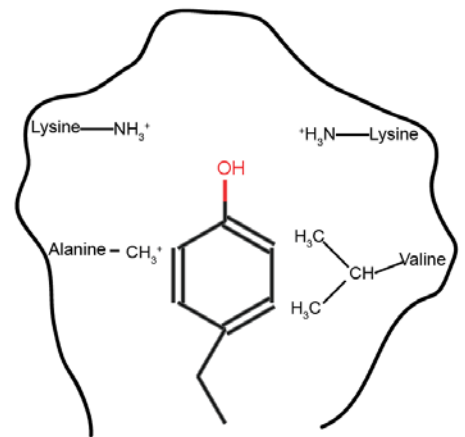
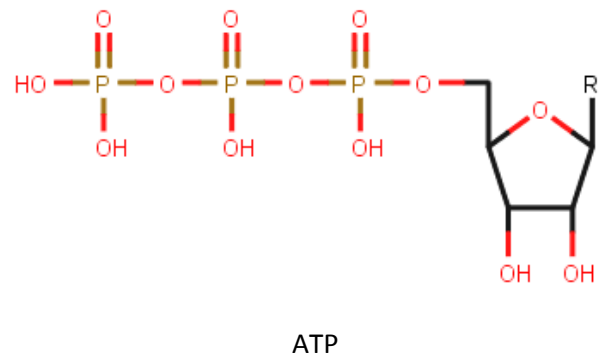
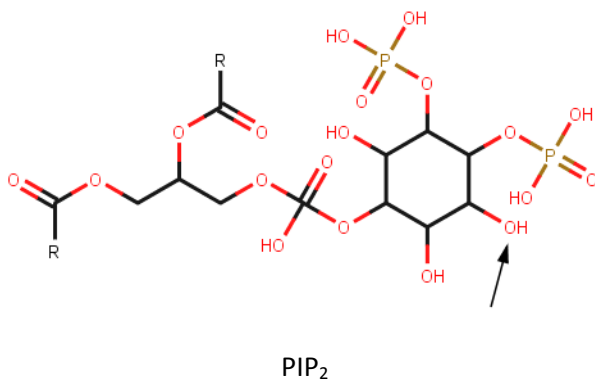


Insulin and Glucagon Signaling.

1. The cellular response to insulin is based on enzymes being able to recognize the difference between tyrosine and a tyrosine that is modified with a phosphate group. Below is an image of tyrosine interacting with the active site of Kinase A. Explain why the modified tyrosine will interact with this enzyme more favorably.



2. PI-3K is responsible for phosphorylating the 3 position of inositol rings. Below are the two substrates (PIP₂ and ATP). ADP is one product – predict the other (PIP₃). The arrow indicates the 3 position of the inositol ring.



3. If an enzyme is able to recognize PIP₂ but not PIP₃, which molecule would have a lower K_m for that enzyme?

