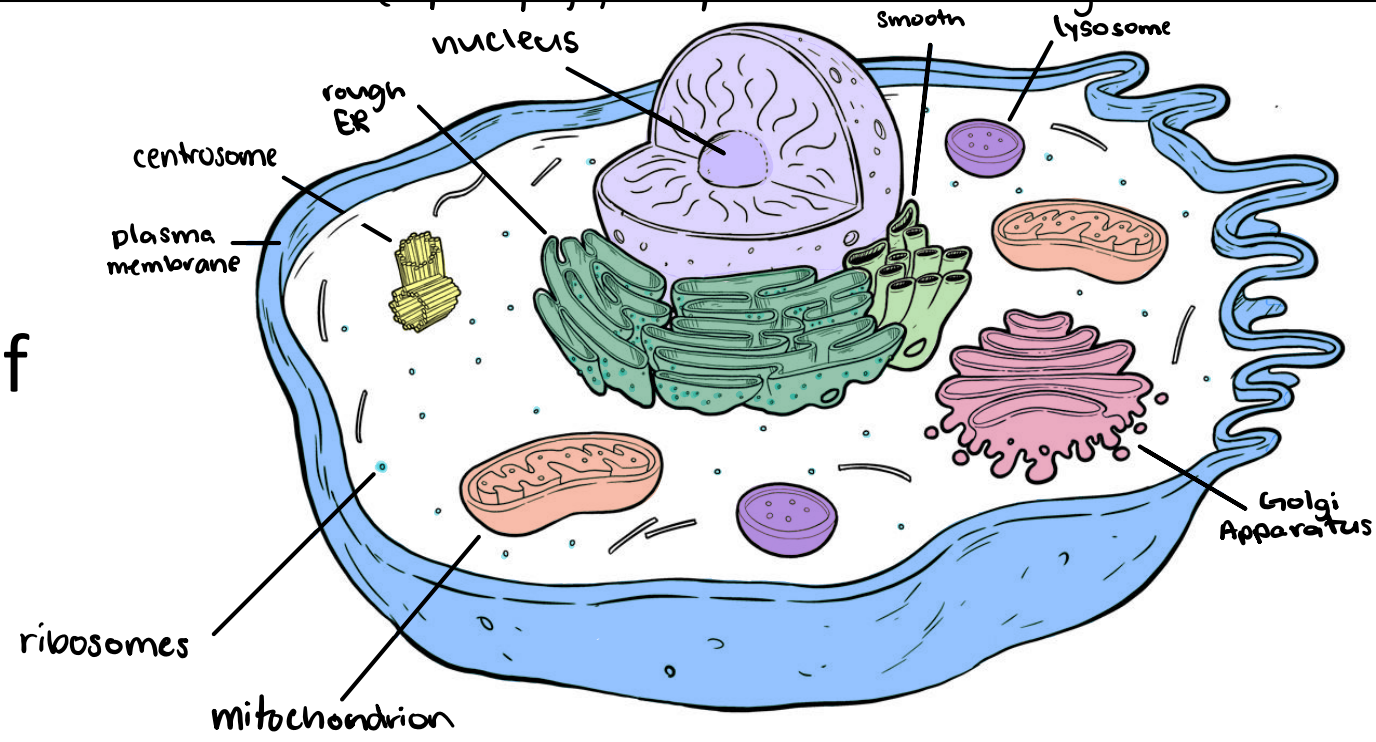
Label and state the function of the following parts of the cell:

Nucleus	contains DNA, the genetic material
Ribosome	make proteins for the cell
Mitochondrion	site of cellular respiration, uses oxygen to generate ATP
Smooth ER	synthesizes lipids, stores calcium ions, metabolizes carbs, detoxifies drugs + poisons
Rough ER	create glycoproteins, distribute transport vesicles, membrane factory for cell
Golgi apparatus	modifies products of ER, manufactures polysaccharides, sorts material into vesicles
Plasma membrane	allows certain substances to enter/exit the cell, lipid bilayer
Centrosome	organizes microtubules and provides structure to the cell
Lysosome	digests macromolecules (hydrolyze), recycles its own organelles

Chap 6: Parts of the Cell



Chap 8: Energy and Chemical Reactions

1) Label the reactants and products.

2) Indicate whether energy is released or required for the reaction.

3) Define free energy.

energy that can do work

4) Which reaction gains free energy? Which reaction loses free energy?

exergonic loses

endergonic gains

5) Which reaction is a catabolic process? Which is an anabolic process?

