

Topics of essays in Medical, Organic and Biological Chemistry.

1. "Dansyl" amino acids.
2. Abiotic synthesis of organic compounds.
3. Abscisic acid.
4. Acid-base balance of blood.
5. Acid-base balance of the body.
6. Acid-base indicators.
7. Activation and biological importance of vitamin D and its role in calcium and phosphorus metabolism.
8. Activation and biological significance of vitamin D, role of Phosphorus in Calcium metabolism.
9. Acute phase proteins.
10. Adrenocorticotrophic hormone (ACTH, Corticotropin).
11. Adrenomedullin.
12. Affinity chromatography.
13. Agarose attached spacers.
14. Alcohols.
15. Aldehydes and ketones as drugs.
16. Aldehydes and ketones of natural origin.
17. Aldehydes of natural origin.
18. Aldose.
19. Allosteric enzymes.
20. Amines.
21. Amino acid derivatives.
22. Amino acids and peptides.
23. Amino acids, amines, amides, peptides and their derivatives.
24. Amino acids.
25. Aminotransferase.
26. Amitosis.
27. Angiotensin group of peptides.
28. Angiotensin-converting enzyme (ACE) inhibitors.
29. Anion exchange resin.
30. Antibiotics.
31. Antimetabolites, antimicrobial agents, and enzyme inhibitors.
32. Antivitamin and antimetabolites as medicaments.
33. Antivitamins and antimetabolites as drugs.
34. Arginine.
35. Aromatic acids and hydroxy acids.
36. Aromatic amines, sulfonamides.
37. Artificial protein synthesis and the problem of artificial synthesis gene.
38. Artificial synthesis of proteins and the problem of artificial gene synthesis.
39. Ascorbic acid.
40. ATP synthetase, its structure and function.
41. Atrial natriuretic peptides (ANF).
42. Bacteria and soil fertility.
43. Bile pigments and related compounds.
44. Biochemical changes in myocardial infarction, muscular dystrophies and metabolic myopathies.
45. Biochemical changes in myocardial infarction.
46. Biochemical methods.
47. Biochemical reagents.
48. Biochemical ways in the study of mental and nervous diseases mechanisms.
49. Biochemistry of diabetes.
50. Biosynthesis of proteins.
51. Blood plasma enzymes.
52. Blood products as drugs.
53. Blood.
54. Bombesin.
55. Buffer systems for electrophoresis on the basis of singly charged ions.
56. Buffers for electrophoresis.
57. Bulk interactions and transitions globule - tangle.
58. By scintillation measurement in a liquid phase.
59. Calcitonin.
60. Calcium and phosphate in blood.
61. Calmodulin and phosphate scavenging peptides.
62. Carbohydrates (sugars).
63. Carbohydrates and lipids.
64. Carbohydrates and related compounds.
65. Carbohydrates structure and functions.
66. Carboxylic acids, alcohols, aldehydes and ketones.
67. Carotenoids.
68. Carriers for gel filtration.
69. Carriers for ion exchange and affinity chromatography and gel filtration.
70. Casomorphins.
71. Catabolism of hemoglobin.
72. Catalysis and activation energy.
73. Catecholamine triacetates.
74. Catecholamines.
75. Causes and types of hepatotoxicity of xenobiotics.
76. Causes of deficiency of vitamin K.
77. Cell cycle.
78. Cell division.

