Full wwPDB EM Validation Report

Oct 13, 2024 – 05:20 pm BST

PDB ID	:	7NS2
EMDB ID	:	EMD-12558
Title	:	Virion of Leishmania RNA virus 1
Authors	:	Prochazkova, M.; Grybchuk, D.; Fuzik, T.
Deposited on	:	2021-03-05
Resolution	:	3.63 Å(reported)
Based on initial model	:	6Y83

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:

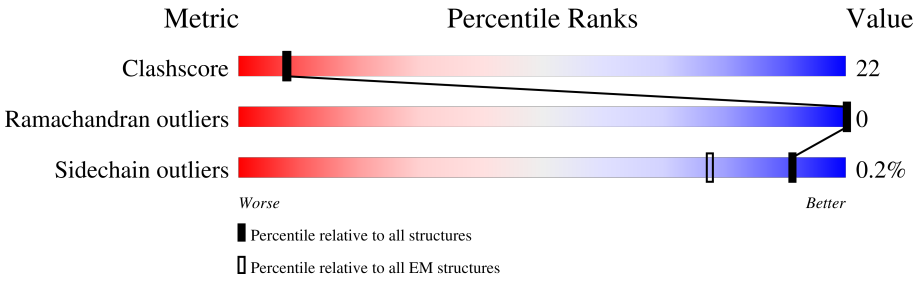
EMDB validation analysis	:	0.0.1.dev113
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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 3.63 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	786	49% 28% 23%
1	B	786	50% 28% 22%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 9575 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 Capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	605	Total 4755	C 3010	N 823	O 888	S 34	0	0
1	B	614	Total 4820	C 3054	N 831	O 901	S 34	0	0

There are 90 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	432	ALA	THR	conflict	UNP L7XUU7
A	743	PRO	-	expression tag	UNP L7XUU7
A	744	ASP	-	expression tag	UNP L7XUU7
A	745	LEU	-	expression tag	UNP L7XUU7
A	746	GLY	-	expression tag	UNP L7XUU7
A	747	THR	-	expression tag	UNP L7XUU7
A	748	GLY	-	expression tag	UNP L7XUU7
A	749	GLY	-	expression tag	UNP L7XUU7
A	750	GLY	-	expression tag	UNP L7XUU7
A	751	SER	-	expression tag	UNP L7XUU7
A	752	GLY	-	expression tag	UNP L7XUU7
A	753	ILE	-	expression tag	UNP L7XUU7
A	754	GLU	-	expression tag	UNP L7XUU7
A	755	GLY	-	expression tag	UNP L7XUU7
A	756	ARG	-	expression tag	UNP L7XUU7
A	757	GLY	-	expression tag	UNP L7XUU7
A	758	SER	-	expression tag	UNP L7XUU7
A	759	MET	-	expression tag	UNP L7XUU7
A	760	ASP	-	expression tag	UNP L7XUU7
A	761	ILE	-	expression tag	UNP L7XUU7
A	762	GLY	-	expression tag	UNP L7XUU7
A	763	ASP	-	expression tag	UNP L7XUU7
A	764	PRO	-	expression tag	UNP L7XUU7
A	765	ASN	-	expression tag	UNP L7XUU7
A	766	SER	-	expression tag	UNP L7XUU7
A	767	VAL	-	expression tag	UNP L7XUU7

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Chain	Residue	Modelled	Actual	Comment	Reference
A	768	GLN	-	expression tag	UNP L7XUU7
A	769	ALA	-	expression tag	UNP L7XUU7
A	770	LEU	-	expression tag	UNP L7XUU7
A	771	ALA	-	expression tag	UNP L7XUU7
A	772	ARG	-	expression tag	UNP L7XUU7
A	773	LEU	-	expression tag	UNP L7XUU7
A	774	GLN	-	expression tag	UNP L7XUU7
A	775	ALA	-	expression tag	UNP L7XUU7
A	776	SER	-	expression tag	UNP L7XUU7
A	777	SER	-	expression tag	UNP L7XUU7
A	778	VAL	-	expression tag	UNP L7XUU7
A	779	ASP	-	expression tag	UNP L7XUU7
A	780	LYS	-	expression tag	UNP L7XUU7
A	781	LEU	-	expression tag	UNP L7XUU7
A	782	ALA	-	expression tag	UNP L7XUU7
A	783	ALA	-	expression tag	UNP L7XUU7
A	784	ALA	-	expression tag	UNP L7XUU7
A	785	LEU	-	expression tag	UNP L7XUU7
A	786	GLU	-	expression tag	UNP L7XUU7
B	432	ALA	THR	conflict	UNP L7XUU7
B	743	PRO	-	expression tag	UNP L7XUU7
B	744	ASP	-	expression tag	UNP L7XUU7
B	745	LEU	-	expression tag	UNP L7XUU7
B	746	GLY	-	expression tag	UNP L7XUU7
B	747	THR	-	expression tag	UNP L7XUU7
B	748	GLY	-	expression tag	UNP L7XUU7
B	749	GLY	-	expression tag	UNP L7XUU7
B	750	GLY	-	expression tag	UNP L7XUU7
B	751	SER	-	expression tag	UNP L7XUU7
B	752	GLY	-	expression tag	UNP L7XUU7
B	753	ILE	-	expression tag	UNP L7XUU7
B	754	GLU	-	expression tag	UNP L7XUU7
B	755	GLY	-	expression tag	UNP L7XUU7
B	756	ARG	-	expression tag	UNP L7XUU7
B	757	GLY	-	expression tag	UNP L7XUU7
B	758	SER	-	expression tag	UNP L7XUU7
B	759	MET	-	expression tag	UNP L7XUU7
B	760	ASP	-	expression tag	UNP L7XUU7
B	761	ILE	-	expression tag	UNP L7XUU7
B	762	GLY	-	expression tag	UNP L7XUU7
B	763	ASP	-	expression tag	UNP L7XUU7
B	764	PRO	-	expression tag	UNP L7XUU7

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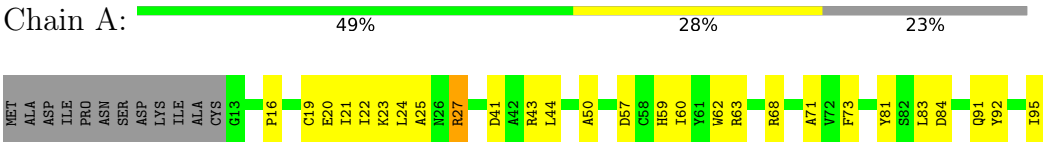
Chain	Residue	Modelled	Actual	Comment	Reference
B	765	ASN	-	expression tag	UNP L7XUU7
B	766	SER	-	expression tag	UNP L7XUU7
B	767	VAL	-	expression tag	UNP L7XUU7
B	768	GLN	-	expression tag	UNP L7XUU7
B	769	ALA	-	expression tag	UNP L7XUU7
B	770	LEU	-	expression tag	UNP L7XUU7
B	771	ALA	-	expression tag	UNP L7XUU7
B	772	ARG	-	expression tag	UNP L7XUU7
B	773	LEU	-	expression tag	UNP L7XUU7
B	774	GLN	-	expression tag	UNP L7XUU7
B	775	ALA	-	expression tag	UNP L7XUU7
B	776	SER	-	expression tag	UNP L7XUU7
B	777	SER	-	expression tag	UNP L7XUU7
B	778	VAL	-	expression tag	UNP L7XUU7
B	779	ASP	-	expression tag	UNP L7XUU7
B	780	LYS	-	expression tag	UNP L7XUU7
B	781	LEU	-	expression tag	UNP L7XUU7
B	782	ALA	-	expression tag	UNP L7XUU7
B	783	ALA	-	expression tag	UNP L7XUU7
B	784	ALA	-	expression tag	UNP L7XUU7
B	785	LEU	-	expression tag	UNP L7XUU7
B	786	GLU	-	expression tag	UNP L7XUU7

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.

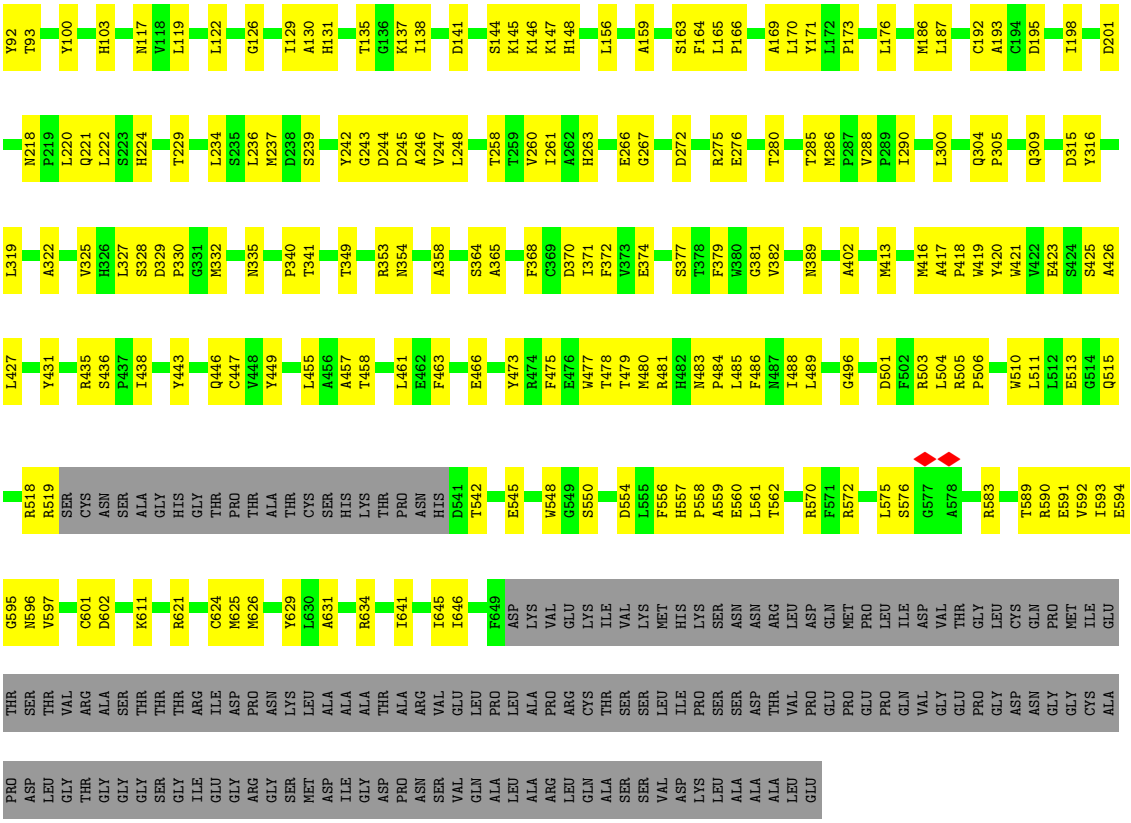
- Molecule 1: Capsid protein

Chain A:



- Molecule 1: Capsid protein

Chain B:


Y92 T93 Y100 H103 N117 V118 L119 L122 G126 I129 A130 H131 T135 G136 K137 I138 D141 S144 K145 K146 K147 H148 L156 A159 S163 F164 L165 P166 A169 L170 Y171 L172 P173 L176 M186 L187 C192 A193 C194 D195 I198 D201
N218 P219 L220 Q221 L222 S223 H224 T229 L234 S235 L236 M237 D238 S239 Y242 G243 D244 D245 A246 V247 L248 T258 T259 V260 I261 A262 H263 E266 G267 D272 R275 E276 T280 T285 M286 P287 V288 P289 I290 L300 Q304 P305 Q309 D315 Y316
L319 A322 V325 H326 L327 S328 D329 P330 G331 M332 N335 P340 T341 T349 R353 N354 A358 S364 A365 F368 C369 D370 I371 F372 V373 E374 S377 T378 F379 W380 G381 V382 N389 A402 M413 M416 A417 P418 W419 Y420 W421 V422 E423 S424 S425 A426
L427 Y431 R435 S436 P437 I438 Y443 Q446 C447 V448 Y449 L455 A456 A457 T458 L461 E462 F463 E466 Y473 R474 F475 E476 W477 T478 T479 M480 R481 H482 N483 P484 L485 F486 N487 I488 L489 G496 D501 F502 R503 L504 R505 P506 W510 L511 L512 E513 G514 Q515
R518 R519 SER CYS ASN SER ALA GLY HIS GLY THR PRO THR ALA THR CYS SER HIS LYS THR PRO ASN HIS D541 T542 E545 W548 G549 S550 D554 L555 F556 H557 P558 A559 E560 L561 T562 R570 F571 R572 L575 S576 G577 A578 R583 T589 R590 E591 V592 I593 E594
G595 N596 V597 C601 D602 K611 R621 C624 M625 M626 Y629 L630 A631 R634 I641 I645 I646 F649 ASP LYS VAL GLU LYS ILE VAL LYS MET HIS LYS SER ASN ASN ARG LEU ASP GLN MET PRO LEU ILE ASP VAL THR GLY LEU CYS GLN PRO MET ILE GLU
THR SER THR VAL ARG ALA SER THR THR THR ARG ILE ASP PRO ASN LYS LEU ALA ALA ALA THR ALA ARG VAL GLU LEU PRO LEU ALA ALA PRO ARG CYS THR SER SER LEU ILE PRO SER SER ASP THR VAL PRO GLU PRO GLU PRO GLN VAL GLY GLU PRO GLY ASP ASN GLY GLY CYS ALA
PRO ASP LEU GLY THR GLY GLY GLY SER GLY ILE GLU GLY ARG GLY SER MET ASP ILE GLY ASP PRO ASN SER VAL GLN ALA LEU ALA ALA ARG LEU GLN ALA SER SER VAL ASP LYS LEU ALA ALA ALA LEU GLU

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, I	Depositor
Number of particles used	3768	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 ($e^-/Å^2$)	1.3	Depositor
Minimum defocus (nm)	3500	Depositor
Maximum defocus (nm)	5000	Depositor
Magnification	105000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.073	Depositor
Minimum map value	-0.035	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.01	Depositor
Map size (Å)	482.40002, 482.40002, 482.40002	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.34, 1.34, 1.34	Depositor

5 Model quality

5.1 Standard geometry

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	0.41	0/4874	0.52	0/6636
1	B	0.41	0/4940	0.50	0/6728
All	All	0.41	0/9814	0.51	0/13364

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	4755	0	4603	223	0
1	B	4820	0	4663	214	0
All	All	9575	0	9266	416	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 22.

