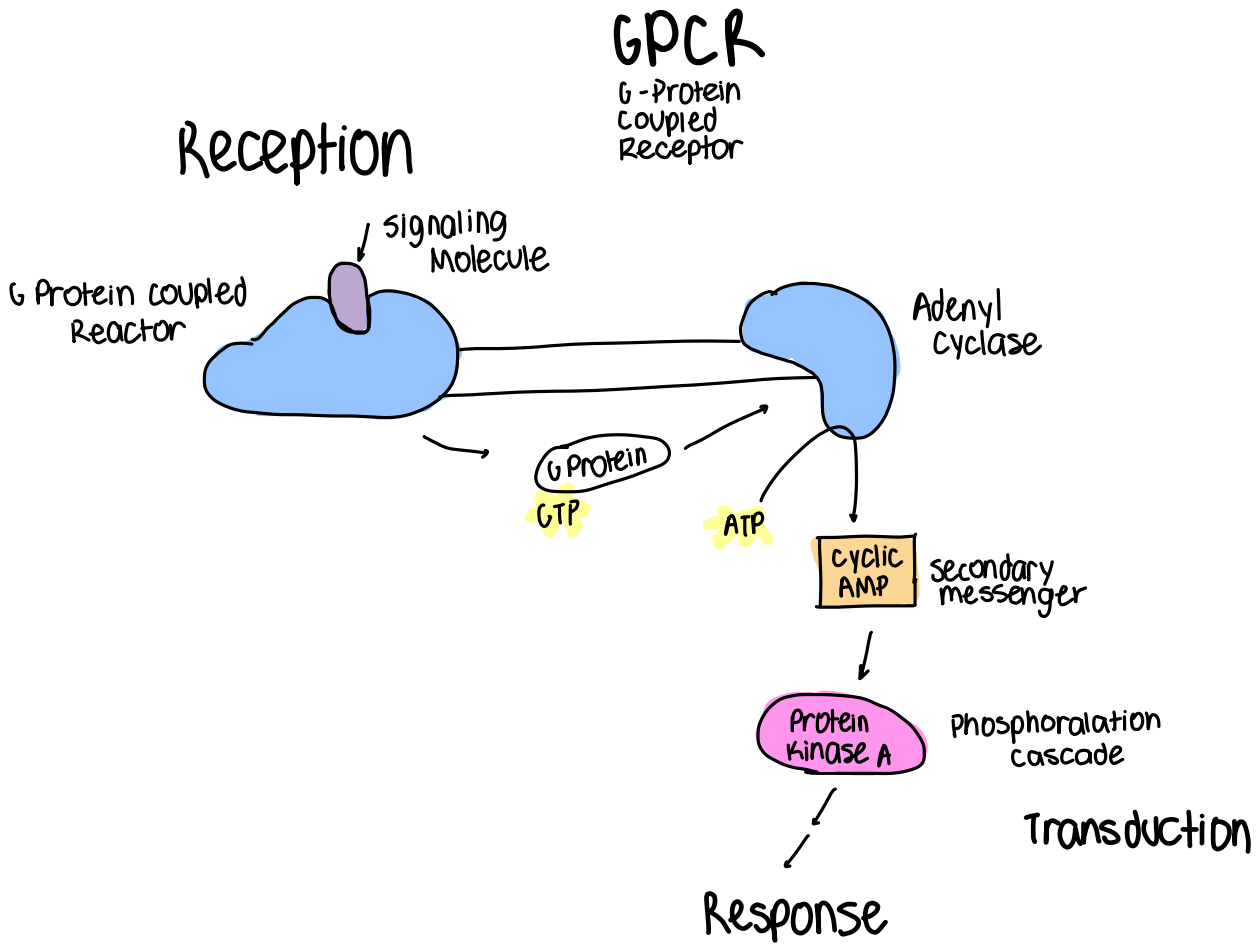
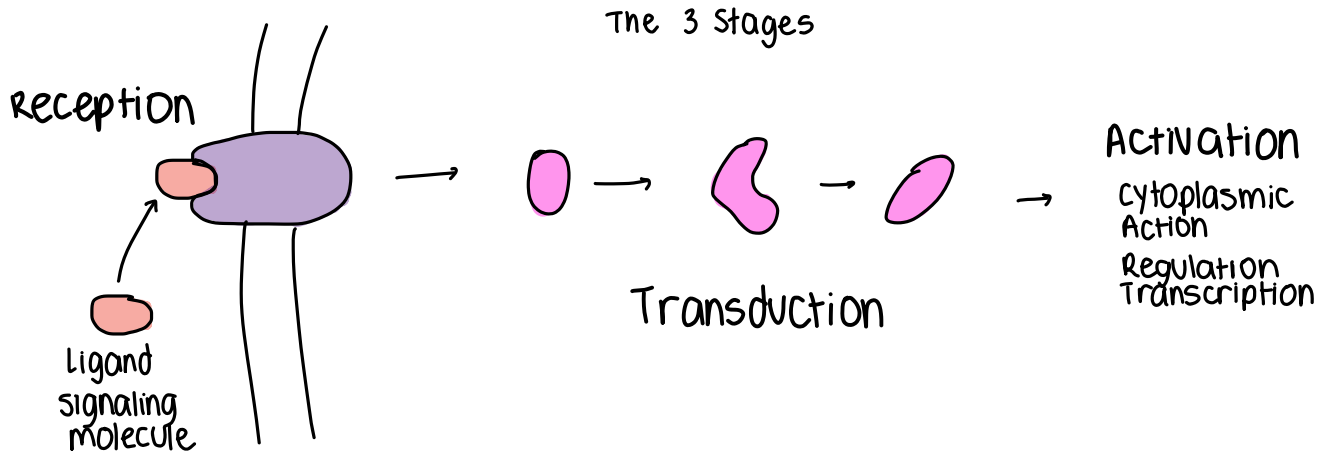
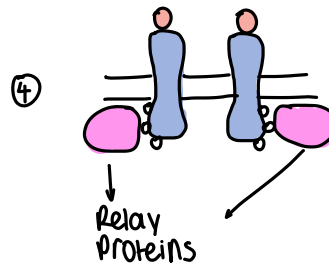
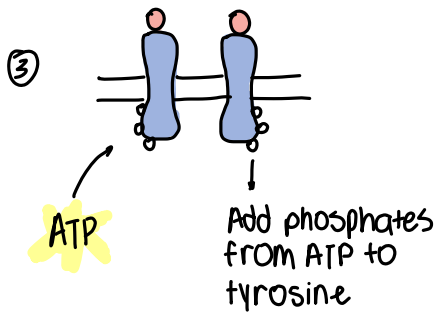
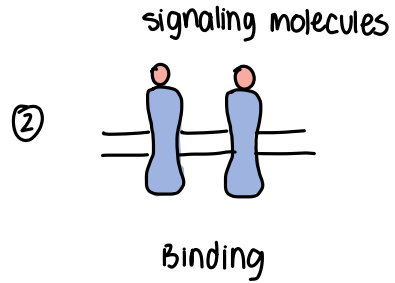
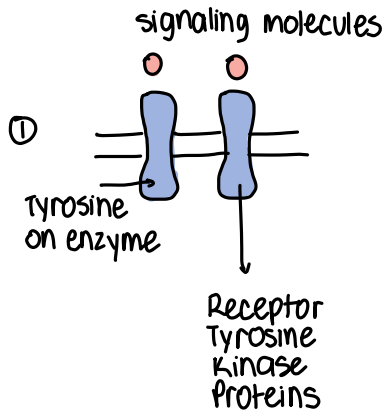


