

Regulation of Enzymes

There are three ways -

1) Binding of other molecules as non-competitive inhibitors

This requires that there has to be two conformations of the enzyme
"T" form - tense form - less active - where inhibitor can readily bind
"R" form - relaxed form - more active - where activator can readily bind
Ex: Pathways with feedback inhibition

2) Proteolysis

Ex: Chymotrypsinogen (inactive) \rightarrow π -chymotrypsin (active) \rightarrow α -chymotrypsin (active)

Ex: blood clotting cascade

Ex: apoptosis through aspartate proteases (caspases)

3) Post-translational modification

Phosphorylation by protein kinases

Can occur with amino acids with a free OH group (ser, thr, tyr)

Multiple mechanisms usually work together

