



wwPDB EM Validation Summary Report ⓘ

Mar 7, 2026 – 12:30 AM UTC

PDB ID : 2W4T / pdb_00002w4t
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 EM Validation Summary Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : **NOT EXECUTED**
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

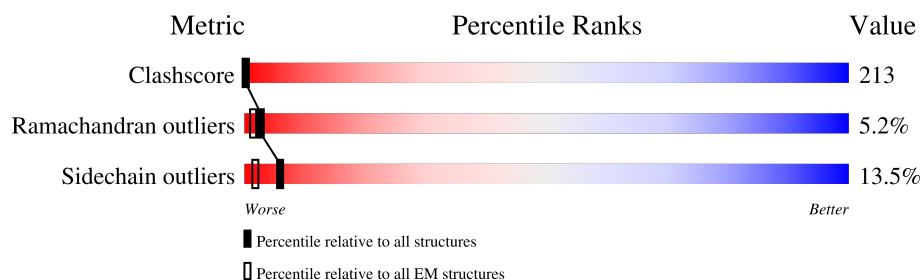
1 Overall quality at a glance

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.



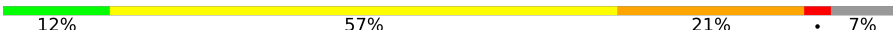
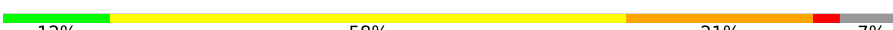
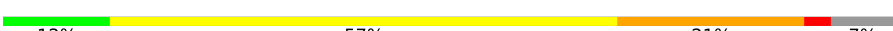
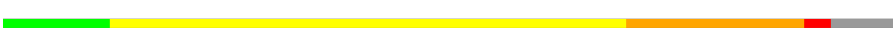
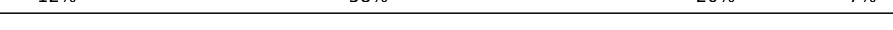
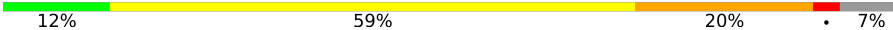
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	229148	23984
Ramachandran outliers	224038	23583
Sidechain outliers	223484	23102

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. 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	12% 58% 21% • 7%
1	10-C	831	12% 58% 20% • 7%
1	11-C	831	13% 57% 20% • 7%
1	12-C	831	12% 58% 20% • 7%
1	13-C	831	12% 58% 20% • 7%
1	14-C	831	12% 57% 21% • 7%
1	15-C	831	12% 58% 20% • 7%
1	16-C	831	12% 58% 20% • 7%
1	17-C	831	12% 58% 20% • 7%

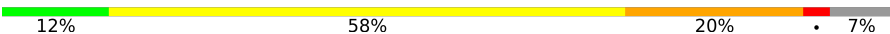
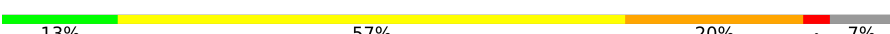
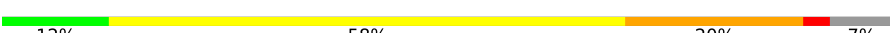
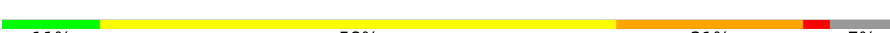
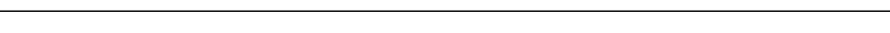
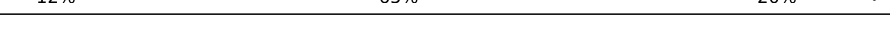
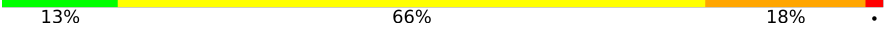
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Mol	Chain	Length	Quality of chain
1	18-C	831	
1	19-C	831	
1	2-C	831	
1	20-C	831	
1	21-C	831	
1	22-C	831	
1	23-C	831	
1	24-C	831	
1	25-C	831	
1	26-C	831	
1	27-C	831	
1	28-C	831	
1	29-C	831	
1	3-C	831	
1	30-C	831	
1	31-C	831	
1	32-C	831	
1	33-C	831	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

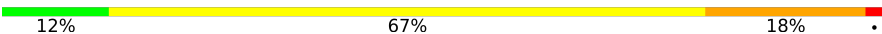
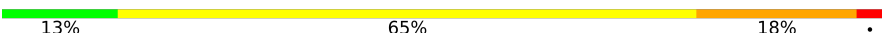
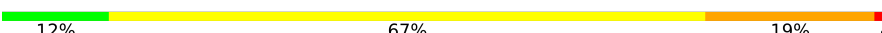
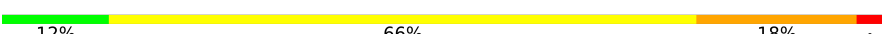
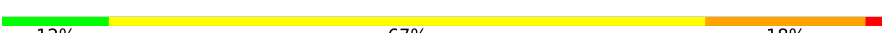
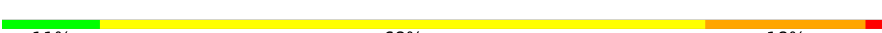
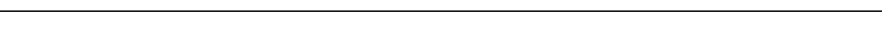
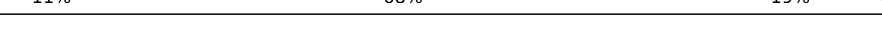
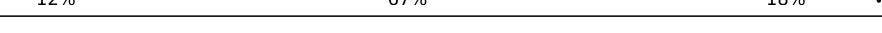
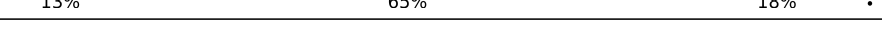
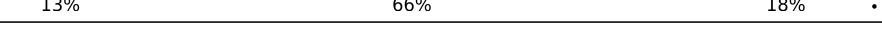
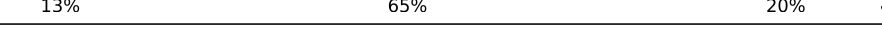
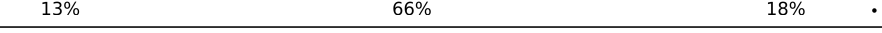
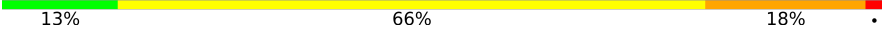
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Mol	Chain	Length	Quality of chain
1	40-C	831	
1	41-C	831	
1	42-C	831	
1	43-C	831	
1	5-C	831	
1	6-C	831	
1	7-C	831	
1	8-C	831	
1	9-C	831	
2	1-Y	136	
2	10-Y	136	
2	11-Y	136	
2	12-Y	136	
2	13-Y	136	
2	14-Y	136	
2	15-Y	136	
2	16-Y	136	
2	17-Y	136	
2	18-Y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

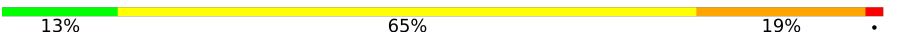
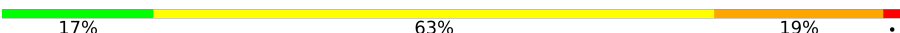
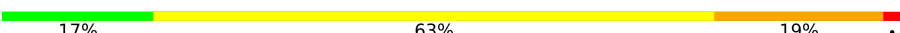
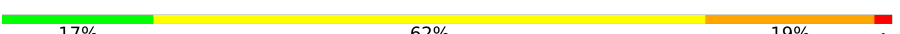
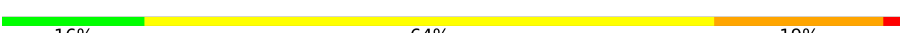
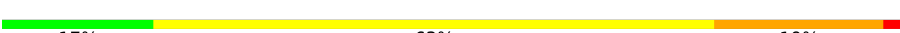
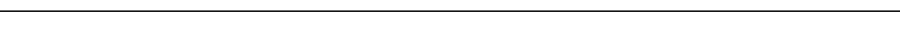
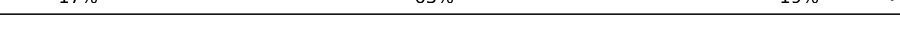
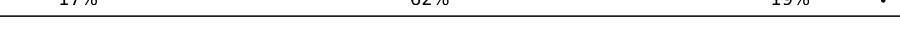
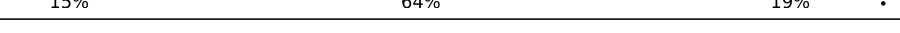
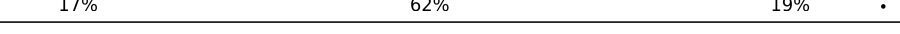
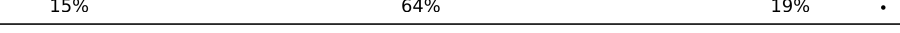
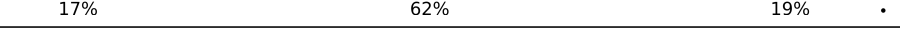
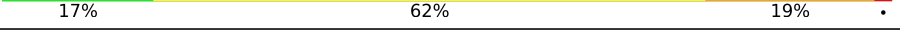
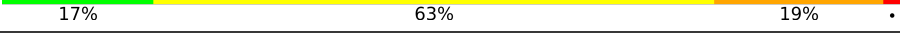
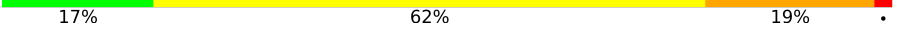
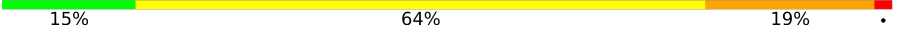
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Mol	Chain	Length	Quality of chain
2	24-Y	136	 12% 66% 19% .
2	25-Y	136	 12% 67% 18% .
2	26-Y	136	 13% 65% 18% .
2	27-Y	136	 12% 67% 19% .
2	28-Y	136	 12% 66% 18% .
2	29-Y	136	 12% 67% 18% .
2	3-Y	136	 11% 68% 18% .
2	30-Y	136	 11% 68% 18% .
2	31-Y	136	 11% 68% 18% .
2	32-Y	136	 12% 66% 19% .
2	33-Y	136	 12% 66% 18% .
2	34-Y	136	 11% 68% 18% .
2	35-Y	136	 12% 67% 18% .
2	36-Y	136	 12% 68% 18% .
2	37-Y	136	 11% 68% 19% .
2	38-Y	136	 12% 67% 18% .
2	39-Y	136	 13% 65% 18% .
2	4-Y	136	 13% 66% 18% .
2	40-Y	136	 13% 65% 20% .
2	41-Y	136	 13% 66% 18% .
2	42-Y	136	 11% 68% 19% .
2	43-Y	136	 13% 65% 18% .
2	5-Y	136	 13% 65% 19% .
2	6-Y	136	 13% 66% 18% .
2	7-Y	136	 11% 68% 18% .

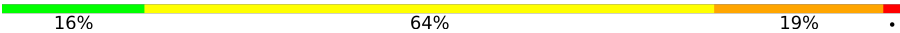
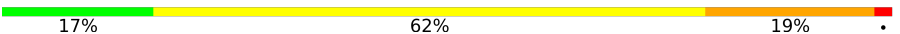
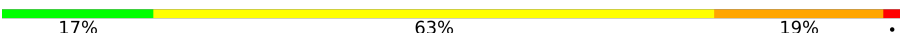
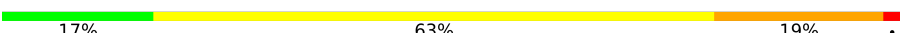
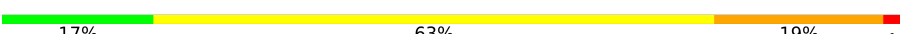
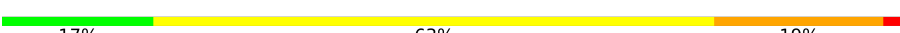
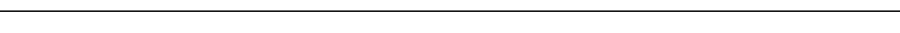
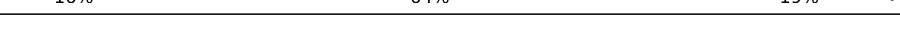
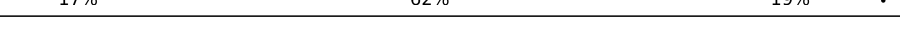
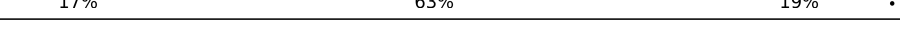
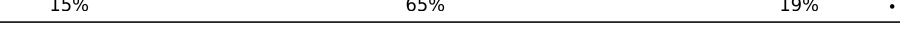
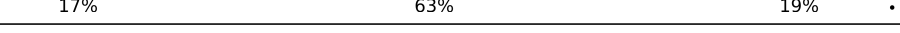
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Mol	Chain	Length	Quality of chain
2	8-Y	136	 12% 68% 18% .
2	9-Y	136	 13% 65% 19% .
3	1-Z	151	 17% 63% 19% .
3	10-Z	151	 17% 63% 19% .
3	11-Z	151	 17% 62% 19% .
3	12-Z	151	 16% 64% 19% .
3	13-Z	151	 17% 63% 19% .
3	14-Z	151	 16% 64% 19% .
3	15-Z	151	 17% 63% 19% .
3	16-Z	151	 17% 63% 19% .
3	17-Z	151	 16% 64% 19% .
3	18-Z	151	 16% 63% 19% .
3	19-Z	151	 17% 62% 19% .
3	2-Z	151	 16% 64% 19% .
3	20-Z	151	 17% 63% 19% .
3	21-Z	151	 17% 62% 19% .
3	22-Z	151	 15% 64% 19% .
3	23-Z	151	 17% 62% 19% .
3	24-Z	151	 15% 64% 19% .
3	25-Z	151	 17% 62% 19% .
3	26-Z	151	 17% 62% 19% .
3	27-Z	151	 17% 63% 19% .
3	28-Z	151	 17% 62% 19% .
3	29-Z	151	 15% 64% 19% .
3	3-Z	151	 17% 62% 19% .

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Mol	Chain	Length	Quality of chain
3	30-Z	151	 16%64%19%.
3	31-Z	151	 17%62%19%.
3	32-Z	151	 17%63%19%.
3	33-Z	151	 17%63%19%.
3	34-Z	151	 17%63%19%.
3	35-Z	151	 17%63%19%.
3	36-Z	151	 18%62%19%.
3	37-Z	151	 17%63%19%.
3	38-Z	151	 17%62%19%.
3	39-Z	151	 17%63%19%.
3	4-Z	151	 16%63%19%.
3	40-Z	151	 19%61%19%.
3	41-Z	151	 17%63%19%.
3	42-Z	151	 15%64%19%.
3	43-Z	151	 16%64%19%.
3	5-Z	151	 17%62%19%.
3	6-Z	151	 17%63%19%.
3	7-Z	151	 15%65%19%.
3	8-Z	151	 17%63%19%.
3	9-Z	151	 16%64%19%.

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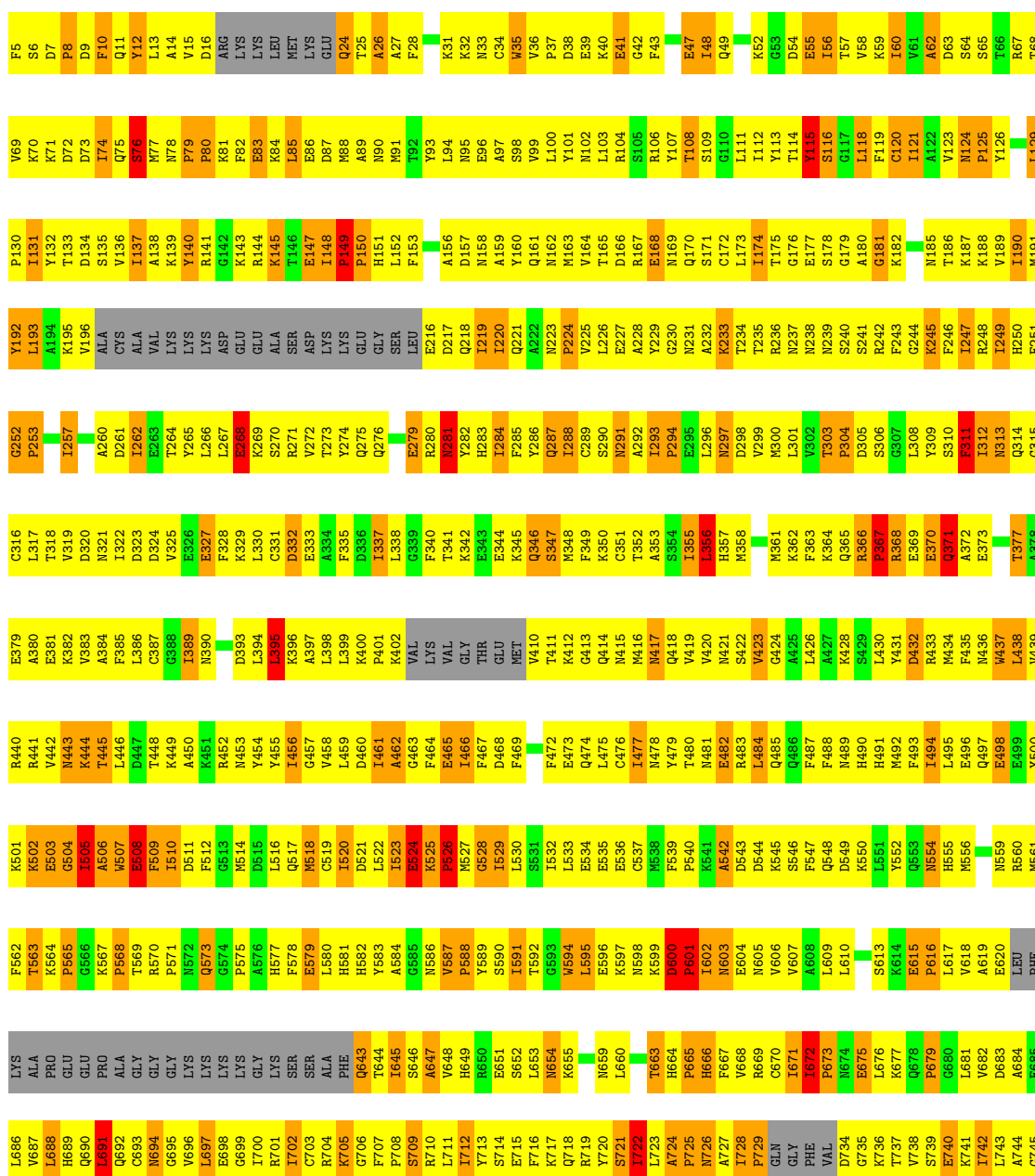
Mol	Chain	Residues	Atoms					AltConf	Trace
3	33-Z	151	Total 1198	C 757	N 190	O 244	S 7	0	0
3	34-Z	151	Total 1198	C 757	N 190	O 244	S 7	0	0
3	35-Z	151	Total 1198	C 757	N 190	O 244	S 7	0	0
3	36-Z	151	Total 1198	C 757	N 190	O 244	S 7	0	0
3	37-Z	151	Total 1198	C 757	N 190	O 244	S 7	0	0
3	38-Z	151	Total 1198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

3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide 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

Chain 1-C: 



L746 Q747 L748 M748 L808 S809 P809 W810 D749 I811 P750 A751 P752 E752 Y753 R754 L755 G756 W757 T758 L759 K759 V760 F761 L762 F762 K763 A764 G765 L770 L771 E771 E772 H773 R774 D775 D776 R777 L778 L779 S779 K780 L781 I781 E782 I782 S783 H784 F785 Q786 A787 H788 I789 R790 G791 Y792 L793 I794 I794 R795 K796 A797 Y798 K799 K800 L801 Q802 D803 Q804 R805 I806

G807 L808 S809 P809 W810 D749 I811 P750 A751 P752 E752 Y753 R754 L755 G756 W757 T758 L759 K759 V760 F761 L762 F762 K763 A764 G765 L770 L771 E771 E772 H773 R774 D775 D776 R777 L778 L779 S779 K780 L781 I781 E782 I782 S783 H784 F785 Q786 A787 H788 I789 R790 G791 Y792 L793 I794 I794 R795 K796 A797 Y798 K799 K800 L801 Q802 D803 Q804 R805 I806

● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

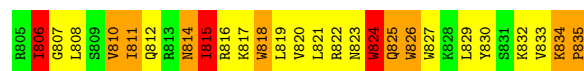
Chain 2-C: 12% 58% 20% 7%

F5 S6 D7 P8 D9 F10 Q11 Y12 L13 P14 V15 D16 ARG LYS LYS LYS MET LYS GLU Q24 T25 A26 L27 K31 K32 N33 C34 W35 V36 P37 D38 E39 L103 E41 C42 F43 E47 I48 Q49 K52 K53 D54 E55 I56 T57 V58 K59 I60 V61 A62 D63 S64 S65 T66 R67 T68 V69

K70 K71 D72 P73 W74 Q75 S76 R77 K78 P79 P80 K81 F82 E83 E84 L85 E86 D87 L88 A89 N90 I91 Y92 Y93 L94 N95 E96 A97 S98 W99 V99 L100 Y101 N102 L103 R104 E105 S106 R106 Y107 T108 S109 G110 L111 I112 Y113 T114 Y115 S116 G117 L118 F119 C120 I121 A122 D123 N124 S125 Y126 L129 M130

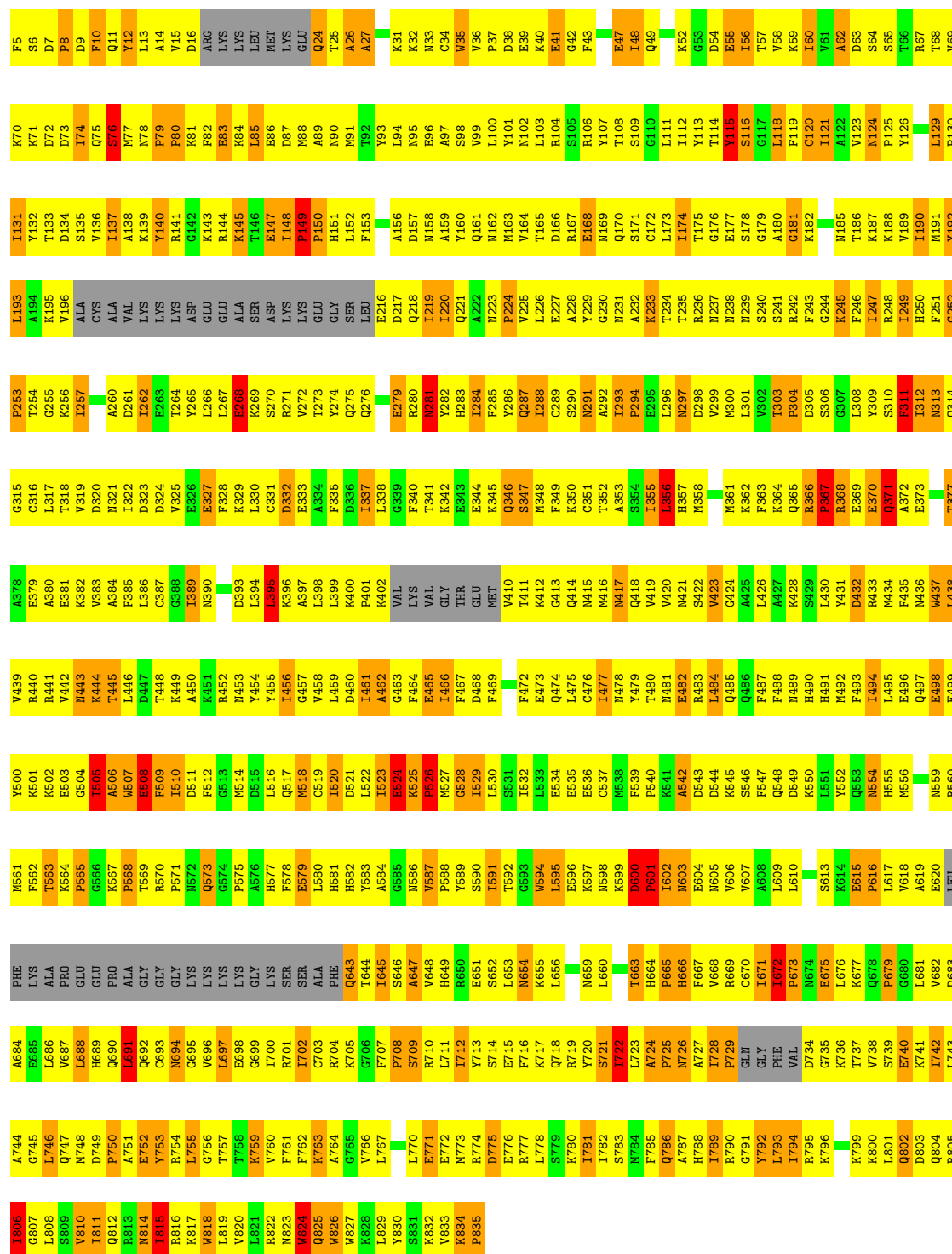
I131 Y132 T133 D134 S135 V136 I137 A138 L139 Y140 R141 G142 G143 R144 K145 E147 L148 F149 A150 H151 L152 F153 A156 D157 N158 A159 Y160 Q161 N162 M163 V164 T165 D166 R167 E168 N169 Q170 C172 L173 T174 T175 G176 E177 G179 G179 S241 A180 G181 K182 N185 A185 T186 Y187 K188 V189 I190 M191 Y192

