# wwPDB X-ray Structure Validation Summary Report (i)

Feb 1, 2016 – 05:22 AM GMT

| | | |
|---|---|---|
| PDB ID | : | 2Q4G |
| Title | : | Ensemble refinement of the protein crystal structure of human ribonuclease inhibitor complexed with ribonuclease I |
| Authors | : | Levin, E.J.; Kondrashov, D.A.; Wesenberg, G.E.; Phillips Jr., G.N.; Center for Eukaryotic Structural Genomics (CESG) |
| Deposited on | : | 2007-05-31 |
| Resolution | : | 1.95 Å(reported) |

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
http://wwpdb.org/validation/2016/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The following versions of software and data (see references (1)) were used in the production of this report:

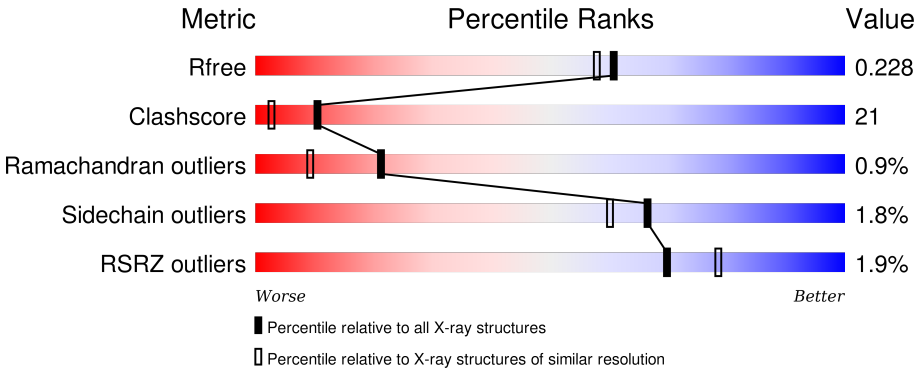
| | | |
|---|---|---|
| MolProbity | : | 4.02b-467 |
| Mogul | : | 1.7 (RC4), CSD as536be (2015) |
| Xtriage (Phenix) | : | 1.9-1692 |
| EDS | : | rb-20026688 |
| Percentile statistics | : | 20151230.v01 (using entries in the PDB archive December 30th 2015) |
| Refmac | : | 5.8.0135 |
| CCP4 | : | 6.5.0 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | trunk26865 |

# 1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
*X-RAY DIFFRACTION*

The reported resolution of this entry is 1.95 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) | Similar resolution (#Entries, resolution range(Å)) |
|---|---|---|
| $R_{free}$ | 91344 | 1833 (1.96-1.96) |
| Clashscore | 102246 | 1953 (1.96-1.96) |
| Ramachandran outliers | 100387 | 1936 (1.96-1.96) |
| Sidechain outliers | 100360 | 1936 (1.96-1.96) |
| RSRZ outliers | 91569 | 1835 (1.96-1.96) |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria. 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 <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 1 | 1-X | 129 | 7% 67% 29% |
| 1 | 1-Z | 129 | % 61% 36% |
| 1 | 2-X | 129 | 7% 78% 20% |
| 1 | 2-Z | 129 | % 67% 31% |
| 1 | 3-X | 129 | 7% 74% 22% |

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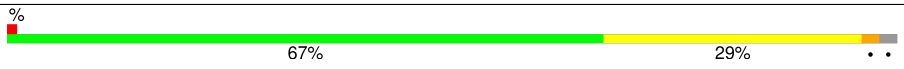
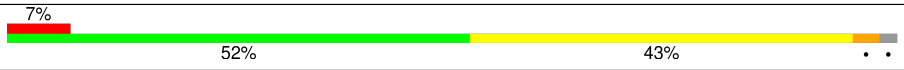
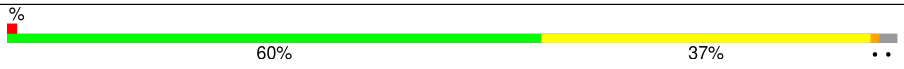
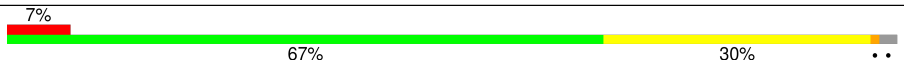
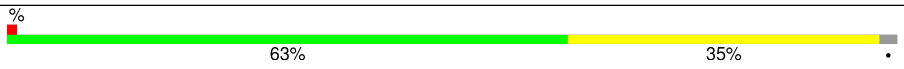
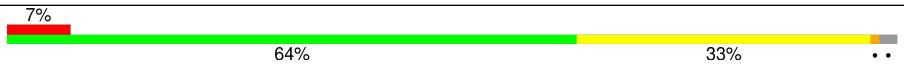
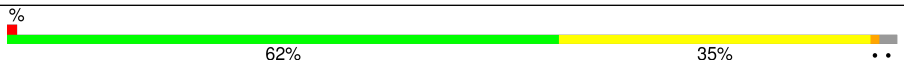
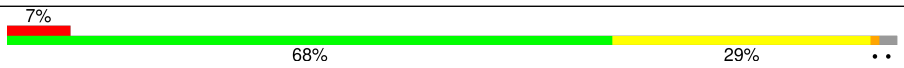
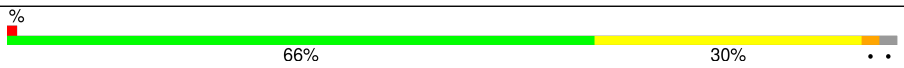
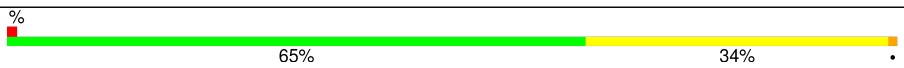
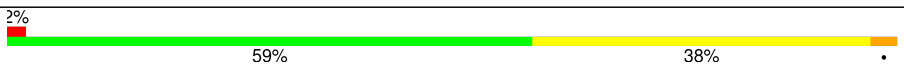
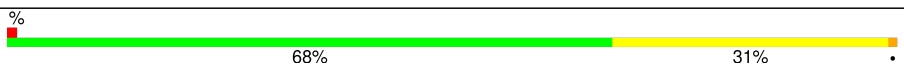
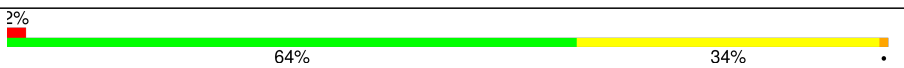
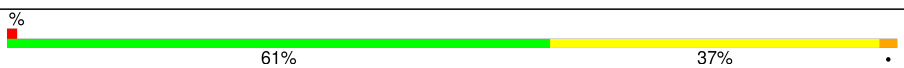
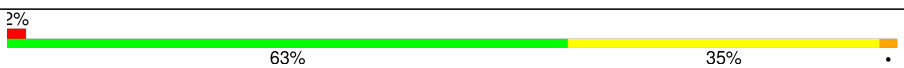
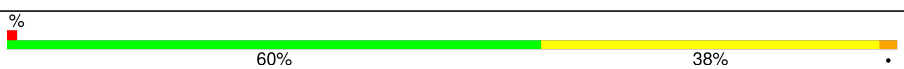
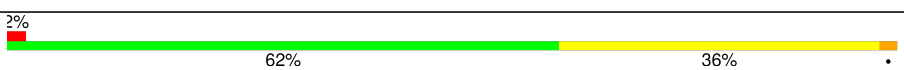
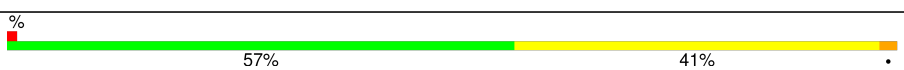
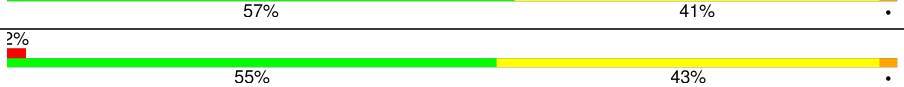
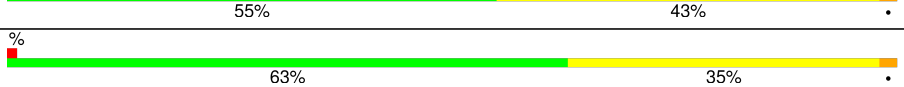
| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 1 | 3-Z | 129 |   |
| 1 | 4-X | 129 |   |
| 1 | 4-Z | 129 |   |
| 1 | 5-X | 129 |   |
| 1 | 5-Z | 129 |   |
| 1 | 6-X | 129 |   |
| 1 | 6-Z | 129 |   |
| 1 | 7-X | 129 |   |
| 1 | 7-Z | 129 |   |
| 1 | 8-X | 129 |   |
| 1 | 8-Z | 129 |   |
| 2 | 1-W | 461 |   |
| 2 | 1-Y | 461 |   |
| 2 | 2-W | 461 |   |
| 2 | 2-Y | 461 |   |
| 2 | 3-W | 461 |   |
| 2 | 3-Y | 461 |   |
| 2 | 4-W | 461 |   |
| 2 | 4-Y | 461 |   |
| 2 | 5-W | 461 |   |
| 2 | 5-Y | 461 |   |
| 2 | 6-W | 461 |   |
| 2 | 6-Y | 461 |   |
| 2 | 7-W | 461 |   |
| 2 | 7-Y | 461 |   |

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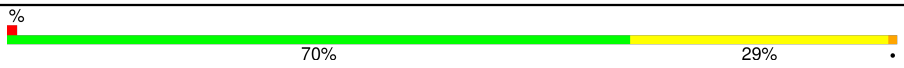
| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 2 | 8-W | 461 |   |
| 2 | 8-Y | 461 |   |

## 2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 78360 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Ribonuclease pancreatic.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1-X | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 2-X | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 3-X | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 4-X | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 5-X | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 6-X | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 7-X | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 8-X | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 1-Z | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 2-Z | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 3-Z | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 4-Z | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 5-Z | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 6-Z | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 7-Z | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |
| 1 | 8-Z | 126 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 996 | 600 | 189 | 194 | 13 | | | |

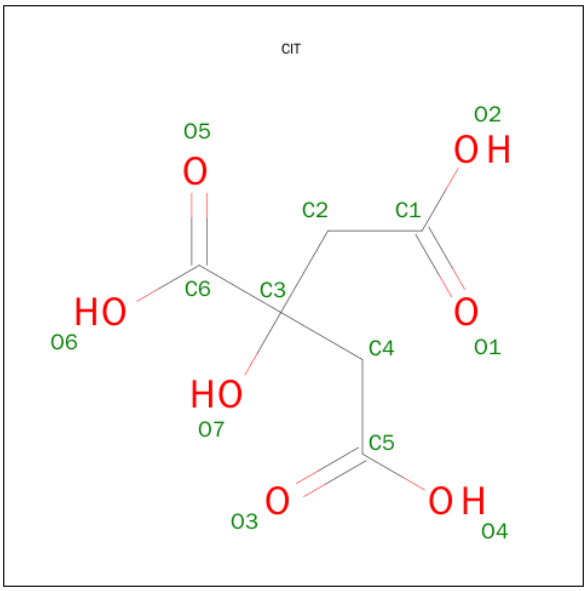
There are 2 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|---|---|---|---|---|---|
| X | 0 | MET | - | INITIATING METHIONINE | UNP P07998 |
| Z | 0 | MET | - | INITIATING METHIONINE | UNP P07998 |

- Molecule 2 is a protein called Ribonuclease inhibitor.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1-W | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 2-W | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 3-W | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 4-W | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 5-W | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 6-W | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 7-W | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 8-W | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 1-Y | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 2-Y | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 3-Y | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 4-Y | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 5-Y | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 6-Y | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 7-Y | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |
| 2 | 8-Y | 460 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 3468 | 2142 | 605 | 687 | 34 | | | |

