



## wwPDB EM Validation Summary Report ⓘ

Mar 27, 2023 – 06:55 PM EDT

PDB ID : 5JUS  
EMDB ID : EMD-6645  
Title : Saccharomyces cerevisiae 80S ribosome bound with elongation factor eEF2-GDP-sordarin and Taura Syndrome Virus IRES, Structure III (mid-rotated 40S subunit)  
Authors : Abeyrathne, P.; Koh, C.S.; Grant, T.; Grigorieff, N.; Korostelev, A.A.  
Deposited on : 2016-05-10  
Resolution : 4.20 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

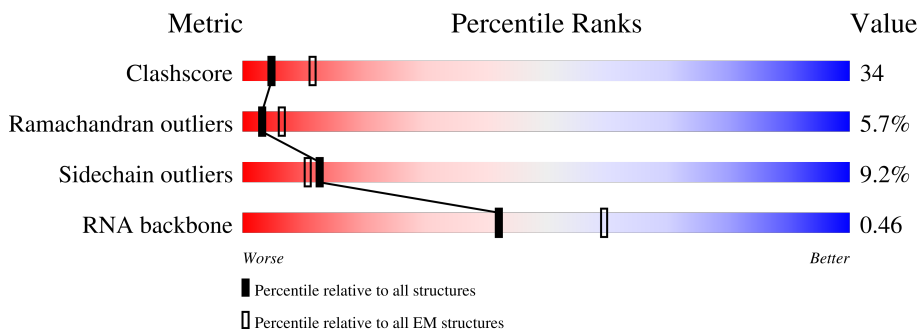
EMDB validation analysis : 0.0.1.dev50  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.32.2

# 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 4.20 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                     |
| RNA backbone          | 4643                     | 859                      |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . 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   | A     | 1798   |                  |
| 2   | B     | 3396   |                  |
| 3   | C     | 158    |                  |
| 4   | D     | 121    |                  |
| 5   | E     | 217    |                  |
| 6   | F     | 254    |                  |
| 7   | G     | 387    |                  |

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| Mol | Chain | Length | Quality of chain      |
|-----|-------|--------|-----------------------|
| 8   | H     | 362    | 39%<br>34% 56% 9%     |
| 9   | I     | 297    | 35%<br>42% 46% 12%    |
| 10  | J     | 176    | 66%<br>35% 57% 8%     |
| 11  | K     | 244    | 39%<br>30% 51% 9% 9%  |
| 12  | L     | 256    | 59%<br>33% 46% 11% 9% |
| 13  | M     | 191    | 63%<br>31% 61% 8%     |
| 14  | N     | 221    | 34%<br>33% 54% 8% 5%  |
| 15  | O     | 174    | 43%<br>41% 48% 7%     |
| 16  | P     | 165    | 40%<br>17% 31% 8% 43% |
| 17  | Q     | 199    | 29%<br>36% 50% 11%    |
| 18  | R     | 138    | 44%<br>29% 58% 12%    |
| 19  | S     | 204    | 52%<br>23% 65% 12%    |
| 20  | T     | 199    | 52%<br>27% 62% 9%     |
| 21  | U     | 184    | 46%<br>36% 51% 11%    |
| 22  | V     | 186    | 28%<br>29% 60% 11%    |
| 23  | W     | 189    | 66%<br>41% 53% 5%     |
| 24  | X     | 172    | 56%<br>26% 65% 9%     |
| 25  | Y     | 160    | 37%<br>38% 48% 12%    |
| 26  | Z     | 121    | 66%<br>45% 36% 17%    |
| 27  | AA    | 137    | 54%<br>47% 45% 6%     |
| 28  | BA    | 155    | 15%<br>6% 26% 6% 61%  |
| 29  | CA    | 142    | 67%<br>36% 42% 8% 15% |
| 30  | DA    | 127    | 32%<br>32% 55% 10%    |
| 31  | EA    | 136    | 61%<br>33% 58% 8%     |
| 32  | FA    | 149    | 33%<br>27% 61% 11%    |

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| Mol | Chain | Length | Quality of chain      |
|-----|-------|--------|-----------------------|
| 33  | GA    | 59     | 34%<br>49% 46% ..     |
| 34  | HA    | 105    | 29%<br>29% 60% 8%     |
| 35  | IA    | 113    | 45%<br>39% 51% 6%     |
| 36  | JA    | 130    | 25%<br>28% 58% 12%    |
| 37  | KA    | 107    | 65%<br>33% 59% 7%     |
| 38  | LA    | 121    | 43%<br>34% 51% 7% 7%  |
| 39  | MA    | 120    | 65%<br>36% 58% 5%     |
| 40  | NA    | 100    | 42%<br>33% 58% 8%     |
| 41  | OA    | 88     | 39%<br>36% 48% 13%    |
| 42  | PA    | 78     | 97%<br>65% 28%        |
| 43  | QA    | 51     | 45%<br>39% 47% 12%    |
| 44  | RA    | 128    | 8%<br>15% 21% 59%     |
| 45  | SA    | 25     | 96%<br>68% 20% 12%    |
| 46  | TA    | 106    | 15%<br>21% 70% 8%     |
| 47  | UA    | 92     | 49%<br>36% 52% 10%    |
| 48  | VA    | 312    | 37%<br>20% 34% 7% 39% |
| 49  | WA    | 319    | 96%<br>45% 51%        |
| 50  | XA    | 252    | 62%<br>29% 43% 8% 18% |
| 51  | YA    | 255    | 84%<br>76% 7% 16%     |
| 52  | ZA    | 254    | 57%<br>38% 44% 15%    |
| 53  | AB    | 240    | 65%<br>45% 42% 5% 7%  |
| 54  | BB    | 261    | 31%<br>32% 60% 7%     |
| 55  | CB    | 225    | 79%<br>31% 52% 8% 8%  |
| 56  | DB    | 236    | 73%<br>44% 48%        |
| 57  | EB    | 190    | 88%<br>41% 46% 11%    |

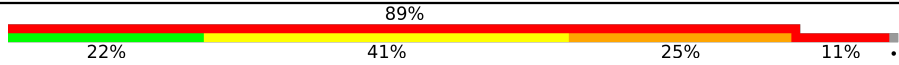
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| Mol | Chain | Length | Quality of chain         |
|-----|-------|--------|--------------------------|
| 58  | FB    | 200    | 58%<br>40% 47% 7% 6%     |
| 59  | GB    | 197    | 27%<br>38% 47% 9% 6%     |
| 60  | HB    | 105    | 35%<br>31% 52% 8% 9%     |
| 61  | IB    | 156    | 76%<br>41% 52% 6% ..     |
| 62  | JB    | 143    | 85%<br>79% 8% 13%        |
| 63  | KB    | 151    | 71%<br>44% 50% 5% .      |
| 64  | LB    | 137    | 92%<br>82% 9% . 7%       |
| 65  | MB    | 142    | 74%<br>32% 46% 7% 14%    |
| 66  | NB    | 143    | 87%<br>38% 53% 6% ..     |
| 67  | OB    | 136    | 71%<br>38% 36% 10% . 14% |
| 68  | PB    | 146    | 97%<br>45% 49% . ..      |
| 69  | QB    | 144    | 82%<br>44% 49% 6% .      |
| 70  | RB    | 121    | 74%<br>28% 54% 7% 12%    |
| 71  | SB    | 87     | 78%<br>31% 61% 8%        |
| 72  | TB    | 130    | 68%<br>32% 58% 8% ..     |
| 73  | UB    | 145    | 86%<br>32% 57% 10% .     |
| 74  | VB    | 135    | 65%<br>45% 47% 7% .      |
| 75  | WB    | 108    | 63%<br>19% 42% 35% ..    |
| 76  | XB    | 119    | 80%<br>74% 8% 18%        |
| 77  | YB    | 82     | 55%<br>55% 41% ..        |
| 78  | ZB    | 67     | 63%<br>33% 51% 10% 6%    |
| 79  | AC    | 56     | 73%<br>48% 45% . 5%      |
| 80  | BC    | 63     | 68%<br>48% 38% 8% . 5%   |
| 81  | CC    | 152    | 45%<br>41% 6% 53%        |
| 82  | DC    | 842    | 62%<br>35% 55% 7% ..     |

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| Mol | Chain | Length | Quality of chain  |
|-----|-------|--------|---|
| 83  | EC    | 201    |  <p>89%<br/>22% 41% 25% 11%</p> |

## 2 Entry composition

There are 86 unique types of molecules in this entry. The entry contains 212680 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 RNA chain called 18S ribosomal RNA.

| Mol | Chain | Residues | Atoms |       |      |       |      | AltConf | Trace |
|-----|-------|----------|-------|-------|------|-------|------|---------|-------|
|     |       |          | Total | C     | N    | O     | P    |         |       |
| 1   | A     | 1781     | 36760 | 16335 | 6359 | 12285 | 1781 | 0       | 0     |

- Molecule 2 is a RNA chain called 25S ribosomal RNA.

| Mol | Chain | Residues | Atoms |       |       |       |      | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|-------|
|     |       |          | Total | C     | N     | O     | P    |         |       |
| 2   | B     | 3309     | 70288 | 31354 | 12595 | 23030 | 3309 | 0       | 0     |

- Molecule 3 is a RNA chain called 5.8S ribosomal RNA.

| Mol | Chain | Residues | Atoms |      |     |      |     | AltConf | Trace |
|-----|-------|----------|-------|------|-----|------|-----|---------|-------|
|     |       |          | Total | C    | N   | O    | P   |         |       |
| 3   | C     | 158      | 3354  | 1500 | 586 | 1110 | 158 | 0       | 0     |

- Molecule 4 is a RNA chain called 5S ribosomal RNA.

| Mol | Chain | Residues | Atoms |      |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|-------|
|     |       |          | Total | C    | N   | O   | P   |         |       |
| 4   | D     | 121      | 2580  | 1152 | 461 | 846 | 121 | 0       | 0     |

- Molecule 5 is a protein called uL1 (yeast L1).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 5   | E     | 171      | 1359  | 869 | 232 | 251 | 7 | 0       | 0     |

- Molecule 6 is a protein called uL2 (yeast L2).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |       |
| 6   | F     | 252      | 1918  | 1193 | 389 | 335 | 1 | 0       | 0     |

- Molecule 7 is a protein called uL3 (yeast L3).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |       |
| 7   | G     | 386      | 3082  | 1956 | 584 | 534 | 8 | 0       | 0     |

- Molecule 8 is a protein called uL4 (yeast L4).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |       |
| 8   | H     | 361      | 2750  | 1730 | 522 | 495 | 3 | 0       | 0     |

- Molecule 9 is a protein called uL18 (yeast L5).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |       |
| 9   | I     | 296      | 2376  | 1501 | 414 | 459 | 2 | 0       | 0     |

- Molecule 10 is a protein called eL6 (yeast L6).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 10  | J     | 175      | 1401  | 902 | 251 | 247 | 1 | 0       | 0     |

- Molecule 11 is a protein called uL30 (yeast L7).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |       |
| 11  | K     | 222      | 1785  | 1151 | 324 | 309 | 1 | 0       | 0     |

- Molecule 12 is a protein called eL8 (yeast L8).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |       |
| 12  | L     | 233      | 1818  | 1159 | 326 | 330 | 3 | 0       | 0     |

- Molecule 13 is a protein called uL6 (yeast L9).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 13  | M     | 191      | 1519  | 963 | 274 | 278 | 4 | 0       | 0     |

- Molecule 14 is a protein called uL16 (yeast L10).



| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |       |
| 14  | N     | 211      | 1718  | 1089 | 325 | 298 | 6 | 0       | 0     |

- Molecule 15 is a protein called uL5 (yeast L11).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 15  | O     | 169      | 1354  | 847 | 253 | 250 | 4 | 0       | 0     |

- Molecule 16 is a protein called uL11 (yeast L12).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 16  | P     | 94       | 723   | 448 | 138 | 135 | 2 | 0       | 0     |

- Molecule 17 is a protein called eL13 (yeast L13).

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
|     |       |          | Total | C   | N   | O   |         |       |
| 17  | Q     | 193      | 1543  | 962 | 315 | 266 | 0       | 0     |

- Molecule 18 is a protein called eL14 (yeast L14).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 18  | R     | 136      | 1054  | 675 | 199 | 178 | 2 | 0       | 0     |

- Molecule 19 is a protein called eL15 (yeast L15).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |       |
| 19  | S     | 203      | 1721  | 1077 | 361 | 282 | 1 | 0       | 0     |

- Molecule 20 is a protein called uL13 (yeast L16).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |       |
| 20  | T     | 197      | 1556  | 1003 | 289 | 263 | 1 | 0       | 0     |

- Molecule 21 is a protein called uL22 (yeast L17).

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
|     |       |          | Total | C   | N   | O   |         |       |
| 21  | U     | 183      | 1443  | 896 | 287 | 260 | 0       | 0     |

- Molecule 22 is a protein called eL18 (yeast L18).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 22  | V     | 185      | 1442  | 908 | 290 | 242 | 2 | 0       | 0     |

- Molecule 23 is a protein called eL19 (yeast L19).

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
|     |       |          | Total | C   | N   | O   |         |       |
| 23  | W     | 188      | 1522  | 935 | 326 | 261 | 0       | 0     |

- Molecule 24 is a protein called eL20 (yeast L20).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 24  | X     | 172      | 1446  | 930 | 267 | 245 | 4 | 0       | 0     |

- Molecule 25 is a protein called eL21 (yeast L21).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 25  | Y     | 159      | 1277  | 805 | 246 | 222 | 4 | 0       | 0     |

- Molecule 26 is a protein called eL22 (yeast L22).

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
|     |       |          | Total | C   | N   | O   |         |       |
| 26  | Z     | 100      | 796   | 516 | 131 | 149 | 0       | 0     |

- Molecule 27 is a protein called uL14 (yeast L23).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 27  | AA    | 136      | 1004  | 628 | 189 | 180 | 7 | 0       | 0     |

- Molecule 28 is a protein called eL24 (yeast L24).

| Mol | Chain | Residues | Atoms |     |     |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|-------|
| 28  | BA    | 61       | Total | C   | N   | O  | S | 0       | 0     |
|     |       |          | 509   | 328 | 100 | 80 | 1 |         |       |

- Molecule 29 is a protein called uL23 (yeast L25).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 29  | CA    | 121      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 969   | 623 | 170 | 174 | 2 |         |       |

- Molecule 30 is a protein called uL24 (yeast L26).

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
| 30  | DA    | 126      | Total | C   | N   | O   | 0       | 0     |
|     |       |          | 994   | 625 | 192 | 177 |         |       |

- Molecule 31 is a protein called eL27 (yeast L27).

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
| 31  | EA    | 135      | Total | C   | N   | O   | 0       | 0     |
|     |       |          | 1093  | 710 | 202 | 181 |         |       |

- Molecule 32 is a protein called uL15 (yeast L28).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 32  | FA    | 148      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1174  | 749 | 231 | 191 | 3 |         |       |

- Molecule 33 is a protein called eL29 (yeast L29).

| Mol | Chain | Residues | Atoms |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---------|-------|
| 33  | GA    | 58       | Total | C   | N   | O  | 0       | 0     |
|     |       |          | 463   | 289 | 100 | 74 |         |       |

- Molecule 34 is a protein called eL30 (yeast L30).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 34  | HA    | 97       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 743   | 479 | 124 | 139 | 1 |         |       |

- Molecule 35 is a protein called eL31 (yeast L31).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 35  | IA    | 109      | 890   | 565 | 168 | 156 | 1 | 0       | 0     |

- Molecule 36 is a protein called eL32 (yeast L32).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 36  | JA    | 127      | 1020  | 647 | 205 | 167 | 1 | 0       | 0     |

- Molecule 37 is a protein called eL33 (yeast L33).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 37  | KA    | 106      | 851   | 540 | 165 | 145 | 1 | 0       | 0     |

- Molecule 38 is a protein called eL34 (yeast L34).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 38  | LA    | 112      | 881   | 546 | 179 | 152 | 4 | 0       | 0     |

- Molecule 39 is a protein called uL29 (yeast L35).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 39  | MA    | 119      | 970   | 615 | 186 | 168 | 1 | 0       | 0     |

- Molecule 40 is a protein called eL36 (yeast L36).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 40  | NA    | 99       | 772   | 481 | 156 | 133 | 2 | 0       | 0     |

- Molecule 41 is a protein called eL37 (yeast L37).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 41  | OA    | 87       | 682   | 414 | 148 | 115 | 5 | 0       | 0     |

- Molecule 42 is a protein called eL38 (yeast L38).

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
| 42  | PA    | 77       | Total | C   | N   | O   | 0       | 0     |
|     |       |          | 613   | 391 | 115 | 107 |         |       |

- Molecule 43 is a protein called eL39 (yeast L39).

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 43  | QA    | 50       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 437   | 272 | 97 | 66 | 2 |         |       |

- Molecule 44 is a protein called eL40 (yeast L40).

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 44  | RA    | 52       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 418   | 259 | 86 | 68 | 5 |         |       |

- Molecule 45 is a protein called eL41 (yeast L41).

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 45  | SA    | 25       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 234   | 142 | 63 | 28 | 1 |         |       |

- Molecule 46 is a protein called eL42 (yeast L42).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 46  | TA    | 105      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 848   | 534 | 170 | 139 | 5 |         |       |

- Molecule 47 is a protein called eL43 (yeast L43).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 47  | UA    | 91       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 695   | 429 | 138 | 122 | 6 |         |       |

- Molecule 48 is a protein called uL10 (yeast P0).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 48  | VA    | 189      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1473  | 942 | 257 | 270 | 4 |         |       |

- Molecule 49 is a protein called RACK1 (yeast Asc1).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 49  | WA    | 318      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2445  | 1546 | 419 | 472 | 8 |         |       |

- Molecule 50 is a protein called uS2 (yeast S0).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 50  | XA    | 206      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1612  | 1034 | 285 | 291 | 2 |         |       |

- Molecule 51 is a protein called eS1 (yeast S1).

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
| 51  | YA    | 214      | Total | C   | N   | O   | 0       | 0     |
|     |       |          | 856   | 428 | 214 | 214 |         |       |

- Molecule 52 is a protein called uS5 (yeast S2).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 52  | ZA    | 217      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1635  | 1047 | 289 | 297 | 2 |         |       |

- Molecule 53 is a protein called uS3 (yeast S3).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 53  | AB    | 223      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1734  | 1101 | 313 | 314 | 6 |         |       |

- Molecule 54 is a protein called eS4 (yeast S4).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 54  | BB    | 260      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2069  | 1316 | 389 | 361 | 3 |         |       |

- Molecule 55 is a protein called uS7 (yeast S5).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 55  | CB    | 206      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1610  | 1007 | 300 | 300 | 3 |         |       |

- Molecule 56 is a protein called eS6 (yeast S6).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |       |
| 56  | DB    | 226      | 1820  | 1142 | 350 | 325 | 3 | 0       | 0     |

- Molecule 57 is a protein called eS7 (yeast S7).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 57  | EB    | 184      | 1481  | 951 | 265 | 265 |   | 0       | 0     |

- Molecule 58 is a protein called eS8 (yeast S8).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 58  | FB    | 188      | 1490  | 925 | 298 | 265 | 2 | 0       | 0     |

- Molecule 59 is a protein called uS4 (yeast S9).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 59  | GB    | 185      | 1494  | 943 | 289 | 261 | 1 | 0       | 0     |

- Molecule 60 is a protein called eS10 (yeast S10).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 60  | HB    | 96       | 817   | 529 | 133 | 153 | 2 | 0       | 0     |

- Molecule 61 is a protein called uS17 (yeast S11).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 61  | IB    | 155      | 1245  | 798 | 235 | 209 | 3 | 0       | 0     |

- Molecule 62 is a protein called eS12 (yeast S12).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 62  | JB    | 124      | 496   | 248 | 124 | 124 |   | 0       | 0     |

- Molecule 63 is a protein called uS15 (yeast S13).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 63  | KB    | 150      | 1193  | 759 | 224 | 208 | 2 | 0       | 0     |

- Molecule 64 is a protein called uS11 (yeast S14).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 64  | LB    | 127      | 508   | 254 | 127 | 127 |   | 0       | 0     |

- Molecule 65 is a protein called uS19 (yeast S15).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 65  | MB    | 122      | 975   | 622 | 182 | 164 | 7 | 0       | 0     |

- Molecule 66 is a protein called uS9 (yeast S16).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 66  | NB    | 141      | 1106  | 708 | 203 | 195 |   | 0       | 0     |

- Molecule 67 is a protein called eS17 (yeast S17).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 67  | OB    | 117      | 836   | 515 | 166 | 153 | 2 | 0       | 0     |

- Molecule 68 is a protein called uS13 (yeast S18).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 68  | PB    | 145      | 1193  | 743 | 237 | 211 | 2 | 0       | 0     |

- Molecule 69 is a protein called eS19 (yeast S19).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 69  | QB    | 143      | 1113  | 694 | 208 | 209 | 2 | 0       | 0     |

- Molecule 70 is a protein called uS10 (yeast S20).



| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 70  | RB    | 107      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 856   | 539 | 156 | 160 | 1 |         |       |

- Molecule 71 is a protein called eS21 (yeast S21).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 71  | SB    | 87       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 685   | 420 | 125 | 138 | 2 |         |       |

- Molecule 72 is a protein called uS8 (yeast S22).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 72  | TB    | 129      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1022  | 650 | 188 | 181 | 3 |         |       |

- Molecule 73 is a protein called uS12 (yeast S23).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 73  | UB    | 144      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1122  | 708 | 220 | 192 | 2 |         |       |

- Molecule 74 is a protein called eS24 (yeast S24).

| Mol | Chain | Residues | Atoms |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
| 74  | VB    | 134      | Total | C   | N   | O   | 0       | 0     |
|     |       |          | 1074  | 676 | 208 | 190 |         |       |

- Molecule 75 is a protein called eS25 (yeast S25).

| Mol | Chain | Residues | Atoms |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---------|-------|
| 75  | WB    | 70       | Total | C   | N   | O  | 0       | 0     |
|     |       |          | 563   | 360 | 104 | 99 |         |       |

- Molecule 76 is a protein called eS26 (yeast S26).

| Mol | Chain | Residues | Atoms |     |    |    | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|-------|
| 76  | XB    | 97       | Total | C   | N  | O  | 0       | 0     |
|     |       |          | 388   | 194 | 97 | 97 |         |       |

- Molecule 77 is a protein called eS27 (yeast S27).

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 77  | YB    | 81       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 611   | 382 | 110 | 114 | 5 |         |       |

- Molecule 78 is a protein called eS28 (yeast S28).

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 78  | ZB    | 63       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 498   | 306 | 99 | 92 | 1 |         |       |

- Molecule 79 is a protein called uS14 (yeast S29).

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 79  | AC    | 53       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 444   | 275 | 92 | 73 | 4 |         |       |

- Molecule 80 is a protein called eS30 (yeast S30).

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 80  | BC    | 60       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 475   | 299 | 98 | 77 | 1 |         |       |

- Molecule 81 is a protein called eS31 (yeast S31).

| Mol | Chain | Residues | Atoms |     |    |    | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|-------|
| 81  | CC    | 71       | Total | C   | N  | O  | 0       | 0     |
|     |       |          | 284   | 142 | 71 | 71 |         |       |

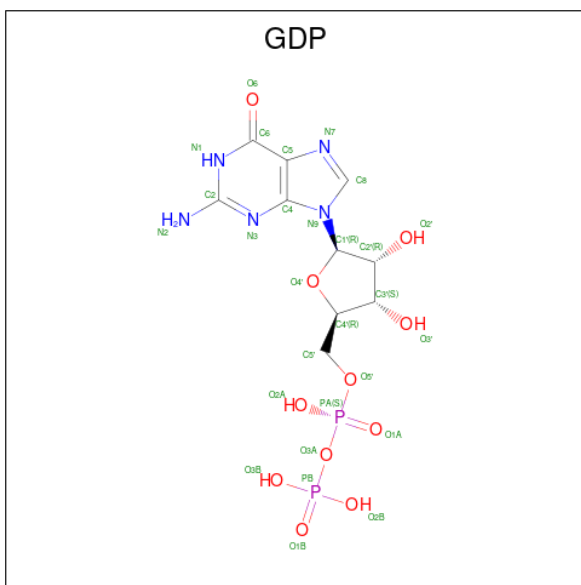
- Molecule 82 is a protein called yeast eEF2.

| Mol | Chain | Residues | Atoms |      |      |      |    | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
| 82  | DC    | 824      | Total | C    | N    | O    | S  | 0       | 0     |
|     |       |          | 6419  | 4085 | 1096 | 1208 | 30 |         |       |

- Molecule 83 is a RNA chain called IRES.

| Mol | Chain | Residues | Atoms |      |     |      |     | AltConf | Trace |
|-----|-------|----------|-------|------|-----|------|-----|---------|-------|
| 83  | EC    | 198      | Total | C    | N   | O    | P   | 0       | 0     |
|     |       |          | 4129  | 1839 | 725 | 1367 | 198 |         |       |

- Molecule 84 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula: C<sub>10</sub>H<sub>15</sub>N<sub>5</sub>O<sub>11</sub>P<sub>2</sub>).

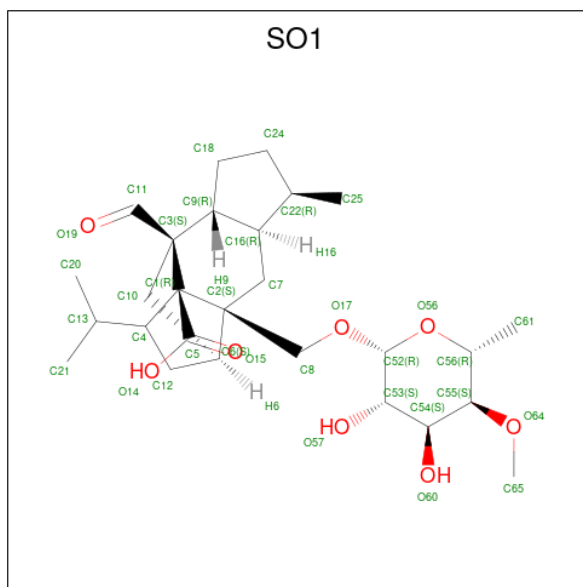


| Mol | Chain | Residues | Atoms |    |   |    |   | AltConf |
|-----|-------|----------|-------|----|---|----|---|---------|
| 84  | DC    | 1        | Total | C  | N | O  | P | 0       |
|     |       |          | 28    | 10 | 5 | 11 | 2 |         |

- Molecule 85 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms |    | AltConf |
|-----|-------|----------|-------|----|---------|
| 85  | DC    | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |

- Molecule 86 is [1R-(1.ALPHA.,3A.BETA.,4.BETA.,4A.BETA.,7.BETA.,7A.ALPHA.,8A.B.ETA.)]8A-[(6-DEOXY-4-O-METHYL-BETA-D-ALTROPYRANOSYLOXY)METHYL]-4-FORMYL-4,4A,5,6,7,7A,8,8A-OCTAHYDRO-7-METHYL-3-(1-METHYLETHYL)-1,4-METHANO-S-INDACENE-3A(1H)-CARBOXYLIC ACID (three-letter code: SO1) (formula: C<sub>27</sub>H<sub>42</sub>O<sub>8</sub>).

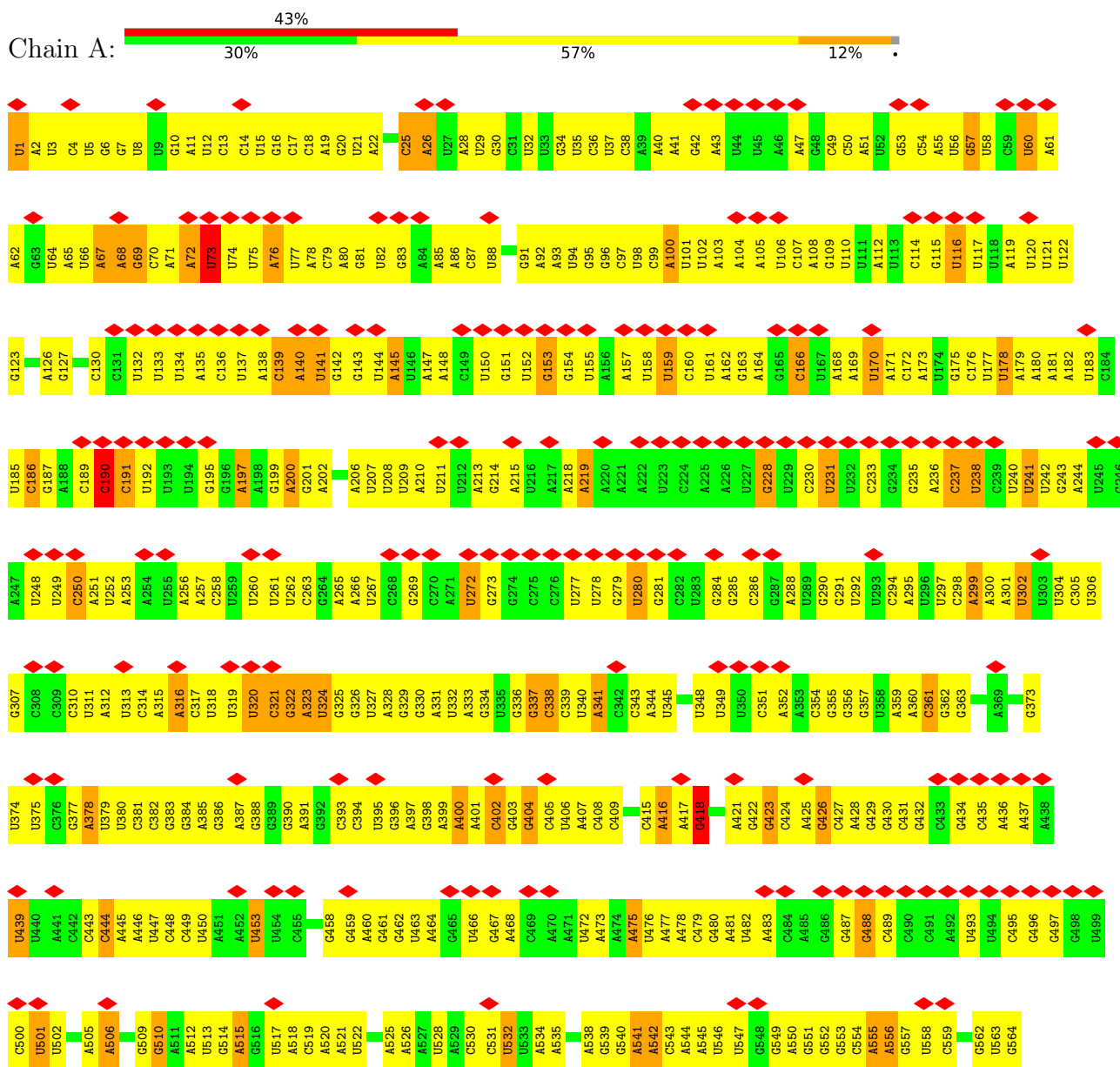


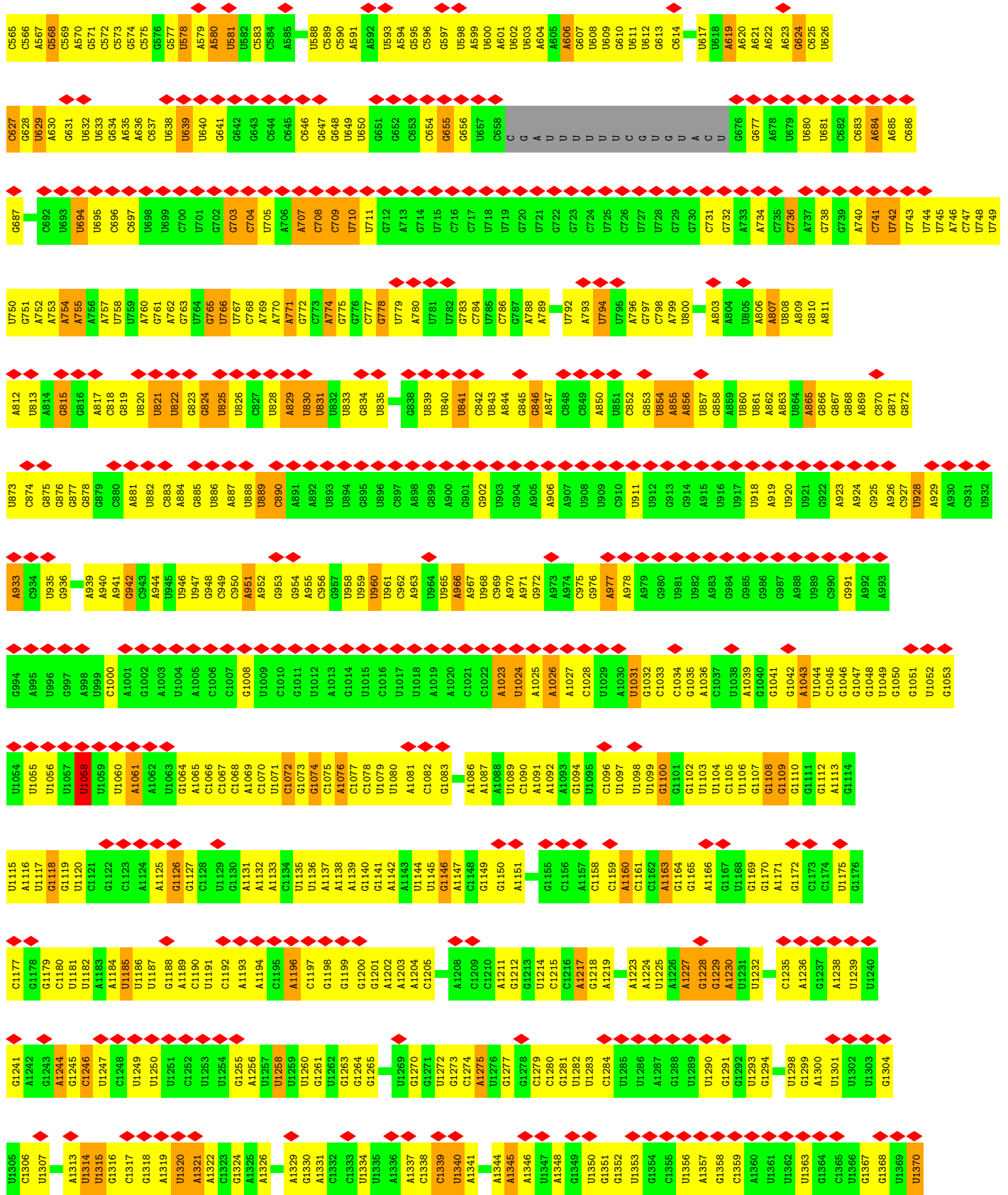
| Mol | Chain | Residues | Atoms |    |   | AltConf |
|-----|-------|----------|-------|----|---|---------|
| 86  | DC    | 1        | Total | C  | O | 0       |
|     |       |          | 35    | 27 | 8 |         |

