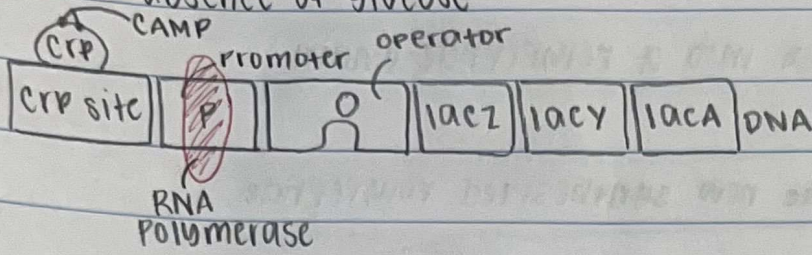
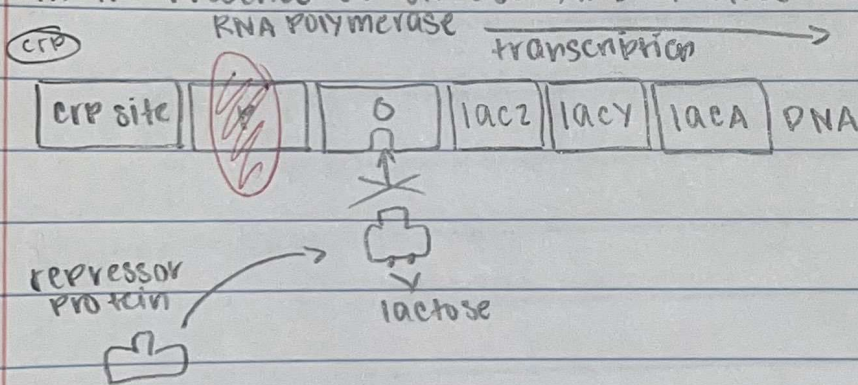


3. In the absence of glucose



— as for the case of an absent glucose, the cAMP (cyclic AMP) binds to the cAMP repressor protein (CRP). The CRP then binds to the promoter and activates transcription through RNA polymerase at the lac promoter. Although, the repressor protein remains attached to the operator and so RNA polymerase could not pass to complete transcription.

4. In the presence of glucose AND lactose



— lastly, when both glucose and lactose are present, the CRP would be inactive, as the lactose binds to the repressor protein. Then the RNA polymerase would be able to transcribe since the operator is not blocked. In addition, since the CRP is inactive, lac mRNA is produced less.

5. Transcription

↳ DNA is copied into RNA (by RNA polymerase)

↳ controls the initiation, elongation, or termination of transcription

Post transcription

↳ modification and processing of RNA transcript