



## wwPDB EM Validation Summary Report ⓘ

Nov 20, 2022 – 03:53 pm GMT

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

This is a wwPDB EM Validation Summary Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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

EMDB validation analysis : 0.0.1.dev43  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : **FAILED**  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.2

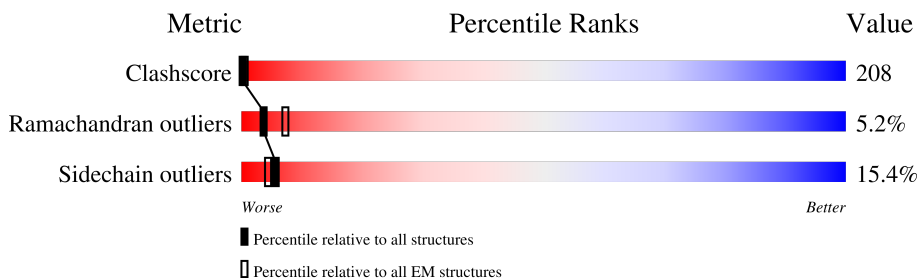
# 1 Overall quality at a glance

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.




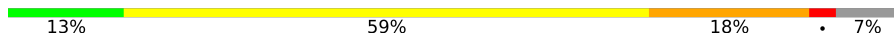

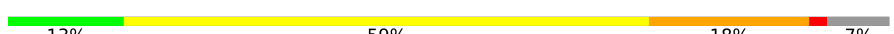
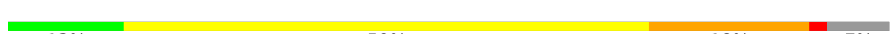

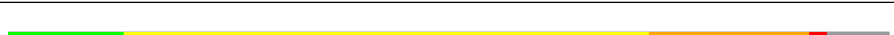
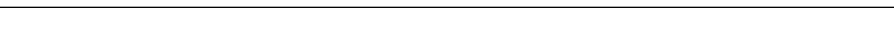
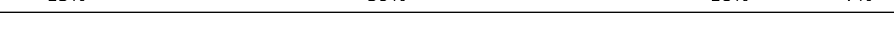
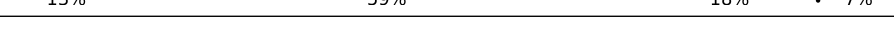
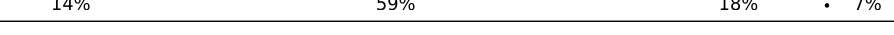
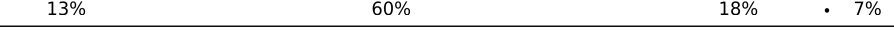



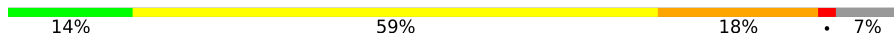

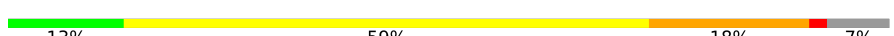
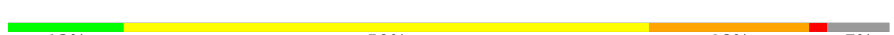

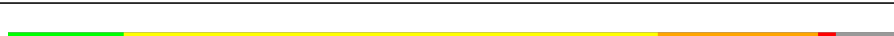




Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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  $\geq 3$ , 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	13% 59% 18% • 7%
1	10-C	831	13% 60% 18% • 7%
1	11-C	831	14% 59% 18% • 7%
1	12-C	831	13% 59% 18% • 7%
1	13-C	831	14% 59% 18% • 7%
1	14-C	831	13% 59% 18% • 7%
1	15-C	831	13% 59% 18% • 7%
1	16-C	831	13% 59% 18% • 7%
1	17-C	831	14% 59% 18% • 7%


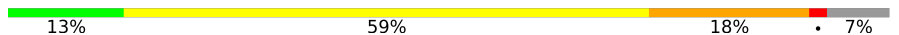

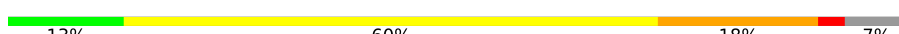
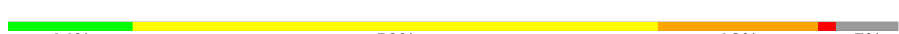

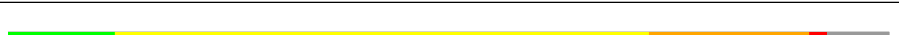
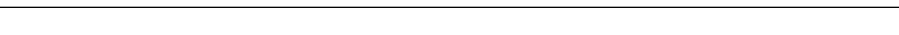
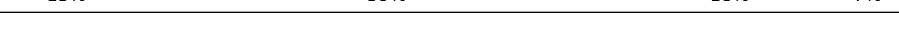
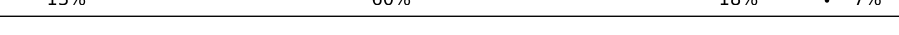
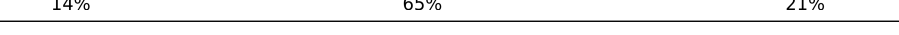
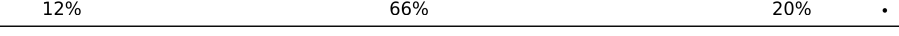

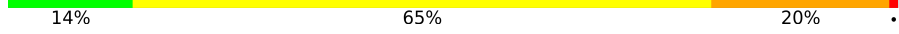
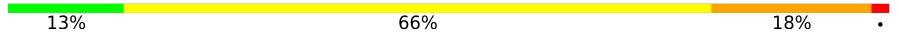
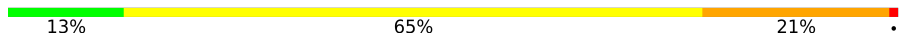

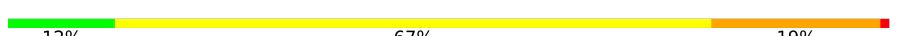
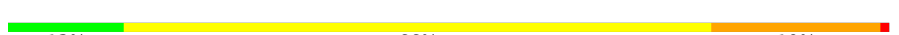

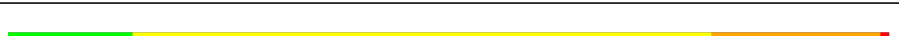


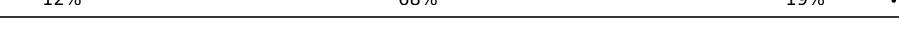
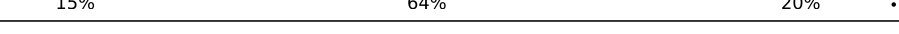
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Mol	Chain	Length	Quality of chain
1	18-C	831	
1	19-C	831	
1	2-C	831	
1	20-C	831	
1	21-C	831	
1	22-C	831	
1	23-C	831	
1	24-C	831	
1	25-C	831	
1	26-C	831	
1	27-C	831	
1	28-C	831	
1	29-C	831	
1	3-C	831	
1	30-C	831	
1	31-C	831	
1	32-C	831	
1	33-C	831	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

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

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Mol	Chain	Length	Quality of chain		
2	24-Y	136	13%	66%	19%
2	25-Y	136	12%	68%	18%
2	26-Y	136	14%	65%	18%
2	27-Y	136	13%	65%	20%
2	28-Y	136	13%	66%	18%
2	29-Y	136	14%	65%	19%
2	3-Y	136	12%	67%	19%
2	30-Y	136	12%	68%	18%
2	31-Y	136	12%	68%	19%
2	32-Y	136	14%	65%	19%
2	33-Y	136	13%	66%	18%
2	34-Y	136	12%	66%	19%
2	35-Y	136	13%	66%	19%
2	36-Y	136	13%	66%	19%
2	37-Y	136	12%	68%	19%
2	38-Y	136	12%	67%	18%
2	39-Y	136	14%	65%	19%
2	4-Y	136	14%	65%	19%
2	40-Y	136	14%	65%	20%
2	41-Y	136	15%	65%	19%
2	42-Y	136	12%	68%	19%
2	43-Y	136	14%	65%	18%
2	5-Y	136	14%	65%	20%
2	6-Y	136	14%	66%	18%
2	7-Y	136	12%	68%	18%

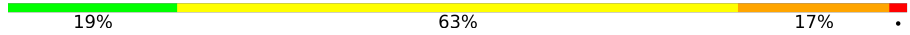
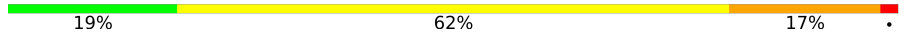
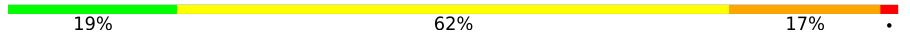
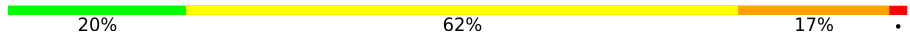
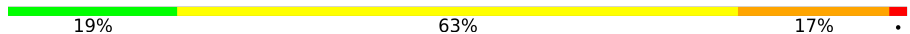
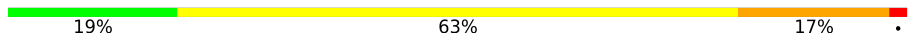
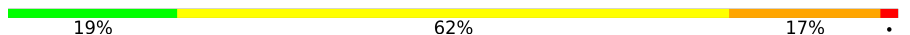
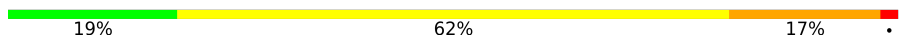
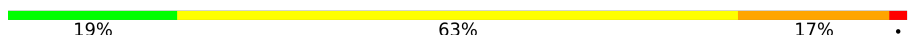
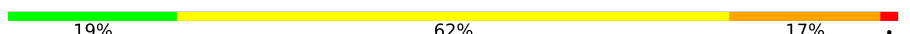
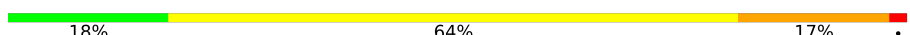
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Mol	Chain	Length	Quality of chain		
2	8-Y	136	13%	65%	19%
2	9-Y	136	13%	66%	19%
3	1-Z	151	19%	63%	17%
3	10-Z	151	19%	62%	17%
3	11-Z	151	19%	62%	17%
3	12-Z	151	19%	63%	17%
3	13-Z	151	19%	62%	17%
3	14-Z	151	19%	63%	17%
3	15-Z	151	19%	62%	17%
3	16-Z	151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

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

## 2 Entry composition [i](#)

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

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

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

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

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

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

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

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

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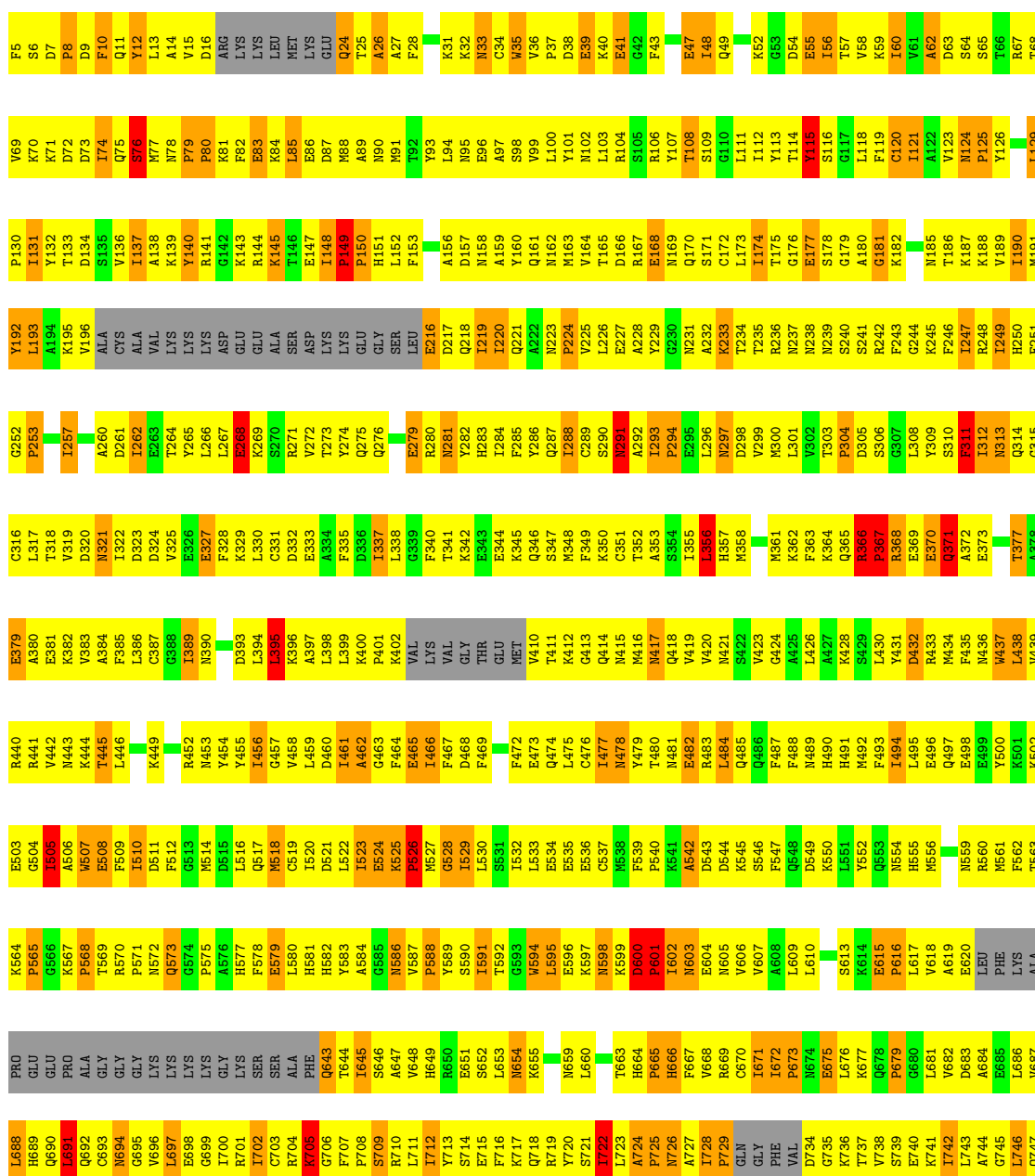
Mol	Chain	Residues	Atoms					AltConf	Trace
3	33-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	34-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	35-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	36-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	37-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244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

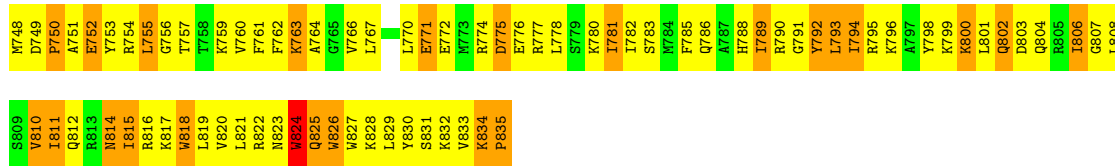
### 3 Residue-property plots

These plots are drawn for all protein, RNA, 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.

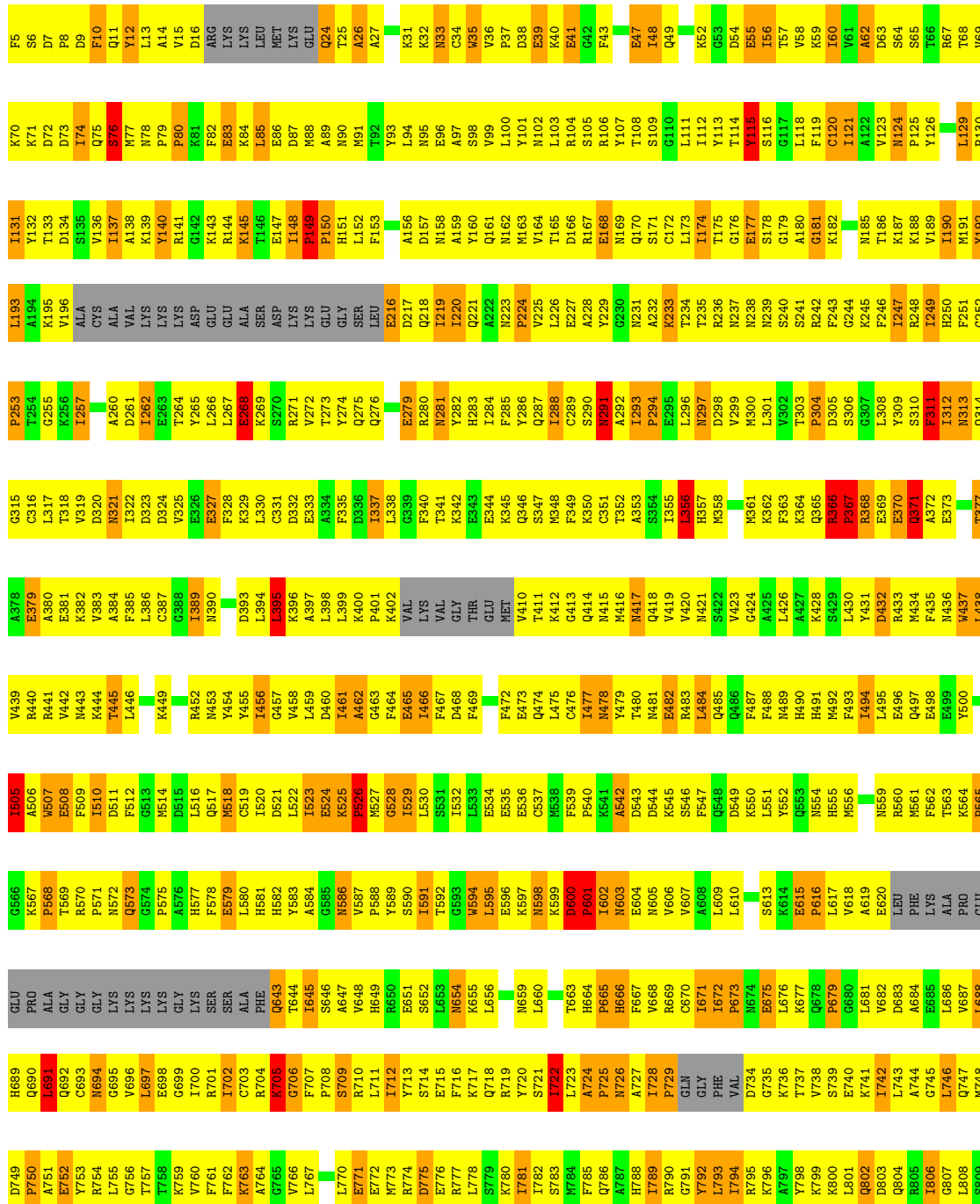
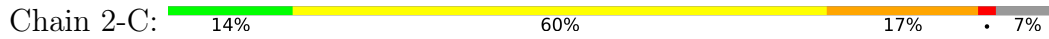
- Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 1-C: 





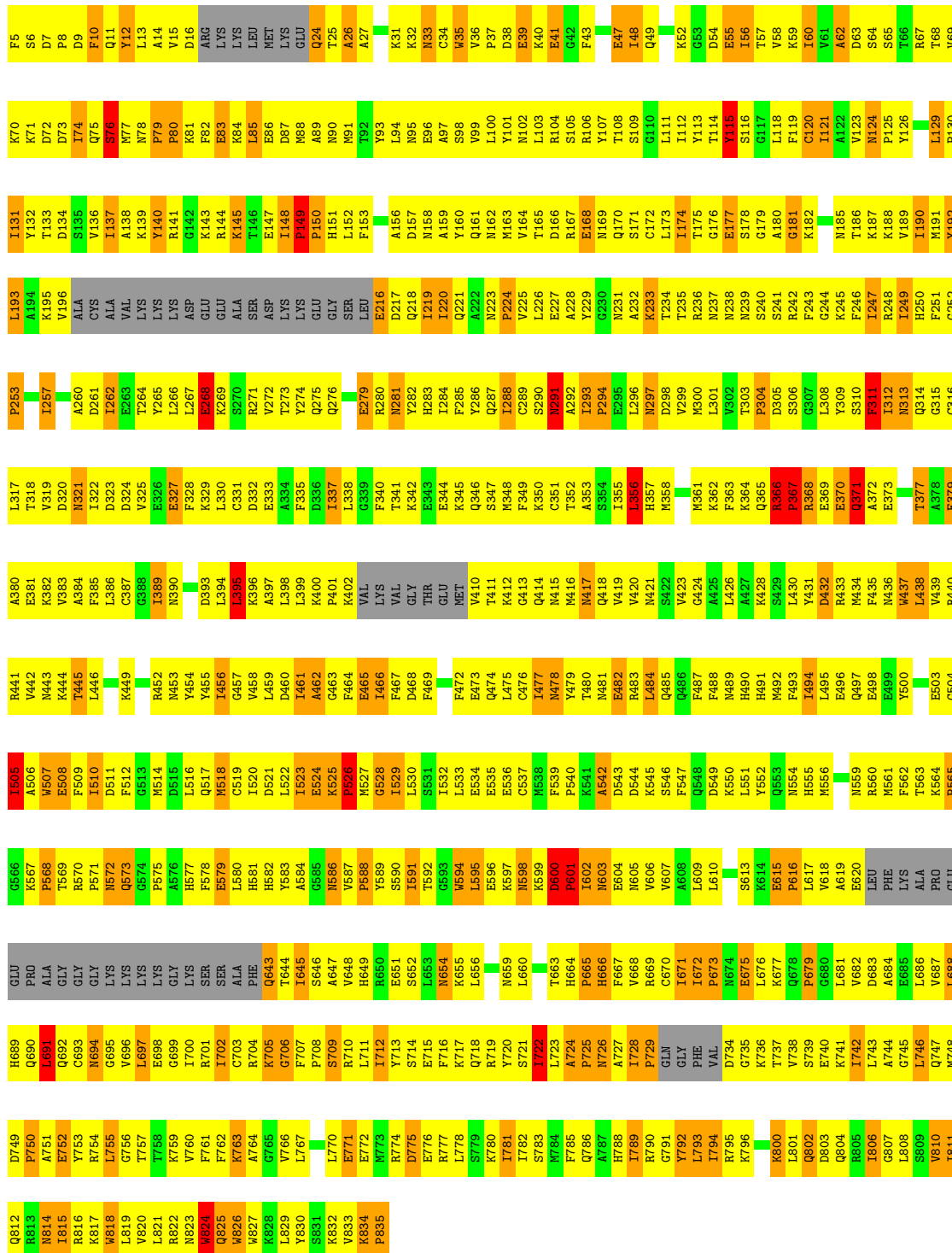
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE





