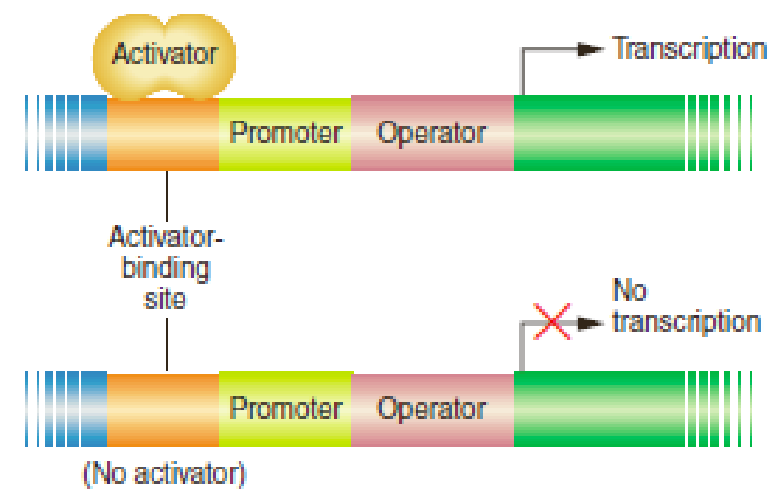
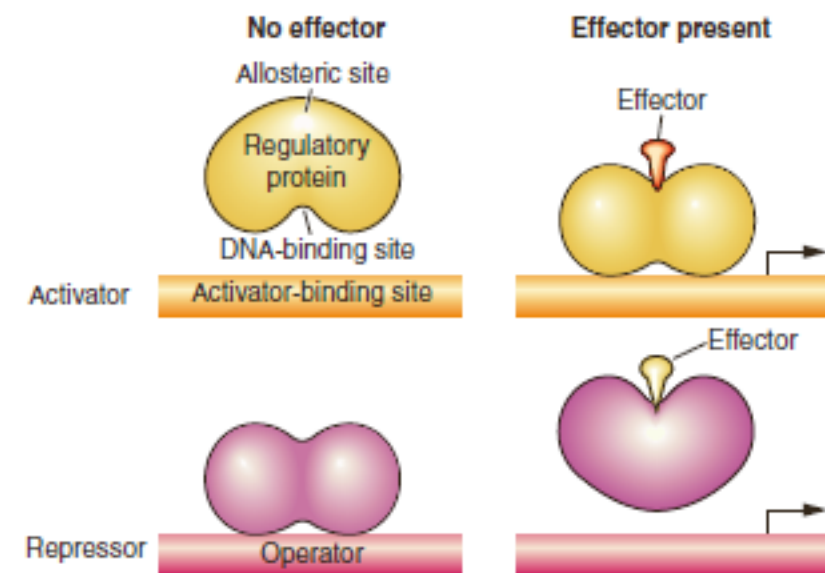
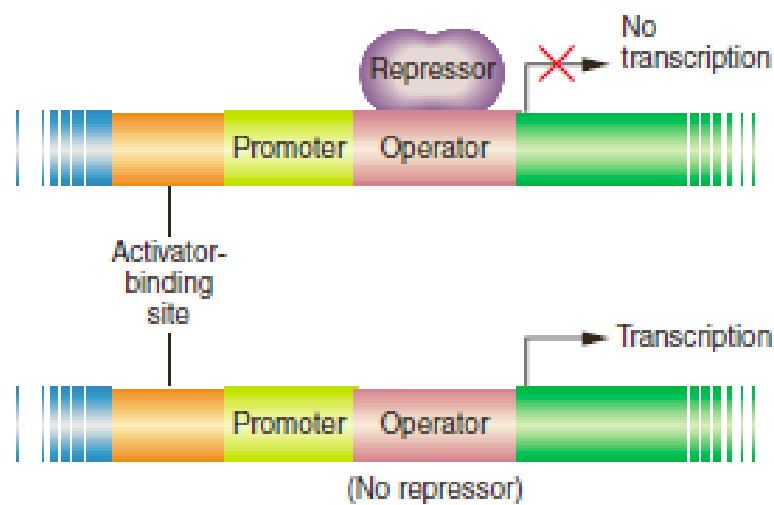


