WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Dec 10, 2025 – 07:21 pm GMT

PDB ID	:	5M5X / pdb_00005m5x
EMDB ID	:	EMD-3447
Title	:	RNA Polymerase I elongation complex 1
Authors	:	Tafur, L.; Sadian, Y.; Hoffmann, N.A.; Jakobi, A.J.; Wetzel, R.; Hagen, W.J.H.; Sachse, C.; Muller, C.W.
Deposited on	:	2016-10-23
Resolution	:	4.00 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 (i) 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 (i)) were used in the production of this report:
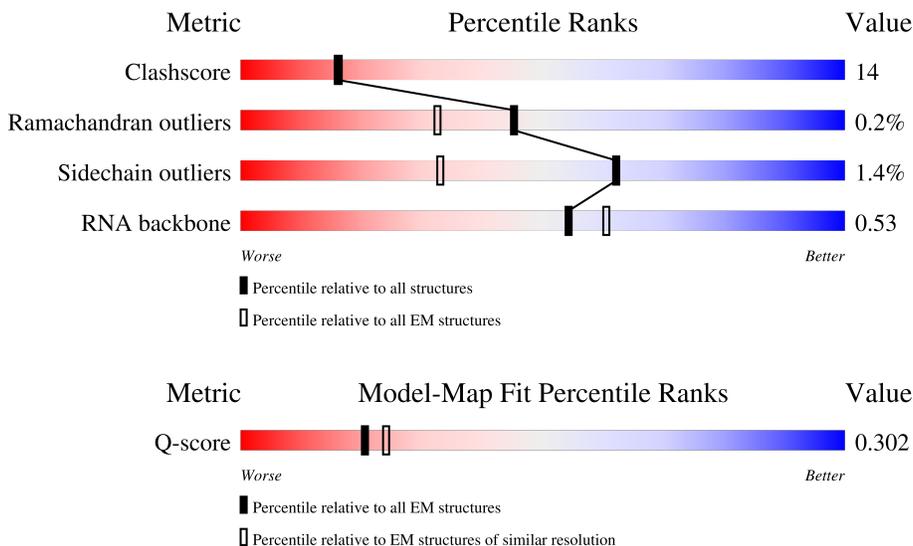
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.47

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 4.00 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.
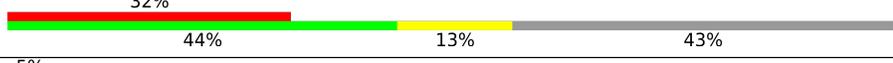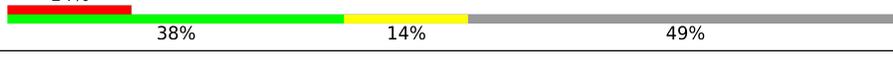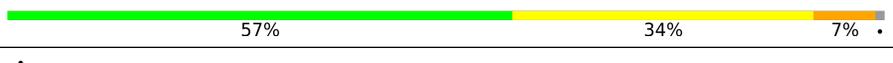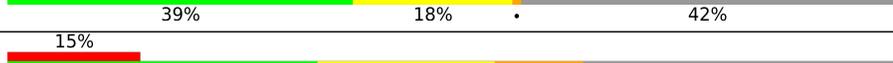
Metric	Percentile Ranks	Value
Clashscore		14
Ramachandran outliers		0.2%
Sidechain outliers		1.4%
RNA backbone		0.53

Worse ... *Better*

▮ Percentile relative to all structures
▯ Percentile relative to all EM structures

Metric	Model-Map Fit Percentile Ranks	Value
Q-score		0.302

Worse ... *Better*

▮ Percentile relative to all EM structures
▯ Percentile relative to EM structures of similar resolution

Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	7587 (3.50 - 4.50)

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	1664	60% 26% · 13%
2	B	1203	65% 32% ··
3	C	335	66% 24% · 9%

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Mol	Chain	Length	Quality of chain
4	D	137	30% / 29% 14% 57%
5	E	215	5% / 72% 27%
6	F	155	· / 45% 19% 35%
7	G	326	32% / 44% 13% 43%
8	H	146	5% / 66% 24% · 8%
9	I	125	14% / 38% 14% 49%
10	J	70	57% 34% 7% ·
11	K	142	· / 47% 23% · 30%
12	L	70	49% 13% 39%
13	M	415	12% / 14% 10% 76%
14	N	233	39% / 39% 18% · 42%
15	R	20	15% / 35% 20% 10% 35%
16	S	38	32% / 42% 32% 26%
17	T	38	45% / 39% 61%
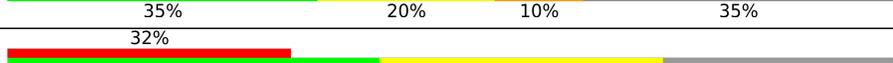
2 Entry composition (i)

There are 18 unique types of molecules in this entry. The entry contains 34491 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 DNA-directed RNA polymerase I subunit RPA190.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1455	Total 11488	C 7259	N 1998	O 2169	S 62	0	0

- Molecule 2 is a protein called DNA-directed RNA polymerase I subunit RPA135.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	1170	Total 9301	C 5888	N 1625	O 1737	S 51	0	0

- Molecule 3 is a protein called DNA-directed RNA polymerases I and III subunit RPAC1.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	304	Total 2418	C 1536	N 414	O 460	S 8	0	0

- Molecule 4 is a protein called DNA-directed RNA polymerase I subunit RPA14.

Mol	Chain	Residues	Atoms				AltConf	Trace
4	D	59	Total 467	C 293	N 80	O 94	0	0

- Molecule 5 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC1.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	214	Total 1751	C 1111	N 309	O 320	S 11	0	0

- Molecule 6 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	100	Total 823	C 522	N 144	O 154	S 3	0	0

- Molecule 7 is a protein called DNA-directed RNA polymerase I subunit RPA43.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	187	Total	C	N	O	S	0	0
			1486	959	255	267	5		

- Molecule 8 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	134	Total	C	N	O	S	0	0
			1075	677	182	212	4		

- Molecule 9 is a protein called DNA-directed RNA polymerase I subunit RPA12.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	64	Total	C	N	O	S	0	0
			472	295	78	95	4		

- Molecule 10 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	69	Total	C	N	O	S	0	0
			569	362	101	100	6		

- Molecule 11 is a protein called DNA-directed RNA polymerases I and III subunit RPAC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	100	Total	C	N	O	S	0	0
			785	491	129	160	5		

- Molecule 12 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC4.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	43	Total	C	N	O	S	0	0
			344	211	69	60	4		

- Molecule 13 is a protein called DNA-directed RNA polymerase I subunit RPA49.

Mol	Chain	Residues	Atoms				AltConf	Trace
13	M	101	Total	C	N	O	0	0
			802	508	132	162		

- Molecule 14 is a protein called DNA-directed RNA polymerase I subunit RPA34.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	135	Total 1070	C 685	N 175	O 206	S 4	0	0

- Molecule 15 is a RNA chain called RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	R	13	Total 281	C 126	N 56	O 86	P 13	0	0

- Molecule 16 is a DNA chain called Non-template DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	S	28	Total 579	C 276	N 108	O 167	P 28	0	0

- Molecule 17 is a DNA chain called Template DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	T	38	Total 774	C 370	N 137	O 229	P 38	0	0

- Molecule 18 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
18	A	2	Total 2	Zn 2	0
18	B	1	Total 1	Zn 1	0
18	I	1	Total 1	Zn 1	0
18	J	1	Total 1	Zn 1	0
18	L	1	Total 1	Zn 1	0

3 Residue-property plots ⓘ

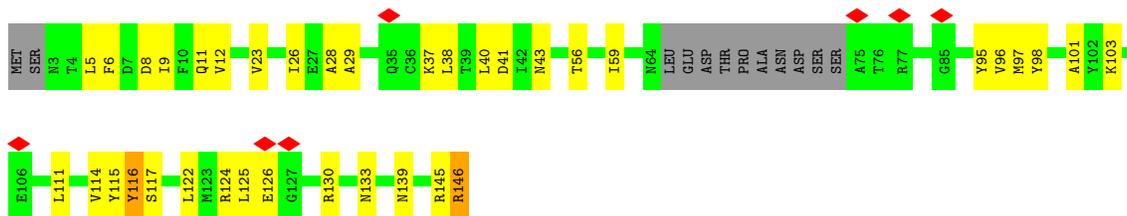These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

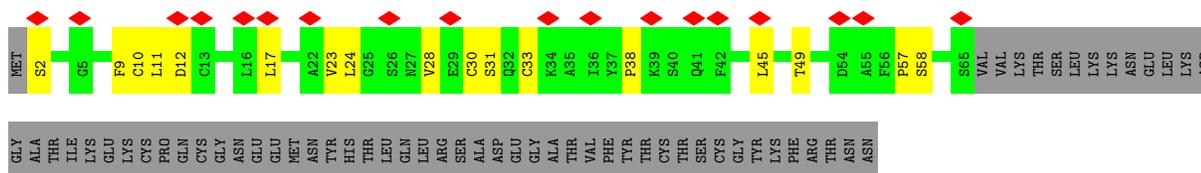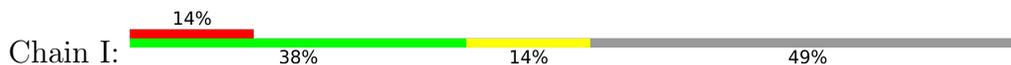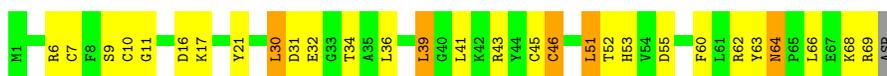• Molecule 1: DNA-directed RNA polymerase I subunit RPA190

• Molecule 2: DNA-directed RNA polymerase I subunit RPA135

• Molecule 3: DNA-directed RNA polymerases I and III subunit RPAC1

• Molecule 4: DNA-directed RNA polymerase I subunit RPA14

Chain D:
30%
29% 14% 57%

MET MET LYS GLY SER ARG ARG THR GLY ASN ASN T12 A13 T14 T18 P19 V20 V21 I22 T25 Q26 H30 V31 S32 T33 D34 E35 V36 L37 Q38 F39 L40 E41 S42 F43 I44 D45 E46 K47 E48 N49 ILE ILE ASP SER SER THR THR MET ASN THR ILE SER GLY ASN ALA ALA ASP

ALA ASP ALA ALA ALA VAL ALA ASN THR SER LEU ASN ILE ASP T80 N81 L82 S83 S84 S85 I86 S87 Q88 L89 K90 R91 I92 Q93 R94 D95 F96 K97 G98 L99 P100 PRO ALA GLN ASP PHE SER ALA ALA PRO ILE GLN VAL SER THR THR GLU LYS LYS GLU THR SER ILE GLY VAL SER

ALA THR GLY GLY LYS THR PHE ALA ASP GLU

• Molecule 5: DNA-directed RNA polymerases I, II, and III subunit RPABC1

Chain E:
5%
72% 27%

MET D2 Q3 E4 R7 N8 R11 F16 K20 D25 V35 E36 L37 P38 L39 E40 D41 F42 K43 A44 K45 Y46 C47 D48 S49 M50 G51 R52 M57 A62 S68 K71 F72 M75 L78 W79 V80 D84 E85 V90 K91 T92 M93 K94 V97

I100 F105 I109 Y112 S119 A120 L123 V124 P125 S126 I127 I132 E133 T134 I144 H147 V150 P151 R155 L156 L164 L175 R180 P183 V187 L188 G189 L190 K191 R192 K197 I198 T204 R207 Y211 M215

• Molecule 6: DNA-directed RNA polymerases I, II, and III subunit RPABC2

Chain F:
45% 19% 35%

MET SER ASP TYR GLU GLU ALA PHE ASN ASP GLY ASN GLU ASN PHE GLU ASP PHE ASP VAL GLU HIS PHE SER ASP GLU GLU THR TYR GLU GLU LYS PRO GLN PHE LYS ASP GLY GLU THR THR ASP ALA ASN GLY LYS THR ILE VAL THR GLY GLY ASN GLY P55 E56 D57 F58 H61

T81 T82 P83 Y84 M85 T86 K87 Y88 E89 R90 I93 I101 S102 M103 V107 L111 E114 T115 D116 R119 I120 A121 E127 I130 P131 L132 V133 L134 R135 R136 Y137 L138 E144 D145 W146 D154 LEU

• Molecule 7: DNA-directed RNA polymerase I subunit RPA43

Chain G:
32%
44% 13% 43%

MET SER GLN VAL LYS ARG ALA N8 E9 N10 R11 A14 R15 F16 I17 K18 K19 H20 K21 LYS GLN VAL THR ASN PRO ILE ASP LYS ASN GLY THR SER ASN C37 I38 V39 R40 V41 P42 I43 A44 L45 Y46 L49 A50 P51 N56 P57 L58 Q59 G60 V61 M62 K63 Q64 H65

L66 N67 V70 M71 K72 Y73 N74 N75 K76 V77 G78 G79 V80 G83 Y84 L87 L95 SER LYS GLU D99 T100 S101 E102 K103 L104 I105 K106 P109 D110 T111 F115 T116 N121 L122 Q128 V129 G130 D131 V132 L133 E134 G135 Y136 I137 F138 I139 Q140 S141 A142 S143 H144

I145 G146 L147 L148 I149 H150 D151 A152 F153 N154 A155 S156 I157 K158 K159 N160 N161 I162 P163 V164 D165 W166 T167 F168 V169 H170 N171 D172 V173 E174 GLU ASP ALA ASP VAL ILE ASN THR ASP GLU ASN GLY ASN ASN ASN ASN GLU ASP ASN LYS ASP SER ASN GLY GLY SER ASN SER LEU

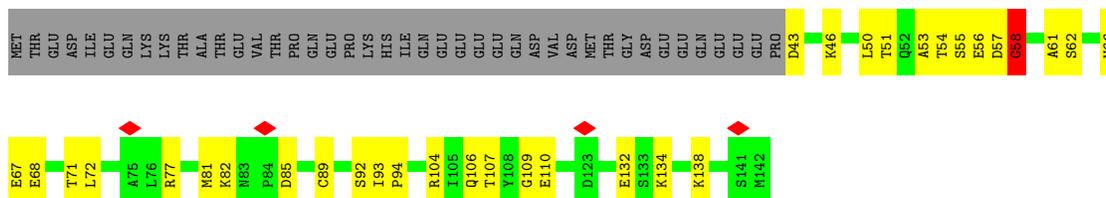• Molecule 8: DNA-directed RNA polymerases I, II, and III subunit RPABC3

Chain H:

• Molecule 9: DNA-directed RNA polymerase I subunit RPA12

Chain I:

• Molecule 10: DNA-directed RNA polymerases I, II, and III subunit RPABC5

Chain J:

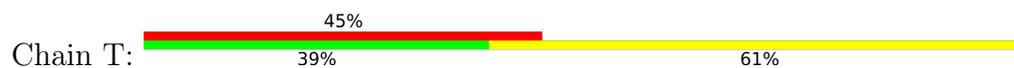• Molecule 11: DNA-directed RNA polymerases I and III subunit RPAC2

Chain K:

• Molecule 12: DNA-directed RNA polymerases I, II, and III subunit RPABC4

Chain L:

49%   13%   39%

MET SER ARG GLU GLY PHE ILE PRO THR ASN LEU ASP ALA ALA ALA GLY THR SER GLN ALA ARG THR ALA THR LEU K28 C31 C34 S35 S36 R47 C48 C51 L56 K62 A69 R70

• Molecule 13: DNA-directed RNA polymerase I subunit RPA49

Chain M:

12%
14%   10%   76%

MET SER VAL LYS ARG SER VAL S8 E9 I10 E11 I12 E13 S14 V15 Q16 D17 Q18 P19 S20 V21 A22 V23 G24 S25 K28 R31 A32 P33 S34 D35 T36 T37 F38 Y41 K42 K43 K44 LYS SER E47 K48 D49 E50 F51 V52 G55 E56 N57 E58 R59 L60 E61 Y62 E63 G64

Y65 T66 D67 S68 S69 S70 Q71 A72 S73 N74 Q75 Y76 V77 V78 G79 L80 F81 N82 P83 E84 K85 K86 S87 I88 Q89 L90 Y91 K92 A93 V101 S104 S105 K106 G110 PRO LYS ILE LYS SER LYS SER ASP THR ARG PRO SER ALA LEU ARG ASN ALA LEU GLU GLY GLU ALA PHE GLY

THR LYS LYS ALA LYS LYS ALA ILE ALA ASP LEU GLU ARG ASN ARG ILE ASP SER ASP LYS LEU THR ASP SER ALA ILE ASP ILE VAL ASP SER VAL ARG THR ALA SER LYS ASP LEU PRO THR ARG ALA GLN LEU ASP GLU ILE THR SER ASN ASP ARG PRO THR PRO LEU ALA ASN ILE

ASP ALA THR ASP VAL GLU GLN ILE GLU TYR PRO ILE GLU SER ILE ILE PRO LYS LYS GLU LEU GLN PHE ILE ARG VAL ALA SER ILE LEU LEU GLU ARG LEU ASN SER PRO PRO GLU ILE LEU VAL ASP GLY ILE LEU LEU SER ARG PHE THR VAL ALA LYS LYS LEU ASP SER SER THR GLN PRO

SER GLN MET THR LYS LEU GLN LEU LEU TYR TYR LEU TYR LEU SER LEU LEU GLY VAL TYR GLU ASN ARG VAL ASN LYS THR LYS LEU LEU GLU ARG LEU ASN SER PRO PRO GLU ILE LEU VAL ASP GLY ILE LEU SER ARG PHE THR VAL ILE LYS PRO GLY GLN PHE GLY ARG SER

LYS ASP ARG SER TYR PHE ILE ASP PRO GLN ASN GLU LYS ILE ASP ASP ILE ILE MET HIS LEU ASP ASN PHE ILE VAL GLU ILE THR PRO LEU HIS GLU ASN LEU LYS PRO SER VAL VAL SER LEU PHE ARG VAL LEU GLY ALA ILE VAL LYS GLY