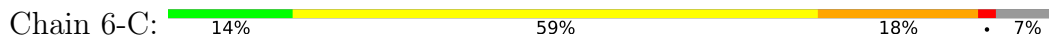


Chain 4-C: 14% 59% 18% 7%

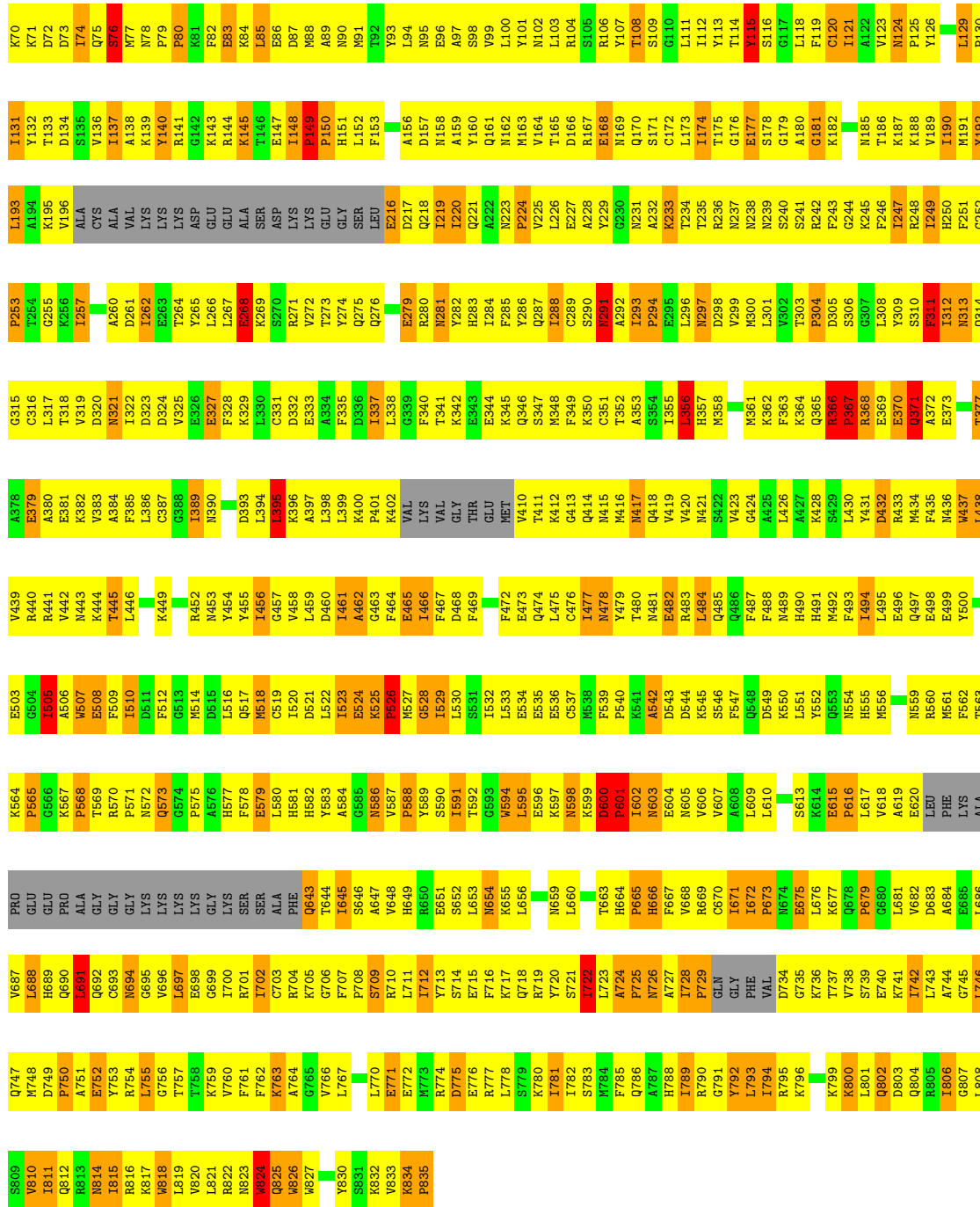


F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	ARC	LYS	LEU	LEU	LEU	MET	LYS	LYS	Q24	T25	A26	A27	F28	K31	K32	N33	C34	W35	V36	P37	D38	E39	K40	E41	G42	F43	E47	I48	Q49	K52	G53	D54	E55	I56	T57	T58	V59	V60	V61	A62	D63	S64	S65	T66	R67	V69							
V69	K70	K71	D72	D73	I74	Q75	S76	M77	N78	P79	P80	K81	F82	E83	K84	L85	E86	D87	M88	A89	N90	A26	M91	F28	Y92	L94	N95	E96	A97	S98	V99	L100	L101	N102	E39	L103	R104	G42	S105	L106	Y107	T108	S109	G110	L111	L112	Y113	T114	Y115	S116	G117	L118	F119	C120	I121	A122	V123	M124	P125	Y126	L129			
P130	I131	T132	T133	D134	S135	V136	I137	A138	K139	V140	L141	G142	K143	R144	K145	E147	ASP	L148	F149	H151	L152	F153	A156	D157	M158	A159	S98	Q161	M162	M163	V225	V164	T165	D166	E227	A228	Y229	E168	M169	Q170	S171	C172	L173	L174	T175	G176	E177	N238	S240	S241	R242	K182	N185	A245	Y309	F310	T247	K187	K188	I189	H250	M191		
Y192	L193	A194	V196	ALA	ALA	CYS	VAL	VAL	LYS	LYS	LYS	ASP	GLU	GLU	ALA	ALA	SER	ASP	LYS	GLY	GLY	GLY	E216	D217	Q218	R219	I220	Q221	Q222	A223	P224	V225	L226	E227	A228	Y229	G230	N231	A232	K233	T234	T235	R236	N237	V302	T303	P304	D305	S306	G307	F243	G244	K245	Y309	S310	F246	I247	R248	I249	H250	F251			
G252	P253	I257	A260	D261	L262	E263	Y265	L266	L267	E268	K269	S270	R271	V272	T273	Y274	Q275	Q276	E279	R280	N281	Y282	H283	I284	F285	Y286	Z287	I288	C289	S290	N291	A292	L293	P294	E295	L296	N297	D298	V299	M300	L301	V302	T303	P304	D305	S306	G307	R368	E369	K433	Y309	Q371	A372	R311	I312	N313	Q314	G315						
C316	L317	T318	V319	D320	N321	I322	D323	D324	V325	E326	E327	F328	K329	L330	C331	D332	E333	A334	F335	D336	L337	L338	G339	F340	T341	K342	E343	E344	F345	Q346	S347	N348	F349	K350	C351	T352	A353	S354	M358	M361	K362	F363	K364	Q365	R366	P367	R368	E369	E370	R433	Q371	A372	F435	M436	W437	Y500	K501	L438	V439					
E379	A380	K381	K382	V383	A384	F385	L386	C387	G388	L389	N390	D393	L394	L395	K396	L397	A398	L398	L399	K400	P401	K402	VAL	LYS	VAL	GLY	THR	GLU	GLU	GLU	GLU	T411	K412	G413	N414	N415	N416	M417	Q418	V419	V420	R483	N421	G422	V423	G424	A425	L426	A427	K428	S429	L430	F431	D432	E433	E434	Q497	F435	M436	W437	Y500	K501	L438	V439
R440	R441	V442	N443	K444	T445	F385	L446	K449	R452	G453	M514	R455	L456	A457	V458	L459	D460	I461	A462	G463	F464	E465	I466	F467	D468	F469	S472	F472	E473	L474	L475	L476	L477	N478	Y479	T480	N481	E482	R483	L484	Q485	G486	F487	N488	N489	H490	H491	M492	F493	L494	L495	E496	Q497	A498	M559	R560	M561	F562	LYS	K502				
E503	G504	S505	A506	V507	E508	F509	L510	D511	G512	G513	M514	A515	L516	A517	M518	C519	L520	D521	L522	L523	E524	K525	P526	M527	G528	L529	L530	S531	L532	L533	E534	E535	E536	N538	F539	P540	N541	A542	E543	N544	D544	H491	S546	F547	G548	L609	L610	S613	K614	E615	P616	L617	H555	M556	V618	A619	E620	LEU	PHE	LYS	ALA	T563		
K564	P565	S566	K567	P568	T569	R570	F571	N572	Q573	G574	F575	H577	F578	E579	L580	H581	H582	V583	A584	G585	N586	V587	P588	V589	S590	L591	T592	G593	M594	L595	E596	K597	N598	K599	P600	P601	L602	N603	E604	N605	V606	A608	L609	L610	S613	K614	E615	P616	L617	H555	M556	V618	A619	E620	LEU	PHE	LYS	ALA	T563					
PR0	GLU	GLU	PR0	GLY	GLY	GLY	GLY	LYS	LYS	LYS	LYS	LYS	SER	SER	ALA	PHE	GLY	T644	T645	S646	A647	V648	H649	R650	E651	S652	L653	N654	K655	L656	N659	L660	T663	H664	P665	H666	F667	V668	R669	C670	L671	L672	P673	G674	E675	L676	K677	Q678	P679	Q680	L681	V682	D683	A684	E685	L686								
V687	L688	H689	N690	L691	A692	C693	N694	G695	L697	E698	G699	L700	R701	L702	C703	R704	K705	G706	F707	S708	S709	L710	L711	L712	Y713	S714	F715	F716	K717	Q718	R719	Y720	S721	L722	L723	A724	F725	M726	A727	I728	P729	GLN	GLY	PHE	VAL	D734	G735	K736	T737	V738	S739	E740	L741	L742	L743	A744	G745	L746						
Q747	R748	D749	P750	A751	E752	V753	R754	L755	G756	T757	L758	K759	V760	F761	F762	K763	A764	G765	V766	L767	L770	E771	E772	H773	R774	D775	E776	R777	L778	S779	K780	L781	L782	S783	M784	F785	Q786	A787	H788	I789	R790	G791	Y792	L793	L794	R795	K796	V797	Y798	K799	R800	L801	Q802	D803	Q804	R805	L806	G807						
L808	S809	V810	L811	Q812	R813	H814	L815	R816	K817	V818	L819	V820	E821	R822	N823	K824	Q825	H826	H827	Y830	S831	K832	V833	K834	P835																																							

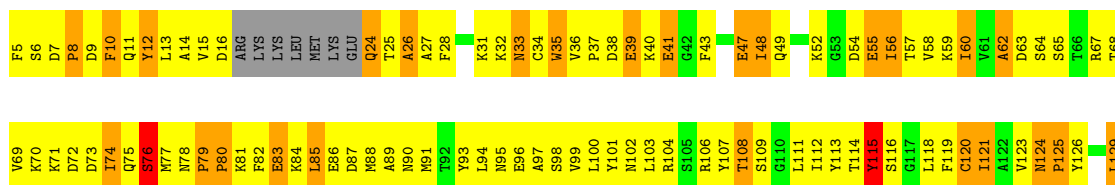
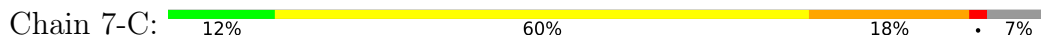
• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



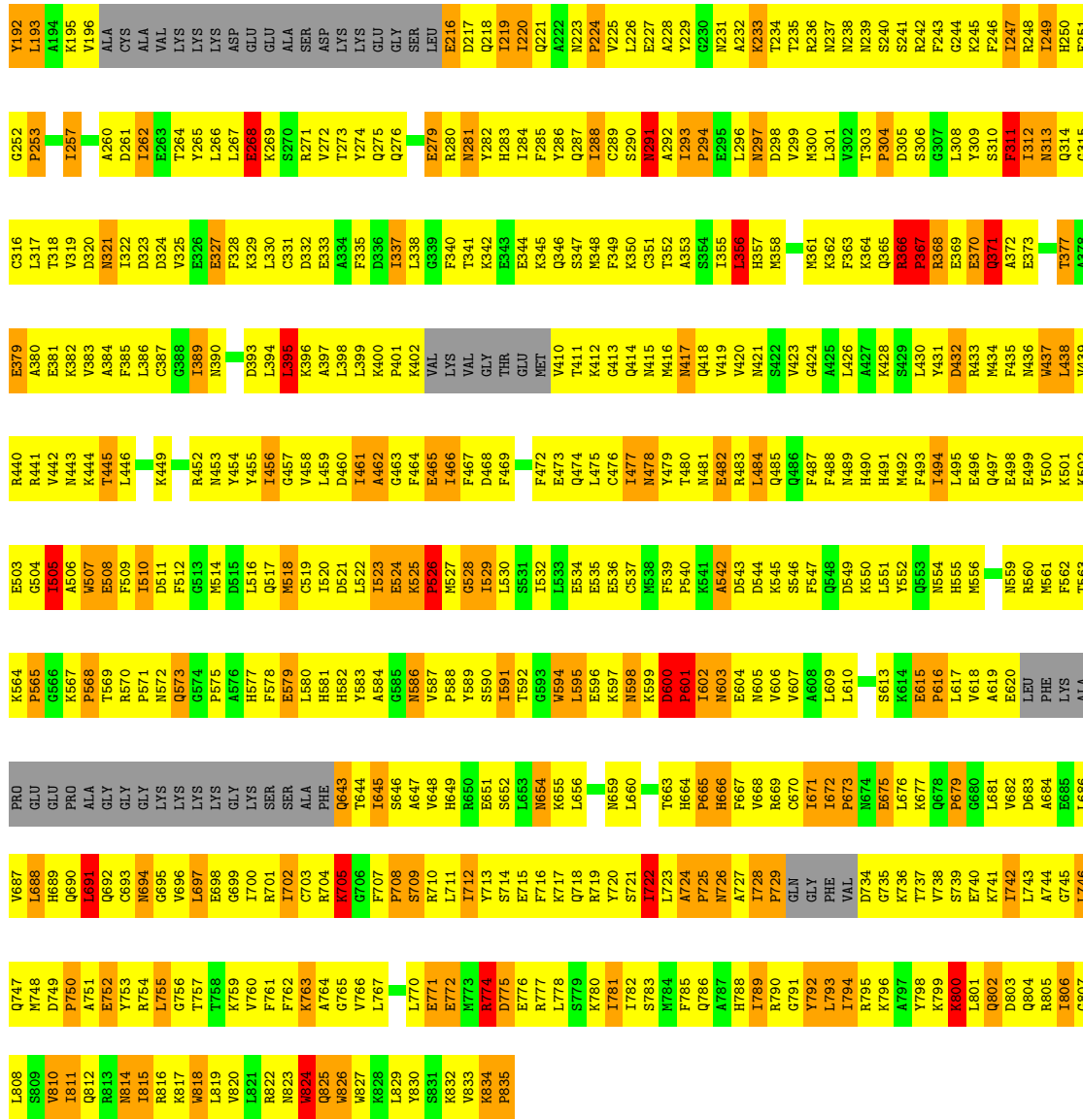
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● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

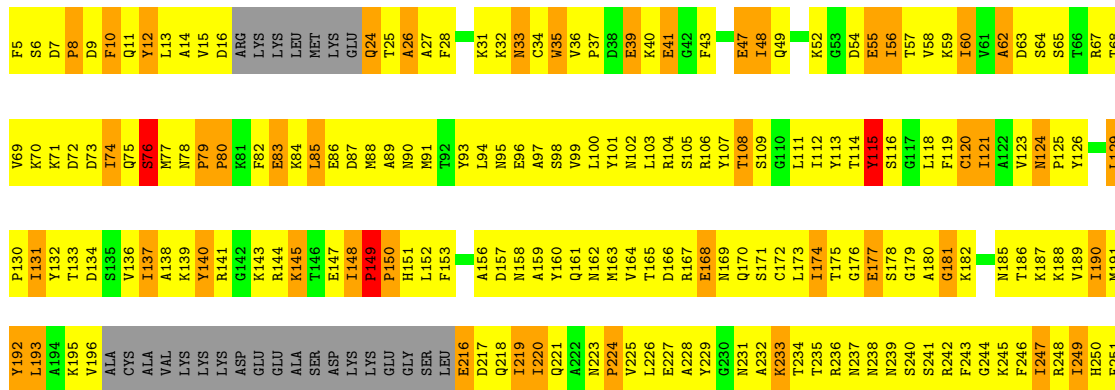


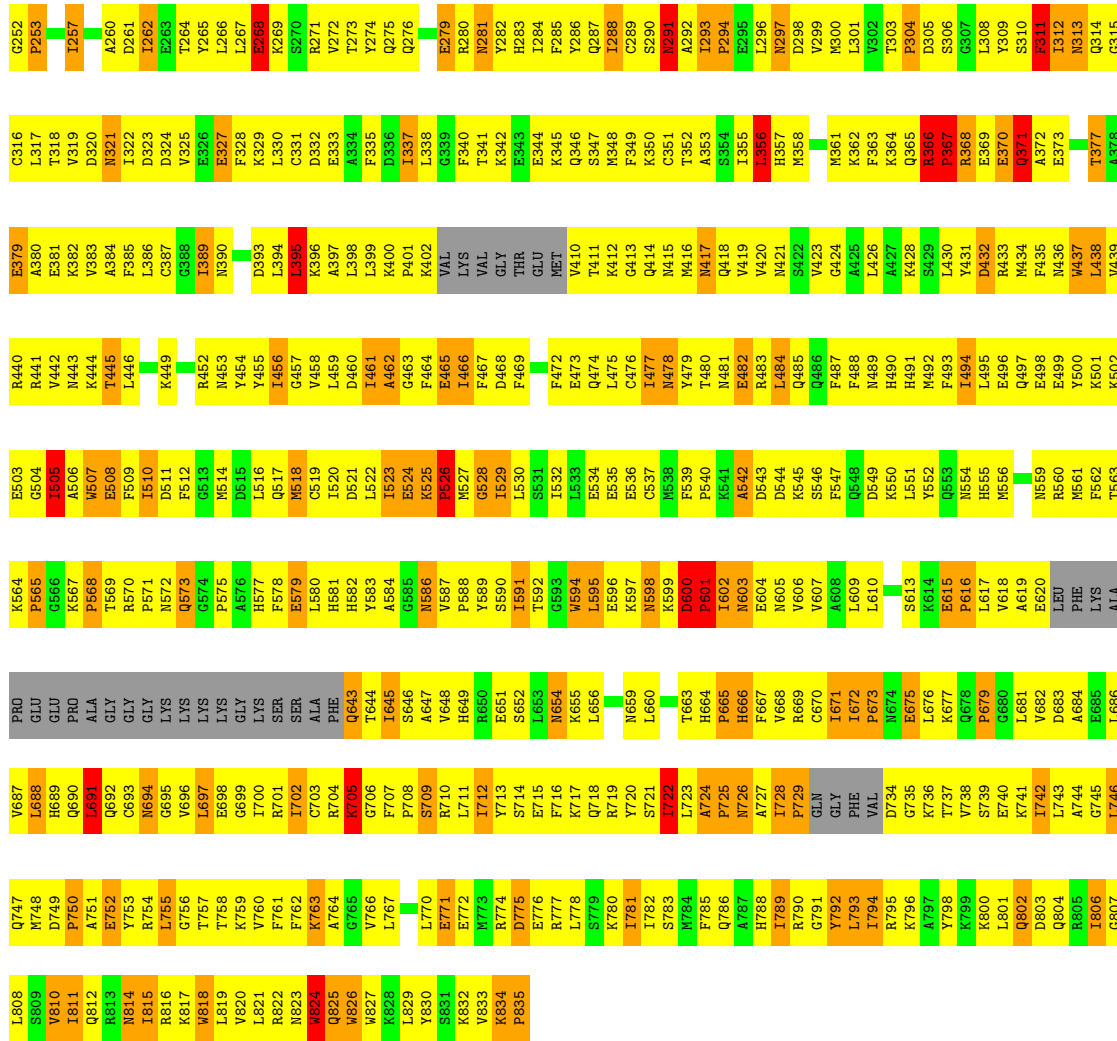
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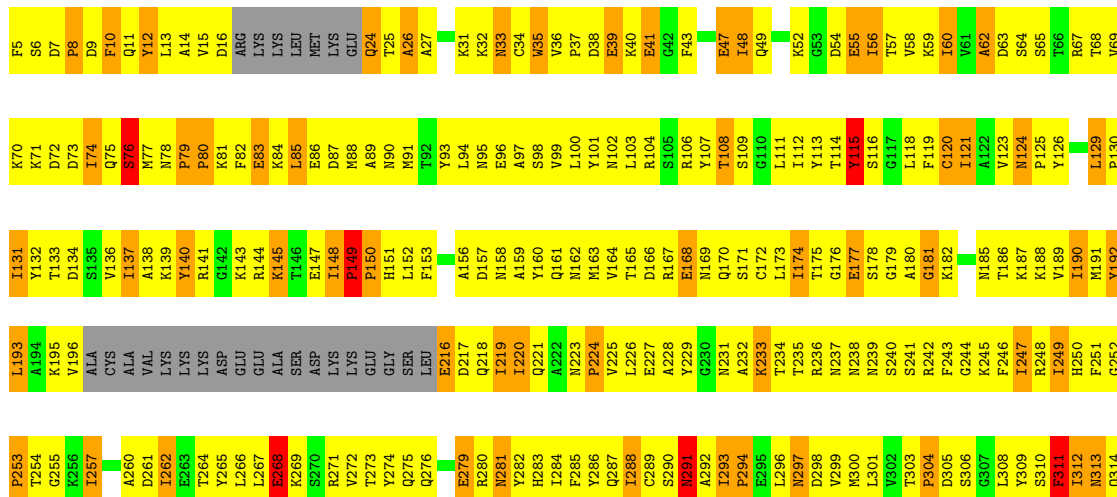
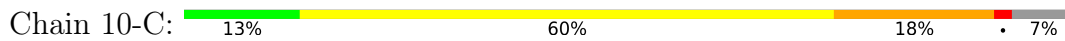
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

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



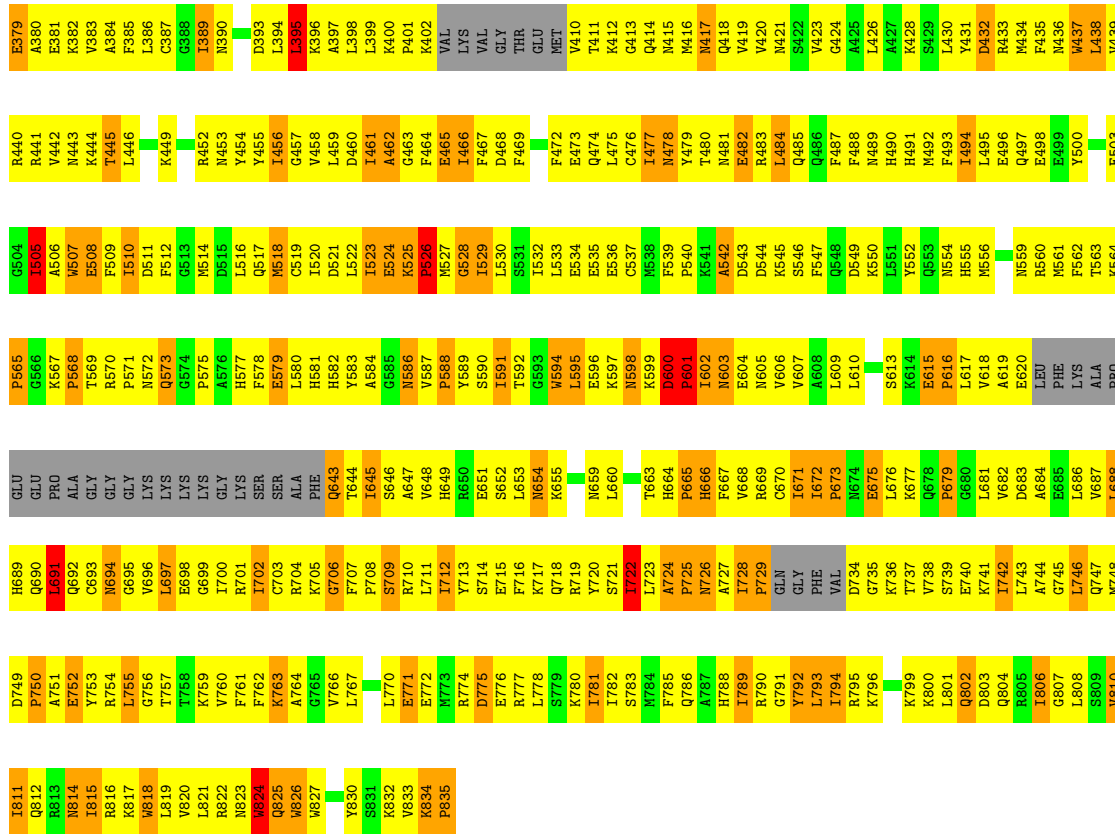


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

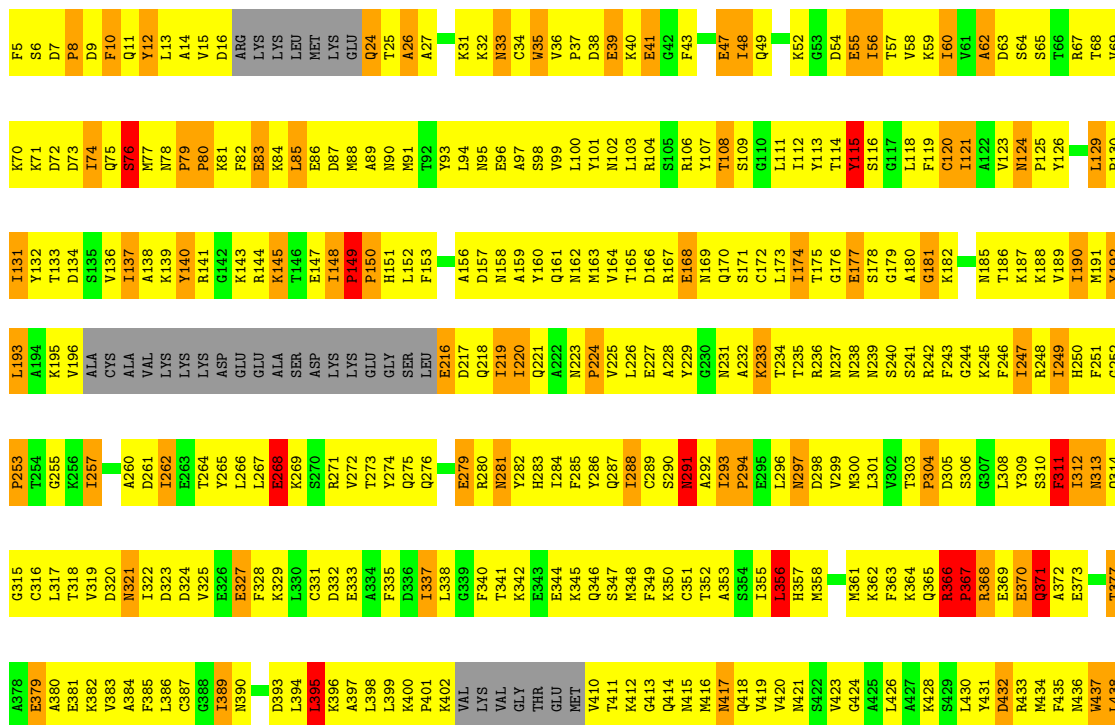
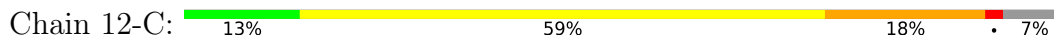








● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE





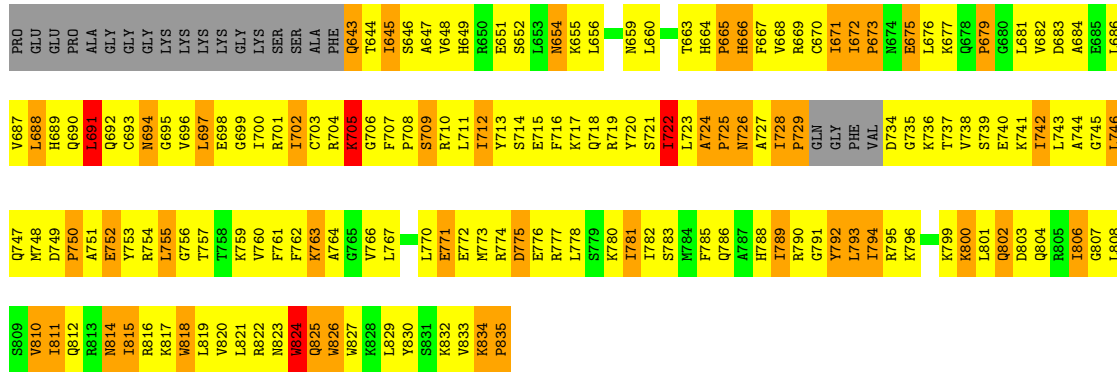
E503	G566	G690	P750	1811	P560	1811	P750	1811	P560
G504	K567	L691	A751	Q812	A751	Q812	A751	Q812	A751
I505	P568	Q692	E752	R813	E752	R813	E752	R813	E752
M507	T569	C693	T753	N814	T753	N814	T753	N814	T753
O508	R570	G694	R754	L815	R754	L815	R754	L815	R754
P509	F571	N695	L755	R816	L755	R816	L755	R816	L755
Q510	M572	G696	C756	K817	C756	K817	C756	K817	C756
R511	Q573	L697	T758	W818	T758	W818	T758	W818	T758
S512	G574	E698	L759	L819	L759	L819	L759	L819	L759
T513	P575	G699	K759	W820	K759	W820	K759	W820	K759
V514	M576	I700	V760	L821	V760	L821	V760	L821	V760
W515	H577	R701	F761	R822	F761	R822	F761	R822	F761
X516	F578	I702	Y792	K823	Y792	K823	Y792	K823	Y792
Y517	Q579	C703	K783	R824	C703	K783	C703	K783	C703
Z518	M580	R704	A784	W825	R704	A784	R704	A784	R704
A519	L581	PHE	PHE	W826	PHE	PHE	PHE	PHE	PHE
B520	H582	Q643	Q643	R827	Q643	R827	Q643	R827	Q643
C521	F583	T644	T644	K828	T644	K828	T644	K828	T644
D522	L522	L645	L645	L829	L645	L829	L645	L829	L645
E523	A524	S646	S646	Y830	S646	Y830	S646	Y830	S646
F524	N586	A647	A647	S831	A647	S831	A647	S831	A647
G525	P587	V648	V648	R832	V648	R832	V648	R832	V648
H526	F588	H649	H649	W833	H649	W833	H649	W833	H649
I527	Y589	I711	I711	R834	I711	R834	I711	R834	I711
J528	S590	Y713	Y713	K834	Y713	K834	Y713	K834	Y713
K529	G591	S714	S714	P835	S714	P835	S714	P835	S714
L530	L591	E715	E715		E715		E715		E715
M531	T592	F716	F716		F716		F716		F716
N532	G593	K717	K717		K717		K717		K717
O533	L532	M654	M654		M654		M654		M654
P534	W534	K655	K655		K655		K655		K655
Q535	E534	N659	N659		N659		N659		N659
R536	F536	L660	L660		L660		L660		L660
S537	C537	T663	T663		T663		T663		T663
T538	M538	A724	A724		A724		A724		A724
V539	D600	P665	P665		P665		P665		P665
W540	P601	P725	P725		P725		P725		P725
X541	K602	N726	N726		N726		N726		N726
Y542	M603	A727	A727		A727		A727		A727
Z543	E604	V668	V668		V668		V668		V668
A544	N605	C670	C670		C670		C670		C670
B545	V606	I671	I671		I671		I671		I671
C546	V607	PHE	PHE		PHE		PHE		PHE
D547	F547	VAL	VAL		VAL		VAL		VAL
E548	Q548	D734	D734		D734		D734		D734
F549	D549	G735	G735		G735		G735		G735
G550	K550	K736	K736		K736		K736		K736
H551	L551	T737	T737		T737		T737		T737
I552	Y552	V738	V738		V738		V738		V738
J553	Q553	K799	K799		K799		K799		K799
K554	E615	K800	K800		K800		K800		K800
L555	P616	L801	L801		L801		L801		L801
M556	L617	E740	E740		E740		E740		E740
N557	V618	K841	K841		K841		K841		K841
O558	A619	D803	D803		D803		D803		D803
P559	E620	L742	L742		L742		L742		L742
Q560	L681	L743	L743		L743		L743		L743
R561	LEU	R805	R805		R805		R805		R805
S562	PHE	A744	A744		A744		A744		A744
T563	LYS	I806	I806		I806		I806		I806
	ALA	G807	G807		G807		G807		G807
	PRO	L808	L808		L808		L808		L808
	GLU	W747	W747		W747		W747		W747
		H689	H689		H689		H689		H689