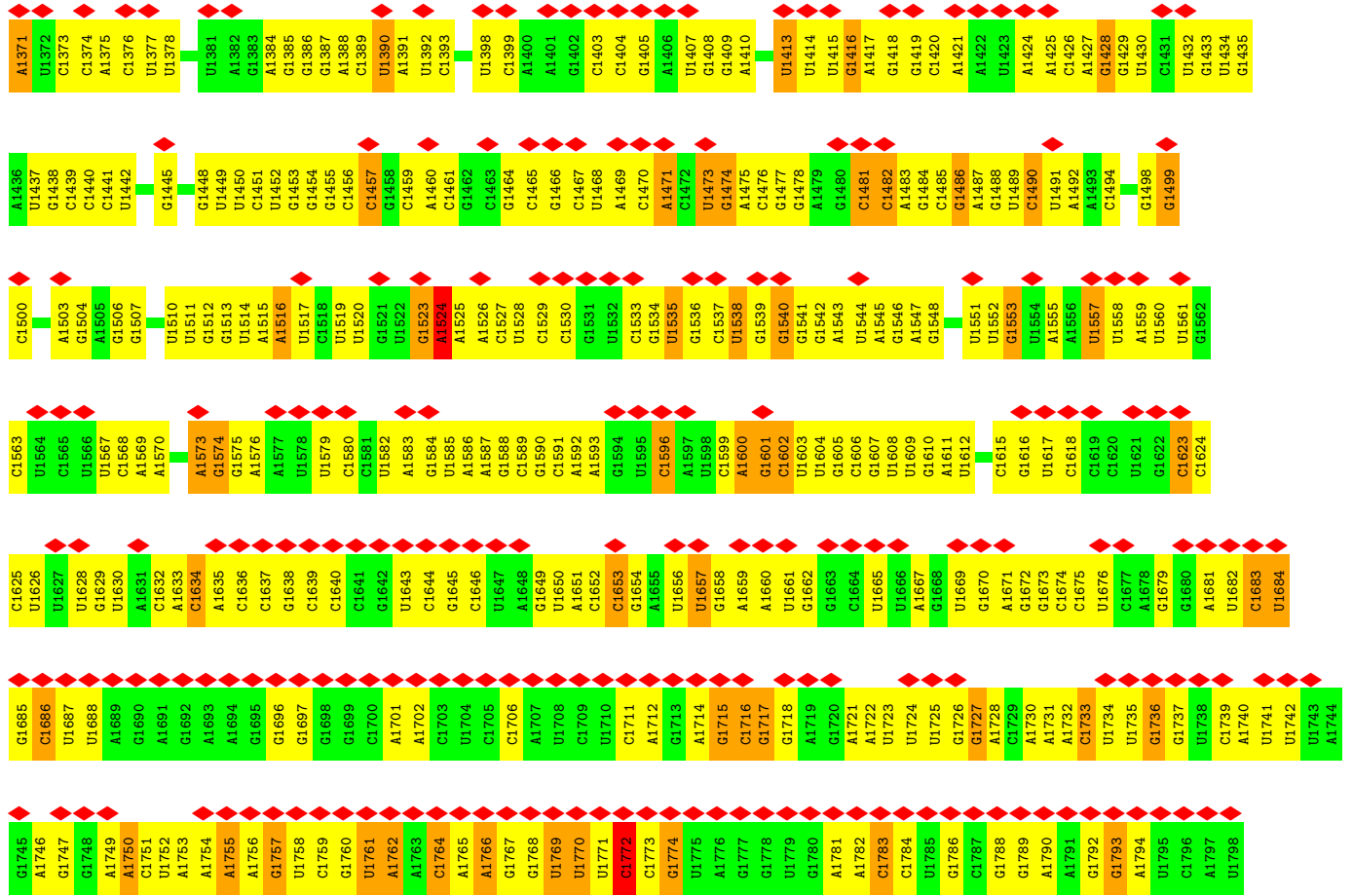
### 3 Residue-property plots

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.

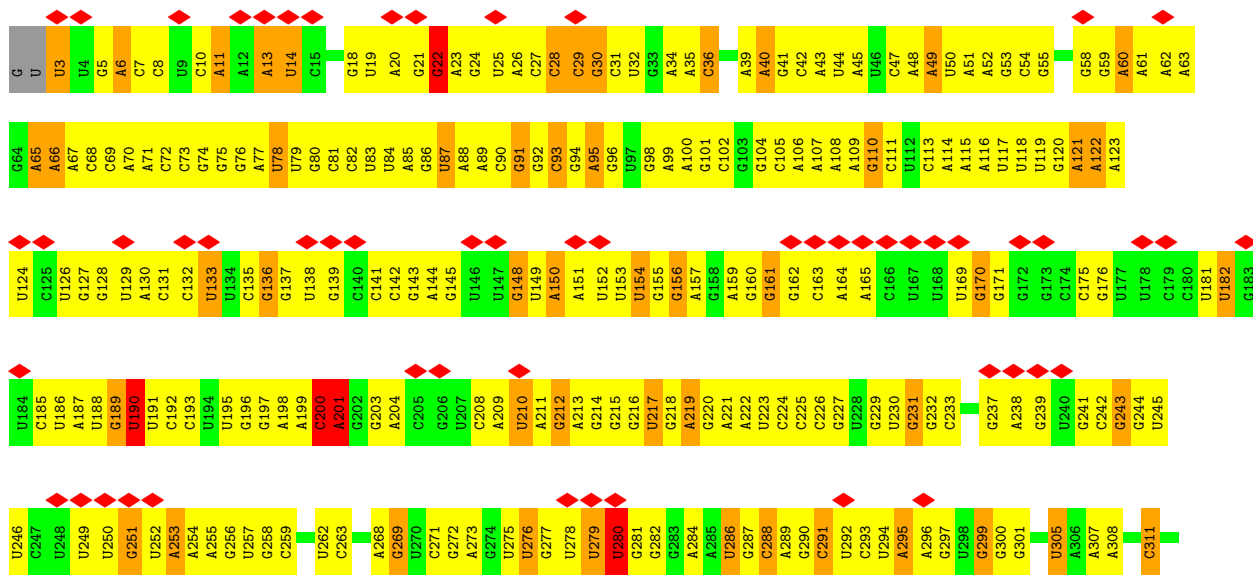
#### • Molecule 1: 18S ribosomal RNA







• Molecule 2: 25S ribosomal RNA

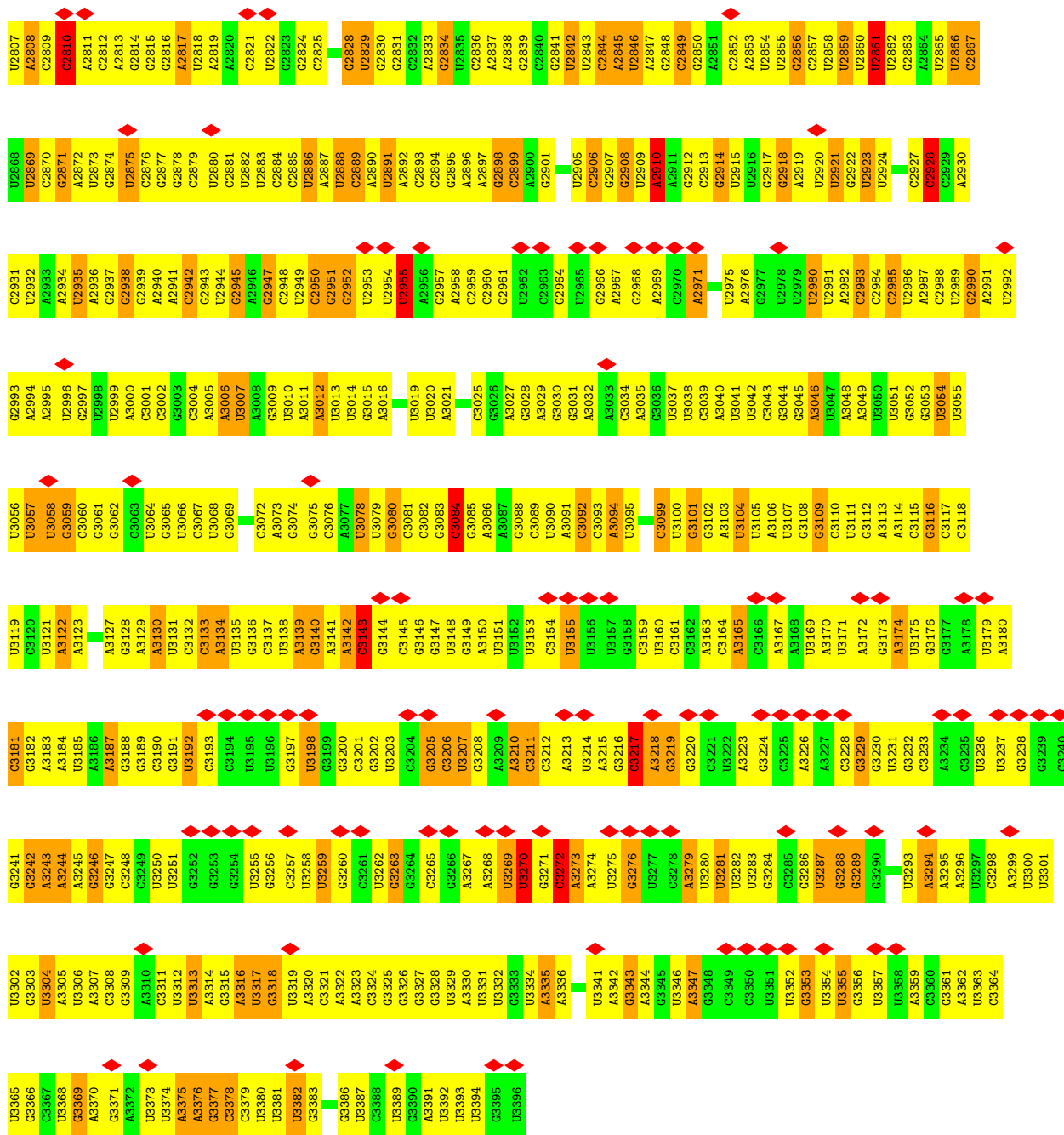


|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| A1130 | A1131 | C1132 | A1133 | G1134 | A1135 | A1136 | C1137 | A1138 | G1139 | G1140 | U1015 | A1143 | A1144 | C1145 | G1146 | A1147 | G1148 | A1149 | A1150 | A1153 | A1154 | C1155 | C1156 | G1157 | A1158 | A1159 | C1160 | G1161 | U1162 | G1163 | A1165 | G1166 | U1167 | U1168 | A1169 | A1170 | G1171 | G1172 | U1173 | G1174 | C1175 | C1176 | G1177 | G1178 | A1179 | A1180 | A1181 | A1182 | C1183 | A1184 | C1185 | G1186 | C1187 | U1188 | C1189 | A1190 | A1191 |       |       |      |      |
| C1068 | C1069 | U1070 | U1071 | G1072 | A1005 | A1006 | U1007 | A1008 | A1009 | U1077 | U1078 | U1081 | U1082 | G1083 | A1084 | A1085 | U1088 | G1089 | G1090 | A1091 | C1092 | A1093 | U1094 | U1095 | U1096 | C1097 | A1098 | A1099 | U1100 | G1101 | A1102 | U1033 | A1103 | G1104 | A1105 | G1106 | C1107 | U1108 | U1109 | U1110 | U1111 | A1112 | G1113 | U1114 | G1115 | G1116 | C1117 | G1118 | U1119 | A1120 | U1121 | U1122 | U1123 | U1124 | U1125 | U1126 | U1127 | U1128 | A1129 |      |      |
| G1001 | A1002 | A1003 | U1004 | G1005 | A1006 | U1007 | A1008 | A1009 | G1010 | U1015 | C1016 | C1017 | A1018 | G1019 | G1020 | U1021 | U1022 | C1023 | G1024 | A1025 | A1026 | A1027 | U1028 | G1029 | A1030 | U1100 | G1101 | A1102 | U1033 | A1103 | G1104 | A1105 | G1106 | C1107 | U1108 | U1109 | U1110 | U1111 | A1112 | G1113 | U1114 | G1115 | G1116 | C1117 | G1118 | U1119 | A1120 | U1121 | U1122 | U1123 | U1124 | U1125 | U1126 | U1127 | U1128 | A1129 |       |       |       |      |      |
| G940  | G941  | U942  | U943  | C944  | A985  | C986  | G987  | A988  | C949  | G950  | A951  | A952  | G953  | U954  | U955  | U956  | C958  | C959  | U960  | C961  | A962  | G963  | G964  | A965  | U966  | A967  | C968  | C969  | A970  | G971  | A972  | G973  | C974  | C975  | U976  | C977  | G978  | U979  | A980  | C981  | A982  | U983  | G984  | U985  | U986  | U987  | U988  | A989  | U990  | G991  | A992  | C993  | U994  | A995  | U996  | U997  | C998  | U999  |       |      |      |
| C818  | U819  | A820  | U821  | G822  | C823  | C824  | U825  | U829  | A830  | G833  | U834  | A835  | A836  | A837  | C838  | C839  | C840  | A841  | C842  | A843  | G844  | G845  | A846  | A847  | A848  | U849  | U850  | U851  | U852  | G853  | G854  | U855  | G856  | G857  | U858  | A859  | A860  | U861  | U862  | U863  | U864  | U865  | U866  | U867  | U868  | U869  | U870  | U871  | U872  | U873  | U874  | U875  | U876  | U877  | U878  | U879  |       |       |       |      |      |
| C880  | C881  | A882  | A883  | A884  | U885  | C886  | G887  | A888  | U889  | C890  | G891  | U892  | C893  | G894  | A895  | U896  | C958  | C959  | U960  | C961  | A962  | G963  | G964  | A965  | U966  | A967  | C968  | C969  | A970  | G971  | A972  | G973  | C974  | C975  | U976  | C977  | G978  | U979  | A980  | C981  | A982  | U983  | G984  | U985  | U986  | U987  | U988  | A989  | U990  | G991  | A992  | C993  | U994  | A995  | U996  | U997  | C998  | U999  |       |      |      |
| C757  | C758  | G759  | G760  | A761  | G762  | G763  | U764  | G765  | U766  | U767  | G768  | G769  | A770  | U771  | U772  | G773  | G774  | A775  | U776  | U777  | U778  | G779  | A780  | G781  | U782  | A783  | A784  | G785  | A786  | G787  | C788  | A789  | U790  | A791  | G792  | C793  | C794  | U795  | U796  | U797  | G798  | G799  | G800  | A801  | C802  | G803  | C804  | G805  | A806  | A807  | A808  | G809  | A810  | U811  | C812  | G813  | U814  | G815  | A816  |      |      |
| A817  | C818  | U819  | A820  | U821  | G822  | C823  | C824  | U825  | U829  | A830  | G833  | U834  | A835  | A836  | A837  | C838  | C839  | C840  | A841  | C842  | A843  | G844  | G845  | A846  | A847  | A848  | U849  | U850  | U851  | U852  | G853  | G854  | U855  | G856  | G857  | U858  | A859  | A860  | U861  | U862  | U863  | U864  | U865  | U866  | U867  | U868  | U869  | U870  | U871  | U872  | U873  | U874  | U875  | U876  | U877  | U878  | U879  |       |       |      |      |
| C695  | C696  | A697  | U698  | G699  | A700  | U701  | C702  | U703  | U704  | A705  | A706  | G707  | G708  | A709  | A710  | C711  | G712  | U713  | G714  | A715  | A716  | G717  | G718  | U719  | A720  | G721  | U722  | G723  | G724  | G725  | G726  | G727  | G728  | C729  | C730  | U731  | C732  | G733  | C734  | A735  | A736  | G737  | A738  | G739  | G740  | U741  | G742  | C743  | A744  | C745  | A746  | A747  | U748  | C749  | G750  | U751  | C752  | G753  | G754  | A755 | U756 |
| U631  | G632  | C633  | C634  | G635  | C636  | C637  | C638  | G639  | U640  | U641  | U642  | U643  | A644  | A645  | A646  | A647  | C648  | A649  | C650  | G651  | G652  | A653  | C654  | C655  | A656  | A660  | G661  | U662  | C663  | U664  | A665  | A666  | C667  | G668  | U669  | C670  | U671  | A672  | G673  | A674  | G675  | G676  | A677  | G678  | U679  | G680  | U681  | U682  | U683  | G684  | C685  | U689  | A690  | A691  | A692  | A693  | C694  |       |       |      |      |
| A504  | G505  | U506  | U507  | U508  | U509  | G510  | G511  | U512  | G513  | G514  | C515  | A516  | G517  | G518  | A519  | A520  | U521  | C522  | A523  | U524  | C525  | C526  | A527  | U528  | A529  | G535  | U536  | A537  | G538  | G542  | C543  | C544  | U545  | U546  | C546  | G547  | G548  | U549  | A550  | A551  | G552  | U553  | A554  | U555  | U556  | A557  | U558  | A559  | G560  | C561  | C562  | U563  | G564  | U565  | G566  | G567  | A568  |       |       |      |      |
| A570  | U571  | A572  | C573  | U574  | G575  | C576  | C577  | G578  | A579  | C580  | U581  | G582  | G583  | A584  | A585  | C586  | U587  | G588  | A589  | U590  | A591  | C592  | A593  | U594  | G595  | C596  | U597  | A598  | C599  | G600  | U601  | A602  | G603  | U604  | U605  | C606  | A607  | A608  | G609  | U610  | U611  | U612  | G613  | C614  | U615  | G616  | U617  | U620  | A621  | A622  | U623  | G624  | G625  | U626  | U627  | A628  | U629  | A630  |       |      |      |
| U444  | G445  | U446  | U447  | U448  | U449  | U450  | U451  | G452  | C453  | C     | C     | U     | U     | C     | U     | U     | C     | A     | U     | U     | C     | U     | U     | U     | G     | U     | G     | U     | A     | U     | U     | C     | U481  | C482  | U483  | C484  | A485  | U486  | U487  | U488  | C489  | A490  | C491  | U492  | G493  | C494  | C495  | C496  | U497  | U498  | U499  | C500  | A501  | U502  | C503  |       |       |       |       |      |      |
| U314  | C315  | U316  | A317  | A318  | A319  | G320  | C321  | U322  | A323  | A324  | A325  | U326  | A327  | U328  | U329  | G335  | A336  | G337  | A338  | C339  | C340  | G341  | A342  | U343  | A344  | G345  | C346  | A347  | U348  | A349  | C350  | A351  | C352  | C353  | U354  | A355  | C356  | A357  | G358  | U359  | G360  | A361  | U362  | G363  | A364  | A365  | A366  | A367  | G368  | A369  | U370  | G371  | A372  | A373  | A374  | A375  | G376  | A377  |       |      |      |

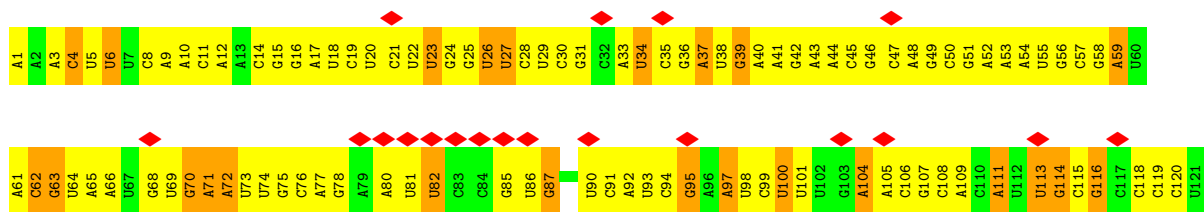


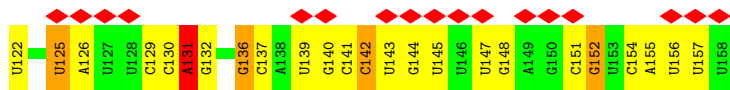
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|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| U1258 | U1259 | U1260 | U1261 | U1262 | U1263 | U1264 | U1265 | U1266 | U1267 | U1268 | U1269 | U1270 | U1271 | U1272 | U1273 | U1274 | U1275 | U1276 | U1277 | U1278 | U1279 | U1280 | U1281 | U1282 | U1283 | U1284 | U1285 | U1286 | U1287 | U1288 | U1289 | U1290 | U1291 | U1292 | U1293 | U1294 | U1295 | U1296 | U1297 | U1298 | U1299 | U1300 | U1301 | U1302 | U1303 | U1304 | U1305 | U1306 | U1307 | U1308 | U1309 | U1310 | U1311 | U1312 | U1313 | U1314 | U1315 | U1316 | U1317 | U1318 | U1319 | U1320 | U1321 | U1322 | U1323 | U1324 | U1325 | U1326 | U1327 | U1328 | U1329 | U1330 | U1331 | U1332 | U1333 | U1334 | U1335 | U1336 | U1337 | U1338 | U1339 | U1340 | U1341 | U1342 | U1343 | U1344 | U1345 | U1346 | U1347 | U1348 | U1349 | U1350 | U1351 | U1352 | U1353 | U1354 | U1355 | U1356 | U1357 | U1358 | U1359 | U1360 | U1361 | U1362 | U1363 | U1364 | U1365 | U1366 | U1367 | U1368 | U1369 | U1370 | U1371 | U1372 | U1373 | U1374 | U1375 | U1376 | U1377 | U1378 | U1379 | U1380 | U1381 | U1382 | U1383 | U1384 | U1385 | U1386 | U1387 | U1388 | U1389 | U1390 | U1391 | U1392 | U1393 | U1394 | U1395 | U1396 | U1397 | U1398 | U1399 | U1400 | U1401 | U1402 | U1403 | U1404 | U1405 | U1406 | U1407 | U1408 | U1409 | U1410 | U1411 | U1412 | U1413 | U1414 | U1415 | U1416 | U1417 | U1418 | U1419 | U1420 | U1421 | U1422 | U1423 | U1424 | U1425 | U1426 | U1427 | U1428 | U1429 | U1430 | U1431 | U1432 | U1433 | U1434 | U1435 | U1436 | U1437 | U1438 | U1439 | U1440 | U1441 | U1442 | U1443 | U1444 | U1445 | U1446 | U1447 | U1448 | U1449 | U1450 | U1451 | U1452 | U1453 | U1454 | U1455 | U1456 | U1457 | U1458 | U1459 | U1460 | U1461 | U1462 | U1463 | U1464 | U1465 | U1466 | U1467 | U1468 | U1469 | U1470 | U1471 | U1472 | U1473 | U1474 | U1475 | U1476 | U1477 | U1478 | U1479 | U1480 | U1481 | U1482 | U1483 | U1484 | U1485 | U1486 | U1487 | U1488 | U1489 | U1490 | U1491 | U1492 | U1493 | U1494 | U1495 | U1496 | U1497 | U1498 | U1499 | U1500 | U1501 | U1502 | U1503 | U1504 | U1505 | U1506 | U1507 | U1508 | U1509 | U1510 | U1511 | U1512 | U1513 | U1514 | U1515 | U1516 | U1517 | U1518 | U1519 | U1520 | U1521 | U1522 | U1523 | U1524 | U1525 | U1526 | U1527 | U1528 | U1529 | U1530 | U1531 | U1532 | U1533 | U1534 | U1535 | U1536 | U1537 | U1538 | U1539 | U1540 | U1541 | U1542 | U1543 | U1544 | U1545 | U1546 | U1547 | U1548 | U1549 | U1550 | U1551 | U1552 | U1553 | U1554 | U1555 | U1556 | U1557 | U1558 | U1559 | U1560 | U1561 | U1562 | U1563 | U1564 | U1565 | U1566 | U1567 | U1568 | U1569 | U1570 | U1571 | U1572 | U1573 | U1574 | U1575 | U1576 | U1577 | U1578 | U1579 | U1580 | U1581 | U1582 | U1583 | U1584 | U1585 | U1586 | U1587 | U1588 | U1589 | U1590 | U1591 | U1592 | U1593 | U1594 | U1595 | U1596 | U1597 | U1598 | U1599 | U1600 | U1601 | U1602 | U1603 | U1604 | U1605 | U1606 | U1607 | U1608 | U1609 | U1610 | U1611 | U1612 | U1613 | U1614 | U1615 | U1616 | U1617 | U1618 | U1619 | U1620 | U1621 | U1622 | U1623 | U1624 | U1625 | U1626 | U1627 | U1628 | U1629 | U1630 | U1631 | U1632 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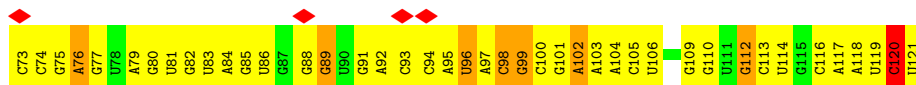
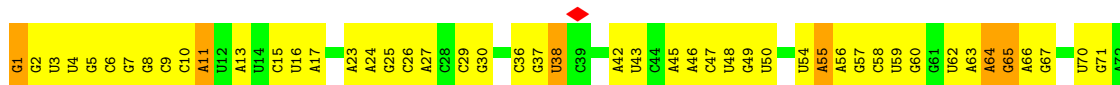


● Molecule 3: 5.8S ribosomal RNA

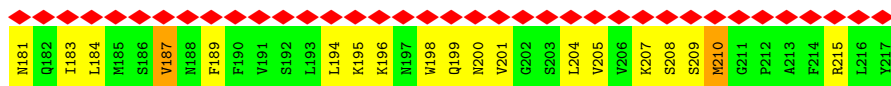
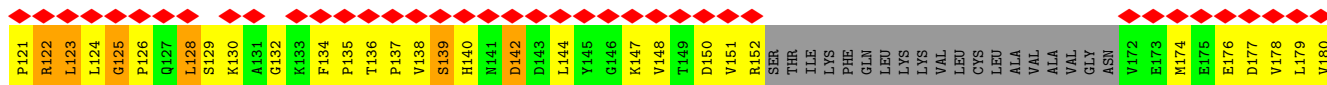
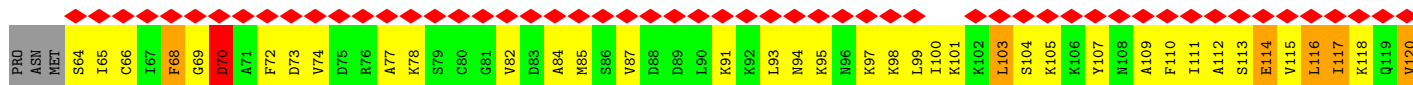
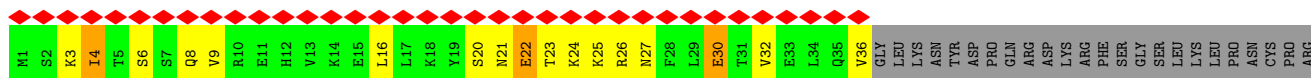
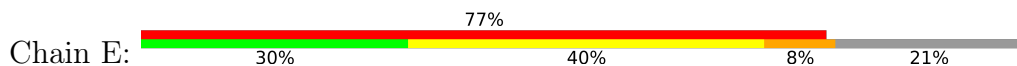




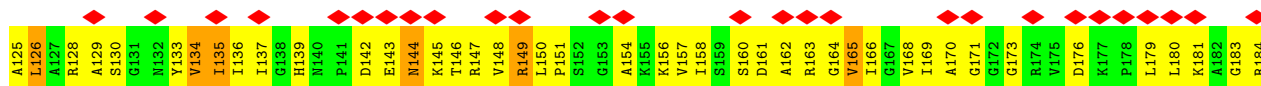
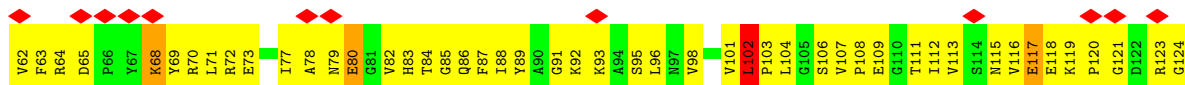
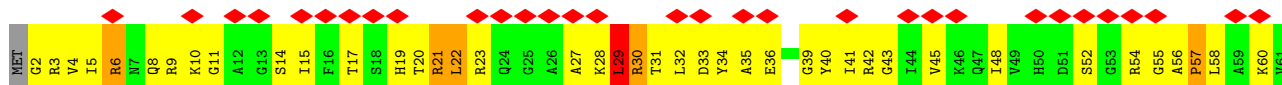
• Molecule 4: 5S ribosomal RNA

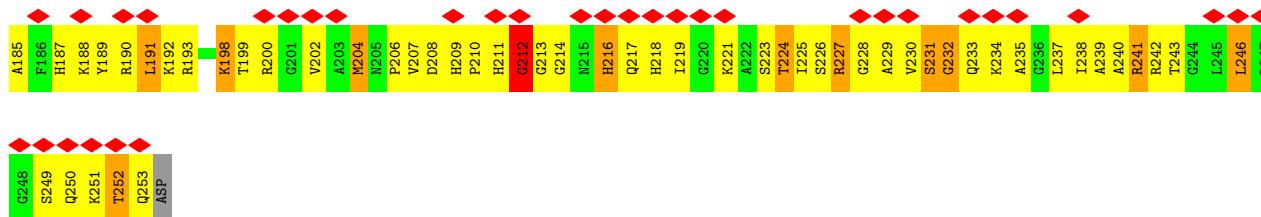


• Molecule 5: uL1 (yeast L1)

