



wwPDB EM Validation Summary Report ⓘ

Mar 15, 2026 – 07:53 AM UTC

PDB ID : 2W4W / pdb_00002w4w
EMDB ID : EMD-1584
Title : Isometrically contracting insect asynchronous flight muscle quick frozen after a quick stretch step
Authors : Wu, S.; Liu, J.; Reedy, M.C.; Tregear, R.T.; Winkler, H.; Franzini-Armstrong, C.; Sasaki, H.; Lucaveche, C.; Goldman, Y.E.; Reedy, M.K.; Taylor, K.A.
Deposited on : 2008-12-02
Resolution : 35.00 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

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

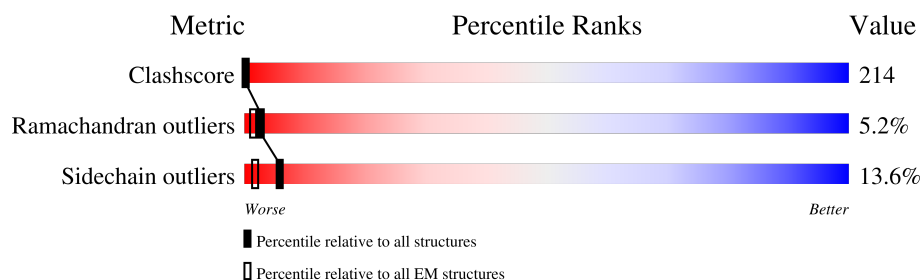
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 35.00 Å.

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



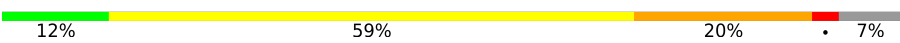
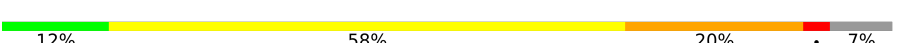
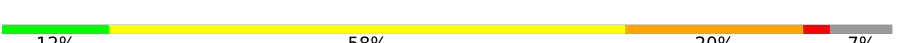
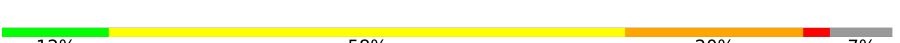
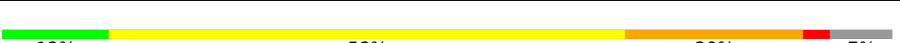
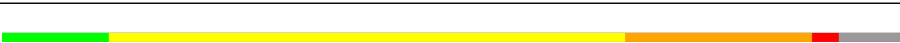
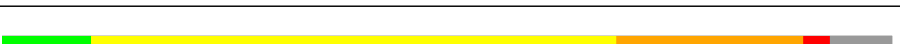
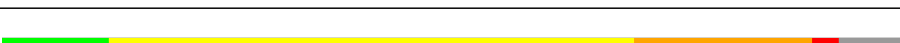
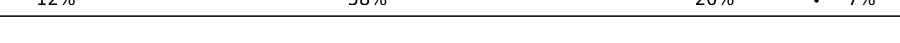
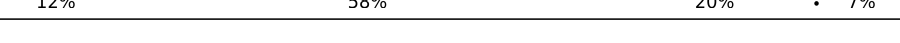
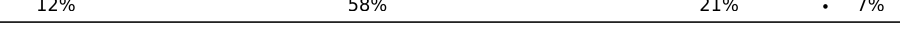
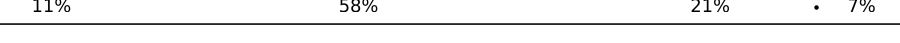
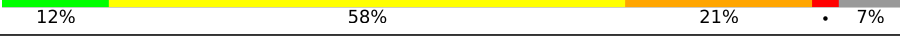
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	229148	23984
Ramachandran outliers	224038	23583
Sidechain outliers	223484	23102

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

Mol	Chain	Length	Quality of chain
1	1-C	831	11% 58% 20% • 7%
1	10-C	831	11% 59% 20% • 7%
1	11-C	831	12% 58% 20% • 7%
1	12-C	831	12% 58% 20% • 7%
1	13-C	831	12% 59% 20% • 7%
1	14-C	831	12% 58% 20% • 7%
1	15-C	831	12% 58% 20% • 7%
1	16-C	831	12% 58% 20% • 7%
1	17-C	831	12% 58% 20% • 7%

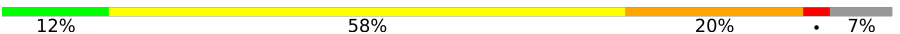
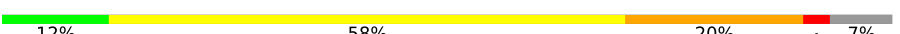
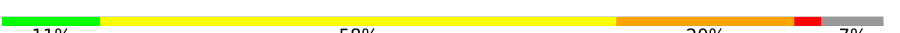
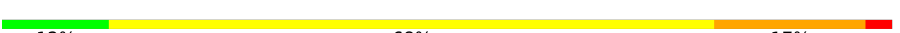
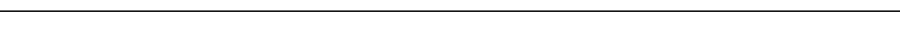
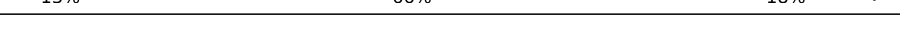
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Mol	Chain	Length	Quality of chain
1	18-C	831	
1	19-C	831	
1	2-C	831	
1	20-C	831	
1	21-C	831	
1	22-C	831	
1	23-C	831	
1	24-C	831	
1	25-C	831	
1	26-C	831	
1	27-C	831	
1	28-C	831	
1	29-C	831	
1	3-C	831	
1	30-C	831	
1	31-C	831	
1	32-C	831	
1	33-C	831	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

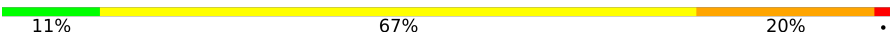
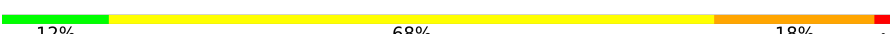
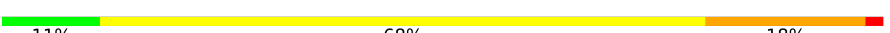
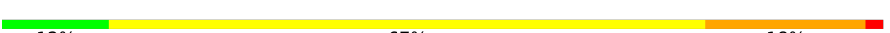
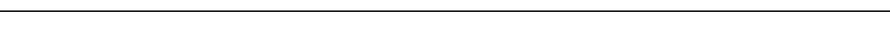
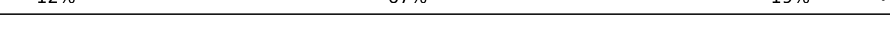
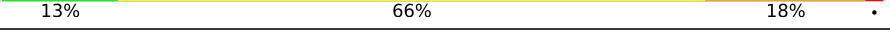
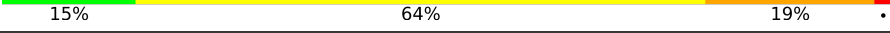
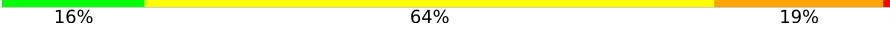
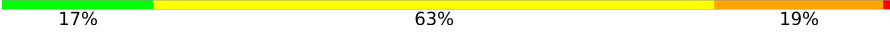
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Mol	Chain	Length	Quality of chain
1	40-C	831	
1	5-C	831	
1	6-C	831	
1	7-C	831	
1	8-C	831	
1	9-C	831	
2	1-Y	136	
2	10-Y	136	
2	11-Y	136	
2	12-Y	136	
2	13-Y	136	
2	14-Y	136	
2	15-Y	136	
2	16-Y	136	
2	17-Y	136	
2	18-Y	136	
2	19-Y	136	
2	2-Y	136	
2	20-Y	136	
2	21-Y	136	
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2	23-Y	136	
2	24-Y	136	
2	25-Y	136	
2	26-Y	136	

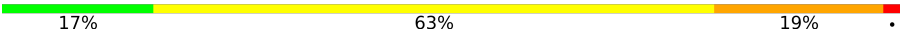
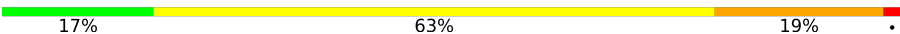
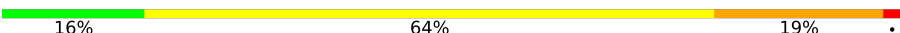
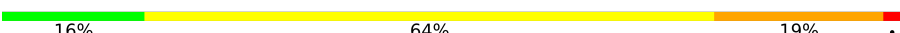
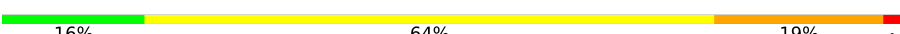
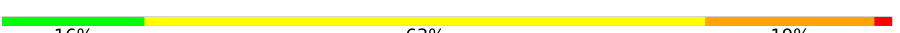
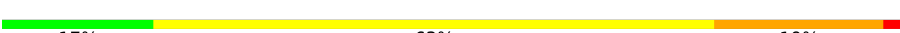
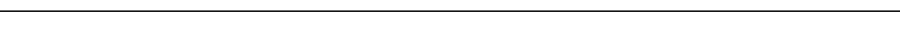
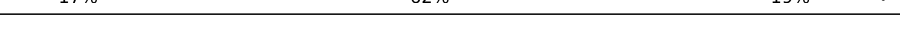
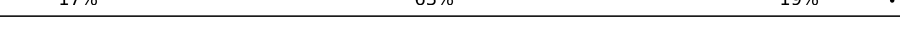
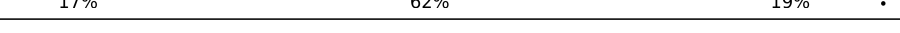
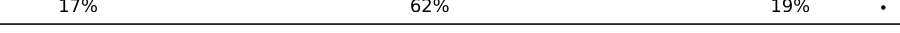
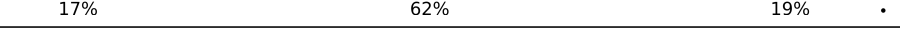
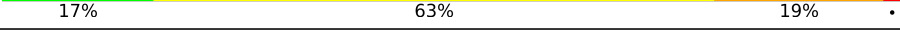
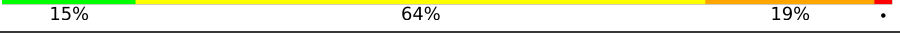
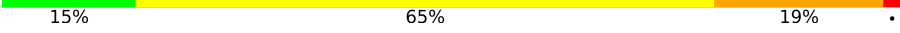
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Mol	Chain	Length	Quality of chain
2	27-Y	136	 12% 67% 18% .
2	28-Y	136	 11% 67% 20% .
2	29-Y	136	 12% 66% 18% .
2	3-Y	136	 12% 67% 18% .
2	30-Y	136	 12% 68% 18% .
2	31-Y	136	 11% 68% 18% .
2	32-Y	136	 12% 67% 18% .
2	33-Y	136	 12% 67% 19% .
2	34-Y	136	 12% 65% 20% .
2	35-Y	136	 13% 66% 18% .
2	36-Y	136	 12% 66% 20% .
2	37-Y	136	 11% 68% 18% .
2	38-Y	136	 13% 65% 19% .
2	39-Y	136	 12% 67% 19% .
2	4-Y	136	 12% 67% 19% .
2	40-Y	136	 11% 68% 18% .
2	5-Y	136	 13% 65% 19% .
2	6-Y	136	 12% 66% 20% .
2	7-Y	136	 12% 67% 19% .
2	8-Y	136	 12% 66% 19% .
2	9-Y	136	 13% 66% 18% .
3	1-Z	151	 15% 64% 19% .
3	10-Z	151	 16% 64% 19% .
3	11-Z	151	 17% 63% 19% .
3	12-Z	151	 17% 62% 19% .

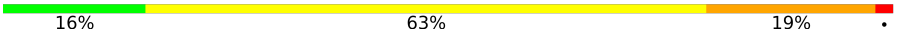
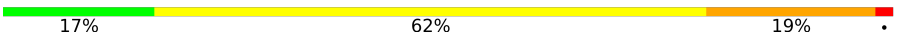
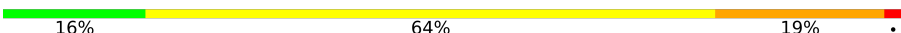
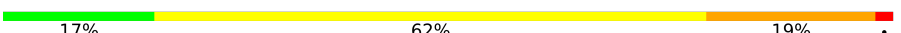
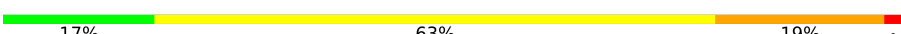
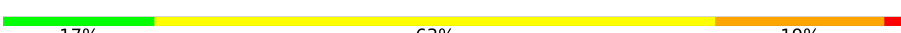
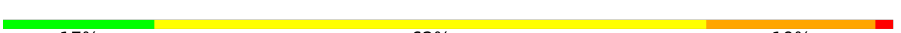
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Mol	Chain	Length	Quality of chain
3	13-Z	151	 17% 63% 19% .
3	14-Z	151	 17% 63% 19% .
3	15-Z	151	 16% 64% 19% .
3	16-Z	151	 16% 64% 19% .
3	17-Z	151	 16% 64% 19% .
3	18-Z	151	 16% 63% 19% .
3	19-Z	151	 17% 63% 19% .
3	2-Z	151	 16% 64% 19% .
3	20-Z	151	 16% 64% 19% .
3	21-Z	151	 13% 66% 19% .
3	22-Z	151	 17% 62% 19% .
3	23-Z	151	 17% 62% 19% .
3	24-Z	151	 15% 64% 19% .
3	25-Z	151	 17% 63% 19% .
3	26-Z	151	 17% 62% 19% .
3	27-Z	151	 17% 63% 19% .
3	28-Z	151	 17% 62% 19% .
3	29-Z	151	 12% 67% 19% .
3	3-Z	151	 17% 62% 19% .
3	30-Z	151	 17% 62% 19% .
3	31-Z	151	 17% 63% 19% .
3	32-Z	151	 15% 64% 19% .
3	33-Z	151	 15% 65% 19% .
3	34-Z	151	 13% 66% 19% .
3	35-Z	151	 18% 62% 19% .

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Mol	Chain	Length	Quality of chain
3	36-Z	151	 16%63%19%.
3	37-Z	151	 17%62%19%.
3	38-Z	151	 16%64%19%.
3	39-Z	151	 17%62%19%.
3	4-Z	151	 17%63%19%.
3	40-Z	151	 17%63%19%.
3	5-Z	151	 17%62%19%.
3	6-Z	151	 17%63%19%.
3	7-Z	151	 16%64%19%.
3	8-Z	151	 16%64%19%.
3	9-Z	151	 17%63%19%.

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 340040 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

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

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

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

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

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

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Mol	Chain	Residues	Atoms					AltConf	Trace
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		
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		

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Mol	Chain	Residues	Atoms					AltConf	Trace
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		

- 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		
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		

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Mol	Chain	Residues	Atoms					AltConf	Trace
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		
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		

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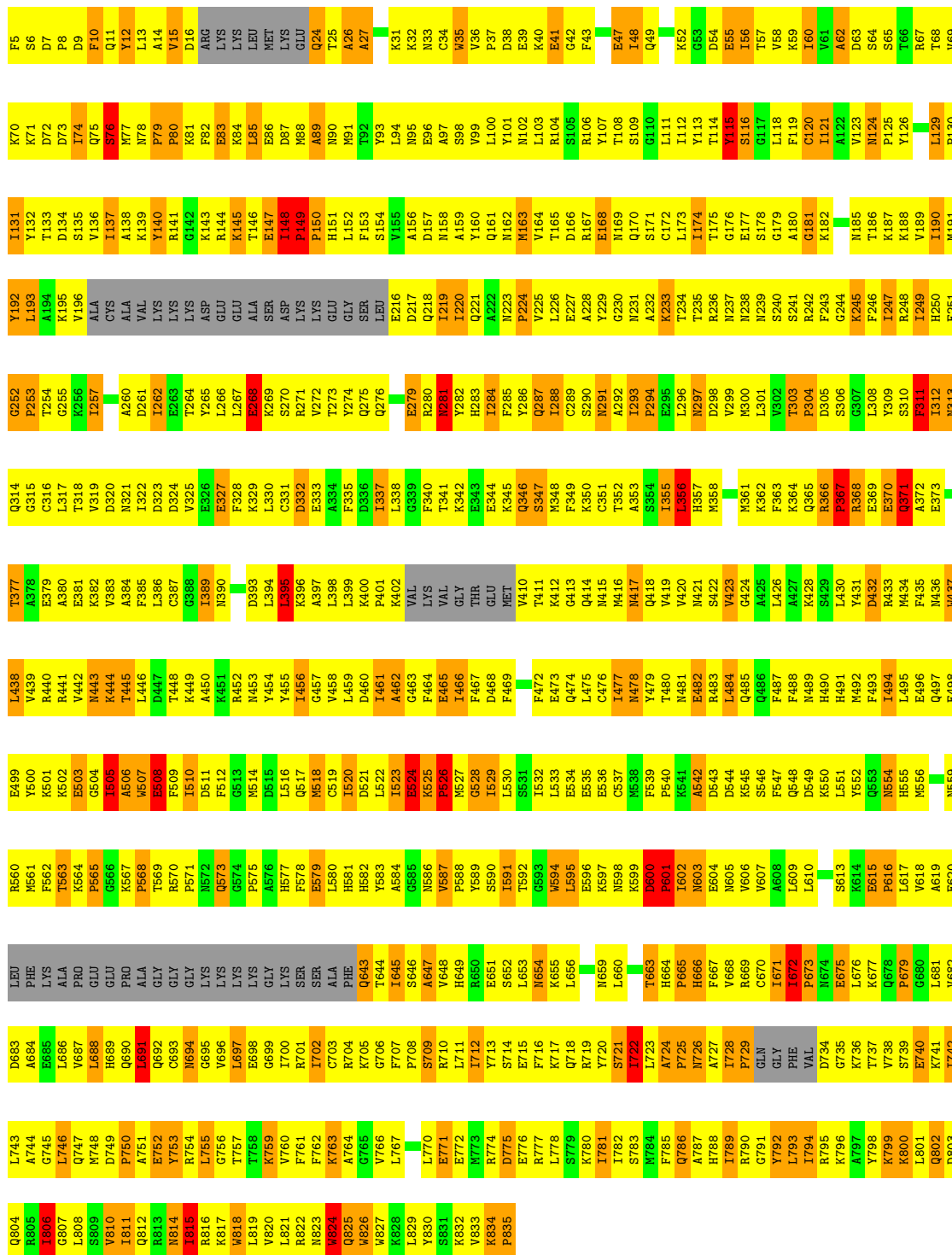
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Mol	Chain	Residues	Atoms					AltConf	Trace
3	39-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		
3	40-Z	151	Total	C	N	O	S	0	0
			1198	757	190	244	7		