Cell Signaling



RTK

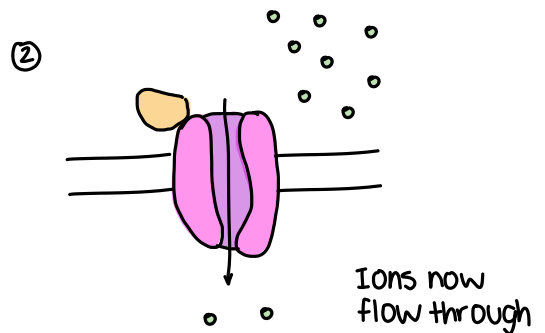
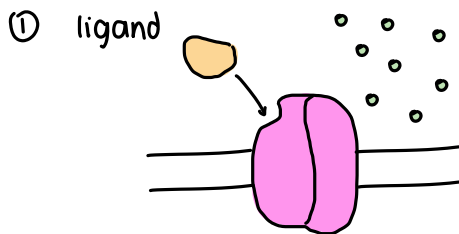
Receptor Tyrosine Kinase



⑤ Transduction and cell response

ICR

Ion Channel Receptors



Cell Cycle ↻

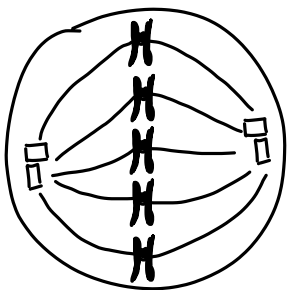
Mitosis

Cell Division and Replication

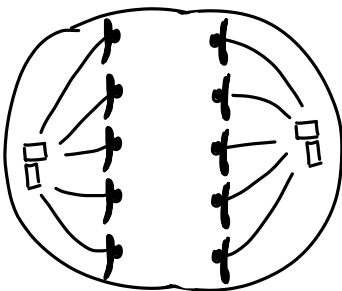
Prophase



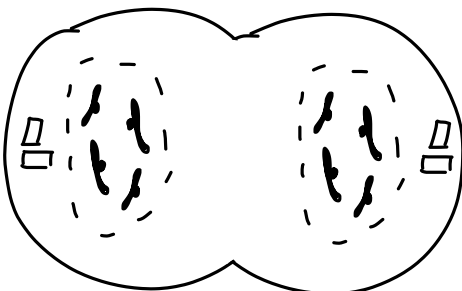
Metaphase



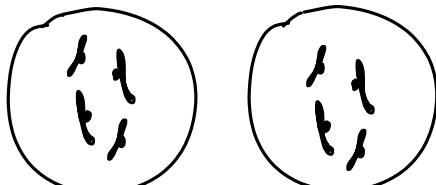
Anaphase



Telophase



Two identical daughter cells



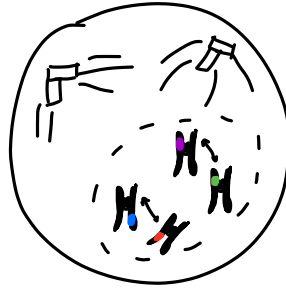
46

46

Meiosis

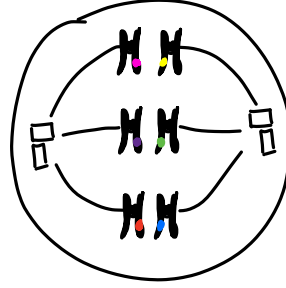
Formation of Gametes

Prophase I

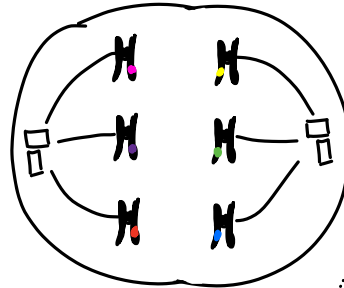


crossing over

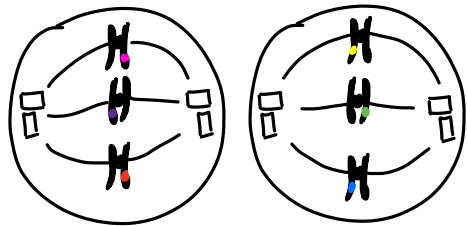
Metaphase I



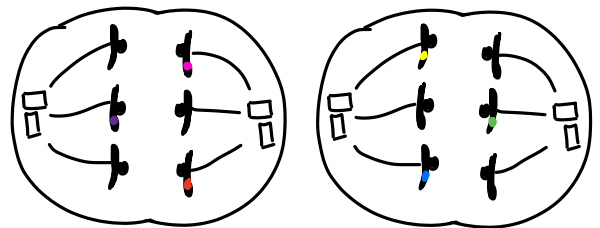
Anaphase I



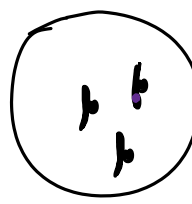
Metaphase II



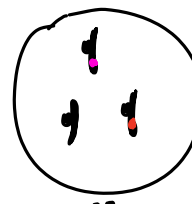
Anaphase II



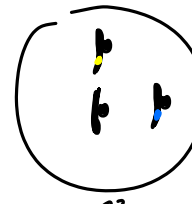
Four Different Gametes



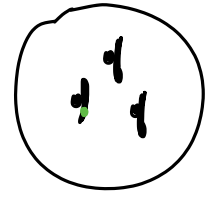
23



23



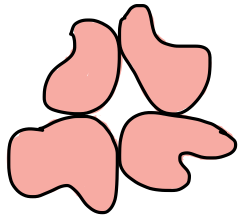
23



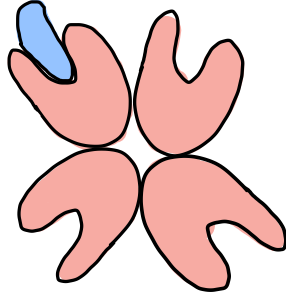
23

Enzymes

Cooperativity



Enzymes all
inactive form

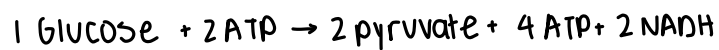
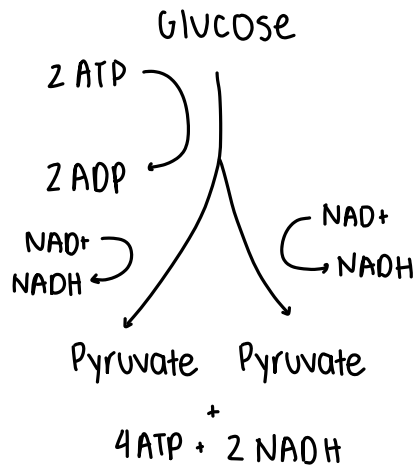


substrate lock
all active sites
into active position

Cellular Respiration

Glycolysis

First Step



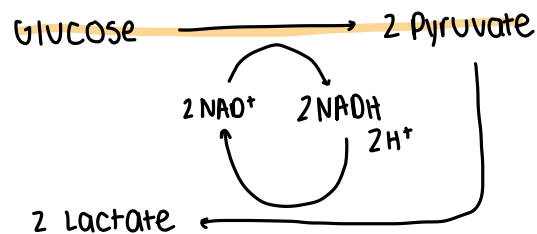
Net 2 ATP
2 NADH
2 Pyruvate

□
Path 1
↓ ↓

Anaerobic Respiration

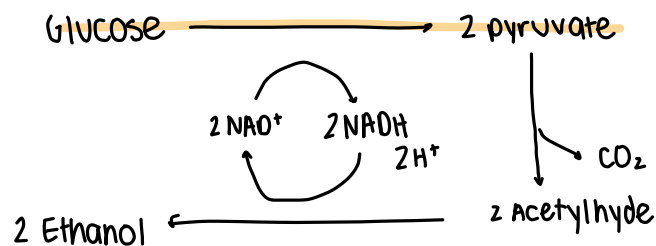
Lactic Acid Fermentation

• Glycolysis



Alcohol Fermentation

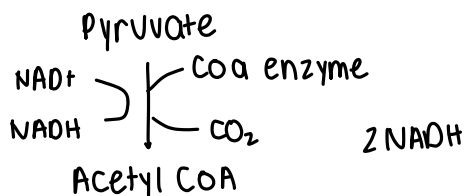
• Glycolysis



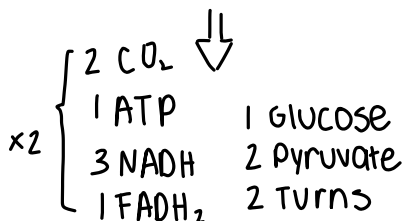
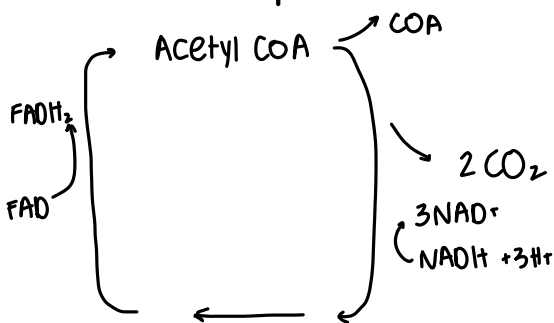
Path 2
↓

