2018 Antibody Building (Immunoglobulin IgG1) antigen binding glycoprotein										
First Name: Surname: Group N° Med Bio Chemist									•	
Task for practical studies: http://aris.gusc.lv/06Daugavpils/Research/ImmunoGlobulASmed.doc										
Molecule viewers: ChemScape MDL RasMol MAGE SISIS Draw FireFox v.3.5.5										
			on Menu Stripe)	Ball &					lor scheme 1965	
Atom N		Symbol			,	Valence l	_	-	tent Journal	
Carbon			Gray lightly or	Black		4	,	-	n of scientists	
Hydrog		\mathbb{H}	White			1		• /	uling, Koltun	
Oxyger		O	Red	•	or accepto	_	- '		ic modeling	
Nitroge	en	N	Bluish	3 + 1	(donor ac	ceptor lig	gand up	Protein Back	bone is Cα trace	
to 4)		C	X 7.11			2				
Sulfur	.04	S P	Yellow Intensity	uo doela		-2,				
Phosph Sodium		\mathbf{Na}^{+}	Blue	ve dark	+1 (coord	5 (&		Polypentide.	of Amino Acids	
	sium ion	Mg^{2+}	Green		+1 (coord				: Hydrophobic	
Calciur		Ca ²⁺	Gray Dai		+2 (coord				pH=7.36	
Iron ior		Fe ²⁺	Yellow Gr		+2 (coord				OO negative	
Iron ion		Fe ³⁺	Yellow Gr	_	+3 (coord		1 /		H ₃ ⁺ positive	
				~	`		· / I		•	
Antigenic determined A B AB O blood groups: http://aris.gusc.lv/06Daugavpils/Research/33BloodGroupABO.doc 1. Using HomeWork: http://aris.gusc.lv/06Daugavpils/Research/Amineac20LS.doc										
What 20 amino acids make up proteins call them using three letter and one letter Amino Acid abbreviations?										
Which are simplest and largest amino acid of 20 write its molar mass g/mol?!										
1	_	5	_	9	_	13	_	17	_	
2	_	6	_	10	_	14	_	18	_	
3	-	7		11	_	15	_	19	-	
4	-	8	-	12	-	16	-	20	-	
simplestlargest										
In FireFox3.5.5 http://aris.gusc.lv/ChemFiles/ChimAntibodyMarz/INDEX.htm choose of the										
molecule AntibodyMarz home page and investigate Immunoglobulin molecule for										
Lysozime binding Anti-Body										
2. How are made backbone of polypeptide sequence chains and which atom of amino acid is responsible for										
backbone trace formation? Point four αCarbons of Amino Acids and draw Backbone trace tetra peptide 3D										
molecular model picture! Write the <u>tetra</u>										
Peptide chain sequence us:								·		
0+							three letter Amino Acid names			
							starting from N-terminus and			
finishing with C-terminus !										
H ₃ N ⁺										
С								C <mark>OO</mark>		
Call terminus										
N-termin							minus amino acid!			
							N-terminus Amino Acid:			
C-terminus Amino Acid:										
Draw inside frame-boxes three peptide bonds for given tetra peptide molecular model picture! 3. What amino acid is N-terminus and C-terminus on Light chains?										
Draw inside frame-boxes three peptide bonds for given tetra peptide molecular model picture!										
3. What amino acid is N-terminus and C-terminus on Light chains?										
4. What amino acid is N-terminus and C-terminus on Heavy chains?										
5. Haw	many amino	acids con	stitute Light an	d Heav	y chains?					
6. What fife 5 intermolecular forces are known in biochemistry of life systems?										
••••										

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6a. What means **disulfide**, -S-S-bonds? Draw its structural presentation on your report notes between two **2** Cys amino acid residues implicated into two **2** neighbor protein chains as **backbone**?!

C-terminus

N-terminus

N-terminus

- 7. What is Immunoglobulin Domain C_L?
- **8.** Haw many **beta sheets** made each **Ig** core domain and haw mach **beta strands** constitutes them respectively?
- **9.** What mean and to what medium faced are oriented laying polar/polar or/and **charged** negative as **charged**positive **amino acid** side chains?
- **10.** Where are oriented hydrophobic side chains?
- 11. Haw many intermolecular forces of five known fold Ig protein chain?
- **13**. Writ foure molecular structure units of inter molecular bonds containing 12 tertiary structure **domains** of immunoglobulin molecule!

1.... **2**..... **3**... **4**....

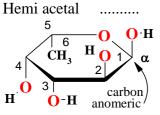
14. What Physiological functions and localization in Cells as Organelles of Lysozime enzyme? **a**....

b...

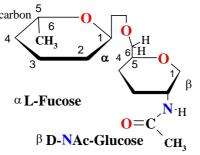
- 15. What are $F(ab')_2$ in IgG chains?
- **16.** What are two **2 paratopes**?
- 17. What are Fc chains?
- **18.** Haw many **Light chains** and **Heavy chains** are?
- 19. How much disulfide bonds has F(ab')₂ structure?
- **20.** What chains are bound with four 4 -S-S-?

...two disulfide bonds connect

- **21.** What structural components compose **glycoproteins**?
- 22. Which amino acid has N-linked glycoside bond?
- **23.** Write the immunologic marker fucose $\alpha 2 = >6$ linked to GlcNAc Haworth projections::



Carbon 6 is -CH₃ rather than -CH₂-OH



Show with arrow in cyclic α-L-Fucose hemi acetal oxygen -O- atom and complete acetal-glycoside oxygen-O- atom linked to β GlcNAc!