ALA THR VAL ALA GLN ALA GLU ALA PHE GLY ILE PRO SER THR ALA ALA SER TYR LYS ILE ALA THR MET LYS VAL PRO PHE LYS LEU GLU MET THR ARG ARG GLY ARG GLY PRO ARG ARG

• Molecule 14: DNA-directed RNA polymerase I subunit RPA34

Chain N:

39%
39%   18%   •   42%

MET SER LYS LEU SER LYS ASP TYR VAL SER SER ASP SER SER ASP VAL ASP VAL ILE SER ASN GLU PHE S24 I25 P26 D27 G28 F29 K30 K31 C32 K33 H34 L35 K36 N37 F38 P39 L40 N41 G42 D43 N44 LYS LYS LYS ALA K49 Q50 Q51 Q52 V53 W54 L55 I56 K57 F58 P59 S60

N61 V62 D63 I64 S65 K66 L67 K68 S69 L70 P71 V72 D73 F74 E75 S76 S77 M80 T81 I82 D83 K84 H85 D86 Y87 K88 I89 M90 D91 D92 T93 D94 ILE GLU SER SER LEU THR GLN ASP ASN LEU SER N106 L109 L110 V111 P112 S113 E114 S115 K116 E117 S118 L119 K120 I121 A122

S123 T124 A125 LYS ASP ASN ALA P130 L131 Q132 F133 D134 K135 V136 F137 S138 V139 A147 I148 V155 P156 R157 K158 D159 V160 P161 K162 G165 L166 K167 H170 F171 A172 T173 G174 Y175 D176 A177 GLU ASP PHE HIS VAL ALA GLU GLU VAL LYS GLU ASN LYS GLU GLU PRO LYS LYS

ARG SER HIS HIS ASP ASP GLU GLU GLU SER SER GLU LYS LYS LYS LYS LYS GLU LYS ARG GLU LYS ARG GLU LYS LYS ASP LYS LYS ASP LYS LYS LYS HIS ARG ASP

• Molecule 15: RNA

Chain R:

15%
35%   20%   10%   35%

• Molecule 16: Non-template DNA

Chain S:

• Molecule 17: Template DNA

Chain T:

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	83787	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	40	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.236	Depositor
Minimum map value	-0.167	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.009	Depositor
Recommended contour level	0.03	Depositor
Map size (Å)	270.0, 270.0, 270.0	wwPDB
Map dimensions	200, 200, 200	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.35, 1.35, 1.35	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	0.12	1/11698 (0.0%)	0.35	5/15798 (0.0%)
2	B	0.14	1/9506 (0.0%)	0.42	6/12847 (0.0%)
3	C	0.09	0/2469	0.27	0/3347
4	D	0.09	0/473	0.28	0/641
5	E	0.09	0/1787	0.27	0/2406
6	F	0.10	0/838	0.27	0/1129
7	G	0.08	0/1521	0.24	0/2067
8	H	0.09	0/1093	0.30	0/1480
9	I	0.09	0/478	0.32	0/647
10	J	0.11	0/578	0.32	0/775
11	K	0.71	3/795 (0.4%)	1.16	6/1072 (0.6%)
12	L	0.10	0/346	0.32	0/457
13	M	0.10	0/816	0.31	0/1095
14	N	0.12	0/1090	0.58	4/1466 (0.3%)
15	R	0.06	0/315	0.16	0/489
16	S	0.13	0/649	0.28	0/998
17	T	0.14	0/866	0.30	0/1333
All	All	0.16	5/35318 (0.0%)	0.39	21/48047 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
11	K	0	1

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	K	57	ASP	N-CA	15.41	1.65	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	K	58	GLY	CA-C	-9.12	1.39	1.51
11	K	57	ASP	CA-CB	8.28	1.66	1.53
2	B	1064	LYS	N-CA	8.05	1.56	1.46
1	A	763	GLY	N-CA	7.16	1.55	1.45

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
11	K	57	ASP	N-CA-C	-29.50	73.44	112.68
2	B	1064	LYS	N-CA-C	-27.82	78.50	113.55
11	K	57	ASP	CB-CA-C	-14.57	85.90	110.24
1	A	764	SER	N-CA-C	-12.92	90.32	108.54
11	K	57	ASP	CA-CB-CG	-9.75	102.85	112.60
14	N	147	ALA	N-CA-C	9.70	123.89	109.24
1	A	763	GLY	N-CA-C	-9.51	90.65	113.18
11	K	57	ASP	N-CA-CB	-8.73	95.66	110.33
2	B	1064	LYS	CB-CA-C	-8.50	96.17	109.34
1	A	866	LYS	N-CA-C	7.85	120.80	108.79
14	N	148	ILE	N-CA-C	7.65	125.25	109.34
2	B	1065	ARG	N-CA-C	-7.61	104.09	113.15
14	N	148	ILE	CA-C-N	-6.71	111.60	122.34
14	N	148	ILE	C-N-CA	-6.71	111.60	122.34
2	B	1064	LYS	N-CA-CB	-5.62	102.24	110.40
1	A	450	LYS	N-CA-C	-5.57	106.07	112.86
2	B	1063	ARG	CA-C-N	-5.28	113.40	122.79
2	B	1063	ARG	C-N-CA	-5.28	113.40	122.79
1	A	867	ASP	N-CA-C	5.09	123.70	113.31
11	K	56	GLU	CA-C-N	-5.03	113.15	122.60
11	K	56	GLU	C-N-CA	-5.03	113.15	122.60

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
11	K	58	GLY	Mainchain

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	11488	0	11571	383	0
2	B	9301	0	9194	324	0
3	C	2418	0	2401	65	0
4	D	467	0	468	16	0
5	E	1751	0	1776	40	0
6	F	823	0	841	25	0
7	G	1486	0	1488	37	0
8	H	1075	0	1046	26	0
9	I	472	0	473	13	0
10	J	569	0	585	23	0
11	K	785	0	782	31	0
12	L	344	0	363	7	0
13	M	802	0	787	37	0
14	N	1070	0	1085	41	0
15	R	281	0	143	4	0
16	S	579	0	318	9	0
17	T	774	0	430	23	0
18	A	2	0	0	0	0
18	B	1	0	0	0	0
18	I	1	0	0	0	0
18	J	1	0	0	0	0
18	L	1	0	0	0	0
All	All	34491	0	33751	964	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 14.

