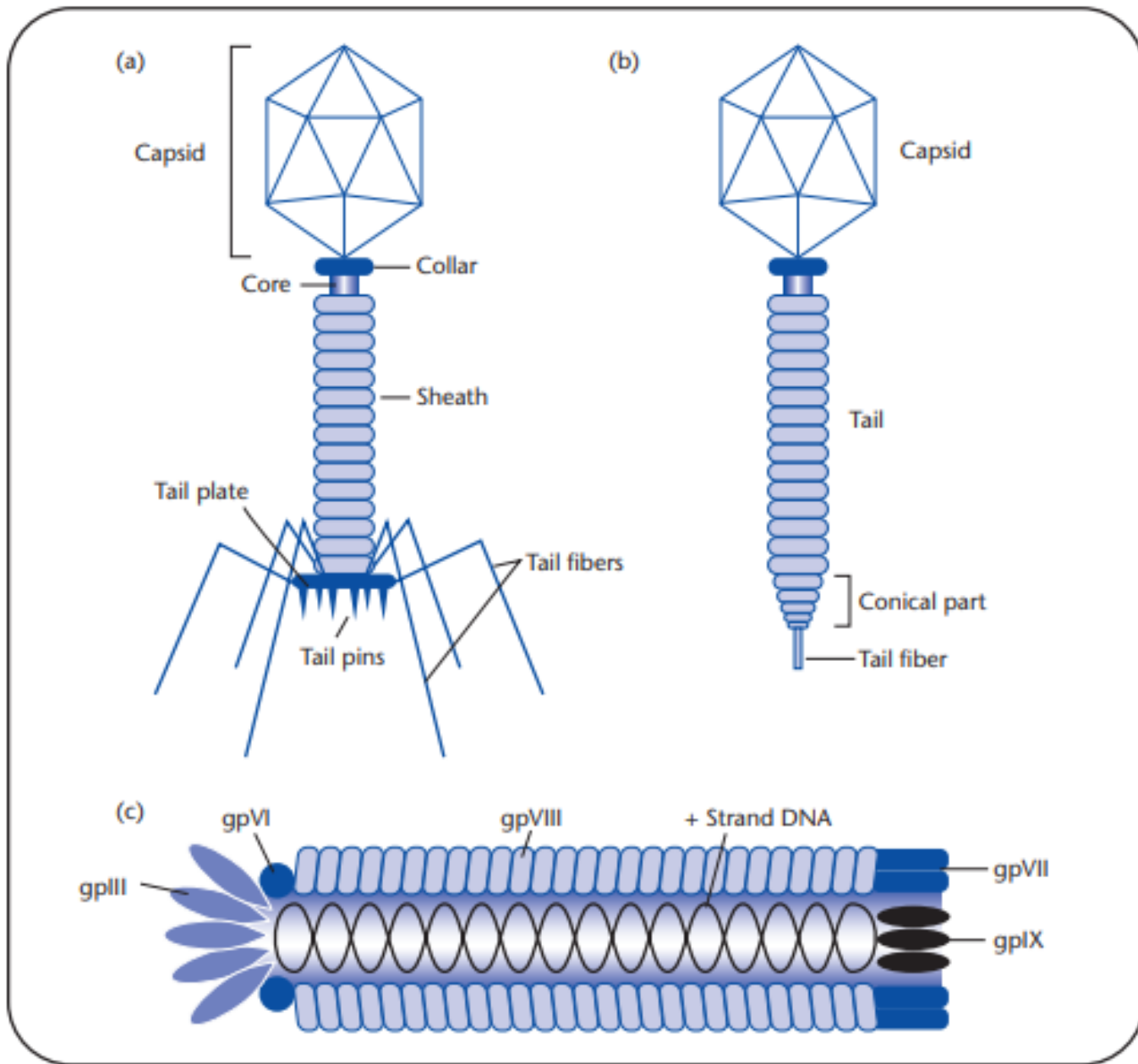


# Bacteriophage: Lytic vs Lysogenic Switch



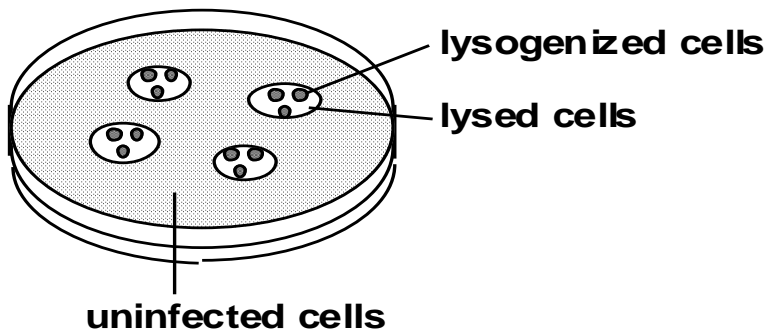
*Dr. Dharmesh Harwani*  
Department of Microbiology