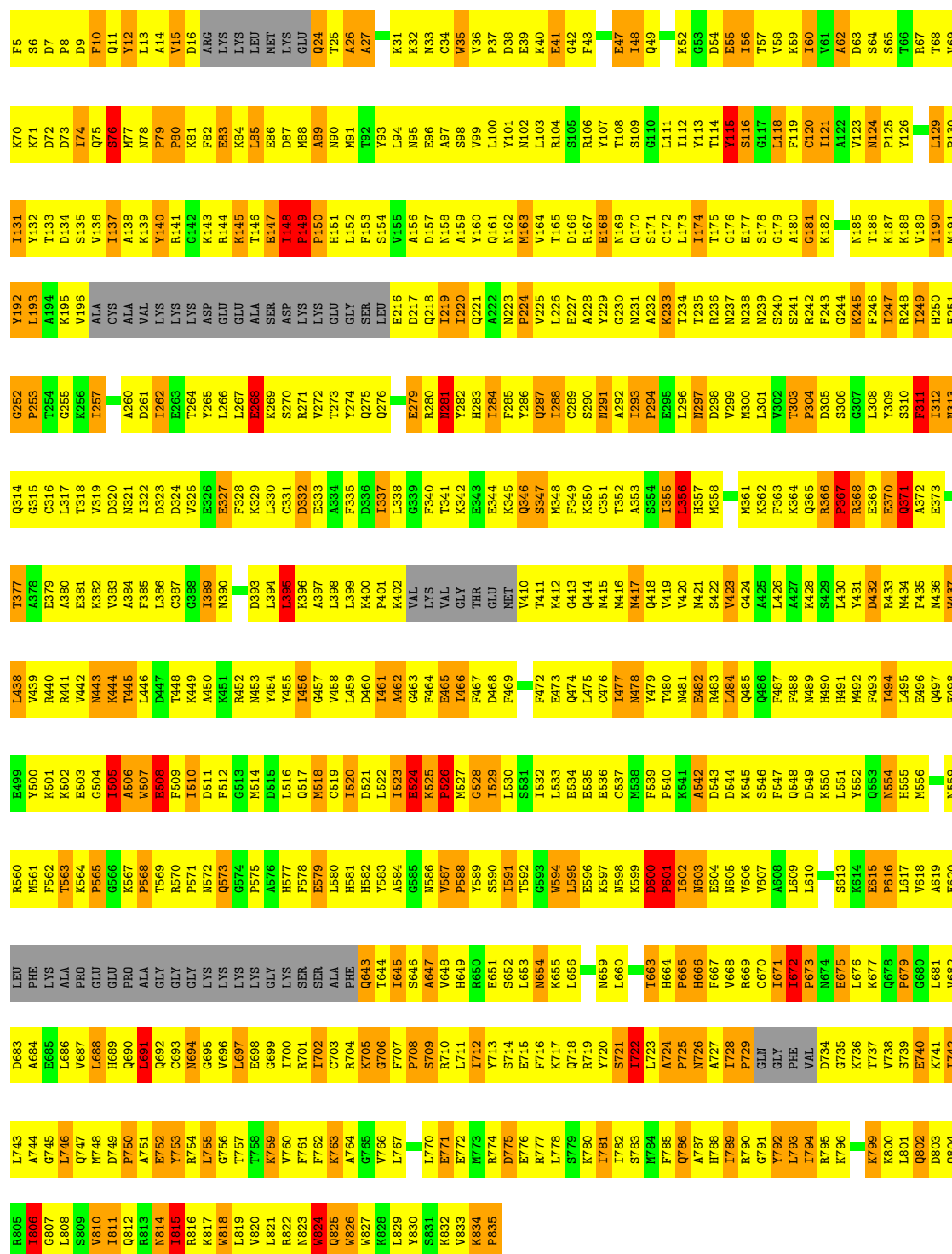


• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 3-C: 12% 59% 20% 7%



• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

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

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 5-C:  12% 58% 20% 7%

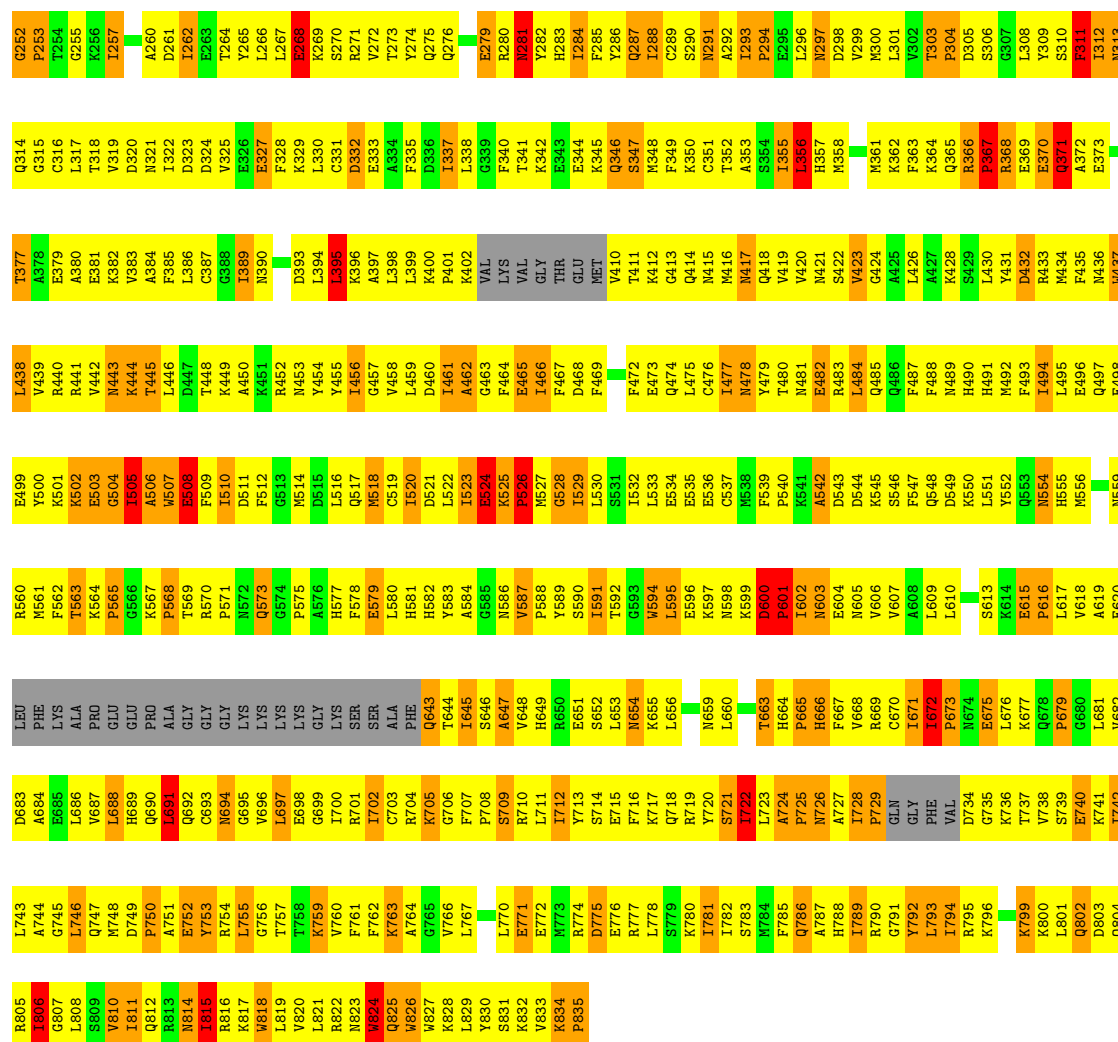
I131	Y192	G252	Q314	T377	L438	E499	B560	L683	L743	R805
Y132	L193	P253	G315	A378	V439	Y500	M561	A684	A744	R806
T133	A194	G254	G316	A379	R440	F501	F562	E685	G745	G807
D134	K195	G255	L317	A380	R441	K502	T563	L686	L746	L808
S135	V196	K256	T318	E381	V442	G504	K564	V687	Q747	S809
V136	ALA	I257	V319	K382	M443	G505	P565	L688	M748	V810
I137	CYS	I258	D320	V383	K444	I506	G566	H689	D749	T811
A138	ALA	A260	N321	A384	T445	A507	K567	Q690	F750	Q812
K139	VAL	D261	N322	F385	T446	A508	P568	L691	A751	Q813
Y140	LYS	D262	D323	L386	L447	F509	T569	Q692	E752	N814
R141	LYS	E263	D324	C387	T448	F508	R570	C693	Y753	R815
G142	LYS	T264	D325	G388	K449	I510	P571	N694	R754	R816
K143	ASP	Y265	F326	I389	K450	D511	N572	G695	L755	K817
R144	GLU	L266	E327	N390	K451	F512	Q573	V696	G756	N818
K145	GLU	L267	F328	D393	R452	G513	G574	L697	T757	L819
T146	ALA	E268	K329	D394	M453	M514	P575	E698	T758	V820
E147	SER	K269	L330	L394	Y454	D515	A576	G699	L759	L821
I148	ASP	S270	C331	L395	Y455	L516	H577	W700	V760	R822
P149	LYS	R271	D332	K396	I456	Q517	F578	R701	F761	N823
P150	LYS	V272	E333	A397	C457	M518	E579	I702	F762	N824
H151	GLU	V273	A394	L398	C458	C519	L580	C703	K763	Q825
L152	GLY	Y274	F335	L399	L459	H581	H581	R704	A764	W826
F153	SER	Q275	D336	K400	D460	D521	H582	K705	G765	W827
S154	SER	Q276	L337	P401	I461	L522	Y583	T644	V766	K828
V155	LEU	Q276	I338	K402	A462	I523	A584	F707	L767	L829
A156	D217	E279	G339	VAL	C463	E524	G585	P708	L770	Y830
D157	Q218	R280	F340	LYS	F464	K525	N586	R709	E771	S831
N158	T219	Y281	T341	VAL	E465	P526	V587	R710	L772	K832
A159	L220	Y282	K342	GLY	I466	M527	P588	L711	E772	W833
Y160	Q221	H283	E343	THR	F467	G528	Y589	T712	M773	K834
Q161	Q222	H284	E344	GLU	D468	I529	S590	Y713	R774	P835
Q162	N223	F285	E345	GLU	F469	L530	I591	S714	D775	
M163	P224	Y286	K346	MET	F469	S531	T592	E715	E776	
V164	V225	Q287	Q347	V410	F472	L532	G593	F716	R777	
T165	L226	T288	N348	T411	E473	L533	W594	K717	L778	
D166	E227	C289	F349	K412	Q474	L534	L595	Q718	S779	
R167	A228	S290	K350	Q413	L475	E535	E596	R719	K780	
E168	Y229	M291	C351	Q414	C476	E536	K597	Y720	I781	
M169	G230	A292	C352	N415	I477	C537	N598	S721	L782	
Q170	N231	I293	A353	N416	M478	M538	K599	L722	S783	
C172	A232	P294	S354	Q418	Y479	F539	D600	L723	M784	
L173	K233	E295	I355	V419	T490	P540	P601	A724	F785	
L174	T234	L296	L356	V420	M481	K541	I602	P665	Q786	
T175	T235	M297	H357	N421	E482	A542	N603	N726	A787	
T176	R236	D298	M358	S422	R483	D543	E604	A727	H788	
G176	N237	V299	N361	V423	L484	D544	N605	I728	I789	
E177	N238	M300	L361	G424	Q485	K545	V606	P729	R790	
S178	N239	L301	K362	A425	Q486	S546	V607	GLN	G791	
G179	S240	V362	F363	L426	F487	Q548	A608	GLY	Y792	
A180	S241	T303	K364	A427	F488	Q549	L609	PHE	L793	
G181	R242	P304	Q365	K428	M489	D549	L610	VAL	I794	
K182	F243	D305	R366	S429	H490	K550	G613	D734	R795	
N185	G244	S306	L367	S429	H491	L551	S613	E675	K796	
T186	K245	G307	R368	L430	M492	L552	G614	G735	G797	
K187	F246	L308	E369	Y431	F493	E515	E615	K736	K799	
K188	I247	Y309	R337	D432	F493	Q553	P616	T737	X800	
V189	R248	S310	Q371	M434	I494	H555	L617	W738	L801	
I189	I249	F311	Q371	M434	L495	H556	L618	S739	Q802	
H190	H250	I312	A372	F435	E496	M556	V618	E740	R803	
M191	F251	N313	E373	N436	Q497	E620	A619	K741	L681	
				W437	E498	N559	E620	I742	Q804	

● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 8-C: 12% 58% 20% 7%

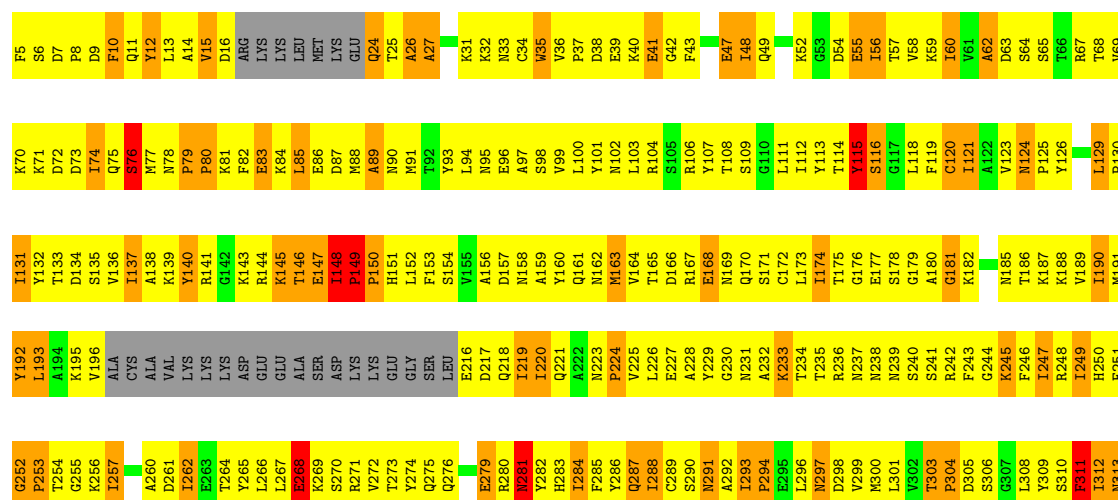
F5	K70	I131	K70	F5	K70	I131	K70	F5	K70	I131
S6	K71	Y132	K71	S6	K71	Y132	K71	S6	K71	Y132
D7	D72	T133	D72	D7	D72	T133	D72	D7	D72	T133
P8	D73	D134	D73	P8	D73	D134	D73	P8	D73	D134
D9	I74	S135	I74	D9	I74	S135	I74	D9	I74	S135
F10	Q75	V136	Q75	F10	Q75	V136	Q75	F10	Q75	V136
Q11	S76	I137	S76	Q11	S76	I137	S76	Q11	S76	I137
Y12	M77	A138	M77	Y12	M77	A138	M77	Y12	M77	A138
L13	N78	K139	N78	L13	N78	K139	N78	L13	N78	K139
A14	P79	Y140	P79	A14	P79	Y140	P79	A14	P79	Y140
V15	P80	R141	P80	V15	P80	R141	P80	V15	P80	R141
D16	K81	G142	K81	D16	K81	G142	K81	D16	K81	G142
ABG	F82	K143	F82	ABG	F82	K143	F82	ABG	F82	K143
LYS	E83	R144	E83	LYS	E83	R144	E83	LYS	E83	R144
LVS	K84	T146	K84	LVS	K84	T146	K84	LVS	K84	T146
LEU	L85	E147	L85	LEU	L85	E147	L85	LEU	L85	E147
MT	E86	I148	MT	MT	E86	I148	MT	MT	E86	I148
LVS	D87	P149	LVS	LVS	D87	P149	LVS	LVS	D87	P149
GLU	M88	F150	GLU	GLU	M88	F150	GLU	GLU	M88	F150
Q24	A89	H151	Q24	Q24	A89	H151	Q24	Q24	A89	H151
T25	N90	L152	T25	T25	N90	L152	T25	T25	N90	L152
A26	M91	F153	A26	A26	M91	F153	A26	A26	M91	F153
A27	G92	S154	A27	A27	G92	S154	A27	A27	G92	S154
K31	L94	V155	K31	K31	L94	V155	K31	K31	L94	V155
K32	N95	A156	K32	K32	N95	A156	K32	K32	N95	A156
N33	E96	D157	N33	N33	E96	D157	N33	N33	E96	D157
C34	A97	N158	C34	C34	A97	N158	C34	C34	A97	N158
W35	S98	A159	W35	W35	S98	A159	W35	W35	S98	A159
P37	V99	Y160	P37	P37	V99	Y160	P37	P37	V99	Y160
D38	L100	Q161	D38	D38	L100	Q161	D38	D38	L100	Q161
E39	Y101	M162	E39	E39	Y101	M162	E39	E39	Y101	M162
K40	N102	F164	K40	K40	N102	F164	K40	K40	N102	F164
E41	L103	T165	E41	E41	L103	T165	E41	E41	L103	T165
G42	R104	D166	G42	G42	R104	D166	G42	G42	R104	D166
F43	Q105	S105	F43	F43	Q105	S105	F43	F43	Q105	S105
E47	Y107	R106	E47	E47	Y107	R106	E47	E47	Y107	R106
I48	T108	E168	I48	I48	T108	E168	I48	I48	T108	E168
Q49	S109	Q170	Q49	Q49	S109	Q170	Q49	Q49	S109	Q170
K52	L111	S171	K52	K52	L111	S171	K52	K52	L111	S171
G53	Y112	C172	G53	G53	Y112	C172	G53	G53	Y112	C172
D54	T113	L173	D54	D54	T113	L173	D54	D54	T113	L173
E55	T114	I174	E55	E55	T114	I174	E55	E55	T114	I174
I56	Y115	T175	I56	I56	Y115	T175	I56	I56	Y115	T175
T57	S116	E177	T57	T57	S116	E177	T57	T57	S116	E177
V58	G117	S178	V58	V58	G117	S178	V58	V58	G117	S178
K59	L118	G179	K59	K59	L118	G179	K59	K59	L118	G179
I60	F119	A180	I60	I60	F119	A180	I60	I60	F119	A180
V81	C120	G181	V81	V81	C120	G181	V81	V81	C120	G181
A62	T121	K182	A62	A62	T121	K182	A62	A62	T121	K182
D63	A122	N185	D63	D63	A122	N185	D63	D63	A122	N185
S64	V123	T186	S64	S64	V123	T186	S64	S64	V123	T186
S65	N124	K187	S65	S65	N124	K187	S65	S65	N124	K187
T66	Y126	K188	T66	T66	Y126	K188	T66	T66	Y126	K188
R67	L129	V189	R67	R67	L129	V189	R67	R67	L129	V189
T68	D130	I190	T68	T68	D130	I190	T68	T68	D130	I190
V69	P130	M191	V69	V69	P130	M191	V69	V69	P130	M191

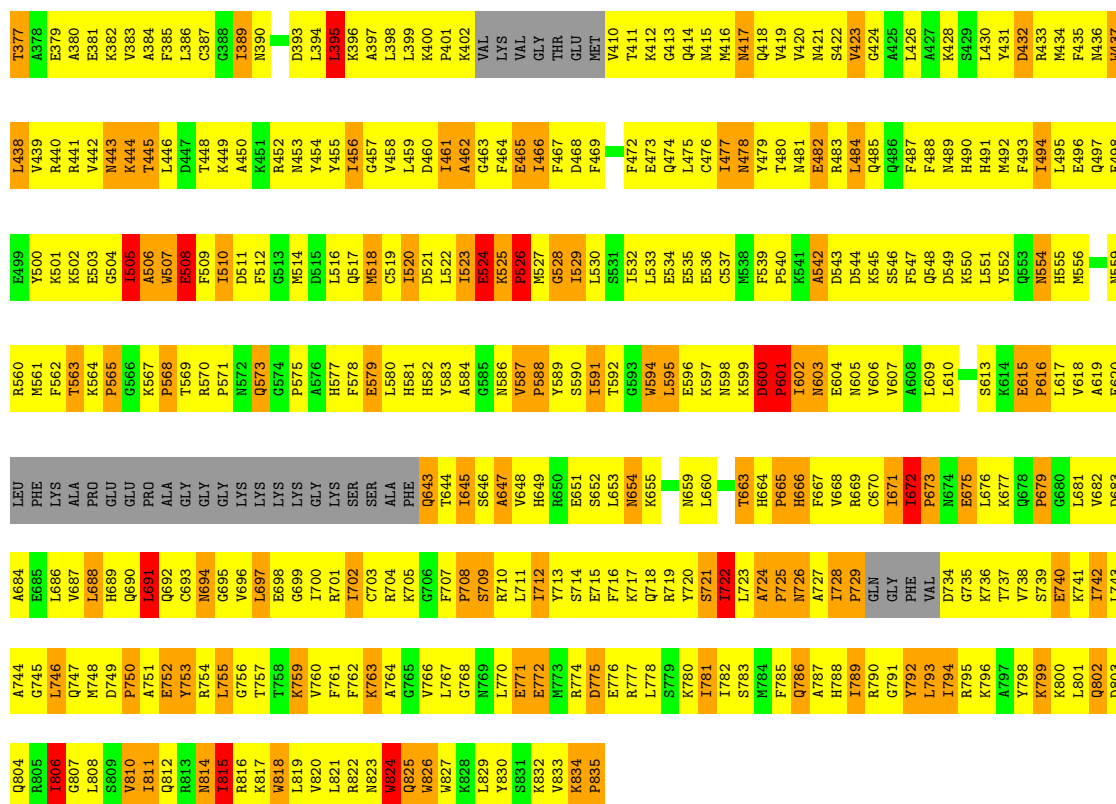




● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

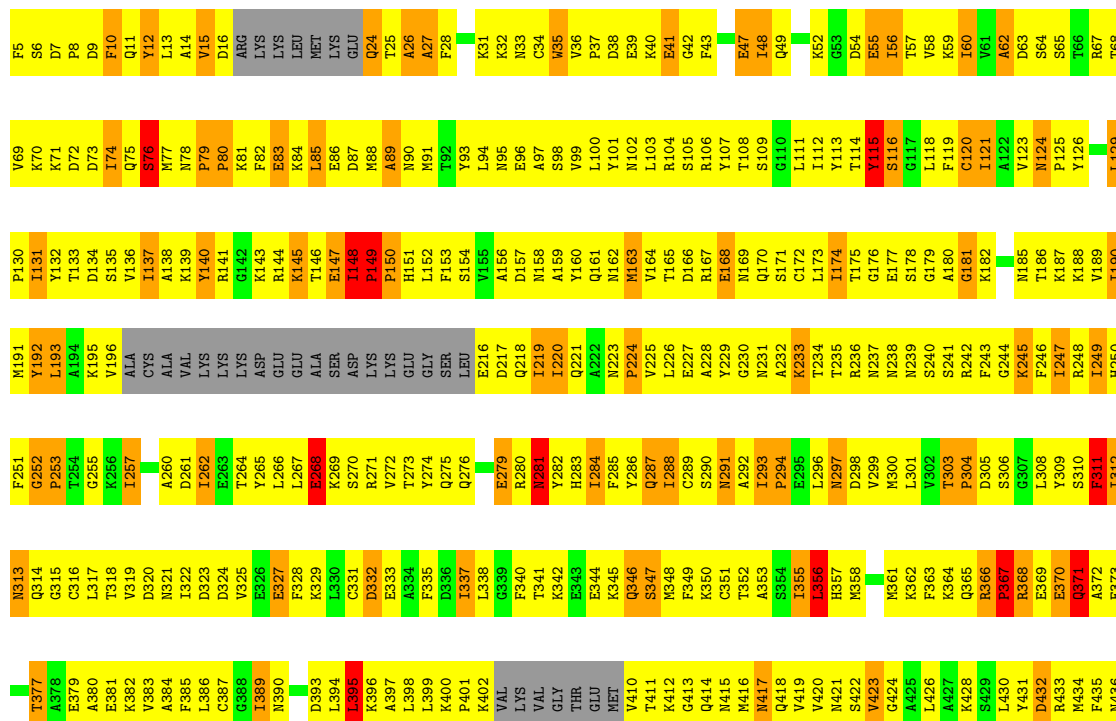
Chain 10-C: 11% 59% 20% 7%

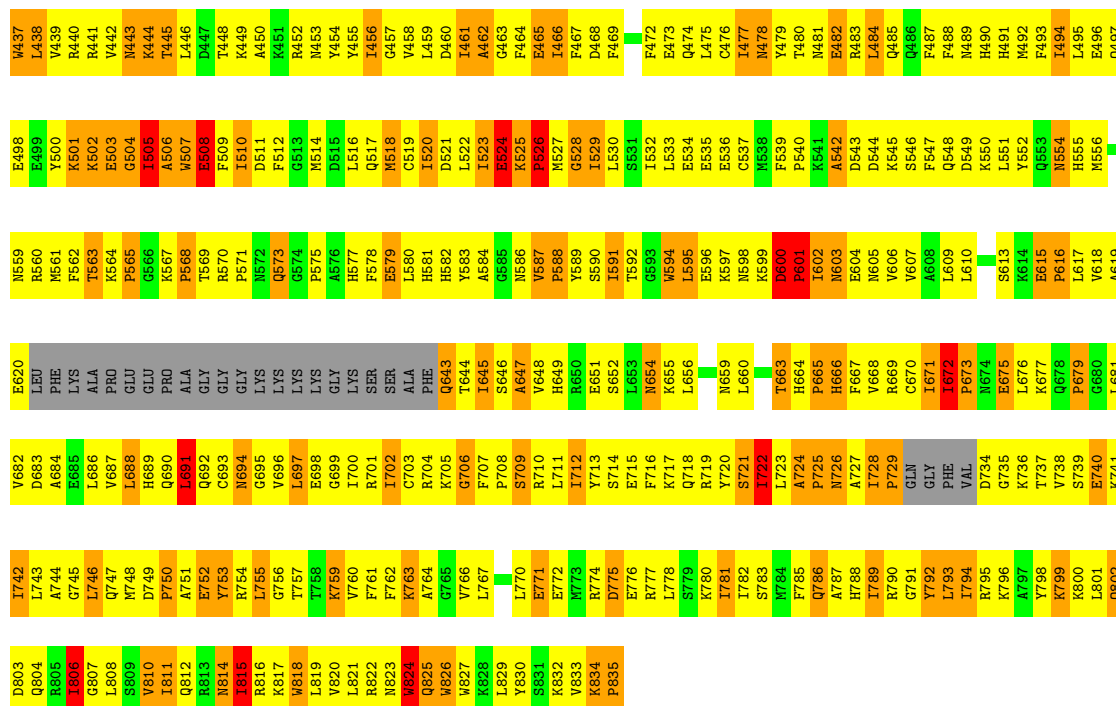




● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

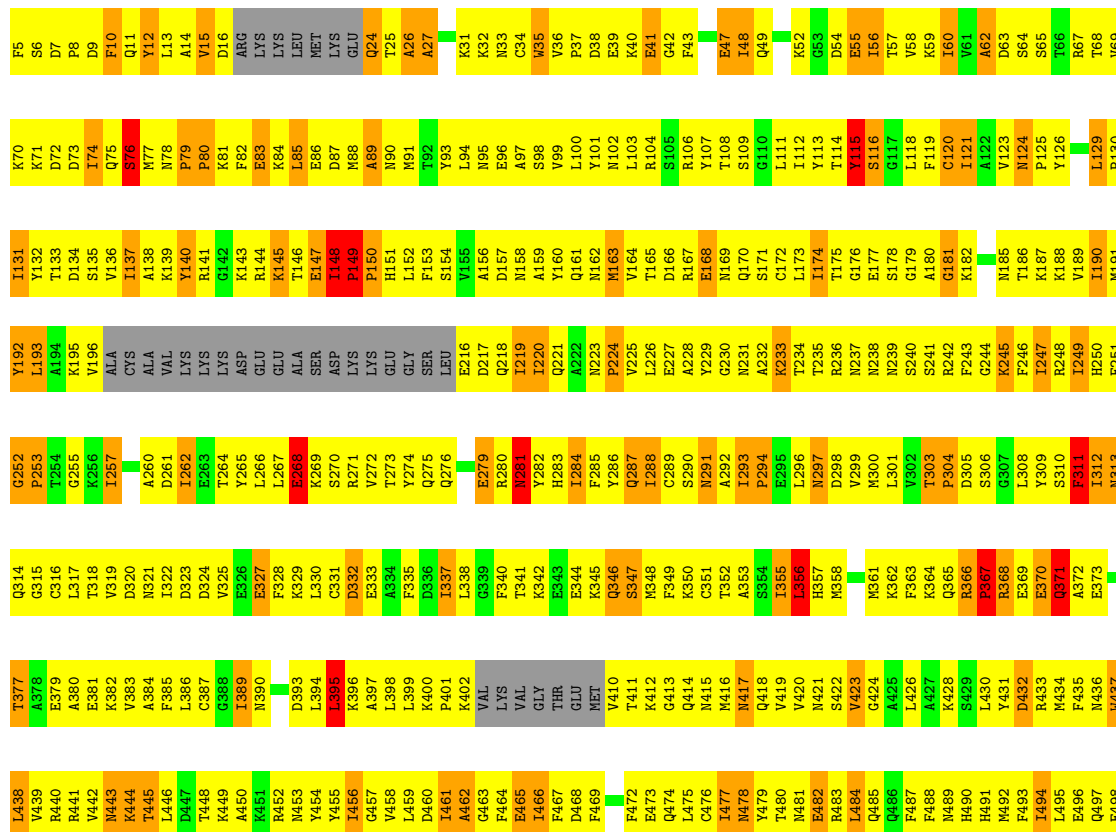
Chain 12-C: 12% 58% 20% 7%





● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 13-C: 12% 59% 20% 7%



D683	A684	E685	L686	L687	L688	L689	Q690	L691	Q692	C693	N694	G695	V696	L697	E698	G699	I700	R701	I702	C703	R704	K705	G706	F707	P708	S709	R710	L711	I712	Y713	S714	E715	F716	K717	Q718	R719	Y720	S721	I722	L723	A724	P725	N726	A727	I728	P729	GLN	GLY	PHE	VAL	D734	G735	K736	T737	V738	S739	E740	K741	D742																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
L743	A744	G745	L746	L747	M748	D749	P750	A751	E752	Y753	R754	L755	G756	T757	L758	K759	V760	F761	F762	K763	A764	G765	V766	L767	L770	E771	E772	M773	R774	D775	E776	R777	L778	K779	S780	L781	I782	S783	M784	Q785	A786	A787	H788	I789	R790	G791	Y792	L793	I794	R795	K796	A797	V798	K799	K800	L801	Q802	D803																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Q804	R805	L806	G807	L808	S809	V810	I811	Q812	R813	Y814	L815	R816	K817	M818	L819	V820	L821	R822	N823	A824	Q825	V826	V827	K828	L829	Y830	K831	C832	W833	K834	P835																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										</

