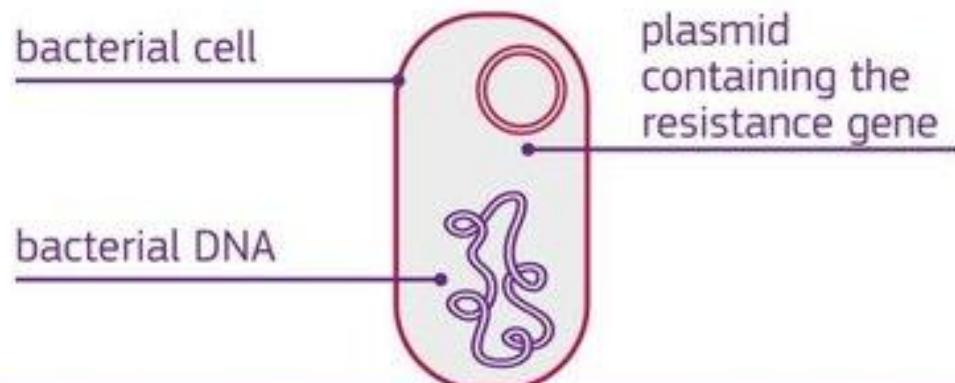


# Horizontal Gene Transfer in Bacteria

# Introduction

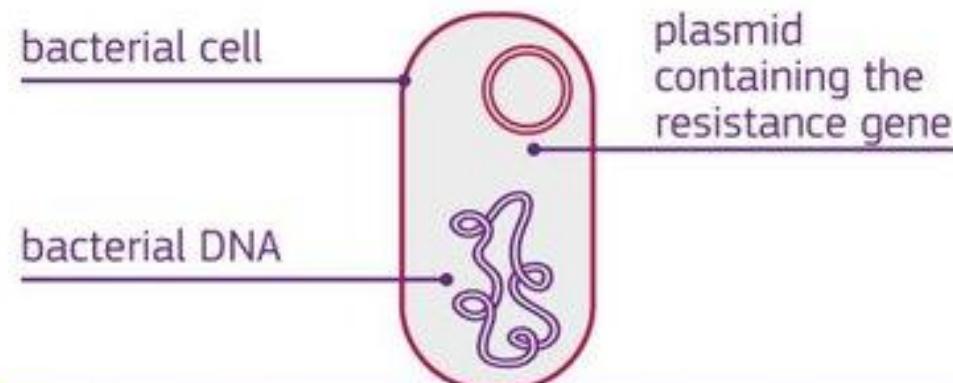
- Horizontal gene transfer, also called as lateral gene transfer, is a process in which genetic material will transfer from one organism to another organism through three mechanisms: Conjugation, Transformation, and Transduction.