All (416) 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:322:ALA:HB1	1:A:421:TRP:CD1	1.44	1.52
1:A:322:ALA:CB	1:A:421:TRP:HE1	1.23	1.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:322:ALA:HB1	1:A:421:TRP:NE1	1.20	1.47
1:A:322:ALA:CB	1:A:421:TRP:NE1	1.77	1.41
1:A:511:LEU:HD11	1:A:562:THR:CG2	1.59	1.31
1:A:300:LEU:CD2	1:B:165:LEU:HA	1.69	1.21
1:A:322:ALA:CB	1:A:421:TRP:CD1	2.21	1.20
1:B:83:LEU:CD2	1:B:245:ASP:OD2	1.92	1.17
1:B:243:GLY:O	1:B:247:VAL:HG23	1.45	1.14
1:A:322:ALA:HB2	1:A:421:TRP:HE1	1.05	1.13
1:B:83:LEU:HD22	1:B:245:ASP:OD2	1.44	1.12
1:A:511:LEU:HD11	1:A:562:THR:HG22	1.15	1.11
1:A:300:LEU:HD23	1:B:165:LEU:CA	1.81	1.10
1:A:300:LEU:HD23	1:B:165:LEU:HA	1.09	1.07
1:A:322:ALA:CA	1:A:421:TRP:CD1	2.47	0.96
1:B:327:LEU:O	1:B:436:SER:HB2	1.66	0.95
1:A:100:TYR:CD1	1:A:159:ALA:O	2.22	0.93
1:B:327:LEU:O	1:B:436:SER:CB	2.16	0.93
1:A:300:LEU:HB2	1:B:163:SER:HB3	1.52	0.92
1:B:461:LEU:HD11	1:B:473:TYR:HB3	1.52	0.91
1:A:271:ARG:HB2	1:A:421:TRP:CZ3	2.06	0.91
1:B:340:PRO:HG2	1:B:559:ALA:HB2	1.53	0.90
1:B:83:LEU:CD1	1:B:245:ASP:OD2	2.20	0.90
1:B:247:VAL:HG21	1:B:382:VAL:HG21	1.53	0.90
1:A:511:LEU:CD1	1:A:562:THR:CG2	2.48	0.89
1:A:511:LEU:CD1	1:A:562:THR:HG22	2.02	0.89
1:B:122:LEU:HD23	1:B:246:ALA:O	1.73	0.88
1:A:328:SER:HB3	1:A:375:ASN:HD22	1.39	0.88
1:B:237:MET:HG3	1:B:246:ALA:CB	2.04	0.87
1:A:100:TYR:HD1	1:A:159:ALA:O	1.58	0.87
1:A:322:ALA:O	1:A:421:TRP:CD1	2.30	0.84
1:A:62:TRP:CH2	1:A:427:LEU:HD11	2.14	0.82
1:A:62:TRP:CZ2	1:A:427:LEU:HD11	2.14	0.82
1:A:300:LEU:CD2	1:B:165:LEU:CA	2.50	0.81
1:B:83:LEU:HD13	1:B:245:ASP:OD2	1.80	0.81
1:A:551:THR:HG21	1:A:615:HIS:HB3	1.63	0.80
1:A:325:VAL:HG11	1:A:421:TRP:HB2	1.64	0.79
1:B:335:ASN:ND2	1:B:641:ILE:O	2.14	0.78
1:A:271:ARG:HB2	1:A:421:TRP:HZ3	1.45	0.78
1:B:119:LEU:CD2	1:B:246:ALA:HA	2.14	0.78
1:A:322:ALA:C	1:A:421:TRP:CD1	2.58	0.77
1:A:186:MET:HB3	1:A:229:THR:HG21	1.64	0.77
1:A:300:LEU:HB3	1:B:164:PHE:H	1.48	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:122:LEU:CD2	1:B:246:ALA:O	2.32	0.77
1:A:479:THR:HG23	1:A:562:THR:HB	1.69	0.75
1:A:504:LEU:O	1:A:504:LEU:HD23	1.86	0.75
1:B:458:THR:HA	1:B:483:ASN:HB2	1.68	0.75
1:A:511:LEU:HD12	1:A:511:LEU:O	1.86	0.75
1:B:327:LEU:O	1:B:436:SER:HB3	1.86	0.74
1:B:22:ILE:HB	1:B:316:TYR:HB2	1.71	0.72
1:B:83:LEU:HD22	1:B:245:ASP:CG	2.10	0.71
1:A:519:ARG:HH22	1:A:545:GLU:HG3	1.55	0.71
1:A:243:GLY:HA3	1:A:382:VAL:HG21	1.73	0.71
1:B:354:ASN:ND2	1:B:413:MET:O	2.24	0.71
1:B:480:MET:HB2	1:B:561:LEU:HB2	1.70	0.70
1:B:272:ASP:O	1:B:276:GLU:HG2	1.91	0.70
1:B:144:SER:HA	1:B:193:ALA:HB2	1.74	0.70
1:A:322:ALA:CA	1:A:421:TRP:NE1	2.49	0.70
1:B:237:MET:HG3	1:B:246:ALA:HB2	1.71	0.70
1:A:22:ILE:HB	1:A:316:TYR:HB2	1.73	0.69
1:A:511:LEU:HD12	1:A:511:LEU:C	2.13	0.69
1:A:247:VAL:HG21	1:A:380:TRP:CD1	2.28	0.69
1:A:300:LEU:CB	1:B:163:SER:HB3	2.23	0.68
1:A:325:VAL:CG1	1:A:421:TRP:HB2	2.22	0.68
1:A:344:THR:HG23	1:A:415:VAL:HG22	1.75	0.68
1:A:511:LEU:HD11	1:A:562:THR:HG23	1.69	0.68
1:A:155:THR:HB	1:A:203:ILE:HB	1.76	0.68
1:A:452:ARG:HG2	1:A:600:ARG:HB3	1.76	0.68
1:B:243:GLY:C	1:B:247:VAL:HG23	2.13	0.68
1:A:300:LEU:HD23	1:B:165:LEU:N	2.09	0.67
1:A:322:ALA:C	1:A:421:TRP:HD1	1.98	0.67
1:A:455:LEU:HD13	1:A:484:PRO:HG3	1.76	0.67
1:A:470:TYR:OH	1:A:572:ARG:NH1	2.28	0.67
1:A:503:ARG:HB2	1:A:570:ARG:HH11	1.60	0.67
1:A:20:GLU:OE1	1:A:20:GLU:N	2.19	0.66
1:A:511:LEU:HD21	1:A:562:THR:HG23	1.77	0.66
1:A:300:LEU:HB3	1:B:164:PHE:N	2.10	0.66
1:B:119:LEU:HD22	1:B:246:ALA:HA	1.78	0.66
1:A:100:TYR:CE1	1:A:159:ALA:O	2.47	0.66
1:B:242:TYR:HB3	1:B:245:ASP:HB3	1.77	0.66
1:A:421:TRP:HD1	1:A:422:VAL:HG22	1.61	0.65
1:A:337:VAL:HG23	1:A:339:TYR:HE2	1.60	0.65
1:B:548:TRP:CE3	1:B:560:GLU:HG2	2.31	0.65
1:A:153:VAL:HG11	1:A:200:MET:HE2	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:237:MET:HE2	1:B:246:ALA:HB2	1.78	0.64
1:A:171:TYR:HD2	1:A:285:THR:HG23	1.63	0.64
1:B:244:ASP:HA	1:B:247:VAL:HB	1.80	0.64
1:A:365:ALA:HA	1:A:368:PHE:HB3	1.79	0.64
1:B:327:LEU:HD11	1:B:431:TYR:HE1	1.62	0.64
1:B:83:LEU:CG	1:B:245:ASP:OD2	2.45	0.64
1:B:171:TYR:HB3	1:B:285:THR:HG22	1.79	0.64
1:B:63:ARG:HB2	1:B:261:ILE:HB	1.80	0.64
1:A:218:ASN:H	1:A:221:GLN:NE2	1.96	0.64
1:A:300:LEU:HD21	1:B:165:LEU:HA	1.74	0.63
1:A:466:GLU:OE1	1:A:466:GLU:N	2.33	0.62
1:B:511:LEU:HB2	1:B:626:MET:HG2	1.81	0.62
1:B:518:ARG:NE	1:B:545:GLU:OE1	2.33	0.62
1:B:83:LEU:HD21	1:B:245:ASP:OD2	1.96	0.62
1:A:236:LEU:O	1:A:239:SER:OG	2.17	0.62
1:B:327:LEU:HD11	1:B:431:TYR:CE1	2.35	0.62
1:A:271:ARG:HB2	1:A:421:TRP:CH2	2.35	0.61
1:A:300:LEU:HD23	1:B:164:PHE:C	2.21	0.61
1:A:511:LEU:CG	1:A:562:THR:HG23	2.30	0.61
1:B:488:ILE:HD11	1:B:597:VAL:HG21	1.81	0.61
1:A:358:ALA:HB1	1:A:402:ALA:HB1	1.82	0.61
1:A:300:LEU:O	1:A:300:LEU:HD12	2.00	0.61
1:A:374:GLU:OE1	1:A:435:ARG:NH2	2.30	0.61
1:B:371:ILE:HG12	1:B:435:ARG:HH22	1.65	0.61
1:A:266:GLU:HG3	1:A:416:MET:HB2	1.83	0.61
1:B:165:LEU:HD12	1:B:166:PRO:HD2	1.83	0.61
1:B:176:LEU:HA	1:B:288:VAL:HG12	1.82	0.61
1:A:144:SER:OG	1:A:148:HIS:N	2.34	0.61
1:A:322:ALA:O	1:A:421:TRP:HD1	1.79	0.60
1:A:81:TYR:OH	1:A:389:ASN:OD1	2.20	0.60
1:A:322:ALA:HB1	1:A:421:TRP:HD1	1.50	0.60
1:B:458:THR:HA	1:B:483:ASN:CB	2.29	0.60
1:B:518:ARG:HD2	1:B:545:GLU:HB3	1.82	0.60
1:B:248:LEU:C	1:B:248:LEU:HD23	2.21	0.60
1:A:364:SER:HB2	1:A:419:TRP:HH2	1.67	0.60
1:B:18:PHE:HB2	1:B:316:TYR:HE2	1.65	0.60
1:B:353:ARG:NH2	1:B:402:ALA:O	2.35	0.59
1:B:365:ALA:HA	1:B:368:PHE:HB3	1.84	0.59
1:A:43:ARG:HD3	1:B:79:GLN:HB3	1.85	0.59
1:A:497:LEU:HD11	1:A:543:LEU:HD23	1.84	0.59
1:B:248:LEU:HD23	1:B:248:LEU:O	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:459:ASN:OD1	1:A:483:ASN:OD1	2.21	0.59
1:B:266:GLU:OE2	1:B:621:ARG:NE	2.27	0.59
1:B:237:MET:CG	1:B:246:ALA:CB	2.79	0.59
1:A:454:VAL:HG22	1:A:598:VAL:HG22	1.85	0.58
1:A:299:VAL:HG21	1:A:313:ILE:HD11	1.85	0.58
1:B:82:SER:HB3	1:B:280:THR:HG21	1.85	0.58
1:A:156:LEU:HB2	1:A:161:SER:HB2	1.86	0.58
1:B:501:ASP:HB3	1:B:542:THR:HA	1.86	0.58
1:A:325:VAL:CG1	1:A:421:TRP:CB	2.82	0.58
1:B:135:THR:HG23	1:B:137:LYS:H	1.67	0.58
1:A:161:SER:O	1:A:164:PHE:HB2	2.04	0.58
1:A:20:GLU:O	1:A:24:LEU:HG	2.04	0.57
1:B:46:TYR:HB3	1:B:488:ILE:HG12	1.85	0.57
1:A:328:SER:HB3	1:A:375:ASN:ND2	2.14	0.57
1:A:421:TRP:CD1	1:A:422:VAL:HG22	2.40	0.57
1:B:237:MET:CG	1:B:246:ALA:HB2	2.35	0.57
1:A:470:TYR:HA	1:A:571:PHE:O	2.05	0.57
1:A:474:ARG:NH2	1:A:476:GLU:OE2	2.38	0.56
1:A:502:PHE:HE1	1:A:569:VAL:HG12	1.71	0.56
1:B:377:SER:OG	1:B:382:VAL:O	2.23	0.56
1:A:81:TYR:HE2	1:A:83:LEU:HB2	1.70	0.56
1:A:461:LEU:HD22	1:A:475:PHE:HE1	1.70	0.56
1:B:27:ARG:H	1:B:27:ARG:HD2	1.71	0.56
1:B:575:LEU:HB2	1:B:583:ARG:HG2	1.88	0.56
1:A:322:ALA:HA	1:A:421:TRP:CD1	2.37	0.56
1:B:237:MET:HG3	1:B:246:ALA:HB1	1.85	0.56
1:A:44:LEU:HD11	1:A:60:ILE:HD11	1.87	0.56
1:A:366:THR:HG22	1:A:395:LEU:HD11	1.87	0.56
1:B:503:ARG:HD3	1:B:570:ARG:HD3	1.89	0.55
1:A:457:ALA:HB2	1:A:595:GLY:O	2.07	0.55
1:B:329:ASP:CG	1:B:419:TRP:HB2	2.27	0.54
1:B:46:TYR:O	1:B:55:GLN:HA	2.07	0.54
1:B:76:TYR:O	1:B:77:THR:HG22	2.07	0.54
1:B:455:LEU:HD11	1:B:484:PRO:HG3	1.90	0.54
1:B:43:ARG:HG3	1:B:602:ASP:HB2	1.90	0.54
1:A:515:GLN:OE1	1:A:518:ARG:NH1	2.37	0.54
1:B:122:LEU:HD21	1:B:234:LEU:HD12	1.90	0.54
1:A:131:HIS:HB2	1:A:257:VAL:HG21	1.90	0.53
1:A:343:LEU:HB3	1:A:360:GLN:HG2	1.89	0.53
1:B:548:TRP:HZ2	1:B:557:HIS:H	1.54	0.53
1:B:631:ALA:HA	1:B:634:ARG:NH1	2.22	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:16:PRO:HG2	1:A:297:ILE:HG22	1.90	0.53
1:A:427:LEU:HD12	1:A:427:LEU:N	2.24	0.53
1:B:624:CYS:SG	1:B:625:MET:N	2.81	0.53
1:A:334:VAL:HG13	1:A:633:ALA:HB1	1.90	0.53
1:A:511:LEU:CD2	1:A:562:THR:HG23	2.38	0.53
1:B:243:GLY:O	1:B:247:VAL:CG2	2.38	0.53
1:B:413:MET:HG2	1:B:621:ARG:HD3	1.90	0.53
1:B:186:MET:HB3	1:B:229:THR:HG21	1.91	0.53
1:B:330:PRO:O	1:B:341:THR:OG1	2.19	0.53
1:B:413:MET:SD	1:B:621:ARG:HD3	2.49	0.53
1:B:170:LEU:HD23	1:B:198:ILE:HG22	1.91	0.53
1:A:20:GLU:H	1:A:20:GLU:CD	2.08	0.53
1:A:20:GLU:HB2	1:A:23:LYS:HB3	1.89	0.53
1:A:221:GLN:HB3	1:A:304:GLN:HG2	1.91	0.53
1:B:130:ALA:HB1	1:B:258:THR:HG23	1.90	0.52
1:A:124:HIS:CD2	1:A:145:LYS:HE3	2.44	0.52
1:A:329:ASP:HB2	1:A:419:TRP:CE3	2.44	0.52
1:A:603:GLY:HA3	1:B:79:GLN:HA	1.90	0.52
1:B:48:SER:HA	1:B:597:VAL:HA	1.92	0.52
1:B:221:GLN:HG3	1:B:304:GLN:HB3	1.91	0.52
1:B:59:HIS:N	1:B:554:ASP:OD1	2.43	0.52
1:B:325:VAL:HG23	1:B:368:PHE:CE1	2.45	0.52
1:A:300:LEU:HB3	1:B:164:PHE:O	2.10	0.52
1:B:438:ILE:HG13	1:B:443:TYR:HB2	1.92	0.52
1:B:67:ARG:HE	1:B:275:ARG:HD3	1.74	0.52
1:B:65:LYS:HE3	1:B:261:ILE:HD11	1.92	0.52
1:A:20:GLU:O	1:A:20:GLU:HG2	2.11	0.51
1:B:220:LEU:HB3	1:B:304:GLN:HB2	1.92	0.51
1:A:345:THR:HG21	1:A:354:ASN:HD21	1.76	0.51
1:A:369:CYS:SG	1:A:394:LEU:HD22	2.50	0.51
1:A:73:PHE:CZ	1:A:142:ILE:HD13	2.45	0.51
1:A:619:VAL:HG23	1:A:621:ARG:HD2	1.91	0.51
1:A:341:THR:O	1:A:418:PRO:HD2	2.11	0.51
1:A:344:THR:HG21	1:A:627:ALA:HB1	1.91	0.51
1:B:515:GLN:O	1:B:519:ARG:NH2	2.44	0.51
1:A:133:CYS:SG	1:A:314:TRP:HB2	2.51	0.51
1:B:589:THR:O	1:B:593:ILE:HD12	2.10	0.51
1:A:50:ALA:HB1	1:A:591:GLU:HG2	1.91	0.51
1:B:481:ARG:HD2	1:B:558:PRO:HG3	1.93	0.51
1:A:100:TYR:HA	1:A:158:ASN:O	2.11	0.51
1:A:511:LEU:CD1	1:A:562:THR:HG23	2.32	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:23:LYS:NZ	1:B:309:GLN:HB3	2.26	0.51
1:A:133:CYS:SG	1:A:311:ALA:HA	2.50	0.50
1:B:148:HIS:HA	1:B:192:CYS:SG	2.51	0.50
