



Full wwPDB EM Validation Report ⓘ

May 19, 2024 – 08:12 PM JST

PDB ID : 5H3O
EMDB ID : EMD-6656
Title : Structure of a eukaryotic cyclic nucleotide-gated channel
Authors : Li, M.; Zhou, X.; Wang, S.; Michailidis, I.; Gong, Y.; Su, D.; Li, H.; Li, X.;
Yang, J.
Deposited on : 2016-10-26
Resolution : 3.50 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

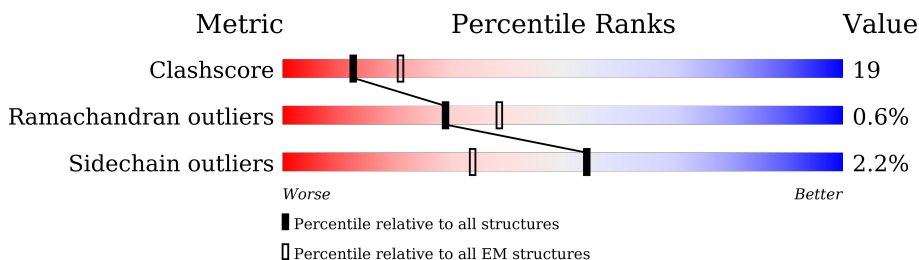
EMDB validation analysis : 0.0.1.dev92
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

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 3.50 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	738	 7% 42% 26% 31%
1	B	738	 7% 42% 26% 31%
1	C	738	 8% 41% 27% 31%
1	D	738	 8% 42% 27% 31%

2 Entry composition i

There are 3 unique types of molecules in this entry. The entry contains 16958 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 Cyclic nucleotide-gated cation channel.

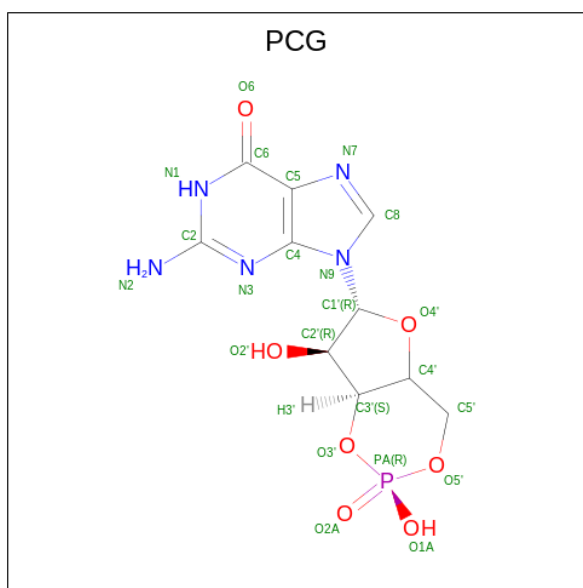
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	510	4215	2742	708	741	24	0	0
1	B	510	4216	2742	708	742	24	0	0
1	C	510	4216	2742	708	742	24	0	0
1	D	510	4216	2742	708	742	24	0	0

There are 20 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-4	GLY	-	expression tag	UNP Q03611
A	-3	GLY	-	expression tag	UNP Q03611
A	-2	GLY	-	expression tag	UNP Q03611
A	-1	GLY	-	expression tag	UNP Q03611
A	0	SER	-	expression tag	UNP Q03611
B	-4	GLY	-	expression tag	UNP Q03611
B	-3	GLY	-	expression tag	UNP Q03611
B	-2	GLY	-	expression tag	UNP Q03611
B	-1	GLY	-	expression tag	UNP Q03611
B	0	SER	-	expression tag	UNP Q03611
C	-4	GLY	-	expression tag	UNP Q03611
C	-3	GLY	-	expression tag	UNP Q03611
C	-2	GLY	-	expression tag	UNP Q03611
C	-1	GLY	-	expression tag	UNP Q03611
C	0	SER	-	expression tag	UNP Q03611
D	-4	GLY	-	expression tag	UNP Q03611
D	-3	GLY	-	expression tag	UNP Q03611
D	-2	GLY	-	expression tag	UNP Q03611
D	-1	GLY	-	expression tag	UNP Q03611
D	0	SER	-	expression tag	UNP Q03611

- Molecule 2 is CYCLIC GUANOSINE MONOPHOSPHATE (three-letter code: PCG) (for-

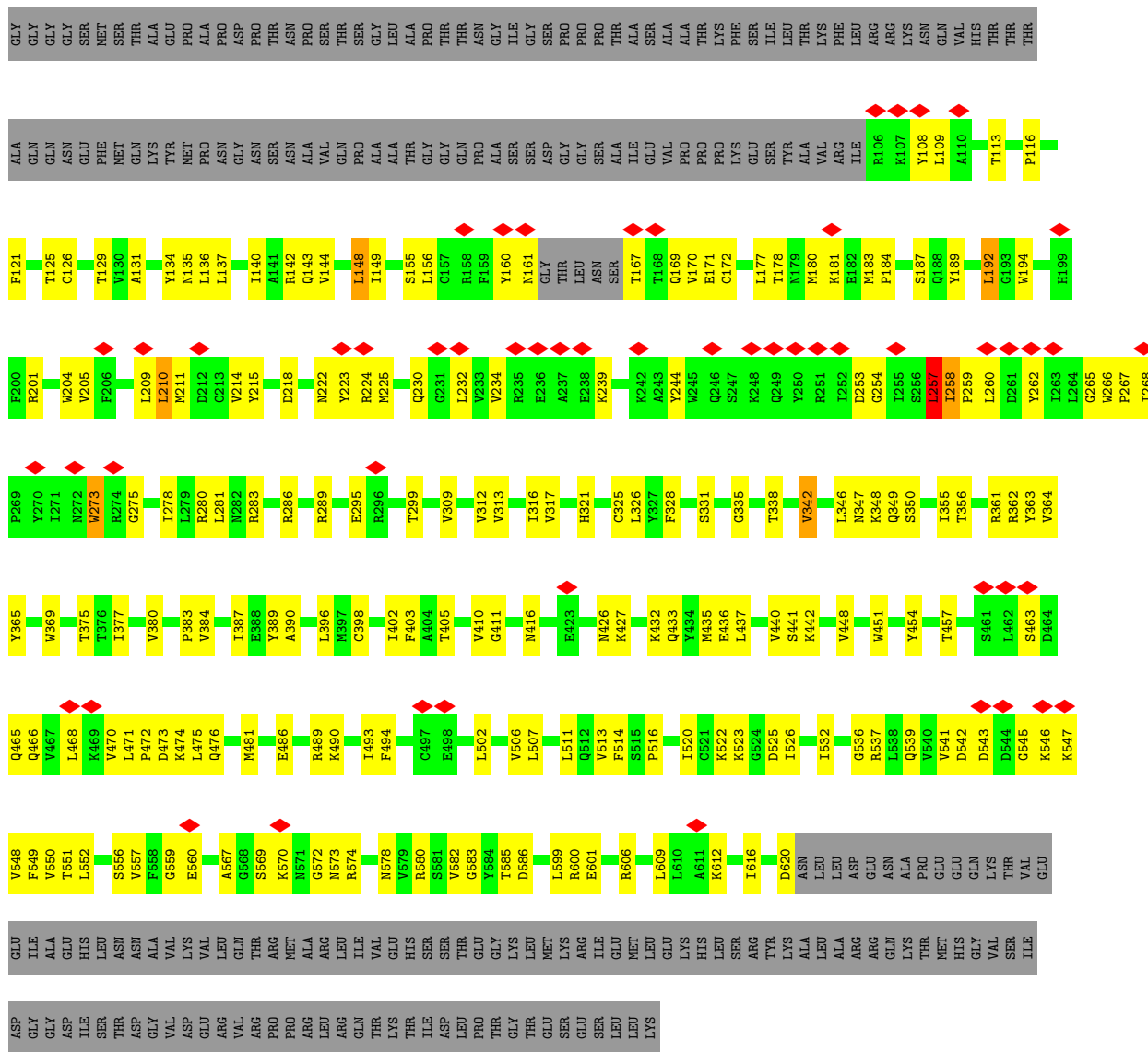
mula: C₁₀H₁₂N₅O₇P).



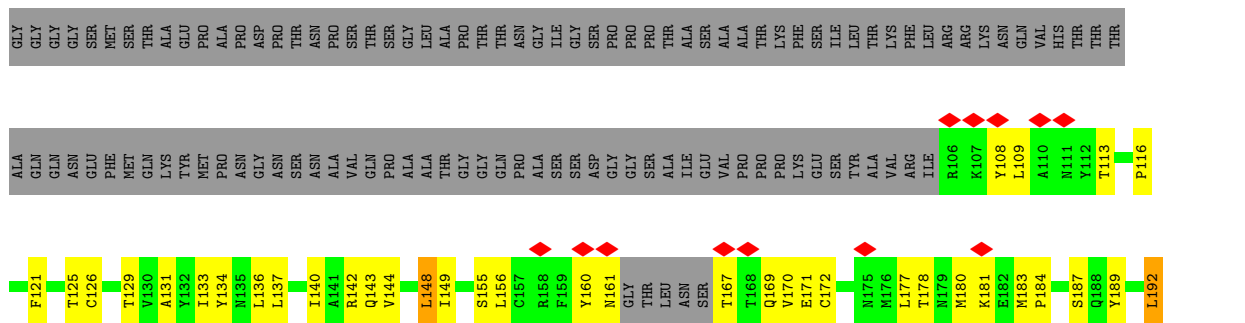
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
2	A	1	Total	C	N	O	P	0
			23	10	5	7	1	
2	B	1	Total	C	N	O	P	0
			23	10	5	7	1	
2	C	1	Total	C	N	O	P	0
			23	10	5	7	1	
2	D	1	Total	C	N	O	P	0
			23	10	5	7	1	

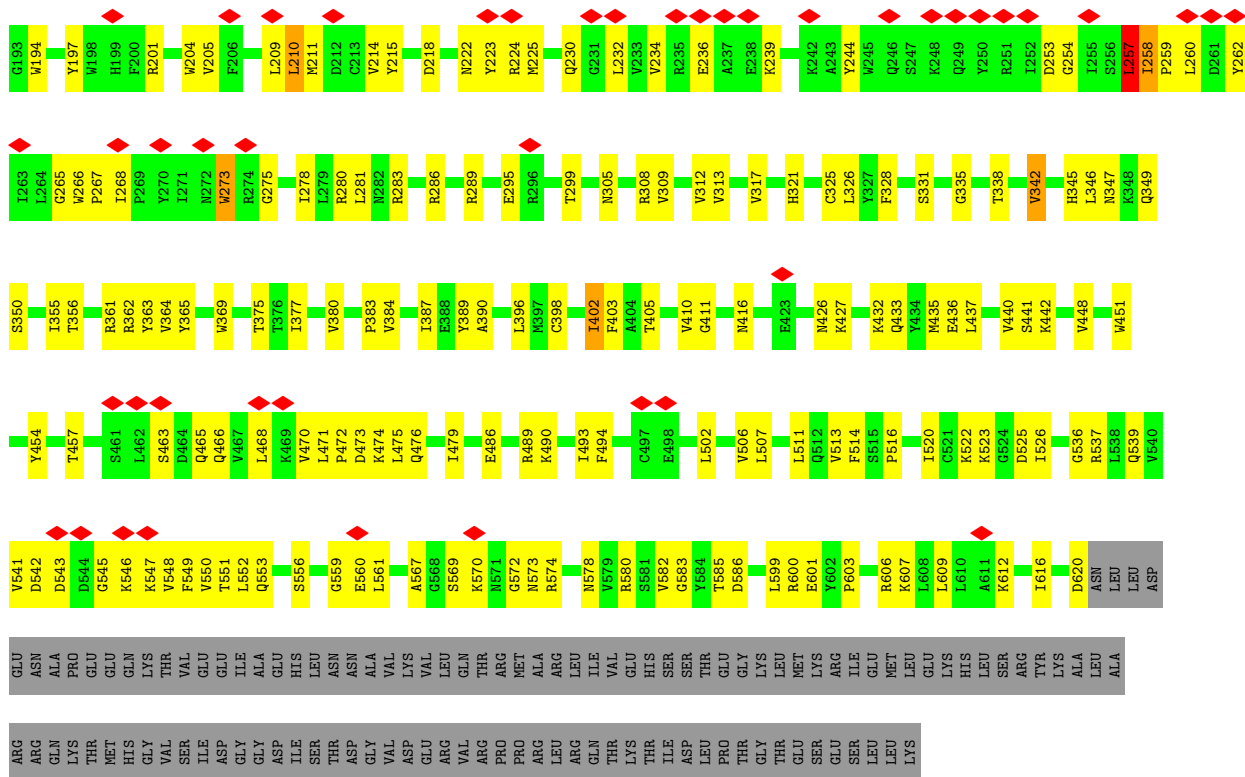
- Molecule 3 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		AltConf
			Total	Na	
3	A	2	Total	Na	0
			2	2	
3	B	1	Total	Na	0
			1	1	

