



## wwPDB EM Validation Summary Report ⓘ

Nov 20, 2022 – 03:23 pm GMT

PDB ID : 2W4V  
EMDB ID : EMD-1584  
Title : Isometrically contracting insect asynchronous flight muscle quick frozen after a quick release 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

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

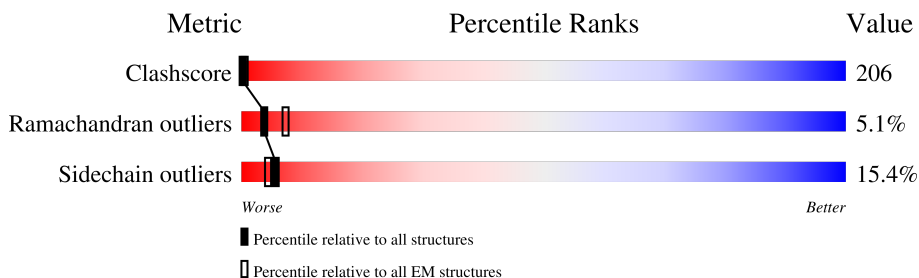
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 35.00 Å.

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




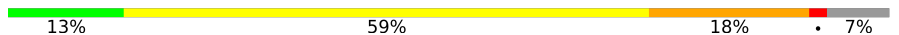

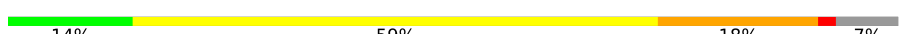
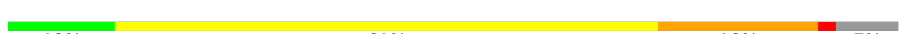

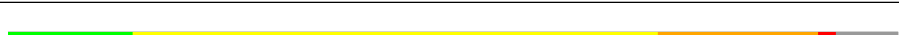
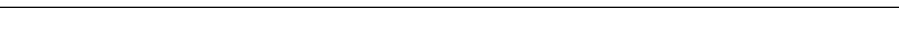
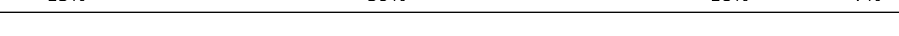
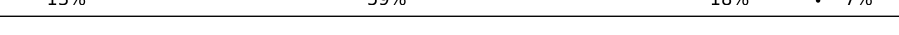
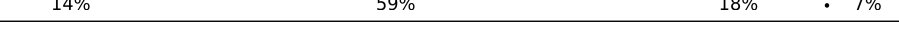
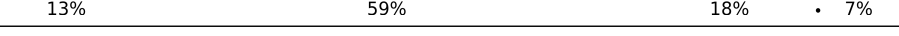



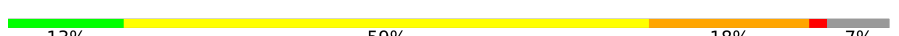
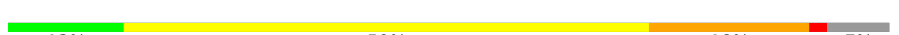

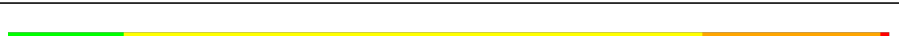


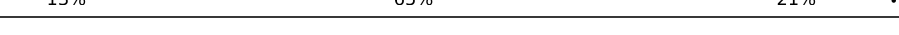
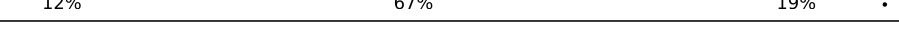
| Metric                | Whole archive (#Entries) | EM structures (#Entries) |
|-----------------------|--------------------------|--------------------------|
| Clashscore            | 158937                   | 4297                     |
| Ramachandran outliers | 154571                   | 4023   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

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

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

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| Mol | Chain | Length | Quality of chain  |
|-----|-------|--------|---|
| 1   | 18-C  | 831    |  13% 59% 18% 7%   |
| 1   | 19-C  | 831    |  13% 59% 18% 7%   |
| 1   | 2-C   | 831    |  14% 59% 18% 7%   |
| 1   | 20-C  | 831    |  14% 59% 18% 7%   |
| 1   | 21-C  | 831    |  12% 61% 18% 7%   |
| 1   | 22-C  | 831    |  14% 59% 18% 7%   |
| 1   | 23-C  | 831    |  14% 59% 18% 7%   |
| 1   | 24-C  | 831    |  13% 59% 18% 7%   |
| 1   | 25-C  | 831    |  13% 59% 18% 7%   |
| 1   | 26-C  | 831    |  14% 59% 18% 7%   |
| 1   | 27-C  | 831    |  13% 59% 18% 7%   |
| 1   | 3-C   | 831    |  14% 60% 17% 7%   |
| 1   | 4-C   | 831    |  13% 60% 18% 7%  |
| 1   | 5-C   | 831    |  14% 59% 18% 7% |
| 1   | 6-C   | 831    |  13% 60% 18% 7% |
| 1   | 7-C   | 831    |  14% 59% 18% 7% |
| 1   | 8-C   | 831    |  13% 59% 18% 7% |
| 1   | 9-C   | 831    |  13% 59% 18% 7% |
| 2   | 1-Y   | 136    |  13% 65% 19% 3% |
| 2   | 10-Y  | 136    |  13% 65% 20% 3% |
| 2   | 11-Y  | 136    |  13% 65% 21% 3% |
| 2   | 12-Y  | 136    |  13% 65% 21% 3% |
| 2   | 13-Y  | 136    |  12% 67% 19% 3% |
| 2   | 14-Y  | 136    |  12% 68% 18% 3% |
| 2   | 15-Y  | 136    |  14% 65% 18% 3% |

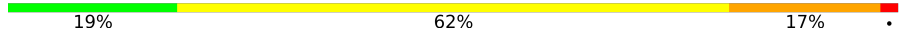
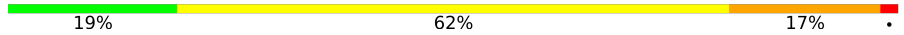
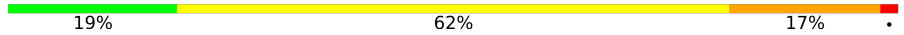
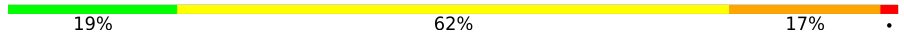
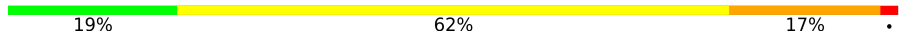
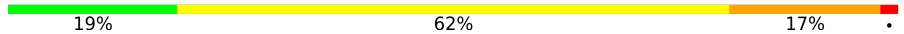
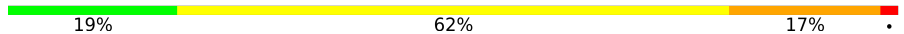
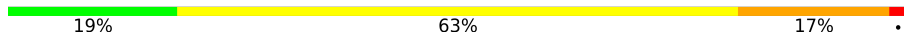
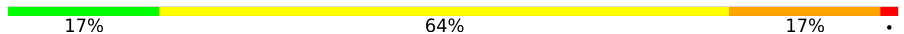
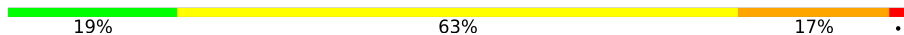
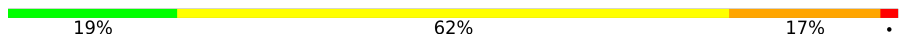
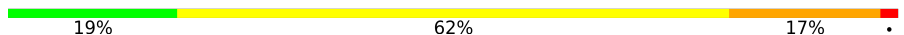
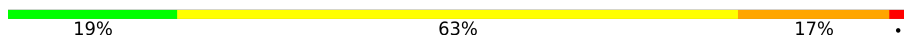
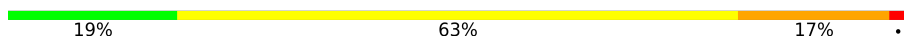
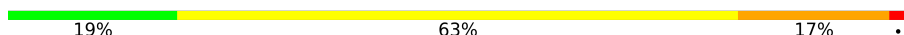
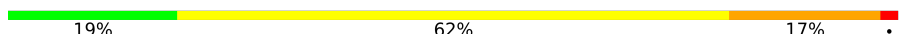
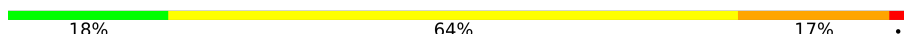
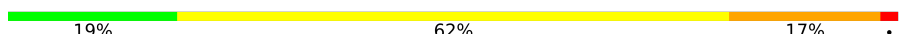
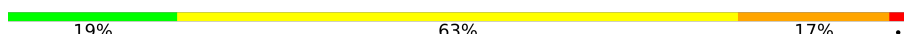
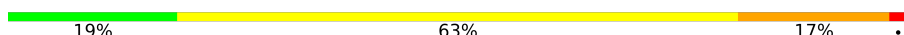
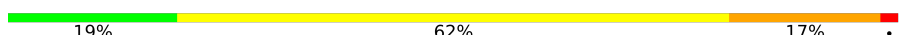
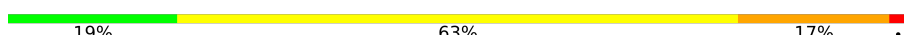
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| Mol | Chain | Length | Quality of chain |     |     |
|-----|-------|--------|------------------|-----|-----|
| 2   | 16-Y  | 136    | 12%              | 68% | 18% |
| 2   | 17-Y  | 136    | 15%              | 65% | 19% |
| 2   | 18-Y  | 136    | 12%              | 68% | 18% |
| 2   | 19-Y  | 136    | 12%              | 67% | 19% |
| 2   | 2-Y   | 136    | 12%              | 67% | 20% |
| 2   | 20-Y  | 136    | 12%              | 67% | 19% |
| 2   | 21-Y  | 136    | 12%              | 68% | 18% |
| 2   | 22-Y  | 136    | 12%              | 66% | 20% |
| 2   | 23-Y  | 136    | 12%              | 67% | 19% |
| 2   | 24-Y  | 136    | 14%              | 66% | 18% |
| 2   | 25-Y  | 136    | 12%              | 68% | 19% |
| 2   | 26-Y  | 136    | 12%              | 67% | 19% |
| 2   | 27-Y  | 136    | 13%              | 66% | 18% |
| 2   | 3-Y   | 136    | 13%              | 65% | 21% |
| 2   | 4-Y   | 136    | 13%              | 65% | 21% |
| 2   | 5-Y   | 136    | 13%              | 65% | 19% |
| 2   | 6-Y   | 136    | 14%              | 65% | 19% |
| 2   | 7-Y   | 136    | 12%              | 67% | 20% |
| 2   | 8-Y   | 136    | 12%              | 68% | 18% |
| 2   | 9-Y   | 136    | 12%              | 67% | 19% |
| 3   | 1-Z   | 151    | 19%              | 62% | 17% |
| 3   | 10-Z  | 151    | 21%              | 61% | 17% |
| 3   | 11-Z  | 151    | 19%              | 62% | 17% |
| 3   | 12-Z  | 151    | 19%              | 62% | 17% |
| 3   | 13-Z  | 151    | 19%              | 63% | 17% |

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| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 3   | 14-Z  | 151    |  19% 62% 17% .   |
| 3   | 15-Z  | 151    |  19% 62% 17% .   |
| 3   | 16-Z  | 151    |  19% 62% 17% .   |
| 3   | 17-Z  | 151    |  19% 62% 17% .   |
| 3   | 18-Z  | 151    |  19% 62% 17% .   |
| 3   | 19-Z  | 151    |  19% 62% 17% .   |
| 3   | 2-Z   | 151    |  19% 62% 17% .   |
| 3   | 20-Z  | 151    |  19% 63% 17% .   |
| 3   | 21-Z  | 151    |  17% 64% 17% .   |
| 3   | 22-Z  | 151    |  19% 63% 17% .   |
| 3   | 23-Z  | 151    |  19% 62% 17% .   |
| 3   | 24-Z  | 151    |  19% 62% 17% .  |
| 3   | 25-Z  | 151    |  19% 63% 17% . |
| 3   | 26-Z  | 151    |  19% 63% 17% . |
| 3   | 27-Z  | 151    |  19% 63% 17% . |
| 3   | 3-Z   | 151    |  19% 62% 17% . |
| 3   | 4-Z   | 151    |  18% 64% 17% . |
| 3   | 5-Z   | 151    |  19% 62% 17% . |
| 3   | 6-Z   | 151    |  19% 63% 17% . |
| 3   | 7-Z   | 151    |  19% 63% 17% . |
| 3   | 8-Z   | 151    |  19% 62% 17% . |
| 3   | 9-Z   | 151    |  19% 63% 17% . |

## 2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 229527 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

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

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| Mol | Chain | Residues | Atoms         |           |           |           |         | AltConf | Trace |
|-----|-------|----------|---------------|-----------|-----------|-----------|---------|---------|-------|
|     |       |          | Total         | C         | N         | O         | S       |         |       |
| 1   | 18-C  | 772      | Total<br>6215 | C<br>3957 | N<br>1067 | O<br>1155 | S<br>36 | 0       | 0     |
| 1   | 19-C  | 772      | Total<br>6215 | C<br>3957 | N<br>1067 | O<br>1155 | S<br>36 | 0       | 0     |
| 1   | 20-C  | 772      | Total<br>6215 | C<br>3957 | N<br>1067 | O<br>1155 | S<br>36 | 0       | 0     |
| 1   | 21-C  | 772      | Total<br>6215 | C<br>3957 | N<br>1067 | O<br>1155 | S<br>36 | 0       | 0     |
| 1   | 22-C  | 772      | Total<br>6215 | C<br>3957 | N<br>1067 | O<br>1155 | S<br>36 | 0       | 0     |
| 1   | 23-C  | 772      | Total<br>6215 | C<br>3957 | N<br>1067 | O<br>1155 | S<br>36 | 0       | 0     |
| 1   | 24-C  | 772      | Total<br>6215 | C<br>3957 | N<br>1067 | O<br>1155 | S<br>36 | 0       | 0     |
| 1   | 25-C  | 772      | Total<br>6215 | C<br>3957 | N<br>1067 | O<br>1155 | S<br>36 | 0       | 0     |
| 1   | 26-C  | 772      | Total<br>6215 | C<br>3957 | N<br>1067 | O<br>1155 | S<br>36 | 0       | 0     |
| 1   | 27-C  | 772      | Total<br>6215 | C<br>3957 | N<br>1067 | O<br>1155 | S<br>36 | 0       | 0     |

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

| Mol | Chain | Residues | Atoms         |          |          |          |        | AltConf | Trace |
|-----|-------|----------|---------------|----------|----------|----------|--------|---------|-------|
|     |       |          | Total         | C        | N        | O        | S      |         |       |
| 2   | 1-Y   | 136      | Total<br>1088 | C<br>687 | N<br>173 | O<br>219 | S<br>9 | 0       | 0     |
| 2   | 2-Y   | 136      | Total<br>1088 | C<br>687 | N<br>173 | O<br>219 | S<br>9 | 0       | 0     |
| 2   | 3-Y   | 136      | Total<br>1088 | C<br>687 | N<br>173 | O<br>219 | S<br>9 | 0       | 0     |
| 2   | 4-Y   | 136      | Total<br>1088 | C<br>687 | N<br>173 | O<br>219 | S<br>9 | 0       | 0     |
| 2   | 5-Y   | 136      | Total<br>1088 | C<br>687 | N<br>173 | O<br>219 | S<br>9 | 0       | 0     |
| 2   | 6-Y   | 136      | Total<br>1088 | C<br>687 | N<br>173 | O<br>219 | S<br>9 | 0       | 0     |
| 2   | 7-Y   | 136      | Total<br>1088 | C<br>687 | N<br>173 | O<br>219 | S<br>9 | 0       | 0     |
| 2   | 8-Y   | 136      | Total<br>1088 | C<br>687 | N<br>173 | O<br>219 | S<br>9 | 0       | 0     |
| 2   | 9-Y   | 136      | Total<br>1088 | C<br>687 | N<br>173 | O<br>219 | S<br>9 | 0       | 0     |

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| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 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 |         |       |
| 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 |         |       |

- 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 |         |       |

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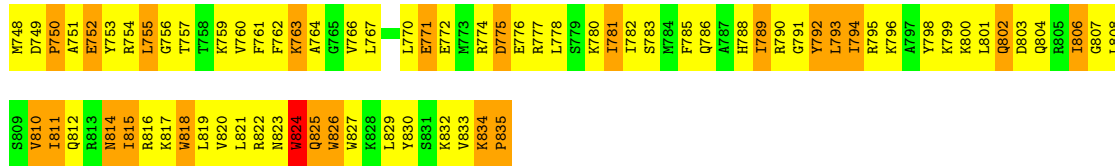
| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 3   | 2-Z   | 151      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1198  | 757 | 190 | 244 | 7 |         |       |
| 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 |         |       |
| 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 |         |       |

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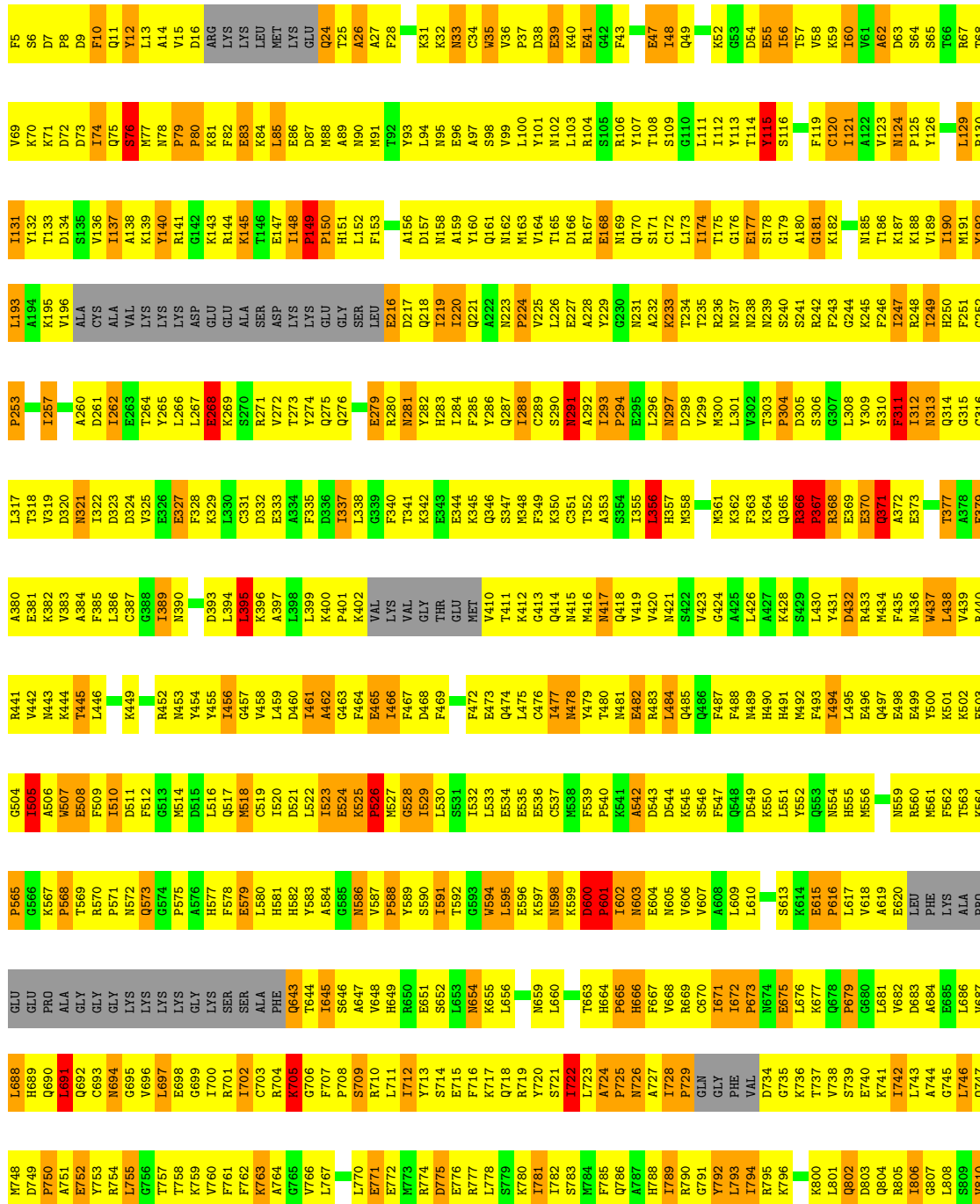
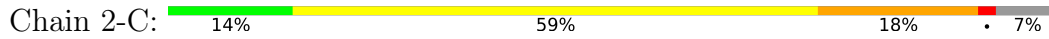
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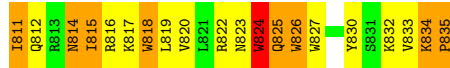
| <b>Mol</b> | <b>Chain</b> | <b>Residues</b> | <b>Atoms</b> |     |     |     |   | <b>AltConf</b> | <b>Trace</b> |
|------------|--------------|-----------------|--------------|-----|-----|-----|---|----------------|--------------|
| 3          | 23-Z         | 151             | Total        | C   | 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 |                |              |



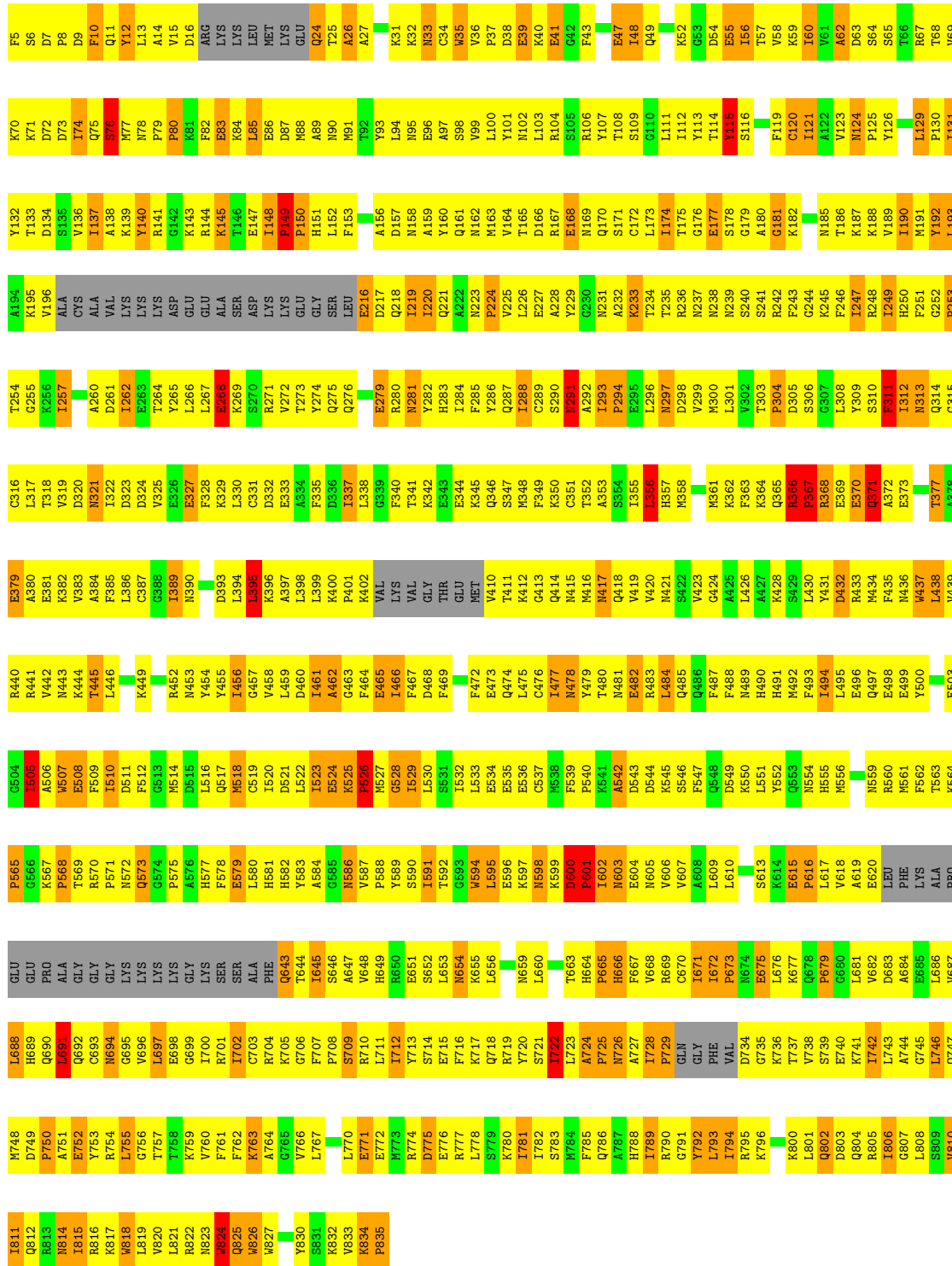
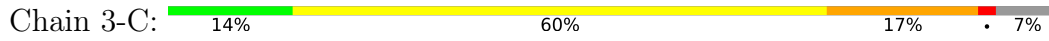