Aerobic Respiration

Pyruvate Oxidation



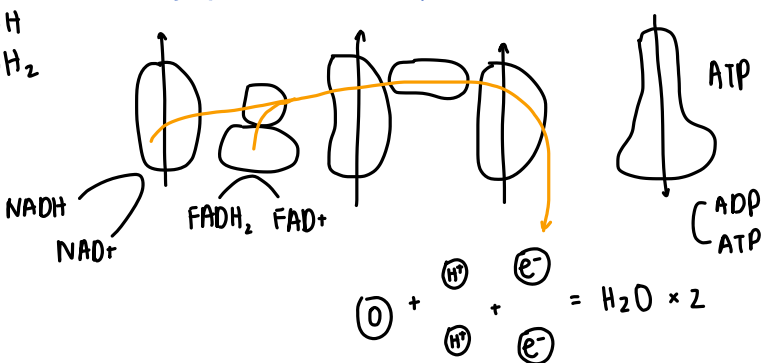
Krebs Cycle



+ 4 NADH { 2 Glycolysis
2 Coenzyme A

delivers electrons

Electron Transport Chain



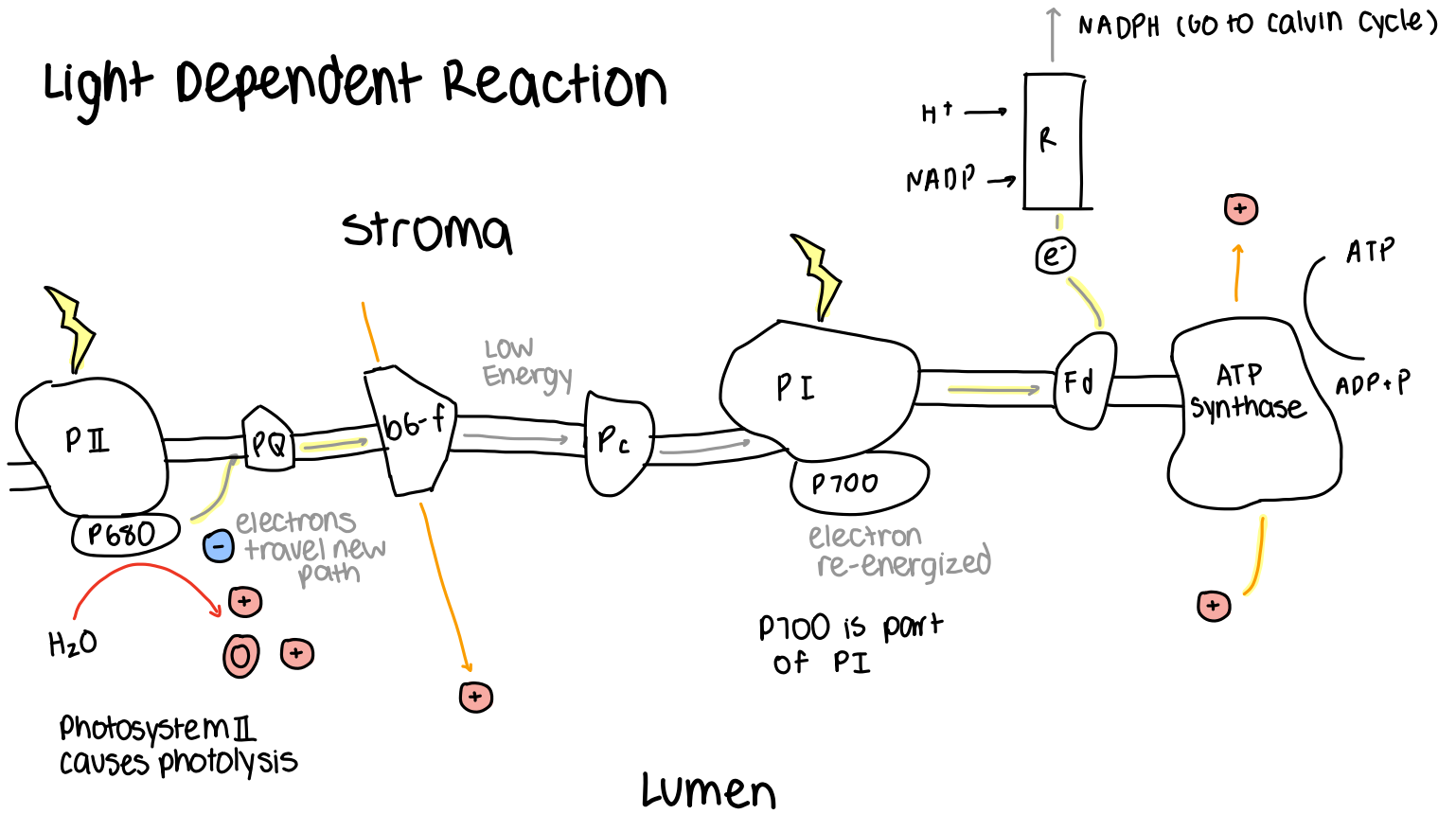
34 ATP

End Equation



Photosynthesis

Light Dependent Reaction



P680 is part of P II

PQ plastoquinone electron acceptor pass excited electrons to proton pump

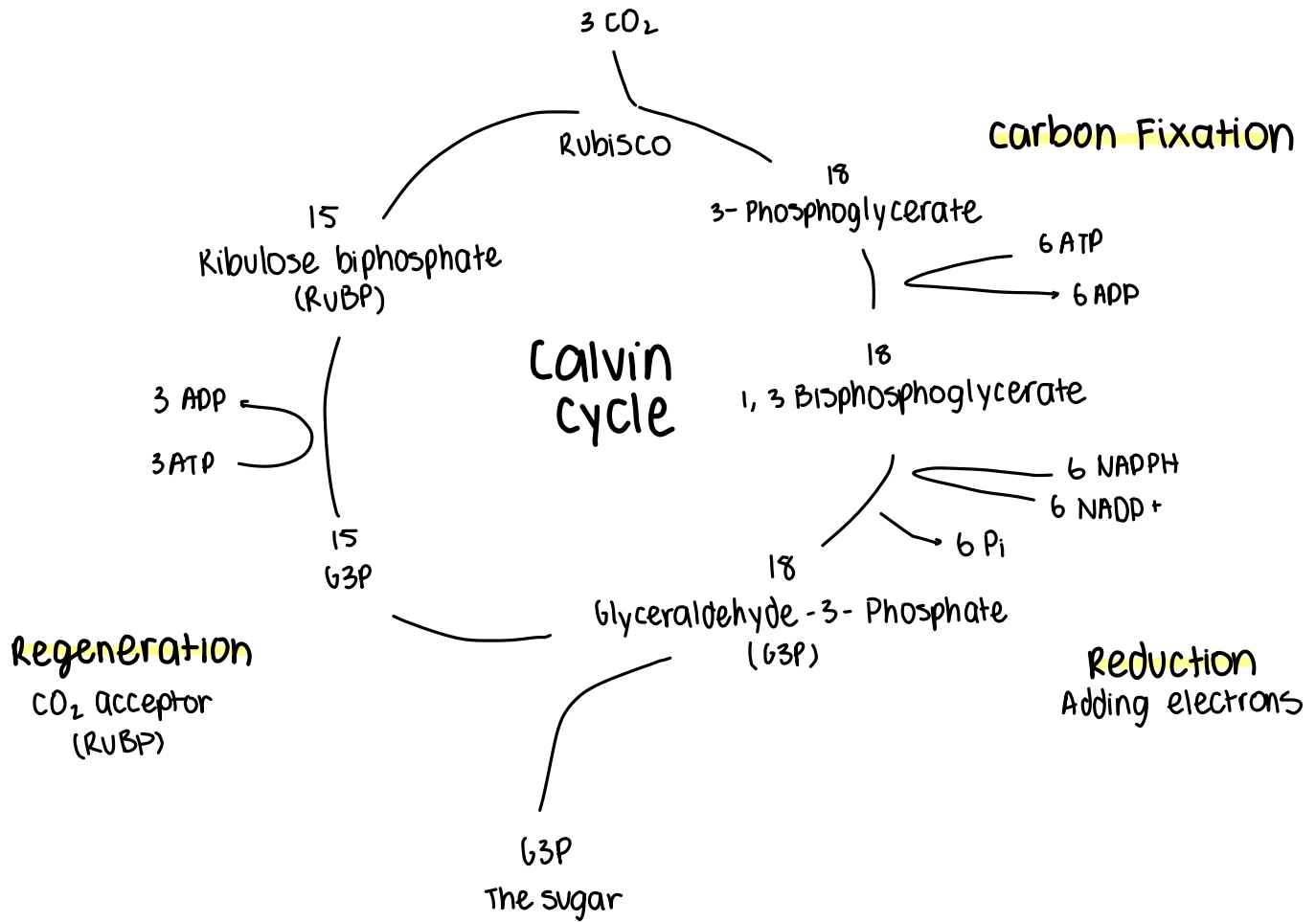
Pc plastocyanin carries unenergized electron to P I for reenergization

Fd ferredoxin passes energized electron to NADP Reductase