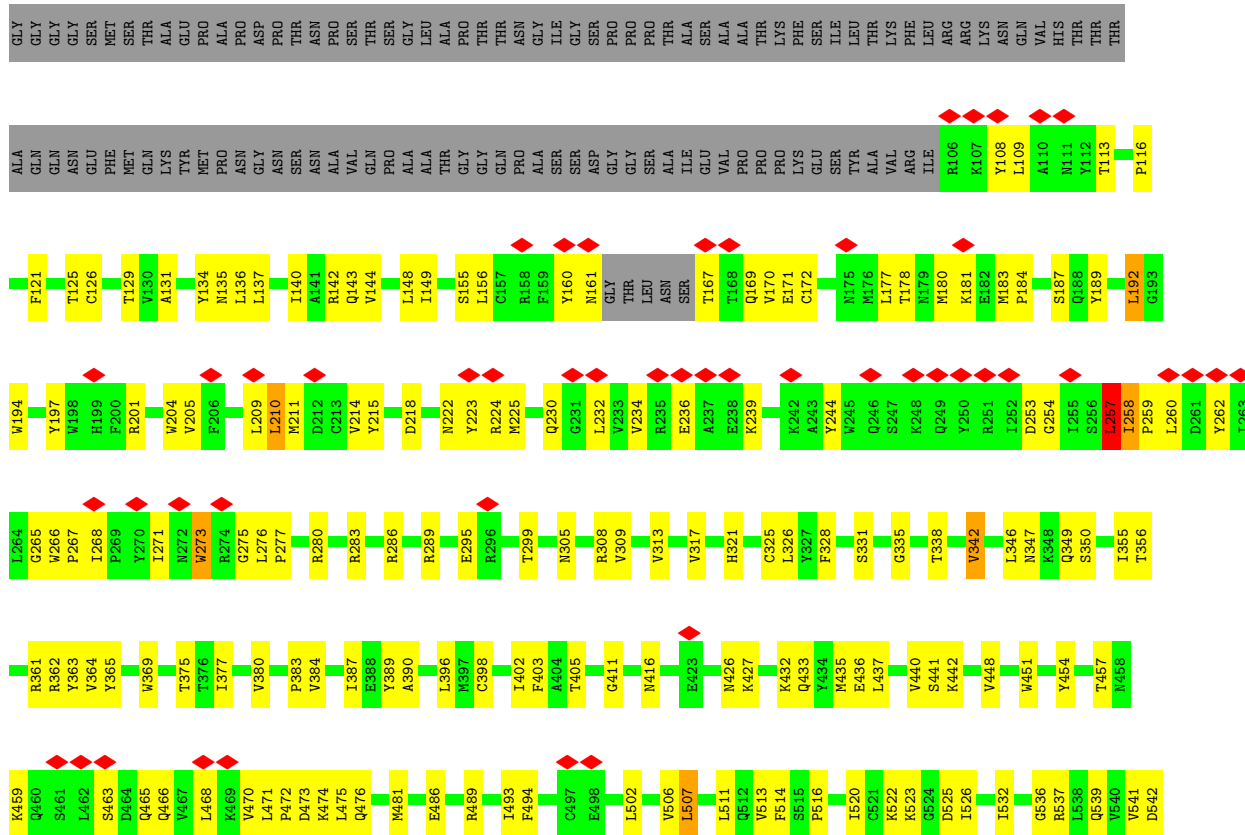


• Molecule 1: Cyclic nucleotide-gated cation channel





• Molecule 1: Cyclic nucleotide-gated cation channel



D543	D544	G645	K546	K547	V548	F549	T551	L552	Q553	S556	F557	G558	G559	E560	A567	G568	S569	K570	N571	G572	N573	R574	M578	V579	R580	S581	V582	G583	Y584	T585	D586	L599	R600	E601	R606	L609	L610	A611	K612	I616	D620	ASN	LEU	LEU	ASP	GLU	ASN	ALA	PRO	GLU																													
GLU	GLN	LYS	THR	VAL	GLU	GLU	ILE	ALA	GLU	HIS	LEU	ASN	ASN	ASP	GLY	ALA	VAL	VAL	LYS	VAL	VAL	LEU	ARG	GLN	THR	THR	ARG	PRO	MET	MET	ALA	ARG	LEU	ARG	LEU	ILE	VAL	THR	GLU	HIS	THR	SER	SER	THR	GLU	GLY	LYS	LEU	LEU	MET	LYS	LYS	ARG	ILE	ILE	GLU	MET	LEU	LEU	GLU	LYS	LYS	HIS	LEU	LEU	SER	ARG	TYR	LYS	ALA	ALA	LEU	LEU	ALA	ARG	ARG	GLN	LYS	THR
MET	HIS	GLY	VAL	SER	ILE	ASP	GLY	ASP	GLU	ILE	SER	THR	THR	ASP	GLY	VAL	VAL	ASP	GLU	ARG	VAL	ARG	VAL	ARG	ARG	PRO	PRO	MET	PRO	ARG	ARG	LEU	ARG	LEU	ILE	THR	THR	LYS	THR	THR	ILE	ASP	LEU	PRO	THR	PRO	GLU	THR	GLY	LYS	THR	LEU	THR	GLU	GLU	SER	LEU	LEU	LEU	LEU	LYS																		

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	99934	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1700	Depositor
Maximum defocus (nm)	2700	Depositor
Magnification	22500	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.340	Depositor
Minimum map value	-0.195	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.010	Depositor
Recommended contour level	0.0426	Depositor
Map size (\AA)	211.20001, 211.20001, 211.20001	wwPDB
Map dimensions	160, 160, 160	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.32, 1.32, 1.32	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.51	0/4317	0.66	3/5854 (0.1%)
1	B	0.51	0/4318	0.67	2/5856 (0.0%)
1	C	0.51	0/4318	0.66	2/5856 (0.0%)
1	D	0.51	0/4318	0.67	2/5856 (0.0%)
All	All	0.51	0/17271	0.67	9/23422 (0.0%)

There are no bond length outliers.

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	136	LEU	CA-CB-CG	5.29	127.46	115.30
1	D	136	LEU	CA-CB-CG	5.21	127.28	115.30
1	C	257	LEU	CA-CB-CG	5.18	127.21	115.30
1	B	136	LEU	CA-CB-CG	5.14	127.11	115.30
1	C	136	LEU	CA-CB-CG	5.12	127.08	115.30
1	D	257	LEU	CA-CB-CG	5.10	127.04	115.30
1	A	257	LEU	CA-CB-CG	5.10	127.03	115.30
1	B	257	LEU	CA-CB-CG	5.06	126.93	115.30
1	A	346	LEU	CB-CA-C	5.05	119.80	110.20

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	4215	0	4253	167	0
1	B	4216	0	4254	169	0
1	C	4216	0	4254	176	0
1	D	4216	0	4254	170	0
2	A	23	0	11	2	0
2	B	23	0	11	2	0
2	C	23	0	11	2	0
2	D	23	0	11	2	0
3	A	2	0	0	0	0
3	B	1	0	0	0	0
All	All	16958	0	17059	641	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 19.

