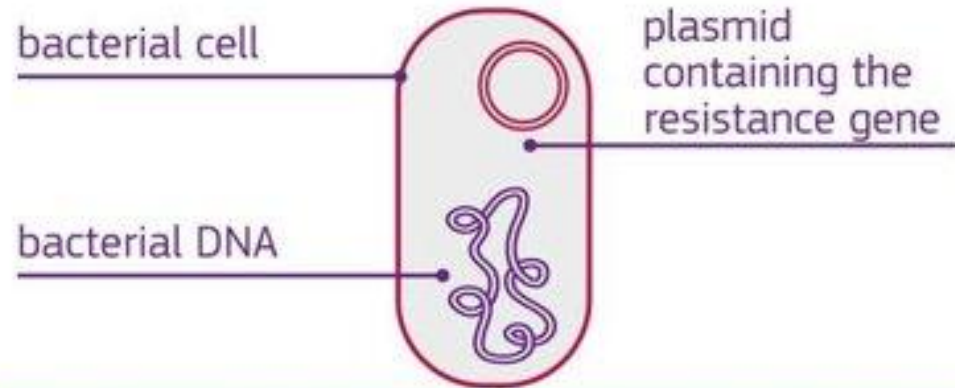


Horizontal Gene Transfer in Bacteria

Introduction

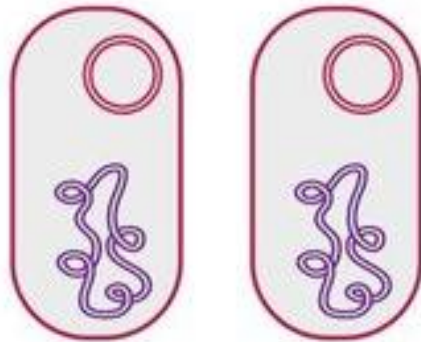
- Horizontal gene transfer, also called as lateral gene transfer, is a process in which genetic material will transfer from one organism to another organism through three mechanisms: Conjugation, Transformation, and Transduction.