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



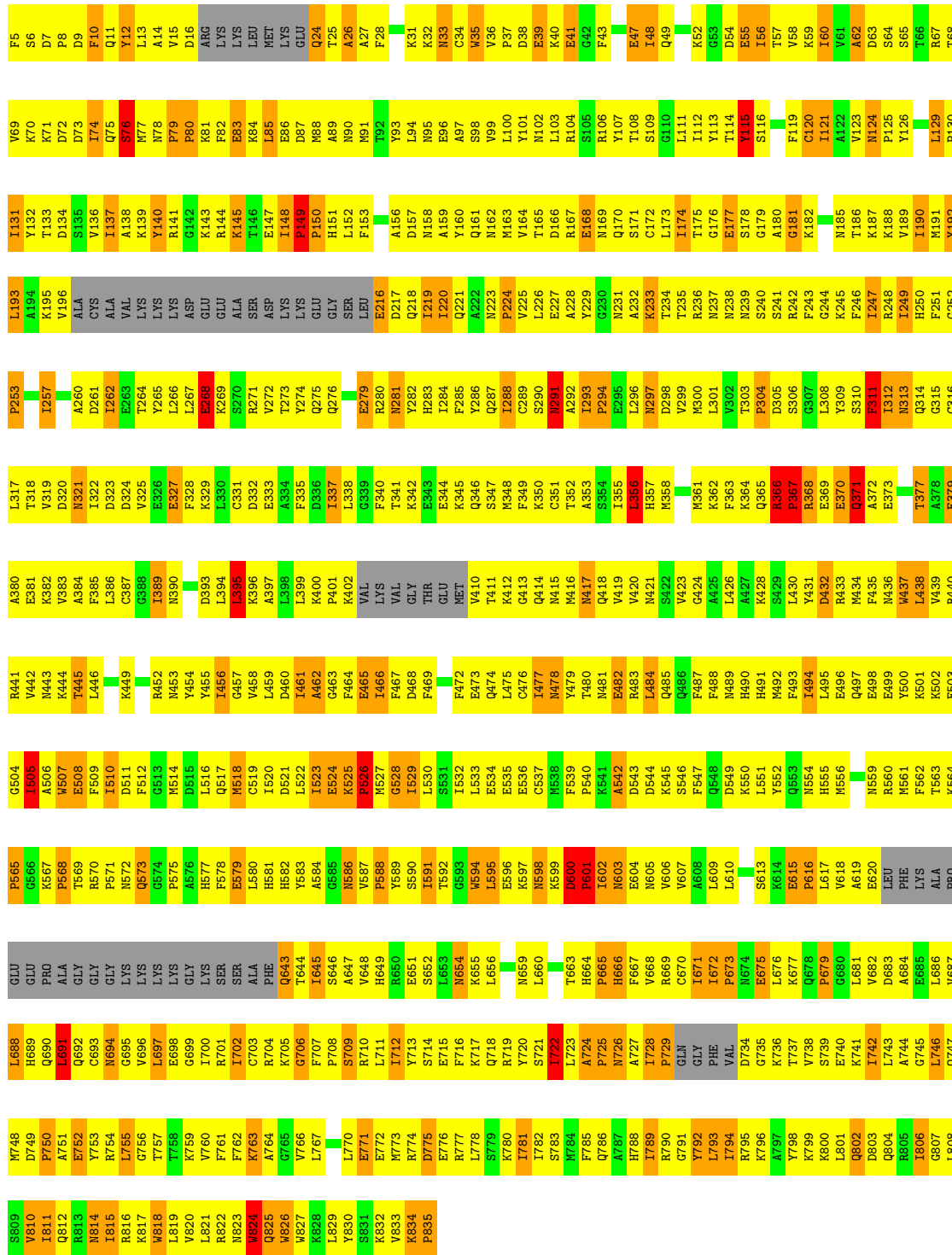


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



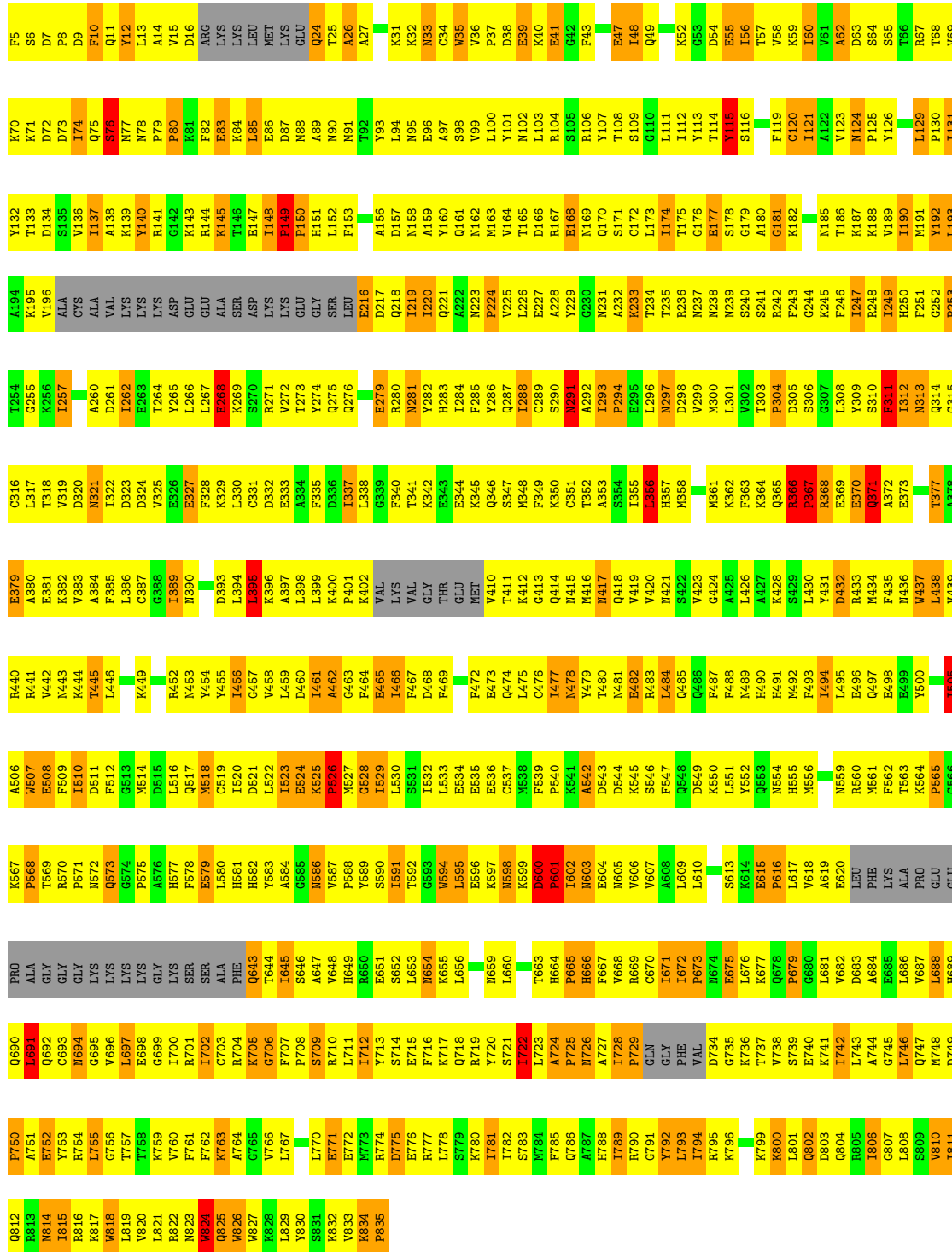
• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 4-C: 13% 60% 18% 7%



• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

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



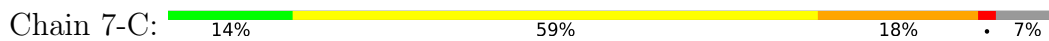
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 6-C: 13% 60% 18% 7%



|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-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| K70  | K71  | D72  | D73  | I74  | O75  | S76  | M77  | M78  | P79  | P80  | K81  | F82  | E83  | K84  | L85  | E86  | D87  | M88  | A89  | N90  | M91  | T92  | Y93  | L94  | M95  | E96  | A97  | S98  | V99  | L100 | Y101 | M102 | L103 | R104 | E105 | R106 | Y107 | T108 | S109 | G110 | L111 | I112 | Y113 | T114 | Y115 | S116 | F119 | C120 | I121 | A122 | V123 | N124 | P125 | V126 | L129 | P130 | Y131 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Y132 | T133 | S134 | S135 | V136 | I137 | A138 | K139 | Y140 | R141 | G142 | K143 | R144 | K145 | T146 | E147 | L88  | P149 | P150 | H151 | L152 | F153 | A154 | A156 | D157 | M158 | A159 | Y160 | Q161 | M162 | V163 | V164 | L165 | D166 | R167 | E168 | M169 | Q170 | S171 | C172 | L173 | I174 | T175 | Y176 | E177 | S178 | G179 | A180 | G181 | K182 | M185 | V186 | K187 | N188 | P189 | I190 | M191 | Y192 | L193 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| A194 | K195 | V196 | C197 | A198 | V199 | L200 | L201 | L202 | L203 | L204 | L205 | L206 | L207 | E208 | K209 | L210 | S211 | L212 | L213 | L214 | L215 | L216 | E217 | Q218 | L219 | Q220 | Q221 | A222 | L223 | N224 | P225 | V226 | L227 | E228 | E229 | A230 | N231 | A232 | K233 | T234 | T235 | L236 | D237 | N238 | M239 | S240 | S241 | R242 | R243 | G244 | K245 | L246 | Y247 | Y248 | S249 | F250 | L251 | L252 | L253 | L254 | L255 | L256 | L257 | L258 | L259 | L260 | L261 | L262 | L263 | L264 | L265 | L266 | L267 | L268 | L269 | L270 | L271 | L272 | L273 | L274 | L275 | L276 | L277 | L278 | L279 | L280 | L281 | L282 | L283 | L284 | L285 | L286 | L287 | L288 | L289 | L290 | L291 | L292 | L293 | L294 | L295 | L296 | L297 | L298 | L299 | M300 | L301 | V302 | T303 | K304 | P305 | D306 | S307 | G308 | L309 | L310 | Y311 | L312 | L313 | L314 | L315 | L316 | L317 | L318 | L319 | L320 | L321 | L322 | L323 | L324 | L325 | L326 | L327 | L328 | L329 | L330 | L331 | L332 | L333 | L334 | L335 | L336 | L337 | L338 | L339 | L340 | L341 | L342 | L343 | L344 | L345 | L346 | L347 | L348 | L349 | L350 | L351 | L352 | L353 | L354 | L355 | L356 | L357 | L358 | L359 | L360 | L361 | L362 | L363 | L364 | L365 | L366 | L367 | L368 | L369 | L370 | L371 | L372 | L373 | L374 | L375 | L376 | L377 | L378 | L379 | L380 | L381 | L382 | L383 | L384 | L385 | L386 | L387 | L388 | L389 | L390 | L391 | L392 | L393 | L394 | L395 | L396 | L397 | L398 | L399 | L400 | P401 | L402 | L403 | L404 | L405 | L406 | L407 | L408 | L409 | L410 | L411 | L412 | L413 | L414 | L415 | L416 | L417 | L418 | L419 | L420 | L421 | L422 | L423 | L424 | L425 | L426 | L427 | L428 | L429 | L430 | L431 | L432 | L433 | L434 | L435 | L436 | L437 | L438 | L439 | L440 | L441 | L442 | L443 | L444 | L445 | L446 | L447 | L448 | L449 | L450 | L451 | L452 | L453 | L454 | L455 | L456 | L457 | L458 | L459 | L460 | L461 | L462 | L463 | L464 | L465 | L466 | L467 | L468 | L469 | L470 | L471 | L472 | L473 | L474 | L475 | L476 | L477 | L478 | L479 | L480 | L481 | L482 | L483 | L484 | L485 | L486 | L487 | L488 | L489 | L490 | L491 | L492 | L493 | L494 | L495 | L496 | L497 | L498 | L499 | Y500 | L501 | L502 | L503 | L504 | L505 | L506 | L507 | L508 | L509 | L510 | L511 | L512 | L513 | L514 | L515 | L516 | L517 | L518 | L519 | L520 | L521 | L522 | L523 | L524 | L525 | L526 | L527 | L528 | L529 | L530 | L531 | L532 | L533 | L534 | L535 | L536 | L537 | L538 | L539 | L540 | L541 | L542 | L543 | L544 | L545 | L546 | L547 | L548 | L549 | L550 | L551 | L552 | L553 | L554 | L555 | L556 | L557 | L558 | L559 | L560 | L561 | L562 | L563 | L564 | L565 | L566 | L567 | L568 | L569 | L570 | L571 | L572 | L573 | L574 | L575 | L576 | L577 | L578 | L579 | L580 | L581 | L582 | L583 | L584 | L585 | L586 | L587 | L588 | L589 | L590 | L591 | L592 | L593 | L594 | L595 | L596 | L597 | L598 | L599 | L600 | L601 | L602 | L603 | L604 | L605 | L606 | L607 | L608 | L609 | L610 | L611 | L612 | L613 | L614 | L615 | L616 | L617 | L618 | L619 | L620 | L621 | L622 | L623 | L624 | L625 | L626 | L627 | L628 | L629 | L630 | L631 | L632 | L633 | L634 | L635 | L636 | L637 | L638 | L639 | L640 | L641 | L642 | L643 | L644 | L645 | L646 | L647 | L648 | L649 | L650 | L651 | L652 | L653 | L654 | L655 | L656 | L657 | L658 | L659 | L660 | L661 | L662 | L663 | L664 | L665 | L666 | L667 | L668 | L669 | L670 | L671 | L672 | L673 | L674 | L675 | L676 | L677 | L678 | L679 | L680 | L681 | L682 | L683 | L684 | L685 | L686 | L687 | L688 | L689 | L690 | L691 | L692 | L693 | L694 | L695 | L696 | L697 | L698 | L699 | L700 | L701 | L702 | L703 | L704 | L705 | L706 | L707 | L708 | L709 | L710 | L711 | L712 | L713 | L714 | L715 | L716 | L717 | L718 | L719 | L720 | L721 | L722 | L723 | L724 | L725 | L726 | L727 | L728 | L729 | L730 | L731 | L732 | L733 | L734 | L735 | L736 | L737 | L738 | L739 | L740 | L741 | L742 | L743 | L744 | L745 | L746 | L747 | L748 | L749 | L750 | L751 | L752 | L753 | L754 | L755 | L756 | L757 | L758 | L759 | L760 | L761 | L762 | L763 | L764 | L765 | L766 | L767 | L768 | L769 | L770 | L771 | L772 | L773 | L774 | L775 | L776 | L777 | L778 | L779 | L780 | L781 | L782 | L783 | L784 | L785 | L786 | L787 | L788 | L789 | L790 | L791 | L792 | L793 | L794 | L795 | L796 | L797 | L798 | L799 | L800 | L801 | L802 | V803 | D804 | D805 | S806 | S807 | L808 | S809 | L809 | L810 | L811 | L812 | L813 | L814 | L815 | L816 | L817 | L818 | L819 | L820 | L821 | L822 | L823 | L824 | L825 | L826 | L827 | L828 | L829 | L830 | L831 | L832 | L833 | L834 | L835 | L836 | L837 | L838 | L839 | L840 | L841 | L842 | L843 | L844 | L845 | L846 | L847 | L848 | L849 | L850 | L851 | L852 | L853 | L854 | L855 | L856 | L857 | L858 | L859 | L860 | L861 | L862 | L863 | L864 | L865 | L866 | L867 | L868 | L869 | L870 | L871 | L872 | L873 | L874 | L875 | L876 | L877 | L878 | L879 | L880 | L881 | L882 | L883 | L884 | L885 | L886 | L887 | L888 | L889 | L890 | L891 | L892 | L893 | L894 | L895 | L896 | L897 | L898 | L899 | L900 | L901 | L902 | L903 | L904 | L905 | L906 | L907 | L908 | L909 | L910 | L911 | L912 | L913 | L914 | L915 | L916 | L917 | L918 | L919 | L920 | L921 | L922 | L923 | L924 | L925 | L926 | L927 | L928 | L929 | L930 | L931 | L932 | L933 | L934 | L935 | L936 | L937 | L938 | L939 | L940 | L941 | L942 | L943 | L944 | L945 | L946 | L947 | L948 | L949 | L950 | L951 | L952 | L953 | L954 | L955 | L956 | L957 | L958 | L959 | L960 | L961 | L962 | L963 | L964 | L965 | L966 | L967 | L968 | L969 | L970 | L971 | L972 | L973 | L974 | L975 | L976 | L977 | L978 | L979 | L980 | L981 | L982 | L983 | L984 | L985 | L986 | L987 | L988 | L989 | L990 | L991 | L992 | L993 | L994 | L995 | L996 | L997 | L998 | L999 | L1000 | L1001 | L1002 | L1003 | L1004 | L1005 | L1006 | L1007 | L1008 | L1009 | L1010 | L1011 | L1012 | L1013 | L1014 | L1015 | L1016 | L1017 | L1018 | L1019 | L1020 | L1021 | L1022 | L1023 | L1024 | L1025 | L1026 | L1027 | L1028 | L1029 | L1030 | L1031 | L1032 | L1033 | L1034 | L1035 | L1036 | L1037 | L1038 | L1039 | L1040 | L1041 | L1042 | L1043 | 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• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

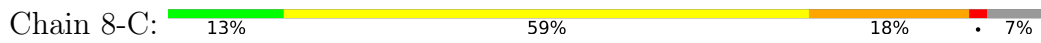


|    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |
|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| F5 | S6 | D7 | P8 | D9 | F10 | Q11 | Y12 | L13 | A14 | V15 | D16 | A8G | L1S | L1S | L8S | L8S | ME8 | M88 | A89 | M90 | M91 | T92 | Y93 | L94 | M95 | E96 | A97 | S98 | V99 | L100 | P37 | D38 | E39 | S83 | I48 | I48 | Q49 | K52 | G53 | D54 | E55 | I56 | T57 | V58 | K59 | I60 | V61 | A62 | D63 | S64 | S65 | T66 | R67 | L68 | S69 | L69 | L130 | L131 |
|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|



|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Y132 | T133 | D134 | S135 | V136 | I137 | A138 | K139 | Y140 | R141 | G142 | K143 | R144 | K145 | T146 | S147 | E148 | I149 | P150 | H151 | L152 | F153 | A156 | D157 | N158 | A159 | Y160 | Q161 | N162 | M163 | V164 | T165 | D166 | R167 | E168 | N169 | Q170 | S171 | C172 | L173 | I174 | T175 | G176 | E177 | S178 | G179 | A180 | G181 | K182 | N185 | T186 | K187 | I188 | V189 | I190 | M191 | Y192 | L193 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| A194 | K195 | V196 | ALA  | CYS  | ALA  | VAL  | LYS  | LYS  | LYS  | ASP  | GLU  | GLU  | ALA  | SER  | ASP  | ASP  | LYS  | LYS  | GLU  | GLY  | SER  | LEU  | E216 | D217 | Q218 | I219 | Q220 | Q221 | A222 | N223 | P224 | V225 | L226 | E227 | C228 | S229 | A228 | R167 | Y229 | G230 | N231 | A232 | K233 | T234 | T235 | R236 | N237 | N238 | N239 | S240 | S241 | R242 | F243 | G244 | K245 | F246 | I247 | R248 | K249 | H250 | G251 | P253 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| T254 | G255 | I257 | A260 | D261 | I262 | E263 | T264 | Y265 | L266 | L267 | E268 | K269 | S270 | R271 | V272 | L273 | Y274 | E279 | R280 | M281 | Y282 | H283 | I284 | F285 | N286 | Q287 | I288 | C289 | S290 | A228 | R291 | Y229 | I293 | P294 | E295 | L296 | N297 | D298 | V299 | M300 | L301 | V302 | T303 | P304 | D305 | S306 | G307 | L308 | Y309 | S310 | R311 | I312 | M313 | G315 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| C316 | L317 | T318 | V319 | D320 | N321 | I322 | D323 | D324 | V325 | E326 | E327 | F328 | K329 | L330 | C331 | R332 | D333 | E334 | A335 | F336 | D337 | I338 | L339 | K400 | P401 | L338 | K402 | VAL  | G339 | F340 | T341 | K342 | E343 | E344 | F472 | M334 | V410 | T411 | S347 | M348 | K412 | G413 | Q414 | K350 | C351 | A352 | A353 | S354 | I355 | H357 | M358 | M561 | K362 | F363 | K364 | K428 | Q365 | R366 | P367 | L430 | Y431 | R368 | D432 | E369 | A433 | E370 | M434 | Q371 | R435 | A372 | M436 | W437 | G438 | L438 | G315 | A378 |
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| R440 | R441 | V442 | N443 | K444 | T445 | L446 | K449 | R452 | M453 | Y454 | Y455 | M518 | L519 | C519 | H581 | D521 | L522 | I523 | E524 | K525 | F464 | E465 | M527 | R528 | I529 | L530 | S531 | I532 | M533 | M534 | E534 | E535 | E536 | E537 | M538 | F539 | P540 | T480 | M481 | E482 | D543 | D544 | K545 | L484 | N421 | S422 | Q423 | G424 | F487 | F488 | M489 | H490 | H491 | M492 | F493 | I494 | L495 | E496 | Q497 | E498 | S499 | Y500 | E503 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| G504 | L505 | V507 | F508 | F509 | I510 | D511 | F512 | G513 | M514 | D515 | L516 | Q517 | M518 | C519 | H581 | D521 | L522 | I523 | E524 | K525 | F464 | E465 | M527 | R528 | I529 | L530 | S531 | I532 | M533 | M534 | E534 | E535 | E536 | E537 | M538 | F539 | P540 | T480 | M481 | E482 | D543 | D544 | K545 | L484 | N421 | S422 | Q423 | G424 | F487 | F488 | M489 | H490 | H491 | M492 | F493 | I494 | L495 | E496 | Q497 | E498 | S499 | Y500 | E503 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| P565 | S566 | K567 | P568 | T569 | R570 | P571 | M572 | Q573 | G574 | P575 | A576 | F577 | E579 | L580 | H581 | D521 | L522 | I523 | E524 | K525 | F464 | E465 | M527 | R528 | I529 | L530 | S531 | I532 | M533 | M534 | E534 | E535 | E536 | E537 | M538 | F539 | P540 | T480 | M481 | E482 | D543 | D544 | K545 | L484 | N421 | S422 | Q423 | G424 | F487 | F488 | M489 | H490 | H491 | M492 | F493 | I494 | L495 | E496 | Q497 | E498 | S499 | Y500 | E503 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| GLU  | GLU  | PRO  | ALA  | GLY  | GLY  | GLY  | LYS  | LYS  | LYS  | LYS  | LYS  | SER  | SER  | ALA  | ALA  | PHE  | GLN  | T644 | L645 | S646 | A647 | H649 | G650 | E651 | S652 | L653 | M654 | G655 | K656 | L656 | M659 | L660 | T663 | H664 | F665 | H666 | P667 | V668 | R669 | C670 | L671 | L672 | P673 | M674 | E675 | L676 | K677 | G678 | V679 | E680 | L681 | A619 | E620 | L682 | D683 | A684 | P685 | L686 | PRO  | P687 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| L688 | H689 | Q690 | L691 | Q692 | C693 | M694 | G695 | L697 | E698 | G699 | L700 | R701 | I702 | C703 | R704 | K705 | G706 | F707 | F708 | S709 | R710 | H711 | L712 | W713 | S714 | E715 | F716 | K717 | G718 | R719 | W720 | S721 | L722 | A723 | P725 | N726 | A727 | I728 | P729 | G791 | G792 | L793 | V794 | D734 | E740 | K736 | T737 | V738 | S739 | E740 | K741 | I742 | L743 | R806 | G807 | L808 | S809 | L746 | Q747 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| H748 | D749 | P750 | A751 | E752 | V753 | R754 | L755 | G756 | T757 | L758 | K759 | F761 | F762 | K763 | A764 | G765 | V766 | L767 | L770 | E771 | E772 | K773 | R774 | D775 | E776 | R777 | V778 | S779 | K780 | L781 | I782 | S783 | F784 | F785 | Q786 | H787 | I788 | R789 | R790 | G791 | Y792 | L793 | R794 | R795 | K796 | K800 | L801 | D803 | Q804 | R805 | L806 | G807 | S809 | L808 | S809 | L746 | Q747 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| L811 | Q812 | R813 | N814 | L815 | R816 | K817 | M818 | L819 | W820 | L821 | R822 | N823 | R824 | Q825 | M826 | W827 | K828 | L829 | S830 | H831 | K832 | K833 | K834 | P835 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

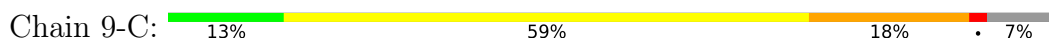
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



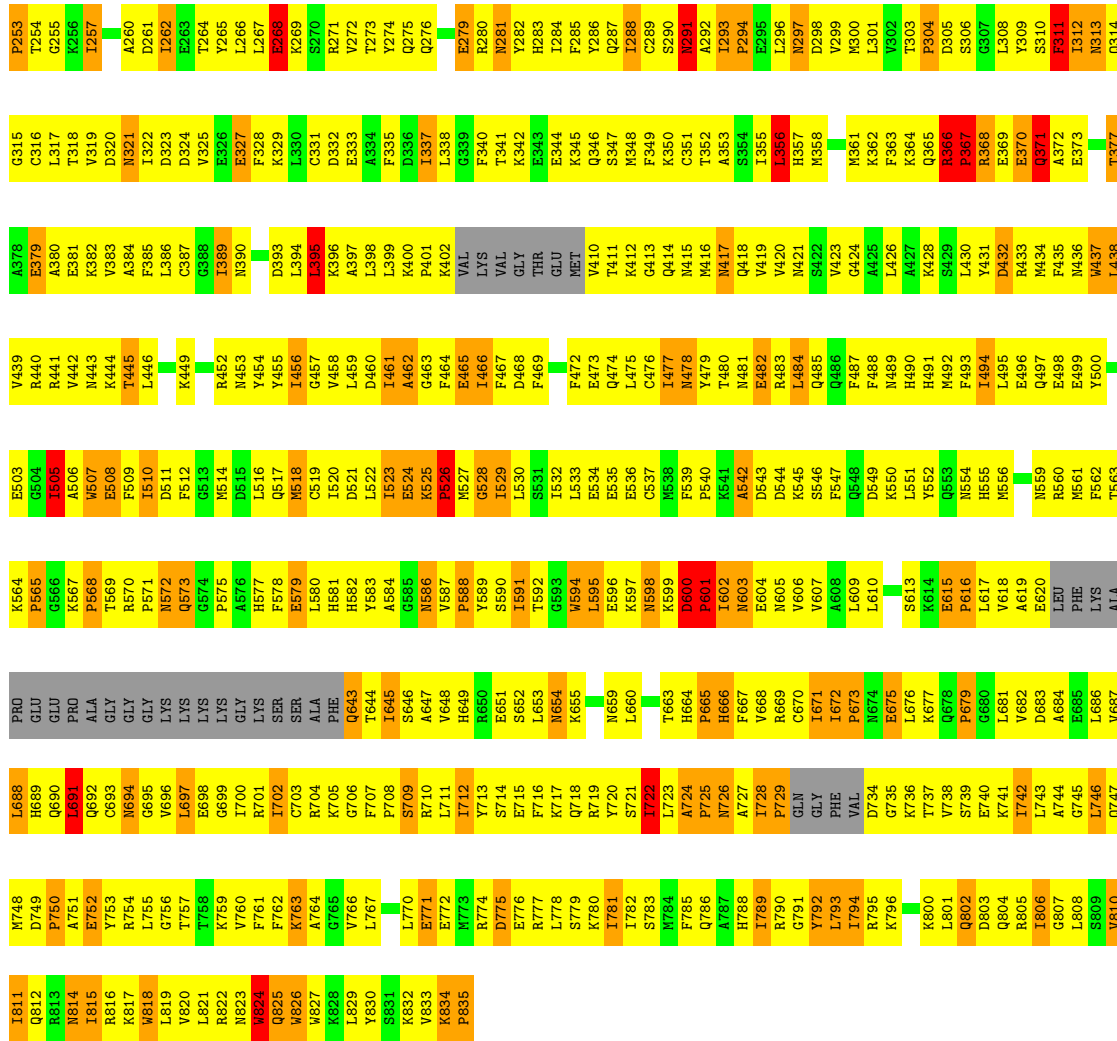
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|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| F5   | S6   | P8   | D9   | F10  | Q11  | Y12  | L13  | R14  | V15  | D16  | ARG  | L15  | L16  | L17  | L18  | M19  | A20  | A21  | A22  | K31  | K32  | C33  | N34  | W35  | V36  | P37  | D38  | O39  | K40  | E41  | G42  | G43  | F44  | E47  | I48  | Q49  | K52  | G53  | D54  | E55  | I56  | T57  | V58  | K59  | I60  | V61  | A62  | D63  | S64  | S65  | T66  | R67  | T68  | S69  | V69  |      |      |      |      |
| K70  | K71  | D72  | D73  | I74  | W75  | S76  | M77  | L78  | P79  | P80  | G81  | E82  | E83  | L84  | R85  | E86  | D87  | M88  | A89  | N90  | M91  | T92  | Y93  | L94  | N95  | E96  | A97  | S98  | V99  | L100 | I101 | N102 | L103 | R104 | S105 | R106 | I107 | T108 | S109 | G110 | L111 | I112 | Y113 | T114 | Y115 | S116 | G117 | L118 | V119 | C120 | I121 | A122 | V123 | M124 | P125 | Y126 | L129 | M191 | Y192 |
| I131 | Y132 | T133 | D134 | S135 | V136 | I137 | A138 | K139 | Y140 | R141 | G142 | K143 | R144 | K145 | T146 | S147 | E148 | I149 | P150 | H151 | L152 | F153 | A156 | D157 | N158 | A159 | Y160 | Q161 | N162 | M163 | V164 | T165 | D166 | R167 | E168 | N169 | Q170 | S171 | C172 | L173 | I174 | T175 | G176 | E177 | S178 | G179 | A180 | G181 | K182 | N185 | T186 | K187 | I188 | V189 | I190 | M191 | Y192 |      |      |