L193 A194 K195 Y196 A196 C197 A198 A198 V199 L200 L201 L202 E203 L204 L205 L206 L207 E208 E209 S210 S211 S212 S213 S214 S215 S216 S217 S218 S219 S220 S221 S222 S223 S224 S225 S226 S227 S228 S229 S230 S231 S232 S233 S234 S235 S236 S237 S238 S239 S240 S241 S242 S243 S244 S245 S246 S247 S248 S249 S250 S251 S252 S253 S254 S255 S256 S257 S258 S259 S260 S261 S262 S263 S264 S265 S266 S267 S268 S269 S270 S271 S272 S273 S274 S275 S276 S277 S278 S279 S280 S281 S282 S283 S284 S285 S286 S287 S288 S289 S290 S291 S292 S293 S294 S295 S296 S297 S298 S299 S300 S301 S302 S303 S304 S305 S306 S307 S308 S309 S310 S311 S312 S313 S314 S315 S316 S317 S318 S319 S320 S321 S322 S323 S324 S325 S326 S327 S328 S329 S330 S331 S332 S333 S334 S335 S336 S337 S338 S339 S340 S341 S342 S343 S344 S345 S346 S347 S348 S349 S350 S351 S352 S353 S354 S355 S356 S357 S358 S359 S360 S361 S362 S363 S364 S365 S366 S367 S368 S369 S370 S371 S372 S373 S374 S375 S376 S377 S378 S379 S380 S381 S382 S383 S384 S385 S386 S387 S388 S389 S390 S391 S392 S393 S394 S395 S396 S397 S398 S399 S400 S401 S402 S403 S404 S405 S406 S407 S408 S409 S410 S411 S412 S413 S414 S415 S416 S417 S418 S419 S420 S421 S422 S423 S424 S425 S426 S427 S428 S429 S430 S431 S432 S433 S434 S435 S436 S437 S438 S439 S440 S441 S442 S443 S444 S445 S446 S447 S448 S449 S450 S451 S452 S453 S454 S455 S456 S457 S458 S459 S460 S461 S462 S463 S464 S465 S466 S467 S468 S469 S470 S471 S472 S473 S474 S475 S476 S477 S478 S479 S480 S481 S482 S483 S484 S485 S486 S487 S488 S489 S490 S491 S492 S493 S494 S495 S496 S497 S498 S499 S500 S501 S502 S503 S504 S505 S506 S507 S508 S509 S510 S511 S512 S513 S514 S515 S516 S517 S518 S519 S520 S521 S522 S523 S524 S525 S526 S527 S528 S529 S530 S531 S532 S533 S534 S535 S536 S537 S538 S539 S540 S541 S542 S543 S544 S545 S546 S547 S548 S549 S550 S551 S552 S553 S554 S555 S556 S557 S558 S559 S560 S561 S562 S563 S564 S565 S566 S567 S568 S569 S570 S571 S572 S573 S574 S575 S576 S577 S578 S579 S580 S581 S582 S583 S584 S585 S586 S587 S588 S589 S590 S591 S592 S593 S594 S595 S596 S597 S598 S599 S600 S601 S602 S603 S604 S605 S606 S607 S608 S609 S610 S611 S612 S613 S614 S615 S616 S617 S618 S619 S620 S621 S622 S623 S624 S625 S626 S627 S628 S629 S630 S631 S632 S633 S634 S635 S636 S637 S638 S639 S640 S641 S642 S643 S644 S645 S646 S647 S648 S649 S650 S651 S652 S653 S654 S655 S656 S657 S658 S659 S660 S661 S662 S663 S664 S665 S666 S667 S668 S669 S670 S671 S672 S673 S674 S675 S676 S677 S678 S679 S680 S681 S682 S683 S684 S685 S686 S687 S688 S689 S690 S691 S692 S693 S694 S695 S696 S697 S698 S699 S700 S701 S702 S703 S704 S705 S706 S707 S708 S709 S710 S711 S712 S713 S714 S715 S716 S717 S718 S719 S720 S721 S722 S723 S724 S725 S726 S727 S728 S729 S730 S731 S732 S733 S734 S735 S736 S737 S738 S739 S740 S741 S742 S743 S744 S745 S746 S747 S748 S749 S750 S751 S752 S753 S754 S755 S756 S757 S758 S759 S760 S761 S762 S763 S764 S765 S766 S767 S768 S769 S770 S771 S772 S773 S774 S775 S776 S777 S778 S779 S780 S781 S782 S783 S784 S785 S786 S787 S788 S789 S790 S791 S792 S793 S794 S795 S796 S797 S798 S799 S800 S801 S802 S803 S804 S805 S806 S807 S808 S809 S810 S811 S812 S813 S814 S815 S816 S817 S818 S819 S820 S821 S822 S823 S824 S825 S826 S827 S828 S829 S830 S831 S832 S833 S834 S835 S836 S837 S838 S839 S840 S841 S842 S843 S844 S845 S846 S847 S848 S849 S850 S851 S852 S853 S854 S855 S856 S857 S858 S859 S860 S861 S862 S863 S864 S865 S866 S867 S868 S869 S870 S871 S872 S873 S874 S875 S876 S877 S878 S879 S880 S881 S882 S883 S884 S885 S886 S887 S888 S889 S890 S891 S892 S893 S894 S895 S896 S897 S898 S899 S900 S901 S902 S903 S904 S905 S906 S907 S908 S909 S910 S911 S912 S913 S914 S915 S916 S917 S918 S919 S920 S921 S922 S923 S924 S925 S926 S927 S928 S929 S930 S931 S932 S933 S934 S935 S936 S937 S938 S939 S940 S941 S942 S943 S944 S945 S946 S947 S948 S949 S950 S951 S952 S953 S954 S955 S956 S957 S958 S959 S960 S961 S962 S963 S964 S965 S966 S967 S968 S969 S970 S971 S972 S973 S974 S975 S976 S977 S978 S979 S980 S981 S982 S983 S984 S985 S986 S987 S988 S989 S990 S991 S992 S993 S994 S995 S996 S997 S998 S999 S1000 S1001 S1002 S1003 S1004 S1005 S1006 S1007 S1008 S1009 S1010 S1011 S1012 S1013 S1014 S1015 S1016 S1017 S1018 S1019 S1020 S1021 S1022 S1023 S1024 S1025 S1026 S1027 S1028 S1029 S1030 S1031 S1032 S1033 S1034 S1035 S1036 S1037 S1038 S1039 S1040 S1041 S1042 S1043 S1044 S1045 S1046 S1047 S1048 S1049 S1050 S1051 S1052 S1053 S1054 S1055 S1056 S1057 S1058 S1059 S1060 S1061 S1062 S1063 S1064 S1065 S1066 S1067 S1068 S1069 S1070 S1071 S1072 S1073 S1074 S1075 S1076 S1077 S1078 S1079 S1080 S1081 S1082 S1083 S1084 S1085 S1086 S1087 S1088 S1089 S1090 S1091 S1092 S1093 S1094 S1095 S1096 S1097 S1098 S1099 S1100 S1101 S1102 S1103 S1104 S1105 S1106 S1107 S1108 S1109 S1110 S1111 S1112 S1113 S1114 S1115 S1116 S1117 S1118 S1119 S1120 S1121 S1122 S1123 S1124 S1125 S1126 S1127 S1128 S1129 S1130 S1131 S1132 S1133 S1134 S1135 S1136 S1137 S1138 S1139 S1140 S1141 S1142 S1143 S1144 S1145 S1146 S1147 S1148 S1149 S1150 S1151 S1152 S1153 S1154 S1155 S1156 S1157 S1158 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S1989 S1990 S1991 S1992 S1993 S1994 S1995 S1996 S1997 S1998 S1999 S2000 S2001 S2002 S2003 S2004 S2005 S2006 S2007 S2008 S2009 S2010 S2011 S2012 S2013 S2014 S2015 S2016 S2017 S2018 S2019 S2020 S2021 S2022 S2023 S2024 S2025 S2026 S2027 S2028 S2029 S2030 S2031 S2032 S2033 S2034 S2035 S2036 S2037 S2038 S2039 S2040 S2041 S2042 S2043 S2044 S2045 S2046 S2047 S2048 S2049 S2050 S2051 S2052 S2053 S2054 S2055 S2056 S2057 S2058 S2059 S2060 S2061 S2062 S2063 S2064 S2065 S2066 S2067 S2068 S2069 S2070 S2071 S2072 S2073 S2074 S2075 S2076 S2077 S2078 S2079 S2080 S2081 S2082 S2083 S2084 S2085 S2086 S2087 S2088 S2089 S2090 S2091 S2092 S2093 S2094 S2095 S2096 S2097 S2098 S2099 S2100 S2101 S2102 S2103 S2104 S2105 S2106 S2107 S2108 S2109 S2110 S2111 S2112 S2113 S2114 S2115 S2116 S2117 S2118 S2119 S2120 S2121 S2122 S2123 S2124 S2125 S2126 S2127 S2128 S2129 S2130 S2131 S2132 S2133 S2134 S2135 S2136 S2137 S2138 S2139 S2140 S2141 S2142 S2143 S2144 S2145 S2146 S2147 S2148 S2149 S2150 S2151 S2152 S2153 S2154 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S2487 S2488 S2489 S2490 S2491 S2492 S2493 S2494 S2495 S2496 S2497 S2498 S2499 S2500 S2501 S2502 S2503 S2504 S2505 S2506 S2507 S2508 S2509 S2510 S2511



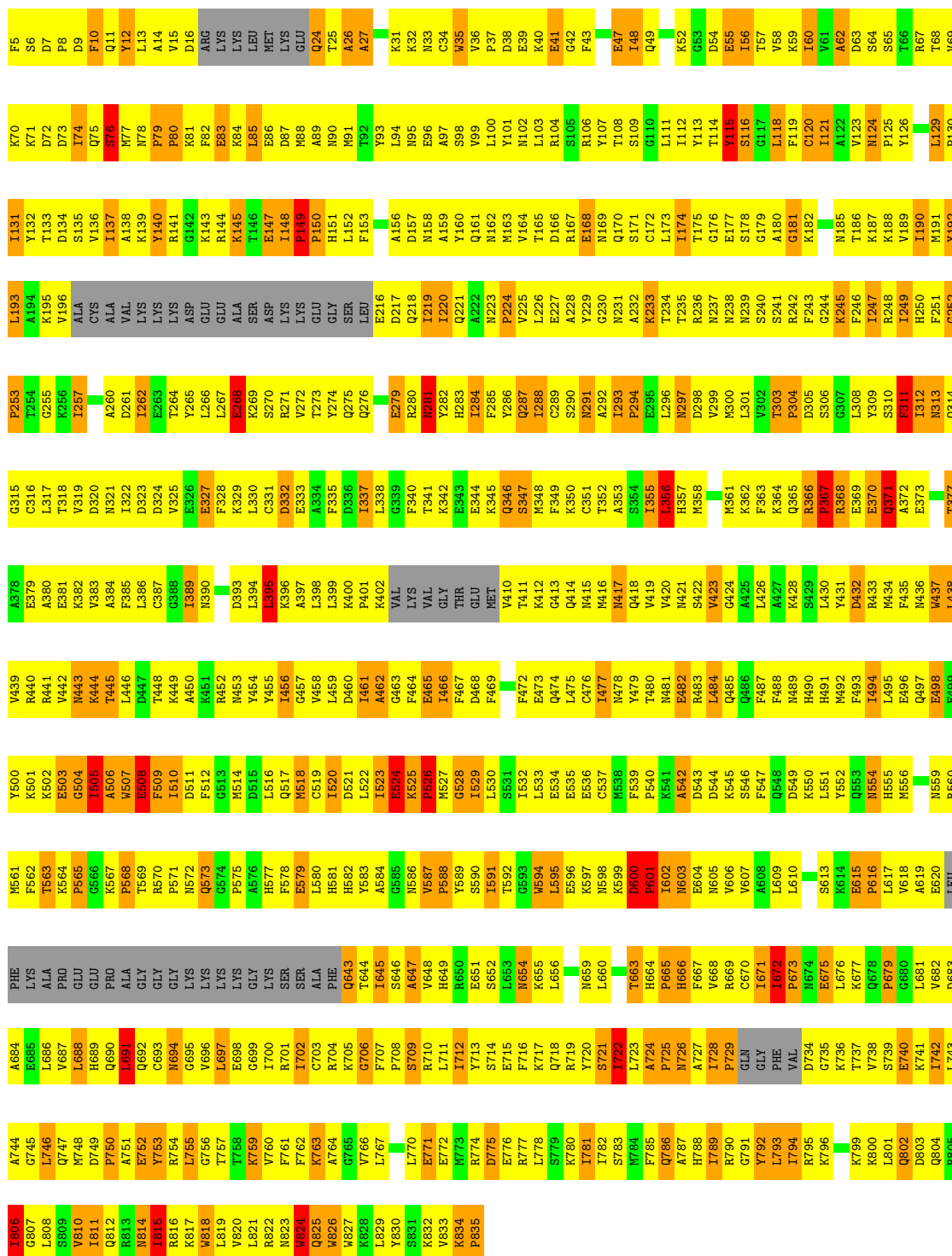
• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 3-C: 12% 58% 20% 7%



• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 4-C:  12% 58% 20% 7%



- Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

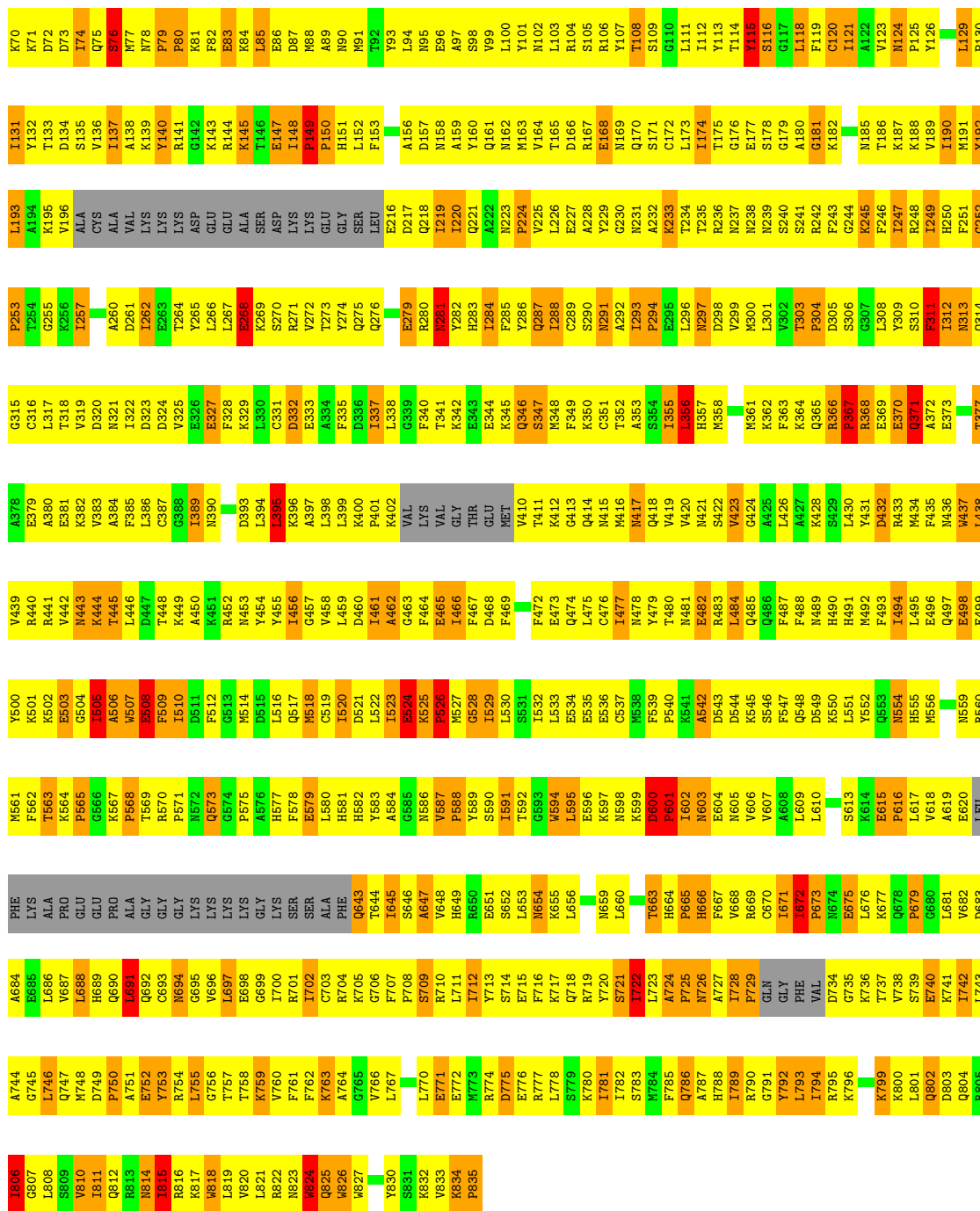
Chain 5-C:  13% 57% 20% 7%

F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	P15	D16	ARG	LYS	LYS	LEU	MET	LYS	GLU	Q24	T25	A26	A27	F28	K31	K32	N33	C34	W35	W36	P37	D38	E39	K40	E41	G42	F43	E47	I48	Q49	K52	G53	D54	E55	I56	T57	G117	L118	F119	C120	I121	A122	D63	S64	S65	T66	V69					
V69	K70	K71	D72	D73	I74	Q75	S76	M77	N78	P79	P80	K81	F82	E83	K84	E86	D87	M88	A89	N90	A26	M91	T92	Y93	L94	N95	E96	A97	S98	V99	L100	Y101	N102	L103	R104	S105	R106	Y107	T108	S109	G110	L111	L112	Y113	T114	Y115	E177	G117	L118	F119	C120	I121	A122	V123	M124	P125	Y126	L129			
P130	I131	T132	T133	K135	S135	V136	I137	A138	K139	Y140	R141	G142	K143	R144	T146	E147	I148	P149	P150	H151	L152	F153	E216	D217	Q218	T219	T220	A159	Q221	Q161	N223	P224	V225	L226	E227	A228	Y229	Q230	N231	A232	C172	L173	T234	T235	T236	N237	N238	N239	G179	S240	S241	R242	P243	S306	G307	F246	K187	K188	V189	H250	P251
Q252	P253	T254	G255	K256	L257	A260	D261	T262	E263	T264	Y265	L266	L267	E268	K269	S270	R271	V272	T273	Y274	Q275	Q276	E279	R280	Y281	Y282	H283	H284	F285	T286	Q287	L288	C289	S290	N291	A292	I293	E295	E296	N297	D298	V299	M300	L301	T302	T303	P304	D305	S306	G307	F246	K187	K188	V189	H250	P251					
Q314	C315	C316	L317	T318	V319	D320	N321	I322	D323	D324	V325	G326	E327	F328	K329	L330	C331	D332	E333	A334	F335	D336	I337	L338	G339	F340	T341	K342	E343	E344	K345	Q346	S347	M348	F349	C350	K351	T352	A353	S354	I355	L356	H357	M358	M361	K362	F363	K364	Q365	D366	P367	R368	E369	E370	Q371	A372	E373				
T377	A378	E379	A380	V442	K443	V444	V445	A384	F385	L386	C387	G388	I389	N390	D393	L394	L395	K396	A397	L398	L399	K400	P401	L402	VAL	LYS	VAL	GLY	THR	GLU	MET	V410	T411	K412	C413	Q414	N415	N416	M417	Q418	V419	V420	N421	S422	V423	G424	A425	Q426	F427	F428	N429	M430	L431	M432	N433	M434	F435	Q436	W437		
L438	V439	R440	R441	V442	K443	V444	T445	L446	D447	T448	K449	A450	K451	R452	M453	G454	F455	L456	G457	V458	L459	D460	I461	A462	C463	F464	E465	P466	L467	D468	F469	F470	E471	K472	Q473	Q474	L475	C476	I477	N478	N479	L480	Q481	E482	R483	Q484	Q485	Q486	F487	F488	M489	D490	K550	L551	M552	M553	L554	H555	M556	N557	
E499	Y500	K501	K502	K503	G504	E505	A506	M507	E508	F509	G510	D511	F512	G513	M514	D515	L516	O517	M518	C519	T520	D521	L522	F523	E524	K525	P526	M527	Y528	S529	L530	S531	L532	M533	W534	E535	E536	C537	M538	F539	P540	N541	E542	D543	D544	K545	S546	F547	G548	D549	L550	S613	K614	E615	P616	L617	V618	A619	E620		
B560	M561	F562	T563	K564	P565	G566	K567	P568	T569	R570	P571	M572	Q573	G574	P575	H576	A577	F578	E579	L580	H581	H582	L583	A584	G585	N586	V587	P588	Y589	S590	L591	T592	G593	W594	L595	E596	K597	N598	K599	D600	P601	T602	E603	E604	N605	V606	V607	A608	L609	L610	S613	K614	E615	P616	L617	V618	A619	E620			
LEU	PHE	LYS	ALA	PRO	GLU	GLU	PRO	ALA	GLY	GLY	GLY	LYS	LYS	LYS	LYS	GLY	LYS	SER	SER	ALA	PHE	Q643	T644	T645	S646	A647	V648	H649	L650	E651	S652	L653	N654	K655	L656	N659	L660	T663	H664	P665	H666	F667	V668	R669	C670	I671	P672	P673	H674	E675	L676	K677	G678	P679	G680	L681	V682				
D683	A684	E685	L686	V687	L688	H689	Q690	L691	C692	C693	G694	G695	V696	L697	E698	G699	I700	R701	I702	C703	R704	K705	G706	F707	P708	S709	V710	H711	L712	T713	S714	E715	F716	K717	Q718	R719	V720	S721	L722	A723	H724	P725	N726	A727	I728	P729	GLN	GLY	PHE	VAL	D734	G735	K736	T737	V738	S739	E740	L742			
L743	A744	G745	L746	Q747	M748	D749	F750	A751	E752	F753	R754	L755	G756	T757	F758	K759	V760	F761	F762	K763	A764	G765	V766	L767	L770	E771	E772	L773	M774	R775	E776	L777	L778	S779	K780	L781	I782	S783	M784	F785	Q786	A787	H788	I789	R790	G791	Y792	L793	I794	R795	A796	K797	Y798	K799	K800	L801	Q802	D803			
Q804	R805	L806	G807	L808	S809	V810	L811	Q812	R813	N814	L815	R816	K817	M818	L819	V820	L821	R822	R823	A824	Q825	A826	A827	Y827	Y830	S831	K832	W833	W834	P835	K836	L837	N838	E839	E840	G841	G842	F843	E847	I848	Q849	K852	G853	D854	E855	I856	T857	V858	K859	I860	V861	A862	D863	S864	S865	T866	R867	L868	V869		

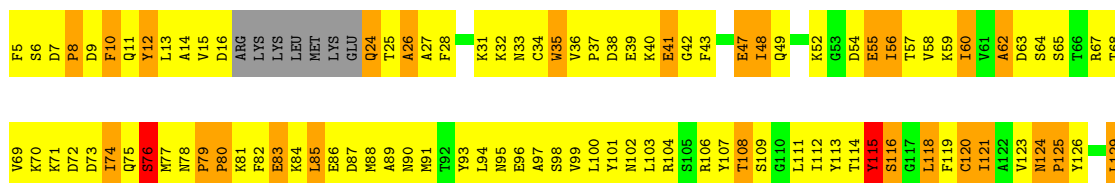
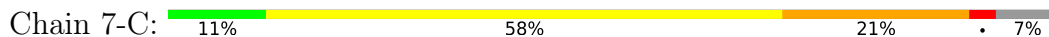
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 6-C: 12% 58% 20% 7%

F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	P15	D16	ARG	LYS	LYS	LEU	MET	LYS	GLU	Q24	T25	A26	A27	K31	K32	N33	C34	W35	W36	P37	D38	E39	K40	E41	G42	F43	E47	I48	Q49	K52	G53	D54	E55	I56	T57	G117	L118	F119	C120	I121	A122	D63	S64	S65	T66	R67	L68	V69
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- Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



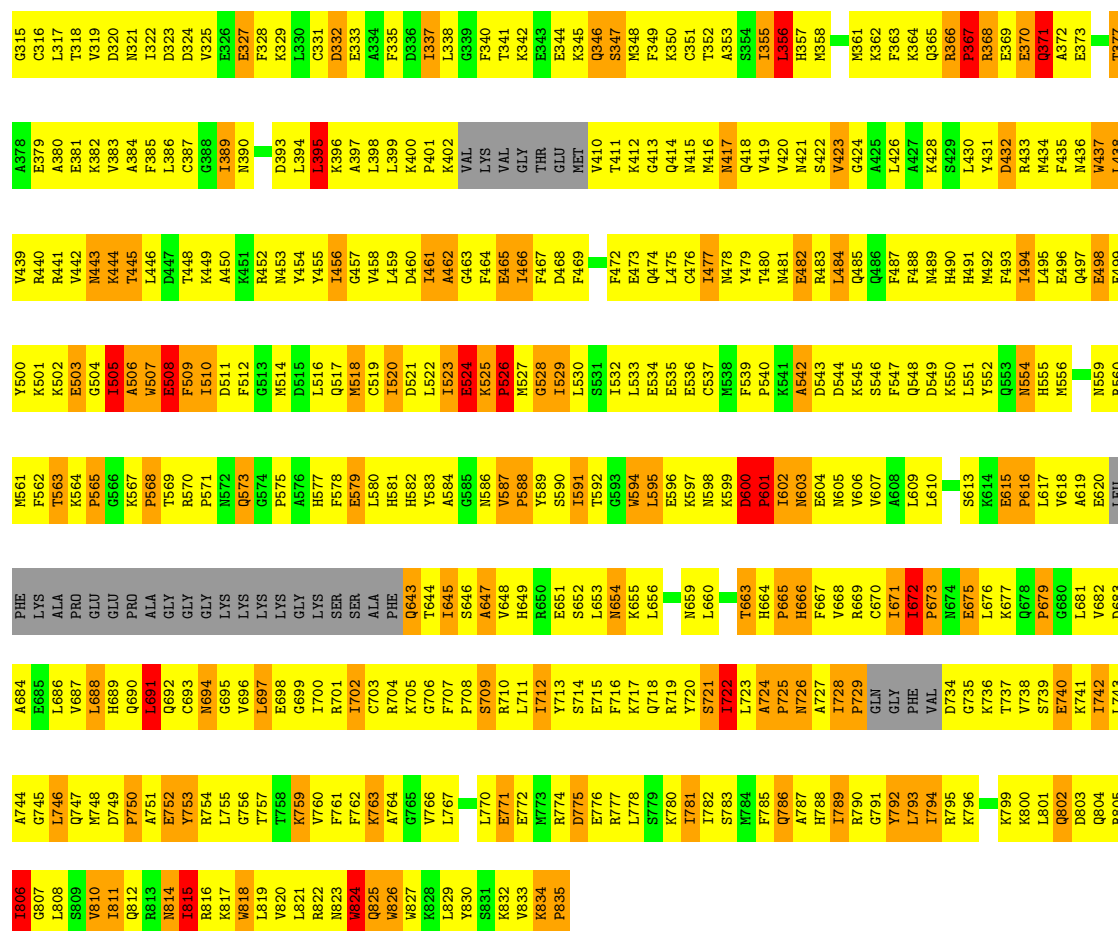


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Q314	G315	C316	A380	L317	T318	V319	D320	N321	I322	D323	C387	G388	I389	N390	D393	L394	C331	D332	E333	A334	F335	D336	I337	L338	G339	F340	T341	G342	E343	E344	K345	Q346	S347	F349	K350	C351	T352	A353	S354	I355	L356	H357	M358	M361	K362	F363	K364	Q365	R366	P367	R368	G369	F432	E370	Q371	A372	E373	N374																																							
T377	A378	E379	A380	E381	K382	V383	D384	A385	L386	C387	G388	I389	N390	D393	L394	C331	D332	E333	A334	F335	D336	I337	L338	G339	F340	T341	G342	E343	E344	K345	Q346	S347	F349	K350	C351	T352	A353	S354	I355	L356	H357	M358	M361	K362	F363	K364	Q365	R366	P367	R368	G369	F432	E370	Q371	A372	E373	N374																																								
L438	V439	R440	R441	V442	N443	K444	T445	L446	D447	T448	K449	A450	K451	R452	N453	A454	Y455	I456	G457	L458	H581	D460	I461	A462	G463	F464	E465	I466	F467	D468	F469	F472	E473	Q474	L475	C476	I477	N478	T480	E481	E482	R483	L484	Q485	Q486	F487	F488	N489	H490	H491	M492	F493	I494	L495	E496	Q497	E498																																								
E499	Y500	K501	K502	E503	G504	I505	A506	M507	F508	E509	I510	D511	F512	G513	M514	D515	L516	H517	F518	E519	C519	I520	D521	L522	E523	E524	K525	P526	M527	Q528	I529	L530	S531	L532	E534	E535	E536	C537	M538	D543	D544	K545	S546	F547	G548	D549	K550	L551	Y552	G553	E554	H555	M556		N559																																										
R560	M561	F562	T563	K564	P565	G566	K567	P568	T569	R570	P571	H572	Q573	G574	P575	A576	H577	F578	E579	L580	H581	H582	Y583	A584	G585	M586	F587	P588	F589	S590	I591	T592	G593	W594	L595	E596	K597	N598	K599	D600	P601	I602	M603	E604	M605	V606	V607	L609	L610	S613	G614	L616	T617	K618	P619	L617	V618	A619	E620																																						
LEU	PHE	ALA	ALA	PRO	GLU	GLU	PRO	ALA	GLY	GLY	GLY	GLY	LYS	LYS	LYS	GLY	LYS	SER	SER	ALA	PHE	Q643	T644	I645	S646	A647	V648	H649	L650	E651	S652	L653	M654	K655	L656	N659	L660	T663	H664	P665	P666	F667	V668	R669	C670	GLN	GLY	PHE	VAL	D734	R735	L736	T737	K738	V739	E740	L741	D742																																							
D683	A684	E685	L686	L687	V688	H689	K690	L691	Q692	C693	H694	G695	V696	L697	E698	K699	L700	R701	I702	C703	R704	K705	G706	F707	S646	P708	S709	R710	L711	L712	L713	E651	S652	L653	M654	K655	L656	N659	L660	T663	H664	P665	P666	F667	V668	R669	C670	GLN	GLY	PHE	VAL	D734	R735	L736	T737	K738	V739	E740	L741	D742																																					
L743	A744	G745	L746	Q747	M748	H749	K750	L751	Q752	C753	H754	G755	V756	L757	E758	K759	L760	R761	I762	C763	R764	K765	G766	F767	S768	P769	S770	R771	L772	L773	L774	E775	L776	M777	K778	L779	R780	I781	T782	S783	L784	F785	G786	H787	I788	R789	T790	P791	GLN	GLY	PHE	VAL	D793	R794	L795	K796	A797	V798	R799	K800	S799	L801	H802	T803																																	
Q804	R805	L806	G807	L808	S809	V810	L811	Q812	R813	H814	L815	F816	K817	W818	L819	E820	L821	R822	H823	Q824	N825	W826	R827	K828	L829	R830	S831	K832	R833	K834	P835	L836	E837	L838	G839	F840	T841	G842	E843	E844	K845	Q846	S847	F849	K850	C851	T852	A853	S854	I855	L856	H857	M858	M859	L860	T861	G862	W863	L864	H865	I866	F867	D868	E869	K870	L871	N872	G873	H874	P875	S876	A877	S878	L879	K880	C881	D882	E883	F884	G885	H886	I887	L888	M889	N890	O891	P892	Q893	R894	S895	T896	U897	V898	W899	X899	Y899	Z899

● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

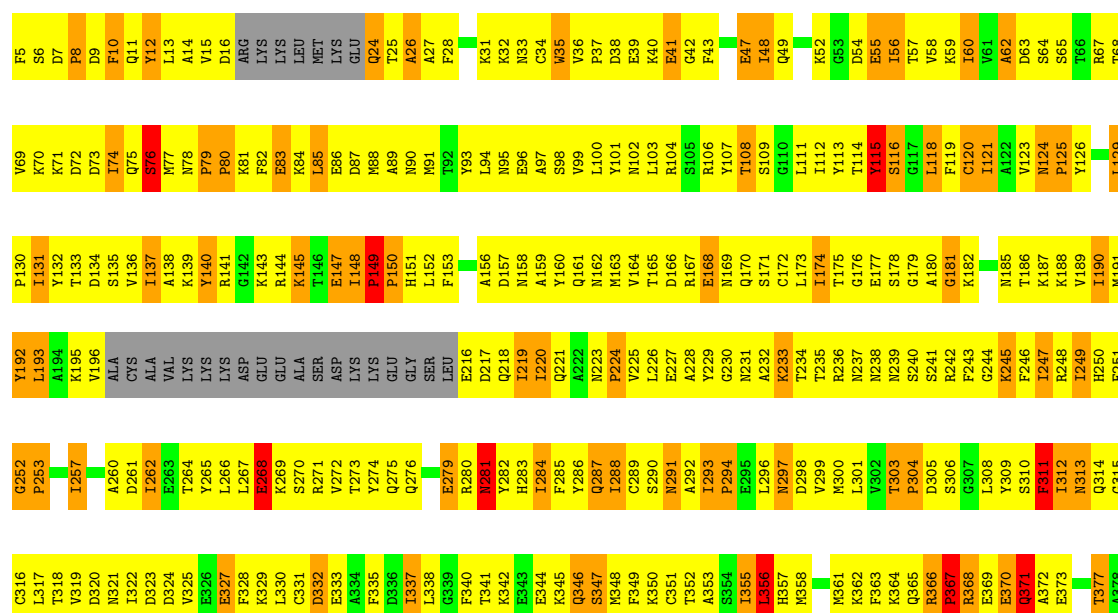
Chain 10-C:  12% 58% 20% 7%

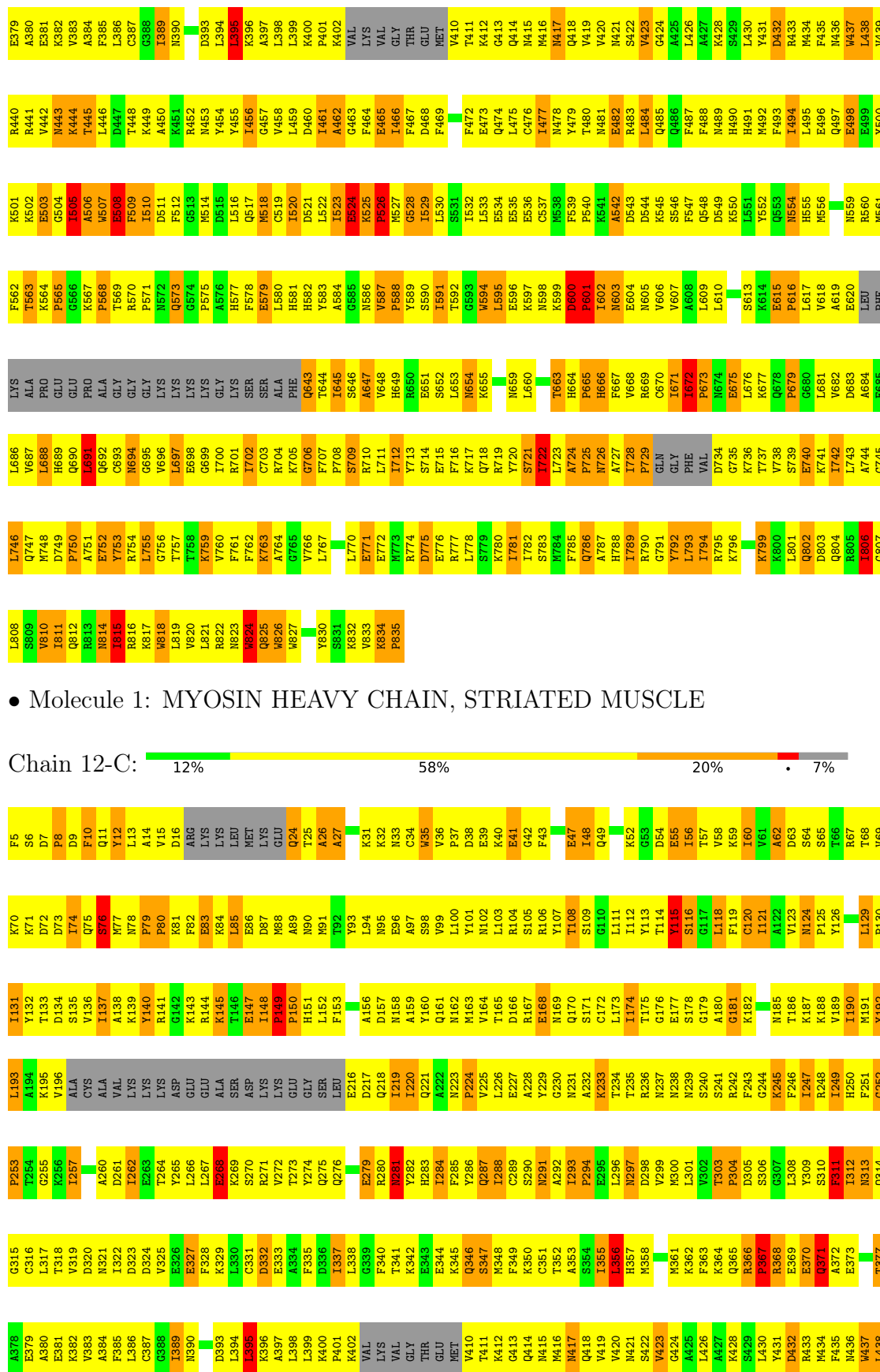
P253	T254	G255	K256	I257		A260	D261	E263	T264	Y265	L266	L267	E268	K269	S270	R271	V272	T273	Y274	Q275	Q276	E279	R280	Y281	Y282	H283	I284	T285	Y286	Q287	I288	C289	S290	I291	A292	I293	P294	L296	I297	D298	V299	M300	L301	V302	T303	P304	D305	S306	L308	Y309	S310	F311	I312	N313	Q314				
L193	A194	K195	V196	ALA	CYS	ALA	VAL	LYS	LYS	ASP	GLU	GLU	ALA	SER	ASP	LYS	LYS	GLU	GLY	SER	LEU	E216	D217	Q218	I219	I220	Q221	A222	N223	P224	L225	L226	F227	A228	Y229	G230	N231	A232	K233	T234	L235	R236	V237	N238	M239	S240	S241	R242	F243	Q244	K245	F246	I247	L248	H249	T250	F251	C252	
I131	Y132	T133	D134	S135	V136	I137	A138	K139	Y140	R141	G142	K143	R144	L145	T146	E147	L148	F149	P150	H151	L152	F153	A156	D157	N158	A159	Y160	Q161	M162	M163	V164	T165	D166	R167	E168	M169	Q170	S171	C172	L173	I174	T175	G176	E177	S178	G179	A180	G181	K182	N185	T186	K187	K188	V189	I190	N191	Y192		
K70	K71	D72	D73	I74	Q75	S76	M77	P79	P80	K81	F82	E83	K84	L85	E86	D87	M88	A89	N90	N91	T92	Y93	L94	N95	E96	A97	S98	Q99	L100	Y101	N102	L103	R104	S105	R106	Y107	T108	S109	L110	L111	I112	Y113	T114	Y115	Y116	S117	G117	L118	F119	C120	I121	A122	V123	N124	K125	Y126	L129	T128	V129
F5	S6	D7	P8	D9	F10	Q11	Y12	A14	V15	D16	ARG	LYS	LYS	LYS	LEU	MET	LYS	GLU	Q24	T25	A26	A27	K31	K32	N33	C34	W35	V36	P37	D38	E39	K40	E41	G42	F43		E47	I48	Q49	K52	G53	D54	E55	I56	T57	V58	K59	I60	V61	A62	D63	S64	S65	T66	R67	L129	T68	V69	



● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 11-C: 13% 57% 20% 7%

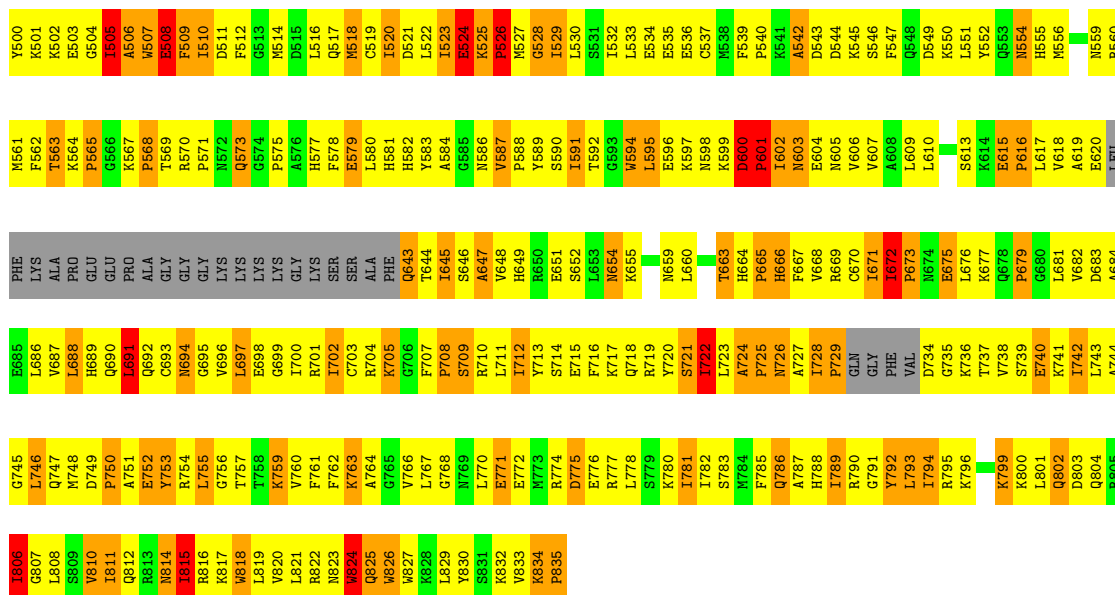




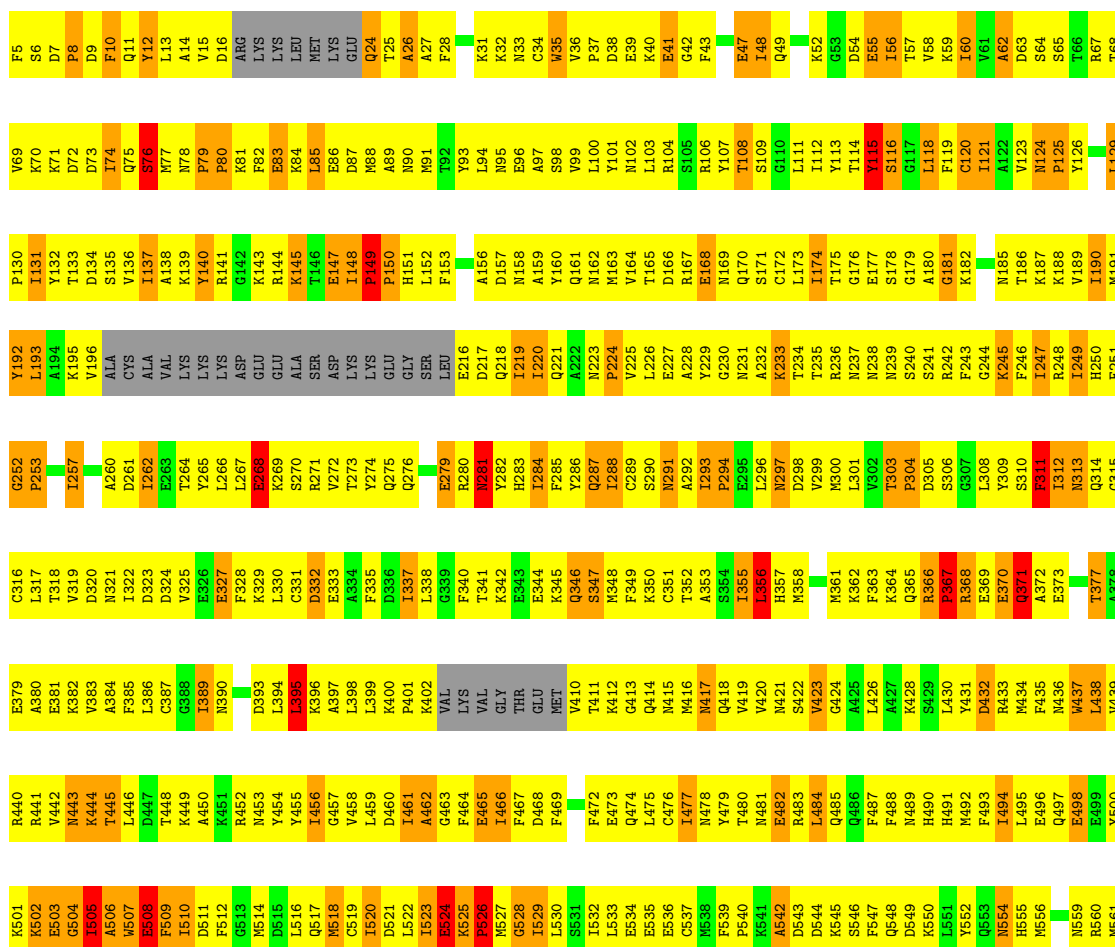
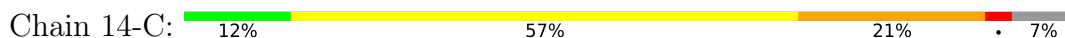
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



V439	A378	G315	P253	L193	I131	K70	F5
R440	E379	C316	T254	A194	Y132	K71	S6
R441	A380	L317	G255	K195	T133	D72	D7
V442	E381	T318	K256	Y196	D134	D73	P8
N443	K382	V319	L257	ALA	S135	I74	D9
K444	V383	D320	K321	CYS	V136	O75	F10
T445	A384	N321	A260	ALA	I137	S76	F11
L446	F385	I322	D261	VAL	A138	M77	Y12
D447	D386	D323	E262	LVS	K139	N78	L13
T448	C387	K324	E263	LVS	Y140	P79	A14
G449	G388	V325	T264	LVS	R141	P80	V15
K450	G389	G326	Y265	ASP	G142	K81	D16
N451	N390	E327	L266	GLU	K143	F82	ARG
R452		F328	D267	GLU	R144	E83	LVS
N453	D393	K329	E268	ALA	K145	K84	LVS
L454	L394	L330	K269	SER	L146	L85	LEU
Y455	L395	C331	S270	ASP	E147	E86	MET
I456	K396	D332	R271	LVS	I148	LVS	LVS
K457	A397	E333	V272	LVS	P149	M88	
V458	L398	A334	T273	GLU	P150	A89	Q24
L459	L399	F335	Y274	GLY	H151	N90	N25
D460	K400	D336	K275	SER	L152	M91	A26
I461	P401	I337	Q276	LEU	F153	T92	A27
A462	K402	L338		E216	Y83		
G463	VAL	G339	E279	D217	A156	L94	K31
F464	LVS	F340	R280	Q218	D157	N95	K32
E465	VAL	T341	K281	I219	M158	E96	K33
I466	L466	K342	T282	I220	A159	A97	C34
F467	THR	E343	H283	Q221	Y160	S98	K35
D468	GLU	E344	L284	A222	Q161	V99	V36
F469	MET	K345	F285	N223	M162	L100	P37
	V410	Q346	T286	P224	M163	Y101	D38
F472	T411	S347	Q287	V225	T164	N102	E39
E473	K412	M348	L288	L226	V165	L103	K40
Q474	G413	F349	C289	E227	D166	R104	E41
L475	Q414	K350	S290	A228	R167	S105	G42
C476	N415	C351	N291	Y229	E168	R106	F43
I477	M416	T352	A292	D230	M169	Y107	
N478	N417	A353	I293	N231	Q170	T108	E47
Y479	Q418	G354	P294	A232	S171	S109	I48
T480	V419	I355	E295	K233	C172	G110	Q49
N481	V420	L356	L296	T234	L173	L111	
E482	N421	H357	N297	T235	I174	I112	K52
R483	S422	M358	D298	R236	T175	Y113	G53
L484	V423		K299	T237	G176	T114	D54
Q485	G424	M361	M300	N238	E177	Y115	E55
G486	A425	K362	L301	N239	S178	S116	I56
F487	L426	F363	F302	S240	G179	G117	T57
F488	A427	K364	T303	S241	A180	L118	V58
N489	K428	Q365	P304	R242	G181	F119	K59
H490	S429	R366	D305	F243	K187	C120	I60
H491	L430	P367	S306	G244	K182	I121	V61
K492	Y431	R368	G307	K245	M185	A122	A62
F493	D432	E369	L308	F246	T186	V123	D63
L494	R433	E370	Y309	I247	K187	N124	S64
L495	M434	T371	S310	R248	K188	P125	S65
E496	F435	A372	F311	I249	V189	Y126	T67
Q497	N436	E373	I312	H250	I190		R67
E498	M437	E374	N313	P251	M191	L129	T68
F499	L438	T377	O314	G562	A192	V69	



- Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

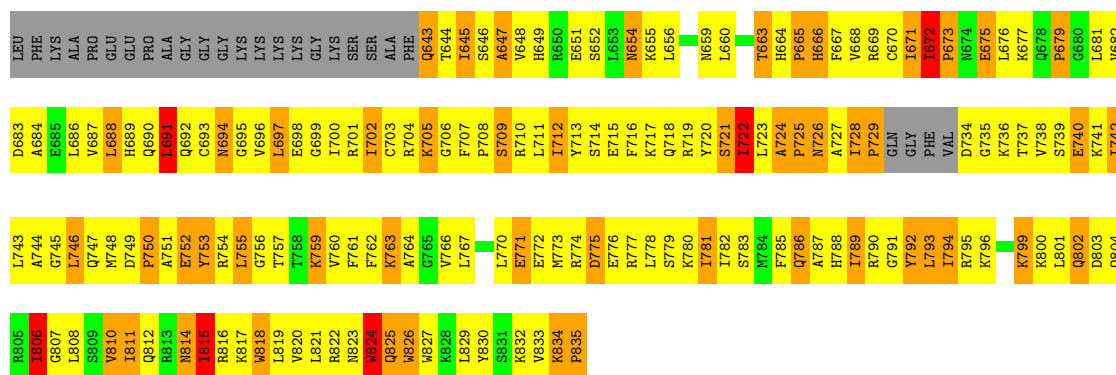


F562	L686	L808	L746	L586	L596	L600	S613
T563	V687	S609	Q747	N586	L596	D600	S613
K564	L688	W810	M748	N587	L596	P601	S614
P565	H689	I811	D749	P588	L596	I602	E615
G566	GLU	Q812	P750	P589	L596	N603	P616
K567	L691	R813	F751	L692	L596	E604	L617
P568	Q692	N814	E752	L693	L596	V668	L618
T569	C693	I815	Y753	L694	L596	R669	A619
R570	N694	R816	R754	L695	L596	C670	E620
P571	G695	K817	L755	L696	L596	L671	PHE
N572	V696	W818	G756	L697	L596	L672	
Q573	L697	L819	T757	L698	L596	P673	
G574	L698	W820	T758	L699	L596	L674	
P575	L699	L821	K759	L700	L596	E675	
A576	GLY	R822	V760	I700	L596	L676	
H577	L701	N823	F761	R701	L596	L677	
F578	SER	W824	F762	I702	L596	Q678	
E579	SER	Q825	K763	C703	L596	P679	
L580	ALA	W826	A764	R704	L596	L680	
H581	PHE	W827	G765	K705	L596	L681	
H582	Q643	R828	V766	G706	L596	L682	
Y583	T644	L829	L767	F707	L596	D683	
A584	I645	Y830	L770	F708	L596	L743	
G585	S646	S831	E771	S709	L596	A684	
N586	A647	K832	E772	R710	L596	L685	
V587	V648	R833	R773	L711	L596		
P588	H649	K834	R774	I712	L596		
Y589	G650	P835	R775	Y713	L596		
S590	E651		D776	S714	L596		
I591	S652		E776	E715	L596		
T592	L653		R777	F716	L596		
G593	N654		L778	K717	L596		
W594	K655		S779	Q718	L596		
L595	L660		K780	R719	L596		
K597	L660		I781	Y720	L596		
N598	L660		I782	S721	L596		
K599	L663		S783	I722	L596		
D600	H664		K784	L723	L596		
P601	P665		F785	A724	L596		
I602	H666		Q786	P725	L596		
N603	F667		A787	N726	L596		
E604	A727		H788	N726	L596		
N605	V668		I789	A727	L596		
V606	R669		R790	I728	L596		
V607	C670		G791	P729	L596		
L610	L671		Y792	GLN	L596		
	L672		L793	PHE	L596		
	P673		I794	VAL	L596		
	L674		R795	D734	L596		
	E675		K796	G735	L596		
	L676			K736	L596		
	L677			T737	L596		
	Q678			V738	L596		
	P679			S739	L596		
	L680			E740	L596		
	L681			K741	L596		
	L682			I742	L596		
	D683			L743	L596		
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● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

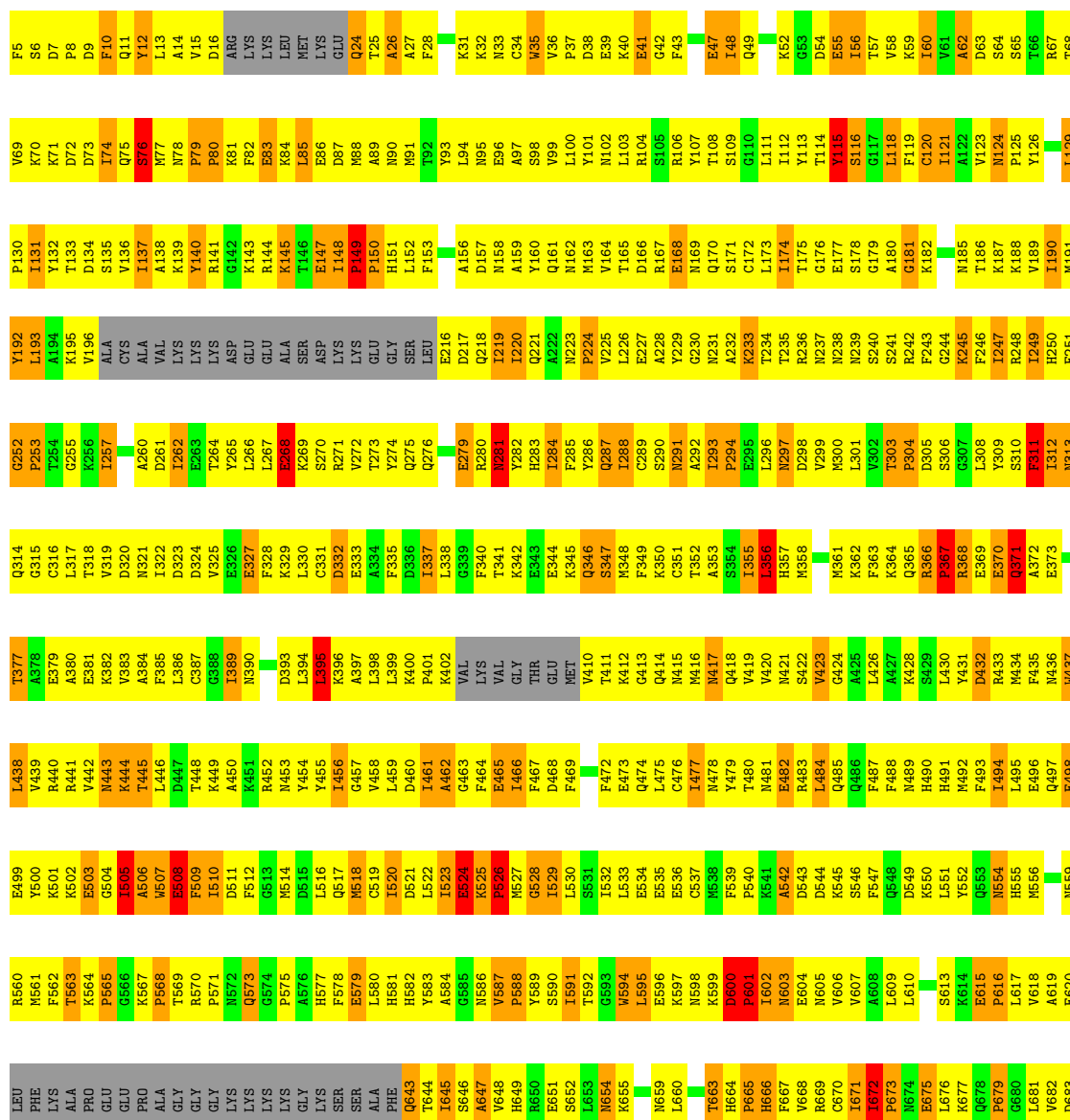
Chain 15-C: 12% 58% 20% 7%

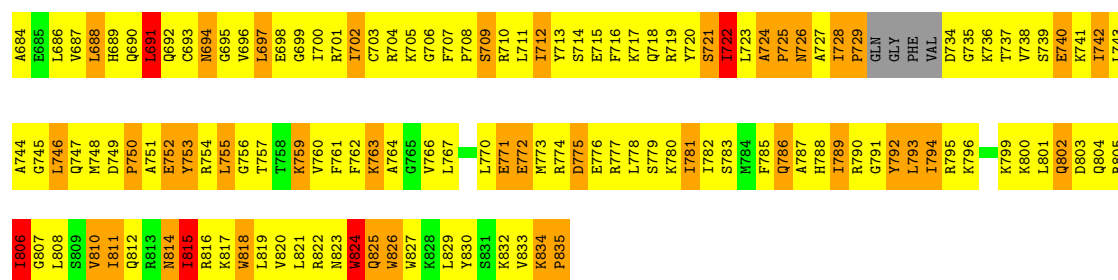
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S6	K70	I131	L193	P253	G315	A378	V439	Y500	M561
D7	K71	Y132	A194	T254	C316	E379	R440	K501	F562
P8	D72	T133	K195	G255	L317	A380	R441	K502	T563
D9	D73	S134	V196	K256	T318	E381	V442	E503	P565
F10	I74	D135	ALA	L257	V319	K382	M443	G504	K565
Q11	Q75	V136	CYS	A260	D320	V383	K444	I605	G566
Y12	S76	I137	ALA	D261	N321	A384	T445	A506	K567
L13	M77	L138	VAL	D262	T322	F385	L446	W507	P568
A14	N78	K139	LVS	E263	D324	L386	D447	F508	T569
V15	P79	Y140	LVS	E264	D324	C387	T448	R570	P571
D16	P80	R141	LVS	T264	V325	G388	K449	I510	N572
ARG	K81	G142	ASP	Y265	E326	L389	A450	D511	P573
LVS	F82	K143	GLU	L266	E327	N390	K451	F512	Q573
LVS	E83	K144	GLU	L267	F328		R452	G513	G574
LEU	K84	K145	ALA	E268	K329	D393	M453	M514	P575
LEU	L85	T146	SER	K269	L330	L394	Y454	D515	A576
LVS	E86	E147	ASP	K270	C331	L395	Y455	L516	H577
GLU	D87	I148	LVS	R271	D332	K396	T456	Q517	F578
Q24	H88	P149	LVS	V272	E333	A397	Q457	M518	E579
T25	A89	F150	GLU	T273	A334	L398	V458	C519	L580
A26	N90	H151	GLY	Y274	F335	L399	L459	I520	H581
A27	N91	L152	SER	Q275	D336	K400	D460	D521	H582
F28	T92	F153	LEU	Q276	I337	P401	T461	L522	Y583
	Y93		E216		L338	K402	A462	I523	A584
K31	L94	A156	D217	E279	G339	VAL	Q463	E524	G585
N32	N95	D157	Q218	R280	E340	LVS	F464	K525	N586
N33	E96	M158	L219	N281	T341	VAL	E465	P526	V587
C34	A97	A159	G220	Y282	K342	GLY	I466	M527	P588
V35	S98	Y160	Q221	H283	E343	THR	F467	G528	Y589
V36	V99	Q161	A222	I284	E344	GLU	D468	I529	S590
P37	L100	M162	N223	F285	K345	MET	F469	L530	I591
D38	Y101	M163	P224	Y286	Q346			S531	T592
E39	N102	E164	V225	Q287	E347	V410	F472	G532	G593
K40	L103	T165	L226	L288	M348	T411	E473	L533	W594
E41	R104	D166	E227	C289	F349	G413	Q474	E534	L595
Q42	S105	R167	A228	S290	K350	Q414	L475	E535	E596
F43	R106	E168	Y229	N291	C351	M415	C476	E536	K597
	Y107	N169	G230	A292	T352	M416	I477	C537	N598
E47	T108	Q170	N231	L295	A353	N417	M478	M538	K599
L48	S109	S171	A232	P294	S354	Q418	Y479	F539	D600
Q49	G110	C172	K233	E295	L355	V419	T480	P540	P601
	L111	L173	T234	L296	L356	V420	M481	K541	I602
K52	T112	I174	T235	N297	H357	N421	E482	A542	N603
G53	Y113	T175	R236	D298	M358	S422	R483	D543	E604
D54	T114	G176	N237	V299		V423	L484	D544	N605
E55	Y115	E177	M238	M300		G424	Q485	K545	V606
I56	S116	S178	N239	L301		A425	Q486	S546	V607
T57	G117	G179	S240	V302		L426	F487	F547	A608
V58	L118	A180	S241	T303		A427	F488	Q548	L609
K59	F119	K181	R242	P304		K428	M489	D549	L610
	C120	K182	F243	D305		S429	H490	K550	
160	V61	G244	F243	S306		K429	L430	L551	S613
	A122	K245	G244	G307		L430	P367	Y552	K614
D63	V123	T186	F246	L308		D432	M492	Q553	E615
S64	N124	K187	T247	E370		R433	F493	P554	P616
S65	P125	K188	R248	E370		I494	L495	H555	L617
T66	Y126	L189	T249	Q371		M434	E496	M556	V618
R67	L129	H250	H250	A372		F435	Q497		A619
T68		N191	F251	E373		N436	E498		E620



• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

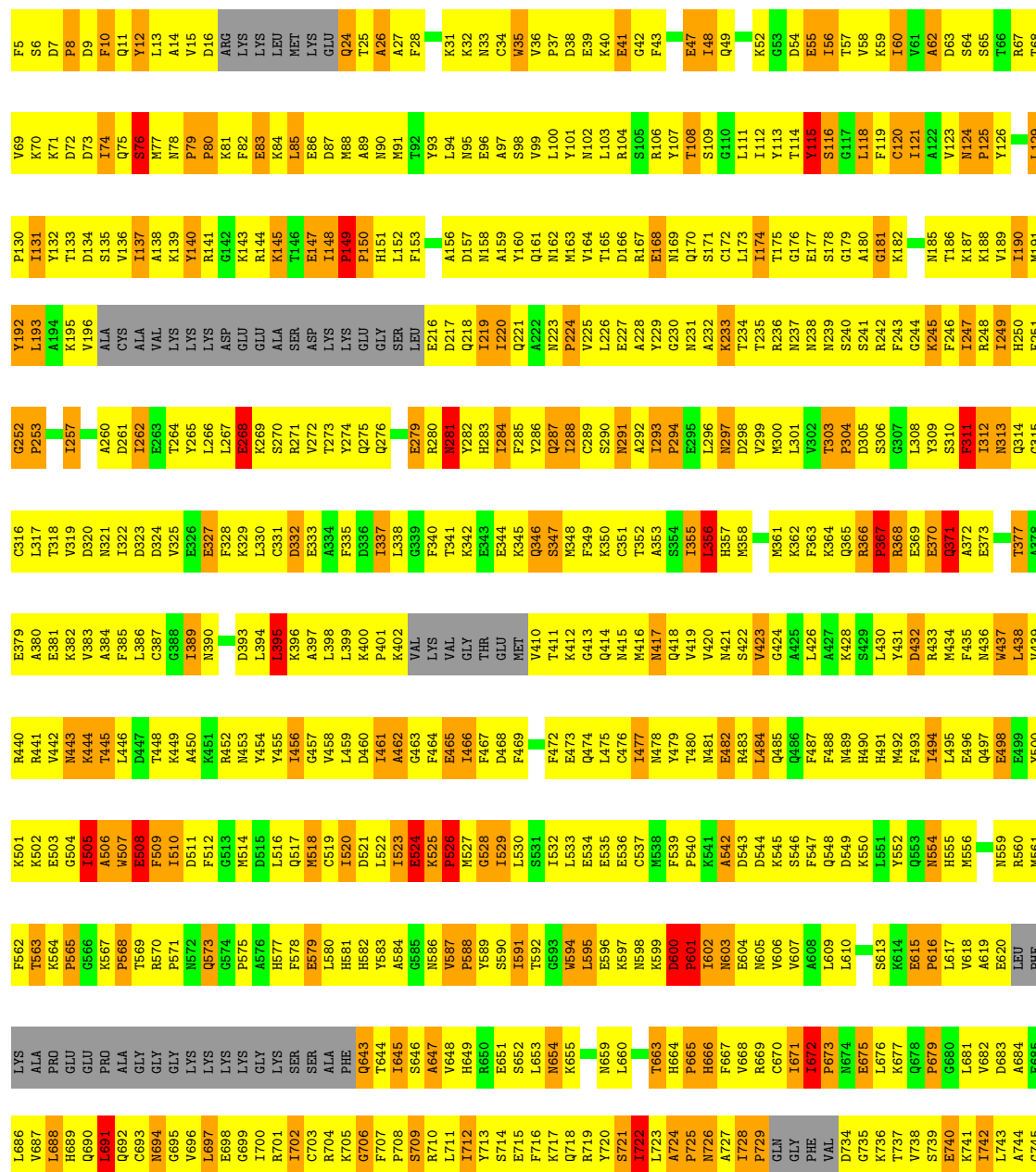
Chain 16-C: 12% 58% 20% 7%





● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

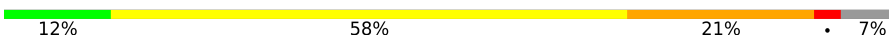
Chain 17-C: 12% 58% 20% 7%





Chain 19-C: 12% 57% 21% 7%



Chain 20-C:  12% 58% 21% 7%

L808	L746	L686	LYS	F562	K501	R440	E379	C316	G252	Y192	P130	V69	F5
S809	Q747	V687	ALA	T563	K502	R441	A380	L317	P253	L193	I131	K70	S6
G809	M748	L688	PRO	K564	E503	R442	E381	T318	E503	A194	Y132	K71	D7
I811	D749	H689	GLU	P565	G504	M443	K382	V319	L257	K195	T133	D72	P8
Q812	P750	Q690	GLU	G566	I505	K444	V383	D320	L505	V196	D134	D73	D9
R813	A751	L691	PRO	K567	A506	T445	A384	N321	A260	ALA	S135	I74	F10
N814	E752	Q692	ALA	P568	E507	L446	F385	L322	D261	CYS	V136	Q75	Q11
T815	Y753	C693	GLY	T569	E508	D447	L386	D323	L262	ALA	I137	S76	Y12
R816	M694	R754	GLY	R570	F509	T448	C387	D324	E263	VAL	A138	M77	L13
K817	L755	G695	GLY	P571	L510	K449	G388	V325	T264	LYS	K139	N78	A14
W818	G756	V696	LYS	N572	D511	A450	I389	E326	V265	LYS	Y140	P79	V15
L819	T757	L697	LYS	Q573	F512	K451	N390	E327	L266	LYS	R141	P80	D16
V820	T758	E698	LYS	G574	G513	R452	D393	F328	L267	ASP	G142	K51	ARG
K821	K759	G699	LYS	P575	M514	N453	L394	K329	E268	GLU	K143	P52	LYS
R822	V760	I700	GLY	A576	D515	Y454	L394	L330	K269	GLY	R144	E83	LYS
N823	F761	R701	LYS	H577	L516	Y455	L395	C331	S270	ALA	K145	K84	LEU
W824	F762	I702	SER	F578	Q517	I456	K396	D332	R271	SER	T146	L85	MET
K825	K763	C703	SER	E579	M518	Q457	A397	E333	V272	ASP	E147	E86	LYS
W826	R704	AL	ALA	L580	C519	V458	L398	A334	T273	LYS	I148	D57	GLU
W827	K705	PHE	PHE	H581	I520	L459	L399	F335	Y274	LYS	P149	M88	Q24
K828	G706	F707	Q643	H582	D521	D460	K400	D336	ZY74	GLU	P150	A89	T25
L829	L767	F708	T644	Y583	L522	I461	P401	I337	Q276	GLY	H151	N90	A26
Y830	P708	S645	I646	A584	I523	A462	K402	L338	Q276	SER	L152	N91	A27
S831	S709	G831	G645	G585	E524	G463	VAL	G339	E279	LEU	F153	Y92	F28
K832	R710	A647	A647	N586	K525	F464	LYS	F340	R280	E216	A156	Y93	Q31
V833	E772	V648	GLY	V587	P526	E465	VAL	T341	Y281	D217	D157	L94	K31
P835	M773	L712	H649	P588	M527	I466	GLY	K342	Y282	Q218	K32	N95	K32
	R774	R774	R650	Y589	G528	F467	THR	E343	H283	I219	N158	E96	N33
	D775	S714	E651	S590	I529	D468	GLU	E344	L284	I220	A159	A97	C34
	E776	E715	S652	I591	L530	F469	MET	K345	F285	Q221	Y160	S98	W35
	R777	F716	L653	T592	S531		V410	Q346	Y286	A222	Q161	V99	V36
	L778	K717	N654	G593	I532	F472	T411	R347	Q287	N223	N162	L100	P37
	S779	Q718	L533	W594	E533	E473	K412	M348	L288	P224	M163	Y101	D38
	K780	R719	L595	L595	E534	Q474	C413	F949	C289	V225	V164	N102	E39
	I781	Y720	N659	E596	E535	L475	Q414	K350	S290	L226	T165	L103	K40
	I782	S721	L660	K597	E536	C476	M415	C351	N291	E227	D166	R104	E41
	S783	I722		N598	C537	I477	M416	T352	A292	A228	L167	S105	G42
	M784	L723	T663	K599	M538	N478	M417	A353	T293	Y229	E168	R106	F43
	F785	R724	H664	D600	F539	Q418	Q418	S354	P294	G230	N169	Y107	E47
	Q786	P725	P665	P601	P540	T480	V419	I355	E295	N231	S171	T108	I48
	A787	N726	H666	I602	N541	N481	V420	L356	L296	A232	S171	S109	Q49
	H788	A727	F667	N603	A542	E482	M421	H357	N297	K233	C172	G110	
	I789	I728	V668	E504	D543	R483	V422	D298	D298	T234	L173	L111	
	R790	P729	R669	N605	D544	L484	S423	V299	V299	T235	I174	I112	K52
	G791	GLN	C670	V606	K545	G424	F424	M361	M300	R236	T175	Y113	G53
	Y792	GLY	I671	V607	S546	Q486	A425	K362	G361	N237	G176	T114	D54
	L793	PHE	I672	A608	F547	F487	L426	F363	V502	N238	E177	Y115	E55
	I794	VAL	P673	L609	Q548	F488	A427	K364	T303	N239	S178	S116	T56
	R795	D734	N674	L610	D549	N489	K428	Q365	P304	G240	G179	G117	V56
	K796	G735	E675		K550	H490	S429	R366	D305	S241	A180	F119	V58
		T736	L676	K614	L551	H491	L430	R368	G307	R242	G181	C120	K59
	K799	V737	K677	E615	Y552	M492	F432	E369	L308	F243	K182	I121	V60
	W800	V738	F738	P616	Q553	F493	D432	K307	G244	G244		N61	L60
	L801	S739	P679	R554	N554	I494	R433	E370	Y309	K245	N185	A122	A62
	Q802	E740	G680	P618	M555	L495	L495	Q370	Y309	F245	T186	I123	D63
	D803	K741	L681	V618	H556	E496	F435	Q371	S310	F246	K187	N124	S64
	Q804	R805	V682	A619	M557	Q497	M436	A372	F311	L247	L188	P125	T65
	K805	L743	D683	E620	N559	E498	W437	E373	N313	R248	V189	Y126	T66
	I806	C807		LEU	R560	E499	L438	T377	Q314	H250	I190	F251	R58
				DUP	M561	Y500	W438	A378	C315	P254	M10	L129	T68

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

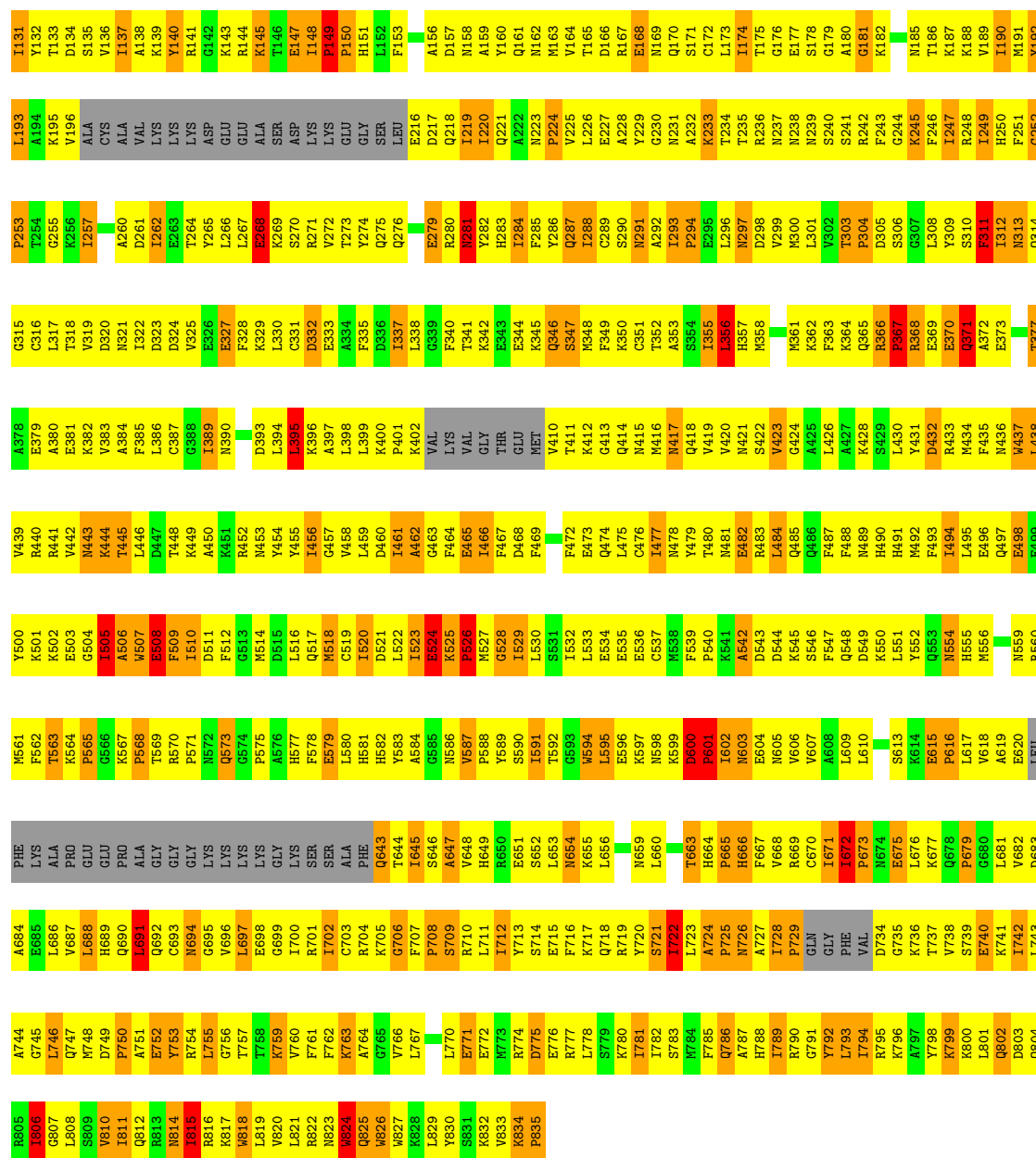
Chain 21-C:  12% 57% 21% 7%

Q804	R805	L806	G807	L808	S809	V810	I811	Q812	R813	N814	L815	R816	K817	W818	L819	V820	L821	R822	N823	W824	Q825	W826	W827	K828	L829	Y830	S831	K832	R833	K834	P835																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													</
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● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

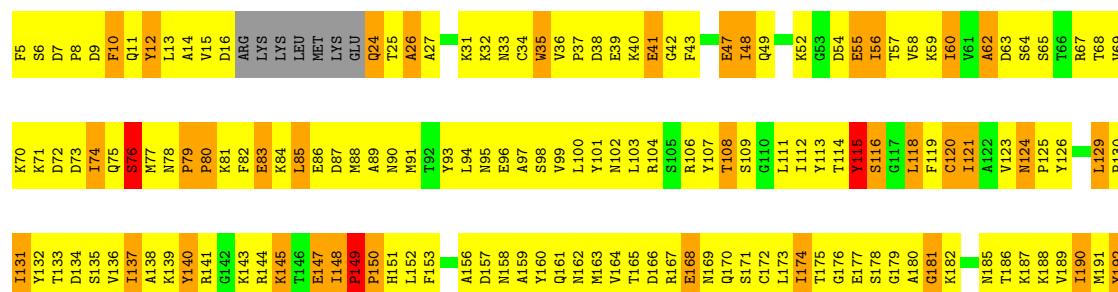
Chain 22-C:  12% 58% 20% 7%

F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	ARG	LYS	LYS	LYS	LEU	MET	LYS	GLU	Q24	T25	A26	A27	K31	K32	N33	C34	W35	V36	P37	D38	E39	K40	E41	G42	F43	E47	I48	Q49	K52	G53	D54	E55	I56	T57	V58	K59	I60	V61	A62	D63	S64	S65	T66	R67	V69
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● Molecule 1: MYOSIN CHAIN, STRIATED MUSCLE

Chain 24-C: 12% 58% 20% 7%



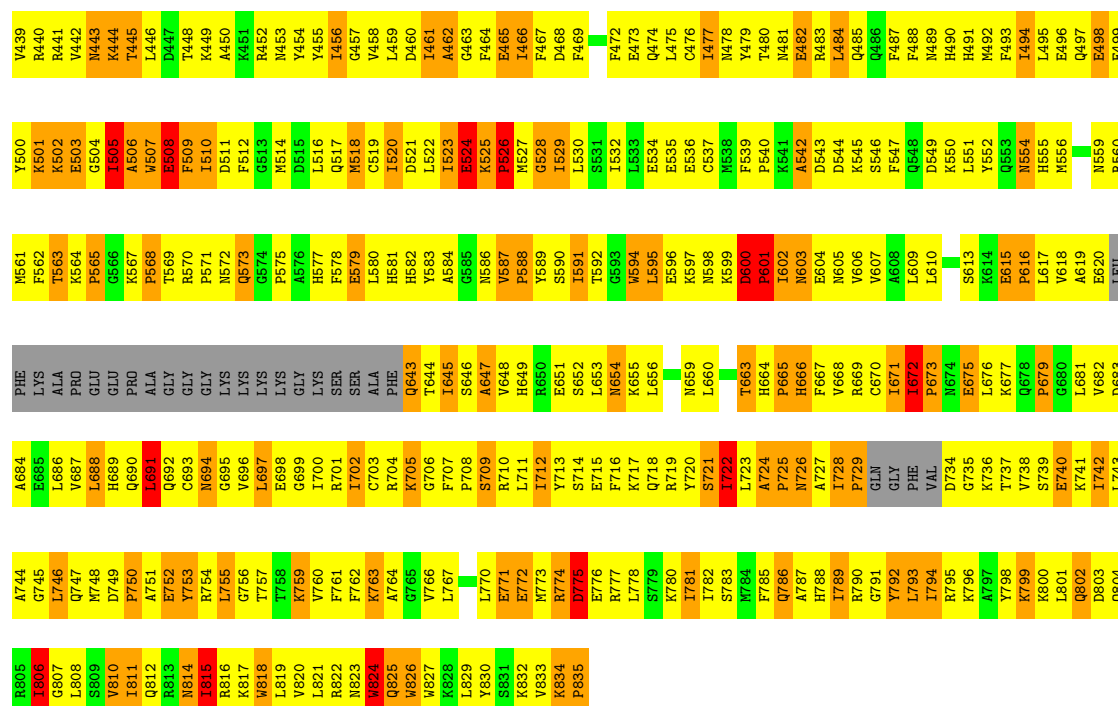




G315	P253	L193	I131	K70	F5
C316	T254	A194	Y132	K71	S6
L317	G255	K195	T133	D72	D7
T318	K256	V196	D134	P8	D9
V319	I257	ALA	S135	I74	F10
D320		CYS	V136	Q75	
N321	A260	ALA	I137	S76	Y11
I322	D261	VAL	A138	M77	Q12
D323	D262	LVS	N78	L13	L13
D324	E263	LVS	Y140	P79	A14
V325	T264	LVS	R141	P80	V15
E326	Y265	ASP	G142	K81	D16
E327	L266	GLU	K143	P82	ARG
F328	L267	GLU	R144	K84	LVS
K329	E268	ALA	K145	K85	LVS
L330	K269	SER	T146	L85	LEU
C331	S270	ASP	E147	E86	NET
D332	R271	LVS	I148	D87	LVS
E333	V272	LVS	P149	M88	GLU
A334	T273	GLU	P150	A89	Q24
F335	Y274	GLY	H151	N90	T25
K336	Q275	SER	L152	N91	A26
I337	Q276	LEU	F153	T92	A27
L338		E216		Y93	
G339	E279	D217	A156	L94	K31
F340	R280	Q218	D157	N95	K32
T341	R281	I219	N158	E96	N33
K342	E282	I220	A159	A97	C34
F343	H283	Q221	Y160	S98	V35
E344	I284	A222	Q161	V99	V36
K345	T285	N223	N162	L100	P37
F346	Y286	P224	M163	Y101	D38
K347	Q287	V225	V164	N102	E39
M348	L288	L226	T165	L103	K40
F349	C289	E227	D166	R104	E41
K350	S290	A228	R167	S105	G42
C351	N291	Y229	E168	R106	F43
T352	A292	D230	N169	Y107	
A353	I293	N231	Q170	T108	E47
E354	P294	A232	S171	L148	L48
I355	E295	K233	C172	G110	Q49
L356	L296	T234	L173	L111	
	N297	T235	I174	I112	K52
M358	D298	R236	T175	Y113	G53
	V299	N237	G176	T114	D54
M361	M300	N238	E177	Y115	E55
K362	L301	N239	S178	S116	I56
F363	V302	S240	G179	G117	T57
K364	T303	S241	R180	L118	V58
F365	P304	R242	G181	F119	K59
K366	D305	F243	K182	C120	I60
P367	S306	G244		I121	V61
K368	G307	K245	N185	A122	A62
E369	L308	F246	T186	V123	D63
F370	Y309	I247	K187	N124	S64
T371	S310	R248	K188	P125	S65
E372	F311	I249	V189	Y126	T66
E373	I312	H250	I190		R67
	N313	D251	M191	L129	T68
T377	C314	C252	A192	L129	V69

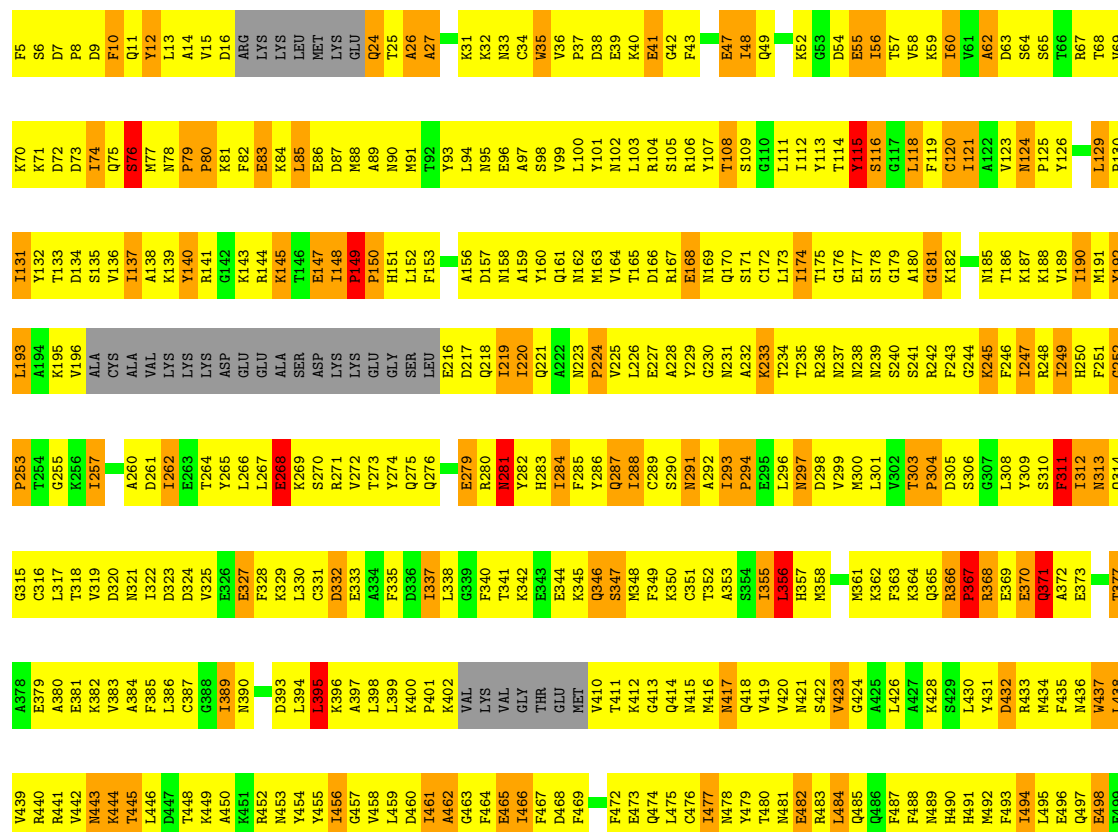


A378	G315	P253	L193	I131	K70	F5
A379	C316	T254	A194	Y132	K71	S6
A380	C317	G255	K195	T133	D72	D7
E381	L318	P256	V196	D134	D73	P8
K382	V319	L257	ALA	S135	I74	D9
V383	D320		CYS	V136	O75	F10
A384	N321	A260	ALA	I137	S76	Y11
F385	L322	D261	VAL	A138	M77	Q12
D386	D323	L262	LYS	K139	N78	L13
C387	D324	E263	LYS	Y140	P79	A14
G388	V325	T264	LYS	R141	P80	A15
I389	F326	Y265	ASP	G142	K81	D16
N390	E327	L266	GLU	K143	F82	ARG
	F328	L267	GLU	R144	E83	LYS
D393	K329	E268	ALA	K145	L84	LYS
L394	L330	K269	SER	T146	L85	LYS
L395	C331	S270	ASP	E147	E86	MET
K396	D332	R271	LYS	I148	D87	LYS
A397	E333	V272	LYS	P149	M88	GLU
L398	A334	T273	GLU	P150	A89	Q24
L399	F335	Y274	GLY	H151	N90	T25
K400	D336	Q275	SER	L152	N91	A26
P401	I337	Q276	LEU	F153	T92	A27
K402	L338		E216		Y93	
VAL	G339	E279	D217	A156	L94	K31
LYS	F340	R280	Q218	D157	N95	K32
VAL	T341	N281	L219	N158	E96	N33
GLY	K342	Y282	L220	A159	A97	C34
THR	F343	H283	Q221	Y160	S98	W35
GLU	E344	L284	A292	Q161	V99	V36
MET	K345	F285	N223	M162	L100	P37
V410	Q346	Y286	P224	M163	D38	D38
T411	S347	Q287	V225	V164	N102	E39
K412	M348	L288	L226	T165	L103	K40
G413	F349	C289	E227	D166	R104	E41
Q414	K350	S290	A228	R167	S105	G42
M415	C351	N291	Y229	E168	R106	F43
M416	T352	A292	G230	M169	Y107	
N417	A353	L293	N231	Q170	T108	E47
Q418	S354	P294	A232	S171	S109	I48
V419	I355	E295	K233	C172	G110	Q49
V420	L356	L296	T234	L173	L111	
	H357	N297	R235	I174	I112	K52
S422	M358	D298	T236	T175	Y113	G53
V423		V300	N237	G176	T114	D54
G424	M361	N300	N238	E177	Y115	E55
A425	K362	L301	N239	S178	S116	I56
L426	F363	V302	S240	G179	G117	T57
A427	K364	T303	S241	A180	L118	V88
S428	Q365	P304	R242	G181	F119	K59
L430	R366	D305	F243	K182	C120	I60
L431	P367	S306	G244		I121	V61
Y431	K368	E307	K245	M185	A122	A62
D432	E369	L308	F246	T186	V123	D63
R433	E370	T309	L247	K187	N124	S64
M434	Q371	R248	K188	P125	P125	S65
F435	A372	F311	T249	V189	Y126	T66
N436	E373	I312	H250	I190		R67
W437		N313	F251	M191	L129	T68
A438	T372	C314	C252	Y192	P126	V69