R NADP Reductase adds electrons and protons to NADP to form NADPH

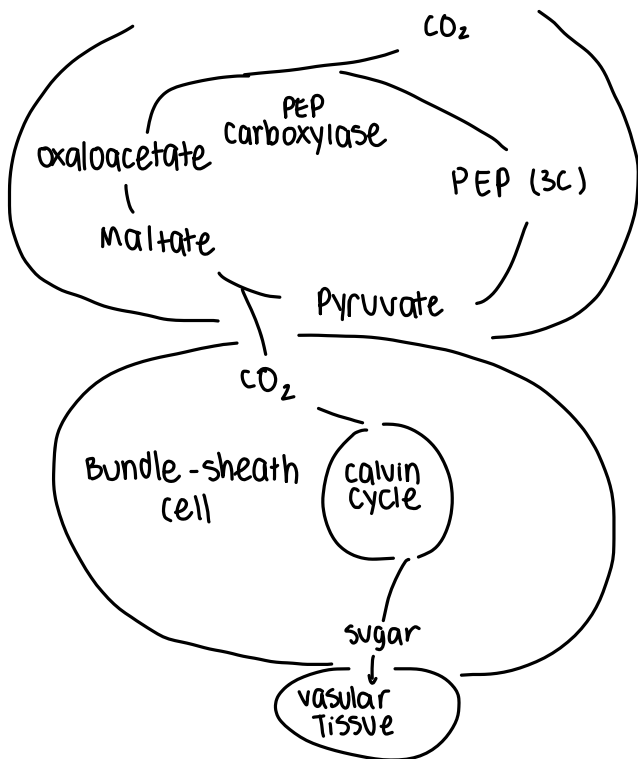
Light Independent Reaction

occurs in the stroma

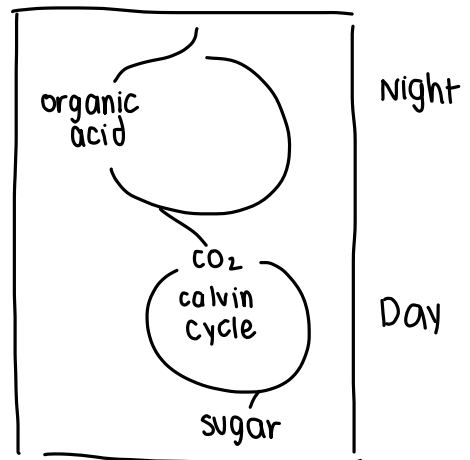


C₄

mesophyll cell



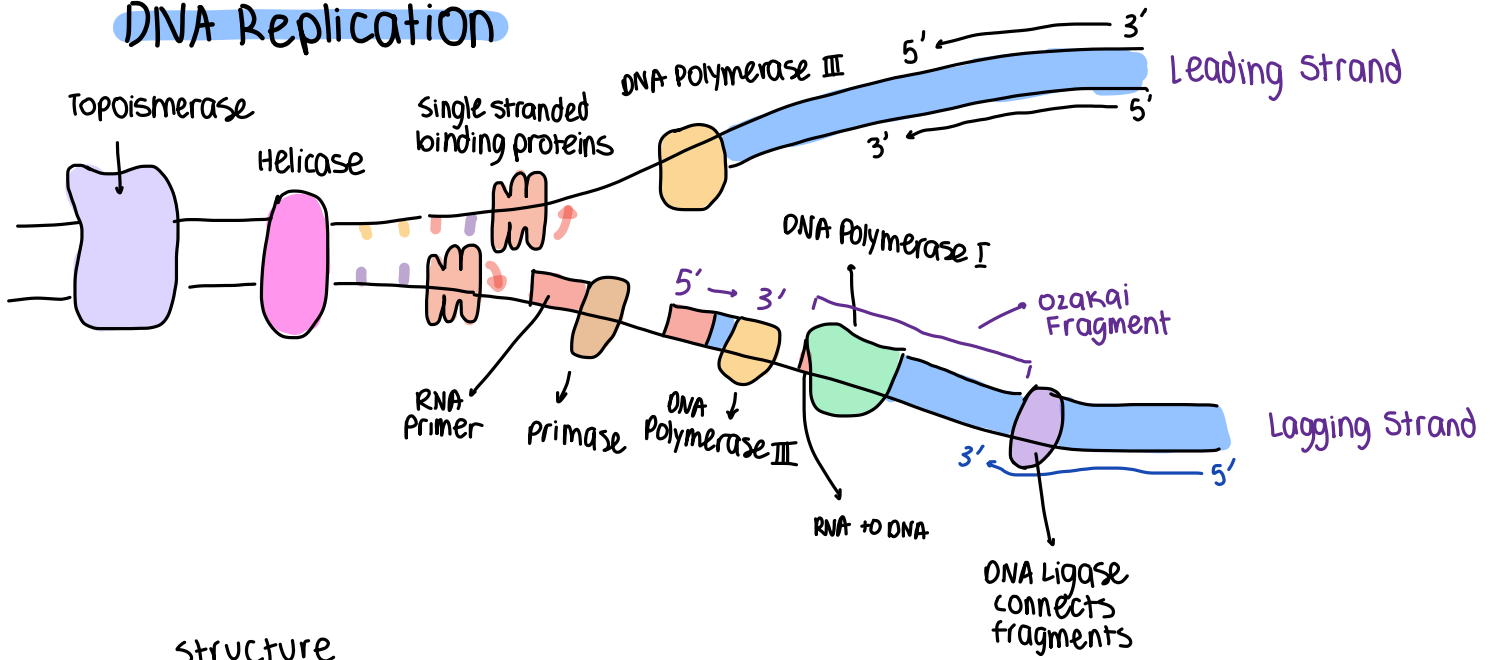
CAM



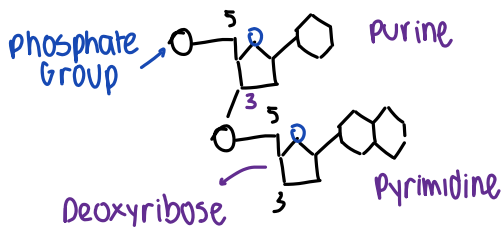
same exact as C₄ but in one cell

DNA

DNA Replication

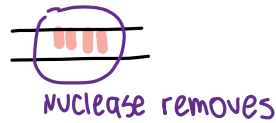


Structure

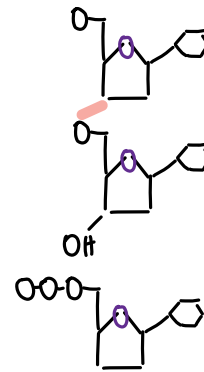


The phosphate group of the nucleotide attaches to the 5' of its sugar. It connects to the 3' of the other.