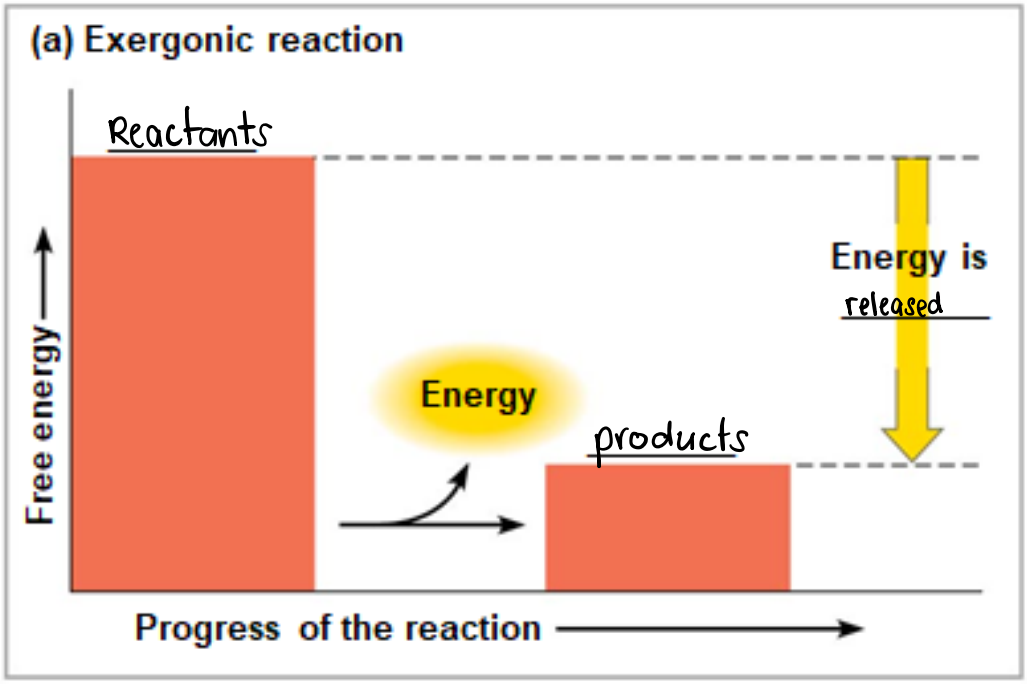
exergonic is catabolic

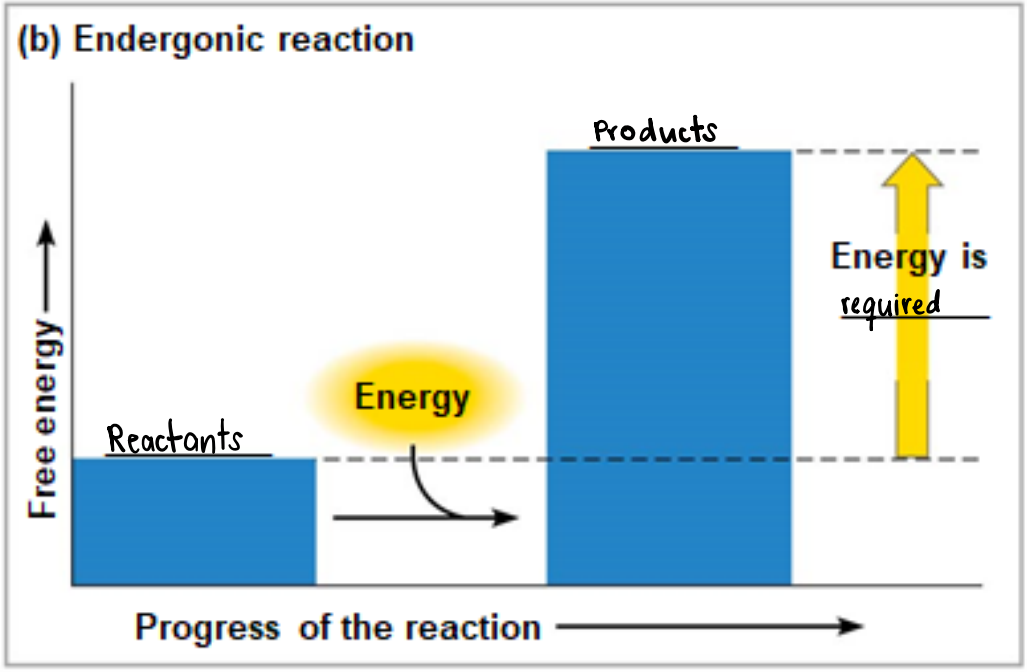
endergonic is anabolic

6) Which reaction is spontaneous? Which is not spontaneous? How can you determine which is which?