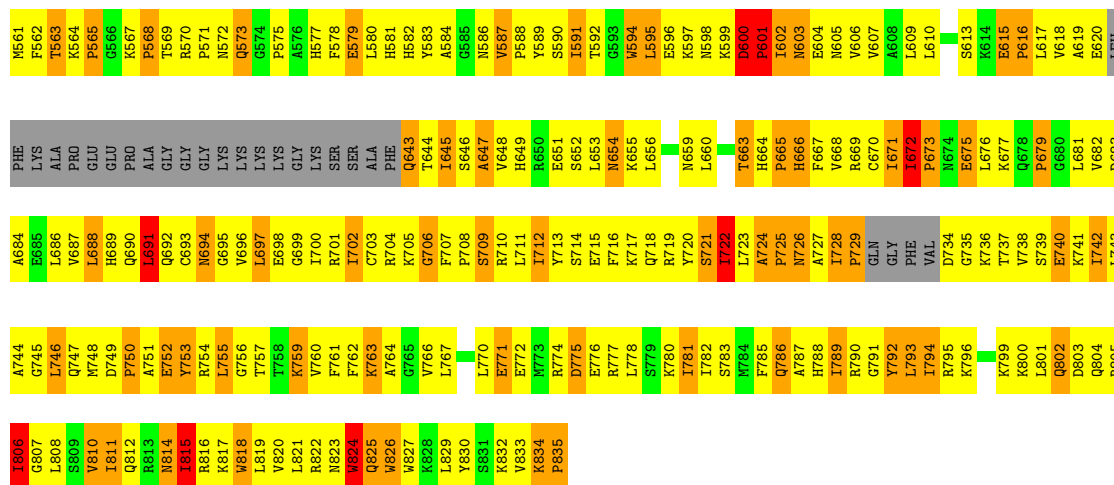


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 29-C: 12% 58% 21% 7%

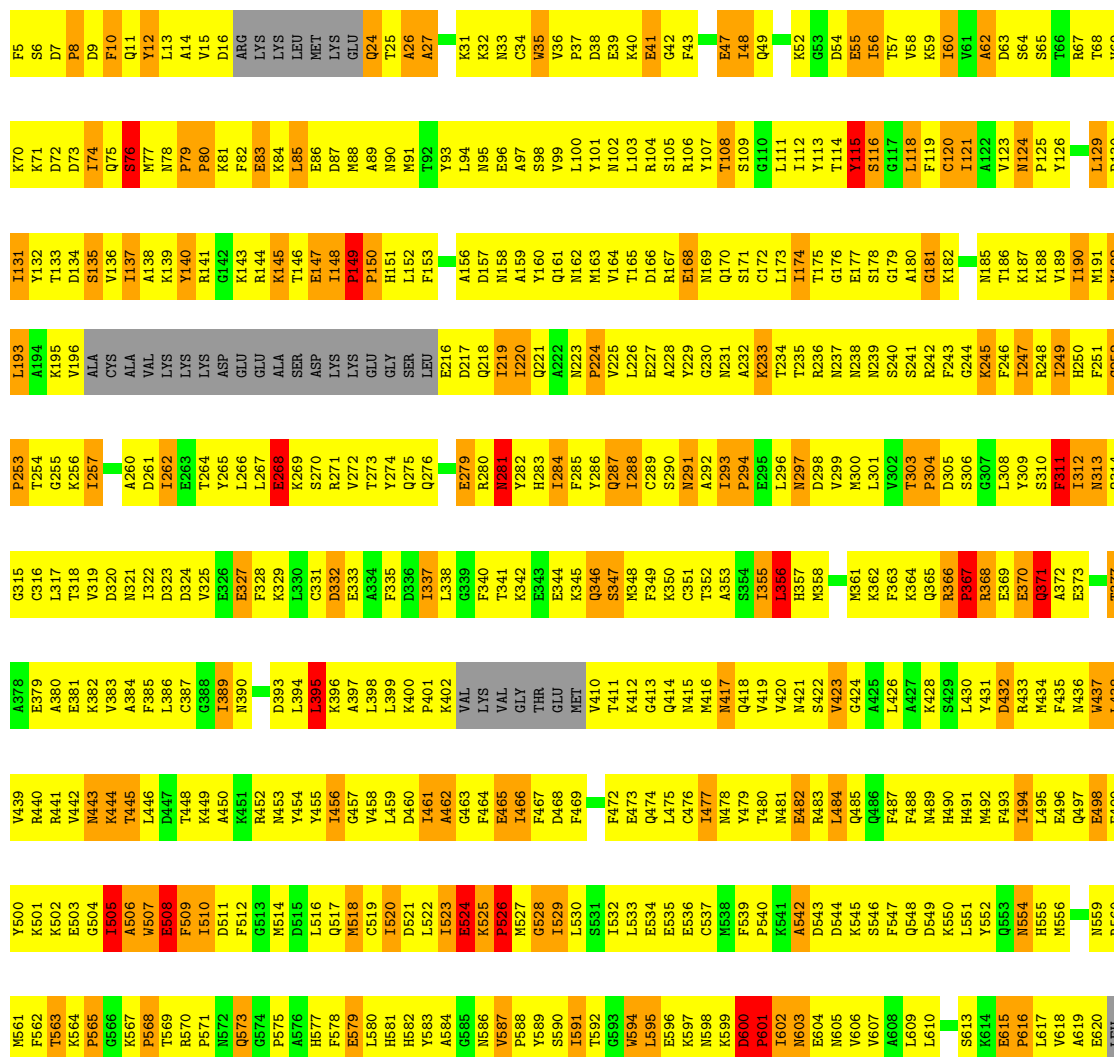




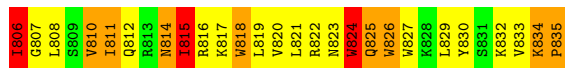


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 31-C: 11% 58% 20% 7%



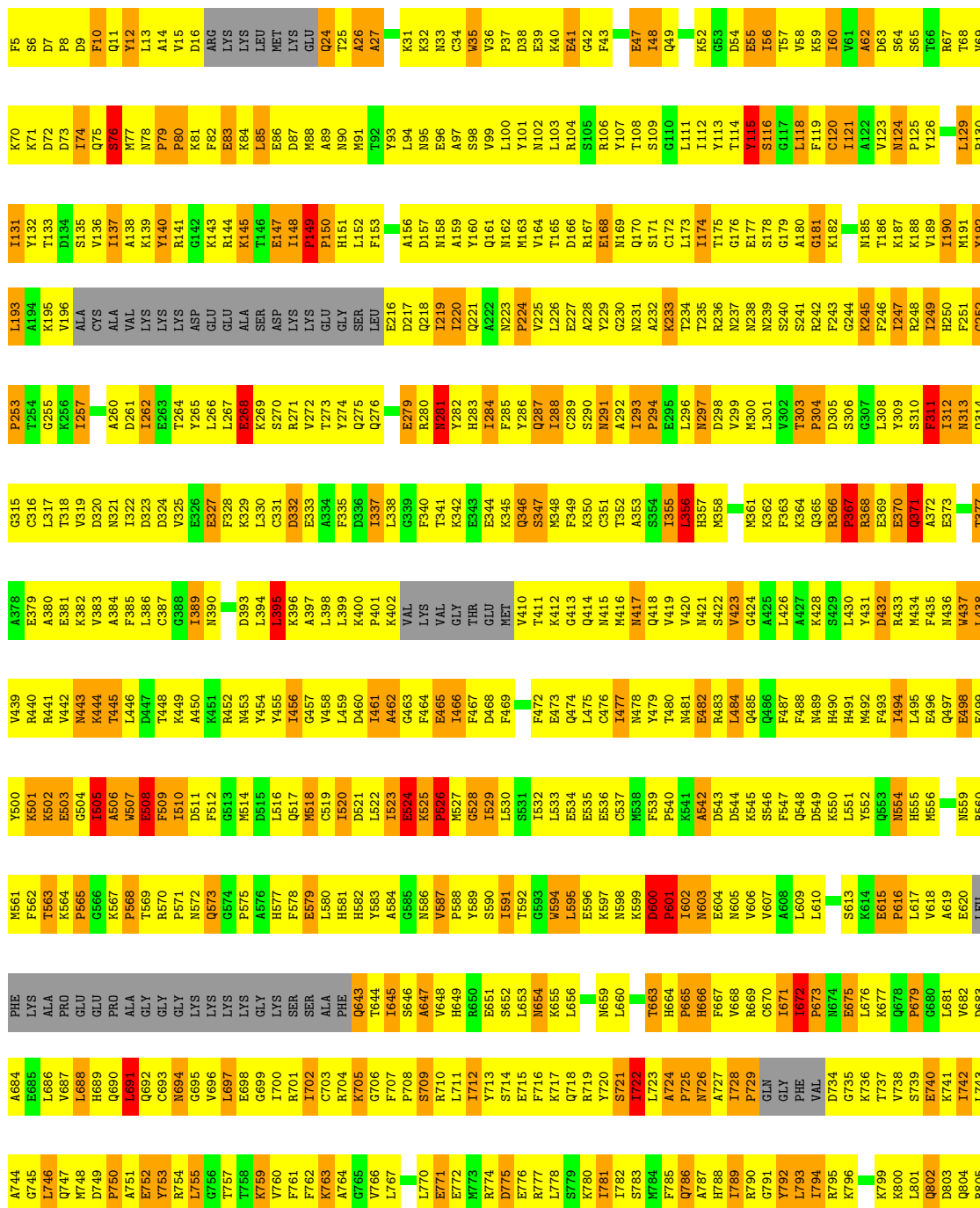


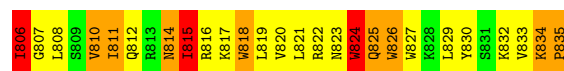


Chain 33-C: 12% 58% 20% 7%

- Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

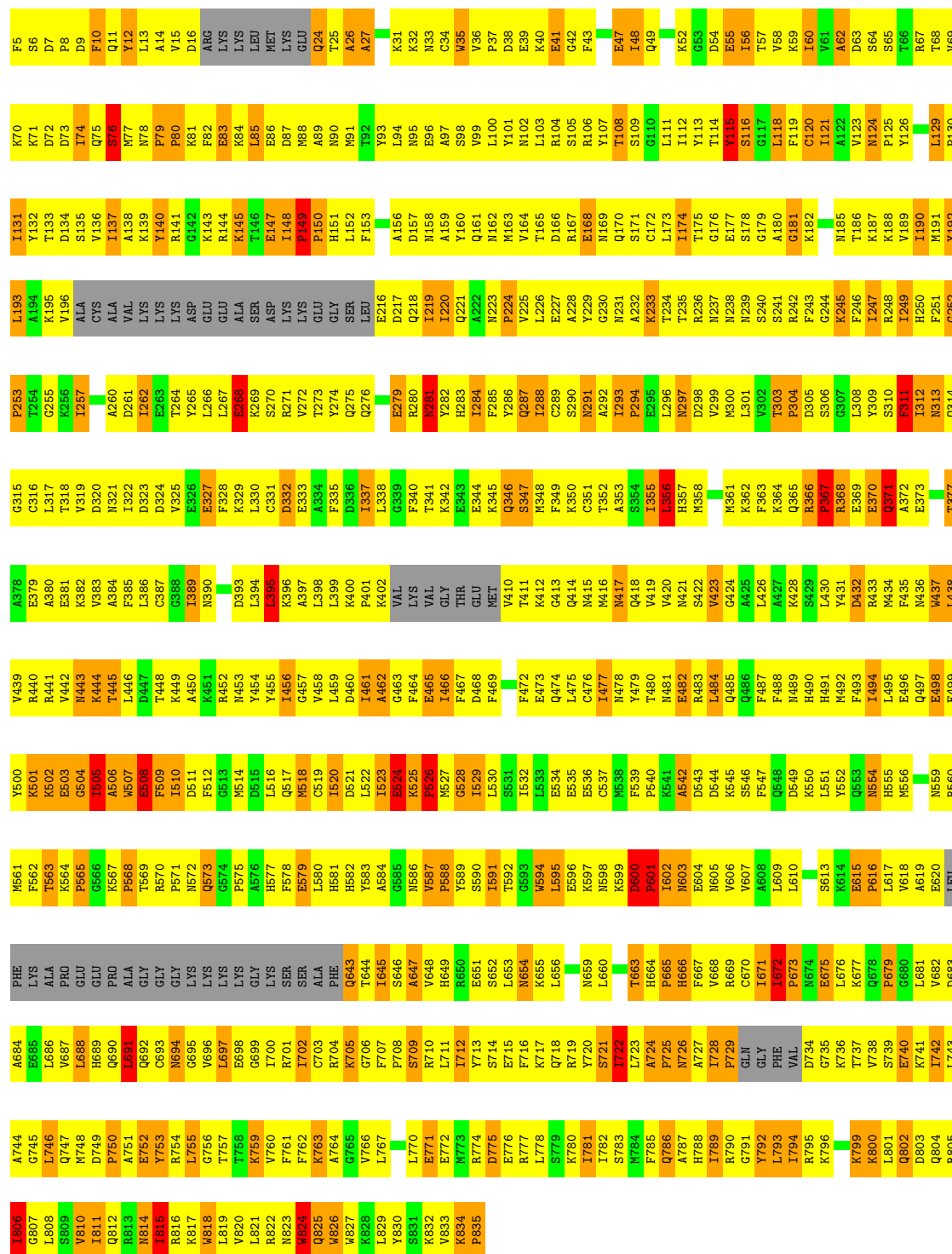
Chain 34-C:  12% 58% 20% 7%



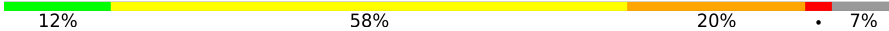


• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 35-C: 12% 58% 21% 7%



• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 36-C:  12% 58% 20% 7%

F5	S6	P8	D7	D9	F10	Q11	Y12	L13	P79	A14	V15	D16	ARG	LYS	LYS	L10	L11	L12	L13	L14	L15	L16	L17	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	L71	L72	L73	L74	L75	L76	L77	L78	L79	L80	L81	L82	L83	L84	L85	L86	L87	L88	L89	L90	L91	L92	L93	L94	L95	L96	L97	L98	L99	L100	L101	L102	L103	L104	L105	L106	L107	L108	L109	L110	L111	L112	L113	L114	L115	L116	L117	L118	L119	L120	L121	L122	L123	L124	L125	L126	L127	L128	L129	L130	L131	L132	L133	L134	L135	L136	L137	L138	L139	L140	L141	L142	L143	L144	L145	L146	L147	L148	L149	L150	L151	L152	L153	L154	L155	L156	L157	L158	L159	L160	L161	L162	L163	L164	L165	L166	L167	L168	L169	L170	L171	L172	L173	L174	L175	L176	L177	L178	L179	L180	L181	L182	L183	L184	L185	L186	L187	L188	L189	L190	L191	L192	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	L10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G315	C316	L317	T318	V319	D320	N321	I322	D323	D324	V325	E326	E327	F328	K329	L330	C331	D332	E333	A334	F335	D336	I337	L338	G339	F340	T341	K342	E343	I344	K345	Q346	S347	M348	F349	K350	C351	T352	A353	I354	L355	L356	H357	M358	M361	K362	F363	K364	Q365	R366	P367	R368	E369	D370	E371	A372	E373	N313	F251	Q314																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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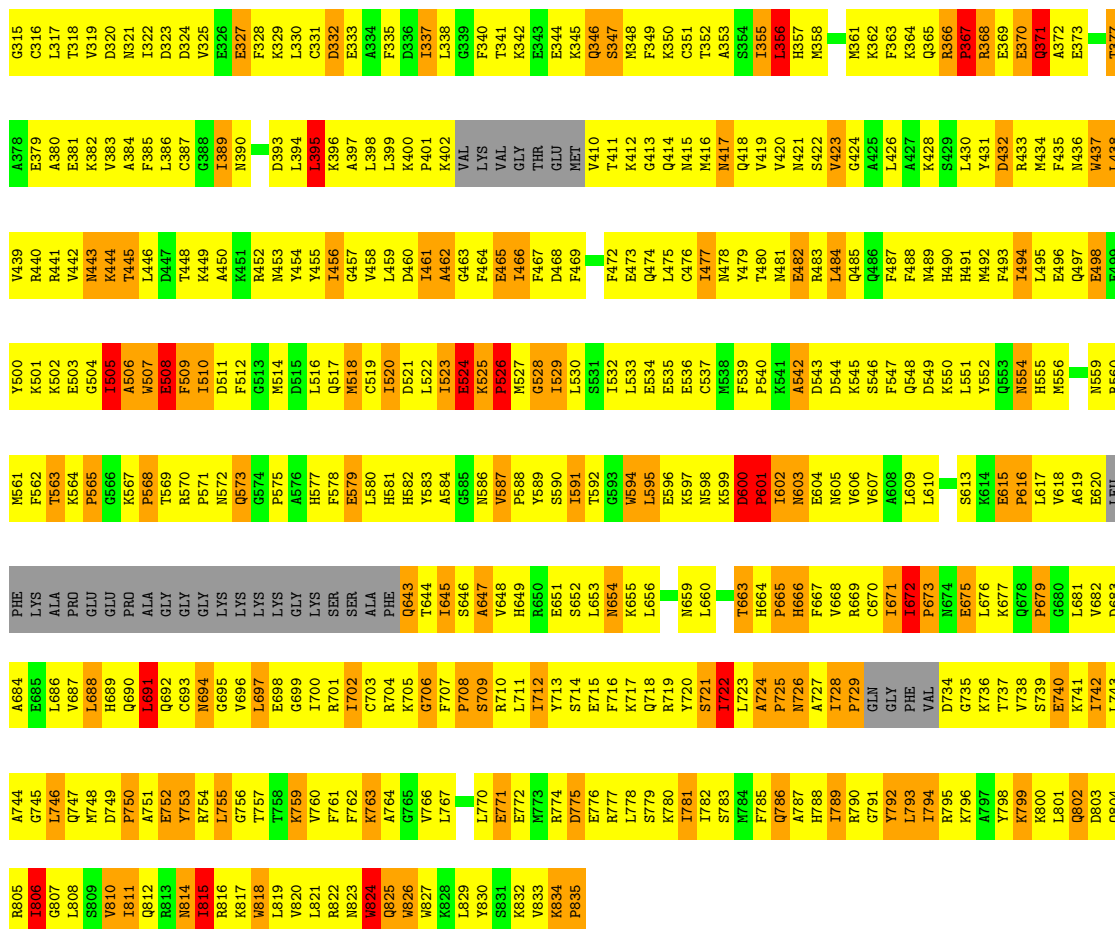
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L808	M748	L688	GLU	P665	G504	N443	K382	V319	I257	ALA	S135
S809	D749	H689	GLU	G566	L505	K444	V383	D320	CYS	CYS	V136
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I811	A751	L691	ALA	P568	M507	L446	F385	I322	D261	VAL	I138
Q812	E752	Q692	GLY	T569	E508	D447	L386	D323	I262	LYS	K139
R813	F753	C693	GLY	B570	F509	T448	C387	D324	E263	LYS	Y140
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R816	G756	V696	LYS	Q573	F512	K451	N390	E327	T266	GLU	K143
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V820	V760	L700	LYS	M577	L516	Y455	L395	C331	S270	ASP	E147
L821	F761	R701	SER	F578	Q517	L456	K396	D332	R271	LYS	I148
R822	F762	I702	SER	E579	M518	G457	A397	E333	V272	LYS	P149
N823	K763	C703	ALA	L588	C519	V458	L398	A334	T273	GLU	P150
M824	A764	R704	LYS	H581	I520	L459	L399	F335	Y274	GLY	H151
Q825	G765	Q643	Q643	H582	D521	D460	K400	D336	Q275	SER	L152
M826	V766	T644	T644	Y583	L522	L461	P401	I337	Q276	LEU	F153
R827	L767	F707	L645	A584	I523	A462	K402	L338	E216	E216	
K828	G768	P708	S646	G585	E524	G463	VAL	G339	E279	D217	A156
L829	V769	S709	A647	N586	K525	F464	LYS	F340	R280	Q218	D157
R830	L770	R710	V648	V587	P526	E465	VAL	T341	K281	I219	N158
S831	E771	L711	H649	P688	M527	L466	GLY	K342	Y282	I220	A159
K832	E772	L712	R650	Y589	G528	F467	THR	F343	H283	Q221	Y160
R833	M773	Y713	E651	S590	I529	D468	GLU	E344	I284	A222	Q161
K834	R774	F714	S652	T591	L530	F469	MET	K345	N223	N223	M162
	D775	E715	L653	L592	S531	P224	V410	Q346	Y286	P224	M163
	E776	F716	M654	G593	I532	F472	T411	S347	Q287	V225	V164
	R777	K717	K655	N594	L533	E473	K412	M348	I288	L226	T165
	L778	Q718	L656	L595	E534	D474	G413	F349	C289	E227	D166
	S779	R719		E596	E535	L475	Q414	K350	S290	A228	R167
			N659	K780	E536	C476	N415	C351	N291	Y229	E168
	I781	S721	L660	N598	C537	L477	M416	A352	A292	G230	N169
	E782	I722		K599	M538	N478	N417	T393	N231	Q170	S171
	S783	L723	T663	D600	F539	Y479	Q418	S354	P294	A232	C172
	R784	R724	G664	P601	P540	T480	V419	L355	E295	K233	C172
	F785	P725	P665	L602	K541	N481	V420	L356	L296	T234	L173
	Q786	N726	H666	E603	A542	E482	N421	H357	N297	T235	T174
	R787	A727	F667	B604	D543	R483	S422	D298	D298	R236	T175
	H788	I728	V668	N605	D544	L484	G423	V299	N237	N237	G176
	I789	P729	R669	V606	K545	D485	V424	M300	N238	E177	S178
	R790	GLN	C670	V607	S546	N486	A495	K362	L301	N239	S178
	G791	GLY	I671	A608	F547	F487	L426	F363	V302	S240	G179
	Y792	PHE	L672	L609	Q548	F488	A427	K364	T303	S241	G179
	L793	VAL	L610		D549	N489	K428	Q365	P304	A180	A180
	I794	D734	N674	K674	K550	H490	S429	R366	D305	F243	K182
	R795	G735	E675	L551	L551	H491	L430	P367	G306	F242	G181
	K796	K736	L676	M614	Y552	N492	Y431	R368	S307	K245	
	A797	T737	K677	E615	N553	F493	D432	E369	L308	F246	N185
	Y798	V738	Q578	P616	N554	L494	R433	E370	L309	I247	T186
	K799	S739	P679	L617	H555	L495	M434	A371	S310	I247	K187
	K800	E740	G680	V618	M556	D497	F435	A372	I249	F435	K188
	L801	L801	G681	A619			N436	E373	F312	H250	I190
	Q802	I742	V682	E620	N559	F498	W437	A373	I312	H250	I190
	R802	L742	L682	E620	E560	E490	L428	T377	N313	F251	K191
											Y192

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 40-C: 12% 58% 20% 7%

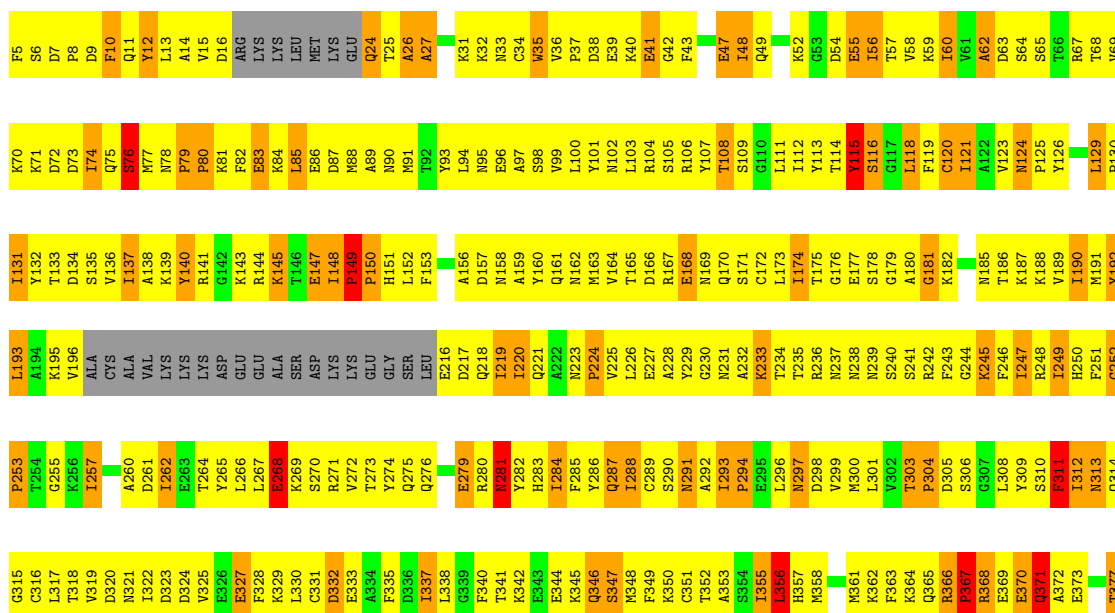
F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	ARG	LVS	LVS	LEU	MET	MET	LVS	GLU	Q24	T25	A26	A27																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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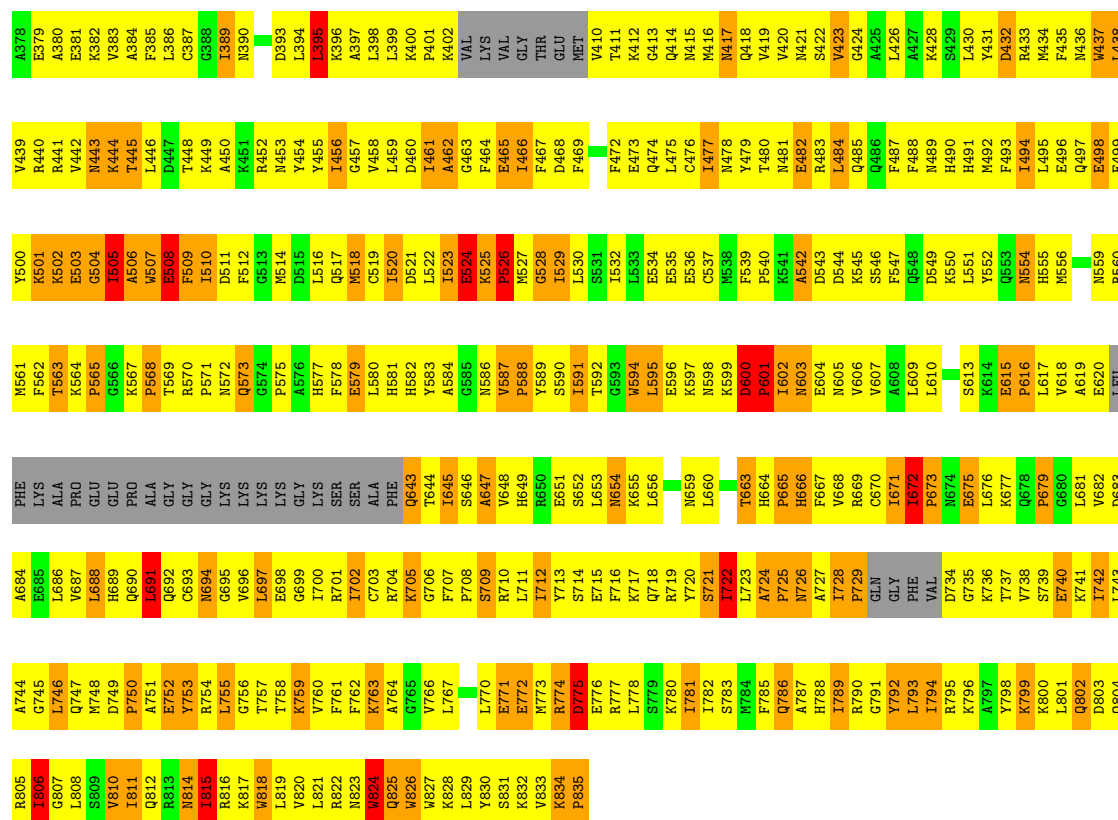
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Q314	G315	C316	L317	T318	V319	D320	N321	I322	D323	D324	V325	E326	E327	F328	K329	L330	C331	D332	E333	A334	F335	D336	I337	L338	G339	F340	T341	K342	E343	E344	K345	Q346	S347	M348	C289	K350	S290	C351	T352	A353	S354	I355	L356	H357	M358	M361	K362	F363	K364	Q365	R366	P367	R368	G369	L368	I369	S310	F311	I312	N313																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
T377	A378	E379	A380	E381	K382	V383	N384	T385	L386	C387	G388	I389	N390	D393	L394	L395	Y455	K396	A397	L398	F399	D400	P401	K402	VAL	LYS	VAL	GLY	THR	GLU	MET	V410	T411	M412	G413	Q414	M415	M416	M417	Q418	V419	V420	N421	S422	V423	G424	Q425	A426	M427	K428	S429	L430	Y431	D432	F433	I434	M435	L436	Q437	I438	N439																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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E499	Y500	K501	K502	K503	G504	I505	A506	M507	F508	E509	I510	D511	F512	G513	M514	D515	L516	Y517	M518	C519	I520	D521	L522	I523	E524	K525	P526	M527	G528	I529	L530	S531	I532	L533	E534	E535	E536	C537	M538	F539	P540	K541	A542	D543	D544	K545	S546	F547	Q548	D549	K550	L551	Y552	G553	M554	H555	M556	M559																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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D683	A684	E685	L686	V687	L688	G689	H690	L691	Q692	C693	M694	G695	V696	L697	E698	G699	I700	R701	I702	C703	R704	K705	T644	G706	F707	P708	S709	R710	L711	L712	G713	S714	E715	F716	K717	Q718	R719	W720	S721	T722	L723	A724	P725	N726	A727	I728	P729	GLN	GLY	PHE	VAL	D734	E675	K736	T737	G678	P679	G680	L681	I742																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
L743	A744	G745	L746	G747	M748	D749	P750	A751	E752	G753	R754	L755	G756	T757	E758	G759	V760	F761	F762	K763	A764	G765	V766	L767	G768	H769	L770	E771	E772	M773	R774	D775	R776	L777	L778	S779	K780	I781	L782	H783	F784	Q785	Q786	A787	H788	R789	R790	G791	Y792	L793	L794	K795	K799	K800	L801	Q802	D803																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Q804	R805	L806	L807	L808	S809	V810	L811	Q812	R813	N814	L815	K816	K817	H818	L819	E820	L821	R822	H823	Q824	Q825	W826	W827	K828	L829	H830	S831	K832	V833	K834	P835	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	L1518	L1519	L1520	L1521	L1522	L1523	L1524	L1525	L1526	L1527	L1528	L1529	L1530	L1531	L1532	L1533	L1534	L1535	L1536	L1537	L1538	L1539	L1540	L1541	L1542	L1543	L1544	L1545	L1546	L1547	L1548	L1549	L1550	L1551	L1552	L1553	L1554	L1555	L1556	L1557	L1558	L1559	L1560	L1561	L1562	L1563	L1564	L1565	L1566	L1567	L1568	L1569	L1570	L1571	L1572	L1573	L1574	L1575	L1576	L1577	L1578	L1579	L1580	L1581	L1582	L1583	L1584	L1585	L1586	L1587	L1588	L1589	L1590	L1591	L1592	L1593	L1594	L1595	L1596	L1597	L1598	L1599	L1600	L1601	L1602	L1603	L1604	L1605	L1606	L1607	L1608	L1609	L1610	L1611	L1612	L1613	L1614	L1615	L1616	L1617	L1618	L1619	L1620	L1621	L1622	L1623	L1624	L1625	L1626	L1627	L1628	L1629	L1630	L1631	L1632	L1633	L1634	L1635	L1636	L1637	L1638	L1639	L1640	L1641	L1642	L1643	L1644	L1645	L1646	L1647	L1648	L1649	L1650	L1651	L1652	L1653	L1654	L1655	L1656	L1657	L1658	L1659	L1660	L1661	L1662	L1663	L1664	L1665	L1666	L1667	L1668	L1669	L1670	L1671	L1672	L1673	L1674	L1675	L1676	L1677	L1678	L1679	L1680	L1681	L1682	L1683	L1684	L1685	L1686	L1687	L1688	L1689	L1690	L1691	L1692	L1693	L1694	L1695	L1696	L1697	L1698	L1699	L1700	L1701	L1702	L1703	L1704	L1705	L1706	L1707	L1708	L1709	L1710	L1711	L1712	L1713



