Full wwPDB EM Validation Report

Jan 30, 2021 – 06:26 AM GMT

PDB ID	:	6Z0V
EMDB ID	:	EMD-11024
Title	:	CryoEM structure of the Chikungunya virus nsP1 complex
Authors	:	Reguera, J.; Jones, R.; Arranz-Avila, R.
Deposited on	:	2020-05-11
Resolution	:	2.60 Å(reported)

This is a Full wwPDB EM 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/EMValidationReportHelp
with specific help available everywhere you see the symbol.

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

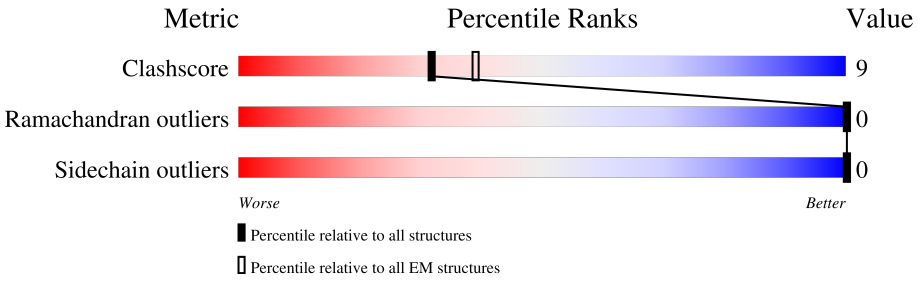
EMDB validation analysis	:	0.0.0.dev61
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.16

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.60 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	472	75% 21% .
1	C	472	75% 20% .
1	E	472	75% 21% .
1	G	472	74% 22% .
1	I	472	75% 21% .
1	K	472	76% 20% .
1	M	472	74% 22% .
1	O	472	75% 20% .

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Mol	Chain	Length	Quality of chain
1	Q	472	75% 20%
1	S	472	74% 22%
1	V	472	76% 20%
1	X	472	76% 20%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 42972 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Polyprotein P1234.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	452	Total 3502	C 2222	N 602	O 648	S 30	4	0
1	C	452	Total 3502	C 2222	N 602	O 648	S 30	4	0
1	E	452	Total 3502	C 2222	N 602	O 648	S 30	4	0
1	G	452	Total 3502	C 2222	N 602	O 648	S 30	4	0
1	I	452	Total 3502	C 2222	N 602	O 648	S 30	4	0
1	K	452	Total 3502	C 2222	N 602	O 648	S 30	4	0
1	M	452	Total 3502	C 2222	N 602	O 648	S 30	4	0
1	O	452	Total 3502	C 2222	N 602	O 648	S 30	4	0
1	Q	452	Total 3502	C 2222	N 602	O 648	S 30	4	0
1	S	452	Total 3502	C 2222	N 602	O 648	S 30	4	0
1	V	452	Total 3502	C 2222	N 602	O 648	S 30	4	0
1	X	452	Total 3502	C 2222	N 602	O 648	S 30	4	0

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
2	G	1	Total 1	Zn 1	0
2	Q	1	Total 1	Zn 1	0
2	K	1	Total 1	Zn 1	0

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Mol	Chain	Residues	Atoms	AltConf
2	E	1	Total Zn 1 1	0
2	I	1	Total Zn 1 1	0
2	C	1	Total Zn 1 1	0
2	V	1	Total Zn 1 1	0
2	A	1	Total Zn 1 1	0
2	X	1	Total Zn 1 1	0
2	O	1	Total Zn 1 1	0
2	S	1	Total Zn 1 1	0
2	M	1	Total Zn 1 1	0

- Molecule 3 is water.

Mol	Chain	Residues	Atoms	AltConf
3	A	78	Total O 78 78	0
3	C	78	Total O 78 78	0
3	E	78	Total O 78 78	0
3	G	78	Total O 78 78	0
3	I	78	Total O 78 78	0
3	K	78	Total O 78 78	0
3	M	78	Total O 78 78	0
3	O	78	Total O 78 78	0
3	Q	78	Total O 78 78	0
3	S	78	Total O 78 78	0

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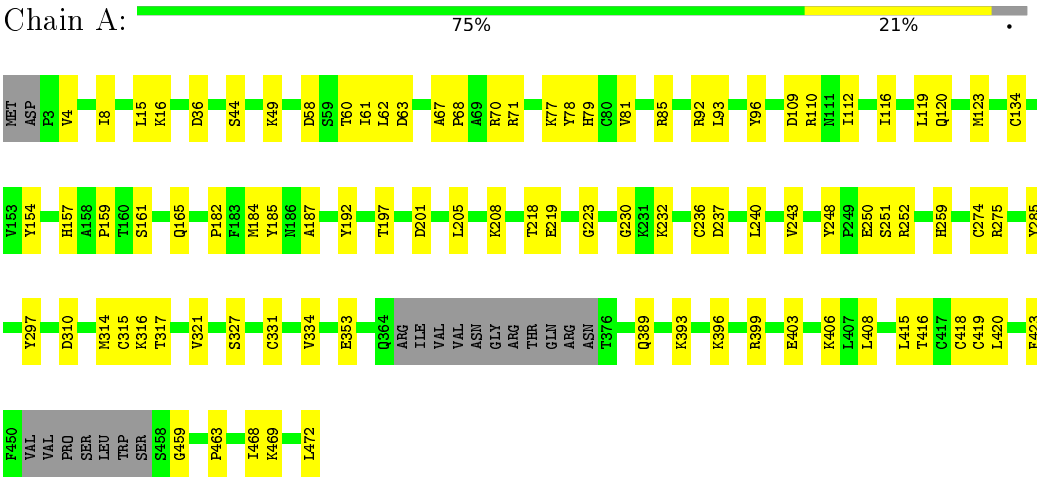
Mol	Chain	Residues	Atoms	AltConf
3	V	78	Total O 78 78	0
3	X	78	Total O 78 78	0

3 Residue-property plots (i)

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

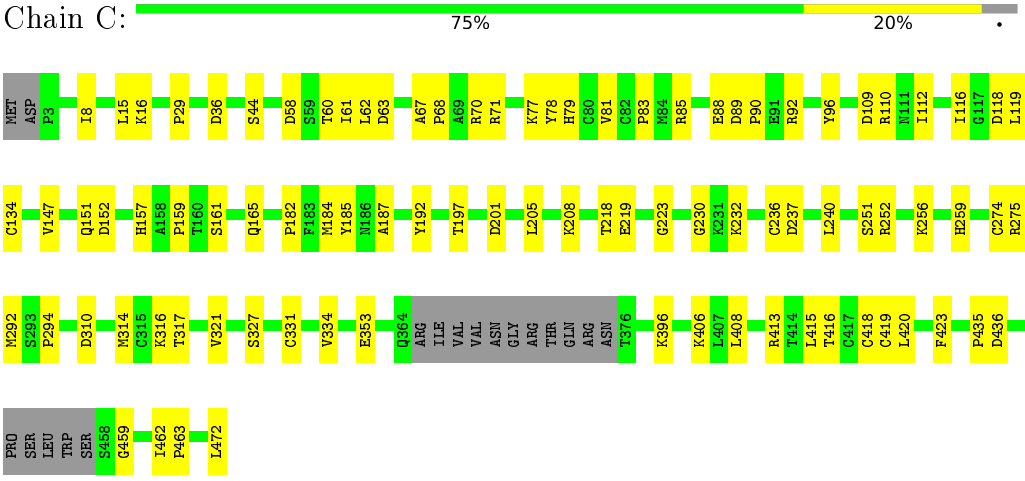
- Molecule 1: Polyprotein P1234

Chain A:



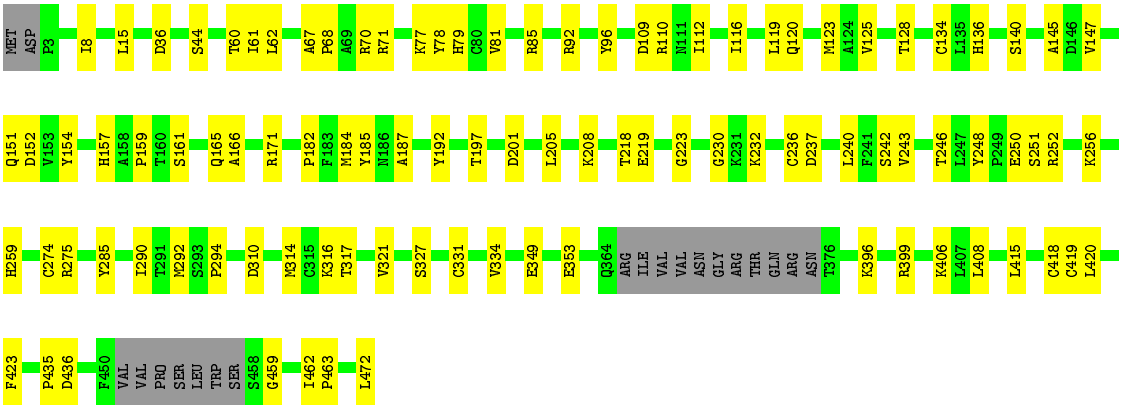
- Molecule 1: Polyprotein P1234

Chain C:



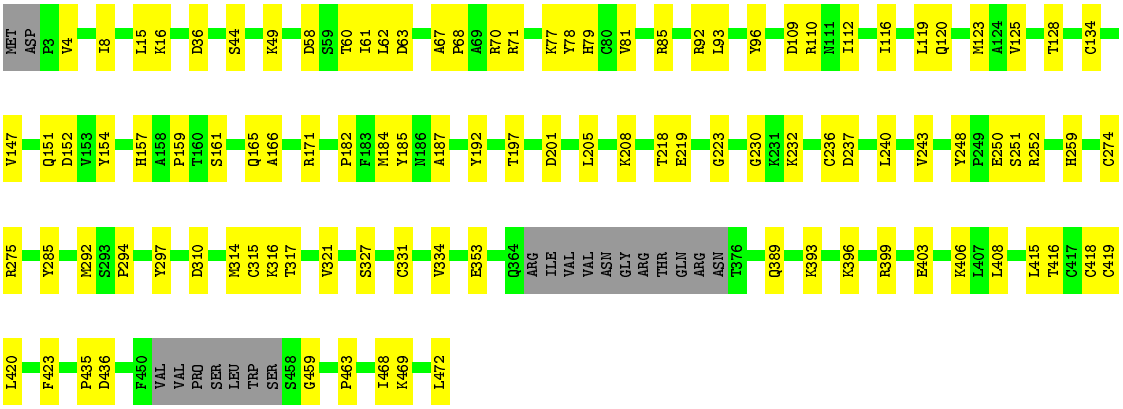
- Molecule 1: Polyprotein P1234

Chain E:



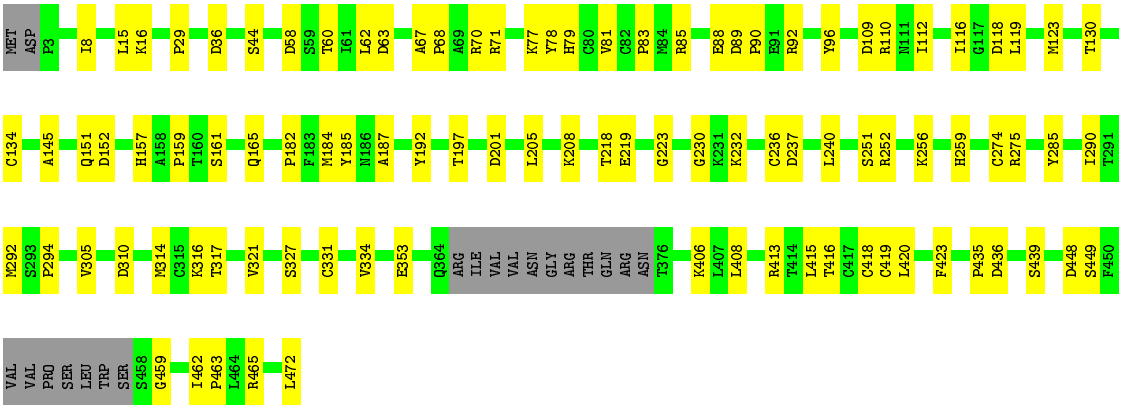
• Molecule 1: Polyprotein P1234

Chain G:



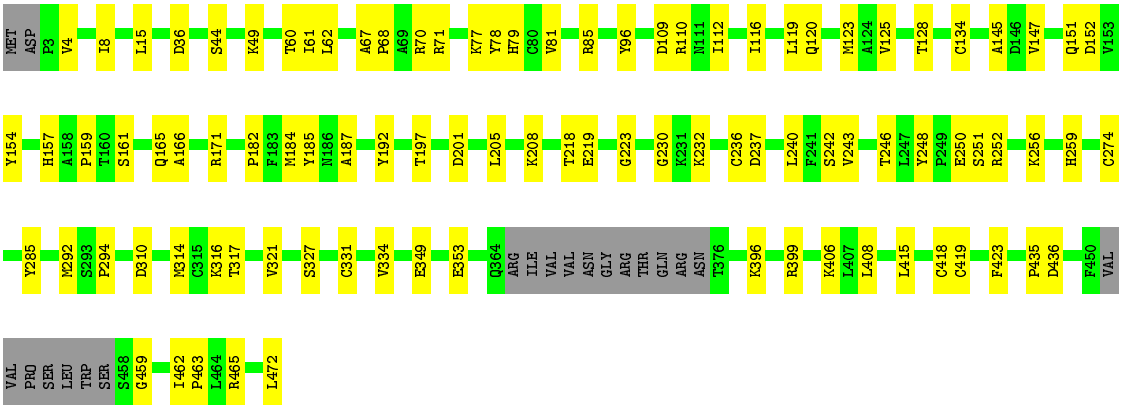
• Molecule 1: Polyprotein P1234

Chain I:



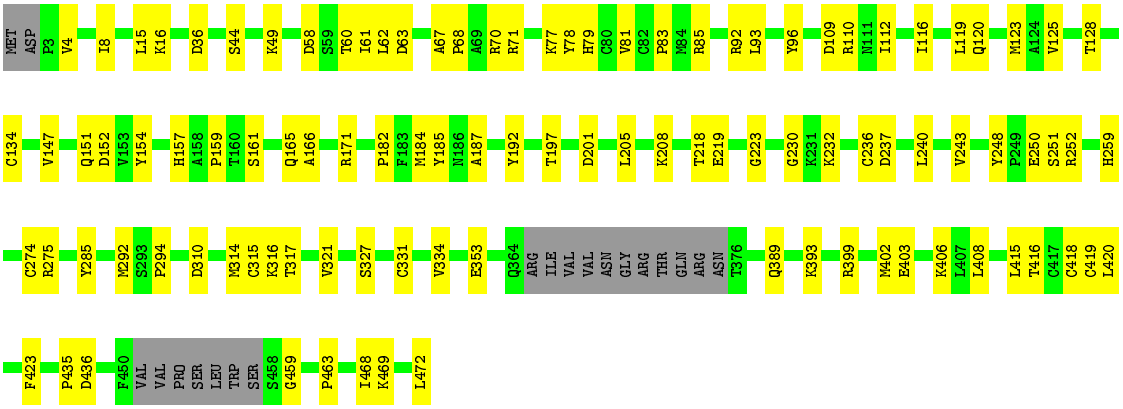
• Molecule 1: Polyprotein P1234

Chain K:



