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.

Figure 18.11 Replication of the bacterial chromosome

Figure 18.12 E. coli
T RANSFORMATION EXPERIMENTS

- DNA IN BACTERIA IS SINGLE STRANDED
- TRANSFORMS BACTERIAL FORMS
- TAKES DNA FROM OUTSIDE HOST CELL
- CAN CAUSE AVIRULENT FORM TO BECOME VIRULENT, SUCH AS TB OR PNEUMONIA.
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.

Figure 18.14  Bacterial mating

Figure 18.13  Transduction (Layer 4)
Figure 18.15 Conjugation and recombination in E. coli (Layer 4)