1:B:237:MET:CB	1:B:246:ALA:CB	2.90	0.50
1:A:181:PRO:O	1:A:185:ASN:ND2	2.41	0.50
1:A:271:ARG:O	1:A:275:ARG:HG2	2.11	0.50
1:A:476:GLU:N	1:A:476:GLU:OE1	2.44	0.50
1:A:457:ALA:HA	1:A:597:VAL:HG23	1.93	0.50
1:A:500:VAL:HG22	1:A:571:PHE:CD1	2.47	0.50
1:B:505:ARG:HB3	1:B:506:PRO:HD2	1.94	0.50
1:A:364:SER:HB2	1:A:419:TRP:CH2	2.47	0.50
1:A:487:ASN:HA	1:A:490:ASN:HB3	1.94	0.50
1:B:131:HIS:O	1:B:135:THR:HG22	2.11	0.50
1:B:38:ARG:NH2	1:B:315:ASP:OD2	2.45	0.49
1:A:572:ARG:HH21	1:A:575:LEU:HG	1.76	0.49
1:A:479:THR:HG21	1:A:559:ALA:HA	1.92	0.49
1:A:272:ASP:O	1:A:276:GLU:HG2	2.12	0.49
1:A:258:THR:HG21	1:A:318:ILE:HD13	1.95	0.49
1:B:138:ILE:HG13	1:B:222:LEU:HD23	1.93	0.49
1:A:218:ASN:HB2	1:A:221:GLN:OE1	2.12	0.49
1:B:187:LEU:HD13	1:B:286:MET:HG3	1.94	0.49
1:A:122:LEU:HD21	1:A:233:MET:HB2	1.95	0.49
1:A:420:TYR:OH	1:A:423:GLU:HG2	2.12	0.49
1:B:218:ASN:OD1	1:B:218:ASN:N	2.42	0.49
1:B:449:TYR:HA	1:B:601:CYS:SG	2.53	0.49
1:A:330:PRO:O	1:A:341:THR:OG1	2.31	0.48
1:A:379:PHE:HB2	1:A:434:PHE:HE1	1.78	0.48
1:A:397:ALA:O	1:A:400:ILE:HG22	2.13	0.48
1:B:591:GLU:O	1:B:595:GLY:N	2.45	0.48
1:B:23:LYS:HZ1	1:B:309:GLN:HB3	1.77	0.48
1:B:559:ALA:HA	1:B:562:THR:HG23	1.95	0.48
1:A:300:LEU:HB3	1:B:164:PHE:C	2.34	0.48
1:A:322:ALA:HB2	1:A:421:TRP:NE1	1.84	0.48
1:B:327:LEU:HD13	1:B:431:TYR:HD1	1.78	0.48
1:A:155:THR:CB	1:A:203:ILE:HB	2.42	0.48
1:A:20:GLU:HB3	1:A:299:VAL:HG23	1.96	0.48
1:B:49:THR:HG22	1:B:596:ASN:O	2.13	0.48
1:A:325:VAL:HG23	1:A:368:PHE:CZ	2.49	0.48
1:B:370:ASP:OD1	1:B:371:ILE:N	2.46	0.48
1:A:502:PHE:HB3	1:A:505:ARG:HG3	1.96	0.48
1:B:463:PHE:HZ	1:B:466:GLU:HB2	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:561:LEU:HD23	1:B:561:LEU:HA	1.66	0.48
1:A:601:CYS:O	1:B:82:SER:OG	2.28	0.48
1:B:575:LEU:HG	1:B:576:SER:H	1.79	0.48
1:A:302:THR:HA	1:B:159:ALA:HA	1.96	0.47
1:B:341:THR:O	1:B:418:PRO:HD2	2.13	0.47
1:A:314:TRP:HA	1:A:317:VAL:HG12	1.95	0.47
1:A:156:LEU:HD13	1:A:159:ALA:HA	1.95	0.47
1:B:237:MET:HB2	1:B:246:ALA:HB3	1.96	0.47
1:B:457:ALA:HA	1:B:484:PRO:HD2	1.97	0.47
1:B:461:LEU:HD13	1:B:475:PHE:CD1	2.49	0.47
1:B:371:ILE:HG12	1:B:435:ARG:NH2	2.30	0.47
1:A:139:ASP:OD1	1:A:139:ASP:N	2.46	0.47
1:A:41:ASP:HB3	1:A:605:ARG:HG2	1.95	0.47
1:A:92:TYR:O	1:A:96:ILE:HG12	2.15	0.47
1:B:243:GLY:O	1:B:247:VAL:N	2.48	0.47
1:A:173:PRO:HB2	1:A:175:PRO:HD2	1.96	0.47
1:A:452:ARG:NH1	1:B:81:TYR:OH	2.48	0.47
1:A:579:ASP:OD1	1:A:579:ASP:N	2.43	0.47
1:B:236:LEU:O	1:B:239:SER:OG	2.31	0.47
1:B:548:TRP:NE1	1:B:550:SER:HB2	2.29	0.47
1:A:432:ALA:N	1:A:433:PRO:HD2	2.30	0.46
1:B:266:GLU:HB3	1:B:416:MET:HG2	1.97	0.46
1:B:631:ALA:HA	1:B:634:ARG:HH12	1.80	0.46
1:A:130:ALA:HB3	1:A:257:VAL:CG1	2.45	0.46
1:A:255:HIS:O	1:A:275:ARG:NE	2.40	0.46
1:A:511:LEU:HD21	1:A:562:THR:CG2	2.46	0.46
1:B:358:ALA:HB1	1:B:402:ALA:HB1	1.97	0.46
1:B:510:TRP:HB3	1:B:513:GLU:HB3	1.97	0.46
1:A:63:ARG:HD3	1:A:613:ILE:HG22	1.96	0.46
1:A:459:ASN:CG	1:A:483:ASN:OD1	2.54	0.46
1:B:237:MET:CB	1:B:246:ALA:HB3	2.45	0.46
1:B:325:VAL:HG11	1:B:421:TRP:HB3	1.97	0.46
1:B:503:ARG:HD2	1:B:503:ARG:HA	1.65	0.46
1:B:119:LEU:HD22	1:B:245:ASP:O	2.16	0.46
1:B:126:GLY:O	1:B:129:ILE:HG22	2.16	0.46
1:B:374:GLU:HG2	1:B:435:ARG:HE	1.81	0.46
1:A:127:ALA:O	1:A:257:VAL:HG11	2.16	0.46
1:A:300:LEU:CB	1:B:164:PHE:H	2.21	0.46
1:B:64:LEU:HD21	1:B:319:LEU:HD21	1.97	0.46
1:B:425:SER:HB3	1:B:446:GLN:H	1.81	0.46
1:B:542:THR:HG23	1:B:545:GLU:HG2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:81:TYR:OH	1:B:389:ASN:ND2	2.38	0.45
1:A:325:VAL:HG23	1:A:368:PHE:CE1	2.51	0.45
1:B:267:GLY:HA3	1:B:420:TYR:O	2.16	0.45
1:A:92:TYR:HD1	1:A:287:PRO:HG3	1.81	0.45
1:A:337:VAL:HG23	1:A:339:TYR:CE2	2.46	0.45
1:A:497:LEU:O	1:A:544:ASP:HB2	2.16	0.45
1:A:19:CYS:CB	1:A:21:ILE:HG13	2.46	0.45
1:A:600:ARG:NH1	1:A:602:ASP:OD1	2.49	0.45
1:B:224:HIS:HB2	1:B:305:PRO:HD2	1.97	0.45
1:A:44:LEU:O	1:A:57:ASP:HA	2.16	0.45
1:A:68:ARG:H	1:A:71:ALA:HB2	1.81	0.45
1:B:483:ASN:O	1:B:483:ASN:OD1	2.35	0.45
1:A:20:GLU:HB2	1:A:23:LYS:HD3	1.98	0.45
1:A:300:LEU:HD23	1:B:164:PHE:O	2.17	0.45
1:A:500:VAL:HG22	1:A:571:PHE:CE1	2.52	0.45
1:B:75:GLU:H	1:B:75:GLU:CD	2.19	0.45
1:B:170:LEU:O	1:B:198:ILE:HA	2.17	0.45
1:B:426:ALA:HB2	1:B:447:CYS:SG	2.56	0.45
1:A:16:PRO:HB3	1:A:380:TRP:O	2.17	0.44
1:B:364:SER:HB3	1:B:419:TRP:HE1	1.81	0.44
1:B:195:ASP:OD1	1:B:195:ASP:N	2.49	0.44
1:A:43:ARG:HB2	1:A:602:ASP:HB2	2.00	0.44
1:B:328:SER:O	1:B:368:PHE:CD1	2.70	0.44
1:A:297:ILE:O	1:B:164:PHE:HB3	2.17	0.44
1:A:623:TYR:CE2	1:A:628:ARG:HB3	2.53	0.44
1:A:634:ARG:HD2	1:A:636:PHE:HD1	1.81	0.44
1:B:88:TYR:HB3	1:B:92:TYR:HB2	2.00	0.44
1:B:171:TYR:OH	1:B:201:ASP:OD1	2.16	0.44
1:A:301:PHE:CD1	1:A:305:PRO:HG3	2.52	0.44
1:A:413:MET:HE1	1:A:621:ARG:CZ	2.47	0.44
1:B:15:LYS:N	1:B:381:GLY:HA3	2.33	0.44
1:B:260:VAL:O	1:B:261:ILE:C	2.55	0.44
1:B:481:ARG:NH1	1:B:556:PHE:O	2.50	0.44
1:B:328:SER:HB3	1:B:372:PHE:HA	2.00	0.44
1:A:159:ALA:HB2	1:A:171:TYR:CZ	2.53	0.44
1:A:547:ILE:HG23	1:A:548:TRP:O	2.18	0.44
1:B:89:PRO:HG3	1:B:239:SER:HB2	1.99	0.44
1:B:145:LYS:HB2	1:B:147:LYS:HE3	2.00	0.44
1:B:171:TYR:O	1:B:173:PRO:HD3	2.18	0.44
1:B:166:PRO:HG2	1:B:169:ALA:HB2	2.00	0.43
1:A:23:LYS:HB2	1:A:313:ILE:HD13	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:557:HIS:HB3	1:A:560:GLU:HB2	1.99	0.43
1:A:610:ASN:OD1	1:A:613:ILE:HG13	2.18	0.43
1:B:122:LEU:HD21	1:B:246:ALA:O	2.14	0.43
1:A:322:ALA:HA	1:A:421:TRP:NE1	2.31	0.43
1:A:518:ARG:NE	1:A:545:GLU:OE2	2.51	0.43
1:B:92:TYR:CE1	1:B:290:ILE:HG12	2.53	0.43
1:A:379:PHE:HB2	1:A:434:PHE:CE1	2.54	0.43
1:A:428:PHE:HB2	1:A:431:TYR:CZ	2.54	0.43
1:B:263:HIS:CE1	1:B:423:GLU:H	2.37	0.43
1:A:63:ARG:HB2	1:A:261:ILE:HG12	2.00	0.43
1:B:300:LEU:HD13	1:B:305:PRO:HG3	2.00	0.43
1:B:100:TYR:HE1	1:B:285:THR:HG21	1.84	0.43
1:A:322:ALA:O	1:A:325:VAL:HG12	2.18	0.43
1:A:326:HIS:CD2	1:A:420:TYR:HD1	2.36	0.43
1:A:357:LEU:HD21	1:A:416:MET:HG2	2.00	0.43
1:B:248:LEU:C	1:B:248:LEU:CD2	2.85	0.43
1:A:71:ALA:HB3	1:A:257:VAL:HG23	2.01	0.43
1:B:57:ASP:OD1	1:B:57:ASP:N	2.49	0.43
1:B:83:LEU:HB3	1:B:117:ASN:OD1	2.19	0.43
1:B:413:MET:CG	1:B:621:ARG:HD3	2.49	0.43
1:B:479:THR:HG21	1:B:559:ALA:H	1.83	0.43
1:A:325:VAL:HG13	1:A:326:HIS:N	2.34	0.42
1:A:340:PRO:HG2	1:A:558:PRO:O	2.19	0.42
1:A:84:ASP:HA	1:A:283:TYR:OH	2.19	0.42
1:B:89:PRO:O	1:B:93:THR:HG23	2.19	0.42
1:B:119:LEU:CD2	1:B:246:ALA:CA	2.93	0.42
1:B:266:GLU:HB3	1:B:417:ALA:H	1.84	0.42
1:B:484:PRO:HG2	1:B:597:VAL:HG11	2.01	0.42
1:A:43:ARG:HG2	1:A:59:HIS:CE1	2.53	0.42
1:B:62:TRP:CH2	1:B:427:LEU:HG	2.54	0.42
1:B:100:TYR:CE2	1:B:165:LEU:HD23	2.54	0.42
1:B:611:LYS:HA	1:B:611:LYS:HD2	1.86	0.42
1:A:63:ARG:HD3	1:A:613:ILE:CG2	2.50	0.42
1:B:266:GLU:CD	1:B:621:ARG:HE	2.20	0.42
1:B:322:ALA:O	1:B:325:VAL:HG12	2.19	0.42
1:B:329:ASP:OD1	1:B:330:PRO:HD2	2.19	0.42
1:B:489:LEU:O	1:B:496:GLY:HA2	2.19	0.42
1:B:548:TRP:CE3	1:B:548:TRP:N	2.87	0.42
1:B:332:MET:HB2	1:B:341:THR:HA	2.01	0.42
1:A:325:VAL:HG11	1:A:421:TRP:CB	2.42	0.42
1:A:357:LEU:HD12	1:A:357:LEU:HA	1.80	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:504:LEU:HD23	1:B:504:LEU:HA	1.83	0.42
1:A:236:LEU:HD12	1:A:236:LEU:HA	1.89	0.42
1:B:236:LEU:HA	1:B:236:LEU:HD12	1.83	0.42
1:A:140:PHE:CD1	1:A:189:LEU:HD11	2.55	0.42
1:B:548:TRP:CZ3	1:B:560:GLU:HG2	2.55	0.42
1:B:572:ARG:HH11	1:B:575:LEU:HD12	1.85	0.42
1:A:335:ASN:H	1:A:634:ARG:HB3	1.85	0.41
1:A:455:LEU:CD1	1:A:484:PRO:HG3	2.49	0.41
1:B:81:TYR:HH	1:B:389:ASN:HD22	1.61	0.41
1:B:349:THR:HA	1:B:354:ASN:OD1	2.20	0.41
1:B:477:TRP:NE1	1:B:561:LEU:O	2.43	0.41
1:B:485:LEU:HD11	1:B:592:VAL:HG12	2.02	0.41
1:A:225:ALA:HA	1:A:228:VAL:HG12	2.02	0.41
1:B:330:PRO:HD2	1:B:419:TRP:CD1	2.55	0.41
1:A:232:TYR:CD1	1:A:289:PRO:HB3	2.55	0.41
1:B:461:LEU:HD23	1:B:594:GLU:HG2	2.02	0.41
1:B:503:ARG:HD3	1:B:570:ARG:HH11	1.85	0.41
1:A:140:PHE:HD1	1:A:189:LEU:HD11	1.85	0.41
1:B:629:TYR:CE2	1:B:645:ILE:HG23	2.56	0.41
1:A:259:THR:HG23	1:A:271:ARG:HD2	2.03	0.41
1:A:297:ILE:HG13	1:A:299:VAL:O	2.21	0.41
1:A:303:THR:HG22	1:A:304:GLN:HG3	2.00	0.41
1:B:17:MET:HB2	1:B:379:PHE:O	2.21	0.41
1:A:25:ALA:O	1:A:27:ARG:NH1	2.54	0.41
1:A:266:GLU:OE2	1:A:418:PRO:HA	2.21	0.41
1:B:478:THR:HG23	1:B:479:THR:N	2.35	0.41
1:A:585:LEU:HA	1:A:585:LEU:HD23	1.86	0.41
1:A:630:LEU:HA	1:A:633:ALA:HB2	2.03	0.41
1:B:483:ASN:OD1	1:B:486:PHE:CD2	2.74	0.41
1:A:41:ASP:O	1:A:604:ILE:HA	2.21	0.41
1:A:265:ASP:HB2	1:A:621:ARG:NH1	2.36	0.41
1:A:413:MET:HE2	1:A:416:MET:HB3	2.02	0.41
1:B:37:GLU:HB3	1:B:65:LYS:HB3	2.03	0.41
1:B:103:HIS:CD2	1:B:156:LEU:HG	2.55	0.41
1:A:91:GLN:O	1:A:95:ILE:HG13	2.21	0.41
1:A:158:ASN:O	1:A:159:ALA:C	2.59	0.41
1:A:423:GLU:OE2	1:A:481:ARG:NH1	2.39	0.41
1:B:510:TRP:CE3	1:B:561:LEU:HD22	2.55	0.41
1:B:141:ASP:HA	1:B:146:LYS:HA	2.02	0.40
1:A:362:MET:SD	1:A:398:PHE:HB3	2.61	0.40
1:B:463:PHE:CD1	1:B:590:ARG:HD3	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:646:ILE:H	1:B:646:ILE:HG12	1.74	0.40
1:A:238:ASP:CG	1:A:382:VAL:HG23	2.41	0.40
1:A:247:VAL:HG21	1:A:380:TRP:CG	2.54	0.40
1:B:135:THR:HG23	1:B:137:LYS:HG2	2.03	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	601/786 (76%)	556 (92%)	45 (8%)	0	100	100
1	B	610/786 (78%)	552 (90%)	58 (10%)	0	100	100
All	All	1211/1572 (77%)	1108 (92%)	103 (8%)	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	512/658 (78%)	511 (100%)	1 (0%)	92	96
1	B	518/658 (79%)	517 (100%)	1 (0%)	92	96
All	All	1030/1316 (78%)	1028 (100%)	2 (0%)	91	96

