Lecture 14: Enzymes & Kinetics III
Michaelis Menton Kinetics and Inhibition

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Announcements!

Monday 10/11 lecture: starts at 10:15;
Taught by Dr. Stephen Everse

No Office Hour/Review Session Tuesday evening.

Review sessions Thurs & Fri from 5:30 - 7:00

Homework due Friday 10/15 by 7 pm in my office. Key will be posted on Saturday. Late homework will be penalized!

Exam II on Monday 10/18. Problems? See me!

Announcements!

Kinetics lecture notes:

Inhibition lecture:

reading: CH 13: pages 421-426

CH 14: pages 460-463

Due to time constraints:
We will not cover enzyme catalyzed bimolecular rxns or catalytic RNAs or catalytic Abs (and these will not be on the exam).

We will not cover Hb structure & function. :(

Outline

- Inihibition Kinetics
  - Reversible
    - competitive
    - non-competitive
    - Mixed non-competitive
    - Uncompetitive inhibition
  - Irreversible

Distinguishable by kinetic inhibition patterns

Enzyme Inhibition

Inhibitor (I): compound that decreases the rate of a catalyzed reaction

Two modes of action:

Reversible: I interacts via non-covalent interactions with E

Irreversible: I interacts via covalent interactions with E (affinity labels; suicide inhibitors)

Reversible Inhibition

Inhibitors interact with the enzymes through ***noncovalent interactions***. They can easily associate and dissociate from the enzyme.

- Competitive Inhibition: I binds to same site as S
- Noncompetitive Inhibition: I binds to different site than S
- Mixed non-competitive Inhibition: I binds with differing affinities to E and ES complex
- Uncompetitive Inhibition: I binds only to ES complex