APSTIPRINĀTS- **Rīgas Stradiņa universitātes** Cilvēka fizioloģijas un bioķīmijas katedras http://aris.gusc.lv/2022MFArzRudBkurss.pdf sanāksme 07.07.2022., protokola nr. 5-MF-1-5-1/2/2022

Study course 2nd semester "Experimental Research in Medical Chemistry ".

1. Oct. 5 **Install applications on** *Your computer: Raswin2.6,ISIS Draw4,ChemScape, FireFo x3.5.5, Mage* http://aris.gusc.lv/index.html;For Windows in adress: http://aris.gusc.lv/InstallChemistryPC.html and MacOSX MacBook Virtual Box:http://aris.gusc.lv/InstallChemistryMac.html runing Windows 10

Install applications*Raswin2.6,ISISDraw4,ChemScape,FireFox3.5.5,Mage* http://aris.gusc.lv/Inst170712.pdf

Computer preparation for molecules experimental research. Instalalation.

Medical Bio**Chemistry** data base **htdocs** building and structure.

Computer and FireFox3.5.5 configuration for molecular coordinates experimental research.

Nr. Week Lectures (October 2–October 9) room A406 , 15:030-18:45 (4*2*45 minutes)

2.	12. Okt	http://aris.gusc.lv/ChemFiles/Aquaporins/WCPsAQPsIUBMBlife09/AQP1-11.pdf**;Aquaporins** cell membranes crosing **H_2O**, **O_2**, **NO** transport proteins. The osmosis against osmolar concentration gradient: AquaPorin1-0.htm; in human body.task: /Research/Aquaporine0.pdf;/Research/Aquaporine0.pdf
3.	19. Okt	**Carbonic Anhydrase CA** ENZYME http://aris.gusc.lv/ChemFiles/CA/CAnhydraseII.htm physiological pH=7.36 determinant in blood::http://aris.gusc.lv/06Daugavpils/Research/CA.pdf
4.	26. Okt	**O_2**, H^+, HCO_3^- shuttles Hemoglobin, Myoglobin molecules. Triplet **•:O≡:::≡O:•** oxygen. http://aris.gusc.lv/06Daugavpils/Research/HromoProteinsA.pdf; http://aris.gusc.lv/ChemFiles/hemoglobEricMarzUMas/INDEX.htm oxygen **O_2** and carbon dioxide **CO_2** exchange ENZYMES in human organism Hemoglobin, CA:

Practical class topic at room Nr A406 (3*45 min class) XXXday $16^{\underline{15}}\div18^{\underline{30}}$,

1.	2. Nov	Tyr357-Heme coordinated iron(III) CATALASE **HOMEOSTASIS** activity E_a in human organism geometric factor **A**=0,13: http://aris.gusc.lv/06Daugavpils/Research/CATALASE.pdf http://aris.gusc.lv/ChemFiles/catalaseKenyon/cat1.htm
2.	9. Nov	Cyclo oxigenase:/Research/COX.pdf:Singlet **•::O-:-O::•** oxygen Eicosatetraenoic acid http://aris.gusc.lv/06Daugavpils/Research/COXLab14.pdf; sorce of: **prostaglandins PGs**, **prostacyclins PGIs**, **thromboxanes TXs** and **leukotrienes LTs** inhibitors: aspirin, warfarin, tylenol, paracetamol, ibuprofen: http://aris.gusc.lv/ChemFiles/CycloOxigenase/cycox.html
3.	16. Nov	/Research/NADalcoholDeHydr.pdf:ENZYME **alcohol dehydrogenase ADH**. B3 vitamin tuneling hydride ion **H^-** dissociates proton **H^+**:/ChemFiles/AlhoDeHydrogenase/NadDehydrogenase.htm
4.	30. Nov	/Research/PhosphLipidBilayerMembranB.doc Cell **membrane** structure of human physiology: http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/Membrane/membrane/Membrane.html Cholesterol 0,9÷1/1 phospholipid ratio in human erytrocites:/Research/LipdBiLayerMembran.doc http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/Cholest5ene3-20diol/Cholesterol5Membran.html START-STARD1-13:http://aris.gusc.lv/06Daugavpils/Research//Start.doc: http://aris.gusc.lv/ChemFiles/START/START.htm
5.	7. Dec	http://aris.gusc.lv/06Daugavpils/Research/HSA.docHuman serum albumin **HSA HOMEOSTASIS** physiology research with Medical Chemistry. Load in **HSA** water isoluble 7 fatty acids, Hem, bilirubin,aspirin,warfarin, ibuprofen,indometacin:http://aris.gusc.lv/ChemFiles/Albumin/cycox.html
6.	14. Dec	http://aris.gusc.lv/06Daugavpils/Research/AndrogenReceptor.doc androgen nuclear receptor: http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/AndrogenReceptor/Androgen1.htm http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/MineraloCorticoidReceptor/NR-A-G-P-R2AA2.htm Mineral corticoid receptors: http://aris.gusc.lv/06Daugavpils/Research/MinerCorticoidAldosteron.pdf
7.	4. Janv	Genom **HOMEOSTASIS** instruments DNA methyl transferases: DNMT1HhaI;DNMT3GC ≡CG http://aris.gusc.lv/ChemFiles/hhaiDNAmethylCtransferKeny/C5MethTransferGoodSell11/MethylTrans11.doc Methylation Protein **DNMT3** experimental research task:/Research/DNAmethylTransferase.doc; **Zn^{2+}** ions DNA Medical Chemistry zinc finger motifs on DNA strands: /hhaiDNAmethylCtransferKeny/methmast.htm
8.	11. Jan	http://aris.gusc.lv/ChemFiles/Aquaporins/AquaPorin1.htm **Aquaporins** cell membranes crosing **H_2O**, **O_2**, **NO** transport proteins. The osmosis against osmolar concentration gradient in human body.task:/Research/Aquaporine0.pdf;/Research/Aquaporine1.pdf