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	27	ARG
1	B	27	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

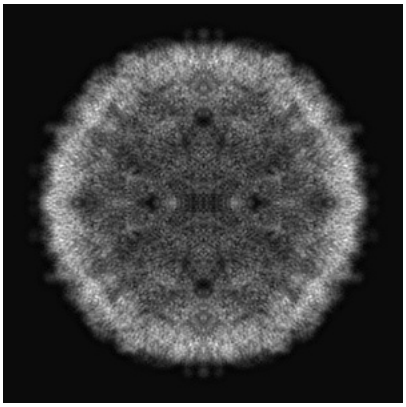
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-12558. These allow visual inspection of the internal detail of the map and identification of artifacts.

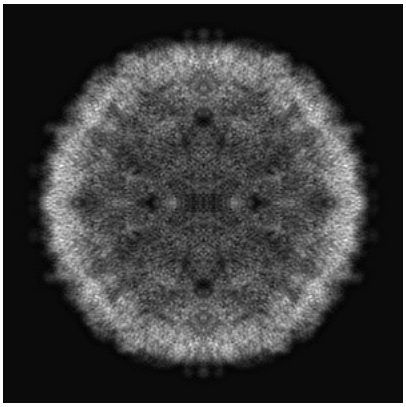
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

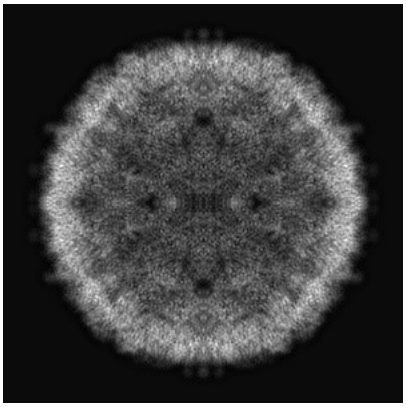
6.1.1 Primary map



X



Y

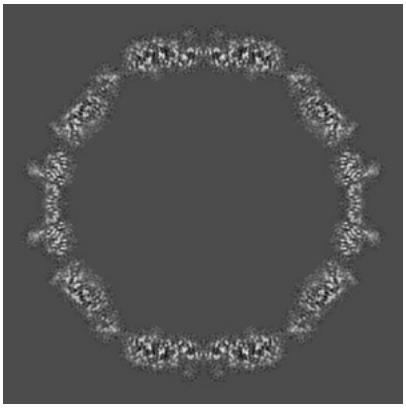


Z

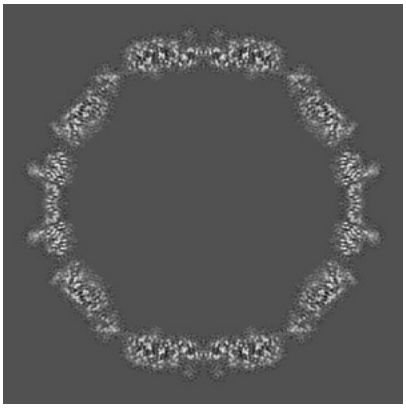
The images above show the map projected in three orthogonal directions.

