Anatomy of a transposon

Figure 14.3
Examples of some bacterial transposons

Figure 14.10
Figure 10.27

(a) IS2

(b) Tn5

IS50L

kan  str  bleo

IS50R

tnp

(a)

(b)
Composite transposons have two insertion elements

Figure 14.11

The transposase binds the inverted repeats

Figure 14.4
Repair of gaps flanking the new insertion result in target site duplication

Figure 14.5
Figure 10.28

Target DNA sequence

Duplicated target sequence

Insertion

Transposable element

IR

IR

A B C D
A' B' C' D'

IR

IR

A B C D
A' B' C' D'

Duplicated target sequence
Figure 10.29

Conservative transposition

Replicative transposition

Target sequence

Transposon excised from donor

Transposon replicates

Donor DNA with break

Transposon in new location

Donor DNA undamaged
Replicative transposons leave one copy of the element at the donor site
Cut-and-paste transposition results in excision and integration at a new site.

Figure 14.8

Regulating transposition with DNA replication can increase copy number of cut-and-paste transposons

Figure 14.9
Transposition often results in a mutation since the newly moved Tn inactivates the gene where it has inserted.
Eukaryotic transposons are similar to those in bacteria