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The effect of antibiotics on Pseudomonas aeruginosa biofilm production

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By

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The effects of antibiotics on *Pseudomonas aeruginosa* biofilm production

By

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Submitted to the Faculty of the Graduate School of
Eastern Kentucky University
in partial fulfillment of the requirements
for the degree of
MASTER OF SCIENCE
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DEDICATION

This thesis is dedicated to my parents
Mr. David Turpin
And
Mrs. Angela Turpin
who have given me endless support and encouragement in my educational career.

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ABSTRACT

Antibiotic-resistant bacteria have become an increasing burden worldwide. A highly resistant species is *Pseudomonas aeruginosa,* a nosocomial pathogen that produces a biofilm that enhances its resistance. This project examined the possibility of using bacteriocin, an internal protective toxin produced by some species of bacteria, as a potential treatment for resistant bacteria. In this study, standard broad spectrum antibiotics were used to treat *P. aeruginosa* to prevent biofilm formation. The biofilm was then analyzed to determine if the biofilm is inhibited or facilitated by each treatment. Optimal concentrations of antibiotics were determined to be effective at a concentration of 0.07mg/mL for gentamicin, rifampicin, and polymyxin B. These antibiotics were used to test 48 clinical samples obtained in 2006. Out of the 48 isolates, a *Pseudomonas* strain of unknown origin was resistant to both gentamicin and rifampicin ($p<0.001$). Extraction of Colicin V from *E. coli* and Pyocin S2 from *P. aeruginosa* was unsuccessful. Nanodrop analysis determined that there was minimal protein in each sample (concentrations between 0.196-3.118mg/mL). In the future, bacteriocin extractions should be successfully performed, and analysis of further biofilm assays will determine the overall benefit of the treatment.

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CHAPTER I

LITERATURE REVIEW

In the clinical setting, new medical treatments are developed to help treat critically ill patients. Where bacterial infections are involved, there is a pressing need to find new kinds of treatment. Antibiotics are beneficial for treating pathogens, but emerging “super bugs” are lessening their ability to work. This increased resistance can be seen in many bacterial species, including *Pseudomonas aeruginosa.* Antibiotic resistance is a very important issue in the medical community and research into newer treatments is vital. Researchers have found that bacteria can produce other natural products that can inhibit other species of bacteria. With the development of these alternative treatments, it is hoped that clinicians can stay a step ahead of evolving bacteria.

Antibiotic treatment is a critical therapy in today’s medical world. The first antibiotic discovered, penicillin, is known to have decreased mortality to many bacterial infections. Since their discovery, researchers have worked tirelessly to develop new antibiotics to inhibit the growth of many bacterial species.

Antibiotics can usually be categorized into one of four groups: aminoglycosides, beta-lactams, quinolones, and macrolides (1). It is important to understand these types of antibiotics and how they are used to treat disease in modern medicine. Antibiotics function in one of two ways: slowing the growth (inhibition) of bacteria, or killing them. Both of these functions can be critical in stopping pathogenic bacteria that are causing an infection in a patient.

Not only are antibiotics critical to the treatment of infections in patients, they are also used in animals that are raised for human consumption. Cattle are treated with antibiotics to increase their growth and prevent disease (2). This use of antibiotics increases the amount of animal products that are available for use by consumers. The everyday use of antibiotics is widespread. The applications of these drugs are necessary not only in the clinical setting, but also in agriculture.

Antibiotics are either derived from living organisms or modified from versions of these products. Natural products are made by bacteria or fungi that have their environment manipulated in an industrial setting (3). These substances are then used in a way that is beneficial to human health; most of the early antibiotics were produced in this manner. Biosynthetic antibiotics are made from the modification of other antibiotics. Using older drugs (like first generation antibiotics) as a template can serve as a means to develop newer drugs (3). The establishment of new substances that have specific bacterial targets and that are not harmful to humans is imperative.

When antibiotics were first discovered to be effective against bacteria, the true mechanisms were not known (3). There are several ways for antibiotics to attack and disable a bacterial pathogen. Targeting specific bacterial structures and processes,such as prokaryotic cell walls, ribosomes, and DNA replication, are important because they are less likely to cause adverse effects in humans (3). Prokaryotes have cell walls that are made of a substance known as peptidoglycan. Penicillin interferes with peptidoglycan production causing the cell to leak or degrade. The prokaryotic ribosomal structure consists of a 70S ribosomal unit that is different from that of a eukaryote. This structure can be inhibited to prevent the prokaryotic cell from producing vital proteins. Bacterial

DNA processes are different from eukaryotes due to variation in the enzymes involved in their overall strand structure; these can be targeted to prevent future cell replication. The major types of antibiotics work by interfering with one of these prokaryote-unique functions.

When targeting the cell wall, knowing the specific bacterial structure is important. Gram-positive bacteria have a single thick layer of peptidoglycan with an inner membrane. Gram-negative bacteria have an outer membrane, a thin peptidoglycan layer, and an inner membrane. Many antibiotics that quickly kill gram-positive bacteria may have a harder time penetrating through the outer membrane of gram-negative bacteria (3). Gram stain identification of the species involved in a bacterial infection is therefore crucial to picking the appropriate antibiotic for treatment.

Several groups of antibiotics target cell wall synthesis. The first group is the beta-lactams; they include penicillin, cephalosporin, carbapenems, and vancomycin. Penicillin are classified in one of five groups. These include: **(1)** narrow spectrum penicillins that are sensitive to penicillinase (an enzyme produced by some organisms that can destroy penicillin); **(2)** narrow spectrum penicillins that are penicillinase-resistant; **(3)** broad spectrum aminopenicillins; **(4)** anti-pseudomonal broad-spectrum penicillins; **(5)** and extended-spectrum penicillins.

Another group classified as members of the beta-lactams is the cephalosporins, which can be categorized as first, second, third, or fourth-generation. Penicillin, cephalosporins, and carbapenems work by inhibiting transpeptidases from producing the peptidoglycan layer (3). Vancomycin and its derivatives work to bind to transglycosylases, which is an enzyme that produces chains that can be linked together to form peptidoglycan (3). Using an antibiotic that targets a bacterial cell wall causes the cell to leak and will eventually cause cell lysis (4). Preventing normal cell wall development is an effective way to prevent bacteria multiplication.

Protein synthesis can also be inhibited by antibiotics. These antibiotics, aminoglycosides and tetracycline, target the 30S or 50S ribosomal subunits. The 30S subunit can be inhibited by aminoglycosides and tetracycline; these bind to the decoding region, reducing its ability to interpret codons (5). The 50S subunit can be prevented from functioning by members of the macrolides; these block the polypeptide exit tunnel (3). Impeding these subunits can halt protein production, eventually slowing down or killing the individual bacterium.

Antibiotics can also inhibit bacterial growth by interfering with prokaryotic DNA replication. Bacterial DNA gyrase, an enzyme which aids DNA replication by dealing with the torsion of the supercoil of the double helix (6), is targeted by fluoroquinolones such as ciprofloxacin. By blocking DNA replication processes, bacteria are unable to replicate new genetic material causing cell death.

Rifampin targets RNA polymerase, an enzyme that is involved in DNA transcription during the process of protein manufacturing (3). Interfering with protein production can stop appropriate functioning of the cell. Without transcription to produce mRNA, the cell cannot produce proteins that are vital to their survival.

Although antibiotics are extremely beneficial in treating infections, there are also problems that have arisen since they have been put into use. Discovery of new options for treatment are becoming critical to staying ahead of the bacterial evolutionary curve.

Antibiotic-resistant bacteria are an increasing burden in regards to medical treatment across the globe. This resistance is primarily a result of the over-prescription of these drugs by physicians and their improper use by patients (7). People with viral infections are sometimes prescribed antibiotics, leading to exposure of microbiota to the antibiotics. When an individual takes an antibiotic without following directions, e.g. not completing the treatment or not taking them appropriately, patients also increase their chances of developing resistant bacteria in their system. Due to this concern, measures must be taken to help combat the development of resistance. Efforts have been made to educate both physicians and patients in order to prevent misuse. In addition, government legislation is attempting to lessen the amount of antibiotics put into the food the public ingests (8). Making these changes will play a role in combating antibiotic resistance, but new treatments also need to be developed. The different types of antibiotics have had their effectiveness lowered due to increasing resistance. Pharmaceutical companies have worked to develop new antibiotics, but these are compounds that use similar mechanisms to previously developed antibiotics for therapeutic effect (1). Due to the rapid generation time of bacteria, mutations leading to antibiotic resistance are increasing rapidly.

Many bacteria are becoming resistant to the major classes of antibiotics by targeting the mechanisms of action. One mechanism is through the inactivation of the antibiotic itself by the bacteria. This can occur when bacteria prevent the antibiotic from taking its active state once it is inside the cell. Bacteria become resistant to mitomycin C by altering the oxidation state of the drug.This process renders the drug inactive (3).

A second mechanism by which antibiotic resistance develops is through the function of bacterial efflux pumps that remove the antibiotic from inside the bacterium.

Both Gram negative and Gram positive bacteria use efflux pumps and porins, which are protein channels through the membrane, to remove antibiotics quickly from the interior of the cell (3), keeping the antibiotic from being effective.

Bacterial modification is the third mechanism through which antibiotic resistance occurs. Modification can change susceptible molecular targets causing decreased potency of the antibiotic. The cell makes modifications the synthesis of the cell wall, ribosomes, or DNA so that the antibiotic cannot function. Bacteria that acquire macrolide resistance make modifications in translation processes. Not only does the bacterium change the binding site of the 50S ribosomal subunit to reduce affinity of the drug, it additionally expresses both a higher exportation of macrolides and an ability to keep macrolides in an inactive form (3). Drugs such as ciprofloxacin can induce resistance in bacteria by causing a mutation in bacterial DNA gyrase, resulting in a modification of the ATP binding site, making the drug less potent (3). Bacteria develop resistance to vancomycin and aminoglycosides by promoting reprogramming of the DNA in the cell, resulting in the alteration of enzymes that are affected by the drug, causing greater resistance (3). Antibiotic resistance can happen through modification of different structures, as shown in Table 1:

Table 1
Listing of Antibiotics and Where Resistance Occurs

Drug	Class	Structure Altered to Promote Resistance
Imipenem	Carbapenem	Envelope
Gentamicin	Aminoglycoside	Ribosome
Erythromycin	Macrolide	Ribosome
Ciprofloxacin	Fluoroquinolone	Replication
Rifampin	Ansamycin	RNA Polymerase

Table 1 (Continued)

Drug	**Class**	**Structure Altered to Promote Resistance**
Polymyxin B	Peptide	Envelope

Source: **Walsh C**. 2003. Antibiotics: actions, origins, resistance. ASM Press, Washington, D.C.

Since resistance has developed via these mechanisms, treatments have become less effective. There exists a definite need for further research into the treatment of bacterial infections in ways that minimize the development of resistance.

Pseudomonas aeruginosa (Figure 1) is a gram-negative, coccobacillus-shaped bacterium that can cause a wide variety of infections. It causes opportunistic lung infections in cystic fibrosis patients as well as urinary tract infections (UTIs) in patients hospitalized with catheters (9)(10). *P. aeruginosa* is of concern to people who are immunocompromised, either through underlying disease or introduction of foreign material into the body. Antibiotic resistance in this bacterium is an issue in hospital settings, where people are more likely to be susceptible and resistant strains are more prevalent (11). This bacterium can cause severe illness in an already afflicted patient and is therefore of great concern in healthcare facilities.

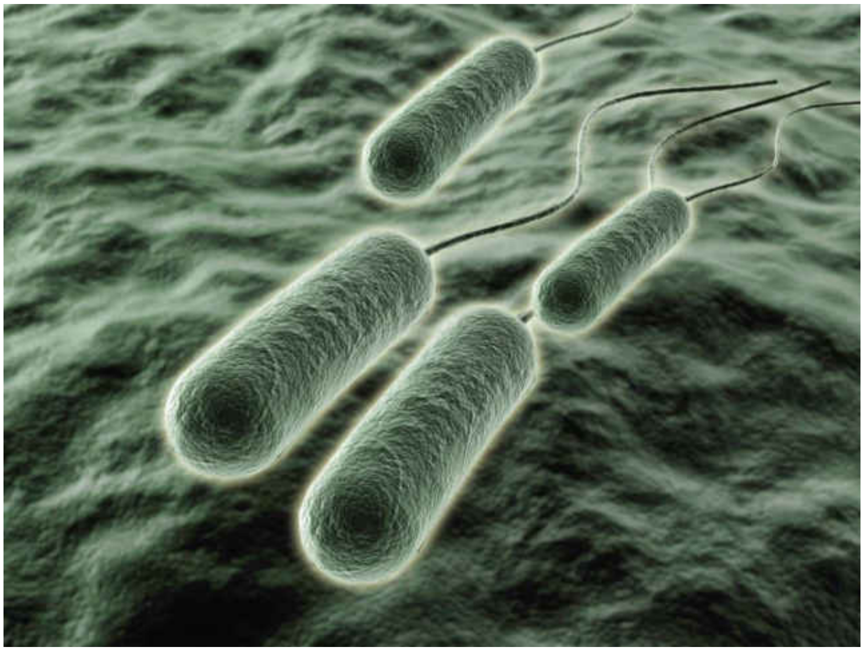


Figure 1: *Pseudomonas aeruginosa*

Source: **Sandle T**. 2014. Understanding how *Pseudomonas aeruginosa* infects. Pharm Microbiol.(12)

Cystic fibrosis is a devastating inherited respiratory disease. It primarily infects the Caucasian population, causing mucus buildup in the respiratory tract due to deficient chloride ion channels (7). A high percentage of people with this disease become infected with *P. aeruginosa*. Their susceptibility to *P. aeruginosa* is due to the mucus buildup causing a lessened ability to rid the body of pathogenic bacteria (7). It is said that up to 70 to 80 percent of people with cystic fibrosis have an infection with *P. aeruginosa* that negatively affects their lives (1). This pathogen causes an enormous impact on young adults who are already are burdened with a serious disease.

Hospital patients are also very susceptible to *P. aeruginosa* infection through catheterization. *P. aeruginosa* readily adheres to the surface of a catheter, forming a biofilm (9). This biofilm formation is crucial because once it has anchored onto a surface, it is impossible to treate or remove. The longer the catheter is inserted, the more likely an infection is to occur in a patient (9). Due to this, asceptic methods and newer technologies are critical in catheterization in a hospital setting.

Pseudomonas aeruginosa is difficult to treat because it has developed multiple mechanisms of resistance to antibiotic treatment. It has been reported that its outer membranes have a 100-fold resistance to cephalosporins (3). *P. aeruginosa* has regulatory systems that work to protect the bacterium against antibiotics. These include sensors, porins, and proteins (3). These mechanisms can activate a protective response that keeps antibiotics from being bacteriostatic or bacteriocidal. Sensors in *P. aeruginosa* can identify an environmental stressor and send a signal to a reaction protein, causing the cell to respond to the antibiotic (13). Porins can effectively send stressors outside the cell through their channels. *P. aeruginosa* prevents high antibiotic concentrations inside the cell through the use of efflux pumps and also by restricting uptake of the antibiotics (3). Proteins can be made to inactivate specific antibiotics, such as fluroquinolone-modifying enzymes that alter fluoroquinolone drugs and prevent them from functioning to kill the bacteria (3,14). Overall, the modifications of this pathogen and the development of virulence factors make it an important opportunistic species.

P. aeruginosa is a highly virulent pathogen due to numerous virulence factors. These factors include biofilm-producing genes, endotoxins, and exotoxins. Some virulence factors cause antibiotic resistance by promoting biofilm formation in the bacterium (10). These factors are activated when the bacteria is under some sort of distress and helps its chance of survival. Biofilm formation, along with toxin production, help make *P. aerugionosa* a very destructive pathogen.

It is through the use of either cooperation or spite mechanisms that bacteria survive potential hazards or competition (15). Virulence factors including biofilm genes and bacteriocin, are of use to help the bacterium survive. These factors can inhbiti or even kill other bacteria in order to allow the producer to survive.

Biofilm production is a well-known virulence capability of *P. aeruginosa*. Biofilms are a secreted matrix that forms around the *P. aeruginosa* cells and binds them to surfaces (7). Its matrix provides a protective boundary that allows it to adhere to an environmental substrate. This coating plays a role in the antibiotic resistance of the bacterium. Biofilms can confer from 10- to 1000-fold more protection against antibiotic treatment (7,16). Once a biofilm has formed (Figure 2), there is a greater chance of *P. aeruginosa* becoming resistant to antibiotic therapies. Biofilms are harder for antibiotics to pass through, and they also change the environment to be unfavorable for therapeutics to work efficiently (7). The genes involved in biofilm production and antibiotic resistance in *P. aeruginosa* have been the subject of much research (17,18). *P. aeruginosa* biofilm production requires several genes (listed in Table 2). Their deletion affects the production of biofilm, and how the expression of the genes produces resistance to antibiotics is currently being investigated. As biofilm production is a known virulence factor of *P. aeruginosa*, new treatments that effectively decrease its production in infections caused by this species need to be developed.

Table 2

Genes involved in biofilm formation in *Pseudomonas aeruginosa*

Gene name	NCBI description
PA0756 F4 and R4	Two-component response regulator
PA2070 F4 and R4	Hypothetical Protein
PA5033 F4 and R4	Hypothetical Protein
PA3064	PelA Protein
PA3063	PelB Protein
PA3062	PelC Protein
PA3061	PelD Protein
PA3060	PelE Protein
PA3059	PelF Protein
PA3058	PelG Protein

Sources: **Zhang L, Fritsch M, Hammond L, Landreville R, Slatculescu C, Colavita A, Mah T-F**. 2013. Identification of Genes Involved in Pseudomonas aeruginosa Biofilm-Specific Resistance to Antibiotics. PLoS ONE **8**:1–8. **Friedman L, Kolter R**. 2004. Genes involved in matrix formation in Pseudomonas aeruginosa PA14 biofilms. Mol Microbiol **51**:675–690.

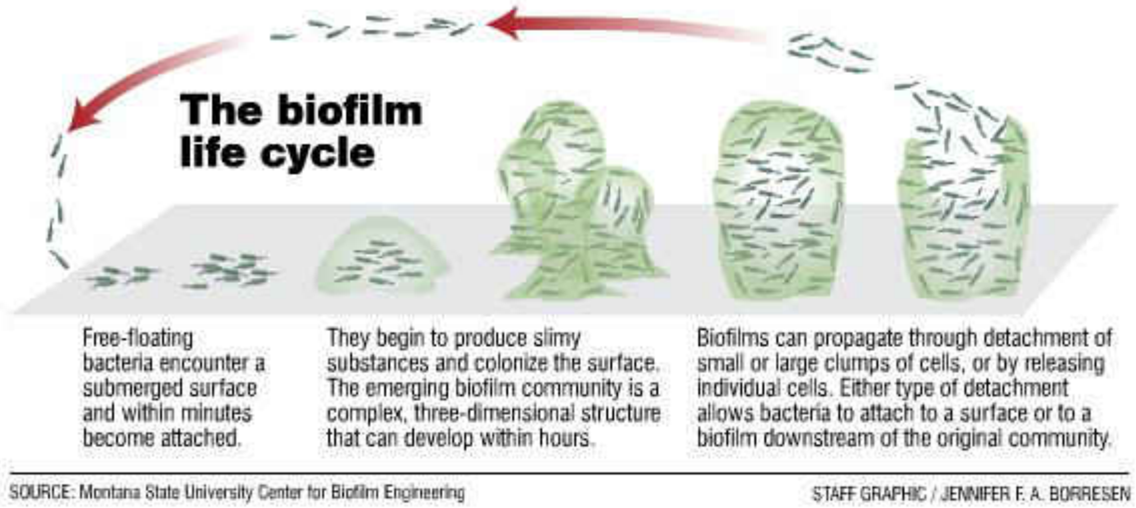


Figure 2: The life cycle of biofilm

Source: **Peters Smith B**. Lab studying new ways to fight infection. Her-Trib. Sarasota, Florida.(19)

Bacteriocins, toxins produced by bacteria as a competitive advantage against other bacteria, have been proposed as an alternative treatment to antibiotics for bacterial infections (8). These toxins can target and kill particular bacteria. Bacteriocins are thought to be the most significant specific antibiotic used by microbial populations (20). These toxins are important because they are a defense mechanism produced by one bacterial species to target the removal of other bacterial species. Almost all bacteria produce and use them to improve survival (15). Production of this toxin by one species has been found to cause damage to another unrelated bacterial species. Bacteriocins are made up of protein (20,21). Because of their lethality, they can be used to cause various forms of damage to competing cells by targeting cell membranes and transcription.

There are several classes of bacteriocins. Gram positive bacteria can produce one of four classes of bacteriocins, Classes I through IV. Post-transcriptional alterations are a characteristic of the Class I bacteriocins (21). After DNA is transcribed to produce RNA, modifications may occur to produce the final product.

Class II bacteriocins consist of three subclasses: Classes IIa, IIb, IIc, and IId (21,22). These classes can perform an array of functions. Class IIa is a pediocin-like compound that is of interest in treating food products to increase safety for human use. This is because it is thought to be non-toxic, making it safe to consume (23). Two bound proteins comprise Class IIb bacteriocins, which work by permeating membranes of the susceptible bacterium (24). The permeation can cause cell death, making this type of bacteriocin of interest to researchers in treating infections. Class IIc bacteriocins are circular proteins thought to be effective in treating dairy products (21). Class IId is little understood, although it is a bacteriocin that is most unlike pediocin and class IIa bacteriocins (25).

Class III bacteriocins are large and are modified by heat exposure (26). Class IV is thought to be circular proteins like enterocin (27). There are also bacteriocins in gram negative bacteria, including colicins, colicin-like bacteriocins, phage-like bacteriocins, and microcins (27). The pyocins of *P. aeruginosa* fall into colicin-like and phage-like bacteriocins, while the colicins of *E.coli* are in a category of their own.

Bacteriocins are thought to have deadly effects on cells (28). The toxins have different structures they target on bacterial cells, causing both DNA and RNA damage. Bacteriocins can also induce pore formation in the cell membrane as well as cause inhibition of enzyme production (7,15). This genetic damage and cell membrane pore formation can cause the affected bacterium to go through cell death. Toxin production comes at a cost to the bacteria either through metabolic loss or cell death (15). The need for killing the competitor must outweigh the cost of perishing. The production of bacteriocin might also come with immunity genes for the producers, which makes it beneficial to use in particular environments (15). These genes can help the producer survive in an area of high competition. Bacteriocin production is advantageous when the bacterial population concentration is neither high nor low, but rather in intermediate numbers (20). This advantage means that a producer will not produce bacteriocin when it is not under stress or when it knows the effect will not be beneficial. What makes bacteriocin an alternative to antibiotics is its ability to be species-specific (7,8). This specificity is what makes this a promising future treatment for infections in humans.

Because bacteriocins can target a particular bacteria species without harming the host microbiota, it decreases the likelihood of resistance developing. Broad-spectrum antibiotics can allow surviving biota to become resistant; those bacteria can then use horizontal gene transfer to spread resistance (29). Killing microbiota is one of the most significant causes of antibiotic resistance development in bacteria. Bacteriocins show specificity to target their alike species as well as some non-related individuals (8,15). The producer cell will form immunity protein factors that will help them withstand the toxin that they have released (15). Bacteriocins from within the same species can be effective at killing other strains of the same species.

In some studies, bacteriocins have been found to not cause stimulation of biofilm in targeted bacteria (30). Since bacteriocin has the capability of being a species-specific antibiotic, the use of it as a treatment is desirable.

Not only can these compounds be used in antibiotic resistance research, but it also has commercial applications. The use of bacteriocins as an alternative to chemicals for food preservation is being investigated (31). Adding bacteriocin to food products can prevent bacterial growth without using chemicals. There is also a push to stop using antibiotics in food products (32). Using bacteriocin could accomplish safe, and chemical-free treatment of food. It was found to be useful in the case of LAC bacteriocin in wine (31).Using these compounds in food can aid in making safer items with a longer shelf life.

Pyocins are bacteriocins produced by *Pseudomonas aeruginosa* and related species. It is thought to have killing ability against other strains of *P. aeruginosa* and closely related species (33). Pyocin is not produced in significant amounts by the bacterium, but its production can be stimulated by UV light or mitomycin C exposure (33)(34). It is thought that by stressing the cell, the bacteriocin production increases significantly. Pyocin is induced when DNA is damaged inside the cell (7). Pyocins attack the membrane on susceptible cells, causing cell death (33). Production of pyocin does have a negative aspect, in that cells that produce pyocin will eventually break apart and die (35). A cell will only resort to pyocin production when overall survival of the population can be benefitted.

Pyocins can be typed as R, F, and S. Pyocin type R (Figure 3) has a structure with phage type tails similar to bacteriophages (36). These toxins have a tall column-like section attached to a tail portion. R-type pyocins have high molecular weight and a substantial capacity to kill many types of bacteria (37). The proteins use their tails to anchor to certain receptors and use a sharp structure to penetrate the membrane (38). The pyocin does not put any type of material into the cell; it only disrupts the membrane potential. With this ability, this protein can be versatile in future research into infection control. In previous studies, the tail of the R-type pyocin was replaced with modified tails of other species and used to treat a greater variety of pathogenic bacteria (37). Using this technology for treatment can help further the fight against the arms race of antibiotic resistance.

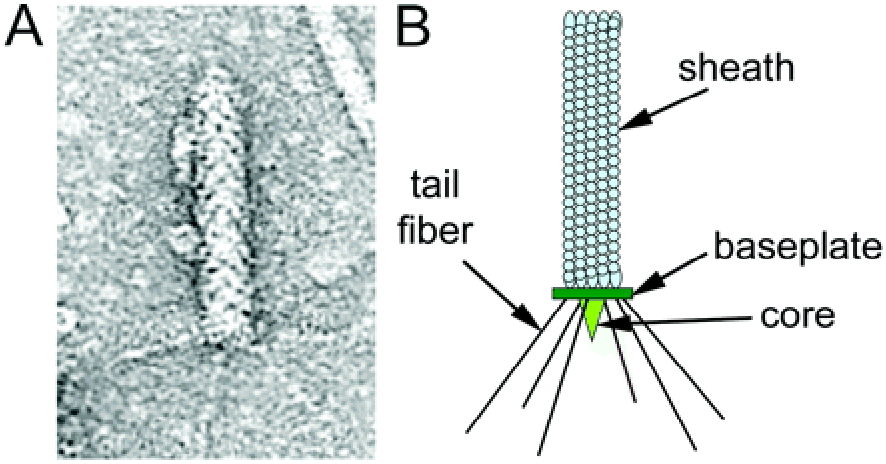


Figure 3: R-type Pyocins

Source: **Williams SR, Gebhart D, Martin DW, Scholl D**. 2008. Retargeting R-Type Pyocins To Generate Novel Bactericidal Protein Complexes. Appl Environ Microbiol **74**:3868–3876.

F-type pyocins, or flexuous pyocins, have tail-like structures like R-type pyocins except have flexible sheath segments (34). They have an immunological response that is cross-reactive (39). F-type pyocins are composed of six protein subunits and a fiber subunit that attaches to the targeted cells (39). When attached, this type of pyocin causes the destruction of bacteria sensitive to its effects.

S-type pyocins exhibit DNAse activity and inhibit lipid synthesis (33). This type of pyocin enters the cell and causes DNA damage. This damage can block important functions inside the cell. S-type pyocin is protease-sensitive, and is made of two protein subunits: a killing and an immunity protein (40,41). The killing protein does the work against susceptible bacteria, and the immunity protein keeps the producer resistant. The S-type of pyocin is very similar in function to E-type colicins, which have been substantially investigated.

Colicins are species-specific antibiotic peptides that have been considered for treatment of *Escherichia coli* infections. Each colicin consists of three subunits: a cytotoxic site (C), a receptor binding site (R), and a subunit that aids in translocation (T) (7). Different types of colicins attack the cells with differing mechanisms. It is said that enzymatic colicins cause damage to nucleotides and prevent cell wall synthesis while other colicins cause pores to form in the membrane of gram-negative bacteria (7). The result of this is cell death for the targeted bacterium (Figure 4). Colicins are transported outside the cell or secreted (42). This means that it does not have to lyse the producing cell to be released.

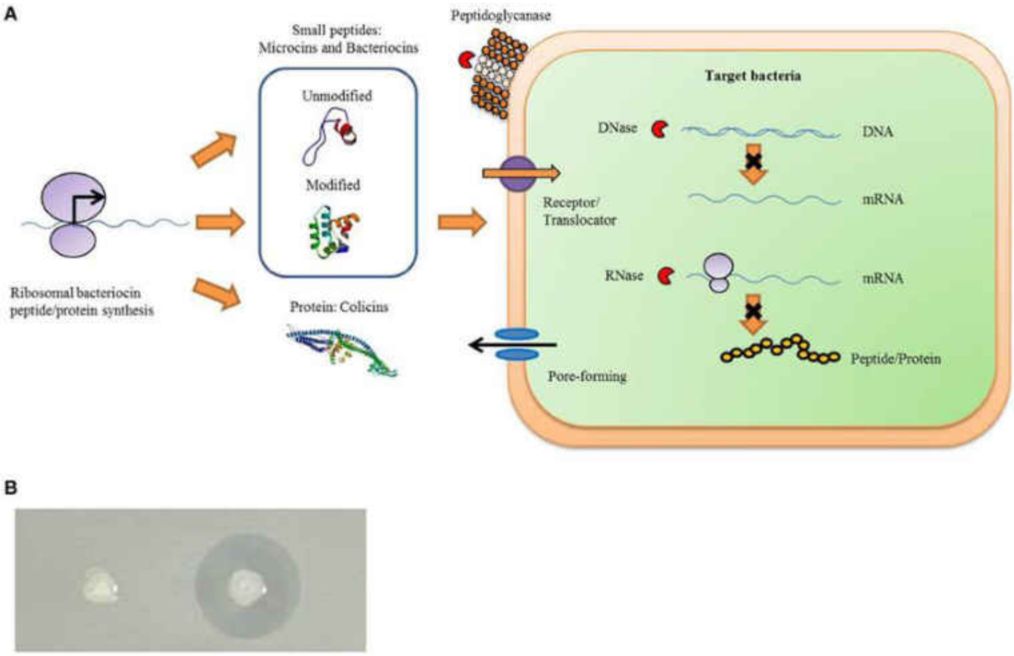


Figure 4: The mechanism for which colicin interferes with protein formation

Source: **Yang S-C, Lin C-H, Sung CT, Fang J-Y**. 2014. Antibacterial activities of bacteriocins: application in foods and pharmaceuticals. Food Microbiol **5**:241.

There are a number of different types of colicins. Colicin V is produced by *E. coli*. It is translated by the RNA in the cell and is exported out of the cell through an ABC exporter (43). This type of colicin does not require cell death in order to be released outside the cell. Colicin V is active against certain cells by incorporating itself into and disrupting the cell membrane (44). By opening the membrane up, it causes death in sensitive cells.

Colicin M works by inhibiting growth and metabolic reactions within the target cell (45). It does this by preventing peptidoglycan synthesis in the cell (30). By preventing synthesis, the growth of the targeted bacteria will remain static.

Similar to S-type pyocins in structure, colicin type E causes DNA damage in sensitive cells (46). Colicins are a varied group of toxins that have many possible uses as therapeutic agents.

With antibiotic resistance on the rise, it is critical to find new treatments for serious bacterial infections. If not, mortality rates will continue to rise steadily. Sufferers of *P. aeruginosa* infections are at high risk due to their impaired immune system, rendering them unable to fight the pathogen without an effective treatment. With new research into species-specific therapies, resistance rates can hopefully be lower to a manageable level in clinical settings.

CHAPTER II

INTRODUCTION

In *Escherichia coli,* the effects of bacteriocin on various genes are currently being studied (30), but the influence of bacteriocin on the genetics of *P. aeruginosa* and its production of biofilm has not been studied. Due to biofilm playing an important role in protecting *Pseudomonas aeruginosa* against antibiotic treatment, it needs to be determined if treatment with bacteriocin could inhibit its formation. At the beginning of this research project, it was hypothesized that biofilm growth was not induced by bacteriocins in other species, but the presence of these substances did cause an increase in the expression of biofilm regulating genes in *Pseudomonas* (30). This study hypothesized further that the presence of bacteriocins from *E. coli* will cause the *P. aeruginosa* biofilm-inducing genes to upregulate, but not trigger greater biofilm production.

Bacteriocins have been said to be species-specific. Producers also protect themselves from the protein by using immunity genes. It is beneficial to know how pyocins affect the production of biofilm within the same species. Pyocins are the bacteriocins made by *P. aeruginosa* that are produced in times of environmental stress in order to kill off competing bacteria. There are types of pyocins can adversely effect *P. aeruginosa,* so comparing their effect to that conferred by antibiotics would give an insight into how pyocins work to inhibit biofilm production. It was also hypothesized that pyocins will downregulate biofilm production genes where antibiotics upregulate it. So-called "cocktail treatments" used in combined therapy using antibiotics and bacteriocins may be more efficient at inhibiting or killing *P. aeruginosa* (8). Understanding what happens to the biofilm in the presence of a "cocktail" is vital to the future of treatment development. The effect on biofilms analyzed when treated with mixtures of antibiotics and bacteriocins was the ultimate goal of this project. It was hypothesized that mixed bacteriocin cocktails will have a down-regulating effect on the genes compared to mixed antibiotic cocktails.

The role of biofilm-expressing genes in antibiotic resistance is being studied, but the effect of bacteriocin treatment on biofilm formation in *Pseudomonas aeruginosa* has not yet been elucidated. By analyzing the different impacts of the bacteriocins of *E. coli* and *P. aeruginosa* in comparison to antibiotics, the new perspective on both antibiotic resistance and bacteriocin treatment can aid the production of new therapeutic agents. The overall hypothesis of this study is that bacteriocins cause a decreased expression of biofilm-producing genes in *Pseudomonas aeruginosa* in comparison to antibiotics.

CHAPTER III

MATERIALS AND METHODS

The methods of this project are illustrated in Figure 5 to show how each part is linked to the next. Growing of control (*P. aeruginosa* ATCC 47085), clinical, and bacteriocin producing isolates were conducted to assess viability. Biofilm assays were performed using the control isolates to test overall procedures and determine appropriate antibiotic concentrations. The bacteriocin-producing strains underwent extraction procedures and protein quantification to determine success of the procedure. The clinical isolates were also grown and tested with antibiotic concentrations as determined by the control assays.

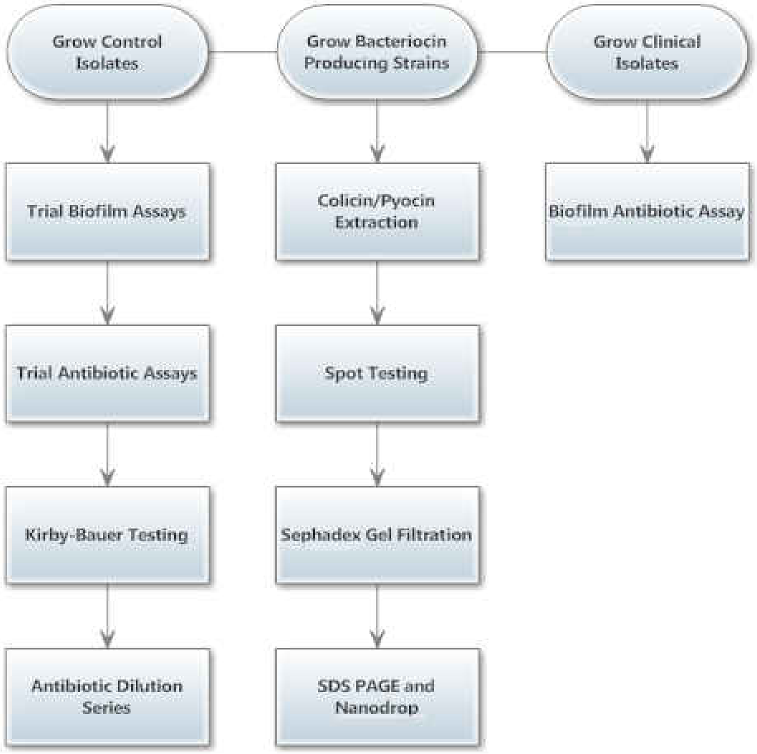


Figure 5: Overall Project Flowchart

Clinical isolates of *P. aeruginosa* were obtained in 2005 on blood agar plates from the University of Kentucky Medical Center in Lexington, KY by Sari Liggett, a graduate student at EKU (47). The isolates came from different types of clinical specimens including: urine, catheterized urine, sputum, cystic fibrosis sputum, catheter tips, wounds, and blood. They were kept frozen at -80°C in a 10% serum sorbitol solution.

Ten of the clinical isolates were thawed to assess for viability. The samples were mixed with a sterilized inoculating loop to allow the bacteria to be evenly dispersed. A loopful of the ten clinical isolates were then added to blood agar plates from Hardy Diagnostics (Santa Maria, CA) and streaked for isolation. The plates were placed in the 37° C incubator for 24 hours (Figure 6).

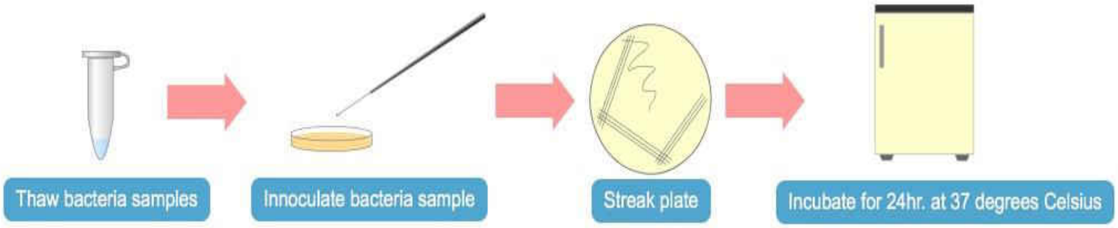


Figure 6: Assessment of viability of clinical samples

P. aeruginosa ATCC 47085 and *E. coli* ATCC 700928 were purchased from ATCC. These strains are both documented as being bacteriocin producers(48)(49). Upon arrival, the strains were rehydrated and grown on a blood agar plate from Hardy Diagnostics (Santa Maria, CA). A Bunsen burner was used to heat the outer glass vial of the samples to break it open. The vial of bacteria was removed, and the pellet was rehydrated with 5-6 mL of Tryptic Soy Broth (TSB). Once rehydrated, 100 µL of the bacterial solution was added to a blood agar plate (4 plates for each culture). Aseptic streaking was performed with an inoculating loop, and the plates were incubated at 37°C for 24 hours (Figure 7).

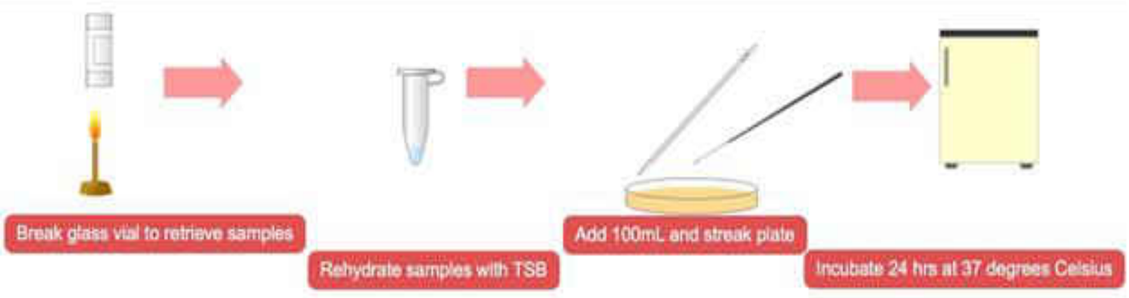


Figure 7: Rehydrating and Growing Bacteriocin Strain

After the initial growth of the bacteriocin producing species on blood agar plates, they were frozen down to preserve them for future experiments. A 10% sorbitol solution was made with 100 mL of water and 10 g of sorbitol, and sterilized in an autoclave. The 10% serum-sorbitol freezing mixture was made by mixing nine mL of sorbitol with one mL of FBS from Atlanta Biologicals (Atlanta, GA) to make a solution. One milliliter of the serum-sorbitol mixture was added to a 1.5 Eppendorf tube (Hamburg, Germany), and several isolated colonies of one species were added and vortexed to mix. Ten tubes of each strain were made and placed in the -20° C freezer overnight. The tubes were moved to a -80° C freezer the following day. Five days later, one tube of each strain was thawed and streaked on a blood agar plate to assess for viability (Figure 8).

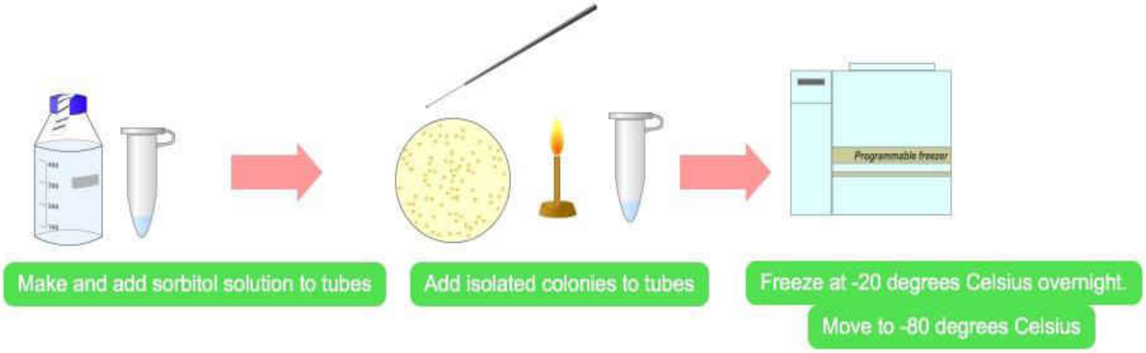


Figure 8: Freezing Bacteriocin Strains

A control assay was performed using *P. aeruginosa* ATCC 47085. The sample was thawed on the countertop and streaked on a blood agar plate from Hardy Diagnostics (Santa Maria, CA). The plates were incubated at 37°C for 24 to 26 hours. After initially growing the bacteria, three isolated colonies were transferred into each of four different tubes of TSB. These were allowed to incubate at 37°C for 16-20 hours. After incubation, the sample was diluted 1:100 by adding 0.25 mL of the broth culture into 25 mL of TSB. The diluted sample was added to a sterile multichannel reservoir, and an eight-channel multichannel pipette was used to load into columns 3-12 of a 96-well microtitre plate from Falcon (Bookings, SD). A new multichannel reservoir from VWR (Radnor, PA) was used to load sterile TSB to columns 1-2 to serve as a control. A total of three plates were prepared. The plates were incubated at a temperature of 37 °C for 24, 48, and 72 hours to assess biofilm formation based on time. The plates columns were loaded into a microtitre plate as seen in Table 3:

Table 3

Column layout of trial microtitre assay

TSB	TSB	Bacteria TSB	Bacteria TSB	Bacteria TSB	Bacteria TSB	Bacteria TSB	Bacteria TSB	Bacteria TSB	Bacteria TSB	Bacteria TSB	Bacteria TSB

After incubation, four disposal bins were prepared. The first bin was empty, but the following three were filled with tap water. The microtitre plate was removed from the incubator, and its contents were dumped into the first bin. The plate was then washed in the second bin and allowed to dry. When the plate had sufficiently dried, 125µL of 0.1% of crystal violet was added to each well. The crystal violet was allowed to stain each well for 10 minutes. The plates were emptied into the first bin and washed in the third bin. After the wash, the plate was emptied into the first bin, and the process was repeated in the fourth bin. The plate was allowed to dry after the washes. The plates then received

200µL of 30% acetic acid in each well. The acetic acid was left in the wells for 10-15 minutes. Each plate was analyzed using the Tecan GENios for absorbance at 595nm (Figure 9).

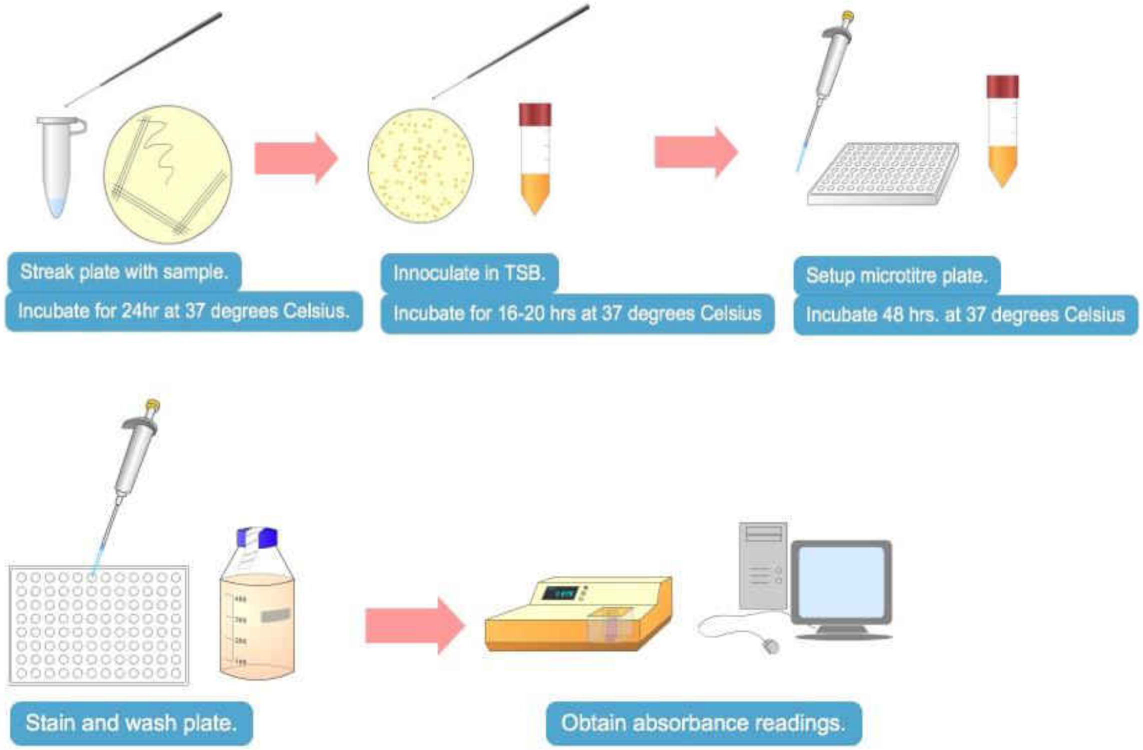


Figure 9: Microtitre assay

Control trials were continued with several modifications. Some trials were carried out by only adding the crystal violet dye and drying, skipping the acetic acid step. Other trials were carried out with a new incubator to determine if more accurate results could be obtained. Twenty-four well plates were also used to determine if biofilm analysis would be less varied. The 24-well plate columns were set up as shown in Table 4:

Table 4
Column layout for 24-well plate

TSB	Bacteria TSB	Bacteria TSB	Bacteria TSB	Bacteria TSB	Bacteria TSB

After testing the control cultures in the biofilm assay, the antibiotics were tested against each strain. Ciprofloxacin (5µg/mL), ceftazidime (10µg/mL), gentamicin (10µg/mL), and imipenem (10µg/mL) were purchased from Fisher Scientific (Pittsburg, PA). These antibiotics were used to attempt to inhibit biofilm levels in the control strain of *P. aeruginosa*. 100µL of antibiotic was added to 100µL of bacteria suspension in the microtitre plates as previously described. The layout of the plate's columns is shown in Table 5. After 48 hours, these plates were read on the Tecan Genios at 595nm to determine the absorbance.

Table 5

Column layout for antibiotic treatments

TSB	TSB	Bacteria TSB Treatment	Bacteria TSB Treatment	Bacteria TSB Treatment	Bacteria TSB Treatment	Bacteria TSB Treatment	Bacteria TSB Treatment	Bacteria TSB Treatment	Bacteria TSB Treatment	Bacteria TSB Treatment	Bacteria TSB Treatment

The antibiotic control protocol was altered to do serial dilutions in the next study. The wells were loaded with 100µL of TSB and then 100µL of the antibiotic. The antibiotic doses were changed to gentamicin (20µg/mL), ceftazidime (20µg/mL), imipenem (20µg/mL), and ciprofloxacin (10µg/mL). After the antibiotics had been added, a clean tip was used to move 100µL to the next well to mix. This process was continued until the plate was filled with columns of decreasing concentrations of the appropriate antibiotic (Figure 10).

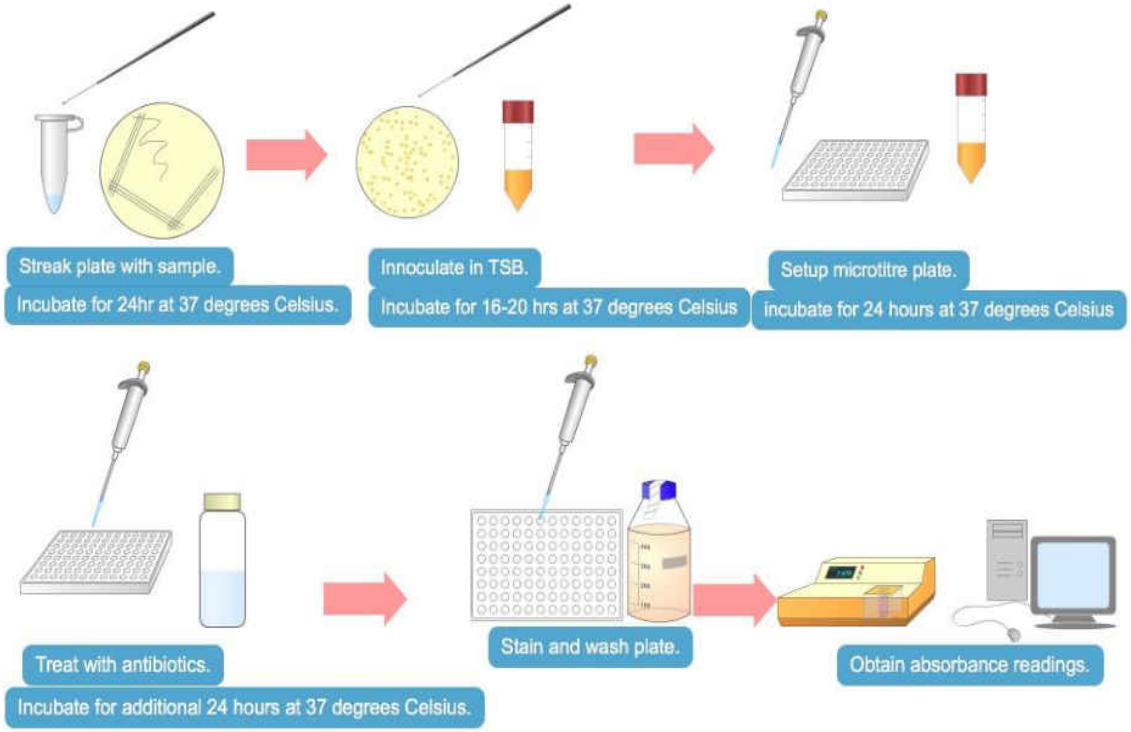


Figure 10: Setup of antibiotic microtitre assay

The bacterium was tested for its susceptibility to antibiotics using the Kirby-Bauer procedure. This procedure was performed by thawing the stock and clinical bacteria isolates, streaking on blood agar plates and incubating for 24 hours at 37°C. After incubation, the test was initiated by adding 1mL of sterile saline to a sterile tube. An inoculating loop was sterilized, a small amount of the *P. aeruginosa* was added to the saline, and it was mixed on a vortex until uniform. This mixture was then compared to the #0.5 McFarland Standard for a consistent bacterium cell concentration. If the mixture was too cloudy, more saline was added. If the mixture was too transparent, more bacteria were inoculated into the tube. After achieving the right concentration of bacteria in the tube, a sterile swab was inserted into it and used to streak a Mueller Hinton plate. The streaking pattern was performed to produce a consistent lawn as shown in Figure 11:

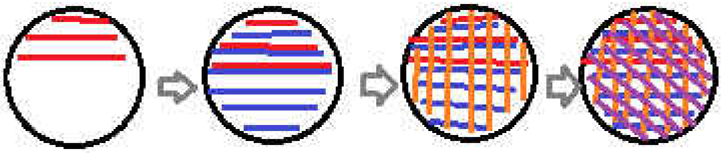


Figure 11: Kirby-Bauer Plate setup

After the plate had been streaked with the selected samples, they were treated with antibiotic disks. The disks were added by using sterilized forceps. The plate was then incubated for 24 hours at 37° C (Figure 12).

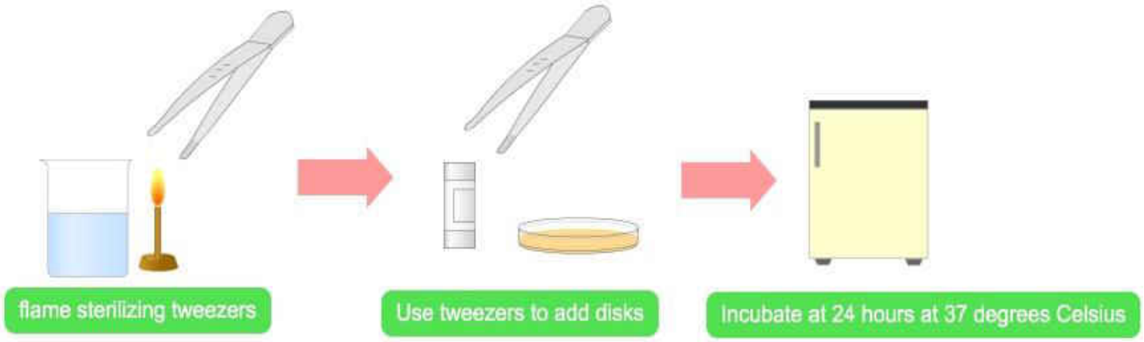


Figure 12: Adding disks to Kirby-Bauer plate

After 24 hours of incubation, the zones of inhibition were measured. The measurements were obtained by measuring the circumference surrounding each antibiotic disk in millimeters. After obtaining the millimeter clearances on the *P. aeruginosa*, each value was compared with the BD BBL™ Sensi-Disc™ Antimicrobial Susceptibility Test Discs Sheet.

In a 96-well microtitre plate, 100 µL of TSB was added to every well. The TSB in column two was diluted with 100 µL of distilled water and 100µL of the mixture was discarded. Ciprofloxacin (25mg/mL), Gentamicin (50mg/mL), Rifampicin (2.5mg/mL), and Polymyxin B (50mg/mL) were purchased from Sigma-Aldrich (St. Louis, MO). Using a multi-channel pipette, the antibiotics were mixed with its appropriate solvent and 100µL of it was added to each well of column three. The solution in column 3 was combined and 100µL of the mixture was added to column four. The multichannel pipette tips were changed, and the solution in column four was mixed and 100µL of the mixture was added to column five. This technique was repeated until all 12 columns were filled with a concentration of antibiotic. After the plate was loaded with treatments, a #0.5 McFarland Standard was used to compare equal concentrations of the *P. aeruginosa* isolates that were grown previously on blood agar plates mixed with sterile saline. After making tubes with similar bacterium levels, 100µL of the bacteria were added to columns 2-12. Those plates were then incubated for 24 hours at 37°C. The plates were read using the Tecan GENios spectrophotometer reader at an absorbance of 595nm. The plates were organized as shown in Table 6:

Table 6

Microtitre dilution series setup

TSB Only	Bacteria TSB Only	Bacteria TSB Antibiotic ½	Bacteria TSB Antibiotic 1/4	Bacteria TSB Antibiotic 1/8	Bacteria TSB Antibiotic 1/16	Bacteria TSB Antibiotic 1/32	Bacteria TSB Antibiotic 1/64	Bacteria TSB Antibiotic 1/128	Bacteria TSB Antibiotic 1/256	Bacteria TSB Antibiotic 1/512	Bacteria TSB Antibiotic 1/1024

Minimum inhibitory concentrations were performed again, starting at smaller concentrations. Ciprofloxacin (12.5mg/mL and 6.25mg/mL), gentamicin (25mg/mL and 12.5mg/mL), rifampicin (1.25mg/mL and 0.625mg/mL), and polymyxin B (25mg/mL and 12.5mg/mL) were mixed for microtitre plates. One plate was set up for each starting concentration as described previously.

Antibiotic concentrations were adjusted, and ciprofloxacin was eliminated from the study. Gentamicin (5mg/mL), polymyxin B (5mg/mL and 4mg/mL), and rifampicin (0.078125mg/mL) were mixed in distilled water. Plating of the bacteria and antibiotics did not change. Absorbance reading parameters also remained the same.

It was determined that a concentration of 0.7mg/mL of gentamicin, polymyxin B, and rifampicin was effective at inhibiting the growth of the clinical isolates. Clinical samples 1-8, 10-31, 33-35, and 37-53 were grown on blood agar plates for 24 hours at 37°C. Each isolate was added to the saline to match a #0.5 McFarland Standard tube. Each plate was loaded as in shown Table 7:

Table 7

Antibiotic Microtitre plate setup

TSB Only	Blank	TSB Bacteria	Blank	TSB Gentamicin Bacteria	TSB Gentamicin Bacteria	Blank	TSB Rifampicin Bacteria	TSB Rifampicin Bacteria	Blank	TSB Polymyxin B Bacteria	TSB Polymyxin B Bacteria

The plates were incubated for 24 hours at 37°C. After incubation, the absorbance for each plate was read on the Tecan GENios at 595nm.

Tryptone-yeast colicin media (TY) was used as previously documented (50). This media was made by mixing one liter of distilled water with a mixture of tryptone (6g), yeast extract (5g), and NaCl (5g). This mixture was heated on a hot plate while stirring until the ingredients were dissolved. The stir bars were removed, and the media was autoclaved. After the media had been sterilized, the media was stored at 4 °C until use (Figure 13).

Figure 13: Media preparation

E. coli ATCC 700928 was used to produce colicin. The strain was taken from the -80°C freezer and thawed. After the sample had been thawed, the sample was streaked on a blood agar plate from Hardy Diagnostics (Santa Maria, CA). After incubating the plate for 24 hours at 37° C, isolated colonies were added to a tube of TY and then incubated for an additional 24 hours at 37°C. Following this incubation, the contents of the TY tube were added to 250mL of TY broth that was incubated for an additional 24 hours at 37°C (Figure 14).

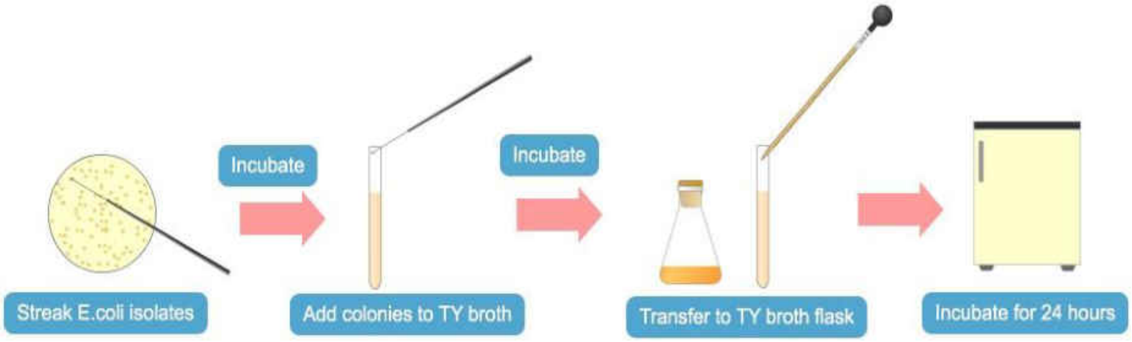


Figure 14: Preparing *E. coli* for colicin extraction

Mitomycin C (0.05mg/mL) was added to the flask of *E. coli*. The flask was shaken and incubated at 37°C for four hours. After agitating the bacterium, the *E. coli* was transferred to a 50mL conical tube and centrifuged at 4°C for 15 minutes at 4,000xg. The supernatant was poured off, and the pellet was suspended in 5mL of distilled water. The mixture was centrifuged again at 4,000xg for 15minutes at 4°C. This wash was repeated once more and the pellet was resuspended in 5mL of distilled water. The tube was sonicated at 24kHz for one minute with 6 second pulses. The tube was centrifuged once more at 4°C for 15 minutes at 4,000xg, and the supernatant was frozen at -80°C for further testing (Figure 15).

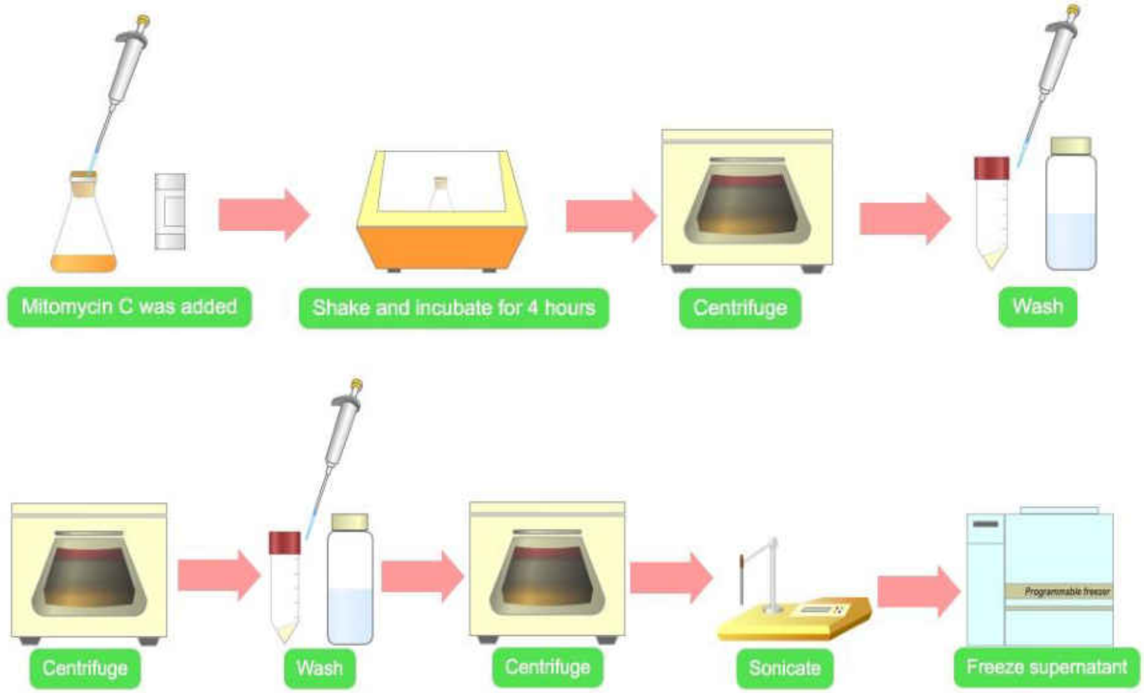


Figure 15: Colicin Extraction

Alterations were made to this procedure as the extraction process continued. The incubation of the initial TY tube was changed to four hours to start the agitation at the exponential growth phase of the bacterium. Another change was also made after the supernatant was obtained by sonication and centrifugation. The addition of overnight exposure to chloroform vapors at 4°C was added due to the recommendation of Dr. Smajs.

After obtaining the crude colicin, a spot test was made to assess activity. TY agar was made adding 15 g/L of agar to the same recipe previously mentioned to produce TY plates and 3 mL agar deeps (tubes). *P. aeruginosa* was grown on blood agar plates for 24 hours and then moved to TSB tubes for 24 hours similarly to previous procedures. When the TSB tube had incubated for a day, a 3mL TY agar deep was boiled and then cooled at 55°C for an hour. The tube of *P. aeruginosa* was mixed well, and 1mL of the bacteria was added to the liquid 3mL agar deep of TY agar. The tube was rolled to mix and poured over a warmed TY agar plate. The liquid agar and bacteria were swirled around the plate evenly. The plates were allowed to dry, and the crude colicin was thawed. The colicin was diluted in 1:10 dilutions to 10^{-5} . Ten microliters from each dilution were spotted on the prepared plate and incubated at 37°C for 24 hours (Figure 16).

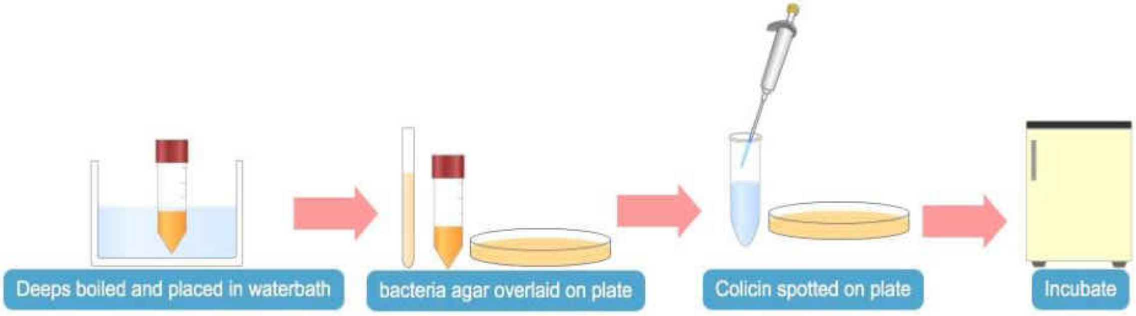


Figure 16: Spot Test

There were several changes made to this protocol. *Shigella* (ATCC 25931) and *Salmonella* (ATCC 202165) species were used as indicator strains (43). There was also a change to spot the colicin before the agar was overlaid on the TY plate.

G medium was made by mixing sodium glutamate, glucose, magnesium sulfate heptahydrate, sodium phosphate dibasic dodecahydrate, potassium phosphate monobasic, yeast extract, and tryptophan as previously described (33).

P.aeruginosa ATCC 47085 was grown on blood agar plates and then transferred to a tube of G medium. After overnight incubation at 37°C, the tube was transferred to 1000 mL of G medium and shaken and incubated at 37°C for 3 hours. Mitomycin C (2µg/mL) was added to the flask and it continued to be incubated and shaken for an additional 3 hours. Chloroform (10mL) was added and the mixture was allowed to sit for an additional hour. The mixture was centrifuged at 10,000Xg for 10 minutes at 4°C. After the centrifugation, the supernatant was stored at -80°C (Figure 17).

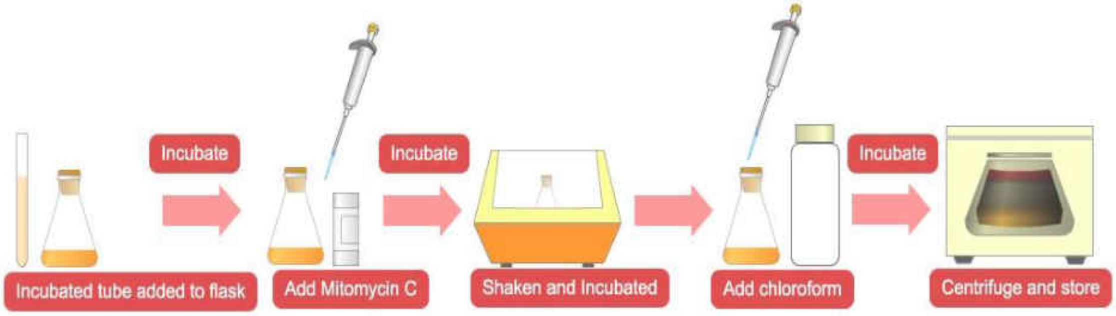


Figure 17: Pyocin extraction

It was determined that protein extraction would be more accurate and the extract more pure if the crude extract was run through a Sephadex size exclusion column. Five grams of Sephadex G-75 from Sigma-Aldrich (St. Louis, MO) was mixed with 300mL NaCl and KH_2SO_4 buffer and vacuumed to remove air bubbles. The Sephadex mixture was applied to a column supplied by Dr. Martin Brock. The Sephadex was allowed to settle before the sample was applied. One milliliter was mixed with 500µL of glycerol and 200µL of Cytochrome C marker (14kDa). The mixture was applied to the column and allowed to pass through the matrix. When the color marker reached the end of the column, tubes were used to collect the desired fractions. The tubes were switched every minute and a total of twenty tubes were collected. The three tubes following the Cytochrome C marker were mixed and concentrated using a Millipore Amicon Ultra-4 Centrifugal Filter Unit until it was concentrated to a milliliter. The concentrated protein (10kDa) was then added to a 1.5mL Eppendorf tube and stored at -80°C until further use

Gel electrophoresis using a 1% agarose gel was performed to analyze the purity of the colicin obtained through the Sephadex. In the first lane, a Bio-Rad Kaleidoscope Gel Marker (Hercules, CA) was used. Cytochrome C from Sigma-Aldrich (St. Louis, MO) was used in lane two. The Cytochrome C captured through the Sephadex column was loaded in lane three (Figure 18).

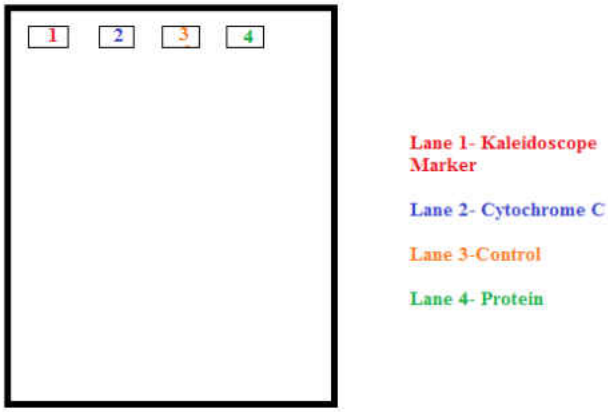


Figure 18: SDS-PAGE Layout

The protein samples were loaded into lane four of the gel, which was then electrophoresced for 60 minutes at 100V. After completion, Coomassie Brilliant Blue Dye was used to stain the gel for one hour. The gel was then decolorized with a mixture of acetic acid and methanol changed every 30 minutes.

SDS-PAGE was also performed to assess protein purity. A pre-made gel was purchased from Edvotek (Washington D.C., USA) and assembled on an electrophoresis unit. 27µL of 2X Laemmli Sample buffer (BioRad) was added to the protein samples (40µL) before heating for 10 minutes in a 100°C water bath. The kaleidoscope standard (BioRad), containing cytochrome C (14kDa), colicin extract (10kDa), control cytochrome C extract (14kDa), conalbumin (75kDa), pyocin (74kDa), and bovine serum albumin (66kDa), was used for reference. After the samples were heated, twenty microliters of each sample were loaded into the wells as seen in figure 19. The unit was filled with Bio-Rad 1X Tris/Glycine/SDS buffer and electrophoresed at 70 volts for 1.5 hours. When completed, the gel was removed and placed in a mixture of Coomassie Brilliant Blue stain for an hour. The gel was then decolorized using a mixture of acetic acid and methanol. The mixture was changed every 30 minutes over a two hour period of time.

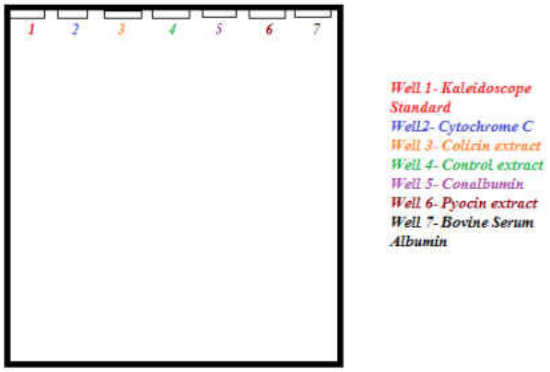


Figure 19: SDS-PAGE layout with Colicin and Pyocin

The statistical analysis was performed with SigmaPlot 11. Raw data, descriptive statistics, t-tests, and ANOVA (Holm-Sidak) are listed in the appendix.

CHAPTER IV

RESULTS

Initially, a control assay was performed using sterile TSB and untreated *P. aeruginosa* ATCC 47085. These control microtitre assays were performed to determine appropriate incubation times, concentrations of staining materials, and incubation environment. Higher biofilm formation correlated with a higher absorbance reading on the GENios system. A total of three plates were assessed, each corresponding to 24, 48, and 72 hours in this trial. Each plate was analyzed for absorbance twice: once after staining and once after the stain was dissolved using acetic acid. Trials were only performed once, although like-treated wells were averaged for statistical analysis.

After 24 hours, there was no statistical difference between the wells containing stained sterile TSB and those containing stained untreated bacteria (Figure 20). After doing a two-tailed T-test, there was no significant difference between the two groups at an alpha level of 0.05. Using the data found in Appendix A, the t was 1.513 and the p-value of a two-tailed T-test was 0.134. At that p-value, it cannot be determined that the control sample population and the TSB population are not the same. The biofilm absorbance has a high standard deviation that cannot be statistically different from the TSB alone.

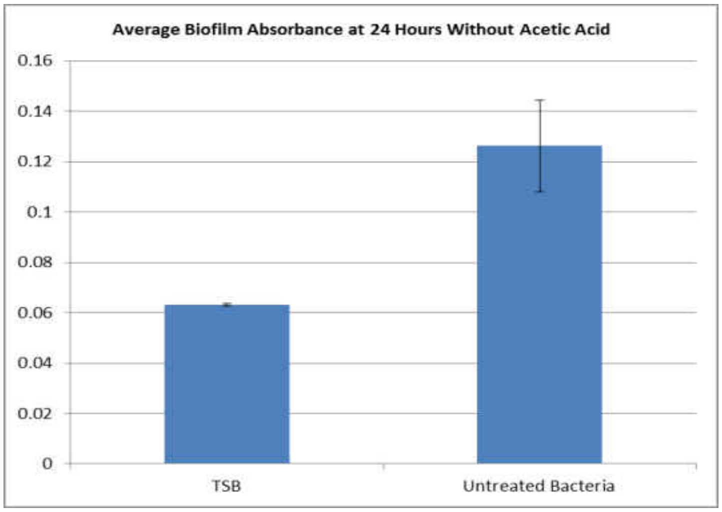


Figure 20: Average Biofilm Absorbance at 24 Hours without Acetic Acid using *P. aeruginosa* ATCC 47085

Note: Standard Error Shown

The stained biofilm at 24 hours was then treated with acetic acid and its absorbance analyzed. The difference between bacterial wells and control wells was more apparent than without the acetic acid (Figure 21). With statistical analysis, the t was -8.992 and the p-value was 2.553×10^{-14} . At a significance level of $\alpha=0.05$, it can be determined that the absorbance of the wells containing bacteria is significantly greater than the control.

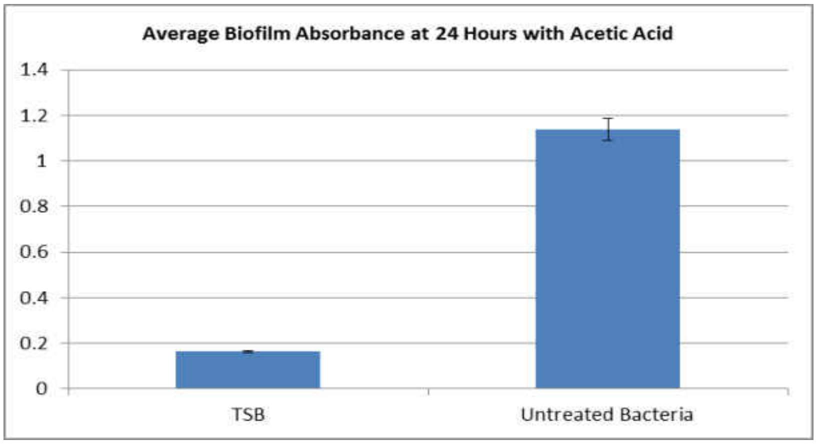


Figure 21: Average Biofilm Absorbance at 24 Hours with Acetic Acid using *P. aeruginosa* ATCC 47085

Note: Standard error shown

When the assays were performed after 48 hours, averages for the biofilm were higher than the control TSB numbers (Figure 22). However, when a two-tailed T-test was performed, the t was -1.718 and the p-value was determined to be 0.0890. At a significance level of α=0.05, it cannot be determined that the *P. aeruginosa* wells had significantly greater absorbance than the TSB control.

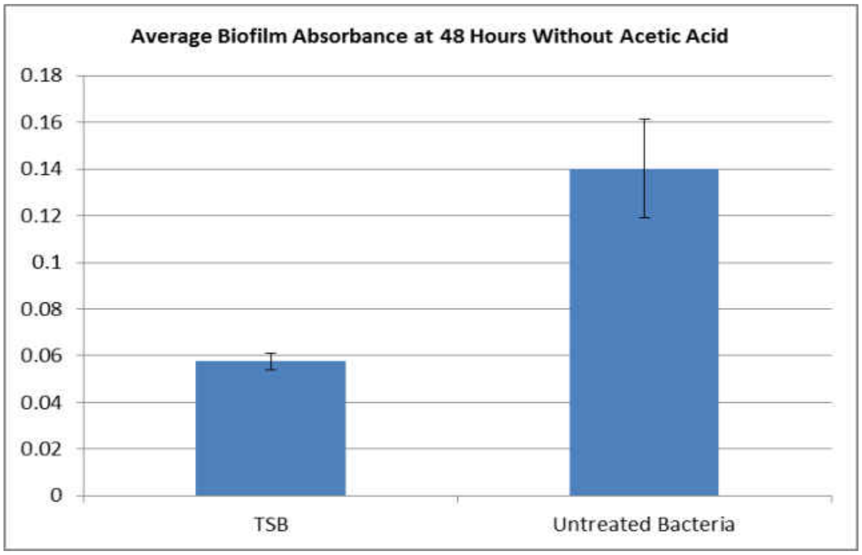


Figure 22: Average Biofilm Absorbance at 48 Hours without Acetic Acid using *P. aeruginosa* ATCC 47085

Note: Standard error shown

After dissolving the stained biofilm with acetic acid, the averages of the bacterial wells and the TSB control wells were visually different (Figure 23). After a two-tailed T-test was performed, the t value was -8.339 and the p-value was 1.011×10^{-12}. At a significance level of α=0.05, the bacterial sample average was statistically greater than the TSB control sample.

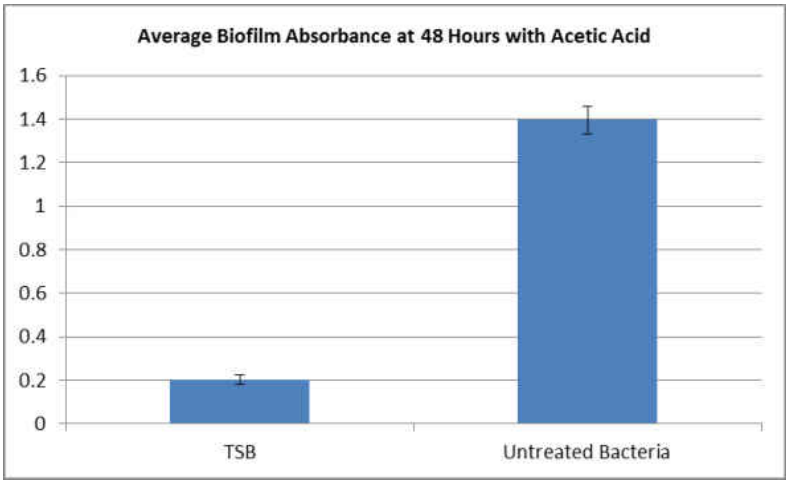


Figure 23: Average Biofilm Absorbance at 48 Hours with Acetic Acid using *P. aeruginosa* ATCC 47085

Note: Standard error shown

At 72 hours, there seemed to be a greater occurrence of the variance for the absorbance at 595nm (Figure 24). The two-tailed T-test had a t of -3.190 and p-value of 0.00193. At a significance level of α=0.05, it can be determined that the *P. aeruginosa* wells have a greater optical density than the TSB control.

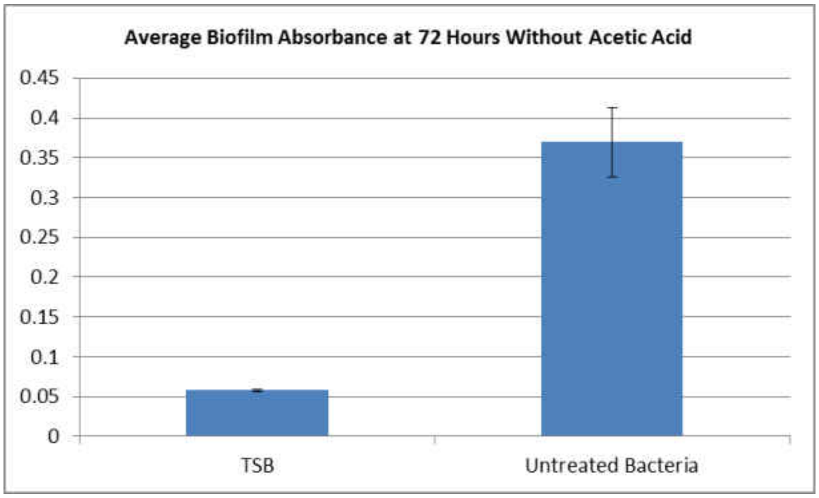


Figure 24: Average Biofilm Absorbance at 72 Hours without Acetic Acid using *P. aeruginosa* ATCC 47085

Note: Standard error shown

With the addition of acetic acid, there were 29 out of 96 wells that read as OVER in the absorbance assay (Appendix A). This reading means the absorbance reading was too high for the GENios to register. The graphical representation seemed to show a difference between the control bacteria in comparison to the sterile TSB (Figure 25). A two-tail T-test determined a t of -9.807 and a p-value of 1.920×10^{-14} . At a significance level of α=0.05, it can be determined that the bacterial wells had significantly greater absorbance than the TSB control.

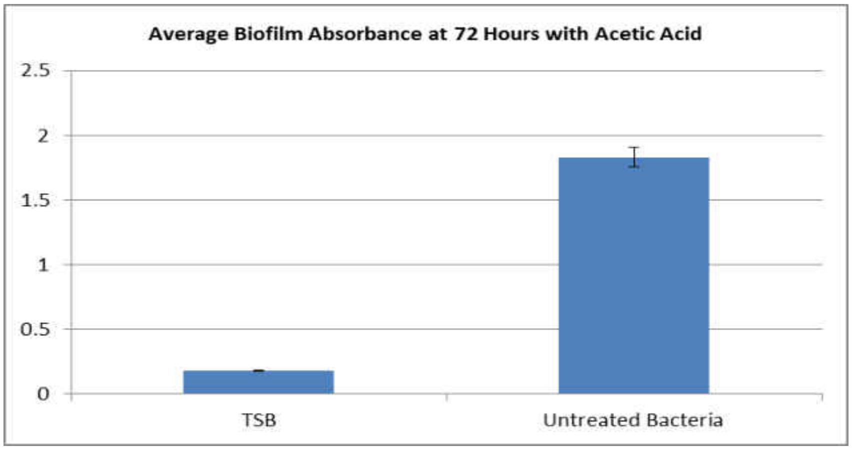


Figure 25: Average Biofilm Absorbance at 72 Hours with Acetic Acid using *P. aeruginosa* ATCC 47085

Note: Standard error shown

At this point, the incubation method was altered by using a different incubator with a more consistent heating system. It is noted that the readings in the first incubator (Figures 20-25) were significantly greater (p-value <0.001) than those obtained in the newer incubator (Figure 26-31). The trials with the new incubator were performed in the same manner as the trials described in the previous section.

The averages visually appear to be close between the control and test wells on the plate that was only stained with crystal violet (Figure 26), but were actually statistically different. In the two-tailed T-test, the t was -5.617 and the p-value was 0.000000197. At a significance level of α=0.05, the absorbance of the sample is significantly greater that the control.

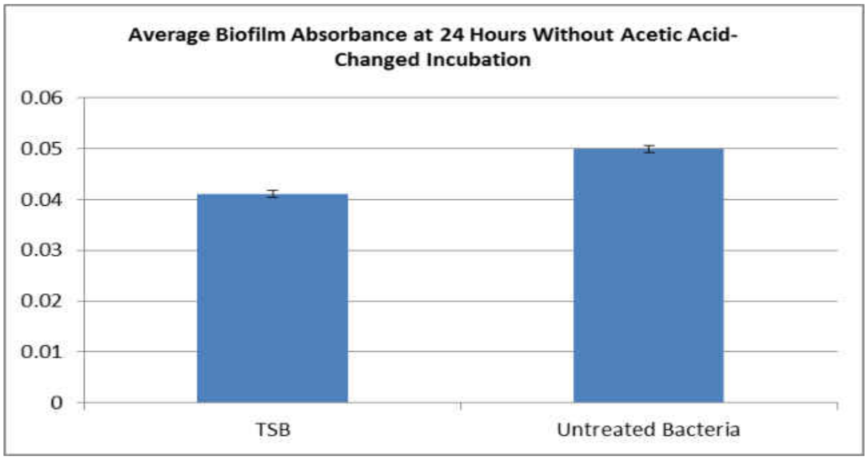


Figure 26: Average Biofilm Absorbance at 24 Hours without Acetic Acid- Changed Incubator using *P. aeruginosa* ATCC 47085

Note: Standard error shown

When acetic acid dissolved the biofilm, the difference between the control and sample is more apparent (Figure 27). When a two-tailed T-test was performed, the t was -4.777 and the p-value was 0.000000654. At a significance level of α=0.05, the bacterial sample was significantly greater than the control TSB.

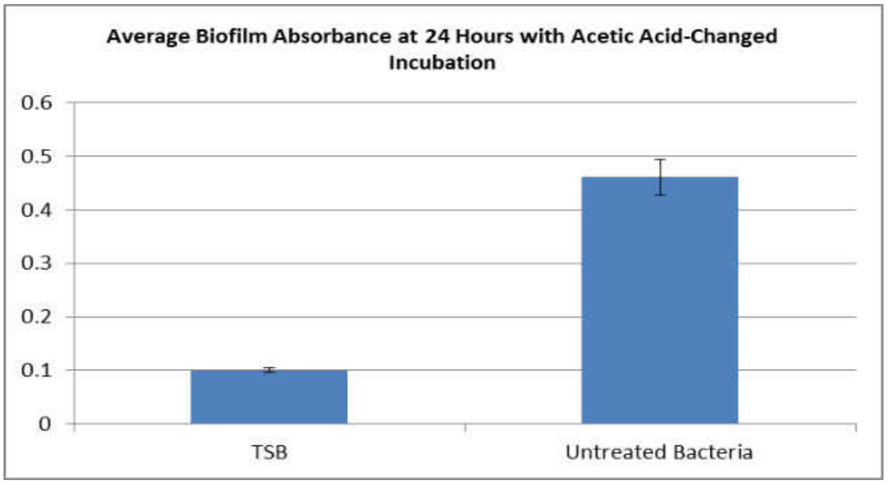


Figure 27: Average Absorbance at 24 Hours with Acetic Acid- Changed Incubator using *P. aeruginosa* ATCC 47085

Note: Standard error shown

Using the new incubator at 48 hours incubation, the sample seemed to have several variations in like-treated wells. These variations between wells led to greater standard deviations (Figure 28). When a two-sample T-test was performed on the data, the t was -1.001 and the p-value was 0.319. At a significance level of α=0.05, the *P. aeruginosa* samples were not significantly greater than the control TSB wells.

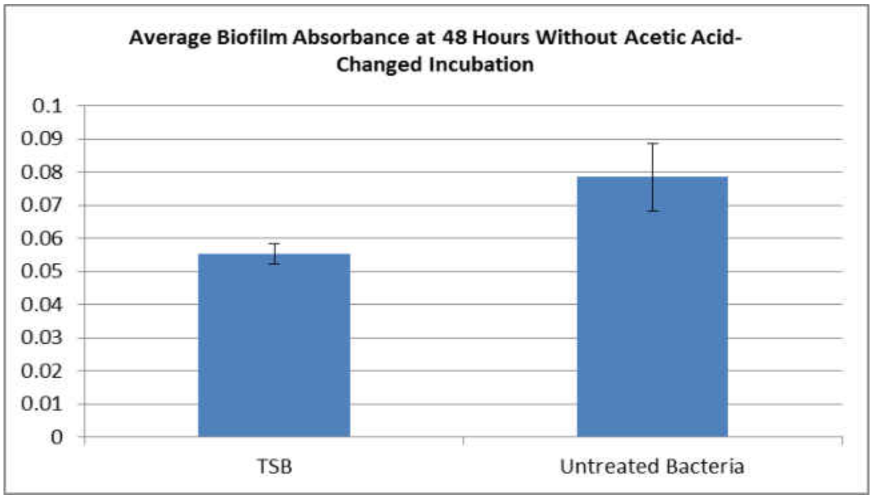


Figure 28: Average Absorbance at 48 Hours without Acetic Acid- Changed Incubator using *P. aeruginosa* ATCC 47085

Note: Standard error shown

When acetic acid was added to the 48-hour biofilm assay, the averages of samples become greater in comparison (Figure 29). In a two-tailed T-test, the t was -2.550 and the p-value was 0.0124. At a significance level of α=0.05, the sterile TSB samples were significantly less than the *P. aeruginosa* samples.

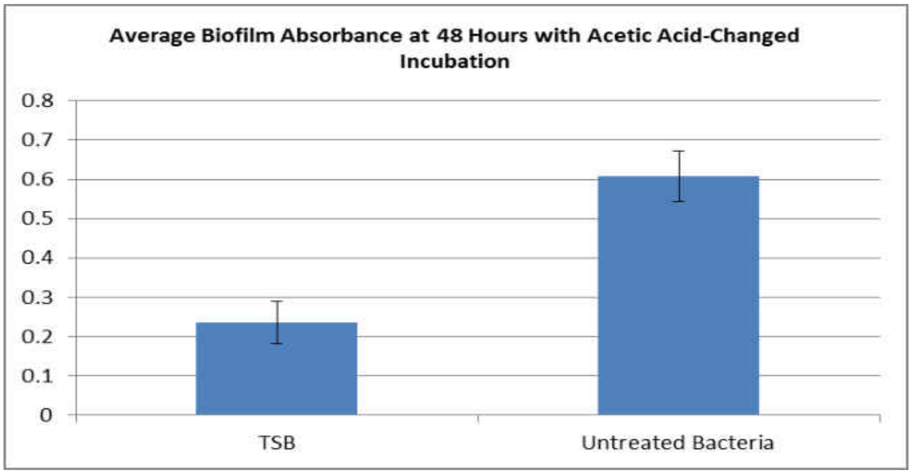


Figure 29: Average Biofilm Absorbance at 48 Hours with Acetic Acid- Changed Incubator using *P. aeruginosa* ATCC 47085

Note: Standard error shown

At 72 hours, the difference between the bacteria and TSB wells without the acetic acid is less pronounced (Figure 30). In the data listed in Appendix A, there is an outlier greater than three standard deviations away in column twelve (2.4602). When a two-tailed T-test was performed, the t was -0.823 and the p-value was 0.413. At a significance level of α=0.05, the bacterial samples are not significantly different from the TSB control.

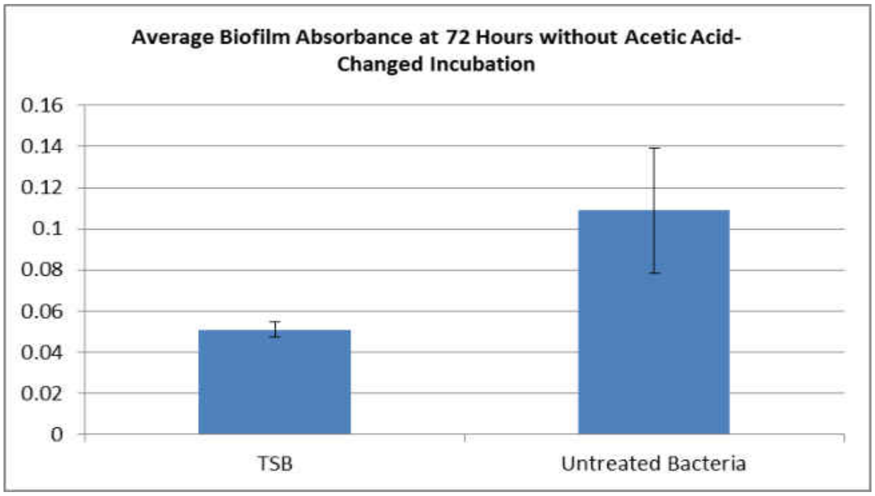


Figure 30: Average Biofilm Absorbance at 72 Hours without Acetic Acid- Change Incubator using *P. aeruginosa* ATCC 47085

Note: Standard error shown

When the acetic acid was added to the 72-hour biofilm assay, the average of the sample populations was greater than the TSB control (Figure 31). When a two-tailed T-test was performed, the t was -3.435 and the p-value was 0.000937. At a significance level of α=0.05, the sample was significantly higher than the TSB control.

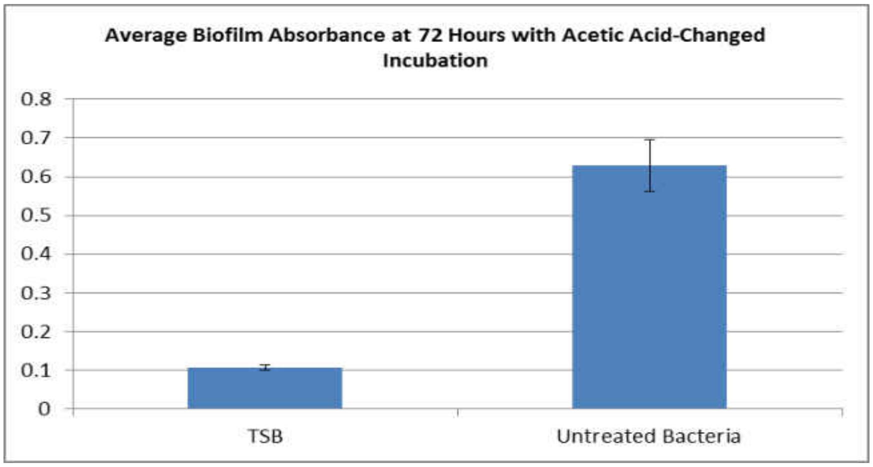


Figure 31: Average Biofilm Absorbance at 72 Hours with Acetic Acid- Changed Incubator using *P. aeruginosa* ATCC 47085

Note: Standard error shown

Based on the previous trials, it was determined that an incubation time of 48 hours with the addition of acetic acid was the most effective means of assaying for biofilm production in *Pseudomonase aeruginosa*. “OVER” readings in the raw data were fewer, and there were greater differences between the sterile TSB and the untreated *P. aeruginosa.* Trials continued with an analysis of the type of plates themselves because standard deviations still seemed to be very high. A trial was conducted using the 96-well plates used in the previous trials; 24-well plates were also used. Each set of data represents two plates, which had multiple wells averaged to calculate the overall result.

The 96-well plate seemed to have a higher biofilm absorbance reading in the wells with the control *P. aeruginosa* in comparison to the sterile TSB (Figure 32). When a two-tailed T-test was performed on the 96-well plates, the t was -5.723 and the p-value was established to be less than 0.001. At a significance level of α=0.05, the bacterial sample average was significantly greater than the sterile TSB.

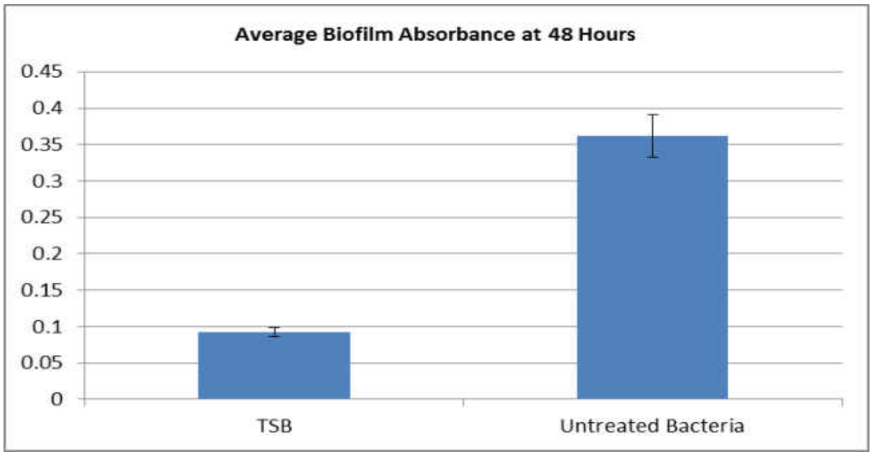


Figure 32: Average Biofilm Absorbance at 48 Hours using *P. aeruginosa* ATCC 47085

Note: Standard error shown

A trial using a 24-well microtitre plate was used to determine if variations could be fixed with the utilization of a different plate (Figure 33). After a two-tailed T-test had been performed, the t was -2.323 and the p-value was 0.025. At a significance level of α=0.05, the *P. aeruginosa* sample averages were significantly greater than that of the control.

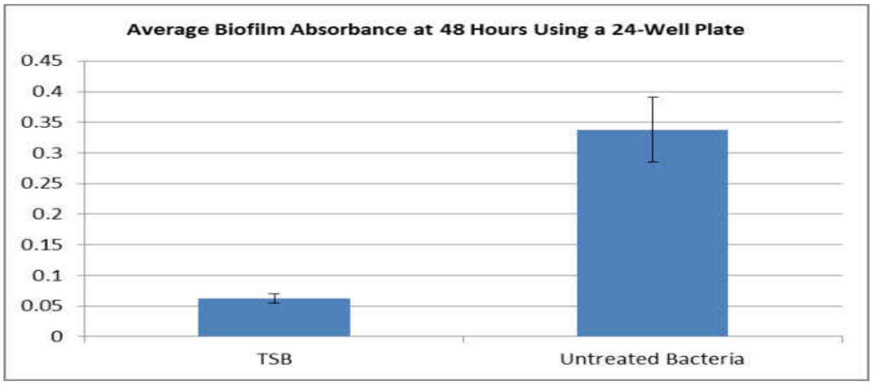


Figure 33: Average Biofilm Absorbance at 48 Hours Using a 24 well plate using *P. aeruginosa* ATCC 47085

Note: Standard error shown

Analysis was continued by testing the antibiotics on the control bacterium. The starting concentrations are listed previously in the methods section. When this trial was set up, there was one plate for control samples and each antibiotic individually and each similarly treated well was averaged to use in statistical analysis.

The antibiotic treatment well readings seemed to be similar to the absorbance reading for the control TSB wells (Figures 34-35). When a one-way ANOVA (Holm-Sidak) was performed using both the negative and positive control as a comparison. For ciprofloxacin, the calculated F-value was 15.898 that gave a P-value of less than 0.001. With a significance value of 0.05, the treatment groups are significantly different from the positive control. For ceftazidime, the calculated F-value was 16.260 that gave a P-value of less than 0.001. With a significance value of 0.05, the ceftazidime treatment groups are significantly different from the positive control.

