Lipid Metabolism

- *Which of the following statements regarding hormone-sensitive lipase is correct*
- *A. It is a pancreatic enzyme*
- *B. It is activated by protein phosphatase*
- *C. The active form is produced by cAMP dependent process*
- *D. It is an extracellular enzyme*
- *E. It is activated by insulin*
- *Answer: C*

- *Which of the following statements regarding prostaglandin E2 is correct*
- *A. it is a dicarboxylic acid*
- *B. its structure contains five membered ring*
- *C. it is the parent compound of other prostaglandins*
- *D. it has a net zero charge at pH 7*
- *E. it contains an amino group*
- *Answer: B*

- *Which of the following statements regarding introduction of double bond at carbon 9 of palmitic acid is correct*
- *A. O2 and NADH are needed*
- *B. is accompanied by reduction of FAD*
- *C. produces omega-6 fatty acid*
- *D. is catalyzed by acyl CoA dehydrogenase*
- *E. produces oleic acid*
- *Answer: A*

- *Synthesis of palmitic acid from acety-Co requires*
- *A. bicarbonate for conversion of acetyl CoA to malonyl COA*
- *B. 8 molecules of water*
- *C. 16 molecules of NADPH*
- *D. 7 NADH and 7 FADH2*
- *E. 8 ATP*
- *Answer: A*

- *Arrange the following intermediates of cholesterol synthesis pathway in the correct order: I. Mevalonate, 2. Lanosterol, 3. HMG CoA, 4. Squalene*
- *A. 1 > 3 > 4 > 2*
- *B. 3 > 1 > 4 > 2*
- *C. 3 > 4 > 2 > 1*
- *D. 1 > 2 > 3 > 4*
- *E. 1 > 3 > 2 > 4*
- *Answer: B*

- *Which of the following statements regarding the production of acetoacetate from acety- CoA is correct?*
- *A. three moles of Coenzyme A are produced per one mole of acetoacetate*
- *B. occurs when oxaloacetate level is high in the cell*
- *C. acetone is an intermediate*
- *D. the process occurs in the mitochondria of liver cells*
- *E. is active in the presence of high insulin/ glucagon ratio*
- *Answer: D*

- *The reaction catalyzed by ceramidase produces*
- *A. sphingosine*
- *B. sphingomyelin*
- *C. phosphocholine*
- *D. ganglioside*
- *E. cerebroside*
- *Answer: A*

- *Inositol trisphosphate is produced from Phosphatidyl inositol bisphosphate in a reaction catalyzed by…*
- *A. Phospholipase A2*
- *B. Phospholipase C*
- *C. Lipoprotein lipase*
- *D. Inositol bisphosphate kinase*
- *E. Acetyicholine esterase*
- *Answer: B*

- *When lipoproteins are separated by electrophoresis, the fastest class in moving towards the anode is*
- *A. Chylomicrons*
- *B. IDL*
- *C. HDL*
- *D. VIDI*
- *E. LDL*
- *Answer: C*

- *Enoyl Co isomerase*
- *A. is required in the oxidation of fatty acids with odd number of carbons*
- *B. catalyzes an irreversible reaction*
- *C. is required for oxidation of unsaturated fatty acids*
- *D. is a cytosolic enzyme*
- *E. catalyzes a rate limiting step in oxidation of fatty acid*
- *Answer: C*

