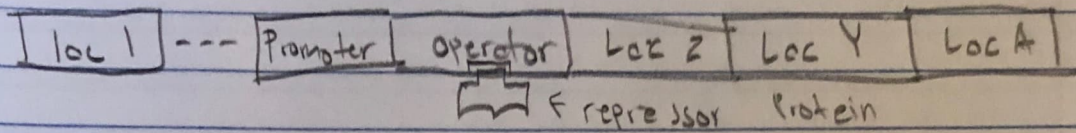
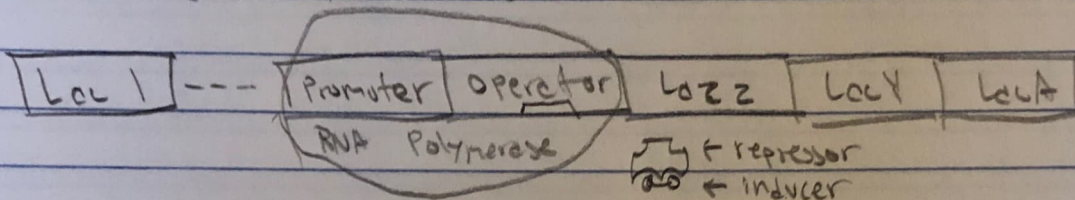


Lac Operon

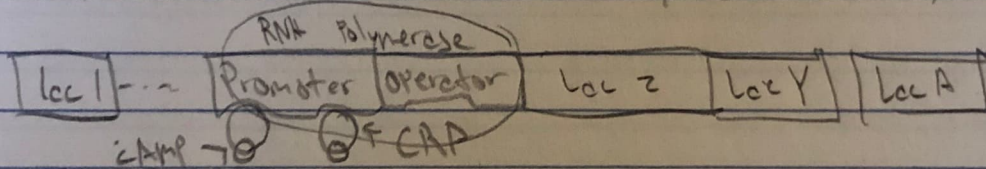
- ① In absence of lactose, the Lac repressor binds to the operator and prevents RNA Polymerase from binding and transcribing



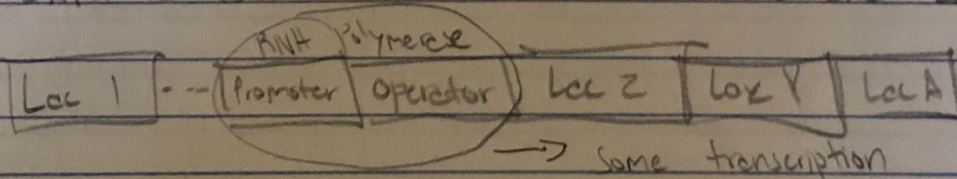
- ② In presence of lactose, lactose (inducer) binds to repressor preventing it from binding to operator → gene expression starts



- ③ In the absence of glucose, cAMP binds to cAMP receptor protein which binds to promoter and enhances RNA Polymerase activity



- ④ In presence of glucose and Lactose, The repressor is released but cAMP is low, so it remains inactive and some transcription occurs.



The Process of gene expression specifically translation in Prokaryotes, occurs at the same time as transcription. As DNA is not stored in a nucleus, the mRNA strands can be translated as it is produced during transcription.