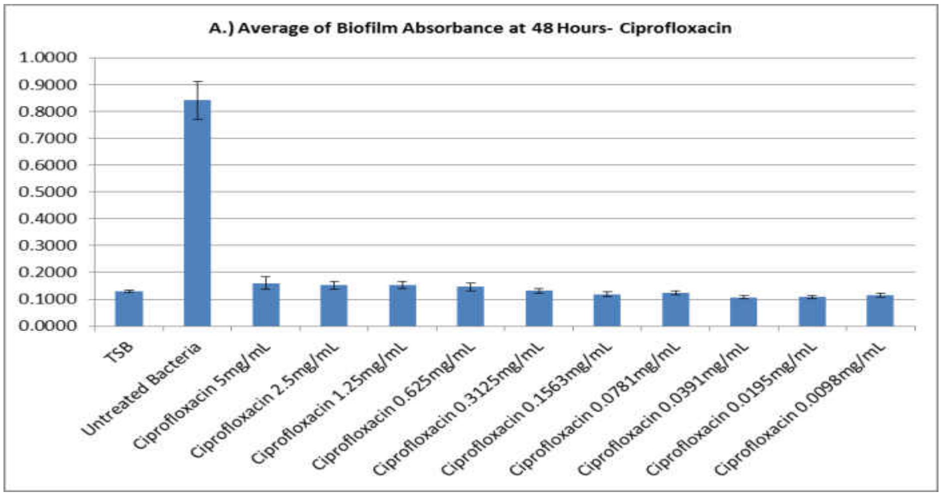


Figure 34: Average of Biofilm Absorbance at 48 Hours Trial 1- Ciprofloxacin

Note: Standard error Shown

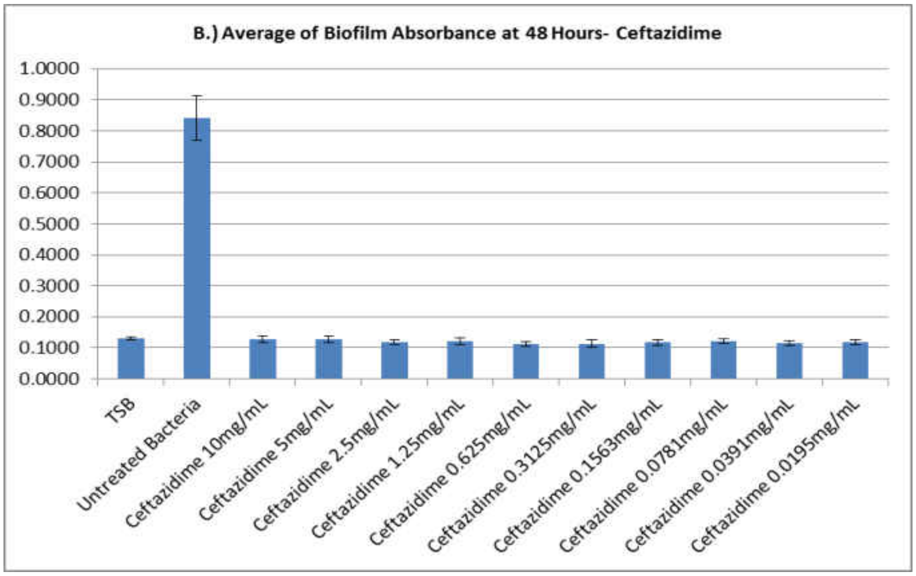


Figure 35: Average of Biofilm Absorbance at 48 Hours Trial 1- Ceftazidime

Note: Standard error shown

When the antibiotic treatments were retested due to low optical density readings, the ceftazidime and ciprofloxacin showed similar readings to the TSB on the GENios (Figures 36-37). In a one-way ANOVA, the F-value of the ciprofloxacin plate was 0.527 with a P-value of 0.867, and the ceftazidime plate had an F-value of 0.990 with a P-value of 0.458. At a significance level of α=0.05, there is no significance difference between the TSB and the antibiotics in each plate.

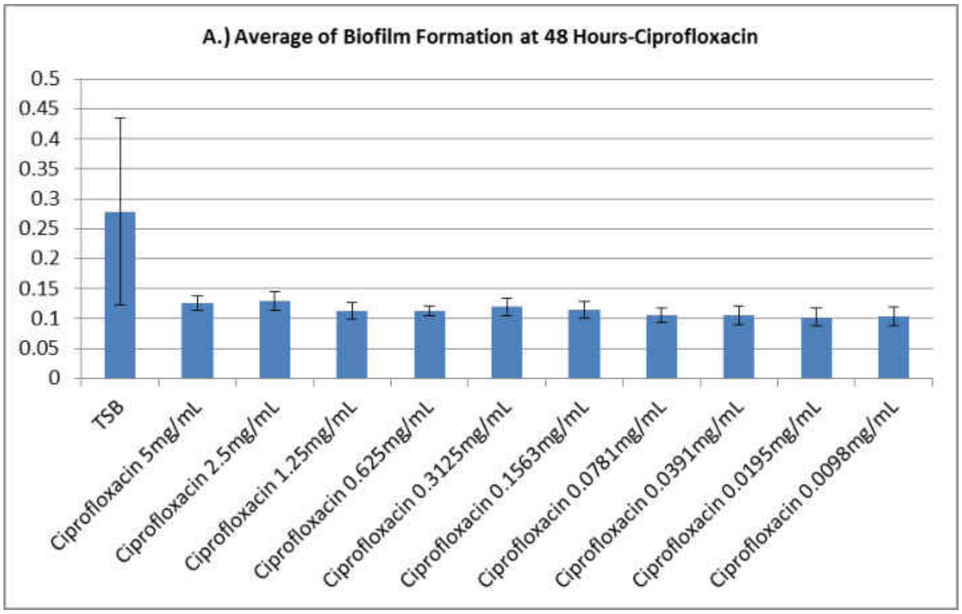


Figure 36: Average of Biofilm Formation at 48 Hours Trial 2- Ciprofloxacin

Note: Standard error shown

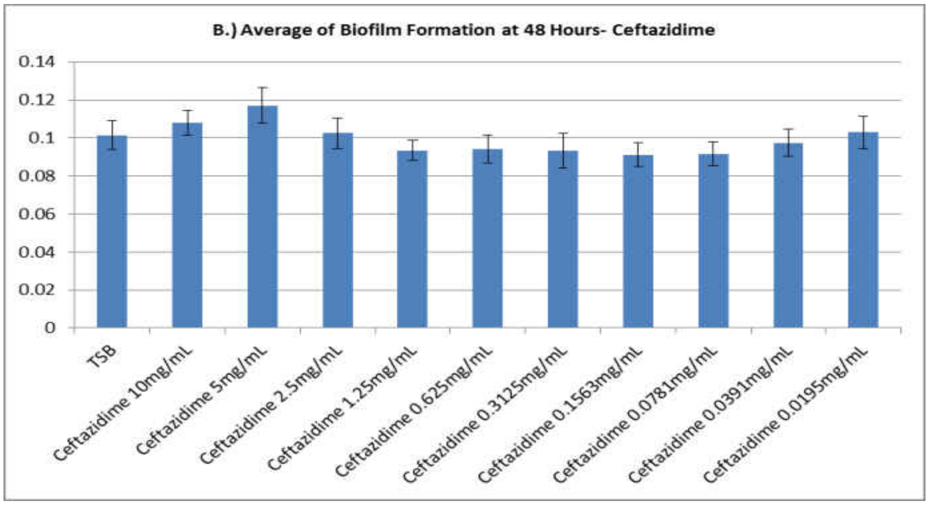


Figure 37: Average Biofilm Formation at 48 Hours Trial 2- Ceftazidime

Note: Standard error shown

Another dilution series was performed using concentrations mentioned previously with an altered procedure by allowing the bacteria to grow 24 hours before treatment. Four plates were loaded with each of the following: bacteria, ciprofloxacin, ceftazidime, and gentamicin (Figures 38-40). A one-way ANOVA test revealed that the ciprofloxacin plate had an F-score of 12.309 with P-value less than 0.001. The test for ceftazidime showed an F-score of 17.391 and a P-value less than 0.001. The ANOVA for gentamicin revealed an F-score of 5.332 with P-value less than 0.001. At a significance level of 0.05, the positive bacterial control was significantly greater than the antibiotic treatments.

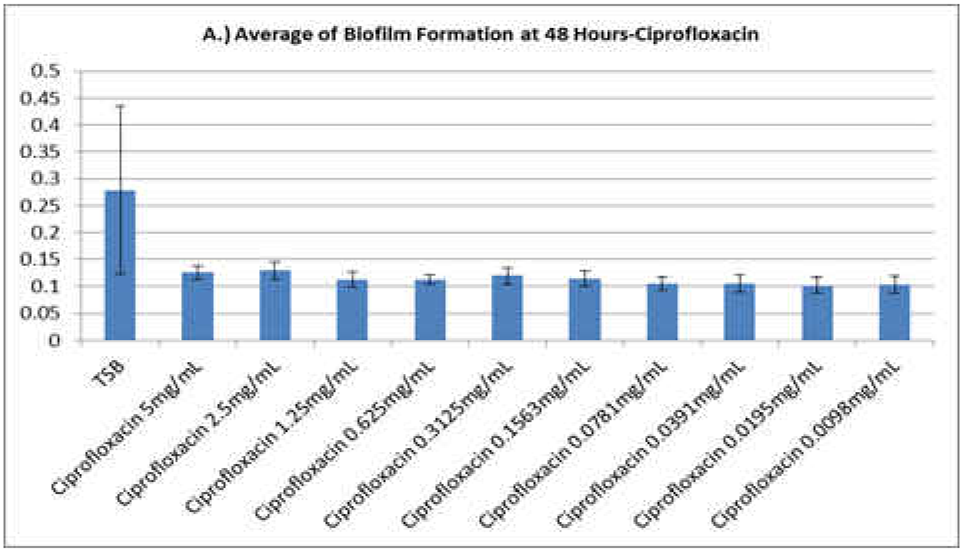


Figure 38: Average of Biofilm Formation at 48 Hours Trial 3- Ciprofloxacin

Note: Standard error shown

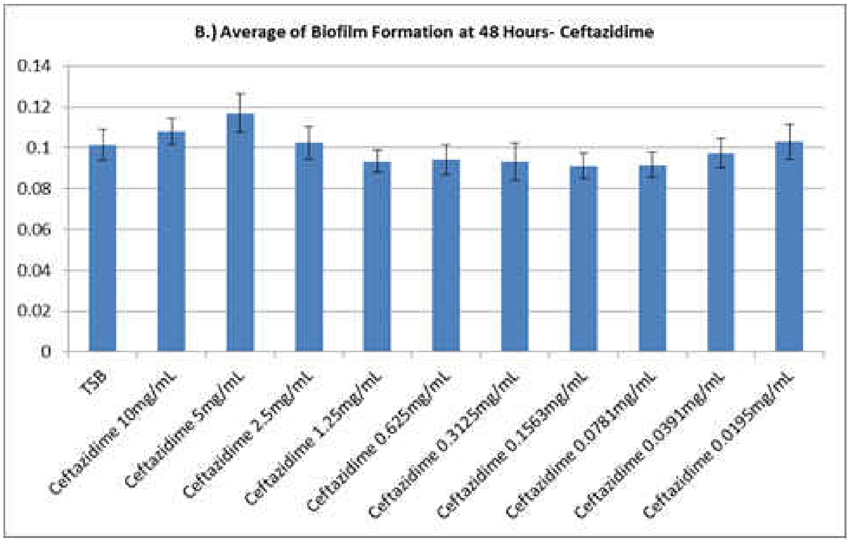


Figure 39: Average of Biofilm Formation at 48 Hours Trial 3- Ceftazidime

Note: Standard error shown

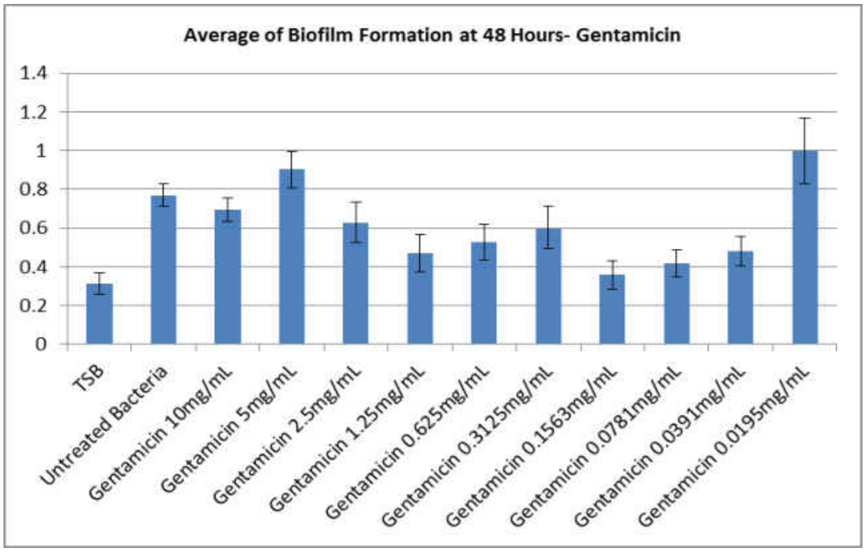


Figure 40: Average of Biofilm Formation at 48 Hours Trial 3- Gentamicin

Note: Standard error shown

Another dilution series was performed using a different plate layout due to contamination causing variation between the same columns. 24-well plates were set up for each of the following: ciprofloxacin, ceftazidime, gentamicin, and imipenem (Figures 41-44). The F- score for ciprofloxacin was 27.790 with a P-value of less than 0.001. Ceftazidime was 46.519 with a P-value of less than 0.001. Gentamicin was 27.647 with a P-value of less than 0.001. Imipenem was 28.549 with a P-value less than 0.001. At a significance level of 0.05, the antibiotic treatments were significantly different from the control.

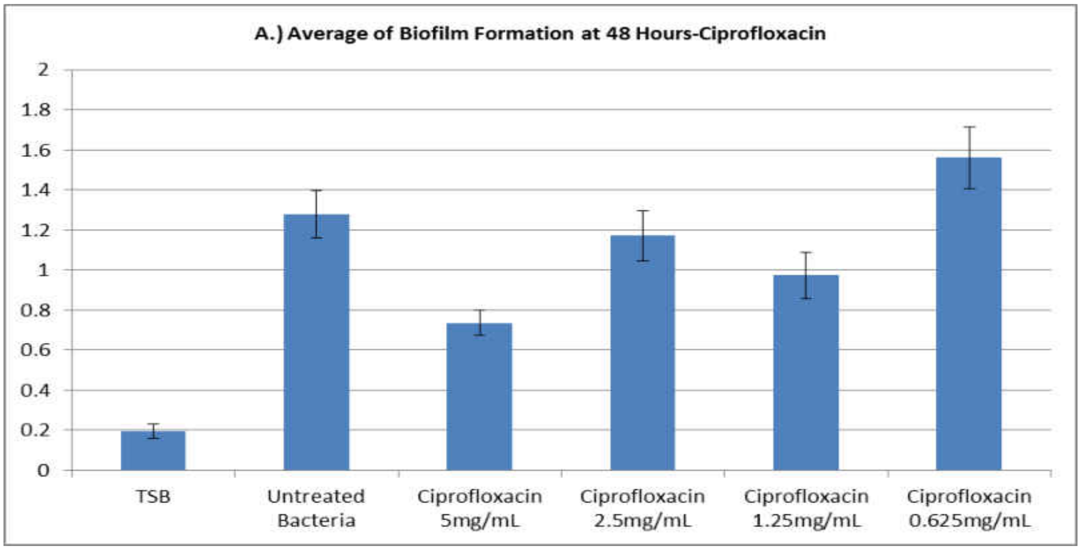


Figure 41: Average of Biofilm Formation using 24-well plate at 48 Hours- Ciprofloxacin

Note: Standard error shown

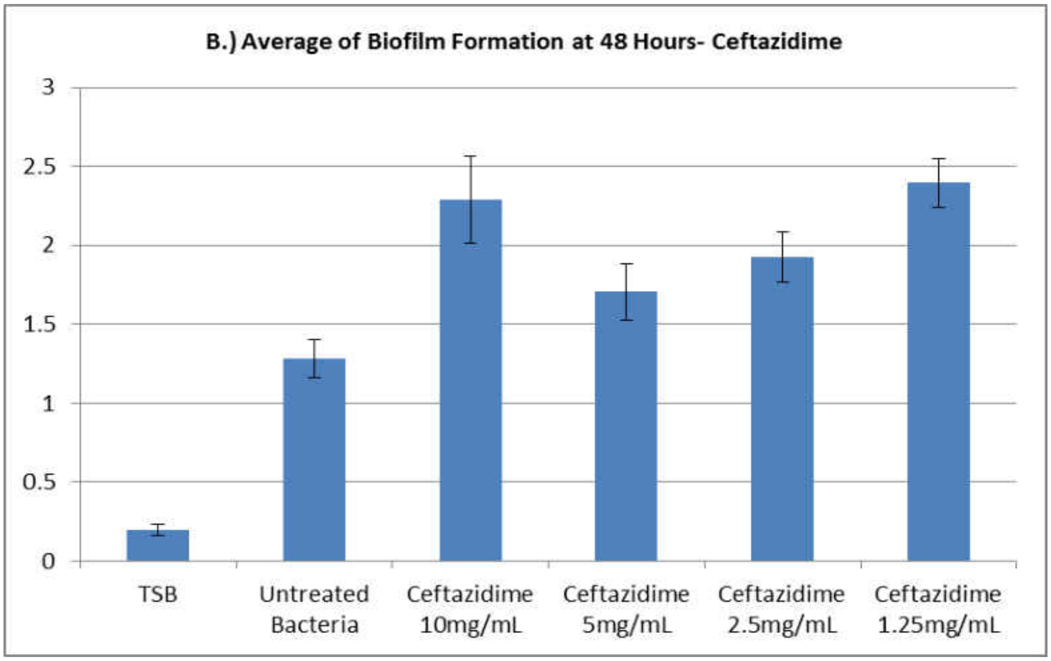


Figure 42: Average of Biofilm Formation using 24-well plate at 48 Hours- Ceftazidime

Note: Standard error shown

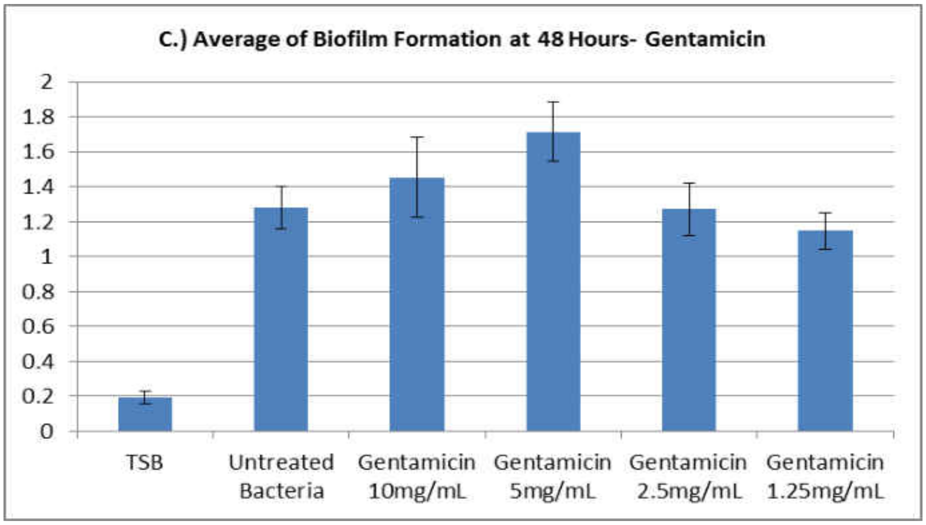


Figure 43: Average of Biofilm Formation using 24-well plate at 48 Hours- Gentamicin

Note: Standard error shown

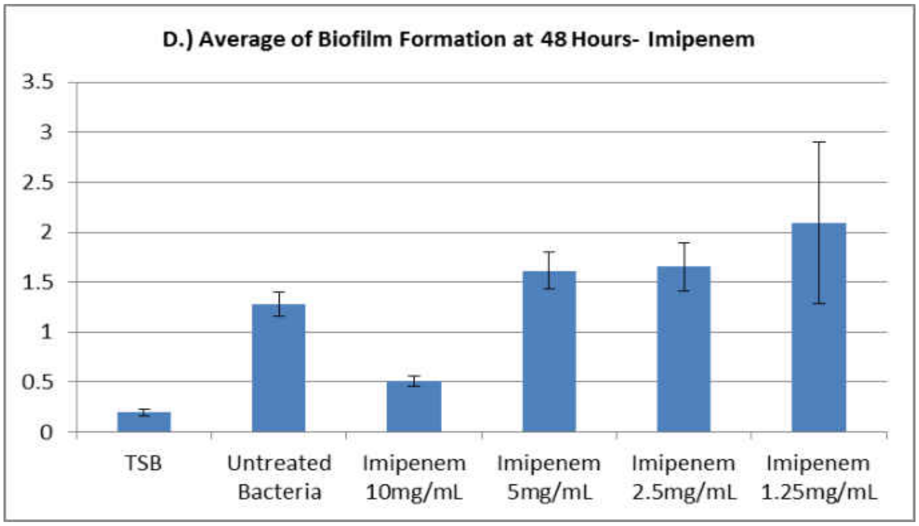


Figure 44: Average of Biofilm Formation using 24-well plate at 48 Hours- Imipenem

Note: Standard error shown

The bacteria concentration was measured on the GENios system using a similar method with 24-well plate. The raw data for ciprofloxacin, ceftazidime, gentamicin, and imipenem (Figures 45-48) is listed in Appendix A. The ciprofloxacin seemed to inhibit the growth concentration of bacteria comparable to the sterile TSB negative control. Ceftazidime had a high absorbance level in the 10μg/mL that registered as an ‘OVER’ reading and was excessive throughout all dilutions. Gentamicin and imipenem had a level of absorbance similar to the bacteria. The F-score from the ANOVA for ciprofloxacin was 357.243 with a P-value less than 0.001, ceftazidime was 366.865 with a P-value less than 0.001, gentamicin was 166. 753 with a P-value less than 0.001, and imipenem was 137.368 with a P-value of less than 0.001. At a significance level of 0.05, the antibiotic treatment shows significantly less biofilm formation than the positive bacterial control.

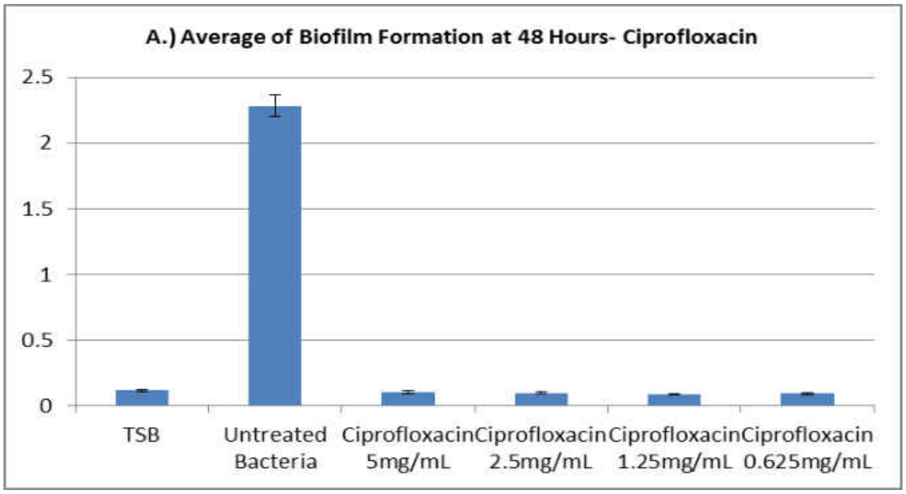


Figure 45: Average of Biofilm Formation at 48 Hours Trial 4- Ciprofloxacin

Note: Standard error shown

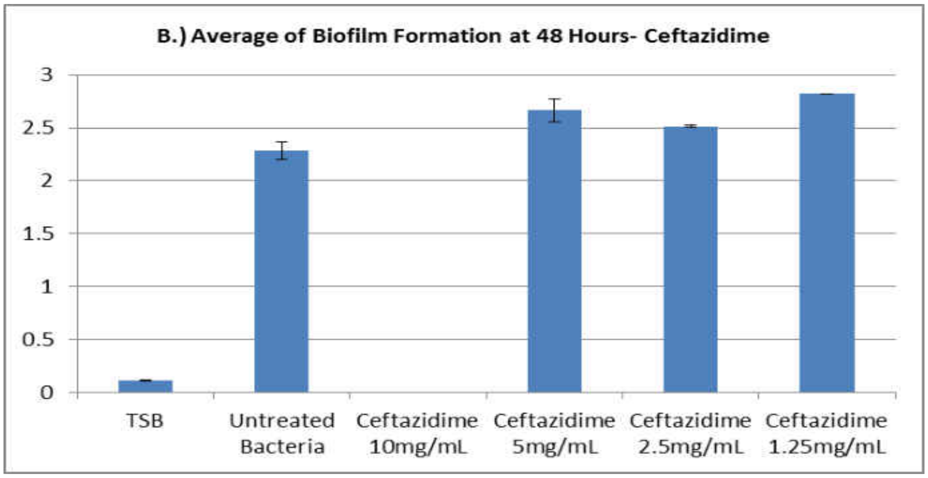


Figure 46: Average of Biofilm Formation at 48 Hours Trial 4-Ceftazidime

Note: Standard error shown

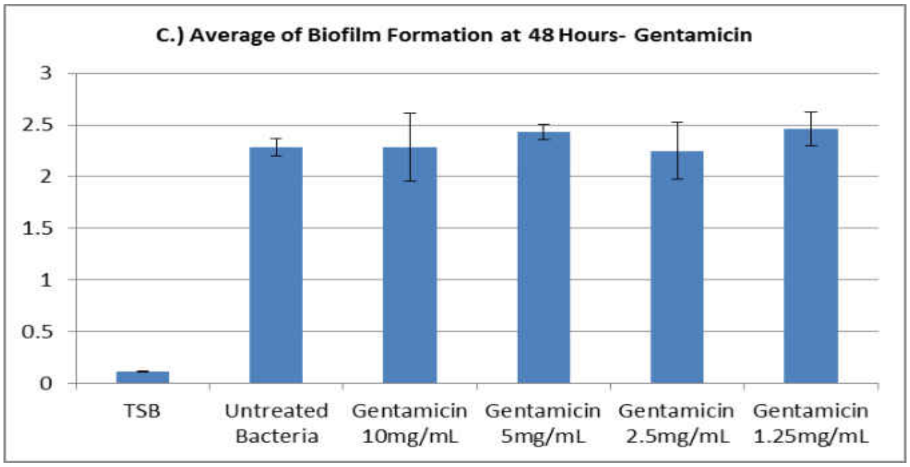


Figure 47: Average of Biofilm Formation at 48 Hours Trial 4- Gentamicin

Note: Standard error shown

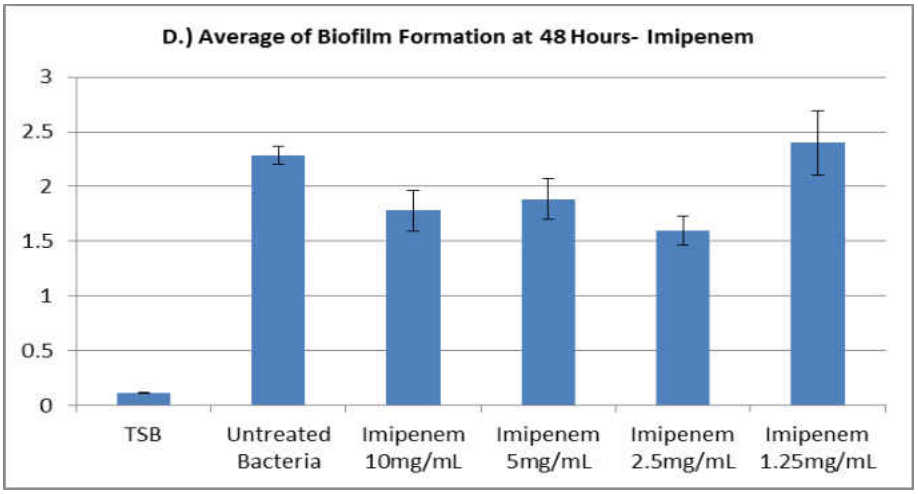


Figure 48: Average of Biofilm Formation at 48 Hours Trial 4- Imipenem

Note: Standard error shown

Another round of 24- well plates was analyzed on the GENios system using ciprofloxacin, gentamicin, ceftazidime, and imipenem (Figures 49-51). Ciprofloxacin optical density readings were low initially and peaked at 0.625mg/mL. Gentamicin also had a similar peak to ciprofloxacin. Ceftazidime peaked at 5mg/mL and 1.25mg/mL. Imipenem started low and peaked at 1.25mg/mL. When an ANOVA was performed, the F-score for ciprofloxacin was 19.560 with a P-value less than 0.001. Ceftazidime had an F-score of 11.312 and a P-value of less than 0.001. Gentamicin has an F-score of 19.840

and a P-value of less than 0.001. Imipenem had an F-score of 20.524 and a P-value of less than 0.001.

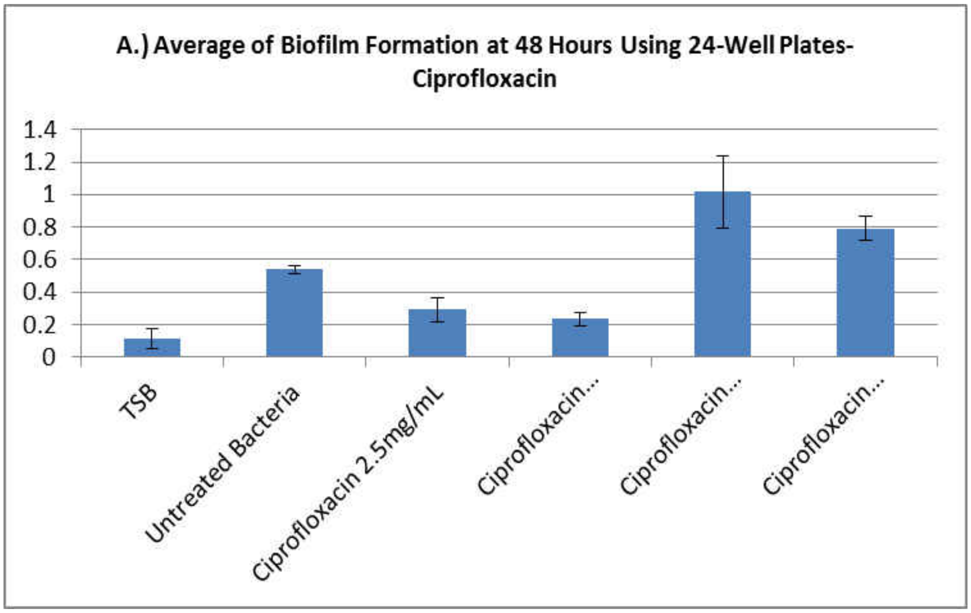


Figure 49: Average of Biofilm Formation using 24-well plate at 48 Hours Trial 2-Ciprofloxacin

Note: Standard error shown

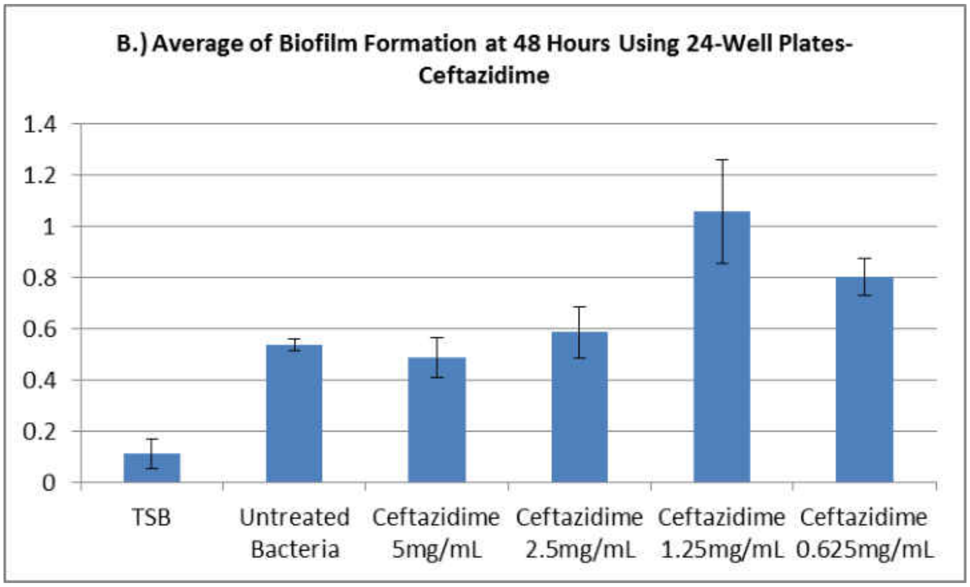


Figure 50: Average of Biofilm Formation using 24-well plate at 48 Hours Trial 2-Ceftazidime

Note: Standard error shown

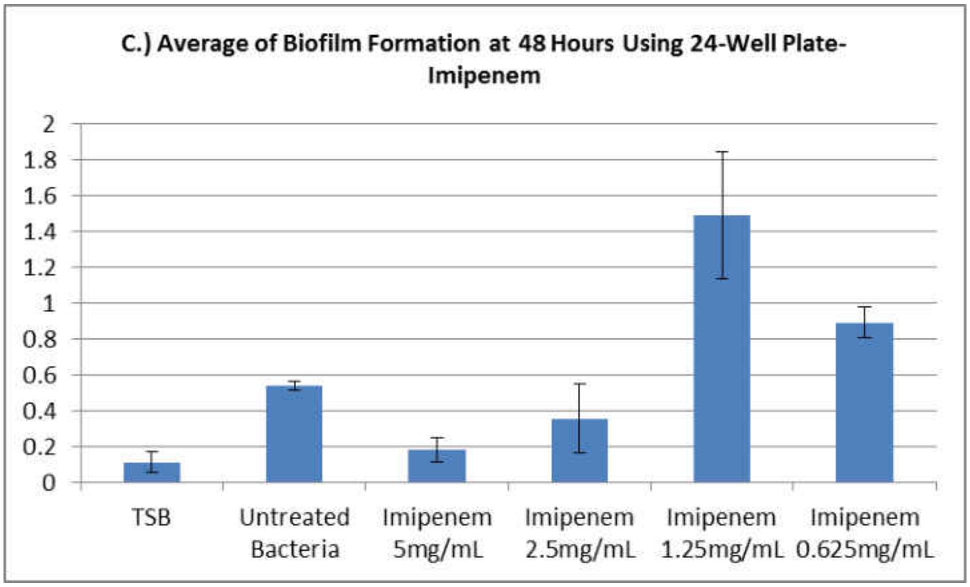


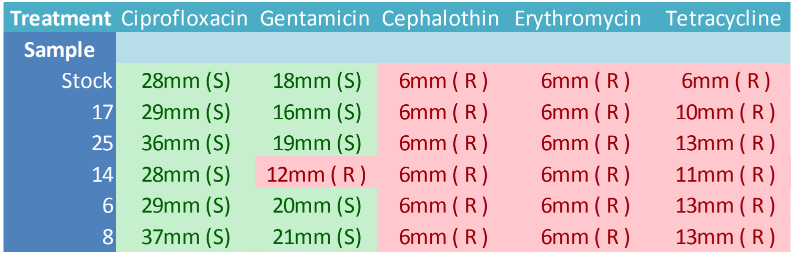
Figure 51: Average of Biofilm Formation using 24-well plate at 48 Hours Trial 2- Imipenem

Note: Standard error shown

After setting up several inconclusive antibiotic microtitre dilution series, a Kirby-Bauer was performed using tetracycline, ciprofloxacin, cephalothin, erythromycin, and gentamicin. The inhibition zones for each of the disks placed on the plates were measured in millimeters, as shown in (Table 8):

Table 8

Results from Kirby-Bauer



Treatment	Ciprofloxacin	Gentamicin	Cephalothin	Erythromycin	Tetracycline
Sample					
Stock	28mm (S)	18mm (S)	6mm (R)	6mm (R)	6mm (R)
17	29mm (S)	16mm (S)	6mm (R)	6mm (R)	10mm (R)
25	36mm (S)	19mm (S)	6mm (R)	6mm (R)	13mm (R)
14	28mm (S)	12mm (R)	6mm (R)	6mm (R)	11mm (R)
6	29mm (S)	20mm (S)	6mm (R)	6mm (R)	13mm (R)
8	37mm (S)	21mm (S)	6mm (R)	6mm (R)	13mm (R)

The samples were resistant to ciprofloxacin and mostly resistant to gentamicin. The control strain of *Pseudomonas aeruginosa* used in earlier assaysand clinical strains were resistant to all other antibiotics.

Additional antibiotics were purchased from Sigma-Aldrich. These were ciprofloxacin, gentamicin, rifampicin, and polymyxin B (Figures 52-55). The antibiotics were mixed at the maximum solubility of the recommended solute (Sigma-Aldrich). Each data set represents one plate where like-treated wells are averaged together. Ciprofloxacin had a low level of bacterial growth at all dilutions in comparison to the control bacteria. The F-score was 18.506 during the P-value of less than 0.001. Gentamicin had a low level of bacterial growth similar to ciprofloxacin. It had an F-value of 18.550 while the P-value was less than 0.001. Rifampicin had an initial high reading due to the opaque nature of the antibiotic and then decreased until less than 1mg/mL. The F-value was 34.222, and the P-value was less than 0.001. The polymyxin B remained at a low level of bacterial concentration in comparison to the control. The F-value of the polymyxin B plate was 17.920 and the P-value was less than 0.001.

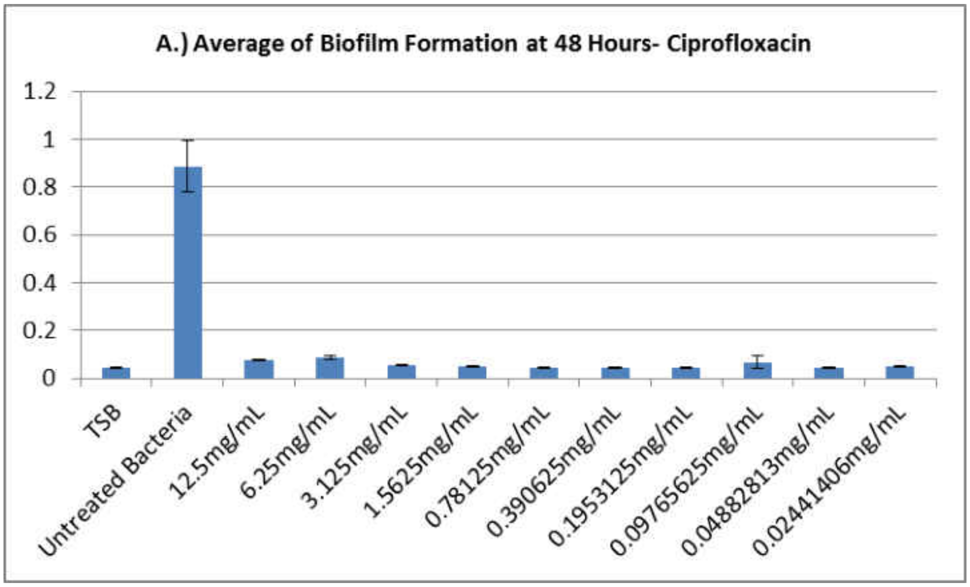


Figure 52: Average of Biofilm Formation Trial 5- Ciprofloxacin

Note: Standard error shown

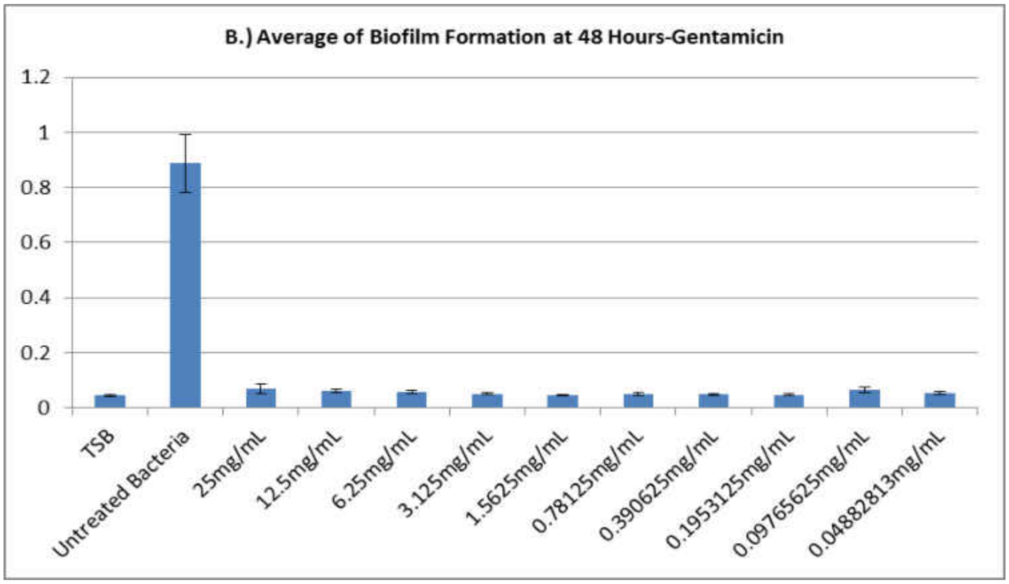


Figure 53: Average of Biofilm Formation Trial 5- Gentamicin

Note: Standard error shown

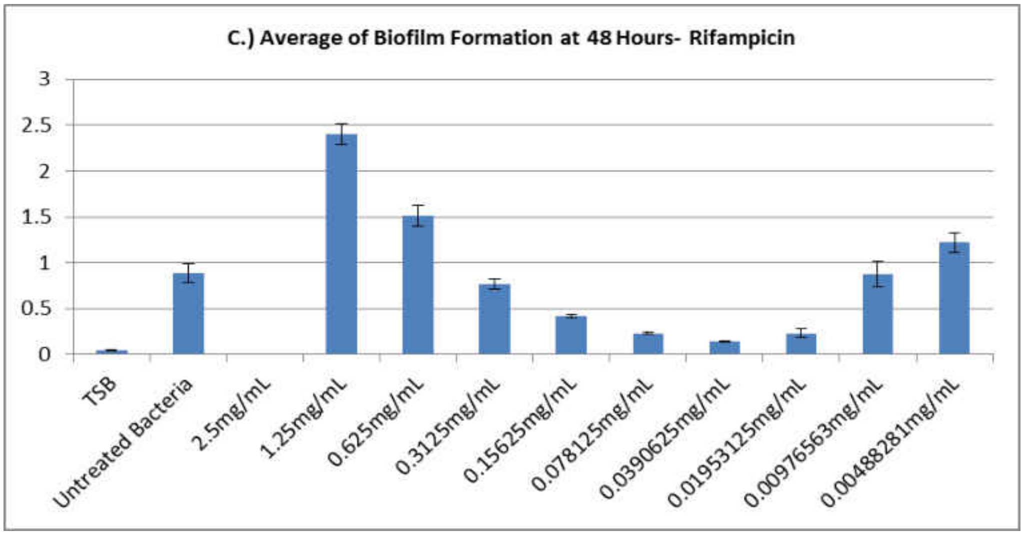


Figure 54: Average of Biofilm Formation Trial 5- Rifampicin

Note: Standard error shown

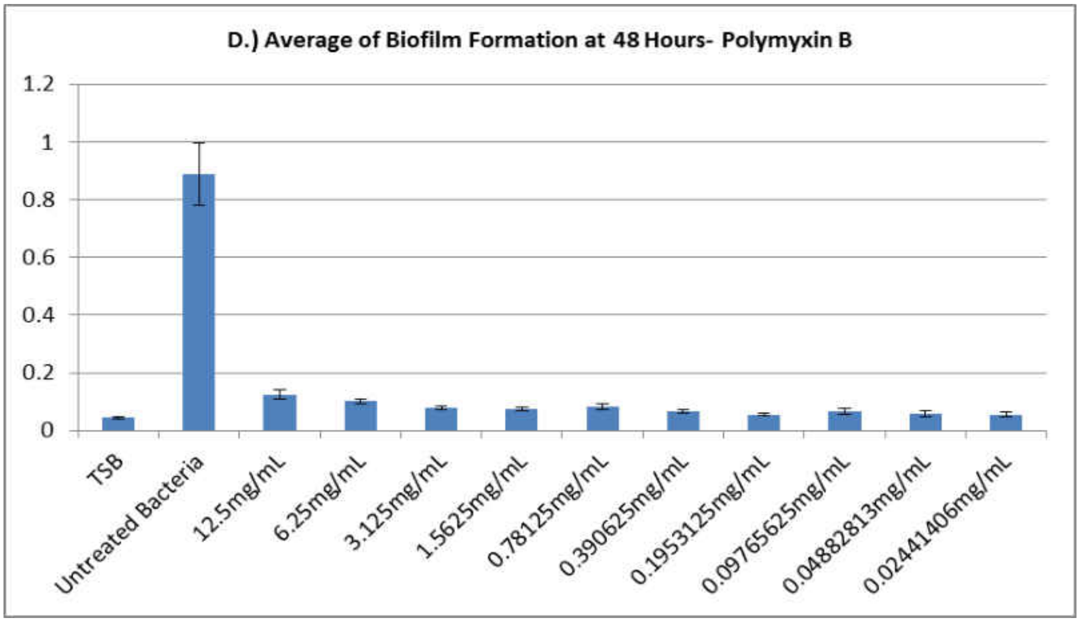


Figure 55: Average of Biofilm Formation Trial 5- Polymyxin B

Note: Standard error shown

The next antibiotic dilution was done with two plates each. Each plate for the antibiotic had a different starting concentration and diluted down (Figures 56-63). The highest ciprofloxacin plate had low concentrations of bacteria throughout compared to the control bacteria. The data had an F-value of 3.218 and a P-value of less than 0.001. The second ciprofloxacin plate also had a low concentrations of bacteria compared to the control bacteria. That data had an F-value of 8.452 and a P-value of less than 0.001. The gentamicin of a higher concentration (0.02-12.5mg/mL) had a low bacteria concentration throughout compared to the control bacteria wells. The data had an F-value of 3.993 and a P-value of less than 0.001. The lower concentration (0.01-6.25mg/mL) of gentamicin had a low bacterial absorbance when compared to the control bacterial wells. It had an F-value of 8.800 and a P-value of less than 0.001. The higher rifampicin concentration (0.001-0.625mg/mL) started higher in optical density and then dropped to a low bacterial absorbance. The F-value for the rifampicin data was 40.614, and the P-value was less than 0.001. Growth of bacteria at a lower concentration of rifampicin (0.0006-0.312mg/mL) started high in optical density and dipped at 0.01mg. At 0.01mg/mL it the optical density rose again, indicating a likely minimum inhibitory concentration (MIC). The F-value was 17.624 and a P-value of less than 0.001. The higher concentration of polymyxin B (0.02-12.5mg/mL) had a low absorbance level throughout all the dilutions on the plate.. The F-value of this data was 4.025, and the P-value was less than 0.001. The lower concentration of polymyxin B (0.01-6.25mg/mL) had a low bacterial absorbance throughout the well dilution series in comparison to the control. The F-value of the polymyxin B data was 8.640 and a P-value of less than 0.001. At a significance level of 0.05, the treatments were significantly less than the bacteria control.

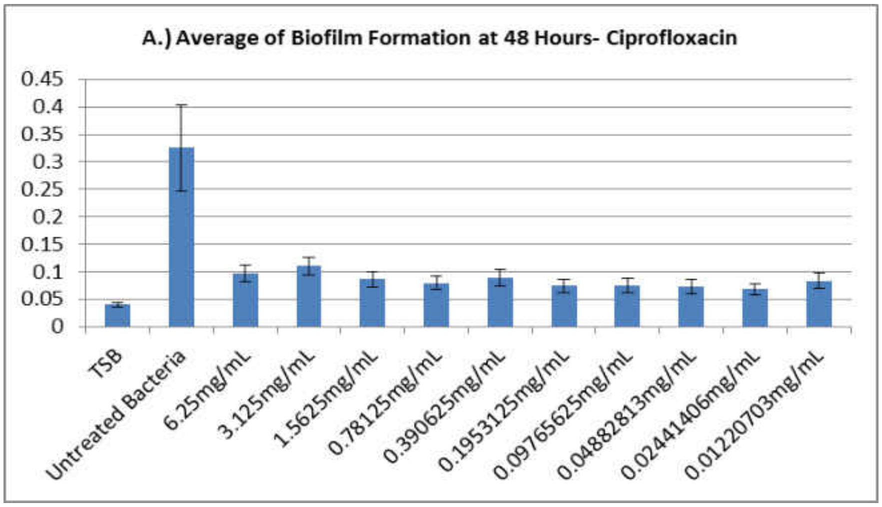


Figure 56: Average of Biofilm Formation at 48 Hours Trial 6- Ciprofloxacin

Note: Standard error shown

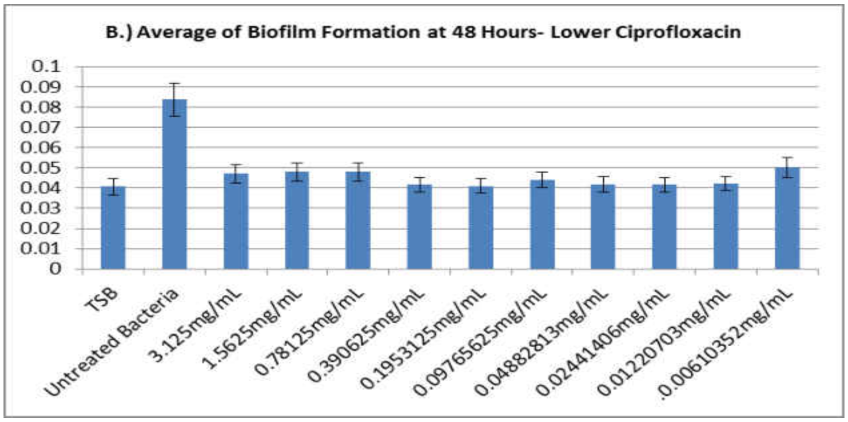


Figure 57: Average of Biofilm Formation at 48 Hours Trial 6- Lower Ciprofloxacin

Note: Standard error shown

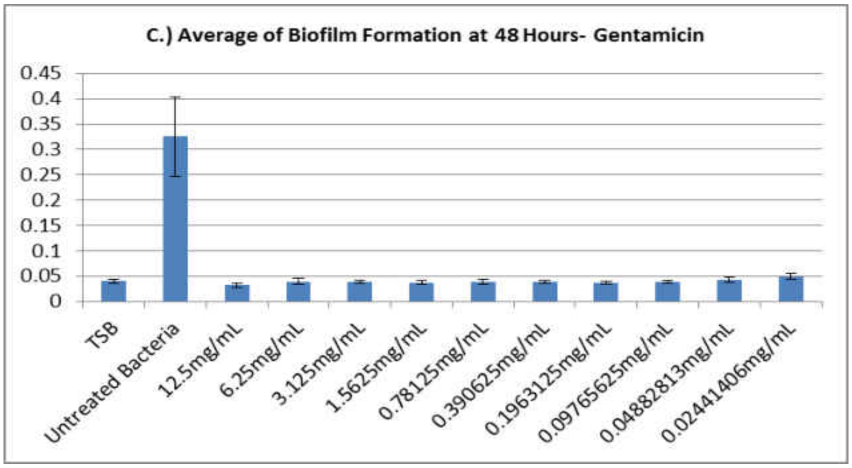


Figure 58: Average of Biofilm Formation at 48 Hours Trial 6- Gentamicin

Note: Standard error shown

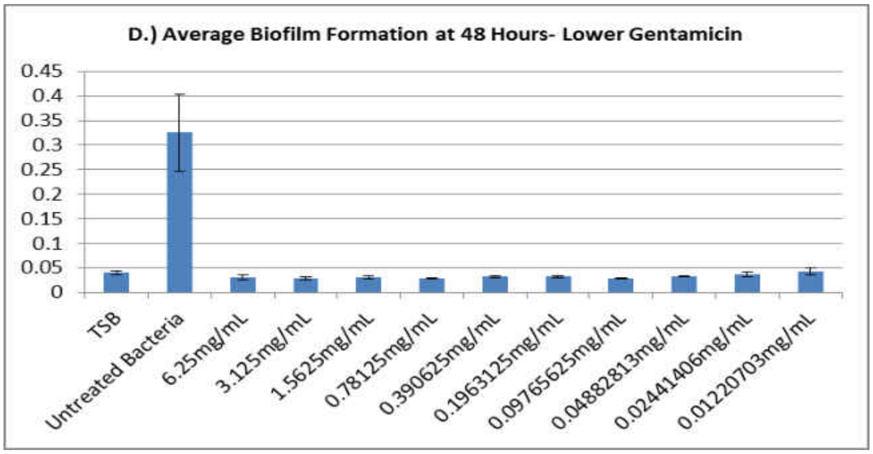


Figure 59: Average of Biofilm Formation at 48 Hours Trial 6- Lower Gentamicin

Note: Standard error shown

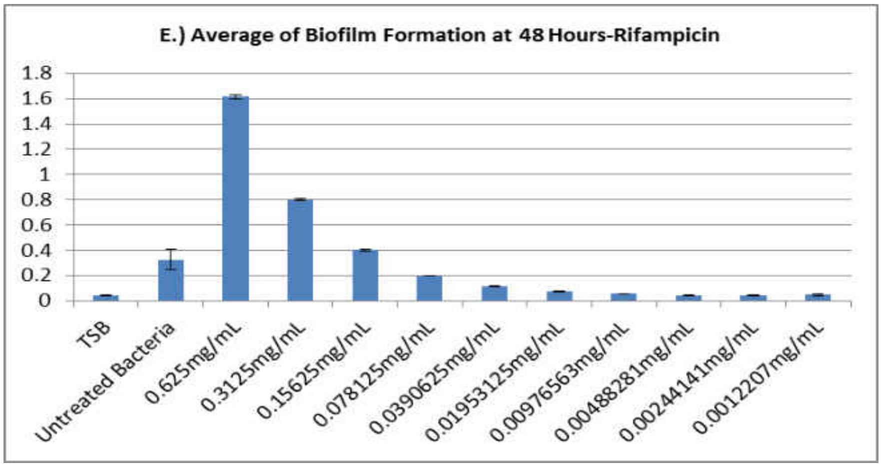


Figure 60: Average of Biofilm Formation at 48 Hours Trial 6- Rifampicin

Note: Standard error shown

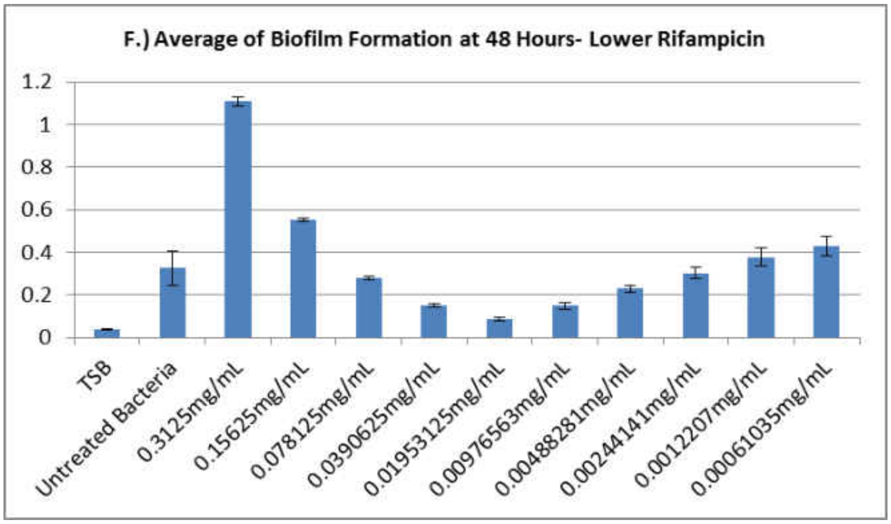


Figure 61: Average of Biofilm Formation at 48 Hours Trial 6- Lower Rifampicin

Note: Standard error shown

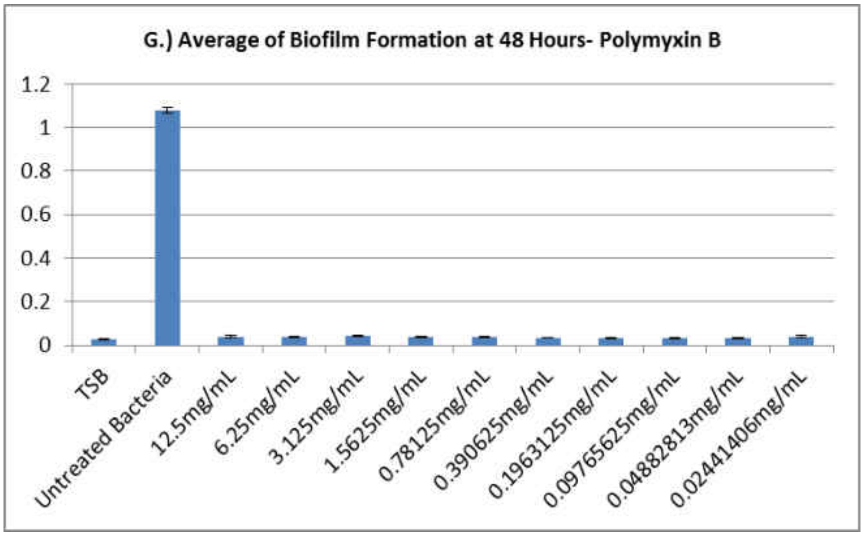


Figure 62: Average of Biofilm Formation at 48 Hours Trial 6- Polymyxin B

Note: Standard error shown

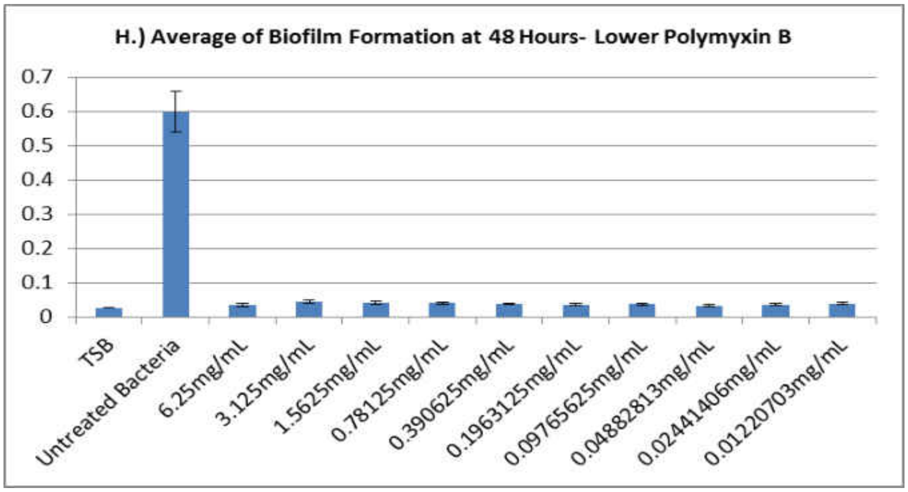


Figure 63: Average of Biofilm Formation at 48 Hours Trial 6- Lower Polymyxin B

Note: Standard error shown

Due to inconsistencies, ciprofloxacin was removed from the project scope. The antibiotic dilutions were retested using duplicate plates of each (Figures 64-66). The gentamicin plates had a consistent low level of bacteria concentration in comparison to the bacteria control. The F- value for gentamicin data was 2,224.134 and the P-value was less than 0.001. The averages for rifampicin show a low bacteria concentration at concentrations higher than 0.02mg/mL and then rose to levels greater than the bacteria control as the antibiotic concentration decreased further. The F-value for the rifampicin data was 2,728.768, and the P-value was less than 0.001. The averages for polymyxin B-treated bacterial concentrations remained low in comparison to the control bacteria. The F-value for the polymyxin data was 1,109.414, and the P-value was less than 0.001. At a significance level of 0.05, the antibiotic treatments are significantly less than the control bacteria.

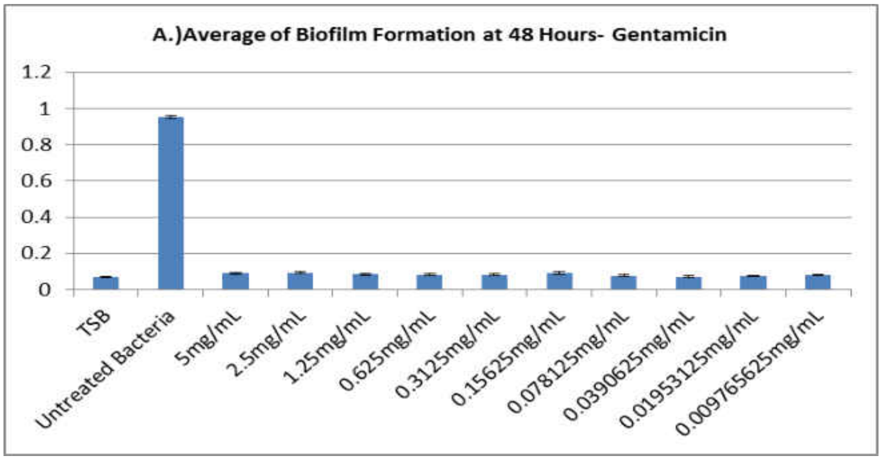


Figure 64: Average of Biofilm Formation at 48 Hours Trial 7- Gentamicin using *P. aeruginosa* ATCC 47085

Note: Standard error shown

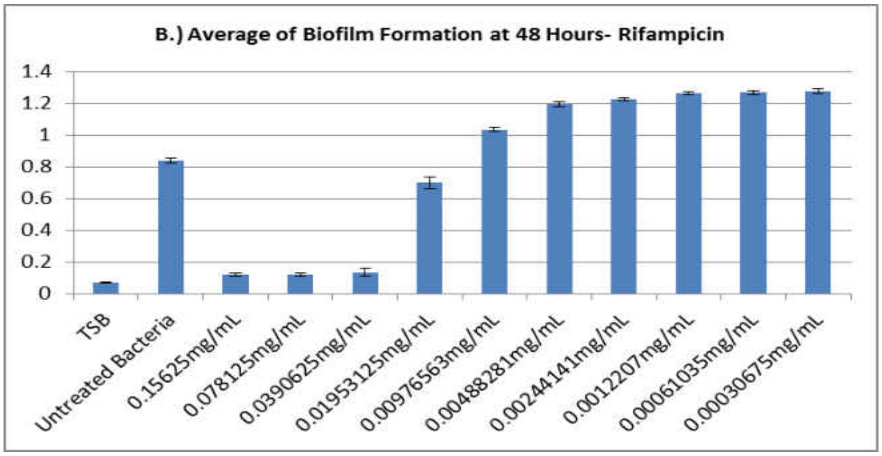


Figure 65: Average of Biofilm Formation at 48 Hours Trial 7- Rifampicin using *P. aeruginosa* ATCC 47085

Note: Standard error shown

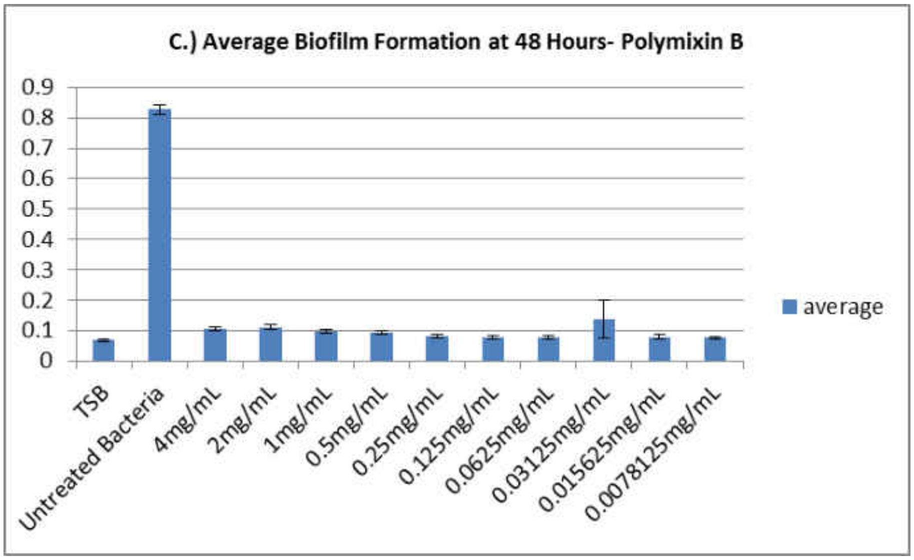


Figure 66: Average of Biofilm Formation at 48 Hours Trial 7- Polymyxin B using *P. aeruginosa* ATCC 47085

Note: Standard error shown

After determining that a dose of 0.07mg/mL of each antibiotic was effective at inhibiting bacterial growth of the control strain of *Pseudomonas*, the clinical isolates were tested for resistance. Plates were set up with the following wells containing: sterile TSB; untreated clinical isolate; gentamicin treated isolates; rifampicin treated isolates; and polymyxin B-treated isolates. Wells from each treatment were averaged together for statistical analysis.

Table 9

Statistical significance of antibiotic treatments in comparison to negative (TSB) and positive (untreated bacteria) controls.

Clinical Isolate	Antibiotic Treatment	TSB Comparison		Bacteria Comparison	
		t	**p-value**	**t**	**p-value**
1	Gentamicin	1.644	0.106	58.917	<0.001
	Rifampicin	2.462	0.033	58.098	<0.001
	Polymyxin B	6.922	<0.001	53.639	<0.001
2	Gentamicin	0.199	0.843	11.530	<0.001
	Rifampicin	1.435	0.289	10.294	<0.001
	Polymyxin B	3.721	0.001	8.008	<0.001
3	Gentamicin	0.268	0.790	14.469	<0.001
	Rifampicin	0.466	0.873	14.271	<0.001
	Polymyxin B	3.997	<0.001	10.740	<0.001
4	Gentamicin	1.466	0.148	29.967	<0.001
	Rifampicin	1.577	0.226	29.856	<0.001
	Polymyxin B	6.277	<0.001	25.155	<0.001
5	Gentamicin	0.777	0.440	121.140	<0.001
	Rifampicin	1.446	0.283	120.471	<0.001
	Polymyxin B	8.635	<0.001	113.282	<0.001
6	Gentamicin	0.801	0.426	102.720	<0.001
	Rifampicin	1.350	0.331	102.171	<0.001
	Polymyxin B	4.198	<0.001	99.324	<0.001
7	Gentamicin	0.694	0.491	105.998	<0.001
	Rifampicin	1.404	0.304	105.288	<0.001
	Polymyxin B	5.720	<0.001	100.972	<0.001
8	Gentamicin	0.970	0.336	90.036	<0.001
	Rifampicin	2.217	0.060	88.789	<0.001
	Polymyxin B	3.970	<0.001	87.036	<0.001
10	Gentamicin	0.953	0.344	48.083	<0.001
	Rifampicin	3.578	0.001	45.458	<0.001
	Polymyxin B	14.270	<0.001	42.467	<0.001
11	Gentamicin	3.351	0.001	41.527	<0.001
	Rifampicin	5.568	<0.001	39.311	<0.001
	Polymyxin B	7.883	<0.001	36.996	<0.001
12	Gentamicin	0.425	0.672	87.900	<0.001
	Rifampicin	3.614	0.013	84.711	<0.001
	Polymyxin B	2.811	0.002	85.515	<0.001
13	Gentamicin	0.742	0.461	81.270	<0.001
	Rifampicin	2.744	0.024	79.268	<0.001
	Polymyxin B	2.224	0.059	79.789	<0.001

Note: Shading represents statistical significant difference

Table 9 (Continued)

Clinical Isolate	Antibiotic Treatment	TSB Comparison		Bacteria Comparison	
		t	**p-value**	**t**	**p-value**
14	Gentamicin	0.798	0.428	90.412	<0.001
	Rifampicin	1.770	0.157	89.440	<0.001
	Polymyxin B	8.338	<0.001	82.872	<0.001
15	Gentamicin	2.912	0.010	54.188	<0.001
	Rifampicin	4.814	<0.001	52.286	<0.001
	Polymyxin B	2.709	0.009	54.391	<0.001
16	Gentamicin	0.608	0.546	29.255	<0.001
	Rifampicin	2.331	0.068	27.532	<0.001
	Polymyxin B	1.258	0.381	28.604	<0.001
17	Gentamicin	0.197	0.845	18.186	<0.001
	Rifampicin	0.432	0.667	17.951	<0.001
	Polymyxin B	2.373	0.021	16.009	<0.001
18	Gentamicin	0.182	0.856	12.453	<0.001
	Rifampicin	0.351	0.727	12.285	<0.001
	Polymyxin B	3.556	<0.001	9.079	<0.001
19	Gentamicin	0.315	0.754	24.313	<0.001
	Rifampicin	1.945	0.057	22.684	<0.001
	Polymyxin B	1.986	0.052	22.643	<0.001
20	Gentamicin	1.466	0.148	49.368	<0.001
	Rifampicin	2.478	0.016	48.357	<0.001
	Polymyxin B	0.856	0.396	49.979	<0.001
21	Gentamicin	0.925	0.359	35.656	<0.001
	Rifampicin	2.608	0.012	33.972	<0.001
	Polymyxin B	0.891	0.376	35.689	<0.001
22	Gentamicin	1.807	0.076	19.669	<0.001
	Rifampicin	2.753	0.008	18.723	<0.001
	Polymyxin B	3.103	0.003	18.373	<0.001
23	Gentamicin	0.683	0.498	25.285	<0.001
	Rifampicin	1.170	0.247	24.797	<0.001
	Polymyxin B	2.504	0.015	23.464	<0.001
24	Gentamicin	0.607	0.546	25.123	<0.001
	Rifampicin	1.153	0.253	24.577	<0.001
	Polymyxin B	3.375	0.001	22.355	<0.001
25	Gentamicin	1.090	0.280	74.128	<0.001
	Rifampicin	3.412	0.001	71.806	<0.001
	Polymyxin B	2.481	0.016	72.737	<0.001

Note: Shading represents statistical significant difference

Table 9 (Continued)

Clinical Isolate	Antibiotic Treatment	TSB Comparison		Bacteria Comparison	
		t	**p-value**	**t**	**p-value**
26	Gentamicin	0.301	0.765	14.776	<0.001
	Rifampicin	0.815	0.418	14.261	<0.001
	Polymyxin B	2.280	0.026	12.796	<0.001
27	Gentamicin	1.546	0.127	68.441	<0.001
	Rifampicin	2.470	0.016	67.516	<0.001
	Polymyxin B	3.047	0.003	66.940	<0.001
28	Gentamicin	2.678	0.010	71.329	<0.001
	Rifampicin	4.354	<0.001	69.653	<0.001
	Polymyxin B	4.471	<0.001	69.536	<0.001
29	Gentamicin	0.0185	0.985	54.377	<0.001
	Rifampicin	52.094	<0.001	2.302	0.025
	Polymyxin B	0.176	0.861	54.220	<0.001
30	Gentamicin	0.866	0.390	102.382	<0.001
	Rifampicin	2.906	0.005	100.342	<0.001
	Polymyxin B	1.427	0.159	101.821	<0.001
33	Gentamicin	1.540	0.129	121.313	<0.001
	Rifampicin	4.090	<0.001	118.763	<0.001
	Polymyxin B	0.961	0.340	121.892	<0.001
34	Gentamicin	1.259	0.213	56.100	<0.001
	Rifampicin	2.957	0.004	54.402	<0.001
	Polymyxin B	0.493	0.623	56.866	<0.001
35	Gentamicin	23.509	<0.001	1.908	0.061
	Rifampicin	25.745	<0.001	4.144	<0.001
	Polymyxin B	0.218	0.828	21.383	<0.001
37	Gentamicin	0.916	0.364	86.153	<0.001
	Rifampicin	2.430	0.018	84.639	<0.001
	Polymyxin B	1.488	0.142	85.581	<0.001
38	Gentamicin	0.175	0.862	120.746	<0.001
	Rifampicin	1.842	0.071	118.729	<0.001
	Polymyxin B	0.444	0.659	121.015	<0.001
39	Gentamicin	0.0668	0.947	100.290	<0.001
	Rifampicin	1.977	0.053	98.246	<0.001
	Polymyxin B	1.019	0.313	101.242	<0.001
40	Gentamicin	0.248	0.805	95.975	<0.001
	Rifampicin	1.766	0.083	94.457	<0.001
	Polymyxin B	0.394	0.695	96.616	<0.001

Note: Shading represents statistical significant difference

Table 9 (Continued)

Clinical Isolate	Antibiotic Treatment	TSB Comparison		Bacteria Comparison	
		t	**p-value**	**t**	**p-value**
42	Gentamicin	1.969	0.054	66.728	<0.001
	Rifampicin	4.027	<0.001	64.669	<0.001
	Polymyxin B	1.921	0.060	66.776	<0.001
44	Gentamicin	1.642	0.106	136.372	<0.001
	Rifampicin	4.126	<0.001	133.888	<0.001
	Polymyxin B	1.150	0.255	136.864	<0.001
45	Gentamicin	0.616	0.540	57.571	<0.001
	Rifampicin	6.061	<0.001	52.126	<0.001
	Polymyxin B	0.926	0.358	57.261	<0.001
47	Gentamicin	0.602	0.549	30.937	<0.001
	Rifampicin	2.754	0.008	28.786	<0.001
	Polymyxin B	0.130	0.130	31.409	<0.001
49	Gentamicin	0.339	0.736	71.963	<0.001
	Rifampicin	1.853	0.069	70.449	<0.001
	Polymyxin B	0.312	0.756	71.990	<0.001
50	Gentamicin	0.751	0.456	55.780	<0.001
	Rifampicin	1.732	0.088	54.798	<0.001
	Polymyxin B	0.0678	0.946	56.463	<0.001
52	Gentamicin	0.219	0.827	35.023	<0.001
	Rifampicin	1.048	0.299	33.755	<0.001
	Polymyxin B	0.0506	0.960	34.753	<0.001
53a	Gentamicin	1.935	0.058	127.062	<0.001
	Rifampicin	2.877	0.006	126.121	<0.001
	Polymyxin B	0.335	0.738	128.662	<0.001
53b	Gentamicin	1.142	0.258	93.893	<0.001
	Rifampicin	2.581	0.012	92.454	<0.001
	Polymyxin B	0.532	0.597	94.503	<0.001

Note: Shading represents statistical significant difference

When conducting the clinical isolate study, the isolates seemed to be sensitive to antibiotic treatment. Most treatments had a small p-value in comparison to the untreated, meaning there is statistical significant difference between the control and the treatment. As shown in Table 9, many of the treated bacteria are significantly different (as shown by the shaded columns) than the untreated bacteria. This indicated that the wells that were treated had significantly less optical density than the untreated bacteria wells.

In comparison to the negative control (TSB), there were several treated wells of clinical isolates that were significantly different. This primarily was in the rifampicin treated wells. Rifampicin could possibly be less effective as a treatment than the other antibiotics. These small differences could also possibly be an indication of lessened susceptibility.

All but one isolate had a significant difference between the antibiotics and the untreated bacteria. This isolate (Clinical Isolate 35) had comparable absorbance levels in gentamicin treatment to untreated bacteria. This resistance only represents a small portion of the data, indicating that resistance in these isolates is low (Figures 67-111).

