

Assignment No. 2
BT301 – Introduction to Biotechnology
Spring 2020

Assignment topic

1. Write down five similarities and five differences between Plasmid and Cosmid (10 Marks)

Similarities:

- These both vectors are used in recombinant DNA technology.
- They both have the ability to replicate itself and both have the point of origin.
- Plasmid and Cosmid have and possess multiple cloning sites.
- Both type of vectors are widely used in constructing genomic libraries.
- Both can be screened easily as their are easy methods available.

Differences:

Plasmid is a double stranded and circle piece of dna that have the ability to replicate independently.

While Cosmid is made from the combinations of cos sequence lambda phage and plasmid DNA of bacteria.

Plasmid naturally occurring in bacteria and sometimes also found in eurokayotes e.g 2-micrometer ring in saccharomyces cerevisiae.

Plasmid is constructed artificially by combining pieces of lambda phage and plasmid of bacteria.

They are different in length. The length of plasmid 24 kb.

Cosmid is about twice of plasmid and possess lenght of about 45 kb.

Plasmid has less transformation efficiency

Comparatively its more efficient in transformation.

Cos sites is absent in Plasmid.

While cosmid possess Cos sites.