



wwPDB/EMDataBank EM Map/Model Validation Summary Report ⓘ

Mar 2, 2017 – 12:53 pm GMT

PDB ID : 2W4T
EMDB ID: : EMD-1561
Title : ISOMETRICALLY CONTRACTING INSECT ASYNCHRONOUS FLIGHT
MUSCLE
Authors : Wu, S.; Liu, J.; Reedy, M.C.; Tregear, R.T.; Winkler, H.; Franzini-Armstrong,
C.; Sasaki, H.; Lucaveche, C.; Goldman, Y.E.; Reedy, M.K.; Taylor, K.A.
Deposited on : 2008-12-02
Resolution : 35.00 Å(reported)

This is a wwPDB/EMDataBank EM Map/Model Validation Summary Report
for a publicly released PDB/EMDB entry.

We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
<http://wwpdb.org/validation/2016/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

MolProbity : 4.02b-467
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : recalc29047

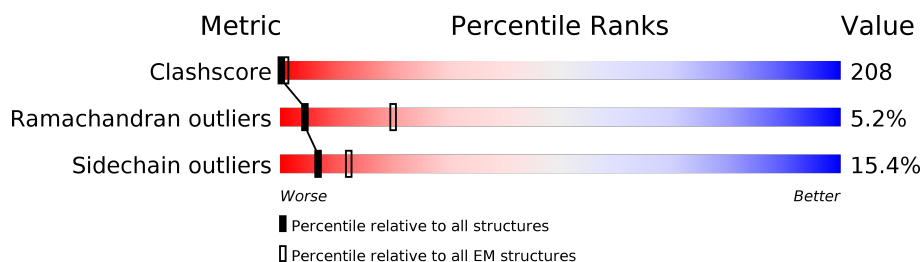
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 35.00 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.




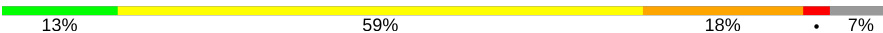
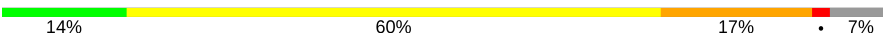


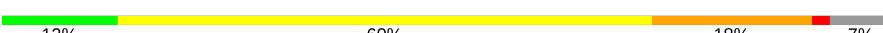
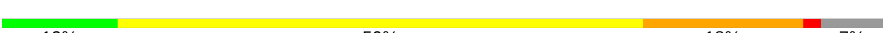




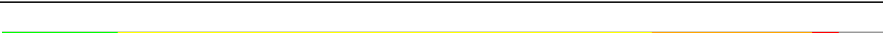


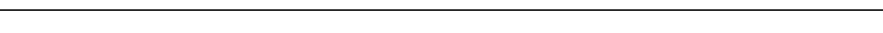




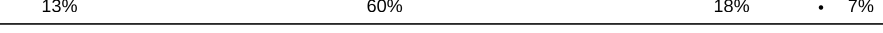

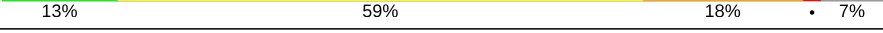



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	125131	1336
Ramachandran outliers	121729	1120
Sidechain outliers	121581	1026

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	1-C	831	13% 59% 18% • 7%
1	10-C	831	13% 60% 18% • 7%
1	11-C	831	14% 59% 18% • 7%
1	12-C	831	13% 59% 18% • 7%
1	13-C	831	14% 59% 18% • 7%
1	14-C	831	13% 59% 18% • 7%
1	15-C	831	13% 59% 18% • 7%
1	16-C	831	13% 59% 18% • 7%
1	17-C	831	14% 59% 18% • 7%


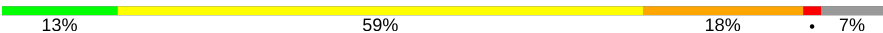
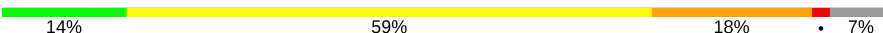


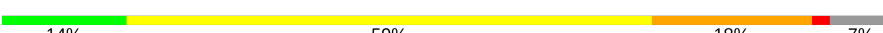
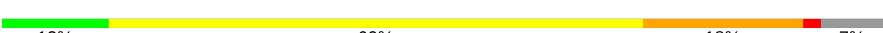




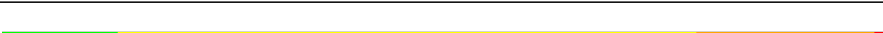


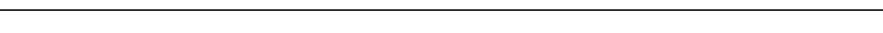


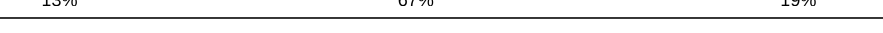
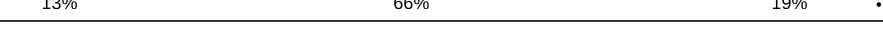
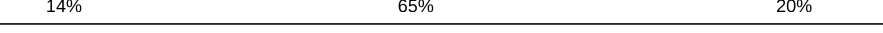
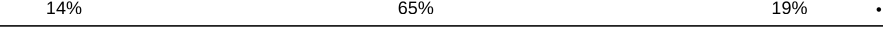
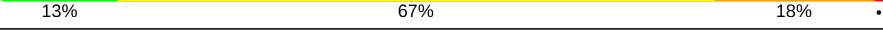
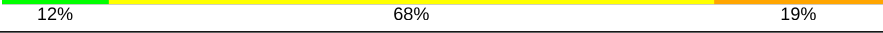
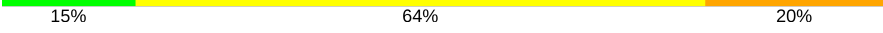

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Mol	Chain	Length	Quality of chain
1	18-C	831	
1	19-C	831	
1	2-C	831	
1	20-C	831	
1	21-C	831	
1	22-C	831	
1	23-C	831	
1	24-C	831	
1	25-C	831	
1	26-C	831	
1	27-C	831	
1	28-C	831	
1	29-C	831	
1	3-C	831	
1	30-C	831	
1	31-C	831	
1	32-C	831	
1	33-C	831	
1	34-C	831	
1	35-C	831	
1	36-C	831	
1	37-C	831	
1	38-C	831	
1	39-C	831	
1	4-C	831	


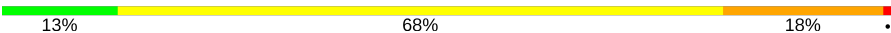
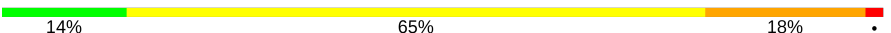


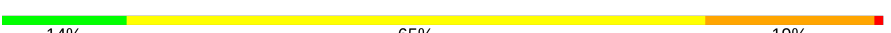
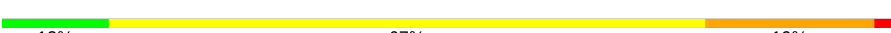




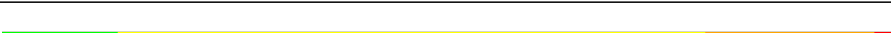


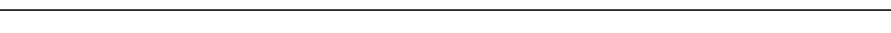

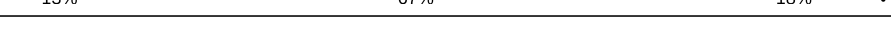
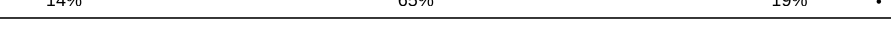
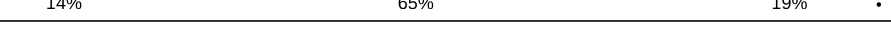
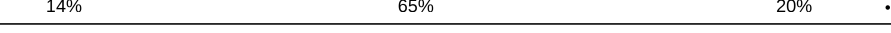
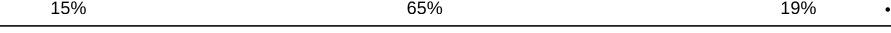

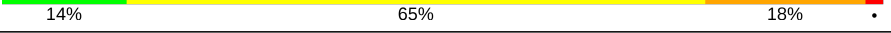
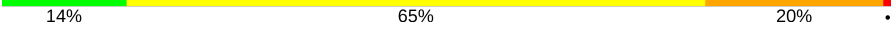
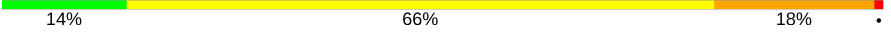
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Mol	Chain	Length	Quality of chain
1	40-C	831	
1	41-C	831	
1	42-C	831	
1	43-C	831	
1	5-C	831	
1	6-C	831	
1	7-C	831	
1	8-C	831	
1	9-C	831	
2	1-Y	136	
2	10-Y	136	
2	11-Y	136	
2	12-Y	136	
2	13-Y	136	
2	14-Y	136	
2	15-Y	136	
2	16-Y	136	
2	17-Y	136	
2	18-Y	136	
2	19-Y	136	
2	2-Y	136	
2	20-Y	136	
2	21-Y	136	
2	22-Y	136	
2	23-Y	136	


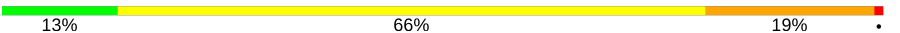
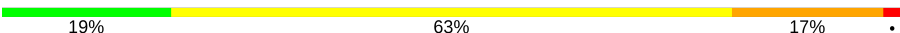
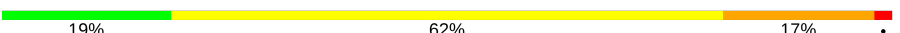
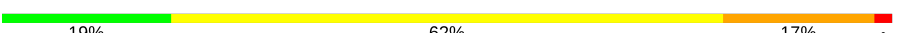
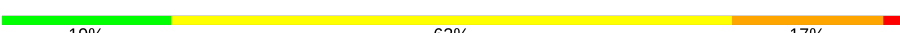
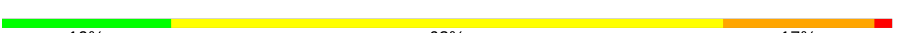




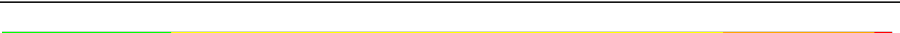


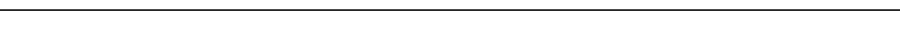
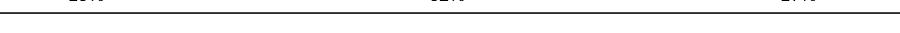
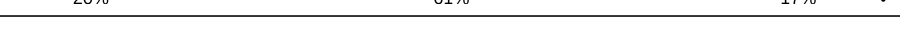
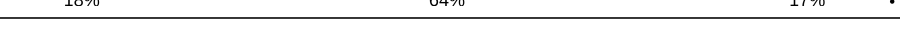
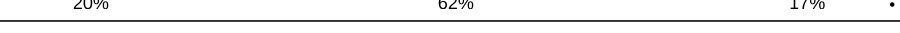
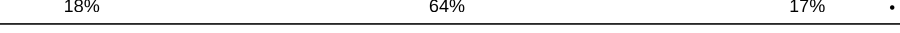
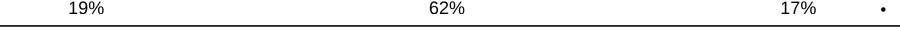
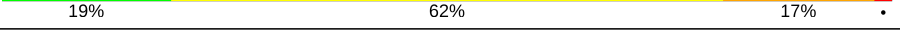
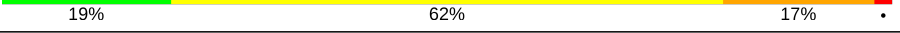
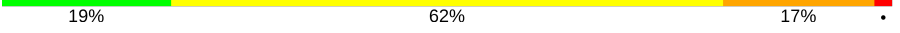
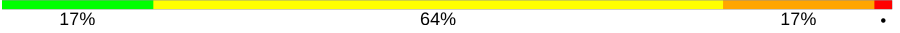
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Mol	Chain	Length	Quality of chain
2	24-Y	136	
2	25-Y	136	
2	26-Y	136	
2	27-Y	136	
2	28-Y	136	
2	29-Y	136	
2	3-Y	136	
2	30-Y	136	
2	31-Y	136	
2	32-Y	136	
2	33-Y	136	
2	34-Y	136	
2	35-Y	136	
2	36-Y	136	
2	37-Y	136	
2	38-Y	136	
2	39-Y	136	
2	4-Y	136	
2	40-Y	136	
2	41-Y	136	
2	42-Y	136	
2	43-Y	136	
2	5-Y	136	
2	6-Y	136	
2	7-Y	136	

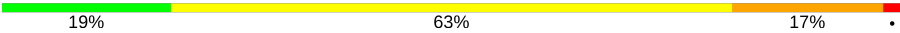
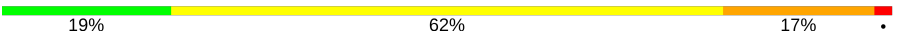
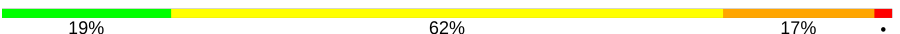
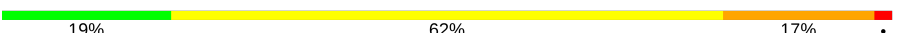
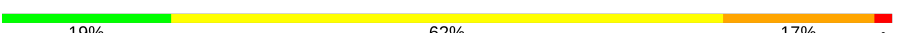
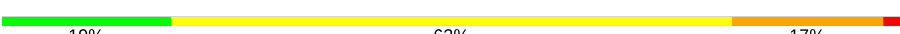
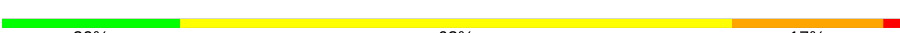




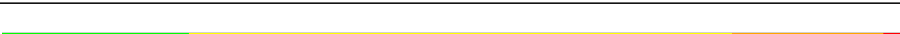



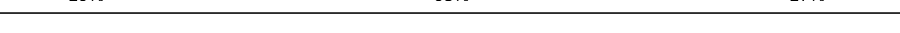
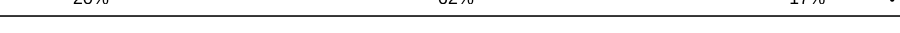
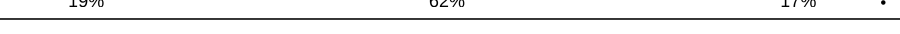
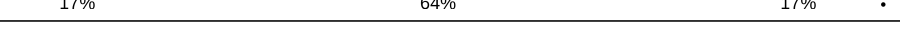
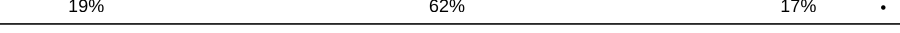
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Mol	Chain	Length	Quality of chain
2	8-Y	136	 13%65%19%.
2	9-Y	136	 13%66%19%.
3	1-Z	151	 19%63%17%.
3	10-Z	151	 19%62%17%.
3	11-Z	151	 19%62%17%.
3	12-Z	151	 19%63%17%.
3	13-Z	151	 19%62%17%.
3	14-Z	151	 19%63%17%.
3	15-Z	151	 19%62%17%.
3	16-Z	151	 19%62%17%.
3	17-Z	151	 19%63%17%.
3	18-Z	151	 19%62%17%.
3	19-Z	151	 20%62%17%.
3	2-Z	151	 19%63%17%.
3	20-Z	151	 19%62%17%.
3	21-Z	151	 20%61%17%.
3	22-Z	151	 18%64%17%.
3	23-Z	151	 20%62%17%.
3	24-Z	151	 18%64%17%.
3	25-Z	151	 19%62%17%.
3	26-Z	151	 19%62%17%.
3	27-Z	151	 19%62%17%.
3	28-Z	151	 19%62%17%.
3	29-Z	151	 17%64%17%.
3	3-Z	151	 19%62%17%.

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Mol	Chain	Length	Quality of chain
3	30-Z	151	 19%63%17%.
3	31-Z	151	 19%62%17%.
3	32-Z	151	 19%62%17%.
3	33-Z	151	 19%62%17%.
3	34-Z	151	 19%62%17%.
3	35-Z	151	 19%63%17%.
3	36-Z	151	 20%62%17%.
3	37-Z	151	 19%63%17%.
3	38-Z	151	 19%62%17%.
3	39-Z	151	 19%63%17%.
3	4-Z	151	 19%62%17%.
3	40-Z	151	 21%61%17%.
3	41-Z	151	 19%62%17%.
3	42-Z	151	 17%65%17%.
3	43-Z	151	 19%63%17%.
3	5-Z	151	 20%62%17%.
3	6-Z	151	 19%62%17%.
3	7-Z	151	 17%64%17%.
3	8-Z	151	 19%62%17%.
3	9-Z	151	 18%64%17%.

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 365543 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called MYOSIN HEAVY CHAIN, STRIATED MUSCLE.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	2-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	3-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	4-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	5-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	6-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	7-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	8-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	9-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	10-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	11-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	12-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	13-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	14-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	15-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	16-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	17-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
1	18-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	19-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	20-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	21-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	22-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	23-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	24-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	25-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	26-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	27-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	28-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	29-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	30-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	31-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	32-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	33-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	34-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	35-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	36-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	37-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0
1	38-C	772	Total 6215	C 3957	N 1067	O 1155	S 36	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
1	39-C	772	Total	C	N	O	S	0	0
			6215	3957	1067	1155	36		
1	40-C	772	Total	C	N	O	S	0	0
			6215	3957	1067	1155	36		
1	41-C	772	Total	C	N	O	S	0	0
			6215	3957	1067	1155	36		
1	42-C	772	Total	C	N	O	S	0	0
			6215	3957	1067	1155	36		
1	43-C	772	Total	C	N	O	S	0	0
			6215	3957	1067	1155	36		

- Molecule 2 is a protein called MYOSIN REGULATORY LIGHT CHAIN, STRIATED AD-DUCTOR MUSCLE.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	2-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	3-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	4-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	5-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	6-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	7-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	8-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	9-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	10-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	11-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	12-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	13-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	14-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		

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Mol	Chain	Residues	Atoms					AltConf	Trace
2	15-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	16-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	17-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	18-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	19-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	20-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	21-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	22-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	23-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	24-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	25-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	26-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	27-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	28-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	29-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	30-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	31-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	32-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	33-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	34-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	35-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		

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Mol	Chain	Residues	Atoms					AltConf	Trace
2	36-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	37-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	38-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	39-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	40-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	41-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	42-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		
2	43-Y	136	Total	C	N	O	S	0	0
			1088	687	173	219	9		

- Molecule 3 is a protein called MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	1-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	2-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	3-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	4-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	5-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	6-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	7-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	8-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	9-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	10-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	11-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		

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Mol	Chain	Residues	Atoms					AltConf	Trace
3	12-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	13-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	14-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	15-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	16-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	17-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	18-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	19-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	20-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	21-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	22-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	23-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	24-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	25-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	26-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	27-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	28-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	29-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	30-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	31-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	32-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		

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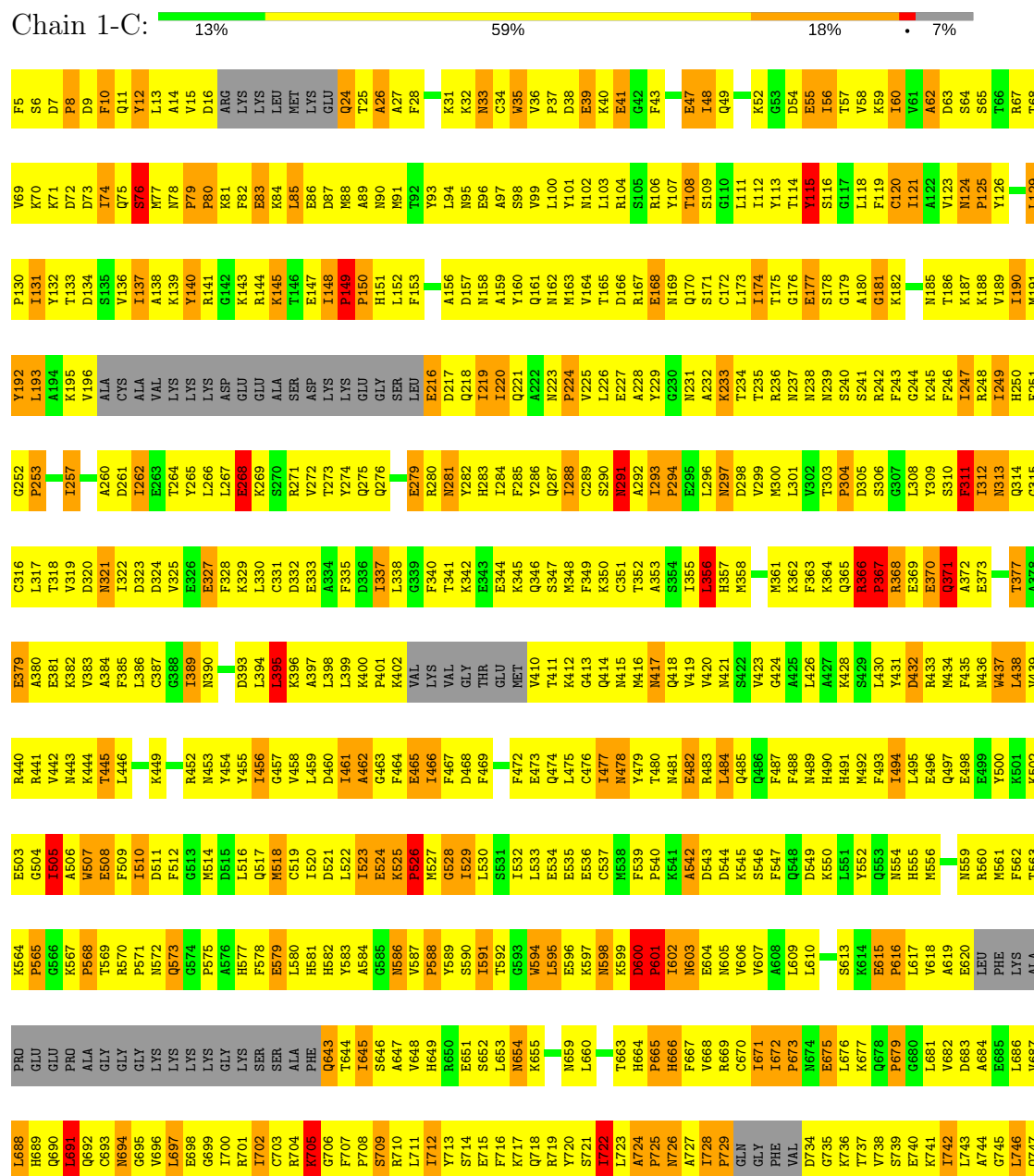
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Mol	Chain	Residues	Atoms					AltConf	Trace
3	33-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	34-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	35-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	36-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	37-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	38-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	39-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	40-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	41-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	42-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	43-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		

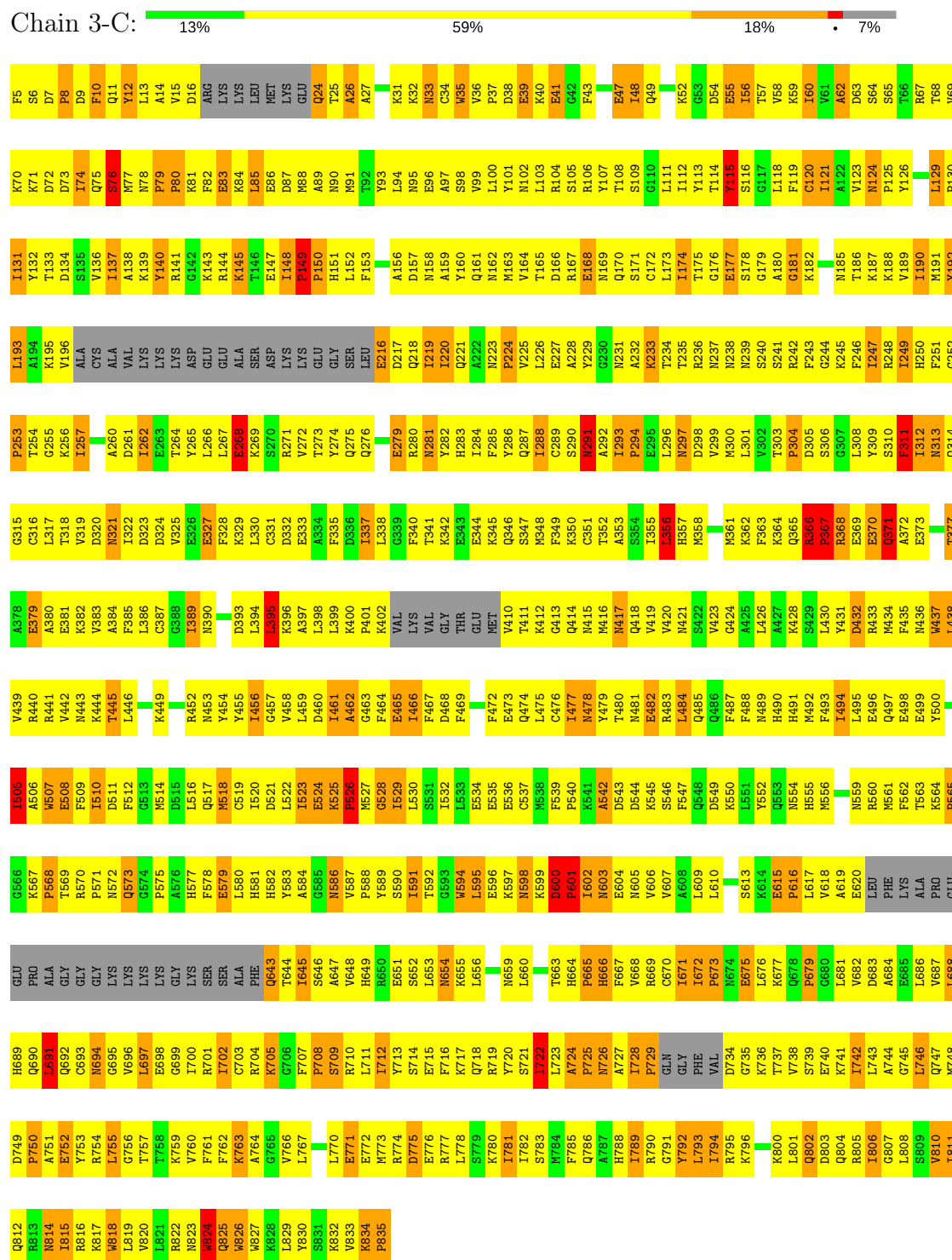
3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

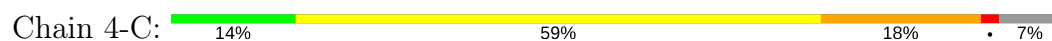
• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

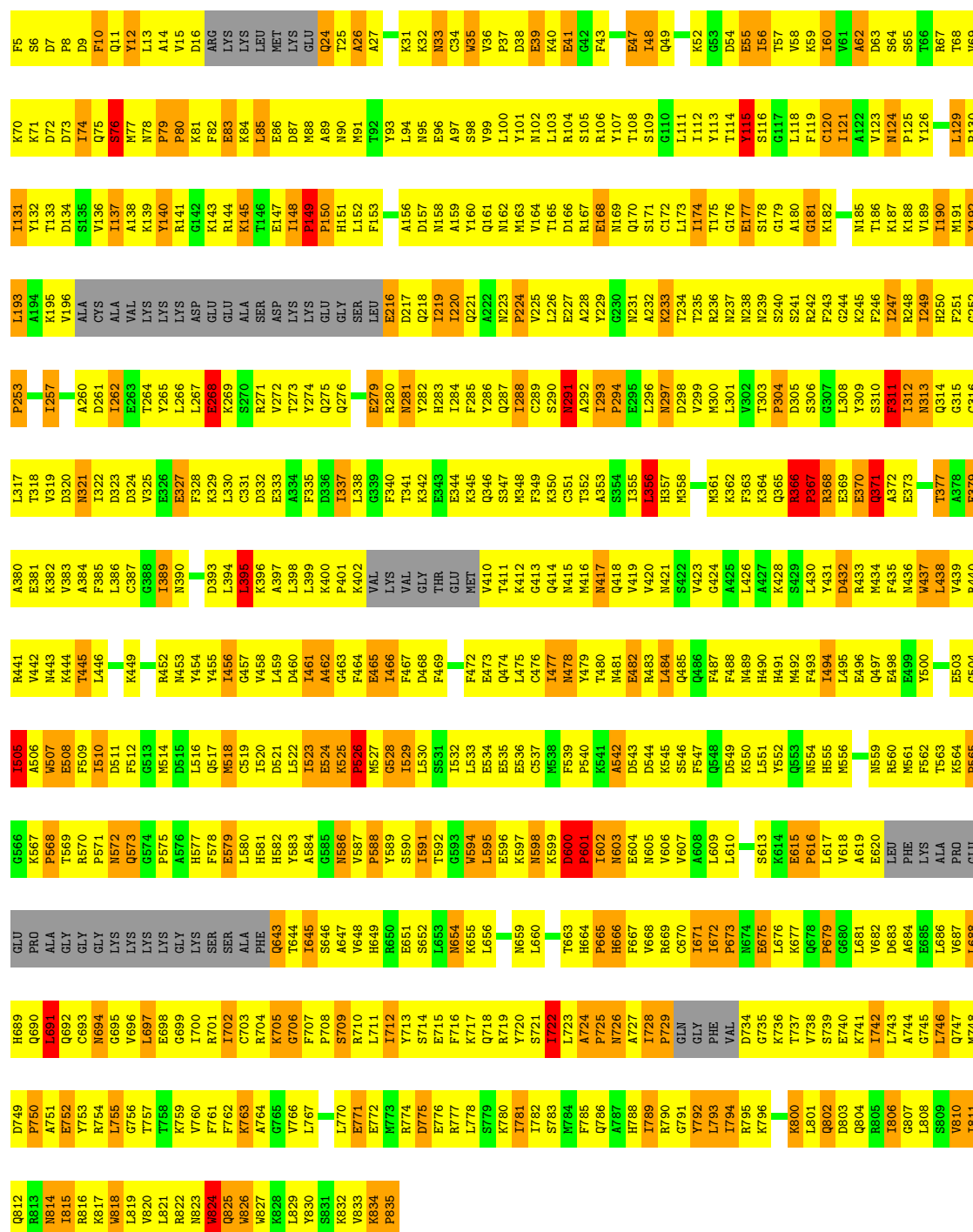


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

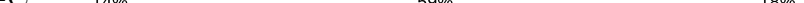


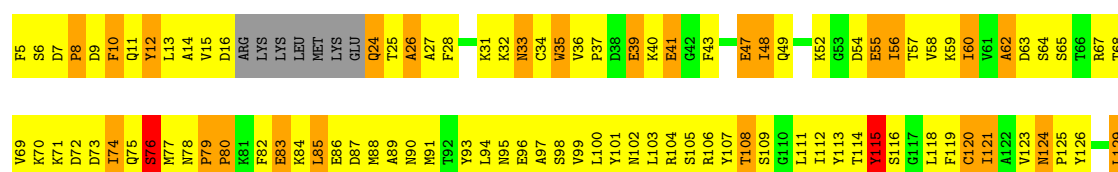
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE





- Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

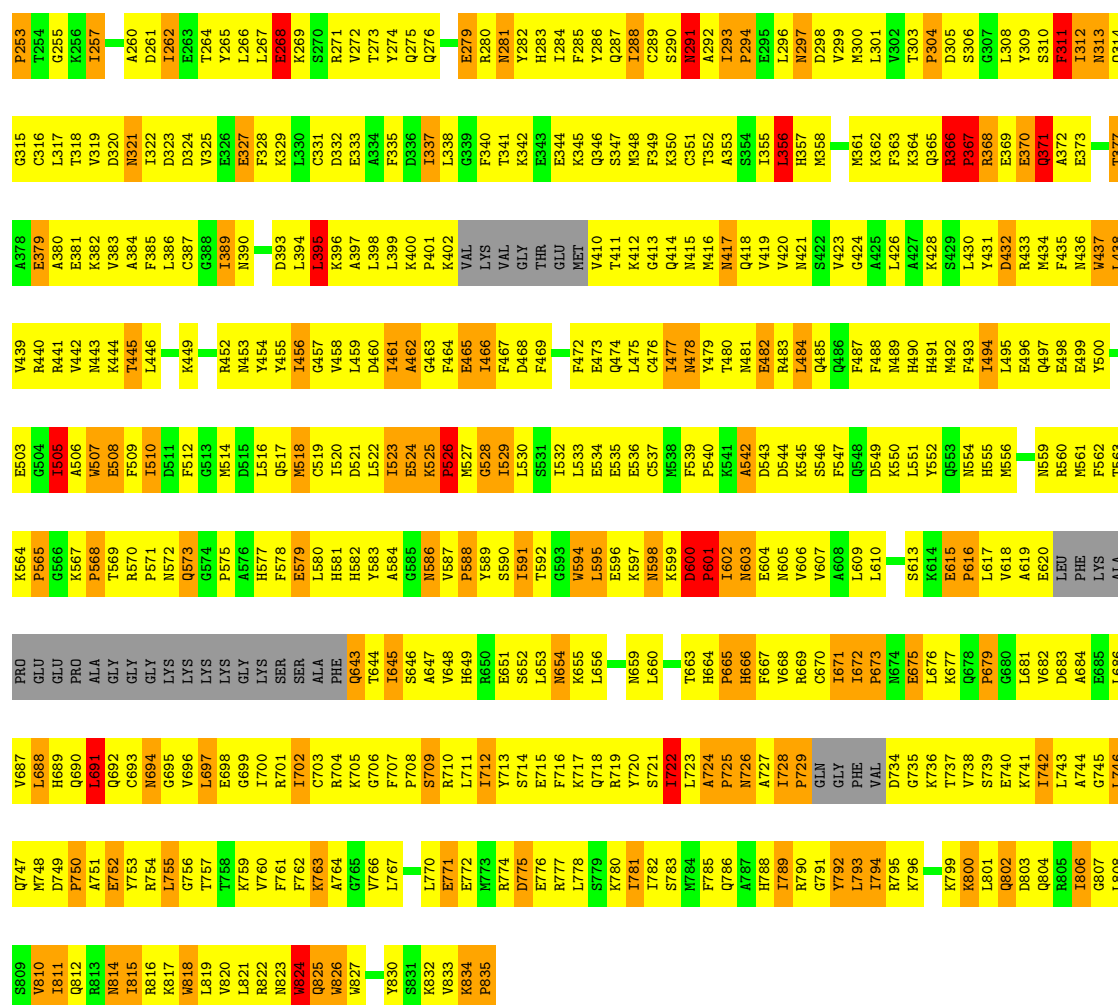
Chain 5-C:  14% 59% 18% 7%





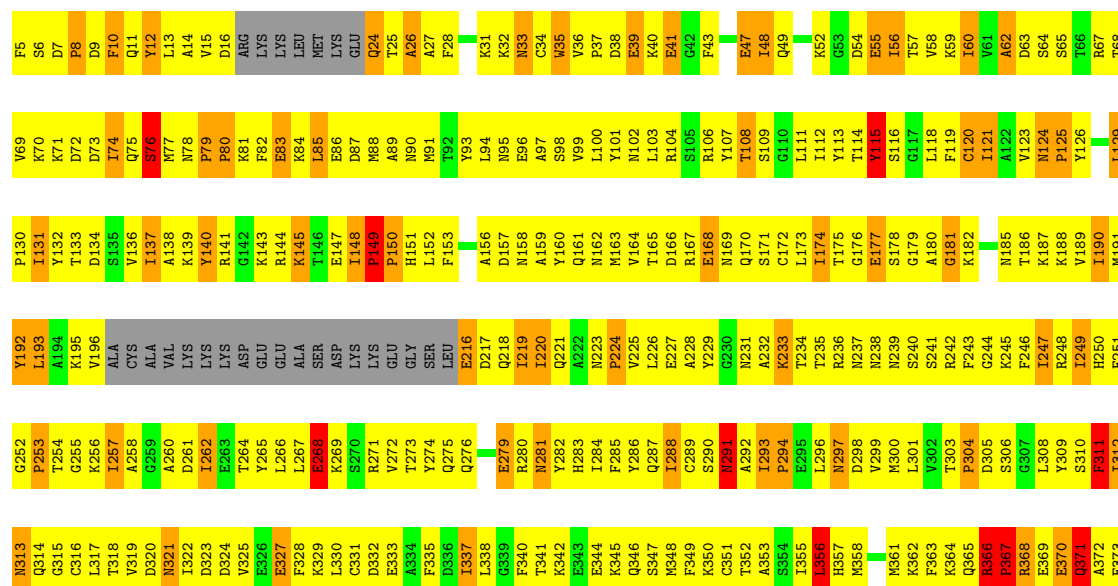
Frequency	Percentage
Daily	14%
Often	59%
Sometimes	18%
Never	7%