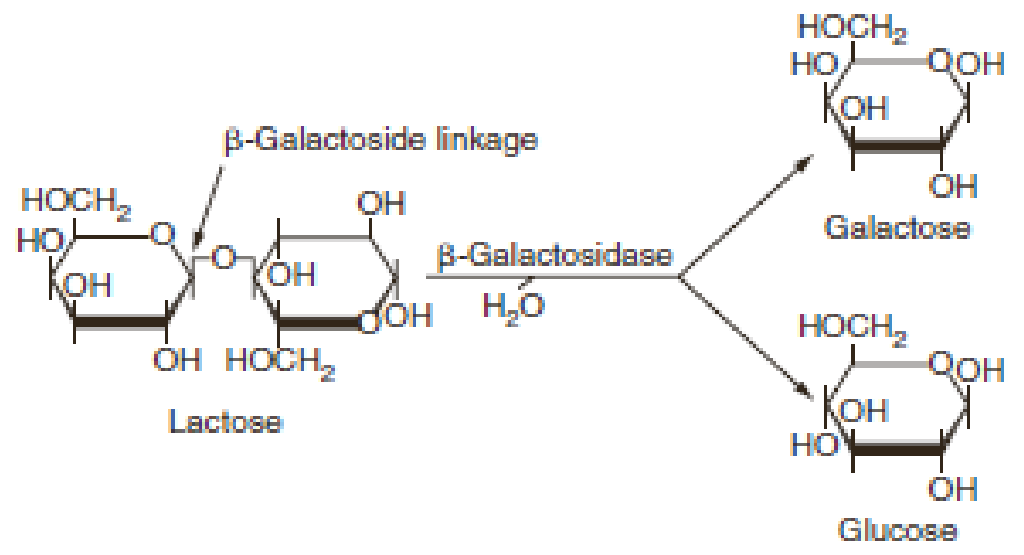
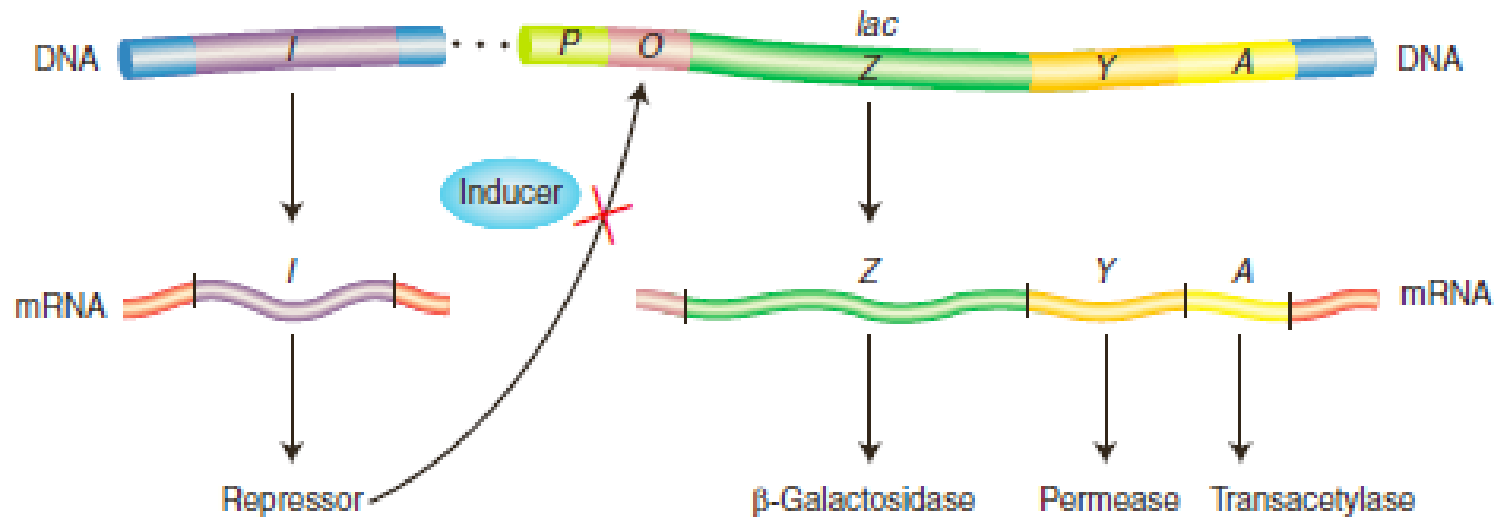
# 11. Gen İfadesinin Düzenlenmesi