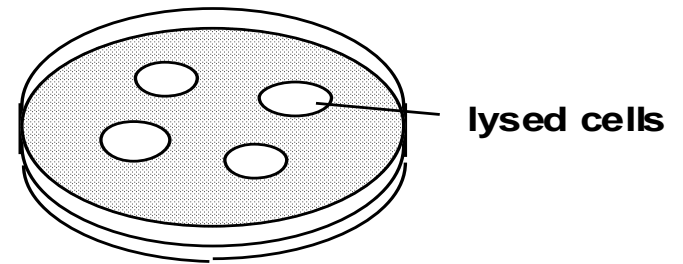
**The structures of (a) T4, (b) Lambda, and (c) M13**

# Temperate and lytic phage have a different plaque morphology

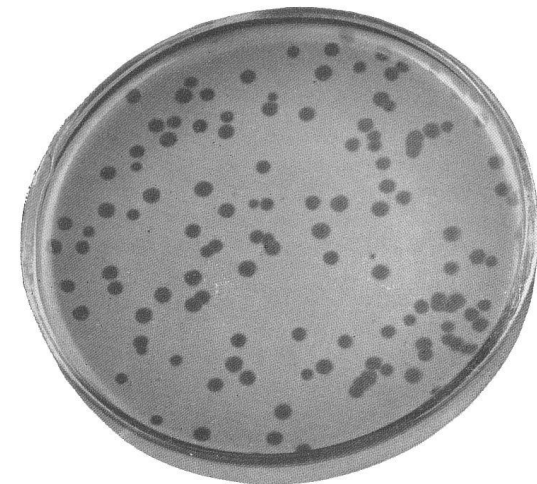
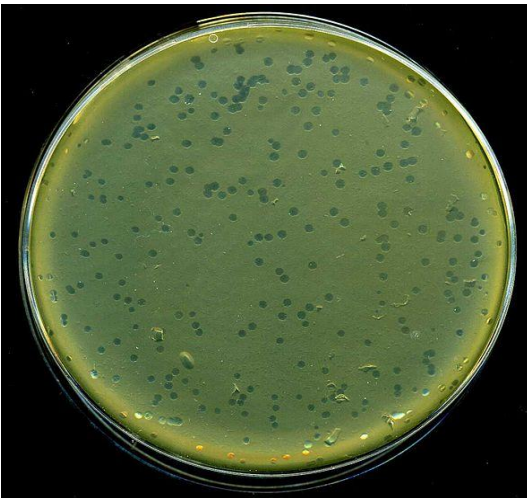
Temperate phage generate turbid plaques