Excision Repair

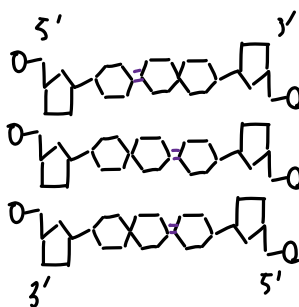


Adding Nucleotides

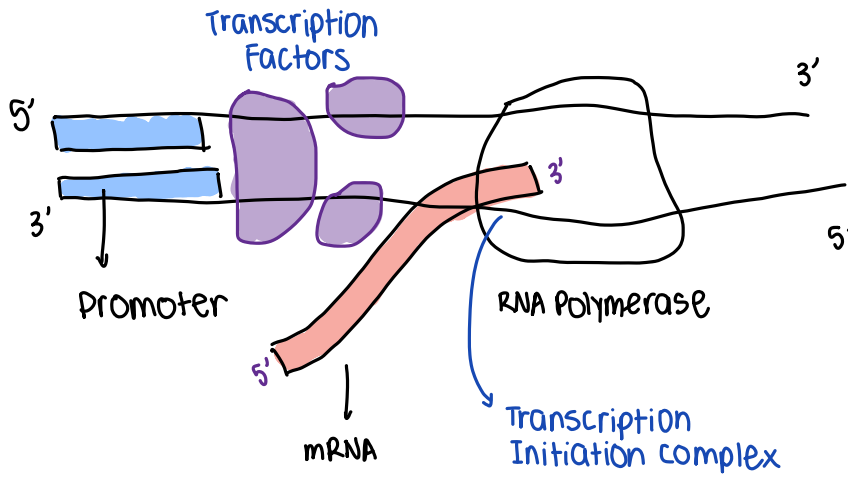
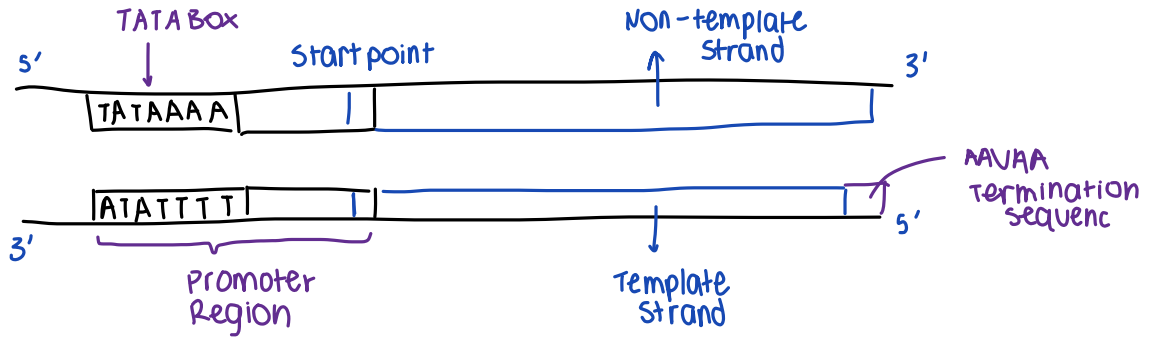


bind
↓
Pyrophosphate
two phosphate

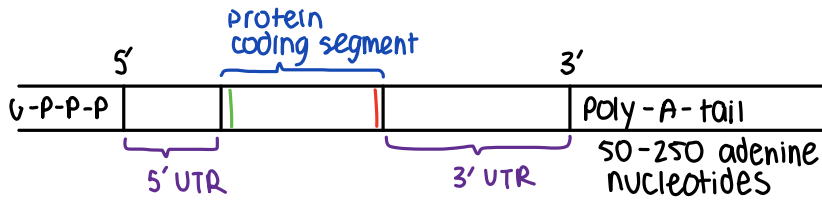
Structure



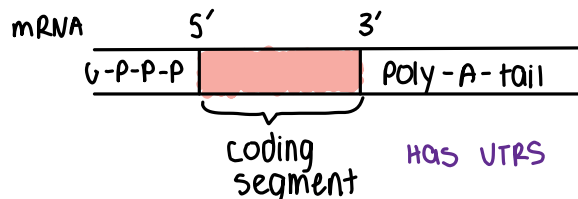
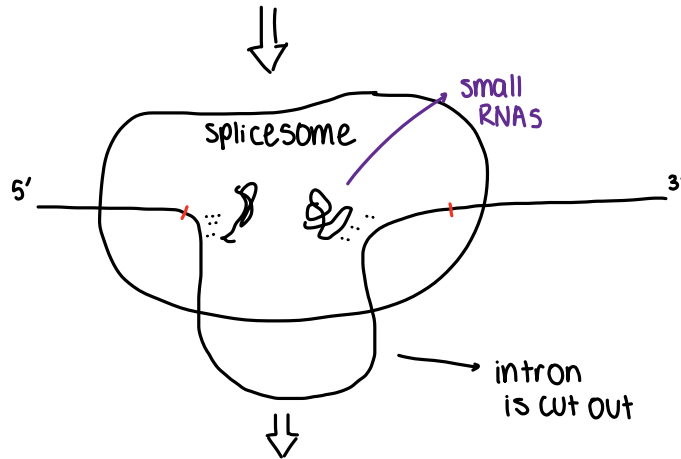
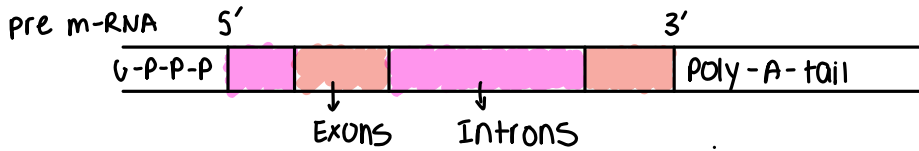
Transcription



