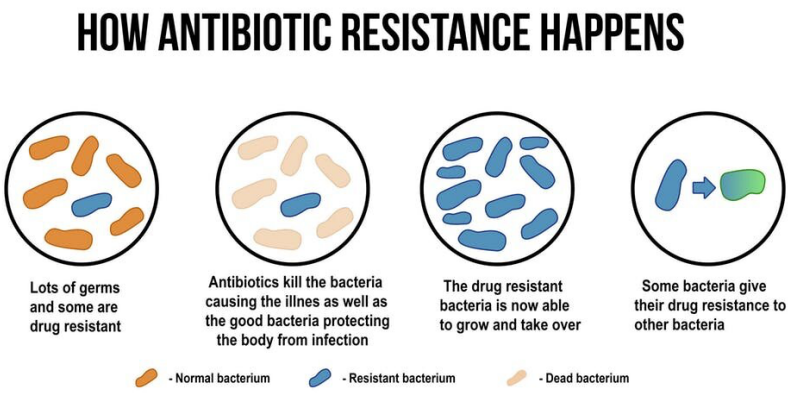
The Evolution of Antibiotic Resistance according to Darwin's Theory of Evolution by Natural Selection



This is a colony of the same species (strain) of bacteria. Bacteria are able to develop **random mutations** in their DNA. Due to this development, this can create new **alleles** which can alter the bacteria's characteristics, such as becoming more resistance to **antibiotics**. For a person, who is trying to get rid of an infection, having the bacteria that have the characteristics of resisting the antibiotic is a disadvantage. Therefore, in these circumstances, **resistant bacteria** is able to survive better than non-resistant bacteria. As a result, resistant bacteria will live for longer and reproduce, and so the allele for resistance is passed on. The resistance makes the bacteria better adapted to the environment when there is a time of **selection pressure**.