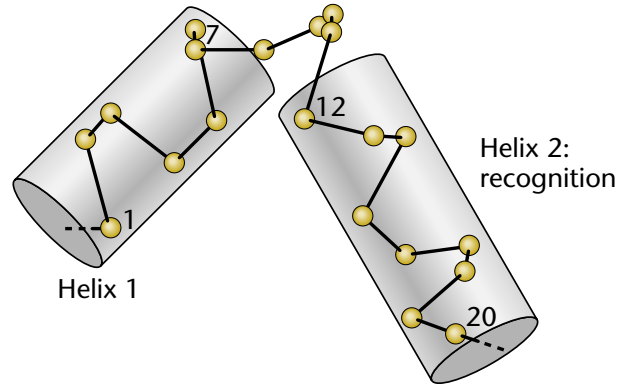


Box 12.1

A



B Amino acids

Helix 1							Turn				Helix 2									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

C

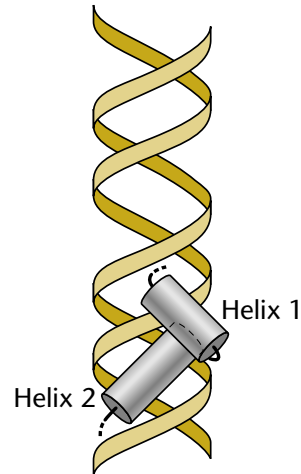


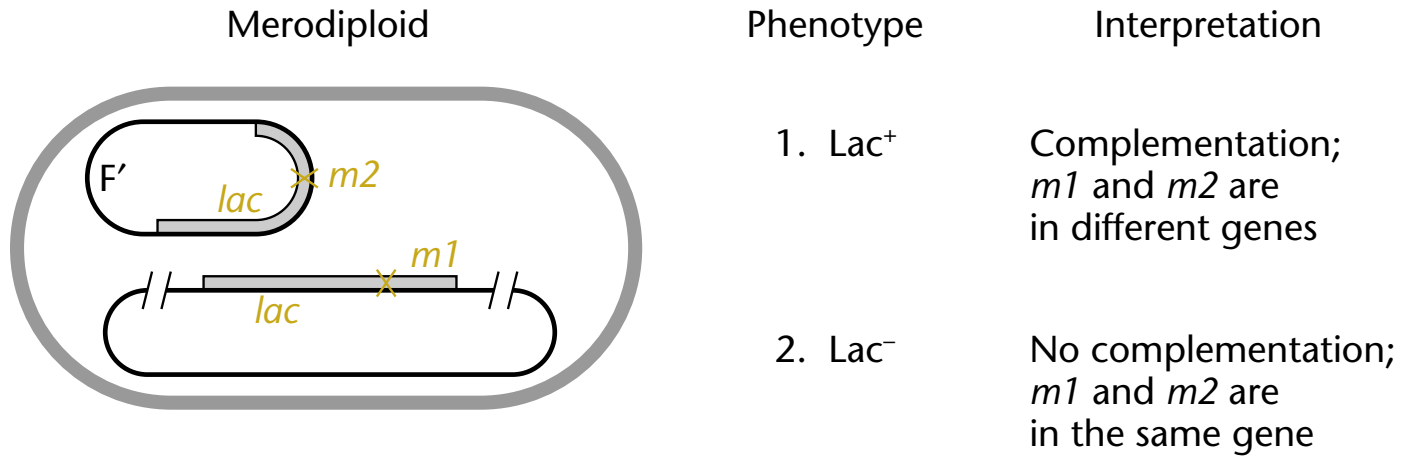
Figure 12.1

Figure 12.2

Merodiploid

Phenotype

Interpretation

Lac⁻

No complementation;
the *cis*-acting *laci* mutation
prevents expression
of *lacZ*, *lacY*, and *lacA*

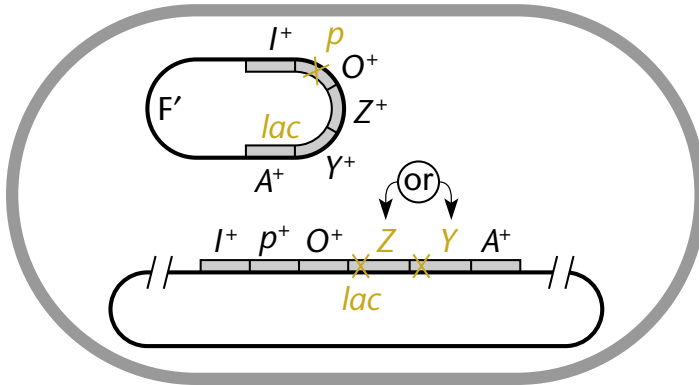


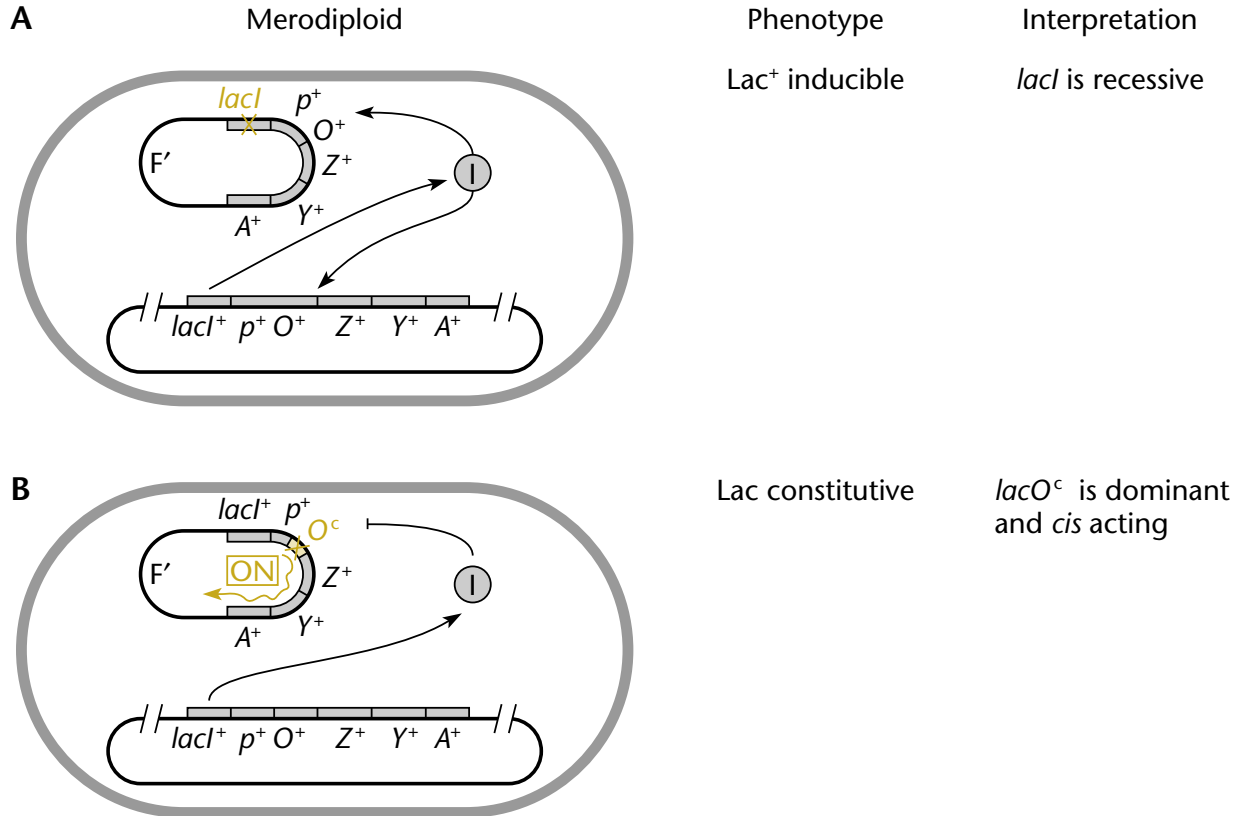
Figure 12.3

Table 12.1

TABLE 12.1 Genetic behavior of <i>lac</i> mutations		
Mutation	Inducibility	Complementation behavior
<i>lacZ</i>	Noninducible	Recessive; <i>trans</i> -acting
<i>lacI</i>	Constitutive	Recessive; <i>trans</i> -acting
<i>lacI^s</i>	Noninducible	Dominant; <i>trans</i> -acting
<i>lacI^d</i>	Constitutive	Dominant; <i>trans</i> -acting
<i>lacI^q</i>	Inducible ^a	Dominant; <i>trans</i> -acting
<i>lacO^c</i>	Constitutive	Dominant; <i>cis</i> -acting
<i>lacP</i>	Noninducible	Recessive; <i>cis</i> -acting

^a Tighter on-off control.