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

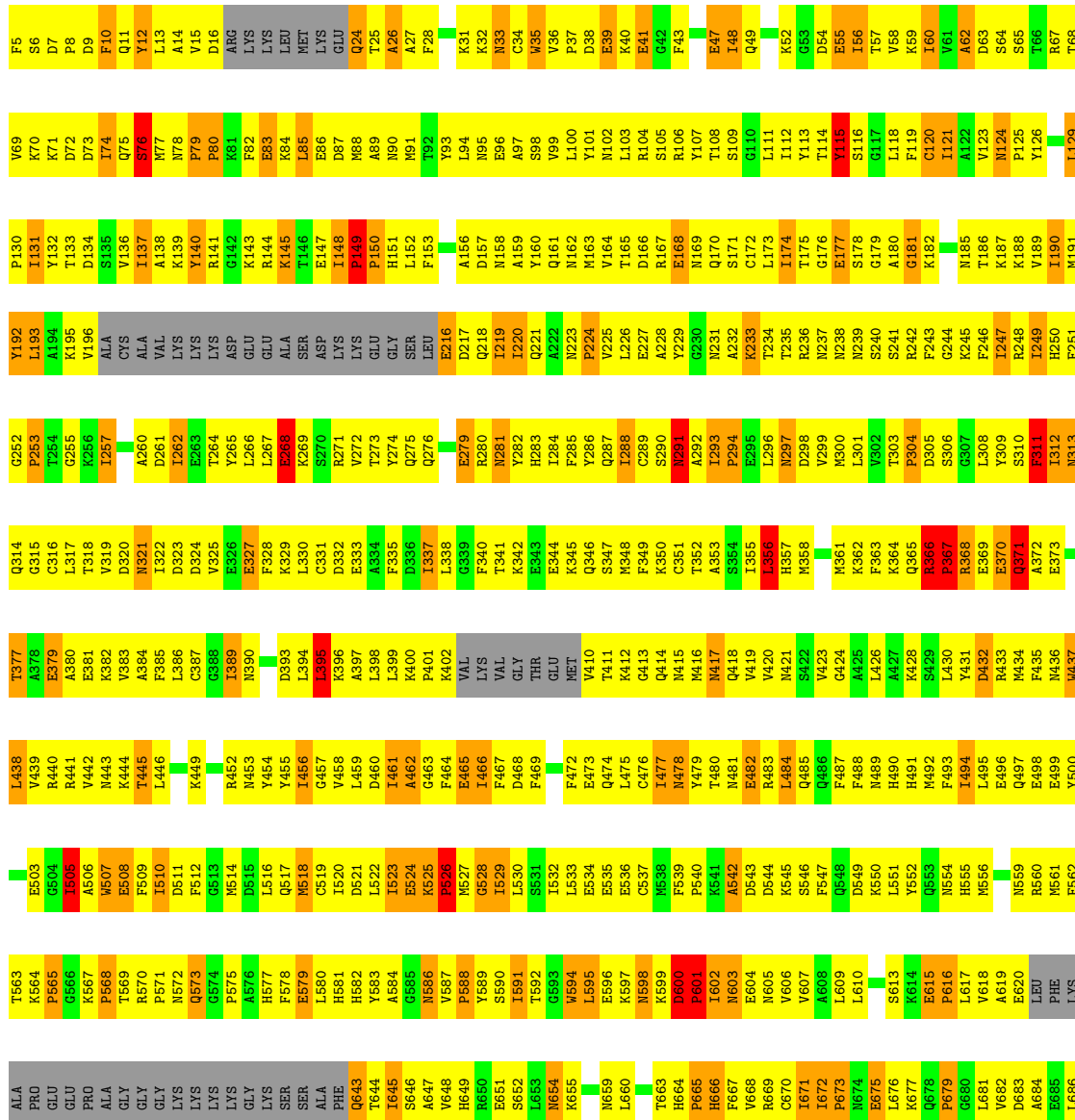
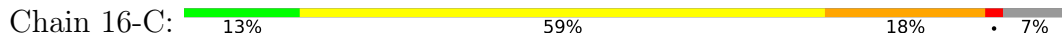
Chain 14-C: 13% 59% 18% 7%

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G504	S6	K70	I131	L193	P253	L317	A380	R441	G504
I505	D7	K71	T133	A194	L257	T318	E381	R442	I505
M507	P8	K72	T133	K195	L257	T319	E382	R443	M507
O508	D9	D73	D134	V196	L257	T320	E383	R444	O508
P509	F10	I74	S135	ALA	A260	N321	A384	R445	P509
Q510	Q11	Q75	V136	CYS	D261	I322	F385	R446	Q510
R511	Y12	S76	I137	ALA	D262	D323	L386	R447	R511
S512	L13	M77	K138	VAL	E263	D324	C387	R449	S512
T513	A14	N78	K139	LYS	T264	V325	G388	R452	T513
V514	V15	P79	K140	LYS	Y265	G326	I389	R453	V514
W515	D16	P80	R441	ASP	L266	E327	N390	R454	W515
X516	ARG	K81	G442	GLU	L267	F328	N390	R455	X516
Y517	LYS	F82	K143	GLU	E268	K329	D393	R456	Y517
Z518	LYS	E83	R144	GLU	K269	L330	L394	R457	Z518
A519	LYS	E83	K145	ALA	E270	C331	G457	R458	A519
B520	LEU	K84	K146	LEU	S271	D332	K396	R459	B520
C521	MET	L85	E147	ASP	R272	E333	A397	R460	C521
D522	LYS	E86	E148	ASP	V273	D334	L398	R461	D522
E523	GLY	D87	I148	LYS	T274	A335	L399	R462	E523
F524	GLY	H88	P149	LYS	Y275	D336	K400	R463	F524
G525	T25	A89	P150	GLY	Q276	L338	K402	R464	G525
H526	A26	N91	L152	SER	Q276	L338	K402	R465	H526
I527	A27	N91	F153	SER	E279	G339	VAL	R466	I527
J528	F28	T92	F153	LEU	E280	F340	LYS	R467	J528
K529	K31	L94	A156	D217	M281	T341	VAL	R468	K529
L530	N32	N95	D157	Q218	M282	K342	GLY	R469	L530
M531	N33	E96	M158	L219	H283	E343	THR	R470	M531
N532	C34	A97	A159	I220	L284	E344	GLU	R471	N532
O533	N35	S98	Y160	Q221	F285	K345	MET	R472	O533
P534	V36	N99	Q161	A222	V286	Q347		R473	P534
Q535	P37	L100	M162	N223	Q287	S347		R474	Q535
R536	I781	L101	M163	P224	L288	M348		R475	R536
S537	I782	M102	M164	V225	C289	G349		R476	S537
T538	S783	N102	T165	V226	S290	K350		R477	T538
V539	M784	L103	D166	E227	M291	C351		R478	V539
W540	F785	R104	D166	E227	M291	T352		R479	W540
X541	Q786	E41	R167	A228	A292	T352		R480	X541
Y542	A787	S105	E168	E229	I293	A353		R481	Y542
Z543	H788	R106	E168	Y229	P294	S354		R482	Z543
A544	I789	Y107	M169	G230	E295	L355		R483	A544
B545	R790	T108	Q170	N231	E295	L355		R484	B545
C546	R791	S109	S171	A232	L296	R356		R485	C546
D547	Y792	G110	C172	K233	M297	H357		R486	D547
E548	L793	L111	L173	T234	D298	M358		R487	E548
F549	I794	L112	I174	T235	V299	M358		R488	F549
G550	K795	Y113	T175	R236	M300	M361		R489	G550
H551	K796	T114	G176	N237	L301	K362		R490	H551
I552	K614	Y115	E177	M238	V302	F363		R491	I552
J553	E615	S116	S178	N239	T303	K364		R492	J553
K554	P616	T57	G179	N239	P304	Q365		R493	K554
L555	L617	V58	A180	S240	D305	R366		R494	L555
M556	G680	K59	G181	R241	S306	P367		R495	M556
N557	L681	L801	K182	R242	G307	R368		R496	N557
O558	V682	K841	M121	F243	E307	K368		R497	O558
P559	E620	D803	I122	G244	V309	E369		R498	P559
Q560	L683	Q804	A122	K245	L308	F370		R499	Q560
R561	A684	R805	M123	R186	Y309	E370		R500	R561
S562	I806	I806	V123	K187	F246	Q371		R501	S562
T563	G745	I806	M124	K187	G247	A372		R502	T563
	L746	G807	S65	K188	R248	S373		R503	
	Q747	S809	T66	L126	I249	T377		R504	
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	H689				F251	G315		R506	



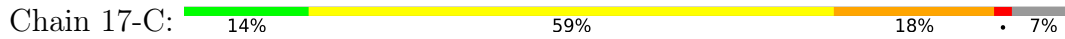


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



V687	L688	H689	Q690	L691	Q692	C693	M694	Q747	M748	D749	P750	L751	E752	L753	L754	L755	G756	L757	E758	K759	V760	F761	F762	K763	M764	R765	R766	K767	K768	R769	R770	E771	E772	M773	R774	D775	E776	R777	K778	S779	K780	I781	I782	S783	M784	F785	Q786	A787	H788	I789	R790	G791	Y792	L793	I794	K795	K800	L801	Q802	D803	E740	K741	R805	I742	L743	A744	G745	L746																																																																																																																										
W810	I811	Q812	Q813	M814	I815	R816	K817	W818	L819	V820	T821	L822	M823	Q824	Q825	W826	W827	K828	L829	Y830	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

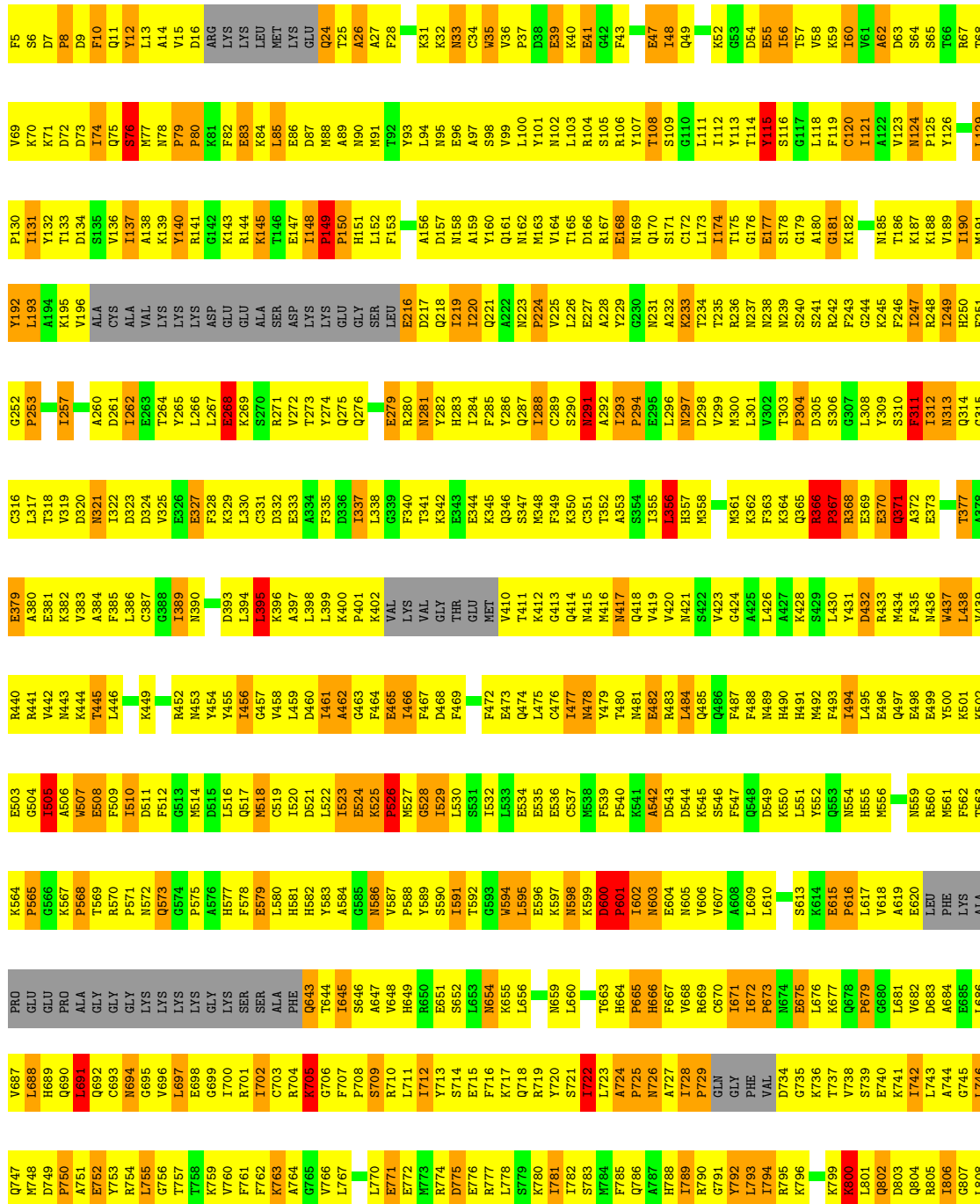
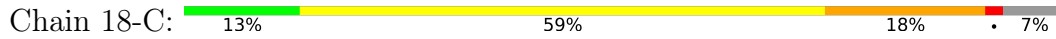
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



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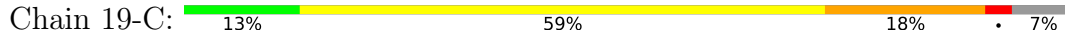


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



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• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	ARG	LYS	LYS	LYS	LEU	LEU	MET	LYS	LYS	GLU	Q24	T25	A26	Y27	S831	K832	F28	K31	K32	N33	C34	W35	V36	P37	D38	E39	K40	K41	E41	E42	F43	E47	I48	I49	Q49	K52	S53	D54	E55	I56	T57	V58	K59	L60	V61	A62	D63	S64	S65	T66	R67	T68
V69	K70	D71	K72	D73	I74	Q75	S76	M77	N78	P79	V15	P80	K81	F82	E83	K84	L85	E86	D87	H88	A89	N90	N91	L92	Y93	L94	N95	E96	A97	Y98	S99	M100	Y101	N102	L103	R104	E105	R106	Y107	T108	I109	G110	L111	L112	Y113	T114	E115	S116	G117	L118	F119	C120	I121	A122	V123	T124	K125	L126	L129				
P130	I131	Y132	T133	D134	S135	V136	I137	A138	Y139	K140	L141	G142	K143	L144	A145	T146	S147	E148	D149	L150	H151	L152	F153	A156	D157	M158	A159	Y160	S98	Q161	M162	L163	V164	L226	E227	D166	R167	E168	M169	Q170	S171	C172	L173	L174	T175	G176	E177	S178	G179	A180	G181	K182	L183	G244	K245	V246	K247	K248	L249	H250	L190	F251	
Y182	L183	A184	V185	V186	ALA	CYS	ALA	VAL	LYS	LYS	LYS	LYS	ASP	GLU	GLU	ALA	ALA	ASP	SER	LYS	LYS	GLU	GLY	SER	L152	E216	D217	Q218	L219	L220	Q221	A222	N223	P224	V225	L226	E227	A228	Y229	G230	N231	A232	K233	T234	T235	R236	N237	N238	N239	S240	S241	R242	F243	G244	K245	F246	L247	R248	L249	H250	L190	F251	
G252	P253	T254	I257	A260	D261	L262	E263	T264	Y265	L266	L267	E268	K269	S270	R271	V272	T273	Y274	L275	L276	E277	R280	N281	Y282	H283	L284	Q221	F285	T286	Y287	L288	C289	S290	E291	A292	L293	P294	E295	L296	N297	D298	V299	K300	L301	N302	F303	S241	D305	S306	G307	L308	Y309	S310	F311	L312	N313	Q314						
G315	C316	L317	T318	V319	D320	N321	L322	D323	L324	V325	E326	E327	F328	K329	L330	D331	D332	E333	A334	F335	L336	F340	T341	L342	E343	E344	L345	K346	Q347	S348	K349	C412	F349	Q413	Q414	N415	M416	M417	S354	L355	L356	H357	K358	M361	K362	F363	K364	Q365	R366	P367	R368	E369	D432	R433	Q370	A371	A372	E373	N313	T377			
A378	E379	A380	E381	K382	V383	A384	F385	L386	G387	G388	L389	N390	D393	L394	K395	V458	L459	D460	L461	L462	D336	A462	G463	P401	L338	F464	E465	I466	F467	G468	L475	C476	I477	Q414	N415	M416	M417	S354	L355	L356	H357	K358	M361	K362	F363	K364	Q365	R366	P367	R368	E369	D432	R433	Q370	A371	A372	E373	N313	T377				
V439	R440	L441	V442	M443	K444	T445	L446	K449	M452	N453	Y454	Y455	L456	I457	Q458	L459	D460	L461	L462	D336	A462	G463	P401	L338	F464	E465	I466	F467	G468	L475	C476	I477	Q414	N415	M416	M417	S354	L355	L356	H357	K358	M361	K362	F363	K364	Q365	R366	P367	R368	E369	D432	R433	Q370	A371	A372	E373	N313	T377					
K502	E503	G504	I505	A506	N507	E508	F509	L510	D511	F512	G513	M514	L515	L516	Q517	M518	C519	L520	D521	L522	L523	E524	G525	P526	M527	G528	L529	S530	L531	S532	L533	E534	E535	E536	C537	M538	F539	P540	K541	A542	D543	D544	K545	S546	F547	Q548	D549	K550	L551	V552	Q553	N554	H555	E556	M557	N558	R559	M560	M561	F562			
T563	K564	G565	G566	K567	P568	T569	R570	P571	L572	Q573	G574	P575	A576	H577	F578	E579	L580	H581	H582	L583	A584	G585	N586	V587	P588	Y589	S590	I591	L592	T593	S594	K595	E596	K597	N598	K599	D600	P601	L602	N603	E604	N605	V606	V607	A608	L609	L610	L611	S613	K614	G615	P616	L617	G618	L619	A619	V620	E621	L622	PHE	L623	LYS	
ALA	PRO	GLU	GLU	PRO	ALA	GLY	GLY	GLY	LYS	LYS	LYS	GLY	LYS	LYS	SER	SER	ALA	PHE	Q643	T644	I645	S646	A647	V648	H649	R650	E651	S652	L653	M654	K655	N659	L660	L661	T663	H664	P665	P666	F667	V668	N605	C670	I671	P672	P673	N674	E675	L676	K677	Q678	P679	L681	G682	V683	L684	L685	L686						
V687	L688	H689	Q690	L691	K692	C693	M694	G695	V696	L697	E698	G699	I700	R701	I702	C703	R704	A705	K706	G707	P708	S709	R710	L711	L712	Y713	S714	E715	F716	L717	K718	L719	Y720	S721	L722	L723	A724	P725	N726	A727	I728	P729	GLN	GLY	PHE	VAL	D734	R735	G736	K737	T738	S739	E740	K741	L742	L743	A744	I805	G806	L746			
Q747	M748	D749	P750	A751	E752	Y753	R754	L755	G756	T757	L758	K759	V760	F761	F762	K763	A764	G765	V766	L767	L770	E771	E772	L773	M774	R774	F775	R776	F777	L778	S779	K780	I781	I782	S783	M784	F785	Q786	A787	H788	I789	R790	G791	Y792	L793	I794	R795	K796	A797	Y798	K799	K800	L801	Q802	D803	Q804	I805	G806	G807				
L808	S809	I811	Q812	Q813	R814	N814	I815	R816	K817	W818	L819	V820	L821	R822	W823	Q824	Q825	W826	W827	K828	L829	Y830	S831	K832	W833	K834	P835																																				

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

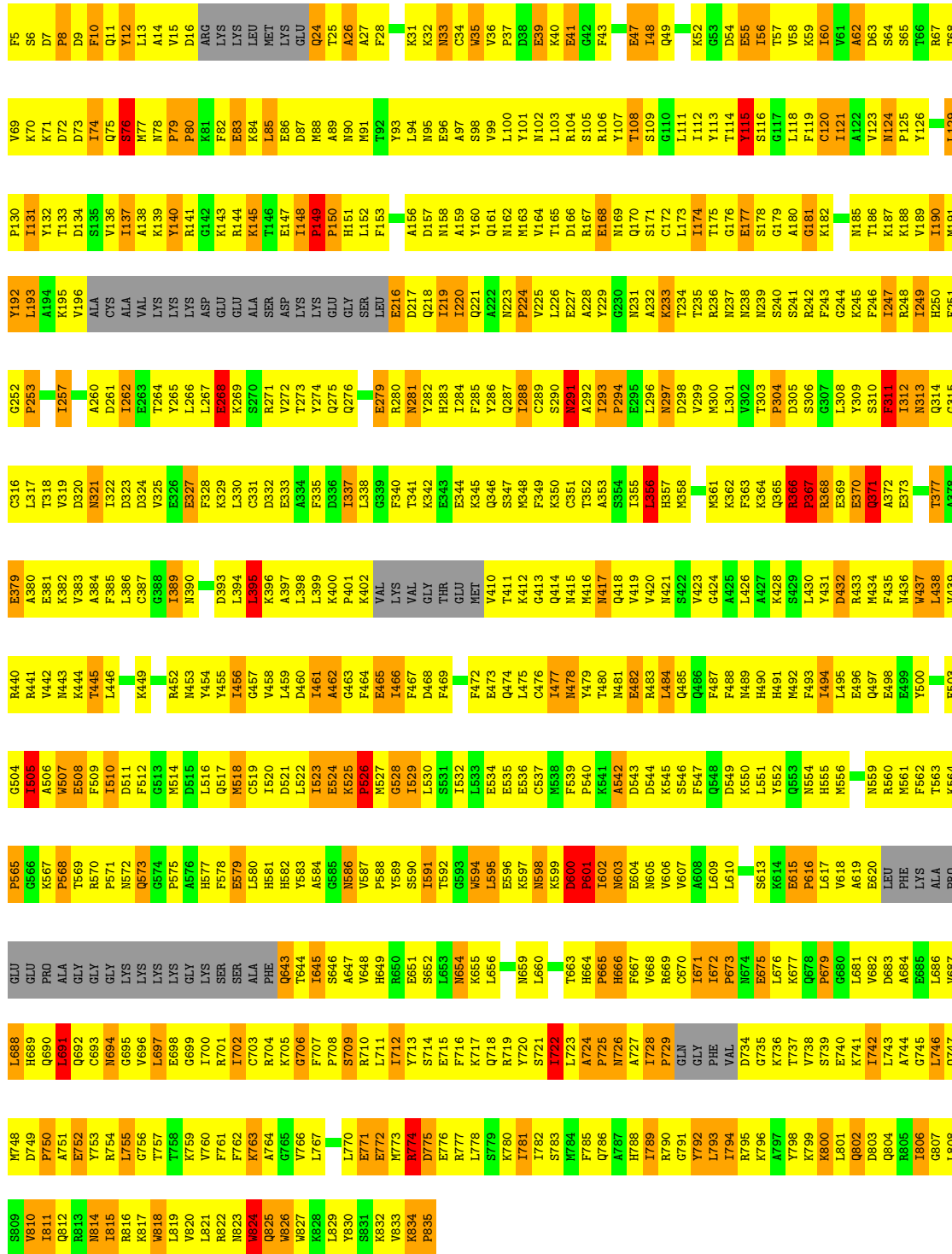


Chain 20-C: 13% 59% 18% 7%

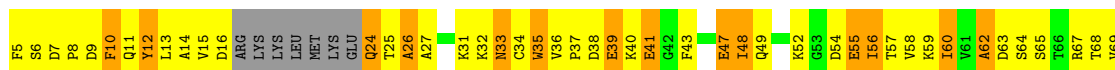
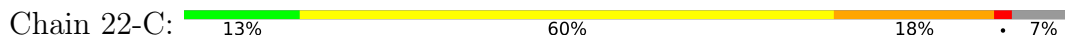
F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	ARG	LYS	LYS	LEU	MET	LYS	GLU	Q24	T25	A26	N90	A27	F28	K31	K32	N33	C34	W35	V36	P37	D38	E39	K40	E41	E42	F43	E47	I48	G10	Q49	K52	S53	D54	E55	I56	T57	V58	K59	I60	V61	A62	D63	S64	S65	F66	R67	T68								
V69	K70	K71	D72	K73	D74	Q75	S76	M77	M78	F79	P80	K81	F82	E83	K84	L85	E86	D87	M88	A89	N90	M91	L92	Y93	L94	N95	E96	A97	S98	V99	L100	Y101	M102	L103	R104	E105	R106	Y107	T108	S109	G110	L111	L112	Y113	T114	E115	S116	G117	L118	F119	C120	I121	A122	V123	M124	K125	P126	L129								
P130	I131	Y132	K133	D134	S135	V136	I137	A138	Y139	K140	R141	G142	K143	R144	K145	T146	S147	L148	F149	P150	H151	L152	F153	A156	D157	M158	L159	Y160	O161	M162	V164	L165	D166	A228	E168	M169	Q170	S171	K233	C172	L173	L174	T175	G176	E177	S178	G179	S240	A180	G181	K182	M185	A186	F187	V188	K187	L188	V189	I190	M191						
Y192	L193	A194	V196	ALA	CYS	ALA	ALA	VAL	LYS	LYS	R141	ASP	GLU	GLU	ALA	ALA	ASP	LYS	LYS	GLU	GLY	SER	F153	E216	D217	Q218	T219	L220	Y160	Q221	Y286	N222	P224	V225	L226	E227	A228	Y229	G230	N231	A232	K233	C172	T234	T235	R236	N237	N238	G176	S240	R241	R242	F243	L308	K245	F246	R248	T249	H250	I190	F251					
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C316	L317	T318	K381	K382	V383	D320	N321	I322	D323	V324	V325	E327	L389	N390	D393	L394	S395	C331	D332	E333	A334	F335	K329	L330	C331	K396	A397	L398	L399	K400	P401	F402	VAL	LYS	VAL	GLY	THR	GLU	MET	V410	T411	K412	C413	Q414	K351	T352	A353	S354	L355	L356	H357	M358	K361	K362	F363	K364	Q365	F366	R368	E369	E370	N434	A372	E373	T377	A378
E379	A380	E381	K382	V383	K444	T445	F385	L386	C387	G388	L389	N390	D393	L394	S395	C331	D332	E333	A334	F335	K329	L330	C331	K396	A397	L398	L399	K400	P401	F402	VAL	LYS	VAL	GLY	THR	GLU	MET	V410	T411	K412	C413	Q414	K351	T352	A353	S354	L355	L356	H357	M358	K361	K362	F363	K364	Q365	F366	R368	E369	E370	N434	A372	E373	T377	A378		
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I811	Q812	R813	N814	I815	R816	K817	M818	L819	V820	L821	R822	N823	M824	Q825	M826	K827	K828	L829	Y830	S831	K832	V833	K834	P835																																										