## A: Vertical Transmission



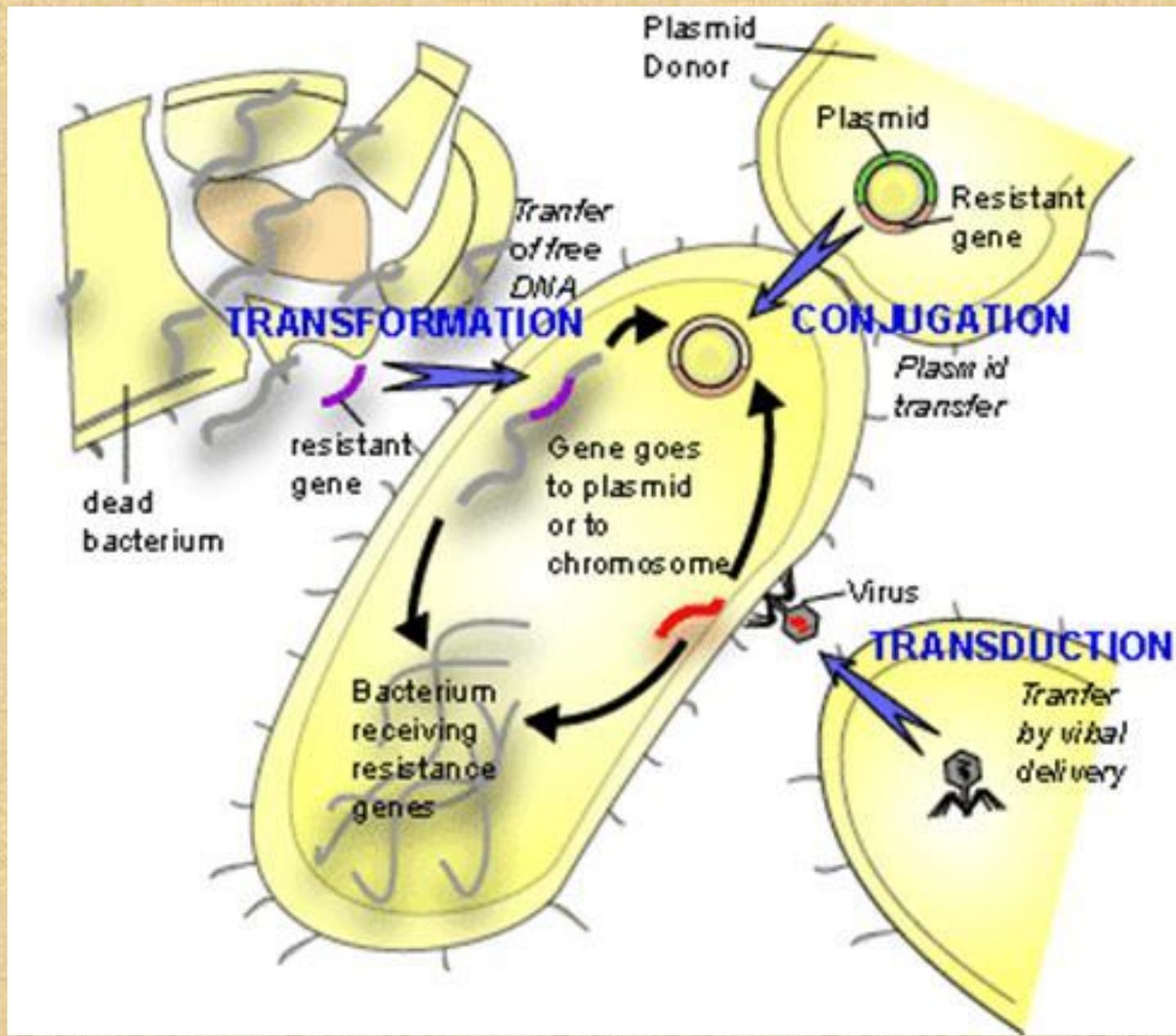
Plasmid transferred during replication to daughter cells

