Protein Function - Enzymes

I. General Comments
- A. Enzymes
- B. Specificity
- C. Interaction
  - 1. active site
    - a. common features
    - b. lock & key
    - c. induced fit
  - 2. temperature effect
  - 3. pH effect
    - a. cholinesterase
    - b. trypsin
    - c. papain

II. Free Energy - G
- 1) free energy *(G)*

A. Two thermodynamic properties of rxns.
- a. free energy change *(ΔG)*
  - 1) exergonic
  - 2) endergonic
- b. activation E

1. Reaction Coordinate Graph
   - 1) E hill
   - 2) transition state
2. Remember:

B. ΔG and its relation to the Equilibrium Constant

1) $\Delta G = \Delta G^{\circ} + RT\ln {}^{[B]}/_{[A]}$

a) Standard free-energy change (ΔG°)
b) biochemical standard free E change = ($\Delta G^{\circ\prime}$)

- a. ex. DHAP $\rightleftharpoons$ GAP
- b. Notes:

III. Enzyme Classes
1. Oxidoreductases
2. Transferases
3. Hydrolases
4. Lyases
   - a. synthase
5. Isomerases
6. Ligases
   - a. sythetases