### Positive regulation

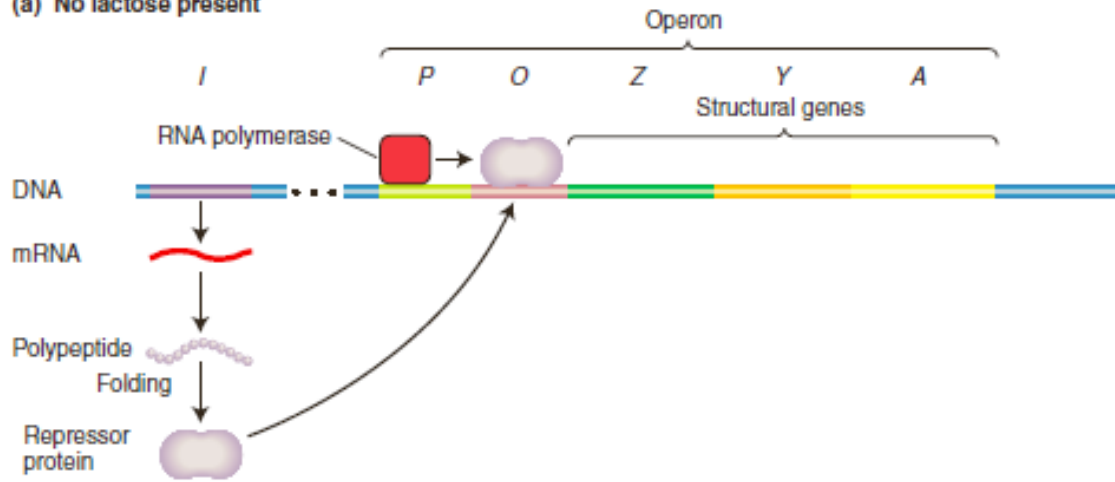


### Negative regulation

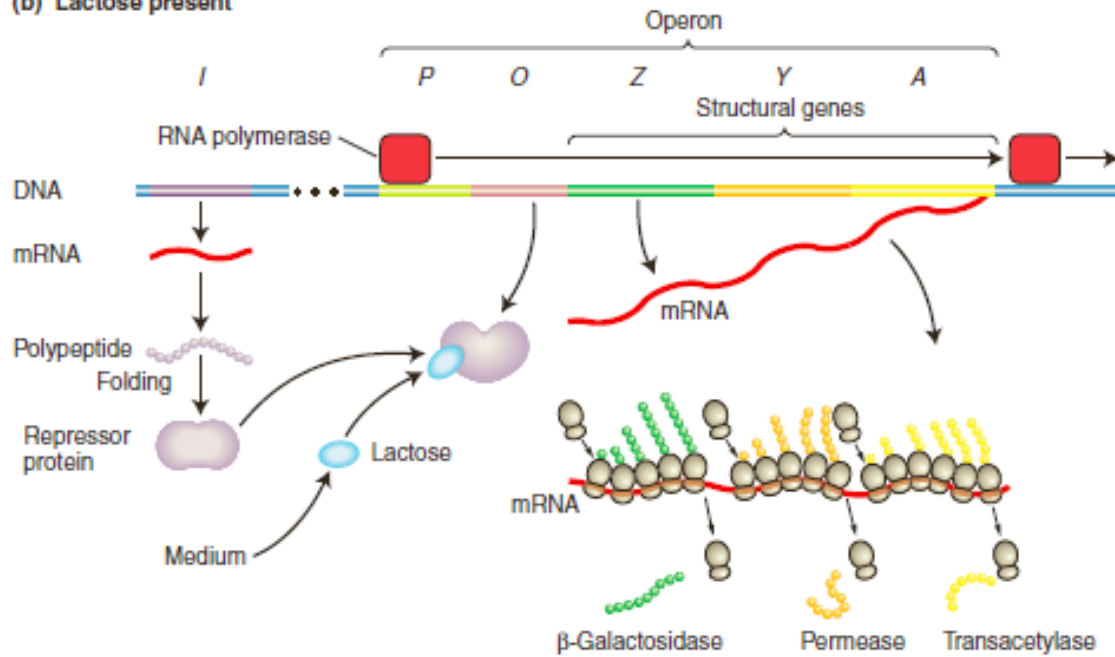




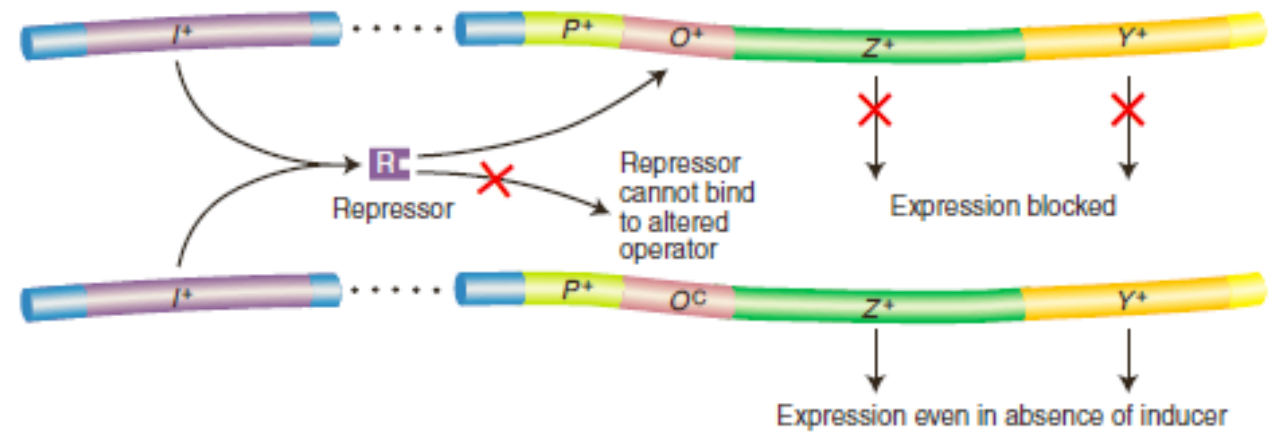
(a) No lactose present



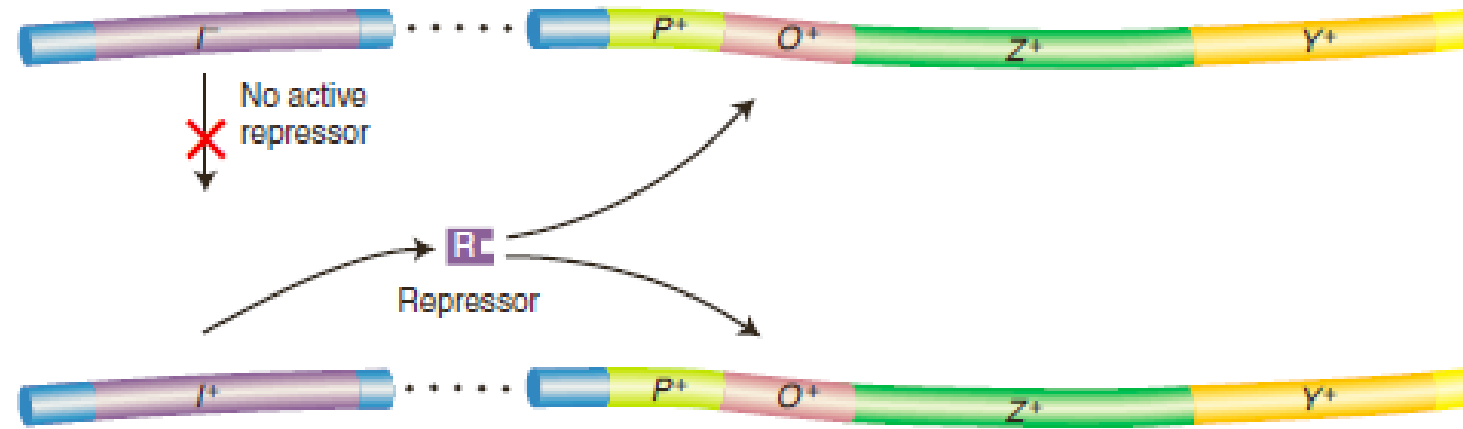