All (964) 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:A:250:LYS:NZ	1:A:314:TYR:HE2	1.28	1.29
1:A:250:LYS:CE	1:A:314:TYR:HE2	1.49	1.25
1:A:250:LYS:HG3	1:A:252:PHE:CE1	1.77	1.18
1:A:250:LYS:NZ	1:A:314:TYR:CE2	2.04	1.17
1:A:250:LYS:CG	1:A:252:PHE:CE1	2.29	1.14
1:A:250:LYS:CE	1:A:314:TYR:CE2	2.33	1.11
2:B:17:ARG:NH1	2:B:758:ASP:OD2	1.85	1.09
1:A:250:LYS:HD2	1:A:314:TYR:CD2	1.92	1.04
1:A:250:LYS:CG	1:A:252:PHE:HE1	1.68	1.03
1:A:1105:ARG:NH1	1:A:1138:GLU:OE2	1.91	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1473:LYS:NZ	1:A:1475:GLU:OE2	1.93	1.00
1:A:248:PHE:HD1	1:A:442:LYS:HG2	1.28	0.97
1:A:250:LYS:HG2	1:A:252:PHE:CE1	2.00	0.97
10:J:10:CYS:HB3	10:J:45:CYS:SG	2.06	0.96
1:A:250:LYS:O	1:A:251:ILE:C	2.10	0.94
1:A:250:LYS:HG2	1:A:252:PHE:HE1	1.32	0.92
2:B:1063:ARG:HA	2:B:1067:GLY:H	1.33	0.91
1:A:1302:TYR:OH	1:A:1310:LYS:NZ	2.04	0.90
2:B:335:ARG:NH1	2:B:344:GLN:OE1	2.04	0.90
2:B:1042:ASP:O	2:B:1063:ARG:NH1	2.03	0.90
12:L:47:ARG:NH1	12:L:48:CYS:O	2.04	0.90
2:B:28:PRO:HD3	10:J:62:ARG:HH12	1.36	0.89
3:C:218:LYS:NZ	12:L:69:ALA:O	2.06	0.88
1:A:15:ASP:OD2	2:B:1197:ARG:NH1	2.06	0.88
2:B:419:GLU:OE1	2:B:460:LYS:NZ	2.08	0.87
9:I:33:CYS:SG	13:M:59:ARG:NH1	2.50	0.84
2:B:711:GLN:HG2	2:B:713:PRO:HD2	1.60	0.84
1:A:248:PHE:O	1:A:249:THR:OG1	1.95	0.83
2:B:64:GLY:O	2:B:414:LYS:NZ	2.11	0.83
3:C:58:ASN:HA	3:C:296:ASN:HB3	1.60	0.81
1:A:250:LYS:HD2	1:A:314:TYR:CE2	2.15	0.81
2:B:588:ILE:HD12	2:B:591:LYS:HZ1	1.46	0.81
4:D:47:LYS:NZ	7:G:67:ASN:OD1	2.14	0.80
1:A:1559:ARG:HH11	1:A:1587:ASP:HB2	1.47	0.80
2:B:750:PRO:HB3	2:B:920:ARG:HH12	1.45	0.80
2:B:1104:CYS:HB3	2:B:1107:CYS:SG	2.23	0.79
1:A:760:TRP:HB2	1:A:764:SER:CB	2.13	0.78
2:B:806:THR:OG1	2:B:904:LYS:NZ	2.17	0.78
1:A:250:LYS:HE3	1:A:314:TYR:HE2	1.48	0.78
1:A:1608:SER:O	1:A:1612:LYS:NZ	2.16	0.78
1:A:250:LYS:CD	1:A:314:TYR:CE2	2.66	0.78
1:A:250:LYS:HG3	1:A:252:PHE:CD1	2.18	0.77
1:A:579:ARG:HD2	1:A:582:LYS:HE2	1.65	0.77
1:A:247:GLY:O	1:A:248:PHE:HB2	1.83	0.77
4:D:95:ASP:OD2	7:G:150:HIS:ND1	2.17	0.76
1:A:250:LYS:HE3	1:A:314:TYR:CE2	2.20	0.75
5:E:71:LYS:NZ	5:E:156:LEU:O	2.17	0.75
1:A:913:PRO:HB3	1:A:926:GLN:HE22	1.50	0.74
1:A:325:ASP:HB3	1:A:329:ARG:HH12	1.50	0.74
1:A:843:ARG:HH21	1:A:945:CYS:HA	1.52	0.74
2:B:258:VAL:HG13	2:B:305:ARG:HH12	1.53	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:123:ARG:HH12	1:A:127:TYR:HE2	1.35	0.74
1:A:518:GLU:OE2	1:A:582:LYS:NZ	2.19	0.74
14:N:147:ALA:O	14:N:148:ILE:HG22	1.87	0.74
1:A:180:GLU:OE1	1:A:184:LYS:NZ	2.21	0.73
3:C:69:ARG:HG2	11:K:71:THR:HG22	1.71	0.73
1:A:760:TRP:HB2	1:A:764:SER:HB3	1.71	0.73
1:A:1274:GLU:OE2	1:A:1288:ARG:NH2	2.20	0.73
13:M:81:PHE:HB3	14:N:54:TRP:HE1	1.54	0.73
1:A:1318:SER:HB2	1:A:1446:ARG:HH22	1.53	0.73
1:A:1446:ARG:HH12	1:A:1450:ILE:HD11	1.54	0.73
1:A:250:LYS:CD	1:A:314:TYR:CD2	2.69	0.72
1:A:1314:GLN:HE21	1:A:1446:ARG:HE	1.35	0.72
5:E:71:LYS:HZ3	5:E:156:LEU:C	1.97	0.72
1:A:760:TRP:CB	1:A:764:SER:HB3	2.21	0.71
2:B:1104:CYS:CB	2:B:1107:CYS:SG	2.78	0.71
5:E:124:VAL:HG23	5:E:125:PRO:HD3	1.72	0.71
2:B:322:ASN:HD22	13:M:105:SER:HA	1.53	0.71
2:B:588:ILE:HD12	2:B:591:LYS:NZ	2.06	0.71
2:B:1025:ASP:OD1	3:C:277:ARG:NH1	2.23	0.71
1:A:1260:LYS:HE3	1:A:1505:ASP:HA	1.73	0.71
1:A:865:ASP:O	1:A:866:LYS:CG	2.39	0.70
2:B:502:MET:HE1	2:B:542:LEU:HG	1.73	0.70
1:A:462:LYS:HG3	1:A:463:LYS:H	1.56	0.70
2:B:719:CYS:SG	2:B:723:LYS:NZ	2.65	0.70
2:B:94:LYS:HZ2	2:B:147:ASN:H	1.40	0.70
1:A:597:LYS:NZ	1:A:656:GLN:HE22	1.91	0.69
2:B:53:THR:HG21	2:B:169:ARG:NH1	2.08	0.69
2:B:67:ASP:OD2	2:B:364:LYS:NZ	2.21	0.68
2:B:675:ALA:HB3	2:B:689:VAL:HG12	1.76	0.68
1:A:1592:GLN:HB2	1:A:1596:LEU:HD11	1.76	0.68
2:B:858:ILE:HD11	2:B:903:ILE:HG21	1.75	0.68
1:A:1:MET:SD	2:B:1094:ASN:ND2	2.67	0.68
2:B:128:GLN:HE21	2:B:735:HIS:HA	1.59	0.68
14:N:56:ILE:HG22	14:N:137:PHE:HB2	1.76	0.68
8:H:56:THR:HB	8:H:145:ARG:HB2	1.74	0.68
2:B:136:LYS:HZ1	2:B:138:LEU:HD21	1.60	0.67
1:A:1559:ARG:HH12	1:A:1583:ASP:CG	2.03	0.67
1:A:1039:ARG:HB3	1:A:1045:LEU:HD13	1.75	0.67
1:A:760:TRP:O	1:A:764:SER:OG	2.13	0.67
2:B:218:ILE:HG22	2:B:232:TYR:HA	1.77	0.67
1:A:325:ASP:HB3	1:A:329:ARG:NH1	2.10	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:831:ASP:HA	1:A:834:ARG:HE	1.60	0.66
2:B:17:ARG:HG3	2:B:20:GLU:HB2	1.78	0.66
2:B:110:ASN:HB2	2:B:119:ARG:H	1.60	0.66
2:B:646:HIS:CD2	2:B:647:SER:H	2.14	0.66
2:B:490:LYS:HG3	2:B:736:ARG:NH1	2.11	0.66
1:A:637:PHE:O	2:B:1091:ARG:NH2	2.28	0.66
2:B:186:GLU:HB3	2:B:189:GLU:HB2	1.77	0.66
1:A:506:THR:HA	1:A:580:HIS:HA	1.78	0.66
2:B:1047:ARG:NH2	2:B:1051:PRO:O	2.29	0.66
1:A:316:LEU:HD13	1:A:317:SER:H	1.61	0.65
1:A:462:LYS:HE2	1:A:469:LYS:HE2	1.78	0.65
2:B:935:ASP:OD1	3:C:69:ARG:NH1	2.29	0.65
2:B:726:MET:HG3	2:B:742:TYR:HB3	1.78	0.65
1:A:1055:ILE:HD11	1:A:1580:ARG:HH12	1.61	0.65
3:C:88:ASN:ND2	3:C:94:ASP:OD1	2.30	0.65
13:M:44:LYS:HD3	13:M:48:LYS:HA	1.77	0.65
1:A:956:ARG:HH12	1:A:979:GLY:HA3	1.62	0.64
13:M:67:ASP:HB2	13:M:71:GLN:HB2	1.79	0.64
3:C:31:TRP:CG	11:K:82:LYS:HZ3	2.16	0.64
1:A:525:ASN:O	1:A:554:ARG:NH1	2.30	0.64
2:B:970:LYS:HZ2	2:B:1000:LEU:HD22	1.62	0.64
2:B:200:GLU:OE2	2:B:736:ARG:NH1	2.31	0.64
2:B:923:GLN:NE2	2:B:959:THR:OG1	2.30	0.64
1:A:461:GLU:HA	1:A:466:LEU:H	1.63	0.64
1:A:1044:THR:OG1	1:A:1591:ARG:NH2	2.30	0.64
2:B:705:PRO:HD3	2:B:920:ARG:HH21	1.62	0.64
5:E:4:GLU:OE1	5:E:8:ASN:ND2	2.31	0.64
5:E:180:ARG:HH11	5:E:192:ARG:HG3	1.61	0.64
14:N:62:VAL:HG12	14:N:63:ASP:H	1.63	0.63
1:A:527:PRO:HG3	1:A:534:THR:HA	1.80	0.63
17:T:25:DT:H4'	17:T:26:DT:H5"	1.79	0.63
1:A:1581:HIS:HA	1:A:1584:LEU:HD12	1.79	0.63
2:B:136:LYS:NZ	2:B:138:LEU:HD21	2.11	0.63
1:A:880:GLN:HB2	2:B:633:THR:HG21	1.79	0.63
2:B:73:ILE:HD11	2:B:429:ARG:HB3	1.80	0.63
2:B:1070:ARG:NH2	17:T:17:DC:OP1	2.30	0.63
1:A:243:PHE:HB3	1:A:251:ILE:HD11	1.79	0.63
2:B:588:ILE:HG12	2:B:642:LEU:HD13	1.81	0.63
2:B:609:ARG:NH1	2:B:626:ILE:O	2.32	0.63
5:E:25:ASP:OD2	5:E:187:TYR:OH	2.16	0.62
1:A:487:ASP:HB2	1:A:615:ARG:HD2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:15:VAL:HG13	13:M:90:LEU:HD22	1.81	0.62
7:G:56:ASN:ND2	7:G:59:GLN:OE1	2.33	0.62
1:A:828:CYS:SG	1:A:829:GLY:N	2.72	0.62
2:B:307:GLU:OE2	2:B:311:ARG:NE	2.32	0.62
2:B:776:ILE:HG22	2:B:778:TYR:H	1.64	0.62
2:B:1195:ARG:HH12	2:B:1197:ARG:HD2	1.65	0.62
1:A:1289:SER:HB3	1:A:1473:LYS:NZ	2.15	0.62
7:G:15:ARG:HA	7:G:18:LYS:HE3	1.82	0.62
17:T:15:DC:H2'	17:T:16:DG:H8	1.64	0.62
1:A:1549:VAL:HG11	1:A:1561:THR:HG21	1.81	0.62
1:A:597:LYS:HE2	2:B:1082:HIS:HA	1.82	0.61
1:A:1504:ILE:HA	1:A:1523:GLY:HA3	1.81	0.61
1:A:1531:ASP:OD2	5:E:7:ARG:NH2	2.34	0.61
2:B:521:LEU:HD23	2:B:523:GLU:H	1.63	0.61
5:E:124:VAL:HG12	5:E:132:ILE:HD13	1.81	0.61
2:B:253:LEU:HD12	2:B:257:GLN:HB3	1.82	0.61
2:B:604:ILE:HB	2:B:608:LEU:HD13	1.83	0.61
2:B:1157:GLN:NE2	2:B:1171:ASN:OD1	2.30	0.61
1:A:247:GLY:O	1:A:248:PHE:CB	2.46	0.61
2:B:73:ILE:HG22	2:B:95:LEU:HB2	1.82	0.61
2:B:240:ARG:N	2:B:244:THR:O	2.31	0.61
5:E:8:ASN:OD1	5:E:11:ARG:NH2	2.32	0.61
1:A:1316:VAL:HG21	1:A:1498:ILE:HA	1.82	0.61
2:B:1094:ASN:HA	2:B:1098:TYR:HB2	1.81	0.61
1:A:248:PHE:CD1	1:A:442:LYS:HG2	2.21	0.61
8:H:28:ALA:HB3	8:H:38:LEU:HB3	1.83	0.61
2:B:214:PRO:HB2	2:B:380:LYS:NZ	2.16	0.60
2:B:987:ASN:HD22	14:N:157:ARG:HH22	1.47	0.60
2:B:562:PRO:HG3	2:B:591:LYS:HZ1	1.66	0.60
2:B:1006:ASN:ND2	2:B:1010:ASN:O	2.34	0.60
3:C:114:THR:OG1	3:C:130:ASN:ND2	2.33	0.60
10:J:7:CYS:CB	10:J:46:CYS:SG	2.88	0.60
1:A:79:ILE:HG12	1:A:360:LEU:HB2	1.83	0.60
1:A:1531:ASP:OD2	5:E:11:ARG:HD3	2.01	0.60
16:S:27:DA:N1	17:T:13:DT:N3	2.49	0.60
1:A:639:GLN:HG2	2:B:1091:ARG:HH22	1.65	0.60
1:A:1120:TYR:O	5:E:207:ARG:NH2	2.35	0.60
2:B:737:SER:HA	2:B:904:LYS:HZ1	1.65	0.60
14:N:76:SER:HB3	14:N:88:LYS:NZ	2.16	0.60
6:F:111:LEU:HD22	6:F:120:ILE:HD12	1.84	0.60
1:A:332:GLN:HE22	1:A:350:VAL:H	1.49	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1050:TYR:HB3	1:A:1054:ALA:HA	1.83	0.60
1:A:1176:ARG:HH12	6:F:84:TYR:HB2	1.67	0.60
2:B:189:GLU:OE2	2:B:193:TYR:OH	2.13	0.60
2:B:750:PRO:HG2	2:B:753:LYS:HB3	1.83	0.60
2:B:591:LYS:HZ2	2:B:593:ILE:HD11	1.67	0.60
3:C:80:ALA:HA	3:C:208:CYS:HA	1.84	0.60
2:B:725:THR:HA	2:B:1036:LEU:HA	1.84	0.60
2:B:709:PHE:HB3	2:B:960:ILE:HG13	1.84	0.59
1:A:1332:GLU:HA	1:A:1335:LYS:HZ2	1.66	0.59
7:G:40:ARG:HD3	7:G:121:ASN:HB3	1.84	0.59
1:A:658:LEU:HD11	1:A:663:GLY:HA2	1.85	0.59
1:A:1289:SER:HB3	1:A:1473:LYS:HZ1	1.67	0.59
2:B:127:ARG:NH2	2:B:193:TYR:OH	2.35	0.59
1:A:1239:THR:HG23	1:A:1518:VAL:HG13	1.84	0.59
2:B:726:MET:SD	2:B:1035:ARG:NH1	2.76	0.59
2:B:1018:THR:O	3:C:65:ASN:ND2	2.34	0.59
14:N:114:GLU:HB2	14:N:120:LYS:HZ2	1.67	0.59
11:K:66:VAL:HG23	11:K:67:GLU:HG2	1.83	0.59
13:M:41:TYR:HB2	13:M:52:VAL:HG23	1.85	0.59
1:A:755:ILE:HG23	1:A:930:LEU:HD22	1.84	0.59
1:A:782:ASP:OD1	1:A:931:SER:OG	2.17	0.59
2:B:934:ILE:HB	3:C:69:ARG:HD3	1.84	0.59
8:H:98:TYR:HE1	8:H:139:ASN:HA	1.67	0.59
1:A:943:ILE:HA	1:A:986:PHE:HB2	1.85	0.59
1:A:1038:ILE:HD11	1:A:1047:GLN:HB3	1.85	0.59
2:B:501:ARG:NH1	2:B:549:CYS:SG	2.75	0.59
8:H:37:LYS:NZ	8:H:124:ARG:HH12	2.00	0.59
1:A:865:ASP:C	1:A:866:LYS:HG3	2.28	0.59
1:A:1121:ASP:OD2	1:A:1126:LYS:HG3	2.03	0.59
11:K:104:ARG:HH21	11:K:106:GLN:HE21	1.51	0.59
1:A:1626:VAL:HG11	2:B:1194:ILE:HD12	1.83	0.58
1:A:494:GLU:HG2	1:A:604:LYS:HB2	1.84	0.58
5:E:180:ARG:NH1	5:E:192:ARG:HG3	2.18	0.58
1:A:689:ARG:NH1	11:K:81:MET:HE1	2.18	0.58
1:A:855:ARG:HD2	1:A:869:PRO:HA	1.84	0.58
2:B:53:THR:HG21	2:B:169:ARG:HH12	1.67	0.58
1:A:689:ARG:HH11	11:K:81:MET:HE1	1.67	0.58
1:A:799:GLU:OE1	1:A:1062:HIS:ND1	2.37	0.58
2:B:280:LEU:HD23	2:B:354:LEU:HD13	1.86	0.58
1:A:489:ASN:HD21	1:A:701:ARG:HH12	1.49	0.58
1:A:123:ARG:NH1	1:A:127:TYR:HE2	2.01	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:218:LYS:HA	10:J:6:ARG:HH11	1.67	0.58
1:A:93:GLN:HG3	1:A:1627:LEU:HD11	1.86	0.58
1:A:249:THR:O	1:A:250:LYS:CB	2.52	0.58
2:B:1002:LYS:HD2	14:N:166:LEU:HD22	1.85	0.58
1:A:764:SER:C	1:A:766:GLU:H	2.12	0.57
5:E:20:LYS:HB3	5:E:35:VAL:HG22	1.84	0.57
2:B:646:HIS:HD2	2:B:647:SER:H	1.51	0.57
1:A:250:LYS:O	1:A:251:ILE:O	2.22	0.57
1:A:446:ARG:HG2	1:A:447:THR:H	1.68	0.57
1:A:709:ARG:HH22	1:A:738:ASN:HA	1.70	0.57
1:A:865:ASP:O	1:A:866:LYS:HG3	2.02	0.57
2:B:1043:LYS:O	2:B:1063:ARG:NH2	2.36	0.57
10:J:10:CYS:HB2	10:J:43:ARG:HH21	1.69	0.57
12:L:31:CYS:CB	12:L:34:CYS:SG	2.90	0.57
2:B:110:ASN:OD1	2:B:119:ARG:NH1	2.38	0.57
10:J:21:TYR:OH	10:J:32:GLU:OE1	2.22	0.57
1:A:263:ASN:HA	1:A:266:VAL:HG22	1.86	0.57
1:A:884:ARG:HH11	2:B:634:ARG:CZ	2.16	0.57
2:B:840:LEU:HD11	2:B:859:CYS:HA	1.86	0.57
6:F:89:GLU:OE2	6:F:136:ARG:HD3	2.04	0.57
14:N:30:LYS:NZ	14:N:31:LYS:O	2.33	0.57
2:B:102:VAL:HG23	2:B:139:LEU:HG	1.85	0.57
1:A:1512:PRO:HB3	1:A:1517:ARG:HA	1.87	0.57
2:B:585:CYS:SG	2:B:587:GLN:NE2	2.77	0.57
1:A:552:GLU:HA	1:A:555:LYS:HZ2	1.70	0.57
2:B:258:VAL:HG13	2:B:305:ARG:NH1	2.20	0.57
2:B:591:LYS:NZ	2:B:593:ILE:HD11	2.20	0.57
2:B:1017:ALA:HA	3:C:69:ARG:HH22	1.70	0.57
6:F:82:THR:HG23	6:F:136:ARG:HH12	1.69	0.57
