



Full wwPDB X-ray Structure Validation Report ⓘ

Nov 25, 2024 – 07:27 PM EST

PDB ID : 5IVK
Title : The alpha-esterase-7 carboxylesterase, E3, from the blowfly *Lucilia cuprina*: phosphorylated-enzyme ensemble refinement
Authors : Correy, G.J.; Jackson, C.J.
Deposited on : 2016-03-21
Resolution : 1.53 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 1.21
EDS : 3.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4 : 9.0.004 (Gargrove)
Density-Fitness : 1.0.11
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.40

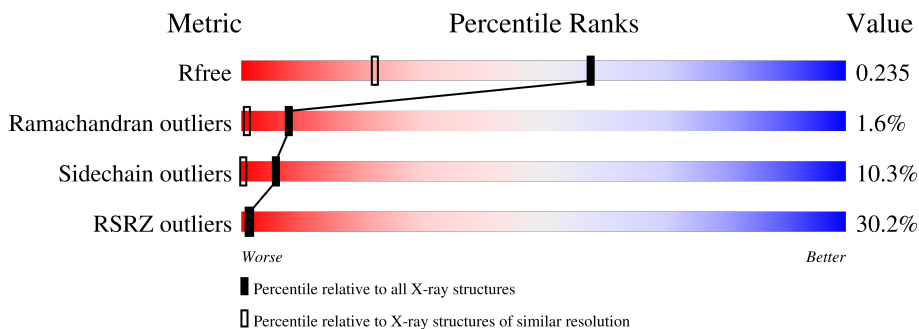
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.53 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} | 164625 | 3511 (1.56-1.52) |
| Ramachandran outliers | 177936 | 3720 (1.56-1.52) |
| Sidechain outliers | 177891 | 3717 (1.56-1.52) |
| RSRZ outliers | 164620 | 3510 (1.56-1.52) |

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 of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|---|
| 1 | 1-A | 577 | 30% (red), 87% (green), 10% (yellow), .. (grey) |
| 1 | 10-A | 577 | 88% (green), 9% (yellow), .. (grey) |
| 1 | 11-A | 577 | 89% (green), 8% (yellow), .. (grey) |
| 1 | 12-A | 577 | 90% (green), 7% (yellow), .. (grey) |
| 1 | 13-A | 577 | 87% (green), 10% (yellow), .. (grey) |
| 1 | 14-A | 577 | 89% (green), 8% (yellow), .. (grey) |
| 1 | 15-A | 577 | 86% (green), 11% (yellow), .. (grey) |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|---|
| 1 | 16-A | 577 |  88% 9% .. |
| 1 | 17-A | 577 |  86% 10% .. |
| 1 | 18-A | 577 |  87% 9% .. |
| 1 | 19-A | 577 |  86% 11% .. |
| 1 | 2-A | 577 |  88% 9% .. |
| 1 | 20-A | 577 |  86% 11% .. |
| 1 | 21-A | 577 |  85% 12% .. |
| 1 | 22-A | 577 |  87% 10% .. |
| 1 | 23-A | 577 |  87% 10% .. |
| 1 | 24-A | 577 |  86% 11% .. |
| 1 | 25-A | 577 |  85% 12% .. |
| 1 | 26-A | 577 |  86% 11% .. |
| 1 | 27-A | 577 |  88% 9% .. |
| 1 | 28-A | 577 |  87% 10% .. |
| 1 | 29-A | 577 |  87% 10% .. |
| 1 | 3-A | 577 |  89% 8% .. |
| 1 | 30-A | 577 |  89% 8% .. |
| 1 | 31-A | 577 |  87% 10% .. |
| 1 | 32-A | 577 |  86% 10% .. |
| 1 | 33-A | 577 |  87% 10% .. |
| 1 | 34-A | 577 |  86% 10% .. |
| 1 | 35-A | 577 |  88% 9% .. |
| 1 | 36-A | 577 |  88% 9% .. |
| 1 | 37-A | 577 |  89% 7% .. |
| 1 | 38-A | 577 |  88% 8% .. |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|---|
| 1 | 39-A | 577 |  86% 10% .. |
| 1 | 4-A | 577 |  87% 10% .. |
| 1 | 40-A | 577 |  86% 11% .. |
| 1 | 41-A | 577 |  87% 9% .. |
| 1 | 42-A | 577 |  87% 10% .. |
| 1 | 43-A | 577 |  86% 11% .. |
| 1 | 5-A | 577 |  86% 11% . |
| 1 | 6-A | 577 |  89% 9% . |
| 1 | 7-A | 577 |  89% 8% .. |
| 1 | 8-A | 577 |  89% 8% . |
| 1 | 9-A | 577 |  88% 9% .. |

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 405539 atoms, of which 192984 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 Carboxylic ester hydrolase.

| Mol | Chain | Residues | Atoms | | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|------|-----|-----|----|---------|---------|-------|
| 1 | 1-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 2-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 3-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 4-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 5-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 6-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 7-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 8-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 9-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 10-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 11-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 12-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 13-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 14-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 15-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 16-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |

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| Mol | Chain | Residues | Atoms | | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|------|-----|-----|----|---------|---------|-------|
| 1 | 17-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 18-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 19-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 20-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 21-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 22-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 23-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 24-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 25-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 26-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 27-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 28-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 29-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 30-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 31-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 32-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 33-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 34-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 35-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 36-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 37-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |

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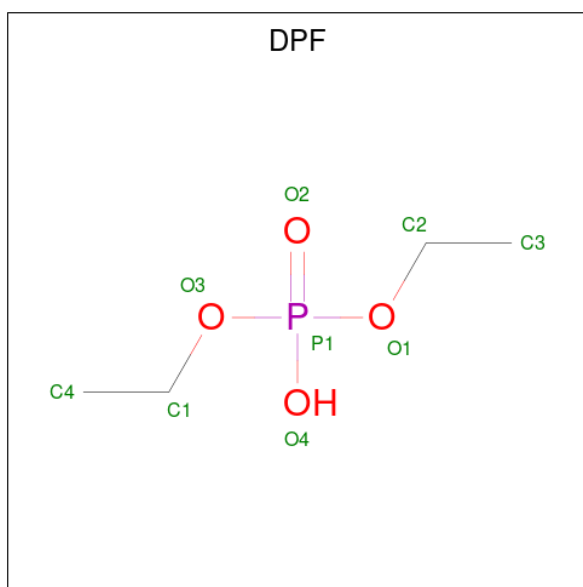
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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace | |
|-----|-------|----------|-------|------|------|-----|-----|---------|---------|-------|---|
| 1 | 38-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 39-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 40-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 41-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 42-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |
| 1 | 43-A | 566 | Total | C | H | N | O | S | 0 | 0 | 0 |
| | | | 9035 | 2911 | 4478 | 766 | 846 | 34 | | | |

There are 13 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|-----------------------|------------|
| A | -6 | MET | - | initiating methionine | UNP Q25252 |
| A | -5 | HIS | - | expression tag | UNP Q25252 |
| A | -4 | HIS | - | expression tag | UNP Q25252 |
| A | -3 | HIS | - | expression tag | UNP Q25252 |
| A | -2 | HIS | - | expression tag | UNP Q25252 |
| A | -1 | HIS | - | expression tag | UNP Q25252 |
| A | 0 | HIS | - | expression tag | UNP Q25252 |
| A | 364 | LEU | MET | conflict | UNP Q25252 |
| A | 419 | PHE | ILE | conflict | UNP Q25252 |
| A | 472 | THR | ALA | conflict | UNP Q25252 |
| A | 505 | THR | ILE | conflict | UNP Q25252 |
| A | 530 | GLU | LYS | conflict | UNP Q25252 |
| A | 554 | GLY | ASP | conflict | UNP Q25252 |

- Molecule 2 is DIETHYL HYDROGEN PHOSPHATE (three-letter code: DPF) (formula: C₄H₁₁O₄P).



| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf |
|-----|-------|----------|-------------|--------|---------|--------|--------|---------|---------|
| | | | Total | C | H | O | P | | |
| 2 | 1-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 2-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 3-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 4-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 5-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 6-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 7-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 8-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 9-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 10-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 11-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 12-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 13-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |
| 2 | 14-A | 1 | Total 18 | C 4 | H 10 | O 3 | P 1 | 0 | 0 |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf |
|-----|-------|----------|-------|---|----|---|---|---------|---------|
| 2 | 15-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 16-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 17-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 18-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 19-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 20-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 21-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 22-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 23-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 24-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 25-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 26-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 27-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 28-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 29-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 30-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 31-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 32-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 33-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 34-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 35-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf |
|-----|-------|----------|-------|---|----|---|---|---------|---------|
| 2 | 36-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 37-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 38-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 39-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 40-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 41-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 42-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |
| 2 | 43-A | 1 | Total | C | H | O | P | 0 | 0 |
| | | | 18 | 4 | 10 | 3 | 1 | | |

- Molecule 3 is water.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 3 | 1-A | 399 | Total | O | 0 | 0 |
| | | | 399 | 399 | | |
| 3 | 2-A | 380 | Total | O | 0 | 0 |
| | | | 380 | 380 | | |
| 3 | 3-A | 356 | Total | O | 0 | 0 |
| | | | 356 | 356 | | |
| 3 | 4-A | 389 | Total | O | 0 | 0 |
| | | | 389 | 389 | | |
| 3 | 5-A | 386 | Total | O | 0 | 0 |
| | | | 386 | 386 | | |
| 3 | 6-A | 379 | Total | O | 0 | 0 |
| | | | 379 | 379 | | |
| 3 | 7-A | 375 | Total | O | 0 | 0 |
| | | | 375 | 375 | | |
| 3 | 8-A | 365 | Total | O | 0 | 0 |
| | | | 365 | 365 | | |
| 3 | 9-A | 373 | Total | O | 0 | 0 |
| | | | 373 | 373 | | |
| 3 | 10-A | 365 | Total | O | 0 | 0 |
| | | | 365 | 365 | | |
| 3 | 11-A | 360 | Total | O | 0 | 0 |
| | | | 360 | 360 | | |

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| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|-----|-------|----------|--------------------|---------|---------|
| 3 | 12-A | 396 | Total O 396 396 | 0 | 0 |
| 3 | 13-A | 406 | Total O 406 406 | 0 | 0 |
| 3 | 14-A | 378 | Total O 378 378 | 0 | 0 |
| 3 | 15-A | 374 | Total O 374 374 | 0 | 0 |
| 3 | 16-A | 386 | Total O 386 386 | 0 | 0 |
| 3 | 17-A | 357 | Total O 357 357 | 0 | 0 |
| 3 | 18-A | 353 | Total O 353 353 | 0 | 0 |
| 3 | 19-A | 363 | Total O 363 363 | 0 | 0 |
| 3 | 20-A | 399 | Total O 399 399 | 0 | 0 |
| 3 | 21-A | 389 | Total O 389 389 | 0 | 0 |
| 3 | 22-A | 380 | Total O 380 380 | 0 | 0 |
| 3 | 23-A | 376 | Total O 376 376 | 0 | 0 |
| 3 | 24-A | 381 | Total O 381 381 | 0 | 0 |
| 3 | 25-A | 359 | Total O 359 359 | 0 | 0 |
| 3 | 26-A | 362 | Total O 362 362 | 0 | 0 |
| 3 | 27-A | 379 | Total O 379 379 | 0 | 0 |
| 3 | 28-A | 389 | Total O 389 389 | 0 | 0 |
| 3 | 29-A | 377 | Total O 377 377 | 0 | 0 |
| 3 | 30-A | 363 | Total O 363 363 | 0 | 0 |
| 3 | 31-A | 365 | Total O 365 365 | 0 | 0 |
| 3 | 32-A | 393 | Total O 393 393 | 0 | 0 |

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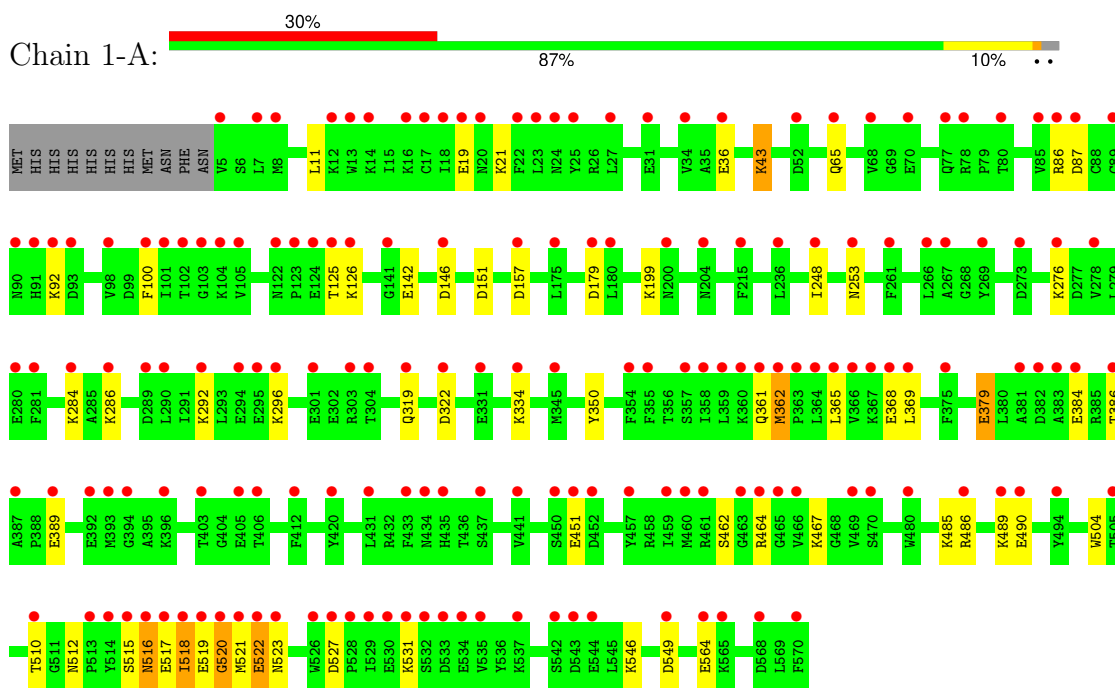
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| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|------------|--------------|-----------------|--------------|----------|----------------|----------------|
| 3 | 33-A | 378 | Total 378 | O 378 | 0 | 0 |
| 3 | 34-A | 384 | Total 384 | O 384 | 0 | 0 |
| 3 | 35-A | 383 | Total 383 | O 383 | 0 | 0 |
| 3 | 36-A | 390 | Total 390 | O 390 | 0 | 0 |
| 3 | 37-A | 358 | Total 358 | O 358 | 0 | 0 |
| 3 | 38-A | 377 | Total 377 | O 377 | 0 | 0 |
| 3 | 39-A | 393 | Total 393 | O 393 | 0 | 0 |
| 3 | 40-A | 388 | Total 388 | O 388 | 0 | 0 |
| 3 | 41-A | 390 | Total 390 | O 390 | 0 | 0 |
| 3 | 42-A | 390 | Total 390 | O 390 | 0 | 0 |
| 3 | 43-A | 377 | Total 377 | O 377 | 0 | 0 |

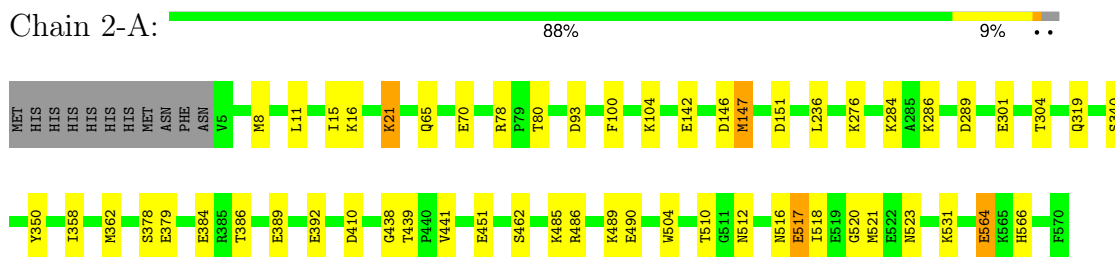
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. 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. 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.

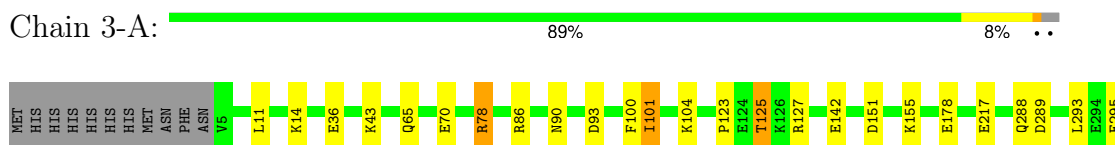
- Molecule 1: Carboxylic ester hydrolase



- Molecule 1: Carboxylic ester hydrolase



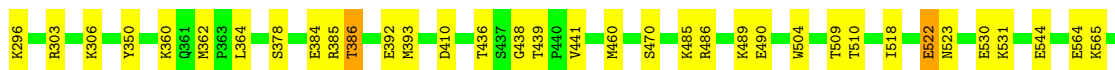
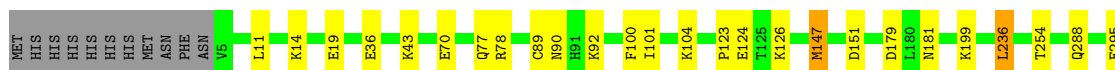
- Molecule 1: Carboxylic ester hydrolase





- Molecule 1: Carboxylic ester hydrolase

Chain 4-A: 87% 10%



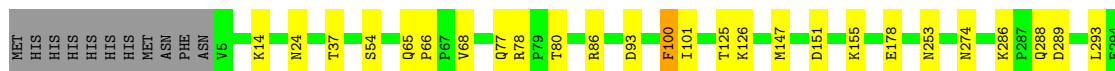
- Molecule 1: Carboxylic ester hydrolase

Chain 5-A: 86% 11%



- Molecule 1: Carboxylic ester hydrolase

Chain 6-A: 89% 9%

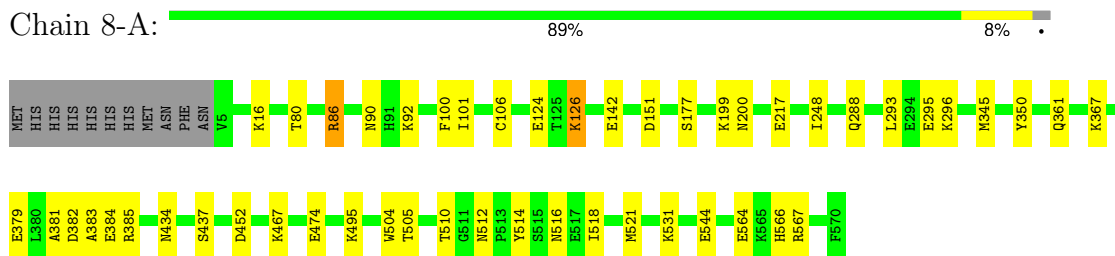


- Molecule 1: Carboxylic ester hydrolase

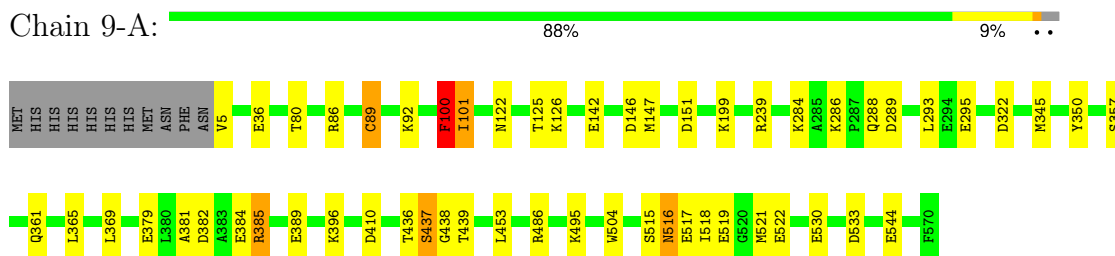
Chain 7-A: 89% 8%



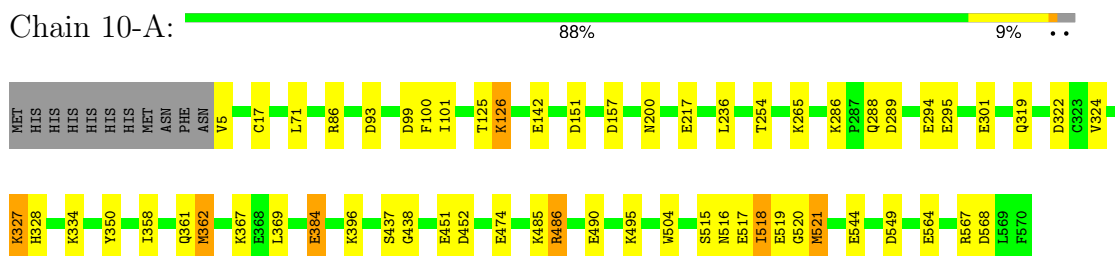
- Molecule 1: Carboxylic ester hydrolase



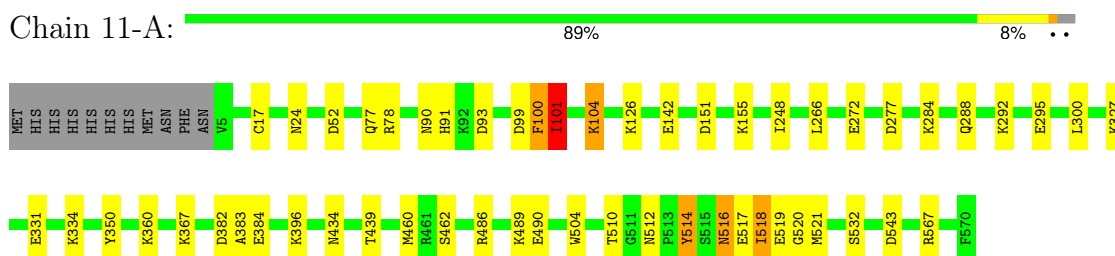
- Molecule 1: Carboxylic ester hydrolase



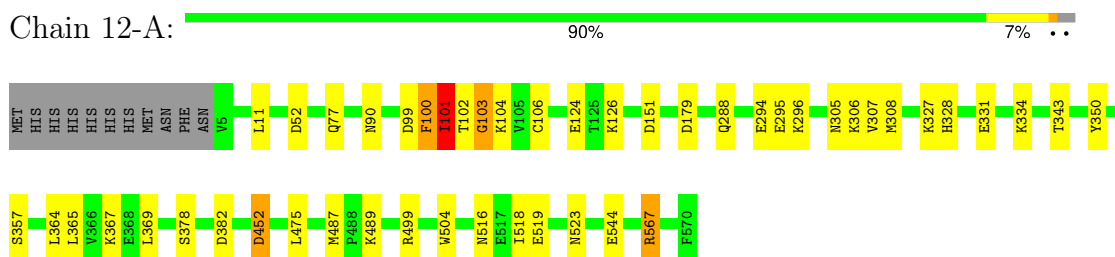
- Molecule 1: Carboxylic ester hydrolase



- Molecule 1: Carboxylic ester hydrolase



- Molecule 1: Carboxylic ester hydrolase



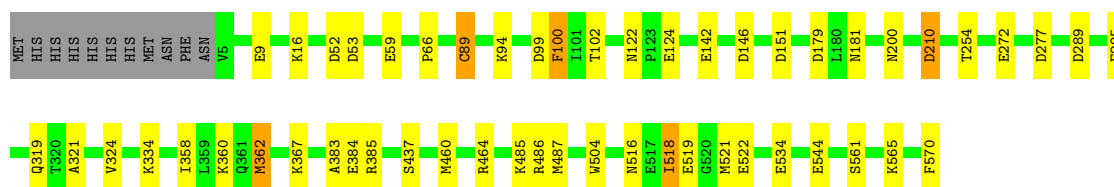
- Molecule 1: Carboxylic ester hydrolase

Chain 13-A: 87% 10% ..



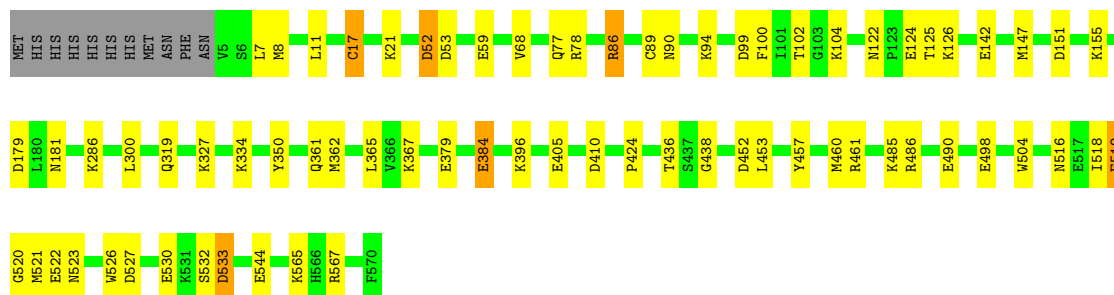
- Molecule 1: Carboxylic ester hydrolase

Chain 14-A: 89% 8% ..



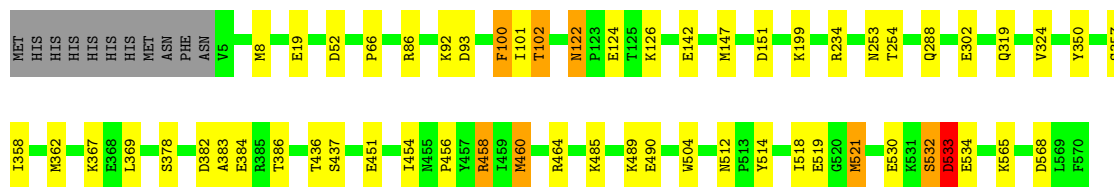
- Molecule 1: Carboxylic ester hydrolase

Chain 15-A: 86% 11% ..



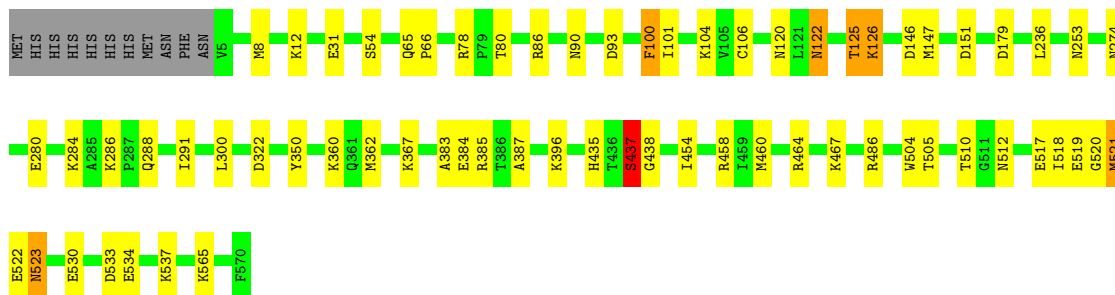
- Molecule 1: Carboxylic ester hydrolase

Chain 16-A: 88% 9% ..



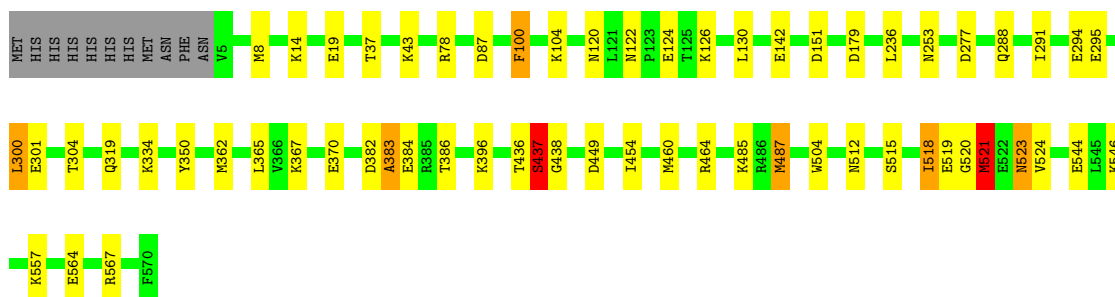
- Molecule 1: Carboxylic ester hydrolase

Chain 17-A: 86% 10% ..



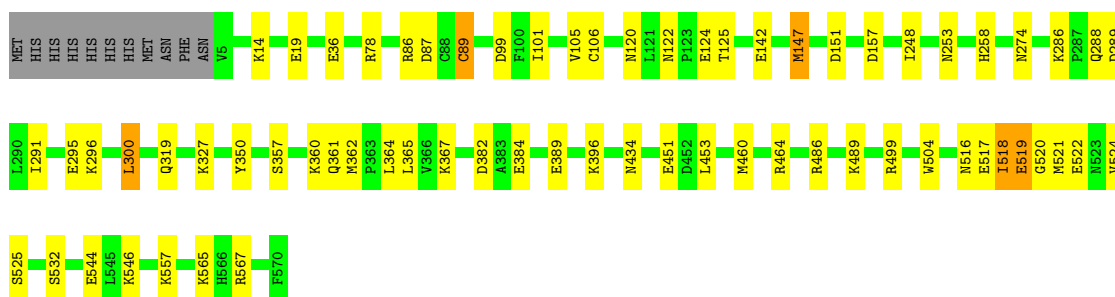
- Molecule 1: Carboxylic ester hydrolase

Chain 18-A: 87% 9% ..



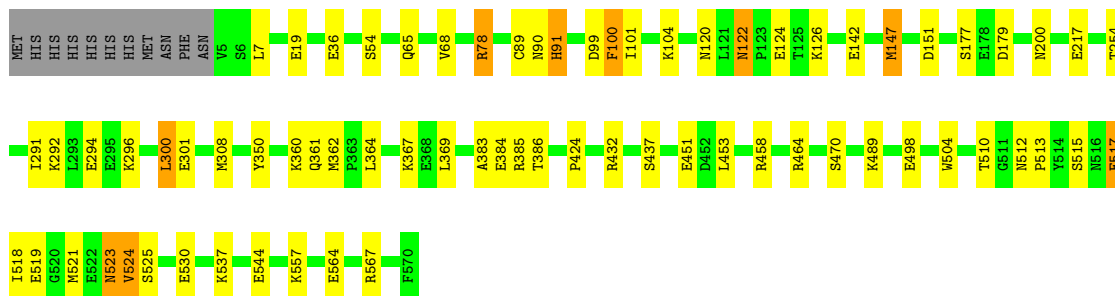
- Molecule 1: Carboxylic ester hydrolase

Chain 19-A: 86% 11% ..




- Molecule 1: Carboxylic ester hydrolase

Chain 20-A: 86% 11% ..



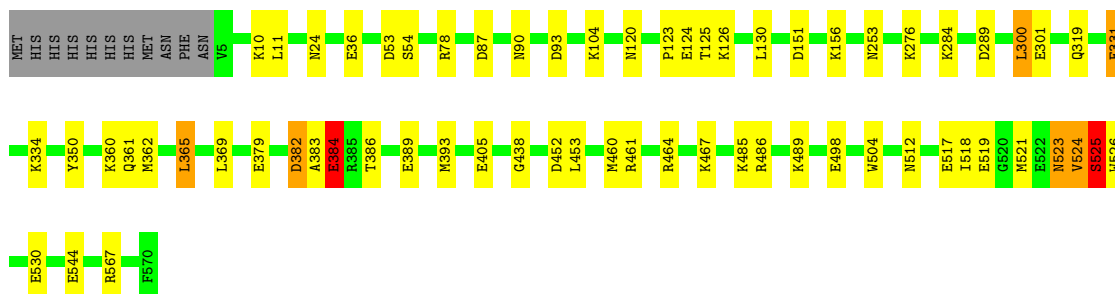
- Molecule 1: Carboxylic ester hydrolase

Chain 21-A:  85% 12% ..



- Molecule 1: Carboxylic ester hydrolase

Chain 22-A:  87% 10% ..



- Molecule 1: Carboxylic ester hydrolase

Chain 23-A:  87% 10% ..



- Molecule 1: Carboxylic ester hydrolase

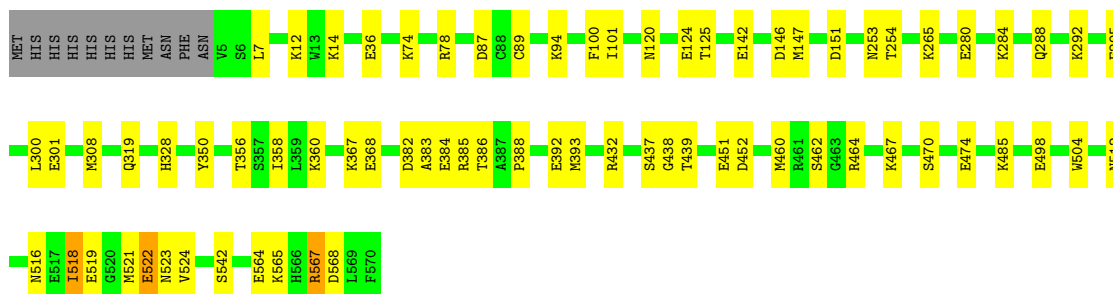
Chain 24-A:  86% 11% ..





