

UNKNOWN PROJECT
BIO220 – INTRODUCTORY MICROBIOLOGY

DESCRIPTION

The Unknown Project is the capstone experience for the Microbiology Lab. For all intents and purposes it serves as the final exam for the lab. You will be given a coded unknown bacterial sample and asked to perform a number of tests (which you have learned throughout the term). The data from these tests will be used to determine the most likely identity of your sample from a series of possibilities. You will be assessed on how successful you are at accomplishing the tests, analyzing the data and finally, the correctness of your identification.

NOTE ON ORGANISMS USED

While a clinical identification can be any number of microbes, this experiment is by design restricted. I do not expect you to have the knowledge and intuition that is gained from years of working with microbial identification, so I have limited the possibilities for the final identification to a subset of bacteria. Granted, there are more bacteria in the list than are present in the sample pool, but they represent common and easily identifiable organisms that will test your abilities at identification.

Clinical samples are often identified solely to genus level and species is left undetermined. This is not always the case, but is common enough to warrant a discussion. The main reason for this is cost. While species level identification does give you more information about the organism, the price to go from genus-level to species-level is usually too expensive to justify in a high throughput lab (accounting for materials, employee time, QA/QC and such). This concern also applies to the academic lab. The identification to genus level allows for an adequate examination of your technique and yet saves the college a significant amount in lab overhead each term (cost that would, at least partially, be passed on to students). Therefore we will only be identifying to genus level.

TESTS AVAILABLE FOR IDENTIFICATION

Phenol Red Durham Tubes	Thioglycollate Tubes	Starch Agar
Lactose	Nutrient Gelatin	Mannitol Salts Agar
Mannitol	Motility Agar	Casein Agar
Glucose	Citrate Agar	Mac Conkey's Agar
Sucrose	Gram Stain	Endospore Stain

PROCEDURE

You will be given a broth culture containing two microbes. The sample will be coded to match to my control list of identifications. You will first have to properly isolate a single organism (either is acceptable) and perform the needed analysis to identify your organism via the provided dichotomous key.