Mutants of phage that have lost the capacity to lysogenize form clear plaques



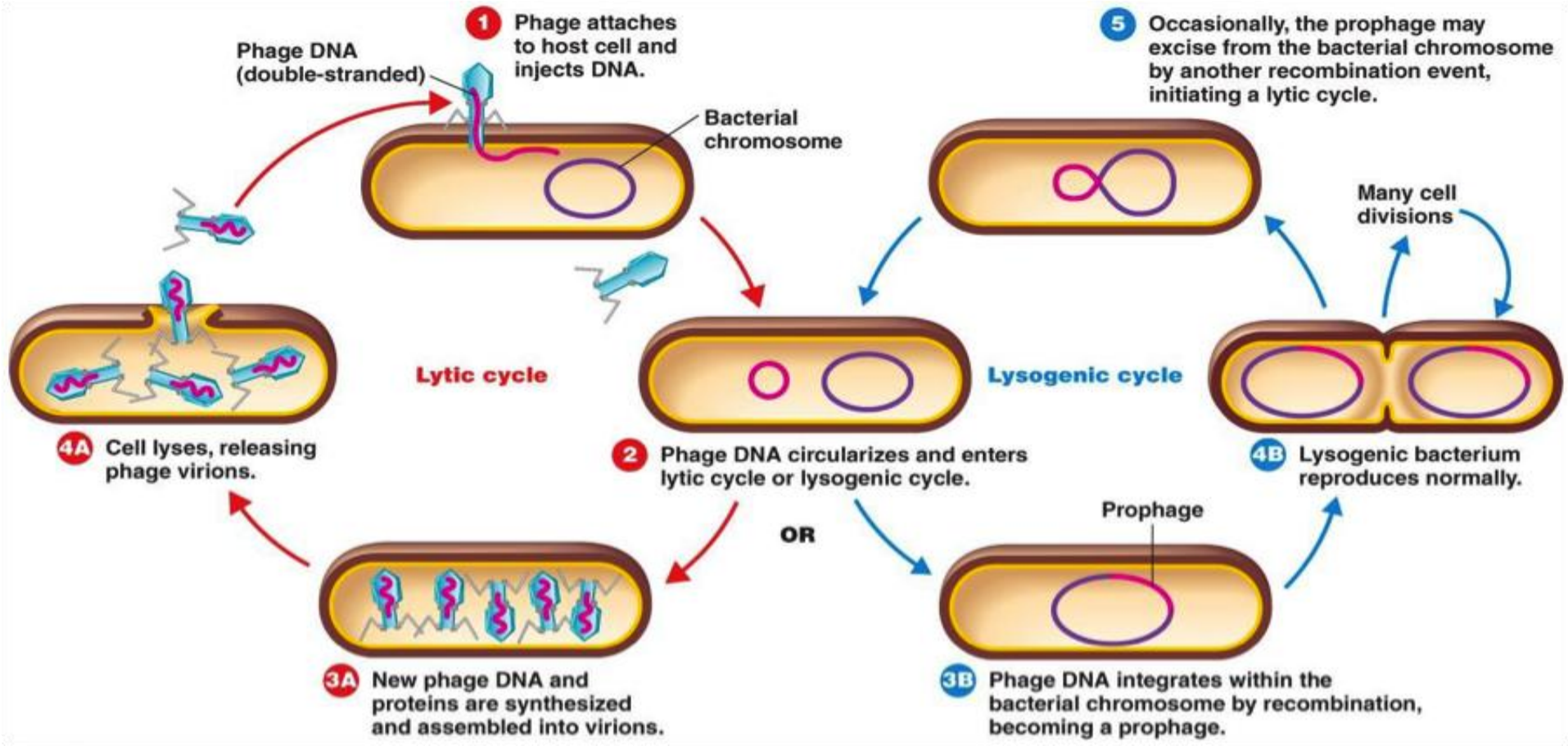
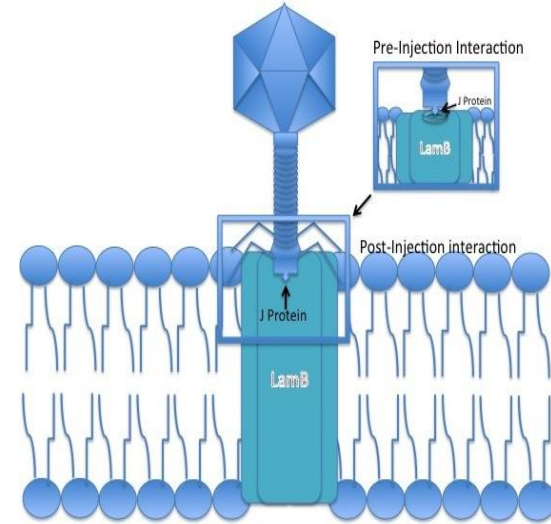
**Lytic phage: clear plaques**

