	Lecture 14 (10/14/20)
Reading:	Ch6; 197-198, 198-203
Problems:	Ch6 (text); 7, 24
	Ch6 (study guide-facts); 4, 13
	Ch6 (text); 8, 9, 10, 11, 12, 13, 14, 15, 16
	Ch6 (study guide-facts); 8, 10, 12, 16, 17, 18,
	19, 20, 21
	Ch6 (study guide-applying); 1
NEXT	
Reading:	Ch6; 207-210
	Ch6; Box 6-1
Problems:	Ch6; 18-21;
	Ch6 (study guide-facts); 9, 11
	Ch6 (study guide-applying); 2

Lecture 14 (10/14/20)			
ENZYMES: Binding & Catalysis 2. Catalytic strategies			
A. Binding 1. Binding curves; <u>How tight?</u> a. Hyperbolic –saturation b. Sigmoidal –cooperativity	 a. binding the transition state (<u>What</u> <u>an enzyme must do</u>) i. Position (proximity) ii. Polarization 		
B. Catalysis 1. Catalytic power a. Proficiency b. assay of rate c. rate versus [E]	 iii. Strain iv. desolvation b. Example of carbonic anhydrase c. Example of "stickase" 		
 C. Nomenclature Enzyme helpers: Cofactors Reaction Nomenclature (kinetic mechanism) B. Enzyme Nomenclature (names) Trivial Enzyme Commission (EC#) 	 a. <u>Mechanistic</u> strategies a. <u>How an enzyme does it</u> b. Acid-base catalysis c. Covalent catalysis d. Metal-ion catalysis Kinetics-review 		
D. Catalysis ^{B.}	Enzyme Kinetics		
 Transition State Theory a. Energetics (thermodynamics) vs. kinetics b. Lower activation energy; negative Δ∆G[‡] 	 a. The set of the set of		

Enzymes

*Catalytic Strategies

Mechanistic Strategies

WHAT must Enzymes do to lower Activation Energies?

-nearly all enzymes do these

HOW do Enzymes lower Activation Energies? - enzymes may use none, one, or more of these

*Textbook uses this term a bit incorrectly. What they term <u>Catalytic strategies</u> are really those that answer HOW enzymes decrease the activation energy. The HOW-to strategies are really "Mechanistic" strategies.



















Why Study Enzyme Kinetics?

- · Quantitative description of biocatalysis
- · Determine the order of binding of substrates
- · Elucidate acid-base catalysis
- Understand catalytic mechanism
- Find effective inhibitors (drugs)
- Understand regulation of activity