exergonic is spontaneous, endergonic is not

spontaneous occur without energy imput

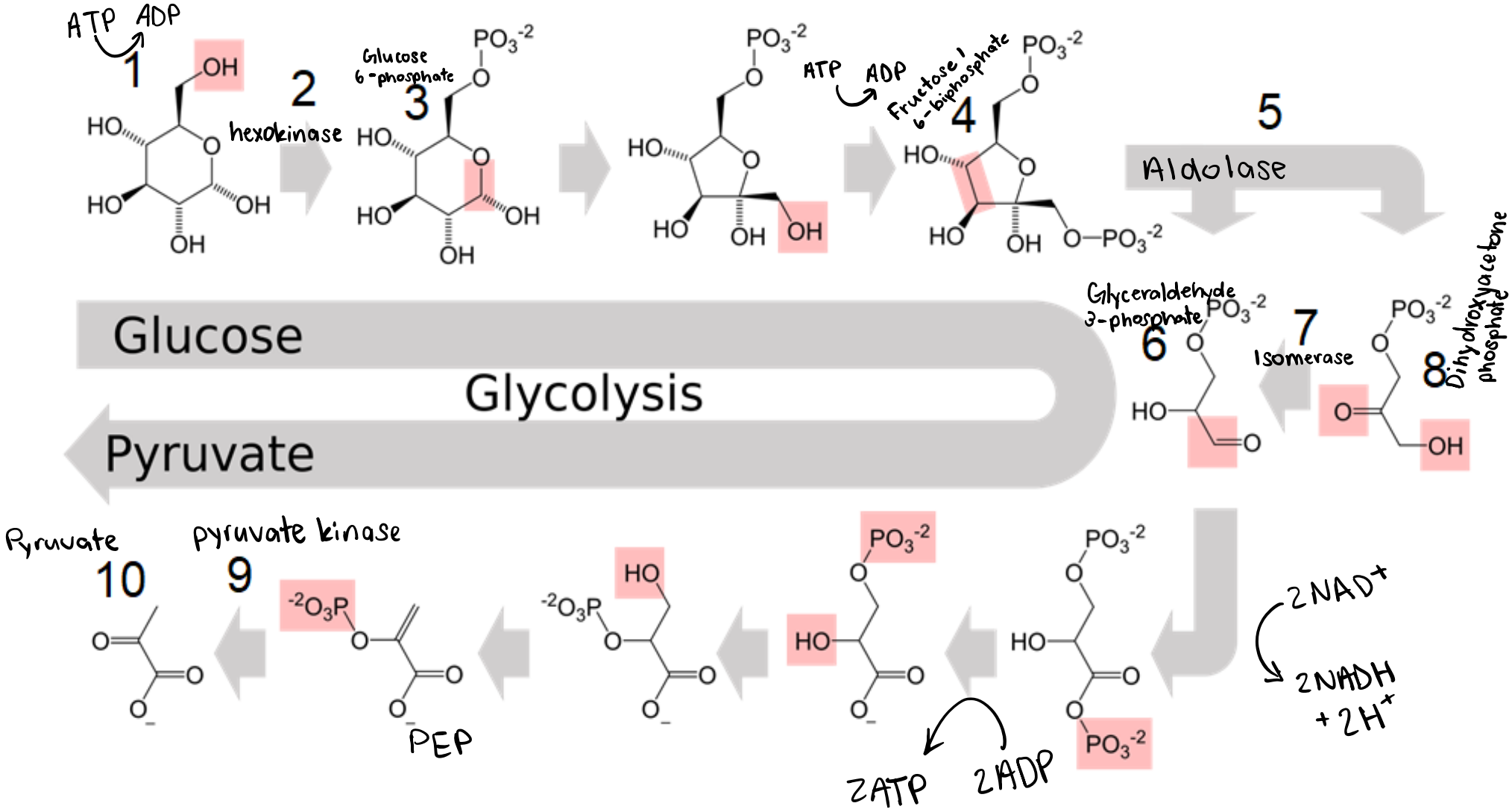




Chap 9: Glycolysis

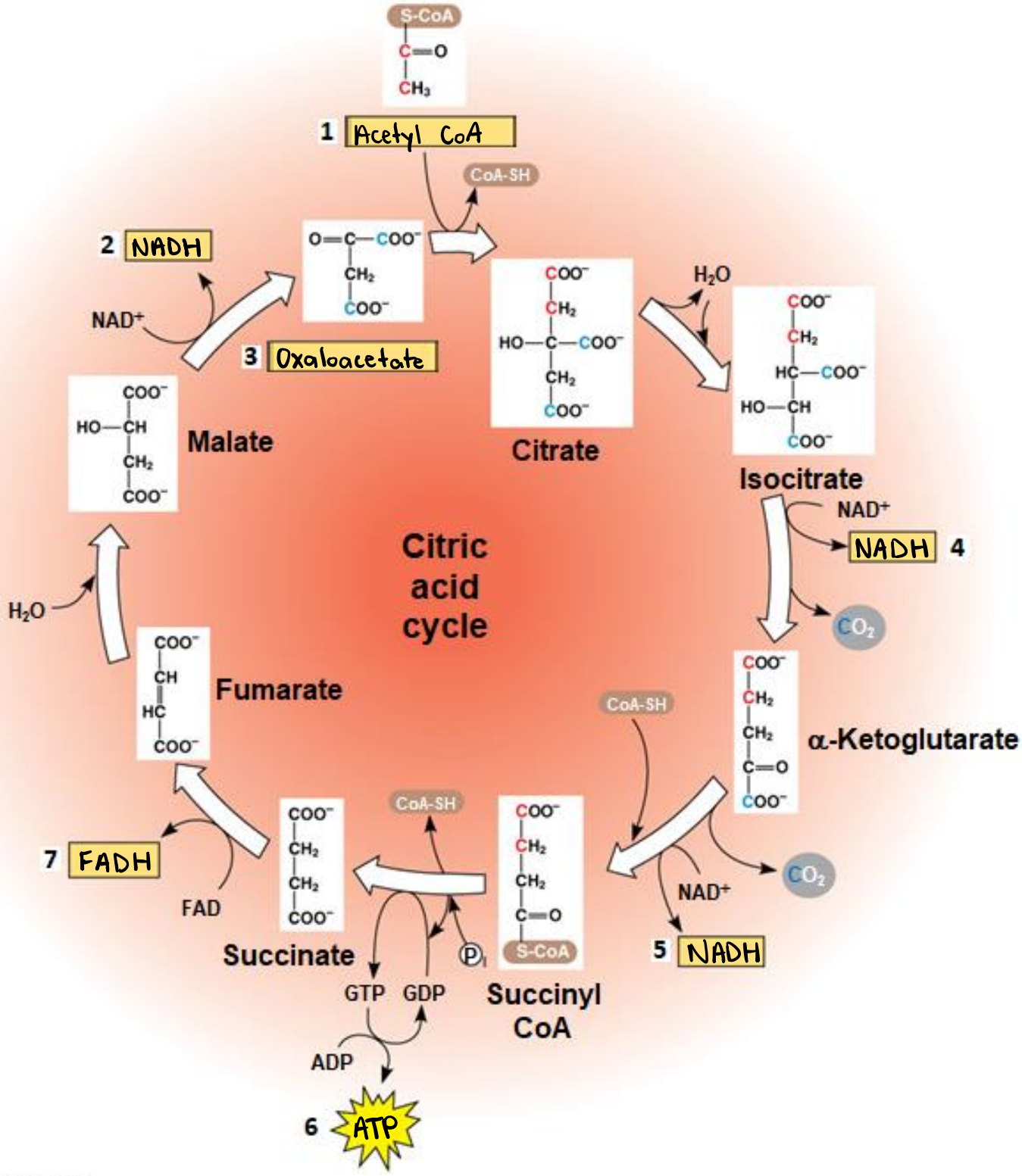
Label the energy investment and energy payoff phases. Label the compounds produced and enzymes used at the numbered stages of glycolysis. Indicate where ATP is used and produced during the reactions as well as the points along the pathway where NAD^+ is reduced to NADH. Note the total amount of ATP used and produced as well as the total amount of NADH produced. Where does that NADH get used?

Note: Pay close attention to the direction of the arrows.