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

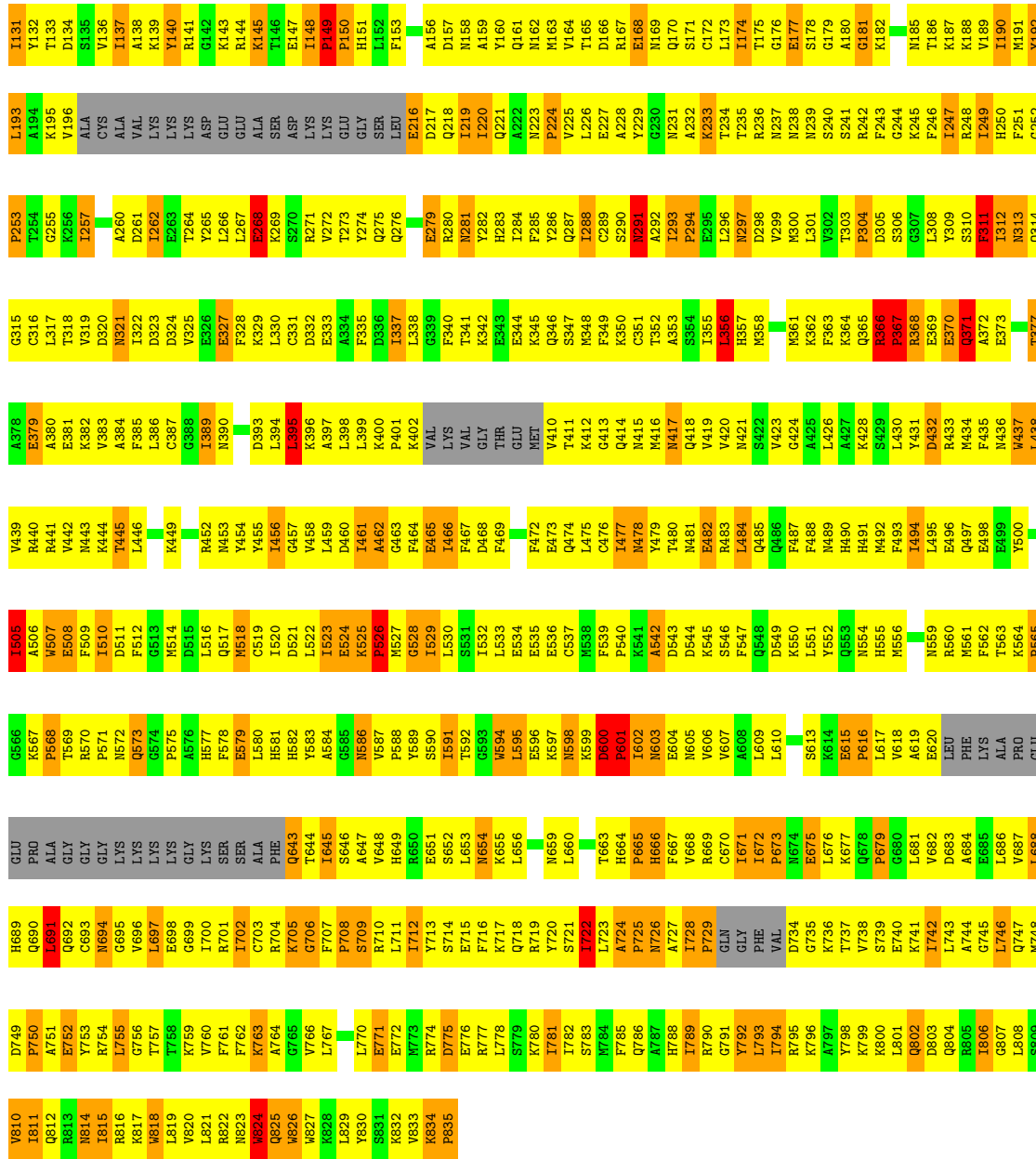
Chain 21-C: 13% 59% 18% 7%



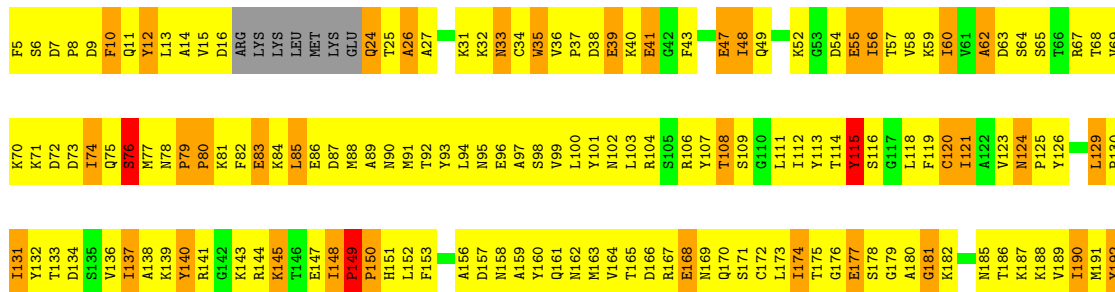
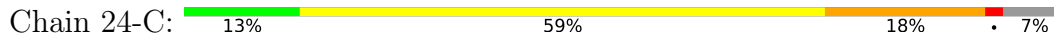
• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



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A194	K195	V196	ALA	CYS	VAL	VAL	LYS	Y140	R141	G142	ASP	GLU	GLU	ALA	SER	ASP	LYS	GLY	GLY	SER	LEU	E216	D217	Q218	I219	I220	A222	N223	P224	V225	L226	E227	A228	Y229	G230	N231	A232	K233	T234	T235	R236	N237	N238	N239	S240	S241	R242	F243	G244	K245	F246	V247	K248	S249	R250	I251	R252	P253																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
T254	G255	F256	I257	A260	D261	I262	E263	T264	Y265	ASP	L266	L267	E268	K269	S270	R271	V272	T273	Y274	Q275	Q276	E279	R280	I281	Y282	I283	I284	F285	M286	Q287	I288	C289	S290	N291	I293	P294	E295	L296	N297	D298	V299	M300	L301	V302	T303	P304	D305	S306	G307	L308	V309	I310	S311	R312	M313	Q314	G315																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
C316	L317	T318	V319	D320	N321	I322	D323	D324	Y325	E326	E327	F328	K329	L330	C331	D332	E333	A334	F335	D336	I337	L338	G339	F340	T341	K342	E343	E344	K345	Q346	Q347	M348	F349	K350	C351	T352	A353	S354	L355	L356	H357	M358	M361	K362	F363	K364	Q365	R366	P367	R368	K245	E369	V309	I370	R371	M372	M373	M374	M375	M376	M377	M378	M379	M380	M381	M382	M383	M384	M385	M386	M387	M388	M389	M390	M391	M392	M393	M394	M395	M396	M397	M398	M399	M400	M401	M402	M403	M404	M405	M406	M407	M408	M409	M410	M411	M412	M413	M414	M415	M416	M417	M418	M419	M420	M421	M422	M423	M424	M425	M426	M427	M428	M429	M430	M431	M432	M433	M434	M435	M436	M437	M438	M439	M440	M441	M442	M443	M444	M445	M446	M447	M448	M449	M450	M451	M452	M453	M454	M455	M456	M457	M458	M459	M460	M461	M462	M463	M464	M465	M466	M467	M468	M469	M470	M471	M472	M473	M474	M475	M476	M477	M478	M479	M480	M481	M482	M483	M484	M485	M486	M487	M488	M489	M490	M491	M492	M493	M494	M495	M496	M497	M498	M499	M500	M501	M502	M503	M504	M505	M506	M507	M508	M509	M510	M511	M512	M513	M514	M515	M516	M517	M518	M519	M520	M521	M522	M523	M524	M525	M526	M527	M528	M529	M530	M531	M532	M533	M534	M535	M536	M537	M538	M539	M540	M541	M542	M543	M544	M545	M546	M547	M548	M549	M550	M551	M552	M553	M554	M555	M556	M557	M558	M559	M560	M561	M562	M563	M564	M565	M566	M567	M568	M569	M570	M571	M572	M573	M574	M575	M576	M577	M578	M579	M580	M581	M582	M583	M584	M585	M586	M587	M588	M589	M590	M591	M592	M593	M594	M595	M596	M597	M598	M599	M600	M601	M602	M603	M604	M605	M606	M607	M608	M609	M610	M611	M612	M613	M614	M615	M616	M617	M618	M619	M620	M621	M622	M623	M624	M625	M626	M627	M628	M629	M630	M631	M632	M633	M634	M635	M636	M637	M638	M639	M640	M641	M642	M643	M644	M645	M646	M647	M648	M649	M650	M651	M652	M653	M654	M655	M656	M657	M658	M659	M660	M661	M662	M663	M664	M665	M666	M667	M668	M669	M670	M671	M672	M673	M674	M675	M676	M677	M678	M679	M680	M681	M682	M683	M684	M685	M686	M687	M688	M689	M690	M691	M692	M693	M694	M695	M696	M697	M698	M699	M700	M701	M702	M703	M704	M705	M706	M707	M708	M709	M710	M711	M712	M713	M714	M715	M716	M717	M718	M719	M720	M721	M722	M723	M724	M725	M726	M727	M728	M729	M730	M731	M732	M733	M734	M735	M736	M737	M738	M739	M740	M741	M742	M743	M744	M745	M746	M747	M748	M749	M750	M751	M752	M753	M754	M755	M756	M757	M758	M759	M760	M761	M762	M763	M764	M765	M766	M767	M768	M769	M770	M771	M772	M773	M774	M775	M776	M777	M778	M779	M780	M781	M782	M783	M784	M785	M786	M787	M788	M789	M790	M791	M792	M793	M794	M795	M796	M797	M798	M799	M800	M801	M802	M803	M804	M805	M806	M807	M808	M809	M810	M811	M812	M813	M814	M815	M816	M817	M818	M819	M820	M821	M822	M823	M824	M825	M826	M827	M828	M829	M830	M831	M832	M833	M834	M835	M836	M837	M838	M839	M840	M841	M842	M843	M844	M845	M846	M847	M848	M849	M850	M851	M852	M853	M854	M855	M856	M857	M858	M859	M860	M861	M862	M863	M864	M865	M866	M867	M868	M869	M870	M871	M872	M873	M874	M875	M876	M877	M878	M879	M880	M881	M882	M883	M884	M885	M886	M887	M888	M889	M890	M891	M892	M893	M894	M895	M896	M897	M898	M899	M900	M901	M902	M903	M904	M905	M906	M907	M908	M909	M910	M911	M912	M913	M914	M915	M916	M917	M918	M919	M920	M921	M922	M923	M924	M925	M926	M927	M928	M929	M930	M931	M932	M933	M934	M935	M936	M937	M938	M939	M940	M941	M942	M943	M944	M945	M946	M947	M948	M949	M950	M951	M952	M953	M954	M955	M956	M957	M958	M959	M960	M961	M962	M963	M964	M965	M966	M967	M968	M969	M970	M971	M972	M973	M974	M975	M976	M977	M978	M979	M980	M981	M982	M983	M984	M985	M986	M987	M988	M989	M990	M991	M992	M993	M994	M995	M996	M997	M998	M999	M1000	M1001	M1002	M1003	M1004	M1005	M1006	M1007	M1008	M1009	M1010	M1011	M1012	M1013	M1014	M1015	M1016	M1017	M1018	M1019	M1020	M1021	M1022	M1023	M1024	M1025	M1026	M1027	M1028	M1029	M1030	M1031	M1032	M1033	M1034	M1035	M1036	M1037	M1038	M1039	M1040	M1041	M1042	M1043	M1044	M1045	M1046	M1047	M1048	M1049	M1050	M1051	M1052	M1053	M1054	M1055	M1056	M1057	M1058	M1059	M1060	M1061	M1062	M1063	M1064	M1065	M1066	M1067	M1068	M1069	M1070	M1071	M1072	M1073	M1074	M1075	M1076	M1077	M1078	M1079	M1080	M1081	M1082	M1083	M1084	M1085	M1086	M1087	M1088	M1089	M1090	M1091	M1092	M1093	M1094	M1095	M1096	M1097	M1098	M1099	M1100	M1101	M1102	M1103	M1104	M1105	M1106	M1107	M1108	M1109	M1110	M1111	M1112	M1113	M1114	M1115	M1116	M1117	M1118	M1119	M1120	M1121	M1122	M1123	M1124	M1125	M1126	M1127	M1128	M1129	M1130	M1131	M1132	M1133	M1134	M1135	M1136	M1137	M1138	M1139	M1140	M1141	M1142	M1143	M1144	M1145	M1146	M1147	M1148	M1149	M1150	M1151	M1152	M1153	M1154	M1155	M1156	M1157	M1158	M1159	M1160	M1161	M1162	M1163	M1164	M1165	M1166	M1167	M1168	M1169	M1170	M1171	M1172	M1173	M1174	M1175	M1176	M1177	M1178	M1179	M1180	M1181	M1182	M1183	M1184	M1185	M1186	M1187	M1188	M1189	M1190	M1191	M1192	M1193	M1194	M1195	M1196	M1197	M1198	M1199	M1200	M1201	M1202	M1203	M1204	M1205	M1206	M1207	M1208	M1209	M1210	M1211	M1212	M1213	M1214	M1215	M1216	M1217	M1218	M1219	M1220	M1221	M1222	M1223	M1224	M1225	M1226	M1227	M1228	M1229	M1230	M1231	M1232	M1233	M1234	M1235	M1236	M1237	M1238	M1239	M1240	M1241	M1242	M1243	M1244	M1245	M1246	M1247	M1248	M1249	M1250	M1251	M1252	M1253	M1254	M1255	M1256	M1257	M1258	M1259	M1260	M1261	M1262	M1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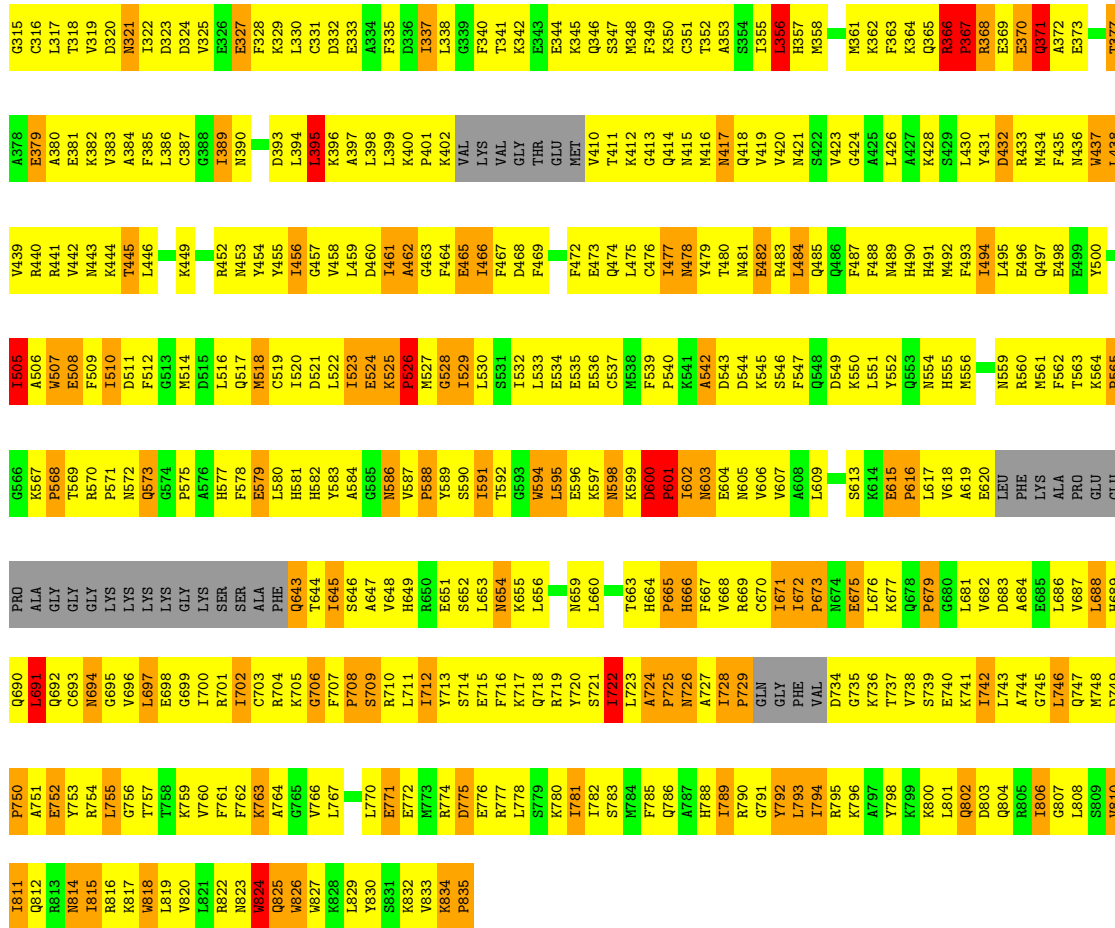


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

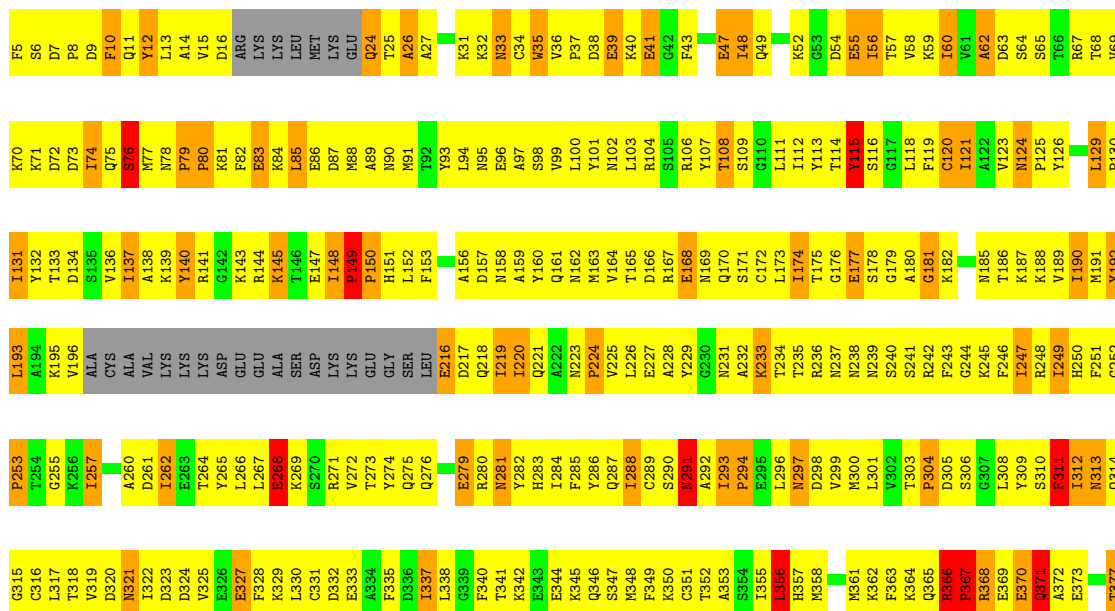
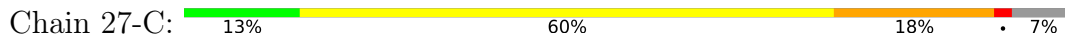








• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE







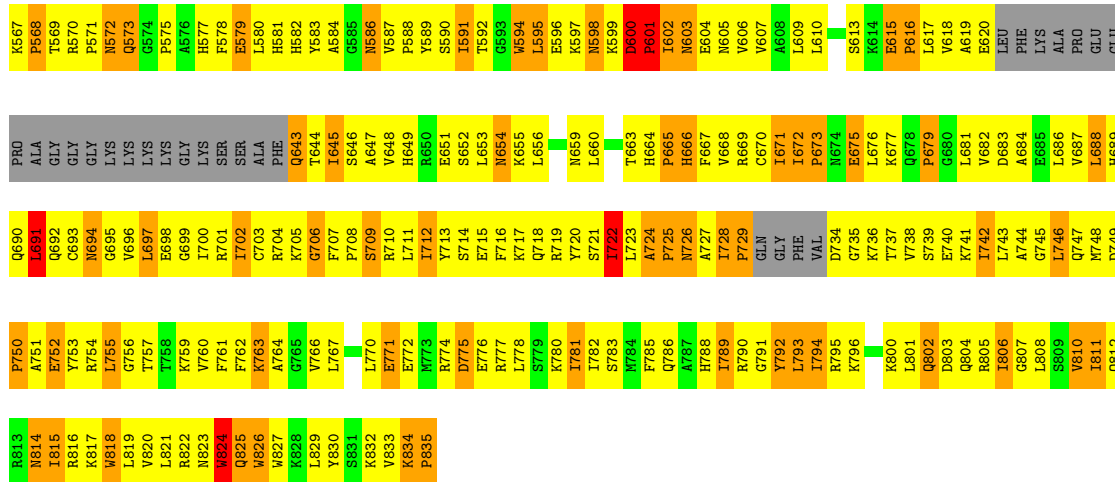


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G504	P565	GLU	H688	M748	S809
I505	G566	GLU	L689	M749	V810
A506	P567	GLY	P690	P750	I811
M507	P568	ALA	L691	A751	Q812
E508	T569	GLY	G692	E752	R813
F509	R570	GLY	C693	Y753	M814
I510	P571	GLY	M694	R754	L815
F512	M572	LYS	L695	L755	R816
F512	Q573	LYS	V696	G756	K817
G513	G574	LYS	L697	T757	M818
M514	F575	LYS	E698	T758	L819
D515	A576	GLY	G699	K759	V820
L516	H577	LYS	I700	V760	L821
Q517	F578	SER	R701	L761	R822
M518	E579	SER	I702	F762	M823
C519	L580	ALA	C703	K763	M824
I520	H581	PHE	R704	A764	Q825
D521	H582	Q643	K705	G765	M826
L522	Y583	T644	G706	V766	R827
I523	A584	I645	F707	L767	R828
E524	G585	S646	P708	L767	L829
K525	N586	A647	S709	Y830	Y830
P526	V587	V648	R710	E771	S831
M527	P588	H649	L711	E772	K832
G528	Y589	R650	I712	M773	R833
I529	S590	L651	Y713	R774	H834
L530	I591	S652	S714	D775	W356
S531	T592	L653	E715	E776	V366
I532	G593	M654	F716	R777	P377
L533	N594	K655	K717	L778	D388
E534	L595	L656	Q718	S779	E399
E536	K597	M659	R719	I781	K400
C537	N598	L660	Y720	E782	E411
M538	K599	L660	S721	I783	S105
F539	D600	T663	I722	S783	G42
P540	P601	H664	L723	M784	F43
K541	I602	P665	A724	F785	E47
A542	N603	H666	P725	Q786	I48
D543	E604	H666	N726	A787	Q49
D544	F667	H668	A727	H788	G52
K545	N605	V668	I728	I789	K52
S546	V606	R669	P729	R790	G53
F547	A608	C670	GLN	G791	D54
Q548	L609	I671	D734	Y792	E55
D549	L610	P672	PHE	L793	L56
K550	L610	P673	VAL	I794	T57
L551	S613	M674	R795	R795	V58
Y552	K614	E675	K796	A797	K59
Q553	E615	L676	K796	K797	I60
H554	P616	K677	Y798	Y798	V61
M555	L617	Q678	K799	K799	A62
M556	L617	P679	K800	S739	D63
L619	V619	G680	L801	N124	S65
E620	A619	L681	K741	S65	T66
R560	E620	V682	I742	D803	R67
M561	LEU	D683	L743	R804	L129
F562	PHE	A684	A744	R805	T68
	LYS	E685	G745	I806	V69