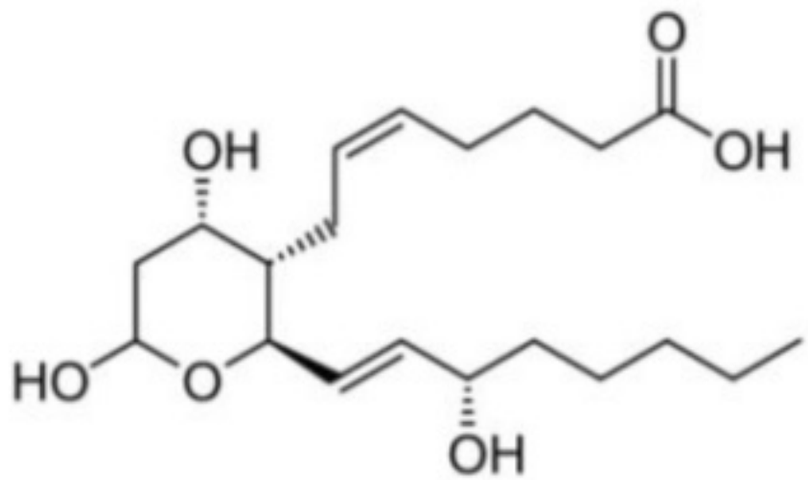
- *Tay sach's disease leads to the accumulation of*
- *A. Gangliosides*
- *B. Lecithin*
- *C. Sphingomyelin*
- *D. Cerebrosides*
- *E. None of the above*
- *Answer: A*

- *Glycerol after TAG hydrolysis*
- *A. is used in the liver and muscle for glycolysis*
- *B. used to resynthesize fat in the liver*
- *C. is used in the liver for gluconeogenesis*
- *D. is metabolized in the kidney and excreted in the urine*
- *Answer: C*

- *Needed to synthesize sphingomyelin from ceramide*
- *A. Phosphocholine*
- *B. UDP-choline*
- *C. Phosphatidylinositol*
- *D. lecithin*
- *Answer: D*

- *What happens in both type 1 and type 2 diabetes*
- *A. Ketoacidosis*
- *B. Hyperglycemia*
- *C. High HDL/LDL ratio*
- *D. Hypo-triacylglycerolemia*
- *Answer: B*

- *The following figure represents the structure of*
- *A. Prostaglandin I3*
- *B. Prostaglandin G2*
- *C. Thromboxane B2*
- *D. Leukotriene B4*
- *Answer: C*



- *Statin is a drug used for losing weight, it inhibits the step that produces which of the following products*
- *A. HMG CoA*
- *B. Mevalonate*
- *C. Acetyl CoA*
- *D. Propionyl CoA*
- *Answer: B*

- *Which of the following is used in the oxidation of very long fatty acid and not in long or short chain fatty acids*
- *A. NAD+*
- *B. FAD*
- *C. H2O*
- *D. O2*
- *Answer: D*

- *Which one of the following protein activates lipoprotein lipase*
- *A. Apolipoprotein A-I*
- *B. Apolipoprotein B-48*
- *C. Apolipoprotein C-II*
- *D. Cholesteryl ester transfer protein*
- *Answer: C*

- *One of the following increases ketone bodies synthesis*
- *A. High free fatty acids concentration in the blood*
- *B. Low blood levels of Glucagon*
- *C. Inhibition of beta oxidation*
- *D. Inhibitions of hormone sensitive lipases*
- *Answer: A*

- *True about using acetoacetate as a source of energy*
- *A. Utilizes succinly CoA*
- *B. Occurs in the cytosol*
- *C. Occurs when oxaloacetate is depleted*
- *D. Occurs in the liver and in red blood cells*
- *Answer: A*

- *Pantothenic acid is found in the structure of*
- *A. NADP*
- *B. FMN*
- *C. ACP*
- *D. NAD*
- *Answer: C*

- *Aspirin inhibits the production of*
- *A. prostaglandins*
- *B. thromboxanes*
- *C. Leukotrienes*
- *D. A+B*
- *E. A + C*
- *Answer: D*

- *To synthesize a 6 carbon fatty acid*
- *A. 1 malonyl CoA ,4 NADPH ,2 acetyl CoA*
- *B. 1 malonyl CoA ,2 NADPH ,2 acetyl CoA*
- *C. 2 malonyl CoA ,3 NADPH ,1 acetyl CoA*
- *D. 2 malonyl CoA ,4 NADPH ,1 acetyl CoA*
- *Answer: D*

- *Which of the following is used in the step that introduces double bond in the fatty acid during B-oxidation*
- *A. NAD+*
- *B. NADP*
- *C. H2O*
- *D. FADH2*
- *Answer: D*

- *Familiar hypercholestrolemia involves a deficiency in*
- *A. HMG-CoA reductase*
- *B. Uptake of HDL by the liver*
- *C. Synthesis of cholesterol*
- *D. LDL endocytosis*
- *Answer: D*

