

# Microbiology bacteria paper assignment



**ASSIGN  
BUSTER**

Mystery bacterium I would not say science is storybook fun, but who knew it become a mystery. Trying to find out what was in our number seven vial would become a battle we were willing to take on. As I began the test of deciding if our little bacteria friend was gram positive or negative, Jordan my science teammate, was putting together a smear plate. In as little as ten minutes we had discovered by the pink oval shapes we were observing, our microbe friend was a gram negative rod. We had narrowed our search down to five!

We decided next we would do oxygen along with a motility test. Along with those, we did a fermentation investigation. These tests would narrow our pursuit down even further. Unfortunately these tests take time. The following day, we curiously went to our ‘stash’ of experiments. As we observed we soon realized our little bacteria was a non-motile, facultative anaerobe. With the observation of acid and gas formation, this microorganism was able to catabolize glucose, lactose and fructose. Our smear plate, with white convex mucous looking colonies confirmed our suspicion.

We were now looking at vial number seven with a new respect, he now had a name, and that name was *Klebsiella pneumoniae*. Now that our mystery bacterium had a proper name, where would we find it? This bacterium, I found out is ubiquitous in nature, meaning it seems to be present, everywhere at the same time. Just about anywhere you would step, touch or see in nature you could bet this little guy is there. Its family is abundant in soil, water and vegetables. But they have cousins, uncles, second cousins etc. Just about everywhere else. WOW’, was all I could muster. But our friend not only had a large family in nature, this microbe also found residence inside the human

body. The respiratory, intestinal, and urogenital tracts are a favored neighborhood for this microscopic organism. This tiny microbe seems to find just about any region environmentally friendly. Not only is it very versatile in where it lives, I would soon learn it was also just as versatile in what it is able to do. This small bacterium could devastate the human body if allowed to.

Our secret microbe was considered to be an opportunistic human pathogen, meaning that under certain conditions it may cause disease. All this little guy needed was the perfect scenario and he could thrive in only a way harmful bacteria could. Persons with underlying diseases such as alcoholism or lung infections were some of their favorite captives. Along with people who are hospitalized and receive invasive procedures, being their other prime hostages. These guys are on the top ten most known list of monoclonal infection pathogens.

Trying to get rid of this pathogen is no easy feat either! Once this type is let in he really does not want to leave. Of course, the first attack to rid the body of this pathogen is to use a timely and aggressive treatment of antibiotics. Even that though, can prove to not be beneficial. Since these little critters are proven to be resistant, meaning, they develop ways to inactivate or neutralize the antibiotic. Many cases have to be treated with specializations and encyclopedias to give the bacteria a two-pronged attack. This bacterium certainly has a powerful army when dispersed.

But how does this little fellow do this? Well, the pathology for it to become pneumonia develops when the bacilli invade and multiply within the alveolar spaces. The pulmonary permanency becomes consolidated, and the mucous

exudates that fill the alveoli is controlled by macrophages, fibrin, and edema fluid. Internships, our bodies own fighting soldiers are inhibited by a neutral polysaccharide in the capsule of this bacterium. Numerous encapsulated gram- negative bacilli appear free in the exudates and in alveolar macrophages.

Then exudates accumulate and the alveolar wall becomes compacted and healthy tissue starts to degrade. This area, where the microbe does its best work, is the area of gas exchange with the blood, a vital part of the human anatomy/physiology. So when this microbe is able to take over, a hefty defense force of antibacterial agents have to come to the battle. Antibiotics themselves though have a become an overused tool. This has become a growing problem and many actions have now come into play to top the abuse of these products.

Some would argue a little too late. This lapse of poor Judgment has led to the numerous strains of antibiotic resistant infections. Kielbasa pneumonia is one of the leading culprits. The thing is though, bacteria does not know its playing a dangerous game with us, all bacteria is trying to do is win.

References Kielbasa pneumonia . Retrieved from: <http://www.kaleidoscopically.org/>

(Kielbasa pneumonia 2011) Assailable pneumonia.

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