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| L193 | A194 | K196 | V196 | ALA  | CYS  | ALA  | VAL  | LYS  | LYS  | LYS  | LYS  | ASP  | GLU  | GLU  | ALA  | SER  | ASP  | LYS  | LYS  | GLY  | LEU  | E216 | D217 | Q218 | I219 | I220 | Q221 | A222 | M223 | P224 | V225 | L226 | E227 | A228 | Y229 | G230 | N231 | A232 | K233 | T234 | T235 | R236 | M237 | N238 | N239 | S240 | S241 | R242 | G244 | K245 | F246 | I247 | R248 | I249 | H250 | F251 | G252 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| P253 | T254 | G255 | K256 | I257 | A260 | D261 | L262 | E263 | T264 | Y265 | L266 | L267 | E268 | R269 | S270 | R271 | V272 | L273 | Y274 | Q275 | Q276 | E279 | R280 | M281 | Y282 | H283 | I284 | F285 | L286 | Q287 | I288 | C289 | S290 | N291 | A292 | I293 | P294 | E295 | L296 | N297 | D298 | V299 | M300 | L301 | V302 | T303 | K304 | D305 | S306 | G307 | E308 | L309 | F309 | G371 | A372 | E373 | N312 | N313 | Q314 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| G315 | C316 | L317 | T318 | V319 | D320 | N321 | I322 | D323 | D324 | V325 | E326 | E327 | F328 | K329 | L330 | C331 | D332 | E333 | A334 | F335 | D336 | I337 | L338 | G339 | F340 | T341 | K342 | E343 | E344 | K345 | Q346 | S347 | M348 | C349 | K350 | C351 | T352 | A353 | S354 | I355 | L356 | H357 | M358 | M361 | K362 | F363 | K364 | Q365 | R366 | P367 | L430 | F431 | E369 | L432 | R433 | L434 | Q435 | M436 | F437 | E373 | N312 | N313 | Q314 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| A376 | E379 | A380 | E381 | K382 | V383 | A384 | F385 | L386 | C387 | G388 | I389 | E390 | D393 | L394 | L395 | K396 | D397 | A397 | L398 | F399 | G400 | P401 | K402 | VAL  | LYS  | VAL  | K442 | E343 | E344 | K345 | Q346 | T411 | K412 | L475 | K413 | Q414 | M415 | M416 | M417 | Q418 | V419 | V420 | M421 | L484 | Q485 | Q486 | G429 | G424 | F488 | L609 | D549 | L426 | A427 | K428 | S429 | F493 | I494 | L495 | H555 | M556 | N559 | R560 | M561 | PHE  | LYS  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
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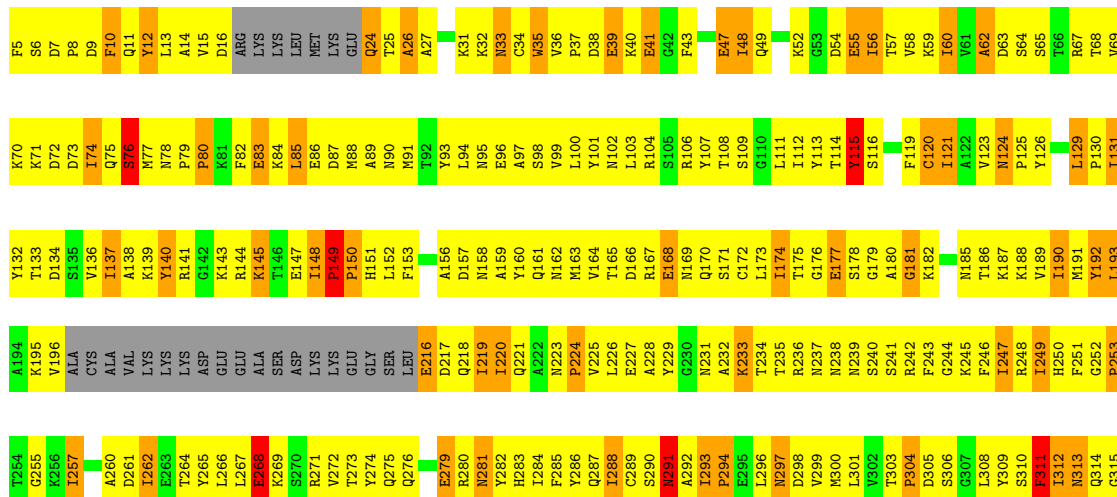
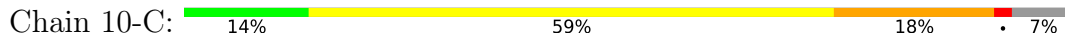
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

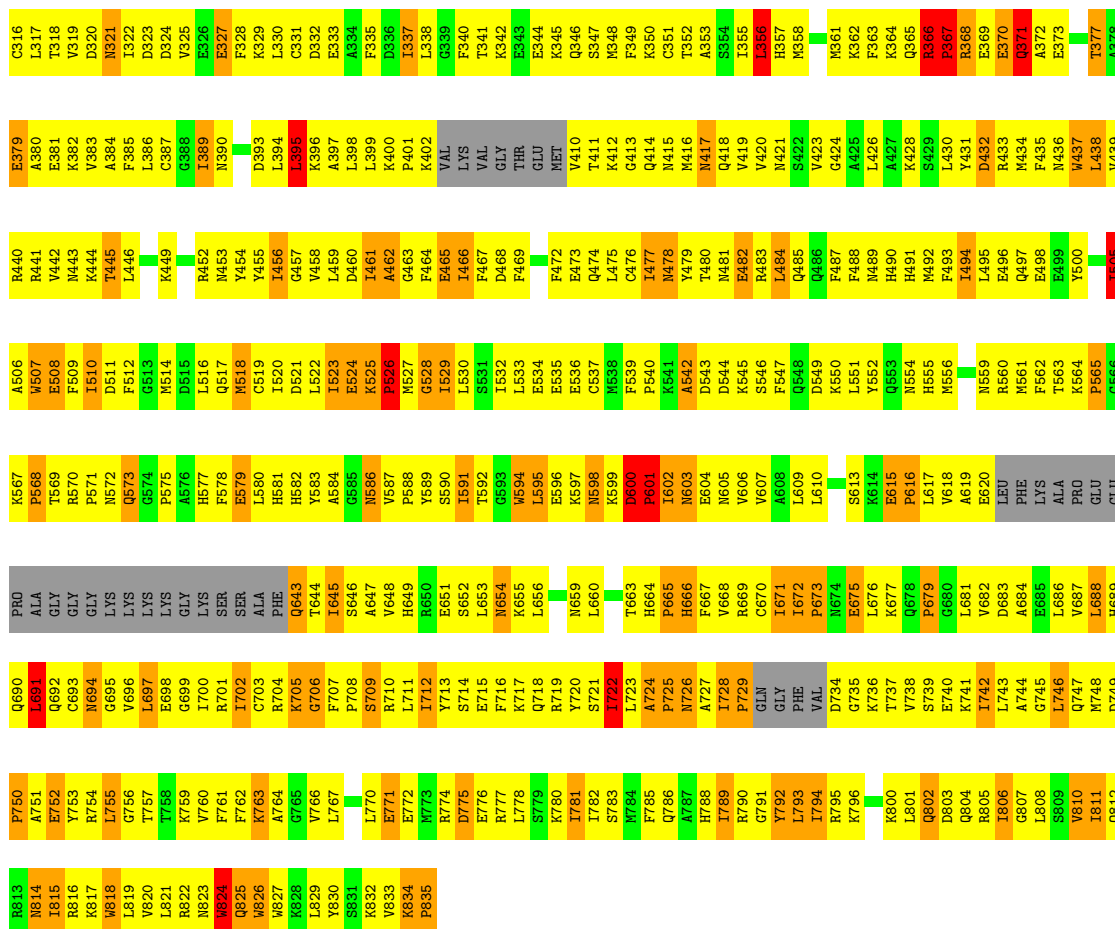


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|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| F5   | S6   | D7   | P8   | D9   | F10  | Q11  | Y12  | L13  | A14  | V15  | D16  | ARG  | LYS  | LYS  | LYS  | LEU  | MET  | ASP  | LYS  | LYS  | GLY  | Q24  | A26  | A27  | K31  | K32  | N33  | C34  | W35  | V36  | P37  | D38  | E39  | K40  | E41  | G42  | F43  | E47  | I48  | Q49  | L111 | I112 | G53  | D54  | E55  | I56  | T57  | V58  | K59  | I60  | V61  | A62  | D63  | S64  | S65  | G66  | T66  | R67  | G68  | V69  |      |      |      |      |      |
| K70  | K71  | D72  | D73  | O74  | I75  | S76  | M77  | M78  | P79  | P80  | K81  | E82  | E83  | K84  | L85  | E86  | D87  | M88  | A89  | N90  | M91  | T92  | Y93  | L94  | N95  | E96  | A97  | S98  | V99  | L100 | Y101 | N102 | L103 | R104 | S105 | R106 | Y107 | T108 | S109 | G110 | L111 | I112 | Y113 | T114 | Y115 | S116 | G117 | L118 | F119 | C120 | I121 | A122 | V123 | D124 | S125 | G126 | L127 | G128 | N129 | T130 | P130 |      |      |      |      |
| I131 | Y132 | T133 | D134 | S135 | V136 | I137 | A138 | K139 | Y140 | R141 | G142 | K143 | R144 | K145 | T146 | E147 | L148 | P149 | P150 | H151 | L152 | M153 | E216 | A156 | D157 | N158 | I219 | A159 | V160 | Q161 | N162 | M163 | V164 | L165 | D166 | R167 | E168 | N169 | Q170 | S171 | C172 | L173 | I174 | T175 | G176 | E177 | S178 | G179 | A180 | G181 | K182 | N185 | K245 | F246 | I247 | K187 | R248 | P125 | S65  | L188 | V189 | I190 | G191 | A192 | Y192 |
| L193 | A194 | K196 | V196 | ALA  | CYS  | ALA  | VAL  | LYS  | LYS  | LYS  | LYS  | ASP  | GLU  | GLU  | ALA  | SER  | ASP  | LYS  | LYS  | GLY  | LEU  | E216 | D217 | Q218 | I219 | I220 | Q221 | A222 | M223 | P224 | V225 | L226 | E227 | A228 | Y229 | G230 | N231 | A232 | K233 | T234 | T235 | R236 | N237 | N238 | N239 | S240 | S241 | R242 | F243 | G244 | K245 | F246 | I247 | K187 | R248 | P125 | S65  | L188 | V189 | I190 | G191 | A192 | Y192 |      |      |

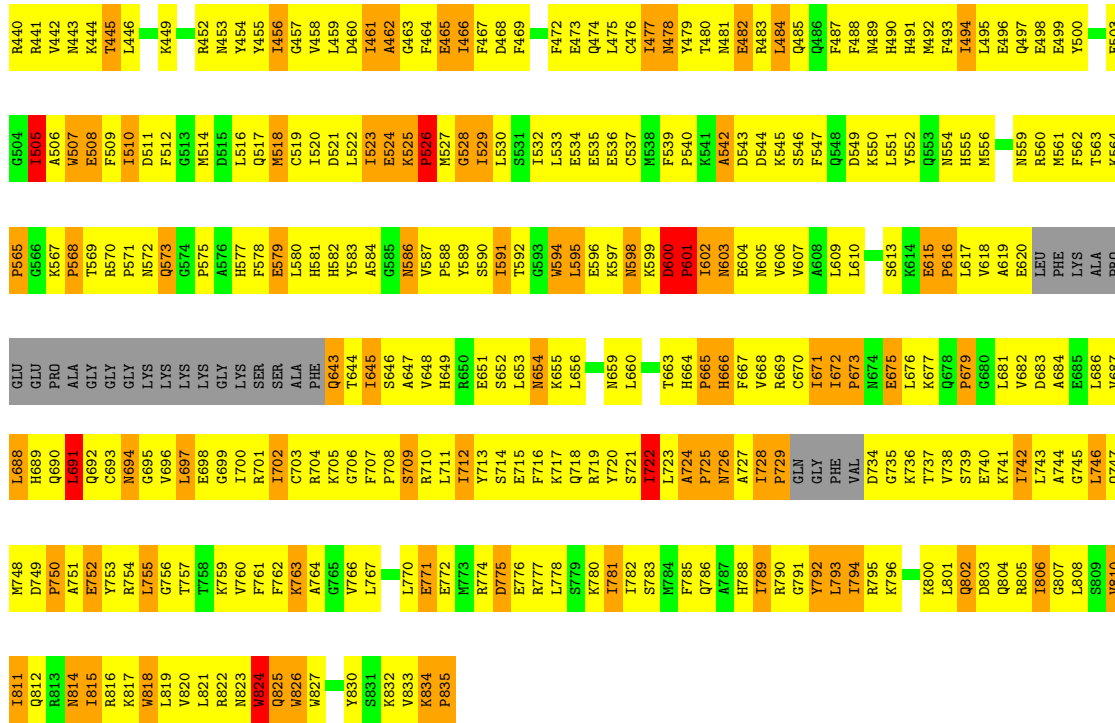


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

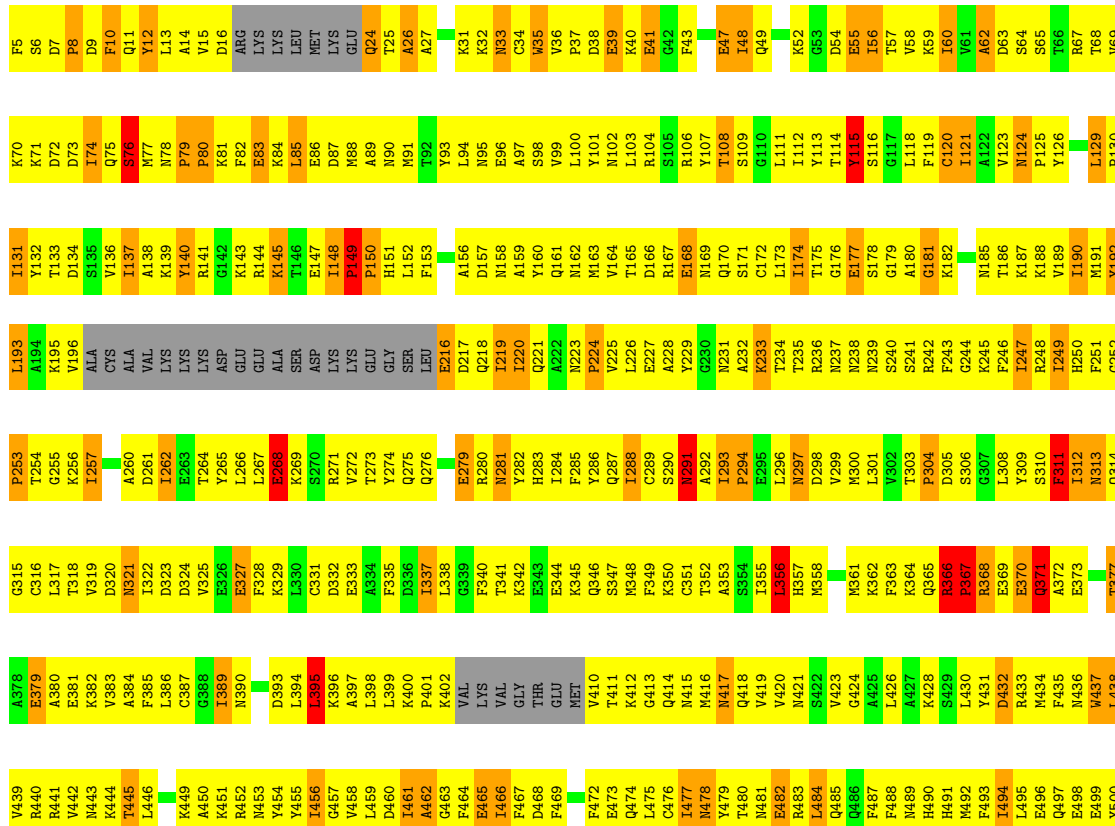
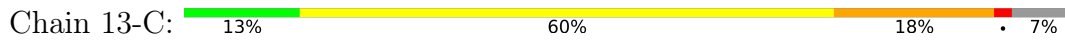




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      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  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   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |     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| E379 | A380 | E381 | K382 | V383 | K444 | K445 | F385 | L386 | C387 | G388 | I389 | N390 | D393 | L394 | L395 | K396 | A397 | L398 | L399 | K400 | P401 | K402 | VAL  | LYS  | VAL  | GLY  | THR  | GLU  | MET  | V410 | T411 | K412 | G413 | Q414 | N415 | M416 | M417 | Q418 | V419 | V420 | N421 | S422 | S423 | G424 | A425 | L426 | A427 | H428 | K429 | L430 | Y431 | D432 | R433 | M434 | Q435 | F436 | E437 | Y500 | E503 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      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| R440 | R441 | V442 | K443 | K444 | T445 | L446 | K449 | R452 | N453 | Y454 | Y455 | I456 | I457 | L458 | G459 | G460 | F461 | D462 | G463 | F464 | E465 | M466 | F467 | D468 | F469 | F472 | E473 | Q474 | L475 | C476 | I477 | N478 | Y479 | T480 | M481 | Q482 | D483 | R484 | N485 | S486 | S487 | G488 | F489 | H490 | H491 | K492 | F493 | L494 | L495 | E496 | R497 | F498 | E499 | Y500 | F562 | L563 | K564 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      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|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  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| G504 | I505 | A506 | W507 | E508 | F509 | I510 | D511 | P512 | G513 | M514 | D515 | L516 | Q517 | M518 | C519 | L520 | H521 | D522 | L523 | E524 | E525 | N526 | P527 | M528 | G529 | I530 | S531 | I532 | L533 | W534 | L535 | E536 | M537 | C538 | F539 | P540 | K541 | A542 | D543 | D544 | K545 | V606 | V607 | S546 | F547 | G548 | D549 | K550 | L551 | Y552 | K553 | M554 | L555 | L556 | N557 | R558 | M559 | E560 | M561 | F562 | L563 | K564 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  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| P565 | G566 | K567 | P568 | T569 | R570 | P571 | M572 | Q573 | G574 | A575 | H576 | F577 | E578 | E579 | L580 | H581 | H582 | Y583 | A584 | G585 | N586 | V587 | P588 | M589 | I590 | T591 | L592 | G593 | G594 | L595 | E596 | E597 | M598 | K599 | D600 | P601 | I602 | M603 | E604 | N605 | V606 | V607 | A608 | L609 | L610 | S613 | K614 | E615 | P616 | L617 | V618 | A619 | E620 | L621 | D622 | L623 | P624 | 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 | L800 | L801 | L802 | L803 | L804 | L805 | L806 | L807 | L808 | L809 | L810 | L811 | L812 | L813 | L814 | L815 | L816 | L817 | L818 | L819 | L820 | L821 | L822 | L823 | L824 | L825 | L826 | L827 | L828 | L829 | L830 | L831 | L832 | L833 | L834 | L835 | L836 | L837 | L838 | L839 | L840 | L841 | L842 | L843 | L844 | L845 | L846 | L847 | L848 | L849 | L850 | L851 | L852 | L853 | L854 | L855 | L856 | L857 | L858 | L859 | L860 | L861 | L862 | L863 | L864 | L865 | L866 | L867 | L868 | L869 | L870 | L871 | L872 | L873 | L874 | L875 | L876 | L877 | L878 | L879 | L880 | L881 | L882 | L883 | L884 | L885 | L886 | L887 | L888 | L889 | L890 | L891 | L892 | L893 | L894 | L895 | L896 | L897 | L898 | L899 | L900 | L901 | L902 | L903 | L904 | L905 | L906 | L907 | L908 | L909 | L910 | L911 | L912 | L913 | L914 | L915 | L916 | L917 | L918 | L919 | L920 | L921 | L922 | L923 | L924 | L925 | L926 | L927 | L928 | L929 | L930 | L931 | L932 | L933 | L934 | L935 | L936 | L937 | L938 | L939 | L940 | L941 | L942 | L943 | L944 | L945 | L946 | L947 | L948 | L949 | L950 | L951 | L952 | L953 | L954 | L955 | L956 | L957 | L958 | L959 | L960 | L961 | L962 | L963 | L964 | L965 | L966 | L967 | L968 | L969 | L970 | L971 | L972 | L973 | L974 | L975 | L976 | L977 | L978 | L979 | L980 | L981 | L982 | L983 | L984 | L985 | L986 | L987 | L988 | L989 | L990 | L991 | L992 | L993 | L994 | L995 | L996 | L997 | L998 | L999 | L1000 | L1001 | L1002 | L1003 | L1004 | L1005 | L1006 | L1007 | L1008 | L1009 | L1010 | L1011 | L1012 | L1013 | L1014 | L1015 | L1016 | L1017 | L1018 | L1019 | L1020 | L1021 | L1022 | L1023 | L1024 | L1025 | L1026 | L1027 | L1028 | L1029 | L1030 | L1031 | L1032 | L1033 | L1034 | L1035 | L1036 | L1037 | L1038 | L1039 | L1040 | L1041 | L1042 | L1043 | L1044 | L1045 | L1046 | L1047 | L1048 | L1049 | L1050 | L1051 | L1052 | L1053 | L1054 | L1055 | L1056 | L1057 | L1058 | L1059 | L1060 | L1061 | L1062 | L1063 | L1064 | L1065 | L1066 | L1067 | L1068 | L1069 | L1070 | L1071 | L1072 | L1073 | L1074 | L1075 | L1076 | L1077 | L1078 | L1079 | L1080 | L1081 | L1082 | L1083 | L1084 | L1085 | L1086 | L1087 | L1088 | L1089 | L1090 | L1091 | L1092 | L1093 | L1094 | L1095 | L1096 | L1097 | L1098 | L1099 | L1100 | L1101 | L1102 | L1103 | L1104 | L1105 | L1106 | L1107 | L1108 | L1109 | L1110 | L1111 | L1112 | L1113 | L1114 | L1115 | L1116 | L1117 | L1118 | L1119 | L1120 | L1121 | L1122 | L1123 | L1124 | L1125 | L1126 | L1127 | L1128 | L1129 | L1130 | L1131 | L1132 | L1133 | L1134 | L1135 | L1136 | L1137 | L1138 | L1139 | L1140 | L1141 | L1142 | L1143 | L1144 | L1145 | L1146 | L1147 | L1148 | L1149 | L1150 | L1151 | L1152 | L1153 | L1154 | L1155 | L1156 | L1157 | L1158 | L1159 | L1160 | L1161 | L1162 | L1163 | L1164 | L1165 | L1166 | L1167 | L1168 | L1169 | L1170 | L1171 | L1172 | L1173 | L1174 | L1175 | L1176 | L1177 | L1178 | L1179 | L1180 | L1181 | L1182 | L1183 | L1184 | L1185 | L1186 | L1187 | L1188 | L1189 | L1190 | L1191 | L1192 | L1193 | L1194 | L1195 | L1196 | L1197 | L1198 | L1199 | L1200 | L1201 | L1202 | L1203 | L1204 | L1205 | L1206 | L1207 | L1208 | L1209 | L1210 | L1211 | L1212 | L1213 | L1214 | L1215 | L1216 | L1217 | L1218 | L1219 | L1220 | L1221 | L1222 | L1223 | L1224 | L1225 | L1226 | L1227 | L1228 | L1229 | L1230 | L1231 | L1232 | L1233 | L1234 | L1235 | L1236 | L1237 | L1238 | L1239 | L1240 | L1241 | L1242 | L1243 | L1244 | L1245 | L1246 | L1247 | L1248 | L1249 | L1250 | L1251 | L1252 | L1253 | L1254 | L1255 | L1256 | L1257 | L1258 | L1259 | L1260 | L1261 | L1262 | L1263 | L1264 | L1265 | L1266 | L1267 | L1268 | L1269 | L1270 | L1271 | L1272 | L1273 | L1274 | L1275 | L1276 | L1277 | L1278 | L1279 | L1280 | L1281 | L1282 | L1283 | L1284 | L1285 | L1286 | L1287 | L1288 | L1289 | L1290 | L1291 | L1292 | L1293 | L1294 | L1295 | L1296 | L1297 | L1298 | L1299 | L1300 | L1301 | L1302 | L1303 | L1304 | L1305 | L1306 | L1307 | L1308 | L1309 | L1310 | L1311 | L1312 | L1313 | L1314 | L1315 | L1316 | L1317 | L1318 | L1319 | L1320 | L1321 | L1322 | L1323 | L1324 | L1325 | L1326 | L1327 | L1328 | L1329 | L1330 | L1331 | L1332 | L1333 | L1334 | L1335 | L1336 | L1337 | L1338 | L1339 | L1340 | L1341 | L1342 | L1343 | L1344 | L1345 | L1346 | L1347 | L1348 | L1349 | L1350 | L1351 | L1352 | L1353 | L1354 | L1355 | L1356 | L1357 | L1358 | L1359 | L1360 | L1361 | L1362 | L1363 | L1364 | L1365 | L1366 | L1367 | L1368 | L1369 | L1370 | L1371 | L1372 | L1373 | L1374 | L1375 | L1376 | L1377 | L1378 | L1379 | L1380 | L1381 | L1382 | L1383 | L1384 | L1385 | L1386 | L1387 | L1388 | L1389 | L1390 | L1391 | L1392 | L1393 | L1394 | L1395 | L1396 | L1397 | L1398 | L1399 | L1400 | L1401 | L1402 | L1403 | L1404 | L1405 | L1406 | L1407 | L1408 | L1409 | L1410 | L1411 | L1412 | L1413 | L1414 | L1415 | L1416 | L1417 | L1418 | L1419 | L1420 | L1421 | L1422 | L1423 | L1424 | L1425 | L1426 | L1427 | L1428 | L1429 | L1430 | L1431 | L1432 | L1433 | L1434 | L1435 | L1436 | L1437 | L1438 | L1439 | L1440 | L1441 | L1442 | L1443 | L1444 | L1445 | L1446 | L1447 | L1448 | L1449 | L1450 | L1451 | L1452 | L1453 | L1454 | L1455 | L1456 | L1457 | L1458 | L1459 | L1460 | L1461 | L1462 | L1463 | L1464 | L1465 | L1466 | L1467 | L1468 | L1469 | L1470 | L1471 | L1472 | L1473 | L1474 | L1475 | L1476 | L1477 | L1478 | L1479 | L1480 | L1481 | L1482 | L1483 | L1484 | L1485 | L1486 | L1487 | L1488 | L1489 | L1490 | L1491 | L1492 | L1493 | L1494 | L1495 | L1496 | L1497 | L1498 | L1499 | L1500 | L1501 | L1502 | L1503 | L1504 | L1505 | L1506 | L1507 | L1508 | L1509 | L1510 | L1511 | L1512 | L1513 | L1514 | L1515 | L1516 | L1517 | L1518 | L1519 | L1520 | L1521 | L1522 | L1523 | L1524 | L1525 | L1526 | L1527 | L1528 | L1529 | L1530 | L1531 | L1532 | L1533 | L1534 | L1535 | L1536 | L1537 | L1538 | L1539 | L1540 | L1541 | L1542 | L1543 | L1544 | L1545 | L1546 | L1547 | L1548 | L1549 | L1550 | L1551 | L1552 | L1553 | L1554 | L1555 | L1556 | L1557 | L1558 | L1559 | L1560 | L1561 | L1562 | L1563 | L1564 | L1565 | L1566 | L1567 | L1568 | L1569 | L1570 | L1571 | L1572 | L1573 | L1574 | L1575 | L1576 | L1577 | L1578 | L1579 | L1580 | L1581 | L1582 | L1583 | L1584 | L1585 | L1586 | L1587 | L1588 | L1589 | L1590 | L1591 | L1592 | L1593 | L1594 | L1595 | L1596 | L1597 | L1598 | L1599 | L1600 | L1601 | L1602 | L1603 | L1604 | L1605 | L1606 | L1607 | L1608 | L1609 | L1610 | L1611 | L1612 | L1613 | L1614 | L1615 | L1616 | L1617 | L1618 | L1619 | L1620 | L1621 | L1622 | L1623 | L1624 | L1625 | L1626 | L1627 | L1628 | L1629 | L1630 | L1631 | L1632 | L1633 | L1634 | L1635 | L1636 | L1637 | L1638 | L1639 | L1640 | L1641 | L1642 | L1643 | L1644 | L1645 | L1646 | L1647 | L1648 | L1649 | L1650 | L1651 | L1652 | L1653 | L1654 | L1655 | L1656 | L1657 | L1658 | L1659 | L1660 | L1661 | L1662 | L1663 | L1664 | L1665 | L1666 | L1667 | L1668 | L1669 | L1670 | L1671 | L1672 | L1673 | L1674 | L1675 | L1676 | L1677 | L1678 | L1679 | L1680 | L1681 | L1682 | L1683 | L1684 | L1685 | L1686 | L1687 | L1688 | L1689 | L1690 | L1691 | L1692 | L1693 | L1694 | L1695 | L1696 | L1697 | L1698 | L1699 | L1700 | L1701 | L1702 | L1703 | L1704 | L1705 | L1706 | L1707 | L1708 | L1709 | L1710 | L1711 | L1712 | L1713 | L1714 | L1715 | L1716 | L1717 | L1718 | L1719 | L1720 | L1721 | L1722 | L1723 | L1724 | L1725 | L1726 | L1727 | L1728 | L1729 | L1730 | L1731 | L1732 | L1733 | L1734 | L1735 | L1736 | L1737 | L1738 | L1739 | L1740 | L1741 | L1742 | L1743 | L1744 | L1745 | L1746 | L1747 | L1748 | L1749 | L1750 | L1751 | L1752 | L1753 | L1754 | L1755 | L1756 | L1757 | L1758 | L1759 | L1760 | L1761 | L1762 | L1763 | L1764 | L1765 | L1766 | L1767 | L1768 | L1769 | L1770 | L1771 | L1772 | L1773 | L1774 | L1775 | L1776 | L1777 | L1778 | L1779 | L1780 | L1781 | L1782 | L1783 | L1784 | L1785 | L1786 | L1787 | L1788 | L1789 | L1790 | L1791 | L1792 | L1793 | L1794 | L1795 | L1796 | L1797 | L1798 | L1799 | L1800 | L1801 | L1802 | L1803 | L1804 | L1805 | L1806 | L1807 | L1808 | L1809 | L1810 | L1811 | L1812 | L181 |



• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

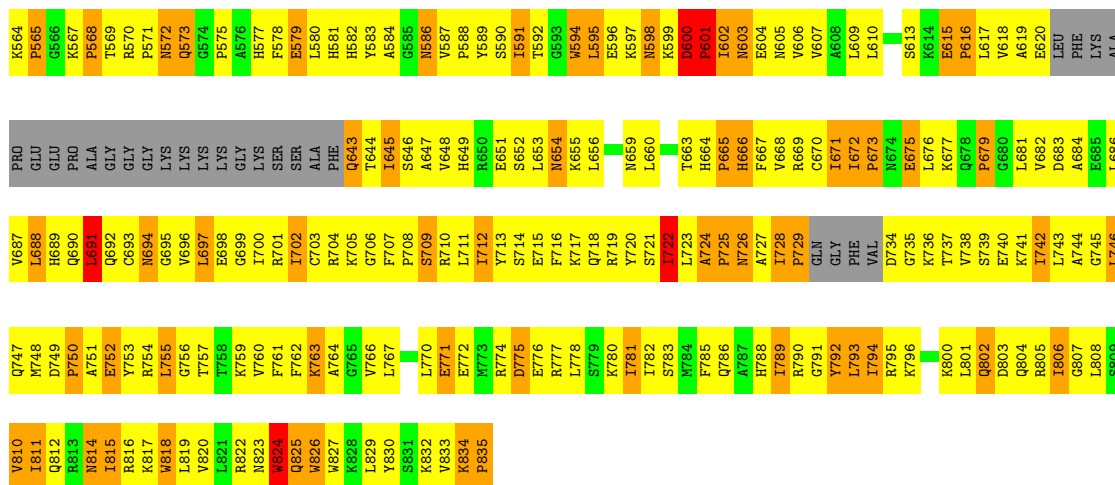


|      |      |      |      |      |      |
|------|------|------|------|------|------|
| E501 | F662 | LYS  | E686 | G745 | G807 |
| K502 | T563 | ALA  | L686 | L746 | L808 |
| E503 | K564 | PRD  | V687 | Q747 | S809 |
| G504 | G566 | GLU  | L688 | M748 | V810 |
| I505 | K567 | PRO  | H689 | I749 | I811 |
| M506 | G568 | ALA  | Q690 | P750 | Q812 |
| M507 | T569 | GLY  | L681 | A751 | R813 |
| E508 | F570 | GLY  | Q692 | E752 | M814 |
| F509 | P571 | GLY  | C693 | Y753 | I815 |
| I510 | M572 | LYS  | N694 | R754 | R816 |
| D511 | L573 | LYS  | N695 | L755 | K817 |
| G513 | Q573 | LYS  | V696 | G756 | M818 |
| M514 | P575 | LYS  | L697 | T757 | L819 |
| D515 | A576 | GLY  | E698 | T758 | V820 |
| L516 | H577 | LYS  | G699 | K759 | L821 |
| M517 | A578 | LYS  | I700 | V760 | R822 |
| C519 | F578 | SER  | R701 | P761 | M823 |
| M518 | E579 | SER  | I702 | F762 | W824 |
| Q519 | L580 | ALA  | C703 | K763 | Q825 |
| I520 | H581 | PHE  | R704 | A764 | M826 |
| D521 | H582 | Q643 | K705 | G765 | W827 |
| L522 | Y583 | T644 | G706 | V766 | R828 |
| I523 | A584 | T645 | F707 | L767 | L829 |
| E524 | G585 | S646 | P708 | G768 | Y830 |
| M525 | G586 | A647 | S709 | N769 | S831 |
| M526 | V587 | V648 | R710 | L770 | K832 |
| G527 | F588 | H649 | L711 | E771 | R833 |
| G528 | Y589 | H650 | L712 | E772 | K834 |
| I529 | I590 | E651 | Y713 | M773 | P835 |
| S530 | I591 | S652 | S714 | R774 |      |
| I531 | T592 | L653 | E715 | D775 |      |
| S533 | G593 | M654 | F716 | E776 |      |
| E534 | W594 | K655 | K717 | R777 |      |
| E535 | L595 | L656 | R718 | L778 |      |
| C536 | E596 | L657 | Y719 | S779 |      |
| M537 | K597 | M659 | Y720 | K780 |      |
| F538 | M598 | L660 | I781 | I781 |      |
| P540 | K599 | T663 | I782 | I782 |      |
| R541 | D600 | H664 | L723 | S783 |      |
| A542 | P601 | H665 | A724 | N784 |      |
| D543 | N603 | P665 | P725 | F785 |      |
| D544 | E604 | H666 | N726 | Q786 |      |
| S546 | M605 | V667 | A727 | A787 |      |
| F547 | V606 | R668 | I728 | H788 |      |
| Q548 | V607 | C670 | P729 | I789 |      |
| D549 | A608 | I671 | GLN  | R790 |      |
| K550 | L609 | F547 | GLY  | Y792 |      |
| L551 | L610 | I672 | PHE  | L793 |      |
| Y552 | L611 | P673 | VAL  | L794 |      |
| Q553 | S613 | M674 | D734 | I794 |      |
| H554 | E675 | E676 | G735 | R795 |      |
| H555 | L677 | L677 | K736 | K796 |      |
| H556 | E615 | K677 | T737 | T797 |      |
| M557 | P616 | Q678 | V738 | V798 |      |
| M558 | L617 | P679 | S739 | L801 |      |
| M559 | V618 | G680 | E740 | S665 |      |
| E560 | A619 | L681 | K741 | D803 |      |
| M561 | E620 | V682 | I742 | Q804 |      |
| F562 | L660 | D683 | L743 | R805 |      |
| T563 | PHE  | A684 | A744 | I806 |      |

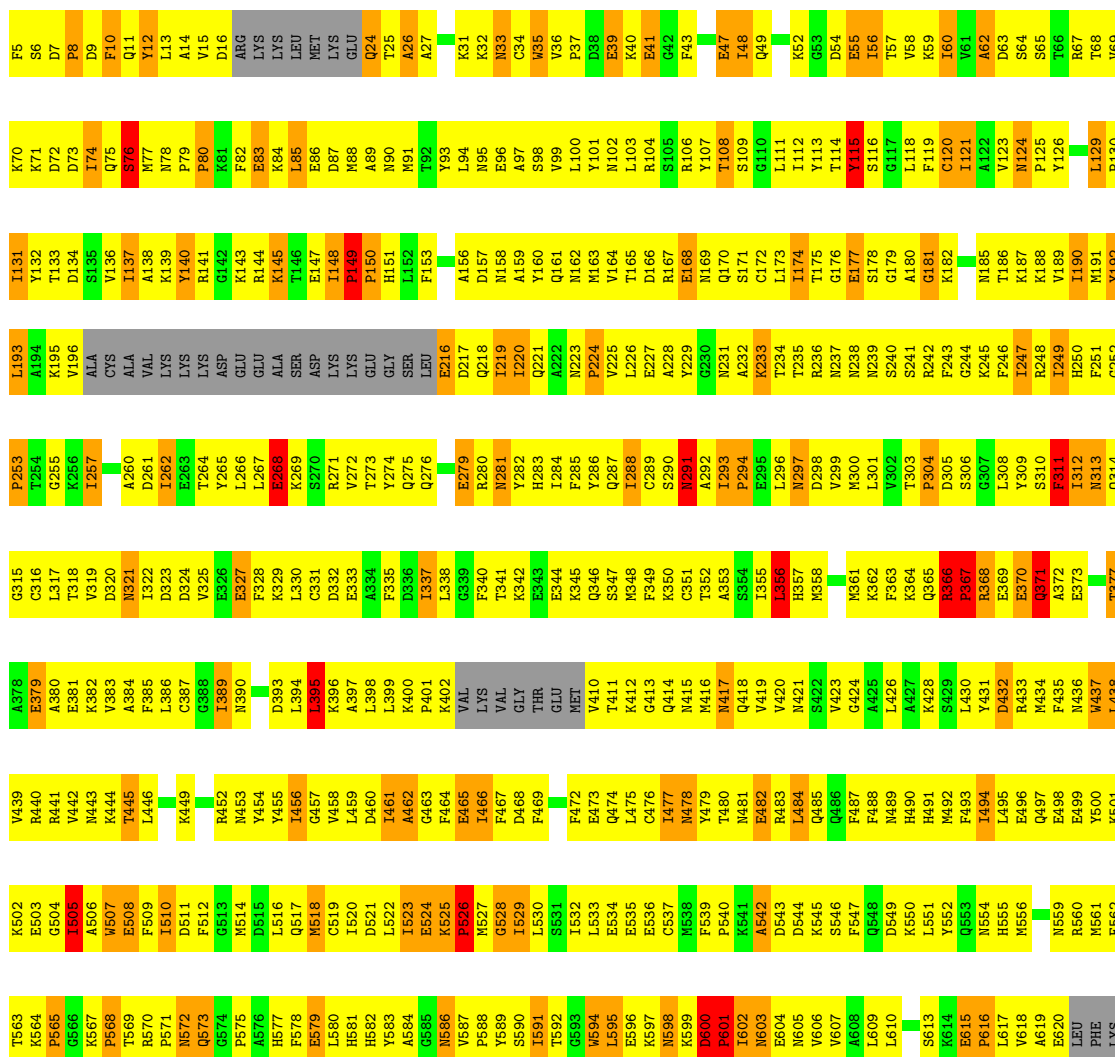
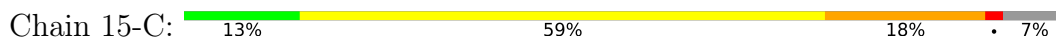
• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



|     |      |      |      |      |      |      |      |      |
|-----|------|------|------|------|------|------|------|------|
| F5  | K70  | I131 | L193 | P253 | G315 | A378 | V439 | E503 |
| S6  | K71  | Y132 | A194 | T254 | C316 | E379 | R440 | G504 |
| P8  | D72  | T133 | K195 | G255 | L317 | E380 | R441 | I505 |
| D9  | D73  | D134 | V196 | K256 | T318 | E381 | V442 | A506 |
| F10 | I74  | S135 | ALA  | I257 | V319 | K382 | M443 | M507 |
| Q11 | Q75  | V136 | CYS  | A260 | D320 | V383 | K444 | E508 |
| I12 | S76  | I137 | ALA  | A261 | N321 | A384 | T445 | F509 |
| Y13 | M77  | A138 | VAL  | D262 | I322 | F385 | L446 | I510 |
| A14 | R78  | K139 | LYS  | T263 | D323 | L386 | K449 | D511 |
| V15 | P79  | Y140 | LYS  | E264 | D324 | C387 | L450 | F512 |
| D16 | K81  | R141 | ASP  | T264 | V325 | G388 | R452 | G513 |
| ARG | F82  | G142 | ASP  | Y265 | E326 | I389 | M453 | M514 |
| LYS | E83  | K143 | GLU  | Y266 | E327 | N390 | Y454 | D515 |
| LYS | R84  | R144 | GLU  | L267 | F328 | L455 | Y455 | L516 |
| LYS | K85  | K145 | ALA  | E268 | K329 | D393 | I456 | Q517 |
| LYS | L85  | T146 | SER  | R269 | L330 | L394 | L457 | M518 |
| LEU | L86  | E147 | ASP  | S270 | C331 | R395 | G457 | C519 |
| MET | D87  | I148 | LYS  | R271 | D332 | K396 | V458 | I520 |
| LYS | M88  | P149 | LYS  | V272 | E333 | A397 | L459 | D521 |
| GLU | A89  | P150 | GLU  | T273 | A334 | L398 | D460 | L522 |
| Q24 | T25  | H151 | GLY  | Y274 | F335 | L399 | I461 | I523 |
| A26 | A26  | L152 | SER  | Q275 | D336 | K400 | A462 | E524 |
| A27 | A27  | F153 | LEU  | Q276 | I337 | P401 | G463 | K525 |
| K31 | Y93  | A156 | E216 | D217 | L338 | K402 | F464 | P526 |
| K32 | N95  | D157 | Q218 | R280 | G339 | VAL  | A465 | M527 |
| N33 | E96  | M158 | I219 | M281 | F340 | LYS  | I466 | G528 |
| C34 | A97  | L159 | L220 | Y282 | T341 | VAL  | F467 | I529 |
| W35 | S98  | Y160 | Q221 | H283 | E342 | THR  | L468 | L530 |
| V36 | N99  | Q161 | A222 | H284 | E343 | GLU  | F469 | S531 |
| P37 | L100 | M162 | N223 | F285 | E344 | MET  | F472 | I532 |
| D38 | Y101 | M163 | P224 | Y286 | K345 |      | E473 | E534 |
| E39 | M102 | V164 | V225 | Q287 | Q346 |      | E474 | E535 |
| K40 | L103 | T165 | L226 | L288 | S347 |      | Q475 | E536 |
| R41 | R104 | L166 | E227 | F349 | M348 |      | L476 | C537 |
| E41 | E41  | R104 | A228 | C290 | Q414 |      | I477 | M538 |
| G42 | S105 | R106 | Y229 | R291 | K350 |      | M478 | F539 |
| F43 | G42  | I106 | G230 | A292 | C351 |      | Y479 | P540 |
| E47 | I108 | T108 | N231 | L293 | T352 |      | T480 | R541 |
| I48 | S109 | S171 | A232 | P294 | A353 |      | A481 | A542 |
| Q49 | G110 | C172 | K233 | E295 | S354 |      | E482 | D543 |
| K52 | L111 | L173 | T234 | L296 | I355 |      | R483 | D544 |
| G53 | Y112 | I174 | T235 | N297 | H357 |      | L484 | K545 |
| D54 | L113 | T175 | R236 | D298 | M358 |      | Q485 | S546 |
| E55 | T114 | G176 | N237 | V299 | V423 |      | Q486 | F547 |
| E56 | Y115 | E177 | M238 | M300 | G424 |      | Q548 | Q548 |
| I56 | S116 | S178 | N239 | L301 | A425 |      | F487 | D549 |
| T57 | G117 | G179 | S240 | V302 | L426 |      | M488 | N489 |
| V58 | L118 | A180 | S241 | T303 | A427 |      | H490 | K550 |
| K59 | F119 | G181 | R242 | P304 | K428 |      | H491 | L551 |
| I60 | C120 | K182 | F243 | D305 | S429 |      | M492 | Y552 |
| V61 | I121 | M185 | G244 | S306 | L430 |      | F493 | Q553 |
| A62 | A122 | A62  | K245 | G307 | L431 |      | I494 | N554 |
| D63 | V123 | T186 | F246 | L308 | E369 |      | H495 | H555 |
| S64 | N124 | K187 | I247 | V309 | D432 |      | L496 | M556 |
| S65 | P125 | K188 | R248 | S310 | E370 |      | Q497 | M557 |
| T66 | Y126 | V189 | I249 | F311 | Q371 |      | M499 | M558 |
| R67 | L129 | H190 | H250 | L312 | A372 |      | E498 | E560 |
| T68 | R805 | M191 | F251 | N313 | E373 |      | M561 | M561 |
| V69 | P130 | Y192 | G252 | Q314 | T377 |      | T563 | T563 |



● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE





|      |      |      |      |
|------|------|------|------|
| ALA  | L686 | G745 | G807 |
| PRO  | L687 | L746 | L808 |
| GLU  | V687 | Q747 | S809 |
| GLU  | L688 | M748 | V810 |
| PRO  | H689 | D749 | I811 |
| ALA  | Q690 | P750 | Q812 |
| GLY  | L691 | A751 | R813 |
| GLY  | Q692 | E752 | M814 |
| GLY  | C693 | Y753 | R815 |
| LYS  | N694 | R754 | R816 |
| LYS  | G695 | L755 | K817 |
| LYS  | V696 | G756 | M818 |
| LYS  | L697 | T757 | L819 |
| GLY  | E698 | I758 | V820 |
| LYS  | G699 | K759 | L821 |
| SER  | I700 | R760 | R822 |
| SER  | I701 | F761 | M823 |
| ALA  | I702 | F762 | M824 |
| PHE  | C703 | K763 | Q825 |
| Q643 | R704 | A764 | M826 |
| I645 | K705 | G765 | K828 |
| S646 | F707 | V766 | L829 |
| A647 | P708 | L767 | Y830 |
| V648 | S709 | L770 | S831 |
| H649 | R710 | E771 | K832 |
| R650 | L711 | E772 | V833 |
| S651 | I712 | M773 | K834 |
| S652 | Y713 | R774 | P835 |
| L653 | S714 | D775 |      |
| M654 | E715 | E776 |      |
| K655 | F716 | R777 |      |
| L656 | K717 | L778 |      |
|      | Q718 | S779 |      |
|      | R719 | K780 |      |
|      | Y720 | I781 |      |
|      | S721 | I782 |      |
|      | I722 | S783 |      |
|      | L723 | F784 |      |
|      | A724 | F785 |      |
|      | P725 | Q786 |      |
|      | N726 | A787 |      |
|      | A727 | H788 |      |
|      | I728 | I789 |      |
|      | P729 | R790 |      |
|      | GLN  | G791 |      |
|      | GLY  | Y792 |      |
|      | PHE  | L793 |      |
|      | VAL  | I794 |      |
|      | D734 | R795 |      |
|      | G735 | K796 |      |
|      | K736 | K799 |      |
|      | T737 | K800 |      |
|      | V738 | R801 |      |
|      | S739 | L802 |      |
|      | F740 | Q802 |      |
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|      | I742 | Q804 |      |
|      | L743 | R805 |      |
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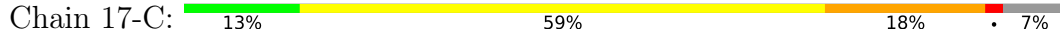
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

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

|     |     |      |      |      |      |      |      |      |      |      |
|-----|-----|------|------|------|------|------|------|------|------|------|
| F5  | K70 | I131 | L193 | P253 | G315 | A378 | V439 | E503 | K564 | GLU  |
| S6  | K71 | Y132 | A194 | T254 | C316 | E379 | R440 | G504 | P565 | GLU  |
| D7  | D72 | T133 | K195 | G255 | L317 | A380 | R441 | I505 | G566 | PRO  |
| P8  | D73 | D134 | V196 | K256 | T318 | E381 | V442 | A506 | K567 | ALA  |
| D9  | D74 | S135 | ALA  | I257 | V319 | K382 | K443 | M507 | P568 | GLY  |
| F10 | Q75 | V136 | CVS  | A260 | D320 | V383 | K444 | E508 | T569 | GLY  |
| O11 | S76 | I137 | ALA  | I261 | M321 | A384 | T445 | F509 | R570 | GLY  |
| Y12 | M77 | A138 | VAL  | D262 | I322 | F385 | L446 | I510 | P571 | LYS  |
| L13 | R78 | K139 | LYS  | L262 | D323 | L386 | K449 | D511 | M571 | LYS  |
| A14 | M78 | Y140 | LYS  | E263 | D324 | C387 |      | F512 | Q573 | LYS  |
| V15 | P80 | R141 | LYS  | T264 | V325 | G388 |      | G513 | G574 | LYS  |
| D16 | K81 | G142 | ASP  | V265 | E326 | I389 | R452 | M514 | A575 | GLY  |
| ARG | F82 | K143 | GLU  | L266 | E327 | N390 | M453 | M515 | P576 | LYS  |
| LYS | E83 | R144 | GLU  | L267 | F328 | I391 | Y454 | L516 | H577 | SER  |
| LYS | L84 | K145 | ALA  | E268 | K329 | D393 | Y455 | Q517 | F578 | SER  |
| LYS | L85 | T146 | SER  | R269 | L330 | L394 | I456 | M518 | E579 | ALA  |
| LEU | L86 | E147 | ASP  | K270 | C331 | L395 | V457 | C519 | L580 | ALA  |
| MET | E86 | I148 | LYS  | R271 | D332 | K396 | G458 | I520 | I581 | PHE  |
| LYS | D87 | P149 | LYS  | V272 | E333 | A397 | L459 | D521 | H582 | T644 |
| GLU | M88 | P150 | GLU  | T273 | A334 | L398 | D460 | L522 | Y583 | I645 |
| Q24 | A89 | H151 | GLY  | Y274 | F335 | L399 | I461 | I523 | A584 | S646 |
| T25 | N90 | I152 | SER  | Q275 | D336 | K400 | A462 | E524 | G585 | A647 |
| A26 | N91 | L152 | LEU  | Q276 | I337 | P401 | G463 | K525 | N586 | V648 |
| A27 | T92 | F153 | LEU  | E216 | L338 | K402 | F464 | P526 | V587 | H649 |
|     | Y93 | A156 |      | E279 | G339 | VAL  | E465 | M527 | R650 | R650 |
|     | K31 | D157 |      | R280 | F340 | LYS  | I466 | G528 | Y589 | E651 |
|     | K32 | N158 |      | M281 | T341 | VAL  | F467 | I529 | S590 | S652 |
|     | N33 | A159 |      | Y282 | K412 | GLY  | D468 | L530 | I591 | L653 |
|     | C34 | L160 |      | H283 | E343 | THR  | F469 | S531 | T592 | M654 |
|     | W35 | Q161 |      | L284 | E344 | GLU  | F470 | I532 | G593 | K655 |
|     | V36 | P162 |      | F285 | E345 | MET  | F471 | L533 | M594 | L656 |
|     | P37 | L100 |      | V286 | K345 | V410 | A472 | E534 | L595 |      |
|     | D38 | Y101 |      | Y287 | S347 | T411 | Q474 | E535 | N596 | M659 |
|     | E39 | M102 |      | Q287 | M348 | K412 | L475 | E536 | K597 | L660 |
|     | K40 | L103 |      | L288 | F349 | G413 | C476 | L476 | N598 |      |
|     | E41 | R104 |      | E227 | K350 | Q414 | I477 | M538 | K599 | T663 |
|     | G42 | S105 |      | S290 | C351 | M415 | M478 | F539 | D600 | H664 |
|     | F43 | R106 |      | Y229 | C352 | M416 | Y479 | P540 | P601 | P665 |
|     |     | Y107 |      | A292 | T352 |      | T480 | R541 | I602 | H666 |
|     |     | I108 |      | M231 | A353 |      | M417 | G542 | N603 | H667 |
|     |     | T109 |      | A232 | S354 |      | Q418 | A542 | A542 | F667 |
|     |     | S109 |      | P294 | I355 |      | V419 | E482 | D543 | V668 |
|     |     | G110 |      | E295 | L356 |      | V420 | E483 | D544 | R669 |
|     |     | L111 |      | L296 | H357 |      | M421 | K545 | K545 | C670 |
|     |     | L112 |      | M297 | M358 |      | S422 | Q485 | S546 | I671 |
|     |     | Y113 |      | D298 |      |      | V423 | Q486 | F547 | L672 |
|     |     | T114 |      | V299 |      |      | G424 | Q548 | Q548 | P673 |
|     |     | Y115 |      | M300 | M361 |      | A425 | D549 | D549 | N674 |
|     |     | S116 |      | L301 | K362 |      | L426 | K550 | K550 | E675 |
|     |     | G117 |      | V302 | F363 |      | A427 | L551 | L551 | L676 |
|     |     | L118 |      | S241 | K364 |      | M428 | Y552 | Y552 | K677 |
|     |     | A180 |      | R242 | Q365 |      | S429 | Q553 | Q553 | Q678 |
|     |     | F119 |      | D305 | R366 |      | L430 | M554 | M554 | P679 |
|     |     | C120 |      | G244 | P367 |      | F493 | F494 | F494 | R680 |
|     |     | V61  |      | K245 | R368 |      | L494 | L495 | L495 | L681 |
|     |     | A62  |      | F246 | E369 |      | R431 | M556 | M556 | L682 |
|     |     | D63  |      | Y309 | L308 |      | R433 | E496 | E496 | V683 |
|     |     | S64  |      | I247 | E370 |      | M434 | Q497 | Q497 | H684 |
|     |     | S65  |      | S310 | Q371 |      | F435 | E498 | E498 | A684 |
|     |     | V66  |      | F511 | A372 |      | M436 | E499 | E499 | E685 |
|     |     | R67  |      | L312 | E373 |      | W437 | F562 | F562 | L686 |
|     |     | T68  |      | N313 | T377 |      | L438 | T563 | T563 | V687 |
|     |     | P130 |      | Q314 |      |      |      |      |      |      |

|      |      |      |      |      |
|------|------|------|------|------|
| L688 | M748 | I811 | M748 | I811 |
| H689 | D749 | Q812 | D749 | Q812 |
| Q690 | P750 | R813 | P750 | R813 |
| L691 | A751 | N814 | A751 | N814 |
| Q692 | E752 | I815 | E752 | I815 |
| C693 | F753 | R816 | F753 | R816 |
| M694 | R754 | K817 | R754 | K817 |
| G695 | L755 | W818 | L755 | W818 |
| V696 | G756 | Q825 | G756 | Q825 |
| L697 | K762 | W826 | K762 | W826 |
| R704 | F763 | A764 | R704 | F763 |
| K705 | G765 | R828 | K705 | G765 |
| G706 | V766 | L829 | G706 | V766 |
| F707 | L767 | Y830 | F707 | L767 |
| F708 | L770 | S831 | F708 | L770 |
| S709 | E771 | K832 | S709 | E771 |
| R710 | L772 | V833 | R710 | L772 |
| L711 | E773 | K834 | L711 | E773 |
| I712 | R774 | P835 | I712 | R774 |
| Y713 | D775 |      | Y713 | D775 |
| S714 | E776 |      | S714 | E776 |
| E715 | R777 |      | E715 | R777 |
| F716 | K778 |      | F716 | K778 |
| K717 | L778 |      | K717 | L778 |
| Q718 | S779 |      | Q718 | S779 |
| R719 | K780 |      | R719 | K780 |
| L720 | I781 |      | L720 | I781 |
| S721 | E782 |      | S721 | E782 |
| L722 | R783 |      | L722 | R783 |
| L723 | F785 |      | L723 | F785 |
| A724 | Q786 |      | A724 | Q786 |
| P725 | A787 |      | P725 | A787 |
| M726 | H788 |      | M726 | H788 |
| A727 | I789 |      | A727 | I789 |
| I728 | R790 |      | I728 | R790 |
| P729 | G791 |      | P729 | G791 |
| GLN  | Y792 |      | GLN  | Y792 |
| PHE  | L793 |      | PHE  | L793 |
| VAL  | I794 |      | VAL  | I794 |
| D734 | K796 |      | D734 | K796 |
| G735 | L801 |      | G735 | L801 |
| K736 | Q802 |      | K736 | Q802 |
| T737 | D803 |      | T737 | D803 |
| V738 | E740 |      | V738 | E740 |
| S739 | K741 |      | S739 | K741 |
| E740 | Q804 |      | E740 | Q804 |
| L742 | R805 |      | L742 | R805 |
| I743 | L806 |      | I743 | L806 |
| A744 | G807 |      | A744 | G807 |
| G745 | L808 |      | G745 | L808 |
| Q747 | S809 |      | Q747 | S809 |
|      | V810 |      |      | V810 |

● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE



|      |      |      |      |      |      |      |      |      |      |     |      |
|------|------|------|------|------|------|------|------|------|------|-----|------|
| F5   | K70  | I131 | L193 | P253 | G315 | A378 | V439 | K502 | T563 | ALA | L686 |
| S6   | K71  | Y132 | A194 | T254 | C316 | E379 | R440 | E503 | K564 | PRU | V687 |
| D7   | D72  | T133 | K195 | G255 | L317 | A380 | R441 | G504 | P565 | GLU | L688 |
| P8   | D73  | D134 | V196 | K256 | T318 | E381 | V442 | I505 | G566 | GLU | H689 |
| D9   | I74  | S135 | ALA  | I257 | V319 | K382 | M443 | A506 | K567 | PRU | L690 |
| F10  | Q75  | CVS  | CYS  | A260 | D320 | V383 | K444 | W507 | P568 | ALA | L691 |
| O11  | S76  | I137 | ALA  | D261 | N921 | A384 | T445 | E508 | T569 | GLY | Q692 |
| Y12  | R77  | A138 | VAL  | D262 | I322 | F385 | L446 | F509 | R570 | GLY | C693 |
| L13  | N78  | K139 | LYS  | I263 | D323 | L386 | K449 | I510 | P571 | GLY | N694 |
| A14  | P79  | Y140 | LYS  | E264 | D324 | C387 | K450 | D511 | N572 | LYS | G695 |
| V15  | P80  | R141 | LYS  | E265 | V325 | G388 | L451 | F512 | Q573 | LYS | V696 |
| L821 | L821 | L821 | LYS  | T266 | G326 | I389 | M452 | G513 | G574 | LYS | L697 |
| R822 | K81  | G142 | ASP  | V265 | E326 | N390 | M453 | G514 | P575 | LYS | E698 |
| N823 | F82  | K143 | GLU  | L266 | E327 |      | Y454 | M514 | A576 | GLY | G699 |
| X824 | E83  | R144 | GLU  | L267 | F328 |      |      | D515 | H577 | GLY | R700 |
| Q825 | R84  | K145 | ALA  | E268 | K329 | D393 | Y455 | L516 | H578 | LYS | I701 |
| W826 | L85  | T146 | SER  | K269 | L330 | L394 | T456 | L517 | F579 | SER | R704 |
| W827 | E86  | E147 | ASP  | S270 | C331 | K395 | G457 | Q518 | E579 | SER | I702 |
| K828 | D87  | L148 | LYS  | R271 | D332 | L396 | V458 | C519 | L580 | ALA | C703 |
| L829 | M88  | P149 | LYS  | V272 | E333 | A397 | L459 | I520 | H581 | PHE | R704 |
| Y830 | A89  | P150 | GLU  | T273 | A334 | L398 | D460 | D521 | H582 |     | K705 |
| S831 | N90  | H151 | GLY  | Y274 | F335 | L399 | T461 | L522 | Y583 |     | G706 |
| K832 | R91  | L152 | SER  | Q275 | D336 | K400 | A462 | I523 | A584 |     | F707 |
| V833 | A26  | L153 | LEU  | Q276 | L337 | P401 | G463 | E524 | G585 |     | P708 |
| K834 | A27  | F153 | LEU  | Q277 | L338 | K402 | F464 | K525 | N586 |     | S709 |
|      |      |      |      |      | G339 | VAL  | E465 | P526 | V587 |     | R710 |
|      |      |      |      |      | D216 | LYS  | I466 | M527 | P588 |     | L711 |
|      |      |      |      |      | Q218 | VAL  | F467 | G528 | Y589 |     | I712 |
|      |      |      |      |      | L219 | GLY  | D468 | I529 | S590 |     | Y713 |
|      |      |      |      |      | L220 | GLY  | F469 | L530 | S591 |     | S714 |
|      |      |      |      |      | Q221 | THR  |      | L531 | I591 |     | E715 |
|      |      |      |      |      | A222 | GLU  |      | S531 | T592 |     | L716 |
|      |      |      |      |      | N223 | MET  |      | G533 | G593 |     | K717 |
|      |      |      |      |      | P224 | V410 | F472 | I532 | M594 |     | F717 |
|      |      |      |      |      | R224 | T411 | E473 | L533 | L594 |     | L718 |
|      |      |      |      |      | V225 | S947 | Q474 | L534 | L595 |     | Q718 |
|      |      |      |      |      | L226 | M948 | L475 | E535 | E596 |     | R719 |
|      |      |      |      |      | E227 | F949 | C476 | E536 | K597 |     | Y720 |
|      |      |      |      |      | A228 | K350 | I477 | C537 | N598 |     | S721 |
|      |      |      |      |      | R167 | Q414 | M478 | S538 | K599 |     | L722 |
|      |      |      |      |      | S165 | C351 | Y479 | M539 | L599 |     | L723 |
|      |      |      |      |      | G42  | T352 | M416 | F539 | D600 |     | A724 |
|      |      |      |      |      | F43  | R352 | M417 | P540 | P601 |     | P725 |
|      |      |      |      |      |      | A353 | Q418 | K541 | I602 |     | M726 |
|      |      |      |      |      |      | S954 | V419 | A542 | G603 |     | N726 |
|      |      |      |      |      |      | L355 | V420 | E604 | E604 |     | A727 |
|      |      |      |      |      |      | L356 | L484 | D543 | N605 |     | I728 |
|      |      |      |      |      |      | H557 | M421 | D544 | V606 |     | P729 |
|      |      |      |      |      |      | K358 | A422 | K485 | V607 |     | GLN  |
|      |      |      |      |      |      |      | V423 | Q486 | V607 |     | GLY  |
|      |      |      |      |      |      |      | G424 | F487 | A608 |     | PHE  |
|      |      |      |      |      |      |      | A425 | F488 | L609 |     | VAL  |
|      |      |      |      |      |      |      | L426 | M489 | P673 |     | VAL  |
|      |      |      |      |      |      |      | A427 | H490 | L610 |     | GLY  |
|      |      |      |      |      |      |      | K428 | H491 | L611 |     | PHE  |
|      |      |      |      |      |      |      | S429 | M492 | S613 |     | GLY  |
|      |      |      |      |      |      |      | L430 | M493 | K614 |     | VAL  |
|      |      |      |      |      |      |      | A431 | F493 | E615 |     | GLY  |
|      |      |      |      |      |      |      | D432 | L494 | P616 |     | PHE  |
|      |      |      |      |      |      |      | E369 | L495 | Q678 |     | GLY  |
|      |      |      |      |      |      |      | E370 | E496 | R679 |     | PHE  |
|      |      |      |      |      |      |      | S310 | M556 | G680 |     | VAL  |
|      |      |      |      |      |      |      | O371 | M434 | V618 |     | GLY  |
|      |      |      |      |      |      |      | F311 | Q497 | A619 |     | GLY  |
|      |      |      |      |      |      |      | A372 | E498 | L681 |     | GLY  |
|      |      |      |      |      |      |      | E373 | E499 | V682 |     | GLY  |
|      |      |      |      |      |      |      | N313 | E500 | L683 |     | GLY  |
|      |      |      |      |      |      |      | Q314 | M501 | D684 |     | GLY  |
|      |      |      |      |      |      |      |      |      | A744 |     | GLY  |
|      |      |      |      |      |      |      |      |      | E885 |     | GLY  |



|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| V810 | I811 | Q812 | R813 | N814 | I815 | R816 | K817 | W818 | L819 | V820 | L821 | R822 | N823 | W824 | Q825 | W826 | W827 | K828 | L829 | Y830 | K831 | K832 | V833 | K834 | P835 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

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

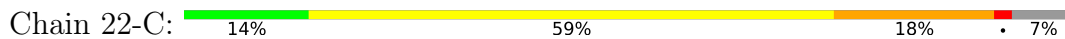
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|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| F5   | S6   | D7   | P8   | D9   | F10  | Q11  | Y12  | L13  | A14  | V15  | D16  | ARG  | LYS  | LYS  | LYS  | LEU  | MET  | W826 | W827 | K828 | Q24  | T25  | A26  | A27  | Y93  | K31  | K32  | N33  | C34  | W35  | V36  | P37  | D38  | E39  | K40  | E41  | E42  | F43  | E47  | I48  | Q49  | L111 | L112 | L113 | D54  | E55  | I56  | T57  | V58  | K59  | I60  | V61  | A62  | D63  | S64  | S65  | T66  | R67  | T68  | V69  |      |     |
| K70  | K71  | D72  | D73  | I74  | Q75  | S76  | R77  | M78  | P79  | F80  | V81  | K81  | F82  | E83  | R84  | L85  | E86  | D87  | M88  | A89  | N90  | R91  | L92  | Y93  | L94  | N95  | E96  | A97  | W98  | V99  | L100 | L101 | N102 | L103 | R104 | S105 | E106 | Y107 | T108 | S109 | C172 | L173 | L174 | L175 | G176 | E177 | S178 | G179 | A180 | G181 | K182 | M185 | A122 | V123 | K187 | M124 | S64  | P125 | V126 | L129 | P130 |     |
| I131 | Y132 | T133 | D134 | I135 | V136 | L137 | A138 | K139 | L140 | R141 | L142 | K143 | G144 | R144 | A145 | T146 | S147 | L148 | P149 | P150 | H151 | L152 | F153 | A156 | D157 | M158 | A159 | V160 | Q161 | M162 | M163 | G164 | L165 | D166 | R167 | E168 | N169 | Q170 | S171 | C172 | L173 | T234 | T235 | P236 | N237 | N238 | S178 | S240 | A180 | G181 | K182 | M185 | A122 | V123 | K187 | M124 | S64  | P125 | V126 | L129 | P130 |     |
| L193 | A194 | K195 | V196 | ALA  | CYS  | ALA  | VAL  | LYS  | LYS  | LYS  | LYS  | ASP  | GLU  | GLU  | ALA  | SER  | ASP  | ASP  | LYS  | GLU  | GLY  | SER  | LEU  | E216 | D217 | Q218 | I219 | A159 | Q221 | Q222 | N223 | P224 | V225 | L226 | E227 | A228 | Y229 | G230 | N231 | A232 | K233 | L234 | T235 | P236 | N237 | N238 | S240 | S241 | R242 | F243 | G244 | K245 | F246 | Y309 | R248 | T249 | H250 | M191 | G252 |      |      |     |
| P253 | T254 | G255 | K256 | I257 | A260 | D261 | I262 | E263 | T264 | V265 | L266 | L267 | E268 | K269 | R270 | S271 | R271 | V272 | T273 | Y274 | Q275 | Q276 | E279 | R280 | N281 | Y282 | H283 | I284 | L285 | P285 | F286 | Y286 | L288 | C289 | S290 | N291 | A292 | I293 | P294 | E295 | L296 | N297 | D298 | V299 | K300 | L301 | F302 | T303 | P304 | D305 | S306 | G307 | L308 | Y309 | S310 | F311 | L312 | K313 | Q314 |      |      |     |
| G315 | C316 | L317 | T318 | V319 | D320 | N321 | I322 | D323 | V324 | V325 | E326 | E327 | F328 | K329 | L330 | C331 | D332 | E333 | A334 | F335 | L336 | L337 | L338 | G339 | F340 | T341 | L342 | E343 | E344 | L345 | K345 | Q346 | S347 | K348 | F349 | K350 | C351 | T352 | A353 | S354 | I355 | L356 | H357 | K358 | M361 | K362 | F363 | K364 | Q365 | R366 | P367 | L430 | Y431 | E369 | E370 | O371 | A372 | E373 | T377 |      |      |     |
| A378 | E379 | A380 | E381 | K382 | V383 | A384 | F385 | L386 | C387 | G388 | L389 | N390 | D393 | L394 | L395 | K396 | D397 | A397 | L398 | L399 | K400 | A401 | L402 | VAL  | LYS  | VAL  | GLY  | THR  | GLU  | MET  | V410 | T411 | K412 | C413 | Q414 | N415 | M416 | M417 | Q418 | V419 | V420 | M421 | S422 | V423 | G424 | A425 | L426 | A427 | K428 | S429 | L430 | Y431 | D432 | R433 | A434 | F435 | M436 | N437 | L438 |      |      |     |
| V439 | R440 | R441 | V442 | M443 | K444 | T445 | L446 | K449 | M452 | M453 | Y454 | Y455 | I456 | Q457 | M458 | V459 | L460 | D461 | L462 | G463 | P401 | F464 | E465 | I466 | F467 | D468 | F469 | F472 | E473 | Q474 | L475 | K476 | C477 | I477 | M478 | Y479 | T480 | M481 | E482 | R483 | L484 | Q485 | Q486 | F487 | M488 | M489 | H490 | H491 | M492 | F493 | L494 | L495 | H496 | Q497 | E498 | E499 | Y500 | K501 |      |      |      |     |
| K502 | E503 | G504 | I505 | A506 | N507 | E508 | F509 | L510 | D511 | F512 | G513 | M514 | E515 | L516 | Q517 | M518 | C519 | L520 | D521 | L522 | E523 | E524 | G525 | H526 | H527 | G528 | G529 | L530 | L531 | S531 | L532 | L533 | E534 | E535 | E536 | C537 | M538 | F539 | P540 | K541 | A542 | D543 | D544 | K545 | S546 | F547 | Q548 | D549 | K550 | L551 | Y552 | Q553 | N554 | H555 | M556 | N559 | R560 | M561 | F562 |      |      |     |
| T563 | K564 | P565 | G566 | K567 | P568 | T569 | R570 | P571 | L572 | Q573 | G574 | P575 | A576 | H577 | F578 | E579 | L580 | H581 | H582 | L583 | A584 | G585 | N586 | V587 | P588 | Y589 | S590 | L591 | T592 | L593 | G594 | M594 | L595 | E596 | K597 | N598 | K599 | D600 | P601 | L602 | N603 | E604 | N605 | V606 | V607 | A608 | L609 | L610 | S613 | K614 | G615 | P616 | L617 | G618 | G619 | L681 | A619 | E620 | L682 | PHE  | A684 | LYS |
| ALA  | PRO  | GLU  | GLU  | PRO  | ALA  | GLY  | GLY  | GLY  | LYS  | LYS  | LYS  | LYS  | GLY  | LYS  | SER  | SER  | ALA  | PHE  | Q643 | T644 | I645 | S646 | A647 | V648 | H649 | R650 | E651 | S652 | L653 | M654 | K655 | L656 | M659 | L660 | T663 | H664 | P665 | H666 | F667 | V668 | R669 | C670 | I671 | P672 | P673 | L674 | E675 | L676 | K677 | Q678 | P679 | G680 | L681 | V682 | L683 | D683 | A684 | LYS  |      |      |      |     |
| L686 | V687 | L688 | H689 | Q690 | L691 | R692 | C693 | M694 | G695 | V696 | L697 | E698 | G699 | I700 | R701 | I702 | C703 | R704 | K705 | G706 | F707 | P708 | S709 | R710 | S711 | L712 | Y713 | E714 | S715 | L716 | K717 | L718 | R719 | Y720 | S721 | I722 | L723 | A724 | F725 | N726 | A727 | I728 | P729 | GLN  | GLY  | PHE  | VAL  | D734 | G735 | K736 | V737 | L738 | S739 | K740 | E741 | L742 | L743 | A744 | G807 | L808 |      |     |
| L746 | Q747 | M748 | D749 | P750 | A751 | E752 | Y753 | R754 | L755 | G756 | T757 | L758 | K759 | V760 | F761 | F762 | K763 | A764 | G765 | L770 | E771 | E772 | M773 | R774 | D775 | E776 | L777 | R778 | L779 | R780 | I781 | Y782 | S783 | M784 | F785 | Q786 | A787 | H788 | I789 | R790 | G791 | Y792 | L793 | I794 | R795 | K796 | K800 | L801 | Q802 | D803 | Q804 | K805 | I806 | L807 | A808 | L808 |      |      |      |      |      |     |
| S809 | V810 | I811 | Q812 | R813 | N814 | I815 | R816 | K817 | W818 | L819 | V820 | L821 | R822 | N823 | W824 | Q825 | W826 | W827 | K828 | L829 | Y830 | K831 | K832 | V833 | K834 | P835 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |

● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

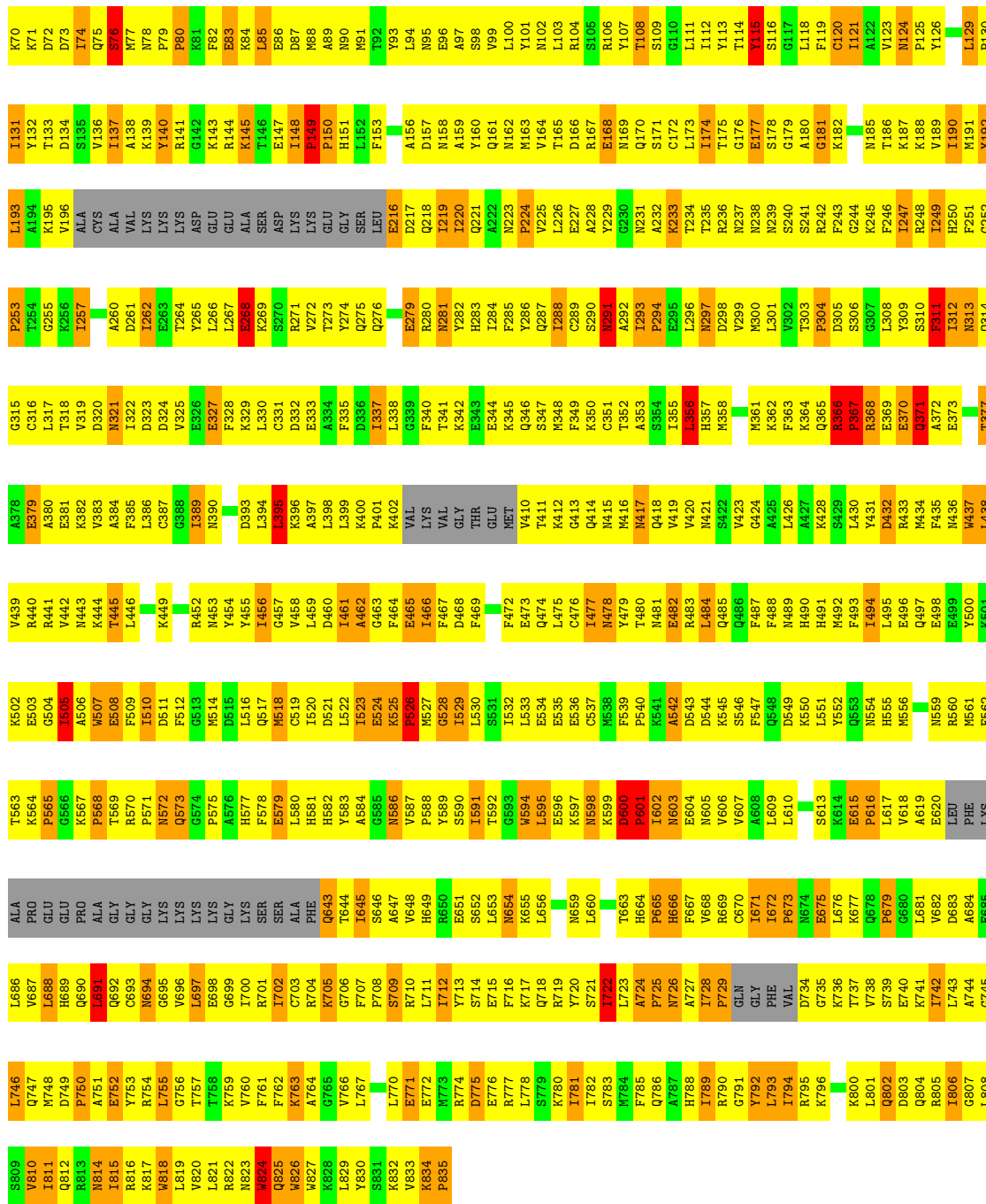


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|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| F5   | S6   | D7   | D8   | D9   | F10  | Q11  | Y12  | L13  | L14  | V15  | D16  | ARC  | LYS  | LEU  | LEU  | MET  | GLY  | GLU  | Q24  | T25  | A26  | A27  | K31  | K32  | N33  | C34  | V35  | V36  | P37  | D38  | E39  | K40  | L41  | E41  | G42  | F43  | E47  | I48  | Q49  | K52  | G53  | D54  | E55  | I56  | T57  | V58  | K59  | I60  | V61  | A62  | D63  | S64  | S65  | T66  | R67  | L68  | V69  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| K70  | K71  | D72  | D73  | I74  | Q75  | S76  | M77  | K78  | P79  | P80  | K81  | F82  | E83  | K84  | L85  | E86  | D87  | M88  | A89  | N90  | M91  | L92  | Y93  | L94  | N95  | E96  | A97  | S98  | V99  | L100 | Y101 | M102 | L103 | R104 | L105 | S105 | G42  | R106 | Y107 | T108 | S109 | G110 | L111 | Y112 | Y113 | T114 | Y115 | S116 | G117 | L118 | F119 | C120 | I121 | A122 | V123 | M124 | S64  | M125 | Y126 | L129 | P130 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| I131 | Y132 | D133 | D134 | S135 | V136 | I137 | A138 | K139 | Y140 | R141 | K142 | K143 | R144 | K145 | T146 | E147 | I148 | F149 | F150 | H151 | L152 | F153 | E216 | A156 | D157 | M158 | A159 | Q160 | Q161 | L100 | M162 | M163 | V164 | T165 | L166 | E227 | R167 | Y229 | E168 | M169 | Q170 | S171 | C172 | L173 | I174 | T175 | E177 | S178 | G179 | A180 | G181 | K182 | N185 | A186 | T186 | K187 | M188 | V189 | I190 | M191 | Y192 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| L193 | A194 | K195 | V196 | ALA  | CYS  | ALA  | VAL  | LYS  | LYS  | LYS  | LYS  | ASP  | ASP  | ASP  | GLY  | GLY  | LYS  | LYS  | GLY  | GLY  | SER  | LEU  | E216 | D217 | Q218 | I219 | N281 | Q221 | Q161 | A222 | N223 | P224 | V225 | L226 | E227 | Y229 | G230 | N231 | A232 | K233 | T234 | T235 | R236 | N237 | N238 | M300 | L301 | S241 | R242 | F243 | G244 | K245 | G307 | F246 | E369 | Y309 | S310 | F311 | I312 | N313 | G252 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| P253 | T254 | G255 | K256 | I257 | A258 | G259 | A260 | D261 | I262 | E263 | E264 | Y265 | L266 | L267 | E268 | K269 | S270 | R271 | V272 | Y274 | SER  | LEU  | E216 | D217 | Q218 | I219 | N281 | Q221 | Q161 | A222 | N223 | P224 | V225 | L226 | E227 | Y229 | G230 | N231 | A232 | K233 | T234 | T235 | R236 | N237 | N238 | M300 | L301 | S241 | R242 | F243 | G244 | K245 | G307 | F246 | E369 | Y309 | 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 | F335 | D336 | I337 | L338 | G339 | F340 | T341 | K342 | E343 | E344 | K345 | Q346 | S347 | M348 | F349 | C289 | K350 | C351 | T352 | A353 | S354 | I355 | L356 | H357 | M358 | M361 | K362 | F363 | K364 | Q365 | R366 | P367 | R368 | E369 | E370 | Q371 | A372 | E373 | G374 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| T377 | A378 | E379 | A380 | E381 | K382 | V383 | N384 | F385 | I386 | C387 | G388 | I389 | M390 | D393 | L394 | L395 | K396 | A397 | L398 | L399 | K400 | P401 | K402 | VAL  | LYS  | VAL  | G528 | GLY  | THR  | GLY  | MET  | V410 | T411 | K412 | Q413 | C289 | Q414 | N415 | M416 | N417 | T418 | V419 | V420 | M421 | S422 | V423 | G424 | A425 | L426 | F488 | M489 | H490 | S428 | H491 | M492 | F493 | Y431 | D432 | R433 | M434 | F435 | M436 | E437 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| L438 | V439 | R440 | R441 | V442 | N443 | K444 | T445 | L446 | K449 | M450 | K451 | R452 | N453 | Y454 | F455 | I456 | C457 | V458 | L459 | D460 | A461 | A462 | C463 | F464 | E465 | G528 | F467 | D468 | F469 | F472 | E473 | E474 | L475 | C476 | N477 | M478 | Y479 | T480 | N481 | E482 | E483 | L484 | Q485 | F487 | F488 | M489 | H490 | S428 | H491 | M492 | F493 | Y431 | D432 | R433 | M434 | F435 | M436 | E437 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| Y500 | E503 | G504 | L505 | A506 | V507 | F508 | F509 | L510 | D511 | F512 | G513 | M514 | D515 | H516 | F517 | F518 | L580 | I520 | D521 | H522 | Y583 | A584 | E524 | M585 | V587 | M527 | G528 | S590 | I591 | L530 | S531 | L532 | E534 | L595 | E596 | K597 | N598 | K599 | D600 | P601 | T602 | N603 | E604 | N605 | V606 | V607 | A608 | L609 | L610 | S613 | E615 | Q616 | L617 | H555 | M556 | L618 | A619 | M559 | R620 | L621 | PHE  | M561 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| F562 | T563 | K564 | P565 | G566 | K567 | P568 | T569 | H570 | P571 | M572 | O573 | G574 | F575 | A576 | H577 | F578 | E579 | H581 | H582 | Y583 | A584 | E524 | M585 | V587 | M527 | G528 | S590 | I591 | L530 | S531 | L532 | E534 | L595 | E596 | K597 | N598 | K599 | D600 | P601 | T602 | N603 | E604 | N605 | V606 | V607 | A608 | L609 | L610 | S613 | E615 | Q616 | L617 | H555 | M556 | L618 | A619 | M559 | R620 | L621 | PHE  | M561 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| LYS  | ALA  | PRO  | GLU  | GLU  | PRO  | ALA  | GLY  | GLY  | GLY  | LYS  | LYS  | LYS  | GLY  | GLY  | LYS  | SER  | SER  | ALA  | PHE  | Q643 | T644 | T645 | F707 | F708 | S646 | A647 | V648 | H649 | L711 | L712 | G650 | E651 | S652 | L653 | M654 | K655 | Q718 | L719 | L720 | N659 | L660 | T663 | H664 | P665 | N666 | F667 | V668 | R669 | C670 | I671 | L672 | PHE  | VAL  | D734 | G735 | L676 | K677 | V738 | S739 | E740 | K741 | L681 | V682 | D683 | L743 | A744 | A684 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| E685 | L686 | V687 | L688 | H689 | O690 | L691 | Q692 | C693 | M694 | L695 | V696 | L697 | E698 | G699 | L700 | R701 | C703 | R704 | K705 | F706 | F707 | F708 | S709 | R710 | L711 | L712 | G713 | S714 | E715 | F716 | K717 | Q718 | R719 | Y720 | S721 | L722 | L723 | A724 | P725 | N726 | A727 | L728 | F729 | G730 | GLY  | PHE  | VAL  | D734 | G735 | L676 | K677 | V738 | S739 | E740 | K741 | L681 | V682 | D683 | L743 | A744 | A684 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| G745 | L746 | Q747 | M748 | D749 | P750 | A751 | E752 | Y753 | R754 | L755 | G756 | T757 | T758 | K759 | V760 | F761 | F762 | K763 | G764 | G765 | V766 | L767 | G768 | N769 | L770 | E771 | E772 | M773 | R774 | D775 | E776 | R777 | L778 | R779 | K780 | L781 | L782 | S783 | M784 | F785 | Q786 | A787 | H788 | L789 | R790 | G791 | Y792 | L793 | L794 | R795 | K796 | L800 | L801 | O802 | D803 | Q804 | R805 | L806 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |
| G807 | L808 | S809 | V810 | I811 | Q812 | R813 | M814 | L815 | R816 | K817 | M818 | L819 | V820 | L821 | R822 | N823 | R824 | K825 | M826 | M827 | L828 | L829 | Y830 | S831 | K832 | H833 | K834 | P835 | G836 | H837 | 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



|    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| F5 | S6 | D7 | D8 | D9 | F10 | Q11 | Y12 | L13 | L14 | V15 | D16 | ARC | LYS | LEU | LEU | MET | GLY | GLU | Q24 | T25 | A26 | A27 | K31 | K32 | N33 | C34 | V35 | V36 | P37 | D38 | E39 | K40 | L41 | E41 | G42 | F43 | E47 | I48 | Q49 | K52 | G53 | D54 | E55 | I56 | T57 | V58 | K59 | I60 | V61 | A62 | D63 | S64 | S65 | T66 | R67 | L68 | V69 |
|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|