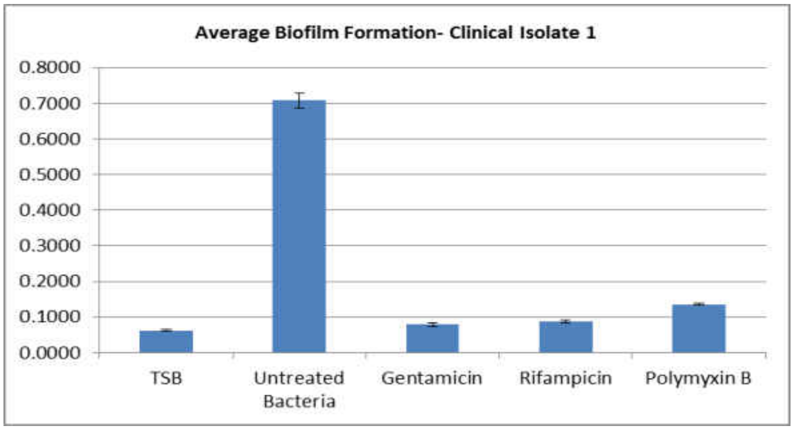


Figure 67: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 1

Note: Standard error shown

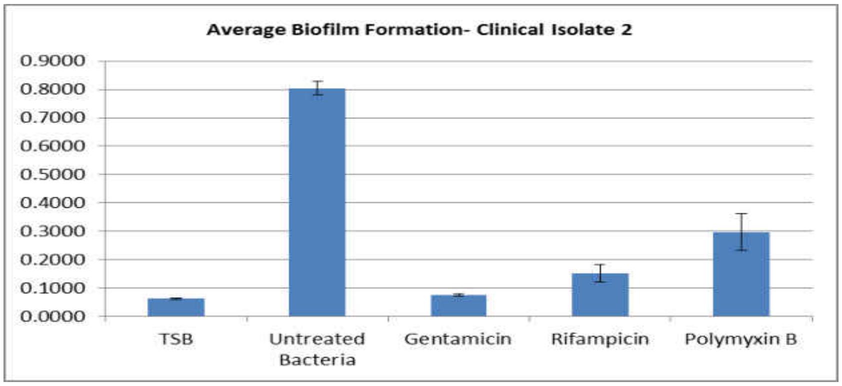


Figure 68: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 2

Note: Standard error shown

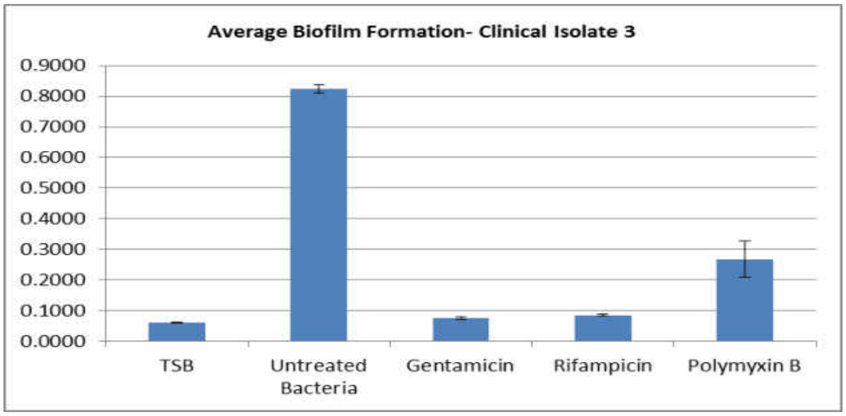


Figure 69: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 3

Note: Standard error shown

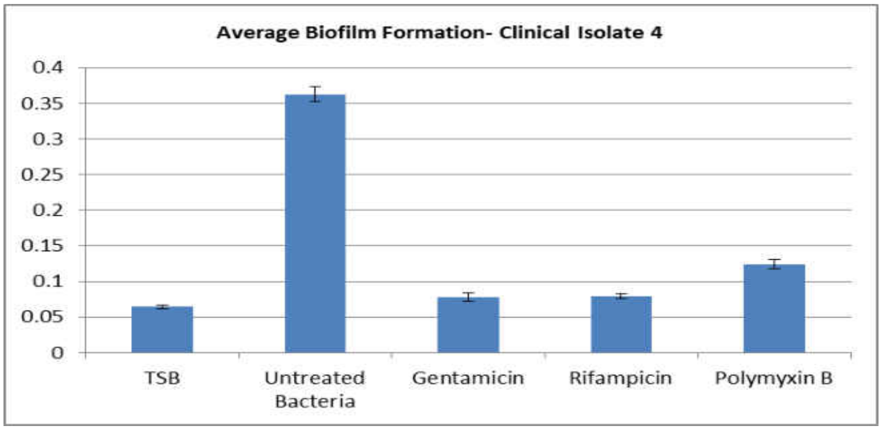


Figure 70: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 4

Note: Standard error shown

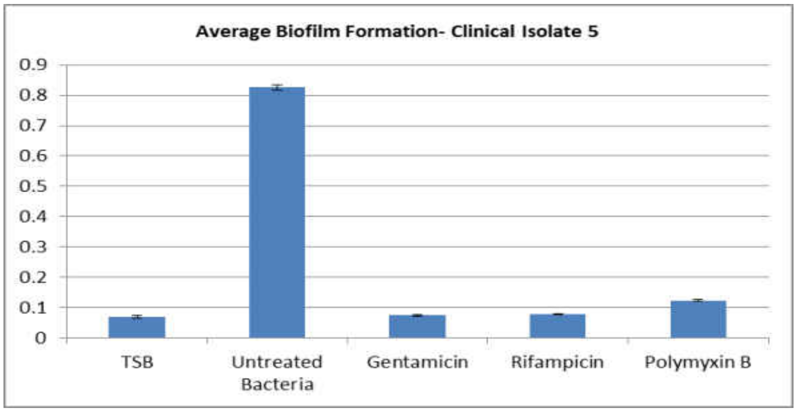


Figure 71: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 5

Note: Standard error shown

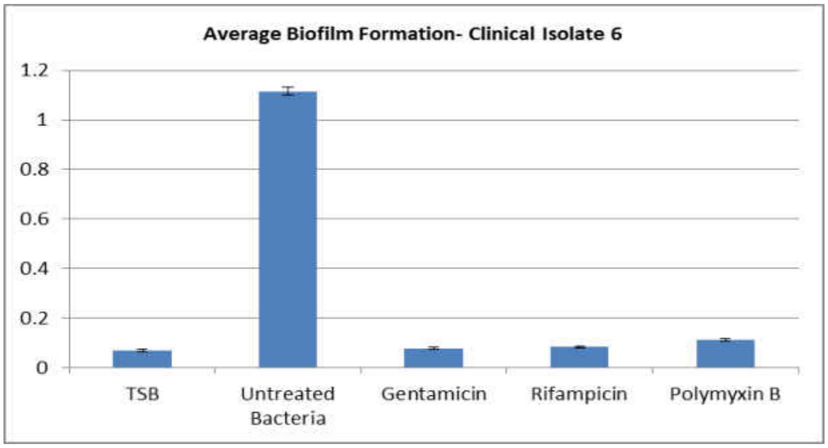


Figure 72: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 6

Note: Standard error shown

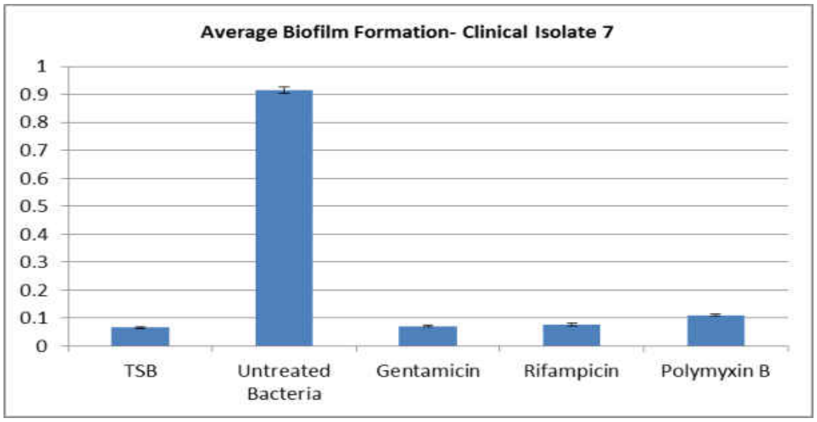


Figure 73: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 7

Note: Standard error shown

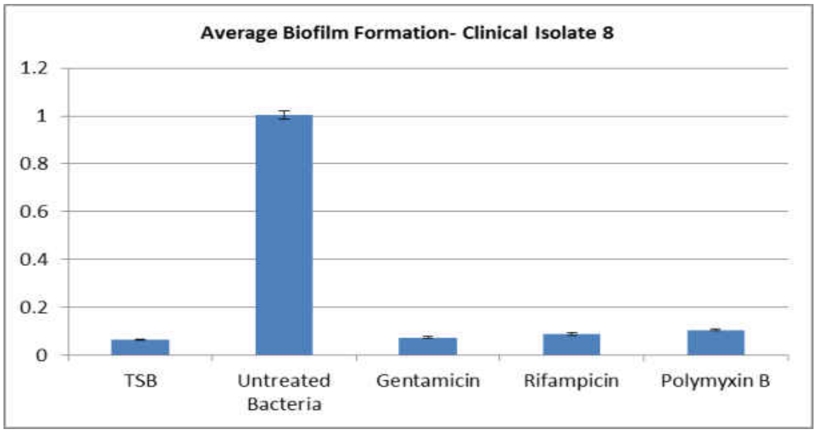


Figure 74: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 8

Note: Standard error shown

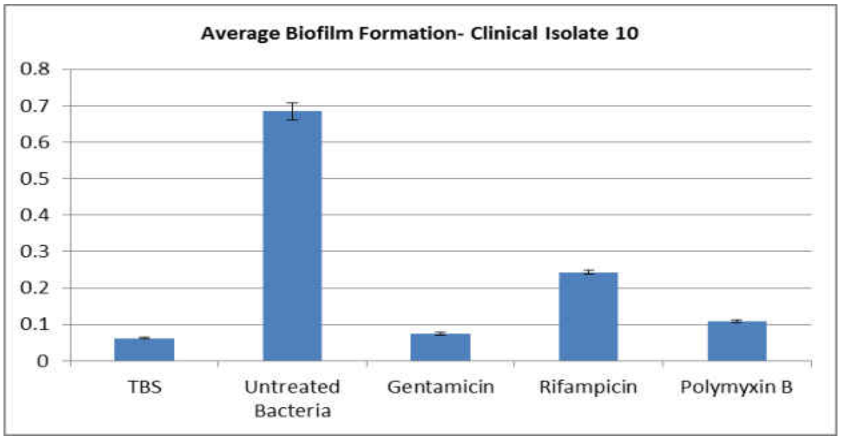


Figure 75: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 10

Note: Standard error shown

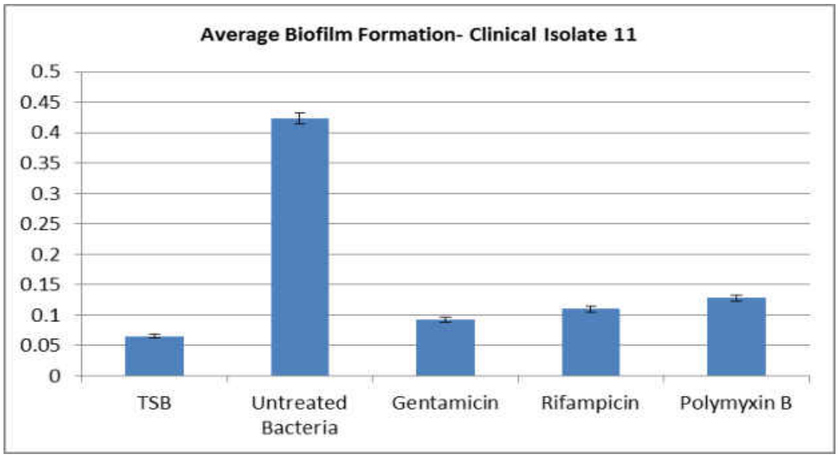


Figure 76: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 11

Note: Standard error shown

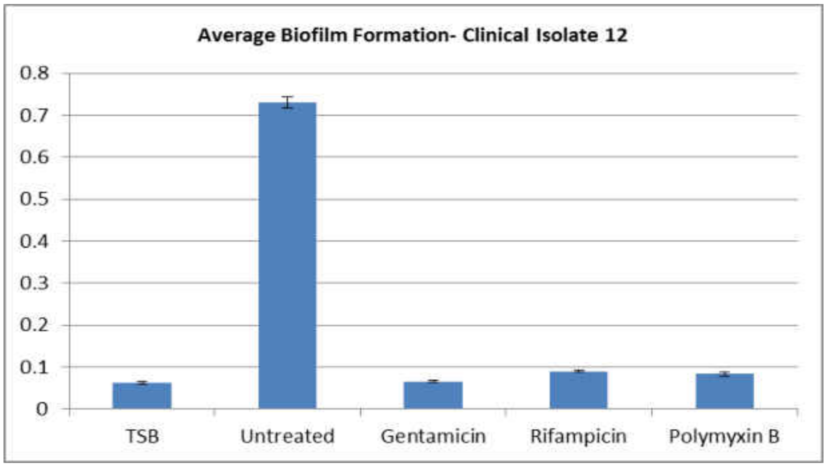


Figure 77: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 12

Note: Standard error shown

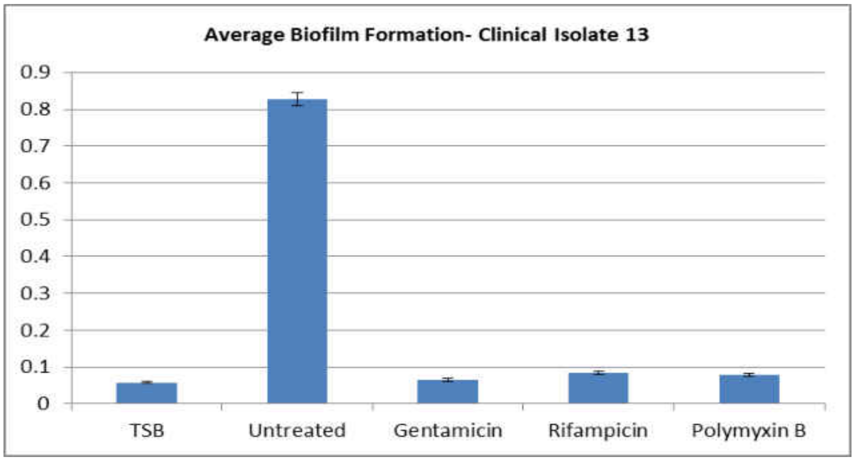


Figure 78: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 13

Note: Standard error shown

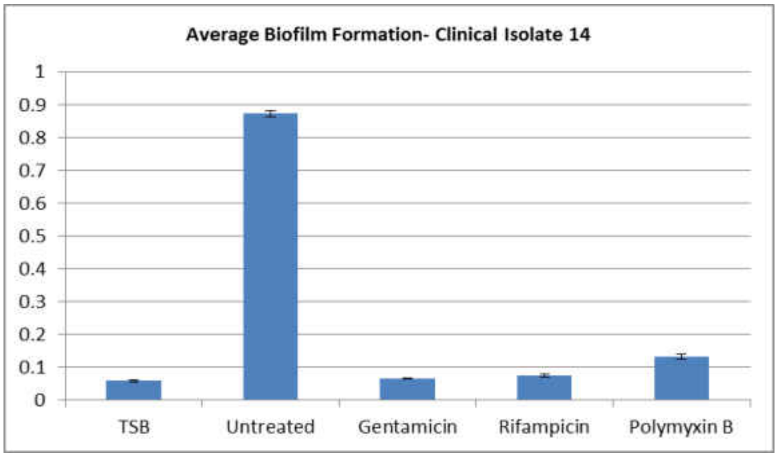


Figure 79: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 14

Note: Standard error shown

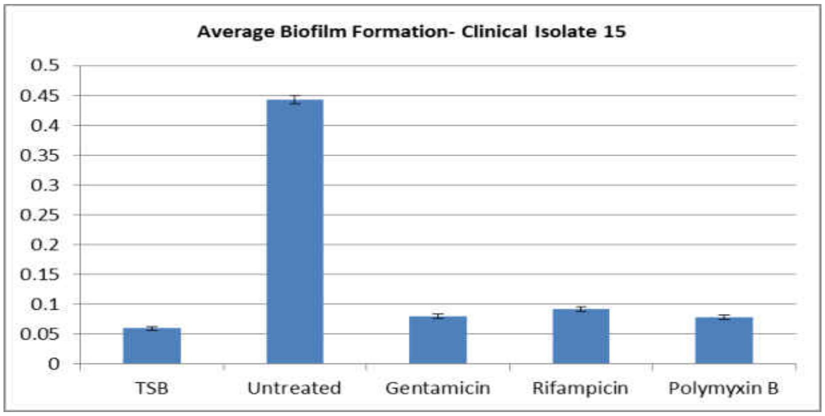


Figure 80: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 15

Note: Standard error shown

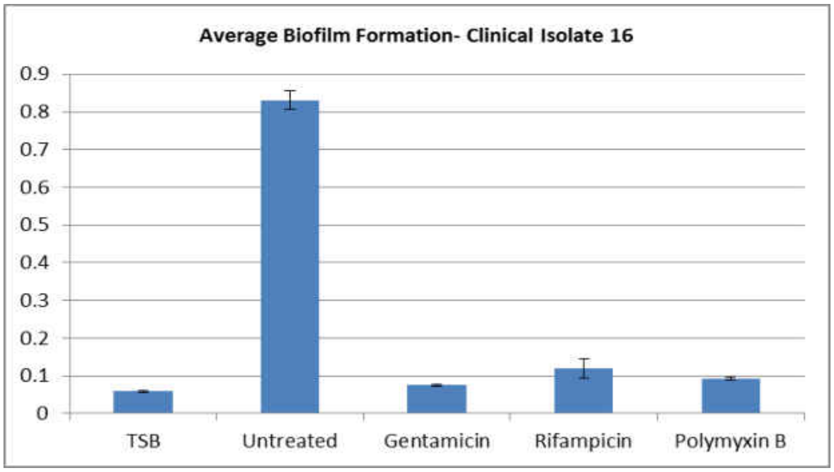


Figure 81: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 16

Note: Standard error shown

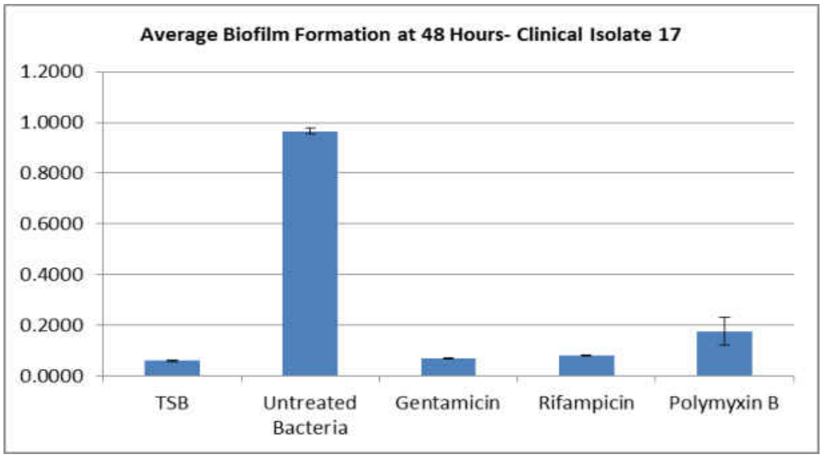


Figure 82: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 17

Note: Standard error shown

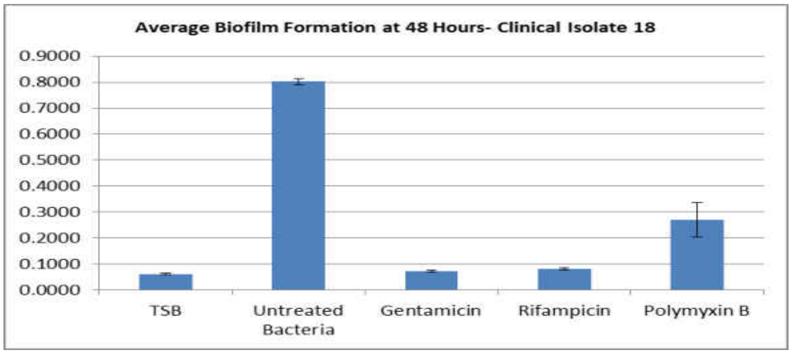


Figure 83: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 18

Note: Standard error shown

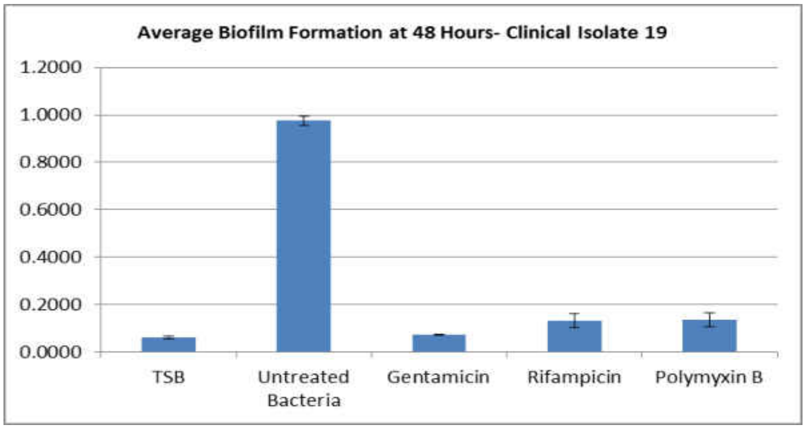


Figure 84: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 19

Note: Standard error shown

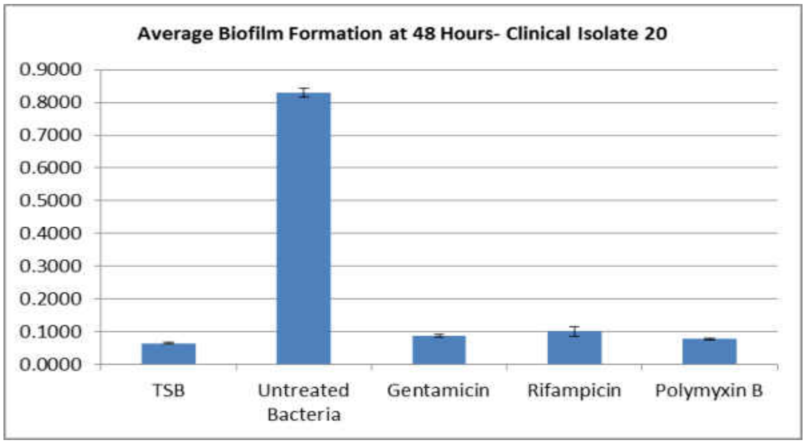


Figure 85: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 20

Note: Standard error shown

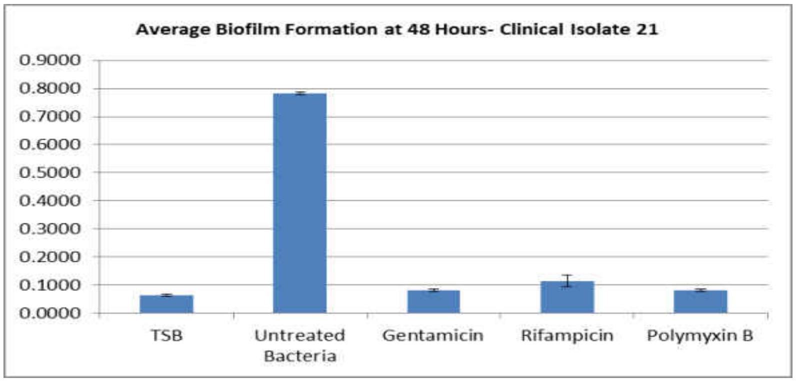


Figure 86: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 21

Note: Standard error shown

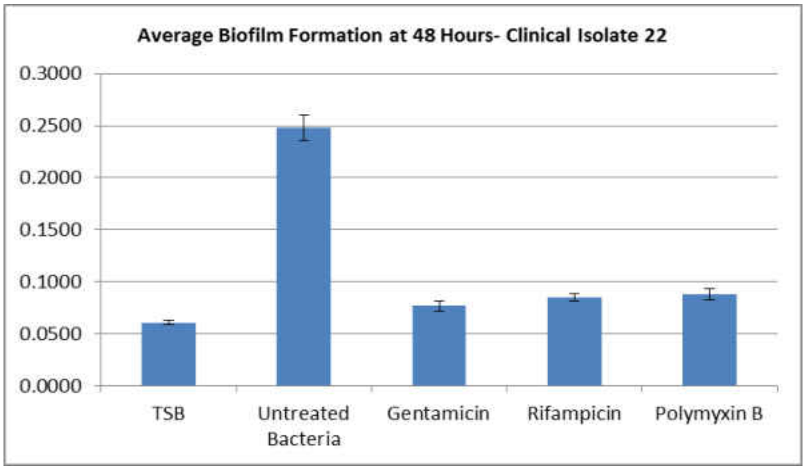


Figure 87: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 22

Note: Standard error shown

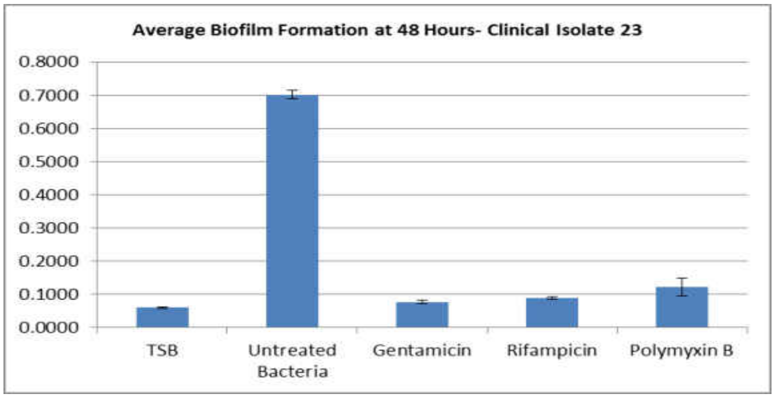


Figure 88: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 23

Note: Standard error shown

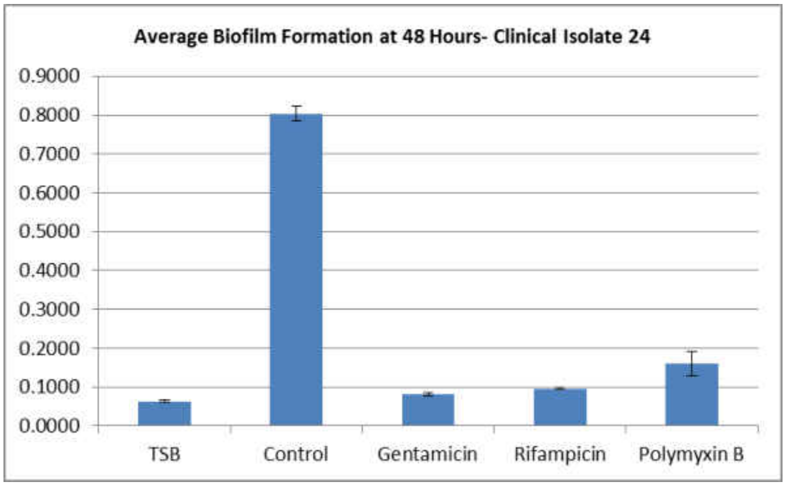


Figure 89: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 24

Note: Standard error shown

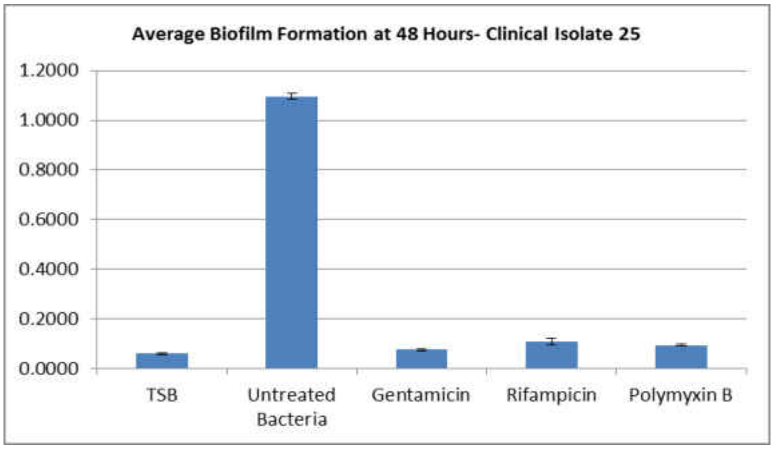


Figure 90: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 25

Note: Standard error shown

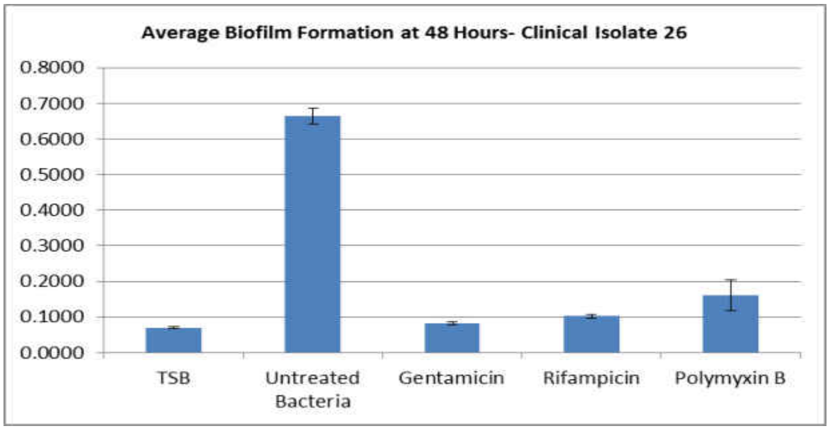


Figure 91: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 26

Note: Standard error shown

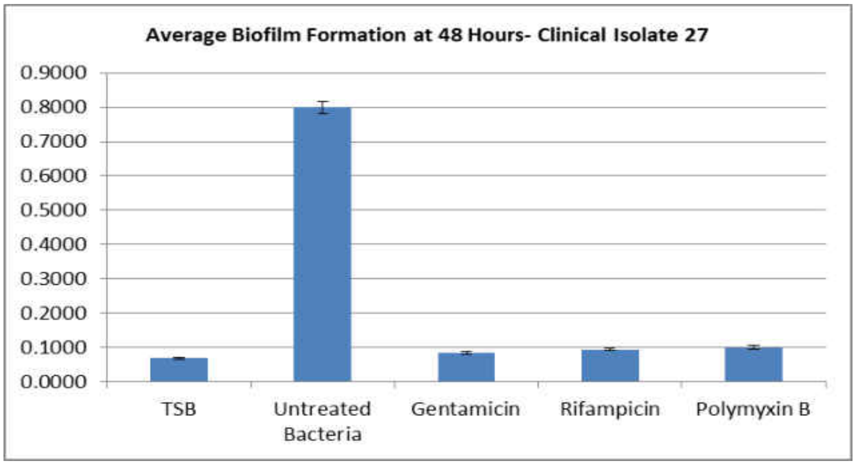


Figure 92: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 27

Note: Standard error shown

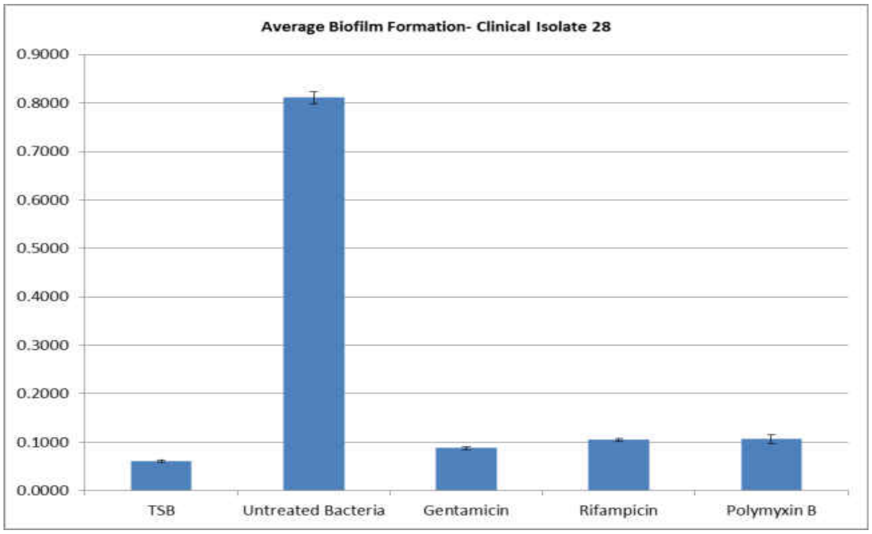


Figure 93: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 28

Note: Standard error shown

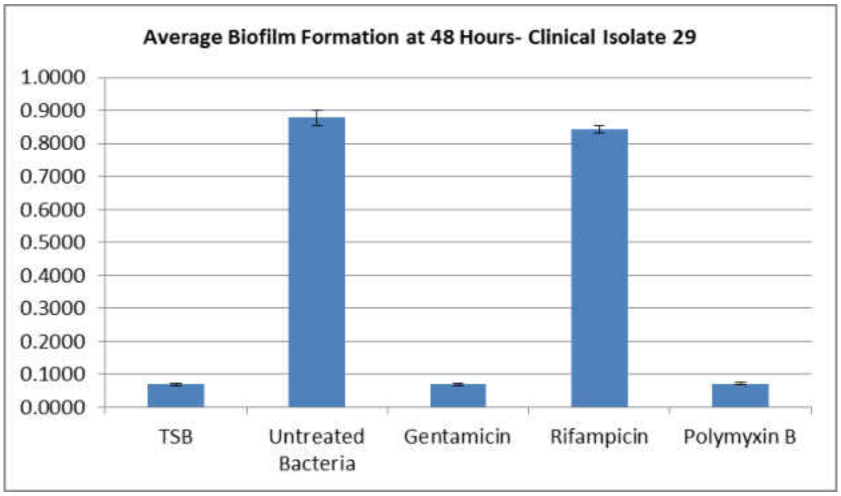


Figure 94: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 29

Note: Standard error shown

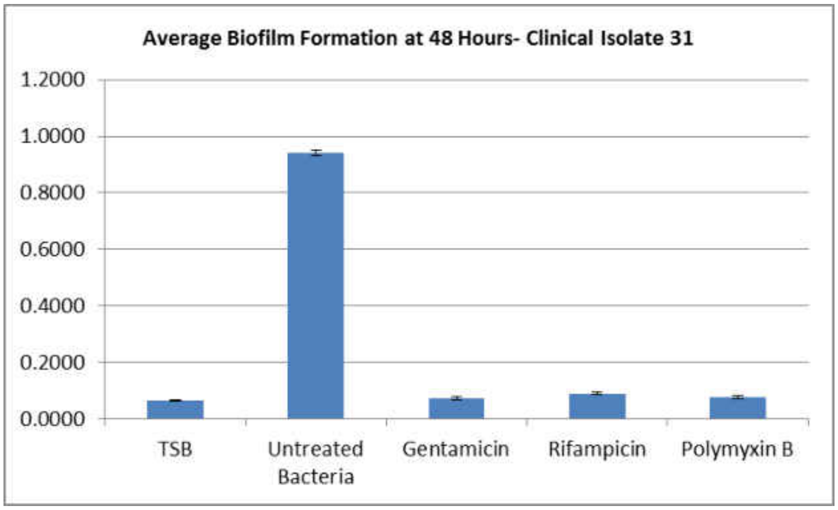


Figure 95: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 31

Note: Standard error shown

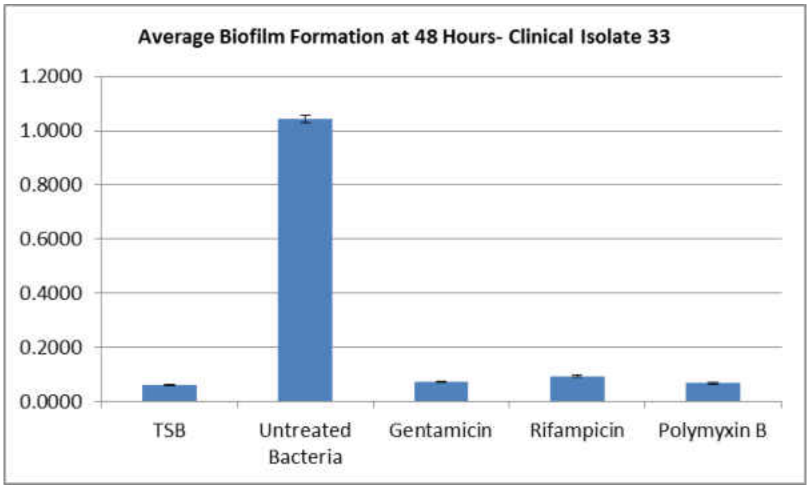


Figure 96: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 33

Note: Standard error shown

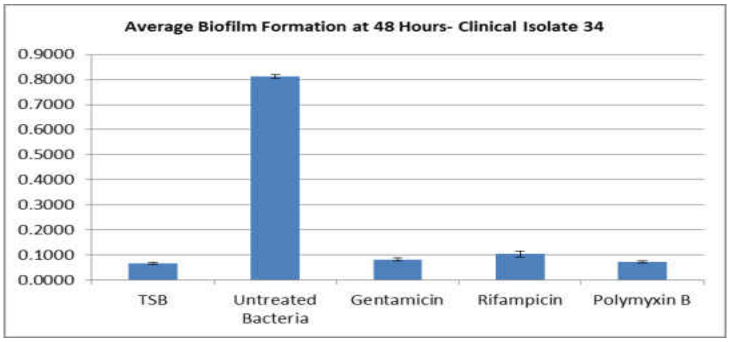


Figure 97: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 34

Note: Standard error shown

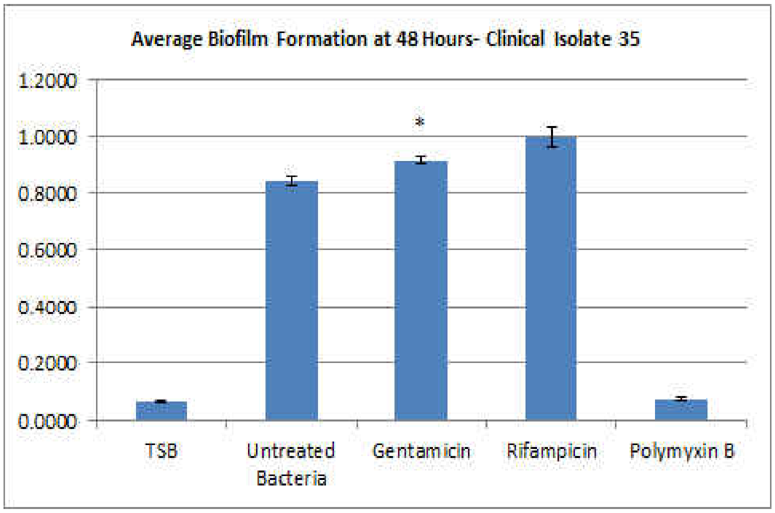


Figure 98: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 35

Note: Standard error shown

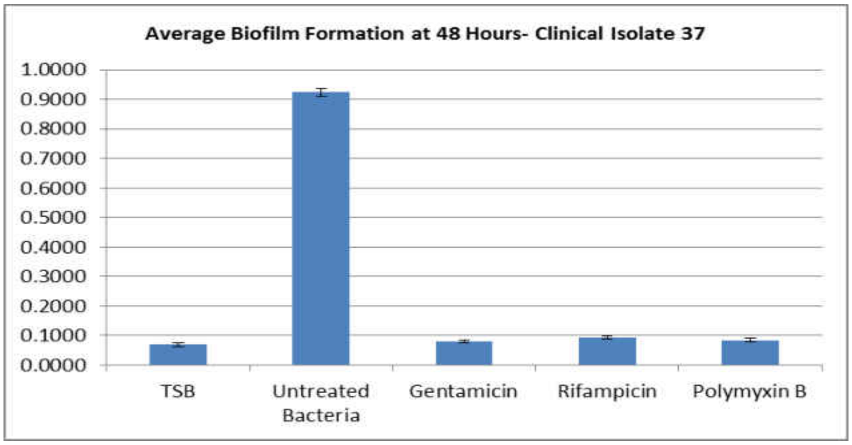


Figure 99: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 37

Note: Standard error shown

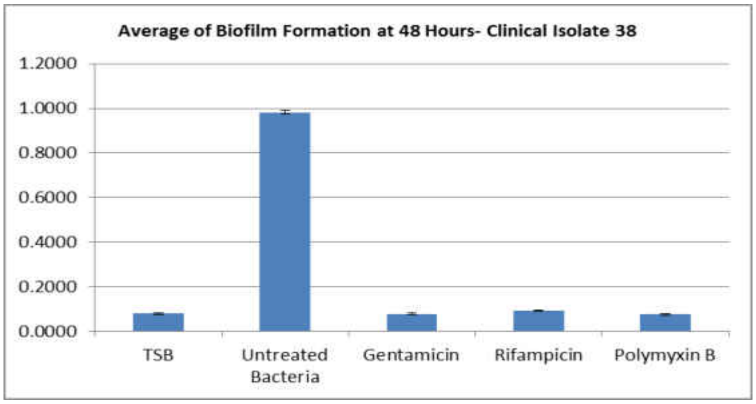


Figure 100: Average of Biofilm Formation with Antibiotic Treatments- Clinical Isolate 38

Note: Standard error shown

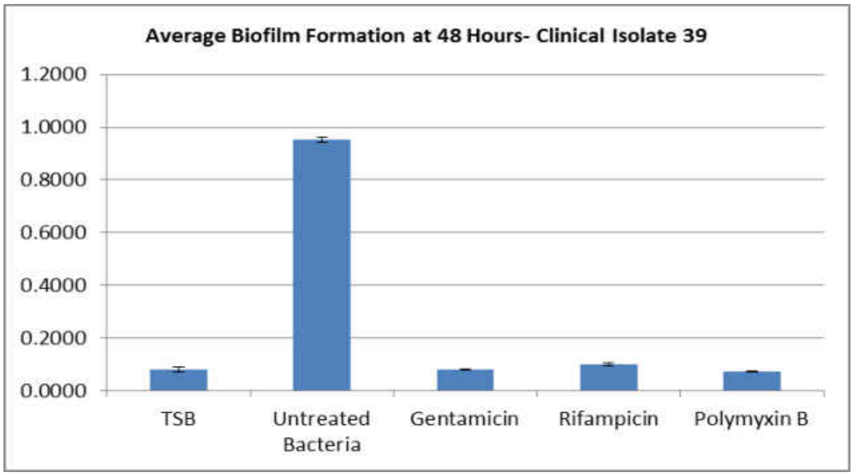


Figure 101: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 39

Note: Standard error shown

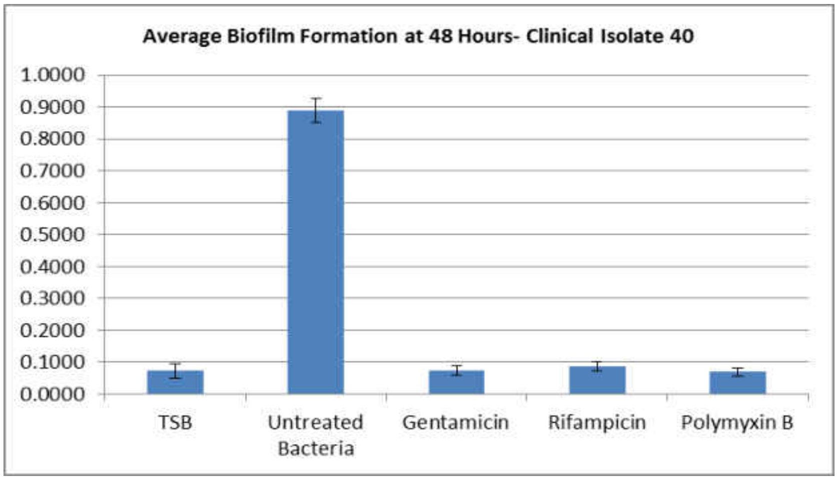


Figure 102: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 40

Note: Standard error shown

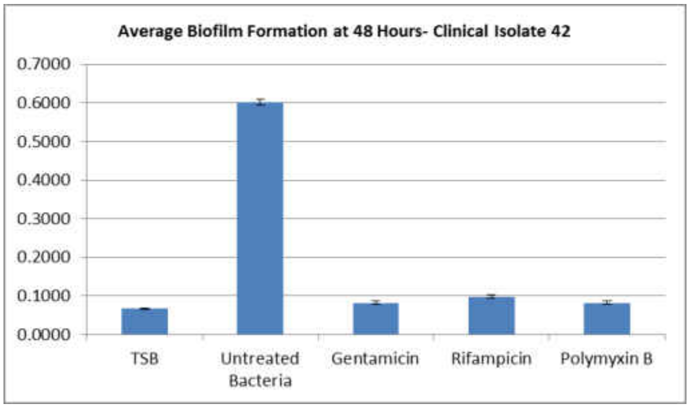


Figure 103: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 42

Note: Standard error shown

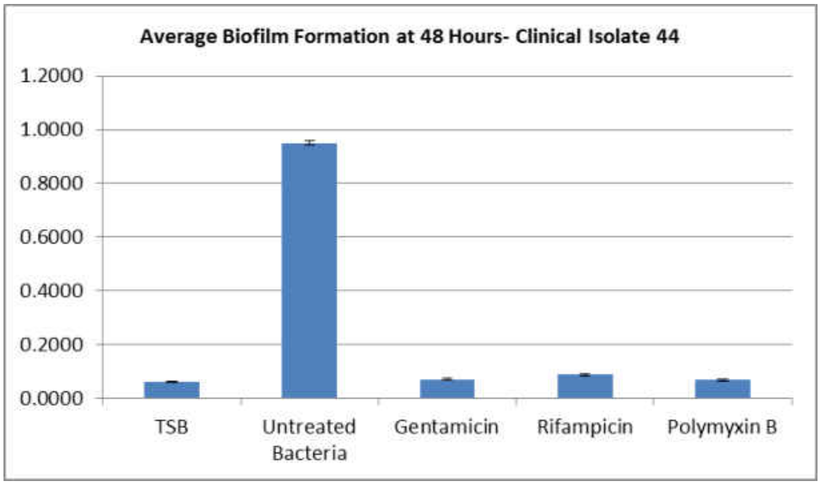


Figure 104: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 44

Note: Standard error shown

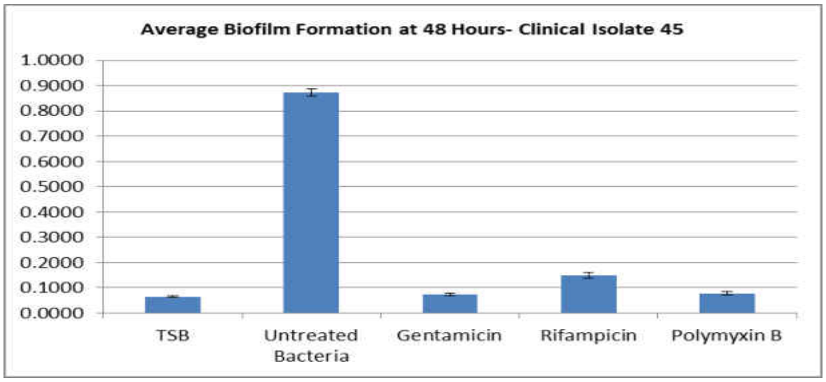


Figure 105: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 45

Note: Standard error shown

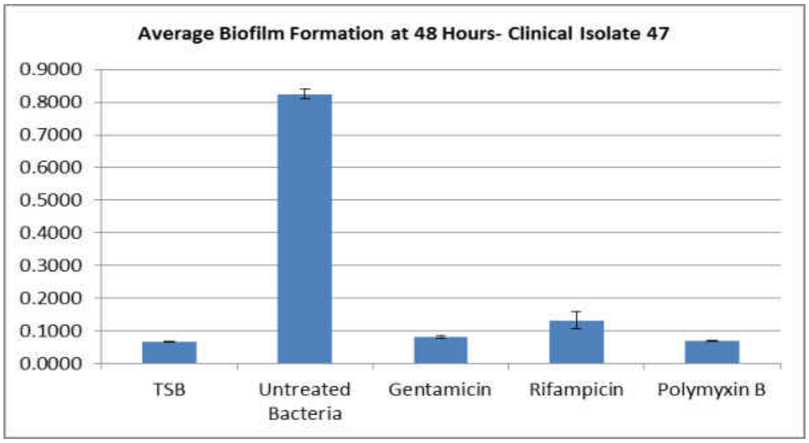


Figure 106: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 47

Note: Standard error shown

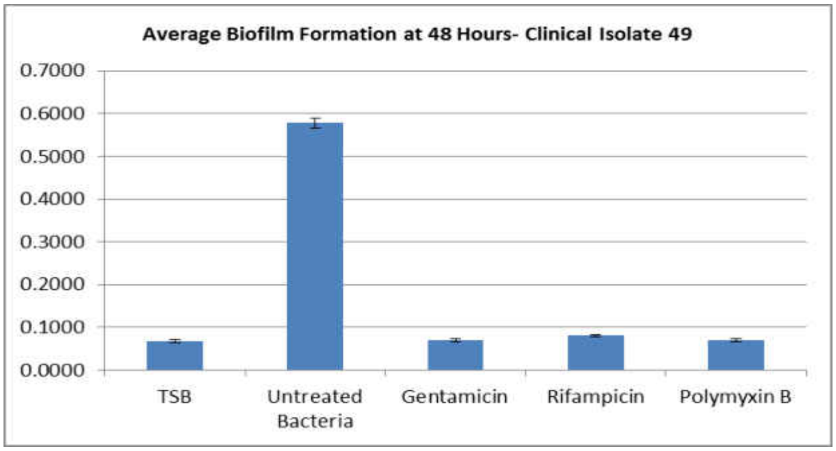


Figure 107: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 49

Note: Standard error shown

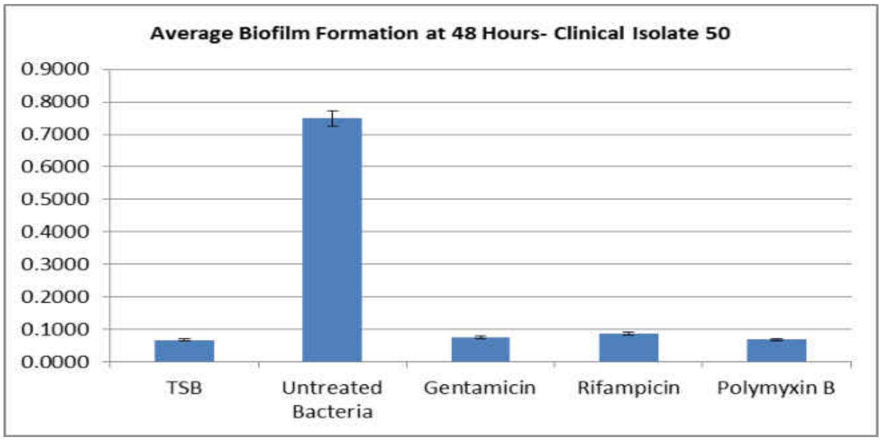


Figure 108: Antibiotic Biofilm Formation with Antibiotic Treatments- Clinical Isolate 50

Note: Standard error shown

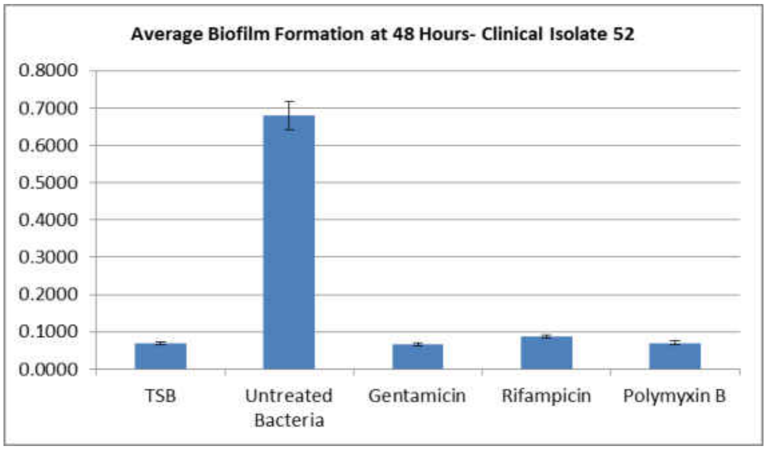


Figure 109: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 52

Note: Standard error shown

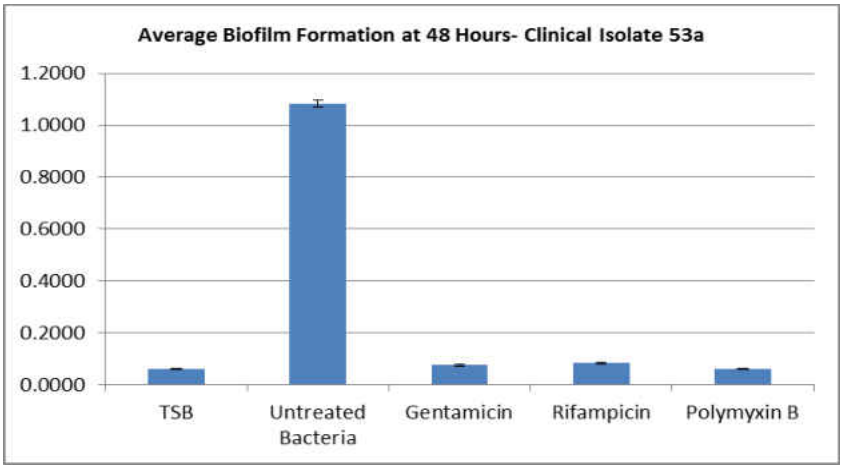


Figure 110: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 53a

Note: Standard error shown

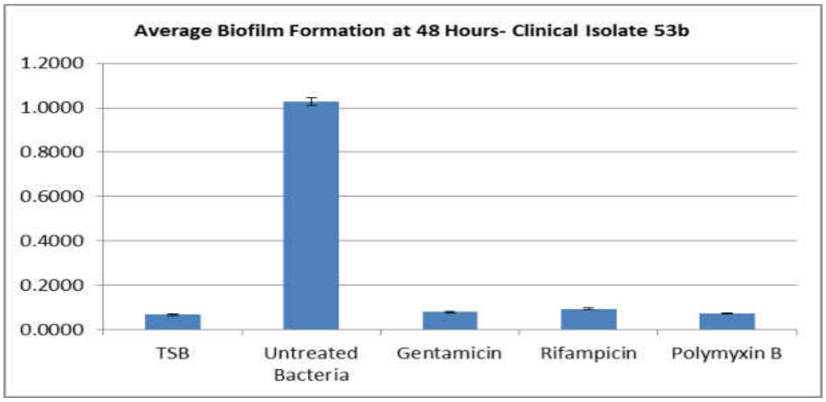


Figure 111: Average Biofilm Formation with Antibiotic Treatments- Clinical Isolate 53b

Note: Standard error shown

When looking at the graphical data (Figure 67-111), it is apparent that the untreated bacteria optical density is much greater than the treated wells. Although several graphs like isolate 22, 29, and 35 had higher reading on the treated wells.

Through graphical representation, there are great differences between the treated bacteria and the untreated control. The *Pseudomonas aeruginosa* isolates seem to be susceptible to these antibiotic treatments.

After testing all of the clinical isolates, a comparison was done based on the source from which the bacteria came. Each sample fell into one of the following categories: sputum, sputum from CF patient, total sputum, catheter tip, urine, fluid, blood, tissue, wound, routine, bone, and unknown (Appendix B). Based on the sources, each treatment was compared for statistical significance.

In the case of gentamicin, bacterial concentrations tended to be low except in the unknown category (Figure 112). The standard deviation for the unknown was sizable. After statistical analysis, the F-value was found to be 743.415 with a p-value of less than 0.001. At a significance level of 0.05, it can be assumed that the treated bacteria are significantly less than the untreated bacteria. The unknown was also found to be statistically different than the negative control with a p-value of less than 0.001.

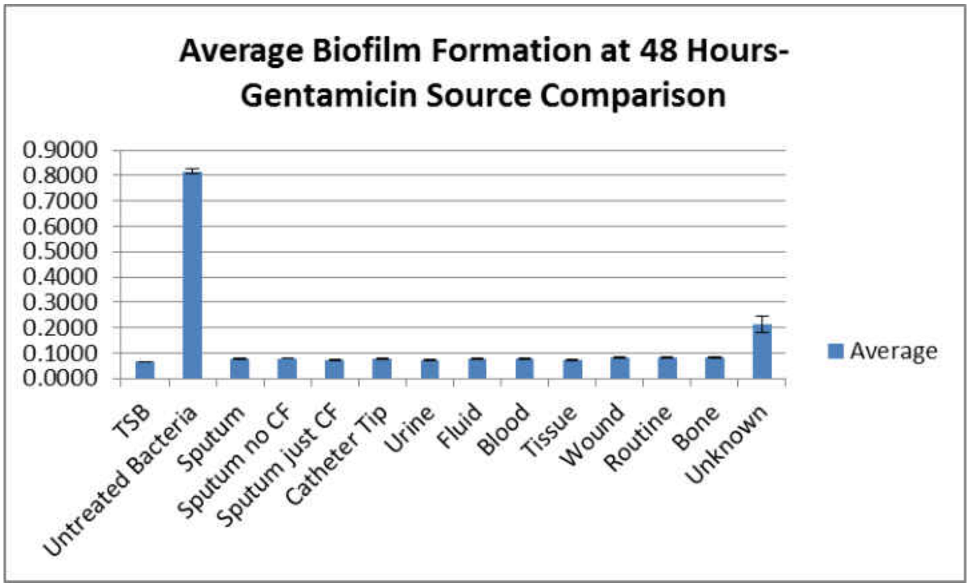


Figure 112: A Source Comparison for Gentamicin Treatments

Note: Standard error shown

For rifampicin, we see a similar graphical representation to gentamicin (Figure 113). The unknown group is also more elevated in comparison to the other groups, but the standard deviation is also high. In a one-way ANOVA, the f-score was found to be 535.883 with a p-value of less than 0.001. At a significance level of 0.05, the treated wells have significantly less bacteria than the untreated wells. The unknown, sputum, and sputum with CF all were significantly different than the TSB negative control with a p-value of less than 0.05.

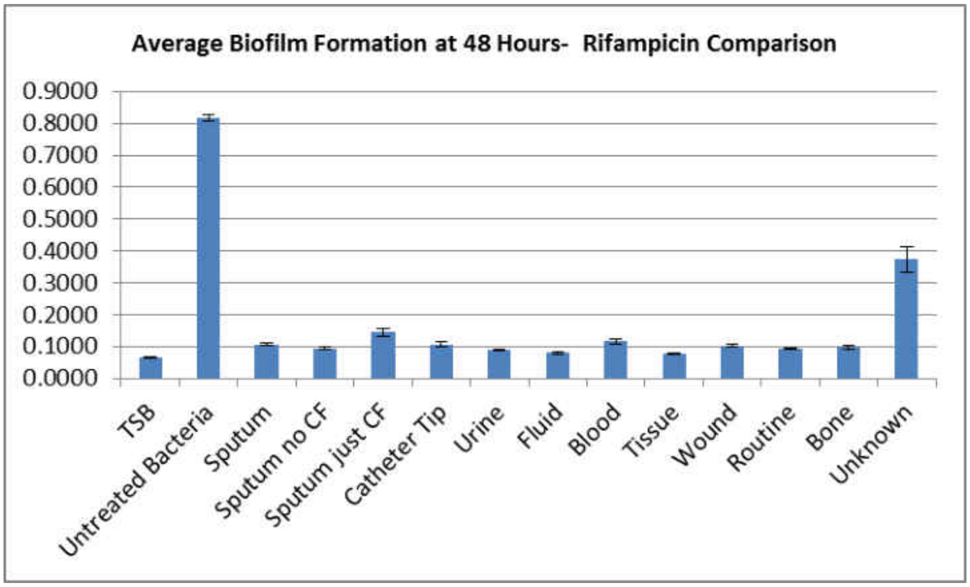


Figure 113: A Source Comparison for Rifampicin Treatments

Note: Standard error shown

The graphical representation of the data for polymyxin B show lower levels of bacteria in the treated wells in comparison to the untreated well (Figure 114). After a one-way ANOVA test, the F-value was found to be 840.571 with a p-value of less than 0.001. At a significance level of 0.001, the antibiotic-treated wells were found to have significantly less bacteria than the untreated wells. The urine, catheter tip, blood, and wound isolates were significantly different than the negative TSB control.

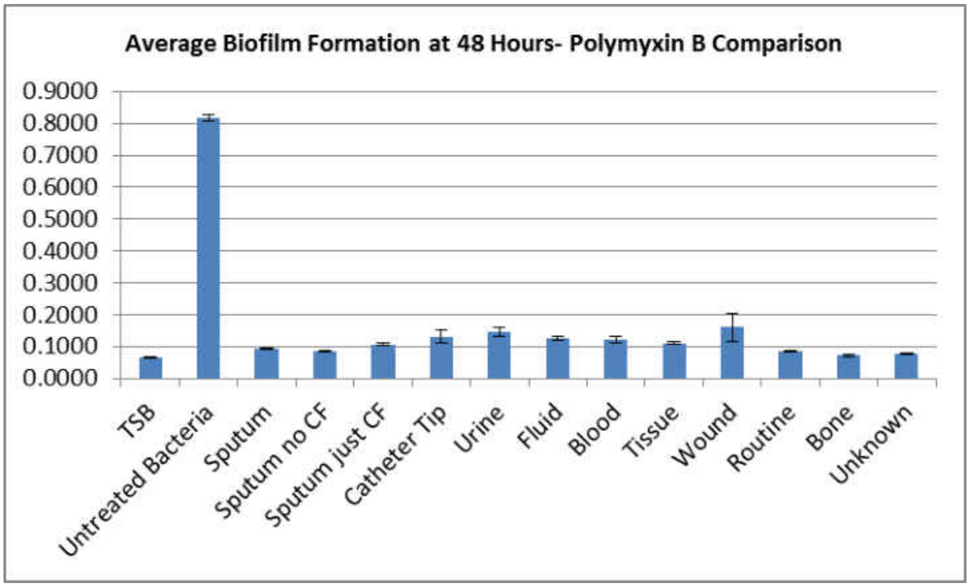


Figure 114: A Source Comparison for Polymyxin B Treatments

Note: Standard error shown

The colicin extractions yielded unsuccessful results over a four month period. The first trials yielded no results due to the addition of mitomycin C when the *E. coli* was in stationary phase, which is an inappropriate time to add it. When a plate was overlaid with the *P. aeruginosa* and spotted with the extract, no inhibition of the bacterial growth occurred. Another problem with the extraction was that the protocol based on previous work from Smajs was unclear. The author was contacted and the protocol specified was performed. The following plates showed no clearance as shown in Figure 115:

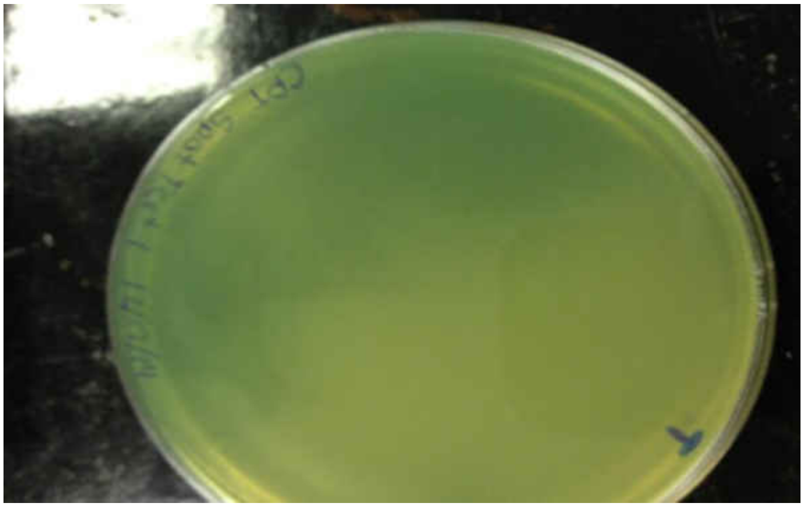


Figure 115: Spot Test Result

After this assay yielded no results, it was determined that using a form of chromatography (HPLC or Gel) would be appropriate. The same protocol was performed and then filtered through a column containing Sephadex-G75 with color gel size markers. The filtered sample was collected and concentrated. The samples were electrophoresced on an SDS-PAGE gel and the results are shown in Figure 116:

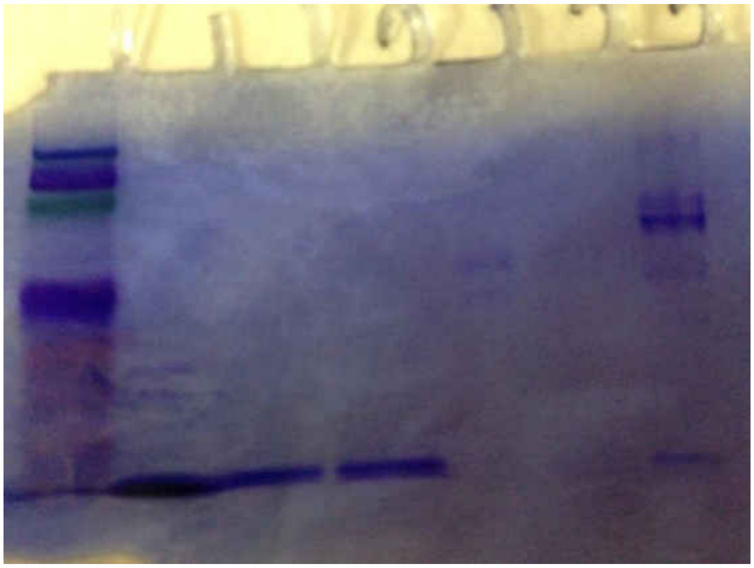


Figure 116: SDS-PAGE Gel Results

The only proteins detected were in lanes one, two, five, and seven (control lanes). That could mean there is either no protein or low protein in the sample. Another gel was electrophoresced with a previous extract and also yielded no banding in the protein example. A pyocin extraction was also performed and stored to test further.

Those protein samples (including pyocin) were analyzed using a Nanodrop (Thermo Scientific) and the results are shown in Table 10. The results seem to show that there was a low amount of protein, but there is protein content.

Table 10
Nanodrop results

Protein	Concentration mg/mL	260/280
Control	0.195	1.07
Colicin	0.312	1.84
Pyocin	3.118	1.20

The results of the tests can mean many things about the bacteria themselves, but also about future treatments with antibiotics. In specimens of *P. aeruginosa* from hospitals today, the resistance to many of these drugs would be increased.Using a toxin, like bacteriocin, that is not widely used would be a great addition to standard procedures of care for many of the people infected with this bacterium.

CHAPTER V

DISCUSSION

The first experiments helped produce results that could be used to improve the future microtitre assays. Firstly, it was found that 48 hours was an optimal time to allow the *Pseudomonas* biofilm to develop in 96-well plates. This is indicated by the stark differences in the data in the results section, but also by the raw data included in appendix A. The 72 hour data produced readings that could not be measured by the GENios. This decreased the number of wells we could statistically analyze.The 24 hour period did not allow sufficient growth of the biofilm to produce a statistical difference as did the 48 and 72 hour. One other concept learned from the trial assays was that the addition of acetic acid to destain the crystal violet was crucial to yielding readable results. When not treated with acetic acid, the stain remained adhered to the sides of the wells. With the addition of the acetic acid, the stain would not adhere to the side surfaces and the plate was read more easily using the GENios. It also resulted in less variability. Finally, as the trials went on the incubation chamber was changed, leading to a significant decrease in variability between the wells. This is due to more even temperature throughout the entire plate. Although the wells did seem to vary at some points through the study, there were more consistent readings using the new incubator as well as decreased human error.

The change in microtitre plate from 96 and 24-well plates seemed to yield no difference in results. The 24-well plate was used as an attempt to decrease variability. When it did not, further assays were carried out using 96-well plates exclusively. This resulted in a larger sample size for statistical analysis, and had the benefit of accommodating more treatments on to a single plate.

When the first antibiotics were tested, the results seemed to indicate that ciprofloxacin and ceftazidime were killing 100 percent of the bacteria within the wells. Theses antibiotics, regardless of concentration, had absorbances test comparable ($p>0.05$) to the TSB negative control wells. When retesting these, the results were varied and trendless. The use of gentamicin and imipenem in the trials also produced variable results. This inconsistency pointed to either the bacteria or the antibiotics themselves.

The results of the Kirby-Bauer assay seemed to indicate the antibiotics were causing variation in the absorbance readings. The bacteria seemed to be inhibited by both ciprofloxacin and gentamicin. They were also resistant to cephalothin, erythromycin, and tetracycline. Resistance to these drugs would be expected, because these antibiotics are found to be ineffective towards *P. aeruginosa.* Based on the results, additional antibiotics were chosen for the study.

Rifampicin was a red color when placed in solution, making higher doses have high optical density. When Rifampicin dosing was lowered, a minimum inhibitory concentration was observed (~0.02mg/mL). Ciprofloxacin continued to produce variability in absorbances and was finally deleted from the project. Polymyxin B and gentamicin had killing power on every control test. It was determined that a 0.07mg/mL concentration of each antbiotic was effective killing the control samples and the clinical isolates.

When assessing resistance based on optical density for the clinical isolates, a surprising number did not show resistance to the antibiotics used. The only isolate that had significant resistance was Clinical Isolate 35, which came from an unknown patient origin. Although, some isolates did show a significant difference in absorbance between the negative control wells and the treatment wells. These statistical differences could indicate partial resistance, which could originate through a number of microbial mechanisms.

One mechanism by which resistance can develop in response to these drugs is through a change in the targeted prokaryote site. Polymyxin B targets the cellular envelope; rifampicin targets the RNA polymerase; while gentamicin targets the ribosome. Changes can be made to the bacterial cell that can block the attachment of the antibiotic and prevent destruction of the bacteria. *P. aeruginosa* also carries numerous porins. Therefore, if the drug was able to cross the barrier, efflux pumps and porins will keep the concentration below a level effective at neutralizing the bacteria (3). Using efflux pumps will make developing resistance to antibiotics faster, because the lower concentration of drugs will encourage selection for resistant strains. Finally, resistance can develop due to the ability of *Pseudomonas* to form biofilm as well as its ability to modulate virulence factor production (3). This constant change and improvement in biofilm could be effective in keeping the antibiotic out of the cell. It could be inferred that the resistance of clinical isolates nine years later could be much higher, since resistance rates are increasing for *P. aeruginosa*. If a comparison study was performed, it could be expected that more resistant strains will be isolated.

When comparing the sources of the isolates, few generalizations can be made. Polymyxin B seemed to have slightly less effect on the two types of urinary tract isolates as well as the blood related isolates in comparison to the positive control (t values of 44 and 45 in comparison to 86). Urinary isolates of *P. aeruginosa* are very likely to form biofilm and that might be the cause for lowered effectiveness of some antibiotics. The blood and wound isolates also showed a small increase in absorbance readings when compared to the control *Pseudomonas*. For rifampicin, the sputum with CF and the sample of unknown origin have higher readings in comparison to positive control. This could be due to increased changes in the RNA polymerase binding sites making the drug less effective against these isolates. The gentamicin treated wells had higher bacteria concentrations in the unknown samples in comparison to the positive control. This mild resistance to gentamicin could be caused by an alteration in the binding site for the ribosomal unit to which it attaches. Overall, there were only low levels of resistance in these isolates for rifampicin, gentamicin, and polymyxin B.

Producing bacteriocin for the study proved to be a difficult task. Using procedures described by Smajs, little to no colicin was extracted. This procedure would possibly be more effective on a larger scale, using many gallons of bacteria to produce detectable toxin production. This was not feasible and the equipment involved would have been costly. One problem with the initial procedure was the use of mitomycin C to stimulate colicin production was performed during stationary phase of the bacteria. After some modifications, it was apparent that the time of addition of the drug was too late in the growth cycle to be effective for production. Another reason the colicin procedure was ineffective was due to the spot testing. Originally the test was performed with a lawn of *P. aeruginosa* with colicin extract spotted on top of it, but it was determined through literature research that using a mixture of *P. aeruginosa* and soft agar inlay with the colicin spotted on top was the correct protocol. Even though this was performed, no clearance in the bacteria was observed. Another hardship in getting bacteriocin in general was the inability to use FPLC. With a large volume FPLC, the ability to run the crude extract through and to take the filtered, size inclusive extract for used in assays would have been hugely beneficial. This would have allowed for a greater concentration of pure extract that might have been used for the microtitre assays.

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APPENDIX A:

Raw Data for Statistical Analysis

Average Biofilm Absorbance at 24 Hours without Acetic Acid using *P. aeruginosa* ATCC 47085

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0653	0.0643	0.0836	0.0897	0.1124	0.0628	0.0687	0.0622	0.5293	0.0643	0.4491	0.0660
B	0.0626	0.0653	0.0807	0.0772	0.1252	0.0619	0.0731	0.0621	0.2675	0.0612	0.0838	0.6108
C	0.0647	0.0645	0.0990	0.0763	0.0759	0.0596	0.0627	0.0625	0.2494	0.4883	0.0862	0.2982
D	0.0628	0.0630	0.0794	0.0753	1.2071	0.0629	0.0563	0.0571	0.0702	0.3158	0.0944	0.4003
E	0.0671	0.0606	0.0712	0.1017	0.0797	0.0703	0.0611	0.0836	0.0670	0.0716	0.0716	0.0647
F	0.0604	0.0640	0.0798	0.0669	0.0759	0.0770	0.0779	0.0646	0.0658	0.0594	0.0626	0.1299
G	0.0609	0.0603	0.0694	0.0783	0.0747	0.0665	0.0616	0.0726	0.0645	0.0713	0.0650	0.1567
H	0.0617	0.0628	0.0764	0.0781	0.0705	0.0896	0.0718	0.0757	0.0743	0.0690	0.0721	0.0679
Average	0.0632	0.0631	0.0799	0.0804	0.2277	0.0688	0.0667	0.0676	0.1735	0.1501	0.1231	0.2243
Range	0.0067	0.0050	0.0296	0.0348	1.1366	0.0300	0.0216	0.0265	0.4648	0.4289	0.3865	0.5461

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	16	0	0.0631	0.00202	0.000504	0.00107
Control	80	0	0.126	0.166	0.0186	0.0369

Column	Range	Max	Min	Median	25%	75%
TSB	0.00680	0.0671	0.0603	0.0629	0.0611	0.0646
Control	1.151	1.207	0.0563	0.0737	0.0652	0.0856

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	0.146	-0.739	0.117	0.714	0.952	0.521
Control	4.395	23.552	0.384	<0.001	0.421	<0.001

Column	Sum	Sum of Squares
TSB	1.010	0.0639
Control	10.097	3.452

t-test

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	16	0	0.0631	0.00202	0.000504
Control	80	0	0.126	0.166	0.0186

Difference -0.0631

t = -1.513 with 94 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -0.146 to 0.0197

Two-tailed P-value = 0.134

The difference in the mean values of the two groups is not great enough to reject the possibility that the difference is due to random sampling variability. There is not a statistically significant difference between the input groups (P = 0.134).

One-tailed P-value = 0.0668

The sample mean of group Control does not exceed the sample mean of the group TSB by an amount great enough to exclude the possibility that the difference is due to random sampling variability. The hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control cannot be rejected. (P = 0.067).

Power of performed two-tailed test with alpha = 0.050: 0.322

The power of the performed test (0.322) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists. Negative results should be interpreted cautiously.

Power of performed one-tailed test with alpha = 0.050: 0.443

The power of the performed test (0.443) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists. Negative results should be interpreted cautiously.

Average Biofilm Absorbance at 24 Hours with Acetic Acid using *P. aeruginosa* ATCC 47085

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.1487	0.1578	0.6248	0.8904	1.3972	1.0838	1.2104	0.7382	2.3589	0.8830	0.9607	0.8928
B	0.1613	0.1620	0.7087	0.8581	1.2763	0.8670	0.8083	0.7276	1.2907	0.7140	1.0322	1.4906
C	0.1465	0.1662	0.4922	0.7856	1.2499	1.1486	0.9677	1.2285	1.8813	1.3968	0.9541	1.1351
D	0.1588	0.1864	0.9047	0.8240	2.9341	1.0665	1.0698	0.9143	1.9300	1.3864	1.1056	1.7271
E	0.1639	0.1796	0.5395	0.9023	1.2779	0.9465	0.8087	1.3415	0.9460	0.9048	0.7508	1.1712
F	0.1462	0.1875	0.4805	0.5778	1.0152	1.1378	1.7069	1.0431	0.9603	1.0996	1.0613	0.9215
G	0.1347	0.1546	0.6345	0.6388	1.2744	1.5518	1.3907	1.4509	1.4033	1.3969	1.0940	1.0633
H	0.1668	0.2028	0.7788	1.1201	1.0399	1.6727	2.4320	1.3917	1.0862	1.7512	1.4913	0.8460
Average	0.153363	0.174613	0.645463	0.824638	1.433113	1.184338	1.299313	1.104475	1.482088	1.191588	1.05625	1.15595
Range	0.0321	0.0482	0.4242	0.5423	1.9189	0.8057	1.6237	0.7233	1.4129	1.0372	0.7405	0.8811

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	16	0	0.164	0.0177	0.00442	0.00943
Control Sample	80	0	1.138	0.431	0.0482	0.0960

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0681	0.203	0.135	0.162	0.150	0.176
Control Sample	2.454	2.934	0.480	1.065	0.871	1.375

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.628	0.236	0.187	0.139	0.956	0.583
Control Sample	1.573	3.887	0.127	0.003	0.890	<0.001

Column	**Sum**	**Sum of Squares**
TSB	2.624	0.435
Control Sample	91.018	118.245

t-test

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	16	0	0.164	0.0177	0.00442
Control Sample	80	0	1.138	0.431	0.0482

Difference -0.974

t = -8.992 with 94 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -1.189 to -0.759

Two-tailed P-value = 2.553E-014

The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = <0.001).

One-tailed P-value = 1.277E-014

The sample mean of group Control Sample exceeds the sample mean of group TSB by an amount that is greater than would be expected by chance, rejecting the hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control Sample. (P = <0.001).

Power of performed two-tailed test with alpha = 0.050: 1.000

Power of performed one-tailed test with alpha = 0.050: 1.000

Average Biofilm Absorbance at 48 Hours without Acidic Acid using *P. aeruginosa* ATCC 47085

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0487	0.0493	0.0867	0.0612	0.1333	1.0184	0.0569	0.7976	0.0645	0.7541	0.1291	0.0593
B	0.0486	0.0521	0.0618	0.1098	0.0636	0.0980	0.1707	0.0771	0.0924	0.1514	0.0611	0.0803
C	0.0438	0.0460	0.0746	0.0885	0.0827	0.0628	0.0792	0.0589	0.0596	0.0583	0.0774	0.1038
D	0.0608	0.0495	0.0736	0.0983	0.0676	0.0631	0.0799	0.1062	0.0558	0.0581	0.0632	0.1706
E	0.0591	0.0479	0.0684	0.0826	0.0674	0.0812	0.0600	0.0918	0.0597	0.0624	0.0621	0.0643
F	0.0862	0.0977	0.0836	0.0863	0.0690	0.0653	0.1088	0.0905	0.0642	0.0620	0.0670	0.0829
G	0.0575	0.0585	0.0736	0.0725	0.0701	0.1675	0.7263	0.8028	0.1061	0.0587	0.0852	0.0771
H	0.0627	0.0537	0.1576	0.0724	0.6322	0.0896	0.1879	0.1990	0.1643	0.0729	0.0939	0.1221
Average	0.058425	0.056838	0.084988	0.08395	0.148238	0.205738	0.183713	0.277988	0.083325	0.159738	0.079875	0.09505
Range	0.0424	0.0517	0.0958	0.0486	0.5686	0.9556	0.6694	0.7439	0.1085	0.696	0.068	0.1113

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	16	0	0.0576	0.0147	0.00367	0.00781
Control Sample	80	0	0.140	0.191	0.0214	0.0426

Column	Range	Max	Min	Median	25%	75%
TSB	0.0539	0.0977	0.0438	0.0529	0.0486	0.0604
Control Sample	0.963	1.018	0.0558	0.0796	0.0638	0.106

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.931	3.475	0.240	0.015	0.761	<0.001
Control Sample	3.302	10.045	0.351	<0.001	0.435	<0.001

Column	Sum	Sum of Squares
TSB	0.922	0.0564
Control Sample	11.221	4.469

t-test

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	16	0	0.0576	0.0147	0.00367
Control Sample	80	0	0.140	0.191	0.0214

Difference -0.0826

t = -1.718 with 94 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -0.178 to 0.0128

Two-tailed P-value = 0.0890

The difference in the mean values of the two groups is not great enough to reject the possibility that the difference is due to random sampling variability. There is not a statistically significant difference between the input groups (P = 0.089).

One-tailed P-value = 0.0445

The sample mean of group Control Sample exceeds the sample mean of group TSB by an amount that is greater than would be expected by chance, rejecting the hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control Sample. (P = 0.045).

Power of performed two-tailed test with alpha = 0.050: 0.398

Power of performed one-tailed test with alpha = 0.050: 0.524

Average Biofilm Absorbance at 48 Hours with Acetic Acid using *P. aeruginosa* ATCC 47085

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.1552	0.1698	1.6932	1.3348	1.8567	OVER	0.8036	OVER	0.9974	OVER	1.7151	1.1564
B	0.1576	0.1514	1.1500	1.7404	1.4545	1.9667	1.6976	1.2303	2.6820	1.5226	0.6106	2.9920
C	0.1438	0.1745	1.1448	1.9287	1.4142	2.0489	1.2005	1.7669	0.7900	0.6551	1.2777	1.3469
D	0.1897	0.1512	1.0494	1.6322	0.8960	1.3134	1.1730	0.5436	0.7402	1.2250	0.6647	1.0102
E	0.1700	0.1588	1.1522	1.7968	0.6146	2.0541	1.7980	1.3722	0.9942	1.0565	0.4777	0.6408
F	0.2708	0.2251	1.1911	1.7978	1.8630	1.4521	1.8123	1.8493	0.6083	0.6599	1.7667	0.6695
G	0.1922	0.4783	1.2981	1.7522	1.9341	2.7560	OVER	OVER	2.4819	1.5424	0.9556	0.8048
H	0.2497	0.2155	2.3098	1.8174	OVER	1.5724	1.5415	2.4043	OVER	0.8404	1.1753	0.7462
Average	0.191125	0.215575	1.373575	1.725038	1.4333	1.880514	1.432357	1.527767	1.327714	1.0717	1.080425	1.17085
Range	0.127	0.3271	1.2604	0.5939	1.3195	1.4426	1.0087	1.8607	2.0737	0.8873	1.289	2.3512

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	16	0	0.203	0.0823	0.0206	0.0439
Control Sample	73	0	1.397	0.569	0.0666	0.133

Column	Range	Max	Min	Median	25%	75%
TSB	0.335	0.478	0.144	0.172	0.156	0.223
Control Sample	2.514	2.992	0.478	1.335	0.975	1.797

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	2.774	8.840	0.241	0.013	0.664	<0.001
Control Sample	0.534	-0.00328	0.0674	0.531	0.962	0.027

Column	Sum	Sum of Squares
TSB	3.254	0.763
Control Sample	101.985	165.774

t-test

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	16	0	0.203	0.0823	0.0206
Control Sample	73	0	1.397	0.569	0.0666

Difference -1.194

t = -8.339 with 87 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -1.478 to -0.909

Two-tailed P-value = 1.011E-012

The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = <0.001).

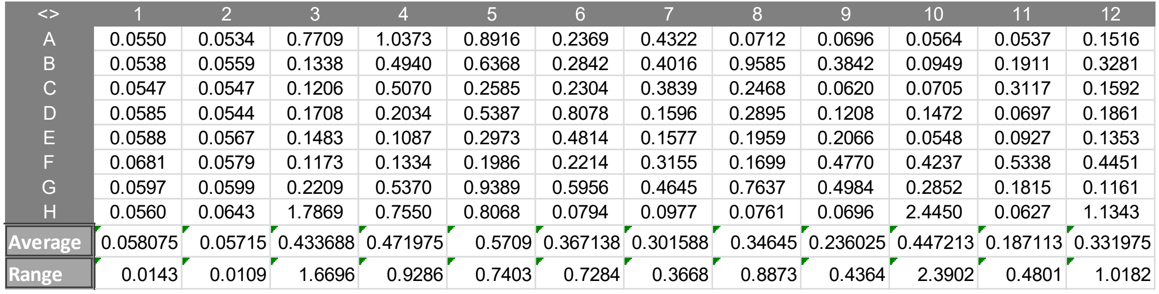
One-tailed P-value = 5.057E-013

The sample mean of group Control Sample exceeds the sample mean of group TSB by an amount that is greater than would be expected by chance, rejecting the hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control Sample. (P = <0.001).

Power of performed two-tailed test with alpha = 0.050: 1.000

Power of performed one-tailed test with alpha = 0.050: 1.000

Average Biofilm Absorbance at 72 Hours without Acetic Acid using *P. aeruginosa* ATCC 47085



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0550	0.0534	0.7709	1.0373	0.8916	0.2369	0.4322	0.0712	0.0696	0.0564	0.0537	0.1516
B	0.0538	0.0559	0.1338	0.4940	0.6368	0.2842	0.4016	0.9585	0.3842	0.0949	0.1911	0.3281
C	0.0547	0.0547	0.1206	0.5070	0.2585	0.2304	0.3839	0.2468	0.0620	0.0705	0.3117	0.1592
D	0.0585	0.0544	0.1708	0.2034	0.5387	0.8078	0.1596	0.2895	0.1208	0.1472	0.0697	0.1861
E	0.0588	0.0567	0.1483	0.1087	0.2973	0.4814	0.1577	0.1959	0.2066	0.0548	0.0927	0.1353
F	0.0681	0.0579	0.1173	0.1334	0.1986	0.2214	0.3155	0.1699	0.4770	0.4237	0.5338	0.4451
G	0.0597	0.0599	0.2209	0.5370	0.9389	0.5956	0.4645	0.7637	0.4984	0.2852	0.1815	0.1161
H	0.0560	0.0643	1.7869	0.7550	0.8068	0.0794	0.0977	0.0761	0.0696	2.4450	0.0627	1.1343
Average	0.058075	0.05715	0.433688	0.471975	0.5709	0.367138	0.301588	0.34645	0.236025	0.447213	0.187113	0.331975
Range	0.0143	0.0109	1.6696	0.9286	0.7403	0.7284	0.3668	0.8873	0.4364	2.3902	0.4801	1.0182

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	16	0	0.0576	0.00399	0.000999	0.00213
Control Sample	80	0	0.369	0.389	0.0435	0.0866

Column	Range	Max	Min	Median	25%	75%
TSB	0.0147	0.0681	0.0534	0.0563	0.0547	0.0595
Control Sample	2.391	2.445	0.0537	0.226	0.124	0.491

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.477	2.156	0.158	0.333	0.857	0.017
Control Sample	2.822	11.011	0.209	<0.001	0.716	<0.001

Column	Sum	Sum of Squares
TSB	0.922	0.0533
Control Sample	29.552	22.891

t-test

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	16	0	0.0576	0.00399	0.000999
Control Sample	80	0	0.369	0.389	0.0435

Difference -0.312

t = -3.190 with 94 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -0.506 to -0.118

Two-tailed P-value = 0.00193

The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = 0.002).

One-tailed P-value = 0.000967

The sample mean of group Control Sample exceeds the sample mean of group TSB by an amount that is greater than would be expected by chance, rejecting the hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control Sample. (P = <0.001).

Power of performed two-tailed test with alpha = 0.050: 0.884

Power of performed one-tailed test with alpha = 0.050: 0.936

Average Biofilm Absorbance at 72 Hours with Acetic Acid using *P. aeruginosa* ATCC 47085

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.1472	0.1646	OVER	OVER	OVER	1.6151	OVER	2.9739	1.1501	0.2798	0.2282	1.4277
B	0.1510	0.1921	1.8187	OVER	OVER	2.1113	2.4833	OVER	1.1813	0.9006	1.4579	2.3263
C	0.1479	0.1854	2.5570	OVER	OVER	OVER	OVER	OVER	2.1811	1.0976	2.5628	2.5782
D	0.1845	0.2056	OVER	2.7870	OVER	OVER	OVER	OVER	OVER	1.0639	2.1456	1.3033
E	0.1764	0.2240	1.5804	2.1051	OVER	OVER	2.1306	2.9854	2.5207	0.6376	1.9864	1.7870
F	0.1961	0.2097	1.3386	2.0920	OVER	2.4165	2.6503	2.7241	OVER	2.2693	2.0135	2.3440
G	0.1542	0.2060	2.0207	OVER	2.4040	1.5662	1.9392	OVER	2.1715	1.8282	1.2838	1.7219
H	0.1598	0.1726	OVER	OVER	OVER	1.9337	1.6703	1.3327	0.6736	OVER	1.0751	OVER
Average	0.164638	0.195	1.86308	2.328033	2.404	1.92856	2.17474	2.504025	1.646383	1.153857	1.594163	1.926914
Range	0.0489	0.0594	1.2184	0.695	0	0.8503	0.98	1.6527	1.8471	1.9895	2.3346	1.2749

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	16	0	0.180	0.0244	0.00610	0.0130
Control Sample	51	0	1.832	0.670	0.0938	0.188

Column	Range	Max	Min	Median	25%	75%
TSB	0.0768	0.224	0.147	0.180	0.156	0.203
Control Sample	2.757	2.985	0.228	1.939	1.333	2.344

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	0.181	-1.145	0.109	0.774	0.946	0.435
Control Sample	-0.460	-0.301	0.0897	0.369	0.973	0.294

Column	Sum	Sum of Squares
TSB	2.877	0.526
Control Sample	93.433	193.630

t-test

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	16	0	0.180	0.0244	0.00610
Control Sample	51	0	1.832	0.670	0.0938

Difference -1.652

t = -9.807 with 65 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -1.989 to -1.316

Two-tailed P-value = 1.920E-014

The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = <0.001).

One-tailed P-value = 9.599E-015

The sample mean of group Control Sample exceeds the sample mean of group TSB by an amount that is greater than would be expected by chance, rejecting the hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control Sample. (P = <0.001).

Power of performed two-tailed test with alpha = 0.050: 1.000

Power of performed one-tailed test with alpha = 0.050: 1.000

Average Biofilm Absorbance at 24 Hours without Acetic Acid- Changed Incubator using *P. aeruginosa* ATCC 47085

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0438	0.0481	0.0515	0.0509	0.0527	0.0506	0.0661	0.0580	0.0532	0.0532	0.0579	0.0570
B	0.0401	0.0390	0.0467	0.0494	0.0543	0.0482	0.0474	0.0522	0.0481	0.0523	0.0468	0.0523
C	0.0384	0.0406	0.0468	0.0512	0.0510	0.0472	0.0463	0.0447	0.0489	0.0469	0.0471	0.0536
D	0.0419	0.0462	0.0473	0.0455	0.0546	0.0467	0.0453	0.0466	0.0478	0.0443	0.0462	0.0442
E	0.0411	0.0413	0.0458	0.0464	0.0457	0.0451	0.0489	0.0544	0.0492	0.0440	0.0455	0.0500
F	0.0368	0.0386	0.0435	0.0652	0.0568	0.0499	0.0486	0.0487	0.0482	0.0615	0.0440	0.0484
G	0.0398	0.0392	0.0454	0.0457	0.0509	0.0871	0.0471	0.0485	0.0504	0.0491	0.0450	0.0445
H	0.0410	0.0413	0.0454	0.0559	0.0487	0.0503	0.0486	0.0521	0.0484	0.0535	0.0453	0.0480
Average	0.0404	0.0418	0.0466	0.0513	0.0518	0.0531	0.0498	0.0507	0.0493	0.0506	0.0472	0.0498
Range	0.0070	0.0095	0.0080	0.0197	0.0111	0.0420	0.0208	0.0133	0.0054	0.0175	0.0139	0.0128

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	16	0	0.0411	0.00290	0.000725	0.00154
Control Sample	80	0	0.0500	0.00621	0.000694	0.00138

Column	Range	Max	Min	Median	25%	75%
TSB	0.0113	0.0481	0.0368	0.0408	0.0391	0.0418
Control Sample	0.0436	0.0871	0.0435	0.0485	0.0463	0.0522

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.161	1.428	0.219	0.039	0.904	0.094
Control Sample	3.232	15.834	0.154	<0.001	0.725	<0.001

Column	Sum	Sum of Squares
TSB	0.657	0.0271
Control Sample	4.001	0.203

t-test

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	16	0	0.0411	0.00290	0.000725
Control Sample	80	0	0.0500	0.00621	0.000694

Difference -0.00893

t = -5.617 with 94 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -0.0121 to -0.00578

Two-tailed P-value = 0.000000197

The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = <0.001).

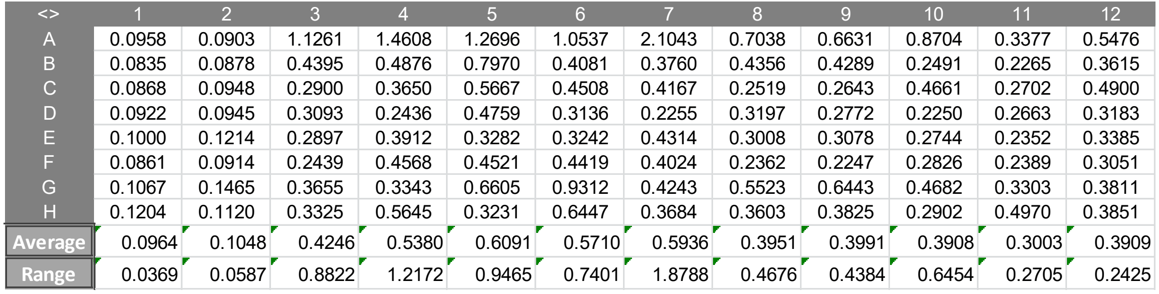
One-tailed P-value = 0.0000000984

The sample mean of group Control Sample exceeds the sample mean of group TSB by an amount that is greater than would be expected by chance, rejecting the hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control Sample. (P = <0.001).

Power of performed two-tailed test with alpha = 0.050: 1.000

Power of performed one-tailed test with alpha = 0.050: 1.000

Average Absorbance at 24 Hours with Acetic Acid- Changed Incubator using *P. aeruginosa* ATCC 47085



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0958	0.0903	1.1261	1.4608	1.2696	1.0537	2.1043	0.7038	0.6631	0.8704	0.3377	0.5476
B	0.0835	0.0878	0.4395	0.4876	0.7970	0.4081	0.3760	0.4356	0.4289	0.2491	0.2265	0.3615
C	0.0868	0.0948	0.2900	0.3650	0.5667	0.4508	0.4167	0.2519	0.2643	0.4661	0.2702	0.4900
D	0.0922	0.0945	0.3093	0.2436	0.4759	0.3136	0.2255	0.3197	0.2772	0.2250	0.2663	0.3183
E	0.1000	0.1214	0.2897	0.3912	0.3282	0.3242	0.4314	0.3008	0.3078	0.2744	0.2352	0.3385
F	0.0861	0.0914	0.2439	0.4568	0.4521	0.4419	0.4024	0.2362	0.2247	0.2826	0.2389	0.3051
G	0.1067	0.1465	0.3655	0.3343	0.6605	0.9312	0.4243	0.5523	0.6443	0.4682	0.3303	0.3811
H	0.1204	0.1120	0.3325	0.5645	0.3231	0.6447	0.3684	0.3603	0.3825	0.2902	0.4970	0.3851
Average	0.0964	0.1048	0.4246	0.5380	0.6091	0.5710	0.5936	0.3951	0.3991	0.3908	0.3003	0.3909
Range	0.0369	0.0587	0.8822	1.2172	0.9465	0.7401	1.8788	0.4676	0.4384	0.6454	0.2705	0.2425

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	16	0	0.101	0.0170	0.00424	0.00903
Control Sample	80	0	0.461	0.301	0.0336	0.0669

Column	Range	Max	Min	Median	25%	75%
TSB	0.0630	0.146	0.0835	0.0946	0.0884	0.111
Control Sample	1.880	2.104	0.225	0.372	0.293	0.485

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.547	2.325	0.237	0.016	0.837	0.009
Control Sample	3.102	12.232	0.240	<0.001	0.666	<0.001

Column	Sum	Sum of Squares
TSB	1.610	0.166
Control Sample	36.899	24.158

t-test

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	16	0	0.101	0.0170	0.00424
Control Sample	80	0	0.461	0.301	0.0336

Difference -0.361

t = -4.777 with 94 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -0.510 to -0.211

Two-tailed P-value = 0.00000654

The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = <0.001).

One-tailed P-value = 0.00000327

The sample mean of group Control Sample exceeds the sample mean of group TSB by an amount that is greater than would be expected by chance, rejecting the hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control Sample. (P = <0.001).

Power of performed two-tailed test with alpha = 0.050: 0.997

Power of performed one-tailed test with alpha = 0.050: 0.999

Average Absorbance at 48 Hours without Acetic Acid- Changed Incubator using *P. aeruginosa* ATCC 47085

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0699	0.0784	0.5855	0.0900	0.4639	0.3141	0.1691	0.4741	0.0670	0.0589	0.0537	0.0533
B	0.0520	0.0542	0.0613	0.0651	0.0547	0.0610	0.0680	0.0524	0.0509	0.0552	0.0530	0.0504
C	0.0640	0.0467	0.0656	0.0666	0.0516	0.0583	0.0550	0.0501	0.0596	0.0596	0.0489	0.0561
D	0.0519	0.0428	0.0600	0.0587	0.0584	0.0617	0.0618	0.0540	0.0463	0.0528	0.0469	0.0614
E	0.0676	0.0733	0.0659	0.0584	0.0562	0.0558	0.0550	0.0555	0.0571	0.0527	0.0481	0.0717
F	0.0595	0.0385	0.0605	0.0630	0.0573	0.0598	0.0550	0.0468	0.0506	0.0483	0.0517	0.0639
G	0.0567	0.0467	0.0550	0.0544	0.0644	0.0638	0.0618	0.0491	0.0481	0.0508	0.0469	0.0521
H	0.0423	0.0409	0.0605	0.0729	0.0533	0.0517	0.0532	0.0507	0.0464	0.0502	0.0477	0.0743
Average	0.0580	0.0527	0.1268	0.0661	0.1075	0.0908	0.0724	0.1041	0.0533	0.0536	0.0496	0.0604
Range	0.0276	0.0399	0.5305	0.0356	0.4123	0.2624	0.1159	0.4273	0.0207	0.0113	0.0068	0.0239

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	16	0	0.0553	0.0124	0.00310	0.00660
Control Sample	80	0	0.0784	0.0918	0.0103	0.0204

Column	Range	Max	Min	Median	25%	75%
TSB	0.0399	0.0784	0.0385	0.0531	0.0438	0.0667
Control Sample	0.539	0.586	0.0463	0.0560	0.0517	0.0618

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	0.416	-0.966	0.132	0.579	0.947	0.450
Control Sample	4.411	19.210	0.443	<0.001	0.316	<0.001

Column	Sum	Sum of Squares
TSB	0.885	0.0513
Control Sample	6.276	1.157

t-test

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	16	0	0.0553	0.0124	0.00310
Control Sample	80	0	0.0784	0.0918	0.0103

Difference -0.0231

t = -1.001 with 94 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -0.0689 to 0.0227

Two-tailed P-value = 0.319

The difference in the mean values of the two groups is not great enough to reject the possibility that the difference is due to random sampling variability. There is not a statistically significant difference between the input groups (P = 0.319).

One-tailed P-value = 0.160

The sample mean of group Control Sample does not exceed the sample mean of the group TSB by an amount great enough to exclude the possibility that the difference is due to random sampling variability. The hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control Sample cannot be rejected. (P = 0.160).

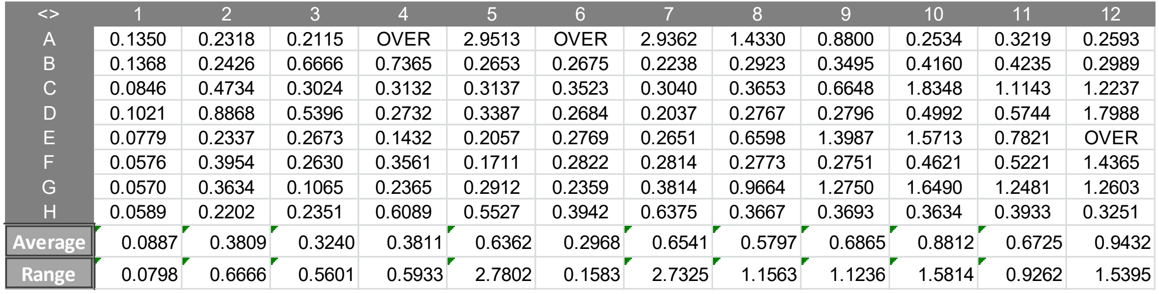
Power of performed two-tailed test with alpha = 0.050: 0.168

The power of the performed test (0.168) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists. Negative results should be interpreted cautiously.

Power of performed one-tailed test with alpha = 0.050: 0.258

The power of the performed test (0.258) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Average Biofilm Absorbance at 48 Hours with Acetic Acid- Changed Incubator using *P. aeruginosa* ATCC 47085



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.1350	0.2318	0.2115	OVER	2.9513	OVER	2.9362	1.4330	0.8800	0.2534	0.3219	0.2593
B	0.1368	0.2426	0.6666	0.7365	0.2653	0.2675	0.2238	0.2923	0.3495	0.4160	0.4235	0.2989
C	0.0846	0.4734	0.3024	0.3132	0.3137	0.3523	0.3040	0.3653	0.6648	1.8348	1.1143	1.2237
D	0.1021	0.8868	0.5396	0.2732	0.3387	0.2684	0.2037	0.2767	0.2796	0.4992	0.5744	1.7988
E	0.0779	0.2337	0.2673	0.1432	0.2057	0.2769	0.2651	0.6598	1.3987	1.5713	0.7821	OVER
F	0.0576	0.3954	0.2630	0.3561	0.1711	0.2822	0.2814	0.2773	0.2751	0.4621	0.5221	1.4365
G	0.0570	0.3634	0.1065	0.2365	0.2912	0.2359	0.3814	0.9664	1.2750	1.6490	1.2481	1.2603
H	0.0589	0.2202	0.2351	0.6089	0.5527	0.3942	0.6375	0.3667	0.3693	0.3634	0.3933	0.3251
Average	0.0887	0.3809	0.3240	0.3811	0.6362	0.2968	0.6541	0.5797	0.6865	0.8812	0.6725	0.9432
Range	0.0798	0.6666	0.5601	0.5933	2.7802	0.1583	2.7325	1.1563	1.1236	1.5814	0.9262	1.5395

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	16	0	0.235	0.216	0.0541	0.115
Control Sample	77	0	0.608	0.575	0.0655	0.130

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.830	0.887	0.0570	0.178	0.0796	0.333
Control Sample	2.845	2.951	0.107	0.356	0.274	0.666

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	2.019	4.885	0.236	0.018	0.779	0.001
Control Sample	2.288	5.814	0.249	<0.001	0.698	<0.001

Column	**Sum**	**Sum of Squares**
TSB	3.757	1.585
Control Sample	46.821	53.591

t-test

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	16	0	0.235	0.216	0.0541
Control Sample	77	0	0.608	0.575	0.0655

Difference -0.373

t = -2.550 with 91 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -0.664 to -0.0825

Two-tailed P-value = 0.0124

The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = 0.012).

One-tailed P-value = 0.00622

The sample mean of group Control Sample exceeds the sample mean of group TSB by an amount that is greater than would be expected by chance, rejecting the hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control Sample. (P = 0.006).

Power of performed two-tailed test with alpha = 0.050: 0.713

Power of performed one-tailed test with alpha = 0.050: 0.812

Average Biofilm Absorbance at 72 Hours without Acetic Acid- Change Incubator using *P. aeruginosa* ATCC 47085

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0477	0.0436	0.0643	0.0691	0.1374	0.0848	0.0694	0.0876	0.1414	0.0697	0.0693	0.0937
B	0.1014	0.0481	0.0902	0.0548	0.0741	0.0664	0.0542	0.0532	0.0573	0.0487	0.0522	0.0677
C	0.0548	0.0382	0.0525	0.0507	0.0654	0.0630	0.0511	0.0577	0.0546	0.0728	0.0582	0.0833
D	0.0603	0.0410	0.0526	0.0499	0.0577	0.0652	0.0528	0.0486	0.0700	0.0518	0.0765	0.0631
E	0.0522	0.0411	0.0497	0.0497	0.0562	0.0520	0.0583	0.0542	0.0480	0.0519	0.0749	2.4602
F	0.0450	0.0399	0.0517	0.0477	0.0521	0.0497	0.0496	0.0496	0.0591	0.0578	0.0809	0.1753
G	0.0513	0.0471	0.0625	0.0653	0.0619	0.0532	0.0604	0.0551	0.0532	0.0642	0.0636	0.2709
H	0.0524	0.0487	0.0745	0.0711	0.0926	0.0749	0.0830	0.0851	0.0717	0.0781	0.1090	0.8290
Average	0.0581	0.0435	0.0623	0.0573	0.0747	0.0637	0.0599	0.0614	0.0694	0.0619	0.0731	0.5054
Range	0.0564	0.0105	0.0405	0.0234	0.0853	0.0351	0.0334	0.0390	0.0934	0.0294	0.0568	2.3971

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	16	0	0.0508	0.0147	0.00369	0.00786
Control Sample	80	0	0.109	0.281	0.0314	0.0626

Column	Range	Max	Min	Median	25%	75%
TSB	0.0632	0.101	0.0382	0.0479	0.0417	0.0524
Control Sample	2.413	2.460	0.0477	0.0628	0.0527	0.0748

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	2.965	10.270	0.269	0.003	0.658	<0.001
Control Sample	7.809	64.267	0.434	<0.001	0.182	<0.001

Column	Sum	Sum of Squares
TSB	0.813	0.0445
Control Sample	8.711	7.194

t-test

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	16	0	0.0508	0.0147	0.00369
Control Sample	80	0	0.109	0.281	0.0314

Difference -0.0581

t = -0.823 with 94 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -0.198 to 0.0821

Two-tailed P-value = 0.413

The difference in the mean values of the two groups is not great enough to reject the possibility that the difference is due to random sampling variability. There is not a statistically significant difference between the input groups (P = 0.413).

One-tailed P-value = 0.206

The sample mean of group Control Sample does not exceed the sample mean of the group TSB by an amount great enough to exclude the possibility that the difference is due to random sampling variability. The hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control Sample cannot be rejected. (P = 0.206).

Power of performed two-tailed test with alpha = 0.050: 0.129

The power of the performed test (0.129) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists. Negative results should be interpreted cautiously.

Power of performed one-tailed test with alpha = 0.050: 0.204

The power of the performed test (0.204) is below the desired power of 0.800.

Less than desired power indicates you are less likely to detect a difference when one actually exists. Negative results should be interpreted cautiously.

Average Biofilm Absorbance at 72 Hours with Acetic Acid- Changed Incubator using *P. aeruginosa* ATCC 47085

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0971	0.0773	0.9015	1.3058	OVER	OVER	0.7851	2.5045	1.5637	0.3032	0.3863	OVER
B	0.1598	0.0775	0.8501	0.7320	0.2011	0.1734	0.1853	0.3280	0.1663	0.1821	0.2076	1.6863
C	0.1012	0.0868	0.2217	0.7609	0.1521	0.2685	0.2159	0.2220	0.2058	0.2237	0.2433	OVER
D	0.0980	0.0843	1.2689	0.5833	0.2171	0.2836	0.2792	0.2663	0.1887	0.2165	0.2474	2.2514
E	0.0963	0.1159	0.4517	1.0184	0.1886	0.2197	1.0311	0.4464	0.2061	0.3271	0.2832	OVER
F	0.1047	0.0853	1.8608	0.8970	0.4999	0.2129	0.3150	0.3296	0.1870	0.2777	0.3148	OVER
G	0.1139	0.1528	2.4653	1.4560	0.7692	0.2396	0.8656	0.4515	0.4389	0.4565	0.3708	OVER
H	0.1359	0.1098	2.2783	0.3931	0.8182	1.3530	OVER	OVER	OVER	OVER	OVER	OVER
Average	0.1134	0.0987	1.2873	0.8933	0.4066	0.3930	0.5253	0.6498	0.4224	0.2838	0.2933	1.9689
Range	0.0635	0.0755	2.2436	1.0629	0.6661	1.1796	0.8458	2.2825	1.3974	0.2744	0.1787	0.5651

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	16	0	0.106	0.0249	0.00623	0.0133
Control Sample	67	0	0.630	0.607	0.0742	0.148

Column	Range	Max	Min	Median	25%	75%
TSB	0.0825	0.160	0.0773	0.0996	0.0857	0.115
Control Sample	2.352	2.505	0.152	0.328	0.220	0.850

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.034	0.384	0.159	0.331	0.893	0.062
Control Sample	1.731	2.285	0.254	<0.001	0.740	<0.001

Column	Sum	Sum of Squares
TSB	1.697	0.189
Control Sample	42.202	50.904

t-test

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	16	0	0.106	0.0249	0.00623
Control Sample	67	0	0.630	0.607	0.0742

Difference -0.524

t = -3.435 with 81 degrees of freedom.

95 percent two-tailed confidence interval for difference of means: -0.827 to -0.220

Two-tailed P-value = 0.000937

The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = <0.001).

One-tailed P-value = 0.000469

The sample mean of group Control Sample exceeds the sample mean of group TSB by an amount that is greater than would be expected by chance, rejecting the hypothesis that the population mean of group TSB is greater than or equal to the population mean of group Control Sample. (P = <0.001).

Power of performed two-tailed test with alpha = 0.050: 0.924

Power of performed one-tailed test with alpha = 0.050: 0.96

Average Biofilm Absorbance at 48 Hours using using *P. aeruginosa* ATCC 47085

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0832	0.1067	0.3852	0.2196	0.2039	0.2181	0.2467	0.4373	0.2779	0.4225	0.2965	0.4514
B	0.0811	0.0721	0.1781	0.2509	0.2347	0.1933	0.1913	0.1900	0.1785	0.0837	0.2745	0.3962
C	0.0787	0.0964	0.3554	0.1314	0.1472	0.3756	0.3396	0.2500	0.1571	0.5164	0.2632	0.4680
D	0.0936	0.0770	0.1959	0.1601	0.1865	0.2171	0.7598	0.2446	0.2707	0.1739	0.2945	0.5503
E	0.1008	0.1042	0.2367	0.1421	0.2589	0.2987	0.2087	0.2716	0.1939	0.1470	0.2397	0.5142
F	0.1021	0.0836	0.3100	0.1681	0.2642	2.3245	0.2030	0.2199	0.2055	0.2697	0.2731	0.6778
G	0.1454	0.1643	0.4891	0.2291	0.3601	0.1863	0.2400	0.3589	0.2039	0.4091	0.4301	0.5305
H	0.1509	0.0994	0.4518	0.1613	0.3181	0.4184	0.4391	0.4913	0.5050	0.4416	0.5132	0.8754
Average	0.104475	0.100463	0.325275	0.182825	0.2467	0.529	0.328525	0.30795	0.249063	0.307988	0.3231	0.557975
Range	0.0722	0.0922	0.311	0.1195	0.2129	2.1382	0.5685	0.3013	0.3479	0.4327	0.2735	0.4792

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0698	0.0766	0.1452	0.3380	0.1833	0.2453	0.3079	0.4106	0.4561	0.4679	0.2118	0.4091
B	0.0786	0.0760	0.1598	0.3078	0.2152	0.1867	0.1530	0.1538	0.1470	0.2280	0.1533	0.5030
C	0.0655	0.0708	0.6973	0.2770	0.2788	0.2714	0.2172	0.3219	0.4523	0.1783	0.2247	0.3326
D	0.0740	0.0804	0.2093	0.2541	0.2614	0.2391	0.2980	0.3269	0.8730	0.2051	0.2038	0.3425
E	0.0708	0.0840	0.5402	1.1103	0.7470	0.2349	0.2044	0.5227	0.2313	0.2609	OVER	0.3951
F	0.0779	0.0828	0.1942	0.6375	0.3626	0.3462	0.9888	0.3772	0.2808	0.7021	0.3061	0.5243
G	0.1033	0.1043	0.2057	0.7248	0.2702	0.2356	0.3363	0.4535	0.5197	0.3567	0.1643	1.0784
H	0.1083	0.0866	0.2769	0.5269	0.2602	0.2974	0.4071	0.4438	1.6507	0.3548	0.8493	OVER
Average	0.0810	0.082688	0.303575	0.52205	0.322338	0.257075	0.364088	0.3763	0.576363	0.344225	0.3019	0.512143
Range	0.0428	0.0335	0.5521	0.8562	0.5637	0.1595	0.8358	0.3689	1.5037	0.5238	0.696	0.7458

t-test

Data source: Data 1 in Notebook1

Normality Test: Failed (P < 0.050)

Equal Variance Test: Failed (P < 0.050)

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	32	0	0.0922	0.0237	0.00419
Untreated Bacteria	158	0	0.361	0.265	0.0211

Difference -0.269

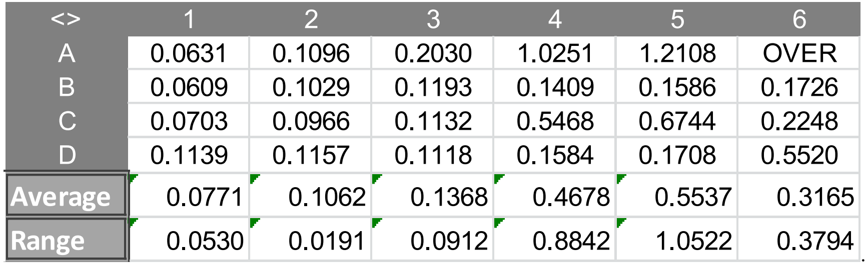
t = -5.723 with 188 degrees of freedom. (P = <0.001)

95 percent confidence interval for difference of means: -0.362 to -0.176

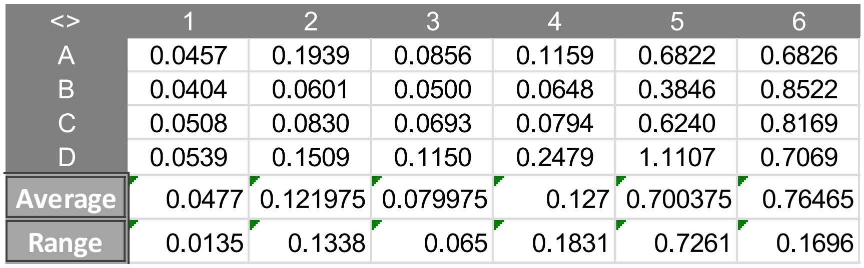
The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Average Biofilm Absorbance at 48 Hours Using a 24 well plate



<>	1	2	3	4	5	6
A	0.0631	0.1096	0.2030	1.0251	1.2108	OVER
B	0.0609	0.1029	0.1193	0.1409	0.1586	0.1726
C	0.0703	0.0966	0.1132	0.5468	0.6744	0.2248
D	0.1139	0.1157	0.1118	0.1584	0.1708	0.5520
Average	0.0771	0.1062	0.1368	0.4678	0.5537	0.3165
Range	0.0530	0.0191	0.0912	0.8842	1.0522	0.3794



<>	1	2	3	4	5	6
A	0.0457	0.1939	0.0856	0.1159	0.6822	0.6826
B	0.0404	0.0601	0.0500	0.0648	0.3846	0.8522
C	0.0508	0.0830	0.0693	0.0794	0.6240	0.8169
D	0.0539	0.1509	0.1150	0.2479	1.1107	0.7069
Average	0.0477	0.121975	0.079975	0.127	0.700375	0.76465
Range	0.0135	0.1338	0.065	0.1831	0.7261	0.1696

t-test

Data source: Data 1 in Notebook1

Normality Test: Failed (P < 0.050)

Equal Variance Test: Failed (P < 0.050)

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0624	0.0230	0.00811
Untreated Bacteria	39	0	0.338	0.333	0.0533

Difference -0.276

t = -2.323 with 45 degrees of freedom. (P = 0.025)

95 percent confidence interval for difference of means: -0.515 to -0.0366

The difference in the mean values of the two groups is greater than would be expected by chance; there is a statistically significant difference between the input groups (P = 0.025).