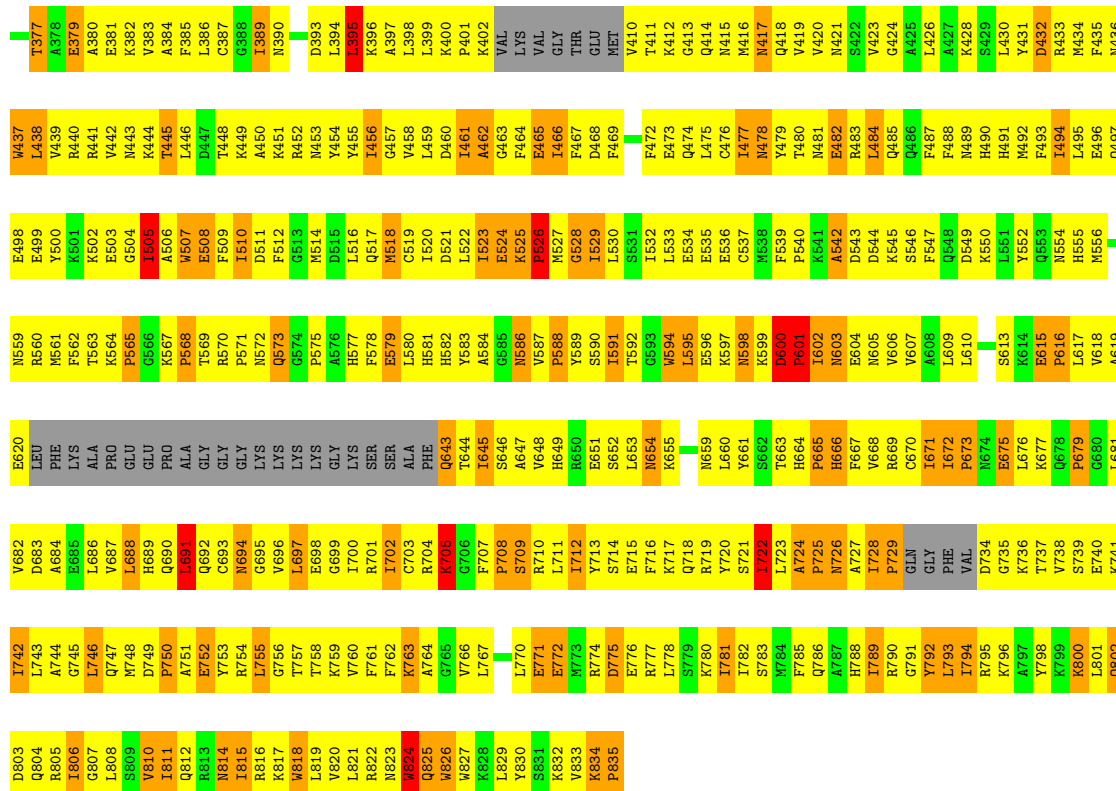




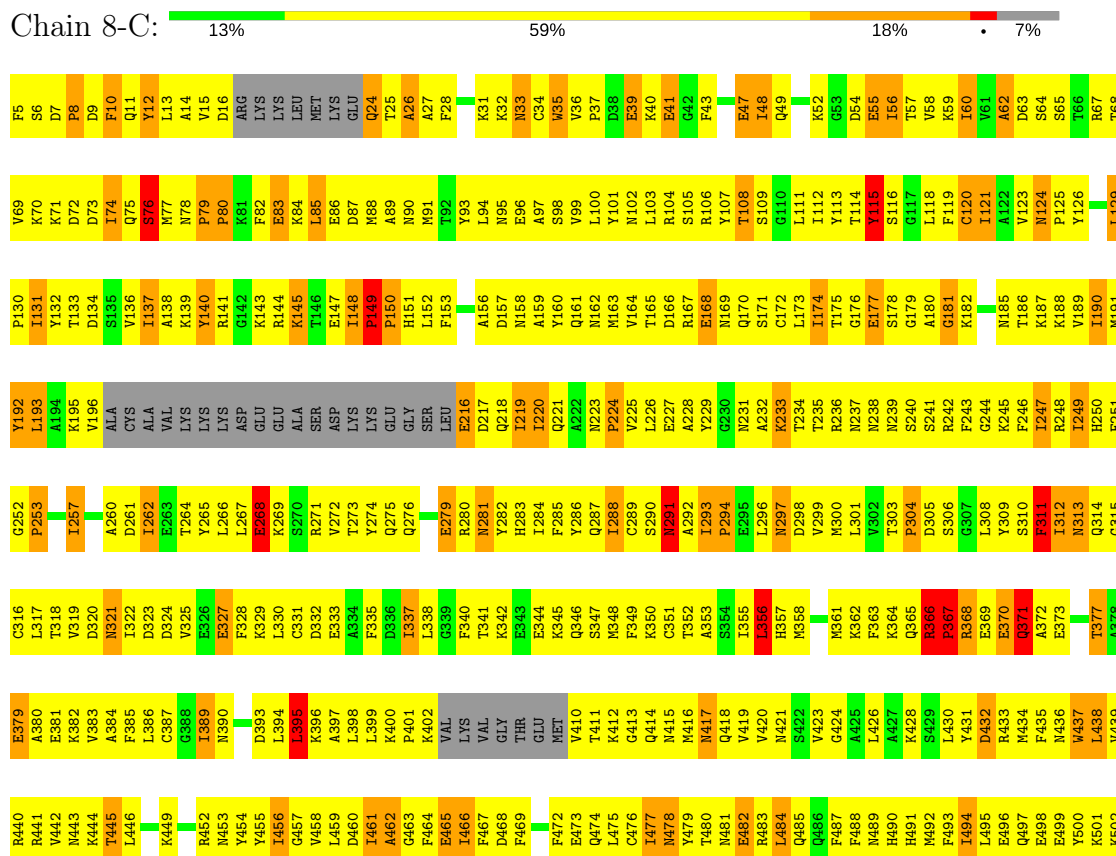
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

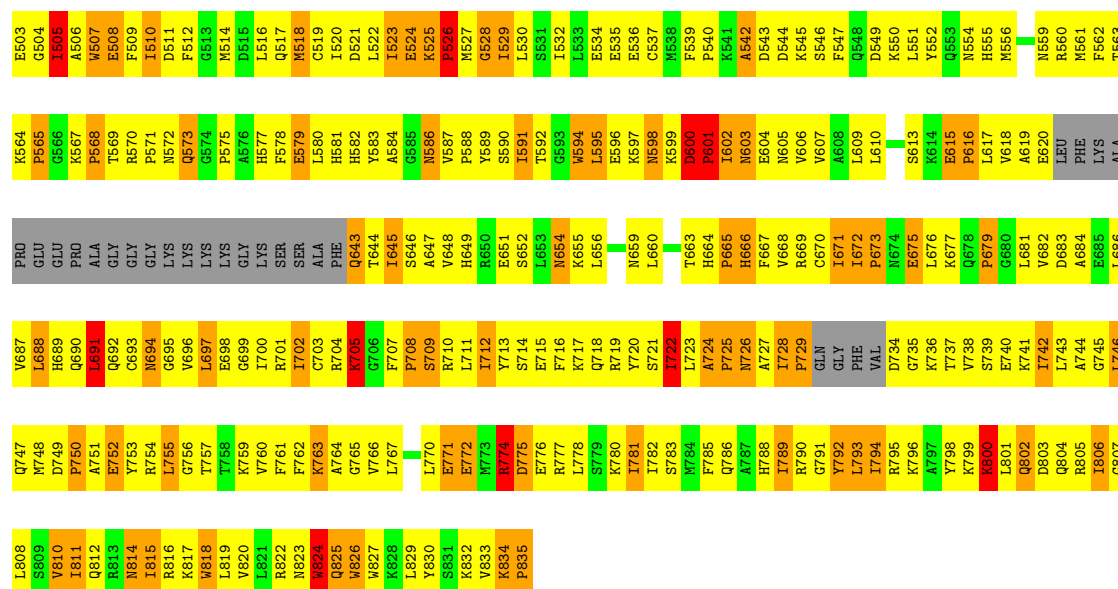
Chain 7-C: 12% 60% 18% 7%





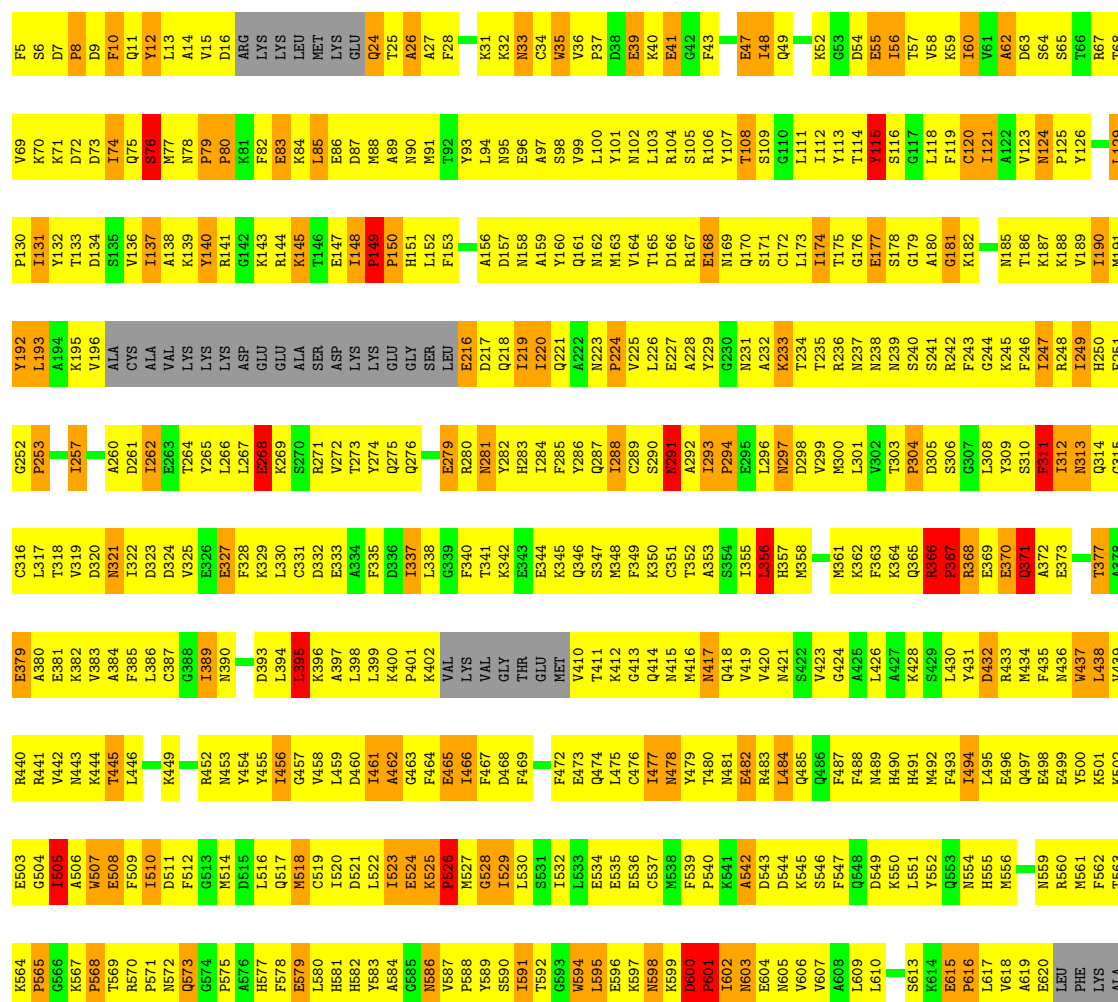
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

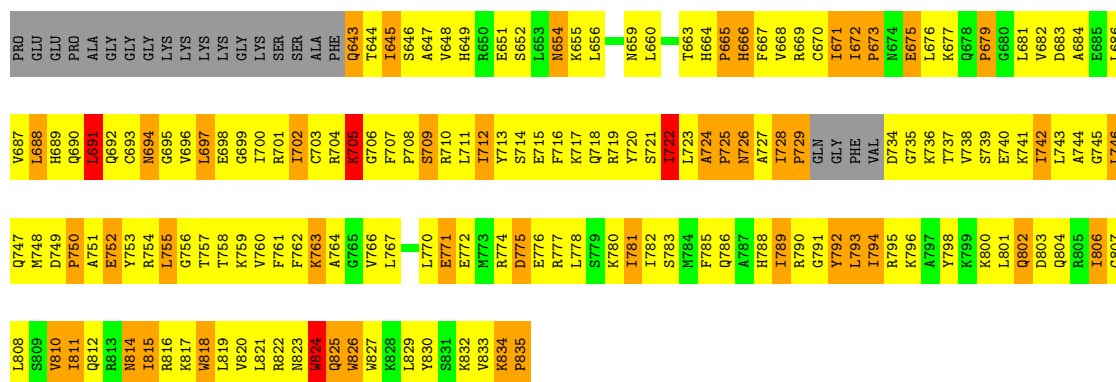




● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

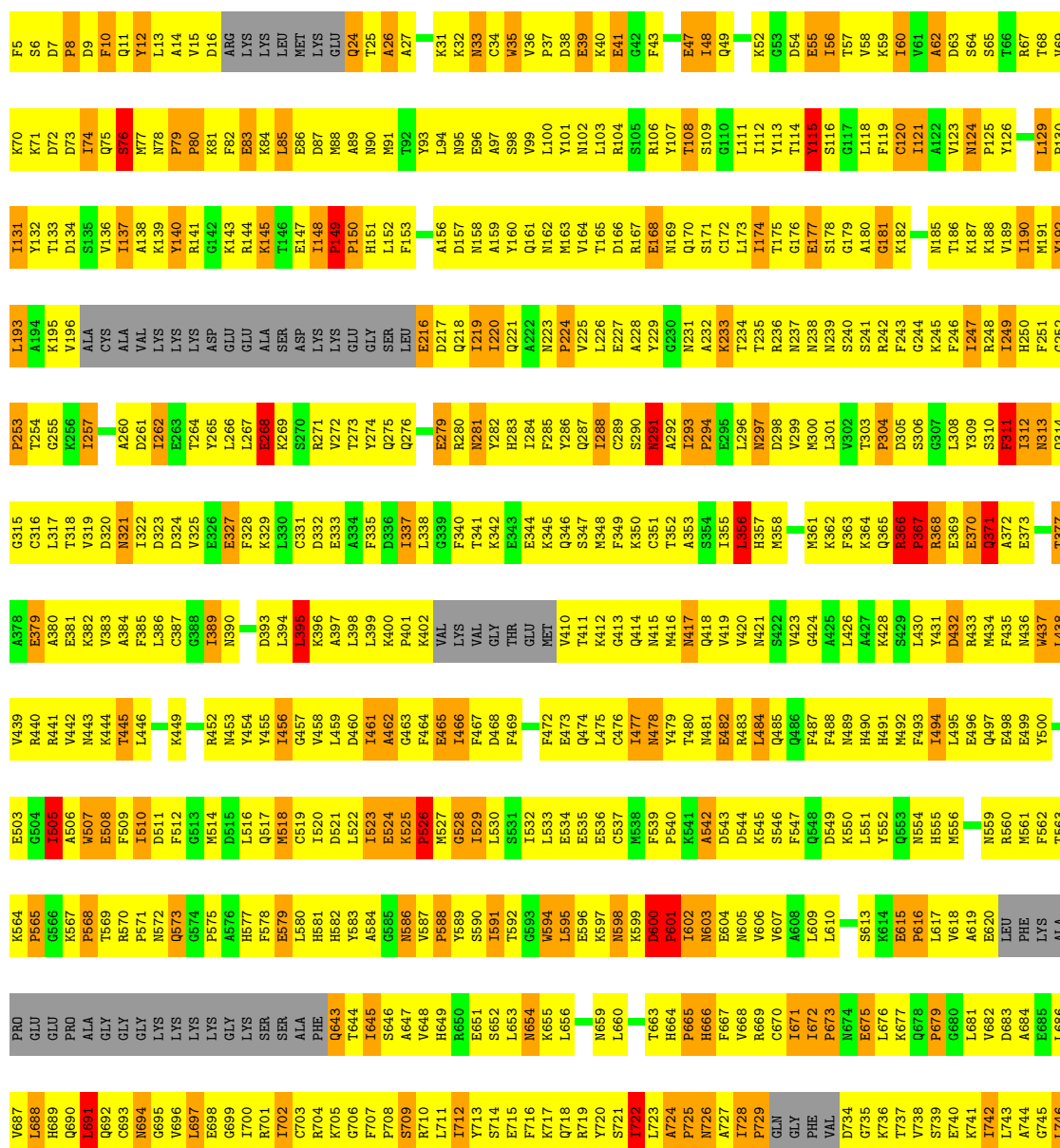
Chain 9-C: 13% 60% 18% 7%

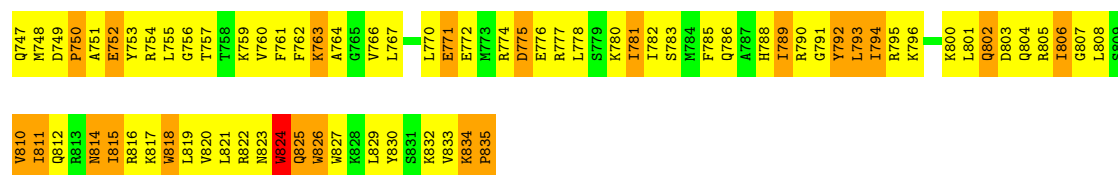




• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

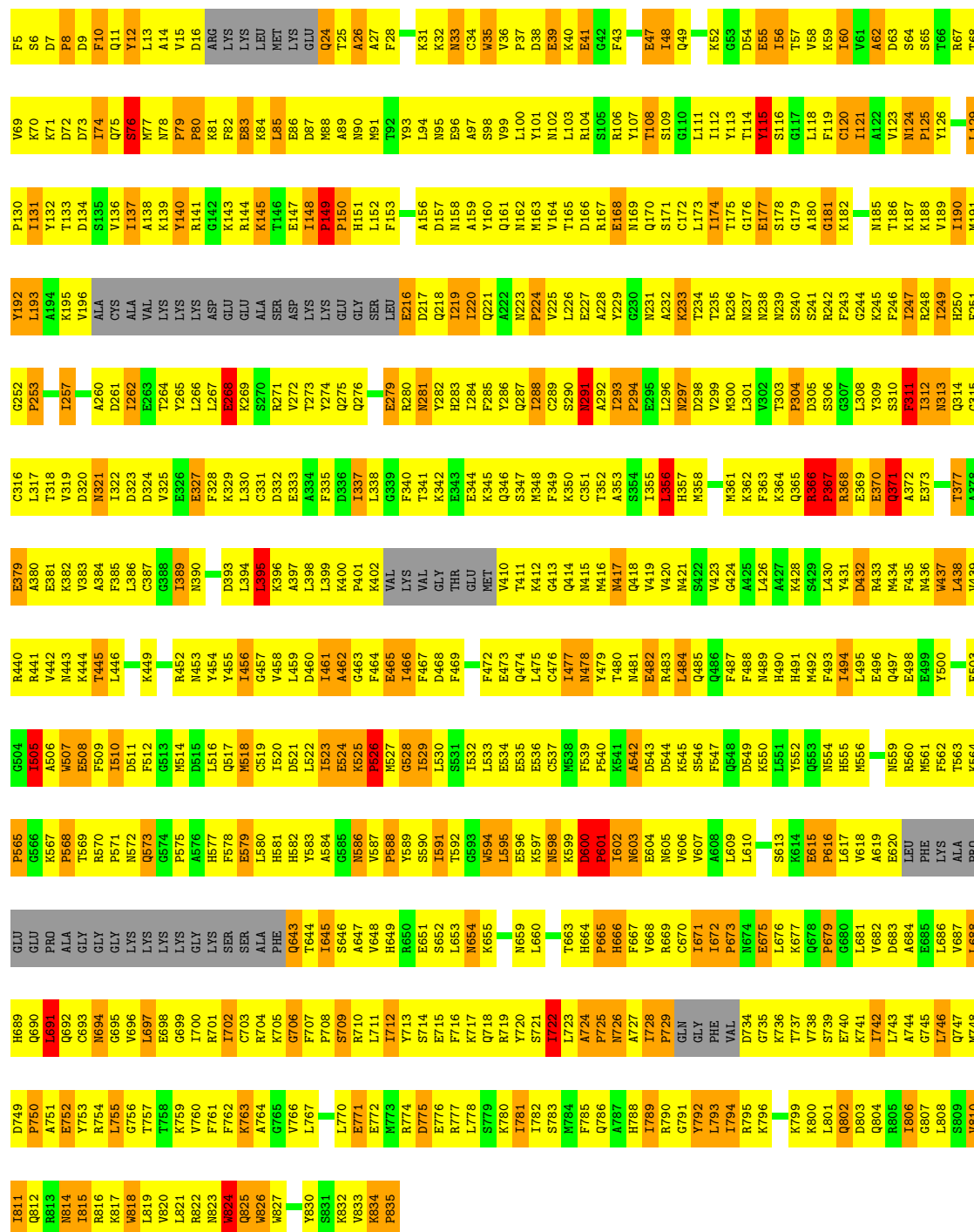
Chain 10-C: 13% 60% 18% 7%






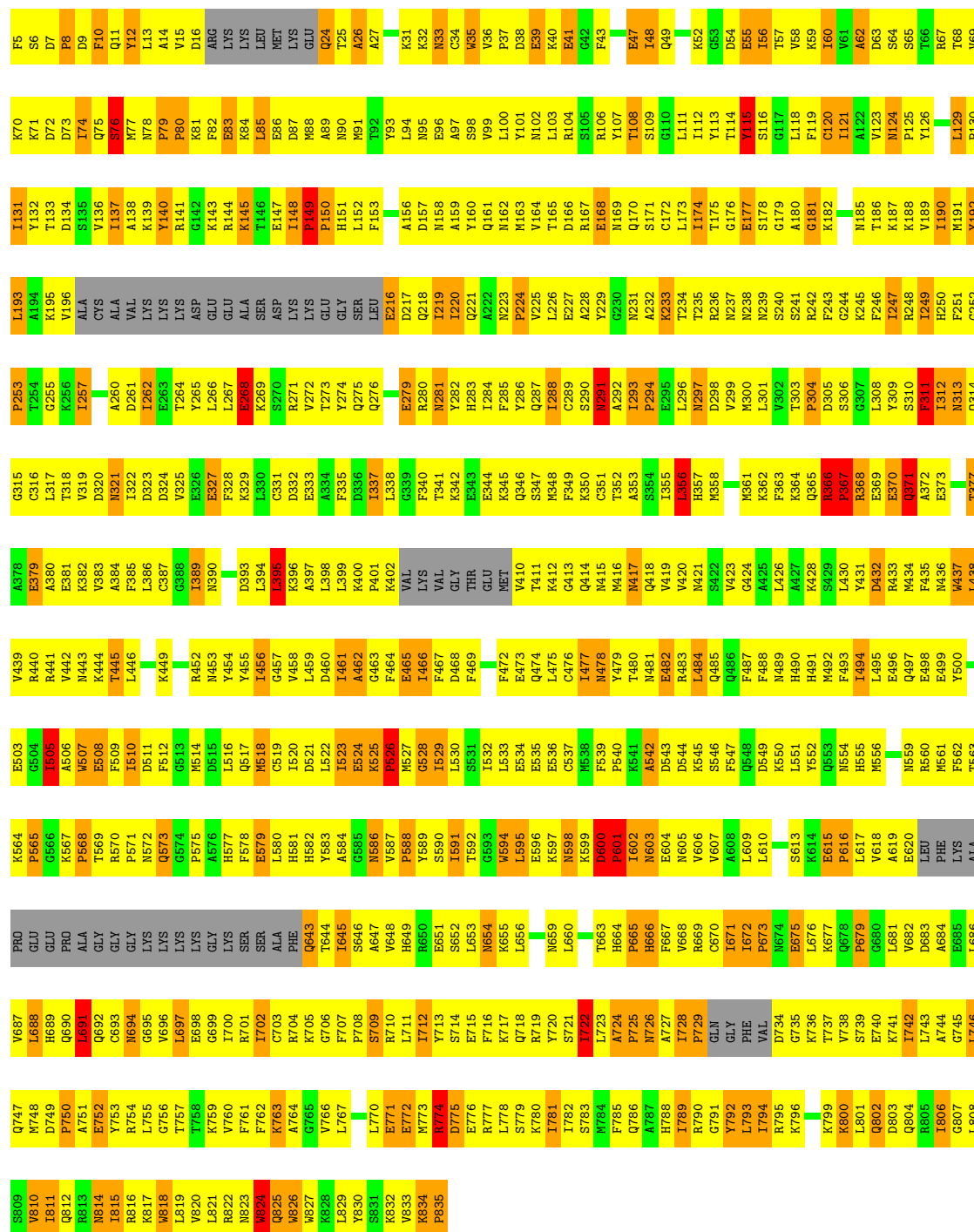
• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 11-C: 14% 59% 18% 7%



● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 12-C: 





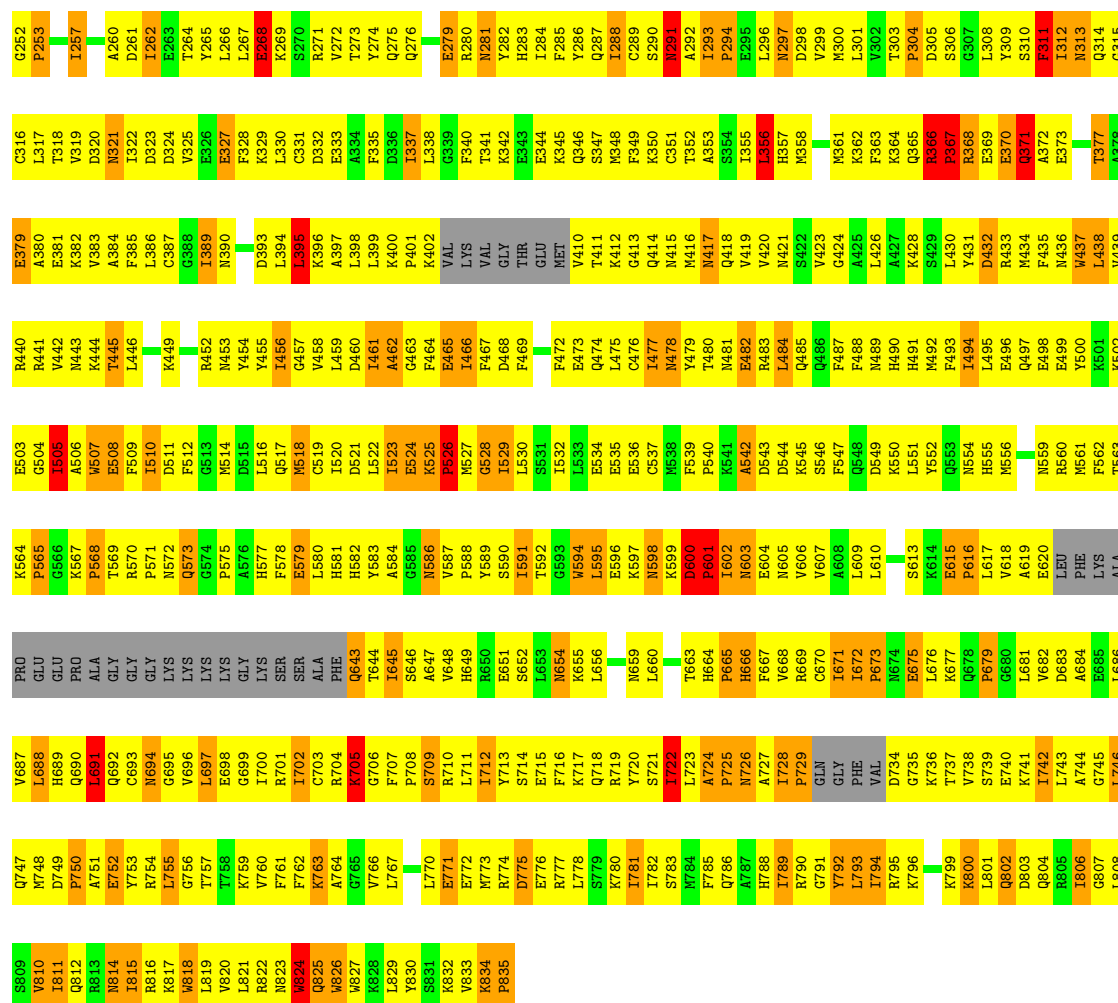
V69	K70	K71	D72	D73	I74	K75	S76	M77	N78	P79	P80	K81	F82	E83	K84	L85	E86	D87	M88	A89	N90	N91	T92	Y93	L94	N95	E96	A97	S98	V99	L100	I101	N102	L103	R104	S105	R106	I107	T108	S109	G110	L111	I112	I113	Y114	T115	Y116	S116	G117	L118	F119	C120	I121	A122	V123	N124	P125	Y126	T127
F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	A87	L88	L89	L90	L91	L92	L93	L94	L95	L96	L97	L98	L99	K31	K32	N33	C34	K35	V36	P37	D38	E39	K40	E41	G42	F43	E47	I48	Q49	K52	G53	D54	E55	I56	T57	V58	K59	P60	V61	A62	D63	S64	S65	T66	R67	T69		

P130	P131	P132	P133	P134	P135	P136	P137	P138	P139	P140	P141	P142	P143	P144	P145	P146	P147	P148	P149	P150	P151	P152	P153
Y192	L193	A194	K195	V196	ALA	CYS	ALA	VAL	LYS	LYS	LYS	ASP	GLU	GLU	ALA	SER	ASP	LYS	LYS	GLU	SER	L152	L153
G252	P253	I257	A260	D261	I262	E263	T264	L266	L267	E268	K269	S270	R271	A272	T273	T274	Q275	Q276	E279	R280	N281	Y282	T283
C316	L317	T318	T319	D320	N321	I322	D323	D324	L325	E326	E327	F328	K329	L330	C331	D332	E333	T334	F335	D336	I337	L338	G339
E379	A380	K381	K382	V383	A384	F385	L386	C387	C388	C389	N390	D393	L394	E395	L396	A397	L398	L399	P401	K402	VAL	LYS	VAL
R440	R441	V442	K443	K444	T445	L446	K449	R452	L453	Y454	Y455	I456	C457	L458	C459	L459	D460	I461	A462	F463	F464	I465	F467
E503	G504	T505	K506	K507	E508	F509	L510	F512	G513	M514	D515	L516	Q517	C519	L520	L521	L522	L523	E524	K525	P526	N527	G528
K564	P565	G566	K567	P568	T569	R570	P571	N572	G573	G574	P575	A576	H577	F578	L579	L580	H581	H582	Y583	A584	G585	N586	V587
PR0	GLU	GLU	PR0	ALA	GLY	GLY	GLY	LYS	LYS	LYS	GLY	LYS	LYS	SER	LYS	ALA	PHE	Q643	T644	S645	A646	V647	H648
L688	H689	K690	L691	Q692	C693	M694	G695	G696	L697	E698	G699	I700	R701	I702	C703	R704	K705	G706	F707	P708	S709	R710	L711
M748	D749	P750	A751	E752	T753	R754	L755	G756	T757	T758	K759	V760	F761	K762	K763	L764	G765	V766	L767	E770	E771	E772	M773
V810	I811	Q812	R813	N814	L815	R816	K817	H818	L819	V820	L821	R822	N823	K824	Q825	Q826	H827	K828	L829	Y830	K831	K832	V833
M888	H889	K890	L891	Q892	C893	M894	G895	G896	L897	E898	G899	I900	R901	I902	C903	R904	K905	G906	F907	P908	S909	R910	L911
M948	D949	P950	A951	E952	T953	R954	L955	G956	T957	T958	K959	V960	F961	K962	K963	L964	G965	V966	L967	E970	E971	E972	M973
V810	I811	Q812	R813	N814	L815	R816	K817	H818	L819	V820	L821	R822	N823	K824	Q825	Q826	H827	K828	L829	Y830	K831	K832	V833

● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

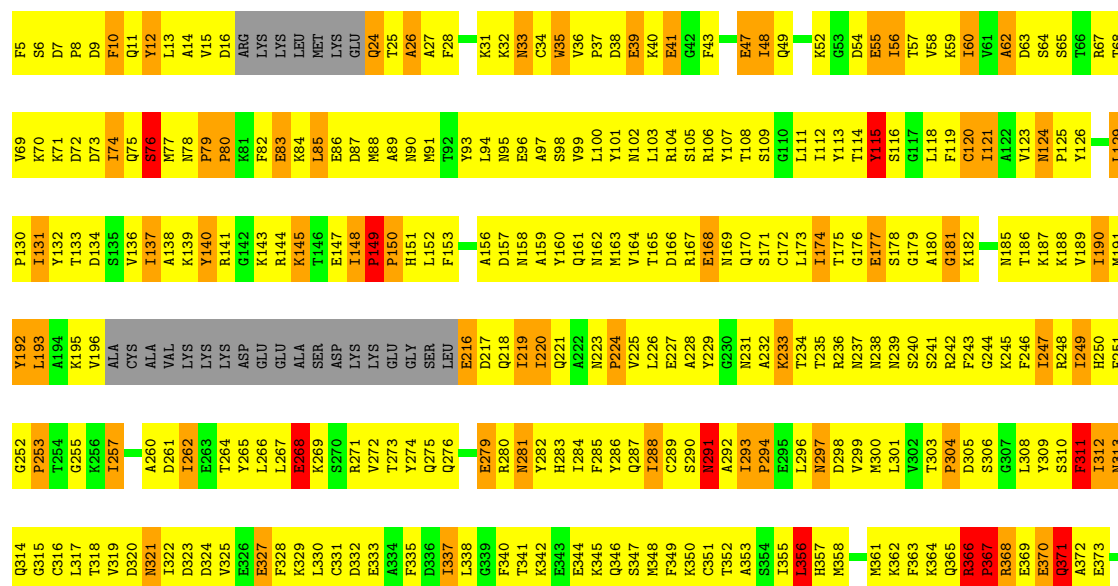
Chain 15-C: 13% 59% 18% 7%

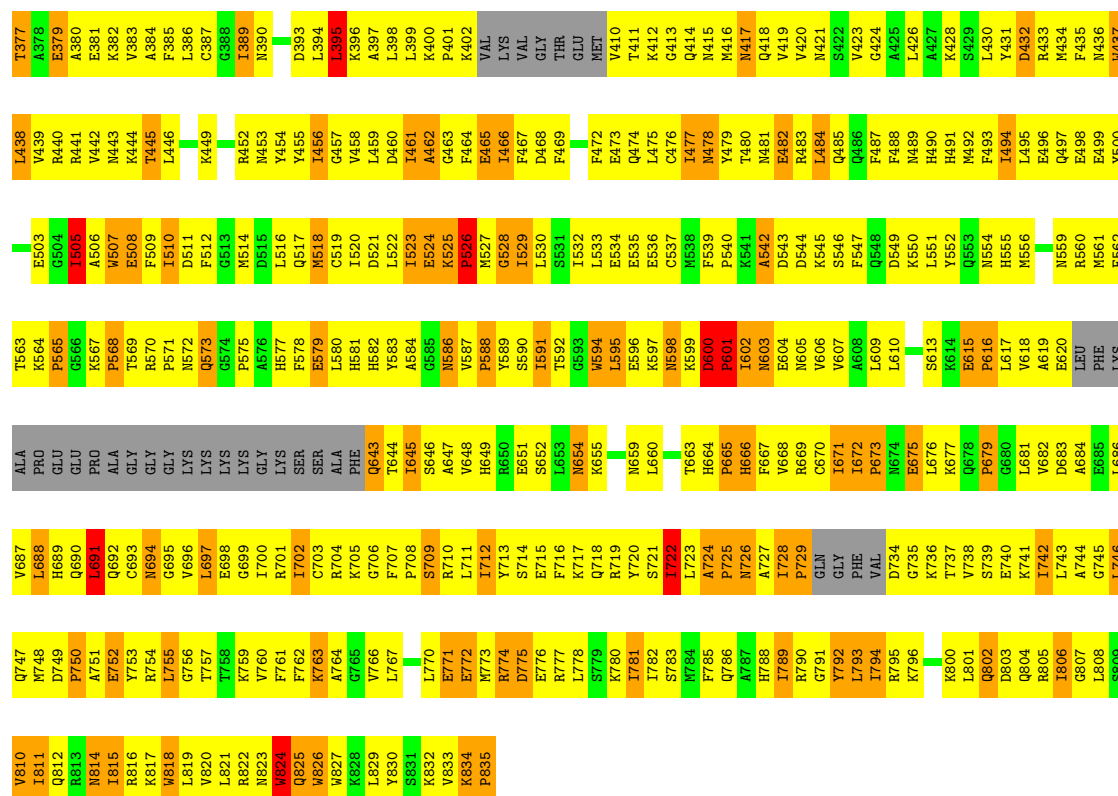
F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	ARG	LYS	LYS	LYS	LEU	MET	LYS	GLU	Q24	T25	A26	A27	F28
V69	K70	K71	D72	D73	I74	Q75	S76	M77	N78	P79	V80	L81	F82	E83	K84	L85	E86	L87	D88	Y89	L94	N95	E96	A97
P130	P131	P132	P133	P134	P135	P136	P137	P138	P139	P140	P141	P142	P143	P144	P145	P146	P147	P148	P149	P150	P151	P152	P153	
Y192	L193	A194	K195	V196	ALA	CYS	ALA	VAL	LYS	LYS	LYS	ASP	GLU	GLU	ALA	SER	ASP	LYS	LYS	GLU	GLU	SER	L152	L153
G252	P253	I257	A260	D261	I262	E263	T264	L266	L267	E268	K269	S270	R271	A272	T273	T274	Q275	Q276	E279	R280	N281	Y282	T283	
C316	L317	T318	T319	D320	N321	I322	D323	D324	L325	E326	E327	F328	K329	L330	C331	D332	E333	T334	F335	D336	I337	L338	G339	
E379	A380	K381	K382	V383	A384	F385	L386	C387	C388	C389	N390	D393	L394	E395	L396	A397	L398	L399	P401	K402	VAL	LYS	VAL	
R440	R441	V442	K443	K444	T445	L446	K449	R452	L453	Y454	Y455	I456	C457	L458	C459	L459	D460	I461	A462	F463	F464	I465	F467	
E503	G504	T505	K506	K507	E508	F509	L510	F512	G513	M514	D515	L516	Q517	C519	L520	L521	L522	L523	E524	K525	P526	N527	G528	
K564	P565	G566	K567	P568	T569	R570	P571	N572	G573	G574	P575	A576	H577	F578	L579	L580	H581	H582	Y583	A584	G585	N586	V587	
PR0	GLU	GLU	PR0	ALA	GLY	GLY	GLY	LYS	LYS	LYS	GLY	LYS	LYS	SER	LYS	ALA	PHE	Q643	T644	S645	A646	V647	H648	
L688	H689	K690	L691	Q692	C693	M694	G695	G696	L697	E698	G699	I700	R701	I702	C703	R704	K705	G706	F707	P708	S709	R710	L711	
M748	D749	P750	A751	E752	T753	R754	L755	G756	T757	T758	K759	V760	F761	K762	K763	L764	G765	V766	L767	E770	E771	E772	M773	
V810	I811	Q812	R813	N814	L815	R816	K817	H818	L819	V820	L821	R822	N823	K824	Q825	Q826	H827	K828	L829	Y830	K831	K832	V833	