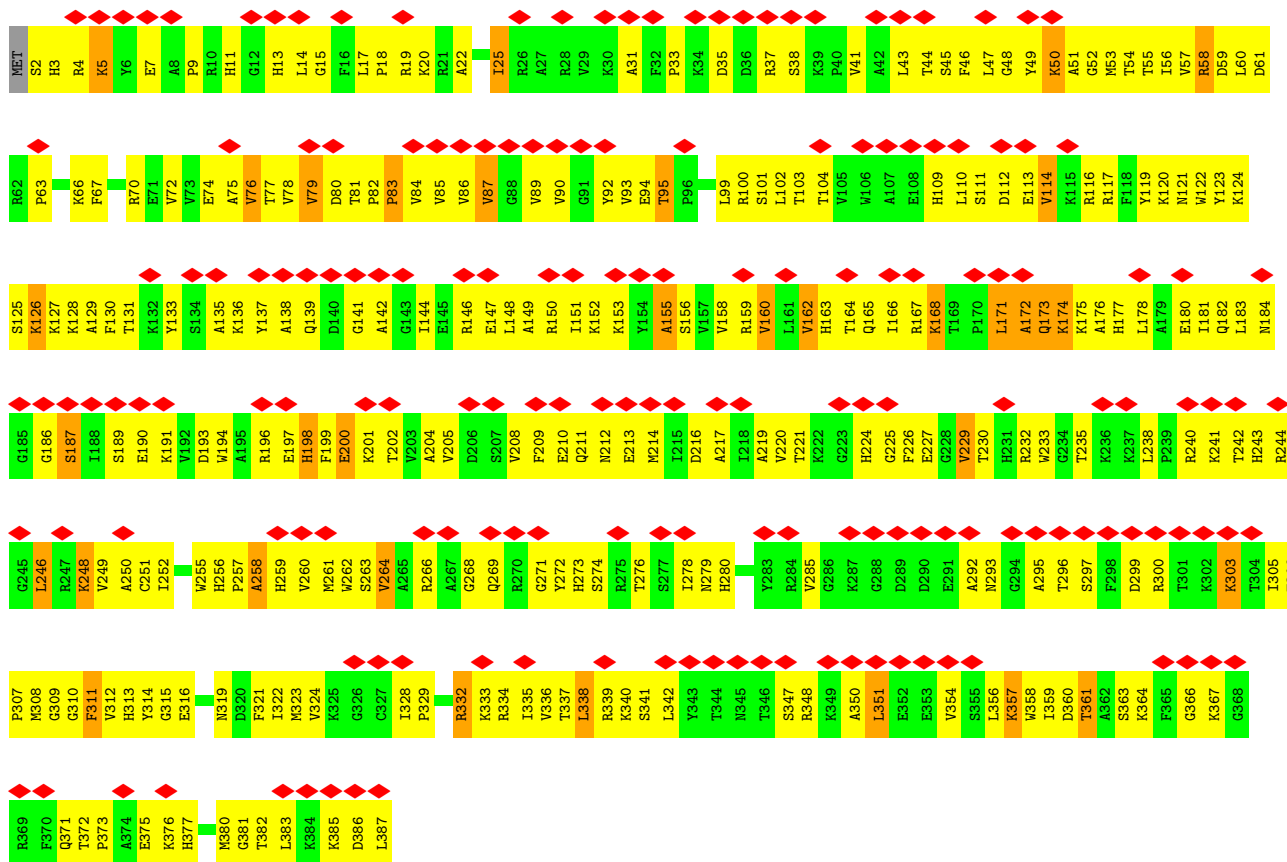


• Molecule 6: uL2 (yeast L2)

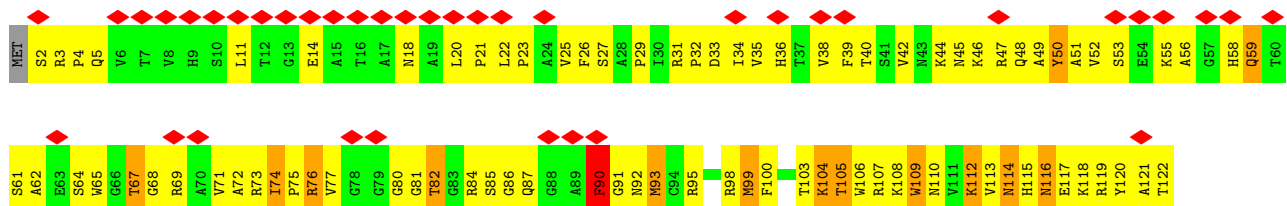


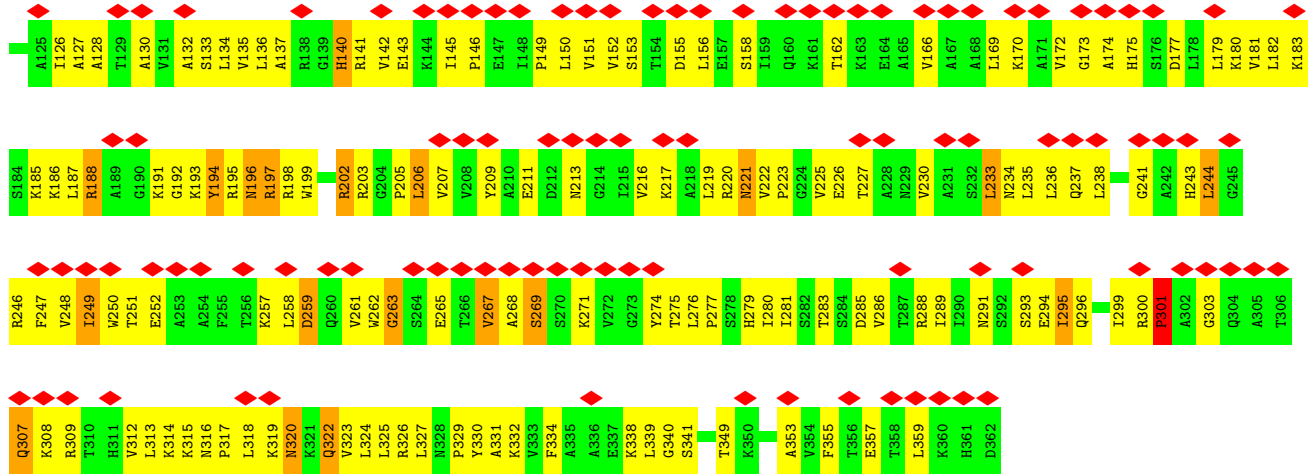


• Molecule 7: uL3 (yeast L3)

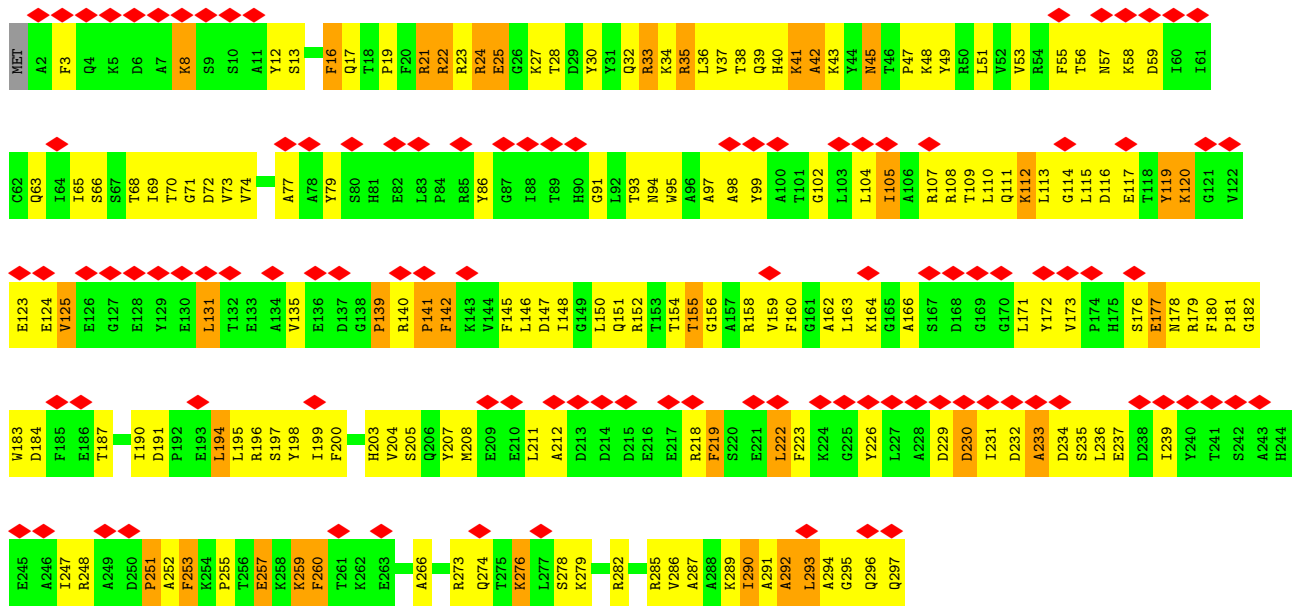


• Molecule 8: uL4 (yeast L4)

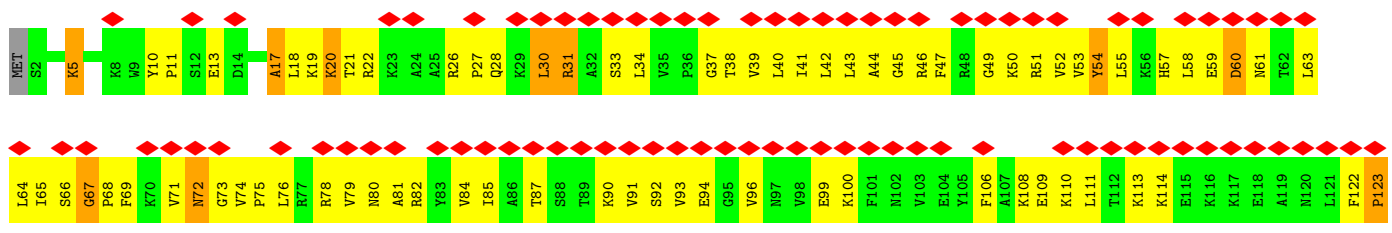




• Molecule 9: uL18 (yeast L5)

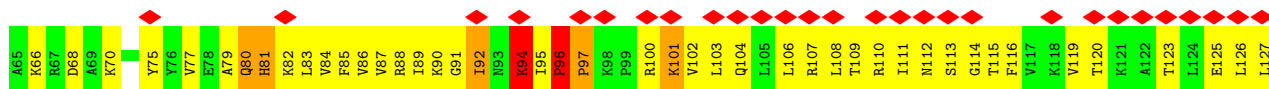
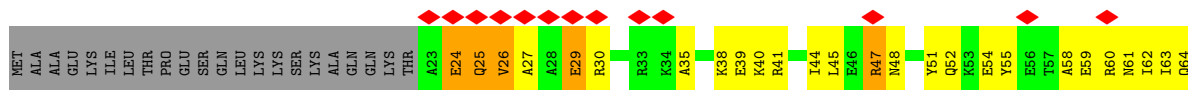


• Molecule 10: eL6 (yeast L6)

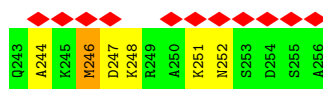
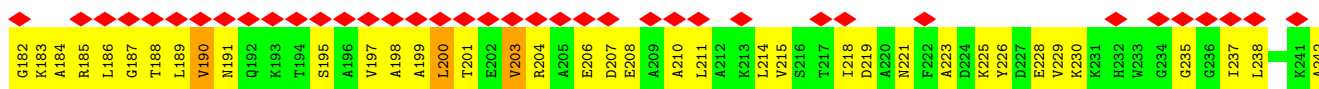
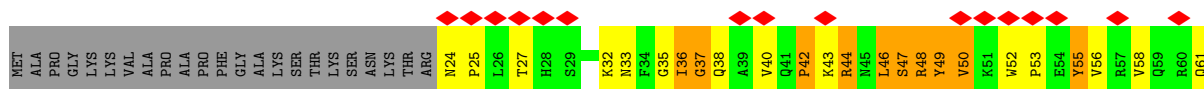




• Molecule 11: uL30 (yeast L7)

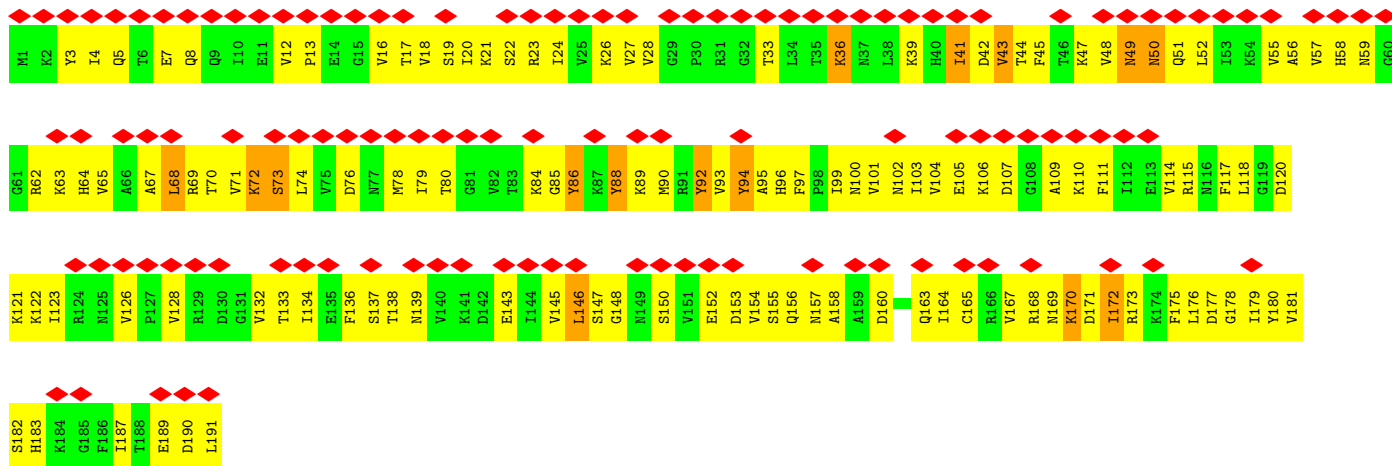


• Molecule 12: eL8 (yeast L8)

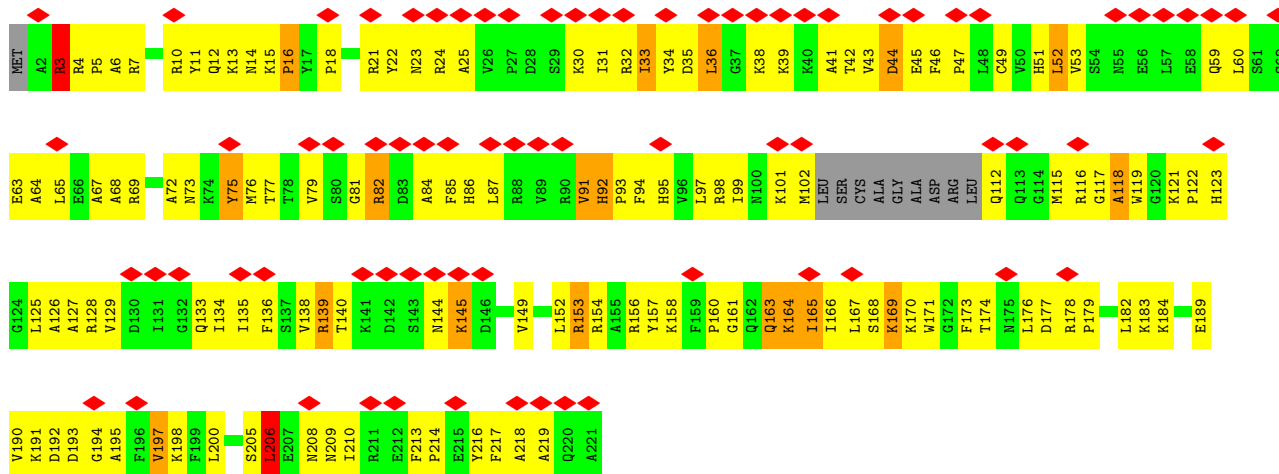
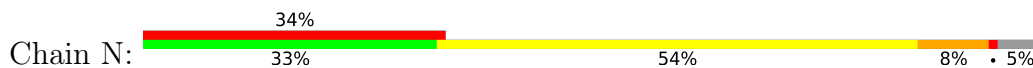


• Molecule 13: uL6 (yeast L9)

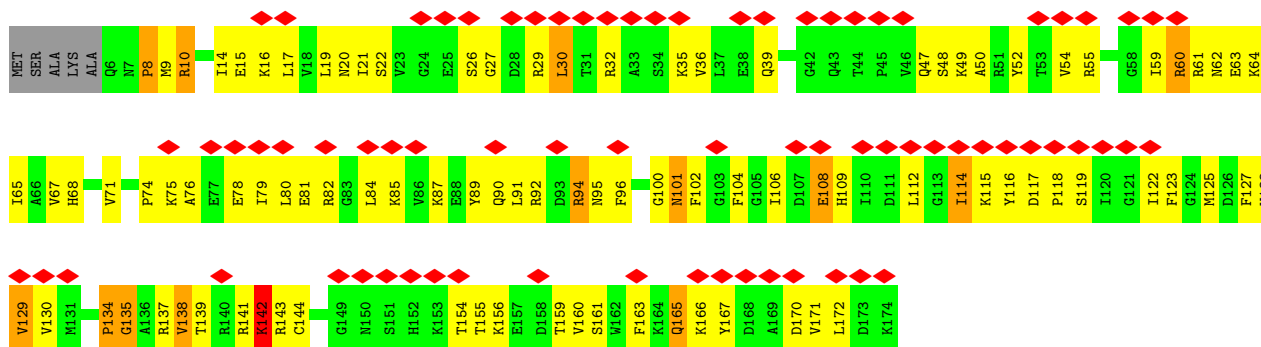
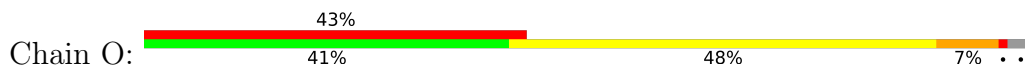




• Molecule 14: uL16 (yeast L10)



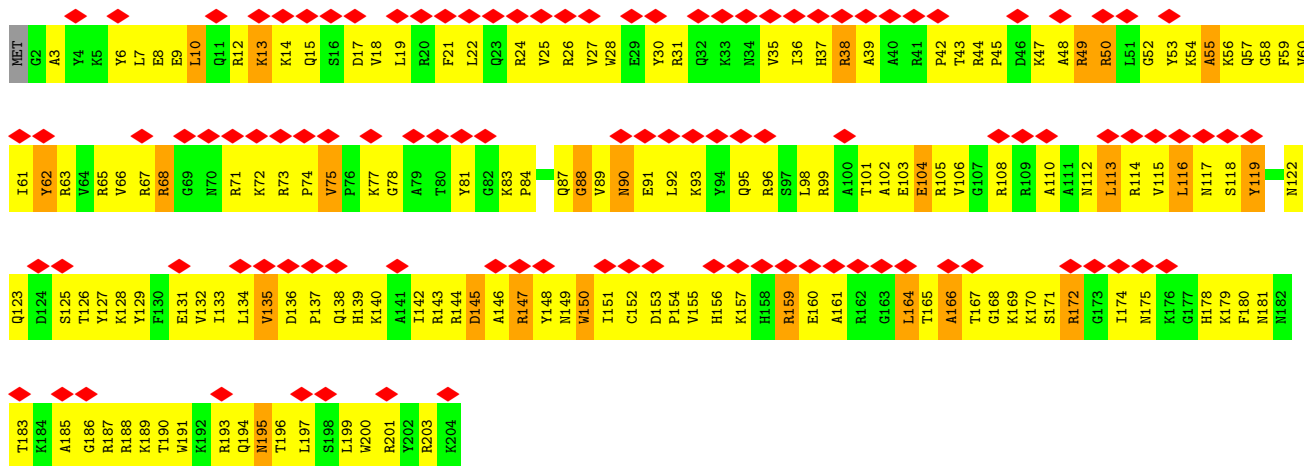
• Molecule 15: uL5 (yeast L11)



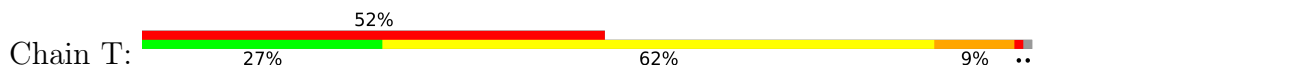
• Molecule 16: uL11 (yeast L12)



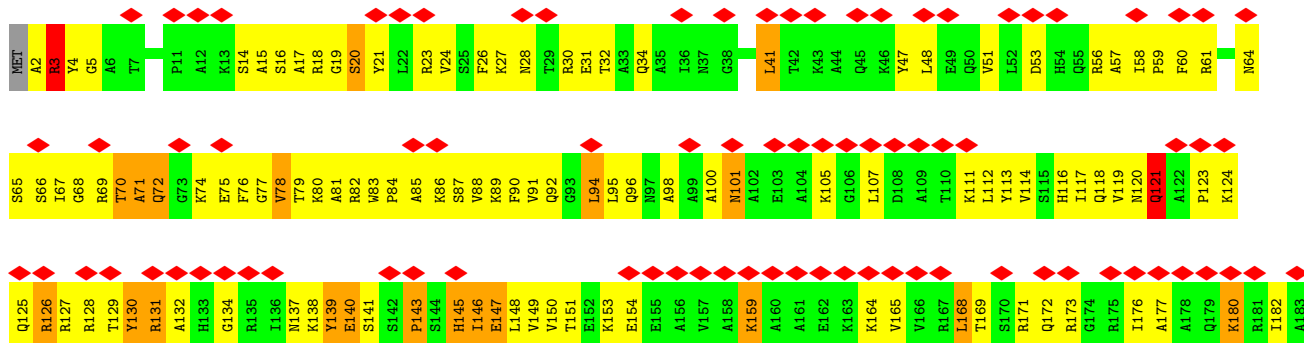
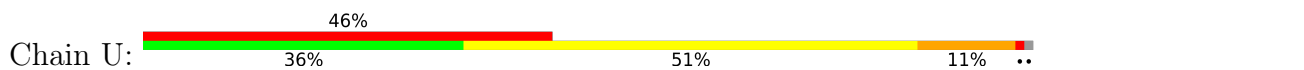




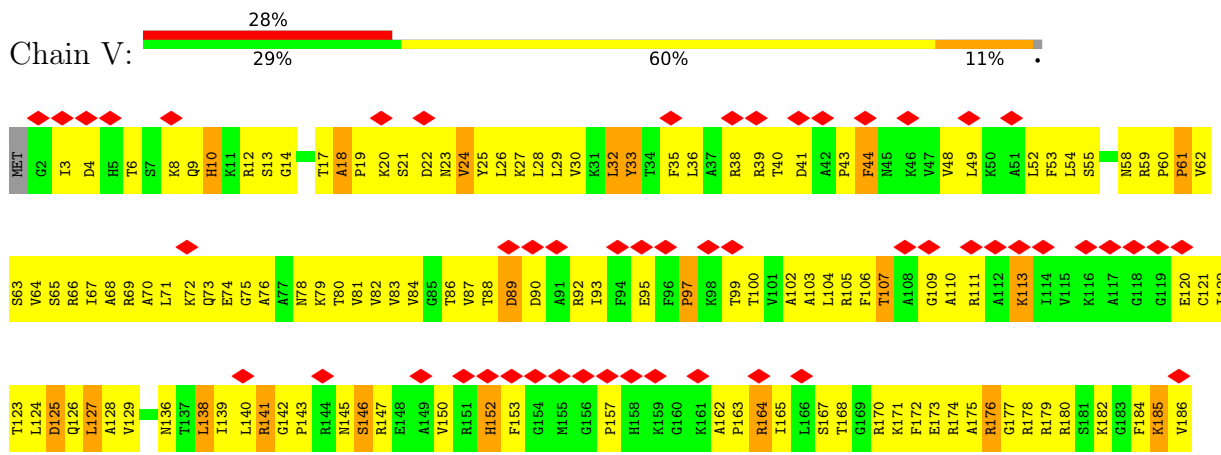
• Molecule 20: uL13 (yeast L16)



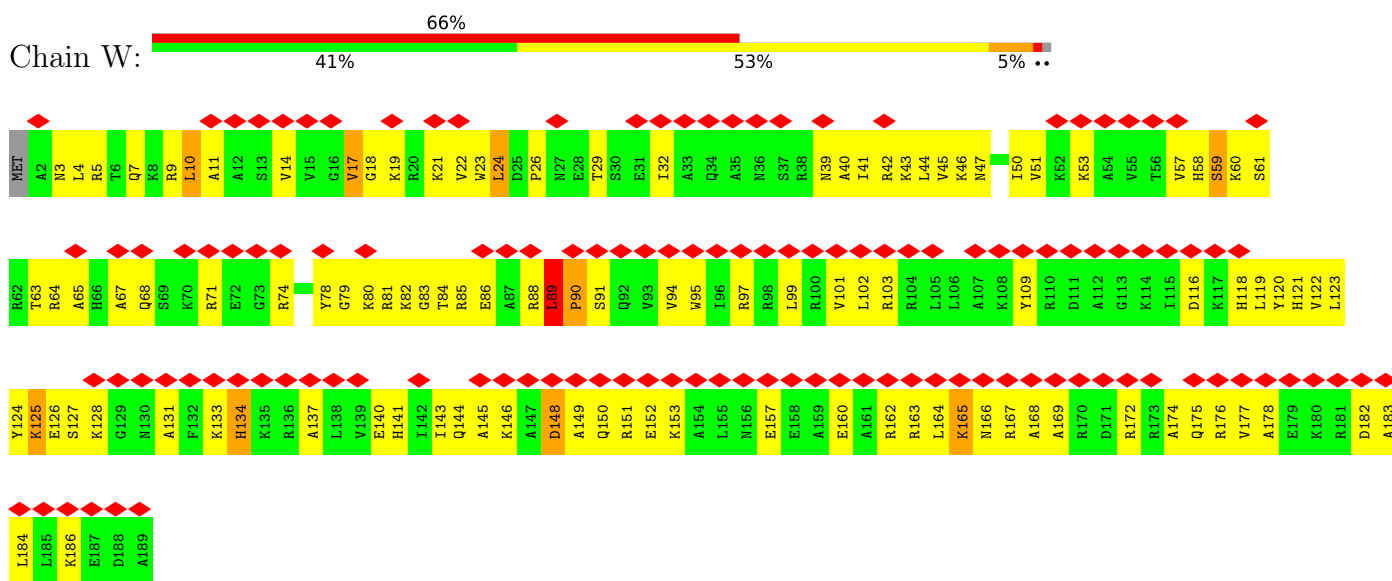
• Molecule 21: uL22 (yeast L17)



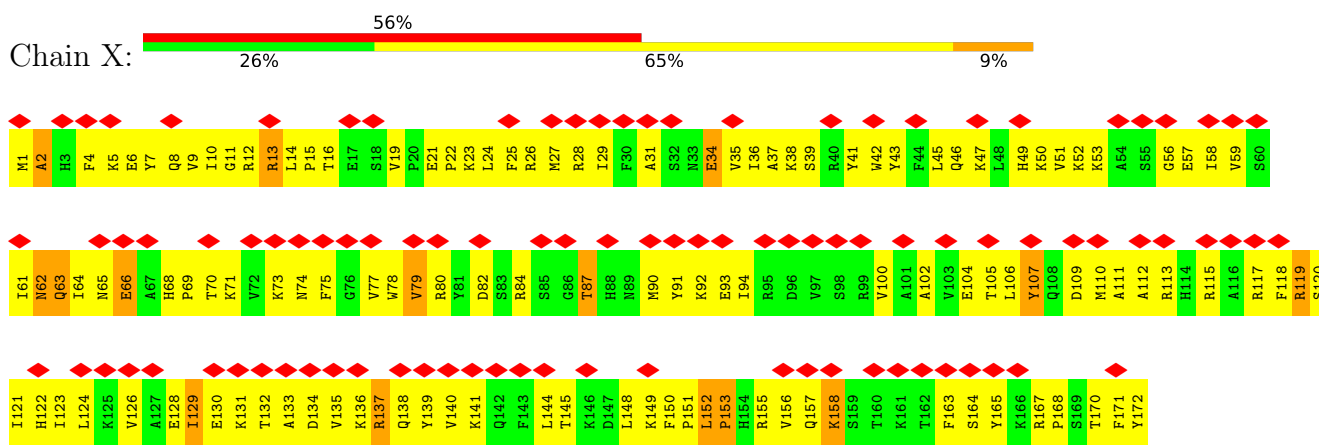
• Molecule 22: eL18 (yeast L18)



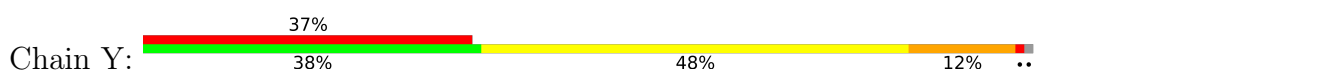
• Molecule 23: eL19 (yeast L19)

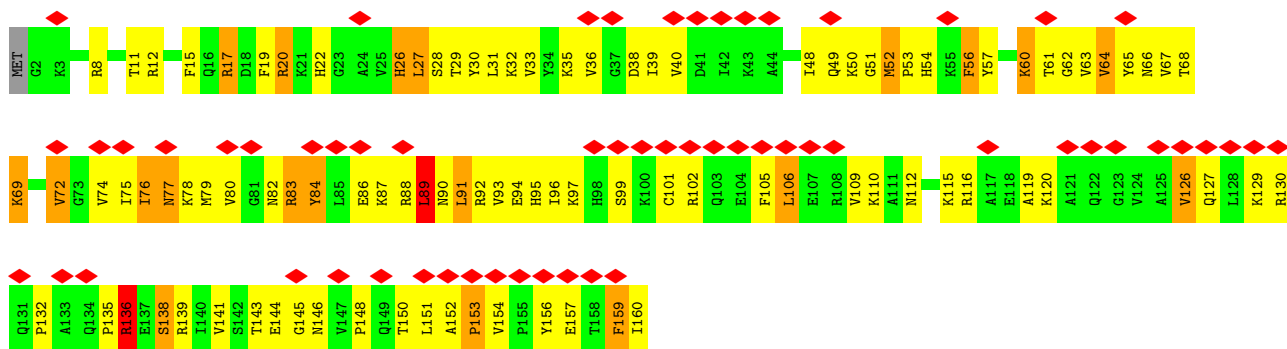


• Molecule 24: eL20 (yeast L20)

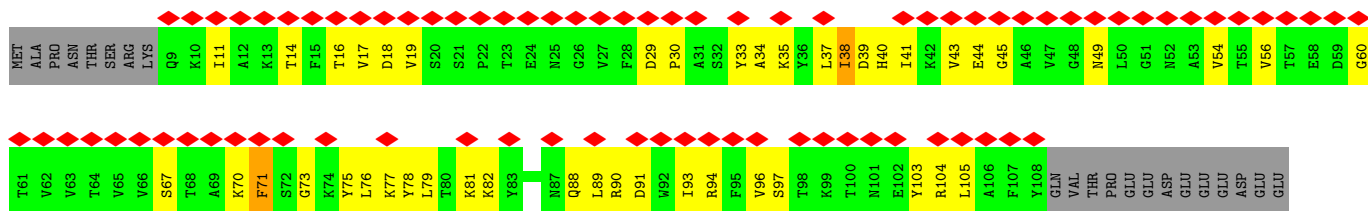
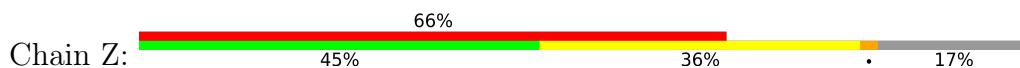


• Molecule 25: eL21 (yeast L21)