Power of performed test with alpha = 0.050: 0.529

Antibiotic testing trial 1 on 7/5/14 at 48 hours- Control Plate

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.1096	0.2206	OVER	1.3772	1.5783	0.8470	0.5027	0.3457	0.4322	0.7172	0.6797	0.2890
B	0.1036	0.1407	1.2218	0.1375	0.1231	0.3151	0.8118	0.1167	0.5487	0.0872	0.5768	OVER
C	0.1108	0.1210	1.4518	0.1339	0.1413	1.2669	0.5122	0.3500	0.4935	1.1325	0.6963	OVER
D	0.1213	0.1167	1.5088	1.1459	1.3179	1.8519	0.4510	0.9611	OVER	0.4435	0.5965	0.5643
E	0.1150	0.1849	1.6671	0.1171	0.6650	0.9809	OVER	1.1047	1.0108	0.6014	0.4711	0.3856
F	0.1462	0.1511	2.0117	0.1738	1.1866	0.8891	1.2834	1.0973	0.9984	0.6742	0.6780	0.3455
G	0.1499	0.1769	OVER	0.1699	1.6218	2.3066	0.9253	0.8017	0.6566	0.6354	0.2422	0.4415
H	0.1501	0.1352	OVER	0.9895	2.8169	OVER	2.4273	OVER	0.5961	1.6754	OVER	0.4975
Average	0.1258	0.155888	1.57224	0.5306	1.181363	1.208214	0.987671	0.682457	0.676614	0.74585	0.562943	0.420567
Range	0.0465	0.1039	0.7899	1.2601	2.6938	1.9915	1.9763	0.988	0.5786	1.5882	0.4541	0.2753

Antibiotic testing trial 2 on 7/5/14 at 48 hours- Ciprofloxacin

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.1145	0.1013	0.0922	0.1006	0.1018	0.0799	0.1083	0.0706	0.1108	0.0871	0.1030	0.0908
B	0.0840	0.2534	0.1275	0.1112	0.1203	0.1249	0.1162	0.1177	0.1482	0.0870	0.0796	0.0938
C	0.1430	0.1362	0.1028	0.1221	0.1494	0.1354	0.1167	0.1049	0.1153	0.1133	0.1289	0.1250
D	0.1155	0.0976	0.1359	0.1327	0.1311	0.1381	0.1179	0.1223	0.1156	0.1094	0.1156	0.1215
E	0.1338	0.1306	0.1662	0.1713	0.1842	0.1534	0.1514	0.1263	0.0975	0.0974	0.1045	0.0950
F	0.1502	0.1434	0.1725	0.1806	0.1939	0.2109	0.1644	0.1184	0.1417	0.1431	0.0940	0.1131
G	0.1553	0.1476	0.1669	0.2127	0.2078	0.2023	0.1666	0.1386	0.1296	0.1108	0.1010	0.1219
H	0.1451	0.1031	0.3151	0.1864	0.1441	0.1269	0.1080	0.1529	0.1294	0.1108	0.1362	0.1498
Average	0.130175	0.13915	0.159888	0.1522	0.154075	0.146475	0.131188	0.118963	0.123513	0.107363	0.10785	0.113863
Range	0.0713	0.1558	0.2229	0.1121	0.106	0.131	0.0586	0.0823	0.0507	0.0561	0.0566	0.059

Antibiotic testing trial 3 on 7/5/14 at 48 hours- Ceftazidime

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.1005	0.0897	0.1018	0.1093	0.0899	0.0935	0.0986	0.0887	0.1116	0.1047	0.1027	0.1078
B	0.1048	0.1044	0.0985	0.0913	0.0945	0.0993	0.0822	0.0911	0.0950	0.0993	0.0940	0.1376
C	0.1152	0.1178	0.0953	0.1080	0.1215	0.0904	0.1020	0.0934	0.0976	0.1143	0.0966	0.1081
D	0.1217	0.0942	0.1334	0.1157	0.1152	0.1140	0.1027	0.1007	0.0949	0.0984	0.1299	0.1150
E	0.1098	0.1089	0.1434	0.1416	0.1101	0.1191	0.1112	0.1146	0.1078	0.1478	0.1097	0.1150
F	0.1425	0.1082	0.1163	0.1301	0.1105	0.1419	0.1207	0.1003	0.1243	0.1263	0.1122	0.1021
G	0.1378	0.1539	0.1745	0.1853	0.1355	0.1739	0.1373	0.1794	0.1606	0.1357	0.1258	0.1039
H	0.1171	0.1112	0.1601	0.1343	0.1631	0.1395	0.1459	0.1384	0.1410	0.1494	0.1466	0.1533
Average	0.118675	0.111038	0.127913	0.12695	0.117538	0.12145	0.112575	0.113325	0.1166	0.121988	0.114688	0.11785
Range	0.042	0.0642	0.0792	0.094	0.0732	0.0835	0.0637	0.0907	0.0657	0.051	0.0526	0.0512

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	48	0	0.130	0.0318	0.00459	0.00924
Control	70	0	0.841	0.592	0.0707	0.141
Ciprofloxacin 5mg/mL	8	0	0.160	0.0695	0.0246	0.0581
Ciprofloxacin 2.5mg/mL	8	0	0.152	0.0408	0.0144	0.0341
Ciprofloxacin 1.25mg/mL	8	0	0.154	0.0376	0.0133	0.0314
Ciprofloxacin 0.625mg/mL	8	0	0.146	0.0427	0.0151	0.0357
Ciprofloxacin 0.3125mg/mL	8	0	0.131	0.0252	0.00890	0.0211
Ciprofloxacin 0.1563mg/mL	8	0	0.119	0.0243	0.00860	0.0203
Ciprofloxacin 0.0781mg/mL	8	0	0.124	0.0168	0.00595	0.0141
Ciprofloxacin 0.0391mg/mL	8	0	0.107	0.0180	0.00636	0.0150
Ciprofloxacin 0.0195mg/mL	8	0	0.108	0.0184	0.00652	0.0154
Ciprofloxacin 0.0098mg/mL	8	0	0.114	0.0201	0.00711	0.0168

Column	Range	Max	Min	Median	25%	75%
TSB	0.169	0.253	0.0840	0.121	0.109	0.146
Control	2.730	2.817	0.0872	0.676	0.439	1.156
Ciprofloxacin 5mg/mL	0.223	0.315	0.0922	0.151	0.109	0.171
Ciprofloxacin 2.5mg/mL	0.112	0.213	0.101	0.152	0.114	0.185
Ciprofloxacin 1.25mg/mL	0.106	0.208	0.102	0.147	0.123	0.191
Ciprofloxacin 0.625mg/mL	0.131	0.211	0.0799	0.137	0.125	0.190
Ciprofloxacin 0.3125mg/mL	0.0586	0.167	0.108	0.117	0.110	0.161
Ciprofloxacin 0.1563mg/mL	0.0823	0.153	0.0706	0.120	0.108	0.136
Ciprofloxacin 0.0781mg/mL	0.0507	0.148	0.0975	0.123	0.112	0.139
Ciprofloxacin 0.0391mg/mL	0.0561	0.143	0.0870	0.110	0.0897	0.113
Ciprofloxacin 0.0195mg/mL	0.0566	0.136	0.0796	0.104	0.0958	0.126

Ciprofloxacin 0.0098mg/mL	0.0590	0.150	0.0908	0.117	0.0941	0.124

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	1.737	4.523	0.146	0.012	0.860	<0.001
Control	1.143	1.292	0.140	0.002	0.912	<0.001
Ciprofloxacin 5mg/mL	1.815	4.119	0.303	0.029	0.811	0.037
Ciprofloxacin 2.5mg/mL	0.142	-1.618	0.184	0.521	0.931	0.521
Ciprofloxacin 1.25mg/mL	0.182	-1.349	0.174	0.582	0.950	0.716
Ciprofloxacin 0.625mg/mL	0.310	-0.0752	0.203	0.396	0.921	0.439
Ciprofloxacin 0.3125mg/mL	0.669	-1.791	0.326	0.012	0.796	0.026
Ciprofloxacin 0.1563mg/mL	-0.911	1.946	0.229	0.240	0.934	0.551
Ciprofloxacin 0.0781mg/mL	0.0315	-0.719	0.181	0.540	0.966	0.864
Ciprofloxacin 0.0391mg/mL	0.923	1.596	0.246	0.166	0.881	0.191
Ciprofloxacin 0.0195mg/mL	0.210	-0.379	0.197	0.433	0.966	0.863
Ciprofloxacin 0.0098mg/mL	0.509	-0.152	0.201	0.407	0.910	0.357

Column	**Sum**	**Sum of Squares**
TSB	6.246	0.860
Control	58.872	73.676
Ciprofloxacin 5mg/mL	1.279	0.238
Ciprofloxacin 2.5mg/mL	1.218	0.197
Ciprofloxacin 1.25mg/mL	1.233	0.200
Ciprofloxacin 0.625mg/mL	1.172	0.184
Ciprofloxacin 0.3125mg/mL	1.049	0.142
Ciprofloxacin 0.1563mg/mL	0.952	0.117
Ciprofloxacin 0.0781mg/mL	0.988	0.124
Ciprofloxacin 0.0391mg/mL	0.859	0.0945
Ciprofloxacin 0.0195mg/mL	0.863	0.0954
Ciprofloxacin 0.0098mg/mL	0.911	0.107

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	48	0	0.130	0.0318	0.00459
Control	70	0	0.841	0.592	0.0707
Ciprofloxacin 5mg/mL	8	0	0.160	0.0695	0.0246
Ciprofloxacin 2.5mg/mL	8	0	0.152	0.0408	0.0144
Ciprofloxacin 1.25mg/mL	8	0	0.154	0.0376	0.0133
Ciprofloxacin 0.625mg/mL	8	0	0.146	0.0427	0.0151
Ciprofloxacin 0.3125mg/mL	8	0	0.131	0.0252	0.00890
Ciprofloxacin 0.1563mg/mL	8	0	0.119	0.0243	0.00860
Ciprofloxacin 0.0781mg/mL	8	0	0.124	0.0168	0.00595
Ciprofloxacin 0.0391mg/mL	8	0	0.107	0.0180	0.00636
Ciprofloxacin 0.0195mg/mL	8	0	0.108	0.0184	0.00652
Ciprofloxacin 0.0098mg/mL	8	0	0.114	0.0201	0.00711

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	22.843	2.077	15.898	<0.001
Residual	186	24.296	0.131		
Total	197	47.139			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.711	10.496	<0.001	Yes
Control vs. Ciprofloxaci	0.734	5.439	<0.001	Yes
Control vs. Ciprofloxaci	0.733	5.436	<0.001	Yes
Control vs. Ciprofloxaci	0.727	5.391	<0.001	Yes
Control vs. Ciprofloxaci	0.722	5.353	<0.001	Yes

Control vs. Ciprofloxaci	0.718	5.319	<0.001	Yes
Control vs. Ciprofloxaci	0.710	5.263	<0.001	Yes
Control vs. Ciprofloxaci	0.695	5.149	<0.001	Yes
Control vs. Ciprofloxaci	0.689	5.107	<0.001	Yes
Control vs. Ciprofloxaci	0.687	5.093	<0.001	Yes
Control vs. Ciprofloxaci	0.681	5.050	<0.001	Yes

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
TSB vs. Control	0.711	10.496	<0.001	Yes
TSB vs. Ciprofloxacin 5mg/mL	0.0298	0.216	1.000	No
TSB vs. Ciprofloxaci	0.0240	0.174	1.000	No
TSB vs. Ciprofloxaci	0.0228	0.165	1.000	No
TSB vs. Ciprofloxaci	0.0223	0.161	1.000	No
TSB vs. Ciprofloxacin 2.5mg/mL	0.0221	0.160	1.000	No
TSB vs. Ciprofloxaci	0.0164	0.118	1.000	No
TSB vs. Ciprofloxaci	0.0163	0.118	1.000	No
TSB vs. Ciprofloxaci	0.0112	0.0809	1.000	No
TSB vs. Ciprofloxaci	0.00661	0.0479	0.999	No
TSB vs. Ciprofloxaci	0.00106	0.00771	0.994	No

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	48	0	0.130	0.0318	0.00459	0.00924
Control	70	0	0.841	0.592	0.0707	0.141
Ceftazidime 10mg/mL	8	0	0.128	0.0298	0.0105	0.0249
Ceftazidime 5mg/mL	8	0	0.127	0.0287	0.0101	0.0240
Ceftazidime 2.5mg/mL	8	0	0.118	0.0234	0.00826	0.0195
Ceftazidime 1.25mg/mL	8	0	0.121	0.0288	0.0102	0.0240
Ceftazidime 0.625mg/mL	8	0	0.113	0.0211	0.00746	0.0176
Ceftazidime 0.3125mg/mL	8	0	0.113	0.0312	0.0110	0.0261
Ceftazidime 0.1563mg/mL	8	0	0.117	0.0239	0.00844	0.0200
Ceftazidime 0.0781mg/mL	8	0	0.122	0.0209	0.00738	0.0175
Ceftazidime 0.0391mg/mL	8	0	0.115	0.0181	0.00641	0.0152
Ceftazidime 0.0195mg/mL	8	0	0.118	0.0181	0.00641	0.0152

Column	Range	Max	Min	Median	25%	75%
TSB	0.169	0.253	0.0840	0.121	0.109	0.146
Control	2.730	2.817	0.0872	0.676	0.439	1.156
Ceftazidime 10mg/mL	0.0792	0.174	0.0953	0.125	0.0993	0.156
Ceftazidime 5mg/mL	0.0940	0.185	0.0913	0.123	0.108	0.140
Ceftazidime 2.5mg/mL	0.0732	0.163	0.0899	0.113	0.0984	0.132
Ceftazidime 1.25mg/mL	0.0835	0.174	0.0904	0.117	0.0949	0.141
Ceftazidime 0.625mg/mL	0.0637	0.146	0.0822	0.107	0.0994	0.133
Ceftazidime 0.3125mg/mL	0.0907	0.179	0.0887	0.101	0.0917	0.132
Ceftazidime 0.1563mg/mL	0.0657	0.161	0.0949	0.110	0.0956	0.137
Ceftazidime 0.0781mg/mL	0.0510	0.149	0.0984	0.120	0.101	0.145
Ceftazidime 0.0391mg/mL	0.0526	0.147	0.0940	0.111	0.0981	0.129
Ceftazidime 0.0195mg/mL	0.0512	0.153	0.102	0.112	0.105	0.132

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.737	4.523	0.146	0.012	0.860	<0.001
Control	1.143	1.292	0.140	0.002	0.912	<0.001
Ceftazidime 10mg/mL	0.423	-1.339	0.184	0.517	0.920	0.429
Ceftazidime 5mg/mL	1.158	1.956	0.180	0.548	0.919	0.420
Ceftazidime 2.5mg/mL	0.991	1.187	0.183	0.529	0.928	0.495
Ceftazidime 1.25mg/mL	0.766	-0.0760	0.158	0.682	0.924	0.464

Ceftazidime 0.625mg/mL	0.401	-0.538	0.180	0.546	0.954	0.754
Ceftazidime 0.3125mg/mL	1.666	2.419	0.282	0.060	0.793	0.024
Ceftazidime 0.1563mg/mL	1.010	0.0374	0.208	0.363	0.878	0.179
Ceftazidime 0.0781mg/mL	0.210	-1.816	0.171	0.603	0.896	0.266
Ceftazidime 0.0391mg/mL	0.663	-0.411	0.180	0.549	0.941	0.617
Ceftazidime 0.0195mg/mL	1.394	0.967	0.312	0.021	0.814	0.040

Column	**Sum**	**Sum of Squares**
TSB	6.246	0.860
Control	58.872	73.676
Ceftazidime 10mg/mL	1.023	0.137
Ceftazidime 5mg/mL	1.016	0.135
Ceftazidime 2.5mg/mL	0.940	0.114
Ceftazidime 1.25mg/mL	0.972	0.124
Ceftazidime 0.625mg/mL	0.901	0.105
Ceftazidime 0.3125mg/mL	0.907	0.110
Ceftazidime 0.1563mg/mL	0.933	0.113
Ceftazidime 0.0781mg/mL	0.976	0.122
Ceftazidime 0.0391mg/mL	0.917	0.108
Ceftazidime 0.0195mg/mL	0.943	0.113

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	48	0	0.130	0.0318	0.00459
Control	70	0	0.841	0.592	0.0707
Ceftazidime 10mg/mL	8	0	0.128	0.0298	0.0105
Ceftazidime 5mg/mL	8	0	0.127	0.0287	0.0101
Ceftazidime 2.5mg/mL	8	0	0.118	0.0234	0.00826
Ceftazidime 1.25mg/mL	8	0	0.121	0.0288	0.0102
Ceftazidime 0.625mg/mL	8	0	0.113	0.0211	0.00746
Ceftazidime 0.3125mg/mL	8	0	0.113	0.0312	0.0110
Ceftazidime 0.1563mg/mL	8	0	0.117	0.0239	0.00844
Ceftazidime 0.0781mg/mL	8	0	0.122	0.0209	0.00738
Ceftazidime 0.0391mg/mL	8	0	0.115	0.0181	0.00641
Ceftazidime 0.0195mg/mL	8	0	0.118	0.0181	0.00641

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	23.322	2.120	16.260	<0.001
Residual	186	24.253	0.130		
Total	197	47.575			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.711	10.505	<0.001	Yes
Control vs. Ceftazidime	0.728	5.405	<0.001	Yes
Control vs. Ceftazidime	0.728	5.400	<0.001	Yes
Control vs. Ceftazidime	0.726	5.390	<0.001	Yes
Control vs. Ceftazidime	0.724	5.375	<0.001	Yes
Control vs. Ceftazidime	0.723	5.369	<0.001	Yes
Control vs. Ceftazidime	0.723	5.366	<0.001	Yes

Control vs. Ceftazidime	0.720	5.340	<0.001	Yes
Control vs. Ceftazidime	0.719	5.336	<0.001	Yes
Control vs. Ceftazidime 5mg/mL	0.714	5.299	<0.001	Yes
Control vs. Ceftazidime	0.713	5.292	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.711	10.505	<0.001	Yes
TSB vs. Ceftazidime 0.625mg/mL	0.0175	0.127	1.000	No
TSB vs. Ceftazidime	0.0168	0.122	1.000	No
TSB vs. Ceftazidime	0.0154	0.112	1.000	No
TSB vs. Ceftazidime	0.0135	0.0981	1.000	No
TSB vs. Ceftazidime 2.5mg/mL	0.0126	0.0913	1.000	No
TSB vs. Ceftazidime	0.0123	0.0890	1.000	No
TSB vs. Ceftazidime 1.25mg/mL	0.00867	0.0629	1.000	No
TSB vs. Ceftazidime	0.00814	0.0590	1.000	No
TSB vs. Ceftazidime 5mg/mL	0.00317	0.0230	1.000	No
TSB vs. Ceftazidime 10mg/mL	0.00221	0.0160	0.987	No

Antibiotic testing trial 4 on 7/11/14 at 48 hours-Ciprofloxacin (Dilution series)

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0695	0.0871	0.1027	0.0732	0.0881	0.0946	0.0896	0.0714	0.0708	0.0712	0.0610	0.0662
B	0.0629	0.0725	0.0730	0.0902	0.0668	0.0879	0.0683	0.0746	0.0692	0.0642	0.0672	0.0597
C	0.0809	2.6128	0.1298	0.1199	0.1152	0.1075	0.1191	0.1087	0.1047	0.0872	0.0811	0.0642
D	0.0994	0.0762	0.0901	0.0952	0.0781	0.0915	0.0898	0.0819	0.0722	0.0699	0.0815	0.0816
E	0.1140	0.3531	0.1444	0.1588	0.1187	0.1112	0.1800	0.1584	0.1448	0.1303	0.1135	0.1019
F	0.1270	0.1006	0.1429	0.1183	0.1011	0.1105	0.0966	0.1217	0.0963	0.1040	0.1003	0.1204
G	0.1500	0.1941	0.1631	0.1956	0.1922	0.1514	0.1697	0.1802	0.1599	0.1974	0.1897	0.1699
H	0.1416	0.1178	0.1620	0.1818	0.1401	0.1492	0.1447	0.1173	0.1276	0.1212	0.1221	0.1675
Average	0.1057	0.4518	0.1260	0.1291	0.1125	0.1130	0.1197	0.1143	0.1057	0.1057	0.1021	0.1039
Range	0.0871	2.5403	0.0901	0.1224	0.1254	0.0635	0.1117	0.1088	0.0907	0.1332	0.1287	0.1102

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	16	0	0.279	0.626	0.157	0.334
Ciprofloxacin 5mg/mL	8	0	0.126	0.0337	0.0119	0.0282
Ciprofloxacin 2.5mg/mL	8	0	0.129	0.0448	0.0159	0.0375
Ciprofloxacin 1.25mg/mL	8	0	0.113	0.0399	0.0141	0.0334
Ciprofloxacin 0.625mg/mL	8	0	0.113	0.0247	0.00872	0.0206
Ciprofloxacin 0.3125mg/mL	8	0	0.120	0.0409	0.0145	0.0342
Ciprofloxacin 0.1563mg/mL	8	0	0.114	0.0394	0.0139	0.0329
Ciprofloxacin 0.0781mg/mL	8	0	0.106	0.0353	0.0125	0.0295
Ciprofloxacin 0.0391mg/mL	8	0	0.106	0.0444	0.0157	0.0371
Ciprofloxacin 0.0195mg/mL	8	0	0.102	0.0414	0.0146	0.0346
Ciprofloxacin 0.0098mg/mL	8	0	0.104	0.0449	0.0159	0.0376

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	2.550	2.613	0.0629	0.107	0.0774	0.148
Ciprofloxacin 5mg/mL	0.0901	0.163	0.0730	0.136	0.0933	0.158
Ciprofloxacin 2.5mg/mL	0.122	0.196	0.0732	0.119	0.0915	0.176
Ciprofloxacin 1.25mg/mL	0.125	0.192	0.0668	0.108	0.0806	0.135
Ciprofloxacin 0.625mg/mL	0.0635	0.151	0.0879	0.109	0.0923	0.140
Ciprofloxacin 0.3125mg/mL	0.112	0.180	0.0683	0.108	0.0896	0.163
Ciprofloxacin 0.1563mg/mL	0.109	0.180	0.0714	0.113	0.0764	0.149
Ciprofloxacin 0.0781mg/mL	0.0907	0.160	0.0692	0.101	0.0711	0.141
Ciprofloxacin 0.0391mg/mL	0.133	0.197	0.0642	0.0956	0.0702	0.128
Ciprofloxacin 0.0195mg/mL	0.129	0.190	0.0610	0.0909	0.0707	0.120
Ciprofloxacin 0.0098mg/mL	0.110	0.170	0.0597	0.0917	0.0647	0.156

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	3.917	15.508	0.429	<0.001	0.353	<0.001
Ciprofloxacin 5mg/mL	-0.492	-1.282	0.192	0.467	0.915	0.391
Ciprofloxacin 2.5mg/mL	0.404	-1.385	0.207	0.372	0.928	0.497
Ciprofloxacin 1.25mg/mL	1.120	1.445	0.189	0.489	0.926	0.480
Ciprofloxacin 0.625mg/mL	0.918	-0.610	0.279	0.067	0.839	0.073
Ciprofloxacin 0.3125mg/mL	0.435	-1.396	0.214	0.326	0.918	0.415

Ciprofloxacin 0.1563mg/mL	0.617	-0.669	0.175	0.577	0.918	0.413
Ciprofloxacin 0.0781mg/mL	0.435	-1.415	0.204	0.389	0.899	0.281
Ciprofloxacin 0.0391mg/mL	1.363	1.929	0.175	0.578	0.868	0.143
Ciprofloxacin 0.0195mg/mL	1.489	2.579	0.190	0.478	0.868	0.144
Ciprofloxacin 0.0098mg/mL	0.703	-1.200	0.190	0.477	0.856	0.111

Column	**Sum**	**Sum of Squares**
TSB	4.460	7.129
Ciprofloxacin 5mg/mL	1.008	0.135
Ciprofloxacin 2.5mg/mL	1.033	0.147
Ciprofloxacin 1.25mg/mL	0.900	0.112
Ciprofloxacin 0.625mg/mL	0.904	0.106
Ciprofloxacin 0.3125mg/mL	0.958	0.126
Ciprofloxacin 0.1563mg/mL	0.914	0.115
Ciprofloxacin 0.0781mg/mL	0.845	0.0981
Ciprofloxacin 0.0391mg/mL	0.845	0.103
Ciprofloxacin 0.0195mg/mL	0.816	0.0953
Ciprofloxacin 0.0098mg/mL	0.831	0.101

One Way Analysis of Variance

Data source: Data 1 in Notebook1

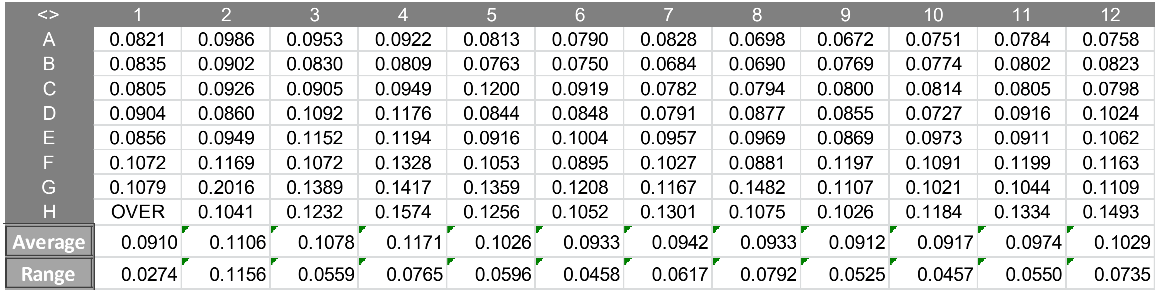
Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	16	0	0.279	0.626	0.157
Ciprofloxacin 5mg/mL	8	0	0.126	0.0337	0.0119
Ciprofloxacin 2.5mg/mL	8	0	0.129	0.0448	0.0159
Ciprofloxacin 1.25mg/mL	8	0	0.113	0.0399	0.0141
Ciprofloxacin 0.625mg/mL	8	0	0.113	0.0247	0.00872
Ciprofloxacin 0.3125mg/mL	8	0	0.120	0.0409	0.0145
Ciprofloxacin 0.1563mg/mL	8	0	0.114	0.0394	0.0139
Ciprofloxacin 0.0781mg/mL	8	0	0.106	0.0353	0.0125
Ciprofloxacin 0.0391mg/mL	8	0	0.106	0.0444	0.0157
Ciprofloxacin 0.0195mg/mL	8	0	0.102	0.0414	0.0146
Ciprofloxacin 0.0098mg/mL	8	0	0.104	0.0449	0.0159

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	10	0.372	0.0372	0.527	0.867
Residual	85	5.994	0.0705		
Total	95	6.366			

The differences in the mean values among the treatment groups are not great enough to exclude the possibility that the difference is due to random sampling variability; there is not a statistically significant difference (P = 0.867).

Power of performed test with alpha = 0.050: --

Antibiotic testing trial 5 on 7/11/14 at 48 hours-Ceftazidime (Dilution series)



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0821	0.0986	0.0953	0.0922	0.0813	0.0790	0.0828	0.0698	0.0672	0.0751	0.0784	0.0758
B	0.0835	0.0902	0.0830	0.0809	0.0763	0.0750	0.0684	0.0690	0.0769	0.0774	0.0802	0.0823
C	0.0805	0.0926	0.0905	0.0949	0.1200	0.0919	0.0782	0.0794	0.0800	0.0814	0.0805	0.0798
D	0.0904	0.0860	0.1092	0.1176	0.0844	0.0848	0.0791	0.0877	0.0855	0.0727	0.0916	0.1024
E	0.0856	0.0949	0.1152	0.1194	0.0916	0.1004	0.0957	0.0969	0.0869	0.0973	0.0911	0.1062
F	0.1072	0.1169	0.1072	0.1328	0.1053	0.0895	0.1027	0.0881	0.1197	0.1091	0.1199	0.1163
G	0.1079	0.2016	0.1389	0.1417	0.1359	0.1208	0.1167	0.1482	0.1107	0.1021	0.1044	0.1109
H	OVER	0.1041	0.1232	0.1574	0.1256	0.1052	0.1301	0.1075	0.1026	0.1184	0.1334	0.1493
Average	0.0910	0.1106	0.1078	0.1171	0.1026	0.0933	0.0942	0.0933	0.0912	0.0917	0.0974	0.1029
Range	0.0274	0.1156	0.0559	0.0765	0.0596	0.0458	0.0617	0.0792	0.0525	0.0457	0.0550	0.0735

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	15	0	0.101	0.0297	0.00767	0.0165
Ceftazidime 10mg/mL	8	0	0.108	0.0183	0.00645	0.0153
Ceftazidime 5mg/mL	8	0	0.117	0.0265	0.00936	0.0221
Ceftazidime 2.5mg/mL	8	0	0.103	0.0225	0.00796	0.0188
Ceftazidime 1.25mg/mL	8	0	0.0933	0.0150	0.00531	0.0125

Ceftazidime 0.625mg/mL	8	0	0.0942	0.0212	0.00750	0.0177
Ceftazidime 0.3125mg/mL	8	0	0.0933	0.0257	0.00909	0.0215
Ceftazidime 0.1563mg/mL	8	0	0.0912	0.0180	0.00638	0.0151
Ceftazidime 0.0781mg/mL	8	0	0.0917	0.0173	0.00613	0.0145
Ceftazidime 0.0391mg/mL	8	0	0.0974	0.0202	0.00716	0.0169
Ceftazidime 0.0195mg/mL	8	0	0.103	0.0242	0.00856	0.0202

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.121	0.202	0.0805	0.0926	0.0856	0.107
Ceftazidime 10mg/mL	0.0559	0.139	0.0830	0.108	0.0917	0.121
Ceftazidime 5mg/mL	0.0765	0.157	0.0809	0.118	0.0929	0.139
Ceftazidime 2.5mg/mL	0.0596	0.136	0.0763	0.0985	0.0821	0.124
Ceftazidime 1.25mg/mL	0.0458	0.121	0.0750	0.0907	0.0804	0.104
Ceftazidime 0.625mg/mL	0.0617	0.130	0.0684	0.0892	0.0784	0.113
Ceftazidime 0.3125mg/mL	0.0792	0.148	0.0690	0.0879	0.0722	0.105
Ceftazidime 0.1563mg/mL	0.0525	0.120	0.0672	0.0862	0.0777	0.109
Ceftazidime 0.0781mg/mL	0.0457	0.118	0.0727	0.0893	0.0757	0.107
Ceftazidime 0.0391mg/mL	0.0550	0.133	0.0784	0.0914	0.0803	0.116
Ceftazidime 0.0195mg/mL	0.0735	0.149	0.0758	0.104	0.0804	0.115

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	3.063	10.508	0.281	0.002	0.618	<0.001
Ceftazidime 10mg/mL	0.366	-0.308	0.128	0.791	0.978	0.954
Ceftazidime 5mg/mL	0.105	-1.123	0.174	0.583	0.962	0.827
Ceftazidime 2.5mg/mL	0.329	-1.674	0.187	0.502	0.919	0.422
Ceftazidime 1.25mg/mL	0.733	0.189	0.163	0.653	0.958	0.794
Ceftazidime 0.625mg/mL	0.638	-0.668	0.205	0.383	0.939	0.599
Ceftazidime 0.3125mg/mL	1.545	2.807	0.206	0.378	0.857	0.111
Ceftazidime 0.1563mg/mL	0.445	-0.979	0.219	0.297	0.948	0.695
Ceftazidime 0.0781mg/mL	0.374	-1.584	0.224	0.270	0.905	0.323
Ceftazidime 0.0391mg/mL	0.939	-0.333	0.238	0.196	0.874	0.164
Ceftazidime 0.0195mg/mL	0.836	0.779	0.177	0.563	0.915	0.388

Column	**Sum**	**Sum of Squares**
TSB	1.522	0.167
Ceftazidime 10mg/mL	0.863	0.0953
Ceftazidime 5mg/mL	0.937	0.115
Ceftazidime 2.5mg/mL	0.820	0.0877
Ceftazidime 1.25mg/mL	0.747	0.0713
Ceftazidime 0.625mg/mL	0.754	0.0742
Ceftazidime 0.3125mg/mL	0.747	0.0743
Ceftazidime 0.1563mg/mL	0.730	0.0688
Ceftazidime 0.0781mg/mL	0.734	0.0694
Ceftazidime 0.0391mg/mL	0.779	0.0788
Ceftazidime 0.0195mg/mL	0.823	0.0888

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	15	0	0.101	0.0297	0.00767
Ceftazidime 10mg/mL	8	0	0.108	0.0183	0.00645
Ceftazidime 5mg/mL	8	0	0.117	0.0265	0.00936
Ceftazidime 2.5mg/mL	8	0	0.103	0.0225	0.00796
Ceftazidime 1.25mg/mL	8	0	0.0933	0.0150	0.00531

Ceftazidime 0.625mg/mL	8	0	0.0942	0.0212	0.00750
Ceftazidime 0.3125mg/mL	8	0	0.0933	0.0257	0.00909
Ceftazidime 0.1563mg/mL	8	0	0.0912	0.0180	0.00638
Ceftazidime 0.0781mg/mL	8	0	0.0917	0.0173	0.00613
Ceftazidime 0.0391mg/mL	8	0	0.0974	0.0202	0.00716
Ceftazidime 0.0195mg/mL	8	0	0.103	0.0242	0.00856

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	10	0.00517	0.000517	0.990	0.458
Residual	84	0.0438	0.000522		
Total	94	0.0490			

The differences in the mean values among the treatment groups are not great enough to exclude the possibility that the difference is due to random sampling variability; there is not a statistically significant difference (P = 0.458).

Power of performed test with alpha = 0.050: --

<u>Antibiotic testing trial 6 on 7/25/14 at 48 hours- Control</u>

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0988	0.1090	0.7887	1.0906	0.5827	0.7144	0.7528	0.6937	0.5808	0.6519	0.5386	0.8051
B	0.0999	0.1075	0.4570	0.5741	0.3573	0.4845	0.3641	0.3724	0.3983	0.3737	0.3623	0.9386
C	0.1151	0.1252	0.4379	0.6193	0.4366	0.4215	0.4602	0.3759	0.4794	0.4454	0.4797	1.1935
D	0.1213	0.1216	0.4552	0.6672	0.3976	0.3804	0.3480	0.3770	0.3506	0.7066	0.4589	1.2333
E	0.1175	0.1608	0.4626	0.9729	0.9987	0.4601	0.4913	0.4510	0.5050	0.4626	0.4224	1.6727
F	0.1409	0.1823	0.5359	0.9605	0.8177	0.6466	0.4221	0.4206	0.6156	0.4849	0.4959	1.7892
G	0.1563	0.2080	0.5751	0.7413	0.5674	0.4826	0.6579	0.5351	0.7911	0.5080	0.8362	1.8488
H	0.1457	0.1308	1.3826	1.8731	0.9951	1.4522	1.5853	1.4221	1.9545	1.3954	2.8554	2.4296
Average	0.1244	0.1432	0.6369	0.9374	0.6441	0.6303	0.6352	0.5810	0.7094	0.6286	0.8062	1.4889
Range	0.0575	0.1005	0.9447	1.2990	0.6414	1.0718	1.2373	1.0497	1.6039	1.0217	2.4931	1.6245

<u>Antibiotic testing trial 7 on 7/25/14 at 48 hours- Ciprofloxacin</u>

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0720	0.0778	0.6228	0.7006	1.5363	0.7827	0.7230	1.2858	0.9963	0.7708	0.8462	1.3672
B	0.0826	0.6220	0.4943	0.5373	0.7170	0.5596	0.7581	0.7713	0.8807	1.1304	0.8428	0.6497
C	1.6836	0.5439	0.3431	0.5444	0.9678	1.0240	0.5896	1.2512	0.9870	1.0721	1.2086	0.8380
D	2.0100	0.5135	0.6149	0.7303	1.0810	1.3624	0.8204	1.1408	1.0901	1.3356	1.2609	0.8514
E	1.1845	0.6098	0.6452	0.4079	1.4602	1.0457	0.6984	1.2197	0.9980	1.2007	1.0300	1.8774
F	0.1081	0.6466	0.5806	0.5470	0.7788	1.5012	0.9421	1.1984	1.0880	1.4936	1.3395	1.7891
G	1.3169	0.2995	0.5464	0.9236	1.2052	0.7558	0.7550	2.1181	1.6312	1.4213	1.8588	2.3581
H	1.6438	1.3519	0.7543	0.9478	1.5388	0.8556	0.7136	2.6253	1.6584	2.1795	1.9024	OVER
Average	1.0127	0.5831	0.5752	0.6674	1.1606	0.9859	0.7500	1.4513	1.1662	1.3255	1.2862	1.3901
Range	1.9380	1.2741	0.4112	0.5399	0.8218	0.9416	0.3525	1.8540	0.7777	1.4087	1.0596	1.7084

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	64	0	0.311	0.447	0.0558	0.112
Control	80	0	0.770	0.509	0.0569	0.113
Ciprofloxacin 5mg/mL	8	0	0.575	0.121	0.0427	0.101
Ciprofloxacin 2.5mg/mL	8	0	0.667	0.194	0.0686	0.162
Ciprofloxacin 1.25mg/mL	8	0	1.161	0.330	0.117	0.276
Ciprofloxacin 0.625mg/mL	8	0	0.986	0.317	0.112	0.265
Ciprofloxacin 0.3125mg/mL	8	0	0.750	0.102	0.0360	0.0850
Ciprofloxacin 0.1563mg/mL	8	0	1.451	0.606	0.214	0.506
Ciprofloxacin 0.0781mg/mL	8	0	1.166	0.303	0.107	0.253
Ciprofloxacin0.0391mg/mL	8	0	1.325	0.413	0.146	0.345
Ciprofloxacin 0.0195mg/mL	8	0	1.286	0.409	0.145	0.342
Ciprofloxacin 0.0098mg/mL	7	0	1.390	0.643	0.243	0.594

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	1.939	2.010	0.0713	0.110	0.0841	0.277
Control	2.507	2.855	0.348	0.571	0.452	0.913
Ciprofloxacin 5mg/mL	0.411	0.754	0.343	0.598	0.507	0.640
Ciprofloxacin 2.5mg/mL	0.540	0.948	0.408	0.624	0.539	0.875
Ciprofloxacin 1.25mg/mL	0.822	1.539	0.717	1.143	0.826	1.517
Ciprofloxacin 0.625mg/mL	0.942	1.501	0.560	0.940	0.763	1.283
Ciprofloxacin 0.3125mg/mL	0.353	0.942	0.590	0.739	0.702	0.805

Ciprofloxacin 0.1563mg/mL	1.854	2.625	0.771	1.235	1.155	1.910
Ciprofloxacin 0.0781mg/mL	0.778	1.658	0.881	1.043	0.989	1.496
Ciprofloxacin0.0391mg/mL	1.409	2.180	0.771	1.268	1.087	1.476
Ciprofloxacin 0.0195mg/mL	1.060	1.902	0.843	1.235	0.892	1.729
Ciprofloxacin 0.0098mg/mL	1.708	2.358	0.650	1.367	0.838	1.877

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	2.362	4.891	0.351	<0.001	0.583	<0.001
Control	1.972	3.988	0.206	<0.001	0.752	<0.001
Ciprofloxacin 5mg/mL	-0.735	1.557	0.156	0.690	0.953	0.737
Ciprofloxacin 2.5mg/mL	0.415	-1.076	0.233	0.224	0.913	0.372
Ciprofloxacin 1.25mg/mL	-0.0880	-1.722	0.193	0.459	0.904	0.315
Ciprofloxacin 0.625mg/mL	0.538	-0.561	0.175	0.577	0.947	0.679
Ciprofloxacin 0.3125mg/mL	0.562	1.695	0.218	0.300	0.944	0.655
Ciprofloxacin 0.1563mg/mL	1.312	1.041	0.358	0.003	0.817	0.043
Ciprofloxacin 0.0781mg/mL	1.238	-0.208	0.349	0.005	0.755	0.009
Ciprofloxacin0.0391mg/mL	1.171	2.583	0.217	0.308	0.914	0.387
Ciprofloxacin 0.0195mg/mL	0.645	-0.843	0.198	0.426	0.885	0.208
Ciprofloxacin 0.0098mg/mL	0.313	-1.466	0.228	0.314	0.923	0.490

Column	**Sum**	**Sum of Squares**
TSB	19.921	18.775
Control	61.583	67.850
Ciprofloxacin 5mg/mL	4.602	2.749
Ciprofloxacin 2.5mg/mL	5.339	3.826
Ciprofloxacin 1.25mg/mL	9.285	11.539
Ciprofloxacin 0.625mg/mL	7.887	8.481
Ciprofloxacin 0.3125mg/mL	6.000	4.573
Ciprofloxacin 0.1563mg/mL	11.611	19.417
Ciprofloxacin 0.0781mg/mL	9.330	11.522
Ciprofloxacin0.0391mg/mL	10.604	15.248
Ciprofloxacin 0.0195mg/mL	10.289	14.406
Ciprofloxacin 0.0098mg/mL	9.731	16.005

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	64	0	0.311	0.447	0.0558
Control	80	0	0.770	0.509	0.0569
Ciprofloxacin 5mg/mL	8	0	0.575	0.121	0.0427
Ciprofloxacin 2.5mg/mL	8	0	0.667	0.194	0.0686
Ciprofloxacin 1.25mg/mL	8	0	1.161	0.330	0.117
Ciprofloxacin 0.625mg/mL	8	0	0.986	0.317	0.112
Ciprofloxacin 0.3125mg/mL	8	0	0.750	0.102	0.0360
Ciprofloxacin 0.1563mg/mL	8	0	1.451	0.606	0.214
Ciprofloxacin 0.0781mg/mL	8	0	1.166	0.303	0.107
Ciprofloxacin0.0391mg/mL	8	0	1.325	0.413	0.146
Ciprofloxacin 0.0195mg/mL	8	0	1.286	0.409	0.145
Ciprofloxacin 0.0098mg/mL	7	0	1.390	0.643	0.243

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	27.576	2.507	12.309	<0.001
Residual	211	42.974	0.204		
Total	222	70.550			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Antibiotic testing trial 8 on 7/25/14 at 48 hours- Ceftazidime

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0987	0.0898	1.7913	1.0160	1.4733	0.9038	1.5660	1.0711	1.9882	1.0693	1.6047	1.7279
B	0.0865	0.3546	0.6113	0.8018	0.5766	0.4820	0.7928	0.5275	0.7742	0.4956	1.1756	1.0241
C	0.0714	0.0908	0.8244	0.5234	0.8521	0.6389	0.6814	0.9982	1.2658	1.4034	1.5363	2.0213
D	0.0884	0.4546	1.1913	0.8524	0.5500	0.5375	0.7628	1.0493	1.5639	1.6738	2.3417	2.3147
E	0.0840	0.0966	1.3853	0.8891	0.9367	0.6387	0.6741	1.6969	1.5470	2.6578	2.5122	1.9211
F	0.1108	0.0816	1.7291	0.8411	0.9883	0.6050	0.8419	2.4624	1.7140	0.9785	2.1810	2.3869
G	0.0844	0.1585	2.0357	1.4621	1.2755	0.8200	1.4767	2.6926	2.0181	1.9607	OVER	1.9879
H	0.1455	0.1025	OVER	2.6237	1.4223	1.7522	1.7258	2.4230	OVER	OVER	OVER	2.0203
Average	0.0962	0.1786	1.3669	1.1262	1.0094	0.7973	1.0652	1.6151	1.5530	1.4627	1.8919	1.9255
Range	0.0741	0.3730	1.4244	2.1003	0.9233	1.2702	1.0517	2.1651	1.2439	2.1622	1.3366	1.3628

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	64	0	0.311	0.447	0.0558	0.112
Control	80	0	0.770	0.509	0.0569	0.113
Ceftazidime 10mg/mL	7	0	1.367	0.525	0.199	0.486
Ceftazidime 5mg/mL	8	0	1.126	0.660	0.233	0.552
Ceftazidime 2.5mg/mL	8	0	1.009	0.356	0.126	0.297
Ceftazidime 1.25mg/mL	8	0	0.797	0.410	0.145	0.343
Ceftazidime 0.625mg/mL	8	0	1.065	0.443	0.157	0.370
Ceftazidime 0.3125mg/mL	8	0	1.615	0.821	0.290	0.686
Ceftazidime 0.1563mg/mL	7	0	1.553	0.432	0.163	0.400
Ceftazidime 0.0781mg/mL	7	0	1.463	0.713	0.269	0.659
Ceftazidime 0.0391mg/mL	6	0	1.892	0.528	0.215	0.554
Ceftazidime 0.0195mg/mL	8	0	1.926	0.421	0.149	0.352

Column	Range	Max	Min	Median	25%	75%
TSB	1.939	2.010	0.0713	0.110	0.0841	0.277
Control	2.507	2.855	0.348	0.571	0.452	0.913
Ceftazidime 10mg/mL	1.424	2.036	0.611	1.385	0.824	1.791
Ceftazidime 5mg/mL	2.100	2.624	0.523	0.871	0.812	1.351
Ceftazidime 2.5mg/mL	0.923	1.473	0.550	0.962	0.645	1.386
Ceftazidime 1.25mg/mL	1.270	1.752	0.482	0.639	0.554	0.883
Ceftazidime 0.625mg/mL	1.052	1.726	0.674	0.817	0.702	1.544
Ceftazidime 0.3125mg/mL	2.165	2.693	0.527	1.384	1.011	2.453
Ceftazidime 0.1563mg/mL	1.244	2.018	0.774	1.564	1.266	1.988
Ceftazidime 0.0781mg/mL	2.162	2.658	0.496	1.403	0.979	1.961
Ceftazidime 0.0391mg/mL	1.337	2.512	1.176	1.893	1.446	2.384
Ceftazidime 0.0195mg/mL	1.363	2.387	1.024	2.004	1.776	2.241

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	2.362	4.891	0.351	<0.001	0.583	<0.001
Control	1.972	3.988	0.206	<0.001	0.752	<0.001
Ceftazidime 10mg/mL	-0.279	-1.332	0.183	0.580	0.954	0.765
Ceftazidime 5mg/mL	2.044	4.500	0.316	0.018	0.750	0.008
Ceftazidime 2.5mg/mL	0.0292	-1.456	0.149	0.726	0.921	0.442
Ceftazidime 1.25mg/mL	2.230	5.379	0.275	0.075	0.722	0.004
Ceftazidime 0.625mg/mL	0.676	-1.836	0.318	0.017	0.794	0.025
Ceftazidime 0.3125mg/mL	0.180	-1.863	0.246	0.163	0.890	0.234
Ceftazidime 0.1563mg/mL	-0.893	0.726	0.209	0.425	0.924	0.500
Ceftazidime 0.0781mg/mL	0.490	0.125	0.138	0.774	0.982	0.968
Ceftazidime 0.0391mg/mL	-0.168	-1.901	0.208	0.497	0.927	0.558

Ceftazidime 0.0195mg/mL	-1.488	3.104	0.246	0.165	0.856	0.110

Column	**Sum**	**Sum of Squares**
TSB	19.921	18.775
Control	61.583	67.850
Ceftazidime 10mg/mL	9.568	14.734
Ceftazidime 5mg/mL	9.010	13.195
Ceftazidime 2.5mg/mL	8.075	9.036
Ceftazidime 1.25mg/mL	6.378	6.263
Ceftazidime 0.625mg/mL	8.521	10.449
Ceftazidime 0.3125mg/mL	12.921	25.587
Ceftazidime 0.1563mg/mL	10.871	18.004
Ceftazidime 0.0781mg/mL	10.239	18.026
Ceftazidime 0.0391mg/mL	11.352	22.869
Ceftazidime 0.0195mg/mL	15.404	30.899

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	64	0	0.311	0.447	0.0558
Control	80	0	0.770	0.509	0.0569
Ceftazidime 10mg/mL	7	0	1.367	0.525	0.199
Ceftazidime 5mg/mL	8	0	1.126	0.660	0.233
Ceftazidime 2.5mg/mL	8	0	1.009	0.356	0.126
Ceftazidime 1.25mg/mL	8	0	0.797	0.410	0.145
Ceftazidime 0.625mg/mL	8	0	1.065	0.443	0.157
Ceftazidime 0.3125mg/mL	8	0	1.615	0.821	0.290
Ceftazidime 0.1563mg/mL	7	0	1.553	0.432	0.163
Ceftazidime 0.0781mg/mL	7	0	1.463	0.713	0.269
Ceftazidime 0.0391mg/mL	6	0	1.892	0.528	0.215
Ceftazidime 0.0195mg/mL	8	0	1.926	0.421	0.149

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	48.680	4.425	17.391	<0.001
Residual	207	52.675	0.254		
Total	218	101.356			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

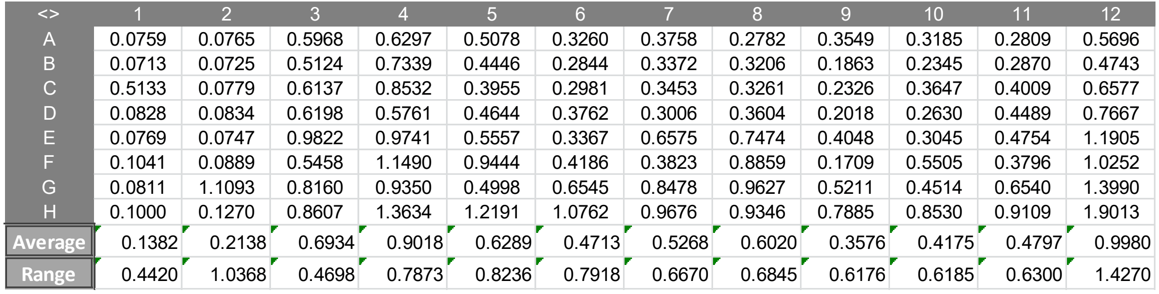
Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Ceftazidime	1.156	6.179	<0.001	Yes
Control vs. TSB	0.459	5.420	<0.001	Yes
Control vs. Ceftazidime	1.122	5.255	<0.001	Yes
Control vs. Ceftazidime	0.845	4.519	<0.001	Yes
Control vs. Ceftazidime	0.783	3.939	<0.001	Yes
Control vs. Ceftazidime	0.693	3.485	0.004	Yes
Control vs. Ceftazidime	0.597	3.003	0.015	Yes
Control vs. Ceftazidime 5mg/mL	0.356	1.905	0.213	No
Control vs. Ceftazidime	0.295	1.579	0.309	No
Control vs. Ceftazidime	0.240	1.281	0.363	No
Control vs. Ceftazidime	0.0275	0.147	0.883	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Ceftazidime	1.614	8.533	<0.001	Yes
TSB vs. Ceftazidime	1.581	7.339	<0.001	Yes

TSB vs. Ceftazidime	1.304	6.893	<0.001	Yes
TSB vs. Ceftazidime	1.242	6.183	<0.001	Yes
TSB vs. Ceftazidime	1.151	5.734	<0.001	Yes
TSB vs. Control	0.459	5.420	<0.001	Yes
TSB vs. Ceftazidime 10mg/mL	1.056	5.257	<0.001	Yes
TSB vs. Ceftazidime 5mg/mL	0.815	4.308	<0.001	Yes
TSB vs. Ceftazidime 0.625mg/mL	0.754	3.985	<0.001	Yes
TSB vs. Ceftazidime 2.5mg/mL	0.698	3.690	<0.001	Yes
TSB vs. Ceftazidime 1.25mg/mL	0.486	2.569	0.011	Yes

Antibiotic testing trial 9 on 7/25/14 at 48 hours- Gentamicin



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0759	0.0765	0.5968	0.6297	0.5078	0.3260	0.3758	0.2782	0.3549	0.3185	0.2809	0.5696
B	0.0713	0.0725	0.5124	0.7339	0.4446	0.2844	0.3372	0.3206	0.1863	0.2345	0.2870	0.4743
C	0.5133	0.0779	0.6137	0.8532	0.3955	0.2981	0.3453	0.3261	0.2326	0.3647	0.4009	0.6577
D	0.0828	0.0834	0.6198	0.5761	0.4644	0.3762	0.3006	0.3604	0.2018	0.2630	0.4489	0.7667
E	0.0769	0.0747	0.9822	0.9741	0.5557	0.3367	0.6575	0.7474	0.4048	0.3045	0.4754	1.1905
F	0.1041	0.0889	0.5458	1.1490	0.9444	0.4186	0.3823	0.8859	0.1709	0.5505	0.3796	1.0252
G	0.0811	1.1093	0.8160	0.9350	0.4998	0.6545	0.8478	0.9627	0.5211	0.4514	0.6540	1.3990
H	0.1000	0.1270	0.8607	1.3634	1.2191	1.0762	0.9676	0.9346	0.7885	0.8530	0.9109	1.9013
Average	0.1382	0.2138	0.6934	0.9018	0.6289	0.4713	0.5268	0.6020	0.3576	0.4175	0.4797	0.9980
Range	0.4420	1.0368	0.4698	0.7873	0.8236	0.7918	0.6670	0.6845	0.6176	0.6185	0.6300	1.4270

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	64	0	0.311	0.447	0.0558	0.112
Control	80	0	0.770	0.509	0.0569	0.113
Gentamicin 10mg/mL	8	0	0.693	0.170	0.0601	0.142
Gentamicin 5mg/mL	8	0	0.902	0.265	0.0937	0.221
Gentamicin 2.5mg/mL	8	0	0.629	0.293	0.104	0.245
Gentamicin 1.25mg/mL	8	0	0.471	0.271	0.0959	0.227
Gentamicin 0.625mg/mL	8	0	0.527	0.261	0.0924	0.219
Gentamicin 0.3125mg/mL	8	0	0.602	0.307	0.109	0.257
Gentamicin 0.1563mg/mL	8	0	0.358	0.213	0.0754	0.178
Gentamicin 0.0781mg/mL	8	0	0.418	0.204	0.0721	0.171
Gentamicin 0.0391mg/mL	8	0	0.480	0.210	0.0744	0.176
Gentamicin 0.0195mg/mL	8	0	0.998	0.484	0.171	0.405

Column	Range	Max	Min	Median	25%	75%
TSB	1.939	2.010	0.0713	0.110	0.0841	0.277
Control	2.507	2.855	0.348	0.571	0.452	0.913
Gentamicin 10mg/mL	0.470	0.982	0.512	0.617	0.559	0.850
Gentamicin 5mg/mL	0.787	1.363	0.576	0.894	0.656	1.105
Gentamicin 2.5mg/mL	0.824	1.219	0.396	0.504	0.450	0.847
Gentamicin 1.25mg/mL	0.792	1.076	0.284	0.356	0.305	0.596
Gentamicin 0.625mg/mL	0.667	0.968	0.301	0.379	0.339	0.800
Gentamicin 0.3125mg/mL	0.685	0.963	0.278	0.554	0.322	0.922
Gentamicin 0.1563mg/mL	0.618	0.788	0.171	0.294	0.190	0.492
Gentamicin 0.0781mg/mL	0.619	0.853	0.234	0.342	0.273	0.526
Gentamicin 0.0391mg/mL	0.630	0.911	0.281	0.425	0.310	0.609
Gentamicin 0.0195mg/mL	1.427	1.901	0.474	0.896	0.592	1.347

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	2.362	4.891	0.351	<0.001	0.583	<0.001
Control	1.972	3.988	0.206	<0.001	0.752	<0.001
Gentamicin 10mg/mL	0.763	-0.922	0.293	0.042	0.884	0.204
Gentamicin 5mg/mL	0.557	-0.256	0.142	0.752	0.962	0.826
Gentamicin 2.5mg/mL	1.588	1.474	0.349	0.005	0.754	0.009
Gentamicin 1.25mg/mL	1.994	3.824	0.327	0.012	0.723	0.004

Gentamicin 0.625mg/mL	0.962	-0.886	0.335	0.009	0.804	0.032
Gentamicin 0.3125mg/mL	0.121	-2.494	0.284	0.056	0.802	0.030
Gentamicin 0.1563mg/mL	1.317	1.400	0.221	0.285	0.855	0.107
Gentamicin 0.0781mg/mL	1.630	2.675	0.227	0.252	0.836	0.069
Gentamicin 0.0391mg/mL	1.408	1.836	0.258	0.120	0.861	0.123
Gentamicin 0.0195mg/mL	0.896	0.200	0.184	0.523	0.927	0.490

Column	**Sum**	**Sum of Squares**
TSB	19.921	18.775
Control	61.583	67.850
Gentamicin 10mg/mL	5.547	4.049
Gentamicin 5mg/mL	7.214	6.997
Gentamicin 2.5mg/mL	5.031	3.764
Gentamicin 1.25mg/mL	3.771	2.293
Gentamicin 0.625mg/mL	4.214	2.698
Gentamicin 0.3125mg/mL	4.816	3.560
Gentamicin 0.1563mg/mL	2.861	1.342
Gentamicin 0.0781mg/mL	3.340	1.686
Gentamicin 0.0391mg/mL	3.838	2.151
Gentamicin 0.0195mg/mL	7.984	9.610

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	64	0	0.311	0.447	0.0558
Control	80	0	0.770	0.509	0.0569
Gentamicin 10mg/mL	8	0	0.693	0.170	0.0601
Gentamicin 5mg/mL	8	0	0.902	0.265	0.0937
Gentamicin 2.5mg/mL	8	0	0.629	0.293	0.104
Gentamicin 1.25mg/mL	8	0	0.471	0.271	0.0959
Gentamicin 0.625mg/mL	8	0	0.527	0.261	0.0924
Gentamicin 0.3125mg/mL	8	0	0.602	0.307	0.109
Gentamicin 0.1563mg/mL	8	0	0.358	0.213	0.0754
Gentamicin 0.0781mg/mL	8	0	0.418	0.204	0.0721
Gentamicin 0.0391mg/mL	8	0	0.480	0.210	0.0744
Gentamicin 0.0195mg/mL	8	0	0.998	0.484	0.171

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	10.660	0.969	5.332	<0.001
Residual	212	38.528	0.182		
Total	223	49.188			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).
Power of performed test with alpha = 0.050: 0.999
Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

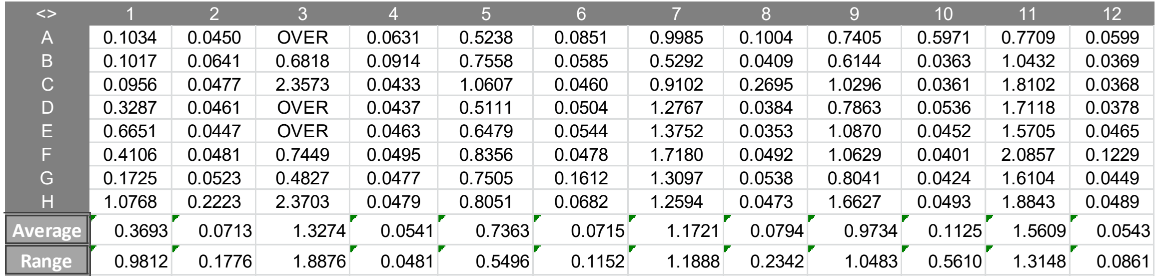
Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.459	6.413	<0.001	Yes
Control vs. Gentamicin 0	0.412	2.607	0.094	No
Control vs. Gentamicin 0	0.352	2.228	0.218	No
Control vs. Gentamicin 1	0.298	1.888	0.392	No
Control vs. Gentamicin 0	0.290	1.835	0.389	No
Control vs. Gentamicin 0	0.243	1.537	0.553	No
Control vs. Gentamicin 0	0.228	1.444	0.557	No
Control vs. Gentamicin 0	0.168	1.061	0.745	No
Control vs. Gentamicin 2	0.141	0.891	0.755	No

Control vs. Gentamicin 5mg/mL	0.132	0.835	0.645	No
Control vs. Gentamicin 10mg/mL	0.0764	0.483	0.630	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.459	6.413	<0.001	Yes
TSB vs. Gentamicin 0.0195mg/mL	0.687	4.296	<0.001	Yes
TSB vs. Gentamicin 5mg/mL	0.591	3.694	0.003	Yes
TSB vs. Gentamicin 10mg/mL	0.382	2.390	0.133	No
TSB vs. Gentamicin 2.5mg/mL	0.318	1.987	0.292	No
TSB vs. Gentamicin 0.3125mg/mL	0.291	1.819	0.355	No
TSB vs. Gentamicin 0.625mg/mL	0.215	1.348	0.627	No
TSB vs. Gentamicin 0.0391mg/mL	0.168	1.054	0.751	No
TSB vs. Gentamicin 1.25mg/mL	0.160	1.001	0.683	No
TSB vs. Gentamicin 0.0781mg/mL	0.106	0.665	0.757	No
TSB vs. Gentamicin 0.1563mg/mL	0.0463	0.290	0.772	No

Antibiotic testing trial 10 on 8/1/14 at 48 hours- Ciprofloxacin



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.1034	0.0450	OVER	0.0631	0.5238	0.0851	0.9985	0.1004	0.7405	0.5971	0.7709	0.0599
B	0.1017	0.0641	0.6818	0.0914	0.7558	0.0585	0.5292	0.0409	0.6144	0.0363	1.0432	0.0369
C	0.0956	0.0477	2.3573	0.0433	1.0607	0.0460	0.9102	0.2695	1.0296	0.0361	1.8102	0.0368
D	0.3287	0.0461	OVER	0.0437	0.5111	0.0504	1.2767	0.0384	0.7863	0.0536	1.7118	0.0378
E	0.6651	0.0447	OVER	0.0463	0.6479	0.0544	1.3752	0.0353	1.0870	0.0452	1.5705	0.0465
F	0.4106	0.0481	0.7449	0.0495	0.8356	0.0478	1.7180	0.0492	1.0629	0.0401	2.0857	0.1229
G	0.1725	0.0523	0.4827	0.0477	0.7505	0.1612	1.3097	0.0538	0.8041	0.0424	1.6104	0.0449
H	1.0768	0.2223	2.3703	0.0479	0.8051	0.0682	1.2594	0.0473	1.6627	0.0493	1.8843	0.0489
Average	0.3693	0.0713	1.3274	0.0541	0.7363	0.0715	1.1721	0.0794	0.9734	0.1125	1.5609	0.0543
Range	0.9812	0.1776	1.8876	0.0481	0.5496	0.1152	1.1888	0.2342	1.0483	0.5610	1.3148	0.0861

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	32	0	0.194	0.200	0.0353	0.0721
Control	27	0	1.279	0.624	0.120	0.247
Ciprofloxacin 5mg/mL	8	0	0.736	0.179	0.0633	0.150
Ciprofloxacin 2.5mg/mL	8	0	1.172	0.356	0.126	0.298
Ciprofloxacin 1.25mg/mL	8	0	0.973	0.326	0.115	0.273
Ciprofloxacin 0.625mg/mL	8	0	1.561	0.441	0.156	0.368

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.996	1.077	0.0807	0.133	0.104	0.171
Control	2.047	2.507	0.460	1.206	0.745	1.487
Ciprofloxacin 5mg/mL	0.550	1.061	0.511	0.753	0.555	0.828
Ciprofloxacin 2.5mg/mL	1.189	1.718	0.529	1.268	0.932	1.359
Ciprofloxacin 1.25mg/mL	1.048	1.663	0.614	0.917	0.752	1.081
Ciprofloxacin 0.625mg/mL	1.315	2.086	0.771	1.661	1.175	1.866

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	3.431	12.913	0.373	<0.001	0.525	<0.001
Control	0.796	-0.443	0.147	0.134	0.893	0.009
Ciprofloxacin 5mg/mL	0.457	0.408	0.164	0.644	0.940	0.612
Ciprofloxacin 2.5mg/mL	-0.478	0.789	0.222	0.281	0.956	0.772
Ciprofloxacin 1.25mg/mL	1.421	2.573	0.239	0.194	0.869	0.147
Ciprofloxacin 0.625mg/mL	-0.966	0.121	0.259	0.119	0.905	0.321

Column	**Sum**	**Sum of Squares**
TSB	6.199	2.440
Control	34.538	54.309
Ciprofloxacin 5mg/mL	5.891	4.561
Ciprofloxacin 2.5mg/mL	9.377	11.880
Ciprofloxacin 1.25mg/mL	7.787	8.327
Ciprofloxacin 0.625mg/mL	12.487	20.850

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	32	0	0.194	0.200	0.0353
Control	27	0	1.279	0.624	0.120
Ciprofloxacin 5mg/mL	8	0	0.736	0.179	0.0633
Ciprofloxacin 2.5mg/mL	8	0	1.172	0.356	0.126
Ciprofloxacin 1.25mg/mL	8	0	0.973	0.326	0.115
Ciprofloxacin 0.625mg/mL	8	0	1.561	0.441	0.156

Source of Variation	DF	SS	MS	F	P
Between Groups	5	23.841	4.768	27.790	<0.001
Residual	85	14.584	0.172		
Total	90	38.425			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

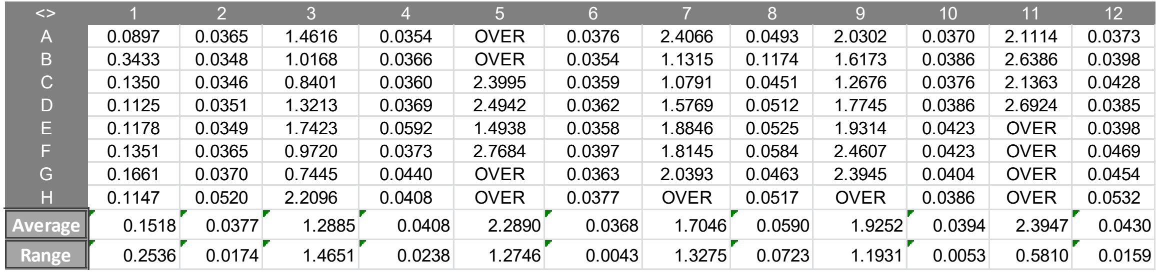
Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
Control vs. TSB	1.085	10.028	<0.001	Yes
Control vs. Ciprofloxaci	0.543	3.256	0.006	Yes
Control vs. Ciprofloxaci	0.306	1.834	0.196	No
Control vs. Ciprofloxaci	0.282	1.689	0.181	No
Control vs. Ciprofloxaci	0.107	0.642	0.522	No

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
TSB vs. Control	1.085	10.028	<0.001	Yes
TSB vs. Ciprofloxaci	1.367	8.350	<0.001	Yes
TSB vs. Ciprofloxacin 2.5mg/mL	0.978	5.975	<0.001	Yes
TSB vs. Ciprofloxaci	0.780	4.762	<0.001	Yes
TSB vs. Ciprofloxacin 5mg/mL	0.543	3.314	0.001	Yes

<u>Antibiotic testing trial 11 on 8/1/14 at 48 hours- Ceftazidime</u>



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0897	0.0365	1.4616	0.0354	OVER	0.0376	2.4066	0.0493	2.0302	0.0370	2.1114	0.0373
B	0.3433	0.0348	1.0168	0.0366	OVER	0.0354	1.1315	0.1174	1.6173	0.0386	2.6386	0.0398
C	0.1350	0.0346	0.8401	0.0360	2.3995	0.0359	1.0791	0.0451	1.2676	0.0376	2.1363	0.0428
D	0.1125	0.0351	1.3213	0.0369	2.4942	0.0362	1.5769	0.0512	1.7745	0.0386	2.6924	0.0385
E	0.1178	0.0349	1.7423	0.0592	1.4938	0.0358	1.8846	0.0525	1.9314	0.0423	OVER	0.0398
F	0.1351	0.0365	0.9720	0.0373	2.7684	0.0397	1.8145	0.0584	2.4607	0.0423	OVER	0.0469
G	0.1661	0.0370	0.7445	0.0440	OVER	0.0363	2.0393	0.0463	2.3945	0.0404	OVER	0.0454
H	0.1147	0.0520	2.2096	0.0408	OVER	0.0377	OVER	0.0517	OVER	0.0386	OVER	0.0532
Average	0.1518	0.0377	1.2885	0.0408	2.2890	0.0368	1.7046	0.0590	1.9252	0.0394	2.3947	0.0430
Range	0.2536	0.0174	1.4651	0.0238	1.2746	0.0043	1.3275	0.0723	1.1931	0.0053	0.5810	0.0159

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
Ceftazidime 1.25mg/mL	4	0	2.395	0.314	0.157	0.499
TSB	32	0	0.194	0.200	0.0353	0.0721
Control	27	0	1.279	0.624	0.120	0.247
Ceftazidime 10mg/mL	4	0	2.289	0.553	0.276	0.879
Ceftazidime 5mg/mL	7	0	1.705	0.481	0.182	0.444
Ceftazidime 2.5mg/mL	7	0	1.925	0.422	0.159	0.390
Ceftazidime 1.25mg/mL	4	0	2.395	0.314	0.157	0.499

Column	Range	Max	Min	Median	25%	75%
Ceftazidime 1.25mg/mL	0.581	2.692	2.111	2.387	2.118	2.679
TSB	0.996	1.077	0.0807	0.133	0.104	0.171
Control	2.047	2.507	0.460	1.206	0.745	1.487
Ceftazidime 10mg/mL	1.275	2.768	1.494	2.447	1.720	2.700

Ceftazidime 5mg/mL	1.328	2.407	1.079	1.815	1.132	2.039
Ceftazidime 2.5mg/mL	1.193	2.461	1.268	1.931	1.617	2.394
Ceftazidime 1.25mg/mL	0.581	2.692	2.111	2.387	2.118	2.679

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
Ceftazidime 1.25mg/mL	0.0200	-5.822	0.295	0.244	0.790	0.085
TSB	3.431	12.913	0.373	<0.001	0.525	<0.001
Control	0.796	-0.443	0.147	0.134	0.893	0.009
Ceftazidime 10mg/mL	-1.511	2.735	0.329	0.137	0.868	0.289
Ceftazidime 5mg/mL	-0.0938	-0.867	0.169	0.658	0.948	0.707
Ceftazidime 2.5mg/mL	-0.183	-0.579	0.153	0.732	0.965	0.858
Ceftazidime 1.25mg/mL	0.0200	-5.822	0.295	0.244	0.790	0.085

Column	**Sum**	**Sum of Squares**
Ceftazidime 1.25mg/mL	9.579	23.233
TSB	6.199	2.440
Control	34.538	54.309
Ceftazidime 10mg/mL	9.156	21.874
Ceftazidime 5mg/mL	11.933	21.726
Ceftazidime 2.5mg/mL	13.476	27.012
Ceftazidime 1.25mg/mL	9.579	23.233

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.194	0.200	0.0353
Control	27	0	1.279	0.624	0.120
Ceftazidime 10mg/mL	4	0	2.289	0.553	0.276
Ceftazidime 5mg/mL	7	0	1.705	0.481	0.182
Ceftazidime 2.5mg/mL	7	0	1.925	0.422	0.159
Ceftazidime 1.25mg/mL	4	0	2.395	0.314	0.157

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	5	46.614	9.323	46.519	<0.001
Residual	75	15.031	0.200		
Total	80	61.645			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	1.085	9.279	<0.001	Yes
Control vs. Ceftazidime	1.115	4.651	<0.001	Yes
Control vs. Ceftazidime	1.010	4.210	<0.001	Yes
Control vs. Ceftazidime	0.646	3.402	0.002	Yes
Control vs. Ceftazidime 5mg/mL	0.425	2.241	0.028	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	1.085	9.279	<0.001	Yes
TSB vs. Ceftazidime 1.25mg/mL	2.201	9.271	<0.001	Yes
TSB vs. Ceftazidime 2.5mg/mL	1.731	9.269	<0.001	Yes
TSB vs. Ceftazidime 10mg/mL	2.095	8.825	<0.001	Yes
TSB vs. Ceftazidime 5mg/mL	1.511	8.089	<0.001	Yes

Antibiotic testing 12 on 8/1/14 at hours- Gentamicin

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0917	0.0609	1.4869	0.0505	1.1331	0.0906	0.9546	0.0318	1.0163	0.0392	0.6855	0.0409
B	0.1050	0.0487	0.7206	0.0524	0.8318	0.0286	1.2492	0.0350	0.6514	0.0358	0.8720	0.0386
C	0.1045	0.0447	2.4485	0.0403	1.0314	0.0383	1.7117	0.0391	0.9416	0.0396	1.0989	0.0422
D	0.1416	0.0454	OVER	0.0474	0.9322	0.0931	2.1606	0.0383	1.2454	0.0367	1.3210	0.0453
E	0.1374	0.0417	OVER	0.0469	1.1831	0.0484	1.6473	0.0662	1.2071	0.0398	1.1939	0.0423
F	0.1549	0.0426	1.4413	0.0565	1.7365	0.0484	2.2899	0.0378	2.0283	0.0454	1.5966	0.0394
G	0.1077	0.0434	0.7025	0.0409	2.1685	0.0395	2.2333	0.0390	1.4565	0.0430	1.4143	0.0390
H	0.1743	0.0469	0.9995	0.0369	2.6128	0.0402	1.4778	0.0372	1.6283	0.0410	1.0067	0.0432
Average	0.1271	0.0468	1.2999	0.0465	1.4537	0.0534	1.7156	0.0406	1.2719	0.0401	1.1486	0.0414
Range	0.0826	0.0192	1.7460	0.0196	1.7810	0.0645	1.3353	0.0344	1.3769	0.0096	0.9111	0.0067

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	32	0	0.194	0.200	0.0353	0.0721
Controll	27	0	1.279	0.624	0.120	0.247
Gentamicin 10mg/mL	8	0	1.454	0.649	0.229	0.542
Gentamicin 5mg/mL	8	0	1.716	0.486	0.172	0.406
Gentamicin 2.5mg/mL	8	0	1.272	0.431	0.152	0.360
Gentamicin 1.25mg/mL	8	0	1.149	0.297	0.105	0.248

Column	Range	Max	Min	Median	25%	75%
TSB	0.996	1.077	0.0807	0.133	0.104	0.171
Controll	2.047	2.507	0.460	1.206	0.745	1.487
Gentamicin 10mg/mL	1.781	2.613	0.832	1.158	0.957	2.060
Gentamicin 5mg/mL	1.335	2.290	0.955	1.680	1.306	2.215
Gentamicin 2.5mg/mL	1.377	2.028	0.651	1.226	0.960	1.585
Gentamicin 1.25mg/mL	0.911	1.597	0.686	1.146	0.906	1.391

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	3.431	12.913	0.373	<0.001	0.525	<0.001
Control	0.796	-0.443	0.147	0.134	0.893	0.009
Gentamicin 10mg/mL	1.000	-0.367	0.287	0.052	0.863	0.129
Gentamicin 5mg/mL	-0.231	-1.179	0.195	0.446	0.933	0.547
Gentamicin 2.5mg/mL	0.460	0.180	0.150	0.722	0.983	0.977
Gentamicin 1.25mg/mL	-0.0699	-0.552	0.0943	0.770	0.995	0.999

Column	Sum	Sum of Squares
TSB	6.199	2.440
Control	34.538	54.309
Gentamicin 10mg/mL	11.629	19.853
Gentamicin 5mg/mL	13.724	25.199
Gentamicin 2.5mg/mL	10.175	14.239
Gentamicin 1.25mg/mL	9.189	11.171

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	32	0	0.194	0.200	0.0353
Control	27	0	1.279	0.624	0.120
Gentamicin 10mg/mL	8	0	1.454	0.649	0.229
Gentamicin 5mg/mL	8	0	1.716	0.486	0.172
Gentamicin 2.5mg/mL	8	0	1.272	0.431	0.152
Gentamicin 1.25mg/mL	8	0	1.149	0.297	0.105

Source of Variation	DF	SS	MS	F	P
Between Groups	5	29.080	5.816	27.647	<0.001
Residual	85	17.881	0.210		
Total	90	46.961			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

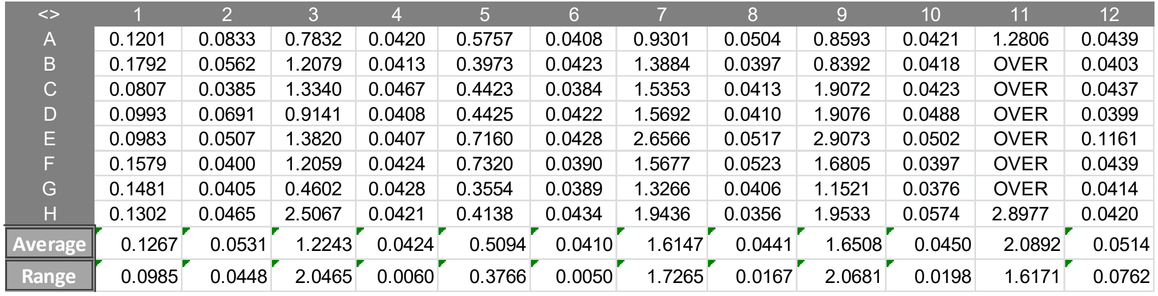
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	1.085	9.056	<0.001	Yes
Control vs. Gentamicin 5mg/mL	0.436	2.363	0.079	No
Control vs. Gentamicin 1	0.174	0.945	0.722	No
Control vs. Gentamicin 1	0.131	0.707	0.731	No
Control vs. Gentamicin 2	0.00734	0.0398	0.968	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	1.085	9.056	<0.001	Yes
TSB vs. Gentamicin 5mg/mL	1.522	8.394	<0.001	Yes
TSB vs. Gentamicin 10mg/mL	1.260	6.949	<0.001	Yes
TSB vs. Gentamicin 2.5mg/mL	1.078	5.947	<0.001	Yes
TSB vs. Gentamicin 1.25mg/mL	0.955	5.267	<0.001	Yes

Antibiotic testing 13 on 8/1/14 at 48 hours- Imipenem



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.1201	0.0833	0.7832	0.0420	0.5757	0.0408	0.9301	0.0504	0.8593	0.0421	1.2806	0.0439
B	0.1792	0.0562	1.2079	0.0413	0.3973	0.0423	1.3884	0.0397	0.8392	0.0418	OVER	0.0403
C	0.0807	0.0385	1.3340	0.0467	0.4423	0.0384	1.5353	0.0413	1.9072	0.0423	OVER	0.0437
D	0.0993	0.0691	0.9141	0.0408	0.4425	0.0422	1.5692	0.0410	1.9076	0.0488	OVER	0.0399
E	0.0983	0.0507	1.3820	0.0407	0.7160	0.0428	2.6566	0.0517	2.9073	0.0502	OVER	0.1161
F	0.1579	0.0400	1.2059	0.0424	0.7320	0.0390	1.5677	0.0523	1.6805	0.0397	OVER	0.0439
G	0.1481	0.0405	0.4602	0.0428	0.3554	0.0389	1.3266	0.0406	1.1521	0.0376	OVER	0.0414
H	0.1302	0.0465	2.5067	0.0421	0.4138	0.0434	1.9436	0.0356	1.9533	0.0574	2.8977	0.0420
Average	0.1267	0.0531	1.2243	0.0424	0.5094	0.0410	1.6147	0.0441	1.6508	0.0450	2.0892	0.0514
Range	0.0985	0.0448	2.0465	0.0060	0.3766	0.0050	1.7265	0.0167	2.0681	0.0198	1.6171	0.0762

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	32	0	0.194	0.200	0.0353	0.0721
Control	27	0	1.279	0.624	0.120	0.247
Imipenem 10mg/mL	8	0	0.509	0.147	0.0519	0.123
Imipenem 5mg/mL	8	0	1.615	0.508	0.180	0.425
Imipenem 2.5mg/mL	8	0	1.651	0.690	0.244	0.577
Imipenem 1.25mg/mL	2	0	2.089	1.143	0.809	10.274

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.996	1.077	0.0807	0.133	0.104	0.171
Control	2.047	2.507	0.460	1.206	0.745	1.487
Imipenem 10mg/mL	0.377	0.732	0.355	0.442	0.401	0.681
Imipenem 5mg/mL	1.727	2.657	0.930	1.552	1.342	1.850
Imipenem 2.5mg/mL	2.068	2.907	0.839	1.794	0.932	1.942
Imipenem 1.25mg/mL	1.617	2.898	1.281	2.089	1.281	2.898

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	3.431	12.913	0.373	<0.001	0.525	<0.001
Control	0.796	-0.443	0.147	0.134	0.893	0.009
Imipenem 10mg/mL	0.818	-1.113	0.301	0.032	0.844	0.083
Imipenem 5mg/mL	1.176	2.401	0.286	0.054	0.897	0.272
Imipenem 2.5mg/mL	0.515	0.227	0.206	0.377	0.910	0.354
Imipenem 1.25mg/mL	--	--	0.260	0.481	--	--

Column	**Sum**	**Sum of Squares**
TSB	6.199	2.440
Control	34.538	54.309
Imipenem 10mg/mL	4.075	2.227
Imipenem 5mg/mL	12.918	22.665

Imipenem 2.5mg/mL	13.207	25.138
Imipenem 1.25mg/mL	4.178	10.037

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.194	0.200	0.0353
Control	27	0	1.279	0.624	0.120
Imipenem 10mg/mL	8	0	0.509	0.147	0.0519
Imipenem 5mg/mL	8	0	1.615	0.508	0.180
Imipenem 2.5mg/mL	8	0	1.651	0.690	0.244
Imipenem 1.25mg/mL	2	0	2.089	1.143	0.809

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	5	32.467	6.493	28.549	<0.001
Residual	79	17.968	0.227		
Total	84	50.435			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	1.085	8.710	<0.001	Yes
Control vs. Imipenem 10mg/mL	0.770	4.010	<0.001	Yes
Control vs. Imipenem 1.25mg/mL	0.810	2.317	0.068	No
Control vs. Imipenem 2.5mg/mL	0.372	1.936	0.110	No
Control vs. Imipenem 5mg/mL	0.335	1.748	0.084	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	1.085	8.710	<0.001	Yes
TSB vs. Imipenem 2.5mg/mL	1.457	7.729	<0.001	Yes
TSB vs. Imipenem 5mg/mL	1.421	7.538	<0.001	Yes
TSB vs. Imipenem 1.25mg/mL	1.895	5.453	<0.001	Yes
TSB vs. Imipenem 10mg/mL	0.316	1.674	0.098	No

Antibiotic testing 14 on 8/8/14 at 48 hours- Ciprofloxacin

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0776	0.0390	OVER	0.0425	0.0727	0.0431	0.0752	0.0414	0.0734	0.0381	0.0677	0.0420
B	0.0595	0.0427	2.7391	0.0425	0.0792	0.0429	0.0615	0.0475	0.0717	0.0653	0.0962	0.0378
C	0.0679	0.0430	OVER	0.0461	0.0854	0.0413	0.0782	0.0465	0.0790	0.0418	0.0836	0.0412
D	0.0920	0.0421	1.9688	0.0421	0.0778	0.0416	0.0711	0.0441	0.0692	0.0430	0.0779	0.0438
E	0.0786	0.0414	OVER	0.0451	0.1160	0.0414	0.1184	0.0420	0.0983	0.0444	0.0718	0.0401
F	0.0908	0.0450	2.5287	0.0423	0.1170	0.0420	0.0920	0.0476	0.0871	0.0505	0.0945	0.0426
G	0.0983	0.0436	OVER	0.0435	0.1405	0.0416	0.1380	0.0401	0.1136	0.0915	0.1061	0.0406
H	0.1359	0.0400	OVER	0.0429	0.1198	0.0405	0.1380	0.0407	0.1017	0.0466	0.1339	0.0415
Average	0.0876	0.0421	2.4122	0.0434	0.1011	0.0418	0.0966	0.0437	0.0868	0.0527	0.0915	0.0412
Range	0.0764	0.0060	0.7703	0.0040	0.0678	0.0026	0.0765	0.0075	0.0444	0.0534	0.0662	0.0060

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	30	0	0.115	0.0303	0.00553	0.0113
Control	22	0	2.285	0.398	0.0849	0.177
Ciprofloxacin 5mg/mL	8	0	0.101	0.0252	0.00892	0.0211
Ciprofloxacin 2.5mg/mL	8	0	0.0965	0.0307	0.0109	0.0257
Ciprofloxacin 1.25mg/mL	8	0	0.0867	0.0163	0.00575	0.0136
Ciprofloxacin 0.625mg/mL	8	0	0.0915	0.0215	0.00761	0.0180

Column	Range	Max	Min	Median	25%	75%
TSB	0.116	0.176	0.0595	0.119	0.0901	0.139
Control	1.394	2.951	1.557	2.385	1.961	2.599
Ciprofloxacin 5mg/mL	0.0678	0.141	0.0727	0.101	0.0781	0.119
Ciprofloxacin 2.5mg/mL	0.0765	0.138	0.0615	0.0851	0.0721	0.133
Ciprofloxacin 1.25mg/mL	0.0444	0.114	0.0692	0.0830	0.0721	0.101
Ciprofloxacin 0.625mg/mL	0.0662	0.134	0.0677	0.0890	0.0733	0.104

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	0.122	-0.775	0.108	0.467	0.973	0.631
Control	-0.462	-0.655	0.136	0.347	0.945	0.255
Ciprofloxacin 5mg/mL	0.306	-1.606	0.233	0.224	0.882	0.196
Ciprofloxacin 2.5mg/mL	0.508	-1.670	0.225	0.263	0.870	0.151
Ciprofloxacin 1.25mg/mL	0.557	-1.128	0.183	0.525	0.916	0.397
Ciprofloxacin 0.625mg/mL	1.063	1.160	0.163	0.653	0.923	0.456

Column	Sum	Sum of Squares
TSB	3.447	0.423
Control	50.265	118.175
Ciprofloxacin 5mg/mL	0.808	0.0861
Ciprofloxacin 2.5mg/mL	0.772	0.0812
Ciprofloxacin 1.25mg/mL	0.694	0.0621
Ciprofloxacin 0.625mg/mL	0.732	0.0702

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	30	0	0.115	0.0303	0.00553
Control	22	0	2.285	0.398	0.0849
Ciprofloxacin 5mg/mL	8	0	0.101	0.0252	0.00892
Ciprofloxacin 2.5mg/mL	8	0	0.0965	0.0307	0.0109
Ciprofloxacin 1.25mg/mL	8	0	0.0867	0.0163	0.00575
Ciprofloxacin 0.625mg/mL	8	0	0.0915	0.0215	0.00761

Source of Variation	DF	SS	MS	F	P
Between Groups	5	77.227	15.445	357.243	<0.001
Residual	78	3.372	0.0432		
Total	83	80.599			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
Control vs. TSB	2.170	37.178	<0.001	Yes
Control vs. Ciprofloxaci	2.198	25.604	<0.001	Yes
Control vs. Ciprofloxaci	2.193	25.549	<0.001	Yes
Control vs. Ciprofloxaci	2.188	25.490	<0.001	Yes
Control vs. Ciprofloxaci	2.184	25.438	<0.001	Yes

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
TSB vs. Control	2.170	37.178	<0.001	Yes
TSB vs. Ciprofloxaci	0.0282	0.340	0.995	No
TSB vs. Ciprofloxaci	0.0235	0.283	0.989	No
TSB vs. Ciprofloxacin 2.5mg/mL	0.0184	0.222	0.969	No
TSB vs. Ciprofloxacin 5mg/mL	0.0139	0.168	0.867	No

Antibiotic testing 15 on 8/8/14 at 48 hours- Ceftazidime

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.1322	0.0566	1.9288	0.0601	OVER	0.0643	2.5550	0.0876	OVER	0.0712	OVER	0.0490
B	0.1440	0.0688	1.5571	0.0617	OVER	0.0540	2.7738	0.0501	OVER	0.0598	2.8251	0.0545
C	0.1386	0.0610	1.5846	0.0556	OVER	0.0472	OVER	0.0583	OVER	0.0595	OVER	0.0524
D	0.1406	0.0530	2.4229	0.0485	OVER	0.0469	OVER	0.0490	2.5221	0.0461	OVER	0.0594
E	0.1435	0.0545	2.7322	0.0487	OVER	0.0529	OVER	0.0469	2.5024	0.0460	OVER	0.0579
F	OVER	0.0467	2.6666	0.0489	OVER	0.0541	OVER	0.0476	OVER	0.0575	OVER	0.0499
G	0.1760	0.0571	2.9513	0.0515	OVER	0.0526	OVER	0.0958	OVER	0.0464	OVER	0.0680
H	0.1484	0.0515	OVER	0.0488	OVER	0.0488	OVER	0.0896	OVER	0.0515	OVER	0.0489
Average	0.1462	0.0562	2.2634	0.0530	#DIV/0!	0.0526	2.6644	0.0656	2.5123	0.0548	2.8251	0.0550
Range	0.0438	0.0221	1.3942	0.0132	0.0000	0.0174	0.2188	0.0489	0.0197	0.0252	0.0000	0.0191

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	30	0	0.115	0.0303	0.00553	0.0113
Control	22	0	2.285	0.398	0.0849	0.177
Ceftazidime 10mg/mL	7	7	--	--	--	--
Ceftazidime 5mg/mL	2	0	2.664	0.155	0.109	1.390
Ceftazidime 2.5mg/mL	2	0	2.512	0.0139	0.00985	0.125
Ceftazidime 1.25mg/mL	1	0	2.825	--	--	--

Column	Range	Max	Min	Median	25%	75%
TSB	0.116	0.176	0.0595	0.119	0.0901	0.139
Control	1.394	2.951	1.557	2.385	1.961	2.599
Ceftazidime 10mg/mL	--	--	--	--	--	--
Ceftazidime 5mg/mL	0.219	2.774	2.555	2.664	2.555	2.774
Ceftazidime 2.5mg/mL	0.0197	2.522	2.502	2.512	2.502	2.522
Ceftazidime 1.25mg/mL	0.000	2.825	2.825	2.825	2.825	2.825

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	0.122	-0.775	0.108	0.467	0.973	0.631
Control	-0.462	-0.655	0.136	0.347	0.945	0.255
Ceftazidime 10mg/mL	--	--	--	--	--	--
Ceftazidime 5mg/mL	--	--	0.260	0.481	--	--
Ceftazidime 2.5mg/mL	--	--	0.260	0.481	--	--
Ceftazidime 1.25mg/mL	--	--	--	--	--	--

Column	Sum	Sum of Squares
TSB	3.447	0.423
Control	50.265	118.175
Ceftazidime 10mg/mL	--	--
Ceftazidime 5mg/mL	5.329	14.222
Ceftazidime 2.5mg/mL	5.024	12.623
Ceftazidime 1.25mg/mL	2.825	7.981

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	30	0	0.115	0.0303	0.00553
Control	22	0	2.285	0.398	0.0849
Ceftazidime 10mg/mL	7	7	--	--	--
Ceftazidime 5mg/mL	2	0	2.664	0.155	0.109
Ceftazidime 2.5mg/mL	2	0	2.512	0.0139	0.00985
Ceftazidime 1.25mg/mL	1	0	2.825	0.000	0.000

Source of Variation	DF	SS	MS	F	P
Between Groups	3	71.545	23.848	366.865	<0.001
Residual	52	3.380	0.0650		
Total	55	74.925			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	2.170	30.320	<0.001	Yes
Control vs. Ceftazidime	0.540	2.073	0.124	No
Control vs. Ceftazidime 5mg/mL	0.380	2.016	0.096	No
Control vs. Ceftazidime	0.227	1.208	0.233	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	2.170	30.320	<0.001	Yes
TSB vs. Ceftazidime 5mg/mL	2.549	13.692	<0.001	Yes
TSB vs. Ceftazidime 2.5mg/mL	2.397	12.875	<0.001	Yes
TSB vs. Ceftazidime 1.25mg/mL	2.710	10.457	<0.001	Yes

Antibiotic testing 16 on 8/8/14 at 48 hours- Gentamicin

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.1012	0.0552	OVER	0.0535	2.3373	0.0571	OVER	0.0499	1.5373	0.0537	1.9152	0.1182
B	0.1232	0.0583	1.9798	0.0755	1.6866	0.0800	2.3000	0.0534	OVER	0.0585	2.8258	0.0561
C	0.1001	0.0501	2.3464	0.0485	2.8278	0.0441	2.3967	0.0490	1.6415	0.0475	2.2176	0.0452
D	0.1339	0.0569	2.2890	0.0451	OVER	0.0423	OVER	0.0463	OVER	0.0473	2.1797	0.0450
E	0.1058	0.0443	2.4460	0.0483	OVER	0.0438	2.3844	0.0464	2.5395	0.0453	OVER	0.0528
F	0.1224	0.0431	1.6007	0.0495	OVER	0.0431	2.6499	0.0449	OVER	0.0457	OVER	0.0461
G	OVER	0.0473	2.5193	0.0436	OVER	0.0452	OVER	0.0418	2.6141	0.0421	2.7967	0.0558
H	0.1711	0.0443	OVER	0.0509	OVER	0.0458	OVER	0.0441	2.9080	0.0468	2.8261	0.0440
Average	0.1225	0.0499	2.1969	0.0519	2.2839	0.0502	2.4328	0.0470	2.2481	0.0484	2.4602	0.0579
Range	0.0710	0.0152	0.9186	0.0319	1.1412	0.0377	0.3499	0.0116	1.3707	0.0164	0.9109	0.0742

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	30	0	0.115	0.0303	0.00553	0.0113
Control	22	0	2.285	0.398	0.0849	0.177
Gentamicin 10mg/mL	3	0	2.284	0.572	0.331	1.422
Gentamicin 5mg/mL	4	0	2.433	0.151	0.0755	0.240
Gentamicin 2.5mg/mL	5	0	2.248	0.618	0.276	0.767
Gentamicin 1.25mg/mL	6	0	2.460	0.404	0.165	0.424

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.116	0.176	0.0595	0.119	0.0901	0.139
Control	1.394	2.951	1.557	2.385	1.961	2.599
Gentamicin 10mg/mL	1.141	2.828	1.687	2.337	1.687	2.828
Gentamicin 5mg/mL	0.350	2.650	2.300	2.391	2.321	2.587
Gentamicin 2.5mg/mL	1.371	2.908	1.537	2.539	1.589	2.761
Gentamicin 1.25mg/mL	0.911	2.826	1.915	2.507	2.114	2.826

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.122	-0.775	0.108	0.467	0.973	0.631
Control	-0.462	-0.655	0.136	0.347	0.945	0.255
Gentamicin 10mg/mL	-0.416	--	0.204	0.623	0.993	0.846
Gentamicin 5mg/mL	1.498	2.788	0.344	0.102	0.860	0.259
Gentamicin 2.5mg/mL	-0.390	-2.811	0.281	0.213	0.859	0.226
Gentamicin 1.25mg/mL	-0.284	-2.394	0.298	0.099	0.821	0.090

Column	**Sum**	**Sum of Squares**
TSB	3.447	0.423
Control	50.265	118.175
Gentamicin 10mg/mL	6.852	16.304
Gentamicin 5mg/mL	9.731	23.742
Gentamicin 2.5mg/mL	11.240	26.797
Gentamicin 1.25mg/mL	14.761	37.130

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	30	0	0.115	0.0303	0.00553
Control	22	0	2.285	0.398	0.0849
Gentamicin 10mg/mL	3	0	2.284	0.572	0.331
Gentamicin 5mg/mL	4	0	2.433	0.151	0.0755
Gentamicin 2.5mg/mL	5	0	2.248	0.618	0.276
Gentamicin 1.25mg/mL	6	0	2.460	0.404	0.165
Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	5	83.675	16.735	166.753	<0.001
Residual	64	6.423	0.100		
Total	69	90.098			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

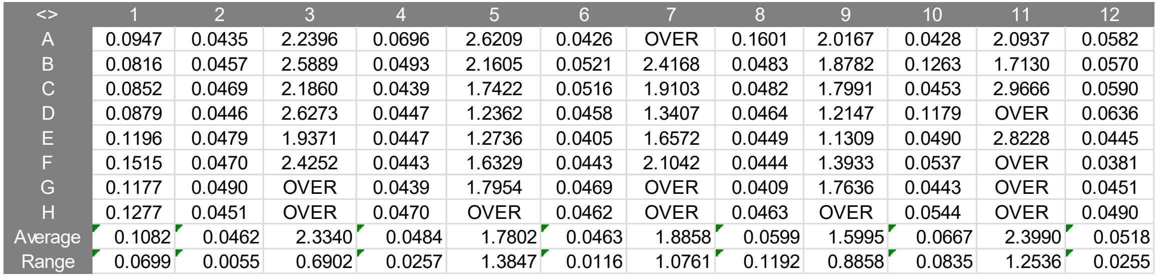
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	2.170	24.402	<0.001	Yes
Control vs. Gentamicin 1	0.175	1.202	0.655	No
Control vs. Gentamicin 5mg/mL	0.148	0.859	0.777	No
Control vs. Gentamicin 2	0.0367	0.234	0.966	No
Control vs. Gentamicin 10mg/mL	0.000891	0.00457	0.996	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	2.170	24.402	<0.001	Yes
TSB vs. Gentamicin 1.25mg/mL	2.345	16.554	<0.001	Yes
TSB vs. Gentamicin 2.5mg/mL	2.133	13.940	<0.001	Yes
TSB vs. Gentamicin 5mg/mL	2.318	13.745	<0.001	Yes
TSB vs. Gentamicin 10mg/mL	2.169	11.307	<0.001	Yes

Antibiotic testing 17 on 8/8/14 at 48 hours- Imipenem



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0947	0.0435	2.2396	0.0696	2.6209	0.0426	OVER	0.1601	2.0167	0.0428	2.0937	0.0582
B	0.0816	0.0457	2.5889	0.0493	2.1605	0.0521	2.4168	0.0483	1.8782	0.1263	1.7130	0.0570
C	0.0852	0.0469	2.1860	0.0439	1.7422	0.0516	1.9103	0.0482	1.7991	0.0453	2.9666	0.0590
D	0.0879	0.0446	2.6273	0.0447	1.2362	0.0458	1.3407	0.0464	1.2147	0.1179	OVER	0.0636
E	0.1196	0.0479	1.9371	0.0447	1.2736	0.0405	1.6572	0.0449	1.1309	0.0490	2.8228	0.0445
F	0.1515	0.0470	2.4252	0.0443	1.6329	0.0443	2.1042	0.0444	1.3933	0.0537	OVER	0.0381
G	0.1177	0.0490	OVER	0.0439	1.7954	0.0469	OVER	0.0409	1.7636	0.0443	OVER	0.0451
H	0.1277	0.0451	OVER	0.0470	OVER	0.0462	OVER	0.0463	OVER	0.0544	OVER	0.0490
Average	0.1082	0.0462	2.3340	0.0484	1.7802	0.0463	1.8858	0.0599	1.5995	0.0667	2.3990	0.0518
Range	0.0699	0.0055	0.6902	0.0257	1.3847	0.0116	1.0761	0.1192	0.8858	0.0835	1.2536	0.0255

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	30	0	0.115	0.0303	0.00553	0.0113
Control	22	0	2.285	0.398	0.0849	0.177
Imipenem 10mg/mL	7	0	1.780	0.488	0.184	0.451
Imipenem 5mg/mL	5	0	1.886	0.412	0.184	0.512
Imipenem 2.5mg/mL	7	0	1.600	0.348	0.132	0.322
Imipenem 1.25mg/mL	4	0	2.399	0.596	0.298	0.948

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.116	0.176	0.0595	0.119	0.0901	0.139
Control	1.394	2.951	1.557	2.385	1.961	2.599

Imipenem 10mg/mL	1.385	2.621	1.236	1.742	1.274	2.160
Imipenem 5mg/mL	1.076	2.417	1.341	1.910	1.499	2.261
Imipenem 2.5mg/mL	0.886	2.017	1.131	1.764	1.215	1.878
Imipenem 1.25mg/mL	1.254	2.967	1.713	2.458	1.808	2.931

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.122	-0.775	0.108	0.467	0.973	0.631
Control	-0.462	-0.655	0.136	0.347	0.945	0.255
Imipenem 10mg/mL	0.713	0.160	0.202	0.467	0.934	0.584
Imipenem 5mg/mL	-0.0823	-0.518	0.124	0.733	0.997	0.997
Imipenem 2.5mg/mL	-0.342	-1.901	0.253	0.192	0.901	0.337
Imipenem 1.25mg/mL	-0.291	-3.824	0.261	0.381	0.907	0.464

Column	**Sum**	**Sum of Squares**
TSB	3.447	0.423
Control	50.265	118.175
Imipenem 10mg/mL	12.462	23.612
Imipenem 5mg/mL	9.429	18.462
Imipenem 2.5mg/mL	11.197	18.637
Imipenem 1.25mg/mL	9.596	24.087

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	30	0	0.115	0.0303	0.00553
Control	22	0	2.285	0.398	0.0849
Imipenem 10mg/mL	7	0	1.780	0.488	0.184
Imipenem 5mg/mL	5	0	1.886	0.412	0.184
Imipenem 2.5mg/mL	7	0	1.600	0.348	0.132
Imipenem 1.25mg/mL	4	0	2.399	0.596	0.298

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	5	72.242	14.448	137.368	<0.001
Residual	69	7.257	0.105		
Total	74	79.500			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.00

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

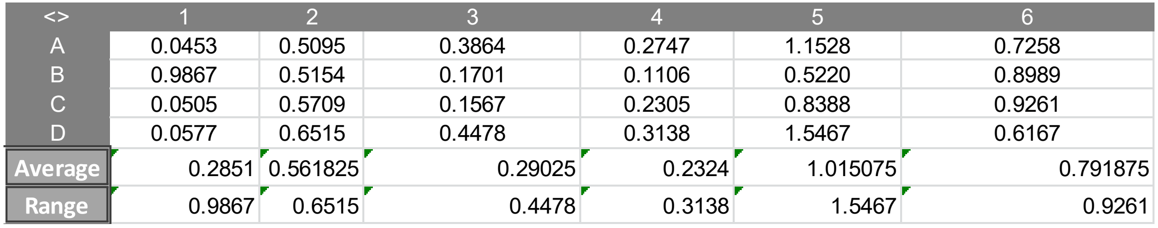
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	2.170	23.836	<0.001	Yes
Control vs. Imipenem 2.5mg/mL	0.685	4.869	<0.001	Yes
Control vs. Imipenem 10mg/mL	0.505	3.585	0.002	Yes
Control vs. Imipenem 5mg/mL	0.399	2.483	0.031	Yes
Control vs. Imipenem 1.25mg/mL	0.114	0.648	0.519	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	2.170	23.836	<0.001	Yes
TSB vs. Imipenem 1.25mg/mL	2.284	13.231	<0.001	Yes
TSB vs. Imipenem 10mg/mL	1.665	12.233	<0.001	Yes
TSB vs. Imipenem 5mg/mL	1.771	11.304	<0.001	Yes
TSB vs. Imipenem 2.5mg/mL	1.485	10.906	<0.001	Yes

Antibiotic Testing 18 on 8/15/14-Ciprofloxacin



<>	1	2	3	4	5	6
A	0.0453	0.5095	0.3864	0.2747	1.1528	0.7258
B	0.9867	0.5154	0.1701	0.1106	0.5220	0.8989
C	0.0505	0.5709	0.1567	0.2305	0.8388	0.9261
D	0.0577	0.6515	0.4478	0.3138	1.5467	0.6167
Average	0.2851	0.561825	0.29025	0.2324	1.015075	0.791875
Range	0.9867	0.6515	0.4478	0.3138	1.5467	0.9261

Descriptive Statistics:
Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	16	0	0.112	0.233	0.0584	0.124
Control	16	0	0.538	0.0947	0.0237	0.0505
Ciprofloxacin 2.5mg/mL	4	0	0.290	0.149	0.0744	0.237
Ciprofloxacin 1.25mg/mL	4	0	0.232	0.0880	0.0440	0.140
Ciprofloxacin 0.625mg/mL	4	0	1.015	0.438	0.219	0.697
Ciprofloxacin 0.3125mg/mL	4	0	0.792	0.147	0.0733	0.233

Column	Range	Max	Min	Median	25%	75%
TSB	0.941	0.987	0.0453	0.0511	0.0480	0.0597
Control	0.372	0.670	0.298	0.523	0.492	0.619
Ciprofloxacin 2.5mg/mL	0.291	0.448	0.157	0.278	0.160	0.432
Ciprofloxacin 1.25mg/mL	0.203	0.314	0.111	0.253	0.141	0.304
Ciprofloxacin 0.625mg/mL	1.025	1.547	0.522	0.996	0.601	1.448
Ciprofloxacin 0.3125mg/mL	0.309	0.926	0.617	0.812	0.644	0.919