9:I:30:CYS:SG	9:I:31:SER:N	2.78	0.56
10:J:7:CYS:HB3	10:J:46:CYS:SG	2.45	0.56
1:A:250:LYS:HG3	1:A:250:LYS:O	2.04	0.56
1:A:108:PHE:N	1:A:331:GLU:OE2	2.38	0.56
1:A:210:ALA:HB3	1:A:1591:ARG:HH12	1.71	0.56
2:B:650:LEU:HB3	2:B:663:ILE:HD11	1.86	0.56
7:G:15:ARG:HH21	7:G:18:LYS:NZ	2.03	0.56
1:A:882:ILE:HD11	1:A:891:ILE:HD11	1.86	0.56
1:A:127:TYR:HB3	1:A:202:THR:HG21	1.88	0.56
1:A:381:SER:OG	1:A:383:ASN:OD1	2.22	0.56
1:A:1272:VAL:HG23	9:I:49:THR:HB	1.87	0.56
2:B:886:ASN:HB2	2:B:902:SER:HB3	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:611:GLU:HG3	1:A:612:LYS:H	1.69	0.56
1:A:1637:PRO:HD3	1:A:1648:ASN:HD21	1.71	0.56
1:A:1643:VAL:HG13	1:A:1644:GLY:H	1.71	0.56
2:B:648:ARG:NH1	2:B:650:LEU:HD21	2.20	0.56
6:F:101:ILE:HD11	6:F:107:VAL:HG22	1.88	0.56
1:A:121:LYS:NZ	1:A:133:SER:O	2.39	0.56
1:A:985:ARG:NH1	1:A:987:TYR:HD2	2.03	0.56
2:B:100:GLU:OE2	2:B:140:LYS:HE2	2.06	0.56
1:A:653:THR:O	1:A:667:ARG:NH2	2.37	0.56
5:E:93:MET:HG2	5:E:120:ALA:HB1	1.88	0.56
1:A:1127:TYR:HB3	1:A:1132:TYR:HD2	1.70	0.55
2:B:853:GLU:N	2:B:856:ASP:OD2	2.39	0.55
13:M:13:GLU:OE2	13:M:85:LYS:HD3	2.05	0.55
1:A:82:PRO:HG3	1:A:396:ILE:HG21	1.87	0.55
3:C:164:ALA:HB2	3:C:191:ILE:HB	1.88	0.55
4:D:26:GLN:H	7:G:42:PRO:HG2	1.70	0.55
9:I:28:VAL:HG22	9:I:38:PRO:HD3	1.88	0.55
1:A:489:ASN:ND2	11:K:94:PRO:O	2.39	0.55
1:A:1240:LEU:HB2	1:A:1519:LEU:HB3	1.88	0.55
1:A:1484:LEU:HD13	1:A:1487:ASN:HB3	1.88	0.55
2:B:320:LEU:HB3	2:B:326:VAL:HG22	1.89	0.55
5:E:91:LYS:HD2	5:E:92:THR:HG23	1.87	0.55
1:A:756:LYS:HE2	1:A:758:GLU:HB2	1.89	0.55
5:E:151:PRO:HB2	5:E:198:ILE:HG12	1.89	0.55
2:B:239:VAL:HA	2:B:245:SER:HA	1.89	0.55
2:B:518:ARG:NH1	2:B:537:SER:O	2.21	0.55
6:F:93:ILE:HD13	6:F:132:LEU:HD22	1.87	0.55
14:N:114:GLU:HG2	14:N:116:LYS:NZ	2.22	0.55
17:T:24:DA:H2"	17:T:25:DT:H5"	1.87	0.55
8:H:115:TYR:HE1	8:H:124:ARG:HG3	1.72	0.55
1:A:226:LYS:HG2	1:A:227:LEU:H	1.71	0.55
1:A:344:ASN:HD21	1:A:348:LYS:H	1.53	0.55
2:B:286:ARG:NH2	13:M:28:LYS:O	2.37	0.55
3:C:190:ASP:HB3	10:J:16:ASP:HB2	1.89	0.55
1:A:874:GLU:OE2	1:A:878:ARG:NH1	2.40	0.55
2:B:566:TYR:HD2	13:M:73:SER:HB3	1.72	0.55
2:B:939:SER:HA	2:B:1013:MET:HG2	1.88	0.55
1:A:949:GLN:HA	1:A:981:TYR:HA	1.89	0.54
2:B:558:VAL:HG13	2:B:562:PRO:HG2	1.89	0.54
2:B:791:LYS:O	2:B:795:GLU:HB2	2.07	0.54
2:B:1065:ARG:NH2	15:R:11:A:OP1	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1105:ARG:HD2	2:B:1172:GLU:HB3	1.88	0.54
3:C:218:LYS:HA	10:J:6:ARG:NH1	2.22	0.54
13:M:77:VAL:HG12	13:M:92:LYS:HA	1.90	0.54
1:A:720:PHE:HB2	8:H:96:VAL:HG23	1.90	0.54
1:A:884:ARG:HH11	2:B:634:ARG:NE	2.05	0.54
1:A:1332:GLU:HA	1:A:1335:LYS:NZ	2.22	0.54
2:B:1047:ARG:NH1	2:B:1059:PRO:HB3	2.21	0.54
3:C:106:LEU:HA	3:C:186:PRO:HA	1.90	0.54
14:N:148:ILE:HG12	14:N:148:ILE:O	2.08	0.54
2:B:934:ILE:O	3:C:69:ARG:NH1	2.40	0.54
4:D:99:LEU:HD12	4:D:100:PRO:HD2	1.89	0.54
14:N:114:GLU:HG2	14:N:116:LYS:HZ2	1.72	0.54
1:A:955:ARG:HG2	1:A:956:ARG:H	1.72	0.54
1:A:1058:THR:HG23	1:A:1059:LYS:HG3	1.89	0.54
4:D:25:THR:N	7:G:42:PRO:O	2.38	0.54
1:A:519:LEU:HD21	1:A:577:VAL:HB	1.90	0.54
1:A:1655:ASP:HB2	6:F:137:TYR:HE2	1.71	0.54
2:B:490:LYS:HZ2	2:B:736:ARG:HH12	1.56	0.54
1:A:475:ARG:HD3	2:B:1070:ARG:HB2	1.88	0.54
2:B:587:GLN:HG3	2:B:592:ILE:HG13	1.90	0.54
3:C:83:VAL:HG13	3:C:206:ALA:HB2	1.89	0.54
17:T:22:DT:H2"	17:T:23:DC:H5'	1.89	0.54
3:C:51:GLU:HG3	3:C:303:GLU:HG2	1.90	0.54
1:A:658:LEU:HD12	1:A:1058:THR:HA	1.89	0.54
1:A:1009:THR:HG23	1:A:1012:LYS:HE2	1.88	0.54
6:F:103:MET:HB3	7:G:51:PRO:HG2	1.90	0.54
1:A:1446:ARG:NH1	1:A:1450:ILE:HD11	2.22	0.54
2:B:17:ARG:H	2:B:17:ARG:HD2	1.73	0.54
2:B:1065:ARG:O	2:B:1066:HIS:HB2	2.08	0.54
13:M:80:LEU:HB2	13:M:89:GLN:HE22	1.73	0.54
1:A:1180:ASN:HD21	6:F:86:THR:HB	1.72	0.53
2:B:454:ASN:ND2	17:T:28:DC:OP2	2.37	0.53
2:B:796:ARG:HE	3:C:217:ALA:HB1	1.72	0.53
2:B:963:PHE:O	2:B:1027:TYR:OH	2.26	0.53
3:C:113:LEU:HG	3:C:210:LEU:HD11	1.90	0.53
1:A:450:LYS:O	1:A:451:VAL:HB	2.07	0.53
7:G:105:ILE:HG23	7:G:116:THR:HB	1.90	0.53
10:J:10:CYS:SG	10:J:11:GLY:N	2.82	0.53
1:A:603:HIS:CE1	1:A:620:ASN:HD21	2.26	0.53
2:B:934:ILE:HG21	3:C:73:SER:HB2	1.90	0.53
9:I:2:SER:N	9:I:9:PHE:O	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:737:SER:HA	2:B:904:LYS:NZ	2.23	0.53
2:B:1063:ARG:NE	17:T:20:DG:OP1	2.37	0.53
10:J:17:LYS:HB3	10:J:39:LEU:HD21	1.91	0.53
14:N:63:ASP:OD2	14:N:67:LEU:HD13	2.09	0.53
1:A:1609:SER:HA	1:A:1612:LYS:NZ	2.24	0.53
2:B:878:GLU:OE2	2:B:1041:ASN:HB2	2.08	0.53
3:C:44:ILE:HG13	11:K:138:LYS:NZ	2.23	0.53
10:J:36:LEU:HD22	10:J:41:LEU:HD12	1.90	0.53
1:A:1501:ILE:HG23	1:A:1504:ILE:HB	1.90	0.53
1:A:342:ARG:NH1	1:A:1629:ASN:O	2.42	0.53
1:A:1313:LEU:HA	1:A:1498:ILE:HD11	1.90	0.53
5:E:16:PHE:O	5:E:20:LYS:NZ	2.40	0.53
1:A:227:LEU:O	1:A:230:ARG:N	2.39	0.53
1:A:15:ASP:N	1:A:15:ASP:OD1	2.42	0.52
2:B:566:TYR:CZ	13:M:74:ASN:HB3	2.44	0.52
3:C:259:ASP:HB2	3:C:264:GLU:OE2	2.09	0.52
1:A:1580:ARG:HH11	5:E:204:THR:HG21	1.73	0.52
1:A:760:TRP:HB2	1:A:764:SER:HB2	1.91	0.52
2:B:60:LEU:HD12	2:B:242:ASP:HA	1.92	0.52
2:B:245:SER:HB2	2:B:477:ASP:OD2	2.10	0.52
1:A:882:ILE:HD12	1:A:888:LYS:HB3	1.91	0.52
1:A:1657:LEU:HD12	7:G:104:LEU:HD12	1.92	0.52
2:B:207:ILE:HD11	2:B:400:GLN:HB3	1.90	0.52
2:B:581:PRO:HA	2:B:638:PRO:HG2	1.91	0.52
2:B:1189:LEU:HG	2:B:1194:ILE:HB	1.92	0.52
6:F:90:ARG:HA	6:F:93:ILE:HG22	1.91	0.52
10:J:7:CYS:HB3	10:J:10:CYS:SG	2.50	0.52
16:S:11:DG:N2	17:T:29:DT:O2	2.43	0.52
1:A:694:GLN:HG3	11:K:77:ARG:NH1	2.24	0.52
1:A:827:THR:HG22	2:B:776:ILE:HG23	1.92	0.52
1:A:1124:LEU:HD11	1:A:1129:PRO:HB3	1.91	0.52
2:B:913:ILE:HA	2:B:927:CYS:HB2	1.92	0.52
2:B:1158:ILE:HG21	2:B:1166:LYS:NZ	2.24	0.52
4:D:22:ILE:HD11	7:G:43:ILE:HB	1.91	0.52
1:A:1501:ILE:HD11	1:A:1528:ALA:HB1	1.92	0.52
2:B:209:GLN:HG3	2:B:215:MET:HE3	1.91	0.52
2:B:401:GLU:HG3	2:B:648:ARG:HA	1.92	0.52
3:C:136:LEU:HD23	3:C:204:LEU:HD21	1.90	0.52
1:A:1004:GLU:OE2	2:B:519:LYS:HG3	2.09	0.52
2:B:265:ARG:H	2:B:265:ARG:HD2	1.74	0.52
2:B:561:ILE:HB	2:B:562:PRO:HD3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:599:GLU:OE1	2:B:602:LYS:NZ	2.42	0.52
7:G:249:LEU:HG	7:G:250:ILE:HG13	1.91	0.52
8:H:117:SER:HB2	8:H:122:LEU:HD13	1.91	0.52
1:A:111:LYS:H	1:A:111:LYS:HD2	1.75	0.52
1:A:450:LYS:O	1:A:451:VAL:CB	2.57	0.52
1:A:771:PHE:HE1	1:A:776:LEU:HD13	1.75	0.52
2:B:73:ILE:HA	2:B:342:PRO:HD3	1.92	0.52
2:B:602:LYS:NZ	2:B:602:LYS:HB3	2.25	0.52
2:B:852:VAL:HG13	2:B:856:ASP:HB2	1.92	0.52
1:A:468:ARG:CZ	1:A:1021:ARG:HH12	2.23	0.52
1:A:1243:TRP:CD1	1:A:1245:ASP:H	2.28	0.51
1:A:1657:LEU:HD23	6:F:135:ARG:HB2	1.93	0.51
2:B:290:ASP:OD2	2:B:577:PHE:HD1	1.93	0.51
2:B:490:LYS:NZ	2:B:736:ARG:HH12	2.07	0.51
2:B:982:THR:HG23	2:B:985:ILE:HD13	1.91	0.51
1:A:99:ARG:HE	1:A:228:LEU:HD22	1.75	0.51
13:M:38:PHE:HB2	14:N:119:LEU:HD11	1.91	0.51
1:A:57:PHE:HE1	1:A:370:PRO:HD3	1.76	0.51
1:A:701:ARG:NE	11:K:92:SER:OG	2.42	0.51
1:A:764:SER:O	1:A:766:GLU:N	2.36	0.51
1:A:982:VAL:HA	1:A:994:GLU:HG2	1.92	0.51
1:A:1656:VAL:HG13	6:F:132:LEU:HD21	1.92	0.51
2:B:73:ILE:HD12	2:B:425:ILE:HG23	1.91	0.51
3:C:91:VAL:HG11	10:J:60:PHE:HB3	1.91	0.51
5:E:46:TYR:HA	5:E:57:MET:HE1	1.93	0.51
9:I:12:ASP:OD1	13:M:31:ARG:NH2	2.43	0.51
2:B:344:GLN:HE21	2:B:349:VAL:HG21	1.74	0.51
7:G:59:GLN:HG3	7:G:63:LYS:HZ3	1.75	0.51
10:J:64:ASN:HD22	10:J:66:LEU:H	1.57	0.51
13:M:9:GLU:HA	14:N:71:PRO:HA	1.92	0.51
13:M:51:PHE:HB2	13:M:66:THR:HG21	1.92	0.51
6:F:114:GLU:OE1	6:F:119:ARG:NH2	2.43	0.51
14:N:57:LYS:HB2	14:N:138:SER:HA	1.91	0.51
1:A:122:LEU:HD23	1:A:125:LEU:HD12	1.91	0.51
1:A:956:ARG:NH1	1:A:979:GLY:O	2.42	0.51
1:A:1028:GLU:HG3	1:A:1637:PRO:HD2	1.93	0.51
1:A:1494:ARG:NH1	9:I:57:PRO:HG2	2.25	0.51
2:B:292:ILE:HA	2:B:379:ARG:HD3	1.92	0.51
2:B:1000:LEU:HB3	2:B:1005:TYR:HB2	1.91	0.51
4:D:32:SER:OG	4:D:35:GLU:OE1	2.21	0.51
1:A:539:GLU:OE2	1:A:575:LYS:HG3	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1039:MET:HG3	2:B:1043:LYS:HG2	1.92	0.51
5:E:90:VAL:HG12	5:E:120:ALA:HB2	1.92	0.51
7:G:59:GLN:HE21	7:G:63:LYS:NZ	2.09	0.51
11:K:55:SER:HB3	11:K:58:GLY:HA2	1.93	0.51
1:A:378:HIS:NE2	17:T:25:DT:O2	2.33	0.51
2:B:529:CYS:SG	2:B:532:HIS:HB3	2.51	0.51
2:B:894:LYS:NZ	2:B:896:GLN:HE21	2.08	0.51
2:B:957:ARG:HB3	2:B:959:THR:HG23	1.93	0.51
3:C:93:GLN:HG3	3:C:95:GLU:OE2	2.11	0.51
1:A:89:LEU:HB3	1:A:1623:THR:HG22	1.92	0.51
1:A:450:LYS:C	1:A:451:VAL:HG23	2.36	0.51
1:A:657:TYR:HD1	1:A:667:ARG:HD2	1.77	0.51
2:B:22:GLU:OE2	10:J:55:ASP:HB3	2.11	0.51
2:B:656:LEU:HD21	2:B:689:VAL:HG13	1.93	0.51
2:B:785:ASP:OD1	2:B:925:GLY:HA2	2.11	0.51
1:A:1559:ARG:NH1	1:A:1587:ASP:HB2	2.22	0.50
1:A:1661:PRO:HA	7:G:102:GLU:HG3	1.92	0.50
1:A:760:TRP:CB	1:A:764:SER:CB	2.82	0.50
1:A:1224:GLU:O	1:A:1228:THR:OG1	2.25	0.50
1:A:1316:VAL:HG11	1:A:1498:ILE:HD12	1.92	0.50
2:B:779:THR:HG21	2:B:788:ILE:HG21	1.92	0.50
2:B:916:LYS:HD3	2:B:1038:HIS:CG	2.45	0.50
3:C:245:ARG:HH22	3:C:258:ILE:HG12	1.76	0.50
1:A:1545:ASP:OD1	1:A:1546:VAL:N	2.44	0.50
2:B:604:ILE:HA	2:B:607:THR:HB	1.92	0.50
7:G:74:ASN:HB3	7:G:77:VAL:HG12	1.93	0.50
8:H:5:LEU:O	8:H:133:ASN:ND2	2.44	0.50
2:B:596:VAL:HG22	2:B:597:SER:H	1.76	0.50
2:B:934:ILE:HG12	3:C:73:SER:HB2	1.93	0.50
9:I:17:LEU:HD23	9:I:17:LEU:H	1.76	0.50
1:A:250:LYS:HD2	1:A:314:TYR:HD2	1.66	0.50
1:A:582:LYS:NZ	1:A:584:ARG:HH21	2.09	0.50
1:A:618:TYR:OH	2:B:780:GLY:O	2.21	0.50
2:B:144:SER:HB3	2:B:148:GLY:HA2	1.91	0.50
1:A:128:GLY:HA3	1:A:207:SER:HB2	1.94	0.50
1:A:732:ILE:HA	1:A:735:VAL:HG12	1.94	0.50
1:A:756:LYS:HB2	1:A:759:TYR:HD1	1.76	0.50
2:B:705:PRO:HG2	2:B:921:HIS:NE2	2.27	0.50
14:N:91:ASP:OD1	14:N:92:ASP:N	2.44	0.50
16:S:9:DT:H2"	16:S:10:DA:C8	2.47	0.50
2:B:390:SER:OG	2:B:634:ARG:O	2.29	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:319:ARG:NH2	11:K:132:GLU:OE2	2.44	0.50
7:G:161:ASN:HA	7:G:249:LEU:HD22	1.93	0.50
2:B:94:LYS:NZ	2:B:147:ASN:H	2.07	0.50
13:M:38:PHE:HD1	13:M:55:GLY:HA3	1.76	0.50
1:A:10:GLU:HB3	1:A:1645:LYS:HE3	1.94	0.50
1:A:790:LYS:NZ	1:A:790:LYS:HB3	2.26	0.50
1:A:847:LEU:HD22	1:A:983:LYS:HD2	1.94	0.50
1:A:1620:GLN:O	1:A:1623:THR:OG1	2.28	0.50
1:A:1264:SER:HB3	1:A:1494:ARG:HH21	1.77	0.49
3:C:268:LYS:NZ	3:C:268:LYS:HB3	2.27	0.49
1:A:555:LYS:HB2	1:A:555:LYS:NZ	2.27	0.49
1:A:748:ASN:HD22	1:A:1071:ASP:HB3	1.76	0.49
1:A:833:LEU:HA	1:A:944:MET:HE2	1.94	0.49
3:C:134:LEU:HD12	3:C:167:LEU:HB3	1.94	0.49
6:F:135:ARG:NE	6:F:145:ASP:OD1	2.45	0.49
1:A:467:PHE:HE1	2:B:1185:LEU:HD11	1.77	0.49
5:E:112:TYR:HE2	5:E:134:THR:HG23	1.77	0.49
17:T:29:DT:H2"	17:T:30:DA:C8	2.47	0.49
1:A:226:LYS:O	1:A:228:LEU:N	2.46	0.49
1:A:760:TRP:C	1:A:764:SER:HG	2.18	0.49
1:A:1617:THR:HG22	1:A:1620:GLN:HB3	1.95	0.49
2:B:71:LYS:HD2	2:B:421:LEU:HD12	1.94	0.49
2:B:305:ARG:NH1	2:B:382:TYR:OH	2.44	0.49
2:B:819:ASP:OD1	2:B:819:ASP:N	2.45	0.49
5:E:191:LYS:NZ	5:E:191:LYS:HB3	2.27	0.49
1:A:555:LYS:HZ2	1:A:555:LYS:HB2	1.78	0.49
2:B:519:LYS:NZ	2:B:519:LYS:HB3	2.27	0.49
7:G:58:LEU:HB2	7:G:87:LEU:HD21	1.95	0.49
1:A:698:GLY:O	1:A:819:ASN:ND2	2.46	0.49