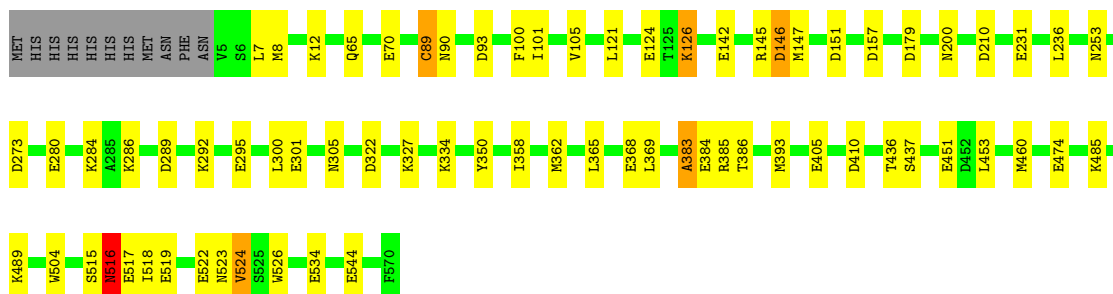
- Molecule 1: Carboxylic ester hydrolase

Chain 25-A: 85% 12% ..



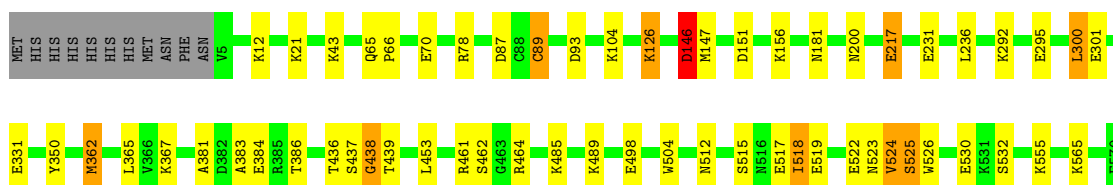
- Molecule 1: Carboxylic ester hydrolase

Chain 26-A: 86% 11% ..



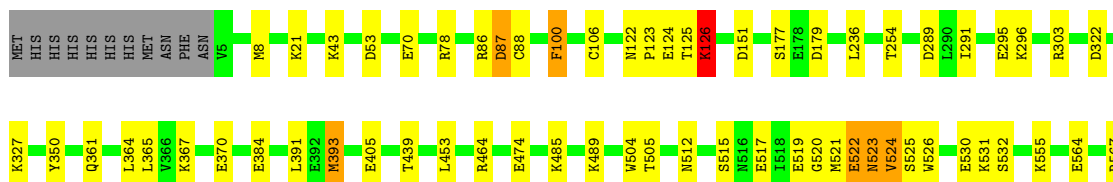
- Molecule 1: Carboxylic ester hydrolase

Chain 27-A: 88% 9% ..



- Molecule 1: Carboxylic ester hydrolase

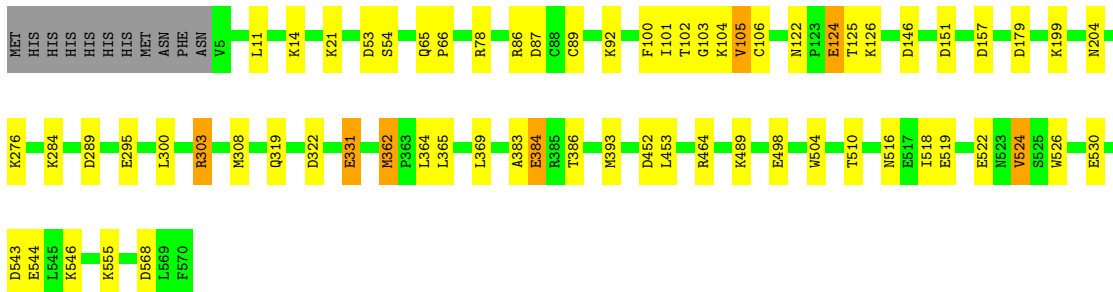
Chain 28-A: 87% 10% ..



D568
L569
F570

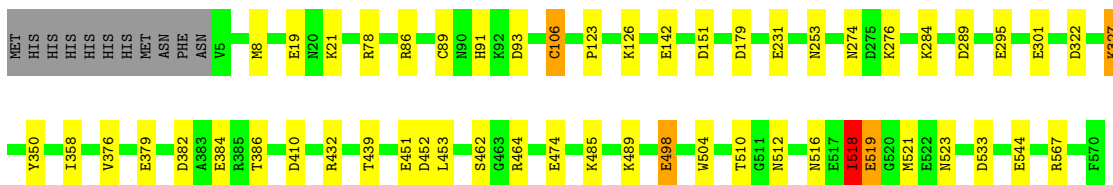
- Molecule 1: Carboxylic ester hydrolase

Chain 29-A:  87% 10% ..



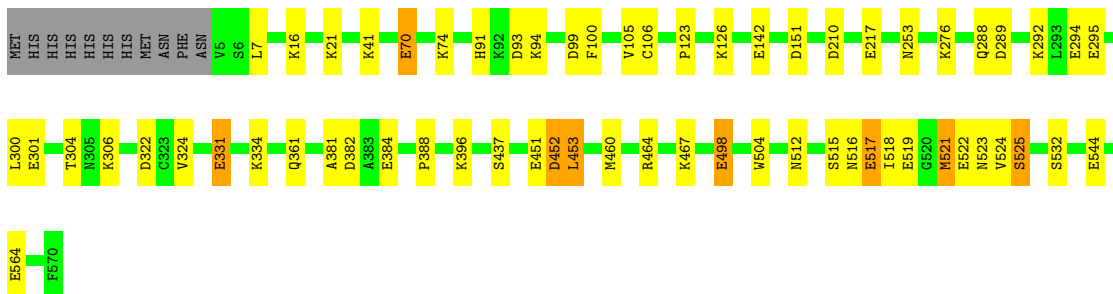
- Molecule 1: Carboxylic ester hydrolase

Chain 30-A:  89% 8% ..




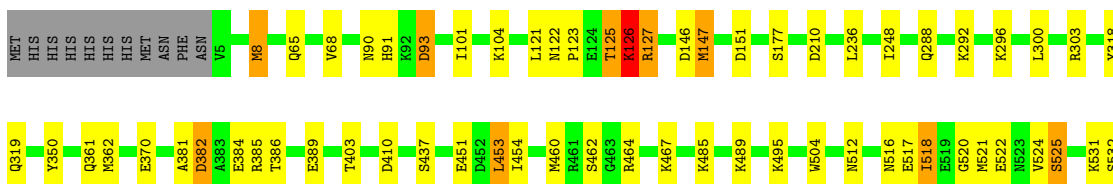
- Molecule 1: Carboxylic ester hydrolase

Chain 31-A:  87% 10% ..



- Molecule 1: Carboxylic ester hydrolase

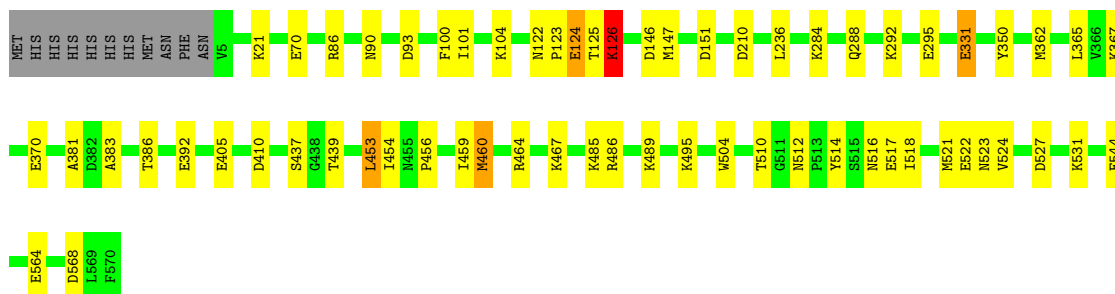
Chain 32-A:  86% 10% ..





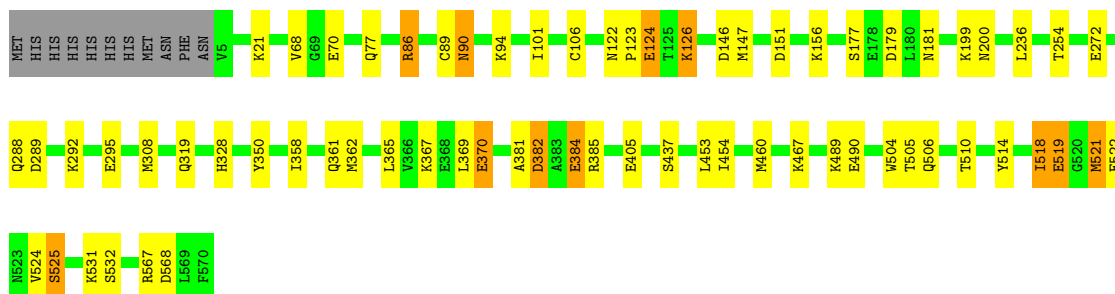
- Molecule 1: Carboxylic ester hydrolase

Chain 33-A: 87% 10% ..



- Molecule 1: Carboxylic ester hydrolase

Chain 34-A: 86% 10% ..



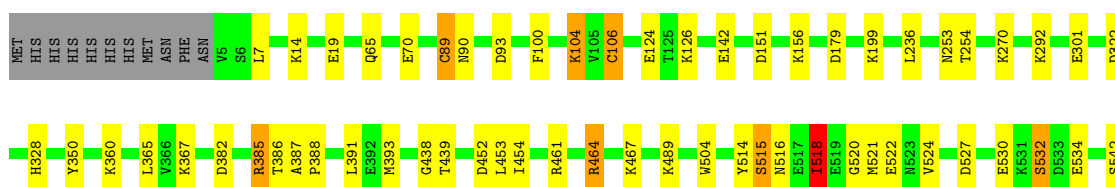
- Molecule 1: Carboxylic ester hydrolase

Chain 35-A: 88% 9% ..



- Molecule 1: Carboxylic ester hydrolase

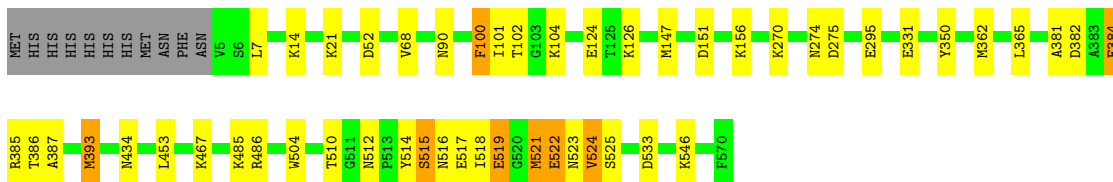
Chain 36-A: 88% 9% ..





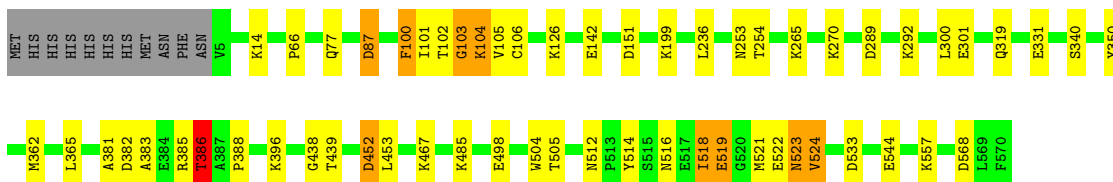
- Molecule 1: Carboxylic ester hydrolase

Chain 37-A: 89% 7% ..



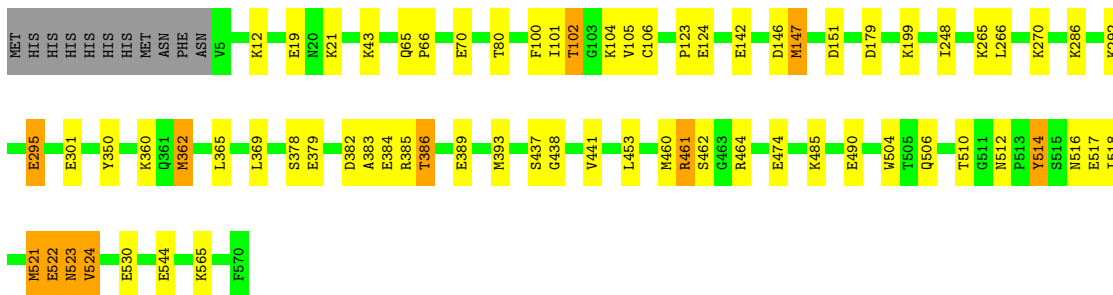
- Molecule 1: Carboxylic ester hydrolase

Chain 38-A: 88% 8% ..



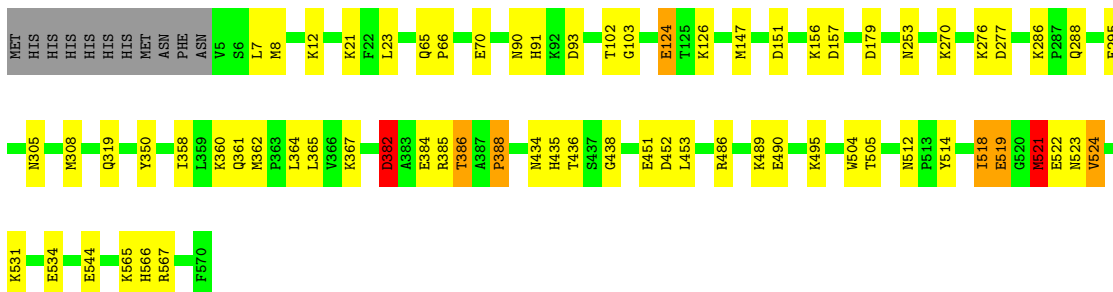
- Molecule 1: Carboxylic ester hydrolase

Chain 39-A: 86% 10% ..



- Molecule 1: Carboxylic ester hydrolase

Chain 40-A: 86% 11% ..



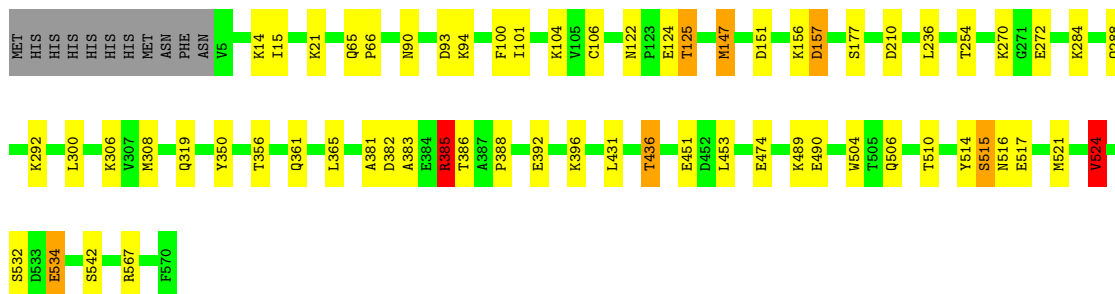
- Molecule 1: Carboxylic ester hydrolase

Chain 41-A:  87% 9% ..



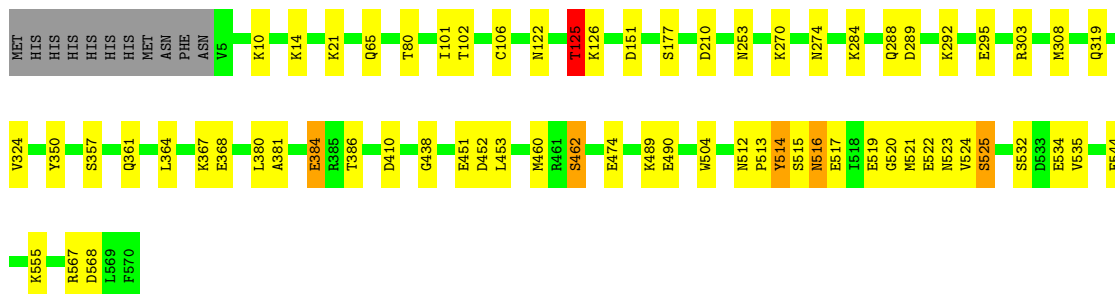
- Molecule 1: Carboxylic ester hydrolase

Chain 42-A:  87% 10% ..



- Molecule 1: Carboxylic ester hydrolase

Chain 43-A:  86% 11% ..



4 Data and refinement statistics

| Property | Value | Source |
|---|---|------------------|
| Space group | C 2 2 1 | Depositor |
| Cell constants a, b, c, α , β , γ | 51.82Å 101.25Å 225.82Å 90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 42.01 – 1.53 42.01 – 1.53 | Depositor EDS |
| % Data completeness (in resolution range) | 100.0 (42.01-1.53) 95.8 (42.01-1.53) | Depositor EDS |
| R_{merge} | (Not available) | Depositor |
| R_{sym} | (Not available) | Depositor |
| $\langle I/\sigma(I) \rangle$ ¹ | 1.27 (at 1.53Å) | Xtrriage |
| Refinement program | PHENIX 1.10.1_2155 | Depositor |
| R, R_{free} | 0.181 , 0.220 0.193 , 0.235 | Depositor DCC |
| R_{free} test set | 4499 reflections (5.01%) | wwPDB-VP |
| Wilson B-factor (Å ²) | 14.7 | Xtrriage |
| Anisotropy | 0.400 | Xtrriage |
| Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²) | 0.01 , 23.8 | EDS |
| L-test for twinning ² | $\langle L \rangle = 0.41$, $\langle L^2 \rangle = 0.24$ | Xtrriage |
| Estimated twinning fraction | No twinning to report. | Xtrriage |
| F_o, F_c correlation | 0.89 | EDS |
| Total number of atoms | 405539 | wwPDB-VP |
| Average B, all atoms (Å ²) | 18.0 | wwPDB-VP |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.58% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

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: DPF

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-A | 0.63 | 2/4672 (0.0%) | 0.78 | 5/6320 (0.1%) |
| 1 | 2-A | 0.57 | 0/4672 | 0.73 | 2/6320 (0.0%) |
| 1 | 3-A | 0.62 | 0/4672 | 0.76 | 7/6320 (0.1%) |
| 1 | 4-A | 0.65 | 2/4672 (0.0%) | 0.78 | 7/6320 (0.1%) |
| 1 | 5-A | 0.62 | 2/4672 (0.0%) | 0.74 | 0/6320 |
| 1 | 6-A | 0.58 | 2/4672 (0.0%) | 0.74 | 3/6320 (0.0%) |
| 1 | 7-A | 0.60 | 0/4672 | 0.75 | 4/6320 (0.1%) |
| 1 | 8-A | 0.59 | 1/4672 (0.0%) | 0.73 | 2/6320 (0.0%) |
| 1 | 9-A | 0.62 | 3/4672 (0.1%) | 0.76 | 5/6320 (0.1%) |
| 1 | 10-A | 0.62 | 3/4672 (0.1%) | 0.78 | 3/6320 (0.0%) |
| 1 | 11-A | 0.59 | 3/4672 (0.1%) | 0.75 | 3/6320 (0.0%) |
| 1 | 12-A | 0.61 | 3/4672 (0.1%) | 0.79 | 7/6320 (0.1%) |
| 1 | 13-A | 0.65 | 6/4672 (0.1%) | 0.79 | 4/6320 (0.1%) |
| 1 | 14-A | 0.61 | 2/4672 (0.0%) | 0.77 | 6/6320 (0.1%) |
| 1 | 15-A | 0.62 | 3/4672 (0.1%) | 0.80 | 7/6320 (0.1%) |
| 1 | 16-A | 0.62 | 1/4672 (0.0%) | 0.79 | 3/6320 (0.0%) |
| 1 | 17-A | 0.63 | 2/4672 (0.0%) | 0.78 | 7/6320 (0.1%) |
| 1 | 18-A | 0.61 | 0/4672 | 0.78 | 8/6320 (0.1%) |
| 1 | 19-A | 0.60 | 0/4672 | 0.79 | 8/6320 (0.1%) |
| 1 | 20-A | 0.64 | 1/4672 (0.0%) | 0.80 | 8/6320 (0.1%) |
| 1 | 21-A | 0.61 | 2/4672 (0.0%) | 0.77 | 5/6320 (0.1%) |
| 1 | 22-A | 0.60 | 2/4672 (0.0%) | 0.78 | 5/6320 (0.1%) |
| 1 | 23-A | 0.65 | 1/4672 (0.0%) | 0.79 | 9/6320 (0.1%) |
| 1 | 24-A | 0.61 | 3/4672 (0.1%) | 0.78 | 3/6320 (0.0%) |
| 1 | 25-A | 0.59 | 1/4672 (0.0%) | 0.77 | 2/6320 (0.0%) |
| 1 | 26-A | 0.61 | 2/4672 (0.0%) | 0.78 | 3/6320 (0.0%) |
| 1 | 27-A | 0.63 | 4/4672 (0.1%) | 0.78 | 4/6320 (0.1%) |
| 1 | 28-A | 0.63 | 1/4672 (0.0%) | 0.77 | 3/6320 (0.0%) |
| 1 | 29-A | 0.62 | 3/4672 (0.1%) | 0.77 | 6/6320 (0.1%) |
| 1 | 30-A | 0.64 | 5/4672 (0.1%) | 0.77 | 5/6320 (0.1%) |
| 1 | 31-A | 0.63 | 5/4672 (0.1%) | 0.77 | 1/6320 (0.0%) |
| 1 | 32-A | 0.69 | 4/4672 (0.1%) | 0.81 | 10/6320 (0.2%) |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|------------------|-------------|-------------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 1 | 33-A | 0.60 | 4/4672 (0.1%) | 0.77 | 7/6320 (0.1%) |
| 1 | 34-A | 0.64 | 4/4672 (0.1%) | 0.78 | 4/6320 (0.1%) |
| 1 | 35-A | 0.61 | 1/4672 (0.0%) | 0.75 | 0/6320 |
| 1 | 36-A | 0.59 | 1/4672 (0.0%) | 0.78 | 3/6320 (0.0%) |
| 1 | 37-A | 0.58 | 0/4672 | 0.77 | 1/6320 (0.0%) |
| 1 | 38-A | 0.60 | 2/4672 (0.0%) | 0.77 | 3/6320 (0.0%) |
| 1 | 39-A | 0.61 | 2/4672 (0.0%) | 0.76 | 5/6320 (0.1%) |
| 1 | 40-A | 0.61 | 4/4672 (0.1%) | 0.77 | 0/6320 |
| 1 | 41-A | 0.60 | 3/4672 (0.1%) | 0.77 | 7/6320 (0.1%) |
| 1 | 42-A | 0.63 | 4/4672 (0.1%) | 0.79 | 5/6320 (0.1%) |
| 1 | 43-A | 0.62 | 4/4672 (0.1%) | 0.77 | 2/6320 (0.0%) |
| All | All | 0.62 | 98/200896 (0.0%) | 0.77 | 192/271760 (0.1%) |

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

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

Continued on next page...

Continued from previous page...

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1 | 25-A | 0 | 1 |
| 1 | 26-A | 0 | 4 |
| 1 | 27-A | 0 | 5 |
| 1 | 28-A | 0 | 2 |
| 1 | 29-A | 0 | 2 |
| 1 | 30-A | 0 | 2 |
| 1 | 31-A | 0 | 1 |
| 1 | 32-A | 0 | 3 |
| 1 | 33-A | 0 | 2 |
| 1 | 34-A | 0 | 5 |
| 1 | 35-A | 0 | 6 |
| 1 | 36-A | 0 | 3 |
| 1 | 37-A | 0 | 4 |
| 1 | 38-A | 0 | 5 |
| 1 | 39-A | 0 | 3 |
| 1 | 40-A | 0 | 6 |
| 1 | 41-A | 0 | 2 |
| 1 | 42-A | 0 | 4 |
| 1 | 43-A | 0 | 5 |
| All | All | 0 | 143 |

All (98) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 1 | 32-A | 125 | THR | C-N | 21.17 | 1.82 | 1.34 |
| 1 | 9-A | 89 | CYS | CB-SG | 11.56 | 2.01 | 1.82 |
| 1 | 23-A | 106 | CYS | CB-SG | 11.46 | 2.01 | 1.82 |
| 1 | 13-A | 126 | LYS | C-N | 11.18 | 1.59 | 1.34 |
| 1 | 34-A | 126 | LYS | C-N | 10.49 | 1.58 | 1.34 |
| 1 | 28-A | 126 | LYS | C-N | 10.16 | 1.57 | 1.34 |
| 1 | 30-A | 89 | CYS | CB-SG | 9.78 | 1.98 | 1.82 |
| 1 | 20-A | 89 | CYS | CB-SG | -9.45 | 1.66 | 1.82 |
| 1 | 24-A | 126 | LYS | C-N | 9.35 | 1.55 | 1.34 |
| 1 | 8-A | 126 | LYS | C-N | 8.86 | 1.54 | 1.34 |
| 1 | 10-A | 126 | LYS | C-N | 8.00 | 1.52 | 1.34 |
| 1 | 13-A | 17 | CYS | CB-SG | -7.99 | 1.68 | 1.82 |
| 1 | 34-A | 370 | GLU | CB-CG | 7.87 | 1.67 | 1.52 |
| 1 | 31-A | 498 | GLU | CB-CG | 7.69 | 1.66 | 1.52 |
| 1 | 35-A | 126 | LYS | C-N | 7.60 | 1.51 | 1.34 |
| 1 | 11-A | 17 | CYS | CB-SG | -7.59 | 1.69 | 1.82 |
| 1 | 29-A | 331 | GLU | CB-CG | 7.45 | 1.66 | 1.52 |
| 1 | 40-A | 295 | GLU | CB-CG | 7.44 | 1.66 | 1.52 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 1 | 15-A | 126 | LYS | C-N | 7.31 | 1.50 | 1.34 |
| 1 | 34-A | 384 | GLU | CB-CG | 7.16 | 1.65 | 1.52 |
| 1 | 38-A | 66 | PRO | C-N | -7.14 | 1.20 | 1.34 |
| 1 | 40-A | 126 | LYS | C-N | 7.14 | 1.50 | 1.34 |
| 1 | 26-A | 534 | GLU | CB-CG | 6.98 | 1.65 | 1.52 |
| 1 | 42-A | 147 | MET | CB-CG | 6.96 | 1.73 | 1.51 |
| 1 | 38-A | 106 | CYS | CB-SG | 6.86 | 1.94 | 1.82 |
| 1 | 33-A | 126 | LYS | C-N | 6.73 | 1.49 | 1.34 |
| 1 | 15-A | 17 | CYS | CB-SG | 6.65 | 1.93 | 1.82 |
| 1 | 31-A | 70 | GLU | CB-CG | 6.57 | 1.64 | 1.52 |
| 1 | 43-A | 126 | LYS | C-N | 6.55 | 1.49 | 1.34 |
| 1 | 9-A | 379 | GLU | CG-CD | 6.49 | 1.61 | 1.51 |
| 1 | 12-A | 106 | CYS | CB-SG | -6.41 | 1.71 | 1.82 |
| 1 | 42-A | 66 | PRO | C-N | -6.40 | 1.22 | 1.34 |
| 1 | 21-A | 142 | GLU | CB-CG | 6.37 | 1.64 | 1.52 |
| 1 | 33-A | 524 | VAL | CB-CG1 | -6.35 | 1.39 | 1.52 |
| 1 | 4-A | 530 | GLU | CB-CG | 6.28 | 1.64 | 1.52 |
| 1 | 25-A | 89 | CYS | CB-SG | -6.26 | 1.71 | 1.82 |
| 1 | 40-A | 295 | GLU | CG-CD | 6.16 | 1.61 | 1.51 |
| 1 | 24-A | 295 | GLU | CG-CD | -6.13 | 1.42 | 1.51 |
| 1 | 31-A | 331 | GLU | CG-CD | 6.13 | 1.61 | 1.51 |
| 1 | 29-A | 66 | PRO | C-N | -6.13 | 1.22 | 1.34 |
| 1 | 5-A | 124 | GLU | CB-CG | 6.11 | 1.63 | 1.52 |
| 1 | 27-A | 126 | LYS | C-N | 6.11 | 1.48 | 1.34 |
| 1 | 1-A | 362 | MET | CG-SD | 6.10 | 1.97 | 1.81 |
| 1 | 10-A | 327 | LYS | CB-CG | 6.08 | 1.69 | 1.52 |
| 1 | 30-A | 498 | GLU | CB-CG | 6.05 | 1.63 | 1.52 |
| 1 | 39-A | 66 | PRO | C-N | -6.01 | 1.22 | 1.34 |
| 1 | 27-A | 217 | GLU | CB-CG | 6.00 | 1.63 | 1.52 |
| 1 | 30-A | 451 | GLU | CB-CG | 5.96 | 1.63 | 1.52 |
| 1 | 11-A | 126 | LYS | C-N | 5.95 | 1.47 | 1.34 |
| 1 | 17-A | 537 | LYS | CD-CE | -5.92 | 1.36 | 1.51 |
| 1 | 15-A | 526 | TRP | C-N | 5.82 | 1.47 | 1.34 |
| 1 | 10-A | 17 | CYS | CB-SG | -5.78 | 1.72 | 1.81 |
| 1 | 6-A | 126 | LYS | C-N | 5.77 | 1.47 | 1.34 |
| 1 | 14-A | 66 | PRO | C-N | -5.77 | 1.23 | 1.34 |
| 1 | 29-A | 526 | TRP | C-N | -5.75 | 1.20 | 1.34 |
| 1 | 43-A | 295 | GLU | CB-CG | 5.74 | 1.63 | 1.52 |
| 1 | 12-A | 308 | MET | CB-CG | -5.72 | 1.33 | 1.51 |
| 1 | 31-A | 451 | GLU | CB-CG | 5.71 | 1.62 | 1.52 |
| 1 | 32-A | 462 | SER | CB-OG | 5.62 | 1.49 | 1.42 |
| 1 | 13-A | 295 | GLU | CB-CG | 5.61 | 1.62 | 1.52 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 1 | 9-A | 379 | GLU | CB-CG | 5.58 | 1.62 | 1.52 |
| 1 | 40-A | 66 | PRO | C-N | -5.54 | 1.23 | 1.34 |
| 1 | 39-A | 295 | GLU | CB-CG | 5.53 | 1.62 | 1.52 |
| 1 | 41-A | 17 | CYS | CB-SG | 5.51 | 1.91 | 1.82 |
| 1 | 24-A | 564 | GLU | CB-CG | 5.47 | 1.62 | 1.52 |
| 1 | 41-A | 490 | GLU | CB-CG | 5.46 | 1.62 | 1.52 |
| 1 | 27-A | 89 | CYS | CB-SG | -5.45 | 1.73 | 1.81 |
| 1 | 21-A | 66 | PRO | C-N | -5.45 | 1.24 | 1.34 |
| 1 | 43-A | 295 | GLU | CG-CD | 5.42 | 1.60 | 1.51 |
| 1 | 1-A | 36 | GLU | CB-CG | 5.41 | 1.62 | 1.52 |
| 1 | 36-A | 393 | MET | CG-SD | -5.41 | 1.67 | 1.81 |
| 1 | 27-A | 66 | PRO | C-N | -5.31 | 1.24 | 1.34 |
| 1 | 11-A | 384 | GLU | CB-CG | 5.31 | 1.62 | 1.52 |
| 1 | 26-A | 526 | TRP | C-N | 5.28 | 1.46 | 1.34 |
| 1 | 33-A | 124 | GLU | CB-CG | 5.26 | 1.62 | 1.52 |
| 1 | 42-A | 396 | LYS | CG-CD | -5.23 | 1.34 | 1.52 |
| 1 | 16-A | 66 | PRO | C-N | -5.22 | 1.24 | 1.34 |
| 1 | 22-A | 384 | GLU | CB-CG | 5.22 | 1.62 | 1.52 |
| 1 | 33-A | 331 | GLU | CB-CG | 5.22 | 1.62 | 1.52 |
| 1 | 6-A | 66 | PRO | C-N | -5.21 | 1.24 | 1.34 |
| 1 | 22-A | 331 | GLU | CB-CG | 5.20 | 1.62 | 1.52 |
| 1 | 13-A | 66 | PRO | C-N | -5.18 | 1.24 | 1.34 |
| 1 | 30-A | 376 | VAL | CB-CG1 | -5.18 | 1.42 | 1.52 |
| 1 | 32-A | 147 | MET | CB-CG | 5.15 | 1.67 | 1.51 |
| 1 | 30-A | 301 | GLU | CB-CG | 5.14 | 1.61 | 1.52 |
| 1 | 17-A | 66 | PRO | C-N | -5.13 | 1.24 | 1.34 |
| 1 | 12-A | 126 | LYS | C-N | 5.12 | 1.45 | 1.34 |
| 1 | 43-A | 308 | MET | CB-CG | 5.11 | 1.67 | 1.51 |
| 1 | 13-A | 498 | GLU | CB-CG | 5.11 | 1.61 | 1.52 |
| 1 | 32-A | 451 | GLU | CB-CG | 5.10 | 1.61 | 1.52 |
| 1 | 34-A | 568 | ASP | CB-CG | 5.08 | 1.62 | 1.51 |
| 1 | 41-A | 147 | MET | CB-CG | 5.08 | 1.67 | 1.51 |
| 1 | 5-A | 124 | GLU | CG-CD | 5.06 | 1.59 | 1.51 |
| 1 | 13-A | 5 | VAL | CB-CG1 | -5.06 | 1.42 | 1.52 |
| 1 | 31-A | 217 | GLU | CB-CG | 5.04 | 1.61 | 1.52 |
| 1 | 14-A | 89 | CYS | CB-SG | -5.03 | 1.73 | 1.81 |
| 1 | 4-A | 544 | GLU | CB-CG | 5.02 | 1.61 | 1.52 |
| 1 | 42-A | 147 | MET | CG-SD | 5.01 | 1.94 | 1.81 |

All (192) bond angle outliers are listed below:

