

**CHAPTER 18**  
**MICROBIAL MODELS: BACTERIA**

- BACTERIA CAN REPRODUCE ASEXUALLY BY BINARY FISSION OR SEXUALLY BY FUSION. PLASMIDS ON CELL MEMBRANE HAVE DNA.
- LIGASES: BIOCHEMICAL SCISSORS/PASTE BACK CORRECT COPY.
- BIOCHEMICAL REPRODUCTION.

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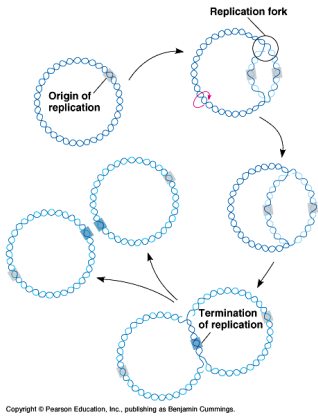
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Figure 18.11 Replication of the bacterial chromosome



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Figure 18.x7 *E. coli*



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Figure 18.x8 *E. coli* dividing



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Figure 18.x9 Bacterium releasing DNA with plasmids



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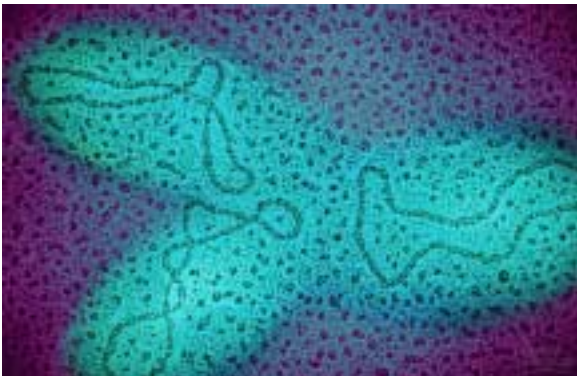
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Figure 18.x10 Plasmids



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## TRANSLOCATION AND RECOMBINATION

- PROVIDES BACTERIAL VARIATION.
- CONJUGATION: EXCHANGE OF DNA THRU PILI.
- PROVIDES HYBRIDS/VARIATION.
- METHOD OF BACTERIAL SURVIVAL.
- ALLOWS BACTERIA TO BECOME ANTIBIOTIC RESISTANT; NEW DNA AND NEW CELL WALL COMPONENTS.

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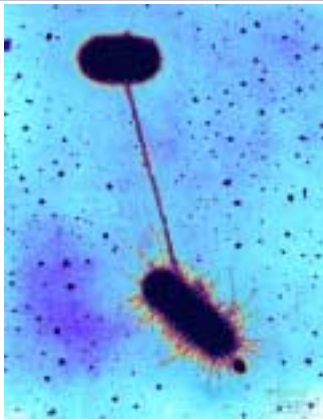
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Figure 18.14 Bacterial mating




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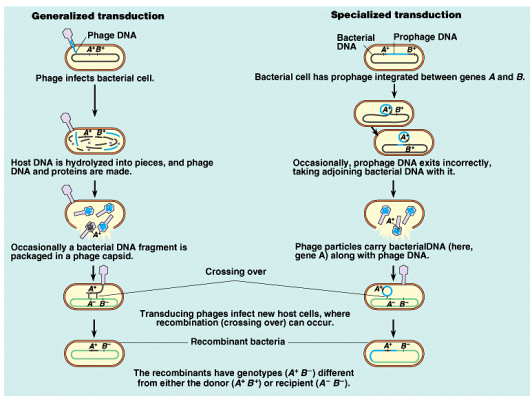
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Figure 18.13 Transduction (Layer 4)



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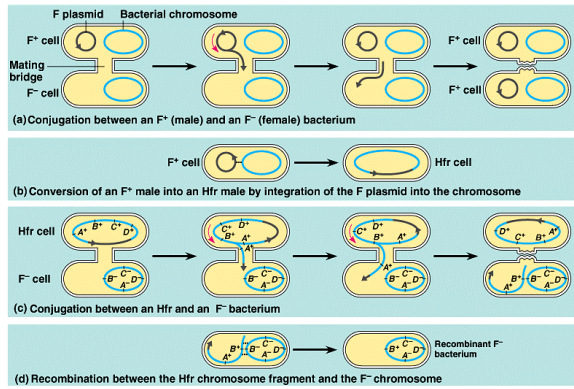
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Figure 18.15 Conjugation and recombination in *E. coli* (Layer 4)



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