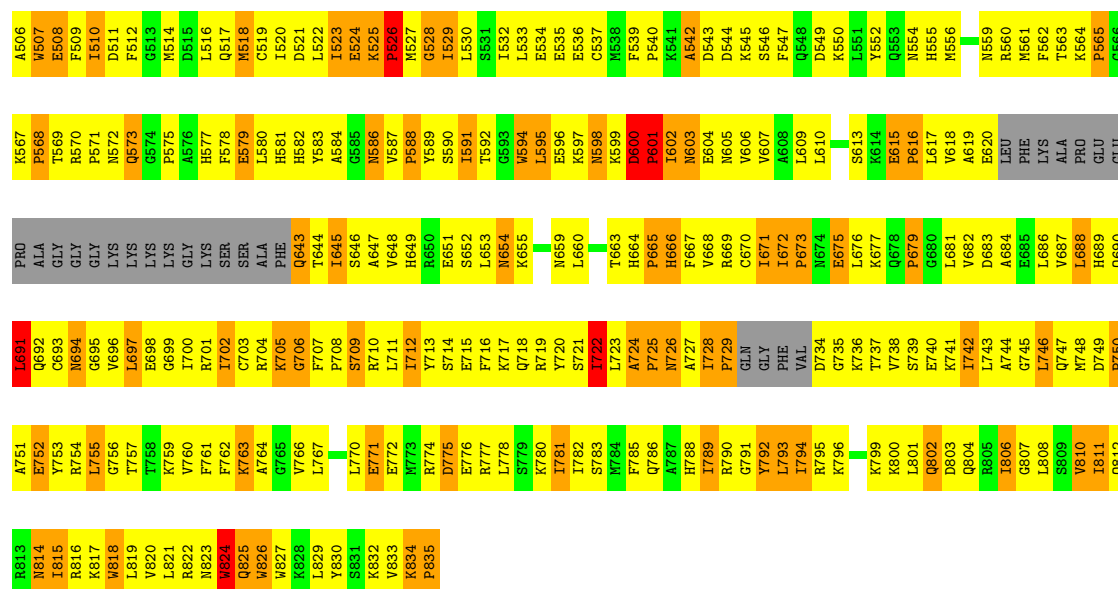


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 16-C: 13% 59% 18% 7%

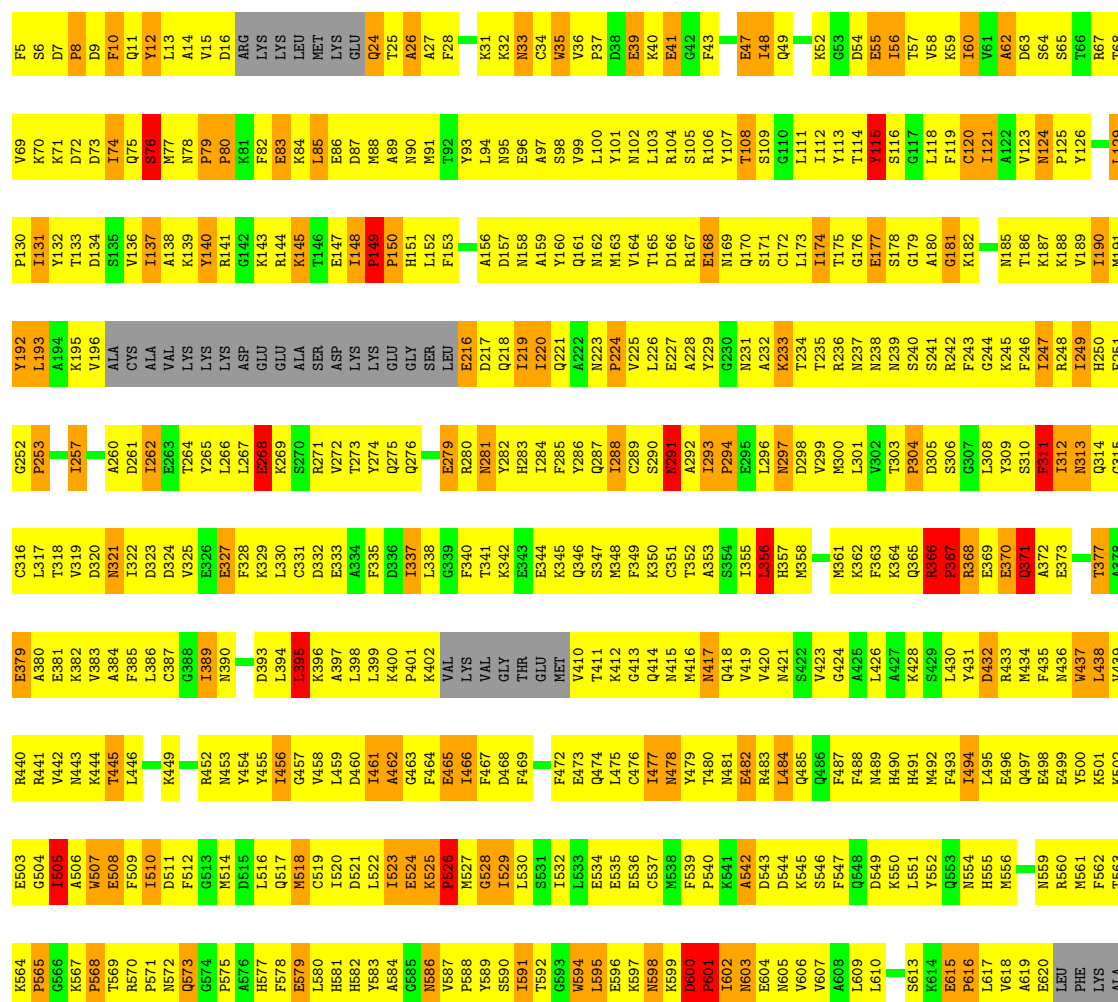


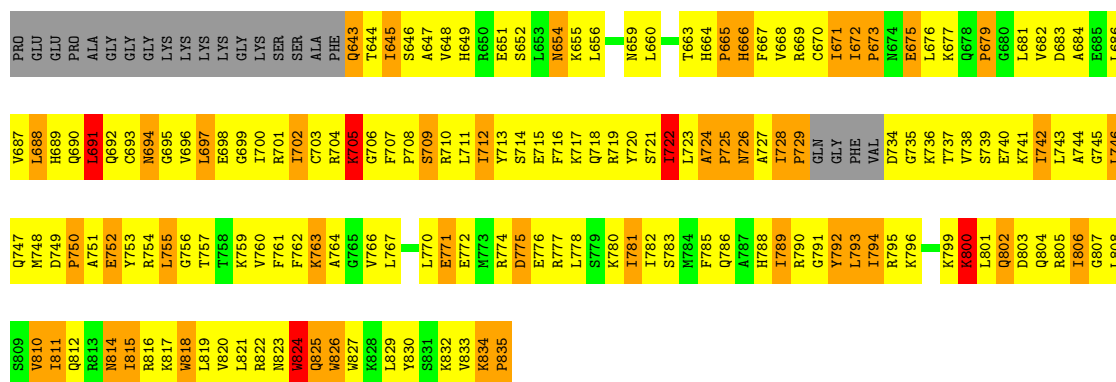




Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

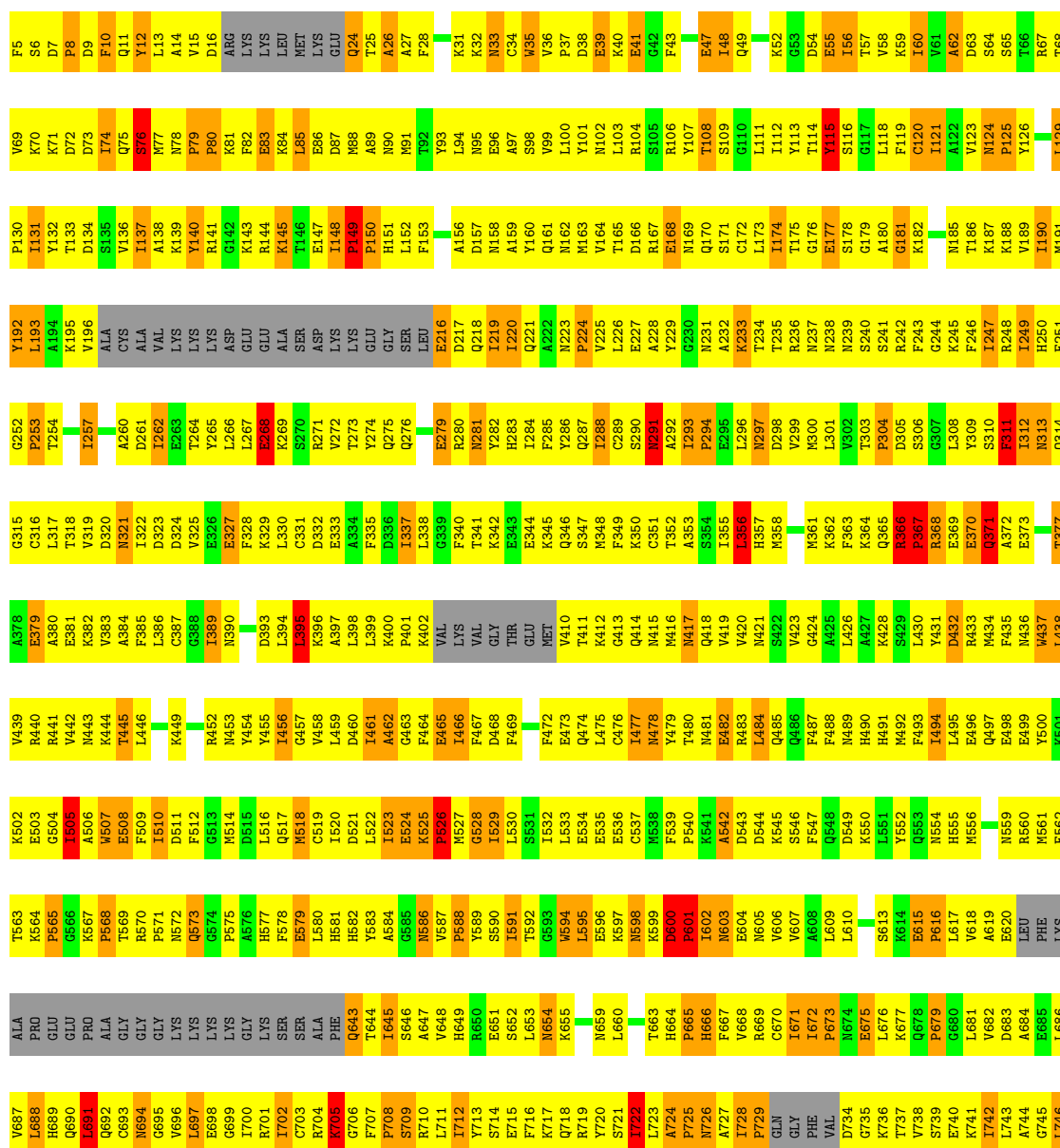
Chain 18-C: 13% 59% 18% 7%

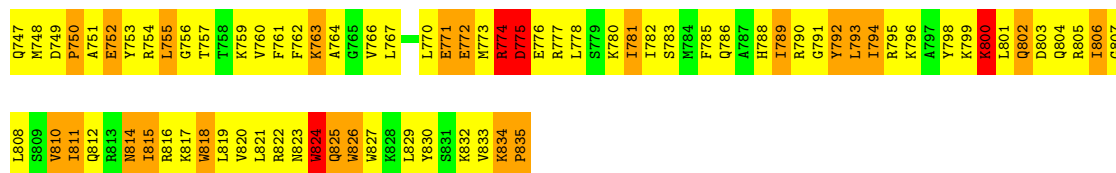




• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

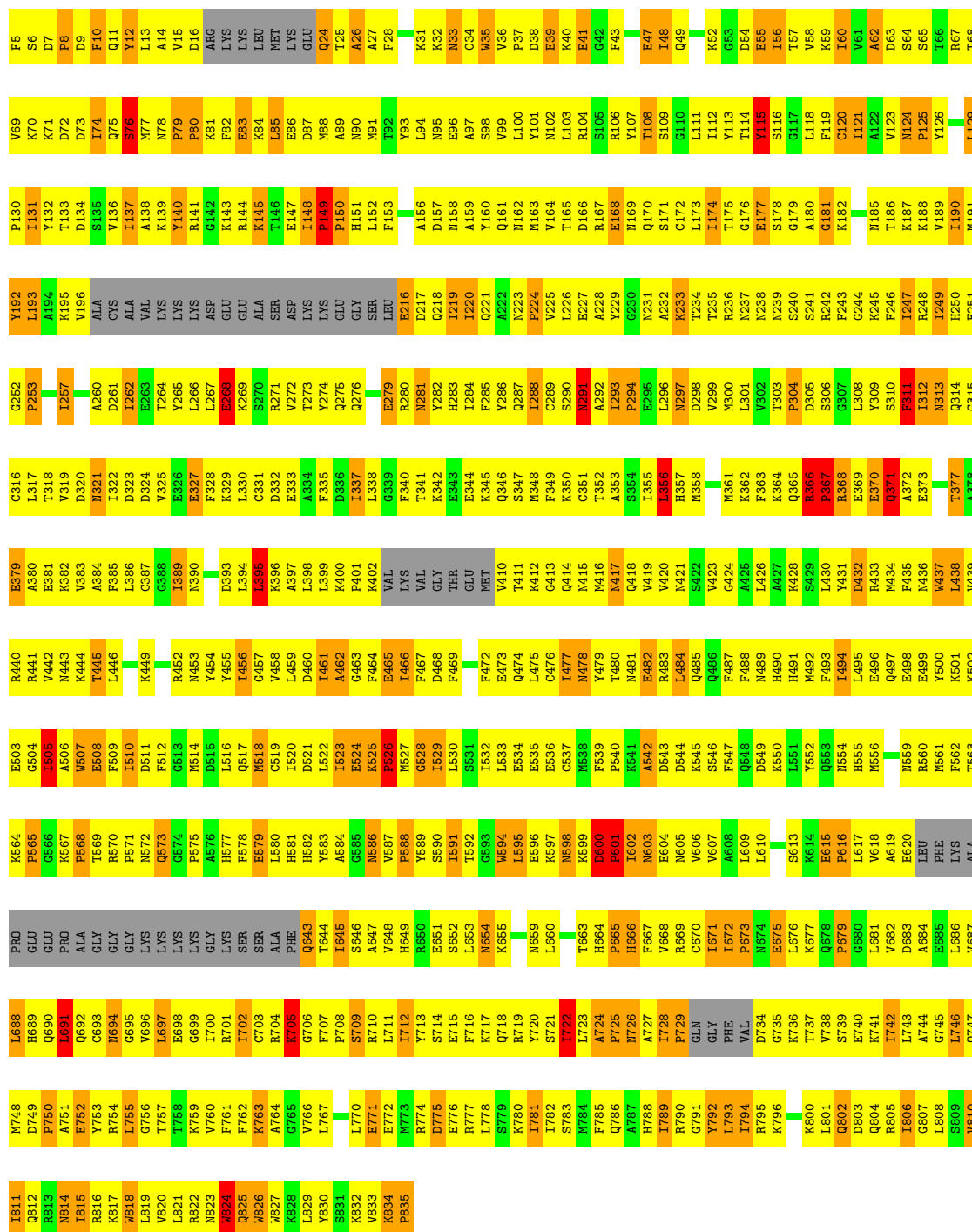
Chain 19-C: 13% 59% 18% 7%



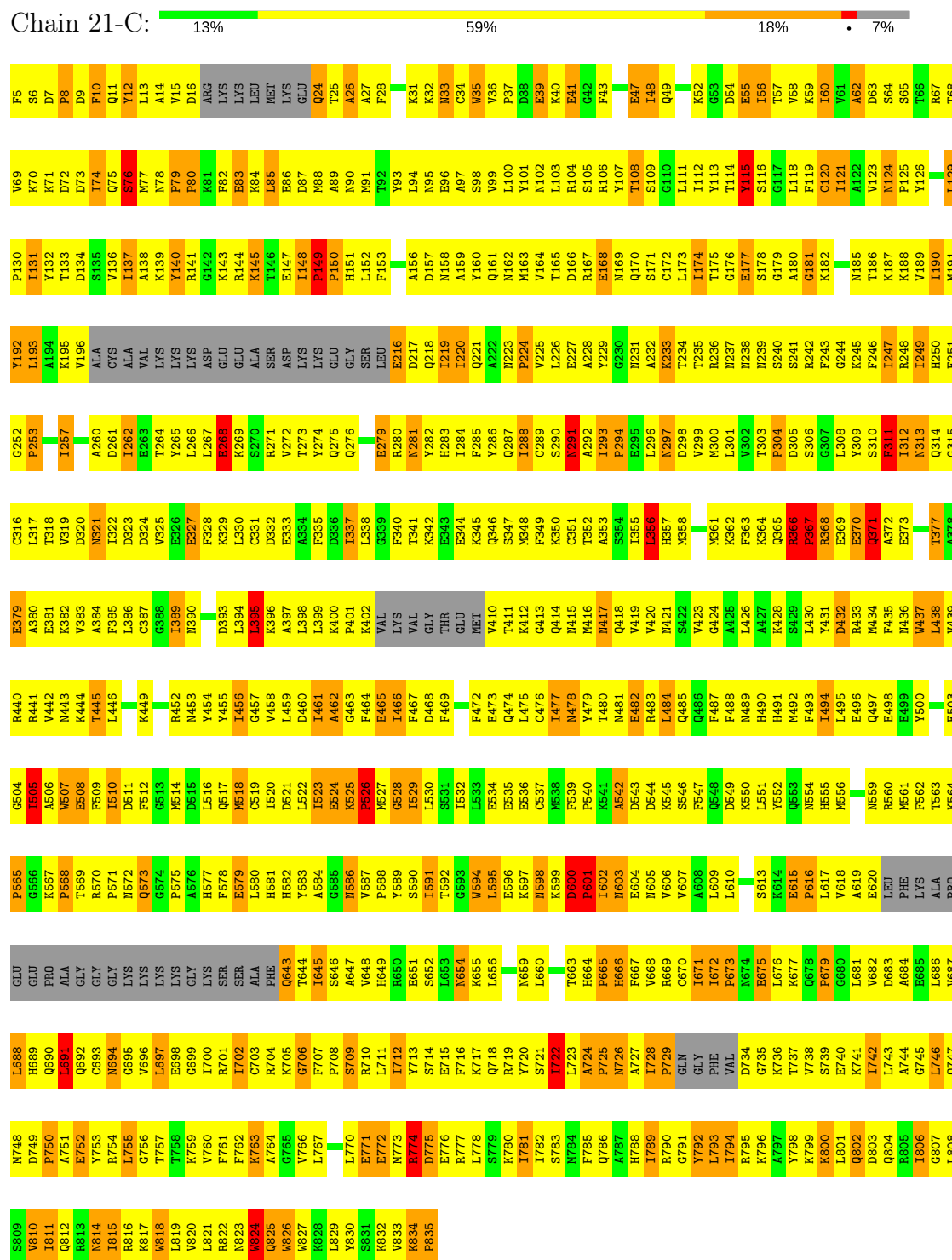


Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

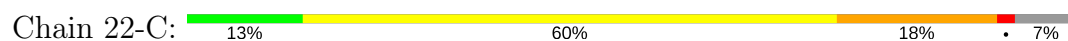
Chain 20-C: 13% 59% 18% 7%

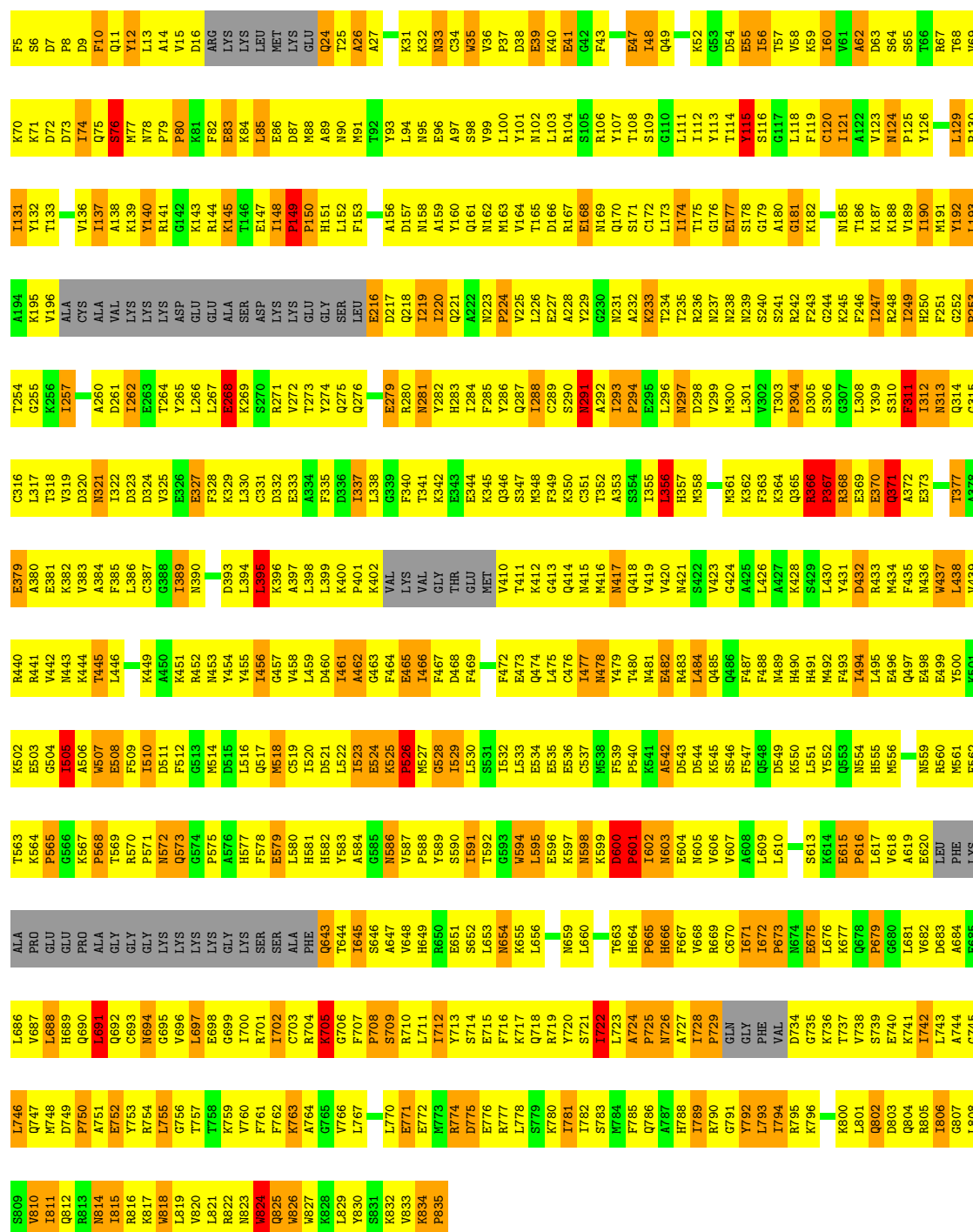


• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



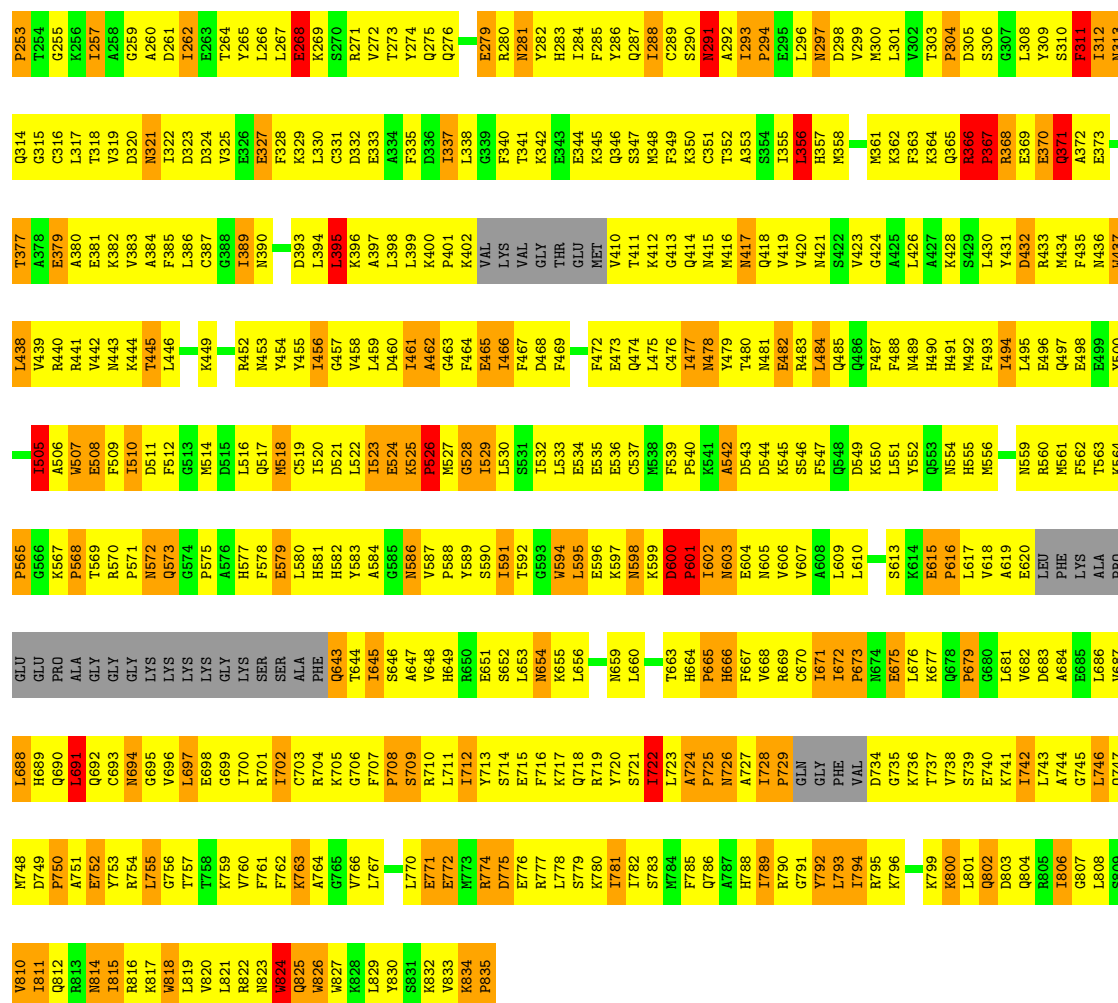


Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 23-C: 13% 59% 18% 7%

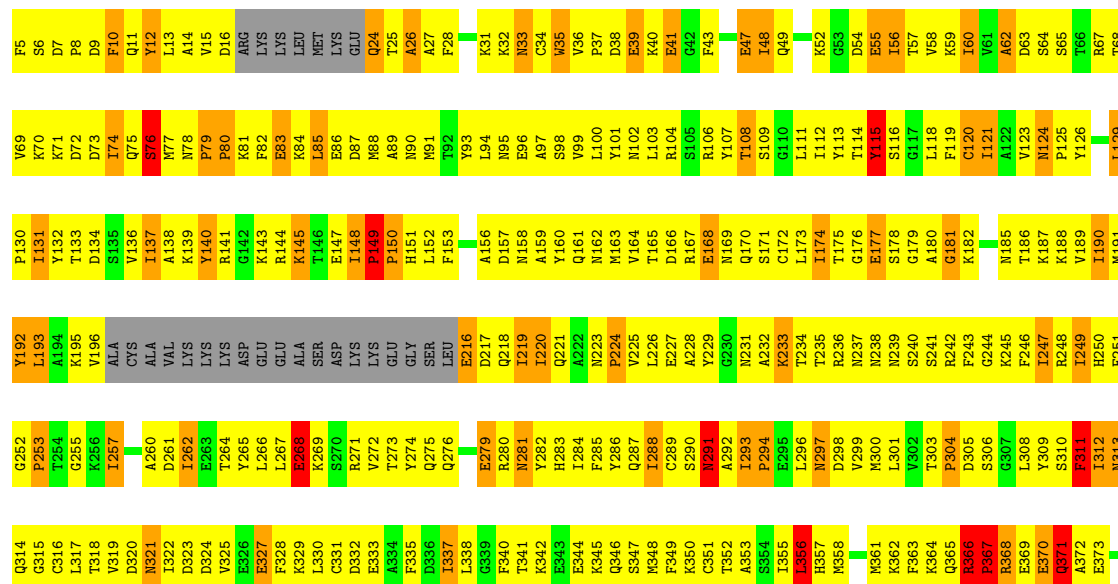


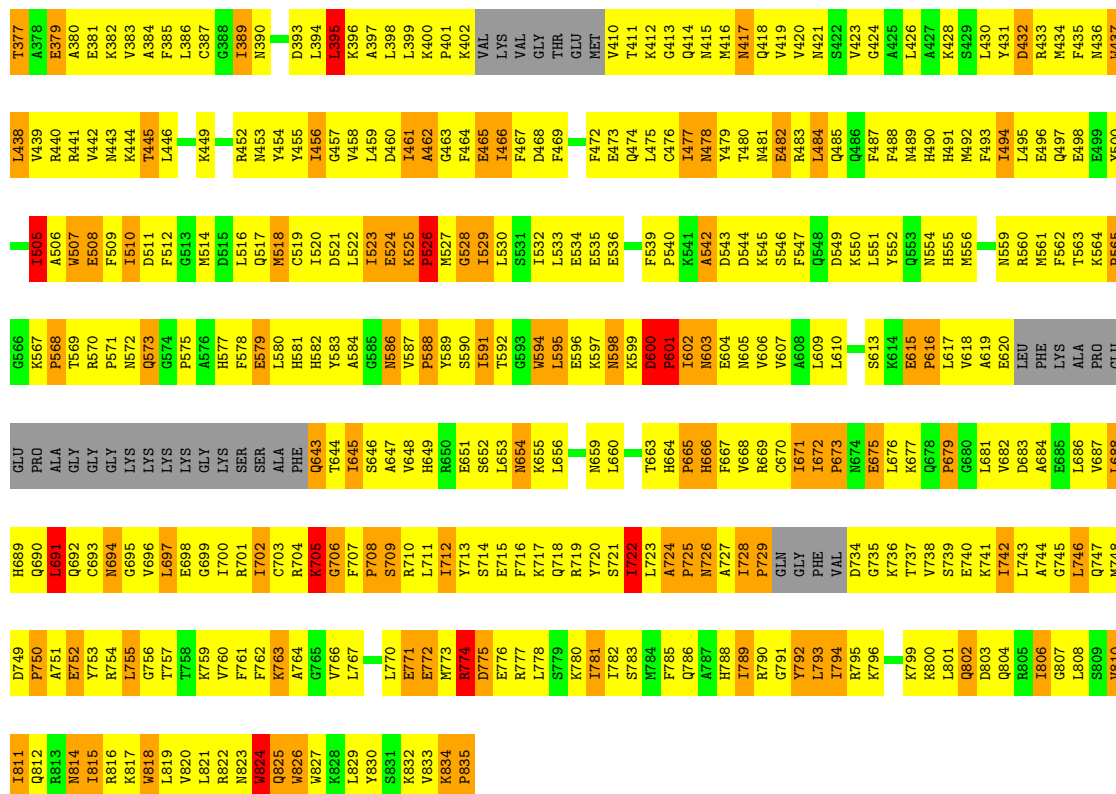
L193	L194	L195	L196	L197	L198	L199	L200	L201	L202	L203	L204	L205	L206	L207	L208	L209	L210	L211	L212	L213	L214	L215	L216	L217	L218	L219	L220	L221	L222	L223	L224	L225	L226	L227	L228	L229	L230	L231	L232	L233	L234	L235	L236	L237	L238	L239	L240	L241	L242	L243	L244	L245	L246	L247	L248	L249	L250	L251	L252	L253	L254	L255	L256	L257	L258	L259	L260	L261	L262	L263	L264	L265	L266	L267	L268	L269	L270	L271	L272	L273	L274	L275	L276	L277	L278	L279	L280	L281	L282	L283	L284	L285	L286	L287	L288	L289	L290	L291	L292	L293	L294	L295	L296	L297	L298	L299	L300	L301	L302	L303	L304	L305	L306	L307	L308	L309	L310	L311	L312	L313	L314	L315	L316	L317	L318	L319	L320	L321	L322	L323	L324	L325	L326	L327	L328	L329	L330	L331	L332	L333	L334	L335	L336	L337	L338	L339	L340	L341	L342	L343	L344	L345	L346	L347	L348	L349	L350	L351	L352	L353	L354	L355	L356	L357	L358	L359	L360	L361	L362	L363	L364	L365	L366	L367	L368	L369	L370	L371	L372	L373	L374	L375	L376	L377	L378	L379	L380	L381	L382	L383	L384	L385	L386	L387	L388	L389	L390	L391	L392	L393	L394	L395	L396	L397	L398	L399	L400	L401	L402	L403	L404	L405	L406	L407	L408	L409	L410	L411	L412	L413	L414	L415	L416	L417	L418	L419	L420	L421	L422	L423	L424	L425	L426	L427	L428	L429	L430	L431	L432	L433	L434	L435	L436	L437	L438	L439	L440	L441	L442	L443	L444	L445	L446	L447	L448	L449	L450	L451	L452	L453	L454	L455	L456	L457	L458	L459	L460	L461	L462	L463	L464	L465	L466	L467	L468	L469	L470	L471	L472	L473	L474	L475	L476	L477	L478	L479	L480	L481	L482	L483	L484	L485	L486	L487	L488	L489	L490	L491	L492	L493	L494	L495	L496	L497	L498	L499	L500	L501	L502	L503	L504	L505	L506	L507	L508	L509	L510	L511	L512	L513	L514	L515	L516	L517	L518	L519	L520	L521	L522	L523	L524	L525	L526	L527	L528	L529	L530	L531	L532	L533	L534	L535	L536	L537	L538	L539	L540	L541	L542	L543	L544	L545	L546	L547	L548	L549	L550	L551	L552	L553	L554	L555	L556	L557	L558	L559	L560	L561	L562	L563	L564	L565	L566	L567	L568	L569	L570	L571	L572	L573	L574	L575	L576	L577	L578	L579	L580	L581	L582	L583	L584	L585	L586	L587	L588	L589	L590	L591	L592	L593	L594	L595	L596	L597	L598	L599	L600	L601	L602	L603	L604	L605	L606	L607	L608	L609	L610	L611	L612	L613	L614	L615	L616	L617	L618	L619	L620	L621	L622	L623	L624	L625	L626	L627	L628	L629	L630	L631	L632	L633	L634	L635	L636	L637	L638	L639	L640	L641	L642	L643	L644	L645	L646	L647	L648	L649	L650	L651	L652	L653	L654	L655	L656	L657	L658	L659	L660	L661	L662	L663	L664	L665	L666	L667	L668	L669	L670	L671	L672	L673	L674	L675	L676	L677	L678	L679	L680	L681	L682	L683	L684	L685	L686	L687	L688	L689	L690	L691	L692	L693	L694	L695	L696	L697	L698	L699	L700	L701	L702	L703	L704	L705	L706	L707	L708	L709	L710	L711	L712	L713	L714	L715	L716	L717	L718	L719	L720	L721	L722	L723	L724	L725	L726	L727	L728	L729	L730	L731	L732	L733	L734	L735	L736	L737	L738	L739	L740	L741	L742	L743	L744	L745	L746	L747	L748	L749	L750	L751	L752	L753	L754	L755	L756	L757	L758	L759	L760	L761	L762	L763	L764	L765	L766	L767	L768	L769	L770	L771	L772	L773	L774	L775	L776	L777	L778	L779	L780	L781	L782	L783	L784	L785	L786	L787	L788	L789	L790	L791	L792	L793	L794	L795	L796	L797	L798	L799	L800	L801	L802	L803	L804	L805	L806	L807	L808	L809	L810	L811	L812	L813	L814	L815	L816	L817	L818	L819	L820	L821	L822	L823	L824	L825	L826	L827	L828	L829	L830	L831	L832	L833	L834	L835	L836	L837	L838	L839	L840	L841	L842	L843	L844	L845	L846	L847	L848	L849	L850	L851	L852	L853	L854	L855	L856	L857	L858	L859	L860	L861	L862	L863	L864	L865	L866	L867	L868	L869	L870	L871	L872	L873	L874	L875	L876	L877	L878	L879	L880	L881	L882	L883	L884	L885	L886	L887	L888	L889	L890	L891	L892	L893	L894	L895	L896	L897	L898	L899	L900	L901	L902	L903	L904	L905	L906	L907	L908	L909	L910	L911	L912	L913	L914	L915	L916	L917	L918	L919	L920	L921	L922	L923	L924	L925	L926	L927	L928	L929	L930	L931	L932	L933	L934	L935	L936	L937	L938	L939	L940	L941	L942	L943	L944	L945	L946	L947	L948	L949	L950	L951	L952	L953	L954	L955	L956	L957	L958	L959	L960	L961	L962	L963	L964	L965	L966	L967	L968	L969	L970	L971	L972	L973	L974	L975	L976	L977	L978	L979	L980	L981	L982	L983	L984	L985	L986	L987	L988	L989	L990	L991	L992	L993	L994	L995	L996	L997	L998	L999	L1000	L1001	L1002	L1003	L1004	L1005	L1006	L1007	L1008	L1009	L1010	L1011	L1012	L1013	L1014	L1015	L1016	L1017	L1018	L1019	L1020	L1021	L1022	L1023	L1024	L1025	L1026	L1027	L1028	L1029	L1030	L1031	L1032	L1033	L1034	L1035	L1036	L1037	L1038	L1039	L1040	L1041	L1042	L1043	L1044	L1045	L1046	L1047	L1048	L1049	L1050	L1051	L1052	L1053	L1054	L1055	L1056	L1057	L1058	L1059	L1060	L1061	L1062	L1063	L1064	L1065	L1066	L1067	L1068	L1069	L1070	L1071	L1072	L1073	L1074	L1075	L1076	L1077	L1078	L1079	L1080	L1081	L1082	L1083	L1084	L1085	L1086	L1087	L1088	L1089	L1090	L1091	L1092	L1093	L1094	L1095	L1096	L1097	L1098	L1099	L1100	L1101	L1102	L1103	L1104	L1105	L1106	L1107	L1108	L1109	L1110	L1111	L1112	L1113	L1114	L1115	L1116	L1117	L1118	L1119	L1120	L1121	L1122	L1123	L1124	L1125	L1126	L1127	L1128	L1129	L1130	L1131	L1132	L1133	L1134	L1135	L1136	L1137	L1138	L1139	L1140	L1141	L1142	L1143	L1144	L1145	L1146	L1147	L1148	L1149	L1150	L1151	L1152	L1153	L1154	L1155	L1156	L1157	L1158	L1159	L1160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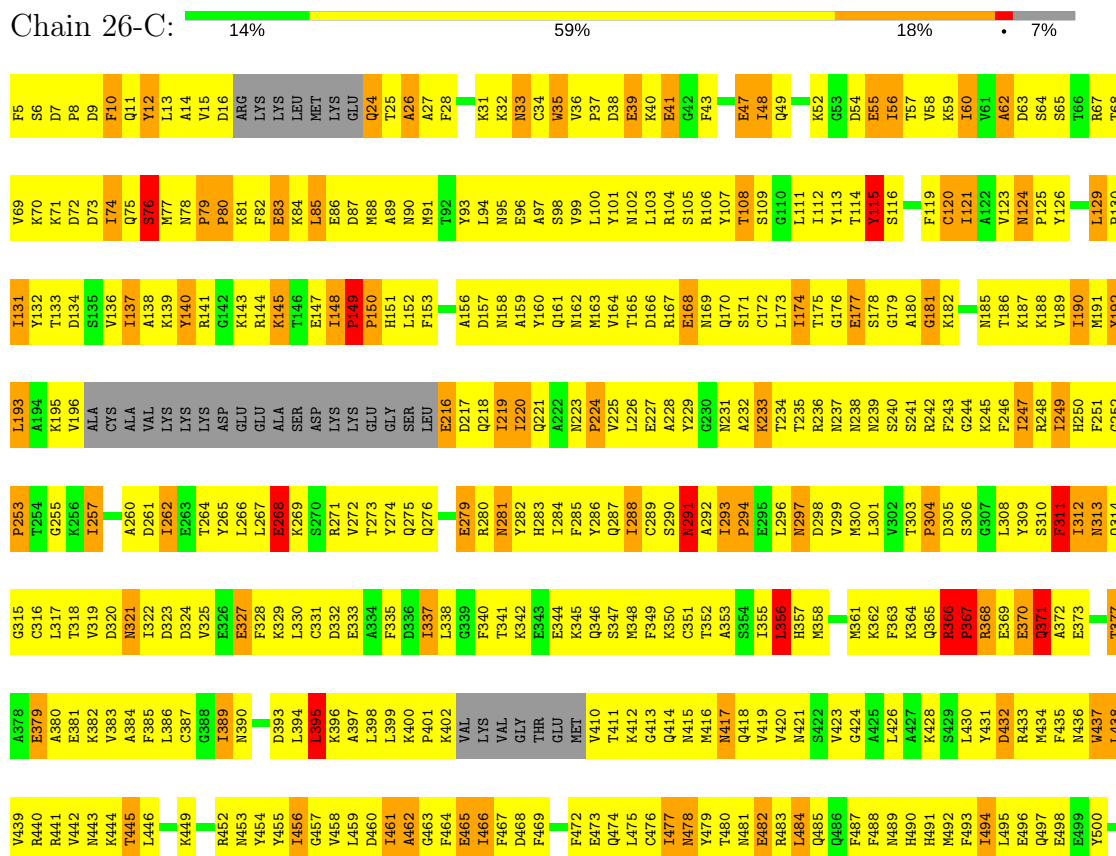
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 25-C: 13% 59% 18% 7%



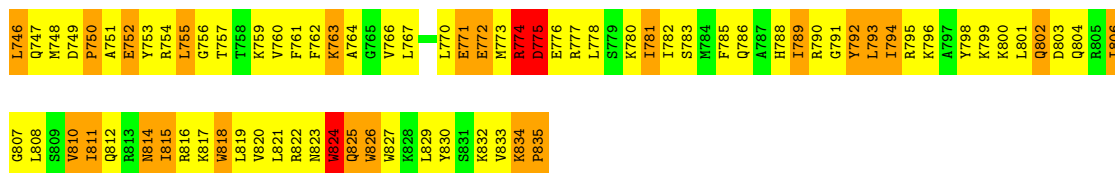


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

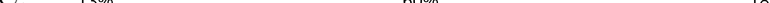


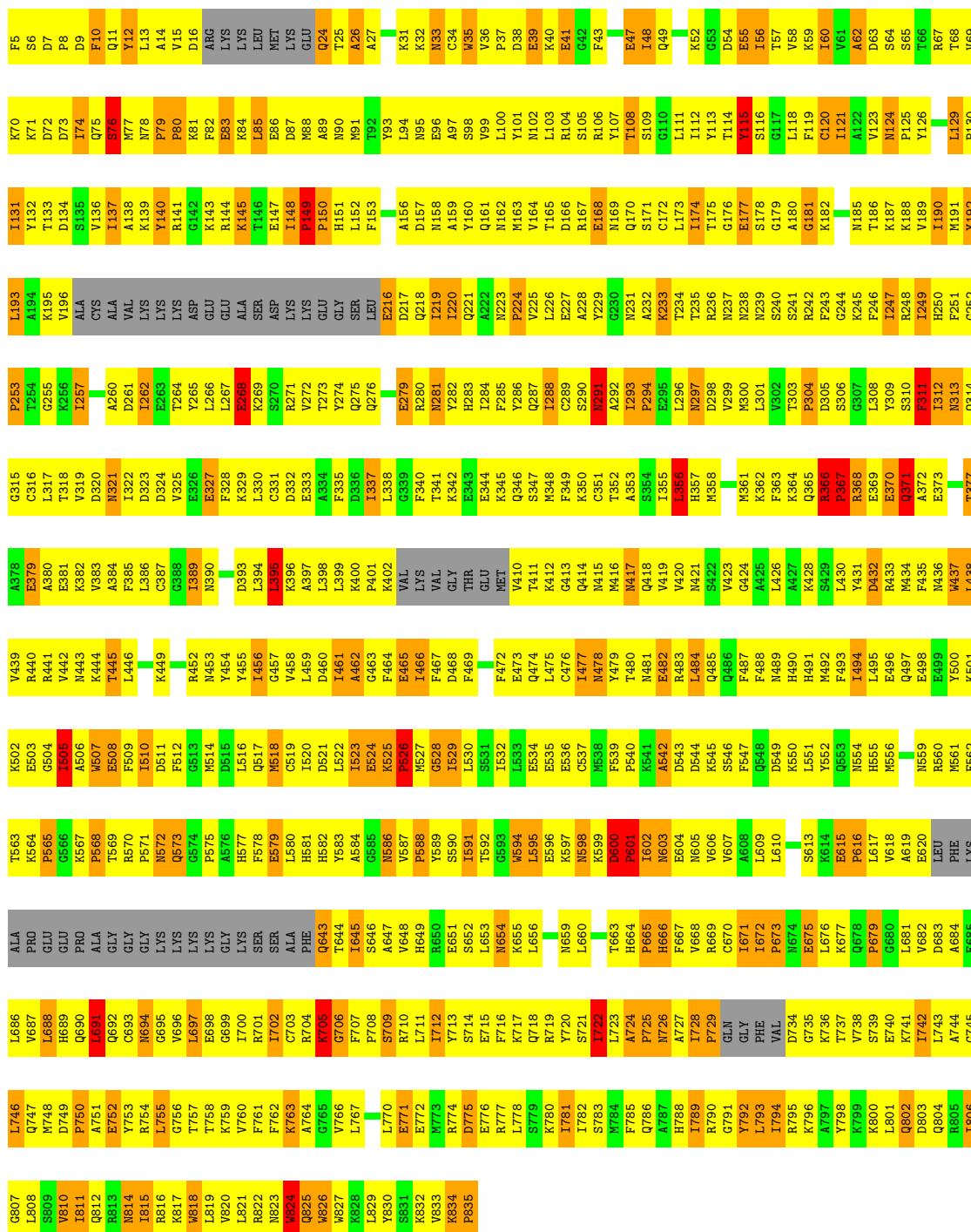


V687	L688	H689	Q690	L691	Q692	C693	N694	G695	V696	L697	E698	G699	I700	R701	I702	C703	R704	W705	G706	P707	S708	S709	R710	L711	I712	Y713	S714	E651	E715	S652	L653	K654	L655	L656	L657	L658	L659	L660	L661	L662	L663	L664	L665	L666	L667	L668	L669	L670	L671	L672	L673	L674	L675	L676	L677	L678	L679	L680	L681	L682	L683	L684	L685	L686	L687	L688	L689	L690	L691	L692	L693	L694	L695	L696	L697	L698	L699	L700	L701	L702	L703	L704	L705	L706	L707	L708	L709	L710	L711	L712	L713	L714	L715	L716	L717	L718	L719	L720	L721	L722	L723	L724	L725	L726	L727	L728	L729	L730	L731	L732	L733	L734	L735	L736	L737	L738	L739	L740	L741	L742	L743	L744	L745	L746	L747	L748	L749	L750	L751	L752	L753	L754	L755	L756	L757	L758	L759	L760	L761	L762	L763	L764	L765	L766	L767	L768	L769	L770	L771	L772	L773	L774	L775	L776	L777	L778	L779	L780	L781	L782	L783	L784	L785	L786	L787	L788	L789	L790	L791	L792	L793	L794	L795	L796	L797	L798	L799	L800	L801	L802	L803	L804	L805	L806	L807	L808	L809	L810	L811	L812	L813	L814	L815	L816	L817	L818	L819	L820	L821	L822	L823	L824	L825	L826	L827	L828	L829	L830	L831	L832	L833	L834	L835	L836	L837	L838	L839	L840	L841	L842	L843	L844	L845	L846	L847	L848	L849	L850	L851	L852	L853	L854	L855	L856	L857	L858	L859	L860	L861	L862	L863	L864	L865	L866	L867	L868	L869	L870	L871	L872	L873	L874	L875	L876	L877	L878	L879	L880	L881	L882	L883	L884	L885	L886	L887	L888	L889	L890	L891	L892	L893	L894	L895	L896	L897	L898	L899	L900	L901	L902	L903	L904	L905	L906	L907	L908	L909	L910	L911	L912	L913	L914	L915	L916	L917	L918	L919	L920	L921	L922	L923	L924	L925	L926	L927	L928	L929	L930	L931	L932	L933	L934	L935	L936	L937	L938	L939	L940	L941	L942	L943	L944	L945	L946	L947	L948	L949	L950	L951	L952	L953	L954	L955	L956	L957	L958	L959	L960	L961	L962	L963	L964	L965	L966	L967	L968	L969	L970	L971	L972	L973	L974	L975	L976	L977	L978	L979	L980	L981	L982	L983	L984	L985	L986	L987	L988	L989	L990	L991	L992	L993	L994	L995	L996	L997	L998	L999	L1000	L1001	L1002	L1003	L1004	L1005	L1006	L1007	L1008	L1009	L1010	L1011	L1012	L1013	L1014	L1015	L1016	L1017	L1018	L1019	L1020	L1021	L1022	L1023	L1024	L1025	L1026	L1027	L1028	L1029	L1030	L1031	L1032	L1033	L1034	L1035	L1036	L1037	L1038	L1039	L1040	L1041	L1042	L1043	L1044	L1045	L1046	L1047	L1048	L1049	L1050	L1051	L1052	L1053	L1054	L1055	L1056	L1057	L1058	L1059	L1060	L1061	L1062	L1063	L1064	L1065	L1066	L1067	L1068	L1069	L1070	L1071	L1072	L1073	L1074	L1075	L1076	L1077	L1078	L1079	L1080	L1081	L1082	L1083	L1084	L1085	L1086	L1087	L1088	L1089	L1090	L1091	L1092	L1093	L1094	L1095	L1096	L1097	L1098	L1099	L1100	L1101	L1102	L1103	L1104	L1105	L1106	L1107	L1108	L1109	L1110	L1111	L1112	L1113	L1114	L1115	L1116	L1117	L1118	L1119	L1120	L1121	L1122	L1123	L1124	L1125	L1126	L1127	L1128	L1129	L1130	L1131	L1132	L1133	L1134	L1135	L1136	L1137	L1138	L1139	L1140	L1141	L1142	L1143	L1144	L1145	L1146	L1147	L1148	L1149	L1150	L1151	L1152	L1153	L1154	L1155	L1156	L1157	L1158	L1159	L1160	L1161	L1162	L1163	L1164	L1165	L1166	L1167	L1168	L1169	L1170	L1171	L1172	L1173	L1174	L1175	L1176	L1177	L1178	L1179	L1180	L1181	L1182	L1183	L1184	L1185	L1186	L1187	L1188	L1189	L1190	L1191	L1192	L1193	L1194	L1195	L1196	L1197	L1198	L1199	L1200	L1201	L1202	L1203	L1204	L1205	L1206	L1207	L1208	L1209	L1210	L1211	L1212	L1213	L1214	L1215	L1216	L1217	L1218	L1219	L1220	L1221	L1222	L1223	L1224	L1225	L1226	L1227	L1228	L1229	L1230	L1231	L1232	L1233	L1234	L1235	L1236	L1237	L1238	L1239	L1240	L1241	L1242	L1243	L1244	L1245	L1246	L1247	L1248	L1249	L1250	L1251	L1252	L1253	L1254	L1255	L1256	L1257	L1258	L1259	L1260	L1261	L1262	L1263	L1264	L1265	L1266	L1267	L1268	L1269	L1270	L1271	L1272	L1273	L1274	L1275	L1276	L1277	L1278	L1279	L1280	L1281	L1282	L1283	L1284	L1285	L1286	L1287	L1288	L1289	L1290	L1291	L1292	L1293	L1294	L1295	L1296	L1297	L1298	L1299	L1300	L1301	L1302	L1303	L1304	L1305	L1306	L1307	L1308	L1309	L1310	L1311	L1312	L1313	L1314	L1315	L1316	L1317	L1318	L1319	L1320	L1321	L1322	L1323	L1324	L1325	L1326	L1327	L1328	L1329	L1330	L1331	L1332	L1333	L1334	L1335	L1336	L1337	L1338	L1339	L1340	L1341	L1342	L1343	L1344	L1345	L1346	L1347	L1348	L1349	L1350	L1351	L1352	L1353	L1354	L1355	L1356	L1357	L1358	L1359	L1360	L1361	L1362	L1363	L1364	L1365	L1366	L1367	L1368	L1369	L1370	L1371	L1372	L1373	L1374	L1375	L1376	L1377	L1378	L1379	L1380	L1381	L1382	L1383	L1384	L1385	L1386	L1387	L1388	L1389	L1390	L1391	L1392	L1393	L1394	L1395	L1396	L1397	L1398	L1399	L1400	L1401	L1402	L1403	L1404	L1405	L1406	L1407	L1408	L1409	L1410	L1411	L1412	L1413	L1414	L1415	L1416	L1417	L1418	L1419	L1420	L1421	L1422	L1423	L1424	L1425	L1426	L1427	L1428	L1429	L1430	L1431	L1432	L1433	L1434	L1435	L1436	L1437	L1438	L1439	L1440	L1441	L1442	L1443	L1444	L1445	L1446	L1447	L1448	L1449	L1450	L1451	L1452	L1453	L1454	L1455	L1456	L1457	L1458	L1459	L1460	L1461	L1462	L1463	L1464	L1465	L1466	L1467	L1468	L1469	L1470	L1471	L1472	L1473	L1474	L1475	L1476	L1477	L1478	L1479	L1480	L1481	L1482	L1483	L1484	L1485	L1486	L1487	L1488	L1489	L1490	L1491	L1492	L1493	L1494	L1495	L1496	L1497	L1498	L1499	L1500	L1501	L1502	L1503	L1504	L1505	L1506	L1507	L1508	L1509	L1510	L1511	L1512	L1513	L1514	L1515	L1516	L1517	L1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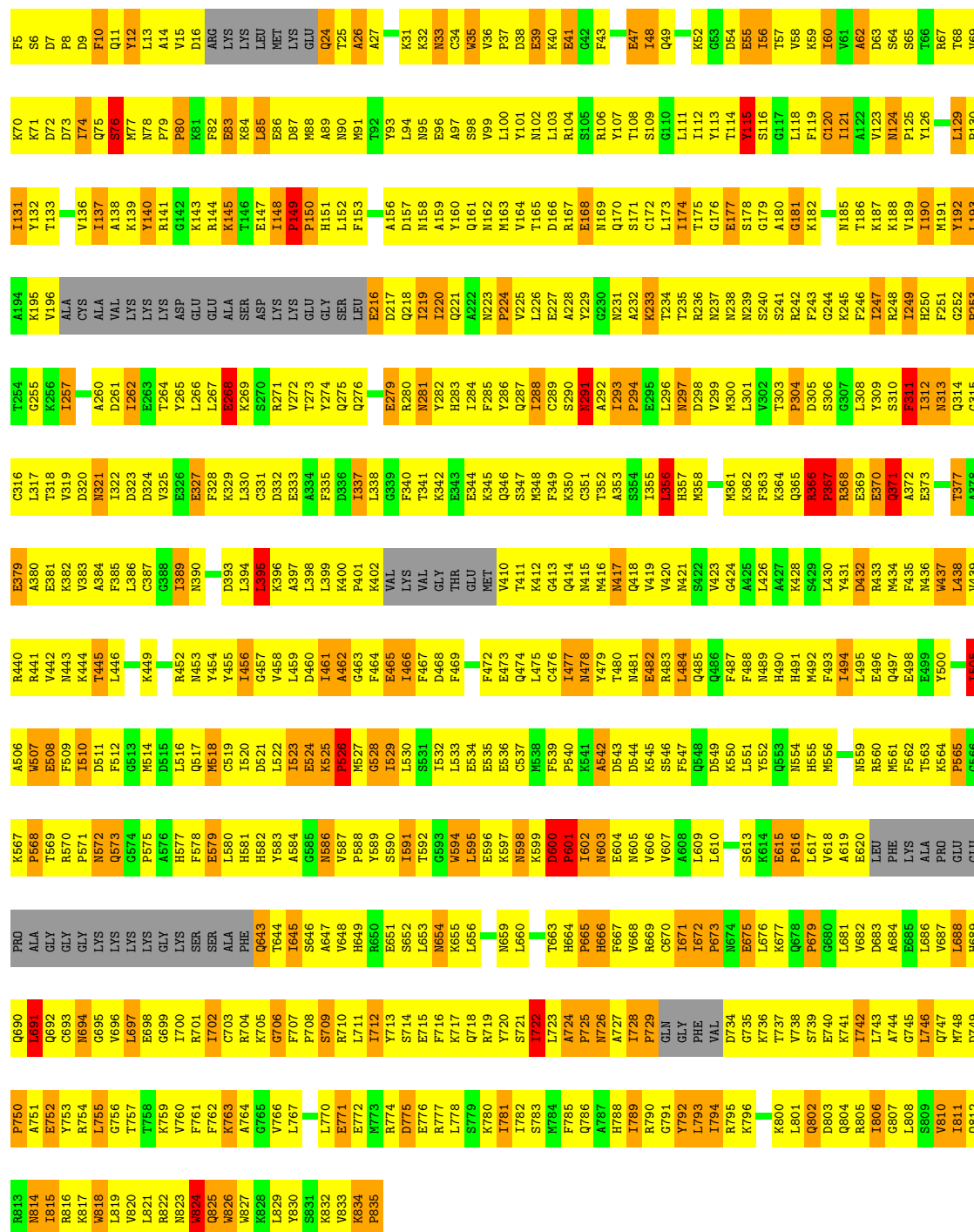


- Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

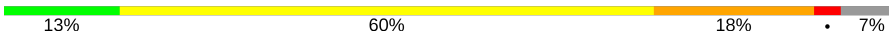
Chain 29-C:  13% 60% 18% 7%

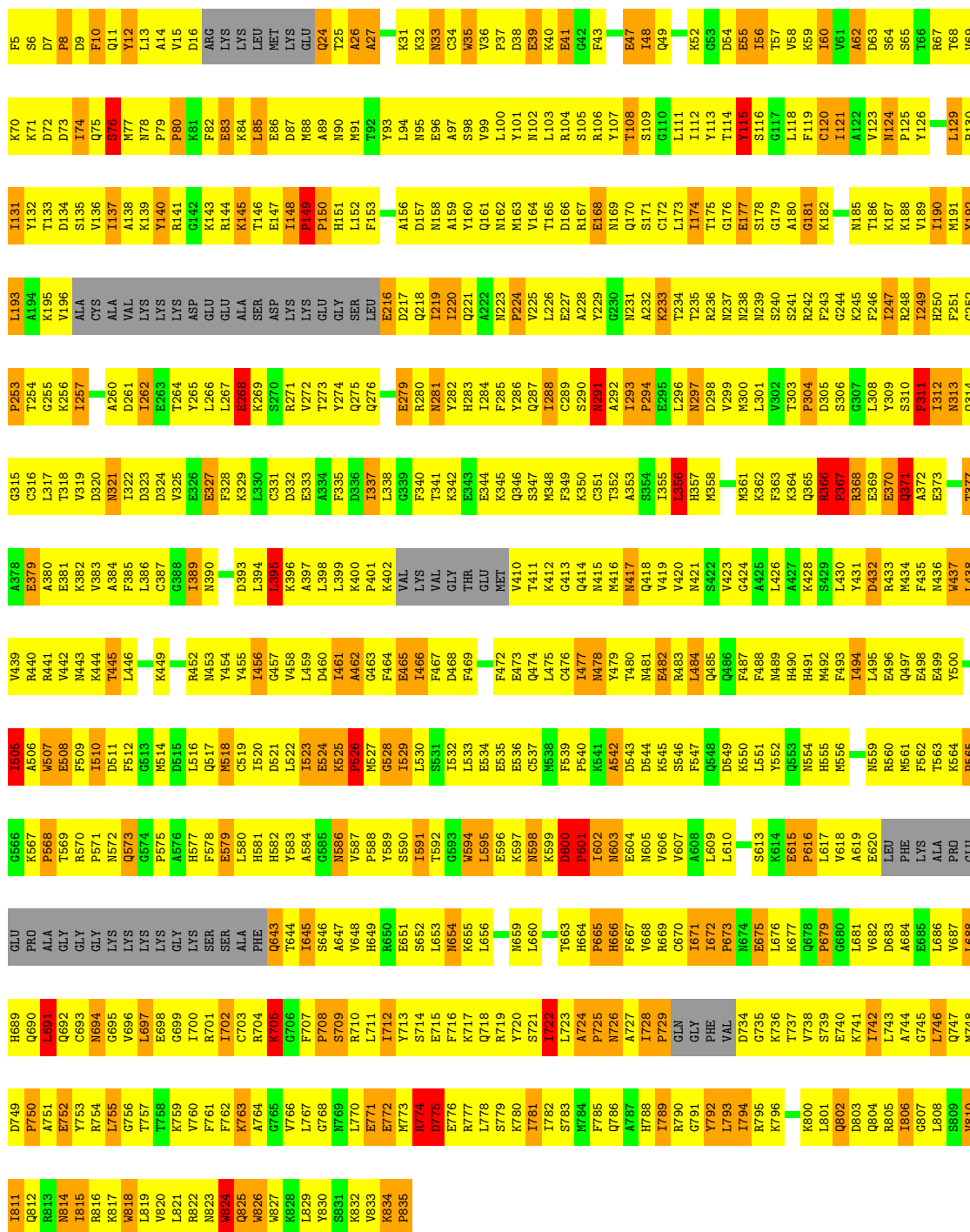


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 30-C:  14% 59% 18% 7%

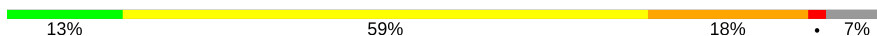
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 31-C:  13% 60% 18% 7%

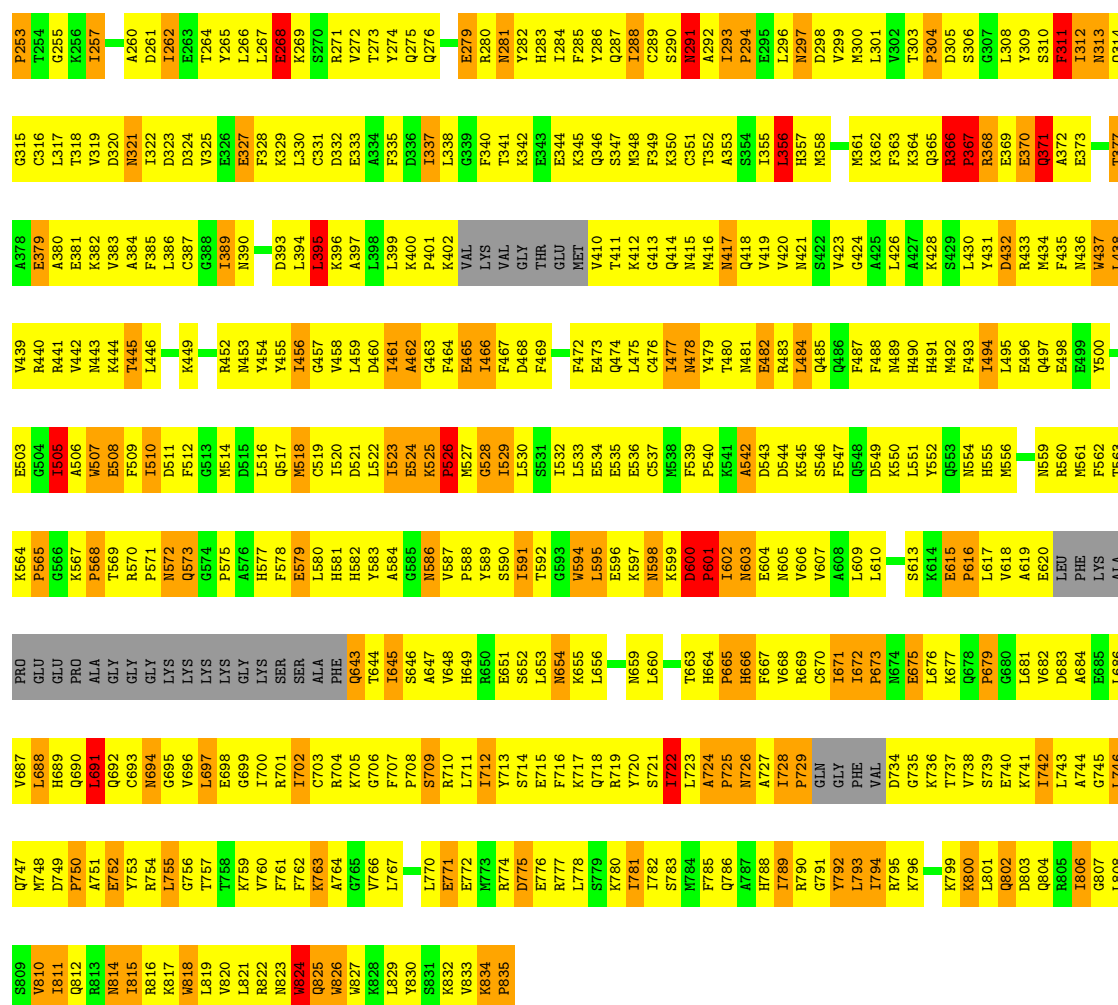


- Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 32-C:

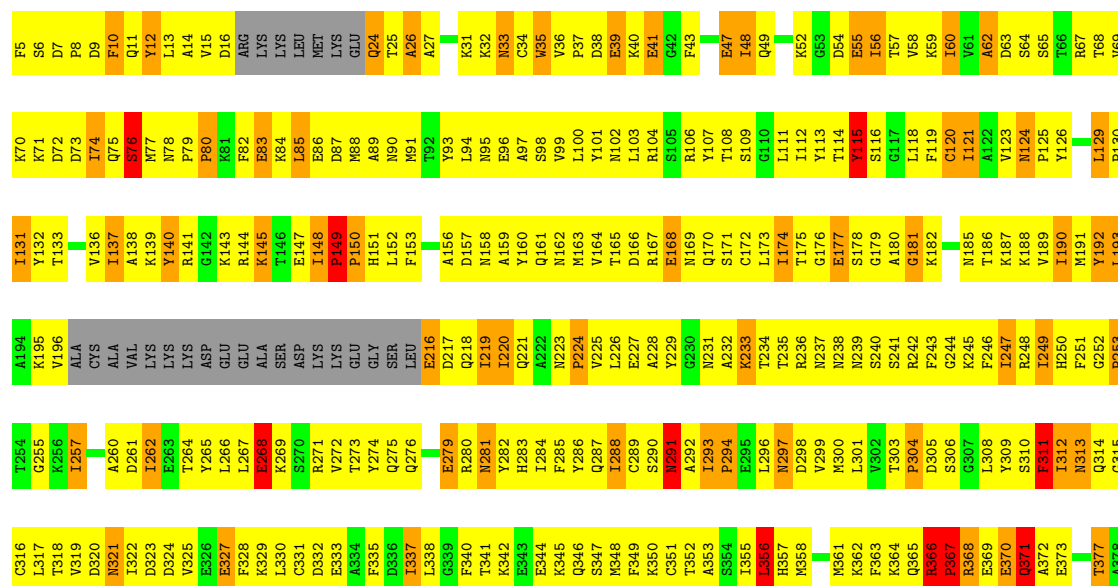


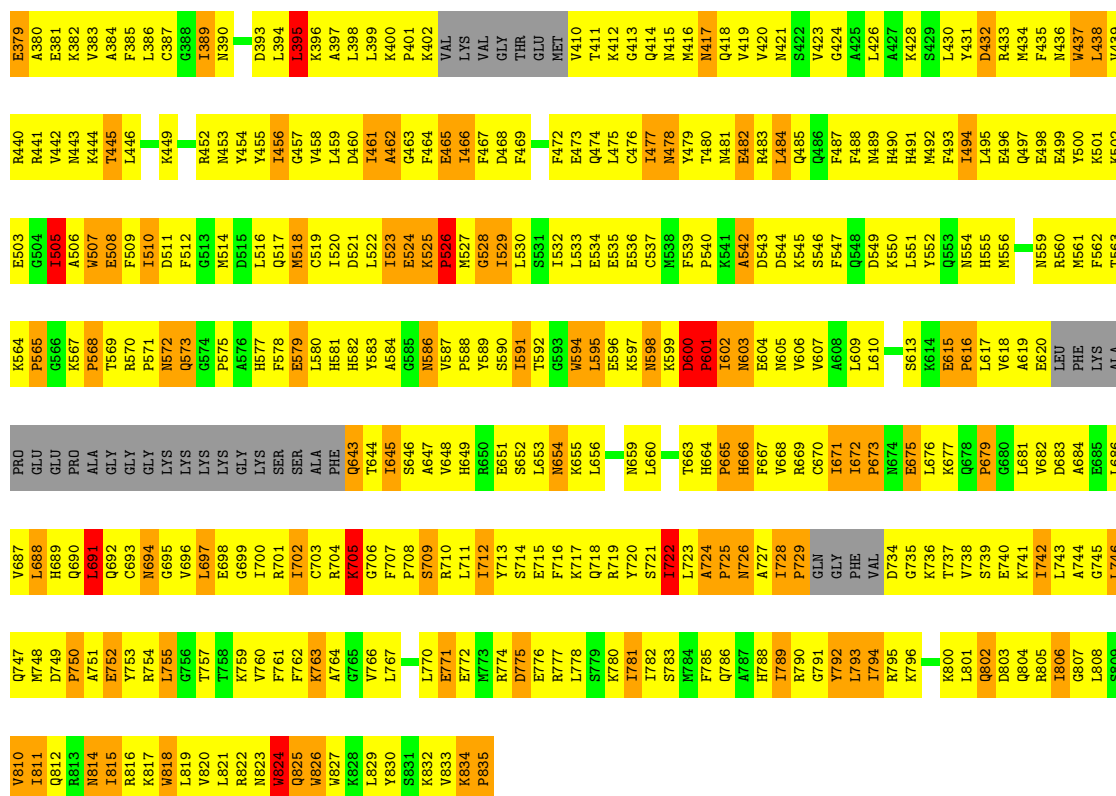
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• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

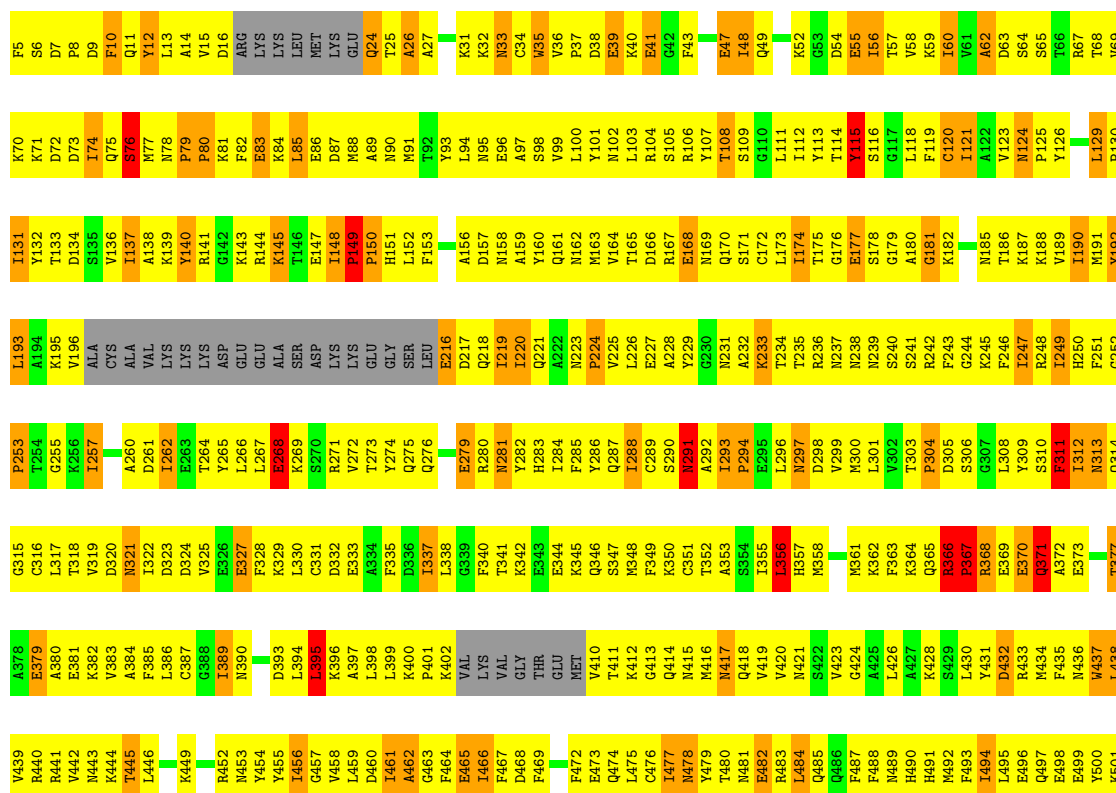
Chain 34-C: 13% 60% 18% 7%

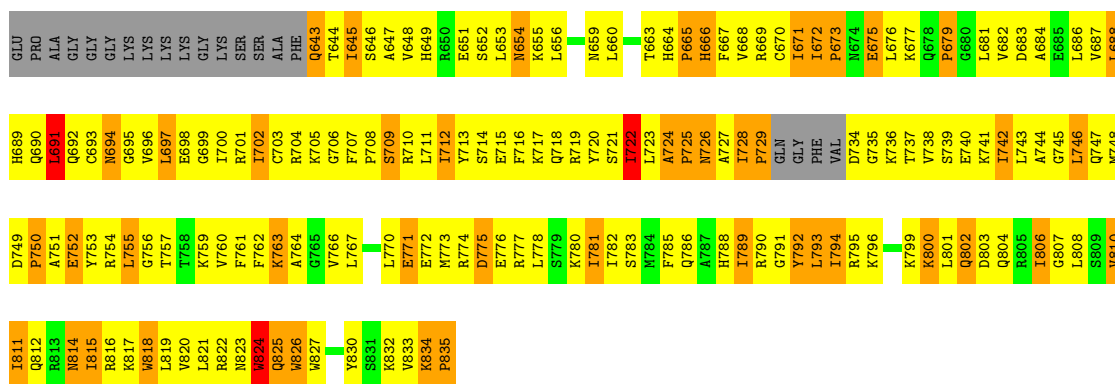




● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

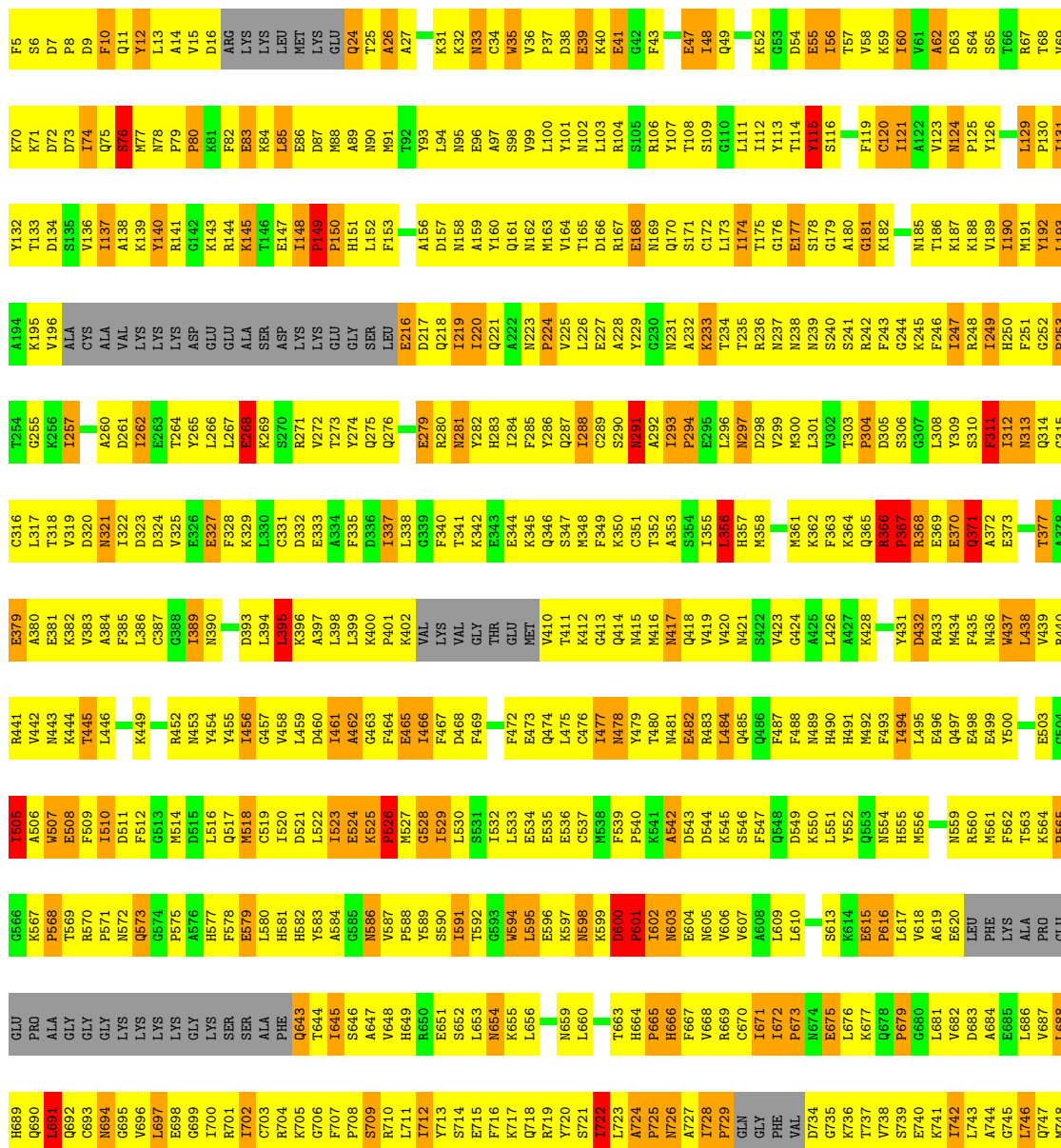
Chain 35-C: 13% 60% 18% 7%

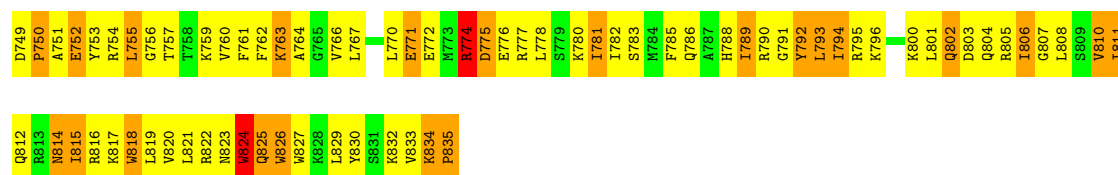




- Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

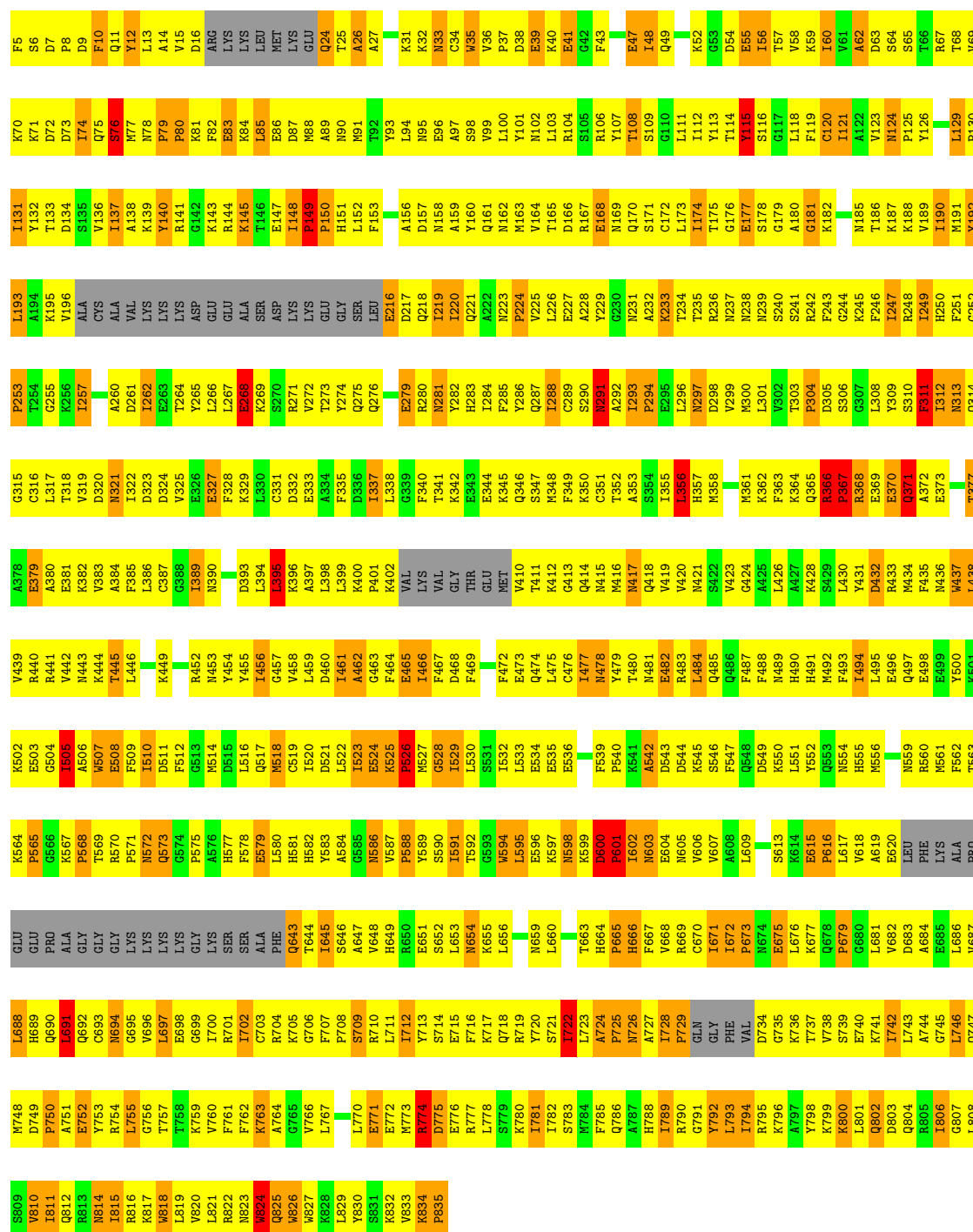
Chain 37-C:  14% 59% 17% 7%



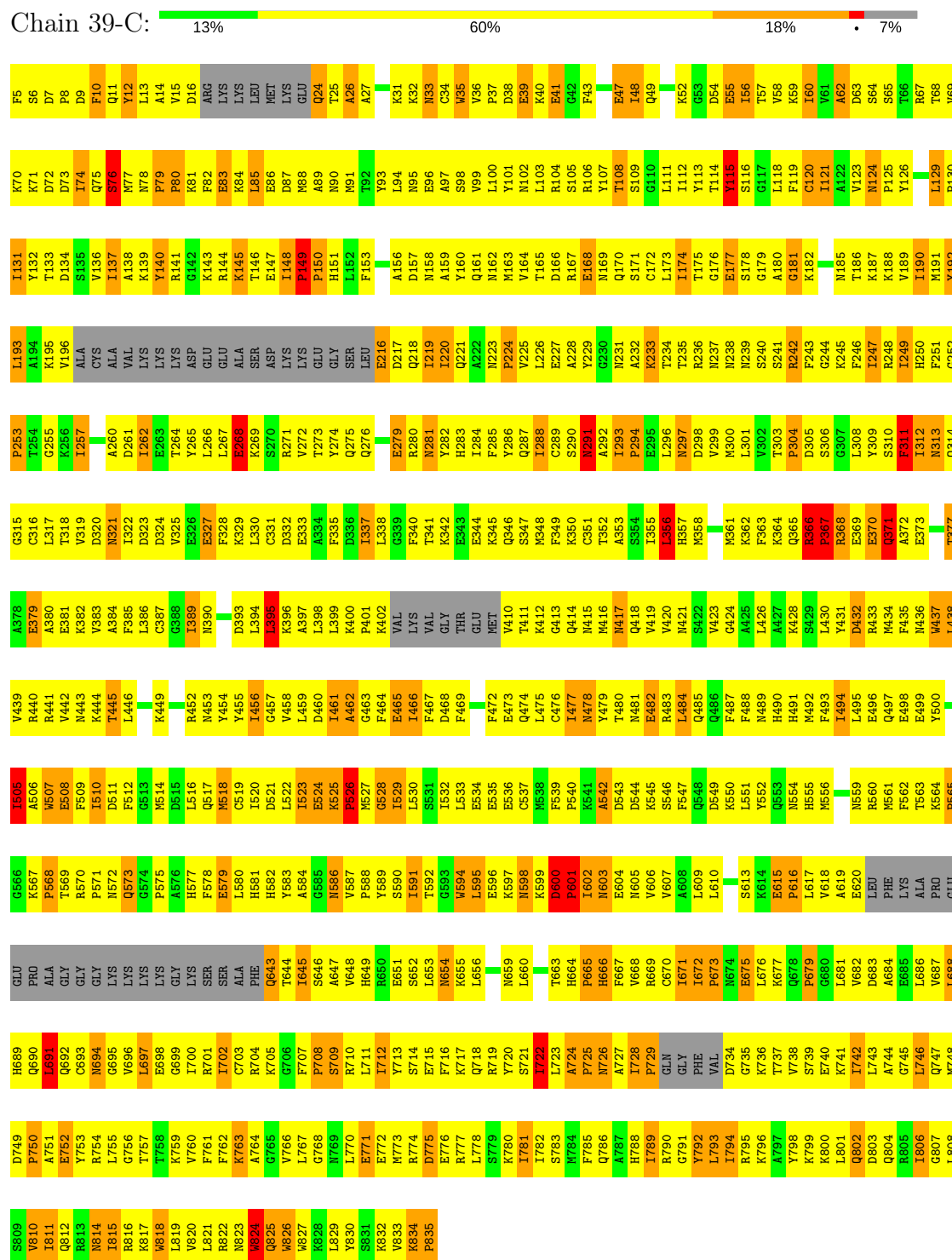


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 38-C: 13% 59% 18% 7%



● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

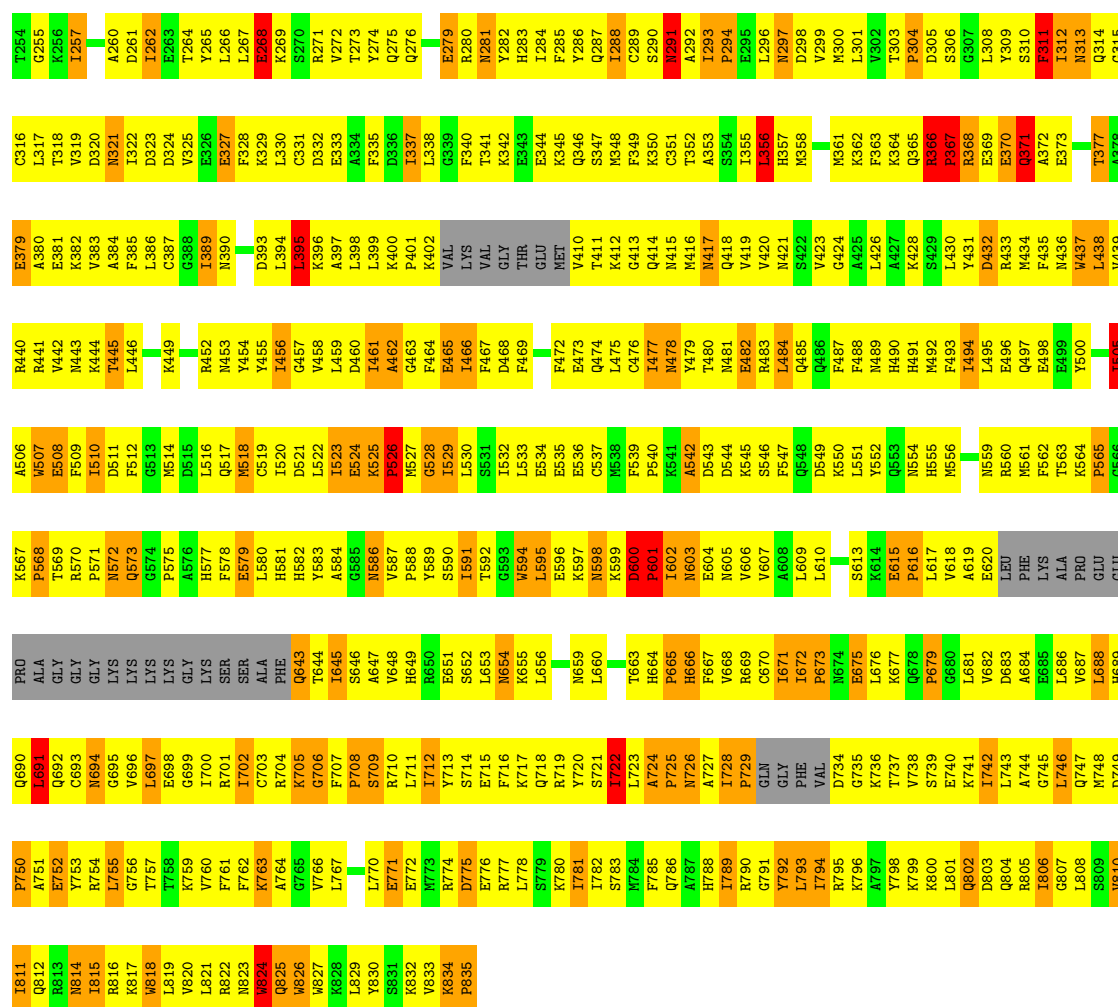


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



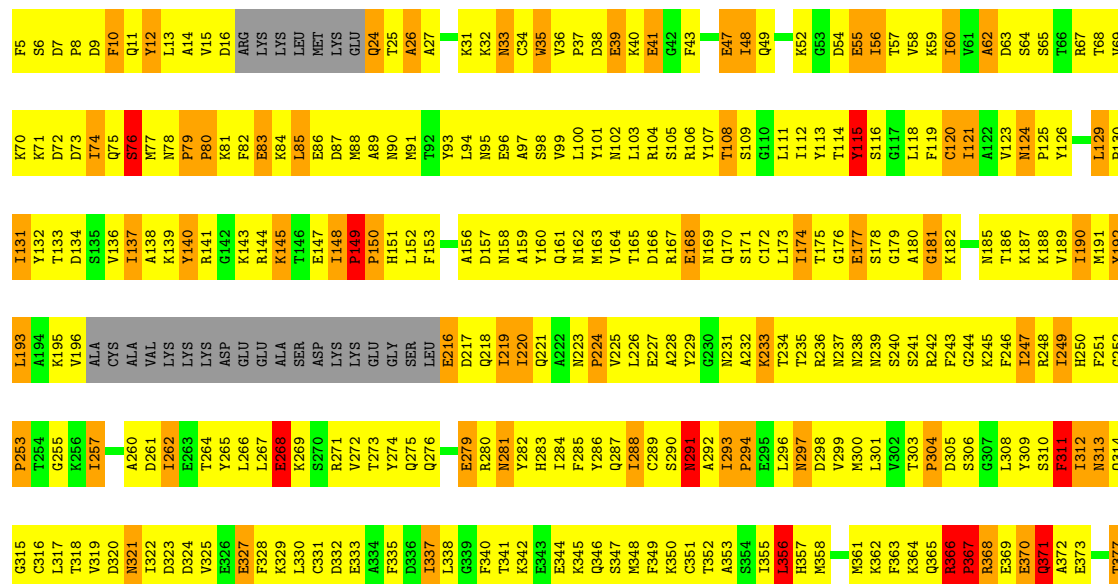


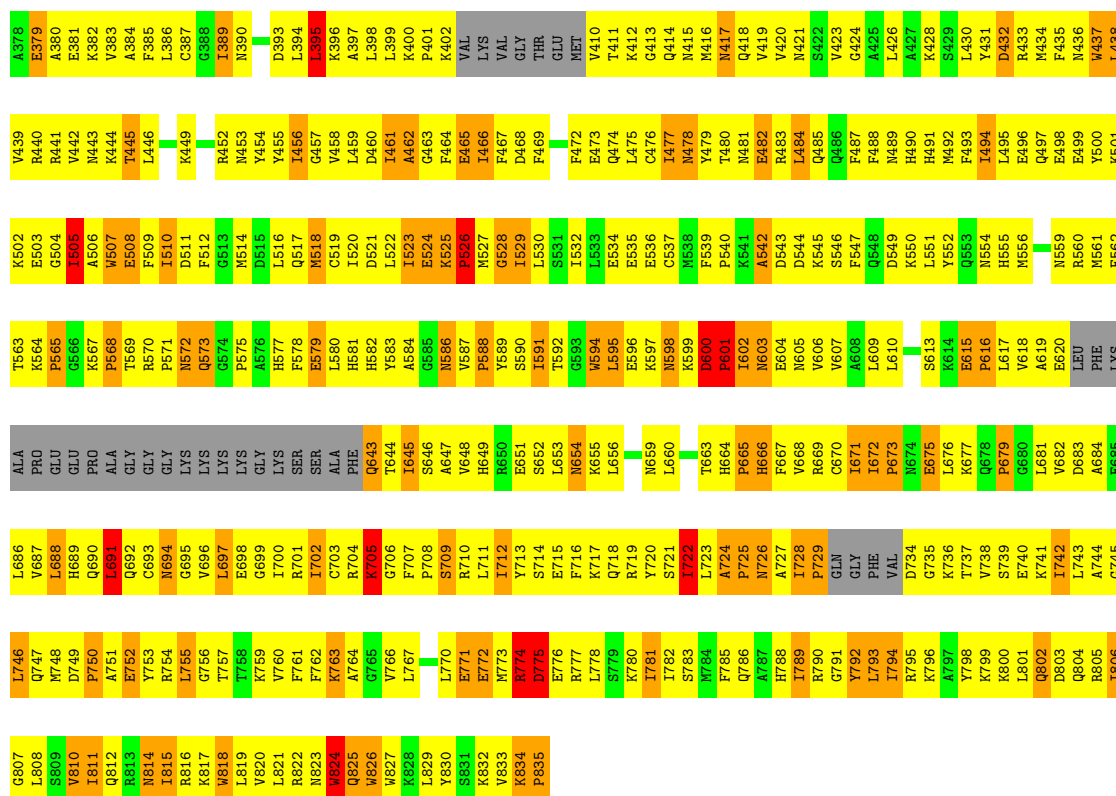
K70	K71	D72	D73	I74	Q75	S76	M77	N78	P79	P80	K81	F82	E83	K84	L85	E86	D87	M88	A89	N90	M91	T92	Y93	L94	N95	E96	A97	S98	V99	L100	I101	N102	L103	A104	S105	R106	I107	T108	S109	G110	L111	I112	I113	T114	Y115	S116	G117	L118	F119	C120	I121	A122	V123	N124	P125	Y126	L127	L128	L129						
F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	A17	L18	L19	L20	L21	L22	L23	L24	L25	L26	L27	L28	L29	L30	L31	L32	L33	L34	L35	L36	L37	L38	L39	L40	L41	L42	L43	L44	L45	L46	L47	L48	L49	L50	L51	L52	L53	L54	L55	L56	L57	L58	L59	L60	L61	L62	L63	L64	L65	L66	L67	L68	L69	L70



● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

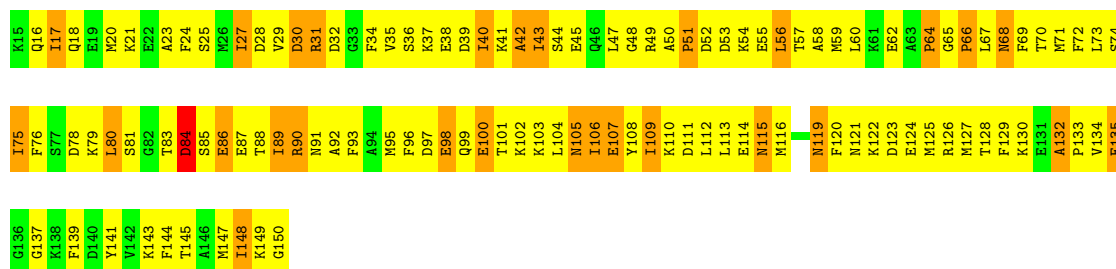
Chain 43-C:





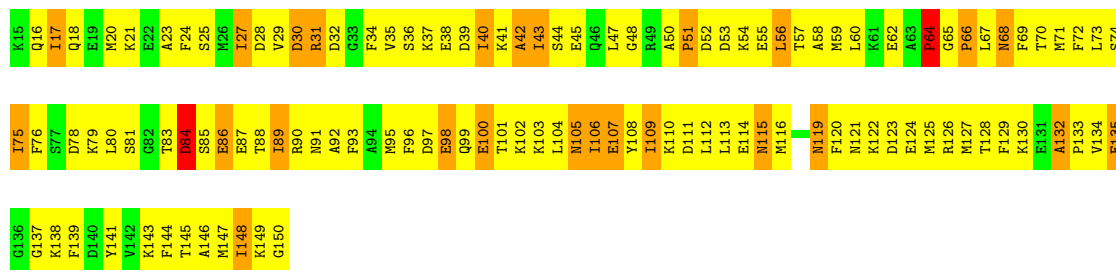
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 1-Y: 14% 65% 21%



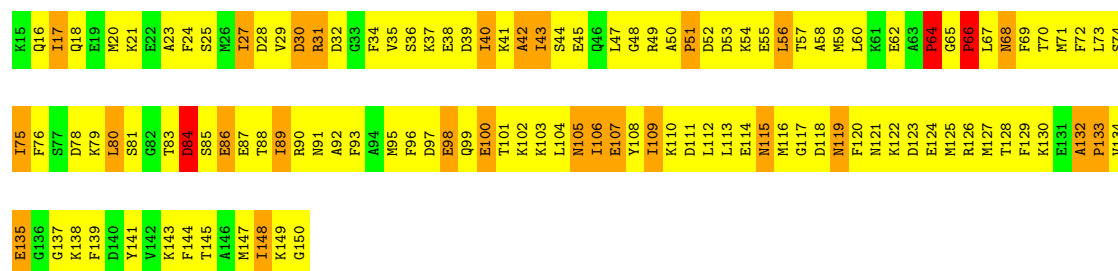
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 2-Y: 13% 67% 18%



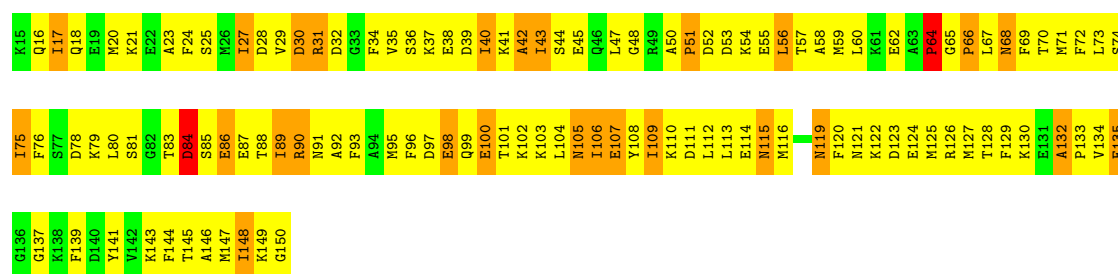
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 3-Y:  12% 67% 19% .



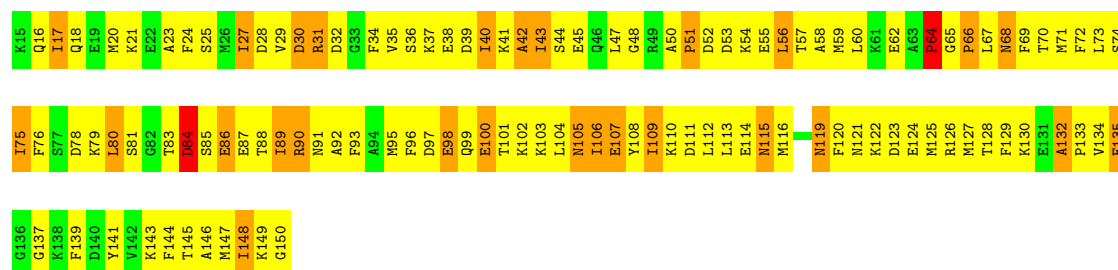
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 4-Y:  14% 65% 19% .



• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 5-Y:  14% 65% 20% .



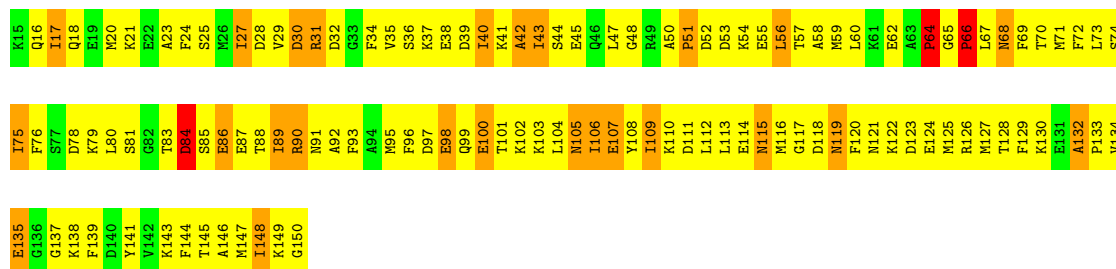
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 6-Y:  14% 66% 18% .