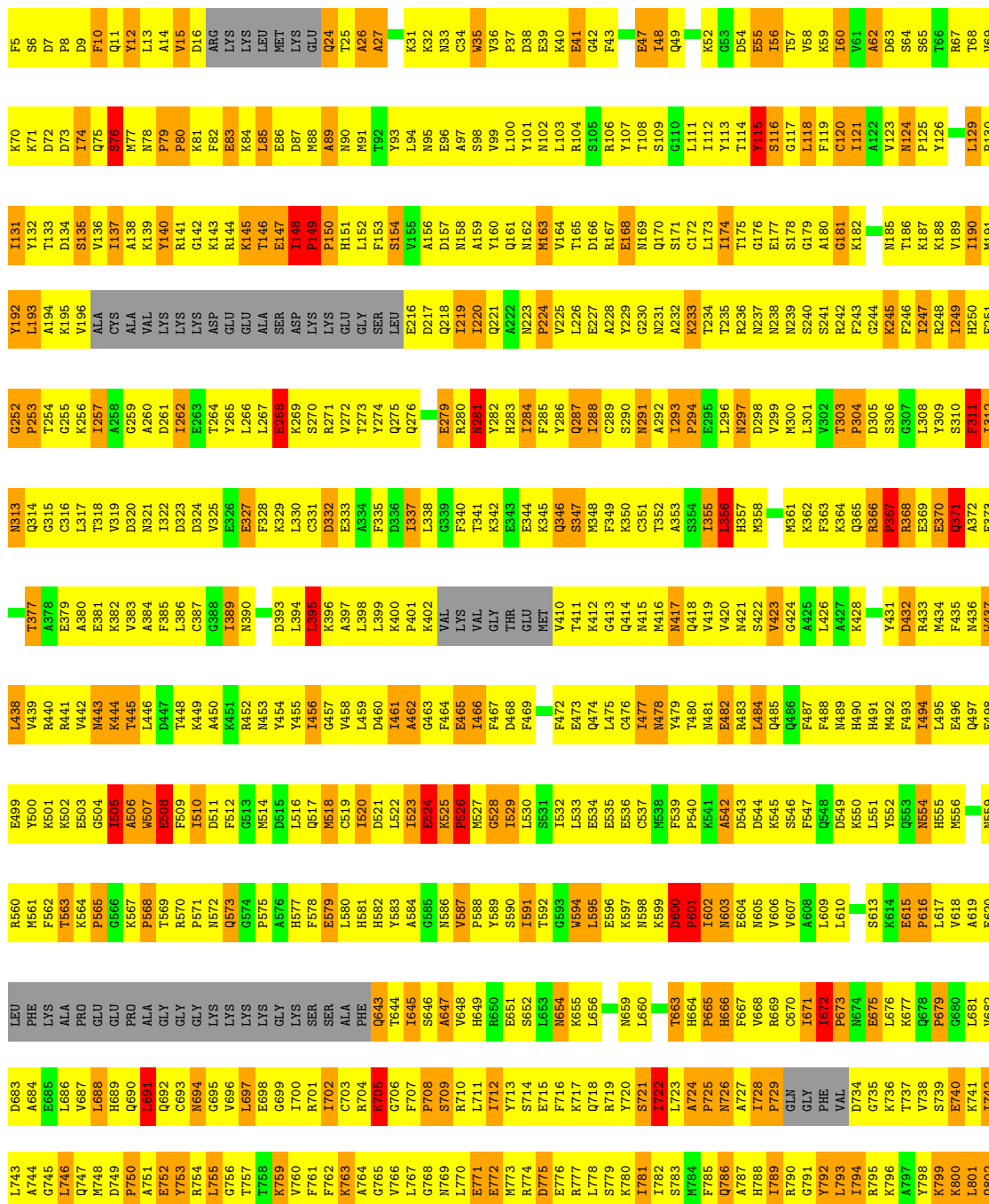
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

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

F5	S6	D7	P8	D9	F10	C11	Y12	L13	A14	V15	D16	ARG	LYS	LEU	LEU	MET	LYS	GLU	Q24	T25	A26	A27	F28	K31	K32	N33	C34	W35	V36	P37	D38	E39	M102	L103	R104	E41	G42	F43	E47	L48	Q49	K52	S53	D54	E55	S56	T57	V58	K59	L60	V61	A62	D63	S64	S65	T66	R67	L129																																																																																																																																																																																									
V69	K70	K71	D72	D73	I74	Q75	S76	M77	N78	P79	R80	K81	F82	E83	K84	L85	E86	D87	H88	A89	N90	A91	Y92	Y93	L94	N95	E96	N97	S98	V99	L100	T107	T108	S109	L111	L112	Y113	T114	E115	S116	G117	L118	F119	C120	L121	A122	V123	N124	P125	Y126	L129																																																																																																																																																																																																
P130	I131	Y132	T133	D134	S135	V136	I137	A138	K139	Y140	R141	G142	K143	L144	K145	T146	E147	I148	P149	H151	L152	GLY	F153	S154	V155	A156	D157	N158	A159	S160	H161	E168	N169	Q170	S171	C172	L173	I174	T175	G176	E177	S178	G179	A180	G181	K182	N185	V186	K187	K188	V189	H250																																																																																																																																																																																															
M191	Y192	L193	A194	K195	V196	ALA	CYS	ALA	VAL	LYS	LYS	LYS	ASP	GLU	GLU	ALA	SER	ASP	LYS	LYS	GLY	GLY	SER	LEU	E216	D217	Q218	L219	N281	Y282	H283	L284	E285	N286	P224	V225	L226	E227	A228	Y229	G230	N231	A232	C233	T234	T235	R236	N237	G300	L301	V302	S303	P304	D305	S306	G307	K308	F309	S310	F311	L312																																																																																																																																																																																						
F251	G252	P253	T254	G255	K256	L257	A260	D261	L262	E263	T264	V265	L266	L267	E268	S270	R271	D272	V273	Y274	Q275	Q276	E279	E280	L281	C288	S289	N291	A292	L293	P294	L296	N297	D298	V299	K300	N238	N239	S240	S241	R242	G181	K182	N185	V186	K187	K188	V189	H250																																																																																																																																																																																																		
N313	Q314	G315	C316	L317	T318	V319	D320	N321	L322	D323	D324	V325	E326	E327	F328	K329	L330	L331	D332	D333	F335	D336	L337	L338	G339	F340	N341	T342	L343	L344	L345	L346	L347	L348	L349	L350	L351	L352	L353	L354	L355	L356	L357	M358	M361	K362	F363	K364	Q365	R366	P367	R368	E369	E370	Q371	A372	E373																																																																																																																																																																																										
T377	A378	E379	L380	K381	E382	K383	V384	V385	F386	L387	C388	G389	L389	L390	K400	P401	L402	VAL	LYS	VAL	GLY	THR	GLU	MET	V410	T411	S412	K413	G414	Q415	L416	M417	Q418	V419	L420	N421	S422	V423	G424	A425	L426	A427	K428	H429	H430	H431	M432	D433	F434	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																																																																																																																																			
E498	E499	Y500	K501	K502	K503	G504	L505	A506	W507	E508	F509	I510	D511	F512	G513	M514	A515	L516	Q517	M518	L519	C520	D521	L522	I523	E524	G525	P526	M527	G528	S529	I530	L531	S532	L533	M534	L535	L536	L537	L538	L539	L540	L541	A542	E543	D544	N545	V546	S547	F548	Q549	L550	K551	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

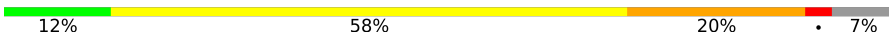


Chain 18-C: 



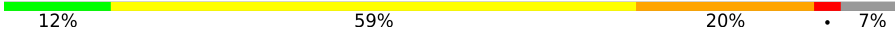
D803
Q804
R805
L806
G807
L808
S809
V810
L811
Q812
R813
N814
I815
R816
K817
W818
V820
L821
R822
N823
W824
Q825
W826
W827
K828
L829
Y830
S831
K832
V833
K834
P835

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 19-C:  12% 58% 20% 7%

R805	L743	D683	LEU	R560	E499	L438	T377	Q314	G252	Y192	I131	K70	F5	
L806	A744	A684	PHE	M561	Y500	V439	A378	G315	E279	A193	Y132	K71	S6	
G807	G745	E685	LYS	F562	K501	R440	E379	C316	T254	L193	T133	D72	D7	
L808	L746	L686	ALA	T563	K502	R441	A380	L317	G255	K195	D134	P8		
S809	G747	V687	PRO	E564	E503	V442	E381	T318	K256	V196	S135	I74	D9	
V810	K748	L688	GLU	P685	G504	N443	K382	V319	I257	ALA	V136	Q75	F10	
L811	D749	H689	GLU	G566	L505	K444	V383	D320	CYS	T137	I137	S76	Q11	
Q812	P750	Q690	PRO	K567	A506	T445	A384	N321	ALA	ALA	A138	M77	Y12	
R813	A751	L691	ALA	P568	W507	L446	F385	I322	VAL	K139	N78	P79	L13	
L814	E752	Q692	GLY	T569	E508	D447	L386	D323	LVS	Y140	P79	A14		
Y815	V753	C693	GLY	R570	F509	T448	C387	D324	LVS	R141	P80	I74	V15	
R816	G754	N694	GLY	P571	I510	K449	G388	V325	LVS	G142	K81	D16		
L755	L755	G695	LYS	M572	D511	A450	L389	E326	ASP	K143	F82	L86	ARG	
R817	G756	V696	LYS	Q573	F512	K451	N390	E327	GLU	E83	E83	E84	LYS	
L818	T757	L697	LYS	G574	G513	R452	L645	F328	GLU	K144	K84	LVS		
W820	L758	E698	GLY	P575	M514	N453	D393	K329	ALA	K146	L85	L86	LYS	
L821	K759	G699	LYS	A576	D515	Y454	L394	L330	E268	E147	E86	LEU		
R822	V760	I700	LYS	H577	L516	Y455	L385	C331	S270	ASP	D87	LVS		
H823	F761	R701	SER	P578	Q517	I456	K396	D332	R271	LYS	P149	M88	GLU	
W824	F762	I702	SER	E579	M518	G457	A397	E333	V272	LYS	A89	Q24		
Q825	K763	G703	ALA	L580	C519	V458	L398	A334	T273	GLU	H51	T25		
W826	A764	R704	PHE	H581	I520	L459	L399	F335	Y274	GLY	L152	N91		
G827	G765	K705		H582	D521	D460	K400	D336	Q275	SER	F153	T32	A27	
K828	V766	G706	T644	Y583	L522	I461	P401	I337	Q276	LEU	S154	Y93		
L829	L767	F707	T645	A584	I523	A462	K402	L338	E216	L94	L94	K31		
W830	L770	P708	S646	G585	E524	G463	VAL	G339	E279	D217	A156	N95	K32	
R831	L770	S709	A647	N586	K525	F464	LYS	LVS	R280	Q218	D157	E96	N33	
K832	E771	R710	V648	P587	P526	E465	VAL	T341	N281	I219	N158	A97	C34	
R833	E772	L711	H649	P588	M527	I466	GLY	K342	Y282	I220	A159	S98	W35	
K834	W773	I712	R650	Y589	G528	F467	THR	E343	H283	Q221	Y160	V99	V36	
P835	R774	F713	E651	S590	I529	D468	GLU	E344	I284	A222	Q161	L101	P37	
	D775	S714	S652	T591	L530	P469	MET	K345	F285	N223	K162	L100	D38	
E776	E715	L653	L653	T592	L530			Q346	Y286	P224	M163	N102	E39	
R777	F716	L654	G593	G593	S531	F472	T411	K347	Q287	V225	V164	L103	K40	
L778	K717	L655	W594	L533	I532	E473	K412	M348	I288	L226	T165	R104	E41	
S779	Q718	L595	L656	E534	E534	Q474	G413	F349	C289	E227	D166	S105	G42	
K780	R719	E596		E535	E535	L475	Q414	K350	S290	A228	R167	R106		
L781	L781	K597		E536	E536	C476	M415	C351	N291	G230	E168	Y107		
L782	S721	N598	L659	C537	C537	I477	M416	T352	A292	Q231	N169	T108	E47	
S783	L722	K599		M538	M538	N478	N417	A353	I293	N231	Q170	S10	I48	
W784	L723	D600	T663	F539	F539	Y479	Q418	S354	P294	A232	S171	G10	Q49	
R785	A724	H664	H664	P540	P540	T480	V419	L355	E295	K233	C172	L111		
Q786	P725	P665		L602	L602	N481	V420	L356	L296	T234	C172	L111	K52	
L787	P726	H666		N603	N603	A542	N421	K357	N297	T235	I174	Y113	G53	
H788	A727	F667		E504	E504	R483	S422	M358	D298	R236	T175	T114	D54	
L789	R728	V668		N605	D544	L484	V423	L484	V299	N237	G176	Y115	E55	
R790	G729	R669		V606	K545	Q485	G424	K361	M300	N238	E177	S116	I56	
G791	GLN	C670		V607	S546	Q486	A425	K362	L301	N239	S178	G117	T57	
Y792	GLY	I671		A608	F467	F487	L426	F363	V302	S240	G179	L118	V58	
L793	PHE	T672		L609	Q548	F488	A427	K364	T303	S241	A180	C120	V58	
L794	VAL	P673		L610	D549	N489	K428	Q365	P304	R242	G181	F119	K59	
R795	D734	N674		K550	K550	H490	S429	K366	D305	F243	I121	C120	I60	
K796	G735	E675		L551	L551	H491	L430	R367	G306	G244	K182	I121	V61	
	K736	L676		Y552	Y552	M492	Y431	R368	G307	K245	N185	V123	A62	
	T737	K677		E515	Q553	F493	D432	E369	L308	F246	K186	I123	D63	
K799	V738	Q678		P616	N554	I494	R433	E370	Y309	R187	T124	N124	S64	
L801	S739	P679		L617	H555	L495	M434	Q371	S310	R248	K188	Y126	S65	
Q802	E740	W556		V618	M556	E496	F435	A372	F311	I249	V189	T66		
D803	K741	L681		A619		Q497	N436	E373	I312	H250	L190	L129	R67	
O804	L742	P620		F520	N550	R498	W427		I312	Q436	M190	P129	T68	

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 20-C:  12% 59% 20% 7%

F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	ARG	LYS	LYS	LEU	MET	LEU	GLU	Q24	T25	A26	A27	K31	K32	K33	C34	W35	V36	P37	D38	E39	K40	E41	G42	F43	E47	I48	Q49	K52	G53	D54	E55	I56	T57	V58	K59	I60	V61	A62	D63	S64	S65	T66	R67	T68	V69										
K70	K71	D72	D73	K74	I75	Q76	R77	K78	P79	R80	K81	F82	E83	K84	L85	E86	D87	M88	A89	N90	N91	T92	Y93	L94	N95	E96	A97	S98	V99	L100	Y101	N102	L103	R104	S105	Y107	T108	Q109	G110	L111	I112	Y113	T114	Y115	S116	G117	L118	F119	C120	I121	A122	V123	N124	P125	Y126	L129	I130	P130								
I131	Y132	T133	D134	K135	V136	I137	A138	K139	Y140	R141	G142	K143	R144	K145	T146	E147	I148	P149	L150	H151	L152	F153	S154	V155	A156	D157	N158	A159	Y160	D161	N162	M163	V164	T165	D166	A228	Y229	G230	N231	A232	C172	L173	T235	R236	N237	E177	G179	S241	R181	K182	N185	T186	K187	K188	V189	I190	M191									
Y192	L193	A194	V196	ALA	CYS	ALA	VAL	LYS	LYS	ASP	ASP	GLU	GLU	GLU	ALA	SER	ASP	LYS	LYS	GLU	GLY	SER	E216	D217	Q218	L219	N220	Q221	Q222	N223	P224	V225	L226	E227	A228	Y229	G230	N231	A232	K233	T234	R235	R236	N237	N238	N239	S240	R241	R242	F243	K245	F246	Y309	S310	F311	I312	N313									
Q252	P253	T254	Q255	K256	I257	A260	D261	L262	E263	T264	Y265	L266	L267	F268	K269	S270	R271	V272	T273	Y274	Q275	Q276	E279	R280	N281	Y282	H283	T284	F285	Y286	Q287	L288	C289	S290	N291	A292	T293	P294	E295	L296	N297	D298	V299	K300	L301	V302	T303	P304	D305	S306	G307	F308	K361	K362	F363	K364	Q365	R366	P367	R368	F369	E370	Q371	A372	E373	N313
Q314	G315	C316	L317	T318	V319	D320	N321	L322	D323	D324	V325	F326	E327	F328	L329	K330	C331	D332	E333	L334	F335	D336	L337	L338	G339	T341	K342	H343	E344	K345	Q346	S347	L348	F349	Q350	C351	A352	T353	L354	L355	L356	K357	K358	K359	K360	K361	K362	F363	K364	Q365	R366	P367	R368	F369	E370	Q371	A372	E373	N313							
T377	A378	E379	A380	E381	K382	V383	A384	L385	L386	C387	G388	T389	K390	D393	L394	L395	K396	A397	L398	L399	K400	P401	K402	VAL	LYS	VAL	GLY	THR	GLU	MET	V410	T411	K412	Q413	Q414	N415	N416	N417	Q418	V419	V420	N421	S422	V423	Q424	Q425	A426	L427	K428	H429	L430	Y431	D432	R433	N434	F435	N436	N437	E498							
L438	V439	R440	R441	V442	N443	K444	T445	L446	D447	T448	K449	A450	K451	R452	N453	Y454	Y455	T456	V457	L458	L459	D460	L461	A462	G463	F464	E465	L466	F467	G468	L469	F472	L473	Q474	L475	C476	T477	N478	Y479	T480	N481	A542	D543	D544	K545	S546	F547	F487	F488	N489	H490	L551	Y552	N553	Q554	L494	L495	E496	Q497	E498						
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R560	M561	F562	T563	K564	P565	G566	K567	P568	L569	R570	P571	Q572	Q573	G574	M575	A576	H577	F578	E579	L580	H581	H582	Y583	A584	G585	N586	V587	P588	Y589	S590	T591	T592	G593	M594	L595	E596	K597	N598	K599	D600	P601	I602	N603	E604	N605	V606	V607	C670	I671	A608	L609	L610	S613	K614	E615	P616	L617	V618	A619	E620						
LEU	PHE	ALA	ALA	PRO	GLU	GLU	PRO	ALA	GLY	GLY	GLY	GLY	LYS	LYS	LYS	GLY	LYS	SER	SER	ALA	PHE	Q643	T644	L645	S646	A647	V648	H649	R650	E651	S652	L653	N654	L655	N659	L660	T663	H664	P665	H666	F667	V668	R669	GLN	GLY	PHE	VAL	D734	G735	K736	T737	V738	S739	E740	K741	I742										
D683	A684	L685	L686	V687	L688	G689	Q690	L691	Q692	C693	N694	G695	V696	L697	E698	G699	I700	R701	I702	C703	R704	K705	G706	F707	P708	S709	R710	L711	I712	I713	S714	E715	F716	K717	Q718	R719	W720	S721	L722	L723	A724	P725	N726	A727	I728	P729	GLN	PHE	VAL	D734	G735	K736	T737	V738	S739	E740	K741	I742								
L743	A744	G745	L746	K747	M748	D749	P750	A751	E752	Y753	R754	L755	G756	T757	K758	F759	W760	F761	F762	K763	A764	G765	V766	L767	L770	E771	R772	M773	R774	D775	E776	R777	L778	S779	K780	I781	I782	S783	M784	Q785	Q786	A787	H788	I789	R790	G791	Y792	L793	I794	R795	K796	K799	K800	L801	Q802	D803	Q804									
R805	L806	G807	L808	S809	V810	I811	Q812	R813	N814	I815	R816	K817	W818	L819	V820	L821	R822	N823	W824	W826	W827	K828	L829	Y830	S831	K832	R833	K834	P835	Q825	W826	W827	K828	L829	Y830	S831	K832	R833	K834	P835	Q825	W826	W827	K828	L829	Y830	S831	K832	R833	K834	P835															

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 21-C:  10% 59% 21% 7%

L801	Q802	D803	Q804	R805	L806	G807	L808	S809	L810	L811	L812	Q813	L814	L815	R816	L817	L818	L819	R820	L821	R822	R823	R824	R825	R826	R827	R828	R829	R830	S831	R832	R833	R834	R835																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

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

F5	S6	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	ARG	LYS	LEU	LEU	MET	LYS	GLU	Q24	T25	A26	A27	K31	K32	N33	C34	W35	V36	P37	D38	E39	K40	E41	G42	F43	E47	I48	Q49	K52	G53	D54	E55	I56	T57	V58	K59	I60	A62	V61	D63	S64	S65	T66	R67	T68	V69
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● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 23-C: 12% 58% 20% 7%

F5	S6	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	ARG	LYS	LYS	LEU	WET	LYS	GLU	Q24	A26	T25	A27	K31	K32	N33	C34	W35	V36	P37	D38	E39	K40	E41	G42	F43	E47	I48	Q49	K52	G53	D54	I55	I56	T57	V58	K59	I60	V61	A62	D63	S64	S65	T66	R67	T68	L69			
K70	K71	D72	D73	I74	K75	S76	M77	M78	P79	P80	K81	F82	E83	K84	L85	E86	D87	M88	A89	N90	M91	T92	Y93	L94	N95	E96	A97	S98	Y99	L100	L101	M102	L103	R104	S105	R106	Y107	T108	S109	G110	L111	C112	I113	T114	Y115	S116	G117	L118	F119	C120	I121	A122	N123	N124	P125	Y126	L129	P130

I131	Y192	G252	Q314	T377	L438	E499	B560	D683	L743	Q804
Y132	L193	P253	G315	A378	V439	Y500	M561	A684	A744	R805
T133	A194	G254	C317	E379	R440	K501	F562	E685	G745	R806
D134	K195	G255	L317	A380	R441	K502	T563	L686	L746	G807
S135	V196	K256	T318	E381	V442	G504	K564	V687	Q747	L808
V136	ALA	I257	V319	K382	M443	E505	P565	L688	M748	S809
I137	CYS	A260	D320	V383	K444	I506	G566	H689	D749	W810
A138	ALA	A261	N321	F384	T445	A507	K567	Q690	F750	I811
K139	VAL	D261	N322	F385	L446	A508	P568	L691	A751	Q812
Y140	LYS	I262	D323	L386	D447	E509	T569	Q692	E752	R813
R141	LYS	E263	D324	C387	T448	F508	R570	C693	Y753	N814
G142	LYS	T264	V325	G388	K449	I510	P571	N694	R754	R815
K143	ASP	Y265	F326	I389	A450	D511	M572	G695	L755	R816
R144	GLU	L266	E327	N390	K451	F512	Q573	V696	G756	K817
K145	GLU	L267	F328	D393	R452	G513	G574	L697	T757	W818
T146	ALA	E268	K329	D394	M453	M514	P575	E698	T758	L819
E147	SER	K269	L330	L394	Y454	D515	A576	G699	W759	W820
I148	ASP	S270	C331	L395	Y455	L516	H577	I700	V760	L821
P149	LYS	R271	D332	K396	I456	Q517	F578	R701	F761	R822
P150	LYS	V272	E333	A397	C457	M518	E579	I702	F762	N823
H151	GLU	Y274	A394	L398	C458	C519	L580	C703	K763	W824
F152	GLY	Y275	F335	L399	L459	D521	H581	R704	A764	Q825
F153	SER	Q275	D336	K400	D460	L522	H582	K705	G765	W826
S154	LEU	Q276	I337	P401	I461	L523	Y583	T644	V766	W827
V155	LEU	E216	L338	K402	A462	E524	A584	F707	L767	K828
A156	D217	E279	G339	VAL	C463	E525	G585	P708		L829
D157	Q218	R280	F340	LYS	F464	K526	M586	S709	L770	W830
N158	I219	Y281	T341	VAL	E465	P526	V587	R710	E771	R831
A159	GLY	I220	K342	GLY	I466	M527	P588	H649	E772	K832
Y160	GLY	Q221	E343	THR	F467	G528	Y589	L711	L773	W833
Q161	GLY	I284	E344	GLY	D468	L529	S590	W713	R774	K834
N162	N223	F285	K345	MET	F469	L530	I591	S714	D775	P835
M163	P224	Y286	Q346	VAL	F470	S531	T592	E715	E776	
V164	V225	Q287	N347	T411	F472	L532	G593	F716	R777	
T165	L226	I288	S348	K412	E473	L533	W594	K717	L778	
D166	E227	C289	F349	Q413	Q474	E534	L595	Q718	R779	
R167	A228	S290	K350	Q414	L475	E535	E596	R719	K780	
E168	Y229	I291	C351	N415	C476	E536	K597	W720	I781	
N169	G230	A292	T352	N416	I477	C537	M598	S721		
Q170	N231	I293	A353	N417	M478	M538	K599	L722		
C172	A232	P294	S354	Q418	Y479	F539	D600	L723	T663	
L173	K233	E295	I355	V419	T490	P540	P601	A724	H664	
L174	T234	L296	L356	V420	M481	K541	I602	P665	P666	
T175	T235	N297	H357	N421	E482	A542	M603	N726	H667	
T176	R236	D298	M358	S422	R483	D543	E604	A727	F667	
G176	N237	V299		V423	L484	D544	M605	I728	V668	
E177	N238	M300	N361	G424	Q485	K545	V606	P729	R669	
S178	N239	L301	K362	A425	Q486	S546	V607	GLN	C670	
G179	S240	V362	F363	L426	F487	A608	L609	GLY	I671	
A180	S241	T303	K364	A427	F488	Q548	L610	PHE	L672	
G181	R242	P304	Q365	K428	M489	D549		VAL	D734	
K182	F243	D305	R366	S429	H490	K550	S613		R795	
	G244	S306	L430	S429	H491	L551	G614	E675	K796	
N185	K245	G307	R368	Y431	M492	Y552	L615	L676	G735	
T186	F246	L308	E369	F493	M493	E553	E615	K736	W737	
K187	I247	Y309	D432	R433	I494	M554	P616	V738	K798	
K188	R248	S310	Q371	M434	L495	H555	L617	S739	K800	
V189	I249	F311	A372	F435	E496	M556	V618	E740	L801	
I190	H250	I312	E373	N436	Q497		A619	K741	L681	
M191	F251	N313		W437	E498	N559	E620	I742	D803	

● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

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

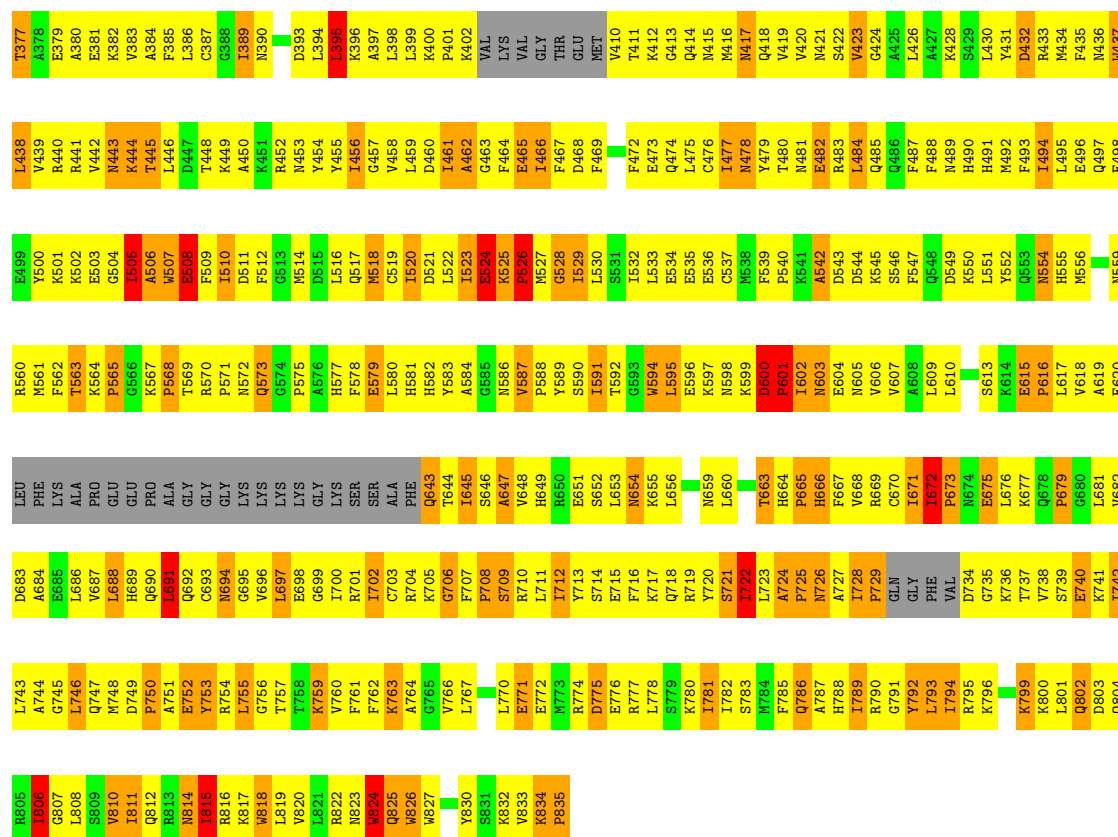
F5	K70	I131	K70	F5
S6	K71	Y132	K71	S6
D7	D72	T133	D72	D7
P8	D73	D134	D73	P8
D9	I74	S135	I74	D9
F10	Q75	V136	Q75	F10
Q11	S76	I137	S76	Q11
Y12	M77	A138	M77	Y12
L13	N78	K139	N78	L13
A14	P79	R140	P79	A14
V15	P80	R141	P80	V15
D16	K81	G142	K81	D16
ARG	F82	K143	ARG	ARG
LYS	E83	R144	LYS	LYS
LYS	K84	K145	LYS	LYS
LEU	L85	T146	LEU	LEU
MET	E86	E147	MET	MET
LYS	D87	I148	LYS	LYS
GLU	M88	P149	GLU	GLU
Q24	A89	P150	Q24	Q24
T25	N90	H151	T25	T25
A26	M91	L152	A26	A26
A27	T92	F153	A27	A27
Y93	Y93	S154	Y93	Y93
K31	L94	V155	K31	K31
K32	N95	A156	K32	K32
N33	E96	D157	N33	N33
C34	A97	N158	C34	C34
W35	S98	A159	W35	W35
P37	V99	Y160	P37	P37
D38	L100	Q161	D38	D38
E39	N101	N162	E39	E39
K40	L103	M163	K40	K40
E41	R104	V164	E41	E41
G42	G105	T165	G42	G42
F43	S106	D166	F43	F43
E47	Y107	R167	E47	E47
I48	T108	E168	I48	I48
Q49	S109	N169	Q49	Q49
	G110	Q170		
	L111	S171		
	Y112	C172		
	Y113	L173		
	T114	I174		
	G53	T175		
	E55	G176		
	I56	E177		
	T57	S178		
	V58	G179		
	K59	A180		
	I60	G181		
	V81	K182		
	A62			
	D63			
	S64			
	S65			
	T66			
	R67			
	T68			
	L129			
	P130			

R805	L743	D683	LEU	R560	E499	L438	T377	Q314	G252	Y192
I806	A744	E684	PHE	M561	Y500	V439	A378	G315	P253	L193
G807	G745	E685	LYS	F562	K501	R440	E379	C316	T254	A194
L808	L746	L686	ALA	T563	K502	R441	A380	L317	G255	K195
S809	Q747	V687	PRO	K564	E503	V442	E381	T318	K256	V196
V810	M748	L688	GLU	P565	G504	N443	K382	V319	L257	ALA
D749	D749	H689	GLU	G566	L505	K444	V383	D320	A260	CYS
Q812	P750	Q690	PRO	K567	A506	T445	A384	N321	L260	ALA
R813	A751	L691	ALA	P568	M507	L446	F385	L322	D261	VAL
N814	E752	Q692	GLY	T569	E508	D447	L386	D323	L262	LYS
L815	Y753	C693	GLY	R570	F509	T448	C387	D324	E263	LYS
R816	R754	N694	GLY	P571	L510	K449	G388	V325	T264	LYS
L755	L755	G695	LYS	M572	D511	A450	L389	E326	Y265	ASP
M818	G756	V696	LYS	Q573	F512	K451	E327	E327	L266	GLU
L819	T757	L697	LYS	G574	G513	R452	K452	F328	L267	GLU
V820	T758	E698	LYS	P575	M514	N453	K329	K329	E268	ALA
K759	R759	G699	GLY	A576	D515	Y454	L394	L330	K269	SER
L821	F760	I700	LYS	H577	L516	Y455	L395	C331	S270	ASP
R822	F761	R701	SER	F578	Q517	L456	K396	D332	R271	LYS
M823	F762	T702	SER	E579	M518	G457	A397	E333	V272	LYS
W824	K763	C703	ALA	L580	C519	V458	L398	A334	T273	GLU
Q825	A764	R704	PHE	H581	I520	L459	L399	F335	Y274	GLY
W826	G765	K705	Q643	H582	D521	D460	K400	D336	Q275	SER
W827	V766	G706	T644	Y583	L522	I461	P401	I337	Q276	LEU
K828	L767	F707	I645	A584	I523	A462	K402	L338		E216
L829		S708	S646	G585	E524	G463	VAL	G339	E279	D217
Y830	L770	S709	A647	N586	K525	F464	LYS	F340	R280	Q218
K832	E771	R710	V648	P587	M526	E465	VAL	T341	N281	L219
V833	E772	L711	H649	P588	P527	I466	GLY	K342	Y282	T220
K834	M773	I712	R650	Y589	G528	F467	THR	E343	H283	Q221
P835	R774	Y713	E651	S590	L529	D468	GLU	E344	I284	A222
	D775	S714	S652	L591	L530	F469	MET	K345	F285	N223
	E776	E715	L653	T592	S531	S831		Q346	Y286	P224
	L777	F716	N654	G593	I532	F472	T411	S347	Q287	V225
	S779	K717	K655	M594	L533	E473	K412	M348	L288	L226
	K780	R719	L656	L595	E534	Q474	Q413	F349	C289	E227
	L781	M659		E596	E535	L475	Q414	K350	S290	A228
	T782	S720	L660	K597	C536	C476	N415	C351	N291	Y229
	S783	Y721		N598	C537	I477	M416	T352	A292	G230
	L722	I723		K599	M538	N478	A353	A353	I293	N231
	K784	F723	T663	D600	F539	Y479	Q418	S354	P294	A232
	F785	A724	H664	P601	P540	T480	V419	L355	E295	K233
	Q786	P665	P665	I602	K541	E481	V420	L356	E295	
	A787	N726	H666	N603	A542	E482	N421	H357	N297	T234
	H788	A727	F667	E604	D543	R483	S422	M358	D298	R236
	I789	I728	V668	N605	D544	L484	V423		Y299	N237
	R790	P729	R669	V606	K545	Q485	G424	K361	M300	N238
	G791	GLN	C670	V607	S546	Q486	A425	K362	L301	N239
	Y792	GLY	I671	A608	F547	F487	L426	F363	V302	S240
	L793	PHE	L672	L609	Q548	F488	A427	K364	T303	S241
	I794	VAL	P673	L610	D549	N489	K428	Q365	P304	R242
	R795	D734	N674		K550	H490	S429	R366	D305	F243
	K796	G735	E675	S613	L551	H491	L430	P367	S306	G244
		K736	L676	K614	Y552	M492	Y431	R368	G307	K245
	K799	T737	K677	E615	Q553	F493	D432	E369	L308	F246
	R800	V738	Q678	P616	N554	I494	R433	E370	Y309	T247
	L801	S739	P679	L617	H554	L495	M434	Q371	L247	R248
	Q802	E740	G680	V618	M556	E496	F435	F311	I249	K249
	D803	K741	L681	A619		Q497	N436	A372	H250	L249
	E804	T742	H682	F620	M559	E498	M437	E373	N312	F251

● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

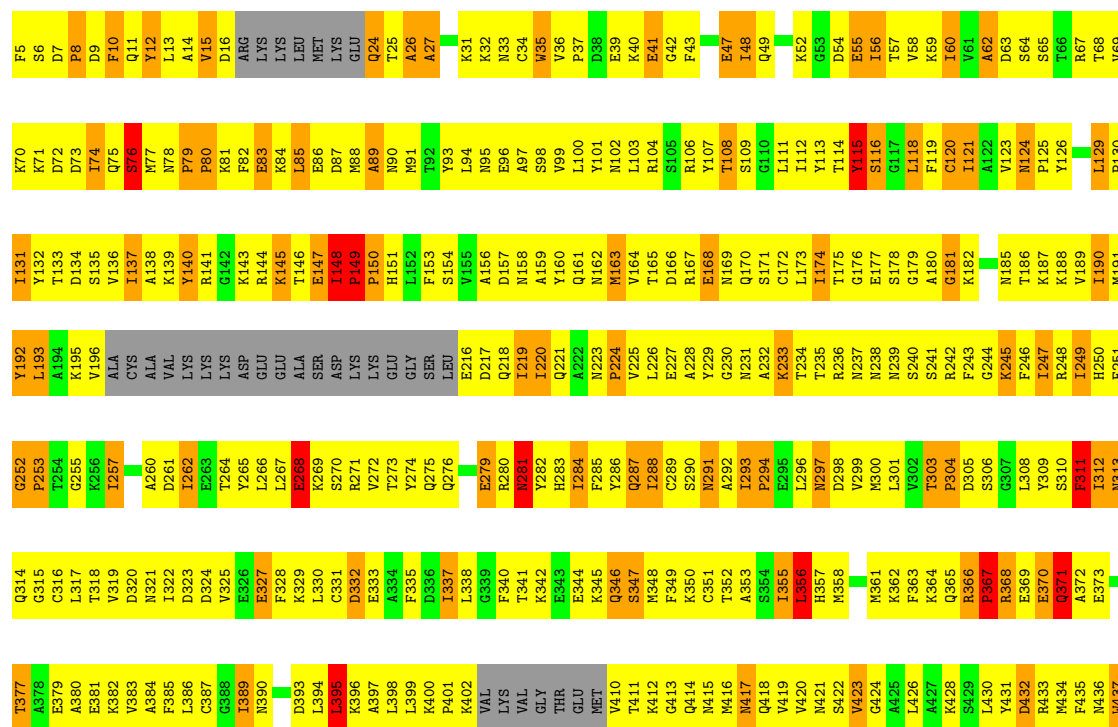
Chain 25-C: 12% 58% 20% 7%

F5	S6	D7	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	A17	L18	L19	L20	L21	L22	L23	L24	L25	L26	L27	L28	L29	L30	L31	L32	L33	L34	L35	L36	L37	L38	L39	L40	L41	L42	L43	L44	L45	L46	L47	L48	L49	L50	L51	L52	L53	L54	L55	L56	L57	L58	L59	L60	L61	L62	L63	L64	L65	L66	L67	L68	L69
K70	K71	D72	D73	Q74	Y75	S76	M77	L78	P79	P80	K81	F82	E83	K84	L85	E86	D87	M88	A89	H90	L91	F92	Y93	L94	N95	E96	A97	S98	V99	L100	L101	N102	L103	R104	S105	R106	Y107	T108	S109	G110	L111	I112	Y113	T114	Y115	S116	G117	L118	F119	C120	I121	A122	V123	N124	S125	P126	S127	L128	T129	P130				
I131	Y132	T133	D134	S135	V136	L137	A138	K139	L140	R141	G142	K143	R144	L145	T146	E147	R148	P149	P150	H151	L152	F153	S154	V155	A156	D157	L158	A159	Y160	Q161	N162	M163	V164	T165	D166	R167	E168	N169	Q170	S171	C172	L173	I174	T175	G176	E177	S178	G179	A180	G181	L182	N185	T186	K187	P188	L189	H190	T191	P192					
Y192	L193	A194	K195	V196	ALA	CYS	ALA	VAL	LYS	LYS	LYS	ASP	LYS	GLU	GLU	ALA	ASP	LYS	LYS	GLY	SER	LEU	E216	D217	Q218	L219	I220	Q221	Q222	A223	N224	V225	L226	E227	C228	S229	Y229	G230	N231	A232	K233	T234	T235	R236	N237	N238	N239	S240	S241	R242	F243	G244	K245	T246	I247	R248	I249	H250	N313	F251				



● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 28-C: 12% 58% 21% 7%



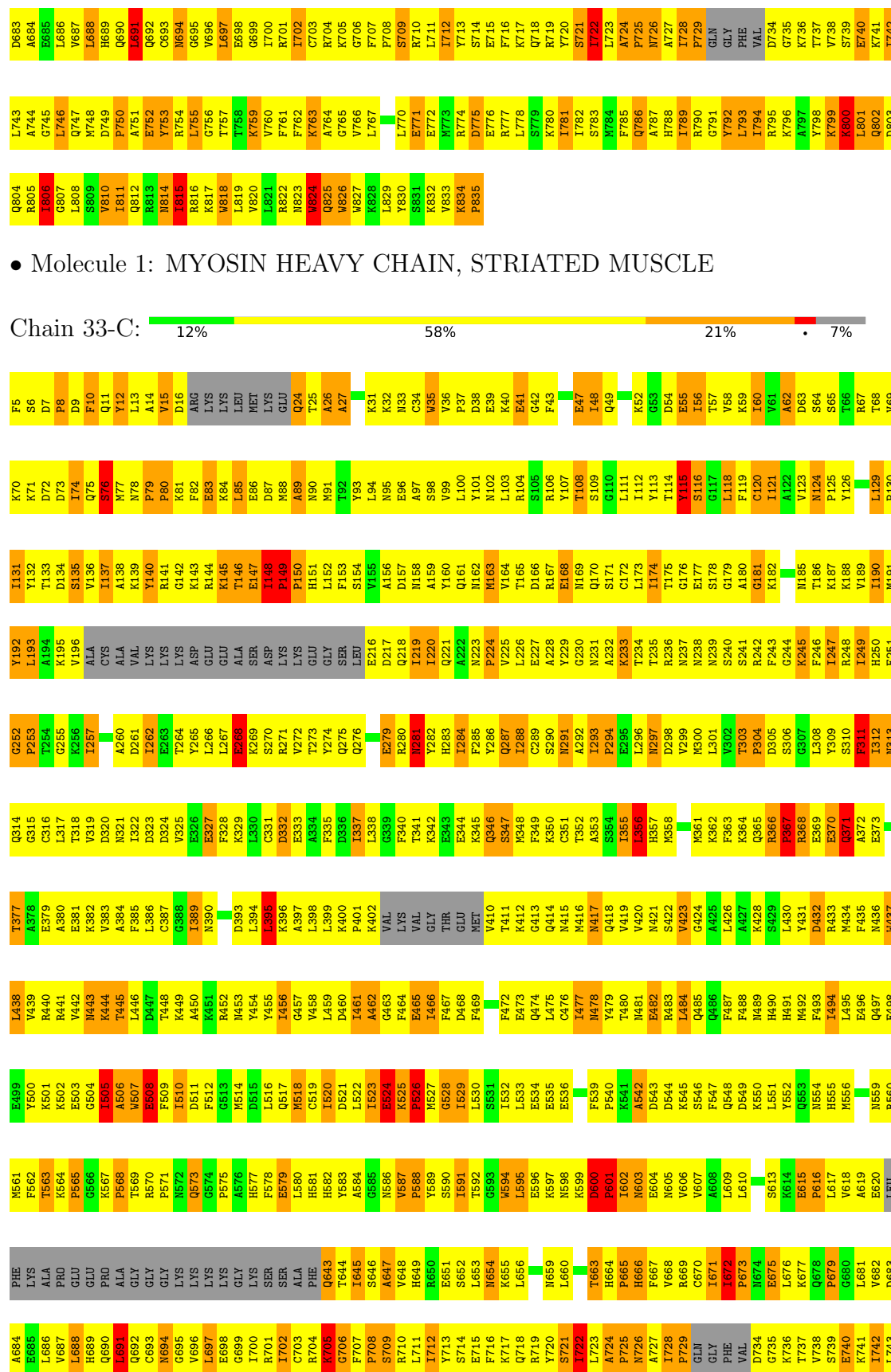


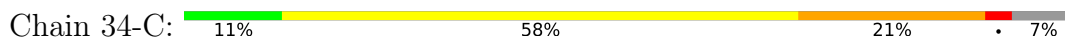
R805	L743	L683	L684	L685	L686	L687	L688	L689	L690	L691	L692	L693	L694	L695	L696	L697	L698	L699	L700	L701	L702	L703	L704	L705	L706	L707	L708	L709	L710	L711	L712	L713	L714	L715	L716	L717	L718	L719	L720	L721	L722	L723	L724	L725	L726	L727	L728	L729	L730	L731	L732	L733	L734	L735	L736	L737	L738	L739	L740	L741	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																																																																								
R806	A744	A684	E685	L686	L687	L688	L689	L690	L691	L692	L693	L694	L695	L696	L697	L698	L699	L700	L701	L702	L703	L704	L705	L706	L707	L708	L709	L710	L711	L712	L713	L714	L715	L716	L717	L718	L719	L720	L721	L722	L723	L724	L725	L726	L727	L728	L729	L730	L731	L732	L733	L734	L735	L736	L737	L738	L739	L740	L741	L742	L743	L744	L745	L746	L747	L748	L749	L750	L751	L752	L753	L754	L755	L756	L757	L758	L759	L760	L761	L762	L763	L764	L765	L766	L767	L768	L769	L770	L771	L772	L773	L774	L775	L776	L777	L778	L779	L780	L781	L782	L783	L784	L785	L786	L787	L788	L789	L790	L791	L792	L793	L794	L795	L796	L797	L798	L799	L800	L801	L802	L803	L804																																																																									
L805	L806	L807	L808	L809	L810	L811	L812	L813	L814	L815	L816	L817	L818	L819	L820	L821	L822	L823	L824	L825	L826	L827	L828	L829	L830	L831	L832	L833	L834	L835	L836	L837	L838	L839	L840	L841	L842	L843	L844	L845	L846	L847	L848	L849	L850	L851	L852	L853	L854	L855	L856	L857	L858	L859	L860	L861	L862	L863	L864	L865	L866	L867	L868	L869	L870	L871	L872	L873	L874	L875	L876	L877	L878	L879	L880	L881	L882	L883	L884	L885	L886	L887	L888	L889	L890	L891	L892	L893	L894	L895	L896	L897	L898	L899	L900	L901	L902	L903	L904	L905	L906	L907	L908	L909	L910	L911	L912	L913	L914	L915	L916	L917	L918	L919	L920	L921	L922	L923	L924	L925	L926	L927	L928	L929	L930	L931	L932	L933	L934	L935	L936	L937	L938	L939	L940	L941	L942	L943	L944	L945	L946	L947	L948	L949	L950	L951	L952	L953	L954	L955	L956	L957	L958	L959	L960	L961	L962	L963	L964	L965	L966	L967	L968	L969	L970	L971	L972	L973	L974	L975	L976	L977	L978	L979	L980	L981	L982	L983	L984	L985	L986	L987	L988	L989	L990	L991	L992	L993	L994	L995	L996	L997	L998	L999	L1000

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 32-C: 12% 58% 20% 7%

F5	S6	D7	P8	D9	F10	Q11	L12	L13	L14	V15	D16	ARG	L18	L19	L20	L21	L22	L23	L24	L25	A26	A27	K31	K32	N33	C34	W35	V36	P37	D38	E39	K40	E41	G42	F43	E47	L48	Q49	K52	D54	E55	L56	T57	V58	K59	L60	V61	D62	D63	S64	S65	T66	R67	L69	V69																																																																																																																																																																																																																																																						
K70	K71	D72	D73	I74	Q75	S76	M77	M78	P79	P80	K81	K82	E83	K84	L85	E86	D87	L88	A89	N90	N91	F92	Y93	L94	N95	E96	L97	S98	V99	L100	L101	N102	L103	R104	S105	L106	Y107	T108	S109	G110	L111	L112	Y113	T114	Y115	S116	G117	L118	F119	C120	I121	A122	V123	N124	S125	Y126	L129	P130																																																																																																																																																																																																																																																			
I131	Y132	T133	D134	S135	V136	I137	A138	K139	Y140	P141	G142	K143	R144	T145	L146	E147	I148	P149	P150	H151	L152	F153	S154	V155	A156	D157	N158	A159	V160	Q161	N162	L163	T164	D165	D166	R167	E168	N169	Q170	C171	L172	I173	T174	T175	G176	E177	S178	G179	A180	G181	K182	N185	T186	P187	Y188	L189	L190	M191																																																																																																																																																																																																																																																			
Y192	L193	A194	V196	ALA	CYS	ALA	VAL	L199	L200	L201	L202	L203	L204	L205	L206	L207	L208	L209	L210	L211	L212	L213	L214	L215	L216	L217	L218	L219	L220	L221	L222	L223	L224	L225	L226	L227	L228	L229	L230	L231	L232	L233	L234	L235	L236	L237	L238	L239	L240	L241	L242	L243	L244	L245	L246	L247	L248	L249	L250	L251																																																																																																																																																																																																																																																	
G252	P253	T254	G255	K256	L257	A260	D261	L262	L263	L264	L265	L266	L267	E268	K269	S270	R271	V272	T273	Y274	Q275	Q276	E279	R280	L281	Y282	L283	H284	L285	F286	L287	L288	C289	S290	L291	A292	L293	L294	L295	L296	L297	L298	V299	M300	L301	L302	L303	L304	D305	S306	G307	L308	Y309	L310	F311	L312	N313																																																																																																																																																																																																																																																				
Q314	G315	L316	L317	T318	V319	D320	N321	L322	D323	D324	V325	E326	E327	F328	K329	L330	C331	D332	E333	A334	F335	D336	L337	L338	G339	F340	T341	L342	F343	E344	K345	Q346	L347	L348	F349	Q350	C351	T352	A353	L354	L355	L356	H357	M358	M361	F362	K363	K364	Q365	R366	P367	L368	Y369	D370	D371	L372	L373	L374	L375	L376	L377	L378	L379	L380	L381	L382	L383	L384	L385	L386	L387	L388	L389	L390	D393	L394	L395	L396	L397	L398	L399	K400	P401	K402	VAL	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	F472	E473	L474	Q475	L476	L477	L478	L479	T480	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
L560	M561	F562	T563	K564	K565	G566	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																																																																																																																						