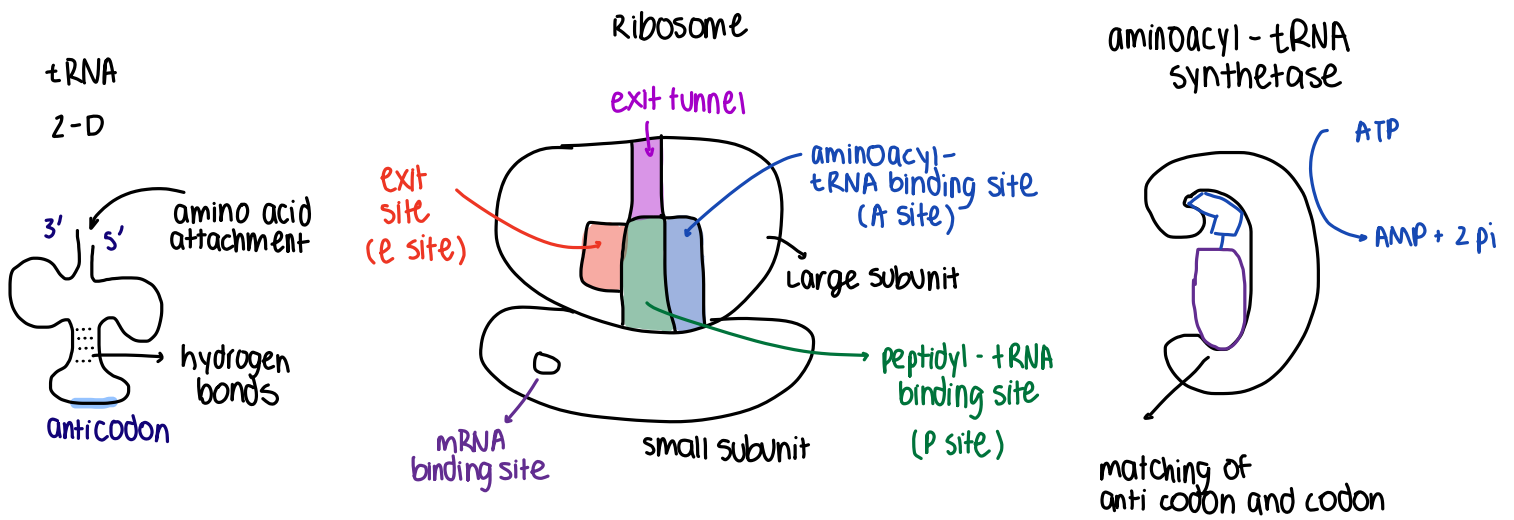
Modified Guanine nucleotide
5' end
5' cap



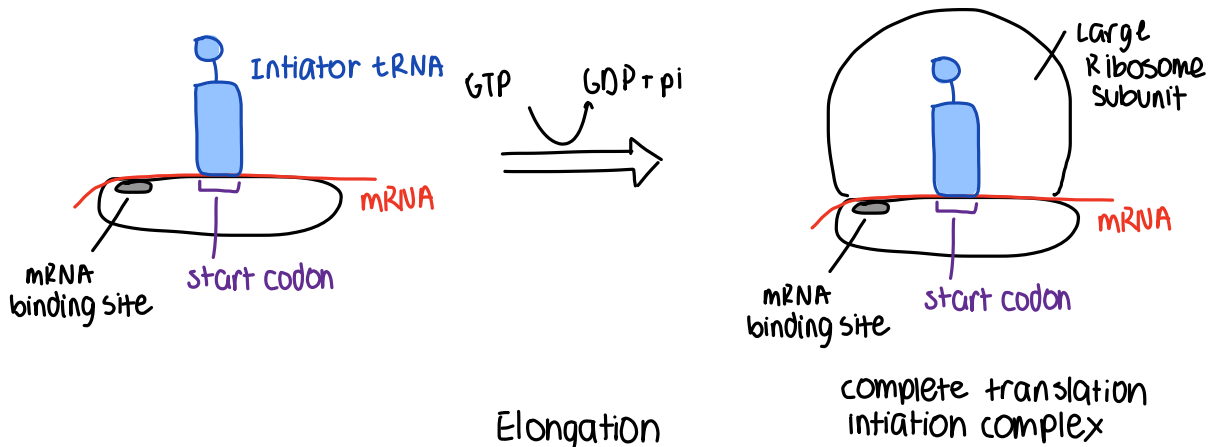
UTRs on both sides of
of coding sequence
5' end called 5' UTR
3' end called 3' UTR
regulate stability
function and localizatio



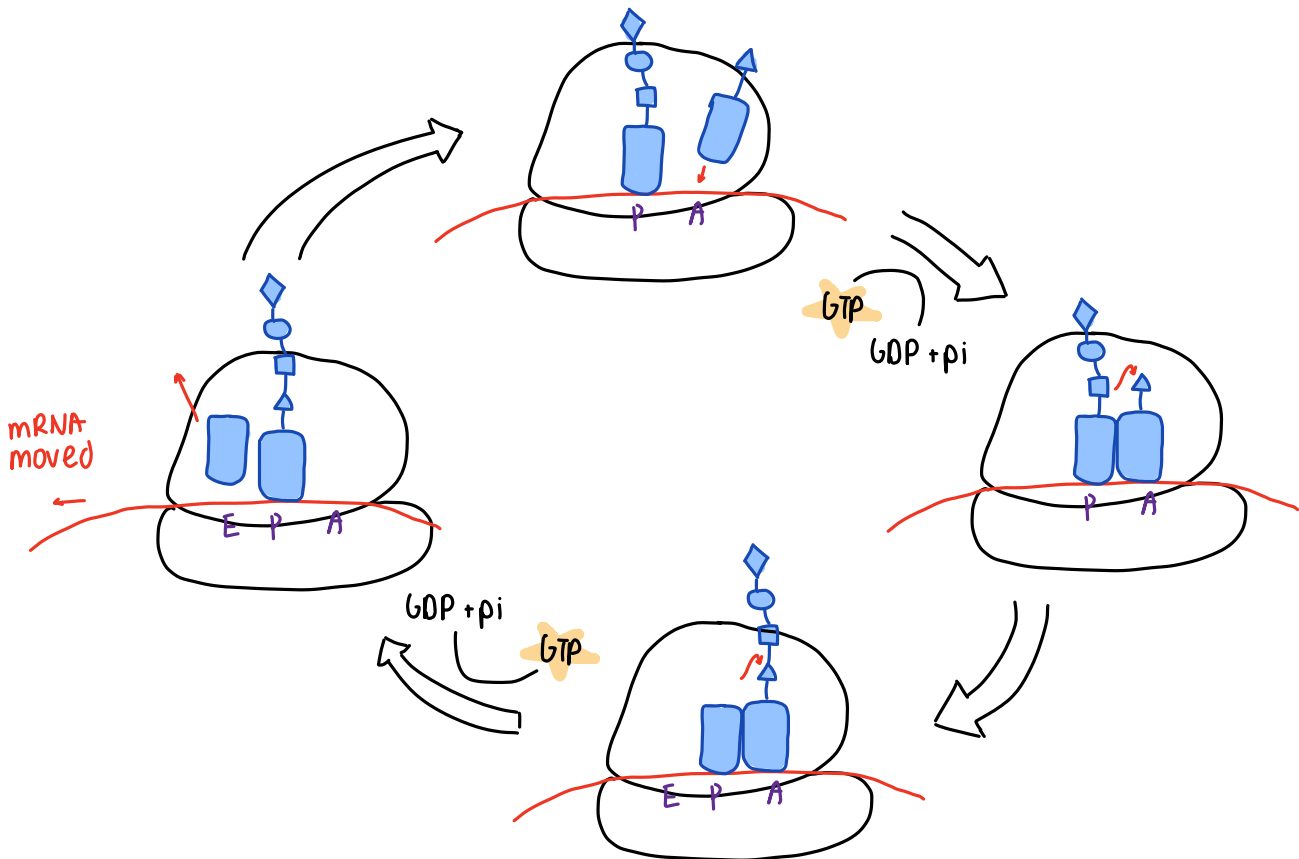
Translation



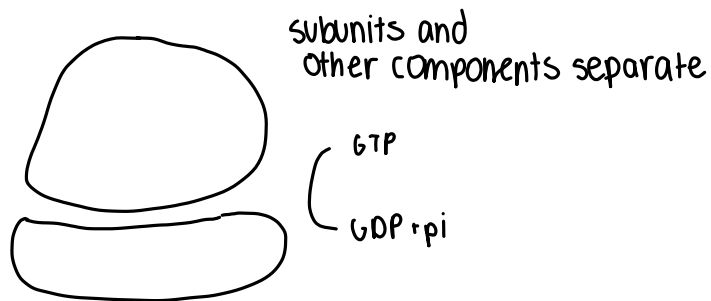
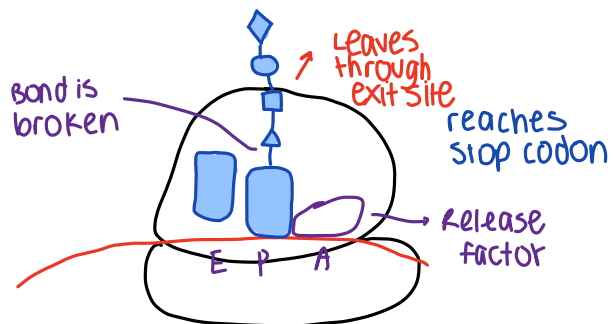
Initiation



