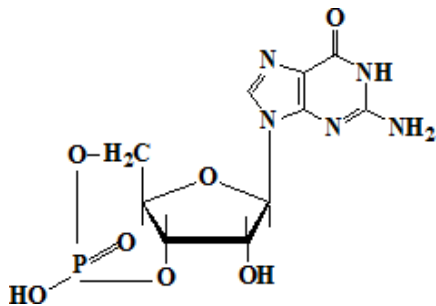




APPROVED  
at the Chair meeting of 09.12.24, minute no.5,  
Head of the Biochemistry and Clinical Biochemistry Chair,  
MD, PhD., prof., Olga TAGADIUC \_\_\_\_\_

**BIOCHEMISTRY EXAM ITEMS**  
**for the students of the Faculty of Medicine 2**  
**(1st year, 2nd semester, winter session, 2024-2025):**

- 1 Histones - select the correct statements:
- 2 Select the correct statements about the chemical structure:



- 3 A common feature of the DNA and RNA biosynthesis is:
- 4 Choose the correct statement about RNA biosynthesis - transcription:
- 5 Choose the correct statements about RNA biosynthesis - transcription:
- 6 DNA replication - select the correct statement:
- 7 DNA-polymerases I:
- 8 DNA-polymerases III select the correct statements:
- 9 How many high-energy bonds are needed to include an amino acid in a polypeptide chain during translation?
- 10 How many origin points (ORI) does prokaryotic DNA have?
- 11 Okazaki fragments - select the correct statement:
- 12 RNA polymerases - select the correct statements:
- 13 RNA-dependent DNA polymerase - select the correct statements:
- 14 Select the ARN polymerase subunit responsible for recognition of initiation sequences:
- 15 Select the compound that is required for DNA biosynthesis:
- 16 Select the correct statements about replication:
- 17 Select the enzyme that is linking the Okazaki fragments in DNA replication:
- 18 Select the enzymes of the DNA-replicase complex:
- 19 Select the enzymes of the DNA-replicase complex:
- 20 Select the posttranscriptional modification of mRNA:
- 21 Select the posttranscriptional modifications of tRNA:
- 22 Select the telomerase coenzyme:



- 23 What kind of process is catalyzed by telomerase
- 24 Select the enzymes that are required for DNA repair:
- 25 Activation of amino acids in the translation process - select the correct statement:
- 26 Choose the correct statement about the genetic code:
- 27 Choose the correct statement about the genetic code:
- 28 Choose the correct statements about aminoacyl-tRNA-synthetases:
- 29 Initiation of protein synthesis requires:
- 30 Select the components of the protein synthesis initiation complex in prokaryotes:
- 31 Select the compounds that are required for the elongation stage of the protein biosynthesis:
- 32 Select the correct statements about mutations by deletion:
- 33 Select the correct statements about the protein biosynthesis regulation based on lac-operon example (enzyme induction):
- 34 Select the events that occur in the elongation step of translation:
- 35 Select the mechanisms by which molecular mutations occur:
- 36 Telomerase - select the correct statements:
- 37 The structure and function of ribosomes - select the correct statements:
- 38 Transversion mutations - select the correct statements:
- 39 Which of the following compounds can regulate gene expression in humans?
- 40 Which of the following processes are posttranslational modifications of proteins?
- 41 Which of the following processes are posttranslational modifications of the protein?
- 42 Which of the following processes are specific for the termination stage of protein biosynthesis?
- 43 Chose the lipids that are components of the cell membranes:
- 44 For monoenic fatty acid oxidation, as compared with the oxidation of saturated fatty acids, is additionally necessary:
- 45 For polyenic fatty acid oxidation, as compared with the oxidation of saturated fatty acids, is additionally necessary:
- 46 How many  $\beta$ -oxidation cycles (1), acetyl-CoA molecules (2) and ATP molecules are formed during the complete oxidation of one molecule of stearic acid?
- 47 In the last cycle of oxidation of fatty acids with an odd number of carbon atoms, propionyl-CoA is formed. Select its further transformation:
- 48 Regarding the oxidation of unsaturated fatty acids the following statements are correct:
- 49 Regarding  $\beta$ -oxidation of fatty acids (FA) with an even number of carbon atoms, the following statements are correct:
- 50 Regarding  $\beta$ -oxidation of fatty acids (FA) with an even number of carbon atoms, the following statements are correct:
- 51 Select the correct statements about the following chemical reaction:



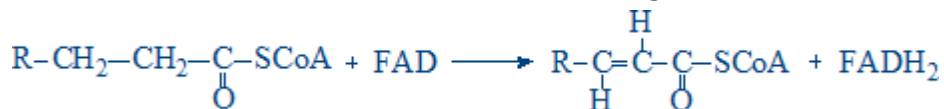


52 Select the correct statements about the following chemical reaction:

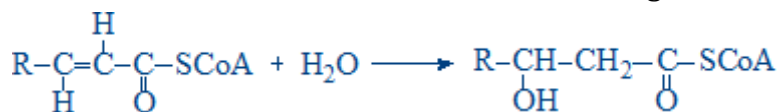


53 Select the correct statements about ketone bodies:

54 Select the correct statements about following chemical reaction:



55 Select the correct statements about following chemical reaction:



56 Select the correct statements about the following chemical reaction:



57 Select the correct statements about following chemical reaction:



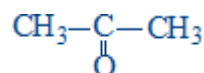
58 Regarding the usage of ketone bodies in tissues, the following statements are correct:

59 Select conditions that may be accompanied by ketonemia:

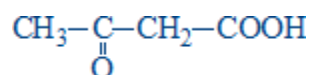
60 Select the conditions that may be accompanied by ketonemia:

61 Select the correct statements about ketone bodies:

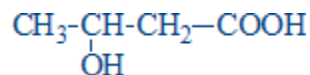
62 Select the correct statements regarding following chemical compound:



63 Select the correct statements regarding following chemical compound:



64 Select the correct statements regarding following chemical compound:



65 Select the possible causes of ketonemia in insulin-dependent diabetes mellitus:

66 Select the correct statements about cholesterol synthesis:

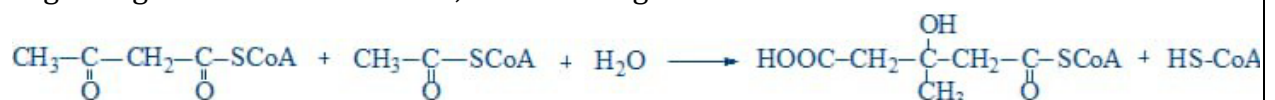
67 Select the correct statements about cholesterol synthesis:

68 Select the stages of cholesterol biosynthesis:

69 Regarding this chemical reaction, the following statements are correct:

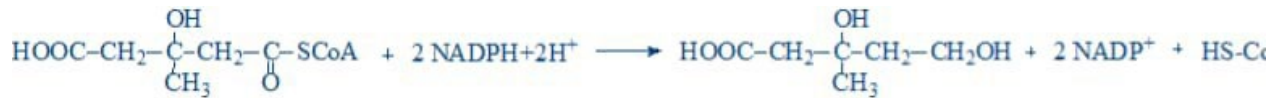


70 Regarding this chemical reaction, the following statements are correct:

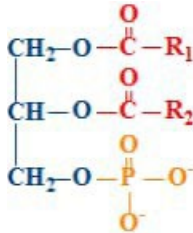




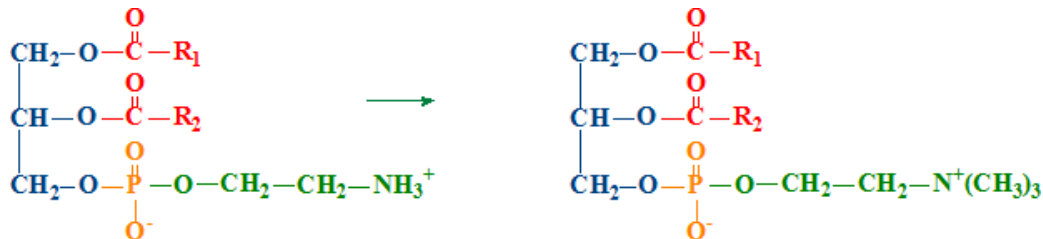
71 Regarding this chemical reaction, the following statements are correct:



72 Select the chemical compounds in the synthesis of which the following substance is an intermediate:



73 Select the substance required for the following transformation:



74 Chylomicrons - choose the correct statements:

75 Chylomicrons:

76 HDL:

77 HDL:

78 LDL:

79 LDL:

80 VLDL:

81 VLDL:

82 According to their biological role lipids are divided into the following classes:

83 According to their physico-chemical properties lipids are divided into the following classes:

84 Acylglycerols - select the correct statements:

85 Bile acids - select the correct statements:

86 Cerebrosides - select correct statements regarding their structure:

87 Choose the correct statements about the action of lipolytic enzymes in the gastrointestinal tract:

88 Chylomicrons - select the correct statements:

89 Chylomicrons - select the correct statements:

90 Complete digestion of the triglycerides in the gastrointestinal tract requires:

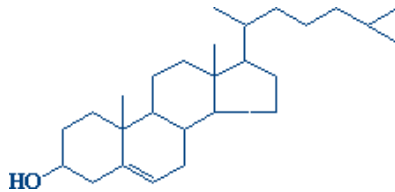
91 Dietary fat digestion in adults:

92 Functions of lipids are:

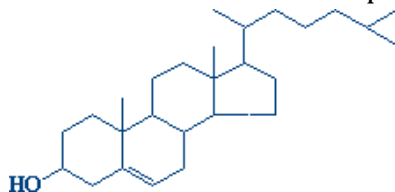
93 Gangliosides - select the correct statements:



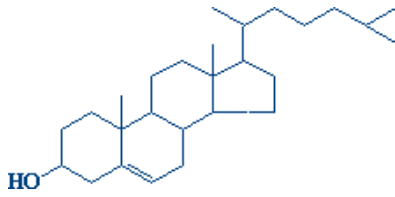
- 94 Glycerophospholipids - choose the correct statements:  
95 Glycolipids:  
96 HDL - select the correct statement:  
97 Hydrolysis of dietary lipids leads to formation of:  
98 In human cells and tissues the following fatty acids prevail:  
99 LDL - select the correct statements:  
100 Lipid components of the cell membranes are:  
101 Lipids are essential components of the diet, because:  
102 Lipids are:  
103 Phosphatidylcholine and phosphatidylethanolamine - choose the correct answers:  
104 Phosphatidylcholines - select the correct statements:  
105 Phosphatidylcholines and phosphatidylethanolamines - select the correct statements:  
106 Phosphatidylethanolamines - choose the correct answers:  
107 Select the correct statement about micelles:  
108 Select the correct statement about the following compound:



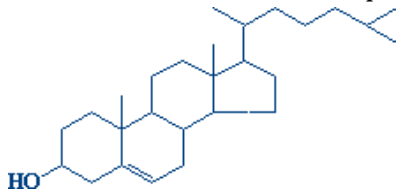
- 109 Sphingomyelins contain:  
110 Sphingosine - select the correct answer:  
111 Structural classification of lipids - select the specific classes:  
112 The following fatty acids are essential for the humans:  
113 The mechanism of dietary lipids digestion products absorption in the gastrointestinal tract:  
114 The products of lipid digestion absorbed in the intestine:  
115 VLDL - select the correct statement:  
116 VLDL catabolism - which statements characterize it?  
117 Which compounds have an acidic functional group in their structure?  
118 Which fatty acid has the lowest melting point?  
119 Which fatty acid has the lowest melting point?  
120 Select the chemical compounds whose precursor is the presented substance:



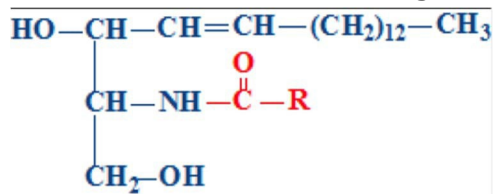
- 121 Select the chemical compounds whose precursor is the presented substance:



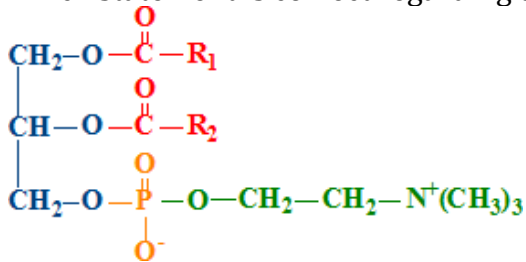
122 Select the chemical compounds whose precursor is the presented substance:



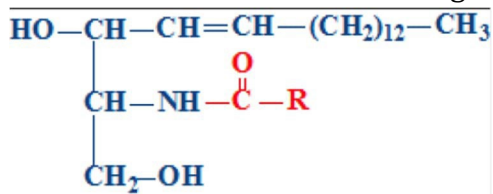
123 Which statement is correct regarding the compound?



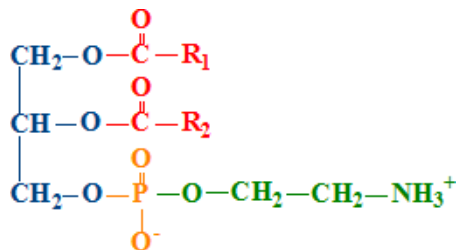
124 Which statement is correct regarding the compound?



