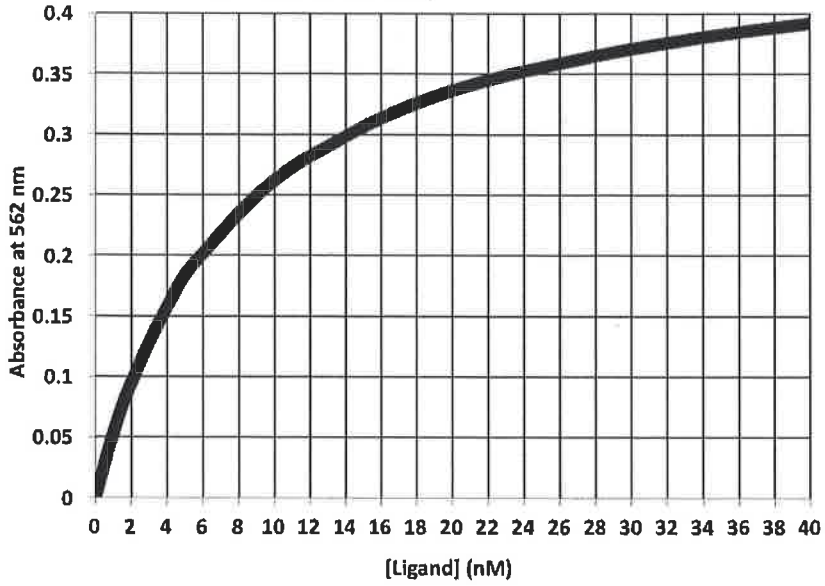
Name: Key

Quiz 13

Imagine that you collect the following data in the lab:



1. Does this ligand binding process show cooperativity? Explain how you know.

   No. This data looks hyperbolic with no indication of curvature to a sigmoid.

2. Determine the K_D and include units.

   6 to 8 nM

3. Determine the K_A and include units.

   0.125 to 0.167 nM^{-1}

4. If this assay were setup well, what would be a good $[protein]_{total}$ (include units)?

   60 to 80 nM

5. What would be the value of the slope for this ligand-binding isotherm on a Hill plot?

   approximately 1.

6. What would be the value of the y-intercept for this ligand-binding isotherm on a Hill plot?

$$y_{int} = -\log K_D = (-1)(\log 6) = -0.778$$

$$-\log K_D = (-1)(\log 8) = -0.903$$