Medical Biochemistry, Discussion Group #4, Quiz

1. (2 points) Indicate the steps of the cycle which must occur for compound A to be converted to compound B. For each step list the name of the compound, the enzyme name, the direction of the reaction, and the product’s name.

\[ \text{Succinate} \xrightarrow{\text{FADH}_2} \text{Fumarate} \xrightarrow{\text{NAD}} \text{L-Malate} \xrightarrow{\text{NADH}+\text{H}^+} \text{Oxaloacetate} \]

2. (1.0 point) Write out the reaction catalyzed by isocitrate dehydrogenase. Indicate the names of the substrates and products (structures are NOT required for this answer), the direction of the reaction, and the names of any cofactors which may be required.

\[ \text{Isocitrate} \xrightarrow{\text{NAD}^+} \text{[Intermediate]} \xrightarrow{\text{NADH}+\text{H}^+} \text{α-Ketoglutarate} \]

3. (2.0 points) List below the enzyme(s) which catalyze reactions which result in the generation of a reduced electron carrier (either NADH or FADH2).

\[ \text{Isocitrate dehydrogenase} \]
\[ \text{α-Ketoglutarate dehydrogenase} \]
\[ \text{Succinate dehydrogenase} \]
\[ \text{Malate dehydrogenase} \]