- Molecule 3 is CITRIC ACID (three-letter code: CIT) (formula: $C_6H_8O_7$).




| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|---|---|---|---|---|---|
| 3 | 1-X | 1 | Total C O<br>13 6 7 | 0 | 0 |
| 3 | 2-X | 1 | Total C O<br>13 6 7 | 0 | 0 |
| 3 | 3-X | 1 | Total C O<br>13 6 7 | 0 | 0 |
| 3 | 4-X | 1 | Total C O<br>13 6 7 | 0 | 0 |
| 3 | 5-X | 1 | Total C O<br>13 6 7 | 0 | 0 |
| 3 | 6-X | 1 | Total C O<br>13 6 7 | 0 | 0 |
| 3 | 7-X | 1 | Total C O<br>13 6 7 | 0 | 0 |
| 3 | 8-X | 1 | Total C O<br>13 6 7 | 0 | 0 |

- Molecule 4 is water.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|---|---|---|---|---|---|
| 4 | 1-X | 103 | Total O<br>103 103 | 0 | 0 |
| 4 | 2-X | 107 | Total O<br>107 107 | 0 | 0 |
| 4 | 3-X | 108 | Total O<br>108 108 | 0 | 0 |
| 4 | 4-X | 107 | Total O<br>107 107 | 0 | 0 |

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| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|---|---|---|---|---|---|
| 4 | 5-X | 111 | Total O<br>111 111 | 0 | 0 |
| 4 | 6-X | 109 | Total O<br>109 109 | 0 | 0 |
| 4 | 7-X | 111 | Total O<br>111 111 | 0 | 0 |
| 4 | 8-X | 106 | Total O<br>106 106 | 0 | 0 |
| 4 | 1-W | 300 | Total O<br>300 300 | 0 | 0 |
| 4 | 2-W | 304 | Total O<br>304 304 | 0 | 0 |
| 4 | 3-W | 298 | Total O<br>298 298 | 0 | 0 |
| 4 | 4-W | 298 | Total O<br>298 298 | 0 | 0 |
| 4 | 5-W | 298 | Total O<br>298 298 | 0 | 0 |
| 4 | 6-W | 299 | Total O<br>299 299 | 0 | 0 |
| 4 | 7-W | 298 | Total O<br>298 298 | 0 | 0 |
| 4 | 8-W | 305 | Total O<br>305 305 | 0 | 0 |
| 4 | 1-Z | 134 | Total O<br>134 134 | 0 | 0 |
| 4 | 2-Z | 134 | Total O<br>134 134 | 0 | 0 |
| 4 | 3-Z | 135 | Total O<br>135 135 | 0 | 0 |
| 4 | 4-Z | 133 | Total O<br>133 133 | 0 | 0 |
| 4 | 5-Z | 132 | Total O<br>132 132 | 0 | 0 |
| 4 | 6-Z | 127 | Total O<br>127 127 | 0 | 0 |
| 4 | 7-Z | 132 | Total O<br>132 132 | 0 | 0 |
| 4 | 8-Z | 131 | Total O<br>131 131 | 0 | 0 |
| 4 | 1-Y | 317 | Total O<br>317 317 | 0 | 0 |

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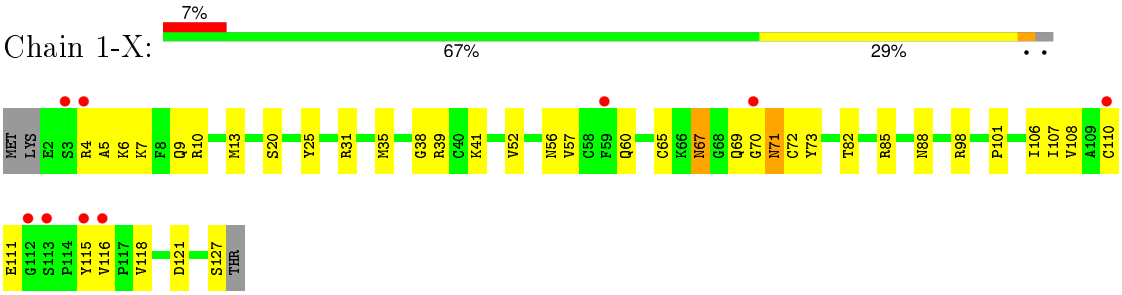
| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|---|---|---|---|---|---|
| 4 | 2-Y | 309 | Total O<br>309 309 | 0 | 0 |
| 4 | 3-Y | 313 | Total O<br>313 313 | 0 | 0 |
| 4 | 4-Y | 316 | Total O<br>316 316 | 0 | 0 |
| 4 | 5-Y | 313 | Total O<br>313 313 | 0 | 0 |
| 4 | 6-Y | 319 | Total O<br>319 319 | 0 | 0 |
| 4 | 7-Y | 313 | Total O<br>313 313 | 0 | 0 |
| 4 | 8-Y | 312 | Total O<br>312 312 | 0 | 0 |

# 3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron 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 dot above a residue indicates a poor fit to the electron density (RSRZ > 2). 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.

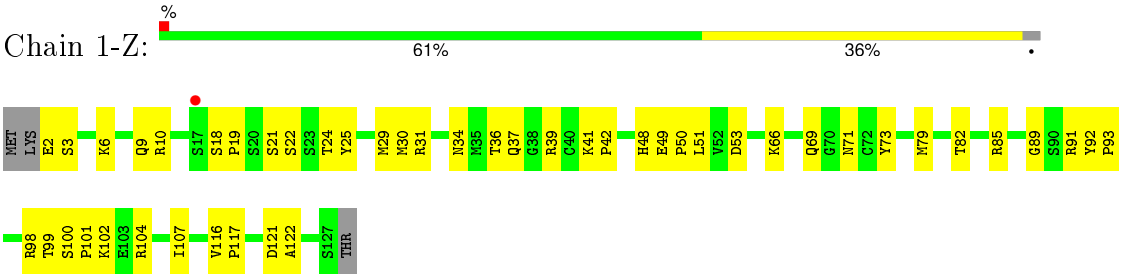
- Molecule 1: Ribonuclease pancreatic

Chain 1-X:



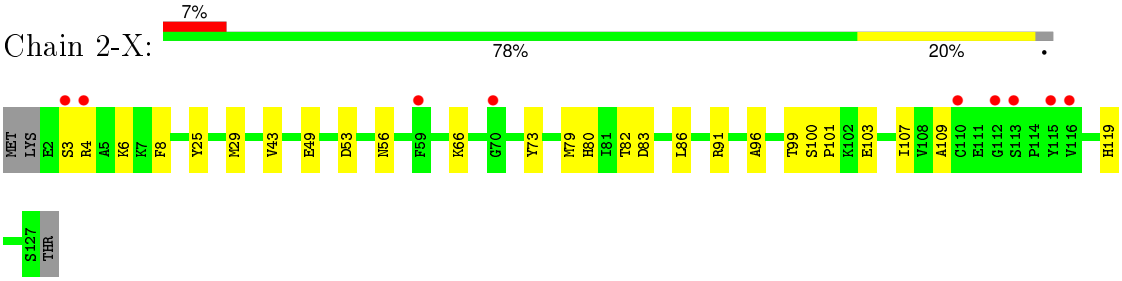

- Molecule 1: Ribonuclease pancreatic

Chain 1-Z:



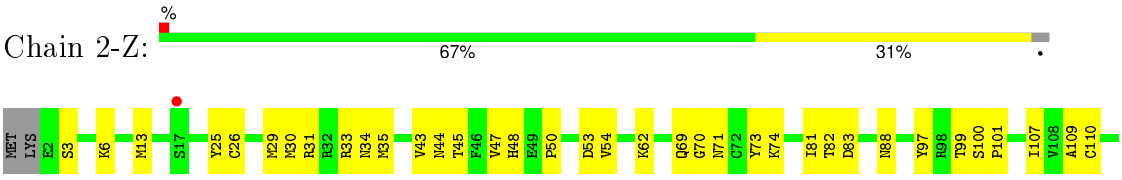

- Molecule 1: Ribonuclease pancreatic

Chain 2-X:



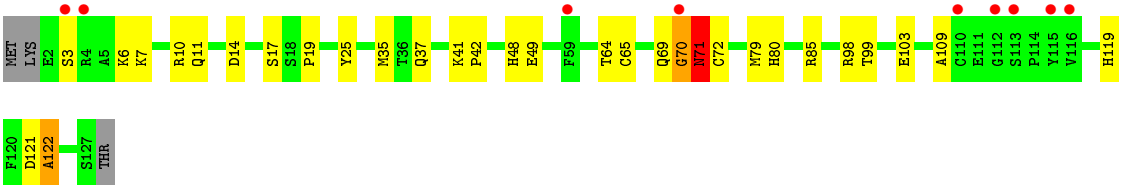

- Molecule 1: Ribonuclease pancreatic

Chain 2-Z:



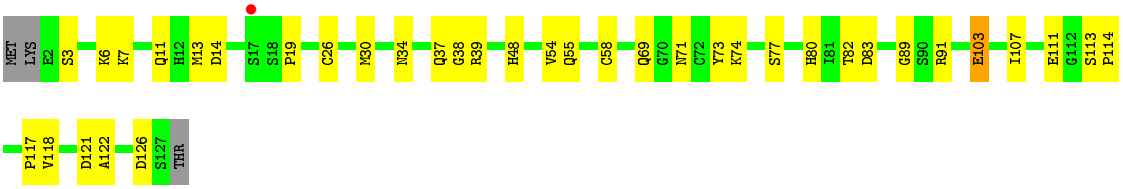

• Molecule 1: Ribonuclease pancreatic

Chain 3-X:

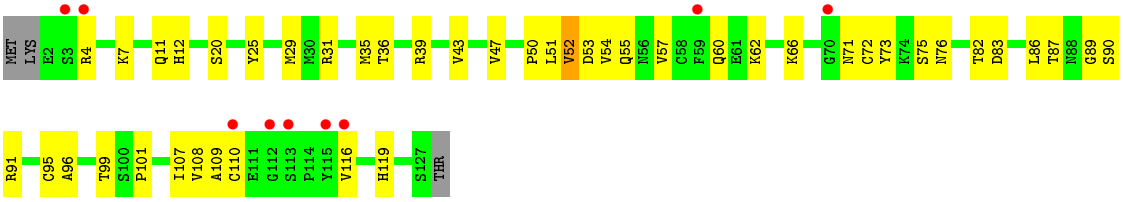

• Molecule 1: Ribonuclease pancreatic

Chain 3-Z:

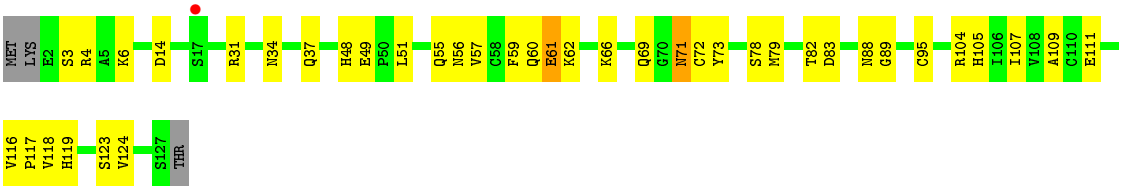

• Molecule 1: Ribonuclease pancreatic

Chain 4-X:

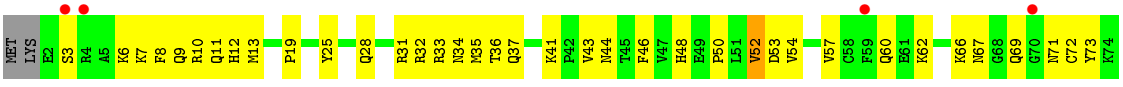

• Molecule 1: Ribonuclease pancreatic

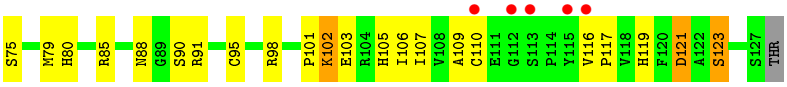
Chain 4-Z:


• Molecule 1: Ribonuclease pancreatic

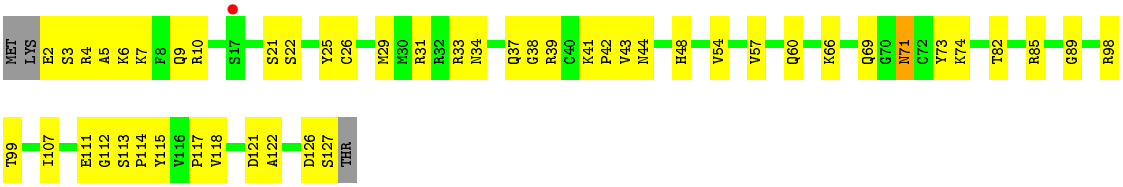
Chain 5-X:



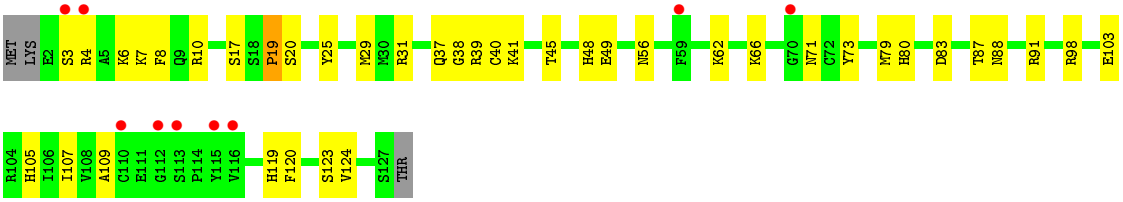

• Molecule 1: Ribonuclease pancreatic

Chain 5-Z:

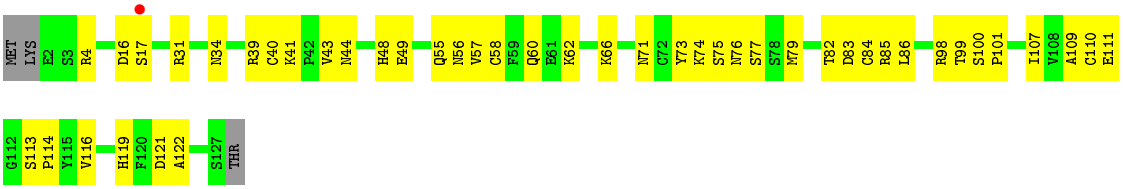

• Molecule 1: Ribonuclease pancreatic

Chain 6-X:

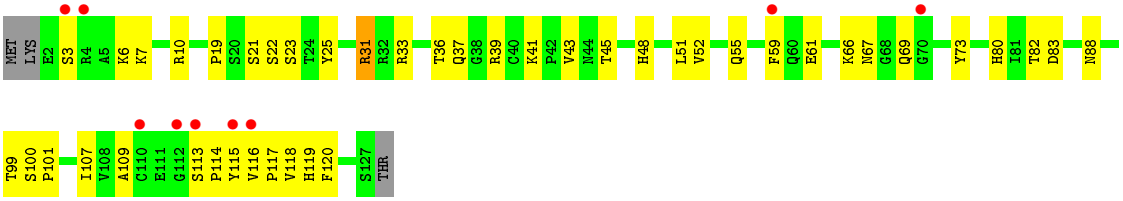

• Molecule 1: Ribonuclease pancreatic

Chain 6-Z:

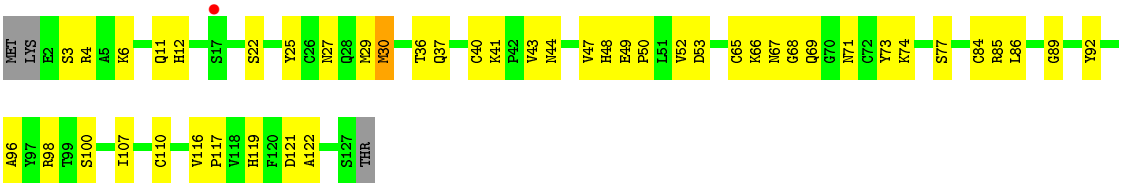

• Molecule 1: Ribonuclease pancreatic

Chain 7-X:

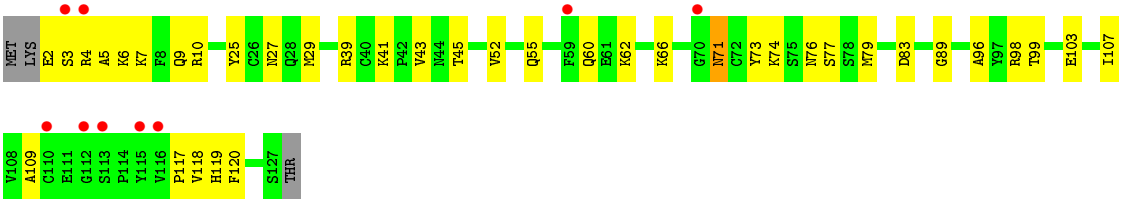

• Molecule 1: Ribonuclease pancreatic

Chain 7-Z:



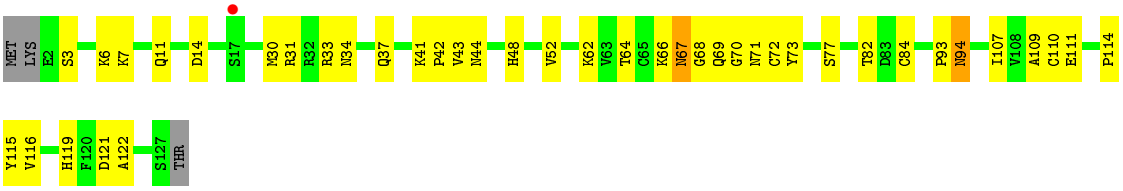
• Molecule 1: Ribonuclease pancreatic

Chain 8-X:

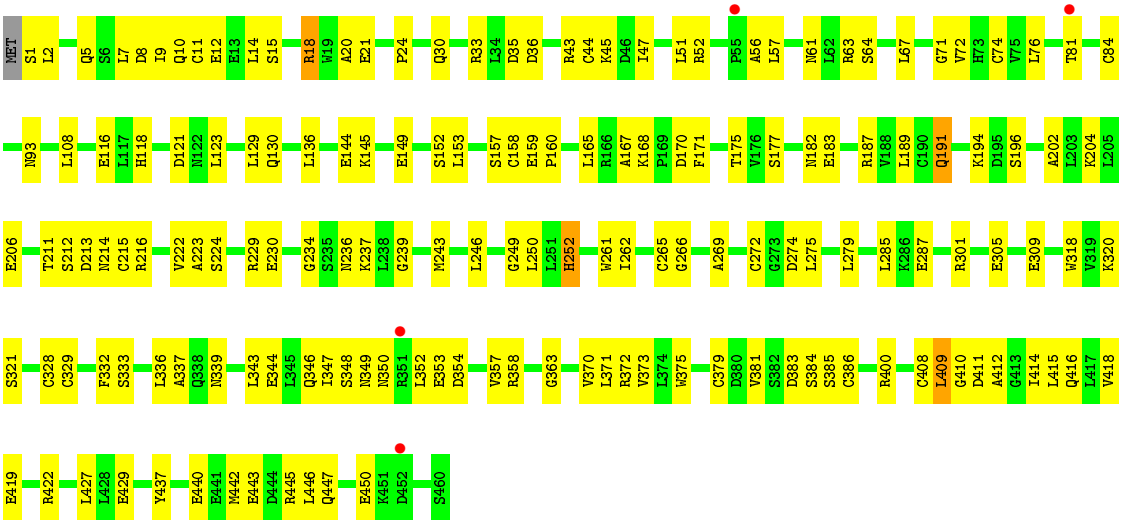
• Molecule 1: Ribonuclease pancreatic

Chain 8-Z:

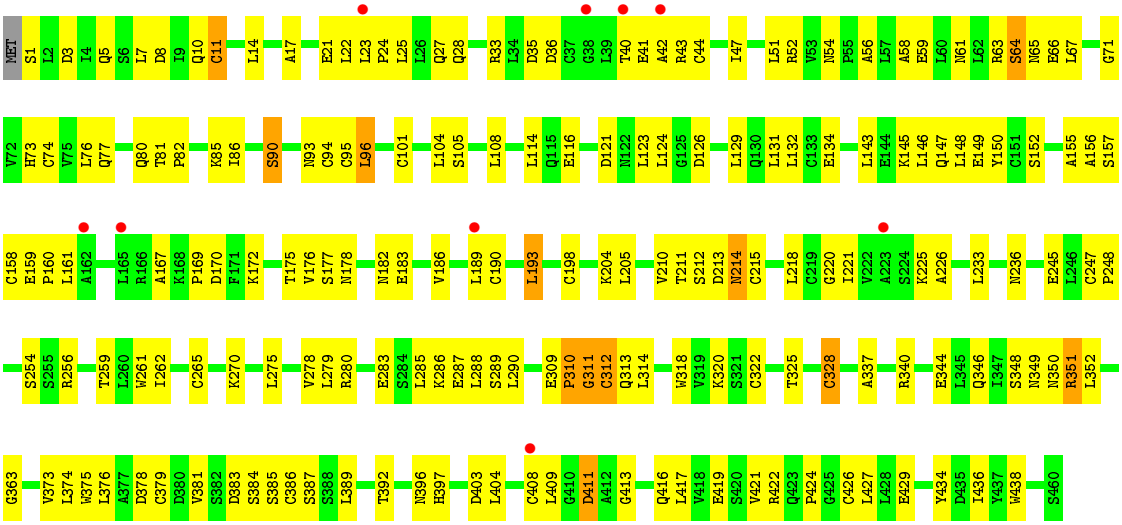
• Molecule 2: Ribonuclease inhibitor

Chain 1-W:

• Molecule 2: Ribonuclease inhibitor

Chain 1-Y:







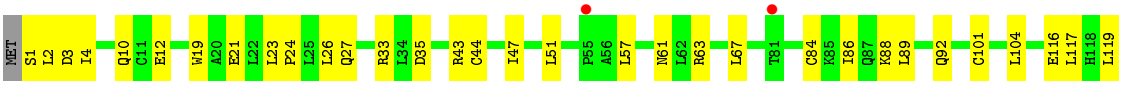


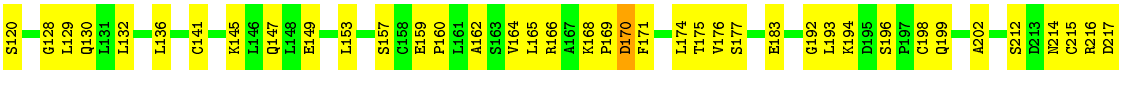


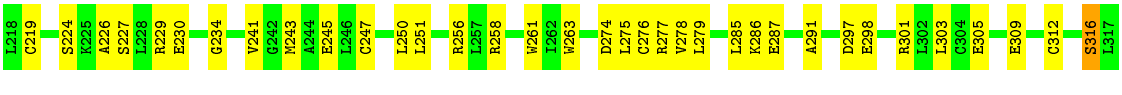


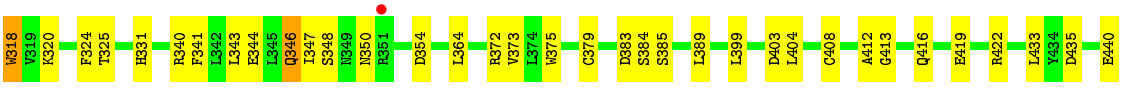
- Molecule 2: Ribonuclease inhibitor

Chain 2-W:

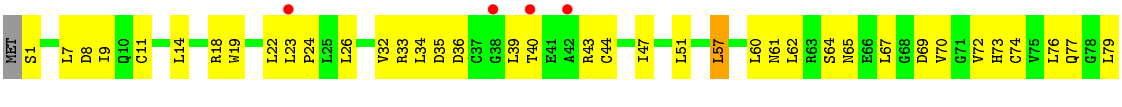


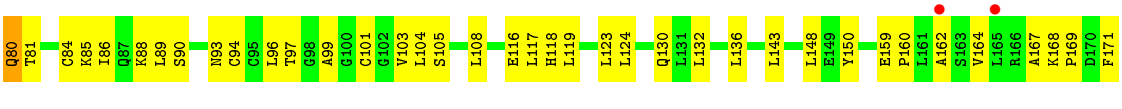


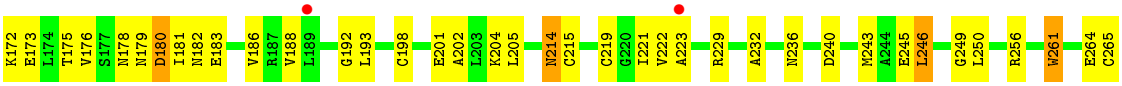


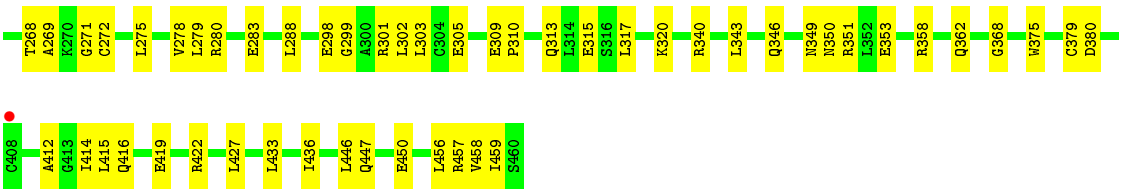
- Molecule 2: Ribonuclease inhibitor

Chain 2-Y:

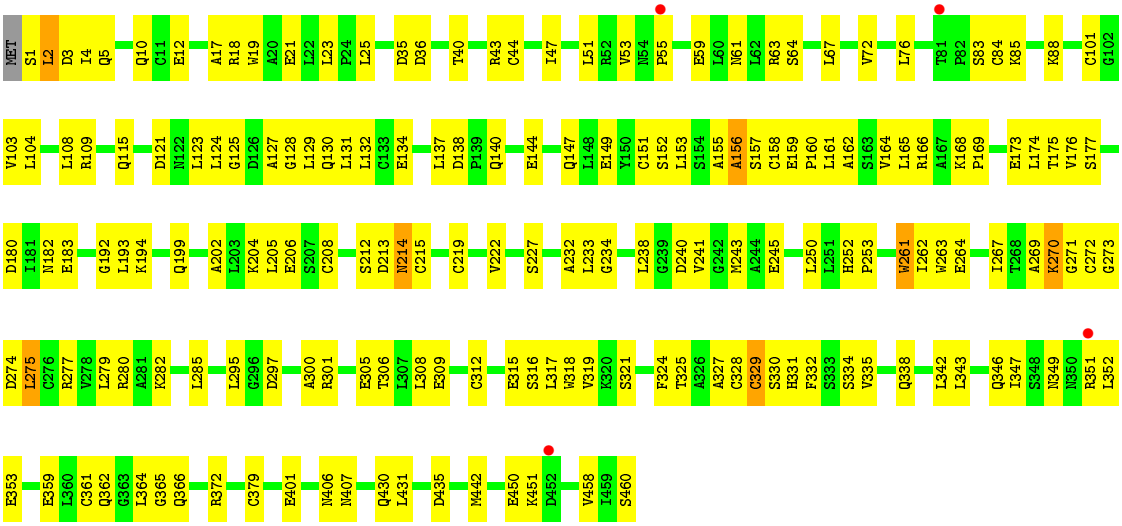






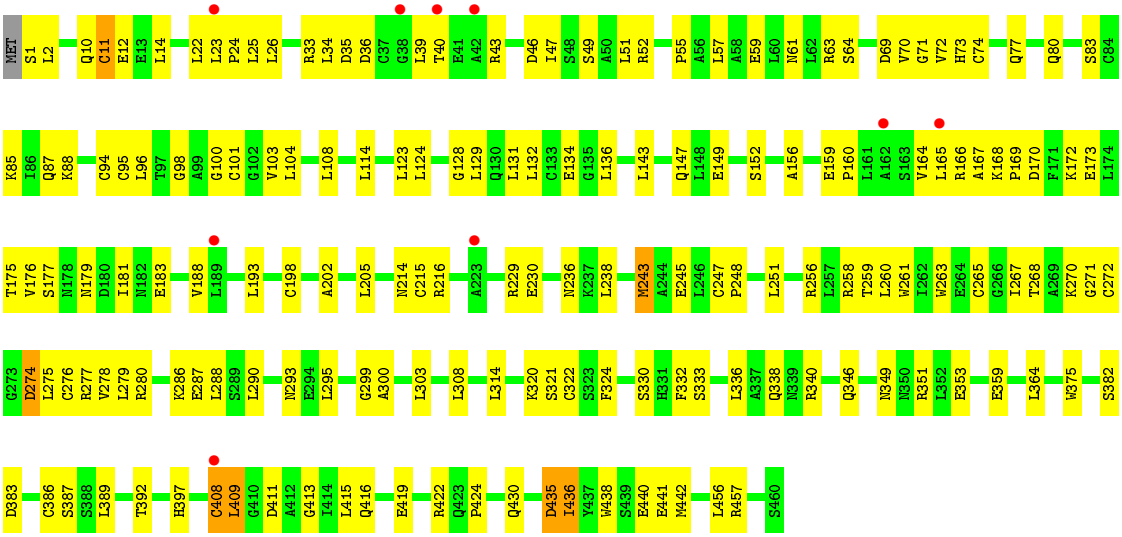

• Molecule 2: Ribonuclease inhibitor

Chain 3-W:

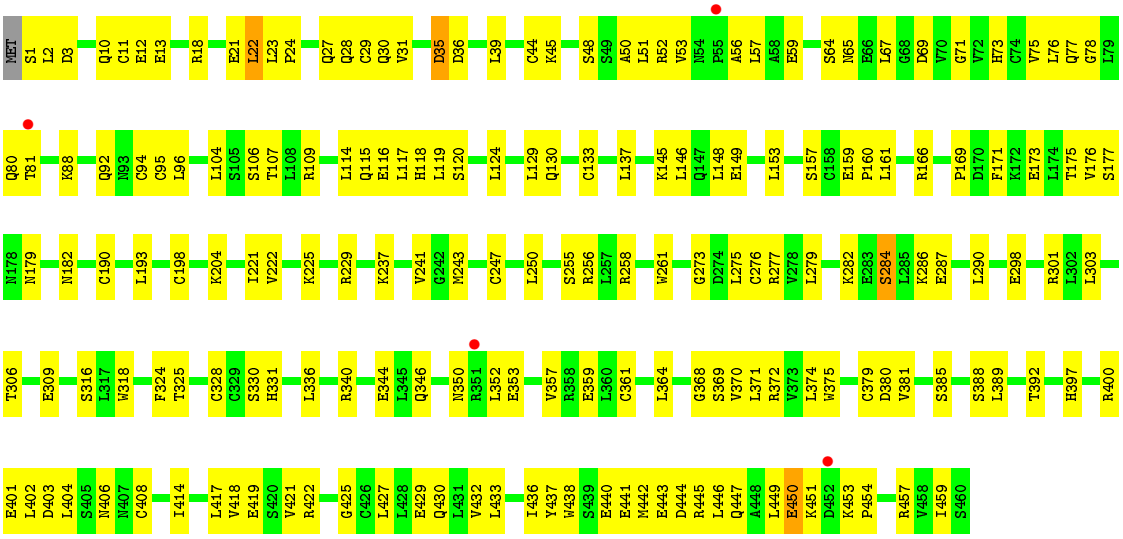

• Molecule 2: Ribonuclease inhibitor

Chain 3-Y:

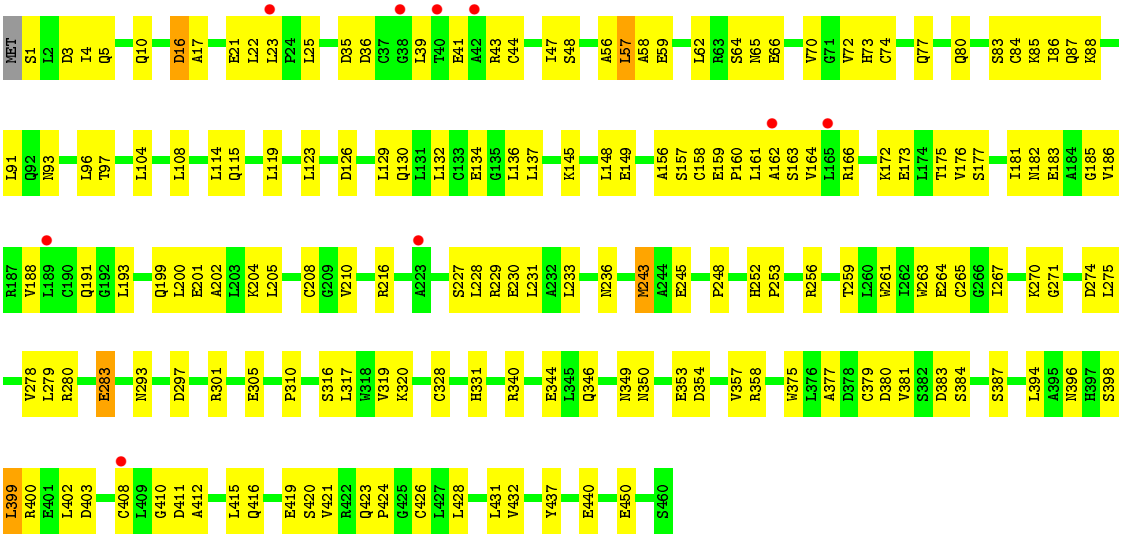

• Molecule 2: Ribonuclease inhibitor

Chain 4-W:



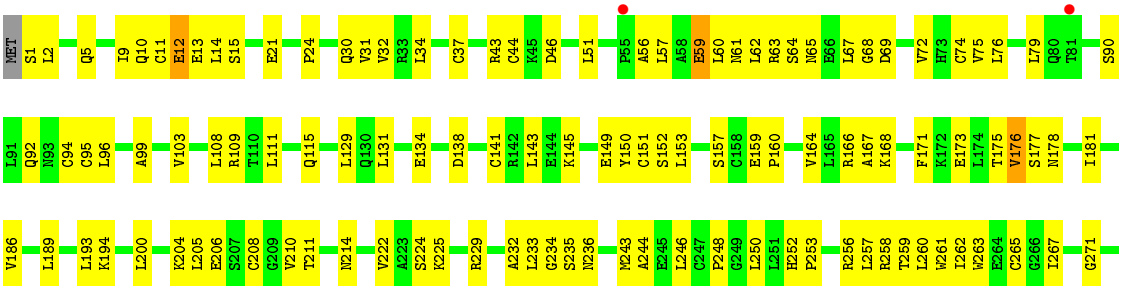
- Molecule 2: Ribonuclease inhibitor

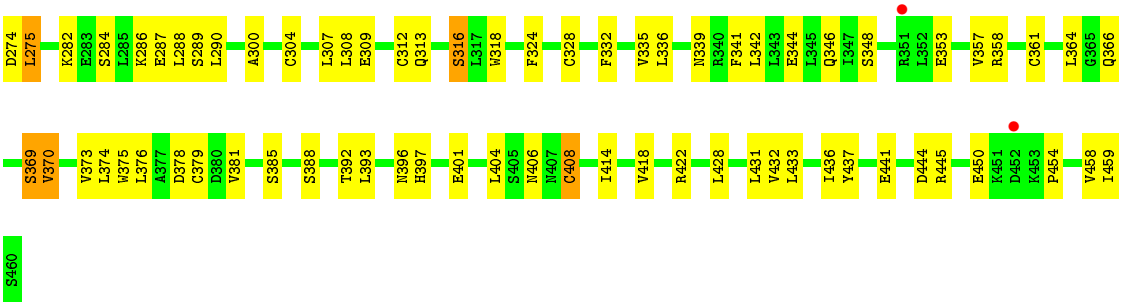
Chain 4-Y:

- Molecule 2: Ribonuclease inhibitor

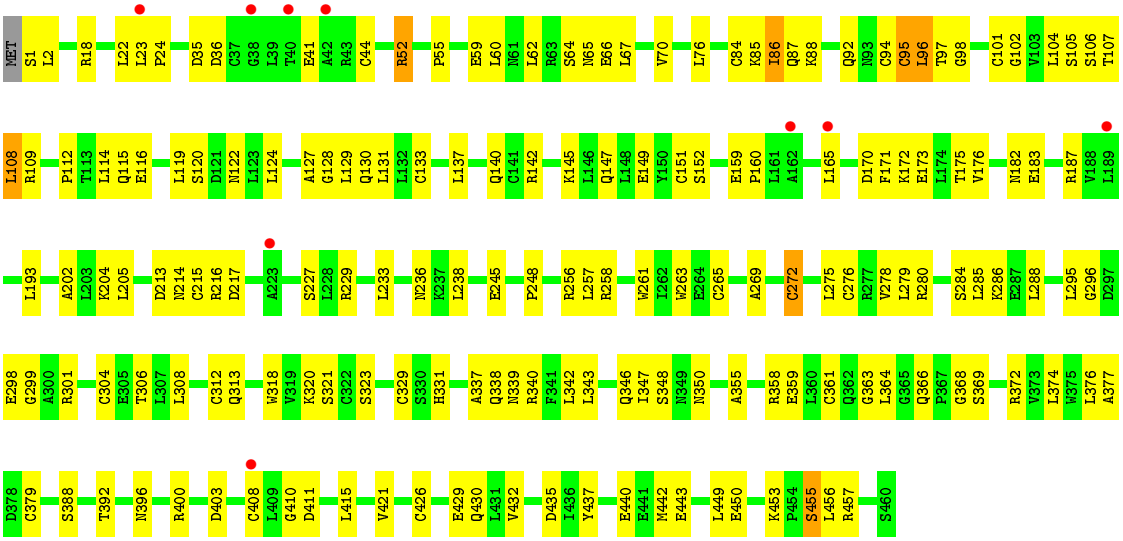
Chain 5-W:



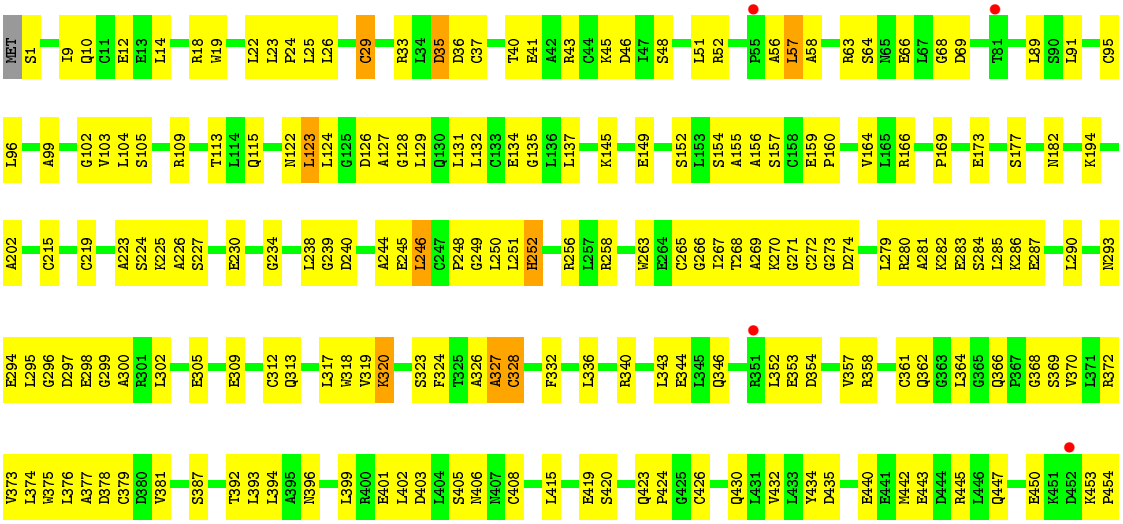

• Molecule 2: Ribonuclease inhibitor

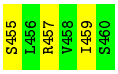
Chain 5-Y:


• Molecule 2: Ribonuclease inhibitor

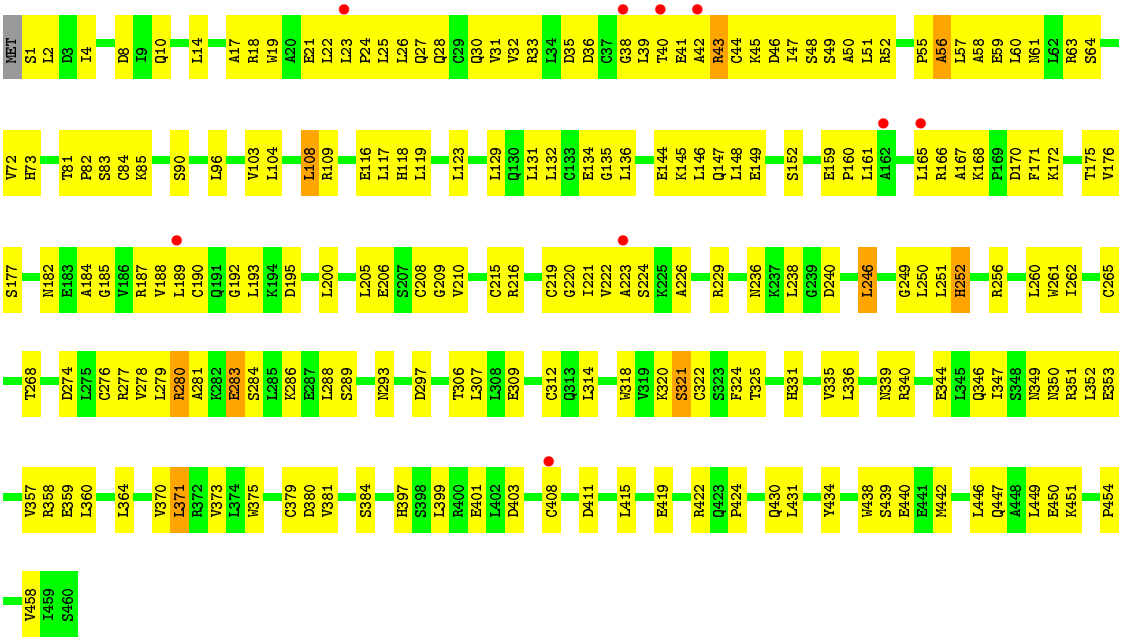
Chain 6-W:



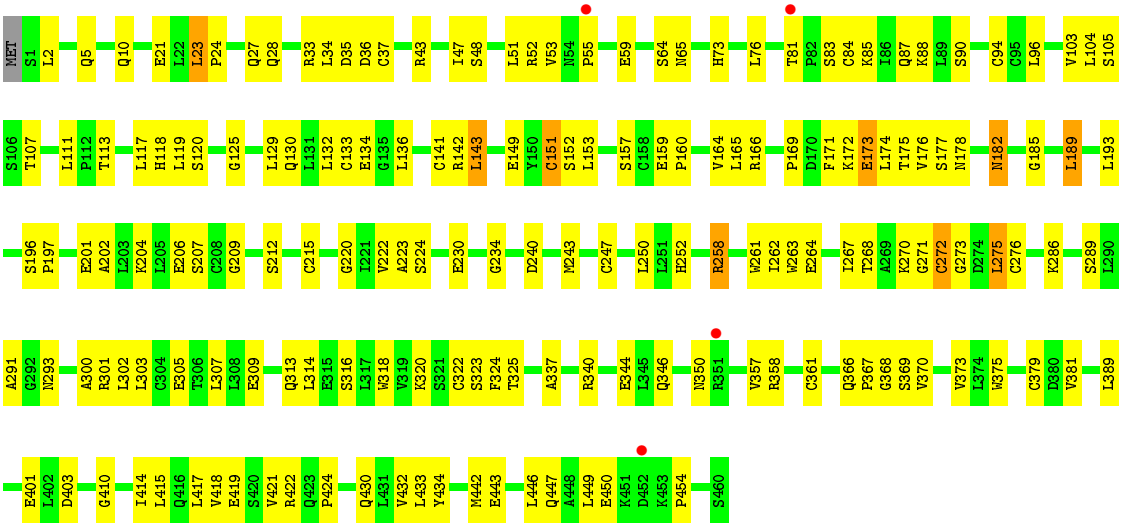

- Molecule 2: Ribonuclease inhibitor

Chain 6-Y:

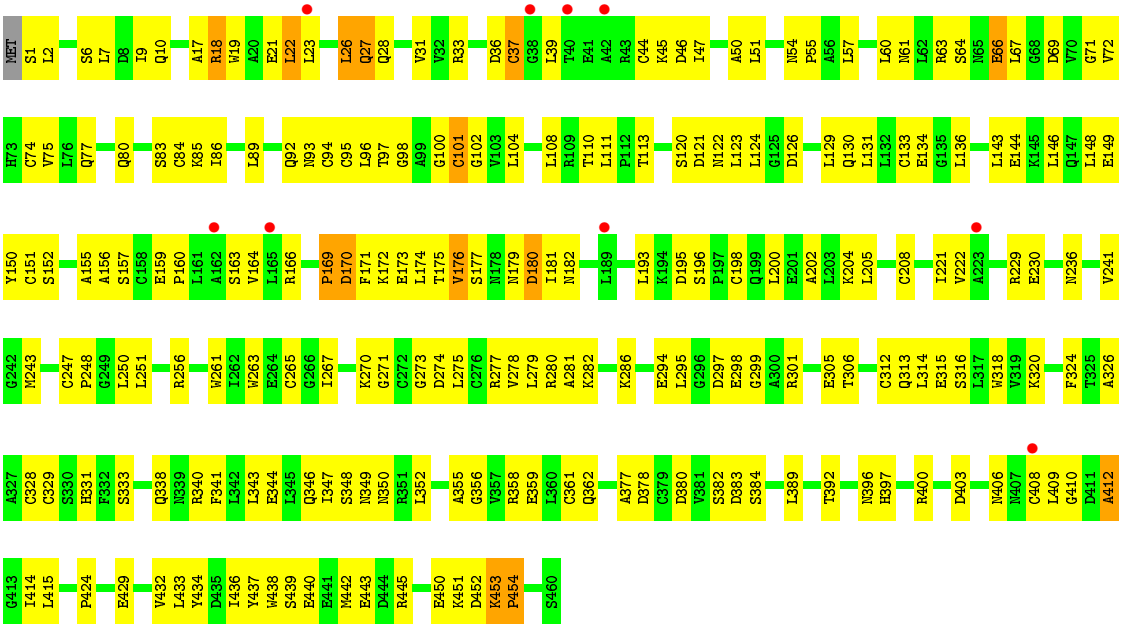

- Molecule 2: Ribonuclease inhibitor

Chain 7-W:

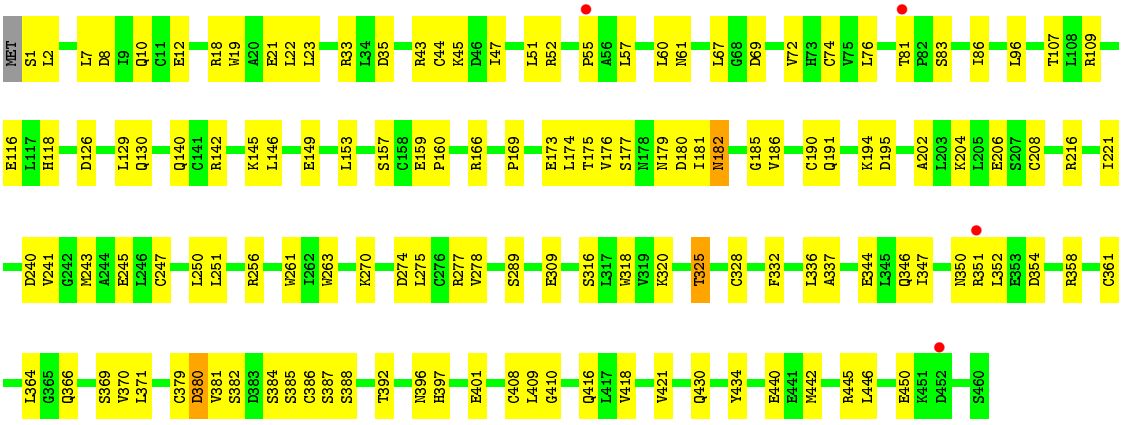

- Molecule 2: Ribonuclease inhibitor

Chain 7-Y:



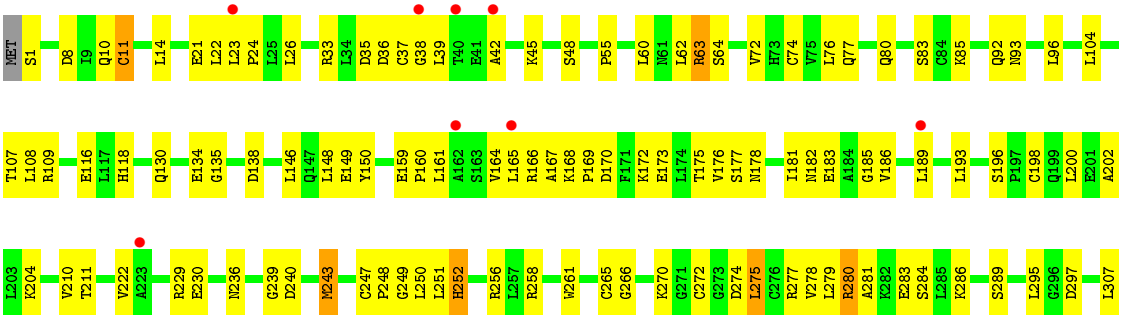
• Molecule 2: Ribonuclease inhibitor

Chain 8-W:

• Molecule 2: Ribonuclease inhibitor

Chain 8-Y:


L308
Q313
S316
L317
W318
V319
K320
F324
A327
G328
G329
S330
Q338
N339
R340
Q346
N349
N350
R351
L352
E353
D354
A355
G356
V357
R358
E359
L360
C361
G368
S369
L374
W375
L376
A377
D378
C379
D380
V381
S382
S387
T392
E401
C408
D411
I415
Q416
E419
R422
Q430
D435
I436
E450
S460

# 4 Data and refinement statistics (i)

| Property | Value | Source |
|---|---|---|
| Space group | P 21 21 21 | Depositor |
| Cell constants<br>a, b, c, $\alpha$, $\beta$, $\gamma$ | 71.34Å 107.55Å 155.04Å<br>90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 47.17 – 1.95<br>47.17 – 1.95 | Depositor<br>EDS |
| % Data completeness<br>(in resolution range) | 96.8 (47.17-1.95)<br>96.9 (47.17-1.95) | Depositor<br>EDS |
| $R_{merge}$ | (Not available) | Depositor |
| $R_{sym}$ | (Not available) | Depositor |
| $< I/\sigma(I) >$ [1] | 2.82 (at 1.95Å) | Xtriage |
| Refinement program | CNS 1.1 | Depositor |
| R, $R_{free}$ | 0.161 , 0.224<br>0.168 , 0.228 | Depositor<br>DCC |
| $R_{free}$ test set | 4225 reflections (5.27%) | DCC |
| Wilson B-factor (Å$^2$) | 25.9 | Xtriage |
| Anisotropy | 0.058 | Xtriage |
| Bulk solvent $k_{sol}$(e/Å$^3$), $B_{sol}$(Å$^2$) | 0.31 , 53.7 | EDS |
| Estimated twinning fraction | No twinning to report. | Xtriage |
| L-test for twinning[2] | $< \|L\| > = 0.48$, $< L^2 > = 0.31$ | Xtriage |
| Outliers | 1 of 84366 reflections (0.001%) | Xtriage |
| $F_o$,$F_c$ correlation | 0.96 | EDS |
| Total number of atoms | 78360 | wwPDB-VP |
| Average B, all atoms (Å$^2$) | 23.0 | wwPDB-VP |

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.37% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 0.2 for perfectly twinned datasets.

# 5 Model quality

## 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: CIT

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

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #$\|Z\|>5$ | RMSZ | #$\|Z\|>5$ |
| 1 | 1-X | 0.40 | 0/1016 | 0.65 | 0/1368 |
| 1 | 1-Z | 0.46 | 0/1016 | 0.69 | 0/1368 |
| 1 | 2-X | 0.41 | 0/1016 | 0.65 | 0/1368 |
| 1 | 2-Z | 0.45 | 0/1016 | 0.68 | 0/1368 |
| 1 | 3-X | 0.41 | 0/1016 | 0.66 | 0/1368 |
| 1 | 3-Z | 0.44 | 0/1016 | 0.68 | 0/1368 |
| 1 | 4-X | 0.42 | 0/1016 | 0.66 | 0/1368 |
| 1 | 4-Z | 0.45 | 0/1016 | 0.68 | 0/1368 |
| 1 | 5-X | 0.45 | 0/1016 | 0.68 | 0/1368 |
| 1 | 5-Z | 0.47 | 0/1016 | 0.71 | 0/1368 |
| 1 | 6-X | 0.43 | 0/1016 | 0.72 | 1/1368 (0.1%) |
| 1 | 6-Z | 0.48 | 0/1016 | 0.73 | 0/1368 |
| 1 | 7-X | 0.44 | 0/1016 | 0.70 | 0/1368 |
| 1 | 7-Z | 0.48 | 0/1016 | 0.72 | 0/1368 |
| 1 | 8-X | 0.45 | 0/1016 | 0.70 | 0/1368 |
| 1 | 8-Z | 0.50 | 0/1016 | 0.74 | 0/1368 |
| 2 | 1-W | 0.42 | 0/3505 | 0.60 | 0/4744 |
| 2 | 1-Y | 0.42 | 0/3505 | 0.62 | 0/4744 |
| 2 | 2-W | 0.42 | 0/3505 | 0.60 | 0/4744 |
| 2 | 2-Y | 0.41 | 0/3505 | 0.62 | 0/4744 |
| 2 | 3-W | 0.42 | 0/3505 | 0.60 | 0/4744 |
| 2 | 3-Y | 0.42 | 1/3505 (0.0%) | 0.62 | 0/4744 |
| 2 | 4-W | 0.41 | 0/3505 | 0.60 | 0/4744 |
| 2 | 4-Y | 0.40 | 0/3505 | 0.63 | 0/4744 |
| 2 | 5-W | 0.46 | 0/3505 | 0.65 | 0/4744 |
| 2 | 5-Y | 0.45 | 0/3505 | 0.64 | 0/4744 |
| 2 | 6-W | 0.45 | 0/3505 | 0.66 | 0/4744 |
| 2 | 6-Y | 0.45 | 0/3505 | 0.65 | 0/4744 |
| 2 | 7-W | 0.44 | 0/3505 | 0.64 | 0/4744 |
| 2 | 7-Y | 0.44 | 1/3505 (0.0%) | 0.65 | 0/4744 |
| 2 | 8-W | 0.44 | 0/3505 | 0.63 | 0/4744 |
| 2 | 8-Y | 0.43 | 0/3505 | 0.64 | 1/4744 (0.0%) |

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | $\#\|Z\|>5$ | RMSZ | $\#\|Z\|>5$ |
| All | All | 0.43 | 2/72336 (0.0%) | 0.64 | 2/97792 (0.0%) |

All (2) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 2 | 3-Y | 408 | CYS | CB-SG | -6.10 | 1.71 | 1.82 |
| 2 | 7-Y | 37 | CYS | CB-SG | -5.23 | 1.73 | 1.81 |

All (2) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 2 | 8-Y | 275 | LEU | CA-CB-CG | 5.50 | 127.94 | 115.30 |
| 1 | 6-X | 40 | CYS | CA-CB-SG | 5.00 | 123.01 | 114.00 |

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 1 | 1-X | 996 | 0 | 941 | 45 | 0 |
| 1 | 1-Z | 996 | 0 | 941 | 47 | 0 |
| 1 | 2-X | 996 | 0 | 941 | 17 | 0 |
| 1 | 2-Z | 996 | 0 | 941 | 37 | 0 |
| 1 | 3-X | 996 | 0 | 941 | 30 | 0 |
| 1 | 3-Z | 996 | 0 | 941 | 31 | 0 |
| 1 | 4-X | 996 | 0 | 941 | 45 | 0 |
| 1 | 4-Z | 996 | 0 | 941 | 46 | 0 |
| 1 | 5-X | 996 | 0 | 941 | 53 | 0 |
| 1 | 5-Z | 996 | 0 | 941 | 50 | 0 |
| 1 | 6-X | 996 | 0 | 941 | 41 | 0 |
| 1 | 6-Z | 996 | 0 | 941 | 38 | 0 |
| 1 | 7-X | 996 | 0 | 941 | 43 | 0 |
| 1 | 7-Z | 996 | 0 | 941 | 41 | 0 |
| 1 | 8-X | 996 | 0 | 941 | 28 | 0 |