All (641) 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:D:547:LYS:HG2	1:D:548:VAL:H	1.46	0.80
1:B:547:LYS:HG2	1:B:548:VAL:H	1.47	0.80
1:C:547:LYS:HG2	1:C:548:VAL:H	1.47	0.78
1:A:547:LYS:HG2	1:A:548:VAL:H	1.47	0.78
1:C:541:VAL:HG22	1:C:549:PHE:HD1	1.50	0.77
1:A:472:PRO:HG3	1:D:451:TRP:CZ2	2.20	0.76
1:B:541:VAL:HG22	1:B:549:PHE:HD1	1.51	0.76
1:B:451:TRP:CZ2	1:C:472:PRO:HG3	2.21	0.76
1:A:451:TRP:CZ2	1:B:472:PRO:HG3	2.22	0.75
1:C:523:LYS:HE2	1:C:542:ASP:OD2	1.86	0.75
1:D:541:VAL:HG22	1:D:549:PHE:HD1	1.50	0.75
1:C:451:TRP:CZ2	1:D:472:PRO:HG3	2.22	0.74
1:B:523:LYS:HE2	1:B:542:ASP:OD2	1.87	0.74
1:B:257:LEU:HD21	1:B:286:ARG:HE	1.53	0.74
1:A:257:LEU:HD21	1:A:286:ARG:HE	1.52	0.73
1:B:260:LEU:HD13	1:B:262:TYR:HE2	1.54	0.73
1:B:349:GLN:HG2	1:B:365:TYR:HE1	1.54	0.73
1:D:257:LEU:HD21	1:D:286:ARG:HE	1.54	0.73
1:C:260:LEU:HD13	1:C:262:TYR:HE2	1.54	0.73
1:A:541:VAL:HG22	1:A:549:PHE:HD1	1.52	0.72
1:C:257:LEU:HD21	1:C:286:ARG:HE	1.54	0.72
1:C:349:GLN:HG2	1:C:365:TYR:HE1	1.54	0.72
1:D:523:LYS:HE2	1:D:542:ASP:OD2	1.90	0.71
1:D:260:LEU:HD13	1:D:262:TYR:HE2	1.55	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:260:LEU:HD13	1:A:262:TYR:HE2	1.55	0.71
1:D:349:GLN:HG2	1:D:365:TYR:HE1	1.55	0.71
1:A:523:LYS:HE2	1:A:542:ASP:OD2	1.91	0.70
1:A:537:ARG:NH2	1:B:230:GLN:OE1	2.24	0.70
1:A:572:GLY:O	1:A:574:ARG:N	2.23	0.70
1:D:572:GLY:O	1:D:574:ARG:N	2.24	0.70
1:A:349:GLN:HG2	1:A:365:TYR:HE1	1.57	0.69
1:A:183:MET:HG3	1:A:184:PRO:HD2	1.74	0.69
1:D:183:MET:HG3	1:D:184:PRO:HD2	1.75	0.69
1:C:183:MET:HG3	1:C:184:PRO:HD2	1.76	0.68
1:B:537:ARG:NH2	1:C:230:GLN:OE1	2.27	0.68
1:B:572:GLY:O	1:B:574:ARG:N	2.24	0.67
1:A:465:GLN:HA	1:A:468:LEU:HD12	1.75	0.67
1:B:183:MET:HG3	1:B:184:PRO:HD2	1.76	0.67
1:B:465:GLN:HA	1:B:468:LEU:HD12	1.75	0.67
1:C:465:GLN:HA	1:C:468:LEU:HD12	1.76	0.67
1:C:215:TYR:CD1	1:C:286:ARG:HD2	2.29	0.67
1:A:215:TYR:CD1	1:A:286:ARG:HD2	2.29	0.67
1:A:149:ILE:HG12	1:A:204:TRP:CD1	2.29	0.66
1:C:572:GLY:O	1:C:574:ARG:N	2.24	0.66
1:C:473:ASP:OD1	1:C:507:LEU:HD21	1.95	0.66
1:D:465:GLN:HA	1:D:468:LEU:HD12	1.75	0.66
1:C:328:PHE:HZ	1:C:362:ARG:HE	1.43	0.66
1:A:328:PHE:HZ	1:A:362:ARG:HE	1.43	0.66
1:B:473:ASP:OD1	1:B:507:LEU:HD21	1.96	0.66
1:C:523:LYS:CE	1:C:542:ASP:OD2	2.44	0.66
1:C:537:ARG:NH2	1:D:230:GLN:OE1	2.27	0.66
1:D:149:ILE:HG12	1:D:204:TRP:CD1	2.31	0.66
1:D:194:TRP:CZ2	1:D:268:ILE:HB	2.31	0.65
1:D:215:TYR:CD1	1:D:286:ARG:HD2	2.31	0.65
1:B:257:LEU:HD22	1:B:258:ILE:HG23	1.79	0.65
1:D:328:PHE:HZ	1:D:362:ARG:HE	1.45	0.65
1:A:599:LEU:HD22	1:A:606:ARG:HG3	1.79	0.65
1:C:194:TRP:CZ2	1:C:268:ILE:HB	2.32	0.65
1:B:215:TYR:CD1	1:B:286:ARG:HD2	2.31	0.64
1:C:149:ILE:HG12	1:C:204:TRP:CD1	2.32	0.64
1:C:257:LEU:HD22	1:C:258:ILE:HG23	1.80	0.64
1:A:257:LEU:HD22	1:A:258:ILE:HG23	1.80	0.64
1:C:599:LEU:HD22	1:C:606:ARG:HG3	1.80	0.64
1:D:170:VAL:HG12	1:D:171:GLU:H	1.63	0.64
1:B:194:TRP:CZ2	1:B:268:ILE:HB	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:149:ILE:HG12	1:B:204:TRP:CD1	2.33	0.63
1:B:170:VAL:HG12	1:B:171:GLU:H	1.64	0.63
1:D:257:LEU:HD22	1:D:258:ILE:HG23	1.80	0.63
1:A:257:LEU:HG	1:A:286:ARG:HG3	1.79	0.63
1:B:523:LYS:CE	1:B:542:ASP:OD2	2.46	0.63
1:B:599:LEU:HD22	1:B:606:ARG:HG3	1.79	0.63
1:A:194:TRP:CZ2	1:A:268:ILE:HB	2.32	0.63
1:B:448:VAL:HG22	1:C:475:LEU:HD13	1.81	0.63
1:C:257:LEU:HG	1:C:286:ARG:HG3	1.81	0.63
1:B:257:LEU:HG	1:B:286:ARG:HG3	1.80	0.63
1:D:523:LYS:CE	1:D:542:ASP:OD2	2.47	0.63
1:A:230:GLN:OE1	1:D:537:ARG:NH2	2.31	0.63
1:D:599:LEU:HD22	1:D:606:ARG:HG3	1.80	0.63
1:B:355:ILE:HD12	1:B:361:ARG:NH1	2.14	0.63
1:C:448:VAL:HG22	1:D:475:LEU:HD13	1.81	0.63
1:C:468:LEU:O	1:C:476:GLN:NE2	2.32	0.63
1:B:468:LEU:O	1:B:476:GLN:NE2	2.33	0.62
1:A:435:MET:HE1	1:A:448:VAL:HG11	1.80	0.62
1:A:170:VAL:HG12	1:A:171:GLU:H	1.63	0.62
1:D:257:LEU:HG	1:D:286:ARG:HG3	1.81	0.62
1:C:170:VAL:HG12	1:C:171:GLU:H	1.64	0.62
1:A:426:ASN:OD1	1:B:416:ASN:ND2	2.33	0.62
1:B:328:PHE:HZ	1:B:362:ARG:HE	1.45	0.62
1:A:355:ILE:HD12	1:A:361:ARG:NH1	2.14	0.62
1:A:448:VAL:HG22	1:B:475:LEU:HD13	1.81	0.62
1:B:546:LYS:H	1:B:549:PHE:HZ	1.48	0.62
1:D:468:LEU:O	1:D:476:GLN:NE2	2.33	0.62
1:A:473:ASP:OD1	1:A:507:LEU:HD21	2.00	0.61
1:C:435:MET:HE1	1:C:448:VAL:HG11	1.81	0.61
1:C:355:ILE:HD12	1:C:361:ARG:NH1	2.16	0.61
1:A:475:LEU:HD13	1:D:448:VAL:HG22	1.82	0.61
1:C:546:LYS:H	1:C:549:PHE:HZ	1.49	0.61
1:A:468:LEU:O	1:A:476:GLN:NE2	2.33	0.61
1:B:435:MET:HE1	1:B:448:VAL:HG11	1.81	0.61
1:D:435:MET:HE1	1:D:448:VAL:HG11	1.82	0.60
1:C:125:THR:HG22	1:C:289:ARG:HD2	1.83	0.60
1:B:426:ASN:OD1	1:C:416:ASN:ND2	2.34	0.60
1:A:125:THR:HG22	1:A:289:ARG:HD2	1.82	0.60
1:A:140:ILE:O	1:A:144:VAL:HG23	2.02	0.60
1:A:405:THR:HG22	1:D:411:GLY:HA2	1.84	0.60
1:C:426:ASN:OD1	1:D:416:ASN:ND2	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:140:ILE:O	1:D:144:VAL:HG23	2.02	0.60
1:D:473:ASP:OD1	1:D:507:LEU:HD21	2.00	0.60
1:C:160:TYR:HA	1:C:167:THR:HA	1.84	0.60
1:D:355:ILE:HD12	1:D:361:ARG:NH1	2.16	0.60
1:C:140:ILE:O	1:C:144:VAL:HG23	2.02	0.60
1:B:160:TYR:HA	1:B:167:THR:HA	1.83	0.59
1:D:215:TYR:CE1	1:D:286:ARG:HD2	2.37	0.59
1:A:416:ASN:ND2	1:D:426:ASN:OD1	2.34	0.59
1:A:215:TYR:CE1	1:A:286:ARG:HD2	2.37	0.59
1:D:194:TRP:HZ2	1:D:268:ILE:HB	1.67	0.59
1:A:160:TYR:HA	1:A:167:THR:HA	1.84	0.59
1:B:140:ILE:O	1:B:144:VAL:HG23	2.02	0.59
1:D:155:SER:HB2	1:D:172:CYS:HB2	1.85	0.59
1:D:546:LYS:H	1:D:549:PHE:HZ	1.50	0.59
1:C:215:TYR:CE1	1:C:286:ARG:HD2	2.38	0.58
1:D:125:THR:HG22	1:D:289:ARG:HD2	1.84	0.58
1:A:542:ASP:O	1:A:543:ASP:HB2	2.02	0.58
1:D:160:TYR:HA	1:D:167:THR:HA	1.84	0.58
1:C:542:ASP:O	1:C:543:ASP:HB2	2.04	0.58
1:D:545:GLY:HA2	1:D:549:PHE:HE1	1.68	0.58
1:A:545:GLY:HA2	1:A:549:PHE:HE1	1.69	0.58
1:B:215:TYR:CE1	1:B:286:ARG:HD2	2.38	0.58
1:D:369:TRP:NE1	1:D:380:VAL:HG11	2.19	0.58
1:B:542:ASP:O	1:B:543:ASP:HB2	2.03	0.58
1:D:260:LEU:HD13	1:D:262:TYR:CE2	2.39	0.58
1:C:545:GLY:HA2	1:C:549:PHE:CE1	2.38	0.58
1:A:260:LEU:HD13	1:A:262:TYR:CE2	2.38	0.58
1:B:537:ARG:HH11	1:C:232:LEU:HD12	1.69	0.57
1:D:486:GLU:HG2	1:D:489:ARG:HH21	1.68	0.57
1:D:545:GLY:HA2	1:D:549:PHE:CE1	2.39	0.57
1:C:155:SER:HB2	1:C:172:CYS:HB2	1.86	0.57
1:C:260:LEU:HD13	1:C:262:TYR:CE2	2.37	0.57
1:A:411:GLY:HA2	1:B:405:THR:HG22	1.85	0.57
1:C:537:ARG:HH11	1:D:232:LEU:HD12	1.69	0.57
1:A:545:GLY:HA2	1:A:549:PHE:CE1	2.39	0.57
1:A:369:TRP:NE1	1:A:380:VAL:HG11	2.19	0.57
1:B:474:LYS:HE2	1:B:474:LYS:HA	1.86	0.57
1:A:432:LYS:O	1:A:436:GLU:HG2	2.05	0.57
1:A:546:LYS:H	1:A:549:PHE:HZ	1.51	0.57
1:A:234:VAL:HG11	1:A:239:LYS:HD3	1.87	0.57
1:D:474:LYS:HE2	1:D:474:LYS:HA	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:155:SER:HB2	1:A:172:CYS:HB2	1.85	0.56
1:A:194:TRP:HZ2	1:A:268:ILE:HB	1.70	0.56
1:B:545:GLY:HA2	1:B:549:PHE:CE1	2.39	0.56
1:B:125:THR:HG22	1:B:289:ARG:HD2	1.86	0.56
1:B:194:TRP:HZ2	1:B:268:ILE:HB	1.69	0.56
1:B:234:VAL:HG11	1:B:239:LYS:HD3	1.87	0.56
1:B:432:LYS:O	1:B:436:GLU:HG2	2.05	0.56
1:C:369:TRP:NE1	1:C:380:VAL:HG11	2.20	0.56
1:C:432:LYS:O	1:C:436:GLU:HG2	2.05	0.56
1:C:545:GLY:HA2	1:C:549:PHE:HE1	1.69	0.56
1:A:369:TRP:CD1	1:A:380:VAL:HG11	2.40	0.56
1:B:454:TYR:HA	1:B:457:THR:HG22	1.88	0.56
1:C:411:GLY:HA2	1:D:405:THR:HG22	1.86	0.56
1:C:539:GLN:OE1	1:C:580:ARG:NH2	2.36	0.56
1:A:537:ARG:HH11	1:B:232:LEU:HD12	1.70	0.56
1:B:155:SER:HB2	1:B:172:CYS:HB2	1.86	0.56
1:B:369:TRP:NE1	1:B:380:VAL:HG11	2.21	0.56
1:D:542:ASP:O	1:D:543:ASP:HB2	2.05	0.56
1:C:194:TRP:HZ2	1:C:268:ILE:HB	1.69	0.56
1:C:369:TRP:CD1	1:C:380:VAL:HG11	2.41	0.56
1:C:536:GLY:HA3	1:C:585:THR:HG22	1.88	0.56
1:A:541:VAL:HG22	1:A:549:PHE:CD1	2.39	0.56
1:B:545:GLY:HA2	1:B:549:PHE:HE1	1.70	0.55
1:C:454:TYR:HA	1:C:457:THR:HG22	1.89	0.55
1:B:411:GLY:HA2	1:C:405:THR:HG22	1.89	0.55
1:D:432:LYS:O	1:D:436:GLU:HG2	2.05	0.55
1:A:525:ASP:OD1	1:A:526:ILE:N	2.40	0.55
1:C:578:ASN:OD1	1:C:578:ASN:N	2.40	0.55
1:A:516:PRO:HB3	1:A:583:GLY:HA2	1.88	0.55
1:A:536:GLY:HA3	1:A:585:THR:HG22	1.89	0.55
1:C:335:GLY:O	1:C:338:THR:HG22	2.07	0.55
1:B:210:LEU:HB3	1:B:211:MET:HE1	1.89	0.55
1:D:522:LYS:HA	1:D:578:ASN:HB3	1.89	0.55
1:B:525:ASP:OD1	1:B:526:ILE:N	2.39	0.55
1:C:569:SER:HB3	1:C:620:ASP:OD2	2.07	0.55
1:D:234:VAL:HG11	1:D:239:LYS:HD3	1.89	0.55
1:D:536:GLY:HA3	1:D:585:THR:HG22	1.89	0.55
1:A:523:LYS:CE	1:A:542:ASP:OD2	2.54	0.54
1:B:578:ASN:OD1	1:B:578:ASN:N	2.40	0.54
1:D:149:ILE:HG23	1:D:201:ARG:HG2	1.89	0.54
1:A:474:LYS:HE2	1:A:474:LYS:HA	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:474:LYS:HA	1:C:474:LYS:HE2	1.89	0.54
1:D:454:TYR:HA	1:D:457:THR:HG22	1.89	0.54
1:A:578:ASN:N	1:A:578:ASN:OD1	2.40	0.54
1:C:486:GLU:HG2	1:C:489:ARG:HH21	1.72	0.54
1:C:522:LYS:HA	1:C:578:ASN:HB3	1.89	0.54
1:B:335:GLY:O	1:B:338:THR:HG22	2.08	0.54
1:B:369:TRP:CD1	1:B:380:VAL:HG11	2.42	0.54
1:C:525:ASP:OD1	1:C:526:ILE:N	2.40	0.54
1:A:335:GLY:O	1:A:338:THR:HG22	2.08	0.54
1:B:149:ILE:HG23	1:B:201:ARG:HG2	1.90	0.54
1:B:516:PRO:HB3	1:B:583:GLY:HA2	1.90	0.54
1:D:369:TRP:CD1	1:D:380:VAL:HG11	2.43	0.54
1:B:257:LEU:HB2	1:B:283:ARG:HA	1.89	0.54
1:B:569:SER:HB3	1:B:620:ASP:OD2	2.08	0.54
1:B:156:LEU:HD12	1:B:169:GLN:HB3	1.90	0.53
1:B:486:GLU:HG2	1:B:489:ARG:HH21	1.72	0.53
1:D:266:TRP:CD1	1:D:267:PRO:HG2	2.44	0.53
1:D:335:GLY:O	1:D:338:THR:HG22	2.08	0.53
1:D:578:ASN:OD1	1:D:578:ASN:N	2.41	0.53
1:A:232:LEU:HD12	1:D:537:ARG:HH11	1.71	0.53
1:D:525:ASP:OD1	1:D:526:ILE:N	2.41	0.53
1:A:149:ILE:HG23	1:A:201:ARG:HG2	1.91	0.53
1:A:232:LEU:HD21	1:D:582:VAL:HG12	1.91	0.53
1:A:266:TRP:CD1	1:A:267:PRO:HG2	2.44	0.53
1:A:486:GLU:HG2	1:A:489:ARG:HH21	1.73	0.53
1:C:142:ARG:HD3	1:C:149:ILE:CD1	2.39	0.53