## B: Horizontal Transmission

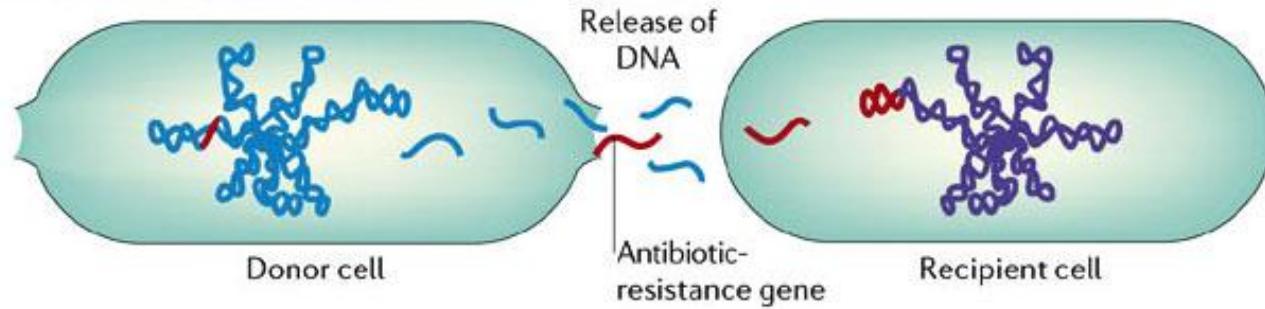


Plasmid transferring to other bacteria of the same generation

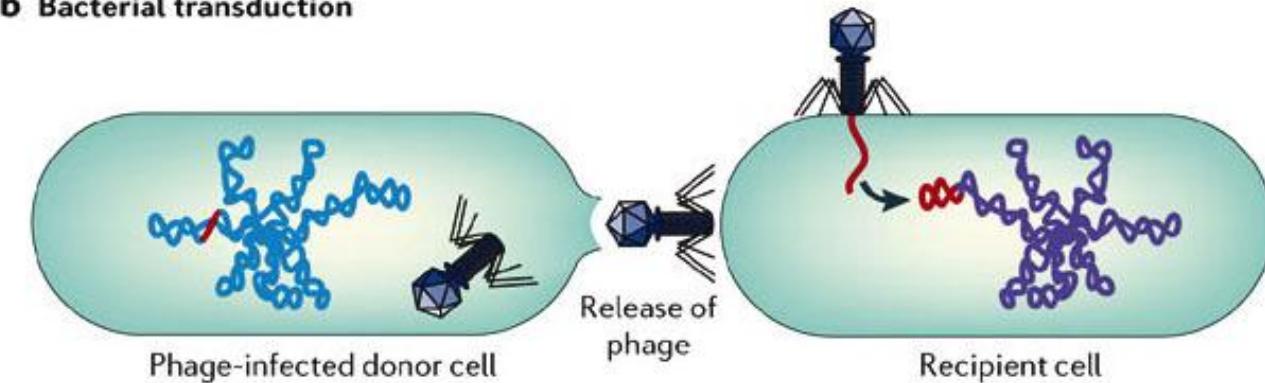
*Transformation*   *Transduction*   *Conjugation*