(b) Lactose present



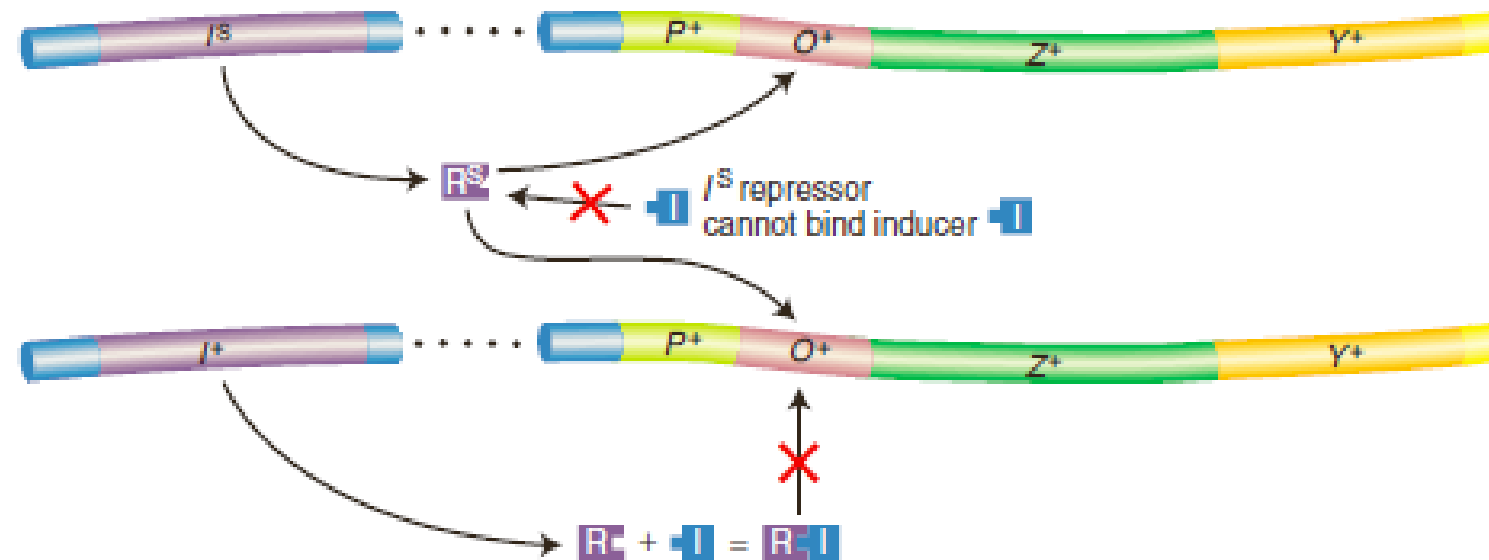
$O^+/O^c$  heterozygote



**$I^+/I^-$  heterozygote**

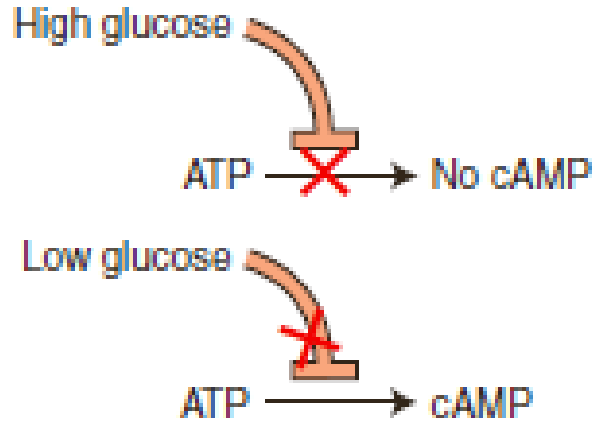


**$I^-/I^S$  heterozygote**

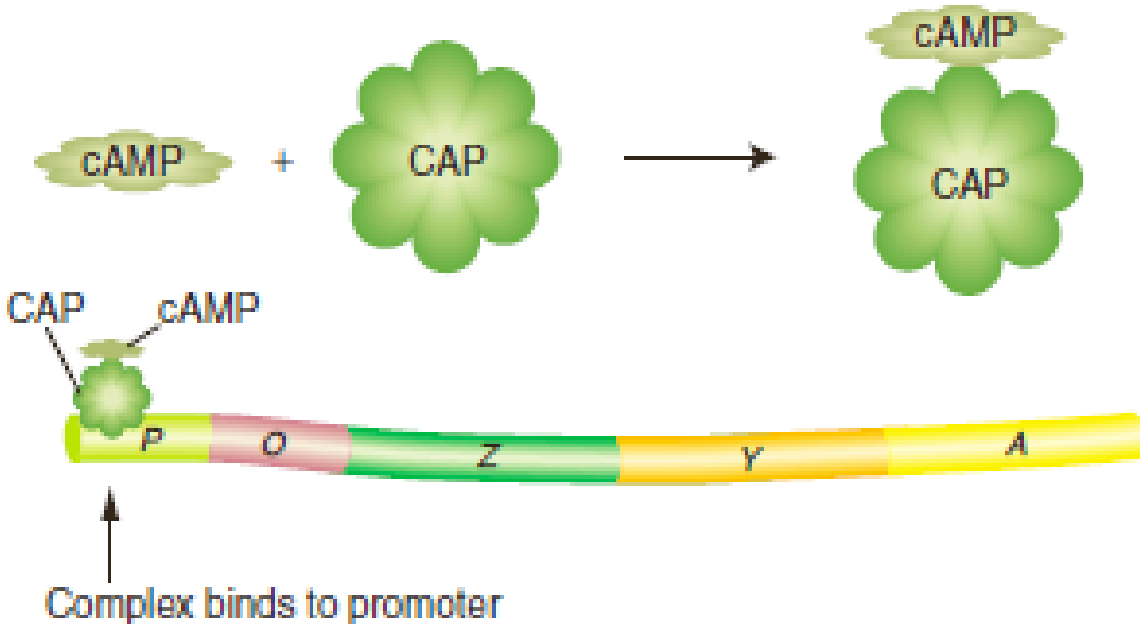