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	3.992	15.957	0.501	<0.001	0.299	<0.001
Control	-0.816	1.399	0.131	0.588	0.932	0.266
Ciprofloxacin 2.5mg/mL	0.139	-5.128	0.290	0.261	0.840	0.195
Ciprofloxacin 1.25mg/mL	-1.164	1.323	0.241	0.470	0.929	0.590
Ciprofloxacin 0.625mg/mL	0.218	-0.803	0.156	0.710	0.994	0.976
Ciprofloxacin 0.3125mg/mL	-0.427	-3.293	0.267	0.356	0.903	0.448

Column	Sum	Sum of Squares
TSB	1.790	1.018
Control	8.611	4.768
Ciprofloxacin 2.5mg/mL	1.161	0.403
Ciprofloxacin 1.25mg/mL	0.930	0.239
Ciprofloxacin 0.625mg/mL	4.060	4.697
Ciprofloxacin 0.3125mg/mL	3.168	2.573

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	16	0	0.112	0.233	0.0584
Control	16	0	0.538	0.0947	0.0237
Ciprofloxacin 2.5mg/mL	4	0	0.290	0.149	0.0744
Ciprofloxacin 1.25mg/mL	4	0	0.232	0.0880	0.0440
Ciprofloxacin 0.625mg/mL	4	0	1.015	0.438	0.219
Ciprofloxacin 0.3125mg/mL	4	0	0.792	0.147	0.0733

Source of Variation	DF	SS	MS	F	P
Between Groups	5	3.916	0.783	19.560	<0.001
Residual	42	1.682	0.0400		
Total	47	5.598			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

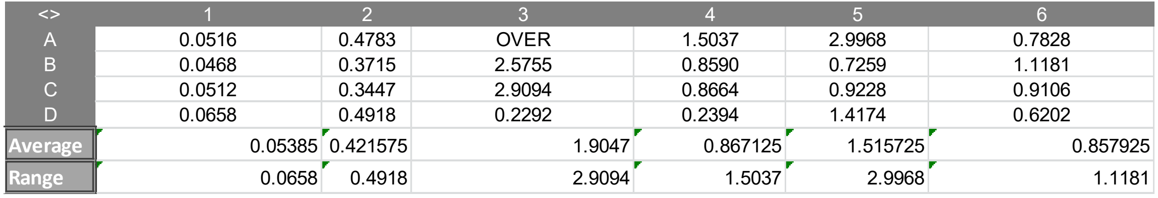
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.426	6.025	<0.001	Yes
Control vs. Ciprofloxaci	0.477	4.263	<0.001	Yes
Control vs. Ciprofloxaci	0.306	2.733	0.027	Yes
Control vs. Ciprofloxaci	0.254	2.268	0.056	No
Control vs. Ciprofloxaci	0.248	2.216	0.032	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Ciprofloxaci	0.903	8.074	<0.001	Yes
TSB vs. Ciprofloxaci	0.680	6.079	<0.001	Yes
TSB vs. Control	0.426	6.025	<0.001	Yes
TSB vs. Ciprofloxacin 2.5mg/mL	0.178	1.595	0.223	No
TSB vs. Ciprofloxaci	0.121	1.077	0.287	No

Antibiotic Testing 19 at 8/15/14-Ceftazidime



<>	1	2	3	4	5	6
A	0.0516	0.4783	OVER	1.5037	2.9968	0.7828
B	0.0468	0.3715	2.5755	0.8590	0.7259	1.1181
C	0.0512	0.3447	2.9094	0.8664	0.9228	0.9106
D	0.0658	0.4918	0.2292	0.2394	1.4174	0.6202
Average	0.05385	0.421575	1.9047	0.867125	1.515725	0.857925
Range	0.0658	0.4918	2.9094	1.5037	2.9968	1.1181

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	16	0	0.112	0.233	0.0584	0.124
Control	16	0	0.538	0.0947	0.0237	0.0505
Ceftazidime 5mg/mL	3	0	1.905	1.461	0.843	3.628
Ceftazidime 2.5mg/mL	4	0	0.867	0.516	0.258	0.821
Ceftazidime 1.25mg/mL	4	0	1.516	1.029	0.515	1.638
Ceftazidime 0.625mg/mL	4	0	0.858	0.210	0.105	0.335

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.941	0.987	0.0453	0.0511	0.0480	0.0597
Control	0.372	0.670	0.298	0.523	0.492	0.619
Ceftazidime 5mg/mL	2.680	2.909	0.229	2.575	0.229	2.909
Ceftazidime 2.5mg/mL	1.264	1.504	0.239	0.863	0.394	1.344
Ceftazidime 1.25mg/mL	2.271	2.997	0.726	1.170	0.775	2.602
Ceftazidime 0.625mg/mL	0.498	1.118	0.620	0.847	0.661	1.066

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	3.992	15.957	0.501	<0.001	0.299	<0.001
Control	-0.816	1.399	0.131	0.588	0.932	0.266
Ceftazidime 5mg/mL	-1.631	--	0.344	0.179	0.842	0.219
Ceftazidime 2.5mg/mL	0.0514	1.500	0.251	0.430	0.947	0.699
Ceftazidime 1.25mg/mL	1.557	2.310	0.288	0.270	0.849	0.224
Ceftazidime 0.625mg/mL	0.280	-0.170	0.151	0.710	0.996	0.986

Column	**Sum**	**Sum of Squares**
TSB	1.790	1.018
Control	8.611	4.768
Ceftazidime 5mg/mL	5.714	15.150
Ceftazidime 2.5mg/mL	3.469	3.807

Ceftazidime 1.25mg/mL	6.063	12.368
Ceftazidime 0.625mg/mL	3.432	3.077

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	16	0	0.112	0.233	0.0584
Control	16	0	0.538	0.0947	0.0237
Ceftazidime 5mg/mL	3	0	1.905	1.461	0.843
Ceftazidime 2.5mg/mL	4	0	0.867	0.516	0.258
Ceftazidime 1.25mg/mL	4	0	1.516	1.029	0.515
Ceftazidime 0.625mg/mL	4	0	0.858	0.210	0.105

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	5	12.870	2.574	11.312	<0.001
Residual	41	9.329	0.228		
Total	46	22.199			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

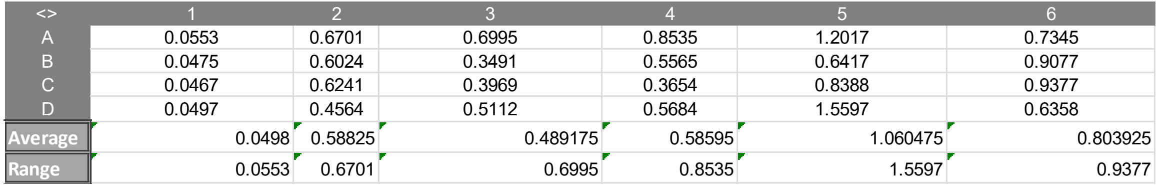
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Ceftazidime 5mg/mL	1.367	4.553	<0.001	Yes
Control vs. Ceftazidime	0.978	3.666	0.003	Yes
Control vs. TSB	0.426	2.528	0.046	Yes
Control vs. Ceftazidime	0.329	1.234	0.398	No
Control vs. Ceftazidime	0.320	1.199	0.237	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Ceftazidime 5mg/mL	1.793	5.974	<0.001	Yes
TSB vs. Ceftazidime 1.25mg/mL	1.404	5.265	<0.001	Yes
TSB vs. Ceftazidime 2.5mg/mL	0.755	2.832	0.021	Yes
TSB vs. Ceftazidime 0.625mg/mL	0.746	2.798	0.016	Yes
TSB vs. Control	0.426	2.528	0.015	Yes

Antibiotic Testing 20 8/15/14-Gentamicin



<>	1	2	3	4	5	6
A	0.0553	0.6701	0.6995	0.8535	1.2017	0.7345
B	0.0475	0.6024	0.3491	0.5565	0.6417	0.9077
C	0.0467	0.6241	0.3969	0.3654	0.8388	0.9377
D	0.0497	0.4564	0.5112	0.5684	1.5597	0.6358
Average	0.0498	0.58825	0.489175	0.58595	1.060475	0.803925
Range	0.0553	0.6701	0.6995	0.8535	1.5597	0.9377

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	16	0	0.112	0.233	0.0584	0.124
Control	16	0	0.538	0.0947	0.0237	0.0505
Gentamicin 5mg/mL	4	0	0.489	0.156	0.0779	0.248
Gentamicin 2.5mg/mL	4	0	0.586	0.201	0.101	0.320
Gentamicin 1.25mg/mL	4	0	1.060	0.406	0.203	0.645
Gentamicin 0.625mg/mL	4	0	0.804	0.143	0.0717	0.228

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.941	0.987	0.0453	0.0511	0.0480	0.0597
Control	0.372	0.670	0.298	0.523	0.492	0.619

Gentamicin 5mg/mL	0.350	0.700	0.349	0.454	0.361	0.652
Gentamicin 2.5mg/mL	0.488	0.854	0.365	0.562	0.413	0.782
Gentamicin 1.25mg/mL	0.918	1.560	0.642	1.020	0.691	1.470
Gentamicin 0.625mg/mL	0.302	0.938	0.636	0.821	0.660	0.930

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	3.992	15.957	0.501	<0.001	0.299	<0.001
Control	-0.816	1.399	0.131	0.588	0.932	0.266
Gentamicin 5mg/mL	1.018	0.146	0.223	0.548	0.927	0.575
Gentamicin 2.5mg/mL	0.687	1.748	0.285	0.283	0.938	0.642
Gentamicin 1.25mg/mL	0.428	-1.722	0.208	0.607	0.968	0.829
Gentamicin 0.625mg/mL	-0.356	-3.599	0.265	0.365	0.904	0.452

Column	**Sum**	**Sum of Squares**
TSB	1.790	1.018
Control	8.611	4.768
Gentamicin 5mg/mL	1.957	1.030
Gentamicin 2.5mg/mL	2.344	1.495
Gentamicin 1.25mg/mL	4.242	4.992
Gentamicin 0.625mg/mL	3.216	2.647

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	16	0	0.112	0.233	0.0584
Control	16	0	0.538	0.0947	0.0237
Gentamicin 5mg/mL	4	0	0.489	0.156	0.0779
Gentamicin 2.5mg/mL	4	0	0.586	0.201	0.101
Gentamicin 1.25mg/mL	4	0	1.060	0.406	0.203
Gentamicin 0.625mg/mL	4	0	0.804	0.143	0.0717

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	5	4.019	0.804	19.840	<0.001
Residual	42	1.702	0.0405		
Total	47	5.720			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.426	5.990	<0.001	Yes
Control vs. Gentamicin 1	0.522	4.642	<0.001	Yes
Control vs. Gentamicin 0	0.266	2.362	0.067	No
Control vs. Gentamicin 5mg/mL	0.0490	0.435	0.888	No
Control vs. Gentamicin 2	0.0478	0.425	0.673	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Gentamicin 1.25mg/mL	0.949	8.431	<0.001	Yes
TSB vs. Gentamicin 0.625mg/mL	0.692	6.151	<0.001	Yes
TSB vs. Control	0.426	5.990	<0.001	Yes
TSB vs. Gentamicin 2.5mg/mL	0.474	4.213	<0.001	Yes
TSB vs. Gentamicin 5mg/mL	0.377	3.353	0.002	Yes

Antibiotic Testing 21 on 8/15/14- Imipenem

<>	1	2	3	4	5	6
A	0.0744	0.5311	0.3738	0.9290	1.8250	0.8145
B	0.0510	0.2985	0.0772	0.2197	0.7846	1.0995
C	0.0604	0.4469	0.0794	0.0906	1.0445	0.9462
D	0.0494	0.4864	0.1990	0.1789	2.3112	0.7119
Average	0.0588	0.440725	0.18235	0.35455	1.491325	0.893025
Range	0.0744	0.5311	0.3738	0.929	2.3112	1.0995

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	16	0	0.112	0.233	0.0584	0.124
Control	16	0	0.538	0.0947	0.0237	0.0505
Imipenem 5mg/mL	4	0	0.182	0.140	0.0699	0.222
Imipenem 2.5mg/mL	4	0	0.355	0.387	0.193	0.615
Imipenem 1.25mg/mL	4	0	1.491	0.703	0.352	1.119
Imipenem 0.625mg/mL	4	0	0.893	0.168	0.0839	0.267

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.941	0.987	0.0453	0.0511	0.0480	0.0597
Control	0.372	0.670	0.298	0.523	0.492	0.619
Imipenem 5mg/mL	0.297	0.374	0.0772	0.139	0.0778	0.330
Imipenem 2.5mg/mL	0.838	0.929	0.0906	0.199	0.113	0.752
Imipenem 1.25mg/mL	1.527	2.311	0.785	1.435	0.850	2.190
Imipenem 0.625mg/mL	0.388	1.099	0.712	0.880	0.738	1.061

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	3.992	15.957	0.501	<0.001	0.299	<0.001
Control	-0.816	1.399	0.131	0.588	0.932	0.266
Imipenem 5mg/mL	1.165	0.294	0.269	0.347	0.854	0.241
Imipenem 2.5mg/mL	1.882	3.641	0.386	0.037	0.757	0.045
Imipenem 1.25mg/mL	0.280	-3.216	0.237	0.487	0.938	0.639
Imipenem 0.625mg/mL	0.357	-1.129	0.180	0.684	0.984	0.927

Column	**Sum**	**Sum of Squares**
TSB	1.790	1.018
Control	8.611	4.768
Imipenem 5mg/mL	0.729	0.192
Imipenem 2.5mg/mL	1.418	0.952
Imipenem 1.25mg/mL	5.965	10.379
Imipenem 0.625mg/mL	3.572	3.274

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	16	0	0.112	0.233	0.0584
Control	16	0	0.538	0.0947	0.0237
Imipenem 5mg/mL	4	0	0.182	0.140	0.0699
Imipenem 2.5mg/mL	4	0	0.355	0.387	0.193
Imipenem 1.25mg/mL	4	0	1.491	0.703	0.352
Imipenem 0.625mg/mL	4	0	0.893	0.168	0.0839

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	5	7.394	1.479	20.524	<0.001
Residual	42	3.026	0.0721		
Total	47	10.420			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):

Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
Control vs. Imipenem 1.25mg/mL	0.953	6.352	<0.001	Yes
Control vs. TSB	0.426	4.492	<0.001	Yes
Control vs. Imipenem 5mg/mL	0.356	2.371	0.066	No
Control vs. Imipenem 0.6	0.355	2.365	0.045	Yes
Control vs. Imipenem 2.5mg/mL	0.184	1.224	0.228	No

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
TSB vs. Imipenem 1.25mg/mL	1.379	9.193	<0.001	Yes
TSB vs. Imipenem 0.625mg/mL	0.781	5.206	<0.001	Yes
TSB vs. Control	0.426	4.492	<0.001	Yes
TSB vs. Imipenem 2.5mg/mL	0.243	1.617	0.214	No
TSB vs. Imipenem 5mg/mL	0.0705	0.470	0.641	No

Antibiotic Testing 22 on 8/25/14- Ciprofloxacin

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0478	0.8052	2.6809	2.3576	2.0776	1.6631	0.8981	0.3866	0.1647	0.0905	0.0846	0.0936
B	0.1259	0.9401	2.6485	2.4146	2.1615	1.6420	0.6019	0.3758	0.1856	0.1075	0.1026	0.1089
C	0.1263	0.8057	2.5381	2.3940	2.1396	1.4165	0.7350	0.4132	0.2556	0.1716	0.1583	0.1606
D	0.1652	0.8201	2.8623	2.1641	2.0973	1.2878	0.5897	0.3794	0.2336	0.1647	0.1649	0.1638
E	0.1657	0.8826	2.6448	2.4350	2.1476	1.8685	0.8990	0.5380	0.3118	0.2070	0.1919	0.1915
F	0.1851	0.2010	2.6432	2.3745	2.1756	1.5243	0.5972	0.4794	0.2263	0.1967	0.1892	0.1973
G	0.1857	0.8940	2.6051	2.3871	2.1339	1.5453	0.7211	0.4424	0.2418	0.2239	0.1991	0.2235
H	0.1761	0.9593	2.5637	2.3648	2.0895	1.4119	0.6753	0.4154	0.2342	0.2023	0.1906	0.2100
Average	0.1472	0.7885	2.6483	2.3615	2.1278	1.5449	0.7147	0.4288	0.2317	0.1705	0.1602	0.1687
Range	0.1379	0.7583	0.3242	0.2709	0.0980	0.5807	0.3093	0.1622	0.1471	0.1334	0.1145	0.1299

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	24	0	0.131	0.0451	0.00921	0.0190
Control	24	0	0.591	0.278	0.0568	0.117
Ciprofloxacin 5mg/mL	8	0	2.648	0.0986	0.0349	0.0824
Ciprofloxacin 2.5mg/mL	8	0	2.361	0.0837	0.0296	0.0700
Ciprofloxacin 1.25mg/mL	8	0	2.128	0.0357	0.0126	0.0298
Ciprofloxacin 0.625mg/mL	8	0	1.545	0.181	0.0639	0.151
Ciprofloxacin 0.3125mg/mL	8	0	0.715	0.126	0.0447	0.106
Ciprofloxacin 0.1563mg/mL	8	0	0.429	0.0562	0.0199	0.0470
Ciprofloxacin 0.0781mg/mL	8	0	0.232	0.0443	0.0157	0.0370
Ciprofloxacin0.0391mg/mL	8	0	0.171	0.0482	0.0171	0.0403
Ciprofloxacin 0.0195mg/mL	8	0	0.160	0.0437	0.0154	0.0365
Ciprofloxacin 0.0098mg/mL	8	0	0.169	0.0468	0.0166	0.0392

Column	Range	Max	Min	Median	25%	75%
TSB	0.138	0.186	0.0478	0.130	0.101	0.169
Control	0.943	1.004	0.0610	0.571	0.489	0.817
Ciprofloxacin 5mg/mL	0.324	2.862	2.538	2.644	2.574	2.673
Ciprofloxacin 2.5mg/mL	0.271	2.435	2.164	2.381	2.359	2.409
Ciprofloxacin 1.25mg/mL	0.0980	2.176	2.078	2.137	2.091	2.158
Ciprofloxacin 0.625mg/mL	0.581	1.869	1.288	1.535	1.413	1.658
Ciprofloxacin 0.3125mg/mL	0.309	0.899	0.590	0.698	0.598	0.857
Ciprofloxacin 0.1563mg/mL	0.162	0.538	0.376	0.414	0.381	0.470
Ciprofloxacin 0.0781mg/mL	0.147	0.312	0.165	0.234	0.196	0.252
Ciprofloxacin0.0391mg/mL	0.133	0.224	0.0905	0.184	0.122	0.206
Ciprofloxacin 0.0195mg/mL	0.115	0.199	0.0846	0.177	0.117	0.192
Ciprofloxacin 0.0098mg/mL	0.130	0.224	0.0936	0.178	0.122	0.207

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	-0.590	-0.748	0.128	0.374	0.907	0.031
Control	-0.469	-0.510	0.139	0.261	0.934	0.120
Ciprofloxacin 5mg/mL	1.551	3.440	0.249	0.151	0.853	0.102
Ciprofloxacin 2.5mg/mL	-2.298	5.946	0.357	0.003	0.718	0.004
Ciprofloxacin 1.25mg/mL	-0.229	-1.499	0.193	0.462	0.934	0.552

Ciprofloxacin 0.625mg/mL	0.482	0.299	0.136	0.773	0.972	0.910
Ciprofloxacin 0.3125mg/mL	0.697	-1.019	0.189	0.487	0.850	0.095
Ciprofloxacin 0.1563mg/mL	1.163	0.798	0.219	0.296	0.882	0.196
Ciprofloxacin 0.0781mg/mL	0.284	0.986	0.201	0.404	0.944	0.650
Ciprofloxacin0.0391mg/mL	-0.870	-0.582	0.206	0.373	0.887	0.219
Ciprofloxacin 0.0195mg/mL	-1.094	-0.329	0.247	0.160	0.819	0.046
Ciprofloxacin 0.0098mg/mL	-0.678	-0.809	0.187	0.498	0.916	0.396

Column	**Sum**	**Sum of Squares**
TSB	3.133	0.456
Control	14.180	10.157
Ciprofloxacin 5mg/mL	21.187	56.177
Ciprofloxacin 2.5mg/mL	18.892	44.661
Ciprofloxacin 1.25mg/mL	17.023	36.230
Ciprofloxacin 0.625mg/mL	12.359	19.323
Ciprofloxacin 0.3125mg/mL	5.717	4.198
Ciprofloxacin 0.1563mg/mL	3.430	1.493
Ciprofloxacin 0.0781mg/mL	1.854	0.443
Ciprofloxacin0.0391mg/mL	1.364	0.249
Ciprofloxacin 0.0195mg/mL	1.281	0.219
Ciprofloxacin 0.0098mg/mL	1.349	0.243

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	24	0	0.131	0.0451	0.00921
Control	24	0	0.591	0.278	0.0568
Ciprofloxacin 5mg/mL	8	0	2.648	0.0986	0.0349
Ciprofloxacin 2.5mg/mL	8	0	2.361	0.0837	0.0296
Ciprofloxacin 1.25mg/mL	8	0	2.128	0.0357	0.0126
Ciprofloxacin 0.625mg/mL	8	0	1.545	0.181	0.0639
Ciprofloxacin 0.3125mg/mL	8	0	0.715	0.126	0.0447
Ciprofloxacin 0.1563mg/mL	8	0	0.429	0.0562	0.0199
Ciprofloxacin 0.0781mg/mL	8	0	0.232	0.0443	0.0157
Ciprofloxacin0.0391mg/mL	8	0	0.171	0.0482	0.0171
Ciprofloxacin 0.0195mg/mL	8	0	0.160	0.0437	0.0154
Ciprofloxacin 0.0098mg/mL	8	0	0.169	0.0468	0.0166

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	90.562	8.233	402.417	<0.001
Residual	116	2.373	0.0205		
Total	127	92.935			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

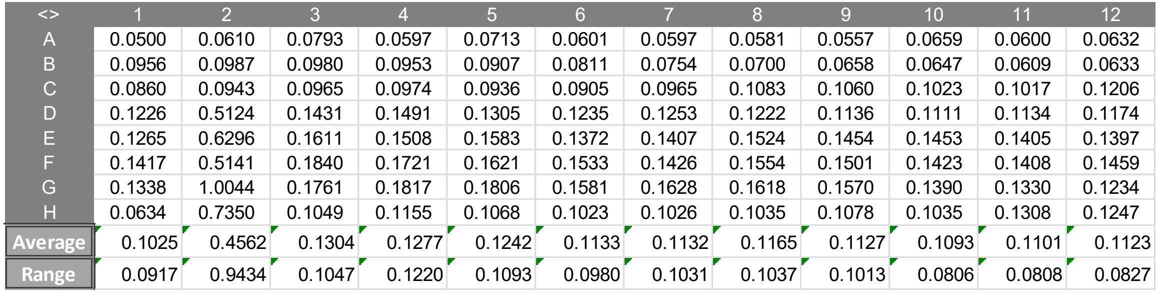
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Ciprofloxaci	2.058	35.235	<0.001	Yes
Control vs. Ciprofloxaci	1.771	30.323	<0.001	Yes
Control vs. Ciprofloxaci	1.537	26.322	<0.001	Yes
Control vs. Ciprofloxaci	0.954	16.339	<0.001	Yes
Control vs. TSB	0.460	11.147	<0.001	Yes
Control vs. Ciprofloxaci	0.431	7.375	<0.001	Yes
Control vs. Ciprofloxaci	0.422	7.230	<0.001	Yes
Control vs. Ciprofloxaci	0.420	7.198	<0.001	Yes
Control vs. Ciprofloxaci	0.359	6.150	<0.001	Yes
Control vs. Ciprofloxaci	0.162	2.775	0.013	Yes
Control vs. Ciprofloxaci	0.124	2.121	0.036	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Ciprofloxacin 5mg/mL	2.518	43.118	<0.001	Yes
TSB vs. Ciprofloxacin 2.5mg/mL	2.231	38.205	<0.001	Yes
TSB vs. Ciprofloxaci	1.997	34.204	<0.001	Yes
TSB vs. Ciprofloxaci	1.414	24.222	<0.001	Yes
TSB vs. Control	0.460	11.147	<0.001	Yes
TSB vs. Ciprofloxaci	0.584	10.003	<0.001	Yes
TSB vs. Ciprofloxaci	0.298	5.107	<0.001	Yes
TSB vs. Ciprofloxaci	0.101	1.732	0.302	No
TSB vs. Ciprofloxaci	0.0400	0.685	0.871	No
TSB vs. Ciprofloxaci	0.0381	0.653	0.765	No
TSB vs. Ciprofloxaci	0.0296	0.507	0.613	No

Antibiotic Testing 23 on 8/25/14-Ceftazidime



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0500	0.0610	0.0793	0.0597	0.0713	0.0601	0.0597	0.0581	0.0557	0.0659	0.0600	0.0632
B	0.0956	0.0987	0.0980	0.0953	0.0907	0.0811	0.0754	0.0700	0.0658	0.0647	0.0609	0.0633
C	0.0860	0.0943	0.0965	0.0974	0.0936	0.0905	0.0965	0.1083	0.1060	0.1023	0.1017	0.1206
D	0.1226	0.5124	0.1431	0.1491	0.1305	0.1235	0.1253	0.1222	0.1136	0.1111	0.1134	0.1174
E	0.1265	0.6296	0.1611	0.1508	0.1583	0.1372	0.1407	0.1524	0.1454	0.1453	0.1405	0.1397
F	0.1417	0.5141	0.1840	0.1721	0.1621	0.1533	0.1426	0.1554	0.1501	0.1423	0.1408	0.1459
G	0.1338	1.0044	0.1761	0.1817	0.1806	0.1581	0.1628	0.1618	0.1570	0.1390	0.1330	0.1234
H	0.0634	0.7350	0.1049	0.1155	0.1068	0.1023	0.1026	0.1035	0.1078	0.1035	0.1308	0.1247
Average	0.1025	0.4562	0.1304	0.1277	0.1242	0.1133	0.1132	0.1165	0.1127	0.1093	0.1101	0.1123
Range	0.0917	0.9434	0.1047	0.1220	0.1093	0.0980	0.1031	0.1037	0.1013	0.0806	0.0808	0.0827

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	24	0	0.131	0.0451	0.00921	0.0190
Control	24	0	0.591	0.278	0.0568	0.117
Ceftazidime	8	0	0.130	0.0406	0.0143	0.0339
Ceftazidime 0.5	8	0	0.128	0.0425	0.0150	0.0355
Ceftazidime 0.5	8	0	0.124	0.0396	0.0140	0.0331
Ceftazidime 0.125	8	0	0.113	0.0354	0.0125	0.0296
Ceftazidime 0.0625	8	0	0.113	0.0357	0.0126	0.0298
Ceftazidime 0.03125	8	0	0.116	0.0391	0.0138	0.0327
Ceftazidime 0.015625	8	0	0.113	0.0377	0.0133	0.0315
Ceftazidime 0.0078125	8	0	0.109	0.0321	0.0114	0.0269
Ceftazidime 0.00391	8	0	0.110	0.0334	0.0118	0.0280
Ceftazidime 0.00195	8	0	0.112	0.0318	0.0112	0.0266

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.138	0.186	0.0478	0.130	0.101	0.169
Control	0.943	1.004	0.0610	0.571	0.489	0.817
Ceftazidime	0.105	0.184	0.0793	0.124	0.0969	0.172
Ceftazidime 0.5	0.122	0.182	0.0597	0.132	0.0958	0.167
Ceftazidime 0.5	0.109	0.181	0.0713	0.119	0.0914	0.161
Ceftazidime 0.125	0.0980	0.158	0.0601	0.113	0.0834	0.149
Ceftazidime 0.0625	0.103	0.163	0.0597	0.114	0.0807	0.142
Ceftazidime 0.03125	0.104	0.162	0.0581	0.115	0.0784	0.155
Ceftazidime 0.015625	0.101	0.157	0.0557	0.111	0.0759	0.149
Ceftazidime 0.0078125	0.0806	0.145	0.0647	0.107	0.0750	0.141
Ceftazidime 0.00391	0.0808	0.141	0.0600	0.122	0.0711	0.139
Ceftazidime 0.00195	0.0827	0.146	0.0632	0.122	0.0768	0.136

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	-0.590	-0.748	0.128	0.374	0.907	0.031
Control	-0.469	-0.510	0.139	0.261	0.934	0.120
Ceftazidime	0.166	-1.966	0.235	0.213	0.898	0.277
Ceftazidime 0.5	-0.276	-1.078	0.193	0.461	0.948	0.688

Ceftazidime 0.5	0.162	-1.613	0.180	0.545	0.936	0.574
Ceftazidime 0.125	-0.118	-1.358	0.125	0.797	0.953	0.738
Ceftazidime 0.0625	-0.180	-1.150	0.155	0.698	0.964	0.844
Ceftazidime 0.03125	-0.328	-1.304	0.196	0.440	0.918	0.416
Ceftazidime 0.015625	-0.405	-1.109	0.182	0.531	0.911	0.359
Ceftazidime 0.0078125	-0.353	-1.315	0.198	0.429	0.881	0.193
Ceftazidime 0.00391	-0.857	-0.958	0.232	0.229	0.828	0.057
Ceftazidime 0.00195	-1.028	-0.374	0.314	0.020	0.810	0.037

Column	**Sum**	**Sum of Squares**
TSB	3.133	0.456
Control	14.180	10.157
Ceftazidime	1.043	0.148
Ceftazidime 0.5	1.022	0.143
Ceftazidime 0.5	0.994	0.134
Ceftazidime 0.125	0.906	0.111
Ceftazidime 0.0625	0.906	0.111
Ceftazidime 0.03125	0.932	0.119
Ceftazidime 0.015625	0.901	0.112
Ceftazidime 0.0078125	0.874	0.103
Ceftazidime 0.00391	0.881	0.105
Ceftazidime 0.00195	0.898	0.108

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	24	0	0.131	0.0451	0.00921
Control	24	0	0.591	0.278	0.0568
Ceftazidime	8	0	0.130	0.0406	0.0143
Ceftazidime 0.5	8	0	0.128	0.0425	0.0150
Ceftazidime 0.5	8	0	0.124	0.0396	0.0140
Ceftazidime 0.125	8	0	0.113	0.0354	0.0125
Ceftazidime 0.0625	8	0	0.113	0.0357	0.0126
Ceftazidime 0.03125	8	0	0.116	0.0391	0.0138
Ceftazidime 0.015625	8	0	0.113	0.0377	0.0133
Ceftazidime 0.0078125	8	0	0.109	0.0321	0.0114
Ceftazidime 0.00391	8	0	0.110	0.0334	0.0118
Ceftazidime 0.00195	8	0	0.112	0.0318	0.0112

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	4.328	0.393	23.758	<0.001
Residual	116	1.921	0.0166		
Total	127	6.250			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.460	12.389	<0.001	Yes
Control vs. Ceftazidime	0.482	9.166	<0.001	Yes
Control vs. Ceftazidime	0.481	9.149	<0.001	Yes

Control vs. Ceftazidime	0.479	9.108	<0.001	Yes
Control vs. Ceftazidime	0.478	9.101	<0.001	Yes
Control vs. Ceftazidime 0.0625	0.478	9.091	<0.001	Yes
Control vs. Ceftazidime 0.125	0.478	9.089	<0.001	Yes
Control vs. Ceftazidime	0.474	9.028	<0.001	Yes
Control vs. Ceftazidime 0.5	0.467	8.880	<0.001	Yes
Control vs. Ceftazidime 0.5	0.463	8.815	<0.001	Yes
Control vs. Ceftazidime	0.460	8.764	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.460	12.389	<0.001	Yes
TSB vs. Ceftazidime 0.0078125	0.0213	0.405	1.000	No
TSB vs. Ceftazidime 0.00391	0.0204	0.388	1.000	No
TSB vs. Ceftazidime 0.00195	0.0183	0.348	1.000	No
TSB vs. Ceftazidime 0.015625	0.0179	0.340	1.000	No
TSB vs. Ceftazidime 0.0625	0.0173	0.330	1.000	No
TSB vs. Ceftazidime 0.125	0.0173	0.329	0.999	No
TSB vs. Ceftazidime 0.03125	0.0141	0.268	0.998	No
TSB vs. Ceftazidime 0.5	0.00631	0.120	0.999	No
TSB vs. Ceftazidime 0.5	0.00285	0.0542	0.998	No
TSB vs. Ceftazidime	0.000171	0.00325	0.997	No

Antibiotic Testing 24 on 8/25/14- Gentamicin

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0513	0.3658	0.1270	0.1024	0.0834	0.0760	0.0677	0.1159	0.0994	0.1250	0.0780	0.0795
B	0.1182	0.5300	0.1601	0.1523	0.1328	0.1217	0.1095	0.1199	0.1297	0.0906	0.1012	0.0933
C	0.1165	0.5527	0.1818	0.1632	0.1558	0.1460	0.1481	0.1372	0.1855	0.1504	0.1461	0.1464
D	0.1604	0.6134	0.1831	0.1953	0.1793	0.1696	0.1702	0.1740	0.1843	0.1584	0.1677	0.1489
E	0.1704	0.5896	0.2014	0.2367	0.2032	0.1848	0.1940	0.2138	0.1985	0.1827	0.1886	0.1803
F	0.1813	0.5451	0.2212	0.2439	0.2499	0.2013	0.1993	0.2236	0.1992	0.1968	0.1927	0.1905
G	0.1822	0.5448	0.2424	0.3002	0.2228	0.2095	0.2234	0.2479	0.2214	0.2554	0.2044	0.1999
H	0.1554	0.4808	0.1775	0.2737	0.2139	0.2038	0.2065	0.2241	0.2360	0.2431	0.1894	0.2079
average	0.1420	0.5278	0.1868	0.2085	0.1801	0.1641	0.1648	0.1821	0.1818	0.1753	0.1585	0.1558
range	0.1309	0.2476	0.1154	0.1978	0.1665	0.1335	0.1557	0.1320	0.1366	0.1648	0.1264	0.1284

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	24	0	0.131	0.0451	0.00921	0.0190
Control	24	0	0.591	0.278	0.0568	0.117
Gentamicin	8	0	0.187	0.0357	0.0126	0.0298
Gentamicin 0.5	8	0	0.208	0.0669	0.0237	0.0559
Gentamicin 0.25	8	0	0.180	0.0542	0.0192	0.0453
Gentamicin 0.125	8	0	0.164	0.0469	0.0166	0.0392
Gentamicin 0.0625	8	0	0.165	0.0535	0.0189	0.0447
Gentamicin 0.03125	8	0	0.182	0.0523	0.0185	0.0437
Gentamicin 0.015625	8	0	0.182	0.0457	0.0162	0.0382
Gentamicin 0.0078125	8	0	0.175	0.0562	0.0199	0.0470
Gentamicin 0.00391	8	0	0.159	0.0465	0.0164	0.0389
Gentamicin 0.00195	8	0	0.156	0.0483	0.0171	0.0404

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.138	0.186	0.0478	0.130	0.101	0.169
Control	0.943	1.004	0.0610	0.571	0.489	0.817
Gentamicin	0.115	0.242	0.127	0.182	0.164	0.216
Gentamicin 0.5	0.198	0.300	0.102	0.216	0.155	0.266
Gentamicin 0.25	0.167	0.250	0.0834	0.191	0.139	0.221
Gentamicin 0.125	0.134	0.209	0.0760	0.177	0.128	0.203
Gentamicin 0.0625	0.156	0.223	0.0677	0.182	0.119	0.205
Gentamicin 0.03125	0.132	0.248	0.116	0.194	0.124	0.224
Gentamicin 0.015625	0.137	0.236	0.0994	0.192	0.143	0.216
Gentamicin 0.0078125	0.165	0.255	0.0906	0.171	0.131	0.232
Gentamicin 0.00391	0.126	0.204	0.0780	0.178	0.112	0.192
Gentamicin 0.00195	0.128	0.208	0.0795	0.165	0.107	0.198

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	-0.590	-0.748	0.128	0.374	0.907	0.031
Control	-0.469	-0.510	0.139	0.261	0.934	0.120
Gentamicin	-0.0777	0.253	0.166	0.632	0.980	0.964
Gentamicin 0.5	-0.222	-0.937	0.163	0.649	0.972	0.912
Gentamicin 0.25	-0.668	-0.0657	0.165	0.642	0.964	0.845
Gentamicin 0.125	-1.016	0.250	0.172	0.599	0.895	0.261
Gentamicin 0.0625	-0.937	-0.0583	0.207	0.367	0.913	0.379
Gentamicin 0.03125	-0.208	-1.967	0.228	0.247	0.885	0.211
Gentamicin 0.015625	-0.934	0.186	0.272	0.083	0.905	0.321
Gentamicin 0.0078125	0.0865	-0.758	0.136	0.773	0.970	0.900
Gentamicin 0.00391	-0.981	-0.475	0.241	0.184	0.861	0.123
Gentamicin 0.00195	-0.689	-0.981	0.194	0.455	0.895	0.262

Column	Sum	Sum of Squares
TSB	3.133	0.456
Control	14.180	10.157
Gentamicin	1.494	0.288
Gentamicin 0.5	1.668	0.379
Gentamicin 0.25	1.441	0.280
Gentamicin 0.125	1.313	0.231
Gentamicin 0.0625	1.319	0.237
Gentamicin 0.03125	1.456	0.284
Gentamicin 0.015625	1.454	0.279
Gentamicin 0.0078125	1.402	0.268
Gentamicin 0.00391	1.268	0.216
Gentamicin 0.00195	1.247	0.211

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	24	0	0.131	0.0451	0.00921
Control	24	0	0.591	0.278	0.0568
Gentamicin	8	0	0.187	0.0357	0.0126
Gentamicin 0.5	8	0	0.208	0.0669	0.0237
Gentamicin 0.25	8	0	0.180	0.0542	0.0192
Gentamicin 0.125	8	0	0.164	0.0469	0.0166
Gentamicin 0.0625	8	0	0.165	0.0535	0.0189
Gentamicin 0.03125	8	0	0.182	0.0523	0.0185
Gentamicin 0.015625	8	0	0.182	0.0457	0.0162
Gentamicin 0.0078125	8	0	0.175	0.0562	0.0199
Gentamicin 0.00391	8	0	0.159	0.0465	0.0164
Gentamicin 0.00195	8	0	0.156	0.0483	0.0171

Source of Variation	DF	SS	MS	F	P
Between Groups	11	3.586	0.326	18.820	<0.001
Residual	116	2.009	0.0173		
Total	127	5.595			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

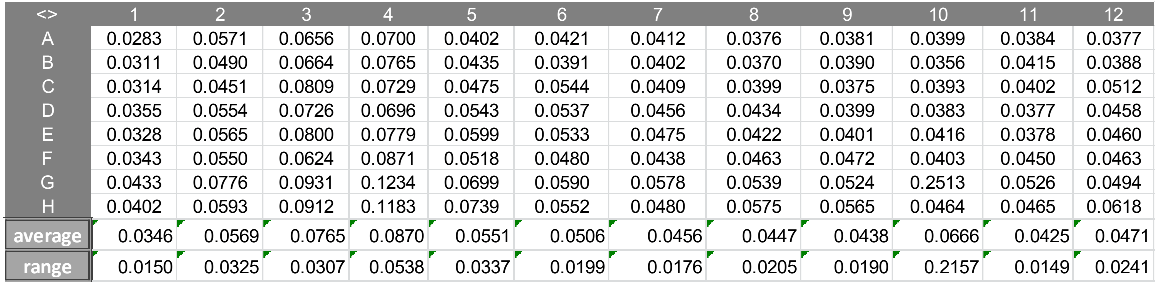
Comparison	Diff of Means	t	P	P<0.050
Control vs. TSB	0.460	12.115	<0.001	Yes
Control vs. Gentamicin 0.00195	0.435	8.096	<0.001	Yes
Control vs. Gentamicin 0.00391	0.432	8.046	<0.001	Yes
Control vs. Gentamicin 0.125	0.427	7.942	<0.001	Yes
Control vs. Gentamicin 0.0625	0.426	7.928	<0.001	Yes

Control vs. Gentamicin 0	0.416	7.734	<0.001	Yes
Control vs. Gentamicin 0.25	0.411	7.644	<0.001	Yes
Control vs. Gentamicin 0	0.409	7.614	<0.001	Yes
Control vs. Gentamicin 0.03125	0.409	7.608	<0.001	Yes
Control vs. Gentamicin	0.404	7.519	<0.001	Yes
Control vs. Gentamicin 0.5	0.382	7.116	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.460	12.115	<0.001	Yes
TSB vs. Gentamicin 0.5	0.0779	1.450	0.802	No
TSB vs. Gentamicin	0.0563	1.047	0.958	No
TSB vs. Gentamicin 0.03125	0.0515	0.959	0.964	No
TSB vs. Gentamicin 0.015625	0.0512	0.953	0.947	No
TSB vs. Gentamicin 0.25	0.0496	0.923	0.930	No
TSB vs. Gentamicin 0.0078125	0.0448	0.833	0.926	No
TSB vs. Gentamicin 0.0625	0.0343	0.638	0.949	No
TSB vs. Gentamicin 0.125	0.0335	0.624	0.899	No
TSB vs. Gentamicin 0.00391	0.0280	0.521	0.843	No
TSB vs. Gentamicin 0.00195	0.0253	0.471	0.639	No

New Antibiotic Testing on 9/24/14 at 48 Hours-Ciprofloxacin



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0283	0.0571	0.0656	0.0700	0.0402	0.0421	0.0412	0.0376	0.0381	0.0399	0.0384	0.0377
B	0.0311	0.0490	0.0664	0.0765	0.0435	0.0391	0.0402	0.0370	0.0390	0.0356	0.0415	0.0388
C	0.0314	0.0451	0.0809	0.0729	0.0475	0.0544	0.0409	0.0399	0.0375	0.0393	0.0402	0.0512
D	0.0355	0.0554	0.0726	0.0696	0.0543	0.0537	0.0456	0.0434	0.0399	0.0383	0.0377	0.0458
E	0.0328	0.0565	0.0800	0.0779	0.0599	0.0533	0.0475	0.0422	0.0401	0.0416	0.0378	0.0460
F	0.0343	0.0550	0.0624	0.0871	0.0518	0.0480	0.0438	0.0463	0.0472	0.0403	0.0450	0.0463
G	0.0433	0.0776	0.0931	0.1234	0.0699	0.0590	0.0578	0.0539	0.0524	0.2513	0.0526	0.0494
H	0.0402	0.0593	0.0912	0.1183	0.0739	0.0552	0.0480	0.0575	0.0565	0.0464	0.0465	0.0618
average	0.0346	0.0569	0.0765	0.0870	0.0551	0.0506	0.0456	0.0447	0.0438	0.0666	0.0425	0.0471
range	0.0150	0.0325	0.0307	0.0538	0.0337	0.0199	0.0176	0.0205	0.0190	0.2157	0.0149	0.0241

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	32	0	0.0443	0.0171	0.00302	0.00616
Control	32	0	0.888	0.601	0.106	0.217
12.5mg	8	0	0.0765	0.0117	0.00414	0.00978
6.25mg	8	0	0.0870	0.0217	0.00766	0.0181
3.125mg	8	0	0.0551	0.0121	0.00427	0.0101
1.5625mg	8	0	0.0506	0.00691	0.00244	0.00578
0.78125mg	8	0	0.0456	0.00576	0.00204	0.00481
0.390625mg	8	0	0.0447	0.00748	0.00264	0.00625
0.1953125mg	8	0	0.0438	0.00728	0.00257	0.00609
0.09765625mg	8	0	0.0666	0.0747	0.0264	0.0624
0.04882813mg	8	0	0.0425	0.00524	0.00185	0.00438
0.02441406mg	8	0	0.0471	0.00755	0.00267	0.00631

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0653	0.0916	0.0263	0.0364	0.0331	0.0517
Control	1.504	1.549	0.0451	1.066	0.183	1.446
12.5mg	0.0307	0.0931	0.0624	0.0763	0.0658	0.0886
6.25mg	0.0538	0.123	0.0696	0.0772	0.0707	0.110
3.125mg	0.0337	0.0739	0.0402	0.0531	0.0445	0.0674
1.5625mg	0.0199	0.0590	0.0391	0.0535	0.0436	0.0550
0.78125mg	0.0176	0.0578	0.0402	0.0447	0.0410	0.0479
0.390625mg	0.0205	0.0575	0.0370	0.0428	0.0382	0.0520
0.1953125mg	0.0190	0.0565	0.0375	0.0400	0.0383	0.0511
0.09765625mg	0.216	0.251	0.0356	0.0401	0.0386	0.0452
0.04882813mg	0.0149	0.0526	0.0377	0.0408	0.0379	0.0461
0.02441406mg	0.0241	0.0618	0.0377	0.0461	0.0406	0.0507

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	1.404	1.092	0.232	<0.001	0.816	<0.001
Control	-0.316	-1.658	0.255	<0.001	0.808	<0.001

12.5mg	0.312	-1.475	0.182	0.536	0.916	0.401
6.25mg	1.204	-0.303	0.287	0.051	0.772	0.014
3.125mg	0.495	-0.974	0.152	0.710	0.944	0.652
1.5625mg	-0.784	-0.611	0.277	0.071	0.898	0.278
0.78125mg	1.464	2.518	0.215	0.320	0.857	0.111
0.390625mg	0.868	-0.471	0.195	0.445	0.897	0.273
0.1953125mg	1.001	-0.639	0.321	0.015	0.822	0.050
0.09765625mg	2.819	7.959	0.482	<0.001	0.456	<0.001
0.04882813mg	1.103	0.612	0.198	0.428	0.878	0.178
0.02441406mg	0.806	1.367	0.180	0.544	0.919	0.424

Column	**Sum**	**Sum of Squares**
TSB	1.418	0.0719
Control	28.402	36.417
12.5mg	0.612	0.0478
6.25mg	0.696	0.0638
3.125mg	0.441	0.0253
1.5625mg	0.405	0.0208
0.78125mg	0.365	0.0169
0.390625mg	0.358	0.0164
0.1953125mg	0.351	0.0157
0.09765625mg	0.533	0.0745
0.04882813mg	0.340	0.0146
0.02441406mg	0.377	0.0182

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.0443	0.0171	0.00302
Control	32	0	0.888	0.601	0.106
12.5mg	8	0	0.0765	0.0117	0.00414
6.25mg	8	0	0.0870	0.0217	0.00766
3.125mg	8	0	0.0551	0.0121	0.00427
1.5625mg	8	0	0.0506	0.00691	0.00244
0.78125mg	8	0	0.0456	0.00576	0.00204
0.390625mg	8	0	0.0447	0.00748	0.00264
0.1953125mg	8	0	0.0438	0.00728	0.00257
0.09765625mg	8	0	0.0666	0.0747	0.0264
0.04882813mg	8	0	0.0425	0.00524	0.00185
0.02441406mg	8	0	0.0471	0.00755	0.00267

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	17.371	1.579	18.506	<0.001
Residual	132	11.264	0.0853		
Total	143	28.635			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

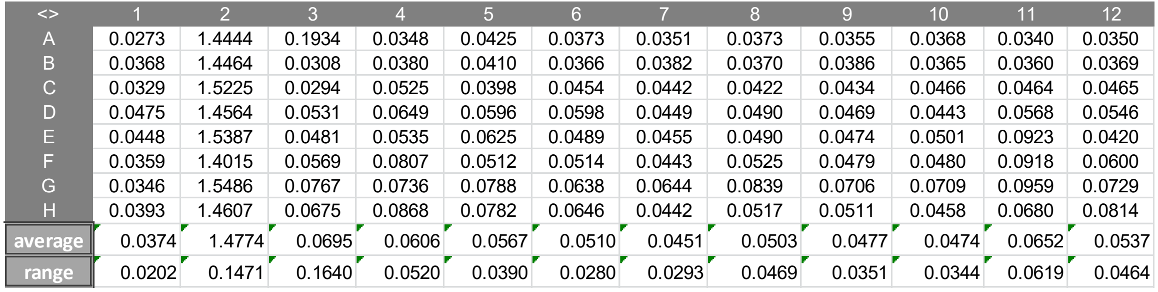
Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.843	11.547	<0.001	Yes
Control vs. 0.04882813mg	0.845	7.319	<0.001	Yes
Control vs. 0.1953125mg	0.844	7.307	<0.001	Yes
Control vs. 0.390625mg	0.843	7.299	<0.001	Yes
Control vs. 0.78125mg	0.842	7.291	<0.001	Yes
Control vs. 0.02441406mg	0.840	7.278	<0.001	Yes
Control vs. 1.5625mg	0.837	7.248	<0.001	Yes
Control vs. 3.125mg	0.832	7.209	<0.001	Yes
Control vs. 0.09765625mg	0.821	7.110	<0.001	Yes

Control vs. 12.5mg	0.811	7.024	<0.001	Yes
Control vs. 6.25mg	0.801	6.933	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.843	11.547	<0.001	Yes
TSB vs. 6.25mg	0.0427	0.369	1.000	No
TSB vs. 12.5mg	0.0322	0.279	1.000	No
TSB vs. 0.09765625mg	0.0223	0.193	1.000	No
TSB vs. 3.125mg	0.0108	0.0937	1.000	No
TSB vs. 1.5625mg	0.00630	0.0546	1.000	No
TSB vs. 0.02441406mg	0.00283	0.0245	1.000	No
TSB vs. 0.04882813mg	0.00184	0.0159	1.000	No
TSB vs. 0.78125mg	0.00132	0.0115	1.000	No
TSB vs. 0.1953125mg	0.000462	0.00401	1.000	No
TSB vs. 0.390625mg	0.000425	0.00368	0.997	No

New Antibiotic Testing on 9/24/14 at 48 Hours- Gentamicin



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0273	1.4444	0.1934	0.0348	0.0425	0.0373	0.0351	0.0373	0.0355	0.0368	0.0340	0.0350
B	0.0368	1.4464	0.0308	0.0380	0.0410	0.0366	0.0382	0.0370	0.0386	0.0365	0.0360	0.0369
C	0.0329	1.5225	0.0294	0.0525	0.0398	0.0454	0.0442	0.0422	0.0434	0.0466	0.0464	0.0465
D	0.0475	1.4564	0.0531	0.0649	0.0596	0.0598	0.0449	0.0490	0.0469	0.0443	0.0568	0.0546
E	0.0448	1.5387	0.0481	0.0535	0.0625	0.0489	0.0455	0.0490	0.0474	0.0501	0.0923	0.0420
F	0.0359	1.4015	0.0569	0.0807	0.0512	0.0514	0.0443	0.0525	0.0479	0.0480	0.0918	0.0600
G	0.0346	1.5486	0.0767	0.0736	0.0788	0.0638	0.0644	0.0839	0.0706	0.0709	0.0959	0.0729
H	0.0393	1.4607	0.0675	0.0868	0.0782	0.0646	0.0442	0.0517	0.0511	0.0458	0.0680	0.0814
average	0.0374	1.4774	0.0695	0.0606	0.0567	0.0510	0.0451	0.0503	0.0477	0.0474	0.0652	0.0537
range	0.0202	0.1471	0.1640	0.0520	0.0390	0.0280	0.0293	0.0469	0.0351	0.0344	0.0619	0.0464

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	32	0	0.0443	0.0171	0.00302	0.00616
Control	32	0	0.888	0.601	0.106	0.217
25mg	8	0	0.0695	0.0526	0.0186	0.0440
12.5mg	8	0	0.0606	0.0192	0.00677	0.0160
6.25mg	8	0	0.0567	0.0158	0.00560	0.0132
3.125mg	8	0	0.0510	0.0111	0.00391	0.00925
1.5625mg	8	0	0.0451	0.00864	0.00305	0.00722
0.78125mg	8	0	0.0503	0.0149	0.00526	0.0124
0.390625mg	8	0	0.0477	0.0106	0.00375	0.00886
0.1953125mg	8	0	0.0474	0.0107	0.00379	0.00896
0.09765625mg	8	0	0.0652	0.0258	0.00910	0.0215
0.04882813mg	8	0	0.0537	0.0169	0.00597	0.0141

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0653	0.0916	0.0263	0.0364	0.0331	0.0517
Control	1.504	1.549	0.0451	1.066	0.183	1.446
25mg	0.164	0.193	0.0294	0.0550	0.0351	0.0744
12.5mg	0.0520	0.0868	0.0348	0.0592	0.0416	0.0789
6.25mg	0.0390	0.0788	0.0398	0.0554	0.0414	0.0743
3.125mg	0.0280	0.0646	0.0366	0.0502	0.0393	0.0628
1.5625mg	0.0293	0.0644	0.0351	0.0442	0.0397	0.0454
0.78125mg	0.0469	0.0839	0.0370	0.0490	0.0385	0.0523
0.390625mg	0.0351	0.0706	0.0355	0.0471	0.0398	0.0503
0.1953125mg	0.0344	0.0709	0.0365	0.0462	0.0387	0.0496
0.09765625mg	0.0619	0.0959	0.0340	0.0624	0.0386	0.0922
0.04882813mg	0.0464	0.0814	0.0350	0.0505	0.0382	0.0697

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	1.404	1.092	0.232	<0.001	0.816	<0.001
Control	-0.316	-1.658	0.255	<0.001	0.808	<0.001
25mg	2.304	5.854	0.321	0.015	0.710	0.003
12.5mg	-0.0331	-1.406	0.145	0.744	0.946	0.670
6.25mg	0.442	-1.430	0.190	0.480	0.881	0.193
3.125mg	-0.0539	-1.557	0.162	0.656	0.914	0.381

1.5625mg	1.730	4.391	0.357	0.003	0.778	0.017
0.78125mg	1.892	4.431	0.317	0.018	0.783	0.019
0.390625mg	1.512	3.387	0.248	0.155	0.860	0.119
0.1953125mg	1.631	3.755	0.275	0.077	0.823	0.050
0.09765625mg	0.0655	-1.989	0.225	0.265	0.878	0.180
0.04882813mg	0.615	-0.890	0.164	0.645	0.929	0.506

Column	**Sum**	**Sum of Squares**
TSB	1.418	0.0719
Control	28.402	36.417
25mg	0.556	0.0580
12.5mg	0.485	0.0319
6.25mg	0.454	0.0275
3.125mg	0.408	0.0216
1.5625mg	0.361	0.0168
0.78125mg	0.403	0.0218
0.390625mg	0.381	0.0190
0.1953125mg	0.379	0.0188
0.09765625mg	0.521	0.0386
0.04882813mg	0.429	0.0250

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.0443	0.0171	0.00302
Control	32	0	0.888	0.601	0.106
25mg	8	0	0.0695	0.0526	0.0186
12.5mg	8	0	0.0606	0.0192	0.00677
6.25mg	8	0	0.0567	0.0158	0.00560
3.125mg	8	0	0.0510	0.0111	0.00391
1.5625mg	8	0	0.0451	0.00864	0.00305
0.78125mg	8	0	0.0503	0.0149	0.00526
0.390625mg	8	0	0.0477	0.0106	0.00375
0.1953125mg	8	0	0.0474	0.0107	0.00379
0.09765625mg	8	0	0.0652	0.0258	0.00910
0.04882813mg	8	0	0.0537	0.0169	0.00597

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	17.395	1.581	18.550	<0.001
Residual	132	11.253	0.0852		
Total	143	28.648			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

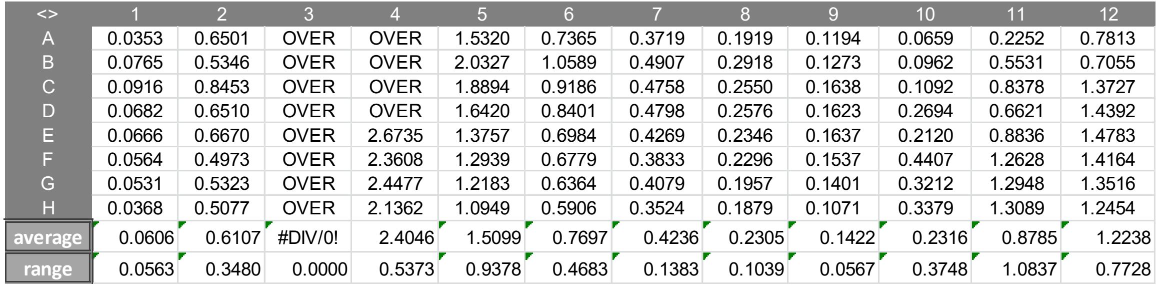
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.843	11.553	<0.001	Yes
Control vs. 1.5625mg	0.842	7.300	<0.001	Yes
Control vs. 0.1953125mg	0.840	7.280	<0.001	Yes
Control vs. 0.390625mg	0.840	7.277	<0.001	Yes
Control vs. 0.78125mg	0.837	7.254	<0.001	Yes
Control vs. 3.125mg	0.837	7.249	<0.001	Yes
Control vs. 0.04882813mg	0.834	7.225	<0.001	Yes
Control vs. 6.25mg	0.831	7.199	<0.001	Yes
Control vs. 12.5mg	0.827	7.165	<0.001	Yes
Control vs. 0.09765625mg	0.822	7.126	<0.001	Yes
Control vs. 25mg	0.818	7.088	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.843	11.553	<0.001	Yes
TSB vs. 25mg	0.0252	0.218	1.000	No
TSB vs. 0.09765625mg	0.0209	0.181	1.000	No
TSB vs. 12.5mg	0.0163	0.141	1.000	No
TSB vs. 6.25mg	0.0124	0.107	1.000	No
TSB vs. 0.04882813mg	0.00936	0.0811	1.000	No
TSB vs. 3.125mg	0.00668	0.0578	1.000	No
TSB vs. 0.78125mg	0.00603	0.0522	1.000	No
TSB vs. 0.390625mg	0.00337	0.0292	1.000	No
TSB vs. 0.1953125mg	0.00308	0.0266	1.000	No
TSB vs. 1.5625mg	0.000800	0.00693	0.994	No

New Antibiotic Testing on 9/25/14 at 48 hours- Rifampicin



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0353	0.6501	OVER	OVER	1.5320	0.7365	0.3719	0.1919	0.1194	0.0659	0.2252	0.7813
B	0.0765	0.5346	OVER	OVER	2.0327	1.0589	0.4907	0.2918	0.1273	0.0962	0.5531	0.7055
C	0.0916	0.8453	OVER	OVER	1.8894	0.9186	0.4758	0.2550	0.1638	0.1092	0.8378	1.3727
D	0.0682	0.6510	OVER	OVER	1.6420	0.8401	0.4798	0.2576	0.1623	0.2694	0.6621	1.4392
E	0.0666	0.6670	OVER	2.6735	1.3757	0.6984	0.4269	0.2346	0.1637	0.2120	0.8836	1.4783
F	0.0564	0.4973	OVER	2.3608	1.2939	0.6779	0.3833	0.2296	0.1537	0.4407	1.2628	1.4164
G	0.0531	0.5323	OVER	2.4477	1.2183	0.6364	0.4079	0.1957	0.1401	0.3212	1.2948	1.3516
H	0.0368	0.5077	OVER	2.1362	1.0949	0.5906	0.3524	0.1879	0.1071	0.3379	1.3089	1.2454
average	0.0606	0.6107	#DIV/0!	2.4046	1.5099	0.7697	0.4236	0.2305	0.1422	0.2316	0.8785	1.2238
range	0.0563	0.3480	0.0000	0.5373	0.9378	0.4683	0.1383	0.1039	0.0567	0.3748	1.0837	0.7728

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	32	0	0.0443	0.0171	0.00302	0.00616
Control	32	0	0.888	0.601	0.106	0.217
2.5mg	8	8	--	--	--	--
1.25mg	8	4	2.405	0.222	0.111	0.354
0.625mg	8	0	1.510	0.329	0.116	0.275
0.3125mg	8	0	0.770	0.158	0.0559	0.132
0.15625mg	8	0	0.424	0.0535	0.0189	0.0447
0.078125mg	8	0	0.231	0.0371	0.0131	0.0310
0.039062mg	8	0	0.142	0.0222	0.00784	0.0185
0.01953125mg	8	0	0.232	0.134	0.0474	0.112
0.00976563mg	8	0	0.879	0.394	0.139	0.330
0.00488281mg	8	0	1.224	0.305	0.108	0.255

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0653	0.0916	0.0263	0.0364	0.0331	0.0517
Control	1.504	1.549	0.0451	1.066	0.183	1.446
2.5mg	--	--	--	--	--	--
1.25mg	0.537	2.674	2.136	2.404	2.192	2.617
0.625mg	0.938	2.033	1.095	1.454	1.237	1.828
0.3125mg	0.468	1.059	0.591	0.717	0.647	0.899
0.15625mg	0.138	0.491	0.352	0.417	0.375	0.479
0.078125mg	0.104	0.292	0.188	0.232	0.193	0.257
0.039062mg	0.0567	0.164	0.107	0.147	0.121	0.163
0.01953125mg	0.375	0.441	0.0659	0.241	0.0994	0.334
0.00976563mg	1.084	1.309	0.225	0.861	0.580	1.287
0.00488281mg	0.773	1.478	0.706	1.362	0.897	1.434

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	1.404	1.092	0.232	<0.001	0.816	<0.001
Control	-0.316	-1.658	0.255	<0.001	0.808	<0.001
2.5mg	--	--	--	--	--	--
1.25mg	0.00769	0.755	0.173	0.696	0.994	0.977
0.625mg	0.488	-0.940	0.158	0.678	0.953	0.741
0.3125mg	0.893	0.000407	0.208	0.362	0.928	0.495
0.15625mg	0.0675	-1.828	0.211	0.346	0.912	0.368
0.078125mg	0.328	-0.912	0.201	0.407	0.924	0.464
0.039062mg	-0.498	-1.433	0.198	0.424	0.885	0.212
0.01953125mg	0.179	-1.259	0.194	0.450	0.940	0.608

0.00976563mg	-0.358	-0.897	0.210	0.349	0.916	0.399
0.00488281mg	-1.253	-0.193	0.287	0.051	0.767	0.012

Column	**Sum**	**Sum of Squares**
TSB	1.418	0.0719
Control	28.402	36.417
2.5mg	--	--
1.25mg	9.618	23.276
0.625mg	12.079	18.995
0.3125mg	6.157	4.914
0.15625mg	3.389	1.455
0.078125mg	1.844	0.435
0.039062mg	1.137	0.165
0.01953125mg	1.852	0.555
0.00976563mg	7.028	7.262
0.00488281mg	9.790	12.633

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.0443	0.0171	0.00302
Control	32	0	0.888	0.601	0.106
2.5mg	8	8	--	--	--
1.25mg	8	4	2.405	0.222	0.111
0.625mg	8	0	1.510	0.329	0.116
0.3125mg	8	0	0.770	0.158	0.0559
0.15625mg	8	0	0.424	0.0535	0.0189
0.078125mg	8	0	0.231	0.0371	0.0131
0.039062mg	8	0	0.142	0.0222	0.00784
0.01953125mg	8	0	0.232	0.134	0.0474
0.00976563mg	8	0	0.879	0.394	0.139
0.00488281mg	8	0	1.224	0.305	0.108

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	10	40.151	4.015	34.222	<0.001
Residual	121	14.196	0.117		
Total	131	54.347			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.843	9.848	<0.001	Yes
Control vs. 1.25mg	1.517	8.351	<0.001	Yes
Control vs. 0.039062mg	0.745	5.505	<0.001	Yes
Control vs. 0.078125mg	0.657	4.853	<0.001	Yes
Control vs. 0.01953125mg	0.656	4.845	<0.001	Yes
Control vs. 0.625mg	0.622	4.596	<0.001	Yes
Control vs. 0.15625mg	0.464	3.427	0.003	Yes
Control vs. 0.00488281mg	0.336	2.483	0.043	Yes
Control vs. 0.3125mg	0.118	0.871	0.623	No
Control vs. 0.00976563mg	0.00903	0.0667	0.947	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. 1.25mg	2.360	12.993	<0.001	Yes
TSB vs. 0.625mg	1.466	10.824	<0.001	Yes
TSB vs. Control	0.843	9.848	<0.001	Yes
TSB vs. 0.00488281mg	1.180	8.711	<0.001	Yes

TSB vs. 0.00976563mg	0.834	6.161	<0.001	Yes
TSB vs. 0.3125mg	0.725	5.357	<0.001	Yes
TSB vs. 0.15625mg	0.379	2.801	0.023	Yes
TSB vs. 0.01953125mg	0.187	1.383	0.427	No
TSB vs. 0.078125mg	0.186	1.375	0.314	No
TSB vs. 0.039062mg	0.0979	0.723	0.471	No

New Antibiotic Testing on 9/25/14 at 48 hours- Polymyxin B

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0263	1.2873	0.1417	0.1353	0.0602	0.0499	0.0551	0.0430	0.0461	0.0428	0.0423	0.0383
B	0.0339	1.4053	0.0689	0.0717	0.0502	0.0574	0.0569	0.0470	0.0386	0.0634	0.0413	0.0343
C	0.0353	1.4101	0.0739	0.0724	0.0575	0.0573	0.0584	0.0499	0.0582	0.0418	0.0427	0.0436
D	0.0447	1.4818	0.1027	0.1102	0.0898	0.0819	0.1002	0.0604	0.0476	0.0790	0.0488	0.0476
E	0.0829	1.4842	0.1058	0.0870	0.0873	0.0876	0.0705	0.0697	0.0477	0.0611	0.0394	0.0403
F	0.0316	1.4425	0.1478	0.0985	0.0749	0.0824	0.0975	0.0595	0.0453	0.0524	0.0599	0.0622
G	0.0669	1.3672	0.1511	0.1168	0.0889	0.1077	0.1003	0.1027	0.0757	0.1264	0.0656	0.1087
H	0.0355	1.3641	0.1988	0.1208	0.1057	0.0646	0.1286	0.0938	0.0842	0.0581	0.1179	0.0686
average	0.0446	1.4053	0.1238	0.1016	0.0768	0.0736	0.0834	0.0658	0.0554	0.0656	0.0572	0.0555
range	0.0566	0.1969	0.1299	0.0636	0.0555	0.0578	0.0735	0.0597	0.0456	0.0846	0.0785	0.0744

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	32	0	0.0443	0.0171	0.00302	0.00616
Control	32	0	0.888	0.601	0.106	0.217
12.5mg	8	0	0.124	0.0440	0.0155	0.0368
6.25mg	8	0	0.102	0.0232	0.00821	0.0194
3.125mg	8	0	0.0768	0.0193	0.00684	0.0162
1.5625mg	8	0	0.0736	0.0196	0.00691	0.0163
0.78125mg	8	0	0.0834	0.0270	0.00955	0.0226
0.390625mg	8	0	0.0658	0.0219	0.00774	0.0183
0.1953125mg	8	0	0.0554	0.0162	0.00573	0.0136
0.09765625mg	8	0	0.0656	0.0273	0.00965	0.0228
0.04882813mg	8	0	0.0572	0.0263	0.00929	0.0220
0.02441406mg	8	0	0.0554	0.0246	0.00869	0.0205

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0653	0.0916	0.0263	0.0364	0.0331	0.0517
Control	1.504	1.549	0.0451	1.066	0.183	1.446
12.5mg	0.130	0.199	0.0689	0.124	0.0811	0.150
6.25mg	0.0636	0.135	0.0717	0.104	0.0761	0.120
3.125mg	0.0555	0.106	0.0502	0.0811	0.0582	0.0896
1.5625mg	0.0578	0.108	0.0499	0.0733	0.0573	0.0863
0.78125mg	0.0735	0.129	0.0551	0.0840	0.0573	0.100
0.390625mg	0.0597	0.103	0.0430	0.0600	0.0477	0.0878
0.1953125mg	0.0456	0.0842	0.0386	0.0476	0.0455	0.0713
0.09765625mg	0.0846	0.126	0.0418	0.0596	0.0452	0.0751
0.04882813mg	0.0785	0.118	0.0394	0.0457	0.0415	0.0642
0.02441406mg	0.0744	0.109	0.0343	0.0456	0.0388	0.0670

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	1.404	1.092	0.232	<0.001	0.816	<0.001
Control	-0.316	-1.658	0.255	<0.001	0.808	<0.001
12.5mg	0.348	-0.484	0.159	0.674	0.942	0.632
6.25mg	-0.0779	-1.304	0.145	0.740	0.942	0.633
3.125mg	-0.0375	-1.290	0.206	0.374	0.936	0.573
1.5625mg	0.536	-0.530	0.177	0.563	0.931	0.525
0.78125mg	0.436	-1.082	0.199	0.422	0.881	0.191
0.390625mg	0.904	-0.513	0.222	0.282	0.883	0.202
0.1953125mg	1.101	-0.137	0.308	0.024	0.841	0.076
0.09765625mg	1.859	3.925	0.282	0.060	0.803	0.031
0.04882813mg	2.173	5.027	0.251	0.145	0.710	0.003
0.02441406mg	1.713	3.031	0.250	0.148	0.814	0.040

Column	**Sum**	**Sum of Squares**
TSB	1.418	0.0719

Control	28.402	36.417
12.5mg	0.991	0.136
6.25mg	0.813	0.0863
3.125mg	0.615	0.0498
1.5625mg	0.589	0.0460
0.78125mg	0.667	0.0608
0.390625mg	0.526	0.0379
0.1953125mg	0.443	0.0264
0.09765625mg	0.525	0.0397
0.04882813mg	0.458	0.0310
0.02441406mg	0.444	0.0288

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.0443	0.0171	0.00302
Control	32	0	0.888	0.601	0.106
12.5mg	8	0	0.124	0.0440	0.0155
6.25mg	8	0	0.102	0.0232	0.00821
3.125mg	8	0	0.0768	0.0193	0.00684
1.5625mg	8	0	0.0736	0.0196	0.00691
0.78125mg	8	0	0.0834	0.0270	0.00955
0.390625mg	8	0	0.0658	0.0219	0.00774
0.1953125mg	8	0	0.0554	0.0162	0.00573
0.09765625mg	8	0	0.0656	0.0273	0.00965
0.04882813mg	8	0	0.0572	0.0263	0.00929
0.02441406mg	8	0	0.0554	0.0246	0.00869

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	16.822	1.529	17.920	<0.001
Residual	132	11.265	0.0853		
Total	143	28.087			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

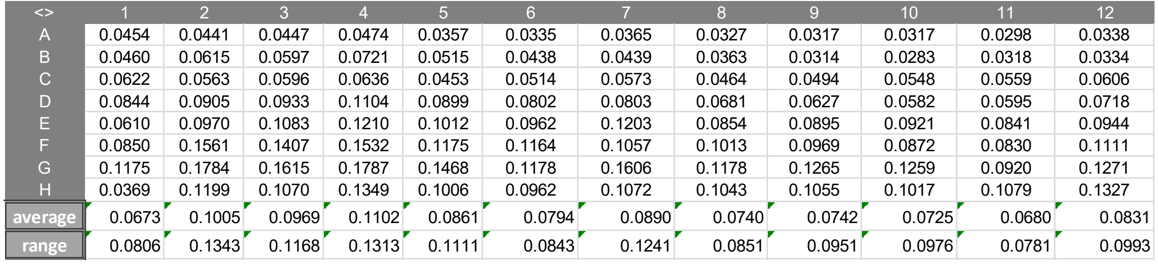
Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.843	11.546	<0.001	Yes
Control vs. 0.1953125mg	0.832	7.206	<0.001	Yes
Control vs. 0.02441406mg	0.832	7.206	<0.001	Yes
Control vs. 0.04882813mg	0.830	7.190	<0.001	Yes
Control vs. 0.09765625mg	0.822	7.118	<0.001	Yes
Control vs. 0.390625mg	0.822	7.117	<0.001	Yes
Control vs. 1.5625mg	0.814	7.049	<0.001	Yes
Control vs. 3.125mg	0.811	7.021	<0.001	Yes
Control vs. 0.78125mg	0.804	6.964	<0.001	Yes
Control vs. 6.25mg	0.786	6.806	<0.001	Yes
Control vs. 12.5mg	0.764	6.614	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.843	11.546	<0.001	Yes
TSB vs. 12.5mg	0.0795	0.689	0.999	No
TSB vs. 6.25mg	0.0573	0.496	1.000	No
TSB vs. 0.78125mg	0.0391	0.339	1.000	No
TSB vs. 3.125mg	0.0325	0.282	1.000	No
TSB vs. 1.5625mg	0.0293	0.254	1.000	No
TSB vs. 0.390625mg	0.0215	0.186	1.000	No
TSB vs. 0.09765625mg	0.0213	0.185	1.000	No

TSB vs. 0.04882813mg	0.0129	0.112	0.999	No
TSB vs. 0.02441406mg	0.0112	0.0966	0.994	No
TSB vs. 0.1953125mg	0.0111	0.0963	0.923	No

New Antibiotic Testing on 10/1/15- Higher Ciprofloxacin



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0454	0.0441	0.0447	0.0474	0.0357	0.0335	0.0365	0.0327	0.0317	0.0317	0.0298	0.0338
B	0.0460	0.0615	0.0597	0.0721	0.0515	0.0438	0.0439	0.0363	0.0314	0.0283	0.0318	0.0334
C	0.0622	0.0563	0.0596	0.0636	0.0453	0.0514	0.0573	0.0464	0.0494	0.0548	0.0559	0.0606
D	0.0844	0.0905	0.0933	0.1104	0.0899	0.0802	0.0803	0.0681	0.0627	0.0582	0.0595	0.0718
E	0.0610	0.0970	0.1083	0.1210	0.1012	0.0962	0.1203	0.0854	0.0895	0.0921	0.0841	0.0944
F	0.0850	0.1561	0.1407	0.1532	0.1175	0.1164	0.1057	0.1013	0.0969	0.0872	0.0830	0.1111
G	0.1175	0.1784	0.1615	0.1787	0.1468	0.1178	0.1606	0.1178	0.1265	0.1259	0.0920	0.1271
H	0.0369	0.1199	0.1070	0.1349	0.1006	0.0962	0.1072	0.1043	0.1055	0.1017	0.1079	0.1327
average	0.0673	0.1005	0.0969	0.1102	0.0861	0.0794	0.0890	0.0740	0.0742	0.0725	0.0680	0.0831
range	0.0806	0.1343	0.1168	0.1313	0.1111	0.0843	0.1241	0.0851	0.0951	0.0976	0.0781	0.0993

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	32	0	0.0397	0.0211	0.00372	0.00759
Control	32	0	0.325	0.444	0.0784	0.160
6.25mg	8	0	0.0968	0.0411	0.0145	0.0344
3.125mg	8	0	0.110	0.0460	0.0163	0.0385
1.5625mg	8	0	0.0861	0.0388	0.0137	0.0324
0.78125mg	8	0	0.0794	0.0329	0.0116	0.0275
0.390625mg	8	0	0.0890	0.0424	0.0150	0.0355
0.1953125mg	8	0	0.0740	0.0330	0.0117	0.0276
0.09765625mg	8	0	0.0742	0.0356	0.0126	0.0297
0.04882813mg	8	0	0.0725	0.0347	0.0123	0.0290
0.02441406mg	8	0	0.0680	0.0284	0.0100	0.0237
0.01220703mg	8	0	0.0831	0.0394	0.0139	0.0329

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0974	0.117	0.0201	0.0321	0.0295	0.0391
Control	1.079	1.115	0.0359	0.0832	0.0488	0.799
6.25mg	0.117	0.162	0.0447	0.100	0.0596	0.133
3.125mg	0.131	0.179	0.0474	0.116	0.0657	0.149
1.5625mg	0.111	0.147	0.0357	0.0953	0.0469	0.113
0.78125mg	0.0843	0.118	0.0335	0.0882	0.0457	0.111
0.390625mg	0.124	0.161	0.0365	0.0930	0.0473	0.117
0.1953125mg	0.0851	0.118	0.0327	0.0767	0.0388	0.104
0.09765625mg	0.0951	0.127	0.0314	0.0761	0.0361	0.103
0.04882813mg	0.0976	0.126	0.0283	0.0727	0.0375	0.0993
0.02441406mg	0.0781	0.108	0.0298	0.0713	0.0378	0.0900
0.01220703mg	0.0993	0.133	0.0334	0.0831	0.0405	0.123

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	2.366	5.838	0.292	<0.001	0.696	<0.001
Control	1.199	-0.568	0.380	<0.001	0.603	<0.001
6.25mg	0.307	-1.012	0.192	0.467	0.942	0.633
3.125mg	0.0288	-1.221	0.171	0.605	0.961	0.817
1.5625mg	0.0816	-1.062	0.189	0.489	0.938	0.593
0.78125mg	-0.257	-1.709	0.195	0.447	0.904	0.315
0.390625mg	0.351	-0.638	0.153	0.704	0.951	0.724
0.1953125mg	-0.0658	-1.843	0.174	0.587	0.915	0.392
0.09765625mg	0.0723	-1.516	0.167	0.631	0.930	0.515
0.04882813mg	0.116	-1.178	0.164	0.646	0.946	0.672
0.02441406mg	-0.172	-1.279	0.201	0.404	0.933	0.548
0.01220703mg	-0.0788	-1.654	0.145	0.742	0.917	0.406

Column	**Sum**	**Sum of Squares**
TSB	1.269	0.0641
Control	10.406	9.482
6.25mg	0.775	0.0869
3.125mg	0.881	0.112
1.5625mg	0.689	0.0698
0.78125mg	0.635	0.0580

0.390625mg	0.712	0.0759
0.1953125mg	0.592	0.0515
0.09765625mg	0.594	0.0529
0.04882813mg	0.580	0.0505
0.02441406mg	0.544	0.0426
0.01220703mg	0.665	0.0661

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.0397	0.0211	0.00372
Control	32	0	0.325	0.444	0.0784
6.25mg	8	0	0.0968	0.0411	0.0145
3.125mg	8	0	0.110	0.0460	0.0163
1.5625mg	8	0	0.0861	0.0388	0.0137
0.78125mg	8	0	0.0794	0.0329	0.0116
0.390625mg	8	0	0.0890	0.0424	0.0150
0.1953125mg	8	0	0.0740	0.0330	0.0117
0.09765625mg	8	0	0.0742	0.0356	0.0126
0.04882813mg	8	0	0.0725	0.0347	0.0123
0.02441406mg	8	0	0.0680	0.0284	0.0100
0.01220703mg	8	0	0.0831	0.0394	0.0139

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	1.666	0.151	3.218	<0.001
Residual	132	6.210	0.0470		
Total	143	7.876			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 0.922

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

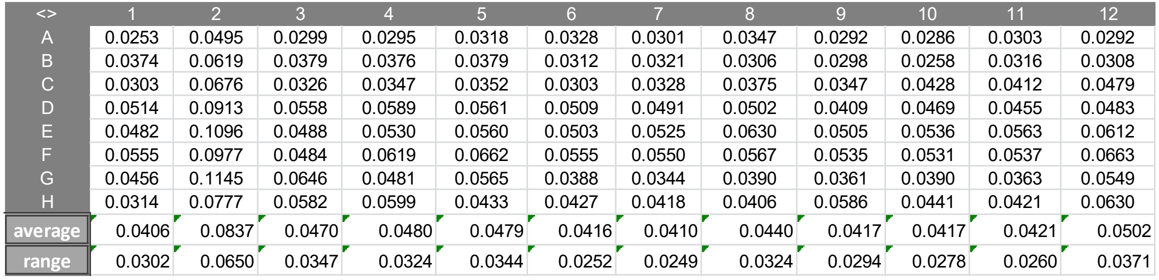
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.286	5.266	<0.001	Yes
Control vs. 0.02441406mg	0.257	3.000	0.032	Yes
Control vs. 0.04882813mg	0.253	2.947	0.034	Yes
Control vs. 0.1953125mg	0.251	2.929	0.032	Yes
Control vs. 0.09765625mg	0.251	2.928	0.028	Yes
Control vs. 0.78125mg	0.246	2.866	0.029	Yes
Control vs. 0.01220703mg	0.242	2.824	0.027	Yes
Control vs. 1.5625mg	0.239	2.789	0.024	Yes
Control vs. 0.390625mg	0.236	2.755	0.020	Yes
Control vs. 6.25mg	0.228	2.663	0.017	Yes
Control vs. 3.125mg	0.215	2.508	0.013	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.286	5.266	<0.001	Yes
TSB vs. 3.125mg	0.0705	0.822	0.995	No
TSB vs. 6.25mg	0.0572	0.667	0.998	No
TSB vs. 0.390625mg	0.0493	0.575	0.999	No
TSB vs. 1.5625mg	0.0464	0.541	0.998	No
TSB vs. 0.01220703mg	0.0435	0.507	0.997	No
TSB vs. 0.78125mg	0.0398	0.464	0.994	No
TSB vs. 0.09765625mg	0.0345	0.403	0.990	No
TSB vs. 0.1953125mg	0.0344	0.401	0.970	No
TSB vs. 0.04882813mg	0.0328	0.383	0.911	No
TSB vs. 0.02441406mg	0.0283	0.331	0.742	No

New Antibiotic Testing on 10/1/14 at 48 Hours- Lower Ciprofloxacin



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0253	0.0495	0.0299	0.0295	0.0318	0.0328	0.0301	0.0347	0.0292	0.0286	0.0303	0.0292
B	0.0374	0.0619	0.0379	0.0376	0.0379	0.0312	0.0321	0.0306	0.0298	0.0258	0.0316	0.0308
C	0.0303	0.0676	0.0326	0.0347	0.0352	0.0303	0.0328	0.0375	0.0347	0.0428	0.0412	0.0479
D	0.0514	0.0913	0.0558	0.0589	0.0561	0.0509	0.0491	0.0502	0.0409	0.0469	0.0455	0.0483
E	0.0482	0.1096	0.0488	0.0530	0.0560	0.0503	0.0525	0.0630	0.0505	0.0536	0.0563	0.0612
F	0.0555	0.0977	0.0484	0.0619	0.0662	0.0555	0.0550	0.0567	0.0535	0.0531	0.0537	0.0663
G	0.0456	0.1145	0.0646	0.0481	0.0565	0.0388	0.0344	0.0390	0.0361	0.0390	0.0363	0.0549
H	0.0314	0.0777	0.0582	0.0599	0.0433	0.0427	0.0418	0.0406	0.0586	0.0441	0.0421	0.0630
average	0.0406	0.0837	0.0470	0.0480	0.0479	0.0416	0.0410	0.0440	0.0417	0.0417	0.0421	0.0502
range	0.0302	0.0650	0.0347	0.0324	0.0344	0.0252	0.0249	0.0324	0.0294	0.0278	0.0260	0.0371

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	32	0	0.0319	0.00942	0.00167	0.00340
Control	32	0	0.466	0.454	0.0803	0.164
3.125mg	8	0	0.0470	0.0125	0.00443	0.0105
1.5625mg	8	0	0.0480	0.0126	0.00444	0.0105
0.78125mg	8	0	0.0479	0.0124	0.00440	0.0104
0.390625mg	8	0	0.0416	0.00984	0.00348	0.00823
0.1953125mg	8	0	0.0410	0.0100	0.00354	0.00838
0.09765625mg	8	0	0.0440	0.0114	0.00402	0.00951
0.04882813mg	8	0	0.0417	0.0112	0.00397	0.00938
0.02441406mg	8	0	0.0417	0.0103	0.00363	0.00858
0.01220703mg	8	0	0.0421	0.00950	0.00336	0.00794
.0.00610352mg	8	0	0.0502	0.0141	0.00499	0.0118

Column	Range	Max	Min	Median	25%	75%
TSB	0.0363	0.0564	0.0201	0.0284	0.0255	0.0334
Control	1.162	1.201	0.0391	0.275	0.0674	0.946
3.125mg	0.0347	0.0646	0.0299	0.0486	0.0339	0.0576
1.5625mg	0.0324	0.0619	0.0295	0.0505	0.0354	0.0596
0.78125mg	0.0344	0.0662	0.0318	0.0497	0.0359	0.0564
0.390625mg	0.0252	0.0555	0.0303	0.0408	0.0316	0.0508
0.1953125mg	0.0249	0.0550	0.0301	0.0381	0.0323	0.0516
0.09765625mg	0.0324	0.0630	0.0306	0.0398	0.0354	0.0551
0.04882813mg	0.0294	0.0586	0.0292	0.0385	0.0310	0.0527
0.02441406mg	0.0278	0.0536	0.0258	0.0435	0.0312	0.0515
0.01220703mg	0.0260	0.0563	0.0303	0.0417	0.0328	0.0516
.0.00610352mg	0.0371	0.0663	0.0292	0.0516	0.0351	0.0625

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.518	1.520	0.245	<0.001	0.809	<0.001
Control	0.547	-1.418	0.281	<0.001	0.798	<0.001
3.125mg	-0.123	-1.387	0.169	0.618	0.945	0.662
1.5625mg	-0.370	-1.721	0.183	0.525	0.902	0.300
0.78125mg	0.0603	-1.605	0.243	0.176	0.913	0.378
0.390625mg	0.191	-1.800	0.188	0.490	0.905	0.319
0.1953125mg	0.380	-1.938	0.244	0.172	0.874	0.164
0.09765625mg	0.698	-0.818	0.244	0.173	0.921	0.437
0.04882813mg	0.417	-1.540	0.190	0.480	0.910	0.357
0.02441406mg	-0.537	-0.833	0.166	0.633	0.919	0.420
0.01220703mg	0.315	-1.051	0.138	0.766	0.941	0.623
.0.00610352mg	-0.603	-1.041	0.185	0.512	0.897	0.270

Column	Sum	Sum of Squares
TSB	1.020	0.0353
Control	14.922	13.347
3.125mg	0.376	0.0188
1.5625mg	0.384	0.0195
0.78125mg	0.383	0.0194
0.390625mg	0.333	0.0145
0.1953125mg	0.328	0.0141
0.09765625mg	0.352	0.0164
0.04882813mg	0.333	0.0148

0.02441406mg	0.334	0.0147
0.01220703mg	0.337	0.0148
.0.00610352mg	0.402	0.0216

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.0319	0.00942	0.00167
Control	32	0	0.466	0.454	0.0803
3.125mg	8	0	0.0470	0.0125	0.00443
1.5625mg	8	0	0.0480	0.0126	0.00444
0.78125mg	8	0	0.0479	0.0124	0.00440
0.390625mg	8	0	0.0416	0.00984	0.00348
0.1953125mg	8	0	0.0410	0.0100	0.00354
0.09765625mg	8	0	0.0440	0.0114	0.00402
0.04882813mg	8	0	0.0417	0.0112	0.00397
0.02441406mg	8	0	0.0417	0.0103	0.00363
0.01220703mg	8	0	0.0421	0.00950	0.00336
.0.00610352mg	8	0	0.0502	0.0141	0.00499

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	4.508	0.410	8.452	<0.001
Residual	132	6.401	0.0485		
Total	143	10.910			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.434	7.891	<0.001	Yes
Control vs. 0.1953125mg	0.425	4.886	<0.001	Yes
Control vs. 0.390625mg	0.425	4.879	<0.001	Yes
Control vs. 0.04882813mg	0.425	4.878	<0.001	Yes
Control vs. 0.02441406mg	0.425	4.877	<0.001	Yes
Control vs. 0.01220703mg	0.424	4.873	<0.001	Yes
Control vs. 0.09765625mg	0.422	4.851	<0.001	Yes
Control vs. 3.125mg	0.419	4.817	<0.001	Yes
Control vs. 0.78125mg	0.418	4.807	<0.001	Yes
Control vs. 1.5625mg	0.418	4.806	<0.001	Yes
Control vs. .0.00610352mg	0.416	4.780	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.434	7.891	<0.001	Yes
TSB vs. .0.00610352mg	0.0183	0.210	1.000	No
TSB vs. 1.5625mg	0.0161	0.185	1.000	No
TSB vs. 0.78125mg	0.0160	0.184	1.000	No
TSB vs. 3.125mg	0.0151	0.174	1.000	No
TSB vs. 0.09765625mg	0.0122	0.140	1.000	No
TSB vs. 0.01220703mg	0.0102	0.118	1.000	No
TSB vs. 0.02441406mg	0.00985	0.113	1.000	No
TSB vs. 0.04882813mg	0.00977	0.112	0.999	No
TSB vs. 0.390625mg	0.00968	0.111	0.992	No
TSB vs. 0.1953125mg	0.00909	0.104	0.917	No

New Antibiotic Testing on 10/1/14 at 48 Hours- High Gentamicin

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0201	0.0359	0.0270	0.0305	0.0289	0.0322	0.0335	0.0359	0.0269	0.0302	0.0282	0.0298
B	0.0313	0.0459	0.0210	0.0254	0.0293	0.0339	0.0286	0.0282	0.0313	0.0306	0.0335	0.0304
C	0.0258	0.0581	0.0212	0.0301	0.0336	0.0249	0.0301	0.0324	0.0285	0.0388	0.0337	0.0406
D	0.0391	0.0651	0.0293	0.0367	0.0386	0.0346	0.0316	0.0321	0.0343	0.0314	0.0327	0.0419
E	0.0357	0.0876	0.0318	0.0308	0.0386	0.0314	0.0341	0.0371	0.0389	0.0417	0.0380	0.0467
F	0.0318	0.0739	0.0315	0.0326	0.0373	0.0362	0.0342	0.0355	0.0330	0.0356	0.0406	0.0531
G	0.0315	0.0983	0.0402	0.0630	0.0480	0.0495	0.0635	0.0582	0.0540	0.0518	0.0609	0.0671
H	0.0354	0.0861	0.0503	0.0663	0.0551	0.0558	0.0531	0.0506	0.0481	0.0466	0.0679	0.0812
average	0.0313	0.0689	0.0315	0.0394	0.0387	0.0373	0.0386	0.0388	0.0369	0.0383	0.0419	0.0489
range	0.0190	0.0624	0.0293	0.0409	0.0262	0.0309	0.0349	0.0300	0.0271	0.0216	0.0397	0.0514

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	32	0	0.0397	0.0211	0.00372	0.00759
Control	32	0	0.325	0.444	0.0784	0.160
12.5mg	8	0	0.0315	0.00979	0.00346	0.00818
6.25mg	8	0	0.0394	0.0159	0.00562	0.0133
3.125mg	8	0	0.0387	0.00901	0.00318	0.00753
1.5625mg	8	0	0.0373	0.0102	0.00360	0.00851
0.78125mg	8	0	0.0386	0.0126	0.00447	0.0106
0.390625mg	8	0	0.0388	0.0103	0.00363	0.00857
0.1963125mg	8	0	0.0369	0.00960	0.00340	0.00803
0.09765625mg	8	0	0.0383	0.00795	0.00281	0.00665
0.04882813mg	8	0	0.0419	0.0145	0.00511	0.0121
0.02441406mg	8	0	0.0489	0.0178	0.00630	0.0149

Column	Range	Max	Min	Median	25%	75%
TSB	0.0974	0.117	0.0201	0.0321	0.0295	0.0391
Control	1.079	1.115	0.0359	0.0832	0.0488	0.799
12.5mg	0.0293	0.0503	0.0210	0.0304	0.0226	0.0381
6.25mg	0.0409	0.0663	0.0254	0.0317	0.0302	0.0564
3.125mg	0.0262	0.0551	0.0289	0.0379	0.0304	0.0456
1.5625mg	0.0309	0.0558	0.0249	0.0343	0.0316	0.0462
0.78125mg	0.0349	0.0635	0.0286	0.0338	0.0305	0.0484
0.390625mg	0.0300	0.0582	0.0282	0.0357	0.0322	0.0472
0.1963125mg	0.0271	0.0540	0.0269	0.0336	0.0292	0.0458
0.09765625mg	0.0216	0.0518	0.0302	0.0372	0.0308	0.0454
0.04882813mg	0.0397	0.0679	0.0282	0.0359	0.0329	0.0558
0.02441406mg	0.0514	0.0812	0.0298	0.0443	0.0330	0.0636

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	2.366	5.838	0.292	<0.001	0.696	<0.001
Control	1.199	-0.568	0.380	<0.001	0.603	<0.001
12.5mg	0.990	0.843	0.239	0.193	0.910	0.354
6.25mg	1.291	-0.121	0.318	0.017	0.746	0.007
3.125mg	0.874	0.199	0.253	0.137	0.909	0.346
1.5625mg	1.049	0.354	0.294	0.041	0.872	0.159
0.78125mg	1.536	1.138	0.386	<0.001	0.747	0.007
0.390625mg	1.278	0.651	0.314	0.020	0.839	0.074
0.1963125mg	0.992	-0.148	0.231	0.233	0.892	0.245
0.09765625mg	0.638	-0.788	0.183	0.523	0.914	0.382
0.04882813mg	1.242	0.0886	0.287	0.052	0.810	0.036
0.02441406mg	0.873	0.0717	0.173	0.591	0.918	0.415

Column	Sum	Sum of Squares
TSB	1.269	0.0641
Control	10.406	9.482
12.5mg	0.252	0.00863
6.25mg	0.315	0.0142
3.125mg	0.309	0.0125
1.5625mg	0.298	0.0119
0.78125mg	0.309	0.0130
0.390625mg	0.310	0.0127
0.1963125mg	0.295	0.0115
0.09765625mg	0.307	0.0122

0.04882813mg	0.336	0.0155
0.02441406mg	0.391	0.0213

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.0397	0.0211	0.00372
Control	32	0	0.325	0.444	0.0784
12.5mg	8	0	0.0315	0.00979	0.00346
6.25mg	8	0	0.0394	0.0159	0.00562
3.125mg	8	0	0.0387	0.00901	0.00318
1.5625mg	8	0	0.0373	0.0102	0.00360
0.78125mg	8	0	0.0386	0.0126	0.00447
0.390625mg	8	0	0.0388	0.0103	0.00363
0.1963125mg	8	0	0.0369	0.00960	0.00340
0.09765625mg	8	0	0.0383	0.00795	0.00281
0.04882813mg	8	0	0.0419	0.0145	0.00511
0.02441406mg	8	0	0.0489	0.0178	0.00630

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	2.037	0.185	3.993	<0.001
Residual	132	6.122	0.0464		
Total	143	8.159			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 0.983

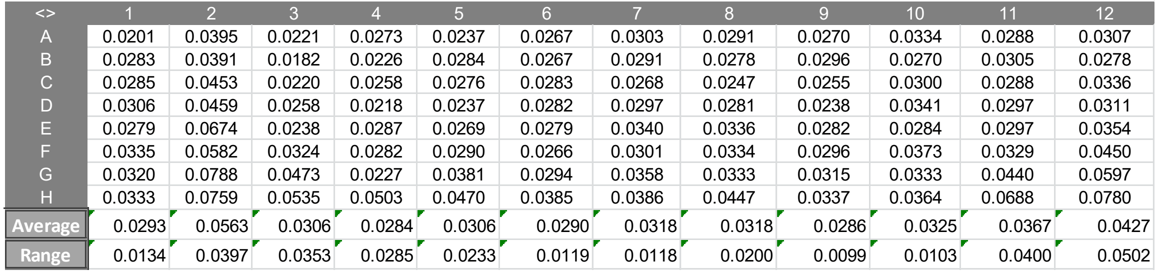
Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.286	5.304	<0.001	Yes
Control vs. 12.5mg	0.294	3.450	0.008	Yes
Control vs. 0.1963125mg	0.288	3.387	0.008	Yes
Control vs. 1.5625mg	0.288	3.382	0.008	Yes
Control vs. 0.09765625mg	0.287	3.370	0.007	Yes
Control vs. 0.78125mg	0.287	3.367	0.006	Yes
Control vs. 3.125mg	0.287	3.366	0.005	Yes
Control vs. 0.390625mg	0.286	3.365	0.004	Yes
Control vs. 6.25mg	0.286	3.357	0.003	Yes
Control vs. 0.04882813mg	0.283	3.328	0.002	Yes
Control vs. 0.02441406mg	0.276	3.246	0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.286	5.304	<0.001	Yes
TSB vs. 0.02441406mg	0.00919	0.108	1.000	No
TSB vs. 12.5mg	0.00812	0.0954	1.000	No
TSB vs. 0.1963125mg	0.00278	0.0327	1.000	No
TSB vs. 1.5625mg	0.00235	0.0276	1.000	No
TSB vs. 0.04882813mg	0.00228	0.0268	1.000	No
TSB vs. 0.09765625mg	0.00132	0.0155	1.000	No
TSB vs. 0.78125mg	0.00107	0.0126	1.000	No
TSB vs. 3.125mg	0.000984	0.0116	1.000	No
TSB vs. 0.390625mg	0.000909	0.0107	1.000	No
TSB vs. 6.25mg	0.000234	0.00275	0.998	No

New Antibiotic Testing on 10/1/14 at 48 Hours- Lower Gentamicin



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0201	0.0395	0.0221	0.0273	0.0237	0.0267	0.0303	0.0291	0.0270	0.0334	0.0288	0.0307
B	0.0283	0.0391	0.0182	0.0226	0.0284	0.0267	0.0291	0.0278	0.0296	0.0270	0.0305	0.0278
C	0.0285	0.0453	0.0220	0.0258	0.0276	0.0283	0.0268	0.0247	0.0255	0.0300	0.0288	0.0336
D	0.0306	0.0459	0.0258	0.0218	0.0237	0.0282	0.0297	0.0281	0.0238	0.0341	0.0297	0.0311
E	0.0279	0.0674	0.0238	0.0287	0.0269	0.0279	0.0340	0.0336	0.0282	0.0284	0.0297	0.0354
F	0.0335	0.0582	0.0324	0.0282	0.0290	0.0266	0.0301	0.0334	0.0296	0.0373	0.0329	0.0450
G	0.0320	0.0788	0.0473	0.0227	0.0381	0.0294	0.0358	0.0333	0.0315	0.0333	0.0440	0.0597
H	0.0333	0.0759	0.0535	0.0503	0.0470	0.0385	0.0386	0.0447	0.0337	0.0364	0.0688	0.0780
Average	0.0293	0.0563	0.0306	0.0284	0.0306	0.0290	0.0318	0.0318	0.0286	0.0325	0.0367	0.0427
Range	0.0134	0.0397	0.0353	0.0285	0.0233	0.0119	0.0118	0.0200	0.0099	0.0103	0.0400	0.0502

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	32	0	0.0319	0.00942	0.00167	0.00340
Control	32	0	0.466	0.454	0.0803	0.164
6.25mg	8	0	0.0306	0.0130	0.00458	0.0108
3.125mg	8	0	0.0284	0.00924	0.00327	0.00772
1.5625mg	8	0	0.0306	0.00802	0.00284	0.00671
0.78125mg	8	0	0.0290	0.00395	0.00140	0.00330
0.390625mg	8	0	0.0318	0.00394	0.00139	0.00330
0.1963125mg	8	0	0.0318	0.00612	0.00216	0.00511
0.09765625mg	8	0	0.0286	0.00320	0.00113	0.00268
0.04882813mg	8	0	0.0325	0.00369	0.00131	0.00309
0.02441406mg	8	0	0.0367	0.0139	0.00493	0.0117
0.01220703mg	8	0	0.0427	0.0176	0.00624	0.0147