Figure 12.4

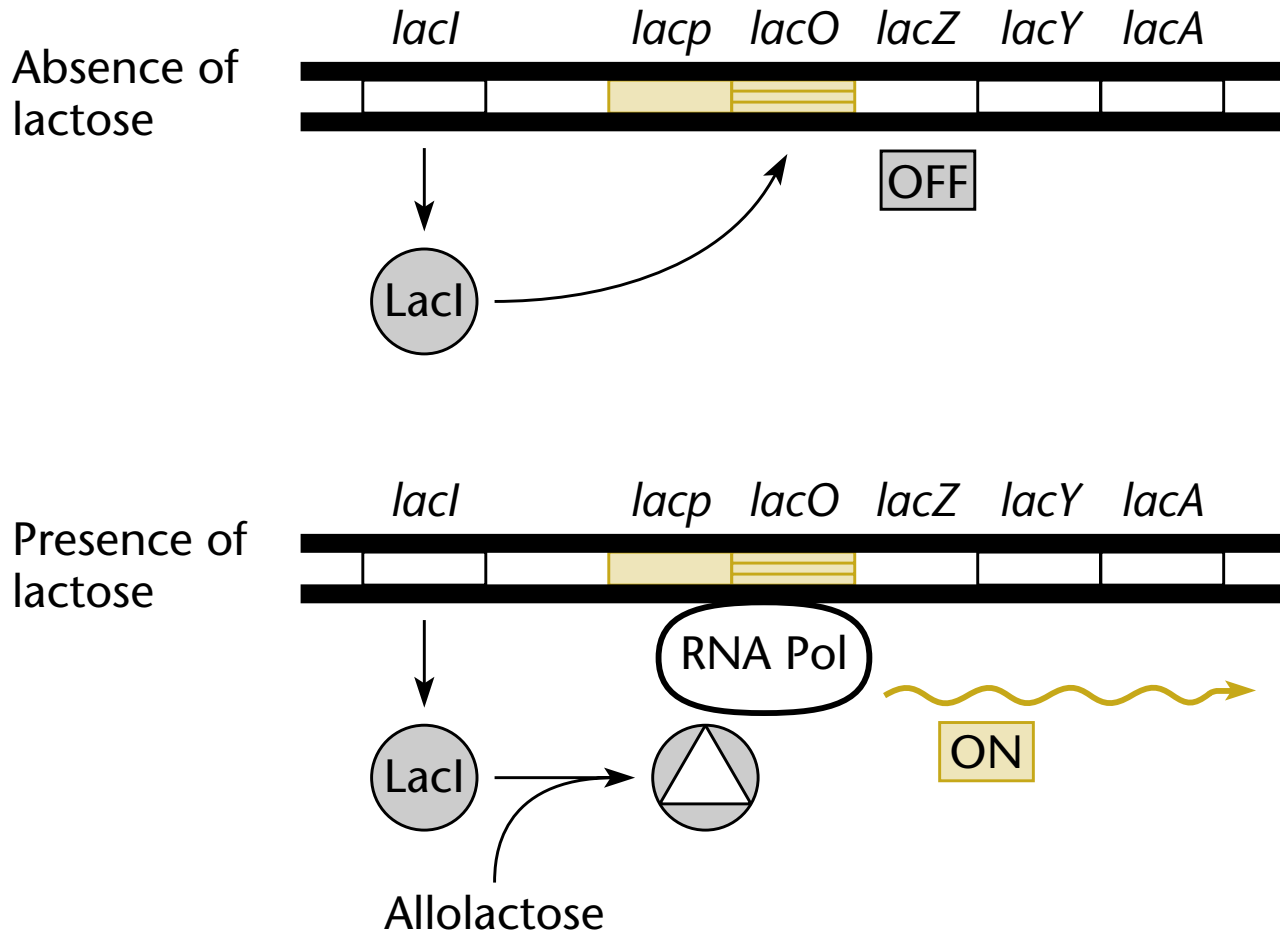


Figure 12.5

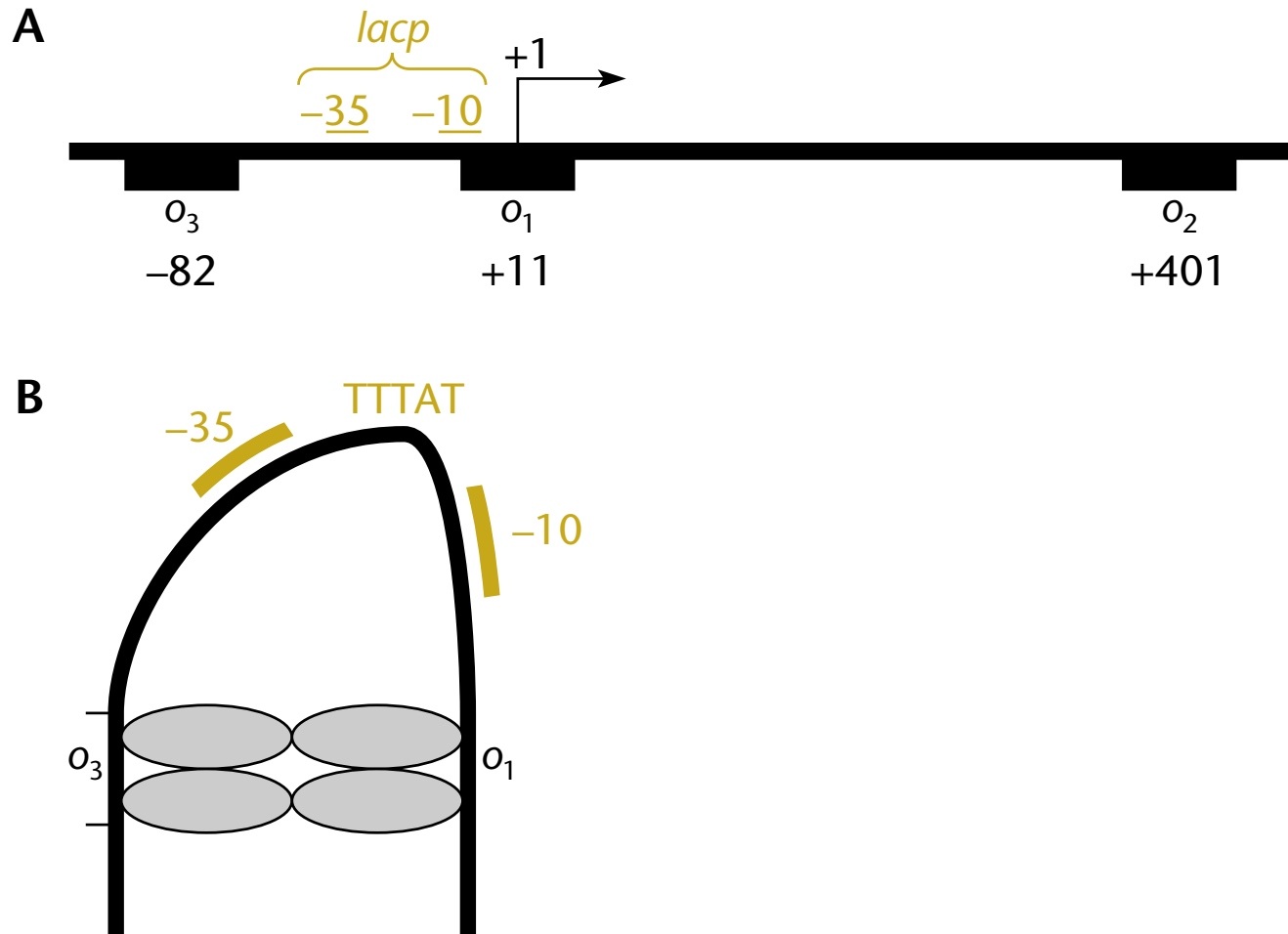


Figure 12.6

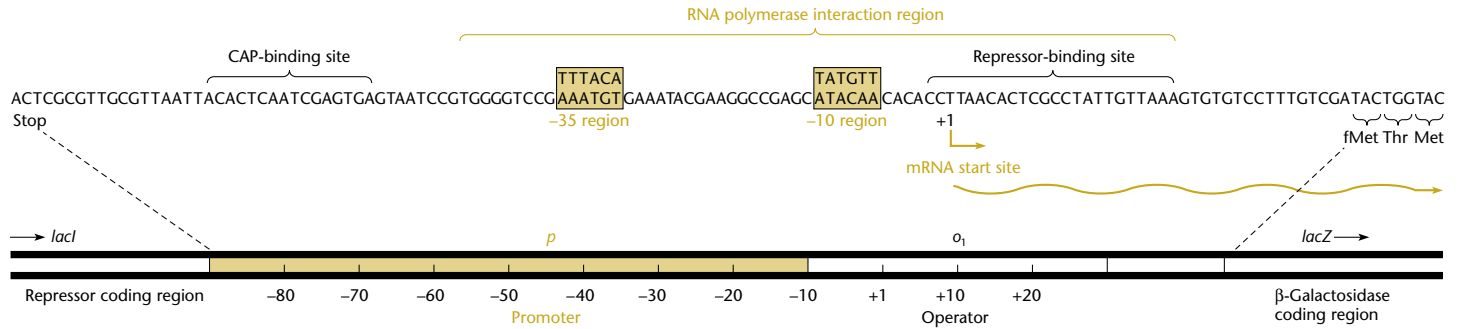


Figure 12.7