1:A:454:TYR:HA	1:A:457:THR:HG22	1.90	0.53
1:B:522:LYS:HA	1:B:578:ASN:HB3	1.90	0.53
1:C:234:VAL:HG11	1:C:239:LYS:HD3	1.89	0.53
1:C:569:SER:CB	1:C:620:ASP:OD2	2.57	0.53
1:B:266:TRP:CD1	1:B:267:PRO:HG2	2.44	0.53
1:B:539:GLN:HB3	1:B:551:THR:HG22	1.91	0.53
1:A:142:ARG:HD3	1:A:149:ILE:CD1	2.39	0.53
1:A:522:LYS:HA	1:A:578:ASN:HB3	1.89	0.53
1:C:433:GLN:O	1:C:437:LEU:HD13	2.09	0.53
1:D:569:SER:HB3	1:D:620:ASP:OD2	2.09	0.53
1:B:541:VAL:HG22	1:B:549:PHE:CD1	2.39	0.53
1:C:131:ALA:O	1:C:134:TYR:HB3	2.09	0.53
1:C:149:ILE:HG23	1:C:201:ARG:HG2	1.91	0.53
1:D:257:LEU:HB2	1:D:283:ARG:HA	1.91	0.52
1:D:539:GLN:HB3	1:D:551:THR:HG22	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:131:ALA:O	1:B:134:TYR:HB3	2.09	0.52
1:A:253:ASP:OD1	1:A:254:GLY:N	2.43	0.52
1:B:260:LEU:HD13	1:B:262:TYR:CE2	2.38	0.52
1:D:108:TYR:CZ	1:D:109:LEU:HD13	2.45	0.52
1:D:253:ASP:OD1	1:D:254:GLY:N	2.43	0.52
1:B:142:ARG:HD3	1:B:149:ILE:CD1	2.40	0.52
1:B:536:GLY:HA3	1:B:585:THR:HG22	1.92	0.52
1:C:516:PRO:HB3	1:C:583:GLY:HA2	1.90	0.52
1:A:321:HIS:CE1	1:A:363:TYR:HH	2.23	0.52
1:D:156:LEU:HD12	1:D:169:GLN:HB3	1.92	0.52
1:A:131:ALA:O	1:A:134:TYR:HB3	2.10	0.52
1:C:266:TRP:CD1	1:C:267:PRO:HG2	2.44	0.52
1:C:253:ASP:OD1	1:C:254:GLY:N	2.43	0.52
1:D:383:PRO:HB2	1:D:389:TYR:CE2	2.45	0.52
1:A:156:LEU:HA	1:A:170:VAL:O	2.09	0.52
1:A:433:GLN:O	1:A:437:LEU:HD13	2.09	0.52
1:B:433:GLN:O	1:B:437:LEU:HD13	2.10	0.52
1:B:569:SER:CB	1:B:620:ASP:OD2	2.59	0.52
1:B:582:VAL:HG12	1:C:232:LEU:HD21	1.93	0.51
1:C:156:LEU:HD12	1:C:169:GLN:HB3	1.92	0.51
1:D:433:GLN:O	1:D:437:LEU:HD13	2.10	0.51
1:A:435:MET:HG2	1:A:440:VAL:HG11	1.92	0.51
1:A:559:GLY:H	2:A:801:PCG:H4'	1.76	0.51
1:D:131:ALA:O	1:D:134:TYR:HB3	2.10	0.51
1:A:470:VAL:HG11	1:D:427:LYS:HB3	1.93	0.51
1:B:253:ASP:OD1	1:B:254:GLY:N	2.44	0.51
1:C:156:LEU:HA	1:C:170:VAL:O	2.10	0.51
1:C:383:PRO:HB2	1:C:389:TYR:CE2	2.46	0.51
1:C:547:LYS:HG2	1:C:548:VAL:N	2.23	0.51
1:C:567:ALA:HB1	1:C:570:LYS:HA	1.93	0.51
1:B:466:GLN:O	1:B:470:VAL:HG23	2.10	0.51
1:C:313:VAL:O	1:C:317:VAL:HG23	2.11	0.51
1:D:516:PRO:HB3	1:D:583:GLY:HA2	1.92	0.51
1:A:156:LEU:HD12	1:A:169:GLN:HB3	1.93	0.51
1:B:156:LEU:HA	1:B:170:VAL:O	2.11	0.51
1:A:427:LYS:HB3	1:B:470:VAL:HG11	1.93	0.51
1:B:144:VAL:HG21	1:B:325:CYS:HB3	1.93	0.51
1:C:435:MET:HG2	1:C:440:VAL:HG11	1.93	0.51
1:D:265:GLY:HA2	1:D:273:TRP:HE1	1.75	0.51
1:A:257:LEU:HB2	1:A:283:ARG:HA	1.93	0.51
1:B:218:ASP:OD1	1:B:289:ARG:NH1	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:541:VAL:HG22	1:C:549:PHE:CD1	2.38	0.51
1:D:466:GLN:O	1:D:470:VAL:HG23	2.10	0.51
1:A:567:ALA:HB1	1:A:570:LYS:HA	1.91	0.51
1:C:427:LYS:HB3	1:D:470:VAL:HG11	1.93	0.51
1:D:142:ARG:HD3	1:D:149:ILE:CD1	2.41	0.51
1:A:569:SER:HB3	1:A:620:ASP:OD2	2.12	0.50
1:C:539:GLN:HB3	1:C:551:THR:HG22	1.93	0.50
1:A:313:VAL:O	1:A:317:VAL:HG23	2.11	0.50
1:B:567:ALA:HB1	1:B:570:LYS:HA	1.93	0.50
1:B:313:VAL:O	1:B:317:VAL:HG23	2.10	0.50
1:B:383:PRO:HB2	1:B:389:TYR:CE2	2.46	0.50
1:C:265:GLY:HA2	1:C:273:TRP:HE1	1.77	0.50
1:D:116:PRO:HA	1:D:121:PHE:CD2	2.46	0.50
1:A:170:VAL:HG12	1:A:171:GLU:N	2.27	0.50
1:C:265:GLY:O	1:C:275:GLY:HA2	2.12	0.50
1:B:265:GLY:HA2	1:B:273:TRP:HE1	1.77	0.50
1:C:108:TYR:CZ	1:C:109:LEU:HD13	2.46	0.50
1:C:257:LEU:HB2	1:C:283:ARG:HA	1.92	0.50
1:D:156:LEU:HA	1:D:170:VAL:O	2.12	0.50
1:B:427:LYS:HB3	1:C:470:VAL:HG11	1.94	0.50
1:D:547:LYS:HG2	1:D:548:VAL:N	2.22	0.50
1:A:116:PRO:HA	1:A:121:PHE:CD2	2.47	0.50
1:A:582:VAL:HG12	1:B:232:LEU:HD21	1.94	0.50
1:D:567:ALA:HB1	1:D:570:LYS:HA	1.93	0.50
1:C:210:LEU:HB3	1:C:211:MET:HE1	1.94	0.50
1:D:541:VAL:HG22	1:D:549:PHE:CD1	2.39	0.50
1:B:116:PRO:HA	1:B:121:PHE:CD2	2.47	0.49
1:D:273:TRP:HA	1:D:273:TRP:CE3	2.47	0.49
1:D:569:SER:CB	1:D:620:ASP:OD2	2.60	0.49
1:B:108:TYR:CZ	1:B:109:LEU:HD13	2.47	0.49
1:B:273:TRP:HA	1:B:273:TRP:CE3	2.47	0.49
1:B:547:LYS:CG	1:B:548:VAL:H	2.21	0.49
1:D:313:VAL:O	1:D:317:VAL:HG23	2.12	0.49
1:B:493:ILE:HD11	1:B:609:LEU:HD21	1.94	0.49
1:C:170:VAL:HG12	1:C:171:GLU:N	2.27	0.49
1:A:539:GLN:HB3	1:A:551:THR:HG22	1.93	0.49
1:D:349:GLN:HG2	1:D:365:TYR:CE1	2.42	0.49
1:D:435:MET:HG2	1:D:440:VAL:HG11	1.93	0.49
1:A:108:TYR:CZ	1:A:109:LEU:HD13	2.47	0.49
1:A:383:PRO:HB2	1:A:389:TYR:CE2	2.47	0.49
1:D:215:TYR:HD1	1:D:286:ARG:HD2	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:502:LEU:O	1:A:506:VAL:HG23	2.13	0.49
1:D:126:CYS:O	1:D:129:THR:HB	2.12	0.49
1:A:223:TYR:HA	1:A:244:TYR:CD1	2.48	0.49
1:B:194:TRP:CD1	1:B:194:TRP:N	2.79	0.49
1:A:569:SER:CB	1:A:620:ASP:OD2	2.61	0.49
1:B:435:MET:HG2	1:B:440:VAL:HG11	1.94	0.49
1:B:126:CYS:O	1:B:129:THR:HB	2.13	0.49
1:B:539:GLN:OE1	1:B:580:ARG:NH2	2.39	0.49
1:A:194:TRP:CD1	1:A:194:TRP:N	2.80	0.48
1:A:326:LEU:HA	1:A:326:LEU:HD23	1.59	0.48
1:B:170:VAL:HG12	1:B:171:GLU:N	2.27	0.48
1:B:222:ASN:HA	1:B:225:MET:HG2	1.95	0.48
1:B:502:LEU:O	1:B:506:VAL:HG23	2.13	0.48
1:C:116:PRO:HA	1:C:121:PHE:CD2	2.48	0.48
1:C:349:GLN:HG2	1:C:365:TYR:CE1	2.41	0.48
1:C:502:LEU:O	1:C:506:VAL:HG23	2.12	0.48
1:C:612:LYS:O	1:C:616:ILE:HG13	2.13	0.48
1:D:559:GLY:H	2:D:801:PCG:H4'	1.79	0.48
1:C:582:VAL:HG12	1:D:232:LEU:HD21	1.95	0.48
1:D:218:ASP:OD1	1:D:289:ARG:NH1	2.45	0.48
1:C:493:ILE:HD11	1:C:609:LEU:HD21	1.95	0.48
1:D:539:GLN:OE1	1:D:580:ARG:NH2	2.38	0.48
1:A:350:SER:O	1:A:361:ARG:NH1	2.46	0.48
1:A:514:PHE:CD1	1:A:520:ILE:HG13	2.49	0.48
1:B:265:GLY:O	1:B:275:GLY:HA2	2.14	0.48
1:C:559:GLY:H	2:C:801:PCG:H4'	1.79	0.48
1:D:142:ARG:HD3	1:D:149:ILE:HD11	1.95	0.48
1:A:547:LYS:CG	1:A:548:VAL:H	2.21	0.48
1:C:126:CYS:O	1:C:129:THR:HB	2.14	0.48
1:C:466:GLN:O	1:C:470:VAL:HG23	2.13	0.48
1:A:273:TRP:HA	1:A:273:TRP:CE3	2.48	0.48
1:A:612:LYS:O	1:A:616:ILE:HG13	2.14	0.48
1:B:349:GLN:HG2	1:B:365:TYR:CE1	2.41	0.48
1:B:514:PHE:CD1	1:B:520:ILE:HG13	2.48	0.48
1:C:361:ARG:NH2	1:D:389:TYR:CE2	2.82	0.48
1:D:170:VAL:HG12	1:D:171:GLU:N	2.26	0.48
1:B:612:LYS:O	1:B:616:ILE:HG13	2.14	0.48
1:A:126:CYS:O	1:A:129:THR:HB	2.14	0.48
1:B:361:ARG:NH2	1:C:389:TYR:CE2	2.82	0.48
1:D:144:VAL:HG21	1:D:325:CYS:HB3	1.96	0.48
1:D:194:TRP:CD1	1:D:194:TRP:N	2.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:223:TYR:HA	1:B:244:TYR:CD1	2.49	0.47
1:D:511:LEU:HA	1:D:511:LEU:HD23	1.64	0.47
1:D:539:GLN:HA	1:D:550:VAL:O	2.14	0.47
1:B:331:SER:HA	1:B:342:VAL:HG22	1.96	0.47
1:B:600:ARG:HB2	1:B:601:GLU:OE1	2.13	0.47
1:C:273:TRP:CE3	1:C:273:TRP:HA	2.48	0.47
1:D:493:ILE:HD11	1:D:609:LEU:HD21	1.94	0.47
1:A:466:GLN:O	1:A:470:VAL:HG23	2.14	0.47
1:A:473:ASP:CG	1:A:507:LEU:HD21	2.35	0.47
1:B:143:GLN:O	1:B:143:GLN:NE2	2.48	0.47
1:B:451:TRP:CE2	1:C:472:PRO:HG3	2.49	0.47
1:C:144:VAL:HG21	1:C:325:CYS:HB3	1.97	0.47
1:D:223:TYR:HA	1:D:244:TYR:CD1	2.49	0.47
1:D:514:PHE:CD1	1:D:520:ILE:HG13	2.49	0.47
1:A:222:ASN:OD1	1:A:289:ARG:NH2	2.44	0.47
1:A:222:ASN:HA	1:A:225:MET:HG2	1.96	0.47
1:A:493:ILE:HD11	1:A:609:LEU:HD21	1.95	0.47
1:B:559:GLY:H	2:B:801:PCG:H4'	1.80	0.47
1:C:222:ASN:HA	1:C:225:MET:HG2	1.97	0.47
1:C:473:ASP:CG	1:C:507:LEU:HD21	2.35	0.47
1:C:547:LYS:CG	1:C:548:VAL:H	2.22	0.47
1:D:137:LEU:HA	1:D:137:LEU:HD23	1.60	0.47
1:D:326:LEU:HD23	1:D:326:LEU:HA	1.56	0.47
1:D:612:LYS:O	1:D:616:ILE:HG13	2.14	0.47
1:C:215:TYR:HD1	1:C:286:ARG:HD2	1.75	0.47
1:A:156:LEU:HD23	1:A:187:SER:HB2	1.97	0.47
1:A:361:ARG:NH2	1:B:389:TYR:CE2	2.82	0.47
1:B:137:LEU:HD23	1:B:137:LEU:HA	1.61	0.47
1:A:305:ASN:OD1	1:A:308:ARG:NH1	2.47	0.47
1:D:265:GLY:O	1:D:275:GLY:HA2	2.15	0.47
1:B:526:ILE:HD12	1:B:526:ILE:H	1.80	0.47
1:C:259:PRO:O	1:C:260:LEU:HB2	2.15	0.47
1:D:350:SER:O	1:D:361:ARG:NH1	2.48	0.47
1:B:547:LYS:HG2	1:B:548:VAL:N	2.23	0.47
1:C:222:ASN:OD1	1:C:289:ARG:NH2	2.44	0.47
1:A:560:GLU:OE1	2:A:801:PCG:O2'	2.33	0.46
1:C:181:LYS:HD2	1:C:181:LYS:N	2.30	0.46
1:D:547:LYS:CG	1:D:548:VAL:H	2.21	0.46
1:B:326:LEU:HD23	1:B:326:LEU:HA	1.58	0.46
1:C:223:TYR:HA	1:C:244:TYR:CD1	2.48	0.46
1:C:305:ASN:OD1	1:C:308:ARG:NH1	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:143:GLN:O	1:D:143:GLN:NE2	2.48	0.46
1:A:349:GLN:HG2	1:A:365:TYR:CE1	2.44	0.46
1:B:156:LEU:HD23	1:B:187:SER:HB2	1.97	0.46
1:C:398:CYS:O	1:C:402:ILE:HB	2.16	0.46
1:C:514:PHE:CD1	1:C:520:ILE:HG13	2.50	0.46
1:D:398:CYS:O	1:D:402:ILE:HB	2.16	0.46
1:B:215:TYR:HD1	1:B:286:ARG:HD2	1.77	0.46
1:B:259:PRO:O	1:B:260:LEU:HB2	2.15	0.46
1:C:177:LEU:HA	1:C:177:LEU:HD23	1.68	0.46
1:C:331:SER:HA	1:C:342:VAL:HG22	1.97	0.46
1:C:539:GLN:HA	1:C:550:VAL:O	2.16	0.46
1:D:473:ASP:CG	1:D:507:LEU:HD21	2.36	0.46
1:D:502:LEU:O	1:D:506:VAL:HG23	2.15	0.46
1:D:560:GLU:OE1	2:D:801:PCG:O2'	2.34	0.46
1:A:375:THR:O	1:A:377:ILE:HD12	2.16	0.46
1:A:331:SER:HA	1:A:342:VAL:HG22	1.97	0.46
1:B:312:VAL:HG11	1:B:410:VAL:HG22	1.98	0.46
1:B:350:SER:O	1:B:361:ARG:NH1	2.48	0.46
1:B:475:LEU:HD23	1:B:475:LEU:HA	1.59	0.46
1:D:441:SER:OG	1:D:442:LYS:N	2.49	0.46
1:A:177:LEU:HA	1:A:177:LEU:HD23	1.68	0.46
1:A:215:TYR:HD1	1:A:286:ARG:HD2	1.75	0.46
1:A:387:ILE:O	1:A:390:ALA:HB3	2.15	0.46
1:A:389:TYR:CE2	1:D:361:ARG:NH2	2.82	0.46
1:A:539:GLN:OE1	1:A:580:ARG:NH2	2.37	0.46
1:B:134:TYR:CD2	1:B:211:MET:HG3	2.51	0.46
1:C:387:ILE:O	1:C:390:ALA:HB3	2.16	0.46
1:D:222:ASN:OD1	1:D:289:ARG:NH2	2.45	0.46
1:D:526:ILE:H	1:D:526:ILE:HD12	1.81	0.46
1:A:265:GLY:HA2	1:A:273:TRP:HE1	1.80	0.46
1:A:142:ARG:HD3	1:A:149:ILE:HD11	1.97	0.46
1:A:155:SER:CB	1:A:172:CYS:HB2	2.46	0.46
1:C:451:TRP:CE2	1:D:472:PRO:HG3	2.51	0.46
1:C:526:ILE:HD12	1:C:526:ILE:H	1.81	0.46
1:C:560:GLU:OE1	2:C:801:PCG:O2'	2.33	0.46
1:D:432:LYS:HB3	1:D:432:LYS:HE3	1.80	0.46
1:D:600:ARG:HB2	1:D:601:GLU:OE1	2.16	0.46
1:A:259:PRO:O	1:A:260:LEU:HB2	2.15	0.45