Column	Range	Max	Min	Median	25%	75%
TSB	0.0363	0.0564	0.0201	0.0284	0.0255	0.0334
Control	1.162	1.201	0.0391	0.275	0.0674	0.946
6.25mg	0.0353	0.0535	0.0182	0.0248	0.0220	0.0436
3.125mg	0.0285	0.0503	0.0218	0.0266	0.0226	0.0286
1.5625mg	0.0233	0.0470	0.0237	0.0280	0.0245	0.0358
0.78125mg	0.0119	0.0385	0.0266	0.0280	0.0267	0.0291
0.390625mg	0.0118	0.0386	0.0268	0.0302	0.0292	0.0353
0.1963125mg	0.0200	0.0447	0.0247	0.0312	0.0279	0.0335
0.09765625mg	0.00990	0.0337	0.0238	0.0289	0.0259	0.0310
0.04882813mg	0.0103	0.0373	0.0270	0.0334	0.0288	0.0358
0.02441406mg	0.0400	0.0688	0.0288	0.0301	0.0290	0.0412
0.01220703mg	0.0502	0.0780	0.0278	0.0345	0.0308	0.0560

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.518	1.520	0.245	<0.001	0.809	<0.001
Control	0.547	-1.418	0.281	<0.001	0.798	<0.001
6.25mg	1.134	-0.187	0.271	0.087	0.832	0.062
3.125mg	2.361	6.077	0.363	0.003	0.684	0.002
1.5625mg	1.531	1.818	0.327	0.012	0.807	0.034
0.78125mg	2.492	6.558	0.338	0.007	0.639	<0.001
0.390625mg	0.704	-0.470	0.273	0.080	0.922	0.449
0.1963125mg	1.364	2.575	0.262	0.110	0.871	0.154
0.09765625mg	0.0685	-0.407	0.129	0.791	0.988	0.992
0.04882813mg	-0.272	-1.216	0.212	0.338	0.942	0.627
0.02441406mg	2.231	4.966	0.356	0.004	0.645	<0.001
0.01220703mg	1.438	1.269	0.285	0.055	0.813	0.040

Column	Sum	Sum of Squares
TSB	1.020	0.0353
Control	14.922	13.347
6.25mg	0.245	0.00869
3.125mg	0.227	0.00706
1.5625mg	0.244	0.00792
0.78125mg	0.232	0.00685
0.390625mg	0.254	0.00820
0.1963125mg	0.255	0.00837
0.09765625mg	0.229	0.00662

0.04882813mg	0.260	0.00854
0.02441406mg	0.293	0.0121
0.01220703mg	0.341	0.0167

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.0319	0.00942	0.00167
Control	32	0	0.466	0.454	0.0803
6.25mg	8	0	0.0306	0.0130	0.00458
3.125mg	8	0	0.0284	0.00924	0.00327
1.5625mg	8	0	0.0306	0.00802	0.00284
0.78125mg	8	0	0.0290	0.00395	0.00140
0.390625mg	8	0	0.0318	0.00394	0.00139
0.1963125mg	8	0	0.0318	0.00612	0.00216
0.09765625mg	8	0	0.0286	0.00320	0.00113
0.04882813mg	8	0	0.0325	0.00369	0.00131
0.02441406mg	8	0	0.0367	0.0139	0.00493
0.01220703mg	8	0	0.0427	0.0176	0.00624

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	4.692	0.427	8.800	<0.001
Residual	132	6.398	0.0485		
Total	143	11.091			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.434	7.892	<0.001	Yes
Control vs. 3.125mg	0.438	5.031	<0.001	Yes
Control vs. 0.09765625mg	0.438	5.029	<0.001	Yes
Control vs. 0.78125mg	0.437	5.024	<0.001	Yes
Control vs. 1.5625mg	0.436	5.007	<0.001	Yes
Control vs. 6.25mg	0.436	5.006	<0.001	Yes
Control vs. 0.390625mg	0.435	4.993	<0.001	Yes
Control vs. 0.1963125mg	0.434	4.992	<0.001	Yes
Control vs. 0.04882813mg	0.434	4.985	<0.001	Yes
Control vs. 0.02441406mg	0.430	4.937	<0.001	Yes
Control vs. 0.01220703mg	0.424	4.868	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.434	7.892	<0.001	Yes
TSB vs. 0.01220703mg	0.0108	0.124	1.000	No
TSB vs. 0.02441406mg	0.00476	0.0547	1.000	No
TSB vs. 3.125mg	0.00346	0.0398	1.000	No
TSB vs. 0.09765625mg	0.00328	0.0376	1.000	No
TSB vs. 0.78125mg	0.00285	0.0327	1.000	No
TSB vs. 1.5625mg	0.00134	0.0154	1.000	No
TSB vs. 6.25mg	0.00125	0.0144	1.000	No
TSB vs. 0.04882813mg	0.000600	0.00689	1.000	No
TSB vs. 0.390625mg	0.0000875	0.00101	1.000	No
TSB vs. 0.1963125mg	0.0000500	0.000575	1.000	No

New Antibiotic Testing on 10/1/14 at 48 Hours- Higher Rifampicin

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0326	0.0384	1.5012	0.7745	0.3736	0.1823	0.0944	0.0552	0.0465	0.0399	0.0354	0.0328
B	0.0295	0.0382	1.6053	0.7834	0.3863	0.1880	0.1010	0.0589	0.0496	0.0378	0.0353	0.0380
C	0.0275	0.0441	1.6394	0.7977	0.3917	0.1935	0.1142	0.0652	0.0454	0.0405	0.0400	0.0392
D	0.0311	0.0463	1.6316	0.8047	0.3843	0.2033	0.1167	0.0631	0.0485	0.0404	0.0309	0.0391
E	0.0321	0.0579	1.6296	0.8099	0.3993	0.1991	0.1254	0.0736	0.0488	0.0400	0.0380	0.0413
F	0.0352	0.0460	1.6227	0.7732	0.4028	0.1979	0.1051	0.0766	0.0574	0.0358	0.0407	0.0509
G	0.0324	0.0694	1.6708	0.8464	0.4479	0.2071	0.1226	0.0839	0.0679	0.0531	0.0466	0.0524
H	0.0390	0.0803	1.6085	0.8136	0.4117	0.2079	0.1218	0.0988	0.0670	0.0545	0.0595	0.0712
average	0.0324	0.0526	1.6136	0.8004	0.3997	0.1974	0.1127	0.0719	0.0539	0.0428	0.0408	0.0456
range	0.0115	0.0421	0.1696	0.0732	0.0743	0.0256	0.0310	0.0436	0.0225	0.0187	0.0286	0.0384

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	32	0	0.0397	0.0211	0.00372	0.00759
Control	32	0	0.325	0.444	0.0784	0.160
0.625mg	8	0	1.614	0.0498	0.0176	0.0416
0.3125mg	8	0	0.800	0.0242	0.00856	0.0202
0.15625mg	8	0	0.400	0.0228	0.00806	0.0191
0.078125mg	8	0	0.197	0.00905	0.00320	0.00757
0.0390625mg	8	0	0.113	0.0113	0.00399	0.00943
0.01953125mg	8	0	0.0719	0.0145	0.00511	0.0121
0.00976563mg	8	0	0.0539	0.00911	0.00322	0.00761
0.00488281mg	8	0	0.0427	0.00701	0.00248	0.00586
0.00244141mg	8	0	0.0408	0.00886	0.00313	0.00741
0.0012207mg	8	0	0.0456	0.0123	0.00434	0.0103

Column	Range	Max	Min	Median	25%	75%
TSB	0.0974	0.117	0.0201	0.0321	0.0295	0.0391
Control	1.079	1.115	0.0359	0.0832	0.0488	0.799
0.625mg	0.170	1.671	1.501	1.626	1.606	1.637
0.3125mg	0.0732	0.846	0.773	0.801	0.777	0.813
0.15625mg	0.0743	0.448	0.374	0.395	0.385	0.409
0.078125mg	0.0256	0.208	0.182	0.199	0.189	0.206
0.0390625mg	0.0310	0.125	0.0944	0.115	0.102	0.122
0.01953125mg	0.0436	0.0988	0.0552	0.0694	0.0599	0.0821
0.00976563mg	0.0225	0.0679	0.0454	0.0492	0.0470	0.0646
0.00488281mg	0.0187	0.0545	0.0358	0.0402	0.0383	0.0500
0.00244141mg	0.0286	0.0595	0.0309	0.0390	0.0353	0.0451
0.0012207mg	0.0384	0.0712	0.0328	0.0403	0.0383	0.0520

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	2.366	5.838	0.292	<0.001	0.696	<0.001
Control	1.199	-0.568	0.380	<0.001	0.603	<0.001
0.625mg	-1.868	4.674	0.308	0.024	0.801	0.030
0.3125mg	0.775	0.672	0.168	0.621	0.927	0.489
0.15625mg	1.436	2.680	0.196	0.440	0.891	0.239
0.078125mg	-0.521	-0.709	0.148	0.731	0.947	0.683
0.0390625mg	-0.558	-1.164	0.180	0.548	0.923	0.452
0.01953125mg	0.846	0.270	0.179	0.554	0.942	0.634
0.00976563mg	0.925	-0.997	0.306	0.026	0.811	0.038
0.00488281mg	1.218	-0.130	0.376	0.001	0.770	0.014
0.00244141mg	1.485	2.610	0.255	0.133	0.875	0.168
0.0012207mg	1.450	2.156	0.262	0.107	0.853	0.103

Column	Sum	Sum of Squares
TSB	1.269	0.0641
Control	10.406	9.482
0.625mg	12.909	20.848
0.3125mg	6.403	5.130
0.15625mg	3.198	1.282
0.078125mg	1.579	0.312
0.0390625mg	0.901	0.102
0.01953125mg	0.575	0.0428
0.00976563mg	0.431	0.0238

0.00488281mg	0.342	0.0150
0.00244141mg	0.326	0.0139
0.0012207mg	0.365	0.0177

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.0397	0.0211	0.00372
Control	32	0	0.325	0.444	0.0784
0.625mg	8	0	1.614	0.0498	0.0176
0.3125mg	8	0	0.800	0.0242	0.00856
0.15625mg	8	0	0.400	0.0228	0.00806
0.078125mg	8	0	0.197	0.00905	0.00320
0.0390625mg	8	0	0.113	0.0113	0.00399
0.01953125mg	8	0	0.0719	0.0145	0.00511
0.00976563mg	8	0	0.0539	0.00911	0.00322
0.00488281mg	8	0	0.0427	0.00701	0.00248
0.00244141mg	8	0	0.0408	0.00886	0.00313
0.0012207mg	8	0	0.0456	0.0123	0.00434

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	20.787	1.890	40.614	<0.001
Residual	132	6.142	0.0465		
Total	143	26.929			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

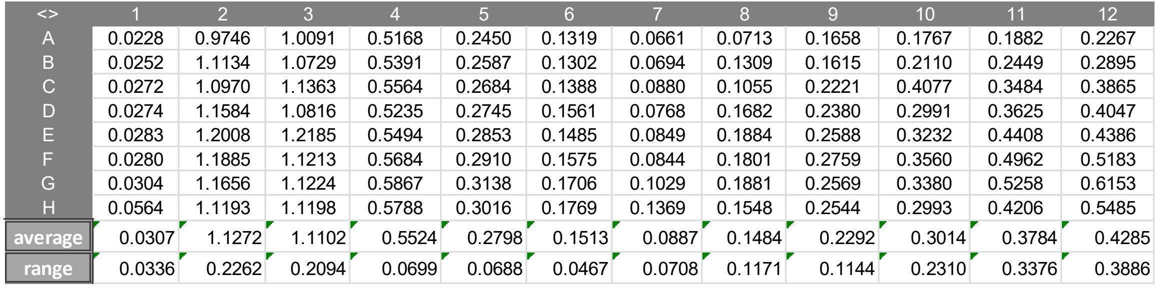
Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. 0.625mg	1.288	15.111	<0.001	Yes
Control vs. 0.3125mg	0.475	5.573	<0.001	Yes
Control vs. TSB	0.286	5.295	<0.001	Yes
Control vs. 0.00244141mg	0.284	3.335	0.009	Yes
Control vs. 0.00488281mg	0.282	3.313	0.008	Yes
Control vs. 0.0012207mg	0.280	3.279	0.008	Yes
Control vs. 0.00976563mg	0.271	3.182	0.009	Yes
Control vs. 0.01953125mg	0.253	2.971	0.014	Yes
Control vs. 0.0390625mg	0.213	2.493	0.041	Yes
Control vs. 0.078125mg	0.128	1.499	0.254	No
Control vs. 0.15625mg	0.0745	0.874	0.384	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. 0.625mg	1.574	18.460	<0.001	Yes
TSB vs. 0.3125mg	0.761	8.922	<0.001	Yes
TSB vs. Control	0.286	5.295	<0.001	Yes
TSB vs. 0.15625mg	0.360	4.223	<0.001	Yes
TSB vs. 0.078125mg	0.158	1.850	0.383	No
TSB vs. 0.0390625mg	0.0730	0.856	0.950	No
TSB vs. 0.01953125mg	0.0323	0.378	0.998	No
TSB vs. 0.00976563mg	0.0142	0.167	1.000	No
TSB vs. 0.0012207mg	0.00595	0.0698	1.000	No
TSB vs. 0.00488281mg	0.00309	0.0362	0.999	No
TSB vs. 0.00244141mg	0.00114	0.0134	0.989	No

New Antibiotic Testing on 10/1/14 at 48 Hours- Lower Rifampicin



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0228	0.9746	1.0091	0.5168	0.2450	0.1319	0.0661	0.0713	0.1658	0.1767	0.1882	0.2267
B	0.0252	1.1134	1.0729	0.5391	0.2587	0.1302	0.0694	0.1309	0.1615	0.2110	0.2449	0.2895
C	0.0272	1.0970	1.1363	0.5564	0.2684	0.1388	0.0880	0.1055	0.2221	0.4077	0.3484	0.3865
D	0.0274	1.1584	1.0816	0.5235	0.2745	0.1561	0.0768	0.1682	0.2380	0.2991	0.3625	0.4047
E	0.0283	1.2008	1.2185	0.5494	0.2853	0.1485	0.0849	0.1884	0.2588	0.3232	0.4408	0.4386
F	0.0280	1.1885	1.1213	0.5684	0.2910	0.1575	0.0844	0.1801	0.2759	0.3560	0.4962	0.5183
G	0.0304	1.1656	1.1224	0.5867	0.3138	0.1706	0.1029	0.1881	0.2569	0.3380	0.5258	0.6153
H	0.0564	1.1193	1.1198	0.5788	0.3016	0.1769	0.1369	0.1548	0.2544	0.2993	0.4206	0.5485
average	0.0307	1.1272	1.1102	0.5524	0.2798	0.1513	0.0887	0.1484	0.2292	0.3014	0.3784	0.4285
range	0.0336	0.2262	0.2094	0.0699	0.0688	0.0467	0.0708	0.1171	0.1144	0.2310	0.3376	0.3886

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	32	0	0.0319	0.00942	0.00167	0.00340
Control	32	0	0.466	0.454	0.0803	0.164
0.3125mg	8	0	1.110	0.0600	0.0212	0.0502
0.15625mg	8	0	0.552	0.0252	0.00890	0.0210
0.078125mg	8	0	0.280	0.0227	0.00802	0.0190
0.0390625mg	8	0	0.151	0.0172	0.00609	0.0144
0.01953125mg	8	0	0.0887	0.0226	0.00800	0.0189
0.00976563mg	8	0	0.148	0.0426	0.0151	0.0356
0.00488281mg	8	0	0.229	0.0434	0.0153	0.0363
0.00244141mg	8	0	0.301	0.0754	0.0267	0.0631
0.0012207mg	8	0	0.378	0.117	0.0415	0.0981
0.00061035	8	0	0.429	0.131	0.0463	0.109

Column	Range	Max	Min	Median	25%	75%
TSB	0.0363	0.0564	0.0201	0.0284	0.0255	0.0334
Control	1.162	1.201	0.0391	0.275	0.0674	0.946
0.3125mg	0.209	1.218	1.009	1.121	1.075	1.133
0.15625mg	0.0699	0.587	0.517	0.553	0.527	0.576
0.078125mg	0.0688	0.314	0.245	0.280	0.261	0.299
0.0390625mg	0.0467	0.177	0.130	0.152	0.134	0.167
0.01953125mg	0.0708	0.137	0.0661	0.0847	0.0712	0.0992
0.00976563mg	0.117	0.188	0.0713	0.161	0.112	0.186
0.00488281mg	0.114	0.276	0.162	0.246	0.180	0.258
0.00244141mg	0.231	0.408	0.177	0.311	0.233	0.351
0.0012207mg	0.338	0.526	0.188	0.392	0.271	0.482
0.00061035	0.389	0.615	0.227	0.422	0.314	0.541

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.518	1.520	0.245	<0.001	0.809	<0.001
Control	0.547	-1.418	0.281	<0.001	0.798	<0.001
0.3125mg	0.159	1.582	0.207	0.369	0.941	0.618
0.15625mg	-0.102	-1.251	0.124	0.798	0.962	0.829
0.078125mg	-0.0293	-0.675	0.0960	0.775	0.992	0.997
0.0390625mg	0.208	-1.254	0.141	0.756	0.942	0.627
0.01953125mg	1.555	2.778	0.262	0.109	0.857	0.113
0.00976563mg	-0.928	-0.212	0.185	0.516	0.890	0.235
0.00488281mg	-0.929	-0.685	0.219	0.294	0.846	0.087
0.00244141mg	-0.555	-0.165	0.238	0.199	0.943	0.641
0.0012207mg	-0.488	-0.725	0.149	0.724	0.953	0.746
0.00061035	-0.172	-0.776	0.129	0.791	0.976	0.942

Column	Sum	Sum of Squares
TSB	1.020	0.0353
Control	14.922	13.347
0.3125mg	8.882	9.886
0.15625mg	4.419	2.445
0.078125mg	2.238	0.630
0.0390625mg	1.210	0.185
0.01953125mg	0.709	0.0665
0.00976563mg	1.187	0.189
0.00488281mg	1.833	0.433

0.00244141mg	2.411	0.766
0.0012207mg	3.027	1.242
0.00061035	3.428	1.589

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.0319	0.00942	0.00167
Control	32	0	0.466	0.454	0.0803
0.3125mg	8	0	1.110	0.0600	0.0212
0.15625mg	8	0	0.552	0.0252	0.00890
0.078125mg	8	0	0.280	0.0227	0.00802
0.0390625mg	8	0	0.151	0.0172	0.00609
0.01953125mg	8	0	0.0887	0.0226	0.00800
0.00976563mg	8	0	0.148	0.0426	0.0151
0.00488281mg	8	0	0.229	0.0434	0.0153
0.00244141mg	8	0	0.301	0.0754	0.0267
0.0012207mg	8	0	0.378	0.117	0.0415
0.00061035	8	0	0.429	0.131	0.0463

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	9.859	0.896	17.624	<0.001
Residual	132	6.713	0.0509		
Total	143	16.572			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.434	7.705	<0.001	Yes
Control vs. 0.3125mg	0.644	7.224	<0.001	Yes
Control vs. 0.01953125mg	0.378	4.236	<0.001	Yes
Control vs. 0.00976563mg	0.318	3.566	0.004	Yes
Control vs. 0.0390625mg	0.315	3.534	0.004	Yes
Control vs. 0.00488281mg	0.237	2.660	0.052	No
Control vs. 0.078125mg	0.187	2.092	0.177	No
Control vs. 0.00244141mg	0.165	1.850	0.241	No
Control vs. 0.0012207mg	0.0879	0.986	0.694	No
Control vs. 0.15625mg	0.0861	0.966	0.559	No
Control vs. 0.00061035	0.0378	0.424	0.672	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. 0.3125mg	1.078	12.097	<0.001	Yes
TSB vs. Control	0.434	7.705	<0.001	Yes
TSB vs. 0.15625mg	0.521	5.839	<0.001	Yes
TSB vs. 0.00061035	0.397	4.449	<0.001	Yes
TSB vs. 0.0012207mg	0.347	3.888	0.001	Yes
TSB vs. 0.00244141mg	0.269	3.023	0.018	Yes
TSB vs. 0.078125mg	0.248	2.781	0.031	Yes
TSB vs. 0.00488281mg	0.197	2.213	0.110	No
TSB vs. 0.0390625mg	0.119	1.340	0.454	No
TSB vs. 0.00976563mg	0.117	1.307	0.349	No
TSB vs. 0.01953125mg	0.0568	0.637	0.525	No

New Antibiotic Testing on 10/1/14 at 48 Hours- Higher Polymyxin B

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0256	1.0062	0.0319	0.0331	0.0379	0.0339	0.0327	0.0292	0.0307	0.0292	0.0271	0.0274
B	0.0219	1.0796	0.0325	0.0368	0.0327	0.0295	0.0308	0.0311	0.0306	0.0314	0.0259	0.0316
C	0.0295	1.0711	0.0319	0.0406	0.0340	0.0344	0.0369	0.0310	0.0276	0.0348	0.0298	0.0349
D	0.0245	1.0734	0.0356	0.0347	0.0347	0.0351	0.0375	0.0300	0.0309	0.0319	0.0290	0.0351
E	0.0250	1.1151	0.0398	0.0408	0.0447	0.0414	0.0380	0.0371	0.0314	0.0301	0.0266	0.0358
F	0.0307	1.1044	0.0460	0.0415	0.0420	0.0406	0.0405	0.0338	0.0308	0.0383	0.0307	0.0436
G	0.0321	1.1014	0.0526	0.0412	0.0589	0.0411	0.0454	0.0418	0.0393	0.0372	0.0315	0.0479
H	0.0313	1.0799	0.0566	0.0482	0.0509	0.0552	0.0522	0.0493	0.0424	0.0399	0.0595	0.0641
average	0.0276	1.0789	0.0409	0.0396	0.0420	0.0389	0.0393	0.0354	0.0330	0.0341	0.0325	0.0401
range	0.0102	0.1089	0.0247	0.0151	0.0262	0.0257	0.0214	0.0201	0.0148	0.0107	0.0336	0.0367

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	32	0	0.0397	0.0211	0.00372	0.00759
Control	32	0	0.325	0.444	0.0784	0.160
12.5mg	8	0	0.0409	0.00979	0.00346	0.00819
6.25mg	8	0	0.0396	0.00473	0.00167	0.00396
3.125mg	8	0	0.0420	0.00920	0.00325	0.00769
1.5625mg	8	0	0.0389	0.00782	0.00276	0.00654
0.78125mg	8	0	0.0393	0.00688	0.00243	0.00575
0.390625mg	8	0	0.0354	0.00702	0.00248	0.00587
0.1963125mg	8	0	0.0330	0.00507	0.00179	0.00424
0.09765625mg	8	0	0.0341	0.00403	0.00142	0.00337
0.04882813mg	8	0	0.0325	0.0111	0.00392	0.00927
0.02441406mg	8	0	0.0401	0.0117	0.00413	0.00976

Column	Range	Max	Min	Median	25%	75%
TSB	0.0974	0.117	0.0201	0.0321	0.0295	0.0391
Control	1.079	1.115	0.0359	0.0832	0.0488	0.799
12.5mg	0.0247	0.0566	0.0319	0.0377	0.0320	0.0510
6.25mg	0.0151	0.0482	0.0331	0.0407	0.0352	0.0414
3.125mg	0.0262	0.0589	0.0327	0.0399	0.0342	0.0494
1.5625mg	0.0257	0.0552	0.0295	0.0378	0.0340	0.0413
0.78125mg	0.0214	0.0522	0.0308	0.0377	0.0338	0.0442
0.390625mg	0.0201	0.0493	0.0292	0.0325	0.0302	0.0406
0.1963125mg	0.0148	0.0424	0.0276	0.0309	0.0306	0.0373
0.09765625mg	0.0107	0.0399	0.0292	0.0333	0.0304	0.0380
0.04882813mg	0.0336	0.0595	0.0259	0.0294	0.0267	0.0313
0.02441406mg	0.0367	0.0641	0.0274	0.0354	0.0324	0.0468

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	2.366	5.838	0.292	<0.001	0.696	<0.001
Control	1.199	-0.568	0.380	<0.001	0.603	<0.001
12.5mg	0.706	-1.187	0.205	0.384	0.865	0.134
6.25mg	0.413	0.510	0.220	0.291	0.930	0.514
3.125mg	0.934	0.0249	0.171	0.604	0.907	0.331
1.5625mg	1.300	2.420	0.250	0.150	0.880	0.190
0.78125mg	0.878	0.685	0.197	0.433	0.937	0.580
0.390625mg	1.307	1.019	0.230	0.234	0.849	0.093
0.1963125mg	1.304	0.529	0.371	0.002	0.778	0.017
0.09765625mg	0.255	-1.713	0.208	0.365	0.925	0.472
0.04882813mg	2.647	7.236	0.411	<0.001	0.591	<0.001
0.02441406mg	1.376	1.958	0.267	0.097	0.878	0.179

Column	Sum	Sum of Squares
TSB	1.269	0.0641
Control	10.406	9.482
12.5mg	0.327	0.0140
6.25mg	0.317	0.0127
3.125mg	0.336	0.0147
1.5625mg	0.311	0.0125
0.78125mg	0.314	0.0127
0.390625mg	0.283	0.0104
0.1963125mg	0.264	0.00887

0.09765625mg	0.273	0.00942
0.04882813mg	0.260	0.00932
0.02441406mg	0.320	0.0138

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	32	0	0.0397	0.0211	0.00372
Control	32	0	0.325	0.444	0.0784
12.5mg	8	0	0.0409	0.00979	0.00346
6.25mg	8	0	0.0396	0.00473	0.00167
3.125mg	8	0	0.0420	0.00920	0.00325
1.5625mg	8	0	0.0389	0.00782	0.00276
0.78125mg	8	0	0.0393	0.00688	0.00243
0.390625mg	8	0	0.0354	0.00702	0.00248
0.1963125mg	8	0	0.0330	0.00507	0.00179
0.09765625mg	8	0	0.0341	0.00403	0.00142
0.04882813mg	8	0	0.0325	0.0111	0.00392
0.02441406mg	8	0	0.0401	0.0117	0.00413

Source of Variation	DF	SS	MS	F	P
Between Groups	11	2.052	0.187	4.025	<0.001
Residual	132	6.116	0.0463		
Total	143	8.168			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 0.984

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05
Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
Control vs. TSB	0.286	5.306	<0.001	Yes
Control vs. 0.04882813mg	0.293	3.440	0.008	Yes
Control vs. 0.1963125mg	0.292	3.435	0.007	Yes
Control vs. 0.09765625mg	0.291	3.421	0.007	Yes
Control vs. 0.390625mg	0.290	3.406	0.006	Yes
Control vs. 1.5625mg	0.286	3.365	0.006	Yes
Control vs. 0.78125mg	0.286	3.361	0.005	Yes
Control vs. 6.25mg	0.286	3.356	0.004	Yes
Control vs. 0.02441406mg	0.285	3.351	0.003	Yes
Control vs. 12.5mg	0.284	3.342	0.002	Yes
Control vs. 3.125mg	0.283	3.329	0.001	Yes

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
TSB vs. Control	0.286	5.306	<0.001	Yes
TSB vs. 0.04882813mg	0.00715	0.0840	1.000	No
TSB vs. 0.1963125mg	0.00670	0.0787	1.000	No
TSB vs. 0.09765625mg	0.00556	0.0653	1.000	No
TSB vs. 0.390625mg	0.00425	0.0499	1.000	No
TSB vs. 3.125mg	0.00232	0.0272	1.000	No
TSB vs. 12.5mg	0.00120	0.0141	1.000	No
TSB vs. 1.5625mg	0.000759	0.00892	1.000	No
TSB vs. 0.78125mg	0.000409	0.00481	1.000	No
TSB vs. 0.02441406mg	0.000391	0.00459	1.000	No
TSB vs. 6.25mg	0.0000469	0.000551	1.000	No

New Antibiotic Testing on 10/1/14 at 48 Hours- Lower Polymyxin B

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0240	0.5183	0.0237	0.0386	0.0317	0.0358	0.0341	0.0337	0.0345	0.0254	0.0315	0.0278
B	0.0249	0.7960	0.0312	0.0320	0.0335	0.0320	0.0354	0.0292	0.0322	0.0283	0.0325	0.0390
C	0.0263	0.4360	0.0273	0.0386	0.0445	0.0424	0.0349	0.0327	0.0309	0.0306	0.0279	0.0353
D	0.0233	0.4642	0.0277	0.0350	0.0349	0.0319	0.0365	0.0305	0.0308	0.0301	0.0290	0.0328
E	0.0253	0.4914	0.0273	0.0475	0.0433	0.0361	0.0421	0.0362	0.0373	0.0329	0.0296	0.0364
F	0.0334	0.8586	0.0345	0.0415	0.0301	0.0358	0.0311	0.0316	0.0344	0.0316	0.0363	0.0451
G	0.0321	0.7307	0.0562	0.0717	0.0615	0.0615	0.0372	0.0582	0.0431	0.0376	0.0369	0.0482
H	0.0261	0.4889	0.0449	0.0487	0.0508	0.0490	0.0482	0.0349	0.0502	0.0473	0.0651	0.0492
average	0.0269	0.5980	0.0341	0.0442	0.0413	0.0406	0.0374	0.0359	0.0367	0.0330	0.0361	0.0392
range	0.0101	0.4226	0.0325	0.0397	0.0314	0.0296	0.0171	0.0290	0.0194	0.0219	0.0372	0.0214

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	32	0	0.0319	0.00942	0.00167	0.00340
Control	32	0	0.466	0.454	0.0803	0.164
6.25mg	8	0	0.0341	0.0111	0.00391	0.00924
3.125mg	8	0	0.0442	0.0125	0.00441	0.0104
1.5625mg	8	0	0.0413	0.0109	0.00385	0.00911
0.78125mg	8	0	0.0406	0.0102	0.00360	0.00852
0.390625mg	8	0	0.0374	0.00535	0.00189	0.00447
0.1963125mg	8	0	0.0359	0.00930	0.00329	0.00778
0.09765625mg	8	0	0.0367	0.00679	0.00240	0.00567
0.04882813mg	8	0	0.0330	0.00678	0.00240	0.00567
0.02441406mg	8	0	0.0361	0.0122	0.00430	0.0102
0.01220703mg	8	0	0.0392	0.00765	0.00271	0.00640

Column	Range	Max	Min	Median	25%	75%
TSB	0.0363	0.0564	0.0201	0.0284	0.0255	0.0334
Control	1.162	1.201	0.0391	0.275	0.0674	0.946
6.25mg	0.0325	0.0562	0.0237	0.0294	0.0273	0.0423
3.125mg	0.0397	0.0717	0.0320	0.0401	0.0359	0.0484
1.5625mg	0.0314	0.0615	0.0301	0.0391	0.0321	0.0492
0.78125mg	0.0296	0.0615	0.0319	0.0359	0.0330	0.0473
0.390625mg	0.0171	0.0482	0.0311	0.0359	0.0343	0.0409
0.1963125mg	0.0290	0.0582	0.0292	0.0332	0.0308	0.0359
0.09765625mg	0.0194	0.0502	0.0308	0.0345	0.0312	0.0417
0.04882813mg	0.0219	0.0473	0.0254	0.0311	0.0287	0.0364
0.02441406mg	0.0372	0.0651	0.0279	0.0320	0.0292	0.0367
0.01220703mg	0.0214	0.0492	0.0278	0.0377	0.0334	0.0474

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.518	1.520	0.245	<0.001	0.809	<0.001
Control	0.547	-1.418	0.281	<0.001	0.798	<0.001
6.25mg	1.412	1.299	0.236	0.210	0.833	0.064
3.125mg	1.758	3.624	0.234	0.216	0.829	0.058
1.5625mg	0.903	0.0683	0.221	0.285	0.905	0.321
0.78125mg	1.477	1.773	0.294	0.040	0.823	0.051
0.390625mg	1.282	1.662	0.268	0.095	0.888	0.225
0.1963125mg	2.495	6.614	0.361	0.003	0.659	<0.001
0.09765625mg	1.360	1.229	0.251	0.146	0.844	0.083
0.04882813mg	1.506	2.642	0.254	0.133	0.871	0.155
0.02441406mg	2.441	6.326	0.349	0.005	0.665	<0.001
0.01220703mg	0.0335	-1.237	0.154	0.702	0.945	0.664

Column	Sum	Sum of Squares
TSB	1.020	0.0353
Control	14.922	13.347
6.25mg	0.273	0.0102
3.125mg	0.354	0.0167
1.5625mg	0.330	0.0145
0.78125mg	0.325	0.0139
0.390625mg	0.299	0.0114
0.1963125mg	0.287	0.0109
0.09765625mg	0.293	0.0111

0.04882813mg	0.264	0.00902
0.02441406mg	0.289	0.0115
0.01220703mg	0.314	0.0127

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	32	0	0.0319	0.00942	0.00167
Control	32	0	0.466	0.454	0.0803
6.25mg	8	0	0.0341	0.0111	0.00391
3.125mg	8	0	0.0442	0.0125	0.00441
1.5625mg	8	0	0.0413	0.0109	0.00385
0.78125mg	8	0	0.0406	0.0102	0.00360
0.390625mg	8	0	0.0374	0.00535	0.00189
0.1963125mg	8	0	0.0359	0.00930	0.00329
0.09765625mg	8	0	0.0367	0.00679	0.00240
0.04882813mg	8	0	0.0330	0.00678	0.00240
0.02441406mg	8	0	0.0361	0.0122	0.00430
0.01220703mg	8	0	0.0392	0.00765	0.00271

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	4.607	0.419	8.640	<0.001
Residual	132	6.398	0.0485		
Total	143	11.005			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

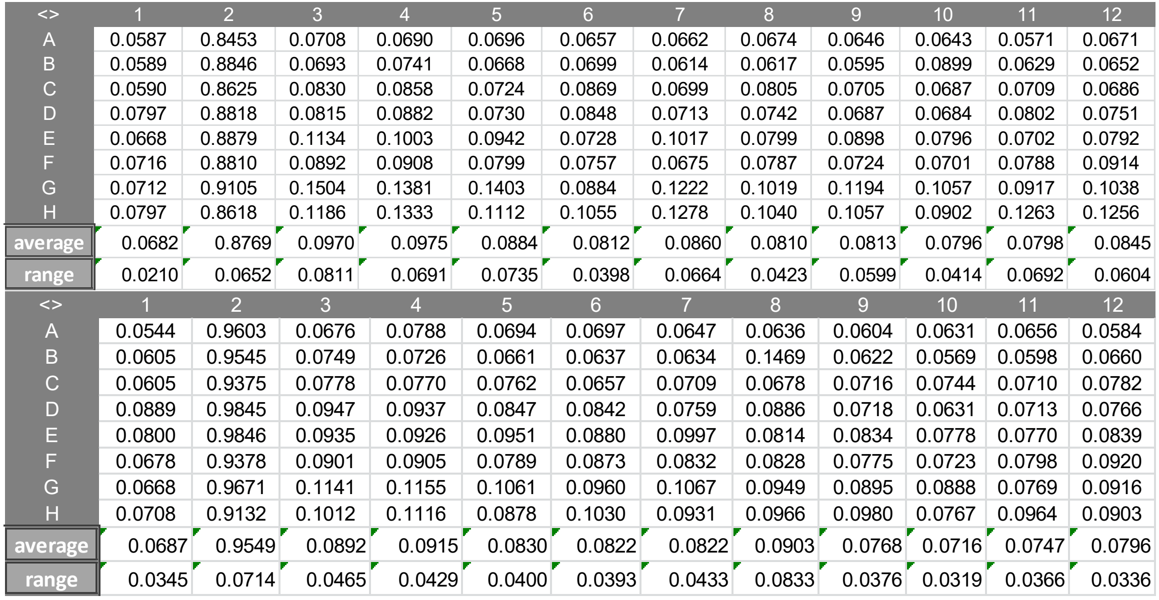
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.434	7.892	<0.001	Yes
Control vs. 0.04882813mg	0.433	4.979	<0.001	Yes
Control vs. 6.25mg	0.432	4.966	<0.001	Yes
Control vs. 0.1963125mg	0.430	4.946	<0.001	Yes
Control vs. 0.02441406mg	0.430	4.943	<0.001	Yes
Control vs. 0.09765625mg	0.430	4.937	<0.001	Yes
Control vs. 0.390625mg	0.429	4.928	<0.001	Yes
Control vs. 0.01220703mg	0.427	4.907	<0.001	Yes
Control vs. 0.78125mg	0.426	4.892	<0.001	Yes
Control vs. 1.5625mg	0.425	4.884	<0.001	Yes
Control vs. 3.125mg	0.422	4.850	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.434	7.892	<0.001	Yes
TSB vs. 3.125mg	0.0123	0.141	1.000	No
TSB vs. 1.5625mg	0.00940	0.108	1.000	No
TSB vs. 0.78125mg	0.00868	0.0997	1.000	No
TSB vs. 0.01220703mg	0.00734	0.0843	1.000	No
TSB vs. 0.390625mg	0.00555	0.0638	1.000	No
TSB vs. 0.09765625mg	0.00479	0.0550	1.000	No
TSB vs. 0.02441406mg	0.00421	0.0484	1.000	No
TSB vs. 0.1963125mg	0.00399	0.0458	1.000	No
TSB vs. 6.25mg	0.00221	0.0254	1.000	No
TSB vs. 0.04882813mg	0.00109	0.0125	0.990	No

New Antibiotic Testing on 10/15/14 at 48 Hours- Gentamicin



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0587	0.8453	0.0708	0.0690	0.0696	0.0657	0.0662	0.0674	0.0646	0.0643	0.0571	0.0671
B	0.0589	0.8846	0.0693	0.0741	0.0668	0.0699	0.0614	0.0617	0.0595	0.0899	0.0629	0.0652
C	0.0590	0.8625	0.0830	0.0858	0.0724	0.0869	0.0699	0.0805	0.0705	0.0687	0.0709	0.0686
D	0.0797	0.8818	0.0815	0.0882	0.0730	0.0848	0.0713	0.0742	0.0687	0.0684	0.0802	0.0751
E	0.0668	0.8879	0.1134	0.1003	0.0942	0.0728	0.1017	0.0799	0.0898	0.0796	0.0702	0.0792
F	0.0716	0.8810	0.0892	0.0908	0.0799	0.0757	0.0675	0.0787	0.0724	0.0701	0.0788	0.0914
G	0.0712	0.9105	0.1504	0.1381	0.1403	0.0884	0.1222	0.1019	0.1194	0.1057	0.0917	0.1038
H	0.0797	0.8618	0.1186	0.1333	0.1112	0.1055	0.1278	0.1040	0.1057	0.0902	0.1263	0.1256
average	0.0682	0.8769	0.0970	0.0975	0.0884	0.0812	0.0860	0.0810	0.0813	0.0796	0.0798	0.0845
range	0.0210	0.0652	0.0811	0.0691	0.0735	0.0398	0.0664	0.0423	0.0599	0.0414	0.0692	0.0604

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0544	0.9603	0.0676	0.0788	0.0694	0.0697	0.0647	0.0636	0.0604	0.0631	0.0656	0.0584
B	0.0605	0.9545	0.0749	0.0726	0.0661	0.0637	0.0634	0.1469	0.0622	0.0569	0.0598	0.0660
C	0.0605	0.9375	0.0778	0.0770	0.0762	0.0657	0.0709	0.0678	0.0716	0.0744	0.0710	0.0782
D	0.0889	0.9845	0.0947	0.0937	0.0847	0.0842	0.0759	0.0886	0.0718	0.0631	0.0713	0.0766
E	0.0800	0.9846	0.0935	0.0926	0.0951	0.0880	0.0997	0.0814	0.0834	0.0778	0.0770	0.0839
F	0.0678	0.9378	0.0901	0.0905	0.0789	0.0873	0.0832	0.0828	0.0775	0.0723	0.0798	0.0920
G	0.0668	0.9671	0.1141	0.1155	0.1061	0.0960	0.1067	0.0949	0.0895	0.0888	0.0769	0.0916
H	0.0708	0.9132	0.1012	0.1116	0.0878	0.1030	0.0931	0.0966	0.0980	0.0767	0.0964	0.0903
average	0.0687	0.9549	0.0892	0.0915	0.0830	0.0822	0.0822	0.0903	0.0768	0.0716	0.0747	0.0796
range	0.0345	0.0714	0.0465	0.0429	0.0400	0.0393	0.0433	0.0833	0.0376	0.0319	0.0366	0.0336

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	48	0	0.0691	0.0115	0.00166	0.00334
Control	48	0	0.854	0.0611	0.00881	0.0177
5mg	16	0	0.0931	0.0222	0.00555	0.0118
2.5mg	16	0	0.0945	0.0207	0.00517	0.0110
1.25mg	16	0	0.0857	0.0200	0.00500	0.0106
0.625mg	16	0	0.0817	0.0132	0.00330	0.00704
0.3125mg	16	0	0.0841	0.0216	0.00541	0.0115
0.15625mg	16	0	0.0857	0.0209	0.00522	0.0111
0.078125mg	16	0	0.0791	0.0173	0.00433	0.00923
0.0390625mg	16	0	0.0756	0.0128	0.00320	0.00681
0.01953125mg	16	0	0.0772	0.0168	0.00419	0.00893
0.009765625mg	16	0	0.0821	0.0170	0.00425	0.00905

Column	Range	Max	Min	Median	25%	75%
TSB	0.0596	0.114	0.0544	0.0678	0.0598	0.0762
Control	0.255	0.985	0.729	0.849	0.825	0.882
5mg	0.0828	0.150	0.0676	0.0897	0.0756	0.110
2.5mg	0.0691	0.138	0.0690	0.0907	0.0774	0.109
1.25mg	0.0742	0.140	0.0661	0.0794	0.0703	0.0949
0.625mg	0.0418	0.106	0.0637	0.0845	0.0697	0.0883
0.3125mg	0.0664	0.128	0.0614	0.0736	0.0665	0.101
0.15625mg	0.0852	0.147	0.0617	0.0809	0.0694	0.0962
0.078125mg	0.0599	0.119	0.0595	0.0721	0.0656	0.0897
0.0390625mg	0.0488	0.106	0.0569	0.0733	0.0653	0.0865
0.01953125mg	0.0692	0.126	0.0571	0.0741	0.0668	0.0801
0.009765625mg	0.0672	0.126	0.0584	0.0787	0.0675	0.0915

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.423	3.685	0.114	0.119	0.890	<0.001
Control	0.219	0.0159	0.103	0.226	0.965	0.164
5mg	1.174	1.511	0.159	0.325	0.905	0.097
2.5mg	0.946	0.179	0.203	0.078	0.905	0.096
1.25mg	1.530	2.517	0.177	0.193	0.853	0.015
0.625mg	0.285	-0.904	0.137	0.528	0.933	0.273
0.3125mg	0.858	-0.512	0.223	0.033	0.870	0.027
0.15625mg	1.700	4.173	0.180	0.177	0.856	0.017
0.078125mg	1.014	0.414	0.212	0.052	0.904	0.093
0.0390625mg	0.828	0.505	0.128	0.618	0.942	0.375

0.01953125mg	1.764	4.230	0.243	0.013	0.847	0.012
0.009765625mg	1.050	1.557	0.154	0.370	0.925	0.206

Column	**Sum**	**Sum of Squares**
TSB	3.315	0.235
Control	40.999	35.195
5mg	1.490	0.146
2.5mg	1.512	0.149
1.25mg	1.372	0.124
0.625mg	1.307	0.109
0.3125mg	1.346	0.120
0.15625mg	1.371	0.124
0.078125mg	1.265	0.105
0.0390625mg	1.210	0.0940
0.01953125mg	1.236	0.0997
0.009765625mg	1.313	0.112

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	48	0	0.0691	0.0115	0.00166
Control	48	0	0.854	0.0611	0.00881
5mg	16	0	0.0931	0.0222	0.00555
2.5mg	16	0	0.0945	0.0207	0.00517
1.25mg	16	0	0.0857	0.0200	0.00500
0.625mg	16	0	0.0817	0.0132	0.00330
0.3125mg	16	0	0.0841	0.0216	0.00541
0.15625mg	16	0	0.0857	0.0209	0.00522
0.078125mg	16	0	0.0791	0.0173	0.00433
0.0390625mg	16	0	0.0756	0.0128	0.00320
0.01953125mg	16	0	0.0772	0.0168	0.00419
0.009765625mg	16	0	0.0821	0.0170	0.00425

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	23.359	2.124	2224.134	<0.001
Residual	244	0.233	0.000955		
Total	255	23.592			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

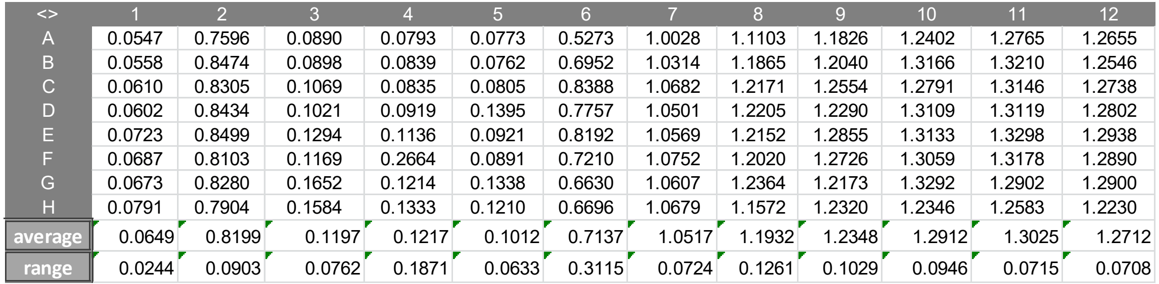
Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.785	124.474	<0.001	Yes
Control vs. 0.0390625mg	0.779	87.280	<0.001	Yes
Control vs. 0.01953125mg	0.777	87.098	<0.001	Yes
Control vs. 0.078125mg	0.775	86.895	<0.001	Yes
Control vs. 0.625mg	0.772	86.598	<0.001	Yes
Control vs. 0.009765625mg	0.772	86.558	<0.001	Yes
Control vs. 0.3125mg	0.770	86.330	<0.001	Yes
Control vs. 0.15625mg	0.768	86.153	<0.001	Yes
Control vs. 1.25mg	0.768	86.147	<0.001	Yes
Control vs. 5mg	0.761	85.317	<0.001	Yes
Control vs. 2.5mg	0.760	85.165	<0.001	Yes

Comparisons for factor:

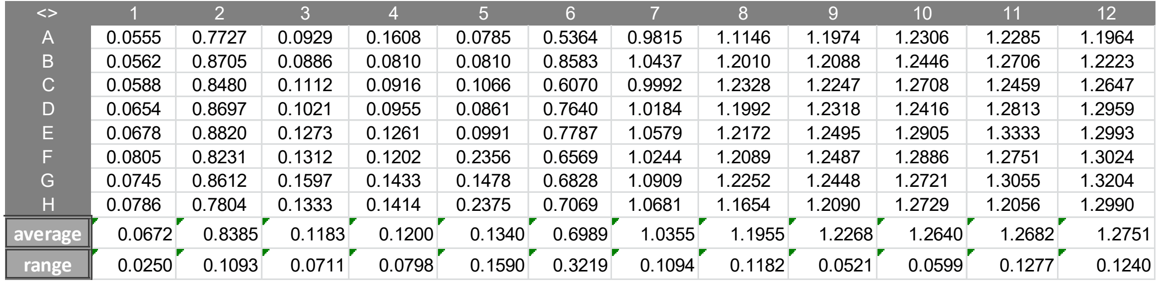
Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.785	124.474	<0.001	Yes
TSB vs. 2.5mg	0.0254	2.852	0.046	Yes
TSB vs. 5mg	0.0241	2.699	0.065	No

TSB vs. 1.25mg	0.0167	1.869	0.405	No
TSB vs. 0.15625mg	0.0166	1.864	0.368	No
TSB vs. 0.3125mg	0.0150	1.687	0.443	No
TSB vs. 0.009765625mg	0.0130	1.458	0.546	No
TSB vs. 0.625mg	0.0126	1.418	0.496	No
TSB vs. 0.078125mg	0.0100	1.122	0.600	No
TSB vs. 0.01953125mg	0.00819	0.918	0.590	No
TSB vs. 0.0390625mg	0.00657	0.736	0.462	No

New Antibiotic Testing on 10/15/14 at 48 Hours- Rifampicin



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0547	0.7596	0.0890	0.0793	0.0773	0.5273	1.0028	1.1103	1.1826	1.2402	1.2765	1.2655
B	0.0558	0.8474	0.0898	0.0839	0.0762	0.6952	1.0314	1.1865	1.2040	1.3166	1.3210	1.2546
C	0.0610	0.8305	0.1069	0.0835	0.0805	0.8388	1.0682	1.2171	1.2554	1.2791	1.3146	1.2738
D	0.0602	0.8434	0.1021	0.0919	0.1395	0.7757	1.0501	1.2205	1.2290	1.3109	1.3119	1.2802
E	0.0723	0.8499	0.1294	0.1136	0.0921	0.8192	1.0569	1.2152	1.2855	1.3133	1.3298	1.2938
F	0.0687	0.8103	0.1169	0.2664	0.0891	0.7210	1.0752	1.2020	1.2726	1.3059	1.3178	1.2890
G	0.0673	0.8280	0.1652	0.1214	0.1338	0.6630	1.0607	1.2364	1.2173	1.3292	1.2902	1.2900
H	0.0791	0.7904	0.1584	0.1333	0.1210	0.6696	1.0679	1.1572	1.2320	1.2346	1.2583	1.2230
average	0.0649	0.8199	0.1197	0.1217	0.1012	0.7137	1.0517	1.1932	1.2348	1.2912	1.3025	1.2712
range	0.0244	0.0903	0.0762	0.1871	0.0633	0.3115	0.0724	0.1261	0.1029	0.0946	0.0715	0.0708



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0555	0.7727	0.0929	0.1608	0.0785	0.5364	0.9815	1.1146	1.1974	1.2306	1.2285	1.1964
B	0.0562	0.8705	0.0886	0.0810	0.0810	0.8583	1.0437	1.2010	1.2088	1.2446	1.2706	1.2223
C	0.0588	0.8480	0.1112	0.0916	0.1066	0.6070	0.9992	1.2328	1.2247	1.2708	1.2459	1.2647
D	0.0654	0.8697	0.1021	0.0955	0.0861	0.7640	1.0184	1.1992	1.2318	1.2416	1.2813	1.2959
E	0.0678	0.8820	0.1273	0.1261	0.0991	0.7787	1.0579	1.2172	1.2495	1.2905	1.3333	1.2993
F	0.0805	0.8231	0.1312	0.1202	0.2356	0.6569	1.0244	1.2089	1.2487	1.2886	1.2751	1.3024
G	0.0745	0.8612	0.1597	0.1433	0.1478	0.6828	1.0909	1.2252	1.2448	1.2721	1.3055	1.3204
H	0.0786	0.7804	0.1333	0.1414	0.2375	0.7069	1.0681	1.1654	1.2090	1.2729	1.2056	1.2990
average	0.0672	0.8385	0.1183	0.1200	0.1340	0.6989	1.0355	1.1955	1.2268	1.2640	1.2682	1.2751
range	0.0250	0.1093	0.0711	0.0798	0.1590	0.3219	0.1094	0.1182	0.0521	0.0599	0.1277	0.1240

Descriptive Statistics:
Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	48	0	0.0691	0.0115	0.00166	0.00334
Control	48	0	0.854	0.0611	0.00881	0.0177
0.15625mg	16	0	0.119	0.0258	0.00646	0.0138
0.078125mg	16	0	0.121	0.0464	0.0116	0.0247
0.0390625mg	16	0	0.118	0.0519	0.0130	0.0277
0.01953125mg	16	0	0.706	0.0980	0.0245	0.0522
0.00976563mg	16	0	1.044	0.0310	0.00774	0.0165
0.00488281mg	16	0	1.194	0.0386	0.00966	0.0206
0.00244141mg	16	0	1.231	0.0278	0.00694	0.0148
0.0012207mg	16	0	1.278	0.0322	0.00806	0.0172
0.00061035mg	16	0	1.285	0.0373	0.00933	0.0199
0.00030675mg	16	0	1.273	0.0341	0.00852	0.0182

Column	Range	Max	Min	Median	25%	75%
TSB	0.0596	0.114	0.0544	0.0678	0.0598	0.0762
Control	0.255	0.985	0.729	0.849	0.825	0.882
0.15625mg	0.0766	0.165	0.0886	0.114	0.0952	0.133
0.078125mg	0.187	0.266	0.0793	0.117	0.0858	0.139
0.0390625mg	0.161	0.237	0.0762	0.0956	0.0806	0.138
0.01953125mg	0.331	0.858	0.527	0.701	0.658	0.778
0.00976563mg	0.109	1.091	0.982	1.054	1.020	1.068
0.00488281mg	0.126	1.236	1.110	1.205	1.171	1.220
0.00244141mg	0.103	1.286	1.183	1.230	1.209	1.249
0.0012207mg	0.0986	1.329	1.231	1.276	1.242	1.310
0.00061035mg	0.128	1.333	1.206	1.286	1.261	1.317
0.00030675mg	0.124	1.320	1.196	1.285	1.257	1.298

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.423	3.685	0.114	0.119	0.890	<0.001
Control	0.219	0.0159	0.103	0.226	0.965	0.164
0.15625mg	0.547	-0.840	0.124	0.655	0.909	0.110

0.078125mg	2.181	6.212	0.189	0.128	0.774	0.001
0.0390625mg	1.649	1.978	0.213	0.051	0.756	<0.001
0.01953125mg	-0.299	-0.433	0.120	0.692	0.962	0.692
0.00976563mg	-0.582	-0.537	0.166	0.268	0.946	0.423
0.00488281mg	-1.269	0.778	0.238	0.016	0.847	0.012
0.00244141mg	0.263	-0.302	0.108	0.778	0.984	0.988
0.0012207mg	-0.0301	-1.307	0.159	0.325	0.933	0.274
0.00061035mg	-0.658	-0.252	0.143	0.477	0.943	0.386
0.00030675mg	-1.003	0.351	0.179	0.182	0.902	0.085

Column	**Sum**	**Sum of Squares**
TSB	3.315	0.235
Control	40.999	35.195
0.15625mg	1.904	0.237
0.078125mg	1.933	0.266
0.0390625mg	1.882	0.262
0.01953125mg	11.301	8.126
0.00976563mg	16.697	17.439
0.00488281mg	19.110	22.846
0.00244141mg	19.693	24.250
0.0012207mg	20.441	26.132
0.00061035mg	20.566	26.456
0.00030675mg	20.370	25.952

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	48	0	0.0691	0.0115	0.00166
Control	48	0	0.854	0.0611	0.00881
0.15625mg	16	0	0.119	0.0258	0.00646
0.078125mg	16	0	0.121	0.0464	0.0116
0.0390625mg	16	0	0.118	0.0519	0.0130
0.01953125mg	16	0	0.706	0.0980	0.0245
0.00976563mg	16	0	1.044	0.0310	0.00774
0.00488281mg	16	0	1.194	0.0386	0.00966
0.00244141mg	16	0	1.231	0.0278	0.00694
0.0012207mg	16	0	1.278	0.0322	0.00806
0.00061035mg	16	0	1.285	0.0373	0.00933
0.00030675mg	16	0	1.273	0.0341	0.00852

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	62.824	5.711	2728.768	<0.001
Residual	244	0.511	0.00209		
Total	255	63.335			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

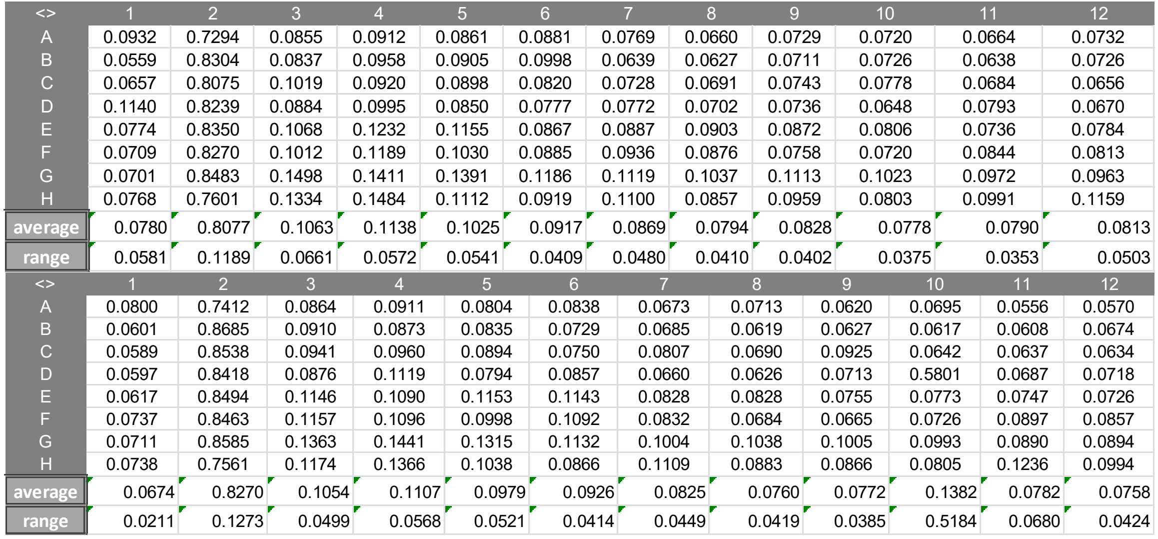
Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.785	84.071	<0.001	Yes
Control vs. 0.0390625mg	0.737	55.771	<0.001	Yes
Control vs. 0.15625mg	0.735	55.665	<0.001	Yes
Control vs. 0.078125mg	0.733	55.527	<0.001	Yes
Control vs. 0.00061035mg	0.431	32.652	<0.001	Yes
Control vs. 0.0012207mg	0.423	32.063	<0.001	Yes
Control vs. 0.00030675mg	0.419	31.726	<0.001	Yes
Control vs. 0.00244141mg	0.377	28.521	<0.001	Yes
Control vs. 0.00488281mg	0.340	25.759	<0.001	Yes
Control vs. 0.00976563mg	0.189	14.344	<0.001	Yes

Control vs. 0.01953125mg	0.148	11.195	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. 0.00061035mg	1.216	92.098	<0.001	Yes
TSB vs. 0.0012207mg	1.209	91.510	<0.001	Yes
TSB vs. 0.00030675mg	1.204	91.173	<0.001	Yes
TSB vs. 0.00244141mg	1.162	87.968	<0.001	Yes
TSB vs. 0.00488281mg	1.125	85.206	<0.001	Yes
TSB vs. Control	0.785	84.071	<0.001	Yes
TSB vs. 0.00976563mg	0.975	73.790	<0.001	Yes
TSB vs. 0.01953125mg	0.637	48.252	<0.001	Yes
TSB vs. 0.078125mg	0.0518	3.920	<0.001	Yes
TSB vs. 0.15625mg	0.0499	3.782	<0.001	Yes
TSB vs. 0.0390625mg	0.0485	3.676	<0.001	Yes

New Antibiotic Testing on 10/15/14 at 48 Hours- Polymyxin B



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0932	0.7294	0.0855	0.0912	0.0861	0.0881	0.0769	0.0660	0.0729	0.0720	0.0664	0.0732
B	0.0559	0.8304	0.0837	0.0958	0.0905	0.0998	0.0639	0.0627	0.0711	0.0726	0.0638	0.0726
C	0.0657	0.8075	0.1019	0.0920	0.0898	0.0820	0.0728	0.0691	0.0743	0.0778	0.0684	0.0656
D	0.1140	0.8239	0.0884	0.0995	0.0850	0.0777	0.0772	0.0702	0.0736	0.0648	0.0793	0.0670
E	0.0774	0.8350	0.1068	0.1232	0.1155	0.0867	0.0887	0.0903	0.0872	0.0806	0.0736	0.0784
F	0.0709	0.8270	0.1012	0.1189	0.1030	0.0885	0.0936	0.0876	0.0758	0.0720	0.0844	0.0813
G	0.0701	0.8483	0.1498	0.1411	0.1391	0.1186	0.1119	0.1037	0.1113	0.1023	0.0972	0.0963
H	0.0768	0.7601	0.1334	0.1484	0.1112	0.0919	0.1100	0.0857	0.0959	0.0803	0.0991	0.1159
average	0.0780	0.8077	0.1063	0.1138	0.1025	0.0917	0.0869	0.0794	0.0828	0.0778	0.0790	0.0813
range	0.0581	0.1189	0.0661	0.0572	0.0541	0.0409	0.0480	0.0410	0.0402	0.0375	0.0353	0.0503

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0800	0.7412	0.0864	0.0911	0.0804	0.0838	0.0673	0.0713	0.0620	0.0695	0.0556	0.0570
B	0.0601	0.8685	0.0910	0.0873	0.0835	0.0729	0.0685	0.0619	0.0627	0.0617	0.0608	0.0674
C	0.0589	0.8538	0.0941	0.0960	0.0894	0.0750	0.0807	0.0690	0.0925	0.0642	0.0637	0.0634
D	0.0597	0.8418	0.0876	0.1119	0.0794	0.0857	0.0660	0.0626	0.0713	0.5801	0.0687	0.0718
E	0.0617	0.8494	0.1146	0.1090	0.1153	0.1143	0.0828	0.0828	0.0755	0.0773	0.0747	0.0726
F	0.0737	0.8463	0.1157	0.1096	0.0998	0.1092	0.0832	0.0684	0.0665	0.0726	0.0897	0.0857
G	0.0711	0.8585	0.1363	0.1441	0.1315	0.1132	0.1004	0.1038	0.1005	0.0993	0.0890	0.0894
H	0.0738	0.7561	0.1174	0.1366	0.1038	0.0866	0.1109	0.0883	0.0866	0.0805	0.1236	0.0994
average	0.0674	0.8270	0.1054	0.1107	0.0979	0.0926	0.0825	0.0760	0.0772	0.1382	0.0782	0.0758
range	0.0211	0.1273	0.0499	0.0568	0.0521	0.0414	0.0449	0.0419	0.0385	0.5184	0.0680	0.0424

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	48	0	0.0691	0.0115	0.00166	0.00334
Control	48	0	0.854	0.0611	0.00881	0.0177
4mg	16	0	0.106	0.0204	0.00510	0.0109
2mg	16	0	0.112	0.0209	0.00522	0.0111
1mg	16	0	0.100	0.0182	0.00454	0.00968
0.5mg	16	0	0.0921	0.0145	0.00363	0.00773
0.25mg	16	0	0.0847	0.0164	0.00410	0.00874
0.125mg	16	0	0.0777	0.0141	0.00353	0.00752
0.0625mg	16	0	0.0800	0.0142	0.00355	0.00757
0.03125mg	16	0	0.108	0.126	0.0316	0.0673
0.015625mg	16	0	0.0786	0.0178	0.00444	0.00947
0.0078125mg	16	0	0.0786	0.0155	0.00387	0.00824

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0596	0.114	0.0544	0.0678	0.0598	0.0762
Control	0.255	0.985	0.729	0.849	0.825	0.882
4mg	0.0661	0.150	0.0837	0.102	0.0878	0.117
2mg	0.0611	0.148	0.0873	0.109	0.0929	0.133
1mg	0.0597	0.139	0.0794	0.0951	0.0853	0.114
0.5mg	0.0457	0.119	0.0729	0.0874	0.0824	0.107
0.25mg	0.0480	0.112	0.0639	0.0817	0.0696	0.0987
0.125mg	0.0419	0.104	0.0619	0.0708	0.0666	0.0881
0.0625mg	0.0493	0.111	0.0620	0.0749	0.0711	0.0912
0.03125mg	0.518	0.580	0.0617	0.0749	0.0701	0.0806
0.015625mg	0.0680	0.124	0.0556	0.0741	0.0644	0.0895

0.0078125mg	0.0589	0.116	0.0570	0.0729	0.0671	0.0885

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	1.423	3.685	0.114	0.119	0.890	<0.001
Control	0.219	0.0159	0.103	0.226	0.965	0.164
4mg	0.842	-0.244	0.155	0.359	0.898	0.073
2mg	0.555	-1.135	0.166	0.269	0.895	0.068
1mg	0.850	-0.126	0.203	0.076	0.907	0.103
0.5mg	0.668	-0.783	0.224	0.032	0.900	0.080
0.25mg	0.544	-0.962	0.161	0.313	0.909	0.113
0.125mg	0.674	-0.750	0.238	0.016	0.880	0.039
0.0625mg	0.805	-0.0933	0.241	0.014	0.920	0.166
0.03125mg	3.948	15.698	0.455	<0.001	0.346	<0.001
0.015625mg	1.089	1.229	0.150	0.409	0.919	0.165
0.0078125mg	1.007	0.796	0.198	0.093	0.927	0.222

Column	**Sum**	**Sum of Squares**
TSB	3.315	0.235
Control	40.999	35.195
4mg	1.694	0.186
2mg	1.796	0.208
1mg	1.603	0.166
0.5mg	1.474	0.139
0.25mg	1.355	0.119
0.125mg	1.243	0.0996
0.0625mg	1.280	0.105
0.03125mg	1.728	0.426
0.015625mg	1.258	0.104
0.0078125mg	1.257	0.102

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	48	0	0.0691	0.0115	0.00166
Control	48	0	0.854	0.0611	0.00881
4mg	16	0	0.106	0.0204	0.00510
2mg	16	0	0.112	0.0209	0.00522
1mg	16	0	0.100	0.0182	0.00454
0.5mg	16	0	0.0921	0.0145	0.00363
0.25mg	16	0	0.0847	0.0164	0.00410
0.125mg	16	0	0.0777	0.0141	0.00353
0.0625mg	16	0	0.0800	0.0142	0.00355
0.03125mg	16	0	0.108	0.126	0.0316
0.015625mg	16	0	0.0786	0.0178	0.00444
0.0078125mg	16	0	0.0786	0.0155	0.00387

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	11	23.025	2.093	1109.414	<0.001
Residual	244	0.460	0.00189		
Total	255	23.486			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

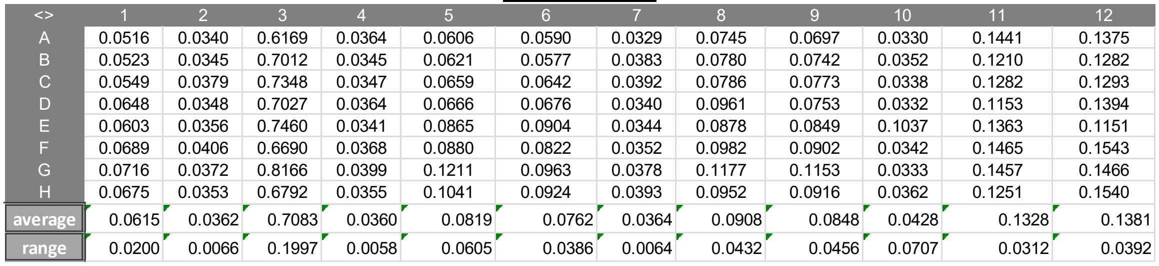
Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. TSB	0.785	88.546	<0.001	Yes
Control vs. 0.125mg	0.776	61.921	<0.001	Yes
Control vs. 0.0078125mg	0.776	61.853	<0.001	Yes
Control vs. 0.015625mg	0.776	61.848	<0.001	Yes
Control vs. 0.0625mg	0.774	61.740	<0.001	Yes

Control vs. 0.25mg	0.769	61.366	<0.001	Yes
Control vs. 0.5mg	0.762	60.771	<0.001	Yes
Control vs. 1mg	0.754	60.127	<0.001	Yes
Control vs. 4mg	0.748	59.676	<0.001	Yes
Control vs. 0.03125mg	0.746	59.507	<0.001	Yes
Control vs. 2mg	0.742	59.168	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.785	88.546	<0.001	Yes
TSB vs. 2mg	0.0432	3.443	0.007	Yes
TSB vs. 0.03125mg	0.0389	3.104	0.019	Yes
TSB vs. 4mg	0.0368	2.935	0.029	Yes
TSB vs. 1mg	0.0311	2.484	0.092	No
TSB vs. 0.5mg	0.0231	1.840	0.340	No
TSB vs. 0.25mg	0.0156	1.246	0.700	No
TSB vs. 0.0625mg	0.0109	0.871	0.856	No
TSB vs. 0.015625mg	0.00957	0.763	0.830	No
TSB vs. 0.0078125mg	0.00951	0.758	0.697	No
TSB vs. 0.125mg	0.00866	0.690	0.491	No

Clinical Isolate 1



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0516	0.0340	0.6169	0.0364	0.0606	0.0590	0.0329	0.0745	0.0697	0.0330	0.1441	0.1375
B	0.0523	0.0345	0.7012	0.0345	0.0621	0.0577	0.0383	0.0780	0.0742	0.0352	0.1210	0.1282
C	0.0549	0.0379	0.7348	0.0347	0.0659	0.0642	0.0392	0.0786	0.0773	0.0338	0.1282	0.1293
D	0.0648	0.0348	0.7027	0.0364	0.0666	0.0676	0.0340	0.0961	0.0753	0.0332	0.1153	0.1394
E	0.0603	0.0356	0.7460	0.0341	0.0865	0.0904	0.0344	0.0878	0.0849	0.1037	0.1363	0.1151
F	0.0689	0.0406	0.6690	0.0368	0.0880	0.0822	0.0352	0.0982	0.0902	0.0342	0.1465	0.1543
G	0.0716	0.0372	0.8166	0.0399	0.1211	0.0963	0.0378	0.1177	0.1153	0.0333	0.1457	0.1466
H	0.0675	0.0353	0.6792	0.0355	0.1041	0.0924	0.0393	0.0952	0.0916	0.0362	0.1251	0.1540
average	0.0615	0.0362	0.7083	0.0360	0.0819	0.0762	0.0364	0.0908	0.0848	0.0428	0.1328	0.1381
range	0.0200	0.0066	0.1997	0.0058	0.0605	0.0386	0.0064	0.0432	0.0456	0.0707	0.0312	0.0392

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0615	0.00785	0.00278	0.00656
Control	8	0	0.708	0.0594	0.0210	0.0496
Gentamicin	16	0	0.0790	0.0188	0.00470	0.0100
Rifampicin	16	0	0.0878	0.0143	0.00356	0.00760
Polymyxin B	16	0	0.135	0.0127	0.00318	0.00678

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0200	0.0716	0.0516	0.0625	0.0529	0.0686
Control	0.200	0.817	0.617	0.702	0.672	0.743
Gentamicin	0.0634	0.121	0.0577	0.0749	0.0626	0.0919
Rifampicin	0.0480	0.118	0.0697	0.0864	0.0758	0.0959
Polymyxin B	0.0392	0.154	0.115	0.137	0.126	0.146

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	-0.132	-1.877	0.174	0.583	0.910	0.355
Control	0.449	0.974	0.163	0.655	0.974	0.924
Gentamicin	0.713	-0.247	0.228	0.025	0.903	0.090
Rifampicin	0.899	0.198	0.178	0.189	0.905	0.096
Polymyxin B	-0.143	-1.080	0.128	0.620	0.947	0.438

Column	**Sum**	**Sum of Squares**
TSB	0.492	0.0307
Control	5.666	4.038
Gentamicin	1.265	0.105
Rifampicin	1.405	0.126
Polymyxin B	2.167	0.296

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0615	0.00785	0.00278
Control	8	0	0.708	0.0594	0.0210
Gentamicin	16	0	0.0790	0.0188	0.00470
Rifampicin	16	0	0.0878	0.0143	0.00356
Polymyxin B	16	0	0.135	0.0127	0.00318

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	2.672	0.668	1097.913	<0.001
Residual	59	0.0359	0.000608		
Total	63	2.708			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Gentamicin	0.629	58.917	<0.001	Yes
Control vs. Rifampicin	0.621	58.098	<0.001	Yes
Control vs. Polymyxin B	0.573	53.639	<0.001	Yes
Control vs. TSB	0.647	52.447	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.647	52.447	<0.001	Yes
TSB vs. Polymyxin B	0.0739	6.922	<0.001	Yes
TSB vs. Rifampicin	0.0263	2.462	0.033	Yes
TSB vs. Gentamicin	0.0176	1.644	0.106	No

Clinical Isolate 2

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0504	0.0376	0.7675	0.0342	0.0609	0.0599	0.0327	0.0732	0.0702	0.0322	0.4342	0.8918
B	0.0543	0.0349	0.8484	0.0420	0.0603	0.0581	0.0337	0.0703	0.3240	0.0345	0.0889	0.4900
C	0.0557	0.0402	0.8551	0.0375	0.0648	0.0640	0.0353	0.3740	0.0788	0.0323	0.0741	0.0846
D	0.0604	0.0335	0.7810	0.0368	0.0655	0.0647	0.0336	0.0802	0.3078	0.0337	0.4508	0.1125
E	0.0619	0.0328	0.6790	0.0339	0.0756	0.0797	0.0350	0.0889	0.0897	0.0336	0.0897	0.0893
F	0.0664	0.0337	0.7710	0.0338	0.0790	0.0717	0.0402	0.0882	0.0863	0.0350	0.1136	0.0908
G	0.0756	0.0322	0.8852	0.0341	0.0872	0.0972	0.0335	0.0883	0.1061	0.0326	0.4872	0.1328
H	0.0707	0.0326	0.8513	0.0340	0.1029	0.1006	0.0339	0.4190	0.1000	0.0350	0.4621	0.6692
average	0.0619	0.0347	0.8048	0.0358	0.0745	0.0745	0.0347	0.1603	0.1454	0.0336	0.2751	0.3201
range	0.0252	0.0080	0.2062	0.0082	0.0426	0.0425	0.0075	0.3487	0.2538	0.0028	0.4131	0.8072

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0619	0.00859	0.00304	0.00718
Bacteria	8	0	0.805	0.0676	0.0239	0.0565
Gentamicin	16	0	0.0745	0.0152	0.00380	0.00811
Rifampicin	16	0	0.153	0.124	0.0309	0.0659
Polymyxin B	16	0	0.298	0.258	0.0644	0.137

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0252	0.0756	0.0504	0.0611	0.0546	0.0696
Bacteria	0.206	0.885	0.679	0.815	0.768	0.854
Gentamicin	0.0448	0.103	0.0581	0.0686	0.0617	0.0853
Rifampicin	0.349	0.419	0.0702	0.0886	0.0791	0.257
Polymyxin B	0.818	0.892	0.0741	0.123	0.0894	0.481

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.332	-0.874	0.141	0.758	0.972	0.911
Bacteria	-0.781	0.200	0.240	0.187	0.907	0.335
Gentamicin	0.821	-0.665	0.223	0.032	0.869	0.026

Rifampicin	1.384	0.177	0.397	<0.001	0.659	<0.001
Polymyxin B	0.942	-0.0291	0.301	<0.001	0.801	0.003

Column	**Sum**	**Sum of Squares**
TSB	0.495	0.0312
Bacteria	6.439	5.214
Gentamicin	1.192	0.0923
Rifampicin	2.445	0.603
Polymyxin B	4.762	2.414

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0619	0.00859	0.00304
Bacteria	8	0	0.805	0.0676	0.0239
Gentamicin	16	0	0.0745	0.0152	0.00380
Rifampicin	16	0	0.153	0.124	0.0309
Polymyxin B	16	0	0.298	0.258	0.0644

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	3.419	0.855	39.943	<0.001
Residual	59	1.262	0.0214		
Total	63	4.681			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Bacteria vs. Gentamicin	0.730	11.530	<0.001	Yes
Bacteria vs. Rifampicin	0.652	10.294	<0.001	Yes
Bacteria vs. TSB	0.743	10.157	<0.001	Yes
Bacteria vs. Polymyxin B	0.507	8.008	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Bacteria	0.743	10.157	<0.001	Yes
TSB vs. Polymyxin B	0.236	3.721	0.001	Yes
TSB vs. Rifampicin	0.0909	1.435	0.289	No
TSB vs. Gentamicin	0.0126	0.199	0.843	No

Clinical Isolate 3

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0503	0.0368	0.7640	0.0340	0.0807	0.0573	0.0329	0.0777	0.0741	0.0329	0.1128	0.4641
B	0.0527	0.0355	0.8010	0.0377	0.0594	0.0552	0.0334	0.0769	0.0704	0.0326	0.0837	0.0870
C	0.0565	0.0317	0.8304	0.0320	0.0641	0.0577	0.0329	0.0828	0.0760	0.0324	0.1010	0.4186
D	0.0585	0.0397	0.8582	0.0355	0.0641	0.0585	0.0341	0.0804	0.0730	0.0349	0.4071	0.0838
E	0.0615	0.0336	0.8064	0.0343	0.0730	0.0662	0.0391	0.0801	0.0924	0.0455	0.4261	0.0822
F	0.0658	0.0322	0.8709	0.0342	0.0834	0.0681	0.0365	0.0850	0.0894	0.0329	0.1117	0.7808
G	0.0668	0.0379	0.8656	0.0381	0.1006	0.0996	0.0347	0.0855	0.1027	0.0337	0.1227	0.7124
H	0.0692	0.0488	0.8005	0.0379	0.1061	0.0909	0.0343	0.1035	0.0992	0.0358	0.1313	0.1545
average	0.0602	0.0370	0.8246	0.0355	0.0789	0.0692	0.0347	0.0840	0.0847	0.0351	0.1871	0.3479
range	0.0189	0.0171	0.1069	0.0061	0.0467	0.0444	0.0062	0.0266	0.0323	0.0131	0.3424	0.6986

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0602	0.00685	0.00242	0.00573
Control	8	0	0.825	0.0380	0.0134	0.0318

```
Gentamicin      16        0         0.0741    0.0172          0.00431            0.00918
Rifampicin      16        0         0.0843    0.0105          0.00262            0.00559
Polymyxin B     16        0         0.267     0.235           0.0588             0.125

Column          Range     Max       Min       Median     25%       75%
TSB             0.0189    0.0692    0.0503    0.0600     0.0536    0.0665
Control         0.107     0.871     0.764     0.818      0.801     0.864
Gentamicin      0.0509    0.106     0.0552    0.0671     0.0587    0.0890
Rifampicin      0.0331    0.103     0.0704    0.0816     0.0762    0.0916
Polymyxin B     0.699     0.781     0.0822    0.127      0.0905    0.424

Column          Skewness    Kurtosis    K-S Dist.    K-S Prob.    SWilk W    SWilk Prob
TSB               -0.128      -1.415      0.170          0.612      0.953        0.743
Control           -0.174      -1.142      0.186          0.504      0.922        0.448
Gentamicin         0.726      -0.917      0.198          0.095      0.877        0.035
Rifampicin         0.700      -0.591      0.146          0.449      0.919        0.164
Polymyxin B        1.155       0.163      0.309         <0.001      0.771        0.001

Column          Sum       Sum of Squares
TSB             0.481        0.0293
Control         6.597        5.450
Gentamicin      1.185        0.0922
Rifampicin      1.349        0.115
Polymyxin B     4.280        1.975

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name      N     Missing     Mean       Std Dev     SEM
TSB              8       0        0.0602     0.00685     0.00242
Control          8       0        0.825      0.0380      0.0134
Gentamicin      16       0        0.0741     0.0172      0.00431
Rifampicin      16       0        0.0843     0.0105      0.00262
Polymyxin B     16       0        0.267      0.235       0.0588

Source of Variation        DF      SS       MS          F          P
Between Groups              4      3.800    0.950      66.190     <0.001
Residual                   59      0.847    0.0144
Total                      63      4.647

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically
significant difference  (P = <0.001).

Power of performed test with alpha = 0.050: 1.000


Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:
Comparison                      Diff of Means          t            P           P<0.050
Control vs. Gentamicin              0.751            14.469       <0.001          Yes
Control vs. Rifampicin              0.740            14.271       <0.001          Yes
Control vs. TSB                     0.764            12.762       <0.001          Yes
Control vs. Polymyxin B             0.557            10.740       <0.001          Yes

Comparisons for factor:
Comparison                  Diff of Means         t            P          P<0.050
TSB vs. Control                 0.764           12.762       <0.001         Yes
TSB vs. Polymyxin B             0.207            3.997       <0.001         Yes
TSB vs. Rifampicin              0.0242           0.466        0.873         No
TSB vs. Gentamicin              0.0139           0.268        0.790         No
```

Clinical Isolate 4

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0569	0.0330	0.3789	0.0444	0.0581	0.0573	0.0334	0.0752	0.0676	0.0347	0.1050	0.1183
B	0.0592	0.0405	0.3469	0.0388	0.1219	0.0497	0.0381	0.0693	0.0703	0.0326	0.0993	0.1069
C	0.0600	0.0322	0.3300	0.0331	0.0737	0.0596	0.0328	0.0640	0.0748	0.0360	0.1297	0.1103
D	0.0609	0.0346	0.3303	0.0339	0.0649	0.0584	0.0327	0.0622	0.0820	0.0398	0.0955	0.0937
E	0.0634	0.0329	0.3597	0.0329	0.0774	0.0624	0.0362	0.0865	0.0750	0.0424	0.1286	0.1402
F	0.0694	0.0340	0.3499	0.0356	0.0791	0.0630	0.0368	0.0722	0.0899	0.0369	0.1094	0.1186
G	0.0689	0.0342	0.3918	0.0340	0.0931	0.1151	0.0334	0.0885	0.0990	0.0335	0.1226	0.1419
H	0.0756	0.0367	0.4163	0.0340	0.1116	0.1062	0.0345	0.1034	0.0885	0.0334	0.1722	0.1908
average	0.0643	0.0348	0.3630	0.0358	0.0850	0.0715	0.0347	0.0777	0.0809	0.0362	0.1203	0.1276
range	0.0187	0.0083	0.0863	0.0115	0.0638	0.0654	0.0054	0.0412	0.0314	0.0098	0.0767	0.0971

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0643	0.00640	0.00226	0.00535
Control	8	0	0.363	0.0305	0.0108	0.0255
Gentamicin	16	0	0.0782	0.0238	0.00594	0.0127
Rifampicin	16	0	0.0793	0.0123	0.00307	0.00654
Polymyxin B	16	0	0.124	0.0269	0.00673	0.0144

Column	Range	Max	Min	Median	25%	75%
TSB	0.0187	0.0756	0.0569	0.0621	0.0594	0.0693
Control	0.0863	0.416	0.330	0.355	0.334	0.389
Gentamicin	0.0722	0.122	0.0497	0.0693	0.0587	0.103
Rifampicin	0.0412	0.103	0.0622	0.0751	0.0696	0.0885
Polymyxin B	0.0971	0.191	0.0937	0.118	0.105	0.138

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	0.747	-0.472	0.202	0.402	0.921	0.435
Control	0.686	-0.455	0.168	0.624	0.929	0.503
Gentamicin	0.746	-0.944	0.213	0.052	0.870	0.028
Rifampicin	0.513	-0.645	0.193	0.113	0.944	0.406
Polymyxin B	1.320	1.544	0.165	0.277	0.880	0.039

Column	Sum	Sum of Squares
TSB	0.514	0.0333
Control	2.904	1.061
Gentamicin	1.252	0.106
Rifampicin	1.268	0.103
Polymyxin B	1.983	0.257

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0643	0.00640	0.00226
Control	8	0	0.363	0.0305	0.0108
Gentamicin	16	0	0.0782	0.0238	0.00594
Rifampicin	16	0	0.0793	0.0123	0.00307
Polymyxin B	16	0	0.124	0.0269	0.00673

Source of Variation	DF	SS	MS	F	P
Between Groups	4	0.551	0.138	286.005	<0.001
Residual	59	0.0284	0.000482		
Total	63	0.579			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

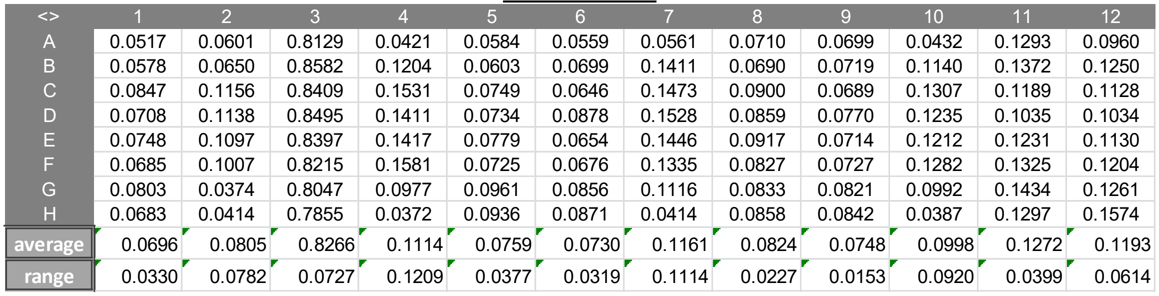
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Gentamicin	0.285	29.967	<0.001	Yes
Control vs. Rifampicin	0.284	29.856	<0.001	Yes
Control vs. TSB	0.299	27.222	<0.001	Yes
Control vs. Polymyxin B	0.239	25.155	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.299	27.222	<0.001	Yes
TSB vs. Polymyxin B	0.0596	6.277	<0.001	Yes
TSB vs. Rifampicin	0.0150	1.577	0.226	No
TSB vs. Gentamicin	0.0139	1.466	0.148	No

Clinical Isolate 5



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0517	0.0601	0.8129	0.0421	0.0584	0.0559	0.0561	0.0710	0.0699	0.0432	0.1293	0.0960
B	0.0578	0.0650	0.8582	0.1204	0.0603	0.0699	0.1411	0.0690	0.0719	0.1140	0.1372	0.1250
C	0.0847	0.1156	0.8409	0.1531	0.0749	0.0646	0.1473	0.0900	0.0689	0.1307	0.1189	0.1128
D	0.0708	0.1138	0.8495	0.1411	0.0734	0.0878	0.1528	0.0859	0.0770	0.1235	0.1035	0.1034
E	0.0748	0.1097	0.8397	0.1417	0.0779	0.0654	0.1446	0.0917	0.0714	0.1212	0.1231	0.1130
F	0.0685	0.1007	0.8215	0.1581	0.0725	0.0676	0.1335	0.0827	0.0727	0.1282	0.1325	0.1204
G	0.0803	0.0374	0.8047	0.0977	0.0961	0.0856	0.1116	0.0833	0.0821	0.0992	0.1434	0.1261
H	0.0683	0.0414	0.7855	0.0372	0.0936	0.0871	0.0414	0.0858	0.0842	0.0387	0.1297	0.1574
average	0.0696	0.0805	0.8266	0.1114	0.0759	0.0730	0.1161	0.0824	0.0748	0.0998	0.1272	0.1193
range	0.0330	0.0782	0.0727	0.1209	0.0377	0.0319	0.1114	0.0227	0.0153	0.0920	0.0399	0.0614

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0696	0.0109	0.00386	0.00912
Control	8	0	0.827	0.0247	0.00874	0.0207
Gentamicin	16	0	0.0744	0.0126	0.00314	0.00669
Rifampicin	16	0	0.0786	0.00793	0.00198	0.00423
Polymyxin B	16	0	0.123	0.0157	0.00393	0.00838

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0330	0.0847	0.0517	0.0697	0.0604	0.0789
Control	0.0727	0.858	0.785	0.831	0.807	0.847
Gentamicin	0.0402	0.0961	0.0559	0.0730	0.0648	0.0867
Rifampicin	0.0228	0.0917	0.0689	0.0796	0.0711	0.0854
Polymyxin B	0.0614	0.157	0.0960	0.124	0.113	0.132

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	-0.382	-0.354	0.202	0.400	0.964	0.851
Control	-0.429	-0.809	0.202	0.403	0.959	0.804
Gentamicin	0.293	-1.015	0.126	0.640	0.954	0.550
Rifampicin	0.172	-1.538	0.209	0.060	0.894	0.064
Polymyxin B	0.277	0.293	0.0904	0.850	0.982	0.977

Column	**Sum**	**Sum of Squares**
TSB	0.557	0.0396
Control	6.613	5.471
Gentamicin	1.191	0.0910
Rifampicin	1.258	0.0998
Polymyxin B	1.972	0.247

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0696	0.0109	0.00386
Control	8	0	0.827	0.0247	0.00874
Gentamicin	16	0	0.0744	0.0126	0.00314
Rifampicin	16	0	0.0786	0.00793	0.00198

Polymyxin B	16	0	0.123	0.0157	0.00393

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	3.837	0.959	4664.813	<0.001
Residual	59	0.0121	0.000206		
Total	63	3.849			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

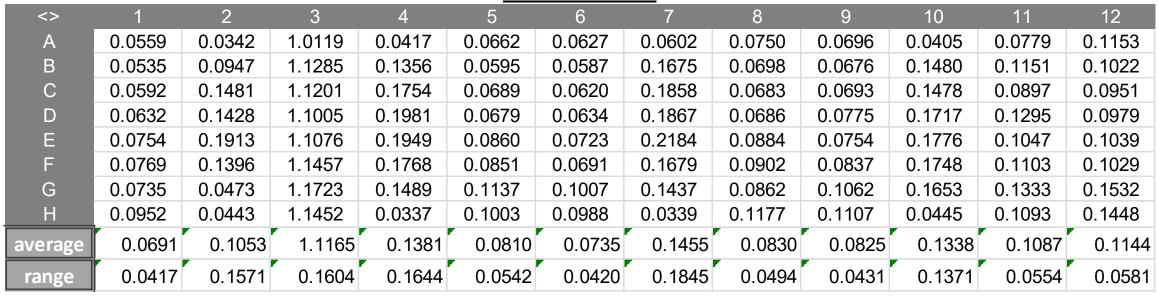
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Gentamicin	0.752	121.140	<0.001	Yes
Control vs. Rifampicin	0.748	120.471	<0.001	Yes
Control vs. Polymyxin B	0.703	113.282	<0.001	Yes
Control vs. TSB	0.757	105.584	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.757	105.584	<0.001	Yes
TSB vs. Polymyxin B	0.0536	8.635	<0.001	Yes
TSB vs. Rifampicin	0.00898	1.446	0.283	No
TSB vs. Gentamicin	0.00483	0.777	0.440	No

Clinical Isolate 6



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0559	0.0342	1.0119	0.0417	0.0662	0.0627	0.0602	0.0750	0.0696	0.0405	0.0779	0.1153
B	0.0535	0.0947	1.1285	0.1356	0.0595	0.0587	0.1675	0.0698	0.0676	0.1480	0.1151	0.1022
C	0.0592	0.1481	1.1201	0.1754	0.0689	0.0620	0.1858	0.0683	0.0693	0.1478	0.0897	0.0951
D	0.0632	0.1428	1.1005	0.1981	0.0679	0.0634	0.1867	0.0686	0.0775	0.1717	0.1295	0.0979
E	0.0754	0.1913	1.1076	0.1949	0.0860	0.0723	0.2184	0.0884	0.0754	0.1776	0.1047	0.1039
F	0.0769	0.1396	1.1457	0.1768	0.0851	0.0691	0.1679	0.0902	0.0837	0.1748	0.1103	0.1029
G	0.0735	0.0473	1.1723	0.1489	0.1137	0.1007	0.1437	0.0862	0.1062	0.1653	0.1333	0.1532
H	0.0952	0.0443	1.1452	0.0337	0.1003	0.0988	0.0339	0.1177	0.1107	0.0445	0.1093	0.1448
average	0.0691	0.1053	1.1165	0.1381	0.0810	0.0735	0.1455	0.0830	0.0825	0.1338	0.1087	0.1144
range	0.0417	0.1571	0.1604	0.1644	0.0542	0.0420	0.1845	0.0494	0.0431	0.1371	0.0554	0.0581

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0691	0.0139	0.00491	0.0116
Control	8	0	1.116	0.0481	0.0170	0.0402
Gentamicin	16	0	0.0772	0.0177	0.00441	0.00941
Rifampicin	16	0	0.0828	0.0162	0.00406	0.00865
Polymyxin B	16	0	0.112	0.0200	0.00500	0.0107

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0417	0.0952	0.0535	0.0683	0.0567	0.0765
Control	0.160	1.172	1.012	1.124	1.102	1.146
Gentamicin	0.0550	0.114	0.0587	0.0690	0.0629	0.0956
Rifampicin	0.0501	0.118	0.0676	0.0764	0.0694	0.0897
Polymyxin B	0.0753	0.153	0.0779	0.107	0.0990	0.126

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.804	0.343	0.164	0.644	0.922	0.443
Control	-1.577	3.450	0.245	0.168	0.864	0.132
Gentamicin	0.839	-0.664	0.239	0.015	0.861	0.020
Rifampicin	1.080	0.0761	0.190	0.126	0.843	0.011
Polymyxin B	0.638	0.143	0.176	0.201	0.951	0.503

Column	**Sum**	**Sum of Squares**

TSB	0.553	0.0396
Control	8.932	9.988
Gentamicin	1.235	0.100
Rifampicin	1.324	0.114
Polymyxin B	1.785	0.205

One Way Analysis of Variance Thursday, April 02, 2015, 1:32:20 PM

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0691	0.0139	0.00491
Control	8	0	1.116	0.0481	0.0170
Gentamicin	16	0	0.0772	0.0177	0.00441
Rifampicin	16	0	0.0828	0.0162	0.00406
Polymyxin B	16	0	0.112	0.0200	0.00500

Source of Variation	DF	SS	MS	F	P
Between Groups	4	7.426	1.857	3400.672	<0.001
Residual	59	0.0322	0.000546		
Total	63	7.458			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

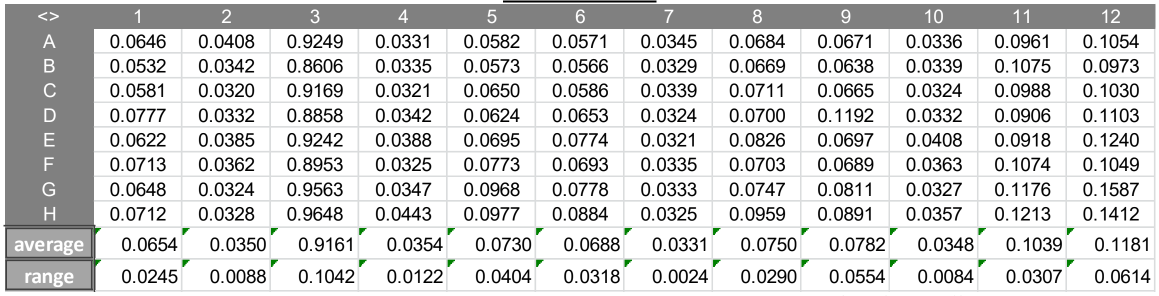
Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
Control vs. Gentamicin	1.039	102.720	<0.001	Yes
Control vs. Rifampicin	1.034	102.171	<0.001	Yes
Control vs. Polymyxin B	1.005	99.324	<0.001	Yes
Control vs. TSB	1.047	89.652	<0.001	Yes

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
TSB vs. Control	1.047	89.652	<0.001	Yes
TSB vs. Polymyxin B	0.0425	4.198	<0.001	Yes
TSB vs. Rifampicin	0.0137	1.350	0.331	No
TSB vs. Gentamicin	0.00811	0.801	0.426	No

Clinical Isolate 7



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0646	0.0408	0.9249	0.0331	0.0582	0.0571	0.0345	0.0684	0.0671	0.0336	0.0961	0.1054
B	0.0532	0.0342	0.8606	0.0335	0.0573	0.0566	0.0329	0.0669	0.0638	0.0339	0.1075	0.0973
C	0.0581	0.0320	0.9169	0.0321	0.0650	0.0586	0.0339	0.0711	0.0665	0.0324	0.0988	0.1030
D	0.0777	0.0332	0.8858	0.0342	0.0624	0.0653	0.0324	0.0700	0.1192	0.0332	0.0906	0.1103
E	0.0622	0.0385	0.9242	0.0388	0.0695	0.0774	0.0321	0.0826	0.0697	0.0408	0.0918	0.1240
F	0.0713	0.0362	0.8953	0.0325	0.0773	0.0693	0.0335	0.0703	0.0689	0.0363	0.1074	0.1049
G	0.0648	0.0324	0.9563	0.0347	0.0968	0.0778	0.0333	0.0747	0.0811	0.0327	0.1176	0.1587
H	0.0712	0.0328	0.9648	0.0443	0.0977	0.0884	0.0325	0.0959	0.0891	0.0357	0.1213	0.1412
average	0.0654	0.0350	0.9161	0.0354	0.0730	0.0688	0.0331	0.0750	0.0782	0.0348	0.1039	0.1181
range	0.0245	0.0088	0.1042	0.0122	0.0404	0.0318	0.0024	0.0290	0.0554	0.0084	0.0307	0.0614

Descriptive Statistics: Thursday, April 02, 2015, 1:44:04 PM

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0654	0.00787	0.00278	0.00658
Control	8	0	0.916	0.0350	0.0124	0.0292
Gentamicin	16	0	0.0709	0.0138	0.00345	0.00736
Rifampicin	16	0	0.0766	0.0145	0.00362	0.00771
Polymyxin B	16	0	0.111	0.0183	0.00457	0.00974

Column	Range	Max	Min	Median	25%	75%
TSB	0.0245	0.0777	0.0532	0.0647	0.0591	0.0713
Control	0.104	0.965	0.861	0.921	0.888	0.948
Gentamicin	0.0411	0.0977	0.0566	0.0673	0.0583	0.0777
Rifampicin	0.0554	0.119	0.0638	0.0702	0.0674	0.0822
Polymyxin B	0.0681	0.159	0.0906	0.106	0.0977	0.120

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	0.0154	-0.392	0.155	0.697	0.979	0.955
Control	-0.116	-0.600	0.151	0.717	0.966	0.864
Gentamicin	0.859	-0.337	0.166	0.272	0.875	0.033
Rifampicin	2.011	4.318	0.273	0.002	0.758	<0.001
Polymyxin B	1.442	2.081	0.203	0.078	0.871	0.028

Column	Sum	Sum of Squares
TSB	0.523	0.0346
Control	7.329	6.722
Gentamicin	1.135	0.0833
Rifampicin	1.225	0.0970
Polymyxin B	1.776	0.202

One Way Analysis of Variance Thursday, April 02, 2015, 1:44:28 PM

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0654	0.00787	0.00278
Control	8	0	0.916	0.0350	0.0124
Gentamicin	16	0	0.0709	0.0138	0.00345
Rifampicin	16	0	0.0766	0.0145	0.00362
Polymyxin B	16	0	0.111	0.0183	0.00457

Source of Variation	DF	SS	MS	F	P
Between Groups	4	4.874	1.219	3593.613	<0.001
Residual	59	0.0200	0.000339		
Total	63	4.894			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