1:A:1233:ILE:HG23	1:A:1235:THR:H	1.77	0.49
1:A:1485:MET:SD	1:A:1485:MET:N	2.85	0.49
13:M:23:VAL:HB	14:N:109:LEU:HD12	1.95	0.49
2:B:261:ARG:NH1	2:B:270:LEU:HD22	2.28	0.49
2:B:655:TYR:HB2	2:B:662:ASP:OD2	2.12	0.49
2:B:655:TYR:O	2:B:659:ASP:HA	2.12	0.49
2:B:788:ILE:HD11	2:B:948:ILE:HD13	1.94	0.49
3:C:61:THR:HG22	3:C:298:PHE:HZ	1.77	0.49
3:C:87:ASN:ND2	3:C:201:GLU:OE2	2.45	0.49
7:G:46:TYR:CZ	7:G:115:PHE:HB3	2.48	0.49
1:A:483:VAL:O	1:A:613:THR:OG1	2.27	0.49
2:B:212:ASN:HB3	2:B:590:GLY:N	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:15:ARG:HH21	7:G:18:LYS:HZ2	1.59	0.49
1:A:716:PRO:O	1:A:730:GLN:NE2	2.39	0.48
2:B:110:ASN:HA	2:B:119:ARG:NH1	2.28	0.48
1:A:1317:ILE:HA	1:A:1321:PHE:HB3	1.96	0.48
2:B:236:ILE:HG23	2:B:248:ASN:HB2	1.94	0.48
1:A:760:TRP:HB3	1:A:764:SER:HB3	1.91	0.48
2:B:1064:LYS:C	2:B:1066:HIS:H	2.20	0.48
3:C:77:SER:HB2	3:C:221:PRO:HD3	1.96	0.48
6:F:81:THR:OG1	6:F:136:ARG:NH2	2.46	0.48
13:M:11:GLU:O	13:M:87:SER:OG	2.27	0.48
13:M:65:TYR:CE2	13:M:68:SER:HB3	2.48	0.48
3:C:230:LEU:HB2	3:C:297:HIS:CD2	2.48	0.48
17:T:7:DA:H2"	17:T:8:DG:C8	2.48	0.48
1:A:439:ASP:OD1	1:A:440:SER:N	2.45	0.48
1:A:865:ASP:O	1:A:866:LYS:HG2	2.11	0.48
1:A:910:LYS:HB2	1:A:910:LYS:NZ	2.29	0.48
2:B:142:LYS:HG3	2:B:153:PHE:HE1	1.78	0.48
13:M:57:ASN:HB3	13:M:60:LEU:HB3	1.94	0.48
13:M:77:VAL:HG13	14:N:58:PHE:CE1	2.48	0.48
16:S:29:DT:H2"	16:S:30:DA:C8	2.47	0.48
1:A:110:LEU:HD12	1:A:114:GLU:OE2	2.13	0.48
2:B:150:GLU:OE2	2:B:441:LYS:HG3	2.13	0.48
2:B:970:LYS:HZ2	2:B:1000:LEU:CD2	2.25	0.48
3:C:55:ASP:OD2	3:C:271:ARG:NE	2.46	0.48
8:H:101:ALA:HA	8:H:116:TYR:HB3	1.95	0.48
1:A:835:LEU:HD21	1:A:843:ARG:HH22	1.79	0.48
1:A:1240:LEU:HB3	1:A:1536:ILE:HD12	1.94	0.48
2:B:1063:ARG:C	2:B:1066:HIS:H	2.22	0.48
7:G:226:ASP:OD1	7:G:227:GLY:N	2.45	0.48
8:H:37:LYS:NZ	8:H:37:LYS:HB3	2.29	0.48
8:H:146:ARG:HD3	8:H:146:ARG:OXT	2.13	0.48
17:T:26:DT:H2"	17:T:27:DA:C8	2.49	0.48
1:A:611:GLU:HG2	2:B:913:ILE:HG12	1.96	0.48
1:A:1296:PHE:HB2	1:A:1468:LYS:HA	1.96	0.48
2:B:699:ILE:HD12	2:B:760:TYR:HE2	1.78	0.48
11:K:54:THR:HA	11:K:61:ALA:HA	1.94	0.48
1:A:593:PRO:HB3	17:T:16:DG:H1'	1.96	0.48
1:A:1600:ARG:NH1	1:A:1601:GLN:HG3	2.29	0.48
2:B:224:ASN:OD1	2:B:224:ASN:N	2.46	0.48
2:B:790:ASN:HB2	2:B:946:ASP:HA	1.95	0.48
7:G:50:ALA:HB2	7:G:64:GLN:HE22	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:107:HIS:CE1	1:A:330:LYS:HB3	2.48	0.48
1:A:552:GLU:OE1	1:A:555:LYS:NZ	2.43	0.48
2:B:239:VAL:H	2:B:361:HIS:HB3	1.79	0.48
2:B:894:LYS:HZ2	2:B:896:GLN:HE21	1.62	0.48
3:C:145:ASP:OD1	3:C:146:ALA:N	2.47	0.48
6:F:138:LEU:HD21	6:F:144:GLU:OE2	2.13	0.48
9:I:23:VAL:HG12	9:I:24:LEU:H	1.79	0.48
11:K:85:ASP:OD2	11:K:107:THR:OG1	2.31	0.48
1:A:102:CYS:HB3	1:A:105:CYS:SG	2.54	0.47
2:B:1123:ILE:HG22	2:B:1124:SER:H	1.79	0.47
13:M:48:LYS:HG2	13:M:49:ASP:H	1.78	0.47
1:A:247:GLY:O	1:A:248:PHE:HD2	1.98	0.47
1:A:247:GLY:C	1:A:248:PHE:CD2	2.92	0.47
1:A:1015:ARG:O	1:A:1223:ARG:NH2	2.47	0.47
11:K:46:LYS:NZ	11:K:67:GLU:HG3	2.30	0.47
1:A:388:LYS:HG3	1:A:433:ASP:OD2	2.14	0.47
3:C:107:LYS:HE3	3:C:187:ALA:HA	1.95	0.47
3:C:324:LYS:HD2	11:K:68:GLU:OE2	2.14	0.47
13:M:16:GLN:HG2	13:M:91:TYR:HA	1.96	0.47
1:A:467:PHE:HD1	1:A:471:MET:HG3	1.79	0.47
1:A:994:GLU:OE1	1:A:994:GLU:N	2.47	0.47
1:A:1191:GLN:HE22	2:B:1078:ALA:HA	1.79	0.47
2:B:613:VAL:HG22	2:B:660:LYS:HE3	1.95	0.47
3:C:117:ASP:HB3	3:C:120:LEU:HD23	1.97	0.47
5:E:144:ILE:HD13	5:E:183:PRO:HB2	1.95	0.47
14:N:81:THR:HA	14:N:85:HIS:HD2	1.78	0.47
1:A:865:ASP:C	1:A:866:LYS:CG	2.86	0.47
1:A:1032:VAL:HG23	1:A:1185:VAL:HG21	1.96	0.47
1:A:1288:ARG:NH1	1:A:1481:GLU:OE2	2.48	0.47
2:B:802:THR:HG22	2:B:908:ARG:HA	1.95	0.47
13:M:80:LEU:HB2	13:M:89:GLN:NE2	2.29	0.47
1:A:11:ILE:HD13	1:A:1643:VAL:HG21	1.96	0.47
2:B:214:PRO:HB2	2:B:380:LYS:HZ3	1.78	0.47
1:A:461:GLU:HB3	1:A:465:GLY:H	1.79	0.47
1:A:477:ASN:O	2:B:1091:ARG:NH1	2.48	0.47
1:A:1589:MET:O	1:A:1596:LEU:N	2.48	0.47
2:B:129:ARG:CZ	2:B:888:ILE:HG23	2.45	0.47
2:B:383:SER:OG	2:B:389:CYS:SG	2.63	0.47
3:C:128:ASP:HB3	3:C:173:GLY:HA3	1.97	0.47
8:H:6:PHE:HB3	8:H:59:ILE:HB	1.96	0.47
1:A:748:ASN:HA	1:A:771:PHE:O	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:37:LEU:HD11	5:E:41:ASP:OD2	2.14	0.47
6:F:58:PHE:HA	6:F:61:HIS:HB3	1.96	0.47
1:A:507:TYR:HE2	1:A:509:GLU:OE2	1.98	0.47
1:A:511:VAL:HG12	1:A:519:LEU:HD23	1.97	0.47
2:B:1042:ASP:C	2:B:1063:ARG:HH12	2.19	0.47
5:E:72:PHE:HE1	5:E:155:ARG:HH12	1.60	0.47
16:S:6:DT:H2"	16:S:7:DA:C8	2.50	0.47
1:A:764:SER:C	1:A:766:GLU:N	2.73	0.46
2:B:832:TRP:NE1	2:B:869:THR:H	2.14	0.46
2:B:882:ILE:HG12	2:B:905:TYR:CE1	2.49	0.46
2:B:909:ARG:HD3	2:B:1040:VAL:HG21	1.97	0.46
8:H:103:LYS:HB2	8:H:115:TYR:HB2	1.97	0.46
1:A:105:CYS:HB3	1:A:236:CYS:SG	2.55	0.46
8:H:8:ASP:OD1	8:H:9:ILE:N	2.48	0.46
8:H:125:LEU:HB3	8:H:130:ARG:HH12	1.80	0.46
1:A:679:TRP:CD2	2:B:1023:ARG:NH1	2.81	0.46
1:A:1276:THR:HB	9:I:45:LEU:HB3	1.96	0.46
2:B:129:ARG:NH1	2:B:888:ILE:HG23	2.31	0.46
7:G:58:LEU:HD23	7:G:58:LEU:H	1.81	0.46
9:I:12:ASP:CG	13:M:31:ARG:HH12	2.23	0.46
1:A:829:GLY:N	1:A:832:ASP:OD2	2.49	0.46
2:B:427:GLN:NE2	2:B:452:ARG:HH12	2.14	0.46
2:B:674:ILE:HG22	2:B:688:HIS:HB2	1.96	0.46
2:B:1025:ASP:OD2	3:C:277:ARG:HD2	2.16	0.46
7:G:59:GLN:CG	7:G:63:LYS:HZ3	2.27	0.46
1:A:584:ARG:HG2	6:F:116:ASP:OD2	2.16	0.46
1:A:843:ARG:NE	1:A:985:ARG:HD3	2.31	0.46
1:A:1240:LEU:HA	1:A:1541:ILE:HG22	1.98	0.46
8:H:23:VAL:HG12	8:H:43:ASN:HB3	1.98	0.46
2:B:492:ASN:ND2	2:B:725:THR:OG1	2.49	0.46
2:B:494:TYR:HB3	2:B:700:LEU:HD21	1.97	0.46
2:B:975:HIS:CE1	14:N:166:LEU:HD23	2.51	0.46
3:C:86:PHE:HB3	12:L:62:LYS:HG3	1.97	0.46
3:C:216:HIS:CD2	3:C:218:LYS:HD3	2.51	0.46
14:N:134:ASP:OD1	14:N:135:LYS:N	2.49	0.46
1:A:1600:ARG:HD2	1:A:1616:GLU:OE2	2.15	0.46
2:B:74:PHE:HB2	2:B:342:PRO:HG2	1.98	0.46
2:B:1158:ILE:HG21	2:B:1166:LYS:HZ2	1.80	0.46
1:A:39:ASP:OD2	1:A:43:HIS:NE2	2.49	0.46
1:A:591:ARG:NH2	1:A:631:ASP:HB3	2.31	0.46
1:A:701:ARG:NH1	11:K:93:ILE:O	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1114:TYR:HE2	1:A:1115:LYS:NZ	2.13	0.46
2:B:773:VAL:HG22	2:B:947:ILE:HB	1.96	0.46
2:B:779:THR:HG22	2:B:781:TYR:H	1.81	0.46
14:N:113:SER:OG	14:N:114:GLU:OE1	2.26	0.46
1:A:753:ASN:N	1:A:767:ASN:O	2.43	0.46
2:B:1053:ASN:N	2:B:1058:GLN:O	2.49	0.46
5:E:43:LYS:O	5:E:47:CYS:HB3	2.16	0.46
13:M:15:VAL:HG22	13:M:90:LEU:HB3	1.97	0.46
1:A:247:GLY:O	1:A:248:PHE:CD2	2.69	0.46
1:A:507:TYR:HB2	1:A:637:PHE:CE2	2.51	0.46
1:A:1114:TYR:HE2	1:A:1115:LYS:HZ2	1.63	0.46
2:B:524:SER:OG	2:B:528:LEU:HB2	2.15	0.46
2:B:545:PHE:HB3	2:B:549:CYS:SG	2.55	0.46
2:B:887:LEU:HB2	12:L:56:LEU:HB2	1.98	0.46
1:A:950:GLN:HE22	1:A:998:HIS:HD2	1.64	0.45
2:B:207:ILE:HG22	2:B:505:ARG:HA	1.98	0.45
2:B:221:SER:OG	16:S:25:DA:OP2	2.28	0.45
2:B:359:LEU:HD23	2:B:370:LYS:HG2	1.97	0.45
3:C:293:ARG:HH21	3:C:295:ARG:NH2	2.14	0.45
1:A:249:THR:O	1:A:250:LYS:HB3	2.17	0.45
1:A:99:ARG:HH11	1:A:228:LEU:HD22	1.80	0.45
1:A:1180:ASN:ND2	6:F:87:LYS:HG2	2.31	0.45
2:B:21:ARG:NH2	10:J:53:HIS:O	2.49	0.45
2:B:970:LYS:NZ	2:B:1000:LEU:HD22	2.31	0.45
1:A:315:ILE:HB	1:A:319:GLU:OE2	2.16	0.45
4:D:30:HIS:HA	7:G:39:VAL:HG23	1.97	0.45
7:G:80:VAL:HG11	7:G:153:PHE:HE1	1.81	0.45
8:H:23:VAL:HA	8:H:43:ASN:HA	1.98	0.45
1:A:753:ASN:ND2	1:A:766:GLU:O	2.48	0.45
1:A:1609:SER:HA	1:A:1612:LYS:HZ1	1.82	0.45
2:B:1065:ARG:NH2	15:R:11:A:P	2.89	0.45
3:C:32:ASN:ND2	3:C:34:GLU:OE2	2.50	0.45
4:D:47:LYS:HD3	7:G:84:TYR:HE1	1.81	0.45
7:G:135:GLY:HA3	7:G:147:LEU:HD13	1.98	0.45
1:A:32:ILE:HD11	1:A:79:ILE:HG22	1.99	0.45
1:A:99:ARG:HH11	1:A:228:LEU:HD13	1.81	0.45
1:A:506:THR:OG1	1:A:578:TYR:HB3	2.17	0.45
1:A:1047:GLN:HB2	1:A:1587:ASP:OD2	2.17	0.45
2:B:648:ARG:HH12	2:B:650:LEU:HD21	1.81	0.45
2:B:709:PHE:HD1	2:B:960:ILE:HD12	1.81	0.45
13:M:43:LYS:HE3	14:N:28:GLY:HA3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:21:ALA:O	1:A:25:ARG:HG2	2.17	0.45
1:A:956:ARG:NH1	1:A:979:GLY:HA3	2.29	0.45
1:A:1197:SER:O	1:A:1201:THR:OG1	2.32	0.45
1:A:1265:GLU:HG3	9:I:58:SER:HB3	1.99	0.45
1:A:1294:MET:HG3	1:A:1470:CYS:HB3	1.99	0.45
1:A:1611:MET:SD	1:A:1636:SER:OG	2.68	0.45
2:B:382:TYR:HA	2:B:385:VAL:HG22	1.99	0.45
5:E:94:LYS:NZ	5:E:123:LEU:HD11	2.32	0.45
1:A:831:ASP:HB2	1:A:834:ARG:HH11	1.81	0.45
2:B:464:PHE:HE1	2:B:470:LEU:HB3	1.82	0.45
4:D:86:ILE:HA	4:D:89:LEU:HD12	1.99	0.45
1:A:699:CYS:O	1:A:815:ARG:NH2	2.49	0.45
2:B:167:SER:N	2:B:170:CYS:SG	2.75	0.45
3:C:75:VAL:HG21	3:C:313:ILE:HD11	1.99	0.45
1:A:450:LYS:O	1:A:451:VAL:HG23	2.17	0.45
1:A:552:GLU:HA	1:A:555:LYS:NZ	2.31	0.45
1:A:1200:MET:HG2	1:A:1573:TYR:CG	2.52	0.45
2:B:1195:ARG:NH1	2:B:1197:ARG:HD2	2.30	0.45
3:C:239:ILE:O	3:C:243:SER:OG	2.34	0.45
8:H:5:LEU:HB3	8:H:133:ASN:HB2	1.99	0.45
1:A:1055:ILE:CD1	1:A:1580:ARG:HH12	2.27	0.44
2:B:109:SER:O	2:B:119:ARG:HB3	2.16	0.44
2:B:968:ALA:HB2	2:B:996:PHE:CE2	2.52	0.44
2:B:1047:ARG:NH1	2:B:1067:GLY:HA2	2.31	0.44
2:B:1160:GLU:OE2	2:B:1164:GLY:HA2	2.17	0.44
5:E:97:VAL:HG13	5:E:127:ILE:HD13	1.99	0.44
5:E:164:LEU:HD21	5:E:175:LEU:HD21	1.99	0.44
8:H:114:VAL:HG22	8:H:125:LEU:HB2	1.98	0.44
11:K:71:THR:OG1	11:K:72:LEU:N	2.50	0.44
1:A:900:VAL:HG11	1:A:949:GLN:HB2	1.99	0.44
1:A:910:LYS:HB2	1:A:910:LYS:HZ2	1.82	0.44
8:H:130:ARG:H	8:H:130:ARG:HD2	1.82	0.44
13:M:75:GLN:HB2	14:N:58:PHE:CZ	2.52	0.44
1:A:879:LEU:HB2	1:A:972:TYR:CE1	2.52	0.44
1:A:1443:GLN:HE22	1:A:1462:PHE:H	1.65	0.44
1:A:1659:LYS:HE3	6:F:133:VAL:HG21	1.99	0.44
2:B:45:HIS:CE1	2:B:205:MET:HE3	2.52	0.44
2:B:787:MET:HE2	2:B:949:ILE:HD13	2.00	0.44
3:C:85:PHE:HE1	3:C:97:LEU:HD12	1.82	0.44
1:A:834:ARG:HH12	2:B:1008:HIS:CB	2.31	0.44
2:B:576:THR:HG23	2:B:577:PHE:H	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:41:GLU:HA	11:K:134:LYS:NZ	2.32	0.44
7:G:149:ILE:HG23	7:G:153:PHE:HB2	2.00	0.44
14:N:157:ARG:HD3	14:N:157:ARG:H	1.82	0.44
1:A:16:PHE:HE2	1:A:1625:ALA:HB1	1.83	0.44
1:A:462:LYS:H	1:A:466:LEU:HB2	1.82	0.44
2:B:585:CYS:SG	2:B:595:TRP:NE1	2.91	0.44
2:B:1064:LYS:C	2:B:1066:HIS:N	2.76	0.44
1:A:363:PRO:HG2	1:A:368:ARG:HD3	1.98	0.44
1:A:694:GLN:HG3	11:K:77:ARG:HH12	1.82	0.44
1:A:734:THR:O	1:A:738:ASN:ND2	2.51	0.44
1:A:1113:HIS:HA	1:A:1116:GLN:HB3	2.00	0.44
1:A:1238:MET:HE3	1:A:1524:VAL:HA	1.99	0.44
2:B:204:ARG:HD2	2:B:205:MET:O	2.18	0.44
2:B:260:PHE:HD2	2:B:273:VAL:HA	1.82	0.44
2:B:885:VAL:HG22	2:B:903:ILE:HG13	1.98	0.44
2:B:947:ILE:HG21	2:B:1033:TYR:CE2	2.52	0.44
2:B:1020:GLU:OE2	3:C:61:THR:OG1	2.22	0.44
3:C:85:PHE:CE2	3:C:98:ALA:HB2	2.53	0.44
4:D:20:VAL:HG12	4:D:21:VAL:HG23	1.99	0.44
2:B:226:GLY:HA2	2:B:229:TYR:CD2	2.53	0.44
2:B:862:PHE:HB2	2:B:869:THR:HG22	1.98	0.44
3:C:55:ASP:HA	3:C:299:ILE:HA	1.99	0.44
6:F:57:ASP:OD1	6:F:57:ASP:N	2.50	0.44
1:A:831:ASP:OD2	1:A:918:LYS:HE3	2.18	0.44
1:A:964:LYS:NZ	1:A:973:GLU:HB3	2.33	0.44
2:B:197:ASN:OD1	2:B:198:GLY:N	2.50	0.44
2:B:760:TYR:HD2	2:B:762:MET:HE1	1.81	0.44
2:B:920:ARG:NH1	2:B:1032:TYR:CD1	2.86	0.44
2:B:154:GLU:OE2	2:B:156:ARG:HG3	2.17	0.44
2:B:359:LEU:HB2	2:B:374:LEU:HD21	2.00	0.44