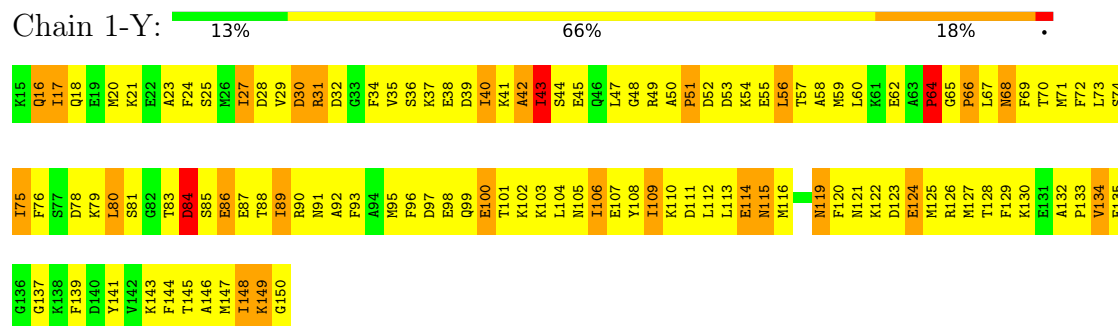
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 43-C: 11% 58% 21% 7%

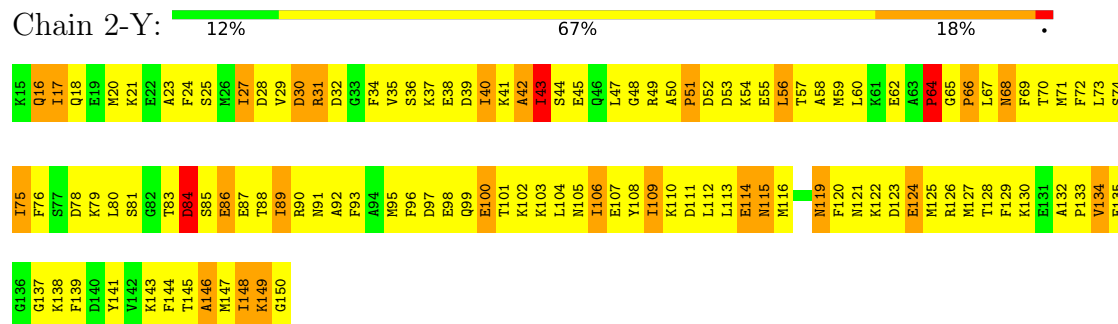




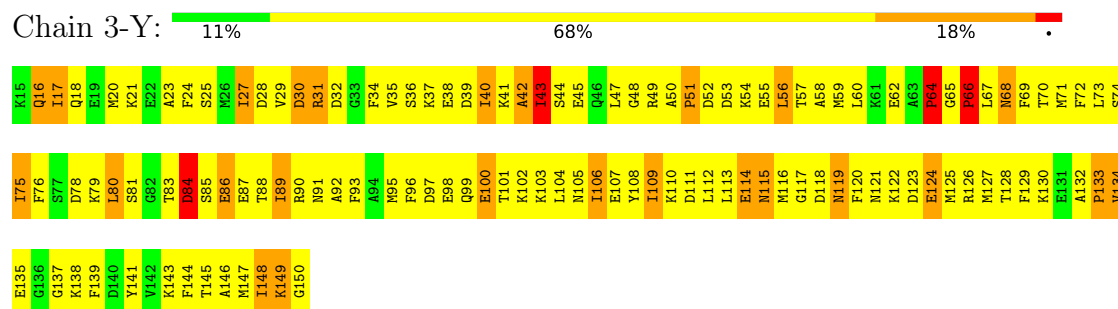
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



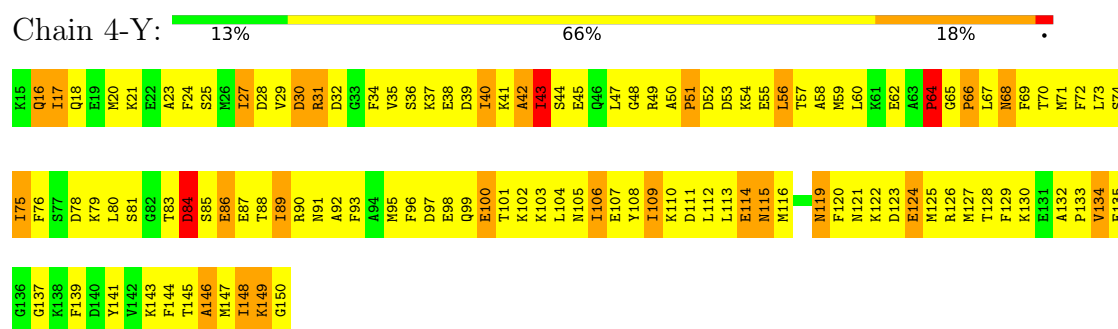
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



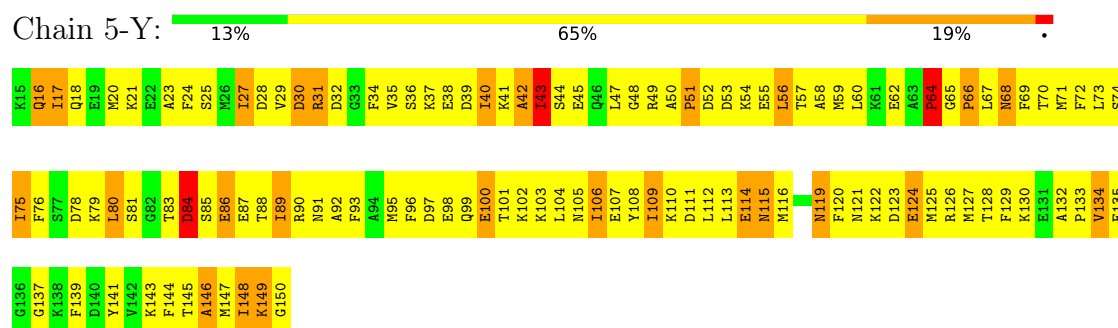
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



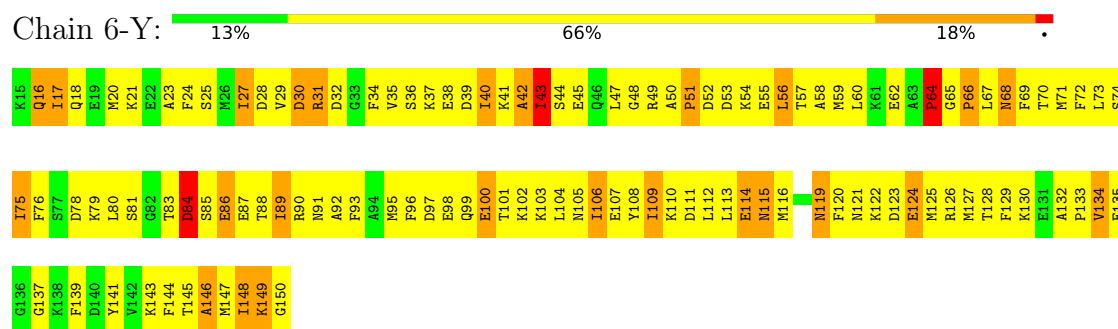
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

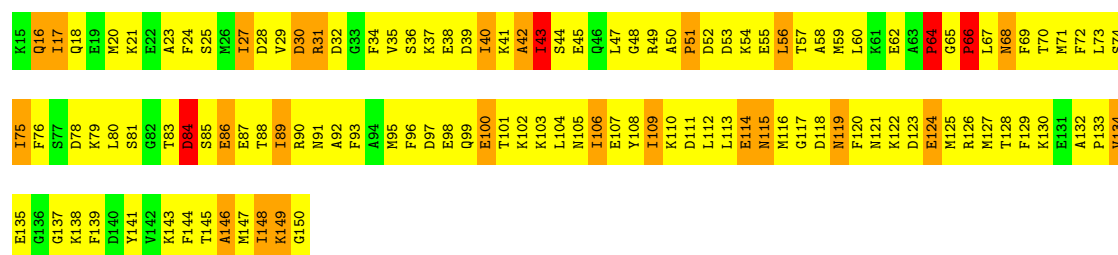


- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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





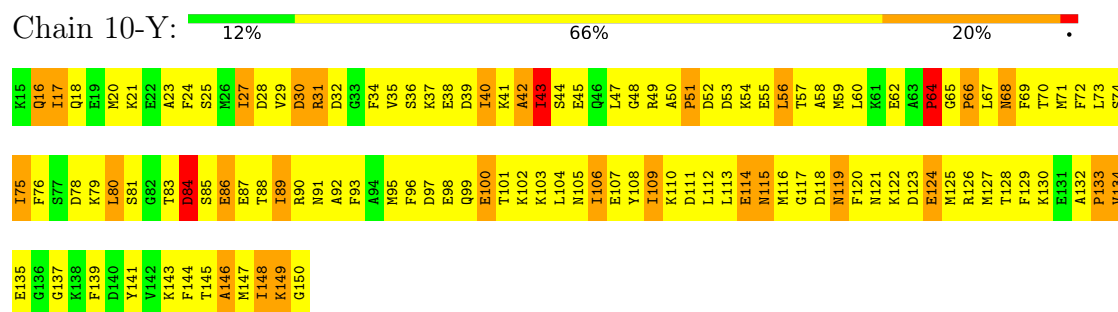
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



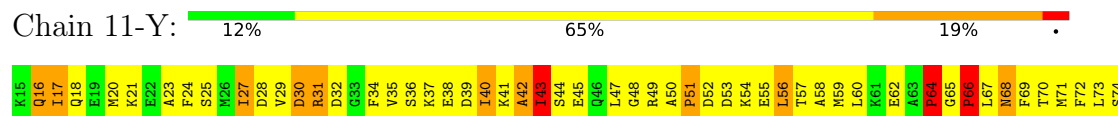
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

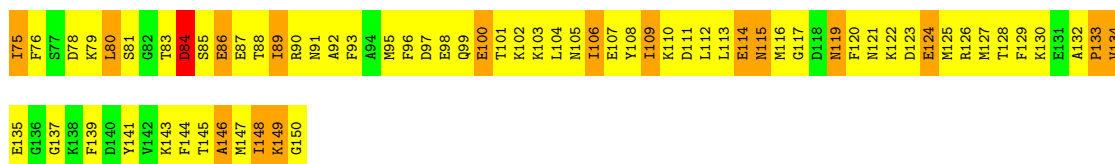


• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



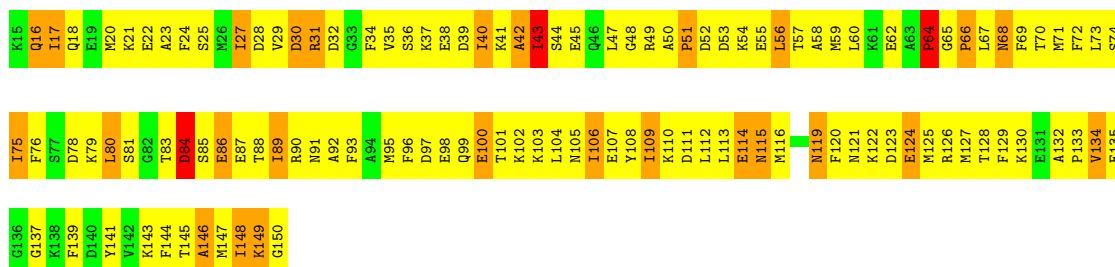
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE





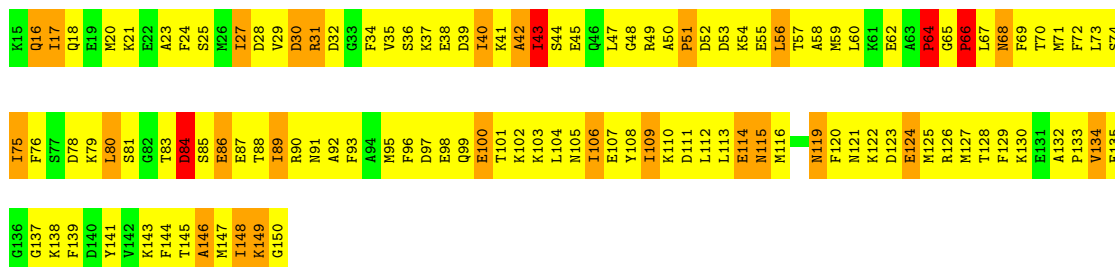
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 12-Y: 12% 66% 19%



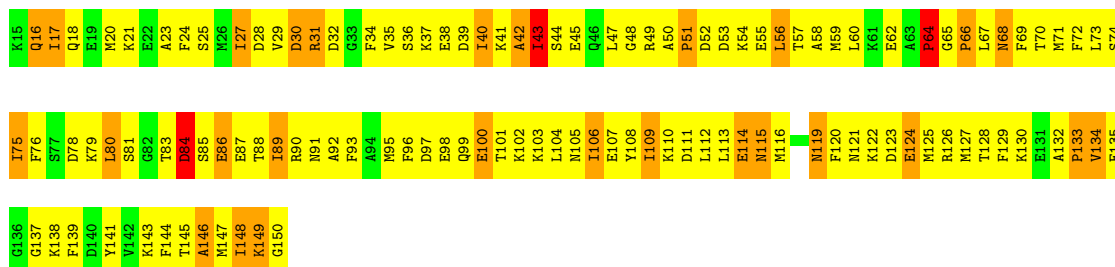
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 13-Y: 12% 66% 18%



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

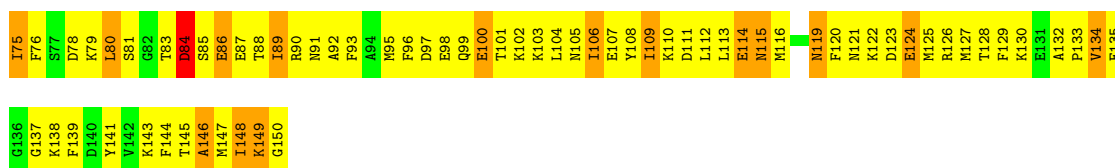
Chain 14-Y: 12% 65% 20%



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

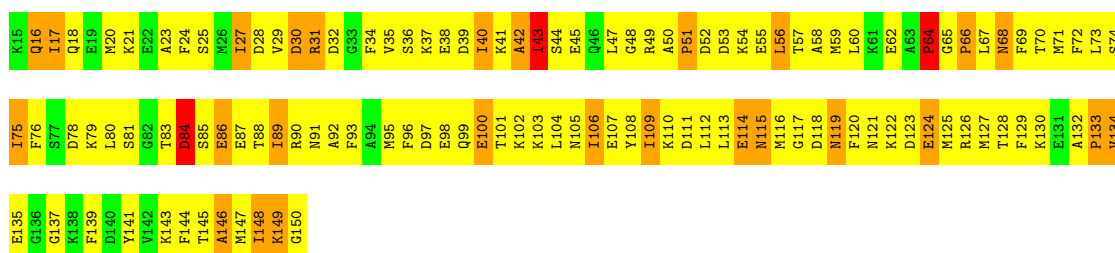
Chain 15-Y: 12% 66% 19%





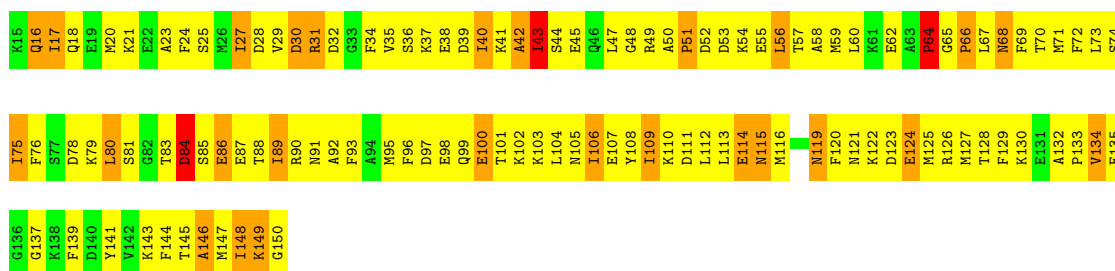
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 16-Y: 12% 67% 19%



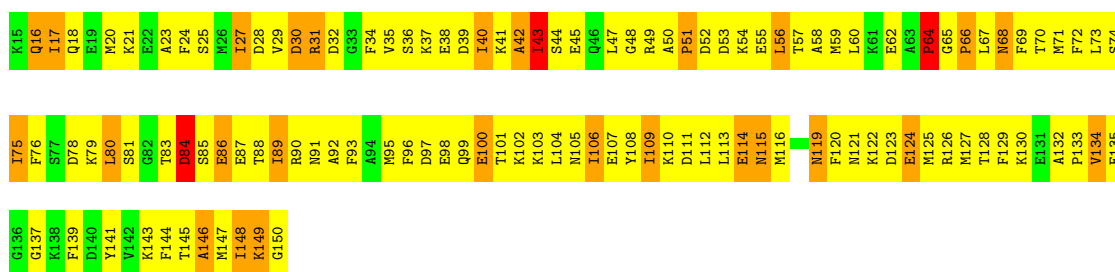
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 17-Y: 13% 65% 19%



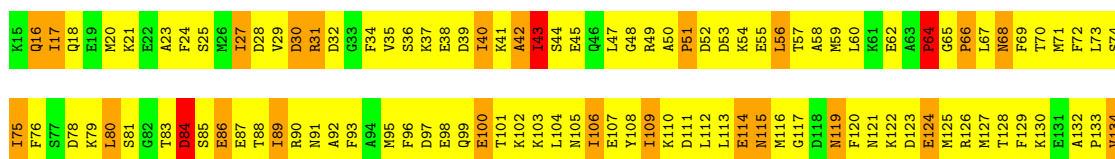
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 18-Y: 13% 65% 19%



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

Chain 19-Y: 12% 67% 18%





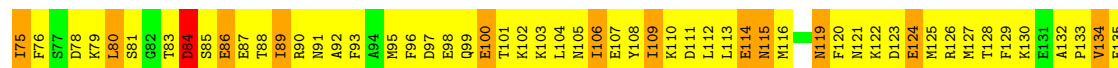
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 20-Y: 11% 68% 19%



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

Chain 21-Y: 13% 66% 18%



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

Chain 22-Y: 11% 68% 19%

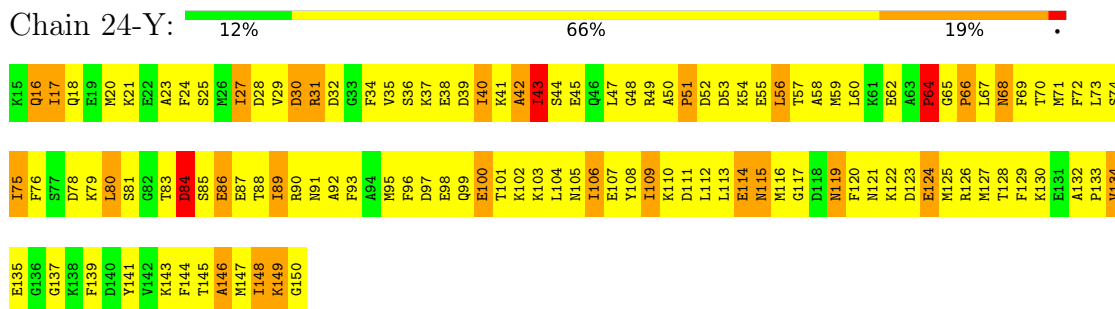


• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

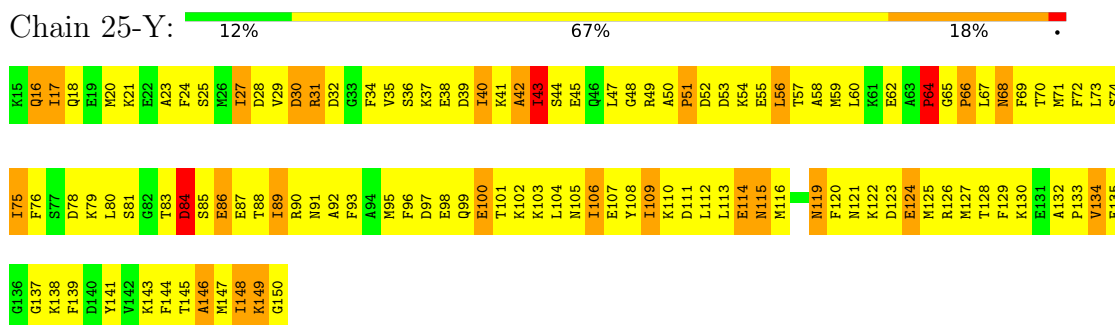
Chain 23-Y: 13% 65% 19%



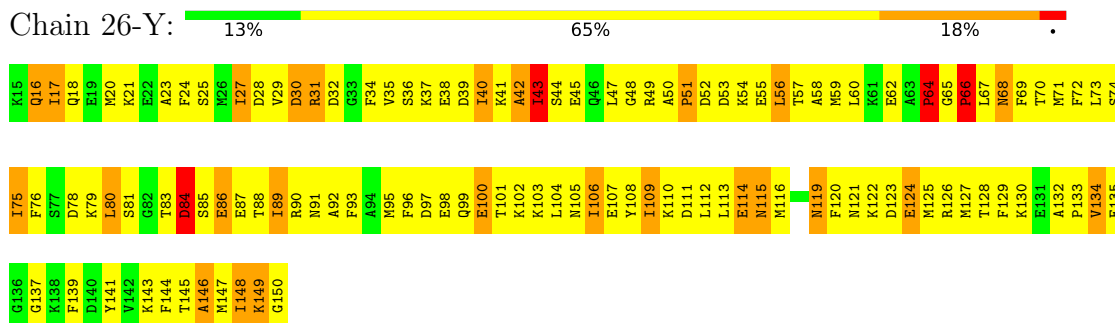
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



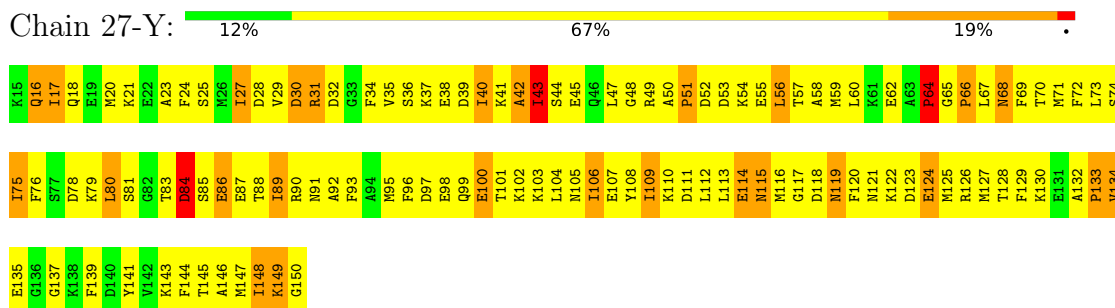
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



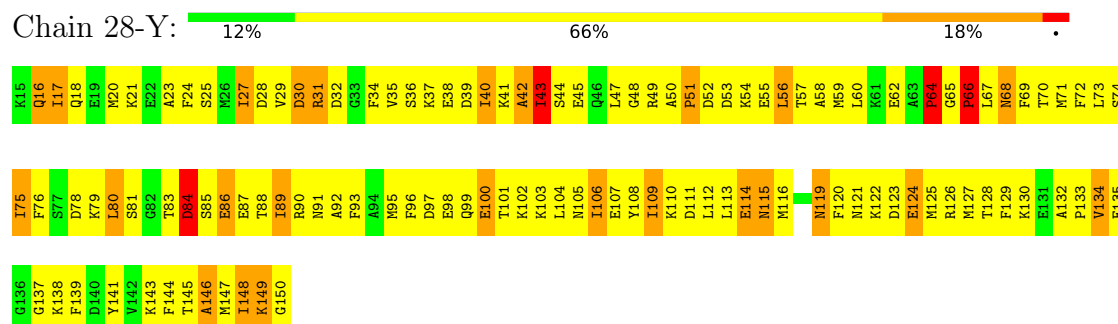
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



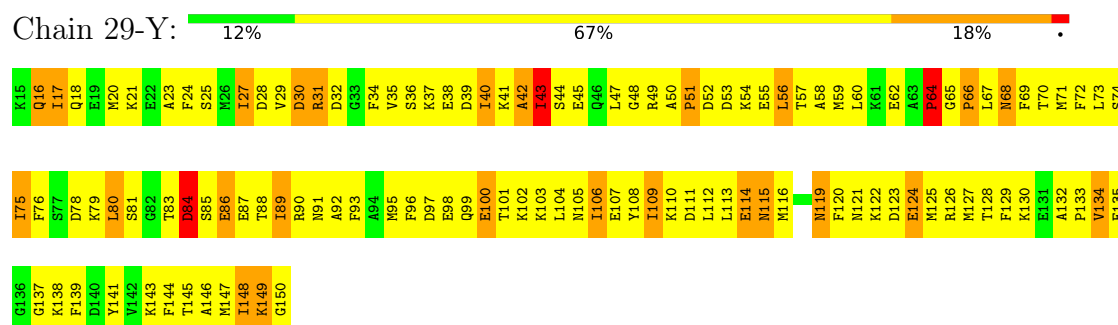
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



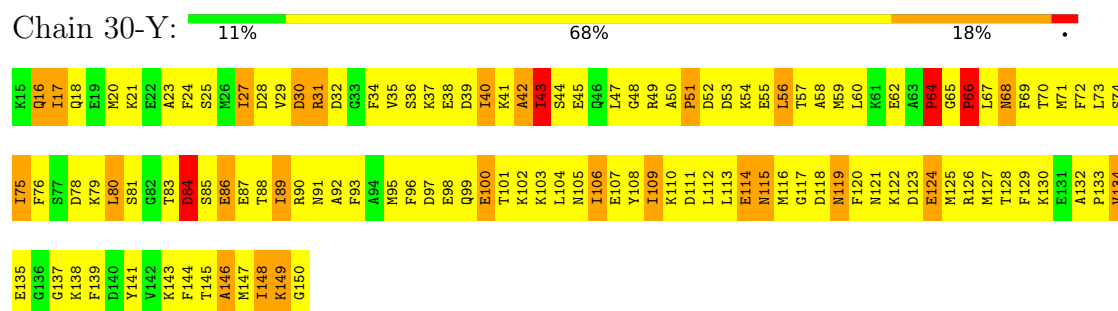
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



