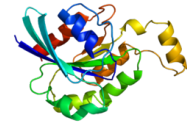




Chem 331 Biochemistry

Kinetics

Learning Objectives, Study Guides



Learning Objectives

- Know the key characteristics which define an enzyme catalyzed reaction
- Relate traditional rate law/kinetics to enzyme kinetics
- Recognize and predict the classification of an enzyme catalyzed reaction (OTHLIL)
- How do enzymes work?
- Explain in detail the impact of pH and temperature on enzyme function. Not just that an activity increases or decreases but HOW-> mechanism!!!
- Understand molecularity and the order of a reaction
- Describe and derive Michaelis Menten's equation and use the equation to predict K_m and V_{max}
- Know the assumptions and limits to using MM
- Relate the Briggs-Haldane steady state model for first order kinetics
- Using data, be able to graph and interpret a primary graph of a kinetic problem and create a secondary plot analyzing K_m , V_{max}
- Describe and use K_{cat} and the ratio of K_{cat}/K_m
- Know each of the major class of enzyme inhibitors and predict the mechanism of binding and impact on K_m and V_{max} . Know the changes for double reciprocal plots
- Sketch and interpret a single displacement reaction for random and ordered reactions

Questions: 5th Ed G&G. 4, 7, 8, 9, 10

Study Notes from Dr P: *This is a complicated but straight forward chapter. First is to know what and how enzymes catalyze a reaction. Think about transition state, the factors which impact the reaction catalyzed by enzymes and the kinds of reactions catalyzed by enzymes. The rest is looking mathematically at enzymes to predict key kinetic functions of an enzyme. There will be graphing and interpretation on the test! I am big on understanding the limits of a MM reaction and relating steady state kinetics/first order kinetics.*