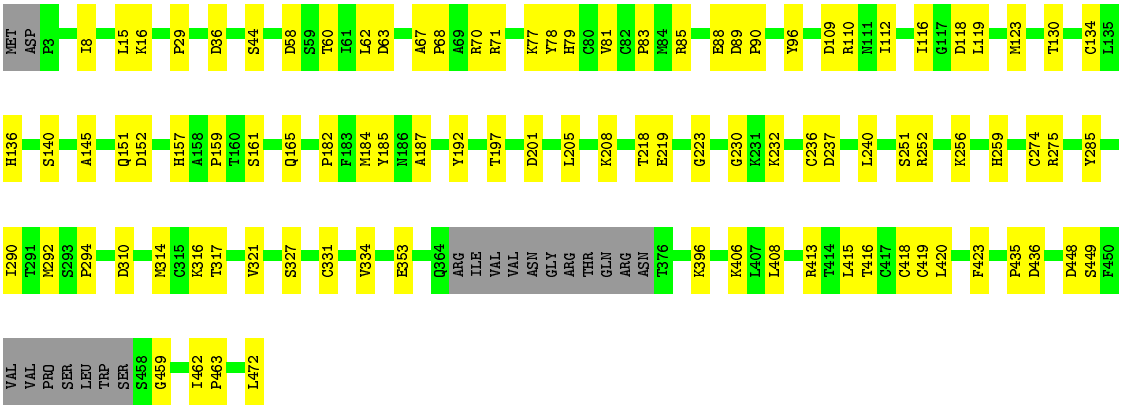
• Molecule 1: Polyprotein P1234

Chain M:



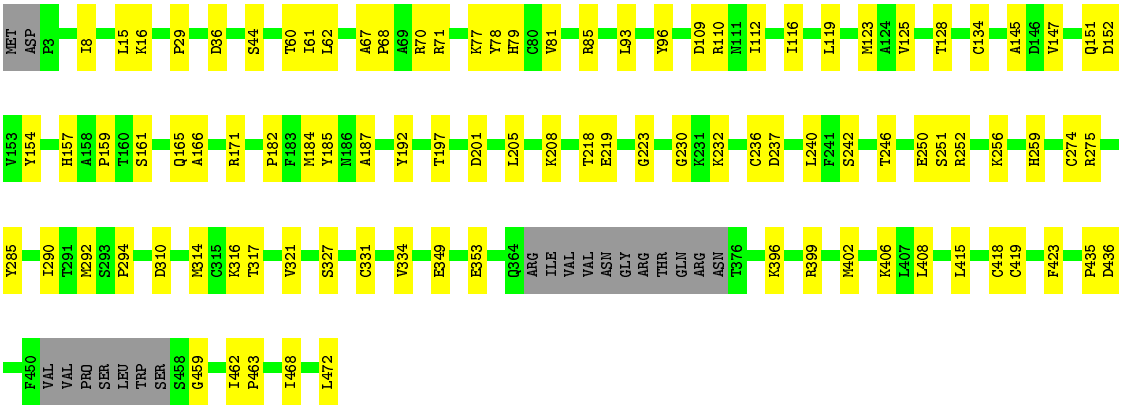
• Molecule 1: Polyprotein P1234

Chain O:



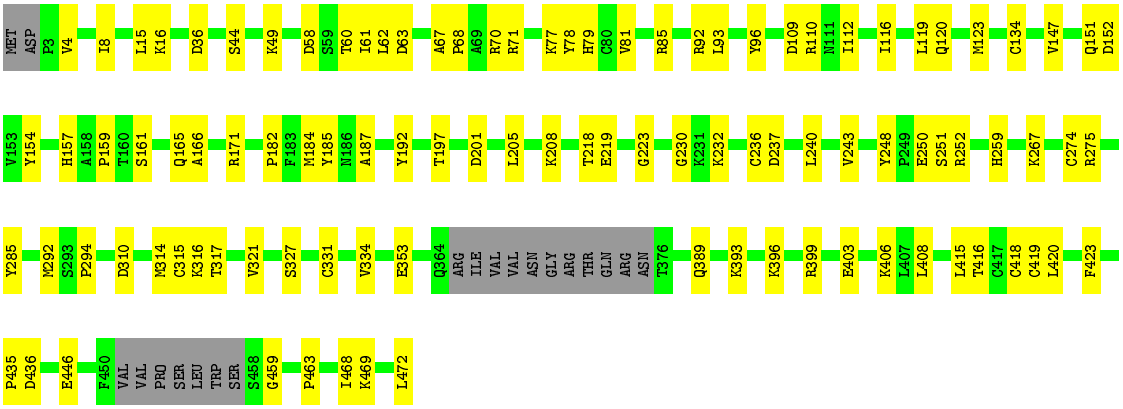
• Molecule 1: Polyprotein P1234

Chain Q:



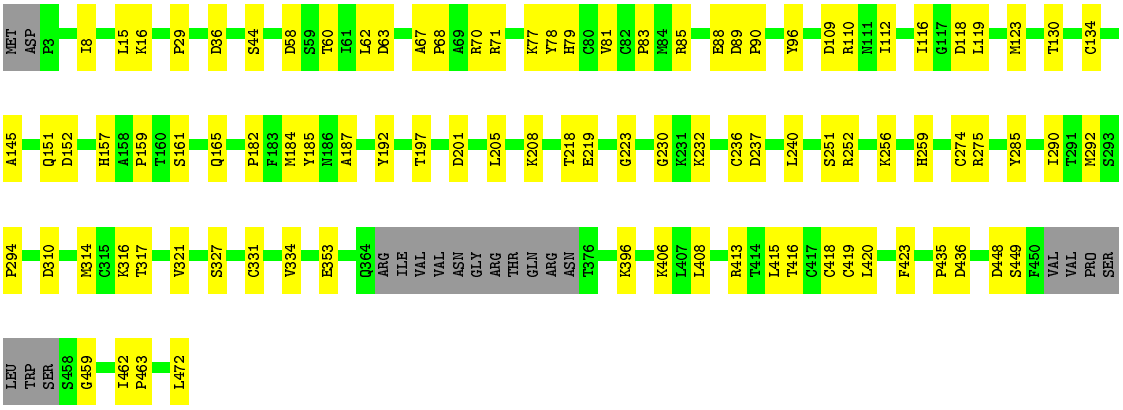
• Molecule 1: Polyprotein P1234

Chain S:



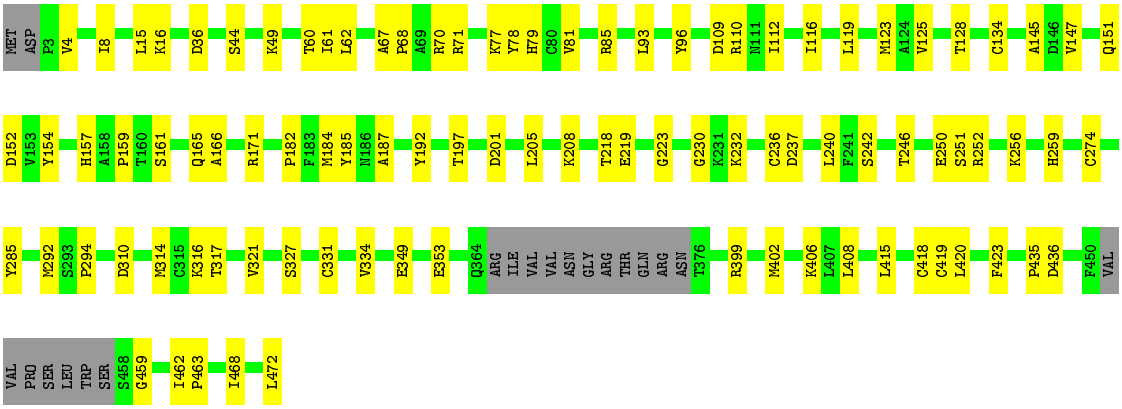
• Molecule 1: Polyprotein P1234

Chain V:



• Molecule 1: Polyprotein P1234

Chain X:


MET ASP P3 V4 I8 L15 K16 D36 S44 K49 T60 I61 L62 A67 P68 A69 R70 R71 K77 Y78 H79 C80 V81 R85 L93 Y96 D109 R110 N111 I112 I116 L119 M123 A124 V125 T128 C134 A145 D146 V147 Q151
D152 V153 Y154 H157 A158 P159 T160 S161 Q165 A166 R171 P182 F183 M184 Y185 N186 A187 Y192 T197 D201 L205 K208 T218 E219 G223 G230 K231 K232 C236 D237 L240 F241 S242 T246 E250 S251 R252 K256 H259 C274
Y285 M292 S293 P294 D310 M314 C315 K316 T317 V321 S327 C331 V334 E349 E353 Q364 ARG ILE VAL VAL ASN GLY ARG THR GLN ARG ASN T376 R399 M402 K406 L407 L408 L415 C418 C419 L420 F423 P435 D436 F450 VAL
VAL PRO SER LEU TRP SER S458 G459 I462 P463 I468 L472

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C12	Depositor
Number of particles used	94018	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION; CTF was estimated from movie frames aligned without dose-weighting. Per particle CTF correction was also performed with polished particles.	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	38.5	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	165000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.178	Depositor
Minimum map value	-0.120	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.007	Depositor
Recommended contour level	0.007	Depositor
Map size (Å)	248.1, 248.1, 248.1	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.827, 0.827, 0.827	Depositor

5 Model quality

5.1 Standard geometry

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.49	0/3587	0.55	0/4870
1	C	0.49	0/3587	0.55	0/4870
1	E	0.49	0/3587	0.55	0/4870
1	G	0.48	0/3587	0.55	0/4870
1	I	0.49	0/3587	0.55	0/4870
1	K	0.49	0/3587	0.55	0/4870
1	M	0.48	0/3587	0.55	0/4870
1	O	0.49	0/3587	0.55	0/4870
1	Q	0.49	0/3587	0.55	0/4870
1	S	0.48	0/3587	0.55	0/4870
1	V	0.49	0/3587	0.55	0/4870
1	X	0.49	0/3587	0.55	0/4870
All	All	0.49	0/43044	0.55	0/58440

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3502	0	3446	68	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	3502	0	3446	72	0
1	E	3502	0	3446	70	0
1	G	3502	0	3446	72	0
1	I	3502	0	3446	74	0
1	K	3502	0	3446	67	0
1	M	3502	0	3446	72	0
1	O	3502	0	3446	72	0
1	Q	3502	0	3446	67	0
1	S	3502	0	3446	72	0
1	V	3502	0	3446	70	0
1	X	3502	0	3446	68	0
2	A	1	0	0	0	0
2	C	1	0	0	0	0
2	E	1	0	0	0	0
2	G	1	0	0	0	0
2	I	1	0	0	0	0
2	K	1	0	0	0	0
2	M	1	0	0	0	0
2	O	1	0	0	0	0
2	Q	1	0	0	0	0
2	S	1	0	0	0	0
2	V	1	0	0	0	0
2	X	1	0	0	0	0
3	A	78	0	0	3	0
3	C	78	0	0	2	0
3	E	78	0	0	2	0
3	G	78	0	0	3	0
3	I	78	0	0	2	0
3	K	78	0	0	2	0
3	M	78	0	0	3	0
3	O	78	0	0	2	0
3	Q	78	0	0	2	0
3	S	78	0	0	3	0
3	V	78	0	0	2	0
3	X	78	0	0	2	0
All	All	42972	0	41352	790	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 9.