RSU dep. Human Physiology and Biochemistry - Assistant Professor, Āris Kaksis.

SSNMFv20_CFUBK_025_B1, SSNMFv21_CFUBK_025_B1

Literature : http://aris.gusc.lv/2022MFArzRudBkurss.pdf; 2022. gada 36 publicationss.

1. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/Data_bookSpring2015CTL.pdf
2. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/ColigatConcOsmosOxRedL.pdf
3. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/ColigativePropertiesL.pdf
4. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/OxRedBiologicalW.doc
5. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/ElektrodsM.doc
6. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/MembraneElektrodsLat.pdf
7. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/ThermEquilibrKinEnzL.pdf
8. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/BioThermodynamics.pdf
9. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/BioThermodynamicAttractor7-36L.pdf
10. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/KineticsLat.pdf
11. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/74LidzsvarsDaba.pdf
12. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/H2OBuferCO2L.pdf
13. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/H2ODissociationLat.pdf
14. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/BufferSolutionLat202215.pdf
15. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/AtomBondMolForceL.pdf
16. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/34AtomaUzbuveS.pdf
17. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/CrystalloGraphyL.pdf
18. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/4KimiskaSaite.pdf
19. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/4Kompleksi.pdf
20. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/4HydrogenBondL.pdf
21. Ā.Kaksis RSU 2022:http://aris.gusc.lv/NutritionBioChem/38Olbalt10311.pdf
22. Ā.Kaksis RSU 2022:http://aris.gusc.lv/NutritionBioChem/32ProteinsLatC.pdf
23. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/CarbohydratesProteinsL.pdf
24. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/Lipidi.pdf
25. Ā.Kaksis RSU 2022:http://aris.gusc.lv/06Daugavpils/Research/LipdBiLayerMembLat.pdf
26. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/LipCholestFatSACL.pdf
27. Ā.Kaksis RSU 2022: http://aris.gusc.lv/NutritionBioChem/35Ogl45Hidr150211.pdf
28. Ā.Kaksis RSU 2022: http://aris.gusc.lv/NutritionBioChem/12CarbohydratesDisacchari.pdf
29. Ā.Kaksis RSU 2022: http://aris.gusc.lv/NutritionBioChem/38Olbalt10311.pdf
30. Ā.Kaksis RSU 2022: http://aris.gusc.lv/NutritionBioChem/32ProteinsLatC.pdf
31. Ā.Kaksis RSU 2022: http://aris.gusc.lv/ChemFiles/FatAcLiverProt11/1/FABP8myp2PMP2.pdf
32. Ā.Kaksis RSU 2022: http://aris.gusc.lv/06Daugavpils/Research/HSAsLat.pdf
33. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/DNAproteinRNALS.pdf
34. Ā.Kaksis RSU 2022: http://aris.gusc.lv/BioThermodynamics/ImmunoGlobulASmedL.pdf
35. Ā.Kaksis RSU 2022: http://aris.gusc.lv/NutritionBioChem/39NuklSk310311.pdf
36. Ā.Kaksis RSU 2022:http://aris.gusc.lv/BioThermodynamics/FABPlipocalinsS.pdf