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | 22-A | 130 | LEU | CA-CB-CG | 13.13 | 145.50 | 115.30 |
| 1 | 15-A | 17 | CYS | CA-CB-SG | 12.26 | 136.07 | 114.00 |
| 1 | 42-A | 157 | ASP | CB-CG-OD2 | -9.89 | 109.40 | 118.30 |
| 1 | 17-A | 147 | MET | CG-SD-CE | -9.52 | 84.96 | 100.20 |
| 1 | 1-A | 179 | ASP | CB-CG-OD2 | -8.96 | 110.23 | 118.30 |
| 1 | 34-A | 86 | ARG | NE-CZ-NH1 | 8.73 | 124.66 | 120.30 |
| 1 | 29-A | 179 | ASP | CB-CG-OD2 | -8.36 | 110.78 | 118.30 |
| 1 | 13-A | 308 | MET | CG-SD-CE | -8.23 | 87.03 | 100.20 |
| 1 | 20-A | 300 | LEU | CB-CG-CD2 | 8.14 | 124.84 | 111.00 |
| 1 | 15-A | 99 | ASP | CB-CG-OD2 | 8.08 | 125.58 | 118.30 |
| 1 | 3-A | 78 | ARG | NE-CZ-NH1 | -8.07 | 116.26 | 120.30 |
| 1 | 26-A | 89 | CYS | CA-CB-SG | -7.84 | 99.89 | 114.00 |
| 1 | 30-A | 289 | ASP | CB-CG-OD1 | -7.78 | 111.30 | 118.30 |
| 1 | 10-A | 362 | MET | CB-CG-SD | -7.70 | 89.31 | 112.40 |
| 1 | 12-A | 308 | MET | CG-SD-CE | -7.70 | 87.88 | 100.20 |
| 1 | 1-A | 179 | ASP | CB-CG-OD1 | 7.68 | 125.22 | 118.30 |
| 1 | 10-A | 486 | ARG | NE-CZ-NH2 | -7.59 | 116.51 | 120.30 |
| 1 | 13-A | 521 | MET | CG-SD-CE | 7.56 | 112.30 | 100.20 |
| 1 | 29-A | 157 | ASP | CB-CG-OD2 | 7.49 | 125.04 | 118.30 |
| 1 | 9-A | 89 | CYS | CA-CB-SG | 7.42 | 127.36 | 114.00 |
| 1 | 30-A | 89 | CYS | CA-CB-SG | 7.42 | 127.36 | 114.00 |
| 1 | 29-A | 179 | ASP | CB-CG-OD1 | 7.36 | 124.92 | 118.30 |
| 1 | 4-A | 147 | MET | CG-SD-CE | -7.35 | 88.44 | 100.20 |
| 1 | 17-A | 458 | ARG | NE-CZ-NH2 | -7.33 | 116.64 | 120.30 |
| 1 | 36-A | 89 | CYS | CA-CB-SG | 7.17 | 126.91 | 114.00 |
| 1 | 20-A | 78 | ARG | NE-CZ-NH2 | 7.16 | 123.88 | 120.30 |
| 1 | 27-A | 146 | ASP | CB-CA-C | -7.13 | 96.14 | 110.40 |
| 1 | 12-A | 475 | LEU | CA-CB-CG | 7.12 | 131.66 | 115.30 |
| 1 | 4-A | 544 | GLU | OE1-CD-OE2 | -7.09 | 114.80 | 123.30 |
| 1 | 43-A | 308 | MET | CB-CG-SD | 7.08 | 133.65 | 112.40 |
| 1 | 27-A | 300 | LEU | CA-CB-CG | 7.04 | 131.49 | 115.30 |
| 1 | 16-A | 458 | ARG | NE-CZ-NH1 | 6.99 | 123.80 | 120.30 |
| 1 | 32-A | 460 | MET | CB-CG-SD | 6.93 | 133.21 | 112.40 |
| 1 | 12-A | 499 | ARG | NE-CZ-NH2 | -6.92 | 116.84 | 120.30 |
| 1 | 16-A | 460 | MET | CG-SD-CE | -6.88 | 89.20 | 100.20 |
| 1 | 17-A | 93 | ASP | CB-CG-OD2 | -6.85 | 112.14 | 118.30 |
| 1 | 32-A | 93 | ASP | CB-CG-OD1 | -6.85 | 112.14 | 118.30 |
| 1 | 18-A | 78 | ARG | NE-CZ-NH2 | 6.82 | 123.71 | 120.30 |
| 1 | 15-A | 86 | ARG | NE-CZ-NH1 | 6.79 | 123.69 | 120.30 |
| 1 | 36-A | 393 | MET | CA-CB-CG | -6.78 | 101.77 | 113.30 |
| 1 | 27-A | 362 | MET | CA-CB-CG | 6.69 | 124.68 | 113.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | 34-A | 385 | ARG | NE-CZ-NH2 | -6.69 | 116.95 | 120.30 |
| 1 | 30-A | 327 | LYS | CD-CE-NZ | -6.67 | 96.36 | 111.70 |
| 1 | 32-A | 147 | MET | CB-CG-SD | 6.64 | 132.33 | 112.40 |
| 1 | 23-A | 93 | ASP | CB-CG-OD1 | -6.64 | 112.33 | 118.30 |
| 1 | 27-A | 89 | CYS | CA-CB-SG | -6.59 | 102.13 | 114.00 |
| 1 | 33-A | 460 | MET | CG-SD-CE | 6.58 | 110.73 | 100.20 |
| 1 | 3-A | 461 | ARG | NE-CZ-NH2 | -6.57 | 117.02 | 120.30 |
| 1 | 19-A | 300 | LEU | CA-CB-CG | 6.55 | 130.38 | 115.30 |
| 1 | 4-A | 92 | LYS | CD-CE-NZ | 6.52 | 126.70 | 111.70 |
| 1 | 19-A | 78 | ARG | NE-CZ-NH1 | 6.51 | 123.55 | 120.30 |
| 1 | 17-A | 93 | ASP | CB-CG-OD1 | 6.48 | 124.14 | 118.30 |
| 1 | 21-A | 300 | LEU | CA-CB-CG | 6.47 | 130.19 | 115.30 |
| 1 | 41-A | 147 | MET | CA-CB-CG | 6.47 | 124.31 | 113.30 |
| 1 | 17-A | 460 | MET | CB-CG-SD | 6.44 | 131.71 | 112.40 |
| 1 | 2-A | 362 | MET | CB-CG-SD | -6.43 | 93.12 | 112.40 |
| 1 | 4-A | 236 | LEU | CA-CB-CG | 6.41 | 130.03 | 115.30 |
| 1 | 24-A | 308 | MET | CA-CB-CG | -6.39 | 102.43 | 113.30 |
| 1 | 32-A | 303 | ARG | NE-CZ-NH1 | 6.39 | 123.49 | 120.30 |
| 1 | 15-A | 99 | ASP | CB-CG-OD1 | -6.38 | 112.55 | 118.30 |
| 1 | 3-A | 486 | ARG | NE-CZ-NH1 | 6.36 | 123.48 | 120.30 |
| 1 | 7-A | 86 | ARG | NE-CZ-NH2 | -6.34 | 117.13 | 120.30 |
| 1 | 18-A | 300 | LEU | CA-CB-CG | 6.30 | 129.79 | 115.30 |
| 1 | 39-A | 460 | MET | CB-CG-SD | -6.29 | 93.52 | 112.40 |
| 1 | 14-A | 570 | PHE | N-CA-C | -6.29 | 94.02 | 111.00 |
| 1 | 6-A | 289 | ASP | CB-CG-OD2 | -6.27 | 112.66 | 118.30 |
| 1 | 20-A | 147 | MET | CG-SD-CE | 6.26 | 110.22 | 100.20 |
| 1 | 9-A | 146 | ASP | CB-CG-OD2 | 6.24 | 123.92 | 118.30 |
| 1 | 33-A | 126 | LYS | C-N-CA | -6.23 | 106.12 | 121.70 |
| 1 | 17-A | 537 | LYS | CD-CE-NZ | 6.21 | 125.99 | 111.70 |
| 1 | 41-A | 93 | ASP | CB-CG-OD1 | 6.20 | 123.88 | 118.30 |
| 1 | 33-A | 460 | MET | CA-CB-CG | 6.18 | 123.81 | 113.30 |
| 1 | 26-A | 322 | ASP | CB-CG-OD2 | 6.14 | 123.83 | 118.30 |
| 1 | 14-A | 53 | ASP | CB-CG-OD1 | -6.13 | 112.78 | 118.30 |
| 1 | 32-A | 8 | MET | CB-CG-SD | 6.12 | 130.74 | 112.40 |
| 1 | 20-A | 100 | PHE | CB-CG-CD2 | 6.10 | 125.07 | 120.80 |
| 1 | 7-A | 464 | ARG | NE-CZ-NH1 | 6.08 | 123.34 | 120.30 |
| 1 | 23-A | 300 | LEU | CA-CB-CG | 6.07 | 129.27 | 115.30 |
| 1 | 18-A | 521 | MET | CG-SD-CE | 6.06 | 109.90 | 100.20 |
| 1 | 11-A | 78 | ARG | NE-CZ-NH1 | 6.05 | 123.33 | 120.30 |
| 1 | 12-A | 567 | ARG | NE-CZ-NH1 | 6.04 | 123.32 | 120.30 |
| 1 | 22-A | 461 | ARG | NE-CZ-NH2 | -6.03 | 117.28 | 120.30 |
| 1 | 34-A | 86 | ARG | NE-CZ-NH2 | -6.03 | 117.28 | 120.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | 31-A | 334 | LYS | CD-CE-NZ | -6.01 | 97.87 | 111.70 |
| 1 | 9-A | 289 | ASP | CB-CG-OD2 | 6.00 | 123.70 | 118.30 |
| 1 | 20-A | 78 | ARG | NE-CZ-NH1 | -5.98 | 117.31 | 120.30 |
| 1 | 1-A | 379 | GLU | CA-CB-CG | 5.97 | 126.54 | 113.40 |
| 1 | 17-A | 385 | ARG | NE-CZ-NH2 | -5.96 | 117.32 | 120.30 |
| 1 | 4-A | 147 | MET | CB-CG-SD | 5.95 | 130.24 | 112.40 |
| 1 | 3-A | 127 | ARG | NE-CZ-NH2 | -5.91 | 117.34 | 120.30 |
| 1 | 21-A | 127 | ARG | NE-CZ-NH2 | -5.90 | 117.35 | 120.30 |
| 1 | 7-A | 147 | MET | CB-CG-SD | 5.89 | 130.08 | 112.40 |
| 1 | 25-A | 567 | ARG | NE-CZ-NH1 | 5.89 | 123.25 | 120.30 |
| 1 | 6-A | 100 | PHE | CB-CG-CD1 | 5.89 | 124.92 | 120.80 |
| 1 | 10-A | 486 | ARG | NE-CZ-NH1 | 5.88 | 123.24 | 120.30 |
| 1 | 32-A | 460 | MET | CG-SD-CE | 5.87 | 109.59 | 100.20 |
| 1 | 18-A | 521 | MET | CA-CB-CG | 5.86 | 123.27 | 113.30 |
| 1 | 41-A | 514 | TYR | CA-CB-CG | 5.86 | 124.53 | 113.40 |
| 1 | 22-A | 300 | LEU | CB-CG-CD1 | 5.86 | 120.96 | 111.00 |
| 1 | 32-A | 453 | LEU | CA-CB-CG | 5.85 | 128.75 | 115.30 |
| 1 | 21-A | 125 | THR | CA-C-N | -5.83 | 104.37 | 117.20 |
| 1 | 39-A | 147 | MET | CB-CG-SD | 5.83 | 129.89 | 112.40 |
| 1 | 28-A | 393 | MET | CG-SD-CE | 5.80 | 109.48 | 100.20 |
| 1 | 14-A | 52 | ASP | CB-CG-OD2 | 5.80 | 123.52 | 118.30 |
| 1 | 32-A | 127 | ARG | NE-CZ-NH2 | -5.77 | 117.42 | 120.30 |
| 1 | 8-A | 86 | ARG | NE-CZ-NH1 | 5.73 | 123.17 | 120.30 |
| 1 | 23-A | 93 | ASP | CB-CG-OD2 | 5.71 | 123.44 | 118.30 |
| 1 | 42-A | 147 | MET | CB-CG-SD | 5.71 | 129.52 | 112.40 |
| 1 | 23-A | 300 | LEU | CB-CG-CD1 | 5.70 | 120.69 | 111.00 |
| 1 | 41-A | 93 | ASP | CB-CG-OD2 | -5.66 | 113.20 | 118.30 |
| 1 | 30-A | 289 | ASP | CB-CG-OD2 | 5.65 | 123.39 | 118.30 |
| 1 | 33-A | 147 | MET | CB-CG-SD | 5.65 | 129.34 | 112.40 |
| 1 | 24-A | 308 | MET | CB-CG-SD | -5.62 | 95.55 | 112.40 |
| 1 | 14-A | 362 | MET | CB-CG-SD | -5.61 | 95.58 | 112.40 |
| 1 | 41-A | 453 | LEU | CA-CB-CG | 5.60 | 128.18 | 115.30 |
| 1 | 20-A | 89 | CYS | CA-CB-SG | -5.58 | 103.97 | 114.00 |
| 1 | 26-A | 289 | ASP | CB-CG-OD2 | 5.57 | 123.31 | 118.30 |
| 1 | 39-A | 514 | TYR | CA-CB-CG | 5.57 | 123.98 | 113.40 |
| 1 | 23-A | 322 | ASP | CB-CG-OD1 | -5.56 | 113.30 | 118.30 |
| 1 | 38-A | 300 | LEU | CA-CB-CG | -5.55 | 102.53 | 115.30 |
| 1 | 29-A | 303 | ARG | NE-CZ-NH1 | 5.54 | 123.07 | 120.30 |
| 1 | 34-A | 236 | LEU | CA-CB-CG | 5.54 | 128.04 | 115.30 |
| 1 | 3-A | 521 | MET | CB-CG-SD | -5.54 | 95.78 | 112.40 |
| 1 | 38-A | 87 | ASP | CB-CG-OD1 | 5.53 | 123.28 | 118.30 |
| 1 | 12-A | 499 | ARG | NE-CZ-NH1 | 5.53 | 123.07 | 120.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1 | 15-A | 461 | ARG | NE-CZ-NH2 | -5.53 | 117.53 | 120.30 |
| 1 | 41-A | 514 | TYR | CB-CG-CD1 | 5.53 | 124.32 | 121.00 |
| 1 | 25-A | 385 | ARG | NE-CZ-NH2 | -5.52 | 117.54 | 120.30 |
| 1 | 19-A | 78 | ARG | NE-CZ-NH2 | -5.52 | 117.54 | 120.30 |
| 1 | 42-A | 157 | ASP | CB-CG-OD1 | 5.51 | 123.26 | 118.30 |
| 1 | 39-A | 362 | MET | CG-SD-CE | 5.49 | 108.98 | 100.20 |
| 1 | 22-A | 382 | ASP | CB-CG-OD1 | 5.47 | 123.22 | 118.30 |
| 1 | 33-A | 460 | MET | CB-CG-SD | 5.47 | 128.81 | 112.40 |
| 1 | 19-A | 521 | MET | CG-SD-CE | 5.46 | 108.93 | 100.20 |
| 1 | 21-A | 106 | CYS | CA-CB-SG | 5.45 | 123.80 | 114.00 |
| 1 | 1-A | 43 | LYS | CD-CE-NZ | 5.44 | 124.22 | 111.70 |
| 1 | 36-A | 385 | ARG | NE-CZ-NH2 | -5.43 | 117.58 | 120.30 |
| 1 | 18-A | 87 | ASP | CB-CG-OD2 | 5.42 | 123.18 | 118.30 |
| 1 | 15-A | 78 | ARG | NE-CZ-NH2 | -5.41 | 117.59 | 120.30 |
| 1 | 18-A | 487 | MET | CG-SD-CE | 5.41 | 108.86 | 100.20 |
| 1 | 13-A | 8 | MET | CG-SD-CE | 5.41 | 108.85 | 100.20 |
| 1 | 24-A | 568 | ASP | CB-CG-OD1 | 5.40 | 123.16 | 118.30 |
| 1 | 14-A | 487 | MET | CG-SD-CE | -5.39 | 91.58 | 100.20 |
| 1 | 11-A | 514 | TYR | CA-CB-CG | 5.39 | 123.64 | 113.40 |
| 1 | 41-A | 487 | MET | CG-SD-CE | 5.38 | 108.80 | 100.20 |
| 1 | 29-A | 362 | MET | CG-SD-CE | 5.37 | 108.79 | 100.20 |
| 1 | 32-A | 385 | ARG | NE-CZ-NH1 | 5.37 | 122.98 | 120.30 |
| 1 | 28-A | 567 | ARG | CG-CD-NE | -5.36 | 100.54 | 111.80 |
| 1 | 23-A | 322 | ASP | CB-CG-OD2 | 5.36 | 123.13 | 118.30 |
| 1 | 43-A | 514 | TYR | CA-CB-CG | 5.34 | 123.55 | 113.40 |
| 1 | 22-A | 365 | LEU | CA-CB-CG | 5.34 | 127.58 | 115.30 |
| 1 | 23-A | 308 | MET | CB-CG-SD | -5.34 | 96.38 | 112.40 |
| 1 | 19-A | 147 | MET | CG-SD-CE | 5.32 | 108.72 | 100.20 |
| 1 | 37-A | 393 | MET | CA-CB-CG | 5.30 | 122.31 | 113.30 |
| 1 | 19-A | 499 | ARG | NE-CZ-NH2 | -5.29 | 117.65 | 120.30 |
| 1 | 9-A | 385 | ARG | NE-CZ-NH2 | -5.27 | 117.66 | 120.30 |
| 1 | 7-A | 432 | ARG | NE-CZ-NH1 | 5.26 | 122.93 | 120.30 |
| 1 | 11-A | 384 | GLU | CB-CA-C | 5.25 | 120.91 | 110.40 |
| 1 | 9-A | 147 | MET | CB-CG-SD | 5.24 | 128.11 | 112.40 |
| 1 | 33-A | 453 | LEU | CA-CB-CG | 5.23 | 127.33 | 115.30 |
| 1 | 18-A | 449 | ASP | CB-CG-OD2 | -5.22 | 113.60 | 118.30 |
| 1 | 38-A | 452 | ASP | CB-CG-OD2 | 5.20 | 122.98 | 118.30 |
| 1 | 14-A | 210 | ASP | CB-CG-OD2 | -5.18 | 113.63 | 118.30 |
| 1 | 2-A | 147 | MET | CG-SD-CE | -5.18 | 91.91 | 100.20 |
| 1 | 16-A | 52 | ASP | CB-CG-OD1 | 5.18 | 122.97 | 118.30 |
| 1 | 39-A | 106 | CYS | CA-CB-SG | 5.18 | 123.33 | 114.00 |
| 1 | 15-A | 52 | ASP | CB-CG-OD2 | 5.17 | 122.96 | 118.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1 | 1-A | 276 | LYS | CD-CE-NZ | 5.15 | 123.55 | 111.70 |
| 1 | 19-A | 300 | LEU | CB-CG-CD2 | 5.15 | 119.76 | 111.00 |
| 1 | 30-A | 106 | CYS | CA-CB-SG | -5.15 | 104.73 | 114.00 |
| 1 | 12-A | 104 | LYS | CA-CB-CG | 5.15 | 124.72 | 113.40 |
| 1 | 13-A | 300 | LEU | CA-CB-CG | 5.13 | 127.11 | 115.30 |
| 1 | 4-A | 385 | ARG | NE-CZ-NH2 | -5.13 | 117.73 | 120.30 |
| 1 | 19-A | 89 | CYS | CA-CB-SG | -5.13 | 104.76 | 114.00 |
| 1 | 42-A | 236 | LEU | CA-CB-CG | 5.12 | 127.08 | 115.30 |
| 1 | 32-A | 126 | LYS | C-N-CA | 5.12 | 134.50 | 121.70 |
| 1 | 20-A | 458 | ARG | NE-CZ-NH1 | 5.12 | 122.86 | 120.30 |
| 1 | 28-A | 100 | PHE | CB-CG-CD1 | 5.12 | 124.38 | 120.80 |
| 1 | 6-A | 458 | ARG | NE-CZ-NH2 | -5.11 | 117.75 | 120.30 |
| 1 | 33-A | 486 | ARG | NE-CZ-NH2 | -5.10 | 117.75 | 120.30 |
| 1 | 23-A | 521 | MET | CA-CB-CG | 5.10 | 121.97 | 113.30 |
| 1 | 20-A | 498 | GLU | OE1-CD-OE2 | -5.09 | 117.19 | 123.30 |
| 1 | 23-A | 425 | MET | CG-SD-CE | 5.09 | 108.35 | 100.20 |
| 1 | 4-A | 385 | ARG | NE-CZ-NH1 | 5.09 | 122.85 | 120.30 |
| 1 | 42-A | 385 | ARG | NE-CZ-NH2 | -5.09 | 117.75 | 120.30 |
| 1 | 3-A | 125 | THR | O-C-N | 5.07 | 130.82 | 122.70 |
| 1 | 3-A | 461 | ARG | NE-CZ-NH1 | 5.04 | 122.82 | 120.30 |
| 1 | 18-A | 449 | ASP | CB-CG-OD1 | 5.03 | 122.83 | 118.30 |
| 1 | 12-A | 307 | VAL | C-N-CA | 5.02 | 134.25 | 121.70 |
| 1 | 21-A | 157 | ASP | CB-CG-OD1 | 5.02 | 122.82 | 118.30 |
| 1 | 29-A | 78 | ARG | NE-CZ-NH1 | 5.01 | 122.81 | 120.30 |
| 1 | 8-A | 385 | ARG | NE-CZ-NH1 | 5.01 | 122.80 | 120.30 |

There are no chirality outliers.

All (143) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|---------|
| 1 | 1-A | 518 | ILE | Peptide |
| 1 | 1-A | 520 | GLY | Peptide |
| 1 | 1-A | 522 | GLU | Peptide |
| 1 | 10-A | 327 | LYS | Peptide |
| 1 | 10-A | 384 | GLU | Peptide |
| 1 | 10-A | 438 | GLY | Peptide |
| 1 | 10-A | 521 | MET | Peptide |
| 1 | 10-A | 99 | ASP | Peptide |
| 1 | 11-A | 101 | ILE | Peptide |
| 1 | 11-A | 383 | ALA | Peptide |
| 1 | 11-A | 521 | MET | Peptide |
| 1 | 12-A | 101 | ILE | Peptide |

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| Mol | Chain | Res | Type | Group |
|------------|--------------|------------|-------------|--------------|
| 1 | 12-A | 102 | THR | Peptide |
| 1 | 12-A | 103 | GLY | Peptide |
| 1 | 12-A | 99 | ASP | Peptide |
| 1 | 13-A | 100 | PHE | Peptide |
| 1 | 13-A | 463 | GLY | Peptide |
| 1 | 13-A | 517 | GLU | Peptide |
| 1 | 14-A | 100 | PHE | Peptide |
| 1 | 15-A | 384 | GLU | Peptide |
| 1 | 15-A | 520 | GLY | Peptide |
| 1 | 15-A | 521 | MET | Peptide |
| 1 | 15-A | 89 | CYS | Peptide |
| 1 | 15-A | 90 | ASN | Peptide |
| 1 | 16-A | 437 | SER | Peptide |
| 1 | 16-A | 514 | TYR | Peptide |
| 1 | 16-A | 532 | SER | Peptide |
| 1 | 16-A | 533 | ASP | Peptide |
| 1 | 17-A | 125 | THR | Peptide |
| 1 | 17-A | 146 | ASP | Peptide |
| 1 | 17-A | 384 | GLU | Peptide |
| 1 | 17-A | 437 | SER | Peptide |
| 1 | 17-A | 523 | ASN | Peptide |
| 1 | 18-A | 383 | ALA | Peptide |
| 1 | 18-A | 384 | GLU | Peptide |
| 1 | 18-A | 436 | THR | Peptide |
| 1 | 18-A | 437 | SER | Peptide |
| 1 | 18-A | 523 | ASN | Peptide |
| 1 | 19-A | 384 | GLU | Peptide |
| 1 | 19-A | 519 | GLU | Peptide |
| 1 | 19-A | 520 | GLY | Peptide |
| 1 | 2-A | 517 | GLU | Peptide |
| 1 | 2-A | 518 | ILE | Peptide |
| 1 | 2-A | 520 | GLY | Peptide |
| 1 | 20-A | 384 | GLU | Peptide |
| 1 | 20-A | 470 | SER | Peptide |
| 1 | 20-A | 517 | GLU | Peptide |
| 1 | 20-A | 523 | ASN | Peptide |
| 1 | 21-A | 125 | THR | Mainchain |
| 1 | 21-A | 382 | ASP | Peptide |
| 1 | 21-A | 384 | GLU | Peptide |
| 1 | 21-A | 438 | GLY | Peptide |
| 1 | 21-A | 5 | VAL | Peptide |
| 1 | 21-A | 522 | GLU | Peptide |

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| Mol | Chain | Res | Type | Group |
|------------|--------------|------------|-------------|--------------|
| 1 | 21-A | 523 | ASN | Peptide |
| 1 | 22-A | 382 | ASP | Peptide |
| 1 | 22-A | 384 | GLU | Peptide |
| 1 | 22-A | 523 | ASN | Peptide |
| 1 | 22-A | 524 | VAL | Peptide |
| 1 | 22-A | 525 | SER | Peptide |
| 1 | 23-A | 382 | ASP | Peptide |
| 1 | 23-A | 517 | GLU | Peptide |
| 1 | 23-A | 520 | GLY | Peptide |
| 1 | 23-A | 523 | ASN | Peptide |
| 1 | 23-A | 524 | VAL | Peptide |
| 1 | 23-A | 525 | SER | Peptide |
| 1 | 24-A | 518 | ILE | Peptide |
| 1 | 25-A | 438 | GLY | Peptide |
| 1 | 26-A | 145 | ARG | Peptide |
| 1 | 26-A | 383 | ALA | Peptide |
| 1 | 26-A | 516 | ASN | Peptide |
| 1 | 26-A | 517 | GLU | Peptide |
| 1 | 27-A | 381 | ALA | Peptide |
| 1 | 27-A | 383 | ALA | Peptide |
| 1 | 27-A | 438 | GLY | Peptide |
| 1 | 27-A | 522 | GLU | Peptide |
| 1 | 27-A | 525 | SER | Peptide |
| 1 | 28-A | 124 | GLU | Peptide |
| 1 | 28-A | 522 | GLU | Peptide |
| 1 | 29-A | 103 | GLY | Peptide |
| 1 | 29-A | 124 | GLU | Peptide |
| 1 | 3-A | 517 | GLU | Peptide |
| 1 | 3-A | 518 | ILE | Peptide |
| 1 | 3-A | 521 | MET | Peptide |
| 1 | 30-A | 518 | ILE | Peptide |
| 1 | 30-A | 521 | MET | Peptide |
| 1 | 31-A | 519 | GLU | Peptide |
| 1 | 32-A | 318 | TYR | Peptide |
| 1 | 32-A | 382 | ASP | Peptide |
| 1 | 32-A | 520 | GLY | Peptide |
| 1 | 33-A | 126 | LYS | Peptide |
| 1 | 33-A | 514 | TYR | Peptide |
| 1 | 34-A | 382 | ASP | Peptide |
| 1 | 34-A | 519 | GLU | Peptide |
| 1 | 34-A | 521 | MET | Peptide |
| 1 | 34-A | 89 | CYS | Peptide |

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| Mol | Chain | Res | Type | Group |
|------------|--------------|------------|-------------|--------------|
| 1 | 34-A | 90 | ASN | Peptide |
| 1 | 35-A | 124 | GLU | Peptide |
| 1 | 35-A | 382 | ASP | Peptide |
| 1 | 35-A | 384 | GLU | Peptide |
| 1 | 35-A | 517 | GLU | Peptide |
| 1 | 35-A | 518 | ILE | Peptide |
| 1 | 35-A | 521 | MET | Peptide |
| 1 | 36-A | 514 | TYR | Peptide |
| 1 | 36-A | 518 | ILE | Peptide |
| 1 | 36-A | 520 | GLY | Peptide |
| 1 | 37-A | 102 | THR | Peptide |
| 1 | 37-A | 384 | GLU | Peptide |
| 1 | 37-A | 515 | SER | Peptide |
| 1 | 37-A | 522 | GLU | Peptide |
| 1 | 38-A | 103 | GLY | Peptide |
| 1 | 38-A | 104 | LYS | Peptide |
| 1 | 38-A | 386 | THR | Peptide |
| 1 | 38-A | 522 | GLU | Peptide |
| 1 | 38-A | 523 | ASN | Peptide |
| 1 | 39-A | 461 | ARG | Peptide |
| 1 | 39-A | 518 | ILE | Peptide |
| 1 | 39-A | 523 | ASN | Peptide |
| 1 | 4-A | 386 | THR | Peptide |
| 1 | 4-A | 522 | GLU | Peptide |
| 1 | 40-A | 103 | GLY | Peptide |
| 1 | 40-A | 382 | ASP | Peptide |
| 1 | 40-A | 435 | HIS | Peptide |
| 1 | 40-A | 519 | GLU | Peptide |
| 1 | 40-A | 521 | MET | Peptide |
| 1 | 40-A | 523 | ASN | Peptide |
| 1 | 41-A | 435 | HIS | Peptide |
| 1 | 41-A | 531 | LYS | Peptide |
| 1 | 42-A | 382 | ASP | Peptide |
| 1 | 42-A | 385 | ARG | Peptide |
| 1 | 42-A | 515 | SER | Peptide |
| 1 | 42-A | 524 | VAL | Peptide |
| 1 | 43-A | 125 | THR | Peptide |
| 1 | 43-A | 380 | LEU | Peptide |
| 1 | 43-A | 384 | GLU | Peptide |
| 1 | 43-A | 438 | GLY | Peptide |
| 1 | 43-A | 525 | SER | Peptide |
| 1 | 5-A | 438 | GLY | Peptide |

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| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|---------|
| 1 | 7-A | 516 | ASN | Peptide |
| 1 | 8-A | 126 | LYS | Peptide |
| 1 | 9-A | 100 | PHE | Peptide |
| 1 | 9-A | 381 | ALA | Peptide |
| 1 | 9-A | 521 | MET | Peptide |

5.2 Too-close contacts [i](#)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | 1-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 2-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 3-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 4-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 5-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 6-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 7-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 8-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 9-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 10-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 11-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 12-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 13-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 14-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 15-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 16-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 17-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 18-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 19-A | 4557 | 4478 | 4475 | 0 | 0 |
| 1 | 20-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 21-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 22-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 23-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 24-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 25-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 26-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 27-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 28-A | 4557 | 4478 | 4476 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | 29-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 30-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 31-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 32-A | 4557 | 4478 | 4475 | 0 | 0 |
| 1 | 33-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 34-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 35-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 36-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 37-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 38-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 39-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 40-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 41-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 42-A | 4557 | 4478 | 4476 | 0 | 0 |
| 1 | 43-A | 4557 | 4478 | 4476 | 0 | 0 |
| 2 | 1-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 2-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 3-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 4-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 5-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 6-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 7-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 8-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 9-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 10-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 11-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 12-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 13-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 14-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 15-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 16-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 17-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 18-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 19-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 20-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 21-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 22-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 23-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 24-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 25-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 26-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 27-A | 8 | 10 | 10 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 2 | 28-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 29-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 30-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 31-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 32-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 33-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 34-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 35-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 36-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 37-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 38-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 39-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 40-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 41-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 42-A | 8 | 10 | 10 | 0 | 0 |
| 2 | 43-A | 8 | 10 | 10 | 0 | 0 |
| 3 | 1-A | 399 | 0 | 0 | 0 | 0 |
| 3 | 2-A | 380 | 0 | 0 | 0 | 0 |
| 3 | 3-A | 356 | 0 | 0 | 0 | 0 |
| 3 | 4-A | 389 | 0 | 0 | 0 | 0 |
| 3 | 5-A | 386 | 0 | 0 | 0 | 0 |
| 3 | 6-A | 379 | 0 | 0 | 0 | 0 |
| 3 | 7-A | 375 | 0 | 0 | 0 | 0 |
| 3 | 8-A | 365 | 0 | 0 | 0 | 0 |
| 3 | 9-A | 373 | 0 | 0 | 0 | 0 |
| 3 | 10-A | 365 | 0 | 0 | 0 | 0 |
| 3 | 11-A | 360 | 0 | 0 | 0 | 0 |
| 3 | 12-A | 396 | 0 | 0 | 0 | 0 |
| 3 | 13-A | 406 | 0 | 0 | 0 | 0 |
| 3 | 14-A | 378 | 0 | 0 | 0 | 0 |
| 3 | 15-A | 374 | 0 | 0 | 0 | 0 |
| 3 | 16-A | 386 | 0 | 0 | 0 | 0 |
| 3 | 17-A | 357 | 0 | 0 | 0 | 0 |
| 3 | 18-A | 353 | 0 | 0 | 0 | 0 |
| 3 | 19-A | 363 | 0 | 0 | 0 | 0 |
| 3 | 20-A | 399 | 0 | 0 | 0 | 0 |
| 3 | 21-A | 389 | 0 | 0 | 0 | 0 |
| 3 | 22-A | 380 | 0 | 0 | 0 | 0 |
| 3 | 23-A | 376 | 0 | 0 | 0 | 0 |
| 3 | 24-A | 381 | 0 | 0 | 0 | 0 |
| 3 | 25-A | 359 | 0 | 0 | 0 | 0 |
| 3 | 26-A | 362 | 0 | 0 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 3 | 27-A | 379 | 0 | 0 | 0 | 0 |
| 3 | 28-A | 389 | 0 | 0 | 0 | 0 |
| 3 | 29-A | 377 | 0 | 0 | 0 | 0 |
| 3 | 30-A | 363 | 0 | 0 | 0 | 0 |
| 3 | 31-A | 365 | 0 | 0 | 0 | 0 |
| 3 | 32-A | 393 | 0 | 0 | 0 | 0 |
| 3 | 33-A | 378 | 0 | 0 | 0 | 0 |
| 3 | 34-A | 384 | 0 | 0 | 0 | 0 |
| 3 | 35-A | 383 | 0 | 0 | 0 | 0 |
| 3 | 36-A | 390 | 0 | 0 | 0 | 0 |
| 3 | 37-A | 358 | 0 | 0 | 0 | 0 |
| 3 | 38-A | 377 | 0 | 0 | 0 | 0 |
| 3 | 39-A | 393 | 0 | 0 | 0 | 0 |
| 3 | 40-A | 388 | 0 | 0 | 0 | 0 |
| 3 | 41-A | 390 | 0 | 0 | 0 | 0 |
| 3 | 42-A | 390 | 0 | 0 | 0 | 0 |
| 3 | 43-A | 377 | 0 | 0 | 0 | 0 |
| All | All | 212555 | 192984 | 192896 | 0 | 0 |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). Clashscore could not be calculated for this entry.