All (790) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:71:ARG:HB3	1:G:78:TYR:HD2	1.47	0.80
1:O:71:ARG:HB3	1:O:78:TYR:HD2	1.46	0.80
1:I:71:ARG:HB3	1:I:78:TYR:HD2	1.46	0.80
1:S:71:ARG:HB3	1:S:78:TYR:HD2	1.47	0.80
1:A:71:ARG:HB3	1:A:78:TYR:HD2	1.47	0.80
1:M:71:ARG:HB3	1:M:78:TYR:HD2	1.47	0.80
1:C:71:ARG:HB3	1:C:78:TYR:HD2	1.45	0.79
1:X:71:ARG:HB3	1:X:78:TYR:HD2	1.47	0.79
1:V:71:ARG:HB3	1:V:78:TYR:HD2	1.46	0.79
1:C:85:ARG:HH12	1:C:459:GLY:HA3	1.49	0.78
1:V:85:ARG:HH12	1:V:459:GLY:HA3	1.48	0.78
1:K:71:ARG:HB3	1:K:78:TYR:HD2	1.47	0.78
1:O:85:ARG:HH12	1:O:459:GLY:HA3	1.48	0.78
1:Q:71:ARG:HB3	1:Q:78:TYR:HD2	1.47	0.78
1:E:71:ARG:HB3	1:E:78:TYR:HD2	1.47	0.77
1:I:85:ARG:HH12	1:I:459:GLY:HA3	1.49	0.77
1:E:205:LEU:HD11	1:E:240:LEU:HD12	1.68	0.75
1:X:205:LEU:HD11	1:X:240:LEU:HD12	1.68	0.75
1:E:85:ARG:HH12	1:E:459:GLY:HA3	1.51	0.75
1:Q:85:ARG:HH12	1:Q:459:GLY:HA3	1.52	0.75
1:X:85:ARG:HH12	1:X:459:GLY:HA3	1.52	0.74
1:G:85:ARG:HH12	1:G:459:GLY:HA3	1.52	0.74
1:O:44:SER:OG	1:O:151:GLN:NE2	2.18	0.74
1:K:205:LEU:HD11	1:K:240:LEU:HD12	1.68	0.73
1:S:85:ARG:HH12	1:S:459:GLY:HA3	1.52	0.73
1:A:85:ARG:HH12	1:A:459:GLY:HA3	1.52	0.73
1:Q:205:LEU:HD11	1:Q:240:LEU:HD12	1.68	0.73
1:K:85:ARG:HH12	1:K:459:GLY:HA3	1.52	0.73
1:M:85:ARG:HH12	1:M:459:GLY:HA3	1.52	0.73
1:E:44:SER:OG	1:E:151:GLN:NE2	2.17	0.73
1:I:44:SER:HG	1:I:151:GLN:HE21	1.35	0.72
1:C:44:SER:OG	1:C:151:GLN:NE2	2.18	0.72
1:E:201:ASP:OD1	1:E:252:ARG:NH1	2.23	0.71
1:V:201:ASP:OD1	1:V:252:ARG:NH1	2.23	0.71
1:A:201:ASP:OD1	1:A:252:ARG:NH1	2.24	0.71
1:C:201:ASP:OD1	1:C:252:ARG:NH1	2.23	0.71
1:Q:201:ASP:OD1	1:Q:252:ARG:NH1	2.24	0.71
1:K:201:ASP:OD1	1:K:252:ARG:NH1	2.24	0.71
1:G:201:ASP:OD1	1:G:252:ARG:NH1	2.24	0.70
1:I:205:LEU:HD11	1:I:240:LEU:HD12	1.73	0.70
1:O:205:LEU:HD11	1:O:240:LEU:HD12	1.73	0.70
1:V:205:LEU:HD11	1:V:240:LEU:HD12	1.74	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:201:ASP:OD1	1:I:252:ARG:NH1	2.23	0.70
1:O:201:ASP:OD1	1:O:252:ARG:NH1	2.23	0.70
1:G:321:VAL:O	3:G:1101:HOH:O	2.09	0.70
1:M:205:LEU:HD11	1:M:240:LEU:HD12	1.74	0.70
1:S:205:LEU:HD11	1:S:240:LEU:HD12	1.74	0.70
1:X:201:ASP:OD1	1:X:252:ARG:NH1	2.24	0.70
1:M:321:VAL:O	3:M:1101:HOH:O	2.09	0.70
1:S:201:ASP:OD1	1:S:252:ARG:NH1	2.24	0.70
1:C:205:LEU:HD11	1:C:240:LEU:HD12	1.73	0.69
1:G:205:LEU:HD11	1:G:240:LEU:HD12	1.74	0.69
1:I:44:SER:OG	1:I:151:GLN:NE2	2.18	0.69
1:M:201:ASP:OD1	1:M:252:ARG:NH1	2.24	0.69
1:S:44:SER:OG	1:S:151:GLN:NE2	2.18	0.69
1:A:205:LEU:HD11	1:A:240:LEU:HD12	1.74	0.69
1:K:462:ILE:HG23	1:K:463:PRO:HD3	1.75	0.69
1:E:462:ILE:HG23	1:E:463:PRO:HD3	1.75	0.69
1:V:44:SER:OG	1:V:151:GLN:NE2	2.18	0.69
1:S:321:VAL:O	3:S:1101:HOH:O	2.09	0.68
1:A:321:VAL:O	3:A:1101:HOH:O	2.09	0.68
1:M:44:SER:OG	1:M:151:GLN:NE2	2.18	0.68
1:C:462:ILE:HG23	1:C:463:PRO:HD3	1.76	0.68
1:Q:44:SER:OG	1:Q:151:GLN:NE2	2.17	0.68
1:X:462:ILE:HG23	1:X:463:PRO:HD3	1.76	0.68
1:I:462:ILE:HG23	1:I:463:PRO:HD3	1.76	0.67
1:K:36:ASP:OD1	3:K:1101:HOH:O	2.12	0.67
1:Q:462:ILE:HG23	1:Q:463:PRO:HD3	1.76	0.67
1:E:36:ASP:OD1	3:E:1101:HOH:O	2.11	0.67
1:K:44:SER:OG	1:K:151:GLN:NE2	2.18	0.67
1:X:44:SER:OG	1:X:151:GLN:NE2	2.18	0.67
1:E:321:VAL:O	3:E:1102:HOH:O	2.12	0.67
1:X:36:ASP:OD1	3:X:1101:HOH:O	2.12	0.67
1:Q:321:VAL:O	3:Q:1102:HOH:O	2.12	0.67
1:V:462:ILE:HG23	1:V:463:PRO:HD3	1.76	0.67
1:K:321:VAL:O	3:K:1102:HOH:O	2.12	0.67
1:X:321:VAL:O	3:X:1102:HOH:O	2.12	0.67
1:O:462:ILE:HG23	1:O:463:PRO:HD3	1.76	0.67
1:A:44:SER:OG	1:A:151:GLN:NE2	2.18	0.66
1:O:321:VAL:O	3:O:1101:HOH:O	2.13	0.66
1:Q:36:ASP:OD1	3:Q:1101:HOH:O	2.12	0.66
1:V:321:VAL:O	3:V:1101:HOH:O	2.13	0.66
1:S:36:ASP:OD1	3:S:1102:HOH:O	2.14	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:321:VAL:O	3:I:1101:HOH:O	2.13	0.66
1:G:237:ASP:OD2	1:G:251:SER:OG	2.13	0.65
1:S:237:ASP:OD2	1:S:251:SER:OG	2.13	0.65
1:Q:237:ASP:OD2	1:Q:251:SER:OG	2.13	0.65
1:C:36:ASP:OD1	3:C:1102:HOH:O	2.15	0.65
1:C:321:VAL:O	3:C:1101:HOH:O	2.13	0.65
1:K:237:ASP:OD2	1:K:251:SER:OG	2.13	0.65
1:O:237:ASP:OD2	1:O:251:SER:OG	2.14	0.65
1:V:109:ASP:O	1:V:110:ARG:NH1	2.30	0.65
1:G:36:ASP:OD1	3:G:1102:HOH:O	2.14	0.65
1:M:36:ASP:OD1	3:M:1102:HOH:O	2.14	0.65
1:V:36:ASP:OD1	3:V:1102:HOH:O	2.14	0.64
1:A:36:ASP:OD1	3:A:1102:HOH:O	2.14	0.64
1:O:109:ASP:O	1:O:110:ARG:NH1	2.31	0.64
1:M:237:ASP:OD2	1:M:251:SER:OG	2.13	0.64
1:O:36:ASP:OD1	3:O:1102:HOH:O	2.15	0.64
1:I:36:ASP:OD1	3:I:1102:HOH:O	2.14	0.64
1:C:109:ASP:O	1:C:110:ARG:NH1	2.30	0.64
1:M:161:SER:O	1:M:165:GLN:HG2	1.99	0.63
1:Q:109:ASP:O	1:Q:110:ARG:NH1	2.31	0.63
1:S:161:SER:O	1:S:165:GLN:HG2	1.99	0.63
1:X:109:ASP:O	1:X:110:ARG:NH1	2.31	0.63
1:G:161:SER:O	1:G:165:GLN:HG2	1.99	0.62
1:A:109:ASP:O	1:A:110:ARG:NH1	2.32	0.62
1:G:44:SER:OG	1:G:151:GLN:NE2	2.18	0.62
1:K:109:ASP:O	1:K:110:ARG:NH1	2.32	0.62
1:I:109:ASP:O	1:I:110:ARG:NH1	2.31	0.62
1:O:44:SER:HG	1:O:151:GLN:HE21	1.42	0.62
1:S:109:ASP:O	1:S:110:ARG:NH1	2.32	0.62
1:A:161:SER:O	1:A:165:GLN:HG2	1.99	0.62
1:C:418:CYS:SG	1:C:419:CYS:N	2.73	0.62
1:G:44:SER:HG	1:G:151:GLN:HE21	1.48	0.62
1:K:187:ALA:O	1:K:252:ARG:NH2	2.33	0.62
1:O:418:CYS:SG	1:O:419:CYS:N	2.73	0.62
1:O:161:SER:O	1:O:165:GLN:HG2	2.00	0.62
1:V:418:CYS:SG	1:V:419:CYS:N	2.73	0.61
1:I:161:SER:O	1:I:165:GLN:HG2	2.00	0.61
1:I:418:CYS:SG	1:I:419:CYS:N	2.73	0.61
1:E:109:ASP:O	1:E:110:ARG:NH1	2.31	0.61
1:K:161:SER:O	1:K:165:GLN:HG2	2.01	0.61
1:M:109:ASP:O	1:M:110:ARG:NH1	2.32	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:V:161:SER:O	1:V:165:GLN:HG2	2.00	0.61
1:G:406:LYS:O	1:I:316:LYS:NZ	2.34	0.61
1:M:406:LYS:O	1:O:316:LYS:NZ	2.34	0.61
1:A:237:ASP:OD2	1:A:251:SER:OG	2.13	0.61
1:I:187:ALA:O	1:I:252:ARG:NH2	2.34	0.61
1:Q:161:SER:O	1:Q:165:GLN:HG2	2.01	0.61
1:C:187:ALA:O	1:C:252:ARG:NH2	2.34	0.60
1:I:119:LEU:O	1:I:123:MET:HG2	2.01	0.60
1:O:119:LEU:O	1:O:123:MET:HG2	2.01	0.60
1:E:187:ALA:O	1:E:252:ARG:NH2	2.33	0.60
1:G:109:ASP:O	1:G:110:ARG:NH1	2.32	0.60
1:S:406:LYS:O	1:V:316:LYS:NZ	2.34	0.60
1:O:187:ALA:O	1:O:252:ARG:NH2	2.34	0.60
1:V:187:ALA:O	1:V:252:ARG:NH2	2.34	0.60
1:I:237:ASP:OD2	1:I:251:SER:OG	2.15	0.60
1:C:161:SER:O	1:C:165:GLN:HG2	2.01	0.60
1:K:119:LEU:O	1:K:123:MET:HG2	2.02	0.60
1:O:406:LYS:O	1:Q:316:LYS:NZ	2.35	0.60
1:S:418:CYS:SG	1:S:419:CYS:N	2.73	0.60
1:X:187:ALA:O	1:X:252:ARG:NH2	2.33	0.60
1:I:406:LYS:O	1:K:316:LYS:NZ	2.35	0.60
1:Q:187:ALA:O	1:Q:252:ARG:NH2	2.33	0.60
1:X:161:SER:O	1:X:165:GLN:HG2	2.01	0.60
1:A:406:LYS:O	1:C:316:LYS:NZ	2.34	0.59
1:E:161:SER:O	1:E:165:GLN:HG2	2.01	0.59
1:A:418:CYS:SG	1:A:419:CYS:N	2.73	0.59
1:C:406:LYS:O	1:E:316:LYS:NZ	2.35	0.59
1:C:119:LEU:O	1:C:123:MET:HG2	2.02	0.59
1:M:418:CYS:SG	1:M:419:CYS:N	2.73	0.59
1:C:237:ASP:OD2	1:C:251:SER:OG	2.15	0.59
1:V:406:LYS:O	1:X:316:LYS:NZ	2.35	0.59
1:X:119:LEU:O	1:X:123:MET:HG2	2.02	0.59
1:G:418:CYS:SG	1:G:419:CYS:N	2.73	0.59
1:M:187:ALA:O	1:M:252:ARG:NH2	2.36	0.59
1:X:237:ASP:OD2	1:X:251:SER:OG	2.13	0.59
1:E:119:LEU:O	1:E:123:MET:HG2	2.02	0.59
1:S:44:SER:HG	1:S:151:GLN:HE21	1.47	0.59
1:G:187:ALA:O	1:G:252:ARG:NH2	2.36	0.58
1:V:119:LEU:O	1:V:123:MET:HG2	2.02	0.58
1:Q:119:LEU:O	1:Q:123:MET:HG2	2.02	0.58
1:A:187:ALA:O	1:A:252:ARG:NH2	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:71:ARG:HB3	1:O:78:TYR:CD2	2.34	0.58
1:C:408:LEU:HD13	1:E:316:LYS:HG3	1.86	0.58
1:X:44:SER:HG	1:X:151:GLN:HE21	1.49	0.58
1:I:408:LEU:HD13	1:K:316:LYS:HG3	1.86	0.58
1:S:187:ALA:O	1:S:252:ARG:NH2	2.36	0.58
1:E:237:ASP:OD2	1:E:251:SER:OG	2.13	0.57
1:V:408:LEU:HD13	1:X:316:LYS:HG3	1.86	0.57
1:A:120:GLN:HB2	1:A:469:LYS:HE2	1.86	0.57
1:V:237:ASP:OD2	1:V:251:SER:OG	2.15	0.57
1:M:120:GLN:HB2	1:M:469:LYS:HE2	1.86	0.57
1:K:406:LYS:O	1:M:316:LYS:NZ	2.38	0.57
1:E:406:LYS:O	1:G:316:LYS:NZ	2.38	0.57
1:S:120:GLN:HB2	1:S:469:LYS:HE2	1.86	0.57
1:C:71:ARG:HB3	1:C:78:TYR:CD2	2.36	0.56
1:K:71:ARG:NH2	1:K:151:GLN:OE1	2.33	0.56
1:E:71:ARG:HB3	1:E:78:TYR:CD2	2.36	0.56
1:Q:406:LYS:O	1:S:316:LYS:NZ	2.38	0.56
1:V:71:ARG:HB3	1:V:78:TYR:CD2	2.34	0.56
1:E:44:SER:HG	1:E:151:GLN:HE21	1.49	0.56
1:G:120:GLN:HB2	1:G:469:LYS:HE2	1.86	0.56
1:I:274:CYS:SG	1:I:292:MET:HG2	2.46	0.56
1:O:408:LEU:HD13	1:Q:316:LYS:HG3	1.86	0.56
1:A:274:CYS:SG	1:A:292:MET:HG2	2.46	0.56
1:I:60:THR:HG23	1:I:145:ALA:HA	1.87	0.56
1:C:274:CYS:SG	1:C:292:MET:HG2	2.46	0.56
1:E:274:CYS:SG	1:E:292:MET:HG2	2.46	0.56
1:V:60:THR:HG23	1:V:145:ALA:HA	1.87	0.56
1:X:71:ARG:HB3	1:X:78:TYR:CD2	2.36	0.56
1:S:274:CYS:SG	1:S:292:MET:HG2	2.46	0.56
1:M:274:CYS:SG	1:M:292:MET:HG2	2.46	0.56
1:Q:274:CYS:SG	1:Q:292:MET:HG2	2.46	0.56
1:V:274:CYS:SG	1:V:292:MET:HG2	2.46	0.56
1:X:274:CYS:SG	1:X:292:MET:HG2	2.46	0.56
1:G:274:CYS:SG	1:G:292:MET:HG2	2.46	0.55
1:K:71:ARG:HB3	1:K:78:TYR:CD2	2.36	0.55
1:G:112:ILE:O	1:G:116:ILE:HG13	2.07	0.55
1:K:274:CYS:SG	1:K:292:MET:HG2	2.46	0.55
1:O:274:CYS:SG	1:O:292:MET:HG2	2.46	0.55
1:O:116:ILE:HG23	1:O:472:LEU:HD22	1.88	0.55
1:M:112:ILE:O	1:M:116:ILE:HG13	2.07	0.55
1:M:157:HIS:CE1	1:M:159:PRO:HG2	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:152:ASP:OD1	1:A:285:TYR:OH	2.25	0.55