1:B:375:THR:O	1:B:377:ILE:HD12	2.16	0.45
1:B:473:ASP:CG	1:B:507:LEU:HD21	2.36	0.45
1:D:222:ASN:HA	1:D:225:MET:HG2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:144:VAL:HG21	1:A:325:CYS:HB3	1.97	0.45
1:A:600:ARG:HB2	1:A:601:GLU:OE1	2.16	0.45
1:A:181:LYS:HD2	1:A:181:LYS:N	2.30	0.45
1:A:398:CYS:O	1:A:402:ILE:HB	2.16	0.45
1:A:561:LEU:HD23	1:A:561:LEU:HA	1.81	0.45
1:B:539:GLN:HA	1:B:550:VAL:O	2.16	0.45
1:C:156:LEU:HD23	1:C:187:SER:HB2	1.96	0.45
1:A:137:LEU:HD23	1:A:137:LEU:HA	1.63	0.45
1:A:539:GLN:HA	1:A:550:VAL:O	2.16	0.45
1:B:441:SER:OG	1:B:442:LYS:N	2.50	0.45
1:C:142:ARG:HD3	1:C:149:ILE:HD11	1.97	0.45
1:A:346:LEU:HD23	1:A:346:LEU:HA	1.85	0.45
1:A:451:TRP:CE2	1:B:472:PRO:HG3	2.50	0.45
1:B:142:ARG:HD3	1:B:149:ILE:HD11	1.98	0.45
1:C:155:SER:CB	1:C:172:CYS:HB2	2.46	0.45
1:C:194:TRP:CD1	1:C:194:TRP:N	2.79	0.45
1:C:350:SER:O	1:C:361:ARG:NH1	2.49	0.45
1:B:177:LEU:HD23	1:B:177:LEU:HA	1.68	0.45
1:C:511:LEU:HD23	1:C:511:LEU:HA	1.66	0.45
1:D:259:PRO:O	1:D:260:LEU:HB2	2.16	0.45
1:B:511:LEU:HA	1:B:511:LEU:HD23	1.63	0.45
1:C:441:SER:OG	1:C:442:LYS:N	2.50	0.45
1:C:600:ARG:HB2	1:C:601:GLU:OE1	2.17	0.45
1:D:331:SER:HA	1:D:342:VAL:HG22	1.97	0.45
1:D:375:THR:O	1:D:377:ILE:HD12	2.17	0.45
1:D:475:LEU:HD23	1:D:475:LEU:HA	1.58	0.45
1:A:526:ILE:HD12	1:A:526:ILE:H	1.81	0.45
1:D:387:ILE:O	1:D:390:ALA:HB3	2.17	0.45
1:A:218:ASP:OD1	1:A:289:ARG:NH1	2.50	0.45
1:A:280:ARG:NH2	1:A:283:ARG:HD3	2.32	0.45
1:A:441:SER:OG	1:A:442:LYS:N	2.50	0.45
1:B:473:ASP:OD1	1:B:507:LEU:CD2	2.65	0.45
1:C:137:LEU:HD23	1:C:137:LEU:HA	1.61	0.45
1:B:257:LEU:HD21	1:B:286:ARG:NE	2.29	0.44
1:B:387:ILE:O	1:B:390:ALA:HB3	2.17	0.44
1:D:134:TYR:CD2	1:D:211:MET:HG3	2.52	0.44
1:D:156:LEU:HD23	1:D:187:SER:HB2	1.97	0.44
1:D:181:LYS:N	1:D:181:LYS:HD2	2.32	0.44
1:D:552:LEU:HD23	1:D:556:SER:HB2	1.99	0.44
1:D:346:LEU:HD23	1:D:346:LEU:HA	1.85	0.44
1:A:143:GLN:O	1:A:143:GLN:NE2	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:473:ASP:OD1	1:A:507:LEU:CD2	2.65	0.44
1:C:143:GLN:O	1:C:143:GLN:NE2	2.51	0.44
1:C:280:ARG:NH2	1:C:283:ARG:HD3	2.32	0.44
1:D:295:GLU:O	1:D:299:THR:HG23	2.18	0.44
1:A:511:LEU:HA	1:A:511:LEU:HD23	1.65	0.44
1:B:560:GLU:OE1	2:B:801:PCG:O2'	2.35	0.44
1:C:473:ASP:OD1	1:C:507:LEU:CD2	2.63	0.44
1:C:475:LEU:HD23	1:C:475:LEU:HA	1.62	0.44
1:D:209:LEU:HD12	1:D:209:LEU:HA	1.86	0.44
1:B:295:GLU:O	1:B:299:THR:HG23	2.18	0.44
1:B:321:HIS:ND1	1:B:363:TYR:OH	2.36	0.44
1:A:295:GLU:O	1:A:299:THR:HG23	2.18	0.44
1:A:513:VAL:HG22	1:A:586:ASP:OD1	2.18	0.44
1:C:134:TYR:CD2	1:C:211:MET:HG3	2.53	0.44
1:C:257:LEU:HD21	1:C:286:ARG:NE	2.29	0.44
1:C:375:THR:O	1:C:377:ILE:HD12	2.18	0.44
1:D:177:LEU:HD23	1:D:177:LEU:HA	1.68	0.44
1:D:321:HIS:CE1	1:D:363:TYR:HH	2.29	0.44
1:A:236:GLU:OE1	1:A:239:LYS:HD2	2.17	0.44
1:A:552:LEU:HD23	1:A:556:SER:HB2	2.00	0.44
1:C:209:LEU:HD12	1:C:209:LEU:HA	1.86	0.44
1:B:155:SER:CB	1:B:172:CYS:HB2	2.48	0.44
1:C:312:VAL:HG11	1:C:410:VAL:HG22	2.00	0.44
1:D:513:VAL:HG22	1:D:586:ASP:OD1	2.18	0.44
1:A:542:ASP:O	1:A:543:ASP:CB	2.65	0.43
1:B:398:CYS:O	1:B:402:ILE:HB	2.17	0.43
1:B:348:LYS:HE2	1:B:348:LYS:HB2	1.84	0.43
1:C:553:GLN:O	1:C:556:SER:OG	2.26	0.43
1:D:280:ARG:NH2	1:D:283:ARG:HD3	2.33	0.43
1:A:475:LEU:HD23	1:A:475:LEU:HA	1.61	0.43
1:B:181:LYS:HD2	1:B:181:LYS:N	2.33	0.43
1:B:280:ARG:NH2	1:B:283:ARG:HD3	2.33	0.43
1:D:210:LEU:O	1:D:214:VAL:HG23	2.19	0.43
1:B:513:VAL:HG22	1:B:586:ASP:OD1	2.19	0.43
1:C:178:THR:OG1	1:C:356:THR:HG22	2.18	0.43
1:C:513:VAL:HG22	1:C:586:ASP:OD1	2.18	0.43
1:C:572:GLY:C	1:C:574:ARG:N	2.72	0.43
1:D:305:ASN:OD1	1:D:308:ARG:NH1	2.52	0.43
1:C:189:TYR:HB2	1:C:192:LEU:HA	2.00	0.43
1:C:295:GLU:O	1:C:299:THR:HG23	2.18	0.43
1:C:607:LYS:HA	1:C:607:LYS:HD3	1.80	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:189:TYR:HB2	1:A:192:LEU:HA	1.98	0.43
1:B:178:THR:OG1	1:B:356:THR:HG22	2.18	0.43
1:B:494:PHE:CD1	1:B:502:LEU:HD12	2.54	0.43
1:B:257:LEU:H	1:B:257:LEU:HD13	1.83	0.43
1:B:490:LYS:HE2	1:B:490:LYS:HB3	1.89	0.43
1:D:178:THR:OG1	1:D:356:THR:HG22	2.18	0.43
1:C:218:ASP:OD1	1:C:289:ARG:NH1	2.52	0.43
1:A:205:VAL:O	1:A:209:LEU:HB2	2.19	0.43
1:A:402:ILE:HG22	1:A:403:PHE:CD1	2.54	0.43
1:A:547:LYS:HG2	1:A:548:VAL:N	2.23	0.43
1:B:572:GLY:C	1:B:574:ARG:N	2.72	0.43
1:A:134:TYR:CD2	1:A:211:MET:HG3	2.53	0.43
1:A:542:ASP:N	1:A:547:LYS:HD2	2.33	0.43
1:B:402:ILE:HG22	1:B:403:PHE:CD1	2.54	0.43
1:A:347:ASN:OD1	1:A:347:ASN:O	2.37	0.42
1:B:205:VAL:O	1:B:209:LEU:HB2	2.19	0.42
1:A:257:LEU:HD13	1:A:257:LEU:H	1.84	0.42
1:A:459:LYS:HD2	1:A:459:LYS:HA	1.78	0.42
1:B:160:TYR:O	1:B:161:ASN:HB2	2.19	0.42
1:B:347:ASN:OD1	1:B:347:ASN:O	2.37	0.42
1:C:402:ILE:HG22	1:C:403:PHE:CD1	2.54	0.42
1:C:472:PRO:HD2	1:C:475:LEU:HB2	2.01	0.42
1:D:236:GLU:OE1	1:D:239:LYS:HD2	2.20	0.42
1:D:473:ASP:OD1	1:D:507:LEU:CD2	2.67	0.42
1:A:472:PRO:HG3	1:D:451:TRP:CE2	2.53	0.42
1:A:532:ILE:HG12	1:A:557:VAL:HG22	2.02	0.42
1:B:472:PRO:HD2	1:B:475:LEU:HB2	2.00	0.42
1:B:364:VAL:HG12	1:B:365:TYR:N	2.35	0.42
1:C:542:ASP:N	1:C:547:LYS:HD2	2.34	0.42
1:A:265:GLY:O	1:A:275:GLY:HA2	2.19	0.42
1:D:572:GLY:C	1:D:574:ARG:N	2.72	0.42
1:D:160:TYR:O	1:D:161:ASN:HB2	2.20	0.42
1:D:552:LEU:HB3	1:D:556:SER:OG	2.19	0.42
1:B:542:ASP:N	1:B:547:LYS:HD2	2.35	0.42
1:C:494:PHE:CD1	1:C:502:LEU:HD12	2.55	0.42
1:C:552:LEU:HD23	1:C:556:SER:HB2	2.02	0.42
1:A:210:LEU:O	1:A:214:VAL:HG23	2.20	0.42
1:C:257:LEU:HD13	1:C:257:LEU:H	1.85	0.42
1:C:561:LEU:HD23	1:C:561:LEU:HA	1.82	0.42
1:D:155:SER:CB	1:D:172:CYS:HB2	2.47	0.42
1:D:459:LYS:HD2	1:D:459:LYS:HA	1.80	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:402:ILE:HG22	1:A:403:PHE:HD1	1.85	0.42
1:A:552:LEU:HB3	1:A:556:SER:OG	2.20	0.42
1:D:257:LEU:HD13	1:D:257:LEU:H	1.84	0.42
1:D:309:VAL:O	1:D:313:VAL:HG23	2.19	0.42
1:A:257:LEU:HD21	1:A:286:ARG:NE	2.28	0.41
1:B:222:ASN:OD1	1:B:289:ARG:NH2	2.44	0.41
1:C:262:TYR:O	1:C:266:TRP:N	2.53	0.41
1:C:309:VAL:O	1:C:313:VAL:HG23	2.20	0.41
1:A:160:TYR:O	1:A:161:ASN:HB2	2.20	0.41
1:A:364:VAL:HG12	1:A:365:TYR:N	2.36	0.41
1:B:346:LEU:HD23	1:B:346:LEU:HA	1.85	0.41
1:C:552:LEU:HB3	1:C:556:SER:OG	2.19	0.41
1:D:532:ILE:HG12	1:D:557:VAL:HG22	2.01	0.41
1:B:135:ASN:HD21	1:B:215:TYR:HE2	1.68	0.41
1:B:189:TYR:HB2	1:B:192:LEU:HA	2.02	0.41
1:B:309:VAL:O	1:B:313:VAL:HG23	2.20	0.41
1:B:532:ILE:HG12	1:B:557:VAL:HG22	2.02	0.41
1:C:205:VAL:O	1:C:209:LEU:HB2	2.20	0.41
1:D:402:ILE:HG22	1:D:403:PHE:CD1	2.56	0.41
1:C:148:LEU:HD21	1:C:204:TRP:CZ2	2.56	0.41
1:C:160:TYR:O	1:C:161:ASN:HB2	2.19	0.41
1:C:347:ASN:OD1	1:C:347:ASN:O	2.38	0.41
1:D:205:VAL:O	1:D:209:LEU:HB2	2.19	0.41
1:D:472:PRO:HD2	1:D:475:LEU:HB2	2.03	0.41
1:A:178:THR:OG1	1:A:356:THR:HG22	2.20	0.41
1:C:236:GLU:OE1	1:C:239:LYS:HD2	2.20	0.41
1:C:278:ILE:O	1:C:281:LEU:HG	2.21	0.41
1:C:361:ARG:NH2	1:D:389:TYR:CZ	2.88	0.41
1:C:402:ILE:HG22	1:C:403:PHE:N	2.36	0.41
1:D:271:ILE:H	1:D:271:ILE:HG13	1.66	0.41
1:D:364:VAL:HG12	1:D:365:TYR:N	2.35	0.41
1:D:553:GLN:O	1:D:556:SER:OG	2.27	0.41
1:A:384:VAL:HG12	1:A:384:VAL:O	2.21	0.41
1:A:572:GLY:C	1:A:574:ARG:N	2.73	0.41
1:B:273:TRP:HA	1:B:273:TRP:HE3	1.86	0.41
1:B:552:LEU:HD23	1:B:556:SER:HB2	2.03	0.41
1:C:192:LEU:H	1:C:192:LEU:HD23	1.85	0.41
1:C:194:TRP:HA	1:C:197:TYR:O	2.21	0.41
1:C:210:LEU:O	1:C:214:VAL:HG23	2.21	0.41
1:C:326:LEU:HD23	1:C:326:LEU:HA	1.59	0.41
1:D:347:ASN:OD1	1:D:347:ASN:O	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:481:MET:SD	1:D:502:LEU:HD21	2.61	0.41
1:A:312:VAL:HG11	1:A:410:VAL:HG22	2.02	0.41
1:C:384:VAL:O	1:C:384:VAL:HG12	2.21	0.41
1:C:402:ILE:HG22	1:C:403:PHE:HD1	1.85	0.41
1:D:113:THR:HA	1:D:224:ARG:HB3	2.02	0.41
1:C:364:VAL:HG12	1:C:365:TYR:N	2.35	0.41
1:C:427:LYS:HA	1:C:427:LYS:HD2	1.94	0.41
1:D:135:ASN:HD21	1:D:215:TYR:HE2	1.69	0.41
1:D:384:VAL:O	1:D:384:VAL:HG12	2.21	0.41
1:D:402:ILE:HG22	1:D:403:PHE:HD1	1.86	0.41
1:B:402:ILE:HG22	1:B:403:PHE:HD1	1.86	0.41
1:B:442:LYS:HD2	1:B:442:LYS:HA	1.89	0.41
1:C:113:THR:HA	1:C:224:ARG:HB3	2.03	0.41
1:C:321:HIS:ND1	1:C:363:TYR:OH	2.36	0.41
1:C:479:ILE:HG21	1:C:479:ILE:HD13	1.84	0.41
1:D:143:GLN:HA	1:D:277:PRO:HG2	2.03	0.41
1:D:194:TRP:H	1:D:194:TRP:HD1	1.65	0.41
1:D:210:LEU:HB3	1:D:211:MET:HE1	2.02	0.41
1:A:156:LEU:CD2	1:A:187:SER:HB2	2.51	0.41
1:B:210:LEU:O	1:B:214:VAL:HG23	2.20	0.40
1:B:313:VAL:HA	1:B:316:ILE:HD12	2.03	0.40
1:C:490:LYS:HE2	1:C:490:LYS:HB3	1.88	0.40
1:C:603:PRO:O	1:C:606:ARG:HB2	2.21	0.40
1:A:242:LYS:O	1:A:246:GLN:HG2	2.21	0.40
1:A:265:GLY:O	1:A:276:LEU:N	2.52	0.40
1:A:271:ILE:H	1:A:271:ILE:HG13	1.65	0.40
1:D:265:GLY:O	1:D:276:LEU:N	2.53	0.40
1:A:143:GLN:HA	1:A:277:PRO:HG2	2.03	0.40
1:B:331:SER:OG	1:B:342:VAL:HG22	2.22	0.40
1:A:278:ILE:O	1:A:281:LEU:HG	2.20	0.40
1:A:331:SER:OG	1:A:342:VAL:HG22	2.22	0.40
1:B:148:LEU:HD21	1:B:204:TRP:CZ2	2.56	0.40
1:B:266:TRP:CG	1:B:267:PRO:HD2	2.56	0.40
1:B:384:VAL:HG12	1:B:384:VAL:O	2.21	0.40
1:B:481:MET:SD	1:B:502:LEU:HD21	2.62	0.40
1:C:345:HIS:CD2	1:C:346:LEU:HG	2.56	0.40
1:D:494:PHE:CD1	1:D:502:LEU:HD12	2.56	0.40
1:A:273:TRP:HA	1:A:273:TRP:HE3	1.87	0.40
1:B:113:THR:HA	1:B:224:ARG:HB3	2.02	0.40
1:B:278:ILE:O	1:B:281:LEU:HG	2.22	0.40
1:C:129:THR:O	1:C:133:ILE:HG12	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:189:TYR:HB2	1:D:192:LEU:HA	2.02	0.40
1:D:194:TRP:HA	1:D:197:TYR:O	2.22	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	506/738 (69%)	474 (94%)	29 (6%)	3 (1%)	25 64
1	B	506/738 (69%)	472 (93%)	31 (6%)	3 (1%)	25 64
1	C	506/738 (69%)	473 (94%)	30 (6%)	3 (1%)	25 64
1	D	506/738 (69%)	472 (93%)	31 (6%)	3 (1%)	25 64
All	All	2024/2952 (69%)	1891 (93%)	121 (6%)	12 (1%)	29 64