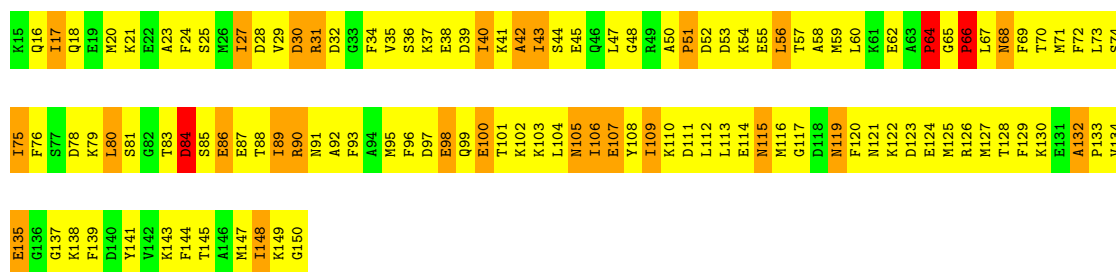
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 7-Y:  12% 68% 18%



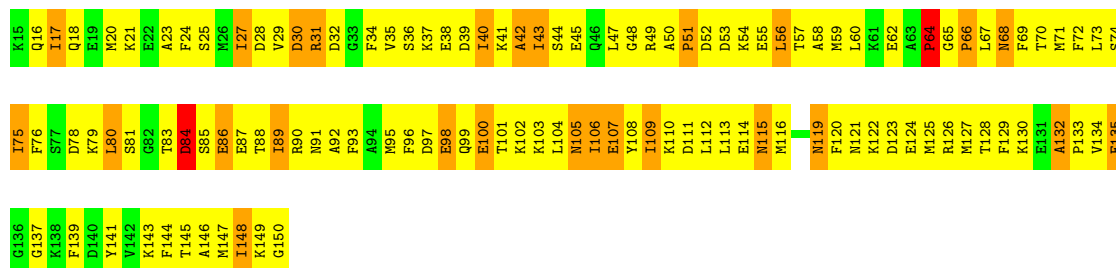
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 8-Y:  13% 65% 19%



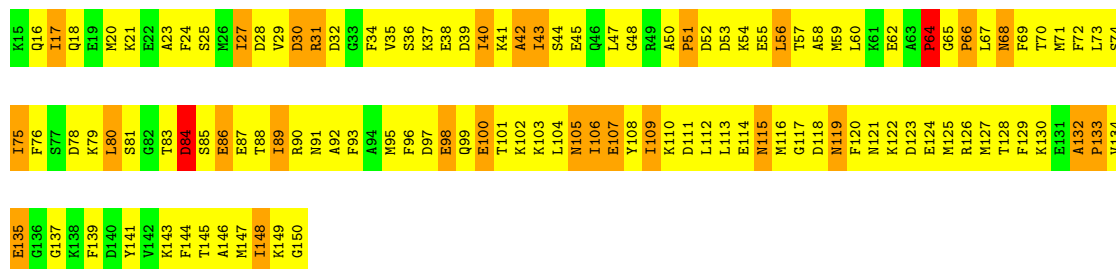
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 9-Y:  13% 66% 19%



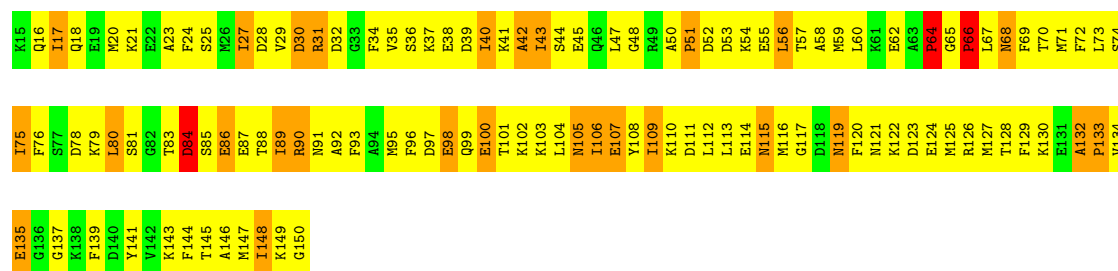
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 10-Y:  13% 66% 20%



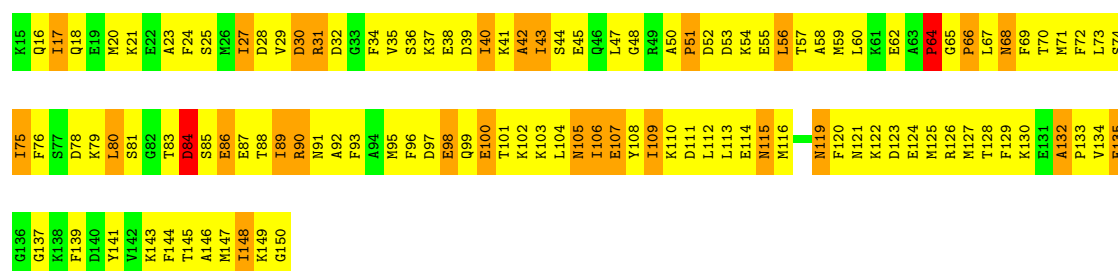
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 11-Y:  13% 65% 20%



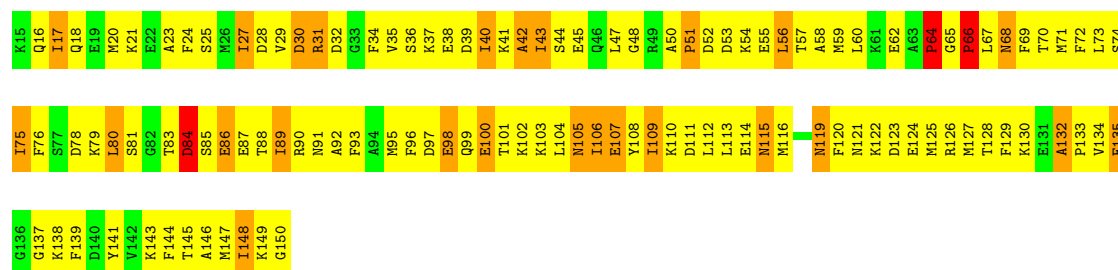
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 12-Y:  14% 65% 20%



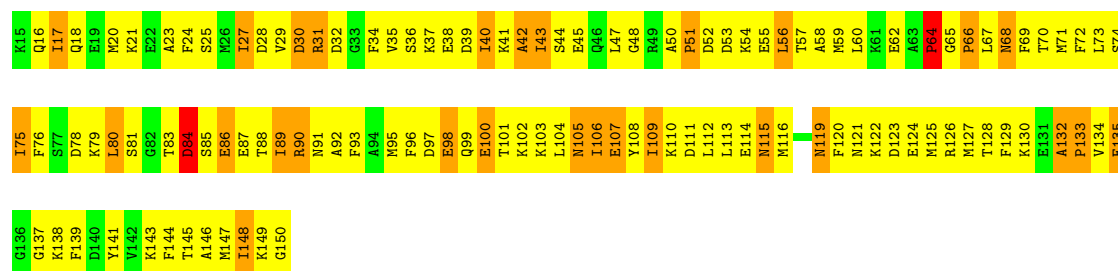
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 13-Y:  13% 66% 18%




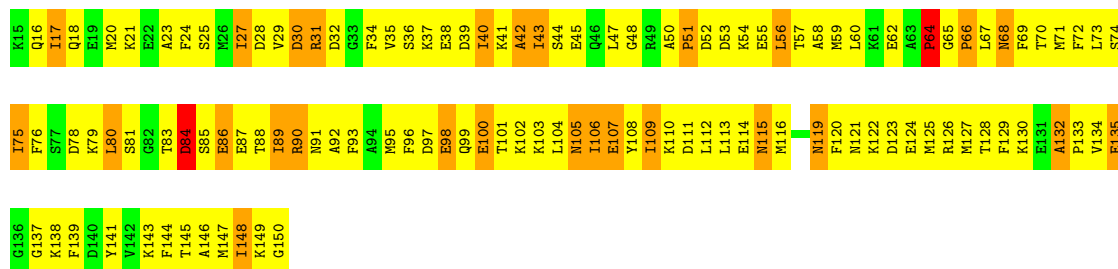
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 14-Y:  13% 65% 21%



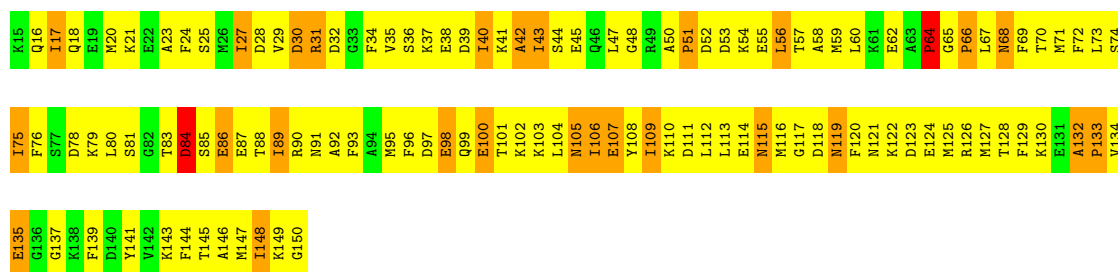
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 15-Y:  13% 65% 20%



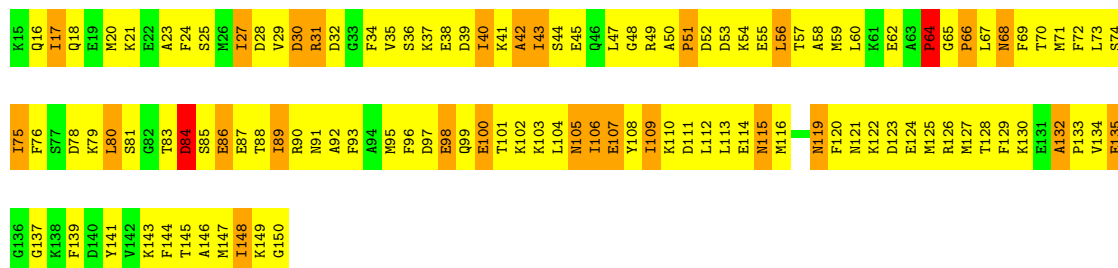
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 16-Y:  13% 67% 19%



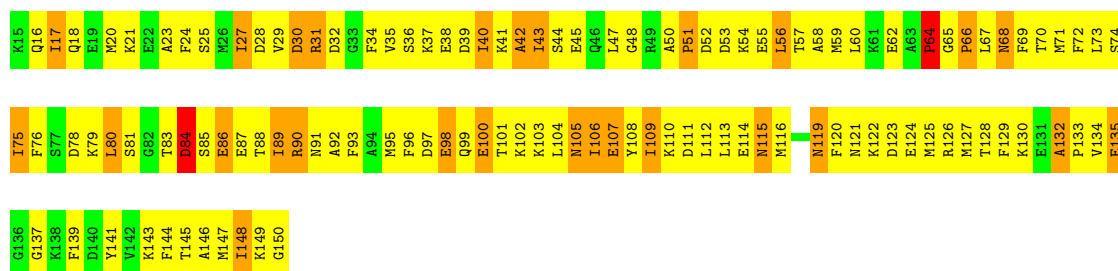
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 17-Y:  13% 66% 19%



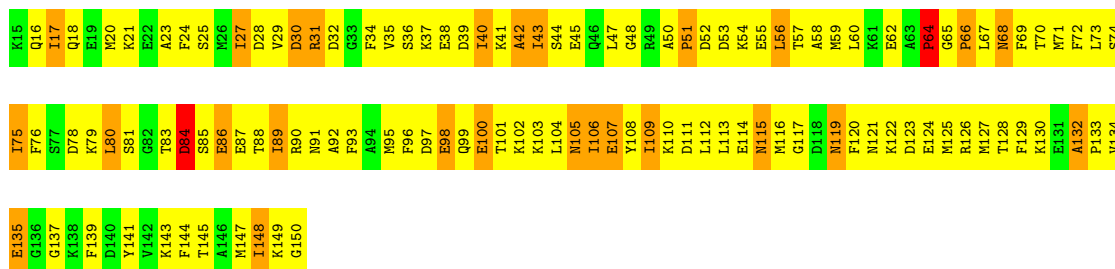
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 18-Y:  14% 65% 20%



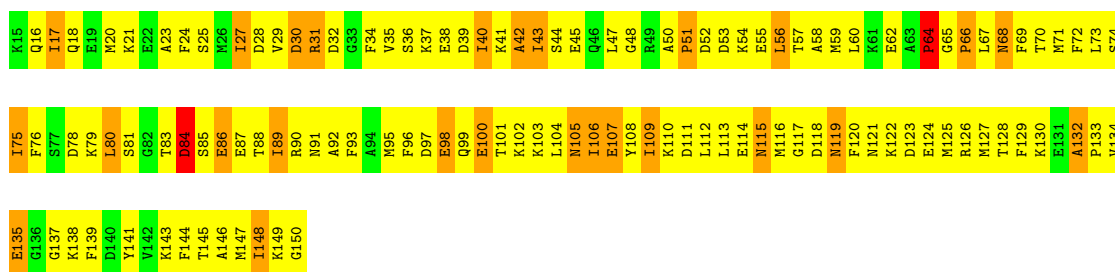
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 19-Y: 14% 65% 19%



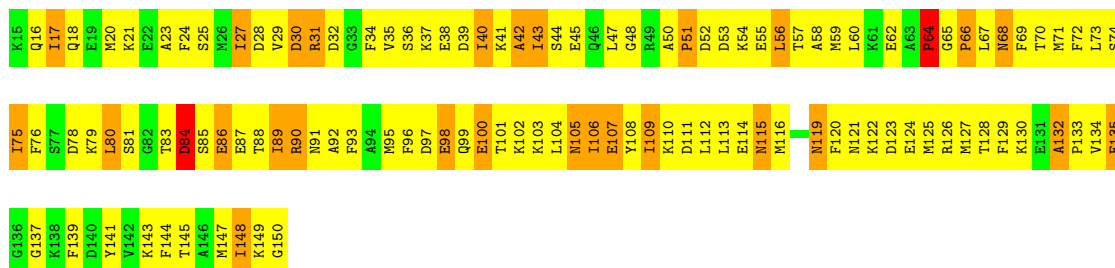
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 20-Y: 12% 68% 19%



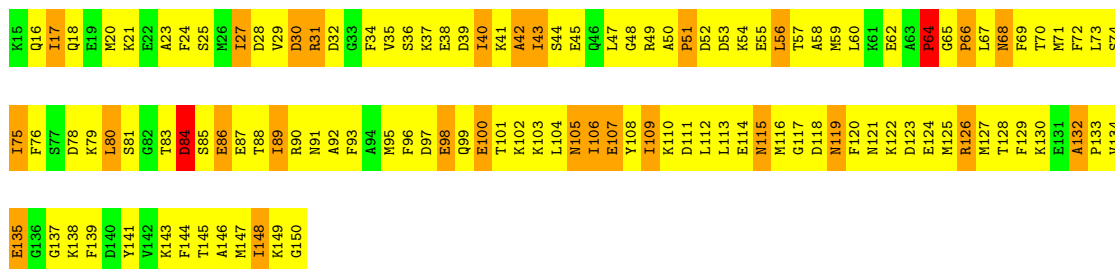
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 21-Y:  15% 64% 20%



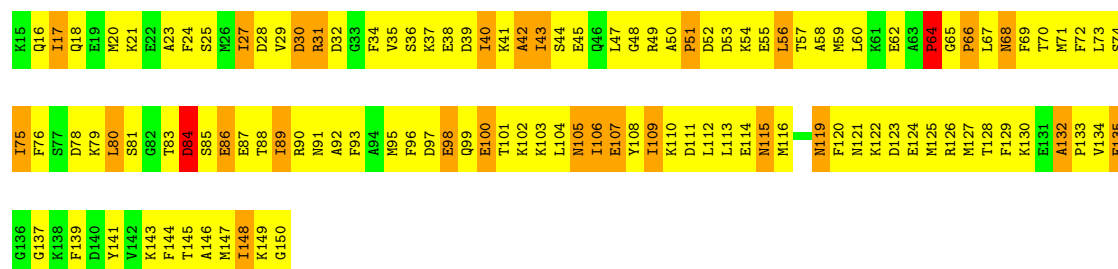
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 22-Y:  11% 68% 20%



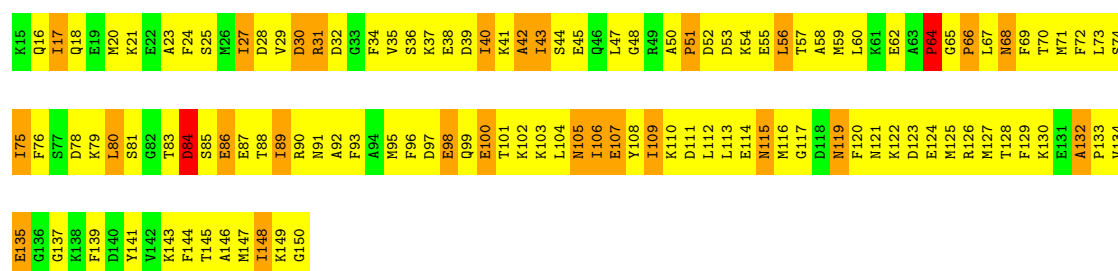
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 23-Y: 13% 66% 19%



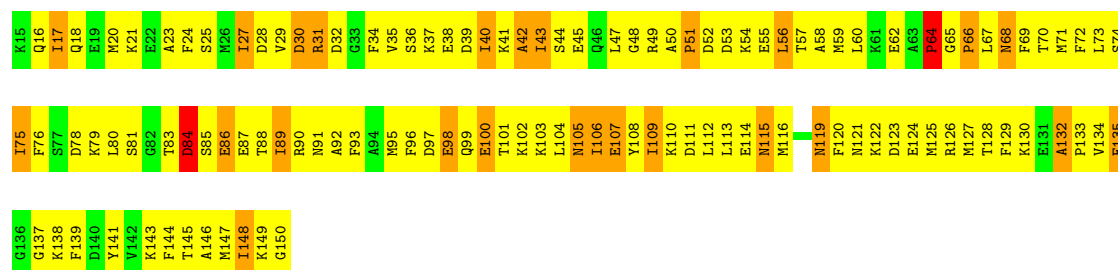
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 24-Y: 13% 66% 19%



- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 25-Y:  13% 68% 18%



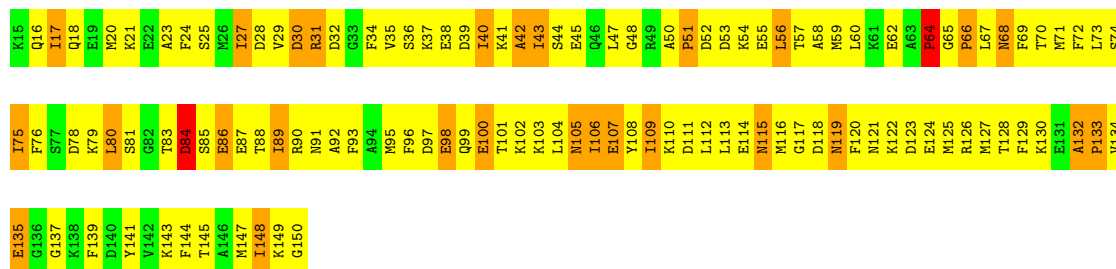
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 26-Y:  14% 65% 18% .



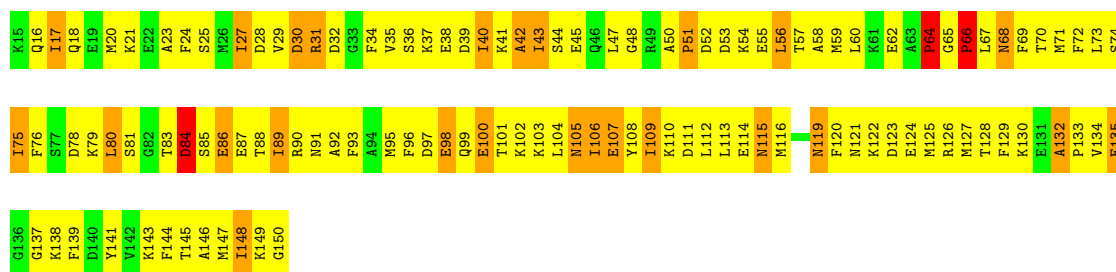
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 27-Y:  13% 65% 20%



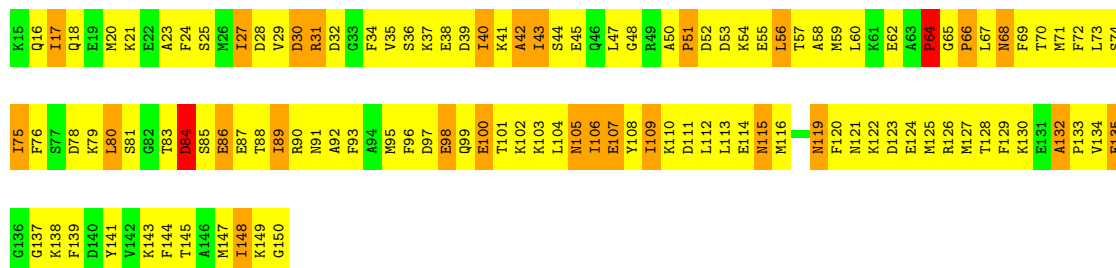
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 28-Y:  13% 66% 18%



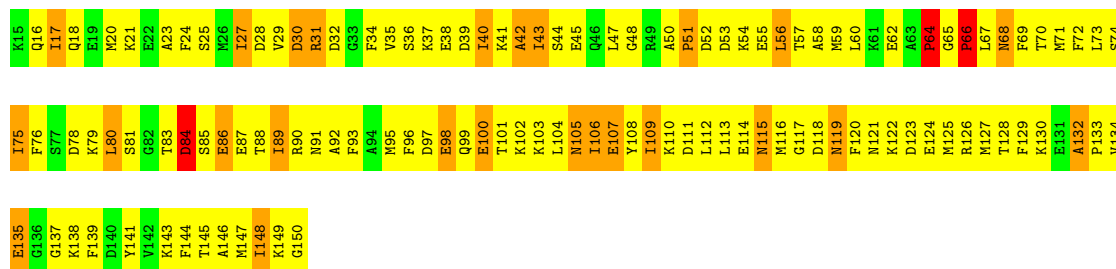
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 29-Y:  14% 65% 19%



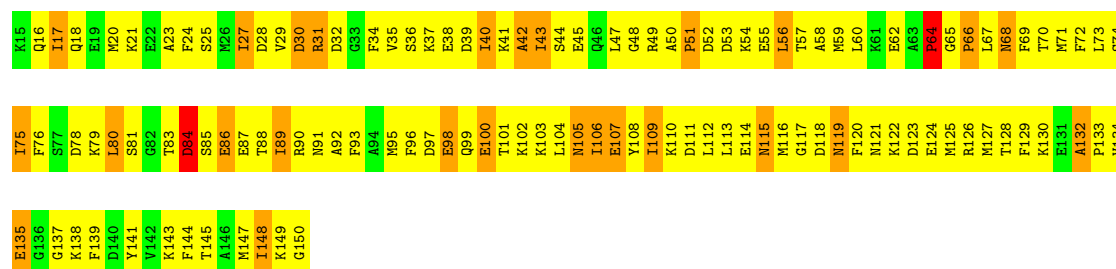
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 30-Y:  12% 68% 18%



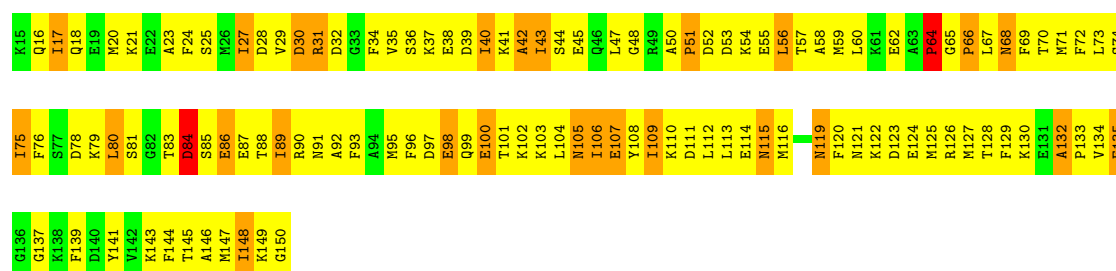
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 31-Y:  12% 68% 19%



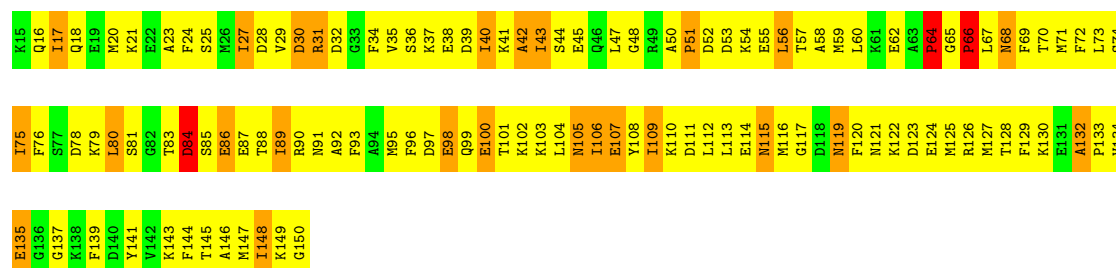
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 32-Y:  14% 65% 19%



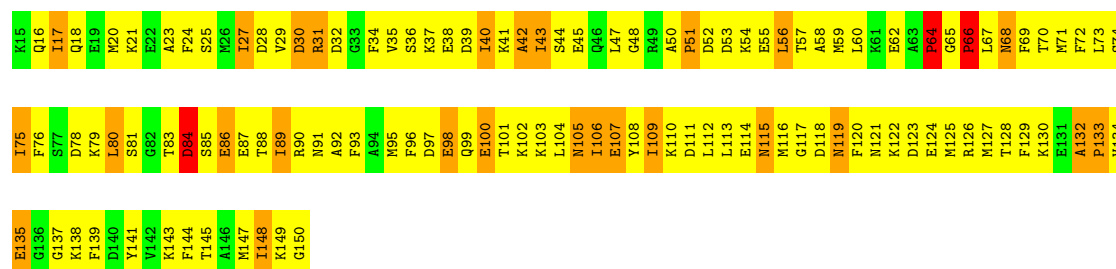
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 33-Y:  13% 66% 18%



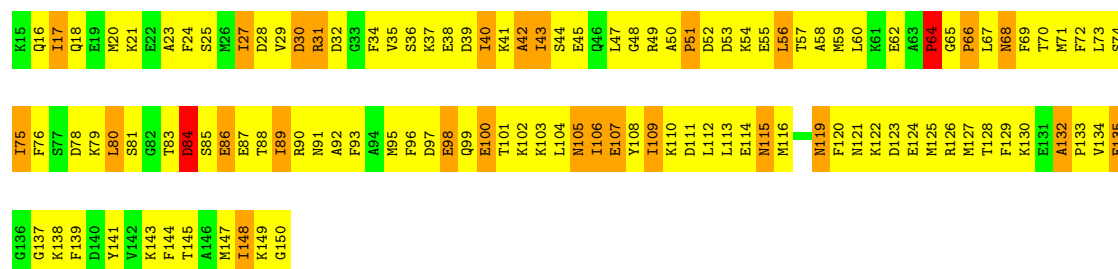
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 34-Y:  13% 66% 19%



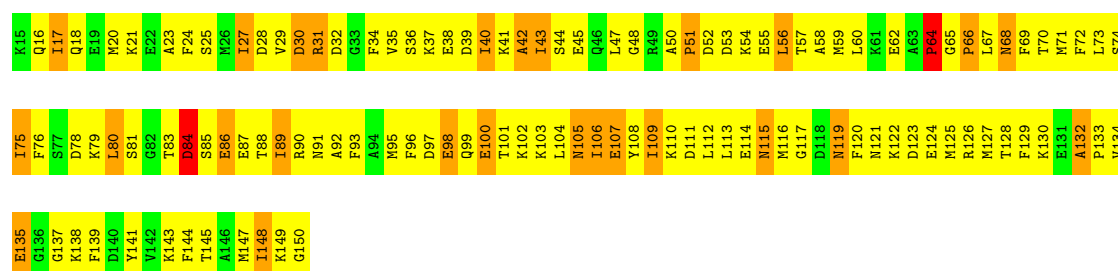
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 35-Y: 13% 66% 19%



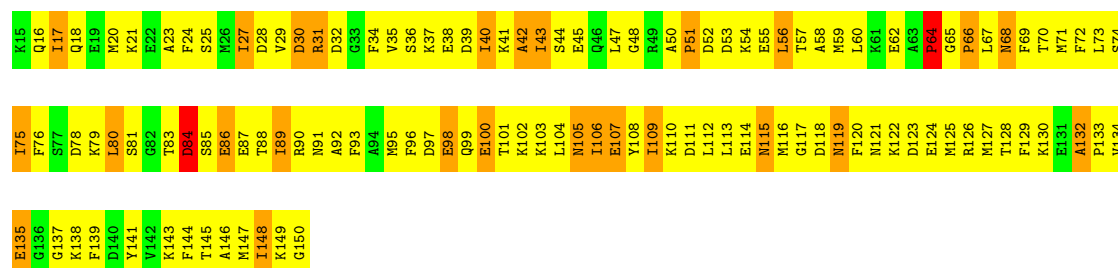
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 36-Y: 13% 66% 19%



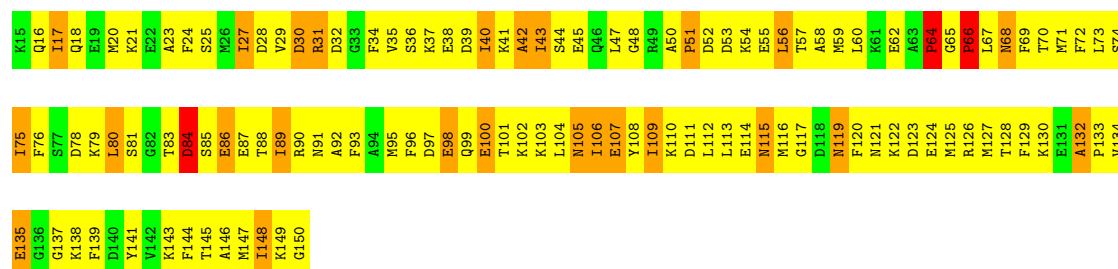
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 37-Y:  12% 68% 19%



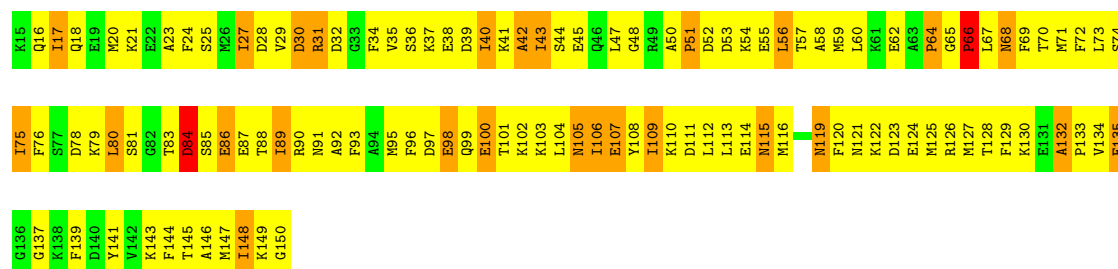
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 38-Y:  13% 67% 18% .



