Messelson and Stahl's Experiment(Heavy Nitrogen)

Bacteria species Escherichia coli.

Culture = N15 isotopes i.e. heavy nitrogen.

After replicated for few generations both strands have N15.

*When N15 bacterias were transferred to N14 medium, it was found that DNA separate from fresh generation possess one strand heavier.

*The heavier strand represents parental DNA strand and lighter one newly synthesized indicating semi conservative nature of DNA.

*Now in next generation when one strand heavier and one strand lighter bacteria divides it forms one bacteria with N15 strand and the other with N14 strand and the second bacteria produces both the strands of N14.

*This same process goes on like this, showing the Semi-Conservative nature of DNA.

Taylor's experiment on Vicia faba

Demonstrated the semiconservative method in the root tip of Vicia faba.

By Audioradiography.

Radioactive thymidine used.

*The roots of Vicia faba were grown in medium containing radioactive thymidine.

*In chromosome of 1st generation the radioactive thymidine is found to be evenly distributed in both chromosomes.

*In chromosomes of 2nd generation only one of the two chromatids in each chromosome was radioactive ie. 50% labelled.

*In 3rd generation only 25% was radioactively labelled and so on, showing the semi conservative nature of DNA.

*As it is known that each chromatid is composed of only double helical of DNA, it is called replication of DNA.