



wwPDB EM Validation Summary Report ⓘ

Nov 28, 2022 – 11:02 PM EST

PDB ID : 7TBM
EMDB ID : EMD-11967
Title : Composite structure of the dilated human nuclear pore complex (NPC) generated with a 37Å in situ cryo-ET map of CD4+ T cell NPC
Authors : Bley, C.J.; Nie, S.; Mobbs, G.W.; Petrovic, S.; Gres, A.T.; Liu, X.; Mukherjee, S.; Harvey, S.; Huber, F.M.; Lin, D.H.; Brown, B.; Tang, A.W.; Rundlet, E.J.; Correia, A.R.; Chen, S.; Regmi, S.G.; Stevens, T.A.; Jette, C.A.; Dasso, M.; Patke, A.; Palazzo, A.F.; Kossiakoff, A.A.; Hoelz, A.
Deposited on : 2021-12-22
Resolution : 37.00 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

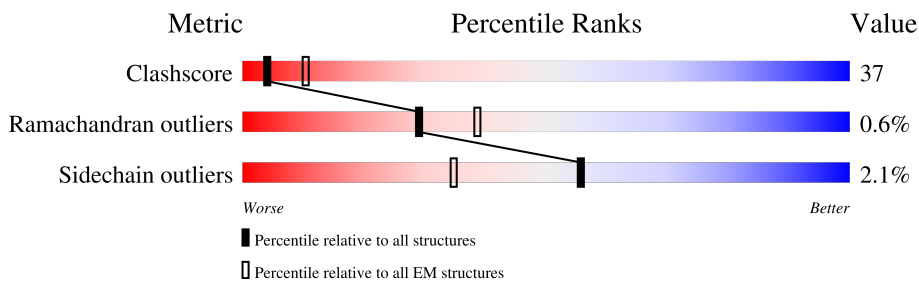
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 37.00 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 ≥ 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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 1 | A1 | 1316 | <div style="display: flex; justify-content: space-between;"> 36% 87% 7% 6% </div> |
| 1 | A3 | 1316 | <div style="display: flex; justify-content: space-between;"> 78% 79% 14% 6% </div> |
| 2 | A2 | 1328 | <div style="display: flex; justify-content: space-between;"> 53% 73% 20% •• </div> |
| 2 | A4 | 1328 | <div style="display: flex; justify-content: space-between;"> 86% 60% 32% •• </div> |
| 3 | A5 | 1330 | <div style="display: flex; justify-content: space-between;"> 50% 81% 14% • </div> |
| 3 | A6 | 1330 | <div style="display: flex; justify-content: space-between;"> 85% 61% 35% • </div> |
| 4 | B1 | 14 | <div style="display: flex; justify-content: space-between;"> 79% 93% 7% </div> |
| 4 | B2 | 14 | <div style="display: flex; justify-content: space-between;"> 57% 43% </div> |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--------------------------|
| 4 | B3 | 14 | 100% 93% 7% |
| 4 | B4 | 14 | 100% 57% 43% |
| 4 | B5 | 14 | 71% 29% |
| 4 | B6 | 14 | 100% 7% 93% |
| 5 | C1 | 19 | 84% 5% 11% |
| 5 | C2 | 19 | 26% 100% |
| 5 | C3 | 19 | 89% 84% 5% 11% |
| 5 | C4 | 19 | 11% 68% 32% |
| 5 | C5 | 19 | 21% 58% 32% 11% |
| 5 | C6 | 19 | 89% 58% 32% 11% |
| 6 | D1 | 644 | 60% 70% 27% . |
| 6 | D2 | 644 | 55% 83% 14% . |
| 6 | D3 | 644 | 76% 64% 33% . |
| 6 | D4 | 644 | 96% 83% 14% . |
| 6 | D5 | 644 | 42% 84% 13% . |
| 6 | D6 | 644 | 81% 82% 14% . |
| 6 | D7 | 644 | 96% 81% 15% . |
| 7 | E1 | 8 | 25% 75% 25% |
| 7 | E2 | 8 | 25% 75% 25% |
| 7 | E3 | 8 | 100% 75% 25% |
| 7 | E4 | 8 | 100% 75% 25% |
| 7 | E5 | 8 | 12% 75% 25% |
| 7 | E6 | 8 | 100% 75% 25% |
| 7 | E7 | 8 | 100% 75% 25% |
| 8 | F1 | 1858 | 67% 81% 7% 12% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--------------------|
| 8 | F2 | 1858 | 84% 81% 7% 12% |
| 9 | G1 | 53 | 91% 68% 32% |
| 9 | G2 | 53 | 100% 85% 15% |
| 10 | H1 | 13 | 92% |
| 10 | H2 | 13 | 100% |
| 11 | I1 | 1756 | 49% 68% 20% 12% |
| 11 | I2 | 1756 | 73% 68% 20% 12% |
| 11 | I3 | 1756 | 67% 79% 9% 12% |
| 11 | I4 | 1756 | 35% 80% 8% 12% |
| 11 | I5 | 1756 | 88% 78% 10% 12% |
| 12 | J1 | 63 | 70% 71% 29% |
| 12 | J2 | 63 | 65% 73% 27% |
| 12 | J3 | 63 | 46% 78% 22% |
| 12 | J4 | 63 | 76% 79% 21% |
| 12 | J5 | 63 | 100% 79% 21% |
| 13 | K1 | 9 | 100% |
| 13 | K2 | 9 | 100% |
| 13 | K3 | 9 | 100% |
| 13 | K4 | 9 | 100% |
| 13 | K5 | 9 | 100% |
| 14 | L1 | 2 | 100% |
| 14 | L2 | 2 | 100% |
| 14 | L3 | 2 | 100% |
| 14 | L4 | 2 | 100% |
| 14 | L5 | 2 | 100% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--------------------|
| 15 | M1 | 183 | 41% 63% 29% 8% |
| 15 | M2 | 183 | 56% 87% 5% 8% |
| 15 | M3 | 183 | 77% 64% 28% 8% |
| 15 | M4 | 183 | 81% 90% 8% |
| 16 | N1 | 222 | 36% 59% 22% 19% |
| 16 | N2 | 222 | 44% 74% 7% 19% |
| 16 | N3 | 222 | 55% 61% 20% 19% |
| 16 | N4 | 222 | 61% 78% 19% |
| 17 | O1 | 241 | 54% 68% 32% |
| 17 | O2 | 241 | 66% 79% 21% |
| 17 | O3 | 241 | 82% 65% 35% |
| 17 | O4 | 241 | 98% 81% 19% |
| 18 | P1 | 116 | 80% 91% 9% |
| 18 | P2 | 116 | 100% 94% 6% |
| 18 | P3 | 116 | 100% 91% 9% |
| 18 | P4 | 116 | 100% 91% 9% |
| 19 | Q1 | 84 | 95% 93% 6% |
| 19 | Q2 | 84 | 65% 87% 8% 5% |
| 19 | Q3 | 84 | 50% 93% 6% |
| 19 | Q4 | 84 | 21% 87% 8% 5% |
| 20 | R1 | 40 | 72% 35% 65% |
| 20 | R2 | 40 | 55% 92% 8% |
| 20 | R3 | 40 | 60% 30% 70% |
| 20 | R4 | 40 | 62% 92% 8% |
| 21 | S1 | 1156 | 70% 58% 18% 22% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--------------------|
| 21 | S2 | 1156 | 59% 59% 17% 22% |
| 21 | S3 | 1156 | 67% 59% 16% 22% |
| 21 | S4 | 1156 | 78% 60% 16% 22% |
| 22 | T1 | 258 | 45% 64% 30% |
| 22 | T2 | 258 | 69% 63% 31% |
| 22 | T3 | 258 | 76% 62% 32% |
| 22 | T4 | 258 | 72% 62% 31% |
| 23 | U1 | 436 | 61% 71% 22% |
| 23 | U2 | 436 | 96% 71% 22% |
| 23 | U3 | 436 | 96% 70% 22% |
| 23 | U4 | 436 | 60% 70% 22% |
| 24 | V1 | 621 | 35% 59% 20% 18% |
| 24 | V2 | 621 | 82% 59% 21% 18% |
| 24 | V3 | 621 | 80% 58% 21% 18% |
| 24 | V4 | 621 | 31% 58% 21% 18% |
| 25 | W1 | 286 | 63% 65% 27% |
| 25 | W2 | 286 | 96% 64% 29% |
| 25 | W3 | 286 | 88% 66% 26% |
| 25 | W4 | 286 | 89% 61% 32% |
| 26 | X1 | 698 | 61% 65% 22% 11% |
| 26 | X2 | 698 | 89% 66% 21% 11% |
| 26 | X3 | 698 | 86% 66% 22% 11% |
| 26 | X4 | 698 | 88% 66% 22% 11% |
| 27 | Y1 | 346 | 7% 62% 26% 11% |
| 27 | Y2 | 346 | 80% 63% 25% 11% |

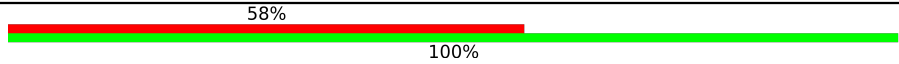

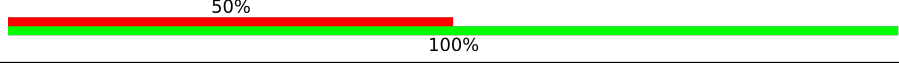
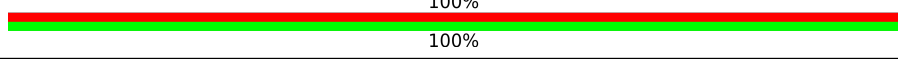
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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--------------------|
| 27 | Y3 | 346 | 89% 63% 25% 11% |
| 27 | Y4 | 346 | 89% 61% 27% 11% |
| 28 | Z1 | 1037 | 31% 71% 15% 14% |
| 28 | Z2 | 1037 | 80% 66% 20% 14% |
| 28 | Z3 | 1037 | 73% 71% 15% 14% |
| 28 | Z4 | 1037 | 45% 67% 18% 14% |
| 29 | a1 | 380 | 64% 82% 17% |
| 29 | a2 | 380 | 23% 82% 17% |
| 29 | a3 | 380 | 83% 82% 17% |
| 29 | a4 | 380 | 83% 82% 17% |
| 30 | b1 | 385 | 58% 83% 6% 11% |
| 30 | b2 | 385 | 85% 83% 6% 11% |
| 30 | b3 | 385 | 89% 83% 6% 11% |
| 30 | b4 | 385 | 31% 83% 6% 11% |
| 31 | c1 | 750 | 45% 99% |
| 31 | c2 | 750 | 84% 99% |
| 31 | c3 | 750 | 45% 99% |
| 31 | c4 | 750 | 68% 99% |
| 31 | c5 | 750 | 55% 99% |
| 32 | g | 421 | 100% 95% 5% |
| 33 | h | 232 | 100% 94% 5% |
| 34 | i | 481 | 44% 85% 15% |
| 35 | j | 150 | 92% 99% |
| 36 | k1 | 85 | 58% 87% 13% |
| 37 | k2 | 37 | 32% 97% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|---|
| 38 | l1 | 92 |  <p>58% 100%</p> |
| 39 | l2 | 39 |  <p>77% 100%</p> |
| 40 | m1 | 88 |  <p>50% 100%</p> |
| 41 | m2 | 20 |  <p>100% 100%</p> |

2 Entry composition [i](#)

There are 41 unique types of molecules in this entry. The entry contains 400581 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 NUP155.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|---------------|-----------|-----------|-----------|---------|---------|-------|
| | | | Total | C | N | O | S | | |
| 1 | A1 | 1231 | Total 9730 | C 6152 | N 1707 | O 1843 | S 28 | 1 | 0 |
| 1 | A3 | 1231 | Total 9730 | C 6152 | N 1707 | O 1843 | S 28 | 1 | 0 |

- Molecule 2 is a protein called NUP155.

| Mol | Chain | Residues | Atoms | | | | | | AltConf | Trace |
|-----|-------|----------|---------------|-----------|-----------|-----------|---------|----------|---------|-------|
| | | | Total | C | N | O | S | Se | | |
| 2 | A2 | 1269 | Total 9946 | C 6277 | N 1745 | O 1890 | S 22 | Se 12 | 0 | 0 |
| 2 | A4 | 1269 | Total 9946 | C 6277 | N 1745 | O 1890 | S 22 | Se 12 | 0 | 0 |

- Molecule 3 is a protein called NUP155.

| Mol | Chain | Residues | Atoms | | | | | | AltConf | Trace |
|-----|-------|----------|----------------|-----------|-----------|-----------|---------|----------|---------|-------|
| | | | Total | C | N | O | S | Se | | |
| 3 | A5 | 1276 | Total 10030 | C 6331 | N 1762 | O 1901 | S 24 | Se 12 | 1 | 0 |
| 3 | A6 | 1276 | Total 10030 | C 6331 | N 1762 | O 1901 | S 24 | Se 12 | 1 | 0 |

- Molecule 4 is a protein called NUP53 R3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|--------------|---------|---------|---------|--------|---------|-------|
| | | | Total | C | N | O | S | | |
| 4 | B1 | 14 | Total 111 | C 73 | N 19 | O 18 | S 1 | 0 | 0 |
| 4 | B2 | 14 | Total 111 | C 73 | N 19 | O 18 | S 1 | 0 | 0 |
| 4 | B3 | 14 | Total 111 | C 73 | N 19 | O 18 | S 1 | 0 | 0 |
| 4 | B4 | 14 | Total 111 | C 73 | N 19 | O 18 | S 1 | 0 | 0 |

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| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---|---------|-------|
| 4 | B5 | 14 | Total | C | N | O | S | 0 | 0 |
| | | | 111 | 73 | 19 | 18 | 1 | | |
| 4 | B6 | 14 | Total | C | N | O | S | 0 | 0 |
| | | | 111 | 73 | 19 | 18 | 1 | | |

- Molecule 5 is a protein called NUP98 R3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 5 | C1 | 17 | Total | C | N | O | S | 0 | 0 |
| | | | 138 | 88 | 24 | 25 | 1 | | |
| 5 | C2 | 19 | Total | C | N | O | S | 0 | 0 |
| | | | 157 | 100 | 29 | 27 | 1 | | |
| 5 | C3 | 17 | Total | C | N | O | S | 0 | 0 |
| | | | 138 | 88 | 24 | 25 | 1 | | |
| 5 | C4 | 19 | Total | C | N | O | S | 0 | 0 |
| | | | 157 | 100 | 29 | 27 | 1 | | |
| 5 | C5 | 17 | Total | C | N | O | S | 0 | 0 |
| | | | 138 | 88 | 24 | 25 | 1 | | |
| 5 | C6 | 17 | Total | C | N | O | S | 0 | 0 |
| | | | 138 | 88 | 24 | 25 | 1 | | |

- Molecule 6 is a protein called NUP93 SOL.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 6 | D1 | 621 | Total | C | N | O | S | 0 | 0 |
| | | | 5034 | 3200 | 874 | 934 | 26 | | |
| 6 | D2 | 621 | Total | C | N | O | S | 0 | 0 |
| | | | 5034 | 3200 | 874 | 934 | 26 | | |
| 6 | D3 | 621 | Total | C | N | O | S | 0 | 0 |
| | | | 5034 | 3200 | 874 | 934 | 26 | | |
| 6 | D4 | 621 | Total | C | N | O | S | 0 | 0 |
| | | | 5034 | 3200 | 874 | 934 | 26 | | |
| 6 | D5 | 621 | Total | C | N | O | S | 0 | 0 |
| | | | 5034 | 3200 | 874 | 934 | 26 | | |
| 6 | D6 | 621 | Total | C | N | O | S | 0 | 0 |
| | | | 5034 | 3200 | 874 | 934 | 26 | | |
| 6 | D7 | 621 | Total | C | N | O | S | 0 | 0 |
| | | | 5034 | 3200 | 874 | 934 | 26 | | |

- Molecule 7 is a protein called NUP53 R2.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---------|-------|
| 7 | E1 | 8 | Total | C | N | O | 0 | 0 |
| | | | 63 | 42 | 11 | 10 | | |
| 7 | E2 | 8 | Total | C | N | O | 0 | 0 |
| | | | 63 | 42 | 11 | 10 | | |
| 7 | E3 | 8 | Total | C | N | O | 0 | 0 |
| | | | 63 | 42 | 11 | 10 | | |
| 7 | E4 | 8 | Total | C | N | O | 0 | 0 |
| | | | 63 | 42 | 11 | 10 | | |
| 7 | E5 | 8 | Total | C | N | O | 0 | 0 |
| | | | 63 | 42 | 11 | 10 | | |
| 7 | E6 | 8 | Total | C | N | O | 0 | 0 |
| | | | 63 | 42 | 11 | 10 | | |
| 7 | E7 | 8 | Total | C | N | O | 0 | 0 |
| | | | 63 | 42 | 11 | 10 | | |

- Molecule 8 is a protein called NUP188.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
| 8 | F1 | 1641 | Total | C | N | O | S | 0 | 0 |
| | | | 12779 | 8190 | 2201 | 2333 | 55 | | |
| 8 | F2 | 1641 | Total | C | N | O | S | 0 | 0 |
| | | | 12779 | 8190 | 2201 | 2333 | 55 | | |

- Molecule 9 is a protein called NUP93 R2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 9 | G1 | 53 | Total | C | N | O | S | 0 | 0 |
| | | | 438 | 274 | 75 | 88 | 1 | | |
| 9 | G2 | 53 | Total | C | N | O | S | 0 | 0 |
| | | | 438 | 274 | 75 | 88 | 1 | | |

- Molecule 10 is a protein called NUP98 R2.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---------|-------|
| 10 | H1 | 13 | Total | C | N | O | 0 | 0 |
| | | | 94 | 58 | 15 | 21 | | |
| 10 | H2 | 13 | Total | C | N | O | 0 | 0 |
| | | | 94 | 58 | 15 | 21 | | |

- Molecule 11 is a protein called NUP205.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
| 11 | I1 | 1542 | Total | C | N | O | S | 0 | 0 |
| | | | 12307 | 7880 | 2084 | 2278 | 65 | | |
| 11 | I2 | 1542 | Total | C | N | O | S | 0 | 0 |
| | | | 12307 | 7880 | 2084 | 2278 | 65 | | |
| 11 | I3 | 1542 | Total | C | N | O | S | 0 | 0 |
| | | | 12307 | 7880 | 2084 | 2278 | 65 | | |
| 11 | I4 | 1542 | Total | C | N | O | S | 0 | 0 |
| | | | 12307 | 7880 | 2084 | 2278 | 65 | | |
| 11 | I5 | 1542 | Total | C | N | O | S | 0 | 0 |
| | | | 12307 | 7880 | 2084 | 2278 | 65 | | |

- Molecule 12 is a protein called NUP93 R2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|-----|---|---------|-------|
| 12 | J1 | 63 | Total | C | N | O | S | 0 | 0 |
| | | | 504 | 315 | 86 | 102 | 1 | | |
| 12 | J2 | 63 | Total | C | N | O | S | 0 | 0 |
| | | | 504 | 315 | 86 | 102 | 1 | | |
| 12 | J3 | 63 | Total | C | N | O | S | 0 | 0 |
| | | | 504 | 315 | 86 | 102 | 1 | | |
| 12 | J4 | 63 | Total | C | N | O | S | 0 | 0 |
| | | | 504 | 315 | 86 | 102 | 1 | | |
| 12 | J5 | 63 | Total | C | N | O | S | 0 | 0 |
| | | | 504 | 315 | 86 | 102 | 1 | | |

- Molecule 13 is a protein called NUP98 R1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---|---------|-------|
| 13 | K1 | 9 | Total | C | N | O | S | 0 | 0 |
| | | | 73 | 51 | 10 | 11 | 1 | | |
| 13 | K2 | 9 | Total | C | N | O | S | 0 | 0 |
| | | | 73 | 51 | 10 | 11 | 1 | | |
| 13 | K3 | 9 | Total | C | N | O | S | 0 | 0 |
| | | | 73 | 51 | 10 | 11 | 1 | | |
| 13 | K4 | 9 | Total | C | N | O | S | 0 | 0 |
| | | | 73 | 51 | 10 | 11 | 1 | | |
| 13 | K5 | 9 | Total | C | N | O | S | 0 | 0 |
| | | | 73 | 51 | 10 | 11 | 1 | | |

- Molecule 14 is a protein called NUP53 R1.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|----|---|---|---------|-------|
| 14 | L1 | 2 | Total | C | N | O | 0 | 0 |
| | | | 15 | 11 | 2 | 2 | | |
| 14 | L2 | 2 | Total | C | N | O | 0 | 0 |
| | | | 15 | 11 | 2 | 2 | | |
| 14 | L3 | 2 | Total | C | N | O | 0 | 0 |
| | | | 15 | 11 | 2 | 2 | | |
| 14 | L4 | 2 | Total | C | N | O | 0 | 0 |
| | | | 15 | 11 | 2 | 2 | | |
| 14 | L5 | 2 | Total | C | N | O | 0 | 0 |
| | | | 15 | 11 | 2 | 2 | | |

- Molecule 15 is a protein called NUP62.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 15 | M1 | 169 | Total | C | N | O | S | 0 | 0 |
| | | | 1372 | 855 | 235 | 276 | 6 | | |
| 15 | M2 | 169 | Total | C | N | O | S | 0 | 0 |
| | | | 1372 | 855 | 235 | 276 | 6 | | |
| 15 | M3 | 169 | Total | C | N | O | S | 0 | 0 |
| | | | 1372 | 855 | 235 | 276 | 6 | | |
| 15 | M4 | 169 | Total | C | N | O | S | 0 | 0 |
| | | | 1372 | 855 | 235 | 276 | 6 | | |

- Molecule 16 is a protein called NUP58.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 16 | N1 | 180 | Total | C | N | O | S | 0 | 0 |
| | | | 1401 | 876 | 236 | 282 | 7 | | |
| 16 | N2 | 180 | Total | C | N | O | S | 0 | 0 |
| | | | 1401 | 876 | 236 | 282 | 7 | | |
| 16 | N3 | 180 | Total | C | N | O | S | 0 | 0 |
| | | | 1401 | 876 | 236 | 282 | 7 | | |
| 16 | N4 | 180 | Total | C | N | O | S | 0 | 0 |
| | | | 1401 | 876 | 236 | 282 | 7 | | |

- Molecule 17 is a protein called NUP54.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 17 | O1 | 241 | Total | C | N | O | S | 0 | 0 |
| | | | 1971 | 1239 | 360 | 368 | 4 | | |
| 17 | O2 | 241 | Total | C | N | O | S | 0 | 0 |
| | | | 1971 | 1239 | 360 | 368 | 4 | | |

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| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 17 | O3 | 241 | Total | C | N | O | S | 0 | 0 |
| | | | 1971 | 1239 | 360 | 368 | 4 | | |
| 17 | O4 | 241 | Total | C | N | O | S | 0 | 0 |
| | | | 1971 | 1239 | 360 | 368 | 4 | | |

- Molecule 18 is a protein called NUP54 Ferredoxin-like domain.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 18 | P1 | 116 | Total | C | N | O | S | 1 | 0 |
| | | | 900 | 560 | 160 | 178 | 2 | | |
| 18 | P2 | 116 | Total | C | N | O | S | 1 | 0 |
| | | | 900 | 560 | 160 | 178 | 2 | | |
| 18 | P3 | 116 | Total | C | N | O | S | 1 | 0 |
| | | | 900 | 560 | 160 | 178 | 2 | | |
| 18 | P4 | 116 | Total | C | N | O | S | 1 | 0 |
| | | | 900 | 560 | 160 | 178 | 2 | | |

- Molecule 19 is a protein called NUP53 RRM.

| Mol | Chain | Residues | Atoms | | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|----|---------|-------|
| 19 | Q1 | 84 | Total | C | N | O | S | Se | 1 | 0 |
| | | | 658 | 421 | 114 | 117 | 1 | 5 | | |
| 19 | Q2 | 80 | Total | C | N | O | S | Se | 1 | 0 |
| | | | 616 | 399 | 103 | 108 | 1 | 5 | | |
| 19 | Q3 | 84 | Total | C | N | O | S | Se | 1 | 0 |
| | | | 658 | 421 | 114 | 117 | 1 | 5 | | |
| 19 | Q4 | 80 | Total | C | N | O | S | Se | 1 | 0 |
| | | | 616 | 399 | 103 | 108 | 1 | 5 | | |

- Molecule 20 is a protein called NUP93 R1.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|-------|
| 20 | R1 | 40 | Total | C | N | O | 0 | 0 |
| | | | 311 | 195 | 59 | 57 | | |
| 20 | R2 | 40 | Total | C | N | O | 0 | 0 |
| | | | 311 | 195 | 59 | 57 | | |
| 20 | R3 | 40 | Total | C | N | O | 0 | 0 |
| | | | 311 | 195 | 59 | 57 | | |
| 20 | R4 | 40 | Total | C | N | O | 0 | 0 |
| | | | 311 | 195 | 59 | 57 | | |

- Molecule 21 is a protein called NUP133.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
| 21 | S1 | 902 | Total | C | N | O | S | 0 | 0 |
| | | | 6013 | 3738 | 1046 | 1210 | 19 | | |
| 21 | S2 | 902 | Total | C | N | O | S | 0 | 0 |
| | | | 6013 | 3738 | 1046 | 1210 | 19 | | |
| 21 | S3 | 902 | Total | C | N | O | S | 0 | 0 |
| | | | 6013 | 3738 | 1046 | 1210 | 19 | | |
| 21 | S4 | 902 | Total | C | N | O | S | 0 | 0 |
| | | | 6013 | 3738 | 1046 | 1210 | 19 | | |

- Molecule 22 is a protein called NUP107 CTD.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 22 | T1 | 247 | Total | C | N | O | S | 0 | 0 |
| | | | 1993 | 1282 | 343 | 355 | 13 | | |
| 22 | T2 | 247 | Total | C | N | O | S | 0 | 0 |
| | | | 1993 | 1282 | 343 | 355 | 13 | | |
| 22 | T3 | 247 | Total | C | N | O | S | 0 | 0 |
| | | | 1993 | 1282 | 343 | 355 | 13 | | |
| 22 | T4 | 247 | Total | C | N | O | S | 0 | 0 |
| | | | 1993 | 1282 | 343 | 355 | 13 | | |

- Molecule 23 is a protein called NUP107 NTD.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 23 | U1 | 418 | Total | C | N | O | S | 0 | 0 |
| | | | 3396 | 2174 | 555 | 655 | 12 | | |
| 23 | U2 | 419 | Total | C | N | O | S | 0 | 0 |
| | | | 3404 | 2178 | 557 | 657 | 12 | | |
| 23 | U3 | 419 | Total | C | N | O | S | 0 | 0 |
| | | | 3404 | 2178 | 557 | 657 | 12 | | |
| 23 | U4 | 419 | Total | C | N | O | S | 0 | 0 |
| | | | 3404 | 2178 | 557 | 657 | 12 | | |

- Molecule 24 is a protein called NUP96.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 24 | V1 | 511 | Total | C | N | O | S | 0 | 0 |
| | | | 3805 | 2417 | 648 | 730 | 10 | | |
| 24 | V2 | 511 | Total | C | N | O | S | 0 | 0 |
| | | | 3805 | 2417 | 648 | 730 | 10 | | |
| 24 | V3 | 511 | Total | C | N | O | S | 0 | 0 |
| | | | 3805 | 2417 | 648 | 730 | 10 | | |

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| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 24 | V4 | 511 | Total | C | N | O | S | 0 | 0 |
| | | | 3805 | 2417 | 648 | 730 | 10 | | |

- Molecule 25 is a protein called SEC13.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 25 | W1 | 274 | Total | C | N | O | S | 0 | 0 |
| | | | 2160 | 1379 | 369 | 409 | 3 | | |
| 25 | W2 | 274 | Total | C | N | O | S | 0 | 0 |
| | | | 2160 | 1379 | 369 | 409 | 3 | | |
| 25 | W3 | 274 | Total | C | N | O | S | 0 | 0 |
| | | | 2160 | 1379 | 369 | 409 | 3 | | |
| 25 | W4 | 274 | Total | C | N | O | S | 0 | 0 |
| | | | 2160 | 1379 | 369 | 409 | 3 | | |

- Molecule 26 is a protein called NUP75.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 26 | X1 | 620 | Total | C | N | O | S | 0 | 0 |
| | | | 4535 | 2884 | 753 | 877 | 21 | | |
| 26 | X2 | 620 | Total | C | N | O | S | 0 | 0 |
| | | | 4535 | 2884 | 753 | 877 | 21 | | |
| 26 | X3 | 620 | Total | C | N | O | S | 0 | 0 |
| | | | 4535 | 2884 | 753 | 877 | 21 | | |
| 26 | X4 | 620 | Total | C | N | O | S | 0 | 0 |
| | | | 4535 | 2884 | 753 | 877 | 21 | | |

- Molecule 27 is a protein called SEH1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 27 | Y1 | 307 | Total | C | N | O | S | 0 | 0 |
| | | | 2438 | 1543 | 422 | 462 | 11 | | |
| 27 | Y2 | 307 | Total | C | N | O | S | 0 | 0 |
| | | | 2438 | 1543 | 422 | 462 | 11 | | |
| 27 | Y3 | 307 | Total | C | N | O | S | 0 | 0 |
| | | | 2438 | 1543 | 422 | 462 | 11 | | |
| 27 | Y4 | 307 | Total | C | N | O | S | 0 | 0 |
| | | | 2438 | 1543 | 422 | 462 | 11 | | |

- Molecule 28 is a protein called NUP160.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
| 28 | Z1 | 896 | Total | C | N | O | S | 0 | 0 |
| | | | 6622 | 4232 | 1099 | 1275 | 16 | | |
| 28 | Z2 | 896 | Total | C | N | O | S | 0 | 0 |
| | | | 6622 | 4232 | 1099 | 1275 | 16 | | |
| 28 | Z3 | 896 | Total | C | N | O | S | 0 | 0 |
| | | | 6622 | 4232 | 1099 | 1275 | 16 | | |
| 28 | Z4 | 896 | Total | C | N | O | S | 0 | 0 |
| | | | 6622 | 4232 | 1099 | 1275 | 16 | | |

- Molecule 29 is a protein called NUP43.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 29 | a1 | 316 | Total | C | N | O | S | 33 | 1 |
| | | | 2587 | 1639 | 447 | 488 | 13 | | |
| 29 | a2 | 316 | Total | C | N | O | S | 33 | 1 |
| | | | 2587 | 1639 | 447 | 488 | 13 | | |
| 29 | a3 | 316 | Total | C | N | O | S | 33 | 1 |
| | | | 2587 | 1639 | 447 | 488 | 13 | | |
| 29 | a4 | 316 | Total | C | N | O | S | 33 | 1 |
| | | | 2587 | 1639 | 447 | 488 | 13 | | |

- Molecule 30 is a protein called NUP37.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 30 | b1 | 343 | Total | C | N | O | S | 0 | 0 |
| | | | 2638 | 1676 | 447 | 500 | 15 | | |
| 30 | b2 | 343 | Total | C | N | O | S | 0 | 0 |
| | | | 2638 | 1676 | 447 | 500 | 15 | | |
| 30 | b3 | 343 | Total | C | N | O | S | 0 | 0 |
| | | | 2638 | 1676 | 447 | 500 | 15 | | |
| 30 | b4 | 343 | Total | C | N | O | S | 0 | 0 |
| | | | 2638 | 1676 | 447 | 500 | 15 | | |

- Molecule 31 is a protein called NUP358.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
| 31 | c1 | 743 | Total | C | N | O | S | 0 | 0 |
| | | | 5980 | 3802 | 1033 | 1117 | 28 | | |
| 31 | c2 | 742 | Total | C | N | O | S | 0 | 0 |
| | | | 5976 | 3800 | 1032 | 1116 | 28 | | |
| 31 | c3 | 742 | Total | C | N | O | S | 0 | 0 |
| | | | 5976 | 3800 | 1032 | 1116 | 28 | | |

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| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
| 31 | c4 | 742 | Total | C | N | O | S | 0 | 0 |
| | | | 5976 | 3800 | 1032 | 1116 | 28 | | |
| 31 | c5 | 742 | Total | C | N | O | S | 0 | 0 |
| | | | 5976 | 3800 | 1032 | 1116 | 28 | | |

- Molecule 32 is a protein called NUP214 NTD.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 32 | g | 421 | Total | C | N | O | S | 0 | 0 |
| | | | 3282 | 2106 | 535 | 619 | 22 | | |

- Molecule 33 is a protein called DDX19.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 33 | h | 232 | Total | C | N | O | S | 0 | 0 |
| | | | 1836 | 1174 | 313 | 338 | 11 | | |

- Molecule 34 is a protein called NUP88 NTD.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 34 | i | 409 | Total | C | N | O | S | 13 | 0 |
| | | | 3280 | 2134 | 540 | 583 | 23 | | |

- Molecule 35 is a protein called NUP98 APD.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 35 | j | 150 | Total | C | N | O | S | 1 | 0 |
| | | | 1197 | 760 | 205 | 228 | 4 | | |

- Molecule 36 is a protein called NUP62 CCS1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 36 | k1 | 85 | Total | C | N | O | S | 0 | 0 |
| | | | 719 | 448 | 124 | 145 | 2 | | |

- Molecule 37 is a protein called NUP62 CCS2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 37 | k2 | 37 | Total | C | N | O | S | 0 | 0 |
| | | | 308 | 188 | 56 | 63 | 1 | | |

- Molecule 38 is a protein called NUP214 CCS1.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|-------|
| | | | Total | C | N | O | | |
| 38 | l1 | 92 | 460 | 276 | 92 | 92 | 0 | 0 |

- Molecule 39 is a protein called NUP214 CCS2.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|-------|
| | | | Total | C | N | O | | |
| 39 | l2 | 39 | 195 | 117 | 39 | 39 | 0 | 0 |

- Molecule 40 is a protein called NUP88 CCS1.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|-------|
| | | | Total | C | N | O | | |
| 40 | m1 | 88 | 440 | 264 | 88 | 88 | 0 | 0 |

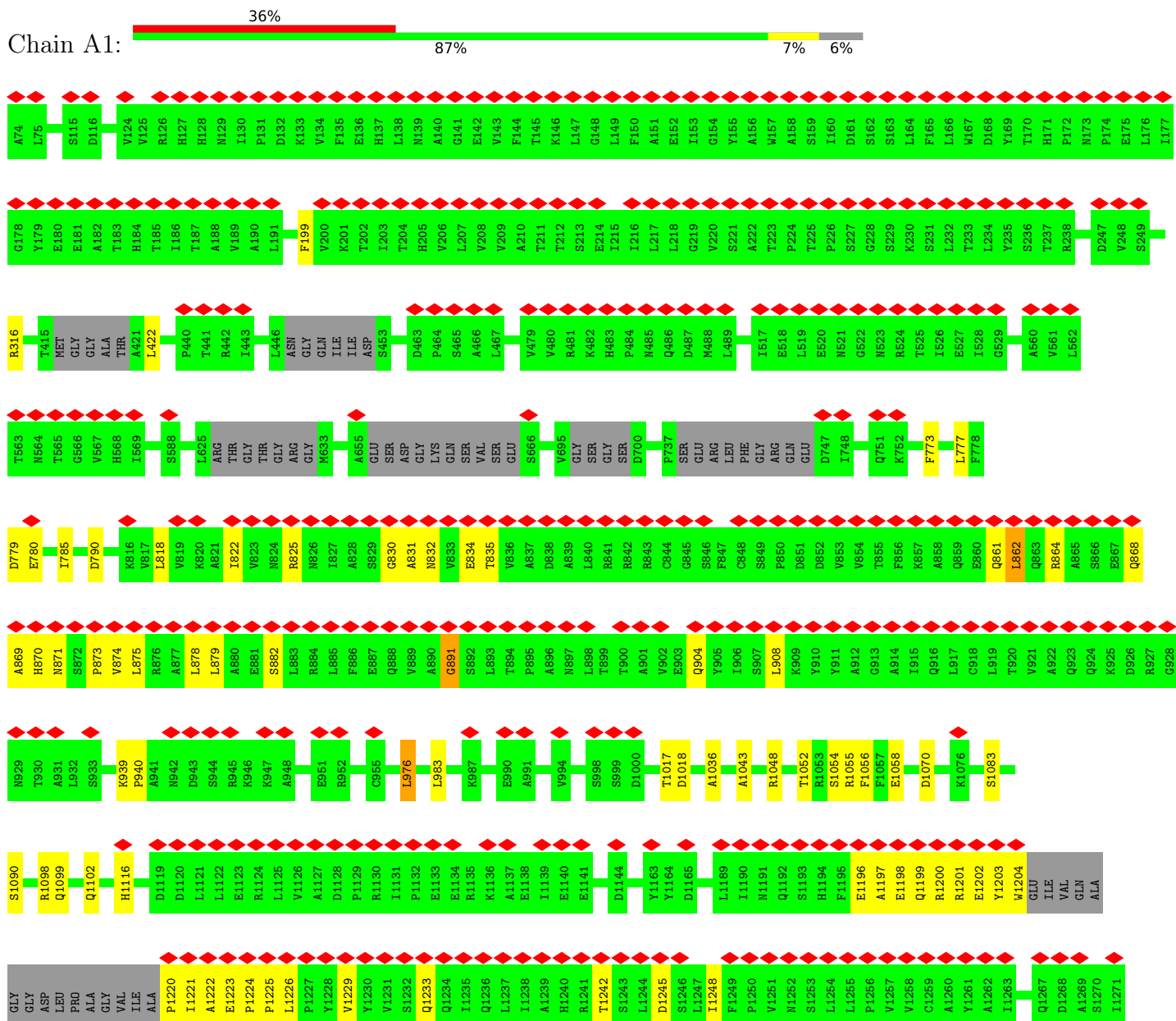
- Molecule 41 is a protein called NUP88 CCS2.

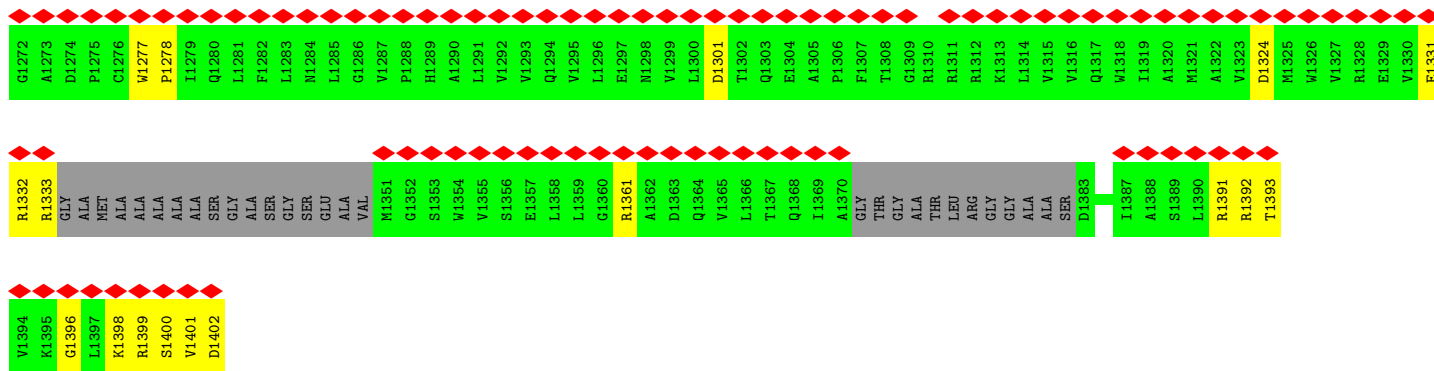
| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---------|-------|
| | | | Total | C | N | O | | |
| 41 | m2 | 20 | 100 | 60 | 20 | 20 | 0 | 0 |

3 Residue-property plots

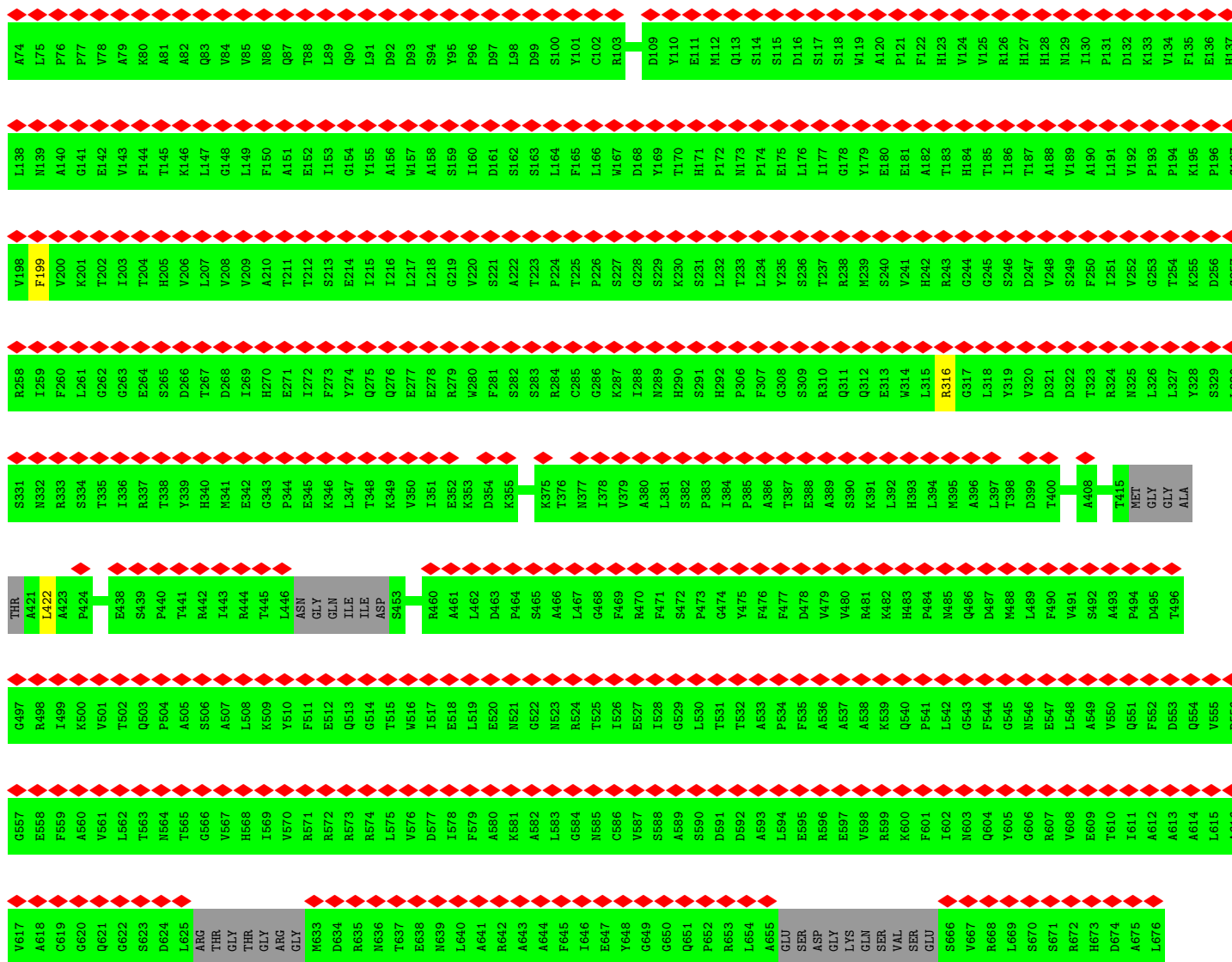
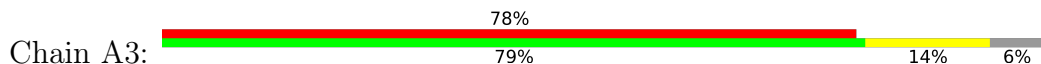
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: NUP155



