Lipid Metabolism Past Paper

لا تنسونا من صالح دعائكم

- When oleic acid, 18:1(9), is desaturated at carbon 6 and then elongated, what is the product?
- A. 19:2(7,9)
- B. 20:2 (n-6)
- C. 20:2(6,9)
- D. 20:2(8,11)
- Answer : D

- -A 4-month-old child is being evaluated for fasting hypoglycemia. Laboratory tests at admission reveal low levels of ketone bodies, free carnitine, and acylcarnitines in the blood. Free fatty acid levels in the blood were elevated. Deficiency of which of the following would best explain these findings?
- A. Adipose triglyceride lipase
- B. Carnitine transporter
- C. Carnitine palmitoyltransferase I
- D. Long-chain fatty acid dehydrogenase
- Answer : B

- True about hormone sensitive lipases:
- a. Inhibited by phosphorylation
- b. Activated by phosphatases
- c. Phosphodiesterase inhibitors maintain the active form
- d. They are released by the pancreas
- Answer : C !!

- 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. H_2O
- d. O_2
- 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

- 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

- Aspirin inhibits the production of?
- a. prostaglandins
- b. thromboxanes
- c. Leukotrienes
- d. A+B
- e. A + C
- Answer : D

- Needed to synthesize sphingomyelin from ceramide?
- a. Phosphocholine
- b. UDP-choline
- c. Phosphatidylinositol
- d. lecithin
- Answer : D (lecithin = PC)

- What inhibits carnitine shuttle?
- a. Malonyl coA
- b. Acyl CoA
- c. Acetyl CoA
- d. Acetoacetate
- 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

- Second substrate for thiolase :
- a. ATP
- b. H2O
- c. O2
- d. Coenzyme A
- Answer : D! (not sure)

- Tay sach’s disease leads to the accumulation of:
- a. Gangliosides
- b. Lecithin
- c. Sphingomyelin
- d. Cerebrosides
- Answer : A

- Familiar hypercholesterolemia involves a deficiency in:
- a. HMG-CoA reductase
- b. Uptake of HDL by the liver
- c. Synthesis of cholesterol
- d. LDL endocytosis
- 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. H_2O
- d. FAD
- 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

- The step required to activate\start TAG synthesis?
- Answer : activation of fatty acids by addition of CoA

- True about TAG synthesis:
- A-DHAP is reduced to glycerol phosphate in adipose tissue
- B-Glycerol kinase play important role
- C-It’s not a hormone sensitive process
- D-Phosphatidate is not on the pathway of TAG synthesis
- Answer : A

- Right about the conversion from hydroxy acyl coA to ketoacyl coA:
- A- Requires NAD+.
- B-The enzyme that involved is enoyl-coA hydratase
- C- It’s an hydration process
- D-A+C
- Answer : A !

- in the final step of ketone body synthesis the products are acetoacetate and ?
- a- DHAP
- b- acetone
- c- 3-hydroxybutyrate
- d- acetyl CoA
- Answer : D

- TAG is produced in adipose tissue, which is true ?
- a- needs NADPH
- b- needs glycerol kinase
- c- needs active glycolysis
- d- b+c
- Answer : C

- The fatty acid that has NO double bonds :
- a) Butyric acid.
- b) Palmitic acid.
- c) Capric acid.
- d) All the above.
- Answer : D

- produces diacyl glycerol and inositol 3 phosphate from PIP2
- a- phospholipase b
- b- phospholipase d
- c- phospholipase a
- d- phospholipase c
- Answer : D

- something true about lipoproteins:
- a-chylomicron has the lowest apolipoprotein percentage
- b- chylomicron has the lowest TAG
- C- HDL has the lowest apolipoprotein percentage
- Answer : A

- in HDL cholesterol is esterified from :-
- a- acetyl CoA
- b- phosphatidyl choline/lecithin
- c- phosphartidylethanolamine
- Answer : B

- amide group in ceramide comes from:
- a- serine
- b- phosphatidyl choline
- c-sphingomylein
- d- glutamine
- e- glutamate
- Answer : A

- phosphatidyl serine is produced from phosphatidylethanolamine by:
- a- carboxylation
- b- decarboxylation
- c- methylation
- d- polar head exchange
- e- more than one of the above

- Fastest lipoprotein to reach anode:
- A-HDL
- B-LDL
- C-VLDL
- D-IDL
- Answer : A

- Apo-B100 is found only by itself in:
- A-LDL
- B-HDL
- C-IDL
- D-chylomicrons
- Answer : A

- The excess dietary carbohydrates are converted to TAGs and transported to cells by?
- A-VLDL
- B-HDL
- C-Chylomicrons
- D-IDL

- -Phosphatidylcholine is formed from?
- A- phosphatidylethanolamine+ 3 SAM.
- B- CDP-DAG + cholin
- C- CMP+ phosphocholin
- Answer : A

- The common intermediate for triacylglycerol and phospholipids synthesis is:
- A-phosphatidic acid.
- B-cholic acid
- C-lysophosphotidic acid
- D-archadionic acid
- Answer : A

- 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

- During the last hours of a 48hour fast, which of the following is used as a source of
- energy?
- a. Amino acids
- b. Glycogen
- c. Lactate
- d. Nucleotides
- Answer : A

- Albumin binds all of the following except
- a. Free fatty acids
- b. Steroid hormones
- c. Conjugated billirubin
- d. Ca+2
- Answer : C

- What happens in both type 1 and type 2 diabetes?
- a. Ketoacidosis
- b. Hyperglycemia
- c. High HDL/LDL ratio
- d. Hypo-triacylglycerolemia

- Which of the following can be used to lose weight?
- a. Inhibition of pancreatic lipases
- b. Activation of pyruvate dehydrogenase
- c. Inhibition of HMG-CoA reductase
- d. Increasing absorption of fat
- Answer : A(not sure)

- What is used to catalyze degradation of sphingomyline into ceramide and phosphocholine?
- a. Phospholipase C
- b. Phospholipase A
- c. Phospholipase B
- d. Phospholipase D
- Answer : A

- Familial hypercholesterolemia results from
- a) overproduction of VLDL
- b) decrease in the rate of cholestrol degradation
- c) decrease in the rate of conversion of cholesterol to bile acids
- d) defect or absence of LDL receptor
- e) defect or deficiency of the enzyme that inhibits the enzyme that catalyzes the rate lim cholesterol synthesis
- Answer: D

- Lisophosphatidyl choline is produced from lecithin by the action of
- a) phospholipase D
- b) phospholipase C
- c) phospholipase A2
- d) phospholipase B
- e) ysophospholipase
- Answer: C

- The rate limiting step in prostaglandins synthesis is catalyzed by
- a) peroxidase
- b) oxygenase
- c) phospholipase A2
- d) cyclooxygenase
- e) PGG synthase
- Answer: C

- What are the reactant A and the product B in the following reaction Ceramide + A ? sphingomyelin + B
- a) UDP-choline and UMP
- b) CDP-choline and CMP
- c) Acyl CoA and COA
- d) UDP choline and UDP
- e) Phosphatidyl choline and diacylglycerol
- Answer: E

- One of the following is required for synthesis of CoA
- a) Biotin
- b) Riboflavin
- c) Thiamine
- d) Pantothenic acid
- e) Niacin
- Answer: D

GOOD LUCK *-*