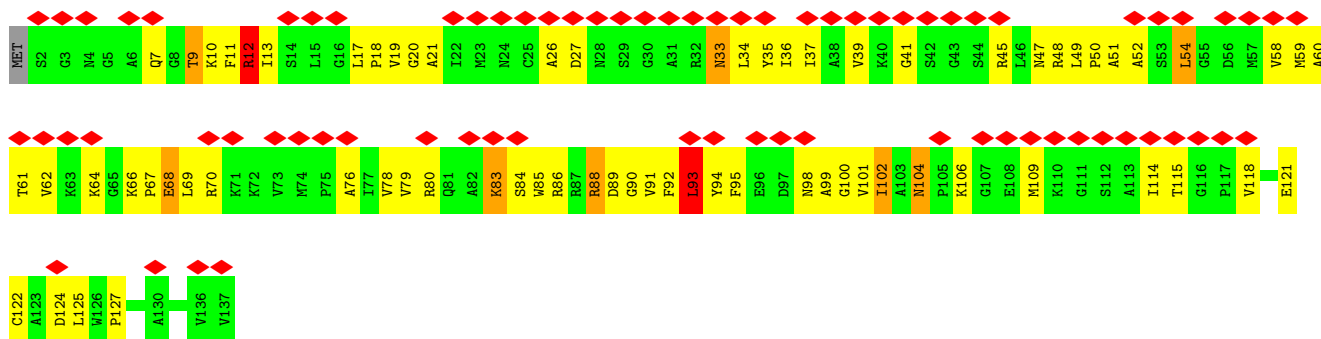




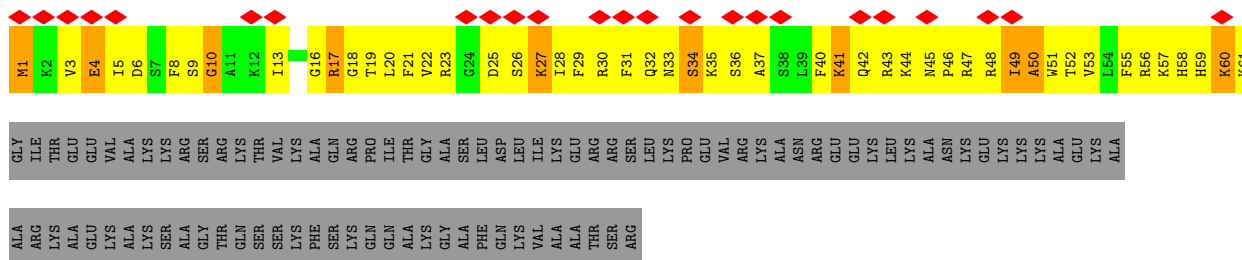
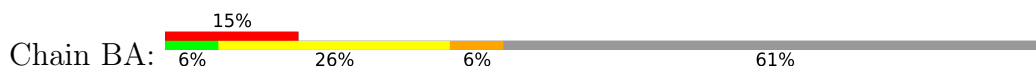
• Molecule 26: eL22 (yeast L22)



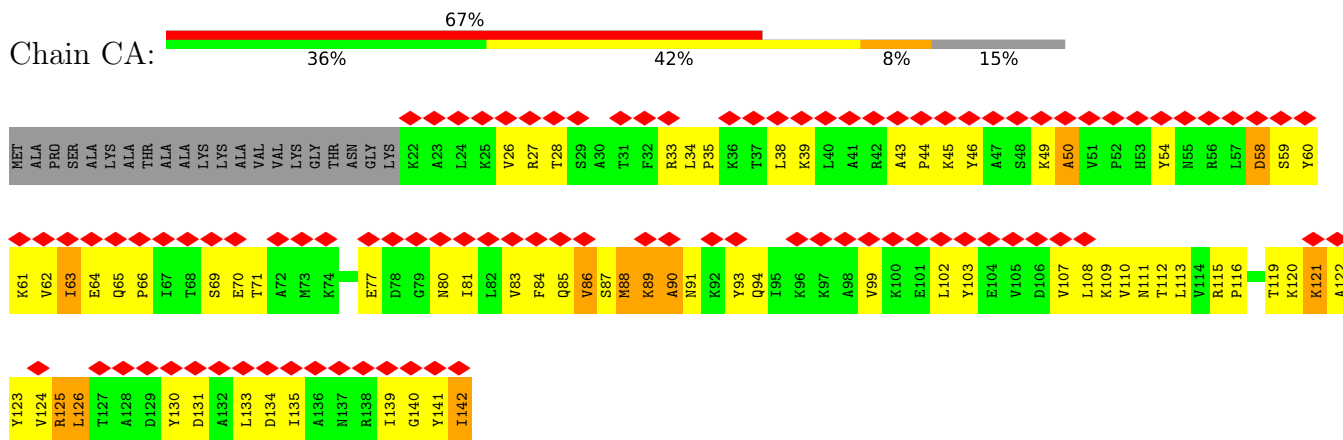
• Molecule 27: uL14 (yeast L23)



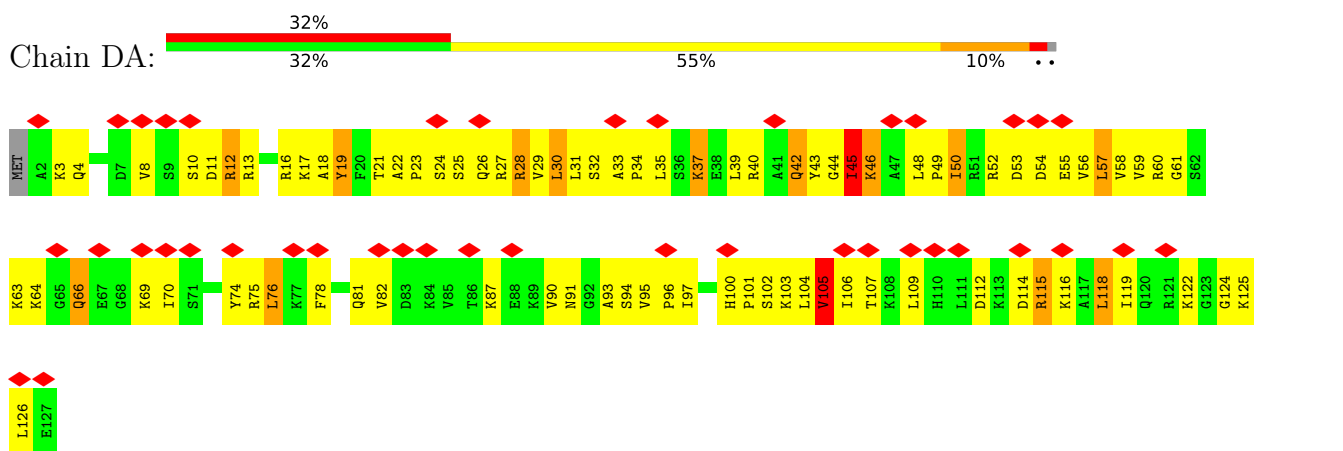
• Molecule 28: eL24 (yeast L24)



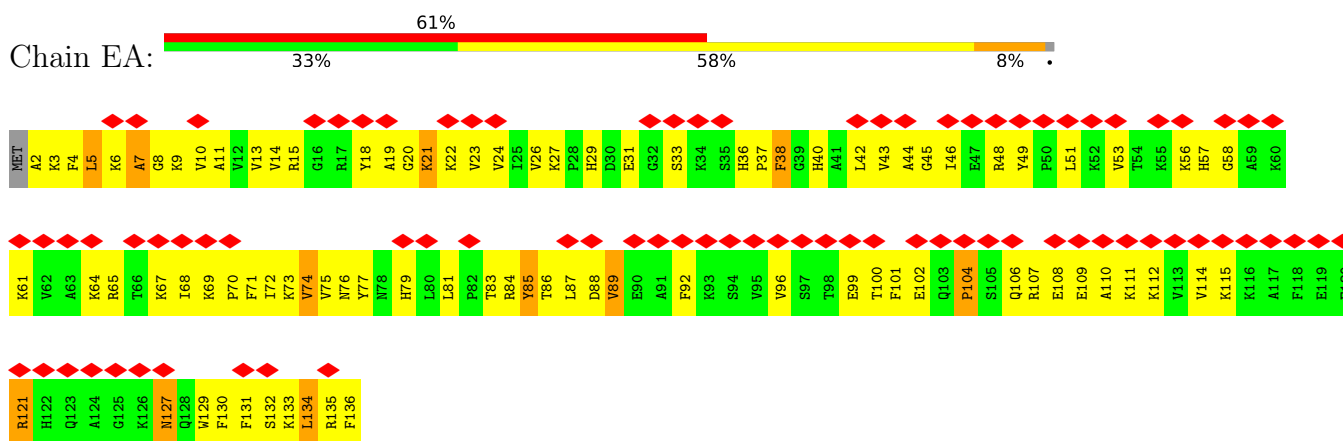
• Molecule 29: uL23 (yeast L25)



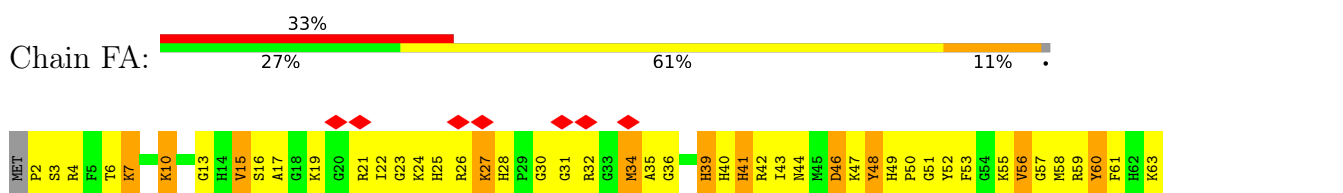
• Molecule 30: uL24 (yeast L26)



• Molecule 31: eL27 (yeast L27)



• Molecule 32: uL15 (yeast L28)

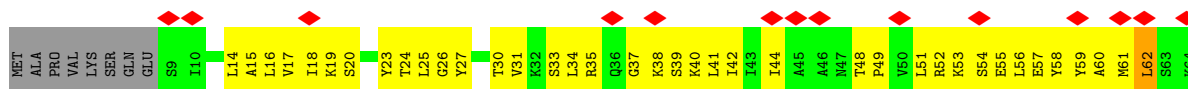
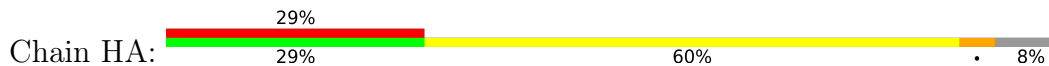




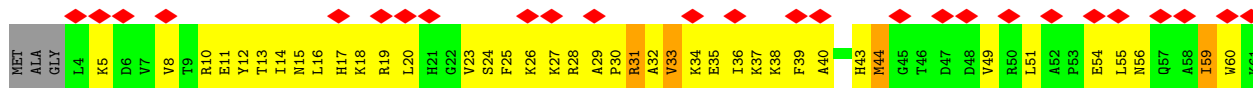
• Molecule 33: eL29 (yeast L29)



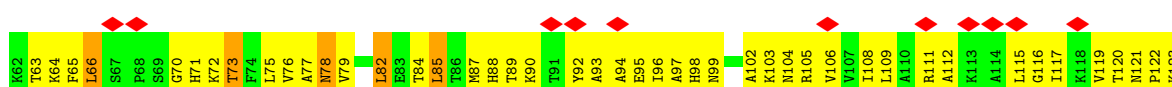
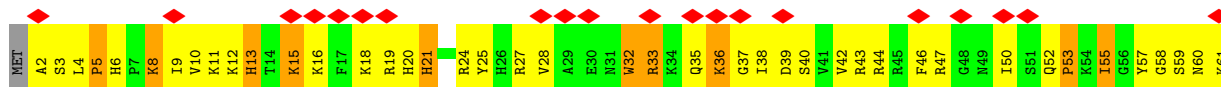
• Molecule 34: eL30 (yeast L30)



• Molecule 35: eL31 (yeast L31)

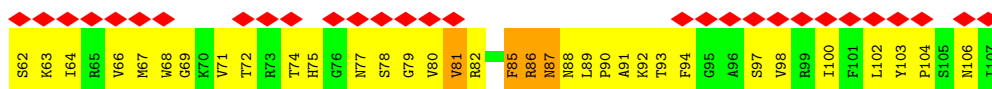
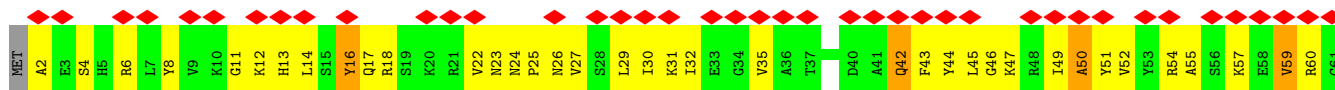


• Molecule 36: eL32 (yeast L32)

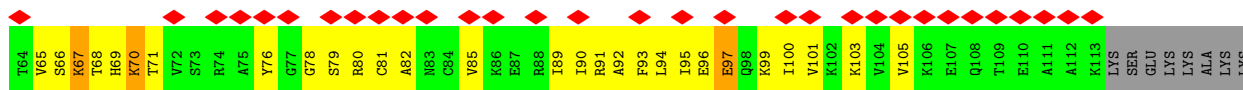
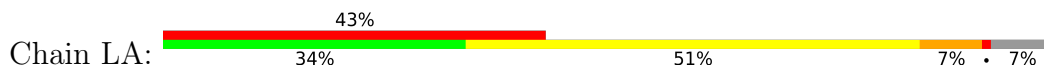




- Molecule 37: eL33 (yeast L33)



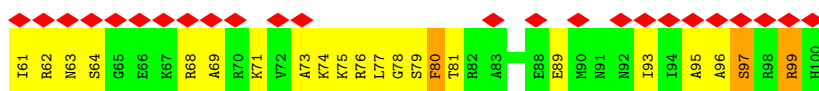
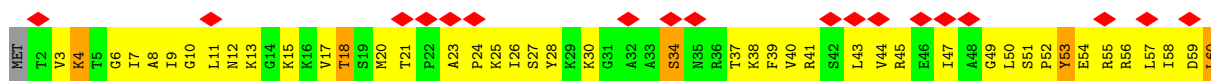
- Molecule 38: eL34 (yeast L34)



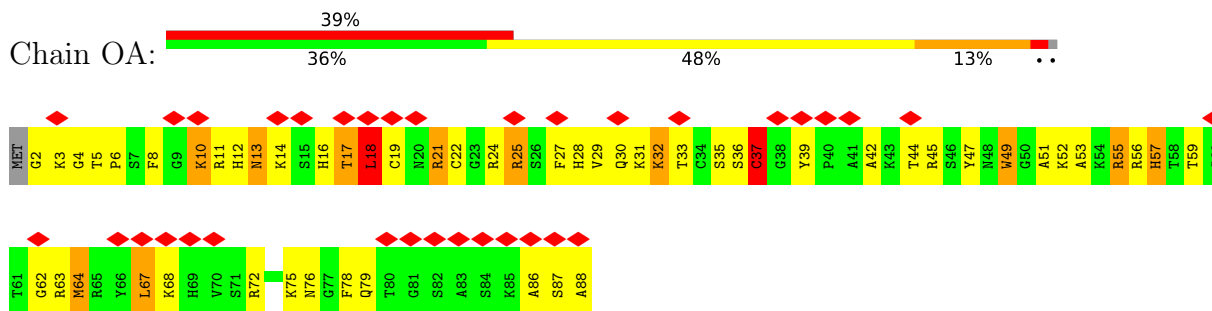
- Molecule 39: uL29 (yeast L35)



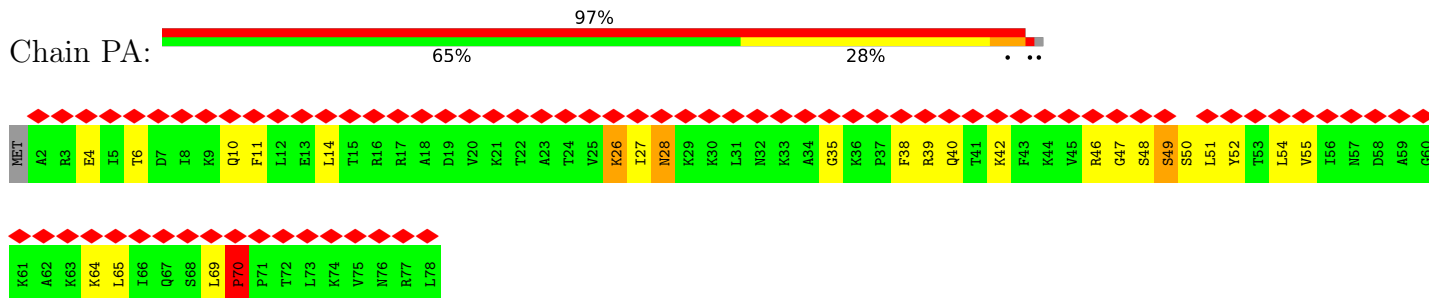
- Molecule 40: eL36 (yeast L36)



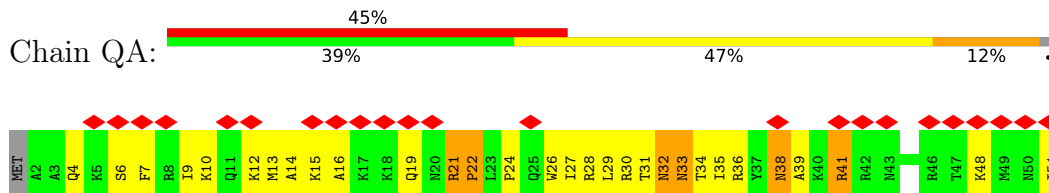
- Molecule 41: eL37 (yeast L37)



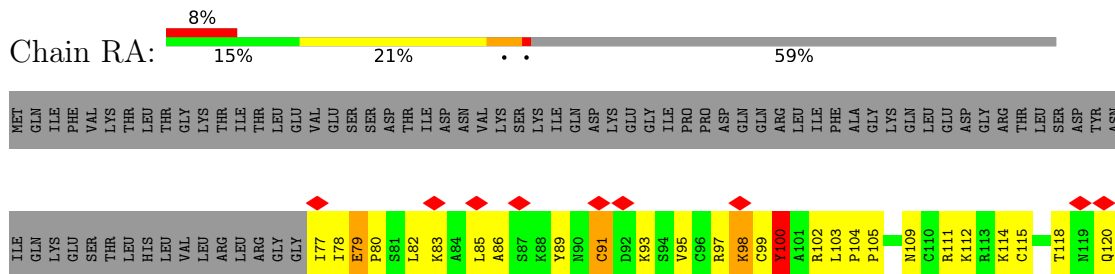
• Molecule 42: eL38 (yeast L38)



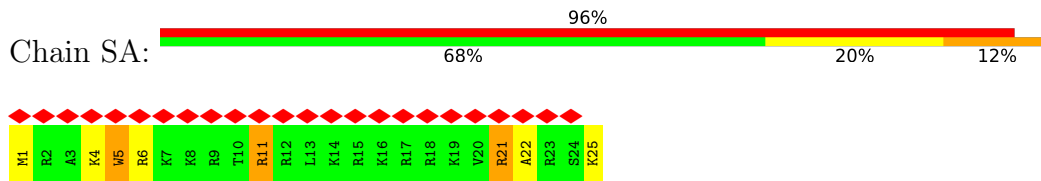
• Molecule 43: eL39 (yeast L39)



• Molecule 44: eL40 (yeast L40)

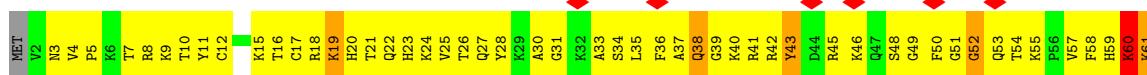


• Molecule 45: eL41 (yeast L41)

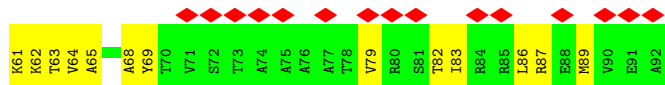
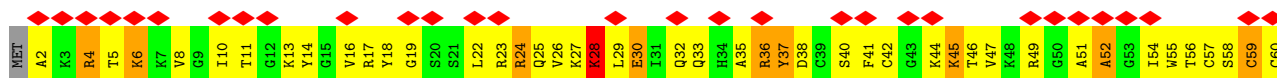


• Molecule 46: eL42 (yeast L42)

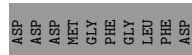
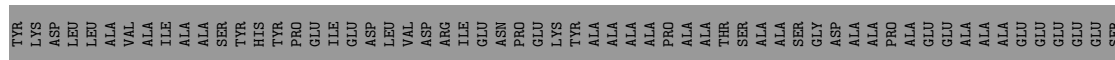
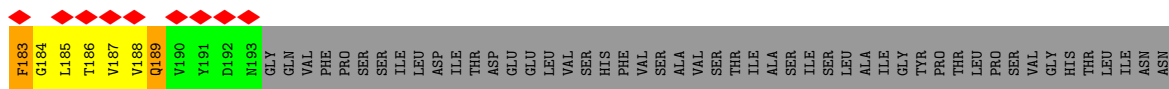
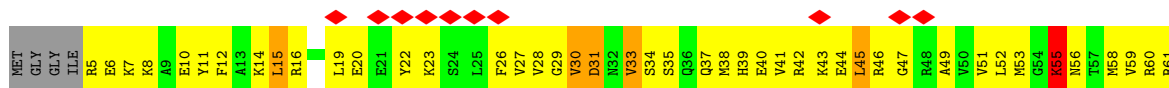
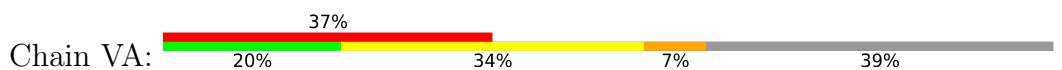




• Molecule 47: eL43 (yeast L43)

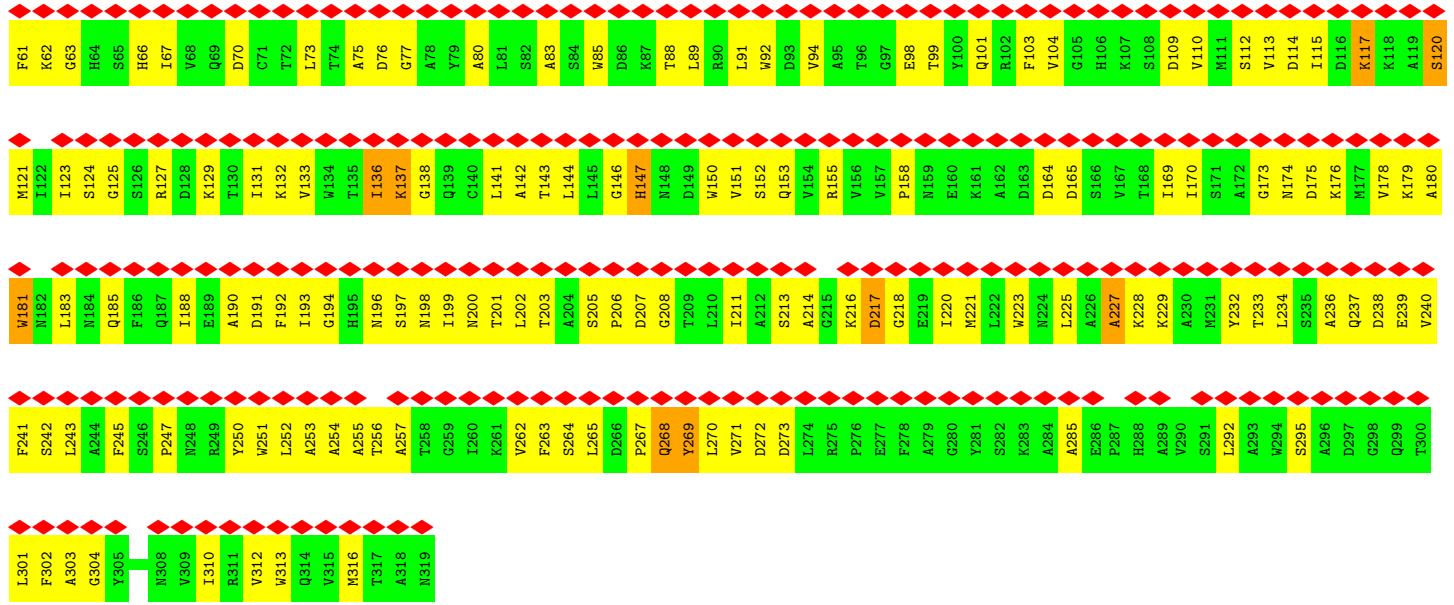


• Molecule 48: uL10 (yeast P0)

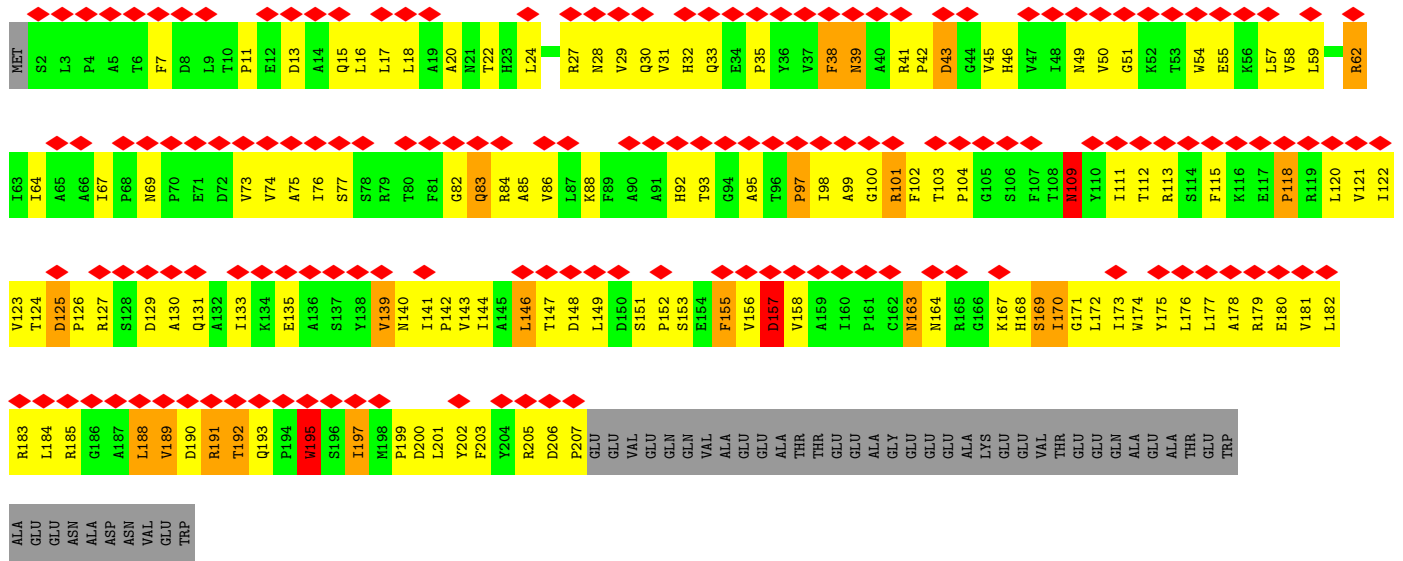


• Molecule 49: RACK1 (yeast Asc1)

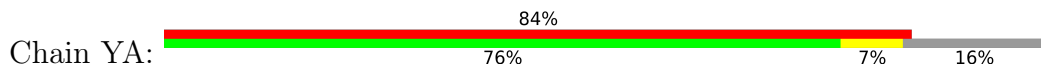


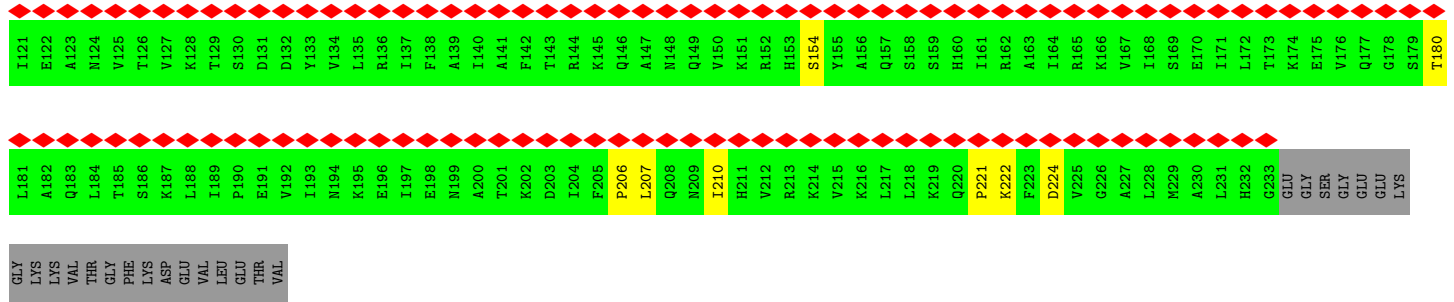


• Molecule 50: uS2 (yeast S0)

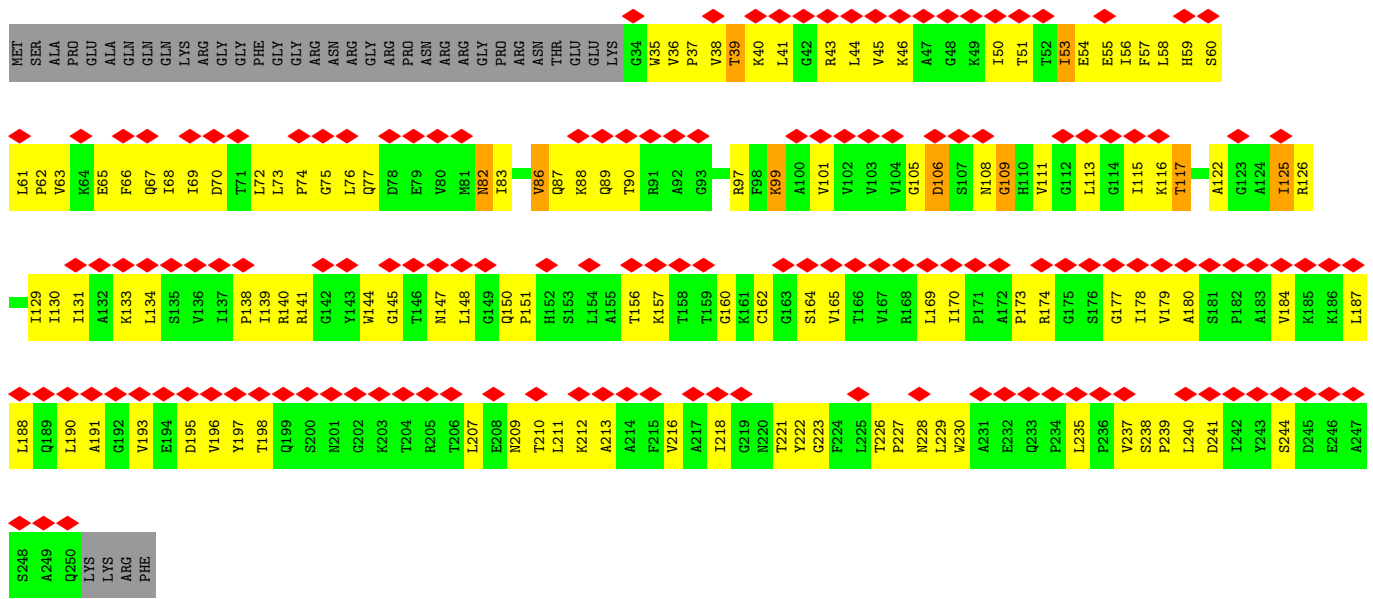


• Molecule 51: eS1 (yeast S1)