*Continued on next page...*

*Continued from previous page...*

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 1 | 8-Z | 996 | 0 | 941 | 43 | 0 |
| 2 | 1-W | 3468 | 0 | 3509 | 150 | 0 |
| 2 | 1-Y | 3468 | 0 | 3509 | 172 | 0 |
| 2 | 2-W | 3468 | 0 | 3509 | 135 | 0 |
| 2 | 2-Y | 3468 | 0 | 3509 | 132 | 0 |
| 2 | 3-W | 3468 | 0 | 3509 | 164 | 0 |
| 2 | 3-Y | 3468 | 0 | 3509 | 160 | 0 |
| 2 | 4-W | 3468 | 0 | 3509 | 172 | 0 |
| 2 | 4-Y | 3468 | 0 | 3509 | 153 | 0 |
| 2 | 5-W | 3468 | 0 | 3509 | 173 | 0 |
| 2 | 5-Y | 3468 | 0 | 3509 | 161 | 0 |
| 2 | 6-W | 3468 | 0 | 3509 | 191 | 0 |
| 2 | 6-Y | 3468 | 0 | 3509 | 209 | 0 |
| 2 | 7-W | 3468 | 0 | 3509 | 161 | 0 |
| 2 | 7-Y | 3468 | 0 | 3509 | 218 | 0 |
| 2 | 8-W | 3468 | 0 | 3509 | 136 | 0 |
| 2 | 8-Y | 3468 | 0 | 3509 | 128 | 0 |
| 3 | 1-X | 13 | 0 | 5 | 0 | 0 |
| 3 | 2-X | 13 | 0 | 5 | 1 | 0 |
| 3 | 3-X | 13 | 0 | 5 | 1 | 0 |
| 3 | 4-X | 13 | 0 | 5 | 1 | 0 |
| 3 | 5-X | 13 | 0 | 5 | 3 | 0 |
| 3 | 6-X | 13 | 0 | 5 | 2 | 0 |
| 3 | 7-X | 13 | 0 | 5 | 0 | 0 |
| 3 | 8-X | 13 | 0 | 5 | 2 | 0 |
| 4 | 1-W | 300 | 0 | 0 | 19 | 0 |
| 4 | 1-X | 103 | 0 | 0 | 5 | 0 |
| 4 | 1-Y | 317 | 0 | 0 | 25 | 0 |
| 4 | 1-Z | 134 | 0 | 0 | 6 | 0 |
| 4 | 2-W | 304 | 0 | 0 | 14 | 0 |
| 4 | 2-X | 107 | 0 | 0 | 1 | 0 |
| 4 | 2-Y | 309 | 0 | 0 | 7 | 0 |
| 4 | 2-Z | 134 | 0 | 0 | 5 | 0 |
| 4 | 3-W | 298 | 0 | 0 | 20 | 0 |
| 4 | 3-X | 108 | 0 | 0 | 1 | 0 |
| 4 | 3-Y | 313 | 0 | 0 | 22 | 0 |
| 4 | 3-Z | 135 | 0 | 0 | 7 | 0 |
| 4 | 4-W | 298 | 0 | 0 | 15 | 0 |
| 4 | 4-X | 107 | 0 | 0 | 7 | 0 |
| 4 | 4-Y | 316 | 0 | 0 | 24 | 0 |
| 4 | 4-Z | 133 | 0 | 0 | 5 | 0 |
| 4 | 5-W | 298 | 0 | 0 | 18 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 4 | 5-X | 111 | 0 | 0 | 9 | 0 |
| 4 | 5-Y | 313 | 0 | 0 | 17 | 0 |
| 4 | 5-Z | 132 | 0 | 0 | 9 | 0 |
| 4 | 6-W | 299 | 0 | 0 | 28 | 0 |
| 4 | 6-X | 109 | 0 | 0 | 5 | 0 |
| 4 | 6-Y | 319 | 0 | 0 | 39 | 0 |
| 4 | 6-Z | 127 | 0 | 0 | 7 | 0 |
| 4 | 7-W | 298 | 0 | 0 | 16 | 0 |
| 4 | 7-X | 111 | 0 | 0 | 10 | 0 |
| 4 | 7-Y | 313 | 0 | 0 | 28 | 0 |
| 4 | 7-Z | 132 | 0 | 0 | 7 | 0 |
| 4 | 8-W | 305 | 0 | 0 | 21 | 0 |
| 4 | 8-X | 106 | 0 | 0 | 5 | 0 |
| 4 | 8-Y | 312 | 0 | 0 | 17 | 0 |
| 4 | 8-Z | 131 | 0 | 0 | 11 | 0 |
| All | All | 78360 | 0 | 71240 | 3062 | 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 21.

The worst 5 of 3062 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:Z:64:THR:HA | 1:Z:70:GLY:HA2 | 1.19 | 1.12 |
| 2:Y:394:LEU:HD11 | 2:Y:423:GLN:HE22 | 1.19 | 1.08 |
| 2:W:55:PRO:HB3 | 2:W:83:SER:HB2 | 1.11 | 1.07 |
| 1:X:64:THR:HA | 1:X:70:GLY:HA2 | 1.32 | 1.07 |
| 1:X:67:ASN:HD21 | 1:X:69:GLN:HG2 | 1.18 | 1.07 |

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 X-ray entries followed by that with respect to entries of similar resolution.

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles |
|---|---|---|---|---|---|---|
| 1 | 1-X | 124/129 (96%) | 109 (88%) | 11 (9%) | 4 (3%) | 5 1 |
| 1 | 1-Z | 124/129 (96%) | 108 (87%) | 16 (13%) | 0 | 100 100 |
| 1 | 2-X | 124/129 (96%) | 119 (96%) | 5 (4%) | 0 | 100 100 |
| 1 | 2-Z | 124/129 (96%) | 116 (94%) | 8 (6%) | 0 | 100 100 |
| 1 | 3-X | 124/129 (96%) | 113 (91%) | 8 (6%) | 3 (2%) | 7 1 |
| 1 | 3-Z | 124/129 (96%) | 116 (94%) | 8 (6%) | 0 | 100 100 |
| 1 | 4-X | 124/129 (96%) | 111 (90%) | 12 (10%) | 1 (1%) | 24 11 |
| 1 | 4-Z | 124/129 (96%) | 112 (90%) | 10 (8%) | 2 (2%) | 12 3 |
| 1 | 5-X | 124/129 (96%) | 105 (85%) | 18 (14%) | 1 (1%) | 24 11 |
| 1 | 5-Z | 124/129 (96%) | 115 (93%) | 8 (6%) | 1 (1%) | 24 11 |
| 1 | 6-X | 124/129 (96%) | 110 (89%) | 12 (10%) | 2 (2%) | 12 3 |
| 1 | 6-Z | 124/129 (96%) | 117 (94%) | 7 (6%) | 0 | 100 100 |
| 1 | 7-X | 124/129 (96%) | 114 (92%) | 10 (8%) | 0 | 100 100 |
| 1 | 7-Z | 124/129 (96%) | 112 (90%) | 11 (9%) | 1 (1%) | 24 11 |
| 1 | 8-X | 124/129 (96%) | 115 (93%) | 8 (6%) | 1 (1%) | 24 11 |
| 1 | 8-Z | 124/129 (96%) | 110 (89%) | 11 (9%) | 3 (2%) | 7 1 |
| 2 | 1-W | 458/461 (99%) | 421 (92%) | 33 (7%) | 4 (1%) | 21 9 |
| 2 | 1-Y | 458/461 (99%) | 419 (92%) | 30 (7%) | 9 (2%) | 9 2 |
| 2 | 2-W | 458/461 (99%) | 436 (95%) | 22 (5%) | 0 | 100 100 |
| 2 | 2-Y | 458/461 (99%) | 431 (94%) | 24 (5%) | 3 (1%) | 26 14 |
| 2 | 3-W | 458/461 (99%) | 416 (91%) | 38 (8%) | 4 (1%) | 21 9 |
| 2 | 3-Y | 458/461 (99%) | 423 (92%) | 31 (7%) | 4 (1%) | 21 9 |
| 2 | 4-W | 458/461 (99%) | 420 (92%) | 34 (7%) | 4 (1%) | 21 9 |
| 2 | 4-Y | 458/461 (99%) | 431 (94%) | 24 (5%) | 3 (1%) | 26 14 |
| 2 | 5-W | 458/461 (99%) | 427 (93%) | 27 (6%) | 4 (1%) | 21 9 |
| 2 | 5-Y | 458/461 (99%) | 424 (93%) | 31 (7%) | 3 (1%) | 26 14 |
| 2 | 6-W | 458/461 (99%) | 414 (90%) | 37 (8%) | 7 (2%) | 13 3 |
| 2 | 6-Y | 458/461 (99%) | 422 (92%) | 31 (7%) | 5 (1%) | 17 6 |
| 2 | 7-W | 458/461 (99%) | 425 (93%) | 31 (7%) | 2 (0%) | 39 27 |
| 2 | 7-Y | 458/461 (99%) | 411 (90%) | 37 (8%) | 10 (2%) | 8 2 |
| 2 | 8-W | 458/461 (99%) | 422 (92%) | 35 (8%) | 1 (0%) | 52 43 |
| 2 | 8-Y | 458/461 (99%) | 428 (93%) | 26 (6%) | 4 (1%) | 21 9 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles |
|---|---|---|---|---|---|---|
| All | All | 9312/9440 (99%) | 8572 (92%) | 654 (7%) | 86 (1%) | 21 9 |

5 of 86 Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | 1-X | 71 | ASN |
| 2 | 1-W | 409 | LEU |
| 2 | 1-Y | 56 | ALA |
| 2 | 1-Y | 310 | PRO |
| 2 | 1-Y | 351 | ARG |

### 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 X-ray entries followed by that with respect to entries of similar resolution.

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles |
|---|---|---|---|---|---|
| 1 | 1-X | 117/120 (98%) | 114 (97%) | 3 (3%) | 54 43 |
| 1 | 1-Z | 117/120 (98%) | 115 (98%) | 2 (2%) | 68 63 |
| 1 | 2-X | 117/120 (98%) | 116 (99%) | 1 (1%) | 84 83 |
| 1 | 2-Z | 117/120 (98%) | 117 (100%) | 0 | 100 100 |
| 1 | 3-X | 117/120 (98%) | 115 (98%) | 2 (2%) | 68 63 |
| 1 | 3-Z | 117/120 (98%) | 115 (98%) | 2 (2%) | 68 63 |
| 1 | 4-X | 117/120 (98%) | 115 (98%) | 2 (2%) | 68 63 |
| 1 | 4-Z | 117/120 (98%) | 116 (99%) | 1 (1%) | 84 83 |
| 1 | 5-X | 117/120 (98%) | 114 (97%) | 3 (3%) | 54 43 |
| 1 | 5-Z | 117/120 (98%) | 116 (99%) | 1 (1%) | 84 83 |
| 1 | 6-X | 117/120 (98%) | 116 (99%) | 1 (1%) | 84 83 |
| 1 | 6-Z | 117/120 (98%) | 117 (100%) | 0 | 100 100 |
| 1 | 7-X | 117/120 (98%) | 115 (98%) | 2 (2%) | 68 63 |
| 1 | 7-Z | 117/120 (98%) | 116 (99%) | 1 (1%) | 84 83 |
| 1 | 8-X | 117/120 (98%) | 115 (98%) | 2 (2%) | 68 63 |
| 1 | 8-Z | 117/120 (98%) | 114 (97%) | 3 (3%) | 54 43 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 2 | 1-W | 396/397 (100%) | 386 (98%) | 10 (2%) | 55 | 45 |
| 2 | 1-Y | 396/397 (100%) | 390 (98%) | 6 (2%) | 72 | 68 |
| 2 | 2-W | 396/397 (100%) | 390 (98%) | 6 (2%) | 72 | 68 |
| 2 | 2-Y | 396/397 (100%) | 391 (99%) | 5 (1%) | 76 | 72 |
| 2 | 3-W | 396/397 (100%) | 389 (98%) | 7 (2%) | 66 | 60 |
| 2 | 3-Y | 396/397 (100%) | 390 (98%) | 6 (2%) | 72 | 68 |
| 2 | 4-W | 396/397 (100%) | 389 (98%) | 7 (2%) | 66 | 60 |
| 2 | 4-Y | 396/397 (100%) | 390 (98%) | 6 (2%) | 72 | 68 |
| 2 | 5-W | 396/397 (100%) | 386 (98%) | 10 (2%) | 55 | 45 |
| 2 | 5-Y | 396/397 (100%) | 388 (98%) | 8 (2%) | 63 | 55 |
| 2 | 6-W | 396/397 (100%) | 386 (98%) | 10 (2%) | 55 | 45 |
| 2 | 6-Y | 396/397 (100%) | 385 (97%) | 11 (3%) | 51 | 39 |
| 2 | 7-W | 396/397 (100%) | 384 (97%) | 12 (3%) | 48 | 36 |
| 2 | 7-Y | 396/397 (100%) | 386 (98%) | 10 (2%) | 55 | 45 |
| 2 | 8-W | 396/397 (100%) | 392 (99%) | 4 (1%) | 82 | 80 |
| 2 | 8-Y | 396/397 (100%) | 390 (98%) | 6 (2%) | 72 | 68 |
| All | All | 8208/8272 (99%) | 8058 (98%) | 150 (2%) | 66 | 60 |

5 of 150 residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | 5-X | 121 | ASP |
| 2 | 5-Y | 261 | TRP |
| 2 | 8-W | 325 | THR |
| 2 | 5-W | 59 | GLU |
| 2 | 5-W | 328 | CYS |

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 152 such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 2 | 4-Y | 115 | GLN |
| 1 | 5-Z | 48 | HIS |
| 2 | 8-W | 313 | GLN |
| 2 | 4-Y | 362 | GLN |
| 2 | 5-W | 115 | GLN |

### 5.3.3 RNA

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains

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

## 5.5 Carbohydrates

There are no carbohydrates in this entry.

