

### *TD 3 Metabolic regulation*

#### Questions

1. What is the main purpose of the citric acid cycle  
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2. Where does the citric acid cycle occur?  
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3. What are the main inputs and outputs of one cycle turn?  
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4. What is the relationship between the citric acid cycle and glycolysis?  
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5. What are some key regulatory points of the citric acid cycle?  
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6. What are the primary regulatory points and mechanisms of the glycolysis pathway?
7. In the table below, compare and contrast the effects of insulin and glucagon on the regulation of glycolysis in the liver. Focus on the enzymes involved in the regulation of fructose-2,6-bisphosphate levels.

<b>Feature</b>	<b>Insulin (High Blood Glucose)</b>	<b>Glucagon (Low Blood Glucose)</b>
<b>Overall Effect</b>		
<b>F2,6BP Level</b>		
<b>Target Enzyme</b>		
<b>Enzyme Activity</b>		
<b>Covalent Modif.</b>		
<b>Downstream Effect</b>		

8. What are the two main stages of oxidative phosphorylation?
9. What is the relationship between glycolysis, the citric acid cycle, and oxidative phosphorylation?
10. Illustrate the steps of oxidative phosphorylation mechanism or the electron transport chain  
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