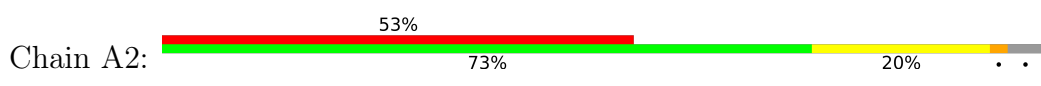


• Molecule 1: NUP155

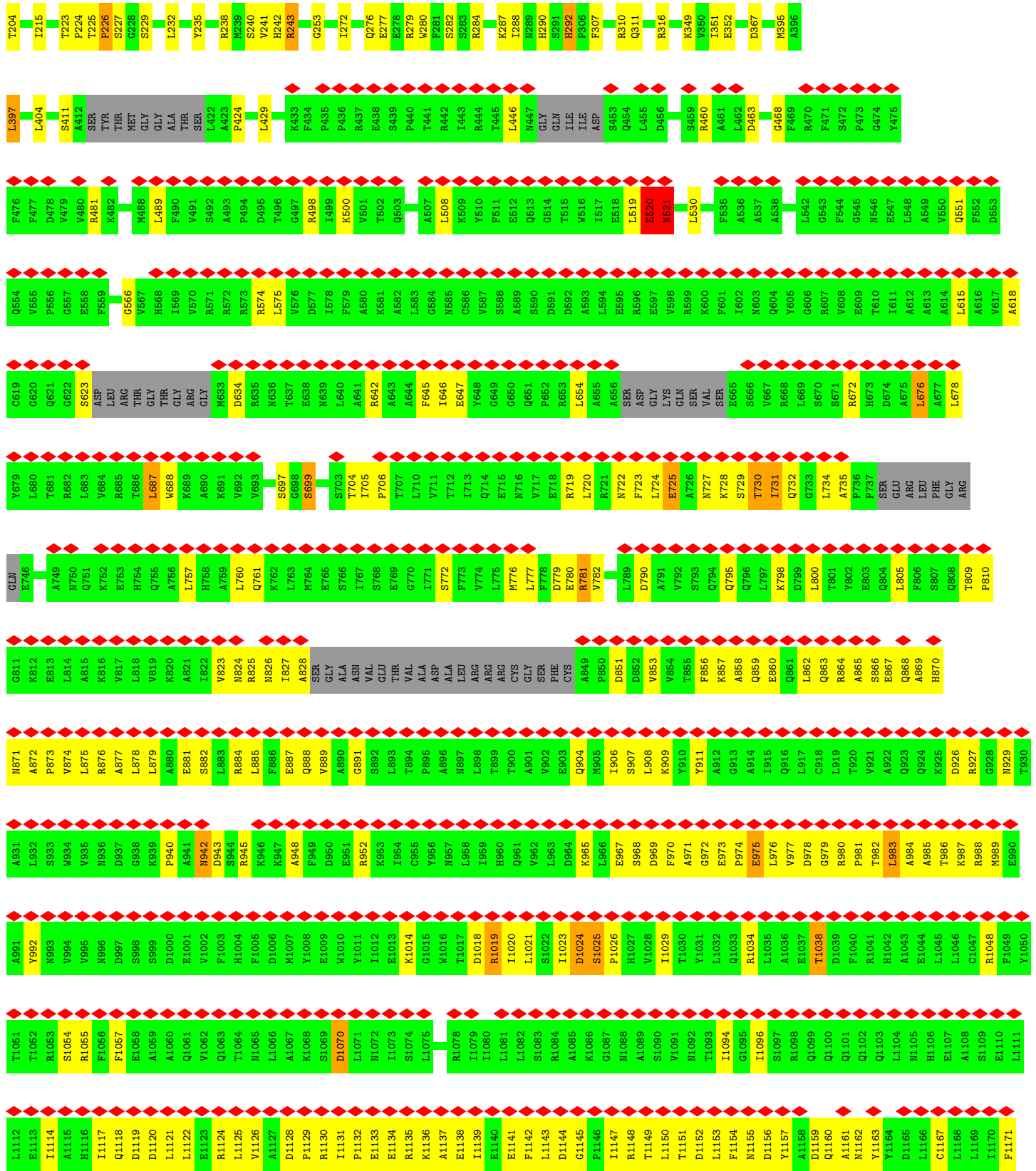


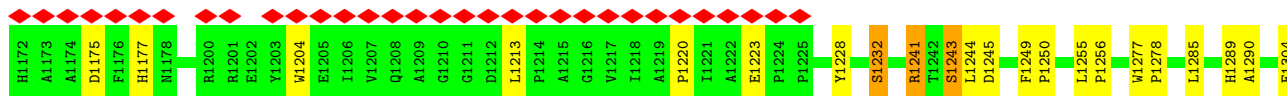
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A677 | L678 | Y679 | L680 | T681 | R682 | L683 | V684 | R685 | T686 | L687 | W688 | K689 | K691 | V692 | V693 | Q694 | V695 | GLY | SER | GLY | SER | D700 | I701 | S702 | S703 | T704 | I705 | P706 | T707 | S708 | L710 | V711 | T712 | I713 | Q714 | E715 | N716 | V717 | E718 | R719 | L720 | R721 | N722 | F723 | L724 | E725 | A726 | N727 | K728 | S729 | T730 | I731 | Q732 | G733 | L734 | A735 | P736 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P737 | SER | GLU | ARG | LEU | PHE | GLY | ARG | GLN | GLU | D747 | I748 | A749 | N750 | Q751 | K752 | E753 | H754 | Q755 | A756 | L757 | H758 | A759 | L760 | Q761 | K762 | L763 | M764 | E765 | S766 | I767 | S768 | E769 | G770 | I771 | S772 | F773 | V774 | L775 | M776 | L777 | F778 | D779 | E780 | R781 | V782 | I785 | D790 | S793 | Q796 | L797 | K798 | D799 | L800 | T801 | Y802 | Q803 | Q804 | L805 | F806 | S807 | Q808 | T809 | P810 | G811 | K812 | E813 | L814 | A815 | K816 | V817 | L818 | V819 | K820 | A821 | I822 | E823 | N824 | R825 | N826 | I827 | A828 | S829 | G830 | A831 | N832 | V833 | E834 | T835 | V836 | A837 | D838 | A839 | L840 | R841 | R842 | R843 | C844 | G845 | S846 | F847 | C848 | S849 | P850 | D851 | D852 | V853 | T854 | R855 | F856 | K857 | L858 | Q859 | E860 | Q861 | L862 |
| Q863 | R864 | A865 | S866 | E867 | Q868 | A869 | H870 | N871 | S872 | P873 | V874 | L875 | R876 | A877 | L878 | L879 | S882 | G891 | T894 | P895 | A896 | N897 | L898 | T899 | A900 | V902 | E903 | Q904 | Y905 | I906 | S907 | L908 | K909 | L910 | Y911 | A914 | N934 | V935 | N936 | D937 | G938 | K939 | P940 | A941 | N942 | D943 | S944 | R945 | K946 | K947 | A948 | F949 | D950 | N951 | D952 | V953 | T954 | R955 | F956 | K957 | L958 | Q959 | E960 | Q961 | L962 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E951 | R952 | K953 | I954 | C955 | Y956 | N957 | L958 | I959 | H960 | Q961 | V962 | L963 | D964 | K965 | L966 | E967 | S968 | D969 | F970 | A971 | G972 | E973 | P974 | E975 | L976 | L983 | A984 | Y992 | V995 | N996 | F1003 | H1004 | F1005 | D1006 | L1007 | Y1008 | E1009 | W1010 | Y1011 | I1012 | E1013 | K1014 | G1015 | W1016 | T1017 | D1018 | R1019 | D943 | I1020 | L1021 | S1022 | I1023 | D1024 | S1025 | P1026 | H1027 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V1028 | I1029 | T1030 | Y1031 | L1032 | Q1033 | R1034 | L1035 | A1036 | E1037 | T1038 | D1039 | F1040 | R1041 | K965 | A1043 | E1044 | L1045 | L1046 | C1047 | R1048 | F1049 | Y1050 | T1051 | T1052 | R1053 | S1054 | R1055 | F1056 | F1057 | E1058 | A1059 | A1060 | Q1061 | V1062 | Q1063 | T1064 | N1065 | L1066 | A1067 | K1068 | S1069 | D1070 | L1071 | N1072 | I1073 | S1074 | L1075 | K1076 | D1077 | R1078 | I1079 | I1080 | L1081 | L1082 | S1083 | R1084 | A1085 | K1086 | G1087 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M1088 | A1089 | S1090 | V1091 | N1092 | L1093 | T1094 | G1095 | I1096 | S1097 | R1098 | Q1099 | Q1100 | Q1101 | Q1102 | Q1103 | L1104 | L1105 | H1106 | E1107 | A1108 | S1109 | E1110 | L1111 | L1112 | E1113 | I1114 | A1115 | H1116 | I1117 | Q1118 | D1119 | D1120 | L1121 | L1122 | E1123 | L1124 | L1125 | V1126 | A1127 | P1128 | P1129 | R1130 | I1131 | P1132 | E1133 | E1134 | R1135 | K1136 | A1137 | E1138 | I1139 | E1140 | R1201 | R1202 | F1142 | L1143 | D1144 | G1145 | P1146 | I1147 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R1148 | T1149 | L1150 | T1151 | D1152 | L1153 | F1154 | N1155 | D1156 | C1157 | A1158 | D1159 | Q1160 | M1161 | M1162 | Y1163 | Y1164 | D1165 | L1166 | C1167 | L1168 | L1169 | I1170 | F1171 | H1172 | A1173 | A1174 | D1175 | F1176 | H1177 | H1178 | P1179 | R1180 | T1181 | I1182 | L1183 | D1184 | T1185 | W1186 | N1187 | L1188 | L1189 | I1190 | N1191 | Q1192 | S1193 | H1194 | F1195 | E1196 | A1197 | A1198 | Q1199 | R1200 | R1201 | E1202 | Y1203 | W1204 | GLU | ILE | VAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G1205 | ALA | GLY | ASP | LEU | PHE | GLY | VAL | ILE | ALA | P1220 | I1221 | A1222 | E1223 | P1224 | P1225 | L1226 | P1227 | Y1228 | Y1229 | Y1230 | V1231 | S1232 | Q1233 | Q1234 | I1235 | Q1236 | L1237 | I1238 | A1239 | H1240 | R1241 | T1242 | S1243 | L1244 | D1245 | L1246 | L1247 | I1248 | F1249 | P1250 | V1251 | N1252 | S1253 | L1254 | L1255 | P1256 | V1257 | V1258 | MET | C1259 | A1260 | ALA | ALA | ALA | ALA | A1262 | I1263 | N1264 | N1265 | G1266 | Q1267 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D1268 | A1269 | S1270 | I1271 | A1272 | G1273 | D1274 | P1275 | C1276 | W1277 | P1278 | I1279 | Q1280 | L1281 | F1282 | L1283 | M1284 | G1286 | V1287 | P1288 | H1289 | A1290 | L1291 | W1292 | D1301 | A1305 | F1306 | P1307 | T1308 | G1309 | R1310 | R1311 | W1318 | M1321 | D1324 | M1325 | R1328 | E1329 | V1330 | R1331 | R1332 | R1333 | GLY | ALA | MET | ALA | ALA | ALA | ALA | ALA | SER | GLY | ALA | D1402 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SER | GLY | SER | GLU | ALA | VAL | H1351 | R1361 | L1366 | T1367 | Q1368 | I1369 | A1370 | THR | GLY | GLY | ALA | ALA | THR | LEU | ARG | GLY | ALA | ALA | SER | D1383 | A1384 | E1385 | E1386 | I1387 | A1388 | S1389 | L1390 | R1391 | R1392 | T1393 | V1394 | K1395 | G1396 | L1397 | K1398 | R1399 | D1402 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

• Molecule 2: NUP155

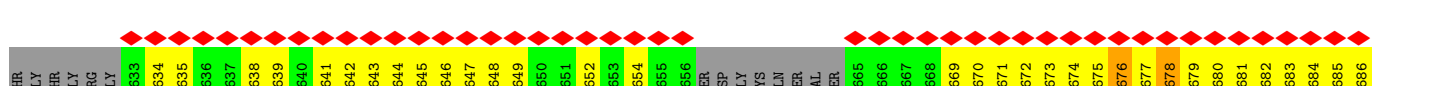
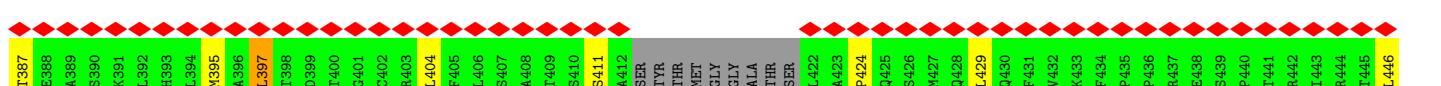
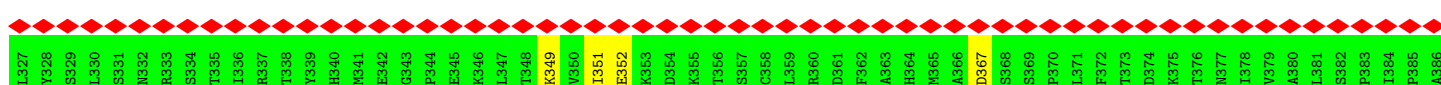
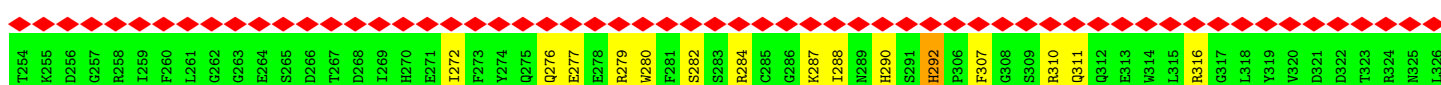
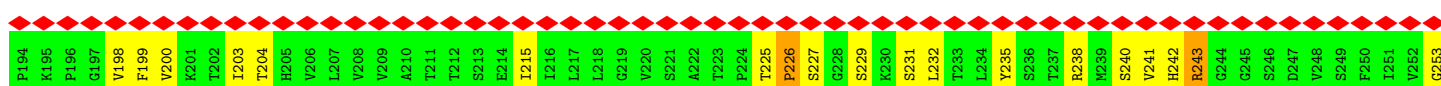
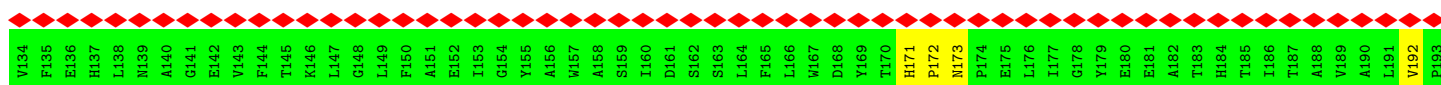
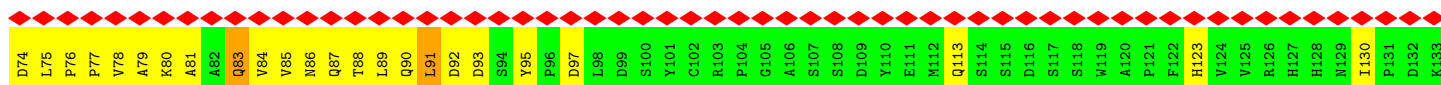


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| D74 | L75 | P76 | P77 | V78 | R80 | A81 | A82 | Q83 | V84 | V85 | H86 | Q87 | L88 | L89 | G90 | L91 | D92 | D93 | S94 | Y95 | P96 | D97 | L98 | Y101 | G102 | S107 | S108 | D109 | Y110 | E111 | M112 | Q113 | S114 | S115 | D116 | S117 | S118 | W119 | A120 | P121 | F122 | H123 | V124 | A126 | H127 | I130 | V192 | V198 | F199 | V200 | I203 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|



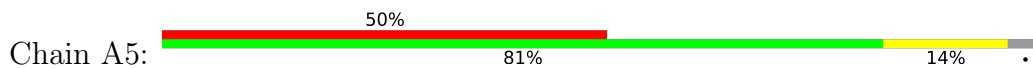


• Molecule 2: NUP155



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| V688 | N750 | P810 | H670 | T930 | E990 | Y1060 | E1110 | Y1228 | V1287 | S1347 | G1407 |
| K689 | Q751 | G811 | N871 | A931 | A891 | T1061 | L1111 | V1229 | P1288 | E1348 | G1408 |
| A690 | K752 | K812 | A872 | L932 | Y992 | T1062 | L1112 | Y1230 | H1289 | A1349 | M1409 |
| K691 | E753 | E813 | V874 | S933 | N993 | R1063 | E1113 | V1231 | L1290 | V1350 | A1410 |
| V692 | H754 | L814 | L875 | W934 | V994 | S1064 | I1114 | E1232 | L1291 | M1351 | R1411 |
| V693 | Q755 | A815 | R876 | V935 | V995 | R1065 | A1115 | Q1233 | M1292 | G1352 | M1412 |
| Q694 | A756 | K816 | L878 | N936 | N996 | F1066 | H1116 | Q1234 | V1293 | S1353 | S1413 |
| V695 | L757 | L817 | L879 | D937 | D997 | F1067 | I1117 | I1235 | Q1294 | W1354 | F1414 |
| G696 | H758 | L818 | A880 | G938 | S998 | E1068 | Q1118 | Q1236 | V1295 | W1355 | F1415 |
| S697 | A759 | V819 | E881 | K939 | S999 | A1069 | D1119 | L1237 | L1296 | S1356 | R1416 |
| G698 | L760 | K820 | L883 | P940 | D1000 | A1060 | D1120 | I1238 | E1297 | E1357 | |
| S699 | Q761 | R821 | R884 | A941 | E1001 | Q1061 | E1123 | H1239 | M1298 | L1358 | |
| D700 | K762 | I822 | L885 | O942 | V1002 | Q1062 | E1133 | H1240 | V1299 | L1359 | |
| I701 | L763 | V823 | F887 | D943 | F1003 | T1064 | E1144 | T1242 | L1300 | G1360 | |
| S702 | M764 | N824 | Q888 | S944 | H1004 | M1065 | D1144 | S1243 | D1301 | R1361 | |
| S703 | E765 | R825 | V889 | R945 | F1005 | L1066 | G1145 | L1244 | T1302 | A1362 | |
| T704 | S766 | N826 | A890 | K946 | D1006 | L1067 | P1146 | D1245 | Q1303 | D1363 | |
| I705 | I767 | I827 | G891 | K947 | M1007 | K1068 | I1147 | S1246 | E1304 | Q1364 | |
| P706 | S768 | A828 | L893 | A948 | Y1008 | S1069 | I1148 | L1247 | A1305 | V1365 | |
| T707 | E769 | SER | T894 | F949 | E1009 | D1070 | R1146 | I1248 | P1306 | L1366 | |
| L710 | G770 | GLY | P895 | D950 | W1010 | L1071 | T1149 | I1249 | F1307 | T1367 | |
| V711 | I771 | ALA | A896 | E951 | Y1011 | M1072 | L1150 | F1248 | T1308 | Q1368 | |
| T712 | S772 | ASN | A896 | R952 | E1012 | I1073 | T1151 | F1249 | G1309 | I1369 | |
| I713 | V773 | GLU | N897 | K953 | E1013 | I1074 | F1154 | P1250 | R1310 | A1370 | |
| Q714 | F774 | THR | L898 | R954 | K1014 | L1075 | M1155 | W1251 | R1311 | G1371 | |
| E715 | L775 | VAL | T899 | C955 | G1015 | L1076 | Q1160 | M1252 | R1312 | T1372 | |
| N716 | M776 | ALA | T900 | Y956 | W1016 | K1076 | L1168 | L1254 | K1313 | G1373 | |
| V717 | L777 | LEU | A901 | N957 | T1017 | D1077 | L1169 | L1255 | V1314 | A1374 | |
| E718 | F778 | ARG | V902 | L958 | D1018 | R1078 | L1170 | L1256 | V1315 | L1374 | |
| R719 | D779 | ARG | E903 | L959 | R1019 | I1079 | I1170 | P1256 | V1316 | L1375 | |
| L720 | E780 | ARG | Q904 | H960 | I1020 | T1080 | F1171 | W1257 | Q1317 | L1376 | |
| R721 | R781 | CYS | M905 | Q961 | L1021 | L1081 | H1172 | V1258 | W1318 | R1377 | |
| F723 | R782 | GLY | I906 | V962 | S1022 | L1082 | H1173 | C1259 | A1319 | G1378 | |
| L724 | S783 | PHE | S907 | L963 | I1023 | S1083 | A1173 | A1260 | A1320 | G1379 | |
| E725 | A849 | CYS | K909 | D964 | D1024 | R1084 | A1174 | Y1261 | M1321 | A1380 | |
| A726 | P850 | | Y910 | K965 | S1025 | A1085 | D1175 | A1262 | A1322 | A1381 | |
| N727 | D851 | | Y911 | L966 | P1026 | K1086 | F1177 | I1263 | V1323 | S1382 | |
| K728 | D852 | | G913 | E967 | H1027 | G1087 | M1178 | M1264 | V1324 | D1383 | |
| S729 | V853 | | A914 | S968 | V1028 | M1088 | P1179 | M1265 | D1324 | A1384 | |
| T730 | V854 | | L915 | D969 | I1029 | A1089 | R1180 | G1266 | M1325 | E1385 | |
| I731 | L789 | | Q916 | F970 | T1030 | S1090 | T1181 | Q1267 | W1326 | E1386 | |
| Q732 | L917 | | C918 | A971 | Y1031 | V1091 | I1182 | D1268 | A1327 | L1387 | |
| G733 | L919 | | L919 | G972 | Y1032 | M1092 | M1183 | D1269 | R1328 | A1388 | |
| S734 | S793 | | T920 | G973 | L1032 | T1093 | D1184 | S1270 | E1329 | A1388 | |
| A735 | Q795 | | V921 | P974 | R1034 | I1094 | T1185 | I1271 | V1330 | L1390 | |
| P736 | Q796 | | A922 | E975 | L1035 | G1095 | W1186 | G1272 | R1332 | R1391 | |
| P737 | L797 | | Q923 | V977 | E1037 | I1096 | M1187 | D1274 | R1333 | R1392 | |
| SER | K798 | | Q924 | D978 | T1038 | S1097 | I1190 | P1276 | G1334 | T1393 | |
| GLU | D799 | | Q924 | G979 | D1039 | Q1099 | W1204 | P1277 | A1335 | W1394 | |
| ARG | L800 | | D926 | R980 | F1040 | Q1100 | L1213 | W1277 | M1336 | G1395 | |
| LEU | A865 | | S866 | P981 | R1041 | Q1101 | L1213 | P1278 | M1336 | G1396 | |
| PHE | S867 | | E867 | T982 | H1042 | Q1102 | P1220 | I1279 | A1337 | L1397 | |
| GLY | E867 | | R927 | L983 | H1042 | Q1103 | | I1280 | A1338 | R1398 | |
| ARG | E803 | | A884 | A885 | A1043 | Q1103 | | Q1280 | A1339 | R1399 | |
| GLN | Q804 | | A885 | A885 | E1044 | L1104 | | L1281 | A1340 | S1400 | |
| E746 | L805 | | A885 | A885 | E1044 | L1105 | | F1282 | A1341 | V1401 | |
| D747 | F806 | | T986 | T986 | L1045 | M1105 | | L1283 | S1342 | D1402 | |
| I748 | S807 | | G928 | R988 | L1046 | H1106 | | L1284 | G1343 | M1403 | |
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• Molecule 3: NUP155

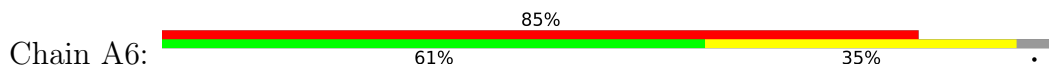


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|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| D74 | D109 | Y110 | E111 | M112 | Q113 | S114 | S115 | D116 | S117 | S118 | W119 | A120 | F121 | H122 | H123 | V124 | V125 | R126 | H127 | H128 | M129 | I130 | P131 | D132 | K133 | L234 | V134 | F135 | E136 | H137 | L138 | M139 | A140 | G141 | E142 | V143 | F144 | K145 | K146 | L147 | F150 | I153 | A156 | W157 | A158 | S159 | L160 | D161 | S162 | S163 | L164 | F165 | L166 | W167 | D168 | Y169 | | | | |
| T170 | H171 | P172 | M173 | P174 | E175 | L176 | I177 | C178 | Y179 | E180 | I186 | T187 | A188 | V189 | F199 | V220 | S221 | A222 | P226 | S227 | G228 | S229 | L232 | T233 | L234 | Y235 | R316 | T415 | MET | GLY | GLY | ALA | THR | A421 | L422 | P436 | R437 | E438 | S439 | P440 | T441 | R442 | G566 | I443 | R444 | T445 | H568 | I569 | ASN | GLY | GLN | ILE | ILE | | | | | | | |
| ASP | S453 | Q454 | S459 | R460 | A461 | L462 | D463 | V480 | R481 | K482 | H483 | P484 | N485 | Q486 | D487 | M488 | D495 | T496 | G497 | R498 | V501 | F511 | E512 | Q513 | G514 | T515 | W516 | I517 | E518 | L519 | E520 | N521 | G522 | N523 | R524 | L562 | T563 | N564 | T565 | G566 | I443 | V567 | H568 | I569 | R573 | R574 | L575 | V576 | D577 | I578 | F579 | A580 | K581 | | | | | | | |
| A582 | L583 | G584 | N585 | S588 | A589 | E595 | R596 | E597 | V598 | R599 | K600 | F601 | I602 | N603 | Q604 | Y605 | G606 | R607 | V608 | E609 | T610 | I611 | A612 | A613 | A614 | L615 | A616 | V617 | G622 | S623 | D624 | L625 | ARG | THR | GLY | GLY | ARG | M633 | D634 | A644 | F645 | G649 | G650 | Q651 | P652 | R653 | L654 | A655 | GLU | SER | ASP | | | | | | | | | |
| GLY | LYS | GLN | SER | VAL | SER | GLU | S666 | S670 | A658 | R672 | H673 | D674 | A675 | L676 | V695 | GLY | SER | GLY | SER | D700 | P737 | SER | GLU | ARG | LEU | PHE | GLY | ARG | GLN | GLU | D747 | A759 | L760 | F773 | L777 | F778 | D779 | E780 | I785 | D790 | L818 | I622 | R825 | N826 | I827 | S849 | P850 | | | | | | | | | | | | | |
| D851 | D852 | V853 | W854 | T855 | F856 | K857 | Q858 | Q859 | E860 | Q861 | L862 | Q863 | R864 | A865 | S866 | E867 | Q868 | A869 | H870 | N871 | S872 | P873 | W874 | L875 | R876 | A877 | L878 | L879 | A880 | E881 | S882 | L883 | R884 | L885 | F886 | Q887 | Q888 | V889 | A890 | G891 | S892 | L893 | T894 | P895 | A896 | N897 | L898 | T899 | T900 | A901 | V902 | E903 | Q904 | N905 | L906 | S907 | L908 | K909 | Y910 | |
| Y911 | A912 | G913 | A914 | I915 | Q916 | L917 | C918 | L919 | T920 | V921 | A922 | Q923 | Q924 | K925 | D926 | R927 | G928 | N929 | T930 | A931 | L932 | S933 | W934 | V935 | N936 | D937 | G938 | K939 | P940 | A941 | N942 | D943 | S944 | K945 | K946 | K947 | A948 | F949 | D950 | E951 | R952 | K953 | I954 | C955 | V956 | N957 | L958 | R959 | H960 | Q961 | V962 | L963 | K965 | L966 | E967 | S968 | D969 | F970 | | |
| A971 | G972 | E973 | P974 | E975 | L976 | V977 | D978 | G979 | R980 | P981 | T982 | L983 | A984 | A985 | T986 | K987 | R988 | M989 | E990 | A991 | Y992 | N993 | V994 | V995 | N996 | D997 | S998 | S999 | D1000 | E1001 | V1002 | F1003 | H1004 | F1005 | D1006 | M1007 | Y1008 | E1009 | M1010 | Y1011 | I1012 | E1013 | K1014 | G1015 | M1016 | T1017 | R1018 | R1019 | I1020 | L1021 | S1022 | I1023 | D1024 | S1025 | P1026 | H1027 | V1028 | I1029 | T1030 | |
| Y1031 | L1032 | Q1033 | R1034 | L1035 | A1036 | E1037 | T1038 | D1039 | F1040 | R1041 | H1042 | E1043 | L1044 | L1045 | L1046 | C1047 | R1048 | F1049 | Y1050 | T1051 | T1052 | R1053 | S1054 | R1055 | L1056 | F1057 | E1058 | A1059 | A1060 | Q1061 | Q1062 | Q1063 | T1064 | M1065 | L1066 | A1067 | K1068 | S1069 | K1076 | D1077 | R1078 | I1079 | L1080 | L1081 | L1082 | S1083 | R1084 | A1085 | K1086 | M1087 | M1088 | A1089 | S1090 | V1091 | M1092 | T1093 | I1094 | G1095 | | |
| I1096 | S1097 | R1098 | Q1099 | Q1100 | Q1101 | Q1102 | Q1103 | L1104 | M1105 | H1106 | E1107 | S1108 | E1109 | E1110 | L1111 | L1112 | E1113 | I1114 | A1115 | H1116 | I1117 | Q1118 | D1119 | D1120 | L1121 | L1122 | E1123 | R1124 | P1129 | R1130 | R1135 | I1139 | L1150 | T1151 | L1153 | F1154 | N1155 | A1158 | D1159 | Q1160 | A1161 | N1162 | Y1163 | Y1164 | D1165 | L1166 | C1167 | L1168 | L1169 | I1170 | Y1171 | E1172 | A1173 | | | | | | | |
| A1174 | D1175 | F1176 | H1177 | M1178 | P1179 | R1180 | T1181 | I1182 | M1183 | D1184 | T1185 | W1186 | M1187 | L1188 | L1189 | I1190 | M1191 | Q1192 | S1193 | H1194 | F1195 | E1196 | A1197 | E1198 | Q1199 | R1200 | R1201 | E1202 | Y1203 | W1204 | E1205 | I1206 | V1207 | Q1208 | A1209 | G1210 | G1211 | D1212 | L1213 | P1214 | A1215 | G1216 | V1217 | A1218 | A1219 | PRD | ILE | ALA | E1223 | P1224 | P1225 | L1226 | P1227 | Y1228 | V1229 | F1171 | Y1230 | V1231 | S1232 | Q1233 |
| Q1234 | T1235 | Q1236 | L1237 | I1238 | A1239 | H1240 | R1241 | T1242 | S1243 | L1244 | D1245 | S1246 | L1247 | L1248 | F1249 | V1250 | V1251 | M1252 | S1253 | L1254 | L1255 | P1256 | V1257 | V1258 | C1259 | A1260 | Y1261 | A1262 | T1263 | N1264 | N1265 | Q1266 | Q1267 | D1268 | A1269 | S1270 | I1271 | G1272 | F1273 | D1274 | P1275 | C1276 | W1277 | P1278 | I1279 | Q1280 | L1281 | F1282 | L1283 | M1284 | L1285 | L1286 | V1287 | P1288 | H1289 | A1290 | L1291 | M1292 | V1293 | |
| Q1294 | V1295 | L1296 | E1297 | M1298 | V1299 | L1300 | D1301 | Q1302 | Q1303 | E1304 | A1305 | P1306 | T1307 | T1308 | G1309 | R1310 | R1311 | R1312 | K1313 | L1314 | V1315 | V1316 | Q1317 | W1318 | I1319 | A1320 | M1321 | A1322 | D1323 | M1324 | N1325 | W1326 | V1327 | R1328 | E1329 | V1330 | E1331 | R1332 | R1333 | G1334 | A1335 | M1336 | A1337 | A1338 | A1339 | ALA | ALA | GLY | ALA | SER | GLY | SER | GLU | ALA | V1350 | M1351 | Q1352 | S1353 | | |

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| W1354 | W1355 | S1356 | E1357 | L1358 | L1359 | G1360 | R1361 | D1362 | Q1364 | V1365 | L1366 | T1367 | Q1368 | I1369 | A1370 | G1371 | T1372 | G1373 | A1374 | T1375 | L1376 | R1377 | G1378 | G1379 | A1380 | A1381 | S1382 | D1383 | A1384 | E1385 | L1386 | I1387 | A1388 | S1389 | L1390 | R1391 | R1392 | T1393 | V1394 | K1395 | G1396 | L1397 | K1398 | R1399 | S1400 | V1401 | D1402 | M1403 | L1404 | L1405 | G1406 | G1407 | E1408 | M1409 | A1410 | R1411 | M1412 | S1413 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

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| F1414 | F1415 | R1416 |
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• Molecule 3: NUP155



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| D74 | L75 | P76 | P77 | W78 | A79 | R80 | A81 | A82 | Q83 | W84 | R86 | T88 | L89 | Q90 | L91 | D92 | D93 | S94 | Y95 | P96 | D97 | L98 | D99 | S100 | Y101 | C102 | R103 | P104 | G105 | A106 | S107 | S108 | D109 | Y110 | E111 | M112 | Q113 | S114 | S115 | D116 | S117 | S118 | W119 | A120 | P121 | F122 | H123 | V124 | V125 | L126 | H127 | H128 | N129 | I130 | P131 | D132 | K133 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

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| V134 | F135 | E136 | H137 | L138 | N139 | A140 | G141 | A142 | V143 | F144 | T145 | K146 | G148 | L149 | F150 | A151 | E152 | I153 | G154 | Y155 | A156 | W157 | A158 | S159 | I160 | D161 | S162 | L164 | F165 | L166 | W167 | D168 | Y169 | T170 | H171 | P172 | M173 | P174 | E175 | L176 | I177 | G178 | W179 | E180 | E181 | A182 | T183 | H184 | T185 | I186 | T187 | A188 | W189 | A190 | L191 | V192 | P193 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

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| P194 | K195 | P196 | G197 | F198 | V200 | K201 | A202 | T203 | T204 | H205 | V206 | L207 | V208 | V209 | A210 | T211 | T212 | S213 | E214 | Y215 | I216 | L217 | L218 | G219 | V220 | S221 | A222 | P224 | T225 | P226 | S227 | G228 | K230 | S231 | L232 | T233 | L234 | Y235 | S236 | T237 | R238 | M239 | S240 | V241 | H242 | R243 | G244 | G245 | S246 | D247 | V248 | S249 | F250 | I251 | V252 | G253 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

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| T254 | K255 | D256 | G257 | R258 | F260 | L261 | G262 | G263 | E264 | S265 | D266 | T267 | D268 | T269 | H270 | E271 | I272 | S273 | E274 | Y275 | Q276 | E277 | E278 | R279 | W280 | F281 | S282 | R283 | L284 | C285 | G286 | I288 | N289 | H290 | S291 | H292 | P306 | F307 | G308 | S309 | R310 | Q311 | Q312 | E313 | W314 | L315 | R316 | G317 | L318 | Y319 | V320 | D321 | S322 | T323 | I251 | R324 | N325 | L326 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

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| L327 | Y328 | S329 | L330 | S331 | N332 | R333 | S334 | T335 | I336 | R337 | T338 | Y339 | H340 | M341 | E342 | G343 | E345 | K346 | L347 | T348 | K349 | V350 | I351 | E352 | K353 | D354 | R355 | T356 | S357 | C358 | L359 | R360 | D361 | F362 | A363 | H364 | M365 | A366 | D367 | S368 | S369 | P370 | L371 | F372 | T373 | D374 | P375 | R376 | N377 | V378 | V379 | A380 | L381 | S382 | P383 | R384 | P385 | A386 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

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| T387 | E388 | A389 | S390 | R391 | L392 | H393 | L394 | M395 | A396 | L397 | T398 | D399 | T400 | G401 | C402 | R403 | L404 | F405 | L406 | S407 | A408 | T409 | S410 | S411 | A412 | S413 | Y414 | T415 | MET | GLY | GLY | ALA | THR | L422 | A423 | P424 | Q425 | S426 | M427 | Q428 | L429 | Q430 | F431 | V432 | K433 | F434 | P435 | P436 | R437 | E438 | S439 | P440 | T441 | R442 | I443 | R444 | T445 | L446 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

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| ASN | GLY | ILE | ASP | S453 | Q454 | L455 | D456 | K457 | T458 | S459 | R460 | A461 | L462 | D463 | P464 | S465 | A466 | L467 | G468 | P469 | R470 | F471 | S472 | P473 | G474 | Y475 | F476 | F477 | D478 | V479 | V480 | R481 | K482 | H483 | P484 | M485 | Q486 | D487 | M488 | L489 | F490 | V491 | S492 | A493 | P494 | D495 | T496 | G497 | R498 | I499 | K500 | V501 | T502 | Q503 | P504 | A505 | S506 |
|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

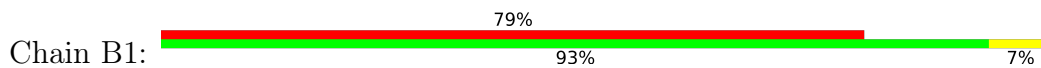
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| A507 | L508 | K509 | Y510 | F511 | E512 | Q513 | G514 | T515 | W516 | I517 | E518 | L519 | E520 | N521 | G522 | N523 | R524 | T525 | I526 | E527 | I528 | G529 | L530 | T531 | T532 | A533 | P534 | F535 | A536 | A537 | A538 | K539 | P541 | L542 | G543 | F544 | G545 | N546 | E547 | L548 | A549 | V550 | Q551 | F552 | D553 | Q554 | V555 | V556 | G557 | E558 | F559 | A560 | V561 | L562 | T563 | N564 | T565 | G566 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

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| V567 | H568 | I569 | V570 | R571 | R572 | R573 | R574 | L575 | V576 | D577 | I578 | F579 | A580 | K581 | A582 | L583 | M584 | N585 | C586 | V587 | S588 | A589 | S590 | D591 | D592 | A593 | L594 | E595 | R596 | E597 | V598 | R599 | K600 | F601 | I602 | N603 | Q604 | Y605 | G606 | R607 | V608 | E609 | T610 | I611 | A612 | A613 | A614 | L615 | A616 | V617 | A618 | C619 | G620 | Q621 | G622 | S623 | D624 | L625 | ARG |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|

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| THR | GLY | THR | GLY | ARG | GLY | M633 | D634 | R635 | M636 | T637 | E638 | M639 | L640 | A641 | R642 | A643 | A644 | F645 | I646 | E647 | Y648 | G649 | G650 | Q651 | P652 | R653 | L654 | A655 | SER | ASP | GLY | LYS | GLN | SER | VAL | SER | GLU | S666 | V667 | R668 | L669 | S670 | S671 | R672 | H673 | D674 | A675 | L676 | A677 | L678 | Y679 | L680 | T681 | R682 | L683 | V684 | R685 | T686 |
|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

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| L687 | M688 | K689 | A690 | K691 | V692 | V693 | Q694 | V695 | GLY | SER | GLY | SER | D700 | I701 | S702 | S703 | T704 | I705 | P706 | T707 | S708 | K709 | L710 | V711 | T712 | I713 | Q714 | E715 | M716 | V717 | E718 | R719 | L720 | R721 | N722 | F723 | L724 | E725 | A726 | N727 | K728 | S729 | T730 | I731 | Q732 | G733 | L734 | A735 | V736 | P737 | SER | GLU | ARG | LEU | PHE | GLY | ARG | GLN | GLU | |
| D747 | I748 | A749 | N750 | Q751 | K752 | E753 | H754 | Q755 | A756 | L757 | H758 | A759 | K760 | Q761 | K762 | L763 | M764 | E765 | S766 | I767 | K768 | E769 | G770 | T771 | S772 | F773 | V774 | L775 | M776 | L777 | F778 | D779 | L780 | E781 | V782 | S783 | D784 | I785 | A786 | Y787 | R788 | K789 | D790 | A791 | S792 | S793 | Q794 | S795 | Q796 | L797 | K798 | Q799 | L800 | T801 | Y802 | E803 | Q804 | L805 | F806 | |
| S807 | Q808 | T809 | P810 | K811 | K812 | E813 | L814 | A815 | K816 | V817 | L818 | V819 | K820 | A821 | I822 | E823 | N824 | R825 | N826 | I827 | A828 | S829 | G830 | A831 | N832 | V833 | E834 | T835 | V836 | A837 | D838 | A839 | L840 | R841 | R842 | R843 | C844 | G845 | S846 | F847 | C848 | S849 | P850 | D851 | R852 | S853 | V854 | S855 | F856 | K857 | A858 | Q859 | E860 | Q861 | L862 | Q863 | R864 | A865 | S866 | |
| E867 | Q868 | A869 | H870 | N871 | S872 | P873 | V874 | L875 | R876 | A877 | L878 | L879 | A880 | E881 | S882 | L883 | R884 | L885 | F886 | E887 | Q888 | V889 | A890 | A891 | S892 | L893 | T894 | P895 | A896 | N897 | L898 | T899 | R899 | L900 | R901 | V902 | E903 | Q904 | M905 | I906 | S907 | L908 | K909 | Y910 | Y911 | A912 | G913 | A914 | I915 | Q916 | L917 | C918 | L919 | T920 | E921 | A922 | Q923 | Q924 | X925 | D926 |
| R927 | G928 | N929 | T930 | A931 | L932 | S933 | W934 | V935 | N936 | D937 | G938 | K939 | P940 | A941 | N942 | D943 | S944 | R945 | K946 | K947 | A948 | F949 | D950 | E951 | R952 | K953 | I954 | C955 | V956 | N957 | L958 | I959 | H960 | Q961 | V962 | L963 | D964 | K965 | L966 | E967 | S968 | D969 | F970 | A971 | G972 | E973 | P974 | E975 | L976 | V977 | D978 | G979 | R980 | P981 | T982 | L983 | A984 | A985 | T986 | |
| K987 | R988 | M989 | E990 | A991 | Y992 | N993 | V994 | V995 | N996 | D997 | S998 | S999 | D1000 | E1001 | V1002 | F1003 | H1004 | F1005 | D1006 | M1007 | Y1008 | E1009 | W1010 | Y1011 | I1012 | E1013 | K1014 | G1015 | W1016 | T1017 | D1018 | R1019 | I1020 | L1021 | S1022 | L1023 | D1024 | S1025 | P1026 | H1027 | W1028 | I1029 | T1030 | Y1031 | L1032 | Q1033 | R1034 | L1035 | A1036 | E1037 | T1038 | D1039 | F1040 | R1041 | H1042 | A1043 | E1044 | L1045 | L1046 | |
| C1047 | R1048 | F1049 | Y1050 | T1051 | T1052 | R1053 | S1054 | E1055 | F1056 | F1057 | E1058 | A1059 | A1060 | Q1061 | V1062 | T1063 | T1064 | M1065 | L1066 | A1067 | K1068 | S1069 | D1070 | L1071 | M1072 | I1073 | S1074 | L1075 | K1076 | D1077 | R1078 | I1079 | I1080 | L1081 | L1082 | S1083 | R1084 | A1085 | I1086 | E1107 | A1108 | L1111 | L1112 | E1113 | I1114 | H1115 | H1116 | I1117 | Q1118 | D1119 | D1120 | L1121 | L1122 | E1123 | R1124 | L1125 | | | | |
| V1126 | A1127 | D1128 | P1129 | R1130 | R1131 | P1132 | E1133 | E1134 | R1135 | K1136 | A1137 | E1138 | I1139 | E1140 | E1141 | F1142 | L1143 | D1144 | G1145 | P1146 | I1147 | R1148 | T1149 | L1150 | T1151 | D1152 | L1153 | F1154 | M1155 | D1156 | Y1157 | A1158 | D1159 | Q1160 | A1161 | M1162 | Y1163 | Y1164 | D1165 | L1166 | C1167 | L1168 | L1169 | I1170 | F1171 | T1181 | D1184 | T1185 | W1186 | N1187 | M1188 | L1189 | I1190 | N1191 | Q1192 | S1193 | H1194 | | | |
| F1195 | E1196 | A1197 | E1198 | Q1199 | R1200 | R1201 | E1202 | Y1203 | W1204 | E1205 | I1206 | V1207 | Q1208 | A1209 | G1210 | G1211 | D1212 | L1213 | P1214 | A1215 | G1216 | V1217 | I1218 | A1219 | PRO | ILE | ALA | E1223 | P1224 | P1225 | L1226 | P1227 | Y1228 | V1229 | Y1230 | V1231 | S1232 | Q1233 | I1234 | I1235 | Q1236 | L1237 | L1255 | P1256 | V1257 | V1258 | C1259 | A1260 | Y1261 | I1263 | M1264 | M1265 | G1266 | Q1267 | D1268 | A1269 | S1270 | | | |
| I1271 | G1272 | A1273 | D1274 | P1275 | C1276 | W1277 | P1278 | I1279 | Q1280 | L1281 | A1305 | P1306 | F1307 | T1308 | G1309 | R1310 | R1311 | R1312 | K1313 | L1314 | V1315 | L1316 | Q1317 | W1318 | I1319 | A1320 | M1321 | D1324 | V1327 | R1328 | E1331 | G1334 | A1335 | A1338 | A1339 | ALA | ALA | SER | GLY | ALA | SER | GLY | ALA | ALA | L1359 | G1360 | R1361 | Q1364 | V1365 | | | | | | | | | | | |
| L1366 | T1367 | Q1368 | I1369 | A1370 | G1371 | T1372 | G1373 | A1374 | T1375 | L1376 | R1377 | G1378 | G1379 | A1380 | A1381 | S1382 | D1383 | A1384 | E1385 | E1386 | I1387 | A1388 | S1389 | L1390 | R1391 | R1392 | T1393 | V1394 | K1395 | G1396 | L1397 | K1398 | R1399 | S1400 | V1401 | D1402 | M1403 | L1404 | G1405 | G1406 | G1407 | E1408 | M1409 | A1410 | R1411 | M1412 | S1413 | F1414 | F1415 | R1416 | | | | | | | | | | |

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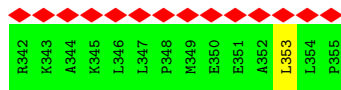


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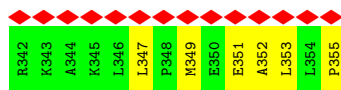
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● Molecule 4: NUP53 R3



● Molecule 4: NUP53 R3



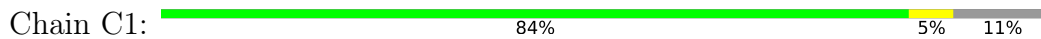
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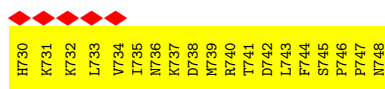
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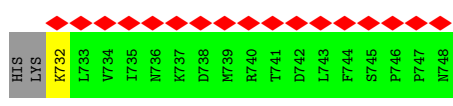
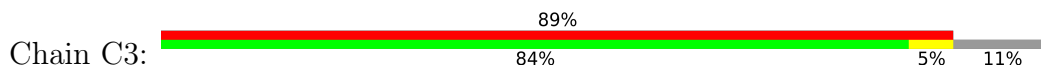
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● Molecule 5: NUP98 R3



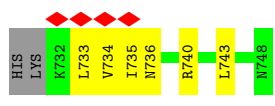
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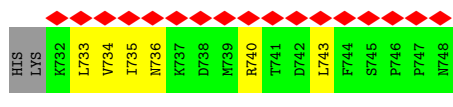
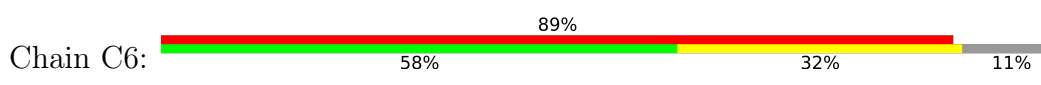
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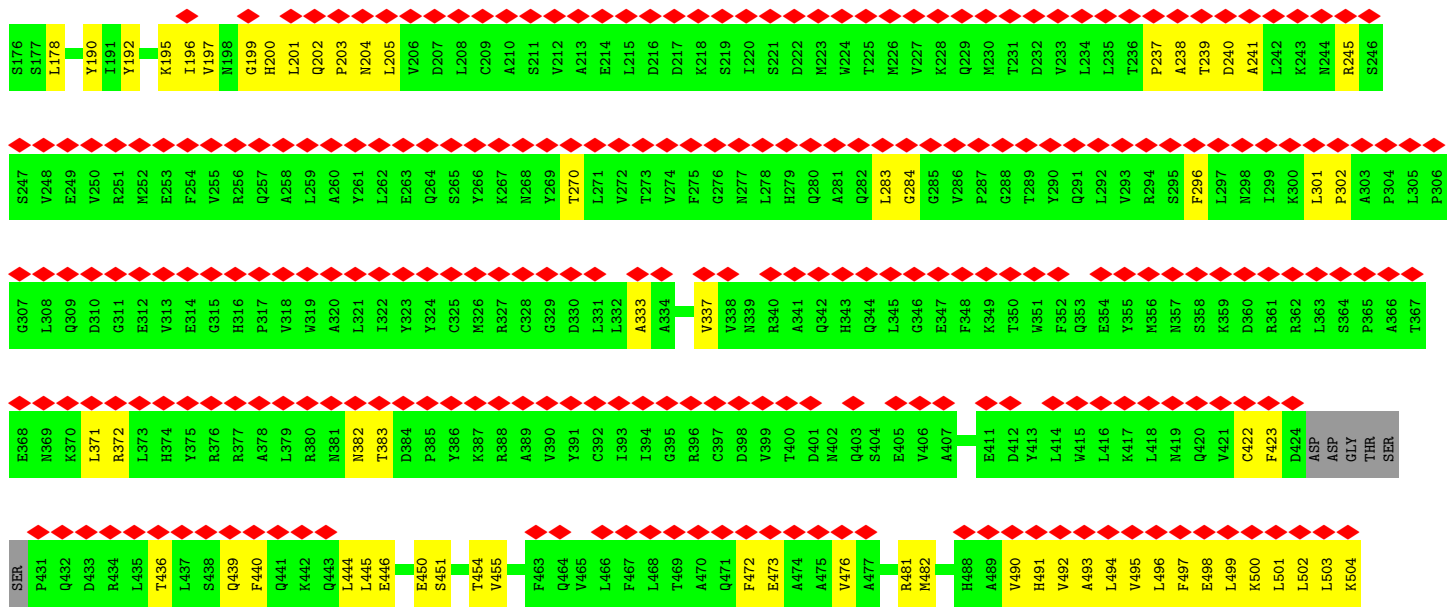
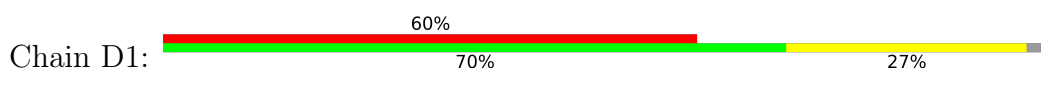
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• Molecule 5: NUP98 R3

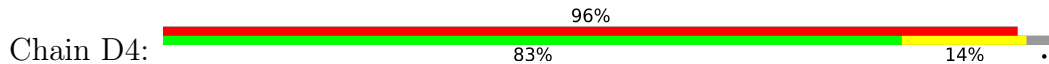


• Molecule 6: NUP93 SOL



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| R593 | K594 | L598 | D599 | K600 | F601 | T602 | S603 | D604 | T605 | K606 | F607 | L608 | L609 | N610 | K611 | V612 | A613 | S614 | V615 | A616 | E517 | N618 | K619 | G620 | L621 | F622 | E623 | E624 | A625 | A626 | K627 | L628 | V629 | D630 | L631 | E632 | K633 | N634 | A635 | D636 | K637 | V638 | L639 | E640 | L641 | M642 | N643 | K644 | L645 | L646 | S647 | P648 | V649 | V650 | P651 | Q652 | L653 | S654 | |
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| R716 | L717 | K718 | L719 | V720 | P721 | L722 | N723 | Q724 | E725 | S726 | V727 | E728 | E729 | R730 | V731 | A732 | A733 | F734 | R735 | M736 | F737 | S738 | D739 | E740 | N741 | R742 | H743 | M744 | L745 | S746 | E747 | V748 | L749 | L750 | A751 | T752 | M753 | M754 | L755 | L756 | F757 | T758 | Q759 | F760 | K761 | R762 | LEU | LYS | THR | GLY | SER | PRO | SER | SER | SER | ARG | ARG | PRO | GLN |
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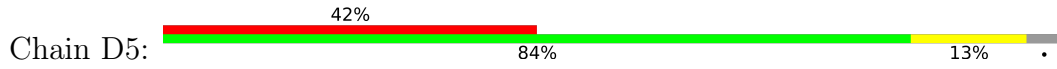
• Molecule 6: NUP93 SOL



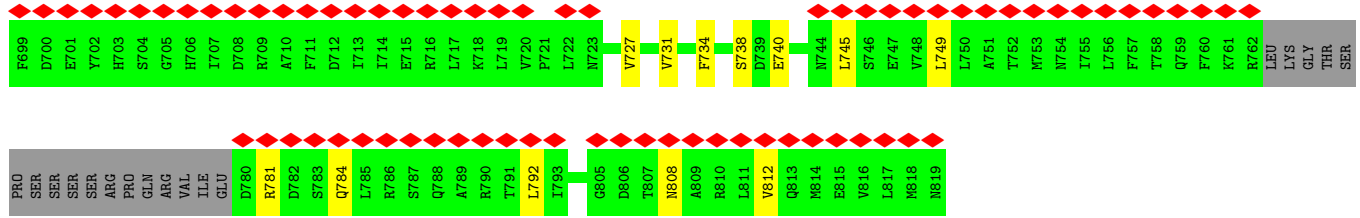
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| F296 | L297 | N298 | I299 | K300 | L301 | P302 | A303 | P304 | N244 | R245 | S246 | A186 | R187 | Q188 | A189 | Y190 | G111 | E312 | V313 | E314 | G315 | H316 | P317 | V318 | W319 | A320 | L321 | I322 | Y323 | Y324 | M326 | R327 | L208 | G329 | D330 | L331 | L332 | A333 | A334 | S335 | Q336 | V337 | V338 | N339 | R340 | A341 | Q342 | H343 | Q344 | L345 | G346 | E347 | F348 | T289 | Y290 | W351 | F352 | V233 | E354 | Y355 |