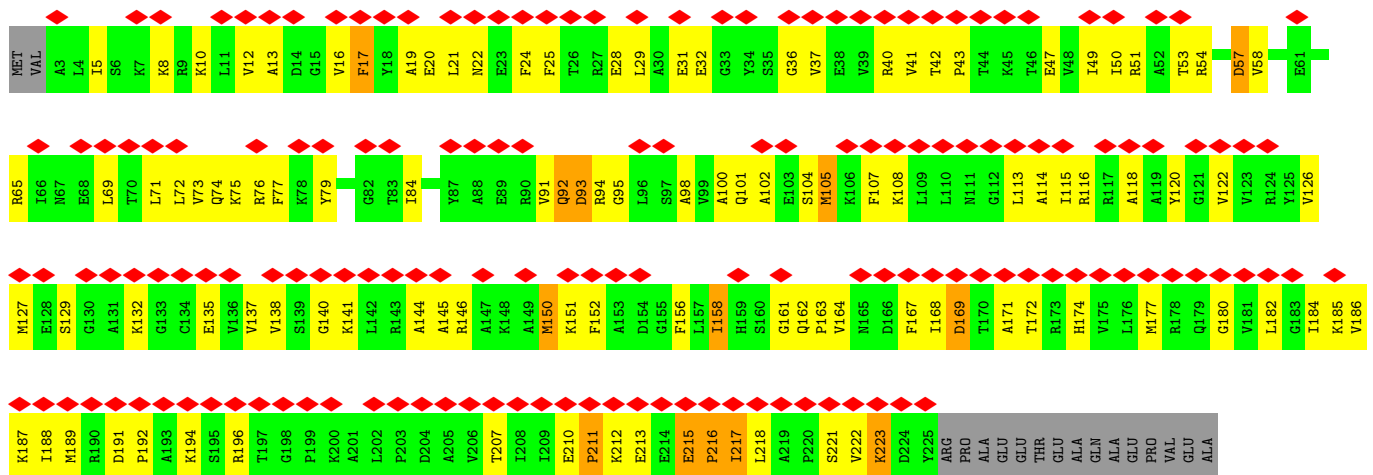




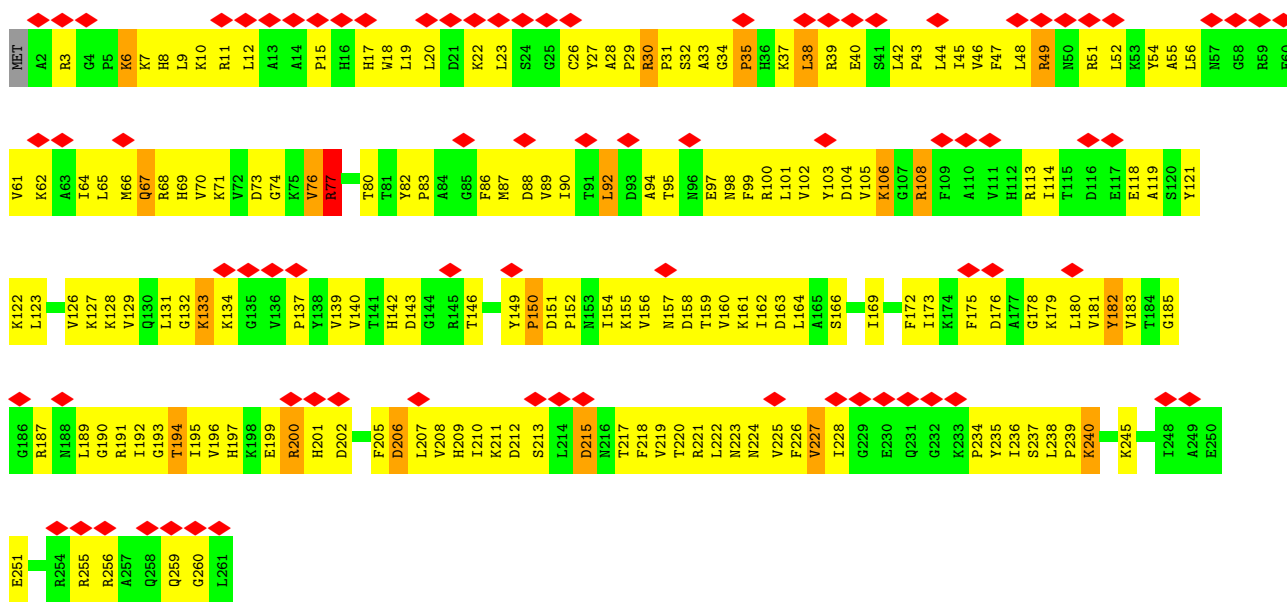
• Molecule 52: uS5 (yeast S2)



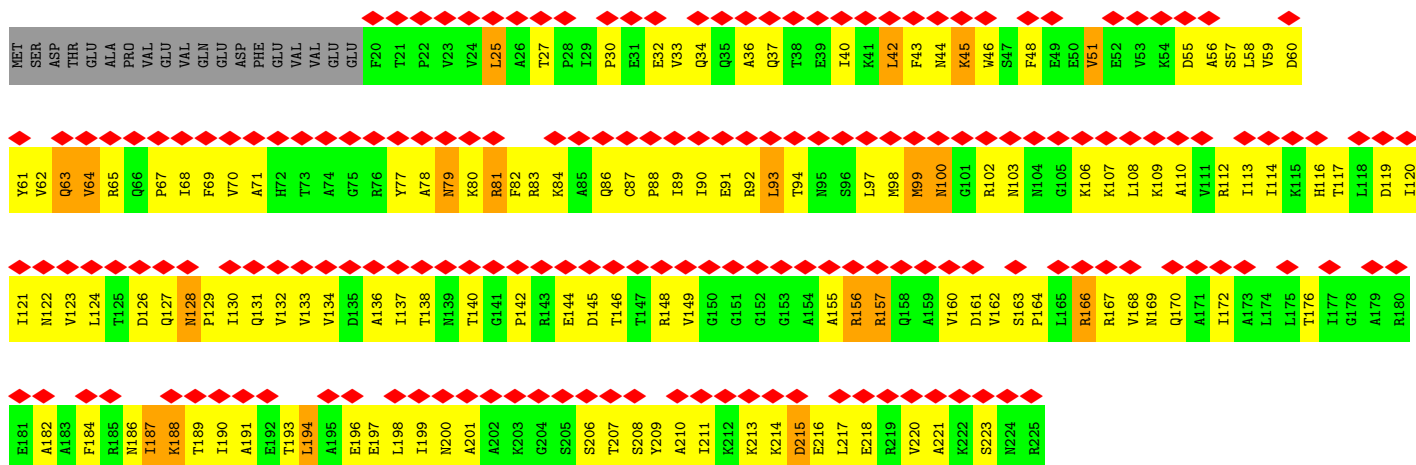
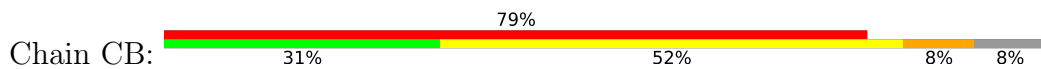
• Molecule 53: uS3 (yeast S3)



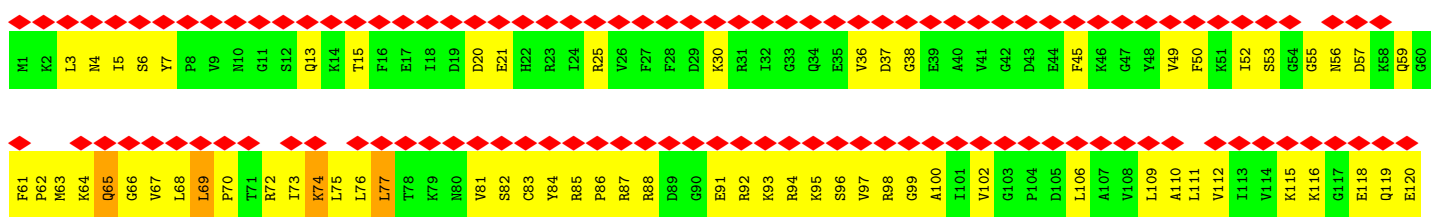
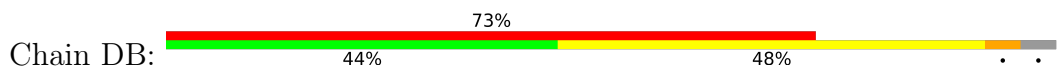
• Molecule 54: eS4 (yeast S4)

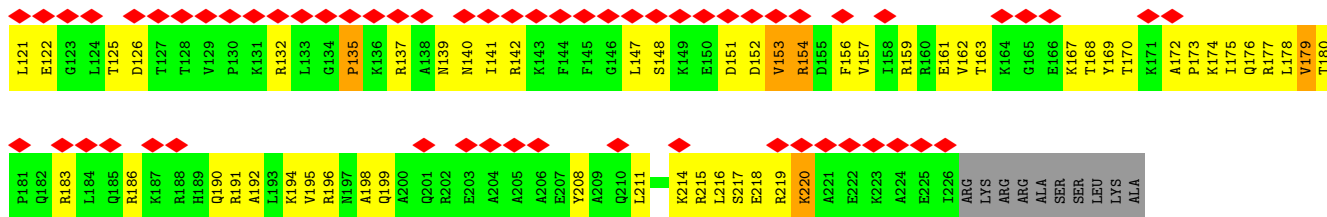


• Molecule 55: uS7 (yeast S5)

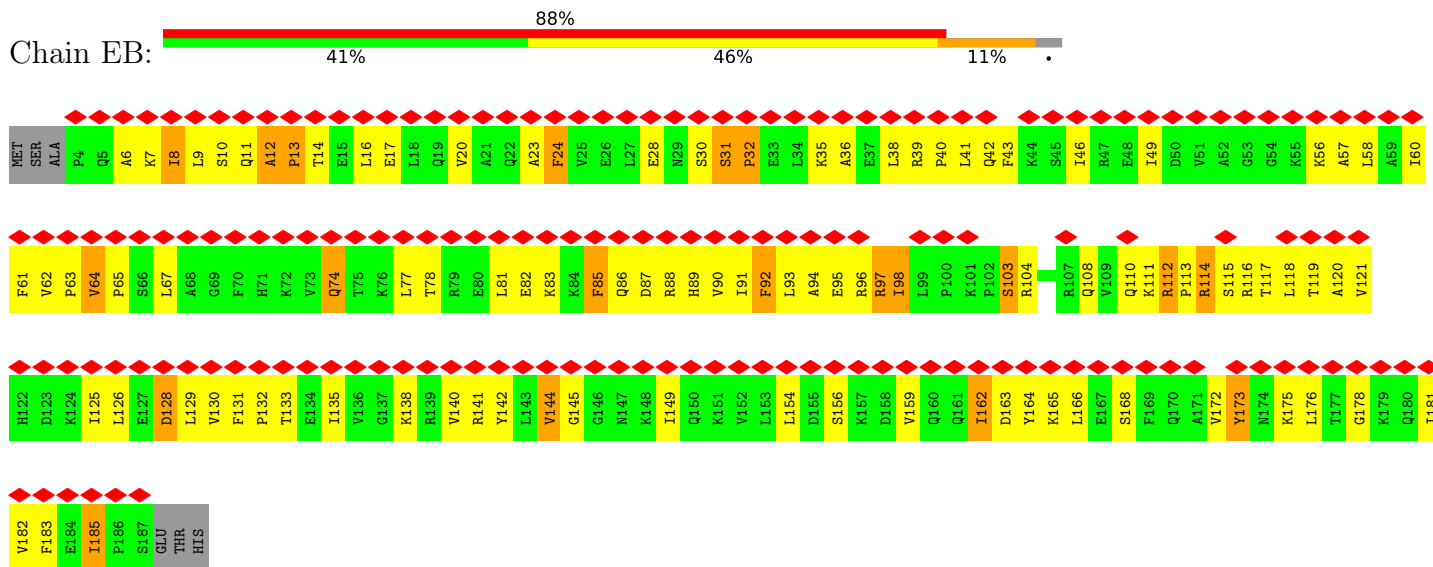


• Molecule 56: eS6 (yeast S6)

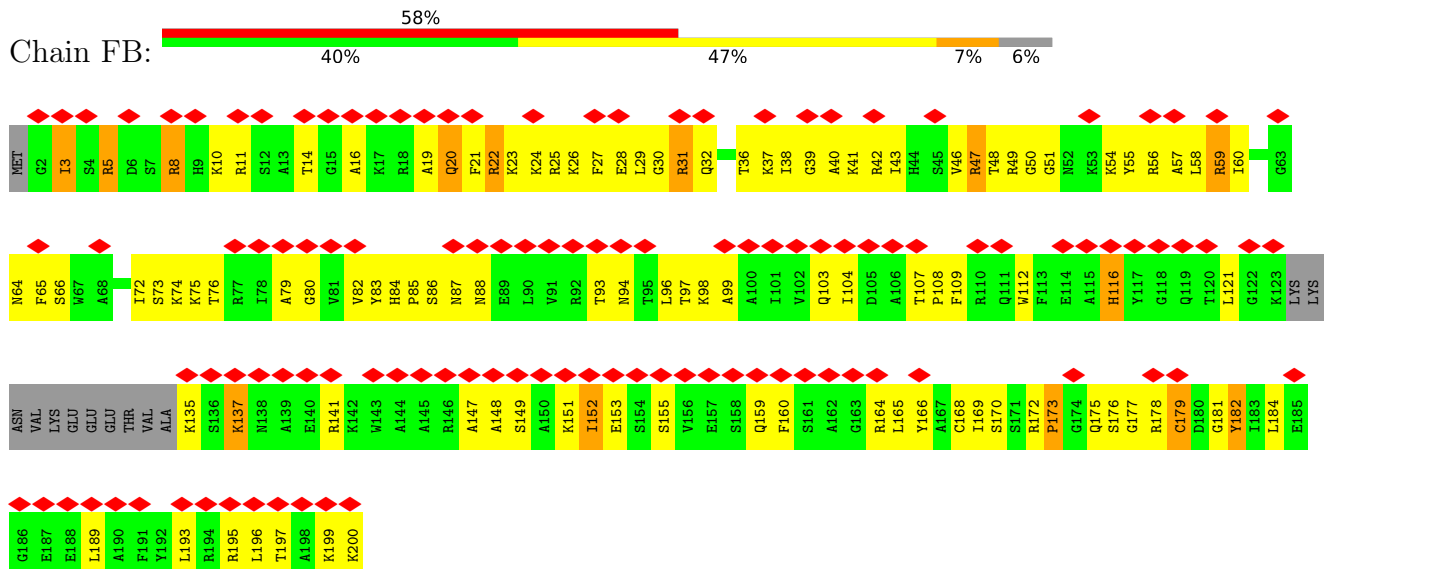




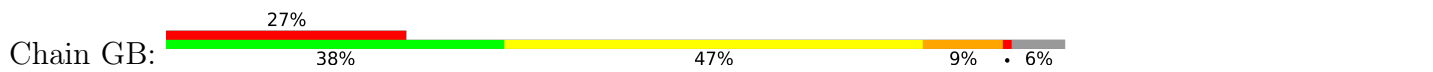
• Molecule 57: eS7 (yeast S7)

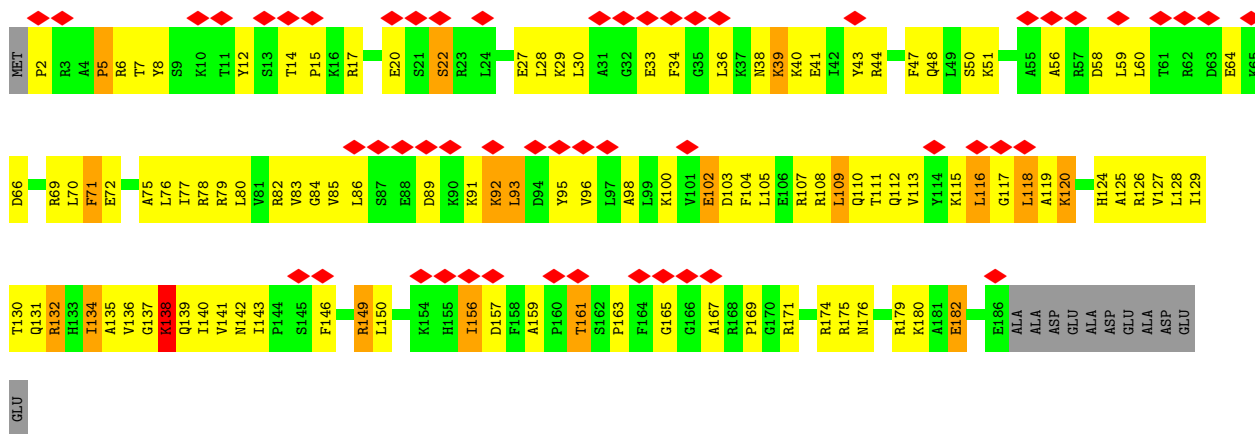


• Molecule 58: eS8 (yeast S8)

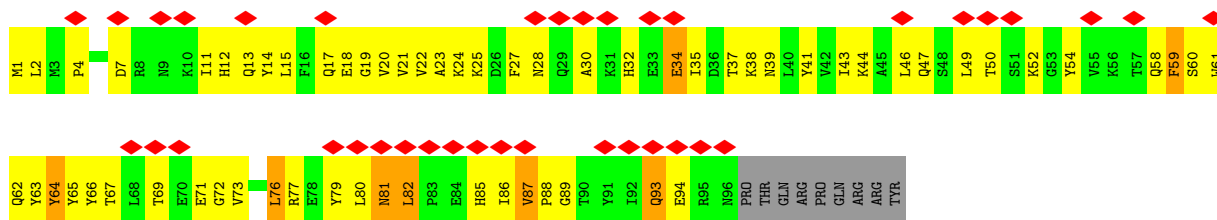


• Molecule 59: uS4 (yeast S9)

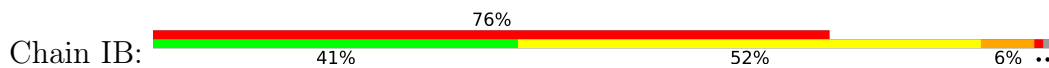




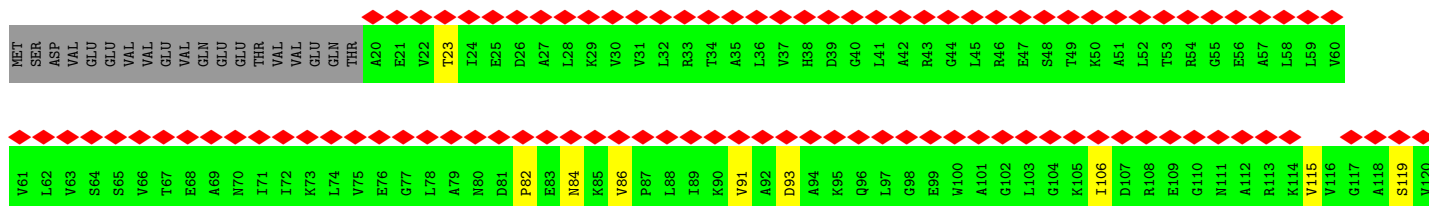
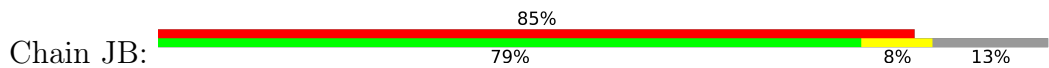
• Molecule 60: eS10 (yeast S10)



• Molecule 61: uS17 (yeast S11)

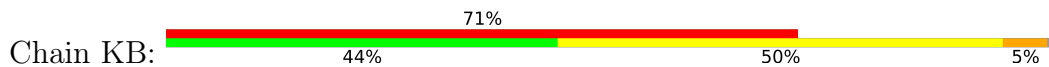


• Molecule 62: eS12 (yeast S12)

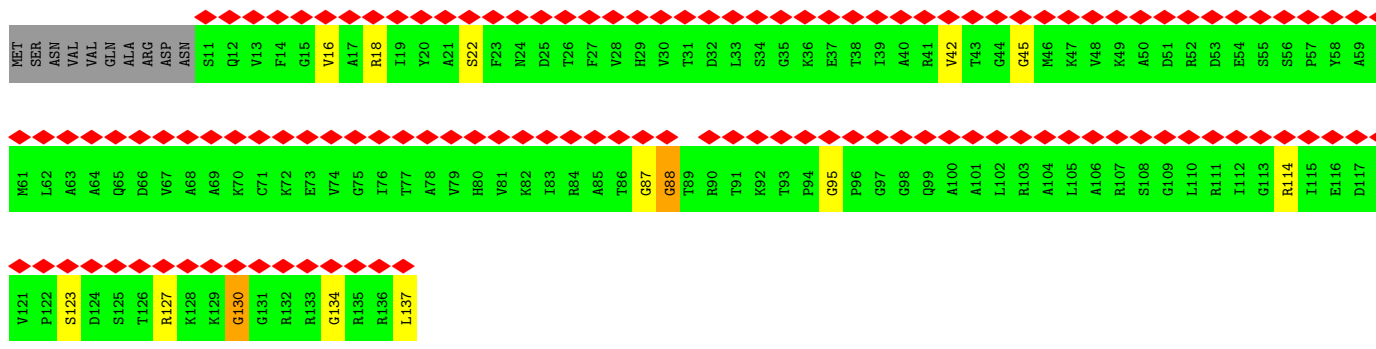
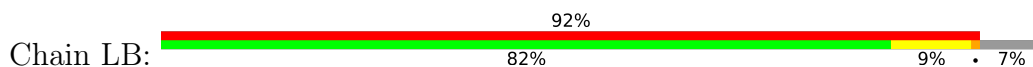




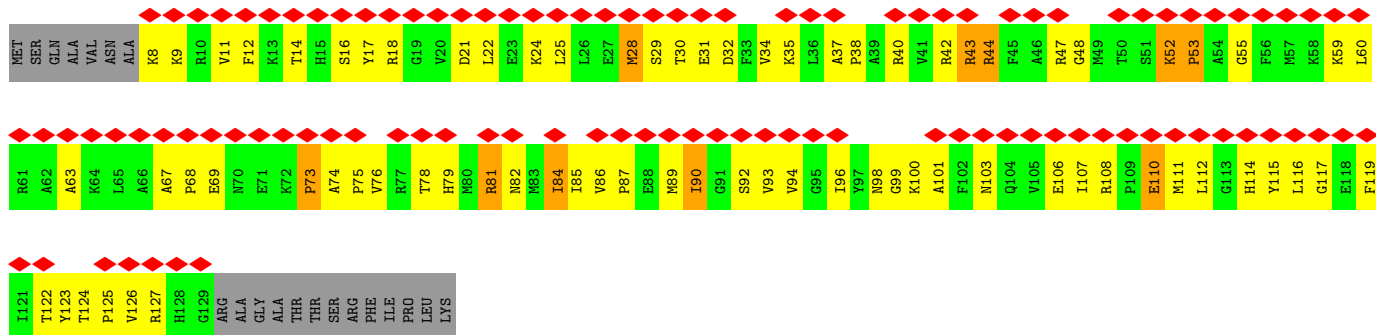
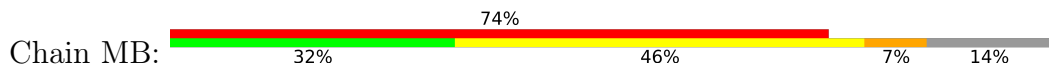
• Molecule 63: uS15 (yeast S13)



• Molecule 64: uS11 (yeast S14)



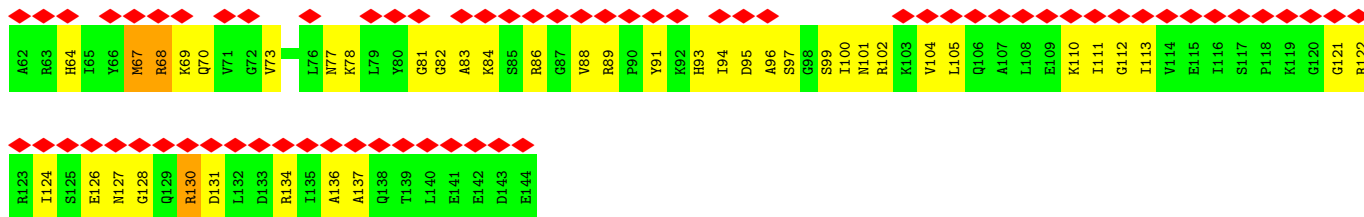
• Molecule 65: uS19 (yeast S15)



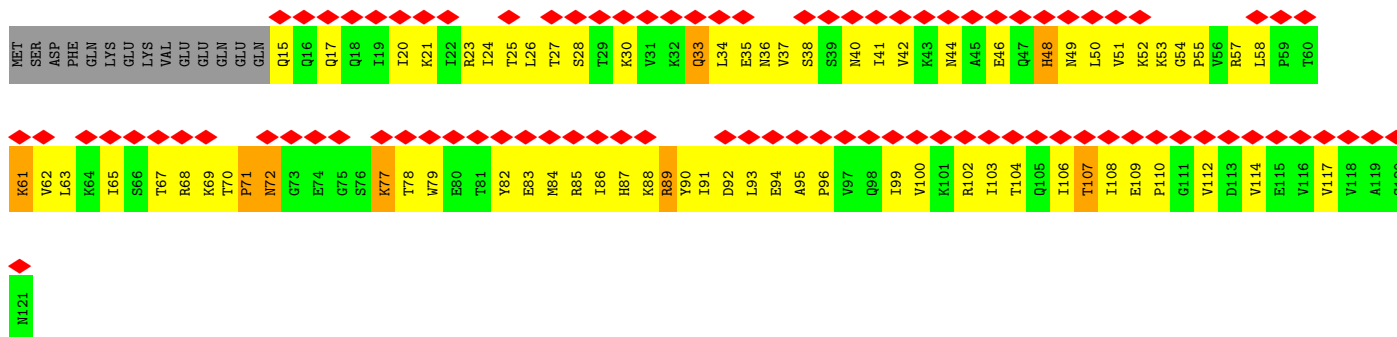
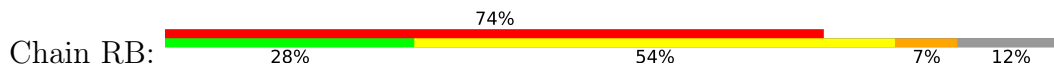
• Molecule 66: uS9 (yeast S16)



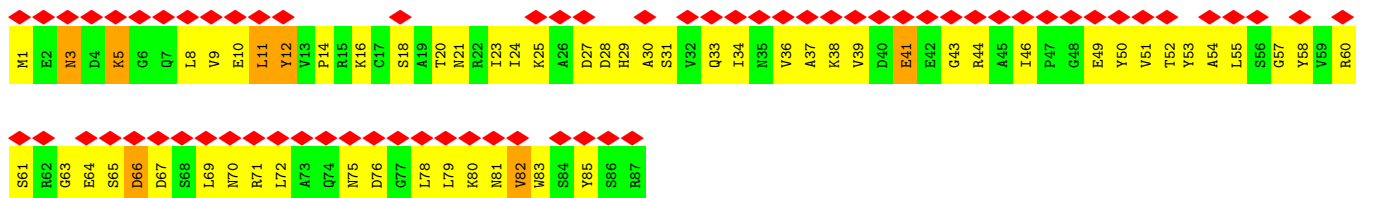
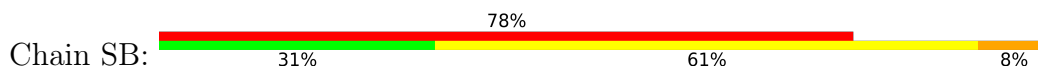




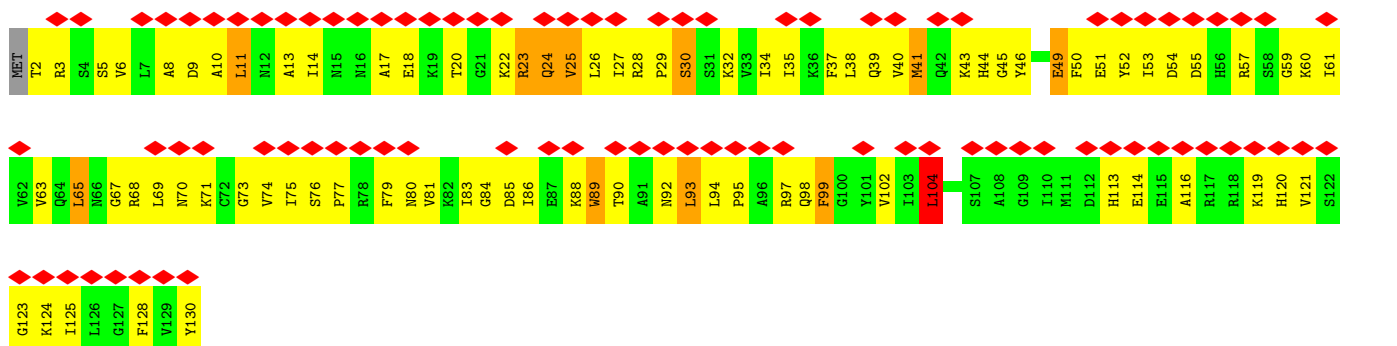
• Molecule 70: uS10 (yeast S20)



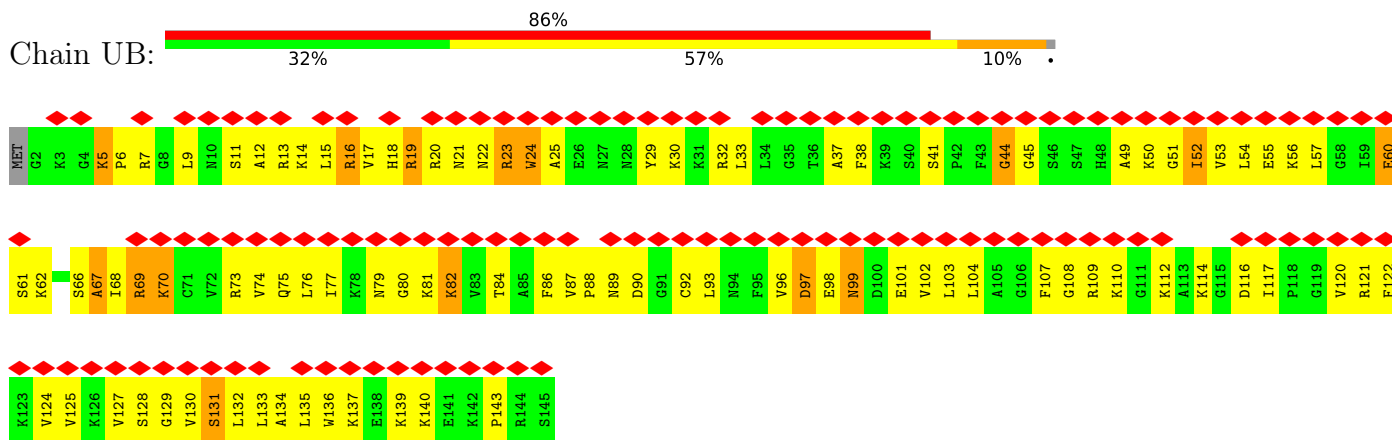
• Molecule 71: eS21 (yeast S21)



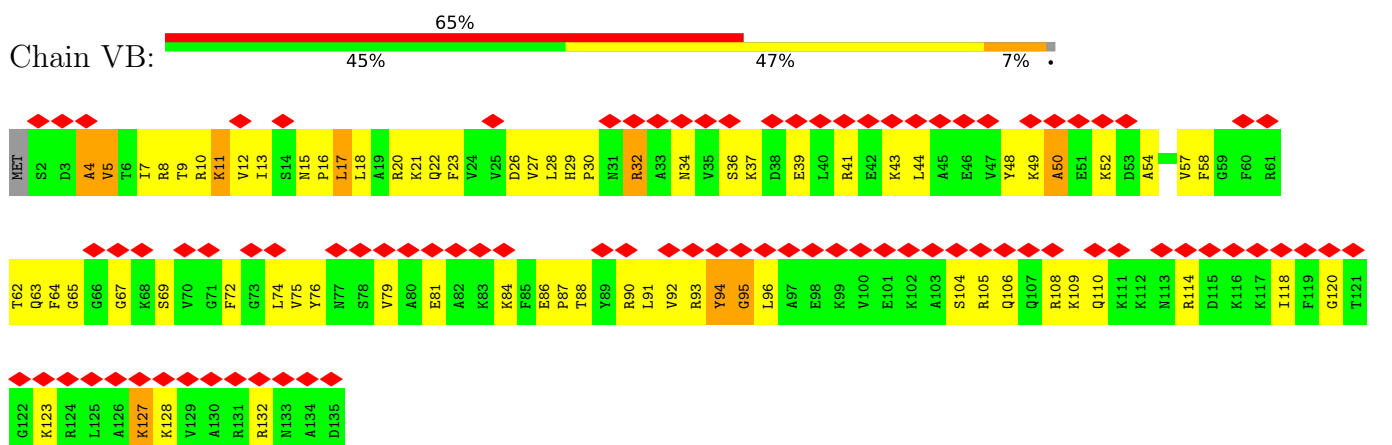
• Molecule 72: uS8 (yeast S22)



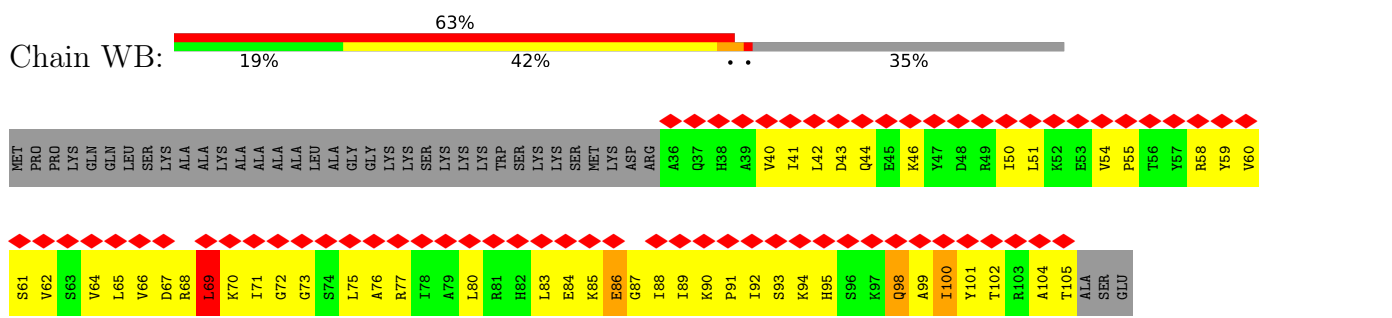
• Molecule 73: uS12 (yeast S23)