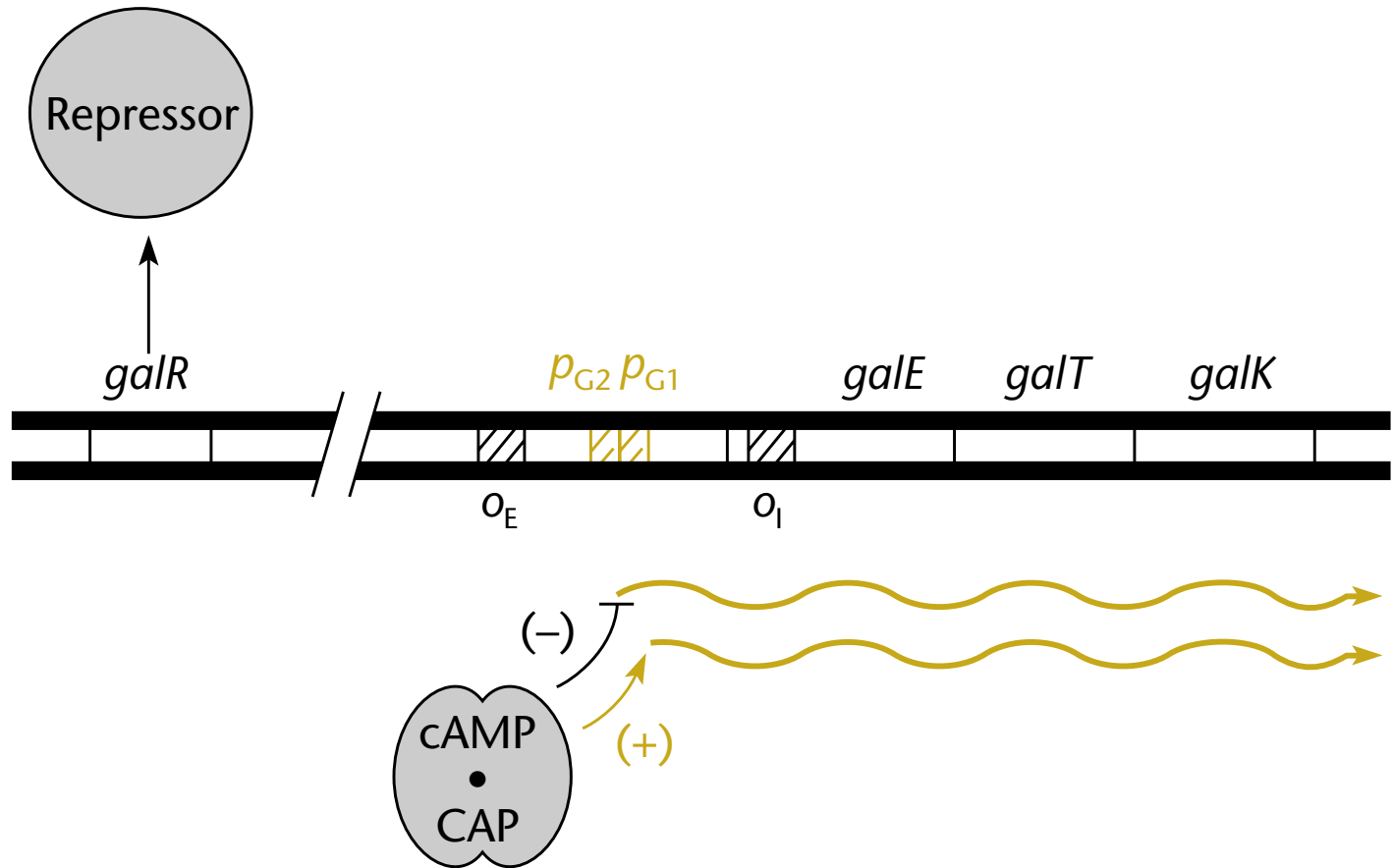


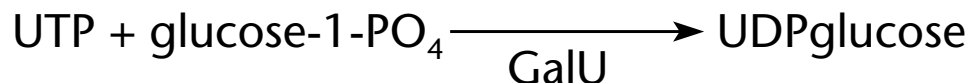
Figure 12.8

Figure 12.9

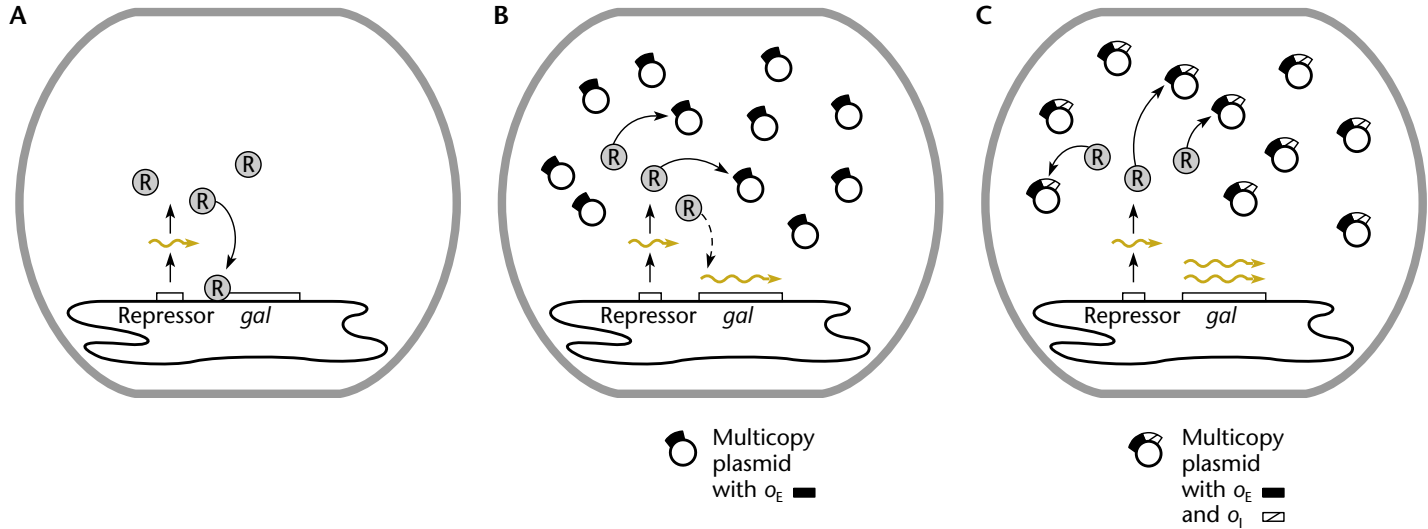


Figure 12.10