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| L416 | K417 | L418 | N419 | Q420 | R421 | C422 | F423 | D424 | ASP | ASP | GLY | THR | SER | P431 | Q432 | D433 | R434 | L435 | T436 | L437 | S438 | Q439 | F440 | Q441 | K442 | Q443 | L444 | L445 | E446 | D447 | Y448 | G449 | E450 | S451 | H452 | F453 | T454 | V455 | N456 | Q457 | Q458 | P459 | F460 | L461 | Y462 | F463 | Q464 | V465 | L466 | F467 | L468 | T469 | A470 | Q471 | F472 | E473 | A474 | A475 | | |
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• Molecule 6: NUP93 SOL

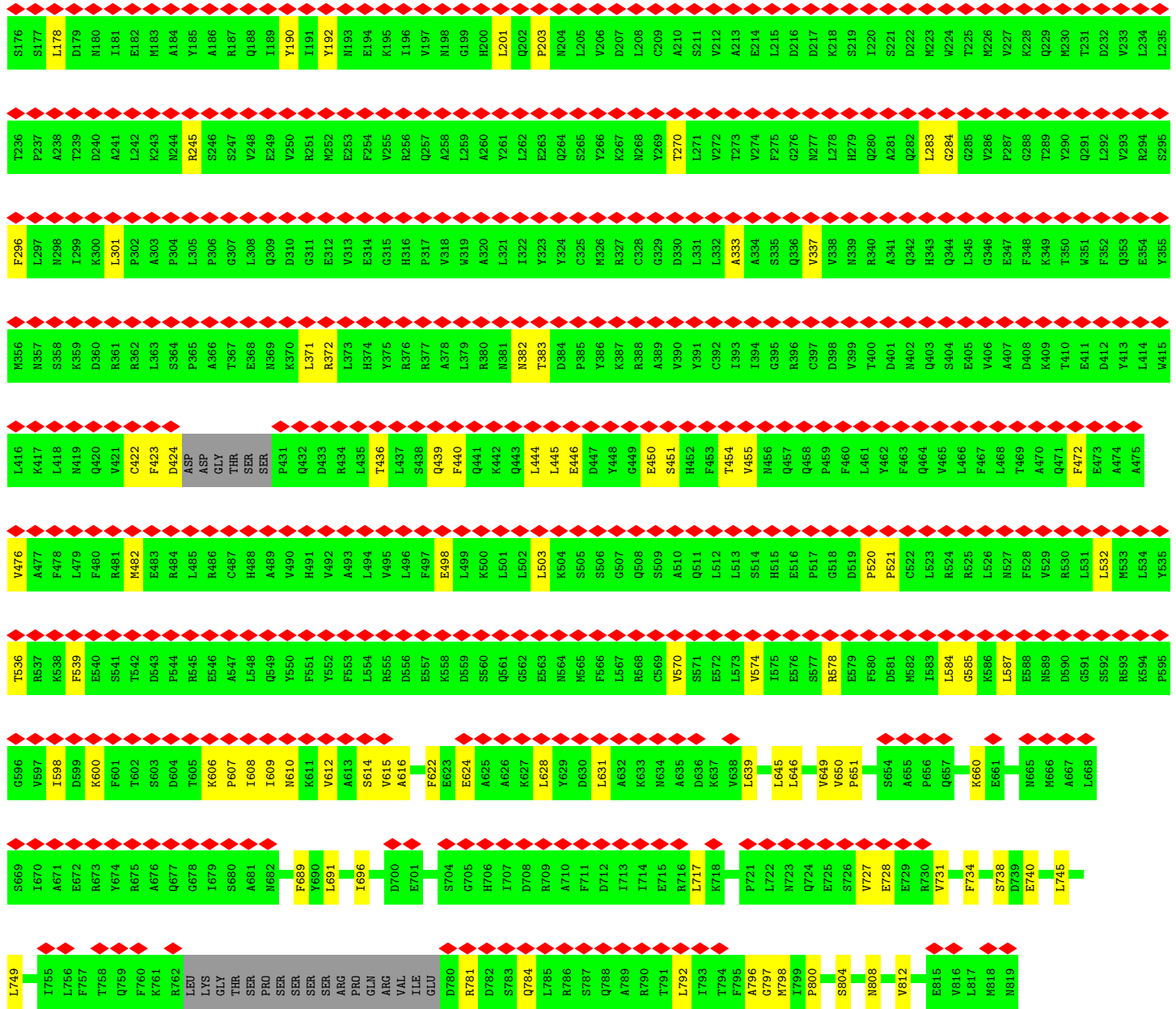


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| T454 | V455 | F472 | V476 | M482 | E498 | L503 | L532 | T536 | F539 | T542 | D543 | W551 | P544 | R545 | E546 | V570 | V574 | R578 | E579 | F580 | D581 | M582 | I583 | K586 | L587 | E588 | N589 | D590 | G591 | S592 | R593 | K594 | P595 | G596 | S597 | V598 | L598 | D599 | K600 | K606 | P607 | I608 | I609 | N610 | K611 | V612 | F689 | Y690 | L691 | L692 | L693 | D694 | L695 | I696 | T697 | F698 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



• Molecule 6: NUP93 SOL

Chain D6:



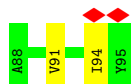
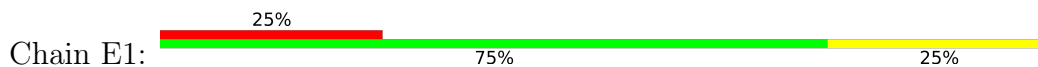
• Molecule 6: NUP93 SOL

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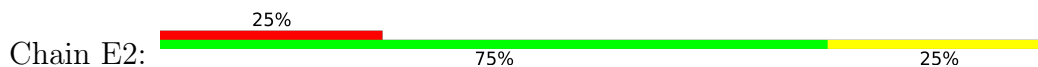


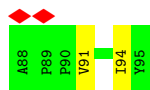
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| D360 | R361 | L363 | S364 | P365 | A366 | T367 | E368 | N369 | K370 | L371 | R372 | L373 | H374 | Y375 | R376 | R377 | A378 | L379 | R380 | H381 | N382 | T383 | D384 | P385 | Y386 | K387 | R388 | A389 | V390 | Y391 | C392 | I393 | I394 | G395 | R396 | C397 | D398 | V399 | T400 | D401 | N402 | Q403 | S404 | E405 | V406 | A407 | D408 | K409 | T410 | E411 | D412 | Y413 | L414 | W415 | L416 | K417 | L418 | N419 | | |
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| F480 | R481 | M482 | E483 | R484 | L485 | R486 | C487 | H488 | A489 | V490 | H491 | V492 | A493 | L494 | V495 | L496 | F497 | E498 | L499 | K500 | L501 | L502 | L503 | K504 | S505 | S506 | G507 | Q508 | A510 | Q511 | L512 | L513 | S514 | H515 | E516 | P517 | G518 | D519 | P520 | P521 | C522 | L523 | R524 | R525 | L526 | N527 | F528 | V529 | R530 | L531 | L532 | M533 | L534 | Y535 | T536 | E537 | K538 | F539 | | |
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| K600 | F601 | T602 | S603 | D604 | T605 | K606 | P607 | L608 | L609 | M610 | K611 | V612 | A613 | S614 | V615 | A616 | E617 | M618 | K619 | G620 | L621 | F622 | E623 | E624 | A625 | A626 | K627 | L628 | V629 | D630 | L631 | A632 | K633 | M634 | A635 | D636 | K637 | V638 | L639 | E640 | L641 | M642 | M643 | K644 | L645 | L646 | S647 | P648 | V649 | V650 | P651 | Q652 | T653 | S654 | A655 | P656 | Q657 | S658 | N659 | |
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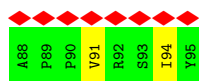
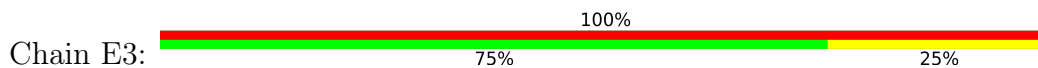


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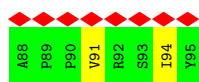
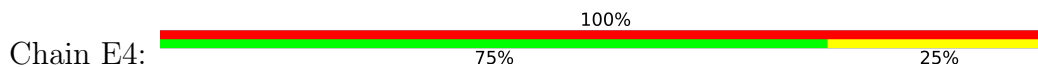




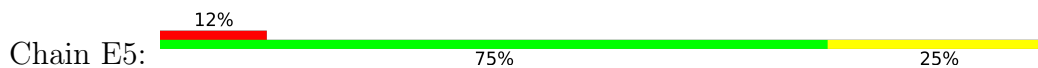
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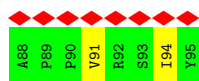
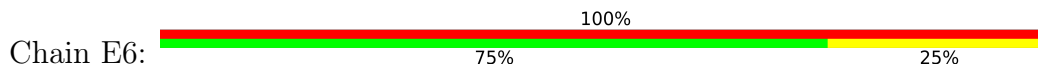
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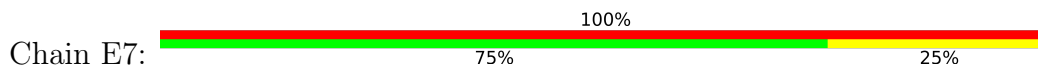
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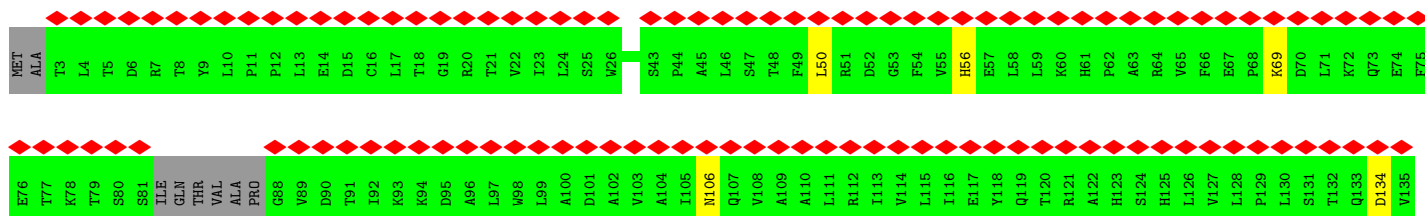
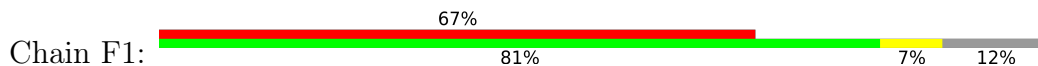
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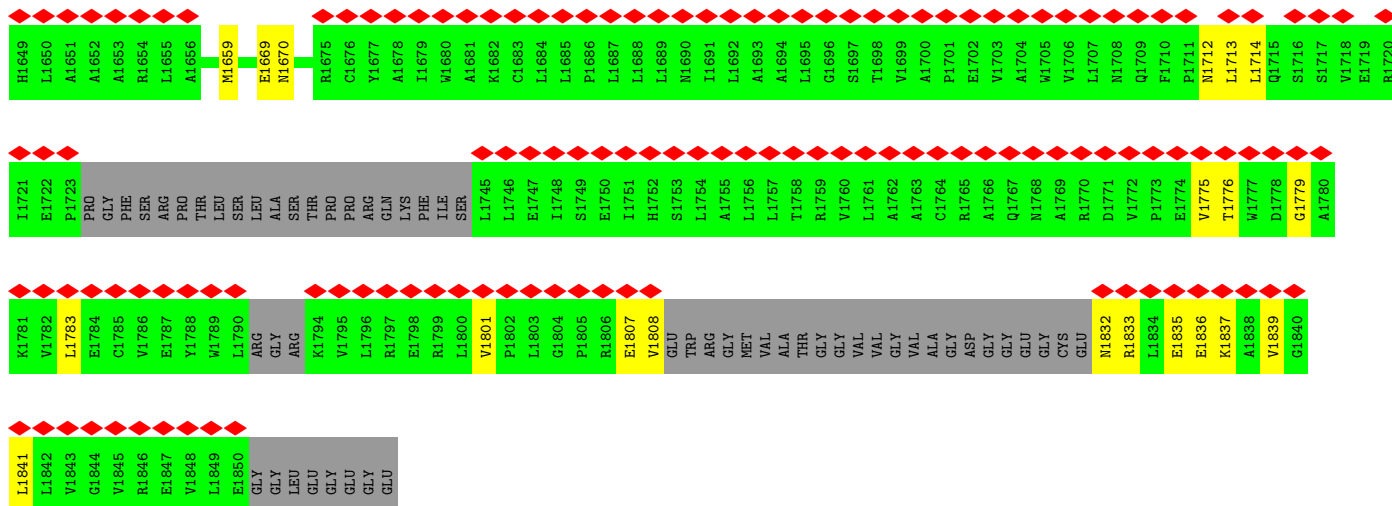


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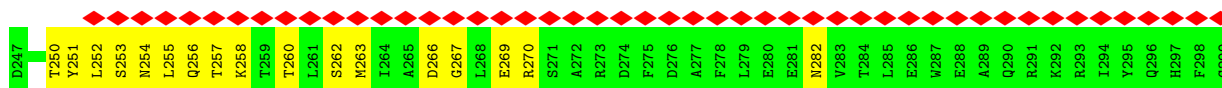


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|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
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| E721 | E722 | E723 | E724 | E725 | E726 | E727 | E728 | E729 | E730 | E731 | E732 | E733 | E734 | E735 | E736 | E737 | E738 | E739 | E740 | E741 | E742 | E743 | E744 | E745 | E746 | E747 | E748 | E749 | E750 | E751 | E752 | E753 | E754 | E755 | E756 | E757 | E758 | E759 | E760 | E761 | E762 | E763 | E764 | E765 | E766 | E767 | E768 | E769 | E770 | E771 | E772 | E773 | E774 | E775 | E776 | E777 | E778 | E779 | E780 |
| V601 | V602 | V603 | V604 | V605 | V606 | V607 | V608 | V609 | V610 | V611 | V612 | V613 | V614 | V615 | V616 | V617 | V618 | V619 | V620 | V621 | V622 | V623 | V624 | V625 | V626 | V627 | V628 | V629 | V630 | V631 | V632 | V633 | V634 | V635 | V636 | V637 | V638 | V639 | V640 | V641 | V642 | V643 | V644 | V645 | V646 | V647 | V648 | V649 | V650 | V651 | V652 | V653 | V654 | V655 | V656 | V657 | V658 | V659 | V660 |
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| E481 | E482 | E483 | E484 | E485 | E486 | E487 | E488 | E489 | E490 | E491 | E492 | E493 | E494 | E495 | E496 | E497 | E498 | E499 | E500 | E501 | E502 | E503 | E504 | E505 | E506 | E507 | E508 | E509 | E510 | E511 | E512 | E513 | E514 | E515 | E516 | E517 | E518 | E519 | E520 | E521 | E522 | E523 | E524 | E525 | E526 | E527 | E528 | E529 | E530 | E531 | E532 | E533 | E534 | E535 | E536 | E537 | E538 | E539 | E540 |
| H361 | H362 | H363 | H364 | H365 | H366 | H367 | H368 | H369 | H370 | H371 | H372 | H373 | H374 | H375 | H376 | H377 | H378 | H379 | H380 | H381 | H382 | H383 | H384 | H385 | H386 | H387 | H388 | H389 | H390 | H391 | H392 | H393 | H394 | H395 | H396 | H397 | H398 | H399 | H400 | H401 | H402 | H403 | H404 | H405 | H406 | H407 | H408 | H409 | H410 | H411 | H412 | H413 | H414 | H415 | H416 | H417 | H418 | H419 | H420 |
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| L241 | L242 | L243 | L244 | L245 | L246 | L247 | L248 | L249 | L250 | L251 | L252 | L253 | L254 | L255 | L256 | L257 | L258 | L259 | L260 | L261 | L262 | L263 | L264 | L265 | L266 | L267 | L268 | L269 | L270 | L271 | L272 | L273 | L274 | L275 | L276 | L277 | L278 | L279 | L280 | L281 | L282 | L283 | L284 | L285 | L286 | L287 | L288 | L289 | L290 | L291 | L292 | L293 | L294 | L295 | L296 | L297 | L298 | L299 | L300 |
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| H61 | H62 | H63 | H64 | H65 | H66 | H67 | H68 | H69 | H70 | H71 | H72 | H73 | H74 | H75 | H76 | H77 | H78 | H79 | H80 | H81 | H82 | H83 | H84 | H85 | H86 | H87 | H88 | H89 | H90 | H91 | H92 | H93 | H94 | H95 | H96 | H97 | H98 | H99 | H100 | H101 | H102 | H103 | H104 | H105 | H106 | H107 | H108 | H109 | H110 | H111 | H112 | H113 | H114 | H115 | H116 | H117 | H118 | H119 | H120 |
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| ARG | ARG | ASP | LEU | VAL | ASN | GLN | ALA | GLN | ALA | GLY | PHE | GLU | LEU | PHE | GLN | PRO | ALA | THR | PRO | ASN | ARG | ARG | ASN | ASN | SER | ALA | GLY | SER | ILE | VAL | SER | LEU | ALA | S462 | P463 | Y464 | D465 | D466 | F467 | L468 | R469 | E470 | Q471 | R472 | L473 | A474 | N475 | D476 | I477 | H478 | P479 | V480 | | | | | | | |

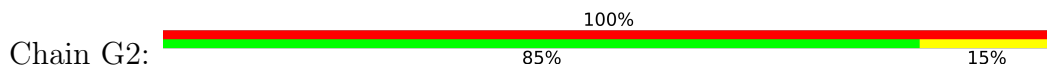
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| GLU | GLY | K1352 | G1472 | L1412 | K1352 | G1292 | M1232 | A1172 | D1112 | C1052 | R988 | R910 | L851 |
| GLM | GLN | Q1353 | M1473 | E1413 | Q1353 | Y1293 | M1233 | A1173 | K1113 | L1053 | Q989 | V911 | D852 |
| GLN | ASN | S1354 | M1474 | A1414 | S1354 | M1294 | M1234 | A1174 | F1114 | L1054 | Q990 | A912 | M853 |
| ALA | ALA | F1355 | D1475 | M1415 | G1355 | A1295 | K1235 | M1175 | P1115 | A1055 | P991 | I915 | Y854 |
| THR | THR | F1356 | L1476 | Q1416 | F1356 | S1296 | T1236 | E1176 | G1116 | R1056 | L992 | Q917 | A855 |
| ASP | THR | R1357 | P1477 | L1417 | R1357 | L1297 | D1237 | R1177 | R1117 | P1058 | L993 | A918 | E856 |
| GLY | THR | K1358 | F1478 | S1418 | K1358 | H1298 | G1238 | L1178 | V1118 | A1059 | L994 | A919 | R857 |
| THR | THR | E1359 | F1479 | Q1419 | E1359 | G1299 | A1239 | R1179 | E1119 | A1060 | T995 | A918 | F858 |
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| L1550 | ASN | L1367 | L1427 | L1427 | L1367 | K1307 | R1247 | Q1187 | F1127 | P1067 | T1002 | T928 | K866 |
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| PRO | PRO | A1379 | L1439 | L1439 | A1379 | R1319 | Q1259 | A1199 | M1139 | A1079 | P1009 | L940 | C877 |
| GLY | GLY | M1380 | L1440 | L1440 | M1380 | T1320 | L1260 | Q1200 | A1140 | G1080 | G1010 | V941 | S878 |
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| L1515 | THR | F1453 | F1453 | F1453 | P1393 | Y1333 | G1273 | E1212 | LEU | L1093 | T1027 | V953 | VAL |
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| H1555 | THR | H1455 | H1455 | H1455 | K1395 | L1335 | E1275 | E1214 | GLY | Y1095 | L1029 | A955 | ALA |
| L1456 | THR | E1396 | L1456 | L1456 | K1395 | E1335 | E1275 | E1215 | GLY | L1096 | L1030 | H956 | VAL |
| L1457 | THR | N1397 | L1457 | L1457 | N1397 | V1337 | V1277 | V1216 | GLU | G1097 | R1031 | T957 | GLU |
| A1458 | THR | A1398 | A1458 | A1458 | A1398 | G1330 | A1270 | V1216 | GLN | P1089 | A1032 | L958 | ASN |
| L1459 | THR | A1399 | L1459 | L1459 | A1399 | E1339 | A1278 | D1218 | LYS | S1098 | A1032 | L958 | ASN |
| V1460 | THR | F1400 | V1460 | V1460 | F1400 | Q1340 | A1279 | D1219 | ILE | H1099 | A1033 | S959 | ALA |
| S1461 | THR | A1401 | S1461 | S1461 | A1401 | M1341 | L1280 | A1219 | GLU | A1100 | D1034 | S960 | ALA |
| S1462 | THR | L1402 | S1462 | S1462 | L1402 | M1342 | L1281 | L1220 | ARG | A1101 | F1035 | H961 | VAL |
| A1463 | THR | Q1403 | A1463 | A1463 | Q1403 | L1343 | L1282 | L1222 | LYS | R1102 | L1043 | L962 | VAL |
| I1464 | THR | V1404 | I1464 | I1464 | V1404 | F1344 | L1284 | V1224 | THR | R1102 | L1043 | T963 | VAL |
| H1465 | THR | L1405 | H1465 | H1465 | L1405 | D1345 | L1285 | R1225 | LYS | S1103 | L1044 | T963 | VAL |
| A1466 | THR | L1406 | A1466 | A1466 | L1406 | A1346 | L1286 | R1226 | GLU | L1096 | T1045 | T965 | VAL |
| V1467 | THR | V1407 | V1467 | V1467 | V1407 | G1347 | L1287 | L1227 | GLU | G1097 | Q1044 | S967 | VAL |
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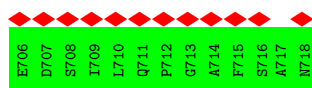
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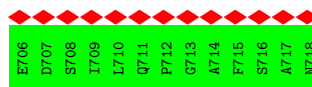
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• Molecule 10: NUP98 R2



• Molecule 10: NUP98 R2

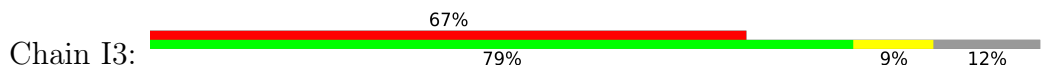


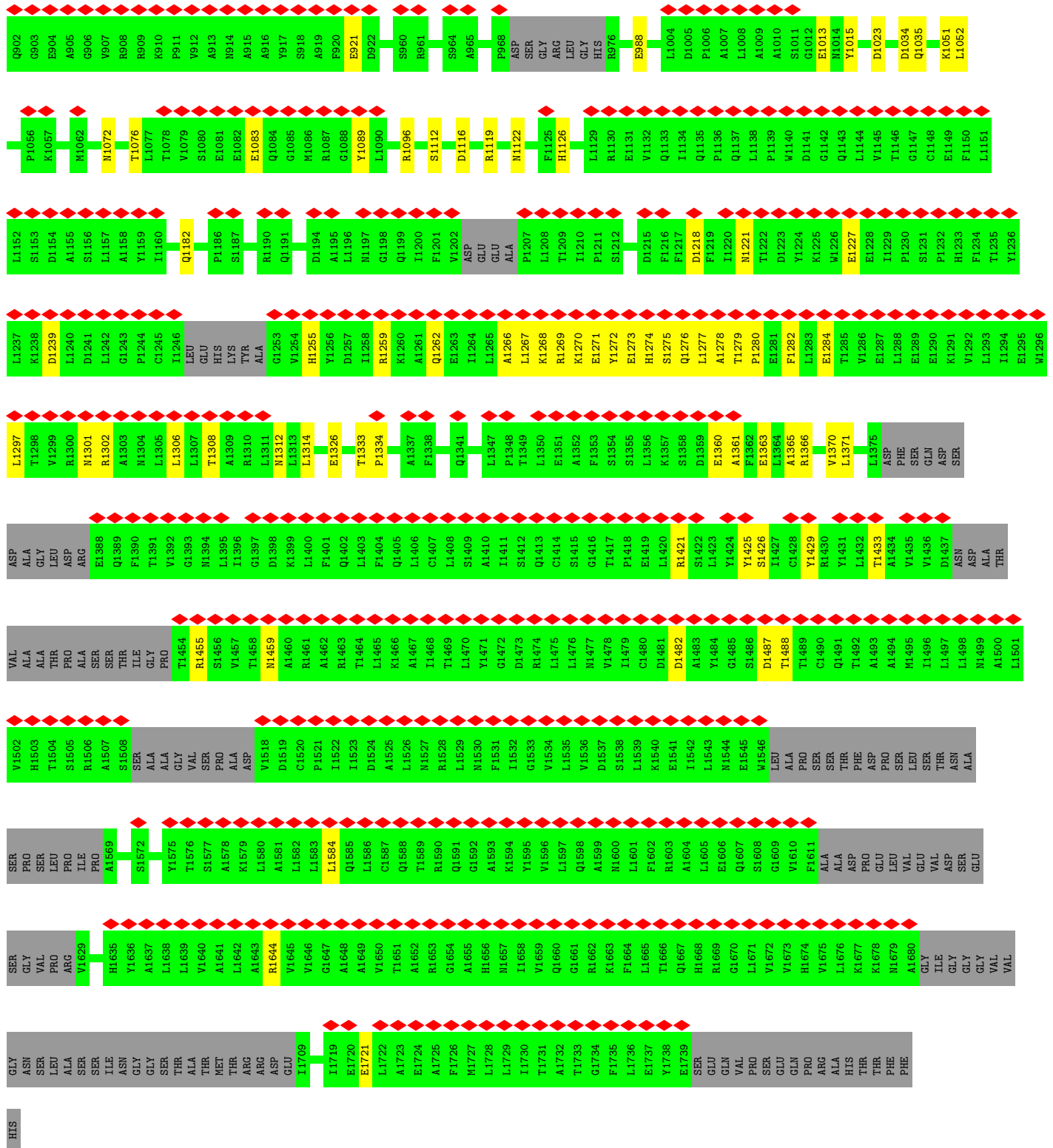
• Molecule 11: NUP205



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|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|-------|-------|
| LEU | GLY | HIS | R976 | R977 | R978 | A979 | Y980 | Y981 | Q982 | L983 | E984 | R985 | Y986 | G987 | E988 | G989 | E990 | T991 | Y992 | S993 | A994 | S995 | L996 | S997 | A998 | S999 | I1000 | M1001 | A1002 | T1003 | L1004 | D1005 | P1006 | A1007 | L1008 | A1009 | A1010 | S1011 | G1012 | E1013 | N1014 | Y1015 | R1016 | V1017 | K1018 | L1019 | A1020 | L1021 | L1022 | D1023 | F1024 | L1025 | G1028 | L1029 | R1030 | A1031 | T1032 | P1033 | | | | | | | | | |
| D1034 | Q1035 | P1036 | T1037 | A1038 | A1039 | H1040 | Q1041 | L1042 | L1043 | G1044 | F1045 | H1046 | C1047 | E1048 | L1049 | S1050 | K1051 | L1052 | I1054 | P1056 | K1057 | G1058 | P1059 | F1060 | D1061 | S1062 | Q1063 | K1064 | S1065 | L1066 | F1067 | H1068 | S1069 | L1070 | L1071 | N1072 | V1073 | L1074 | I1075 | T1076 | L1077 | T1078 | V1079 | S1080 | E1081 | L1082 | E1083 | Q1084 | G1085 | F1086 | M1087 | G1088 | Y1089 | L1090 | V1091 | T1092 | L1093 | | | | | | | | | | |
| K1094 | Y1095 | R1096 | I1100 | Q1101 | Q1102 | L1103 | L1104 | W1105 | K1106 | S1107 | P1108 | L1109 | S1110 | A1111 | L1112 | L1113 | W1114 | M1115 | D1116 | E1117 | L1118 | R1119 | A1120 | T1121 | M1122 | F1123 | L1124 | F1125 | H1126 | M1127 | L1128 | L1129 | R1130 | E1131 | V1132 | Q1133 | I1134 | Q1135 | P1136 | Q1137 | L1138 | P1139 | W1140 | D1141 | G1142 | Q1143 | V1144 | L1144 | V1145 | T1146 | C1148 | E1149 | F1150 | L1151 | L1152 | S1153 | D1154 | A1155 | | | | | | | | | |
| S1156 | L1157 | A1158 | Y1159 | Y1162 | L1163 | R1166 | Q1182 | I1185 | P1186 | S1187 | I1188 | K1189 | R1190 | Q1191 | I1192 | F1193 | D1194 | A1195 | L1196 | M1197 | G1198 | Q1199 | I1200 | F1201 | ASP | GLU | GLU | ALA | P1207 | L1208 | I1210 | I1211 | S1212 | I1213 | F1214 | D1215 | F1216 | F1217 | D1218 | F1219 | I1220 | M1221 | T1222 | D1223 | Y1224 | K1225 | W1226 | E1227 | L1228 | I1229 | P1230 | P1231 | P1232 | | | | | | | | | | | | | | |
| H1233 | F1234 | T1235 | Y1236 | K1238 | D1239 | L1240 | D1241 | L1242 | G1243 | P1244 | C1245 | I1246 | LEU | GLU | HIS | LYS | TYR | ALA | G1253 | V1254 | H1255 | Y1256 | D1257 | I1258 | R1259 | A1261 | Q1262 | E1263 | L1264 | L1265 | A1266 | L1267 | K1268 | R1269 | K1270 | E1271 | Y1272 | E1273 | H1274 | S1275 | Q1276 | L1277 | A1278 | T1279 | P1280 | E1281 | F1282 | L1283 | E1284 | T1285 | V1286 | E1287 | L1288 | E1289 | E1290 | K1291 | V1292 | | | | | | | | | | |
| L1293 | I1294 | E1295 | W1296 | L1297 | L1298 | V1299 | R1300 | H1301 | R1302 | A1303 | M1304 | L1305 | L1306 | L1307 | T1308 | A1309 | L1310 | L1311 | M1312 | L1313 | L1314 | W1317 | A1318 | E1326 | T1333 | P1334 | A1345 | I1346 | L1347 | P1348 | T1349 | R1350 | E1351 | A1352 | F1353 | S1354 | S1355 | L1356 | K1357 | S1358 | D1359 | E1360 | A1361 | F1362 | E1363 | L1364 | A1365 | R1366 | V1367 | A1368 | L1369 | V1370 | L1371 | L1372 | W1373 | | | | | | | | | | | | |
| K1374 | L1375 | ASP | PHE | ALA | SER | GLN | ASP | SER | ASP | SER | ASP | ALA | VAL | ALA | GLY | LEU | ASP | ARG | E1388 | L1400 | F1401 | Q1402 | L1403 | F1404 | L1406 | C1407 | L1408 | S1409 | A1410 | I1411 | S1412 | Q1413 | C1414 | S1415 | G1416 | T1417 | P1418 | E1419 | L1420 | R1421 | S1422 | L1423 | Y1424 | Y1425 | S1426 | I1427 | C1428 | Y1429 | L1430 | Y1431 | L1432 | T1433 | A1434 | V1435 | V1436 | D1437 | ASN | ASP | ALA | THR | VAL | ALA | | | | | |
| ALA | THR | PRO | ALA | SER | SER | THR | ILE | GLY | PRO | T1454 | R1455 | T1458 | M1459 | A1460 | R1461 | A1462 | R1463 | T1464 | L1465 | K1466 | A1467 | I1468 | T1469 | L1470 | Y1471 | G1472 | D1473 | R1474 | L1475 | L1476 | M1477 | V1478 | I1479 | E1419 | C1480 | D1481 | D1482 | A1483 | Y1484 | G1485 | S1486 | D1487 | T1488 | T1489 | C1490 | Q1491 | T1492 | A1493 | A1494 | M1495 | L1496 | L1497 | L1498 | M1499 | A1500 | L1501 | V1502 | H1503 | T1504 | | | | | | | | |
| S1505 | R1506 | A1507 | S1508 | ALA | ALA | VAL | SER | PRO | ALA | ASP | Y1518 | D1519 | C1520 | P1521 | I1522 | I1523 | D1524 | A1525 | L1526 | M1527 | R1528 | L1529 | M1530 | F1531 | I1532 | G1533 | V1534 | L1535 | V1536 | D1537 | S1538 | E1419 | L1539 | K1540 | L1543 | W1546 | LEU | ALA | PRO | SER | SER | THR | PHE | ASP | PRO | VAL | VAL | VAL | VAL | VAL | VAL | ASN | ASN | ALA | ALA | GLY | THR | THR | GLY | GLY | VAL | VAL | ARG | PRO | PRO | ARG | V1629 |
| ILE | PRO | A1569 | Q1574 | Y1575 | T1576 | S1577 | A1578 | K1579 | L1580 | A1581 | L1582 | L1583 | L1584 | Q1585 | L1586 | C1587 | Q1588 | T1589 | R1590 | Q1591 | I1592 | A1593 | K1594 | Y1595 | V1596 | L1597 | Q1598 | A1599 | F1602 | R1603 | A1604 | L1605 | E1606 | Q1607 | S1608 | G1609 | V1610 | F1611 | ALA | ALA | ASP | PRO | GLU | LEU | VAL | VAL | VAL | VAL | VAL | VAL | ASN | ASN | GLY | ILE | THR | THR | THR | GLY | GLY | VAL | VAL | ARG | PRO | PRO | ARG | V1629 | |
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| GLY | GLY | SER | THR | ALA | THR | MET | THR | ARG | ARG | ASP | GLU | I1709 | Q1713 | E1716 | E1717 | E1720 | E1721 | E1724 | A1725 | F1726 | M1727 | L1728 | T1731 | A1732 | F1735 | L1736 | E1737 | Y1738 | E1739 | SER | GLU | GLN | VAL | PRO | PRO | SER | GLU | GLN | PRO | ARG | ALA | ALA | HIS | THR | THR | PHE | PHE | HIS | | | | | | | | | | | | | | | | | | | |

● Molecule 11: NUP205





• Molecule 11: NUP205

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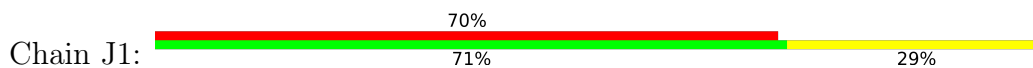
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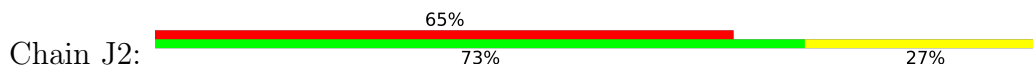
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|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| A481 | A482 | M483 | S484 | F485 | W486 | E487 | D488 | P489 | D490 | S491 | N492 | L493 | A494 | G495 | F496 | L497 | Q498 | W499 | A500 | S501 | R502 | R503 | A504 | S505 | T506 | P507 | L508 | V509 | S510 | A511 | F512 | C513 | E514 | M515 | L516 | R517 | C518 | L519 | A520 | D521 | N522 | E523 | E524 | C525 | A526 | T527 | A528 | A529 | H530 | M531 | F532 | L533 | L534 | D535 | E536 | GLY | HIS | GLN | ALA | | | |
| SER | GLY | LYS | MET | LVS | ARG | SER | Q548 | S549 | L550 | T551 | W552 | S553 | Q554 | I555 | F556 | K557 | E558 | L559 | E560 | Y561 | F562 | T563 | T564 | K565 | V566 | C567 | S568 | GLU | ARG | PRO | ASN | ILE | D629 | PHE | LEU | GLY | GLM | ALA | SER | THR | HIS | ARG | PRO | GLY | ARG | PRO | ALA | ASP | PRO | ALA | E590 | I591 | E592 | P593 | E594 | S595 | A596 | H530 | L597 | M598 | L599 | E600 |
| C601 | Y602 | L603 | R604 | L605 | I606 | A607 | K608 | L609 | A610 | T611 | E612 | S613 | E614 | I615 | A616 | R617 | K618 | R619 | L620 | I621 | M622 | D623 | E624 | D625 | GLY | F626 | M627 | L628 | V629 | D630 | T631 | I632 | L633 | L634 | K634 | L635 | S636 | V637 | G638 | V639 | I640 | P641 | H642 | R643 | L644 | R645 | A646 | C647 | I648 | F649 | Y650 | H651 | L652 | K653 | A654 | L655 | M656 | I657 | R658 | K659 | T660 | |
| H661 | E662 | E663 | L664 | D665 | A666 | W668 | R669 | W670 | W671 | E672 | A673 | W674 | M675 | T676 | M677 | P678 | F679 | SER | F800 | LEU | PRO | GLY | SER | GLN | ALA | PRO | GLN | ARG | ILE | SER | SER | PHE | LEU | GLY | GLM | THR | P699 | G700 | P701 | Q702 | E703 | C704 | M705 | E706 | M707 | M708 | F709 | R710 | E711 | G712 | G713 | T714 | G715 | F716 | E717 | Q718 | S719 | M720 | | | | |
| A721 | F722 | I723 | Q724 | L725 | L726 | T727 | T728 | L729 | L730 | V731 | P732 | F733 | E734 | G735 | L736 | ASN | SER | LEU | N740 | D741 | S742 | P743 | V744 | F745 | P746 | E747 | W748 | L749 | G750 | S751 | S752 | I753 | R754 | T755 | L756 | G757 | I758 | E759 | P760 | Y761 | V762 | D763 | F764 | V765 | F766 | D767 | V768 | F769 | A770 | M771 | R772 | T773 | K774 | D775 | I776 | S777 | D778 | F779 | S780 | | | |
| Q781 | L782 | R783 | L784 | L785 | R786 | L787 | S788 | C789 | L790 | D791 | F792 | V793 | M794 | V795 | C796 | L797 | V798 | T799 | F800 | N801 | E802 | D803 | L804 | I805 | V806 | L807 | G808 | H809 | E810 | S811 | N812 | I813 | S814 | I815 | D816 | D817 | A818 | M819 | A820 | A821 | N822 | N823 | L824 | A825 | R826 | Y827 | V828 | R829 | L830 | H831 | P832 | F833 | S834 | D835 | R836 | M837 | E838 | W839 | L840 | | | |
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| I1021 | L1022 | D1023 | F1024 | L1025 | Y1026 | A1027 | C1028 | L1029 | R1030 | A1031 | T1032 | P1033 | D1034 | Q1035 | P1036 | T1037 | I1038 | A1039 | H1040 | Q1041 | L1042 | L1043 | G1044 | F1045 | H1046 | C1047 | E1048 | L1049 | S1050 | K1051 | L1052 | G1053 | I1054 | L1055 | E1056 | A998 | I1057 | G1058 | P1059 | F1060 | D1061 | Q1062 | K1064 | S1065 | L1066 | T946 | F1067 | H1068 | S1069 | L1070 | L1071 | N1072 | V1073 | L1074 | I1075 | T1076 | L1077 | L1078 | V1079 | S1080 | | |
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|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-------|-------|-------|
| SER | ASP | THR | THR | L1501 | ALA | ASP | GLU | GLY | GLN | S239 | S240 | T241 | E245 | D249 | T250 | Y251 | L252 | S253 | M254 | L255 | Q256 | T257 | K258 | R259 | R270 | T271 | A272 | R273 | D274 | F275 | D276 | A277 | F278 | E280 | E281 | M282 | V283 | A272 | R273 | D274 | F275 | D276 | A277 | F278 | E280 | E281 | M282 | V283 | Y295 | F298 | I300 | K301 | L1321 | L1322 | V1323 | M1324 | L1325 | E1326 | S1327 | N1328 | F1329 | T1330 | K1331 | S1332 | T1333 | P1334 | K1335 | M1336 | A1337 | F1338 | L1339 | L1340 | Q1341 | A1342 | L1343 | Q1344 | A1345 | I1346 | L1347 | P1348 | L1349 | T1350 | E1351 | V1352 | F1353 | L1354 | S1355 | L1356 | K1357 | S1358 | D1359 | R1421 | S1422 | L1423 | Y1424 | Y1425 | S1426 | I1427 | C1428 | Y1429 | R1430 | Y1431 | V1370 | L1371 | L1372 | W1373 | K1374 | L1375 | ASP | PHE | ASP | GLN | ASP | L1261 | Q1262 | E1263 | I1264 | L1265 | A1266 | L1267 | K1268 | R1269 | K1270 | E1271 | Y1272 | E1273 | H1274 | S1275 | Q1276 | L1277 | A1278 | T1279 | P1280 | E1281 | F1282 | L1283 | E1284 | T1285 | W1286 | E1287 | L1288 | L1289 | L1290 | K1291 | V1292 | L1293 | I1294 | E1295 | W1296 | L1297 | T1298 | V1299 | R1300 | M1301 | R1302 | A1303 | N1304 | L1305 | L1306 | L1307 | T1308 | A1309 | R1310 | L1311 | N1312 | L1313 | L1314 | Q1315 | A1316 | W1317 | SER | GLN | A1318 | N1319 | L1320 |
| SER | ASP | THR | THR | L1501 | ALA | ASP | GLU | GLY | GLN | S239 | S240 | T241 | E245 | D249 | T250 | Y251 | L252 | S253 | M254 | L255 | Q256 | T257 | K258 | R259 | R270 | T271 | A272 | R273 | D274 | F275 | D276 | A277 | F278 | E280 | E281 | M282 | V283 | A272 | R273 | D274 | F275 | D276 | A277 | F278 | E280 | E281 | M282 | V283 | Y295 | F298 | I300 | K301 | L1321 | L1322 | V1323 | M1324 | L1325 | E1326 | S1327 | N1328 | F1329 | T1330 | K1331 | S1332 | T1333 | P1334 | K1335 | M1336 | A1337 | F1338 | L1339 | L1340 | Q1341 | A1342 | L1343 | Q1344 | A1345 | I1346 | L1347 | P1348 | L1349 | T1350 | E1351 | V1352 | F1353 | L1354 | S1355 | L1356 | K1357 | S1358 | D1359 | R1421 | S1422 | L1423 | Y1424 | Y1425 | S1426 | I1427 | C1428 | Y1429 | R1430 | Y1431 | V1370 | L1371 | L1372 | W1373 | K1374 | L1375 | ASP | PHE | ASP | GLN | ASP | L1261 | Q1262 | E1263 | I1264 | L1265 | A1266 | L1267 | K1268 | R1269 | K1270 | E1271 | Y1272 | E1273 | H1274 | S1275 | Q1276 | L1277 | A1278 | T1279 | P1280 | E1281 | F1282 | L1283 | E1284 | T1285 | W1286 | E1287 | L1288 | L1289 | L1290 | K1291 | V1292 | L1293 | I1294 | E1295 | W1296 | L1297 | T1298 | V1299 | R1300 | M1301 | R1302 | A1303 | N1304 | L1305 | L1306 | L1307 | T1308 | A1309 | R1310 | L1311 | N1312 | L1313 | L1314 | Q1315 | A1316 | W1317 | SER | GLN | A1318 | N1319 | L1320 |

• Molecule 12: NUP93 R2

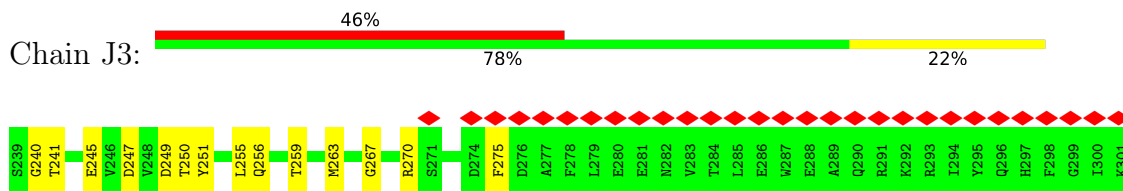


• Molecule 12: NUP93 R2

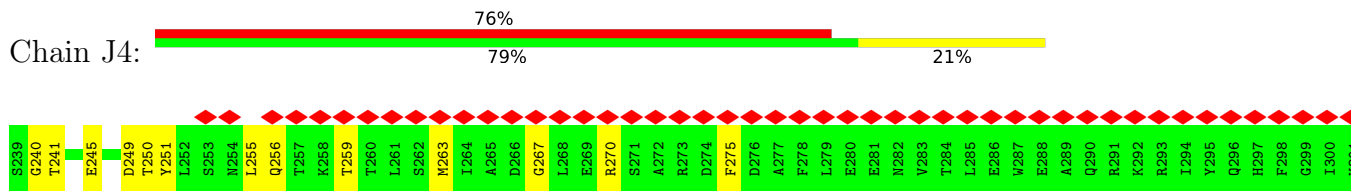


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|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| S239 | G240 | T241 | E245 | D249 | T250 | Y251 | L255 | Q256 | T259 | T260 | M263 | I264 | A265 | D266 | G267 | L268 | E269 | R270 | S271 | A272 | R273 | D274 | F275 | D276 | A277 | F278 | E280 | E281 | M282 | V283 | A272 | R273 | D274 | F275 | D276 | A277 | F278 | E280 | E281 | M282 | V283 | Y295 | Q296 | H297 | F298 | G299 | I300 | K301 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

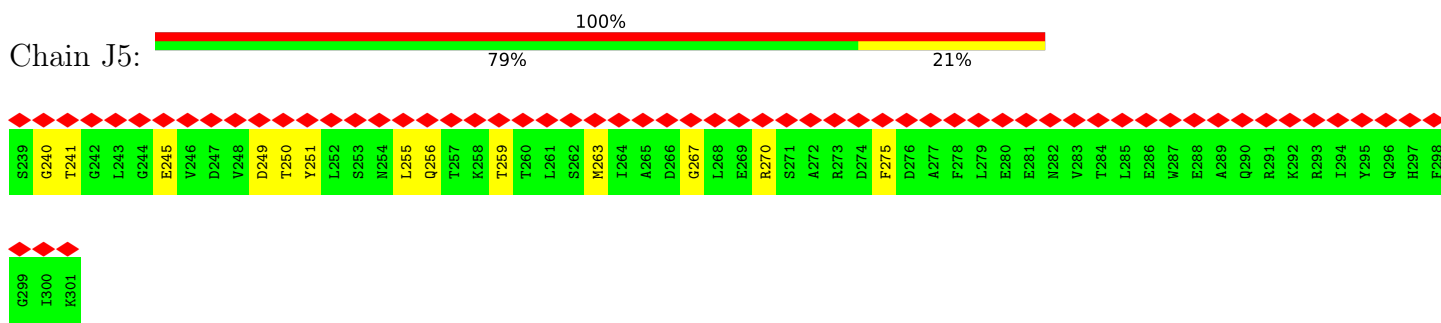
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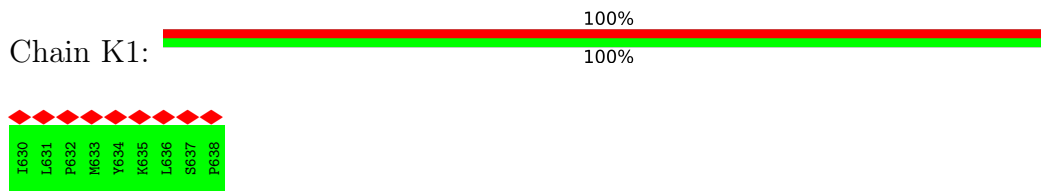
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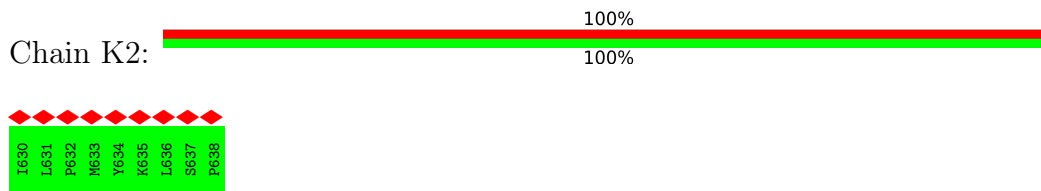
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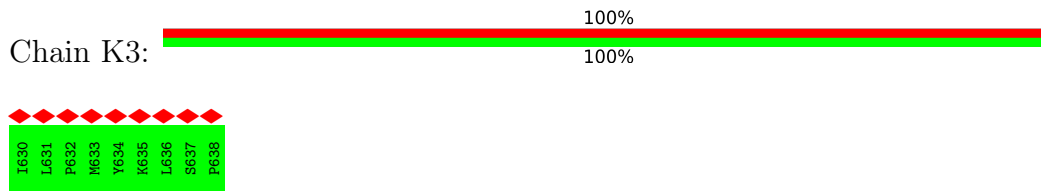
• Molecule 13: NUP98 R1



• Molecule 13: NUP98 R1



• Molecule 13: NUP98 R1

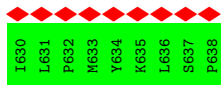


• Molecule 13: NUP98 R1



There are no outlier residues recorded for this chain.