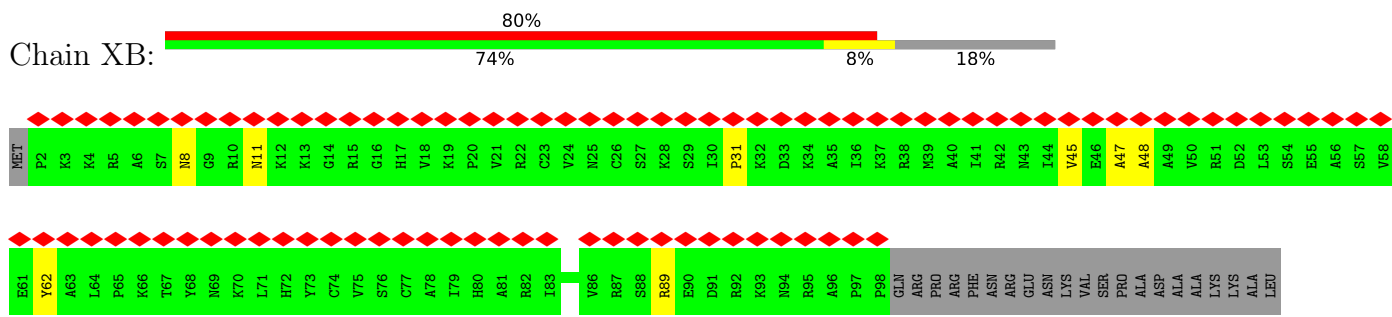
• Molecule 74: eS24 (yeast S24)



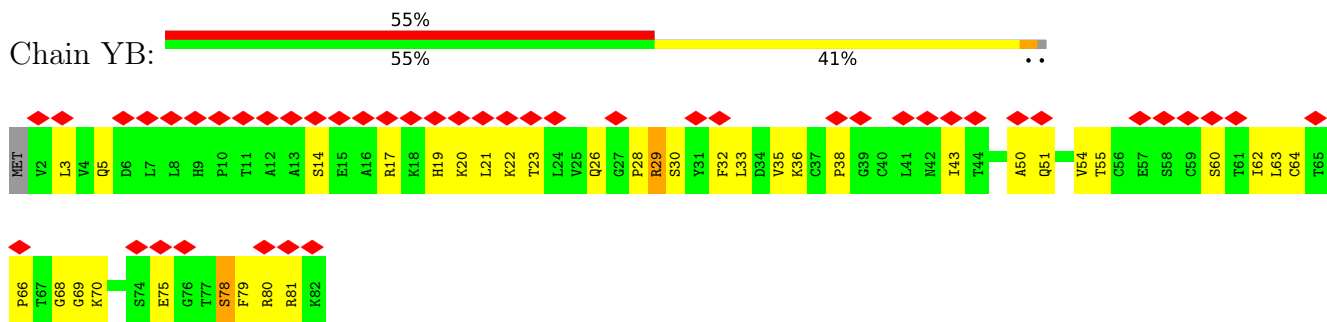
• Molecule 75: eS25 (yeast S25)



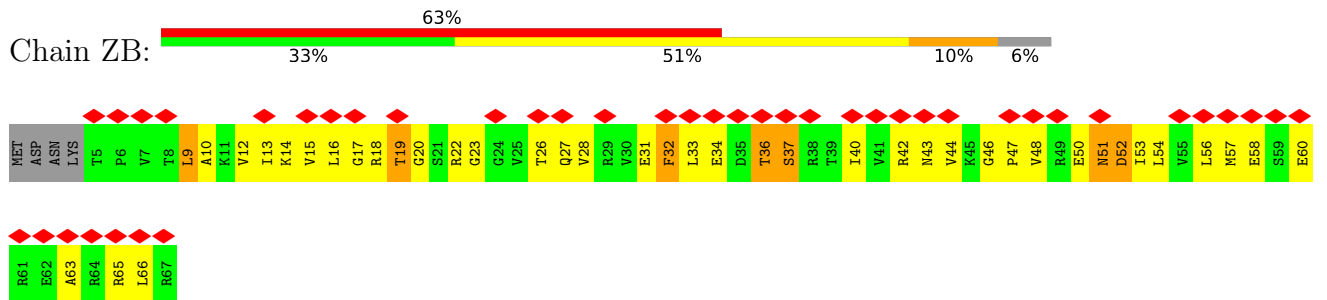
• Molecule 76: eS26 (yeast S26)



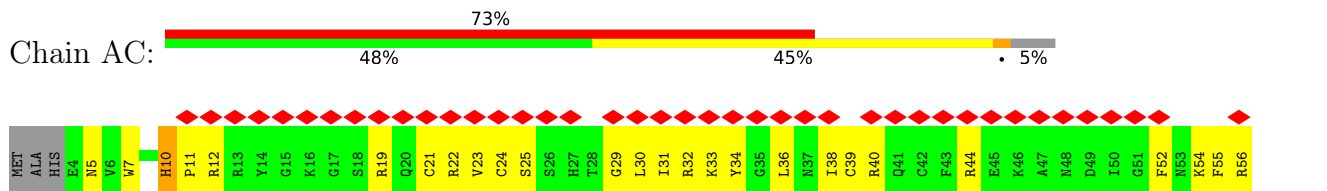
• Molecule 77: eS27 (yeast S27)



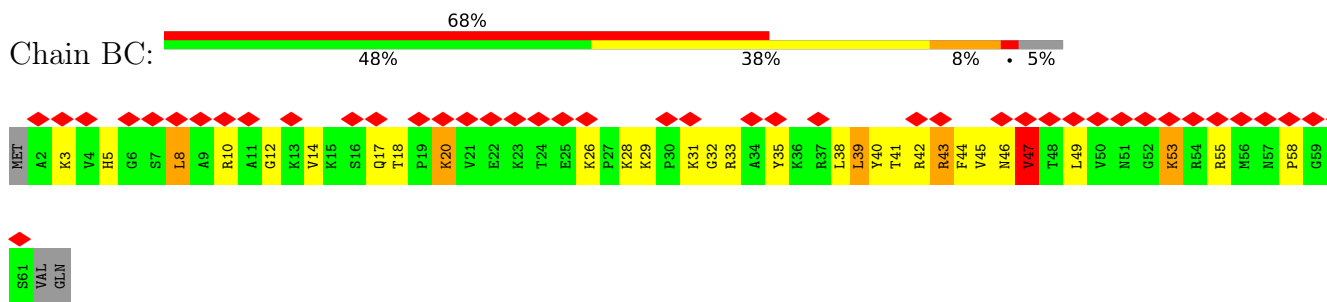
• Molecule 78: eS28 (yeast S28)



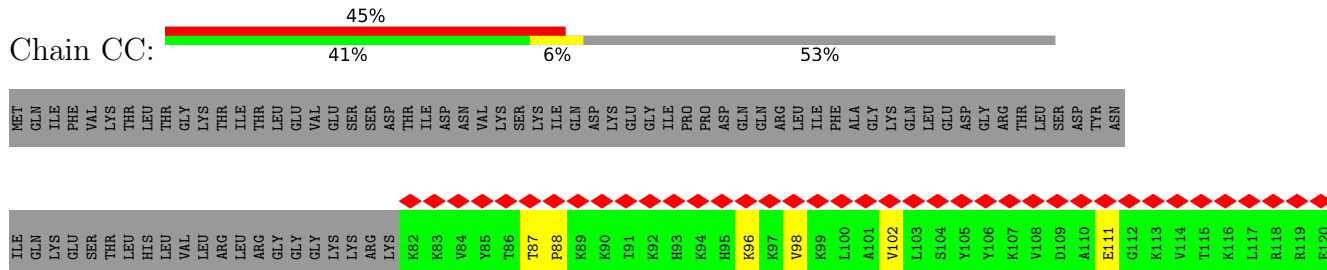
• Molecule 79: uS14 (yeast S29)

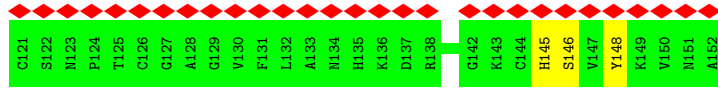


• Molecule 80: eS30 (yeast S30)

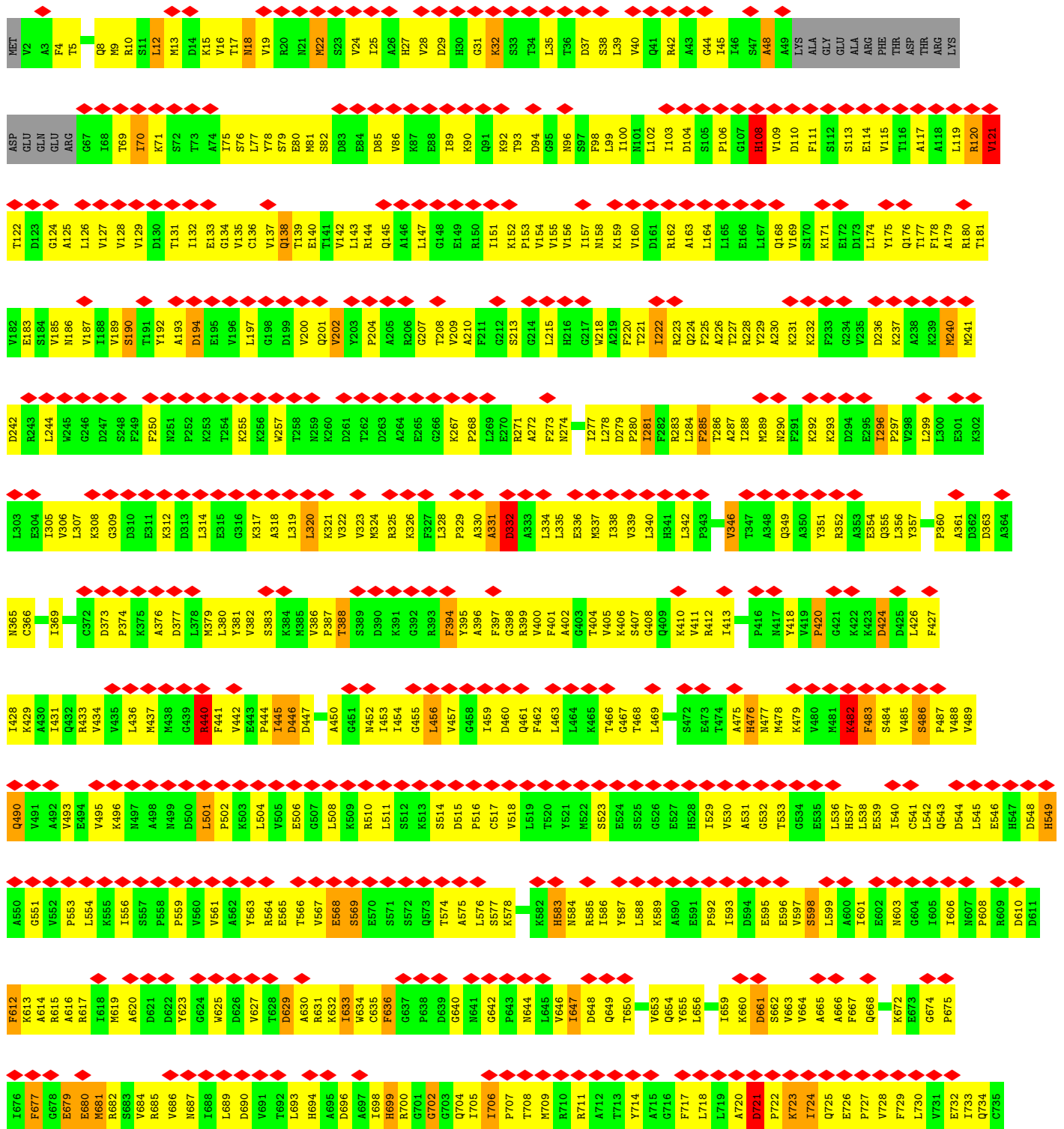


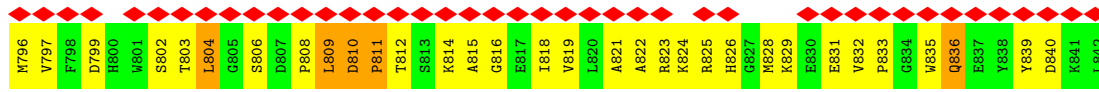
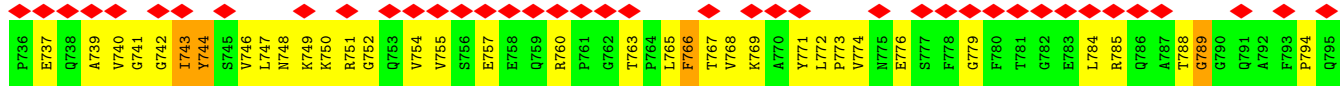
• Molecule 81: eS31 (yeast S31)



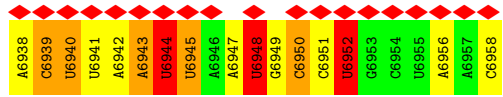
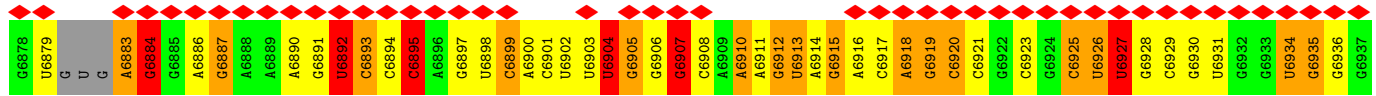
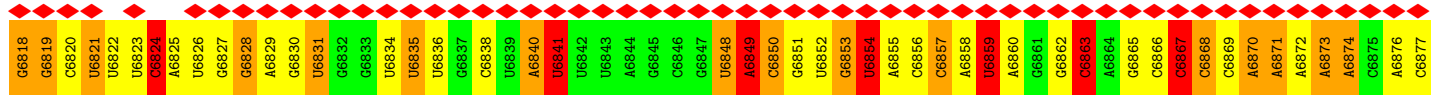
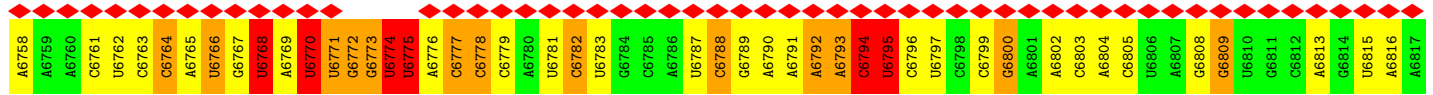
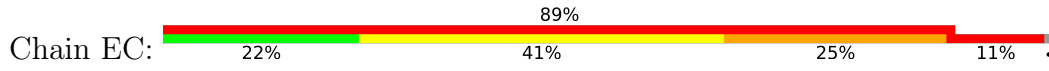


• Molecule 82: yeast eEF2





• Molecule 83: IRES



## 4 Experimental information

| Property                             | Value                                   | Source    |
|--------------------------------------|---|-----------|
| EM reconstruction method             | SINGLE PARTICLE                         | Depositor |
| Imposed symmetry                     | POINT, Not provided                     |           |
| Number of particles used             | 38054                                   | 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 ( $e^-/\text{\AA}^2$ ) | 1.4                                     | Depositor |
| Minimum defocus (nm)                 | Not provided                            |           |
| Maximum defocus (nm)                 | Not provided                            |           |
| Magnification                        | Not provided                            |           |
| Image detector                       | GATAN K2 SUMMIT (4k x 4k)               | Depositor |
| Maximum map value                    | 0.055                                   | Depositor |
| Minimum map value                    | -0.025                                  | Depositor |
| Average map value                    | -0.002                                  | Depositor |
| Map value standard deviation         | 0.004                                   | Depositor |
| Recommended contour level            | 0.015                                   | Depositor |
| Map size (Å)                         | 419.84, 419.84, 419.84                  | wwPDB     |
| Map dimensions                       | 512, 512, 512                           | wwPDB     |
| Map angles (°)                       | 90.0, 90.0, 90.0                        | wwPDB     |
| Pixel spacing (Å)                    | 0.82, 0.82, 0.82                        | Depositor |

## 5 Model quality i

### 5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: MG, GDP, SO1, DDE

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   | A     | 1.15         | 8/41014 (0.0%)   | 0.77        | 15/63809 (0.0%)  |
| 2   | B     | 1.62         | 229/78631 (0.3%) | 0.82        | 50/122552 (0.0%) |
| 3   | C     | 1.60         | 10/3747 (0.3%)   | 0.79        | 0/5832           |
| 4   | D     | 1.44         | 6/2884 (0.2%)    | 0.77        | 2/4491 (0.0%)    |
| 5   | E     | 1.93         | 0/1377           | 0.71        | 0/1844           |
| 6   | F     | 1.35         | 0/1952           | 0.67        | 2/2622 (0.1%)    |
| 7   | G     | 1.35         | 0/3153           | 0.65        | 0/4239           |
| 8   | H     | 1.45         | 0/2802           | 0.70        | 0/3792           |
| 9   | I     | 1.15         | 0/2426           | 0.60        | 0/3271           |
| 10  | J     | 1.34         | 0/1425           | 0.66        | 0/1912           |
| 11  | K     | 1.49         | 1/1822 (0.1%)    | 0.68        | 0/2451           |
| 12  | L     | 1.15         | 0/1850           | 0.65        | 0/2495           |
| 13  | M     | 1.27         | 0/1540           | 0.65        | 0/2073           |
| 14  | N     | 1.32         | 0/1754           | 0.65        | 1/2350 (0.0%)    |
| 15  | O     | 1.03         | 0/1375           | 0.57        | 0/1842           |
| 16  | P     | 1.82         | 0/728            | 0.73        | 0/975            |
| 17  | Q     | 1.32         | 0/1568           | 0.68        | 0/2106           |
| 18  | R     | 1.40         | 1/1069 (0.1%)    | 0.67        | 0/1438           |
| 19  | S     | 1.43         | 0/1758           | 0.70        | 0/2354           |
| 20  | T     | 1.45         | 0/1586           | 0.67        | 0/2128           |
| 21  | U     | 1.46         | 0/1466           | 0.70        | 1/1968 (0.1%)    |
| 22  | V     | 1.43         | 0/1466           | 0.70        | 0/1965           |
| 23  | W     | 1.13         | 0/1539           | 0.65        | 0/2050           |
| 24  | X     | 1.54         | 0/1482           | 0.67        | 0/1990           |
| 25  | Y     | 1.47         | 0/1301           | 0.64        | 1/1743 (0.1%)    |
| 26  | Z     | 0.99         | 0/812            | 0.54        | 0/1099           |
| 27  | AA    | 1.37         | 0/1019           | 0.66        | 1/1369 (0.1%)    |
| 28  | BA    | 1.50         | 0/521            | 0.66        | 0/691            |
| 29  | CA    | 1.33         | 0/984            | 0.65        | 0/1325           |
| 30  | DA    | 1.34         | 0/1005           | 0.73        | 3/1341 (0.2%)    |
| 31  | EA    | 1.06         | 0/1119           | 0.54        | 0/1497           |
| 32  | FA    | 1.41         | 0/1205           | 0.67        | 0/1612           |

| Mol | Chain | Bond lengths |              | Bond angles |               |
|-----|-------|--------------|--------------|-------------|---------------|
|     |       | RMSZ         | # Z  >5      | RMSZ        | # Z  >5       |
| 33  | GA    | 1.28         | 0/474        | 0.68        | 0/629         |
| 34  | HA    | 1.02         | 0/751        | 0.60        | 0/1008        |
| 35  | IA    | 1.23         | 0/904        | 0.63        | 0/1213        |
| 36  | JA    | 1.47         | 0/1041       | 0.67        | 1/1394 (0.1%) |
| 37  | KA    | 1.56         | 0/869        | 0.70        | 0/1168        |
| 38  | LA    | 1.22         | 0/891        | 0.65        | 0/1191        |
| 39  | MA    | 1.22         | 0/979        | 0.64        | 0/1301        |
| 40  | NA    | 1.17         | 0/779        | 0.63        | 0/1034        |
| 41  | OA    | 1.53         | 0/697        | 0.70        | 1/923 (0.1%)  |
| 42  | PA    | 1.06         | 0/619        | 0.61        | 0/826         |
| 43  | QA    | 1.38         | 0/444        | 0.77        | 0/588         |
| 44  | RA    | 1.31         | 0/424        | 0.66        | 0/562         |
| 45  | SA    | 1.57         | 0/235        | 0.71        | 0/300         |
| 46  | TA    | 1.30         | 0/861        | 0.70        | 0/1136        |
| 47  | UA    | 1.30         | 0/702        | 0.65        | 0/934         |
| 48  | VA    | 1.78         | 0/1498       | 0.83        | 3/2025 (0.1%) |
| 49  | WA    | 0.92         | 0/2498       | 0.56        | 0/3398        |
| 50  | XA    | 0.78         | 0/1653       | 0.58        | 0/2261        |
| 51  | YA    | 1.13         | 0/855        | 0.51        | 0/1067        |
| 52  | ZA    | 0.91         | 0/1665       | 0.59        | 0/2263        |
| 53  | AB    | 0.97         | 0/1759       | 0.56        | 0/2368        |
| 54  | BB    | 0.89         | 0/2110       | 0.59        | 0/2839        |
| 55  | CB    | 0.85         | 0/1630       | 0.56        | 0/2202        |
| 56  | DB    | 0.89         | 0/1844       | 0.57        | 0/2464        |
| 57  | EB    | 0.92         | 0/1506       | 0.58        | 0/2028        |
| 58  | FB    | 1.07         | 0/1515       | 0.61        | 0/2021        |
| 59  | GB    | 0.84         | 0/1519       | 0.59        | 0/2035        |
| 60  | HB    | 1.03         | 0/837        | 0.57        | 0/1131        |
| 61  | IB    | 1.16         | 0/1273       | 0.62        | 0/1712        |
| 62  | JB    | 1.06         | 0/495        | 0.56        | 0/617         |
| 63  | KB    | 1.01         | 0/1216       | 0.59        | 0/1638        |
| 64  | LB    | 1.02         | 0/507        | 0.53        | 0/632         |
| 65  | MB    | 1.03         | 0/996        | 0.60        | 0/1335        |
| 66  | NB    | 0.94         | 0/1126       | 0.55        | 0/1510        |
| 67  | OB    | 1.04         | 2/844 (0.2%) | 0.90        | 4/1120 (0.4%) |
| 68  | PB    | 0.93         | 0/1212       | 0.59        | 2/1628 (0.1%) |
| 69  | QB    | 0.89         | 0/1131       | 0.58        | 0/1517        |
| 70  | RB    | 0.97         | 0/866        | 0.56        | 0/1169        |
| 71  | SB    | 0.85         | 0/694        | 0.55        | 0/935         |
| 72  | TB    | 0.95         | 0/1039       | 0.62        | 2/1395 (0.1%) |
| 73  | UB    | 1.12         | 0/1140       | 0.62        | 0/1518        |
| 74  | VB    | 0.89         | 0/1088       | 0.54        | 0/1449        |
| 75  | WB    | 0.87         | 0/571        | 0.57        | 0/768         |



| Mol | Chain | Bond lengths |                   | Bond angles |                   |
|-----|-------|--------------|-------------------|-------------|-------------------|
|     |       | RMSZ         | # Z  >5           | RMSZ        | # Z  >5           |
| 76  | XB    | 1.09         | 0/387             | 0.62        | 0/482             |
| 77  | YB    | 0.87         | 0/621             | 0.55        | 0/838             |
| 78  | ZB    | 0.85         | 0/500             | 0.56        | 0/670             |
| 79  | AC    | 1.09         | 0/454             | 0.57        | 0/602             |
| 80  | BC    | 0.96         | 0/483             | 0.59        | 0/643             |
| 81  | CC    | 0.97         | 0/283             | 0.59        | 0/352             |
| 82  | DC    | 1.63         | 0/6521            | 0.69        | 1/8830 (0.0%)     |
| 83  | EC    | 2.33         | 88/4608 (1.9%)    | 0.94        | 11/7166 (0.2%)    |
| All | All   | 1.41         | 345/227994 (0.2%) | 0.75        | 101/334061 (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   | A     | 0                   | 14                  |
| 2   | B     | 0                   | 72                  |
| 3   | C     | 0                   | 6                   |
| 4   | D     | 0                   | 2                   |
| 50  | XA    | 0                   | 1                   |
| 83  | EC    | 0                   | 5                   |
| All | All   | 0                   | 100                 |

The worst 5 of 345 bond length outliers are listed below:

| Mol | Chain | Res  | Type | Atoms | Z      | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|--------|-------------|----------|
| 1   | A     | 627  | C    | O3'-P | -14.02 | 1.44        | 1.61     |
| 2   | B     | 1285 | G    | O3'-P | -9.98  | 1.49        | 1.61     |
| 2   | B     | 3318 | G    | O3'-P | 8.71   | 1.71        | 1.61     |
| 2   | B     | 493  | G    | P-OP2 | -8.52  | 1.34        | 1.49     |
| 67  | OB    | 91   | LEU  | C-O   | 8.41   | 1.39        | 1.23     |

The worst 5 of 101 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms     | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|--------|-------------|----------|
| 2   | B     | 493 | G    | O5'-P-OP1 | -40.69 | 61.87       | 110.70   |
| 2   | B     | 493 | G    | O5'-P-OP2 | 19.84  | 134.51      | 110.70   |
| 2   | B     | 487 | U    | P-O3'-C3' | 16.13  | 139.06      | 119.70   |
| 1   | A     | 627 | C    | O3'-P-O5' | 9.79   | 122.59      | 104.00   |
| 67  | OB    | 93  | LEU  | C-N-CA    | -8.61  | 100.19      | 121.70   |

There are no chirality outliers.

5 of 100 planarity outliers are listed below:

| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 1   | A     | 313 | U    | Sidechain |
| 1   | A     | 324 | U    | Sidechain |
| 1   | A     | 447 | U    | Sidechain |
| 1   | A     | 53  | G    | Sidechain |
| 1   | A     | 568 | G    | Sidechain |

## 5.2 Too-close contacts

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | A     | 36760 | 0        | 18348    | 1356    | 0            |
| 2   | B     | 70288 | 0        | 35262    | 3569    | 0            |
| 3   | C     | 3354  | 0        | 1695     | 188     | 0            |
| 4   | D     | 2580  | 0        | 1304     | 125     | 0            |
| 5   | E     | 1359  | 0        | 1425     | 98      | 0            |
| 6   | F     | 1918  | 0        | 1987     | 258     | 0            |
| 7   | G     | 3082  | 0        | 3165     | 358     | 0            |
| 8   | H     | 2750  | 0        | 2863     | 326     | 0            |
| 9   | I     | 2376  | 0        | 2325     | 219     | 0            |
| 10  | J     | 1401  | 0        | 1501     | 144     | 0            |
| 11  | K     | 1785  | 0        | 1862     | 193     | 0            |
| 12  | L     | 1818  | 0        | 1908     | 192     | 0            |
| 13  | M     | 1519  | 0        | 1587     | 156     | 0            |
| 14  | N     | 1718  | 0        | 1754     | 166     | 0            |
| 15  | O     | 1354  | 0        | 1383     | 86      | 0            |
| 16  | P     | 723   | 0        | 774      | 98      | 0            |
| 17  | Q     | 1543  | 0        | 1608     | 208     | 0            |
| 18  | R     | 1054  | 0        | 1149     | 157     | 0            |
| 19  | S     | 1721  | 0        | 1779     | 241     | 0            |
| 20  | T     | 1556  | 0        | 1659     | 203     | 0            |
| 21  | U     | 1443  | 0        | 1485     | 146     | 0            |
| 22  | V     | 1442  | 0        | 1543     | 197     | 0            |
| 23  | W     | 1522  | 0        | 1617     | 117     | 0            |
| 24  | X     | 1446  | 0        | 1487     | 196     | 0            |
| 25  | Y     | 1277  | 0        | 1323     | 148     | 0            |
| 26  | Z     | 796   | 0        | 812      | 45      | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 27  | AA    | 1004  | 0        | 1048     | 93      | 0            |
| 28  | BA    | 509   | 0        | 537      | 68      | 0            |
| 29  | CA    | 969   | 0        | 1036     | 71      | 0            |
| 30  | DA    | 994   | 0        | 1081     | 114     | 0            |
| 31  | EA    | 1093  | 0        | 1155     | 116     | 0            |
| 32  | FA    | 1174  | 0        | 1215     | 163     | 0            |
| 33  | GA    | 463   | 0        | 491      | 45      | 0            |
| 34  | HA    | 743   | 0        | 797      | 88      | 0            |
| 35  | IA    | 890   | 0        | 938      | 78      | 0            |
| 36  | JA    | 1020  | 0        | 1090     | 117     | 0            |
| 37  | KA    | 851   | 0        | 880      | 95      | 0            |
| 38  | LA    | 881   | 0        | 949      | 103     | 0            |
| 39  | MA    | 970   | 0        | 1078     | 112     | 0            |
| 40  | NA    | 772   | 0        | 849      | 83      | 0            |
| 41  | OA    | 682   | 0        | 687      | 96      | 0            |
| 42  | PA    | 613   | 0        | 682      | 20      | 0            |
| 43  | QA    | 437   | 0        | 475      | 46      | 0            |
| 44  | RA    | 418   | 0        | 459      | 48      | 0            |
| 45  | SA    | 234   | 0        | 284      | 16      | 0            |
| 46  | TA    | 848   | 0        | 918      | 110     | 0            |
| 47  | UA    | 695   | 0        | 738      | 72      | 0            |
| 48  | VA    | 1473  | 0        | 1514     | 177     | 0            |
| 49  | WA    | 2445  | 0        | 2401     | 155     | 0            |
| 50  | XA    | 1612  | 0        | 1623     | 146     | 0            |
| 51  | YA    | 856   | 0        | 226      | 2       | 0            |
| 52  | ZA    | 1635  | 0        | 1723     | 137     | 0            |
| 53  | AB    | 1734  | 0        | 1817     | 122     | 0            |
| 54  | BB    | 2069  | 0        | 2154     | 223     | 0            |
| 55  | CB    | 1610  | 0        | 1675     | 162     | 0            |
| 56  | DB    | 1820  | 0        | 1918     | 118     | 0            |
| 57  | EB    | 1481  | 0        | 1572     | 129     | 0            |
| 58  | FB    | 1490  | 0        | 1525     | 152     | 0            |
| 59  | GB    | 1494  | 0        | 1573     | 121     | 0            |
| 60  | HB    | 817   | 0        | 804      | 61      | 0            |
| 61  | IB    | 1245  | 0        | 1314     | 104     | 0            |
| 62  | JB    | 496   | 0        | 141      | 0       | 0            |
| 63  | KB    | 1193  | 0        | 1255     | 99      | 0            |
| 64  | LB    | 508   | 0        | 151      | 4       | 0            |
| 65  | MB    | 975   | 0        | 1017     | 68      | 0            |
| 66  | NB    | 1106  | 0        | 1166     | 121     | 0            |
| 67  | OB    | 836   | 0        | 827      | 84      | 0            |
| 68  | PB    | 1193  | 0        | 1222     | 80      | 0            |

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| Mol | Chain | Non-H  | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 69  | QB    | 1113   | 0        | 1124     | 90      | 0            |
| 70  | RB    | 856    | 0        | 917      | 75      | 0            |
| 71  | SB    | 685    | 0        | 672      | 74      | 0            |
| 72  | TB    | 1022   | 0        | 1060     | 107     | 0            |
| 73  | UB    | 1122   | 0        | 1196     | 123     | 0            |
| 74  | VB    | 1074   | 0        | 1132     | 76      | 0            |
| 75  | WB    | 563    | 0        | 603      | 55      | 0            |
| 76  | XB    | 388    | 0        | 96       | 0       | 0            |
| 77  | YB    | 611    | 0        | 633      | 38      | 0            |
| 78  | ZB    | 498    | 0        | 535      | 48      | 0            |
| 79  | AC    | 444    | 0        | 436      | 30      | 0            |
| 80  | BC    | 475    | 0        | 525      | 27      | 0            |
| 81  | CC    | 284    | 0        | 76       | 0       | 0            |
| 82  | DC    | 6419   | 0        | 6493     | 587     | 0            |
| 83  | EC    | 4129   | 0        | 2078     | 97      | 0            |
| 84  | DC    | 28     | 0        | 12       | 2       | 0            |
| 85  | DC    | 1      | 0        | 0        | 0       | 0            |
| 86  | DC    | 35     | 0        | 41       | 2       | 0            |
| All | All   | 212680 | 0        | 156239   | 12389   | 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 34.

