Metabolism questions:

1.one of the following as an inhibitor for ATP synthase: A.oligomycin B.cyznide C.Azide D.antimycin

Ans:A

2.the advantage of oxidative phosphorylation uncoupling:A.limiting the rate of oxidizing carriersB.restriction of the consumption of ATPC.generating heatD.balancing the PH between inside and outside the mitochondriaE.regulating mitochondria shutting system

Ans:c



4.choose the correct statement based on the following structures of ATC cycle intermediates:

COO^{-} $CH2$ $Ho - C - Cab$ $CH2$ COO^{-}	$ \begin{array}{c} C & 0 & \overline{0} \\ C & H_{2} \\ H & - & C & - & C & 0 \\ H & 0 & - & C & - & H \\ H & 0 & - & C & - & H \\ C & 0 & \overline{0} \\ L & 2 \\ \end{array} $	C H 2 $C H 2$ $C H 2$ $C = 0$ $C = 0$ $C = 0$	Coo CH2 CH2 CH2 C=0 SCOA (Y)
(1)	(2)		CIJ

A.convertion of (1) to (2) is an oxidative decarboxylation reaction B.release of CoA from (4) accompanies the release of CoA C.compound (q) is oxidized but can't be reduced D.conversion of (3) to (4) is the rate limiting step of the cycle E.the enzyme that catalyse the conversion between (2) to (3) is allosterically activated by ADP

Ans:E

5. A characteristic of the glycerol shuttel is: A.shuttels NADH across the membrane yielding 1.5 ATP per NADH B.It opperates through a cytosolic isozyme and another one located in mitochondrial matrix C.malate is a key component of the shuttling process D.it shuttles the electron from NADH TO FADH2 across mitochondrial membrane yeilding 1.5 ATP per NADH E.none of the above

Ans:D

6.If mitochondrial matrix has a PH of 7.8 where as the inter membrane space has a PH range between 7-7.4 and an appropriate buffer exists in the matrix, what do you expect to happen if you injected the mitochondrial matrix with 0.5 equivevalents of NaOH?

A.an increase in the ATP generation efficiency B.an increase in the level of uncoupling proteins C.an increase in the level of electrons carrying molecules D.an increase in O2 consumption E.nothing would happen

Ans:E

7.ATP synthase can produce ATP using this mechanism as a direct source of energy: A.the conversion of glucose to pyrovate B.oxidation of pyrovate producing CO2 and H2O C.a proton gradient established in the mitochondrial matrix D.metabolism of amino acids E.break down of NADH

Ans:C

8.the only TCA cycle enzyme whose name does not imply its function is responsible for the production of? A.five carbon unit molecule B.NADH C.CO2 D.a 4 carbon unit molecule E.tricarboxylic acid

Ans:E

9.TCA cycle is unique because: A.a cycle pathway that produce electrons carrying molecules B.it produce ATP molecules through substrate level moleculeS C.it has very high effeicincy D.it is an exerdonic pathway

Ans:C

10.the main regulator of the respiratory chain reaction is the level of: A.O2 B.ATP C.ADP D.calcium ions E.electron carriers

Ans:C

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