## 5.6 Ligand geometry

8 ligands are 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 | $\#\|Z\| > 2$ |
| 3 | CIT | 1-X | 900 | - | 3,12,12 | 1.52 | 0 | 3,17,17 | 4.53 | 2 (66%) |
| 3 | CIT | 2-X | 900 | - | 3,12,12 | 1.98 | 1 (33%) | 3,17,17 | 4.30 | 2 (66%) |
| 3 | CIT | 3-X | 900 | - | 3,12,12 | 1.89 | 1 (33%) | 3,17,17 | 4.40 | 2 (66%) |
| 3 | CIT | 4-X | 900 | - | 3,12,12 | 1.96 | 1 (33%) | 3,17,17 | 4.24 | 2 (66%) |
| 3 | CIT | 5-X | 900 | - | 3,12,12 | 2.04 | 2 (66%) | 3,17,17 | 4.47 | 2 (66%) |
| 3 | CIT | 6-X | 900 | - | 3,12,12 | 2.06 | 1 (33%) | 3,17,17 | 4.26 | 2 (66%) |
| 3 | CIT | 7-X | 900 | - | 3,12,12 | 1.90 | 1 (33%) | 3,17,17 | 4.26 | 2 (66%) |
| 3 | CIT | 8-X | 900 | - | 3,12,12 | 2.13 | 2 (66%) | 3,17,17 | 4.50 | 3 (100%) |

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 |
|---|---|---|---|---|---|---|---|
| 3 | CIT | 1-X | 900 | - | - | 0/6/16/16 | 0/0/0/0 |
| 3 | CIT | 2-X | 900 | - | - | 0/6/16/16 | 0/0/0/0 |
| 3 | CIT | 3-X | 900 | - | - | 0/6/16/16 | 0/0/0/0 |
| 3 | CIT | 4-X | 900 | - | - | 0/6/16/16 | 0/0/0/0 |
| 3 | CIT | 5-X | 900 | - | - | 0/6/16/16 | 0/0/0/0 |
| 3 | CIT | 6-X | 900 | - | - | 0/6/16/16 | 0/0/0/0 |
| 3 | CIT | 7-X | 900 | - | - | 0/6/16/16 | 0/0/0/0 |
| 3 | CIT | 8-X | 900 | - | - | 0/6/16/16 | 0/0/0/0 |

The worst 5 of 9 bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 3 | 4-X | 900 | CIT | C4-C3 | -2.31 | 1.51 | 1.54 |
| 3 | 6-X | 900 | CIT | C4-C3 | -2.29 | 1.51 | 1.54 |
| 3 | 8-X | 900 | CIT | C4-C3 | -2.14 | 1.51 | 1.54 |
| 3 | 7-X | 900 | CIT | C4-C3 | -2.10 | 1.51 | 1.54 |
| 3 | 2-X | 900 | CIT | C4-C3 | -2.05 | 1.51 | 1.54 |

The worst 5 of 17 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 3 | 8-X | 900 | CIT | C3-C4-C5 | 2.22 | 118.51 | 114.96 |
| 3 | 1-X | 900 | CIT | C3-C2-C1 | 3.27 | 120.19 | 114.96 |
| 3 | 4-X | 900 | CIT | C3-C2-C1 | 3.53 | 120.61 | 114.96 |
| 3 | 5-X | 900 | CIT | C3-C2-C1 | 3.59 | 120.70 | 114.96 |
| 3 | 6-X | 900 | CIT | C3-C2-C1 | 3.70 | 120.87 | 114.96 |

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

6 monomers are involved in 10 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 3 | 2-X | 900 | CIT | 1 | 0 |
| 3 | 3-X | 900 | CIT | 1 | 0 |
| 3 | 4-X | 900 | CIT | 1 | 0 |
| 3 | 5-X | 900 | CIT | 3 | 0 |
| 3 | 6-X | 900 | CIT | 2 | 0 |
| 3 | 8-X | 900 | CIT | 2 | 0 |

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

# 6 Fit of model and data

## 6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, $95^{th}$ percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | | | OWAB(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 1 | 1-X | 126/129 (97%) | 0.22 | 9 (7%) | 19 | 29 | 13, 22, 37, 41 | 126 (100%) |
| 1 | 1-Z | 126/129 (97%) | -0.12 | 1 (0%) | 87 | 92 | 10, 19, 31, 38 | 126 (100%) |
| 1 | 2-X | 126/129 (97%) | 0.22 | 9 (7%) | 19 | 29 | 13, 22, 37, 41 | 126 (100%) |
| 1 | 2-Z | 126/129 (97%) | -0.12 | 1 (0%) | 87 | 92 | 10, 19, 31, 38 | 126 (100%) |
| 1 | 3-X | 126/129 (97%) | 0.22 | 9 (7%) | 19 | 29 | 13, 22, 37, 41 | 126 (100%) |
| 1 | 3-Z | 126/129 (97%) | -0.12 | 1 (0%) | 87 | 92 | 10, 19, 31, 38 | 126 (100%) |
| 1 | 4-X | 126/129 (97%) | 0.22 | 9 (7%) | 19 | 29 | 13, 22, 37, 41 | 126 (100%) |
| 1 | 4-Z | 126/129 (97%) | -0.12 | 1 (0%) | 87 | 92 | 10, 19, 31, 38 | 126 (100%) |
| 1 | 5-X | 126/129 (97%) | 0.22 | 9 (7%) | 19 | 29 | 13, 22, 37, 41 | 126 (100%) |
| 1 | 5-Z | 126/129 (97%) | -0.12 | 1 (0%) | 87 | 92 | 10, 19, 31, 38 | 126 (100%) |
| 1 | 6-X | 126/129 (97%) | 0.22 | 9 (7%) | 19 | 29 | 13, 22, 37, 41 | 126 (100%) |
| 1 | 6-Z | 126/129 (97%) | -0.12 | 1 (0%) | 87 | 92 | 10, 19, 31, 38 | 126 (100%) |
| 1 | 7-X | 126/129 (97%) | 0.22 | 9 (7%) | 19 | 29 | 13, 22, 37, 41 | 126 (100%) |
| 1 | 7-Z | 126/129 (97%) | -0.12 | 1 (0%) | 87 | 92 | 10, 19, 31, 38 | 126 (100%) |
| 1 | 8-X | 126/129 (97%) | 0.22 | 9 (7%) | 19 | 29 | 13, 22, 37, 41 | 126 (100%) |
| 1 | 8-Z | 126/129 (97%) | -0.12 | 1 (0%) | 87 | 92 | 10, 19, 31, 38 | 126 (100%) |
| 2 | 1-W | 460/461 (99%) | -0.14 | 4 (0%) | 85 | 90 | 11, 21, 32, 43 | 460 (100%) |
| 2 | 1-Y | 460/461 (99%) | -0.00 | 9 (1%) | 68 | 77 | 8, 21, 34, 44 | 460 (100%) |
| 2 | 2-W | 460/461 (99%) | -0.14 | 4 (0%) | 85 | 90 | 11, 21, 32, 43 | 460 (100%) |
| 2 | 2-Y | 460/461 (99%) | -0.00 | 9 (1%) | 68 | 77 | 8, 21, 34, 44 | 460 (100%) |
| 2 | 3-W | 460/461 (99%) | -0.14 | 4 (0%) | 85 | 90 | 11, 21, 32, 43 | 460 (100%) |
| 2 | 3-Y | 460/461 (99%) | -0.00 | 9 (1%) | 68 | 77 | 8, 21, 34, 44 | 460 (100%) |
| 2 | 4-W | 460/461 (99%) | -0.14 | 4 (0%) | 85 | 90 | 11, 21, 32, 43 | 460 (100%) |
| 2 | 4-Y | 460/461 (99%) | -0.00 | 9 (1%) | 68 | 77 | 8, 21, 34, 44 | 460 (100%) |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|
| 2 | 5-W | 460/461 (99%) | -0.14 | 4 (0%) 85 90 | 11, 21, 32, 43 | 460 (100%) |
| 2 | 5-Y | 460/461 (99%) | -0.00 | 9 (1%) 68 77 | 8, 21, 34, 44 | 460 (100%) |
| 2 | 6-W | 460/461 (99%) | -0.14 | 4 (0%) 85 90 | 11, 21, 32, 43 | 460 (100%) |
| 2 | 6-Y | 460/461 (99%) | -0.00 | 9 (1%) 68 77 | 8, 21, 34, 44 | 460 (100%) |
| 2 | 7-W | 460/461 (99%) | -0.14 | 4 (0%) 85 90 | 11, 21, 32, 43 | 460 (100%) |
| 2 | 7-Y | 460/461 (99%) | -0.00 | 9 (1%) 68 77 | 8, 21, 34, 44 | 460 (100%) |
| 2 | 8-W | 460/461 (99%) | -0.14 | 4 (0%) 85 90 | 11, 21, 32, 43 | 460 (100%) |
| 2 | 8-Y | 460/461 (99%) | -0.00 | 9 (1%) 68 77 | 8, 21, 34, 44 | 460 (100%) |
| All | All | 9376/9440 (99%) | -0.04 | 184 (1%) 70 77 | 8, 21, 33, 44 | 9376 (100%) |

The worst 5 of 184 RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 1 | 1-X | 112 | GLY | 4.7 |
| 1 | 2-X | 112 | GLY | 4.7 |
| 1 | 3-X | 112 | GLY | 4.7 |
| 1 | 4-X | 112 | GLY | 4.7 |
| 1 | 5-X | 112 | GLY | 4.7 |

## 6.2 Non-standard residues in protein, DNA, RNA chains (i)

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

## 6.3 Carbohydrates (i)

There are no carbohydrates in this entry.

## 6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, $95^{th}$ percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | LLDF | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|---|
| 3 | CIT | 5-X | 900 | 13/13 | 0.95 | 0.16 | 1.02 | 10,18,22,26 | 13 |
| 3 | CIT | 3-X | 900 | 13/13 | 0.95 | 0.16 | 0.99 | 21,24,29,31 | 13 |
| 3 | CIT | 7-X | 900 | 13/13 | 0.95 | 0.16 | 0.94 | 20,24,28,29 | 13 |
| 3 | CIT | 2-X | 900 | 13/13 | 0.95 | 0.16 | 0.94 | 19,24,28,28 | 13 |
| 3 | CIT | 6-X | 900 | 13/13 | 0.95 | 0.16 | 0.94 | 18,24,26,27 | 13 |
| 3 | CIT | 4-X | 900 | 13/13 | 0.95 | 0.16 | 0.90 | 18,26,29,30 | 13 |
| 3 | CIT | 8-X | 900 | 13/13 | 0.95 | 0.16 | 0.90 | 1,25,30,32 | 13 |
| 3 | CIT | 1-X | 900 | 13/13 | 0.95 | 0.16 | 0.62 | 12,22,25,27 | 13 |

## 6.5 Other polymers (i)

There are no such residues in this entry.