

**1 Okt 2 Install applications on Your computer: Raswin2.6, ISIS Draw4, ChemScape, FireFox 3.5.5, Mage**  
<http://aris.gusc.lv/index.html>; For Windows in adress: <http://aris.gusc.lv/InstallChemistryPC.html> and available for  
 MacOSX MacBook On Parallel Desktop: <http://aris.gusc.lv/InstallChemistryMac.html> runing XP2 Windows  
**Install applications Raswin2.6, ISIS Draw4, ChemScape, FireFox 3.5.5, Mage**  
 Computer preparation for molecules experimental research. Instalation.  
**Medical BioChemistry** 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.	2. Okt	Molecules geometric research $\text{CO}_2, \text{CO}_3^{2-}, \text{HCOOH}, \text{NH}_3, \text{H}_2\text{O}, \text{C}_2\text{H}_4, \text{C}_2\text{H}_2, \text{PCl}_5, [\text{Al}(\text{OH})_6]^{3-}$ : <a href="http://aris.gusc.lv/06Daugavpils/Research/VSEPR-A.doc">http://aris.gusc.lv/06Daugavpils/Research/VSEPR-A.doc</a> : Molecular coordinates data research <a href="http://aris.gusc.lv/ChemFiles/ComplexCompounds/PensilvaniaLebanonUniv/PensilvaniaLebanonUniv/VSEPR_table_C0.html">http://aris.gusc.lv/ChemFiles/ComplexCompounds/PensilvaniaLebanonUniv/PensilvaniaLebanonUniv/VSEPR_table_C0.html</a>
3.	9. Okt	20 L-Amino acids Fisher projections: <a href="http://aris.gusc.lv/06Daugavpils/Research/Amineac20L.doc">http://aris.gusc.lv/06Daugavpils/Research/Amineac20L.doc</a> <a href="http://aris.gusc.lv/ChemFiles/MCDB108A/mcdb108a.html">http://aris.gusc.lv/ChemFiles/MCDB108A/mcdb108a.html</a> : Net constant calculation $\text{pK}_{\text{anet}}$
4.	9. Okt	Human body guard Glycoprotein immunoglobulin, <a href="http://aris.gusc.lv/06Daugavpils/Research/ImmunoGlobulA.doc">http://aris.gusc.lv/06Daugavpils/Research/ImmunoGlobulA.doc</a> <a href="http://aris.gusc.lv/ChemFiles/Aquaporins/AquaPorin1.htm">http://aris.gusc.lv/ChemFiles/Aquaporins/AquaPorin1.htm</a> : <a href="http://aris.gusc.lv/ChemFiles/Aquaporins/AquaPorin1-0.htm">http://aris.gusc.lv/ChemFiles/Aquaporins/AquaPorin1-0.htm</a> <b>Aquaporins</b> cell membranes crossing $\text{H}_2\text{O}, \text{O}_2, \text{NO}$ transport proteins. The osmosis against osmolar concentration gradient in human body. task: <a href="http://aris.gusc.lv/06Daugavpils/Research/Aquaporine0.doc">Research/Aquaporine0.doc</a> ; <a href="http://aris.gusc.lv/06Daugavpils/Research/Aquaporine1.doc">Research/Aquaporine1.doc</a>

Practical class topic at room Nr A409 (3\*45 min class) XXXday 16<sup>15</sup>÷18<sup>30</sup>,