There are no clashes within the asymmetric unit.

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-A | 564/577 (98%) | 531 (94%) | 27 (5%) | 6 (1%) | 12 | 2 |
| 1 | 2-A | 564/577 (98%) | 524 (93%) | 34 (6%) | 6 (1%) | 12 | 2 |
| 1 | 3-A | 564/577 (98%) | 528 (94%) | 29 (5%) | 7 (1%) | 11 | 1 |
| 1 | 4-A | 564/577 (98%) | 533 (94%) | 27 (5%) | 4 (1%) | 19 | 4 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|---------|----------|-------------|---|
| 1 | 5-A | 564/577 (98%) | 529 (94%) | 28 (5%) | 7 (1%) | 11 | 1 |
| 1 | 6-A | 564/577 (98%) | 528 (94%) | 30 (5%) | 6 (1%) | 12 | 2 |
| 1 | 7-A | 564/577 (98%) | 527 (93%) | 31 (6%) | 6 (1%) | 12 | 2 |
| 1 | 8-A | 564/577 (98%) | 528 (94%) | 28 (5%) | 8 (1%) | 9 | 1 |
| 1 | 9-A | 564/577 (98%) | 531 (94%) | 26 (5%) | 7 (1%) | 11 | 1 |
| 1 | 10-A | 564/577 (98%) | 538 (95%) | 20 (4%) | 6 (1%) | 12 | 2 |
| 1 | 11-A | 564/577 (98%) | 528 (94%) | 30 (5%) | 6 (1%) | 12 | 2 |
| 1 | 12-A | 564/577 (98%) | 528 (94%) | 28 (5%) | 8 (1%) | 9 | 1 |
| 1 | 13-A | 564/577 (98%) | 532 (94%) | 27 (5%) | 5 (1%) | 14 | 3 |
| 1 | 14-A | 564/577 (98%) | 531 (94%) | 25 (4%) | 8 (1%) | 9 | 1 |
| 1 | 15-A | 564/577 (98%) | 523 (93%) | 32 (6%) | 9 (2%) | 8 | 1 |
| 1 | 16-A | 564/577 (98%) | 531 (94%) | 24 (4%) | 9 (2%) | 8 | 1 |
| 1 | 17-A | 564/577 (98%) | 532 (94%) | 23 (4%) | 9 (2%) | 8 | 1 |
| 1 | 18-A | 564/577 (98%) | 529 (94%) | 26 (5%) | 9 (2%) | 8 | 1 |
| 1 | 19-A | 564/577 (98%) | 530 (94%) | 29 (5%) | 5 (1%) | 14 | 3 |
| 1 | 20-A | 564/577 (98%) | 525 (93%) | 30 (5%) | 9 (2%) | 8 | 1 |
| 1 | 21-A | 564/577 (98%) | 523 (93%) | 34 (6%) | 7 (1%) | 11 | 1 |
| 1 | 22-A | 564/577 (98%) | 525 (93%) | 29 (5%) | 10 (2%) | 7 | 1 |
| 1 | 23-A | 564/577 (98%) | 521 (92%) | 31 (6%) | 12 (2%) | 5 | 0 |
| 1 | 24-A | 564/577 (98%) | 530 (94%) | 30 (5%) | 4 (1%) | 19 | 4 |
| 1 | 25-A | 564/577 (98%) | 524 (93%) | 32 (6%) | 8 (1%) | 9 | 1 |
| 1 | 26-A | 564/577 (98%) | 527 (93%) | 28 (5%) | 9 (2%) | 8 | 1 |
| 1 | 27-A | 564/577 (98%) | 519 (92%) | 34 (6%) | 11 (2%) | 6 | 0 |
| 1 | 28-A | 564/577 (98%) | 527 (93%) | 25 (4%) | 12 (2%) | 5 | 0 |
| 1 | 29-A | 564/577 (98%) | 530 (94%) | 24 (4%) | 10 (2%) | 7 | 1 |
| 1 | 30-A | 564/577 (98%) | 531 (94%) | 29 (5%) | 4 (1%) | 19 | 4 |
| 1 | 31-A | 564/577 (98%) | 530 (94%) | 22 (4%) | 12 (2%) | 5 | 0 |
| 1 | 32-A | 564/577 (98%) | 534 (95%) | 17 (3%) | 13 (2%) | 5 | 0 |
| 1 | 33-A | 564/577 (98%) | 520 (92%) | 36 (6%) | 8 (1%) | 9 | 1 |
| 1 | 34-A | 564/577 (98%) | 518 (92%) | 34 (6%) | 12 (2%) | 5 | 0 |
| 1 | 35-A | 564/577 (98%) | 517 (92%) | 39 (7%) | 8 (1%) | 9 | 1 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-------------------|-------------|-----------|----------|-------------|---|
| 1 | 36-A | 564/577 (98%) | 524 (93%) | 27 (5%) | 13 (2%) | 5 | 0 |
| 1 | 37-A | 564/577 (98%) | 519 (92%) | 31 (6%) | 14 (2%) | 4 | 0 |
| 1 | 38-A | 564/577 (98%) | 522 (93%) | 30 (5%) | 12 (2%) | 5 | 0 |
| 1 | 39-A | 564/577 (98%) | 523 (93%) | 28 (5%) | 13 (2%) | 5 | 0 |
| 1 | 40-A | 564/577 (98%) | 530 (94%) | 22 (4%) | 12 (2%) | 5 | 0 |
| 1 | 41-A | 564/577 (98%) | 524 (93%) | 27 (5%) | 13 (2%) | 5 | 0 |
| 1 | 42-A | 564/577 (98%) | 525 (93%) | 28 (5%) | 11 (2%) | 6 | 0 |
| 1 | 43-A | 564/577 (98%) | 526 (93%) | 23 (4%) | 15 (3%) | 4 | 0 |
| All | All | 24252/24811 (98%) | 22655 (93%) | 1214 (5%) | 383 (2%) | 8 | 1 |

All (383) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | 1-A | 515 | SER |
| 1 | 1-A | 522 | GLU |
| 1 | 2-A | 564 | GLU |
| 1 | 3-A | 123 | PRO |
| 1 | 3-A | 518 | ILE |
| 1 | 3-A | 521 | MET |
| 1 | 3-A | 564 | GLU |
| 1 | 4-A | 123 | PRO |
| 1 | 4-A | 124 | GLU |
| 1 | 5-A | 123 | PRO |
| 1 | 5-A | 434 | ASN |
| 1 | 5-A | 439 | THR |
| 1 | 5-A | 523 | ASN |
| 1 | 6-A | 288 | GLN |
| 1 | 6-A | 385 | ARG |
| 1 | 7-A | 385 | ARG |
| 1 | 7-A | 405 | GLU |
| 1 | 8-A | 381 | ALA |
| 1 | 8-A | 383 | ALA |
| 1 | 8-A | 516 | ASN |
| 1 | 9-A | 100 | PHE |
| 1 | 9-A | 385 | ARG |
| 1 | 9-A | 437 | SER |
| 1 | 10-A | 437 | SER |
| 1 | 11-A | 100 | PHE |
| 1 | 11-A | 104 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 11-A | 518 | ILE |
| 1 | 11-A | 520 | GLY |
| 1 | 12-A | 101 | ILE |
| 1 | 12-A | 516 | ASN |
| 1 | 12-A | 519 | GLU |
| 1 | 13-A | 518 | ILE |
| 1 | 14-A | 99 | ASP |
| 1 | 14-A | 100 | PHE |
| 1 | 14-A | 383 | ALA |
| 1 | 14-A | 518 | ILE |
| 1 | 15-A | 122 | ASN |
| 1 | 15-A | 124 | GLU |
| 1 | 15-A | 125 | THR |
| 1 | 15-A | 362 | MET |
| 1 | 15-A | 519 | GLU |
| 1 | 16-A | 122 | ASN |
| 1 | 16-A | 383 | ALA |
| 1 | 16-A | 436 | THR |
| 1 | 16-A | 521 | MET |
| 1 | 16-A | 532 | SER |
| 1 | 16-A | 533 | ASP |
| 1 | 17-A | 122 | ASN |
| 1 | 17-A | 126 | LYS |
| 1 | 17-A | 520 | GLY |
| 1 | 18-A | 124 | GLU |
| 1 | 18-A | 383 | ALA |
| 1 | 18-A | 437 | SER |
| 1 | 19-A | 105 | VAL |
| 1 | 19-A | 106 | CYS |
| 1 | 19-A | 434 | ASN |
| 1 | 20-A | 122 | ASN |
| 1 | 20-A | 383 | ALA |
| 1 | 20-A | 518 | ILE |
| 1 | 20-A | 519 | GLU |
| 1 | 21-A | 516 | ASN |
| 1 | 21-A | 517 | GLU |
| 1 | 21-A | 519 | GLU |
| 1 | 21-A | 523 | ASN |
| 1 | 22-A | 384 | GLU |
| 1 | 22-A | 525 | SER |
| 1 | 22-A | 526 | TRP |
| 1 | 23-A | 383 | ALA |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 23-A | 385 | ARG |
| 1 | 23-A | 452 | ASP |
| 1 | 23-A | 518 | ILE |
| 1 | 23-A | 523 | ASN |
| 1 | 23-A | 525 | SER |
| 1 | 24-A | 524 | VAL |
| 1 | 25-A | 518 | ILE |
| 1 | 25-A | 519 | GLU |
| 1 | 25-A | 523 | ASN |
| 1 | 26-A | 385 | ARG |
| 1 | 26-A | 519 | GLU |
| 1 | 26-A | 523 | ASN |
| 1 | 27-A | 384 | GLU |
| 1 | 27-A | 523 | ASN |
| 1 | 27-A | 526 | TRP |
| 1 | 28-A | 125 | THR |
| 1 | 28-A | 384 | GLU |
| 1 | 28-A | 521 | MET |
| 1 | 28-A | 523 | ASN |
| 1 | 29-A | 102 | THR |
| 1 | 29-A | 105 | VAL |
| 1 | 29-A | 125 | THR |
| 1 | 29-A | 384 | GLU |
| 1 | 30-A | 123 | PRO |
| 1 | 30-A | 384 | GLU |
| 1 | 30-A | 518 | ILE |
| 1 | 30-A | 519 | GLU |
| 1 | 31-A | 126 | LYS |
| 1 | 31-A | 384 | GLU |
| 1 | 31-A | 452 | ASP |
| 1 | 31-A | 517 | GLU |
| 1 | 31-A | 518 | ILE |
| 1 | 31-A | 522 | GLU |
| 1 | 32-A | 123 | PRO |
| 1 | 32-A | 125 | THR |
| 1 | 32-A | 126 | LYS |
| 1 | 32-A | 127 | ARG |
| 1 | 32-A | 382 | ASP |
| 1 | 32-A | 518 | ILE |
| 1 | 33-A | 123 | PRO |
| 1 | 33-A | 518 | ILE |
| 1 | 34-A | 122 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 34-A | 123 | PRO |
| 1 | 34-A | 124 | GLU |
| 1 | 34-A | 126 | LYS |
| 1 | 34-A | 437 | SER |
| 1 | 34-A | 519 | GLU |
| 1 | 34-A | 524 | VAL |
| 1 | 34-A | 525 | SER |
| 1 | 35-A | 123 | PRO |
| 1 | 35-A | 437 | SER |
| 1 | 35-A | 518 | ILE |
| 1 | 35-A | 524 | VAL |
| 1 | 36-A | 104 | LYS |
| 1 | 36-A | 385 | ARG |
| 1 | 36-A | 387 | ALA |
| 1 | 36-A | 438 | GLY |
| 1 | 36-A | 518 | ILE |
| 1 | 36-A | 524 | VAL |
| 1 | 37-A | 100 | PHE |
| 1 | 37-A | 519 | GLU |
| 1 | 37-A | 523 | ASN |
| 1 | 37-A | 524 | VAL |
| 1 | 38-A | 100 | PHE |
| 1 | 38-A | 101 | ILE |
| 1 | 38-A | 381 | ALA |
| 1 | 38-A | 383 | ALA |
| 1 | 38-A | 518 | ILE |
| 1 | 38-A | 524 | VAL |
| 1 | 39-A | 385 | ARG |
| 1 | 39-A | 437 | SER |
| 1 | 39-A | 462 | SER |
| 1 | 39-A | 521 | MET |
| 1 | 39-A | 522 | GLU |
| 1 | 39-A | 524 | VAL |
| 1 | 40-A | 124 | GLU |
| 1 | 40-A | 388 | PRO |
| 1 | 40-A | 519 | GLU |
| 1 | 40-A | 521 | MET |
| 1 | 40-A | 522 | GLU |
| 1 | 41-A | 103 | GLY |
| 1 | 41-A | 382 | ASP |
| 1 | 41-A | 519 | GLU |
| 1 | 41-A | 521 | MET |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 41-A | 522 | GLU |
| 1 | 41-A | 524 | VAL |
| 1 | 42-A | 381 | ALA |
| 1 | 42-A | 383 | ALA |
| 1 | 42-A | 388 | PRO |
| 1 | 42-A | 436 | THR |
| 1 | 42-A | 516 | ASN |
| 1 | 42-A | 524 | VAL |
| 1 | 43-A | 125 | THR |
| 1 | 43-A | 381 | ALA |
| 1 | 43-A | 516 | ASN |
| 1 | 43-A | 519 | GLU |
| 1 | 43-A | 523 | ASN |
| 1 | 43-A | 524 | VAL |
| 1 | 43-A | 525 | SER |
| 1 | 43-A | 535 | VAL |
| 1 | 2-A | 21 | LYS |
| 1 | 2-A | 438 | GLY |
| 1 | 2-A | 462 | SER |
| 1 | 2-A | 517 | GLU |
| 1 | 2-A | 521 | MET |
| 1 | 6-A | 387 | ALA |
| 1 | 6-A | 517 | GLU |
| 1 | 6-A | 523 | ASN |
| 1 | 7-A | 516 | ASN |
| 1 | 8-A | 382 | ASP |
| 1 | 8-A | 384 | GLU |
| 1 | 8-A | 437 | SER |
| 1 | 9-A | 101 | ILE |
| 1 | 9-A | 516 | ASN |
| 1 | 10-A | 101 | ILE |
| 1 | 10-A | 518 | ILE |
| 1 | 10-A | 519 | GLU |
| 1 | 11-A | 101 | ILE |
| 1 | 11-A | 516 | ASN |
| 1 | 12-A | 124 | GLU |
| 1 | 14-A | 102 | THR |
| 1 | 15-A | 533 | ASP |
| 1 | 16-A | 100 | PHE |
| 1 | 16-A | 102 | THR |
| 1 | 17-A | 438 | GLY |
| 1 | 17-A | 521 | MET |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 18-A | 519 | GLU |
| 1 | 18-A | 521 | MET |
| 1 | 19-A | 518 | ILE |
| 1 | 20-A | 101 | ILE |
| 1 | 20-A | 515 | SER |
| 1 | 21-A | 384 | GLU |
| 1 | 21-A | 518 | ILE |
| 1 | 22-A | 521 | MET |
| 1 | 22-A | 523 | ASN |
| 1 | 23-A | 519 | GLU |
| 1 | 23-A | 520 | GLY |
| 1 | 23-A | 526 | TRP |
| 1 | 24-A | 523 | ASN |
| 1 | 25-A | 356 | THR |
| 1 | 25-A | 383 | ALA |
| 1 | 25-A | 522 | GLU |
| 1 | 26-A | 384 | GLU |
| 1 | 27-A | 386 | THR |
| 1 | 27-A | 438 | GLY |
| 1 | 27-A | 518 | ILE |
| 1 | 27-A | 519 | GLU |
| 1 | 27-A | 524 | VAL |
| 1 | 28-A | 87 | ASP |
| 1 | 28-A | 126 | LYS |
| 1 | 28-A | 526 | TRP |
| 1 | 29-A | 101 | ILE |
| 1 | 29-A | 383 | ALA |
| 1 | 29-A | 516 | ASN |
| 1 | 29-A | 518 | ILE |
| 1 | 31-A | 453 | LEU |
| 1 | 31-A | 524 | VAL |
| 1 | 32-A | 384 | GLU |
| 1 | 32-A | 522 | GLU |
| 1 | 32-A | 525 | SER |
| 1 | 33-A | 381 | ALA |
| 1 | 33-A | 383 | ALA |
| 1 | 34-A | 381 | ALA |
| 1 | 35-A | 381 | ALA |
| 1 | 35-A | 383 | ALA |
| 1 | 35-A | 521 | MET |
| 1 | 35-A | 525 | SER |
| 1 | 36-A | 522 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 36-A | 532 | SER |
| 1 | 37-A | 124 | GLU |
| 1 | 37-A | 381 | ALA |
| 1 | 37-A | 525 | SER |
| 1 | 38-A | 438 | GLY |
| 1 | 38-A | 519 | GLU |
| 1 | 38-A | 523 | ASN |
| 1 | 39-A | 383 | ALA |
| 1 | 39-A | 384 | GLU |
| 1 | 40-A | 386 | THR |
| 1 | 41-A | 92 | LYS |
| 1 | 41-A | 386 | THR |
| 1 | 42-A | 125 | THR |
| 1 | 42-A | 386 | THR |
| 1 | 42-A | 534 | GLU |
| 1 | 43-A | 452 | ASP |
| 1 | 1-A | 517 | GLU |
| 1 | 1-A | 520 | GLY |
| 1 | 3-A | 100 | PHE |
| 1 | 4-A | 509 | THR |
| 1 | 5-A | 304 | THR |
| 1 | 5-A | 453 | LEU |
| 1 | 7-A | 384 | GLU |
| 1 | 8-A | 434 | ASN |
| 1 | 10-A | 520 | GLY |
| 1 | 12-A | 452 | ASP |
| 1 | 13-A | 100 | PHE |
| 1 | 13-A | 104 | LYS |
| 1 | 14-A | 321 | ALA |
| 1 | 14-A | 519 | GLU |
| 1 | 15-A | 102 | THR |
| 1 | 15-A | 523 | ASN |
| 1 | 17-A | 100 | PHE |
| 1 | 17-A | 383 | ALA |
| 1 | 18-A | 100 | PHE |
| 1 | 20-A | 521 | MET |
| 1 | 22-A | 518 | ILE |
| 1 | 23-A | 300 | LEU |
| 1 | 23-A | 490 | GLU |
| 1 | 24-A | 383 | ALA |
| 1 | 24-A | 452 | ASP |
| 1 | 27-A | 146 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 28-A | 88 | CYS |
| 1 | 28-A | 122 | ASN |
| 1 | 29-A | 124 | GLU |
| 1 | 31-A | 381 | ALA |
| 1 | 32-A | 122 | ASN |
| 1 | 32-A | 319 | GLN |
| 1 | 33-A | 126 | LYS |
| 1 | 33-A | 437 | SER |
| 1 | 33-A | 522 | GLU |
| 1 | 34-A | 384 | GLU |
| 1 | 34-A | 518 | ILE |
| 1 | 37-A | 387 | ALA |
| 1 | 37-A | 522 | GLU |
| 1 | 38-A | 385 | ARG |
| 1 | 39-A | 386 | THR |
| 1 | 39-A | 438 | GLY |
| 1 | 40-A | 382 | ASP |
| 1 | 40-A | 524 | VAL |
| 1 | 41-A | 90 | ASN |
| 1 | 41-A | 438 | GLY |
| 1 | 41-A | 515 | SER |
| 1 | 43-A | 364 | LEU |
| 1 | 43-A | 384 | GLU |
| 1 | 1-A | 521 | MET |
| 1 | 3-A | 385 | ARG |
| 1 | 5-A | 81 | PRO |
| 1 | 7-A | 388 | PRO |
| 1 | 7-A | 521 | MET |
| 1 | 10-A | 521 | MET |
| 1 | 12-A | 294 | GLU |
| 1 | 13-A | 464 | ARG |
| 1 | 15-A | 438 | GLY |
| 1 | 18-A | 518 | ILE |
| 1 | 19-A | 519 | GLU |
| 1 | 21-A | 525 | SER |
| 1 | 22-A | 383 | ALA |
| 1 | 22-A | 438 | GLY |
| 1 | 23-A | 524 | VAL |
| 1 | 26-A | 146 | ASP |
| 1 | 26-A | 383 | ALA |
| 1 | 26-A | 516 | ASN |
| 1 | 27-A | 462 | SER |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 27-A | 525 | SER |
| 1 | 28-A | 524 | VAL |
| 1 | 31-A | 521 | MET |
| 1 | 32-A | 381 | ALA |
| 1 | 34-A | 382 | ASP |
| 1 | 36-A | 106 | CYS |
| 1 | 36-A | 386 | THR |
| 1 | 36-A | 388 | PRO |
| 1 | 36-A | 464 | ARG |
| 1 | 37-A | 385 | ARG |
| 1 | 37-A | 386 | THR |
| 1 | 37-A | 518 | ILE |
| 1 | 37-A | 521 | MET |
| 1 | 38-A | 386 | THR |
| 1 | 39-A | 102 | THR |
| 1 | 39-A | 123 | PRO |
| 1 | 40-A | 438 | GLY |
| 1 | 42-A | 385 | ARG |
| 1 | 43-A | 534 | GLU |
| 1 | 6-A | 362 | MET |
| 1 | 9-A | 453 | LEU |
| 1 | 12-A | 100 | PHE |
| 1 | 12-A | 103 | GLY |
| 1 | 13-A | 484 | ALA |
| 1 | 14-A | 385 | ARG |
| 1 | 16-A | 386 | THR |
| 1 | 17-A | 387 | ALA |
| 1 | 17-A | 437 | SER |
| 1 | 20-A | 91 | HIS |
| 1 | 22-A | 524 | VAL |
| 1 | 25-A | 521 | MET |
| 1 | 31-A | 525 | SER |
| 1 | 39-A | 461 | ARG |
| 1 | 40-A | 384 | GLU |
| 1 | 41-A | 516 | ASN |
| 1 | 42-A | 106 | CYS |
| 1 | 43-A | 513 | PRO |
| 1 | 1-A | 516 | ASN |
| 1 | 8-A | 100 | PHE |
| 1 | 26-A | 126 | LYS |
| 1 | 26-A | 524 | VAL |
| 1 | 28-A | 520 | GLY |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | 32-A | 524 | VAL |
| 1 | 36-A | 515 | SER |
| 1 | 37-A | 101 | ILE |
| 1 | 40-A | 385 | ARG |
| 1 | 43-A | 462 | SER |
| 1 | 18-A | 438 | GLY |
| 1 | 22-A | 123 | PRO |
| 1 | 25-A | 388 | PRO |
| 1 | 38-A | 103 | GLY |
| 1 | 41-A | 101 | ILE |
| 1 | 3-A | 101 | ILE |
| 1 | 18-A | 520 | GLY |
| 1 | 28-A | 123 | PRO |
| 1 | 29-A | 524 | VAL |
| 1 | 40-A | 518 | ILE |
| 1 | 43-A | 520 | GLY |
| 1 | 20-A | 524 | VAL |
| 1 | 31-A | 123 | PRO |
| 1 | 33-A | 439 | THR |
| 1 | 9-A | 438 | GLY |
| 1 | 4-A | 438 | GLY |

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-A | 500/512 (98%) | 445 (89%) | 55 (11%) | 5 0 |
| 1 | 2-A | 500/512 (98%) | 451 (90%) | 49 (10%) | 6 0 |
| 1 | 3-A | 500/512 (98%) | 456 (91%) | 44 (9%) | 8 0 |
| 1 | 4-A | 500/512 (98%) | 446 (89%) | 54 (11%) | 5 0 |
| 1 | 5-A | 500/512 (98%) | 439 (88%) | 61 (12%) | 4 0 |
| 1 | 6-A | 500/512 (98%) | 455 (91%) | 45 (9%) | 8 0 |
| 1 | 7-A | 500/512 (98%) | 455 (91%) | 45 (9%) | 8 0 |
| 1 | 8-A | 500/512 (98%) | 460 (92%) | 40 (8%) | 10 0 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|-------------|---|
| 1 | 9-A | 500/512 (98%) | 453 (91%) | 47 (9%) | 7 | 0 |
| 1 | 10-A | 500/512 (98%) | 449 (90%) | 51 (10%) | 6 | 0 |
| 1 | 11-A | 500/512 (98%) | 452 (90%) | 48 (10%) | 7 | 0 |
| 1 | 12-A | 500/512 (98%) | 466 (93%) | 34 (7%) | 13 | 1 |
| 1 | 13-A | 500/512 (98%) | 452 (90%) | 48 (10%) | 7 | 0 |
| 1 | 14-A | 500/512 (98%) | 459 (92%) | 41 (8%) | 9 | 0 |
| 1 | 15-A | 500/512 (98%) | 444 (89%) | 56 (11%) | 5 | 0 |
| 1 | 16-A | 500/512 (98%) | 450 (90%) | 50 (10%) | 6 | 0 |
| 1 | 17-A | 500/512 (98%) | 446 (89%) | 54 (11%) | 5 | 0 |
| 1 | 18-A | 500/512 (98%) | 448 (90%) | 52 (10%) | 5 | 0 |
| 1 | 19-A | 500/512 (98%) | 441 (88%) | 59 (12%) | 4 | 0 |
| 1 | 20-A | 500/512 (98%) | 439 (88%) | 61 (12%) | 4 | 0 |
| 1 | 21-A | 500/512 (98%) | 440 (88%) | 60 (12%) | 4 | 0 |
| 1 | 22-A | 500/512 (98%) | 446 (89%) | 54 (11%) | 5 | 0 |
| 1 | 23-A | 500/512 (98%) | 454 (91%) | 46 (9%) | 7 | 0 |
| 1 | 24-A | 500/512 (98%) | 439 (88%) | 61 (12%) | 4 | 0 |
| 1 | 25-A | 500/512 (98%) | 436 (87%) | 64 (13%) | 3 | 0 |
| 1 | 26-A | 500/512 (98%) | 439 (88%) | 61 (12%) | 4 | 0 |
| 1 | 27-A | 500/512 (98%) | 452 (90%) | 48 (10%) | 7 | 0 |
| 1 | 28-A | 500/512 (98%) | 446 (89%) | 54 (11%) | 5 | 0 |
| 1 | 29-A | 500/512 (98%) | 447 (89%) | 53 (11%) | 5 | 0 |
| 1 | 30-A | 500/512 (98%) | 454 (91%) | 46 (9%) | 7 | 0 |
| 1 | 31-A | 500/512 (98%) | 448 (90%) | 52 (10%) | 5 | 0 |
| 1 | 32-A | 500/512 (98%) | 448 (90%) | 52 (10%) | 5 | 0 |
| 1 | 33-A | 500/512 (98%) | 449 (90%) | 51 (10%) | 6 | 0 |
| 1 | 34-A | 500/512 (98%) | 445 (89%) | 55 (11%) | 5 | 0 |
| 1 | 35-A | 500/512 (98%) | 449 (90%) | 51 (10%) | 6 | 0 |
| 1 | 36-A | 500/512 (98%) | 449 (90%) | 51 (10%) | 6 | 0 |
| 1 | 37-A | 500/512 (98%) | 460 (92%) | 40 (8%) | 10 | 0 |
| 1 | 38-A | 500/512 (98%) | 452 (90%) | 48 (10%) | 7 | 0 |
| 1 | 39-A | 500/512 (98%) | 442 (88%) | 58 (12%) | 4 | 0 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-------------------|-------------|------------|-------------|---|
| 1 | 40-A | 500/512 (98%) | 441 (88%) | 59 (12%) | 4 | 0 |
| 1 | 41-A | 500/512 (98%) | 451 (90%) | 49 (10%) | 6 | 0 |
| 1 | 42-A | 500/512 (98%) | 447 (89%) | 53 (11%) | 5 | 0 |
| 1 | 43-A | 500/512 (98%) | 450 (90%) | 50 (10%) | 6 | 0 |
| All | All | 21500/22016 (98%) | 19290 (90%) | 2210 (10%) | 6 | 0 |