2:B:564:ILE:HD11	2:B:620:LEU:HD22	2.00	0.44
2:B:704:THR:HA	2:B:920:ARG:HD2	2.00	0.44
14:N:158:LYS:HD3	14:N:161:PRO:HD3	1.99	0.44
1:A:703:GLU:HA	11:K:53:ALA:HB2	2.00	0.43
7:G:62:MET:HA	7:G:66:LEU:HB3	2.00	0.43
1:A:464:GLU:OE2	17:T:13:DT:H3'	2.18	0.43
1:A:876:LEU:HA	1:A:972:TYR:CZ	2.53	0.43
1:A:960:MET:HE3	1:A:961:VAL:HG22	1.99	0.43
2:B:713:PRO:HA	2:B:716:MET:HE3	2.00	0.43
2:B:782:ASP:HA	2:B:786:ALA:HB3	1.99	0.43
2:B:1039:MET:HG2	2:B:1042:ASP:H	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1151:ASN:HB2	1:A:1153:LYS:NZ	2.33	0.43
2:B:521:LEU:HG	2:B:522:PRO:HD2	2.01	0.43
9:I:10:CYS:SG	9:I:11:LEU:N	2.91	0.43
1:A:585:ASP:OD1	1:A:586:VAL:N	2.47	0.43
1:A:744:MET:HG2	1:A:1078:LYS:HG2	2.00	0.43
1:A:1556:GLU:OE2	5:E:198:ILE:HG21	2.17	0.43
5:E:100:ILE:HG23	5:E:105:PHE:HB2	2.00	0.43
8:H:11:GLN:HE21	8:H:29:ALA:HB3	1.82	0.43
1:A:747:ILE:HD11	1:A:801:TYR:CE2	2.53	0.43
1:A:1224:GLU:HG3	1:A:1234:LYS:NZ	2.33	0.43
2:B:327:LEU:HG	2:B:350:GLY:HA3	2.01	0.43
1:A:248:PHE:HD1	1:A:442:LYS:CG	2.14	0.43
1:A:432:ASN:HD21	1:A:444:GLN:H	1.67	0.43
1:A:522:ALA:HA	1:A:532:GLY:HA2	2.01	0.43
1:A:588:LEU:HD22	1:A:600:MET:HE2	2.00	0.43
1:A:669:LEU:HD23	1:A:786:TYR:CE2	2.54	0.43
2:B:244:THR:HG23	2:B:411:MET:HE3	2.00	0.43
3:C:240:LYS:HD2	3:C:263:ASP:N	2.33	0.43
8:H:40:LEU:HD22	8:H:41:ASP:H	1.83	0.43
16:S:11:DG:H1	17:T:28:DC:H42	1.66	0.43
1:A:481:ARG:HE	1:A:632:GLU:HG2	1.84	0.43
1:A:947:LEU:HB3	1:A:982:VAL:HG21	2.01	0.43
1:A:1057:ILE:H	1:A:1057:ILE:HD12	1.84	0.43
1:A:1535:PHE:HD1	1:A:1536:ILE:HG12	1.84	0.43
2:B:106:LYS:HD2	2:B:108:MET:HE2	2.01	0.43
2:B:129:ARG:HA	2:B:129:ARG:HD2	1.88	0.43
2:B:130:LEU:HD11	2:B:902:SER:HB2	2.01	0.43
2:B:520:LEU:HG	2:B:530:PRO:HB3	2.01	0.43
6:F:82:THR:CG2	6:F:136:ARG:HH12	2.32	0.43
14:N:170:HIS:CG	14:N:171:PHE:H	2.37	0.43
1:A:728:GLY:HA2	1:A:731:ILE:HG22	2.00	0.43
2:B:705:PRO:HD3	2:B:920:ARG:HD2	1.99	0.43
2:B:840:LEU:HD23	2:B:857:PRO:HB2	2.00	0.43
11:K:62:SER:OG	11:K:104:ARG:NH1	2.45	0.43
14:N:80:MET:HB3	14:N:87:TYR:HB2	2.00	0.43
1:A:315:ILE:HG13	1:A:316:LEU:H	1.83	0.43
1:A:760:TRP:C	1:A:764:SER:OG	2.61	0.43
2:B:108:MET:HB3	2:B:118:GLU:HG2	1.99	0.43
2:B:236:ILE:HD12	2:B:377:MET:HE1	2.01	0.43
2:B:934:ILE:H	2:B:934:ILE:HG13	1.58	0.43
1:A:458:GLN:CD	1:A:458:GLN:H	2.27	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:834:ARG:HH12	2:B:1008:HIS:HB3	1.83	0.43
1:A:1049:MET:HE3	1:A:1049:MET:HB2	1.92	0.43
1:A:1535:PHE:CD1	1:A:1536:ILE:HG12	2.53	0.43
2:B:561:ILE:HG12	2:B:620:LEU:HG	2.01	0.43
2:B:683:ASN:HD21	14:N:148:ILE:HD11	1.82	0.43
2:B:1151:ILE:H	2:B:1151:ILE:HG13	1.73	0.43
1:A:6:PRO:HB3	7:G:111:THR:HG21	2.01	0.42
1:A:481:ARG:HB3	2:B:1045:GLN:HB2	1.99	0.42
2:B:120:LYS:HG3	2:B:171:HIS:CE1	2.54	0.42
2:B:1077:ASP:HA	2:B:1080:ILE:HG22	2.01	0.42
5:E:109:ILE:HG22	5:E:133:GLU:HB2	2.01	0.42
10:J:36:LEU:HD11	10:J:51:LEU:HB2	2.00	0.42
14:N:41:ASN:ND2	14:N:51:GLN:OE1	2.52	0.42
16:S:36:DC:H6	16:S:36:DC:H2'	1.72	0.42
1:A:19:LEU:HD22	2:B:1195:ARG:HB2	2.01	0.42
1:A:210:ALA:CB	1:A:1591:ARG:HH12	2.31	0.42
1:A:462:LYS:HG3	1:A:463:LYS:N	2.31	0.42
2:B:137:LEU:HB2	2:B:161:LEU:HD13	2.00	0.42
2:B:502:MET:HE3	2:B:504:HIS:HB2	2.02	0.42
3:C:249:LYS:HE3	3:C:249:LYS:HB3	1.89	0.42
5:E:94:LYS:HZ2	5:E:123:LEU:HD11	1.83	0.42
10:J:9:SER:HB2	10:J:45:CYS:HB2	2.00	0.42
1:A:1105:ARG:NH1	1:A:1142:ASP:OD1	2.46	0.42
1:A:1646:LEU:HD11	7:G:109:PRO:HB2	2.01	0.42
2:B:74:PHE:CE2	2:B:94:LYS:HB3	2.54	0.42
2:B:289:PHE:HZ	2:B:303:THR:HG23	1.83	0.42
2:B:562:PRO:HG3	2:B:591:LYS:NZ	2.31	0.42
2:B:656:LEU:HB2	2:B:657:PRO:HD3	2.01	0.42
2:B:733:LEU:HD11	2:B:804:TYR:CZ	2.55	0.42
5:E:147:HIS:HB3	5:E:150:VAL:HG22	2.01	0.42
12:L:31:CYS:HB3	12:L:36:SER:H	1.84	0.42
13:M:78:VAL:O	13:M:91:TYR:HB2	2.20	0.42
15:R:13:G:H2'	15:R:14:A:H8	1.85	0.42
1:A:591:ARG:HH12	15:R:20:C:HO2'	1.66	0.42
1:A:1657:LEU:HD13	7:G:106:LYS:HA	2.01	0.42
11:K:46:LYS:HA	11:K:66:VAL:HG22	2.00	0.42
11:K:51:THR:HA	11:K:54:THR:HG22	2.01	0.42
12:L:47:ARG:NH1	12:L:51:CYS:O	2.52	0.42
1:A:525:ASN:ND2	1:A:531:PRO:O	2.52	0.42
1:A:697:TYR:CZ	11:K:104:ARG:HB2	2.53	0.42
2:B:427:GLN:NE2	2:B:452:ARG:NH1	2.68	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:714:ARG:CZ	2:B:957:ARG:HG3	2.49	0.42
3:C:165:ARG:H	3:C:165:ARG:HD3	1.85	0.42
4:D:44:ILE:HD13	4:D:44:ILE:HA	1.92	0.42
5:E:197:LYS:HG3	5:E:211:TYR:HE1	1.84	0.42
14:N:29:PHE:CD2	14:N:30:LYS:HG2	2.55	0.42
14:N:76:SER:HB3	14:N:88:LYS:HZ1	1.83	0.42
1:A:103:LEU:HD13	1:A:240:SER:HB3	2.01	0.42
1:A:650:LEU:HD23	2:B:1084:THR:HB	2.01	0.42
2:B:199:ILE:HD12	2:B:487:VAL:HG13	2.01	0.42
2:B:730:GLY:HA2	2:B:765:PHE:CE1	2.55	0.42
2:B:803:MET:SD	2:B:909:ARG:NH1	2.92	0.42
2:B:941:THR:HG23	14:N:171:PHE:HE1	1.85	0.42
17:T:17:DC:H2'	17:T:18:DC:C6	2.54	0.42
1:A:250:LYS:CD	1:A:314:TYR:HD2	2.30	0.42
1:A:1180:ASN:ND2	6:F:86:THR:HB	2.35	0.42
2:B:832:TRP:CZ2	2:B:869:THR:HG23	2.54	0.42
10:J:68:LYS:HG2	10:J:69:ARG:HD2	2.00	0.42
14:N:84:LYS:H	14:N:84:LYS:HD2	1.85	0.42
1:A:719:ILE:HD12	1:A:725:LEU:HB2	2.01	0.42
2:B:168:ASN:OD1	2:B:169:ARG:NH1	2.52	0.42
2:B:242:ASP:C	2:B:243:GLN:HG3	2.45	0.42
2:B:1047:ARG:CZ	2:B:1059:PRO:HB3	2.49	0.42
1:A:253:GLU:O	1:A:312:SER:N	2.53	0.42
1:A:1609:SER:O	1:A:1613:MET:HG2	2.20	0.42
2:B:954:PHE:N	2:B:955:PRO:HD2	2.34	0.42
17:T:9:DT:H2'	17:T:9:DT:OP2	2.20	0.42
1:A:960:MET:SD	2:B:521:LEU:HD21	2.60	0.42
1:A:1214:ASN:OD1	1:A:1215:VAL:N	2.51	0.42
1:A:1635:ASP:O	1:A:1648:ASN:ND2	2.52	0.42
2:B:258:VAL:HG23	2:B:273:VAL:HG11	2.01	0.42
2:B:991:THR:HG22	2:B:993:ALA:H	1.85	0.42
2:B:1013:MET:SD	2:B:1026:ILE:HD11	2.60	0.42
2:B:1063:ARG:HE	17:T:20:DG:P	2.42	0.42
3:C:169:PHE:CG	3:C:184:VAL:HB	2.55	0.42
11:K:50:LEU:HD23	11:K:50:LEU:H	1.85	0.42
13:M:21:VAL:HB	14:N:38:PHE:HE2	1.85	0.42
1:A:756:LYS:HB2	1:A:759:TYR:CD1	2.55	0.41
1:A:1065:GLN:HB3	1:A:1068:PHE:HB3	2.01	0.41
1:A:753:ASN:ND2	1:A:780:ILE:HG22	2.34	0.41
2:B:30:LYS:HG2	2:B:178:TYR:CG	2.55	0.41
2:B:332:ASP:OD1	2:B:335:ARG:NH2	2.43	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:909:ARG:HG2	2:B:1035:ARG:HH22	1.85	0.41
5:E:68:SER:HB3	5:E:75:MET:SD	2.60	0.41
5:E:80:VAL:HG22	5:E:109:ILE:HD11	2.02	0.41
17:T:35:DT:H2"	17:T:36:DG:C8	2.55	0.41
1:A:695:TYR:HE1	1:A:820:TYR:HA	1.85	0.41
2:B:264:TRP:CZ2	2:B:357:ILE:HD11	2.55	0.41
2:B:531:VAL:O	2:B:716:MET:HG2	2.21	0.41
3:C:61:THR:HG22	3:C:298:PHE:CZ	2.55	0.41
13:M:21:VAL:HG13	13:M:93:ALA:HB2	2.03	0.41
17:T:32:DT:H2"	17:T:33:DA:C8	2.54	0.41
1:A:181:LEU:HA	1:A:184:LYS:NZ	2.35	0.41
1:A:496:GLY:HA2	1:A:606:ARG:O	2.21	0.41
2:B:990:ASP:OD1	2:B:990:ASP:N	2.53	0.41
8:H:111:LEU:HD22	8:H:126:GLU:OE2	2.20	0.41
11:K:109:GLY:O	11:K:110:GLU:HG2	2.20	0.41
1:A:357:MET:H	1:A:357:MET:HG3	1.74	0.41
1:A:699:CYS:SG	1:A:816:LEU:HA	2.61	0.41
1:A:1648:ASN:OD1	1:A:1649:VAL:N	2.54	0.41
2:B:1004:GLY:HA3	14:N:170:HIS:CG	2.55	0.41
3:C:129:GLU:OE2	3:C:174:ARG:NH1	2.53	0.41
8:H:95:TYR:HE2	8:H:97:MET:HE2	1.86	0.41
17:T:24:DA:H4'	17:T:25:DT:OP1	2.19	0.41
3:C:218:LYS:HB2	3:C:218:LYS:HE2	1.89	0.41
4:D:22:ILE:HD13	7:G:45:LEU:HB3	2.03	0.41
16:S:12:DT:H2"	16:S:13:DA:C8	2.55	0.41
1:A:470:HIS:CD2	2:B:1056:THR:HG21	2.56	0.41
1:A:1104:TYR:CG	1:A:1119:LYS:NZ	2.88	0.41
2:B:701:ALA:O	2:B:704:THR:HG22	2.20	0.41
6:F:136:ARG:HH21	6:F:146:TRP:NE1	2.18	0.41
11:K:43:ASP:OD2	11:K:46:LYS:N	2.40	0.41
1:A:613:THR:HG23	1:A:615:ARG:NH2	2.36	0.41
2:B:322:ASN:ND2	13:M:104:SER:O	2.53	0.41
2:B:947:ILE:HG21	2:B:1033:TYR:HE2	1.85	0.41
3:C:136:LEU:HB3	3:C:204:LEU:HG	2.03	0.41
4:D:22:ILE:HD11	7:G:43:ILE:HD12	2.02	0.41
11:K:81:MET:SD	11:K:89:CYS:HB3	2.61	0.41
17:T:18:DC:H2'	17:T:19:DT:C6	2.56	0.41
1:A:399:LEU:HD23	1:A:422:ARG:CZ	2.51	0.41
1:A:498:PRO:HB3	1:A:611:GLU:O	2.21	0.41
1:A:525:ASN:OD1	1:A:529:LYS:HB3	2.21	0.41
1:A:603:HIS:CD2	1:A:653:THR:HB	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:652:ASN:ND2	1:A:654:ASP:OD1	2.53	0.41
1:A:784:SER:OG	1:A:785:GLN:OE1	2.34	0.41
1:A:854:GLY:HA2	1:A:899:LYS:NZ	2.36	0.41
2:B:161:LEU:HD21	2:B:413:LEU:HD21	2.02	0.41
2:B:181:VAL:HA	10:J:63:TYR:HE1	1.86	0.41
2:B:204:ARG:HH11	2:B:502:MET:HE2	1.86	0.41
2:B:416:LYS:HD2	2:B:460:LYS:NZ	2.36	0.41
2:B:532:HIS:CG	2:B:719:CYS:HG	2.38	0.41
2:B:706:PHE:HB3	2:B:709:PHE:CD2	2.56	0.41
2:B:916:LYS:HD3	2:B:1038:HIS:CD2	2.56	0.41
3:C:42:VAL:HG12	11:K:138:LYS:NZ	2.36	0.41
5:E:38:PRO:HB2	5:E:40:GLU:HG3	2.01	0.41
7:G:234:ARG:HB3	7:G:246:ASP:HB3	2.02	0.41
13:M:17:ASP:OD1	13:M:17:ASP:N	2.54	0.41
1:A:1247:SER:H	1:A:1250:GLN:HB2	1.86	0.41
1:A:1308:VAL:HG11	1:A:1498:ILE:HG12	2.03	0.41
1:A:1322:ILE:HG23	1:A:1456:PHE:HZ	1.86	0.41
2:B:1106:GLU:OE1	2:B:1172:GLU:HB2	2.21	0.41
3:C:209:ILE:HG13	3:C:210:LEU:H	1.86	0.41
6:F:116:ASP:O	6:F:120:ILE:HG12	2.21	0.41
14:N:117:GLU:OE2	14:N:120:LYS:HD3	2.20	0.41
1:A:196:ALA:HA	1:A:201:ARG:HH21	1.86	0.40
1:A:250:LYS:O	1:A:252:PHE:CD1	2.74	0.40
1:A:474:LYS:NZ	2:B:1093:LEU:HD23	2.36	0.40
1:A:508:PRO:HB3	1:A:578:TYR:CE1	2.56	0.40
2:B:995:TYR:HE1	14:N:162:LYS:HG2	1.87	0.40
2:B:1093:LEU:HD22	2:B:1179:PRO:HG3	2.03	0.40
4:D:90:LYS:O	4:D:94:ARG:HG2	2.21	0.40
14:N:170:HIS:CD2	14:N:171:PHE:H	2.38	0.40
1:A:677:GLY:O	1:A:681:THR:OG1	2.37	0.40
1:A:1580:ARG:HH11	5:E:204:THR:CG2	2.34	0.40
2:B:130:LEU:HD13	2:B:808:LYS:HE2	2.02	0.40
2:B:651:ARG:HH11	2:B:695:ASN:ND2	2.20	0.40
10:J:30:LEU:HD13	10:J:31:ASP:N	2.35	0.40
1:A:248:PHE:O	1:A:249:THR:CB	2.70	0.40
1:A:1098:SER:HA	1:A:1123:VAL:HG11	2.04	0.40
1:A:1502:PRO:O	1:A:1525:ASN:ND2	2.52	0.40
2:B:882:ILE:HG12	2:B:905:TYR:HE1	1.86	0.40
2:B:962:MET:HG3	2:B:1031:VAL:HG21	2.03	0.40
8:H:37:LYS:HZ1	8:H:124:ARG:HH12	1.66	0.40
13:M:22:ALA:O	14:N:110:LEU:HG	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:232:LYS:HB2	1:A:239:PHE:CE1	2.56	0.40
1:A:493:ASN:HA	1:A:653:THR:HG21	2.03	0.40
1:A:697:TYR:CE1	11:K:104:ARG:HB2	2.56	0.40
2:B:566:TYR:CD2	13:M:73:SER:HB3	2.53	0.40
4:D:43:PHE:HA	4:D:46:GLU:HB2	2.03	0.40
1:A:1:MET:HG3	2:B:1098:TYR:CZ	2.56	0.40
1:A:1189:ALA:HB2	1:A:1584:LEU:HD13	2.03	0.40
2:B:252:TYR:CD1	2:B:385:VAL:HG11	2.56	0.40
5:E:62:ALA:HB3	5:E:78:LEU:HB3	2.03	0.40
8:H:12:VAL:HG13	8:H:26:ILE:HG23	2.04	0.40
10:J:30:LEU:HD11	10:J:34:THR:HB	2.02	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	1437/1664 (86%)	1345 (94%)	85 (6%)	7 (0%)	25	61
2	B	1160/1203 (96%)	1098 (95%)	62 (5%)	0	100	100
3	C	300/335 (90%)	293 (98%)	7 (2%)	0	100	100
4	D	55/137 (40%)	55 (100%)	0	0	100	100
5	E	212/215 (99%)	206 (97%)	6 (3%)	0	100	100
6	F	98/155 (63%)	97 (99%)	1 (1%)	0	100	100
7	G	179/326 (55%)	179 (100%)	0	0	100	100
8	H	130/146 (89%)	125 (96%)	5 (4%)	0	100	100
9	I	62/125 (50%)	57 (92%)	5 (8%)	0	100	100
10	J	67/70 (96%)	60 (90%)	7 (10%)	0	100	100
11	K	98/142 (69%)	93 (95%)	5 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
12	L	41/70 (59%)	40 (98%)	1 (2%)	0	100	100
13	M	97/415 (23%)	86 (89%)	11 (11%)	0	100	100
14	N	127/233 (54%)	101 (80%)	25 (20%)	1 (1%)	16	53
All	All	4063/5236 (78%)	3835 (94%)	220 (5%)	8 (0%)	45	76

