

ENZYMES

by Arthur W. Siebens, Ph.D., Copyright 1999
(to the tune of "Blue Moon," by Lorenz Hart and Richard Rogers)

Make ma make ma make, break ba break ba break, cut cu cut cu cut, bind ba bind
Enzymes, enzymes, enzymes

They speed reactions--they catalyze
Without them life would stop on a dime
Because of them cells work just fine
They're blinding fast—they're so sublime

Enzymes—proteins with active sites
That bind their substrates just right
Induce their fit to bind tight, Oh...

Some (anabolic) enzymes make—they make the protein in steak
Some (catabolic) enzymes break—cut up the steak you intake.* Oh...

Lock la lock la lock, key ka key, enzymes/substrates like lock and key
Enzymes, enzymes, enzymes

They're regulated under control
Some work in groups--each has a role
Make up pathways with a final goal
Final product can feed back to slow the whole.**

Enzymes have allosteric sites,
Inhibitor bound from the back
Stops the enzyme in its tracks. Alternatively...

The active site can be knocked out of commission
In competitive inhibition—fights for the substrate's position. Whoa...

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Lower the energy it takes (the activation energy)
To get reactants through the transition state
To make products 'fore it's too late
So your life depends upon those great... ENZYMES!

* In small quantities if a healthy heart is considered desirable.

** For example, the nine-enzyme pathway of glycolysis is inhibited by allosteric inhibition of the third enzyme, phosphofructokinase by one of the final products, ATP.