Lab Report #4
Evaluating the Effectiveness of Common Antiseptics and Disinfectants OR
Antibiotic Evaluation by The Kirby-Bauer Method

Choose one of the topics to write about, either (1) Evaluating the Effectiveness of Common Antiseptics and Disinfectants OR (2) Antibiotic Evaluation by The Kirby-Bauer Method. Both protocols are included in the document.

Try to enjoy writing this report........especially those of you that want to go into a medical profession. There is an abundant amount of information that you can find on the internet so have fun and try to enjoy learning!

The report is worth 100 points. It should be 3-5 pages long, typed, 12-point font and double-spaced. It should contain an introduction, procedure (materials and methods), results, discussion and literature cited. Label each section in your report. You must cite your references in the body of the paper. Failure to do so will be considered plagiarism. LAB REPORTS ARE DUE BEFORE 11AM ON MON. ANYTHING TURNED IN AFTER 11AM WILL BE LATE AND 10 POINTS WILL BE TAKEN OFF. I will be waiting outside CON 228 between 10:55am and 11am.

(1) Evaluating the Effectiveness of Common Antiseptics and Disinfectants

Introduction
* Define antiseptic and disinfectant
* Background information on the 4 you tested in lab. Background should include: antiseptic or disinfectant, common uses, active ingredient, how they work (ex: does it dissolve the cell wall or membrane, does it dehydrate the cell, does it cause the cell to lyse, i.e. what it does to kill the cell or inhibit its growth)

Materials and Methods
* Describe the media used, prep procedure, organisms used, how you inoculated the plate and what with, the temperature and length of incubation, how you applied the disks to the plate and what with, technique used to sterilize instruments, how you applied the chemical to the disk/plate, how plates were set up (i.e. did you divide the plate into sections, did you use one plate per chemical, etc.)

Results
* Report only the results of the experiments.
* It will be easiest to use a table to report results. You need to have 4 tables, one for each organism. The tables must include the zone of inhibition measurements for each chemical.
**Discussion**

* Information on how effective each chemical was on each organism based on the results. Organize it by organism, a new paragraph for each one (this means 4 paragraphs). Do not write out one long paragraph repeating the results.
* Based on the zones of inhibition, why did some chemicals work better than others? Was there a certain ingredient within the chemical that caused it to work better or not at all?
* Include any deviations from the norm in your results.

**Literature Cited**

* Should contain any resources you used.
* You need at least two sources, the lab manual and either a book/journal article/website.

**Bacterial Names**

* Genus (uppercase) species (lowercase)
* Italicized or underlined
* i.e. *Bacillus subtilis*  
* Once you have stated the name you can refer to it as *B. subtilis/B. subtilis*

**(2) Antibiotic Evaluation by The Kirby-Bauer Method**

**Introduction**

* Background on chemical antimicrobial agents. Info should include: the 3 characteristics of antibiotics, what organisms generally produce antibiotics, info on Kirby-Bauer method, McFarland Standard, MIC, define sensitivity and resistance etc.
* Background information on the 8 antibiotics you tested in lab. Background should include: common uses, mode of action (i.e. what it does to kill the cell or inhibit its growth), etc.

**Materials and Methods**

* Describe the media used, prep procedure, organisms used, how you inoculated the plate and what with, the temperature and length of incubation, how you applied the disks to the plate and what with, technique used to sterilize instruments, how plates were set up (i.e. did you divide the plate into sections, did you use one plate per antibiotic, etc.)

**Results**

* Report only the results of the experiments.
* It will be easiest to use a table to report results. You need to have 4 tables, one for each organism. The tables must include the zone of inhibition measurements for each antibiotic.

**Discussion**

* Information how effective each antibiotic was on each organism based on the results. Organize it by organism (this means 4 paragraphs). Do not write out one long paragraph
repeating the results, you must interpret the results. Talk about the bacteria in terms of it being sensitive, intermediate, or resistant, not specific measurements.
* Information on bacteria that are showing signs of becoming resistant to antibiotics that have been effective in the past and are becoming a concern for the medical community.
* Info on how bacteria become resistant to antibiotics.
* Include any deviations from the norm in your results.

**Literature Cited**
* Should contain any resources you used.
* You need at least two sources, the lab manual and either a book/journal article/website.

**Bacterial Names**
* Genus (uppercase) species (lowercase)
* Italicized or underlined
* i.e. *Bacillus subtilis*  *Bacillus subtilis*
*Once you have stated the name you can refer to it as *B. subtilis/B. subtilis*