A: Vertical Transmission

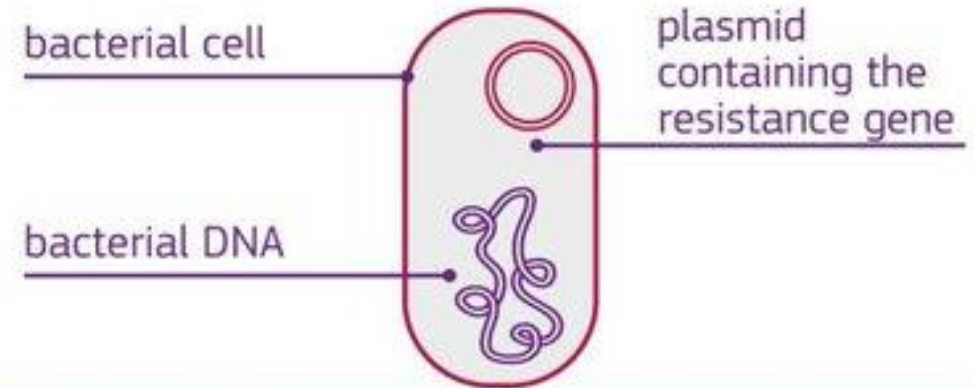


Plasmid transferred during replication to daughter cells

Daughter cells



B: Horizontal Transmission

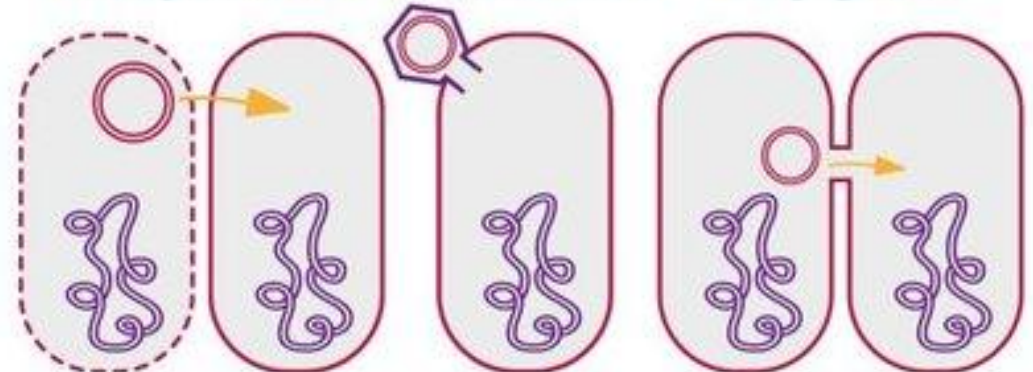


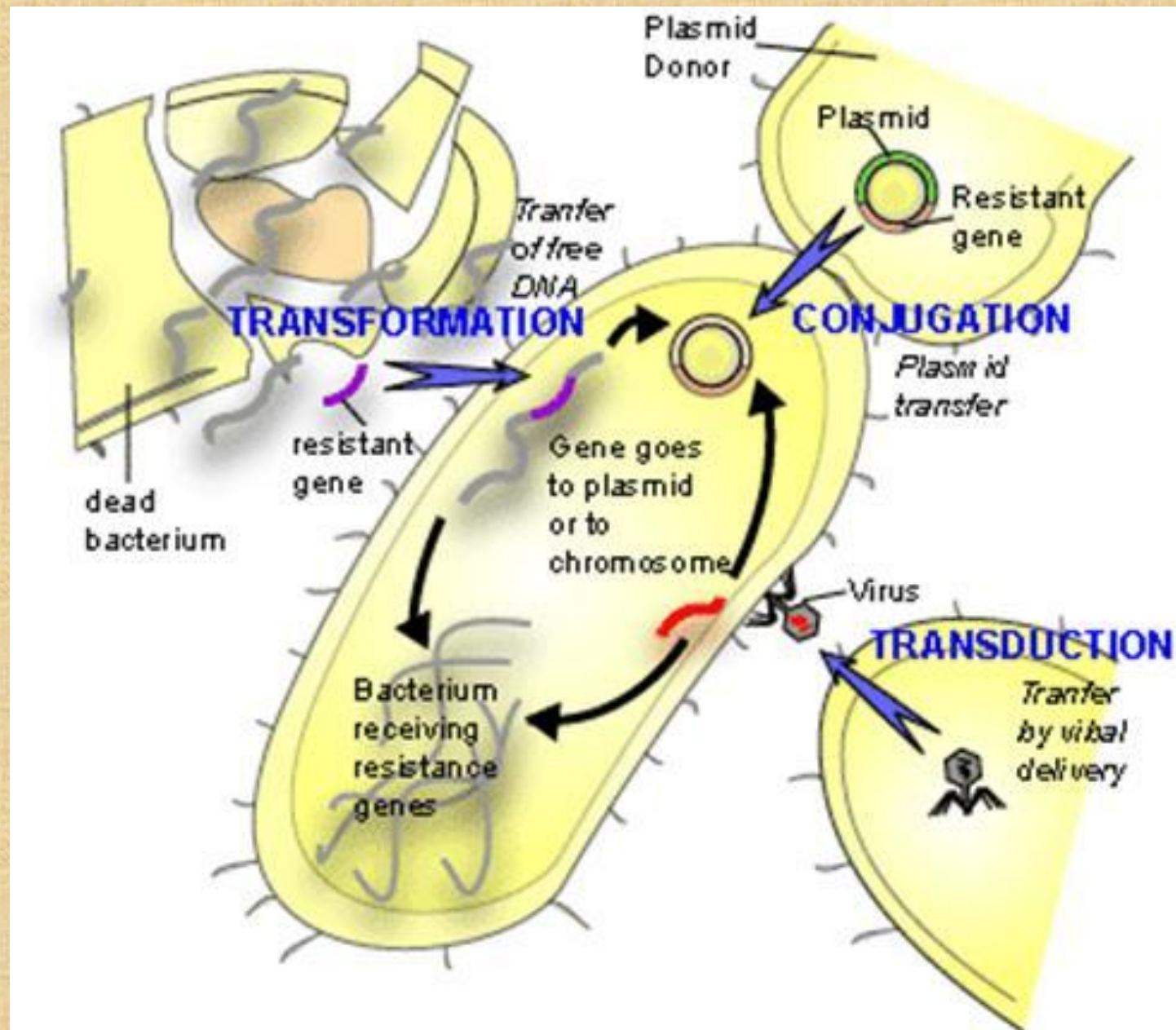
Plasmid transferring to other bacteria of the same generation