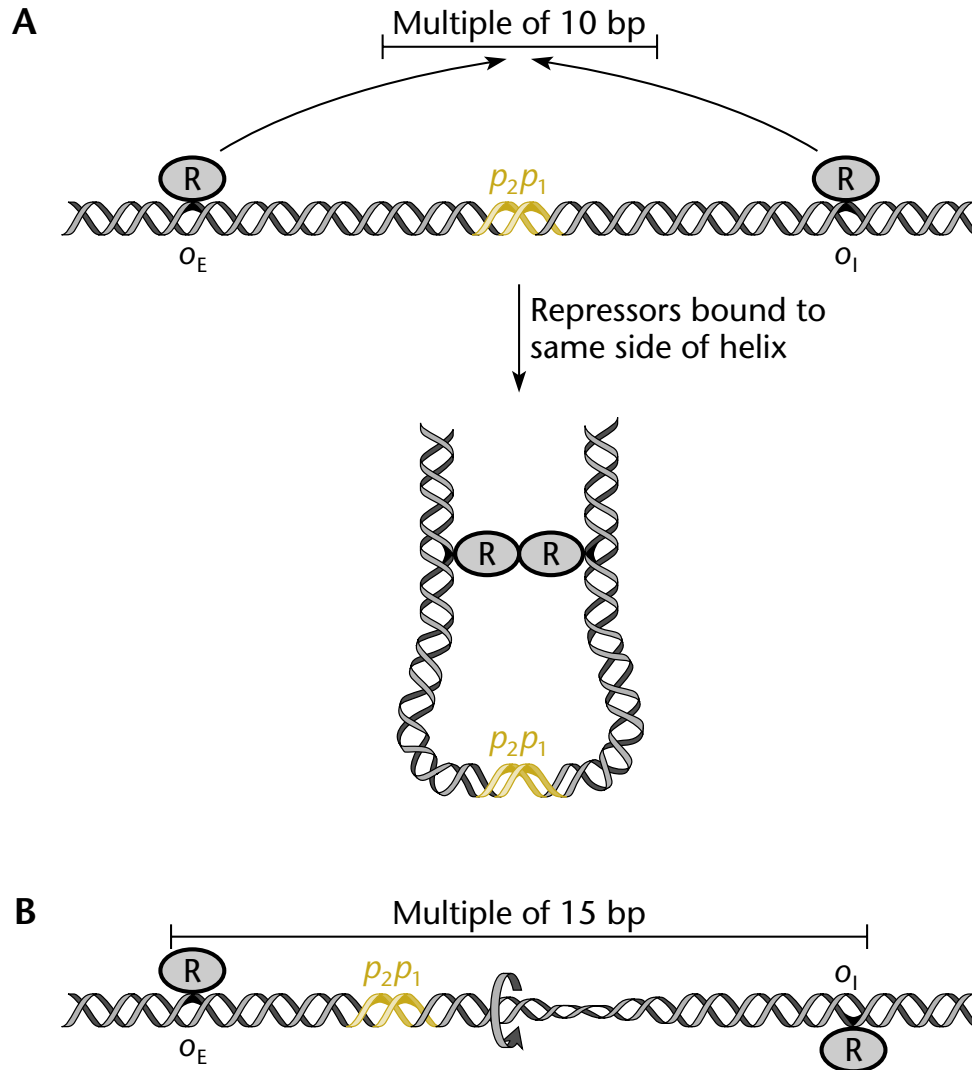


Figure 12.11

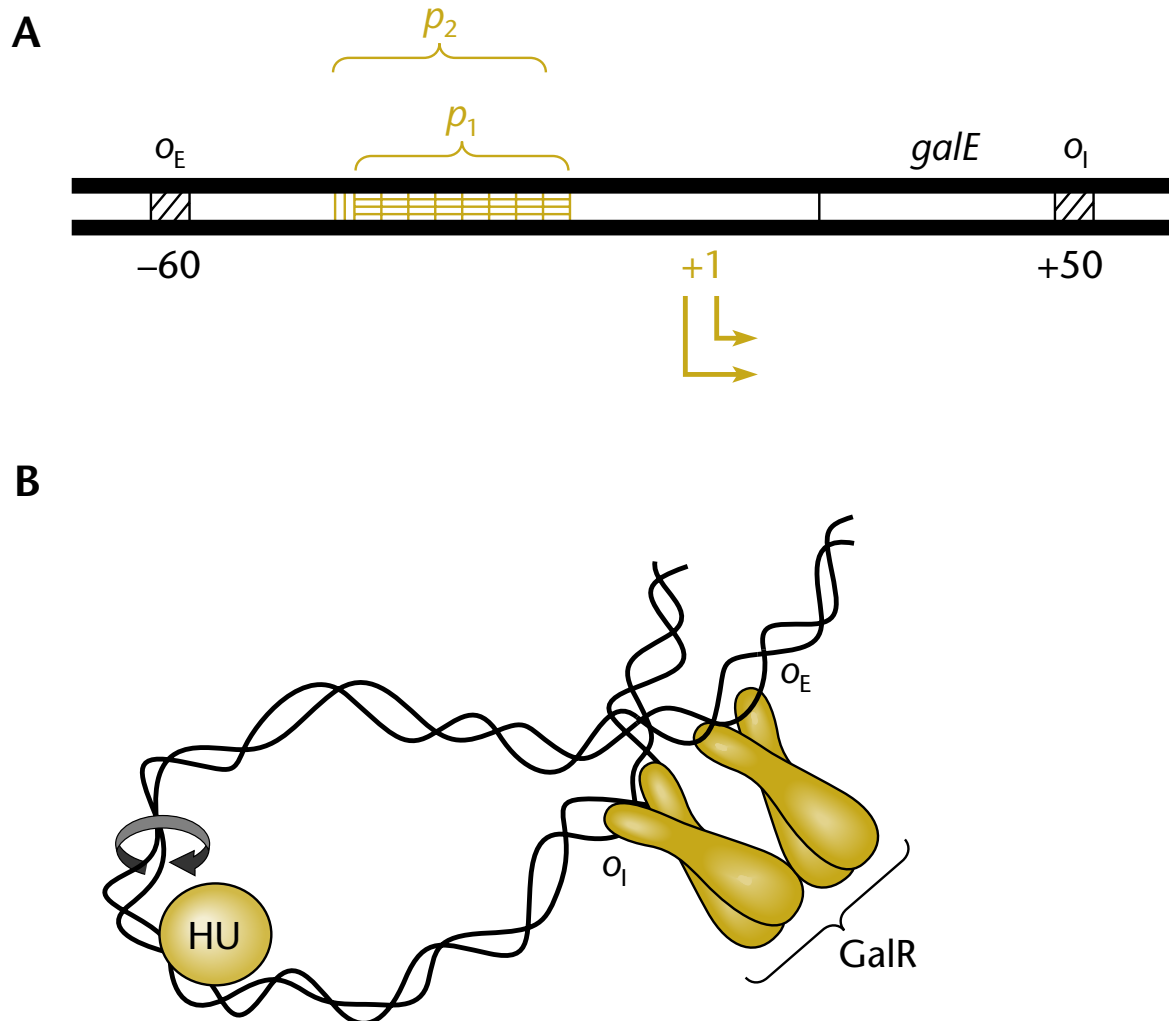


Figure 12.12

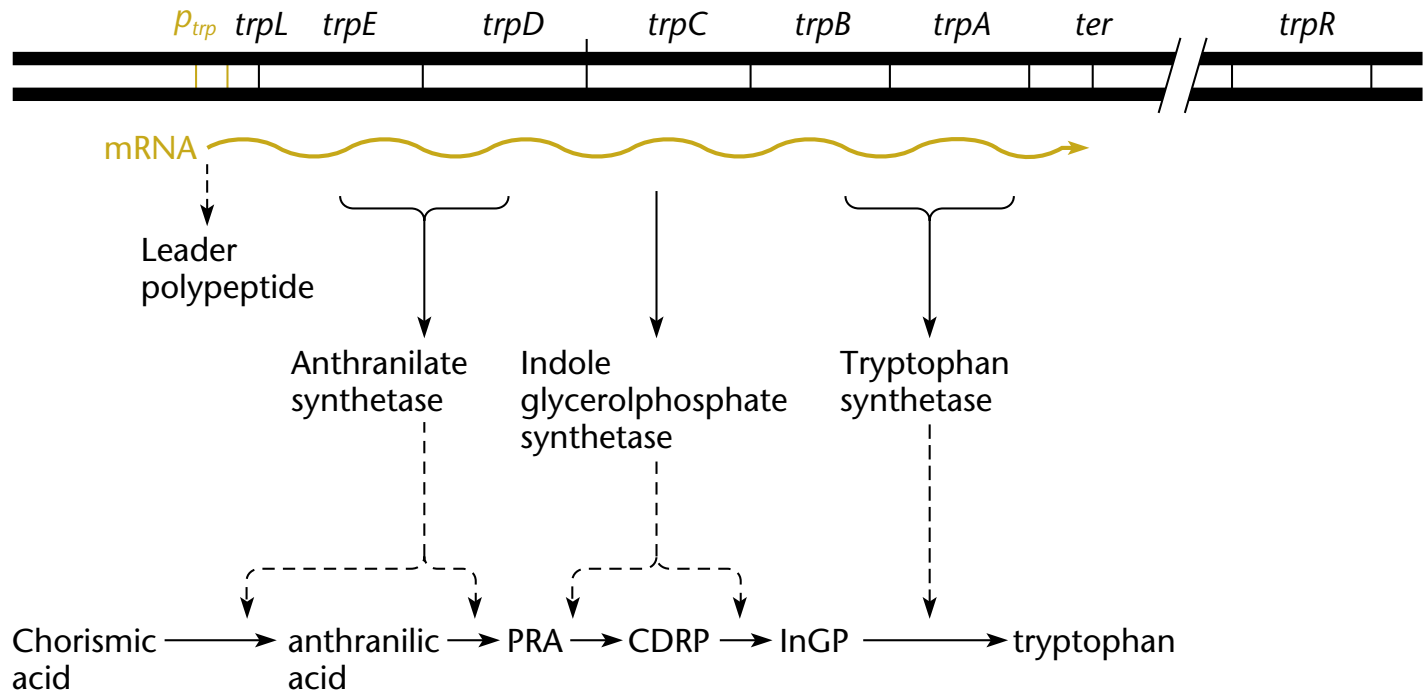
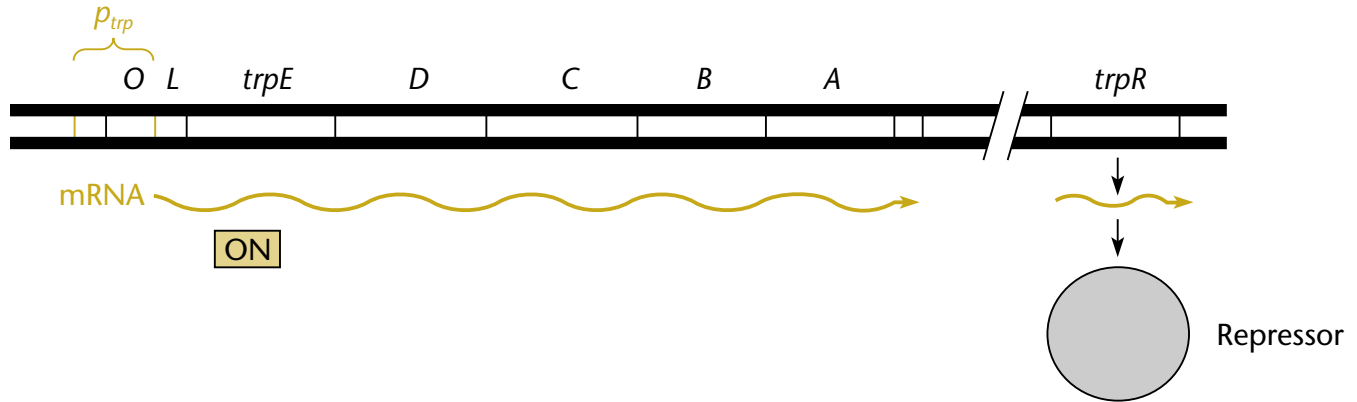