1.	16. Oct	<b>Carbonic Anhydrase CA ENZYME</b> <a href="http://aris.gusc.lv/ChemFiles/CA/CAnhydraseII.htm">http://aris.gusc.lv/ChemFiles/CA/CAnhydraseII.htm</a> physiological $\text{pH}=7.36$ determinant in blood: <a href="http://aris.gusc.lv/06Daugavpils/Research/CA.doc">http://aris.gusc.lv/06Daugavpils/Research/CA.doc</a>
2.	23. Oct	$\text{O}_2, \text{H}^+, \text{HCO}_3^-$ shuttles Hemoglobin, Myoglobin molecules. Triplet $\bullet\text{O}\equiv\text{O}\bullet$ oxygen. <a href="http://aris.gusc.lv/06Daugavpils/Research/HromoProteinsA.doc">http://aris.gusc.lv/06Daugavpils/Research/HromoProteinsA.doc</a> ; <a href="http://aris.gusc.lv/ChemFiles/hemoglobEricMarzUMas/INDEX.htm">http://aris.gusc.lv/ChemFiles/hemoglobEricMarzUMas/INDEX.htm</a> oxygen $\text{O}_2$ and carbon dioxide $\text{CO}_2$ exchange ENZYMES in human organism Hemoglobin, CA: <a href="http://aris.gusc.lv/06Daugavpils/Research/HromoProteinsA.doc">http://aris.gusc.lv/06Daugavpils/Research/HromoProteinsA.doc</a>
3.	30. Oct	Heme coordinated iron(III) CATALASE <b>HOMEOSTASIS</b> activity $E_a$ in human organism geometric factor $A=0,13$ : <a href="http://aris.gusc.lv/06Daugavpils/Research/CATALASE.doc">http://aris.gusc.lv/06Daugavpils/Research/CATALASE.doc</a> <a href="http://aris.gusc.lv/06Daugavpils/Research/CATALASE.doc">http://aris.gusc.lv/06Daugavpils/Research/CATALASE.doc</a> ; <a href="http://aris.gusc.lv/ChemFiles/catalaseKenyon/cat1.htm">http://aris.gusc.lv/ChemFiles/catalaseKenyon/cat1.htm</a> Cyclo oxygenase: <a href="http://aris.gusc.lv/06Daugavpils/Research/COX.doc">Research/COX.doc</a> : Singlet $\bullet\text{O}-\text{O}\bullet$ oxygen Eicosatetraenoic acid <a href="http://aris.gusc.lv/06Daugavpils/Research/COXLab14.doc">http://aris.gusc.lv/06Daugavpils/Research/COXLab14.doc</a> ; source of: <b>prostaglandins PGs</b> , <b>prostacyclins PGI<sub>2</sub></b> , <b>thromboxanes TX<sub>2</sub></b> and <b>leukotrienes LTs</b> inhibitors: aspirin, warfarin, tylenol, paracetamol, ibuprofen: <a href="http://aris.gusc.lv/ChemFiles/CycloOxygenase/cycox.html">http://aris.gusc.lv/ChemFiles/CycloOxygenase/cycox.html</a>
4.	6. Nov	<a href="http://aris.gusc.lv/06Daugavpils/Research/NADalcoholDeHydr.doc">/Research/NADalcoholDeHydr.doc</a> : ENZYME <b>alcohol dehydrogenase ADH</b> . B3 vitamin tunneling hydride ion $\text{H}^-$ dissociates proton $\text{H}^+$ : <a href="http://aris.gusc.lv/ChemFiles/AlhoDeHydrogenase/NadDehydrogenase.htm">ChemFiles/AlhoDeHydrogenase/NadDehydrogenase.htm</a>
5.	13. Nov	<a href="http://aris.gusc.lv/06Daugavpils/Research/PhosphLipidBilayerMembranB.doc">/Research/PhosphLipidBilayerMembranB.doc</a> Cell <b>membrane</b> structure of human physiology: <a href="http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/Membrane/membrane/Membrane.html">http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/Membrane/membrane/Membrane.html</a> Cholesterol 0,9÷1/1 phospholipid ratio in human erythrocytes: <a href="http://aris.gusc.lv/06Daugavpils/Research/LipdBiLayerMembran.doc">Research/LipdBiLayerMembran.doc</a> <a href="http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/Cholest5ene3-20diol/Cholesterol5Membran.html">http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/Cholest5ene3-20diol/Cholesterol5Membran.html</a> START-START1-13: <a href="http://aris.gusc.lv/06Daugavpils/Research/Start.doc">http://aris.gusc.lv/06Daugavpils/Research/Start.doc</a> : <a href="http://aris.gusc.lv/ChemFiles/START/START.htm">http://aris.gusc.lv/ChemFiles/START/START.htm</a>
6.	20. Nov	<a href="http://aris.gusc.lv/06Daugavpils/Research/HSA.doc">http://aris.gusc.lv/06Daugavpils/Research/HSA.doc</a> Human serum albumin <b>HSA HOMEOSTASIS</b> physiology research with Medical Chemistry. Load in <b>HSA</b> water insoluble 7 fatty acids, Hem, bilirubin, aspirin, warfarin, ibuprofen, indometacin: <a href="http://aris.gusc.lv/ChemFiles/Albumin/cycox.html">http://aris.gusc.lv/ChemFiles/Albumin/cycox.html</a>
7.	27. Nov	<a href="http://aris.gusc.lv/06Daugavpils/Research/AndrogenReceptor.doc">http://aris.gusc.lv/06Daugavpils/Research/AndrogenReceptor.doc</a> androgen nuclear receptor: <a href="http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/AndrogenReceptor/Androgen1.htm">http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/AndrogenReceptor/Androgen1.htm</a> <a href="http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/MineraloCorticoidReceptor/NR-A-G-P-R2AA2.htm">http://aris.gusc.lv/ChemFiles/BilipidCholine/Membrane/MineraloCorticoidReceptor/NR-A-G-P-R2AA2.htm</a> Mineral corticoid receptors: <a href="http://aris.gusc.lv/06Daugavpils/Research/MinerCorticoidAldosteron.doc">http://aris.gusc.lv/06Daugavpils/Research/MinerCorticoidAldosteron.doc</a>
8.	4. Dec	Genom <b>HOMEOSTASIS</b> instruments DNA methyl transferases: DNMT1HhaI; DNMT3GC $\equiv$ CG <a href="http://aris.gusc.lv/ChemFiles/hhaiDNAmethylCtransferKeny/C5MethTransferGoodSell11/MethylTrans11.doc">http://aris.gusc.lv/ChemFiles/hhaiDNAmethylCtransferKeny/C5MethTransferGoodSell11/MethylTrans11.doc</a> Methylation Protein <b>DNMT3</b> experimental research task: <a href="http://aris.gusc.lv/06Daugavpils/Research/DNAmethylTransferase.doc">Research/DNAmethylTransferase.doc</a> ; $\text{Zn}^{2+}$ ions DNA Medical Chemistry zinc finger motifs on DNA strands: <a href="http://aris.gusc.lv/ChemFiles/hhaiDNAmethylCtransferKeny/methmast.htm">/hhaiDNAmethylCtransferKeny/methmast.htm</a>