**(a) Glucose levels regulate cAMP levels**



**(b) cAMP-CAP complex activates transcription**

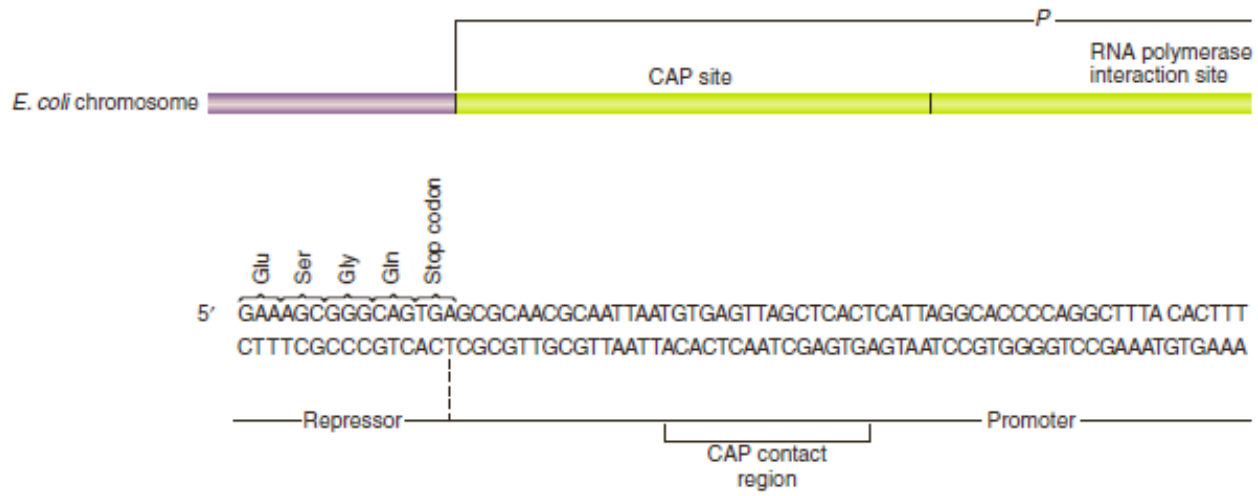


**(a) *lac* operator**



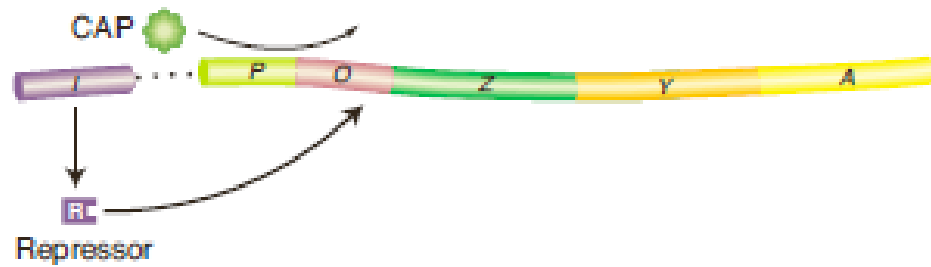