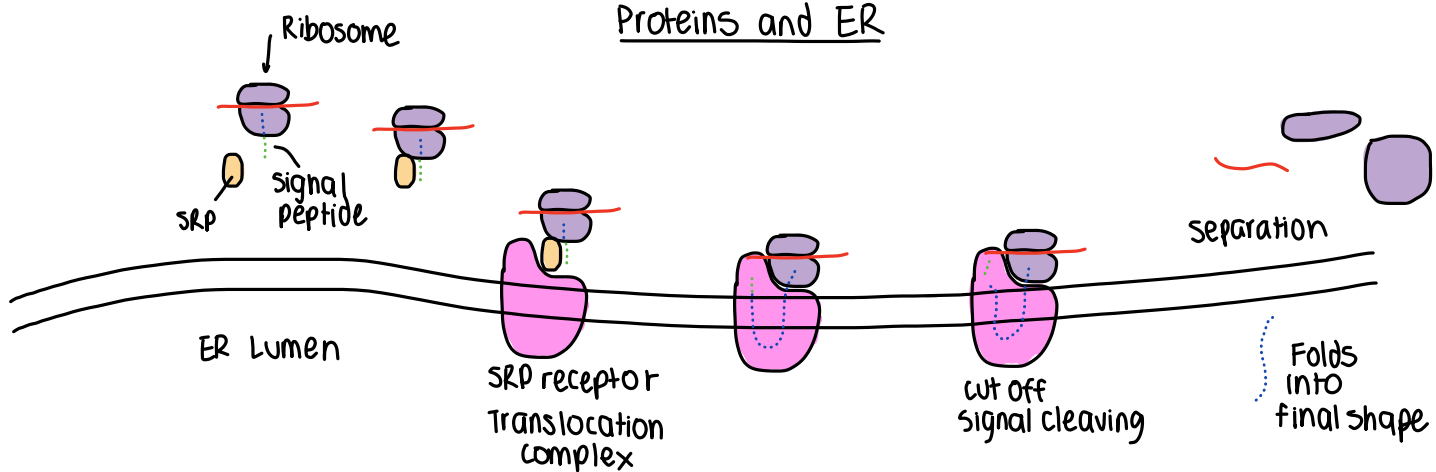
Elongation



Termination

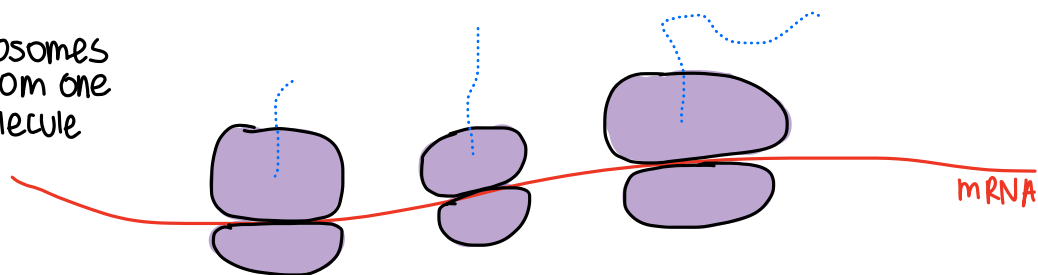


Proteins and ER



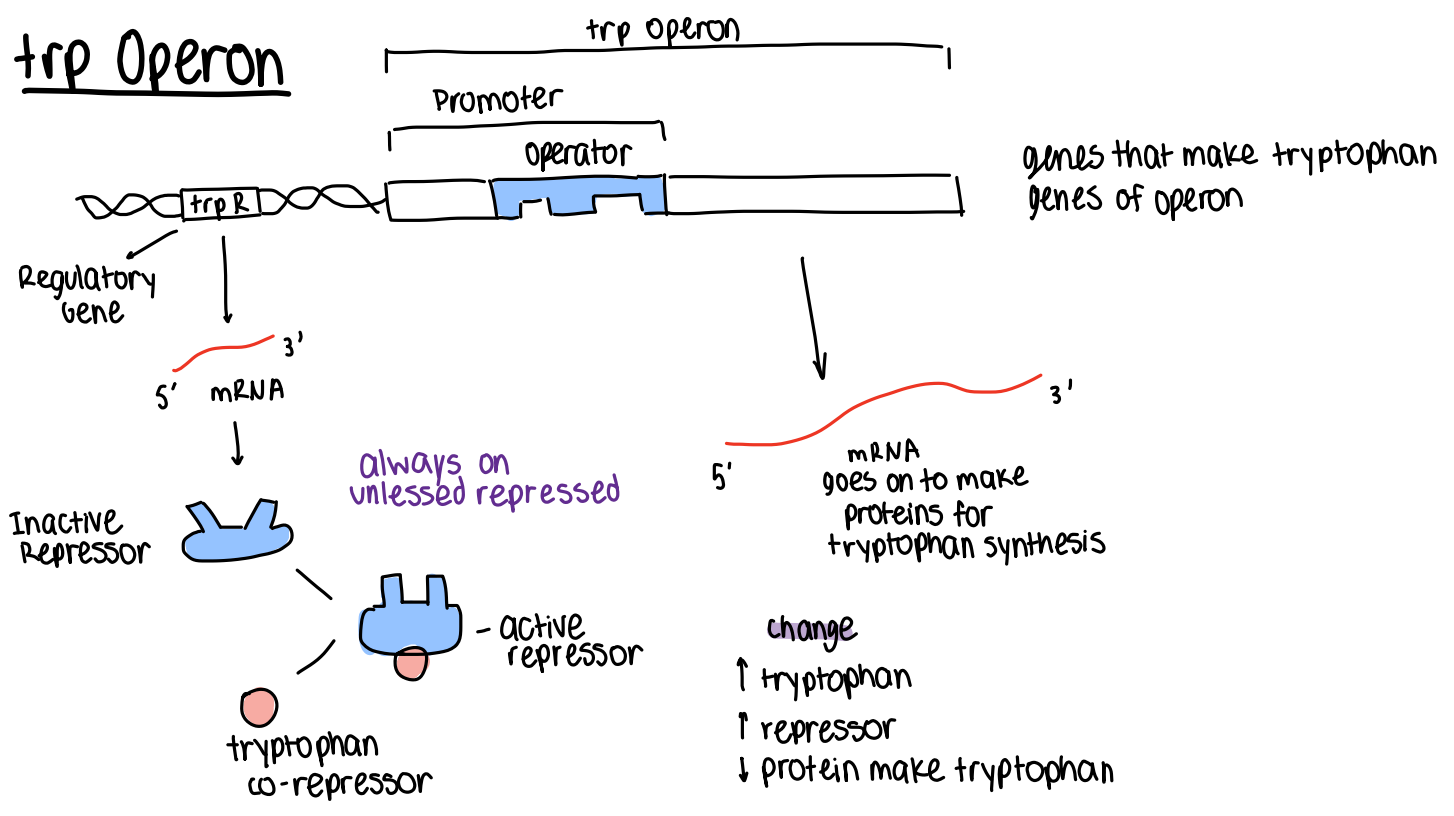
Polyribosomes

Many ribosomes reading from one mRNA molecule

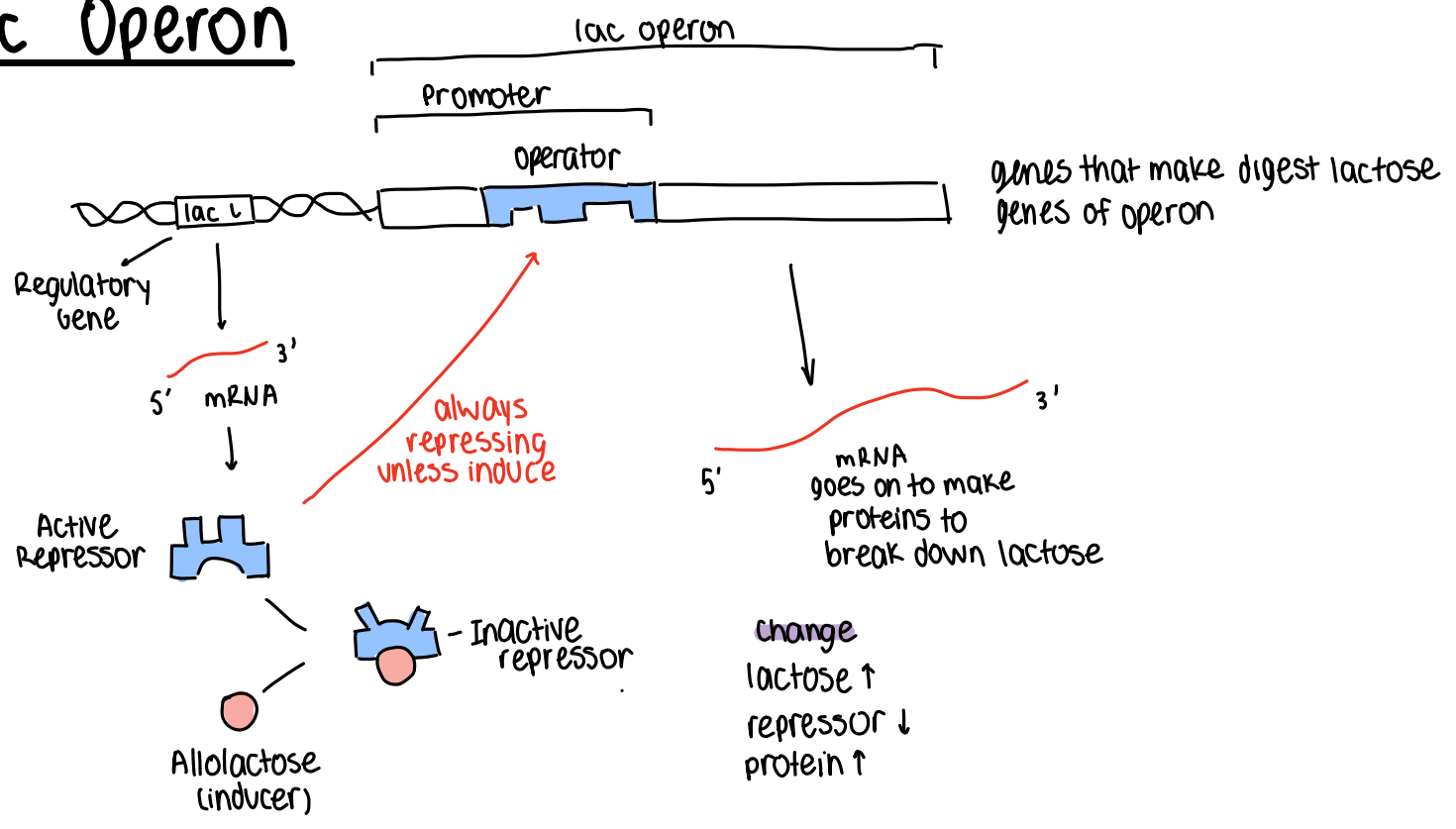