The worst 5 of 12389 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) |
|-----------------|-----------------|--------------------------|-------------------|
| 37:KA:67:MET:CE | 37:KA:67:MET:SD | 2.03                     | 1.47              |
| 66:NB:93:HIS:HA | 66:NB:97:VAL:HB | 1.20                     | 1.19              |
| 2:B:1494:U:H4'  | 2:B:1495:U:H5'  | 1.24                     | 1.14              |
| 2:B:2954:U:H4'  | 2:B:2955:U:H5'  | 1.26                     | 1.13              |
| 2:B:1719:G:H4'  | 2:B:1732:U:H4'  | 1.30                     | 1.11              |

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 |     |
|-----|-------|---------------|-----------|----------|----------|-------------|-----|
| 5   | E     | 165/217 (76%) | 129 (78%) | 26 (16%) | 10 (6%)  | 1           | 20  |
| 6   | F     | 250/254 (98%) | 177 (71%) | 56 (22%) | 17 (7%)  | 1           | 18  |
| 7   | G     | 384/387 (99%) | 293 (76%) | 70 (18%) | 21 (6%)  | 2           | 22  |
| 8   | H     | 359/362 (99%) | 259 (72%) | 77 (21%) | 23 (6%)  | 1           | 19  |
| 9   | I     | 294/297 (99%) | 226 (77%) | 49 (17%) | 19 (6%)  | 1           | 19  |
| 10  | J     | 173/176 (98%) | 125 (72%) | 33 (19%) | 15 (9%)  | 1           | 13  |
| 11  | K     | 220/244 (90%) | 165 (75%) | 39 (18%) | 16 (7%)  | 1           | 16  |
| 12  | L     | 231/256 (90%) | 180 (78%) | 38 (16%) | 13 (6%)  | 2           | 21  |
| 13  | M     | 189/191 (99%) | 150 (79%) | 36 (19%) | 3 (2%)   | 9           | 45  |
| 14  | N     | 207/221 (94%) | 169 (82%) | 28 (14%) | 10 (5%)  | 2           | 24  |
| 15  | O     | 167/174 (96%) | 128 (77%) | 31 (19%) | 8 (5%)   | 2           | 24  |
| 16  | P     | 92/165 (56%)  | 62 (67%)  | 20 (22%) | 10 (11%) | 0           | 8   |
| 17  | Q     | 191/199 (96%) | 144 (75%) | 35 (18%) | 12 (6%)  | 1           | 19  |
| 18  | R     | 134/138 (97%) | 103 (77%) | 23 (17%) | 8 (6%)   | 1           | 20  |
| 19  | S     | 201/204 (98%) | 144 (72%) | 46 (23%) | 11 (6%)  | 2           | 22  |
| 20  | T     | 195/199 (98%) | 160 (82%) | 27 (14%) | 8 (4%)   | 3           | 26  |
| 21  | U     | 181/184 (98%) | 133 (74%) | 35 (19%) | 13 (7%)  | 1           | 17  |
| 22  | V     | 183/186 (98%) | 131 (72%) | 39 (21%) | 13 (7%)  | 1           | 17  |
| 23  | W     | 186/189 (98%) | 162 (87%) | 19 (10%) | 5 (3%)   | 5           | 34  |
| 24  | X     | 170/172 (99%) | 130 (76%) | 31 (18%) | 9 (5%)   | 2           | 22  |
| 25  | Y     | 157/160 (98%) | 124 (79%) | 25 (16%) | 8 (5%)   | 2           | 22  |
| 26  | Z     | 98/121 (81%)  | 69 (70%)  | 23 (24%) | 6 (6%)   | 1           | 20  |
| 27  | AA    | 134/137 (98%) | 107 (80%) | 24 (18%) | 3 (2%)   | 6           | 38  |
| 28  | BA    | 59/155 (38%)  | 43 (73%)  | 11 (19%) | 5 (8%)   | 1           | 13  |
| 29  | CA    | 119/142 (84%) | 84 (71%)  | 29 (24%) | 6 (5%)   | 2           | 23  |
| 30  | DA    | 124/127 (98%) | 89 (72%)  | 28 (23%) | 7 (6%)   | 2           | 21  |
| 31  | EA    | 133/136 (98%) | 108 (81%) | 19 (14%) | 6 (4%)   | 2           | 25  |
| 32  | FA    | 146/149 (98%) | 106 (73%) | 31 (21%) | 9 (6%)   | 1           | 20  |
| 33  | GA    | 56/59 (95%)   | 48 (86%)  | 8 (14%)  | 0        | 100         | 100 |
| 34  | HA    | 95/105 (90%)  | 80 (84%)  | 13 (14%) | 2 (2%)   | 7           | 39  |

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| Mol | Chain | Analysed      | Favoured  | Allowed  | Outliers | Percentiles |     |
|-----|-------|---------------|-----------|----------|----------|-------------|-----|
| 35  | IA    | 107/113 (95%) | 87 (81%)  | 17 (16%) | 3 (3%)   | 5           | 33  |
| 36  | JA    | 125/130 (96%) | 95 (76%)  | 23 (18%) | 7 (6%)   | 2           | 21  |
| 37  | KA    | 104/107 (97%) | 81 (78%)  | 17 (16%) | 6 (6%)   | 1           | 21  |
| 38  | LA    | 110/121 (91%) | 76 (69%)  | 26 (24%) | 8 (7%)   | 1           | 16  |
| 39  | MA    | 117/120 (98%) | 93 (80%)  | 20 (17%) | 4 (3%)   | 3           | 30  |
| 40  | NA    | 97/100 (97%)  | 80 (82%)  | 10 (10%) | 7 (7%)   | 1           | 17  |
| 41  | OA    | 85/88 (97%)   | 62 (73%)  | 18 (21%) | 5 (6%)   | 1           | 20  |
| 42  | PA    | 75/78 (96%)   | 64 (85%)  | 8 (11%)  | 3 (4%)   | 3           | 26  |
| 43  | QA    | 48/51 (94%)   | 35 (73%)  | 9 (19%)  | 4 (8%)   | 1           | 13  |
| 44  | RA    | 50/128 (39%)  | 32 (64%)  | 10 (20%) | 8 (16%)  | 0           | 3   |
| 45  | SA    | 23/25 (92%)   | 23 (100%) | 0        | 0        | 100         | 100 |
| 46  | TA    | 103/106 (97%) | 75 (73%)  | 22 (21%) | 6 (6%)   | 1           | 21  |
| 47  | UA    | 89/92 (97%)   | 63 (71%)  | 18 (20%) | 8 (9%)   | 1           | 13  |
| 48  | VA    | 187/312 (60%) | 132 (71%) | 39 (21%) | 16 (9%)  | 1           | 13  |
| 49  | WA    | 316/319 (99%) | 247 (78%) | 63 (20%) | 6 (2%)   | 8           | 41  |
| 50  | XA    | 204/252 (81%) | 146 (72%) | 40 (20%) | 18 (9%)  | 1           | 13  |
| 51  | YA    | 212/255 (83%) | 159 (75%) | 36 (17%) | 17 (8%)  | 1           | 14  |
| 52  | ZA    | 215/254 (85%) | 169 (79%) | 37 (17%) | 9 (4%)   | 3           | 26  |
| 53  | AB    | 221/240 (92%) | 191 (86%) | 24 (11%) | 6 (3%)   | 5           | 34  |
| 54  | BB    | 258/261 (99%) | 185 (72%) | 60 (23%) | 13 (5%)  | 2           | 23  |
| 55  | CB    | 204/225 (91%) | 159 (78%) | 33 (16%) | 12 (6%)  | 1           | 20  |
| 56  | DB    | 224/236 (95%) | 192 (86%) | 21 (9%)  | 11 (5%)  | 2           | 23  |
| 57  | EB    | 182/190 (96%) | 130 (71%) | 34 (19%) | 18 (10%) | 0           | 10  |
| 58  | FB    | 184/200 (92%) | 141 (77%) | 36 (20%) | 7 (4%)   | 3           | 27  |
| 59  | GB    | 183/197 (93%) | 144 (79%) | 27 (15%) | 12 (7%)  | 1           | 18  |
| 60  | HB    | 94/105 (90%)  | 73 (78%)  | 15 (16%) | 6 (6%)   | 1           | 19  |
| 61  | IB    | 153/156 (98%) | 113 (74%) | 30 (20%) | 10 (6%)  | 1           | 19  |
| 62  | JB    | 122/143 (85%) | 90 (74%)  | 21 (17%) | 11 (9%)  | 1           | 13  |
| 63  | KB    | 148/151 (98%) | 124 (84%) | 19 (13%) | 5 (3%)   | 3           | 30  |
| 64  | LB    | 125/137 (91%) | 88 (70%)  | 26 (21%) | 11 (9%)  | 1           | 13  |
| 65  | MB    | 120/142 (84%) | 91 (76%)  | 15 (12%) | 14 (12%) | 0           | 6   |

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| Mol | Chain | Analysed          | Favoured   | Allowed    | Outliers | Percentiles |    |
|-----|-------|-------------------|------------|------------|----------|-------------|----|
| 66  | NB    | 139/143 (97%)     | 108 (78%)  | 24 (17%)   | 7 (5%)   | 2           | 23 |
| 67  | OB    | 115/136 (85%)     | 79 (69%)   | 24 (21%)   | 12 (10%) | 0           | 9  |
| 68  | PB    | 143/146 (98%)     | 111 (78%)  | 24 (17%)   | 8 (6%)   | 2           | 21 |
| 69  | QB    | 141/144 (98%)     | 122 (86%)  | 16 (11%)   | 3 (2%)   | 7           | 39 |
| 70  | RB    | 105/121 (87%)     | 85 (81%)   | 15 (14%)   | 5 (5%)   | 2           | 24 |
| 71  | SB    | 85/87 (98%)       | 63 (74%)   | 17 (20%)   | 5 (6%)   | 1           | 20 |
| 72  | TB    | 127/130 (98%)     | 99 (78%)   | 24 (19%)   | 4 (3%)   | 4           | 31 |
| 73  | UB    | 142/145 (98%)     | 108 (76%)  | 22 (16%)   | 12 (8%)  | 1           | 13 |
| 74  | VB    | 132/135 (98%)     | 105 (80%)  | 20 (15%)   | 7 (5%)   | 2           | 22 |
| 75  | WB    | 68/108 (63%)      | 47 (69%)   | 17 (25%)   | 4 (6%)   | 1           | 20 |
| 76  | XB    | 95/119 (80%)      | 54 (57%)   | 32 (34%)   | 9 (10%)  | 0           | 12 |
| 77  | YB    | 79/82 (96%)       | 59 (75%)   | 17 (22%)   | 3 (4%)   | 3           | 27 |
| 78  | ZB    | 61/67 (91%)       | 43 (70%)   | 15 (25%)   | 3 (5%)   | 2           | 23 |
| 79  | AC    | 51/56 (91%)       | 39 (76%)   | 11 (22%)   | 1 (2%)   | 7           | 40 |
| 80  | BC    | 58/63 (92%)       | 38 (66%)   | 16 (28%)   | 4 (7%)   | 1           | 17 |
| 81  | CC    | 69/152 (45%)      | 42 (61%)   | 18 (26%)   | 9 (13%)  | 0           | 5  |
| 82  | DC    | 819/842 (97%)     | 646 (79%)  | 137 (17%)  | 36 (4%)  | 2           | 25 |
| All | All   | 12207/13416 (91%) | 9316 (76%) | 2192 (18%) | 699 (6%) | 3           | 21 |

5 of 699 Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 5   | E     | 70  | ASP  |
| 6   | F     | 29  | LEU  |
| 6   | F     | 34  | TYR  |
| 6   | F     | 68  | LYS  |
| 7   | G     | 187 | 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 |    |
|-----|-------|----------------|-----------|----------|-------------|----|
| 5   | E     | 157/198 (79%)  | 136 (87%) | 21 (13%) | 4           | 20 |
| 6   | F     | 194/196 (99%)  | 172 (89%) | 22 (11%) | 6           | 25 |
| 7   | G     | 322/323 (100%) | 295 (92%) | 27 (8%)  | 11          | 37 |
| 8   | H     | 288/289 (100%) | 249 (86%) | 39 (14%) | 4           | 20 |
| 9   | I     | 244/245 (100%) | 220 (90%) | 24 (10%) | 8           | 29 |
| 10  | J     | 152/153 (99%)  | 141 (93%) | 11 (7%)  | 14          | 41 |
| 11  | K     | 186/205 (91%)  | 165 (89%) | 21 (11%) | 6           | 25 |
| 12  | L     | 191/208 (92%)  | 169 (88%) | 22 (12%) | 5           | 24 |
| 13  | M     | 171/171 (100%) | 154 (90%) | 17 (10%) | 8           | 29 |
| 14  | N     | 180/187 (96%)  | 161 (89%) | 19 (11%) | 6           | 27 |
| 15  | O     | 147/150 (98%)  | 134 (91%) | 13 (9%)  | 10          | 34 |
| 16  | P     | 81/136 (60%)   | 70 (86%)  | 11 (14%) | 3           | 20 |
| 17  | Q     | 154/159 (97%)  | 136 (88%) | 18 (12%) | 5           | 23 |
| 18  | R     | 107/109 (98%)  | 96 (90%)  | 11 (10%) | 7           | 28 |
| 19  | S     | 175/176 (99%)  | 150 (86%) | 25 (14%) | 3           | 18 |
| 20  | T     | 160/162 (99%)  | 141 (88%) | 19 (12%) | 5           | 23 |
| 21  | U     | 145/146 (99%)  | 122 (84%) | 23 (16%) | 2           | 16 |
| 22  | V     | 150/151 (99%)  | 134 (89%) | 16 (11%) | 6           | 27 |
| 23  | W     | 153/154 (99%)  | 138 (90%) | 15 (10%) | 8           | 29 |
| 24  | X     | 156/156 (100%) | 141 (90%) | 15 (10%) | 8           | 30 |
| 25  | Y     | 136/137 (99%)  | 114 (84%) | 22 (16%) | 2           | 15 |
| 26  | Z     | 87/107 (81%)   | 85 (98%)  | 2 (2%)   | 50          | 70 |
| 27  | AA    | 104/105 (99%)  | 93 (89%)  | 11 (11%) | 6           | 27 |
| 28  | BA    | 54/129 (42%)   | 45 (83%)  | 9 (17%)  | 2           | 14 |
| 29  | CA    | 105/118 (89%)  | 97 (92%)  | 8 (8%)   | 13          | 40 |
| 30  | DA    | 109/110 (99%)  | 94 (86%)  | 15 (14%) | 3           | 20 |
| 31  | EA    | 115/116 (99%)  | 105 (91%) | 10 (9%)  | 10          | 34 |
| 32  | FA    | 118/119 (99%)  | 105 (89%) | 13 (11%) | 6           | 26 |
| 33  | GA    | 46/47 (98%)    | 42 (91%)  | 4 (9%)   | 10          | 34 |
| 34  | HA    | 81/88 (92%)    | 75 (93%)  | 6 (7%)   | 13          | 40 |
| 35  | IA    | 96/97 (99%)    | 89 (93%)  | 7 (7%)   | 14          | 41 |
| 36  | JA    | 109/111 (98%)  | 100 (92%) | 9 (8%)   | 11          | 37 |

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| Mol | Chain | Analysed       | Rotameric | Outliers | Percentiles |    |
|-----|-------|----------------|-----------|----------|-------------|----|
| 37  | KA    | 90/91 (99%)    | 80 (89%)  | 10 (11%) | 6           | 25 |
| 38  | LA    | 95/103 (92%)   | 90 (95%)  | 5 (5%)   | 22          | 50 |
| 39  | MA    | 104/105 (99%)  | 96 (92%)  | 8 (8%)   | 13          | 39 |
| 40  | NA    | 81/82 (99%)    | 75 (93%)  | 6 (7%)   | 13          | 40 |
| 41  | OA    | 70/71 (99%)    | 60 (86%)  | 10 (14%) | 3           | 18 |
| 42  | PA    | 68/69 (99%)    | 63 (93%)  | 5 (7%)   | 13          | 40 |
| 43  | QA    | 45/46 (98%)    | 39 (87%)  | 6 (13%)  | 4           | 21 |
| 44  | RA    | 47/116 (40%)   | 44 (94%)  | 3 (6%)   | 17          | 45 |
| 45  | SA    | 23/23 (100%)   | 20 (87%)  | 3 (13%)  | 4           | 21 |
| 46  | TA    | 90/91 (99%)    | 80 (89%)  | 10 (11%) | 6           | 25 |
| 47  | UA    | 71/72 (99%)    | 65 (92%)  | 6 (8%)   | 10          | 36 |
| 48  | VA    | 160/254 (63%)  | 147 (92%) | 13 (8%)  | 11          | 38 |
| 49  | WA    | 261/262 (100%) | 246 (94%) | 15 (6%)  | 20          | 48 |
| 50  | XA    | 173/210 (82%)  | 155 (90%) | 18 (10%) | 7           | 27 |
| 52  | ZA    | 176/205 (86%)  | 170 (97%) | 6 (3%)   | 37          | 61 |
| 53  | AB    | 182/195 (93%)  | 167 (92%) | 15 (8%)  | 11          | 37 |
| 54  | BB    | 221/222 (100%) | 202 (91%) | 19 (9%)  | 10          | 36 |
| 55  | CB    | 173/191 (91%)  | 162 (94%) | 11 (6%)  | 17          | 45 |
| 56  | DB    | 193/201 (96%)  | 187 (97%) | 6 (3%)   | 40          | 62 |
| 57  | EB    | 165/170 (97%)  | 157 (95%) | 8 (5%)   | 25          | 52 |
| 58  | FB    | 150/161 (93%)  | 141 (94%) | 9 (6%)   | 19          | 47 |
| 59  | GB    | 158/166 (95%)  | 143 (90%) | 15 (10%) | 8           | 30 |
| 60  | HB    | 89/98 (91%)    | 83 (93%)  | 6 (7%)   | 16          | 43 |
| 61  | IB    | 136/137 (99%)  | 127 (93%) | 9 (7%)   | 16          | 44 |
| 63  | KB    | 127/128 (99%)  | 119 (94%) | 8 (6%)   | 18          | 45 |
| 65  | MB    | 103/118 (87%)  | 98 (95%)  | 5 (5%)   | 25          | 52 |
| 66  | NB    | 117/119 (98%)  | 108 (92%) | 9 (8%)   | 13          | 39 |
| 67  | OB    | 82/124 (66%)   | 77 (94%)  | 5 (6%)   | 18          | 46 |
| 68  | PB    | 128/129 (99%)  | 116 (91%) | 12 (9%)  | 8           | 30 |
| 69  | QB    | 115/116 (99%)  | 105 (91%) | 10 (9%)  | 10          | 34 |
| 70  | RB    | 100/114 (88%)  | 90 (90%)  | 10 (10%) | 7           | 28 |

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| Mol | Chain | Analysed         | Rotameric  | Outliers | Percentiles |    |
|-----|-------|------------------|------------|----------|-------------|----|
| 71  | SB    | 74/74 (100%)     | 66 (89%)   | 8 (11%)  | 6           | 26 |
| 72  | TB    | 110/111 (99%)    | 99 (90%)   | 11 (10%) | 7           | 28 |
| 73  | UB    | 119/120 (99%)    | 110 (92%)  | 9 (8%)   | 13          | 40 |
| 74  | VB    | 112/113 (99%)    | 103 (92%)  | 9 (8%)   | 12          | 38 |
| 75  | WB    | 61/89 (68%)      | 56 (92%)   | 5 (8%)   | 11          | 37 |
| 77  | YB    | 70/71 (99%)      | 69 (99%)   | 1 (1%)   | 67          | 80 |
| 78  | ZB    | 56/60 (93%)      | 49 (88%)   | 7 (12%)  | 4           | 22 |
| 79  | AC    | 47/49 (96%)      | 44 (94%)   | 3 (6%)   | 17          | 45 |
| 80  | BC    | 51/54 (94%)      | 45 (88%)   | 6 (12%)  | 5           | 23 |
| 82  | DC    | 699/714 (98%)    | 641 (92%)  | 58 (8%)  | 11          | 37 |
| All | All   | 9865/10602 (93%) | 8962 (91%) | 903 (9%) | 13          | 31 |

5 of 903 residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 31  | EA    | 121 | ARG  |
| 82  | DC    | 654 | GLN  |
| 47  | UA    | 28  | LYS  |
| 82  | DC    | 568 | GLU  |
| 72  | TB    | 41  | MET  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 283 such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 65  | MB    | 98  | ASN  |
| 67  | OB    | 29  | GLN  |
| 72  | TB    | 80  | ASN  |
| 24  | X     | 3   | HIS  |
| 23  | W     | 34  | GLN  |

### 5.3.3 RNA [i](#)

| Mol | Chain | Analysed        | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1   | A     | 1682/1798 (93%) | 312 (18%)         | 11 (0%)         |
| 2   | B     | 3267/3396 (96%) | 632 (19%)         | 27 (0%)         |
| 3   | C     | 157/158 (99%)   | 32 (20%)          | 0               |

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| Mol | Chain | Analysed        | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 4   | D     | 120/121 (99%)   | 12 (10%)          | 0               |
| 83  | EC    | 189/201 (94%)   | 74 (39%)          | 2 (1%)          |
| All | All   | 5415/5674 (95%) | 1062 (19%)        | 40 (0%)         |

5 of 1062 RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 2   | A    |
| 1   | A     | 25  | C    |
| 1   | A     | 26  | A    |
| 1   | A     | 34  | G    |
| 1   | A     | 47  | A    |

5 of 40 RNA pucker outliers are listed below:

| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 2   | B     | 2513 | U    |
| 2   | B     | 3269 | U    |
| 2   | B     | 2525 | G    |
| 2   | B     | 3218 | A    |
| 2   | B     | 3375 | A    |

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths |      |             | Bond angles |      |             |
|-----|------|-------|-----|------|--------------|------|-------------|-------------|------|-------------|
|     |      |       |     |      | Counts       | RMSZ | # $ Z  > 2$ | Counts      | RMSZ | # $ Z  > 2$ |
| 82  | DDE  | DC    | 699 | 82   | 14,20,21     | 2.11 | 6 (42%)     | 14,28,30    | 1.90 | 6 (42%)     |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions   | Rings   |
|-----|------|-------|-----|------|---------|------------|---------|
| 82  | DDE  | DC    | 699 | 82   | -       | 1/20/21/23 | 0/1/1/1 |

The worst 5 of 6 bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms   | Z    | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|------|-------------|----------|
| 82  | DC    | 699 | DDE  | CBW-CBI | 4.59 | 1.60        | 1.53     |
| 82  | DC    | 699 | DDE  | CAT-CE1 | 3.52 | 1.55        | 1.50     |
| 82  | DC    | 699 | DDE  | CB-CG   | 2.46 | 1.59        | 1.51     |
| 82  | DC    | 699 | DDE  | OAG-CBI | 2.24 | 1.28        | 1.23     |
| 82  | DC    | 699 | DDE  | CB-CA   | 2.13 | 1.58        | 1.53     |

The worst 5 of 6 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 82  | DC    | 699 | DDE  | OAG-CBI-CBW | -3.77 | 115.72      | 120.49   |
| 82  | DC    | 699 | DDE  | CAU-CBW-CBI | -2.80 | 105.65      | 111.20   |
| 82  | DC    | 699 | DDE  | CG-ND1-CE1  | 2.53  | 110.53      | 103.05   |
| 82  | DC    | 699 | DDE  | CB-CA-C     | 2.23  | 115.65      | 111.47   |
| 82  | DC    | 699 | DDE  | OAG-CBI-NAD | 2.19  | 126.80      | 123.00   |

There are no chirality outliers.

All (1) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms        |
|-----|-------|-----|------|--------------|
| 82  | DC    | 699 | DDE  | CA-CB-CG-ND1 |

There are no ring outliers.

1 monomer is involved in 3 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 82  | DC    | 699 | DDE  | 3       | 0            |

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 3 ligands modelled in this entry, 1 is monoatomic - leaving 2 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul

statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |      | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 84  | GDP  | DC    | 901 | 85   | 24,30,30     | 1.93 | 5 (20%)  | 30,47,47    | 1.74 | 6 (20%)  |
| 86  | SO1  | DC    | 903 | -    | 35,39,39     | 2.82 | 20 (57%) | 39,64,64    | 2.03 | 8 (20%)  |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions     | Rings   |
|-----|------|-------|-----|------|---------|--------------|---------|
| 84  | GDP  | DC    | 901 | 85   | -       | 3/12/32/32   | 0/3/3/3 |
| 86  | SO1  | DC    | 903 | -    | -       | 4/21/104/104 | 0/7/5/5 |

The worst 5 of 25 bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms   | Z    | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|------|-------------|----------|
| 84  | DC    | 901 | GDP  | O4'-C1' | 5.55 | 1.48        | 1.41     |
| 86  | DC    | 903 | SO1  | O17-C52 | 5.13 | 1.49        | 1.40     |
| 86  | DC    | 903 | SO1  | C12-C6  | 4.56 | 1.64        | 1.53     |
| 86  | DC    | 903 | SO1  | C1-C5   | 4.35 | 1.60        | 1.50     |
| 86  | DC    | 903 | SO1  | C8-C2   | 4.30 | 1.61        | 1.53     |

The worst 5 of 14 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 86  | DC    | 903 | SO1  | C12-C6-C10  | -6.91 | 102.42      | 107.91   |
| 84  | DC    | 901 | GDP  | PA-O3A-PB   | -5.95 | 112.41      | 132.83   |
| 86  | DC    | 903 | SO1  | C25-C22-C24 | 4.93  | 129.42      | 113.56   |
| 86  | DC    | 903 | SO1  | C10-C6-C2   | 3.71  | 108.62      | 104.16   |
| 84  | DC    | 901 | GDP  | C8-N7-C5    | 3.44  | 109.54      | 102.99   |

There are no chirality outliers.

5 of 7 torsion outliers are listed below:

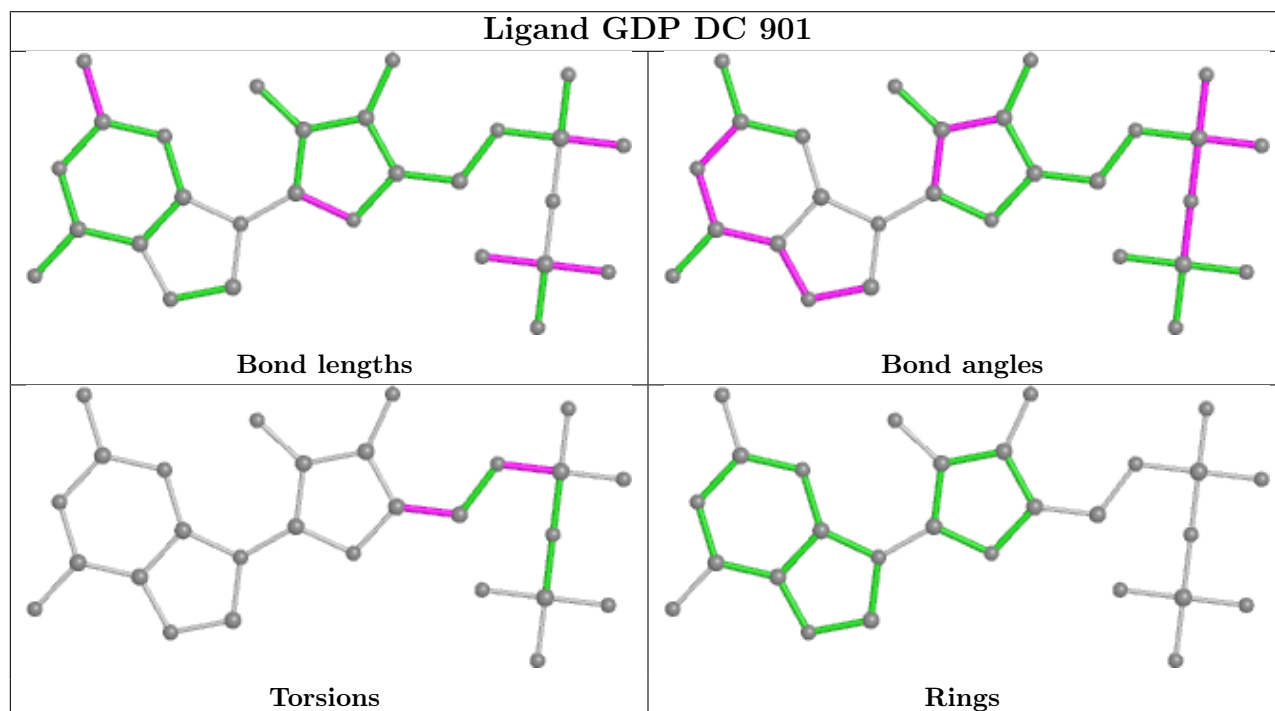
| Mol | Chain | Res | Type | Atoms           |
|-----|-------|-----|------|-----------------|
| 84  | DC    | 901 | GDP  | O4'-C4'-C5'-O5' |
| 84  | DC    | 901 | GDP  | C3'-C4'-C5'-O5' |
| 86  | DC    | 903 | SO1  | C2-C1-C5-O14    |
| 86  | DC    | 903 | SO1  | C2-C1-C5-O15    |
| 86  | DC    | 903 | SO1  | C3-C1-C5-O15    |

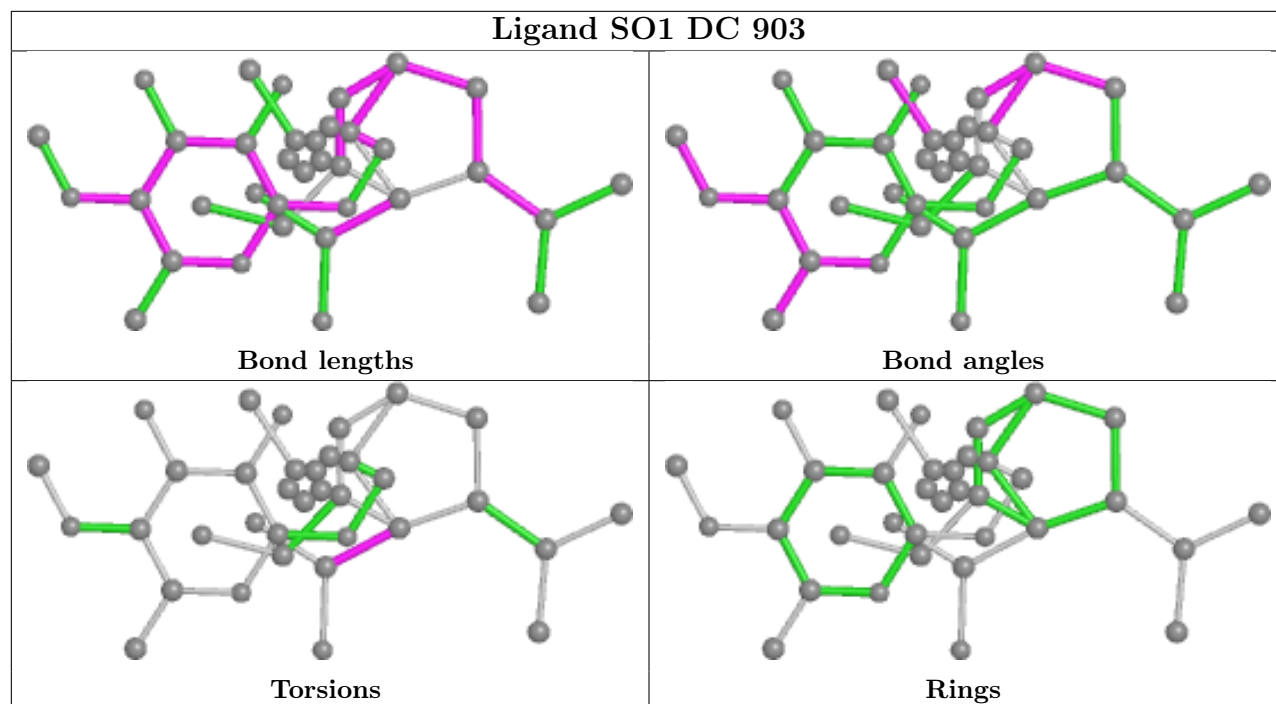
There are no ring outliers.

2 monomers are involved in 4 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 84  | DC    | 901 | GDP  | 2       | 0            |
| 86  | DC    | 903 | SO1  | 2       | 0            |

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.





## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

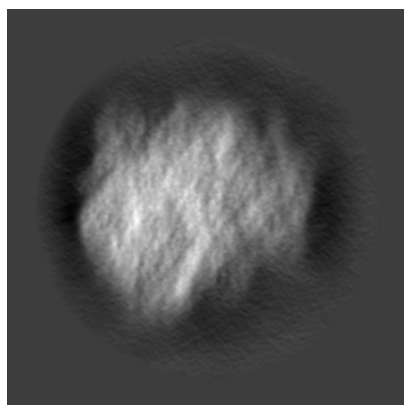
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-6645. These allow visual inspection of the internal detail of the map and identification of artifacts.

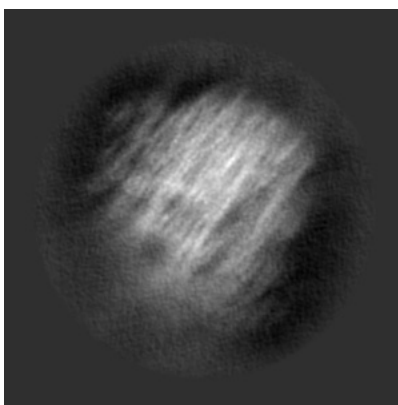
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

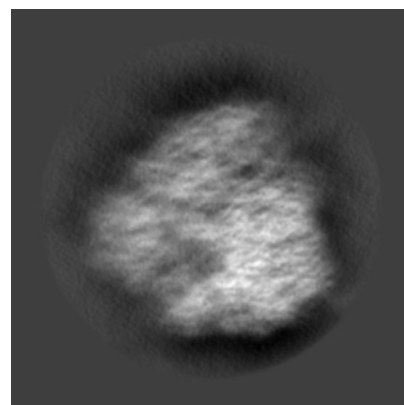
#### 6.1.1 Primary map



X



Y

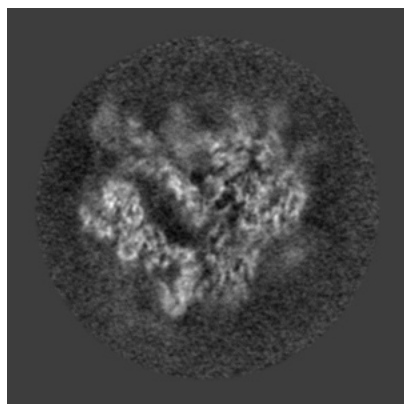


Z

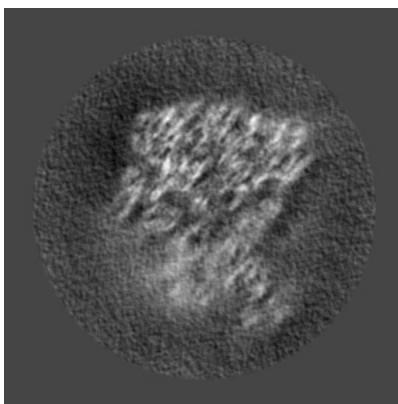
The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

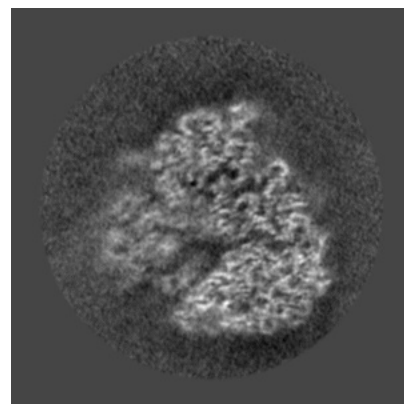
#### 6.2.1 Primary map



X Index: 256



Y Index: 256



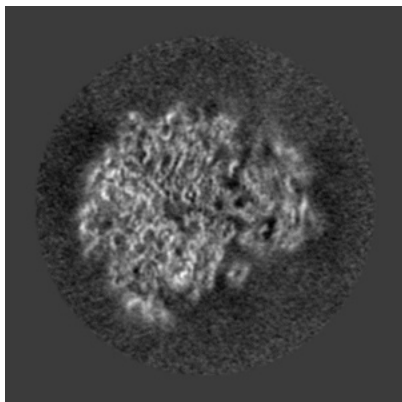
Z Index: 256



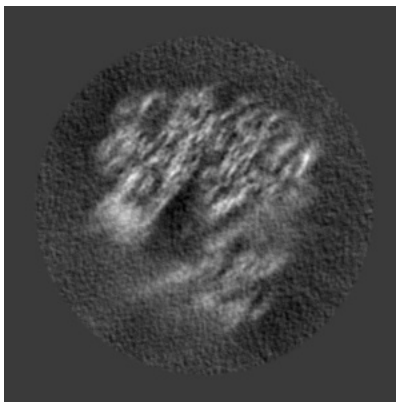
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

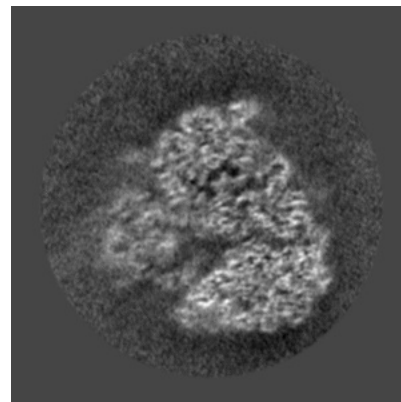
### 6.3.1 Primary map



X Index: 287



Y Index: 221

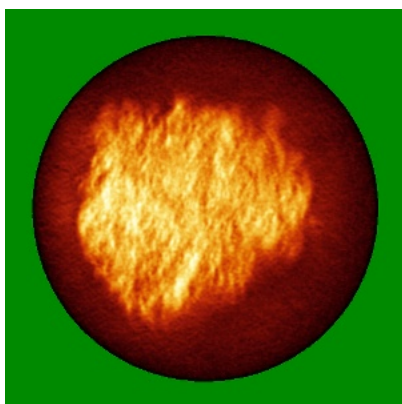


Z Index: 258

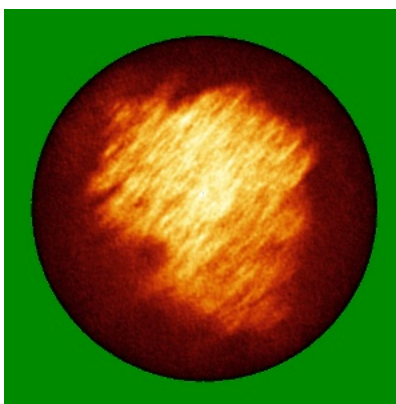
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

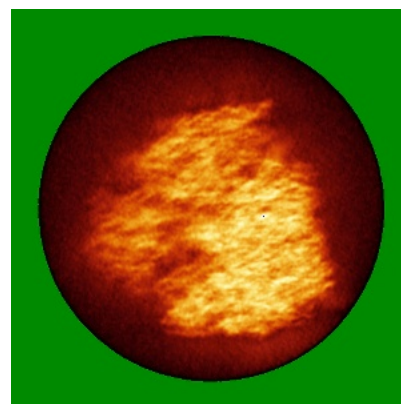
### 6.4.1 Primary map



X



Y

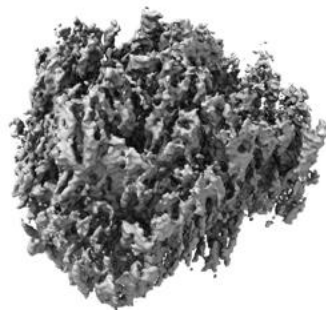


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.015. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

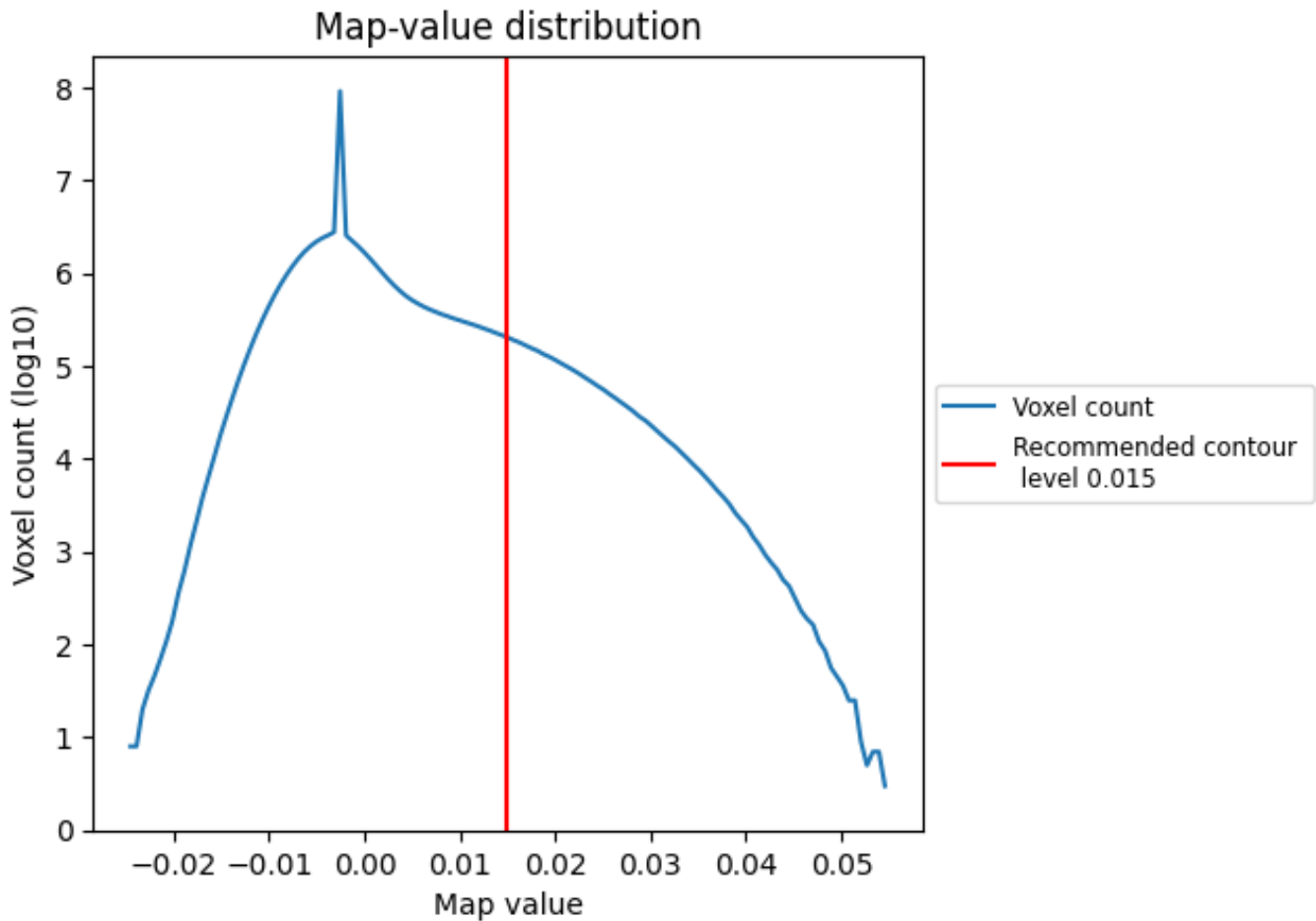
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

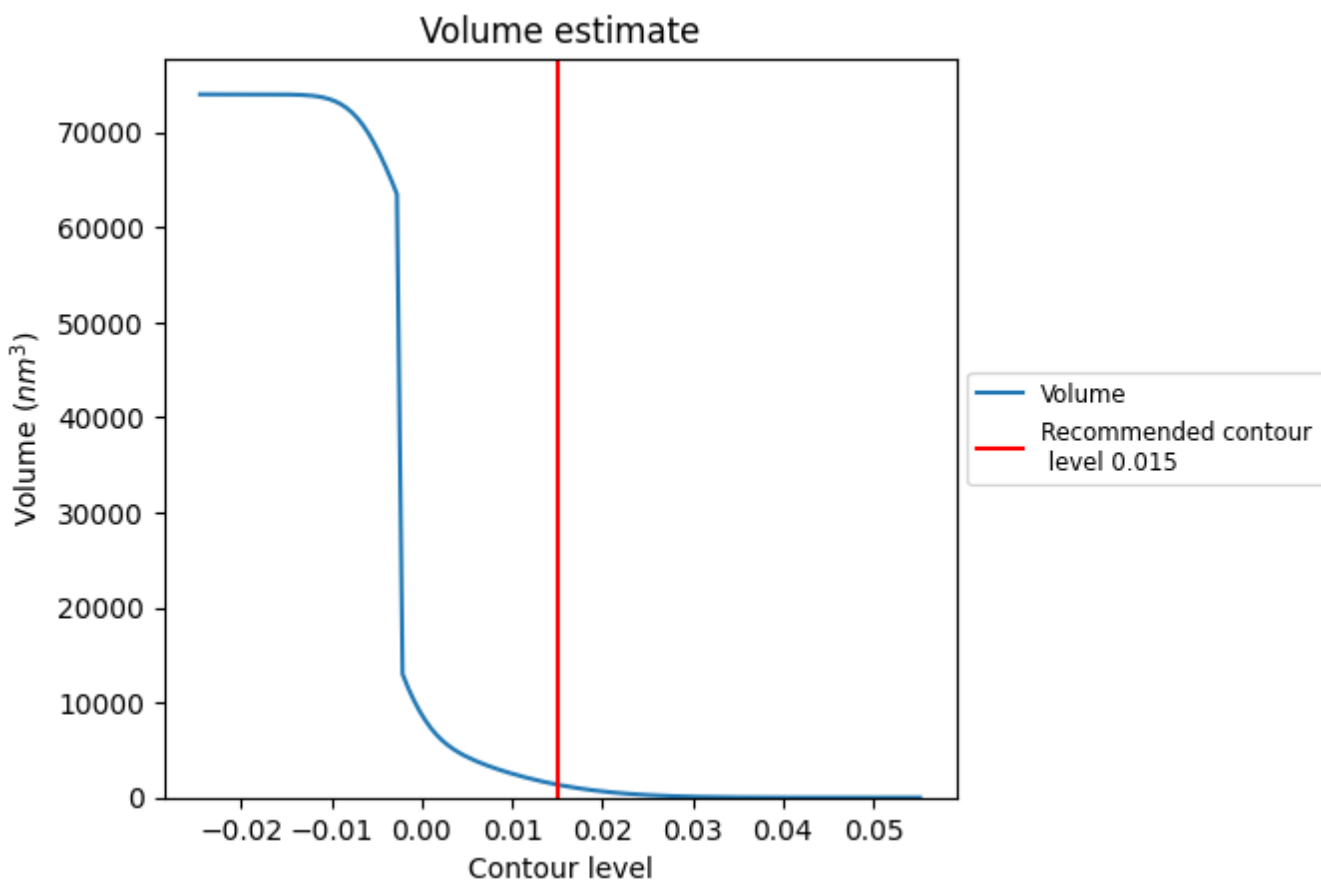
This section contains the results of statistical analysis of the map.

### 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.

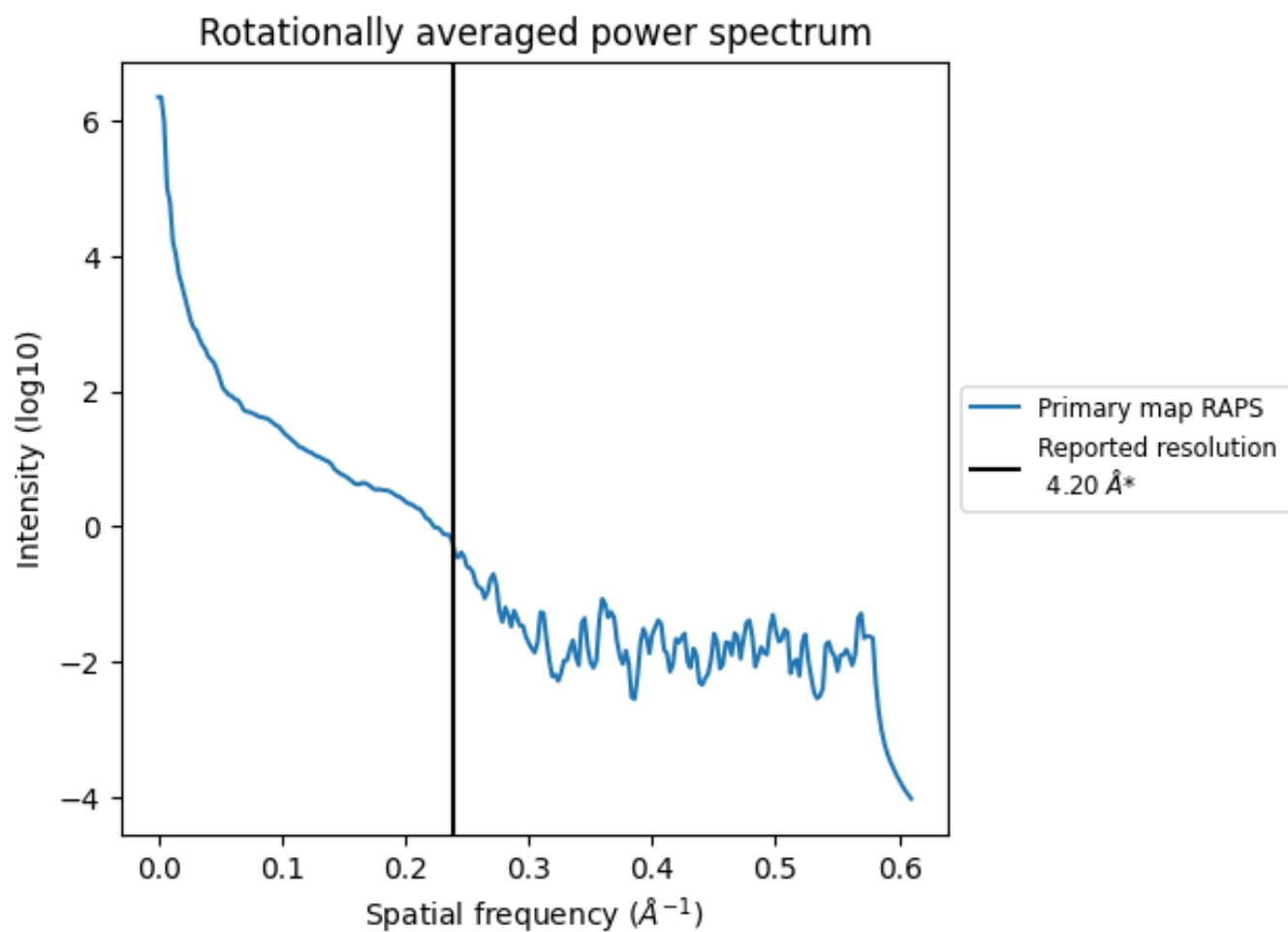
## 7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 1368 nm<sup>3</sup>; this corresponds to an approximate mass of 1236 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  $0.238 \text{\AA}^{-1}$

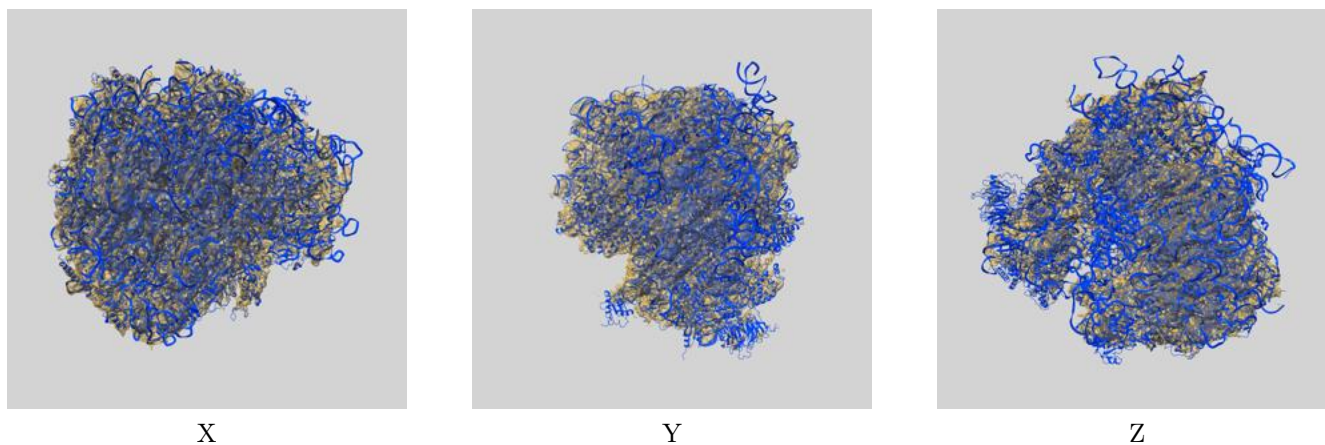
## 8 Fourier-Shell correlation

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

## 9 Map-model fit [i](#)

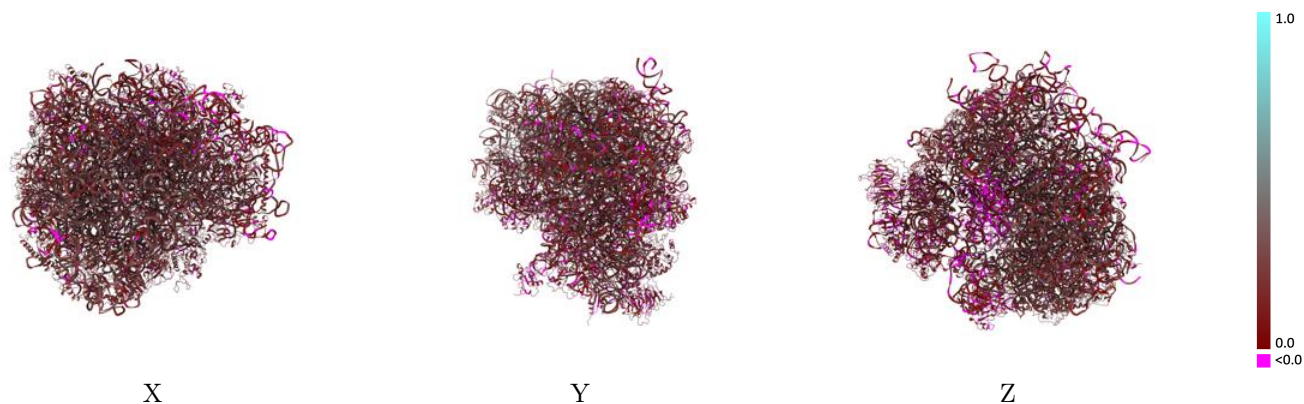
This section contains information regarding the fit between EMDB map EMD-6645 and PDB model 5JUS. Per-residue inclusion information can be found in section 3 on page 21.

### 9.1 Map-model overlay [i](#)



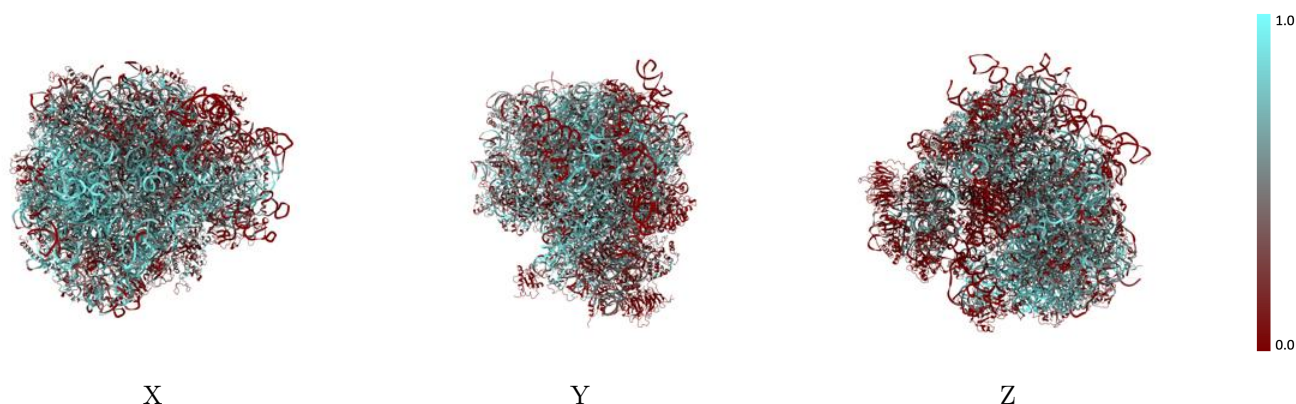
The images above show the 3D surface view of the map at the recommended contour level 0.015 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 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.

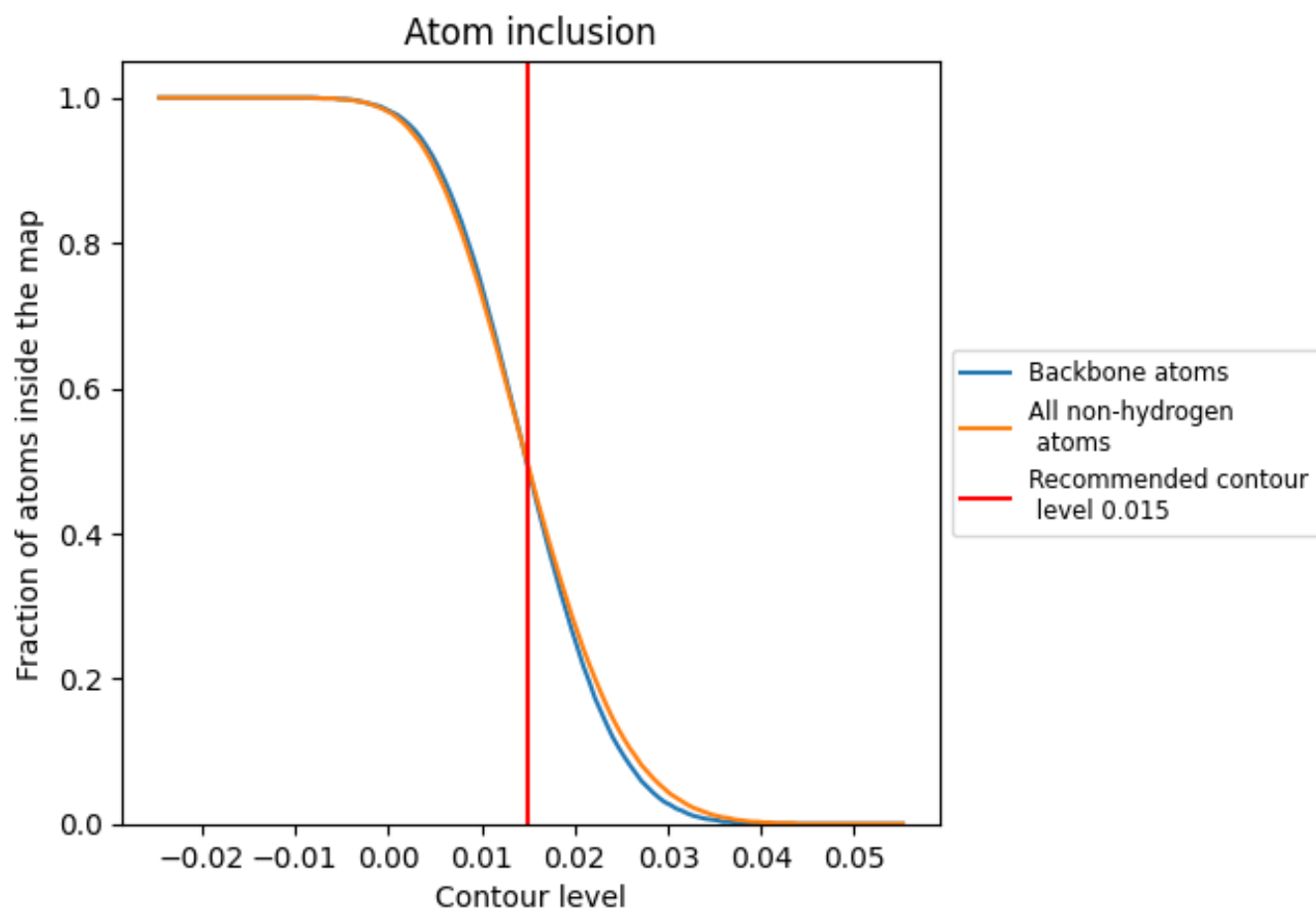
## 9.3 Atom inclusion mapped to coordinate model [i](#)



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 (0.015).



## 9.4 Atom inclusion [i](#)



At the recommended contour level, 49% of all backbone atoms, 49% 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 (0.015) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|-------|----------------|---------|
| All   | 0.4940         | 0.2100  |
| A     | 0.4890         | 0.1870  |
| AA    | 0.3890         | 0.2650  |
| AB    | 0.2650         | 0.1660  |
| AC    | 0.2640         | 0.1450  |
| B     | 0.6930         | 0.2430  |
| BA    | 0.5090         | 0.2440  |
| BB    | 0.5820         | 0.2120  |
| BC    | 0.2550         | 0.1610  |
| C     | 0.6220         | 0.2320  |
| CA    | 0.2000         | 0.2000  |
| CB    | 0.1550         | 0.1440  |
| CC    | 0.0320         | 0.0500  |
| D     | 0.8630         | 0.2350  |
| DA    | 0.5640         | 0.2180  |
| DB    | 0.2030         | 0.1920  |
| DC    | 0.3240         | 0.1850  |
| E     | 0.0290         | 0.1090  |
| EA    | 0.3060         | 0.1650  |
| EB    | 0.0790         | 0.1560  |
| EC    | 0.1000         | 0.0830  |
| F     | 0.4860         | 0.2290  |
| FA    | 0.5790         | 0.2680  |
| FB    | 0.3700         | 0.1920  |
| G     | 0.4470         | 0.2570  |
| GA    | 0.5720         | 0.2360  |
| GB    | 0.5620         | 0.1960  |
| H     | 0.5190         | 0.2580  |
| HA    | 0.6100         | 0.2070  |
| HB    | 0.4860         | 0.1050  |
| I     | 0.5650         | 0.1950  |
| IA    | 0.4440         | 0.2540  |
| IB    | 0.2370         | 0.1940  |
| J     | 0.2930         | 0.2270  |
| JA    | 0.6190         | 0.2830  |

















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| Chain | Atom inclusion   | Q-score  |
|-------|--|--|
| JB    |  0.0180   |  0.0670   |
| K     |  0.4350   |  0.2330   |
| KA    |  0.2970   |  0.2550   |
| KB    |  0.2790   |  0.1800   |
| L     |  0.2930   |  0.1840   |
| LA    |  0.4540   |  0.2080   |
| LB    |  0.0080   |  0.0460   |
| M     |  0.3220   |  0.2300   |
| MA    |  0.2900   |  0.2020   |
| MB    |  0.1540   |  0.1380   |
| N     |  0.5280   |  0.2150   |
| NA    |  0.5190   |  0.2510   |
| NB    |  0.1230   |  0.1430   |
| O     |  0.4570   |  0.1960   |
| OA    |  0.4970   |  0.2240   |
| OB    |  0.1350   |  0.1630   |
| P     |  0.2850   |  0.1070   |
| PA    |  0.0170  |  0.1330  |
| PB    |  0.0530 |  0.1280 |
| Q     |  0.6110 |  0.2470 |
| QA    |  0.4640 |  0.2600 |
| QB    |  0.1440 |  0.1430 |
| R     |  0.4980 |  0.2340 |
| RA    |  0.6660 |  0.2650 |
| RB    |  0.1520 |  0.1520 |
| S     |  0.4270 |  0.2240 |
| SA    |  0.0240 |  0.0800 |
| SB    |  0.2130 |  0.2110 |
| T     |  0.4000 |  0.2400 |
| TA    |  0.7620 |  0.2350 |
| TB    |  0.2740 |  0.2240 |
| U     |  0.4690 |  0.2450 |
| UA    |  0.4280 |  0.2330 |
| UB    |  0.1640 |  0.2150 |
| V     |  0.5590 |  0.2570 |
| VA    |  0.3580 |  0.1540 |
| VB    |  0.2890 |  0.1760 |
| W     |  0.3160 |  0.2080 |
| WA    |  0.0400 |  0.1300 |
| WB    |  0.0460 |  0.1330 |
| X     |  0.3870 |  0.2450 |
| XA    |  0.2230 |  0.2070 |

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| Chain | Atom inclusion   | Q-score  |
|-------|--|--|
| XB    |  0.0210 |  0.0390 |
| Y     |  0.5290 |  0.2540 |
| YA    |  0.0040 |  0.0120 |
| YB    |  0.3650 |  0.2160 |
| Z     |  0.2290 |  0.1930 |
| ZA    |  0.3090 |  0.2340 |
| ZB    |  0.2930 |  0.2090 |