Chap 9: Citric Acid Cycle

- Fill in spaces 1-7 in the diagram.
  - Label the ATP, NADH, and $FADH_2$.
  - Label the molecule that enters the cycle after pyruvate oxidation.
  - Label the molecule that is regenerated by the cycle.



Chap 9: Oxidative Phosphorylation

- Fill in the blank spaces.
  - Label the H^+, NAD^+, FAD^+, H_2O, and ATP.
  - Label the two stages of Oxidative Phosphorylation.

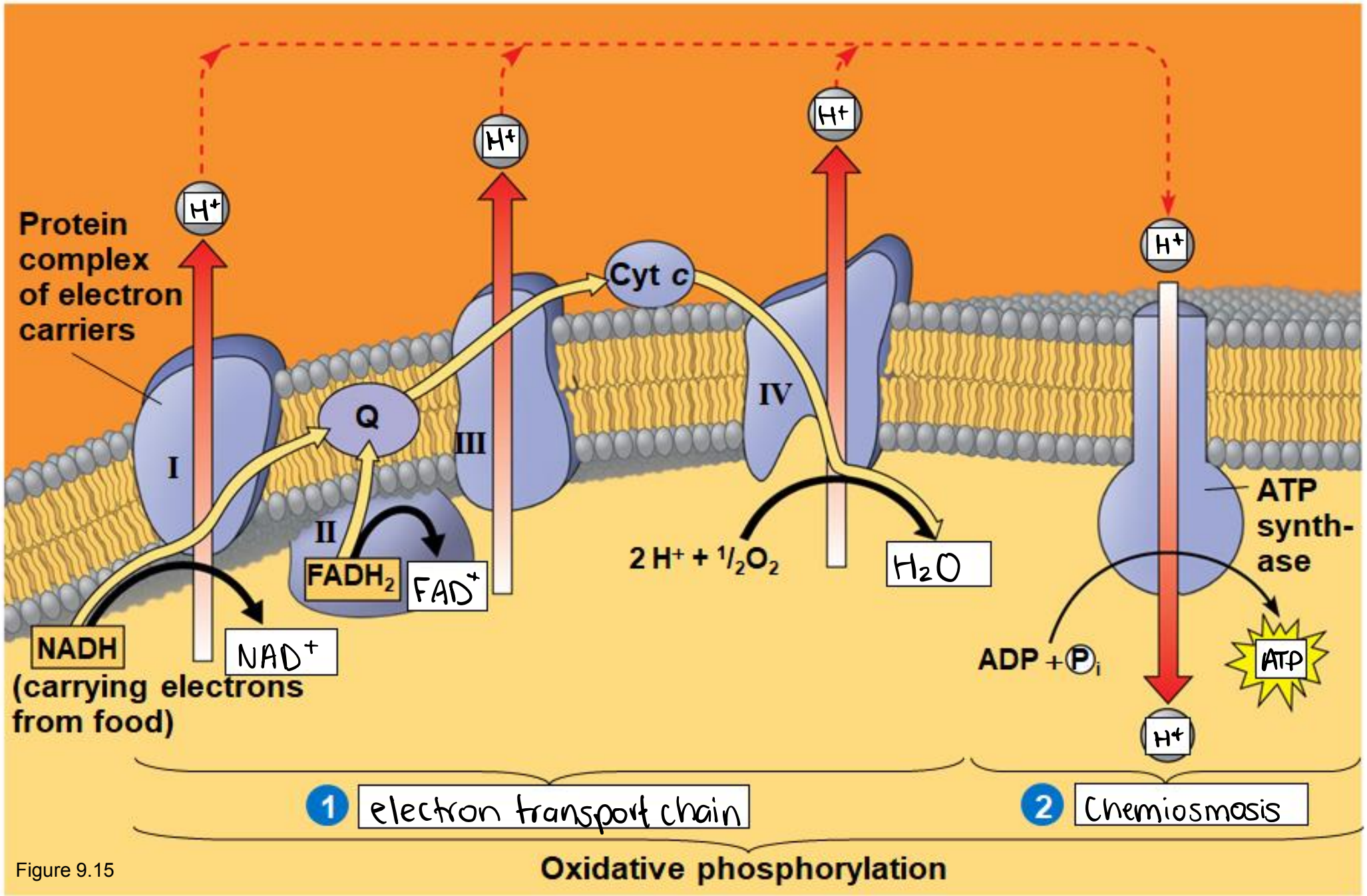


Figure 9.15