79. Centrifuge field (g).
80. Chelating agents.
81. Chemical basis of the origin of life.
82. Chemical components of the living.
83. Chlorophylls and related pigments.
84. Cholecystokinin-pancreozymin.
85. Cholesterol.
86. Choline esters.
87. Choline.
88. Citric acid.
89. Classification of enzymes.
90. Classification of proteins.
91. Cleaning of drains.
92. Coenzymes NAD, NADPH, coenzyme A, ATP.
93. Cofactors. Vitamins. Hormones.
94. Collagen and connective tissue pathology indicators.
95. Collagen and indicators of connective tissue disease.
96. Common reagents for the detection by spraying or dipping methods.
97. Compounds similar to polysaccharides.
98. Conditions for the existence of the coil and the globule.
99. Conjugates.
100. Coomassie blue for proteins.
101. Corticotropin-releasing factor.
102. Creatine kinase.
103. Cytokinins.
104. d-amino acids.
105. Defensins.
106. Denaturation and renaturation of proteins.
107. Deoxyribonucleosides.
108. Dermorfina, kyotorphin.
109. Determination acids involved in the metabolism of carbohydrates.
110. Determination of the activity of peptidases.
111. Dextran and agarose ion exchangers.
112. Different types of interactions in macromolecules.
113. Differential diagnosis of jaundice.
114. Differential diagnosis of jaundice.
115. Disaccharides.
116. Dissociation constants of acids and bases.
117. DNA diagnosis of diseases.
118. DNA diagnosis of diseases.
119. DNA interactions with biologically active substances.
120. DNA replication.
121. DNA staining with ethidium bromide.
122. DNP-amino acids.
123. Donors, carriers and electron acceptors.
124. Dynorphin.
125. Endorphins and fragments of beta-lipotropina.
126. Endothelial cell growth factor.
127. Enzimopatya amino acid metabolism.
128. Enzyme cofactors.
129. Enzyme inhibitors - mechanism of action and possible application in medicine.
130. Enzymes degradation of collagen.
131. Enzymes in Medicine.
132. Enzymes in medicine.
133. Enzymes of collagen degradation.
134. Enzymes.
135. Enzymopathies amino acid metabolism.
136. Epidermal growth factor.
137. Esters and lactones.
138. Esters of phosphoric acid.
139. Ethanolamine.
140. Ethylene (ethene) and its biologically active derivatives.
141. Levels of the structural organization of the protein molecule.
142. Evidence for the role of DNA in heredity.
143. Factor, growth hormone releasing somatokrinin.
144. Factors affecting the rate of enzymatic reactions.
145. Fat-soluble vitamins.
146. Features and functions of triacyl-glycerol.
147. Features of metabolic phagocytic cells.
148. Features of the metabolism of phagocytes.
149. Fermentation: types, mechanisms, biological significance.
150. Fermentation: types, mechanisms, biological significance.
151. Ferroprotoporphyrin (gems, gemins).
152. Fibronectin and other "local cell" peptides: fibronectin, nectofibrin, laminines, chromostatin.
153. Flavins.
154. Fluorography of acrylamide gel plates.
155. Formation and development of biological microstructures.
156. Formation of lipids.
157. Fundamentals of reproduction and individual development of organisms.
158. Galanin.
159. Gamma-glutaryl transferase.
160. Gastrins.
161. Gastrointestinal peptides.

162. Gel electrophoresis and its use in biomedical research.
163. Gel electrophoresis.
164. Gene mutations.
165. Genes and enzymes.
166. Genetic code.
167. Genetic regulation of development.
168. Gibberellins.
169. Glucose.
170. Glutaric acid imides, carbamates, ureides.
171. Glycine.
172. Glycogen and glucagon-like peptides.
173. Glycogen storage and aglikogenozy.
174. Glycogen storage disease.
175. Glycolipids.
176. Glycolysis and carcinogenesis.
177. Glycolysis and carcinogenesis.
178. Group Reagents.
179. Guanidines.
180. Hemolysis.
181. Hemorphin, deltorphin.
182. Hereditary carbohydrate metabolism: fructosemiya, galactosemia.
183. Hereditary disorders of carbohydrate metabolism: fructosemiya, galactosemia.
184. Hexosamine.
185. Higher fatty acid.
186. Histidine.
187. History of discovery of vitamin B1.
188. History of discovery of vitamin B12.
189. History of discovery of vitamins.
190. History of discovery, mechanism and biological significance three carboxylic acid cycle.
191. History of the discovery of vitamin B12.
192. History of the discovery, the mechanism and the biological significance of the citric acid cycle.
193. HIV-associated peptides (HIV-Related Peptides).
194. Glutathion role of enzymes in the removal of toxic compounds endo "and exogenous origin.
195. Hormonal regulation of urine formation.
196. Hormonal regulation of urine formation.
197. Hydrogen bonding and electrostatic interactions.
198. Hydrophobic interactions and protein structure.
199. Jacob-Monod hypothesis.
200. Immunoactive peptides.
201. Indolamine.
202. Induction of enzymes.
203. Industrial fermentation processes.
204. Inhibition of the enzyme.
205. Inhibition of the final product on the principle of negative feedback.
206. Inhibitors functions of mitochondria and chloroplasts.
207. Inhibitors of enzymes: mechanism of action and applications in medicine.
208. Inhibitors of protein synthesis and amino acid analogs.
209. Inhibitors of steroid synthesis and function.
210. Inorganic ions as enzyme activators.
211. Inositol.
212. Insulin-like growth factor, somatomedin C.
213. Interleukins.
214. Introduction: current trends study of regulatory peptides.
215. Ion exchange resins.
216. Ion exchangers based on cellulose.
217. Ionophores channelization and related compounds.
218. Irreversible inhibition of enzymes.
219. Isoenzymes: use in enzymodiagnosics.
220. Isolation of plasmid DNA.
221. Isozyme forms of cytochrome 450 family - 2E, 3A, 2D to practical medicine.
222. Isozymes: use in enzimodiagnosics.
223. Ketones of natural origin.
224. Ketoses and pentoses.
225. Ketoso amino acids.
226. Kinins.
227. Lactate dehydrogenase.
228. Lectins.
229. Leu, met- enkephalins and enkephalin precursors. Enkephalinase inhibitor.
230. Ligand binding with macromolecules.
231. Lipids and fatty acids having long hydrocarbon chains.
232. Lipids.
233. Lipoproteins.
234. Liver cell growth factor.
235. Lymphokins.
236. Macromolecules.
237. Matrix, or information, RNA.
238. Media based on agarose gels.
239. Meiosis.
240. Melanocyte-stimulating hormones.
241. Methods for determination of protein.
242. Methods for protein separation.
243. Methods for the quantitative determination of nucleic acids.

