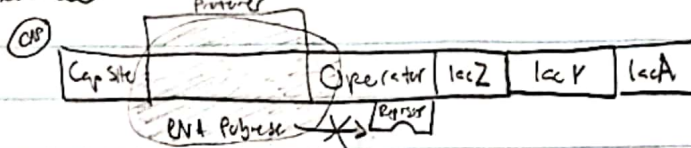


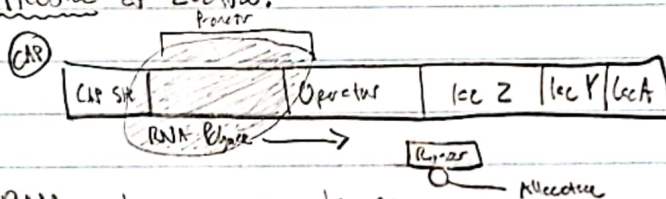
LAC OPERON ASSIGNMENT - Nick Fisher 01195688

1) Absence of Lactose:



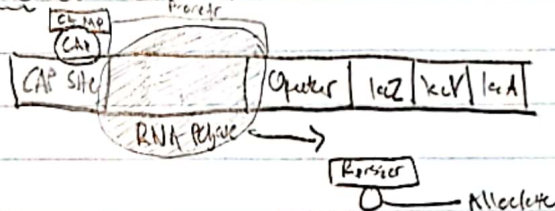
- No transcription of lac Operon occurs, because the lac repressor remains bound to the operator and prevents transcription by RNA Polymerase.
- CAMP levels are low since glucose levels are higher so CAP is inactive and non-DNA binding.

2) Presence of Lactose:



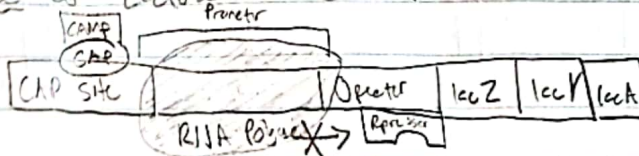
- RNA polymerase can transcribe operon.
- Allolactose (reversed lactose) binds to the lac repressor and causes it to release the operator.

3) Absence of Glucose:



- Strong transcription of lac operon and lac operon repressor is released from operator since allolactose is present.
- CAMP levels are high since glucose is absent so CAP is active and binds to DNA.

4) Absence of Lactose and Glucose:



- No transcription of lac operon occurs.
- CAMP levels are high since glucose is low, therefore CAP is active and binds to DNA.
- lac Repressor will be bound to operator since there is no allolactose preventing transcription.

5) The regulation of the lac Operon takes place typically within the context of transcription but is not limited to that area of gene expression and is sometimes seen during post-transcription, translation, and post-translation.