All (2210) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | 1-A | 11 | LEU |
| 1 | 1-A | 19 | GLU |
| 1 | 1-A | 21 | LYS |
| 1 | 1-A | 43 | LYS |
| 1 | 1-A | 65 | GLN |
| 1 | 1-A | 86 | ARG |
| 1 | 1-A | 87 | ASP |
| 1 | 1-A | 92 | LYS |
| 1 | 1-A | 100 | PHE |
| 1 | 1-A | 125 | THR |
| 1 | 1-A | 126 | LYS |
| 1 | 1-A | 142 | GLU |
| 1 | 1-A | 146 | ASP |
| 1 | 1-A | 151 | ASP |
| 1 | 1-A | 157 | ASP |
| 1 | 1-A | 199 | LYS |
| 1 | 1-A | 248 | ILE |
| 1 | 1-A | 253 | ASN |
| 1 | 1-A | 284 | LYS |
| 1 | 1-A | 286 | LYS |
| 1 | 1-A | 292 | LYS |
| 1 | 1-A | 296 | LYS |
| 1 | 1-A | 319 | GLN |
| 1 | 1-A | 322 | ASP |
| 1 | 1-A | 334 | LYS |
| 1 | 1-A | 350 | TYR |
| 1 | 1-A | 361 | GLN |
| 1 | 1-A | 362 | MET |
| 1 | 1-A | 365 | LEU |
| 1 | 1-A | 368 | GLU |
| 1 | 1-A | 369 | LEU |
| 1 | 1-A | 379 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 1-A | 384 | GLU |
| 1 | 1-A | 386 | THR |
| 1 | 1-A | 389 | GLU |
| 1 | 1-A | 451 | GLU |
| 1 | 1-A | 462 | SER |
| 1 | 1-A | 464 | ARG |
| 1 | 1-A | 467 | LYS |
| 1 | 1-A | 485 | LYS |
| 1 | 1-A | 486 | ARG |
| 1 | 1-A | 489 | LYS |
| 1 | 1-A | 490 | GLU |
| 1 | 1-A | 504 | TRP |
| 1 | 1-A | 510 | THR |
| 1 | 1-A | 512 | ASN |
| 1 | 1-A | 516 | ASN |
| 1 | 1-A | 518 | ILE |
| 1 | 1-A | 519 | GLU |
| 1 | 1-A | 523 | ASN |
| 1 | 1-A | 527 | ASP |
| 1 | 1-A | 531 | LYS |
| 1 | 1-A | 546 | LYS |
| 1 | 1-A | 549 | ASP |
| 1 | 1-A | 564 | GLU |
| 1 | 2-A | 8 | MET |
| 1 | 2-A | 11 | LEU |
| 1 | 2-A | 15 | ILE |
| 1 | 2-A | 16 | LYS |
| 1 | 2-A | 21 | LYS |
| 1 | 2-A | 65 | GLN |
| 1 | 2-A | 70 | GLU |
| 1 | 2-A | 78 | ARG |
| 1 | 2-A | 80 | THR |
| 1 | 2-A | 93 | ASP |
| 1 | 2-A | 100 | PHE |
| 1 | 2-A | 104 | LYS |
| 1 | 2-A | 142 | GLU |
| 1 | 2-A | 146 | ASP |
| 1 | 2-A | 147 | MET |
| 1 | 2-A | 151 | ASP |
| 1 | 2-A | 236 | LEU |
| 1 | 2-A | 276 | LYS |
| 1 | 2-A | 284 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 2-A | 286 | LYS |
| 1 | 2-A | 289 | ASP |
| 1 | 2-A | 301 | GLU |
| 1 | 2-A | 304 | THR |
| 1 | 2-A | 319 | GLN |
| 1 | 2-A | 340 | SER |
| 1 | 2-A | 350 | TYR |
| 1 | 2-A | 358 | ILE |
| 1 | 2-A | 378 | SER |
| 1 | 2-A | 379 | GLU |
| 1 | 2-A | 384 | GLU |
| 1 | 2-A | 386 | THR |
| 1 | 2-A | 389 | GLU |
| 1 | 2-A | 392 | GLU |
| 1 | 2-A | 410 | ASP |
| 1 | 2-A | 439 | THR |
| 1 | 2-A | 441 | VAL |
| 1 | 2-A | 451 | GLU |
| 1 | 2-A | 485 | LYS |
| 1 | 2-A | 486 | ARG |
| 1 | 2-A | 489 | LYS |
| 1 | 2-A | 490 | GLU |
| 1 | 2-A | 504 | TRP |
| 1 | 2-A | 510 | THR |
| 1 | 2-A | 512 | ASN |
| 1 | 2-A | 516 | ASN |
| 1 | 2-A | 523 | ASN |
| 1 | 2-A | 531 | LYS |
| 1 | 2-A | 564 | GLU |
| 1 | 2-A | 566 | HIS |
| 1 | 3-A | 11 | LEU |
| 1 | 3-A | 14 | LYS |
| 1 | 3-A | 36 | GLU |
| 1 | 3-A | 43 | LYS |
| 1 | 3-A | 65 | GLN |
| 1 | 3-A | 70 | GLU |
| 1 | 3-A | 78 | ARG |
| 1 | 3-A | 86 | ARG |
| 1 | 3-A | 90 | ASN |
| 1 | 3-A | 93 | ASP |
| 1 | 3-A | 101 | ILE |
| 1 | 3-A | 104 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 3-A | 125 | THR |
| 1 | 3-A | 142 | GLU |
| 1 | 3-A | 151 | ASP |
| 1 | 3-A | 155 | LYS |
| 1 | 3-A | 178 | GLU |
| 1 | 3-A | 217 | GLU |
| 1 | 3-A | 288 | GLN |
| 1 | 3-A | 289 | ASP |
| 1 | 3-A | 293 | LEU |
| 1 | 3-A | 295 | GLU |
| 1 | 3-A | 301 | GLU |
| 1 | 3-A | 306 | LYS |
| 1 | 3-A | 350 | TYR |
| 1 | 3-A | 357 | SER |
| 1 | 3-A | 360 | LYS |
| 1 | 3-A | 365 | LEU |
| 1 | 3-A | 367 | LYS |
| 1 | 3-A | 379 | GLU |
| 1 | 3-A | 384 | GLU |
| 1 | 3-A | 386 | THR |
| 1 | 3-A | 452 | ASP |
| 1 | 3-A | 460 | MET |
| 1 | 3-A | 462 | SER |
| 1 | 3-A | 464 | ARG |
| 1 | 3-A | 485 | LYS |
| 1 | 3-A | 486 | ARG |
| 1 | 3-A | 489 | LYS |
| 1 | 3-A | 504 | TRP |
| 1 | 3-A | 515 | SER |
| 1 | 3-A | 531 | LYS |
| 1 | 3-A | 564 | GLU |
| 1 | 3-A | 568 | ASP |
| 1 | 4-A | 11 | LEU |
| 1 | 4-A | 14 | LYS |
| 1 | 4-A | 19 | GLU |
| 1 | 4-A | 36 | GLU |
| 1 | 4-A | 43 | LYS |
| 1 | 4-A | 70 | GLU |
| 1 | 4-A | 77 | GLN |
| 1 | 4-A | 78 | ARG |
| 1 | 4-A | 89 | CYS |
| 1 | 4-A | 90 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 4-A | 100 | PHE |
| 1 | 4-A | 101 | ILE |
| 1 | 4-A | 104 | LYS |
| 1 | 4-A | 126 | LYS |
| 1 | 4-A | 147 | MET |
| 1 | 4-A | 151 | ASP |
| 1 | 4-A | 179 | ASP |
| 1 | 4-A | 181 | ASN |
| 1 | 4-A | 199 | LYS |
| 1 | 4-A | 236 | LEU |
| 1 | 4-A | 254 | THR |
| 1 | 4-A | 288 | GLN |
| 1 | 4-A | 295 | GLU |
| 1 | 4-A | 296 | LYS |
| 1 | 4-A | 303 | ARG |
| 1 | 4-A | 306 | LYS |
| 1 | 4-A | 350 | TYR |
| 1 | 4-A | 360 | LYS |
| 1 | 4-A | 362 | MET |
| 1 | 4-A | 364 | LEU |
| 1 | 4-A | 378 | SER |
| 1 | 4-A | 384 | GLU |
| 1 | 4-A | 386 | THR |
| 1 | 4-A | 392 | GLU |
| 1 | 4-A | 393 | MET |
| 1 | 4-A | 410 | ASP |
| 1 | 4-A | 436 | THR |
| 1 | 4-A | 439 | THR |
| 1 | 4-A | 441 | VAL |
| 1 | 4-A | 460 | MET |
| 1 | 4-A | 470 | SER |
| 1 | 4-A | 485 | LYS |
| 1 | 4-A | 486 | ARG |
| 1 | 4-A | 489 | LYS |
| 1 | 4-A | 490 | GLU |
| 1 | 4-A | 504 | TRP |
| 1 | 4-A | 510 | THR |
| 1 | 4-A | 518 | ILE |
| 1 | 4-A | 522 | GLU |
| 1 | 4-A | 523 | ASN |
| 1 | 4-A | 531 | LYS |
| 1 | 4-A | 564 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 4-A | 565 | LYS |
| 1 | 4-A | 568 | ASP |
| 1 | 5-A | 7 | LEU |
| 1 | 5-A | 8 | MET |
| 1 | 5-A | 11 | LEU |
| 1 | 5-A | 19 | GLU |
| 1 | 5-A | 36 | GLU |
| 1 | 5-A | 54 | SER |
| 1 | 5-A | 68 | VAL |
| 1 | 5-A | 70 | GLU |
| 1 | 5-A | 74 | LYS |
| 1 | 5-A | 90 | ASN |
| 1 | 5-A | 91 | HIS |
| 1 | 5-A | 93 | ASP |
| 1 | 5-A | 101 | ILE |
| 1 | 5-A | 105 | VAL |
| 1 | 5-A | 124 | GLU |
| 1 | 5-A | 125 | THR |
| 1 | 5-A | 126 | LYS |
| 1 | 5-A | 142 | GLU |
| 1 | 5-A | 146 | ASP |
| 1 | 5-A | 151 | ASP |
| 1 | 5-A | 155 | LYS |
| 1 | 5-A | 156 | LYS |
| 1 | 5-A | 178 | GLU |
| 1 | 5-A | 179 | ASP |
| 1 | 5-A | 200 | ASN |
| 1 | 5-A | 236 | LEU |
| 1 | 5-A | 253 | ASN |
| 1 | 5-A | 265 | LYS |
| 1 | 5-A | 272 | GLU |
| 1 | 5-A | 280 | GLU |
| 1 | 5-A | 293 | LEU |
| 1 | 5-A | 294 | GLU |
| 1 | 5-A | 306 | LYS |
| 1 | 5-A | 331 | GLU |
| 1 | 5-A | 340 | SER |
| 1 | 5-A | 350 | TYR |
| 1 | 5-A | 358 | ILE |
| 1 | 5-A | 360 | LYS |
| 1 | 5-A | 362 | MET |
| 1 | 5-A | 369 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 5-A | 378 | SER |
| 1 | 5-A | 382 | ASP |
| 1 | 5-A | 384 | GLU |
| 1 | 5-A | 392 | GLU |
| 1 | 5-A | 405 | GLU |
| 1 | 5-A | 437 | SER |
| 1 | 5-A | 452 | ASP |
| 1 | 5-A | 456 | PRO |
| 1 | 5-A | 464 | ARG |
| 1 | 5-A | 467 | LYS |
| 1 | 5-A | 474 | GLU |
| 1 | 5-A | 485 | LYS |
| 1 | 5-A | 486 | ARG |
| 1 | 5-A | 498 | GLU |
| 1 | 5-A | 504 | TRP |
| 1 | 5-A | 517 | GLU |
| 1 | 5-A | 519 | GLU |
| 1 | 5-A | 523 | ASN |
| 1 | 5-A | 531 | LYS |
| 1 | 5-A | 537 | LYS |
| 1 | 5-A | 564 | GLU |
| 1 | 6-A | 14 | LYS |
| 1 | 6-A | 24 | ASN |
| 1 | 6-A | 37 | THR |
| 1 | 6-A | 54 | SER |
| 1 | 6-A | 65 | GLN |
| 1 | 6-A | 68 | VAL |
| 1 | 6-A | 77 | GLN |
| 1 | 6-A | 78 | ARG |
| 1 | 6-A | 80 | THR |
| 1 | 6-A | 86 | ARG |
| 1 | 6-A | 93 | ASP |
| 1 | 6-A | 100 | PHE |
| 1 | 6-A | 101 | ILE |
| 1 | 6-A | 125 | THR |
| 1 | 6-A | 147 | MET |
| 1 | 6-A | 151 | ASP |
| 1 | 6-A | 155 | LYS |
| 1 | 6-A | 178 | GLU |
| 1 | 6-A | 253 | ASN |
| 1 | 6-A | 274 | ASN |
| 1 | 6-A | 286 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 6-A | 293 | LEU |
| 1 | 6-A | 295 | GLU |
| 1 | 6-A | 306 | LYS |
| 1 | 6-A | 350 | TYR |
| 1 | 6-A | 357 | SER |
| 1 | 6-A | 365 | LEU |
| 1 | 6-A | 379 | GLU |
| 1 | 6-A | 384 | GLU |
| 1 | 6-A | 392 | GLU |
| 1 | 6-A | 396 | LYS |
| 1 | 6-A | 410 | ASP |
| 1 | 6-A | 437 | SER |
| 1 | 6-A | 460 | MET |
| 1 | 6-A | 474 | GLU |
| 1 | 6-A | 486 | ARG |
| 1 | 6-A | 490 | GLU |
| 1 | 6-A | 504 | TRP |
| 1 | 6-A | 505 | THR |
| 1 | 6-A | 521 | MET |
| 1 | 6-A | 522 | GLU |
| 1 | 6-A | 530 | GLU |
| 1 | 6-A | 531 | LYS |
| 1 | 6-A | 534 | GLU |
| 1 | 6-A | 564 | GLU |
| 1 | 7-A | 16 | LYS |
| 1 | 7-A | 19 | GLU |
| 1 | 7-A | 24 | ASN |
| 1 | 7-A | 65 | GLN |
| 1 | 7-A | 74 | LYS |
| 1 | 7-A | 92 | LYS |
| 1 | 7-A | 101 | ILE |
| 1 | 7-A | 102 | THR |
| 1 | 7-A | 122 | ASN |
| 1 | 7-A | 142 | GLU |
| 1 | 7-A | 147 | MET |
| 1 | 7-A | 151 | ASP |
| 1 | 7-A | 157 | ASP |
| 1 | 7-A | 181 | ASN |
| 1 | 7-A | 204 | ASN |
| 1 | 7-A | 236 | LEU |
| 1 | 7-A | 288 | GLN |
| 1 | 7-A | 301 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 7-A | 350 | TYR |
| 1 | 7-A | 355 | PHE |
| 1 | 7-A | 365 | LEU |
| 1 | 7-A | 384 | GLU |
| 1 | 7-A | 388 | PRO |
| 1 | 7-A | 396 | LYS |
| 1 | 7-A | 403 | THR |
| 1 | 7-A | 425 | MET |
| 1 | 7-A | 437 | SER |
| 1 | 7-A | 439 | THR |
| 1 | 7-A | 460 | MET |
| 1 | 7-A | 461 | ARG |
| 1 | 7-A | 462 | SER |
| 1 | 7-A | 464 | ARG |
| 1 | 7-A | 489 | LYS |
| 1 | 7-A | 504 | TRP |
| 1 | 7-A | 505 | THR |
| 1 | 7-A | 514 | TYR |
| 1 | 7-A | 518 | ILE |
| 1 | 7-A | 519 | GLU |
| 1 | 7-A | 521 | MET |
| 1 | 7-A | 522 | GLU |
| 1 | 7-A | 532 | SER |
| 1 | 7-A | 542 | SER |
| 1 | 7-A | 544 | GLU |
| 1 | 7-A | 549 | ASP |
| 1 | 7-A | 566 | HIS |
| 1 | 8-A | 16 | LYS |
| 1 | 8-A | 80 | THR |
| 1 | 8-A | 86 | ARG |
| 1 | 8-A | 90 | ASN |
| 1 | 8-A | 92 | LYS |
| 1 | 8-A | 101 | ILE |
| 1 | 8-A | 106 | CYS |
| 1 | 8-A | 124 | GLU |
| 1 | 8-A | 142 | GLU |
| 1 | 8-A | 151 | ASP |
| 1 | 8-A | 177 | SER |
| 1 | 8-A | 199 | LYS |
| 1 | 8-A | 200 | ASN |
| 1 | 8-A | 217 | GLU |
| 1 | 8-A | 248 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 8-A | 288 | GLN |
| 1 | 8-A | 293 | LEU |
| 1 | 8-A | 295 | GLU |
| 1 | 8-A | 296 | LYS |
| 1 | 8-A | 345 | MET |
| 1 | 8-A | 350 | TYR |
| 1 | 8-A | 361 | GLN |
| 1 | 8-A | 367 | LYS |
| 1 | 8-A | 379 | GLU |
| 1 | 8-A | 452 | ASP |
| 1 | 8-A | 467 | LYS |
| 1 | 8-A | 474 | GLU |
| 1 | 8-A | 495 | LYS |
| 1 | 8-A | 504 | TRP |
| 1 | 8-A | 505 | THR |
| 1 | 8-A | 510 | THR |
| 1 | 8-A | 512 | ASN |
| 1 | 8-A | 514 | TYR |
| 1 | 8-A | 518 | ILE |
| 1 | 8-A | 521 | MET |
| 1 | 8-A | 531 | LYS |
| 1 | 8-A | 544 | GLU |
| 1 | 8-A | 564 | GLU |
| 1 | 8-A | 566 | HIS |
| 1 | 8-A | 567 | ARG |
| 1 | 9-A | 5 | VAL |
| 1 | 9-A | 36 | GLU |
| 1 | 9-A | 80 | THR |
| 1 | 9-A | 86 | ARG |
| 1 | 9-A | 89 | CYS |
| 1 | 9-A | 92 | LYS |
| 1 | 9-A | 100 | PHE |
| 1 | 9-A | 101 | ILE |
| 1 | 9-A | 122 | ASN |
| 1 | 9-A | 125 | THR |
| 1 | 9-A | 126 | LYS |
| 1 | 9-A | 142 | GLU |
| 1 | 9-A | 151 | ASP |
| 1 | 9-A | 199 | LYS |
| 1 | 9-A | 239 | ARG |
| 1 | 9-A | 284 | LYS |
| 1 | 9-A | 286 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 9-A | 288 | GLN |
| 1 | 9-A | 293 | LEU |
| 1 | 9-A | 295 | GLU |
| 1 | 9-A | 322 | ASP |
| 1 | 9-A | 345 | MET |
| 1 | 9-A | 350 | TYR |
| 1 | 9-A | 357 | SER |
| 1 | 9-A | 361 | GLN |
| 1 | 9-A | 365 | LEU |
| 1 | 9-A | 369 | LEU |
| 1 | 9-A | 382 | ASP |
| 1 | 9-A | 384 | GLU |
| 1 | 9-A | 389 | GLU |
| 1 | 9-A | 396 | LYS |
| 1 | 9-A | 410 | ASP |
| 1 | 9-A | 436 | THR |
| 1 | 9-A | 437 | SER |
| 1 | 9-A | 439 | THR |
| 1 | 9-A | 486 | ARG |
| 1 | 9-A | 495 | LYS |
| 1 | 9-A | 504 | TRP |
| 1 | 9-A | 515 | SER |
| 1 | 9-A | 516 | ASN |
| 1 | 9-A | 517 | GLU |
| 1 | 9-A | 518 | ILE |
| 1 | 9-A | 519 | GLU |
| 1 | 9-A | 522 | GLU |
| 1 | 9-A | 530 | GLU |
| 1 | 9-A | 533 | ASP |
| 1 | 9-A | 544 | GLU |
| 1 | 10-A | 5 | VAL |
| 1 | 10-A | 71 | LEU |
| 1 | 10-A | 86 | ARG |
| 1 | 10-A | 93 | ASP |
| 1 | 10-A | 100 | PHE |
| 1 | 10-A | 125 | THR |
| 1 | 10-A | 126 | LYS |
| 1 | 10-A | 142 | GLU |
| 1 | 10-A | 151 | ASP |
| 1 | 10-A | 157 | ASP |
| 1 | 10-A | 200 | ASN |
| 1 | 10-A | 217 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 10-A | 236 | LEU |
| 1 | 10-A | 254 | THR |
| 1 | 10-A | 265 | LYS |
| 1 | 10-A | 286 | LYS |
| 1 | 10-A | 288 | GLN |
| 1 | 10-A | 289 | ASP |
| 1 | 10-A | 294 | GLU |
| 1 | 10-A | 295 | GLU |
| 1 | 10-A | 301 | GLU |
| 1 | 10-A | 319 | GLN |
| 1 | 10-A | 322 | ASP |
| 1 | 10-A | 324 | VAL |
| 1 | 10-A | 328 | HIS |
| 1 | 10-A | 334 | LYS |
| 1 | 10-A | 350 | TYR |
| 1 | 10-A | 358 | ILE |
| 1 | 10-A | 361 | GLN |
| 1 | 10-A | 362 | MET |
| 1 | 10-A | 367 | LYS |
| 1 | 10-A | 369 | LEU |
| 1 | 10-A | 384 | GLU |
| 1 | 10-A | 396 | LYS |
| 1 | 10-A | 451 | GLU |
| 1 | 10-A | 452 | ASP |
| 1 | 10-A | 474 | GLU |
| 1 | 10-A | 485 | LYS |
| 1 | 10-A | 486 | ARG |
| 1 | 10-A | 490 | GLU |
| 1 | 10-A | 495 | LYS |
| 1 | 10-A | 504 | TRP |
| 1 | 10-A | 515 | SER |
| 1 | 10-A | 516 | ASN |
| 1 | 10-A | 517 | GLU |
| 1 | 10-A | 518 | ILE |
| 1 | 10-A | 544 | GLU |
| 1 | 10-A | 549 | ASP |
| 1 | 10-A | 564 | GLU |
| 1 | 10-A | 567 | ARG |
| 1 | 10-A | 568 | ASP |
| 1 | 11-A | 24 | ASN |
| 1 | 11-A | 52 | ASP |
| 1 | 11-A | 77 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 11-A | 90 | ASN |
| 1 | 11-A | 91 | HIS |
| 1 | 11-A | 93 | ASP |
| 1 | 11-A | 99 | ASP |
| 1 | 11-A | 100 | PHE |
| 1 | 11-A | 101 | ILE |
| 1 | 11-A | 104 | LYS |
| 1 | 11-A | 142 | GLU |
| 1 | 11-A | 151 | ASP |
| 1 | 11-A | 155 | LYS |
| 1 | 11-A | 248 | ILE |
| 1 | 11-A | 266 | LEU |
| 1 | 11-A | 272 | GLU |
| 1 | 11-A | 277 | ASP |
| 1 | 11-A | 284 | LYS |
| 1 | 11-A | 288 | GLN |
| 1 | 11-A | 292 | LYS |
| 1 | 11-A | 295 | GLU |
| 1 | 11-A | 300 | LEU |
| 1 | 11-A | 327 | LYS |
| 1 | 11-A | 331 | GLU |
| 1 | 11-A | 334 | LYS |
| 1 | 11-A | 350 | TYR |
| 1 | 11-A | 360 | LYS |
| 1 | 11-A | 367 | LYS |
| 1 | 11-A | 382 | ASP |
| 1 | 11-A | 396 | LYS |
| 1 | 11-A | 434 | ASN |
| 1 | 11-A | 439 | THR |
| 1 | 11-A | 460 | MET |
| 1 | 11-A | 462 | SER |
| 1 | 11-A | 486 | ARG |
| 1 | 11-A | 489 | LYS |
| 1 | 11-A | 490 | GLU |
| 1 | 11-A | 504 | TRP |
| 1 | 11-A | 510 | THR |
| 1 | 11-A | 512 | ASN |
| 1 | 11-A | 514 | TYR |
| 1 | 11-A | 516 | ASN |
| 1 | 11-A | 517 | GLU |
| 1 | 11-A | 518 | ILE |
| 1 | 11-A | 519 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 11-A | 532 | SER |
| 1 | 11-A | 543 | ASP |
| 1 | 11-A | 567 | ARG |
| 1 | 12-A | 11 | LEU |
| 1 | 12-A | 52 | ASP |
| 1 | 12-A | 77 | GLN |
| 1 | 12-A | 90 | ASN |
| 1 | 12-A | 100 | PHE |
| 1 | 12-A | 101 | ILE |
| 1 | 12-A | 151 | ASP |
| 1 | 12-A | 179 | ASP |
| 1 | 12-A | 288 | GLN |
| 1 | 12-A | 295 | GLU |
| 1 | 12-A | 296 | LYS |
| 1 | 12-A | 305 | ASN |
| 1 | 12-A | 306 | LYS |
| 1 | 12-A | 327 | LYS |
| 1 | 12-A | 328 | HIS |
| 1 | 12-A | 331 | GLU |
| 1 | 12-A | 334 | LYS |
| 1 | 12-A | 343 | THR |
| 1 | 12-A | 350 | TYR |
| 1 | 12-A | 357 | SER |
| 1 | 12-A | 364 | LEU |
| 1 | 12-A | 365 | LEU |
| 1 | 12-A | 367 | LYS |
| 1 | 12-A | 369 | LEU |
| 1 | 12-A | 378 | SER |
| 1 | 12-A | 382 | ASP |
| 1 | 12-A | 452 | ASP |
| 1 | 12-A | 487 | MET |
| 1 | 12-A | 489 | LYS |
| 1 | 12-A | 504 | TRP |
| 1 | 12-A | 518 | ILE |