- *Second substrate for thiolase*
- *A. ATP*
- *B. H2O*
- *C. O2*
- *D. Coenzyme A*
- *Answer : D*

- *Which of the following enzymes catalyzes the production of NADPH used in the synthesis of fatty acids*
- *A. Aconitase*
- *B. Cytosolic malate dehydrogenase*
- *C. Citrate synthase*
- *D. Pyruvate dehydrogenase*
- *Answer: B*

- *What inhibits carnitine shuttle*
- *A. Malonyl coA*
- *B. Acyl CoA*
- *C. Acetyl CoA*
- *D. Acetoacetate*
- *Answer: A*

- *The reaction that produces malonyl coA from acetyl coA*
- *A. Requires ATP*
- *B. Is the rate limiting step in cholesterol biosynthesis*
- *C. Is inhibited by citrate*
- *D. Requires vitamin B12*
- *E. Is activated by phoshpyrlation*
- *Answer: A*

- *Synthesis of TAG in adipose tissue requires*
- *A. Active glycerol kinase X*
- *B. Isomerization of DHAP*
- *C. Phosphorylated hormone sensitive lipase*
- *D. Active gluconeogenesis*
- *E. Insulin*
- *Answer: E (Old questions)*

- *Lactating mammary glands produce short chain fatty acids. » Production of fatty acid with 4 carbons by fatty acid synthase requires (...) acetyl COA, (...) malonyl COA and (...) NADPH*
- *A. 2, 1 and I*
- *B. 1, 2 and 4*
- *C. 0, 2 and 4*
- *D. 1, 1 and 2*
- *E. 2, 0 and 2*
- *Answer: D*

- *Succinyl CoA is produced from the end product of oxidation of*
- *A. ethanol*
- *B. polyunsaturated fatty acids*
- *C. very long chain fatty acids*
- *D. monounsaturated fatty acids*
- *E. fatty acids with odd number of carbon atoms*
- *Answer: E*

- *The reaction that produces cholesterol ester from free cholesterol in the plasma occurs in..*
- *A. Chylomicrons*
- *B. HDL*
- *C. VLDL*
- *D. LDL particles*
- *E. Chylomicron remnants*
- *Answer: B*

- *Glycerol is produced in the adipose tissue by hydrolysis of triacyl glycerol. What happens to glycerol then*
- *A. It is phosphorylated in the adipose tissue to glycerol phosphate*
- *B. It is converted in the liver to 3 phosphoglycerate*
- *C. It is converted in the muscle to phosphoenol pyruvate*
- *D. It is converted in the muscle to glyceraldyde 3-phosphate*
- *E. It is converted in the liver to dihydroxy acetoneohosphate*
- *Answer: E*

- *The use of 3-hydroxy butyrate as a source of energy*
- *A. occurs in the brain during prolonged fasting V*
- *B. starts with cleaving it into two acetate molecules*
- *C. can occur in the absence of oxaloacetate*
- *D. is observed in the liver during prolonged fasting*
- *E. starts by conversion to acetoacetate in an isomerization reaction*
- *Answer: A*

- *Aspirin is taken daily in low dose to decrease blood clotting; it acts by inhibiting*
- *A. phospholipase A2*
- *B. HMG CoA reductase*
- *C. phosphodiesterase*
- *D. protein kinase A*
- *E. cyclooxygenase*
- *Answer: E*

- *(X -› Oleic acid). What is the substrate X in this reaction that is catalyzed by 9 Desaturase*
- *A. palmitoleic acid*
- *B. linoleic acid*
- *C. linolenic acid*
- *D. palmitic acid*
- *E. stearic acid*
- *Answer: E*

- *Phosphatidyl serine is produced from phosphatidyl ethanolamine by*
- *A. a carboxylation reaction*
- *B. a decarboxylation reaction*
- *C. a reaction that requires the transfer of one-carbon group from folic acid*
- *D. an exchange of the polar head group*
- *E. an isomerization reaction*
- *Answer: D*

The END