**(b) CAP-binding site**



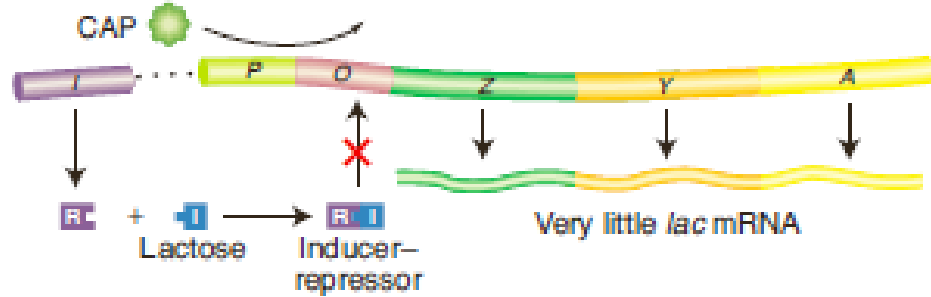




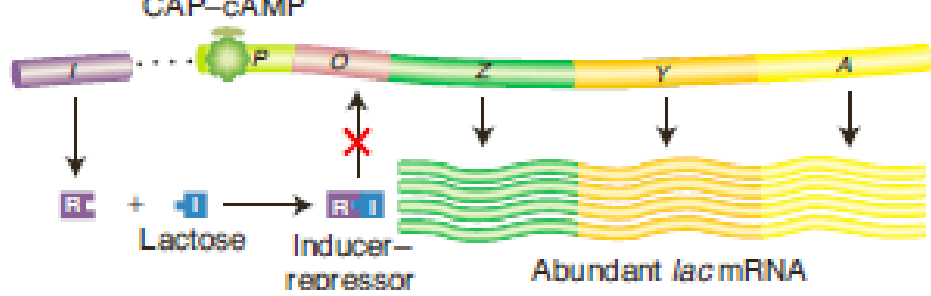
(a) Glucose present (cAMP low); no lactose; no *lac* mRNA



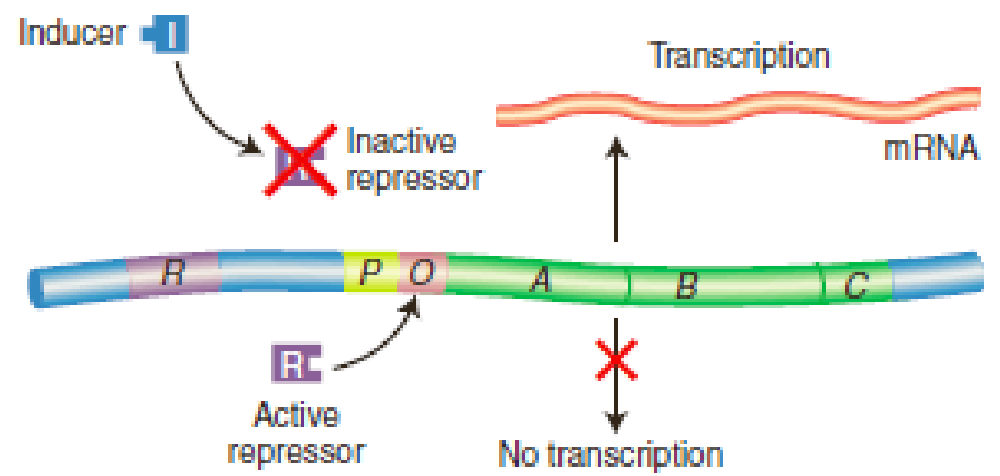
(b) Glucose present (cAMP low); lactose present