6.2 Central slices

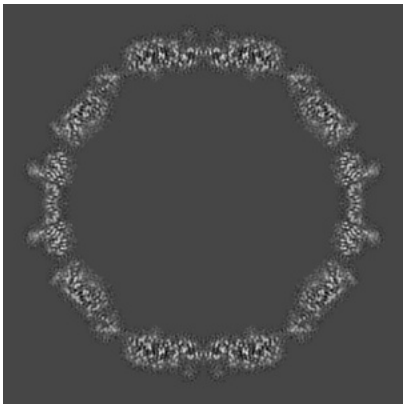
6.2.1 Primary map



X Index: 180



Y Index: 180

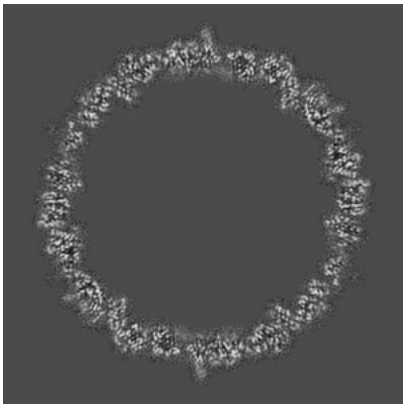


Z Index: 180

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: 212

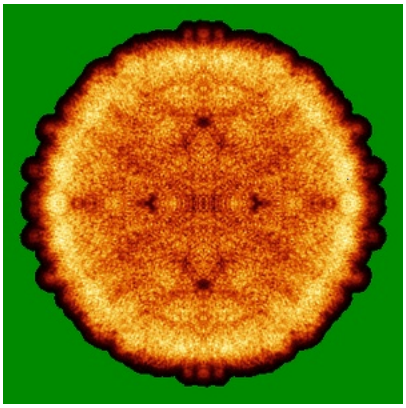
Y Index: 84

Z Index: 84

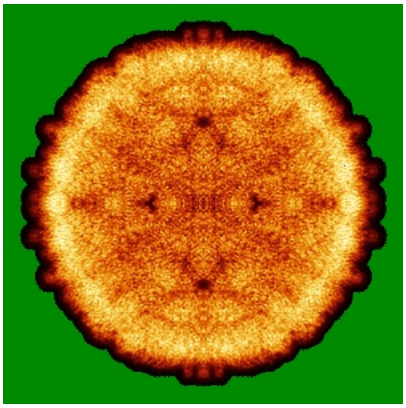
The images above show the largest variance slices of the map in three orthogonal directions.

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

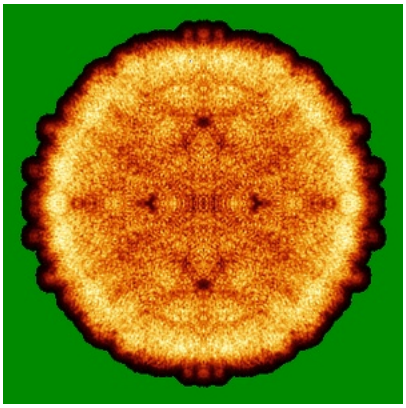
6.4.1 Primary map



X



Y

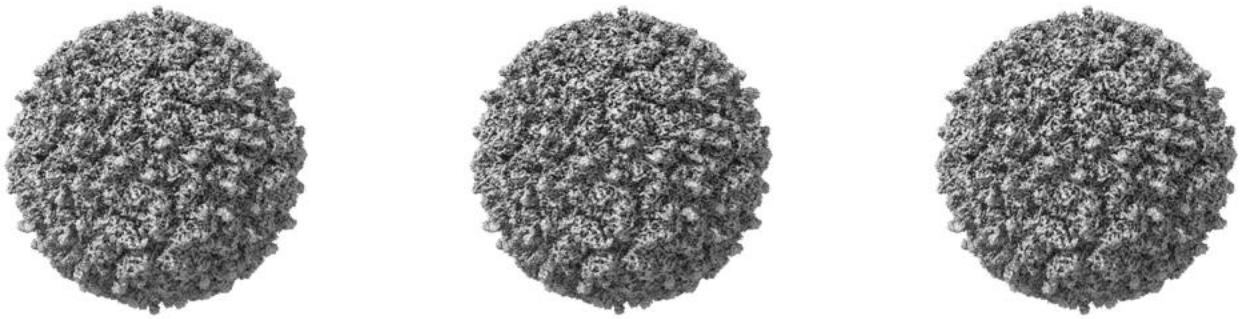


Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

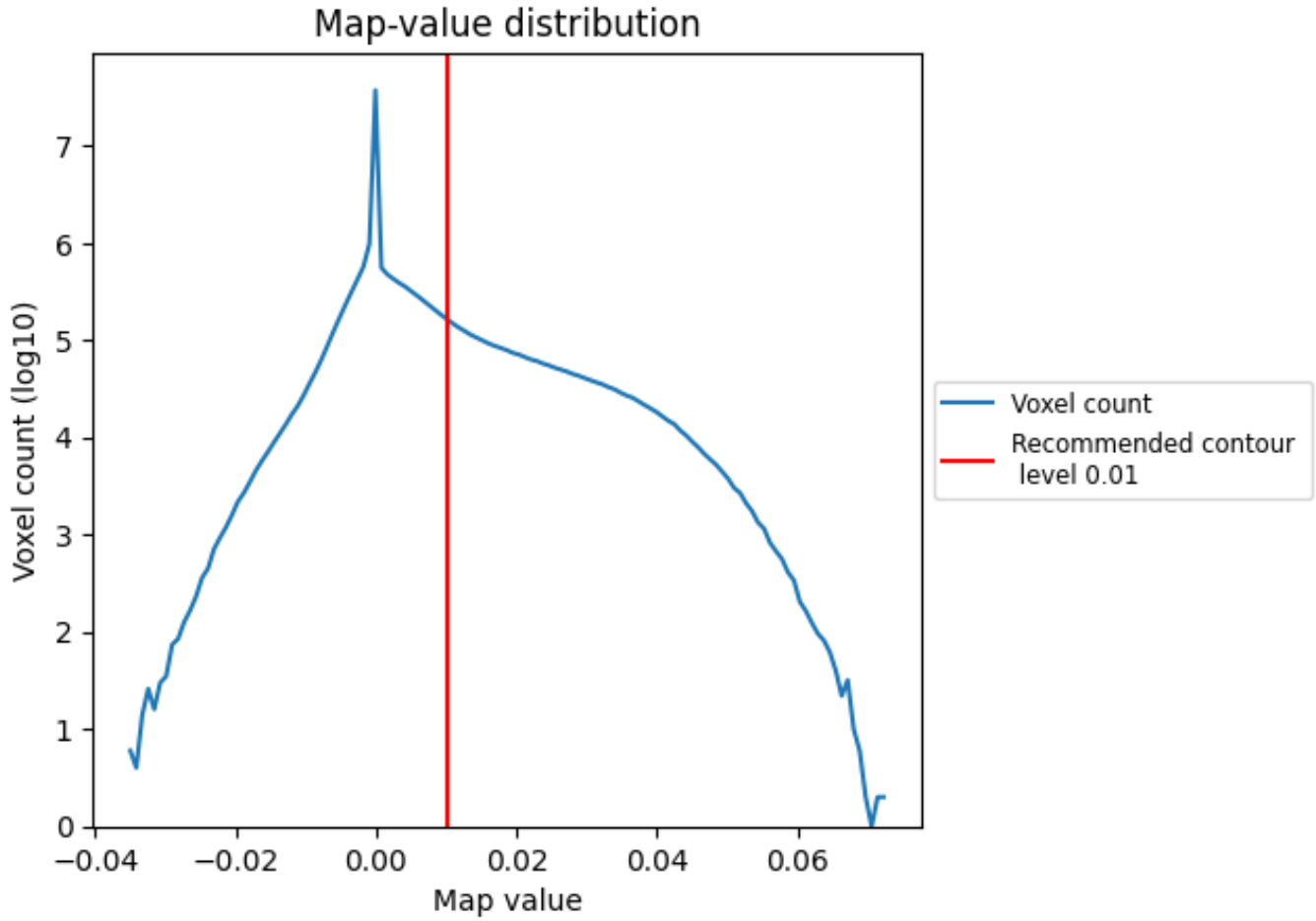
6.6 Mask visualisation (i)