- Molecule 13: NUP98 R1



- Molecule 14: NUP53 R1



There are no outlier residues recorded for this chain.

- Molecule 14: NUP53 R1



- Molecule 14: NUP53 R1



- Molecule 14: NUP53 R1

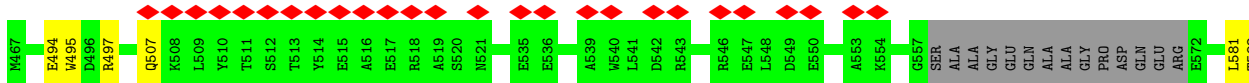
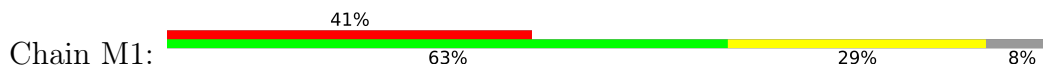


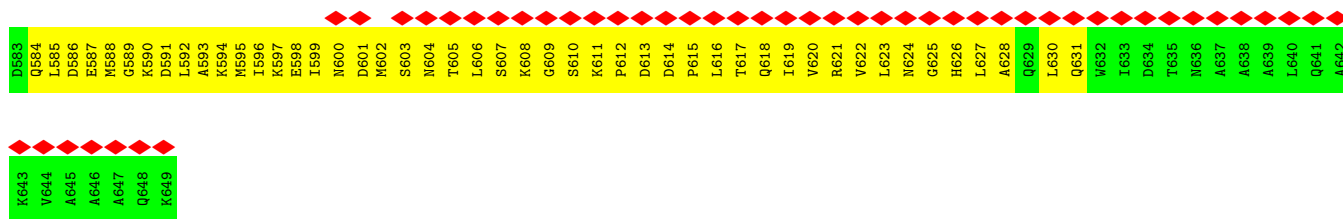
There are no outlier residues recorded for this chain.

- Molecule 14: NUP53 R1

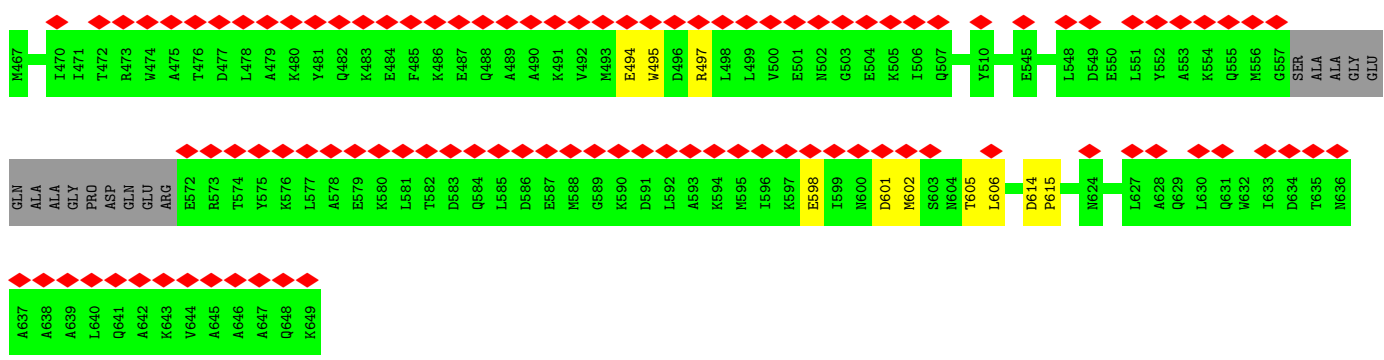
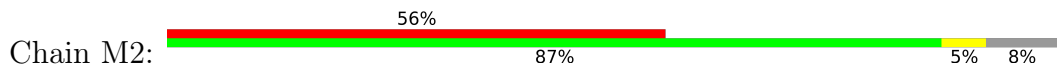


- Molecule 15: NUP62

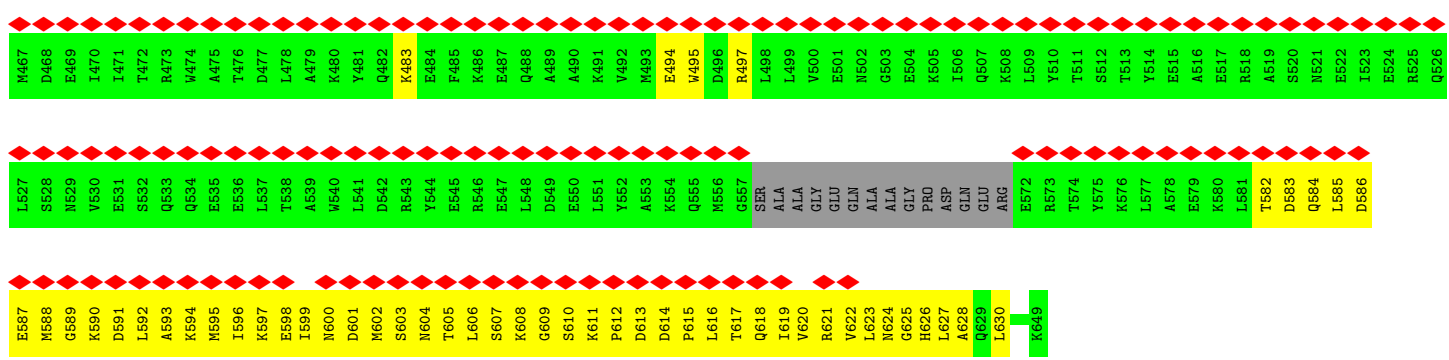
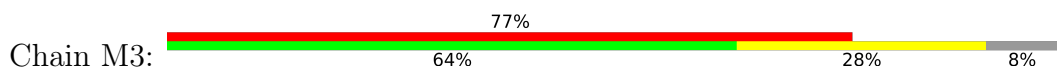




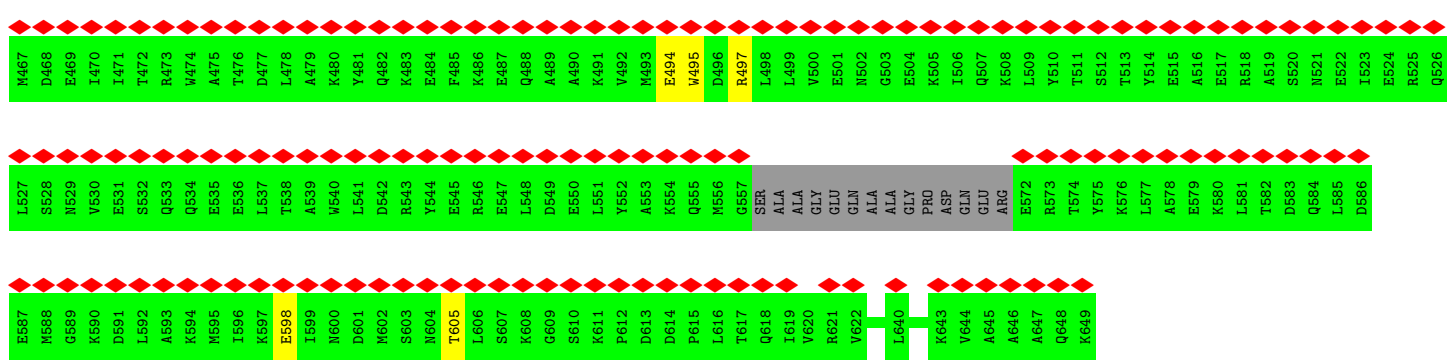
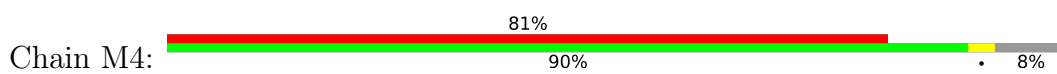
• Molecule 15: NUP62



• Molecule 15: NUP62



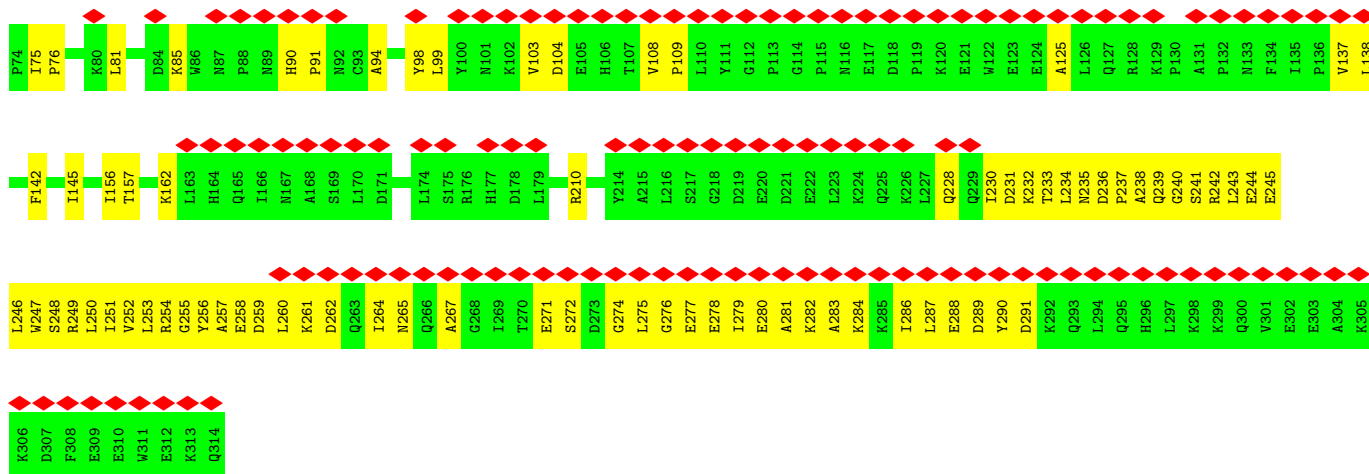
• Molecule 15: NUP62





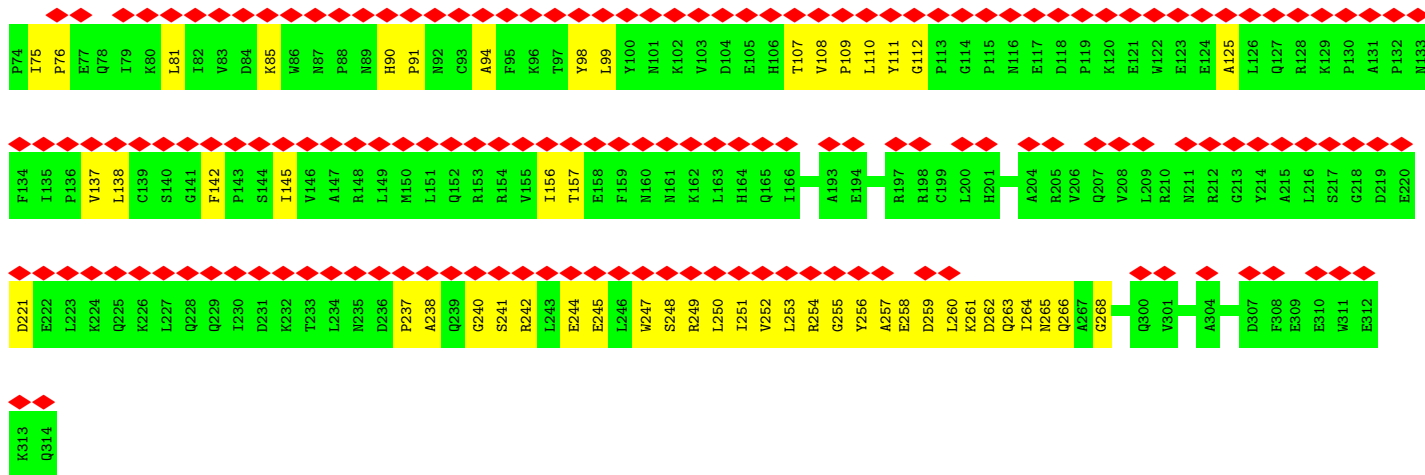
• Molecule 17: NUP54

Chain O1:

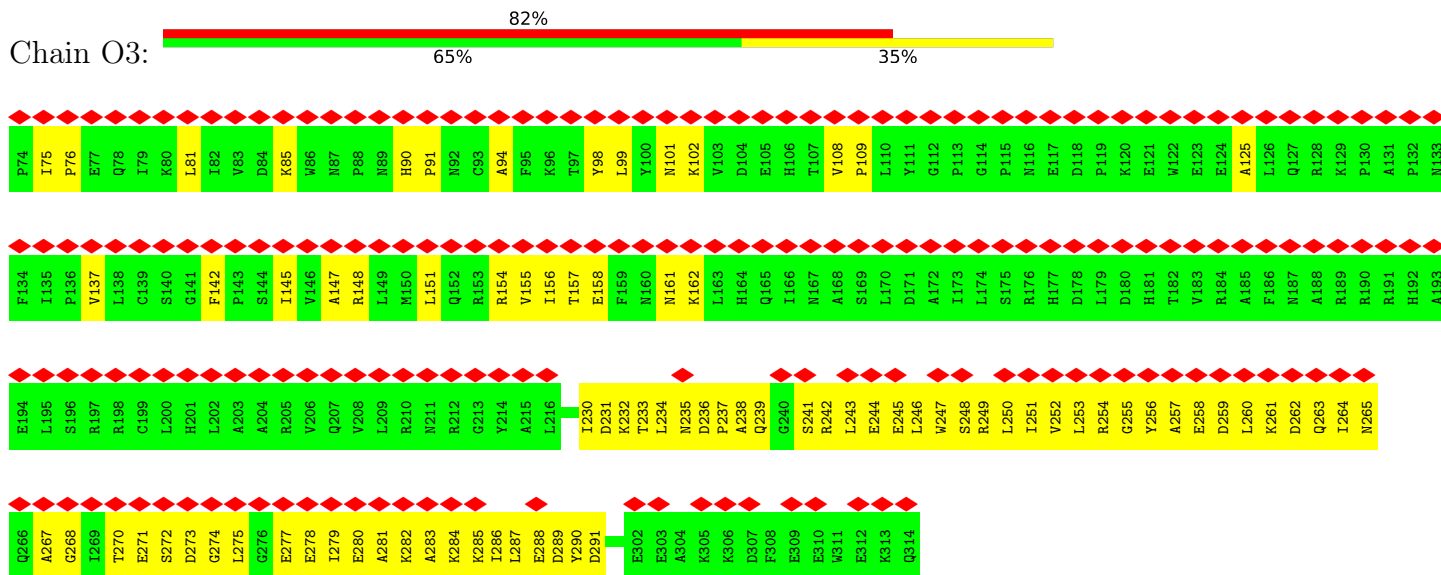


• Molecule 17: NUP54

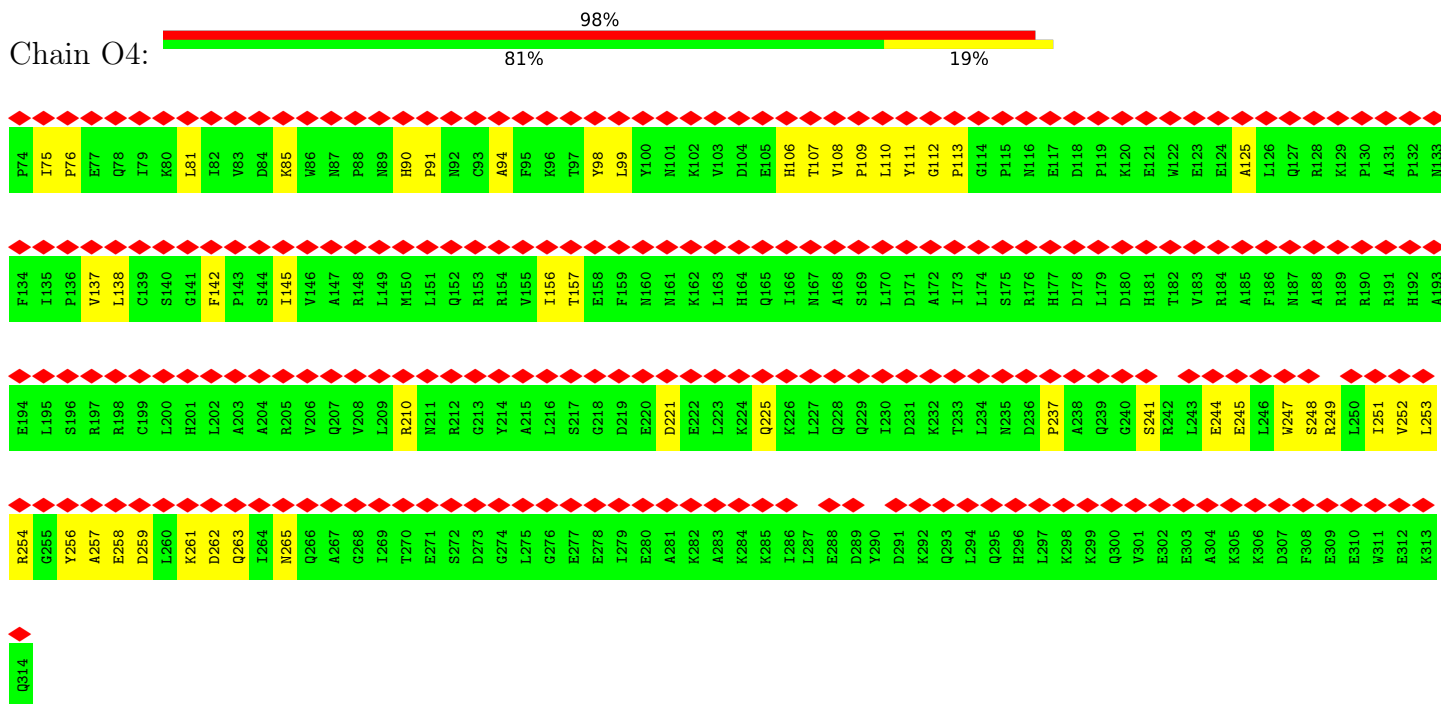
Chain O2:



• Molecule 17: NUP54



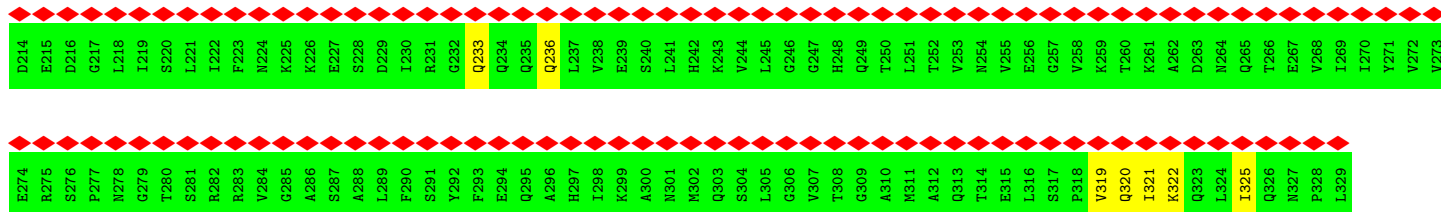
• Molecule 17: NUP54



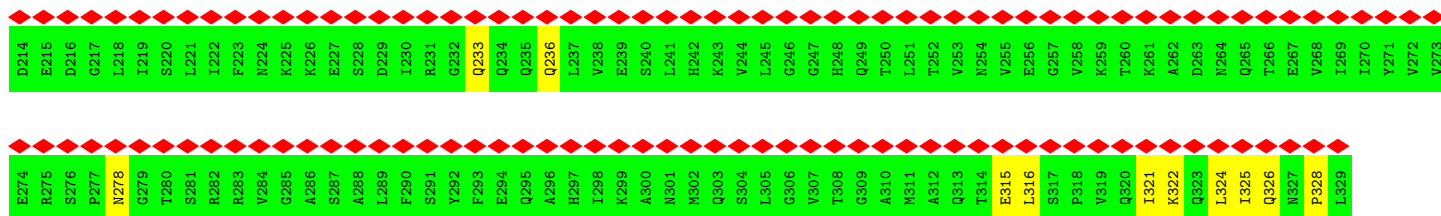
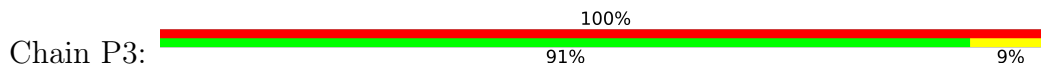
• Molecule 18: NUP54 Ferredoxin-like domain



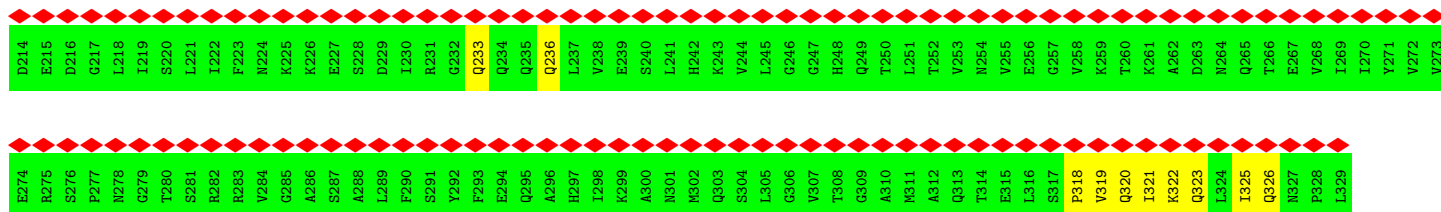
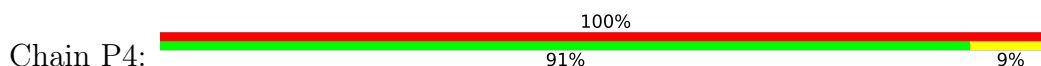
• Molecule 18: NUP54 Ferredoxin-like domain



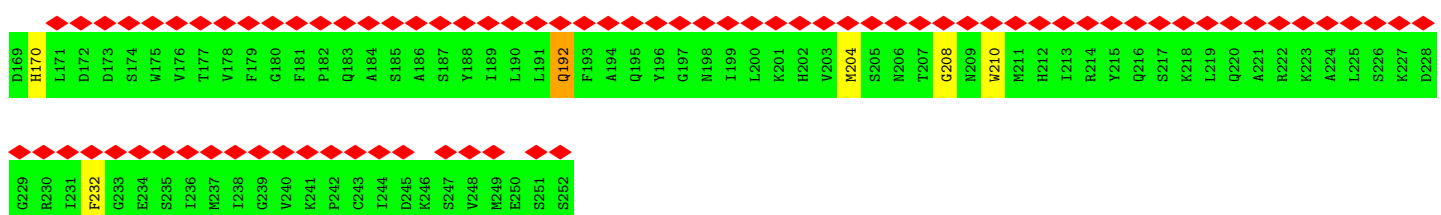
• Molecule 18: NUP54 Ferredoxin-like domain



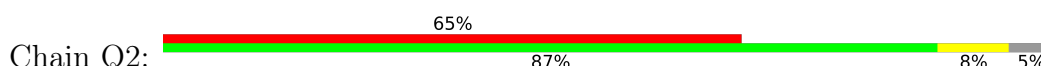
• Molecule 18: NUP54 Ferredoxin-like domain



• Molecule 19: NUP53 RRM

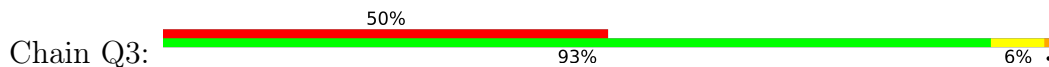


• Molecule 19: NUP53 RRM

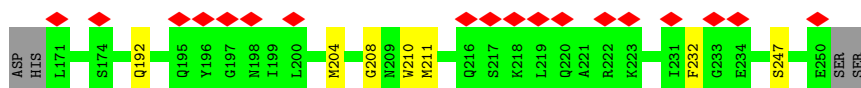
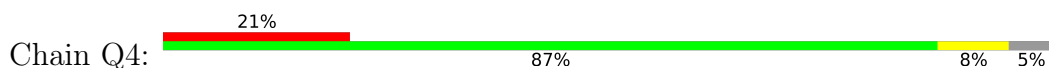




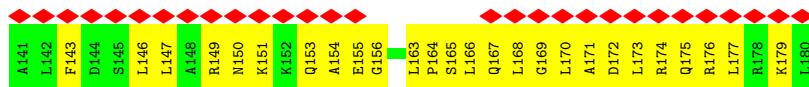
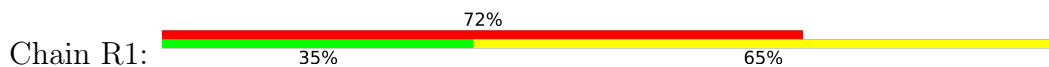
• Molecule 19: NUP53 RRM



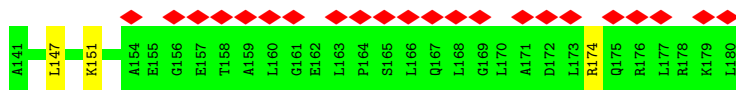
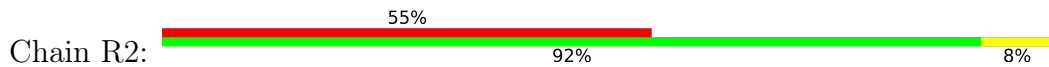
• Molecule 19: NUP53 RRM



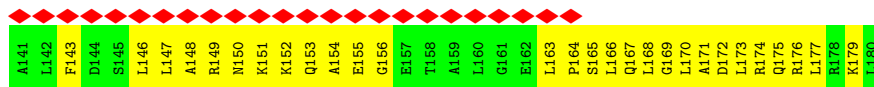
• Molecule 20: NUP93 R1



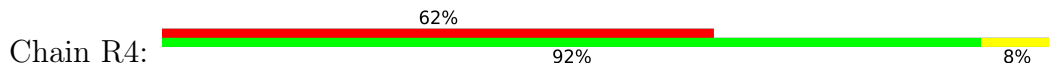
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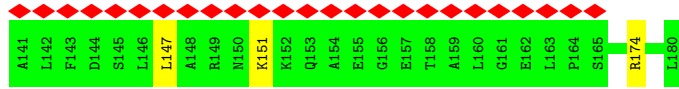


• Molecule 20: NUP93 R1

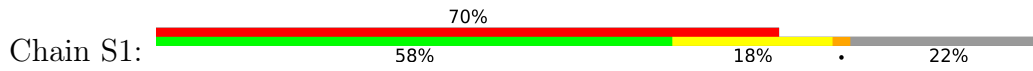


• Molecule 20: NUP93 R1





• Molecule 21: NUP133



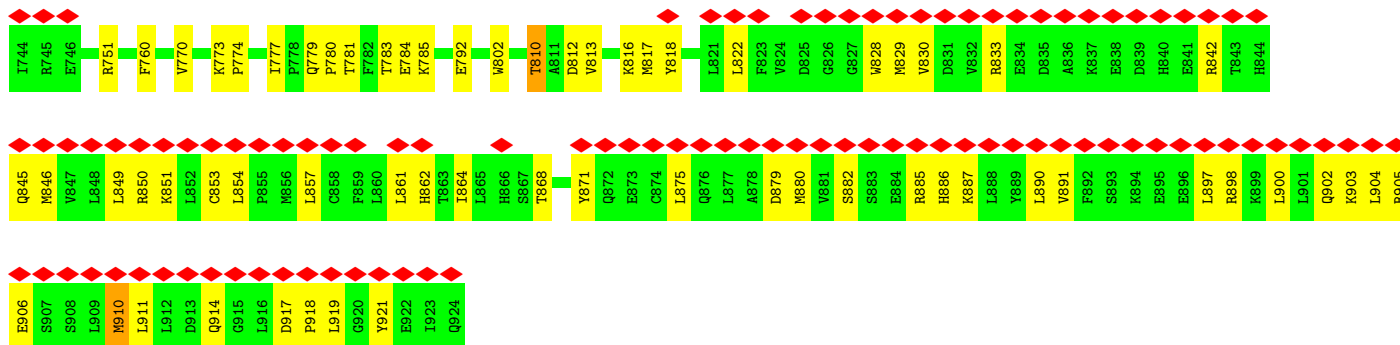
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|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MET | PHE | PRO | PRO | ALA | ALA | PRO | SER | PRO | ARG | THR | PRO | THR | GLY | THR | GLY | K151 | K152 | A153 | Q154 | E155 | G156 | E157 | T158 | A159 | L160 | G161 | E162 | L163 | P164 | S165 | R174 | L180 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ARG | GLY | THR | PRO | THR | THR | ARG | MET | PHE | PRO | HIS | HIS | SER | ILE | THR | E75 | S76 | V77 | N78 | Y79 | D80 | V81 | K82 | T83 | F84 | G85 | S86 | S87 | L88 | P89 | V90 | Y91 | V92 | M93 | E94 | A95 | L96 | T97 | L98 | A99 | E100 | V101 | D102 | D103 | Q104 | L105 | T106 | I107 | M108 | I109 | D110 | E111 | G112 | G113 | W114 | A115 | C116 | L117 | V118 | C119 | K120 |
| E121 | K122 | L123 | I124 | L125 | W126 | K127 | I128 | A129 | L130 | S131 | P132 | I133 | T134 | K135 | L136 | S137 | V138 | G139 | F200 | K140 | E141 | L142 | Q143 | L144 | P145 | P146 | S147 | D148 | F149 | M93 | H150 | W151 | S152 | A153 | D154 | L155 | V156 | A157 | L158 | S159 | Y160 | S161 | S162 | PRO | GLY | GLU | ALA | HIS | SER | T170 | Q171 | A172 | V173 | A174 | V175 | M176 | V177 | A178 | T179 | R180 |
| E181 | G182 | S183 | I184 | R185 | Y186 | W187 | P188 | S189 | L190 | A191 | G192 | E193 | D194 | T195 | Y196 | T197 | E198 | A199 | F200 | V201 | ASP | SER | GLY | GLY | D206 | K207 | T208 | Y209 | S210 | F211 | L212 | T213 | A214 | V215 | Q216 | G217 | G218 | S219 | F220 | I221 | L222 | S223 | S224 | S225 | G226 | Q227 | Q228 | L229 | I230 | R231 | L232 | I233 | P234 | Q242 | L245 | P246 | Q247 | | | |
| G248 | Q249 | C250 | M251 | LEU | SER | ILE | GLY | ARG | LYS | VAL | SER | SER | LEU | PHE | GLY | ILE | SER | S270 | D271 | L272 | T273 | L274 | S275 | S276 | V277 | L278 | W279 | D280 | R281 | E282 | R283 | S284 | S285 | F286 | Y287 | S288 | L289 | T290 | F220 | I221 | L222 | S223 | S224 | S225 | G226 | Q227 | Q228 | L229 | I230 | R231 | L232 | I233 | P234 | Q242 | L245 | P246 | Q247 | | | |
| Y308 | S309 | W310 | D311 | I312 | N313 | R314 | A315 | L316 | K317 | E318 | N319 | I320 | Q321 | D322 | A323 | I324 | W325 | G326 | S327 | E328 | N330 | Y331 | E332 | A333 | I334 | K335 | E336 | F337 | Y338 | N339 | I340 | R341 | Y342 | L343 | D344 | L345 | K346 | Q347 | N348 | C349 | D350 | G351 | L352 | V353 | I354 | L355 | L356 | A357 | A358 | W359 | H360 | S361 | A362 | D363 | N364 | P365 | C366 | L367 | | |
| I368 | Y369 | Y370 | S371 | L372 | I373 | T374 | I375 | E376 | D377 | M378 | G379 | C380 | Q381 | M382 | S383 | D384 | A385 | V386 | T387 | V388 | E389 | V390 | T391 | Q392 | Y393 | N394 | P395 | P396 | F397 | Q398 | S399 | E400 | D401 | L402 | I403 | L404 | C405 | Q406 | L407 | T408 | V409 | P410 | M411 | F412 | S413 | M414 | Q415 | T416 | A417 | Y418 | L419 | Y420 | M421 | E422 | S423 | A424 | N364 | P365 | C366 | V427 |
| C428 | S429 | T430 | G431 | T432 | G433 | K434 | F435 | S436 | L437 | P438 | Q439 | E440 | K441 | I442 | V443 | F444 | M445 | A446 | Q447 | G448 | D449 | S450 | V451 | L452 | G453 | A454 | G455 | A456 | C457 | G458 | G459 | V460 | I461 | I462 | I463 | F464 | S465 | R466 | M467 | S468 | G469 | L470 | V471 | S472 | I473 | T474 | S475 | R476 | E477 | ASN | VAL | ILE | LEU | ALA | GLU | ASP | LEU | G427 | | |
| GLY | SER | LEU | ALA | SER | SER | VAL | ALA | GLY | PRO | ASN | SER | GLU | SER | MET | G619 | L620 | A660 | F621 | G622 | R623 | L624 | G625 | S626 | F627 | P628 | V629 | R630 | K518 | I519 | K520 | K521 | L522 | K523 | A524 | A525 | F526 | L527 | Q528 | Y529 | C530 | R531 | K532 | D533 | L534 | C535 | H536 | A537 | Q538 | M539 | V540 | V541 | D542 | E543 | L544 | F545 | S546 | S547 | | | |
| H548 | S549 | D550 | L551 | D552 | S553 | D554 | S555 | E556 | L557 | D558 | R559 | A560 | V561 | T562 | Q563 | I564 | S565 | V566 | D567 | L568 | M569 | D570 | D571 | Y572 | A574 | S575 | ASP | PRO | ARG | TRP | ALA | GLU | SER | VAL | PRO | GLU | GLU | ALA | PRO | GLY | PHE | ASN | THR | SER | LEU | I596 | I597 | L598 | H599 | Q600 | L601 | E602 | D603 | R604 | M605 | R606 | A607 | | | |
| H608 | S609 | F610 | L611 | M612 | D613 | F614 | I615 | H616 | Q617 | V618 | G619 | L620 | F621 | G622 | R623 | L624 | G625 | S626 | F627 | P628 | V629 | R630 | GLY | THR | PRO | MET | ALA | THR | ARG | L638 | L639 | L640 | C641 | E642 | H643 | A644 | E645 | K646 | L647 | S648 | A649 | A650 | I651 | V652 | L653 | K654 | N655 | H656 | H657 | S658 | R659 | L660 | S661 | D662 | L663 | V664 | N665 | T666 | A667 | |
| L669 | L670 | A671 | L672 | N673 | K674 | R675 | E676 | Y677 | E678 | L679 | P680 | S681 | N682 | L683 | T684 | P685 | A686 | D687 | V688 | F689 | F690 | R691 | E692 | V693 | S694 | Q695 | V696 | D697 | T698 | L699 | C700 | E701 | D713 | ALA | PRO | ASP | S718 | I719 | E720 | W721 | A722 | E723 | V724 | I726 | N727 | H656 | H657 | N729 | W730 | I731 | L732 | K733 | D734 | W735 | L736 | Q737 | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| V541 | D642 | E543 | L544 | F545 | S546 | S547 | H548 | S549 | D550 | L551 | D552 | S553 | D554 | S555 | E556 | L557 | D558 | R559 | A560 | V561 | T562 | Q563 | I564 | S565 | V566 | D567 | L568 | M569 | D570 | D571 | Y572 | P573 | A574 | S575 | ASP | PRO | ARG | TRP | ALA | GLU | VAL | PRO | GLU | ALA | PRO | PHE | SER | ASN | THR | SER | SER | LEU | I596 | I597 | L598 | H599 | Q600 | | |
| L601 | E602 | D603 | K604 | M605 | K606 | A607 | H608 | S609 | F610 | L611 | D612 | D613 | F614 | I615 | H616 | V617 | V618 | G619 | L620 | F621 | G622 | R623 | L624 | G625 | V626 | F627 | P628 | V629 | GLY | THR | PRO | MET | ALA | THR | ARG | L638 | L639 | L640 | C641 | E642 | H643 | A644 | L645 | K646 | L647 | S648 | A649 | A650 | I651 | V652 | L653 | K654 | N655 | H656 | S657 | R658 | L660 | | |
| S661 | D662 | L663 | V664 | M665 | T666 | A667 | I668 | L669 | I670 | A671 | N672 | K673 | N674 | R675 | E676 | V677 | V678 | I679 | P680 | S681 | N682 | L683 | T684 | P685 | A686 | D687 | V688 | F689 | F690 | E692 | G693 | S694 | Q695 | V696 | D697 | L698 | I699 | C700 | E701 | C702 | L703 | L704 | E705 | H706 | E707 | E708 | Q709 | V710 | L711 | R712 | D713 | ALA | PRO | MET | ASP | S718 | I719 | R659 | E720 |
| W721 | A722 | E723 | V724 | V725 | I726 | N727 | V728 | N729 | N730 | I731 | L732 | D733 | K734 | M735 | L736 | Q737 | A738 | A739 | S740 | H741 | V742 | R743 | Q744 | N745 | R746 | ASN | SER | LEU | TYR | ARG | GLU | GLU | LEU | LYS | GLU | PRO | VAL | PRO | THR | ALA | THR | GLY | PRO | GLY | ILE | R775 | T776 | V777 | I778 | I779 | R780 | | | | | | | | |
| H781 | E783 | I784 | V785 | L786 | K787 | V788 | A789 | V790 | F791 | Q792 | A793 | D794 | S795 | N796 | L797 | R798 | N799 | I800 | S801 | T802 | E803 | Q804 | L805 | A806 | A807 | L808 | I809 | D810 | C811 | F812 | L813 | D814 | G815 | Y816 | V817 | S818 | Q819 | L820 | K821 | S822 | V823 | D824 | K825 | S826 | S827 | N828 | R829 | E830 | R831 | Y832 | D833 | N834 | L835 | E836 | M837 | E838 | Y839 | L840 | |
| Q841 | R842 | R843 | S844 | D845 | L846 | L847 | S848 | P849 | L850 | L851 | S852 | L853 | G854 | Q855 | Y856 | L857 | M858 | A859 | A860 | S861 | L862 | A863 | E864 | K865 | V866 | C867 | D868 | F869 | D870 | I871 | L872 | V873 | Q874 | M875 | C876 | E877 | Q878 | T879 | D880 | M881 | Q882 | S883 | R884 | L885 | Q886 | R887 | Y888 | M889 | T890 | L891 | F892 | A893 | D894 | Q895 | N896 | F897 | S898 | D899 | F900 |
| L901 | F902 | R903 | W904 | Y905 | L906 | E907 | LYS | GLY | LYS | ARG | GLY | LYS | LEU | SER | GLN | PRO | ILE | SER | Q921 | H922 | G923 | Q924 | L925 | A926 | N927 | F928 | L929 | Q930 | A931 | H932 | E933 | H934 | L935 | S936 | Q937 | L938 | H939 | E940 | I941 | N942 | S943 | Q944 | Q945 | Q946 | L946 | E947 | K948 | A949 | H950 | A951 | T952 | L953 | L954 | G955 | L956 | A957 | N958 | M959 | E960 |
| T961 | R962 | Y963 | F964 | A965 | K966 | K967 | K968 | T969 | L970 | L971 | G972 | L973 | S974 | K975 | L976 | A977 | A978 | L979 | A980 | S981 | D982 | F983 | S984 | E985 | D986 | M987 | L988 | Q989 | E990 | K991 | I992 | L993 | E994 | M995 | A996 | E997 | Q998 | E999 | R1000 | F1001 | L1002 | L1003 | H1004 | Q1005 | E1006 | N1007 | L1008 | P1009 | E1010 | Q1011 | L1012 | L1013 | A1014 | E1015 | K1016 | Q1017 | L1018 | N1019 | L1020 |
| S1021 | A1022 | M1023 | P1024 | V1025 | L1026 | T1027 | A1028 | P1029 | Q1030 | L1031 | I1032 | G1033 | L1034 | Y1035 | I1036 | C1037 | E1038 | E1039 | N1040 | R1041 | L1042 | A1043 | N1044 | E1045 | V1046 | D1047 | F1048 | K1049 | A1051 | L1052 | D1053 | L1054 | L1055 | E1056 | Y1057 | I1058 | D1059 | GLU | GLU | GLU | ASP | I1064 | N1065 | I1066 | N1067 | D1068 | L1069 | K1070 | L1071 | E1072 | I1073 | L1074 | C1075 | K1076 | A1077 | Q1078 | R1080 | | |
| D1081 | M1082 | W1083 | SER | SER | SER | ASP | GLY | LYS | ASP | ASP | PRO | ILE | GLU | V1095 | S1096 | K1097 | D1098 | S1099 | I1100 | F1101 | V1102 | K1103 | L1104 | L1105 | GLN | LYS | LEU | LYS | ASP | GLY | ILE | GLN | LEU | SER | GLU | TYR | L1119 | P1120 | E1121 | V1122 | K1123 | D1124 | L1125 | L1126 | Q1127 | A1128 | D1129 | GLN | LEU | GLY | SER | LEU | LYS | SER | ASN | PRO | TYR | PHE | |
| E1141 | F1142 | V1143 | L1144 | K1145 | A1146 | M1147 | Y1148 | E1149 | Y1150 | Y1151 | V1152 | Q1153 | G1154 | Q1155 | I1156 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

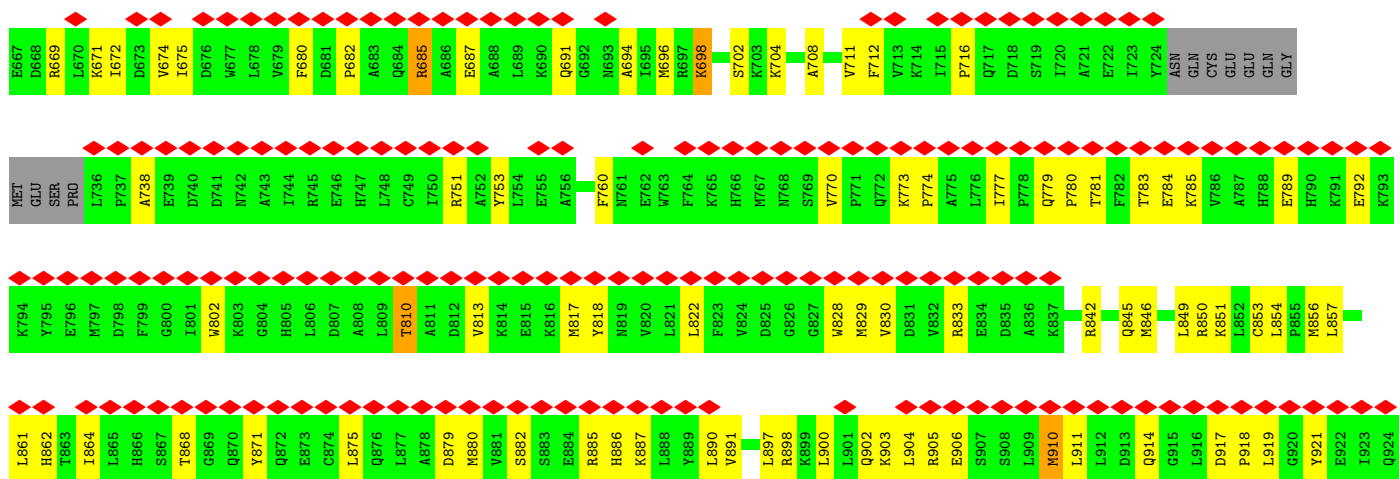
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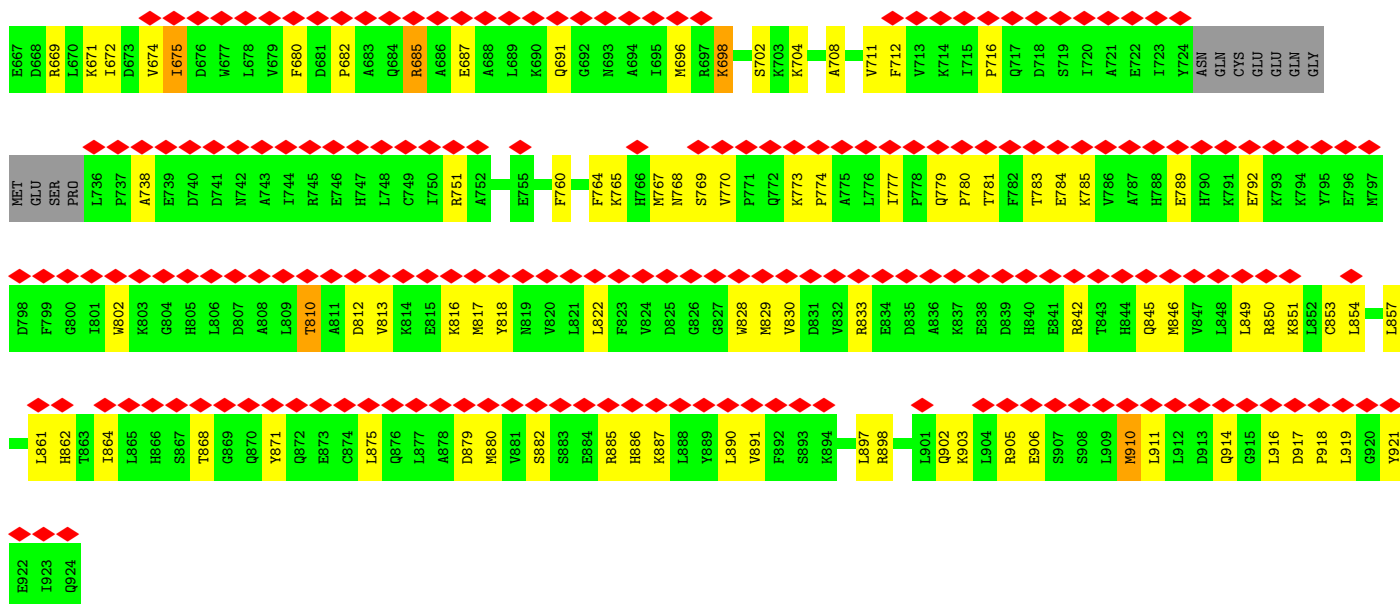
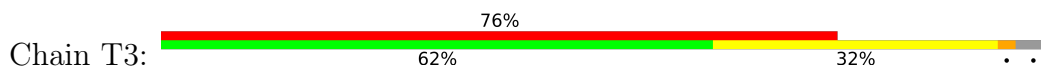
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| E667 | D668 | R669 | L670 | K671 | I672 | D673 | V674 | I675 | F680 | D681 | P682 | A683 | Q684 | R685 | A686 | E687 | K690 | Q691 | A694 | I695 | M696 | R697 | K698 | A701 | S702 | K703 | K704 | A708 | V711 | F712 | P716 | Y724 | ASN | GLN | CYS | GLU | GLU | GLN | GLY | MET | GLU | SER | PRO | L736 | P737 | A738 | E739 | D740 | D741 | N742 | A743 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|

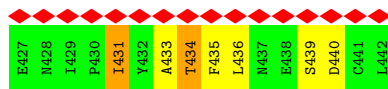
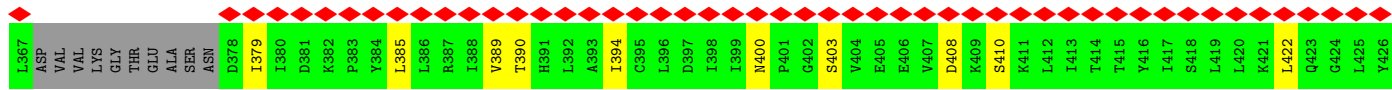
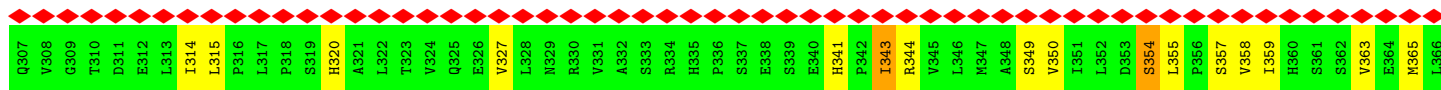