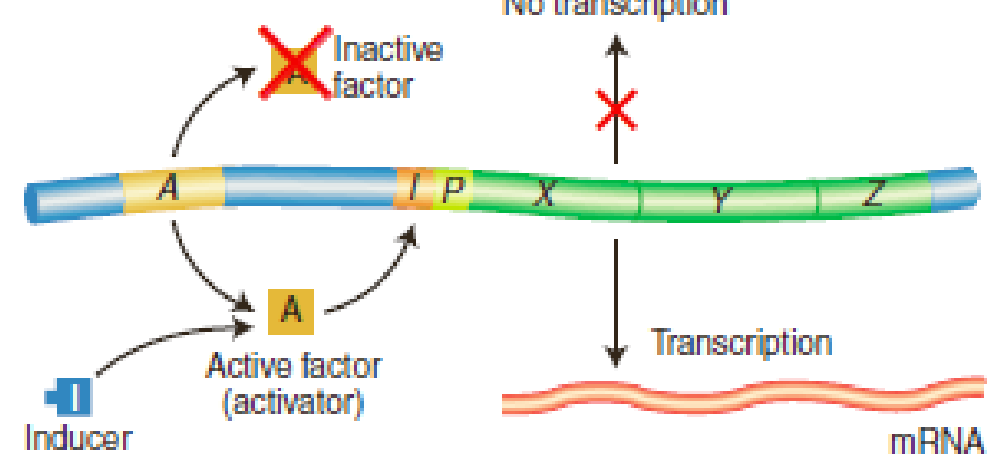
(c) No glucose present (cAMP high); lactose present

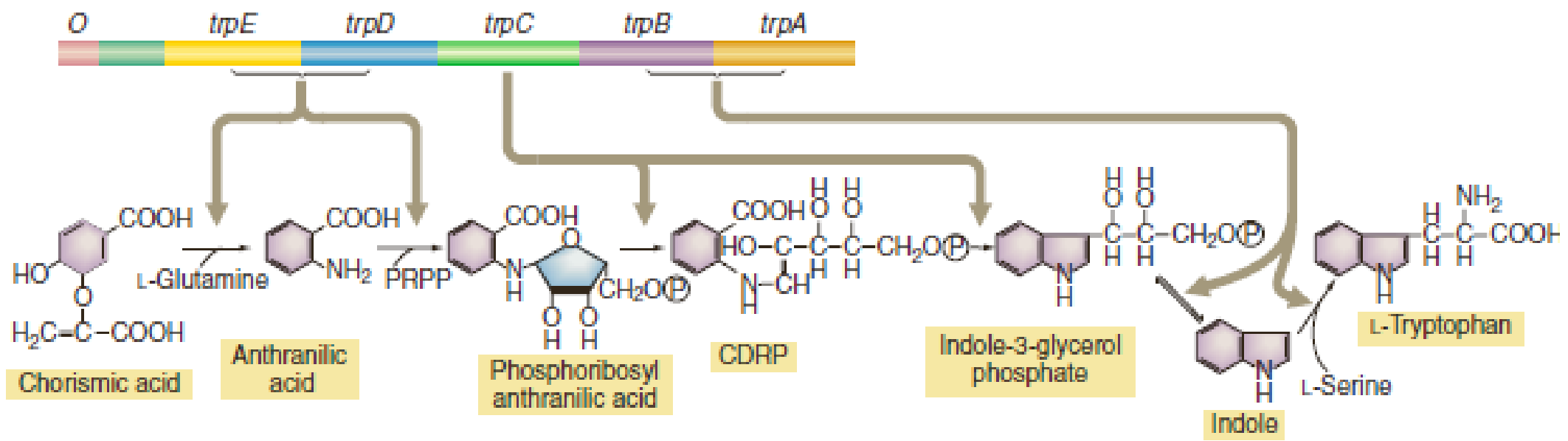
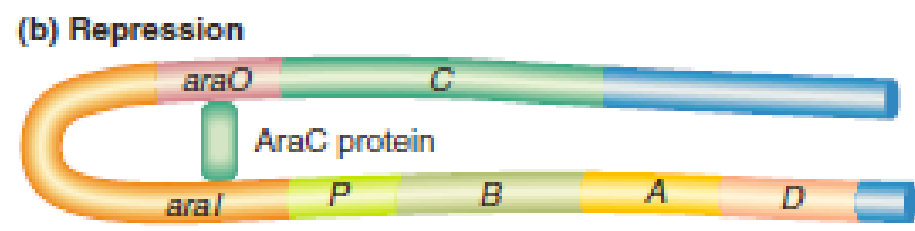