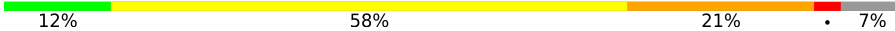
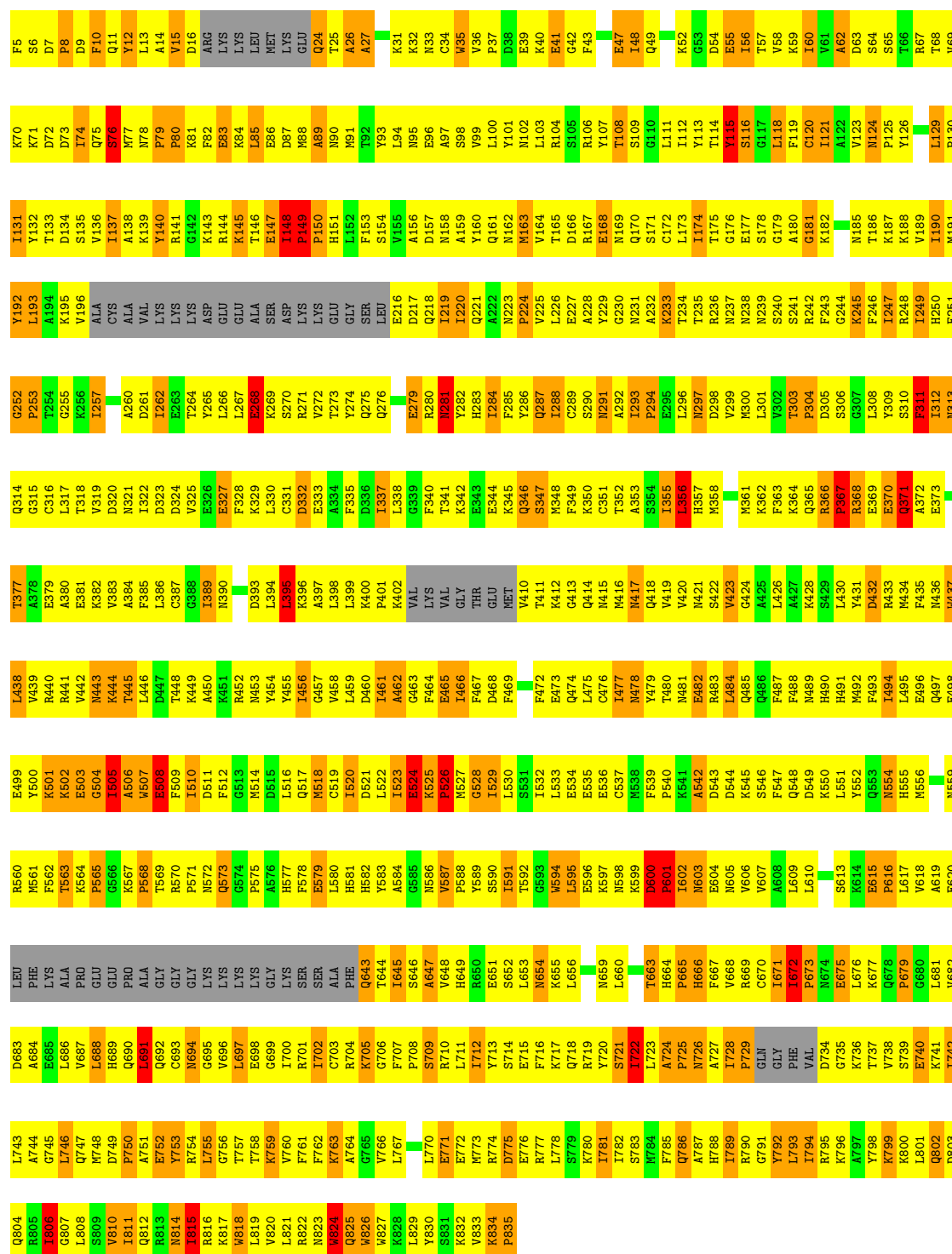
D803
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R805
I806
G807
L808
S809
V810
I811
Q812
R813
N814
I815
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L819
V820
L821
R822
N823
W824
Q825
W826
W827
K828
L829
Y830
S831
K832
V833
K834
P835

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 35-C: 12% 58% 20% 7%

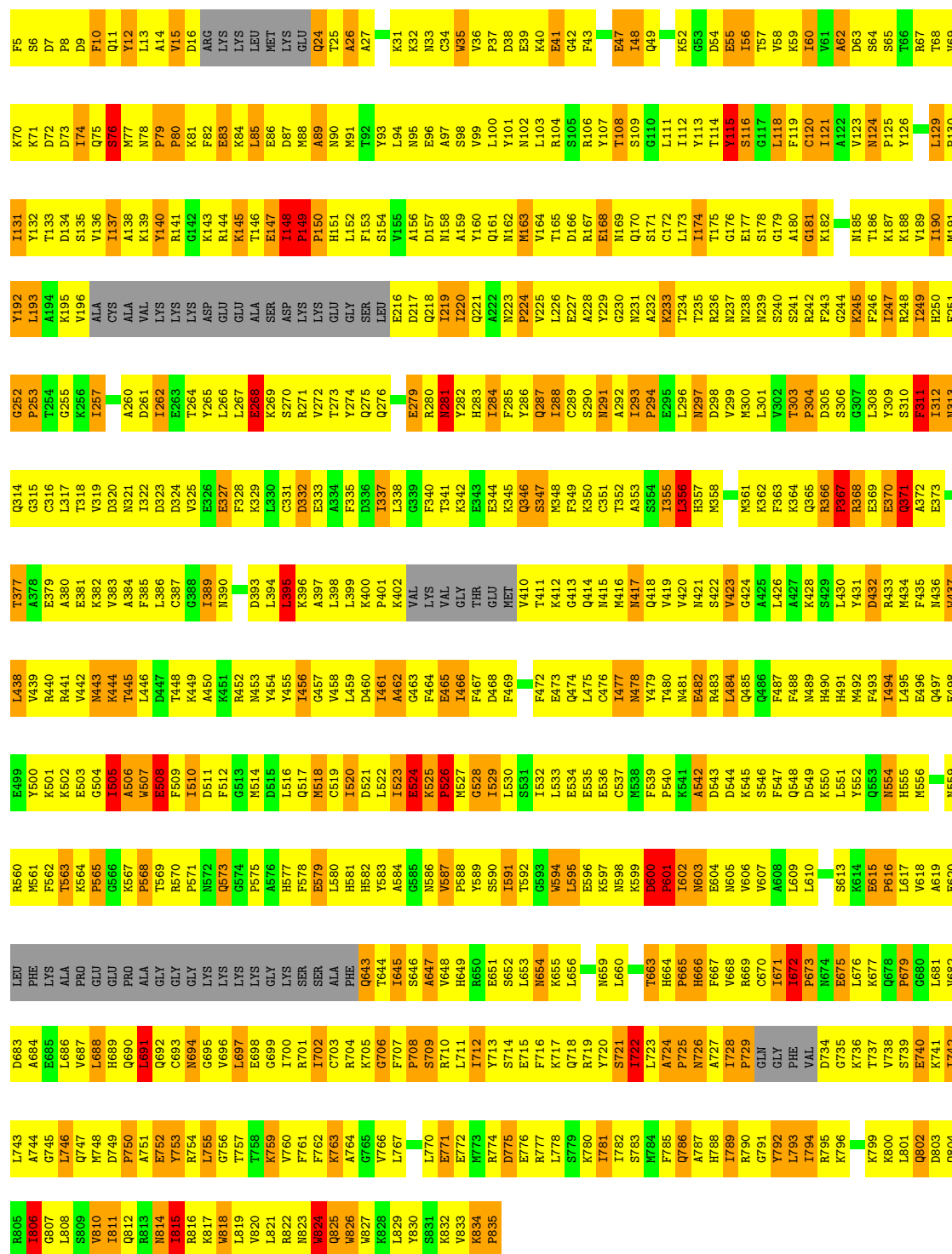
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L743	G744	T745	L746	G747	L748	D749	P750	A751	E752	G753	R754	L755	G756	T757	L758	K759	I760	F761	F762	K763	C764	R765	G766	V767	L768	L770	E771	G772	L773	R774	D775	E776	L777	L778	S779	K780	I781	I782	S783	W784	F785	Q786	P787	N788	I789	R790	G791	Y792	L793	L794	R795	K796	A797	G798	Y799	K799	K800	L801	Q802																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
D683	A684	E685	L686	G687	L688	H689	P690	L691	Q692	R693	G694	L695	G696	L697	E698	G699	I700	F701	I702	R703	W704	K705	G706	F707	F708	S709	R710	L711	I712	R713	Y713	S714	E715	L716	K717	L718	W719	I720	S721	L722	L723	A724	F725	N726	A727	F728	I728	P729	GLN	GLY	PHE	L794	D734	G735	L736	T737	W738	S739	L801	Q802																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
R560	E499	Y500	K501	X502	E503	G504	L505	A506	N507	E508	F509	L510	D511	F512	G513	N514	M515	L516	Q517	E518	C519	L520	H521	L522	L523	E524	K525	P526	N527	G528	L529	L530	L531	L532	L533	L534	E535	E536	C537	N538	F539	P540	L541	A542	D543	L484	V423	X545	S546	F547	Q548	D549	K550	L551	Q552	Q553	N554	H555	N556																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
LEU	PHE	LYS	ALA	P80	GLU	GLY	LYS	GLY	LYS	LYS	LYS	LYS	LYS	LYS	LYS	LYS	LYS	LYS	SER	SER	ALA	PHE	Q643	T644	I645	S646	A647	V648	H649	R650	E651	S652	L653	N654	K655	L656																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 36-C:  12% 58% 21% 7%

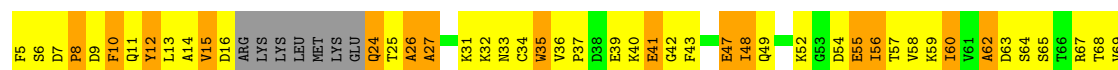
- Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 37-C:  12% 58% 20% 7%



Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 38-C: 12% 58% 21% 7%

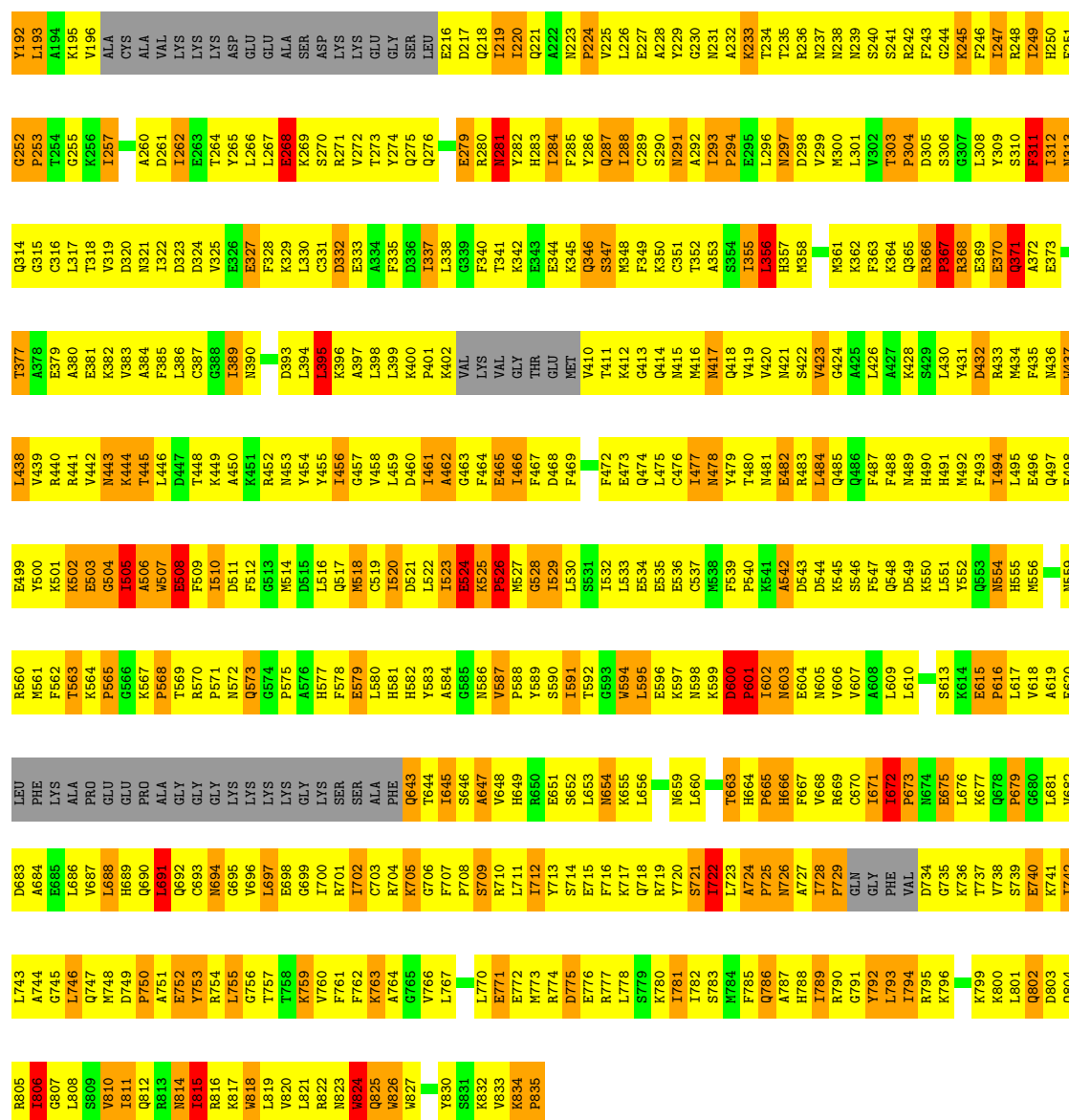


K70	K71	D72	D73	I74	I75	S76	M77	M78	P79	P80	K81	F82	E83	K84	K85	K86	K87	K88	K89	N90	M91	T92	Y93	L94	N95	E96	A97	S98	Y99	Q100	Y101	M102	L103	R104	S105	R106	Y107	T108	S109	G110	L111	I112	I113	T114	Y115	S116	G117	L118	F119	C120	C121	A122	N123	N124	P125	Y126	L129	M130							
L131	Y132	T133	D134	S135	V136	I137	A138	K139	Y140	R141	G142	G143	R144	K145	T146	L147	I148	P149	P150	H151	F152	S153	S154	V155	A156	D157	N158	A159	Y160	Q161	M162	M163	V164	T165	D166	R167	E168	M169	Q170	S171	C172	L173	I174	T175	G176	E177	S178	G179	A180	C181	K182	N185	T186	K187	K188	V189	I190	M191							
Y192	L193	A194	K195	V196	ALA	CYS	ALA	VAL	LYS	LYS	G142	ASP	GLU	GLU	ALA	L85	K269	ASP	LYS	GLY	SER	LEU	E216	D217	Q218	I219	Q220	Q221	Q222	A223	P224	V225	L226	E227	A228	Y229	G230	N231	K232	C172	T234	T235	R236	N237	N238	N239	S240	S241	R242	F243	G244	K245	F246	Y247	R248	I249	F251								
Q252	P253	T254	G255	K256	I257	A260	D261	E262	E263	T264	Y265	L266	L267	E268	L85	K269	S270	R271	V272	T273	Y274	Q275	Q276	E279	R280	N281	Y282	H283	I284	F285	Y286	Q287	L288	C289	S290	M291	A292	L293	P294	E295	L296	N297	D298	V299	N300	L301	V302	T303	P304	D305	S306	G307	L308	R309	S310	F311	I312	N313							
Q314	G315	C316	L317	T318	V319	D320	N321	I322	D323	D324	V325	E326	E327	F328	K329	L330	C331	D332	E333	A334	D335	D336	I337	L338	G339	F340	T341	K342	E343	E344	K345	Q346	M347	N348	F349	Q350	C351	T352	A353	I354	L355	L356	H357	N358	M361	K362	F363	K364	Q365	R366	P367	R368	E369	E370	Q371	A372	E373								
T377	A378	E379	A380	V442	K382	V383	A384	F385	L386	C387	G388	I389	N390	D393	L394	L395	K396	A397	L398	A399	L399	K400	I401	K402	VAL	LYS	VAL	THR	GLU	MET	V410	T411	K412	L413	Q414	Q415	M415	M416	M417	Q418	V419	V420	M421	S422	V423	G424	A425	L426	A427	K428	L429	L430	Y431	D432	R433	M434	F435	M436	W437						
L438	V439	R440	R441	V442	K443	K444	T445	L446	D447	L448	K449	A450	K451	R452	M453	Y454	Y455	I456	G457	V458	L459	D460	I461	A462	G463	F464	E465	L466	F467	D468	F469	F472	E473	L474	Q475	L476	C477	I477	M478	Y479	T480	M481	E482	R483	L484	Q485	Q486	F487	F488	M489	K490	H491	M492	F493	L494	L495	E496	E498							
E499	Y500	K501	K502	E503	G504	I505	A506	M507	E508	F509	I510	D511	F512	G513	M514	D515	L516	M517	M518	C519	H520	D521	L522	I523	E524	K525	P526	M527	O528	I529	S530	L531	L532	L533	E534	E535	E536	C537	M538	F539	P540	K541	A542	D543	D544	K545	S546	F547	L548	Q549	K550	L551	Y552	E553	M554	H555	M556	N559							
R560	M561	F562	T563	K564	P565	G566	K567	P568	T569	R570	P571	M572	Q573	G574	E575	A576	F577	F578	E579	L580	H581	H582	Y583	A584	G585	M586	P587	L588	L589	E590	L591	T592	G593	M594	L595	E596	K597	M598	K599	D600	P601	I602	M603	E604	M605	V606	V607	L608	L609	L610	S613	K614	E615	G616	P617	L618	V619	E620							
LEU	PHE	LYS	ALA	PRO	GLU	GLU	PRO	ALA	GLY	GLY	GLY	LYS	LYS	LYS	LYS	GLY	LYS	SER	SER	ALA	PHE	Q643	T644	I645	S646	A647	V648	H649	R650	E651	S652	L653	M654	L655	L656	N659	L660	T663	H664	P665	H666	F667	V668	R669	C670	GLY	PHE	VAL	D734	E675	L676	T737	V738	S739	E740	L681	I742								
D683	A684	E685	L686	V687	L688	H689	Q690	L691	Q692	C693	N694	G695	V696	L697	E698	E699	I700	R701	I702	C703	R704	K705	G706	F707	P708	S709	R710	L711	I712	Y713	S714	E715	F716	K717	Q718	R719	V720	S721	I722	L723	A724	P725	N726	A727	I728	P729	GLN	GLY	PHE	D734	G735	K736	T737	V738	S739	E740	L681	I742							
L743	A744	G745	L746	Q747	M748	D749	P750	A751	E752	Y753	R754	L755	G756	T757	F758	E759	V760	F761	F762	K763	A764	G765	V766	L767	L770	E771	E772	M773	R774	D775	E776	R777	L778	K779	L780	I781	L782	S783	M784	F785	Q786	A787	H788	L789	R790	G791	Y792	L793	L794	R795	K796	K799	L801	Q802	D803	Q804									
R805	L806	G807	L808	S809	V810	L811	Q812	R813	L814	R815	L816	K817	L818	L819	W820	L821	R822	L823	R824	Q825	W826	W827	K828	L829	Y830	S831	K832	W833	K834	P835	K31	K32	N33	C34	W35	V36	P37	D38	E39	N102	L103	R104	G42	F43	E47	I48	Q49	K52	G53	D54	E55	I56	T57	V58	K59	I60	V61	A62	D63	S64	S65	T66	R67	T68	V69

● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

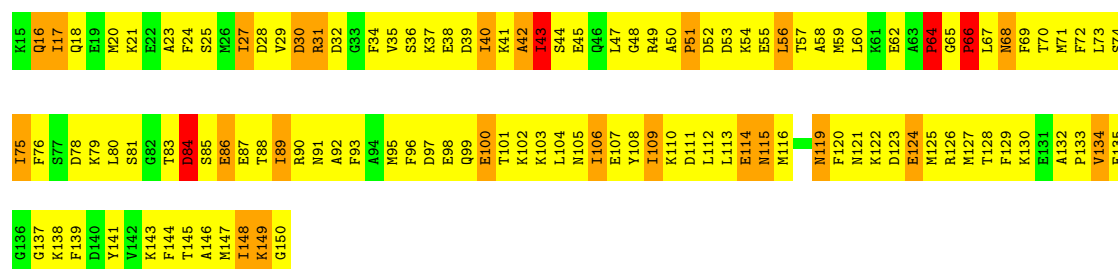
Chain 39-C: 12% 58% 20% 7%

F5	S6	P8	D9	F10	Q11	Y12	L13	A14	V15	D16	A86	LYS	LYS	K84	L85	E86	D87	M88	A89	N90	M91	A26	A27	K31	K32	N33	C34	W35	V36	P37	D38	E39	N102	L103	R104	G42	F43	E47	I48	Q49	K52	G53	D54	E55	I56	T57	V58	K59	I60	V61	A62	D63	S64	S65	T66	R67	T68	V69
K70	K71	D72	D73	I74	I75	S76	M77	M78	P79	P80	K81	F82	E83	K84	K85	K86	K87	K88	K89	N90	M91	T92	Y93	L94	N95	E96	A97	S98	Y99	Q100	Y101	M102	L103	R104	S105	R106	Y107	T108	S109	G110	L111	I112	I113	T114	Y115	S116	G117	L118	F119	C120	C121	A122	N123	N124	P125	Y126	L129	M130



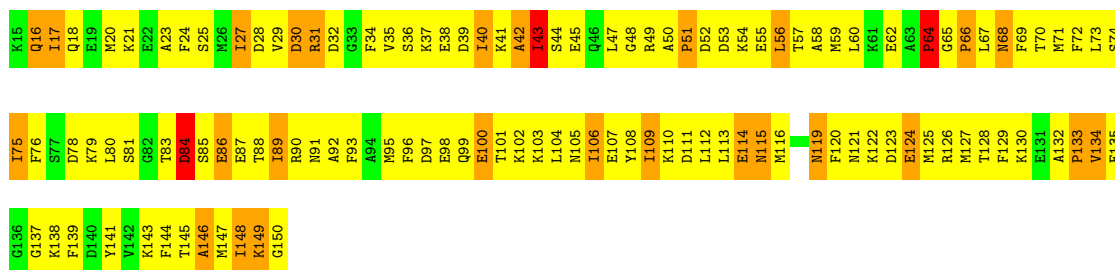
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 1-Y: 12% 68% 17%



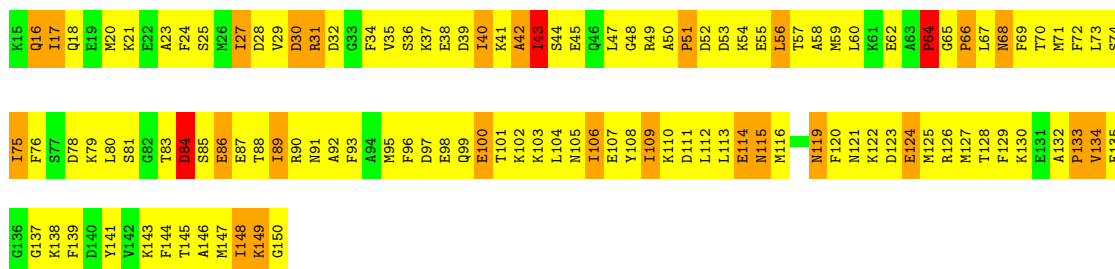
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 2-Y: 12% 66% 19%



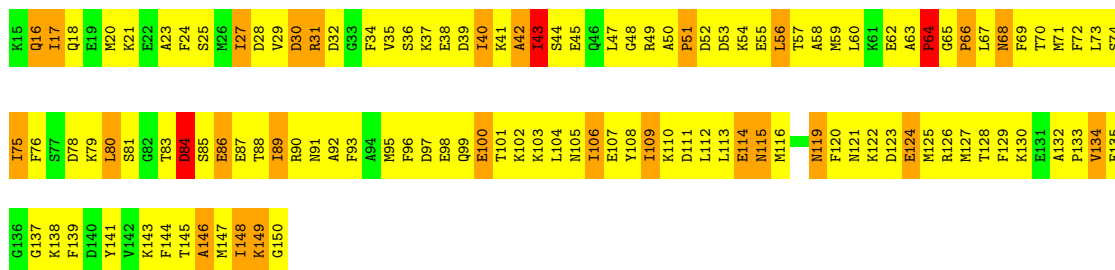
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 3-Y: 12% 67% 18% .



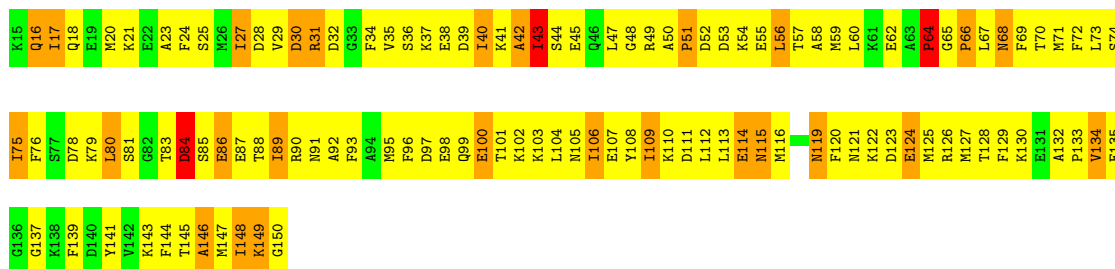
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 4-Y: 12% 67% 19% .



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

Chain 5-Y: 13% 65% 19% .



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

Chain 6-Y: 12% 66% 20% .