Transformation

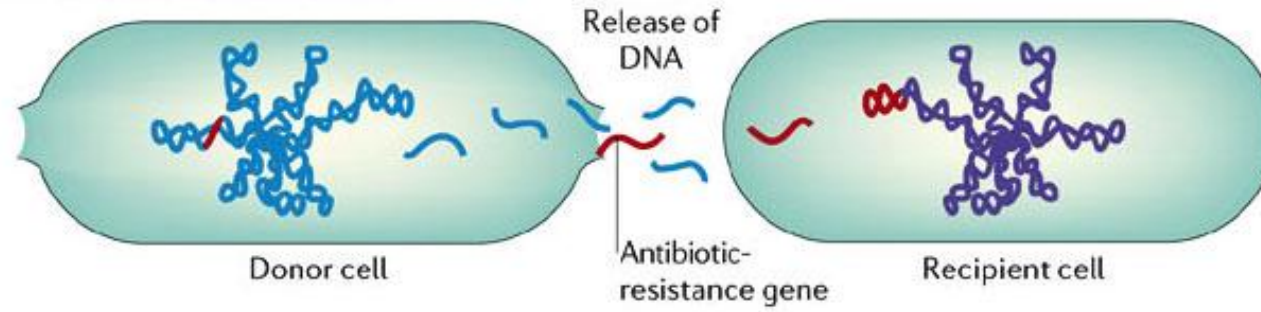
Transduction

Conjugation

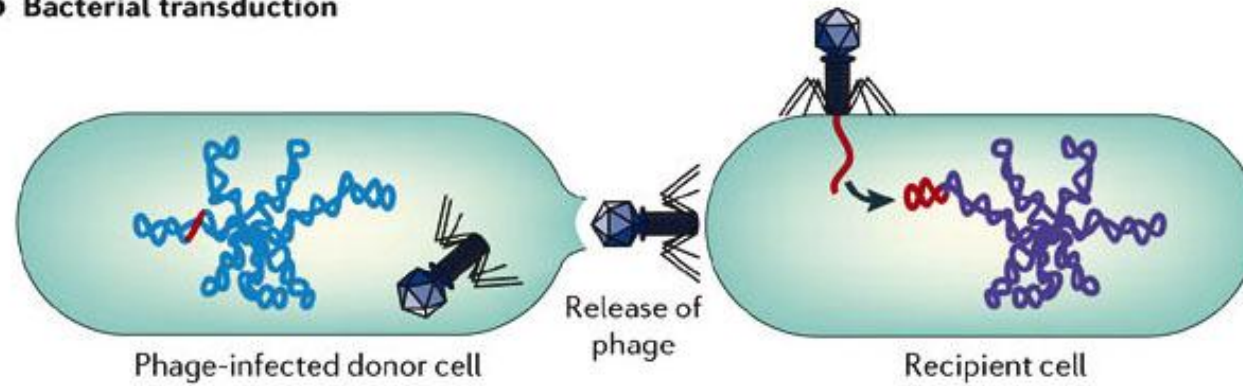