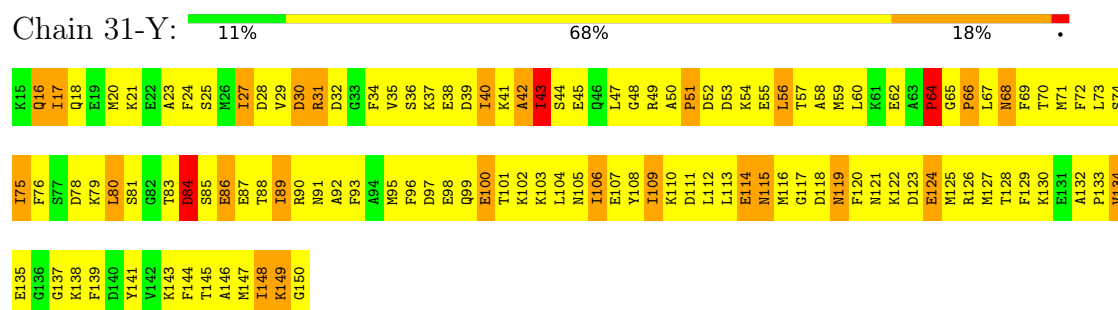
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

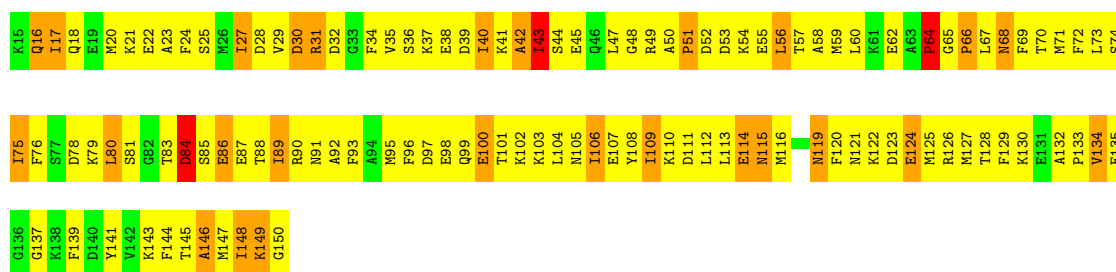


• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



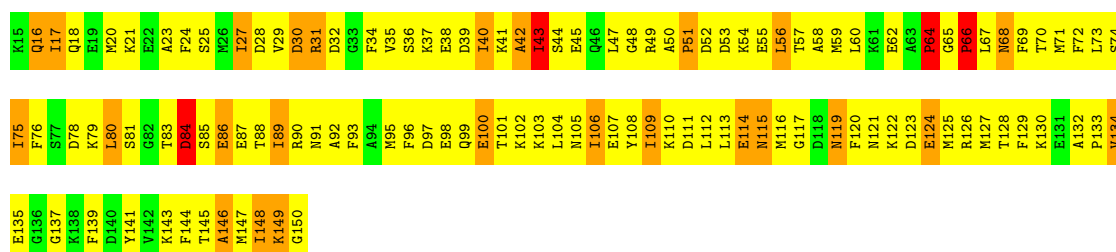
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE





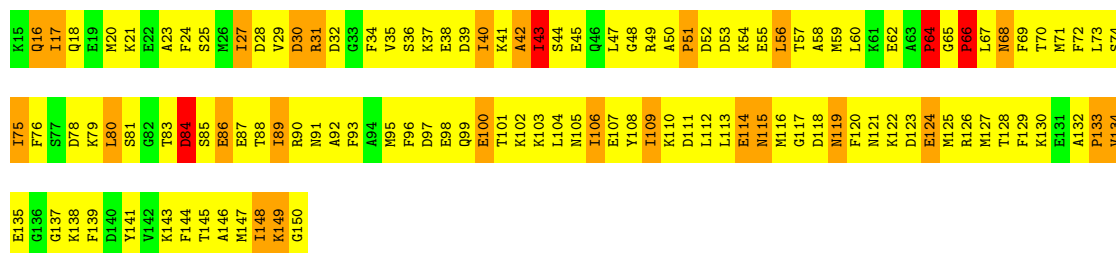
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 33-Y: 12% 66% 18%



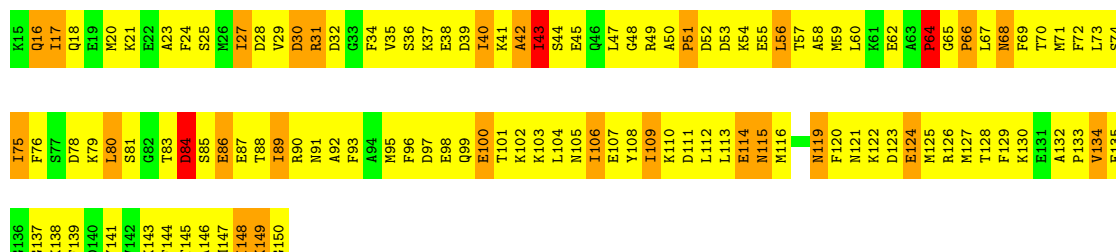
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 34-Y: 11% 68% 18%



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

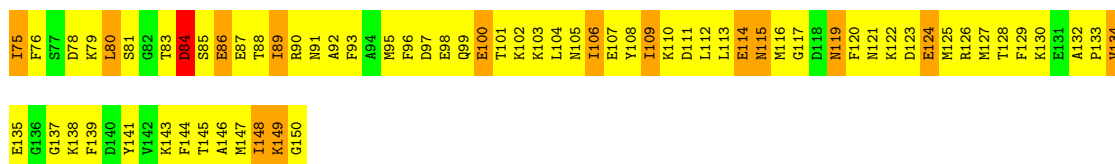
Chain 35-Y: 12% 67% 18%



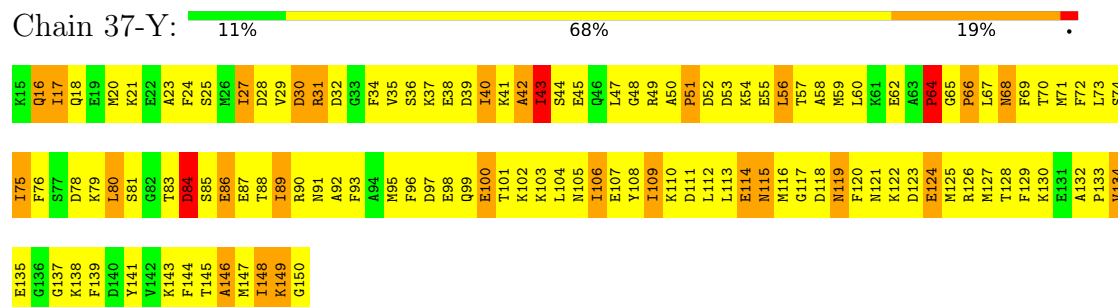
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 36-Y: 12% 68% 18%

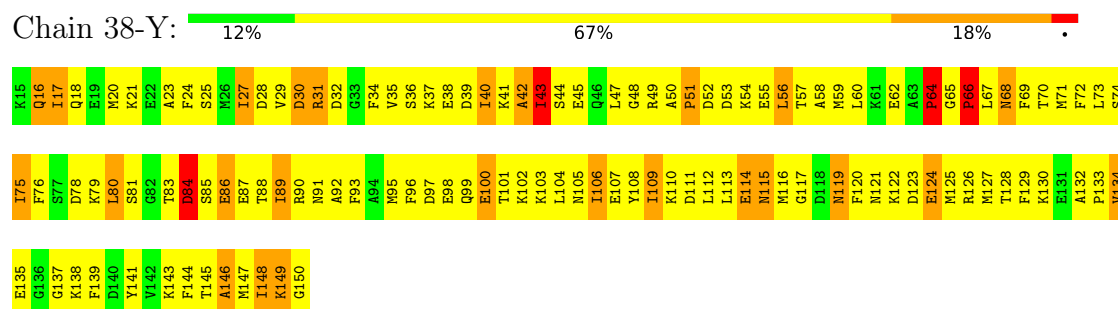




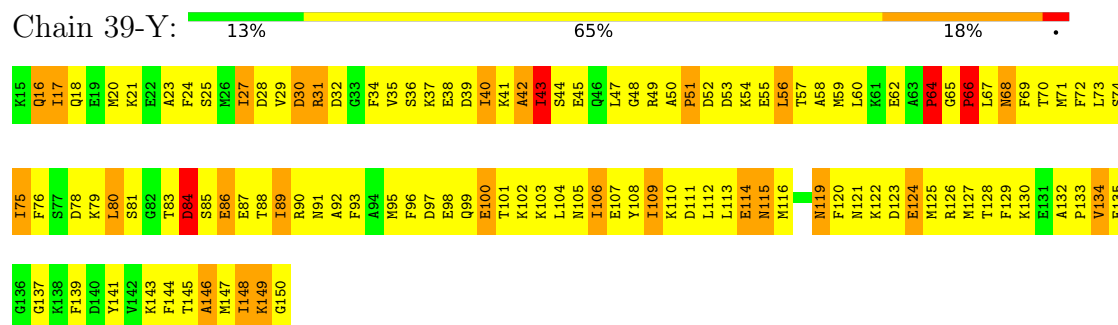
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



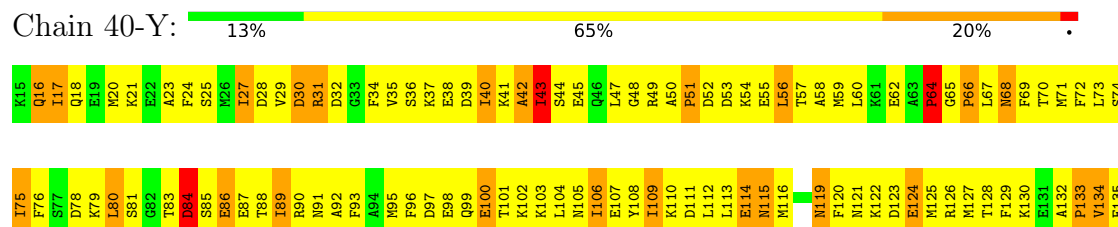
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

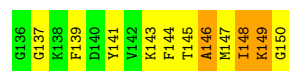


• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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





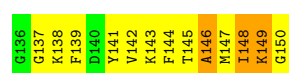
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 41-Y: 13% 66% 18%



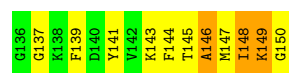
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 42-Y: 11% 68% 19%



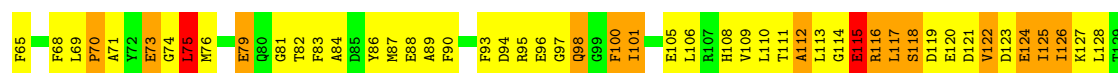
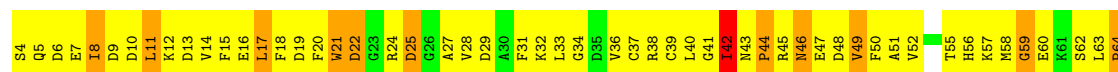
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

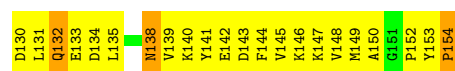
Chain 43-Y: 13% 65% 18%



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

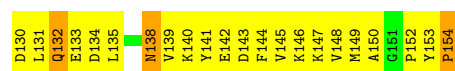
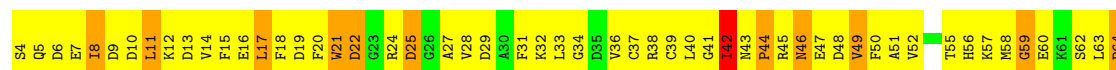
Chain 1-Z: 17% 63% 19%





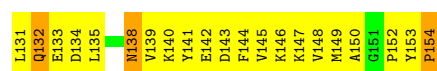
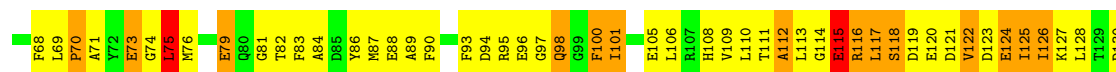
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 2-Z: 16% 64% 19%



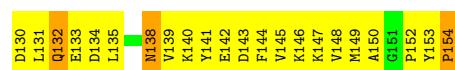
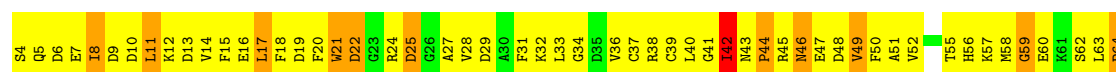
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 3-Z: 17% 62% 19%



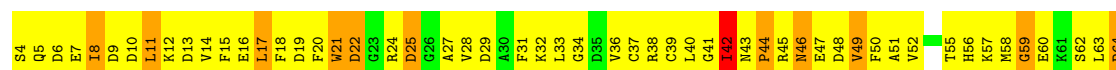
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

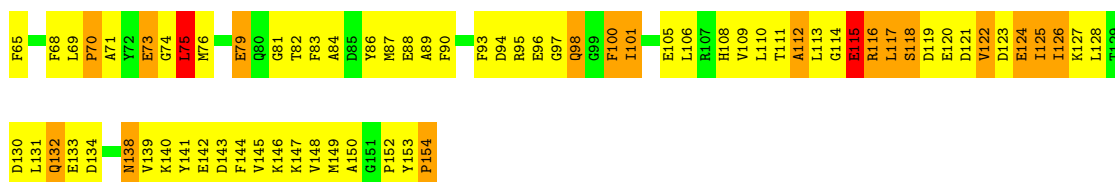
Chain 4-Z: 16% 63% 19%



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

Chain 5-Z: 17% 62% 19%





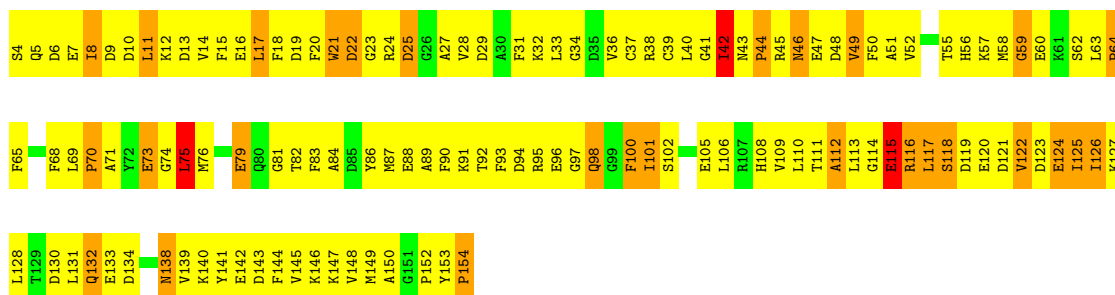
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 6-Z: 17% 63% 19%



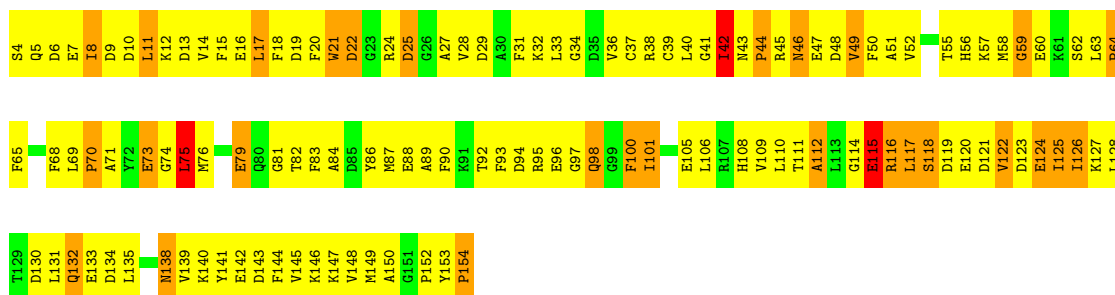
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 7-Z: 15% 65% 19%



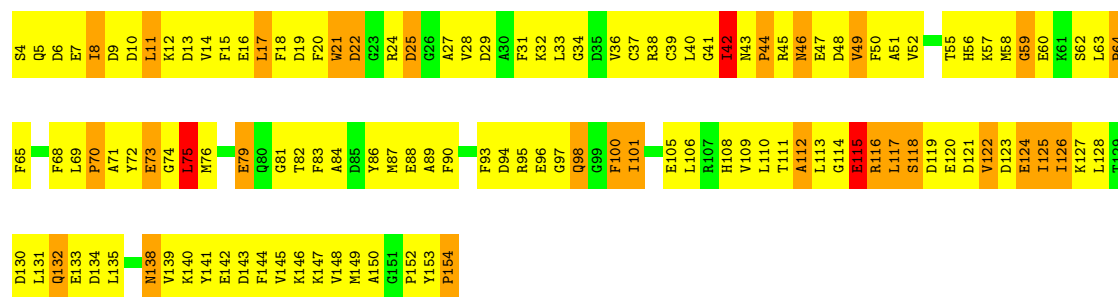
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 8-Z: 17% 63% 19%



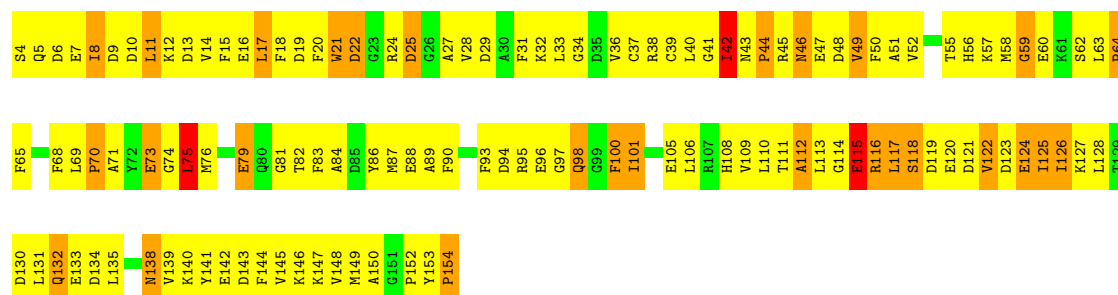
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 9-Z: 16% 64% 19%



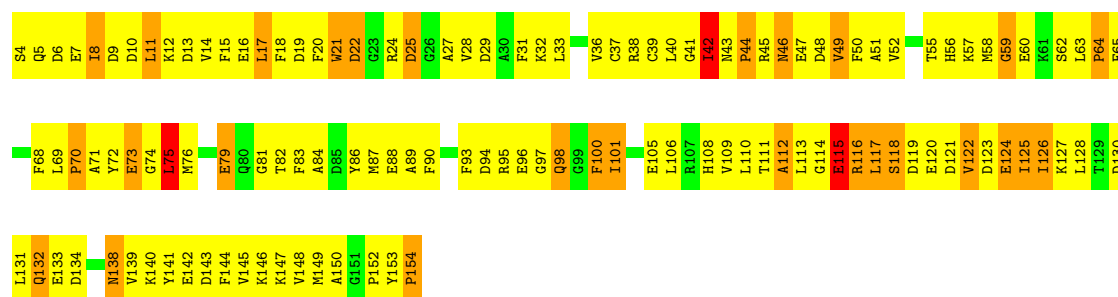
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 10-Z: 17% 63% 19%



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

Chain 11-Z: 17% 62% 19%



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

Chain 12-Z: 16% 64% 19%



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

Chain 13-Z: 17% 63% 19% .



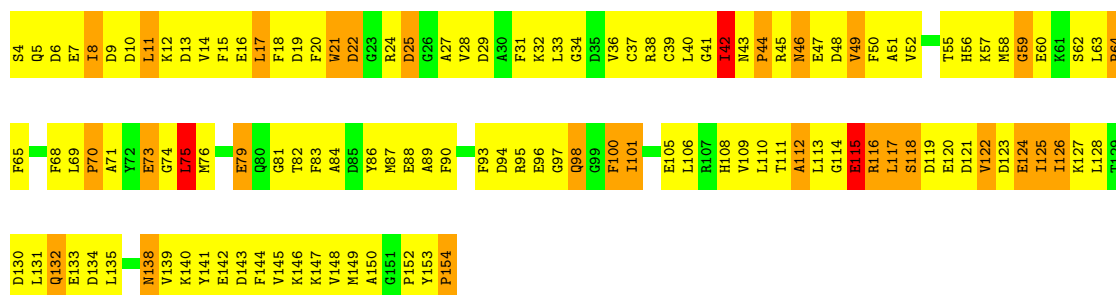
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 14-Z: 16% 64% 19% .



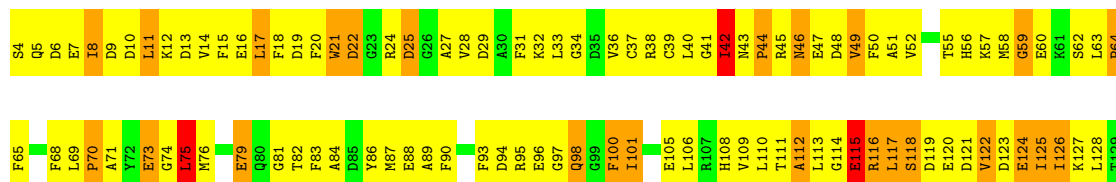
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

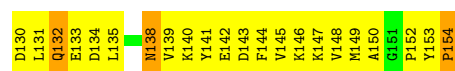
Chain 15-Z: 17% 63% 19% .



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

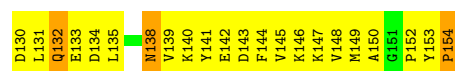
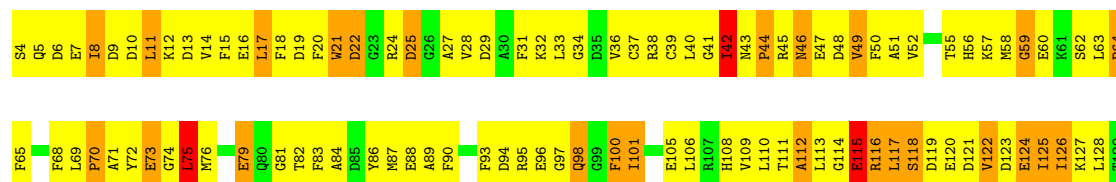
Chain 16-Z: 17% 63% 19% .





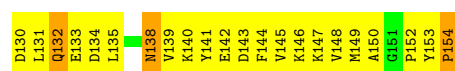
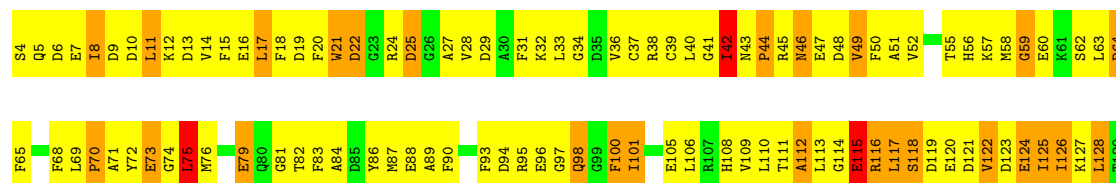
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 17-Z: 16% 64% 19%



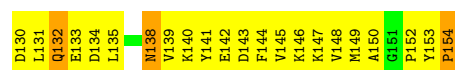
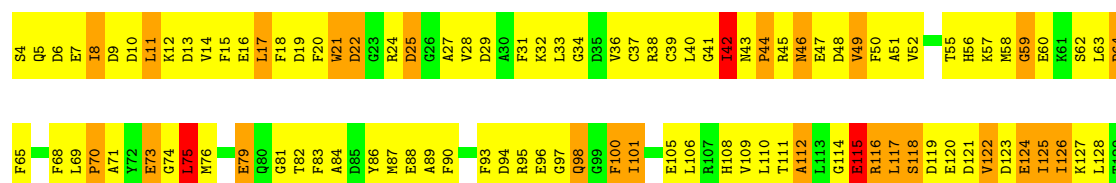
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 18-Z: 16% 63% 19%



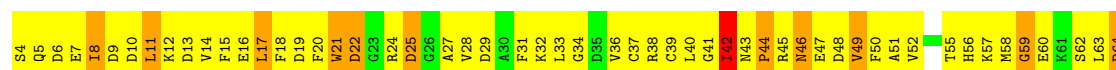
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

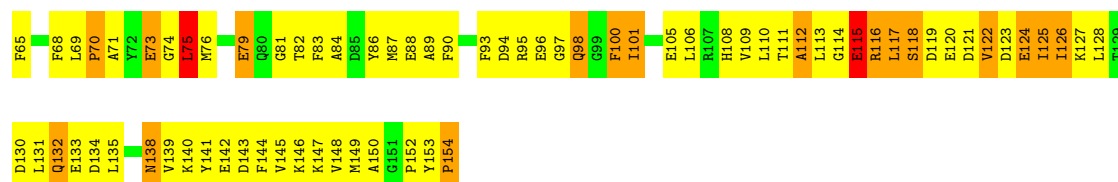
Chain 19-Z: 17% 62% 19%



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

Chain 20-Z: 17% 63% 19%





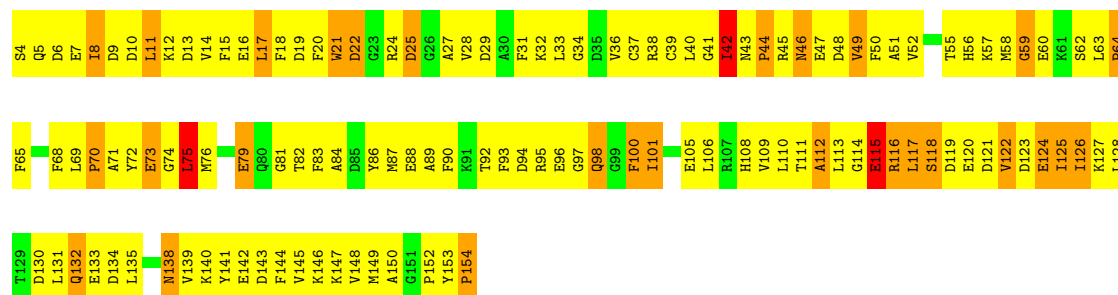
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 21-Z: 17% 62% 19%



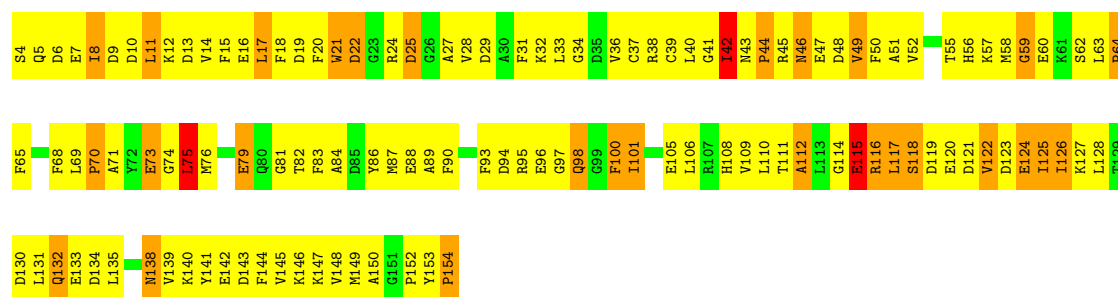
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 22-Z: 15% 64% 19%



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

Chain 23-Z: 17% 62% 19%



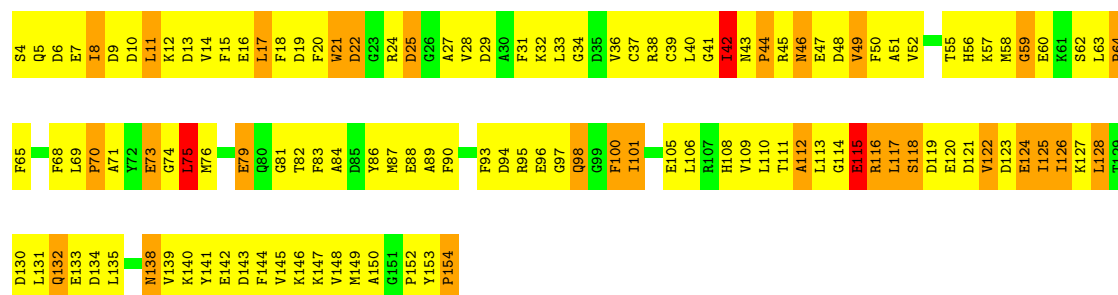
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 24-Z: 15% 64% 19%