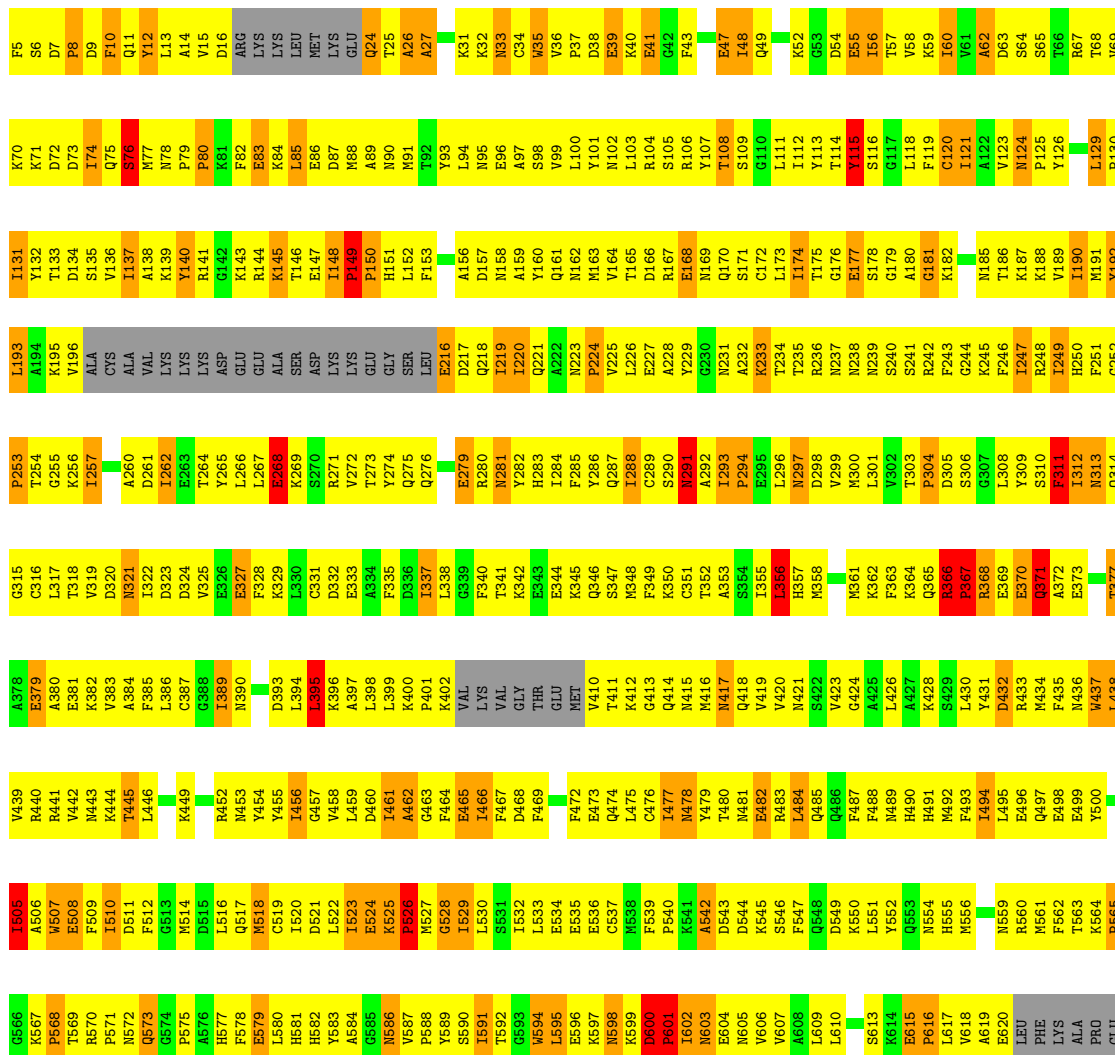
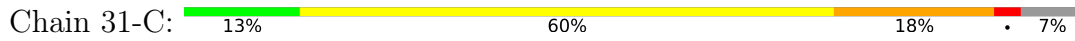
• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



F5	K70	I131	A194	T254	C316	E379	R440	A506
S6	K71	Y132	K195	G255	L317	A380	R441	M507
D7	D72	T133	V196	R256	T318	E381	V442	E508
P8	D73	ALA	ALA	I257	V319	K382	N443	F509
D9	I74	V136	CVS	A260	D320	V383	K444	I510
F10	Q75	I137	VAL	D261	N321	A384	T445	D511
Q11	S76	A138	LVS	D262	I322	F385	L446	F512
Y12	M77	K139	LVS	E263	D323	L386	K449	G513
L13	R78	Y140	LVS	I264	V324	C387		M514
A14	M79	R141	LVS	T265	V325	G388		L516
V15	P80	G142	ASP	Y266	E326	I389	R452	D515
D16	K81	K143	GLU	L266	E327	N390	M453	F517
ARG	E82	R144	GLU	L267	F328	Y454	Y454	Q517
LYS	E83	K145	ALA	E268	K329	D393	Y455	M518
LVS	R84	T146	SER	K269	L330	L394	I456	C519
LVS	K85	E147	ASP	R270	C331	I520	L456	I520
LEU	R86	I148	LVS	E271	D332	L395	G457	D521
MET	D87	P149	LVS	R272	E333	K396	V458	L522
LVS	M88	P150	GLU	T273	A334	A397	L459	I523
Q24	A89	H151	GLY	Y274	F335	L398	D460	E524
T25	N90	F153	SER	Q275	D336	L399	I461	K525
A26	R91	E216	LEU	Q276	L337	K400	G462	P526
A27	T92	E217	LEU	E279	L338	P401	F463	M527
K31	L94	D217	Q218	R280	G339	VAL	E465	I529
K32	R95	D157	I219	M281	F340	LVS	I466	L530
N33	E96	M158	T220	Y282	T341	GLY	F467	S531
C34	A97	A159	Q221	H283	K342	THR	D468	I532
W35	S98	Y160	A222	L284	E343	GLU	F469	L533
V36	N99	Q161	N223	F285	E344	MET	F472	E534
P37	L100	M162	N224	V286	K345		E473	E535
D38	Y101	P224	V225	Q287	Q346		Q474	E536
E39	M102	V164	V225	I288	S347		T411	C537
K40	L103	T165	L226	E288	M348		K412	M538
E41	R104	D166	E227	C289	F349		Q413	F539
G42	E41	E167	Y229	S290	A477		I477	P540
F43	S105	R167	E168	R291	N415		N478	K541
E47	I107	M169	G230	A292	M416		Y479	A542
I48	T108	Q170	N231	I293	M417		T480	D543
Q49	S109	C172	A232	P294	Q418		M481	D544
G52	G110	C172	K233	E295	V419		E482	K545
D54	L111	L174	T234	L296	V420		R483	S546
E55	L112	I174	T235	M297	M421		L484	F547
V58	Y113	T175	R236	D298	S422		Q485	Q548
K59	F113	G175	N237	V299	V423		Q486	D549
I60	C120	E177	N238	M300	G424		F487	K550
V61	I121	M185	N239	L301	Y431		A425	L551
A62	A122	T186	S240	V302	D432		L426	Y552
D63	G117	S116	S241	T303	L427		H490	Q553
S65	L118	A180	R242	P304	K428		H491	M554
S65	F119	K182	F243	D305	S429		M492	H555
T66	C120	K182	G244	S306	L430		F493	M556
R67	I121	M185	K245	G307	Y431		I494	
V69	A122	T186	R245	L308	D432		L495	N559
	A122	S116	F246	V309	R432		E495	R560
	N123	G117	L247	S310	R433		M496	F561
	N124	K188	I249	F311	M434		Q497	M561
	P125	V189	I249	S311	F435		E498	F562
	Y126	I190	H250	I312	M436		E499	T563
	L129	M191	G251	N313	M437		Y500	K564
	P130	Y192	G252	Q314	L438		I505	P565
		L193	P253	G315	V439			G566



● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



GLU	H689	D749	I811
PRO	Q690	P750	Q812
ALA	L691	A751	R813
GLY	Q692	E752	N814
GLY	C693	R753	I815
GLY	N694	R754	R816
LYS	G695	L755	K817
LYS	V696	L756	W818
LYS	V697	T757	L819
LYS	E698	T758	L820
LYS	G699	K759	L821
LYS	I700	V760	R822
SER	R701	F761	M823
SER	I702	F762	W824
ALA	C703	K763	Q825
ALA	R704	A764	W826
PHE	T644	R765	W827
Q643	G706	V766	K828
T644	I645	L767	L829
I645	F707	G768	Y830
S646	S708	N769	S831
A647	S709	L770	N832
V648	H649	E771	W833
H649	L711	E772	K834
E651	I712	M773	P835
E651	E651	R774	
S652	S714	D775	
M654	E715	E776	
L656	F716	R777	
L656	K717	L778	
L656	L718	S779	
L656	R719	K780	
L659	Y720	I781	
L660	S721	I782	
L660	L723	S783	
T663	A724	N784	
H664	P725	F785	
P665	N726	Q786	
H666	A727	A787	
H666	I728	H788	
F667	P729	I789	
F667	C670	R790	
C670	GLN	R791	
C670	GLY	Y792	
I671	PHE	L793	
I672	VAL	I794	
P673	D734	R795	
P673	G735	K796	
N674	K736		
E675	T737		
E675	K677		
E675	L676		
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E675	L685		
E675	L686		
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• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 32-C: 13% 59% 18% 7%

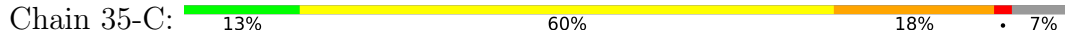
F5	K70	I131	L193	P253	G315	A378	V439	L505	G566	PRO
S6	K71	Y132	A194	T254	C316	E379	R440	A506	K567	ALA
D7	D72	T133	K195	G255	L317	A380	R441	W507	G568	GLY
P8	D73	D134	V196	K256	T318	E381	V442	E508	T569	GLY
D9	D74	S135	ALA	I257	V319	K382	K443	F509	R570	GLY
F10	I75	L136	CVS	A260	D320	V383	K444	I510	P571	LYS
O11	S76	I137	ALA	A261	N321	A384	T445	D511	N572	LYS
Y12	M77	A138	VAL	D261	I322	F385	L446	F512	Q573	LYS
L13	M78	K139	LYS	L262	D323	L386	K449	G513	G574	LYS
A14	P79	Y140	LYS	E263	D324	C387		M514	A575	LYS
V15	P80	R141	LYS	E264	V325	G388	R452	L516	A576	LYS
D16	K81	G142	ASP	V265	E326	I389	R453	L517	H577	SER
ARG	F82	K143	GLU	L266	E327	N390	Y454	M518	M578	SER
LYS	E83	R144	GLU	L267	F328				E579	ALA
LYS	K84	K145	ALA	E268	K329	D393	V455	C519	L580	PHE
LYS	L85	T146	SER	K269	L330	L394	I456	I520	H581	Q643
LEU	E86	E147	ASP	R270	C331	L395	G457	D521	H582	T644
MET	D87	I148	LYS	S271	D332	K396	V458	L522	Y583	I645
LYS	M88	P149	LYS	V272	E333	A397	L459	I523	A584	S646
GLU	A89	P150	GLU	T273	A334	L398	D460	E524	G855	A647
Q24	N90	F151	GLY	Y274	F335	L399	I461	K525	V468	V648
T25	N91	F152	SER	Q275	D336	K400	A462	P526	H649	H649
A26	N92	F153	LEU	Q276	I337	P401	G463	M527	P888	R650
A27	Y93	E216	LEU	E279	G338	K402	E465	G528	S590	E651
K31	L94	A156	E217	R280	F340	LYS	I466	L530	I591	L653
K32	N95	D157	Q218	R281	T341	VAL	F467	S531	T592	L654
N33	E96	N158	I219	M281	K412	VAL	D468	I532	G593	K655
C34	A97	A159	L220	Y282	L342	GLY	F469	L533	W594	L656
W35	S98	Y160	Q221	H283	E343	THR		L534	L656	
V36	N99	Q161	A222	L284	E344	GLU		E534		
P37	L100	G162	A223	F285	K345	MET		E535		
D38	Y101	M163	N224	Y286	Q346	V410	F472	E536		
E39	M102	V164	V225	Q287	S347	T411	Q474	C537		
K40	L103	L165	L226	R288	M348	K412	L475	M538		
E41	R104	D166	E227	C289	F349	G413	C476	F539		
S105	S105	R167	A228	S290	K350	Q414	I477	P540		
G42	R106	E168	Y229	N291	C351	M415	M478	K541		
F43	Y107	N169	G330	A292	T352	M416	Y479	A542		
E47	T108	Q170	N231	I293	A353	M417	T480	D542		
L48	S109	S171	A232	P294	S354	Q418	D481	D544		
Q49	G110	C172	K233	E295	I355	V419	E482	K545		
K52	L111	L173	T234	L296	L356	V420	R483	S546		
G53	Y112	I174	T235	N297	H357	M421	L484	F547		
D54	Y113	T175	R236	D298	M358	S422	Q485	Q548		
E55	L114	G176	M237	V299		V423	Q486	D549		
S116	Y115	E177	M238	M300	M361	G424	F487	K550		
T57	G117	S178	N239	L301	K362	A425	F488	L551		
V58	L118	A180	S240	V302	F363	L426	N489	Y552		
K59	F119	I181	S241	T303	K364	A427	H490	Q553		
L60	C120	K182	R242	P304	Q365	K428	H491	N554		
V61	I121	A122	F243	D305	R366	S429	M492	H555		
A62	A122	A62	G244	S306	P367	L430	F493	M556		
D63	G123	L186	K245	G307	R368	Y431	I494	L557		
S64	N124	F246	F246	L308	E369	D432	L495	N559		
S65	P125	K187	I247	Y309	E370	R433	E496	R560		
G66	Y126	L188	S310	S310	Q371	M434	Q497	M561		
R67	L129	V189	I249	F311	A372	F435	E498	F562		
T68	L129	I190	H250	L312	E373	M436	E499	T563		
V69	P130	M191	G252	Q314	T377	V437	Y500	K564		





V810	I811	Q812	R813	I814	I815	R816	K817	W818	V819	W820	L821	R822	N823	W824	Q825	W826	W827	K828	L829	Y830	K831	K832	V833	K834	P835
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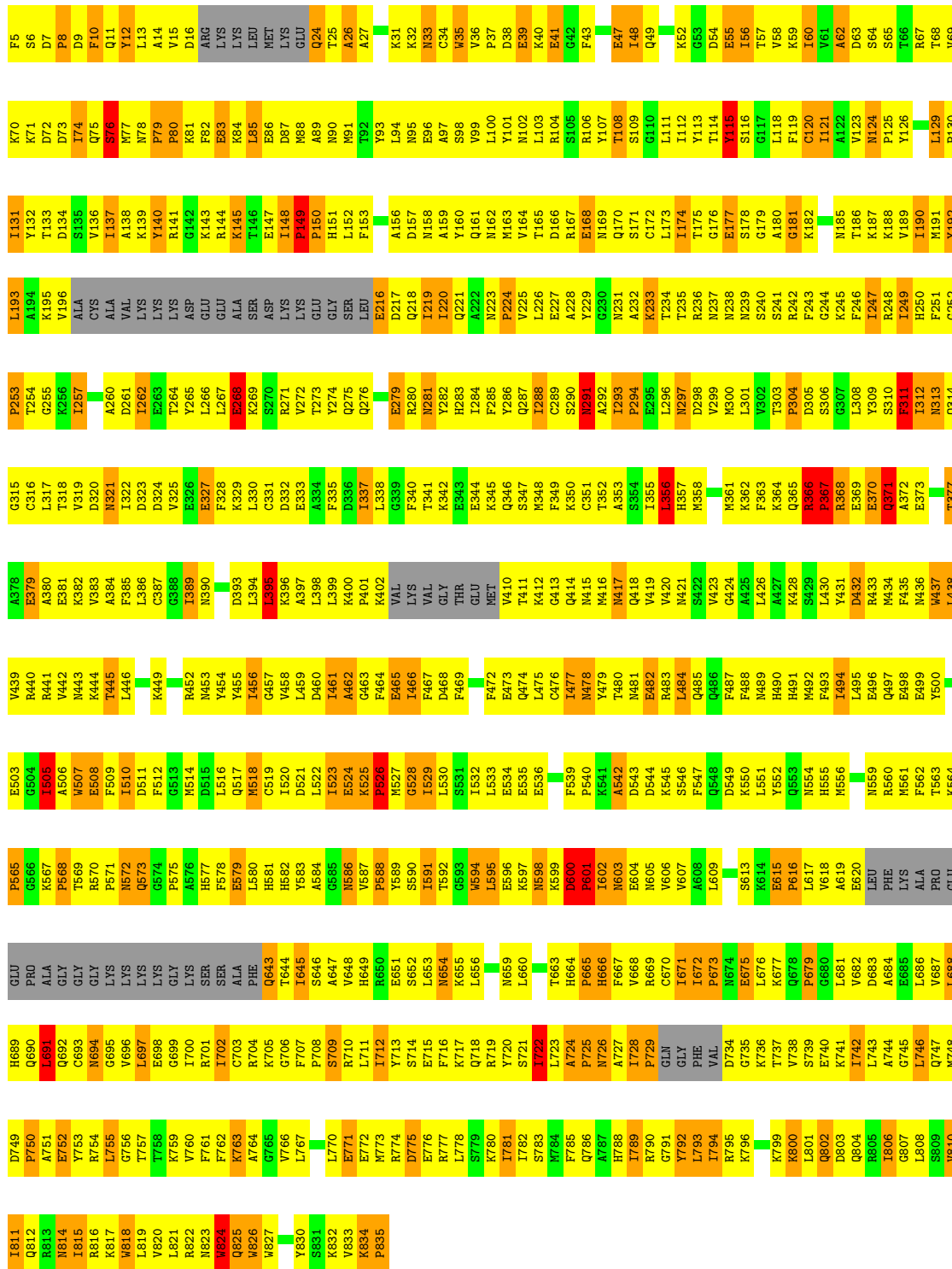
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



F5	S6	D7	F8	D9	F10	Q11	Y12	L13	A14	V15	D16	ARG	LYS	LYS	LEU	MET	LYS	GLY	Q24	T25	A26	A27	Y93	K31	K32	R33	C34	W35	V36	P37	D38	E39	K40	E41	S105	G42	F43	E47	I48	Q49	L111	L112	L113	D54	E55	S56	T57	V58	K59	I60	V61	A62	D63	S64	S65	T66	R67	T68	V69						
K70	K71	D72	D73	I74	Q75	R76	R77	M78	P79	R80	K81	F82	E83	R84	L85	E86	D87	M88	A89	N90	R91	I92	Y93	L94	N95	E96	A97	W98	V99	L100	L101	N102	L103	R104	E105	R106	Y107	T108	S109	C172	L173	L111	L112	L113	T114	Y115	S116	G117	L118	F119	C120	I121	A122	V123	K187	M124	P125	V126	L129	T130					
I131	Y132	T133	D134	V135	I137	A138	K139	Y140	P141	L142	G143	R144	A145	T146	S147	P148	L149	P150	H151	L152	R153	E216	D217	Q218	I219	A159	Q221	Q161	Q222	N223	P224	V225	L226	E227	A228	Y229	E230	N231	A232	K233	L234	T235	L174	T175	G176	E177	S178	G179	A180	G181	K182	M185	A122	T186	V123	K187	M124	P125	V126	L189	I190	M191	L129	T130	G252
L193	A194	K195	V196	ALA	CYS	ALA	VAL	LYS	LYS	LYS	ASP	GLU	GLU	ALA	SER	ASP	LYS	GLY	SER	LEU	E216	D217	Q218	I219	A159	Q221	Q161	Q222	N223	P224	V225	L226	E227	A228	Y229	E230	N231	A232	K233	L234	T235	L174	T175	G176	E177	S178	G179	A180	G181	K182	M185	A122	T186	V123	K187	M124	P125	V126	L189	I190	M191	L129	T130	G252	
P253	T254	G255	K256	I257	A260	D261	I262	E263	T264	Y265	G266	L267	E268	K269	S270	R271	V272	T273	Y274	Q275	Q276	E279	R280	N281	Y282	H283	I284	F285	P286	Y287	L288	C289	S290	N291	A292	I293	P294	E295	L296	N297	D298	V299	K300	L301	N239	S240	S241	R242	F243	G244	K307	F246	Y309	I247	S310	R248	T249	H250	F251	I312	Q314				
G315	C316	L317	T318	V319	D320	N321	I322	D323	V324	V325	E326	E327	F328	K329	L330	C331	D332	E333	A334	F335	D336	L337	L338	G339	F340	T341	Y342	E343	E344	L345	Q346	S347	K348	F349	K350	C351	T352	A353	S354	L355	L356	H357	K358	M361	K362	F363	K364	Q365	R366	P367	L430	Y431	E369	E370	O371	A372	E373	T377							
A378	E379	A380	E381	K382	V383	A384	F385	L386	C387	G388	L389	N390	D393	L394	L395	K396	D397	A397	L398	L399	K400	A401	L402	VAL	LYS	VAL	GLY	THR	GLU	MET	V410	T411	K412	C413	Q414	N415	M416	M417	Q418	V419	V420	N421	S422	V423	G424	A425	L426	A427	K428	S429	L430	Y431	D432	R433	M434	F435	M436	N437	L438						
V439	R440	L441	V442	M443	K444	T445	L446	K449	M452	M453	Y454	Y455	I456	Q457	L458	V459	L460	D461	A462	G463	P464	F464	A465	I466	F467	D468	F469	F472	E473	Q474	L475	C476	I477	M478	Y479	T480	M481	E482	R483	L484	D544	Q485	Q486	F487	M489	H490	H491	M492	F493	L494	I495	L496	H554	H555	M556	N559	R560	M561	Y500	F562					
K502	E503	G504	R505	A506	N507	E508	F509	L510	D511	F512	G513	M514	M515	L516	Q517	M518	L519	L520	D521	L522	L523	E524	K525	P526	M527	G528	L529	I530	S531	L532	L533	E534	E535	F536	N537	M538	F539	P540	K541	A542	D543	D544	S545	S546	F547	Q548	D549	K550	L551	Y552	Q553	N554	H555	M556	N559	R560	M561	Y500	F562						
T563	K564	P565	G566	K567	P568	T569	R570	P571	L572	Q573	G574	P575	A576	H577	F578	E579	L580	H581	H582	L583	A584	G585	N586	V587	P588	Y589	S590	I591	L592	T593	G594	E595	K596	N597	K598	K599	D600	P601	L602	N603	E604	N605	V606	V607	A608	L609	L610	S613	K614	G615	P616	L617	G618	G680	L681	V682	L683	PHE	A684	LYS					
ALA	PRO	GLU	GLU	PRO	ALA	GLY	GLY	GLY	LYS	LYS	LYS	LYS	GLY	LYS	SER	SER	ALA	PHE	Q643	T644	I645	S646	A647	V648	H649	R650	E651	S652	L653	M654	K655	L656	M659	L660	T663	H664	P665	H666	F667	V668	R669	C670	I671	P672	P673	L674	E675	L676	K677	Q678	P679	G680	L681	V682	L683	PHE	A684	LYS							
L686	V687	L688	H689	Q690	L691	R692	C693	M694	G695	V696	L697	E698	G699	I700	R701	I702	C703	R704	K705	G706	F707	P708	S709	R710	S711	L712	Y713	E714	S715	L716	K717	L718	R719	Y720	S721	I722	L723	A724	F725	N726	H727	I728	P729	GLN	GLY	PHE	VAL	D734	G735	K736	T737	V738	S739	K740	E741	L742	L743	A744	I805	G745					
L746	Q747	M748	D749	P750	A751	E752	Y753	R754	L755	G756	T757	T758	K759	V760	F761	R762	K763	A764	G765	L770	E771	E772	M773	D774	D775	E776	L777	L778	S779	R780	I781	Y782	S783	M784	F785	Q786	A787	H788	I789	R790	G791	Y792	L793	I794	R795	K796	K799	K800	L801	Q802	D803	Q804	I805	I806	G807										
L808	S809	I810	Q811	R812	R813	I814	I815	R816	K817	W818	L819	R820	L821	R822	N823	W824	Q825	W826	W827	K828	L829	Y830	S831	K832	V833	K834	P835																																						

● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 36-C: 13% 59% 18% 7%



• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

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



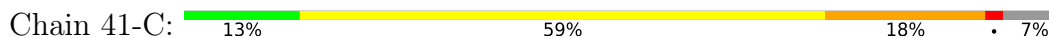


K70	K71	D72	D73	I74	O75	S76	M77	M78	P79	P80	K81	F82	E83	K84	K85	E86	D87	M88	A89	M90	L91	L92	Y93	L94	M95	E96	A97	S98	V99	L100	L101	M102	L103	R104	R105	S106	L107	T108	T109	S110	G111	L112	L113	T114	Y115	S116	G117	L118	F119	C120	C121	I122	A123	T124	K125	M126	L127	L128	M129	P130																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
L131	Y132	K133	D134	S135	L136	L137	A138	L139	Y140	L141	G142	K143	R144	K145	L146	E147	L148	P149	P150	H151	N152	L153	F154	E155	A156	D157	M158	A159	Q160	Q161	M162	M163	V164	L165	D166	R167	E168	M169	Q170	S171	C172	L173	L174	L175	T176	G177	E178	S179	S240	A180	G181	K182	M185	T186	K187	M188	P189	L190	M191	Y192																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
L193	A194	K195	V196	ALA	CYS	ALA	VAL	LYS	LYS	LYS	ASP	GLU	GLU	ALA	SER	ASP	LYS	LYS	GLY	SER	LEU	E216	E217	D218	I219	I220	Q221	A222	N223	P224	V225	L226	E227	A228	Y229	G230	N231	A232	K233	T234	T235	R236	N237	M238	N239	S240	S241	R242	F243	G244	K245	F246	I247	Y309	R248	S310	F311	I312	H250	F251	G252																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
P253	T254	G255	K256	I257	A260	D261	L262	E263	T264	Y265	ASP	L266	L267	E268	K269	S270	R271	V272	T273	Y274	Q275	Q276	E279	R280	M281	I282	H283	I284	N285	Y286	Q287	I288	C289	S290	N291	A292	L293	P294	E295	L296	N297	D298	V299	M300	L301	V302	T303	K304	D305	P306	G307	R308	L309	E309	E310	F311	I312	F251	Q314																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
G315	C316	L317	T318	V319	D320	M321	I322	D323	D324	L325	E326	F327	F328	K329	L330	C331	D332	E333	A334	F335	D336	I337	L338	G339	F340	T341	K342	E343	G344	K345	Q346	S347	M348	F349	K350	C351	T352	S353	L354	L355	L356	H357	M358	M361	K362	F363	K364	Q365	K366	P367	R368	E369	E370	R371	A372	E373	L438	T377																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
A378	E379	A380	E381	K382	V383	A384	F385	L386	C387	G388	I389	M390	D393	L394	L395	K396	D397	A398	L399	K400	P401	K402	VAL	LYS	VAL	VAL	G412	T411	K412	L413	Q414	L415	M416	M417	M418	M419	M420	M421	M422	M423	G424	A425	L426	A427	K428	S429	L430	Y431	D432	R433	R434	E435	M436	M437	M438	M439	M440	M441	M442	M443	M444	M445	M446	M447	M448	M449	M450	M451	M452	M453	M454	M455	M456	M457	M458	M459	M460	M461	M462	M463	M464	M465	M466	M467	M468	M469	M470	M471	M472	M473	M474	M475	M476	M477	M478	M479	M480	M481	M482	M483	M484	M485	M486	M487	M488	M489	M490	M491	M492	M493	M494	M495	M496	M497	M498	M499	M500	M501	M502	M503	M504	M505	M506	M507	M508	M509	M510	M511	M512	M513	M514	M515	M516	M517	M518	M519	M520	M521	M522	M523	M524	M525	M526	M527	M528	M529	M530	M531	M532	M533	M534	M535	M536	M537	M538	M539	M540	M541	M542	M543	M544	M545	M546	M547	M548	M549	M550	M551	M552	M553	M554	M555	M556	M557	M558	M559	M560	M561	M562	M563	M564	M565	M566	M567	M568	M569	M570	M571	M572	M573	M574	M575	M576	M577	M578	M579	M580	M581	M582	M583	M584	M585	M586	M587	M588	M589	M590	M591	M592	M593	M594	M595	M596	M597	M598	M599	M600	M601	M602	M603	M604	M605	M606	M607	M608	M609	M610	M611	M612	M613	M614	M615	M616	M617	M618	M619	M620	M621	M622	M623	M624	M625	M626	M627	M628	M629	M630	M631	M632	M633	M634	M635	M636	M637	M638	M639	M640	M641	M642	M643	M644	M645	M646	M647	M648	M649	M650	M651	M652	M653	M654	M655	M656	M657	M658	M659	M660	M661	M662	M663	M664	M665	M666	M667	M668	M669	M670	M671	M672	M673	M674	M675	M676	M677	M678	M679	M680	M681	M682	M683	M684	M685	M686	M687	M688	M689	M690	M691	M692	M693	M694	M695	M696	M697	M698	M699	M700	M701	M702	M703	M704	M705	M706	M707	M708	M709	M710	M711	M712	M713	M714	M715	M716	M717	M718	M719	M720	M721	M722	M723	M724	M725	M726	M727	M728	M729	M730	M731	M732	M733	M734	M735	M736	M737	M738	M739	M740	M741	M742	M743	M744	M745	M746	M747	M748	M749	M750	M751	M752	M753	M754	M755	M756	M757	M758	M759	M760	M761	M762	M763	M764	M765	M766	M767	M768	M769	M770	M771	M772	M773	M774	M775	M776	M777	M778	M779	M780	M781	M782	M783	M784	M785	M786	M787	M788	M789	M790	M791	M792	M793	M794	M795	M796	M797	M798	M799	M800	M801	M802	M803	M804	M805	M806	M807	M808	M809	M810	M811	M812	M813	M814	M815	M816	M817	M818	M819	M820	M821	M822	M823	M824	M825	M826	M827	M828	M829	M830	M831	M832	M833	M834	M835	M836	M837	M838	M839	M840	M841	M842	M843	M844	M845	M846	M847	M848	M849	M850	M851	M852	M853	M854	M855	M856	M857	M858	M859	M860	M861	M862	M863	M864	M865	M866	M867	M868	M869	M870	M871	M872	M873	M874	M875	M876	M877	M878	M879	M880	M881	M882	M883	M884	M885	M886	M887	M888	M889	M890	M891	M892	M893	M894	M895	M896	M897	M898	M899	M900	M901	M902	M903	M904	M905	M906	M907	M908	M909	M910	M911	M912	M913	M914	M915	M916	M917	M918	M919	M920	M921	M922	M923	M924	M925	M926	M927	M928	M929	M930	M931	M932	M933	M934	M935	M936	M937	M938	M939	M940	M941	M942	M943	M944	M945	M946	M947	M948	M949	M950	M951	M952	M953	M954	M955	M956	M957	M958	M959	M960	M961	M962	M963	M964	M965	M966	M967	M968	M969	M970	M971	M972	M973	M974	M975	M976	M977	M978	M979	M980	M981	M982	M983	M984	M985	M986	M987	M988	M989	M990	M991	M992	M993	M994	M995	M996	M997	M998	M999	M1000	M1001	M1002	M1003	M1004	M1005	M1006	M1007	M1008	M1009	M1010	M1011	M1012	M1013	M1014	M1015	M1016	M1017	M1018	M1019	M1020	M1021	M1022	M1023	M1024	M1025	M1026	M1027	M1028	M1029	M1030	M1031	M1032	M1033	M1034	M1035	M1036	M1037	M1038	M1039	M1040	M1041	M1042	M1043	M1044	M1045	M1046	M1047	M1048	M1049	M1050	M1051	M1052	M1053	M1054	M1055	M1056	M1057	M1058	M1059	M1060	M1061	M1062	M1063	M1064	M1065	M1066	M1067	M1068	M1069	M1070	M1071	M1072	M1073	M1074	M1075	M1076	M1077	M1078	M1079	M1080	M1081	M1082	M1083	M1084	M1085	M1086	M1087	M1088	M1089	M1090	M1091	M1092	M1093	M1094	M1095	M1096	M1097	M1098	M1099	M1100	M1101	M1102	M1103	M1104	M1105	M1106	M1107	M1108	M1109	M1110	M1111	M1112	M1113	M1114	M1115	M1116	M1117	M1118	M1119	M1120	M1121	M1122	M1123	M1124	M1125	M1126	M1127	M1128	M1129	M1130	M1131	M1132	M1133	M1134	M1135	M1136	M1137	M1138	M1139	M1140	M1141	M1142	M1143	M1144	M1145	M1146	M1147	M1148	M1149	M1150	M1151	M1152	M1153	M1154	M1155	M1156	M1157	M1158	M1159	M1160	M1161	M1162	M1163	M1164	M1165	M1166	M1167	M1168	M1169	M1170	M1171	M1172	M1173	M1174	M1175	M1176	M1177	M1178	M1179	M1180	M1181	M1182	M1183	M1184	M1185	M1186	M1187	M1188	M1189	M1190	M1191	M1192	M1193	M1194	M1195	M1196	M1197	M1198	M1199	M1200	M1201	M1202	M1203	M1204	M1205	M1206	M1207	M1208	M1209	M1210	M1211	M1212	M1213	M1214	M1215	M1216	M1217	M1218	M1219	M1220	M1221	M1222	M1223	M1224	M1225	M1226	M1227	M1228	M1229	M1230	M1231	M1232	M1233	M1234	M1235	M1236	M1237	M1238	M1239	M1240	M1241	M1242	M1243	M1244	M1245	M1246	M1247	M1248	M1249	M1250	M1251	M1252	M1253	M1254	M1255	M1256	M1257	M1258	M1259	M1260	M1261	M1262	M1263	M1264	M1265	M1266	M1267	M1268	M1269	M1270	M1271	M1272	M1273	M1274	M1275	M1276	M1277	M1278	M1279	M1280	M1281	M1282	M1283	M1284	M1285	M1286	M1287	M1288	M1289	M1290	M1291	M1292	M1293	M1294	M1295	M1296	M1297	M1298	M1299	M1300	M1301	M1302	M1303	M1304	M1305	M1306	M1307	M1308	M1309	M1310	M1311	M1312	M1313	M1314	M1315	M1316	M1317	M1318	M1319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L193	A194	K196	V196	ALA	CYS	ALA	ALA	VAL	LYS	LYS	LYS	ASP	ASP	GLU	GLU	ALA	SER	ASP	LYS	LYS	GLY	SER	LEU	E216	D217	Q218	I219	I220	H283	A221	A222	M223	P224	V225	L226	E227	A228	Y229	G230	N231	A232	K233	T234	T235	R236	M237	N238	N239	S240	S241	R242	F243	G244	K245	F246	I247	R248	I249	H250	F251	G252																																																																																																																																																																																																																		
P253	T254	G255	K256	I257	A260	D261	L262	E263	V264	L265	ASP	GLU	L267	E268	K269	S270	R271	V272	L273	Y274	Q275	Q276	E279	R280	I281	Y282	H283	I284	F285	L286	Q287	I288	C289	S290	N291	A292	I293	P294	E295	L296	H357	M358	M361	K362	L301	V302	T303	K364	Q365	R366	S306	G307	E369	L308	Y309	G371	S310	F311	I312	N313	Q314																																																																																																																																																																																																																		
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V439	R440	R441	V442	N443	K444	T445	L446	K449	R452	F453	Y454	F455	I456	F457	E458	L459	D460	I461	G462	G463	F464	E465	L466	F467	D468	F469	F472	E473	Q474	L475	C476	I477	N478	Y479	T480	N481	E482	R483	N484	D543	D544	K545	S546	Q548	F487	F488	N489	H490	H491	M492	F493	I494	H505	H506	M507	N508	R509	P562																																																																																																																																																																																																																					
K502	E503	L504	T505	G506	V507	E508	F509	I510	D511	F512	G513	M514	B515	L516	Q517	M518	C519	L520	D521	L522	E523	E524	K525	F526	M527	G528	L529	L530	S531	I532	L533	E534	E535	C537	M538	F539	P540	R541	A542	D543	D544	K545	S546	Q548	F487	F488	N489	H490	H491	M492	F493	I494	H505	H506	M507	N508	R509	P562																																																																																																																																																																																																																					
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● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

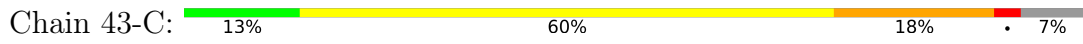


F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	ARG	LYS	K31	K32	N33	C34	W35	V36	P37	D38	E39	S40	K41	L42	E43	G44	F45	E47	I48	Q49	L111	I112	Y113	T114	Y115	S116	G117	L118	V119	C120	I121	A122	D123	S124	N125	G126	S127	L128	L129	T130	V131	L132	L133	L134	L135	L136	L137	L138	L139	L140	L141	L142	L143	L144	K145	L146	R147	E148	M149	P150	H151	L152	F153	A156	D157	N158	I159	A160	Q161	Q162	M163	V164	L165	D166	A167	E168	N169	Q170	S171	C172	L173	L174	T175	L176	G177	E178	S179	L180	G181	K182	N185	K245	F246	I247	K248	L249	H250	F251	G252
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C316	L317	T318	V319	D320	N321	I322	D323	D324	V325	E326	E327	F328	K329	L330	C331	D332	E333	A334	F335	D336	I337	L338	VAL	G339	F340	T341	K342	E343	K344	K345	Q346	S347	M348	F349	K350	C351	T352	A353	S354	L355	R356	H357	M358	M361	K362	F363	K364	Q365	R366	R367	R368	E369	E370	Q371	M372	F373	M374	M375	M376	M377	M378	M379	M380	M381	M382	M383	M384	M385	M386	M387	M388	M389	M390	D393	L394	L395	K396	V397	A398	L399	L400	P401	K402	VAL	L403	VAL	L404	GLY	E405	F406	F407	D408	F409	F410	F411	F412	F413	F414	F415	F416	F417	F418	F419	F420	F421	F422	F423	F424	F425	F426	F427	F428	F429	F430	F431	F432	F433	F434	F435	F436	F437	F438	F439	F440	F441	F442	F443	F444	F445	F446	F447	F448	F449	F450	F451	F452	F453	F454	F455	F456	F457	F458	F459	F460	F461	F462	F463	F464	F465	F466	F467	F468	F469	F470	F471	F472	F473	F474	F475	F476	F477	F478	F479	F480	F481	F482	F483	F484	F485	F486	F487	F488	F489	F490	F491	F492	F493	F494	F495	F496	F497	F498	F499	F500	F501	F502	F503	F504	F505	F506	F507	F508	F509	F510	F511	F512	F513	F514	F515	F516	F517	F518	F519	F520	F521	F522	F523	F524	F525	F526	F527	F528	F529	F530	F531	F532	F533	F534	F535	F536	F537	F538	F539	F540	F541	F542	F543	F544	F545	F546	F547	F548	F549	F550	F551	F552	F553	F554	F555	F556	F557	F558	F559	F560	F561	F562	F563	F564	F565	F566	F567	F568	F569	F570	F571	F572	F573	F574	F575	F576	F577	F578	F579	F580	F581	F582	F583	F584	F585	F586	F587	F588	F589	F590	F591	F592	F593	F594	F595	F596	F597	F598	F599	F600	F601	F602	F603	F604	F605	F606	F607	F608	F609	F610	F611	F612	F613	F614	F615	F616	F617	F618	F619	F620	F621	F622	F623	F624	F625	F626	F627	F628	F629	F630	F631	F632	F633	F634	F635	F636	F637	F638	F639	F640	F641	F642	F643	F644	F645	F646	F647	F648	F649	F650	F651	F652	F653	F654	F655	F656	F657	F658	F659	F660	F661	F662	F663	F664	F665	F666	F667	F668	F669	F670	F671	F672	F673	F674	F675	F676	F677	F678	F679	F680	F681	F682	F683	F684	F685	F686	F687	F688	F689	F690	F691	F692	F693	F694	F695	F696	F697	F698	F699	F700	F701	F702	F703	F704	F705	F706	F707	F708	F709	F710	F711	F712	F713	F714	F715	F716	F717	F718	F719	F720	F721	F722	F723	F724	F725	F726	F727	F728	F729	F730	F731	F732	F733	F734	F735	F736	F737	F738	F739	F740	F741	F742	F743	F744	F745	F746	F747	F748	F749	F750	F751	F752	F753	F754	F755	F756	F757	F758	F759	F760	F761	F762	F763	F764	F765	F766	F767	F768	F769	F770	F771	F772	F773	F774	F775	F776	F777	F778	F779	F780	F781	F782	F783	F784	F785	F786	F787	F788	F789	F790	F791	F792	F793	F794	F795	F796	F797	F798	F799	F800	F801	F802	F803	F804	F805	F806	F807	F808	F809	F810	F811	F812	F813	F814	F815	F816	F817	F818	F819	F820	F821	F822	F823	F824	F825	F826	F827	F828	F829	F830	F831	F832	F833	F834	F835	F836	F837	F838	F839	F840	F841	F842	F843	F844	F845	F846	F847	F848	F849	F850	F851	F852	F853	F854	F855	F856	F857	F858	F859	F860	F861	F862	F863	F864	F865	F866	F867	F868	F869	F870	F871	F872	F873	F874	F875	F876	F877	F878	F879	F880	F881	F882	F883	F884	F885	F886	F887	F888	F889	F890	F891	F892	F893	F894	F895	F896	F897	F898	F899	F900	F901	F902	F903	F904	F905	F906	F907	F908	F909	F910	F911	F912	F913	F914	F915	F916	F917	F918	F919	F920	F921	F922	F923	F924	F925	F926	F927	F928	F929	F930	F931	F932	F933	F934	F935	F936	F937	F938	F939	F940	F941	F942	F943	F944	F945	F946	F947	F948	F949	F950	F951	F952	F953	F954	F955	F956	F957	F958	F959	F960	F961	F962	F963	F964	F965	F966	F967	F968	F969	F970	F971	F972	F973	F974	F975	F976	F977	F978	F979	F980	F981	F982	F983	F984	F985	F986	F987	F988	F989	F990	F991	F992	F993	F994	F995	F996	F997	F998	F999	F1000
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• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



F5	S6	D7	P8	F9	D10	Q11	Y12	L13	A14	V15	D16	ARG	LYS	K84	L85	L86	LEU	MET	L88	L89	L90	Q91	A92	A93	K31	K32	N33	C34	N35	V36	V37	D38	E39	S40	M84	K40	E41	G42	G43	F43	E47	I48	Q49	L110	L111	L112	L113	L114	D54	E55	I56	T57	V58	K59	I60	V61	A62	D63	R64	A65	S66	T66	R67	T68	V69	K70	K71	D72	D73	I74	S75	E76	M77	L78	P79	P80	L81	K81	ASP	G82	F82	E83	K84	L85	L86	L87	L88	L89	N90	A91	L92	F93	L94	D95	E96	I97	I98	I99	I100	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	A194	K195	L196	ALA	CYS	ALA	VAL	LYS	LYS	LYS	ASP	GLU	GLU	ALA	SER	ASP	S270	R271	V272	V273	Y274	Q275	Q276	E279	R280	N281	Y282	H283	E284	F285	L286	Q287	L288	F289	S290	A291	A292	L293	P294	E295	L296	N297	D298	V299	M300	L301	V302	T303	P304	D305	S306	G307	L308	F309	G310	S311	S312	F313	F314	F315	F316	F317	F318	F319	F320	F321	F322	F323	F324	F325	F326	F327	F328	F329	F330	F331	F332	F333	F334	F335	F336	F337	F338	F339	F340	T341	K342	E343	E344	K345	Q346	S347	M348	F349	K350	K351	T352	A353	S354	L355	L356	H357	M358	M361	K362	F363	K364	Q365	R366	R367	R368	E369	E370	G371	S372	S373	A374	E375	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
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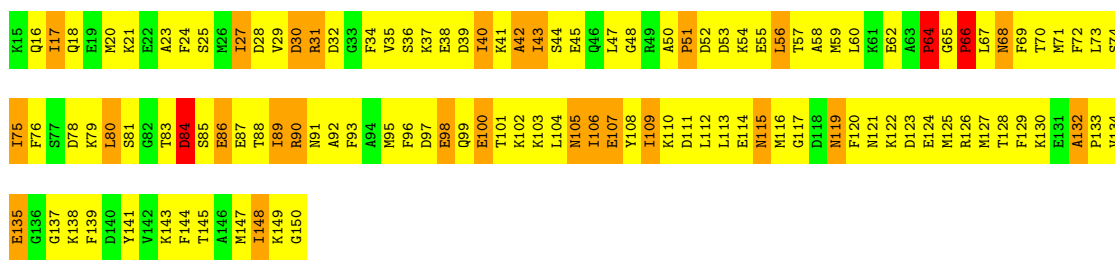








• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

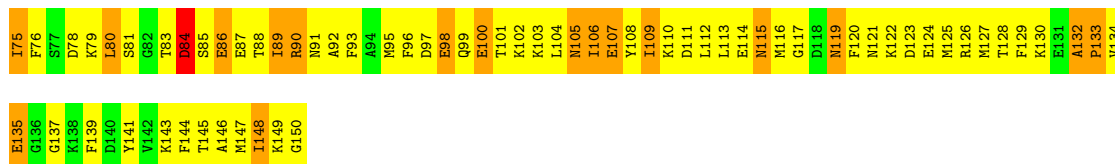


• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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





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

Chain 12-Y: 14% 65% 20%



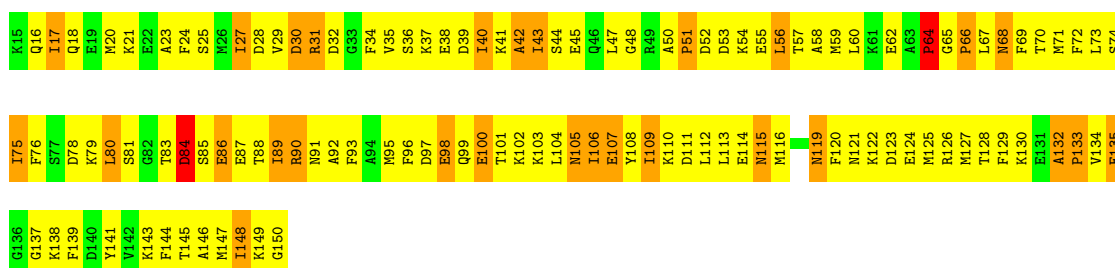
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 13-Y: 13% 66% 18%



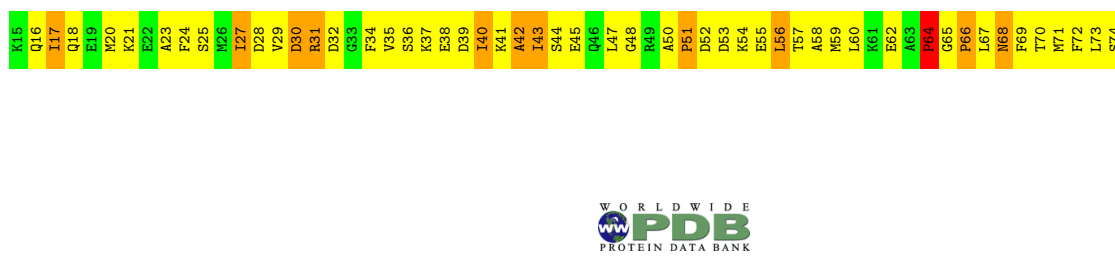
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

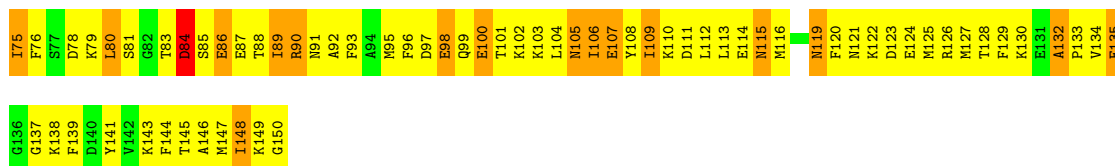
Chain 14-Y: 13% 65% 21%



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

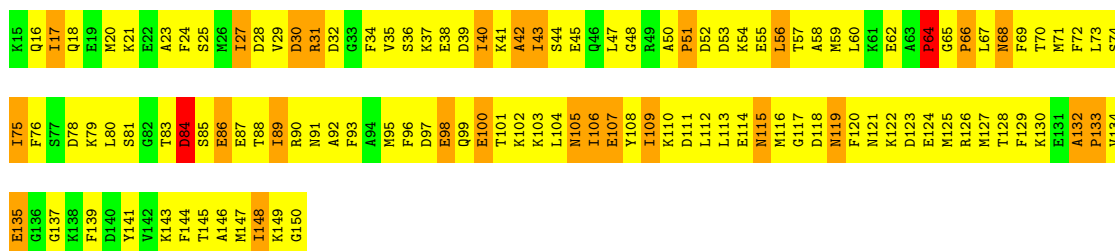
Chain 15-Y: 13% 65% 20%





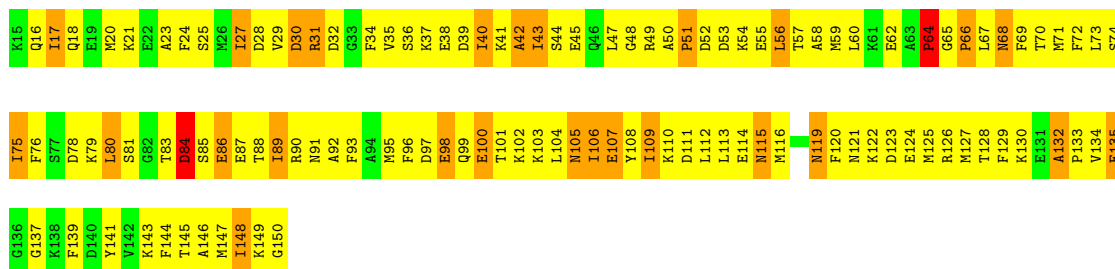
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 16-Y: 12% 67% 19%



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

Chain 17-Y: 13% 66% 19%



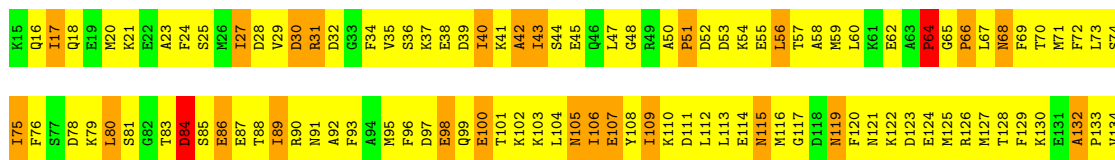
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 18-Y: 14% 65% 20%



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

Chain 19-Y: 14% 65% 19%

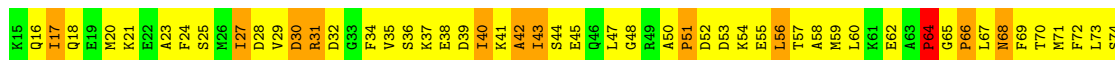




• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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



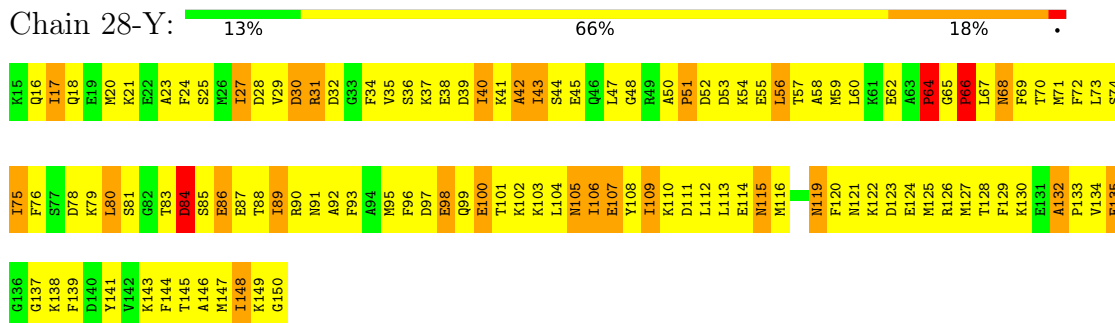
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



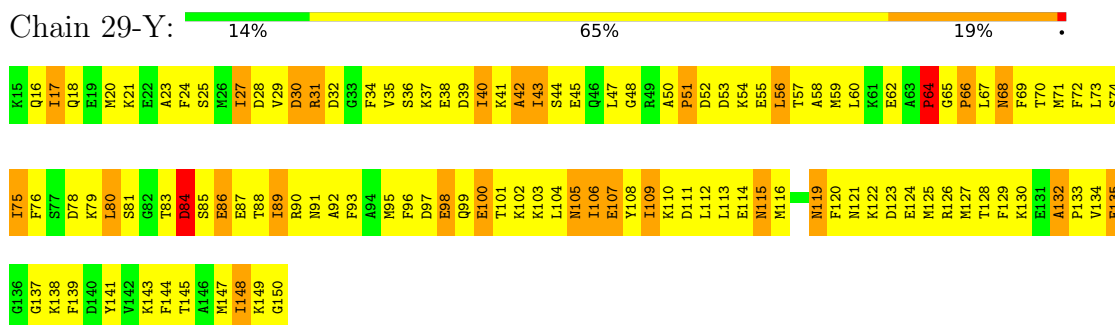
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