1:V:152:ASP:OD1	1:V:285:TYR:OH	2.25	0.55
1:G:157:HIS:CE1	1:G:159:PRO:HG2	2.42	0.55
1:I:71:ARG:HB3	1:I:78:TYR:CD2	2.34	0.55
1:M:152:ASP:OD1	1:M:285:TYR:OH	2.25	0.55
1:X:71:ARG:NH2	1:X:151:GLN:OE1	2.33	0.55
1:A:157:HIS:CE1	1:A:159:PRO:HG2	2.42	0.55
1:I:112:ILE:O	1:I:116:ILE:HG13	2.07	0.55
1:I:116:ILE:HG23	1:I:472:LEU:HD22	1.88	0.55
1:K:112:ILE:O	1:K:116:ILE:HG13	2.07	0.55
1:Q:112:ILE:O	1:Q:116:ILE:HG13	2.07	0.55
1:S:157:HIS:CE1	1:S:159:PRO:HG2	2.42	0.55
1:V:116:ILE:HG23	1:V:472:LEU:HD22	1.89	0.55
1:V:112:ILE:O	1:V:116:ILE:HG13	2.07	0.55
1:O:60:THR:HG23	1:O:145:ALA:HA	1.87	0.54
1:S:112:ILE:O	1:S:116:ILE:HG13	2.07	0.54
1:A:316:LYS:NZ	1:X:406:LYS:O	2.38	0.54
1:A:112:ILE:O	1:A:116:ILE:HG13	2.07	0.54
1:I:152:ASP:OD1	1:I:285:TYR:OH	2.25	0.54
1:C:112:ILE:O	1:C:116:ILE:HG13	2.07	0.54
1:S:154:TYR:HB2	1:S:250:GLU:OE2	2.08	0.54
1:X:112:ILE:O	1:X:116:ILE:HG13	2.07	0.54
1:G:154:TYR:HB2	1:G:250:GLU:OE2	2.08	0.54
1:O:112:ILE:O	1:O:116:ILE:HG13	2.07	0.54
1:Q:154:TYR:HB2	1:Q:250:GLU:OE1	2.08	0.54
1:E:112:ILE:O	1:E:116:ILE:HG13	2.07	0.54
1:K:154:TYR:HB2	1:K:250:GLU:OE1	2.08	0.54
1:A:154:TYR:HB2	1:A:250:GLU:OE2	2.08	0.54
1:A:44:SER:HG	1:A:151:GLN:HE21	1.48	0.54
1:V:423:PHE:O	1:X:223:GLY:HA2	2.08	0.54
1:C:152:ASP:OD1	1:C:285:TYR:OH	2.25	0.53
1:E:154:TYR:HB2	1:E:250:GLU:OE1	2.08	0.53
1:M:154:TYR:HB2	1:M:250:GLU:OE2	2.08	0.53
1:X:154:TYR:HB2	1:X:250:GLU:OE1	2.08	0.53
1:C:423:PHE:O	1:E:223:GLY:HA2	2.08	0.53
1:A:408:LEU:HD13	1:C:316:LYS:HG3	1.91	0.53
1:C:415:LEU:HD11	1:C:418:CYS:O	2.09	0.53
1:O:152:ASP:OD1	1:O:285:TYR:OH	2.25	0.53
1:Q:71:ARG:HB3	1:Q:78:TYR:CD2	2.36	0.53
1:C:116:ILE:HG23	1:C:472:LEU:HD22	1.89	0.53
1:A:119:LEU:O	1:A:123:MET:HG2	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:415:LEU:HD11	1:O:418:CYS:O	2.09	0.53
1:V:415:LEU:HD11	1:V:418:CYS:O	2.09	0.53
1:I:415:LEU:HD11	1:I:418:CYS:O	2.09	0.52
1:M:119:LEU:O	1:M:123:MET:HG2	2.09	0.52
1:O:423:PHE:O	1:Q:223:GLY:HA2	2.09	0.52
1:G:408:LEU:HD13	1:I:316:LYS:HG3	1.91	0.52
1:K:157:HIS:CE1	1:K:159:PRO:HG2	2.45	0.52
1:S:119:LEU:O	1:S:123:MET:HG2	2.09	0.52
1:X:157:HIS:CE1	1:X:159:PRO:HG2	2.45	0.52
1:E:157:HIS:CE1	1:E:159:PRO:HG2	2.45	0.52
1:G:119:LEU:O	1:G:123:MET:HG2	2.09	0.52
1:G:152:ASP:OD1	1:G:285:TYR:OH	2.25	0.52
1:O:157:HIS:CE1	1:O:159:PRO:HG2	2.45	0.52
1:Q:116:ILE:HG23	1:Q:472:LEU:HD22	1.91	0.52
1:Q:157:HIS:CE1	1:Q:159:PRO:HG2	2.45	0.52
1:C:157:HIS:CE1	1:C:159:PRO:HG2	2.45	0.52
1:I:157:HIS:CE1	1:I:159:PRO:HG2	2.45	0.52
1:A:316:LYS:HG3	1:X:408:LEU:HD13	1.92	0.52
1:A:275:ARG:NE	1:C:88:GLU:HG2	2.25	0.52
1:E:408:LEU:HD13	1:G:316:LYS:HG3	1.92	0.52
1:I:423:PHE:O	1:K:223:GLY:HA2	2.08	0.52
1:K:310:ASP:HB2	1:K:334:VAL:O	2.10	0.52
1:V:157:HIS:CE1	1:V:159:PRO:HG2	2.45	0.52
1:G:275:ARG:NE	1:I:88:GLU:HG2	2.25	0.52
1:K:116:ILE:HG23	1:K:472:LEU:HD22	1.92	0.52
1:M:408:LEU:HD13	1:O:316:LYS:HG3	1.91	0.52
1:S:152:ASP:OD1	1:S:285:TYR:OH	2.25	0.52
1:S:310:ASP:HB2	1:S:334:VAL:O	2.10	0.52
1:X:310:ASP:HB2	1:X:334:VAL:O	2.10	0.52
1:G:310:ASP:HB2	1:G:334:VAL:O	2.10	0.51
1:S:275:ARG:NE	1:V:88:GLU:HG2	2.25	0.51
1:G:294:PRO:HB2	1:I:463:PRO:HB2	1.93	0.51
1:S:408:LEU:HD13	1:V:316:LYS:HG3	1.91	0.51
1:A:310:ASP:HB2	1:A:334:VAL:O	2.10	0.51
1:E:310:ASP:HB2	1:E:334:VAL:O	2.10	0.51
1:K:408:LEU:HD13	1:M:316:LYS:HG3	1.92	0.51
1:M:310:ASP:HB2	1:M:334:VAL:O	2.10	0.51
1:A:116:ILE:HG23	1:A:472:LEU:HD22	1.93	0.51
1:Q:310:ASP:HB2	1:Q:334:VAL:O	2.10	0.51
1:V:85:ARG:NH1	1:V:459:GLY:HA3	2.23	0.51
1:V:71:ARG:NH2	1:V:151:GLN:OE1	2.34	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:116:ILE:HG23	1:E:472:LEU:HD22	1.92	0.51
1:X:116:ILE:HG23	1:X:472:LEU:HD22	1.91	0.51
1:Q:71:ARG:NH2	1:Q:151:GLN:OE1	2.33	0.51
1:A:294:PRO:HB2	1:C:463:PRO:HB2	1.93	0.51
1:K:61:ILE:HG13	1:K:147:VAL:HB	1.93	0.51
1:Q:423:PHE:O	1:S:223:GLY:HA2	2.11	0.51
1:M:275:ARG:NE	1:O:88:GLU:HG2	2.25	0.50
1:Q:152:ASP:OD1	1:Q:285:TYR:OH	2.28	0.50
1:Q:61:ILE:HG13	1:Q:147:VAL:HB	1.93	0.50
1:X:418:CYS:SG	1:X:419:CYS:N	2.85	0.50
1:X:61:ILE:HG13	1:X:147:VAL:HB	1.93	0.50
1:A:223:GLY:HA2	1:X:423:PHE:O	2.11	0.50
1:G:116:ILE:HG23	1:G:472:LEU:HD22	1.93	0.50
1:Q:408:LEU:HD13	1:S:316:LYS:HG3	1.92	0.50
1:C:61:ILE:HG13	1:C:147:VAL:HB	1.92	0.50
1:O:71:ARG:NH2	1:O:151:GLN:OE1	2.33	0.50
1:S:294:PRO:HB2	1:V:463:PRO:HB2	1.93	0.50
1:A:415:LEU:HD11	1:A:418:CYS:O	2.11	0.50
1:O:310:ASP:HB2	1:O:334:VAL:O	2.12	0.50
1:S:116:ILE:HG23	1:S:472:LEU:HD22	1.93	0.50
1:Q:418:CYS:SG	1:Q:419:CYS:N	2.85	0.50
1:S:63:ASP:OD1	1:S:71:ARG:NE	2.45	0.50
1:E:61:ILE:HG13	1:E:147:VAL:HB	1.93	0.50
1:Q:166:ALA:O	1:Q:171:ARG:NH2	2.45	0.50
1:Q:71:ARG:HD2	1:Q:78:TYR:CE2	2.47	0.50
1:S:415:LEU:HD11	1:S:418:CYS:O	2.11	0.50
1:K:415:LEU:HD11	1:K:418:CYS:O	2.12	0.50
1:K:71:ARG:HD2	1:K:78:TYR:CE2	2.47	0.50
1:K:423:PHE:O	1:M:223:GLY:HA2	2.12	0.50
1:A:63:ASP:OD1	1:A:71:ARG:NE	2.44	0.49
1:E:152:ASP:OD1	1:E:285:TYR:OH	2.28	0.49
1:E:166:ALA:O	1:E:171:ARG:NH2	2.45	0.49
1:E:423:PHE:O	1:G:223:GLY:HA2	2.11	0.49
1:I:71:ARG:HD2	1:I:78:TYR:CE2	2.47	0.49
1:M:116:ILE:HG23	1:M:472:LEU:HD22	1.93	0.49
1:M:294:PRO:HB2	1:O:463:PRO:HB2	1.93	0.49
1:E:418:CYS:SG	1:E:419:CYS:N	2.85	0.49
1:G:71:ARG:NH2	1:G:151:GLN:OE1	2.37	0.49
1:V:81:VAL:HA	1:V:134:CYS:HB3	1.94	0.49
1:E:71:ARG:HD2	1:E:78:TYR:CE2	2.47	0.49
1:K:166:ALA:O	1:K:171:ARG:NH2	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:V:71:ARG:HD2	1:V:78:TYR:CE2	2.47	0.49
1:X:71:ARG:HD2	1:X:78:TYR:CE2	2.47	0.49
1:C:85:ARG:NH1	1:C:459:GLY:HA3	2.23	0.49
1:V:185:TYR:HB3	1:V:314:MET:SD	2.53	0.49
1:I:310:ASP:HB2	1:I:334:VAL:O	2.12	0.49
1:K:418:CYS:SG	1:K:419:CYS:N	2.85	0.49
1:O:71:ARG:HD2	1:O:78:TYR:CE2	2.47	0.49
1:O:81:VAL:HA	1:O:134:CYS:HB3	1.95	0.49
1:O:294:PRO:HB2	1:Q:463:PRO:HB2	1.94	0.49
1:S:71:ARG:HD2	1:S:78:TYR:CE2	2.48	0.49
1:C:81:VAL:HA	1:C:134:CYS:HB3	1.95	0.49
1:K:462:ILE:HG23	1:K:463:PRO:CD	2.43	0.49
1:M:205:LEU:HD11	1:M:240:LEU:CD1	2.42	0.49
1:E:119:LEU:HD23	1:E:472:LEU:HD11	1.95	0.49
1:E:71:ARG:NH2	1:E:151:GLN:OE1	2.33	0.49
1:E:415:LEU:HD11	1:E:418:CYS:O	2.12	0.49
1:O:185:TYR:HB3	1:O:314:MET:SD	2.53	0.49
1:E:185:TYR:HB3	1:E:314:MET:SD	2.53	0.49
1:K:185:TYR:HB3	1:K:314:MET:SD	2.53	0.49
1:M:415:LEU:HD11	1:M:418:CYS:O	2.12	0.49
1:S:208:LYS:HB3	1:S:208:LYS:HE2	1.55	0.49
1:G:415:LEU:HD11	1:G:418:CYS:O	2.11	0.49
1:G:67:ALA:O	1:G:70:ARG:HG2	2.13	0.49
1:G:71:ARG:HD2	1:G:78:TYR:CE2	2.48	0.49
1:I:81:VAL:HA	1:I:134:CYS:HB3	1.94	0.49
1:K:119:LEU:HD23	1:K:472:LEU:HD11	1.94	0.49
1:C:71:ARG:NH2	1:C:151:GLN:OE1	2.33	0.48
1:C:310:ASP:HB2	1:C:334:VAL:O	2.12	0.48
1:G:63:ASP:OD1	1:G:71:ARG:NE	2.44	0.48
1:I:185:TYR:HB3	1:I:314:MET:SD	2.53	0.48
1:V:310:ASP:HB2	1:V:334:VAL:O	2.12	0.48
1:X:85:ARG:NH1	1:X:459:GLY:HA3	2.24	0.48
1:O:205:LEU:HD11	1:O:240:LEU:CD1	2.43	0.48
1:V:294:PRO:HB2	1:X:463:PRO:HB2	1.95	0.48
1:A:399:ARG:O	1:A:403:GLU:HG3	2.14	0.48
1:A:71:ARG:HD2	1:A:78:TYR:CE2	2.48	0.48
1:M:71:ARG:HD2	1:M:78:TYR:CE2	2.48	0.48
1:S:67:ALA:O	1:S:70:ARG:HG2	2.13	0.48
1:V:192:TYR:HB2	1:V:197:THR:HB	1.94	0.48
1:C:208:LYS:HB3	1:C:208:LYS:HE2	1.54	0.48
1:I:85:ARG:NH1	1:I:459:GLY:HA3	2.23	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S:205:LEU:HD11	1:S:240:LEU:CD1	2.42	0.48
1:X:185:TYR:HB3	1:X:314:MET:SD	2.53	0.48
1:X:119:LEU:HD23	1:X:472:LEU:HD11	1.95	0.48
1:C:185:TYR:HB3	1:C:314:MET:SD	2.53	0.48
1:C:71:ARG:HD2	1:C:78:TYR:CE2	2.48	0.48
1:G:58:ASP:HA	1:G:77:LYS:NZ	2.28	0.48
1:I:192:TYR:HB2	1:I:197:THR:HB	1.95	0.48
1:I:294:PRO:HB2	1:K:463:PRO:HB2	1.95	0.48
1:O:192:TYR:HB2	1:O:197:THR:HB	1.94	0.48
1:Q:185:TYR:HB3	1:Q:314:MET:SD	2.53	0.48
1:Q:119:LEU:HD23	1:Q:472:LEU:HD11	1.95	0.48
1:S:185:TYR:HB3	1:S:314:MET:SD	2.54	0.48
1:X:166:ALA:O	1:X:171:ARG:NH2	2.45	0.48
1:M:61:ILE:HG13	1:M:147:VAL:HB	1.96	0.48
1:M:399:ARG:O	1:M:403:GLU:HG3	2.14	0.48
1:M:67:ALA:O	1:M:70:ARG:HG2	2.13	0.48
1:A:58:ASP:HA	1:A:77:LYS:NZ	2.28	0.48
1:C:192:TYR:HB2	1:C:197:THR:HB	1.95	0.48
1:G:205:LEU:HD11	1:G:240:LEU:CD1	2.42	0.48
1:G:399:ARG:O	1:G:403:GLU:HG3	2.14	0.48
1:M:185:TYR:HB3	1:M:314:MET:SD	2.54	0.48
1:O:462:ILE:HG23	1:O:463:PRO:CD	2.43	0.48
1:Q:415:LEU:HD11	1:Q:418:CYS:O	2.13	0.48
1:A:205:LEU:HD11	1:A:240:LEU:CD1	2.42	0.48
1:A:423:PHE:O	1:C:223:GLY:HA2	2.14	0.48
1:C:62:LEU:HD22	1:C:79:HIS:HD2	1.79	0.48
1:C:294:PRO:HB2	1:E:463:PRO:HB2	1.95	0.48
1:I:205:LEU:HD11	1:I:240:LEU:CD1	2.43	0.48
1:M:63:ASP:OD1	1:M:71:ARG:NE	2.44	0.48
1:S:71:ARG:NH2	1:S:151:GLN:OE1	2.37	0.48
1:V:462:ILE:HG23	1:V:463:PRO:CD	2.43	0.48
1:A:185:TYR:HB3	1:A:314:MET:SD	2.54	0.48
1:C:462:ILE:HG23	1:C:463:PRO:CD	2.43	0.48
1:G:423:PHE:O	1:I:223:GLY:HA2	2.14	0.48
1:M:423:PHE:O	1:O:223:GLY:HA2	2.14	0.48
1:S:58:ASP:HA	1:S:77:LYS:NZ	2.28	0.48
1:K:192:TYR:HB2	1:K:197:THR:HB	1.96	0.47
1:A:67:ALA:O	1:A:70:ARG:HG2	2.13	0.47
1:G:185:TYR:HB3	1:G:314:MET:SD	2.54	0.47
1:O:85:ARG:NH1	1:O:459:GLY:HA3	2.23	0.47
1:M:58:ASP:HA	1:M:77:LYS:NZ	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S:399:ARG:O	1:S:403:GLU:HG3	2.14	0.47
1:S:61:ILE:HG13	1:S:147:VAL:HB	1.96	0.47