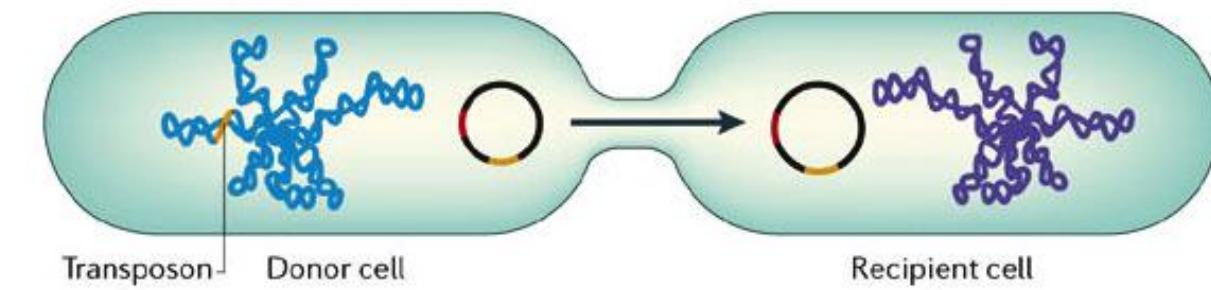
**a Bacterial transformation**



**b Bacterial transduction**

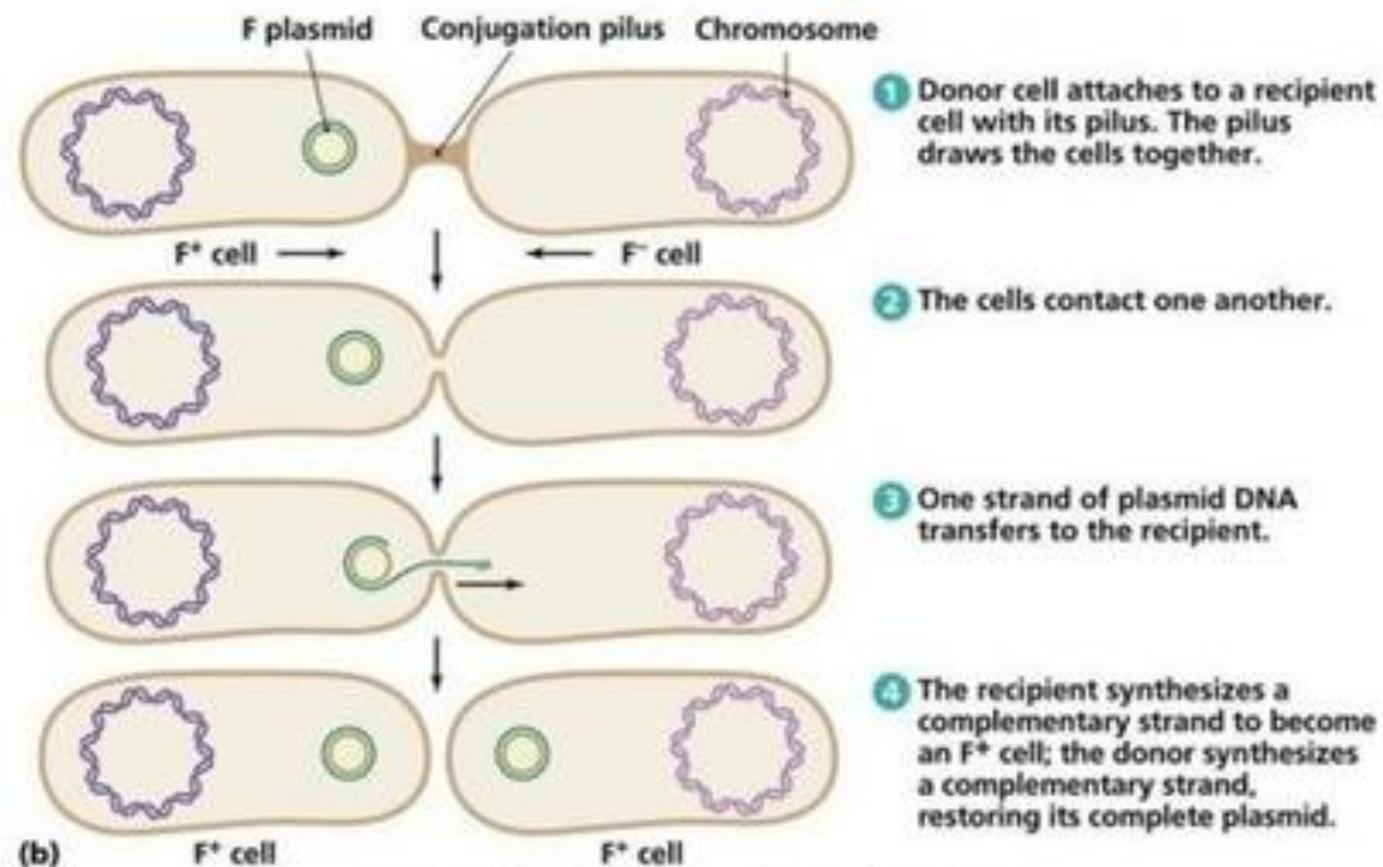


**c Bacterial conjugation**

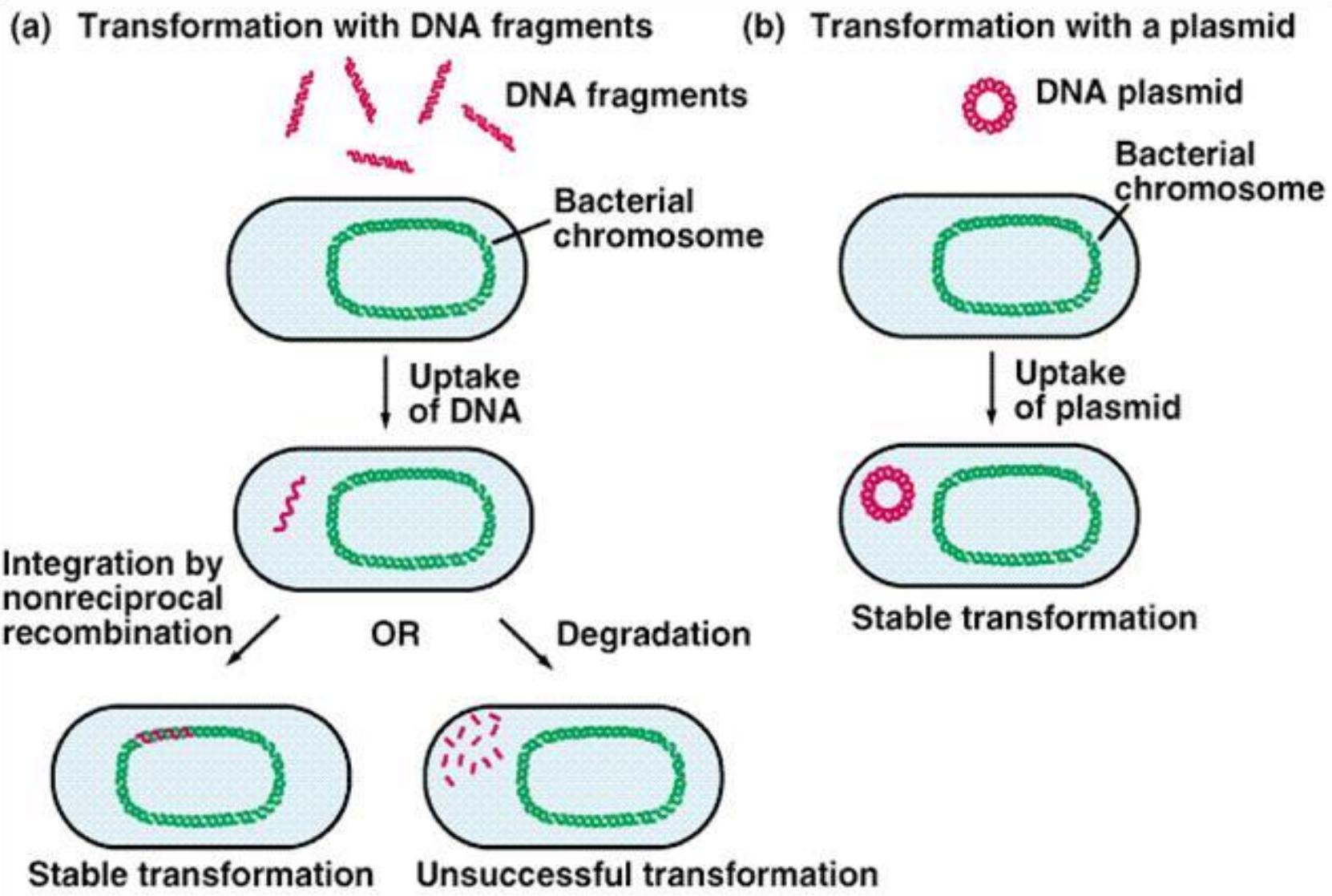


# Conjugation

## Bacterial