244. Methods of molecular biology.
245. Minor RNA.
246. Mitosis.
247. Modern aspects of genetic engineering. Cloning genes.
248. Molecular mechanisms of memory.
249. Monosaccharides.
250. Multienzyme complexes and their role in the metabolism of the cell.
251. Multifunctionality of RNA.
252. Multiple staining.
253. Multienzyme systems and their role in the metabolism of cells.
254. Natural and synthetic substrates.
255. Nature of genes.
256. Nerve growth factor.
257. Neurokinins.
258. Neuropeptide U.
259. Neurotensin.
260. Nicotinic acid and related compounds.
261. Nucleic acids, their structure and function.
262. Nucleoside diphosphosugars.
263. Nucleotide metal complexes.
264. Nucleotides.
265. o-, m- and n-Aminophenols and drugs of aminophenol row.
266. o-Aminophenols, indoles and drugs based on these structures.
267. Opioid peptides.
268. Optical rotation.
269. Organizer and its Molecular nature.
270. Ornithine.
271. Oxidative phosphorylation - the theory of P. Mitchell.
272. Oxytocin.
273. Pancreastatin.
274. Pantothenic acid and its derivative coenzyme A.
275. Paper and thin layer chromatography in biochemistry. Techniques for separation.
276. Parathyroid hormone.
277. Participation of vitamin A in the act of vision, differentiation and regulation of cell growth.
278. Participation of vitamin A in the act of, during the regulation of cell growth and differentiation.
279. Pathobiochemical framework for the assessment of inflammatory reactions in the human body.
280. Peptidase substrates.
281. Peptide growth factors.
282. Peptide hormones.
283. Peptide YY.
284. Peptides with antimicrobial activity (Baktenetsin, Dermaseptin, Maganin).
285. Peptides.
286. pH buffers and physiological media.
287. PH measurement. General remarks.
288. Phenols and related compounds.
289. Phenols.
290. Phenylalanine.
291. Phenylthiohydantoin.
292. Phosphatase.
293. Phospholipids.
294. Phosphoric acid esters (except coenzymes and nucleotides).
295. Physiological environment.
296. Blood pigments.
297. Plant growth regulators.
298. Polysaccharides.
299. Porphyrins (excluding chlorophyll porphyrins).
300. Porphyrins and related compounds.
301. Potassium in the blood.
302. Pressure and temperature parameters for autoclaves.
303. Primary amines.
304. Primary standards.
305. Problems of digestion and assimilation of proteins in humans.
306. Properties buffers. General remarks.
307. Properties of amino acids.
308. Prosthetic groups and their importance in enzymatic reactions (eg, FAD, FMN, biotin, haem).
309. Proteases and antiproteinase.
310. Protein metabolism in mammals.
311. Protein precipitants.
312. Protein synthesis.
313. Protein-coacervate theory Oparin.
314. Proteins.
315. Purines, pyrimidines, nucleosides and nucleotides.
316. Purines.
317. Pyridine nucleotide.
318. Pyridoxine.
319. Pyrimidines.
320. Reagents for protein modification.
321. Reagents for the introduction of substituents.
322. Recent advances of biotechnology and genetic engineering.
323. Recrystallization acrylamides.
324. Reducing centers.