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

7 Map analysis

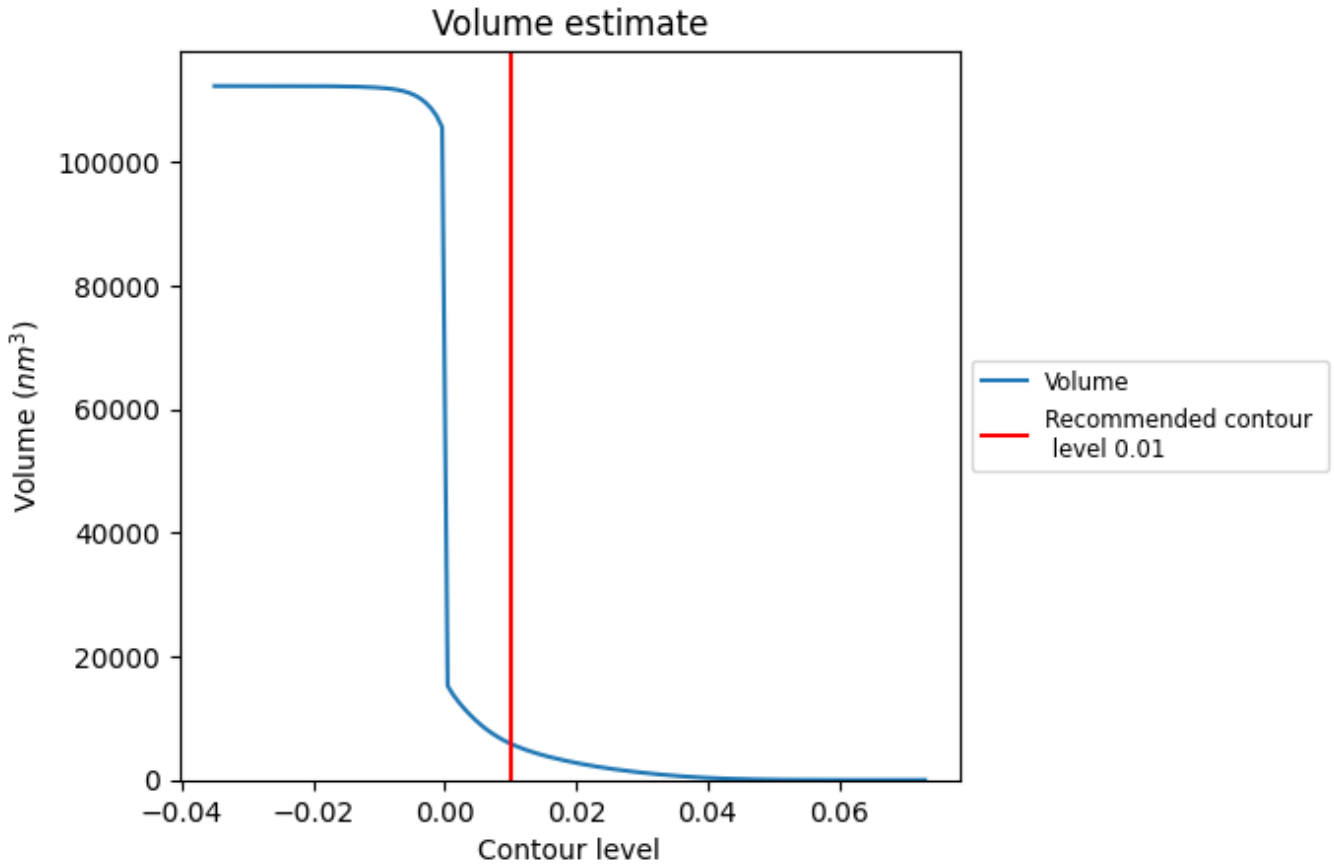
This section contains the results of statistical analysis of the map.

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.

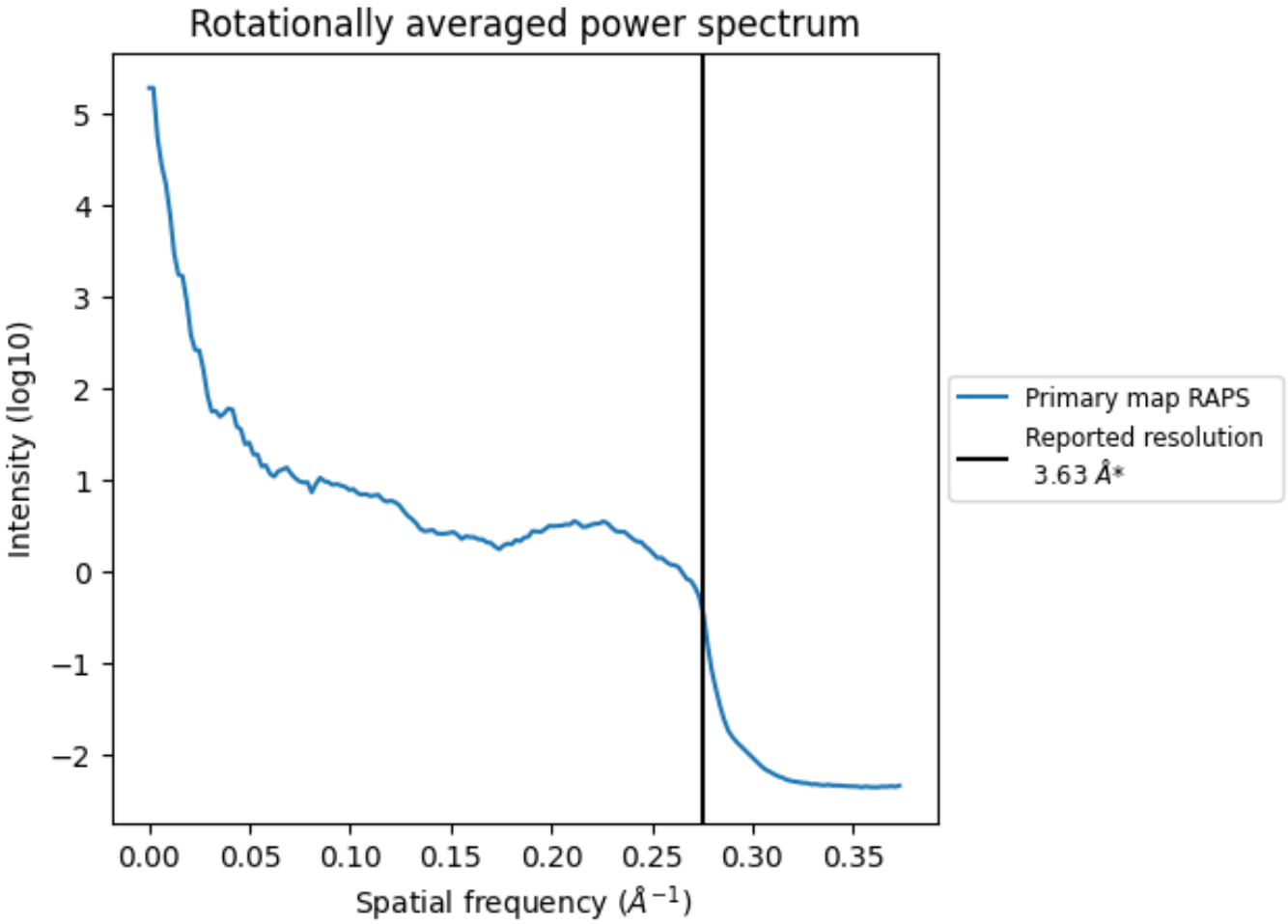
7.2 Volume estimate



The volume at the recommended contour level is 5895 nm^3; this corresponds to an approximate mass of 5325 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)

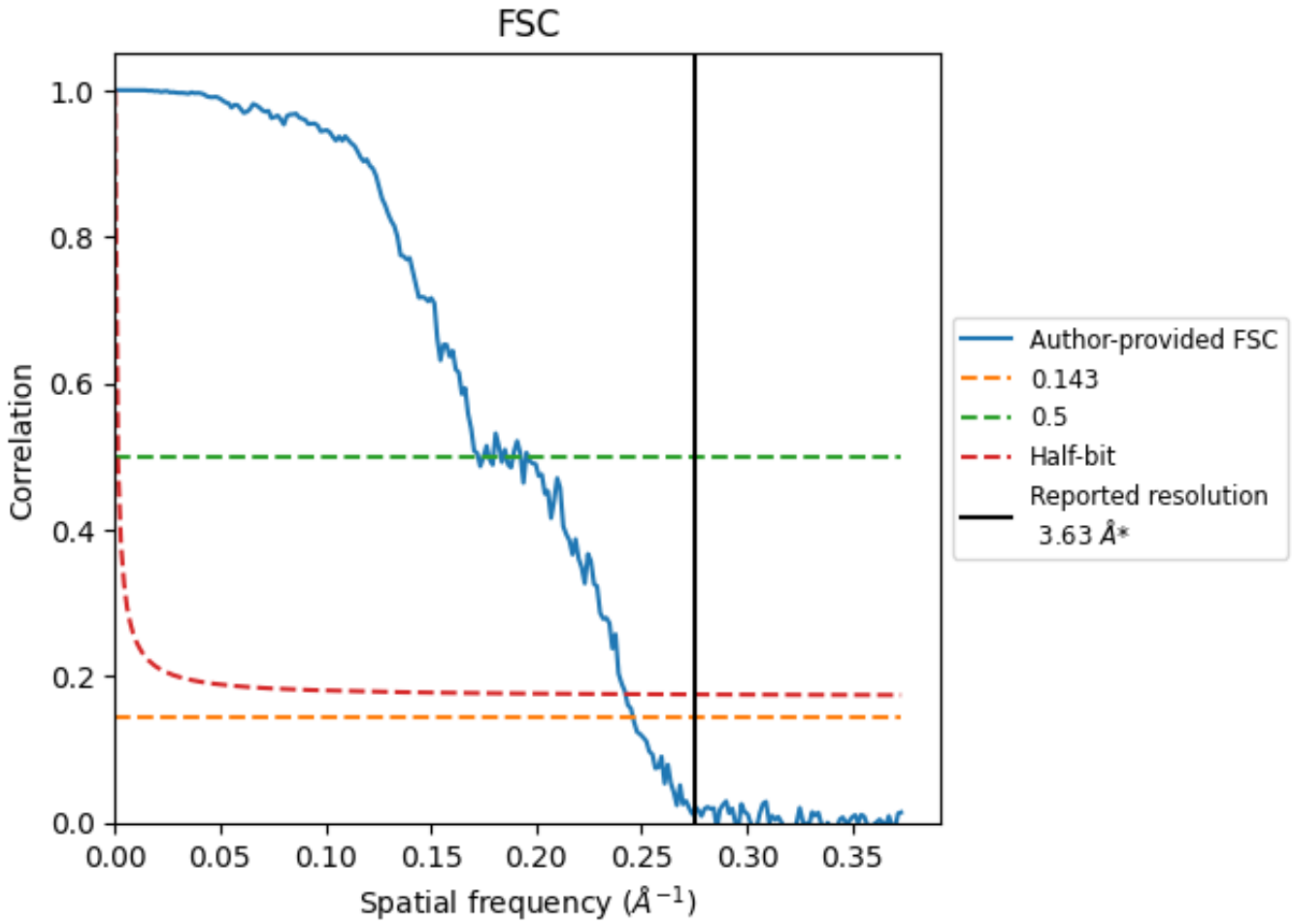


*Reported resolution corresponds to spatial frequency of 0.275 Å^{-1}

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 0.275 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.63	-	-
Author-provided FSC curve	4.07	5.80	4.13
Unmasked-calculated*	-	-	-

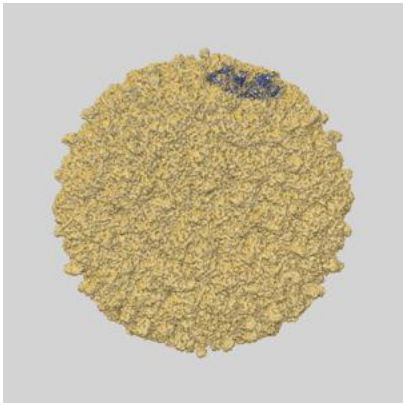
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 4.07 differs from the reported value 3.63 by more than 10 %