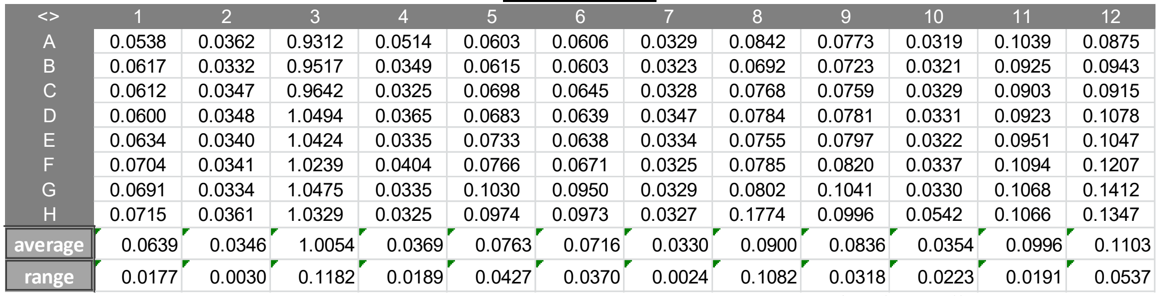
Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
Control vs. Gentamicin	0.845	105.998	<0.001	Yes
Control vs. Rifampicin	0.840	105.288	<0.001	Yes
Control vs. Polymyxin B	0.805	100.972	<0.001	Yes
Control vs. TSB	0.851	92.398	<0.001	Yes

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
TSB vs. Control	0.851	92.398	<0.001	Yes
TSB vs. Polymyxin B	0.0456	5.720	<0.001	Yes
TSB vs. Rifampicin	0.0112	1.404	0.304	No
TSB vs. Gentamicin	0.00553	0.694	0.491	No

Clinical Isolate 8



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0538	0.0362	0.9312	0.0514	0.0603	0.0606	0.0329	0.0842	0.0773	0.0319	0.1039	0.0875
B	0.0617	0.0332	0.9517	0.0349	0.0615	0.0603	0.0323	0.0692	0.0723	0.0321	0.0925	0.0943
C	0.0612	0.0347	0.9642	0.0325	0.0698	0.0645	0.0328	0.0768	0.0759	0.0329	0.0903	0.0915
D	0.0600	0.0348	1.0494	0.0365	0.0683	0.0639	0.0347	0.0784	0.0781	0.0331	0.0923	0.1078
E	0.0634	0.0340	1.0424	0.0335	0.0733	0.0638	0.0334	0.0755	0.0797	0.0322	0.0951	0.1047
F	0.0704	0.0341	1.0239	0.0404	0.0766	0.0671	0.0325	0.0785	0.0820	0.0337	0.1094	0.1207
G	0.0691	0.0334	1.0475	0.0335	0.1030	0.0950	0.0329	0.0802	0.1041	0.0330	0.1068	0.1412
H	0.0715	0.0361	1.0329	0.0325	0.0974	0.0973	0.0327	0.1774	0.0996	0.0542	0.1066	0.1347
average	0.0639	0.0346	1.0054	0.0369	0.0763	0.0716	0.0330	0.0900	0.0836	0.0354	0.0996	0.1103
range	0.0177	0.0030	0.1182	0.0189	0.0427	0.0370	0.0024	0.1082	0.0318	0.0223	0.0191	0.0537

Descriptive Statistics: Thursday, April 02, 2015, 1:56:09 PM

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0639	0.00606	0.00214	0.00506
Control	8	0	1.005	0.0482	0.0170	0.0403
Gentamicin	16	0	0.0739	0.0152	0.00381	0.00812
Rifampicin	16	0	0.0868	0.0258	0.00644	0.0137
Polymyxin B	16	0	0.105	0.0157	0.00393	0.00838

Column	Range	Max	Min	Median	25%	75%
TSB	0.0177	0.0715	0.0538	0.0625	0.0603	0.0701
Control	0.118	1.049	0.931	1.028	0.955	1.046
Gentamicin	0.0427	0.103	0.0603	0.0677	0.0621	0.0904
Rifampicin	0.108	0.177	0.0692	0.0784	0.0761	0.0837
Polymyxin B	0.0537	0.141	0.0875	0.104	0.0923	0.109

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	-0.220	-0.678	0.180	0.544	0.934	0.549
Control	-0.673	-1.663	0.274	0.077	0.828	0.056
Gentamicin	1.010	-0.623	0.232	0.022	0.796	0.002
Rifampicin	3.267	11.552	0.353	<0.001	0.549	<0.001
Polymyxin B	1.194	0.880	0.201	0.083	0.864	0.022

Column	Sum	Sum of Squares
TSB	0.511	0.0329
Control	8.043	8.103
Gentamicin	1.183	0.0909
Rifampicin	1.389	0.131
Polymyxin B	1.679	0.180

One Way Analysis of Variance Thursday, April 02, 2015, 1:56:42 PM

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0639	0.00606	0.00214
Control	8	0	1.005	0.0482	0.0170
Gentamicin	16	0	0.0739	0.0152	0.00381
Rifampicin	16	0	0.0868	0.0258	0.00644
Polymyxin B	16	0	0.105	0.0157	0.00393

Source of Variation	DF	SS	MS	F	P
Between Groups	4	5.941	1.485	2602.060	<0.001
Residual	59	0.0337	0.000571		
Total	63	5.975			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

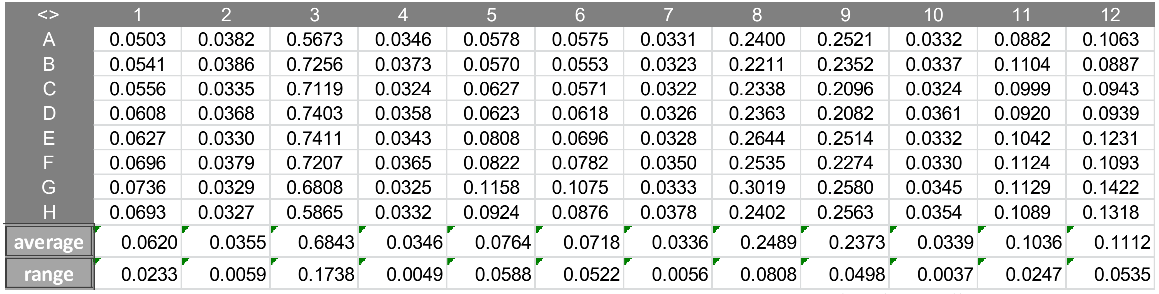
Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
Control vs. Gentamicin	0.931	90.036	<0.001	Yes
Control vs. Rifampicin	0.919	88.789	<0.001	Yes
Control vs. Polymyxin B	0.900	87.036	<0.001	Yes
Control vs. TSB	0.942	78.814	<0.001	Yes

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
TSB vs. Control	0.942	78.814	<0.001	Yes
TSB vs. Polymyxin B	0.0411	3.970	<0.001	Yes
TSB vs. Rifampicin	0.0229	2.217	0.060	No
TSB vs. Gentamicin	0.0100	0.970	0.336	No

Clinical Isolate 10



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0503	0.0382	0.5673	0.0346	0.0578	0.0575	0.0331	0.2400	0.2521	0.0332	0.0882	0.1063
B	0.0541	0.0386	0.7256	0.0373	0.0570	0.0553	0.0323	0.2211	0.2352	0.0337	0.1104	0.0887
C	0.0556	0.0335	0.7119	0.0324	0.0627	0.0571	0.0322	0.2338	0.2096	0.0324	0.0999	0.0943
D	0.0608	0.0368	0.7403	0.0358	0.0623	0.0618	0.0326	0.2363	0.2082	0.0361	0.0920	0.0939
E	0.0627	0.0330	0.7411	0.0343	0.0808	0.0696	0.0328	0.2644	0.2514	0.0332	0.1042	0.1231
F	0.0696	0.0379	0.7207	0.0365	0.0822	0.0782	0.0350	0.2535	0.2274	0.0330	0.1124	0.1093
G	0.0736	0.0329	0.6808	0.0325	0.1158	0.1075	0.0333	0.3019	0.2580	0.0345	0.1129	0.1422
H	0.0693	0.0327	0.5865	0.0332	0.0924	0.0876	0.0378	0.2402	0.2563	0.0354	0.1089	0.1318
average	0.0620	0.0355	0.6843	0.0346	0.0764	0.0718	0.0336	0.2489	0.2373	0.0339	0.1036	0.1112
range	0.0233	0.0059	0.1738	0.0049	0.0588	0.0522	0.0056	0.0808	0.0498	0.0037	0.0247	0.0535

Descriptive Statistics: Thursday, April 02, 2015, 2:17:36 PM

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0620	0.00835	0.00295	0.00698
Control	8	0	0.684	0.0691	0.0244	0.0578
Gentamicin	16	0	0.0741	0.0190	0.00475	0.0101
Rifampicin	16	0	0.243	0.0229	0.00572	0.0122
Polymyxin B	16	0	0.107	0.0153	0.00382	0.00814

Column	Range	Max	Min	Median	25%	75%
TSB	0.0233	0.0736	0.0503	0.0617	0.0545	0.0695
Control	0.174	0.741	0.567	0.716	0.610	0.737
Gentamicin	0.0605	0.116	0.0553	0.0662	0.0576	0.0862
Rifampicin	0.0937	0.302	0.208	0.240	0.229	0.256
Polymyxin B	0.0540	0.142	0.0882	0.108	0.0940	0.113

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	0.0101	-1.469	0.184	0.519	0.948	0.693
Control	-1.176	-0.325	0.280	0.064	0.787	0.021
Gentamicin	0.985	0.0518	0.226	0.029	0.866	0.023
Rifampicin	0.796	1.866	0.132	0.578	0.937	0.315
Polymyxin B	0.820	0.432	0.172	0.227	0.929	0.239

Column	Sum	Sum of Squares
TSB	0.496	0.0312
Control	5.474	3.779
Gentamicin	1.186	0.0933
Rifampicin	3.889	0.953
Polymyxin B	1.718	0.188

One Way Analysis of Variance Thursday, April 02, 2015, 2:17:57 PM

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0620	0.00835	0.00295
Control	8	0	0.684	0.0691	0.0244
Gentamicin	16	0	0.0741	0.0190	0.00475
Rifampicin	16	0	0.243	0.0229	0.00572
Polymyxin B	16	0	0.107	0.0153	0.00382

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	2.449	0.612	712.852	<0.001
Residual	59	0.0507	0.000859		
Total	63	2.500			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Gentamicin	0.610	48.083	<0.001	Yes
Control vs. Polymyxin B	0.577	45.458	<0.001	Yes
Control vs. TSB	0.622	42.467	<0.001	Yes
Control vs. Rifampicin	0.441	34.766	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.622	42.467	<0.001	Yes
TSB vs. Rifampicin	0.181	14.270	<0.001	Yes
TSB vs. Polymyxin B	0.0454	3.578	0.001	Yes
TSB vs. Gentamicin	0.0121	0.953	0.344	No

Clinical Isolate 11

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0517	0.0344	0.3971	0.0506	0.0803	0.0805	0.0506	0.1046	0.0964	0.0344	0.1162	0.1205
B	0.0651	0.0771	0.3981	0.1083	0.0752	0.0726	0.1099	0.0929	0.1068	0.0870	0.1138	0.1469
C	0.0587	0.0943	0.4180	0.1042	0.0839	0.0759	0.1168	0.0956	0.0951	0.0981	0.1035	0.1248
D	0.0624	0.1001	0.4315	0.1214	0.0731	0.0758	0.1270	0.0958	0.0967	0.0990	0.1006	0.1138
E	0.0709	0.1102	0.4409	0.1096	0.1093	0.0974	0.1207	0.1044	0.1112	0.0954	0.1088	0.1722
F	0.0699	0.0645	0.4221	0.1043	0.0899	0.0917	0.1016	0.1159	0.1033	0.0835	0.1352	0.1427
G	0.0744	0.0330	0.4750	0.0454	0.1179	0.1211	0.0649	0.1306	0.1514	0.0371	0.1265	0.1322
H	0.0692	0.0407	0.4068	0.0327	0.1132	0.1150	0.0333	0.1368	0.1185	0.0344	0.1350	0.1591
average	0.0653	0.0693	0.4237	0.0846	0.0929	0.0913	0.0906	0.1096	0.1099	0.0711	0.1175	0.1390
range	0.0227	0.0772	0.0779	0.0887	0.0448	0.0485	0.0937	0.0439	0.0563	0.0646	0.0346	0.0584

Descriptive Statistics: Thursday, April 02, 2015, 2:30:44 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0653	0.00744	0.00263	0.00622
Control	8	0	0.424	0.0258	0.00913	0.0216
Gentamicin	16	0	0.0920	0.0177	0.00443	0.00943
Rifampicin	16	0	0.110	0.0171	0.00426	0.00909
Polymyxin B	16	0	0.128	0.0199	0.00498	0.0106

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0227	0.0744	0.0517	0.0672	0.0596	0.0707
Control	0.0779	0.475	0.397	0.420	0.400	0.439
Gentamicin	0.0485	0.121	0.0726	0.0869	0.0758	0.112
Rifampicin	0.0585	0.151	0.0929	0.105	0.0959	0.118
Polymyxin B	0.0716	0.172	0.101	0.126	0.114	0.141

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	-0.799	0.0911	0.201	0.410	0.945	0.663
Control	1.106	1.284	0.152	0.712	0.911	0.359
Gentamicin	0.514	-1.419	0.180	0.174	0.868	0.025
Rifampicin	1.279	1.009	0.194	0.109	0.853	0.015
Polymyxin B	0.703	0.116	0.113	0.742	0.957	0.612

Column	**Sum**	**Sum of Squares**
TSB	0.522	0.0345
Control	3.390	1.441

Gentamicin	1.473	0.140
Rifampicin	1.756	0.197
Polymyxin B	2.052	0.269

One Way Analysis of Variance Thursday, April 02, 2015, 2:31:04 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0653	0.00744	0.00263
Control	8	0	0.424	0.0258	0.00913
Gentamicin	16	0	0.0920	0.0177	0.00443
Rifampicin	16	0	0.110	0.0171	0.00426
Polymyxin B	16	0	0.128	0.0199	0.00498

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	0.741	0.185	544.836	<0.001
Residual	59	0.0201	0.000340		
Total	63	0.761			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

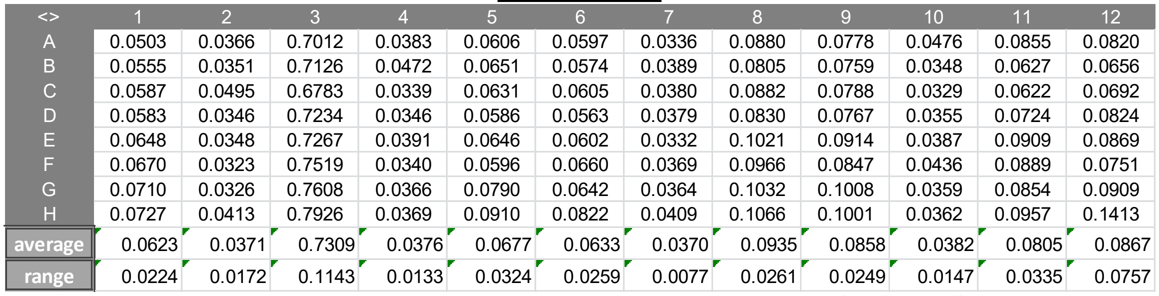
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Gentamicin	0.332	41.527	<0.001	Yes
Control vs. Rifampicin	0.314	39.311	<0.001	Yes
Control vs. TSB	0.358	38.866	<0.001	Yes
Control vs. Polymyxin B	0.295	36.996	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.358	38.866	<0.001	Yes
TSB vs. Polymyxin B	0.0630	7.883	<0.001	Yes
TSB vs. Rifampicin	0.0445	5.568	<0.001	Yes
TSB vs. Gentamicin	0.0268	3.351	0.001	Yes

Clinical Isolate 12



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0503	0.0366	0.7012	0.0383	0.0606	0.0597	0.0336	0.0880	0.0778	0.0476	0.0855	0.0820
B	0.0555	0.0351	0.7126	0.0472	0.0651	0.0574	0.0389	0.0805	0.0759	0.0348	0.0627	0.0656
C	0.0587	0.0495	0.6783	0.0339	0.0631	0.0605	0.0380	0.0882	0.0788	0.0329	0.0622	0.0692
D	0.0583	0.0346	0.7234	0.0346	0.0586	0.0563	0.0379	0.0830	0.0767	0.0355	0.0724	0.0824
E	0.0648	0.0348	0.7267	0.0391	0.0646	0.0602	0.0332	0.1021	0.0914	0.0387	0.0909	0.0869
F	0.0670	0.0323	0.7519	0.0340	0.0596	0.0660	0.0369	0.0966	0.0847	0.0436	0.0889	0.0751
G	0.0710	0.0326	0.7608	0.0366	0.0790	0.0642	0.0364	0.1032	0.1008	0.0359	0.0854	0.0909
H	0.0727	0.0413	0.7926	0.0369	0.0910	0.0822	0.0409	0.1066	0.1001	0.0362	0.0957	0.1413
average	0.0623	0.0371	0.7309	0.0376	0.0677	0.0633	0.0370	0.0935	0.0858	0.0382	0.0805	0.0867
range	0.0224	0.0172	0.1143	0.0133	0.0324	0.0259	0.0077	0.0261	0.0249	0.0147	0.0335	0.0757

Descriptive Statistics: Thursday, April 02, 2015, 2:45:23 PM

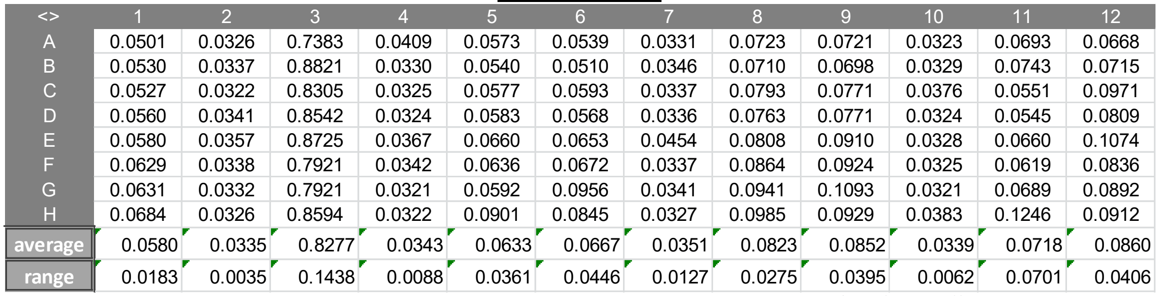
Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0623	0.00785	0.00278	0.00656
Control	8	0	0.731	0.0363	0.0128	0.0303
Gentamicin	16	0	0.0655	0.00988	0.00247	0.00526
Rifampicin	16	0	0.0896	0.0106	0.00265	0.00564
Polymyxin B	16	0	0.0836	0.0187	0.00468	0.00997

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0224	0.0727	0.0503	0.0617	0.0562	0.0700

```
Control            0.114       0.793       0.678        0.725        0.704       0.759
Gentamicin         0.0347      0.0910      0.0563       0.0619       0.0596      0.0658
Rifampicin         0.0307      0.107       0.0759       0.0881       0.0792      0.101
Polymyxin B        0.0791      0.141       0.0622       0.0839       0.0700      0.0904

Column           Skewness     Kurtosis      K-S Dist.     K-S Prob.     SWilk W     SWilk Prob
TSB               -0.0922      -1.177        0.176          0.571        0.958         0.786
Control            0.366       -0.132        0.172          0.601        0.983         0.975
Gentamicin         1.678        2.063        0.293         <0.001        0.770         0.001
Rifampicin         0.209       -1.516        0.151          0.403        0.915         0.139
Polymyxin B        1.923        5.788        0.223          0.033        0.811         0.004

Column           Sum        Sum of Squares
TSB              0.498         0.0315
Control          5.848         4.283
Gentamicin       1.048         0.0701
Rifampicin       1.434         0.130
Polymyxin B      1.337         0.117

One Way Analysis of Variance                                    Thursday, April 02, 2015, 2:45:41 PM

Data source: Data 1 in Notebook1

Group Name        N     Missing      Mean       Std Dev      SEM
TSB               8       0          0.0623     0.00785      0.00278
Control           8       0          0.731      0.0363       0.0128
Gentamicin       16       0          0.0655     0.00988      0.00247
Rifampicin       16       0          0.0896     0.0106       0.00265
Polymyxin B      16       0          0.0836     0.0187       0.00468

Source of Variation          DF       SS         MS              F            P
Between Groups                4       3.000      0.750           2453.447     <0.001
Residual                     59       0.0180     0.000306
Total                        63       3.018

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically
significant difference  (P = <0.001).

Power of performed test with alpha = 0.050: 1.000


Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:
Comparison                        Diff of Means          t           P          P<0.050
Control vs. Gentamicin                0.665            87.900      <0.001         Yes
Control vs. Polymyxin B               0.647            85.515      <0.001         Yes
Control vs. Rifampicin                0.641            84.711      <0.001         Yes
Control vs. TSB                       0.669            76.492      <0.001         Yes

Comparisons for factor:
Comparison                    Diff of Means         t           P          P<0.050
TSB vs. Control                  0.669            76.492      <0.001         Yes
TSB vs. Rifampicin               0.0274            3.614       0.002         Yes
TSB vs. Polymyxin B              0.0213            2.811       0.013         Yes
TSB vs. Gentamicin               0.00322           0.425       0.672          No
```

Clinical Isolate 13



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0501	0.0326	0.7383	0.0409	0.0573	0.0539	0.0331	0.0723	0.0721	0.0323	0.0693	0.0668
B	0.0530	0.0337	0.8821	0.0330	0.0540	0.0510	0.0346	0.0710	0.0698	0.0329	0.0743	0.0715
C	0.0527	0.0322	0.8305	0.0325	0.0577	0.0593	0.0337	0.0793	0.0771	0.0376	0.0551	0.0971
D	0.0560	0.0341	0.8542	0.0324	0.0583	0.0568	0.0336	0.0763	0.0771	0.0324	0.0545	0.0809
E	0.0580	0.0357	0.8725	0.0367	0.0660	0.0653	0.0454	0.0808	0.0910	0.0328	0.0660	0.1074
F	0.0629	0.0338	0.7921	0.0342	0.0636	0.0672	0.0337	0.0864	0.0924	0.0325	0.0619	0.0836
G	0.0631	0.0332	0.7921	0.0321	0.0592	0.0956	0.0341	0.0941	0.1093	0.0321	0.0689	0.0892
H	0.0684	0.0326	0.8594	0.0322	0.0901	0.0845	0.0327	0.0985	0.0929	0.0383	0.1246	0.0912
average	0.0580	0.0335	0.8277	0.0343	0.0633	0.0667	0.0351	0.0823	0.0852	0.0339	0.0718	0.0860
range	0.0183	0.0035	0.1438	0.0088	0.0361	0.0446	0.0127	0.0275	0.0395	0.0062	0.0701	0.0406

Descriptive Statistics: Thursday, April 02, 2015, 3:02:48 PM

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0580	0.00630	0.00223	0.00527
Control	8	0	0.828	0.0496	0.0175	0.0415
Gentamicin	16	0	0.0650	0.0134	0.00335	0.00713
Rifampicin	16	0	0.0838	0.0115	0.00288	0.00614
Polymyxin B	16	0	0.0789	0.0192	0.00481	0.0102

Column	Range	Max	Min	Median	25%	75%
TSB	0.0183	0.0684	0.0501	0.0570	0.0528	0.0630
Control	0.144	0.882	0.738	0.842	0.792	0.869
Gentamicin	0.0446	0.0956	0.0510	0.0592	0.0569	0.0669
Rifampicin	0.0395	0.109	0.0698	0.0800	0.0733	0.0928
Polymyxin B	0.0701	0.125	0.0545	0.0729	0.0662	0.0907

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	0.442	-0.931	0.163	0.655	0.946	0.672
Control	-0.783	-0.289	0.204	0.389	0.916	0.400
Gentamicin	1.414	0.966	0.247	0.010	0.805	0.003
Rifampicin	0.681	-0.283	0.164	0.284	0.923	0.186
Polymyxin B	0.949	0.661	0.157	0.346	0.931	0.256

Column	Sum	Sum of Squares
TSB	0.464	0.0272
Control	6.621	5.497
Gentamicin	1.040	0.0703
Rifampicin	1.340	0.114
Polymyxin B	1.262	0.105

One Way Analysis of Variance Thursday, April 02, 2015, 3:03:12 PM

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0580	0.00630	0.00223
Control	8	0	0.828	0.0496	0.0175
Gentamicin	16	0	0.0650	0.0134	0.00335
Rifampicin	16	0	0.0838	0.0115	0.00288
Polymyxin B	16	0	0.0789	0.0192	0.00481

Source of Variation	DF	SS	MS	F	P
Between Groups	4	3.988	0.997	2122.835	<0.001
Residual	59	0.0277	0.000470		
Total	63	4.016			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

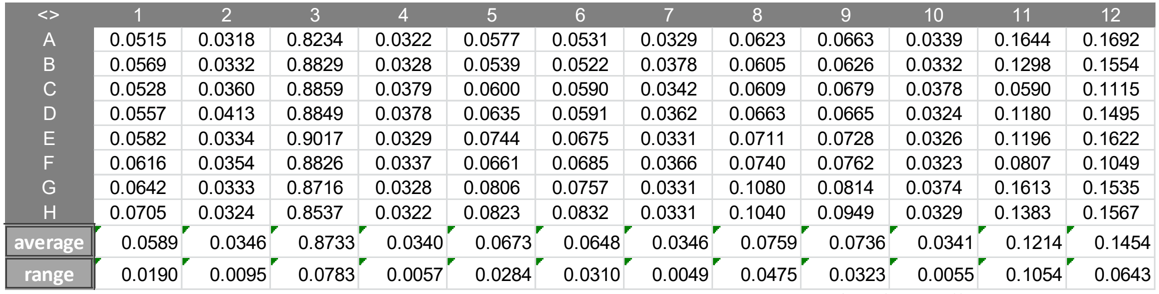
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Gentamicin	0.763	81.270	<0.001	Yes
Control vs. Polymyxin B	0.749	79.789	<0.001	Yes
Control vs. Rifampicin	0.744	79.268	<0.001	Yes
Control vs. TSB	0.770	71.025	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.770	71.025	<0.001	Yes
TSB vs. Rifampicin	0.0258	2.744	0.024	Yes
TSB vs. Polymyxin B	0.0209	2.224	0.059	No
TSB vs. Gentamicin	0.00696	0.742	0.461	No

Clinical Isolate 14



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0515	0.0318	0.8234	0.0322	0.0577	0.0531	0.0329	0.0623	0.0663	0.0339	0.1644	0.1692
B	0.0569	0.0332	0.8829	0.0328	0.0539	0.0522	0.0378	0.0605	0.0626	0.0332	0.1298	0.1554
C	0.0528	0.0360	0.8859	0.0379	0.0600	0.0590	0.0342	0.0609	0.0679	0.0378	0.0590	0.1115
D	0.0557	0.0413	0.8849	0.0378	0.0635	0.0591	0.0362	0.0663	0.0665	0.0324	0.1180	0.1495
E	0.0582	0.0334	0.9017	0.0329	0.0744	0.0675	0.0331	0.0711	0.0728	0.0326	0.1196	0.1622
F	0.0616	0.0354	0.8826	0.0337	0.0661	0.0685	0.0366	0.0740	0.0762	0.0323	0.0807	0.1049
G	0.0642	0.0333	0.8716	0.0328	0.0806	0.0757	0.0331	0.1080	0.0814	0.0374	0.1613	0.1535
H	0.0705	0.0324	0.8537	0.0322	0.0823	0.0832	0.0331	0.1040	0.0949	0.0329	0.1383	0.1567
average	0.0589	0.0346	0.8733	0.0340	0.0673	0.0648	0.0346	0.0759	0.0736	0.0341	0.1214	0.1454
range	0.0190	0.0095	0.0783	0.0057	0.0284	0.0310	0.0049	0.0475	0.0323	0.0055	0.1054	0.0643

Descriptive Statistics: Thursday, April 02, 2015, 3:23:59 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0589	0.00629	0.00222	0.00526
Control	8	0	0.873	0.0244	0.00861	0.0204
Gentamicin	16	0	0.0660	0.0105	0.00263	0.00560
Rifampicin	16	0	0.0747	0.0150	0.00376	0.00801
Polymyxin B	16	0	0.133	0.0323	0.00806	0.0172

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0190	0.0705	0.0515	0.0576	0.0535	0.0635
Control	0.0783	0.902	0.823	0.883	0.858	0.886
Gentamicin	0.0310	0.0832	0.0522	0.0648	0.0580	0.0754
Rifampicin	0.0475	0.108	0.0605	0.0695	0.0635	0.0801
Polymyxin B	0.110	0.169	0.0590	0.144	0.113	0.160

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.794	0.226	0.171	0.605	0.950	0.708
Control	-1.371	1.981	0.273	0.081	0.864	0.130
Gentamicin	0.379	-1.164	0.155	0.363	0.925	0.202
Rifampicin	1.326	0.722	0.211	0.055	0.820	0.005
Polymyxin B	-0.999	0.331	0.191	0.118	0.895	0.067

Column	**Sum**	**Sum of Squares**
TSB	0.471	0.0281
Control	6.987	6.106
Gentamicin	1.057	0.0715
Rifampicin	1.196	0.0927
Polymyxin B	2.134	0.300

One Way Analysis of Variance Thursday, April 02, 2015, 3:24:20 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0589	0.00629	0.00222
Control	8	0	0.873	0.0244	0.00861
Gentamicin	16	0	0.0660	0.0105	0.00263
Rifampicin	16	0	0.0747	0.0150	0.00376
Polymyxin B	16	0	0.133	0.0323	0.00806

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	4.381	1.095	2575.929	<0.001
Residual	59	0.0251	0.000425		
Total	63	4.406			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

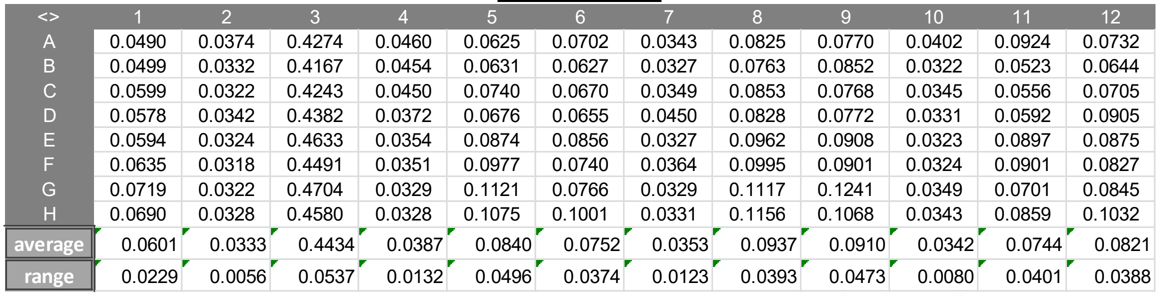
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Gentamicin	0.807	90.412	<0.001	Yes
Control vs. Rifampicin	0.799	89.440	<0.001	Yes
Control vs. Polymyxin B	0.740	82.872	<0.001	Yes
Control vs. TSB	0.814	78.990	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.814	78.990	<0.001	Yes
TSB vs. Polymyxin B	0.0744	8.338	<0.001	Yes
TSB vs. Rifampicin	0.0158	1.770	0.157	No
TSB vs. Gentamicin	0.00712	0.798	0.428	No

Clinical Isolate 15



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0490	0.0374	0.4274	0.0460	0.0625	0.0702	0.0343	0.0825	0.0770	0.0402	0.0924	0.0732
B	0.0499	0.0332	0.4167	0.0454	0.0631	0.0627	0.0327	0.0763	0.0852	0.0322	0.0523	0.0644
C	0.0599	0.0322	0.4243	0.0450	0.0740	0.0670	0.0349	0.0853	0.0768	0.0345	0.0556	0.0705
D	0.0578	0.0342	0.4382	0.0372	0.0676	0.0655	0.0450	0.0828	0.0772	0.0331	0.0592	0.0905
E	0.0594	0.0324	0.4633	0.0354	0.0874	0.0856	0.0327	0.0962	0.0908	0.0323	0.0897	0.0875
F	0.0635	0.0318	0.4491	0.0351	0.0977	0.0740	0.0364	0.0995	0.0901	0.0324	0.0901	0.0827
G	0.0719	0.0322	0.4704	0.0329	0.1121	0.0766	0.0329	0.1117	0.1241	0.0349	0.0701	0.0845
H	0.0690	0.0328	0.4580	0.0328	0.1075	0.1001	0.0331	0.1156	0.1068	0.0343	0.0859	0.1032
average	0.0601	0.0333	0.4434	0.0387	0.0840	0.0752	0.0353	0.0937	0.0910	0.0342	0.0744	0.0821
range	0.0229	0.0056	0.0537	0.0132	0.0496	0.0374	0.0123	0.0393	0.0473	0.0080	0.0401	0.0388

Descriptive Statistics: Thursday, April 02, 2015, 3:49:08 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0600	0.00813	0.00288	0.00680
Control	8	0	0.443	0.0198	0.00698	0.0165
Gentamicin	16	0	0.0796	0.0167	0.00418	0.00891
Rifampicin	16	0	0.0924	0.0152	0.00380	0.00809
Polymyxin B	16	0	0.0782	0.0149	0.00373	0.00795

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0229	0.0719	0.0490	0.0597	0.0519	0.0676
Control	0.0537	0.470	0.417	0.444	0.425	0.462
Gentamicin	0.0496	0.112	0.0625	0.0740	0.0659	0.0951
Rifampicin	0.0478	0.124	0.0763	0.0877	0.0785	0.105
Polymyxin B	0.0509	0.103	0.0523	0.0836	0.0658	0.0900

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.00545	-0.840	0.144	0.746	0.945	0.665
Control	0.0103	-1.652	0.166	0.632	0.945	0.660
Gentamicin	0.803	-0.714	0.196	0.098	0.874	0.032
Rifampicin	0.816	-0.433	0.179	0.181	0.895	0.068
Polymyxin B	-0.338	-0.911	0.180	0.176	0.941	0.356

Column	**Sum**	**Sum of Squares**
TSB	0.480	0.0293
Control	3.547	1.576

Gentamicin	1.274	0.106
Rifampicin	1.478	0.140
Polymyxin B	1.252	0.101

One Way Analysis of Variance Thursday, April 02, 2015, 3:49:27 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0600	0.00813	0.00288
Control	8	0	0.443	0.0198	0.00698
Gentamicin	16	0	0.0796	0.0167	0.00418
Rifampicin	16	0	0.0924	0.0152	0.00380
Polymyxin B	16	0	0.0782	0.0149	0.00373

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	0.930	0.232	966.931	<0.001
Residual	59	0.0142	0.000240		
Total	63	0.944			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

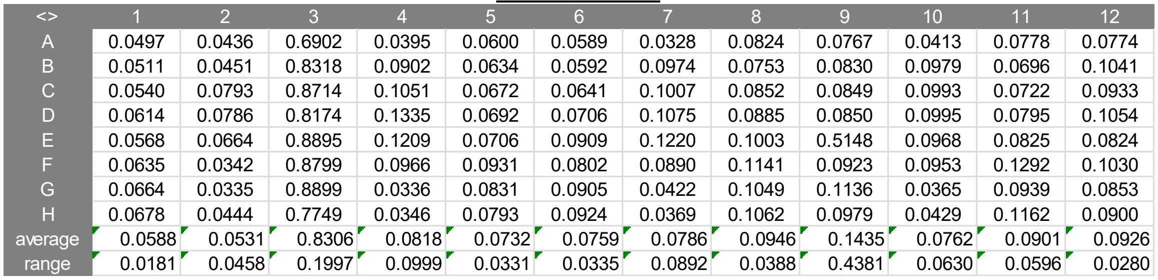
Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Polymyxin B	0.365	54.391	<0.001	Yes
Control vs. Gentamicin	0.364	54.188	<0.001	Yes
Control vs. Rifampicin	0.351	52.286	<0.001	Yes
Control vs. TSB	0.383	49.450	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.383	49.450	<0.001	Yes
TSB vs. Rifampicin	0.0323	4.814	<0.001	Yes
TSB vs. Gentamicin	0.0196	2.912	0.010	Yes
TSB vs. Polymyxin B	0.0182	2.709	0.009	Yes

Clinical Isolate 16



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0497	0.0436	0.6902	0.0395	0.0600	0.0589	0.0328	0.0824	0.0767	0.0413	0.0778	0.0774
B	0.0511	0.0451	0.8318	0.0902	0.0634	0.0592	0.0974	0.0753	0.0830	0.0979	0.0696	0.1041
C	0.0540	0.0793	0.8714	0.1051	0.0672	0.0641	0.1007	0.0852	0.0849	0.0993	0.0722	0.0933
D	0.0614	0.0786	0.8174	0.1335	0.0692	0.0706	0.1075	0.0885	0.0850	0.0995	0.0795	0.1054
E	0.0568	0.0664	0.8895	0.1209	0.0706	0.0909	0.1220	0.1003	0.5148	0.0968	0.0825	0.0824
F	0.0635	0.0342	0.8799	0.0966	0.0931	0.0802	0.0890	0.1141	0.0923	0.0953	0.1292	0.1030
G	0.0664	0.0335	0.8899	0.0336	0.0831	0.0905	0.0422	0.1049	0.1136	0.0365	0.0939	0.0853
H	0.0678	0.0444	0.7749	0.0346	0.0793	0.0924	0.0369	0.1062	0.0979	0.0429	0.1162	0.0900
average	0.0588	0.0531	0.8306	0.0818	0.0732	0.0759	0.0786	0.0946	0.1435	0.0762	0.0901	0.0926
range	0.0181	0.0458	0.1997	0.0999	0.0331	0.0335	0.0892	0.0388	0.4381	0.0630	0.0596	0.0280

Descriptive Statistics: Thursday, April 02, 2015, 4:02:17 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0588	0.00694	0.00245	0.00580
Control	8	0	0.831	0.0698	0.0247	0.0583
Gentamicin	16	0	0.0745	0.0125	0.00313	0.00667
Rifampicin	16	0	0.119	0.106	0.0266	0.0566
Polymyxin B	16	0	0.0914	0.0166	0.00414	0.00882

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0181	0.0678	0.0497	0.0591	0.0518	0.0657
Control	0.200	0.890	0.690	0.852	0.786	0.887

Gentamicin	0.0342	0.0931	0.0589	0.0706	0.0636	0.0886
Rifampicin	0.440	0.515	0.0753	0.0904	0.0835	0.106
Polymyxin B	0.0596	0.129	0.0696	0.0877	0.0782	0.104

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	-0.0441	-1.735	0.144	0.745	0.932	0.533
Control	-1.315	1.345	0.221	0.288	0.851	0.097
Gentamicin	0.300	-1.459	0.186	0.143	0.896	0.070
Rifampicin	3.909	15.483	0.456	<0.001	0.375	<0.001
Polymyxin B	0.840	0.241	0.143	0.475	0.937	0.313

Column	**Sum**	**Sum of Squares**
TSB	0.471	0.0280
Control	6.645	5.554
Gentamicin	1.193	0.0913
Rifampicin	1.905	0.396
Polymyxin B	1.462	0.138

One Way Analysis of Variance Thursday, April 02, 2015, 4:02:37 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0588	0.00694	0.00245
Control	8	0	0.831	0.0698	0.0247
Gentamicin	16	0	0.0745	0.0125	0.00313
Rifampicin	16	0	0.119	0.106	0.0266
Polymyxin B	16	0	0.0914	0.0166	0.00414

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	3.867	0.967	271.353	<0.001
Residual	59	0.210	0.00356		
Total	63	4.077			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
Control vs. Gentamicin	0.756	29.255	<0.001	Yes
Control vs. Polymyxin B	0.739	28.604	<0.001	Yes
Control vs. Rifampicin	0.712	27.532	<0.001	Yes
Control vs. TSB	0.772	25.862	<0.001	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**P**	**P<0.050**
TSB vs. Control	0.772	25.862	<0.001	Yes
TSB vs. Rifampicin	0.0602	2.331	0.068	No
TSB vs. Polymyxin B	0.0325	1.258	0.381	No
TSB vs. Gentamicin	0.0157	0.608	0.546	No

Clinical Isolate 17

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0553	0.0343	0.8942	0.0328	0.0616	0.0583	0.0329	0.0795	0.0700	0.0327	0.1205	0.1162
B	0.0508	0.0323	0.9901	0.0443	0.0592	0.0557	0.0414	0.0683	0.0653	0.0334	0.0877	0.1369
C	0.0521	0.0343	0.9599	0.0344	0.0638	0.0584	0.0340	0.0756	0.0727	0.0348	0.1111	0.1388
D	0.0567	0.0359	0.9668	0.0330	0.0640	0.0598	0.0390	0.0705	0.0728	0.0331	1.0129	0.1107
E	0.0581	0.0403	0.9524	0.0400	0.0697	0.0791	0.0367	0.0785	0.0801	0.0332	0.1086	0.0875
F	0.0609	0.0448	0.9612	0.0370	0.0719	0.0652	0.0336	0.0821	0.0776	0.0382	0.1441	0.1462
G	0.0647	0.0339	0.9828	0.0334	0.0781	0.0680	0.0378	0.0970	0.1040	0.0385	0.1079	0.1041
H	0.0727	0.0362	1.0278	0.0370	0.0879	0.0972	0.0343	0.0995	0.0904	0.0438	0.1249	0.1602
average	0.0589	0.0365	0.9669	0.0365	0.0695	0.0677	0.0362	0.0814	0.0791	0.0360	0.2272	0.1251
range	0.0219	0.0125	0.1336	0.0115	0.0287	0.0415	0.0085	0.0312	0.0387	0.0111	0.9252	0.0727

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
Polymyxin B	16	0	0.176	0.224	0.0560	0.119
TSB	8	0	0.0589	0.00716	0.00253	0.00598
Untreated Bacteria	8	0	0.967	0.0379	0.0134	0.0317
Gentamicin	16	0	0.0686	0.0117	0.00292	0.00623
Rifampicin	16	0	0.0802	0.0116	0.00291	0.00620
Polymyxin B	16	0	0.176	0.224	0.0560	0.119

Column	Range	Max	Min	Median	25%	75%
Polymyxin B	0.925	1.013	0.0875	0.118	0.108	0.141
TSB	0.0219	0.0727	0.0508	0.0574	0.0537	0.0628
Untreated Bacteria	0.134	1.028	0.894	0.964	0.956	0.986
Gentamicin	0.0415	0.0972	0.0557	0.0646	0.0595	0.0750
Rifampicin	0.0387	0.104	0.0653	0.0781	0.0716	0.0862
Polymyxin B	0.925	1.013	0.0875	0.118	0.108	0.141

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
Polymyxin B	3.942	15.674	0.466	<0.001	0.355	<0.001
TSB	0.995	0.850	0.170	0.609	0.934	0.554
Untreated Bacteria	-0.507	2.064	0.226	0.257	0.935	0.566
Gentamicin	1.245	1.054	0.178	0.191	0.879	0.037
Rifampicin	0.884	-0.223	0.192	0.114	0.903	0.089
Polymyxin B	3.94	15.674	0.466	<0.001	0.355	<0.001

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0589	0.00716	0.00253
Untreated Bacteria	8	0	0.967	0.0379	0.0134
Gentamicin	16	0	0.0686	0.0117	0.00292
Rifampicin	16	0	0.0802	0.0116	0.00291
Polymyxin B	16	0	0.176	0.224	0.0560

Source of Variation	DF	SS	MS	F	P
Between Groups	4	5.373	1.343	103.238	<0.001
Residual	59	0.768	0.0130		
Total	63	6.141			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

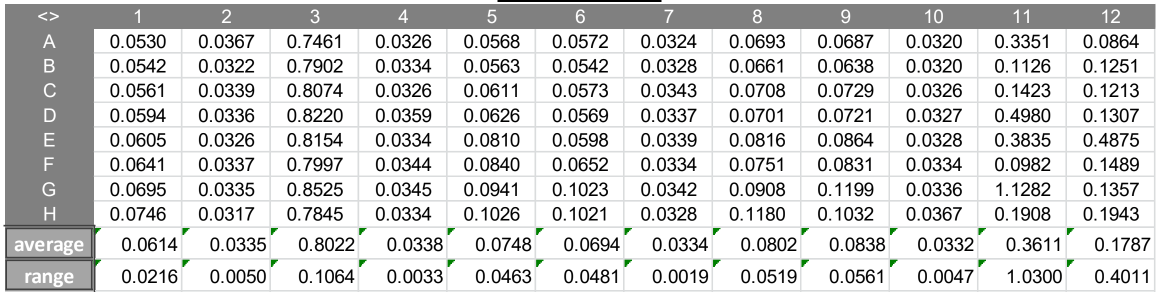
Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
Untreated Ba vs. Gentamicin	0.898	18.186	<0.001	0.013	Yes
Untreated Ba vs. Rifampicin	0.887	17.951	<0.001	0.017	Yes

Untreated Ba vs. Polymyxin B	0.791	16.009	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.908	15.920	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.908	15.920	<0.001	0.013	Yes
TSB vs. Polymyxin B	0.117	2.373	0.021	0.017	No
TSB vs. Rifampicin	0.0213	0.432	0.667	0.025	No
TSB vs. Gentamicin	0.00971	0.197	0.845	0.050	No

Clinical Isolate 18



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0530	0.0367	0.7461	0.0326	0.0568	0.0572	0.0324	0.0693	0.0687	0.0320	0.3351	0.0864
B	0.0542	0.0322	0.7902	0.0334	0.0563	0.0542	0.0328	0.0661	0.0638	0.0320	0.1126	0.1251
C	0.0561	0.0339	0.8074	0.0326	0.0611	0.0573	0.0343	0.0708	0.0729	0.0326	0.1423	0.1213
D	0.0594	0.0336	0.8220	0.0359	0.0626	0.0569	0.0337	0.0701	0.0721	0.0327	0.4980	0.1307
E	0.0605	0.0326	0.8154	0.0334	0.0810	0.0598	0.0339	0.0816	0.0864	0.0328	0.3835	0.4875
F	0.0641	0.0337	0.7997	0.0344	0.0840	0.0652	0.0334	0.0751	0.0831	0.0334	0.0982	0.1489
G	0.0695	0.0335	0.8525	0.0345	0.0941	0.1023	0.0342	0.0908	0.1199	0.0336	1.1282	0.1357
H	0.0746	0.0317	0.7845	0.0334	0.1026	0.1021	0.0328	0.1180	0.1032	0.0367	0.1908	0.1943
average	0.0614	0.0335	0.8022	0.0338	0.0748	0.0694	0.0334	0.0802	0.0838	0.0332	0.3611	0.1787
range	0.0216	0.0050	0.1064	0.0033	0.0463	0.0481	0.0019	0.0519	0.0561	0.0047	1.0300	0.4011

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0614	0.00758	0.00268	0.00634
Untreated Bacteria	8	0	0.802	0.0310	0.0110	0.0259
Gentamicin	16	0	0.0721	0.0189	0.00471	0.0100
Rifampicin	16	0	0.0820	0.0177	0.00442	0.00943
Polymyxin B	16	0	0.270	0.266	0.0666	0.142

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0216	0.0746	0.0530	0.0600	0.0551	0.0668
Untreated Bacteria	0.106	0.853	0.746	0.804	0.787	0.819
Gentamicin	0.0484	0.103	0.0542	0.0619	0.0571	0.0891
Rifampicin	0.0561	0.120	0.0638	0.0740	0.0697	0.0886
Polymyxin B	1.042	1.128	0.0864	0.146	0.123	0.359

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.742	-0.438	0.174	0.588	0.932	0.539
Untreated Bacteria	-0.299	1.255	0.159	0.675	0.976	0.943
Gentamicin	0.777	-1.197	0.268	0.003	0.788	0.002
Rifampicin	1.263	0.597	0.214	0.048	0.832	0.007
Polymyxin B	2.518	7.224	0.299	<0.001	0.669	<0.001

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0614	0.00758	0.00268
Untreated Bacteria	8	0	0.802	0.0310	0.0110
Gentamicin	16	0	0.0721	0.0189	0.00471
Rifampicin	16	0	0.0820	0.0177	0.00442
Polymyxin B	16	0	0.270	0.266	0.0666

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	3.605	0.901	49.166	<0.001
Residual	59	1.082	0.0183		
Total	63	4.687			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

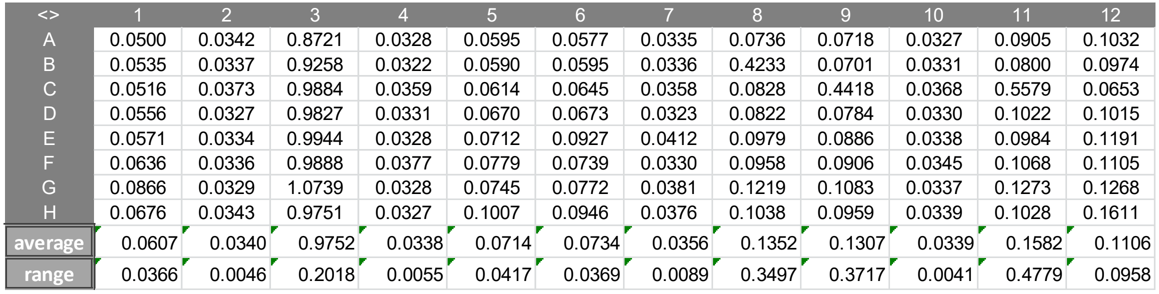
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Gentamicin	0.730	12.453	<0.001	0.013	Yes
Untreated Ba vs. Rifampicin	0.720	12.285	<0.001	0.017	Yes
Untreated Bacteria vs. TSB	0.741	10.943	<0.001	0.025	Yes
Untreated Ba vs. Polymyxin B	0.532	9.079	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.741	10.943	<0.001	0.013	Yes
TSB vs. Polymyxin B	0.208	3.556	<0.001	0.017	Yes
TSB vs. Rifampicin	0.0206	0.351	0.727	0.025	No
TSB vs. Gentamicin	0.0107	0.182	0.856	0.050	No

Clinical Isolate 19



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0500	0.0342	0.8721	0.0328	0.0595	0.0577	0.0335	0.0736	0.0718	0.0327	0.0905	0.1032
B	0.0535	0.0337	0.9258	0.0322	0.0590	0.0595	0.0336	0.4233	0.0701	0.0331	0.0800	0.0974
C	0.0516	0.0373	0.9884	0.0359	0.0614	0.0645	0.0358	0.0828	0.4418	0.0368	0.5579	0.0653
D	0.0556	0.0327	0.9827	0.0331	0.0670	0.0673	0.0323	0.0822	0.0784	0.0330	0.1022	0.1015
E	0.0571	0.0334	0.9944	0.0328	0.0712	0.0927	0.0412	0.0979	0.0886	0.0338	0.0984	0.1191
F	0.0636	0.0336	0.9888	0.0377	0.0779	0.0739	0.0330	0.0958	0.0906	0.0345	0.1068	0.1105
G	0.0866	0.0329	1.0739	0.0328	0.0745	0.0772	0.0381	0.1219	0.1083	0.0337	0.1273	0.1268
H	0.0676	0.0343	0.9751	0.0327	0.1007	0.0946	0.0376	0.1038	0.0959	0.0339	0.1028	0.1611
average	0.0607	0.0340	0.9752	0.0338	0.0714	0.0734	0.0356	0.1352	0.1307	0.0339	0.1582	0.1106
range	0.0366	0.0046	0.2018	0.0055	0.0417	0.0369	0.0089	0.3497	0.3717	0.0041	0.4779	0.0958

Descriptive Statistics: Thursday, April 16, 2015, 12:44:39 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0607	0.0120	0.00426	0.0101
Untreated Bacteria	8	0	0.975	0.0581	0.0205	0.0485
Gentamicin	16	0	0.0724	0.0135	0.00338	0.00719
Rifampicin	16	0	0.133	0.118	0.0295	0.0628
Polymyxin B	16	0	0.134	0.115	0.0287	0.0612

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0366	0.0866	0.0500	0.0563	0.0525	0.0656
Untreated Bacteria	0.202	1.074	0.872	0.986	0.950	0.992
Gentamicin	0.0430	0.101	0.0577	0.0693	0.0605	0.0776
Rifampicin	0.372	0.442	0.0701	0.0932	0.0803	0.106
Polymyxin B	0.493	0.558	0.0653	0.103	0.0979	0.123

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	1.658	2.860	0.243	0.179	0.832	0.062
Untreated Bacteria	-0.233	1.557	0.250	0.150	0.910	0.353
Gentamicin	0.934	-0.0851	0.155	0.365	0.884	0.045
Rifampicin	2.444	4.708	0.412	<0.001	0.513	<0.001
Polymyxin B	3.769	14.677	0.400	<0.001	0.439	<0.001

One Way Analysis of Variance Thursday, April 16, 2015, 12:44:57 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0607	0.0120	0.00426
Untreated Bacteria	8	0	0.975	0.0581	0.0205
Gentamicin	16	0	0.0724	0.0135	0.00338
Rifampicin	16	0	0.133	0.118	0.0295
Polymyxin B	16	0	0.134	0.115	0.0287

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**

Between Groups	4	5.350	1.338	181.913	<0.001
Residual	59	0.434	0.00735		
Total	63	5.784			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).
Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

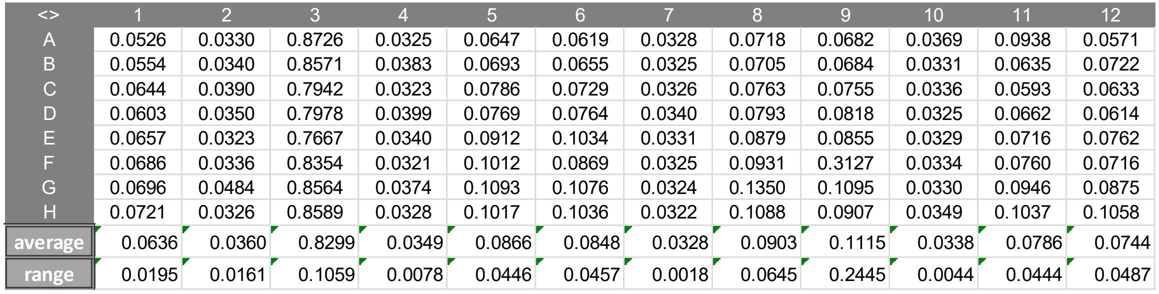
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Gentamicin	0.903	24.313	<0.001	0.013	Yes
Untreated Ba vs. Rifampicin	0.842	22.684	<0.001	0.017	Yes
Untreated Ba vs. Polymyxin B	0.841	22.643	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.914	21.329	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.914	21.329	<0.001	0.013	Yes
TSB vs. Polymyxin B	0.0737	1.986	0.052	0.017	No
TSB vs. Rifampicin	0.0722	1.945	0.057	0.025	No
TSB vs. Gentamicin	0.0117	0.315	0.754	0.050	No

Clinical Isolate 20



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0526	0.0330	0.8726	0.0325	0.0647	0.0619	0.0328	0.0718	0.0682	0.0369	0.0938	0.0571
B	0.0554	0.0340	0.8571	0.0383	0.0693	0.0655	0.0325	0.0705	0.0684	0.0331	0.0635	0.0722
C	0.0644	0.0390	0.7942	0.0323	0.0786	0.0729	0.0326	0.0763	0.0755	0.0336	0.0593	0.0633
D	0.0603	0.0350	0.7978	0.0399	0.0769	0.0764	0.0340	0.0793	0.0818	0.0325	0.0662	0.0614
E	0.0657	0.0323	0.7667	0.0340	0.0912	0.1034	0.0331	0.0879	0.0855	0.0329	0.0716	0.0762
F	0.0686	0.0336	0.8354	0.0321	0.1012	0.0869	0.0325	0.0931	0.3127	0.0334	0.0760	0.0716
G	0.0696	0.0484	0.8564	0.0374	0.1093	0.1076	0.0324	0.1350	0.1095	0.0330	0.0946	0.0875
H	0.0721	0.0326	0.8589	0.0328	0.1017	0.1036	0.0322	0.1088	0.0907	0.0349	0.1037	0.1058
average	0.0636	0.0360	0.8299	0.0349	0.0866	0.0848	0.0328	0.0903	0.1115	0.0338	0.0786	0.0744
range	0.0195	0.0161	0.1059	0.0078	0.0446	0.0457	0.0018	0.0645	0.2445	0.0044	0.0444	0.0487

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0636	0.00694	0.00245	0.00580
Untreated Bacteria	8	0	0.830	0.0386	0.0137	0.0323
Gentamicin	16	0	0.0857	0.0169	0.00421	0.00898
Rifampicin	16	0	0.101	0.0593	0.0148	0.0316
Polymyxin B	16	0	0.0765	0.0158	0.00396	0.00844

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0195	0.0721	0.0526	0.0650	0.0578	0.0691
Untreated Bacteria	0.106	0.873	0.767	0.846	0.796	0.858
Gentamicin	0.0474	0.109	0.0619	0.0828	0.0711	0.103
Rifampicin	0.245	0.313	0.0682	0.0837	0.0736	0.101
Polymyxin B	0.0487	0.106	0.0571	0.0719	0.0634	0.0906

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	-0.535	-1.005	0.172	0.600	0.941	0.619
Untreated Bacteria	-0.627	-1.243	0.254	0.135	0.885	0.211
Gentamicin	0.0582	-1.656	0.196	0.098	0.901	0.084
Rifampicin	3.423	12.570	0.318	<0.001	0.530	<0.001
Polymyxin B	0.693	-0.779	0.195	0.104	0.902	0.088

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0636	0.00694	0.00245
Untreated Bacteria	8	0	0.830	0.0386	0.0137
Gentamicin	16	0	0.0857	0.0169	0.00421
Rifampicin	16	0	0.101	0.0593	0.0148
Polymyxin B	16	0	0.0765	0.0158	0.00396

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	3.901	0.975	804.618	<0.001
Residual	59	0.0715	0.00121		
Total	63	3.972			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Polymyxin B	0.753	49.979	<0.001	0.013	Yes
Untreated Ba vs. Gentamicin	0.744	49.368	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.729	48.357	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.766	44.024	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.766	44.024	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0374	2.478	0.016	0.017	Yes
TSB vs. Gentamicin	0.0221	1.466	0.148	0.025	No
TSB vs. Polymyxin B	0.0129	0.856	0.396	0.050	No

Clinical Isolate 21

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0512	0.0330	0.7982	0.0333	0.0670	0.0646	0.0321	0.0807	0.0757	0.0327	0.0628	0.0657
B	0.0530	0.0323	0.7730	0.1150	0.0618	0.0639	0.1178	0.0816	0.0748	0.1176	0.1229	0.0728
C	0.0548	0.0631	0.7864	0.1247	0.0652	0.0705	0.1294	0.0830	0.0833	0.1297	0.0615	0.0726
D	0.0624	0.0533	0.7913	0.1386	0.0640	0.0705	0.1578	0.0896	0.0832	0.1367	0.0795	0.0604
E	0.0607	0.0634	0.7643	0.1405	0.0747	0.0896	0.1506	0.1112	0.1065	0.1262	0.0680	0.0749
F	0.0708	0.0411	0.7677	0.1297	0.0923	0.0895	0.1361	0.1110	0.0951	0.1208	0.0747	0.0681
G	0.0775	0.0339	0.7769	0.0727	0.1058	0.1071	0.1017	0.1196	0.4276	0.0743	0.0842	0.0820
H	0.0732	0.0318	0.7974	0.0324	0.1112	0.1003	0.0345	0.1080	0.0964	0.0338	0.1019	0.1355
average	0.0630	0.0440	0.7819	0.0984	0.0803	0.0820	0.1075	0.0981	0.1303	0.0965	0.0819	0.0790
range	0.0263	0.0316	0.0339	0.1081	0.0494	0.0432	0.1257	0.0389	0.3528	0.1040	0.0614	0.0751

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0630	0.00991	0.00350	0.00828
Untreated Bacteria	8	0	0.782	0.0133	0.00469	0.0111
Gentamicin	16	0	0.0811	0.0178	0.00446	0.00951
Rifampicin	16	0	0.114	0.0848	0.0212	0.0452
Polymyxin B	16	0	0.0805	0.0217	0.00544	0.0116

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0263	0.0775	0.0512	0.0615	0.0539	0.0720
Untreated Bacteria	0.0339	0.798	0.764	0.782	0.770	0.794
Gentamicin	0.0494	0.111	0.0618	0.0726	0.0649	0.0963
Rifampicin	0.353	0.428	0.0748	0.0924	0.0823	0.110
Polymyxin B	0.0751	0.136	0.0604	0.0738	0.0668	0.0831

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.290	-1.594	0.170	0.613	0.924	0.464
Untreated Bacteria	-0.0138	-1.791	0.147	0.734	0.920	0.432

Gentamicin	0.509	-1.428	0.224	0.031	0.858	0.018
Rifampicin	3.813	14.933	0.412	<0.001	0.421	<0.001
Polymyxin B	1.661	2.138	0.244	0.011	0.792	0.002

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0630	0.00991	0.00350
Untreated Bacteria	8	0	0.782	0.0133	0.00469
Gentamicin	16	0	0.0811	0.0178	0.00446
Rifampicin	16	0	0.114	0.0848	0.0212
Polymyxin B	16	0	0.0805	0.0217	0.00544

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	3.390	0.848	411.395	<0.001
Residual	59	0.122	0.00206		
Total	63	3.512			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

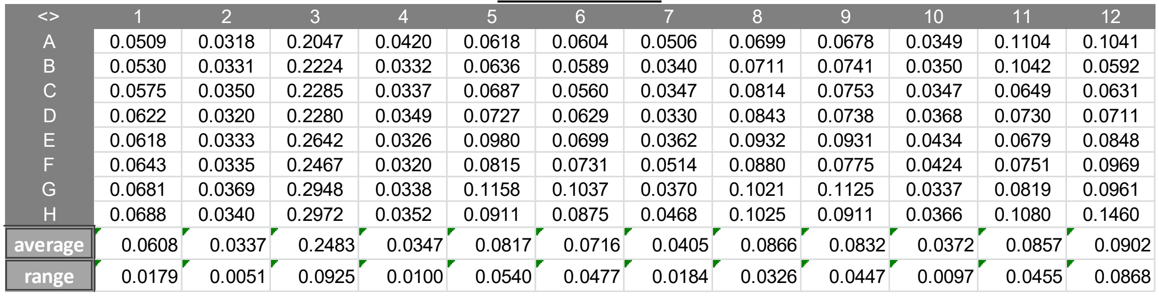
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Polymyxin B	0.701	35.689	<0.001	0.013	Yes
Untreated Ba vs. Gentamicin	0.701	35.656	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.668	33.972	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.719	31.679	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.719	31.679	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0513	2.608	0.012	0.017	Yes
TSB vs. Gentamicin	0.0182	0.925	0.359	0.025	No
TSB vs. Polymyxin B	0.0175	0.891	0.376	0.050	No

Clinical Isolate 22



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0509	0.0318	0.2047	0.0420	0.0618	0.0604	0.0506	0.0699	0.0678	0.0349	0.1104	0.1041
B	0.0530	0.0331	0.2224	0.0332	0.0636	0.0589	0.0340	0.0711	0.0741	0.0350	0.1042	0.0592
C	0.0575	0.0350	0.2285	0.0337	0.0687	0.0560	0.0347	0.0814	0.0753	0.0347	0.0649	0.0631
D	0.0622	0.0320	0.2280	0.0349	0.0727	0.0629	0.0330	0.0843	0.0738	0.0368	0.0730	0.0711
E	0.0618	0.0333	0.2642	0.0326	0.0980	0.0699	0.0362	0.0932	0.0931	0.0434	0.0679	0.0848
F	0.0643	0.0335	0.2467	0.0320	0.0815	0.0731	0.0514	0.0880	0.0775	0.0424	0.0751	0.0969
G	0.0681	0.0369	0.2948	0.0338	0.1158	0.1037	0.0370	0.1021	0.1125	0.0337	0.0819	0.0961
H	0.0688	0.0340	0.2972	0.0352	0.0911	0.0875	0.0468	0.1025	0.0911	0.0366	0.1080	0.1460
average	0.0608	0.0337	0.2483	0.0347	0.0817	0.0716	0.0405	0.0866	0.0832	0.0372	0.0857	0.0902
range	0.0179	0.0051	0.0925	0.0100	0.0540	0.0477	0.0184	0.0326	0.0447	0.0097	0.0455	0.0868

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0608	0.00657	0.00232	0.00549
Untreated Bacteria	8	0	0.248	0.0342	0.0121	0.0286
Gentamicin	16	0	0.0766	0.0179	0.00447	0.00952
Rifampicin	16	0	0.0849	0.0133	0.00333	0.00709
Polymyxin B	16	0	0.0879	0.0232	0.00579	0.0123

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**

TSB	0.0179	0.0688	0.0509	0.0620	0.0553	0.0662
Untreated Bacteria	0.0925	0.297	0.205	0.238	0.225	0.279
Gentamicin	0.0598	0.116	0.0560	0.0713	0.0624	0.0893
Rifampicin	0.0447	0.113	0.0678	0.0829	0.0740	0.0932
Polymyxin B	0.0868	0.146	0.0592	0.0834	0.0695	0.104

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	-0.373	-1.117	0.184	0.520	0.936	0.573
Untreated Bacteria	0.499	-1.179	0.219	0.297	0.909	0.344
Gentamicin	0.893	-0.162	0.203	0.078	0.904	0.092
Rifampicin	0.592	-0.567	0.147	0.434	0.937	0.317
Polymyxin B	0.955	1.006	0.148	0.431	0.916	0.145

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0608	0.00657	0.00232
Untreated Bacteria	8	0	0.248	0.0342	0.0121
Gentamicin	16	0	0.0766	0.0179	0.00447
Rifampicin	16	0	0.0849	0.0133	0.00333
Polymyxin B	16	0	0.0879	0.0232	0.00579

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	0.203	0.0507	124.825	<0.001
Residual	59	0.0240	0.000406		
Total	63	0.227			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

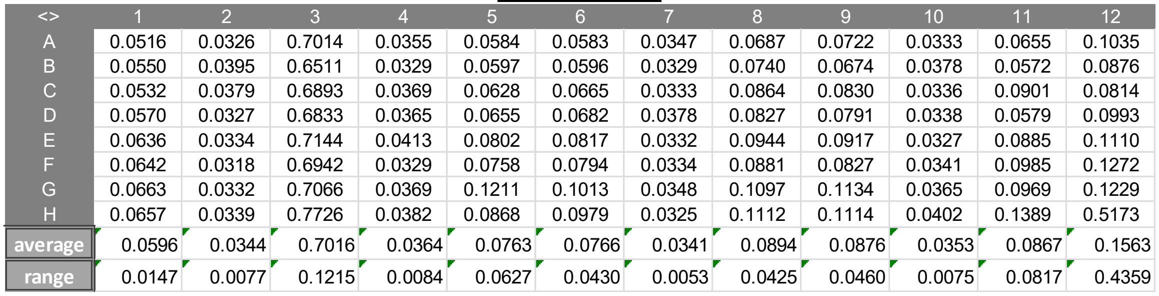
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Gentamicin	0.172	19.669	<0.001	0.013	Yes
Untreated Ba vs. Rifampicin	0.163	18.723	<0.001	0.017	Yes
Untreated Bacteria vs. TSB	0.187	18.599	<0.001	0.025	Yes
Untreated Ba vs. Polymyxin B	0.160	18.373	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.187	18.599	<0.001	0.013	Yes
TSB vs. Polymyxin B	0.0271	3.103	0.003	0.017	Yes
TSB vs. Rifampicin	0.0240	2.753	0.008	0.025	Yes
TSB vs. Gentamicin	0.0158	1.807	0.076	0.050	No

Clinical Isolate 23



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0516	0.0326	0.7014	0.0355	0.0584	0.0583	0.0347	0.0687	0.0722	0.0333	0.0655	0.1035
B	0.0550	0.0395	0.6511	0.0329	0.0597	0.0596	0.0329	0.0740	0.0674	0.0378	0.0572	0.0876
C	0.0532	0.0379	0.6893	0.0369	0.0628	0.0665	0.0333	0.0864	0.0830	0.0336	0.0901	0.0814
D	0.0570	0.0327	0.6833	0.0365	0.0655	0.0682	0.0378	0.0827	0.0791	0.0338	0.0579	0.0993
E	0.0636	0.0334	0.7144	0.0413	0.0802	0.0817	0.0332	0.0944	0.0917	0.0327	0.0885	0.1110
F	0.0642	0.0318	0.6942	0.0329	0.0758	0.0794	0.0334	0.0881	0.0827	0.0341	0.0985	0.1272
G	0.0663	0.0332	0.7066	0.0369	0.1211	0.1013	0.0348	0.1097	0.1134	0.0365	0.0969	0.1229
H	0.0657	0.0339	0.7726	0.0382	0.0868	0.0979	0.0325	0.1112	0.1114	0.0402	0.1389	0.5173
average	0.0596	0.0344	0.7016	0.0364	0.0763	0.0766	0.0341	0.0894	0.0876	0.0353	0.0867	0.1563
range	0.0147	0.0077	0.1215	0.0084	0.0627	0.0430	0.0053	0.0425	0.0460	0.0075	0.0817	0.4359

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0596	0.00600	0.00212	0.00502
Untreated Bacteria	8	0	0.702	0.0345	0.0122	0.0288
Gentamicin	16	0	0.0765	0.0181	0.00453	0.00965
Rifampicin	16	0	0.0885	0.0156	0.00390	0.00832
Polymyxin B	16	0	0.121	0.108	0.0270	0.0576

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0147	0.0663	0.0516	0.0603	0.0541	0.0649
Untreated Bacteria	0.121	0.773	0.651	0.698	0.686	0.711
Gentamicin	0.0628	0.121	0.0583	0.0720	0.0612	0.0842
Rifampicin	0.0460	0.113	0.0674	0.0847	0.0766	0.102
Polymyxin B	0.460	0.517	0.0572	0.0977	0.0845	0.117

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	-0.160	-2.164	0.249	0.153	0.873	0.159
Untreated Bacteria	1.035	2.881	0.230	0.235	0.905	0.321
Gentamicin	1.138	0.934	0.176	0.203	0.882	0.042
Rifampicin	0.458	-1.019	0.163	0.298	0.906	0.100
Polymyxin B	3.688	14.254	0.373	<0.001	0.475	<0.001

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0596	0.00600	0.00212
Untreated Bacteria	8	0	0.702	0.0345	0.0122
Gentamicin	16	0	0.0765	0.0181	0.00453
Rifampicin	16	0	0.0885	0.0156	0.00390
Polymyxin B	16	0	0.121	0.108	0.0270

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	2.642	0.660	202.568	<0.001
Residual	59	0.192	0.00326		
Total	63	2.834			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Gentamicin	0.625	25.285	<0.001	0.013	Yes
Untreated Ba vs. Rifampicin	0.613	24.797	<0.001	0.017	Yes
Untreated Ba vs. Polymyxin B	0.580	23.464	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.642	22.489	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.642	22.489	<0.001	0.013	Yes
TSB vs. Polymyxin B	0.0619	2.504	0.015	0.017	Yes
TSB vs. Rifampicin	0.0289	1.170	0.247	0.025	No
TSB vs. Gentamicin	0.0169	0.683	0.498	0.050	No

Clinical Isolate 24

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0525	0.0318	0.7256	0.0325	0.0621	0.0613	0.0329	0.0755	0.0743	0.0324	0.0989	0.1237
B	0.0509	0.0320	0.7573	0.0323	0.0671	0.0644	0.0354	0.1054	0.0787	0.0502	0.3901	0.0590
C	0.0634	0.0321	0.7883	0.0331	0.0669	0.0698	0.0402	0.0902	0.0882	0.0324	0.0769	0.0999
D	0.0764	0.0338	0.8075	0.0378	0.0720	0.0768	0.0339	0.0944	0.0957	0.0351	0.0862	0.3365
E	0.0642	0.0321	0.8178	0.0341	0.0863	0.0858	0.0348	0.1048	0.0994	0.0325	0.0681	0.1250
F	0.0629	0.0322	0.7942	0.0339	0.0760	0.0875	0.0333	0.0857	0.0882	0.0351	0.1159	0.4809
G	0.0638	0.0436	0.8540	0.0347	0.1178	0.0944	0.0328	0.1249	0.1158	0.0332	0.1348	0.1322
H	0.0679	0.0333	0.8871	0.0359	0.0980	0.0978	0.0362	0.1092	0.1052	0.0360	0.1059	0.1256
average	0.0628	0.0339	0.8040	0.0343	0.0808	0.0797	0.0349	0.0988	0.0932	0.0359	0.1346	0.1854
range	0.0255	0.0118	0.1615	0.0055	0.0557	0.0365	0.0074	0.0494	0.0415	0.0178	0.3220	0.4219

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0628	0.00812	0.00287	0.00679
Untreated Bacteria	8	0	0.804	0.0511	0.0181	0.0427
Gentamicin	16	0	0.0803	0.0160	0.00401	0.00854
Rifampicin	16	0	0.0960	0.0144	0.00360	0.00768
Polymyxin B	16	0	0.160	0.125	0.0313	0.0668

Column	Range	Max	Min	Median	25%	75%
TSB	0.0255	0.0764	0.0509	0.0636	0.0577	0.0660
Untreated Bacteria	0.161	0.887	0.726	0.801	0.773	0.836
Gentamicin	0.0565	0.118	0.0613	0.0764	0.0670	0.0910
Rifampicin	0.0506	0.125	0.0743	0.0950	0.0870	0.105
Polymyxin B	0.422	0.481	0.0590	0.120	0.0925	0.134

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	-0.0201	0.310	0.257	0.123	0.914	0.384
Untreated Bacteria	0.163	-0.0429	0.143	0.748	0.986	0.985
Gentamicin	0.821	0.231	0.148	0.429	0.922	0.178
Rifampicin	0.267	-0.454	0.105	0.797	0.972	0.871
Polymyxin B	1.825	2.229	0.392	<0.001	0.689	<0.001

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0628	0.00812	0.00287
Untreated Bacteria	8	0	0.804	0.0511	0.0181
Gentamicin	16	0	0.0803	0.0160	0.00401
Rifampicin	16	0	0.0960	0.0144	0.00360
Polymyxin B	16	0	0.160	0.125	0.0313

Source of Variation	DF	SS	MS	F	P
Between Groups	4	3.493	0.873	197.328	<0.001
Residual	59	0.261	0.00443		
Total	63	3.755			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

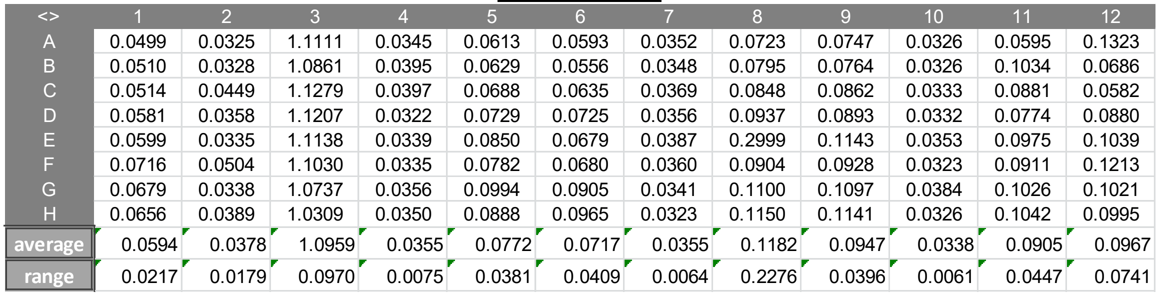
Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
Untreated Ba vs. Gentamicin	0.724	25.123	<0.001	0.013	Yes
Untreated Ba vs. Rifampicin	0.708	24.577	<0.001	0.017	Yes
Untreated Ba vs. Polymyxin B	0.644	22.355	<0.001	0.025	Yes

Untreated Bacteria vs. TSB	0.741	22.283	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.741	22.283	<0.001	0.013	Yes
TSB vs. Polymyxin B	0.0972	3.375	0.001	0.017	Yes
TSB vs. Rifampicin	0.0332	1.153	0.253	0.025	No
TSB vs. Gentamicin	0.0175	0.607	0.546	0.050	No

Clinical Isolate 25



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0499	0.0325	1.1111	0.0345	0.0613	0.0593	0.0352	0.0723	0.0747	0.0326	0.0595	0.1323
B	0.0510	0.0328	1.0861	0.0395	0.0629	0.0556	0.0348	0.0795	0.0764	0.0326	0.1034	0.0686
C	0.0514	0.0449	1.1279	0.0397	0.0688	0.0635	0.0369	0.0848	0.0862	0.0333	0.0881	0.0582
D	0.0581	0.0358	1.1207	0.0322	0.0729	0.0725	0.0356	0.0937	0.0893	0.0332	0.0774	0.0880
E	0.0599	0.0335	1.1138	0.0339	0.0850	0.0679	0.0387	0.2999	0.1143	0.0353	0.0975	0.1039
F	0.0716	0.0504	1.1030	0.0335	0.0782	0.0680	0.0360	0.0904	0.0928	0.0323	0.0911	0.1213
G	0.0679	0.0338	1.0737	0.0356	0.0994	0.0905	0.0341	0.1100	0.1097	0.0384	0.1026	0.1021
H	0.0656	0.0389	1.0309	0.0350	0.0888	0.0965	0.0323	0.1150	0.1141	0.0326	0.1042	0.0995
average	0.0594	0.0378	1.0959	0.0355	0.0772	0.0717	0.0355	0.1182	0.0947	0.0338	0.0905	0.0967
range	0.0217	0.0179	0.0970	0.0075	0.0381	0.0409	0.0064	0.2276	0.0396	0.0061	0.0447	0.0741

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0594	0.00833	0.00295	0.00697
Untreated Bacteria	8	0	1.096	0.0317	0.0112	0.0265
Gentamicin	16	0	0.0744	0.0137	0.00343	0.00732
Rifampicin	16	0	0.106	0.0537	0.0134	0.0286
Polymyxin B	16	0	0.0936	0.0203	0.00506	0.0108

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0217	0.0716	0.0499	0.0590	0.0512	0.0668
Untreated Bacteria	0.0970	1.128	1.031	1.107	1.080	1.117
Gentamicin	0.0438	0.0994	0.0556	0.0706	0.0632	0.0869
Rifampicin	0.228	0.300	0.0723	0.0916	0.0822	0.112
Polymyxin B	0.0741	0.132	0.0582	0.0985	0.0827	0.104

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.220	-1.631	0.207	0.367	0.912	0.371
Untreated Bacteria	-1.363	1.746	0.213	0.329	0.882	0.195
Gentamicin	0.546	-0.937	0.170	0.244	0.929	0.233
Rifampicin	3.493	13.151	0.374	<0.001	0.527	<0.001
Polymyxin B	-0.186	-0.00174	0.175	0.204	0.946	0.428

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0594	0.00833	0.00295
Untreated Bacteria	8	0	1.096	0.0317	0.0112
Gentamicin	16	0	0.0744	0.0137	0.00343
Rifampicin	16	0	0.106	0.0537	0.0134
Polymyxin B	16	0	0.0936	0.0203	0.00506

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	7.142	1.785	1763.051	<0.001
Residual	59	0.0597	0.00101		
Total	63	7.201			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

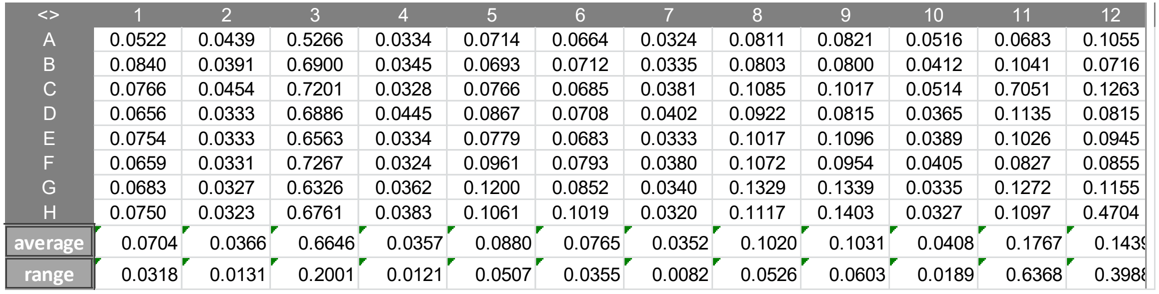
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Gentamicin	1.021	74.128	<0.001	0.013	Yes
Untreated Ba vs. Polymyxin B	1.002	72.737	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.989	71.806	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	1.036	65.140	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	1.036	65.140	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0470	3.412	0.001	0.017	Yes
TSB vs. Polymyxin B	0.0342	2.481	0.016	0.025	Yes
TSB vs. Gentamicin	0.0150	1.090	0.280	0.050	No

Clinical Isolate 26



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0522	0.0439	0.5266	0.0334	0.0714	0.0664	0.0324	0.0811	0.0821	0.0516	0.0683	0.1055
B	0.0840	0.0391	0.6900	0.0345	0.0693	0.0712	0.0335	0.0803	0.0800	0.0412	0.1041	0.0716
C	0.0766	0.0454	0.7201	0.0328	0.0766	0.0685	0.0381	0.1085	0.1017	0.0514	0.7051	0.1263
D	0.0656	0.0333	0.6886	0.0445	0.0867	0.0708	0.0402	0.0922	0.0815	0.0365	0.1135	0.0815
E	0.0754	0.0333	0.6563	0.0334	0.0779	0.0683	0.0333	0.1017	0.1096	0.0389	0.1026	0.0945
F	0.0659	0.0331	0.7267	0.0324	0.0961	0.0793	0.0380	0.1072	0.0954	0.0405	0.0827	0.0855
G	0.0683	0.0327	0.6326	0.0362	0.1200	0.0852	0.0340	0.1329	0.1339	0.0335	0.1272	0.1155
H	0.0750	0.0323	0.6761	0.0383	0.1061	0.1019	0.0320	0.1117	0.1403	0.0327	0.1097	0.4704
average	0.0704	0.0366	0.6646	0.0357	0.0880	0.0765	0.0352	0.1020	0.1031	0.0408	0.1767	0.1439
range	0.0318	0.0131	0.2001	0.0121	0.0507	0.0355	0.0082	0.0526	0.0603	0.0189	0.6368	0.3988

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0704	0.00963	0.00340	0.00805
Untreated Bacteria	8	0	0.665	0.0637	0.0225	0.0533
Gentamicin	16	0	0.0822	0.0160	0.00400	0.00852
Rifampicin	16	0	0.103	0.0200	0.00500	0.0107
Polymyxin B	16	0	0.160	0.173	0.0433	0.0923

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0318	0.0840	0.0522	0.0716	0.0658	0.0760
Untreated Bacteria	0.200	0.727	0.527	0.682	0.644	0.705
Gentamicin	0.0536	0.120	0.0664	0.0772	0.0701	0.0914
Rifampicin	0.0603	0.140	0.0800	0.102	0.0818	0.111
Polymyxin B	0.637	0.705	0.0683	0.105	0.0841	0.121

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	-0.687	0.977	0.185	0.514	0.946	0.666
Untreated Bacteria	-1.635	3.189	0.198	0.426	0.849	0.093
Gentamicin	1.157	0.498	0.198	0.095	0.858	0.018
Rifampicin	0.600	-0.619	0.159	0.331	0.896	0.070
Polymyxin B	2.750	7.107	0.451	<0.001	0.512	<0.001

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0704	0.00963	0.00340
Untreated Bacteria	8	0	0.665	0.0637	0.0225
Gentamicin	16	0	0.0822	0.0160	0.00400
Rifampicin	16	0	0.103	0.0200	0.00500
Polymyxin B	16	0	0.160	0.173	0.0433

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	2.230	0.558	67.285	<0.001

Residual	59	0.489	0.00829
Total	63	2.719	

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

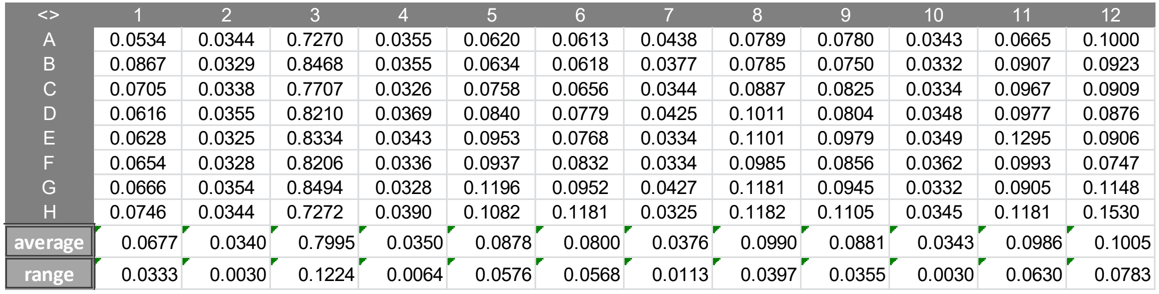
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Gentamicin	0.582	14.776	<0.001	0.013	Yes
Untreated Ba vs. Rifampicin	0.562	14.261	<0.001	0.017	Yes
Untreated Bacteria vs. TSB	0.594	13.057	<0.001	0.025	Yes
Untreated Ba vs. Polymyxin B	0.504	12.796	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.594	13.057	<0.001	0.013	Yes
TSB vs. Polymyxin B	0.0899	2.280	0.026	0.017	No
TSB vs. Rifampicin	0.0321	0.815	0.418	0.025	No
TSB vs. Gentamicin	0.0119	0.301	0.765	0.050	No

Clinical Isolate 27



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0534	0.0344	0.7270	0.0355	0.0620	0.0613	0.0438	0.0789	0.0780	0.0343	0.0665	0.1000
B	0.0867	0.0329	0.8468	0.0355	0.0634	0.0618	0.0377	0.0785	0.0750	0.0332	0.0907	0.0923
C	0.0705	0.0338	0.7707	0.0326	0.0758	0.0656	0.0344	0.0887	0.0825	0.0334	0.0967	0.0909
D	0.0616	0.0355	0.8210	0.0369	0.0840	0.0779	0.0425	0.1011	0.0804	0.0348	0.0977	0.0876
E	0.0628	0.0325	0.8334	0.0343	0.0953	0.0768	0.0334	0.1101	0.0979	0.0349	0.1295	0.0906
F	0.0654	0.0328	0.8206	0.0336	0.0937	0.0832	0.0334	0.0985	0.0856	0.0362	0.0993	0.0747
G	0.0666	0.0354	0.8494	0.0328	0.1196	0.0952	0.0427	0.1181	0.0945	0.0332	0.0905	0.1148
H	0.0746	0.0344	0.7272	0.0390	0.1082	0.1181	0.0325	0.1182	0.1105	0.0345	0.1181	0.1530
average	0.0677	0.0340	0.7995	0.0350	0.0878	0.0800	0.0376	0.0990	0.0881	0.0343	0.0986	0.1005
range	0.0333	0.0030	0.1224	0.0064	0.0576	0.0568	0.0113	0.0397	0.0355	0.0030	0.0630	0.0783

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0677	0.00992	0.00351	0.00829
Untreated Bacteria	8	0	0.800	0.0508	0.0180	0.0425
Gentamicin	16	0	0.0839	0.0196	0.00491	0.0105
Rifampicin	16	0	0.0935	0.0148	0.00370	0.00788
Polymyxin B	16	0	0.0996	0.0209	0.00523	0.0111

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0333	0.0867	0.0534	0.0660	0.0622	0.0726
Untreated Bacteria	0.122	0.849	0.727	0.821	0.749	0.840
Gentamicin	0.0583	0.120	0.0613	0.0805	0.0645	0.0953
Rifampicin	0.0432	0.118	0.0750	0.0916	0.0796	0.106
Polymyxin B	0.0865	0.153	0.0665	0.0945	0.0905	0.107

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.767	1.351	0.169	0.615	0.957	0.784
Untreated Bacteria	-0.718	-1.381	0.286	0.053	0.835	0.066
Gentamicin	0.560	-0.740	0.137	0.536	0.909	0.112
Rifampicin	0.449	-1.171	0.147	0.435	0.908	0.110
Polymyxin B	1.107	1.891	0.242	0.013	0.901	0.083

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0677	0.00992	0.00351
Untreated Bacteria	8	0	0.800	0.0508	0.0180
Gentamicin	16	0	0.0839	0.0196	0.00491
Rifampicin	16	0	0.0935	0.0148	0.00370
Polymyxin B	16	0	0.0996	0.0209	0.00523

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	3.542	0.885	1518.497	<0.001
Residual	59	0.0344	0.000583		
Total	63	3.576			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.00

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

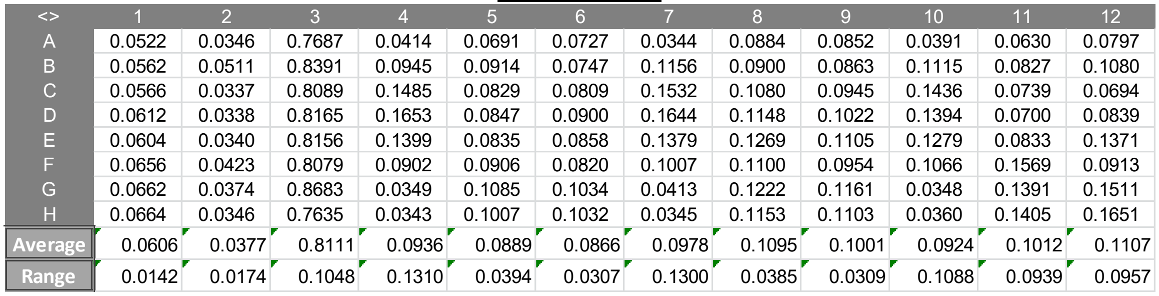
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Gentamicin	0.716	68.441	<0.001	0.013	Yes
Untreated Ba vs. Rifampicin	0.706	67.516	<0.001	0.017	Yes
Untreated Ba vs. Polymyxin B	0.700	66.940	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.732	60.610	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.732	60.610	<0.001	0.013	Yes
TSB vs. Polymyxin B	0.0319	3.047	0.003	0.017	Yes
TSB vs. Rifampicin	0.0258	2.470	0.016	0.025	Yes
TSB vs. Gentamicin	0.0162	1.546	0.127	0.050	No

Clinical Isolate 28



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0522	0.0346	0.7687	0.0414	0.0691	0.0727	0.0344	0.0884	0.0852	0.0391	0.0630	0.0797
B	0.0562	0.0511	0.8391	0.0945	0.0914	0.0747	0.1156	0.0900	0.0863	0.1115	0.0827	0.1080
C	0.0566	0.0337	0.8089	0.1485	0.0829	0.0809	0.1532	0.1080	0.0945	0.1436	0.0739	0.0694
D	0.0612	0.0338	0.8165	0.1653	0.0847	0.0900	0.1644	0.1148	0.1022	0.1394	0.0700	0.0839
E	0.0604	0.0340	0.8156	0.1399	0.0835	0.0858	0.1379	0.1269	0.1105	0.1279	0.0833	0.1371
F	0.0656	0.0423	0.8079	0.0902	0.0906	0.0820	0.1007	0.1100	0.0954	0.1066	0.1569	0.0913
G	0.0662	0.0374	0.8683	0.0349	0.1085	0.1034	0.0413	0.1222	0.1161	0.0348	0.1391	0.1511
H	0.0664	0.0346	0.7635	0.0343	0.1007	0.1032	0.0345	0.1153	0.1103	0.0360	0.1405	0.1651
Average	0.0606	0.0377	0.8111	0.0936	0.0889	0.0866	0.0978	0.1095	0.1001	0.0924	0.1012	0.1107
Range	0.0142	0.0174	0.1048	0.1310	0.0394	0.0307	0.1300	0.0385	0.0309	0.1088	0.0939	0.0957

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0606	0.00530	0.00187	0.00443
Untreated Bacteria	8	0	0.811	0.0342	0.0121	0.0286
Gentamicin	16	0	0.0878	0.0115	0.00288	0.00613
Rifampicin	16	0	0.105	0.0133	0.00332	0.00708
Polymyxin B	16	0	0.106	0.0359	0.00898	0.0191

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0142	0.0664	0.0522	0.0608	0.0564	0.0659
Untreated Bacteria	0.105	0.868	0.763	0.812	0.788	0.828
Gentamicin	0.0394	0.109	0.0691	0.0852	0.0814	0.0960
Rifampicin	0.0417	0.127	0.0852	0.109	0.0922	0.115
Polymyxin B	0.102	0.165	0.0630	0.0876	0.0768	0.140

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	-0.315	-1.260	0.202	0.398	0.911	0.364
Untreated Bacteria	0.125	0.0391	0.213	0.331	0.937	0.581
Gentamicin	0.291	-0.667	0.130	0.599	0.956	0.584

Rifampicin	-0.0950	-1.225	0.159	0.328	0.936	0.306
Polymyxin B	0.455	-1.555	0.230	0.023	0.866	0.024

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0606	0.00530	0.00187
Untreated Bacteria	8	0	0.811	0.0342	0.0121
Gentamicin	16	0	0.0878	0.0115	0.00288
Rifampicin	16	0	0.105	0.0133	0.00332
Polymyxin B	16	0	0.106	0.0359	0.00898

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	3.614	0.903	1647.310	<0.001
Residual	59	0.0324	0.000548		
Total	63	3.646			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Gentamicin	0.723	71.329	<0.001	0.013	Yes
Untreated Ba vs. Rifampicin	0.706	69.653	<0.001	0.017	Yes
Untreated Ba vs. Polymyxin B	0.705	69.536	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.750	64.092	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.750	64.092	<0.001	0.013	Yes
TSB vs. Polymyxin B	0.0453	4.471	<0.001	0.017	Yes
TSB vs. Rifampicin	0.0442	4.354	<0.001	0.025	Yes
TSB vs. Gentamicin	0.0272	2.678	0.010	0.050	Yes

Clinical Isolate 29

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0659	0.0350	0.7821	0.0420	0.0776	0.0516	0.0347	0.7275	0.7484	0.0412	0.0524	0.0511
B	0.0804	0.0340	0.9104	0.0371	0.0590	0.0543	0.0326	0.8035	0.8472	0.0543	0.0544	0.0583
C	0.0563	0.0337	0.9247	0.0439	0.0660	0.0595	0.0355	0.8672	0.8561	0.0556	0.0672	0.0630
D	0.0605	0.0358	0.9074	0.0444	0.0721	0.0591	0.0334	0.8833	0.8666	0.0567	0.0621	0.0625
E	0.0604	0.0496	0.9382	0.0358	0.0755	0.0627	0.0354	0.8385	0.8968	0.0343	0.0772	0.0654
F	0.0649	0.0340	0.8989	0.0360	0.0828	0.0614	0.0342	0.8452	0.8648	0.0391	0.0634	0.1036
G	0.0899	0.0334	0.8832	0.0331	0.0886	0.0656	0.0384	0.8969	0.8870	0.0327	0.0783	0.0931
H	0.0732	0.0340	0.7811	0.0325	0.0873	0.0843	0.0331	0.8478	0.8272	0.0335	0.1012	0.0917
average	0.0689	0.0362	0.8783	0.0381	0.0761	0.0623	0.0347	0.8387	0.8493	0.0434	0.0695	0.0736
range	0.0336	0.0162	0.1571	0.0119	0.0296	0.0327	0.0058	0.1694	0.1484	0.0240	0.0488	0.0525

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0689	0.0115	0.00405	0.00958
Untreated Bacteria	8	0	0.878	0.0618	0.0219	0.0517
Gentamicin	16	0	0.0692	0.0121	0.00302	0.00644
Rifampicin	16	0	0.844	0.0485	0.0121	0.0258
Polymyxin B	16	0	0.0716	0.0173	0.00432	0.00921

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0336	0.0899	0.0563	0.0654	0.0605	0.0768

Untreated Bacteria	0.157	0.938	0.781	0.903	0.833	0.918
Gentamicin	0.0370	0.0886	0.0516	0.0658	0.0593	0.0802
Rifampicin	0.169	0.897	0.728	0.852	0.833	0.875
Polymyxin B	0.0525	0.104	0.0511	0.0644	0.0602	0.0850

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.946	0.0194	0.230	0.239	0.912	0.367
Untreated Bacteria	-1.146	-0.350	0.282	0.061	0.790	0.022
Gentamicin	0.318	-1.275	0.167	0.262	0.929	0.234
Rifampicin	-1.372	1.557	0.205	0.071	0.857	0.017
Polymyxin B	0.762	-0.729	0.225	0.030	0.885	0.047

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0689	0.0115	0.00405
Untreated Bacteria	8	0	0.878	0.0618	0.0219
Gentamicin	16	0	0.0692	0.0121	0.00302
Rifampicin	16	0	0.844	0.0485	0.0121
Polymyxin B	16	0	0.0716	0.0173	0.00432

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	9.257	2.314	1960.286	<0.001
Residual	59	0.0697	0.00118		
Total	63	9.327			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

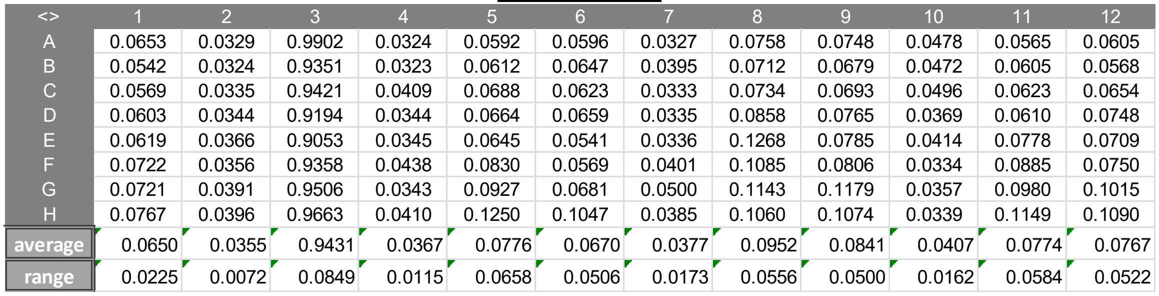
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Gentamicin	0.809	54.377	<0.001	0.013	Yes
Untreated Ba vs. Polymyxin B	0.807	54.220	<0.001	0.017	Yes
Untreated Bacteria vs. TSB	0.809	47.108	<0.001	0.025	Yes
Untreated Ba vs. Rifampicin	0.0343	2.302	0.025	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Rifampicin	0.775	52.094	<0.001	0.013	Yes
TSB vs. Untreated Bacteria	0.809	47.108	<0.001	0.017	Yes
TSB vs. Polymyxin B	0.00262	0.176	0.861	0.025	No
TSB vs. Gentamicin	0.000275	0.0185	0.985	0.050	No

