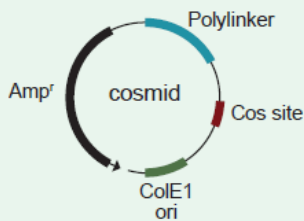


## More vectors to know



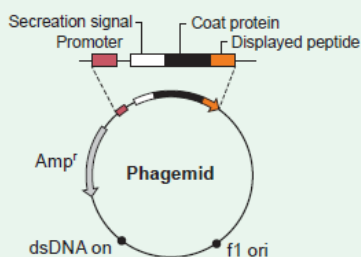
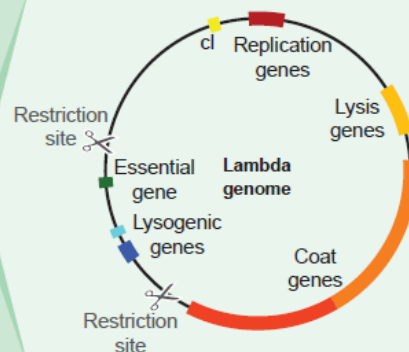
### Cosmid

Cosmids are plasmids containing the 'cos' - Cohesive Terminus, the sequence having cohesive ends. They are hybrid vectors derived from plasmids having a fragment of lambda phage DNA with its Cos site and a bacterial plasmid.

### Bacteriophage Vectors

Bacteriophages are viruses that infect bacteria. The most commonly used *E. coli* phages are  $\lambda$  phage (Lambda phage) and M13 phage. Phage vectors are more efficient than plasmids - DNA upto 25 Kb can be inserted into phage vector.

**Lambda genome:** Lambda phage is a temperate bacteriophage that infects *Escherichia coli*. The genome of lambda-Phage is 48502 bp long, i.e. 49Kb and has 50 genes.

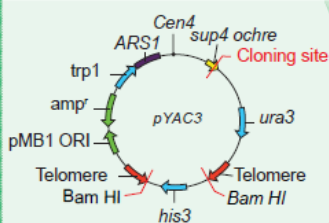
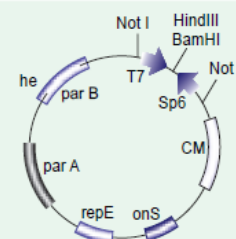


### Phagemid Vectors

Phagemids are reconstructed plasmid vectors, which contain their own origin - 'ori' gene and also contain origin of replication from a phage. pBluescript SK (+/-) is an example of phagemid vector.

### Bacterial Artificial Chromosome (BAC) Vector

BAC is a shuttle plasmid vector, created for cloning large-sized foreign DNA. BAC vector is one of the most useful cloning vector in r-DNA technology they can clone DNA inserts of upto 300 Kb and they are stable and more user-friendly.



### Yeast Artificial chromosome (YAC vector)

YAC plasmid vector behaves like a yeast chromosome, which occurs in two forms, i.e. circular and linear. The circular YAC multiplies in Bacteria and linear YAC multiplies in Yeast Cells.

### Shuttle Vectors

The shuttle vectors are plasmids designed to replicate in cells of two different species. These vectors are created by recombinant techniques. The shuttle vectors can propagate in one host and then move into another host without any extra manipulation. Most of the Eukaryotic vectors are Shuttle Vectors.