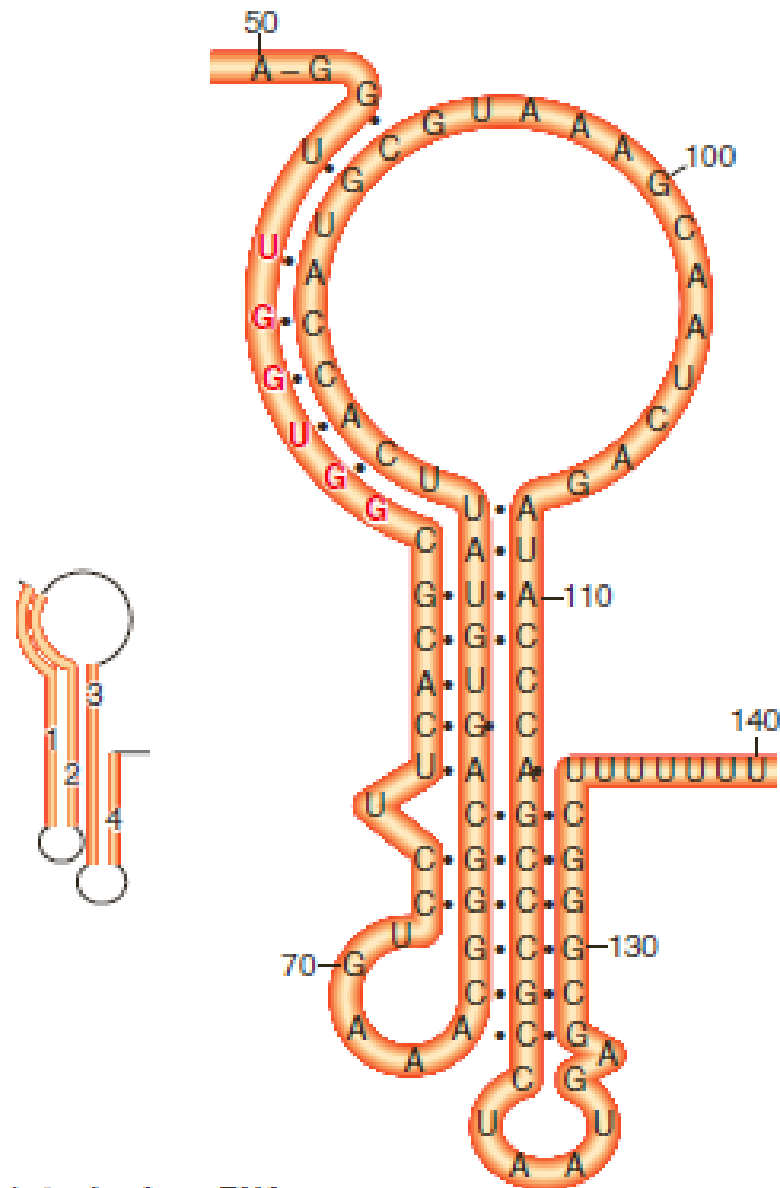
(a) Repression



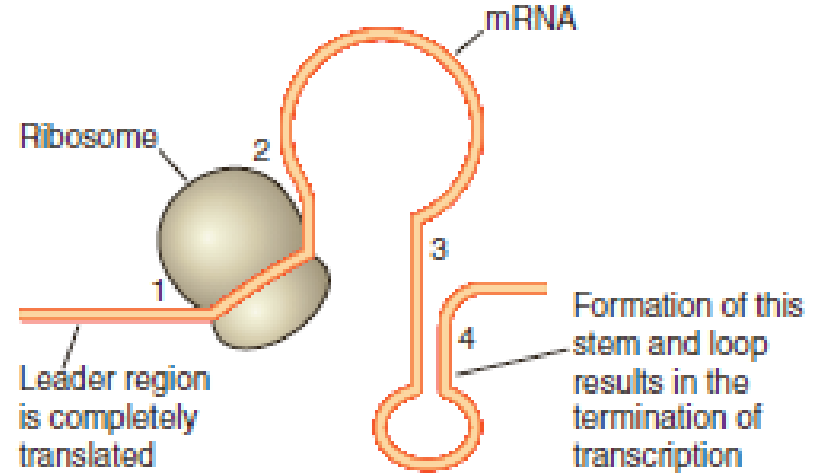
(b) Activation



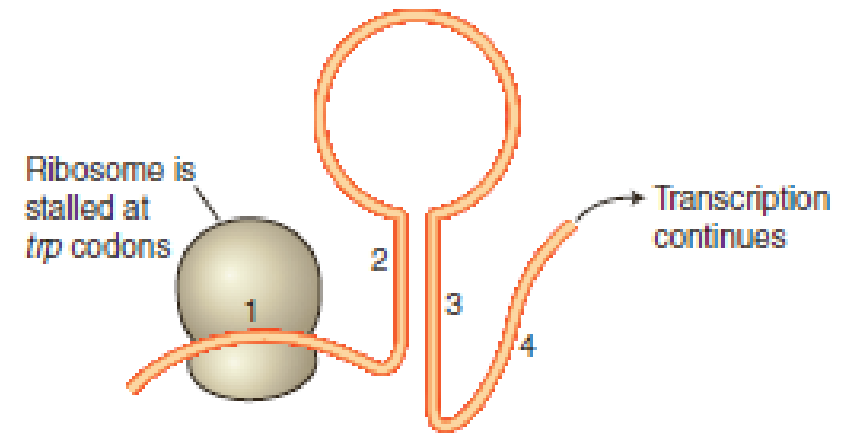




(a) *trp* leader mRNA



(b) High tryptophan level



(c) Low tryptophan level