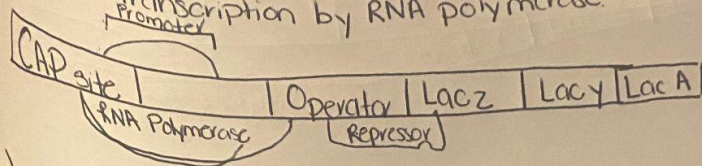
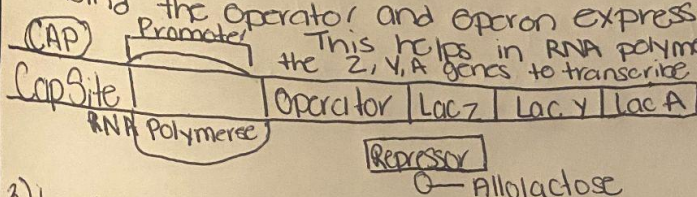


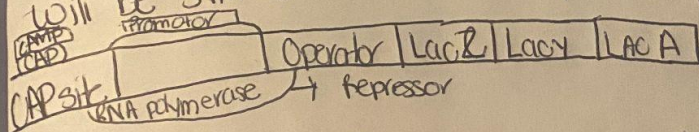
- 1) In the absence of lactose, repressors will bind to the operator and operon expression will be repressed. Prevent transcription by RNA polymerase.



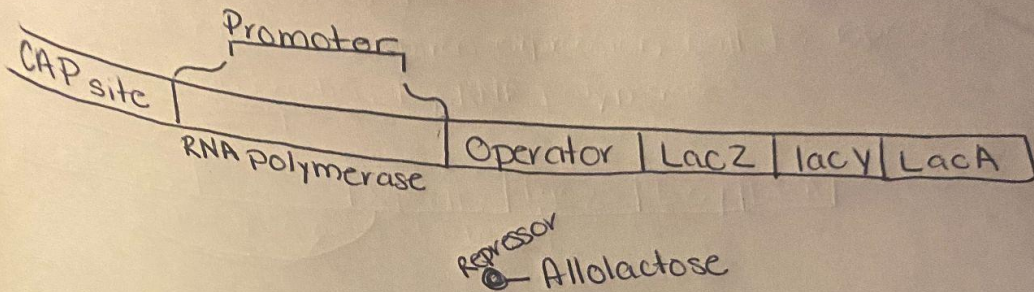
- 2) In the presence of lactose, Repressors will be able to bind the operator and operon expression induced. This helps in RNA polymerase moving over the Z, Y, A genes to transcribe them.



- 3) In the absence of glucose, the operon may be off if the lactose isn't there. It will be on if the lactose is present. CAP / cAMP are important in the regulation of the Lac Operon. Absence of glucose activates the production of cAMP which binds to CAP protein and the complex to the CAP site in the DNA which will activate the operon if the lactose is present. In its absence the operon will be off because repressor will be still bound to the operator gene.



- 4) Lac Operon of E coli is inducible type as presence of lactose induce the gene expression. Lac operon contains a regulatory unit in which there is repressors protein that binds with operator gene and prevent the gene expression.



→ The regulation is taking place at the level of transcription as lactose and glucose regulate the transcription of lac operon.