INTRODUCTION

Antibiotics are defined as a type of medicine used to treat bacterial infections (1). At one point, antibiotics were a game changer in the field of medicine. However, there are many bacteria that are becoming resistant to antibiotics. This is made worse especially considering how many bacteria are in the human body. Granted, most of this bacteria is not harmful to our body processes. For the bacteria that is not beneficial, it is imperative that antibiotics are able to treat the bacteria effectively. So, when antibiotics become resistant to our current antibiotics, bacteria become resistant by pumping the antibiotic out of the cell, destroying the antibiotic, modifying the antibiotic, or dodging the antibiotic.

Elizabthkingia is one type of bacteria that is resistant to various antibiotics. Found in the gut of mosquitoes and in nature, Elizabethkingia can cause human diseases. Since it is resistant to over twenty antibiotics, it is a prime candidate for this test. Beta-lactamase is a key mechanism to detect antibiotics. Elizabethkingia have several different beta-lactamase genes, and therefore produce several different beta-lactamase. This allows Elizabethkingia to become resistant to various antibiotics.

The genome is even growing too fast for our cloning methods.

- E.coli ATCC33958: bla2882 positive MRB
- AEROTETRACYCLINE RESISTANT
- E.coli ATCC33958: bla2882 positive MRB
- TETRACYCLINE RESISTANT

For the purposes of this project, we selected E. coli ATCC33958 and Miricola 2882 (all 4), 5

This is our plate which shows the number of transformants after DNA ligation.

Figure 2 displays our nitrocefin saturated disks which did not change color allowing us to conclude our specific gene was not a beta-lactamase gene.

MATERIALS AND METHODS

1. We started our experiment by finding the forward and reverse primer for our gene.
2. Each primer had a temperature between 38-40°C and a 30°C.
3. The first 23 nucleotides of the DNA sequence, ATGTTTCCGGAGACGTTTTATTTGAAGGAAGTATTGGACGGACAGATCTGTTCAAAGCCAACTTT
4. The next week Professor Canaan gave us the primers so we set up the PCR reactions.
5. We took the vector DNA and our PCR product and glued them together by using a Ligase.
6. The next 23 nucleotides of the DNA sequence, ATGCTGCATATACAGATTTTTCC, is the forward primer
7. The solution went through heat shock at 42°C for 1 hour, plated aliquots on media, and transferred plates to the refrigerator for storage.
8. We then used ligation of PCR product to plasmid vector for molecular cloning followed by heat shock
9. The solution went through heat shock at 42°C for 1 hour, plated aliquots on media, and transferred plates to the refrigerator for storage.
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REFERENCES