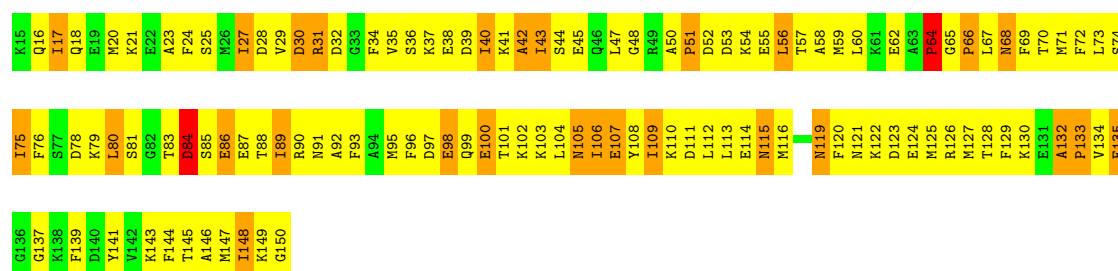
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 39-Y:  14% 65% 19%



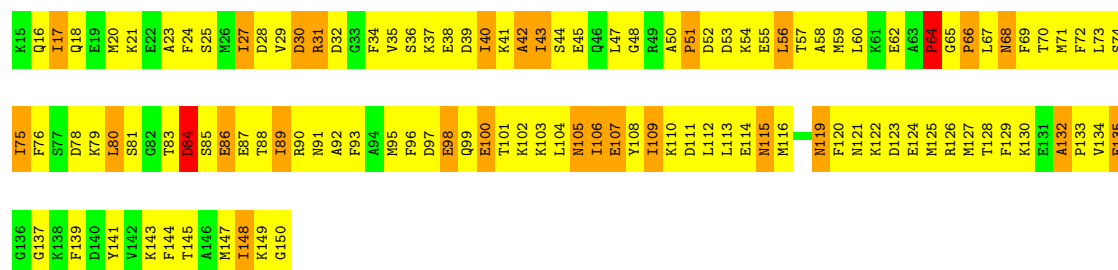
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 40-Y: 14% 65% 20%



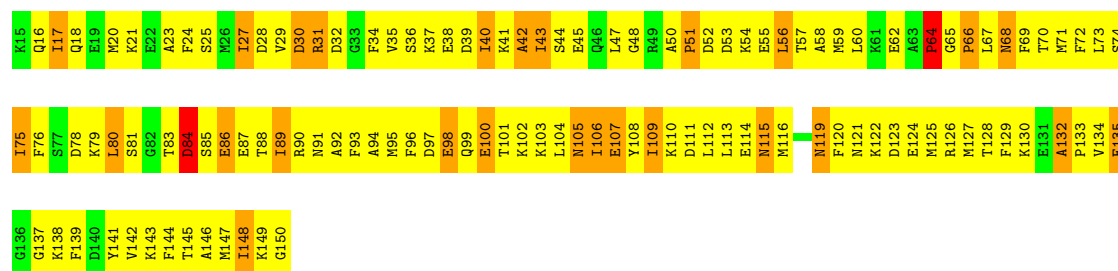
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 41-Y: 15% 65% 19%



- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

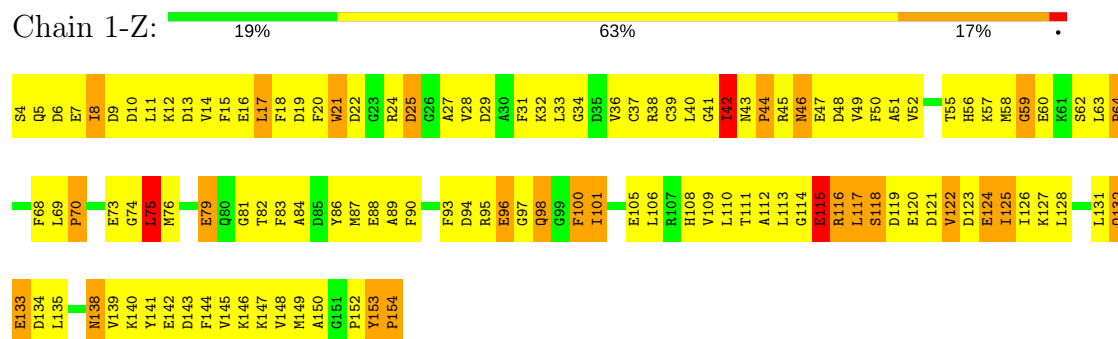
Chain 42-Y:  12% 68% 19%



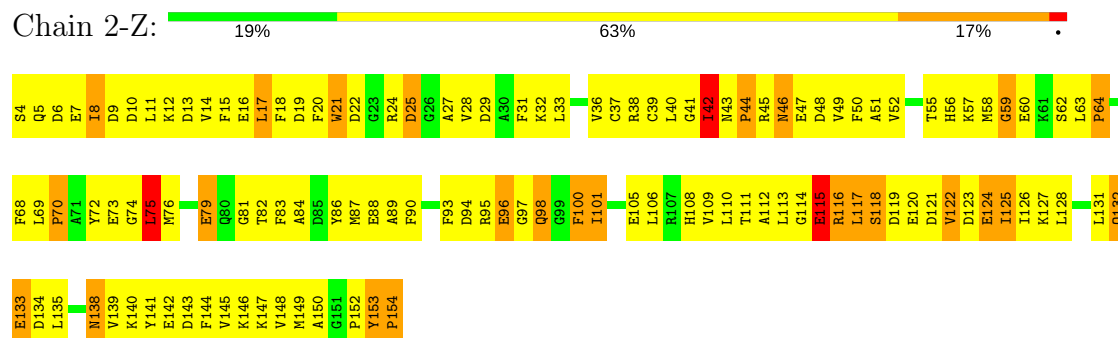
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



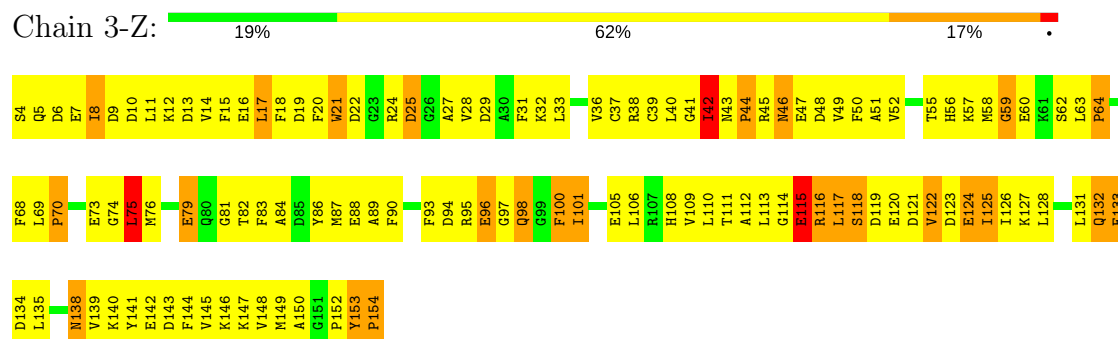
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



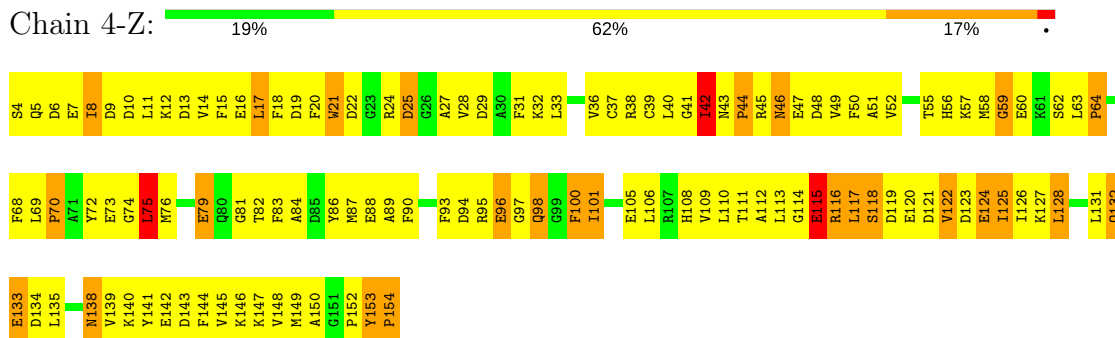
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



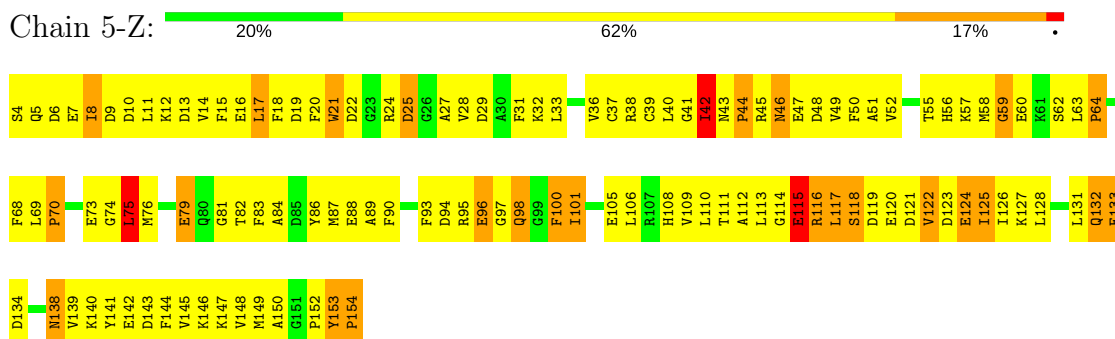
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



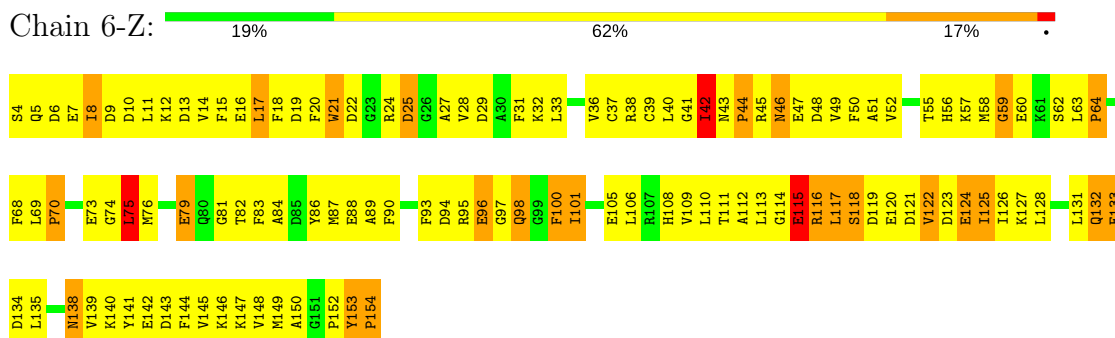
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



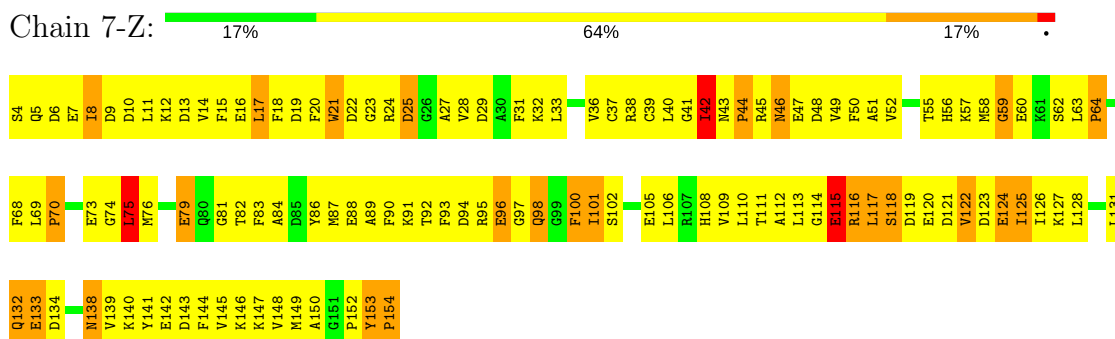
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



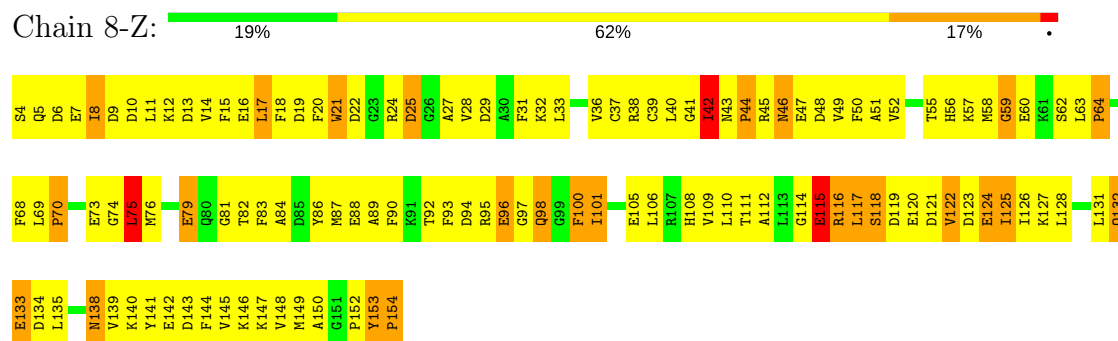
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



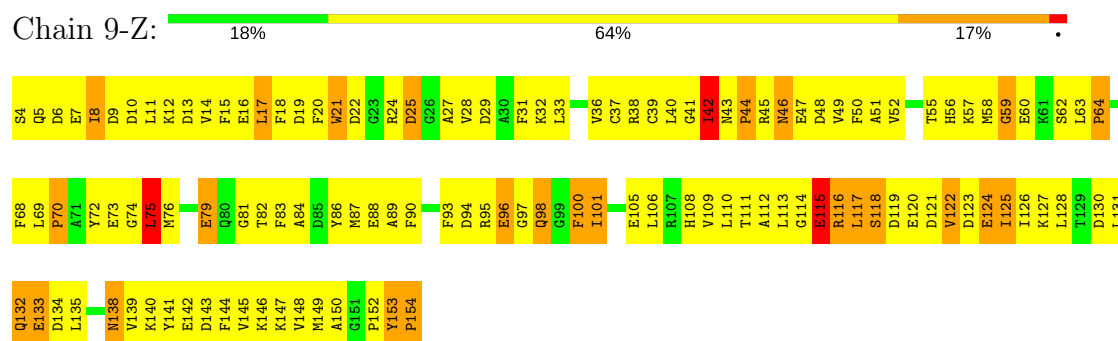
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



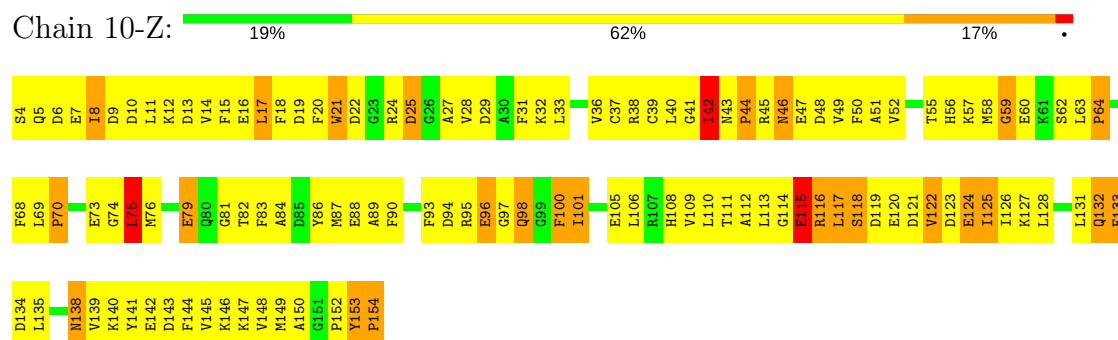
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



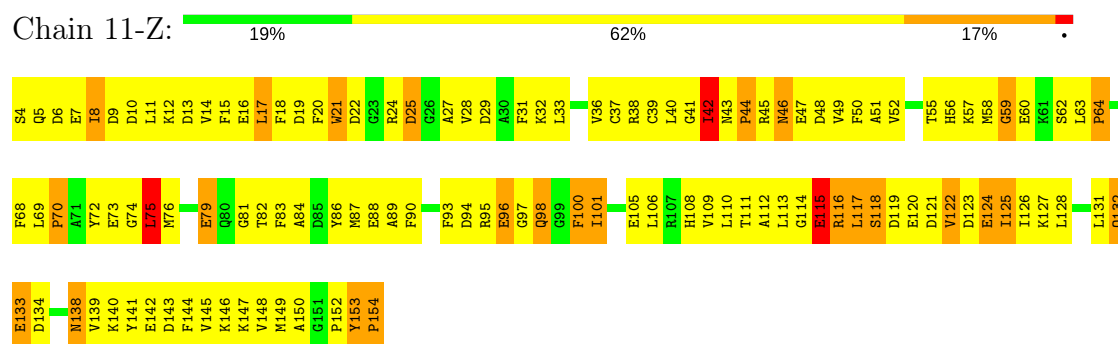
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



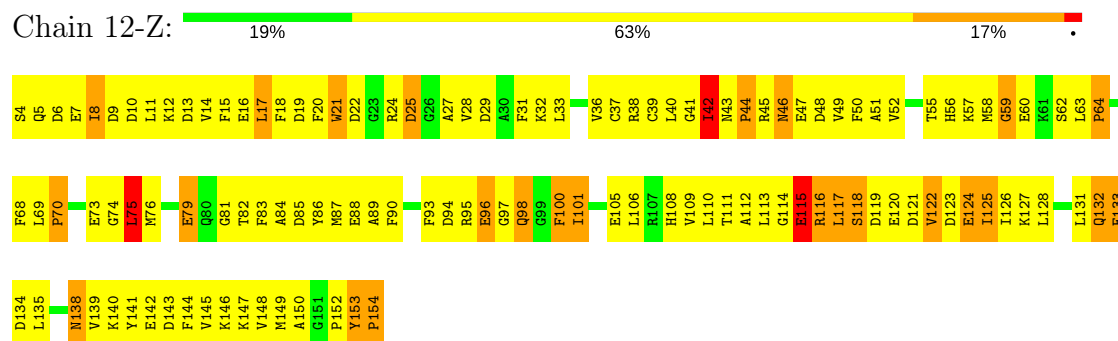
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



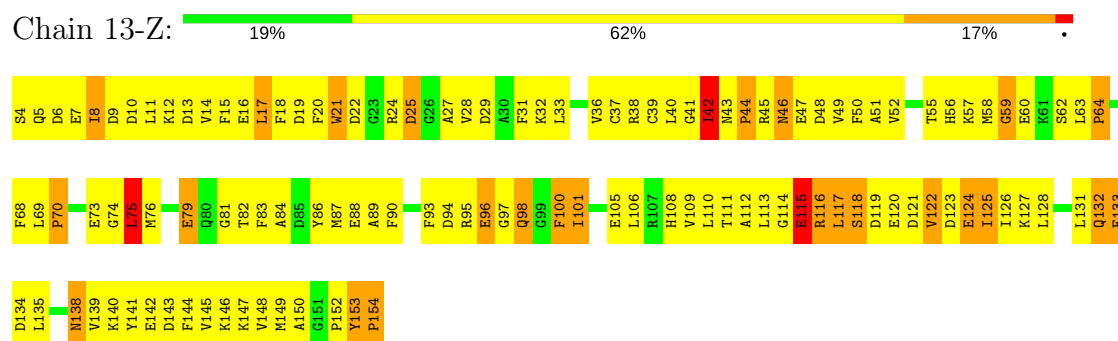
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



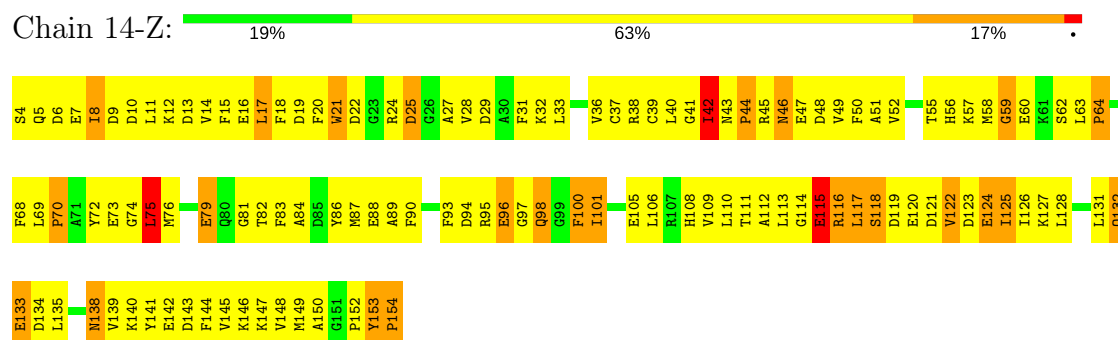
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



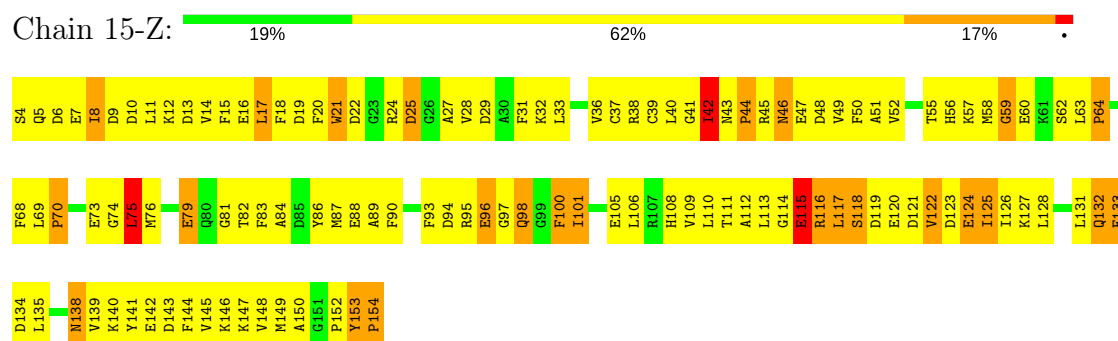
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



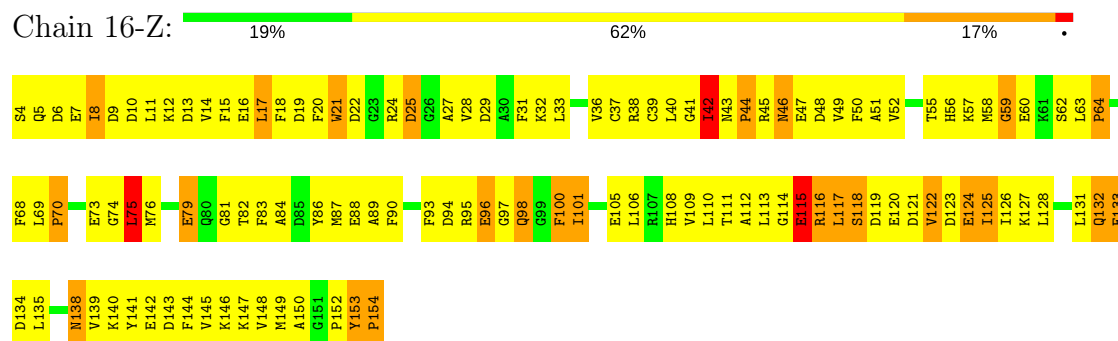
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

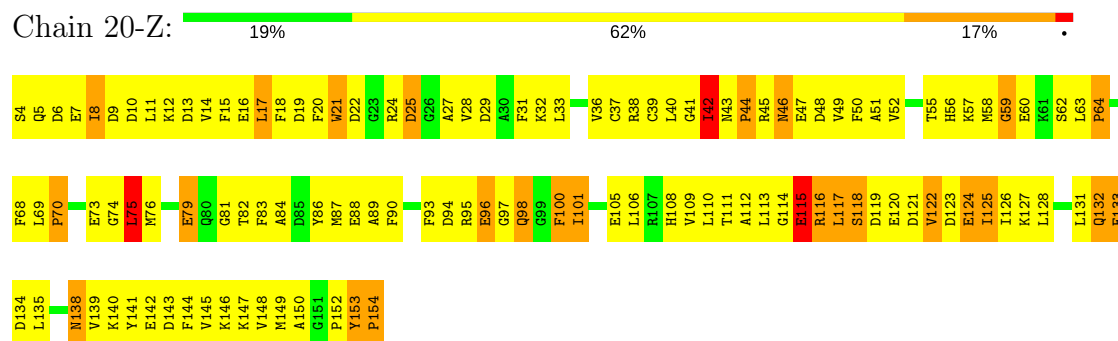


- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

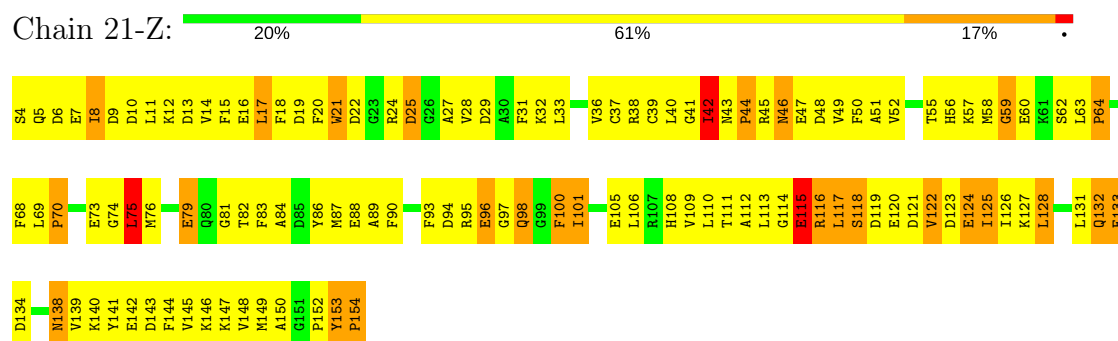


- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

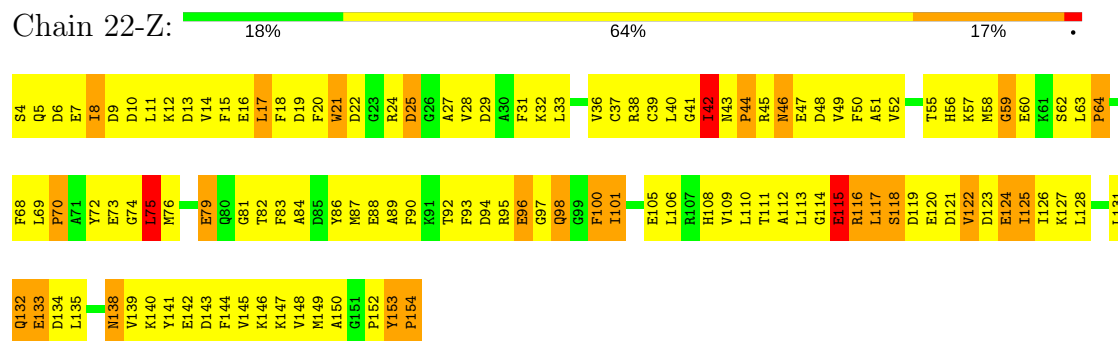




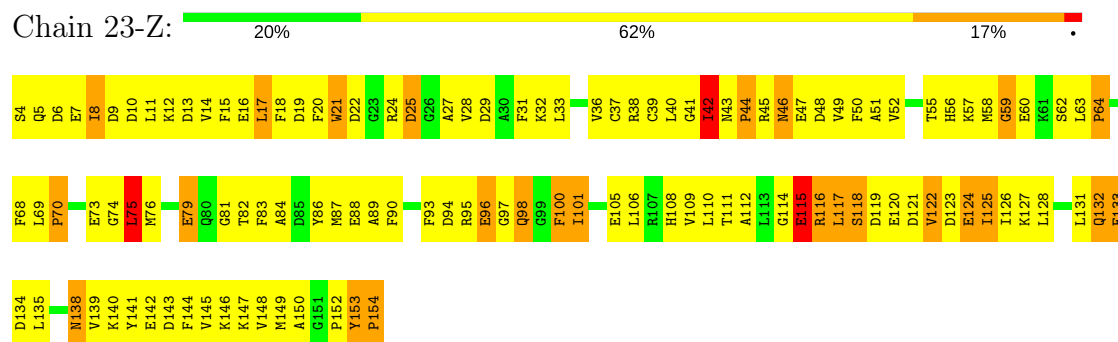
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



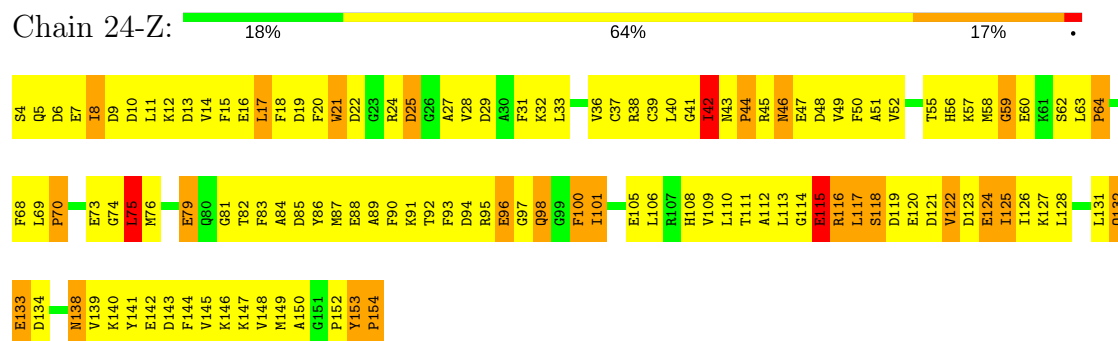
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



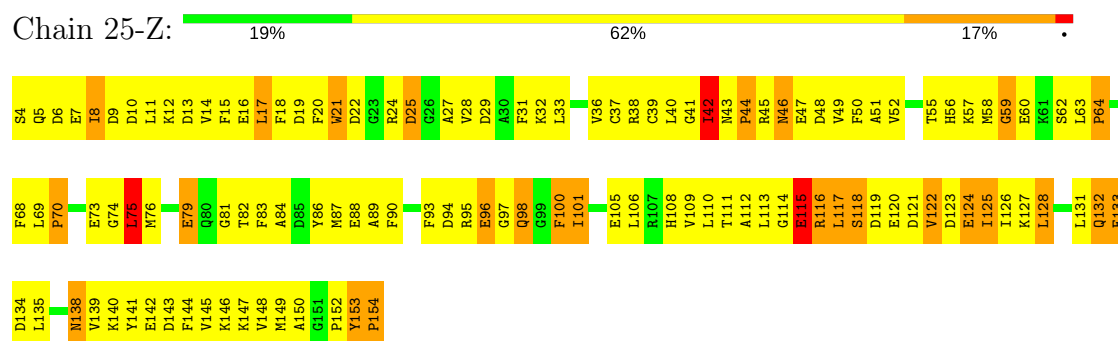
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



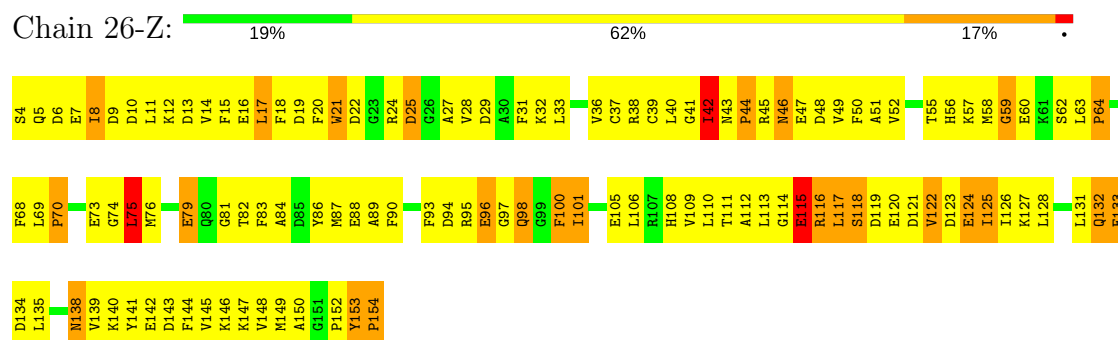
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



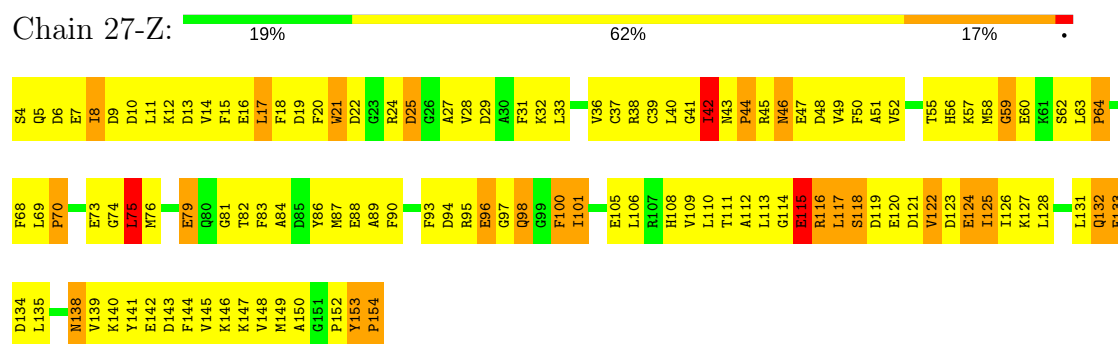
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



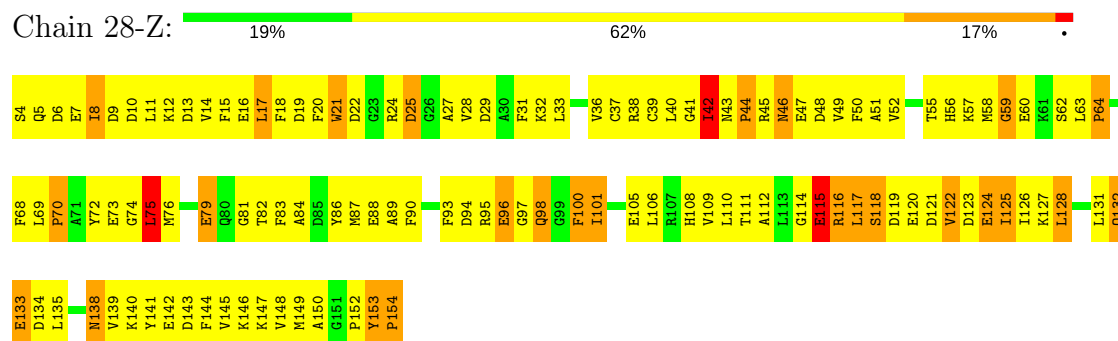
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



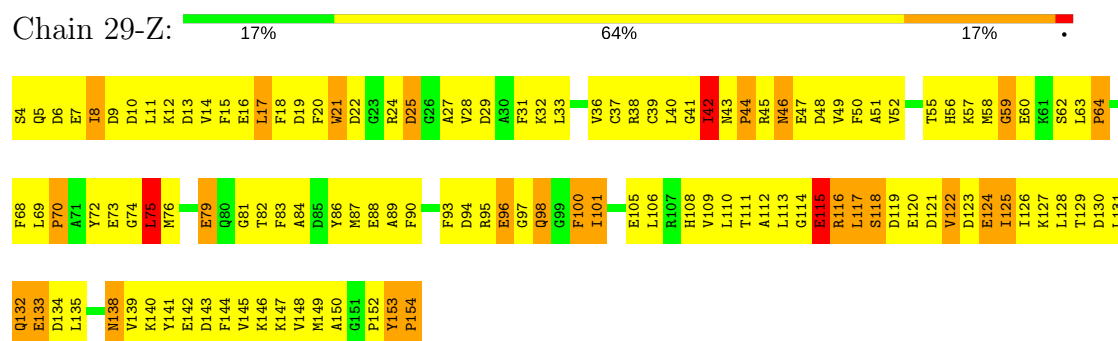
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



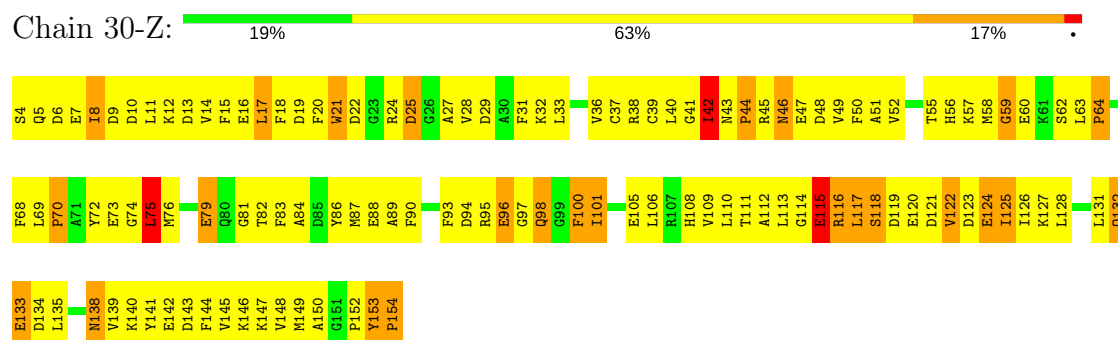
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



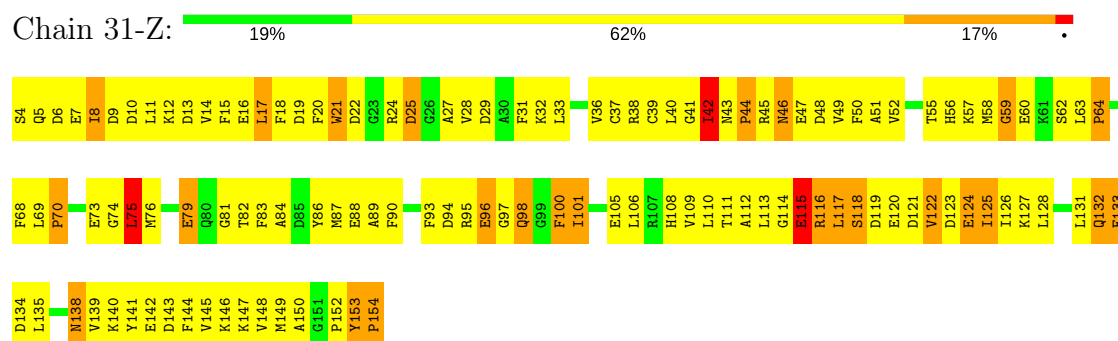
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



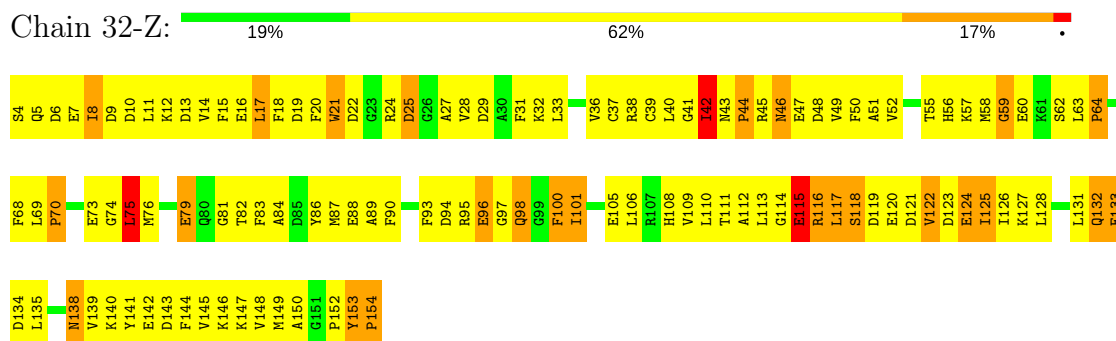
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