325. Reducing sugars.
326. Regulation of gene activity.
327. Regulation of metabolic pathways.
328. Residual nitrogen.
329. Reversible inhibition.
330. Ribonucleic acid.
331. Ribonucleosides.
332. Ribosomal RNA.
333. Ribozymes.
334. RNA structure.
335. RNA world.
336. Role of sulfate-reducing bacteria in industrial and natural systems.
337. Sapogenins.
338. Secondary amines.
339. Separates of oxidative phosphorylation and regulation of thermogenesis.
340. Separates oxidative phosphorylation and regulation of thermogenesis.
341. Sephadex and Bio Gel Mark R.
342. Similarities and differences between mitosis and meiosis.
343. Simple biological molecules.
344. Sizes of protein molecules.
345. Sodium in the blood.
346. Sodium like bioelement.
347. Solutions for formation of the density gradient.
348. Somatostatin.
349. Some biochemical parameters of blood of newborns and healthy children.
350. Some radioisotopes used in biochemical research.
351. Special methods.
352. Special solutions for the detection method of spraying or dipping.
353. Specific reagents.
354. Spectral data and pK for purine, pyrimidine nucleosides and nucleotides.
355. Spectrophotometric concepts.
356. Staining of proteins with silver salts.
357. Staining RNA.
358. Standard solutions (N. B. S.) for measuring the pH at 0-95 ° C.
359. Standardization and pH measurement.
360. Steroids and terpenes.
361. Steroids.
362. Structure and classification of amino acids.
363. Structure and regulation of enzyme activity.
364. Structure dinucleotides and polynucleotide.
365. Structure nucleotides.
366. Study of the effect of different pH on the enzyme activity.
367. Studying the distribution of catalase in the wetted seeds of pea and temperature effect on the activity of the enzyme.
368. Substance P.
369. Substances that affect nucleic acids.
370. Substances that affect the function of membranes.
371. Substrates glycosidases and inductors.
372. Substrates phosphatases.
373. Sugar acids.
374. Sugar alcohols, glycols, deoxy and glycans.
375. Sulfur-containing amino acids.
376. Surfactants.
377. Tachykinins.
378. Tertiary amines, quaternary ammonium compounds and alkaloids.
379. The activated agarose.
380. The appearance of protein biosynthesis.
381. The atomic mass.
382. The atomic structure of living systems.
383. The biological function of the proteins.
384. The biological importance of polyunsaturated fatty acids and their synthesis in the body.
385. The biological role of fibronectin.
386. The biological significance of polyunsaturated fatty acids and their synthesis in the body.
387. The biological significance of vitamin B9, B12, C and P.
388. The biological significance of Zn and Mg.
389. The biosynthesis of protein synthesis in a cell-division cell DNA.
390. The branched metabolic pathways.
391. The catabolism of hemoglobin.
392. The cation exchange resin.
393. The causes and types of hepatotoxicity of xenobiotics.
394. The centrioles and spindle formation.
395. The chemical structure of RNA.
396. The components of the lipid molecules.
397. The compounds used in biochemical studies and their ability to bind metals.
398. The concentration and density of the concentrated acids and ammonia.
399. The concentration of the enzymes.
400. The conformations of the polypeptide chain.
401. The division of the cytoplasm.
402. The electrical properties of proteins.
403. The elements contained in living organisms.
404. The endothelins.