9 Map-model fit

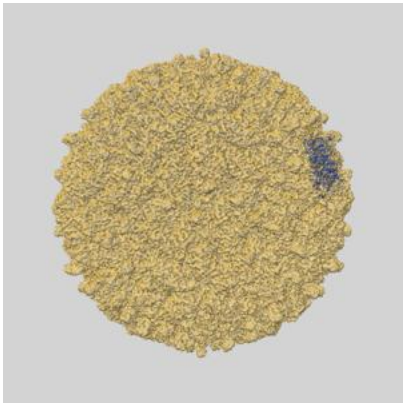
This section contains information regarding the fit between EMDB map EMD-12558 and PDB model 7NS2. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlays

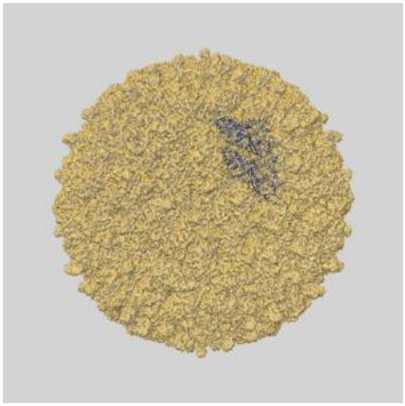
9.1.1 Map-model overlay



X

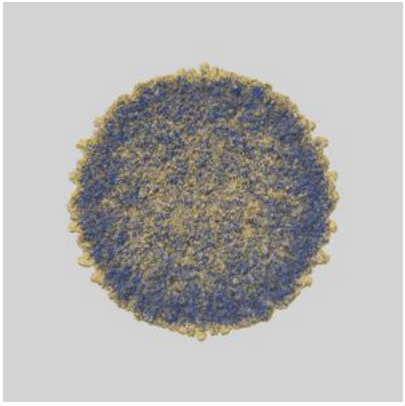


Y

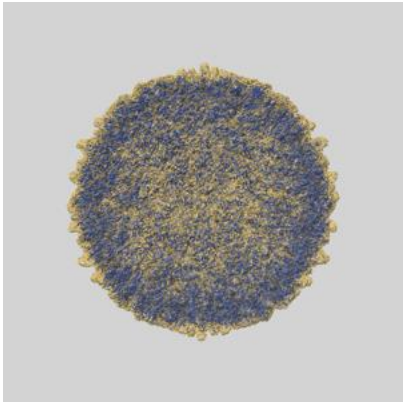


Z

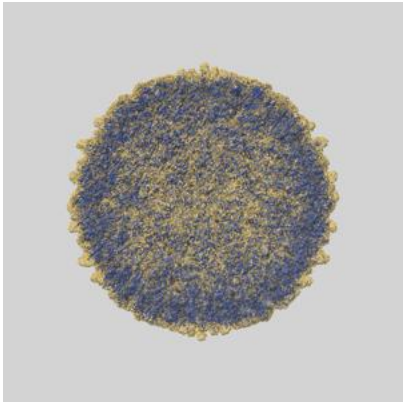
9.1.2 Map-model assembly overlay



X



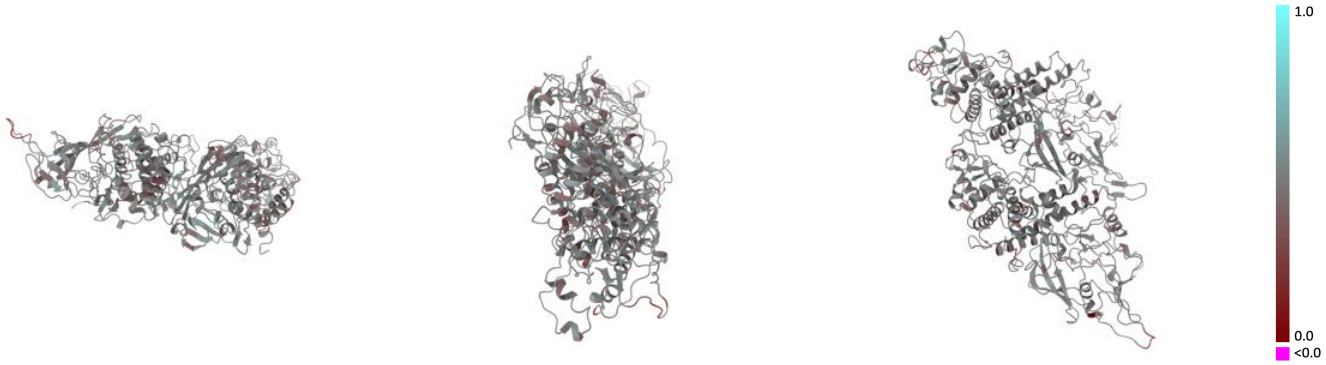
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

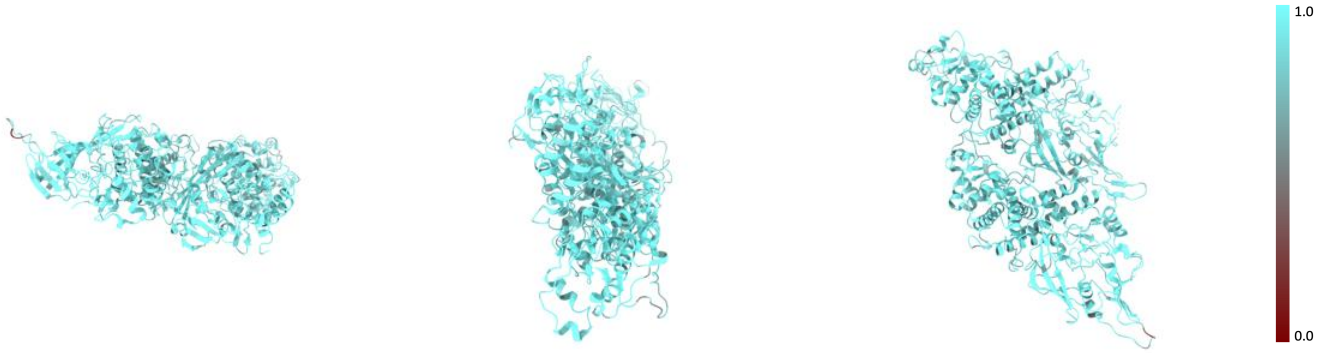
9.2 Q-score mapped to coordinate model (i)



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.

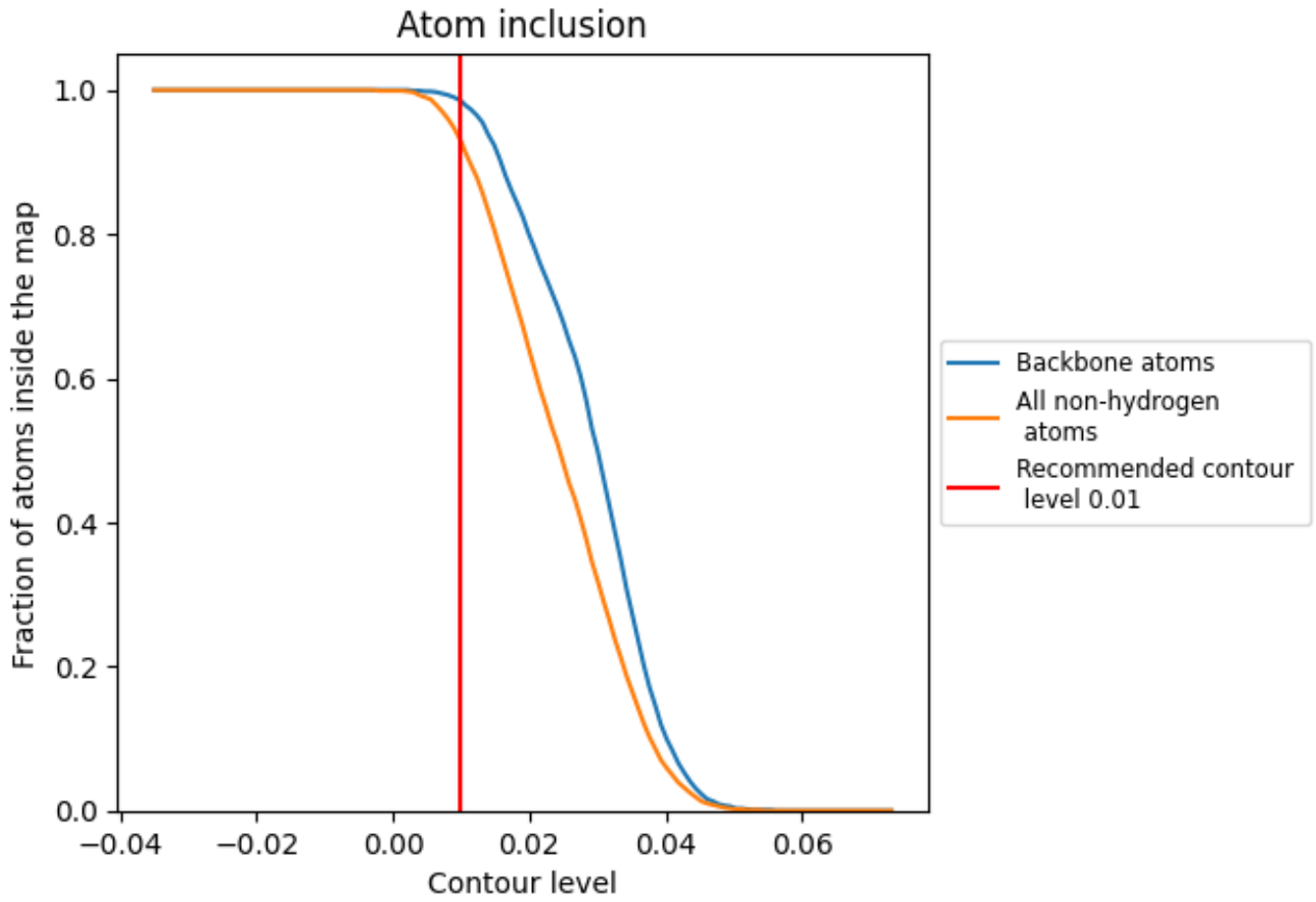
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.01).

9.4 Atom inclusion (i)



At the recommended contour level, 98% of all backbone atoms, 93% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9290	0.4630
A	0.9310	0.4650
B	0.9270	0.4620