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	573	ASN
1	B	573	ASN
1	C	573	ASN
1	D	573	ASN
1	A	148	LEU
1	B	148	LEU
1	C	148	LEU
1	D	148	LEU
1	A	258	ILE
1	D	258	ILE
1	B	258	ILE
1	C	258	ILE

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	462/652 (71%)	451 (98%)	11 (2%)	49 76
1	B	462/652 (71%)	453 (98%)	9 (2%)	57 80
1	C	462/652 (71%)	452 (98%)	10 (2%)	52 78
1	D	462/652 (71%)	452 (98%)	10 (2%)	52 78
All	All	1848/2608 (71%)	1808 (98%)	40 (2%)	54 78

All (40) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	180	MET
1	A	192	LEU
1	A	210	LEU
1	A	257	LEU
1	A	271	ILE
1	A	273	TRP
1	A	342	VAL
1	A	396	LEU
1	A	463	SER
1	A	465	GLN
1	A	471	LEU
1	B	180	MET
1	B	192	LEU
1	B	210	LEU
1	B	257	LEU
1	B	273	TRP
1	B	342	VAL
1	B	396	LEU
1	B	463	SER
1	B	471	LEU
1	C	180	MET
1	C	192	LEU
1	C	210	LEU
1	C	257	LEU

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Mol	Chain	Res	Type
1	C	273	TRP
1	C	342	VAL
1	C	396	LEU
1	C	402	ILE
1	C	463	SER
1	C	471	LEU
1	D	180	MET
1	D	192	LEU
1	D	210	LEU
1	D	257	LEU
1	D	273	TRP
1	D	342	VAL
1	D	396	LEU
1	D	463	SER
1	D	471	LEU
1	D	507	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	571	ASN
1	B	571	ASN
1	C	571	ASN
1	D	571	ASN

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 monosaccharides in this entry.

5.6 Ligand geometry

Of 7 ligands modelled in this entry, 3 are monoatomic - leaving 4 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	PCG	B	801	-	22,26,26	2.31	5 (22%)	25,41,41	1.82	6 (24%)
2	PCG	D	801	-	22,26,26	2.31	5 (22%)	25,41,41	1.81	6 (24%)
2	PCG	C	801	-	22,26,26	2.31	5 (22%)	25,41,41	1.81	6 (24%)
2	PCG	A	801	-	22,26,26	2.31	5 (22%)	25,41,41	1.85	6 (24%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PCG	B	801	-	-	0/0/31/31	0/4/4/4
2	PCG	D	801	-	-	0/0/31/31	0/4/4/4
2	PCG	C	801	-	-	0/0/31/31	0/4/4/4
2	PCG	A	801	-	-	0/0/31/31	0/4/4/4

All (20) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	801	PCG	PA-O5'	6.26	1.64	1.57
2	B	801	PCG	PA-O5'	6.22	1.64	1.57
2	C	801	PCG	PA-O5'	6.21	1.64	1.57
2	D	801	PCG	PA-O5'	6.19	1.64	1.57
2	C	801	PCG	O4'-C1'	5.21	1.48	1.41
2	B	801	PCG	O4'-C1'	5.21	1.48	1.41
2	A	801	PCG	O4'-C1'	5.21	1.48	1.41
2	D	801	PCG	O4'-C1'	5.14	1.48	1.41
2	C	801	PCG	PA-O3'	3.98	1.64	1.57
2	D	801	PCG	PA-O3'	3.96	1.64	1.57
2	B	801	PCG	PA-O3'	3.91	1.64	1.57

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	801	PCG	PA-O3'	3.88	1.64	1.57
2	D	801	PCG	C5-C6	-3.84	1.39	1.47
2	A	801	PCG	C5-C6	-3.84	1.39	1.47
2	B	801	PCG	C5-C6	-3.83	1.39	1.47
2	C	801	PCG	C5-C6	-3.82	1.39	1.47
2	D	801	PCG	C6-N1	2.10	1.41	1.37
2	A	801	PCG	C6-N1	2.06	1.40	1.37
2	B	801	PCG	C6-N1	2.04	1.40	1.37
2	C	801	PCG	C6-N1	2.02	1.40	1.37

All (24) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	801	PCG	O3'-C3'-C4'	-4.13	107.59	110.71
2	B	801	PCG	O3'-C3'-C4'	-4.00	107.69	110.71
2	D	801	PCG	O3'-C3'-C4'	-3.96	107.72	110.71
2	C	801	PCG	O3'-C3'-C4'	-3.93	107.75	110.71
2	A	801	PCG	C2-N1-C6	-3.47	118.71	125.10
2	B	801	PCG	C2-N1-C6	-3.44	118.77	125.10
2	D	801	PCG	C2-N1-C6	-3.43	118.77	125.10
2	C	801	PCG	C2-N1-C6	-3.43	118.78	125.10
2	A	801	PCG	O1A-PA-O2A	3.07	118.34	108.73
2	C	801	PCG	O1A-PA-O2A	3.07	118.33	108.73
2	D	801	PCG	O1A-PA-O2A	3.06	118.33	108.73
2	B	801	PCG	O1A-PA-O2A	3.05	118.28	108.73
2	A	801	PCG	O3'-C3'-C2'	-3.04	112.62	115.61
2	C	801	PCG	C8-N7-C5	3.04	108.78	102.99
2	B	801	PCG	O3'-C3'-C2'	-3.01	112.66	115.61
2	B	801	PCG	C8-N7-C5	2.99	108.69	102.99
2	A	801	PCG	C8-N7-C5	2.98	108.66	102.99
2	A	801	PCG	C5-C6-N1	2.98	119.21	113.95
2	D	801	PCG	C8-N7-C5	2.95	108.62	102.99
2	B	801	PCG	C5-C6-N1	2.94	119.15	113.95
2	C	801	PCG	C5-C6-N1	2.93	119.13	113.95
2	D	801	PCG	C5-C6-N1	2.93	119.12	113.95
2	D	801	PCG	O3'-C3'-C2'	-2.86	112.80	115.61
2	C	801	PCG	O3'-C3'-C2'	-2.85	112.81	115.61

There are no chirality outliers.

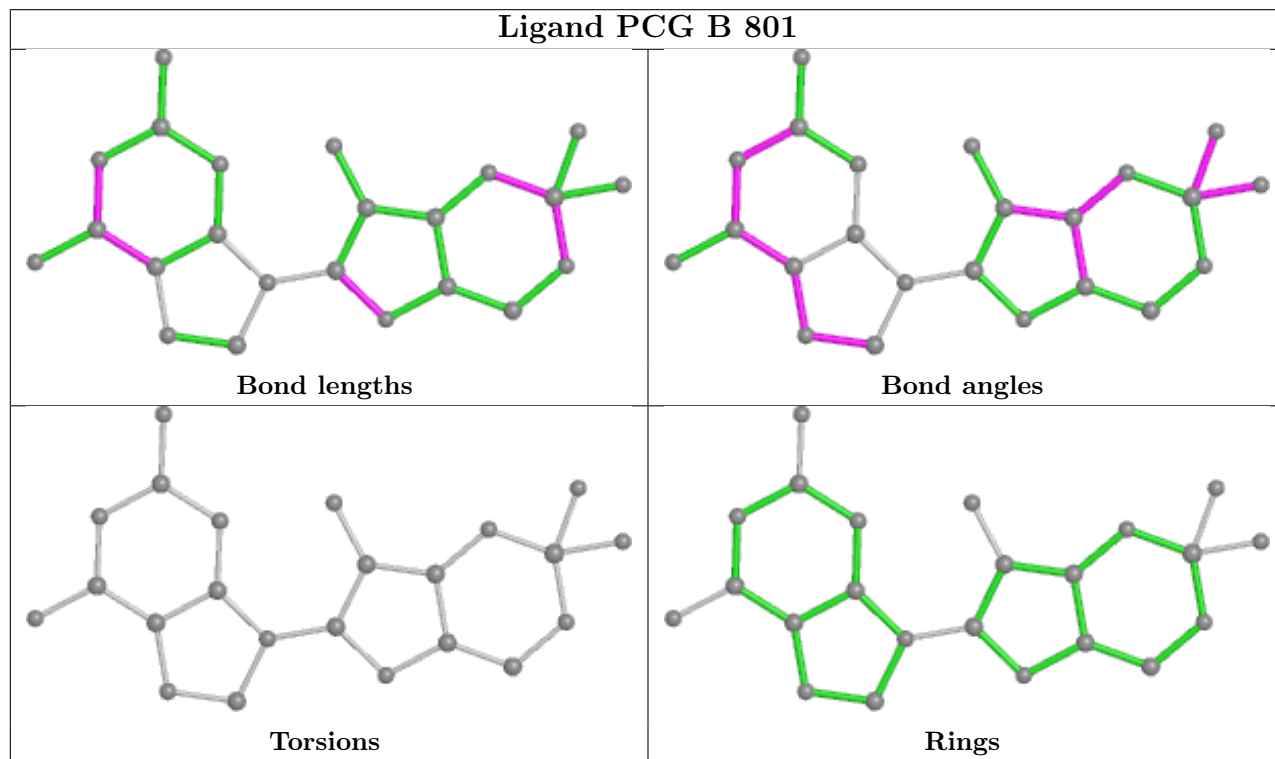
There are no torsion outliers.

