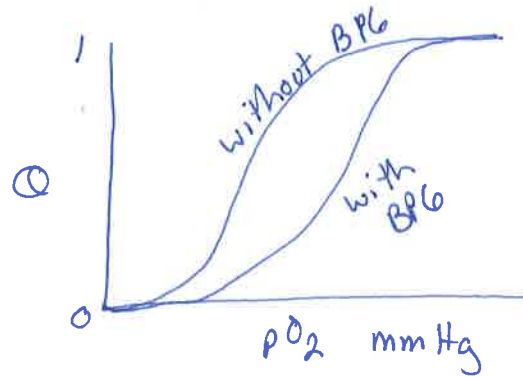


Name: Key

1. Sketch two ligand binding isotherms for oxygen binding to hemoglobin with and without 2,3-bisphosphoglycerate on one graph. Make sure to label your axes.



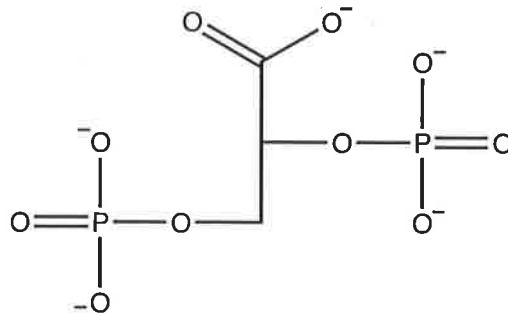
2. Does 2,3-bisphosphoglycerate increase or decrease the P₅₀ for oxygen binding to hemoglobin?

Increase

3. In the MWC model for cooperativity, 2,3-bisphosphoglycerate affects which parameter or parameters?

$K_{T_0} \rightarrow R_0$

4. The chemical structure of 2,3-bisphosphoglycerate is below. What hemoglobin amino acid residues would be good candidates to be in the binding interface with 2,3-bisphosphoglycerate?



His
Lys
Arg