Conjugation

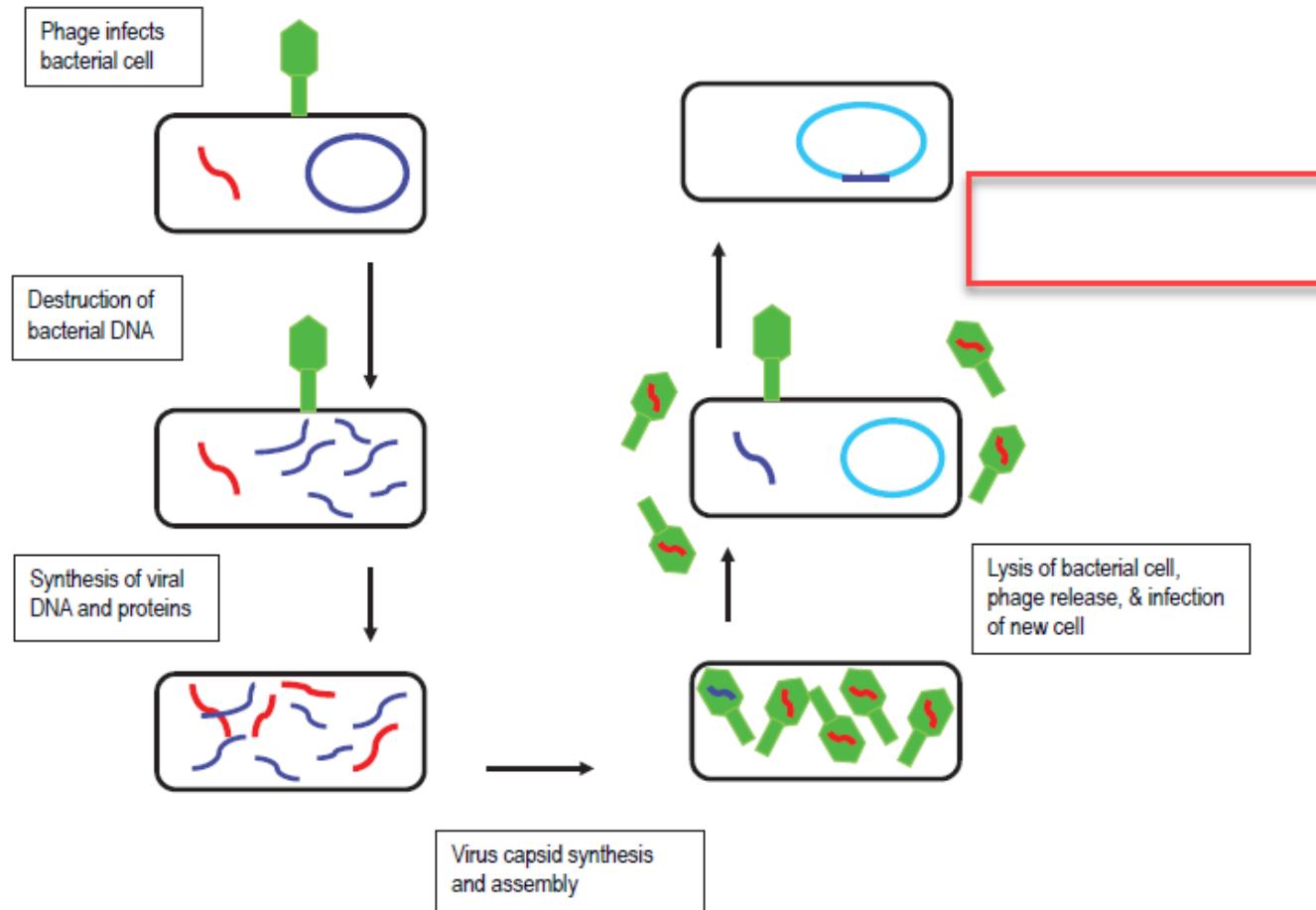


# Transformation



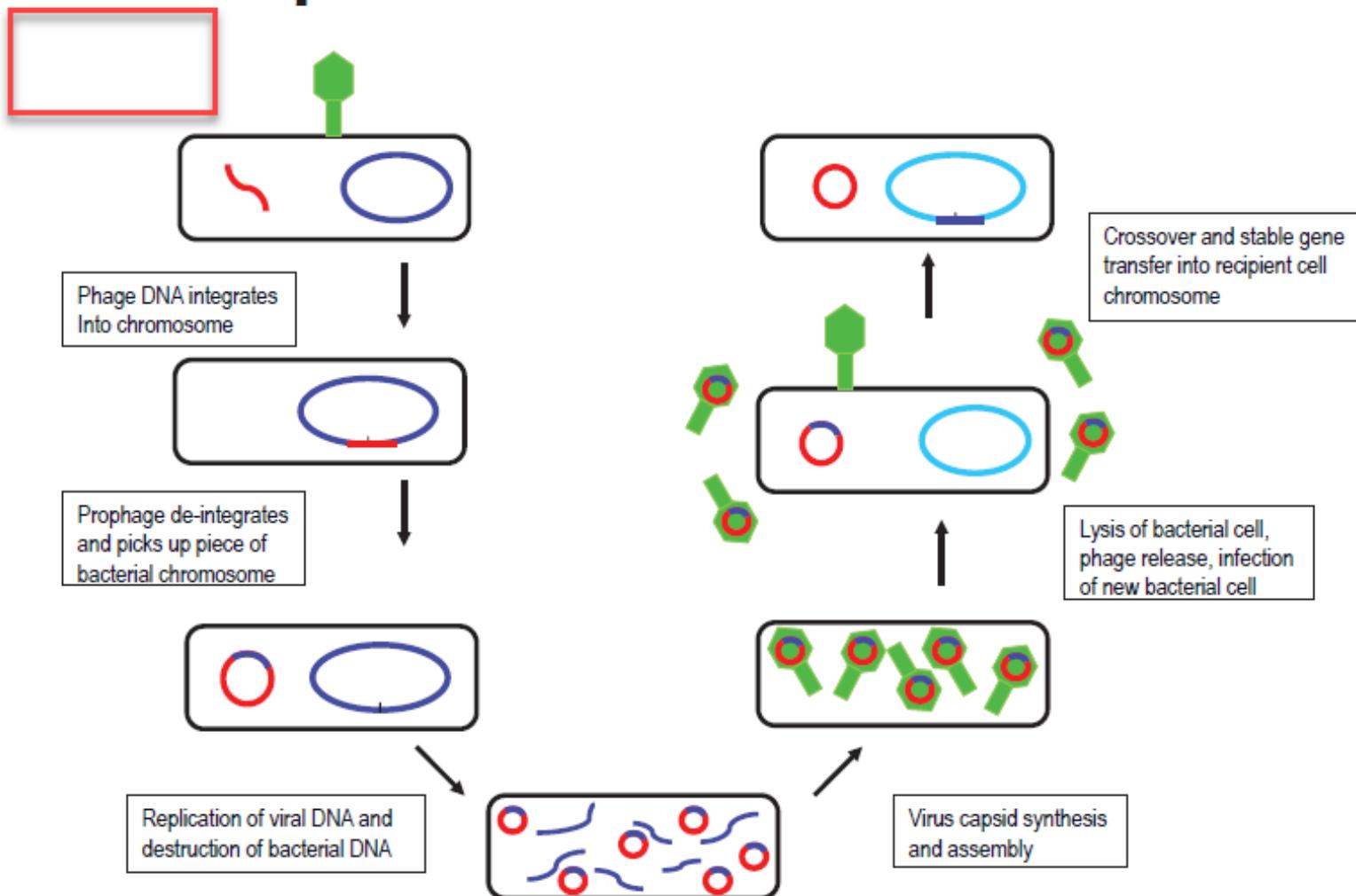
# Transduction

## Generalized transduction



Courtesy of M. Mulks (MSU)

# Specialized transduction



Courtesy of M. Mulks (MSU)