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	250	LYS
1	A	227	LEU
1	A	248	PHE
1	A	251	ILE
14	N	148	ILE
1	A	249	THR
1	A	451	VAL
1	A	765	LEU

5.3.2　Protein sidechains ⓘ

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	1284/1465 (88%)	1261 (98%)	23 (2%)	54	71
2	B	1025/1053 (97%)	1013 (99%)	12 (1%)	67	78
3	C	269/296 (91%)	266 (99%)	3 (1%)	70	80
4	D	56/116 (48%)	56 (100%)	0	100	100
5	E	196/197 (100%)	195 (100%)	1 (0%)	86	89
6	F	90/137 (66%)	88 (98%)	2 (2%)	47	65
7	G	166/291 (57%)	166 (100%)	0	100	100
8	H	117/128 (91%)	115 (98%)	2 (2%)	56	72
9	I	56/110 (51%)	56 (100%)	0	100	100
10	J	64/65 (98%)	58 (91%)	6 (9%)	7	25

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
11	K	90/130 (69%)	90 (100%)	0	100	100
12	L	38/57 (67%)	38 (100%)	0	100	100
13	M	91/371 (24%)	90 (99%)	1 (1%)	70	80
14	N	125/220 (57%)	123 (98%)	2 (2%)	58	74
All	All	3667/4636 (79%)	3615 (99%)	52 (1%)	62	75

All (52) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	24	ILE
1	A	41	LEU
1	A	94	LEU
1	A	203	THR
1	A	227	LEU
1	A	315	ILE
1	A	316	LEU
1	A	350	VAL
1	A	466	LEU
1	A	492	THR
1	A	570	THR
1	A	658	LEU
1	A	835	LEU
1	A	930	LEU
1	A	946	LEU
1	A	1124	LEU
1	A	1263	LEU
1	A	1300	ASN
1	A	1457	ILE
1	A	1498	ILE
1	A	1546	VAL
1	A	1634	LEU
1	A	1643	VAL
2	B	37	LEU
2	B	236	ILE
2	B	374	LEU
2	B	375	LEU
2	B	478	LEU
2	B	512	LEU
2	B	520	LEU
2	B	692	THR
2	B	934	ILE

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Mol	Chain	Res	Type
2	B	1084	THR
2	B	1117	VAL
2	B	1168	VAL
3	C	75	VAL
3	C	94	ASP
3	C	258	ILE
5	E	124	VAL
6	F	127	GLU
6	F	130	ILE
8	H	116	TYR
8	H	146	ARG
10	J	30	LEU
10	J	39	LEU
10	J	46	CYS
10	J	51	LEU
10	J	52	THR
10	J	64	ASN
13	M	52	VAL
14	N	62	VAL
14	N	84	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (70) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	76	GLN
1	A	116	HIS
1	A	264	ASN
1	A	332	GLN
1	A	344	ASN
1	A	431	GLN
1	A	470	HIS
1	A	515	ASN
1	A	559	ASN
1	A	620	ASN
1	A	634	ASN
1	A	656	GLN
1	A	694	GLN
1	A	795	HIS
1	A	798	HIS
1	A	926	GLN
1	A	942	GLN
1	A	950	GLN

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Mol	Chain	Res	Type
1	A	1026	GLN
1	A	1141	GLN
1	A	1191	GLN
1	A	1314	GLN
1	A	1315	ASN
1	A	1443	GLN
1	A	1447	GLN
1	A	1453	HIS
1	A	1454	HIS
2	B	43	GLN
2	B	45	HIS
2	B	128	GLN
2	B	213	HIS
2	B	398	GLN
2	B	427	GLN
2	B	473	GLN
2	B	504	HIS
2	B	636	GLN
2	B	646	HIS
2	B	682	GLN
2	B	684	ASN
2	B	711	GLN
2	B	718	GLN
2	B	770	ASN
2	B	896	GLN
2	B	899	GLN
2	B	923	GLN
2	B	1066	HIS
3	C	53	ASN
3	C	58	ASN
3	C	99	HIS
3	C	130	ASN
3	C	161	HIS
3	C	207	HIS
3	C	232	GLN
3	C	301	ASN
4	D	17	ASN
4	D	23	HIS
4	D	29	GLN
5	E	136	ASN
7	G	56	ASN
7	G	59	GLN

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Mol	Chain	Res	Type
7	G	64	GLN
7	G	121	ASN
7	G	140	GLN
7	G	170	HIS
8	H	11	GLN
9	I	19	ASN
9	I	21	ASN
10	J	64	ASN
11	K	106	GLN
12	L	53	HIS

5.3.3   RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
15	R	12/20 (60%)	3 (25%)	2 (16%)

All (3) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
15	R	10	A
15	R	11	A
15	R	13	G

All (2) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
15	R	10	A
15	R	12	A

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 ⓘ

Of 6 ligands modelled in this entry, 6 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-3447. 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 |
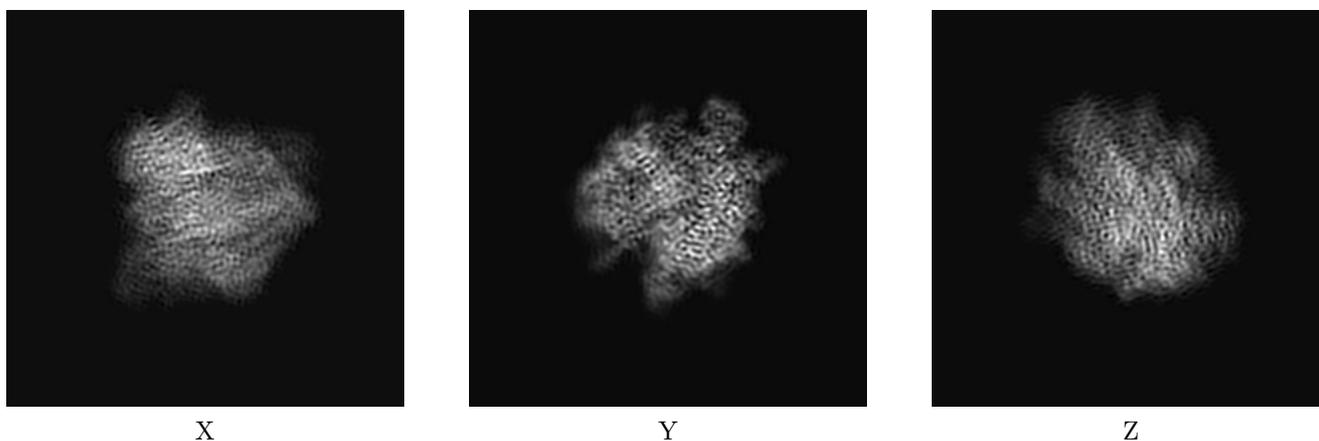
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ

6.2.1 Primary map

| X Index: 100 | Y Index: 100 | Z Index: 100 |
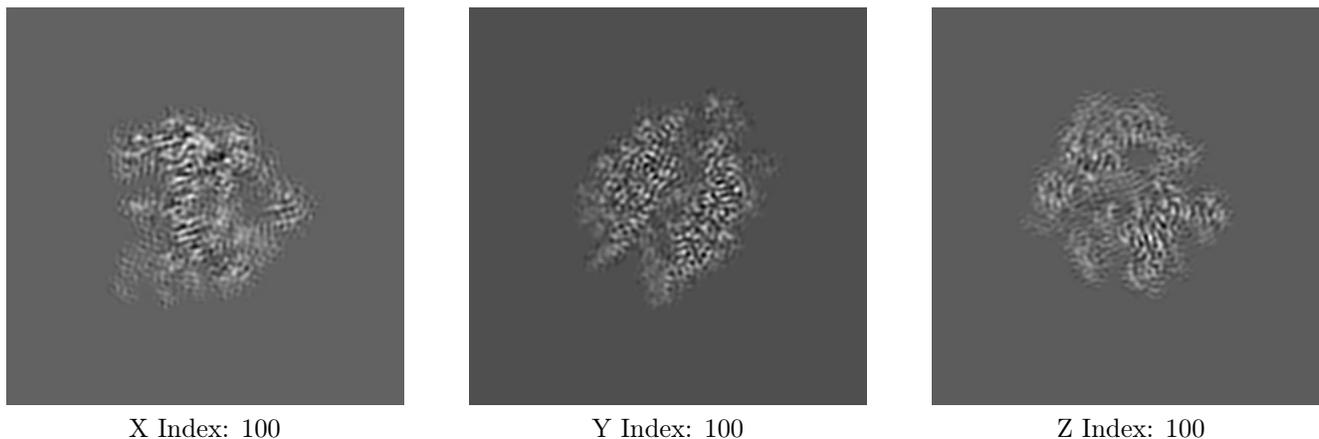
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices ⓘ
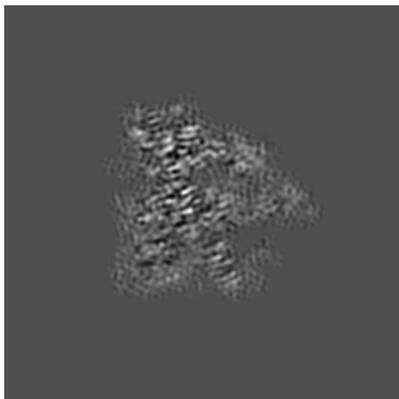
6.3.1 Primary map
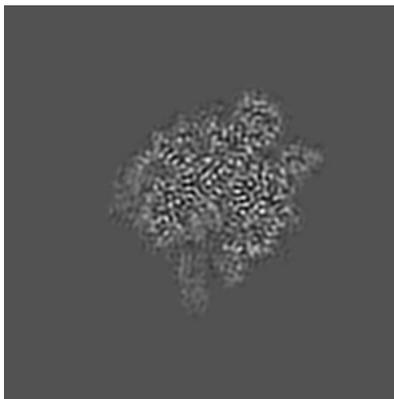
| X Index: 113 | Y Index: 89 | Z Index: 125 |
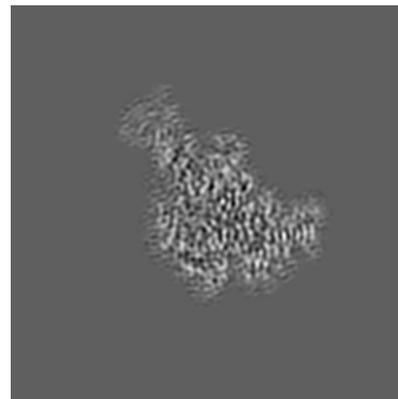
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) ⓘ

6.4.1 Primary map

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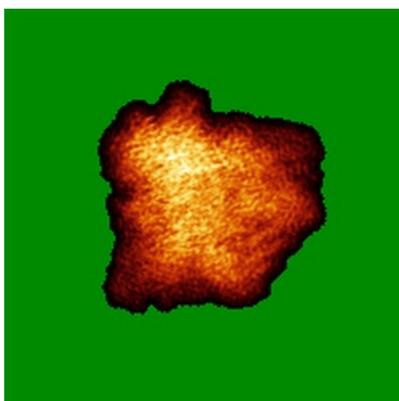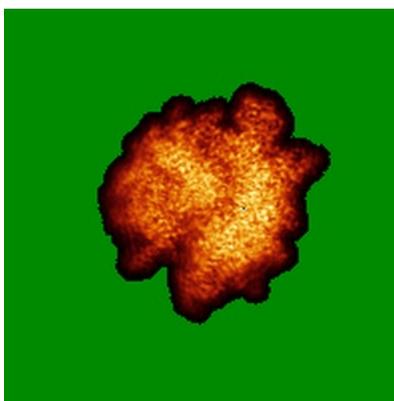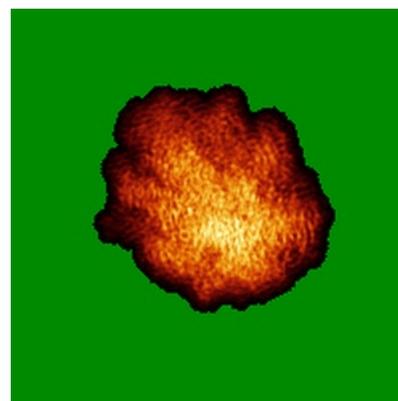
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X   Y   Z
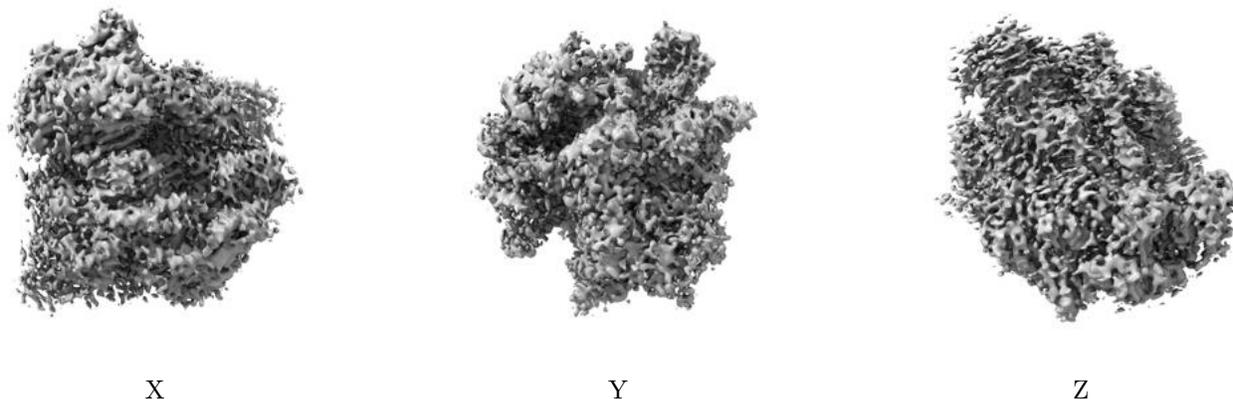
The images above show the 3D surface view of the map at the recommended contour level 0.03. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.6 Mask visualisation (i)