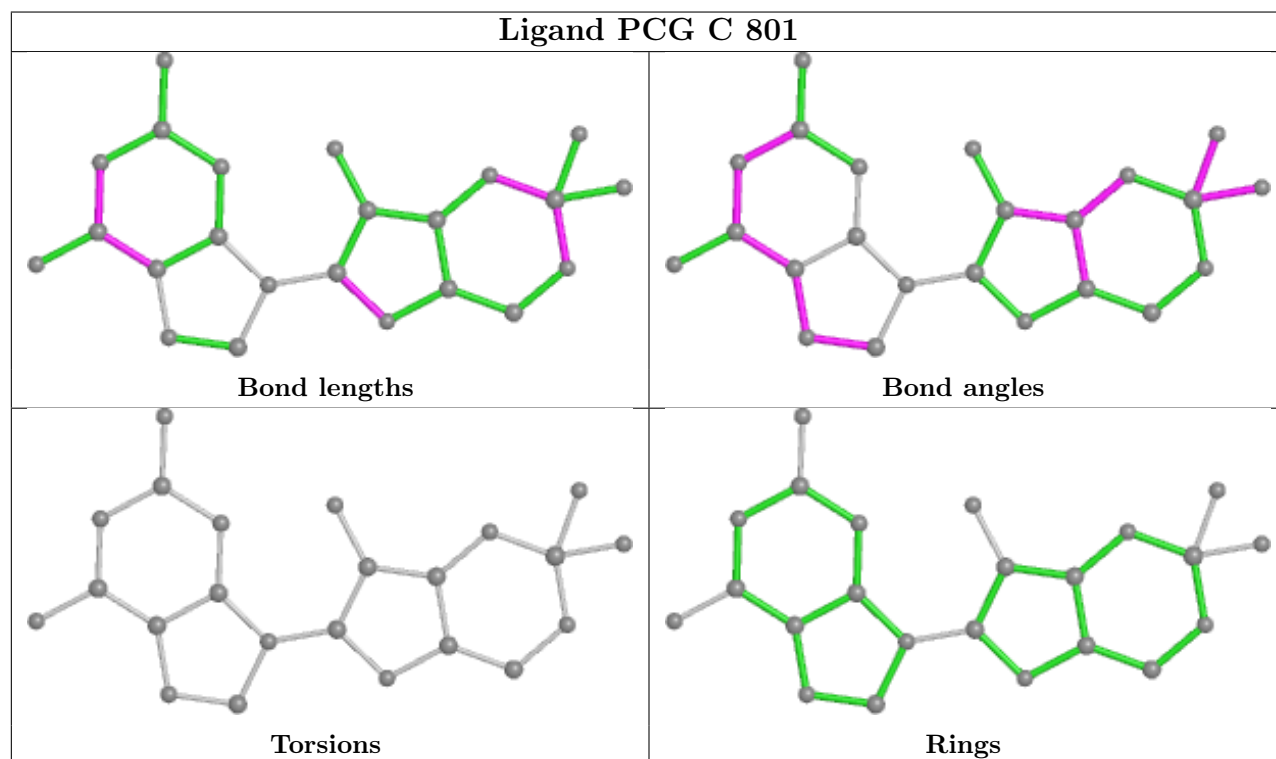
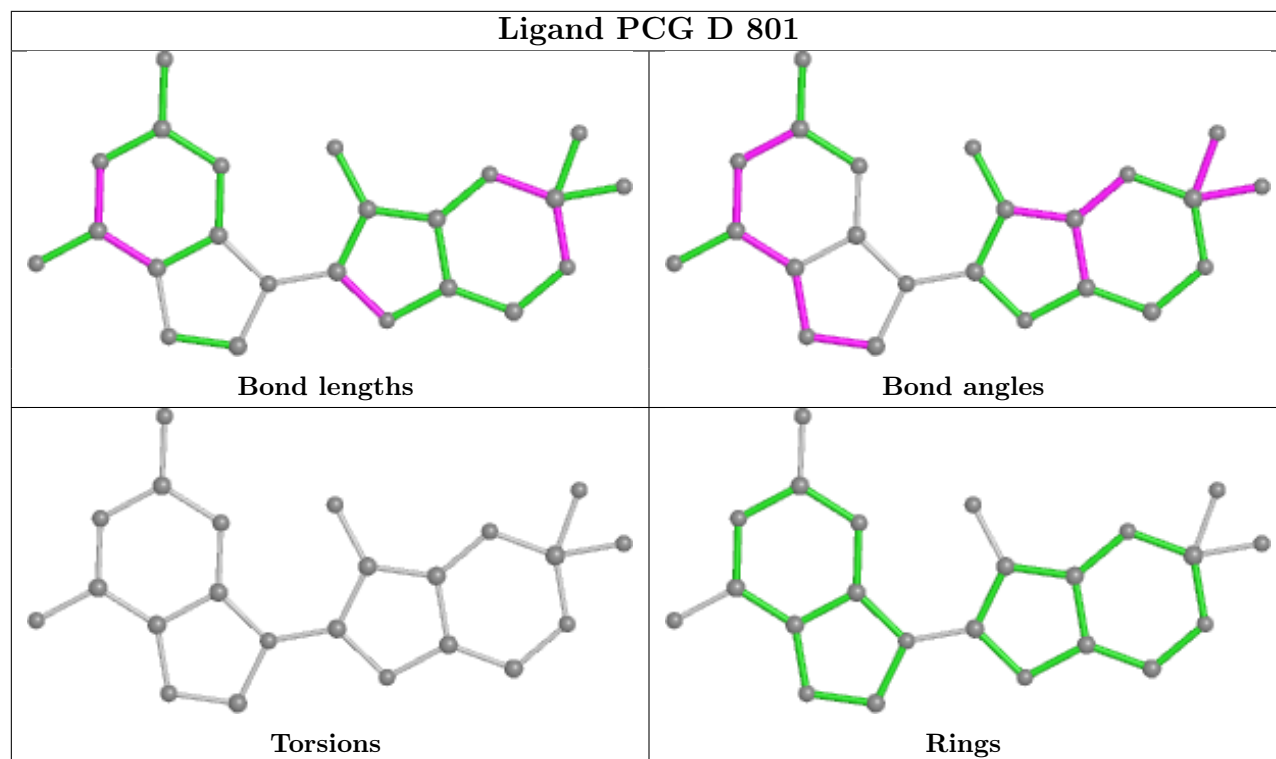
There are no ring outliers.

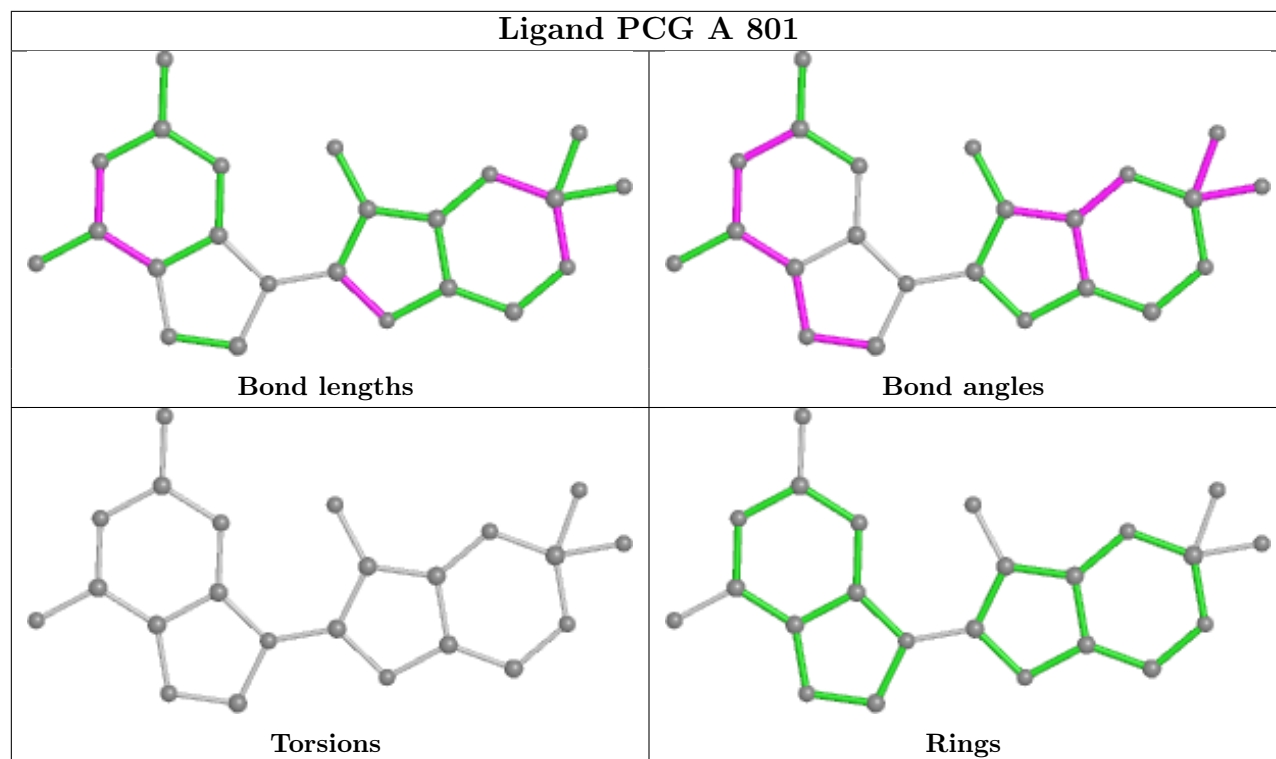
4 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	801	PCG	2	0
2	D	801	PCG	2	0
2	C	801	PCG	2	0
2	A	801	PCG	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.







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.

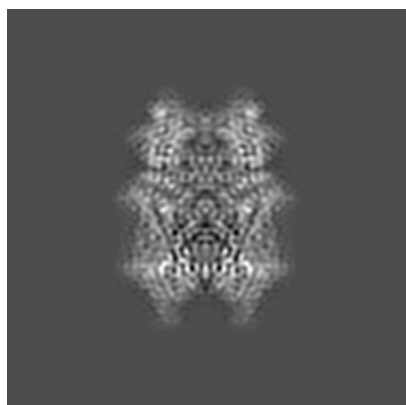
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-6656. These allow visual inspection of the internal detail of the map and identification of artifacts.

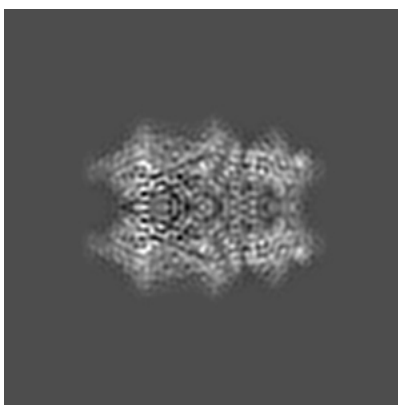
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

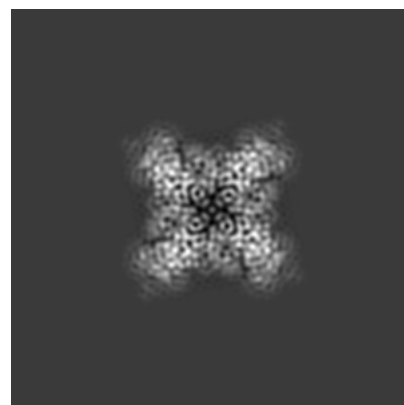
6.1.1 Primary map



X



Y



Z

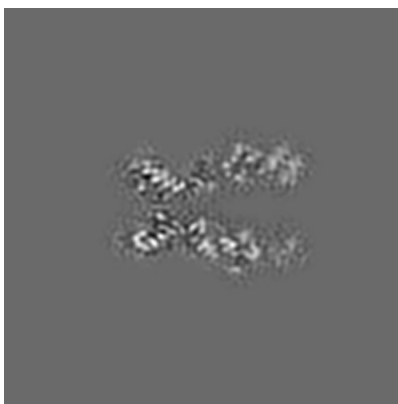
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

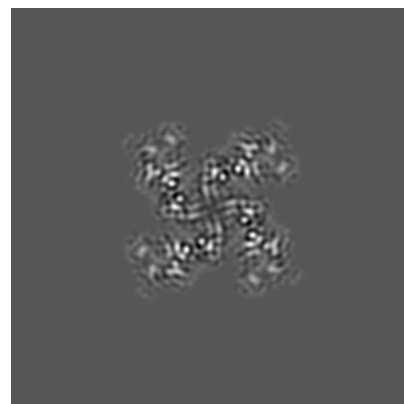
6.2.1 Primary map



X Index: 80



Y Index: 80



Z Index: 80

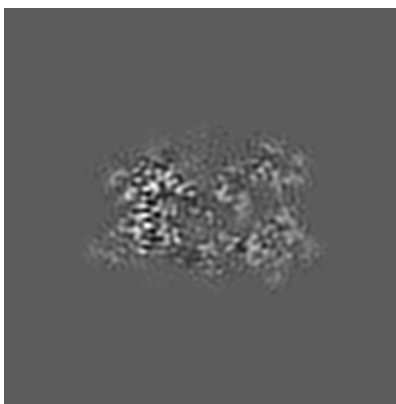
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [\(i\)](#)

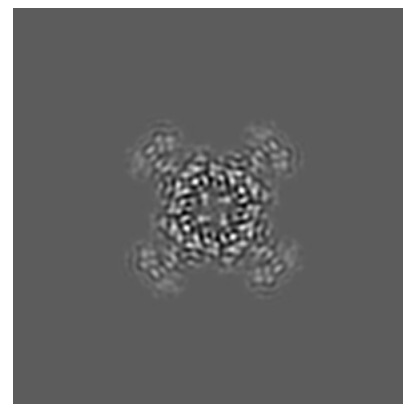
6.3.1 Primary map



X Index: 69



Y Index: 90

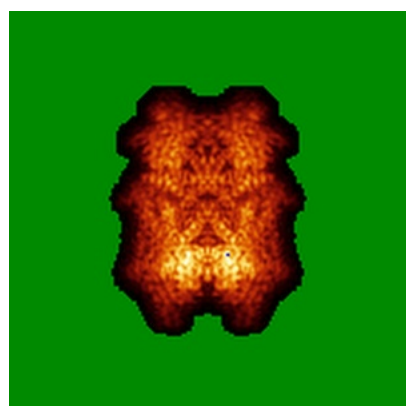


Z Index: 57

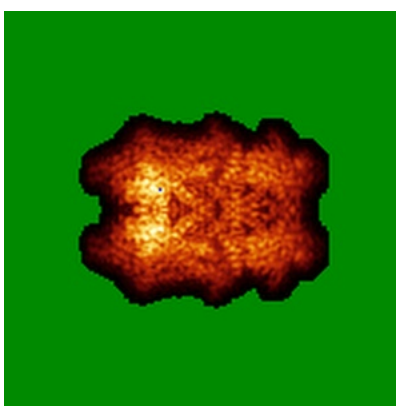
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [\(i\)](#)