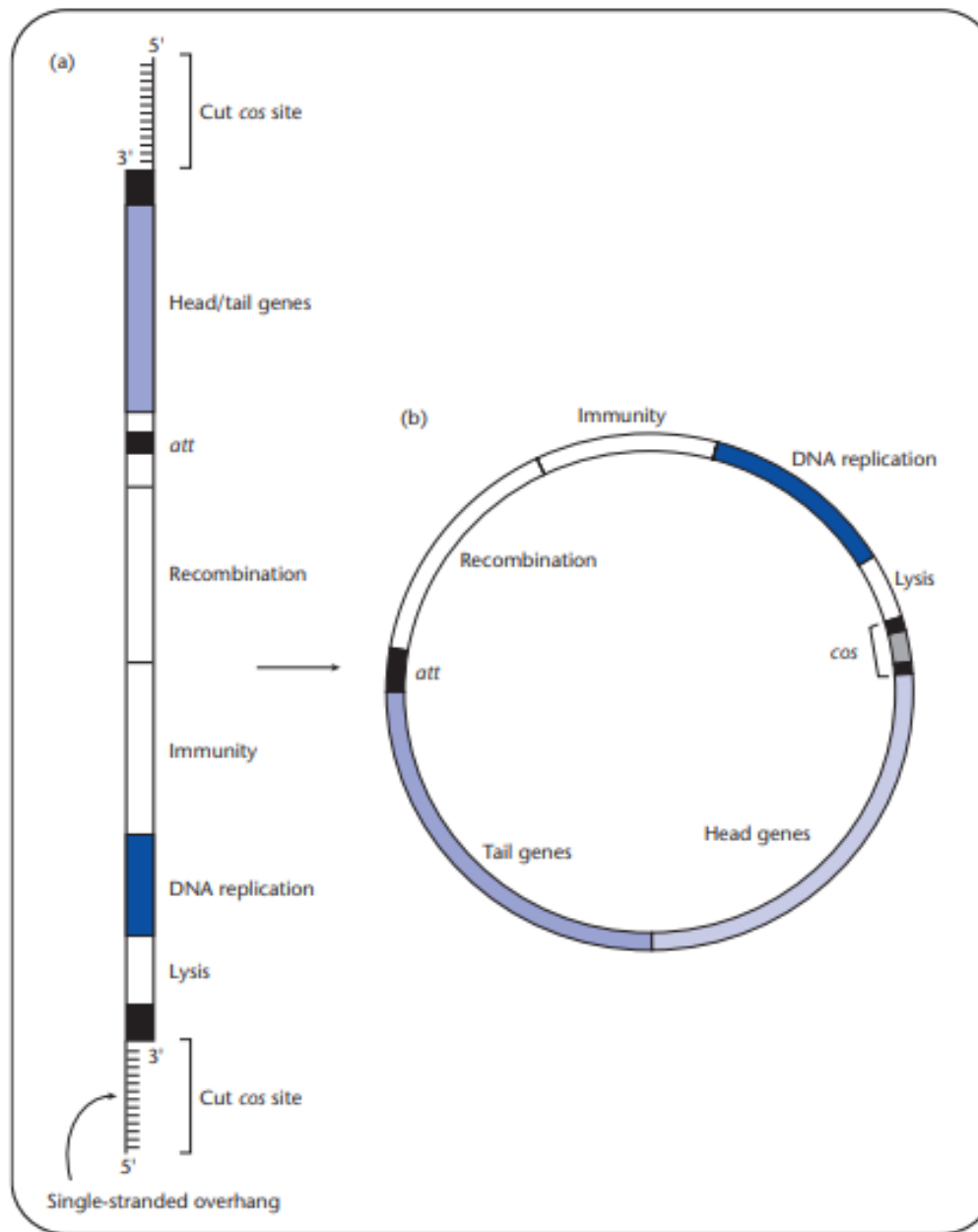


Host range

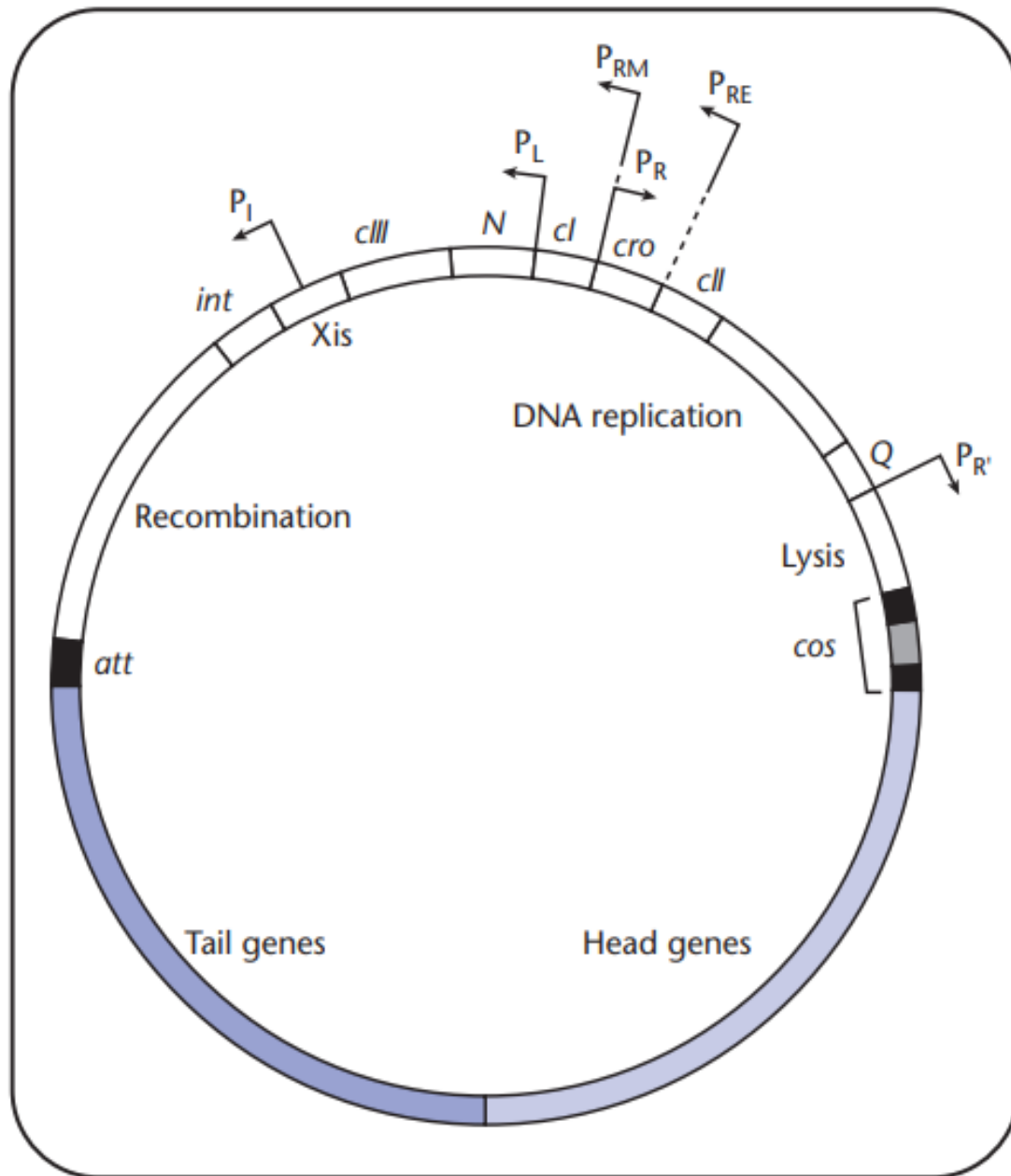
Burst size

