

Escherichia Coli Ceftriaxone Resistance

Overview of the Dataset:

Antibiotic resistance in bacteria is a critical issue in modern medicine. A study conducted from 2013 to 2015 revealed that an astonishing 87.5% of the bacteria sampled in North Iran were resistant to at least one antibiotic [1]. It is evident that this percentage has likely increased until now, underscoring the urgency of addressing this topic. Another study published in 2022 successfully compiled a dataset containing mass spectrometer results from more than 300'000 samples of bacteria and fungi. This dataset was then used to train a machine learning model capable of predicting whether a bacteria is resistant to a specific type of antibiotic; with the ultimate goal of prescribing the most effective treatment to a patient [2]. In this project, we only selected the samples used to train for the resistance to Ceftriaxone of Escherichia Coli, with the aim of building and testing different models onto real-world scenarios.

Data Preprocessing and Visualization:

References

- [1] Study on antibiotic resistance on bacteria: <https://pmc.ncbi.nlm.nih.gov/articles/PMC5629843/>
- [2]