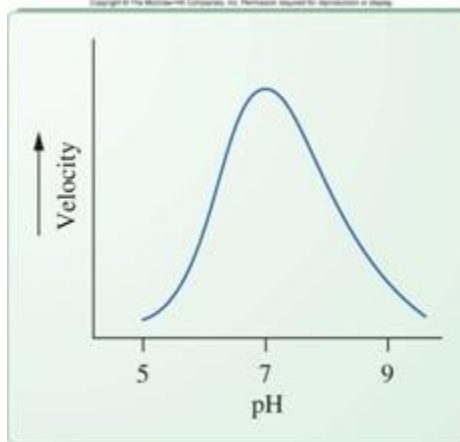


Topic: Enzyme(Nomenclature & Classification)
Class: B.Sc Part –III (Hons.)
Paper- V
Group – A

Faculty Name : Dr. Kumari Sushma Saroj
Department: Zoology
College: Dr. L. K. V. D College, Tajpur, Samastipur

Environmental Effects

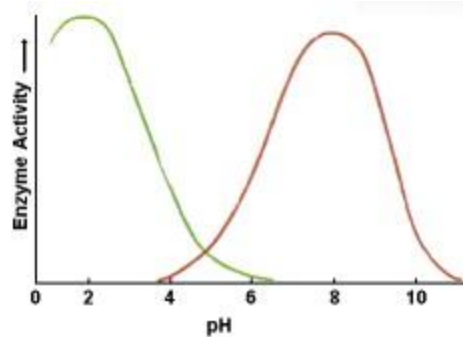
- The environment surrounding an enzyme can have a direct effect on enzyme function



- Enzymes work best within a particular range of pH

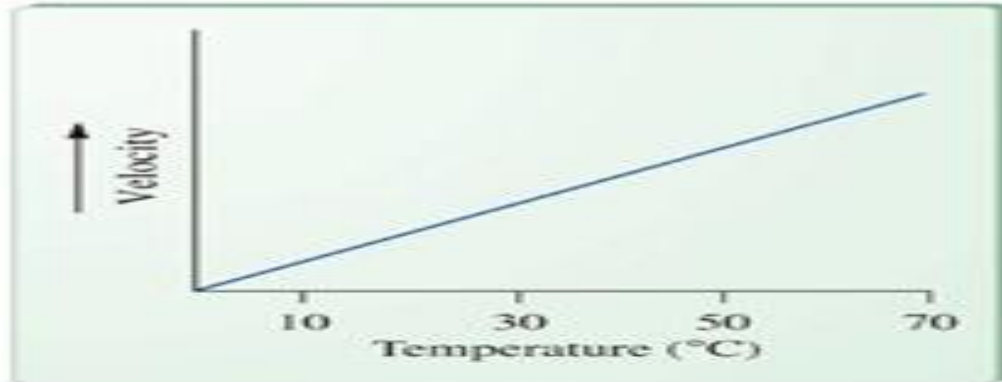
Environmental Effects

- Extreme pH changes will denature the enzyme, destroying its catalytic ability
- Pepsin (stomach)
- Chymotrypsin (small intestine) have different optimum pHs

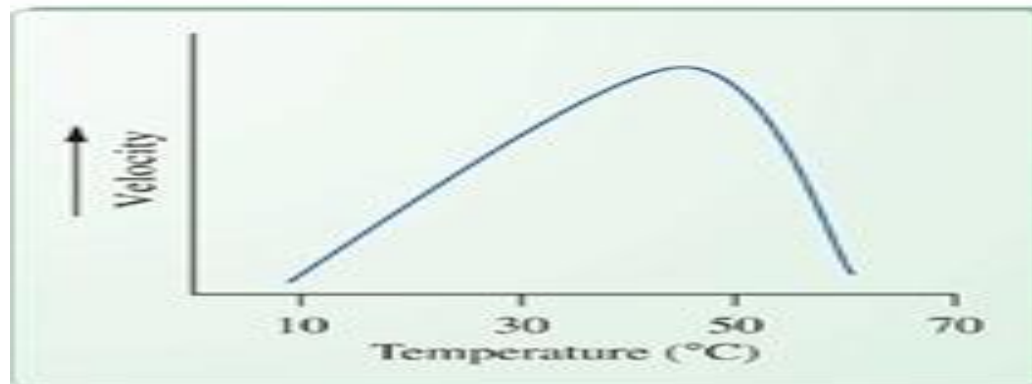


- Top panel at right - a representative pH range
- Bottom panel at right – specific examples of pH ranges for 2 enzymes

Temperature Effects



(a)



(b)

Temperature Effects

- An enzyme has an optimum temperature associated with maximal function
- The rate of an uncatalyzed reaction will increase proportionally with temperature increase
- Optimum temperature is usually close to the temperature at which the enzyme typically exists
- 37°C for humans
- Excessive heat can denature an enzyme making it completely nonfunctional
-
-

Regulation of Enzyme Activity

One of the major ways that enzymes differ from nonbiological catalysts is in the regulation of biological catalysts by cells

Some methods that organisms use to regulate enzyme activity are:

1. Produce the enzyme only when the substrate is present – common in bacteria
2. Allosteric enzymes
3. Feedback inhibition
4. Zymogens
5. Protein modification