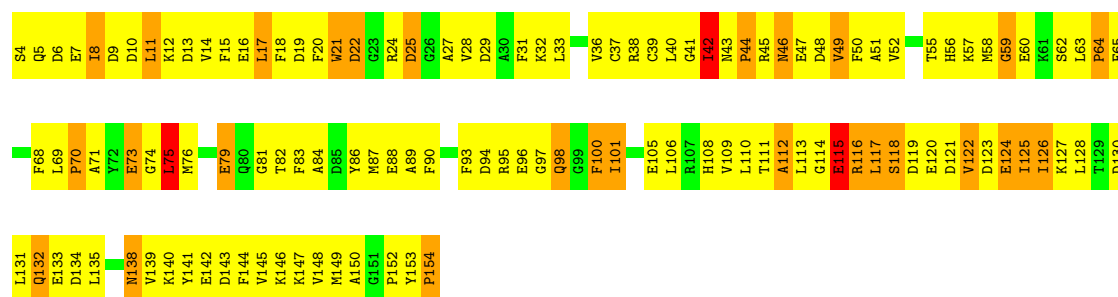
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 25-Z: 17% 62% 19%



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

Chain 26-Z: 17% 62% 19%



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

Chain 27-Z: 17% 63% 19%



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

Chain 28-Z: 17% 62% 19%



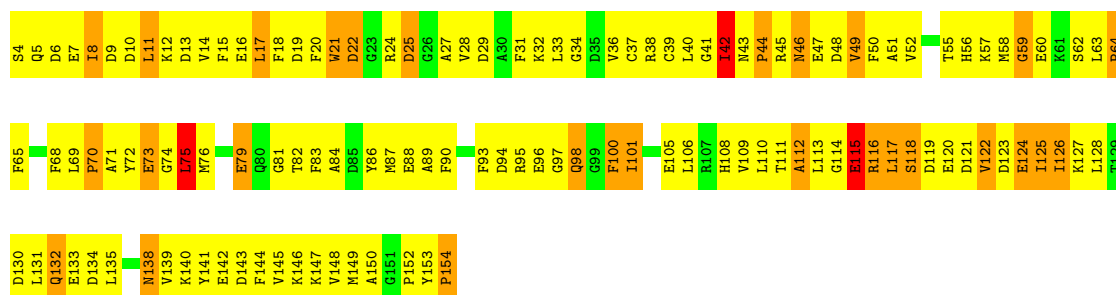
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 29-Z: 15% 64% 19%



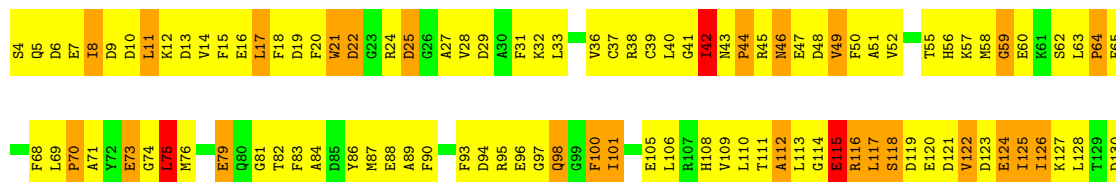
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

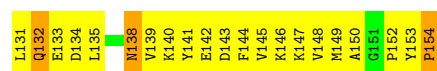
Chain 30-Z: 16% 64% 19%



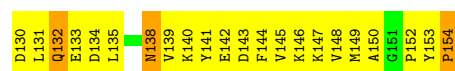
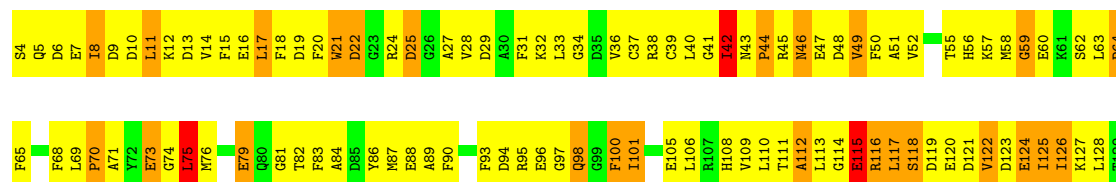
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 31-Z: 17% 62% 19%

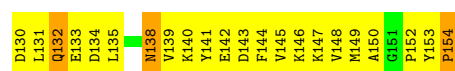
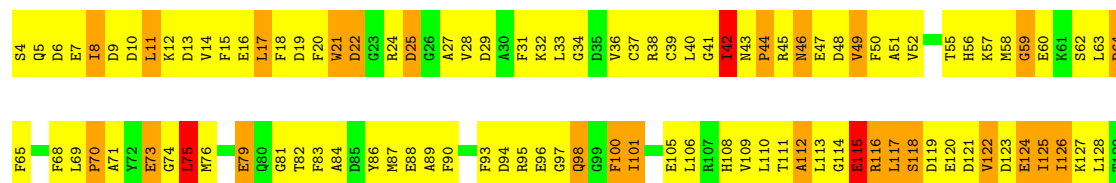




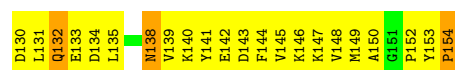
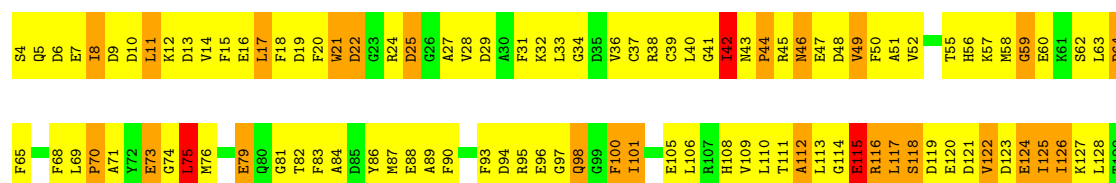
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

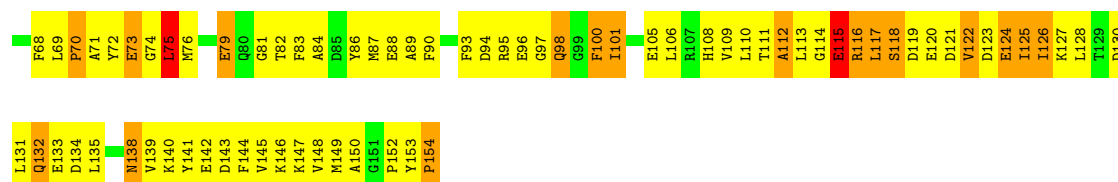


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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





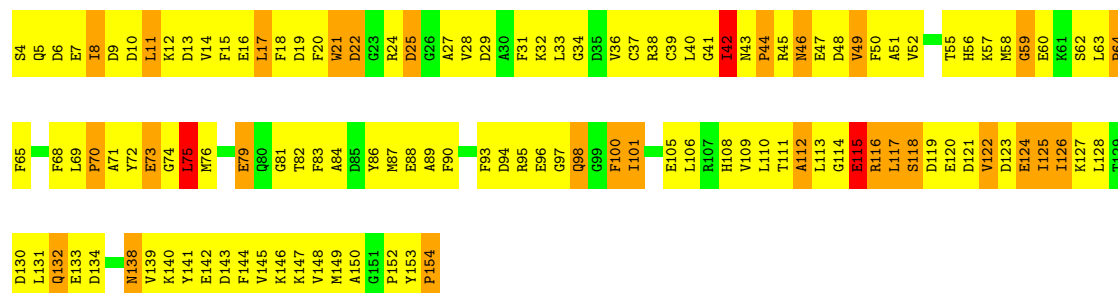
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 36-Z: 18% 62% 19%



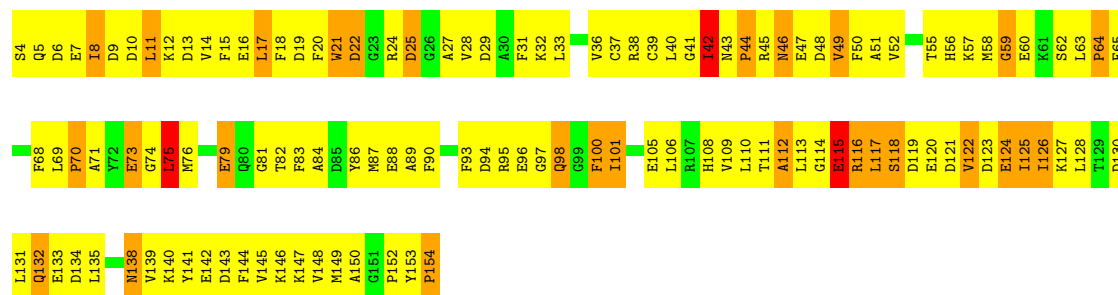
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 37-Z: 17% 63% 19%



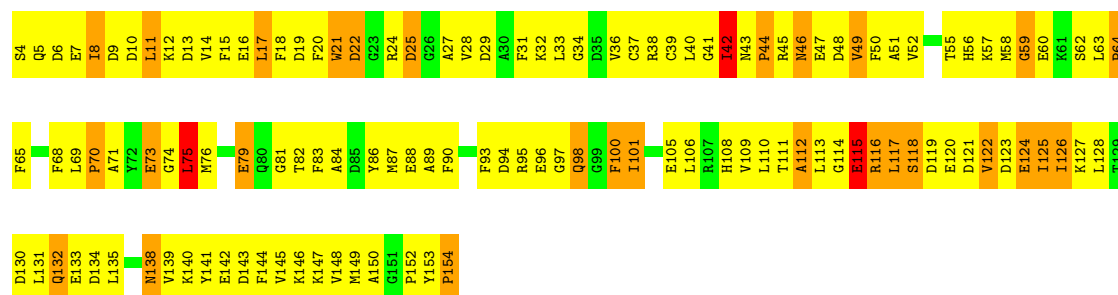
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 38-Z: 17% 62% 19%



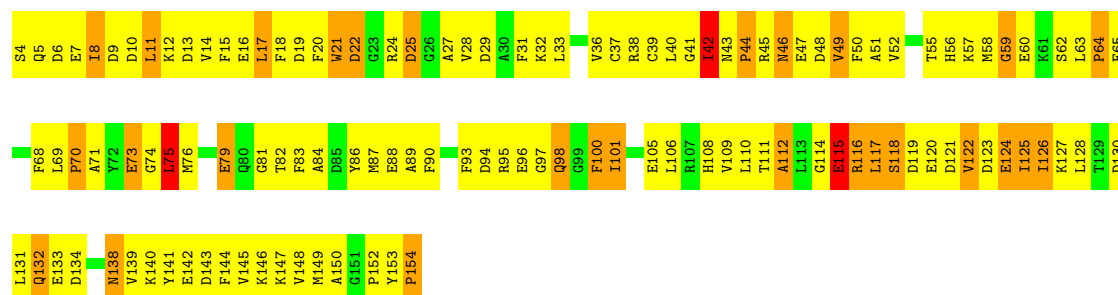
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 39-Z: 17% 63% 19%



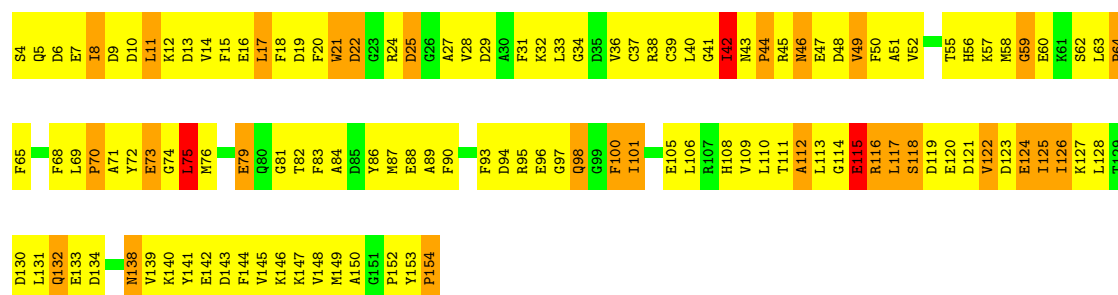
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 40-Z: 19% 61% 19%



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

Chain 41-Z: 17% 63% 19%



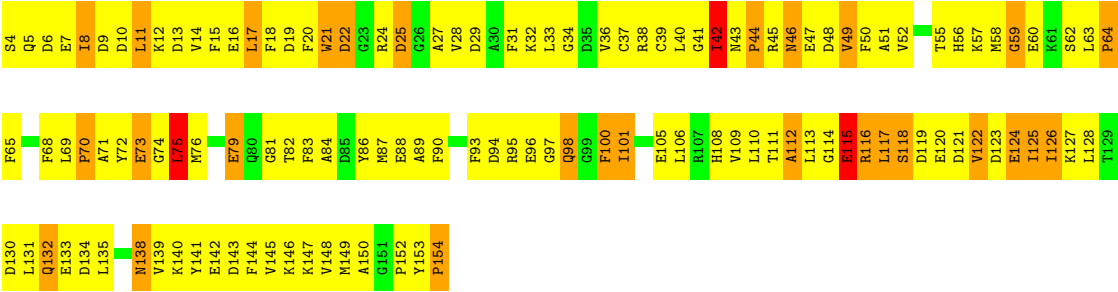
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 42-Z: 15% 64% 19%



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

Chain 43-Z: 16% 64% 19% .



4 Experimental information

Property	Value	Source
EM reconstruction method	HELICAL	Depositor
Imposed symmetry	HELICAL, twist=Not provided°, rise=Not provided Å, axial sym=Not provided	Depositor
Number of segments used	Not provided	
Resolution determination method	FSC 0.5 CUT-OFF	Depositor
CTF correction method	Not provided	
Microscope	FEI/PHILIPS CM300FEG/T	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	Not provided	
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	TVIPS TEMCAM-F224 (2k x 2k)	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	$\# Z > 5$	RMSZ	$\# Z > 5$
1	1-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	2-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	3-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	4-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	5-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	6-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	7-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	8-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	9-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	10-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	11-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	12-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	13-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	14-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	15-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	16-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	17-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	18-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	19-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	20-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	21-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	22-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	23-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	24-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	25-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	26-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	27-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	28-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	29-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	30-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	31-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	32-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	33-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	34-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	35-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	36-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	37-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	38-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	39-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	40-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	41-C	2.31	90/6340 (1.4%)	2.46	107/8539 (1.3%)
1	42-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
1	43-C	2.31	90/6339 (1.4%)	2.46	107/8536 (1.3%)
2	1-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	2-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	3-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	4-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	5-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	6-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	7-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	8-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	9-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	10-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	11-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	12-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	13-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	14-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	15-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	16-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	17-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	18-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	19-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	20-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	21-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	22-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	23-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	24-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	25-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	26-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	27-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	28-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	29-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	30-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	31-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	32-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	33-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	34-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
2	35-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	36-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	37-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	38-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	39-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	40-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	41-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	42-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	43-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
3	1-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	2-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	3-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	4-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	5-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	6-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	7-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	8-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	9-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	10-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	11-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	12-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	13-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	14-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	15-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	16-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	17-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	18-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	19-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	20-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	21-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	22-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	23-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	24-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	25-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	26-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	27-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	28-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	29-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	30-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	31-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	32-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	33-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	34-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
3	35-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	36-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	37-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	38-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	39-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	40-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	41-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	42-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
3	43-Z	0.76	9/1222 (0.7%)	1.34	11/1644 (0.7%)
All	All	2.02	4644/372622 (1.2%)	2.22	5547/501117 (1.1%)

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	2-C	0	4
1	3-C	0	4
1	4-C	0	4
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
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	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

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Mol	Chain	#Chirality outliers	#Planarity outliers
1	26-C	0	4
1	27-C	0	4
1	28-C	0	8
1	29-C	0	5
1	30-C	0	4
1	31-C	0	6
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	40-C	0	4
1	41-C	0	4
1	42-C	0	4
1	43-C	0	8
2	1-Y	0	1
2	2-Y	0	1
2	3-Y	0	1
2	4-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
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	20-Y	0	1
2	21-Y	0	1
2	22-Y	0	1
2	23-Y	0	1
2	24-Y	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
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	30-Y	0	1
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	40-Y	0	1
2	41-Y	0	1
2	42-Y	0	1
2	43-Y	0	1
All	All	0	260

The worst 5 of 4644 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1-C	498	GLU	C-N	112.86	2.91	1.33
1	2-C	498	GLU	C-N	112.86	2.91	1.33
1	3-C	498	GLU	C-N	112.86	2.91	1.33
1	4-C	498	GLU	C-N	112.86	2.91	1.33
1	5-C	498	GLU	C-N	112.86	2.91	1.33

The worst 5 of 5547 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1-C	505	ILE	O-C-N	-66.49	16.61	123.00
1	2-C	505	ILE	O-C-N	-66.49	16.61	123.00
1	3-C	505	ILE	O-C-N	-66.49	16.61	123.00
1	4-C	505	ILE	O-C-N	-66.49	16.61	123.00
1	5-C	505	ILE	O-C-N	-66.49	16.61	123.00

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	2718	0
1	2-C	6215	0	6182	2710	0
1	3-C	6215	0	6179	2682	0
1	4-C	6215	0	6182	2714	0
1	5-C	6215	0	6168	2819	0
1	6-C	6215	0	6184	2708	0
1	7-C	6215	0	6143	3072	0
1	8-C	6215	0	6165	2957	0
1	9-C	6215	0	6169	2862	0
1	10-C	6215	0	6185	2662	0
1	11-C	6215	0	6183	2660	0
1	12-C	6215	0	6181	2707	0
1	13-C	6215	0	6182	2685	0
1	14-C	6215	0	6184	2720	0
1	15-C	6215	0	6171	2748	0
1	16-C	6215	0	6185	2664	0
1	17-C	6215	0	6183	2683	0
1	18-C	6215	0	6171	2842	0
1	19-C	6215	0	6170	2839	0
1	20-C	6215	0	6169	2844	0
1	21-C	6215	0	6178	2754	0
1	22-C	6215	0	6175	2794	0
1	23-C	6215	0	6181	2715	0
1	24-C	6215	0	6178	2769	0
1	25-C	6215	0	6179	2705	0
1	26-C	6215	0	6179	2661	0
1	27-C	6215	0	6183	2727	0
1	28-C	6215	0	6163	2906	0
1	29-C	6215	0	6167	2866	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	30-C	6215	0	6183	2662	0
1	31-C	6215	0	6168	2887	0
1	32-C	6215	0	6180	2751	0
1	33-C	6215	0	6184	2667	0
1	34-C	6215	0	6175	2766	0
1	35-C	6215	0	6172	2843	0
1	36-C	6215	0	6185	2656	0
1	37-C	6215	0	6185	2659	0
1	38-C	6215	0	6181	2709	0
1	39-C	6215	0	6180	2702	0
1	40-C	6215	0	6180	2693	0
1	41-C	6215	0	6168	2791	0
1	42-C	6215	0	6176	2692	0
1	43-C	6215	0	6159	2891	0
2	1-Y	1088	0	1066	473	0
2	2-Y	1088	0	1066	476	0
2	3-Y	1088	0	1066	481	0
2	4-Y	1088	0	1066	490	0
2	5-Y	1088	0	1064	494	0
2	6-Y	1088	0	1066	472	0
2	7-Y	1088	0	1066	515	0
2	8-Y	1088	0	1063	499	0
2	9-Y	1088	0	1065	518	0
2	10-Y	1088	0	1066	478	0
2	11-Y	1088	0	1066	478	0
2	12-Y	1088	0	1066	473	0
2	13-Y	1088	0	1066	481	0
2	14-Y	1088	0	1066	480	0
2	15-Y	1088	0	1066	475	0
2	16-Y	1088	0	1066	480	0
2	17-Y	1088	0	1066	478	0
2	18-Y	1088	0	1063	482	0
2	19-Y	1088	0	1066	477	0
2	20-Y	1088	0	1066	483	0
2	21-Y	1088	0	1066	477	0
2	22-Y	1088	0	1066	485	0
2	23-Y	1088	0	1066	487	0
2	24-Y	1088	0	1066	475	0
2	25-Y	1088	0	1064	486	0
2	26-Y	1088	0	1065	508	0
2	27-Y	1088	0	1066	480	0
2	28-Y	1088	0	1054	563	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	29-Y	1088	0	1064	662	0
2	30-Y	1088	0	1066	482	0
2	31-Y	1088	0	1066	484	0
2	32-Y	1088	0	1066	480	0
2	33-Y	1088	0	1066	478	0
2	34-Y	1088	0	1066	485	0
2	35-Y	1088	0	1062	504	0
2	36-Y	1088	0	1066	479	0
2	37-Y	1088	0	1066	480	0
2	38-Y	1088	0	1066	482	0
2	39-Y	1088	0	1064	479	0
2	40-Y	1088	0	1066	485	0
2	41-Y	1088	0	1066	472	0
2	42-Y	1088	0	1057	634	0
2	43-Y	1088	0	1066	478	0
3	1-Z	1198	0	1120	510	0
3	2-Z	1198	0	1120	518	0
3	3-Z	1198	0	1120	512	0
3	4-Z	1198	0	1120	517	0
3	5-Z	1198	0	1120	521	0
3	6-Z	1198	0	1117	502	0
3	7-Z	1198	0	1114	740	0
3	8-Z	1198	0	1120	546	0
3	9-Z	1198	0	1120	536	0
3	10-Z	1198	0	1120	504	0
3	11-Z	1198	0	1120	499	0
3	12-Z	1198	0	1120	516	0
3	13-Z	1198	0	1120	502	0
3	14-Z	1198	0	1120	507	0
3	15-Z	1198	0	1120	502	0
3	16-Z	1198	0	1120	507	0
3	17-Z	1198	0	1120	506	0
3	18-Z	1198	0	1120	531	0
3	19-Z	1198	0	1120	533	0
3	20-Z	1198	0	1120	509	0
3	21-Z	1198	0	1120	514	0
3	22-Z	1198	0	1120	545	0
3	23-Z	1198	0	1120	508	0
3	24-Z	1198	0	1118	570	0
3	25-Z	1198	0	1120	519	0
3	26-Z	1198	0	1118	531	0
3	27-Z	1198	0	1117	517	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	28-Z	1198	0	1115	590	0
3	29-Z	1198	0	1115	649	0
3	30-Z	1198	0	1120	512	0
3	31-Z	1198	0	1118	614	0
3	32-Z	1198	0	1120	524	0
3	33-Z	1198	0	1120	511	0
3	34-Z	1198	0	1120	510	0
3	35-Z	1198	0	1116	561	0
3	36-Z	1198	0	1120	502	0
3	37-Z	1198	0	1120	513	0
3	38-Z	1198	0	1120	510	0
3	39-Z	1198	0	1120	501	0
3	40-Z	1198	0	1120	515	0
3	41-Z	1198	0	1117	529	0
3	42-Z	1198	0	1115	655	0
3	43-Z	1198	0	1120	506	0
All	All	365543	0	359490	154231	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 213.

The worst 5 of 154231 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%)	1	16
1	2-C	756/831 (91%)	604 (80%)	112 (15%)	40 (5%)	1	15
1	3-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	1	16
1	4-C	758/831 (91%)	605 (80%)	114 (15%)	39 (5%)	1	15
1	5-C	756/831 (91%)	605 (80%)	113 (15%)	38 (5%)	1	16
1	6-C	758/831 (91%)	608 (80%)	112 (15%)	38 (5%)	1	16
1	7-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	8-C	758/831 (91%)	607 (80%)	112 (15%)	39 (5%)	1	15
1	9-C	756/831 (91%)	606 (80%)	112 (15%)	38 (5%)	1	16
1	10-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	1	16
1	11-C	758/831 (91%)	606 (80%)	113 (15%)	39 (5%)	1	15
1	12-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	1	16
1	13-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	1	15
1	14-C	756/831 (91%)	605 (80%)	112 (15%)	39 (5%)	1	15
1	15-C	758/831 (91%)	608 (80%)	112 (15%)	38 (5%)	1	16
1	16-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	1	16
1	17-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	1	15
1	18-C	758/831 (91%)	607 (80%)	112 (15%)	39 (5%)	1	15
1	19-C	758/831 (91%)	605 (80%)	112 (15%)	41 (5%)	1	15
1	20-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	1	16
1	21-C	758/831 (91%)	605 (80%)	114 (15%)	39 (5%)	1	15
1	22-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	23-C	756/831 (91%)	603 (80%)	114 (15%)	39 (5%)	1	15
1	24-C	756/831 (91%)	605 (80%)	113 (15%)	38 (5%)	1	16
1	25-C	756/831 (91%)	602 (80%)	114 (15%)	40 (5%)	1	15
1	26-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	1	15
1	27-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	28-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	1	15
1	29-C	756/831 (91%)	605 (80%)	112 (15%)	39 (5%)	1	15
1	30-C	758/831 (91%)	605 (80%)	114 (15%)	39 (5%)	1	15

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

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	19-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	20-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	21-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	22-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	17
2	23-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	24-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	17
2	25-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	26-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	27-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	17
2	28-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	29-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	30-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	31-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	17
2	32-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	17
2	33-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	34-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	35-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	36-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	37-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	38-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	17
2	39-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	17
2	40-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	41-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	17
2	42-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	17
2	43-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
3	1-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	2-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	3-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	4-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	12
3	5-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	6-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13

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

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	38-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	39-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	40-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	41-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	42-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	43-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
All	All	44731/48074 (93%)	34583 (77%)	7834 (18%)	2314 (5%)	3	15

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%)	579 (85%)	99 (15%)	3	13
1	2-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	3-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	4-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	5-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	6-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	7-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	8-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	9-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	10-C	678/724 (94%)	579 (85%)	99 (15%)	3	13

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	11-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	12-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	13-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	14-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	15-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	16-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	17-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	18-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	19-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	20-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	21-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	22-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	23-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	24-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	25-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	26-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	27-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	28-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	29-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	30-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	31-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	32-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	33-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	34-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	35-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	36-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	37-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	38-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	39-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	40-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	41-C	678/724 (94%)	579 (85%)	99 (15%)	3	13

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	42-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
1	43-C	678/724 (94%)	579 (85%)	99 (15%)	3	13
2	1-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	2-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	3-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	4-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	5-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	6-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	7-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	8-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	9-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	10-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	11-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	12-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	13-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	14-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	15-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	16-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	17-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	18-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	19-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	20-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	21-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	22-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	23-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	24-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	25-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	26-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	27-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	28-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	29-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	30-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	31-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	32-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	33-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	34-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	35-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	36-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	37-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	38-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	39-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	40-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	41-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	42-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	43-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
3	1-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	2-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	3-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	4-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	5-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	6-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	7-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	8-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	9-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	10-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	11-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	12-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	13-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	14-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	15-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	16-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	17-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	18-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	19-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	20-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	21-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	22-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	23-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	24-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	25-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	26-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	27-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	28-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	29-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	30-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	31-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	32-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	33-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	34-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	35-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	36-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	37-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	38-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	39-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	40-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	41-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	42-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	43-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
All	All	39732/41710 (95%)	34357 (86%)	5375 (14%)	6	14

5 of 5375 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	30-C	694	ASN
1	37-C	726	ASN

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Mol	Chain	Res	Type
1	31-C	529	ILE
1	30-C	671	ILE
1	34-C	288	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 2050 such sidechains are listed below:

Mol	Chain	Res	Type
2	39-Y	121	ASN
1	41-C	33	ASN
2	39-Y	115	ASN
1	17-C	357	HIS
3	16-Z	46	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 oligosaccharides 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](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	28-C	13
1	8-C	13
1	24-C	13
1	25-C	13
1	42-C	12
1	23-C	12
1	32-C	12
1	2-C	12
1	43-C	12
1	9-C	12
1	29-C	12
1	17-C	12
1	1-C	12
1	12-C	12
1	15-C	12
1	18-C	12
1	35-C	12
1	5-C	11
1	39-C	11
1	26-C	11
1	14-C	11
1	4-C	11
1	6-C	11
1	7-C	11
1	11-C	11
1	13-C	11
1	19-C	11
1	21-C	11
1	31-C	11
1	33-C	11
1	34-C	11
1	40-C	11
1	3-C	10
1	10-C	10
1	16-C	10
1	20-C	10
1	22-C	10
1	27-C	10
1	30-C	10
1	36-C	10
1	37-C	10
1	38-C	10
1	41-C	10

The worst 5 of 483 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
42	C	800:LYS	C	801:LEU	N	3.10
23	C	800:LYS	C	801:LEU	N	2.77
5	C	800:LYS	C	801:LEU	N	2.74
32	C	800:LYS	C	801:LEU	N	2.62
39	C	800:LYS	C	801:LEU	N	2.52

6 Map visualisation

This section contains visualisations of the EMDB entry EMD-1561. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

This section was not generated.

6.2 Central slices

This section was not generated.

6.3 Largest variance slices

This section was not generated.

6.4 Orthogonal standard-deviation projections (False-color)

This section was not generated.

6.5 Orthogonal surface views

This section was not generated.

6.6 Mask visualisation

This section was not generated. No masks/segmentation were deposited.

7 Map analysis ⓘ

This section contains the results of statistical analysis of the map.

7.1 Map-value distribution ⓘ

This section was not generated.

7.2 Volume estimate versus contour level ⓘ

This section was not generated.

7.3 Rotationally averaged power spectrum ⓘ

This section was not generated. The rotationally averaged power spectrum had issues being displayed.

8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit

This section was not generated.