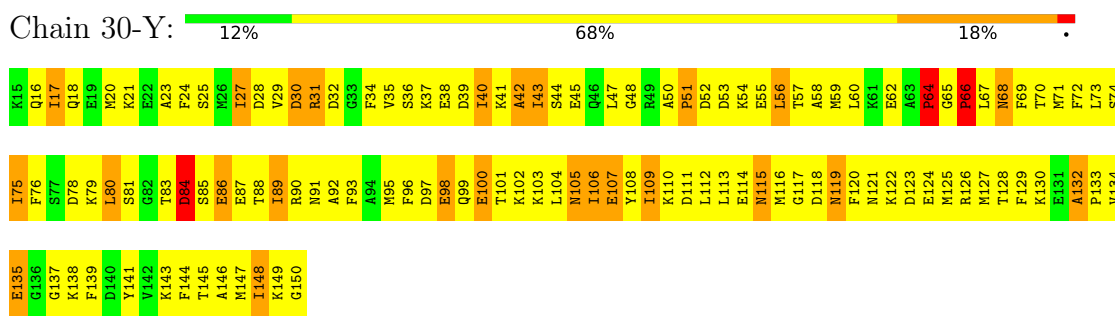




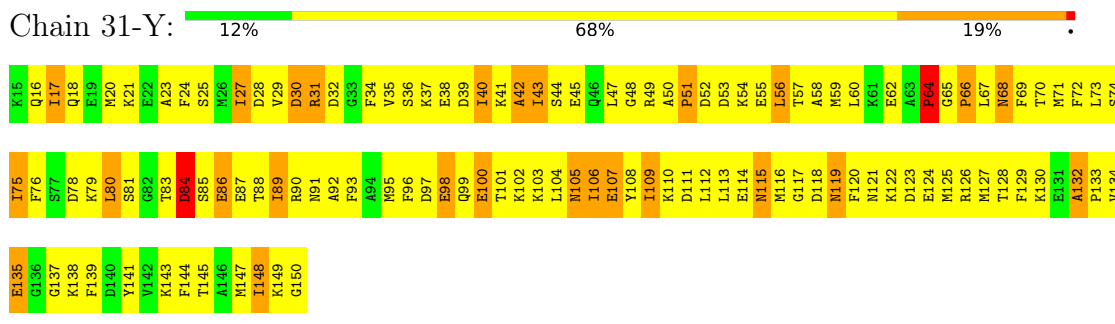
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

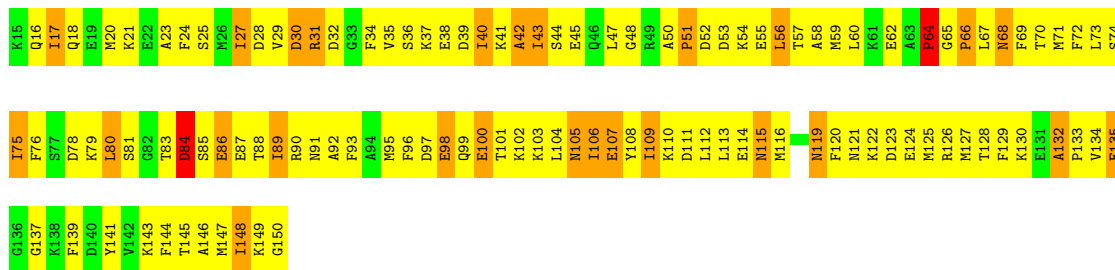


• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



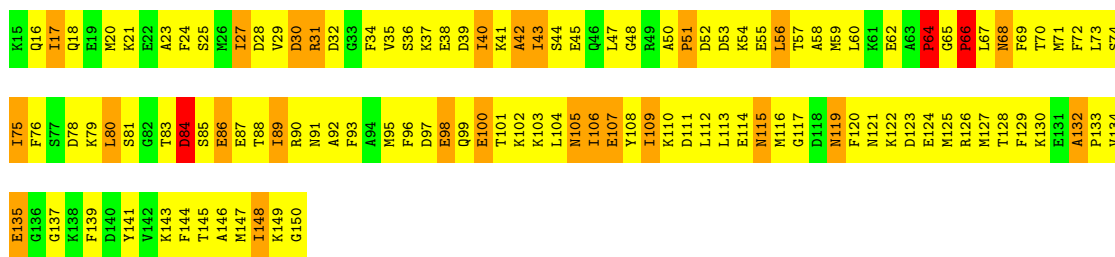
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE





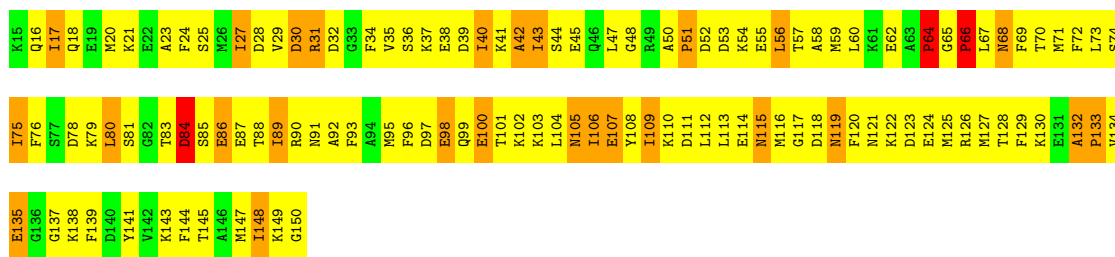
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 33-Y: 13% 66% 18%



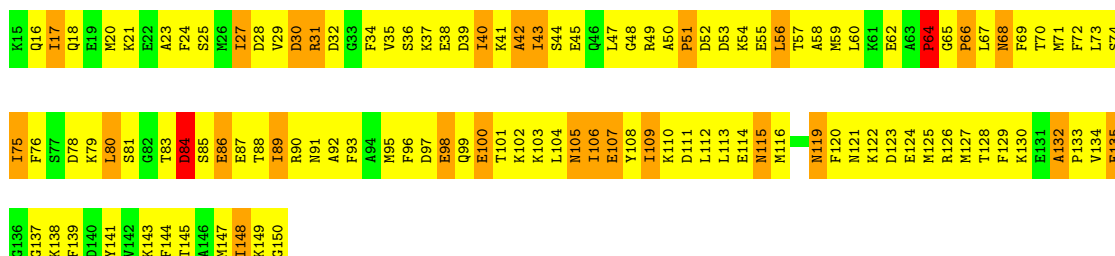
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 34-Y: 12% 66% 19%



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

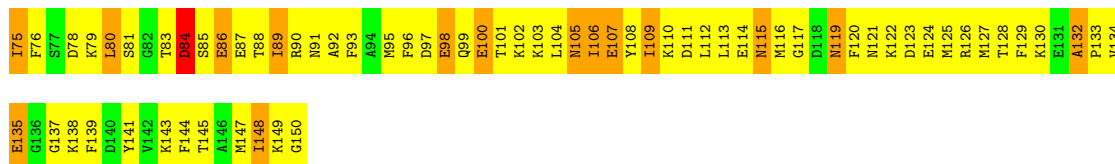
Chain 35-Y: 13% 66% 19%



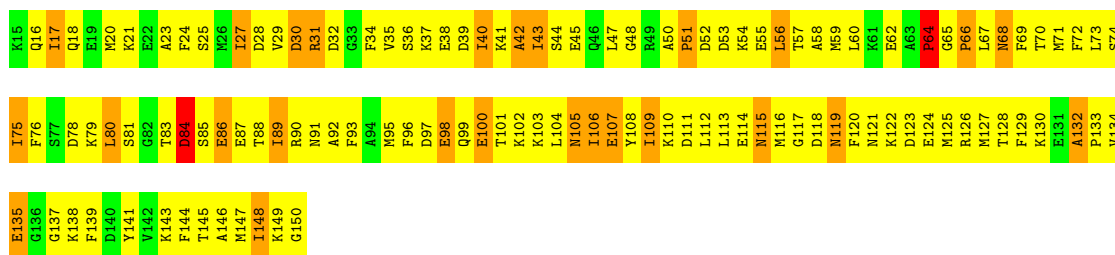
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 36-Y: 13% 66% 19%

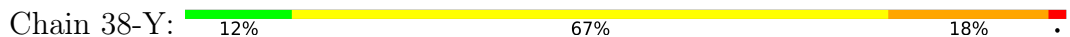




● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



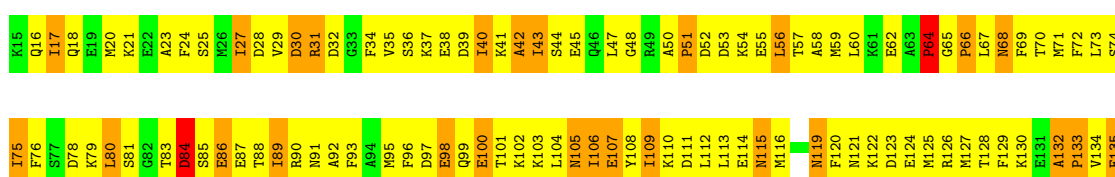
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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



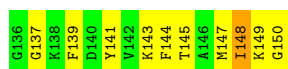
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



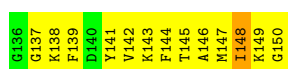
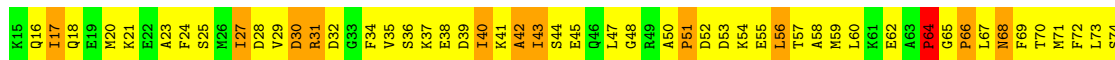




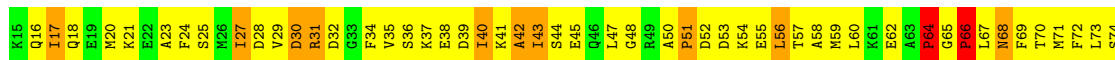
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



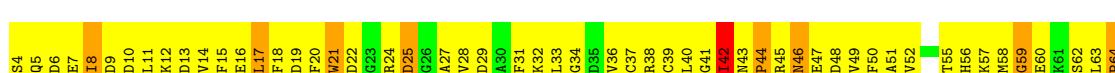
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

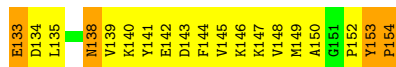


● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

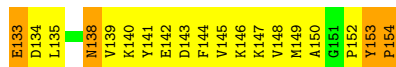
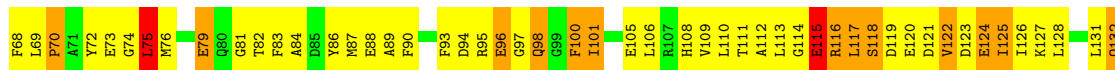
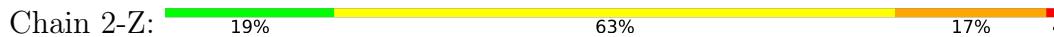


● Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

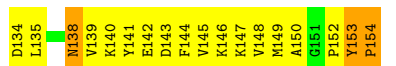
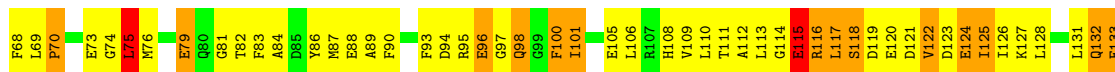
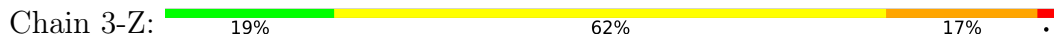




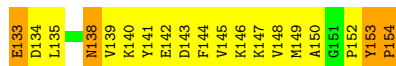
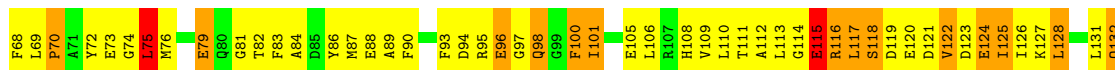
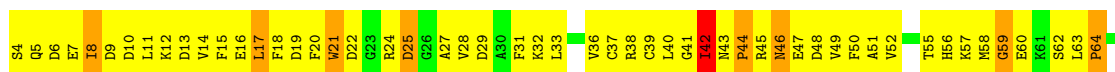
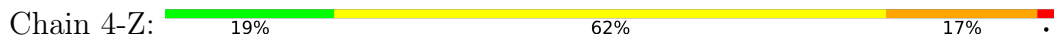
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



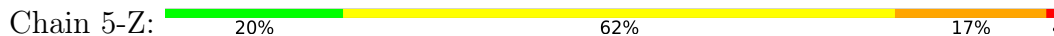
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

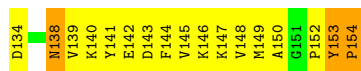
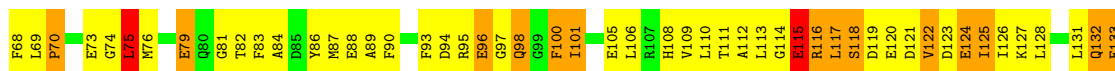


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

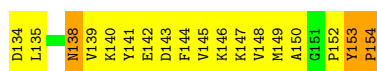
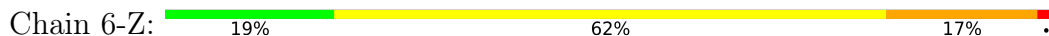


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

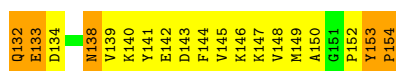
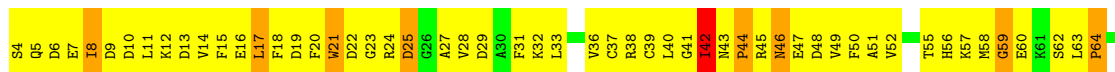




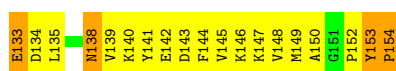
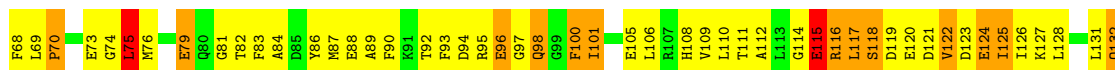
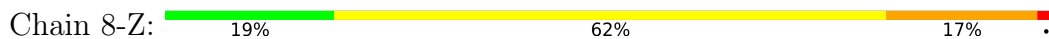
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

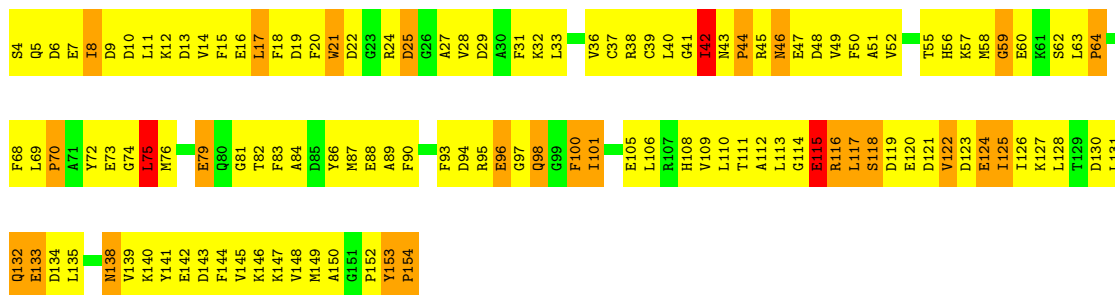


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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





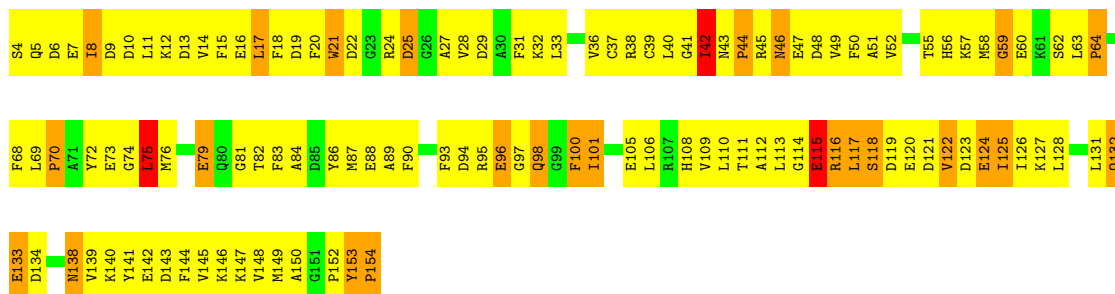
● Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 10-Z: 19% 62% 17%



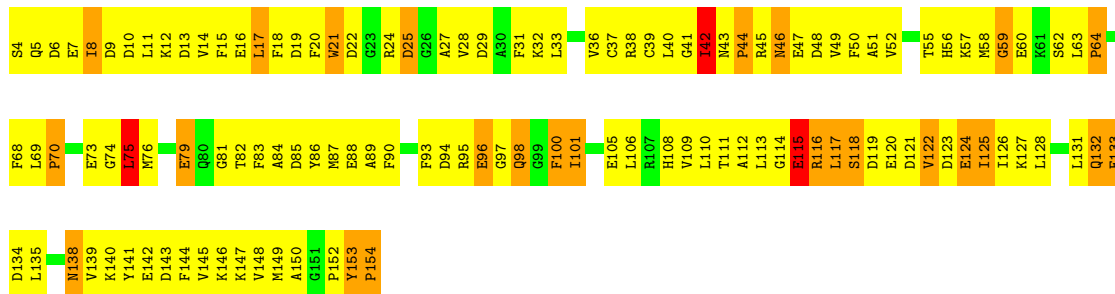
● Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 11-Z: 19% 62% 17%

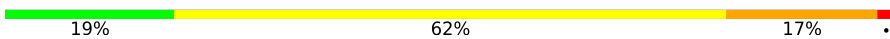


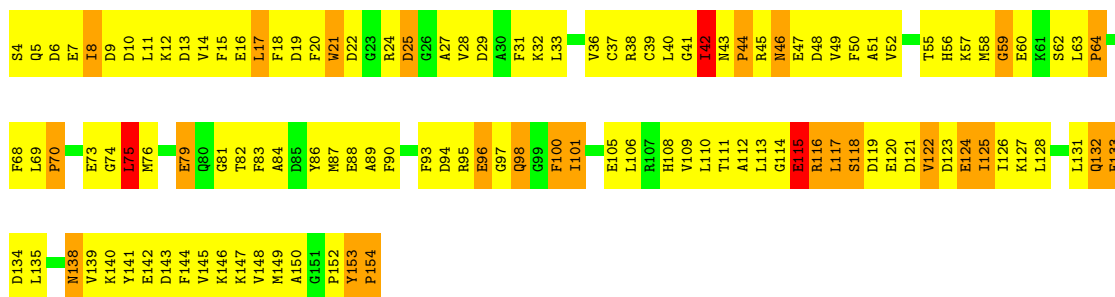
● Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 12-Z: 19% 63% 17%



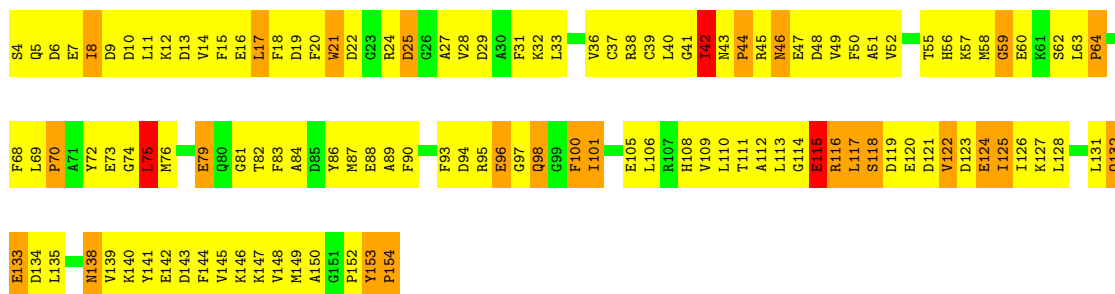
● Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 13-Z: 

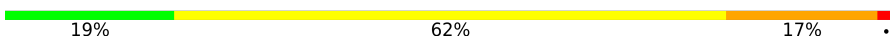


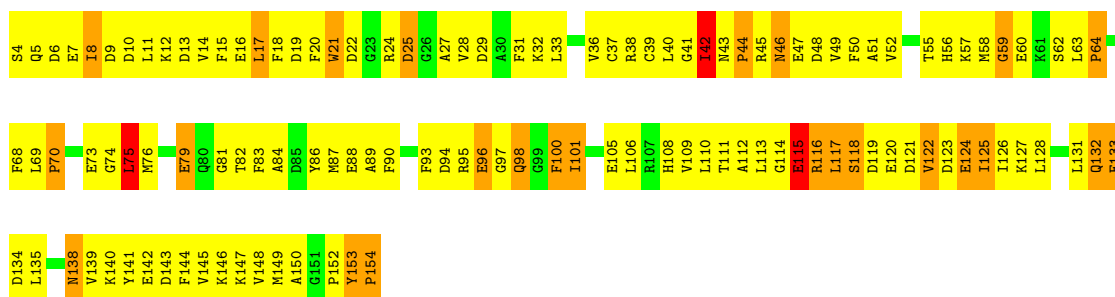
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 14-Z: 



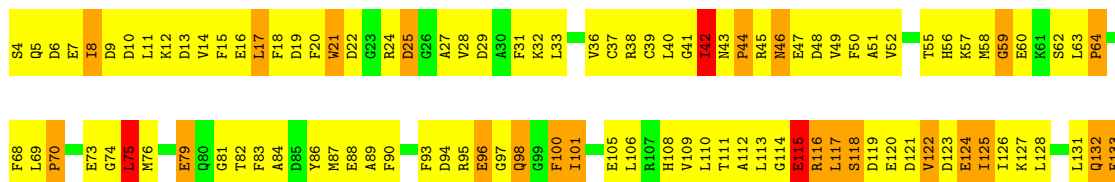
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

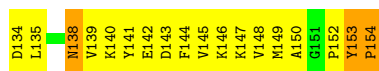
Chain 15-Z: 



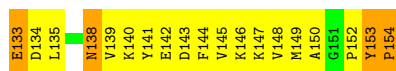
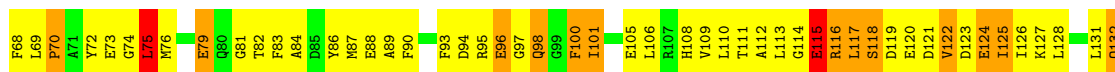
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 16-Z: 

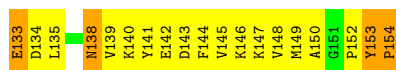
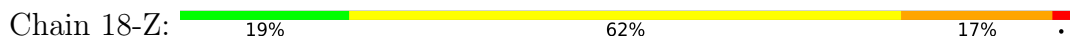




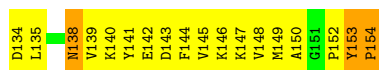
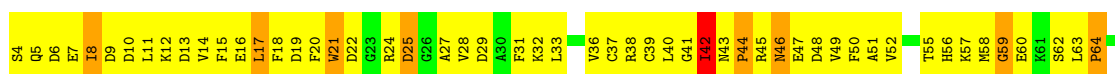
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

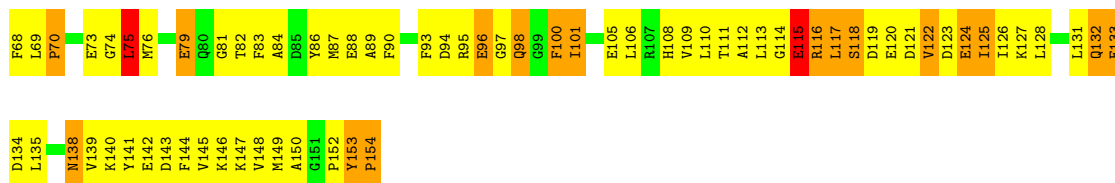


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



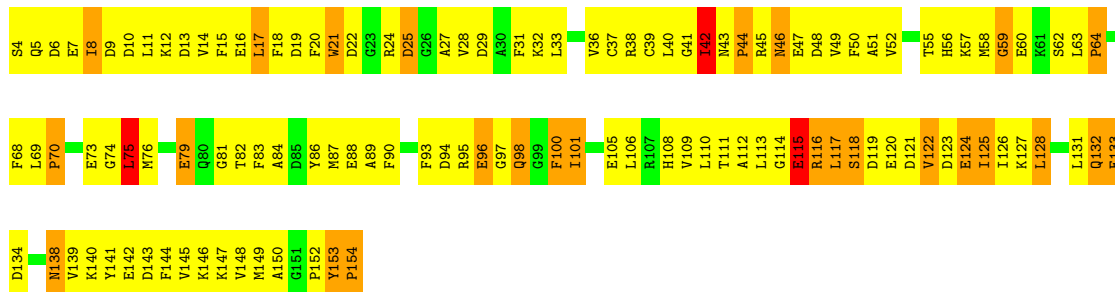
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE





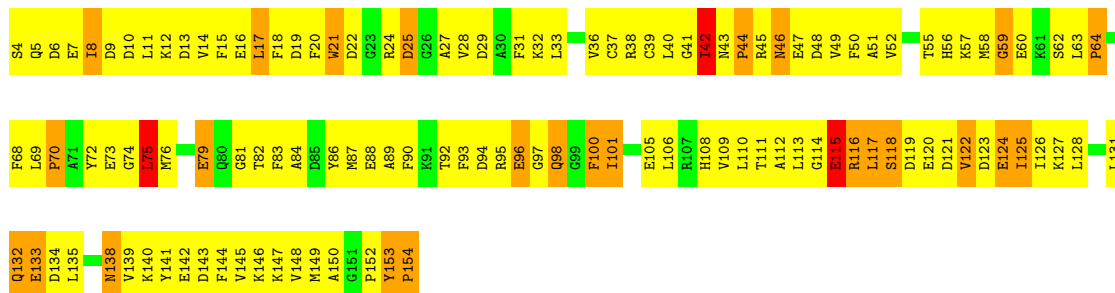
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 21-Z: 20% 61% 17%



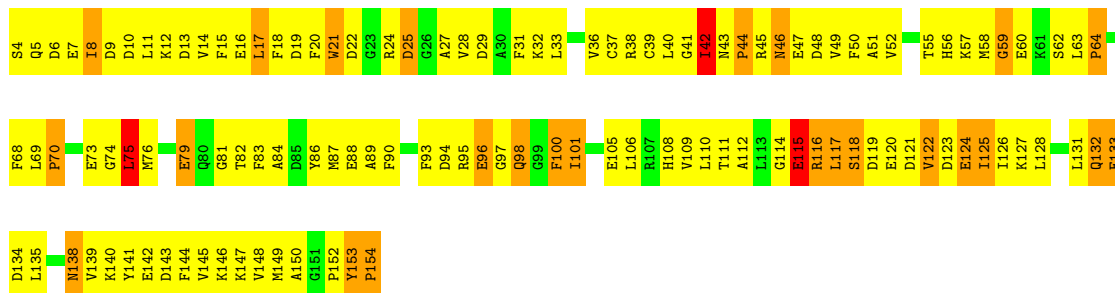
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 22-Z: 18% 64% 17%



