

Session 12
10/13/25

1. What are the advantages and disadvantages of the Michaelis-Menten equation/graph?

advantages:

disadvantages:

2. bigger K_m = _____ affinity

3. What are the advantages and disadvantages of Lineweaver-Burke?

advantages:

disadvantages:

4. What is the purpose of both LWB and MM?

5. What kind of curve is seen when using the MM equation?
draw this graph & label appropriately.

6. Define competitive inhibition and draw the reaction. Give both the written chemical equation and associated graph.

7. Define noncompetitive inhibition and draw the reaction. Give both the written chemical equation and associated graph.

8. Define uncompetitive inhibition and draw the reaction. Give both the written chemical equation and associated graph.

9. Draw the 3 graphs of competitive, uncompetitive, and noncompetitive for both LWB & MM

10. Assume you have a LWB plot and determine the x-intercept is approximately 4.
 - what is the corresponding K_m value?

11. Assume you have a LWB plot and determine the x-intercept is approximately -6
 - what is the corresponding K_m value?

12. consider the following data for an enzyme-catalyzed hydrolysis reaction in the presence and absence of inhibitor I

[substrate] [M]	V_o [$\mu\text{mol/min}$]	V_{oi} [$\mu\text{mol/min}$]
6×10^{-6}	20.8	4.2
1×10^{-5}	29	5.8
2×10^{-5}	45	9
6×10^{-5}	67.6	13.6
1.8×10^{-4}	87	16.2

using the MM plot, determine K_m for the uninhibited and inhibited reaction

Using the data above,

a. generate lineweaver-Burk plots

b. explain the significance of the horizontal intercept, the vertical intercept, and the slope