E135
G136
G137
K138
F139
D140
Y141
V142
K143
F144
T145
M146
M147
I148
K149
G150

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

Chain 11-Y: 13% 66% 18%

K15 Q16 I17 Q18 E19 M20 K21 E22 A23 F24 S25 M26 I27 D28 V29 D30 R31 A32 G33 F34 V35 S36 K37 E38 D39 I40 K41 A42 K102 K103 S44 S45 Q46 L47 G48 R49 I109 A50 P51 D52 D53 K54 E55 L56 T57 A58 M59 L60 K61 E62 A63 P64 G65 P66 L67 N68 F69 T70 M71 F72 L73 S74

I75 F76 S77 D78 K79 L80 S81 G82 T83 D84 S85 S86 E87 T88 I89 R90 D91 A92 G93 F94 M95 F96 D97 E98 Q99 E100 I101 K102 K103 L104 M105 I106 I107 Y108 R109 K110 D111 L112 L113 E114 N115 M116 N119 F120 M121 K122 D123 E124 M125 A126 M127 T128 F129 K130 E131 A132 P133 V134 E135

G136
G137
K138
F139
D140
Y141
V142
K143
F144
T145
M146
M147
I148
K149
G150

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

Chain 12-Y: 13% 65% 19%

K15 Q16 I17 Q18 E19 M20 K21 E22 A23 F24 S25 M26 I27 D28 V29 D30 R31 A32 G33 F34 V35 S36 K37 E38 D39 I40 K41 A42 K102 K103 S44 S45 Q46 L47 G48 R49 I109 A50 P51 D52 D53 K54 E55 L56 T57 A58 M59 L60 K61 E62 A63 P64 G65 P66 L67 N68 F69 T70 M71 F72 L73 S74

I75 F76 S77 D78 K79 L80 S81 G82 T83 D84 S85 S86 E87 T88 I89 R90 D91 A92 G93 F94 M95 F96 D97 E98 Q99 E100 I101 K102 K103 L104 M105 I106 I107 Y108 R109 K110 D111 L112 L113 E114 N115 M116 N119 F120 M121 K122 D123 E124 M125 A126 M127 T128 F129 K130 E131 A132 P133 V134 E135

G136
G137
K138
F139
D140
Y141
V142
K143
F144
T145
M146
M147
I148
K149
G150

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

Chain 13-Y: 12% 67% 18%

K15 Q16 I17 Q18 E19 M20 K21 E22 A23 F24 S25 M26 I27 D28 V29 D30 R31 A32 G33 F34 V35 S36 K37 E38 D39 I40 K41 A42 K102 K103 S44 S45 Q46 L47 G48 R49 I109 A50 P51 D52 D53 K54 E55 L56 T57 A58 M59 L60 K61 E62 A63 P64 G65 P66 L67 N68 F69 T70 M71 F72 L73 S74

I75 F76 S77 D78 K79 L80 S81 G82 T83 D84 S85 S86 E87 T88 I89 R90 D91 A92 G93 F94 M95 F96 D97 E98 Q99 E100 I101 K102 K103 L104 M105 I106 I107 Y108 R109 K110 D111 L112 L113 E114 N115 M116 G117 D118 N119 F120 M121 K122 D123 E124 M125 A126 M127 T128 F129 K130 E131 A132 P133 V134

E135
G136
G137
K138
F139
D140
Y141
V142
K143
F144
T145
M146
M147
I148
K149
G150

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

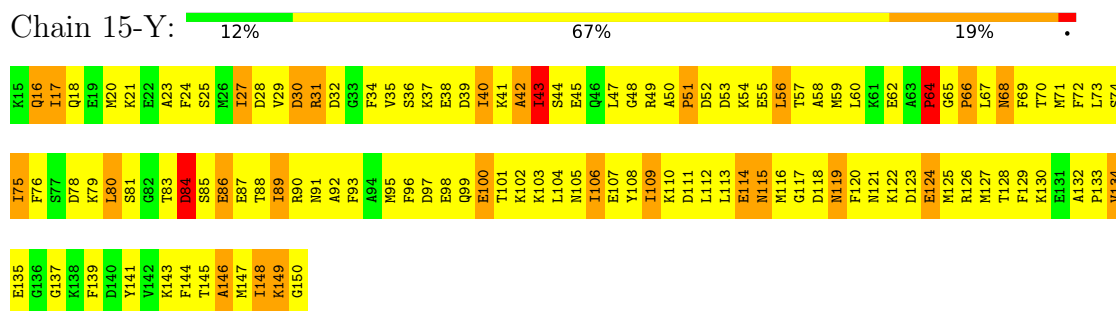
Chain 14-Y: 12% 66% 19%

K15 Q16 I17 Q18 E19 M20 K21 E22 A23 F24 S25 M26 I27 D28 V29 D30 R31 A32 G33 F34 V35 S36 K37 E38 D39 I40 K41 A42 K102 K103 S44 S45 Q46 L47 G48 R49 I109 A50 P51 D52 D53 K54 E55 L56 T57 A58 M59 L60 K61 E62 A63 P64 G65 P66 L67 N68 F69 T70 M71 F72 L73 S74

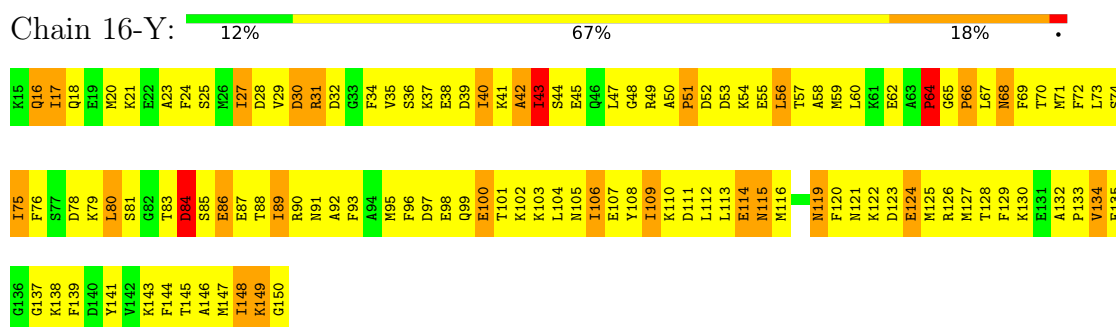
I75 F76 S77 D78 K79 L80 S81 G82 T83 D84 S85 S86 E87 T88 I89 R90 D91 A92 G93 F94 M95 F96 D97 E98 Q99 E100 I101 K102 K103 L104 M105 I106 I107 Y108 R109 K110 D111 L112 L113 E114 N115 M116 N119 F120 M121 K122 D123 E124 M125 A126 M127 T128 F129 K130 E131 A132 P133 V134 E135

G136
G137
K138
F139
D140
Y141
V142
K143
F144
T145
M146
M147
I148
K149
G150

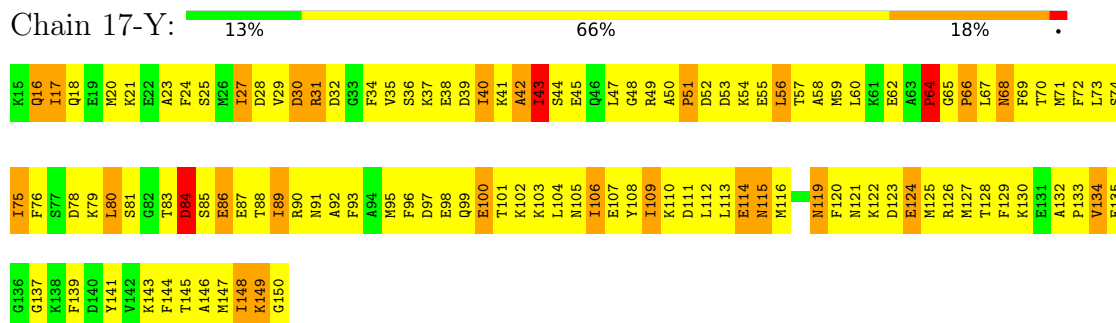
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



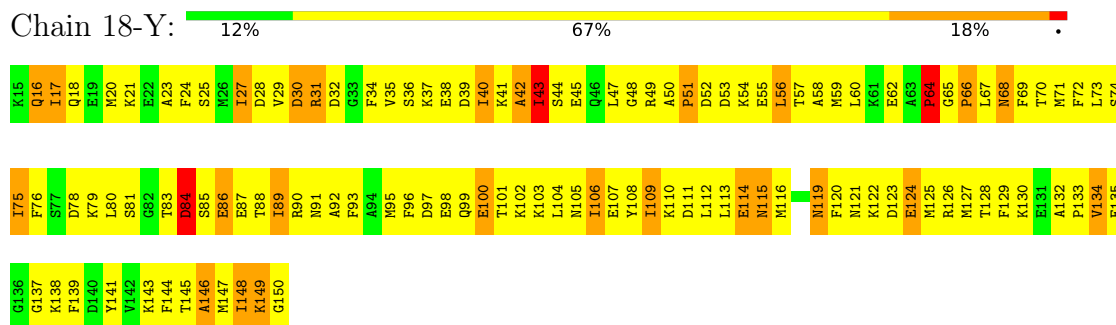
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



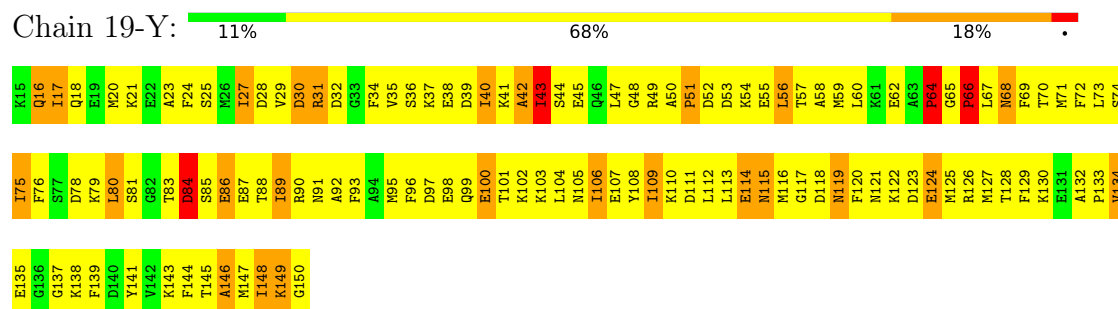
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



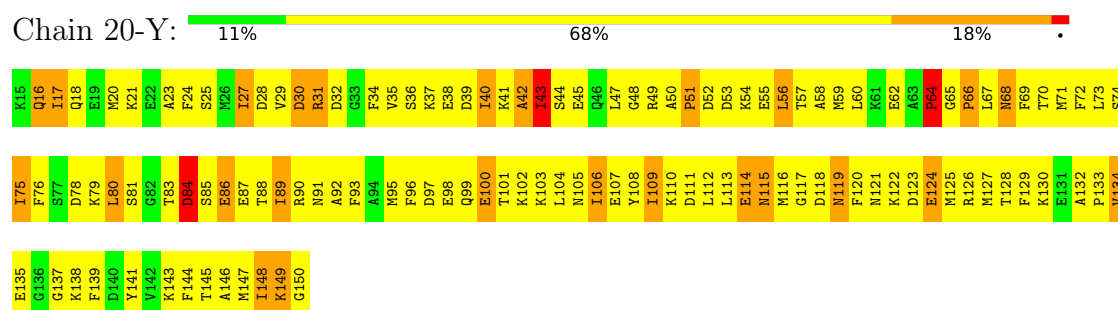
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



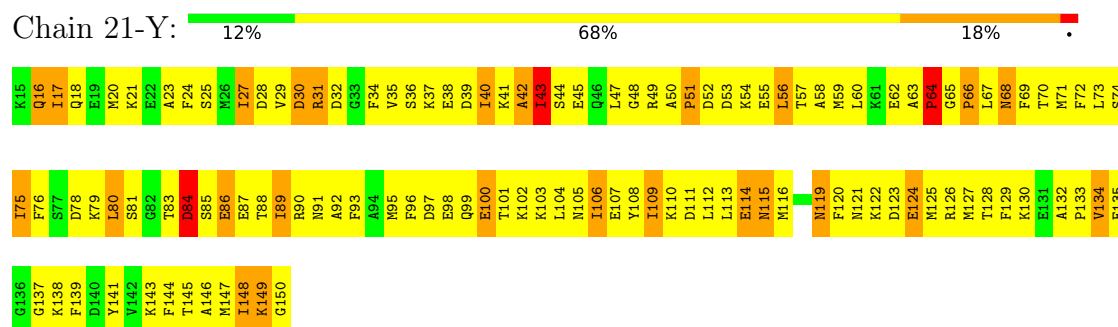
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



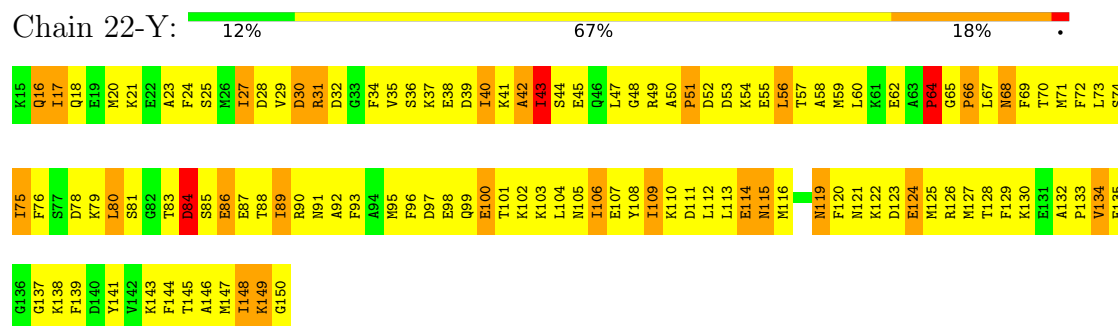
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

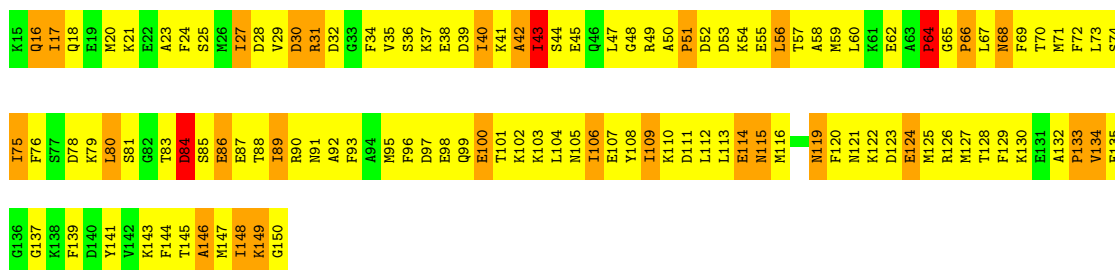


- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



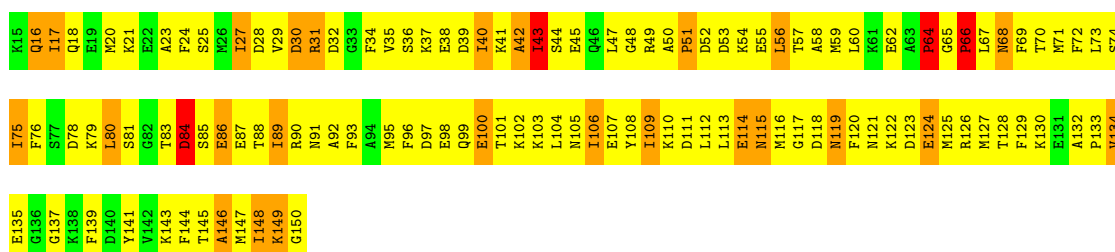
- Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE





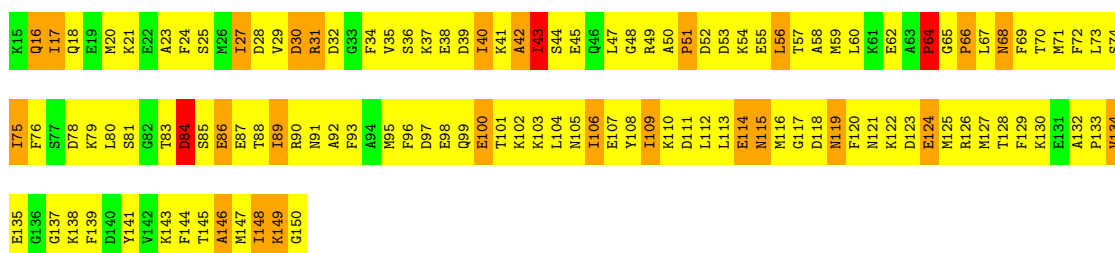
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 24-Y: 12% 67% 18%



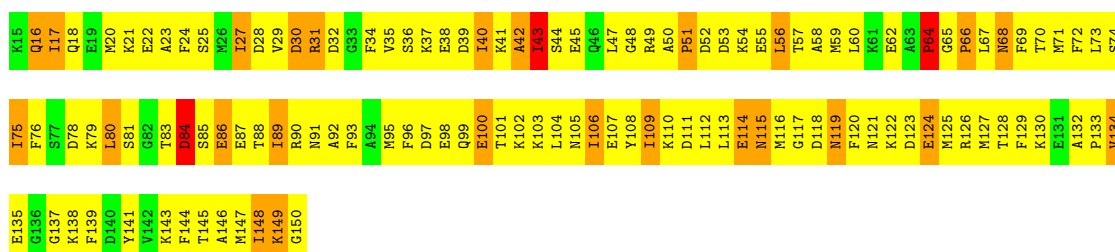
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 25-Y: 11% 68% 18%



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

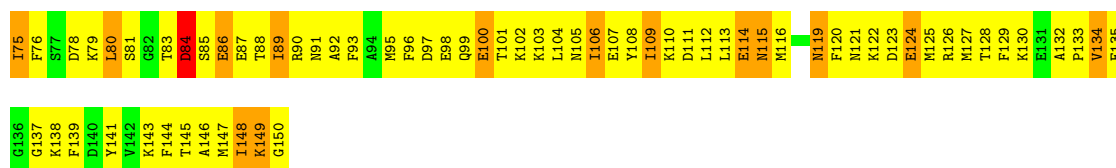
Chain 26-Y: 10% 69% 18%



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

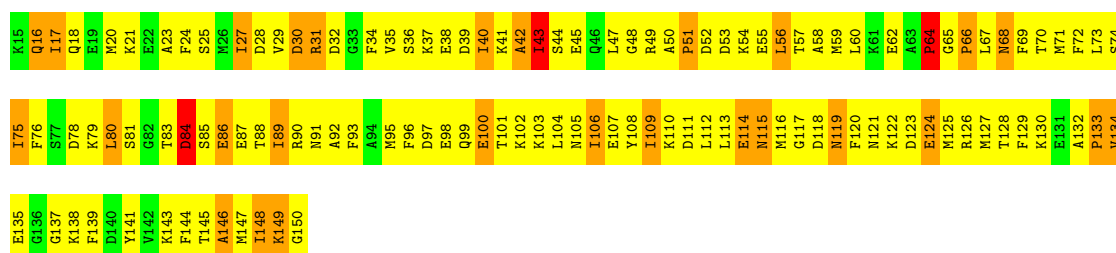
Chain 27-Y: 12% 67% 18%





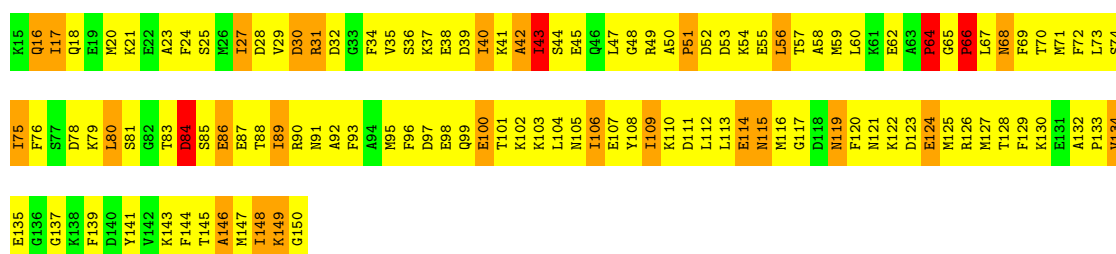
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 28-Y: 11% 67% 20%



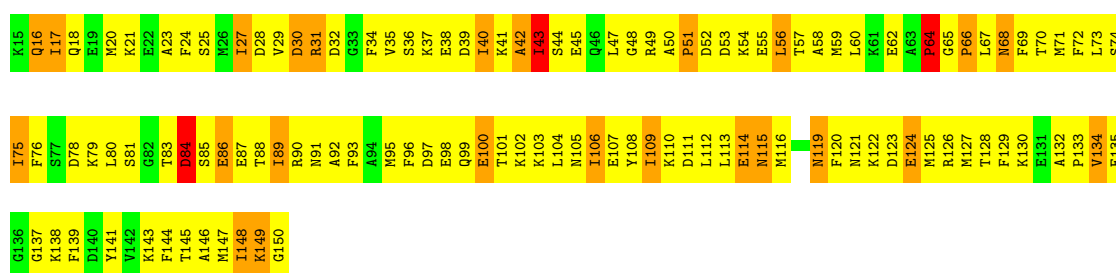
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 29-Y: 12% 66% 18%



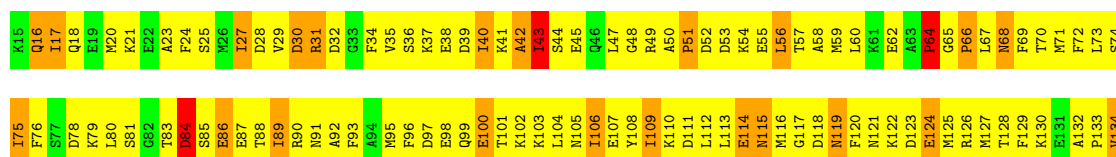
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 30-Y: 12% 68% 18%



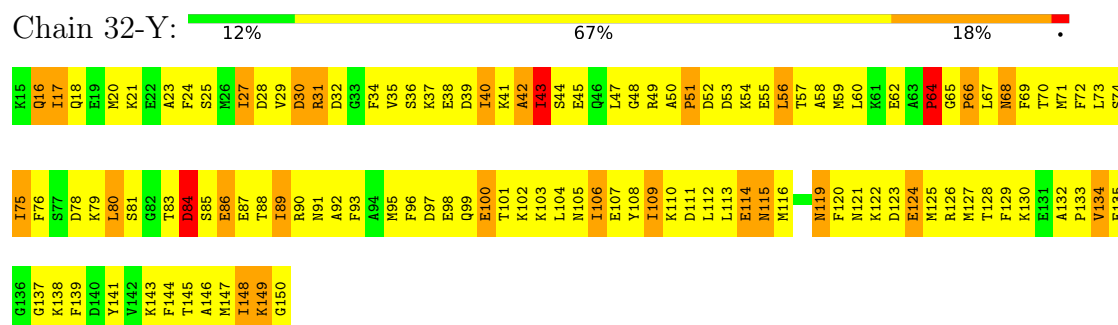
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 31-Y: 11% 68% 18%

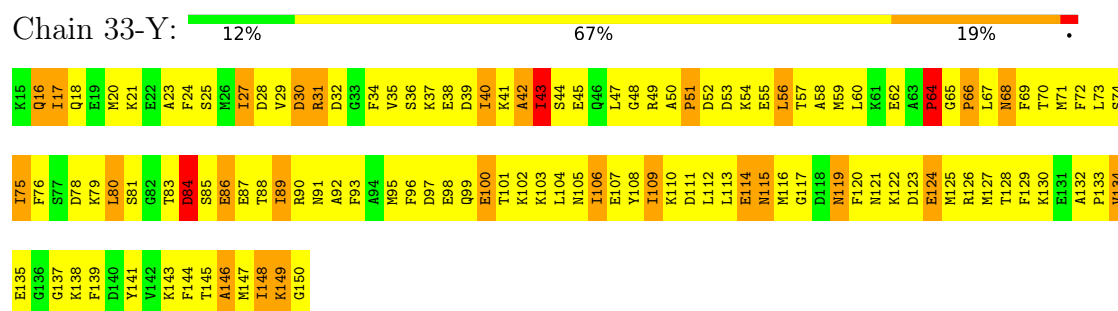




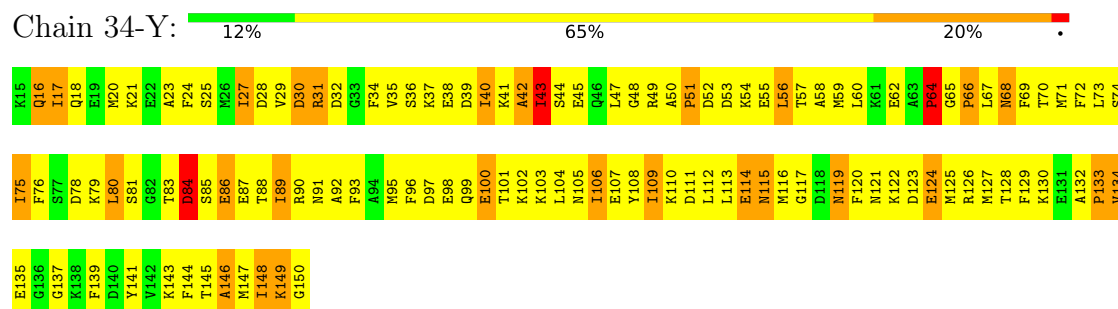
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



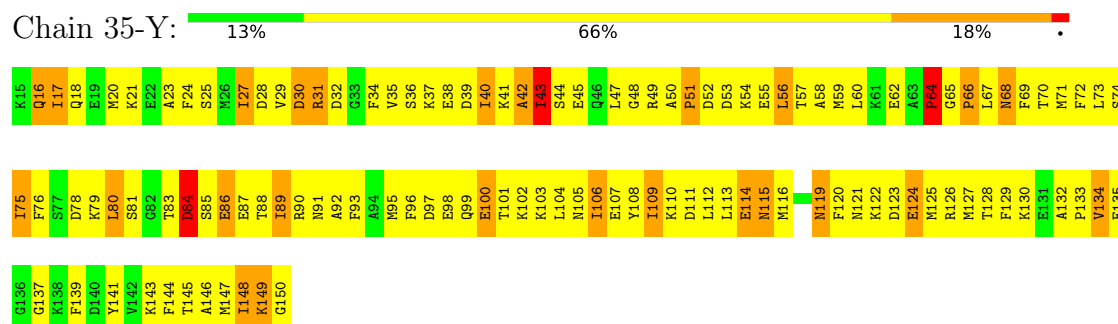
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



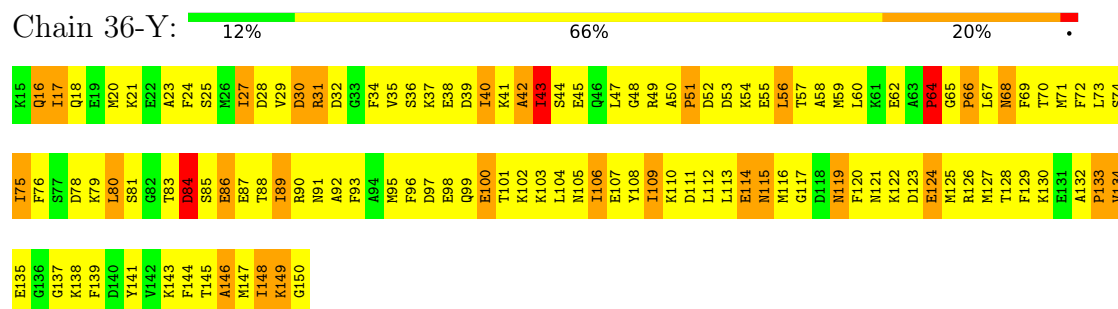
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