1:S:71:ARG:HB3	1:S:78:TYR:CD2	2.38	0.47
1:X:192:TYR:HB2	1:X:197:THR:HB	1.96	0.47
1:S:423:PHE:O	1:V:223:GLY:HA2	2.14	0.47
1:X:62:LEU:HD22	1:X:79:HIS:HD2	1.80	0.47
1:E:62:LEU:HD22	1:E:79:HIS:HD2	1.80	0.47
1:Q:462:ILE:HG23	1:Q:463:PRO:CD	2.43	0.47
1:X:415:LEU:HD11	1:X:418:CYS:O	2.12	0.47
1:M:208:LYS:HE2	1:M:208:LYS:HB3	1.55	0.47
1:E:192:TYR:HB2	1:E:197:THR:HB	1.96	0.47
1:G:236[A]:CYS:O	1:G:252:ARG:HD2	2.15	0.47
1:K:208:LYS:HB3	1:K:208:LYS:HE2	1.55	0.47
1:M:236[A]:CYS:O	1:M:252:ARG:HD2	2.15	0.47
1:I:462:ILE:HG23	1:I:463:PRO:CD	2.43	0.47
1:M:71:ARG:NH2	1:M:151:GLN:OE1	2.37	0.47
1:Q:62:LEU:HD22	1:Q:79:HIS:HD2	1.79	0.47
1:X:8:ILE:HD11	1:X:15:LEU:HB2	1.97	0.47
1:A:61:ILE:HG13	1:A:147:VAL:HB	1.96	0.47
1:E:294:PRO:HB2	1:G:463:PRO:HB2	1.97	0.47
1:S:236[A]:CYS:O	1:S:252:ARG:HD2	2.15	0.47
1:V:205:LEU:HD11	1:V:240:LEU:CD1	2.43	0.47
1:X:208:LYS:HE2	1:X:208:LYS:HB3	1.55	0.47
1:M:236[B]:CYS:O	1:M:252:ARG:HD2	2.15	0.47
1:Q:208:LYS:HB3	1:Q:208:LYS:HE2	1.55	0.47
1:I:236[A]:CYS:O	1:I:252:ARG:HD2	2.16	0.46
1:Q:16:LYS:HE3	1:Q:16:LYS:HB2	1.77	0.46
1:Q:192:TYR:HB2	1:Q:197:THR:HB	1.96	0.46
1:Q:85:ARG:NH1	1:Q:459:GLY:HA3	2.24	0.46
1:Q:67:ALA:O	1:Q:70:ARG:HG2	2.15	0.46
1:S:236[B]:CYS:O	1:S:252:ARG:HD2	2.15	0.46
1:X:152:ASP:OD1	1:X:285:TYR:OH	2.28	0.46
1:C:15:LEU:HD11	1:C:29:PRO:HG3	1.97	0.46
1:C:205:LEU:HD11	1:C:240:LEU:CD1	2.43	0.46
1:G:236[B]:CYS:O	1:G:252:ARG:HD2	2.15	0.46
1:K:8:ILE:HD11	1:K:15:LEU:HB2	1.97	0.46
1:K:67:ALA:O	1:K:70:ARG:HG2	2.15	0.46
1:K:62:LEU:HD22	1:K:79:HIS:HD2	1.79	0.46
1:M:44:SER:HG	1:M:151:GLN:HE21	1.53	0.46
1:A:236[A]:CYS:O	1:A:252:ARG:HD2	2.15	0.46
1:E:8:ILE:HD11	1:E:15:LEU:HB2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:61:ILE:HG13	1:G:147:VAL:HB	1.96	0.46
1:X:67:ALA:O	1:X:70:ARG:HG2	2.15	0.46
1:A:184:MET:HG3	1:A:259:HIS:CD2	2.50	0.46
1:O:236[A]:CYS:O	1:O:252:ARG:HD2	2.16	0.46
1:Q:8:ILE:HD11	1:Q:15:LEU:HB2	1.98	0.46
1:G:16:LYS:HB2	1:G:16:LYS:HE3	1.79	0.46
1:M:184:MET:HG3	1:M:259:HIS:CD2	2.50	0.46
1:V:448:ASP:OD1	1:V:449:SER:N	2.49	0.46
1:V:62:LEU:HD22	1:V:79:HIS:HD2	1.81	0.46
1:E:230:GLY:C	1:E:232:LYS:H	2.20	0.46
1:E:67:ALA:O	1:E:70:ARG:HG2	2.15	0.46
1:X:462:ILE:HG23	1:X:463:PRO:CD	2.43	0.46
1:A:463:PRO:HB2	1:X:294:PRO:HB2	1.97	0.46
1:C:16:LYS:HE3	1:C:16:LYS:HB2	1.77	0.46
1:C:236[A]:CYS:O	1:C:252:ARG:HD2	2.15	0.46
1:I:58:ASP:HA	1:I:77:LYS:NZ	2.31	0.46
1:A:68:PRO:HB2	1:A:96:TYR:CG	2.52	0.45
1:C:67:ALA:O	1:C:70:ARG:HG2	2.16	0.45
1:I:71:ARG:NH2	1:I:151:GLN:OE1	2.34	0.45
1:E:184:MET:HG3	1:E:259:HIS:CD2	2.51	0.45
1:E:85:ARG:NH1	1:E:459:GLY:HA3	2.24	0.45
1:I:208:LYS:HE2	1:I:208:LYS:HB3	1.54	0.45
1:K:230:GLY:C	1:K:232:LYS:H	2.20	0.45
1:K:294:PRO:HB2	1:M:463:PRO:HB2	1.97	0.45
1:Q:184:MET:HG3	1:Q:259:HIS:CD2	2.52	0.45
1:K:152:ASP:OD1	1:K:285:TYR:OH	2.29	0.45
1:O:62:LEU:HD22	1:O:79:HIS:HD2	1.81	0.45
1:O:58:ASP:HA	1:O:77:LYS:NZ	2.32	0.45
1:Q:294:PRO:HB2	1:S:463:PRO:HB2	1.97	0.45
1:V:208:LYS:HB3	1:V:208:LYS:HE2	1.54	0.45
1:V:63:ASP:OD1	1:V:71:ARG:NE	2.48	0.45
1:C:448:ASP:OD1	1:C:449:SER:N	2.49	0.45
1:G:68:PRO:HB2	1:G:96:TYR:CG	2.52	0.45
1:Q:230:GLY:C	1:Q:232:LYS:H	2.20	0.45
1:E:462:ILE:HG23	1:E:463:PRO:CD	2.43	0.45
1:E:68:PRO:HB2	1:E:96:TYR:CG	2.52	0.45
1:I:435:PRO:O	1:I:436:ASP:HB2	2.17	0.45
1:I:67:ALA:O	1:I:70:ARG:HG2	2.16	0.45
1:S:184:MET:HG3	1:S:259:HIS:CD2	2.51	0.45
1:A:192:TYR:HB2	1:A:197:THR:HB	1.99	0.45
1:C:230:GLY:C	1:C:232:LYS:H	2.20	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:184:MET:HG3	1:G:259:HIS:CD2	2.51	0.45
1:I:62:LEU:HD22	1:I:79:HIS:HD2	1.81	0.45
1:M:416:THR:OG1	1:M:420:LEU:HB2	2.17	0.45
1:M:68:PRO:HB2	1:M:96:TYR:CG	2.52	0.45
1:G:396:LYS:HE3	1:G:396:LYS:HB3	1.81	0.45
1:K:68:PRO:HB2	1:K:96:TYR:CG	2.52	0.45
1:Q:68:PRO:HB2	1:Q:96:TYR:CG	2.52	0.45
1:S:68:PRO:HB2	1:S:96:TYR:CG	2.52	0.45
1:V:435:PRO:O	1:V:436:ASP:HB2	2.17	0.45
1:C:119:LEU:HD23	1:C:472:LEU:HD11	1.99	0.45
1:K:396:LYS:HB3	1:K:396:LYS:HE3	1.81	0.45
1:V:236[A]:CYS:O	1:V:252:ARG:HD2	2.15	0.45
1:V:67:ALA:O	1:V:70:ARG:HG2	2.16	0.45
1:X:230:GLY:C	1:X:232:LYS:H	2.20	0.45
1:I:230:GLY:C	1:I:232:LYS:H	2.20	0.45
1:I:448:ASP:OD2	1:I:449:SER:N	2.50	0.45
1:M:230:GLY:C	1:M:232:LYS:H	2.20	0.45
1:Q:60:THR:HA	1:Q:77:LYS:HB2	1.99	0.45
1:V:119:LEU:HD23	1:V:472:LEU:HD11	1.99	0.45
1:A:236[B]:CYS:O	1:A:252:ARG:HD2	2.15	0.45
1:C:68:PRO:HB2	1:C:96:TYR:CG	2.52	0.45
1:G:230:GLY:C	1:G:232:LYS:H	2.20	0.45
1:X:184:MET:HG3	1:X:259:HIS:CD2	2.51	0.45
1:X:68:PRO:HB2	1:X:96:TYR:CG	2.52	0.45
1:C:184:MET:HG3	1:C:259:HIS:CD2	2.52	0.44
1:C:396:LYS:HB3	1:C:396:LYS:HE3	1.80	0.44
1:E:205:LEU:HD11	1:E:240:LEU:CD1	2.43	0.44
1:K:60:THR:HA	1:K:77:LYS:HB2	1.99	0.44
1:O:119:LEU:HD23	1:O:472:LEU:HD11	1.99	0.44
1:O:230:GLY:C	1:O:232:LYS:H	2.20	0.44
1:O:448:ASP:OD2	1:O:449:SER:N	2.50	0.44
1:O:67:ALA:O	1:O:70:ARG:HG2	2.16	0.44
1:S:93:LEU:HG	1:S:468:ILE:HD11	1.99	0.44
1:V:184:MET:HG3	1:V:259:HIS:CD2	2.52	0.44
1:A:230:GLY:C	1:A:232:LYS:H	2.20	0.44
1:G:208:LYS:HB3	1:G:208:LYS:HE2	1.55	0.44
1:G:93:LEU:HG	1:G:468:ILE:HD11	2.00	0.44
1:K:205:LEU:HD11	1:K:240:LEU:CD1	2.43	0.44
1:K:435:PRO:O	1:K:436:ASP:HB2	2.18	0.44
1:M:192:TYR:HB2	1:M:197:THR:HB	1.99	0.44
1:M:60:THR:HA	1:M:77:LYS:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S:416:THR:OG1	1:S:420:LEU:HB2	2.17	0.44
1:C:118:ASP:HB3	1:C:130:THR:OG1	2.17	0.44
1:C:85:ARG:HD3	1:C:85:ARG:HA	1.87	0.44
1:I:184:MET:HG3	1:I:259:HIS:CD2	2.53	0.44
1:I:68:PRO:HB2	1:I:96:TYR:CG	2.53	0.44
1:O:208:LYS:HE2	1:O:208:LYS:HB3	1.54	0.44
1:S:192:TYR:HB2	1:S:197:THR:HB	1.99	0.44
1:V:416:THR:OG1	1:V:420:LEU:HB2	2.18	0.44
1:V:68:PRO:HB2	1:V:96:TYR:CG	2.52	0.44
1:O:15:LEU:HD11	1:O:29:PRO:HG3	1.99	0.44
1:S:60:THR:HA	1:S:77:LYS:HB2	2.00	0.44
1:O:416:THR:OG1	1:O:420:LEU:HB2	2.18	0.44
1:S:389:GLN:HE22	1:S:393:LYS:NZ	2.15	0.44
1:X:435:PRO:O	1:X:436:ASP:HB2	2.18	0.44
1:A:389:GLN:HE22	1:A:393:LYS:NZ	2.15	0.44
1:M:93:LEU:HG	1:M:468:ILE:HD11	2.00	0.44
1:V:118:ASP:HB3	1:V:130:THR:OG1	2.18	0.44
1:K:184:MET:HG3	1:K:259:HIS:CD2	2.52	0.44
1:O:68:PRO:HB2	1:O:96:TYR:CG	2.53	0.44
1:S:267:LYS:NZ	1:S:446:GLU:OE2	2.42	0.44
1:V:58:ASP:HA	1:V:77:LYS:NZ	2.31	0.44
1:A:93:LEU:HG	1:A:468:ILE:HD11	2.00	0.44
1:A:62:LEU:HD22	1:A:79:HIS:HD2	1.83	0.44
1:C:58:ASP:HA	1:C:77:LYS:NZ	2.32	0.44
1:E:396:LYS:HB3	1:E:396:LYS:HE3	1.81	0.44
1:E:435:PRO:O	1:E:436:ASP:HB2	2.18	0.44
1:G:389:GLN:HE22	1:G:393:LYS:NZ	2.15	0.44
1:I:119:LEU:HD23	1:I:472:LEU:HD11	1.99	0.44
1:O:184:MET:HG3	1:O:259:HIS:CD2	2.52	0.44
1:C:435:PRO:O	1:C:436:ASP:HB2	2.17	0.44
1:G:192:TYR:HB2	1:G:197:THR:HB	1.99	0.44
1:G:416:THR:OG1	1:G:420:LEU:HB2	2.17	0.44
1:I:63:ASP:OD1	1:I:71:ARG:NE	2.48	0.44
1:A:416:THR:OG1	1:A:420:LEU:HB2	2.17	0.43
1:I:416:THR:OG1	1:I:420:LEU:HB2	2.18	0.43
1:O:63:ASP:OD1	1:O:71:ARG:NE	2.48	0.43
1:S:62:LEU:HD22	1:S:79:HIS:HD2	1.83	0.43
1:C:416:THR:OG1	1:C:420:LEU:HB2	2.18	0.43
1:G:60:THR:HA	1:G:77:LYS:HB2	1.99	0.43
1:O:118:ASP:HB3	1:O:130:THR:OG1	2.18	0.43
1:O:435:PRO:O	1:O:436:ASP:HB2	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:X:60:THR:HA	1:X:77:LYS:HB2	1.99	0.43
1:X:81:VAL:HA	1:X:134:CYS:HB3	2.00	0.43
1:C:63:ASP:OD1	1:C:71:ARG:NE	2.49	0.43
1:I:118:ASP:HB3	1:I:130:THR:OG1	2.17	0.43
1:K:60:THR:HG23	1:K:145:ALA:HA	2.00	0.43
1:S:81:VAL:HA	1:S:134:CYS:HB3	2.01	0.43
1:V:230:GLY:C	1:V:232:LYS:H	2.20	0.43
1:A:71:ARG:NH2	1:A:151:GLN:OE1	2.37	0.43
1:E:208:LYS:HE2	1:E:208:LYS:HB3	1.55	0.43
1:E:60:THR:HA	1:E:77:LYS:HB2	1.99	0.43
1:G:435:PRO:O	1:G:436:ASP:HB2	2.18	0.43
1:Q:205:LEU:HD11	1:Q:240:LEU:CD1	2.43	0.43
1:X:205:LEU:HD11	1:X:240:LEU:CD1	2.43	0.43
1:X:218:THR:O	1:X:219:GLU:HB2	2.19	0.43
1:Q:60:THR:HG23	1:Q:145:ALA:HA	2.00	0.43
1:S:85:ARG:HA	1:S:85:ARG:HD3	1.85	0.43
1:A:435:PRO:O	1:A:436:ASP:HB2	2.18	0.43
1:C:184:MET:SD	1:C:256:LYS:HG2	2.59	0.43
1:E:236[B]:CYS:O	1:E:252:ARG:NH1	2.47	0.43
1:M:81:VAL:HA	1:M:134:CYS:HB3	2.01	0.43
1:Q:125:VAL:O	1:Q:128:THR:HG22	2.19	0.43
1:A:81:VAL:HA	1:A:134:CYS:HB3	2.01	0.43
1:C:413:ARG:HG2	1:C:423:PHE:HB3	2.01	0.43
1:I:16:LYS:HB2	1:I:16:LYS:HE3	1.77	0.43
1:M:389:GLN:HE22	1:M:393:LYS:NZ	2.16	0.43
1:O:218:THR:O	1:O:219:GLU:HB2	2.19	0.43
1:Q:218:THR:O	1:Q:219:GLU:HB2	2.19	0.43
1:Q:435:PRO:O	1:Q:436:ASP:HB2	2.18	0.43
1:V:15:LEU:HD11	1:V:29:PRO:HG3	2.00	0.43
1:X:125:VAL:O	1:X:128:THR:HG22	2.18	0.43
1:A:218:THR:O	1:A:219:GLU:HB2	2.19	0.43
1:A:60:THR:HA	1:A:77:LYS:HB2	1.99	0.43
1:G:71:ARG:HB3	1:G:78:TYR:CD2	2.38	0.43
1:I:15:LEU:HD11	1:I:29:PRO:HG3	1.99	0.43
1:S:8:ILE:HD11	1:S:15:LEU:HB2	2.01	0.43
1:S:218:THR:O	1:S:219:GLU:HB2	2.19	0.43
1:V:184:MET:SD	1:V:256:LYS:HG2	2.59	0.43
1:X:242:SER:HA	1:X:246:THR:O	2.19	0.43
1:X:184:MET:SD	1:X:256:LYS:HG2	2.59	0.43
1:G:8:ILE:HD11	1:G:15:LEU:HB2	2.01	0.43
1:I:218:THR:O	1:I:219:GLU:HB2	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:218:THR:O	1:K:219:GLU:HB2	2.19	0.43
1:M:16:LYS:HE3	1:M:16:LYS:HB2	1.79	0.43
1:M:435:PRO:O	1:M:436:ASP:HB2	2.18	0.43
1:V:218:THR:O	1:V:219:GLU:HB2	2.19	0.43
1:V:85:ARG:HA	1:V:85:ARG:HD3	1.87	0.43