Figure 12.13

A In the absence of tryptophan



B In the presence of tryptophan

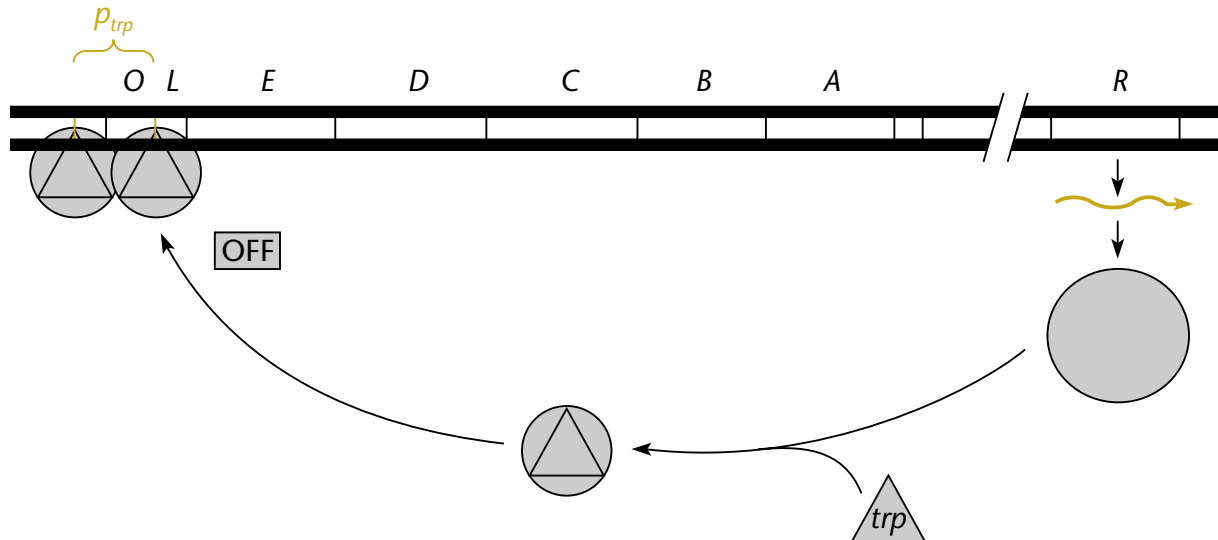
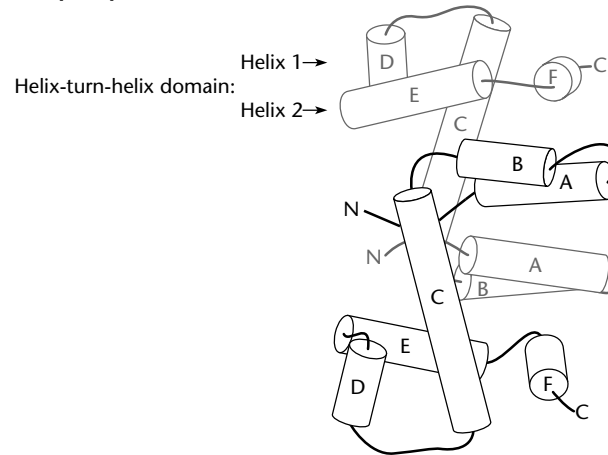