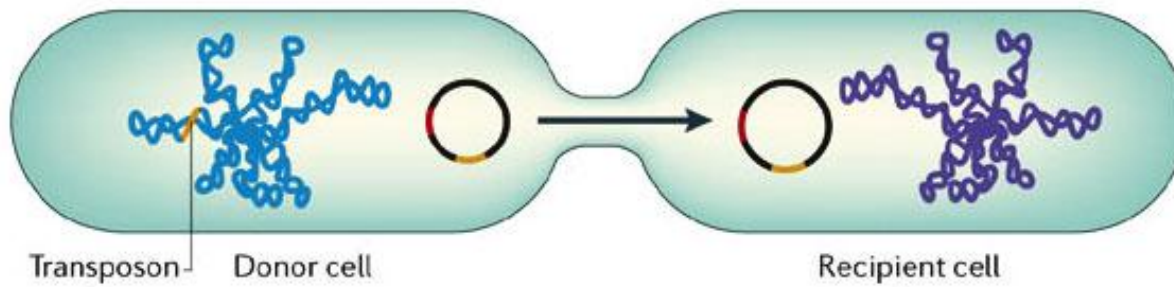
a Bacterial transformation



b Bacterial transduction

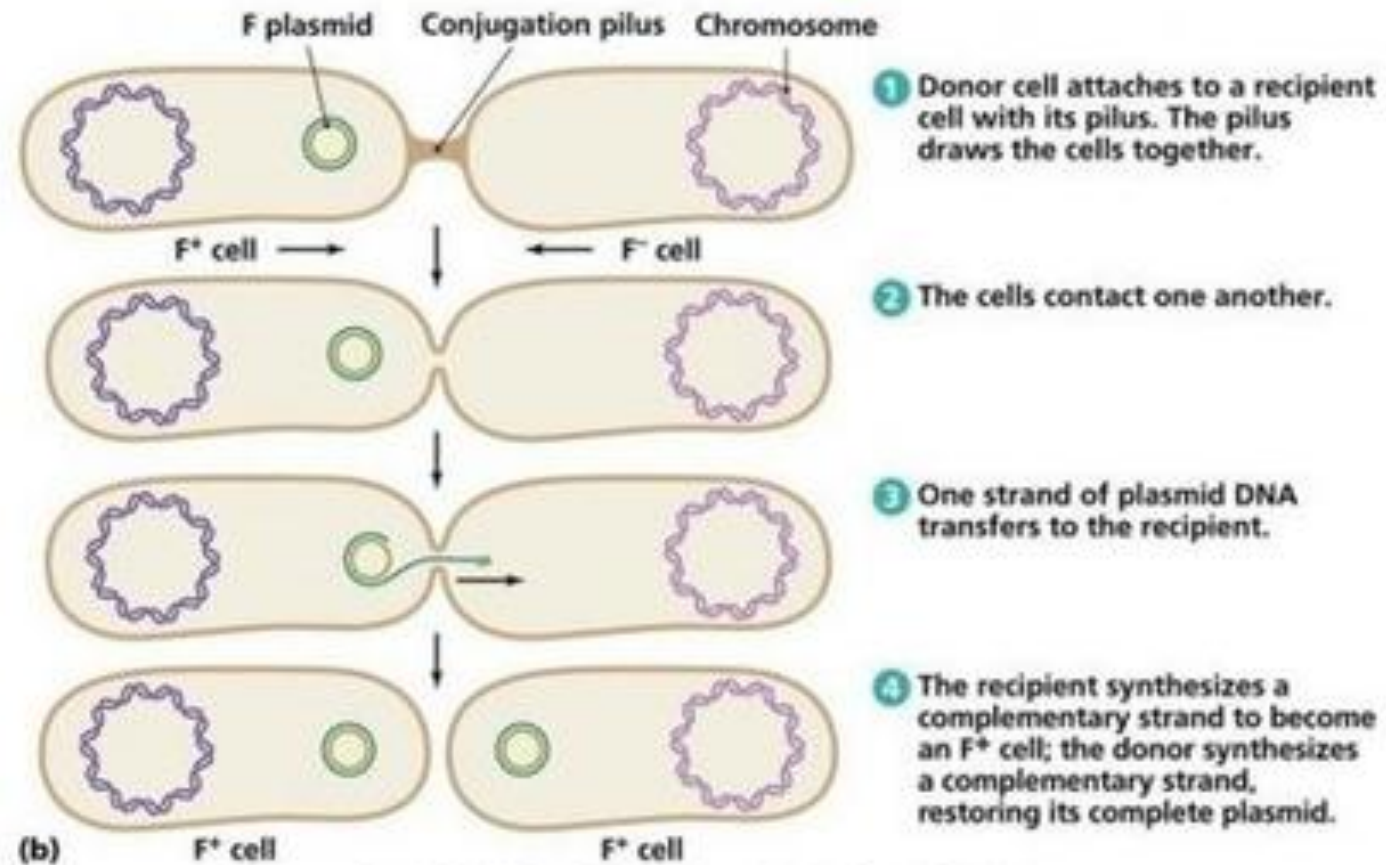


c Bacterial conjugation

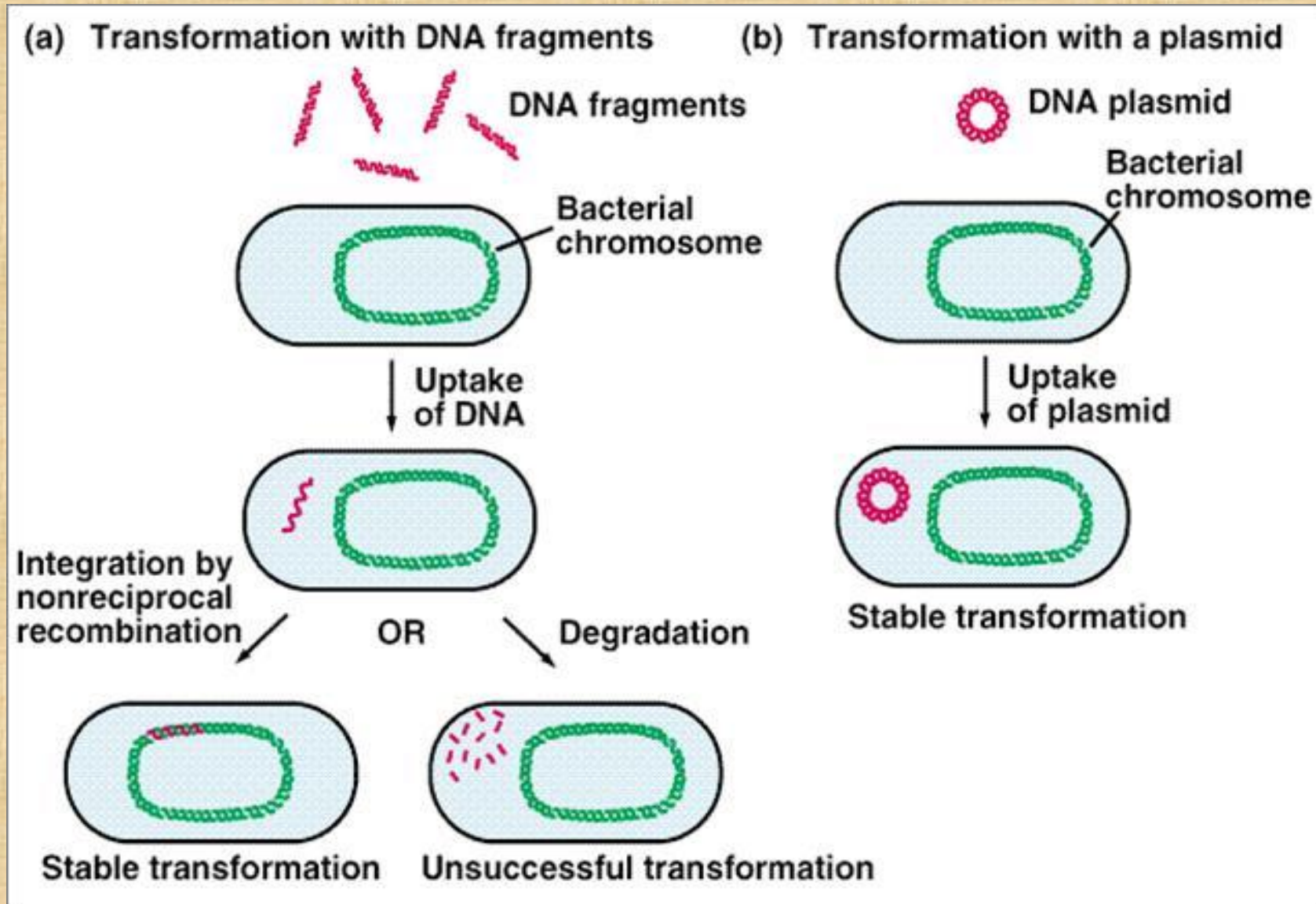


Conjugation