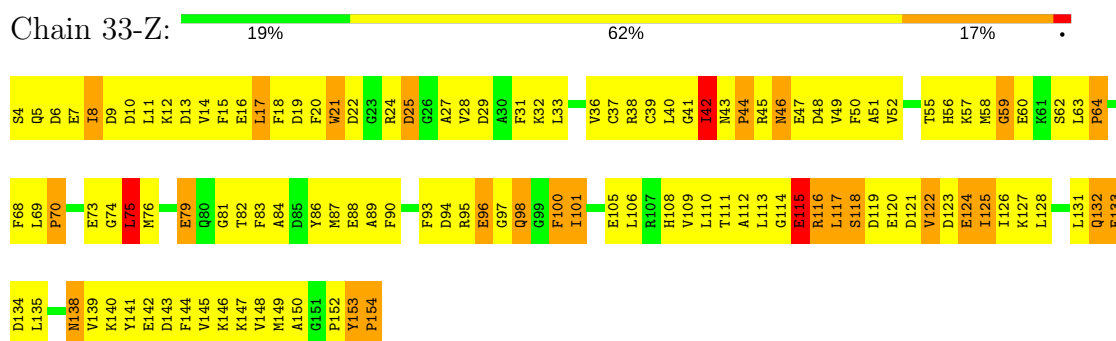
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



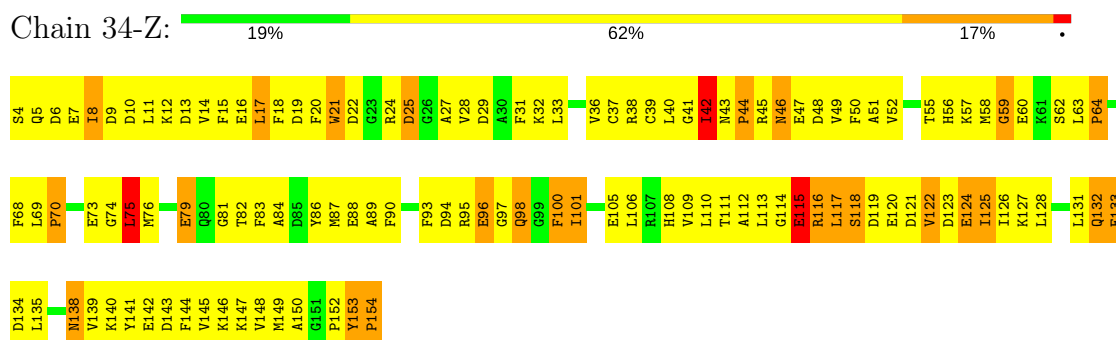
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



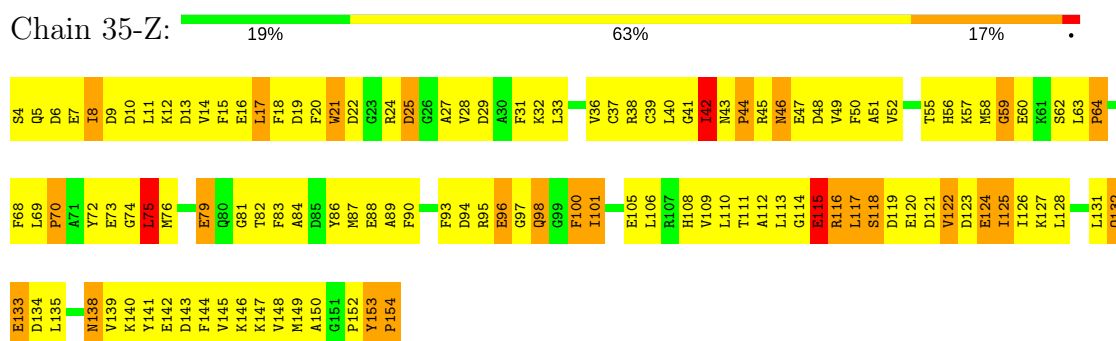
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

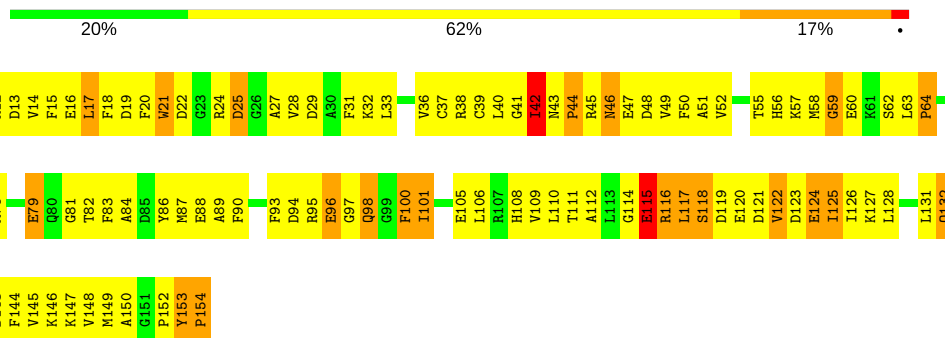


- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



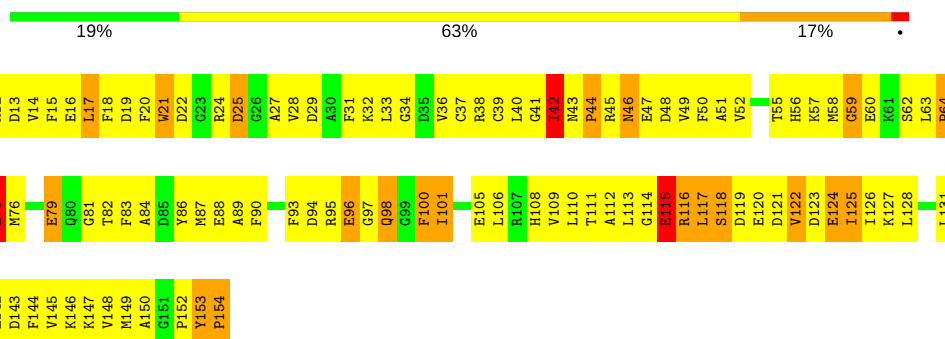
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 36-Z:



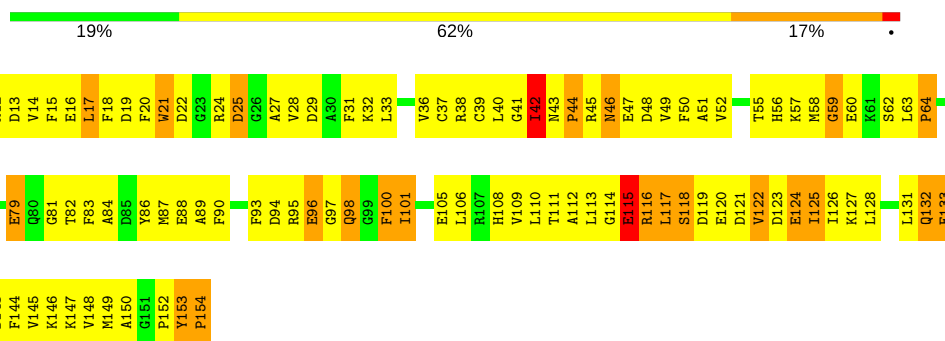
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 37-Z:



- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 38-Z:

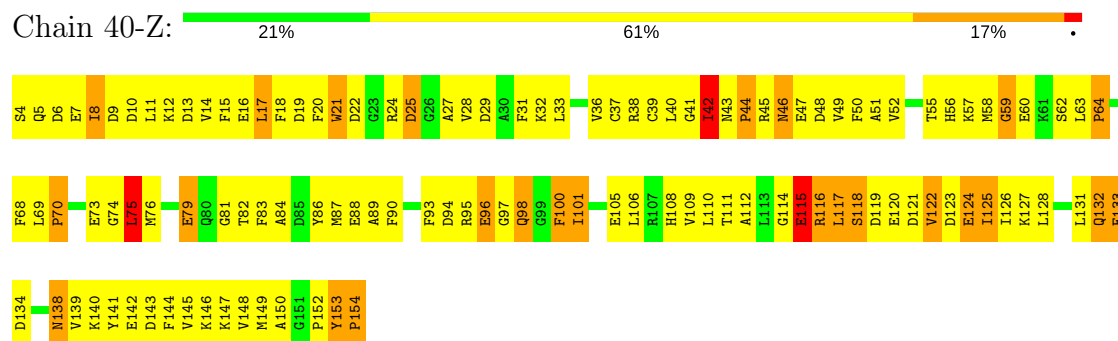


- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

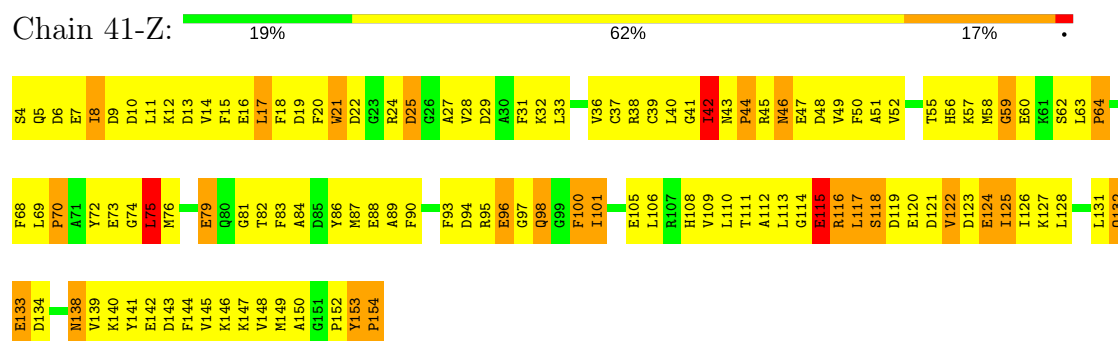
Chain 39-Z:



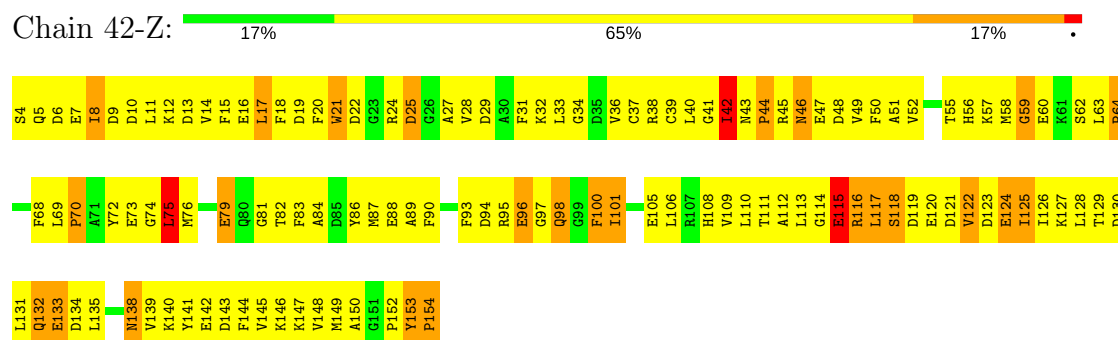
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



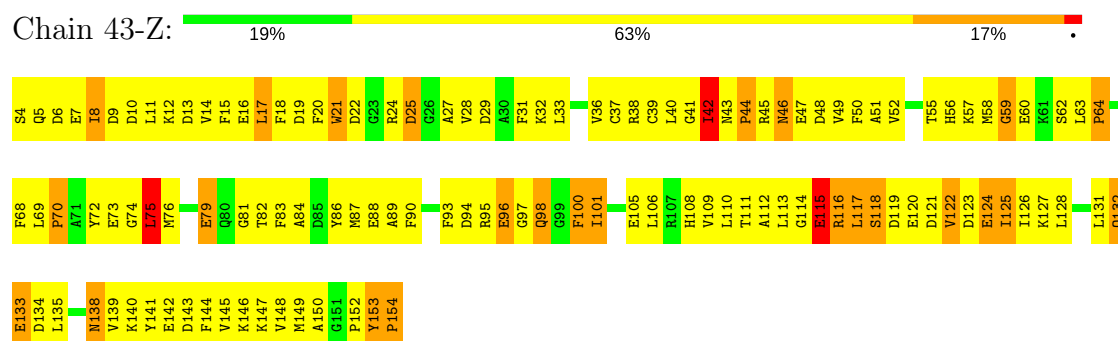
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



4 Experimental information

Property	Value	Source
Reconstruction method	HELICAL	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of segments used	Not provided	Depositor
Resolution determination method	Not provided	Depositor
CTF correction method	Not provided	Depositor
Microscope	FEI/PHILIPS CM300FEG/T	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	Not provided	Depositor
Minimum defocus (nm)	Not provided	Depositor
Maximum defocus (nm)	Not provided	Depositor
Magnification	Not provided	Depositor
Image detector	TIETZ TEM-CAM F224	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >2	RMSZ	# Z >2
1	1-C	1.19	83/6340 (1.3%)	1.30	32/8539 (0.4%)
1	10-C	1.14	81/6340 (1.3%)	1.29	29/8539 (0.3%)
1	11-C	1.15	82/6340 (1.3%)	1.29	31/8539 (0.4%)
1	12-C	1.18	83/6340 (1.3%)	1.30	31/8539 (0.4%)
1	13-C	1.14	82/6339 (1.3%)	1.29	30/8536 (0.4%)
1	14-C	1.14	81/6339 (1.3%)	1.29	28/8536 (0.3%)
1	15-C	1.17	83/6340 (1.3%)	1.34	30/8539 (0.4%)
1	16-C	1.14	81/6340 (1.3%)	1.29	28/8539 (0.3%)
1	17-C	1.16	82/6339 (1.3%)	1.29	29/8536 (0.3%)
1	18-C	1.16	83/6340 (1.3%)	1.33	32/8539 (0.4%)
1	19-C	1.15	83/6340 (1.3%)	1.34	33/8539 (0.4%)
1	2-C	1.18	82/6339 (1.3%)	1.29	30/8536 (0.4%)
1	20-C	1.14	82/6340 (1.3%)	1.33	32/8539 (0.4%)
1	21-C	1.18	82/6340 (1.3%)	1.30	28/8539 (0.3%)
1	22-C	1.14	81/6340 (1.3%)	1.29	31/8539 (0.4%)
1	23-C	1.17	82/6339 (1.3%)	1.30	31/8536 (0.4%)
1	24-C	1.19	83/6339 (1.3%)	1.30	32/8536 (0.4%)
1	25-C	1.21	83/6339 (1.3%)	1.31	34/8536 (0.4%)
1	26-C	1.14	81/6339 (1.3%)	1.29	30/8536 (0.4%)
1	27-C	1.14	81/6340 (1.3%)	1.29	30/8539 (0.4%)
1	28-C	1.16	83/6339 (1.3%)	1.36	36/8536 (0.4%)
1	29-C	1.16	82/6339 (1.3%)	1.31	33/8536 (0.4%)
1	3-C	1.14	82/6340 (1.3%)	1.29	30/8539 (0.4%)
1	30-C	1.14	81/6340 (1.3%)	1.29	30/8539 (0.4%)
1	31-C	1.21	83/6340 (1.3%)	1.36	32/8539 (0.4%)
1	32-C	1.19	82/6339 (1.3%)	1.30	31/8536 (0.4%)
1	33-C	1.15	82/6340 (1.3%)	1.29	31/8539 (0.4%)
1	34-C	1.14	82/6340 (1.3%)	1.30	33/8539 (0.4%)
1	35-C	1.18	83/6340 (1.3%)	1.32	34/8539 (0.4%)
1	36-C	1.14	82/6340 (1.3%)	1.29	30/8539 (0.4%)
1	37-C	1.14	81/6340 (1.3%)	1.29	28/8539 (0.3%)
1	38-C	1.14	82/6340 (1.3%)	1.30	31/8539 (0.4%)
1	39-C	1.14	80/6339 (1.3%)	1.29	30/8536 (0.4%)
1	4-C	1.17	83/6340 (1.3%)	1.29	29/8539 (0.3%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >2	RMSZ	# Z >2
1	40-C	1.17	82/6340 (1.3%)	1.30	30/8539 (0.4%)
1	41-C	1.14	83/6340 (1.3%)	1.29	29/8539 (0.3%)
1	42-C	1.17	82/6339 (1.3%)	1.29	31/8536 (0.4%)
1	43-C	1.14	83/6339 (1.3%)	1.36	33/8536 (0.4%)
1	5-C	1.14	82/6339 (1.3%)	1.29	28/8536 (0.3%)
1	6-C	1.18	82/6340 (1.3%)	1.30	28/8539 (0.3%)
1	7-C	1.15	83/6340 (1.3%)	1.31	32/8539 (0.4%)
1	8-C	1.17	84/6340 (1.3%)	1.38	33/8539 (0.4%)
1	9-C	1.14	82/6339 (1.3%)	1.32	30/8536 (0.4%)
2	1-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	10-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	11-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	12-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	13-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	14-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	15-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	16-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	17-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	18-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	19-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	2-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	20-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	21-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	22-Y	0.80	8/1104 (0.7%)	1.06	2/1472 (0.1%)
2	23-Y	0.80	8/1104 (0.7%)	1.05	1/1472 (0.1%)
2	24-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	25-Y	0.80	8/1104 (0.7%)	1.05	1/1472 (0.1%)
2	26-Y	0.80	8/1104 (0.7%)	1.05	1/1472 (0.1%)
2	27-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	28-Y	0.80	8/1104 (0.7%)	1.05	1/1472 (0.1%)
2	29-Y	0.80	9/1104 (0.8%)	1.05	1/1472 (0.1%)
2	3-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	30-Y	0.80	8/1104 (0.7%)	1.05	1/1472 (0.1%)
2	31-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	32-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	33-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	34-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	35-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	36-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	37-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	38-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	39-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	4-Y	0.80	8/1104 (0.7%)	1.06	2/1472 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >2	RMSZ	# Z >2
2	40-Y	0.80	9/1104 (0.8%)	1.05	1/1472 (0.1%)
2	41-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	42-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	43-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	5-Y	0.79	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	6-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	7-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	8-Y	0.80	8/1104 (0.7%)	1.06	2/1472 (0.1%)
2	9-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
3	1-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	10-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	11-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	12-Z	0.82	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	13-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	14-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	15-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	16-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	17-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	18-Z	0.82	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	19-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	2-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	20-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	21-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	22-Z	0.81	10/1222 (0.8%)	1.09	1/1644 (0.1%)
3	23-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	24-Z	0.81	11/1222 (0.9%)	1.09	1/1644 (0.1%)
3	25-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	26-Z	0.81	9/1222 (0.7%)	1.09	2/1644 (0.1%)
3	27-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	28-Z	0.82	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	29-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	3-Z	0.82	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	30-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	31-Z	0.81	10/1222 (0.8%)	1.09	1/1644 (0.1%)
3	32-Z	0.81	11/1222 (0.9%)	1.09	1/1644 (0.1%)
3	33-Z	0.81	9/1222 (0.7%)	1.09	2/1644 (0.1%)
3	34-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	35-Z	0.82	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	36-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	37-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	38-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	39-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	4-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >2	RMSZ	# Z >2
3	40-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	41-Z	0.82	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	42-Z	0.81	11/1222 (0.9%)	1.09	1/1644 (0.1%)
3	43-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	5-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	6-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	7-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	8-Z	0.82	11/1222 (0.9%)	1.09	1/1644 (0.1%)
3	9-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
All	All	1.08	4348/372622 (1.2%)	1.25	1458/501117 (0.3%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	1-C	0	5
1	10-C	0	4
1	11-C	0	4
1	12-C	0	5
1	13-C	0	4
1	14-C	0	4
1	15-C	0	6
1	16-C	0	4
1	17-C	0	4
1	18-C	0	6
1	19-C	0	9
1	2-C	0	4
1	20-C	0	6
1	21-C	0	5
1	22-C	0	7
1	23-C	0	4
1	24-C	0	4
1	25-C	0	6
1	26-C	0	4
1	27-C	0	4
1	28-C	0	8
1	29-C	0	5
1	3-C	0	4
1	30-C	0	4
1	31-C	0	6

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Mol	Chain	#Chirality outliers	#Planarity outliers
1	32-C	0	4
1	33-C	0	4
1	34-C	0	6
1	35-C	0	6
1	36-C	0	4
1	37-C	0	6
1	38-C	0	7
1	39-C	0	4
1	4-C	0	4
1	40-C	0	4
1	41-C	0	4
1	42-C	0	4
1	43-C	0	8
1	5-C	0	4
1	6-C	0	4
1	7-C	0	6
1	8-C	0	6
1	9-C	0	6
2	1-Y	0	1
2	10-Y	0	1
2	11-Y	0	1
2	12-Y	0	1
2	13-Y	0	1
2	14-Y	0	1
2	15-Y	0	1
2	16-Y	0	1
2	17-Y	0	1
2	18-Y	0	1
2	19-Y	0	1
2	2-Y	0	1
2	20-Y	0	1
2	21-Y	0	1
2	22-Y	0	1
2	23-Y	0	1
2	24-Y	0	1
2	25-Y	0	1
2	26-Y	0	1
2	27-Y	0	1
2	28-Y	0	1
2	29-Y	0	1
2	3-Y	0	1
2	30-Y	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
2	31-Y	0	1
2	32-Y	0	1
2	33-Y	0	1
2	34-Y	0	1
2	35-Y	0	1
2	36-Y	0	1
2	37-Y	0	1
2	38-Y	0	1
2	39-Y	0	1
2	4-Y	0	1
2	40-Y	0	1
2	41-Y	0	1
2	42-Y	0	1
2	43-Y	0	1
2	5-Y	0	1
2	6-Y	0	1
2	7-Y	0	1
2	8-Y	0	1
2	9-Y	0	1
All	All	0	260

The worst 5 of 4348 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	36-C	462	ALA	C-N	33.20	1.92	1.33
1	40-C	462	ALA	C-N	33.19	1.92	1.33
1	28-C	462	ALA	C-N	33.19	1.92	1.33
1	29-C	462	ALA	C-N	33.19	1.92	1.33
1	33-C	462	ALA	C-N	33.19	1.92	1.33

The worst 5 of 1458 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	31-C	774	ARG	O-C-N	-38.20	61.57	122.70
1	8-C	705	LYS	O-C-N	-33.25	66.68	123.20
1	43-C	705	LYS	O-C-N	-30.78	70.87	123.20
1	8-C	705	LYS	CA-C-N	28.08	172.37	116.20
1	20-C	705	LYS	O-C-N	-27.41	76.60	123.20

There are no chirality outliers.

5 of 260 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	1-C	115	TYR	Mainchain
1	1-C	691	LEU	Mainchain
1	1-C	705	LYS	Mainchain
1	1-C	76	SER	Mainchain
1	1-C	824	TRP	Mainchain

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1-C	6215	0	6178	2653	0
1	2-C	6215	0	6182	2653	0
1	3-C	6215	0	6179	2620	0
1	4-C	6215	0	6182	2643	0
1	5-C	6215	0	6168	2765	0
1	6-C	6215	0	6184	2649	0
1	7-C	6215	0	6142	3004	0
1	8-C	6215	0	6165	2902	0
1	9-C	6215	0	6169	2803	0
1	10-C	6215	0	6185	2603	0
1	11-C	6215	0	6183	2601	0
1	12-C	6215	0	6181	2649	0
1	13-C	6215	0	6182	2634	0
1	14-C	6215	0	6184	2657	0
1	15-C	6215	0	6171	2692	0
1	16-C	6215	0	6185	2603	0
1	17-C	6215	0	6183	2617	0
1	18-C	6215	0	6171	2777	0
1	19-C	6215	0	6170	2771	0
1	20-C	6215	0	6169	2784	0
1	21-C	6215	0	6178	2695	0
1	22-C	6215	0	6175	2737	0
1	23-C	6215	0	6181	2654	0
1	24-C	6215	0	6178	2704	0
1	25-C	6215	0	6179	2644	0
1	26-C	6215	0	6179	2598	0
1	27-C	6215	0	6183	2652	0
1	28-C	6215	0	6163	2840	0
1	29-C	6215	0	6167	2794	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	30-C	6215	0	6183	2598	0
1	31-C	6215	0	6168	2829	0
1	32-C	6215	0	6180	2691	0
1	33-C	6215	0	6184	2617	0
1	34-C	6215	0	6175	2700	0
1	35-C	6215	0	6172	2773	0
1	36-C	6215	0	6185	2595	0
1	37-C	6215	0	6185	2605	0
1	38-C	6215	0	6181	2646	0
1	39-C	6215	0	6180	2643	0
1	40-C	6215	0	6180	2623	0
1	41-C	6215	0	6168	2729	0
1	42-C	6215	0	6176	2627	0
1	43-C	6215	0	6159	2820	0
2	1-Y	1088	0	1066	467	0
2	2-Y	1088	0	1066	467	0
2	3-Y	1088	0	1066	474	0
2	4-Y	1088	0	1066	483	0
2	5-Y	1088	0	1064	489	0
2	6-Y	1088	0	1066	466	0
2	7-Y	1088	0	1066	506	0
2	8-Y	1088	0	1063	492	0
2	9-Y	1088	0	1065	506	0
2	10-Y	1088	0	1066	472	0
2	11-Y	1088	0	1066	469	0
2	12-Y	1088	0	1066	465	0
2	13-Y	1088	0	1066	475	0
2	14-Y	1088	0	1066	470	0
2	15-Y	1088	0	1066	468	0
2	16-Y	1088	0	1066	471	0
2	17-Y	1088	0	1066	471	0
2	18-Y	1088	0	1063	477	0
2	19-Y	1088	0	1066	474	0
2	20-Y	1088	0	1066	476	0
2	21-Y	1088	0	1066	470	0
2	22-Y	1088	0	1066	482	0
2	23-Y	1088	0	1066	482	0
2	24-Y	1088	0	1066	469	0
2	25-Y	1088	0	1064	482	0
2	26-Y	1088	0	1065	502	0
2	27-Y	1088	0	1066	476	0
2	28-Y	1088	0	1054	553	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	29-Y	1088	0	1064	655	0
2	30-Y	1088	0	1066	474	0
2	31-Y	1088	0	1066	478	0
2	32-Y	1088	0	1066	474	0
2	33-Y	1088	0	1066	475	0
2	34-Y	1088	0	1066	476	0
2	35-Y	1088	0	1062	498	0
2	36-Y	1088	0	1066	472	0
2	37-Y	1088	0	1066	474	0
2	38-Y	1088	0	1066	476	0
2	39-Y	1088	0	1064	475	0
2	40-Y	1088	0	1066	478	0
2	41-Y	1088	0	1066	469	0
2	42-Y	1088	0	1057	628	0
2	43-Y	1088	0	1066	469	0
3	1-Z	1198	0	1120	500	0
3	2-Z	1198	0	1120	512	0
3	3-Z	1198	0	1120	510	0
3	4-Z	1198	0	1120	512	0
3	5-Z	1198	0	1120	516	0
3	6-Z	1198	0	1117	497	0
3	7-Z	1198	0	1113	730	0
3	8-Z	1198	0	1120	536	0
3	9-Z	1198	0	1120	533	0
3	10-Z	1198	0	1120	497	0
3	11-Z	1198	0	1120	498	0
3	12-Z	1198	0	1120	506	0
3	13-Z	1198	0	1120	498	0
3	14-Z	1198	0	1120	497	0
3	15-Z	1198	0	1120	496	0
3	16-Z	1198	0	1120	497	0
3	17-Z	1198	0	1120	498	0
3	18-Z	1198	0	1120	524	0
3	19-Z	1198	0	1120	523	0
3	20-Z	1198	0	1120	499	0
3	21-Z	1198	0	1120	505	0
3	22-Z	1198	0	1120	539	0
3	23-Z	1198	0	1120	499	0
3	24-Z	1198	0	1118	562	0
3	25-Z	1198	0	1120	512	0
3	26-Z	1198	0	1117	522	0
3	27-Z	1198	0	1117	510	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	28-Z	1198	0	1115	585	0
3	29-Z	1198	0	1115	639	0
3	30-Z	1198	0	1120	502	0
3	31-Z	1198	0	1118	605	0
3	32-Z	1198	0	1120	517	0
3	33-Z	1198	0	1120	503	0
3	34-Z	1198	0	1120	499	0
3	35-Z	1198	0	1116	555	0
3	36-Z	1198	0	1120	498	0
3	37-Z	1198	0	1120	507	0
3	38-Z	1198	0	1120	503	0
3	39-Z	1198	0	1120	490	0
3	40-Z	1198	0	1120	507	0
3	41-Z	1198	0	1117	521	0
3	42-Z	1198	0	1115	648	0
3	43-Z	1198	0	1120	496	0
All	All	365543	0	359487	151000	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 208.

The worst 5 of 151000 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:503:GLU:HG3	1:C:761:PHE:CE1	1.20	1.71
1:C:505:ILE:HB	1:C:761:PHE:CD1	1.21	1.71
1:C:285:PHE:CZ	1:C:312:ILE:CG2	1.75	1.70
1:C:505:ILE:CB	1:C:762:PHE:HA	1.23	1.69
1:C:285:PHE:CZ	1:C:312:ILE:CG2	1.75	1.68

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	1-C	758/831 (91%)	608 (80%)	112 (15%)	38 (5%)	2	27
1	2-C	756/831 (91%)	604 (80%)	112 (15%)	40 (5%)	2	26
1	3-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	2	27
1	4-C	758/831 (91%)	605 (80%)	114 (15%)	39 (5%)	2	26
1	5-C	756/831 (91%)	605 (80%)	113 (15%)	38 (5%)	2	27
1	6-C	758/831 (91%)	608 (80%)	112 (15%)	38 (5%)	2	27
1	7-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	2	27
1	8-C	758/831 (91%)	607 (80%)	112 (15%)	39 (5%)	2	26
1	9-C	756/831 (91%)	606 (80%)	112 (15%)	38 (5%)	2	27
1	10-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	2	27
1	11-C	758/831 (91%)	606 (80%)	113 (15%)	39 (5%)	2	26
1	12-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	2	27
1	13-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	2	26
1	14-C	756/831 (91%)	605 (80%)	112 (15%)	39 (5%)	2	26
1	15-C	758/831 (91%)	608 (80%)	112 (15%)	38 (5%)	2	27
1	16-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	2	27
1	17-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	2	26
1	18-C	758/831 (91%)	607 (80%)	112 (15%)	39 (5%)	2	26
1	19-C	758/831 (91%)	605 (80%)	112 (15%)	41 (5%)	2	25
1	20-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	2	27
1	21-C	758/831 (91%)	605 (80%)	114 (15%)	39 (5%)	2	26
1	22-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	2	27
1	23-C	756/831 (91%)	603 (80%)	114 (15%)	39 (5%)	2	26
1	24-C	756/831 (91%)	605 (80%)	113 (15%)	38 (5%)	2	27
1	25-C	756/831 (91%)	602 (80%)	114 (15%)	40 (5%)	2	26
1	26-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	2	26
1	27-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	2	27
1	28-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	2	26
1	29-C	756/831 (91%)	605 (80%)	112 (15%)	39 (5%)	2	26
1	30-C	758/831 (91%)	605 (80%)	114 (15%)	39 (5%)	2	26

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	31-C	758/831 (91%)	603 (80%)	114 (15%)	41 (5%)	2	25
1	32-C	756/831 (91%)	605 (80%)	111 (15%)	40 (5%)	2	26
1	33-C	758/831 (91%)	605 (80%)	115 (15%)	38 (5%)	2	27
1	34-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	2	27
1	35-C	758/831 (91%)	606 (80%)	113 (15%)	39 (5%)	2	26
1	36-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	2	27
1	37-C	758/831 (91%)	605 (80%)	115 (15%)	38 (5%)	2	27
1	38-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	2	27
1	39-C	756/831 (91%)	605 (80%)	113 (15%)	38 (5%)	2	27
1	40-C	758/831 (91%)	607 (80%)	112 (15%)	39 (5%)	2	26
1	41-C	758/831 (91%)	605 (80%)	114 (15%)	39 (5%)	2	26
1	42-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	2	26
1	43-C	756/831 (91%)	603 (80%)	114 (15%)	39 (5%)	2	26
2	1-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	2-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	3-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	4-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	5-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	6-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	7-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	8-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	9-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	10-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	11-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	12-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	13-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	14-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	15-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	16-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	17-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	18-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	19-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	20-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	21-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	22-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	3	29
2	23-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	24-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	3	29
2	25-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	26-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	27-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	3	29
2	28-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	29-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	30-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	31-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	3	29
2	32-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	3	29
2	33-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	34-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	35-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	36-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	37-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	38-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	3	29
2	39-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	3	29
2	40-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
2	41-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	3	29
2	42-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	3	29
2	43-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	3	29
3	1-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	2-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	3-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	4-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	21
3	5-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	6-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	7-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	8-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	9-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	10-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	11-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	12-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	13-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	14-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	15-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	16-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	17-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	18-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	21
3	19-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	20-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	21-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	21
3	22-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	23-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	24-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	25-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	21
3	26-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	27-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	28-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	21
3	29-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	30-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	31-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	32-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	33-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	34-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	35-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	36-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	37-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	38-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	39-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	40-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	41-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	42-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
3	43-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	2	23
All	All	44731/48074 (93%)	34583 (77%)	7834 (18%)	2314 (5%)	4	26

5 of 2314 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	1-C	27	ALA
1	1-C	366	ARG
1	1-C	368	ARG
1	1-C	371	GLN
1	1-C	542	ALA

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	1-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	2-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	3-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	4-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	5-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	6-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	7-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	8-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	9-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	10-C	678/724 (94%)	571 (84%)	107 (16%)	3	18

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	11-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	12-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	13-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	14-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	15-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	16-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	17-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	18-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	19-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	20-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	21-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	22-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	23-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	24-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	25-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	26-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	27-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	28-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	29-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	30-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	31-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	32-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	33-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	34-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	35-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	36-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	37-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	38-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	39-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	40-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	41-C	678/724 (94%)	571 (84%)	107 (16%)	3	18

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	42-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
1	43-C	678/724 (94%)	571 (84%)	107 (16%)	3	18
2	1-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	2-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	3-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	4-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	5-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	6-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	7-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	8-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	9-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	10-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	11-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	12-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	13-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	14-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	15-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	16-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	17-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	18-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	19-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	20-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	21-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	22-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	23-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	24-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	25-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	26-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	27-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	28-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	29-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	30-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	31-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	32-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	33-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	34-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	35-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	36-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	37-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	38-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	39-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	40-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	41-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	42-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
2	43-Y	119/119 (100%)	100 (84%)	19 (16%)	3	18
3	1-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	2-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	3-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	4-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	5-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	6-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	7-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	8-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	9-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	10-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	11-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	12-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	13-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	14-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	15-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	16-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	17-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	18-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	19-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	20-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	21-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	22-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	23-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	24-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	25-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	26-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	27-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	28-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	29-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	30-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	31-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	32-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	33-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	34-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	35-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	36-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	37-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	38-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	39-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	40-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	41-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	42-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
3	43-Z	127/127 (100%)	111 (87%)	16 (13%)	5	26
All	All	39732/41710 (95%)	33626 (85%)	6106 (15%)	7	19

5 of 6106 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	20-C	505	ILE
1	25-C	56	ILE

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Mol	Chain	Res	Type
1	40-C	814	ASN
1	21-C	33	ASN
2	22-Y	105	ASN

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 2066 such sidechains are listed below:

Mol	Chain	Res	Type
1	20-C	490	HIS
1	25-C	124	ASN
1	40-C	788	HIS
1	21-C	151	HIS
2	22-Y	119	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.