1:C:218:THR:O	1:C:219:GLU:HB2	2.19	0.43
1:E:184:MET:SD	1:E:256:LYS:HG2	2.59	0.43
1:G:62:LEU:HD22	1:G:79:HIS:HD2	1.83	0.43
1:K:125:VAL:O	1:K:128:THR:HG22	2.19	0.43
1:K:85:ARG:NH1	1:K:459:GLY:HA3	2.24	0.43
1:S:230:GLY:C	1:S:232:LYS:H	2.20	0.43
1:X:60:THR:HG23	1:X:145:ALA:HA	2.01	0.43
1:A:8:ILE:HD11	1:A:15:LEU:HB2	2.01	0.42
1:E:218:THR:O	1:E:219:GLU:HB2	2.19	0.42
1:I:85:ARG:HA	1:I:85:ARG:HD3	1.87	0.42
1:M:8:ILE:HD11	1:M:15:LEU:HB2	2.01	0.42
1:A:396:LYS:HE3	1:A:396:LYS:HB3	1.81	0.42
1:M:182:PRO:HB3	1:M:331:CYS:SG	2.60	0.42
1:Q:236[A]:CYS:O	1:Q:252:ARG:HD2	2.19	0.42
1:S:396:LYS:HE3	1:S:396:LYS:HB3	1.81	0.42
1:A:71:ARG:HB3	1:A:78:TYR:CD2	2.38	0.42
1:M:218:THR:O	1:M:219:GLU:HB2	2.19	0.42
1:X:85:ARG:HD3	1:X:85:ARG:HA	1.87	0.42
1:A:208:LYS:HE2	1:A:208:LYS:HB3	1.55	0.42
1:G:182:PRO:HB3	1:G:331:CYS:SG	2.59	0.42
1:I:413:ARG:HG2	1:I:423:PHE:HB3	2.01	0.42
1:M:62:LEU:HD22	1:M:79:HIS:HD2	1.83	0.42
1:O:60:THR:CG2	1:O:145:ALA:HA	2.49	0.42
1:O:317:THR:O	1:O:327:SER:HA	2.20	0.42
1:Q:184:MET:SD	1:Q:256:LYS:HG2	2.59	0.42
1:Q:317:THR:O	1:Q:327:SER:HA	2.20	0.42
1:S:435:PRO:O	1:S:436:ASP:HB2	2.18	0.42
1:V:44:SER:HG	1:V:151:GLN:HE21	1.56	0.42
1:G:218:THR:O	1:G:219:GLU:HB2	2.19	0.42
1:G:81:VAL:HA	1:G:134:CYS:HB3	2.01	0.42
1:I:236[B]:CYS:O	1:I:252:ARG:HD2	2.20	0.42
1:K:236[A]:CYS:O	1:K:252:ARG:HD2	2.19	0.42
1:M:71:ARG:HB3	1:M:78:TYR:CD2	2.38	0.42
1:O:16:LYS:HB2	1:O:16:LYS:HE3	1.77	0.42
1:X:16:LYS:HE3	1:X:16:LYS:HB2	1.77	0.42
1:A:182:PRO:HB3	1:A:331:CYS:SG	2.60	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:83:PRO:HB2	1:I:85:ARG:HG2	2.01	0.42
1:M:243:VAL:HG23	1:M:248[B]:TYR:HE1	1.84	0.42
1:Q:353[A]:GLU:H	1:Q:353[A]:GLU:CD	2.23	0.42
1:S:16:LYS:HB2	1:S:16:LYS:HE3	1.79	0.42
1:V:60:THR:CG2	1:V:145:ALA:HA	2.49	0.42
1:X:4:VAL:HG13	1:X:49:LYS:HE3	2.01	0.42
1:C:317:THR:O	1:C:327:SER:HA	2.20	0.42
1:E:242:SER:HA	1:E:246:THR:O	2.19	0.42
1:I:184:MET:SD	1:I:256:LYS:HG2	2.59	0.42
1:O:184:MET:SD	1:O:256:LYS:HG2	2.59	0.42
1:O:413:ARG:HG2	1:O:423:PHE:HB3	2.01	0.42
1:Q:242:SER:HA	1:Q:246:THR:O	2.19	0.42
1:Q:81:VAL:HA	1:Q:134:CYS:HB3	2.02	0.42
1:V:353[A]:GLU:H	1:V:353[A]:GLU:CD	2.23	0.42
1:K:353[A]:GLU:H	1:K:353[A]:GLU:CD	2.23	0.42
1:M:58:ASP:HA	1:M:77:LYS:HZ3	1.84	0.42
1:Q:93:LEU:HG	1:Q:468:ILE:HD11	2.02	0.42
1:S:4:VAL:HG13	1:S:49:LYS:HE3	2.02	0.42
1:V:413:ARG:HG2	1:V:423:PHE:HB3	2.02	0.42
1:X:236[A]:CYS:O	1:X:252:ARG:HD2	2.19	0.42
1:G:67:ALA:HB2	1:G:92:ARG:NE	2.35	0.42
1:I:353[A]:GLU:CD	1:I:353[A]:GLU:H	2.23	0.42
1:K:349:GLU:HG3	1:K:399:ARG:HG3	2.02	0.42
1:Q:349:GLU:HG3	1:Q:399:ARG:HG3	2.02	0.42
1:S:353[A]:GLU:H	1:S:353[A]:GLU:CD	2.23	0.42
1:X:93:LEU:HG	1:X:468:ILE:HD11	2.02	0.42
1:A:353[A]:GLU:CD	1:A:353[A]:GLU:H	2.23	0.42
1:A:4:VAL:HG13	1:A:49:LYS:HE3	2.02	0.42
1:I:317:THR:O	1:I:327:SER:HA	2.20	0.42
1:O:236[B]:CYS:O	1:O:252:ARG:HD2	2.20	0.42
1:S:182:PRO:HB3	1:S:331:CYS:SG	2.60	0.42
1:C:89:ASP:N	1:C:90:PRO:HD2	2.35	0.41
1:E:60:THR:HG23	1:E:145:ALA:HA	2.01	0.41
1:G:243:VAL:HG23	1:G:248[B]:TYR:HE1	1.84	0.41
1:G:353[A]:GLU:CD	1:G:353[A]:GLU:H	2.23	0.41
1:X:317:THR:O	1:X:327:SER:HA	2.20	0.41
1:X:353[A]:GLU:H	1:X:353[A]:GLU:CD	2.23	0.41
1:C:236[B]:CYS:O	1:C:252:ARG:HD2	2.20	0.41
1:C:353[A]:GLU:CD	1:C:353[A]:GLU:H	2.23	0.41
1:E:317:THR:O	1:E:327:SER:HA	2.20	0.41
1:K:242:SER:HA	1:K:246:THR:O	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:317:THR:O	1:K:327:SER:HA	2.20	0.41
1:K:182:PRO:HB3	1:K:331:CYS:SG	2.61	0.41
1:A:243:VAL:HG23	1:A:248[B]:TYR:HE1	1.85	0.41
1:A:67:ALA:HB2	1:A:92:ARG:NE	2.35	0.41
1:Q:396:LYS:HE3	1:Q:396:LYS:HB3	1.82	0.41
1:V:83:PRO:HB2	1:V:85:ARG:HG2	2.01	0.41
1:X:182:PRO:HB3	1:X:331:CYS:SG	2.61	0.41
1:I:89:ASP:N	1:I:90:PRO:HD2	2.35	0.41
1:M:353[A]:GLU:H	1:M:353[A]:GLU:CD	2.23	0.41
1:M:4:VAL:HG13	1:M:49:LYS:HE3	2.02	0.41
1:O:83:PRO:HB2	1:O:85:ARG:HG2	2.01	0.41
1:Q:182:PRO:HB3	1:Q:331:CYS:SG	2.60	0.41
1:E:353[A]:GLU:H	1:E:353[A]:GLU:CD	2.23	0.41
1:K:184:MET:SD	1:K:256:LYS:HG2	2.59	0.41
1:O:353[A]:GLU:H	1:O:353[A]:GLU:CD	2.23	0.41
1:S:243:VAL:HG23	1:S:248[B]:TYR:HE1	1.85	0.41
1:E:125:VAL:O	1:E:128:THR:HG22	2.20	0.41
1:E:236[A]:CYS:O	1:E:252:ARG:HD2	2.19	0.41
1:E:81:VAL:HA	1:E:134:CYS:HB3	2.02	0.41
1:O:8:ILE:HD11	1:O:15:LEU:HB2	2.02	0.41
1:V:16:LYS:HE3	1:V:16:LYS:HB2	1.77	0.41
1:G:166:ALA:O	1:G:171:ARG:NH2	2.54	0.41
1:I:60:THR:CG2	1:I:145:ALA:HA	2.49	0.41
1:I:8:ILE:HD11	1:I:15:LEU:HB2	2.03	0.41
1:G:297:TYR:CD2	1:I:90:PRO:HG3	2.56	0.41
1:M:61:ILE:HB	1:M:78:TYR:CD1	2.56	0.41
1:O:85:ARG:HD3	1:O:85:ARG:HA	1.87	0.41
1:Q:402:MET:HE2	1:Q:402:MET:HB3	1.97	0.41
1:V:8:ILE:HD11	1:V:15:LEU:HB2	2.03	0.41
1:V:317:THR:O	1:V:327:SER:HA	2.20	0.41
1:V:89:ASP:N	1:V:90:PRO:HD2	2.35	0.41
1:A:315:CYS:HB2	3:A:1142:HOH:O	2.20	0.41
1:E:182:PRO:HB3	1:E:331:CYS:SG	2.61	0.41
1:E:243:VAL:HG23	1:E:248[B]:TYR:HE1	1.86	0.41
1:S:166:ALA:O	1:S:171:ARG:NH2	2.54	0.41
1:S:67:ALA:HB2	1:S:92:ARG:NE	2.35	0.41
1:A:317:THR:O	1:A:327:SER:HA	2.21	0.41
1:C:60:THR:HA	1:C:77:LYS:HB2	2.03	0.41
1:E:349:GLU:HG3	1:E:399:ARG:HG3	2.02	0.41
1:I:123:MET:HE3	1:I:465:ARG:HG3	2.03	0.41
1:I:182:PRO:HB3	1:I:331:CYS:SG	2.61	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:4:VAL:HG13	1:K:49:LYS:HE3	2.01	0.41
1:O:182:PRO:HB3	1:O:331:CYS:SG	2.61	0.41
1:S:61:ILE:HB	1:S:78:TYR:CD1	2.56	0.41
1:X:349:GLU:HG3	1:X:399:ARG:HG3	2.02	0.41
1:C:182:PRO:HB3	1:C:331:CYS:SG	2.61	0.41
1:C:67:ALA:HB2	1:C:92:ARG:NE	2.36	0.41
1:A:297:TYR:CD2	1:C:90:PRO:HG3	2.56	0.41
1:G:4:VAL:HG13	1:G:49:LYS:HE3	2.02	0.41
1:I:275:ARG:O	1:I:290:ILE:HA	2.21	0.41
1:M:67:ALA:HB2	1:M:92:ARG:NE	2.35	0.41
1:O:89:ASP:N	1:O:90:PRO:HD2	2.35	0.41
1:V:275:ARG:O	1:V:290:ILE:HA	2.21	0.41
1:V:182:PRO:HB3	1:V:331:CYS:SG	2.61	0.41
1:C:275:ARG:O	1:C:290:ILE:HA	2.21	0.41
1:E:120:GLN:HE21	1:E:472:LEU:HB2	1.85	0.41
1:G:315:CYS:HB2	3:G:1142:HOH:O	2.20	0.41
1:K:243:VAL:HG23	1:K:248[B]:TYR:HE1	1.86	0.41
1:M:317:THR:O	1:M:327:SER:HA	2.21	0.41
1:O:396:LYS:HE3	1:O:396:LYS:HB3	1.80	0.41
1:S:315:CYS:HB2	3:S:1142:HOH:O	2.20	0.41
1:E:275:ARG:O	1:E:290:ILE:HA	2.21	0.40
1:G:61:ILE:HB	1:G:78:TYR:CD1	2.56	0.40
1:I:67:ALA:HB2	1:I:92:ARG:NE	2.36	0.40
1:Q:275:ARG:O	1:Q:290:ILE:HA	2.21	0.40
1:X:402:MET:HE2	1:X:402:MET:HB3	1.98	0.40
1:C:83:PRO:HB2	1:C:85:ARG:HG2	2.01	0.40
1:E:136:HIS:HB3	1:E:140:SER:OG	2.21	0.40
1:K:120:GLN:HE21	1:K:472:LEU:HB2	1.84	0.40
1:K:81:VAL:HA	1:K:134:CYS:HB3	2.03	0.40
1:M:315:CYS:HB2	3:M:1143:HOH:O	2.20	0.40
1:M:83:PRO:HB2	1:M:85:ARG:HG2	2.03	0.40
1:Q:15:LEU:HD11	1:Q:29:PRO:HG3	2.03	0.40
1:S:79:HIS:CE1	1:S:134:CYS:HB2	2.57	0.40
1:X:415:LEU:HD12	1:X:420:LEU:O	2.21	0.40
1:C:8:ILE:HD11	1:C:15:LEU:HB2	2.04	0.40
1:G:79:HIS:CE1	1:G:134:CYS:HB2	2.57	0.40
1:K:236[A]:CYS:O	1:K:252:ARG:NH1	2.47	0.40
1:E:415:LEU:HD12	1:E:420:LEU:O	2.21	0.40
1:G:125:VAL:O	1:G:128:THR:HG22	2.22	0.40
1:G:317:THR:O	1:G:327:SER:HA	2.21	0.40
1:I:305:VAL:HA	1:I:439:SER:O	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:402:MET:HB3	1:M:402:MET:HE2	1.98	0.40
1:O:136:HIS:HB3	1:O:140:SER:OG	2.21	0.40
1:S:317:THR:O	1:S:327:SER:HA	2.21	0.40
1:V:396:LYS:HB3	1:V:396:LYS:HE3	1.80	0.40
1:A:16:LYS:HE3	1:A:16:LYS:HB2	1.79	0.40
1:E:67:ALA:HB2	1:E:92:ARG:NE	2.37	0.40
1:K:123:MET:HE3	1:K:465:ARG:HG3	2.02	0.40
1:M:125:VAL:O	1:M:128:THR:HG22	2.22	0.40
1:M:166:ALA:O	1:M:171:ARG:NH2	2.54	0.40
1:O:275:ARG:O	1:O:290:ILE:HA	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	450/472 (95%)	426 (95%)	24 (5%)	0	100	100
1	C	450/472 (95%)	429 (95%)	21 (5%)	0	100	100
1	E	450/472 (95%)	425 (94%)	25 (6%)	0	100	100
1	G	450/472 (95%)	426 (95%)	24 (5%)	0	100	100
1	I	450/472 (95%)	428 (95%)	22 (5%)	0	100	100
1	K	450/472 (95%)	425 (94%)	25 (6%)	0	100	100
1	M	450/472 (95%)	426 (95%)	24 (5%)	0	100	100
1	O	450/472 (95%)	428 (95%)	22 (5%)	0	100	100
1	Q	450/472 (95%)	426 (95%)	24 (5%)	0	100	100
1	S	450/472 (95%)	424 (94%)	26 (6%)	0	100	100
1	V	450/472 (95%)	428 (95%)	22 (5%)	0	100	100
1	X	450/472 (95%)	426 (95%)	24 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
All	All	5400/5664 (95%)	5117 (95%)	283 (5%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	374/409 (91%)	374 (100%)	0	100	100
1	C	374/409 (91%)	374 (100%)	0	100	100
1	E	374/409 (91%)	374 (100%)	0	100	100
1	G	374/409 (91%)	374 (100%)	0	100	100
1	I	374/409 (91%)	374 (100%)	0	100	100
1	K	374/409 (91%)	374 (100%)	0	100	100
1	M	374/409 (91%)	374 (100%)	0	100	100
1	O	374/409 (91%)	374 (100%)	0	100	100
1	Q	374/409 (91%)	374 (100%)	0	100	100
1	S	374/409 (91%)	374 (100%)	0	100	100
1	V	374/409 (91%)	374 (100%)	0	100	100
1	X	374/409 (91%)	374 (100%)	0	100	100
All	All	4488/4908 (91%)	4488 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (16) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	389	GLN
1	C	111	ASN
1	C	120	GLN
1	E	120	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	E	389	GLN
1	G	389	GLN
1	I	111	ASN
1	K	120	GLN
1	K	389	GLN
1	M	389	GLN
1	O	111	ASN
1	Q	120	GLN
1	S	389	GLN
1	V	111	ASN
1	X	120	GLN
1	X	389	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