Bacterial Conjugation

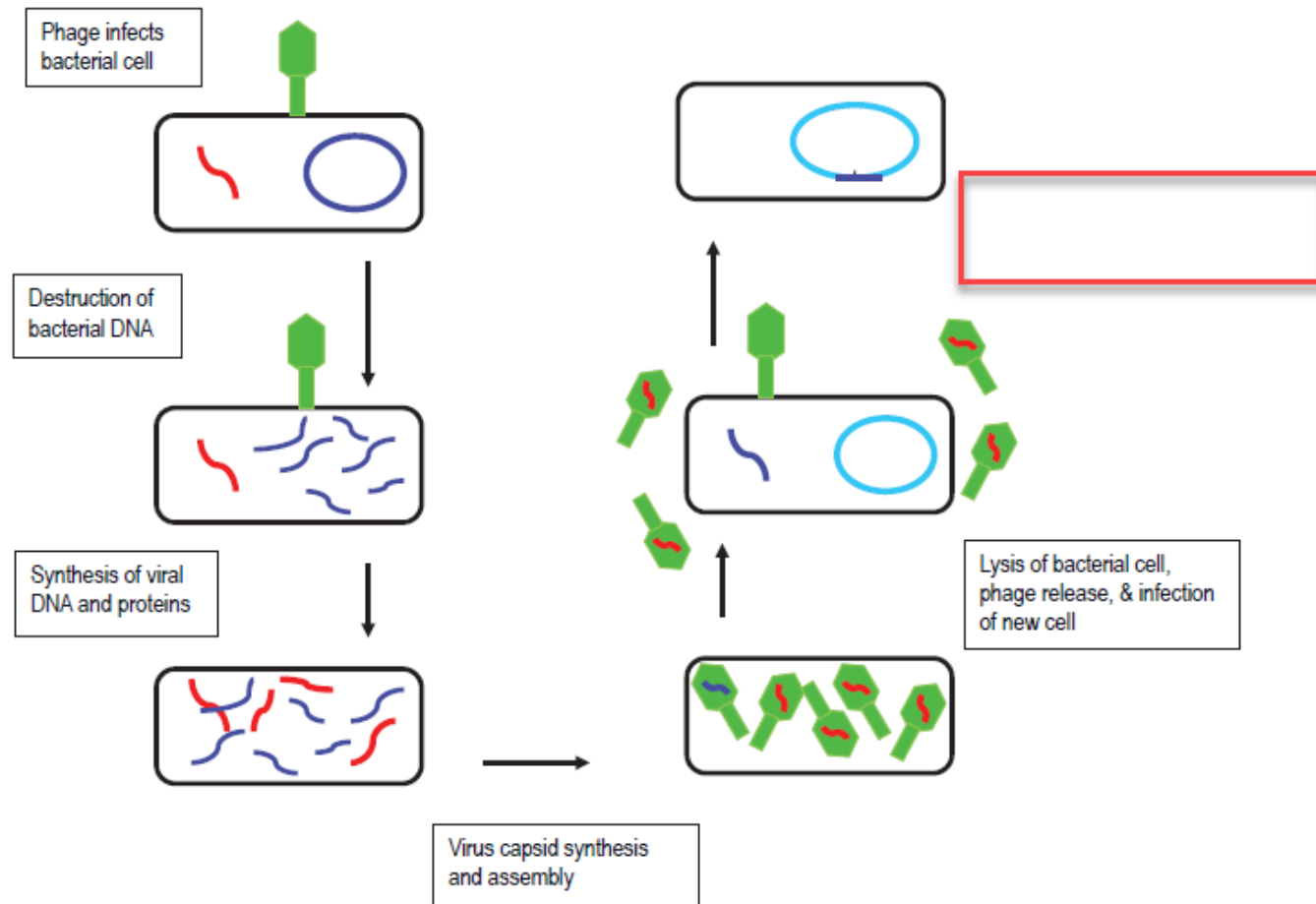


Transformation



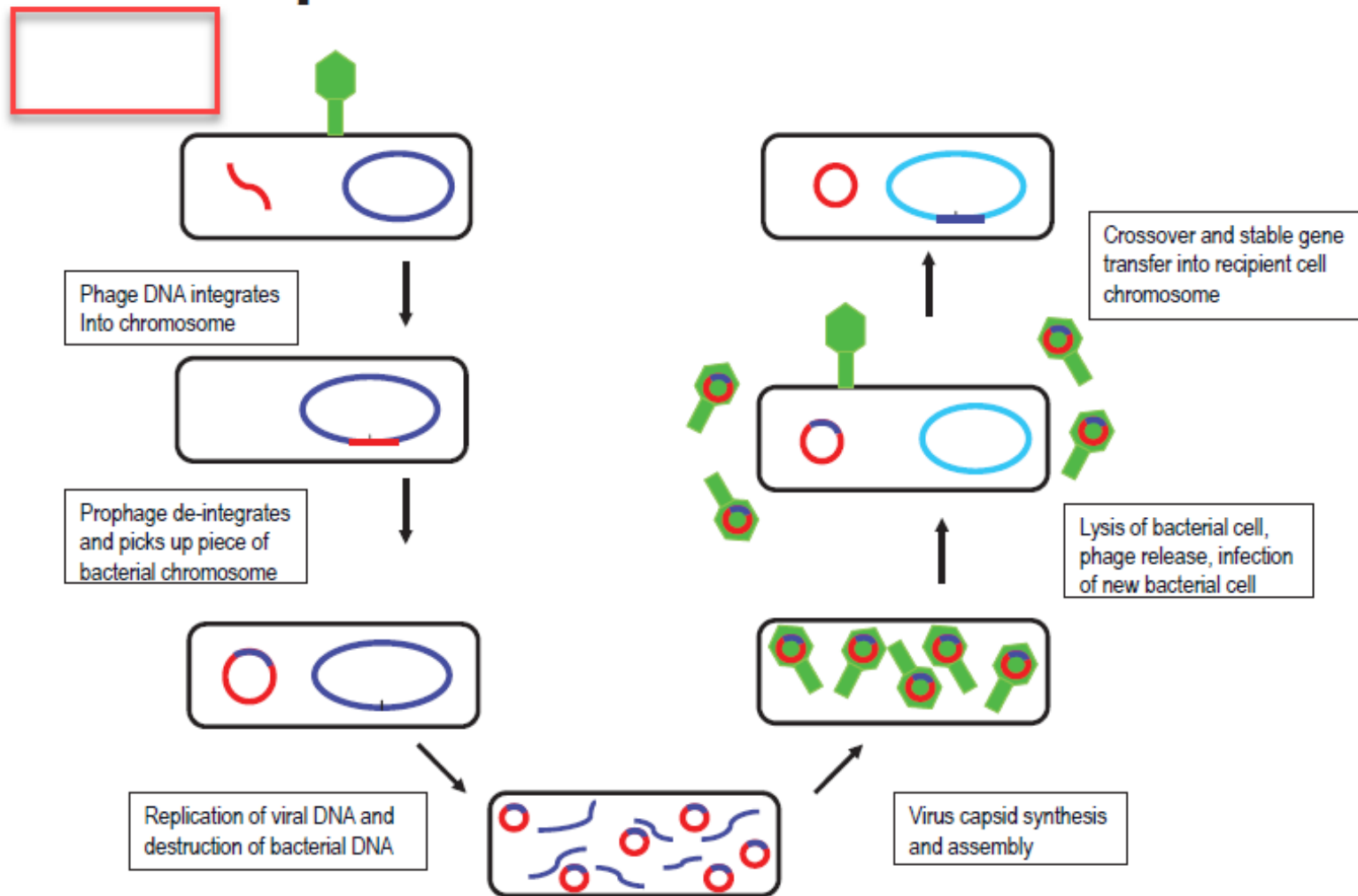
Transduction

Generalized transduction



Courtesy of M. Mulks (MSU)

Specialized transduction



Courtesy of M. Mulks (MSU)