Figure 12.14

A Aporepressor dimer



B Aporepressor - repressor conformational change

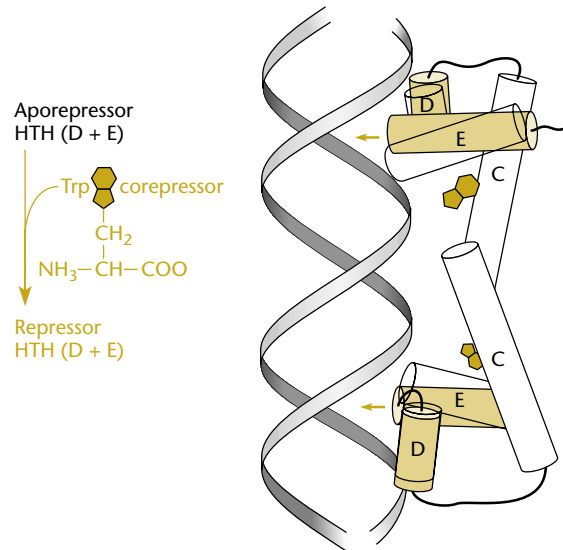


Figure 12.15

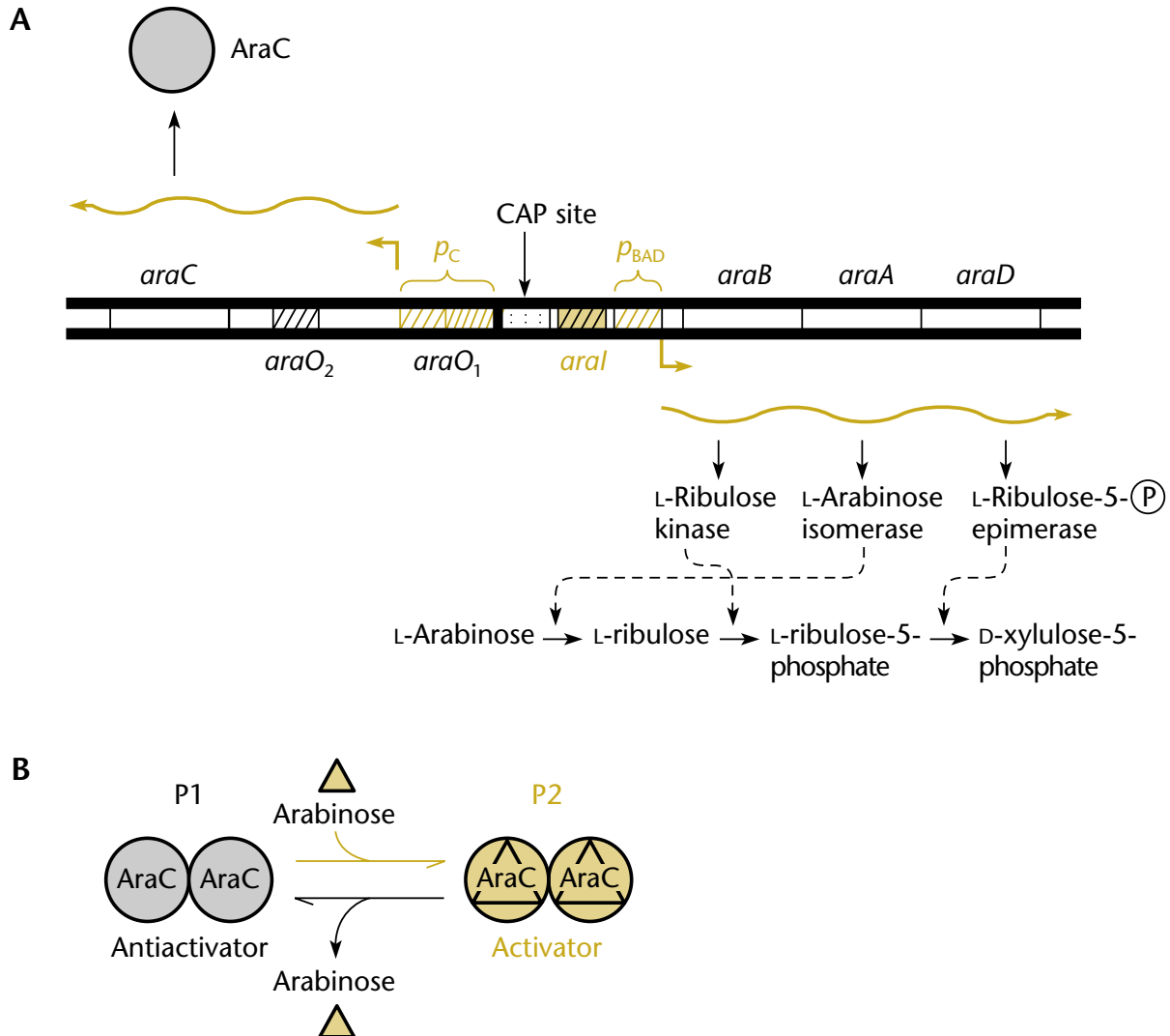
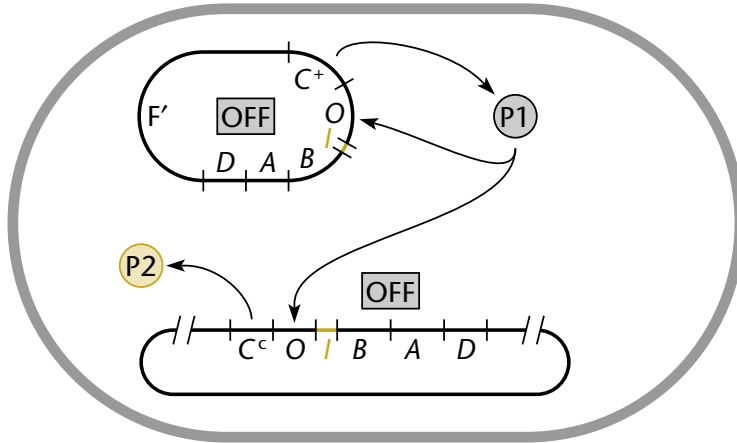
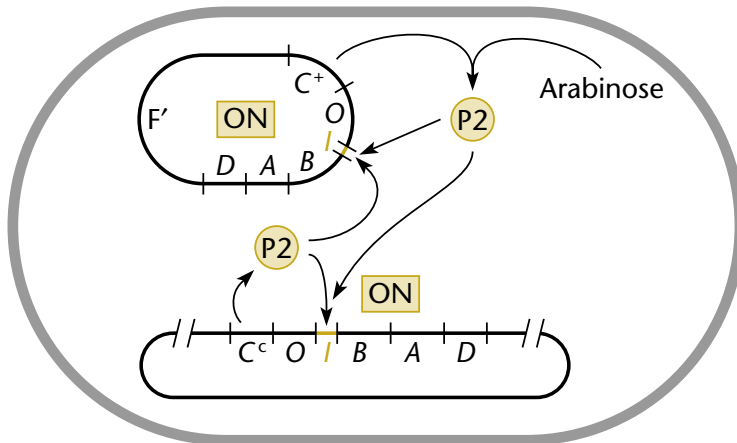


Figure 12.16**A Absence of arabinose**

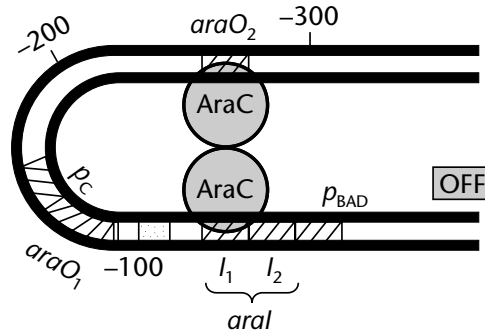
P1 form binds to operators of both operons, preventing *araBAD* expression

B Presence of arabinose

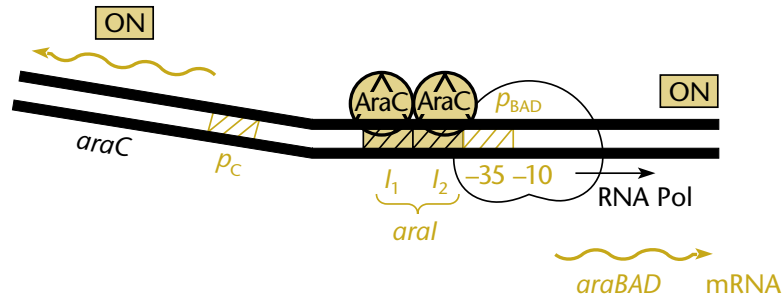
P2 form and/or the $AraC^c$ (=P2) form binds to I (induction) sites of both operons, activating *araBAD* transcription