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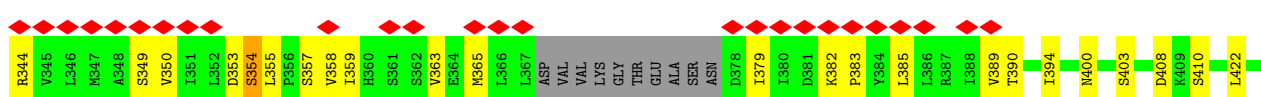
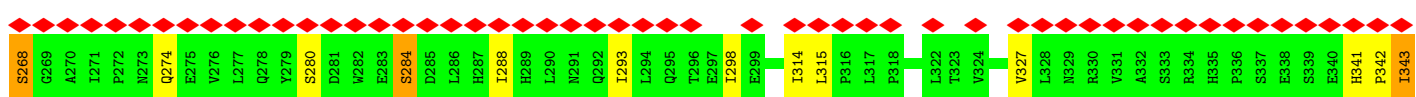
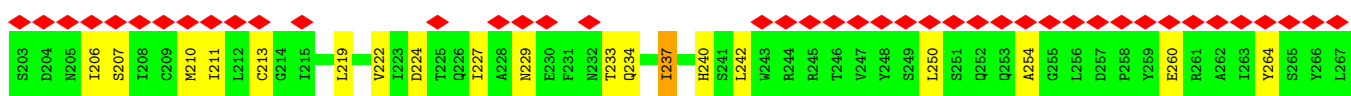
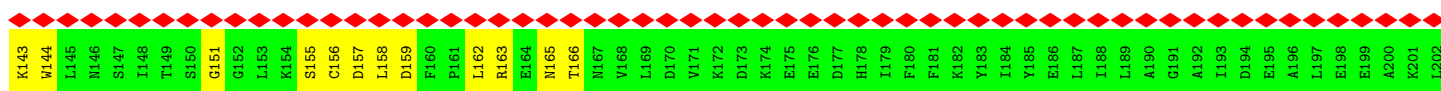
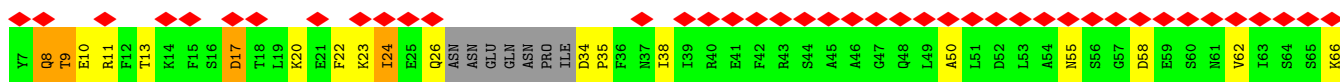


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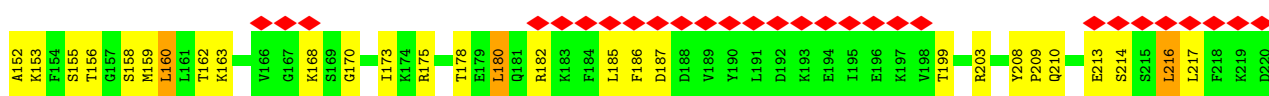
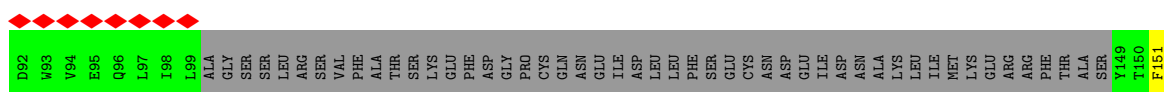


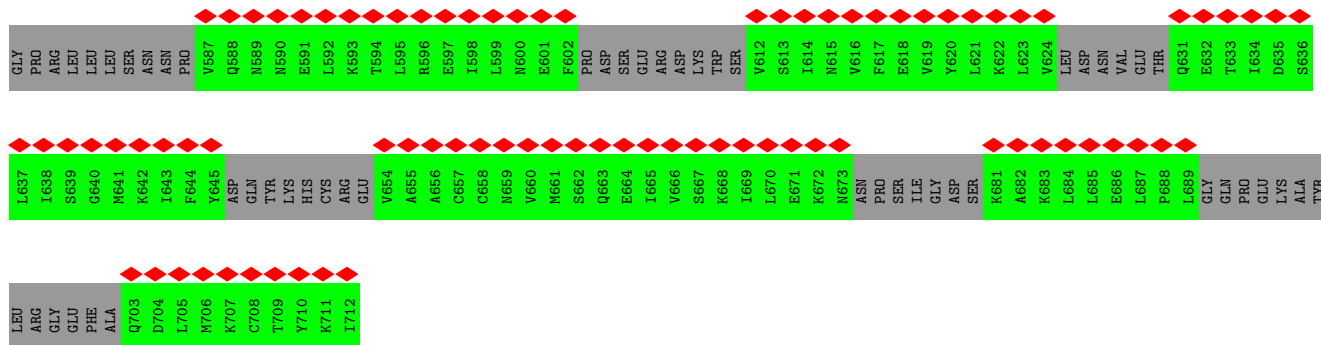


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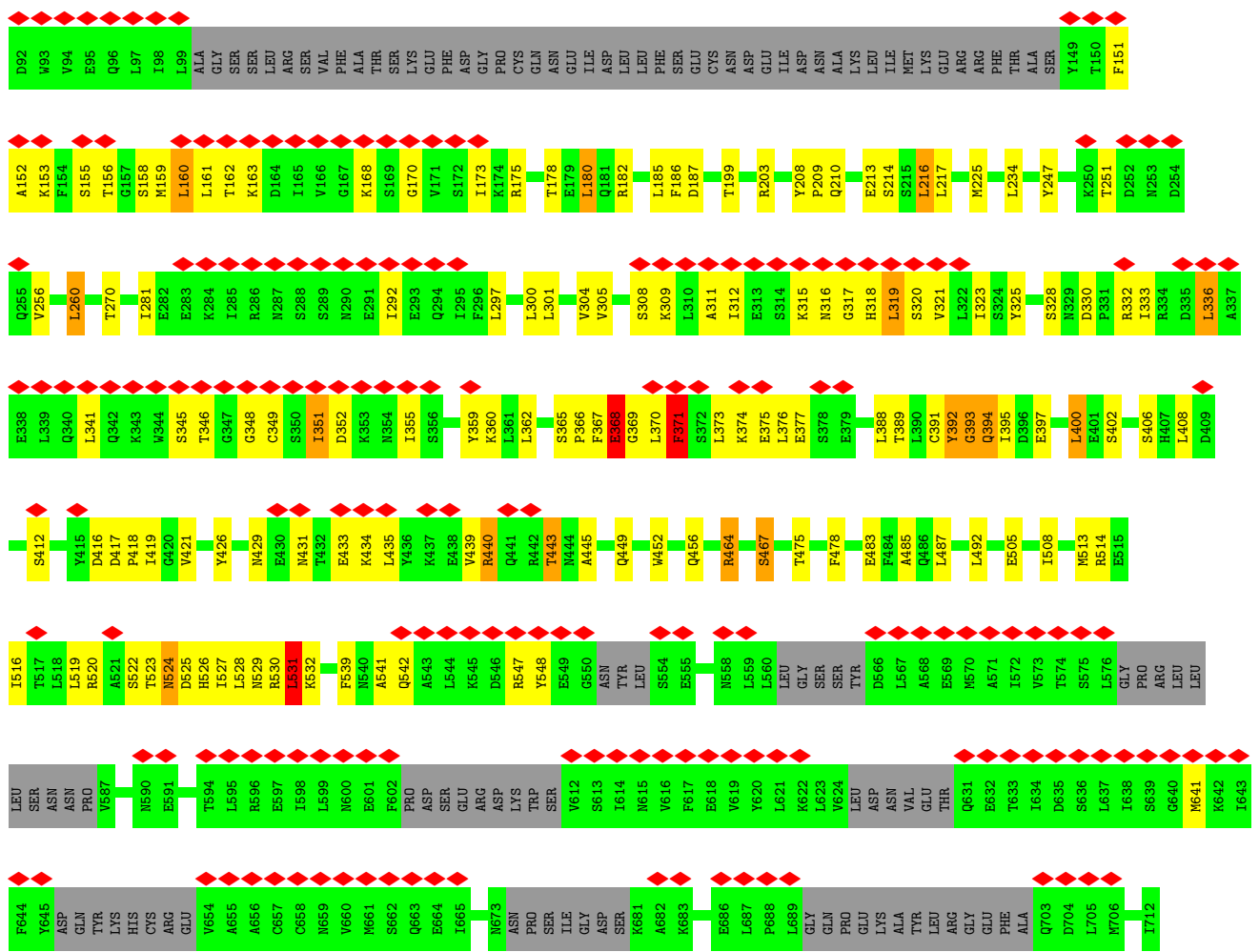


• Molecule 24: NUP96





• Molecule 24: NUP96

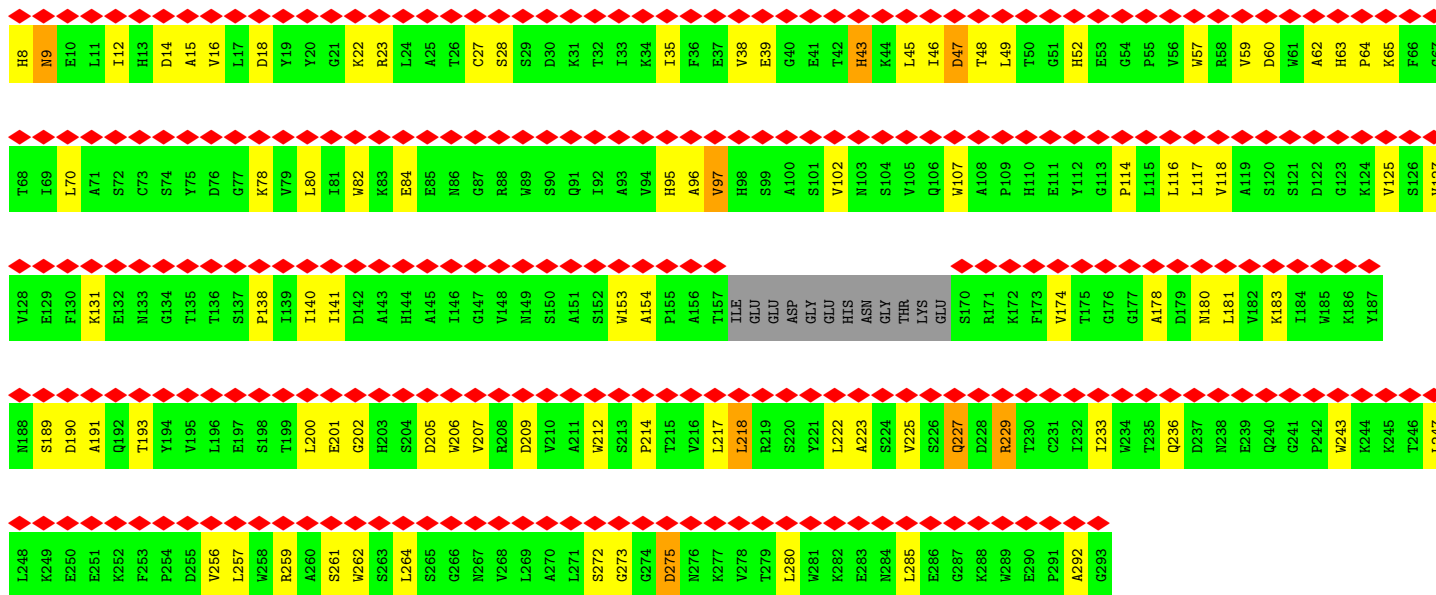


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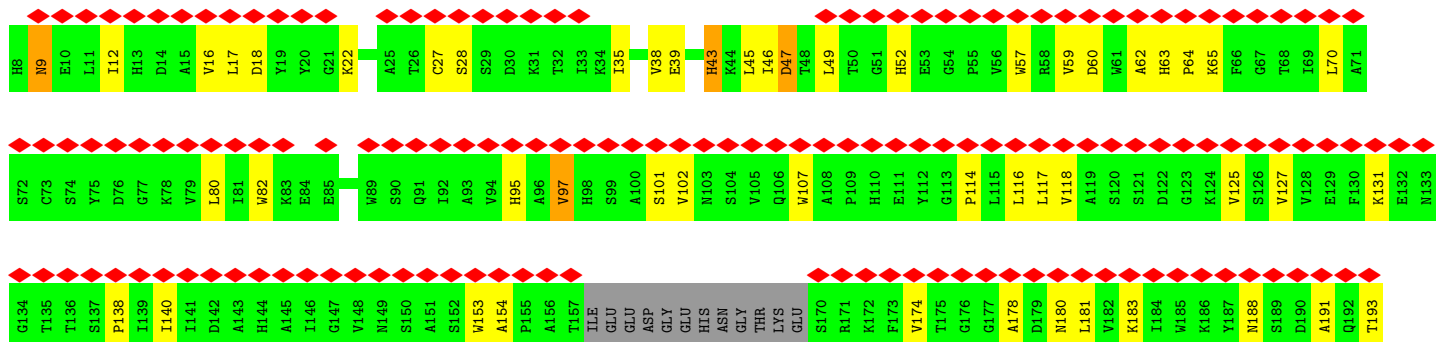
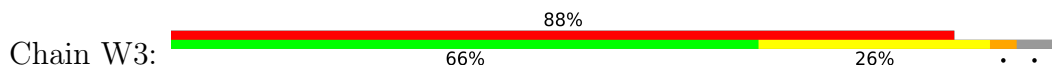


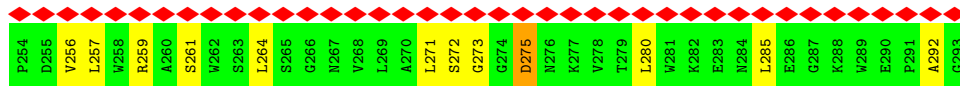


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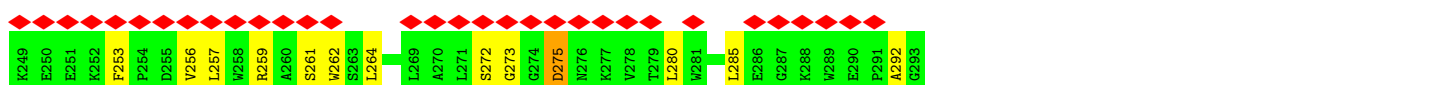
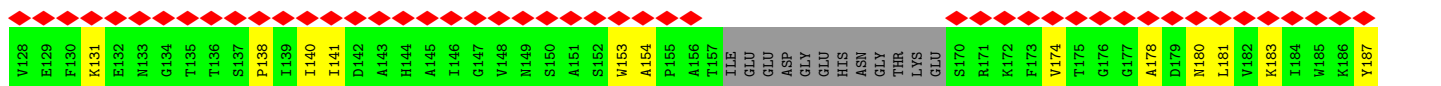
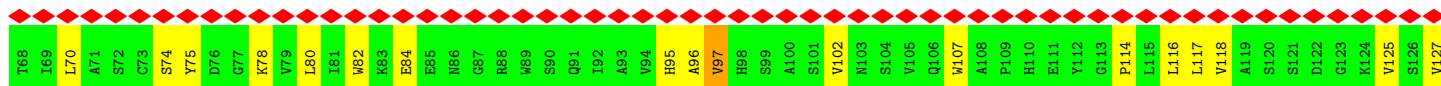
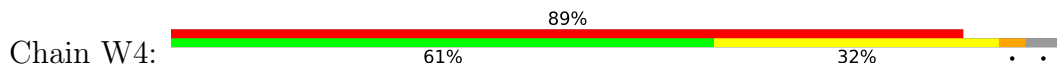


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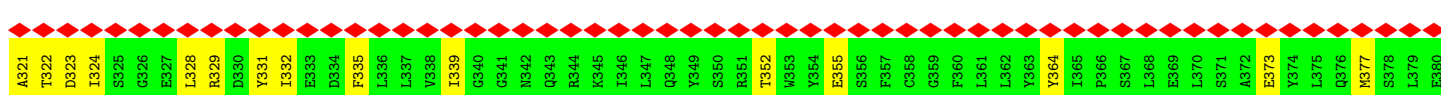
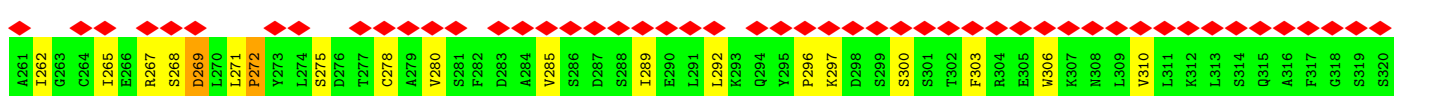


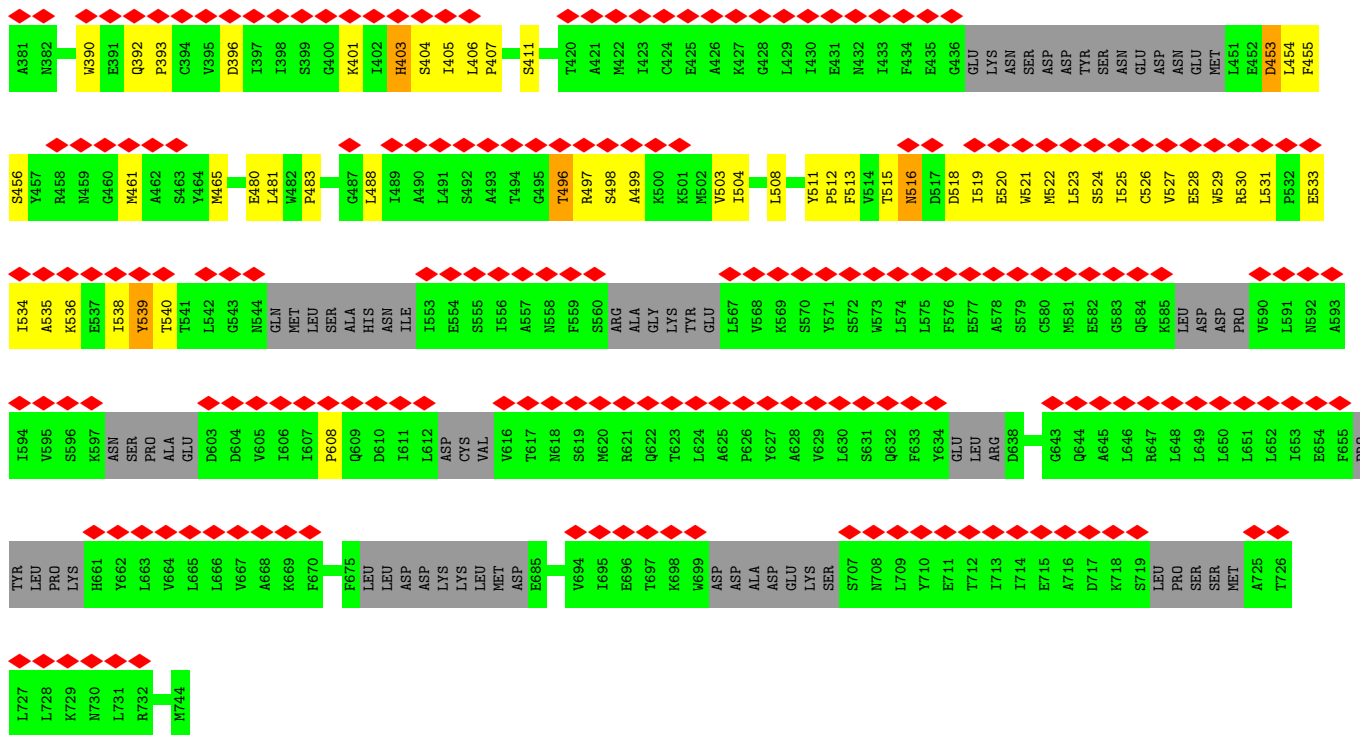


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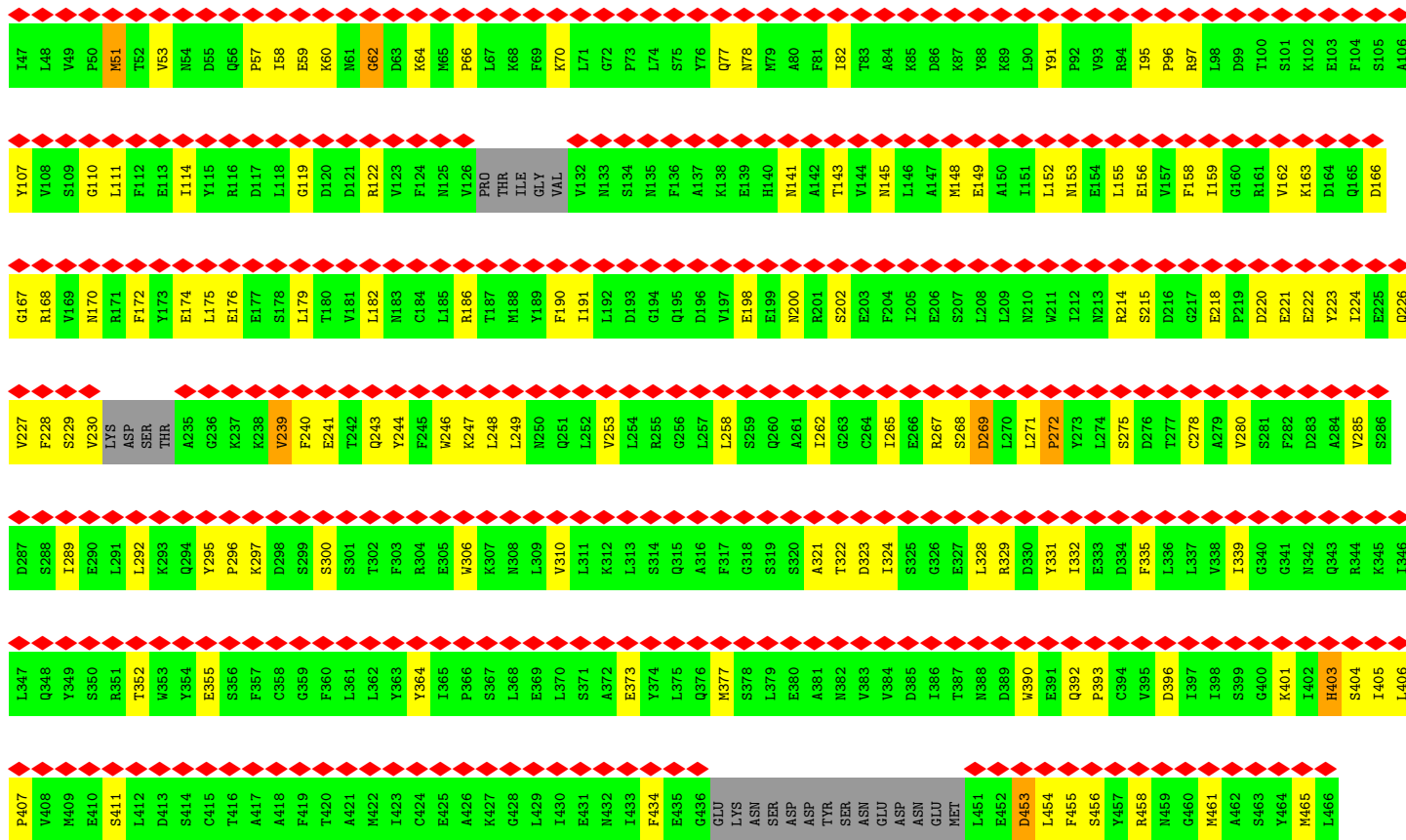
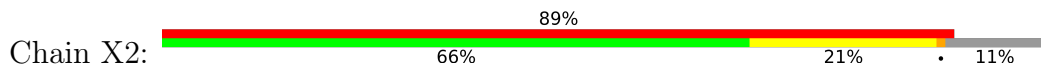


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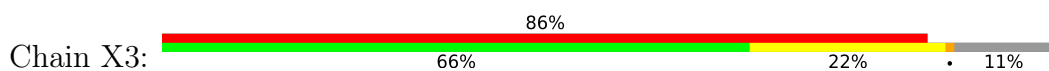


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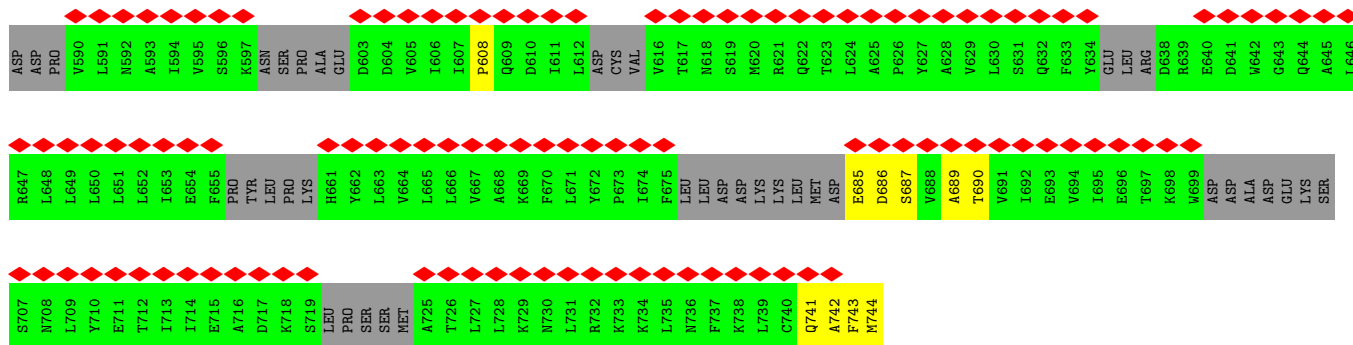


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|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| N467 | S468 | F469 | A470 | F471 | F472 | L473 | C474 | S475 | L476 | G477 | D478 | K479 | E480 | L481 | W482 | P483 | V484 | A485 | I486 | G487 | L488 | I489 | A490 | L491 | A492 | A493 | T494 | G495 | T496 | R497 | A498 | A499 | K500 | M501 | M502 | V503 | I504 | A505 | E506 | L507 | L508 | P509 | H510 | Y511 | P512 | F513 | V514 | T515 | N516 | D517 | D518 | I519 | E520 | W521 | M522 | L523 | S524 | I525 | C526 |
| V527 | E528 | W529 | R530 | L531 | P532 | E533 | I534 | A535 | K536 | E537 | I538 | Y539 | T540 | T541 | L542 | G543 | N544 | G545 | MET | LEU | SER | ALA | HIS | ASN | I553 | E554 | S555 | I556 | A557 | N558 | F559 | S560 | ARG | ALA | GLY | LYS | TYR | L567 | V568 | K569 | S570 | L571 | H510 | L574 | L575 | F576 | E577 | ARG | T515 | A578 | S579 | C580 | M581 | I519 | E582 | G583 | Q584 | K585 | LEU |
| ASP | ASP | PRO | V590 | L591 | N592 | A593 | I594 | V595 | S596 | K597 | ASN | SER | PRO | ALA | GLU | D603 | D604 | V605 | I606 | I607 | P608 | Q609 | D610 | I611 | L612 | ASP | CYS | VAL | V616 | T617 | N618 | S619 | M620 | R621 | Q622 | T623 | L624 | A625 | P626 | Y627 | A628 | V629 | L630 | S631 | Q632 | F633 | Y634 | GLU | LEU | D638 | R639 | E640 | W641 | G642 | Q643 | Q644 | A645 | L646 | |
| R647 | L648 | L649 | L650 | L651 | L652 | I653 | E654 | P655 | PRO | LEU | TYR | SER | PRO | LYS | H661 | Y662 | L663 | V664 | L665 | L666 | I667 | A668 | K669 | F670 | I671 | Y672 | P673 | F675 | LEU | LEU | LEU | ASP | LYS | LYS | LEU | MET | ASP | E685 | D686 | V688 | A689 | T690 | V691 | I692 | E693 | V694 | I695 | E696 | T697 | K698 | W699 | ASP | ALA | ASP | GLU | LYS | SER | | |
| S707 | N708 | L709 | V710 | T711 | E712 | I713 | I714 | A715 | E716 | D717 | K718 | S719 | PRO | SER | SER | SER | MET | A725 | T726 | L727 | L728 | K729 | W730 | L731 | R732 | K733 | K734 | L735 | W736 | F737 | K738 | L739 | Q740 | MET | ASP | E685 | D686 | V688 | A689 | T690 | V691 | I692 | E693 | V694 | I695 | E696 | T697 | K698 | W699 | ASP | ALA | ASP | GLU | LYS | SER | | | | |

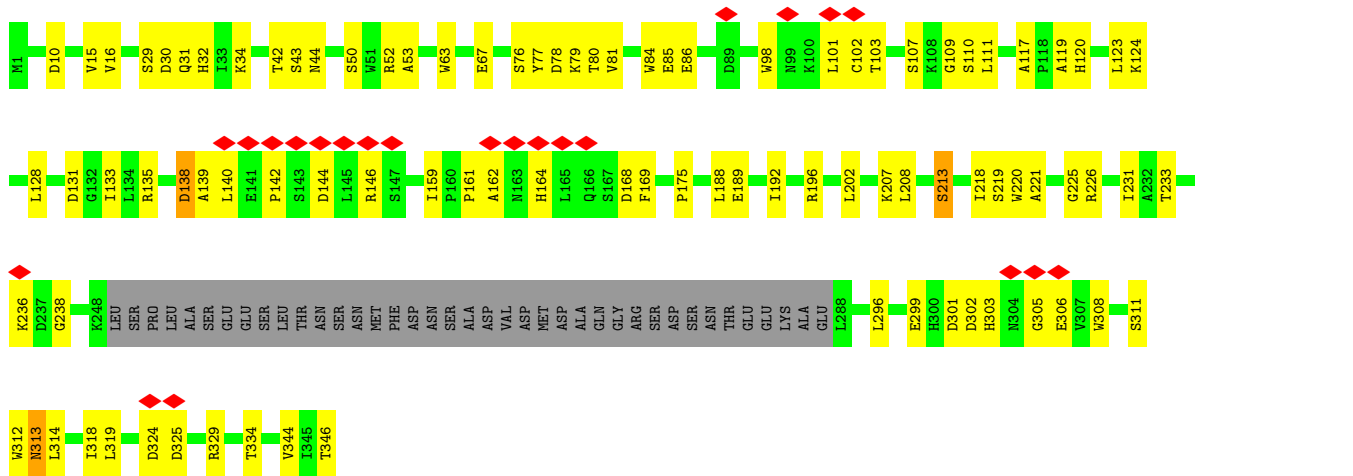
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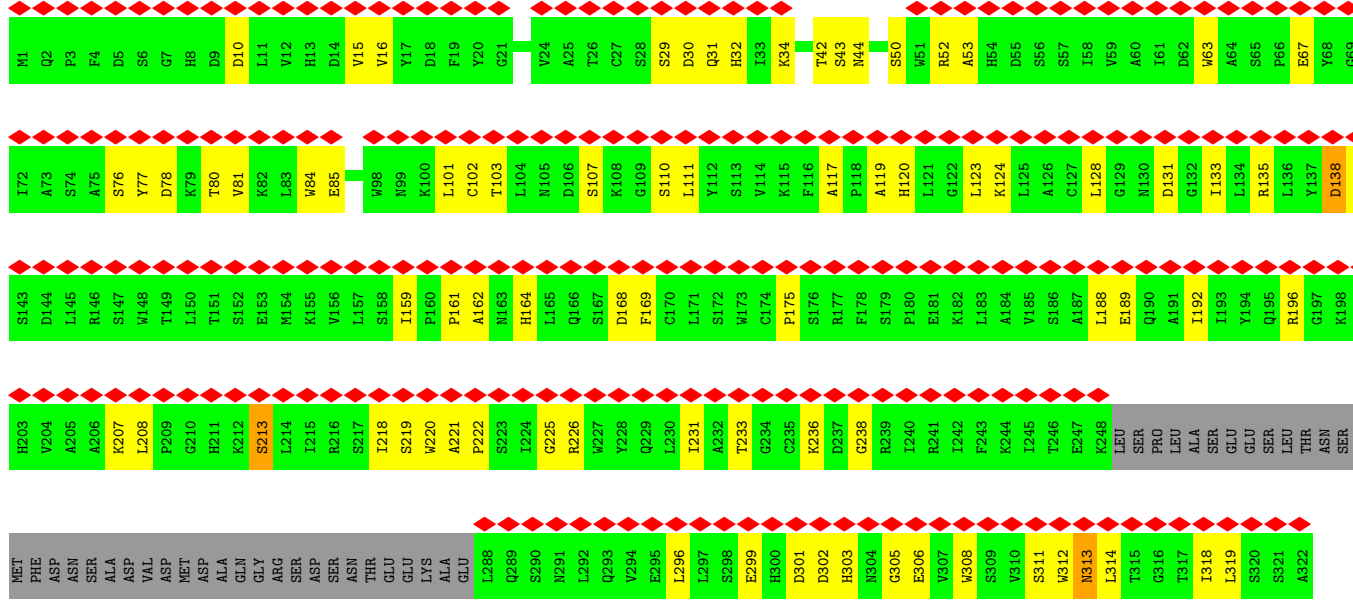
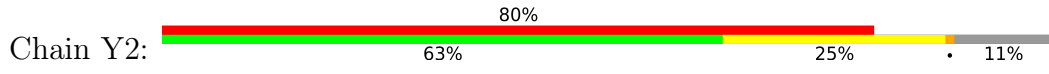
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|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
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| G167 | R168 | V169 | M170 | R171 | F172 | Y173 | E174 | L175 | E176 | E177 | S178 | L179 | T180 | V181 | L182 | M183 | C184 | L185 | R186 | T187 | M188 | Y189 | F190 | I191 | L192 | D193 | G194 | Q195 | D196 | V197 | E198 | E199 | N200 | R201 | S202 | E203 | P204 | I205 | E206 | S207 | L208 | L209 | N210 | W211 | I212 | M213 | R214 | S215 | D216 | G217 | E218 | F219 | D220 | E221 | F282 | D283 | A284 | V285 | Q226 | | |
| V227 | F228 | S229 | V230 | L291 | L292 | K293 | Q294 | Y295 | P296 | K297 | D298 | S299 | S300 | S301 | T302 | Q303 | R304 | E305 | W306 | K307 | L248 | L249 | N250 | Q251 | V253 | L254 | R255 | G256 | L257 | L258 | S259 | Q260 | A261 | I262 | G263 | C264 | I265 | E266 | R267 | S268 | D269 | L270 | L271 | P272 | Y273 | L274 | S275 | D276 | T277 | C278 | A279 | V280 | S281 | F282 | D283 | A284 | V285 | S286 | | | |
| D287 | S288 | I289 | E290 | L291 | L292 | K293 | Q294 | Y295 | P296 | K297 | D298 | S299 | S300 | S301 | T302 | Q303 | R304 | E305 | W306 | K307 | L248 | L249 | N250 | Q251 | V253 | L254 | R255 | G256 | L257 | L258 | S259 | Q260 | A261 | I262 | G263 | C264 | I265 | E266 | R267 | S268 | D269 | L270 | L271 | P272 | Y273 | L274 | S275 | D276 | T277 | C278 | A279 | V280 | S281 | F282 | D283 | A284 | V285 | S286 | | | |
| L347 | Q348 | Y349 | S350 | R351 | T352 | W353 | Y354 | E355 | S356 | F357 | C358 | G359 | F360 | L361 | L362 | Y363 | Y364 | I365 | P366 | S367 | L368 | E369 | L370 | S371 | A372 | E373 | Y374 | L375 | Q376 | M377 | S378 | L379 | E380 | A381 | N382 | V383 | V384 | D385 | I386 | T387 | N388 | D389 | W390 | E391 | Q392 | P393 | C394 | Y395 | D396 | I397 | I398 | S399 | G400 | K401 | I402 | H403 | S404 | I405 | L406 | | |
| P407 | V408 | M409 | E410 | S411 | L412 | D413 | S414 | C415 | T416 | A417 | F418 | F419 | T420 | A421 | M422 | I423 | C424 | E425 | A426 | K427 | G428 | L429 | I430 | E431 | N432 | I433 | F434 | E435 | G436 | GLY | LYS | ASN | SER | ASP | ASP | TYR | SER | ASN | GLU | GLU | ASN | ASP | ASN | GLY | MET | L451 | E452 | D453 | L454 | F455 | S456 | Y457 | R458 | N459 | G460 | M461 | A462 | S463 | Y464 | M465 | L466 |
| N467 | S468 | F469 | A470 | F471 | F472 | L473 | C474 | S475 | L476 | G477 | D478 | K479 | E480 | L481 | W482 | P483 | V484 | A485 | I486 | G487 | L488 | I489 | A490 | L491 | A492 | A493 | T494 | G495 | T496 | R497 | A498 | A499 | K500 | M501 | M502 | V503 | I504 | A505 | E506 | L507 | L508 | P509 | H510 | Y511 | P512 | F513 | V514 | T515 | N516 | D517 | D518 | I519 | E520 | W521 | M522 | L523 | S524 | I525 | C526 | | |



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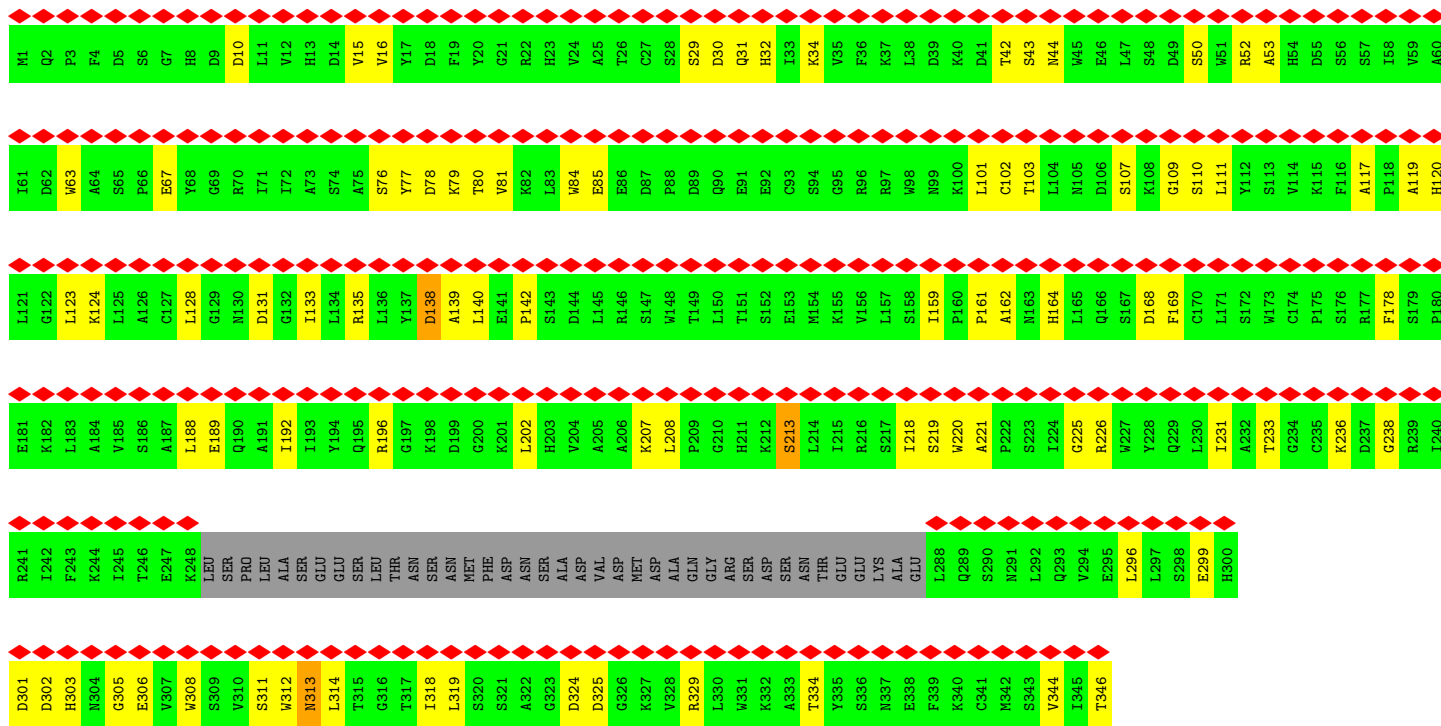
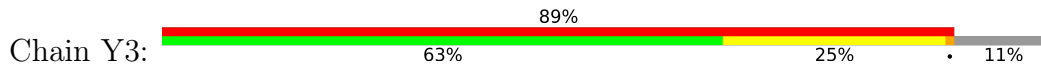


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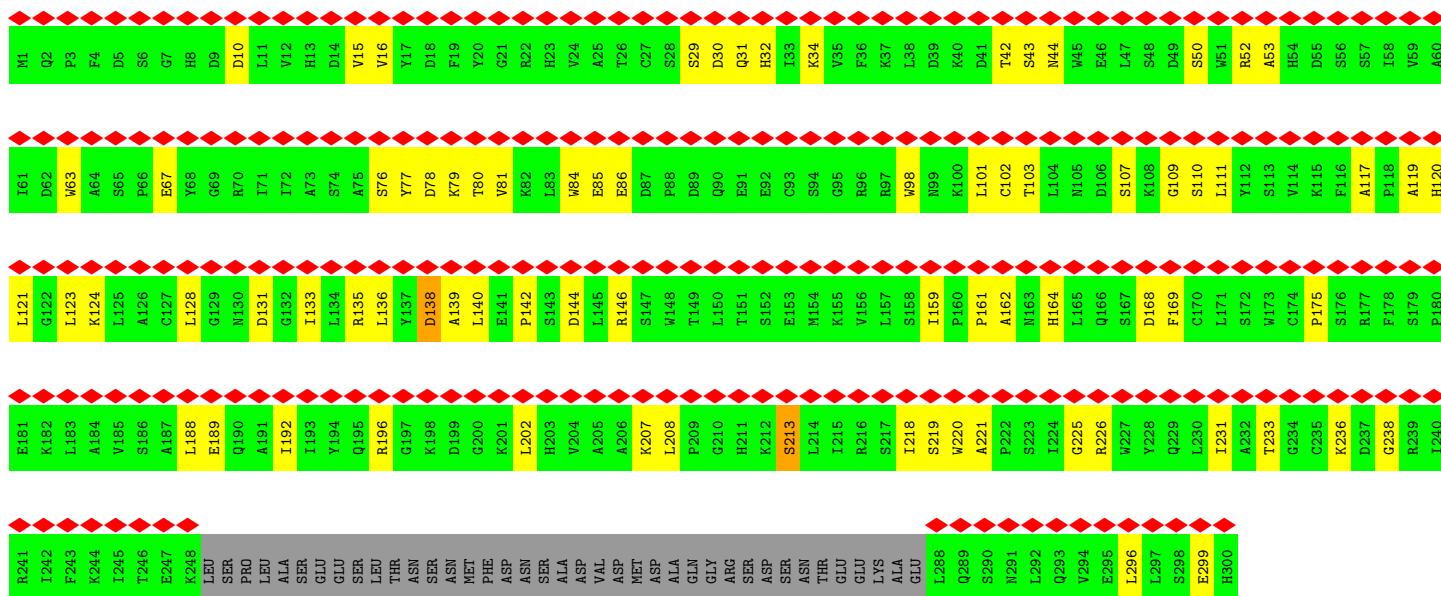
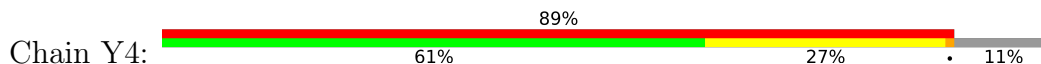




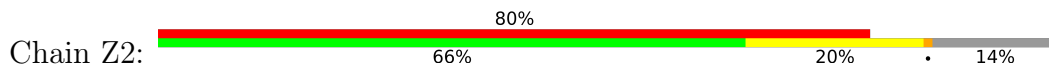
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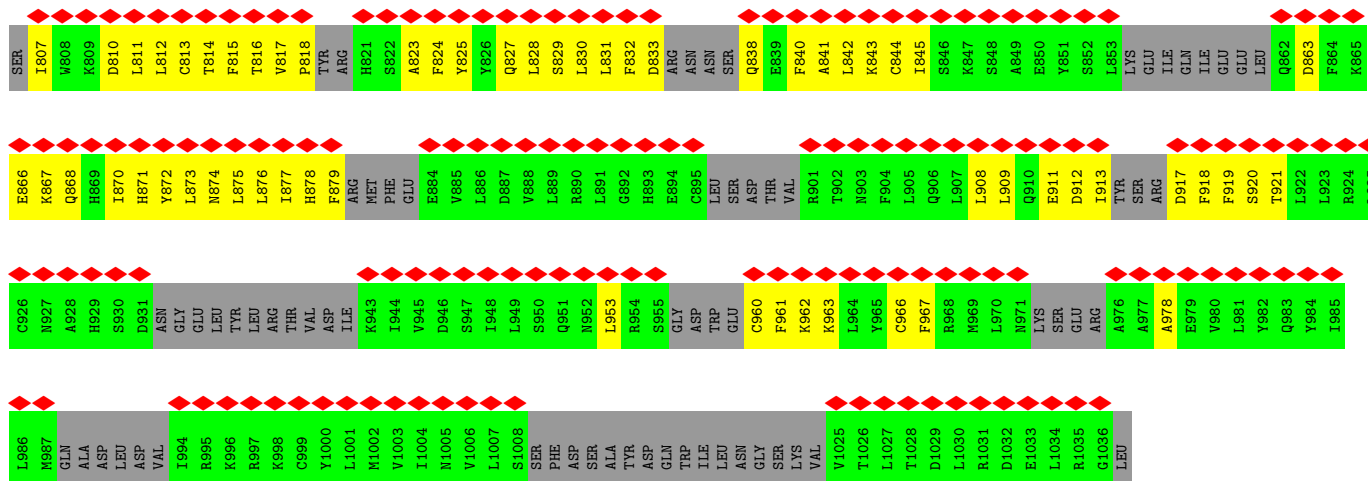
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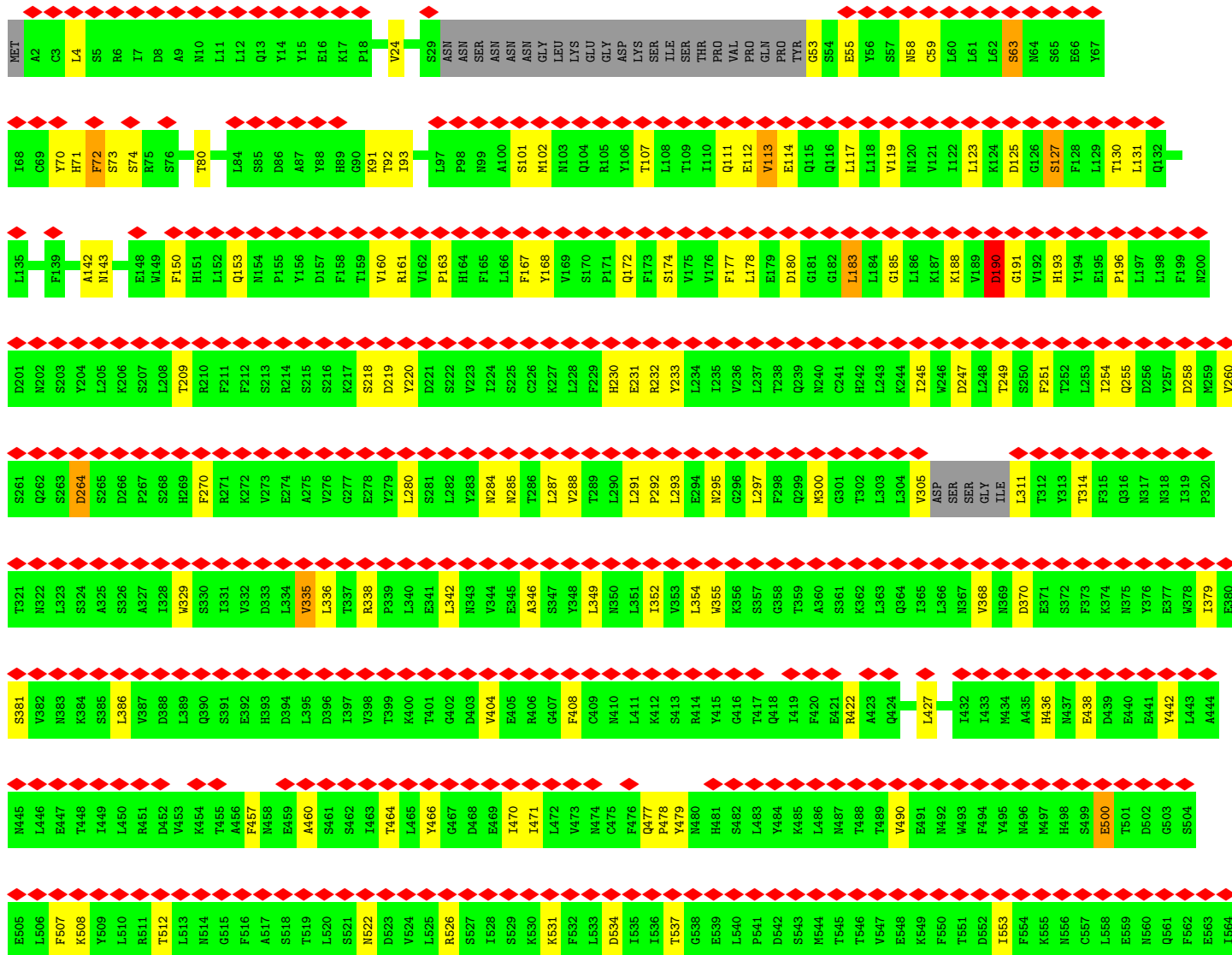
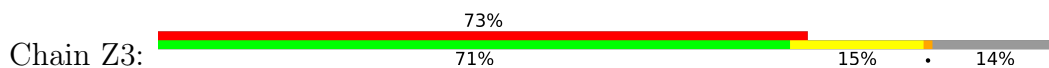
• Molecule 28: NUP160