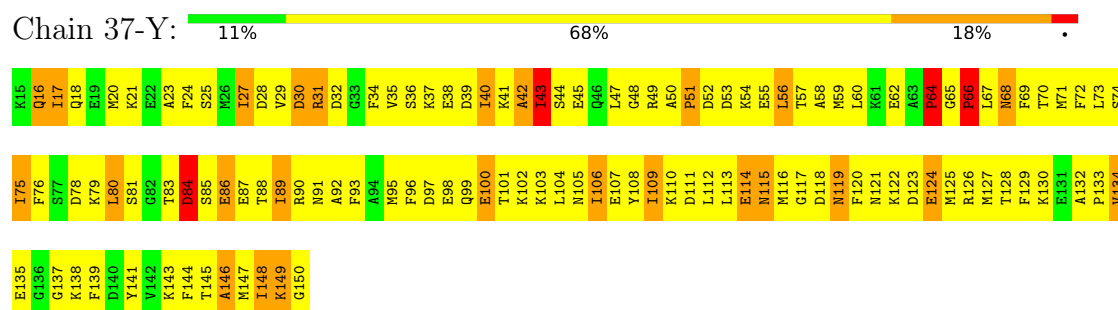
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



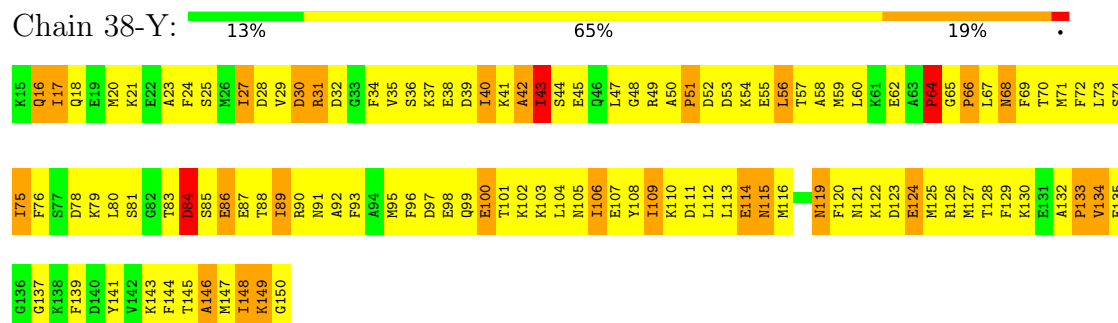
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



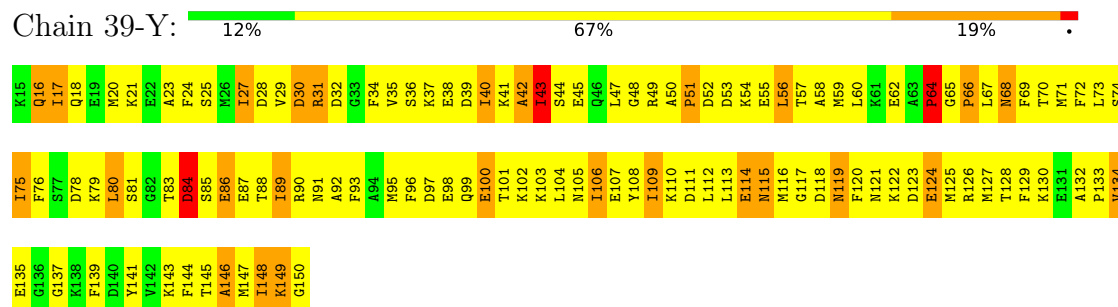
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

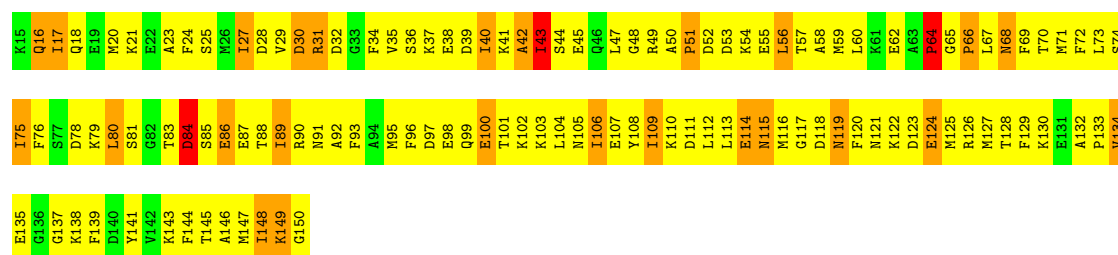


● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



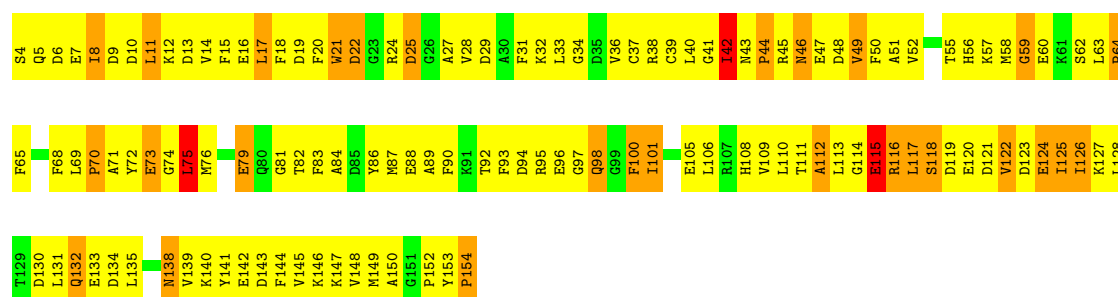
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE





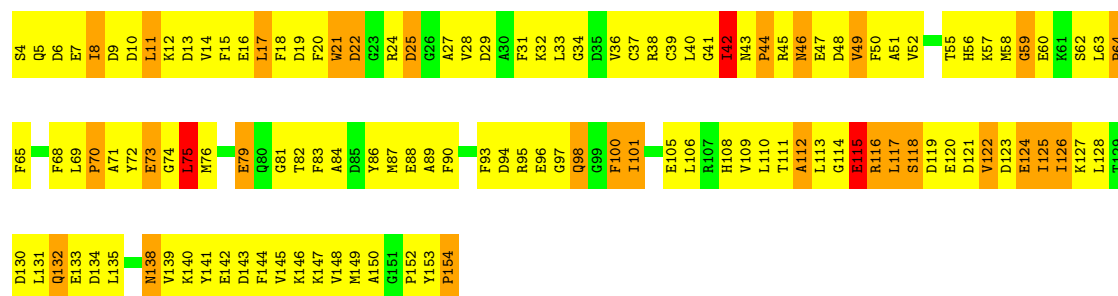
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 1-Z: 15% 64% 19%



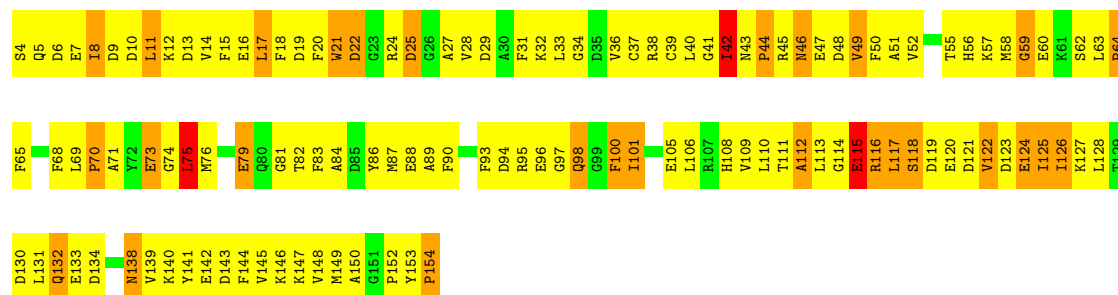
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 2-Z: 16% 64% 19%



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

Chain 3-Z: 17% 62% 19%



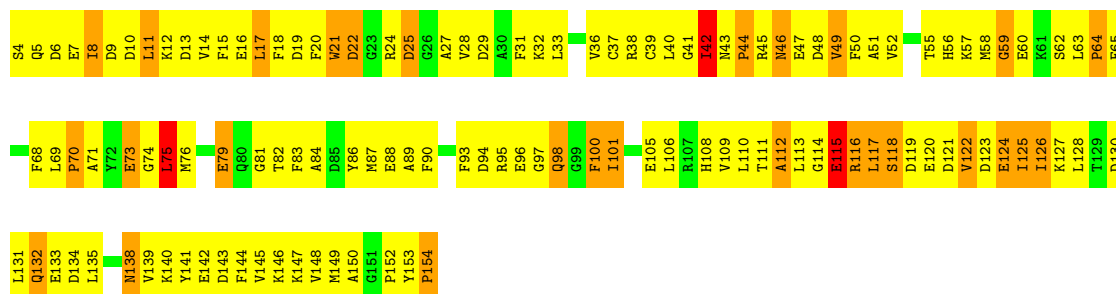
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 4-Z: 17% 63% 19% .



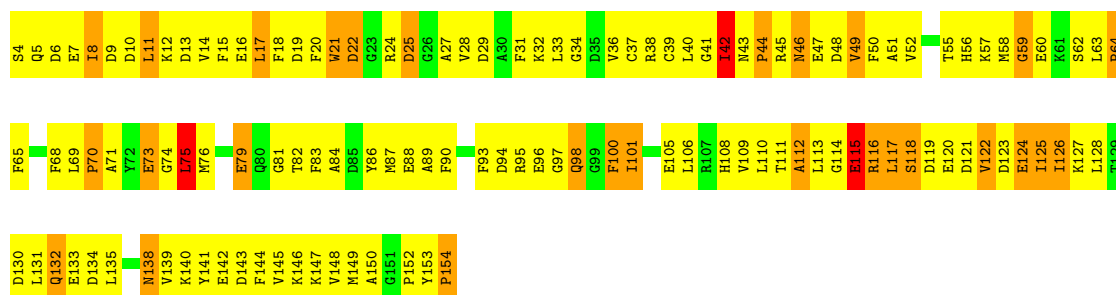
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 5-Z: 17% 62% 19% .



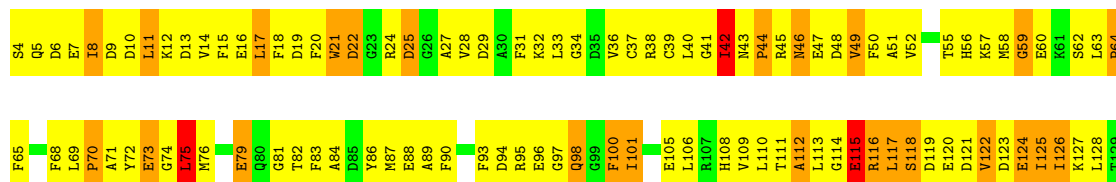
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

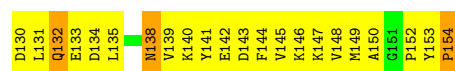
Chain 6-Z: 17% 63% 19% .



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

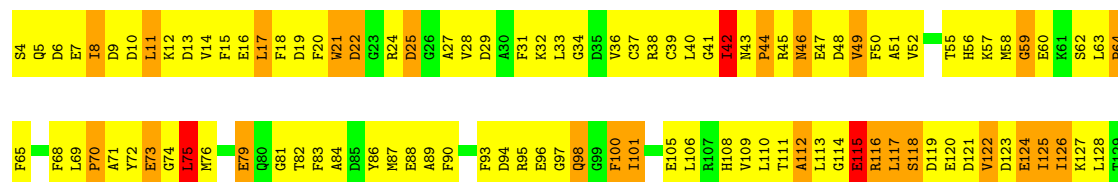
Chain 7-Z: 16% 64% 19% .





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

Chain 8-Z: 16% 64% 19%



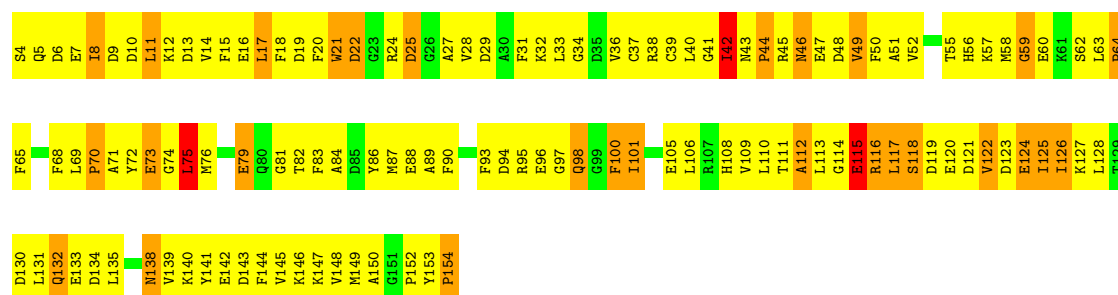
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 9-Z: 17% 63% 19%



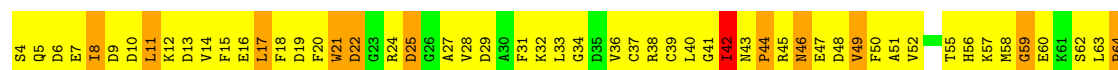
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

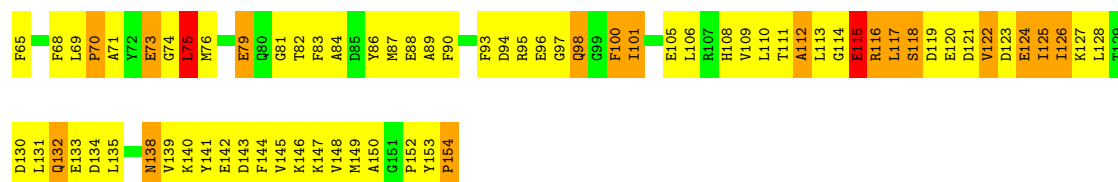
Chain 10-Z: 16% 64% 19%



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

Chain 11-Z: 17% 63% 19%





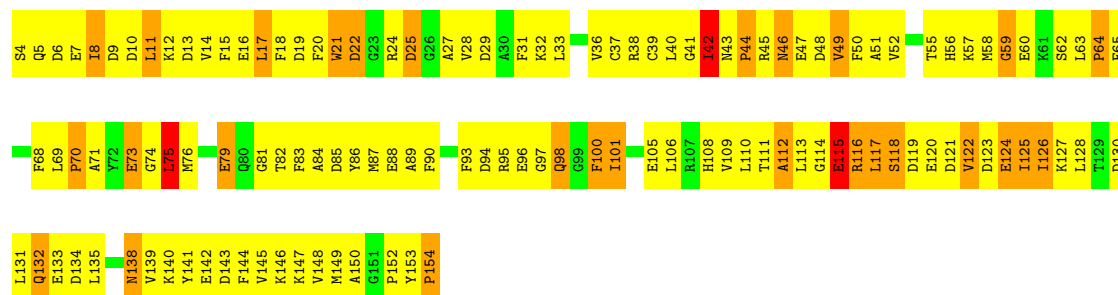
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 12-Z: 17% 62% 19%



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

Chain 13-Z: 17% 63% 19%



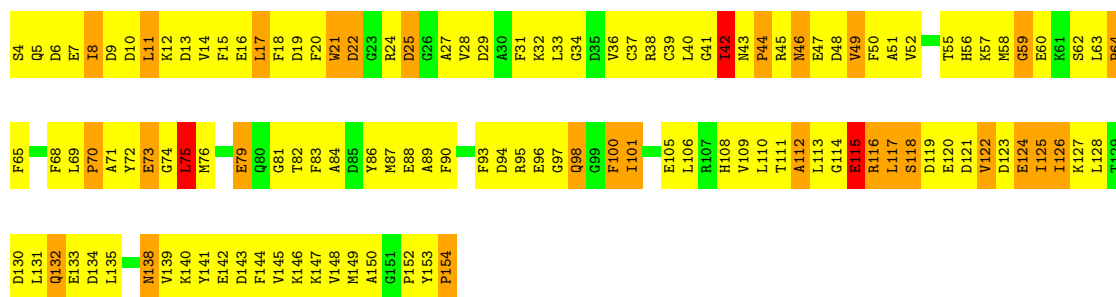
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 14-Z: 17% 63% 19%



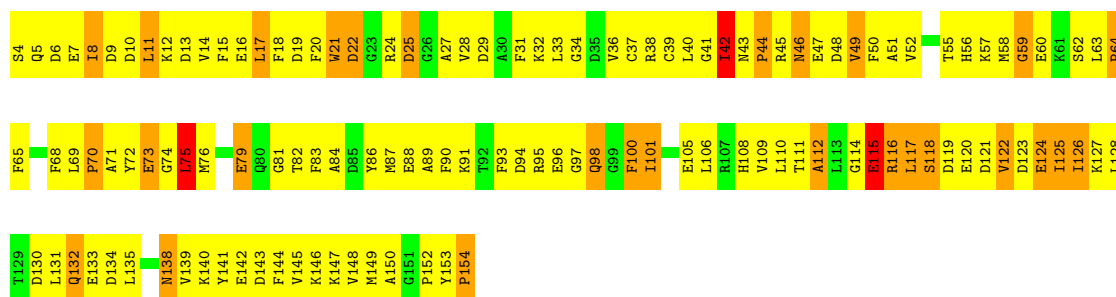
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 15-Z: 16% 64% 19%



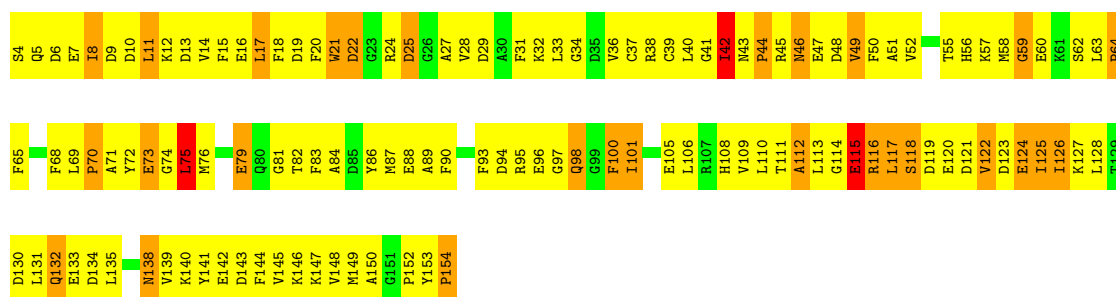
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 16-Z: 16% 64% 19%



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

Chain 17-Z: 16% 64% 19%



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

Chain 18-Z: 16% 63% 19%



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

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



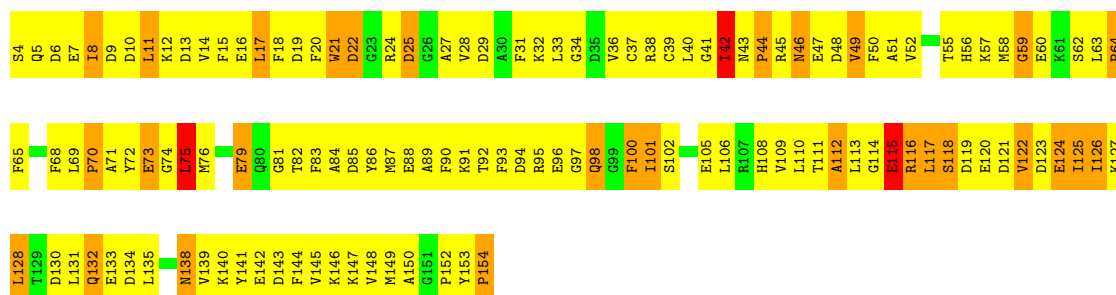
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 20-Z: 16% 64% 19% .



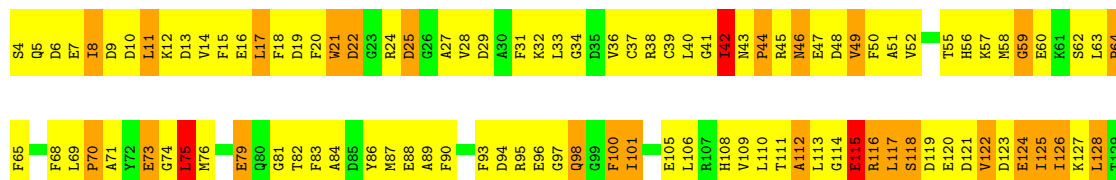
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

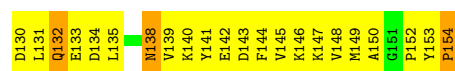
Chain 21-Z: 13% 66% 19% .



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

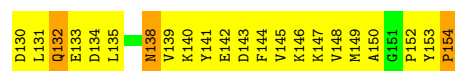
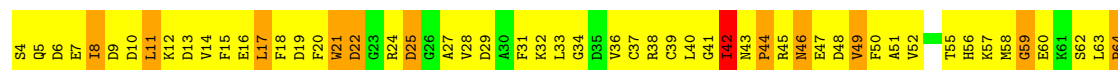
Chain 22-Z: 17% 62% 19% .





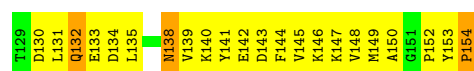
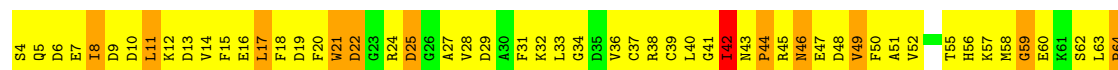
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 23-Z: 17% 62% 19%



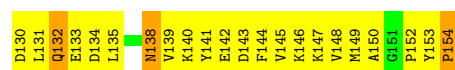
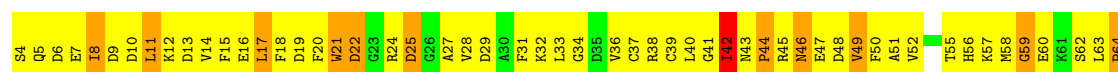
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 24-Z: 15% 64% 19%



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

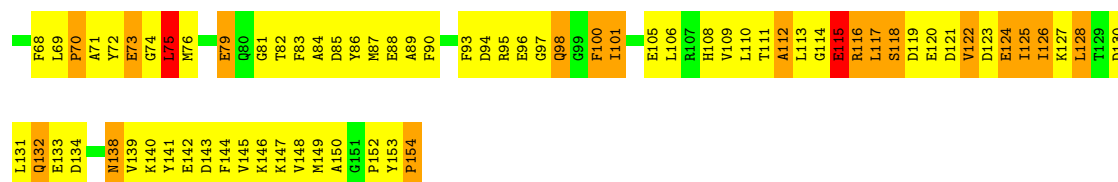
Chain 25-Z: 17% 63% 19%



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

Chain 26-Z: 17% 62% 19%





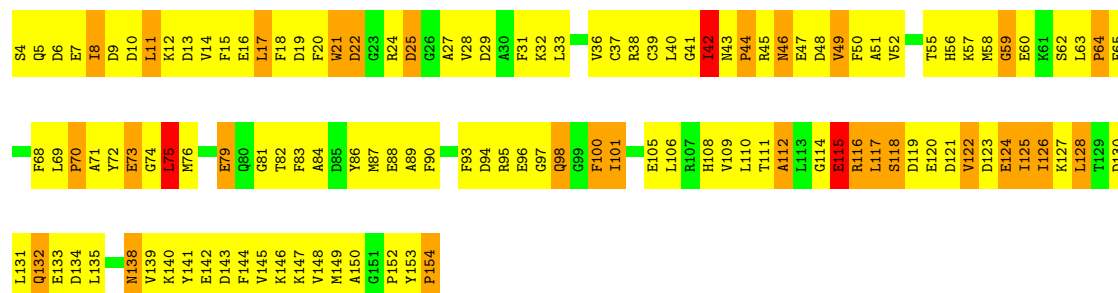
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 27-Z: 17% 63% 19%



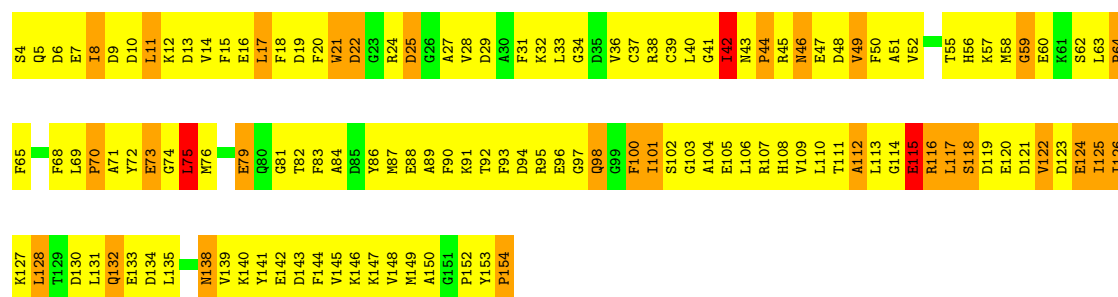
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 28-Z: 17% 62% 19%



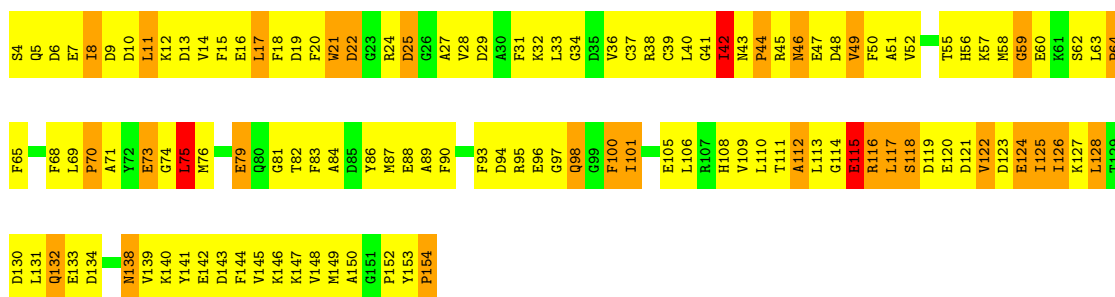
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 29-Z: 12% 67% 19%



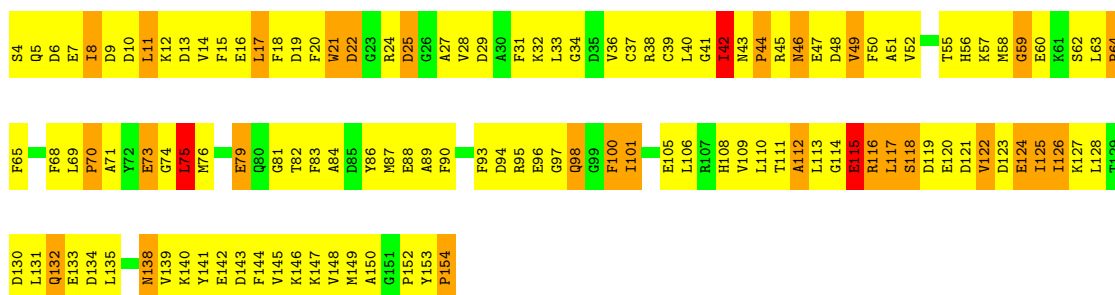
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 30-Z: 17% 62% 19%



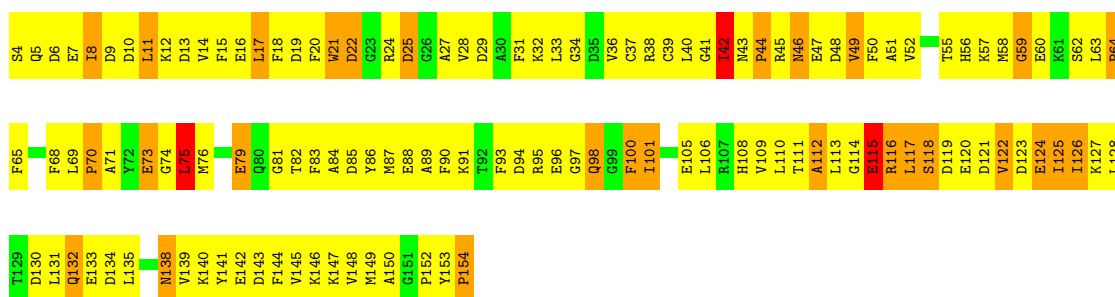
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 31-Z: 17% 63% 19% .



