1.9 Enzyme Inhibition

- Enzyme inhibitors are substances that directly or indirectly interfere with the functioning of the active site of an enzyme and so reduce its activity

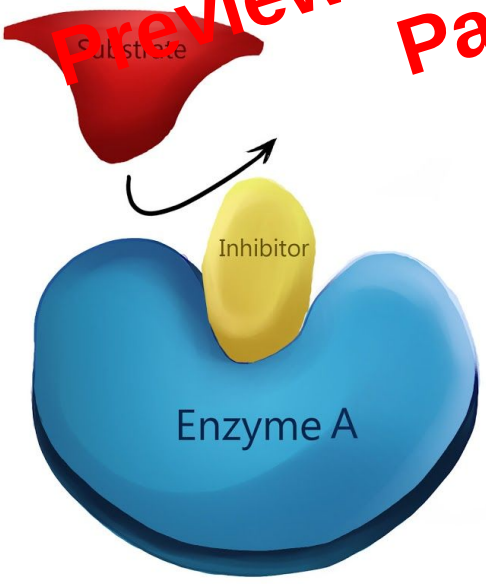
Competitive Inhibitors

- Shape is similar to that of the substrate allowing them to occupy the active site of an enzyme
- Compete with the substrate for the active site
- If the substrate concentration is increased the effect of the inhibitor is reduced
- The inhibitor is non permanently bound to the active site and so when it leaves another molecule can take its place
- E.g. malonate inhibits the respiratory enzyme succinate

Non-Competitive Inhibitor

- Attach themselves to the enzyme at a binding site that isn't the active site
- Upon attaching to the enzyme the inhibitor alters the shape of the enzyme and thus its active site so the substate no longer fits it
- As the substrate and the inhibitor are not competing for the same site an increases in substrate concentration does not decrease the effect of the inhibitor

A) Competitive Inhibition



B) Non-competitive Inhibition