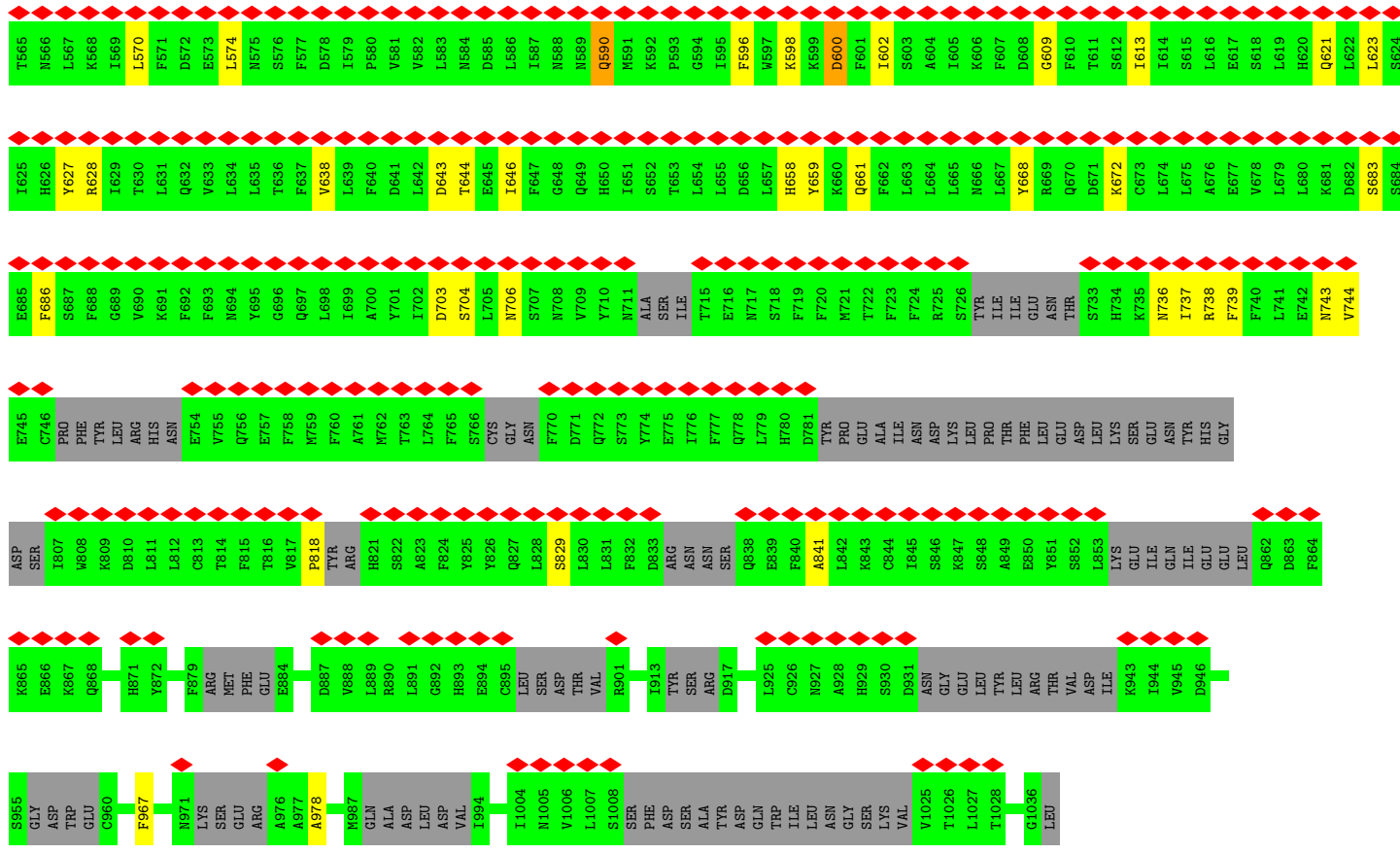


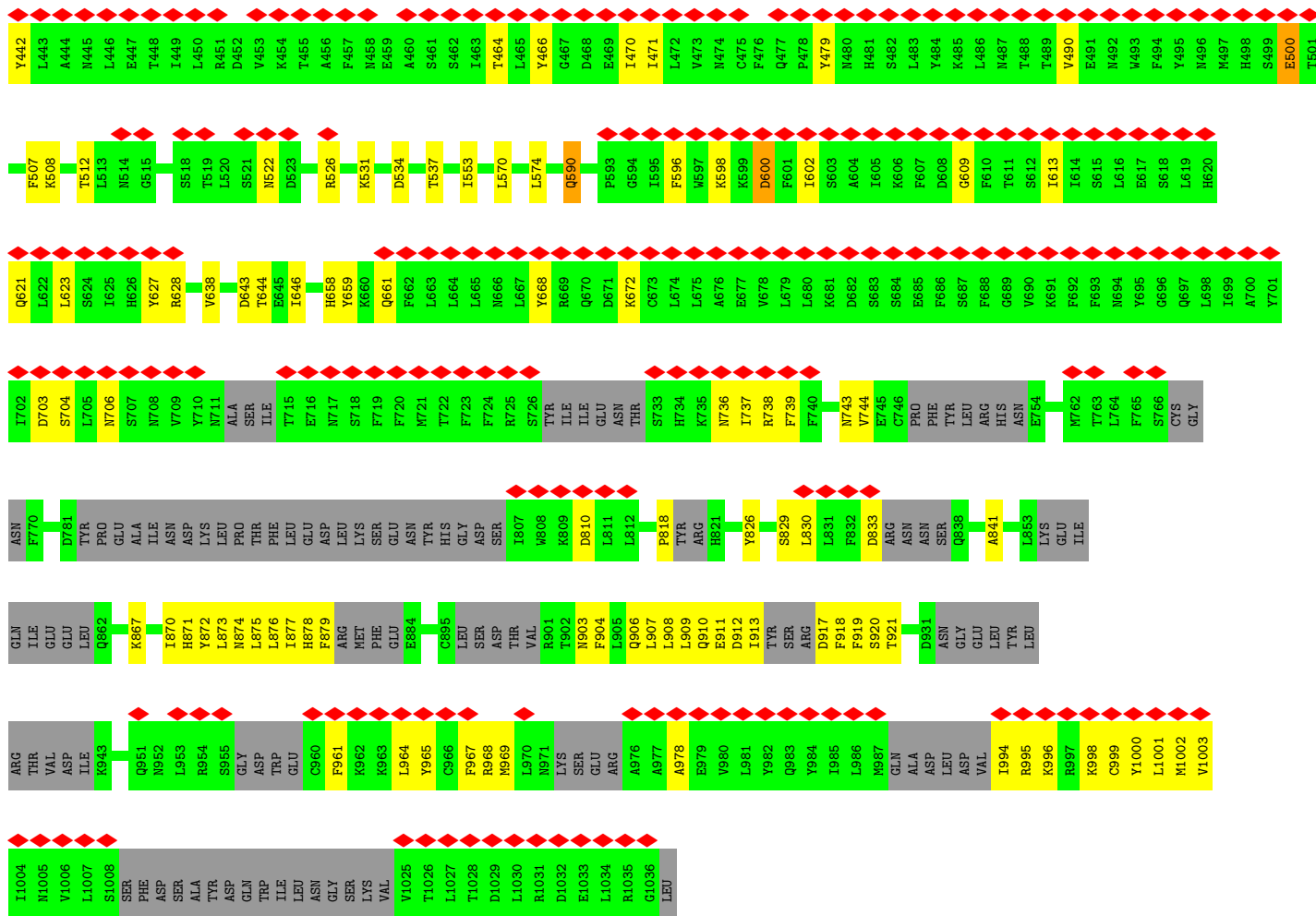
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|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ME1 | A2 | C3 | L4 | S5 | R6 | I7 | D8 | A9 | M10 | L11 | L12 | Q13 | Y14 | Y15 | E16 | K17 | P18 | E19 | P20 | N21 | N22 | T23 | V24 | D25 | L26 | Y27 | V28 | S29 | ASN | ASN | ASN | ASN | ASN | ASN | GLY | LEU | LYS | GLY | ASP | LYS | ILE | THR | PRO | VAL | PRO | PRO | GLN | TYR | G53 | S54 | E55 | Y56 | S57 | N58 | C59 | L60 | | | | | | | | | |
| L61 | L62 | S63 | N64 | S65 | E66 | Y67 | I68 | C69 | Y70 | H71 | F72 | S73 | S74 | R75 | S76 | T77 | L78 | L79 | T80 | F81 | A82 | Y82 | P83 | L84 | S85 | D86 | A87 | Y88 | H89 | G90 | K91 | T92 | N93 | N94 | I95 | H96 | L97 | K98 | F99 | L100 | S101 | M102 | M103 | Q104 | R105 | Y106 | T107 | L108 | T109 | I110 | Q111 | E112 | E113 | Y114 | E115 | Q116 | L117 | L118 | V119 | N120 | | | | | |
| V121 | I122 | L123 | K124 | D125 | G126 | S127 | L128 | T129 | T130 | L131 | L132 | L133 | L134 | L135 | S136 | F137 | L138 | F139 | S140 | S141 | A142 | M143 | T144 | L145 | S146 | G147 | E148 | V149 | F150 | H151 | L152 | Q153 | V154 | R155 | V156 | P157 | Y158 | V159 | M160 | P161 | H162 | H163 | H164 | F165 | L166 | F167 | A168 | S169 | M170 | P171 | Q172 | F173 | S174 | V175 | V176 | V177 | I178 | Q179 | Q180 | L181 | L182 | G183 | L184 | G185 | L186 |
| K187 | K188 | V189 | D190 | G191 | V192 | H193 | F194 | E195 | P196 | T209 | S218 | D219 | Y220 | D221 | S222 | V223 | L224 | S225 | C226 | K227 | L228 | F229 | H230 | E231 | R232 | Y233 | L234 | I235 | V236 | L237 | T238 | Q239 | N240 | C241 | H242 | L243 | K244 | I245 | V246 | D247 | L248 | T249 | S250 | F251 | I254 | Q255 | Y257 | D258 | M259 | V260 | S261 | N318 | I319 | S263 | D264 | L183 | L184 | G185 | L186 | | | | | | |
| D266 | P267 | S268 | H269 | F270 | R271 | K272 | V273 | E274 | A275 | V276 | Q277 | E278 | Y279 | L280 | S281 | L282 | Y283 | N284 | M285 | T286 | L287 | F288 | T289 | M290 | L291 | P292 | L293 | E294 | M295 | G296 | L297 | F298 | M300 | G301 | T302 | L303 | I304 | V305 | ASP | SER | SER | SER | ILE | L311 | T312 | Y313 | T314 | F315 | Q316 | N317 | N318 | I319 | F320 | T321 | N322 | L323 | S324 | A325 | | | | | | | |
| S326 | A327 | I328 | M329 | S330 | I331 | D332 | H333 | L334 | V335 | L336 | T337 | R338 | P339 | K340 | E341 | L342 | M343 | V344 | E345 | A346 | L347 | Y348 | L349 | N350 | L351 | I352 | V353 | L354 | M355 | K356 | S357 | G358 | T359 | A360 | S361 | K362 | L363 | Q364 | I365 | L366 | N367 | V368 | N369 | D370 | E371 | S372 | F373 | K374 | N375 | Y376 | E377 | M378 | E379 | I379 | E380 | S381 | V382 | L383 | K384 | S385 | | | | | |
| L386 | V387 | D388 | L389 | L510 | S391 | E392 | H393 | D394 | L395 | D396 | I397 | V398 | T399 | K400 | T401 | G402 | D403 | V404 | E405 | R406 | G407 | F408 | C409 | M410 | L411 | K412 | S413 | R414 | Y415 | G416 | T417 | Q418 | I419 | F420 | E421 | R422 | A423 | Q424 | Q425 | L426 | L427 | S428 | E429 | M430 | I431 | I432 | I433 | M434 | A435 | M436 | M437 | E438 | D439 | E440 | E441 | Y442 | L443 | A444 | M445 | | | | | | |
| L446 | E447 | T448 | I449 | L450 | R451 | D452 | V453 | K454 | T455 | A456 | F457 | M458 | E459 | A460 | S461 | S462 | I463 | T464 | L465 | Y466 | G467 | D468 | E469 | I470 | I471 | L472 | V473 | M474 | C475 | F476 | Q477 | P478 | Y479 | M480 | H481 | S482 | L483 | Y484 | K485 | L486 | M487 | T488 | T489 | V490 | E491 | M492 | W493 | F494 | Y495 | M496 | M497 | H498 | S499 | E500 | T501 | D502 | L503 | S504 | E505 | | | | | | |
| L506 | F507 | K508 | Y509 | R510 | T511 | L512 | L513 | M514 | G515 | F516 | A517 | S518 | T519 | L520 | S521 | N522 | D523 | V524 | L525 | R526 | S527 | L528 | S529 | K530 | K531 | F532 | L533 | D534 | I535 | I536 | T537 | G538 | E539 | L540 | P541 | D542 | S543 | M544 | T545 | T546 | V547 | E548 | K549 | F550 | T551 | D552 | I553 | F554 | L555 | L556 | N557 | E558 | L559 | N560 | Q561 | F562 | L563 | I564 | T565 | | | | | | |
| N566 | L567 | K568 | I569 | L570 | F571 | D572 | E573 | N574 | L575 | S576 | F577 | D578 | I579 | P580 | V581 | V582 | L583 | N584 | D585 | L586 | I587 | G588 | N589 | Q590 | M591 | K592 | P593 | G594 | I595 | F596 | M597 | K598 | D600 | F601 | I602 | S603 | A604 | I605 | K606 | F607 | D608 | G609 | F610 | S611 | S612 | I613 | L614 | L615 | L616 | E617 | S618 | L619 | H620 | Q621 | L622 | L623 | S624 | I625 | | | | | | | |
| H626 | Y627 | R628 | I629 | T630 | L631 | Q632 | V633 | L634 | L635 | T636 | F637 | V638 | L639 | F640 | D641 | L642 | D643 | T644 | E645 | I646 | F647 | G648 | Q649 | H650 | I651 | S652 | L653 | L654 | L655 | D656 | L657 | H658 | Y659 | K660 | Q661 | F662 | L663 | L664 | L665 | N666 | L667 | Y668 | R669 | Q670 | D671 | K672 | C673 | L674 | L675 | A676 | E677 | V678 | L679 | L680 | K681 | D682 | S683 | S684 | E685 | | | | | | |
| F686 | S687 | F688 | G689 | N690 | K691 | F692 | V693 | N694 | Y695 | G696 | Q697 | L698 | I699 | A700 | Y701 | T702 | D703 | S704 | L705 | N706 | S707 | N708 | V709 | Y710 | N711 | ALA | SER | ILE | T715 | E716 | N717 | S718 | F719 | F720 | M721 | T722 | F723 | F724 | ASP | L725 | S726 | TYR | ILE | ILE | GLU | ASN | THR | S733 | H734 | K735 | L736 | I737 | R738 | HIS | GLY | ASP | F740 | L741 | E742 | N743 | V744 | E745 | | | |
| C746 | PRO | PHE | THR | LEU | ARG | HIS | ASN | E754 | V755 | Q756 | E757 | F758 | M759 | F760 | A761 | M762 | T763 | L764 | F765 | S766 | CYS | GLY | ASN | F770 | D771 | Q772 | S773 | Y774 | E775 | L776 | F777 | Q778 | L779 | H780 | D781 | TYR | PRO | GLU | ALA | ILE | ASN | ASP | LYS | LEU | PRO | THR | PHE | GLU | LEU | ASN | THR | S733 | H734 | K735 | L736 | I737 | R738 | HIS | GLY | ASP | | | | | |



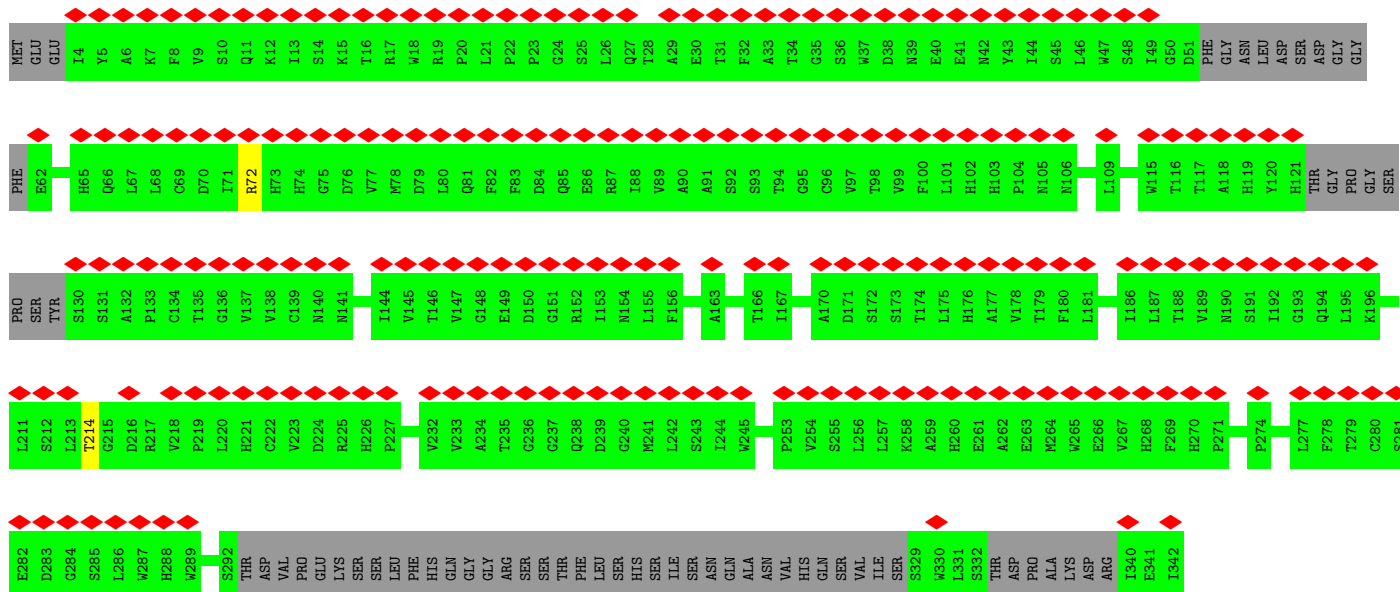
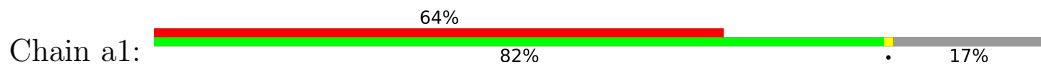
• Molecule 28: NUP160

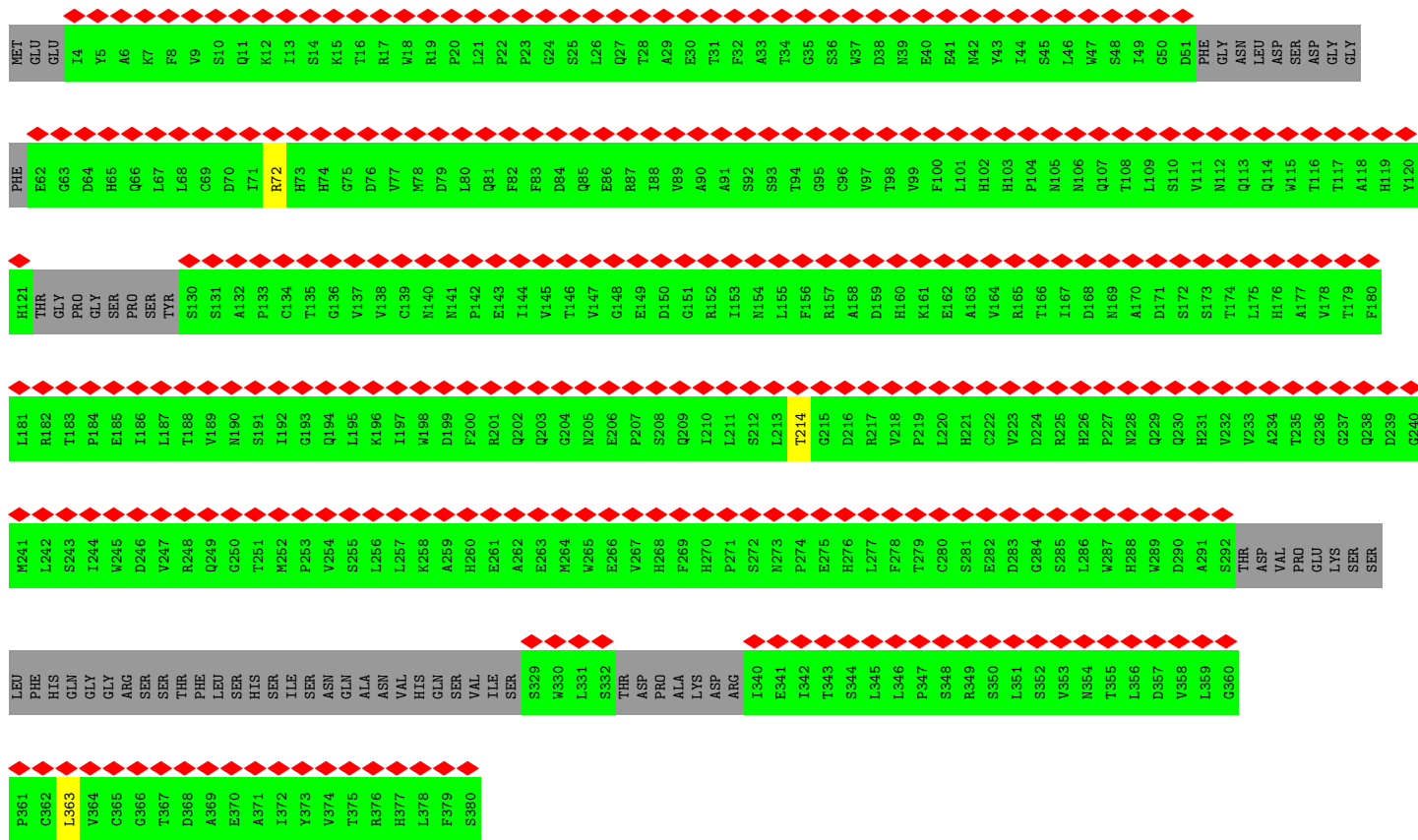




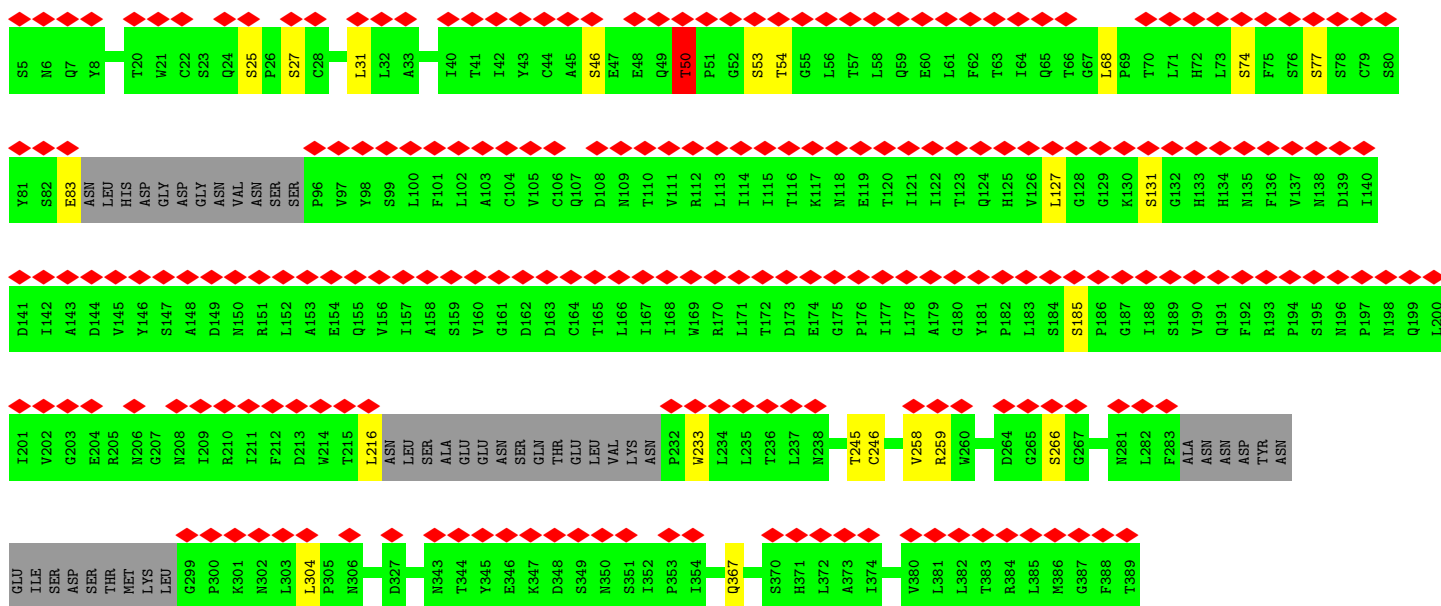
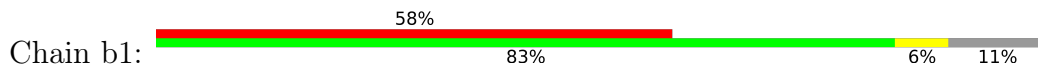


• Molecule 29: NUP43

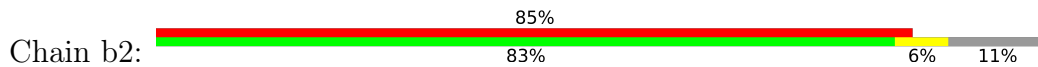


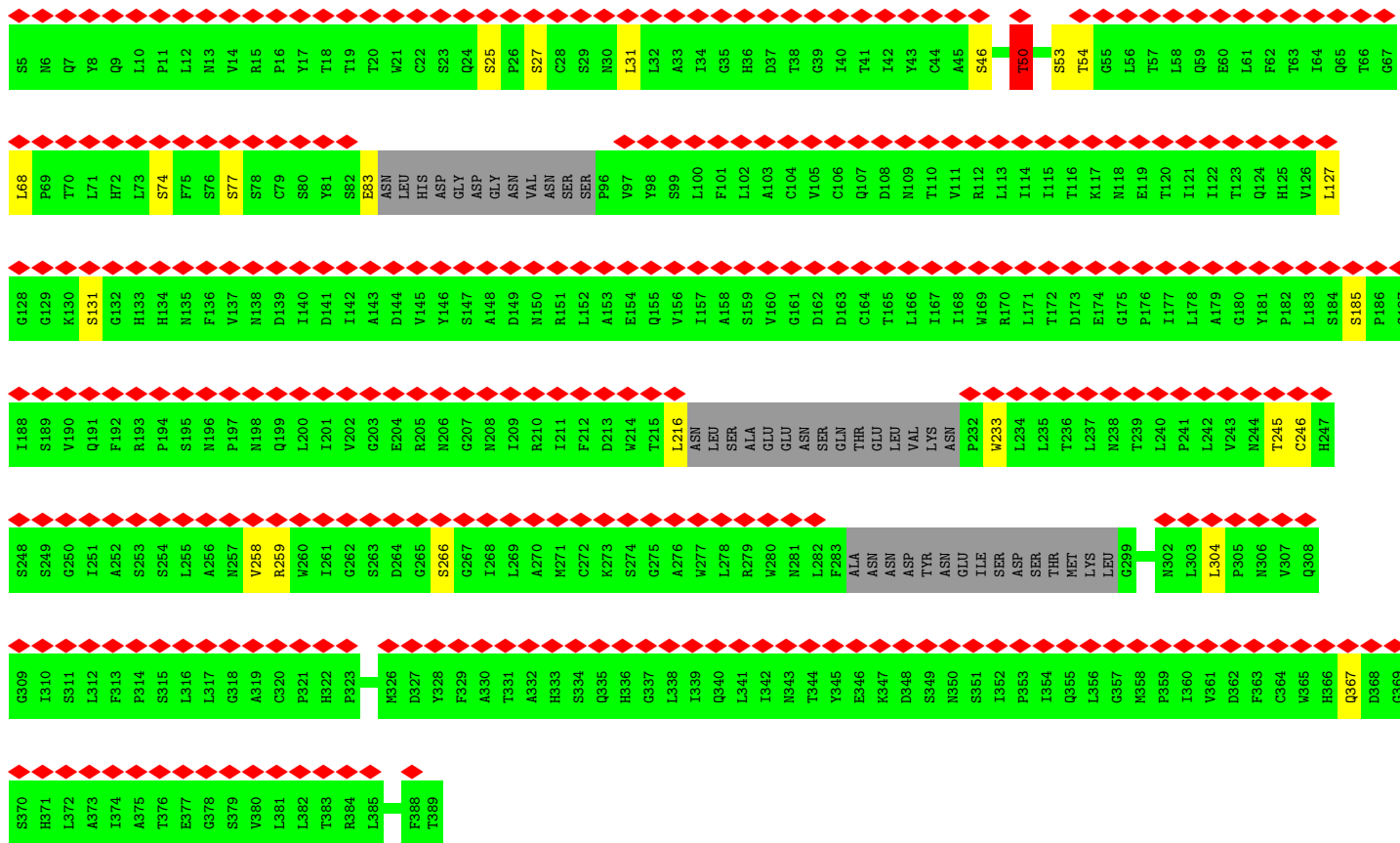


• Molecule 30: NUP37

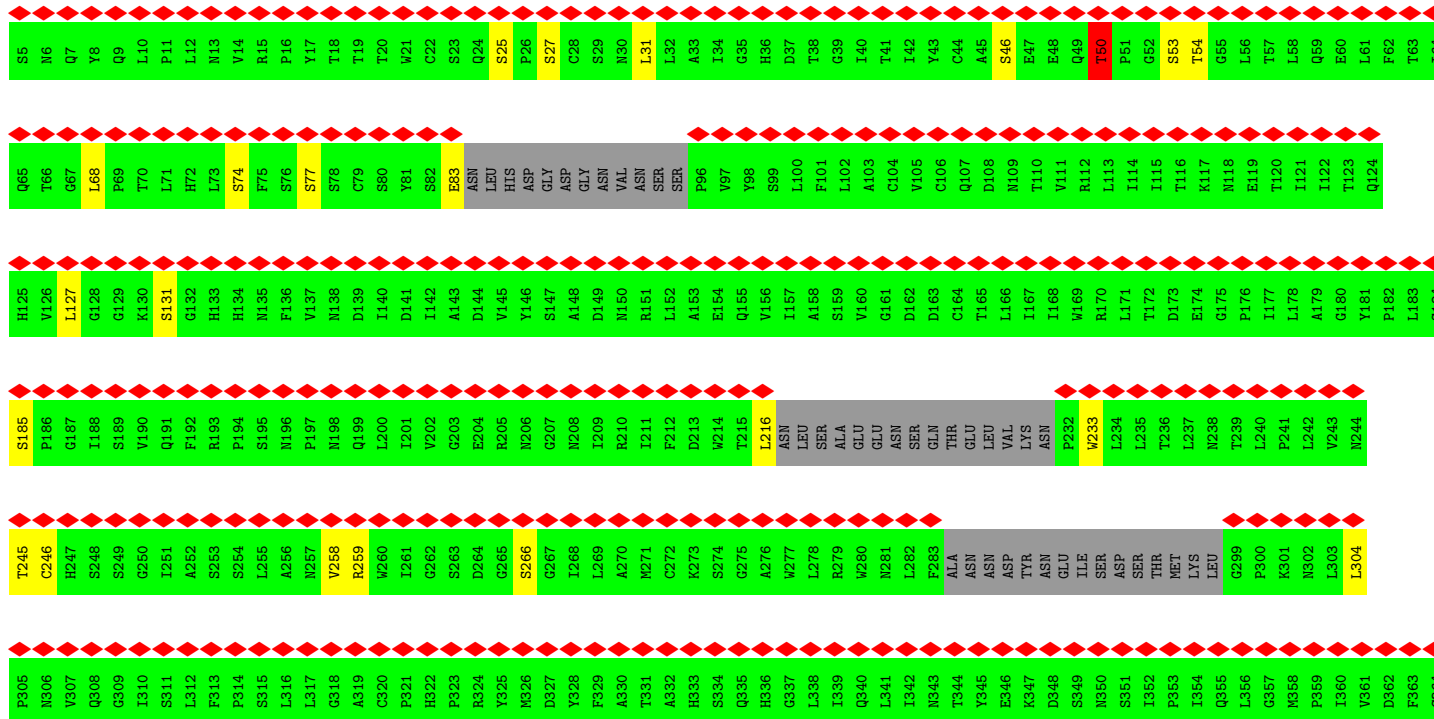
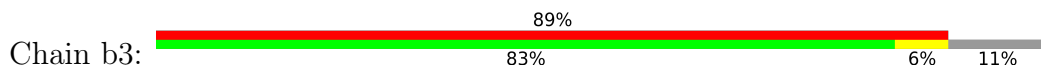


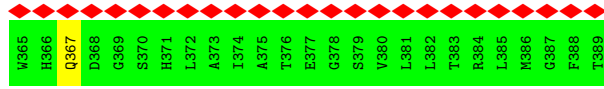
• Molecule 30: NUP37



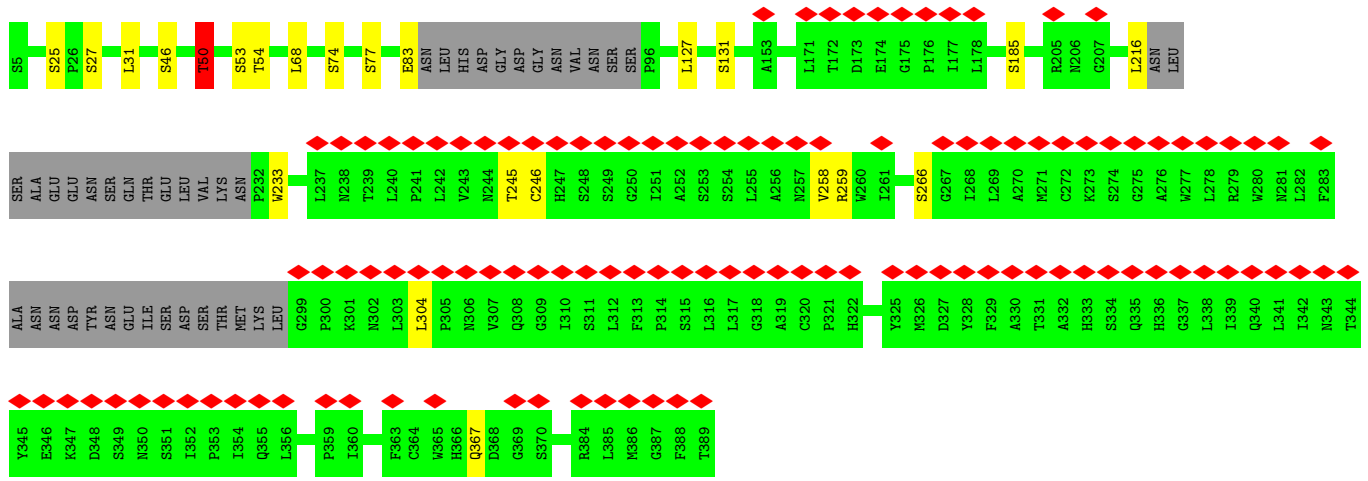
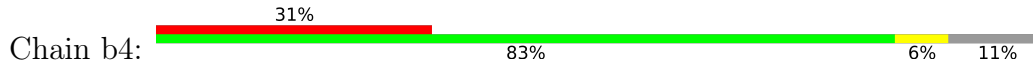


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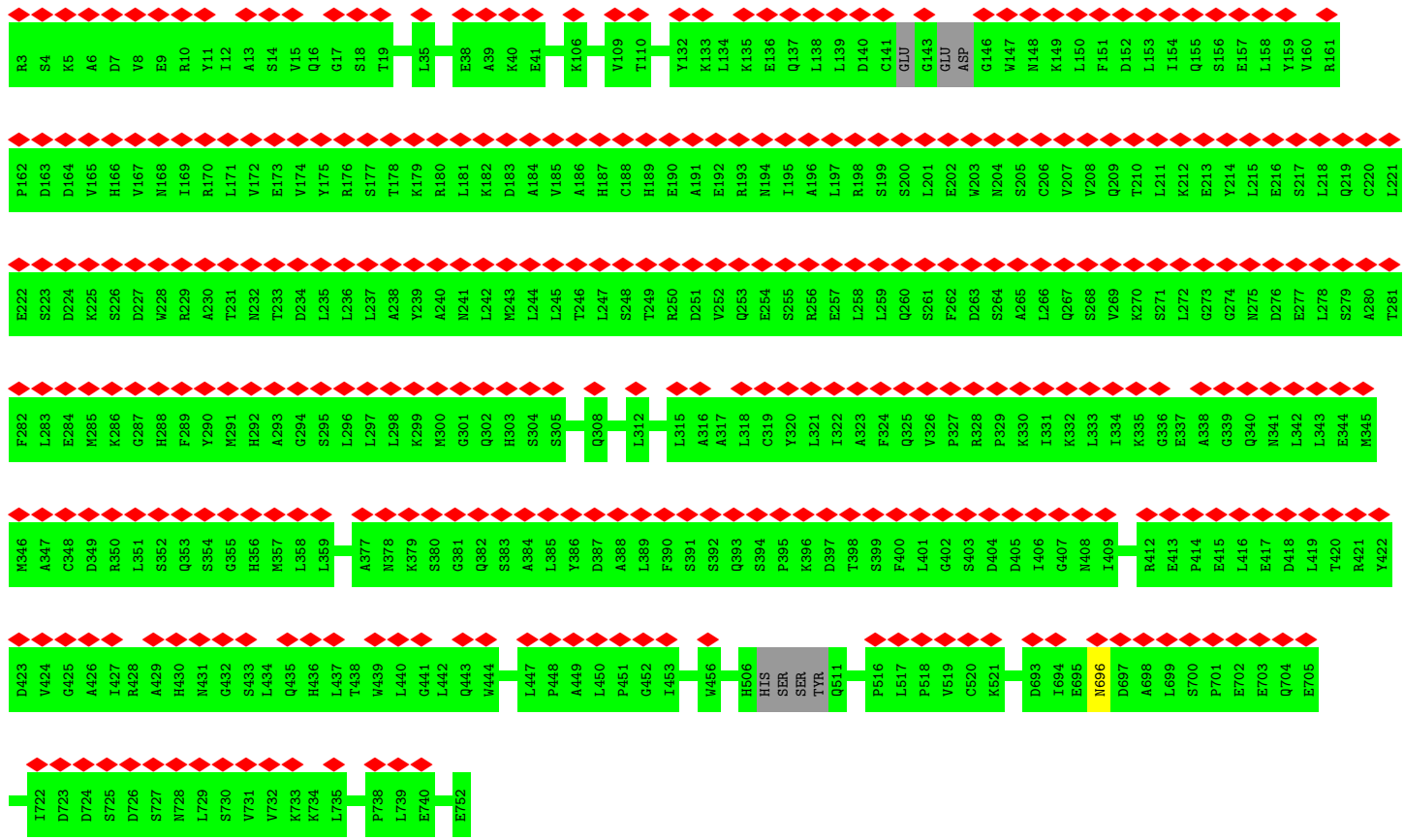




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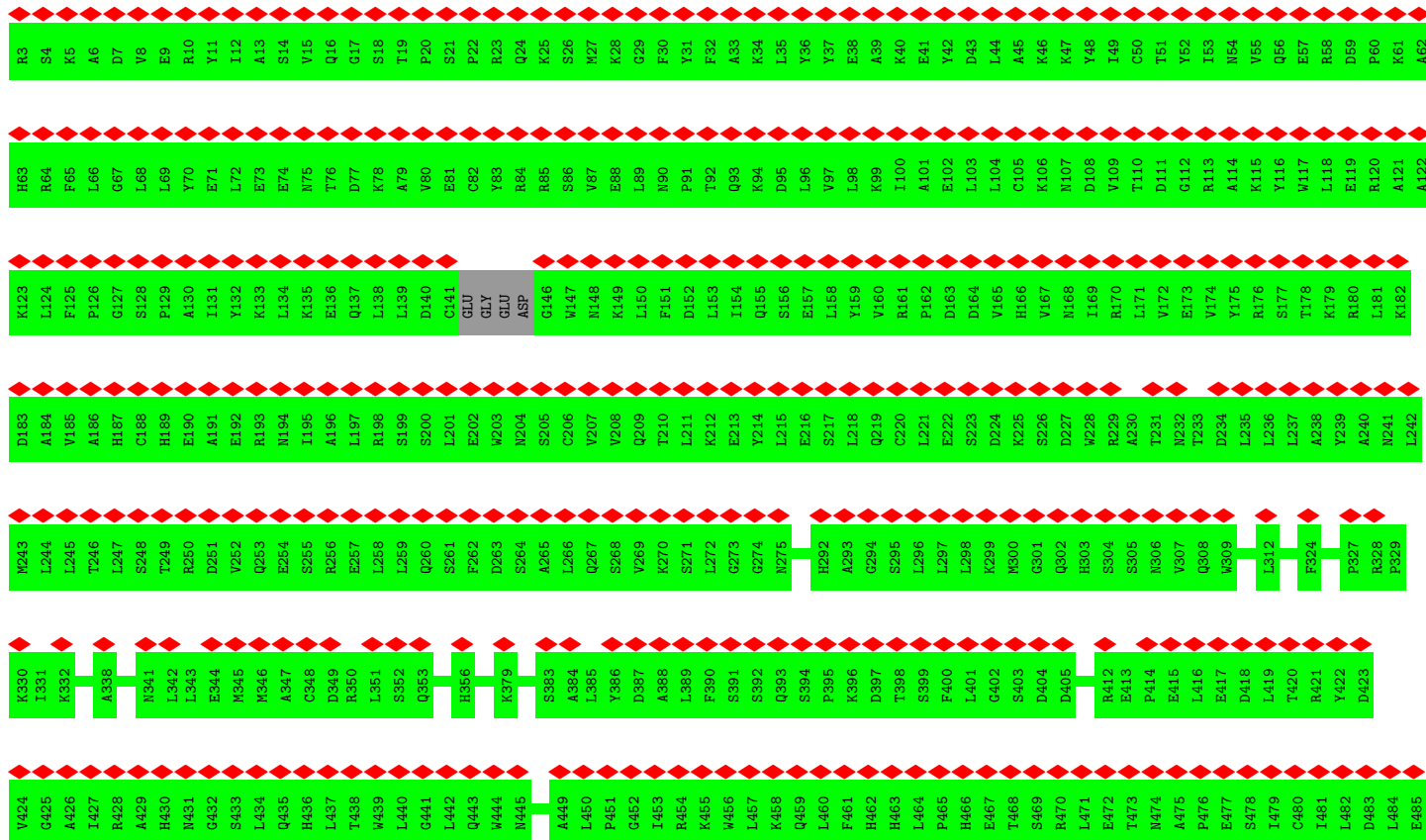


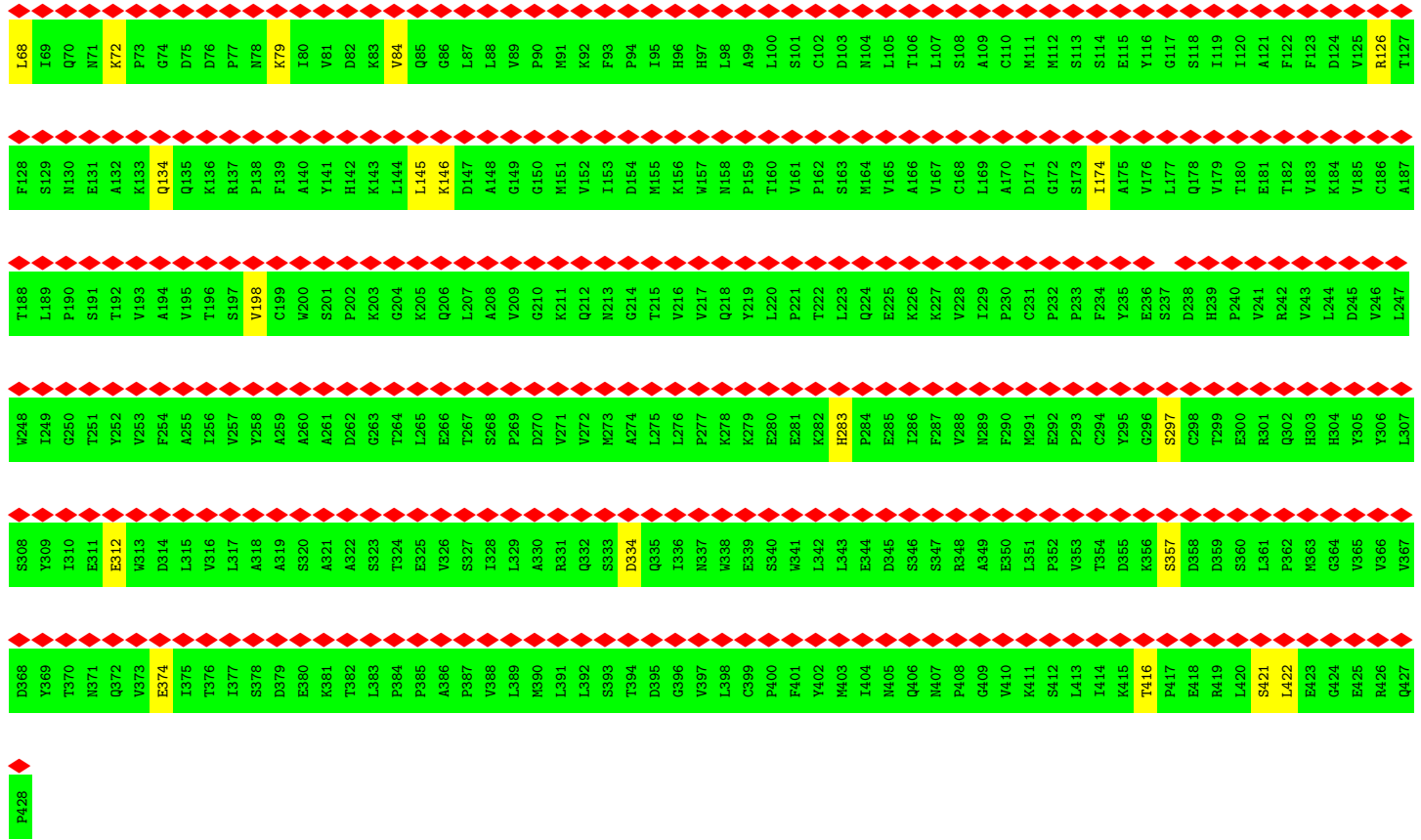
• Molecule 31: NUP358



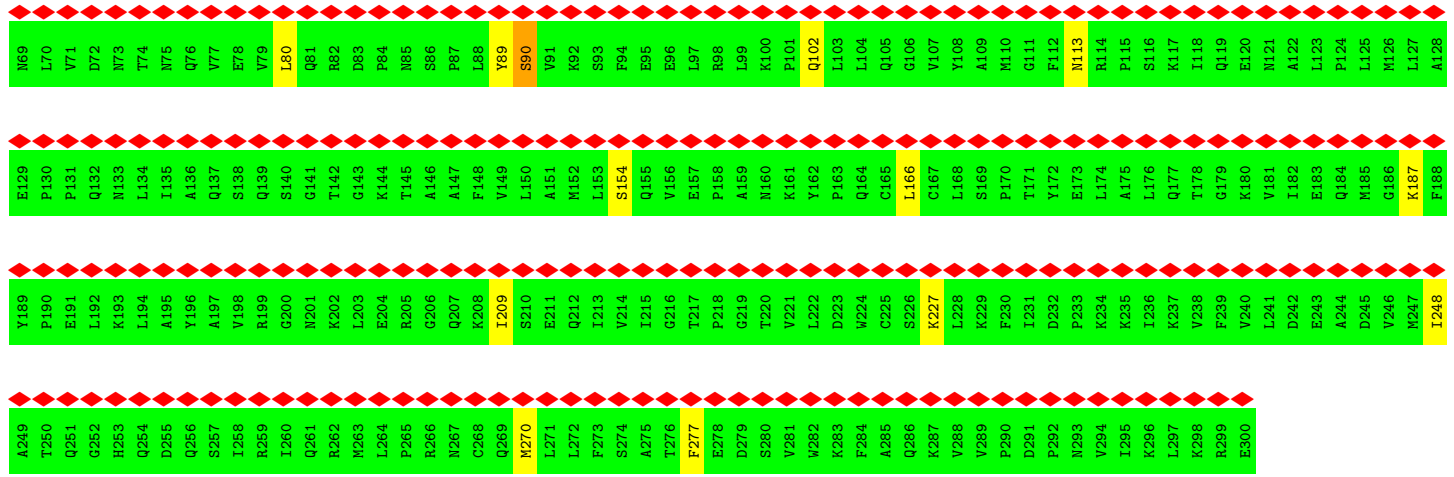
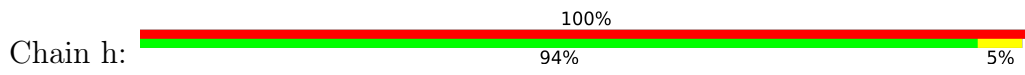