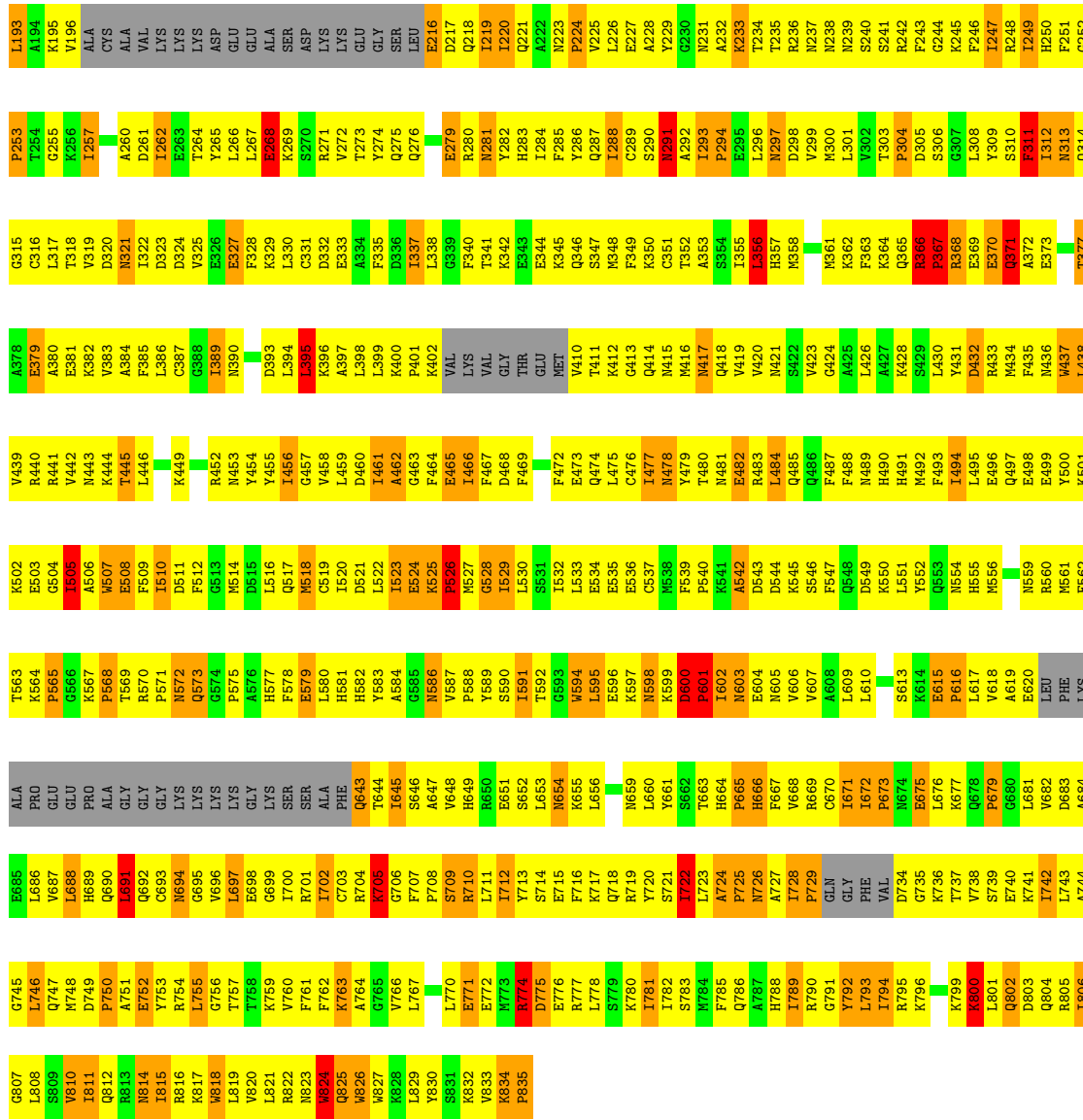
● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 23-C:  14%  59%  18%  7%

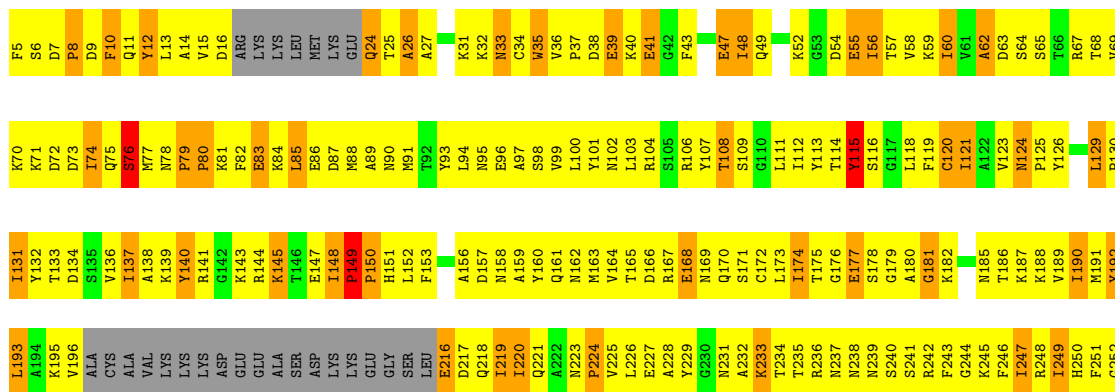






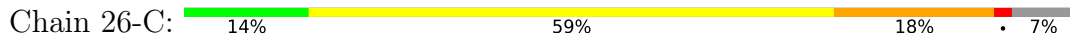


● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

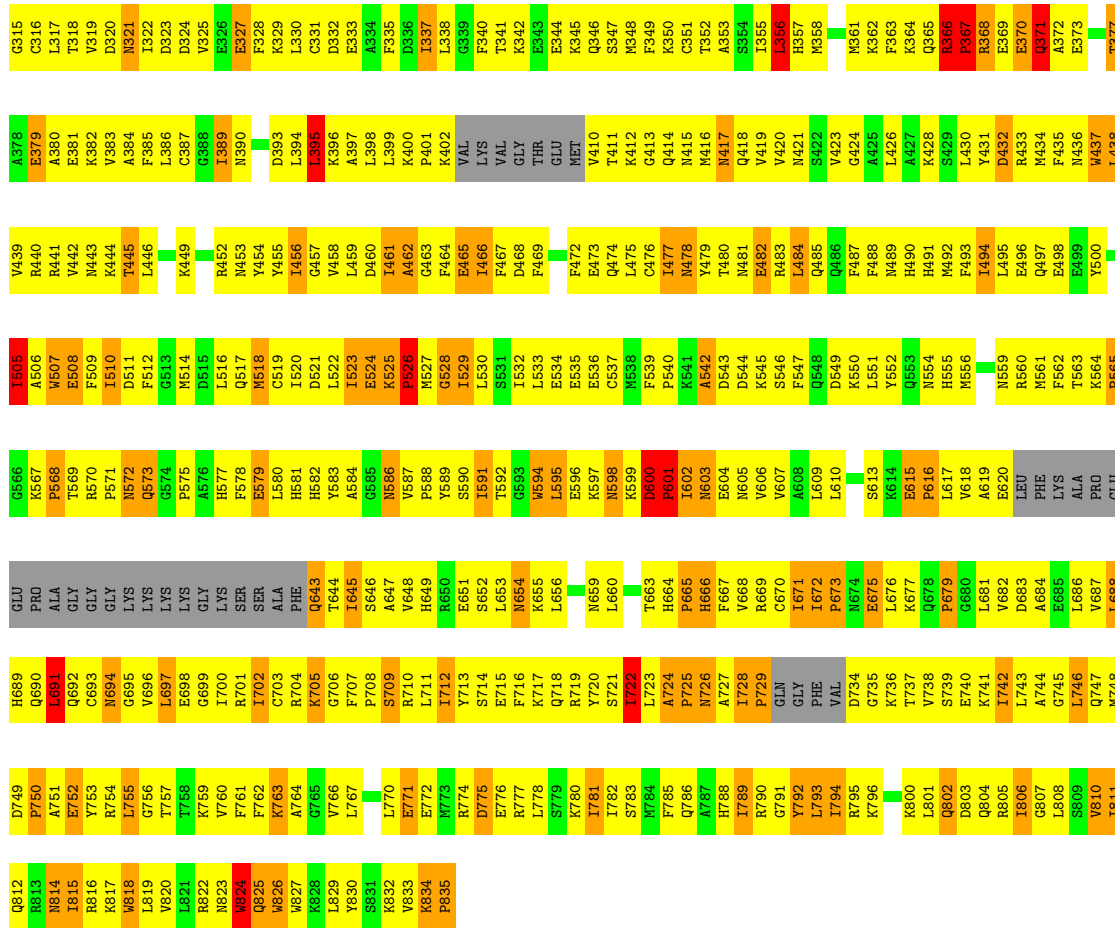


|      |      |      |      |      |      |      |      |      |      |     |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|-----|------|------|------|------|
| P253 | G315 | A376 | V439 | E503 | T563 | ALA  | L686 | L746 | S809 | F5  | K70  | I131 | L193 | P253 |
| T254 | C316 | E379 | R440 | E504 | K564 | PRO  | V687 | Q747 | V810 | S6  | K71  | Y132 | A194 | T254 |
| G255 | L317 | A380 | R441 | G505 | P585 | GLU  | L688 | M748 | I811 | P8  | D72  | T133 | G256 | G255 |
| K256 | T318 | E381 | V442 | I506 | G566 | GLU  | H689 | D749 | Q812 | D7  | D73  | D134 | K256 | K256 |
| I257 | V319 | K382 | N443 | A506 | K567 | PRO  | Q690 | F750 | R813 | D9  | F75  | S135 | I257 | I257 |
| A260 | D320 | K383 | K444 | W507 | P568 | ALA  | L691 | A751 | N814 | F10 | O74  | I136 | A260 | A260 |
| D261 | N321 | A384 | T445 | E508 | T569 | GLY  | Q692 | E752 | I815 | Q11 | S76  | I137 | D261 | D261 |
| L262 | I322 | F385 | L446 | F509 | A570 | GLY  | C693 | Y753 | R816 | Y12 | M77  | A138 | L262 | L262 |
| E263 | D324 | L386 | K449 | D511 | P571 | LYS  | M694 | R754 | R817 | L13 | N78  | K139 | E263 | E263 |
| T264 | D325 | C387 | K450 | F512 | Q573 | LYS  | V695 | L755 | W818 | A14 | P79  | L140 | T264 | T264 |
| Y265 | V325 | G388 | A451 | Q513 | Q574 | LYS  | V696 | G756 | L819 | V15 | P80  | R141 | Y265 | Y265 |
| L266 | E326 | I389 | K452 | G514 | G574 | LYS  | L697 | T757 | W820 | D16 | K81  | G142 | L266 | L266 |
| L267 | E327 | N390 | R452 | M514 | P575 | LYS  | E698 | T758 | L821 | ABC | F82  | K143 | L267 | L267 |
| E268 | F328 | N390 | N453 | E515 | A576 | GLY  | G699 | K759 | R822 | LVS | E83  | R144 | E268 | E268 |
| K269 | K329 | D393 | L454 | L516 | H577 | LYS  | L700 | V760 | M823 | LVS | K84  | K145 | K269 | K269 |
| S270 | L330 | L394 | Y455 | Q517 | F578 | SER  | R701 | F761 | W824 | LEU | L85  | T146 | S270 | S270 |
| R271 | C331 | L395 | I456 | M518 | E579 | SER  | I702 | F762 | Q825 | MET | E86  | E147 | R271 | R271 |
| V272 | D332 | K396 | G457 | C519 | L580 | ALA  | C703 | K763 | W826 | LVS | D87  | I148 | V272 | V272 |
| T273 | E333 | A397 | V458 | I520 | H581 | PHE  | R704 | A764 | W827 | GLU | M88  | P149 | T273 | T273 |
| Y274 | L398 | L398 | L459 | D521 | H582 | Q643 | K705 | G765 | K828 | Q24 | A89  | P150 | Y274 | Y274 |
| Q275 | D460 | L399 | D460 | I523 | F583 | T644 | F707 | V766 | L829 | A26 | N90  | H151 | Q275 | Q275 |
| Q276 | I461 | K400 | A462 | E524 | G585 | S646 | P708 | L767 | S830 | A27 | T92  | F152 | Q276 | Q276 |
| E279 | L338 | K402 | G463 | K525 | N586 | A647 | S709 | L770 | K832 | K31 | Y93  | A156 | E279 | E279 |
| R280 | F340 | VAL  | F464 | M527 | P587 | V648 | R710 | E771 | W833 | K32 | N95  | D157 | R280 | R280 |
| N281 | T341 | LYS  | E465 | M528 | P588 | H649 | L711 | E772 | K834 | K33 | E96  | D157 | N281 | N281 |
| Y282 | K342 | VAL  | L466 | G529 | F589 | R650 | I712 | R773 | P835 | N33 | S98  | I158 | Y282 | Y282 |
| H283 | GLY  | GLY  | F467 | I529 | S590 | E651 | Y713 | R774 | K835 | C34 | A97  | A159 | H283 | H283 |
| I284 | THR  | THR  | D468 | L530 | I591 | S652 | S714 | D775 | W836 | W35 | S98  | Y160 | I284 | I284 |
| F285 | E344 | GLU  | F469 | S531 | T592 | L653 | E715 | E776 | K837 | V36 | V99  | Q161 | F285 | F285 |
| T286 | K345 | MET  | F469 | I532 | G593 | M654 | F716 | R777 | K838 | P37 | L100 | M162 | T286 | T286 |
| I288 | Q346 | V410 | E472 | L533 | H594 | K655 | K717 | L778 | K839 | D38 | Y101 | M163 | I288 | I288 |
| C289 | S347 | T411 | E473 | E534 | L595 | L656 | Q718 | S779 | L829 | E39 | N102 | V164 | C289 | C289 |
| S290 | M348 | K412 | Q474 | E535 | E596 | L659 | R719 | K780 | S831 | K40 | L103 | D166 | S290 | S290 |
| N291 | F349 | G413 | L475 | E536 | K597 | L660 | W720 | I781 | K832 | E41 | R104 | R167 | N291 | N291 |
| A292 | K350 | Q414 | C476 | C537 | M598 | L660 | S721 | I782 | S833 | G42 | S105 | E168 | A292 | A292 |
| I293 | C351 | N415 | I477 | M538 | K599 | T663 | L722 | S783 | W834 | F43 | Y107 | N169 | I293 | I293 |
| L293 | L352 | M416 | M478 | P539 | P600 | H664 | L723 | W784 | F785 | E47 | T108 | Q170 | L293 | L293 |
| P294 | A353 | M417 | Y479 | P640 | P601 | A724 | A724 | F785 | Q786 | I48 | S109 | S171 | P294 | P294 |
| E295 | I355 | N418 | T480 | R541 | N603 | P665 | P725 | R786 | A787 | I48 | S109 | C172 | E295 | E295 |
| L296 | L356 | V419 | N481 | D543 | E604 | H666 | M726 | H788 | H787 | Q49 | G110 | L111 | L296 | L296 |
| N297 | H357 | V420 | E482 | D544 | N605 | F667 | A727 | H788 | H787 | K52 | L111 | L112 | N297 | N297 |
| D298 | M358 | M421 | R483 | K545 | V606 | V668 | I728 | I789 | I789 | G53 | Y112 | T175 | D298 | D298 |
| M300 | M361 | V423 | Q485 | S646 | V607 | C670 | P729 | R790 | G791 | D54 | T114 | G176 | M300 | M300 |
| L301 | K362 | G424 | Q486 | P547 | A608 | L671 | D734 | Y792 | Y792 | E55 | Y115 | E177 | L301 | L301 |
| T303 | F363 | A425 | F487 | D548 | L609 | L672 | P673 | L793 | L793 | I56 | S116 | S178 | T303 | T303 |
| P304 | K364 | L426 | F488 | K550 | L610 | P673 | VAL  | I794 | I794 | T57 | G117 | G179 | P304 | P304 |
| D305 | Q365 | K428 | N489 | L551 | L610 | L674 | D734 | R795 | R795 | V58 | L118 | A180 | D305 | D305 |
| S306 | R366 | S429 | H490 | Y552 | S613 | L676 | G735 | K796 | K796 | I60 | C120 | K182 | S306 | S306 |
| G307 | P367 | L430 | M491 | G553 | K614 | L677 | K736 | R800 | R800 | V61 | A122 | N185 | G307 | G307 |
| L308 | R368 | L431 | M492 | H554 | E615 | K677 | T737 | L801 | L801 | A62 | A122 | A122 | L308 | L308 |
| Y309 | F369 | D432 | F493 | H555 | P616 | Q678 | V738 | Q802 | Q802 | D63 | V123 | F246 | Y309 | Y309 |
| S310 | E370 | I494 | I494 | M556 | L617 | V618 | S739 | D803 | D803 | S64 | M124 | K187 | S310 | S310 |
| F311 | Q371 | R433 | L495 | M556 | L618 | A619 | E740 | O804 | O804 | S65 | P125 | K188 | F311 | F311 |
| I312 | A372 | F435 | Q497 | N559 | E620 | V682 | I742 | R805 | R805 | T86 | Y126 | V189 | I312 | I312 |
| N313 | E373 | M436 | E498 | R560 | R560 | L683 | L743 | R806 | R806 | R67 | L129 | N190 | N313 | N313 |
| Q314 | T377 | L438 | Y500 | F562 | PHE  | A684 | A684 | G807 | G807 | T68 | A744 | M191 | Q314 | Q314 |

• Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

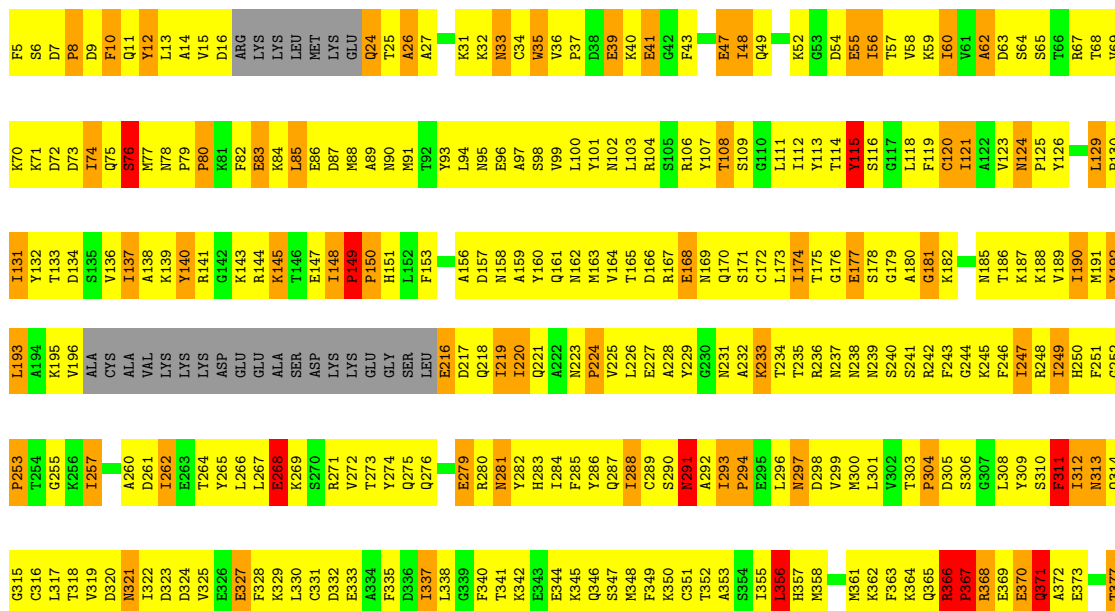


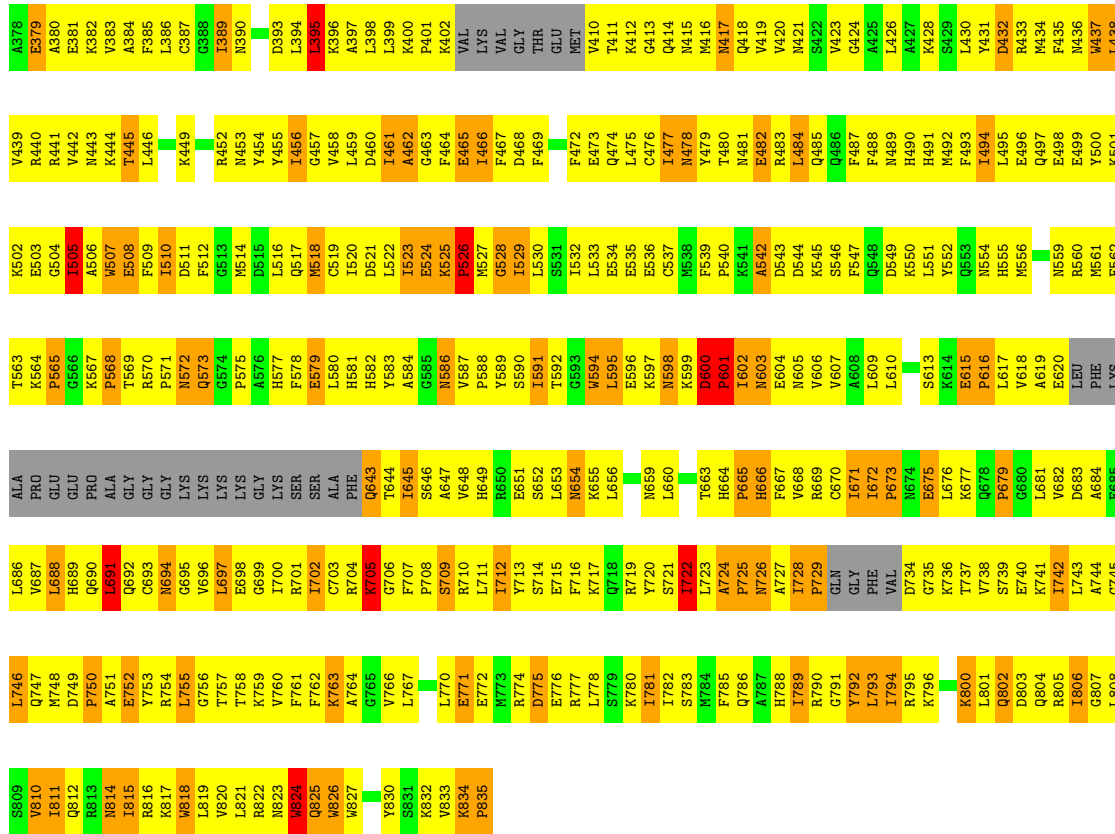
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|------|------|------|------|------|
| F5   | K70  | I131 | L193 | P253 |
| S6   | K71  | Y132 | A194 | T254 |
| D7   | D72  | T133 | G256 | G255 |
| P8   | D73  | D134 | K256 | K256 |
| D9   | F75  | S135 | I257 | I257 |
| F10  | O74  | I136 | A260 | A260 |
| Q11  | S76  | I137 | D261 | D261 |
| Y12  | M77  | A138 | L262 | L262 |
| L13  | N78  | K139 | E263 | E263 |
| A14  | P79  | L140 | T264 | T264 |
| V15  | P80  | R141 | Y265 | Y265 |
| D16  | K81  | G142 | L266 | L266 |
| ABC  | F82  | K143 | L267 | L267 |
| LVS  | E83  | R144 | E268 | E268 |
| LVS  | K84  | K145 | K269 | K269 |
| LVS  | L85  | T146 | S270 | S270 |
| LEU  | D86  | E147 | R271 | R271 |
| MET  | E87  | I148 | V272 | V272 |
| LVS  | M88  | P149 | T273 | T273 |
| GLU  | A89  | P150 | Y274 | Y274 |
| GLY  | N90  | H151 | Q275 | Q275 |
| SER  | M91  | L152 | Q276 | Q276 |
| LEU  | T92  | F153 | E279 | E279 |
| Y93  | L94  | A156 | R280 | R280 |
| K31  | N95  | D157 | N281 | N281 |
| K32  | E96  | I158 | Y282 | Y282 |
| N33  | S98  | A159 | H283 | H283 |
| C34  | A97  | Y160 | I284 | I284 |
| W35  | S98  | Q161 | F285 | F285 |
| V36  | V99  | Q162 | T286 | T286 |
| P37  | L100 | M162 | I288 | I288 |
| D38  | Y101 | M163 | C289 | C289 |
| E39  | N102 | V164 | S290 | S290 |
| K40  | L103 | D166 | N291 | N291 |
| E41  | R104 | R167 | A292 | A292 |
| G42  | S105 | E168 | I293 | I293 |
| F43  | Y107 | N169 | L293 | L293 |
| E47  | T108 | Q170 | P294 | P294 |
| I48  | S109 | S171 | E295 | E295 |
| Q49  | G110 | C172 | L296 | L296 |
| L111 | L111 | L173 | N297 | N297 |
| I112 | Y112 | T174 | D298 | D298 |
| Y113 | Y113 | T175 | V299 | V299 |
| T114 | T114 | G176 | M300 | M300 |
| E55  | Y115 | E177 | L301 | L301 |
| I56  | S116 | S178 | T303 | T303 |
| T57  | G117 | G179 | P304 | P304 |
| V58  | L118 | A180 | D305 | D305 |
| F119 | F119 | G181 | S306 | S306 |
| K59  | C120 | K182 | G307 | G307 |
| I60  | A122 | N185 | L308 | L308 |
| V61  | A122 | A122 | Y309 | Y309 |
| D62  | V123 | F246 | S310 | S310 |
| D63  | M124 | K187 | F311 | F311 |
| S64  | P125 | K188 | I312 | I312 |
| S65  | P125 | K188 | N313 | N313 |
| S66  | O804 | V189 | Q314 | Q314 |
| T86  | Y126 | V189 |      |      |
| R67  | L129 | N190 |      |      |
| T68  | A744 | M191 |      |      |
| V69  | P130 | Y192 |      |      |



● Molecule 1: MYOSIN HEAVY CHAIN, STRIATED MUSCLE

Chain 27-C: 13% 59% 18% 7%

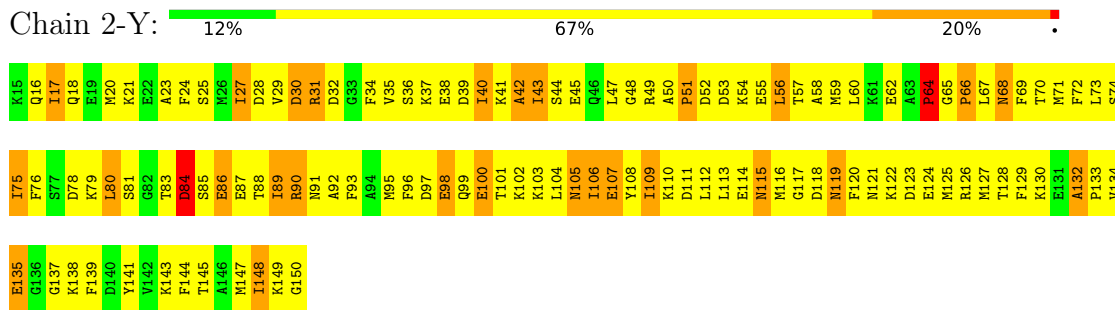




● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

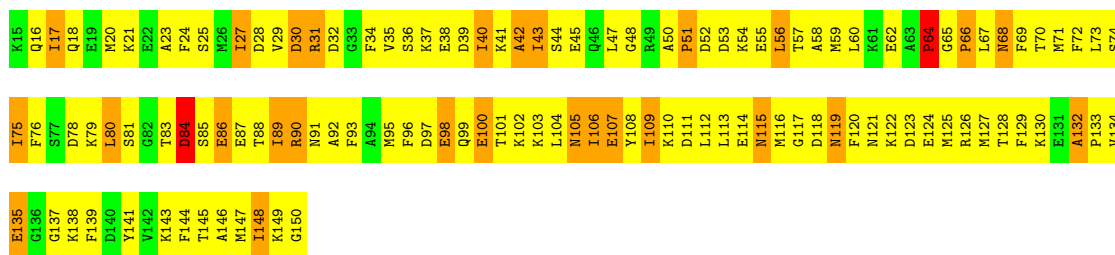


● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

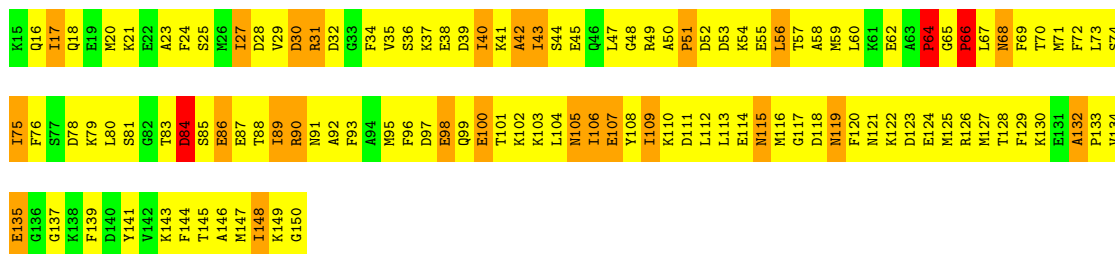


● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE





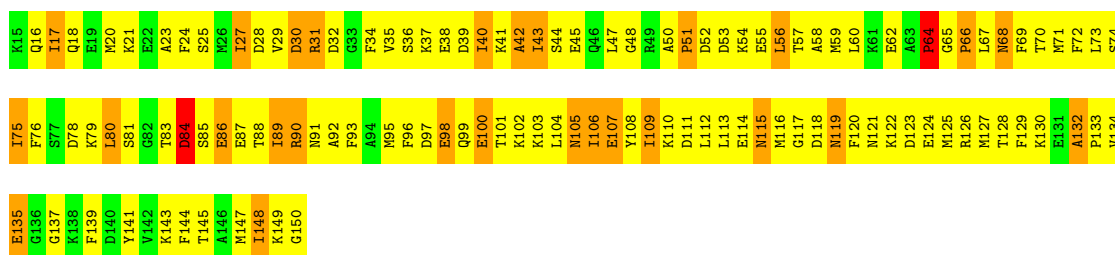
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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



