

4.3: Exercises

Multiple Choice

1. Which of the following will NOT facilitate the transfer of oxygen to tissues?

1. decreased body temperature
2. decreased pH of the blood
3. increased carbon dioxide
4. increased exercise

2. The majority of carbon dioxide in the blood is transported by _____.

1. binding to hemoglobin
2. dissolution in the blood
3. conversion to bicarbonate
4. binding to plasma proteins

3. The majority of oxygen in the blood is transported by _____.

1. dissolution in the blood
2. being carried as bicarbonate ions
3. binding to blood plasma
4. binding to hemoglobin

Review Questions

1. **Hemoglobin** is able to use 90% of its potential oxygen-carrying capacity effectively. Under similar conditions, **myoglobin** would be able to use only 7% of its potential capacity. What accounts for this dramatic difference?

2. How does **2,3-BPG** affect oxygen affinity so significantly?

3. Explain the heterotropic regulation of **hemoglobin** by hydrogen ions and carbon dioxide increases the oxygen-transporting efficiency of this magnificent allosteric **protein**.

4. What would happen if no carbonic anhydrase were present in red blood cells?

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