Quiz 2
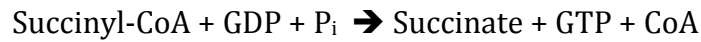
1.) During the citric acid cycle, the hydrolysis of succinyl-CoA to succinate is coupled to the formation of GTP from GDP and P_i:

Succinyl-CoA + GDP + P_i ➔ Succinate + GTP + CoA

What is the overall standard free energy change for this coupled reaction?

Succinyl-CoA ➔ Succinate + CoA $\quad \left(\Delta G^0 = -7.8 \; kcal \; mol^{-1} \right)$

GTP ➔ GDP + P_i $\qquad\qquad\qquad\qquad \left(\Delta G^0 = -7.3 \; kcal \; mol^{-1} \right)$

2.) If you were to eat a spoonful of sugar right now:

   a. would the concentration of insulin in your bloodstream increase, decrease, or remain the same?

   b. would the concentration of phosphorylated MEK increase, decrease, or remain the same?

   c. Would the concentration of Ras with GDP bound increase, decrease, or remain the same?