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

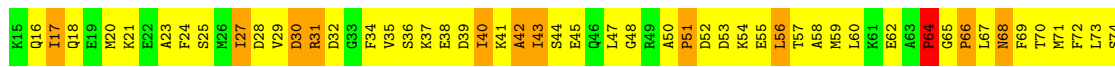


• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

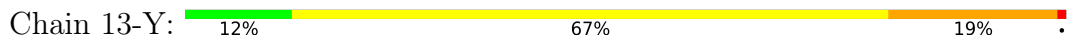




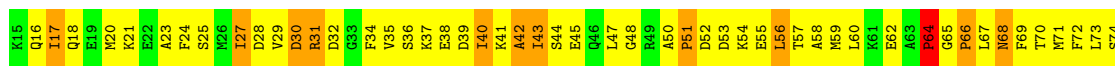
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



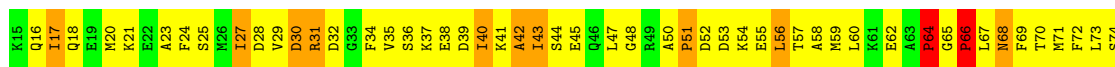
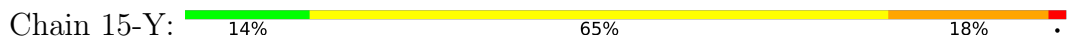
● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

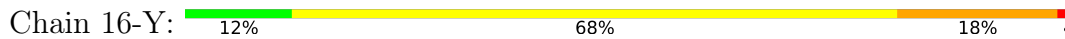


● Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE





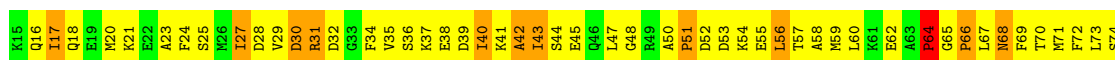
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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



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

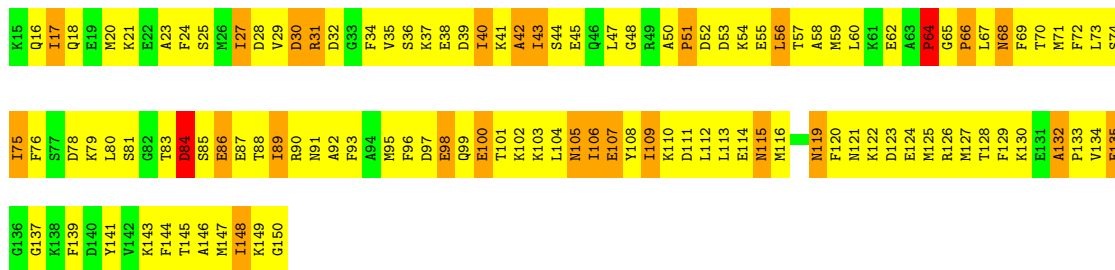


• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

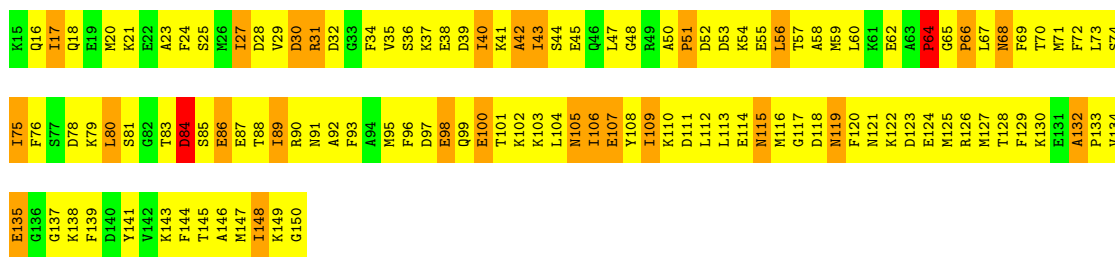




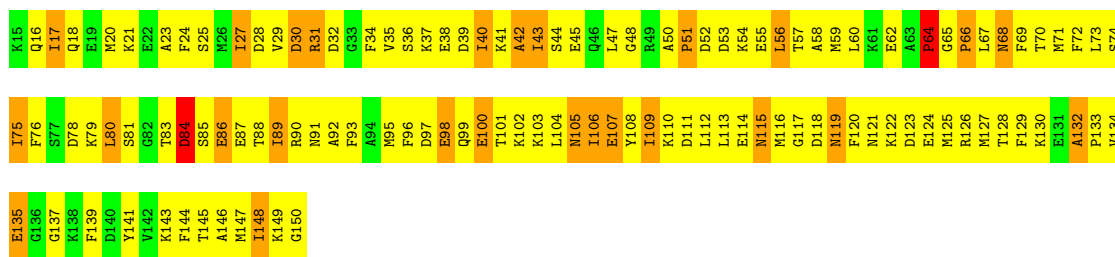
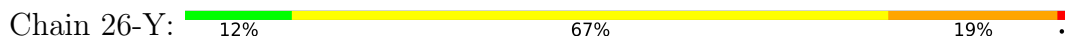




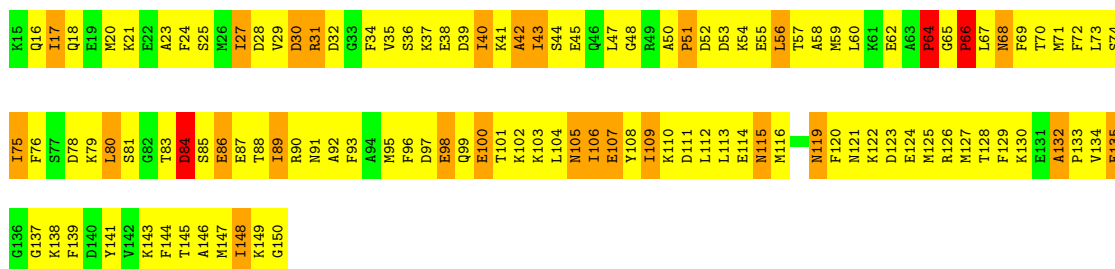
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



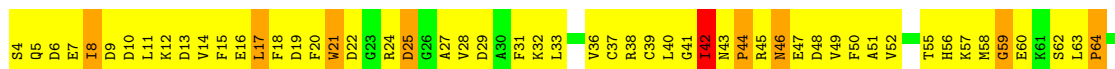
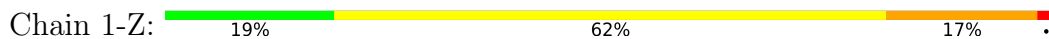
• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

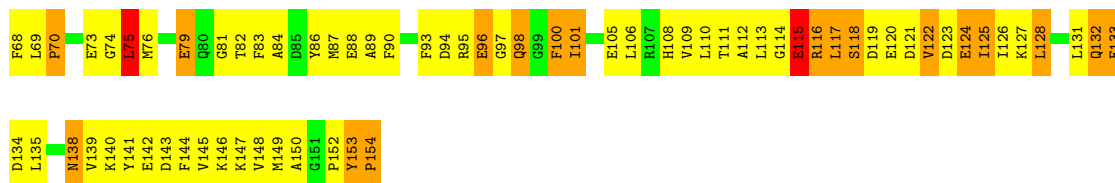


• Molecule 2: MYOSIN REGULATORY LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

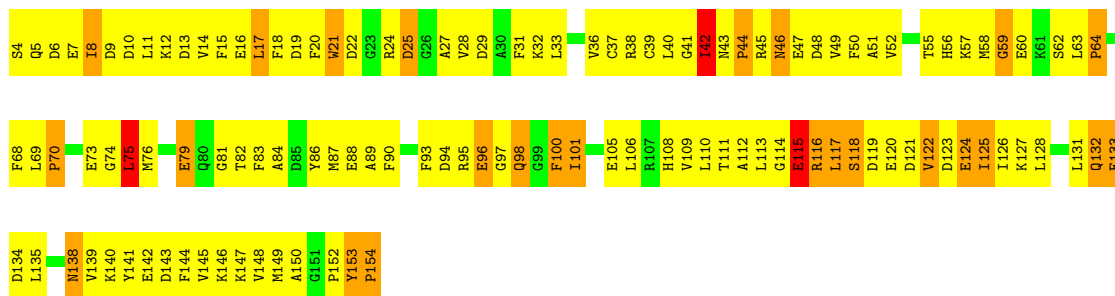
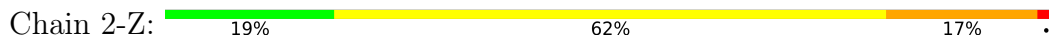


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE





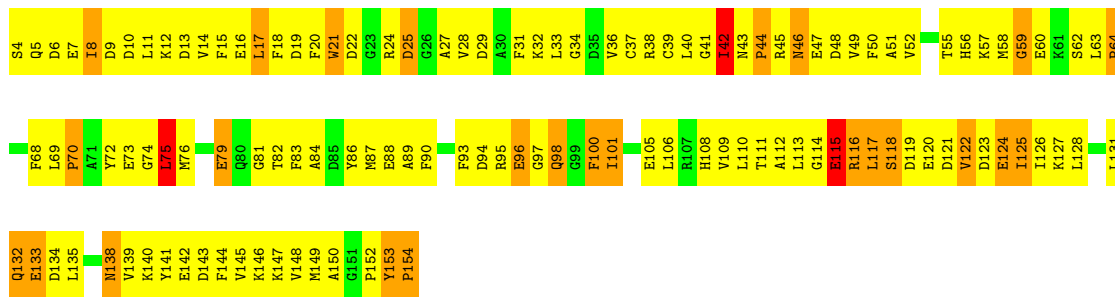
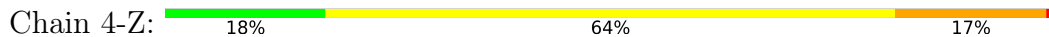
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



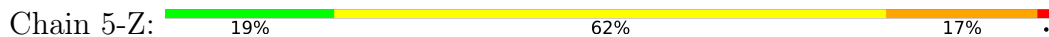
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

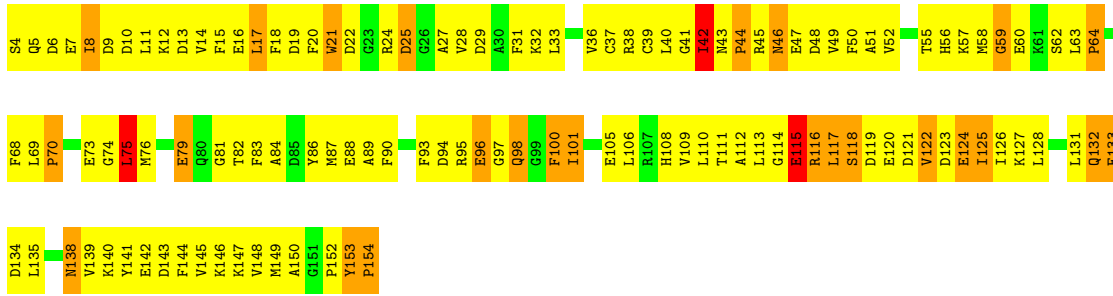


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



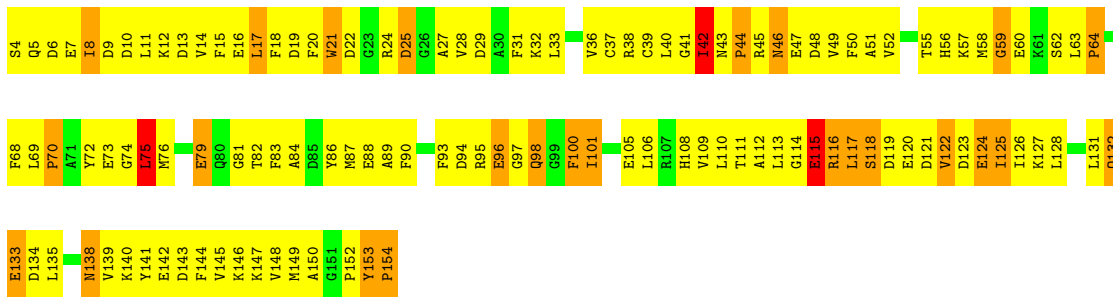
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE





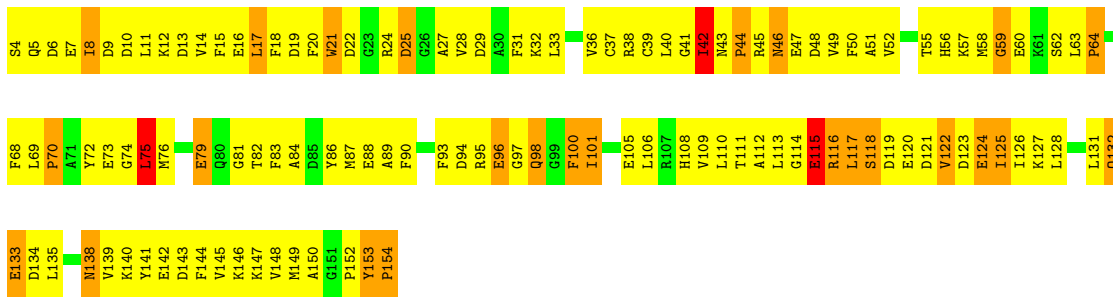
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 6-Z: 19% 63% 17%



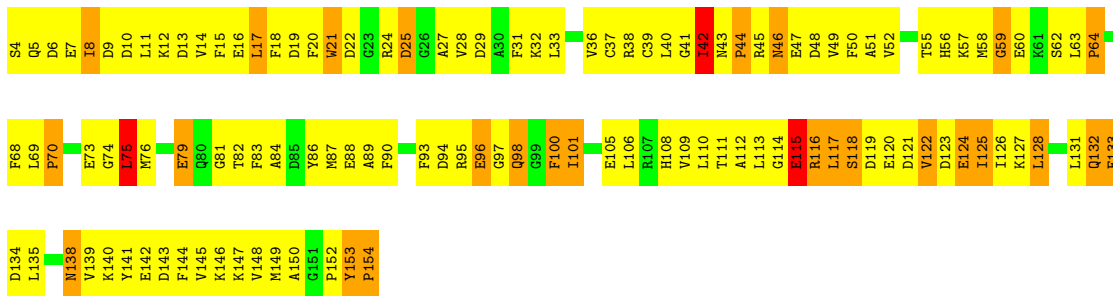
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

Chain 7-Z: 19% 63% 17%

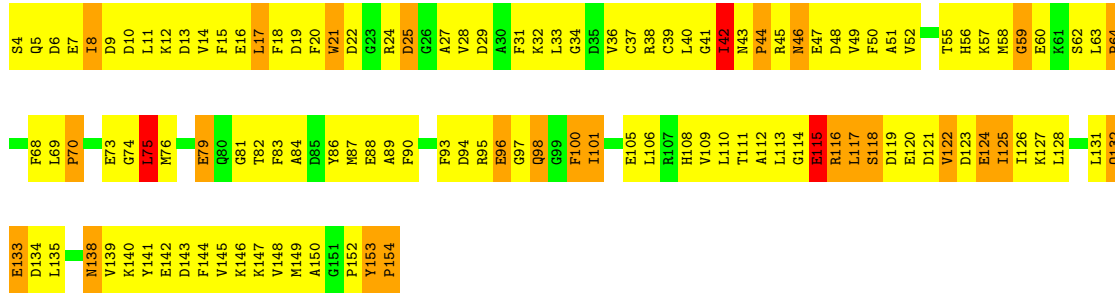
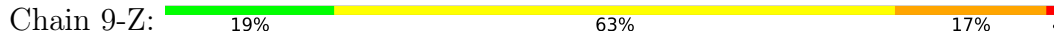


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

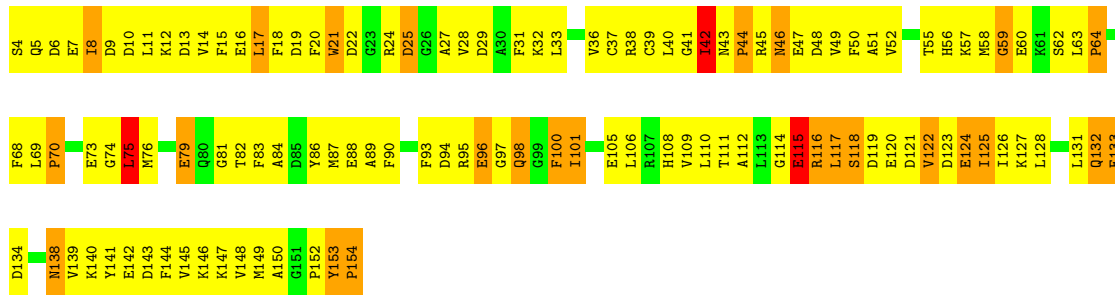
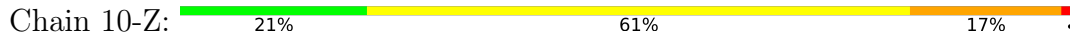
Chain 8-Z: 19% 62% 17%



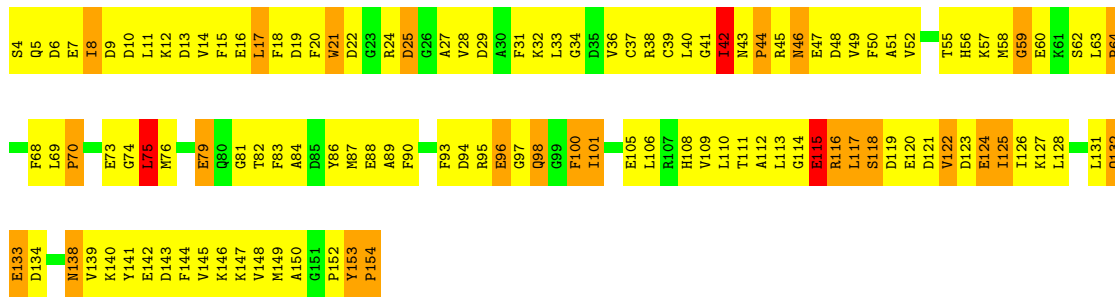
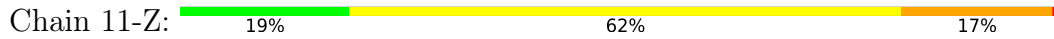
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



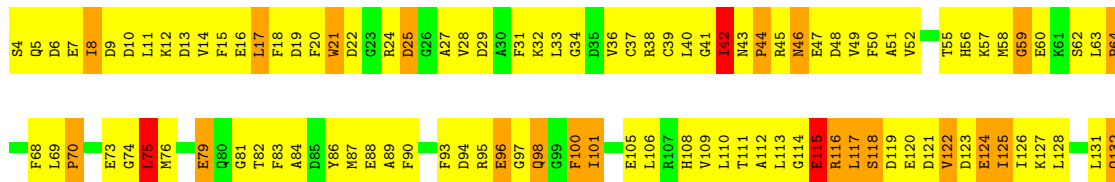
● Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

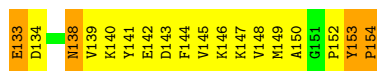


● Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

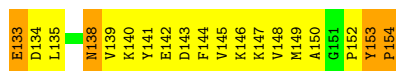
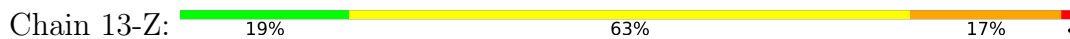


● Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

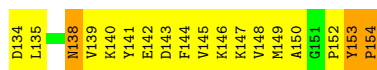
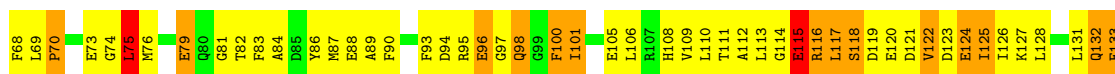
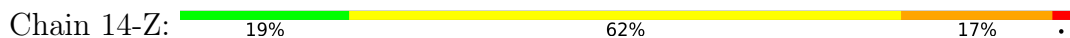




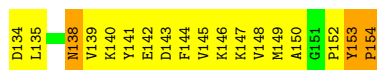
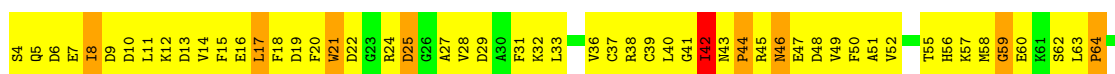
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



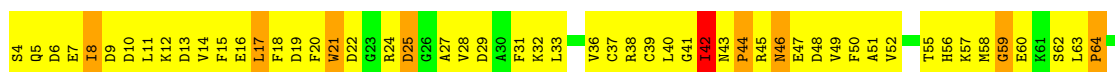
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

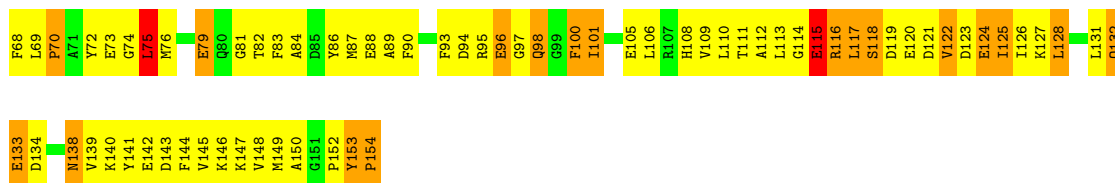


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

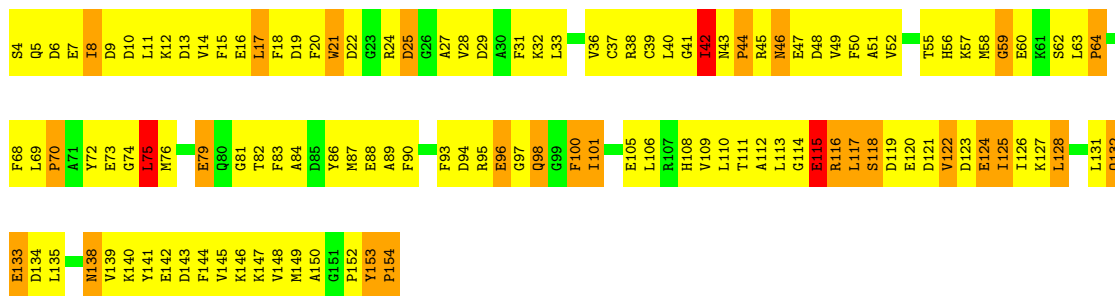
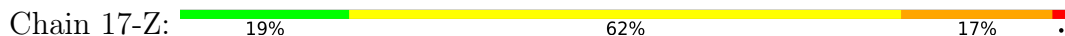


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

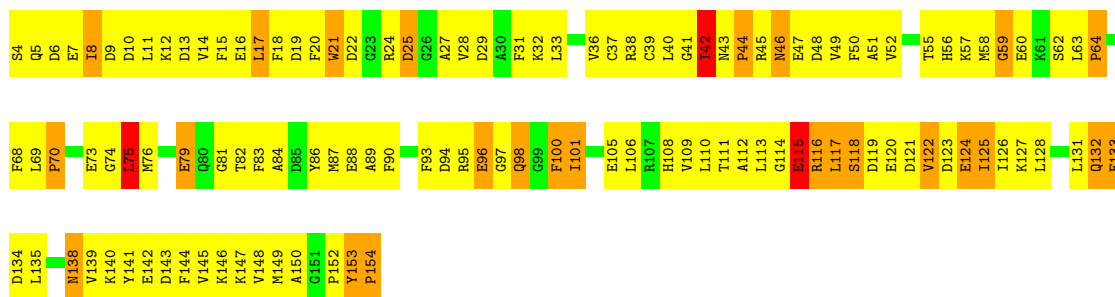




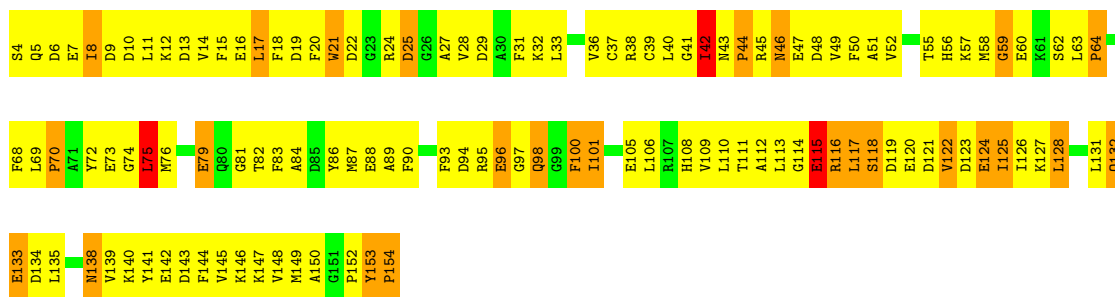
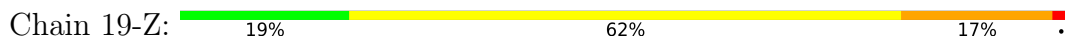
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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

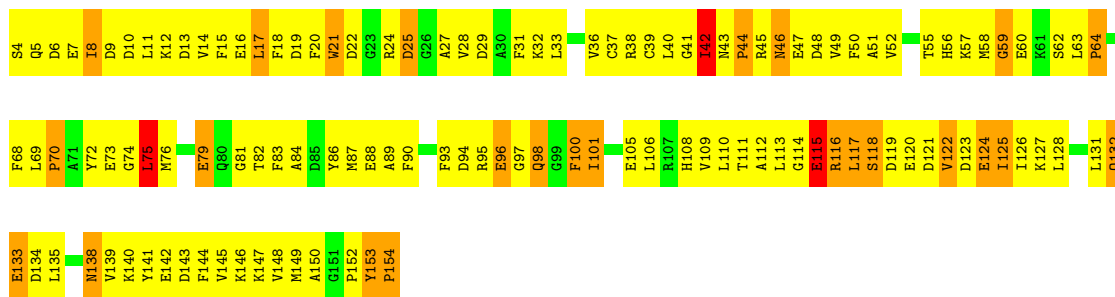


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

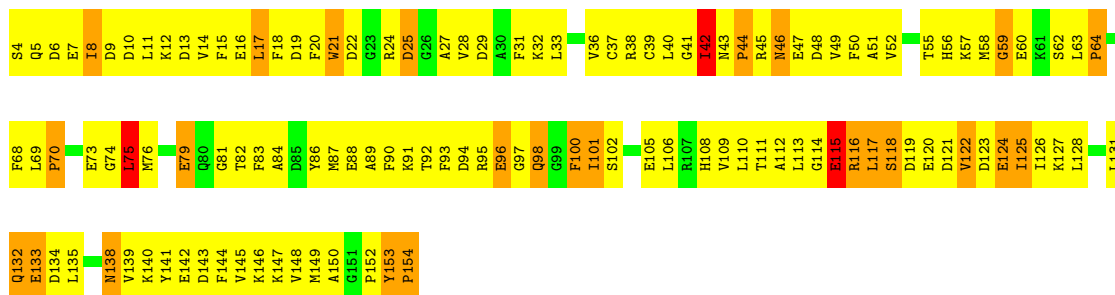


• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE

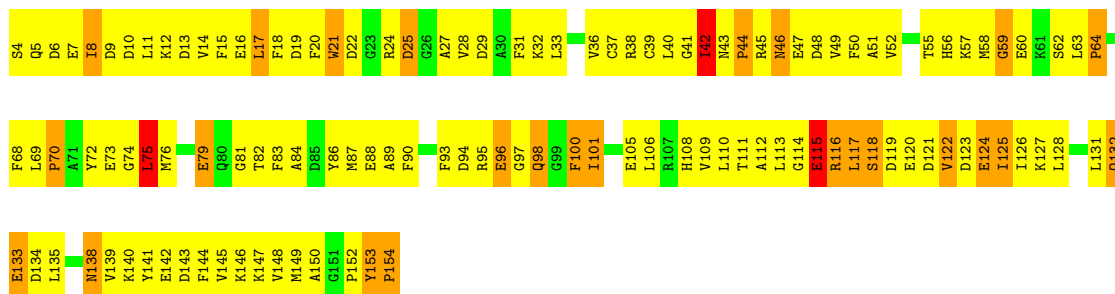




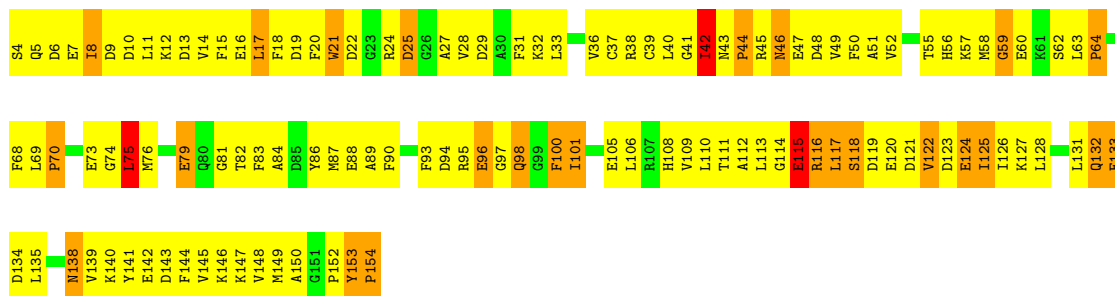
• Molecule 3: MYOSIN ESSENTIAL LIGHT CHAIN, STRIATED ADDUCTOR MUSCLE



