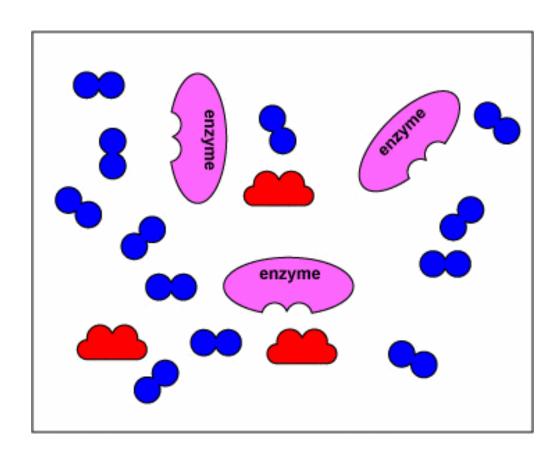
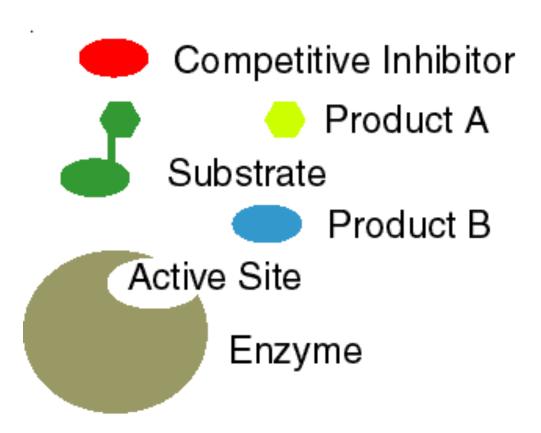
Enzyme Regulation



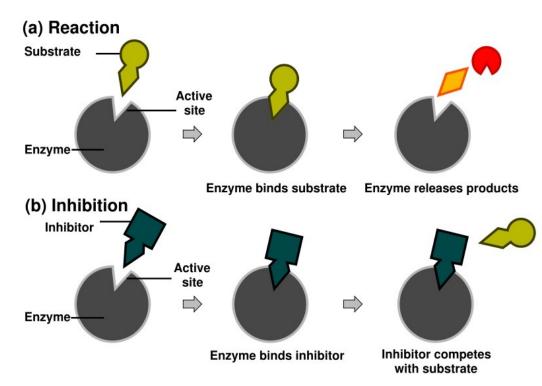
Competitive Inhibition



Competitive Inhibition

Competitive inhibitors

- have a similar structure to the substrate
- competes for the enzyme's active site and block the substrate from binding
- Concentration effect of inhibitor???



Irreversible Inhibitors

Similar to Competitive inhibitors

• exception to destroying the enzyme activity altogether by never letting go or destroying the active site.

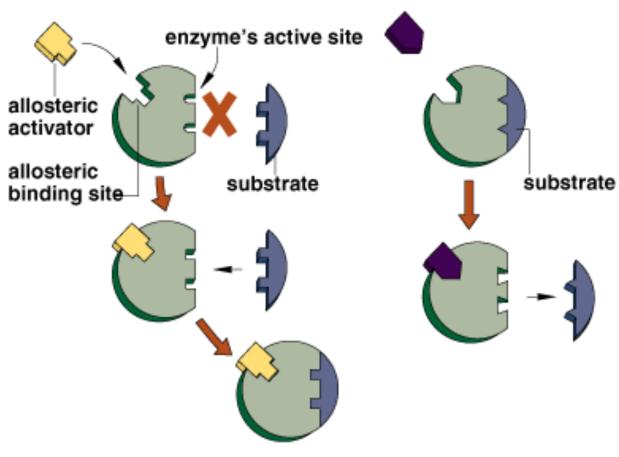
Many drugs & pesticides act as irreversible inhibitors of enzymes

antibiotics (inhibit bacterial enzymes)

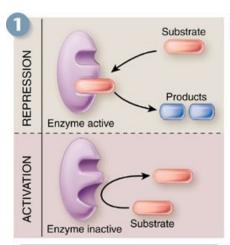




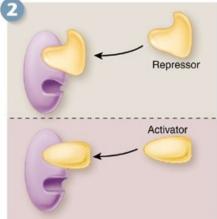
- some enzymes have allosteric sites
- allosteric regulators either inhibit or stimulate an enzyme's activity



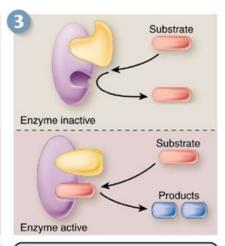
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Allosteric enzymes subject to repression are active in the absence of signal molecules, while allosteric enzymes that rely on activation are not active in the absence of signal molecules.



When signal molecules bind allosteric enzymes, they change the shape of the active site. Repressors disrupt the active site, while activators restore it.



Allosteric enzymes subject to repression are not active in the presence of signal molecules, while allosteric enzymes that rely on activation require signal molecules to be active.

 allosteric activators promote the action of the enzyme

 allosteric inhibitors prevent the action of the enzyme (i.e. noncompetitive inhibition)