The rate of phage DNA transport

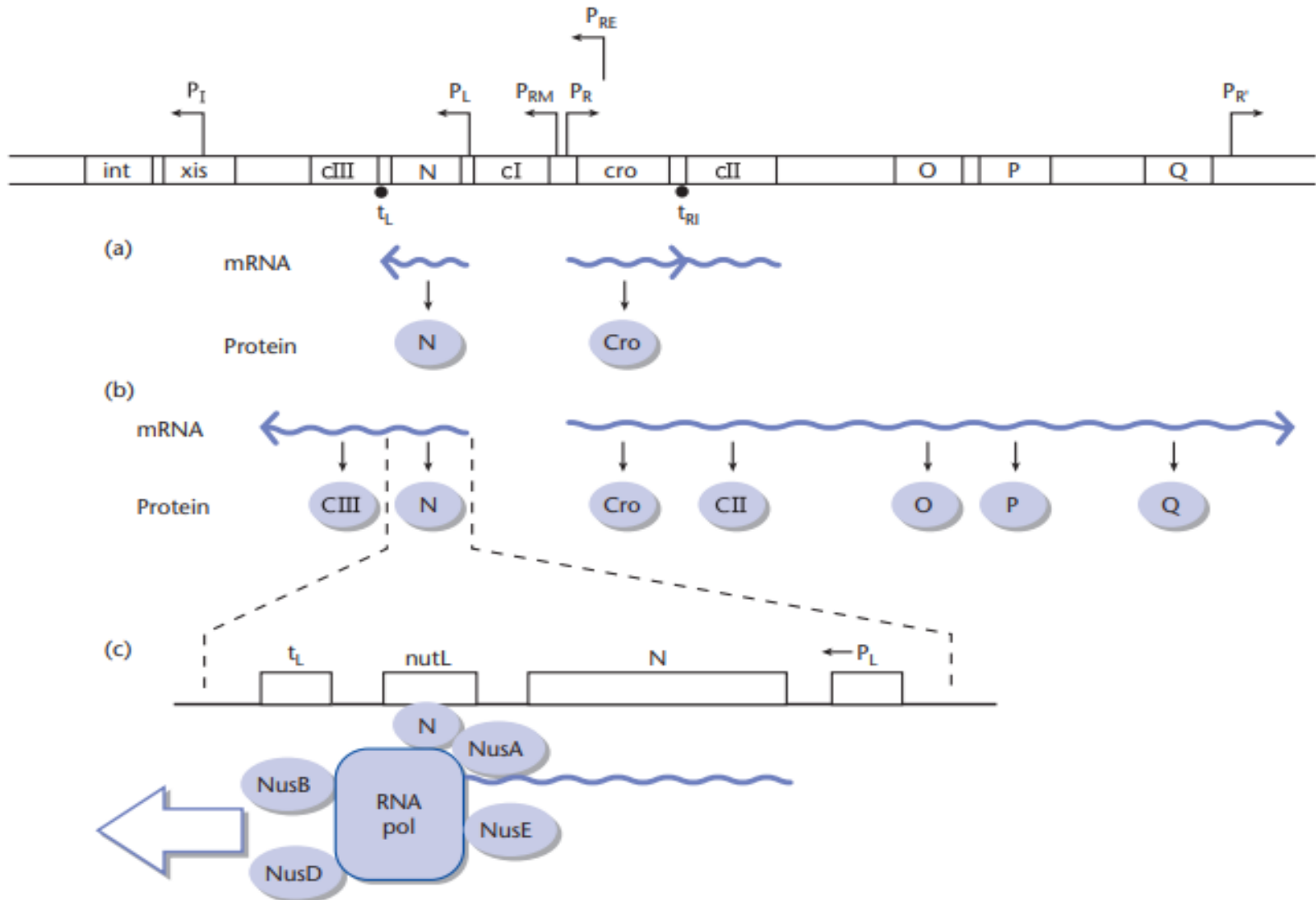




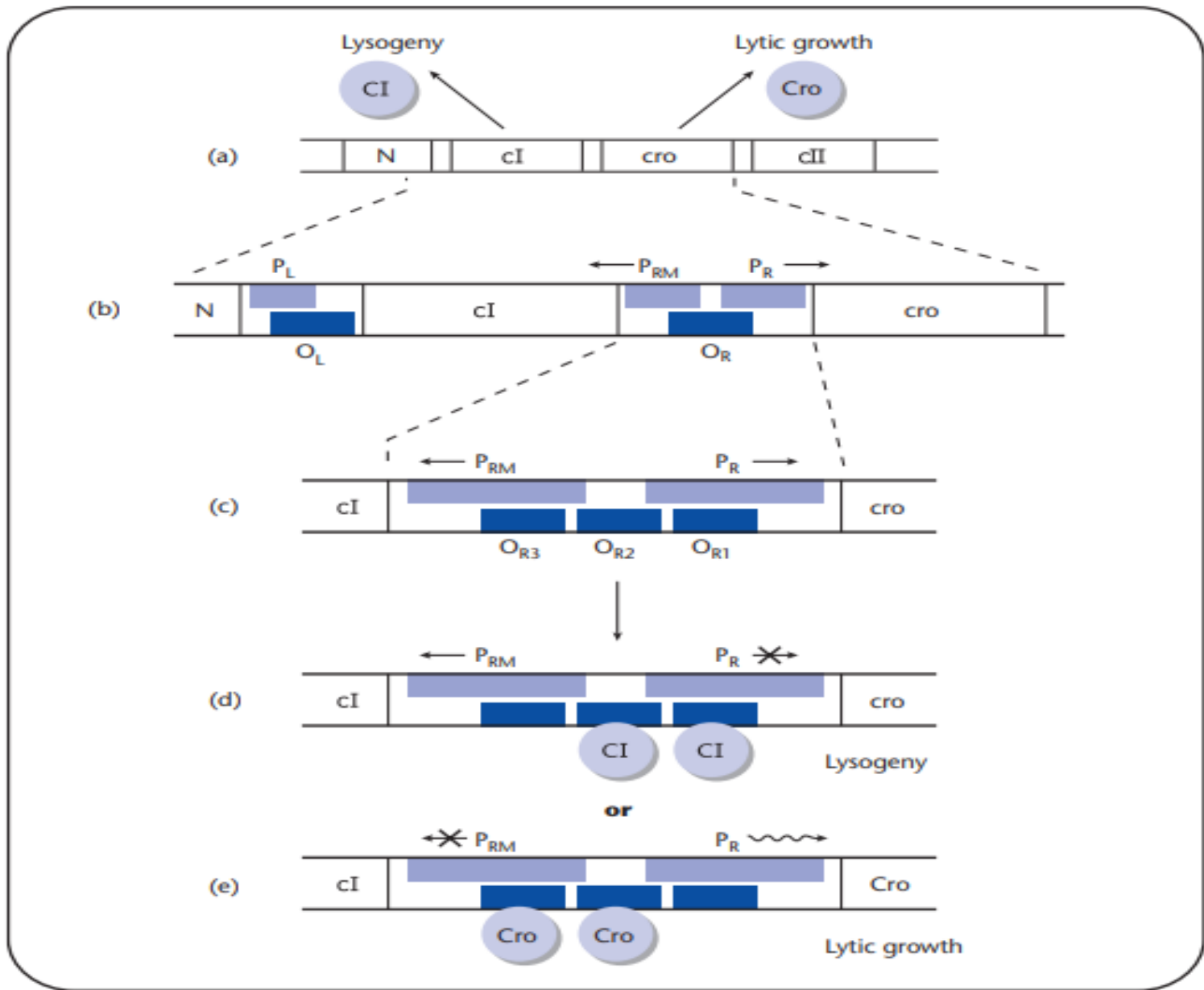
**The structure of the lambda DNA in the phage capsid (a) and after circularization in the cytoplasm (b)**