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

7 Map analysis ⓘ

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

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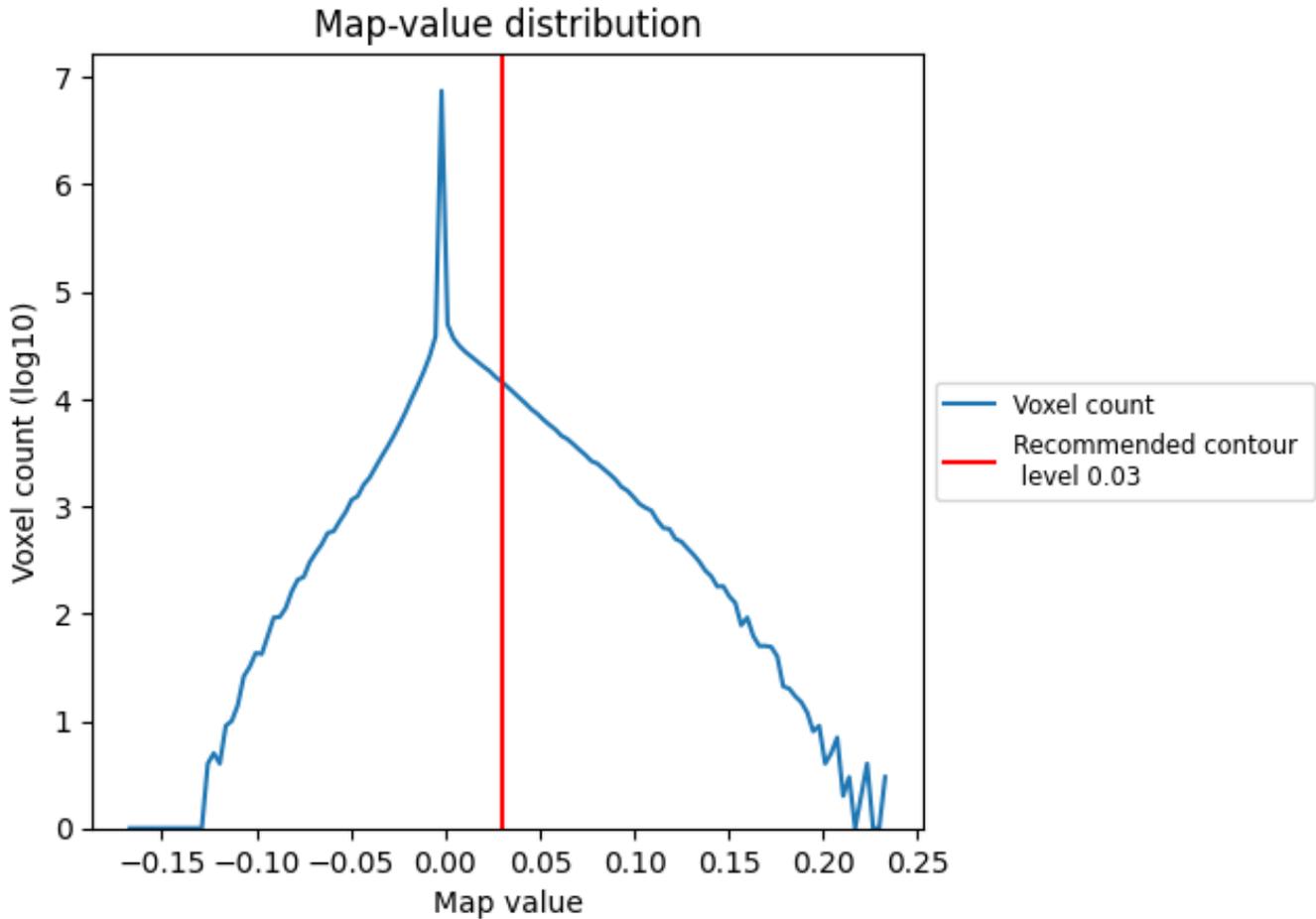
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2   Volume estimate ⓘ
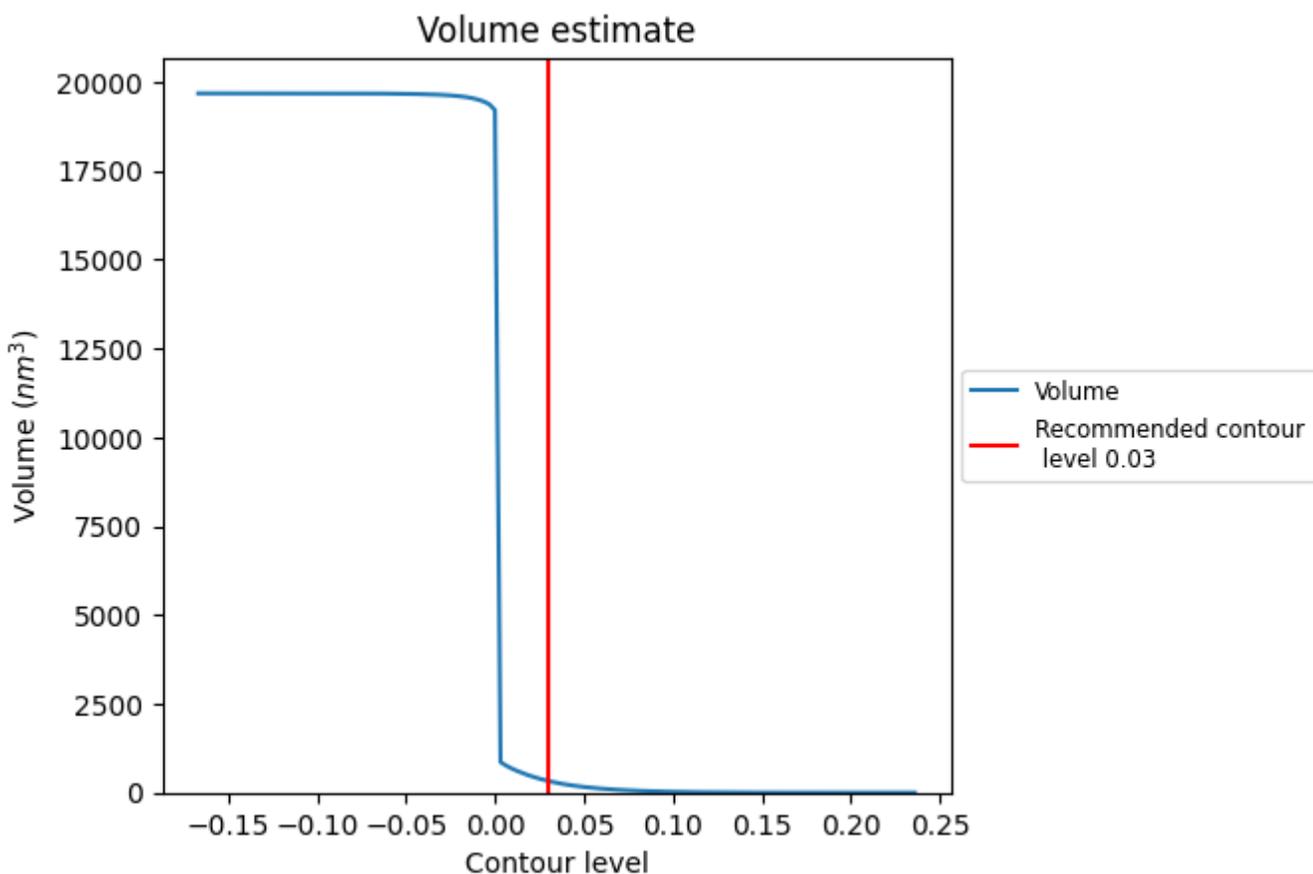
The volume at the recommended contour level is 328 nm^3; this corresponds to an approximate mass of 296 kDa.

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 ⓘ
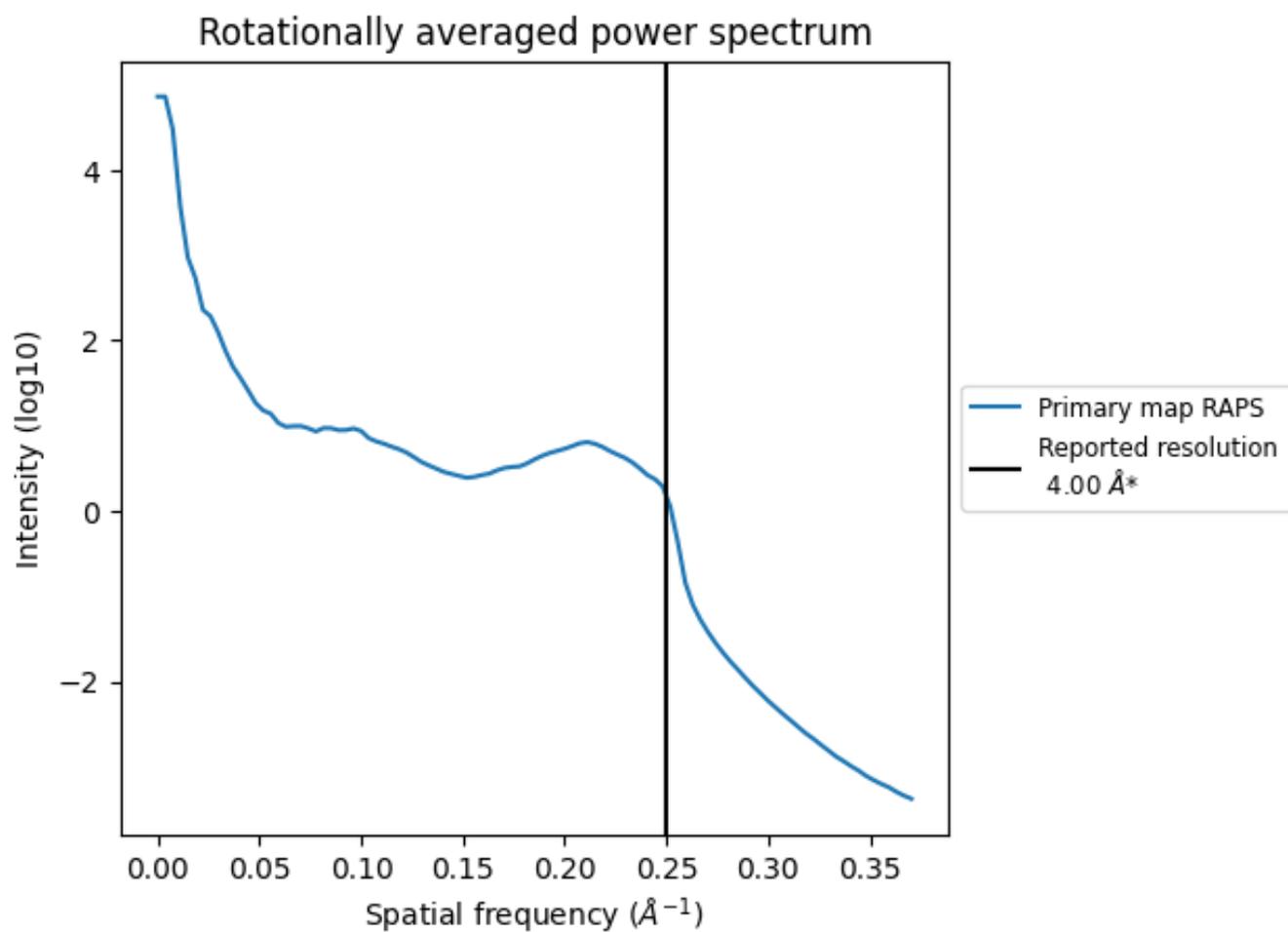
*Reported resolution corresponds to spatial frequency of 0.250 Å^{-1}

8　Fourier-Shell correlation ⓘ

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

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-3447 and PDB model 5M5X. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay ⓘ

X   Y   Z
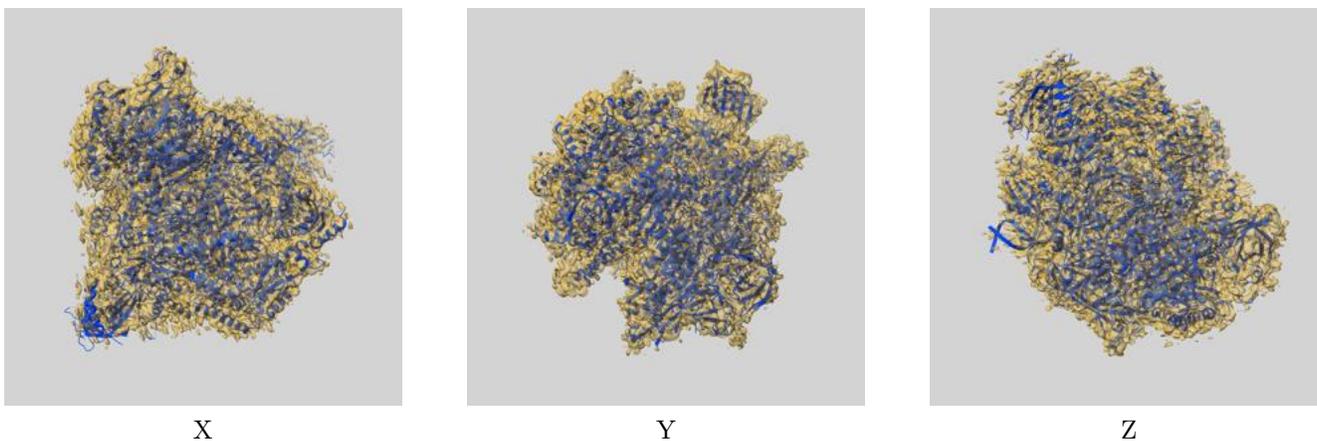
The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2　Q-score mapped to coordinate model ⓘ

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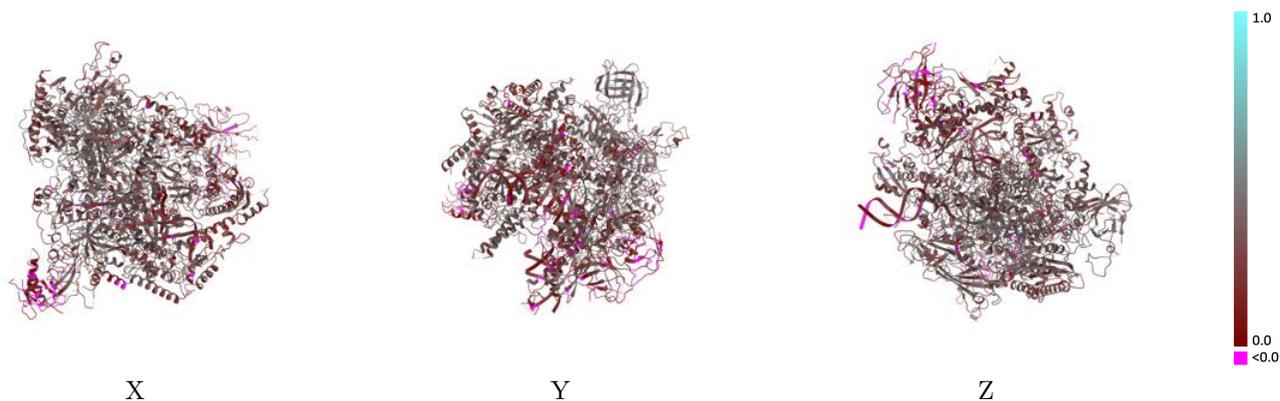
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3　Atom inclusion mapped to coordinate model ⓘ

X　　　　　　　　　　　　Y　　　　　　　　　　　　Z
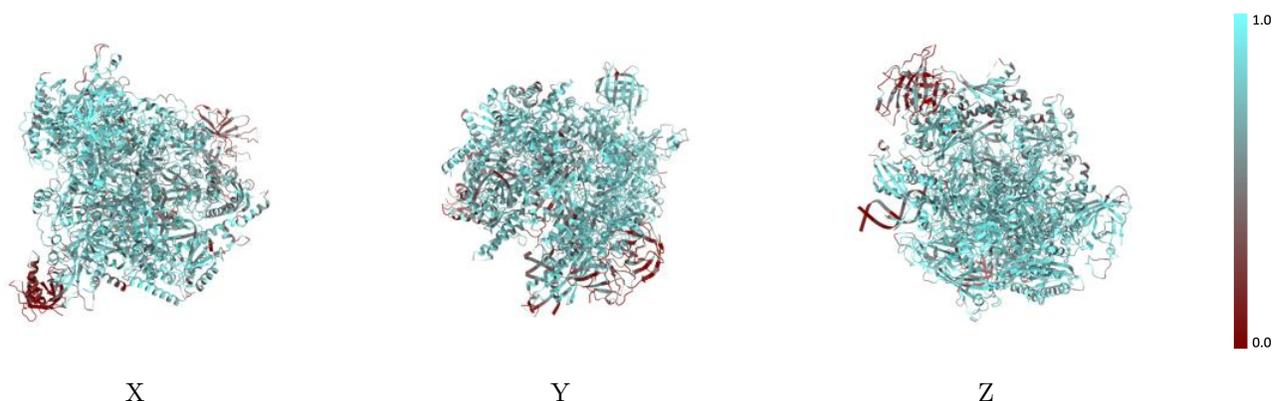
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.03).

9.4　Atom inclusion ⓘ
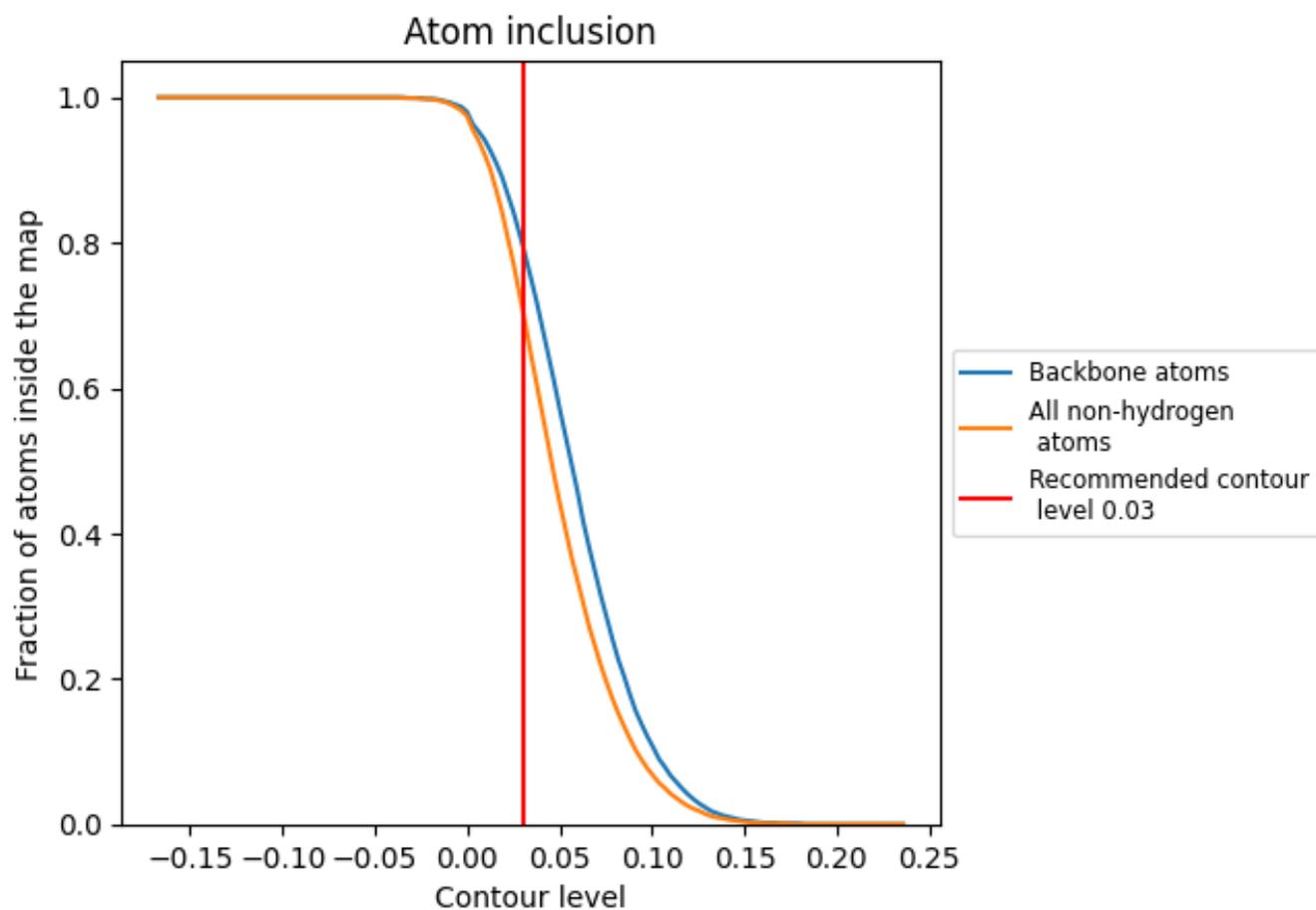
At the recommended contour level, 80% of all backbone atoms, 71% of all non-hydrogen atoms, are inside the map.

9.5   Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7080	0.3020
A	0.7570	0.3280
B	0.7800	0.3270
C	0.7850	0.3500
D	0.3130	0.1880
E	0.7580	0.3060
F	0.7710	0.3320
G	0.3510	0.1460
H	0.7630	0.3410
I	0.5640	0.2170
J	0.8440	0.3870
K	0.7990	0.3260
L	0.8160	0.3480
M	0.3820	0.1700
N	0.3100	0.1640
R	0.7300	0.2470
S	0.3970	0.0960
T	0.5440	0.1790

1.0

0.0
<0.0