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



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



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





|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| E133 | D134 | L135 | M138 | V139 | K140 | Y141 | E142 | D143 | F144 | V145 | K146 | K147 | V148 | M149 | A150 | G151 | P152 | Y153 | P154 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

## 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 i

### 5.1 Standard geometry i

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

| Mol | Chain | Bond lengths |                | Bond angles |                |
|-----|-------|--------------|----------------|-------------|----------------|
|     |       | RMSZ         | # Z  >5        | RMSZ        | # Z  >5        |
| 1   | 1-C   | 1.15         | 82/6339 (1.3%) | 1.30        | 31/8536 (0.4%) |
| 1   | 2-C   | 1.15         | 82/6340 (1.3%) | 1.31        | 31/8539 (0.4%) |
| 1   | 3-C   | 1.14         | 81/6340 (1.3%) | 1.29        | 29/8539 (0.3%) |
| 1   | 4-C   | 1.14         | 81/6339 (1.3%) | 1.29        | 27/8536 (0.3%) |
| 1   | 5-C   | 1.16         | 83/6340 (1.3%) | 1.29        | 30/8539 (0.4%) |
| 1   | 6-C   | 1.14         | 81/6338 (1.3%) | 1.29        | 27/8533 (0.3%) |
| 1   | 7-C   | 1.14         | 82/6340 (1.3%) | 1.29        | 29/8539 (0.3%) |
| 1   | 8-C   | 1.14         | 81/6340 (1.3%) | 1.29        | 28/8539 (0.3%) |
| 1   | 9-C   | 1.14         | 80/6340 (1.3%) | 1.29        | 28/8539 (0.3%) |
| 1   | 10-C  | 1.14         | 82/6340 (1.3%) | 1.29        | 29/8539 (0.3%) |
| 1   | 11-C  | 1.14         | 81/6340 (1.3%) | 1.29        | 29/8539 (0.3%) |
| 1   | 12-C  | 1.14         | 81/6340 (1.3%) | 1.29        | 29/8539 (0.3%) |
| 1   | 13-C  | 1.14         | 82/6340 (1.3%) | 1.29        | 30/8539 (0.4%) |
| 1   | 14-C  | 1.14         | 81/6340 (1.3%) | 1.29        | 30/8539 (0.4%) |
| 1   | 15-C  | 1.15         | 82/6340 (1.3%) | 1.34        | 33/8539 (0.4%) |
| 1   | 16-C  | 1.14         | 81/6340 (1.3%) | 1.29        | 29/8539 (0.3%) |
| 1   | 17-C  | 1.15         | 82/6339 (1.3%) | 1.30        | 33/8536 (0.4%) |
| 1   | 18-C  | 1.14         | 81/6340 (1.3%) | 1.29        | 30/8539 (0.4%) |
| 1   | 19-C  | 1.15         | 82/6340 (1.3%) | 1.30        | 33/8539 (0.4%) |
| 1   | 20-C  | 1.14         | 82/6340 (1.3%) | 1.29        | 30/8539 (0.4%) |
| 1   | 21-C  | 1.14         | 81/6340 (1.3%) | 1.29        | 29/8539 (0.3%) |
| 1   | 22-C  | 1.14         | 82/6340 (1.3%) | 1.29        | 30/8539 (0.4%) |
| 1   | 23-C  | 1.14         | 82/6340 (1.3%) | 1.29        | 30/8539 (0.4%) |
| 1   | 24-C  | 1.15         | 82/6340 (1.3%) | 1.34        | 35/8539 (0.4%) |
| 1   | 25-C  | 1.14         | 81/6340 (1.3%) | 1.29        | 30/8539 (0.4%) |
| 1   | 26-C  | 1.16         | 82/6340 (1.3%) | 1.29        | 31/8539 (0.4%) |
| 1   | 27-C  | 1.16         | 83/6340 (1.3%) | 1.30        | 32/8539 (0.4%) |
| 2   | 1-Y   | 0.80         | 9/1104 (0.8%)  | 1.06        | 2/1472 (0.1%)  |
| 2   | 2-Y   | 0.80         | 9/1104 (0.8%)  | 1.06        | 2/1472 (0.1%)  |
| 2   | 3-Y   | 0.80         | 9/1104 (0.8%)  | 1.06        | 2/1472 (0.1%)  |
| 2   | 4-Y   | 0.80         | 9/1104 (0.8%)  | 1.06        | 2/1472 (0.1%)  |
| 2   | 5-Y   | 0.80         | 9/1104 (0.8%)  | 1.06        | 2/1472 (0.1%)  |
| 2   | 6-Y   | 0.80         | 9/1104 (0.8%)  | 1.06        | 2/1472 (0.1%)  |
| 2   | 7-Y   | 0.80         | 9/1104 (0.8%)  | 1.06        | 2/1472 (0.1%)  |

| Mol | Chain | Bond lengths |                | Bond angles |               |
|-----|-------|--------------|----------------|-------------|---------------|
|     |       | RMSZ         | # Z  >5        | RMSZ        | # Z  >5       |
| 2   | 8-Y   | 0.80         | 9/1104 (0.8%)  | 1.06        | 2/1472 (0.1%) |
| 2   | 9-Y   | 0.80         | 8/1104 (0.7%)  | 1.06        | 1/1472 (0.1%) |
| 2   | 10-Y  | 0.80         | 9/1104 (0.8%)  | 1.06        | 2/1472 (0.1%) |
| 2   | 11-Y  | 0.80         | 9/1104 (0.8%)  | 1.06        | 2/1472 (0.1%) |
| 2   | 12-Y  | 0.80         | 9/1104 (0.8%)  | 1.06        | 2/1472 (0.1%) |
| 2   | 13-Y  | 0.80         | 8/1104 (0.7%)  | 1.06        | 1/1472 (0.1%) |
| 2   | 14-Y  | 0.80         | 9/1104 (0.8%)  | 1.06        | 1/1472 (0.1%) |
| 2   | 15-Y  | 0.80         | 9/1104 (0.8%)  | 1.05        | 1/1472 (0.1%) |
| 2   | 16-Y  | 0.80         | 9/1104 (0.8%)  | 1.05        | 1/1472 (0.1%) |
| 2   | 17-Y  | 0.80         | 8/1104 (0.7%)  | 1.06        | 1/1472 (0.1%) |
| 2   | 18-Y  | 0.80         | 9/1104 (0.8%)  | 1.06        | 1/1472 (0.1%) |
| 2   | 19-Y  | 0.80         | 9/1104 (0.8%)  | 1.05        | 1/1472 (0.1%) |
| 2   | 20-Y  | 0.80         | 9/1104 (0.8%)  | 1.05        | 1/1472 (0.1%) |
| 2   | 21-Y  | 0.80         | 9/1104 (0.8%)  | 1.06        | 1/1472 (0.1%) |
| 2   | 22-Y  | 0.80         | 8/1104 (0.7%)  | 1.06        | 1/1472 (0.1%) |
| 2   | 23-Y  | 0.80         | 8/1104 (0.7%)  | 1.06        | 1/1472 (0.1%) |
| 2   | 24-Y  | 0.80         | 8/1104 (0.7%)  | 1.05        | 1/1472 (0.1%) |
| 2   | 25-Y  | 0.80         | 8/1104 (0.7%)  | 1.06        | 1/1472 (0.1%) |
| 2   | 26-Y  | 0.80         | 8/1104 (0.7%)  | 1.06        | 1/1472 (0.1%) |
| 2   | 27-Y  | 0.80         | 9/1104 (0.8%)  | 1.05        | 1/1472 (0.1%) |
| 3   | 1-Z   | 0.81         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 2-Z   | 0.81         | 10/1222 (0.8%) | 1.09        | 2/1644 (0.1%) |
| 3   | 3-Z   | 0.81         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 4-Z   | 0.82         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 5-Z   | 0.81         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 6-Z   | 0.81         | 10/1222 (0.8%) | 1.09        | 2/1644 (0.1%) |
| 3   | 7-Z   | 0.81         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 8-Z   | 0.81         | 10/1222 (0.8%) | 1.09        | 2/1644 (0.1%) |
| 3   | 9-Z   | 0.81         | 10/1222 (0.8%) | 1.09        | 2/1644 (0.1%) |
| 3   | 10-Z  | 0.81         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 11-Z  | 0.81         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 12-Z  | 0.81         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 13-Z  | 0.81         | 10/1222 (0.8%) | 1.09        | 2/1644 (0.1%) |
| 3   | 14-Z  | 0.81         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 15-Z  | 0.82         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 16-Z  | 0.81         | 10/1222 (0.8%) | 1.09        | 2/1644 (0.1%) |
| 3   | 17-Z  | 0.82         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 18-Z  | 0.81         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 19-Z  | 0.82         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 20-Z  | 0.81         | 11/1222 (0.9%) | 1.09        | 2/1644 (0.1%) |
| 3   | 21-Z  | 0.81         | 11/1222 (0.9%) | 1.09        | 1/1644 (0.1%) |
| 3   | 22-Z  | 0.81         | 10/1222 (0.8%) | 1.09        | 2/1644 (0.1%) |
| 3   | 23-Z  | 0.81         | 11/1222 (0.9%) | 1.09        | 1/1644 (0.1%) |

| Mol | Chain | Bond lengths |                    | Bond angles |                   |
|-----|-------|--------------|--------------------|-------------|-------------------|
|     |       | RMSZ         | # Z  >5            | RMSZ        | # Z  >5           |
| 3   | 24-Z  | 0.81         | 10/1222 (0.8%)     | 1.09        | 2/1644 (0.1%)     |
| 3   | 25-Z  | 0.81         | 10/1222 (0.8%)     | 1.09        | 2/1644 (0.1%)     |
| 3   | 26-Z  | 0.81         | 10/1222 (0.8%)     | 1.09        | 2/1644 (0.1%)     |
| 3   | 27-Z  | 0.82         | 11/1222 (0.9%)     | 1.09        | 2/1644 (0.1%)     |
| All | All   | 1.06         | 2725/233977 (1.2%) | 1.24        | 902/314670 (0.3%) |

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

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

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| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 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                   |
| All | All   | 0                   | 148                 |

The worst 5 of 2725 bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 1   | 16-C  | 462 | ALA  | C-N   | 33.23 | 1.92        | 1.33     |
| 1   | 15-C  | 462 | ALA  | C-N   | 33.21 | 1.92        | 1.33     |
| 1   | 17-C  | 462 | ALA  | C-N   | 33.21 | 1.92        | 1.33     |
| 1   | 19-C  | 462 | ALA  | C-N   | 33.21 | 1.92        | 1.33     |
| 1   | 20-C  | 462 | ALA  | C-N   | 33.21 | 1.92        | 1.33     |

The worst 5 of 902 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------|--------|-------------|----------|
| 1   | 15-C  | 705 | LYS  | O-C-N | -27.34 | 76.73       | 123.20   |
| 1   | 24-C  | 705 | LYS  | O-C-N | -27.34 | 76.73       | 123.20   |
| 1   | 23-C  | 709 | SER  | O-C-N | 27.20  | 166.23      | 122.70   |
| 1   | 14-C  | 709 | SER  | O-C-N | 27.19  | 166.20      | 122.70   |

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| Mol | Chain | Res | Type | Atoms | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 1   | 18-C  | 709 | SER  | O-C-N | 27.19 | 166.20      | 122.70   |

There are no chirality outliers.

5 of 148 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   | 76  | SER  | Mainchain |
| 1   | 1-C   | 824 | TRP  | Mainchain |
| 2   | 1-Y   | 84  | ASP  | Mainchain |

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

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | 1-C   | 6215  | 0        | 6168     | 2801    | 0            |
| 1   | 2-C   | 6215  | 0        | 6174     | 2730    | 0            |
| 1   | 3-C   | 6215  | 0        | 6185     | 2593    | 0            |
| 1   | 4-C   | 6215  | 0        | 6176     | 2764    | 0            |
| 1   | 5-C   | 6215  | 0        | 6182     | 2606    | 0            |
| 1   | 6-C   | 6215  | 0        | 6180     | 2671    | 0            |
| 1   | 7-C   | 6215  | 0        | 6181     | 2610    | 0            |
| 1   | 8-C   | 6215  | 0        | 6179     | 2653    | 0            |
| 1   | 9-C   | 6215  | 0        | 6185     | 2597    | 0            |
| 1   | 10-C  | 6215  | 0        | 6183     | 2596    | 0            |
| 1   | 11-C  | 6215  | 0        | 6185     | 2593    | 0            |
| 1   | 12-C  | 6215  | 0        | 6185     | 2593    | 0            |
| 1   | 13-C  | 6215  | 0        | 6167     | 2821    | 0            |
| 1   | 14-C  | 6215  | 0        | 6185     | 2599    | 0            |
| 1   | 15-C  | 6215  | 0        | 6168     | 2778    | 0            |
| 1   | 16-C  | 6215  | 0        | 6185     | 2591    | 0            |
| 1   | 17-C  | 6215  | 0        | 6173     | 2811    | 0            |
| 1   | 18-C  | 6215  | 0        | 6185     | 2599    | 0            |
| 1   | 19-C  | 6215  | 0        | 6176     | 2664    | 0            |
| 1   | 20-C  | 6215  | 0        | 6184     | 2596    | 0            |
| 1   | 21-C  | 6215  | 0        | 6162     | 2939    | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | 22-C  | 6215  | 0        | 6182     | 2642    | 0            |
| 1   | 23-C  | 6215  | 0        | 6185     | 2594    | 0            |
| 1   | 24-C  | 6215  | 0        | 6168     | 2770    | 0            |
| 1   | 25-C  | 6215  | 0        | 6172     | 2712    | 0            |
| 1   | 26-C  | 6215  | 0        | 6185     | 2588    | 0            |
| 1   | 27-C  | 6215  | 0        | 6176     | 2716    | 0            |
| 2   | 1-Y   | 1088  | 0        | 1066     | 501     | 0            |
| 2   | 2-Y   | 1088  | 0        | 1066     | 474     | 0            |
| 2   | 3-Y   | 1088  | 0        | 1066     | 471     | 0            |
| 2   | 4-Y   | 1088  | 0        | 1066     | 497     | 0            |
| 2   | 5-Y   | 1088  | 0        | 1066     | 476     | 0            |
| 2   | 6-Y   | 1088  | 0        | 1066     | 475     | 0            |
| 2   | 7-Y   | 1088  | 0        | 1066     | 472     | 0            |
| 2   | 8-Y   | 1088  | 0        | 1066     | 471     | 0            |
| 2   | 9-Y   | 1088  | 0        | 1066     | 467     | 0            |
| 2   | 10-Y  | 1088  | 0        | 1066     | 474     | 0            |
| 2   | 11-Y  | 1088  | 0        | 1066     | 471     | 0            |
| 2   | 12-Y  | 1088  | 0        | 1066     | 471     | 0            |
| 2   | 13-Y  | 1088  | 0        | 1066     | 472     | 0            |
| 2   | 14-Y  | 1088  | 0        | 1066     | 474     | 0            |
| 2   | 15-Y  | 1088  | 0        | 1066     | 470     | 0            |
| 2   | 16-Y  | 1088  | 0        | 1066     | 475     | 0            |
| 2   | 17-Y  | 1088  | 0        | 1065     | 503     | 0            |
| 2   | 18-Y  | 1088  | 0        | 1066     | 474     | 0            |
| 2   | 19-Y  | 1088  | 0        | 1066     | 474     | 0            |
| 2   | 20-Y  | 1088  | 0        | 1066     | 475     | 0            |
| 2   | 21-Y  | 1088  | 0        | 1066     | 467     | 0            |
| 2   | 22-Y  | 1088  | 0        | 1066     | 475     | 0            |
| 2   | 23-Y  | 1088  | 0        | 1066     | 472     | 0            |
| 2   | 24-Y  | 1088  | 0        | 1066     | 465     | 0            |
| 2   | 25-Y  | 1088  | 0        | 1066     | 468     | 0            |
| 2   | 26-Y  | 1088  | 0        | 1066     | 471     | 0            |
| 2   | 27-Y  | 1088  | 0        | 1066     | 475     | 0            |
| 3   | 1-Z   | 1198  | 0        | 1119     | 509     | 0            |
| 3   | 2-Z   | 1198  | 0        | 1120     | 499     | 0            |
| 3   | 3-Z   | 1198  | 0        | 1120     | 496     | 0            |
| 3   | 4-Z   | 1198  | 0        | 1119     | 508     | 0            |
| 3   | 5-Z   | 1198  | 0        | 1120     | 498     | 0            |
| 3   | 6-Z   | 1198  | 0        | 1120     | 505     | 0            |
| 3   | 7-Z   | 1198  | 0        | 1120     | 505     | 0            |
| 3   | 8-Z   | 1198  | 0        | 1120     | 500     | 0            |
| 3   | 9-Z   | 1198  | 0        | 1120     | 498     | 0            |

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| Mol | Chain | Non-H  | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 3   | 10-Z  | 1198   | 0        | 1120     | 497     | 0            |
| 3   | 11-Z  | 1198   | 0        | 1120     | 496     | 0            |
| 3   | 12-Z  | 1198   | 0        | 1120     | 496     | 0            |
| 3   | 13-Z  | 1198   | 0        | 1120     | 541     | 0            |
| 3   | 14-Z  | 1198   | 0        | 1120     | 502     | 0            |
| 3   | 15-Z  | 1198   | 0        | 1120     | 507     | 0            |
| 3   | 16-Z  | 1198   | 0        | 1120     | 504     | 0            |
| 3   | 17-Z  | 1198   | 0        | 1118     | 538     | 0            |
| 3   | 18-Z  | 1198   | 0        | 1120     | 502     | 0            |
| 3   | 19-Z  | 1198   | 0        | 1120     | 501     | 0            |
| 3   | 20-Z  | 1198   | 0        | 1120     | 505     | 0            |
| 3   | 21-Z  | 1198   | 0        | 1118     | 619     | 0            |
| 3   | 22-Z  | 1198   | 0        | 1120     | 507     | 0            |
| 3   | 23-Z  | 1198   | 0        | 1120     | 506     | 0            |
| 3   | 24-Z  | 1198   | 0        | 1120     | 512     | 0            |
| 3   | 25-Z  | 1198   | 0        | 1118     | 526     | 0            |
| 3   | 26-Z  | 1198   | 0        | 1120     | 504     | 0            |
| 3   | 27-Z  | 1198   | 0        | 1120     | 501     | 0            |
| All | All   | 229527 | 0        | 225829   | 94003   | 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 206.

The worst 5 of 94003 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:536:GLU:CB | 1:C:547:PHE:HE1 | 1.04                     | 1.67              |
| 1:C:536:GLU:CB | 1:C:547:PHE:HE1 | 1.04                     | 1.67              |
| 1:C:536:GLU:CB | 1:C:547:PHE:HE1 | 1.04                     | 1.67              |
| 1:C:536:GLU:CB | 1:C:547:PHE:HE1 | 1.04                     | 1.67              |
| 1:C:536:GLU:CB | 1:C:547:PHE:HE1 | 1.04                     | 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   | 756/831 (91%) | 604 (80%) | 113 (15%) | 39 (5%)  | 2           | 19 |
| 1   | 2-C   | 758/831 (91%) | 607 (80%) | 113 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 3-C   | 758/831 (91%) | 606 (80%) | 114 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 4-C   | 756/831 (91%) | 604 (80%) | 113 (15%) | 39 (5%)  | 2           | 19 |
| 1   | 5-C   | 758/831 (91%) | 606 (80%) | 113 (15%) | 39 (5%)  | 2           | 19 |
| 1   | 6-C   | 754/831 (91%) | 604 (80%) | 112 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 7-C   | 758/831 (91%) | 606 (80%) | 113 (15%) | 39 (5%)  | 2           | 19 |
| 1   | 8-C   | 758/831 (91%) | 607 (80%) | 113 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 9-C   | 758/831 (91%) | 605 (80%) | 115 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 10-C  | 758/831 (91%) | 605 (80%) | 114 (15%) | 39 (5%)  | 2           | 19 |
| 1   | 11-C  | 758/831 (91%) | 606 (80%) | 114 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 12-C  | 758/831 (91%) | 606 (80%) | 114 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 13-C  | 758/831 (91%) | 608 (80%) | 112 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 14-C  | 758/831 (91%) | 607 (80%) | 113 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 15-C  | 758/831 (91%) | 607 (80%) | 112 (15%) | 39 (5%)  | 2           | 19 |
| 1   | 16-C  | 758/831 (91%) | 607 (80%) | 113 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 17-C  | 756/831 (91%) | 604 (80%) | 113 (15%) | 39 (5%)  | 2           | 19 |
| 1   | 18-C  | 758/831 (91%) | 607 (80%) | 113 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 19-C  | 758/831 (91%) | 607 (80%) | 113 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 20-C  | 758/831 (91%) | 606 (80%) | 113 (15%) | 39 (5%)  | 2           | 19 |
| 1   | 21-C  | 758/831 (91%) | 607 (80%) | 113 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 22-C  | 758/831 (91%) | 607 (80%) | 113 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 23-C  | 758/831 (91%) | 606 (80%) | 114 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 24-C  | 758/831 (91%) | 606 (80%) | 113 (15%) | 39 (5%)  | 2           | 19 |
| 1   | 25-C  | 758/831 (91%) | 608 (80%) | 112 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 26-C  | 758/831 (91%) | 606 (80%) | 114 (15%) | 38 (5%)  | 2           | 20 |
| 1   | 27-C  | 758/831 (91%) | 606 (80%) | 114 (15%) | 38 (5%)  | 2           | 20 |
| 2   | 1-Y   | 134/136 (98%) | 95 (71%)  | 33 (25%)  | 6 (4%)   | 2           | 22 |
| 2   | 2-Y   | 134/136 (98%) | 95 (71%)  | 33 (25%)  | 6 (4%)   | 2           | 22 |
| 2   | 3-Y   | 134/136 (98%) | 95 (71%)  | 33 (25%)  | 6 (4%)   | 2           | 22 |

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

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| Mol | Chain | Analysed          | Favoured    | Allowed    | Outliers  | Percentiles |    |
|-----|-------|-------------------|-------------|------------|-----------|-------------|----|
| 3   | 8-Z   | 149/151 (99%)     | 104 (70%)   | 35 (24%)   | 10 (7%)   | 1           | 15 |
| 3   | 9-Z   | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 10-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 11-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 12-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 13-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 14-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 15-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 16-Z  | 149/151 (99%)     | 104 (70%)   | 35 (24%)   | 10 (7%)   | 1           | 15 |
| 3   | 17-Z  | 149/151 (99%)     | 104 (70%)   | 35 (24%)   | 10 (7%)   | 1           | 15 |
| 3   | 18-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 19-Z  | 149/151 (99%)     | 104 (70%)   | 35 (24%)   | 10 (7%)   | 1           | 15 |
| 3   | 20-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 21-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 22-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 23-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 24-Z  | 149/151 (99%)     | 104 (70%)   | 35 (24%)   | 10 (7%)   | 1           | 15 |
| 3   | 25-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 26-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| 3   | 27-Z  | 149/151 (99%)     | 104 (70%)   | 36 (24%)   | 9 (6%)    | 1           | 17 |
| All | All   | 28097/30186 (93%) | 21738 (77%) | 4913 (18%) | 1446 (5%) | 4           | 19 |

5 of 1446 Ramachandran outliers are listed below:

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

### 5.3.2 Protein sidechains [i](#)

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

entries.

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

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

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| Mol | Chain | Analysed       | Rotameric | Outliers | Percentiles |    |
|-----|-------|----------------|-----------|----------|-------------|----|
| 2   | 3-Y   | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 4-Y   | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 5-Y   | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 6-Y   | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 7-Y   | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 8-Y   | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 9-Y   | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 10-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 11-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 12-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 13-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 14-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 15-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 16-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 17-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 18-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 19-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 20-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 21-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 22-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 23-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 24-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 25-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 26-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 2   | 27-Y  | 119/119 (100%) | 100 (84%) | 19 (16%) | 2           | 13 |
| 3   | 1-Z   | 127/127 (100%) | 111 (87%) | 16 (13%) | 4           | 19 |
| 3   | 2-Z   | 127/127 (100%) | 111 (87%) | 16 (13%) | 4           | 19 |
| 3   | 3-Z   | 127/127 (100%) | 111 (87%) | 16 (13%) | 4           | 19 |
| 3   | 4-Z   | 127/127 (100%) | 111 (87%) | 16 (13%) | 4           | 19 |
| 3   | 5-Z   | 127/127 (100%) | 111 (87%) | 16 (13%) | 4           | 19 |
| 3   | 6-Z   | 127/127 (100%) | 111 (87%) | 16 (13%) | 4           | 19 |

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| Mol | Chain | Analysed          | Rotameric   | Outliers   | Percentiles |    |
|-----|-------|-------------------|-------------|------------|-------------|----|
| 3   | 7-Z   | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 8-Z   | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 9-Z   | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 10-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 11-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 12-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 13-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 14-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 15-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 16-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 17-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 18-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 19-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 20-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 21-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 22-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 23-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 24-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 25-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 26-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| 3   | 27-Z  | 127/127 (100%)    | 111 (87%)   | 16 (13%)   | 4           | 19 |
| All | All   | 24948/26190 (95%) | 21114 (85%) | 3834 (15%) | 6           | 14 |

5 of 3834 residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | 14-C  | 47  | GLU  |
| 3   | 25-Z  | 125 | ILE  |
| 1   | 17-C  | 140 | TYR  |
| 1   | 25-C  | 793 | LEU  |
| 1   | 27-C  | 726 | ASN  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 1296 such sidechains are listed below:



| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | 20-C  | 291 | ASN  |
| 3   | 24-Z  | 43  | ASN  |
| 2   | 20-Y  | 91  | ASN  |
| 1   | 20-C  | 283 | HIS  |
| 1   | 22-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 monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

### 5.7 Other polymers [i](#)

There are no such residues in this entry.

### 5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 1   | 6-C   | 12               |
| 1   | 1-C   | 12               |
| 1   | 17-C  | 12               |
| 1   | 4-C   | 11               |
| 1   | 2-C   | 11               |
| 1   | 5-C   | 11               |
| 1   | 7-C   | 11               |
| 1   | 19-C  | 11               |

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| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 1   | 26-C  | 11               |
| 1   | 27-C  | 11               |
| 1   | 3-C   | 10               |
| 1   | 8-C   | 10               |
| 1   | 9-C   | 10               |
| 1   | 10-C  | 10               |
| 1   | 11-C  | 10               |
| 1   | 12-C  | 10               |
| 1   | 13-C  | 10               |
| 1   | 14-C  | 10               |
| 1   | 15-C  | 10               |
| 1   | 16-C  | 10               |
| 1   | 18-C  | 10               |
| 1   | 20-C  | 10               |
| 1   | 21-C  | 10               |
| 1   | 22-C  | 10               |
| 1   | 23-C  | 10               |
| 1   | 24-C  | 10               |
| 1   | 25-C  | 10               |

The worst 5 of 283 chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 6     | C     | 800:LYS   | C      | 801:LEU   | N      | 2.57         |
| 6     | C     | 705:LYS   | C      | 706:GLY   | N      | 2.32         |
| 1     | C     | 800:LYS   | C      | 801:LEU   | N      | 2.23         |
| 4     | C     | 800:LYS   | C      | 801:LEU   | N      | 2.23         |
| 17    | C     | 800:LYS   | C      | 801:LEU   | N      | 2.19         |

## 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 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.