| 1 | 12-A | 523 | ASN |
| 1 | 12-A | 544 | GLU |
| 1 | 12-A | 567 | ARG |
| 1 | 13-A | 14 | LYS |
| 1 | 13-A | 36 | GLU |
| 1 | 13-A | 43 | LYS |
| 1 | 13-A | 53 | ASP |
| 1 | 13-A | 90 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 13-A | 91 | HIS |
| 1 | 13-A | 99 | ASP |
| 1 | 13-A | 105 | VAL |
| 1 | 13-A | 126 | LYS |
| 1 | 13-A | 142 | GLU |
| 1 | 13-A | 151 | ASP |
| 1 | 13-A | 156 | LYS |
| 1 | 13-A | 179 | ASP |
| 1 | 13-A | 200 | ASN |
| 1 | 13-A | 210 | ASP |
| 1 | 13-A | 236 | LEU |
| 1 | 13-A | 253 | ASN |
| 1 | 13-A | 284 | LYS |
| 1 | 13-A | 286 | LYS |
| 1 | 13-A | 288 | GLN |
| 1 | 13-A | 296 | LYS |
| 1 | 13-A | 301 | GLU |
| 1 | 13-A | 306 | LYS |
| 1 | 13-A | 327 | LYS |
| 1 | 13-A | 328 | HIS |
| 1 | 13-A | 334 | LYS |
| 1 | 13-A | 350 | TYR |
| 1 | 13-A | 361 | GLN |
| 1 | 13-A | 362 | MET |
| 1 | 13-A | 365 | LEU |
| 1 | 13-A | 367 | LYS |
| 1 | 13-A | 393 | MET |
| 1 | 13-A | 439 | THR |
| 1 | 13-A | 451 | GLU |
| 1 | 13-A | 452 | ASP |
| 1 | 13-A | 462 | SER |
| 1 | 13-A | 464 | ARG |
| 1 | 13-A | 485 | LYS |
| 1 | 13-A | 487 | MET |
| 1 | 13-A | 504 | TRP |
| 1 | 13-A | 506 | GLN |
| 1 | 13-A | 521 | MET |
| 1 | 13-A | 530 | GLU |
| 1 | 13-A | 533 | ASP |
| 1 | 13-A | 534 | GLU |
| 1 | 13-A | 537 | LYS |
| 1 | 13-A | 544 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 13-A | 565 | LYS |
| 1 | 14-A | 9 | GLU |
| 1 | 14-A | 16 | LYS |
| 1 | 14-A | 59 | GLU |
| 1 | 14-A | 89 | CYS |
| 1 | 14-A | 94 | LYS |
| 1 | 14-A | 122 | ASN |
| 1 | 14-A | 124 | GLU |
| 1 | 14-A | 142 | GLU |
| 1 | 14-A | 146 | ASP |
| 1 | 14-A | 151 | ASP |
| 1 | 14-A | 179 | ASP |
| 1 | 14-A | 181 | ASN |
| 1 | 14-A | 200 | ASN |
| 1 | 14-A | 210 | ASP |
| 1 | 14-A | 254 | THR |
| 1 | 14-A | 272 | GLU |
| 1 | 14-A | 277 | ASP |
| 1 | 14-A | 289 | ASP |
| 1 | 14-A | 295 | GLU |
| 1 | 14-A | 319 | GLN |
| 1 | 14-A | 324 | VAL |
| 1 | 14-A | 334 | LYS |
| 1 | 14-A | 358 | ILE |
| 1 | 14-A | 360 | LYS |
| 1 | 14-A | 362 | MET |
| 1 | 14-A | 367 | LYS |
| 1 | 14-A | 384 | GLU |
| 1 | 14-A | 437 | SER |
| 1 | 14-A | 460 | MET |
| 1 | 14-A | 464 | ARG |
| 1 | 14-A | 485 | LYS |
| 1 | 14-A | 486 | ARG |
| 1 | 14-A | 504 | TRP |
| 1 | 14-A | 516 | ASN |
| 1 | 14-A | 518 | ILE |
| 1 | 14-A | 521 | MET |
| 1 | 14-A | 522 | GLU |
| 1 | 14-A | 534 | GLU |
| 1 | 14-A | 544 | GLU |
| 1 | 14-A | 561 | SER |
| 1 | 14-A | 565 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 15-A | 7 | LEU |
| 1 | 15-A | 8 | MET |
| 1 | 15-A | 11 | LEU |
| 1 | 15-A | 17 | CYS |
| 1 | 15-A | 21 | LYS |
| 1 | 15-A | 52 | ASP |
| 1 | 15-A | 53 | ASP |
| 1 | 15-A | 59 | GLU |
| 1 | 15-A | 68 | VAL |
| 1 | 15-A | 77 | GLN |
| 1 | 15-A | 86 | ARG |
| 1 | 15-A | 94 | LYS |
| 1 | 15-A | 100 | PHE |
| 1 | 15-A | 104 | LYS |
| 1 | 15-A | 142 | GLU |
| 1 | 15-A | 147 | MET |
| 1 | 15-A | 151 | ASP |
| 1 | 15-A | 155 | LYS |
| 1 | 15-A | 179 | ASP |
| 1 | 15-A | 181 | ASN |
| 1 | 15-A | 286 | LYS |
| 1 | 15-A | 300 | LEU |
| 1 | 15-A | 319 | GLN |
| 1 | 15-A | 327 | LYS |
| 1 | 15-A | 334 | LYS |
| 1 | 15-A | 350 | TYR |
| 1 | 15-A | 361 | GLN |
| 1 | 15-A | 365 | LEU |
| 1 | 15-A | 367 | LYS |
| 1 | 15-A | 379 | GLU |
| 1 | 15-A | 384 | GLU |
| 1 | 15-A | 396 | LYS |
| 1 | 15-A | 405 | GLU |
| 1 | 15-A | 410 | ASP |
| 1 | 15-A | 424 | PRO |
| 1 | 15-A | 436 | THR |
| 1 | 15-A | 452 | ASP |
| 1 | 15-A | 453 | LEU |
| 1 | 15-A | 457 | TYR |
| 1 | 15-A | 460 | MET |
| 1 | 15-A | 485 | LYS |
| 1 | 15-A | 486 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 15-A | 490 | GLU |
| 1 | 15-A | 498 | GLU |
| 1 | 15-A | 504 | TRP |
| 1 | 15-A | 516 | ASN |
| 1 | 15-A | 518 | ILE |
| 1 | 15-A | 519 | GLU |
| 1 | 15-A | 522 | GLU |
| 1 | 15-A | 527 | ASP |
| 1 | 15-A | 530 | GLU |
| 1 | 15-A | 532 | SER |
| 1 | 15-A | 533 | ASP |
| 1 | 15-A | 544 | GLU |
| 1 | 15-A | 565 | LYS |
| 1 | 15-A | 567 | ARG |
| 1 | 16-A | 8 | MET |
| 1 | 16-A | 19 | GLU |
| 1 | 16-A | 86 | ARG |
| 1 | 16-A | 92 | LYS |
| 1 | 16-A | 93 | ASP |
| 1 | 16-A | 100 | PHE |
| 1 | 16-A | 101 | ILE |
| 1 | 16-A | 102 | THR |
| 1 | 16-A | 122 | ASN |
| 1 | 16-A | 124 | GLU |
| 1 | 16-A | 126 | LYS |
| 1 | 16-A | 142 | GLU |
| 1 | 16-A | 147 | MET |
| 1 | 16-A | 151 | ASP |
| 1 | 16-A | 199 | LYS |
| 1 | 16-A | 234 | ARG |
| 1 | 16-A | 253 | ASN |
| 1 | 16-A | 254 | THR |
| 1 | 16-A | 288 | GLN |
| 1 | 16-A | 302 | GLU |
| 1 | 16-A | 319 | GLN |
| 1 | 16-A | 324 | VAL |
| 1 | 16-A | 350 | TYR |
| 1 | 16-A | 357 | SER |
| 1 | 16-A | 358 | ILE |
| 1 | 16-A | 362 | MET |
| 1 | 16-A | 367 | LYS |
| 1 | 16-A | 369 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 16-A | 378 | SER |
| 1 | 16-A | 382 | ASP |
| 1 | 16-A | 384 | GLU |
| 1 | 16-A | 451 | GLU |
| 1 | 16-A | 454 | ILE |
| 1 | 16-A | 456 | PRO |
| 1 | 16-A | 458 | ARG |
| 1 | 16-A | 460 | MET |
| 1 | 16-A | 464 | ARG |
| 1 | 16-A | 485 | LYS |
| 1 | 16-A | 489 | LYS |
| 1 | 16-A | 490 | GLU |
| 1 | 16-A | 504 | TRP |
| 1 | 16-A | 512 | ASN |
| 1 | 16-A | 518 | ILE |
| 1 | 16-A | 519 | GLU |
| 1 | 16-A | 521 | MET |
| 1 | 16-A | 530 | GLU |
| 1 | 16-A | 533 | ASP |
| 1 | 16-A | 534 | GLU |
| 1 | 16-A | 565 | LYS |
| 1 | 16-A | 568 | ASP |
| 1 | 17-A | 8 | MET |
| 1 | 17-A | 12 | LYS |
| 1 | 17-A | 31 | GLU |
| 1 | 17-A | 54 | SER |
| 1 | 17-A | 65 | GLN |
| 1 | 17-A | 78 | ARG |
| 1 | 17-A | 80 | THR |
| 1 | 17-A | 86 | ARG |
| 1 | 17-A | 90 | ASN |
| 1 | 17-A | 100 | PHE |
| 1 | 17-A | 101 | ILE |
| 1 | 17-A | 104 | LYS |
| 1 | 17-A | 106 | CYS |
| 1 | 17-A | 120 | ASN |
| 1 | 17-A | 122 | ASN |
| 1 | 17-A | 125 | THR |
| 1 | 17-A | 126 | LYS |
| 1 | 17-A | 151 | ASP |
| 1 | 17-A | 179 | ASP |
| 1 | 17-A | 236 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 17-A | 253 | ASN |
| 1 | 17-A | 274 | ASN |
| 1 | 17-A | 280 | GLU |
| 1 | 17-A | 284 | LYS |
| 1 | 17-A | 286 | LYS |
| 1 | 17-A | 288 | GLN |
| 1 | 17-A | 291 | ILE |
| 1 | 17-A | 300 | LEU |
| 1 | 17-A | 322 | ASP |
| 1 | 17-A | 350 | TYR |
| 1 | 17-A | 360 | LYS |
| 1 | 17-A | 362 | MET |
| 1 | 17-A | 367 | LYS |
| 1 | 17-A | 396 | LYS |
| 1 | 17-A | 435 | HIS |
| 1 | 17-A | 437 | SER |
| 1 | 17-A | 454 | ILE |
| 1 | 17-A | 464 | ARG |
| 1 | 17-A | 467 | LYS |
| 1 | 17-A | 486 | ARG |
| 1 | 17-A | 504 | TRP |
| 1 | 17-A | 505 | THR |
| 1 | 17-A | 510 | THR |
| 1 | 17-A | 512 | ASN |
| 1 | 17-A | 517 | GLU |
| 1 | 17-A | 518 | ILE |
| 1 | 17-A | 519 | GLU |
| 1 | 17-A | 521 | MET |
| 1 | 17-A | 522 | GLU |
| 1 | 17-A | 523 | ASN |
| 1 | 17-A | 530 | GLU |
| 1 | 17-A | 533 | ASP |
| 1 | 17-A | 534 | GLU |
| 1 | 17-A | 565 | LYS |
| 1 | 18-A | 8 | MET |
| 1 | 18-A | 14 | LYS |
| 1 | 18-A | 19 | GLU |
| 1 | 18-A | 37 | THR |
| 1 | 18-A | 43 | LYS |
| 1 | 18-A | 100 | PHE |
| 1 | 18-A | 104 | LYS |
| 1 | 18-A | 120 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 18-A | 122 | ASN |
| 1 | 18-A | 126 | LYS |
| 1 | 18-A | 130 | LEU |
| 1 | 18-A | 142 | GLU |
| 1 | 18-A | 151 | ASP |
| 1 | 18-A | 179 | ASP |
| 1 | 18-A | 236 | LEU |
| 1 | 18-A | 253 | ASN |
| 1 | 18-A | 277 | ASP |
| 1 | 18-A | 288 | GLN |
| 1 | 18-A | 291 | ILE |
| 1 | 18-A | 294 | GLU |
| 1 | 18-A | 295 | GLU |
| 1 | 18-A | 300 | LEU |
| 1 | 18-A | 301 | GLU |
| 1 | 18-A | 304 | THR |
| 1 | 18-A | 319 | GLN |
| 1 | 18-A | 334 | LYS |
| 1 | 18-A | 350 | TYR |
| 1 | 18-A | 362 | MET |
| 1 | 18-A | 365 | LEU |
| 1 | 18-A | 367 | LYS |
| 1 | 18-A | 370 | GLU |
| 1 | 18-A | 382 | ASP |
| 1 | 18-A | 386 | THR |
| 1 | 18-A | 396 | LYS |
| 1 | 18-A | 437 | SER |
| 1 | 18-A | 454 | ILE |
| 1 | 18-A | 460 | MET |
| 1 | 18-A | 464 | ARG |
| 1 | 18-A | 485 | LYS |
| 1 | 18-A | 487 | MET |
| 1 | 18-A | 504 | TRP |
| 1 | 18-A | 512 | ASN |
| 1 | 18-A | 515 | SER |
| 1 | 18-A | 518 | ILE |
| 1 | 18-A | 521 | MET |
| 1 | 18-A | 523 | ASN |
| 1 | 18-A | 524 | VAL |
| 1 | 18-A | 544 | GLU |
| 1 | 18-A | 546 | LYS |
| 1 | 18-A | 557 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 18-A | 564 | GLU |
| 1 | 18-A | 567 | ARG |
| 1 | 19-A | 14 | LYS |
| 1 | 19-A | 19 | GLU |
| 1 | 19-A | 36 | GLU |
| 1 | 19-A | 86 | ARG |
| 1 | 19-A | 87 | ASP |
| 1 | 19-A | 89 | CYS |
| 1 | 19-A | 99 | ASP |
| 1 | 19-A | 101 | ILE |
| 1 | 19-A | 120 | ASN |
| 1 | 19-A | 122 | ASN |
| 1 | 19-A | 124 | GLU |
| 1 | 19-A | 125 | THR |
| 1 | 19-A | 142 | GLU |
| 1 | 19-A | 147 | MET |
| 1 | 19-A | 151 | ASP |
| 1 | 19-A | 157 | ASP |
| 1 | 19-A | 248 | ILE |
| 1 | 19-A | 253 | ASN |
| 1 | 19-A | 258 | HIS |
| 1 | 19-A | 274 | ASN |
| 1 | 19-A | 286 | LYS |
| 1 | 19-A | 288 | GLN |
| 1 | 19-A | 289 | ASP |
| 1 | 19-A | 291 | ILE |
| 1 | 19-A | 295 | GLU |
| 1 | 19-A | 296 | LYS |
| 1 | 19-A | 300 | LEU |
| 1 | 19-A | 319 | GLN |
| 1 | 19-A | 327 | LYS |
| 1 | 19-A | 350 | TYR |
| 1 | 19-A | 357 | SER |
| 1 | 19-A | 360 | LYS |
| 1 | 19-A | 361 | GLN |
| 1 | 19-A | 362 | MET |
| 1 | 19-A | 364 | LEU |
| 1 | 19-A | 365 | LEU |
| 1 | 19-A | 367 | LYS |
| 1 | 19-A | 382 | ASP |
| 1 | 19-A | 389 | GLU |
| 1 | 19-A | 396 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 19-A | 451 | GLU |
| 1 | 19-A | 453 | LEU |
| 1 | 19-A | 460 | MET |
| 1 | 19-A | 464 | ARG |
| 1 | 19-A | 486 | ARG |
| 1 | 19-A | 489 | LYS |
| 1 | 19-A | 504 | TRP |
| 1 | 19-A | 516 | ASN |
| 1 | 19-A | 517 | GLU |
| 1 | 19-A | 518 | ILE |
| 1 | 19-A | 522 | GLU |
| 1 | 19-A | 524 | VAL |
| 1 | 19-A | 525 | SER |
| 1 | 19-A | 532 | SER |
| 1 | 19-A | 544 | GLU |
| 1 | 19-A | 546 | LYS |
| 1 | 19-A | 557 | LYS |
| 1 | 19-A | 565 | LYS |
| 1 | 19-A | 567 | ARG |
| 1 | 20-A | 7 | LEU |
| 1 | 20-A | 19 | GLU |
| 1 | 20-A | 36 | GLU |
| 1 | 20-A | 54 | SER |
| 1 | 20-A | 65 | GLN |
| 1 | 20-A | 68 | VAL |
| 1 | 20-A | 78 | ARG |
| 1 | 20-A | 90 | ASN |
| 1 | 20-A | 91 | HIS |
| 1 | 20-A | 99 | ASP |
| 1 | 20-A | 100 | PHE |
| 1 | 20-A | 104 | LYS |
| 1 | 20-A | 120 | ASN |
| 1 | 20-A | 122 | ASN |
| 1 | 20-A | 124 | GLU |
| 1 | 20-A | 126 | LYS |
| 1 | 20-A | 142 | GLU |
| 1 | 20-A | 147 | MET |
| 1 | 20-A | 151 | ASP |
| 1 | 20-A | 177 | SER |
| 1 | 20-A | 179 | ASP |
| 1 | 20-A | 200 | ASN |
| 1 | 20-A | 217 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 20-A | 254 | THR |
| 1 | 20-A | 291 | ILE |
| 1 | 20-A | 292 | LYS |
| 1 | 20-A | 294 | GLU |
| 1 | 20-A | 296 | LYS |
| 1 | 20-A | 300 | LEU |
| 1 | 20-A | 301 | GLU |
| 1 | 20-A | 308 | MET |
| 1 | 20-A | 350 | TYR |
| 1 | 20-A | 360 | LYS |
| 1 | 20-A | 361 | GLN |
| 1 | 20-A | 362 | MET |
| 1 | 20-A | 364 | LEU |
| 1 | 20-A | 367 | LYS |
| 1 | 20-A | 369 | LEU |
| 1 | 20-A | 385 | ARG |
| 1 | 20-A | 386 | THR |
| 1 | 20-A | 424 | PRO |
| 1 | 20-A | 432 | ARG |
| 1 | 20-A | 437 | SER |
| 1 | 20-A | 451 | GLU |
| 1 | 20-A | 453 | LEU |
| 1 | 20-A | 464 | ARG |
| 1 | 20-A | 489 | LYS |
| 1 | 20-A | 504 | TRP |
| 1 | 20-A | 510 | THR |
| 1 | 20-A | 512 | ASN |
| 1 | 20-A | 513 | PRO |
| 1 | 20-A | 517 | GLU |
| 1 | 20-A | 523 | ASN |
| 1 | 20-A | 524 | VAL |
| 1 | 20-A | 525 | SER |
| 1 | 20-A | 530 | GLU |
| 1 | 20-A | 537 | LYS |
| 1 | 20-A | 544 | GLU |
| 1 | 20-A | 557 | LYS |
| 1 | 20-A | 564 | GLU |
| 1 | 20-A | 567 | ARG |
| 1 | 21-A | 7 | LEU |
| 1 | 21-A | 14 | LYS |
| 1 | 21-A | 16 | LYS |
| 1 | 21-A | 18 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 21-A | 20 | ASN |
| 1 | 21-A | 36 | GLU |
| 1 | 21-A | 41 | LYS |
| 1 | 21-A | 70 | GLU |
| 1 | 21-A | 78 | ARG |
| 1 | 21-A | 91 | HIS |
| 1 | 21-A | 93 | ASP |
| 1 | 21-A | 100 | PHE |
| 1 | 21-A | 105 | VAL |
| 1 | 21-A | 120 | ASN |
| 1 | 21-A | 122 | ASN |
| 1 | 21-A | 124 | GLU |
| 1 | 21-A | 125 | THR |
| 1 | 21-A | 126 | LYS |
| 1 | 21-A | 146 | ASP |
| 1 | 21-A | 151 | ASP |
| 1 | 21-A | 155 | LYS |
| 1 | 21-A | 157 | ASP |
| 1 | 21-A | 204 | ASN |
| 1 | 21-A | 276 | LYS |
| 1 | 21-A | 288 | GLN |
| 1 | 21-A | 289 | ASP |
| 1 | 21-A | 295 | GLU |
| 1 | 21-A | 296 | LYS |
| 1 | 21-A | 300 | LEU |
| 1 | 21-A | 303 | ARG |
| 1 | 21-A | 319 | GLN |
| 1 | 21-A | 324 | VAL |
| 1 | 21-A | 331 | GLU |
| 1 | 21-A | 334 | LYS |
| 1 | 21-A | 350 | TYR |
| 1 | 21-A | 358 | ILE |
| 1 | 21-A | 361 | GLN |
| 1 | 21-A | 362 | MET |
| 1 | 21-A | 365 | LEU |
| 1 | 21-A | 367 | LYS |
| 1 | 21-A | 385 | ARG |
| 1 | 21-A | 389 | GLU |
| 1 | 21-A | 396 | LYS |
| 1 | 21-A | 439 | THR |
| 1 | 21-A | 452 | ASP |
| 1 | 21-A | 453 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 21-A | 462 | SER |
| 1 | 21-A | 464 | ARG |
| 1 | 21-A | 474 | GLU |
| 1 | 21-A | 485 | LYS |
| 1 | 21-A | 486 | ARG |
| 1 | 21-A | 489 | LYS |
| 1 | 21-A | 504 | TRP |
| 1 | 21-A | 512 | ASN |
| 1 | 21-A | 516 | ASN |
| 1 | 21-A | 524 | VAL |
| 1 | 21-A | 530 | GLU |
| 1 | 21-A | 544 | GLU |
| 1 | 21-A | 567 | ARG |
| 1 | 21-A | 568 | ASP |
| 1 | 22-A | 10 | LYS |
| 1 | 22-A | 11 | LEU |
| 1 | 22-A | 24 | ASN |
| 1 | 22-A | 36 | GLU |
| 1 | 22-A | 53 | ASP |
| 1 | 22-A | 54 | SER |
| 1 | 22-A | 78 | ARG |
| 1 | 22-A | 87 | ASP |
| 1 | 22-A | 90 | ASN |
| 1 | 22-A | 93 | ASP |
| 1 | 22-A | 104 | LYS |
| 1 | 22-A | 120 | ASN |
| 1 | 22-A | 124 | GLU |
| 1 | 22-A | 125 | THR |
| 1 | 22-A | 126 | LYS |
| 1 | 22-A | 151 | ASP |
| 1 | 22-A | 156 | LYS |
| 1 | 22-A | 253 | ASN |
| 1 | 22-A | 276 | LYS |
| 1 | 22-A | 284 | LYS |
| 1 | 22-A | 289 | ASP |
| 1 | 22-A | 300 | LEU |
| 1 | 22-A | 301 | GLU |
| 1 | 22-A | 319 | GLN |
| 1 | 22-A | 331 | GLU |
| 1 | 22-A | 334 | LYS |
| 1 | 22-A | 350 | TYR |
| 1 | 22-A | 360 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 22-A | 361 | GLN |
| 1 | 22-A | 362 | MET |
| 1 | 22-A | 365 | LEU |
| 1 | 22-A | 369 | LEU |
| 1 | 22-A | 379 | GLU |
| 1 | 22-A | 386 | THR |
| 1 | 22-A | 389 | GLU |
| 1 | 22-A | 393 | MET |
| 1 | 22-A | 405 | GLU |
| 1 | 22-A | 452 | ASP |
| 1 | 22-A | 453 | LEU |
| 1 | 22-A | 460 | MET |
| 1 | 22-A | 464 | ARG |
| 1 | 22-A | 467 | LYS |
| 1 | 22-A | 485 | LYS |
| 1 | 22-A | 486 | ARG |
| 1 | 22-A | 489 | LYS |
| 1 | 22-A | 498 | GLU |
| 1 | 22-A | 504 | TRP |
| 1 | 22-A | 512 | ASN |
| 1 | 22-A | 517 | GLU |
| 1 | 22-A | 519 | GLU |
| 1 | 22-A | 525 | SER |
| 1 | 22-A | 530 | GLU |
| 1 | 22-A | 544 | GLU |
| 1 | 22-A | 567 | ARG |
| 1 | 23-A | 10 | LYS |
| 1 | 23-A | 21 | LYS |
| 1 | 23-A | 36 | GLU |
| 1 | 23-A | 80 | THR |
| 1 | 23-A | 87 | ASP |
| 1 | 23-A | 90 | ASN |
| 1 | 23-A | 92 | LYS |
| 1 | 23-A | 100 | PHE |
| 1 | 23-A | 101 | ILE |
| 1 | 23-A | 104 | LYS |
| 1 | 23-A | 105 | VAL |
| 1 | 23-A | 120 | ASN |
| 1 | 23-A | 124 | GLU |
| 1 | 23-A | 125 | THR |
| 1 | 23-A | 126 | LYS |
| 1 | 23-A | 151 | ASP |