405. The energy relations in living systems.
406. The flexibility of biopolymers.
407. The formation and evolution of biopolymers.
408. The formulas and ratios.
409. The growth factor of fibroblasts.
410. The impact of heavy metal ions on human health.
411. The impact of heavy metal ions on the growth and development of organisms.
412. The impact of heavy metals on the growth and development of microorganisms.
413. The influence of the concentration of the enzyme in the hydrolysis of sucrose catalyzed sucrase (invertase).
414. The levels of structural organization of the protein molecules.
415. The ligands used in the commercially available affinity sorbents.
416. The linear metabolic pathway.
417. The macromolecular structure of RNA.
418. The main task of protein biophysics.
419. The mechanism of functioning and disorders of glucose-6-phosphate dehydrogenase.
420. The mechanism of operation and violation activity of glucose-6-phosphate dehydrogenase.
421. The mechanism of protein synthesis.
422. The mechanisms of enzyme action.
423. The modified hypothesis operon.
424. The most important biochemical parameters of blood of a healthy adult.
425. The origin and structure of the main classes of biomolecules.
426. The origin and structure of the main classes of biomolecules.
427. The peptide delta sleep and other physiologically active peptides.
428. The peptides associated with the pathology of various genesis, amylin. The beta protein of Alzheimer's disease. Allergic encephalitogenic peptide.
429. The peptides from tissue invertebrates and lower vertebrates: allatostatin, deltorphin, dermorfina, cardioactive peptides conotoxins, leykokininy peptides - inhibitors of ion channels.
430. The pharmacologically active compounds.
431. The physical hierarchy of biosystems.
432. The physical nature of the hydrogen bond.
433. The problems of digestion and assimilation of proteins in the human body.
434. The redox potential.
435. The regulation of metabolism.
436. The regulatory function of the liver in the metabolism of proteins.
437. The regulatory function of the liver in the metabolism of proteins.
438. The repression of the enzymes.
439. The role of genes in development.
440. The role of glutathione enzymes in the removal of toxic compounds endo "and exogenous origin.
441. The role of mercury in the processes of life.
442. The role of RNA and DNA in the formation of systems with feedback.
443. The role of RNA.
444. The role of the cell nucleus.
445. The role of the cytoplasm.
446. The role of the kidney renin-angiotensin system. Antihypertensive drugs.
447. The role of vitamin nicotinamide NAD, NADH, flavin FMN, FAD coenzymes in the reactions of the cell energy metabolism.
448. The solubility of gases. Bunsen coefficients.
449. The spatial organization of biopolymers.
450. The speed of enzymatic reactions.
451. The stability constants of metal complexes.
452. The structure and regulation of enzyme activity.
453. The structure of chromosomes.
454. The structure of DNA.
455. The structure of the code.
456. The structure of the protein.
457. The structure of water and hydrophobic interactions.
458. The study of sulfate-reducing bacteria strain promising for use in biotechnological methods of purification from heavy metals.
459. The substrates of esterases and lipases.
460. The theory of biological oxidation.
461. The value of isozyme forms of cytochrome P450 family - 2E, 3A, 2D to practice medicine.
462. Thiamine and its derivatives.
463. Three-dimensional interaction. Transitions globule – tangle in biopolymers.
464. Thyrotropin-releasing hormone (thyrotropin releasing hormone).
465. Thyroxine and related compounds.
466. Transcription.
467. Translation.
468. Transport inhibitors.
469. Transportation and deposition of lipids.
470. Transportation RNA.

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| 471. Tryptophan and related compounds. | 480. Vitamin D. |
| 472. Tyrosine. | 481. Vitamin E (tocopherol). |
| 473. Units of enzyme activity. | 482. Vitamin K. |
| 474. Unsaturated bonds in biomolecules. | 483. Vitamins and coenzymes. |
| 475. Van der Waals (BB) forces. | 484. Vitamins. |
| 476. Vasoactive intestinal peptide. | 485. Volatile fatty acid. |
| 477. Vasopressin. | 486. Water-soluble vitamins. |
| 478. Viral RNA. | 487. World of RNA as a precursor of modern life. |
| 479. Vitamin A. | 488. Xenopsin. |

Essey themes on the subject: Nanomedicine - present and future.

1. Biosensors and biochips.
2. Current trends and near-term prospects of nanobiotechnology.
3. Environmental Nanotechnology.
4. Fullerenes in biology and medicine.
5. Gene therapy and genokorreksiya. Using genetically engineered nanostructures and viral nanovektorov to deliver therapeutic genes.
6. Humanized antibodies and nanobodies in modern medicine.
7. Modern nanostructured materials in biology and medicine.
8. Nanomedicine - present and future.
9. Nanoparticles in biomedical research and medical practice.
10. Nanoparticles in radio and imaging diagnostic methods (CT, MRI, PET, SPECT).
11. Nanoparticles-carriers of drugs. "Smart" drug.
12. Nanotechnologies in biomedical research and medical practice.
13. Nanotechnology approaches to diagnosis and therapy of tumors.
14. Nanotechnology aspects of gene diagnostics. Modern gene diagnostics of infectious diseases and hereditary diseases.
15. Nanotechnology in the tumor visualization.
16. Nanotoxicology.
17. Nano trauma in the pathogenesis of human diseases. Misfolding, violation assembly secondary and tertiary structure proteins.
18. Principles getting therapeutic genes and genetic engineering of nanostructures.
19. Targeted delivery of drugs across the blood-brain barrier.
20. The nanoparticles and nanotechnology in biomedical research and medical practice.