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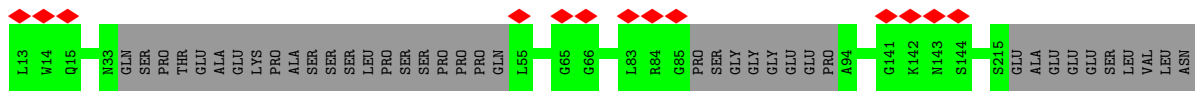
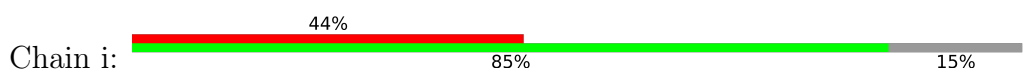




• Molecule 33: DDX19

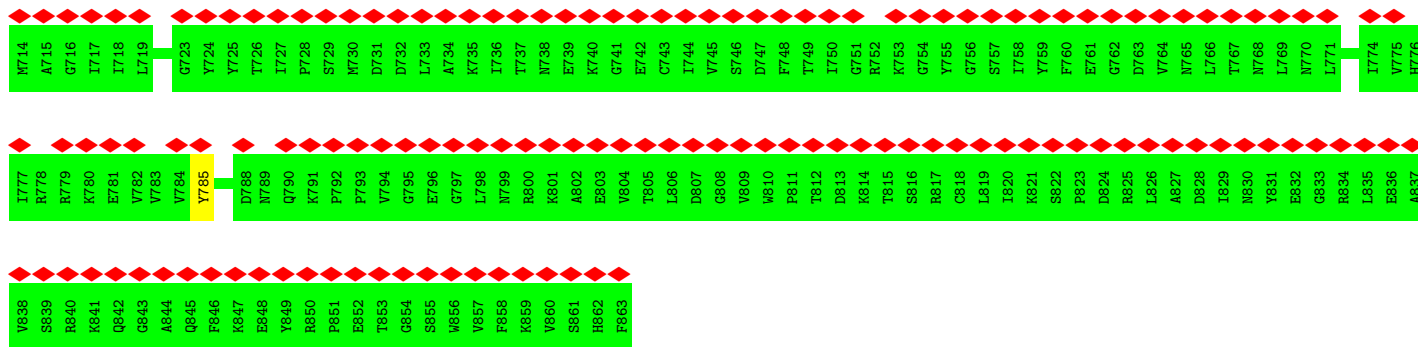
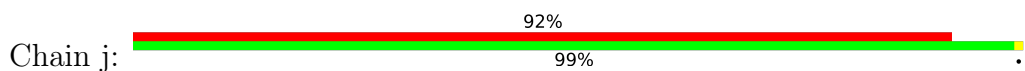


• Molecule 34: NUP88 NTD

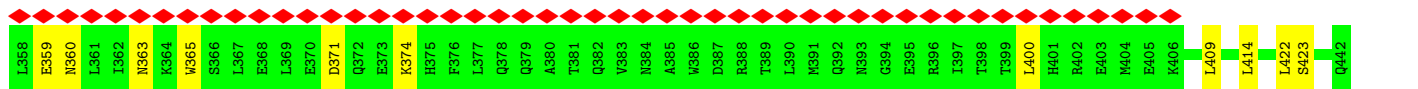
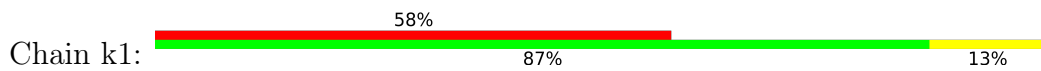




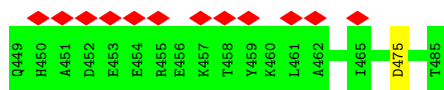
• Molecule 35: NUP98 APD



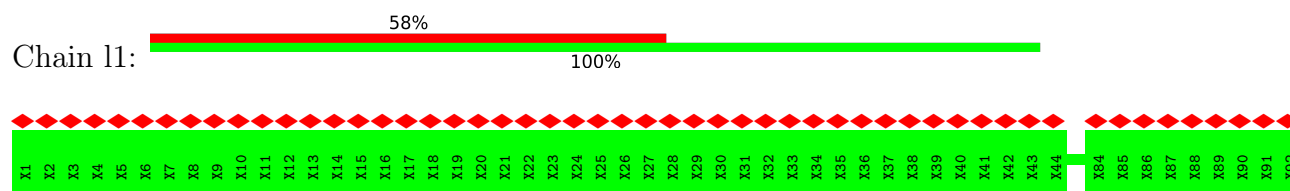
• Molecule 36: NUP62 CCS1



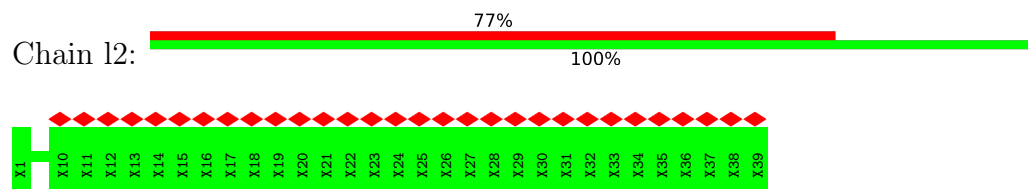
• Molecule 37: NUP62 CCS2



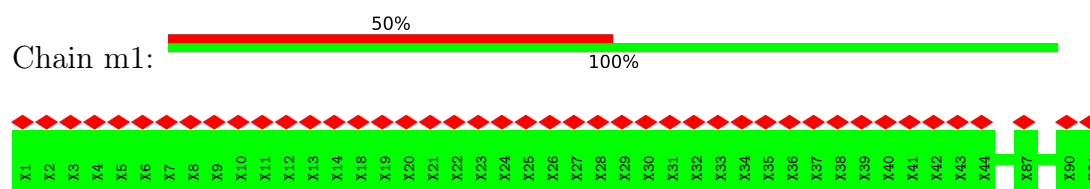
• Molecule 38: NUP214 CCS1



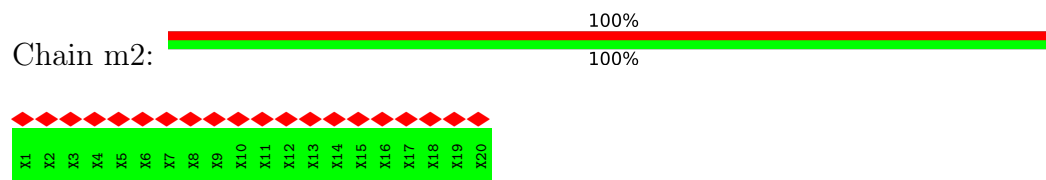
- Molecule 39: NUP214 CCS2



- Molecule 40: NUP88 CCS1



- Molecule 41: NUP88 CCS2



4 Experimental information

| Property | Value | Source |
|--------------------------------------|---|-----------|
| EM reconstruction method | SUBTOMOGRAM AVERAGING | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of subtomograms used | 792 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | FEI TITAN KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 140 | Depositor |
| Minimum defocus (nm) | 2000 | Depositor |
| Maximum defocus (nm) | 4500 | Depositor |
| Magnification | Not provided | |
| Image detector | GATAN K2 QUANTUM (4k x 4k) | Depositor |
| Maximum map value | 0.524 | Depositor |
| Minimum map value | -0.301 | Depositor |
| Average map value | 0.002 | Depositor |
| Map value standard deviation | 0.036 | Depositor |
| Recommended contour level | 0.07 | Depositor |
| Map size (Å) | 1987.2001, 1987.2001, 1987.2001 | wwPDB |
| Map dimensions | 144, 144, 144 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 13.8, 13.8, 13.8 | 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 | A1 | 0.28 | 1/9926 (0.0%) | 0.44 | 0/13474 |
| 1 | A3 | 0.29 | 1/9926 (0.0%) | 0.44 | 0/13474 |
| 2 | A2 | 0.25 | 0/10133 | 0.45 | 0/13731 |
| 2 | A4 | 0.25 | 0/10133 | 0.45 | 0/13731 |
| 3 | A5 | 0.26 | 1/10216 (0.0%) | 0.43 | 0/13838 |
| 3 | A6 | 0.26 | 1/10216 (0.0%) | 0.43 | 0/13838 |
| 4 | B1 | 0.25 | 0/112 | 0.48 | 0/149 |
| 4 | B2 | 0.25 | 0/112 | 0.48 | 0/149 |
| 4 | B3 | 0.25 | 0/112 | 0.48 | 0/149 |
| 4 | B4 | 0.25 | 0/112 | 0.48 | 0/149 |
| 4 | B5 | 0.26 | 0/112 | 0.48 | 0/149 |
| 4 | B6 | 0.26 | 0/112 | 0.48 | 0/149 |
| 5 | C1 | 0.39 | 0/140 | 0.50 | 0/188 |
| 5 | C2 | 0.30 | 0/160 | 0.53 | 0/214 |
| 5 | C3 | 0.39 | 0/140 | 0.50 | 0/188 |
| 5 | C4 | 0.31 | 0/160 | 0.53 | 0/214 |
| 5 | C5 | 0.39 | 0/140 | 0.50 | 0/188 |
| 5 | C6 | 0.39 | 0/140 | 0.50 | 0/188 |
| 6 | D1 | 0.27 | 0/5130 | 0.43 | 0/6930 |
| 6 | D2 | 0.27 | 0/5130 | 0.43 | 0/6930 |
| 6 | D3 | 0.27 | 0/5130 | 0.43 | 0/6930 |
| 6 | D4 | 0.27 | 0/5130 | 0.43 | 0/6930 |
| 6 | D5 | 0.27 | 0/5130 | 0.43 | 0/6930 |
| 6 | D6 | 0.28 | 0/5130 | 0.43 | 0/6930 |
| 6 | D7 | 0.27 | 0/5130 | 0.43 | 0/6930 |
| 7 | E1 | 0.25 | 0/65 | 0.41 | 0/89 |
| 7 | E2 | 0.25 | 0/65 | 0.41 | 0/89 |
| 7 | E3 | 0.25 | 0/65 | 0.42 | 0/89 |
| 7 | E4 | 0.24 | 0/65 | 0.41 | 0/89 |
| 7 | E5 | 0.24 | 0/65 | 0.42 | 0/89 |
| 7 | E6 | 0.24 | 0/65 | 0.41 | 0/89 |
| 7 | E7 | 0.24 | 0/65 | 0.42 | 0/89 |
| 8 | F1 | 0.24 | 0/13031 | 0.39 | 0/17717 |
| 8 | F2 | 0.24 | 0/13031 | 0.39 | 0/17717 |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|---------|-------------|---------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 9 | G1 | 0.23 | 0/445 | 0.38 | 0/600 |
| 9 | G2 | 0.23 | 0/445 | 0.38 | 0/600 |
| 10 | H1 | 0.26 | 0/95 | 0.37 | 0/128 |
| 10 | H2 | 0.26 | 0/95 | 0.37 | 0/128 |
| 11 | I1 | 0.23 | 0/12541 | 0.36 | 0/16980 |
| 11 | I2 | 0.23 | 0/12541 | 0.35 | 0/16980 |
| 11 | I3 | 0.23 | 0/12541 | 0.36 | 0/16980 |
| 11 | I4 | 0.23 | 0/12541 | 0.36 | 0/16980 |
| 11 | I5 | 0.23 | 0/12541 | 0.36 | 0/16980 |
| 12 | J1 | 0.23 | 0/511 | 0.37 | 0/688 |
| 12 | J2 | 0.24 | 0/511 | 0.37 | 0/688 |
| 12 | J3 | 0.23 | 0/511 | 0.37 | 0/688 |
| 12 | J4 | 0.23 | 0/511 | 0.37 | 0/688 |
| 12 | J5 | 0.23 | 0/511 | 0.37 | 0/688 |
| 13 | K1 | 0.23 | 0/75 | 0.40 | 0/101 |
| 13 | K2 | 0.23 | 0/75 | 0.39 | 0/101 |
| 13 | K3 | 0.23 | 0/75 | 0.39 | 0/101 |
| 13 | K4 | 0.24 | 0/75 | 0.39 | 0/101 |
| 13 | K5 | 0.24 | 0/75 | 0.40 | 0/101 |
| 14 | L1 | 0.29 | 0/15 | 0.16 | 0/18 |
| 14 | L2 | 0.29 | 0/15 | 0.17 | 0/18 |
| 14 | L3 | 0.26 | 0/15 | 0.19 | 0/18 |
| 14 | L4 | 0.28 | 0/15 | 0.19 | 0/18 |
| 14 | L5 | 0.30 | 0/15 | 0.18 | 0/18 |
| 15 | M1 | 0.26 | 0/1388 | 0.39 | 0/1866 |
| 15 | M2 | 0.26 | 0/1388 | 0.40 | 0/1866 |
| 15 | M3 | 0.26 | 0/1388 | 0.39 | 0/1866 |
| 15 | M4 | 0.26 | 0/1388 | 0.39 | 0/1866 |
| 16 | N1 | 0.24 | 0/1413 | 0.38 | 0/1898 |
| 16 | N2 | 0.25 | 0/1413 | 0.38 | 0/1898 |
| 16 | N3 | 0.24 | 0/1413 | 0.38 | 0/1898 |
| 16 | N4 | 0.25 | 0/1413 | 0.38 | 0/1898 |
| 17 | O1 | 0.26 | 0/2011 | 0.41 | 0/2715 |
| 17 | O2 | 0.26 | 0/2011 | 0.41 | 0/2715 |
| 17 | O3 | 0.26 | 0/2011 | 0.41 | 0/2715 |
| 17 | O4 | 0.26 | 0/2011 | 0.41 | 0/2715 |
| 18 | P1 | 0.37 | 0/910 | 0.51 | 0/1228 |
| 18 | P2 | 0.37 | 0/910 | 0.51 | 0/1228 |
| 18 | P3 | 0.37 | 0/910 | 0.51 | 0/1228 |
| 18 | P4 | 0.37 | 0/910 | 0.51 | 0/1228 |
| 19 | Q1 | 0.50 | 0/672 | 0.59 | 0/898 |
| 19 | Q2 | 0.49 | 0/629 | 0.61 | 0/842 |
| 19 | Q3 | 0.50 | 0/672 | 0.59 | 0/898 |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|---------------|-------------|----------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 19 | Q4 | 0.49 | 0/629 | 0.61 | 0/842 |
| 20 | R1 | 0.23 | 0/312 | 0.38 | 0/416 |
| 20 | R2 | 0.23 | 0/312 | 0.38 | 0/416 |
| 20 | R3 | 0.23 | 0/312 | 0.38 | 0/416 |
| 20 | R4 | 0.23 | 0/312 | 0.38 | 0/416 |
| 21 | S1 | 0.84 | 6/6081 (0.1%) | 0.83 | 18/8304 (0.2%) |
| 21 | S2 | 0.84 | 6/6081 (0.1%) | 0.83 | 19/8304 (0.2%) |
| 21 | S3 | 0.84 | 6/6081 (0.1%) | 0.83 | 18/8304 (0.2%) |
| 21 | S4 | 0.84 | 6/6081 (0.1%) | 0.83 | 18/8304 (0.2%) |
| 22 | T1 | 0.24 | 0/2037 | 0.41 | 0/2749 |
| 22 | T2 | 0.24 | 0/2037 | 0.41 | 0/2749 |
| 22 | T3 | 0.24 | 0/2037 | 0.41 | 0/2749 |
| 22 | T4 | 0.24 | 0/2037 | 0.41 | 0/2749 |
| 23 | U1 | 0.36 | 0/3463 | 0.64 | 2/4700 (0.0%) |
| 23 | U2 | 0.36 | 0/3472 | 0.64 | 2/4714 (0.0%) |
| 23 | U3 | 0.36 | 0/3472 | 0.64 | 2/4714 (0.0%) |
| 23 | U4 | 0.36 | 0/3472 | 0.64 | 2/4714 (0.0%) |
| 24 | V1 | 0.37 | 0/3860 | 0.66 | 2/5224 (0.0%) |
| 24 | V2 | 0.37 | 0/3860 | 0.66 | 2/5224 (0.0%) |
| 24 | V3 | 0.37 | 0/3860 | 0.66 | 2/5224 (0.0%) |
| 24 | V4 | 0.37 | 0/3860 | 0.66 | 2/5224 (0.0%) |
| 25 | W1 | 0.32 | 0/2220 | 0.62 | 0/3028 |
| 25 | W2 | 0.32 | 0/2220 | 0.62 | 0/3028 |
| 25 | W3 | 0.32 | 0/2220 | 0.62 | 0/3028 |
| 25 | W4 | 0.32 | 0/2220 | 0.62 | 0/3028 |
| 26 | X1 | 0.31 | 0/4602 | 0.58 | 2/6246 (0.0%) |
| 26 | X2 | 0.31 | 0/4602 | 0.58 | 2/6246 (0.0%) |
| 26 | X3 | 0.31 | 0/4602 | 0.58 | 2/6246 (0.0%) |
| 26 | X4 | 0.31 | 0/4602 | 0.58 | 2/6246 (0.0%) |
| 27 | Y1 | 0.28 | 0/2499 | 0.64 | 0/3388 |
| 27 | Y2 | 0.28 | 0/2499 | 0.64 | 0/3388 |
| 27 | Y3 | 0.28 | 0/2499 | 0.64 | 0/3388 |
| 27 | Y4 | 0.28 | 0/2499 | 0.64 | 0/3388 |
| 28 | Z1 | 0.33 | 0/6730 | 0.55 | 1/9158 (0.0%) |
| 28 | Z2 | 0.33 | 0/6730 | 0.55 | 1/9158 (0.0%) |
| 28 | Z3 | 0.33 | 0/6730 | 0.55 | 1/9158 (0.0%) |
| 28 | Z4 | 0.33 | 0/6730 | 0.55 | 1/9158 (0.0%) |
| 29 | a1 | 0.78 | 0/2723 | 0.78 | 0/3715 |
| 29 | a2 | 0.78 | 0/2723 | 0.78 | 0/3715 |
| 29 | a3 | 0.78 | 0/2723 | 0.78 | 0/3715 |
| 29 | a4 | 0.78 | 0/2723 | 0.78 | 0/3715 |
| 30 | b1 | 0.33 | 0/2702 | 0.65 | 0/3689 |
| 30 | b2 | 0.33 | 0/2702 | 0.65 | 0/3689 |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|------------------|-------------|-------------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 30 | b3 | 0.33 | 0/2702 | 0.65 | 0/3689 |
| 30 | b4 | 0.33 | 0/2702 | 0.65 | 0/3689 |
| 31 | c1 | 0.25 | 0/6101 | 0.39 | 0/8248 |
| 31 | c2 | 0.25 | 0/6098 | 0.39 | 0/8246 |
| 31 | c3 | 0.25 | 0/6098 | 0.39 | 0/8246 |
| 31 | c4 | 0.25 | 0/6098 | 0.39 | 0/8246 |
| 31 | c5 | 0.25 | 0/6098 | 0.39 | 0/8246 |
| 32 | g | 0.67 | 0/3359 | 0.73 | 0/4572 |
| 33 | h | 0.68 | 0/1871 | 0.76 | 1/2530 (0.0%) |
| 34 | i | 0.26 | 0/3398 | 0.45 | 0/4629 |
| 35 | j | 0.25 | 0/1223 | 0.43 | 0/1653 |
| 36 | k1 | 0.36 | 0/727 | 0.47 | 0/977 |
| 37 | k2 | 0.31 | 0/310 | 0.46 | 0/414 |
| All | All | 0.37 | 28/407133 (0.0%) | 0.52 | 102/551943 (0.0%) |

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 | A1 | 0 | 2 |
| 1 | A3 | 0 | 2 |
| 2 | A2 | 0 | 1 |
| 2 | A4 | 0 | 1 |
| 23 | U1 | 0 | 1 |
| 23 | U2 | 0 | 1 |
| 23 | U3 | 0 | 1 |
| 23 | U4 | 0 | 1 |
| 24 | V1 | 0 | 2 |
| 24 | V2 | 0 | 2 |
| 24 | V3 | 0 | 2 |
| 24 | V4 | 0 | 2 |
| 28 | Z1 | 0 | 2 |
| 28 | Z2 | 0 | 2 |
| 28 | Z3 | 0 | 2 |
| 28 | Z4 | 0 | 2 |
| 30 | b1 | 0 | 3 |
| 30 | b2 | 0 | 3 |
| 30 | b3 | 0 | 3 |
| 30 | b4 | 0 | 3 |
| All | All | 0 | 38 |

The worst 5 of 28 bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|------|-------------|----------|
| 1 | A1 | 891 | GLY | C-N | 7.13 | 1.50 | 1.34 |
| 1 | A3 | 891 | GLY | C-N | 7.09 | 1.50 | 1.34 |
| 21 | S1 | 151 | TRP | CE3-CZ3 | 7.06 | 1.50 | 1.38 |
| 21 | S2 | 151 | TRP | CE3-CZ3 | 7.04 | 1.50 | 1.38 |
| 21 | S3 | 151 | TRP | CE3-CZ3 | 7.04 | 1.50 | 1.38 |

The worst 5 of 102 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|------|-------------|----------|
| 21 | S1 | 685 | PRO | N-CA-CB | 8.59 | 113.61 | 103.30 |
| 21 | S2 | 685 | PRO | N-CA-CB | 8.59 | 113.61 | 103.30 |
| 21 | S4 | 685 | PRO | N-CA-CB | 8.59 | 113.60 | 103.30 |
| 21 | S3 | 685 | PRO | N-CA-CB | 8.54 | 113.55 | 103.30 |
| 21 | S3 | 377 | ASP | CB-CG-OD2 | 8.04 | 125.53 | 118.30 |

There are no chirality outliers.

5 of 38 planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 1 | A1 | 891 | GLY | Mainchain |
| 1 | A1 | 976 | LEU | Peptide |
| 2 | A2 | 699 | SER | Peptide |
| 1 | A3 | 891 | GLY | Mainchain |
| 1 | A3 | 976 | LEU | Peptide |

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 | A1 | 9730 | 0 | 9629 | 529 | 0 |
| 1 | A3 | 9730 | 0 | 9573 | 2325 | 0 |
| 2 | A2 | 9946 | 0 | 9774 | 1854 | 0 |
| 2 | A4 | 9946 | 0 | 9656 | 5008 | 0 |
| 3 | A5 | 10030 | 0 | 9892 | 1550 | 0 |
| 3 | A6 | 10030 | 0 | 9732 | 6034 | 0 |
| 4 | B1 | 111 | 0 | 127 | 1 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 4 | B2 | 111 | 0 | 127 | 24 | 0 |
| 4 | B3 | 111 | 0 | 127 | 1 | 0 |
| 4 | B4 | 111 | 0 | 127 | 25 | 0 |
| 4 | B5 | 111 | 0 | 122 | 38 | 0 |
| 4 | B6 | 111 | 0 | 118 | 184 | 0 |
| 5 | C1 | 138 | 0 | 144 | 26 | 0 |
| 5 | C2 | 157 | 0 | 157 | 350 | 0 |
| 5 | C3 | 138 | 0 | 144 | 8 | 0 |
| 5 | C4 | 157 | 0 | 164 | 64 | 0 |
| 5 | C5 | 138 | 0 | 144 | 23 | 0 |
| 5 | C6 | 138 | 0 | 144 | 22 | 0 |
| 6 | D1 | 5034 | 0 | 4999 | 1029 | 0 |
| 6 | D2 | 5034 | 0 | 5029 | 82 | 0 |
| 6 | D3 | 5034 | 0 | 4965 | 1769 | 0 |
| 6 | D4 | 5034 | 0 | 5030 | 91 | 0 |
| 6 | D5 | 5034 | 0 | 5024 | 58 | 0 |
| 6 | D6 | 5034 | 0 | 5027 | 85 | 0 |
| 6 | D7 | 5034 | 0 | 5027 | 126 | 0 |
| 7 | E1 | 63 | 0 | 65 | 2 | 0 |
| 7 | E2 | 63 | 0 | 65 | 2 | 0 |
| 7 | E3 | 63 | 0 | 65 | 2 | 0 |
| 7 | E4 | 63 | 0 | 65 | 2 | 0 |
| 7 | E5 | 63 | 0 | 65 | 2 | 0 |
| 7 | E6 | 63 | 0 | 65 | 2 | 0 |
| 7 | E7 | 63 | 0 | 65 | 2 | 0 |
| 8 | F1 | 12779 | 0 | 12916 | 379 | 0 |
| 8 | F2 | 12779 | 0 | 12917 | 133 | 0 |
| 9 | G1 | 438 | 0 | 404 | 211 | 0 |
| 9 | G2 | 438 | 0 | 412 | 73 | 0 |
| 10 | H1 | 94 | 0 | 84 | 0 | 0 |
| 10 | H2 | 94 | 0 | 84 | 0 | 0 |
| 11 | I1 | 12307 | 0 | 12271 | 3172 | 0 |
| 11 | I2 | 12307 | 0 | 12280 | 3234 | 0 |
| 11 | I3 | 12307 | 0 | 12354 | 443 | 0 |
| 11 | I4 | 12307 | 0 | 12360 | 241 | 0 |
| 11 | I5 | 12307 | 0 | 12347 | 527 | 0 |
| 12 | J1 | 504 | 0 | 485 | 54 | 0 |
| 12 | J2 | 504 | 0 | 485 | 55 | 0 |
| 12 | J3 | 504 | 0 | 487 | 32 | 0 |
| 12 | J4 | 504 | 0 | 487 | 30 | 0 |
| 12 | J5 | 504 | 0 | 487 | 31 | 0 |
| 13 | K1 | 73 | 0 | 82 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 13 | K2 | 73 | 0 | 82 | 0 | 0 |
| 13 | K3 | 73 | 0 | 82 | 0 | 0 |
| 13 | K4 | 73 | 0 | 82 | 0 | 0 |
| 13 | K5 | 73 | 0 | 82 | 0 | 0 |
| 14 | L1 | 15 | 0 | 11 | 0 | 0 |
| 14 | L2 | 15 | 0 | 11 | 0 | 0 |
| 14 | L3 | 15 | 0 | 11 | 0 | 0 |
| 14 | L4 | 15 | 0 | 11 | 0 | 0 |
| 14 | L5 | 15 | 0 | 11 | 0 | 0 |
| 15 | M1 | 1372 | 0 | 1333 | 715 | 0 |
| 15 | M2 | 1372 | 0 | 1361 | 52 | 0 |
| 15 | M3 | 1372 | 0 | 1332 | 573 | 0 |
| 15 | M4 | 1372 | 0 | 1363 | 4 | 0 |
| 16 | N1 | 1401 | 0 | 1375 | 720 | 0 |
| 16 | N2 | 1401 | 0 | 1397 | 74 | 0 |
| 16 | N3 | 1401 | 0 | 1383 | 611 | 0 |
| 16 | N4 | 1401 | 0 | 1398 | 10 | 0 |
| 17 | O1 | 1971 | 0 | 1943 | 906 | 0 |
| 17 | O2 | 1971 | 0 | 1962 | 418 | 0 |
| 17 | O3 | 1971 | 0 | 1935 | 1232 | 0 |
| 17 | O4 | 1971 | 0 | 1961 | 236 | 0 |
| 18 | P1 | 900 | 0 | 910 | 60 | 0 |
| 18 | P2 | 900 | 0 | 910 | 42 | 0 |
| 18 | P3 | 900 | 0 | 908 | 147 | 0 |
| 18 | P4 | 900 | 0 | 907 | 119 | 0 |
| 19 | Q1 | 658 | 0 | 645 | 3 | 0 |
| 19 | Q2 | 616 | 0 | 600 | 3 | 0 |
| 19 | Q3 | 658 | 0 | 645 | 3 | 0 |
| 19 | Q4 | 616 | 0 | 600 | 3 | 0 |
| 20 | R1 | 311 | 0 | 315 | 348 | 0 |
| 20 | R2 | 311 | 0 | 334 | 2 | 0 |
| 20 | R3 | 311 | 0 | 313 | 463 | 0 |
| 20 | R4 | 311 | 0 | 334 | 2 | 0 |
| 21 | S1 | 6013 | 0 | 4977 | 319 | 0 |
| 21 | S2 | 6013 | 0 | 4980 | 325 | 0 |
| 21 | S3 | 6013 | 0 | 4983 | 236 | 0 |
| 21 | S4 | 6013 | 0 | 4979 | 233 | 0 |
| 22 | T1 | 1993 | 0 | 1975 | 65 | 0 |
| 22 | T2 | 1993 | 0 | 1981 | 68 | 0 |
| 22 | T3 | 1993 | 0 | 1981 | 99 | 0 |
| 22 | T4 | 1993 | 0 | 1981 | 71 | 0 |
| 23 | U1 | 3396 | 0 | 3352 | 82 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 23 | U2 | 3404 | 0 | 3326 | 76 | 0 |
| 23 | U3 | 3404 | 0 | 3377 | 135 | 0 |
| 23 | U4 | 3404 | 0 | 3378 | 79 | 0 |
| 24 | V1 | 3805 | 0 | 3499 | 105 | 0 |
| 24 | V2 | 3805 | 0 | 3499 | 109 | 0 |
| 24 | V3 | 3805 | 0 | 3499 | 106 | 0 |
| 24 | V4 | 3805 | 0 | 3499 | 110 | 0 |
| 25 | W1 | 2160 | 0 | 2096 | 63 | 0 |
| 25 | W2 | 2160 | 0 | 2096 | 75 | 0 |
| 25 | W3 | 2160 | 0 | 2096 | 63 | 0 |
| 25 | W4 | 2160 | 0 | 2096 | 125 | 0 |
| 26 | X1 | 4535 | 0 | 4064 | 370 | 0 |
| 26 | X2 | 4535 | 0 | 4032 | 155 | 0 |
| 26 | X3 | 4535 | 0 | 4068 | 232 | 0 |
| 26 | X4 | 4535 | 0 | 4071 | 146 | 0 |
| 27 | Y1 | 2438 | 0 | 2378 | 55 | 0 |
| 27 | Y2 | 2438 | 0 | 2378 | 52 | 0 |
| 27 | Y3 | 2438 | 0 | 2378 | 63 | 0 |
| 27 | Y4 | 2438 | 0 | 2378 | 56 | 0 |
| 28 | Z1 | 6622 | 0 | 5893 | 80 | 0 |
| 28 | Z2 | 6622 | 0 | 5883 | 487 | 0 |
| 28 | Z3 | 6622 | 0 | 5893 | 83 | 0 |
| 28 | Z4 | 6622 | 0 | 5885 | 305 | 0 |
| 29 | a1 | 2587 | 0 | 2488 | 0 | 0 |
| 29 | a2 | 2587 | 0 | 2488 | 0 | 0 |
| 29 | a3 | 2587 | 0 | 2486 | 0 | 0 |
| 29 | a4 | 2587 | 0 | 2488 | 0 | 0 |
| 30 | b1 | 2638 | 0 | 2573 | 0 | 0 |
| 30 | b2 | 2638 | 0 | 2573 | 0 | 0 |
| 30 | b3 | 2638 | 0 | 2573 | 0 | 0 |
| 30 | b4 | 2638 | 0 | 2573 | 0 | 0 |
| 31 | c1 | 5980 | 0 | 5992 | 0 | 0 |
| 31 | c2 | 5976 | 0 | 5981 | 0 | 0 |
| 31 | c3 | 5976 | 0 | 5996 | 0 | 0 |
| 31 | c4 | 5976 | 0 | 5949 | 0 | 0 |
| 31 | c5 | 5976 | 0 | 5997 | 0 | 0 |
| 32 | g | 3282 | 0 | 3310 | 0 | 0 |
| 33 | h | 1836 | 0 | 1893 | 0 | 0 |
| 34 | i | 3280 | 0 | 3277 | 0 | 0 |
| 35 | j | 1197 | 0 | 1198 | 0 | 0 |
| 36 | k1 | 719 | 0 | 713 | 0 | 0 |
| 37 | k2 | 308 | 0 | 302 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 38 | l1 | 460 | 0 | 94 | 0 | 0 |
| 39 | l2 | 195 | 0 | 41 | 0 | 0 |
| 40 | m1 | 440 | 0 | 93 | 0 | 0 |
| 41 | m2 | 100 | 0 | 21 | 0 | 0 |
| All | All | 400581 | 0 | 386996 | 22511 | 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 37.

The worst 5 of 22511 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) |
|--------------------|------------------|--------------------------|-------------------|
| 11:I2:950:LEU:HD11 | 16:N3:410:MET:SD | 1.20 | 1.72 |
| 3:A6:444:ARG:HG2 | 6:D3:737:PHE:CZ | 1.21 | 1.69 |
| 2:A4:886:PHE:CZ | 3:A6:176:LEU:HG | 1.26 | 1.68 |
| 11:I1:833:PHE:CD2 | 17:O1:238:ALA:HA | 1.27 | 1.68 |
| 2:A4:770:GLY:CA | 3:A6:469:PHE:CD2 | 1.74 | 1.68 |

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-----------------|------------|---------|----------|-------------|-----|
| 1 | A1 | 1211/1316 (92%) | 1172 (97%) | 39 (3%) | 0 | 100 | 100 |
| 1 | A3 | 1211/1316 (92%) | 1172 (97%) | 39 (3%) | 0 | 100 | 100 |
| 2 | A2 | 1255/1328 (94%) | 1183 (94%) | 54 (4%) | 18 (1%) | 11 | 46 |
| 2 | A4 | 1255/1328 (94%) | 1182 (94%) | 55 (4%) | 18 (1%) | 11 | 46 |
| 3 | A5 | 1258/1330 (95%) | 1224 (97%) | 34 (3%) | 0 | 100 | 100 |
| 3 | A6 | 1258/1330 (95%) | 1224 (97%) | 34 (3%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-----------------|------------|---------|----------|-------------|-----|
| 4 | B1 | 12/14 (86%) | 11 (92%) | 1 (8%) | 0 | 100 | 100 |
| 4 | B2 | 12/14 (86%) | 11 (92%) | 1 (8%) | 0 | 100 | 100 |
| 4 | B3 | 12/14 (86%) | 11 (92%) | 1 (8%) | 0 | 100 | 100 |
| 4 | B4 | 12/14 (86%) | 11 (92%) | 1 (8%) | 0 | 100 | 100 |
| 4 | B5 | 12/14 (86%) | 11 (92%) | 1 (8%) | 0 | 100 | 100 |
| 4 | B6 | 12/14 (86%) | 11 (92%) | 1 (8%) | 0 | 100 | 100 |
| 5 | C1 | 15/19 (79%) | 11 (73%) | 4 (27%) | 0 | 100 | 100 |
| 5 | C2 | 17/19 (90%) | 12 (71%) | 5 (29%) | 0 | 100 | 100 |
| 5 | C3 | 15/19 (79%) | 11 (73%) | 4 (27%) | 0 | 100 | 100 |
| 5 | C4 | 17/19 (90%) | 12 (71%) | 5 (29%) | 0 | 100 | 100 |
| 5 | C5 | 15/19 (79%) | 11 (73%) | 4 (27%) | 0 | 100 | 100 |
| 5 | C6 | 15/19 (79%) | 11 (73%) | 4 (27%) | 0 | 100 | 100 |
| 6 | D1 | 615/644 (96%) | 604 (98%) | 11 (2%) | 0 | 100 | 100 |
| 6 | D2 | 615/644 (96%) | 604 (98%) | 11 (2%) | 0 | 100 | 100 |
| 6 | D3 | 615/644 (96%) | 604 (98%) | 11 (2%) | 0 | 100 | 100 |
| 6 | D4 | 615/644 (96%) | 604 (98%) | 11 (2%) | 0 | 100 | 100 |
| 6 | D5 | 615/644 (96%) | 604 (98%) | 11 (2%) | 0 | 100 | 100 |
| 6 | D6 | 615/644 (96%) | 604 (98%) | 11 (2%) | 0 | 100 | 100 |
| 6 | D7 | 615/644 (96%) | 604 (98%) | 11 (2%) | 0 | 100 | 100 |
| 7 | E1 | 6/8 (75%) | 6 (100%) | 0 | 0 | 100 | 100 |
| 7 | E2 | 6/8 (75%) | 6 (100%) | 0 | 0 | 100 | 100 |
| 7 | E3 | 6/8 (75%) | 6 (100%) | 0 | 0 | 100 | 100 |
| 7 | E4 | 6/8 (75%) | 6 (100%) | 0 | 0 | 100 | 100 |
| 7 | E5 | 6/8 (75%) | 6 (100%) | 0 | 0 | 100 | 100 |
| 7 | E6 | 6/8 (75%) | 6 (100%) | 0 | 0 | 100 | 100 |
| 7 | E7 | 6/8 (75%) | 6 (100%) | 0 | 0 | 100 | 100 |
| 8 | F1 | 1611/1858 (87%) | 1589 (99%) | 22 (1%) | 0 | 100 | 100 |
| 8 | F2 | 1611/1858 (87%) | 1589 (99%) | 22 (1%) | 0 | 100 | 100 |
| 9 | G1 | 51/53 (96%) | 51 (100%) | 0 | 0 | 100 | 100 |
| 9 | G2 | 51/53 (96%) | 51 (100%) | 0 | 0 | 100 | 100 |
| 10 | H1 | 11/13 (85%) | 7 (64%) | 4 (36%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-----------------|------------|----------|----------|-------------|-----|
| 10 | H2 | 11/13 (85%) | 7 (64%) | 4 (36%) | 0 | 100 | 100 |
| 11 | I1 | 1508/1756 (86%) | 1491 (99%) | 17 (1%) | 0 | 100 | 100 |
| 11 | I2 | 1508/1756 (86%) | 1491 (99%) | 17 (1%) | 0 | 100 | 100 |
| 11 | I3 | 1508/1756 (86%) | 1491 (99%) | 17 (1%) | 0 | 100 | 100 |
| 11 | I4 | 1508/1756 (86%) | 1491 (99%) | 17 (1%) | 0 | 100 | 100 |
| 11 | I5 | 1508/1756 (86%) | 1491 (99%) | 17 (1%) | 0 | 100 | 100 |
| 12 | J1 | 61/63 (97%) | 61 (100%) | 0 | 0 | 100 | 100 |
| 12 | J2 | 61/63 (97%) | 61 (100%) | 0 | 0 | 100 | 100 |
| 12 | J3 | 61/63 (97%) | 61 (100%) | 0 | 0 | 100 | 100 |
| 12 | J4 | 61/63 (97%) | 61 (100%) | 0 | 0 | 100 | 100 |
| 12 | J5 | 61/63 (97%) | 61 (100%) | 0 | 0 | 100 | 100 |
| 13 | K1 | 7/9 (78%) | 5 (71%) | 2 (29%) | 0 | 100 | 100 |
| 13 | K2 | 7/9 (78%) | 5 (71%) | 2 (29%) | 0 | 100 | 100 |
| 13 | K3 | 7/9 (78%) | 5 (71%) | 2 (29%) | 0 | 100 | 100 |
| 13 | K4 | 7/9 (78%) | 5 (71%) | 2 (29%) | 0 | 100 | 100 |
| 13 | K5 | 7/9 (78%) | 5 (71%) | 2 (29%) | 0 | 100 | 100 |
| 15 | M1 | 165/183 (90%) | 158 (96%) | 7 (4%) | 0 | 100 | 100 |
| 15 | M2 | 165/183 (90%) | 158 (96%) | 7 (4%) | 0 | 100 | 100 |
| 15 | M3 | 165/183 (90%) | 158 (96%) | 7 (4%) | 0 | 100 | 100 |
| 15 | M4 | 165/183 (90%) | 158 (96%) | 7 (4%) | 0 | 100 | 100 |
| 16 | N1 | 174/222 (78%) | 172 (99%) | 2 (1%) | 0 | 100 | 100 |
| 16 | N2 | 174/222 (78%) | 172 (99%) | 2 (1%) | 0 | 100 | 100 |
| 16 | N3 | 174/222 (78%) | 172 (99%) | 2 (1%) | 0 | 100 | 100 |
| 16 | N4 | 174/222 (78%) | 172 (99%) | 2 (1%) | 0 | 100 | 100 |
| 17 | O1 | 239/241 (99%) | 213 (89%) | 26 (11%) | 0 | 100 | 100 |
| 17 | O2 | 239/241 (99%) | 212 (89%) | 27 (11%) | 0 | 100 | 100 |
| 17 | O3 | 239/241 (99%) | 213 (89%) | 26 (11%) | 0 | 100 | 100 |
| 17 | O4 | 239/241 (99%) | 213 (89%) | 26 (11%) | 0 | 100 | 100 |
| 18 | P1 | 115/116 (99%) | 114 (99%) | 1 (1%) | 0 | 100 | 100 |
| 18 | P2 | 115/116 (99%) | 114 (99%) | 1 (1%) | 0 | 100 | 100 |
| 18 | P3 | 115/116 (99%) | 114 (99%) | 1 (1%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|----------------|-----------|----------|----------|-------------|-----|
| 18 | P4 | 115/116 (99%) | 114 (99%) | 1 (1%) | 0 | 100 | 100 |
| 19 | Q1 | 83/84 (99%) | 81 (98%) | 2 (2%) | 0 | 100 | 100 |
| 19 | Q2 | 79/84 (94%) | 77 (98%) | 2 (2%) | 0 | 100 | 100 |
| 19 | Q3 | 83/84 (99%) | 81 (98%) | 2 (2%) | 0 | 100 | 100 |
| 19 | Q4 | 79/84 (94%) | 77 (98%) | 2 (2%) | 0 | 100 | 100 |
| 20 | R1 | 38/40 (95%) | 31 (82%) | 7 (18%) | 0 | 100 | 100 |
| 20 | R2 | 38/40 (95%) | 31 (82%) | 7 (18%) | 0 | 100 | 100 |
| 20 | R3 | 38/40 (95%) | 31 (82%) | 7 (18%) | 0 | 100 | 100 |
| 20 | R4 | 38/40 (95%) | 31 (82%) | 7 (18%) | 0 | 100 | 100 |
| 21 | S1 | 874/1156 (76%) | 784 (90%) | 74 (8%) | 16 (2%) | 8 | 40 |
| 21 | S2 | 874/1156 (76%) | 784 (90%) | 74 (8%) | 16 (2%) | 8 | 40 |
| 21 | S3 | 874/1156 (76%) | 784 (90%) | 74 (8%) | 16 (2%) | 8 | 40 |
| 21 | S4 | 874/1156 (76%) | 784 (90%) | 74 (8%) | 16 (2%) | 8 | 40 |
| 22 | T1 | 243/258 (94%) | 235 (97%) | 8 (3%) | 0 | 100 | 100 |
| 22 | T2 | 243/258 (94%) | 234 (96%) | 9 (4%) | 0 | 100 | 100 |
| 22 | T3 | 243/258 (94%) | 234 (96%) | 9 (4%) | 0 | 100 | 100 |
| 22 | T4 | 243/258 (94%) | 234 (96%) | 9 (4%) | 0 | 100 | 100 |
| 23 | U1 | 410/436 (94%) | 365 (89%) | 34 (8%) | 11 (3%) | 5 | 31 |
| 23 | U2 | 413/436 (95%) | 368 (89%) | 34 (8%) | 11 (3%) | 5 | 31 |
| 23 | U3 | 413/436 (95%) | 368 (89%) | 34 (8%) | 11 (3%) | 5 | 31 |
| 23 | U4 | 413/436 (95%) | 368 (89%) | 34 (8%) | 11 (3%) | 5 | 31 |
| 24 | V1 | 491/621 (79%) | 451 (92%) | 30 (6%) | 10 (2%) | 7 | 38 |
| 24 | V2 | 491/621 (79%) | 451 (92%) | 30 (6%) | 10 (2%) | 7 | 38 |
| 24 | V3 | 491/621 (79%) | 451 (92%) | 30 (6%) | 10 (2%) | 7 | 38 |
| 24 | V4 | 491/621 (79%) | 451 (92%) | 30 (6%) | 10 (2%) | 7 | 38 |
| 25 | W1 | 270/286 (94%) | 228 (84%) | 36 (13%) | 6 (2%) | 6 | 35 |
| 25 | W2 | 270/286 (94%) | 228 (84%) | 36 (13%) | 6 (2%) | 6 | 35 |
| 25 | W3 | 270/286 (94%) | 228 (84%) | 36 (13%) | 6 (2%) | 6 | 35 |
| 25 | W4 | 270/286 (94%) | 228 (84%) | 36 (13%) | 6 (2%) | 6 | 35 |
| 26 | X1 | 592/698 (85%) | 531 (90%) | 51 (9%) | 10 (2%) | 9 | 42 |
| 26 | X2 | 592/698 (85%) | 531 (90%) | 51 (9%) | 10 (2%) | 9 | 42 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-------------------|-------------|-----------|----------|-------------|-----|
| 26 | X3 | 592/698 (85%) | 532 (90%) | 50 (8%) | 10 (2%) | 9 | 42 |
| 26 | X4 | 592/698 (85%) | 532 (90%) | 50 (8%) | 10 (2%) | 9 | 42 |
| 27 | Y1 | 303/346 (88%) | 266 (88%) | 31 (10%) | 6 (2%) | 7 | 38 |
| 27 | Y2 | 303/346 (88%) | 266 (88%) | 31 (10%) | 6 (2%) | 7 | 38 |
| 27 | Y3 | 303/346 (88%) | 266 (88%) | 31 (10%) | 6 (2%) | 7 | 38 |
| 27 | Y4 | 303/346 (88%) | 266 (88%) | 31 (10%) | 6 (2%) | 7 | 38 |
| 28 | Z1 | 858/1037 (83%) | 798 (93%) | 50 (6%) | 10 (1%) | 13 | 50 |
| 28 | Z2 | 858/1037 (83%) | 798 (93%) | 49 (6%) | 11 (1%) | 12 | 48 |
| 28 | Z3 | 858/1037 (83%) | 798 (93%) | 49 (6%) | 11 (1%) | 12 | 48 |
| 28 | Z4 | 858/1037 (83%) | 798 (93%) | 49 (6%) | 11 (1%) | 12 | 48 |
| 29 | a1 | 334/380 (88%) | 325 (97%) | 9 (3%) | 0 | 100 | 100 |
| 29 | a2 | 334/380 (88%) | 325 (97%) | 9 (3%) | 0 | 100 | 100 |
| 29 | a3 | 334/380 (88%) | 325 (97%) | 9 (3%) | 0 | 100 | 100 |
| 29 | a4 | 334/380 (88%) | 325 (97%) | 9 (3%) | 0 | 100 | 100 |
| 30 | b1 | 335/385 (87%) | 315 (94%) | 19 (6%) | 1 (0%) | 41 | 77 |
| 30 | b2 | 335/385 (87%) | 315 (94%) | 19 (6%) | 1 (0%) | 41 | 77 |
| 30 | b3 | 335/385 (87%) | 315 (94%) | 19 (6%) | 1 (0%) | 41 | 77 |
| 30 | b4 | 335/385 (87%) | 315 (94%) | 19 (6%) | 1 (0%) | 41 | 77 |
| 31 | c1 | 736/750 (98%) | 727 (99%) | 9 (1%) | 0 | 100 | 100 |
| 31 | c2 | 736/750 (98%) | 727 (99%) | 9 (1%) | 0 | 100 | 100 |
| 31 | c3 | 736/750 (98%) | 727 (99%) | 9 (1%) | 0 | 100 | 100 |
| 31 | c4 | 736/750 (98%) | 727 (99%) | 9 (1%) | 0 | 100 | 100 |
| 31 | c5 | 736/750 (98%) | 727 (99%) | 9 (1%) | 0 | 100 | 100 |
| 32 | g | 419/421 (100%) | 404 (96%) | 14 (3%) | 1 (0%) | 47 | 81 |
| 33 | h | 230/232 (99%) | 217 (94%) | 10 (4%) | 3 (1%) | 12 | 48 |
| 34 | i | 408/481 (85%) | 401 (98%) | 7 (2%) | 0 | 100 | 100 |
| 35 | j | 149/150 (99%) | 144 (97%) | 4 (3%) | 1 (1%) | 22 | 63 |
| 36 | k1 | 83/85 (98%) | 79 (95%) | 4 (5%) | 0 | 100 | 100 |
| 37 | k2 | 35/37 (95%) | 35 (100%) | 0 | 0 | 100 | 100 |
| All | All | 50288/56810 (88%) | 47822 (95%) | 2142 (4%) | 324 (1%) | 29 | 66 |