Clinical Isolate 30



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0653	0.0329	0.9902	0.0324	0.0592	0.0596	0.0327	0.0758	0.0748	0.0478	0.0565	0.0605
B	0.0542	0.0324	0.9351	0.0323	0.0612	0.0647	0.0395	0.0712	0.0679	0.0472	0.0605	0.0568
C	0.0569	0.0335	0.9421	0.0409	0.0688	0.0623	0.0333	0.0734	0.0693	0.0496	0.0623	0.0654
D	0.0603	0.0344	0.9194	0.0344	0.0664	0.0659	0.0335	0.0858	0.0765	0.0369	0.0610	0.0748
E	0.0619	0.0366	0.9053	0.0345	0.0645	0.0541	0.0336	0.1268	0.0785	0.0414	0.0778	0.0709
F	0.0722	0.0356	0.9358	0.0438	0.0830	0.0569	0.0401	0.1085	0.0806	0.0334	0.0885	0.0750
G	0.0721	0.0391	0.9506	0.0343	0.0927	0.0681	0.0500	0.1143	0.1179	0.0357	0.0980	0.1015
H	0.0767	0.0396	0.9663	0.0410	0.1250	0.1047	0.0385	0.1060	0.1074	0.0339	0.1149	0.1090
average	0.0650	0.0355	0.9431	0.0367	0.0776	0.0670	0.0377	0.0952	0.0841	0.0407	0.0774	0.0767
range	0.0225	0.0072	0.0849	0.0115	0.0658	0.0506	0.0173	0.0556	0.0500	0.0162	0.0584	0.0522

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0649	0.00805	0.00284	0.00673
Untreated Bacteria	8	0	0.943	0.0265	0.00937	0.0222
Gentamicin	16	0	0.0723	0.0195	0.00488	0.0104
Rifampicin	16	0	0.0897	0.0200	0.00501	0.0107
Polymyxin B	16	0	0.0771	0.0194	0.00486	0.0104

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0225	0.0767	0.0542	0.0636	0.0586	0.0721
Untreated Bacteria	0.0849	0.990	0.905	0.939	0.927	0.958
Gentamicin	0.0709	0.125	0.0541	0.0653	0.0604	0.0759
Rifampicin	0.0589	0.127	0.0679	0.0796	0.0741	0.108
Polymyxin B	0.0584	0.115	0.0565	0.0728	0.0607	0.0933

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.174	-1.419	0.188	0.494	0.947	0.677
Untreated Bacteria	0.502	0.356	0.140	0.760	0.975	0.934
Gentamicin	1.765	2.656	0.322	<0.001	0.772	0.001
Rifampicin	0.620	-1.284	0.237	0.017	0.856	0.017
Polymyxin B	0.793	-0.713	0.173	0.222	0.878	0.036

One Way Analysis of Variance Friday, April 17, 2015, 10:36:10 AM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0649	0.00805	0.00284
Untreated Bacteria	8	0	0.943	0.0265	0.00937
Gentamicin	16	0	0.0723	0.0195	0.00488
Rifampicin	16	0	0.0897	0.0200	0.00501
Polymyxin B	16	0	0.0771	0.0194	0.00486

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	5.248	1.312	3400.559	<0.001
Residual	59	0.0228	0.000386		
Total	63	5.271			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**
Untreated Ba vs. Gentamicin	0.871	102.382	<0.001	0.013
Untreated Ba vs. Polymyxin B	0.866	101.821	<0.001	0.017
Untreated Ba vs. Rifampicin	0.853	100.342	<0.001	0.025
Untreated Bacteria vs. TSB	0.878	89.415	<0.001	0.050

Comparison	**Significant?**
Untreated Ba vs. Gentamicin	Yes
Untreated Ba vs. Polymyxin B	Yes
Untreated Ba vs. Rifampicin	Yes
Untreated Bacteria vs. TSB	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.878	89.415	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0247	2.906	0.005	0.017	Yes
TSB vs. Polymyxin B	0.0121	1.427	0.159	0.025	No
TSB vs. Gentamicin	0.00737	0.866	0.390	0.050	No

Clinical Isolate 33

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0507	0.0329	0.9653	0.0405	0.0608	0.0594	0.0410	0.0908	0.0736	0.0398	0.0530	0.0531
B	0.0518	0.0334	1.0184	0.0410	0.0608	0.0661	0.0359	0.0877	0.0742	0.0563	0.0518	0.0518
C	0.0542	0.0328	1.0382	0.0390	0.0655	0.0656	0.0390	0.0794	0.0906	0.0382	0.0847	0.0576
D	0.0570	0.0333	1.0791	0.0383	0.0714	0.0659	0.0457	0.0808	0.0824	0.0334	0.0584	0.0636
E	0.0658	0.0349	1.0534	0.0348	0.0730	0.0647	0.0530	0.0848	0.1043	0.0371	0.0622	0.0655
F	0.0658	0.0414	1.0738	0.0372	0.0678	0.0621	0.0371	0.0949	0.0876	0.0339	0.0713	0.0731
G	0.0647	0.0373	1.0510	0.0425	0.1002	0.0768	0.0496	0.1296	0.1113	0.0330	0.0712	0.0797
H	0.0684	0.0334	1.0843	0.0423	0.0944	0.1000	0.0404	0.1073	0.1025	0.0356	0.0846	0.0986
average	0.0598	0.0349	1.0454	0.0395	0.0742	0.0701	0.0427	0.0944	0.0908	0.0384	0.0672	0.0679
range	0.0177	0.0086	0.1190	0.0077	0.0394	0.0406	0.0171	0.0502	0.0377	0.0233	0.0329	0.0468

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0598	0.00713	0.00252	0.00596
Untreated Bacteria	8	0	1.045	0.0392	0.0139	0.0328
Gentamicin	16	0	0.0722	0.0138	0.00344	0.00733
Rifampicin	16	0	0.0926	0.0151	0.00377	0.00803
Polymyxin B	16	0	0.0675	0.0139	0.00348	0.00741

Column	Range	Max	Min	Median	25%	75%
TSB	0.0177	0.0684	0.0507	0.0609	0.0530	0.0658
Untreated Bacteria	0.119	1.084	0.965	1.052	1.028	1.076
Gentamicin	0.0408	0.100	0.0594	0.0660	0.0634	0.0749
Rifampicin	0.0560	0.130	0.0736	0.0892	0.0816	0.103
Polymyxin B	0.0468	0.0986	0.0518	0.0645	0.0553	0.0764

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	-0.146	-2.164	0.254	0.134	0.871	0.153
Untreated Bacteria	-1.312	1.790	0.181	0.537	0.886	0.214
Gentamicin	1.381	0.589	0.249	0.009	0.771	0.001
Rifampicin	0.978	0.881	0.173	0.222	0.929	0.237
Polymyxin B	0.748	-0.0980	0.129	0.605	0.922	0.179

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0598	0.00713	0.00252
Untreated Bacteria	8	0	1.045	0.0392	0.0139
Gentamicin	16	0	0.0722	0.0138	0.00344
Rifampicin	16	0	0.0926	0.0151	0.00377
Polymyxin B	16	0	0.0675	0.0139	0.00348

Source of Variation	DF	SS	MS	F	P
Between Groups	4	6.601	1.650	4807.395	<0.001
Residual	59	0.0203	0.000343		
Total	63	6.622			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	Unadjusted P	Critical Level
Untreated Ba vs. Polymyxin B	0.978	121.892	<0.001	0.013
Untreated Ba vs. Gentamicin	0.973	121.313	<0.001	0.017
Untreated Ba vs. Rifampicin	0.953	118.763	<0.001	0.025

Untreated Bacteria vs. TSB	0.986	106.394	<0.001	0.050

Comparison	**Significant?**
Untreated Ba vs. Polymyxin B	Yes
Untreated Ba vs. Gentamicin	Yes
Untreated Ba vs. Rifampicin	Yes
Untreated Bacteria vs. TSB	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.986	106.394	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0328	4.090	<0.001	0.017	Yes
TSB vs. Gentamicin	0.0124	1.540	0.129	0.025	No
TSB vs. Polymyxin B	0.00771	0.961	0.340	0.050	No

Clinical Isolate 34

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0566	0.0399	0.7802	0.0328	0.0656	0.1267	0.0384	0.0802	0.0798	0.0421	0.0546	0.0559
B	0.0580	0.0436	0.8024	0.0354	0.1551	0.0665	0.0345	0.0856	0.0777	0.0356	0.0578	0.0704
C	0.0524	0.0356	0.8248	0.0402	0.0739	0.0707	0.0336	0.0795	0.0767	0.0417	0.0660	0.0635
D	0.0600	0.0334	0.8348	0.0334	0.0687	0.0639	0.0344	0.1018	0.0764	0.0370	0.0625	0.0610
E	0.0580	0.0403	0.8378	0.0369	0.0770	0.0585	0.0364	0.0866	0.0841	0.0408	0.0705	0.0703
F	0.0959	0.0348	0.7985	0.0353	0.0833	0.0627	0.0339	0.1561	0.0848	0.0411	0.0713	0.0738
G	0.0693	0.0432	0.8160	0.0352	0.0971	0.0663	0.0332	0.1115	0.0999	0.0343	0.0856	0.0797
H	0.0707	0.0328	0.8007	0.0422	0.0822	0.0859	0.0333	0.1057	0.2714	0.0376	0.1055	0.0962
average	0.0651	0.0380	0.8119	0.0364	0.0879	0.0752	0.0347	0.1009	0.1064	0.0388	0.0717	0.0714
range	0.0435	0.0108	0.0576	0.0094	0.0895	0.0682	0.0052	0.0766	0.1950	0.0078	0.0509	0.0403

Descriptive Statistics: Friday, April 17, 2015, 12:05:13 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0651	0.0139	0.00492	0.0116
Untreated Bacteria	8	0	0.812	0.0199	0.00704	0.0167
Gentamicin	16	0	0.0815	0.0258	0.00645	0.0137
Rifampicin	16	0	0.104	0.0491	0.0123	0.0262
Polymyxin B	16	0	0.0715	0.0142	0.00356	0.00759

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0435	0.0959	0.0524	0.0590	0.0573	0.0700
Untreated Bacteria	0.0576	0.838	0.780	0.809	0.800	0.830
Gentamicin	0.0966	0.155	0.0585	0.0723	0.0660	0.0846
Rifampicin	0.195	0.271	0.0764	0.0852	0.0796	0.104
Polymyxin B	0.0509	0.106	0.0546	0.0703	0.0617	0.0767

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	1.826	3.635	0.268	0.094	0.796	0.026
Untreated Bacteria	-0.119	-0.942	0.183	0.525	0.948	0.690
Gentamicin	2.021	3.997	0.245	0.011	0.755	<0.001
Rifampicin	3.054	10.051	0.311	<0.001	0.571	<0.001
Polymyxin B	1.150	1.001	0.194	0.107	0.899	0.079

One Way Analysis of Variance Friday, April 17, 2015, 12:05:37 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0651	0.0139	0.00492
Untreated Bacteria	8	0	0.812	0.0199	0.00704
Gentamicin	16	0	0.0815	0.0258	0.00645
Rifampicin	16	0	0.104	0.0491	0.0123
Polymyxin B	16	0	0.0715	0.0142	0.00356

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	3.734	0.934	1032.671	<0.001
Residual	59	0.0533	0.000904		
Total	63	3.788			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

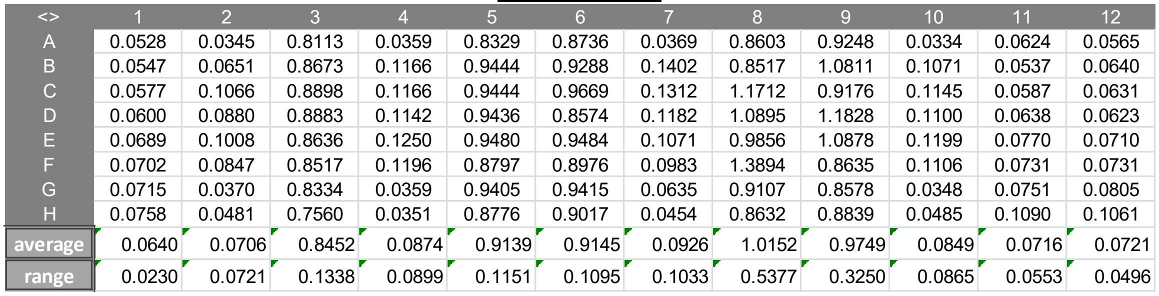
Comparisons for factor:

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
Untreated Ba vs. Polymyxin B	0.740	56.866	<0.001	0.013	Yes
Untreated Ba vs. Gentamicin	0.730	56.100	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.708	54.402	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.747	49.674	<0.001	0.050	Yes

Comparisons for factor:

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
TSB vs. Untreated Bacteria	0.747	49.674	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0385	2.957	0.004	0.017	Yes
TSB vs. Gentamicin	0.0164	1.259	0.213	0.025	No
TSB vs. Polymyxin B	0.00643	0.493	0.623	0.050	No

Clinical Isolate 35



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0528	0.0345	0.8113	0.0359	0.8329	0.8736	0.0369	0.8603	0.9248	0.0334	0.0624	0.0565
B	0.0547	0.0651	0.8673	0.1166	0.9444	0.9288	0.1402	0.8517	1.0811	0.1071	0.0537	0.0640
C	0.0577	0.1066	0.8898	0.1166	0.9444	0.9669	0.1312	1.1712	0.9176	0.1145	0.0587	0.0631
D	0.0600	0.0880	0.8883	0.1142	0.9436	0.8574	0.1182	1.0895	1.1828	0.1100	0.0638	0.0623
E	0.0689	0.1008	0.8636	0.1250	0.9480	0.9484	0.1071	0.9856	1.0878	0.1199	0.0770	0.0710
F	0.0702	0.0847	0.8517	0.1196	0.8797	0.8976	0.0983	1.3894	0.8635	0.1106	0.0731	0.0731
G	0.0715	0.0370	0.8334	0.0359	0.9405	0.9415	0.0635	0.9107	0.8578	0.0348	0.0751	0.0805
H	0.0758	0.0481	0.7560	0.0351	0.8776	0.9017	0.0454	0.8632	0.8839	0.0485	0.1090	0.1061
average	0.0640	0.0706	0.8452	0.0874	0.9139	0.9145	0.0926	1.0152	0.9749	0.0849	0.0716	0.0721
range	0.0230	0.0721	0.1338	0.0899	0.1151	0.1095	0.1033	0.5377	0.3250	0.0865	0.0553	0.0496

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0640	0.00866	0.00306	0.00724
Untreated Bacteria	8	0	0.845	0.0447	0.0158	0.0373
Gentamicin	16	0	0.914	0.0399	0.00997	0.0213
Rifampicin	16	0	0.995	0.157	0.0392	0.0836
Polymyxin B	16	0	0.0718	0.0159	0.00397	0.00847

Column	Range	Max	Min	Median	25%	75%
TSB	0.0230	0.0758	0.0528	0.0645	0.0562	0.0708
Untreated Bacteria	0.134	0.890	0.756	0.858	0.822	0.878
Gentamicin	0.134	0.967	0.833	0.935	0.879	0.944
Rifampicin	0.538	1.389	0.852	0.921	0.863	1.089
Polymyxin B	0.0553	0.109	0.0537	0.0675	0.0624	0.0761

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	-0.00691	-1.881	0.216	0.313	0.914	0.386
Untreated Bacteria	-1.204	1.336	0.183	0.526	0.897	0.273
Gentamicin	-0.643	-0.799	0.245	0.011	0.893	0.061
Rifampicin	1.190	0.983	0.235	0.018	0.843	0.011
Polymyxin B	1.463	1.776	0.189	0.129	0.832	0.008

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0640	0.00866	0.00306
Untreated Bacteria	8	0	0.845	0.0447	0.0158

Gentamicin	16	0	0.914	0.0399	0.00997
Rifampicin	16	0	0.995	0.157	0.0392
Polymyxin B	16	0	0.0718	0.0159	0.00397

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	11.314	2.829	405.465	<0.001
Residual	59	0.412	0.00698		
Total	63	11.726			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

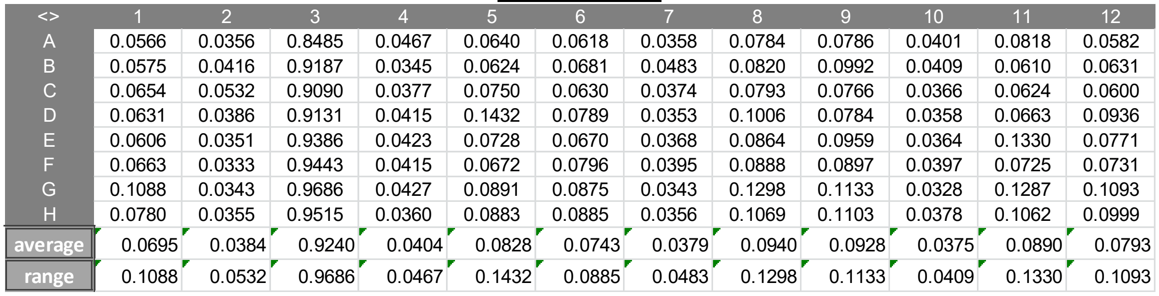
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Polymyxin B	0.773	21.383	<0.001	0.013	Yes
Untreated Bacteria vs. TSB	0.781	18.707	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.150	4.144	<0.001	0.025	Yes
Untreated Ba vs. Gentamicin	0.0690	1.908	0.061	0.050	No

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Rifampicin	0.931	25.745	<0.001	0.013	Yes
TSB vs. Gentamicin	0.850	23.509	<0.001	0.017	Yes
TSB vs. Untreated Bacteria	0.781	18.707	<0.001	0.025	Yes
TSB vs. Polymyxin B	0.00789	0.218	0.828	0.050	No

Clinical Isolate 37



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0566	0.0356	0.8485	0.0467	0.0640	0.0618	0.0358	0.0784	0.0786	0.0401	0.0818	0.0582
B	0.0575	0.0416	0.9187	0.0345	0.0624	0.0681	0.0483	0.0820	0.0992	0.0409	0.0610	0.0631
C	0.0654	0.0532	0.9090	0.0377	0.0750	0.0630	0.0374	0.0793	0.0766	0.0366	0.0624	0.0600
D	0.0631	0.0386	0.9131	0.0415	0.1432	0.0789	0.0353	0.1006	0.0784	0.0358	0.0663	0.0936
E	0.0606	0.0351	0.9386	0.0423	0.0728	0.0670	0.0368	0.0864	0.0959	0.0364	0.1330	0.0771
F	0.0663	0.0333	0.9443	0.0415	0.0672	0.0796	0.0395	0.0888	0.0897	0.0397	0.0725	0.0731
G	0.1088	0.0343	0.9686	0.0427	0.0891	0.0875	0.0343	0.1298	0.1133	0.0328	0.1287	0.1093
H	0.0780	0.0355	0.9515	0.0360	0.0883	0.0885	0.0356	0.1069	0.1103	0.0378	0.1062	0.0999
average	0.0695	0.0384	0.9240	0.0404	0.0828	0.0743	0.0379	0.0940	0.0928	0.0375	0.0890	0.0793
range	0.1088	0.0532	0.9686	0.0467	0.1432	0.0885	0.0483	0.1298	0.1133	0.0409	0.1330	0.1093

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0695	0.0172	0.00609	0.0144
Untreated Bacteria	8	0	0.924	0.0367	0.0130	0.0307
Gentamicin	16	0	0.0785	0.0200	0.00499	0.0106
Rifampicin	16	0	0.0934	0.0156	0.00390	0.00831
Polymyxin B	16	0	0.0841	0.0247	0.00618	0.0132

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0522	0.109	0.0566	0.0643	0.0591	0.0721
Untreated Bacteria	0.120	0.969	0.849	0.929	0.911	0.948
Gentamicin	0.0814	0.143	0.0618	0.0739	0.0655	0.0879
Rifampicin	0.0532	0.130	0.0766	0.0892	0.0789	0.104
Polymyxin B	0.0748	0.133	0.0582	0.0751	0.0628	0.103

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	2.096	4.623	0.325	0.013	0.741	0.006
Untreated Bacteria	-1.212	2.137	0.216	0.313	0.910	0.354
Gentamicin	2.435	7.475	0.236	0.018	0.728	<0.001
Rifampicin	0.897	0.210	0.156	0.354	0.901	0.083

Polymyxin B	0.828	-0.512	0.175	0.210	0.880	0.038

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0695	0.0172	0.00609
Untreated Bacteria	8	0	0.924	0.0367	0.0130
Gentamicin	16	0	0.0785	0.0200	0.00499
Rifampicin	16	0	0.0934	0.0156	0.00390
Polymyxin B	16	0	0.0841	0.0247	0.00618

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	4.954	1.238	2410.940	<0.001
Residual	59	0.0303	0.000514		
Total	63	4.984			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**
Untreated Ba vs. Gentamicin	0.846	86.153	<0.001	0.013
Untreated Ba vs. Polymyxin B	0.840	85.581	<0.001	0.017
Untreated Ba vs. Rifampicin	0.831	84.639	<0.001	0.025
Untreated Bacteria vs. TSB	0.855	75.404	<0.001	0.050

Comparison	**Significant?**
Untreated Ba vs. Gentamicin	Yes
Untreated Ba vs. Polymyxin B	Yes
Untreated Ba vs. Rifampicin	Yes
Untreated Bacteria vs. TSB	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**
TSB vs. Untreated Bacteria	0.855	75.404	<0.001	0.013
TSB vs. Rifampicin	0.0238	2.430	0.018	0.017
TSB vs. Polymyxin B	0.0146	1.488	0.142	0.025
TSB vs. Gentamicin	0.00899	0.916	0.364	0.050

Comparison	**Significant?**
TSB vs. Untreated Bacteria	Yes
TSB vs. Rifampicin	No
TSB vs. Polymyxin B	No
TSB vs. Gentamicin	No

Clinical Isolate 38

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0764	0.0345	0.9470	0.0337	0.0601	0.0973	0.0351	0.0836	0.0785	0.0357	0.0624	0.0593
B	0.0756	0.0419	0.9697	0.0465	0.0736	0.0672	0.0454	0.1027	0.0787	0.0329	0.0597	0.0572
C	0.0586	0.0355	0.9625	0.0448	0.0622	0.0676	0.0407	0.0948	0.0824	0.0323	0.0602	0.0619
D	0.0605	0.0335	0.9817	0.0340	0.0715	0.0574	0.0405	0.0865	0.0793	0.0343	0.0709	0.0789
E	0.0982	0.0377	0.9925	0.0370	0.0636	0.0654	0.0373	0.0920	0.0975	0.0362	0.0678	0.0638
F	0.0696	0.0328	0.9973	0.0375	0.0672	0.0664	0.0340	0.0819	0.0814	0.0338	0.0718	0.0922
G	0.0907	0.0343	0.9975	0.0366	0.1192	0.0855	0.0437	0.1040	0.1113	0.0350	0.0915	0.0870
H	0.0984	0.0456	1.0141	0.0366	0.1067	0.1041	0.0362	0.1037	0.1187	0.0352	0.1053	0.1128
average	0.0785	0.0370	0.9828	0.0383	0.0780	0.0764	0.0391	0.0937	0.0910	0.0344	0.0737	0.0766
range	0.0398	0.0128	0.0671	0.0128	0.0591	0.0467	0.0114	0.0221	0.0402	0.0039	0.0456	0.0556

Descriptive Statistics: Friday, April 17, 2015, 1:11:19 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0785	0.0158	0.00558	0.0132
Untreated Bacteria	8	0	0.983	0.0219	0.00775	0.0183
Gentamicin	16	0	0.0772	0.0192	0.00480	0.0102
Rifampicin	16	0	0.0923	0.0128	0.00319	0.00680
Polymyxin B	16	0	0.0752	0.0176	0.00439	0.00936

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0398	0.0984	0.0586	0.0760	0.0650	0.0945
Untreated Bacteria	0.0671	1.014	0.947	0.987	0.966	0.997
Gentamicin	0.0618	0.119	0.0574	0.0674	0.0645	0.0914
Rifampicin	0.0402	0.119	0.0785	0.0892	0.0817	0.103
Polymyxin B	0.0556	0.113	0.0572	0.0693	0.0610	0.0892

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.140	-1.602	0.178	0.560	0.905	0.322
Untreated Bacteria	-0.335	-0.601	0.171	0.604	0.969	0.889
Gentamicin	1.117	-0.0634	0.262	0.005	0.827	0.006
Rifampicin	0.657	-0.692	0.190	0.124	0.900	0.080
Polymyxin B	0.962	-0.190	0.201	0.083	0.867	0.025

One Way Analysis of Variance Friday, April 17, 2015, 1:13:02 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0785	0.0158	0.00558
Untreated Bacteria	8	0	0.983	0.0219	0.00775
Gentamicin	16	0	0.0772	0.0192	0.00480
Rifampicin	16	0	0.0923	0.0128	0.00319
Polymyxin B	16	0	0.0752	0.0176	0.00439

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	5.694	1.423	4744.843	<0.001
Residual	59	0.0177	0.000300		
Total	63	5.712			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

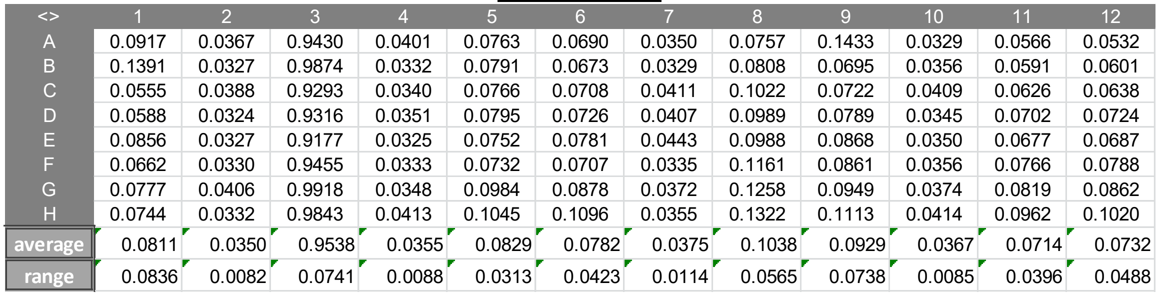
Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**
Untreated Ba vs. Polymyxin B	0.908	121.015	<0.001	0.013
Untreated Ba vs. Gentamicin	0.906	120.746	<0.001	0.017
Untreated Ba vs. Rifampicin	0.890	118.729	<0.001	0.025
Untreated Bacteria vs. TSB	0.904	104.417	<0.001	0.050

Comparison	**Significant?**
Untreated Ba vs. Polymyxin B	Yes
Untreated Ba vs. Gentamicin	Yes
Untreated Ba vs. Rifampicin	Yes
Untreated Bacteria vs. TSB	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.904	104.417	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0138	1.842	0.071	0.017	No
TSB vs. Polymyxin B	0.00333	0.444	0.659	0.025	No
TSB vs. Gentamicin	0.00131	0.175	0.862	0.050	No

Clinical Isolate 39



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0917	0.0367	0.9430	0.0401	0.0763	0.0690	0.0350	0.0757	0.1433	0.0329	0.0566	0.0532
B	0.1391	0.0327	0.9874	0.0332	0.0791	0.0673	0.0329	0.0808	0.0695	0.0356	0.0591	0.0601
C	0.0555	0.0388	0.9293	0.0340	0.0766	0.0708	0.0411	0.1022	0.0722	0.0409	0.0626	0.0638
D	0.0588	0.0324	0.9316	0.0351	0.0795	0.0726	0.0407	0.0989	0.0789	0.0345	0.0702	0.0724
E	0.0856	0.0327	0.9177	0.0325	0.0752	0.0781	0.0443	0.0988	0.0868	0.0350	0.0677	0.0687
F	0.0662	0.0330	0.9455	0.0333	0.0732	0.0707	0.0335	0.1161	0.0861	0.0356	0.0766	0.0788
G	0.0777	0.0406	0.9918	0.0348	0.0984	0.0878	0.0372	0.1258	0.0949	0.0374	0.0819	0.0862
H	0.0744	0.0332	0.9843	0.0413	0.1045	0.1096	0.0355	0.1322	0.1113	0.0414	0.0962	0.1020
average	0.0811	0.0350	0.9538	0.0355	0.0829	0.0782	0.0375	0.1038	0.0929	0.0367	0.0714	0.0732
range	0.0836	0.0082	0.0741	0.0088	0.0313	0.0423	0.0114	0.0565	0.0738	0.0085	0.0396	0.0488

Descriptive Statistics:

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0811	0.0265	0.00938	0.0222
Untreated Bacteria	8	0	0.954	0.0295	0.0104	0.0246
Gentamicin	16	0	0.0805	0.0129	0.00321	0.00685
Rifampicin	16	0	0.0983	0.0223	0.00556	0.0119
Polymyxin B	16	0	0.0723	0.0140	0.00350	0.00746

Column	Range	Max	Min	Median	25%	75%
TSB	0.0836	0.139	0.0555	0.0761	0.0625	0.0887
Untreated Bacteria	0.0741	0.992	0.918	0.944	0.930	0.986
Gentamicin	0.0423	0.110	0.0673	0.0765	0.0717	0.0837
Rifampicin	0.0738	0.143	0.0695	0.0968	0.0799	0.114
Polymyxin B	0.0488	0.102	0.0532	0.0694	0.0614	0.0804

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.678	3.431	0.220	0.290	0.846	0.087
Untreated Bacteria	0.343	-1.933	0.236	0.207	0.866	0.137
Gentamicin	1.342	0.750	0.282	0.001	0.821	0.005
Rifampicin	0.612	-0.542	0.136	0.546	0.944	0.395
Polymyxin B	0.765	-0.0273	0.121	0.681	0.945	0.418

One Way Analysis of Variance

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0811	0.0265	0.00938
Untreated Bacteria	8	0	0.954	0.0295	0.0104
Gentamicin	16	0	0.0805	0.0129	0.00321
Rifampicin	16	0	0.0983	0.0223	0.00556
Polymyxin B	16	0	0.0723	0.0140	0.00350

Source of Variation	DF	SS	MS	F	P
Between Groups	4	5.310	1.327	3282.706	<0.001
Residual	59	0.0239	0.000404		
Total	63	5.334			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	Unadjusted P	Critical Level
Untreated Ba vs. Polymyxin B	0.882	101.242	<0.001	0.013
Untreated Ba vs. Gentamicin	0.873	100.290	<0.001	0.017
Untreated Ba vs. Rifampicin	0.855	98.246	<0.001	0.025

Untreated Bacteria vs. TSB	0.873	86.796	<0.001	0.050

Comparison	Significant?
Untreated Ba vs. Polymyxin B	Yes
Untreated Ba vs. Gentamicin	Yes
Untreated Ba vs. Rifampicin	Yes
Untreated Bacteria vs. TSB	Yes

Comparisons for factor:

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
TSB vs. Untreated Bacteria	0.873	86.796	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0172	1.977	0.053	0.017	No
TSB vs. Polymyxin B	0.00887	1.019	0.313	0.025	No
TSB vs. Gentamicin	0.000581	0.0668	0.947	0.050	No

Clinical Isolate 40

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0532	0.0337	0.8712	0.0454	0.0635	0.0690	0.0393	0.0855	0.0757	0.0516	0.0508	0.0694
B	0.0529	0.0457	0.8945	0.1350	0.0627	0.0601	0.1245	0.0726	0.0701	0.1269	0.0528	0.0658
C	0.0823	0.0957	0.9126	0.1432	0.0668	0.0600	0.1415	0.0771	0.0787	0.1407	0.0581	0.0577
D	0.0609	0.1259	0.9098	0.1486	0.0617	0.0702	0.1584	0.0818	0.0723	0.1426	0.0641	0.0589
E	0.0625	0.0881	0.9132	0.1577	0.0862	0.0647	0.1568	0.0960	0.0840	0.1498	0.0675	0.0660
F	0.1217	0.0909	0.9018	0.1794	0.0764	0.0686	0.1460	0.0849	0.0874	0.1467	0.0683	0.0779
G	0.0713	0.0342	0.9138	0.1514	0.1066	0.0855	0.1516	0.1130	0.1069	0.1233	0.0723	0.0839
H	0.0749	0.0329	0.8038	0.0356	0.0928	0.0983	0.0391	0.1146	0.0989	0.0352	0.0891	0.1033
average	0.0725	0.0684	0.8901	0.1245	0.0771	0.0721	0.1197	0.0907	0.0843	0.1146	0.0654	0.0729
range	0.0688	0.0930	0.1100	0.1438	0.0449	0.0383	0.1193	0.0420	0.0368	0.1146	0.0383	0.0456

Descriptive Statistics: Saturday, April 18, 2015, 9:23:48 AM

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0725	0.0224	0.00792	0.0187
Untreated Bacteria	8	0	0.890	0.0377	0.0133	0.0315
Gentamicin	16	0	0.0746	0.0148	0.00369	0.00787
Rifampicin	16	0	0.0875	0.0144	0.00359	0.00766
Polymyxin B	16	0	0.0691	0.0139	0.00346	0.00738

Column	Range	Max	Min	Median	25%	75%
TSB	0.0688	0.122	0.0529	0.0669	0.0571	0.0786
Untreated Bacteria	0.110	0.914	0.804	0.906	0.883	0.913
Gentamicin	0.0466	0.107	0.0600	0.0688	0.0631	0.0859
Rifampicin	0.0445	0.115	0.0701	0.0844	0.0764	0.0975
Polymyxin B	0.0525	0.103	0.0508	0.0668	0.0585	0.0751

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.746	3.528	0.207	0.371	0.823	0.050
Untreated Bacteria	-2.142	4.702	0.297	0.037	0.700	0.002
Gentamicin	0.992	-0.195	0.241	0.013	0.861	0.020
Rifampicin	0.779	-0.529	0.189	0.127	0.902	0.087
Polymyxin B	1.067	1.168	0.179	0.180	0.924	0.193

One Way Analysis of Variance Saturday, April 18, 2015, 9:24:09 AM

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0725	0.0224	0.00792
Untreated Bacteria	8	0	0.890	0.0377	0.0133
Gentamicin	16	0	0.0746	0.0148	0.00369
Rifampicin	16	0	0.0875	0.0144	0.00359
Polymyxin B	16	0	0.0691	0.0139	0.00346

Source of Variation	DF	SS	MS	F	P
Between Groups	4	4.638	1.159	3010.830	<0.001
Residual	59	0.0227	0.000385		
Total	63	4.660			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

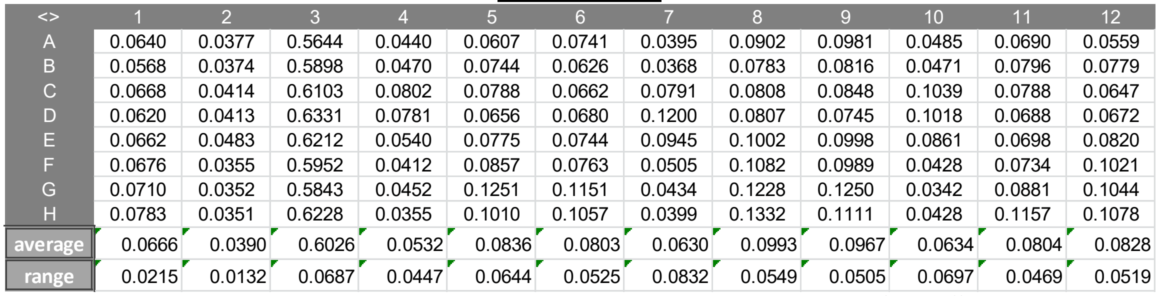
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Polymyxin B	0.821	96.616	<0.001	0.013	Yes
Untreated Ba vs. Gentamicin	0.816	95.975	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.803	94.457	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.818	83.331	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.818	83.331	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0150	1.766	0.083	0.017	No
TSB vs. Polymyxin B	0.00334	0.394	0.695	0.025	No
TSB vs. Gentamicin	0.00211	0.248	0.805	0.050	No

Clinical Isolate 42



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0640	0.0377	0.5644	0.0440	0.0607	0.0741	0.0395	0.0902	0.0981	0.0485	0.0690	0.0559
B	0.0568	0.0374	0.5898	0.0470	0.0744	0.0626	0.0368	0.0783	0.0816	0.0471	0.0796	0.0779
C	0.0668	0.0414	0.6103	0.0802	0.0788	0.0662	0.0791	0.0808	0.0848	0.1039	0.0788	0.0647
D	0.0620	0.0413	0.6331	0.0781	0.0656	0.0680	0.1200	0.0807	0.0745	0.1018	0.0688	0.0672
E	0.0662	0.0483	0.6212	0.0540	0.0775	0.0744	0.0945	0.1002	0.0998	0.0861	0.0698	0.0820
F	0.0676	0.0355	0.5952	0.0412	0.0857	0.0763	0.0505	0.1082	0.0989	0.0428	0.0734	0.1021
G	0.0710	0.0352	0.5843	0.0452	0.1251	0.1151	0.0434	0.1228	0.1250	0.0342	0.0881	0.1044
H	0.0783	0.0351	0.6228	0.0355	0.1010	0.1057	0.0399	0.1332	0.1111	0.0428	0.1157	0.1078
average	0.0666	0.0390	0.6026	0.0532	0.0836	0.0803	0.0630	0.0993	0.0967	0.0634	0.0804	0.0828
range	0.0215	0.0132	0.0687	0.0447	0.0644	0.0525	0.0832	0.0549	0.0505	0.0697	0.0469	0.0519

Descriptive Statistics: Saturday, April 18, 2015, 1:48:43 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0666	0.00634	0.00224	0.00530
Untreated Bacteria	8	0	0.603	0.0232	0.00819	0.0194
Gentamicin	16	0	0.0819	0.0195	0.00486	0.0104
Rifampicin	16	0	0.0980	0.0181	0.00452	0.00964
Polymyxin B	16	0	0.0816	0.0174	0.00435	0.00927

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0215	0.0783	0.0568	0.0665	0.0630	0.0693
Untreated Bacteria	0.0687	0.633	0.564	0.603	0.587	0.622
Gentamicin	0.0644	0.125	0.0607	0.0754	0.0671	0.0934
Rifampicin	0.0587	0.133	0.0745	0.0985	0.0812	0.110
Polymyxin B	0.0598	0.116	0.0559	0.0784	0.0689	0.0951

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.480	1.223	0.187	0.503	0.970	0.896
Untreated Bacteria	-0.326	-0.816	0.164	0.649	0.961	0.824
Gentamicin	1.115	0.225	0.252	0.008	0.862	0.021
Rifampicin	0.562	-0.709	0.142	0.479	0.929	0.234
Polymyxin B	0.688	-0.539	0.178	0.190	0.920	0.168

One Way Analysis of Variance Saturday, April 18, 2015, 1:49:50 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0666	0.00634	0.00224
Untreated Bacteria	8	0	0.603	0.0232	0.00819

Gentamicin	16	0	0.0819	0.0195	0.00486
Rifampicin	16	0	0.0980	0.0181	0.00452
Polymyxin B	16	0	0.0816	0.0174	0.00435

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	1.887	0.472	1452.614	<0.001
Residual	59	0.0192	0.000325		
Total	63	1.906			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

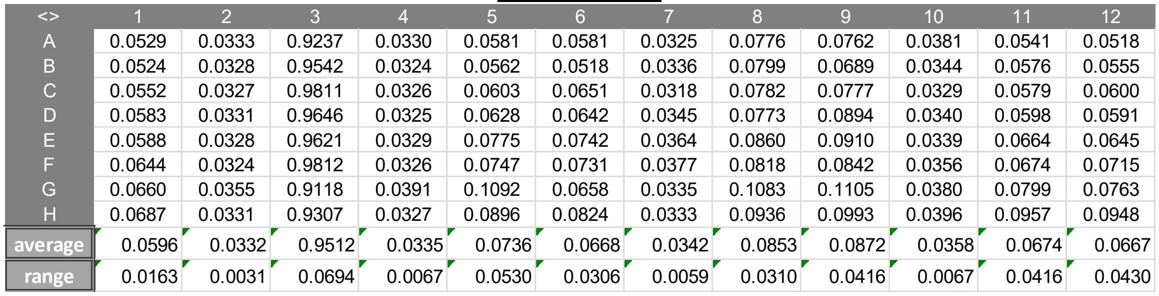
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Polymyxin B	0.521	66.776	<0.001	0.013	Yes
Untreated Ba vs. Gentamicin	0.521	66.728	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.505	64.669	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.536	59.493	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.536	59.493	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0314	4.027	<0.001	0.017	Yes
TSB vs. Gentamicin	0.0154	1.969	0.054	0.025	No
TSB vs. Polymyxin B	0.0150	1.921	0.060	0.050	No

Clinical Isolate 44



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0529	0.0333	0.9237	0.0330	0.0581	0.0581	0.0325	0.0776	0.0762	0.0381	0.0541	0.0518
B	0.0524	0.0328	0.9542	0.0324	0.0562	0.0518	0.0336	0.0799	0.0689	0.0344	0.0576	0.0555
C	0.0552	0.0327	0.9811	0.0326	0.0603	0.0651	0.0318	0.0782	0.0777	0.0329	0.0579	0.0600
D	0.0583	0.0331	0.9646	0.0325	0.0628	0.0642	0.0345	0.0773	0.0894	0.0340	0.0598	0.0591
E	0.0588	0.0328	0.9621	0.0329	0.0775	0.0742	0.0364	0.0860	0.0910	0.0339	0.0664	0.0645
F	0.0644	0.0324	0.9812	0.0326	0.0747	0.0731	0.0377	0.0818	0.0842	0.0356	0.0674	0.0715
G	0.0660	0.0355	0.9118	0.0391	0.1092	0.0658	0.0335	0.1083	0.1105	0.0380	0.0799	0.0763
H	0.0687	0.0331	0.9307	0.0327	0.0896	0.0824	0.0333	0.0936	0.0993	0.0396	0.0957	0.0948
average	0.0596	0.0332	0.9512	0.0335	0.0736	0.0668	0.0342	0.0853	0.0872	0.0358	0.0674	0.0667
range	0.0163	0.0031	0.0694	0.0067	0.0530	0.0306	0.0059	0.0310	0.0416	0.0067	0.0416	0.0430

Descriptive Statistics: Saturday, April 18, 2015, 2:10:28 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0596	0.00616	0.00218	0.00515
Untreated Bacteria	8	0	0.951	0.0263	0.00929	0.0220
Gentamicin	16	0	0.0702	0.0146	0.00365	0.00779
Rifampicin	16	0	0.0862	0.0118	0.00295	0.00629
Polymyxin B	16	0	0.0670	0.0135	0.00338	0.00720

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0163	0.0687	0.0524	0.0585	0.0541	0.0652
Untreated Bacteria	0.0694	0.981	0.912	0.958	0.927	0.973
Gentamicin	0.0574	0.109	0.0518	0.0655	0.0592	0.0761
Rifampicin	0.0416	0.111	0.0689	0.0830	0.0776	0.0923
Polymyxin B	0.0439	0.0957	0.0518	0.0623	0.0577	0.0739

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.306	-1.517	0.176	0.573	0.923	0.454
Untreated Bacteria	-0.344	-1.436	0.171	0.605	0.916	0.401
Gentamicin	1.335	2.166	0.181	0.173	0.899	0.076
Rifampicin	0.865	0.0858	0.147	0.439	0.914	0.134
Polymyxin B	1.173	0.562	0.198	0.093	0.864	0.022

One Way Analysis of Variance Saturday, April 18, 2015, 2:11:17 PM

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0596	0.00616	0.00218
Untreated Bacteria	8	0	0.951	0.0263	0.00929
Gentamicin	16	0	0.0702	0.0146	0.00365
Rifampicin	16	0	0.0862	0.0118	0.00295
Polymyxin B	16	0	0.0670	0.0135	0.00338

Source of Variation	DF	SS	MS	F	P
Between Groups	4	5.411	1.353	6077.871	<0.001
Residual	59	0.0131	0.000223		
Total	63	5.424			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	Unadjusted P	Critical Level
Untreated Ba vs. Polymyxin B	0.884	136.864	<0.001	0.013
Untreated Ba vs. Gentamicin	0.881	136.372	<0.001	0.017
Untreated Ba vs. Rifampicin	0.865	133.888	<0.001	0.025
Untreated Bacteria vs. TSB	0.892	119.524	<0.001	0.050

Comparison	Significant?
Untreated Ba vs. Polymyxin B	Yes
Untreated Ba vs. Gentamicin	Yes
Untreated Ba vs. Rifampicin	Yes
Untreated Bacteria vs. TSB	Yes

Comparisons for factor:

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
TSB vs. Untreated Bacteria	0.892	119.524	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0267	4.126	<0.001	0.017	Yes
TSB vs. Gentamicin	0.0106	1.642	0.106	0.025	No
TSB vs. Polymyxin B	0.00743	1.150	0.255	0.050	No

Clinical Isolate 45

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0578	0.0401	0.7786	0.0339	0.0587	0.0652	0.0349	0.1170	0.1515	0.0356	0.0545	0.0559
B	0.0540	0.0321	0.8753	0.0425	0.0582	0.0620	0.0341	0.1004	0.1317	0.0351	0.0576	0.0584
C	0.0574	0.0322	0.8948	0.0334	0.0609	0.0573	0.0332	0.1929	0.1558	0.0328	0.0601	0.0722
D	0.0756	0.0338	0.9060	0.0380	0.0631	0.0565	0.0410	0.0794	0.1686	0.0334	0.0701	0.0653
E	0.0620	0.0325	0.8931	0.0343	0.0733	0.0577	0.0361	0.1716	0.1010	0.0332	0.0656	0.0751
F	0.0649	0.0345	0.8857	0.0326	0.0805	0.0647	0.0337	0.0939	0.1592	0.0330	0.0800	0.1155
G	0.0715	0.0353	0.8956	0.0330	0.0975	0.0964	0.0413	0.1619	0.2587	0.0362	0.0904	0.1056
H	0.0765	0.0324	0.8576	0.0327	0.0952	0.1292	0.0355	0.1225	0.2206	0.0329	0.1017	0.1173
average	0.0650	0.0341	0.8733	0.0351	0.0734	0.0736	0.0362	0.1300	0.1684	0.0340	0.0725	0.0832
range	0.0225	0.0080	0.1274	0.0099	0.0393	0.0727	0.0081	0.1135	0.1577	0.0034	0.0472	0.0614

Descriptive Statistics: Saturday, April 18, 2015, 2:24:48 PM

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0650	0.00867	0.00307	0.00725
Untreated Bacteria	8	0	0.873	0.0410	0.0145	0.0343
Gentamicin	16	0	0.0735	0.0209	0.00521	0.0111
Rifampicin	16	0	0.149	0.0482	0.0121	0.0257
Polymyxin B	16	0	0.0778	0.0216	0.00541	0.0115

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0225	0.0765	0.0540	0.0635	0.0576	0.0736
Untreated Bacteria	0.127	0.906	0.779	0.889	0.866	0.895
Gentamicin	0.0727	0.129	0.0565	0.0639	0.0585	0.0879
Rifampicin	0.179	0.259	0.0794	0.154	0.109	0.170
Polymyxin B	0.0628	0.117	0.0545	0.0711	0.0592	0.0960

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.256	-1.701	0.171	0.607	0.914	0.382
Untreated Bacteria	-2.173	5.052	0.269	0.091	0.732	0.005
Gentamicin	1.537	1.993	0.280	0.002	0.784	0.002
Rifampicin	0.673	0.342	0.133	0.567	0.955	0.572
Polymyxin B	0.777	-0.804	0.175	0.206	0.875	0.032

One Way Analysis of Variance Saturday, April 18, 2015, 2:25:16 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0650	0.00867	0.00307
Untreated Bacteria	8	0	0.873	0.0410	0.0145
Gentamicin	16	0	0.0735	0.0209	0.00521
Rifampicin	16	0	0.149	0.0482	0.0121
Polymyxin B	16	0	0.0778	0.0216	0.00541

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	4.305	1.076	1045.650	<0.001
Residual	59	0.0607	0.00103		
Total	63	4.366			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

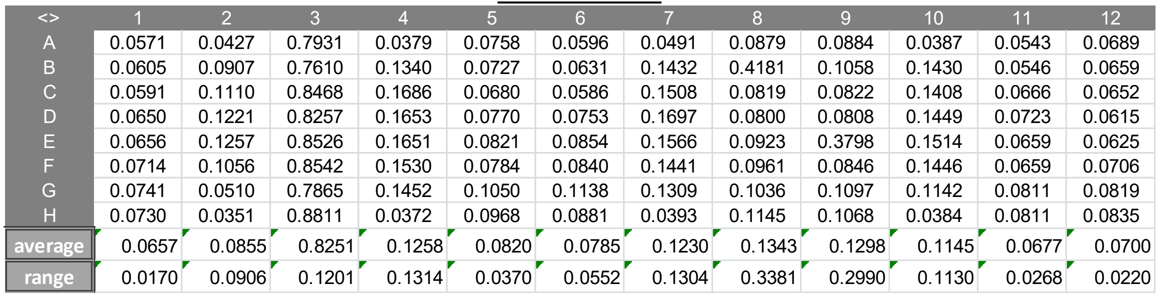
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Gentamicin	0.800	57.571	<0.001	0.013	Yes
Untreated Ba vs. Polymyxin B	0.796	57.261	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.724	52.126	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.808	50.392	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.808	50.392	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0842	6.061	<0.001	0.017	Yes
TSB vs. Polymyxin B	0.0129	0.926	0.358	0.025	No
TSB vs. Gentamicin	0.00856	0.616	0.540	0.050	No

Clinical Isolate 47



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0571	0.0427	0.7931	0.0379	0.0758	0.0596	0.0491	0.0879	0.0884	0.0387	0.0543	0.0689
B	0.0605	0.0907	0.7610	0.1340	0.0727	0.0631	0.1432	0.4181	0.1058	0.1430	0.0546	0.0659
C	0.0591	0.1110	0.8468	0.1686	0.0680	0.0586	0.1508	0.0819	0.0822	0.1408	0.0666	0.0652
D	0.0650	0.1221	0.8257	0.1653	0.0770	0.0753	0.1697	0.0800	0.0808	0.1449	0.0723	0.0615
E	0.0656	0.1257	0.8526	0.1651	0.0821	0.0854	0.1566	0.0923	0.3798	0.1514	0.0659	0.0625
F	0.0714	0.1056	0.8542	0.1530	0.0784	0.0840	0.1441	0.0961	0.0846	0.1446	0.0659	0.0706
G	0.0741	0.0510	0.7865	0.1452	0.1050	0.1138	0.1309	0.1036	0.1097	0.1142	0.0811	0.0819
H	0.0730	0.0351	0.8811	0.0372	0.0968	0.0881	0.0393	0.1145	0.1068	0.0384	0.0811	0.0835
average	0.0657	0.0855	0.8251	0.1258	0.0820	0.0785	0.1230	0.1343	0.1298	0.1145	0.0677	0.0700
range	0.0170	0.0906	0.1201	0.1314	0.0370	0.0552	0.1304	0.3381	0.2990	0.1130	0.0268	0.0220

Descriptive Statistics: Saturday, April 18, 2015, 2:37:57 PM

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0657	0.00656	0.00232	0.00549
Untreated Bacteria	8	0	0.825	0.0411	0.0145	0.0344
Gentamicin	16	0	0.0802	0.0154	0.00386	0.00822
Rifampicin	16	0	0.132	0.105	0.0263	0.0560
Polymyxin B	16	0	0.0689	0.00914	0.00229	0.00487

Column	Range	Max	Min	Median	25%	75%
TSB	0.0170	0.0741	0.0571	0.0653	0.0598	0.0722
Untreated Bacteria	0.120	0.881	0.761	0.836	0.790	0.853
Gentamicin	0.0552	0.114	0.0586	0.0777	0.0703	0.0867
Rifampicin	0.338	0.418	0.0800	0.0942	0.0834	0.108
Polymyxin B	0.0292	0.0835	0.0543	0.0663	0.0638	0.0767

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	0.0538	-1.763	0.181	0.537	0.917	0.406
Untreated Bacteria	-0.338	-1.120	0.201	0.407	0.944	0.651
Gentamicin	0.660	0.225	0.119	0.699	0.953	0.542
Rifampicin	2.475	4.898	0.441	<0.001	0.505	<0.001
Polymyxin B	0.227	-0.697	0.160	0.317	0.921	0.177

One Way Analysis of Variance Saturday, April 18, 2015, 2:38:22 PM

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0657	0.00656	0.00232
Untreated Bacteria	8	0	0.825	0.0411	0.0145
Gentamicin	16	0	0.0802	0.0154	0.00386
Rifampicin	16	0	0.132	0.105	0.0263
Polymyxin B	16	0	0.0689	0.00914	0.00229

Source of Variation	DF	SS	MS	F	P
Between Groups	4	3.827	0.957	309.476	<0.001
Residual	59	0.182	0.00309		
Total	63	4.010			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.0
Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05
Comparisons for factor:

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
Untreated Ba vs. Polymyxin B	0.756	31.409	<0.001	0.013	Yes
Untreated Ba vs. Gentamicin	0.745	30.937	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.693	28.786	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.759	27.314	<0.001	0.050	Yes

Comparisons for factor:

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
TSB vs. Untreated Bacteria	0.759	27.314	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0663	2.754	0.008	0.017	Yes
TSB vs. Gentamicin	0.0145	0.602	0.549	0.025	No
TSB vs. Polymyxin B	0.00314	0.130	0.897	0.050	No

Clinical Isolate 49

<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0585	0.0725	0.5874	0.1178	0.0637	0.0591	0.1230	0.0803	0.0938	0.1128	0.0564	0.0575
B	0.0565	0.1720	0.5275	0.1699	0.0614	0.0525	0.1894	0.0659	0.0715	0.1660	0.0634	0.0531
C	0.0590	0.1764	0.5869	0.1949	0.0626	0.0542	0.1905	0.0689	0.0716	0.1712	0.0635	0.0574
D	0.0644	0.2056	0.5848	0.1982	0.0628	0.0534	0.1962	0.0700	0.0671	0.1758	0.0583	0.0728
E	0.0707	0.1598	0.5559	0.2050	0.0743	0.0578	0.1971	0.0689	0.0756	0.1544	0.0640	0.0721
F	0.0657	0.1705	0.6266	0.1946	0.0775	0.0712	0.1779	0.0718	0.0848	0.1727	0.0708	0.0827
G	0.0704	0.1333	0.6040	0.1537	0.0993	0.0917	0.1625	0.0989	0.1040	0.1440	0.0664	0.0909
H	0.0906	0.0467	0.5553	0.0341	0.0861	0.0824	0.0568	0.0987	0.0896	0.0406	0.0822	0.0954
average	0.0670	0.1421	0.5786	0.1585	0.0735	0.0653	0.1617	0.0779	0.0823	0.1422	0.0656	0.0727
range	0.0341	0.1589	0.0991	0.1709	0.0379	0.0392	0.1403	0.0330	0.0369	0.1352	0.0258	0.0423

Descriptive Statistics: Saturday, April 18, 2015, 2:53:08 PM

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	8	0	0.0670	0.0109	0.00387	0.00914
Untreated Bacteria	8	0	0.579	0.0312	0.0110	0.0261
Gentamicin	16	0	0.0694	0.0144	0.00361	0.00770
Rifampicin	16	0	0.0801	0.0130	0.00325	0.00692
Polymyxin B	16	0	0.0692	0.0128	0.00320	0.00681

Column	Range	Max	Min	Median	25%	75%
TSB	0.0341	0.0906	0.0565	0.0650	0.0587	0.0706
Untreated Bacteria	0.0991	0.627	0.527	0.586	0.556	0.596
Gentamicin	0.0468	0.0993	0.0525	0.0633	0.0585	0.0799
Rifampicin	0.0381	0.104	0.0659	0.0737	0.0695	0.0917
Polymyxin B	0.0423	0.0954	0.0531	0.0652	0.0579	0.0775

Column	Skewness	Kurtosis	K-S Dist.	K-S Prob.	SWilk W	SWilk Prob
TSB	1.601	3.086	0.242	0.182	0.843	0.080
Untreated Bacteria	-0.178	-0.142	0.204	0.385	0.964	0.851
Gentamicin	0.737	-0.509	0.215	0.046	0.916	0.146
Rifampicin	0.680	-1.107	0.238	0.016	0.867	0.024
Polymyxin B	0.792	-0.330	0.157	0.342	0.915	0.140

One Way Analysis of Variance Saturday, April 18, 2015, 2:53:36 PM

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0670	0.0109	0.00387
Untreated Bacteria	8	0	0.579	0.0312	0.0110
Gentamicin	16	0	0.0694	0.0144	0.00361
Rifampicin	16	0	0.0801	0.0130	0.00325
Polymyxin B	16	0	0.0692	0.0128	0.00320

Source of Variation	DF	SS	MS	F	P
Between Groups	4	1.797	0.449	1682.915	<0.001
Residual	59	0.0158	0.000267		
Total	63	1.813			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

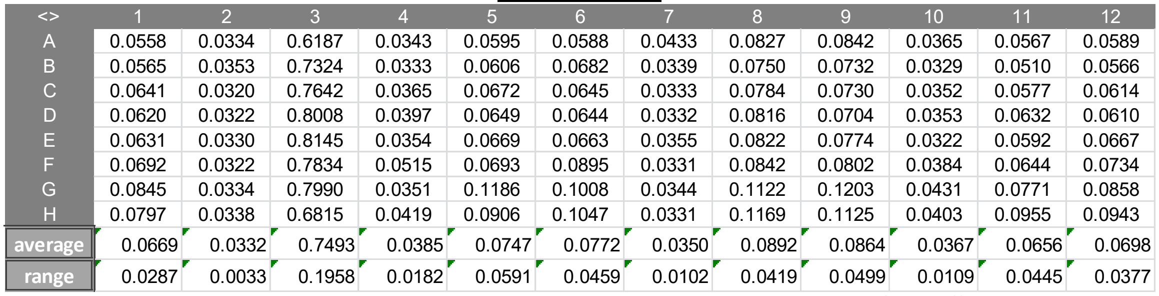
Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
Untreated Ba vs. Polymyxin B	0.509	71.990	<0.001	0.013	Yes
Untreated Ba vs. Gentamicin	0.509	71.963	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.498	70.449	<0.001	0.025	Yes

Untreated Bacteria vs. TSB	0.512	62.615	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.512	62.615	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0131	1.853	0.069	0.017	No
TSB vs. Gentamicin	0.00240	0.339	0.736	0.025	No
TSB vs. Polymyxin B	0.00221	0.312	0.756	0.050	No

Clinical Isolate 50



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0558	0.0334	0.6187	0.0343	0.0595	0.0588	0.0433	0.0827	0.0842	0.0365	0.0567	0.0589
B	0.0565	0.0353	0.7324	0.0333	0.0606	0.0682	0.0339	0.0750	0.0732	0.0329	0.0510	0.0566
C	0.0641	0.0320	0.7642	0.0365	0.0672	0.0645	0.0333	0.0784	0.0730	0.0352	0.0577	0.0614
D	0.0620	0.0322	0.8008	0.0397	0.0649	0.0644	0.0332	0.0816	0.0704	0.0353	0.0632	0.0610
E	0.0631	0.0330	0.8145	0.0354	0.0669	0.0663	0.0355	0.0822	0.0774	0.0322	0.0592	0.0667
F	0.0692	0.0322	0.7834	0.0515	0.0693	0.0895	0.0331	0.0842	0.0802	0.0384	0.0644	0.0734
G	0.0845	0.0334	0.7990	0.0351	0.1186	0.1008	0.0344	0.1122	0.1203	0.0431	0.0771	0.0858
H	0.0797	0.0338	0.6815	0.0419	0.0906	0.1047	0.0331	0.1169	0.1125	0.0403	0.0955	0.0943
average	0.0669	0.0332	0.7493	0.0385	0.0747	0.0772	0.0350	0.0892	0.0864	0.0367	0.0656	0.0698
range	0.0287	0.0033	0.1958	0.0182	0.0591	0.0459	0.0102	0.0419	0.0499	0.0109	0.0445	0.0377

Descriptive Statistics: Saturday, April 18, 2015, 3:04:58 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0669	0.0104	0.00368	0.00869
Untreated Bacteria	8	0	0.749	0.0683	0.0242	0.0571
Gentamicin	16	0	0.0759	0.0186	0.00466	0.00993
Rifampicin	16	0	0.0878	0.0171	0.00427	0.00911
Polymyxin B	16	0	0.0677	0.0137	0.00343	0.00730

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0287	0.0845	0.0558	0.0636	0.0592	0.0744
Untreated Bacteria	0.196	0.815	0.619	0.774	0.707	0.800
Gentamicin	0.0598	0.119	0.0588	0.0670	0.0645	0.0900
Rifampicin	0.0499	0.120	0.0704	0.0819	0.0762	0.0982
Polymyxin B	0.0445	0.0955	0.0510	0.0623	0.0583	0.0753

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.841	-0.459	0.230	0.238	0.895	0.260
Untreated Bacteria	-1.173	0.519	0.211	0.342	0.873	0.161
Gentamicin	1.204	0.227	0.326	<0.001	0.799	0.003
Rifampicin	1.100	-0.436	0.333	<0.001	0.781	0.002
Polymyxin B	1.097	0.101	0.220	0.038	0.855	0.016

One Way Analysis of Variance Saturday, April 18, 2015, 3:05:17 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0669	0.0104	0.00368
Untreated Bacteria	8	0	0.749	0.0683	0.0242
Gentamicin	16	0	0.0759	0.0186	0.00466
Rifampicin	16	0	0.0878	0.0171	0.00427
Polymyxin B	16	0	0.0677	0.0137	0.00343

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	3.181	0.795	1023.005	<0.001
Residual	59	0.0459	0.000777		
Total	63	3.226			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

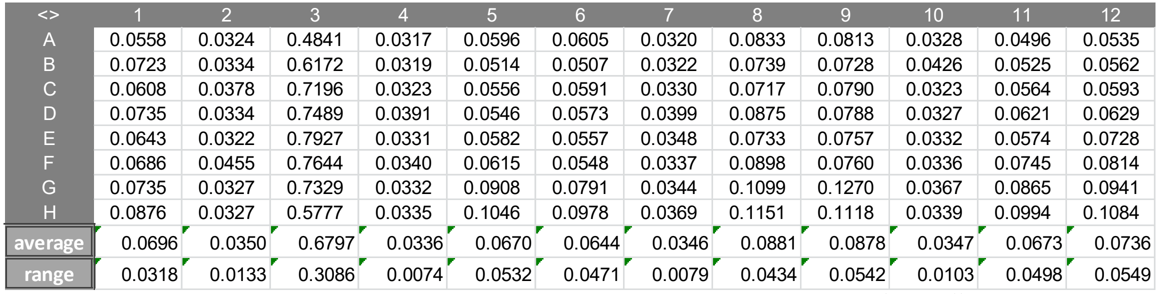
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Polymyxin B	0.682	56.463	<0.001	0.013	Yes
Untreated Ba vs. Gentamicin	0.673	55.780	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.662	54.798	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.682	48.957	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.682	48.957	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0209	1.732	0.088	0.017	No
TSB vs. Gentamicin	0.00906	0.751	0.456	0.025	No
TSB vs. Polymyxin B	0.000819	0.0678	0.946	0.050	No

Clinical Isolate 52



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0558	0.0324	0.4841	0.0317	0.0596	0.0605	0.0320	0.0833	0.0813	0.0328	0.0496	0.0535
B	0.0723	0.0334	0.6172	0.0319	0.0514	0.0507	0.0322	0.0739	0.0728	0.0426	0.0525	0.0562
C	0.0608	0.0378	0.7196	0.0323	0.0556	0.0591	0.0330	0.0717	0.0790	0.0323	0.0564	0.0593
D	0.0735	0.0334	0.7489	0.0391	0.0546	0.0573	0.0399	0.0875	0.0788	0.0327	0.0621	0.0629
E	0.0643	0.0322	0.7927	0.0331	0.0582	0.0557	0.0348	0.0733	0.0757	0.0332	0.0574	0.0728
F	0.0686	0.0455	0.7644	0.0340	0.0615	0.0548	0.0337	0.0898	0.0760	0.0336	0.0745	0.0814
G	0.0735	0.0327	0.7329	0.0332	0.0908	0.0791	0.0344	0.1099	0.1270	0.0367	0.0865	0.0941
H	0.0876	0.0327	0.5777	0.0335	0.1046	0.0978	0.0369	0.1151	0.1118	0.0339	0.0994	0.1084
average	0.0696	0.0350	0.6797	0.0336	0.0670	0.0644	0.0346	0.0881	0.0878	0.0347	0.0673	0.0736
range	0.0318	0.0133	0.3086	0.0074	0.0532	0.0471	0.0079	0.0434	0.0542	0.0103	0.0498	0.0549

Descriptive Statistics: Saturday, April 18, 2015, 3:16:15 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0696	0.00970	0.00343	0.00811
Untreated Bacteria	8	0	0.680	0.108	0.0382	0.0903
Gentamicin	16	0	0.0657	0.0173	0.00432	0.00921
Rifampicin	16	0	0.0879	0.0178	0.00445	0.00948
Polymyxin B	16	0	0.0704	0.0184	0.00461	0.00983

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0318	0.0876	0.0558	0.0704	0.0625	0.0735
Untreated Bacteria	0.309	0.793	0.484	0.726	0.597	0.757
Gentamicin	0.0539	0.105	0.0507	0.0587	0.0552	0.0703
Rifampicin	0.0553	0.127	0.0717	0.0801	0.0748	0.0998
Polymyxin B	0.0588	0.108	0.0496	0.0625	0.0563	0.0839

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.545	0.872	0.217	0.308	0.955	0.760
Untreated Bacteria	-0.935	-0.284	0.269	0.091	0.889	0.231
Gentamicin	1.437	0.686	0.346	<0.001	0.747	<0.001
Rifampicin	1.149	-0.0269	0.228	0.026	0.812	0.004
Polymyxin B	0.824	-0.539	0.221	0.035	0.891	0.057

One Way Analysis of Variance Saturday, April 18, 2015, 3:18:11 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0696	0.00970	0.00343
Untreated Bacteria	8	0	0.680	0.108	0.0382
Gentamicin	16	0	0.0657	0.0173	0.00432
Rifampicin	16	0	0.0879	0.0178	0.00445
Polymyxin B	16	0	0.0704	0.0184	0.00461

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	2.573	0.643	392.423	<0.001
Residual	59	0.0967	0.00164		

Total	63	2.670

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

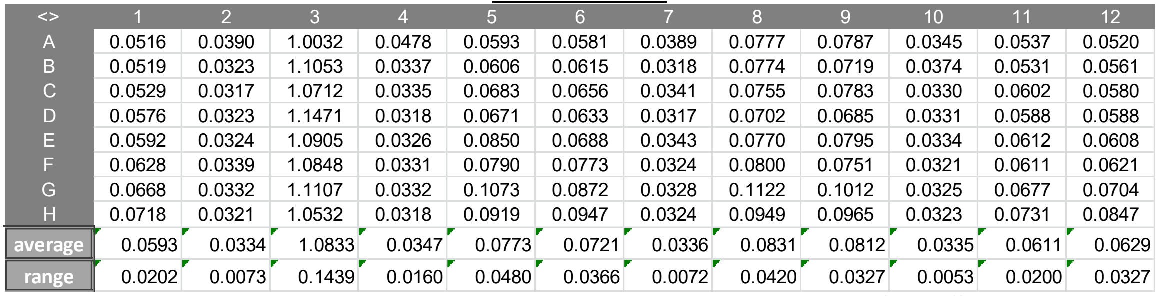
Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
Untreated Ba vs. Gentamicin	0.614	35.023	<0.001	0.013	Yes
Untreated Ba vs. Polymyxin B	0.609	34.753	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.592	33.755	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.610	30.141	<0.001	0.050	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.610	30.141	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0184	1.048	0.299	0.017	No
TSB vs. Gentamicin	0.00384	0.219	0.827	0.025	No
TSB vs. Polymyxin B	0.000887	0.0506	0.960	0.050	No

Clinical Isolate 53a



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0516	0.0390	1.0032	0.0478	0.0593	0.0581	0.0389	0.0777	0.0787	0.0345	0.0537	0.0520
B	0.0519	0.0323	1.1053	0.0337	0.0606	0.0615	0.0318	0.0774	0.0719	0.0374	0.0531	0.0561
C	0.0529	0.0317	1.0712	0.0335	0.0683	0.0656	0.0341	0.0755	0.0783	0.0330	0.0602	0.0580
D	0.0576	0.0323	1.1471	0.0318	0.0671	0.0633	0.0317	0.0702	0.0685	0.0331	0.0588	0.0588
E	0.0592	0.0324	1.0905	0.0326	0.0850	0.0688	0.0343	0.0770	0.0795	0.0334	0.0612	0.0608
F	0.0628	0.0339	1.0848	0.0331	0.0790	0.0773	0.0324	0.0800	0.0751	0.0321	0.0611	0.0621
G	0.0668	0.0332	1.1107	0.0332	0.1073	0.0872	0.0328	0.1122	0.1012	0.0325	0.0677	0.0704
H	0.0718	0.0321	1.0532	0.0318	0.0919	0.0947	0.0324	0.0949	0.0965	0.0323	0.0731	0.0847
average	0.0593	0.0334	1.0833	0.0347	0.0773	0.0721	0.0336	0.0831	0.0812	0.0335	0.0611	0.0629
range	0.0202	0.0073	0.1439	0.0160	0.0480	0.0366	0.0072	0.0420	0.0327	0.0053	0.0200	0.0327

Descriptive Statistics: Saturday, April 18, 2015, 3:29:13 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0593	0.00739	0.00261	0.00618
Untreated Bacteria	8	0	1.083	0.0428	0.0151	0.0358
Gentamicin	16	0	0.0747	0.0148	0.00370	0.00788
Rifampicin	16	0	0.0822	0.0123	0.00308	0.00655
Polymyxin B	16	0	0.0620	0.00843	0.00211	0.00449

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0202	0.0718	0.0516	0.0584	0.0524	0.0648
Untreated Bacteria	0.144	1.147	1.003	1.088	1.062	1.108
Gentamicin	0.0492	0.107	0.0581	0.0686	0.0624	0.0861
Rifampicin	0.0437	0.112	0.0685	0.0780	0.0753	0.0875
Polymyxin B	0.0327	0.0847	0.0520	0.0605	0.0571	0.0649

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.594	-0.792	0.183	0.529	0.920	0.427
Untreated Bacteria	-0.606	1.157	0.139	0.762	0.970	0.898
Gentamicin	0.814	-0.274	0.217	0.042	0.906	0.100
Rifampicin	1.333	1.021	0.320	<0.001	0.827	0.006
Polymyxin B	1.430	2.395	0.245	0.011	0.875	0.032

One Way Analysis of Variance Saturday, April 18, 2015, 3:29:38 PM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	8	0	0.0593	0.00739	0.00261

Untreated Bacteria	8	0	1.083	0.0428	0.0151
Gentamicin	16	0	0.0747	0.0148	0.00370
Rifampicin	16	0	0.0822	0.0123	0.00308
Polymyxin B	16	0	0.0620	0.00843	0.00211

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	4	7.177	1.794	5339.753	<0.001
Residual	59	0.0198	0.000336		
Total	63	7.197			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

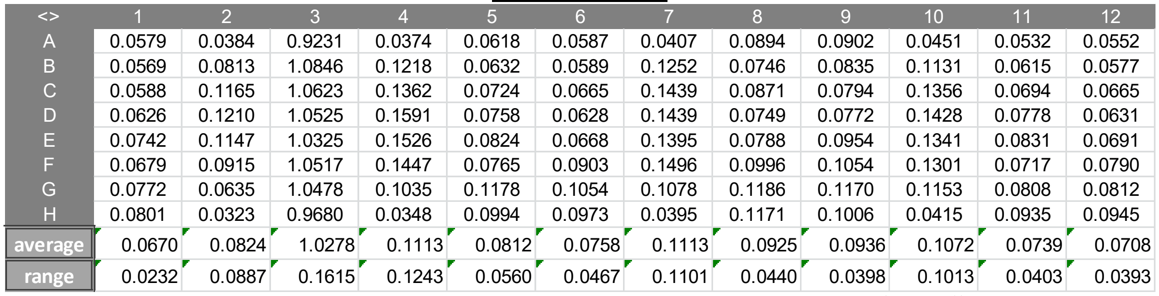
Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**
Untreated Ba vs. Polymyxin B	1.021	128.662	<0.001	0.013
Untreated Ba vs. Gentamicin	1.009	127.062	<0.001	0.017
Untreated Ba vs. Rifampicin	1.001	126.121	<0.001	0.025
Untreated Bacteria vs. TSB	1.024	111.715	<0.001	0.050

Comparison	**Significant?**
Untreated Ba vs. Polymyxin B	Yes
Untreated Ba vs. Gentamicin	Yes
Untreated Ba vs. Rifampicin	Yes
Untreated Bacteria vs. TSB	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	1.024	111.715	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0228	2.877	0.006	0.017	Yes
TSB vs. Gentamicin	0.0154	1.935	0.058	0.025	No
TSB vs. Polymyxin B	0.00266	0.335	0.738	0.050	No

Clinical Isolate 53b



<>	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0579	0.0384	0.9231	0.0374	0.0618	0.0587	0.0407	0.0894	0.0902	0.0451	0.0532	0.0552
B	0.0569	0.0813	1.0846	0.1218	0.0632	0.0589	0.1252	0.0746	0.0835	0.1131	0.0615	0.0577
C	0.0588	0.1165	1.0623	0.1362	0.0724	0.0665	0.1439	0.0871	0.0794	0.1356	0.0694	0.0665
D	0.0626	0.1210	1.0525	0.1591	0.0758	0.0628	0.1439	0.0749	0.0772	0.1428	0.0778	0.0631
E	0.0742	0.1147	1.0325	0.1526	0.0824	0.0668	0.1395	0.0788	0.0954	0.1341	0.0831	0.0691
F	0.0679	0.0915	1.0517	0.1447	0.0765	0.0903	0.1496	0.0996	0.1054	0.1301	0.0717	0.0790
G	0.0772	0.0635	1.0478	0.1035	0.1178	0.1054	0.1078	0.1186	0.1170	0.1153	0.0808	0.0812
H	0.0801	0.0323	0.9680	0.0348	0.0994	0.0973	0.0395	0.1171	0.1006	0.0415	0.0935	0.0945
average	0.0670	0.0824	1.0278	0.1113	0.0812	0.0758	0.1113	0.0925	0.0936	0.1072	0.0739	0.0708
range	0.0232	0.0887	0.1615	0.1243	0.0560	0.0467	0.1101	0.0440	0.0398	0.1013	0.0403	0.0393

Descriptive Statistics: Saturday, April 18, 2015, 3:40:39 PM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	8	0	0.0669	0.00926	0.00327	0.00774
Untreated Bacteria	8	0	1.028	0.0542	0.0192	0.0453
Gentamicin	16	0	0.0785	0.0184	0.00460	0.00980
Rifampicin	16	0	0.0930	0.0153	0.00383	0.00816
Polymyxin B	16	0	0.0723	0.0127	0.00317	0.00675

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0232	0.0801	0.0569	0.0653	0.0583	0.0757
Untreated Bacteria	0.161	1.085	0.923	1.050	1.000	1.057
Gentamicin	0.0591	0.118	0.0587	0.0741	0.0630	0.0938
Rifampicin	0.0440	0.119	0.0746	0.0898	0.0791	0.103
Polymyxin B	0.0413	0.0945	0.0532	0.0706	0.0623	0.0810

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	0.325	-1.846	0.186	0.508	0.893	0.248

Untreated Bacteria	-1.318	0.892	0.284	0.056	0.838	0.072
Gentamicin	0.815	-0.422	0.175	0.207	0.898	0.074
Rifampicin	0.511	-1.012	0.136	0.539	0.907	0.104
Polymyxin B	0.221	-0.782	0.104	0.799	0.960	0.655

One Way Analysis of Variance Saturday, April 18, 2015, 3:41:02 PM

Data source: Data 1 in Notebook1

Group Name	N	Missing	Mean	Std Dev	SEM
TSB	8	0	0.0669	0.00926	0.00327
Untreated Bacteria	8	0	1.028	0.0542	0.0192
Gentamicin	16	0	0.0785	0.0184	0.00460
Rifampicin	16	0	0.0930	0.0153	0.00383
Polymyxin B	16	0	0.0723	0.0127	0.00317

Source of Variation	DF	SS	MS	F	P
Between Groups	4	6.303	1.576	2890.469	<0.001
Residual	59	0.0322	0.000545		
Total	63	6.336			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
Untreated Ba vs. Polymyxin B	0.955	94.503	<0.001	0.013	Yes
Untreated Ba vs. Gentamicin	0.949	93.893	<0.001	0.017	Yes
Untreated Ba vs. Rifampicin	0.935	92.454	<0.001	0.025	Yes
Untreated Bacteria vs. TSB	0.961	82.303	<0.001	0.050	Yes

Comparisons for factor:

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
TSB vs. Untreated Bacteria	0.961	82.303	<0.001	0.013	Yes
TSB vs. Rifampicin	0.0261	2.581	0.012	0.017	Yes
TSB vs. Gentamicin	0.0116	1.142	0.258	0.025	No
TSB vs. Polymyxin B	0.00538	0.532	0.597	0.050	No

Gentamicin Source Comparison

Descriptive Statistics: Friday, May 01, 2015, 9:11:27 AM

Data source: Data 1 in Notebook1

Column	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
TSB	336	0	0.0646	0.0110	0.000601	0.00118
Untreated Bacteria	336	0	0.817	0.195	0.0107	0.0210
Sputum	192	0	0.0769	0.0168	0.00121	0.00240
Sputum without CF	144	0	0.0780	0.0167	0.00139	0.00275
Sputum with CF	48	0	0.0738	0.0171	0.00246	0.00495
Catheter Tip	64	0	0.0751	0.0173	0.00216	0.00432
Urine	128	0	0.0720	0.0165	0.00146	0.00288
Fluid	16	0	0.0782	0.0238	0.00594	0.0127
Blood	64	0	0.0758	0.0171	0.00214	0.00427
Tissue	16	0	0.0709	0.0138	0.00345	0.00736
Wound	16	0	0.0822	0.0160	0.00400	0.00852
Routine	64	0	0.0802	0.0186	0.00233	0.00465
Bone	16	0	0.0805	0.0129	0.00321	0.00685
Unknown	96	0	0.214	0.315	0.0322	0.0639

Column	Range	Max	Min	Median	25%	75%

TSB	0.0901	0.139	0.0490	0.0631	0.0569	0.0701
Untreated Bacteria	0.968	1.172	0.205	0.850	0.744	0.944
Sputum	0.0689	0.121	0.0522	0.0720	0.0633	0.0895
Sputum without CF	0.0686	0.121	0.0525	0.0736	0.0641	0.0907
Sputum with CF	0.0636	0.116	0.0522	0.0680	0.0609	0.0827
Catheter Tip	0.0914	0.143	0.0518	0.0678	0.0633	0.0839
Urine	0.104	0.155	0.0510	0.0660	0.0595	0.0822
Fluid	0.0722	0.122	0.0497	0.0693	0.0590	0.0997
Blood	0.0727	0.129	0.0565	0.0694	0.0621	0.0869
Tissue	0.0411	0.0977	0.0566	0.0673	0.0584	0.0776
Wound	0.0536	0.120	0.0664	0.0772	0.0701	0.0914
Routine	0.0691	0.125	0.0560	0.0758	0.0635	0.0945
Bone	0.0423	0.110	0.0673	0.0765	0.0717	0.0837
Unknown	0.915	0.967	0.0516	0.0730	0.0638	0.0991

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	1.987	8.421	0.0858	<0.001	0.869	<0.001
Untreated Bacteria	-0.981	0.907	0.122	<0.001	0.931	<0.001
Sputum	0.737	-0.425	0.136	<0.001	0.925	<0.001
Sputum without CF	0.711	-0.463	0.129	<0.001	0.926	<0.001
Sputum with CF	0.914	-0.0958	0.159	0.004	0.901	<0.001
Catheter Tip	1.560	2.981	0.173	<0.001	0.862	<0.001
Urine	1.687	4.503	0.171	<0.001	0.848	<0.001
Fluid	0.746	-0.944	0.213	0.052	0.870	0.028
Blood	1.034	0.437	0.154	<0.001	0.882	<0.001
Tissue	0.859	-0.337	0.166	0.272	0.875	0.033
Wound	1.157	0.498	0.198	0.095	0.858	0.018
Routine	0.789	-0.441	0.144	0.002	0.905	<0.001
Bone	1.342	0.750	0.282	0.001	0.821	0.005
Unknown	1.818	1.368	0.445	<0.001	0.499	<0.001

One Way Analysis of Variance Friday, May 01, 2015, 9:12:55 AM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	336	0	0.0646	0.0110	0.000601
Untreated Bacteria	336	0	0.817	0.195	0.0107
Sputum	192	0	0.0769	0.0168	0.00121
Sputum without CF	144	0	0.0780	0.0167	0.00139
Sputum with CF	48	0	0.0738	0.0171	0.00246
Catheter Tip	64	0	0.0751	0.0173	0.00216
Urine	128	0	0.0720	0.0165	0.00146
Fluid	16	0	0.0782	0.0238	0.00594
Blood	64	0	0.0758	0.0171	0.00214
Tissue	16	0	0.0709	0.0138	0.00345
Wound	16	0	0.0822	0.0160	0.00400
Routine	64	0	0.0802	0.0186	0.00233
Bone	16	0	0.0805	0.0129	0.00321
Unknown	96	0	0.214	0.315	0.0322

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	13	142.844	10.988	743.415	<0.001
Residual	1522	22.496	0.0148		
Total	1535	165.340			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**

Untreated Ba vs. Sputum witho	0.739	61.030	<0.001	0.004
Untreated Bacteria vs. TSB	0.752	80.219	<0.001	0.004
Untreated Bacteria vs. Sputum	0.740	67.287	<0.001	0.005
Untreated Bacteria vs. Urine	0.745	58.999	<0.001	0.005
Untreated Ba vs. Catheter Tip	0.742	44.743	<0.001	0.006
Untreated Bacteria vs. Blood	0.741	44.698	<0.001	0.006
Untreated Bacteria vs. Routine	0.737	44.433	<0.001	0.007
Untreated Bacteria vs. Unknown	0.603	42.836	<0.001	0.009
Untreated Ba vs. Sputum with	0.743	39.619	<0.001	0.010
Untreated Bacteria vs. Tissue	0.746	23.982	<0.001	0.013
Untreated Bacteria vs. Fluid	0.739	23.748	<0.001	0.017
Untreated Bacteria vs. Bone	0.736	23.673	<0.001	0.025
Untreated Bacteria vs. Wound	0.735	23.619	<0.001	0.050

Comparison	**Significant?**
Untreated Ba vs. Sputum witho	Yes
Untreated Bacteria vs. TSB	Yes
Untreated Bacteria vs. Sputum	Yes
Untreated Bacteria vs. Urine	Yes
Untreated Ba vs. Catheter Tip	Yes
Untreated Bacteria vs. Blood	Yes
Untreated Bacteria vs. Routine	Yes
Untreated Bacteria vs. Unknown	Yes
Untreated Ba vs. Sputum with	Yes
Untreated Bacteria vs. Tissue	Yes
Untreated Bacteria vs. Fluid	Yes
Untreated Bacteria vs. Bone	Yes
Untreated Bacteria vs. Wound	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.752	80.219	<0.001	0.004	Yes
TSB vs. Unknown	0.150	10.643	<0.001	0.004	Yes
TSB vs. Sputum	0.0124	1.124	0.261	0.005	No
TSB vs. Sputum without CF	0.0134	1.108	0.268	0.005	No
TSB vs. Routine	0.0157	0.945	0.345	0.006	No
TSB vs. Blood	0.0113	0.681	0.496	0.006	No
TSB vs. Catheter Tip	0.0105	0.636	0.525	0.007	No
TSB vs. Urine	0.00740	0.586	0.558	0.009	No
TSB vs. Wound	0.0177	0.568	0.570	0.010	No
TSB vs. Bone	0.0160	0.514	0.607	0.013	No
TSB vs. Sputum with CF	0.00920	0.491	0.624	0.017	No
TSB vs. Fluid	0.0137	0.439	0.661	0.025	No
TSB vs. Tissue	0.00636	0.205	0.838	0.050	No

Rifampicin Source Comparison

Descriptive Statistics: Friday, May 01, 2015, 9:41:32 AM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	336	0	0.0646	0.0110	0.000601	0.00118
Untreated Bacteria	336	0	0.817	0.195	0.0107	0.0210
Sputum	192	0	0.107	0.0614	0.00443	0.00874
Sputum without CF	144	0	0.0947	0.0431	0.00359	0.00710
Sputum just CF	48	0	0.144	0.0884	0.0128	0.0257
Catheter Tip	64	0	0.106	0.0672	0.00840	0.0168
Urine	128	0	0.0886	0.0288	0.00254	0.00503
Fluid	16	0	0.0793	0.0123	0.00307	0.00654
Blood	64	0	0.115	0.0686	0.00858	0.0171
Tissue	16	0	0.0766	0.0145	0.00362	0.00771
Wound	16	0	0.103	0.0200	0.00500	0.0107
Routine	64	0	0.0924	0.0158	0.00198	0.00396
Bone	16	0	0.0983	0.0223	0.00556	0.0119
Unknown	96	0	0.373	0.399	0.0408	0.0809

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0901	0.139	0.0490	0.0631	0.0569	0.0701

Untreated Bacteria	0.968	1.172	0.205	0.850	0.744	0.944
Sputum	0.454	0.515	0.0605	0.0882	0.0769	0.107
Sputum without CF	0.449	0.515	0.0659	0.0875	0.0771	0.101
Sputum just CF	0.367	0.428	0.0605	0.100	0.0753	0.234
Catheter Tip	0.350	0.419	0.0689	0.0882	0.0790	0.102
Urine	0.236	0.300	0.0638	0.0827	0.0757	0.0928
Fluid	0.0412	0.103	0.0622	0.0751	0.0698	0.0885
Blood	0.374	0.442	0.0676	0.0958	0.0791	0.117
Tissue	0.0554	0.119	0.0638	0.0702	0.0678	0.0819
Wound	0.0603	0.140	0.0800	0.102	0.0818	0.111
Routine	0.0654	0.133	0.0678	0.0898	0.0789	0.102
Bone	0.0738	0.143	0.0695	0.0968	0.0799	0.114
Unknown	1.321	1.389	0.0679	0.106	0.0799	0.850

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	1.987	8.421	0.0858	<0.001	0.869	<0.001
Untreated Bacteria	-0.981	0.907	0.122	<0.001	0.931	<0.001
Sputum	3.429	14.640	0.297	<0.001	0.578	<0.001
Sputum without CF	7.490	67.613	0.255	<0.001	0.392	<0.001
Sputum just CF	1.044	0.418	0.270	<0.001	0.806	<0.001
Catheter Tip	3.650	12.794	0.364	<0.001	0.438	<0.001
Urine	5.309	34.715	0.217	<0.001	0.513	<0.001
Fluid	0.513	-0.645	0.193	0.113	0.944	0.406
Blood	3.435	13.460	0.256	<0.001	0.594	<0.001
Tissue	2.011	4.318	0.273	0.002	0.758	<0.001
Wound	0.600	-0.619	0.159	0.331	0.896	0.070
Routine	0.591	-0.527	0.111	0.049	0.946	0.007
Bone	0.612	-0.542	0.136	0.546	0.944	0.395
Unknown	0.828	-1.034	0.366	<0.001	0.706	<0.001

One Way Analysis of Variance Friday, May 01, 2015, 9:41:50 AM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	336	0	0.0646	0.0110	0.000601
Untreated Bacteria	336	0	0.817	0.195	0.0107
Sputum	192	0	0.107	0.0614	0.00443
Sputum without CF	144	0	0.0947	0.0431	0.00359
Sputum just CF	48	0	0.144	0.0884	0.0128
Catheter Tip	64	0	0.106	0.0672	0.00840
Urine	128	0	0.0886	0.0288	0.00254
Fluid	16	0	0.0793	0.0123	0.00307
Blood	64	0	0.115	0.0686	0.00858
Tissue	16	0	0.0766	0.0145	0.00362
Wound	16	0	0.103	0.0200	0.00500
Routine	64	0	0.0924	0.0158	0.00198
Bone	16	0	0.0983	0.0223	0.00556
Unknown	96	0	0.373	0.399	0.0408

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	13	137.579	10.583	535.883	<0.001
Residual	1522	30.058	0.0197		
Total	1535	167.637			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**
Untreated Bacteria vs. TSB	0.752	69.399	<0.001	0.004
Untreated Ba vs. Sputum witho	0.722	51.603	<0.001	0.004

Untreated Bacteria vs. Sputum	0.710	55.843	<0.001	0.005
Untreated Bacteria vs. Urine	0.728	49.902	<0.001	0.005
Untreated Bacteria vs. Routine	0.725	37.807	<0.001	0.006
Untreated Ba vs. Catheter Tip	0.711	37.086	<0.001	0.006
Untreated Bacteria vs. Blood	0.702	36.615	<0.001	0.007
Untreated Ba vs. Sputum just	0.673	31.035	<0.001	0.009
Untreated Bacteria vs. Unknown	0.444	27.327	<0.001	0.010
Untreated Bacteria vs. Tissue	0.740	20.590	<0.001	0.013
Untreated Bacteria vs. Fluid	0.738	20.515	<0.001	0.017
Untreated Bacteria vs. Bone	0.719	19.985	<0.001	0.025
Untreated Bacteria vs. Wound	0.714	19.869	<0.001	0.050

Comparison	**Significant?**
Untreated Bacteria vs. TSB	Yes
Untreated Ba vs. Sputum witho	Yes
Untreated Bacteria vs. Sputum	Yes
Untreated Bacteria vs. Urine	Yes
Untreated Bacteria vs. Routine	Yes
Untreated Ba vs. Catheter Tip	Yes
Untreated Bacteria vs. Blood	Yes
Untreated Ba vs. Sputum just	Yes
Untreated Bacteria vs. Unknown	Yes
Untreated Bacteria vs. Tissue	Yes
Untreated Bacteria vs. Fluid	Yes
Untreated Bacteria vs. Bone	Yes
Untreated Bacteria vs. Wound	Yes

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
TSB vs. Untreated Bacteria	0.752	69.399	<0.001	0.004	Yes
TSB vs. Unknown	0.308	18.939	<0.001	0.004	Yes
TSB vs. Sputum just CF	0.0795	3.664	<0.001	0.005	Yes
TSB vs. Sputum	0.0425	3.340	<0.001	0.005	Yes
TSB vs. Blood	0.0507	2.643	0.008	0.006	No
TSB vs. Catheter Tip	0.0416	2.172	0.030	0.006	No
TSB vs. Sputum without CF	0.0301	2.153	0.031	0.007	No
TSB vs. Urine	0.0240	1.646	0.100	0.009	No
TSB vs. Routine	0.0278	1.451	0.147	0.010	No
TSB vs. Wound	0.0380	1.055	0.291	0.013	No
TSB vs. Bone	0.0338	0.940	0.348	0.017	No
TSB vs. Fluid	0.0147	0.409	0.682	0.025	No
TSB vs. Tissue	0.0120	0.334	0.738	0.050	No

Polymyxin B Source Comparison

Descriptive Statistics: Friday, May 01, 2015, 9:55:33 AM

Data source: Data 1 in Notebook1

Column	**Size**	**Missing**	**Mean**	**Std Dev**	**Std. Error**	**C.I. of Mean**
TSB	336	0	0.0646	0.0110	0.000601	0.00118
Untreated Bacteria	336	0	0.817	0.195	0.0107	0.0210
Sputum	192	0	0.0916	0.0313	0.00226	0.00446
Sputum without CF	144	0	0.0864	0.0293	0.00245	0.00483
Sputum with CF	48	0	0.107	0.0322	0.00464	0.00934
Catheter Tip	64	0	0.131	0.160	0.0200	0.0399
Urine	128	0	0.146	0.165	0.0146	0.0288
Fluid	16	0	0.124	0.0269	0.00673	0.0144
Blood	64	0	0.121	0.0895	0.0112	0.0224
Tissue	16	0	0.111	0.0183	0.00457	0.00974
Wound	16	0	0.160	0.173	0.0433	0.0923
Routine	64	0	0.0853	0.0210	0.00263	0.00525
Bone	16	0	0.0723	0.0140	0.00350	0.00746
Unknown	96	0	0.0770	0.0199	0.00203	0.00403

Column	**Range**	**Max**	**Min**	**Median**	**25%**	**75%**
TSB	0.0901	0.139	0.0490	0.0631	0.0569	0.0701
Untreated Bacteria	0.968	1.172	0.205	0.850	0.744	0.944
Sputum	0.121	0.172	0.0508	0.0841	0.0656	0.113

Sputum without CF	0.121	0.172	0.0508	0.0776	0.0633	0.104
Sputum with CF	0.110	0.169	0.0590	0.106	0.0801	0.131
Catheter Tip	0.840	0.892	0.0518	0.0767	0.0621	0.103
Urine	1.074	1.128	0.0545	0.102	0.0803	0.130
Fluid	0.0971	0.191	0.0937	0.118	0.106	0.135
Blood	0.503	0.558	0.0545	0.103	0.0800	0.121
Tissue	0.0681	0.159	0.0906	0.106	0.0980	0.119
Wound	0.637	0.705	0.0683	0.105	0.0841	0.121
Routine	0.0998	0.153	0.0532	0.0815	0.0691	0.0973
Bone	0.0488	0.102	0.0532	0.0694	0.0614	0.0804
Unknown	0.0902	0.141	0.0510	0.0709	0.0622	0.0920

Column	**Skewness**	**Kurtosis**	**K-S Dist.**	**K-S Prob.**	**SWilk W**	**SWilk Prob**
TSB	1.987	8.421	0.0858	<0.001	0.869	<0.001
Untreated Bacteria	-0.981	0.907	0.122	<0.001	0.931	<0.001
Sputum	0.726	-0.511	0.128	<0.001	0.919	<0.001
Sputum without CF	0.904	-0.163	0.153	<0.001	0.898	<0.001
Sputum with CF	0.321	-0.946	0.0742	0.670	0.951	0.043
Catheter Tip	3.107	9.807	0.387	<0.001	0.484	<0.001
Urine	3.966	17.440	0.359	<0.001	0.471	<0.001
Fluid	1.320	1.544	0.165	0.277	0.880	0.039
Blood	3.575	13.376	0.329	<0.001	0.528	<0.001
Tissue	1.442	2.081	0.203	0.078	0.871	0.028
Wound	2.750	7.107	0.451	<0.001	0.512	<0.001
Routine	0.968	1.182	0.0945	0.164	0.940	0.004
Bone	0.765	-0.0273	0.121	0.681	0.945	0.418
Unknown	0.957	0.364	0.158	<0.001	0.907	<0.001

One Way Analysis of Variance Friday, May 01, 2015, 9:55:58 AM

Data source: Data 1 in Notebook1

Group Name	**N**	**Missing**	**Mean**	**Std Dev**	**SEM**
TSB	336	0	0.0646	0.0110	0.000601
Untreated Bacteria	336	0	0.817	0.195	0.0107
Sputum	192	0	0.0916	0.0313	0.00226
Sputum without CF	144	0	0.0864	0.0293	0.00245
Sputum with CF	48	0	0.107	0.0322	0.00464
Catheter Tip	64	0	0.131	0.160	0.0200
Urine	128	0	0.146	0.165	0.0146
Fluid	16	0	0.124	0.0269	0.00673
Blood	64	0	0.121	0.0895	0.0112
Tissue	16	0	0.111	0.0183	0.00457
Wound	16	0	0.160	0.173	0.0433
Routine	64	0	0.0853	0.0210	0.00263
Bone	16	0	0.0723	0.0140	0.00350
Unknown	96	0	0.0770	0.0199	0.00203

Source of Variation	**DF**	**SS**	**MS**	**F**	**P**
Between Groups	13	138.396	10.646	840.571	<0.001
Residual	1522	19.276	0.0127		
Total	1535	157.672			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

Multiple Comparisons versus Control Group (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**
Untreated Bacteria vs. TSB	0.752	86.660	<0.001	0.004
Untreated Bacteria vs. Sputum	0.725	71.251	<0.001	0.004
Untreated Bacteria vs. Unknown	0.740	56.818	<0.001	0.005
Untreated Bacteria vs. Urine	0.671	57.441	<0.001	0.005

Untreated Ba vs. Sputum witho	0.731	65.178	<0.001	0.006
Untreated Bacteria vs. Routine	0.732	47.668	<0.001	0.006
Untreated Bacteria vs. Blood	0.696	45.348	<0.001	0.007
Untreated Ba vs. Catheter Tip	0.686	44.695	<0.001	0.009
Untreated Ba vs. Sputum with	0.710	40.881	<0.001	0.010
Untreated Bacteria vs. Bone	0.745	25.862	<0.001	0.013
Untreated Bacteria vs. Tissue	0.706	24.516	<0.001	0.017
Untreated Bacteria vs. Fluid	0.693	24.067	<0.001	0.025
Untreated Bacteria vs. Wound	0.657	22.806	<0.001	0.050

Comparison	**Significant?**
Untreated Bacteria vs. TSB	Yes
Untreated Bacteria vs. Sputum	Yes
Untreated Bacteria vs. Unknown	Yes
Untreated Bacteria vs. Urine	Yes
Untreated Ba vs. Sputum witho	Yes
Untreated Bacteria vs. Routine	Yes
Untreated Bacteria vs. Blood	Yes
Untreated Ba vs. Catheter Tip	Yes
Untreated Ba vs. Sputum with	Yes
Untreated Bacteria vs. Bone	Yes
Untreated Bacteria vs. Tissue	Yes
Untreated Bacteria vs. Fluid	Yes
Untreated Bacteria vs. Wound	Yes

APPENDIX B:
Isolate Source List

CF = sputum was isolated from a patient with cystic fibrosis.

1.) Sputum
2.) Sputum
3.) Catheter tip
4.) Urine
5.) Fluid
6.) Urine
7.) Blood
8.) Tissue
9.) Unknown
10.) Wound
11.) Sputum, CF
12.) Sputum
13.) Urine
14.) Urine
15.) Sputum, CF
16.) Sputum
17.) Sputum
18.) Urine
19.) Urine
20.) Blood
21.) Sputum
22.) Sputum, CF
23.) Routine
24.) Sputum, CF
25.) Blood
26.) Urine
27.) Wound
28.) Routine
29.) Respiratory
30.) Unknown
31.) Sputum
32.) Unknown
33.) Sputum
34.) Sputum
35.) Urine
36.) Unknown
37.) Sputum
38.) Catheter tip
39.) Catheter tip
40.) Bone
41.) Sputum
42.) Wound
43.) Routine
44.) Ear
45.) Catheter tip

46.) Blood
47.) Sputum
48.) Unknown
49.) Sputum
50.) Sputum
51.) Unknown
52.) Catheter tip
53.) A. Sputum
  B. Routine