Figure 12.17

A Absence of L-arabinose



B Presence of L-arabinose



C

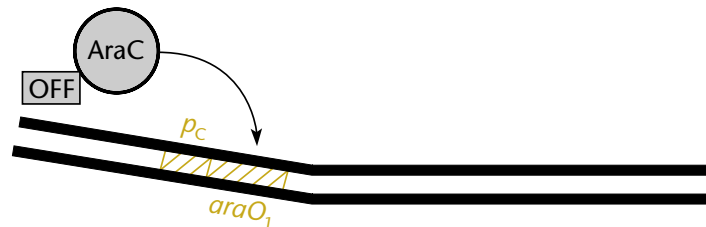


Figure 12.18

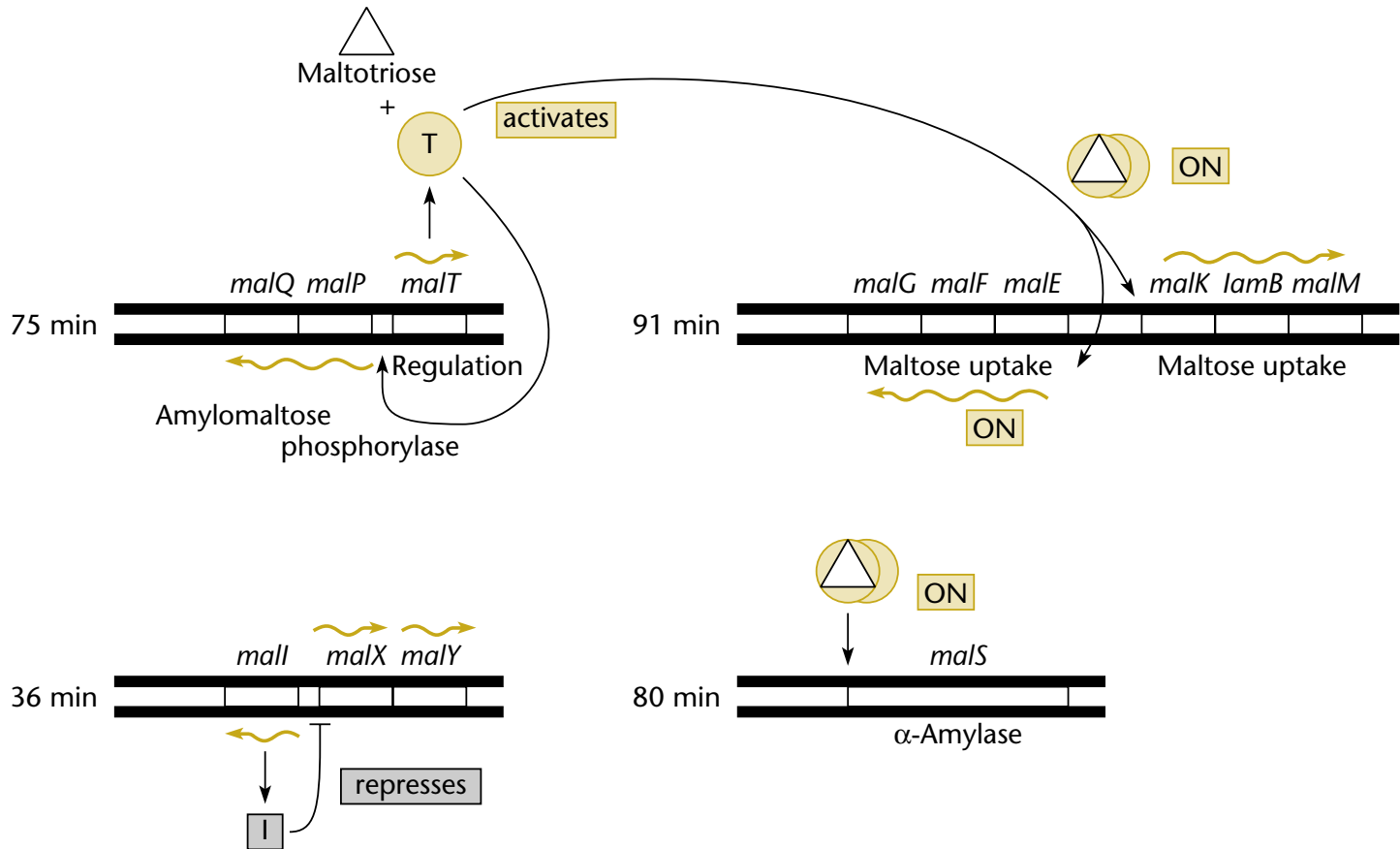


Figure 12.19

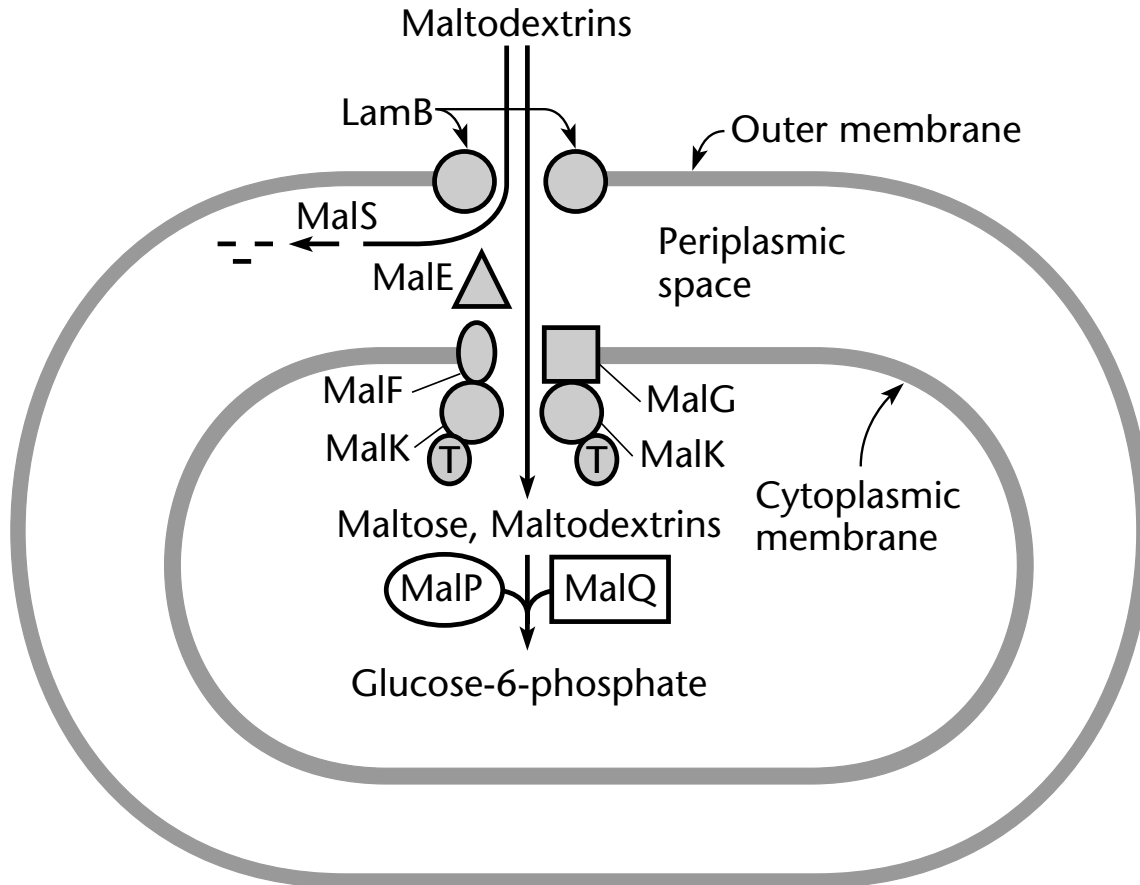
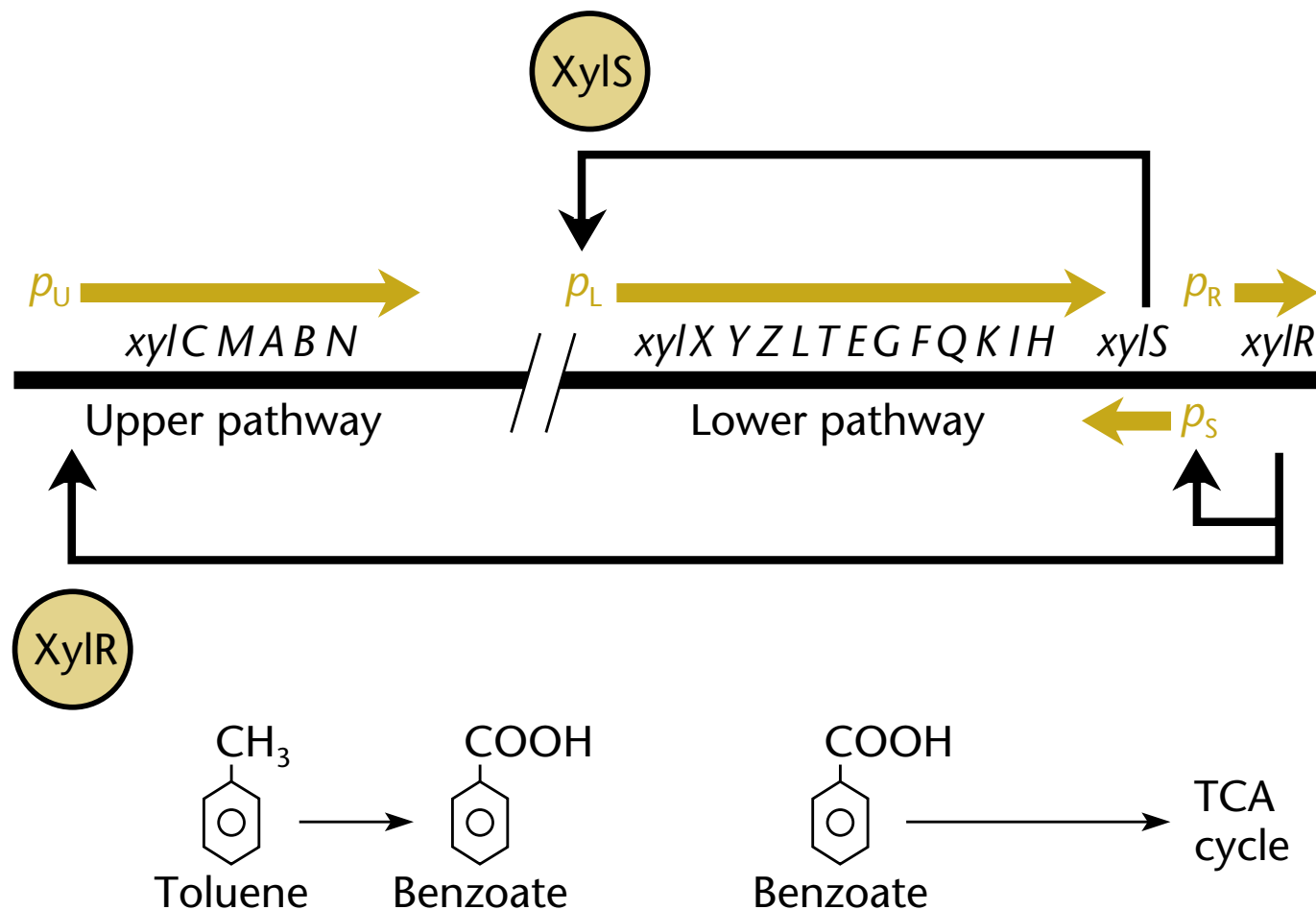


