Ch 19 owl #10-15

Compared to the TCA cycle, the glyoxylate cycle:

|  |  |  |
| --- | --- | --- |
|  |  | has no CO2-producing reactions |
|  |  | consumes two acetyl-CoA molecules per turn |
|  |  | has the net production of succinate |
| http://owl.cengage.com/owlimages/check.GIF |  | All of the Above |

The three main regulatory sites in the TCA cycle are:

|  |  |  |
| --- | --- | --- |
|  |  | α-ketoglutarate dehydrogenase, succinate dehydrogenase, malate dehydrogenase |
|  |  | succinyl-CoA synthetase, fumarase, succinate dehydrogenase |
| http://owl.cengage.com/owlimages/check.GIF |  | citrate synthase, isocitrate dehydrogenase, α-ketoglutarate dehydrogenase |
|  |  | citrate synthase, malate dehydrogenase, aconitase |

Which of the following is **not** true concerning citrate synthase?

|  |  |  |
| --- | --- | --- |
|  |  | it catalyzes a condensation reaction |
| http://owl.cengage.com/owlimages/check.GIF |  | the reaction requires an input of energy from ATP |
|  |  | the enzyme performs a general base catalysis creating a reactive carbanion |
|  |  | in mammals the enzyme is a dimer of 49 kD subunits |
|  |  | it catalyzes a reaction that passes through a citryl-CoA intermediate |

Which enzyme of the TCA cycle is an integral membrane protein?

|  |  |  |
| --- | --- | --- |
|  |  | fumarase |
| http://owl.cengage.com/owlimages/check.GIF |  | succinate dehydrogenase |
|  |  | malate dehydrogenase |
|  |  | succinyl-CoA synthetase |

Pyruvate dehydrogenase (PDH) is regulated by covalent modification. The PDH kinase phosphorylates and inactivates PDH. The PDH kinase is allosterically activated by a low:

|  |  |  |
| --- | --- | --- |
| http://owl.cengage.com/owlimages/check.GIF |  | NAD/NADH ratio |
|  |  | [acetyl-CoA] |
|  |  | [Ca2+] |
|  |  | ATP/ADP ratio |

Which of the following enzymes catalyzes an anaplerotic reaction for the TCA cycle?

|  |  |  |
| --- | --- | --- |
|  |  | pyruvate carboxylase |
|  |  | PEP carboxylase |
|  |  | malic enzyme |
| http://owl.cengage.com/owlimages/check.GIF |  | All of the Above |