**The location of the six major promoters on the lambda genome**

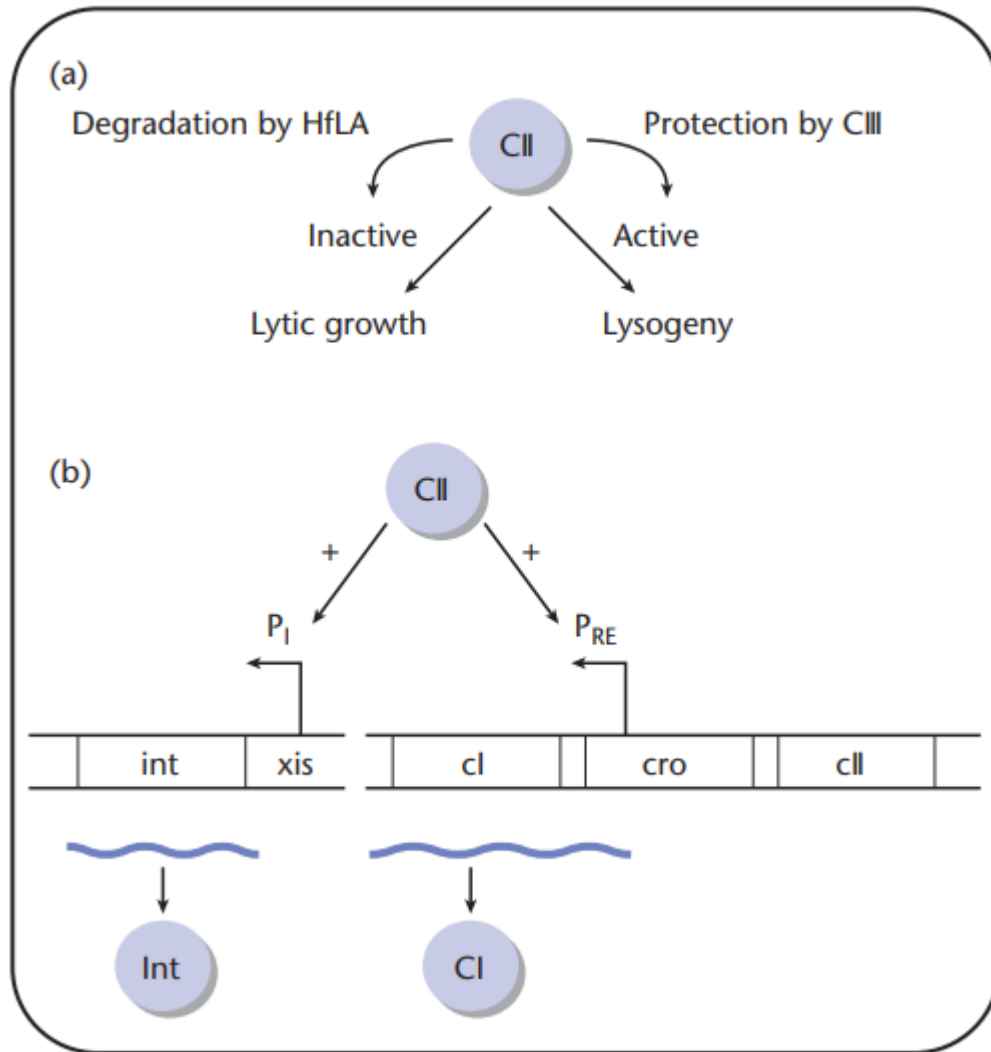


**The first transcription and translation events that take place on the lambda genome after infection**

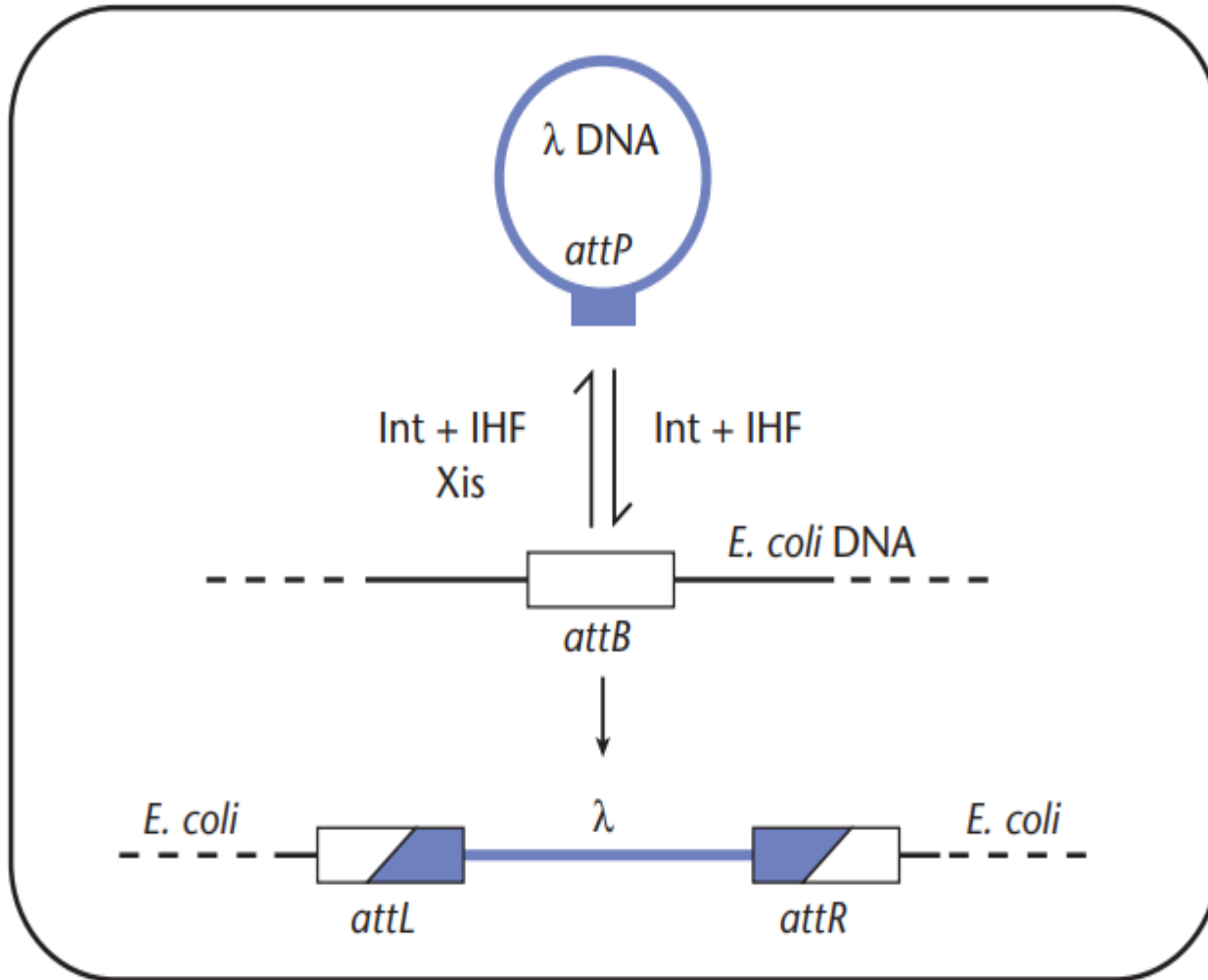


**CI and Cro are the proteins responsible for the two developmental fates of  $\lambda$**

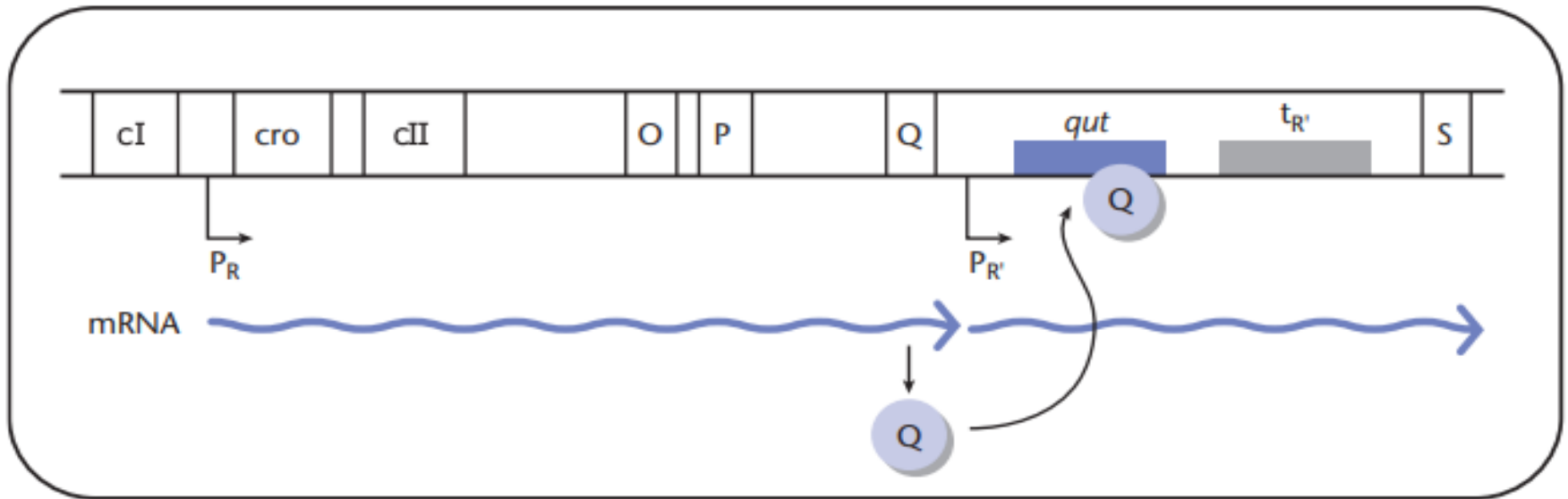




**The CII protein is the major player in the switch between lytic and lysogenic growth**



**I recombines into the chromosome using a specific site on the phage called *attP* and a specific site on the bacterial chromosome called *attB***



**The Q protein which is made from P<sub>R</sub> when N is present is a second anti-termination protein**