Of 12 ligands modelled in this entry, 12 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

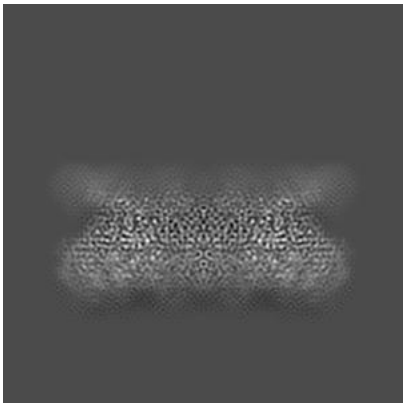
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-11024. These allow visual inspection of the internal detail of the map and identification of artifacts.

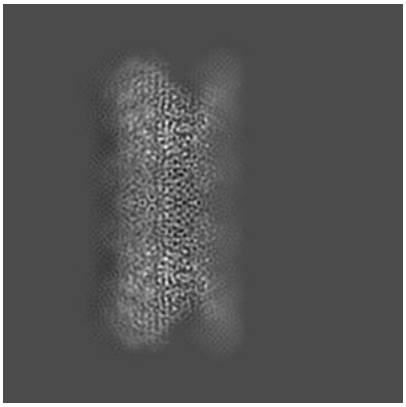
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

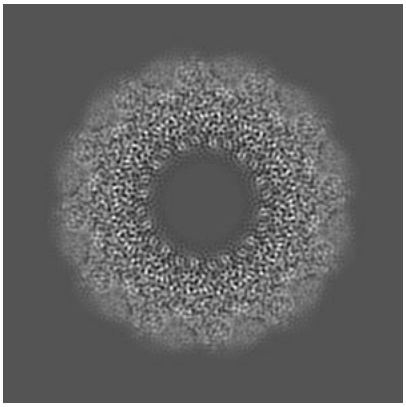
6.1.1 Primary map



X



Y

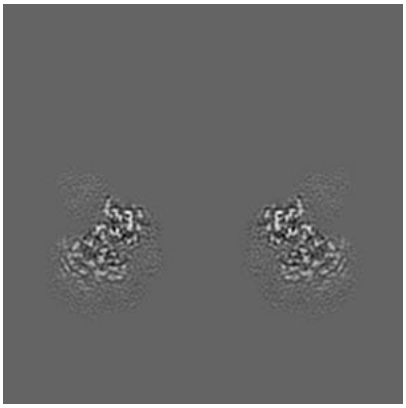


Z

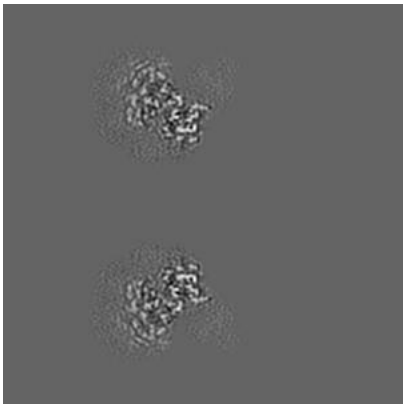
The images above show the map projected in three orthogonal directions.

6.2 Central slices

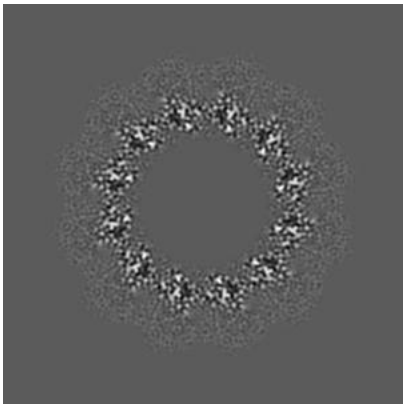
6.2.1 Primary map



X Index: 150



Y Index: 150



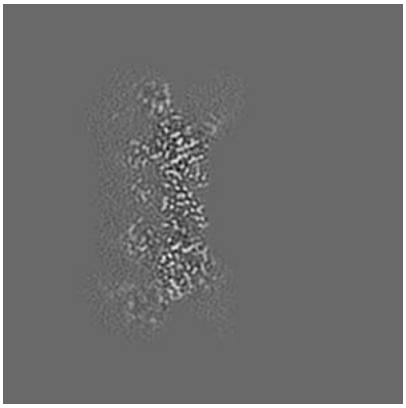
Z Index: 150

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

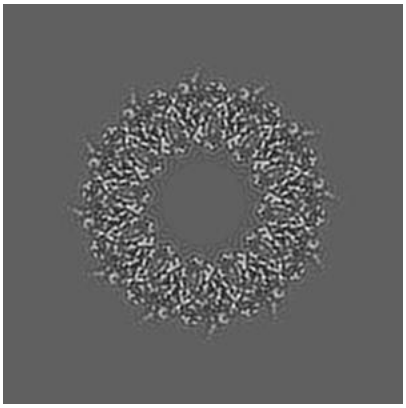
6.3 Largest variance slices (i)

6.3.1 Primary map

X Index: 206



Y Index: 206

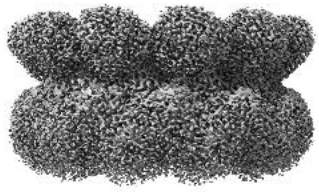


Z Index: 126

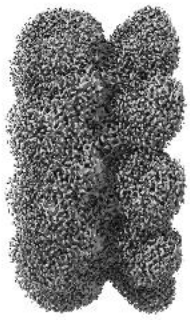
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views (i)

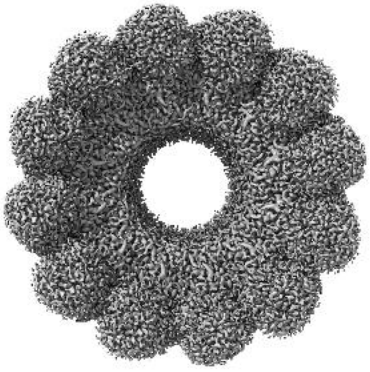
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.007. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

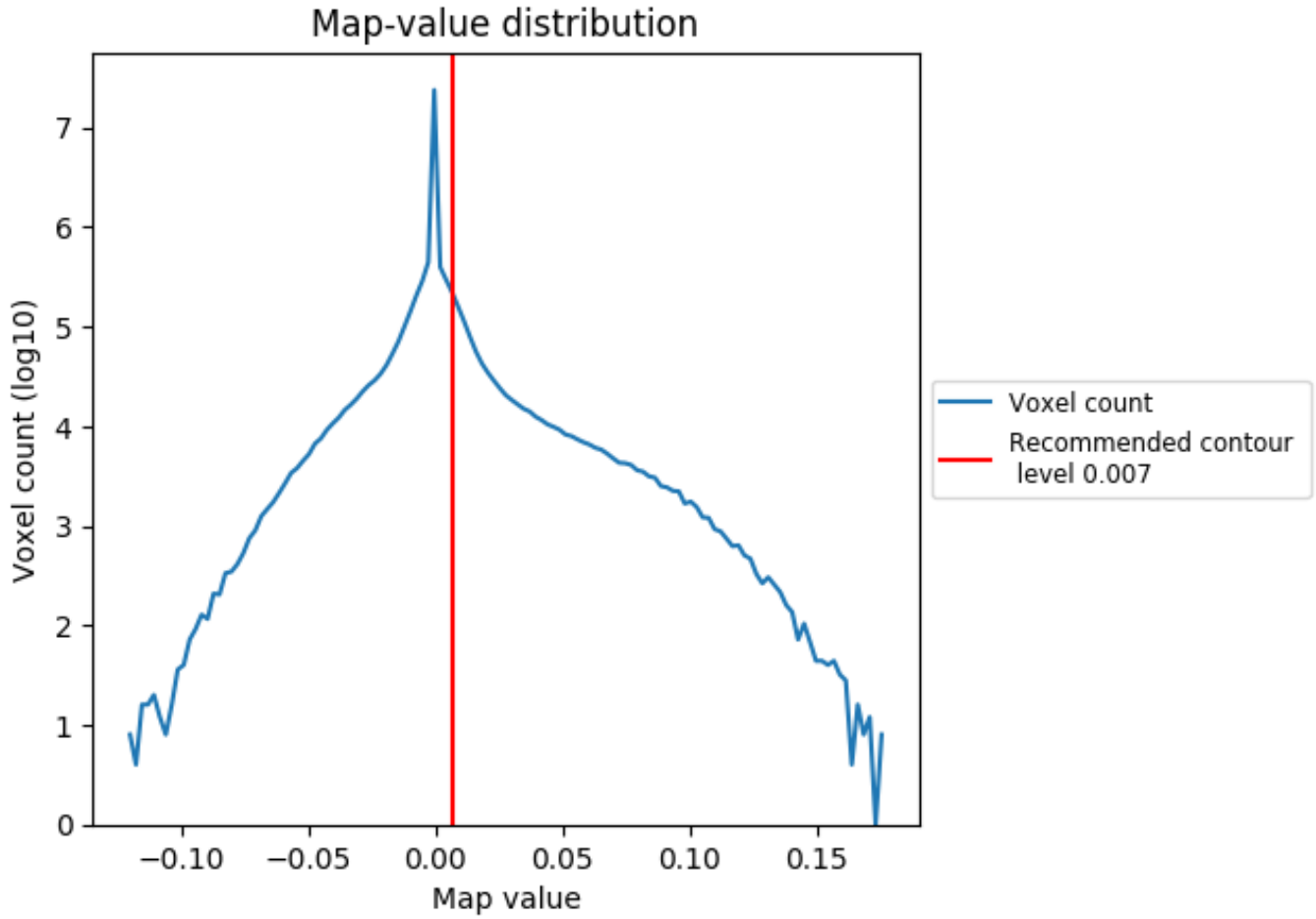
6.5 Mask visualisation (i)

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

7 Map analysis

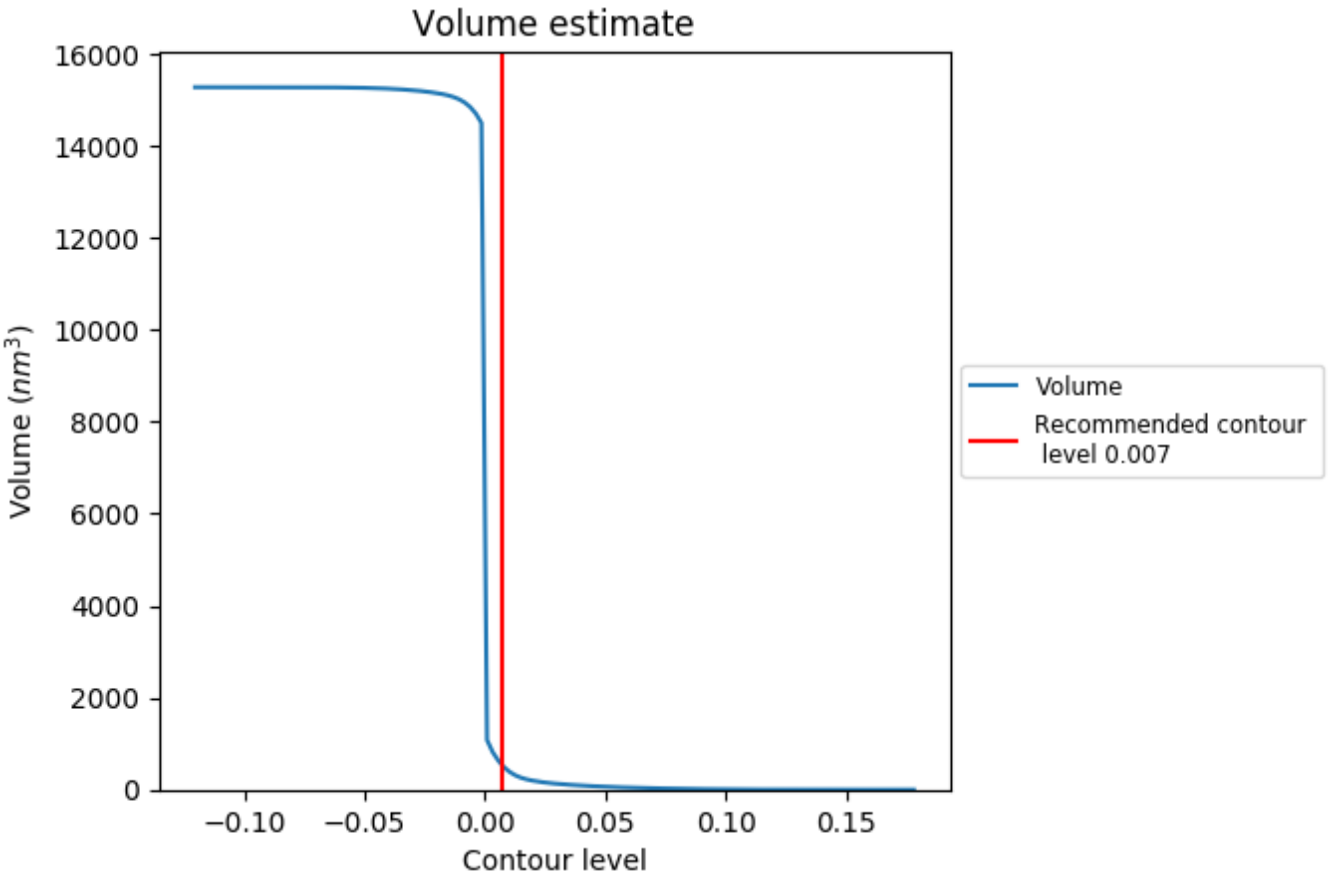
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