Regulation

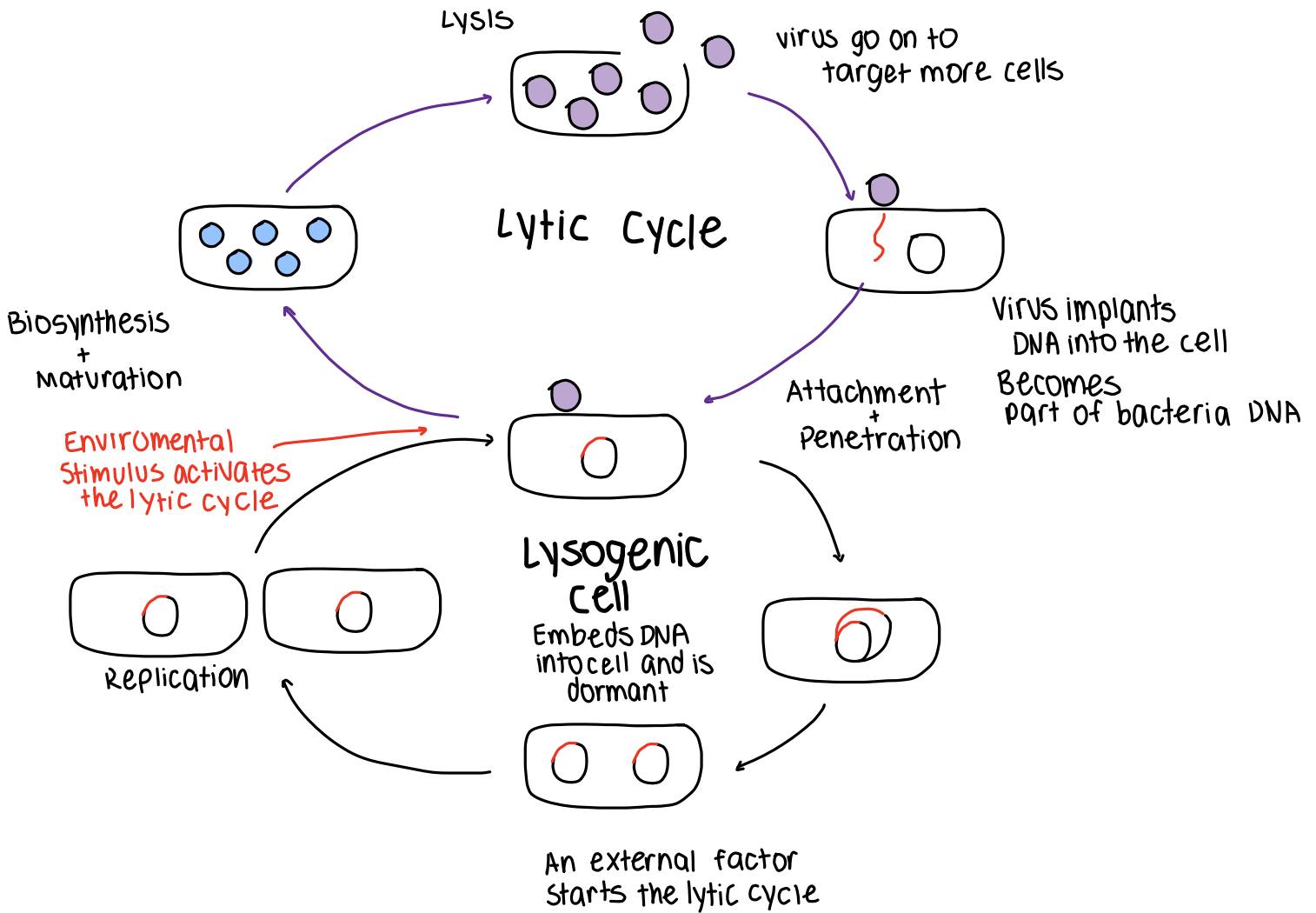
trp Operon



lac Operon



Virus Replication



Lysogenic is especially dangerous as it can quickly replicate undetected and stay in the body in large quantities.

Ecology

Nitrogen Cycle