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

Chain 32-Z: 15% 64% 19% .

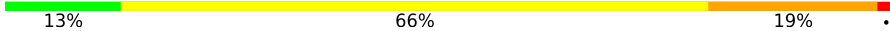


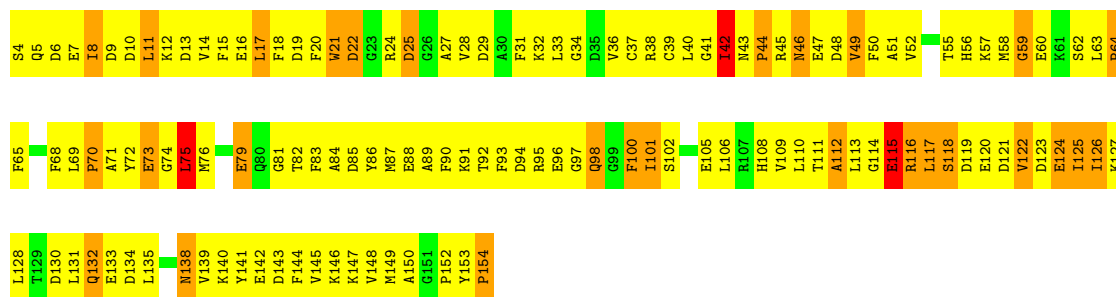
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 33-Z: 15% 65% 19% .

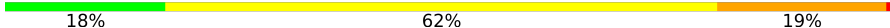


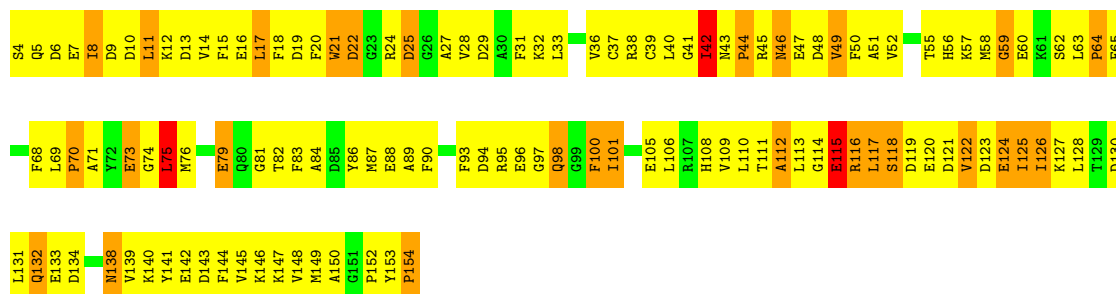
- Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 34-Z:  13% 66% 19% .

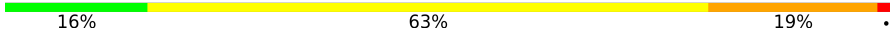


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 35-Z:  18% 62% 19% .

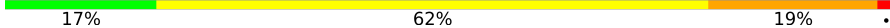


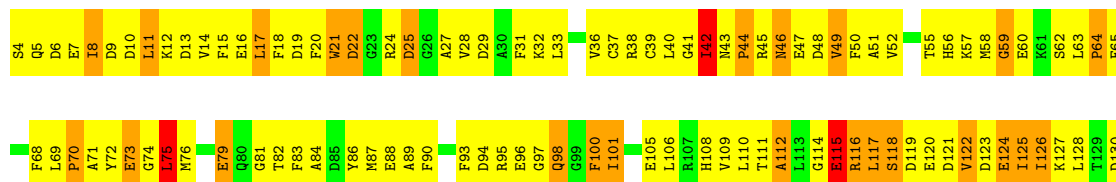
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

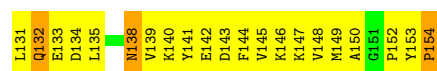
Chain 36-Z:  16% 63% 19% .



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

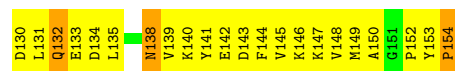
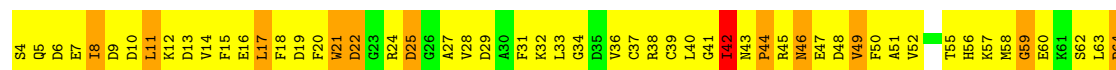
Chain 37-Z:  17% 62% 19% .





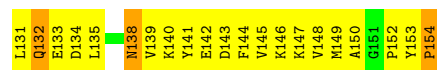
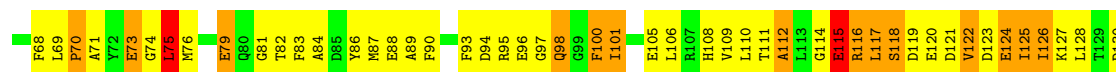
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 38-Z: 16% 64% 19%



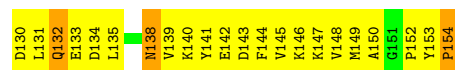
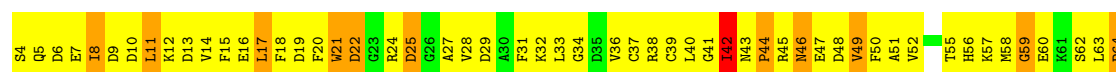
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 39-Z: 17% 62% 19%



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

Chain 40-Z: 17% 63% 19%



4 Experimental information

Property	Value	Source
EM reconstruction method	TOMOGRAPHY	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of tilted images used	Not provided	
Resolution determination method	FSC 0.5 CUT-OFF	Depositor
CTF correction method	Not provided	
Microscope	FEI/PHILIPS CM300FEG/T	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	Not provided	
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	TVIPS TEMCAM-F224 (2k x 2k)	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	1-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	2-C	1.91	90/6339 (1.4%)	2.38	112/8536 (1.3%)
1	3-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	4-C	1.91	90/6339 (1.4%)	2.38	112/8536 (1.3%)
1	5-C	1.91	90/6339 (1.4%)	2.38	112/8536 (1.3%)
1	6-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	7-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	8-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	9-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	10-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	11-C	1.91	90/6339 (1.4%)	2.38	112/8536 (1.3%)
1	12-C	1.91	90/6339 (1.4%)	2.38	112/8536 (1.3%)
1	13-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	14-C	1.91	90/6338 (1.4%)	2.38	112/8533 (1.3%)
1	15-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	16-C	1.91	90/6338 (1.4%)	2.38	112/8533 (1.3%)
1	17-C	1.91	90/6339 (1.4%)	2.38	112/8536 (1.3%)
1	18-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	19-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	20-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	21-C	1.91	90/6339 (1.4%)	2.38	112/8536 (1.3%)
1	22-C	1.91	90/6339 (1.4%)	2.38	112/8536 (1.3%)
1	23-C	1.91	90/6339 (1.4%)	2.38	112/8536 (1.3%)
1	24-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	25-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	26-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	27-C	1.91	90/6339 (1.4%)	2.38	112/8536 (1.3%)
1	28-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	29-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	30-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	31-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	32-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	33-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	34-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	35-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	36-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	37-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	38-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	39-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
1	40-C	1.91	90/6340 (1.4%)	2.38	112/8539 (1.3%)
2	1-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	2-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	3-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	4-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	5-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	6-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	7-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	8-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	9-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	10-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	11-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	12-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	13-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	14-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	15-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	16-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	17-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	18-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	19-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	20-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	21-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	22-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	23-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	24-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	25-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	26-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	27-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	28-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	29-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	30-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	31-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	32-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	33-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	34-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	35-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	36-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)
2	37-Y	0.87	9/1104 (0.8%)	1.38	11/1472 (0.7%)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
All	All	1.69	4280/346626 (1.2%)	2.16	5360/466158 (1.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	1-C	0	5
1	2-C	0	7
1	3-C	0	6
1	4-C	0	4
1	5-C	0	6
1	6-C	0	4
1	7-C	0	4
1	8-C	0	4
1	9-C	0	5
1	10-C	0	4
1	11-C	0	4
1	12-C	0	4
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	7
1	19-C	0	4
1	20-C	0	4
1	21-C	0	6
1	22-C	0	4
1	23-C	0	4
1	24-C	0	4
1	25-C	0	4
1	26-C	0	4
1	27-C	0	4
1	28-C	0	6
1	29-C	0	6
1	30-C	0	6
1	31-C	0	4
1	32-C	0	6
1	33-C	0	5
1	34-C	0	6

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Mol	Chain	#Chirality outliers	#Planarity outliers
1	35-C	0	4
1	36-C	0	5
1	37-C	0	4
1	38-C	0	6
1	39-C	0	6
1	40-C	0	6
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
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

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Mol	Chain	#Chirality outliers	#Planarity outliers
2	37-Y	0	1
2	38-Y	0	1
2	39-Y	0	1
2	40-Y	0	1
All	All	0	234

The worst 5 of 4280 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1-C	154	SER	C-N	63.35	2.22	1.33
1	2-C	154	SER	C-N	63.35	2.22	1.33
1	3-C	154	SER	C-N	63.35	2.22	1.33
1	4-C	154	SER	C-N	63.35	2.22	1.33
1	5-C	154	SER	C-N	63.35	2.22	1.33

The worst 5 of 5360 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1-C	154	SER	CA-C-N	-55.34	22.09	121.70
1	1-C	154	SER	C-N-CA	-55.34	22.09	121.70
1	2-C	154	SER	CA-C-N	-55.34	22.09	121.70
1	2-C	154	SER	C-N-CA	-55.34	22.09	121.70
1	3-C	154	SER	CA-C-N	-55.34	22.09	121.70

There are no chirality outliers.

5 of 234 planarity outliers are listed below:

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

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1-C	6215	0	6169	2906	0
1	2-C	6215	0	6170	2799	0
1	3-C	6215	0	6183	2663	0
1	4-C	6215	0	6182	2716	0
1	5-C	6215	0	6179	2701	0
1	6-C	6215	0	6173	2802	0
1	7-C	6215	0	6181	2702	0
1	8-C	6215	0	6180	2673	0
1	9-C	6215	0	6180	2711	0
1	10-C	6215	0	6180	2739	0
1	11-C	6215	0	6182	2680	0
1	12-C	6215	0	6175	2769	0
1	13-C	6215	0	6182	2668	0
1	14-C	6215	0	6182	2681	0
1	15-C	6215	0	6177	2796	0
1	16-C	6215	0	6182	2712	0
1	17-C	6215	0	6177	2742	0
1	18-C	6215	0	6151	3132	0
1	19-C	6215	0	6181	2676	0
1	20-C	6215	0	6179	2725	0
1	21-C	6215	0	6145	3317	0
1	22-C	6215	0	6183	2684	0
1	23-C	6215	0	6180	2754	0
1	24-C	6215	0	6181	2719	0
1	25-C	6215	0	6185	2654	0
1	26-C	6215	0	6183	2677	0
1	27-C	6215	0	6184	2687	0
1	28-C	6215	0	6176	2769	0
1	29-C	6215	0	6124	3620	0
1	30-C	6215	0	6174	2781	0
1	31-C	6215	0	6185	2654	0
1	32-C	6215	0	6181	2691	0
1	33-C	6215	0	6168	2978	0
1	34-C	6215	0	6148	3408	0
1	35-C	6215	0	6181	2740	0
1	36-C	6215	0	6177	2767	0
1	37-C	6215	0	6183	2643	0
1	38-C	6215	0	6174	2771	0
1	39-C	6215	0	6173	2785	0
1	40-C	6215	0	6177	2693	0
2	1-Y	1088	0	1066	475	0
2	2-Y	1088	0	1066	479	0
2	3-Y	1088	0	1066	475	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	4-Y	1088	0	1066	482	0
2	5-Y	1088	0	1066	471	0
2	6-Y	1088	0	1066	473	0
2	7-Y	1088	0	1066	479	0
2	8-Y	1088	0	1066	472	0
2	9-Y	1088	0	1066	478	0
2	10-Y	1088	0	1066	479	0
2	11-Y	1088	0	1066	465	0
2	12-Y	1088	0	1066	472	0
2	13-Y	1088	0	1066	477	0
2	14-Y	1088	0	1066	488	0
2	15-Y	1088	0	1066	479	0
2	16-Y	1088	0	1066	477	0
2	17-Y	1088	0	1066	492	0
2	18-Y	1088	0	1066	474	0
2	19-Y	1088	0	1066	478	0
2	20-Y	1088	0	1066	480	0
2	21-Y	1088	0	1066	477	0
2	22-Y	1088	0	1066	479	0
2	23-Y	1088	0	1064	492	0
2	24-Y	1088	0	1066	481	0
2	25-Y	1088	0	1066	480	0
2	26-Y	1088	0	1066	482	0
2	27-Y	1088	0	1066	472	0
2	28-Y	1088	0	1066	484	0
2	29-Y	1088	0	1066	506	0
2	30-Y	1088	0	1066	476	0
2	31-Y	1088	0	1066	480	0
2	32-Y	1088	0	1066	483	0
2	33-Y	1088	0	1066	473	0
2	34-Y	1088	0	1065	482	0
2	35-Y	1088	0	1066	473	0
2	36-Y	1088	0	1066	476	0
2	37-Y	1088	0	1066	478	0
2	38-Y	1088	0	1064	478	0
2	39-Y	1088	0	1064	521	0
2	40-Y	1088	0	1066	480	0
3	1-Z	1198	0	1118	553	0
3	2-Z	1198	0	1120	511	0
3	3-Z	1198	0	1120	506	0
3	4-Z	1198	0	1120	514	0
3	5-Z	1198	0	1120	509	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	6-Z	1198	0	1117	542	0
3	7-Z	1198	0	1120	505	0
3	8-Z	1198	0	1120	508	0
3	9-Z	1198	0	1120	514	0
3	10-Z	1198	0	1118	541	0
3	11-Z	1198	0	1120	509	0
3	12-Z	1198	0	1120	507	0
3	13-Z	1198	0	1120	513	0
3	14-Z	1198	0	1120	516	0
3	15-Z	1198	0	1120	512	0
3	16-Z	1198	0	1120	525	0
3	17-Z	1198	0	1120	528	0
3	18-Z	1198	0	1109	664	0
3	19-Z	1198	0	1120	502	0
3	20-Z	1198	0	1117	521	0
3	21-Z	1198	0	1111	783	0
3	22-Z	1198	0	1120	505	0
3	23-Z	1198	0	1120	515	0
3	24-Z	1198	0	1120	541	0
3	25-Z	1198	0	1120	509	0
3	26-Z	1198	0	1120	521	0
3	27-Z	1198	0	1120	511	0
3	28-Z	1198	0	1120	504	0
3	29-Z	1198	0	1094	985	0
3	30-Z	1198	0	1120	511	0
3	31-Z	1198	0	1120	509	0
3	32-Z	1198	0	1120	525	0
3	33-Z	1198	0	1118	611	0
3	34-Z	1198	0	1110	810	0
3	35-Z	1198	0	1120	507	0
3	36-Z	1198	0	1120	518	0
3	37-Z	1198	0	1120	503	0
3	38-Z	1198	0	1120	503	0
3	39-Z	1198	0	1117	624	0
3	40-Z	1198	0	1120	509	0
All	All	340040	0	334369	144532	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 214.

The worst 5 of 144532 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:500:TYR:HA	1:C:761:PHE:CG	1.17	1.69
1:C:192:TYR:CE2	1:C:775:ASP:HA	1.27	1.68
1:C:500:TYR:CE1	1:C:707:PHE:HB2	1.22	1.68
1:C:251:PHE:HD1	3:Z:95:ARG:CG	1.07	1.67
1:C:130:PRO:HA	3:Z:108:HIS:CD2	1.27	1.67

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%)	605 (80%)	114 (15%)	39 (5%)	1	15
1	2-C	756/831 (91%)	604 (80%)	114 (15%)	38 (5%)	1	16
1	3-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	1	16
1	4-C	756/831 (91%)	604 (80%)	112 (15%)	40 (5%)	1	15
1	5-C	756/831 (91%)	604 (80%)	114 (15%)	38 (5%)	1	16
1	6-C	758/831 (91%)	606 (80%)	113 (15%)	39 (5%)	1	15
1	7-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	8-C	758/831 (91%)	605 (80%)	113 (15%)	40 (5%)	1	15
1	9-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	10-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	1	16
1	11-C	756/831 (91%)	605 (80%)	113 (15%)	38 (5%)	1	16
1	12-C	756/831 (91%)	605 (80%)	112 (15%)	39 (5%)	1	15
1	13-C	758/831 (91%)	606 (80%)	114 (15%)	38 (5%)	1	16
1	14-C	754/831 (91%)	604 (80%)	112 (15%)	38 (5%)	1	16
1	15-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	16-C	754/831 (91%)	604 (80%)	112 (15%)	38 (5%)	1	16

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	17-C	756/831 (91%)	605 (80%)	112 (15%)	39 (5%)	1	15
1	18-C	758/831 (91%)	605 (80%)	113 (15%)	40 (5%)	1	15
1	19-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	20-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	21-C	756/831 (91%)	605 (80%)	112 (15%)	39 (5%)	1	15
1	22-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	1	15
1	23-C	756/831 (91%)	604 (80%)	113 (15%)	39 (5%)	1	15
1	24-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	25-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	26-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	27-C	756/831 (91%)	605 (80%)	112 (15%)	39 (5%)	1	15
1	28-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	29-C	758/831 (91%)	607 (80%)	111 (15%)	40 (5%)	1	15
1	30-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	31-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
1	32-C	758/831 (91%)	605 (80%)	113 (15%)	40 (5%)	1	15
1	33-C	758/831 (91%)	606 (80%)	112 (15%)	40 (5%)	1	15
1	34-C	758/831 (91%)	605 (80%)	112 (15%)	41 (5%)	1	15
1	35-C	758/831 (91%)	609 (80%)	111 (15%)	38 (5%)	1	16
1	36-C	758/831 (91%)	608 (80%)	112 (15%)	38 (5%)	1	16
1	37-C	758/831 (91%)	606 (80%)	113 (15%)	39 (5%)	1	15
1	38-C	758/831 (91%)	607 (80%)	112 (15%)	39 (5%)	1	15
1	39-C	758/831 (91%)	608 (80%)	112 (15%)	38 (5%)	1	16
1	40-C	758/831 (91%)	607 (80%)	113 (15%)	38 (5%)	1	16
2	1-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	2-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	3-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	4-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	5-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	6-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	7-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	8-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	9-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	10-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	11-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	12-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	13-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	14-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	15-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	16-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	17-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	18-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	19-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	20-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	21-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	22-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	23-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	24-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	25-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	26-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	27-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	28-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	29-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	30-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	31-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	32-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	33-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	17
2	34-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	35-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	36-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	37-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
2	38-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	39-Y	134/136 (98%)	94 (70%)	34 (25%)	6 (4%)	2	17
2	40-Y	134/136 (98%)	95 (71%)	33 (25%)	6 (4%)	2	17
3	1-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	2-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	3-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	4-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	5-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	6-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	7-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	8-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	9-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	10-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	11-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	12-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	13-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	14-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	15-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	16-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	17-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	18-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	12
3	19-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	20-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	21-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	12
3	22-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	12
3	23-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	12
3	24-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	25-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	26-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	12
3	27-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	28-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	12
3	29-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	12

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	30-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	12
3	31-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	32-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	33-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	34-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	35-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	36-Z	149/151 (99%)	104 (70%)	35 (24%)	10 (7%)	1	12
3	37-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	38-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	39-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
3	40-Z	149/151 (99%)	104 (70%)	36 (24%)	9 (6%)	1	13
All	All	41612/44720 (93%)	32195 (77%)	7263 (18%)	2154 (5%)	3	15

5 of 2154 Ramachandran outliers are listed below:

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

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	1-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	2-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	3-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	4-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	5-C	678/724 (94%)	578 (85%)	100 (15%)	3	13

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	6-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	7-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	8-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	9-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	10-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	11-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	12-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	13-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	14-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	15-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	16-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	17-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	18-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	19-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	20-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	21-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	22-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	23-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	24-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	25-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	26-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	27-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	28-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	29-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	30-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	31-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	32-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	33-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	34-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	35-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	36-C	678/724 (94%)	578 (85%)	100 (15%)	3	13

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	37-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	38-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	39-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
1	40-C	678/724 (94%)	578 (85%)	100 (15%)	3	13
2	1-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	2-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	3-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	4-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	5-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	6-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	7-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	8-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	9-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	10-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	11-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	12-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	13-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	14-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	15-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	16-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	17-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	18-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	19-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	20-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	21-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	22-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	23-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	24-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	25-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	26-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	27-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	28-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	29-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	30-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	31-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	32-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	33-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	34-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	35-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	36-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	37-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	38-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	39-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
2	40-Y	119/119 (100%)	106 (89%)	13 (11%)	6	21
3	1-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	2-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	3-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	4-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	5-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	6-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	7-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	8-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	9-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	10-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	11-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	12-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	13-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	14-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	15-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	16-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	17-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	18-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	19-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	20-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	21-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	22-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	23-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	24-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	25-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	26-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	27-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	28-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	29-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	30-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	31-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	32-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	33-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	34-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	35-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	36-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	37-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	38-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	39-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
3	40-Z	127/127 (100%)	114 (90%)	13 (10%)	7	23
All	All	36960/38800 (95%)	31920 (86%)	5040 (14%)	6	14

5 of 5040 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	30-C	456	ILE
1	37-C	417	ASN
1	31-C	284	ILE
1	30-C	389	ILE
1	34-C	24	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 1907 such sidechains are listed below:

Mol	Chain	Res	Type
1	20-C	357	HIS
1	38-C	239	ASN
3	24-Z	46	ASN
2	37-Y	115	ASN
1	40-C	689	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	2-C	13
1	17-C	12
1	14-C	12
1	21-C	12
1	4-C	12
1	12-C	12
1	16-C	12
1	1-C	12

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

The worst 5 of 446 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
23	C	800:LYS	C	801:LEU	N	2.81
17	C	800:LYS	C	801:LEU	N	2.72
14	C	800:LYS	C	801:LEU	N	2.53
21	C	705:LYS	C	706:GLY	N	2.46
5	C	800:LYS	C	801:LEU	N	2.42

6 Tomogram visualisation

This section contains visualisations of the EMDB entry EMD-1584. These allow visual inspection of the internal detail of the tomogram and identification of artifacts.

6.1 Orthogonal projections

This section was not generated.

6.2 Central slices

This section was not generated.

6.3 Largest variance slices

This section was not generated.

6.4 Orthogonal standard-deviation projections (False-color)

This section was not generated.

6.5 Mask visualisation

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

7 Tomogram analysis

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

7.1 Map-value distribution

This section was not generated.

8 Map-model fit

This section was not generated.