5 of 324 Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 2 | A2 | 521 | ASN |
| 2 | A2 | 1024 | ASP |
| 2 | A2 | 1305 | ALA |
| 2 | A2 | 1342 | SER |
| 2 | A2 | 1345 | SER |

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 | A1 | 1061/1111 (96%) | 1053 (99%) | 8 (1%) | 81 | 89 |
| 1 | A3 | 1061/1111 (96%) | 1053 (99%) | 8 (1%) | 81 | 89 |
| 2 | A2 | 1073/1107 (97%) | 991 (92%) | 82 (8%) | 13 | 37 |
| 2 | A4 | 1073/1107 (97%) | 991 (92%) | 82 (8%) | 13 | 37 |
| 3 | A5 | 1087/1111 (98%) | 1076 (99%) | 11 (1%) | 76 | 86 |
| 3 | A6 | 1087/1111 (98%) | 1076 (99%) | 11 (1%) | 76 | 86 |
| 4 | B1 | 12/12 (100%) | 12 (100%) | 0 | 100 | 100 |
| 4 | B2 | 12/12 (100%) | 12 (100%) | 0 | 100 | 100 |
| 4 | B3 | 12/12 (100%) | 12 (100%) | 0 | 100 | 100 |
| 4 | B4 | 12/12 (100%) | 12 (100%) | 0 | 100 | 100 |
| 4 | B5 | 12/12 (100%) | 12 (100%) | 0 | 100 | 100 |
| 4 | B6 | 12/12 (100%) | 12 (100%) | 0 | 100 | 100 |
| 5 | C1 | 17/19 (90%) | 17 (100%) | 0 | 100 | 100 |
| 5 | C2 | 19/19 (100%) | 19 (100%) | 0 | 100 | 100 |
| 5 | C3 | 17/19 (90%) | 17 (100%) | 0 | 100 | 100 |
| 5 | C4 | 19/19 (100%) | 19 (100%) | 0 | 100 | 100 |
| 5 | C5 | 17/19 (90%) | 17 (100%) | 0 | 100 | 100 |
| 5 | C6 | 17/19 (90%) | 17 (100%) | 0 | 100 | 100 |
| 6 | D1 | 554/575 (96%) | 554 (100%) | 0 | 100 | 100 |
| 6 | D2 | 554/575 (96%) | 554 (100%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-----------------|-------------|----------|-------------|-----|
| 6 | D3 | 554/575 (96%) | 554 (100%) | 0 | 100 | 100 |
| 6 | D4 | 554/575 (96%) | 554 (100%) | 0 | 100 | 100 |
| 6 | D5 | 554/575 (96%) | 554 (100%) | 0 | 100 | 100 |
| 6 | D6 | 554/575 (96%) | 554 (100%) | 0 | 100 | 100 |
| 6 | D7 | 554/575 (96%) | 554 (100%) | 0 | 100 | 100 |
| 7 | E1 | 7/7 (100%) | 7 (100%) | 0 | 100 | 100 |
| 7 | E2 | 7/7 (100%) | 7 (100%) | 0 | 100 | 100 |
| 7 | E3 | 7/7 (100%) | 7 (100%) | 0 | 100 | 100 |
| 7 | E4 | 7/7 (100%) | 7 (100%) | 0 | 100 | 100 |
| 7 | E5 | 7/7 (100%) | 7 (100%) | 0 | 100 | 100 |
| 7 | E6 | 7/7 (100%) | 7 (100%) | 0 | 100 | 100 |
| 7 | E7 | 7/7 (100%) | 7 (100%) | 0 | 100 | 100 |
| 8 | F1 | 1350/1512 (89%) | 1350 (100%) | 0 | 100 | 100 |
| 8 | F2 | 1350/1512 (89%) | 1350 (100%) | 0 | 100 | 100 |
| 9 | G1 | 47/47 (100%) | 47 (100%) | 0 | 100 | 100 |
| 9 | G2 | 47/47 (100%) | 47 (100%) | 0 | 100 | 100 |
| 10 | H1 | 10/10 (100%) | 10 (100%) | 0 | 100 | 100 |
| 10 | H2 | 10/10 (100%) | 10 (100%) | 0 | 100 | 100 |
| 11 | I1 | 1340/1509 (89%) | 1339 (100%) | 1 (0%) | 93 | 97 |
| 11 | I2 | 1340/1509 (89%) | 1339 (100%) | 1 (0%) | 93 | 97 |
| 11 | I3 | 1340/1509 (89%) | 1339 (100%) | 1 (0%) | 93 | 97 |
| 11 | I4 | 1340/1509 (89%) | 1339 (100%) | 1 (0%) | 93 | 97 |
| 11 | I5 | 1340/1509 (89%) | 1339 (100%) | 1 (0%) | 93 | 97 |
| 12 | J1 | 54/54 (100%) | 54 (100%) | 0 | 100 | 100 |
| 12 | J2 | 54/54 (100%) | 54 (100%) | 0 | 100 | 100 |
| 12 | J3 | 54/54 (100%) | 54 (100%) | 0 | 100 | 100 |
| 12 | J4 | 54/54 (100%) | 54 (100%) | 0 | 100 | 100 |
| 12 | J5 | 54/54 (100%) | 54 (100%) | 0 | 100 | 100 |
| 13 | K1 | 9/9 (100%) | 9 (100%) | 0 | 100 | 100 |
| 13 | K2 | 9/9 (100%) | 9 (100%) | 0 | 100 | 100 |
| 13 | K3 | 9/9 (100%) | 9 (100%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------------|------------|----------|-------------|-----|
| 13 | K4 | 9/9 (100%) | 9 (100%) | 0 | 100 | 100 |
| 13 | K5 | 9/9 (100%) | 9 (100%) | 0 | 100 | 100 |
| 14 | L1 | 1/1 (100%) | 1 (100%) | 0 | 100 | 100 |
| 14 | L2 | 1/1 (100%) | 1 (100%) | 0 | 100 | 100 |
| 14 | L3 | 1/1 (100%) | 1 (100%) | 0 | 100 | 100 |
| 14 | L4 | 1/1 (100%) | 1 (100%) | 0 | 100 | 100 |
| 14 | L5 | 1/1 (100%) | 1 (100%) | 0 | 100 | 100 |
| 15 | M1 | 146/154 (95%) | 146 (100%) | 0 | 100 | 100 |
| 15 | M2 | 146/154 (95%) | 146 (100%) | 0 | 100 | 100 |
| 15 | M3 | 146/154 (95%) | 146 (100%) | 0 | 100 | 100 |
| 15 | M4 | 146/154 (95%) | 146 (100%) | 0 | 100 | 100 |
| 16 | N1 | 150/173 (87%) | 150 (100%) | 0 | 100 | 100 |
| 16 | N2 | 150/173 (87%) | 150 (100%) | 0 | 100 | 100 |
| 16 | N3 | 150/173 (87%) | 150 (100%) | 0 | 100 | 100 |
| 16 | N4 | 150/173 (87%) | 150 (100%) | 0 | 100 | 100 |
| 17 | O1 | 213/213 (100%) | 213 (100%) | 0 | 100 | 100 |
| 17 | O2 | 213/213 (100%) | 213 (100%) | 0 | 100 | 100 |
| 17 | O3 | 213/213 (100%) | 213 (100%) | 0 | 100 | 100 |
| 17 | O4 | 213/213 (100%) | 213 (100%) | 0 | 100 | 100 |
| 18 | P1 | 101/100 (101%) | 101 (100%) | 0 | 100 | 100 |
| 18 | P2 | 101/100 (101%) | 101 (100%) | 0 | 100 | 100 |
| 18 | P3 | 101/100 (101%) | 101 (100%) | 0 | 100 | 100 |
| 18 | P4 | 101/100 (101%) | 101 (100%) | 0 | 100 | 100 |
| 19 | Q1 | 70/69 (101%) | 66 (94%) | 4 (6%) | 20 | 45 |
| 19 | Q2 | 63/69 (91%) | 62 (98%) | 1 (2%) | 62 | 79 |
| 19 | Q3 | 70/69 (101%) | 66 (94%) | 4 (6%) | 20 | 45 |
| 19 | Q4 | 63/69 (91%) | 62 (98%) | 1 (2%) | 62 | 79 |
| 20 | R1 | 32/32 (100%) | 32 (100%) | 0 | 100 | 100 |
| 20 | R2 | 32/32 (100%) | 32 (100%) | 0 | 100 | 100 |
| 20 | R3 | 32/32 (100%) | 32 (100%) | 0 | 100 | 100 |
| 20 | R4 | 32/32 (100%) | 32 (100%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------------|-----------|----------|-------------|----|
| 21 | S1 | 488/1013 (48%) | 463 (95%) | 25 (5%) | 24 | 48 |
| 21 | S2 | 488/1013 (48%) | 463 (95%) | 25 (5%) | 24 | 48 |
| 21 | S3 | 488/1013 (48%) | 463 (95%) | 25 (5%) | 24 | 48 |
| 21 | S4 | 488/1013 (48%) | 463 (95%) | 25 (5%) | 24 | 48 |
| 22 | T1 | 211/231 (91%) | 206 (98%) | 5 (2%) | 49 | 69 |
| 22 | T2 | 211/231 (91%) | 206 (98%) | 5 (2%) | 49 | 69 |
| 22 | T3 | 211/231 (91%) | 206 (98%) | 5 (2%) | 49 | 69 |
| 22 | T4 | 211/231 (91%) | 206 (98%) | 5 (2%) | 49 | 69 |
| 23 | U1 | 386/402 (96%) | 366 (95%) | 20 (5%) | 23 | 48 |
| 23 | U2 | 387/402 (96%) | 367 (95%) | 20 (5%) | 23 | 48 |
| 23 | U3 | 387/402 (96%) | 367 (95%) | 20 (5%) | 23 | 48 |
| 23 | U4 | 387/402 (96%) | 367 (95%) | 20 (5%) | 23 | 48 |
| 24 | V1 | 367/567 (65%) | 332 (90%) | 35 (10%) | 8 | 27 |
| 24 | V2 | 367/567 (65%) | 332 (90%) | 35 (10%) | 8 | 27 |
| 24 | V3 | 367/567 (65%) | 332 (90%) | 35 (10%) | 8 | 27 |
| 24 | V4 | 367/567 (65%) | 332 (90%) | 35 (10%) | 8 | 27 |
| 25 | W1 | 233/243 (96%) | 224 (96%) | 9 (4%) | 32 | 56 |
| 25 | W2 | 233/243 (96%) | 224 (96%) | 9 (4%) | 32 | 56 |
| 25 | W3 | 233/243 (96%) | 223 (96%) | 10 (4%) | 29 | 53 |
| 25 | W4 | 233/243 (96%) | 224 (96%) | 9 (4%) | 32 | 56 |
| 26 | X1 | 424/628 (68%) | 414 (98%) | 10 (2%) | 49 | 69 |
| 26 | X2 | 424/628 (68%) | 414 (98%) | 10 (2%) | 49 | 69 |
| 26 | X3 | 424/628 (68%) | 414 (98%) | 10 (2%) | 49 | 69 |
| 26 | X4 | 424/628 (68%) | 414 (98%) | 10 (2%) | 49 | 69 |
| 27 | Y1 | 269/303 (89%) | 261 (97%) | 8 (3%) | 41 | 63 |
| 27 | Y2 | 269/303 (89%) | 261 (97%) | 8 (3%) | 41 | 63 |
| 27 | Y3 | 269/303 (89%) | 261 (97%) | 8 (3%) | 41 | 63 |
| 27 | Y4 | 269/303 (89%) | 261 (97%) | 8 (3%) | 41 | 63 |
| 28 | Z1 | 639/972 (66%) | 616 (96%) | 23 (4%) | 35 | 59 |
| 28 | Z2 | 639/972 (66%) | 616 (96%) | 23 (4%) | 35 | 59 |
| 28 | Z3 | 639/972 (66%) | 616 (96%) | 23 (4%) | 35 | 59 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-------------------|-------------|----------|-------------|-----|
| 28 | Z4 | 639/972 (66%) | 616 (96%) | 23 (4%) | 35 | 59 |
| 29 | a1 | 293/335 (88%) | 288 (98%) | 5 (2%) | 60 | 78 |
| 29 | a2 | 293/335 (88%) | 288 (98%) | 5 (2%) | 60 | 78 |
| 29 | a3 | 293/335 (88%) | 288 (98%) | 5 (2%) | 60 | 78 |
| 29 | a4 | 293/335 (88%) | 288 (98%) | 5 (2%) | 60 | 78 |
| 30 | b1 | 299/337 (89%) | 278 (93%) | 21 (7%) | 15 | 40 |
| 30 | b2 | 299/337 (89%) | 278 (93%) | 21 (7%) | 15 | 40 |
| 30 | b3 | 299/337 (89%) | 278 (93%) | 21 (7%) | 15 | 40 |
| 30 | b4 | 299/337 (89%) | 278 (93%) | 21 (7%) | 15 | 40 |
| 31 | c1 | 663/670 (99%) | 662 (100%) | 1 (0%) | 93 | 96 |
| 31 | c2 | 663/670 (99%) | 662 (100%) | 1 (0%) | 93 | 96 |
| 31 | c3 | 663/670 (99%) | 662 (100%) | 1 (0%) | 93 | 96 |
| 31 | c4 | 663/670 (99%) | 662 (100%) | 1 (0%) | 93 | 96 |
| 31 | c5 | 663/670 (99%) | 662 (100%) | 1 (0%) | 93 | 96 |
| 32 | g | 373/373 (100%) | 355 (95%) | 18 (5%) | 25 | 51 |
| 33 | h | 206/206 (100%) | 196 (95%) | 10 (5%) | 25 | 50 |
| 34 | i | 372/425 (88%) | 371 (100%) | 1 (0%) | 92 | 95 |
| 35 | j | 132/131 (101%) | 132 (100%) | 0 | 100 | 100 |
| 36 | k1 | 82/82 (100%) | 71 (87%) | 11 (13%) | 4 | 17 |
| 37 | k2 | 33/33 (100%) | 32 (97%) | 1 (3%) | 41 | 63 |
| All | All | 42167/49609 (85%) | 41259 (98%) | 908 (2%) | 56 | 71 |

5 of 908 residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 24 | V2 | 341 | LEU |
| 33 | h | 89 | TYR |
| 25 | W2 | 229 | ARG |
| 32 | g | 283 | HIS |
| 30 | b2 | 25 | SER |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 253 such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 21 | S2 | 1017 | GLN |
| 28 | Z4 | 410 | ASN |
| 22 | T4 | 914 | GLN |
| 28 | Z4 | 295 | ASN |
| 30 | b3 | 333 | 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 |
|-----|-------|------------------|
| 40 | m1 | 1 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1 | m1 | 14:UNK | C | 18:UNK | N | 8.65 |

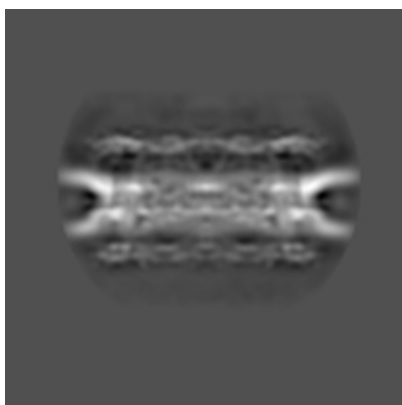
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-11967. These allow visual inspection of the internal detail of the map and identification of artifacts.

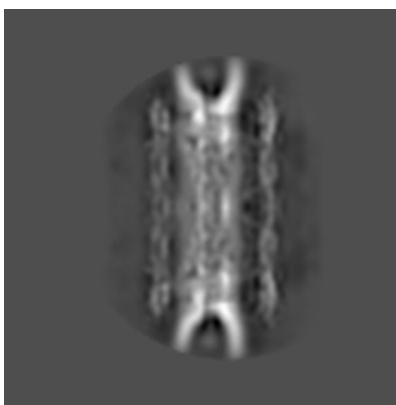
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

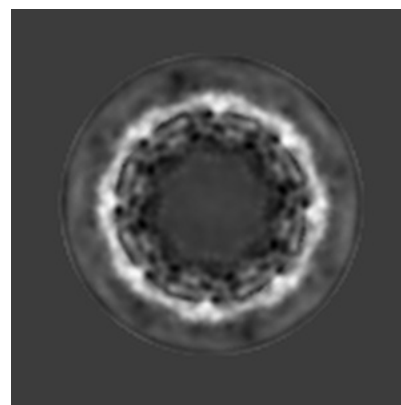
6.1.1 Primary map



X



Y



Z

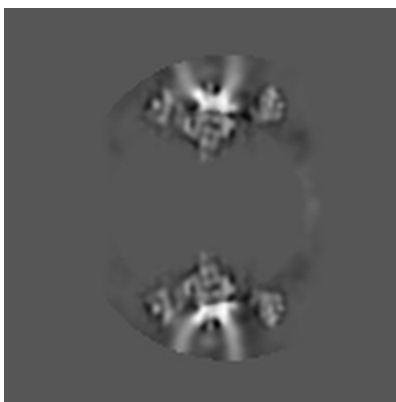
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

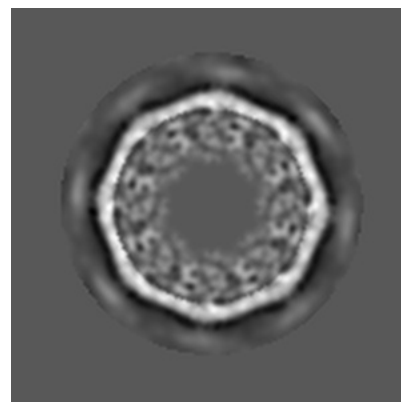
6.2.1 Primary map



X Index: 72



Y Index: 72



Z Index: 72

The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

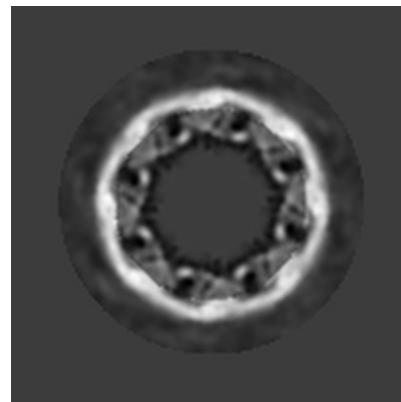
6.3.1 Primary map



X Index: 36



Y Index: 108

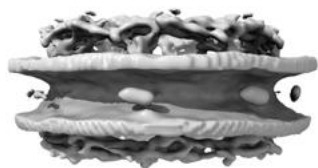


Z Index: 78

The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.07. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

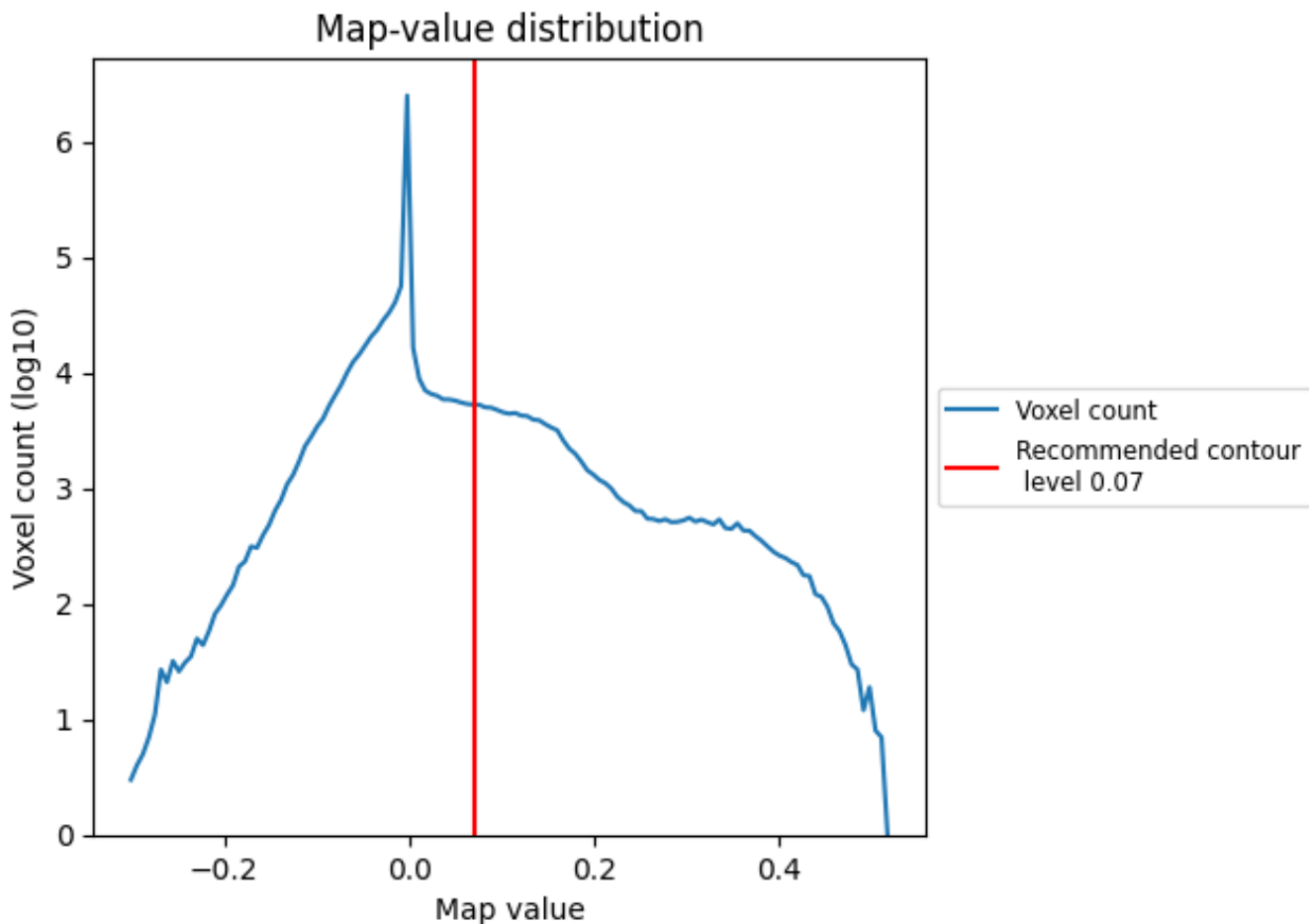
6.5 Mask visualisation

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

7 Map analysis [i](#)

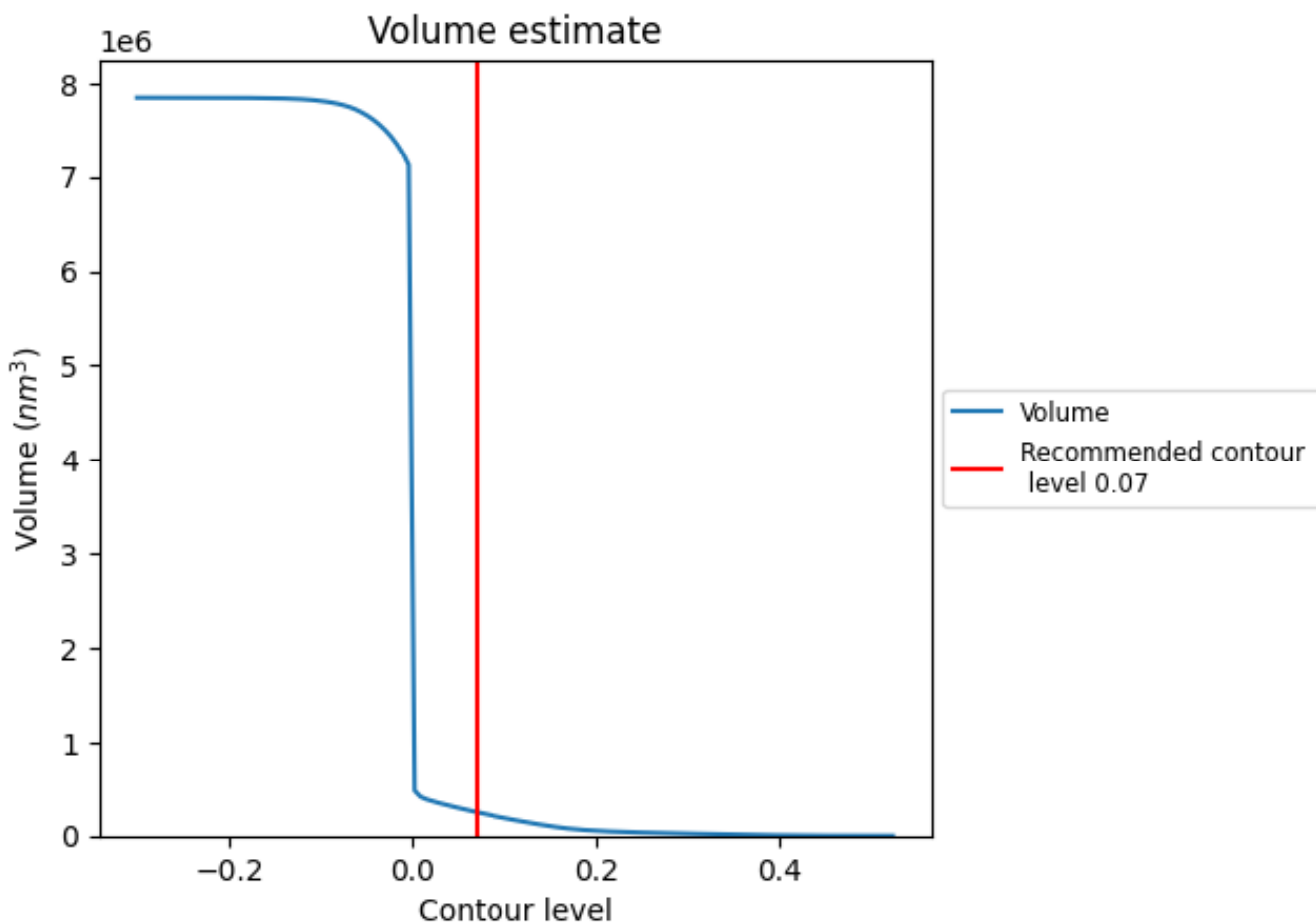
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

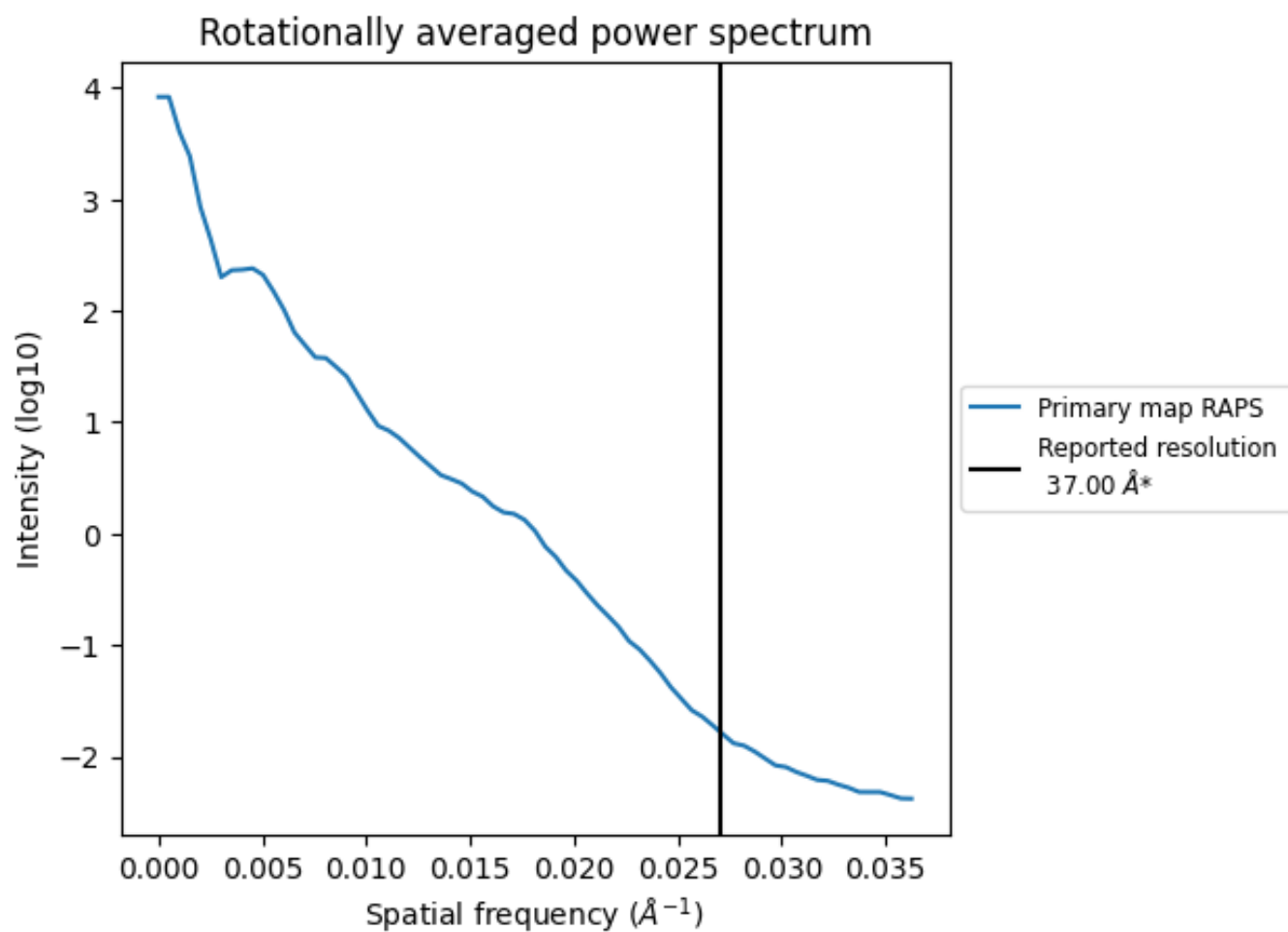
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 250411 nm^3 ; this corresponds to an approximate mass of 226203 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)



*Reported resolution corresponds to spatial frequency of 0.027 Å⁻¹

8 Fourier-Shell correlation

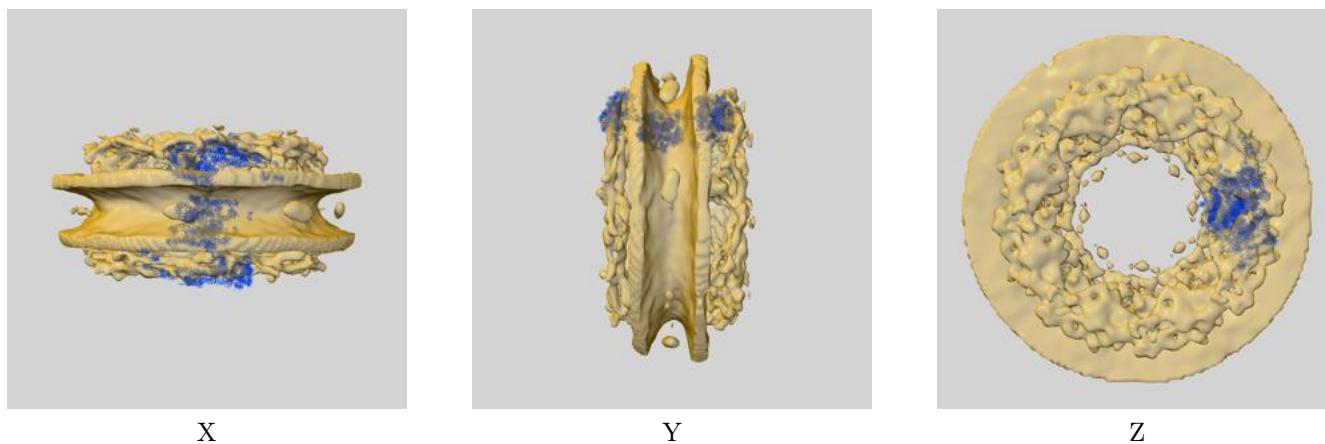
This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

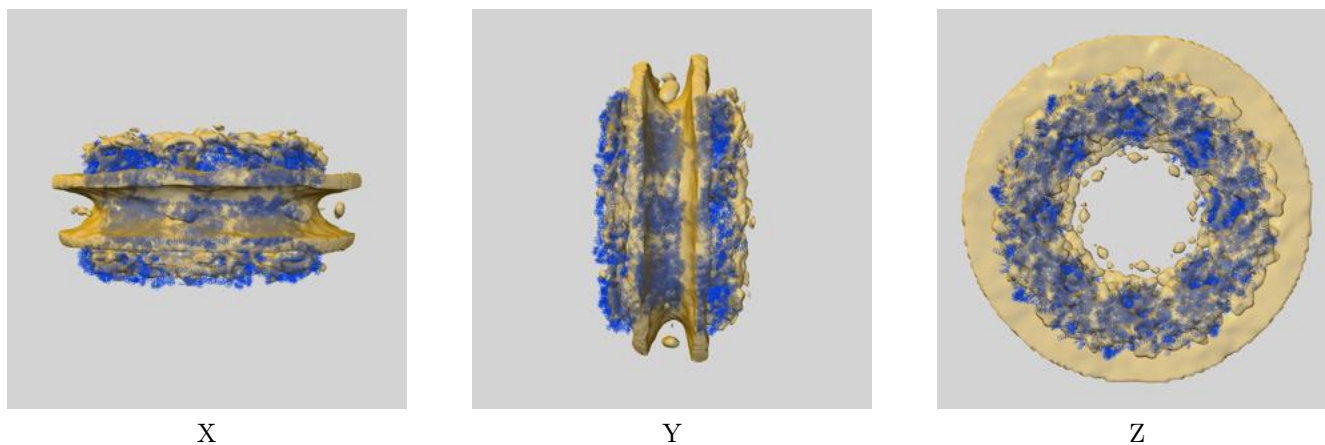
This section contains information regarding the fit between EMDB map EMD-11967 and PDB model 7TBM. Per-residue inclusion information can be found in section 3 on page 20.

9.1 Map-model overlays

9.1.1 Map-model overlay [i](#)

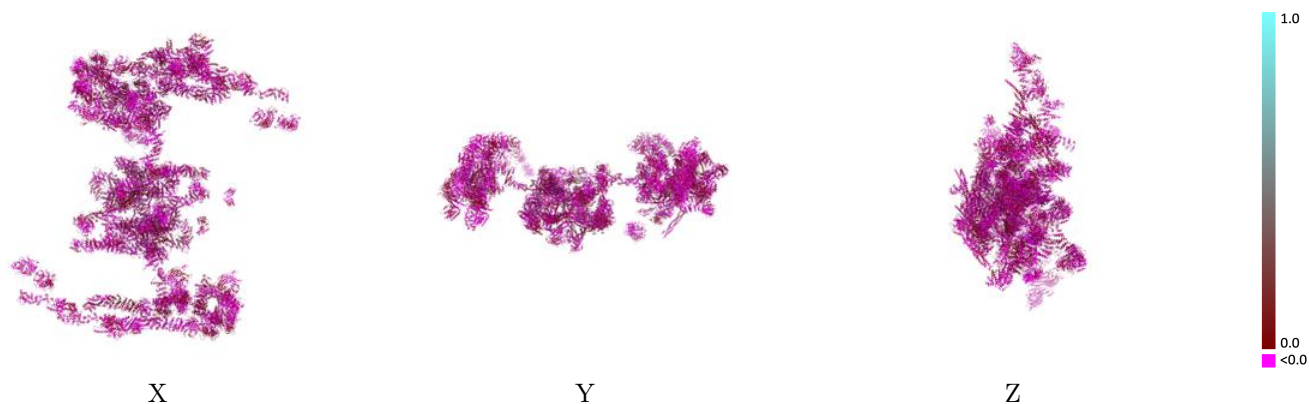


9.1.2 Map-model assembly overlay [i](#)



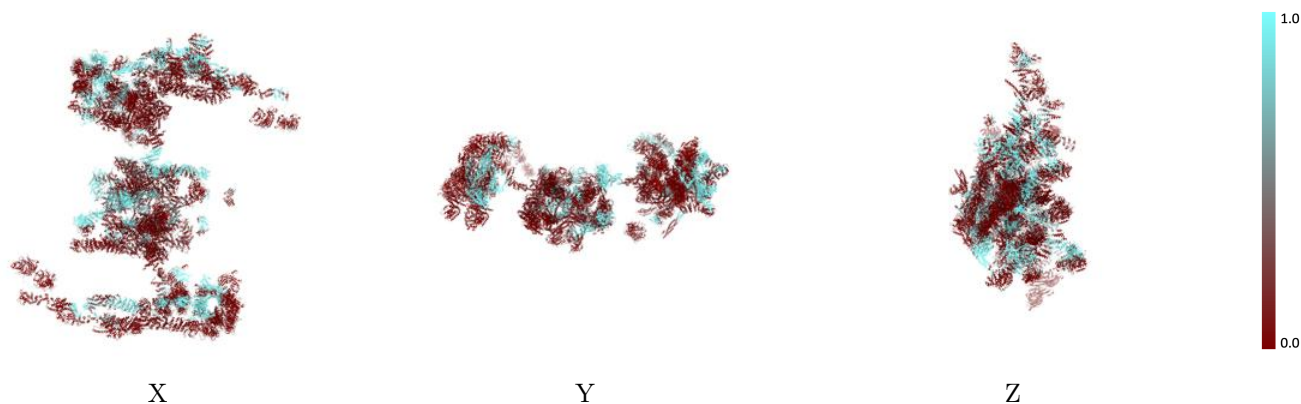
The images above show the 3D surface view of the map at the recommended contour level 0.07 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



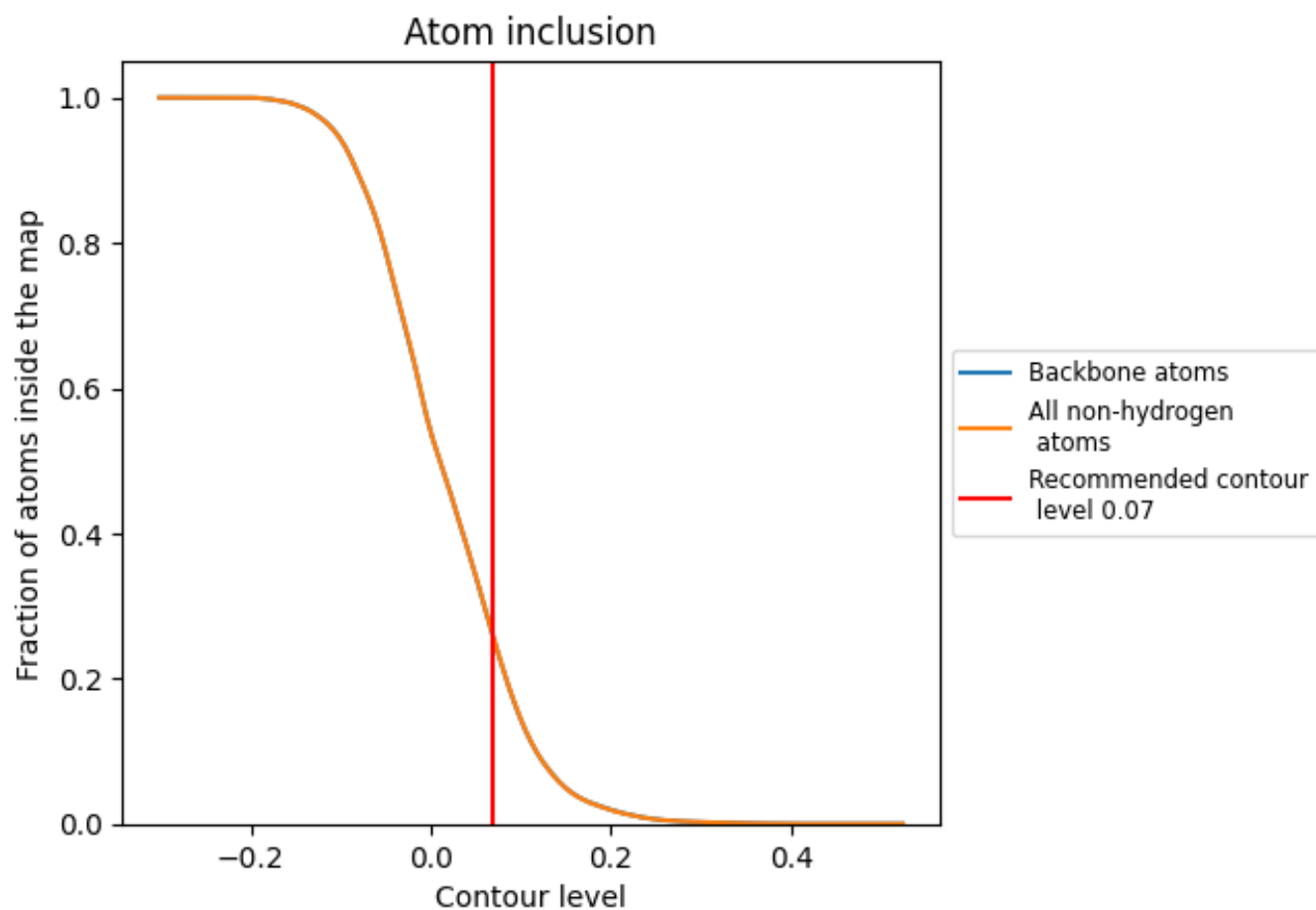
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.07).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 26% of all backbone atoms, 26% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.07) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|-------|--|---|
| All |  0.2561 |  -0.0040 |
| A1 |  0.6042 |  0.0060 |
| A2 |  0.4364 |  -0.0060 |
| A3 |  0.1583 |  -0.0070 |
| A4 |  0.0936 |  -0.0080 |
| A5 |  0.4657 |  -0.0130 |
| A6 |  0.1094 |  0.0020 |
| B1 |  0.2110 |  -0.0340 |
| B2 |  1.0000 |  0.0600 |
| B3 |  0.0000 |  -0.0480 |
| B4 |  0.0000 |  -0.0250 |
| B5 |  0.9817 |  0.0030 |
| B6 |  0.0000 |  0.0230 |
| C1 |  1.0000 |  0.0130 |
| C2 |  0.7226 |  -0.0560 |
| C3 |  0.0000 |  0.0310 |
| C4 |  0.8258 |  0.0830 |
| C5 |  0.7353 |  0.0160 |
| C6 |  0.0000 |  -0.0060 |
| D1 |  0.3738 |  0.0130 |
| D2 |  0.4242 |  0.0040 |
| D3 |  0.2123 |  -0.0180 |
| D4 |  0.0000 |  0.0010 |
| D5 |  0.5656 |  0.0120 |
| D6 |  0.1530 |  -0.0060 |
| D7 |  0.0089 |  -0.0410 |
| E1 |  0.7500 |  0.0310 |
| E2 |  0.7000 |  0.0010 |
| E3 |  0.0000 |  -0.0090 |
| E4 |  0.0000 |  0.0130 |
| E5 |  0.8167 |  0.0230 |
| E6 |  0.0000 |  -0.0450 |
| E7 |  0.0000 |  -0.0300 |
| F1 |  0.2335 |  -0.0000 |
| F2 |  0.0390 |  -0.0200 |























































































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| Chain | Atom inclusion | Q-score |
|-------|----------------|---------|
| G1 | 0.1101 | -0.0010 |
| G2 | 0.0000 | -0.0520 |
| H1 | 0.0638 | -0.0260 |
| H2 | 0.0000 | -0.0020 |
| I1 | 0.4411 | 0.0030 |
| I2 | 0.1600 | 0.0050 |
| I3 | 0.2318 | -0.0020 |
| I4 | 0.6064 | 0.0080 |
| I5 | 0.0000 | -0.0090 |
| J1 | 0.3225 | -0.0120 |
| J2 | 0.3205 | -0.0080 |
| J3 | 0.5030 | 0.0220 |
| J4 | 0.2211 | -0.0060 |
| J5 | 0.0000 | 0.0420 |
| K1 | 0.0000 | -0.0460 |
| K2 | 0.0000 | -0.0150 |
| K3 | 0.0417 | -0.0040 |
| K4 | 1.0000 | 0.0160 |
| K5 | 0.0000 | -0.0190 |
| L1 | 1.0000 | -0.0560 |
| L2 | 0.0000 | -0.0040 |
| L3 | 0.0000 | 0.0010 |
| L4 | 1.0000 | 0.0020 |
| L5 | 0.0000 | -0.0120 |
| M1 | 0.5520 | 0.0270 |
| M2 | 0.3886 | 0.0090 |
| M3 | 0.1731 | -0.0070 |
| M4 | 0.0973 | -0.0020 |
| N1 | 0.5495 | 0.0300 |
| N2 | 0.4513 | -0.0000 |
| N3 | 0.3235 | -0.0000 |
| N4 | 0.2383 | 0.0000 |
| O1 | 0.4369 | 0.0200 |
| O2 | 0.3108 | -0.0040 |
| O3 | 0.1661 | -0.0060 |
| O4 | 0.0171 | -0.0250 |
| P1 | 0.2002 | -0.0060 |
| P2 | 0.0034 | -0.0140 |
| P3 | 0.0000 | -0.0070 |
| P4 | 0.0000 | -0.0010 |
| Q1 | 0.0343 | -0.0260 |
| Q2 | 0.3239 | -0.0100 |







































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| Chain | Atom inclusion | Q-score |
|-------|--|---|
| Q3 |  0.4782 |  0.0110 |
| Q4 |  0.7608 |  0.0450 |
| R1 |  0.2409 |  -0.0060 |
| R2 |  0.4422 |  -0.0130 |
| R3 |  0.4125 |  0.0460 |
| R4 |  0.3861 |  0.0190 |
| S1 |  0.1021 |  -0.0130 |
| S2 |  0.2025 |  -0.0010 |
| S3 |  0.1140 |  -0.0060 |
| S4 |  0.0029 |  -0.0200 |
| T1 |  0.5173 |  0.0010 |
| T2 |  0.2740 |  0.0140 |
| T3 |  0.2010 |  -0.0070 |
| T4 |  0.2240 |  -0.0020 |
| U1 |  0.3662 |  0.0010 |
| U2 |  0.0000 |  -0.0210 |
| U3 |  0.0000 |  -0.0270 |
| U4 |  0.3645 |  0.0110 |
| V1 |  0.5805 |  0.0200 |
| V2 |  0.0000 |  -0.0260 |
| V3 |  0.0195 |  -0.0340 |
| V4 |  0.6611 |  0.0360 |
| W1 |  0.3294 |  -0.0120 |
| W2 |  0.0000 |  -0.0310 |
| W3 |  0.0895 |  -0.0130 |
| W4 |  0.0650 |  -0.0150 |
| X1 |  0.3162 |  -0.0060 |
| X2 |  0.0034 |  -0.0210 |
| X3 |  0.0188 |  -0.0090 |
| X4 |  0.0069 |  -0.0370 |
| Y1 |  0.9159 |  0.0300 |
| Y2 |  0.1017 |  0.0060 |
| Y3 |  0.0000 |  0.0010 |
| Y4 |  0.0000 |  0.0210 |
| Z1 |  0.5984 |  0.0080 |
| Z2 |  0.0753 |  -0.0150 |
| Z3 |  0.1361 |  -0.0090 |
| Z4 |  0.4495 |  0.0080 |
| a1 |  0.2026 |  -0.0150 |
| a2 |  0.7299 |  0.0350 |
| a3 |  0.0000 |  -0.0130 |
| a4 |  0.0021 |  -0.0330 |

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| Chain | Atom inclusion | Q-score |
|-------|---|--|
| b1 |  0.3272 |  0.0130 |
| b2 |  0.0481 |  -0.0230 |
| b3 |  0.0000 |  -0.0360 |
| b4 |  0.6493 |  0.0080 |
| c1 |  0.5429 |  0.0160 |
| c2 |  0.1446 |  -0.0160 |
| c3 |  0.5336 |  -0.0050 |
| c4 |  0.2998 |  0.0130 |
| c5 |  0.4415 |  0.0000 |
| g |  0.0015 |  -0.0240 |
| h |  0.0000 |  -0.0410 |
| i |  0.4803 |  0.0200 |
| j |  0.0755 |  0.0010 |
| k1 |  0.4189 |  -0.0100 |
| k2 |  0.6337 |  -0.0110 |
| l1 |  0.4261 |  -0.0100 |
| l2 |  0.2308 |  -0.0210 |
| m1 |  0.4932 |  0.0010 |
| m2 |  0.0000 |  -0.0370 |