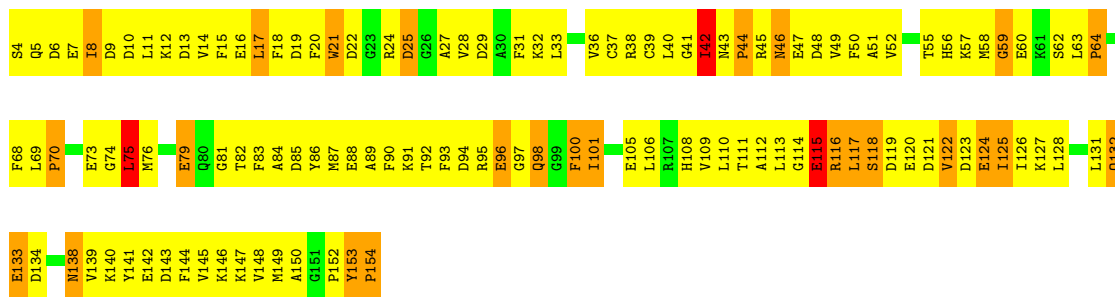
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 23-Z: 20% 62% 17%

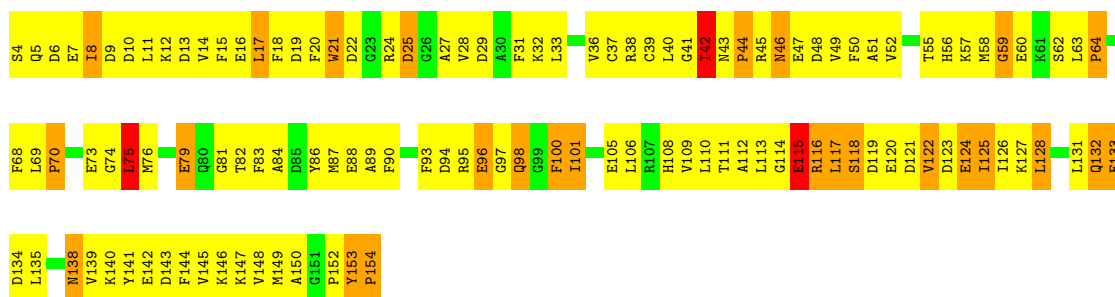


- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

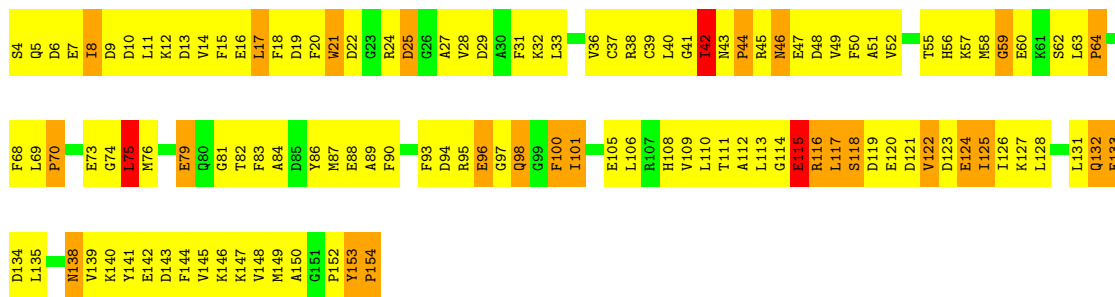
Chain 24-Z: 18% 64% 17%



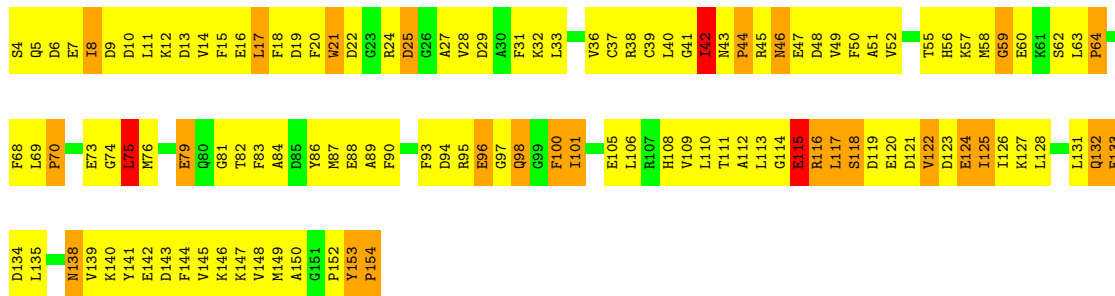
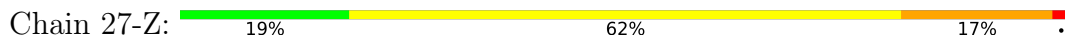
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

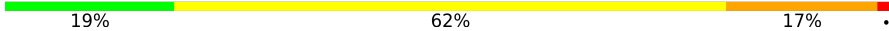


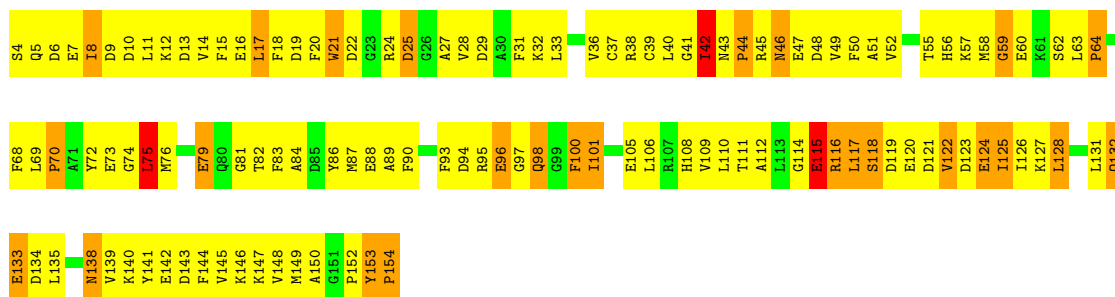
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

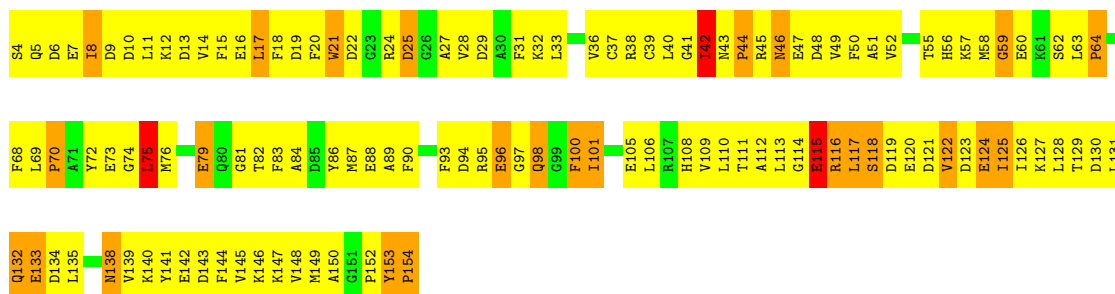


Chain 28-Z:  19% 62% 17%

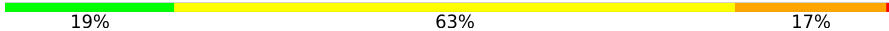


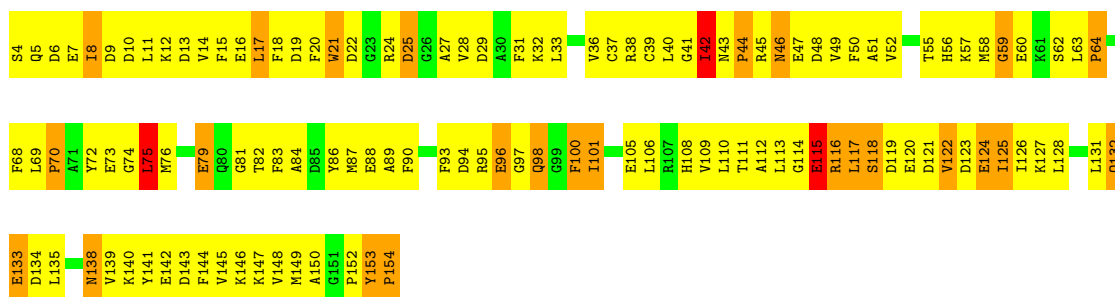
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 29-Z:  17% 64% 17%



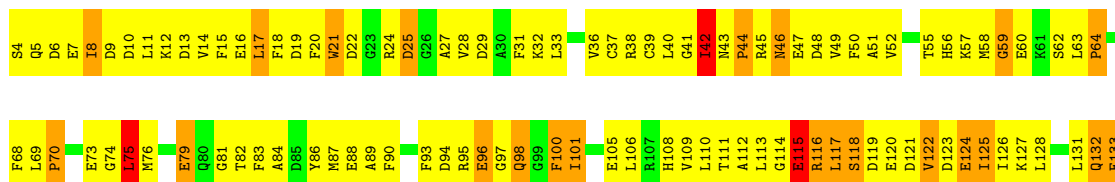
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

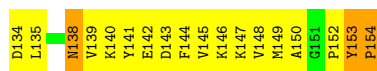
Chain 30-Z:  19% 63% 17%



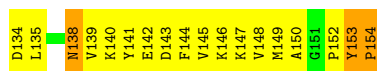
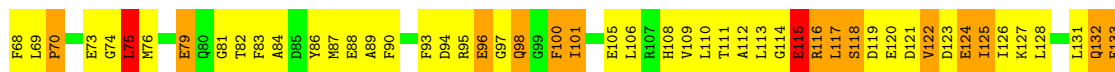
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 31-Z:  19% 62% 17%

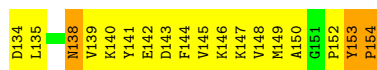
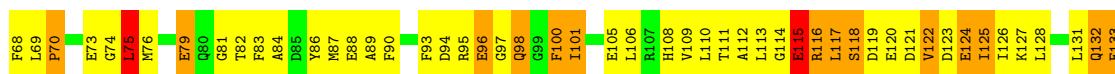
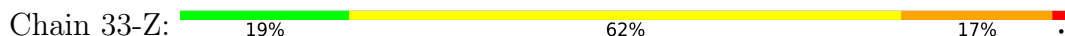




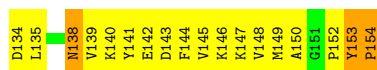
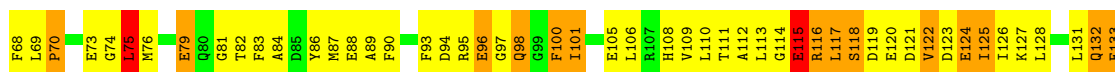
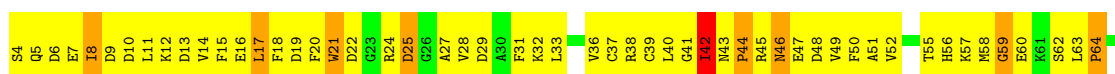
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



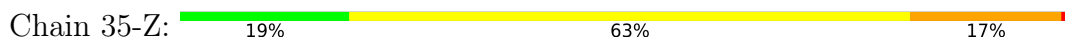
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

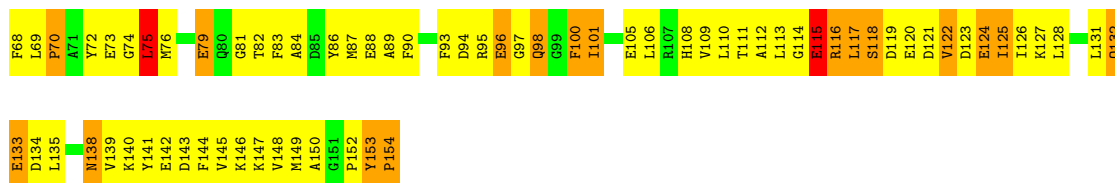


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

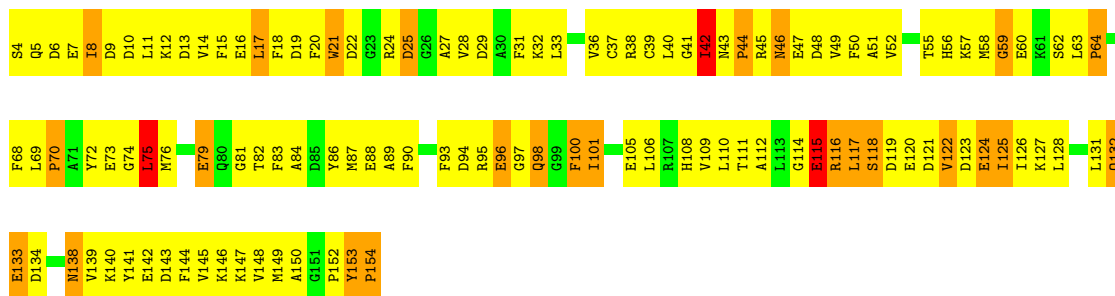
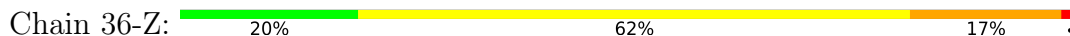


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

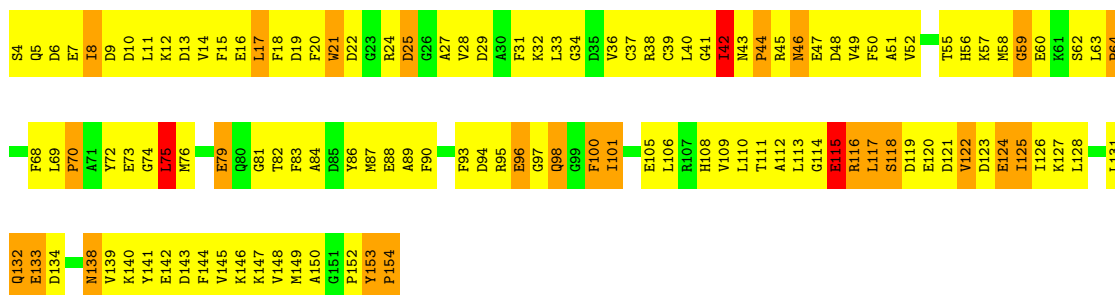




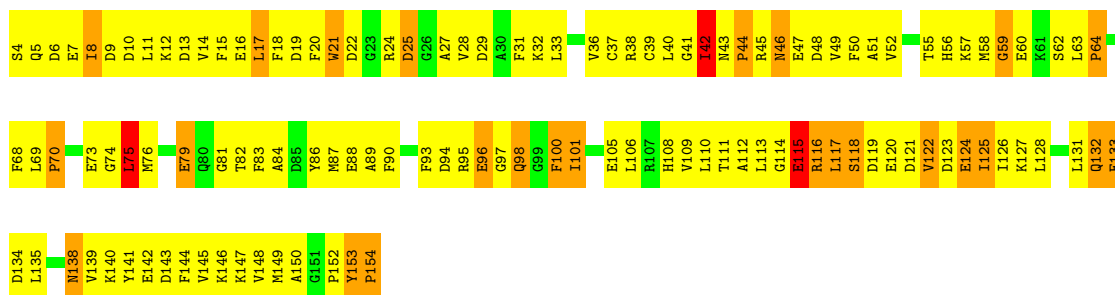
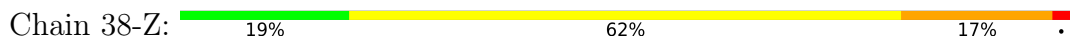
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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



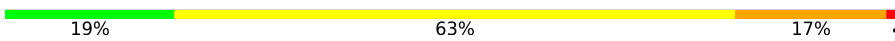
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

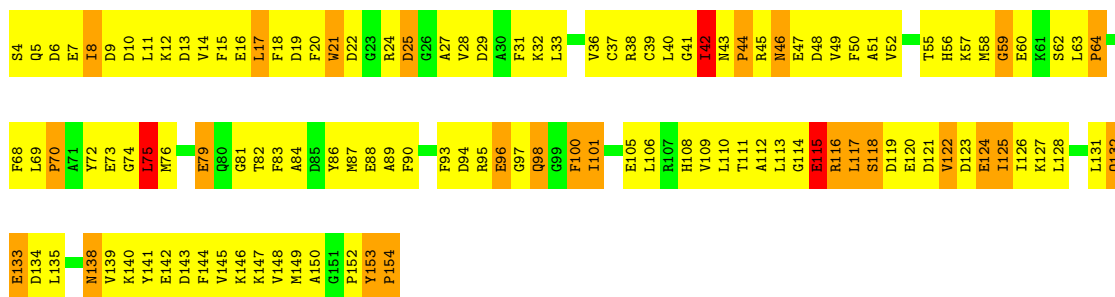


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE





Chain 43-Z:  19% 63% 17%



## 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 ( $e^-/\text{Å}^2$ )	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 i

### 5.1 Standard geometry i

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	1.19	83/6340 (1.3%)	1.30	32/8539 (0.4%)
1	2-C	1.18	82/6339 (1.3%)	1.29	30/8536 (0.4%)
1	3-C	1.14	82/6340 (1.3%)	1.29	30/8539 (0.4%)
1	4-C	1.17	83/6340 (1.3%)	1.29	29/8539 (0.3%)
1	5-C	1.14	82/6339 (1.3%)	1.29	28/8536 (0.3%)
1	6-C	1.18	82/6340 (1.3%)	1.30	28/8539 (0.3%)
1	7-C	1.15	83/6340 (1.3%)	1.31	32/8539 (0.4%)
1	8-C	1.17	84/6340 (1.3%)	1.38	33/8539 (0.4%)
1	9-C	1.14	82/6339 (1.3%)	1.32	30/8536 (0.4%)
1	10-C	1.14	81/6340 (1.3%)	1.29	29/8539 (0.3%)
1	11-C	1.15	82/6340 (1.3%)	1.29	31/8539 (0.4%)
1	12-C	1.18	83/6340 (1.3%)	1.30	31/8539 (0.4%)
1	13-C	1.14	82/6339 (1.3%)	1.29	30/8536 (0.4%)
1	14-C	1.14	81/6339 (1.3%)	1.29	28/8536 (0.3%)
1	15-C	1.17	83/6340 (1.3%)	1.34	30/8539 (0.4%)
1	16-C	1.14	81/6340 (1.3%)	1.29	28/8539 (0.3%)
1	17-C	1.16	82/6339 (1.3%)	1.29	29/8536 (0.3%)
1	18-C	1.16	83/6340 (1.3%)	1.33	32/8539 (0.4%)
1	19-C	1.15	83/6340 (1.3%)	1.34	33/8539 (0.4%)
1	20-C	1.14	82/6340 (1.3%)	1.33	32/8539 (0.4%)
1	21-C	1.18	82/6340 (1.3%)	1.30	28/8539 (0.3%)
1	22-C	1.14	81/6340 (1.3%)	1.29	31/8539 (0.4%)
1	23-C	1.17	82/6339 (1.3%)	1.30	31/8536 (0.4%)
1	24-C	1.19	83/6339 (1.3%)	1.30	32/8536 (0.4%)
1	25-C	1.21	83/6339 (1.3%)	1.31	34/8536 (0.4%)
1	26-C	1.14	81/6339 (1.3%)	1.29	30/8536 (0.4%)
1	27-C	1.14	81/6340 (1.3%)	1.29	30/8539 (0.4%)
1	28-C	1.16	83/6339 (1.3%)	1.36	36/8536 (0.4%)
1	29-C	1.16	82/6339 (1.3%)	1.31	33/8536 (0.4%)
1	30-C	1.14	81/6340 (1.3%)	1.29	30/8539 (0.4%)
1	31-C	1.21	83/6340 (1.3%)	1.36	32/8539 (0.4%)
1	32-C	1.19	82/6339 (1.3%)	1.30	31/8536 (0.4%)
1	33-C	1.15	82/6340 (1.3%)	1.29	31/8539 (0.4%)
1	34-C	1.14	82/6340 (1.3%)	1.30	33/8539 (0.4%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	35-C	1.18	83/6340 (1.3%)	1.32	34/8539 (0.4%)
1	36-C	1.14	82/6340 (1.3%)	1.29	30/8539 (0.4%)
1	37-C	1.14	81/6340 (1.3%)	1.29	28/8539 (0.3%)
1	38-C	1.14	82/6340 (1.3%)	1.30	31/8539 (0.4%)
1	39-C	1.14	80/6339 (1.3%)	1.29	30/8536 (0.4%)
1	40-C	1.17	82/6340 (1.3%)	1.30	30/8539 (0.4%)
1	41-C	1.14	83/6340 (1.3%)	1.29	29/8539 (0.3%)
1	42-C	1.17	82/6339 (1.3%)	1.29	31/8536 (0.4%)
1	43-C	1.14	83/6339 (1.3%)	1.36	33/8536 (0.4%)
2	1-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	2-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	3-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	4-Y	0.80	8/1104 (0.7%)	1.06	2/1472 (0.1%)
2	5-Y	0.79	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	6-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	7-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	8-Y	0.80	8/1104 (0.7%)	1.06	2/1472 (0.1%)
2	9-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	10-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	11-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	12-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	13-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	14-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	15-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	16-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	17-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	18-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	19-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	20-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	21-Y	0.80	9/1104 (0.8%)	1.06	2/1472 (0.1%)
2	22-Y	0.80	8/1104 (0.7%)	1.06	2/1472 (0.1%)
2	23-Y	0.80	8/1104 (0.7%)	1.05	1/1472 (0.1%)
2	24-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	25-Y	0.80	8/1104 (0.7%)	1.05	1/1472 (0.1%)
2	26-Y	0.80	8/1104 (0.7%)	1.05	1/1472 (0.1%)
2	27-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	28-Y	0.80	8/1104 (0.7%)	1.05	1/1472 (0.1%)
2	29-Y	0.80	9/1104 (0.8%)	1.05	1/1472 (0.1%)
2	30-Y	0.80	8/1104 (0.7%)	1.05	1/1472 (0.1%)
2	31-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	32-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)
2	33-Y	0.80	9/1104 (0.8%)	1.06	1/1472 (0.1%)
2	34-Y	0.80	8/1104 (0.7%)	1.06	1/1472 (0.1%)



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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
3	35-Z	0.82	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	36-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	37-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	38-Z	0.81	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	39-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	40-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
3	41-Z	0.82	11/1222 (0.9%)	1.09	2/1644 (0.1%)
3	42-Z	0.81	11/1222 (0.9%)	1.09	1/1644 (0.1%)
3	43-Z	0.81	10/1222 (0.8%)	1.09	2/1644 (0.1%)
All	All	1.08	4348/372622 (1.2%)	1.25	1458/501117 (0.3%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	1-C	0	5
1	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 4348 bond length outliers are listed below:

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

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

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

There are no chirality outliers.

5 of 260 planarity outliers are listed below:

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

## 5.2 Too-close contacts [i](#)

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

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

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

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

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

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

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

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

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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



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

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

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	31-C	758/831 (91%)	603 (80%)	114 (15%)	41 (5%)	2	19
1	32-C	756/831 (91%)	605 (80%)	111 (15%)	40 (5%)	2	19
1	33-C	758/831 (91%)	605 (80%)	115 (15%)	38 (5%)	2	20
1	34-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	2	20
1	35-C	758/831 (91%)	606 (80%)	113 (15%)	39 (5%)	2	19
1	36-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	2	20
1	37-C	758/831 (91%)	605 (80%)	115 (15%)	38 (5%)	2	20
1	38-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	2	20
1	39-C	756/831 (91%)	605 (80%)	113 (15%)	38 (5%)	2	20
1	40-C	758/831 (91%)	607 (80%)	112 (15%)	39 (5%)	2	19
1	41-C	758/831 (91%)	605 (80%)	114 (15%)	39 (5%)	2	19
1	42-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	2	19
1	43-C	756/831 (91%)	603 (80%)	114 (15%)	39 (5%)	2	19
2	1-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	2-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	3-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	4-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	5-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	6-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	7-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	8-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	9-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	10-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	11-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	12-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	13-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	14-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	15-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	16-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	17-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	18-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	19-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	20-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	21-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	22-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	22
2	23-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	24-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	22
2	25-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	26-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	27-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	22
2	28-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	29-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	30-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	31-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	22
2	32-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	22
2	33-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	34-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	35-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	36-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	37-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	38-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	22
2	39-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	22
2	40-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
2	41-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	22
2	42-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	22
2	43-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	22
3	1-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	17
3	2-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	17
3	3-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	17
3	4-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	15
3	5-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	17
3	6-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	17

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

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	38-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	17
3	39-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	17
3	40-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	17
3	41-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	17
3	42-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	17
3	43-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	17
All	All	44731/48074 (93%)	34583 (77%)	7834 (18%)	2314 (5%)	4	19

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 [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	1-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	2-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	3-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	4-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	5-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	6-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	7-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	8-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	9-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	10-C	678/724 (94%)	571 (84%)	107 (16%)	2	13

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	11-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	12-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	13-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	14-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	15-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	16-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	17-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	18-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	19-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	20-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	21-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	22-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	23-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	24-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	25-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	26-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	27-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	28-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	29-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	30-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	31-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	32-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	33-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	34-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	35-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	36-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	37-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	38-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	39-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	40-C	678/724 (94%)	571 (84%)	107 (16%)	2	13
1	41-C	678/724 (94%)	571 (84%)	107 (16%)	2	13

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

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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	18-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	19-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	20-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	21-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	22-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	23-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	24-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	25-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	26-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	27-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	28-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	29-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	30-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	31-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	32-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	33-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	34-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	35-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	36-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	37-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	38-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	39-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	40-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	41-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	42-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
3	43-Z	127/127 (100%)	111 (87%)	16 (13%)	4	19
All	All	39732/41710 (95%)	33626 (85%)	6106 (15%)	6	14

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

Mol	Chain	Res	Type
1	27-C	85	LEU
1	33-C	297	ASN

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
2	27-Y	115	ASN
1	27-C	56	ILE
1	30-C	311	PHE

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

Mol	Chain	Res	Type
1	39-C	559	ASN
1	40-C	726	ASN
1	39-C	491	HIS
1	17-C	313	ASN
2	16-Y	119	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides 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 surface views

This section was not generated.

### 6.5 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.