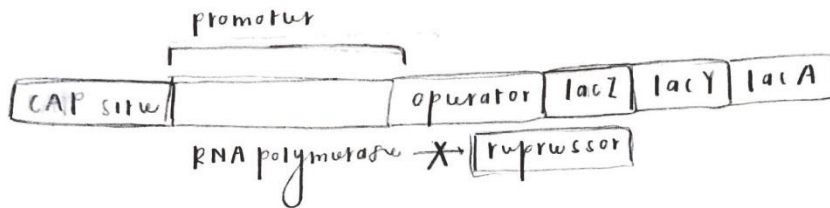


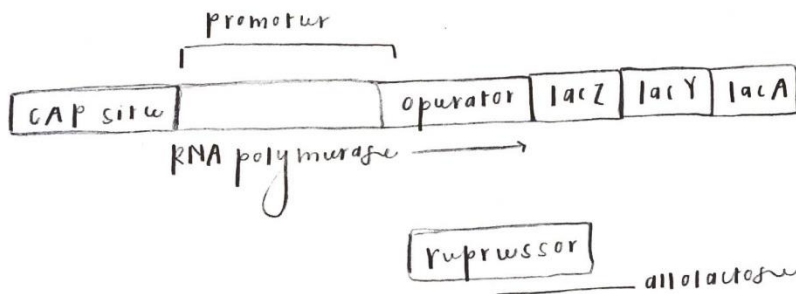
Danielle Wolcott

1. *Escherichia coli* lac operon in the absence of lactose



The lac repressor binds to the operator, blocking transcription.

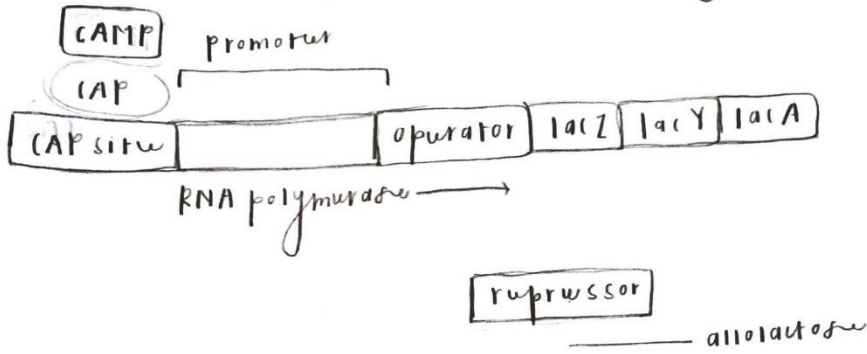
2. *Escherichia coli* lac operon in the presence of lactose



Allolactose binds to the lac repressor, letting go of the operator, and allowing transcription to happen.

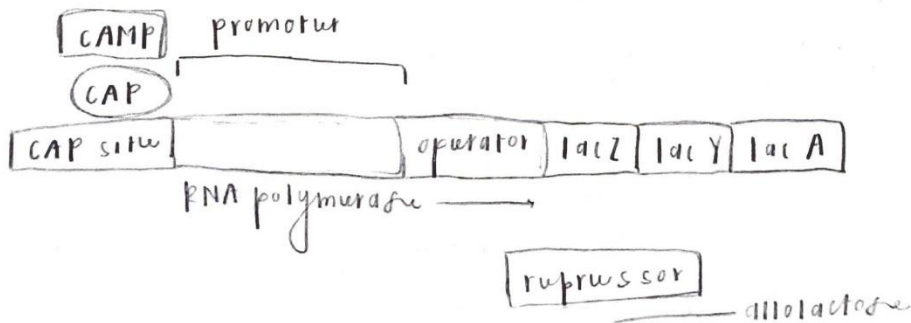
Danielle Wolcott

3. *Escherichia coli* lac operon in the absence of glucose



CAP helps RNA polymerase to bind to the promoter, allowing for transcription to happen.

4. *Escherichia coli* lac operon in the absence of glucose and the presence of lactose



The lac repressor and CAP turn the operon on and off.

1. *Escherichia coli* lac operon in the absence of lactose: The lac repressor binds to the operator, blocking transcription.
2. *Escherichia coli* lac operon in the presence of lactose: Allolactose binds to the lac repressor, letting go of the operator, and allowing transcription to happen.
3. *Escherichia coli* lac operon in the absence of glucose: CAP helps RNA polymerase to bind to the promoter, allowing for transcription to happen.
4. *Escherichia coli* lac operon in the absence of glucose and the presence of lactose: The lac repressor and CAP turn the operon on and off.