Continued on next page...

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 23-A | 156 | LYS |
| 1 | 23-A | 177 | SER |
| 1 | 23-A | 181 | ASN |
| 1 | 23-A | 199 | LYS |
| 1 | 23-A | 276 | LYS |
| 1 | 23-A | 277 | ASP |
| 1 | 23-A | 284 | LYS |
| 1 | 23-A | 286 | LYS |
| 1 | 23-A | 288 | GLN |
| 1 | 23-A | 289 | ASP |
| 1 | 23-A | 300 | LEU |
| 1 | 23-A | 319 | GLN |
| 1 | 23-A | 350 | TYR |
| 1 | 23-A | 362 | MET |
| 1 | 23-A | 370 | GLU |
| 1 | 23-A | 378 | SER |
| 1 | 23-A | 396 | LYS |
| 1 | 23-A | 405 | GLU |
| 1 | 23-A | 410 | ASP |
| 1 | 23-A | 453 | LEU |
| 1 | 23-A | 464 | ARG |
| 1 | 23-A | 467 | LYS |
| 1 | 23-A | 485 | LYS |
| 1 | 23-A | 490 | GLU |
| 1 | 23-A | 504 | TRP |
| 1 | 23-A | 512 | ASN |
| 1 | 23-A | 515 | SER |
| 1 | 23-A | 519 | GLU |
| 1 | 23-A | 557 | LYS |
| 1 | 23-A | 567 | ARG |
| 1 | 24-A | 7 | LEU |
| 1 | 24-A | 10 | LYS |
| 1 | 24-A | 14 | LYS |
| 1 | 24-A | 21 | LYS |
| 1 | 24-A | 43 | LYS |
| 1 | 24-A | 48 | LEU |
| 1 | 24-A | 65 | GLN |
| 1 | 24-A | 87 | ASP |
| 1 | 24-A | 90 | ASN |
| 1 | 24-A | 101 | ILE |
| 1 | 24-A | 105 | VAL |
| 1 | 24-A | 120 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 24-A | 124 | GLU |
| 1 | 24-A | 126 | LYS |
| 1 | 24-A | 130 | LEU |
| 1 | 24-A | 142 | GLU |
| 1 | 24-A | 146 | ASP |
| 1 | 24-A | 147 | MET |
| 1 | 24-A | 151 | ASP |
| 1 | 24-A | 156 | LYS |
| 1 | 24-A | 265 | LYS |
| 1 | 24-A | 284 | LYS |
| 1 | 24-A | 288 | GLN |
| 1 | 24-A | 292 | LYS |
| 1 | 24-A | 294 | GLU |
| 1 | 24-A | 300 | LEU |
| 1 | 24-A | 319 | GLN |
| 1 | 24-A | 328 | HIS |
| 1 | 24-A | 334 | LYS |
| 1 | 24-A | 350 | TYR |
| 1 | 24-A | 358 | ILE |
| 1 | 24-A | 360 | LYS |
| 1 | 24-A | 365 | LEU |
| 1 | 24-A | 367 | LYS |
| 1 | 24-A | 369 | LEU |
| 1 | 24-A | 384 | GLU |
| 1 | 24-A | 396 | LYS |
| 1 | 24-A | 405 | GLU |
| 1 | 24-A | 425 | MET |
| 1 | 24-A | 434 | ASN |
| 1 | 24-A | 439 | THR |
| 1 | 24-A | 453 | LEU |
| 1 | 24-A | 460 | MET |
| 1 | 24-A | 467 | LYS |
| 1 | 24-A | 489 | LYS |
| 1 | 24-A | 490 | GLU |
| 1 | 24-A | 498 | GLU |
| 1 | 24-A | 499 | ARG |
| 1 | 24-A | 504 | TRP |
| 1 | 24-A | 505 | THR |
| 1 | 24-A | 510 | THR |
| 1 | 24-A | 512 | ASN |
| 1 | 24-A | 517 | GLU |
| 1 | 24-A | 518 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 24-A | 521 | MET |
| 1 | 24-A | 524 | VAL |
| 1 | 24-A | 534 | GLU |
| 1 | 24-A | 537 | LYS |
| 1 | 24-A | 565 | LYS |
| 1 | 24-A | 567 | ARG |
| 1 | 24-A | 570 | PHE |
| 1 | 25-A | 7 | LEU |
| 1 | 25-A | 12 | LYS |
| 1 | 25-A | 14 | LYS |
| 1 | 25-A | 36 | GLU |
| 1 | 25-A | 74 | LYS |
| 1 | 25-A | 78 | ARG |
| 1 | 25-A | 87 | ASP |
| 1 | 25-A | 94 | LYS |
| 1 | 25-A | 100 | PHE |
| 1 | 25-A | 101 | ILE |
| 1 | 25-A | 120 | ASN |
| 1 | 25-A | 124 | GLU |
| 1 | 25-A | 125 | THR |
| 1 | 25-A | 142 | GLU |
| 1 | 25-A | 146 | ASP |
| 1 | 25-A | 147 | MET |
| 1 | 25-A | 151 | ASP |
| 1 | 25-A | 253 | ASN |
| 1 | 25-A | 254 | THR |
| 1 | 25-A | 265 | LYS |
| 1 | 25-A | 280 | GLU |
| 1 | 25-A | 284 | LYS |
| 1 | 25-A | 288 | GLN |
| 1 | 25-A | 292 | LYS |
| 1 | 25-A | 295 | GLU |
| 1 | 25-A | 300 | LEU |
| 1 | 25-A | 301 | GLU |
| 1 | 25-A | 308 | MET |
| 1 | 25-A | 319 | GLN |
| 1 | 25-A | 328 | HIS |
| 1 | 25-A | 350 | TYR |
| 1 | 25-A | 358 | ILE |
| 1 | 25-A | 360 | LYS |
| 1 | 25-A | 367 | LYS |
| 1 | 25-A | 368 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 25-A | 382 | ASP |
| 1 | 25-A | 384 | GLU |
| 1 | 25-A | 386 | THR |
| 1 | 25-A | 392 | GLU |
| 1 | 25-A | 393 | MET |
| 1 | 25-A | 432 | ARG |
| 1 | 25-A | 437 | SER |
| 1 | 25-A | 439 | THR |
| 1 | 25-A | 451 | GLU |
| 1 | 25-A | 452 | ASP |
| 1 | 25-A | 460 | MET |
| 1 | 25-A | 462 | SER |
| 1 | 25-A | 464 | ARG |
| 1 | 25-A | 467 | LYS |
| 1 | 25-A | 470 | SER |
| 1 | 25-A | 474 | GLU |
| 1 | 25-A | 485 | LYS |
| 1 | 25-A | 498 | GLU |
| 1 | 25-A | 504 | TRP |
| 1 | 25-A | 512 | ASN |
| 1 | 25-A | 516 | ASN |
| 1 | 25-A | 518 | ILE |
| 1 | 25-A | 522 | GLU |
| 1 | 25-A | 524 | VAL |
| 1 | 25-A | 542 | SER |
| 1 | 25-A | 564 | GLU |
| 1 | 25-A | 565 | LYS |
| 1 | 25-A | 567 | ARG |
| 1 | 25-A | 568 | ASP |
| 1 | 26-A | 7 | LEU |
| 1 | 26-A | 8 | MET |
| 1 | 26-A | 12 | LYS |
| 1 | 26-A | 65 | GLN |
| 1 | 26-A | 70 | GLU |
| 1 | 26-A | 89 | CYS |
| 1 | 26-A | 90 | ASN |
| 1 | 26-A | 93 | ASP |
| 1 | 26-A | 100 | PHE |
| 1 | 26-A | 101 | ILE |
| 1 | 26-A | 105 | VAL |
| 1 | 26-A | 121 | LEU |
| 1 | 26-A | 124 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 26-A | 126 | LYS |
| 1 | 26-A | 142 | GLU |
| 1 | 26-A | 146 | ASP |
| 1 | 26-A | 147 | MET |
| 1 | 26-A | 151 | ASP |
| 1 | 26-A | 157 | ASP |
| 1 | 26-A | 179 | ASP |
| 1 | 26-A | 200 | ASN |
| 1 | 26-A | 210 | ASP |
| 1 | 26-A | 231 | GLU |
| 1 | 26-A | 236 | LEU |
| 1 | 26-A | 253 | ASN |
| 1 | 26-A | 273 | ASP |
| 1 | 26-A | 280 | GLU |
| 1 | 26-A | 284 | LYS |
| 1 | 26-A | 286 | LYS |
| 1 | 26-A | 292 | LYS |
| 1 | 26-A | 295 | GLU |
| 1 | 26-A | 300 | LEU |
| 1 | 26-A | 301 | GLU |
| 1 | 26-A | 305 | ASN |
| 1 | 26-A | 327 | LYS |
| 1 | 26-A | 334 | LYS |
| 1 | 26-A | 350 | TYR |
| 1 | 26-A | 358 | ILE |
| 1 | 26-A | 362 | MET |
| 1 | 26-A | 365 | LEU |
| 1 | 26-A | 368 | GLU |
| 1 | 26-A | 369 | LEU |
| 1 | 26-A | 386 | THR |
| 1 | 26-A | 393 | MET |
| 1 | 26-A | 405 | GLU |
| 1 | 26-A | 410 | ASP |
| 1 | 26-A | 436 | THR |
| 1 | 26-A | 437 | SER |
| 1 | 26-A | 451 | GLU |
| 1 | 26-A | 453 | LEU |
| 1 | 26-A | 460 | MET |
| 1 | 26-A | 474 | GLU |
| 1 | 26-A | 485 | LYS |
| 1 | 26-A | 489 | LYS |
| 1 | 26-A | 504 | TRP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 26-A | 515 | SER |
| 1 | 26-A | 516 | ASN |
| 1 | 26-A | 518 | ILE |
| 1 | 26-A | 522 | GLU |
| 1 | 26-A | 524 | VAL |
| 1 | 26-A | 544 | GLU |
| 1 | 27-A | 12 | LYS |
| 1 | 27-A | 21 | LYS |
| 1 | 27-A | 43 | LYS |
| 1 | 27-A | 65 | GLN |
| 1 | 27-A | 70 | GLU |
| 1 | 27-A | 78 | ARG |
| 1 | 27-A | 87 | ASP |
| 1 | 27-A | 89 | CYS |
| 1 | 27-A | 93 | ASP |
| 1 | 27-A | 104 | LYS |
| 1 | 27-A | 126 | LYS |
| 1 | 27-A | 146 | ASP |
| 1 | 27-A | 147 | MET |
| 1 | 27-A | 151 | ASP |
| 1 | 27-A | 156 | LYS |
| 1 | 27-A | 181 | ASN |
| 1 | 27-A | 200 | ASN |
| 1 | 27-A | 217 | GLU |
| 1 | 27-A | 231 | GLU |
| 1 | 27-A | 236 | LEU |
| 1 | 27-A | 292 | LYS |
| 1 | 27-A | 295 | GLU |
| 1 | 27-A | 300 | LEU |
| 1 | 27-A | 301 | GLU |
| 1 | 27-A | 331 | GLU |
| 1 | 27-A | 350 | TYR |
| 1 | 27-A | 362 | MET |
| 1 | 27-A | 365 | LEU |
| 1 | 27-A | 367 | LYS |
| 1 | 27-A | 436 | THR |
| 1 | 27-A | 437 | SER |
| 1 | 27-A | 439 | THR |
| 1 | 27-A | 453 | LEU |
| 1 | 27-A | 461 | ARG |
| 1 | 27-A | 464 | ARG |
| 1 | 27-A | 485 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 27-A | 489 | LYS |
| 1 | 27-A | 498 | GLU |
| 1 | 27-A | 504 | TRP |
| 1 | 27-A | 512 | ASN |
| 1 | 27-A | 515 | SER |
| 1 | 27-A | 517 | GLU |
| 1 | 27-A | 518 | ILE |
| 1 | 27-A | 524 | VAL |
| 1 | 27-A | 530 | GLU |
| 1 | 27-A | 532 | SER |
| 1 | 27-A | 555 | LYS |
| 1 | 27-A | 565 | LYS |
| 1 | 28-A | 8 | MET |
| 1 | 28-A | 21 | LYS |
| 1 | 28-A | 43 | LYS |
| 1 | 28-A | 53 | ASP |
| 1 | 28-A | 70 | GLU |
| 1 | 28-A | 78 | ARG |
| 1 | 28-A | 86 | ARG |
| 1 | 28-A | 87 | ASP |
| 1 | 28-A | 100 | PHE |
| 1 | 28-A | 106 | CYS |
| 1 | 28-A | 126 | LYS |
| 1 | 28-A | 151 | ASP |
| 1 | 28-A | 177 | SER |
| 1 | 28-A | 179 | ASP |
| 1 | 28-A | 236 | LEU |
| 1 | 28-A | 254 | THR |
| 1 | 28-A | 289 | ASP |
| 1 | 28-A | 291 | ILE |
| 1 | 28-A | 295 | GLU |
| 1 | 28-A | 296 | LYS |
| 1 | 28-A | 303 | ARG |
| 1 | 28-A | 322 | ASP |
| 1 | 28-A | 327 | LYS |
| 1 | 28-A | 350 | TYR |
| 1 | 28-A | 361 | GLN |
| 1 | 28-A | 364 | LEU |
| 1 | 28-A | 365 | LEU |
| 1 | 28-A | 367 | LYS |
| 1 | 28-A | 370 | GLU |
| 1 | 28-A | 391 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 28-A | 393 | MET |
| 1 | 28-A | 405 | GLU |
| 1 | 28-A | 439 | THR |
| 1 | 28-A | 453 | LEU |
| 1 | 28-A | 464 | ARG |
| 1 | 28-A | 474 | GLU |
| 1 | 28-A | 485 | LYS |
| 1 | 28-A | 489 | LYS |
| 1 | 28-A | 504 | TRP |
| 1 | 28-A | 505 | THR |
| 1 | 28-A | 512 | ASN |
| 1 | 28-A | 515 | SER |
| 1 | 28-A | 517 | GLU |
| 1 | 28-A | 519 | GLU |
| 1 | 28-A | 522 | GLU |
| 1 | 28-A | 523 | ASN |
| 1 | 28-A | 524 | VAL |
| 1 | 28-A | 525 | SER |
| 1 | 28-A | 530 | GLU |
| 1 | 28-A | 531 | LYS |
| 1 | 28-A | 532 | SER |
| 1 | 28-A | 555 | LYS |
| 1 | 28-A | 564 | GLU |
| 1 | 28-A | 568 | ASP |
| 1 | 29-A | 11 | LEU |
| 1 | 29-A | 14 | LYS |
| 1 | 29-A | 21 | LYS |
| 1 | 29-A | 53 | ASP |
| 1 | 29-A | 54 | SER |
| 1 | 29-A | 65 | GLN |
| 1 | 29-A | 86 | ARG |
| 1 | 29-A | 87 | ASP |
| 1 | 29-A | 89 | CYS |
| 1 | 29-A | 92 | LYS |
| 1 | 29-A | 100 | PHE |
| 1 | 29-A | 104 | LYS |
| 1 | 29-A | 105 | VAL |
| 1 | 29-A | 106 | CYS |
| 1 | 29-A | 122 | ASN |
| 1 | 29-A | 126 | LYS |
| 1 | 29-A | 146 | ASP |
| 1 | 29-A | 151 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 29-A | 199 | LYS |
| 1 | 29-A | 204 | ASN |
| 1 | 29-A | 276 | LYS |
| 1 | 29-A | 284 | LYS |
| 1 | 29-A | 289 | ASP |
| 1 | 29-A | 295 | GLU |
| 1 | 29-A | 300 | LEU |
| 1 | 29-A | 303 | ARG |
| 1 | 29-A | 308 | MET |
| 1 | 29-A | 319 | GLN |
| 1 | 29-A | 322 | ASP |
| 1 | 29-A | 331 | GLU |
| 1 | 29-A | 362 | MET |
| 1 | 29-A | 364 | LEU |
| 1 | 29-A | 365 | LEU |
| 1 | 29-A | 369 | LEU |
| 1 | 29-A | 384 | GLU |
| 1 | 29-A | 386 | THR |
| 1 | 29-A | 393 | MET |
| 1 | 29-A | 452 | ASP |
| 1 | 29-A | 453 | LEU |
| 1 | 29-A | 464 | ARG |
| 1 | 29-A | 489 | LYS |
| 1 | 29-A | 498 | GLU |
| 1 | 29-A | 504 | TRP |
| 1 | 29-A | 510 | THR |
| 1 | 29-A | 519 | GLU |
| 1 | 29-A | 522 | GLU |
| 1 | 29-A | 524 | VAL |
| 1 | 29-A | 530 | GLU |
| 1 | 29-A | 543 | ASP |
| 1 | 29-A | 544 | GLU |
| 1 | 29-A | 546 | LYS |
| 1 | 29-A | 555 | LYS |
| 1 | 29-A | 568 | ASP |
| 1 | 30-A | 8 | MET |
| 1 | 30-A | 19 | GLU |
| 1 | 30-A | 21 | LYS |
| 1 | 30-A | 78 | ARG |
| 1 | 30-A | 86 | ARG |
| 1 | 30-A | 91 | HIS |
| 1 | 30-A | 93 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 30-A | 106 | CYS |
| 1 | 30-A | 126 | LYS |
| 1 | 30-A | 142 | GLU |
| 1 | 30-A | 151 | ASP |
| 1 | 30-A | 179 | ASP |
| 1 | 30-A | 231 | GLU |
| 1 | 30-A | 253 | ASN |
| 1 | 30-A | 274 | ASN |
| 1 | 30-A | 276 | LYS |
| 1 | 30-A | 284 | LYS |
| 1 | 30-A | 295 | GLU |
| 1 | 30-A | 322 | ASP |
| 1 | 30-A | 327 | LYS |
| 1 | 30-A | 350 | TYR |
| 1 | 30-A | 358 | ILE |
| 1 | 30-A | 379 | GLU |
| 1 | 30-A | 382 | ASP |
| 1 | 30-A | 386 | THR |
| 1 | 30-A | 410 | ASP |
| 1 | 30-A | 432 | ARG |
| 1 | 30-A | 439 | THR |
| 1 | 30-A | 452 | ASP |
| 1 | 30-A | 453 | LEU |
| 1 | 30-A | 462 | SER |
| 1 | 30-A | 464 | ARG |
| 1 | 30-A | 474 | GLU |
| 1 | 30-A | 485 | LYS |
| 1 | 30-A | 489 | LYS |
| 1 | 30-A | 498 | GLU |
| 1 | 30-A | 504 | TRP |
| 1 | 30-A | 510 | THR |
| 1 | 30-A | 512 | ASN |
| 1 | 30-A | 516 | ASN |
| 1 | 30-A | 518 | ILE |
| 1 | 30-A | 519 | GLU |
| 1 | 30-A | 523 | ASN |
| 1 | 30-A | 533 | ASP |
| 1 | 30-A | 544 | GLU |
| 1 | 30-A | 567 | ARG |
| 1 | 31-A | 7 | LEU |
| 1 | 31-A | 16 | LYS |
| 1 | 31-A | 21 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 31-A | 41 | LYS |
| 1 | 31-A | 70 | GLU |
| 1 | 31-A | 74 | LYS |
| 1 | 31-A | 91 | HIS |
| 1 | 31-A | 93 | ASP |
| 1 | 31-A | 94 | LYS |
| 1 | 31-A | 99 | ASP |
| 1 | 31-A | 100 | PHE |
| 1 | 31-A | 105 | VAL |
| 1 | 31-A | 106 | CYS |
| 1 | 31-A | 142 | GLU |
| 1 | 31-A | 151 | ASP |
| 1 | 31-A | 210 | ASP |
| 1 | 31-A | 253 | ASN |
| 1 | 31-A | 276 | LYS |
| 1 | 31-A | 288 | GLN |
| 1 | 31-A | 289 | ASP |
| 1 | 31-A | 292 | LYS |
| 1 | 31-A | 294 | GLU |
| 1 | 31-A | 295 | GLU |
| 1 | 31-A | 300 | LEU |
| 1 | 31-A | 301 | GLU |
| 1 | 31-A | 304 | THR |
| 1 | 31-A | 306 | LYS |
| 1 | 31-A | 322 | ASP |
| 1 | 31-A | 324 | VAL |
| 1 | 31-A | 331 | GLU |
| 1 | 31-A | 361 | GLN |
| 1 | 31-A | 382 | ASP |
| 1 | 31-A | 388 | PRO |
| 1 | 31-A | 396 | LYS |
| 1 | 31-A | 437 | SER |
| 1 | 31-A | 452 | ASP |
| 1 | 31-A | 453 | LEU |
| 1 | 31-A | 460 | MET |
| 1 | 31-A | 464 | ARG |
| 1 | 31-A | 467 | LYS |
| 1 | 31-A | 498 | GLU |
| 1 | 31-A | 504 | TRP |
| 1 | 31-A | 512 | ASN |
| 1 | 31-A | 515 | SER |
| 1 | 31-A | 516 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 31-A | 517 | GLU |
| 1 | 31-A | 521 | MET |
| 1 | 31-A | 523 | ASN |
| 1 | 31-A | 525 | SER |
| 1 | 31-A | 532 | SER |
| 1 | 31-A | 544 | GLU |
| 1 | 31-A | 564 | GLU |
| 1 | 32-A | 8 | MET |
| 1 | 32-A | 65 | GLN |
| 1 | 32-A | 68 | VAL |
| 1 | 32-A | 90 | ASN |
| 1 | 32-A | 91 | HIS |
| 1 | 32-A | 93 | ASP |
| 1 | 32-A | 101 | ILE |
| 1 | 32-A | 104 | LYS |
| 1 | 32-A | 121 | LEU |
| 1 | 32-A | 126 | LYS |
| 1 | 32-A | 146 | ASP |
| 1 | 32-A | 147 | MET |
| 1 | 32-A | 151 | ASP |
| 1 | 32-A | 177 | SER |
| 1 | 32-A | 210 | ASP |
| 1 | 32-A | 236 | LEU |
| 1 | 32-A | 248 | ILE |
| 1 | 32-A | 288 | GLN |
| 1 | 32-A | 292 | LYS |
| 1 | 32-A | 296 | LYS |
| 1 | 32-A | 300 | LEU |
| 1 | 32-A | 350 | TYR |
| 1 | 32-A | 361 | GLN |
| 1 | 32-A | 362 | MET |
| 1 | 32-A | 370 | GLU |
| 1 | 32-A | 386 | THR |
| 1 | 32-A | 389 | GLU |
| 1 | 32-A | 403 | THR |
| 1 | 32-A | 410 | ASP |
| 1 | 32-A | 437 | SER |
| 1 | 32-A | 453 | LEU |
| 1 | 32-A | 454 | ILE |
| 1 | 32-A | 464 | ARG |
| 1 | 32-A | 467 | LYS |
| 1 | 32-A | 485 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 32-A | 489 | LYS |
| 1 | 32-A | 495 | LYS |
| 1 | 32-A | 504 | TRP |
| 1 | 32-A | 512 | ASN |
| 1 | 32-A | 516 | ASN |
| 1 | 32-A | 517 | GLU |
| 1 | 32-A | 518 | ILE |
| 1 | 32-A | 521 | MET |
| 1 | 32-A | 525 | SER |
| 1 | 32-A | 531 | LYS |
| 1 | 32-A | 532 | SER |
| 1 | 32-A | 537 | LYS |
| 1 | 32-A | 542 | SER |
| 1 | 32-A | 543 | ASP |
| 1 | 32-A | 544 | GLU |
| 1 | 32-A | 564 | GLU |
| 1 | 32-A | 568 | ASP |
| 1 | 33-A | 21 | LYS |
| 1 | 33-A | 70 | GLU |
| 1 | 33-A | 86 | ARG |
| 1 | 33-A | 90 | ASN |
| 1 | 33-A | 93 | ASP |
| 1 | 33-A | 100 | PHE |
| 1 | 33-A | 101 | ILE |
| 1 | 33-A | 104 | LYS |
| 1 | 33-A | 122 | ASN |
| 1 | 33-A | 124 | GLU |
| 1 | 33-A | 125 | THR |
| 1 | 33-A | 146 | ASP |
| 1 | 33-A | 151 | ASP |
| 1 | 33-A | 210 | ASP |
| 1 | 33-A | 236 | LEU |
| 1 | 33-A | 284 | LYS |
| 1 | 33-A | 288 | GLN |
| 1 | 33-A | 292 | LYS |
| 1 | 33-A | 295 | GLU |
| 1 | 33-A | 331 | GLU |
| 1 | 33-A | 350 | TYR |
| 1 | 33-A | 362 | MET |
| 1 | 33-A | 365 | LEU |
| 1 | 33-A | 367 | LYS |
| 1 | 33-A | 370 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 33-A | 386 | THR |
| 1 | 33-A | 392 | GLU |
| 1 | 33-A | 405 | GLU |
| 1 | 33-A | 410 | ASP |
| 1 | 33-A | 453 | LEU |
| 1 | 33-A | 454 | ILE |
| 1 | 33-A | 456 | PRO |
| 1 | 33-A | 459 | ILE |
| 1 | 33-A | 460 | MET |
| 1 | 33-A | 464 | ARG |
| 1 | 33-A | 467 | LYS |
| 1 | 33-A | 485 | LYS |
| 1 | 33-A | 489 | LYS |
| 1 | 33-A | 495 | LYS |
| 1 | 33-A | 504 | TRP |
| 1 | 33-A | 510 | THR |
| 1 | 33-A | 512 | ASN |
| 1 | 33-A | 516 | ASN |
| 1 | 33-A | 517 | GLU |
| 1 | 33-A | 521 | MET |
| 1 | 33-A | 523 | ASN |
| 1 | 33-A | 527 | ASP |
| 1 | 33-A | 531 | LYS |
| 1 | 33-A | 544 | GLU |
| 1 | 33-A | 564 | GLU |
| 1 | 33-A | 568 | ASP |
| 1 | 34-A | 21 | LYS |
| 1 | 34-A | 68 | VAL |
| 1 | 34-A | 70 | GLU |
| 1 | 34-A | 77 | GLN |
| 1 | 34-A | 86 | ARG |
| 1 | 34-A | 90 | ASN |
| 1 | 34-A | 94 | LYS |
| 1 | 34-A | 101 | ILE |
| 1 | 34-A | 106 | CYS |
| 1 | 34-A | 124 | GLU |
| 1 | 34-A | 146 | ASP |
| 1 | 34-A | 147 | MET |
| 1 | 34-A | 151 | ASP |
| 1 | 34-A | 156 | LYS |
| 1 | 34-A | 177 | SER |
| 1 | 34-A | 179 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 34-A | 181 | ASN |
| 1 | 34-A | 199 | LYS |
| 1 | 34-A | 200 | ASN |
| 1 | 34-A | 254 | THR |
| 1 | 34-A | 272 | GLU |
| 1 | 34-A | 288 | GLN |
| 1 | 34-A | 289 | ASP |
| 1 | 34-A | 292 | LYS |
| 1 | 34-A | 295 | GLU |
| 1 | 34-A | 308 | MET |
| 1 | 34-A | 319 | GLN |
| 1 | 34-A | 328 | HIS |
| 1 | 34-A | 350 | TYR |
| 1 | 34-A | 358 | ILE |
| 1 | 34-A | 361 | GLN |
| 1 | 34-A | 362 | MET |
| 1 | 34-A | 365 | LEU |
| 1 | 34-A | 367 | LYS |
| 1 | 34-A | 369 | LEU |
| 1 | 34-A | 370 | GLU |
| 1 | 34-A | 405 | GLU |
| 1 | 34-A | 453 | LEU |
| 1 | 34-A | 454 | ILE |
| 1 | 34-A | 460 | MET |
| 1 | 34-A | 467 | LYS |
| 1 | 34-A | 489 | LYS |
| 1 | 34-A | 490 | GLU |
| 1 | 34-A | 504 | TRP |
| 1 | 34-A | 505 | THR |
| 1 | 34-A | 506 | GLN |
| 1 | 34-A | 510 | THR |
| 1 | 34-A | 514 | TYR |
| 1 | 34-A | 518 | ILE |
| 1 | 34-A | 521 | MET |
| 1 | 34-A | 522 | GLU |
| 1 | 34-A | 525 | SER |
| 1 | 34-A | 531 | LYS |
| 1 | 34-A | 532 | SER |
| 1 | 34-A | 567 | ARG |
| 1 | 35-A | 10 | LYS |
| 1 | 35-A | 12 | LYS |
| 1 | 35-A | 43 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 35-A | 54 | SER |
| 1 | 35-A | 77 | GLN |
| 1 | 35-A | 87 | ASP |
| 1 | 35-A | 90 | ASN |
| 1 | 35-A | 92 | LYS |
| 1 | 35-A | 93 | ASP |
| 1 | 35-A | 100 | PHE |
| 1 | 35-A | 101 | ILE |
| 1 | 35-A | 104 | LYS |
| 1 | 35-A | 124 | GLU |
| 1 | 35-A | 126 | LYS |
| 1 | 35-A | 127 | ARG |
| 1 | 35-A | 151 | ASP |
| 1 | 35-A | 156 | LYS |
| 1 | 35-A | 236 | LEU |
| 1 | 35-A | 253 | ASN |
| 1 | 35-A | 270 | LYS |
| 1 | 35-A | 284 | LYS |
| 1 | 35-A | 288 | GLN |
| 1 | 35-A | 291 | ILE |
| 1 | 35-A | 292 | LYS |
| 1 | 35-A | 301 | GLU |
| 1 | 35-A | 322 | ASP |
| 1 | 35-A | 324 | VAL |
| 1 | 35-A | 328 | HIS |
| 1 | 35-A | 350 | TYR |
| 1 | 35-A | 365 | LEU |
| 1 | 35-A | 382 | ASP |
| 1 | 35-A | 396 | LYS |
| 1 | 35-A | 437 | SER |
| 1 | 35-A | 451 | GLU |
| 1 | 35-A | 453 | LEU |
| 1 | 35-A | 454 | ILE |
| 1 | 35-A | 456 | PRO |
| 1 | 35-A | 467 | LYS |
| 1 | 35-A | 486 | ARG |
| 1 | 35-A | 489 | LYS |
| 1 | 35-A | 495 | LYS |
| 1 | 35-A | 504 | TRP |
| 1 | 35-A | 505 | THR |
| 1 | 35-A | 510 | THR |
| 1 | 35-A | 516 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 35-A | 518 | ILE |
| 1 | 35-A | 521 | MET |
| 1 | 35-A | 522 | GLU |
| 1 | 35-A | 525 | SER |
| 1 | 35-A | 531 | LYS |
| 1 | 35-A | 537 | LYS |
| 1 | 36-A | 7 | LEU |
| 1 | 36-A | 14 | LYS |
| 1 | 36-A | 19 | GLU |
| 1 | 36-A | 65 | GLN |
| 1 | 36-A | 70 | GLU |
| 1 | 36-A | 89 | CYS |
| 1 | 36-A | 90 | ASN |
| 1 | 36-A | 93 | ASP |
| 1 | 36-A | 100 | PHE |
| 1 | 36-A | 104 | LYS |
| 1 | 36-A | 106 | CYS |
| 1 | 36-A | 124 | GLU |
| 1 | 36-A | 126 | LYS |
| 1 | 36-A | 142 | GLU |
| 1 | 36-A | 151 | ASP |
| 1 | 36-A | 156 | LYS |
| 1 | 36-A | 179 | ASP |
| 1 | 36-A | 199 | LYS |
| 1 | 36-A | 236 | LEU |
| 1 | 36-A | 253 | ASN |
| 1 | 36-A | 254 | THR |
| 1 | 36-A | 270 | LYS |
| 1 | 36-A | 292 | LYS |
| 1 | 36-A | 301 | GLU |
| 1 | 36-A | 322 | ASP |
| 1 | 36-A | 328 | HIS |
| 1 | 36-A | 350 | TYR |
| 1 | 36-A | 360 | LYS |
| 1 | 36-A | 365 | LEU |
| 1 | 36-A | 367 | LYS |
| 1 | 36-A | 382 | ASP |
| 1 | 36-A | 391 | LEU |
| 1 | 36-A | 439 | THR |
| 1 | 36-A | 452 | ASP |
| 1 | 36-A | 453 | LEU |
| 1 | 36-A | 454 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 36-A | 461 | ARG |
| 1 | 36-A | 464 | ARG |
| 1 | 36-A | 467 | LYS |
| 1 | 36-A | 489 | LYS |
| 1 | 36-A | 504 | TRP |
| 1 | 36-A | 515 | SER |
| 1 | 36-A | 516 | ASN |
| 1 | 36-A | 518 | ILE |
| 1 | 36-A | 521 | MET |
| 1 | 36-A | 527 | ASP |
| 1 | 36-A | 530 | GLU |
| 1 | 36-A | 532 | SER |
| 1 | 36-A | 534 | GLU |
| 1 | 36-A | 542 | SER |
| 1 | 36-A | 544 | GLU |
| 1 | 37-A | 7 | LEU |
| 1 | 37-A | 14 | LYS |
| 1 | 37-A | 21 | LYS |
| 1 | 37-A | 52 | ASP |
| 1 | 37-A | 68 | VAL |
| 1 | 37-A | 90 | ASN |
| 1 | 37-A | 100 | PHE |
| 1 | 37-A | 104 | LYS |
| 1 | 37-A | 126 | LYS |
| 1 | 37-A | 147 | MET |
| 1 | 37-A | 151 | ASP |
| 1 | 37-A | 156 | LYS |
| 1 | 37-A | 270 | LYS |
| 1 | 37-A | 274 | ASN |
| 1 | 37-A | 275 | ASP |
| 1 | 37-A | 295 | GLU |
| 1 | 37-A | 331 | GLU |
| 1 | 37-A | 350 | TYR |
| 1 | 37-A | 362 | MET |
| 1 | 37-A | 365 | LEU |
| 1 | 37-A | 382 | ASP |
| 1 | 37-A | 384 | GLU |
| 1 | 37-A | 393 | MET |
| 1 | 37-A | 434 | ASN |
| 1 | 37-A | 453 | LEU |
| 1 | 37-A | 467 | LYS |
| 1 | 37-A | 485 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 37-A | 486 | ARG |
| 1 | 37-A | 504 | TRP |
| 1 | 37-A | 510 | THR |
| 1 | 37-A | 512 | ASN |
| 1 | 37-A | 514 | TYR |
| 1 | 37-A | 515 | SER |
| 1 | 37-A | 516 | ASN |
| 1 | 37-A | 517 | GLU |
| 1 | 37-A | 519 | GLU |
| 1 | 37-A | 521 | MET |
| 1 | 37-A | 524 | VAL |
| 1 | 37-A | 533 | ASP |
| 1 | 37-A | 546 | LYS |
| 1 | 38-A | 14 | LYS |
| 1 | 38-A | 77 | GLN |
| 1 | 38-A | 87 | ASP |
| 1 | 38-A | 100 | PHE |
| 1 | 38-A | 102 | THR |
| 1 | 38-A | 104 | LYS |
| 1 | 38-A | 105 | VAL |
| 1 | 38-A | 126 | LYS |
| 1 | 38-A | 142 | GLU |
| 1 | 38-A | 151 | ASP |
| 1 | 38-A | 199 | LYS |
| 1 | 38-A | 236 | LEU |
| 1 | 38-A | 253 | ASN |
| 1 | 38-A | 254 | THR |
| 1 | 38-A | 265 | LYS |
| 1 | 38-A | 270 | LYS |
| 1 | 38-A | 289 | ASP |
| 1 | 38-A | 292 | LYS |
| 1 | 38-A | 301 | GLU |
| 1 | 38-A | 319 | GLN |
| 1 | 38-A | 331 | GLU |
| 1 | 38-A | 340 | SER |
| 1 | 38-A | 350 | TYR |
| 1 | 38-A | 362 | MET |
| 1 | 38-A | 365 | LEU |
| 1 | 38-A | 382 | ASP |
| 1 | 38-A | 386 | THR |
| 1 | 38-A | 388 | PRO |
| 1 | 38-A | 396 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 38-A | 439 | THR |
| 1 | 38-A | 452 | ASP |
| 1 | 38-A | 453 | LEU |
| 1 | 38-A | 467 | LYS |
| 1 | 38-A | 485 | LYS |
| 1 | 38-A | 498 | GLU |
| 1 | 38-A | 504 | TRP |
| 1 | 38-A | 505 | THR |
| 1 | 38-A | 512 | ASN |
| 1 | 38-A | 514 | TYR |
| 1 | 38-A | 516 | ASN |
| 1 | 38-A | 518 | ILE |
| 1 | 38-A | 519 | GLU |
| 1 | 38-A | 521 | MET |
| 1 | 38-A | 524 | VAL |
| 1 | 38-A | 533 | ASP |
| 1 | 38-A | 544 | GLU |
| 1 | 38-A | 557 | LYS |
| 1 | 38-A | 568 | ASP |
| 1 | 39-A | 12 | LYS |
| 1 | 39-A | 19 | GLU |
| 1 | 39-A | 21 | LYS |
| 1 | 39-A | 43 | LYS |
| 1 | 39-A | 65 | GLN |
| 1 | 39-A | 70 | GLU |
| 1 | 39-A | 80 | THR |
| 1 | 39-A | 100 | PHE |
| 1 | 39-A | 101 | ILE |
| 1 | 39-A | 102 | THR |
| 1 | 39-A | 104 | LYS |
| 1 | 39-A | 105 | VAL |
| 1 | 39-A | 124 | GLU |
| 1 | 39-A | 142 | GLU |
| 1 | 39-A | 146 | ASP |
| 1 | 39-A | 147 | MET |
| 1 | 39-A | 151 | ASP |
| 1 | 39-A | 179 | ASP |
| 1 | 39-A | 199 | LYS |
| 1 | 39-A | 248 | ILE |
| 1 | 39-A | 265 | LYS |
| 1 | 39-A | 266 | LEU |
| 1 | 39-A | 270 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 39-A | 286 | LYS |
| 1 | 39-A | 292 | LYS |
| 1 | 39-A | 295 | GLU |
| 1 | 39-A | 301 | GLU |
| 1 | 39-A | 350 | TYR |
| 1 | 39-A | 360 | LYS |
| 1 | 39-A | 362 | MET |
| 1 | 39-A | 365 | LEU |
| 1 | 39-A | 369 | LEU |
| 1 | 39-A | 378 | SER |
| 1 | 39-A | 379 | GLU |
| 1 | 39-A | 382 | ASP |
| 1 | 39-A | 386 | THR |
| 1 | 39-A | 389 | GLU |
| 1 | 39-A | 393 | MET |
| 1 | 39-A | 441 | VAL |
| 1 | 39-A | 453 | LEU |
| 1 | 39-A | 464 | ARG |
| 1 | 39-A | 474 | GLU |
| 1 | 39-A | 485 | LYS |
| 1 | 39-A | 490 | GLU |
| 1 | 39-A | 504 | TRP |
| 1 | 39-A | 506 | GLN |
| 1 | 39-A | 510 | THR |
| 1 | 39-A | 512 | ASN |
| 1 | 39-A | 514 | TYR |
| 1 | 39-A | 516 | ASN |
| 1 | 39-A | 517 | GLU |
| 1 | 39-A | 521 | MET |
| 1 | 39-A | 522 | GLU |
| 1 | 39-A | 523 | ASN |
| 1 | 39-A | 524 | VAL |
| 1 | 39-A | 530 | GLU |
| 1 | 39-A | 544 | GLU |
| 1 | 39-A | 565 | LYS |
| 1 | 40-A | 7 | LEU |
| 1 | 40-A | 8 | MET |
| 1 | 40-A | 12 | LYS |
| 1 | 40-A | 21 | LYS |
| 1 | 40-A | 23 | LEU |
| 1 | 40-A | 65 | GLN |
| 1 | 40-A | 70 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 40-A | 90 | ASN |
| 1 | 40-A | 91 | HIS |
| 1 | 40-A | 93 | ASP |
| 1 | 40-A | 102 | THR |
| 1 | 40-A | 124 | GLU |
| 1 | 40-A | 147 | MET |
| 1 | 40-A | 151 | ASP |
| 1 | 40-A | 156 | LYS |
| 1 | 40-A | 157 | ASP |
| 1 | 40-A | 179 | ASP |
| 1 | 40-A | 253 | ASN |
| 1 | 40-A | 270 | LYS |
| 1 | 40-A | 276 | LYS |
| 1 | 40-A | 277 | ASP |
| 1 | 40-A | 286 | LYS |
| 1 | 40-A | 288 | GLN |
| 1 | 40-A | 305 | ASN |
| 1 | 40-A | 308 | MET |
| 1 | 40-A | 319 | GLN |
| 1 | 40-A | 350 | TYR |
| 1 | 40-A | 358 | ILE |
| 1 | 40-A | 360 | LYS |
| 1 | 40-A | 361 | GLN |
| 1 | 40-A | 362 | MET |
| 1 | 40-A | 364 | LEU |
| 1 | 40-A | 365 | LEU |
| 1 | 40-A | 367 | LYS |
| 1 | 40-A | 382 | ASP |
| 1 | 40-A | 386 | THR |
| 1 | 40-A | 388 | PRO |
| 1 | 40-A | 434 | ASN |
| 1 | 40-A | 436 | THR |
| 1 | 40-A | 451 | GLU |
| 1 | 40-A | 452 | ASP |
| 1 | 40-A | 453 | LEU |
| 1 | 40-A | 486 | ARG |
| 1 | 40-A | 489 | LYS |
| 1 | 40-A | 490 | GLU |
| 1 | 40-A | 495 | LYS |
| 1 | 40-A | 504 | TRP |
| 1 | 40-A | 505 | THR |
| 1 | 40-A | 512 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 40-A | 514 | TYR |
| 1 | 40-A | 518 | ILE |
| 1 | 40-A | 521 | MET |
| 1 | 40-A | 524 | VAL |
| 1 | 40-A | 531 | LYS |
| 1 | 40-A | 534 | GLU |
| 1 | 40-A | 544 | GLU |
| 1 | 40-A | 565 | LYS |
| 1 | 40-A | 566 | HIS |
| 1 | 40-A | 567 | ARG |
| 1 | 41-A | 7 | LEU |
| 1 | 41-A | 19 | GLU |
| 1 | 41-A | 21 | LYS |
| 1 | 41-A | 37 | THR |
| 1 | 41-A | 65 | GLN |
| 1 | 41-A | 91 | HIS |
| 1 | 41-A | 94 | LYS |
| 1 | 41-A | 100 | PHE |
| 1 | 41-A | 101 | ILE |
| 1 | 41-A | 105 | VAL |
| 1 | 41-A | 121 | LEU |
| 1 | 41-A | 124 | GLU |
| 1 | 41-A | 146 | ASP |
| 1 | 41-A | 147 | MET |
| 1 | 41-A | 151 | ASP |
| 1 | 41-A | 270 | LYS |
| 1 | 41-A | 277 | ASP |
| 1 | 41-A | 280 | GLU |
| 1 | 41-A | 288 | GLN |
| 1 | 41-A | 292 | LYS |
| 1 | 41-A | 304 | THR |
| 1 | 41-A | 305 | ASN |
| 1 | 41-A | 308 | MET |
| 1 | 41-A | 319 | GLN |
| 1 | 41-A | 322 | ASP |
| 1 | 41-A | 340 | SER |
| 1 | 41-A | 350 | TYR |
| 1 | 41-A | 357 | SER |
| 1 | 41-A | 365 | LEU |
| 1 | 41-A | 367 | LYS |
| 1 | 41-A | 382 | ASP |
| 1 | 41-A | 386 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 41-A | 389 | GLU |
| 1 | 41-A | 391 | LEU |
| 1 | 41-A | 392 | GLU |
| 1 | 41-A | 451 | GLU |
| 1 | 41-A | 453 | LEU |
| 1 | 41-A | 461 | ARG |
| 1 | 41-A | 464 | ARG |
| 1 | 41-A | 467 | LYS |
| 1 | 41-A | 504 | TRP |
| 1 | 41-A | 514 | TYR |
| 1 | 41-A | 516 | ASN |
| 1 | 41-A | 521 | MET |
| 1 | 41-A | 524 | VAL |
| 1 | 41-A | 525 | SER |
| 1 | 41-A | 532 | SER |
| 1 | 41-A | 564 | GLU |
| 1 | 41-A | 567 | ARG |
| 1 | 42-A | 14 | LYS |
| 1 | 42-A | 15 | ILE |
| 1 | 42-A | 21 | LYS |
| 1 | 42-A | 65 | GLN |
| 1 | 42-A | 90 | ASN |
| 1 | 42-A | 93 | ASP |
| 1 | 42-A | 94 | LYS |
| 1 | 42-A | 100 | PHE |
| 1 | 42-A | 101 | ILE |
| 1 | 42-A | 104 | LYS |
| 1 | 42-A | 122 | ASN |
| 1 | 42-A | 124 | GLU |
| 1 | 42-A | 125 | THR |
| 1 | 42-A | 147 | MET |
| 1 | 42-A | 151 | ASP |
| 1 | 42-A | 156 | LYS |
| 1 | 42-A | 157 | ASP |
| 1 | 42-A | 177 | SER |
| 1 | 42-A | 210 | ASP |
| 1 | 42-A | 254 | THR |
| 1 | 42-A | 270 | LYS |
| 1 | 42-A | 272 | GLU |
| 1 | 42-A | 284 | LYS |
| 1 | 42-A | 288 | GLN |
| 1 | 42-A | 292 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 42-A | 300 | LEU |
| 1 | 42-A | 306 | LYS |
| 1 | 42-A | 308 | MET |
| 1 | 42-A | 319 | GLN |
| 1 | 42-A | 350 | TYR |
| 1 | 42-A | 356 | THR |
| 1 | 42-A | 361 | GLN |
| 1 | 42-A | 365 | LEU |
| 1 | 42-A | 392 | GLU |
| 1 | 42-A | 431 | LEU |
| 1 | 42-A | 436 | THR |
| 1 | 42-A | 451 | GLU |
| 1 | 42-A | 453 | LEU |
| 1 | 42-A | 474 | GLU |
| 1 | 42-A | 489 | LYS |
| 1 | 42-A | 490 | GLU |
| 1 | 42-A | 504 | TRP |
| 1 | 42-A | 506 | GLN |
| 1 | 42-A | 510 | THR |
| 1 | 42-A | 514 | TYR |
| 1 | 42-A | 515 | SER |
| 1 | 42-A | 517 | GLU |
| 1 | 42-A | 521 | MET |
| 1 | 42-A | 524 | VAL |
| 1 | 42-A | 532 | SER |
| 1 | 42-A | 534 | GLU |
| 1 | 42-A | 542 | SER |
| 1 | 42-A | 567 | ARG |
| 1 | 43-A | 10 | LYS |
| 1 | 43-A | 14 | LYS |
| 1 | 43-A | 21 | LYS |
| 1 | 43-A | 65 | GLN |
| 1 | 43-A | 80 | THR |
| 1 | 43-A | 101 | ILE |
| 1 | 43-A | 102 | THR |
| 1 | 43-A | 106 | CYS |
| 1 | 43-A | 122 | ASN |
| 1 | 43-A | 125 | THR |
| 1 | 43-A | 151 | ASP |
| 1 | 43-A | 177 | SER |
| 1 | 43-A | 210 | ASP |
| 1 | 43-A | 253 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 43-A | 270 | LYS |
| 1 | 43-A | 274 | ASN |
| 1 | 43-A | 284 | LYS |
| 1 | 43-A | 288 | GLN |
| 1 | 43-A | 289 | ASP |
| 1 | 43-A | 292 | LYS |
| 1 | 43-A | 303 | ARG |
| 1 | 43-A | 319 | GLN |
| 1 | 43-A | 324 | VAL |
| 1 | 43-A | 350 | TYR |
| 1 | 43-A | 357 | SER |
| 1 | 43-A | 361 | GLN |
| 1 | 43-A | 367 | LYS |
| 1 | 43-A | 368 | GLU |
| 1 | 43-A | 386 | THR |
| 1 | 43-A | 410 | ASP |
| 1 | 43-A | 451 | GLU |
| 1 | 43-A | 453 | LEU |
| 1 | 43-A | 460 | MET |
| 1 | 43-A | 462 | SER |
| 1 | 43-A | 474 | GLU |
| 1 | 43-A | 489 | LYS |
| 1 | 43-A | 490 | GLU |
| 1 | 43-A | 504 | TRP |
| 1 | 43-A | 512 | ASN |
| 1 | 43-A | 514 | TYR |
| 1 | 43-A | 515 | SER |
| 1 | 43-A | 516 | ASN |
| 1 | 43-A | 517 | GLU |
| 1 | 43-A | 521 | MET |
| 1 | 43-A | 522 | GLU |
| 1 | 43-A | 532 | SER |
| 1 | 43-A | 544 | GLU |
| 1 | 43-A | 555 | LYS |
| 1 | 43-A | 567 | ARG |
| 1 | 43-A | 568 | ASP |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (364) such sidechains are listed below:

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 1-A | 65 | GLN |
| 1 | 1-A | 77 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 1-A | 91 | HIS |
| 1 | 1-A | 181 | ASN |
| 1 | 1-A | 374 | ASN |
| 1 | 1-A | 418 | HIS |
| 1 | 1-A | 435 | HIS |
| 1 | 1-A | 506 | GLN |
| 1 | 1-A | 558 | GLN |
| 1 | 2-A | 24 | ASN |
| 1 | 2-A | 65 | GLN |
| 1 | 2-A | 90 | ASN |
| 1 | 2-A | 181 | ASN |
| 1 | 2-A | 200 | ASN |
| 1 | 2-A | 204 | ASN |
| 1 | 2-A | 319 | GLN |
| 1 | 2-A | 418 | HIS |
| 1 | 2-A | 512 | ASN |
| 1 | 2-A | 523 | ASN |
| 1 | 2-A | 566 | HIS |
| 1 | 3-A | 24 | ASN |
| 1 | 3-A | 65 | GLN |
| 1 | 3-A | 77 | GLN |
| 1 | 3-A | 90 | ASN |
| 1 | 3-A | 91 | HIS |
| 1 | 3-A | 181 | ASN |
| 1 | 3-A | 274 | ASN |
| 1 | 3-A | 319 | GLN |
| 1 | 3-A | 411 | ASN |
| 1 | 3-A | 418 | HIS |
| 1 | 3-A | 506 | GLN |
| 1 | 3-A | 523 | ASN |
| 1 | 3-A | 566 | HIS |
| 1 | 4-A | 24 | ASN |
| 1 | 4-A | 181 | ASN |
| 1 | 4-A | 200 | ASN |
| 1 | 4-A | 319 | GLN |
| 1 | 4-A | 328 | HIS |
| 1 | 4-A | 418 | HIS |
| 1 | 4-A | 506 | GLN |
| 1 | 4-A | 516 | ASN |
| 1 | 4-A | 523 | ASN |
| 1 | 5-A | 20 | ASN |
| 1 | 5-A | 24 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 5-A | 65 | GLN |
| 1 | 5-A | 91 | HIS |
| 1 | 5-A | 181 | ASN |
| 1 | 5-A | 204 | ASN |
| 1 | 5-A | 253 | ASN |
| 1 | 5-A | 418 | HIS |
| 1 | 5-A | 430 | GLN |
| 1 | 5-A | 523 | ASN |
| 1 | 6-A | 181 | ASN |
| 1 | 6-A | 208 | ASN |
| 1 | 6-A | 274 | ASN |
| 1 | 6-A | 361 | GLN |
| 1 | 6-A | 418 | HIS |
| 1 | 6-A | 506 | GLN |
| 1 | 7-A | 181 | ASN |
| 1 | 7-A | 204 | ASN |
| 1 | 7-A | 274 | ASN |
| 1 | 7-A | 411 | ASN |
| 1 | 7-A | 418 | HIS |
| 1 | 7-A | 506 | GLN |
| 1 | 7-A | 516 | ASN |
| 1 | 8-A | 90 | ASN |
| 1 | 8-A | 144 | HIS |
| 1 | 8-A | 181 | ASN |
| 1 | 8-A | 211 | ASN |
| 1 | 8-A | 274 | ASN |
| 1 | 8-A | 328 | HIS |
| 1 | 8-A | 418 | HIS |
| 1 | 8-A | 506 | GLN |
| 1 | 9-A | 91 | HIS |
| 1 | 9-A | 181 | ASN |
| 1 | 9-A | 204 | ASN |
| 1 | 9-A | 274 | ASN |
| 1 | 9-A | 288 | GLN |
| 1 | 9-A | 347 | ASN |
| 1 | 9-A | 411 | ASN |
| 1 | 9-A | 418 | HIS |
| 1 | 9-A | 516 | ASN |
| 1 | 9-A | 523 | ASN |
| 1 | 10-A | 122 | ASN |
| 1 | 10-A | 181 | ASN |
| 1 | 10-A | 274 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 10-A | 288 | GLN |
| 1 | 10-A | 328 | HIS |
| 1 | 10-A | 347 | ASN |
| 1 | 10-A | 418 | HIS |
| 1 | 10-A | 435 | HIS |
| 1 | 10-A | 506 | GLN |
| 1 | 10-A | 516 | ASN |
| 1 | 10-A | 558 | GLN |
| 1 | 11-A | 91 | HIS |
| 1 | 11-A | 144 | HIS |
| 1 | 11-A | 181 | ASN |
| 1 | 11-A | 204 | ASN |
| 1 | 11-A | 274 | ASN |
| 1 | 11-A | 288 | GLN |
| 1 | 11-A | 418 | HIS |
| 1 | 11-A | 434 | ASN |
| 1 | 11-A | 506 | GLN |
| 1 | 11-A | 516 | ASN |
| 1 | 12-A | 77 | GLN |
| 1 | 12-A | 90 | ASN |
| 1 | 12-A | 181 | ASN |
| 1 | 12-A | 253 | ASN |
| 1 | 12-A | 258 | HIS |
| 1 | 12-A | 274 | ASN |
| 1 | 12-A | 418 | HIS |
| 1 | 12-A | 516 | ASN |
| 1 | 12-A | 523 | ASN |
| 1 | 12-A | 558 | GLN |
| 1 | 13-A | 91 | HIS |
| 1 | 13-A | 144 | HIS |
| 1 | 13-A | 200 | ASN |
| 1 | 13-A | 288 | GLN |
| 1 | 13-A | 361 | GLN |
| 1 | 13-A | 374 | ASN |
| 1 | 13-A | 418 | HIS |
| 1 | 13-A | 516 | ASN |
| 1 | 13-A | 558 | GLN |
| 1 | 14-A | 253 | ASN |
| 1 | 14-A | 319 | GLN |
| 1 | 14-A | 328 | HIS |
| 1 | 14-A | 418 | HIS |
| 1 | 15-A | 91 | HIS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 15-A | 144 | HIS |
| 1 | 15-A | 181 | ASN |
| 1 | 15-A | 258 | HIS |
| 1 | 15-A | 411 | ASN |
| 1 | 15-A | 418 | HIS |
| 1 | 15-A | 506 | GLN |
| 1 | 15-A | 512 | ASN |
| 1 | 16-A | 181 | ASN |
| 1 | 16-A | 204 | ASN |
| 1 | 16-A | 347 | ASN |
| 1 | 16-A | 418 | HIS |
| 1 | 16-A | 506 | GLN |
| 1 | 16-A | 512 | ASN |
| 1 | 17-A | 20 | ASN |
| 1 | 17-A | 65 | GLN |
| 1 | 17-A | 91 | HIS |
| 1 | 17-A | 120 | ASN |
| 1 | 17-A | 122 | ASN |
| 1 | 17-A | 181 | ASN |
| 1 | 17-A | 253 | ASN |
| 1 | 17-A | 418 | HIS |
| 1 | 17-A | 482 | GLN |
| 1 | 17-A | 512 | ASN |
| 1 | 18-A | 91 | HIS |
| 1 | 18-A | 120 | ASN |
| 1 | 18-A | 122 | ASN |
| 1 | 18-A | 418 | HIS |
| 1 | 18-A | 506 | GLN |
| 1 | 18-A | 558 | GLN |
| 1 | 19-A | 120 | ASN |
| 1 | 19-A | 181 | ASN |
| 1 | 19-A | 319 | GLN |
| 1 | 19-A | 361 | GLN |
| 1 | 19-A | 418 | HIS |
| 1 | 19-A | 512 | ASN |
| 1 | 20-A | 90 | ASN |
| 1 | 20-A | 120 | ASN |
| 1 | 20-A | 122 | ASN |
| 1 | 20-A | 181 | ASN |
| 1 | 20-A | 319 | GLN |
| 1 | 20-A | 347 | ASN |
| 1 | 20-A | 418 | HIS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 20-A | 512 | ASN |
| 1 | 20-A | 566 | HIS |
| 1 | 21-A | 20 | ASN |
| 1 | 21-A | 90 | ASN |
| 1 | 21-A | 91 | HIS |
| 1 | 21-A | 120 | ASN |
| 1 | 21-A | 319 | GLN |
| 1 | 21-A | 418 | HIS |
| 1 | 21-A | 506 | GLN |
| 1 | 21-A | 512 | ASN |
| 1 | 21-A | 516 | ASN |
| 1 | 21-A | 523 | ASN |
| 1 | 22-A | 91 | HIS |
| 1 | 22-A | 120 | ASN |
| 1 | 22-A | 122 | ASN |
| 1 | 22-A | 181 | ASN |
| 1 | 22-A | 418 | HIS |
| 1 | 22-A | 512 | ASN |
| 1 | 22-A | 523 | ASN |
| 1 | 23-A | 77 | GLN |
| 1 | 23-A | 91 | HIS |
| 1 | 23-A | 120 | ASN |
| 1 | 23-A | 181 | ASN |
| 1 | 23-A | 288 | GLN |
| 1 | 23-A | 328 | HIS |
| 1 | 23-A | 418 | HIS |
| 1 | 23-A | 506 | GLN |
| 1 | 23-A | 512 | ASN |
| 1 | 23-A | 566 | HIS |
| 1 | 24-A | 77 | GLN |
| 1 | 24-A | 90 | ASN |
| 1 | 24-A | 91 | HIS |
| 1 | 24-A | 120 | ASN |
| 1 | 24-A | 176 | ASN |
| 1 | 24-A | 181 | ASN |
| 1 | 24-A | 211 | ASN |
| 1 | 24-A | 319 | GLN |
| 1 | 24-A | 418 | HIS |
| 1 | 24-A | 512 | ASN |
| 1 | 25-A | 20 | ASN |
| 1 | 25-A | 65 | GLN |
| 1 | 25-A | 77 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 25-A | 181 | ASN |
| 1 | 25-A | 347 | ASN |
| 1 | 25-A | 374 | ASN |
| 1 | 25-A | 418 | HIS |
| 1 | 26-A | 77 | GLN |
| 1 | 26-A | 90 | ASN |
| 1 | 26-A | 200 | ASN |
| 1 | 26-A | 328 | HIS |
| 1 | 26-A | 418 | HIS |
| 1 | 26-A | 506 | GLN |
| 1 | 27-A | 91 | HIS |
| 1 | 27-A | 144 | HIS |
| 1 | 27-A | 181 | ASN |
| 1 | 27-A | 418 | HIS |
| 1 | 27-A | 506 | GLN |
| 1 | 27-A | 512 | ASN |
| 1 | 27-A | 516 | ASN |
| 1 | 28-A | 77 | GLN |
| 1 | 28-A | 90 | ASN |
| 1 | 28-A | 181 | ASN |
| 1 | 28-A | 253 | ASN |
| 1 | 28-A | 328 | HIS |
| 1 | 28-A | 361 | GLN |
| 1 | 28-A | 411 | ASN |
| 1 | 28-A | 418 | HIS |
| 1 | 28-A | 512 | ASN |
| 1 | 29-A | 20 | ASN |
| 1 | 29-A | 65 | GLN |
| 1 | 29-A | 91 | HIS |
| 1 | 29-A | 181 | ASN |
| 1 | 29-A | 253 | ASN |
| 1 | 29-A | 361 | GLN |
| 1 | 29-A | 418 | HIS |
| 1 | 29-A | 506 | GLN |
| 1 | 29-A | 512 | ASN |
| 1 | 29-A | 523 | ASN |
| 1 | 30-A | 20 | ASN |
| 1 | 30-A | 122 | ASN |
| 1 | 30-A | 144 | HIS |
| 1 | 30-A | 181 | ASN |
| 1 | 30-A | 200 | ASN |
| 1 | 30-A | 328 | HIS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 30-A | 418 | HIS |
| 1 | 30-A | 512 | ASN |
| 1 | 31-A | 418 | HIS |
| 1 | 31-A | 506 | GLN |
| 1 | 31-A | 512 | ASN |
| 1 | 31-A | 516 | ASN |
| 1 | 31-A | 523 | ASN |
| 1 | 32-A | 20 | ASN |
| 1 | 32-A | 91 | HIS |
| 1 | 32-A | 181 | ASN |
| 1 | 32-A | 411 | ASN |
| 1 | 32-A | 418 | HIS |
| 1 | 32-A | 516 | ASN |
| 1 | 32-A | 523 | ASN |
| 1 | 33-A | 90 | ASN |
| 1 | 33-A | 91 | HIS |
| 1 | 33-A | 181 | ASN |
| 1 | 33-A | 200 | ASN |
| 1 | 33-A | 418 | HIS |
| 1 | 33-A | 506 | GLN |
| 1 | 33-A | 512 | ASN |
| 1 | 33-A | 516 | ASN |
| 1 | 33-A | 523 | ASN |
| 1 | 33-A | 558 | GLN |
| 1 | 34-A | 181 | ASN |
| 1 | 34-A | 200 | ASN |
| 1 | 34-A | 328 | HIS |
| 1 | 34-A | 361 | GLN |
| 1 | 34-A | 418 | HIS |
| 1 | 34-A | 506 | GLN |
| 1 | 34-A | 512 | ASN |
| 1 | 34-A | 558 | GLN |
| 1 | 35-A | 77 | GLN |
| 1 | 35-A | 90 | ASN |
| 1 | 35-A | 91 | HIS |
| 1 | 35-A | 144 | HIS |
| 1 | 35-A | 328 | HIS |
| 1 | 35-A | 418 | HIS |
| 1 | 35-A | 506 | GLN |
| 1 | 35-A | 516 | ASN |
| 1 | 35-A | 523 | ASN |
| 1 | 35-A | 558 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | 36-A | 65 | GLN |
| 1 | 36-A | 91 | HIS |
| 1 | 36-A | 181 | ASN |
| 1 | 36-A | 319 | GLN |
| 1 | 36-A | 328 | HIS |
| 1 | 36-A | 411 | ASN |
| 1 | 36-A | 418 | HIS |
| 1 | 36-A | 558 | GLN |
| 1 | 37-A | 181 | ASN |
| 1 | 37-A | 418 | HIS |
| 1 | 37-A | 434 | ASN |
| 1 | 37-A | 506 | GLN |
| 1 | 37-A | 516 | ASN |
| 1 | 38-A | 20 | ASN |
| 1 | 38-A | 77 | GLN |
| 1 | 38-A | 181 | ASN |
| 1 | 38-A | 253 | ASN |
| 1 | 38-A | 274 | ASN |
| 1 | 38-A | 411 | ASN |
| 1 | 38-A | 418 | HIS |
| 1 | 38-A | 434 | ASN |
| 1 | 38-A | 506 | GLN |
| 1 | 39-A | 91 | HIS |
| 1 | 39-A | 181 | ASN |
| 1 | 39-A | 319 | GLN |
| 1 | 39-A | 361 | GLN |
| 1 | 39-A | 418 | HIS |
| 1 | 39-A | 434 | ASN |
| 1 | 39-A | 506 | GLN |
| 1 | 39-A | 523 | ASN |
| 1 | 39-A | 558 | GLN |
| 1 | 40-A | 91 | HIS |
| 1 | 40-A | 181 | ASN |
| 1 | 40-A | 274 | ASN |
| 1 | 40-A | 288 | GLN |
| 1 | 40-A | 319 | GLN |
| 1 | 40-A | 418 | HIS |
| 1 | 40-A | 434 | ASN |
| 1 | 40-A | 523 | ASN |
| 1 | 40-A | 558 | GLN |
| 1 | 40-A | 566 | HIS |
| 1 | 41-A | 181 | ASN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | 41-A | 208 | ASN |
| 1 | 41-A | 274 | ASN |
| 1 | 41-A | 418 | HIS |
| 1 | 41-A | 434 | ASN |
| 1 | 41-A | 506 | GLN |
| 1 | 41-A | 516 | ASN |
| 1 | 41-A | 523 | ASN |
| 1 | 42-A | 65 | GLN |
| 1 | 42-A | 181 | ASN |
| 1 | 42-A | 274 | ASN |
| 1 | 42-A | 288 | GLN |
| 1 | 42-A | 319 | GLN |
| 1 | 42-A | 418 | HIS |
| 1 | 42-A | 434 | ASN |
| 1 | 42-A | 558 | GLN |
| 1 | 43-A | 65 | GLN |
| 1 | 43-A | 122 | ASN |
| 1 | 43-A | 181 | ASN |
| 1 | 43-A | 274 | ASN |
| 1 | 43-A | 288 | GLN |
| 1 | 43-A | 418 | HIS |
| 1 | 43-A | 434 | ASN |
| 1 | 43-A | 506 | GLN |
| 1 | 43-A | 512 | ASN |
| 1 | 43-A | 558 | GLN |
| 1 | 43-A | 566 | HIS |

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry

43 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 |
| 2 | DPF | 38-A | 601 | 1 | 4,7,8 | 0.93 | 0 | 2,7,10 | 0.68 | 0 |
| 2 | DPF | 25-A | 601 | 1 | 4,7,8 | 0.91 | 0 | 2,7,10 | 0.66 | 0 |
| 2 | DPF | 5-A | 601 | 1 | 4,7,8 | 0.79 | 0 | 2,7,10 | 0.19 | 0 |
| 2 | DPF | 9-A | 601 | 1 | 4,7,8 | 1.10 | 0 | 2,7,10 | 0.35 | 0 |
| 2 | DPF | 31-A | 601 | 1 | 4,7,8 | 0.74 | 0 | 2,7,10 | 0.09 | 0 |
| 2 | DPF | 26-A | 601 | 1 | 4,7,8 | 0.74 | 0 | 2,7,10 | 0.58 | 0 |
| 2 | DPF | 21-A | 601 | 1 | 4,7,8 | 0.99 | 0 | 2,7,10 | 0.13 | 0 |
| 2 | DPF | 34-A | 601 | 1 | 4,7,8 | 0.93 | 0 | 2,7,10 | 0.44 | 0 |
| 2 | DPF | 3-A | 601 | 1 | 4,7,8 | 1.04 | 0 | 2,7,10 | 0.30 | 0 |
| 2 | DPF | 11-A | 601 | 1 | 4,7,8 | 1.09 | 0 | 2,7,10 | 0.64 | 0 |
| 2 | DPF | 6-A | 601 | 1 | 4,7,8 | 1.10 | 0 | 2,7,10 | 0.97 | 0 |
| 2 | DPF | 2-A | 601 | 1 | 4,7,8 | 1.12 | 0 | 2,7,10 | 0.72 | 0 |
| 2 | DPF | 15-A | 601 | 1 | 4,7,8 | 1.44 | 1 (25%) | 2,7,10 | 0.97 | 0 |
| 2 | DPF | 18-A | 601 | 1 | 4,7,8 | 1.00 | 0 | 2,7,10 | 0.90 | 0 |
| 2 | DPF | 22-A | 601 | 1 | 4,7,8 | 1.19 | 1 (25%) | 2,7,10 | 0.64 | 0 |
| 2 | DPF | 24-A | 601 | 1 | 4,7,8 | 0.97 | 0 | 2,7,10 | 0.39 | 0 |
| 2 | DPF | 19-A | 601 | 1 | 4,7,8 | 0.89 | 0 | 2,7,10 | 0.79 | 0 |
| 2 | DPF | 20-A | 601 | 1 | 4,7,8 | 1.02 | 0 | 2,7,10 | 0.30 | 0 |
| 2 | DPF | 43-A | 601 | 1 | 4,7,8 | 0.98 | 0 | 2,7,10 | 0.60 | 0 |
| 2 | DPF | 41-A | 601 | 1 | 4,7,8 | 0.79 | 0 | 2,7,10 | 0.26 | 0 |
| 2 | DPF | 42-A | 601 | 1 | 4,7,8 | 0.78 | 0 | 2,7,10 | 0.38 | 0 |
| 2 | DPF | 39-A | 601 | 1 | 4,7,8 | 0.89 | 0 | 2,7,10 | 0.34 | 0 |
| 2 | DPF | 4-A | 601 | 1 | 4,7,8 | 0.86 | 0 | 2,7,10 | 1.12 | 0 |
| 2 | DPF | 28-A | 601 | 1 | 4,7,8 | 0.90 | 0 | 2,7,10 | 0.09 | 0 |
| 2 | DPF | 36-A | 601 | 1 | 4,7,8 | 0.82 | 0 | 2,7,10 | 0.19 | 0 |
| 2 | DPF | 40-A | 601 | 1 | 4,7,8 | 1.00 | 0 | 2,7,10 | 0.28 | 0 |
| 2 | DPF | 12-A | 601 | 1 | 4,7,8 | 1.01 | 0 | 2,7,10 | 0.74 | 0 |
| 2 | DPF | 17-A | 601 | 1 | 4,7,8 | 0.98 | 0 | 2,7,10 | 0.06 | 0 |
| 2 | DPF | 37-A | 601 | 1 | 4,7,8 | 0.88 | 0 | 2,7,10 | 0.68 | 0 |
| 2 | DPF | 35-A | 601 | 1 | 4,7,8 | 1.03 | 0 | 2,7,10 | 0.57 | 0 |
| 2 | DPF | 1-A | 601 | 1 | 4,7,8 | 1.24 | 1 (25%) | 2,7,10 | 0.42 | 0 |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 2 | DPF | 32-A | 601 | 1 | 4,7,8 | 0.56 | 0 | 2,7,10 | 0.38 | 0 |
| 2 | DPF | 33-A | 601 | 1 | 4,7,8 | 1.08 | 0 | 2,7,10 | 1.09 | 0 |
| 2 | DPF | 23-A | 601 | 1 | 4,7,8 | 0.92 | 0 | 2,7,10 | 0.38 | 0 |
| 2 | DPF | 29-A | 601 | 1 | 4,7,8 | 0.98 | 0 | 2,7,10 | 0.52 | 0 |
| 2 | DPF | 8-A | 601 | 1 | 4,7,8 | 0.94 | 0 | 2,7,10 | 0.37 | 0 |
| 2 | DPF | 13-A | 601 | 1 | 4,7,8 | 1.15 | 0 | 2,7,10 | 0.43 | 0 |
| 2 | DPF | 27-A | 601 | 1 | 4,7,8 | 0.99 | 0 | 2,7,10 | 0.59 | 0 |
| 2 | DPF | 14-A | 601 | 1 | 4,7,8 | 0.97 | 0 | 2,7,10 | 0.23 | 0 |
| 2 | DPF | 30-A | 601 | 1 | 4,7,8 | 1.06 | 0 | 2,7,10 | 0.58 | 0 |
| 2 | DPF | 7-A | 601 | 1 | 4,7,8 | 1.00 | 0 | 2,7,10 | 0.53 | 0 |
| 2 | DPF | 16-A | 601 | 1 | 4,7,8 | 0.98 | 0 | 2,7,10 | 0.64 | 0 |
| 2 | DPF | 10-A | 601 | 1 | 4,7,8 | 0.87 | 0 | 2,7,10 | 0.70 | 0 |

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 |
|-----|------|-------|-----|------|---------|----------|-------|
| 2 | DPF | 38-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 25-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 5-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 9-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 31-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 26-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 21-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 34-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 3-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 11-A | 601 | 1 | - | 2/2/6/8 | - |
| 2 | DPF | 6-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 2-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 15-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 18-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 22-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 24-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 19-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 20-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 43-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 41-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 42-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 39-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 4-A | 601 | 1 | - | 0/2/6/8 | - |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|----------|-------|
| 2 | DPF | 28-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 36-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 40-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 12-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 17-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 37-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 35-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 1-A | 601 | 1 | - | 2/2/6/8 | - |
| 2 | DPF | 32-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 33-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 23-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 29-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 8-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 13-A | 601 | 1 | - | 2/2/6/8 | - |
| 2 | DPF | 27-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 14-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 30-A | 601 | 1 | - | 1/2/6/8 | - |
| 2 | DPF | 7-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 16-A | 601 | 1 | - | 0/2/6/8 | - |
| 2 | DPF | 10-A | 601 | 1 | - | 0/2/6/8 | - |

All (3) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 2 | 15-A | 601 | DPF | O1-C2 | -2.23 | 1.37 | 1.44 |
| 2 | 1-A | 601 | DPF | O1-C2 | -2.05 | 1.38 | 1.44 |
| 2 | 22-A | 601 | DPF | O1-C2 | -2.02 | 1.38 | 1.44 |

There are no bond angle outliers.

There are no chirality outliers.

All (19) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-------------|
| 2 | 1-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 1-A | 601 | DPF | C3-C2-O1-P1 |
| 2 | 6-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 9-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 11-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 11-A | 601 | DPF | C3-C2-O1-P1 |
| 2 | 12-A | 601 | DPF | C3-C2-O1-P1 |
| 2 | 13-A | 601 | DPF | C4-C1-O3-P1 |

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| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-------------|
| 2 | 13-A | 601 | DPF | C3-C2-O1-P1 |
| 2 | 14-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 15-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 22-A | 601 | DPF | C3-C2-O1-P1 |
| 2 | 25-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 26-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 28-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 30-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 33-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 34-A | 601 | DPF | C4-C1-O3-P1 |
| 2 | 39-A | 601 | DPF | C4-C1-O3-P1 |

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 1 | 32-A | 1 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 32 | A | 125:THR | C | 126:LYS | N | 1.82 |

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

Warning: The R factor obtained from EDS is 0.2977, which does not match the depositor's R factor of 0.181. Please interpret the results in this section carefully.

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, 95th 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-A | 566/577 (98%) | 1.63 | 171 (30%) 1 1 | 0, 0, 0, 0 | 566 (100%) |
| 1 | 2-A | 0/577 | - | - | - | - |
| 1 | 3-A | 0/577 | - | - | - | - |
| 1 | 4-A | 0/577 | - | - | - | - |
| 1 | 5-A | 0/577 | - | - | - | - |
| 1 | 6-A | 0/577 | - | - | - | - |
| 1 | 7-A | 0/577 | - | - | - | - |
| 1 | 8-A | 0/577 | - | - | - | - |
| 1 | 9-A | 0/577 | - | - | - | - |
| 1 | 10-A | 0/577 | - | - | - | - |
| 1 | 11-A | 0/577 | - | - | - | - |
| 1 | 12-A | 0/577 | - | - | - | - |
| 1 | 13-A | 0/577 | - | - | - | - |
| 1 | 14-A | 0/577 | - | - | - | - |
| 1 | 15-A | 0/577 | - | - | - | - |
| 1 | 16-A | 0/577 | - | - | - | - |
| 1 | 17-A | 0/577 | - | - | - | - |
| 1 | 18-A | 0/577 | - | - | - | - |
| 1 | 19-A | 0/577 | - | - | - | - |
| 1 | 20-A | 0/577 | - | - | - | - |
| 1 | 21-A | 0/577 | - | - | - | - |
| 1 | 22-A | 0/577 | - | - | - | - |
| 1 | 23-A | 0/577 | - | - | - | - |
| 1 | 24-A | 0/577 | - | - | - | - |
| 1 | 25-A | 0/577 | - | - | - | - |
| 1 | 26-A | 0/577 | - | - | - | - |
| 1 | 27-A | 0/577 | - | - | - | - |
| 1 | 28-A | 0/577 | - | - | - | - |
| 1 | 29-A | 0/577 | - | - | - | - |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|----------------|--------|-----------------------------|-----------------------|------------|
| 1 | 30-A | 0/577 | - | - | - | - |
| 1 | 31-A | 0/577 | - | - | - | - |
| 1 | 32-A | 0/577 | - | - | - | - |
| 1 | 33-A | 0/577 | - | - | - | - |
| 1 | 34-A | 0/577 | - | - | - | - |
| 1 | 35-A | 0/577 | - | - | - | - |
| 1 | 36-A | 0/577 | - | - | - | - |
| 1 | 37-A | 0/577 | - | - | - | - |
| 1 | 38-A | 0/577 | - | - | - | - |
| 1 | 39-A | 0/577 | - | - | - | - |
| 1 | 40-A | 0/577 | - | - | - | - |
| 1 | 41-A | 0/577 | - | - | - | - |
| 1 | 42-A | 0/577 | - | - | - | - |
| 1 | 43-A | 0/577 | - | - | - | - |
| All | All | 566/24811 (2%) | 1.63 | 171 (30%) 1 1 | 0, 0, 0, 0 | 566 (100%) |

All (171) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1 | 1-A | 515 | SER | 8.0 |
| 1 | 1-A | 514 | TYR | 7.7 |
| 1 | 1-A | 100 | PHE | 7.5 |
| 1 | 1-A | 519 | GLU | 7.1 |
| 1 | 1-A | 518 | ILE | 6.6 |
| 1 | 1-A | 520 | GLY | 6.6 |
| 1 | 1-A | 521 | MET | 6.6 |
| 1 | 1-A | 381 | ALA | 6.2 |
| 1 | 1-A | 383 | ALA | 6.1 |
| 1 | 1-A | 517 | GLU | 6.0 |
| 1 | 1-A | 522 | GLU | 5.8 |
| 1 | 1-A | 124 | GLU | 5.7 |
| 1 | 1-A | 384 | GLU | 5.7 |
| 1 | 1-A | 361 | GLN | 5.6 |
| 1 | 1-A | 362 | MET | 4.9 |
| 1 | 1-A | 532 | SER | 4.8 |
| 1 | 1-A | 451 | GLU | 4.7 |
| 1 | 1-A | 319 | GLN | 4.6 |
| 1 | 1-A | 104 | LYS | 4.5 |
| 1 | 1-A | 513 | PRO | 4.5 |
| 1 | 1-A | 179 | ASP | 4.4 |
| 1 | 1-A | 382 | ASP | 4.3 |
| 1 | 1-A | 102 | THR | 4.3 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 1 | 1-A | 90 | ASN | 4.1 |
| 1 | 1-A | 295 | GLU | 4.1 |
| 1 | 1-A | 392 | GLU | 4.1 |
| 1 | 1-A | 36 | GLU | 4.0 |
| 1 | 1-A | 122 | ASN | 4.0 |
| 1 | 1-A | 360 | LYS | 4.0 |
| 1 | 1-A | 101 | ILE | 3.9 |
| 1 | 1-A | 25 | TYR | 3.9 |
| 1 | 1-A | 516 | ASN | 3.9 |
| 1 | 1-A | 92 | LYS | 3.9 |
| 1 | 1-A | 301 | GLU | 3.8 |
| 1 | 1-A | 125 | THR | 3.8 |
| 1 | 1-A | 460 | MET | 3.7 |
| 1 | 1-A | 77 | GLN | 3.7 |
| 1 | 1-A | 537 | LYS | 3.7 |
| 1 | 1-A | 527 | ASP | 3.6 |
| 1 | 1-A | 355 | PHE | 3.6 |
| 1 | 1-A | 396 | LYS | 3.6 |
| 1 | 1-A | 466 | VAL | 3.5 |
| 1 | 1-A | 23 | LEU | 3.4 |
| 1 | 1-A | 461 | ARG | 3.4 |
| 1 | 1-A | 280 | GLU | 3.4 |
| 1 | 1-A | 12 | LYS | 3.4 |
| 1 | 1-A | 31 | GLU | 3.4 |
| 1 | 1-A | 486 | ARG | 3.4 |
| 1 | 1-A | 22 | PHE | 3.3 |
| 1 | 1-A | 248 | ILE | 3.3 |
| 1 | 1-A | 386 | THR | 3.2 |
| 1 | 1-A | 523 | ASN | 3.1 |
| 1 | 1-A | 284 | LYS | 3.1 |
| 1 | 1-A | 433 | PHE | 3.1 |
| 1 | 1-A | 549 | ASP | 3.1 |
| 1 | 1-A | 322 | ASP | 3.1 |
| 1 | 1-A | 431 | LEU | 3.1 |
| 1 | 1-A | 564 | GLU | 3.1 |
| 1 | 1-A | 334 | LYS | 3.1 |
| 1 | 1-A | 505 | THR | 3.1 |
| 1 | 1-A | 87 | ASP | 3.1 |
| 1 | 1-A | 105 | VAL | 3.1 |
| 1 | 1-A | 289 | ASP | 3.0 |
| 1 | 1-A | 405 | GLU | 3.0 |
| 1 | 1-A | 450 | SER | 3.0 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 1 | 1-A | 465 | GLY | 3.0 |
| 1 | 1-A | 389 | GLU | 3.0 |
| 1 | 1-A | 534 | GLU | 3.0 |
| 1 | 1-A | 236 | LEU | 3.0 |
| 1 | 1-A | 365 | LEU | 3.0 |
| 1 | 1-A | 441 | VAL | 3.0 |
| 1 | 1-A | 359 | LEU | 3.0 |
| 1 | 1-A | 489 | LYS | 2.9 |
| 1 | 1-A | 364 | LEU | 2.9 |
| 1 | 1-A | 91 | HIS | 2.9 |
| 1 | 1-A | 13 | TRP | 2.9 |
| 1 | 1-A | 544 | GLU | 2.9 |
| 1 | 1-A | 103 | GLY | 2.9 |
| 1 | 1-A | 531 | LYS | 2.9 |
| 1 | 1-A | 24 | ASN | 2.9 |
| 1 | 1-A | 5 | VAL | 2.8 |
| 1 | 1-A | 292 | LYS | 2.8 |
| 1 | 1-A | 490 | GLU | 2.8 |
| 1 | 1-A | 7 | LEU | 2.8 |
| 1 | 1-A | 200 | ASN | 2.8 |
| 1 | 1-A | 510 | THR | 2.8 |
| 1 | 1-A | 434 | ASN | 2.7 |
| 1 | 1-A | 470 | SER | 2.7 |
| 1 | 1-A | 80 | THR | 2.7 |
| 1 | 1-A | 303 | ARG | 2.7 |
| 1 | 1-A | 452 | ASP | 2.7 |
| 1 | 1-A | 14 | LYS | 2.7 |
| 1 | 1-A | 357 | SER | 2.7 |
| 1 | 1-A | 78 | ARG | 2.7 |
| 1 | 1-A | 16 | LYS | 2.6 |
| 1 | 1-A | 52 | ASP | 2.6 |
| 1 | 1-A | 253 | ASN | 2.6 |
| 1 | 1-A | 459 | ILE | 2.6 |
| 1 | 1-A | 261 | PHE | 2.6 |
| 1 | 1-A | 530 | GLU | 2.6 |
| 1 | 1-A | 420 | TYR | 2.5 |
| 1 | 1-A | 290 | LEU | 2.5 |
| 1 | 1-A | 157 | ASP | 2.5 |
| 1 | 1-A | 294 | GLU | 2.5 |
| 1 | 1-A | 368 | GLU | 2.5 |
| 1 | 1-A | 18 | ILE | 2.5 |
| 1 | 1-A | 126 | LYS | 2.5 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 1 | 1-A | 435 | HIS | 2.5 |
| 1 | 1-A | 437 | SER | 2.5 |
| 1 | 1-A | 8 | MET | 2.5 |
| 1 | 1-A | 464 | ARG | 2.5 |
| 1 | 1-A | 358 | ILE | 2.4 |
| 1 | 1-A | 85 | VAL | 2.4 |
| 1 | 1-A | 276 | LYS | 2.4 |
| 1 | 1-A | 123 | PRO | 2.4 |
| 1 | 1-A | 363 | PRO | 2.4 |
| 1 | 1-A | 278 | VAL | 2.4 |
| 1 | 1-A | 375 | PHE | 2.4 |
| 1 | 1-A | 529 | ILE | 2.4 |
| 1 | 1-A | 68 | VAL | 2.4 |
| 1 | 1-A | 70 | GLU | 2.4 |
| 1 | 1-A | 565 | LYS | 2.3 |
| 1 | 1-A | 34 | VAL | 2.3 |
| 1 | 1-A | 204 | ASN | 2.3 |
| 1 | 1-A | 412 | PHE | 2.3 |
| 1 | 1-A | 273 | ASP | 2.3 |
| 1 | 1-A | 568 | ASP | 2.3 |
| 1 | 1-A | 403 | THR | 2.3 |
| 1 | 1-A | 175 | LEU | 2.3 |
| 1 | 1-A | 345 | MET | 2.3 |
| 1 | 1-A | 367 | LYS | 2.3 |
| 1 | 1-A | 526 | TRP | 2.2 |
| 1 | 1-A | 406 | THR | 2.2 |
| 1 | 1-A | 215 | PHE | 2.2 |
| 1 | 1-A | 354 | PHE | 2.2 |
| 1 | 1-A | 387 | ALA | 2.2 |
| 1 | 1-A | 93 | ASP | 2.2 |
| 1 | 1-A | 269 | TYR | 2.2 |
| 1 | 1-A | 146 | ASP | 2.2 |
| 1 | 1-A | 570 | PHE | 2.2 |
| 1 | 1-A | 89 | CYS | 2.2 |
| 1 | 1-A | 457 | TYR | 2.2 |
| 1 | 1-A | 286 | LYS | 2.2 |
| 1 | 1-A | 296 | LYS | 2.2 |
| 1 | 1-A | 366 | VAL | 2.1 |
| 1 | 1-A | 281 | PHE | 2.1 |
| 1 | 1-A | 17 | CYS | 2.1 |
| 1 | 1-A | 494 | TYR | 2.1 |
| 1 | 1-A | 543 | ASP | 2.1 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1 | 1-A | 304 | THR | 2.1 |
| 1 | 1-A | 65 | GLN | 2.1 |
| 1 | 1-A | 267 | ALA | 2.1 |
| 1 | 1-A | 180 | LEU | 2.1 |
| 1 | 1-A | 266 | LEU | 2.1 |
| 1 | 1-A | 369 | LEU | 2.1 |
| 1 | 1-A | 393 | MET | 2.1 |
| 1 | 1-A | 528 | PRO | 2.1 |
| 1 | 1-A | 469 | VAL | 2.1 |
| 1 | 1-A | 20 | ASN | 2.1 |
| 1 | 1-A | 141 | GLY | 2.1 |
| 1 | 1-A | 463 | GLY | 2.1 |
| 1 | 1-A | 480 | TRP | 2.1 |
| 1 | 1-A | 19 | GLU | 2.1 |
| 1 | 1-A | 331 | GLU | 2.1 |
| 1 | 1-A | 533 | ASP | 2.0 |
| 1 | 1-A | 27 | LEU | 2.0 |
| 1 | 1-A | 394 | GLY | 2.0 |
| 1 | 1-A | 542 | SER | 2.0 |
| 1 | 1-A | 98 | VAL | 2.0 |
| 1 | 1-A | 535 | VAL | 2.0 |
| 1 | 1-A | 86 | ARG | 2.0 |

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 monosaccharides in this entry.

6.4 Ligands [\(i\)](#)

LIGAND-RSR INFOmissingINFO

6.5 Other polymers [\(i\)](#)

There are no such residues in this entry.