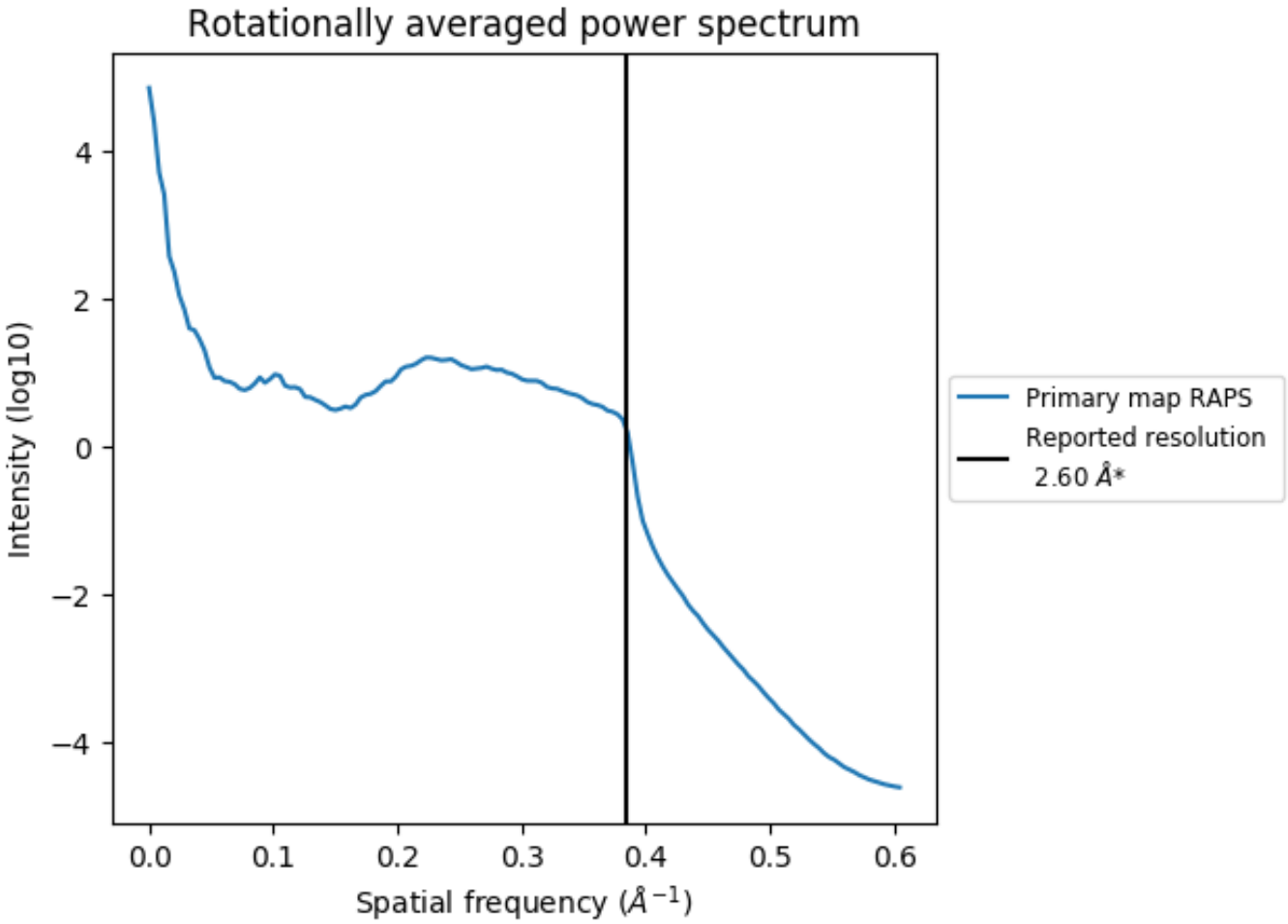
7.2 Volume estimate



The volume at the recommended contour level is 539 nm^3; this corresponds to an approximate mass of 487 kDa.

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

7.3 Rotationally averaged power spectrum (i)

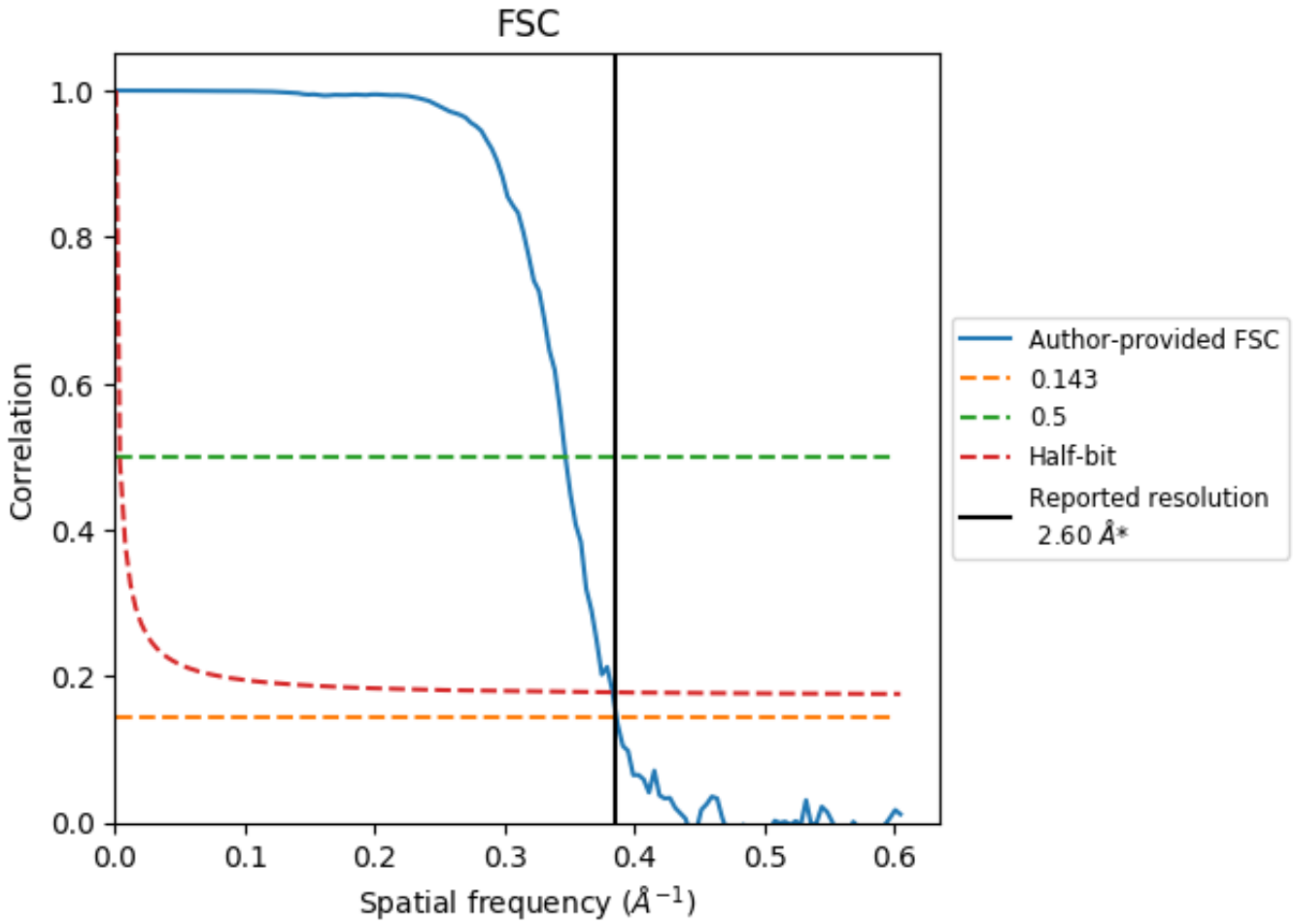


*Reported resolution corresponds to spatial frequency of 0.385 Å^{-1}

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.385 Å^{-1}

8.2 Resolution estimates (i)

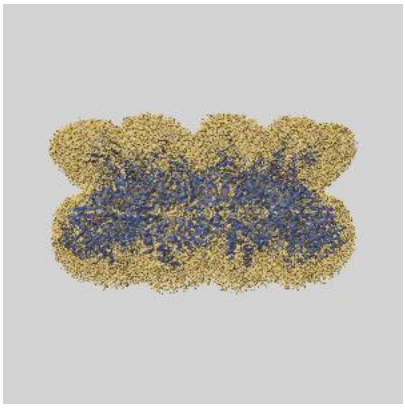
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.60	-	-
Author-provided FSC curve	2.62	2.92	2.64
Calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

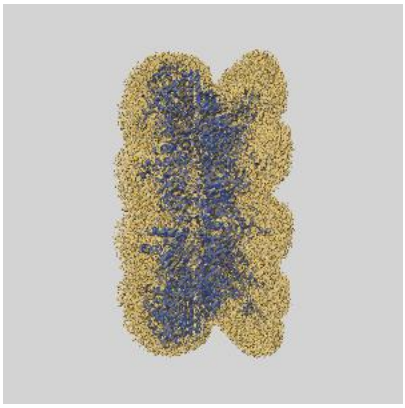
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-11024 and PDB model 6Z0V. Per-residue inclusion information can be found in section 3 on page 7.

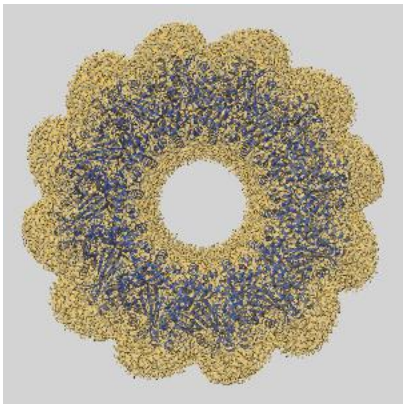
9.1 Map-model overlay



X



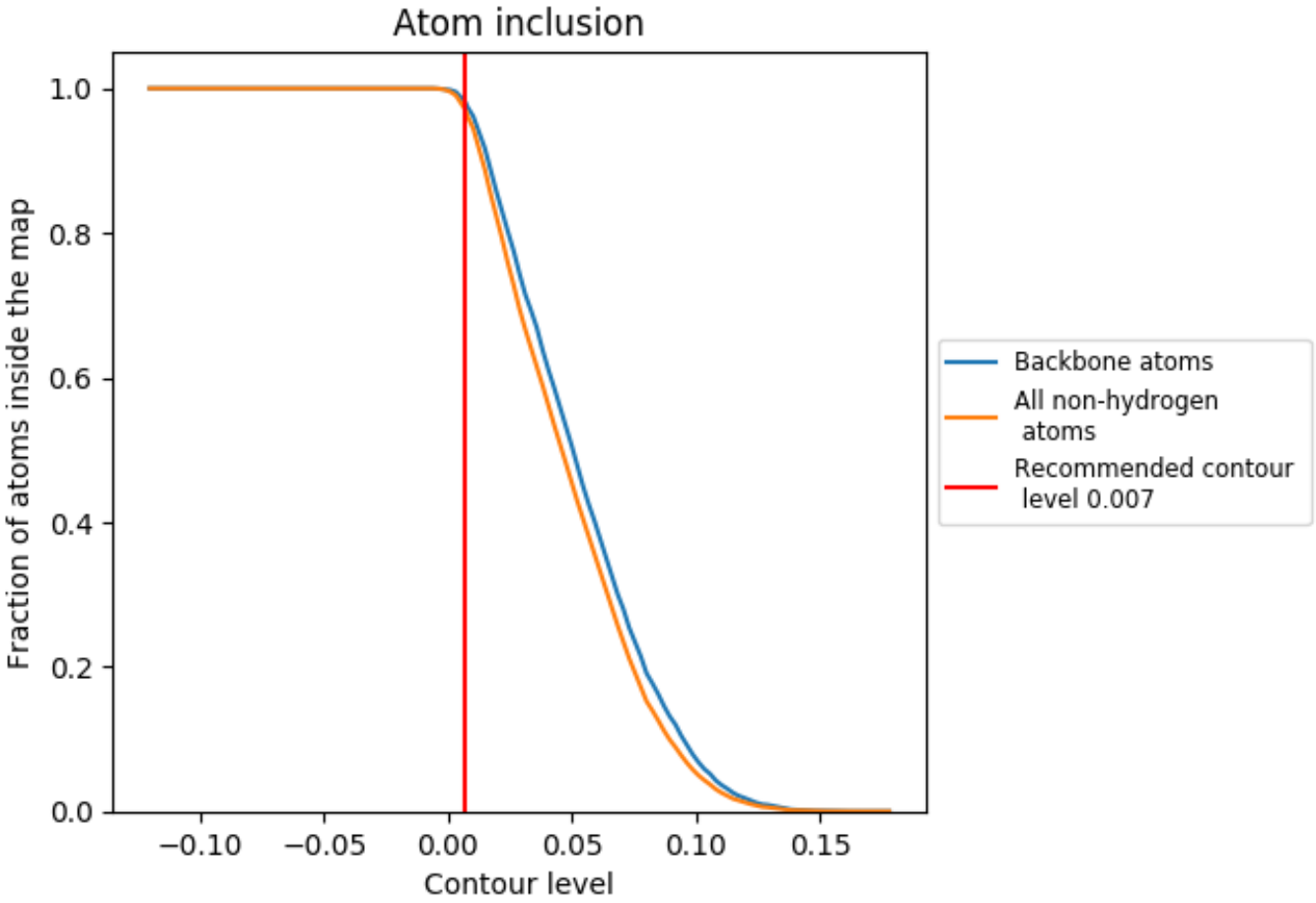
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.007 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Atom inclusion (i)



At the recommended contour level, 98% of all backbone atoms, 97% of all non-hydrogen atoms, are inside the map.