Figure 12.20



Box 12.3

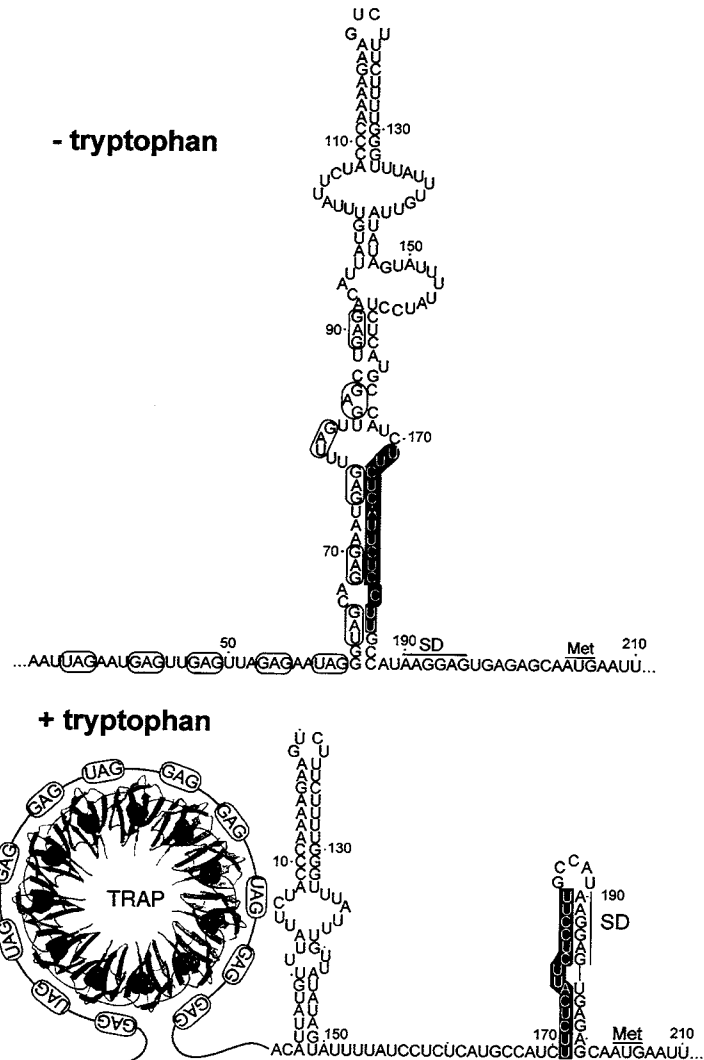


Figure 12.21

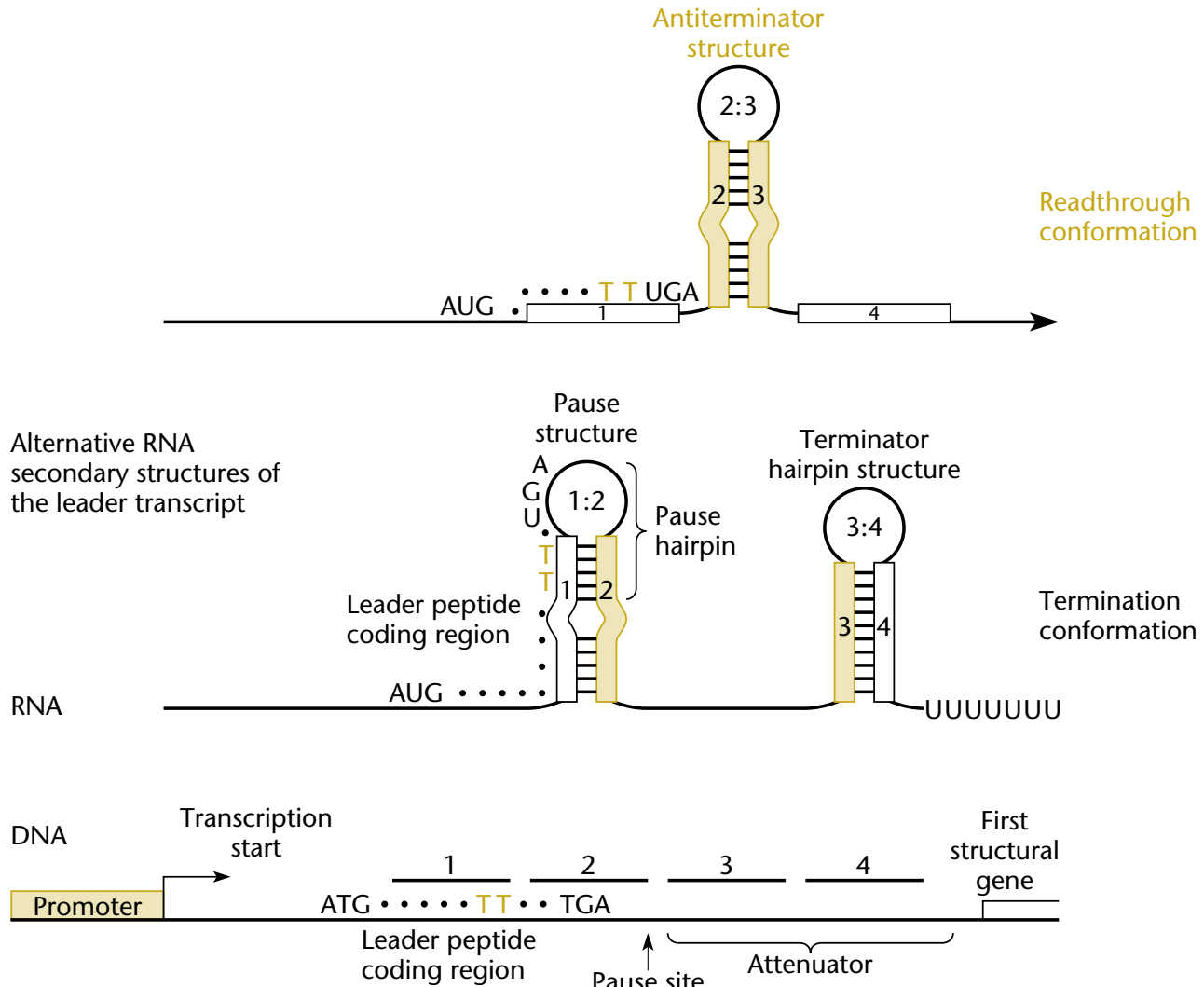


Figure 12.22