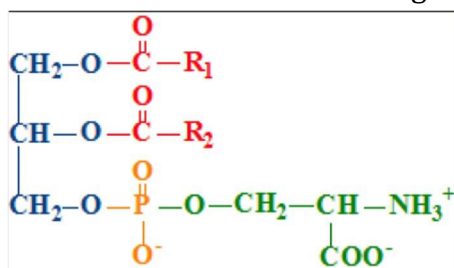
125 Which statement is correct regarding the compound?



126 Which statement is correct regarding the compound?

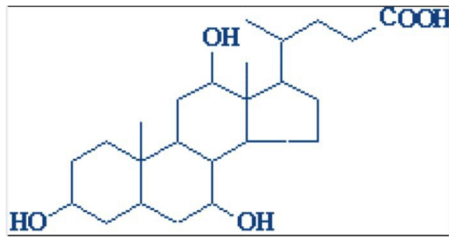


127 Which statement is correct regarding the compound?

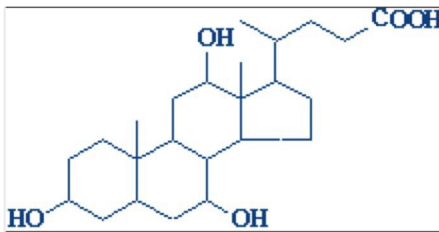




128 Which is the correct statement regarding the substance?



129 Which is the correct statement regarding the substance?



- 130 The product of the second reaction of beta-oxidation of fatty acids is:
- 131 Acetoacetate - select the correct statements about the compound:
- 132 Activation of fatty acids (FA) (in beta-oxidation of fatty acids):
- 133 Activation of fatty acids (FA) during beta-oxidation of fatty acids - select the correct reaction:
- 134 Beta oxidation involves a sequence of four reactions. Choose their correct order:
- 135 Beta-oxidation of fatty acids (FA) - choose the correct statements:
- 136 Choose the correct statements about the ketone bodies:
- 137 How can be used acetyl-CoA?
- 138 How many turns are necessary (1), how many molecules of acetyl-CoA (2) and of ATP (3) are produced during the complete oxidation of stearic acid (C18):
- 139 In one turn of beta-oxidation the fatty acid undergoes the following changes:
- 140 Ketone bodies - select the chemical compounds that belong to them:
- 141 Ketonemia - select the correct statement:
- 142 Name the products of the third reaction of beta-oxidation and the enzyme that catalyzes it:
- 143 Oxidation of fatty acids with odd number of carbon atoms - choose the correct statements:
- 144 Select compounds that can be synthesized from beta-hydroxy-beta-methyl-glutaryl-CoA:
- 145 Select the 4th reaction of beta-oxidation and the enzyme that catalyzes it:
- 146 Select the additional substance necessary for the oxidation of polyunsaturated fatty acids compared to saturated fatty acids:
- 147 Select the correct statement about the compound:
- 148 Select the correct statements about the utilization of ketone bodies in tissues:
- 149 The products of Acyl-CoA dehydrogenation reaction of beta-oxidation of fatty acids are:
- 150 The second reaction of beta-oxidation of fatty acids - select the correct statements:
- 151 The third reaction of beta-oxidation of fatty acids - select the correct statement:
- 152 Transformation of acyl-CoA in the first reaction of beta-oxidation of fatty acids:



- 153 Transport of fatty acids (FA) from cytoplasm into the mitochondrial matrix during beta-oxidation:
- 154 Acetyl-CoA transport from mitochondria into cytosol during fatty acid biosynthesis:
- 155 Activator (1) and inhibitor (2) of acetyl-CoA carboxylase - the regulating enzyme of fatty acids synthesis:
- 156 Biosynthesis of fatty acids - choose the correct statements:
- 157 Biosynthesis of malonyl-CoA during the fatty acid synthesis:
- 158 Choose the correct statements about fatty acid biosynthesis:
- 159 Differences between fatty acid oxidation and biosynthesis:
- 160 Enzyme (1) and reaction product (2) of the transformation of enoyl-ACP during the biosynthesis of fatty acids are:
- 161 NADPH is a donor of reducing equivalents (H<sup>+</sup>) in the synthesis of fatty acids. In what processes is NADPH obtained?
- 162 Reaction of beta-ketoacyl-ACP reduction during biosynthesis of fatty acids:
- 163 Reactions of the biosynthesis of fatty acids:
- 164 Synthesis of one molecule of palmitic acid requires:
- 165 The first cycle of the biosynthesis of saturated fatty acids with even number of carbon atoms:
- 166 The reaction of beta-ketoacyl-ACP synthesis during the biosynthesis of fatty acids:
- 167 What is characteristic of fatty acid synthase?
- 168 Which enzyme is involved in acetyl-CoA transport from mitochondria into cytosol during fatty acid biosynthesis:
- 169 Which is the substrate of fatty acids synthesis (1) and the compound that is transporting it from mitochondria into cytosol (2)?
- 170 Biosynthesis of cholesterol - select the correct statements:
- 171 Biosynthesis of triacylglycerols - select the correct statement:
- 172 Choose the correct statements about the synthesis of glycerophospholipids:
- 173 During the triacylglycerols biosynthesis the phosphatidic acid is:
- 174 Glycerol-3-phosphate is produced in the reaction of:
- 175 Name the source of methyl group in the synthesis of phosphatidylcholine:
- 176 Phosphatidylcholine can be synthesized by:
- 177 Phosphatidylethanolamine can be synthesized by:
- 178 Phosphatidylinositols - which statements characterize the chemical compounds?
- 179 Phosphatidylserine synthesis - select the correct statements:
- 180 Regulation of cholesterol biosynthesis:
- 181 Select the rate-limiting reaction of cholesterol synthesis:
- 182 The common intermediary compound of triglycerides and phosphoglycerides synthesis is:
- 183 Select the correct affirmation about fat-soluble vitamins:
- 184 Select the correct affirmation about fat-soluble vitamins:

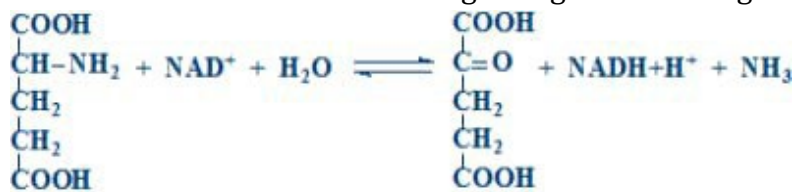




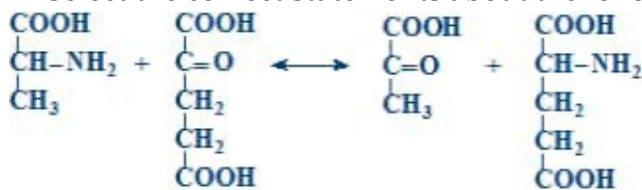
- 185 Which statement is correct regarding vitamin A?
- 186 Which statement regarding vitamin A is correct?
- 187 Which vitamin is liposoluble?
- 188 Which vitamin is liposoluble?
- 189 Which vitamin is liposoluble?
- 190 Liposoluble vitamins - choose the correct statement:
- 191 Metabolism of vitamin D:
- 192 Select the correct statements about calcitriol:
- 193 Select the eicosanoid precursor from the following chemical compounds:
- 194 The following compounds belong to the class of eicosanoids:
- 195 Vitamin A - select the correct statement:
- 196 Vitamin D - select the correct statement:
- 197 Vitamin E - select the correct statements:
- 198 Vitamin K - select the correct statements:
- 199 Absorption of amino acids (AA) - select the correct statement about the process:
- 200 Absorption of amino acids (AA) - select the correct statement about the process:
- 201 Aminopeptidases - select the correct statements:
- 202 Biological functions of proteins are:
- 203 Biological value of proteins is determined by the essential amino acids including the following one:
- 204 Biological value of proteins is determined by the essential amino acids including the following one:
- 205 Carboxypeptidases - select the correct statements:
- 206 Chymotrypsin - select the correct statements:
- 207 Equilibrated nitrogen balance - select the correct statements:
- 208 Gamma-glutamyl cycle - choose the correct statements:
- 209 How are amino acids used in tissues?
- 210 Negative nitrogen balance - what statements characterize it?
- 211 Pepsin - select the correct statement regarding the enzyme:
- 212 Positive nitrogen balance - choose the correct statements:
- 213 Putrefaction of amino acids in the intestine - select the correct statements about the process:
- 214 Select the semi-essential amino acids from the following one:
- 215 Trypsin - select the correct statements:
- 216 What are the biological functions of proteins?
- 217 What are the functions of HCl in the digestion of proteins?
- 218 What are the HCl functions in the digestion of proteins?
- 219 What are the properties of pepsin?



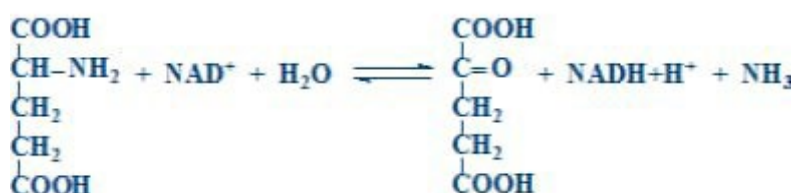
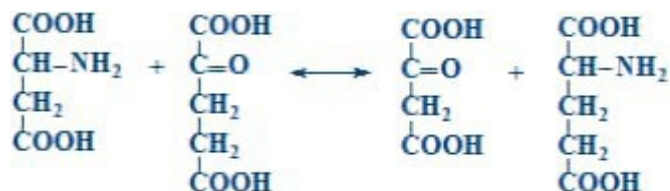
- 220 Which of the statements characterizes the neutralization of the amino acids putrefaction products?
- 221 Alanine aminotransferase (ALAT) - select the statements that characterize it:
- 222 Alanine transdeamination - select the correct statements:
- 223 Amino acid transamination (TA) - select the correct statements about the process:
- 224 Amino transferases - select the correct statements about the enzymes:
- 225 Aminotransferases - select the correct statement about the enzyme:
- 226 Aspartate aminotransferase (ASAT) - select the correct statements about the enzyme:
- 227 Choose the general pathways of amino acids catabolism:
- 228 Direct deamination (DA) of the amino acids - select the correct statements about the process:
- 229 Glutamate dehydrogenase - select the correct statement:
- 230 Indirect amino acid deamination (transdeamination) - select the correct statements about the process:
- 231 Select the class to which the enzyme glutamate dehydrogenase belongs
- 232 Select the correct statement regarding the following reaction:



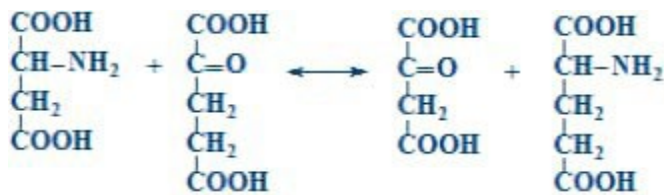
- 233 Select the correct statements about the amino acids deamination (DA):
- 234 Select the correct statements about the following chemical reaction:



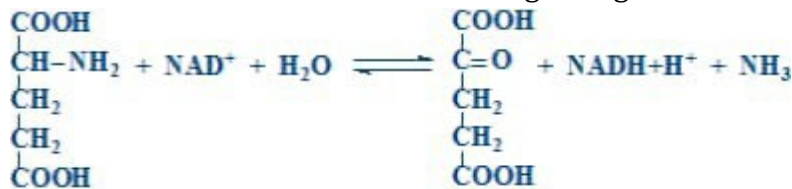
- 235 Select the correct statements about the following chemical reactions:



- 236 6.2 Select the correct statements about the following chemical reaction:



237 6.2 Select the correct statements regarding the following reaction:



238 Transdeamination of aspartate. Select the reaction of the process (1) and the enzyme (2) that catalyzes the reaction:

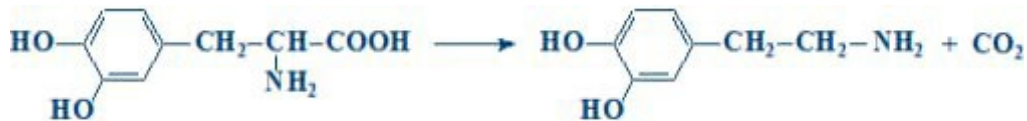
239 Transamination of amino acids - select the correct statement:

240 What are the general types of deamination of amino acid?

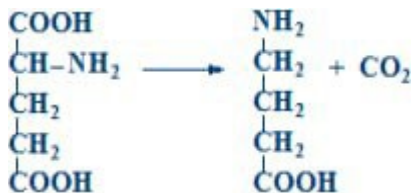
241 Chemical reaction:  $\text{R-CH}_2\text{-NH}_2 + \text{H}_2\text{O} + \text{O}_2 \rightarrow \text{R-COH} + \text{NH}_3 + \text{H}_2\text{O}_2$

242 Decarboxilation of amino acids:

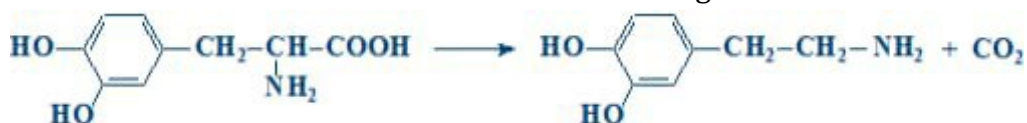
243 Select the correct statements about the following chemical reaction:



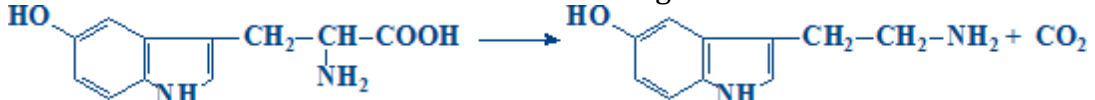
244 Select the correct statements about the following chemical reaction:



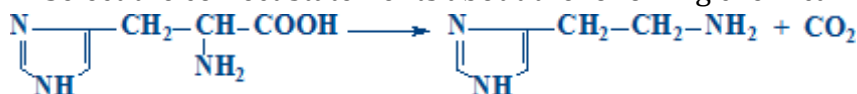
245 Select the correct statements about the following chemical reaction:



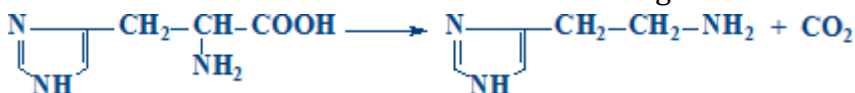
246 Select the correct statements about the following chemical reaction:



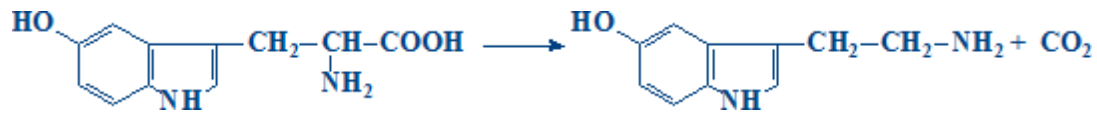
247 Select the correct statements about the following chemical reaction:



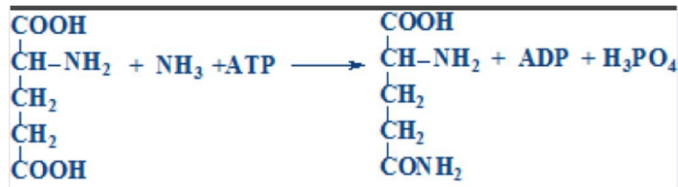
248 Select the correct statements about the following chemical reaction:



249 Select the correct statements about the shown chemical reaction:



- 250 Serotonin is synthesized from the following amino acid:
- 251 The precursor of catecholamines is:
- 252 Which compound is the precursor of histamine?
- 253 For the synthesis of which compounds can ammonia (NH<sub>3</sub>) be used?
- 254 How many ATP molecules are needed to synthesize one urea molecule?
- 255 How many high-energy bonds are necessary for the synthesis of 100 molecules of urea?
- 256 In which processes is ammonia produced?
- 257 In which processes is ammonia produced?
- 258 NH<sub>3</sub> can be used for the:
- 259 Renal excretion of ammonia - select the correct statement about the process:
- 260 Select ornithine cycle reactions:
- 261 Select ornithine cycle reactions:
- 262 Select the correct statements about the chemical reaction:

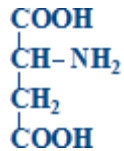


- 263 Select the correct statements about the reaction of carbamoyl phosphate synthesis - the first reaction of urea synthesis:
- 264 Select the urea cycle enzymes:
- 265 Select the urea cycle enzymes:
- 266 The connection between Krebs cycle and urea cycle:
- 267 Urea cycle (first reaction)- select the correct statements:
- 268 Ureagenesis - choose the correct statements about the process:
- 269 Ureagenesis - select the correct statements:
- 270 What are the end products of simple proteins catabolism?
- 271 What are the final products of complete NH<sub>3</sub> detoxification?
- 272 Select the hereditary diseases caused by defects of the enzymes involved in the metabolism of phenylalanine and tyrosine:
- 273 Albinism - select the correct statements about the disease:
- 274 Alcaptonuria - select the correct statements about the disease:
- 275 Biosynthesis of asparagine (Asn) - choose the correct statements about the reaction:
- 276 Biosynthesis of glutamine (Gln) - choose the correct statements about the reaction:
- 277 Choose the correct statements about carbohydrate and lipid metabolisms connections:
- 278 Choose the correct statements about protein and carbohydrate metabolisms connection:
- 279 Choose the correct statements about the catabolism of amino acids:

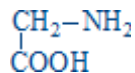


280 Choose the enzyme involved in amino acids catabolism:

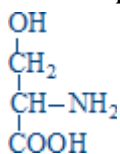
281 In the synthesis of what substances does the following compound participate?



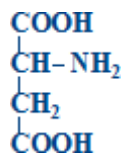
282 In the synthesis of what substances does the following compound participate?



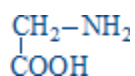
283 In what processes is the following compound involved?



284 In what processes is the following compound involved?



285 In what processes is the following compound involved?



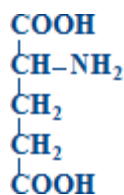
286 Phenylalanine (Phe) and tyrosine (Tyr) are precursors of:

287 Phenylketonuria - select the correct statements about the disease:

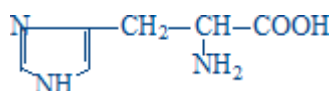
288 Protein and lipid metabolisms connection - choose the correct statements:

289 S-adenosylmethionine (SAM) - choose the correct statements:

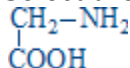
290 Select correct statements about the following compound:



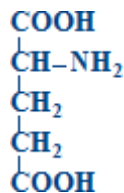
291 Select the correct statement about the following compound:



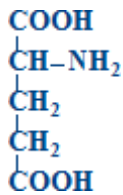
292 Select the correct statements about the following compound:



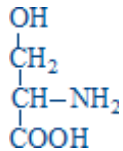
293 Select the correct statements about the following compound:



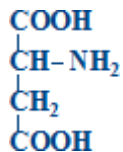
294 Select the correct statements about the following compound:



- 295 Select the enzymes involved in amino acid catabolism:  
296 Select the functional groups whose acceptor and donor is the tetrahydrofolic acid:  
297 Select the statements that characterize protein deficiency:  
298 Tetrahydrofolic acid (TFH) - choose the correct statements:  
299 Tetrahydrofolic acid (THF) - choose the correct statements:  
300 The following compound:



- 301 The following compound:



- 302 Biosynthesis of deoxyribonucleotides - select the correct statements:  
303 Biosynthesis of cytidylic nucleotides:  
304 Biosynthesis of thymidine nucleotides - select the correct statements:  
305 Choose the amino acid that is used in the second reaction of pyrimidine nucleotide synthesis:  
306 Clinical manifestations of gout:  
307 Digestion of nucleoproteins - select the correct statements:  
308 GMP synthesis from inosine monophosphate (IMP) - select the correct statements:  
309 Inosine monophosphate (IMP) - select the correct statements:  
310 Phosphoribosyl-pyrophosphate synthesis (PRPP) - select the correct statements about the first reaction of purine nucleotide synthesis:  
311 Products of uracil and cytosine catabolism:  
312 Pyrimidine nucleotide synthesis (select the reactions):  
313 Regulation of the purine nucleotides synthesis - choose the correct statements:  
314 Salvage of purine nitrogenous bases - select the correct statements:  
315 Select the chemical compounds necessary for the synthesis of purine nucleotides:  
316 Select the chemical compounds that are involved in purine nucleotides synthesis:  
317 Select the correct statements about the reaction of carbamoyl phosphate synthesis - the 1st reaction of pyrimidine nucleotide synthesis:  
318 Select the products of thymine catabolism:  
319 Select the reactions of pyrimidine nucleotide synthesis:  
320 Select the statements that characterize gout:



- 321 Synthesis of phosphoribosylamine from phosphoribosyl pyrophosphate (PRPP) - select the correct statements about the second reaction of purine nucleotide synthesis:
- 322 What amino acid is a donor of the -NH<sub>2</sub> group in the pathway of GMP synthesis from IMP?
- 323 What amino acid is a donor of the -NH<sub>2</sub> group in the pathway of AMP synthesis from IMP?
- 324 What compounds are the sources of atoms for the pyrimidine ring?
- 325 What is characteristic for the carbamoyl phosphate synthesis reaction - the 1st reaction of pyrimidine nucleotides synthesis:
- 326 What is the final product of purine nucleotide catabolism in humans?
- 327 What statements characterize the synthesis pathway of AMP from inosine monophosphate (IMP):
- 328 Inhibition of what enzyme underlies the treatment of gout?
- 329 What of the following is a function of ATP?
- 330 What of the following is not a property of the genetic code?
- 331 Select the chemical compound that serves as the source of the methyl group for thymine (synthesis of TMP):
- 332 Select the chemical compound that serves as the source of the amino group for adenine (synthesis of AMP from IMP):
- 333 Select the chemical compound that serves as the source of the amino group for guanine (synthesis of GMP from IMP):
- 334 Select the chemical compound that serves as the source of the amino group for cytosine (synthesis of CTP from UTP):
- 335 Select the chemical compound that serves as the source of the amino group for carbamoyl phosphate synthesis (synthesis of pyrimidine nucleotides):
- 336 Select the correct statement about the following chemical reaction  $\text{Gln} + \text{CO}_2 + 2\text{ATP} + \text{H}_2\text{O} \rightarrow$   
carbamoyl phosphate + Glu + 2ADP + Pi
- 337 Select the correct statement about the following chemical reaction  $\text{Gln} + \text{CO}_2 + 2\text{ATP} + \text{H}_2\text{O}$   
 $\rightarrow$  carbamoyl phosphate + Glu + 2ADP + Pi
- 338 Select the inhibitor of dihydrofolate reductase:
- 339 Select the inhibitor of thymidylate synthase:
- 340 Select the inhibitor of xanthine oxidase:
- 341 Bilirubin - select the correct statements regarding its transformations in the liver:
- 342 Bilirubin - select the correct statements regarding the compound:
- 343 Catabolism of hemoglobin (Hb) - select the correct statements regarding the process:
- 344 Catabolism of hemoglobin is characterized by the following statements:
- 345 Catabolism of hemoglobin. What statements are correct regarding biliverdin transformation into bilirubin?
- 346 Causes of hepatic jaundice are the following:



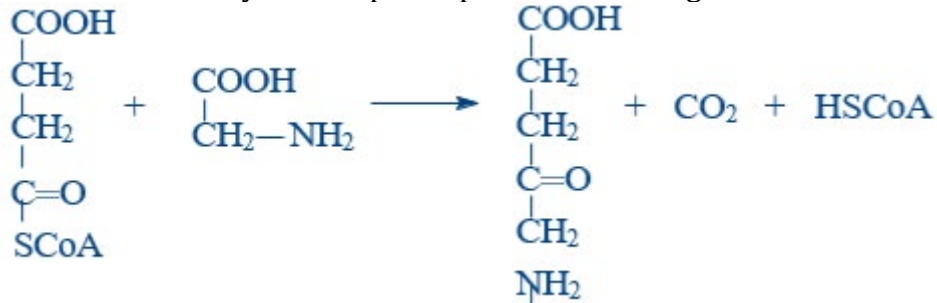
- 347 Causes of jaundice are the following:
- 348 Conjugation of bilirubin - select the statements that characterize the process:
- 349 Heme biosynthesis - select the compounds required for the process:
- 350 Heme biosynthesis - select the correct statements about the first reaction of the process:
- 351 Heme biosynthesis - select the correct statements regarding the second reaction of the process:
- 352 Heme biosynthesis - select the correct statements regarding the conversion of protoporphyrin IX into heme:
- 353 Hemoglobin (Hb) - which statements characterize its structure?
- 354 Hemoglobin (Hb) catabolism - choose the correct statements about the conversion of Hb to biliverdin:
- 355 Hemoproteins - select the correct statements:
- 356 Porphyrin - select the correct statements about the diseases:
- 357 Prehepatic jaundice - select the statements that characterize the disorder:
- 358 Renal excretion of bile pigments - select the correct statements:
- 359 Select causes of jaundice:
- 360 Select the compound responsible for iron cellular storage:
- 361 Select the compound responsible for the blood iron transport:
- 362 Select the compound that are transporting bilirubin in the blood:
- 363 Select the compound that is used for the conjugation of bilirubin in the endoplasmic reticulum of the hepatocytes:
- 364 Select the inhibitor of aminolevulinic acid synthase:
- 365 Select the membrane protein responsible for the absorption of iron from the small intestine:
- 366 Select the non-proteic part of hemoglobin:
- 367 What are the stages of bilirubin metabolism in the intestine?
- 368 What changes in bile pigments occur in posthepatic jaundice?
- 369 What changes of bile pigments occur in hepatic jaundice?
- 370 What compound, which is usually absent, will appear in the urine in posthepatic jaundice?
- 371 What is form of iron that is absorbed from the intestine?
- 372 What is the cause of posthepatic jaundice?
- 373 What is the main regulatory enzyme of hem synthesis pathway?
- 374 What processes does hemoglobin participate in?
- 375 Which of the following statements about blood bilirubin are correct?
- 376 Which proteins belong to the class of chromoproteins?
- 377 Which statements about prehepatic jaundice are correct?
- 378 Choose the correct statement about bilirubin:
- 379 Choose the correct statement about conjugated bilirubin:



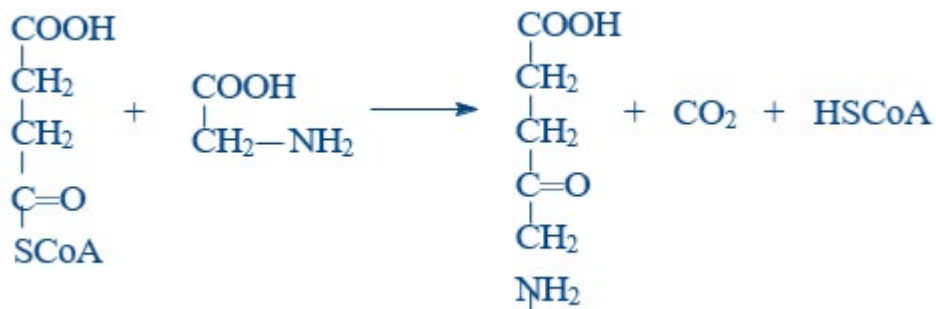


380 Choose the correct statement about unconjugated bilirubin:

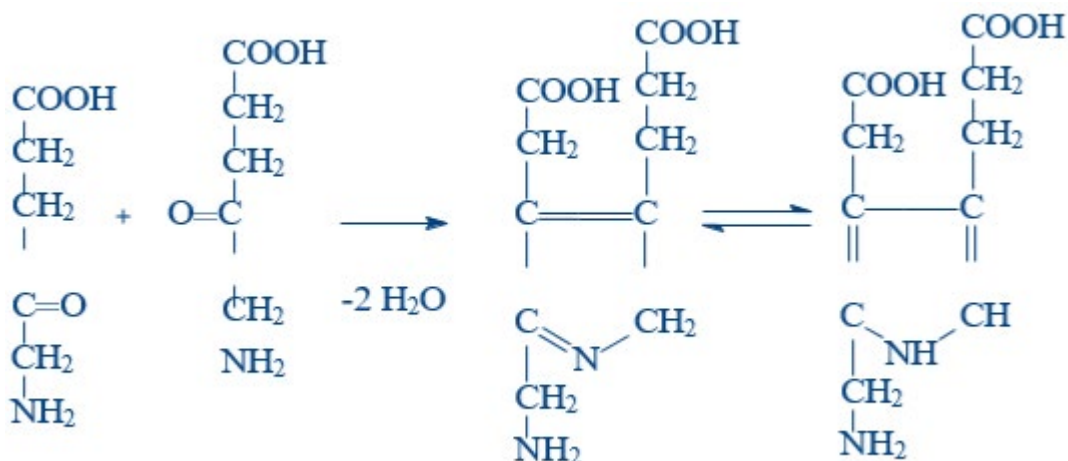
381 Select the coenzyme that participates in following chemical reaction:



382 Select the correct statement about the following chemical reaction:



383 Select the correct statement about the following chemical reaction:



384 Select the possible cause of posthepatic jaundice:

385 Select the possible cause of prehepatic jaundice:

386 Which of the following statements about hormones is correct?

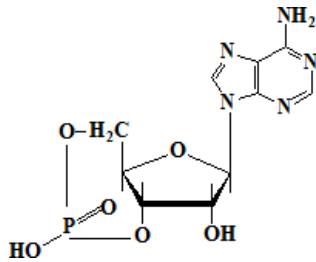
387 Choose the hormone whose secretion is not regulated by the hypothalamic-pituitary mechanism:

388 Choose the hormone whose secretion is not regulated by the hypothalamic-pituitary mechanism:

389 Choose the hormone whose secretion is not regulated by the hypothalamic-pituitary



- mechanism:
- 390 Choose the membrane phospholipid that is a precursor of second messenger hormones:
  - 391 Cytosolic-nuclear mechanism of action of hormones - select the correct statement:
  - 392 Membrane-intracellular mechanism of hormone action - select the correct statement:
  - 393 Membrane-intracellular mechanism of hormone action - select the correct statements:
  - 394 Membrane-intracellular mechanism of hormones action mediated by cAMP - select the statements that characterize it:
  - 395 Phosphodiesterase - select the correct statements regarding the enzyme:
  - 396 Select hormone second messengers:
  - 397 Select the classes of hormones according to the structural classification:
  - 398 Select the correct statement regarding Gs proteins:
  - 399 Select the correct statements about the active form of Gs protein:
  - 400 Select the correct statements about the membrane-intracellular mechanism of hormone action mediated by diacylglycerol (DAG) and inositol triphosphates (IP3):
  - 401 Select the correct statements regarding adenylate cyclase:
  - 402 Select the correct statements regarding calmodulin:
  - 403 Select the correct statements regarding protein kinase A:
  - 404 Select the correct statements regarding the hormones:
  - 405 Select the hormone that acts through the cAMP-mediated membrane-intracellular mechanism:
  - 406 Select the hormone that acts through the cAMP-mediated membrane-intracellular mechanism:
  - 407 Select the hormone that has membrane-intracellular mechanism of action:
  - 408 Select the ion that is a second messenger of hormones:
  - 409 Select the precursor of the second messenger of hormones:
  - 410 Select the reaction catalyzed by phosphoprotein phosphatases:
  - 411 Select the second messenger of glucagon:
  - 412 What are the properties of phospholipase C?
  - 413 What is cyclic AMP (cAMP)?
  - 414 Which classes of conjugated proteins do hormone receptors belong to?
  - 415 Which compound is inhibited by caffeine?
  - 416 Which hormone has cytosolic-nuclear mechanism of action?
  - 417 Which hormone has cytosolic-nuclear mechanism of action?
  - 418 Which hormone has cytosolic-nuclear mechanism of action?
  - 419 Which of the following compound is biologic activ?
  - 420 Which processes are regulated by Ca<sup>2+</sup>-calmodulin complex?
  - 421 Select the correct statements about the chemical structure:



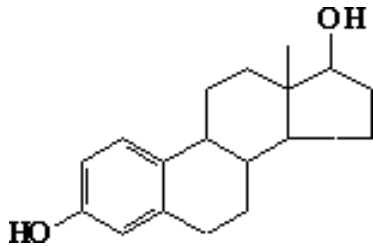
- 422 What statement is characterizing glucagon?
- 423 Adrenergic receptors - select the correct statements:
- 424 Biosynthesis of iodothyronines - select the correct statements:
- 425 By which mechanism of action on the kidneys does parathyroid hormone cause an increase in blood calcium level?
- 426 Calcitonin - select the correct statements regarding the hormone:
- 427 Catecholamine biosynthesis - select the correct statements:
- 428 Choose the compound that regulates the secretion of parathyroid hormone:
- 429 Diabetes mellitus - select the disorders that are specific for the disease:
- 430 Glucagon secretion - select the correct statements about its regulation:
- 431 How insulin is influencing the activity of enzymes?
- 432 Pheochromocytoma - select the correct statements about the disease:
- 433 Prolactin - select the correct statements about the hormone:
- 434 Renal reabsorption of which compound is induced by antidiuretic hormone?
- 435 Select hormone that is synthesized in the adrenal cortex:
- 436 Select hormones belonging to the class of glycoprotein hormones of the adenohypophysis:
- 437 Select the adenohypophysis hormones:
- 438 Select the compounds involved in the maintenance of the extracellular calcium homeostasis:
- 439 Select the correct statement about iodothyronines:
- 440 Select the correct statements about oxytocin:
- 441 Select the correct statements about steroid hormones:
- 442 Select the correct statements about the biosynthesis of the pancreatic hormones:
- 443 Select the correct statements about the regulation of synthesis and secretion of glucocorticoids:
- 444 Select the correct statements regarding the biologic effects of the parathyroid hormone:
- 445 Select the correct statements regarding the hormones of adenohypophysis:
- 446 Select the correct statements regarding the hormones that belong to the class of catecholamines:
- 447 Select the correct statements regarding the luteinizing hormone (LH):
- 448 Select the correct statements regarding adrenocorticotropin (ACTH):
- 449 Select the disorders specific for hyperparathyroidism:
- 450 Select the disorders specific for hypoparathyroidism:



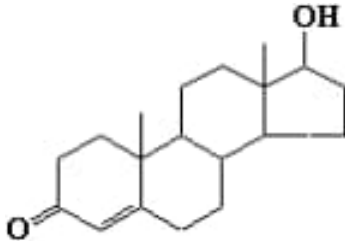
- 451 Select the hormone that stimulates glycogen synthesis:
- 452 Select the hormone that stimulates glycogenolysis:
- 453 Select the hormone whose deficiency causes diabetes insipidus:
- 454 Select the hormones that are derivatives of proopiomelanocortin:
- 455 Select the hormones that belong to the class of adenohipophysis somatomammotrop hormones:
- 456 Select the metabolic and physiologic effects of catecholamines:
- 457 Select the metabolic effects of glucagon:
- 458 Select the metabolic effects of insulin:
- 459 Select the metabolic effects of T3 and T4:
- 460 Select the second messenger of adrenalin:
- 461 Select the statements that characterize glucagon:
- 462 Select the tropin-release inhibiting hormone (statin):
- 463 Select the tropin-releasing hormones (liberins):
- 464 Somatostatin - select the correct statements about the hormone:
- 465 Somatotropin (growth hormone) - select the correct statement regarding the compound:
- 466 The synthesis of the active form of what vitamin is stimulated by parathyroid hormone?
- 467 Thyroglobulin - select the correct statements about the compound:
- 468 Thyrotropin (TSH) - select the correct statements regarding the compound:
- 469 Vasopressin - select the correct statements about the hormone:
- 470 What are the correct statements about hypothalamic hormones?
- 471 What are the metabolic effects of somatotropin?
- 472 What are the metabolic effects of T3 and T4?
- 473 What are the signs of hypothyroidism in adults (myxedema)?
- 474 What compounds stimulate insulin secretion?
- 475 What processes are stimulated by insulin?
- 476 What statements are characterizing insulin?
- 477 What statements characterize 1,25-dihydroxycholecalciferol - calcitriol?
- 478 What statements characterize the mechanism of action of insulin?
- 479 Which are the metabolic effects of glucocorticoids?
- 480 Which are the signs of thyroid hyperfunction?
- 481 Which compounds are transporting iodothyronines in the blood?
- 482 Which factors influence the synthesis and secretion of iodothyronines?
- 483 Which is the metabolic effect of calcitonin?
- 484 Which of the following effects does insulin have on lipid metabolism?
- 485 Which of the following effects does insulin have on protein metabolism?
- 486 Which statements are correct regarding the parathyroid hormone?
- 487 Which statements are true regarding the hormones of posterior pituitary gland?



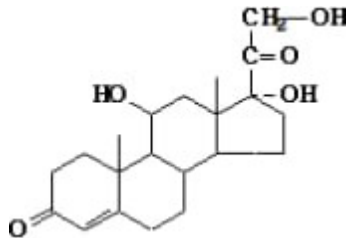
- 488 Which statements characterize the follicle stimulating hormone (FSH)?
- 489 Angiotensin II - select the correct statements:
- 490 Hyperaldosteronism (Conn's syndrome) is characterized by:
- 491 Hypercortisolism (Addison's disease) - choose the correct statements about the specific signs of the disease:
- 492 Select physiological effects of the following hormone:



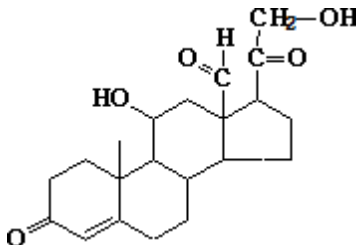
- 493 Select physiological effects of the following hormone:



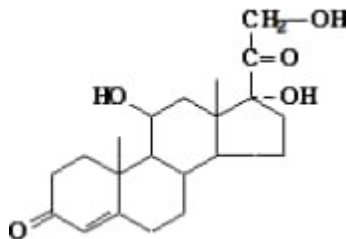
- 494 Select the compound whose concentration increase will trigger aldosterone secretion:
- 495 Select the correct statements about the Cushing's syndrome:
- 496 Select the correct statements about the effects of the following hormone:



- 497 Select the correct statements about the functions of the following hormone:



- 498 Select the correct statements about the mechanism of action of the following hormone:

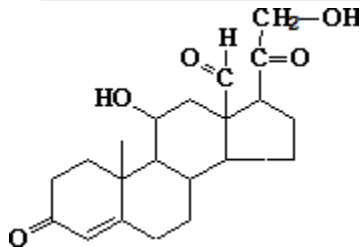


- 499 Select the correct statements about the regulation of the synthesis and secretion of sex hormones:
- 500 Select the correct statements regarding aldosterone synthesis and secretion:

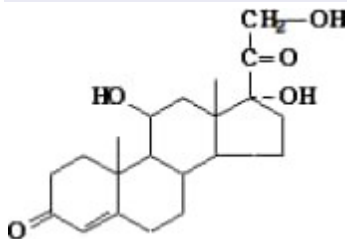


501 Select the correct statements regarding the androgens:

502 Select the correct statements regarding the following hormone:



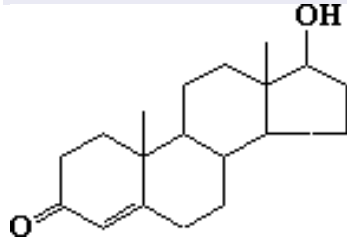
503 Select the correct statements regarding the metabolic effects of the following hormone:



504 Select the correct statements regarding the sex hormones:

505 Select the hormone that regulates blood osmolarity:

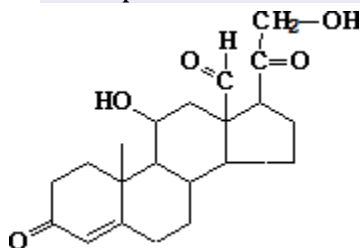
506 Select the metabolic effects of the following hormone:



507 Select the sex hormones from the following:

508 What is the purpose of using corticosteroids as medicines?

509 What processes are stimulated in the kidneys by the following hormone?



510 Which of the listed hormones stimulates protein synthesis in skeletal muscles?

511 Which statements are correct regarding the female sex hormones?