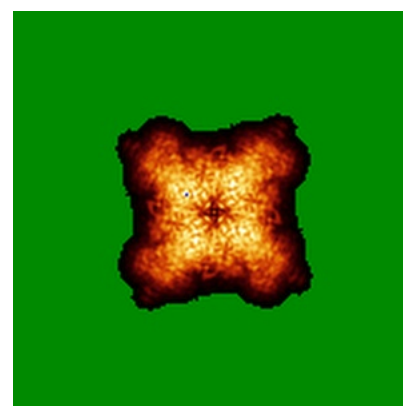
6.4.1 Primary map



X



Y

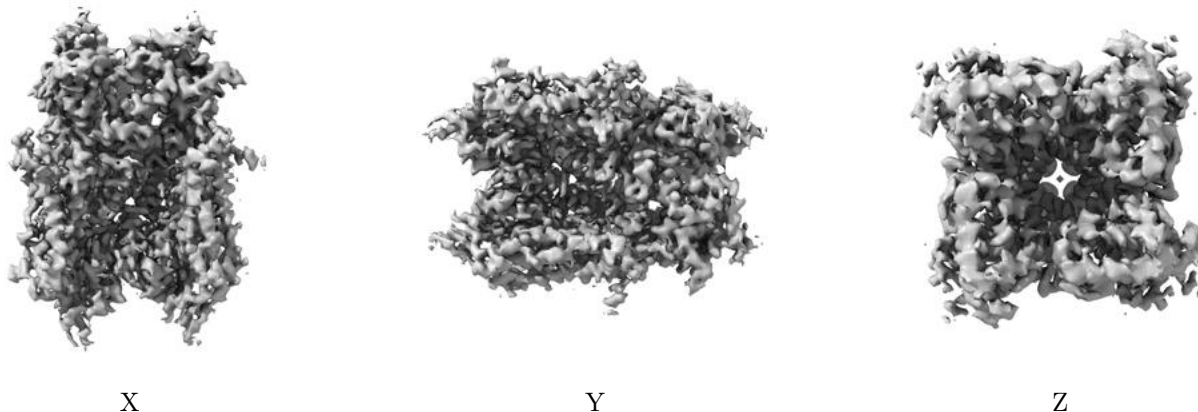


Z

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



The images above show the 3D surface view of the map at the recommended contour level 0.0426. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

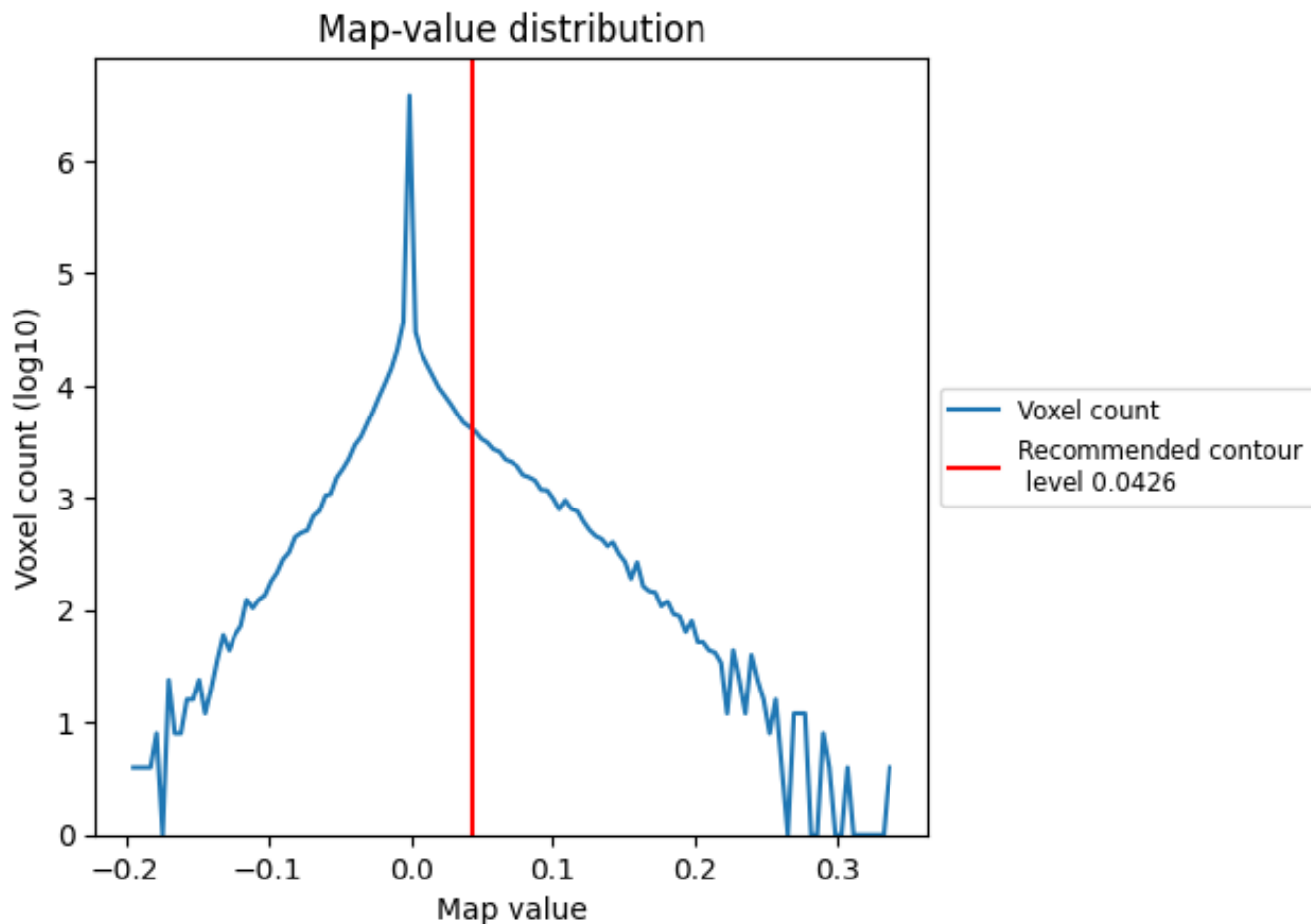
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

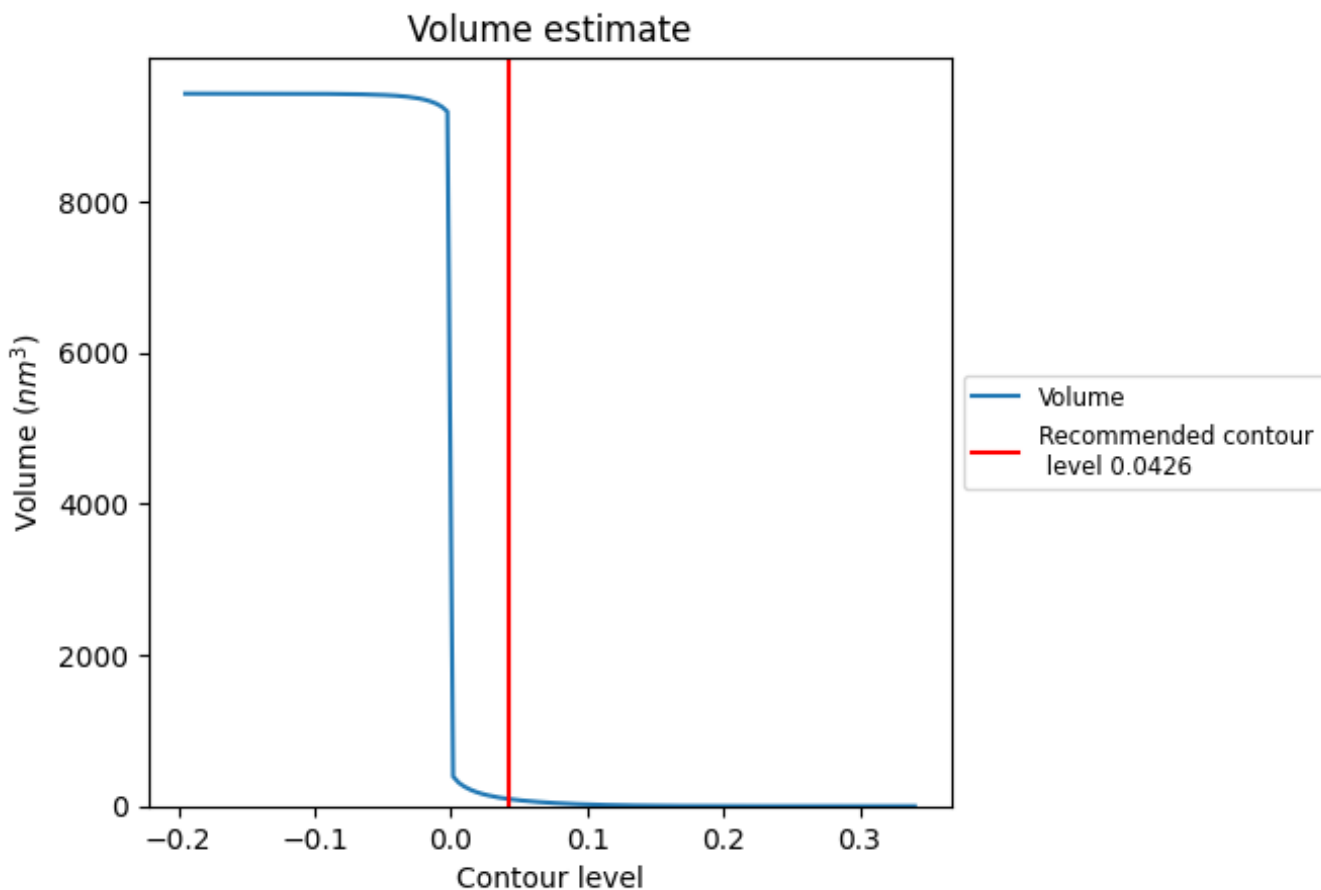
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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.

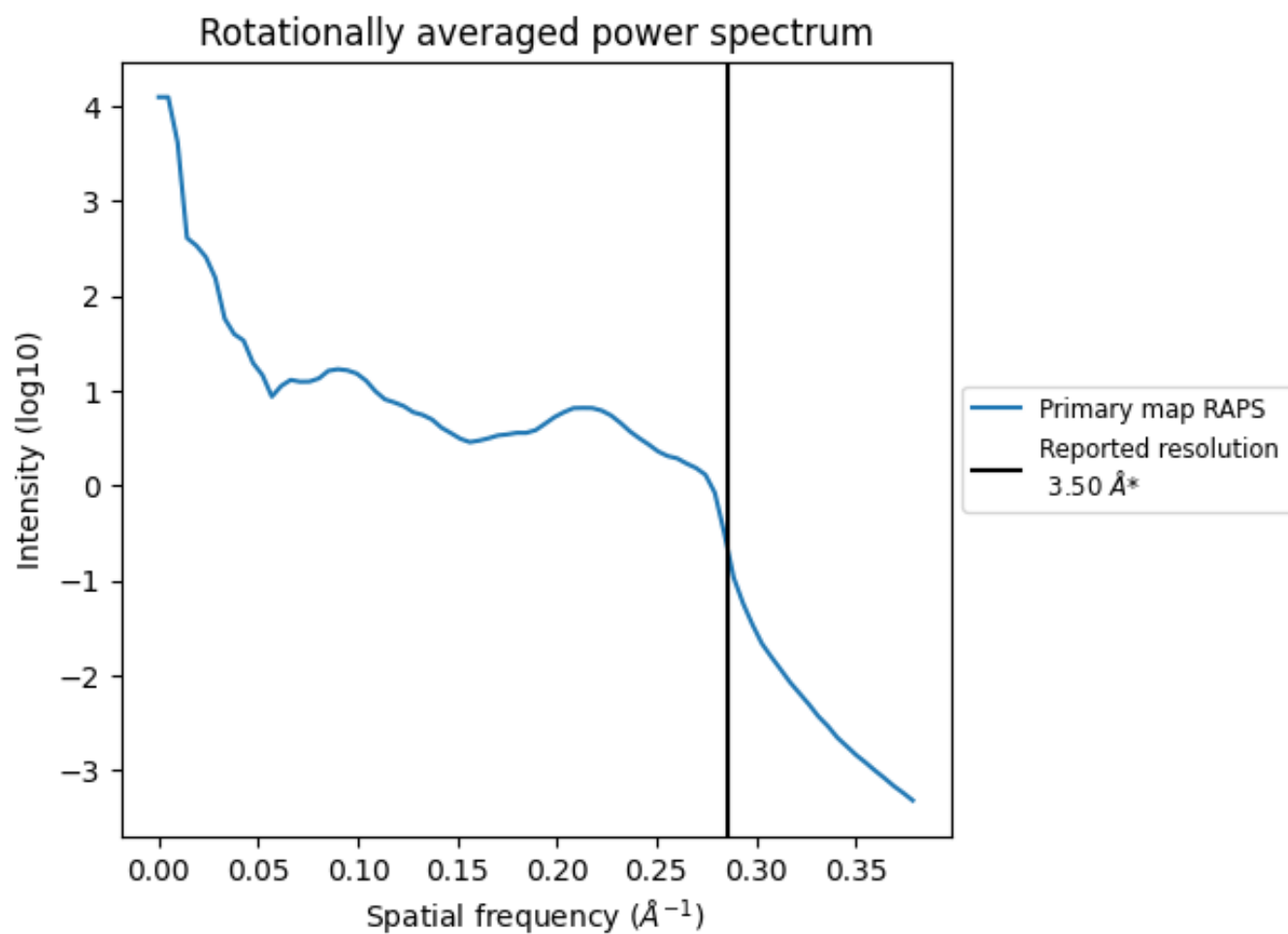
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 95 nm^3 ; this corresponds to an approximate mass of 86 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 0.286 \AA^{-1}

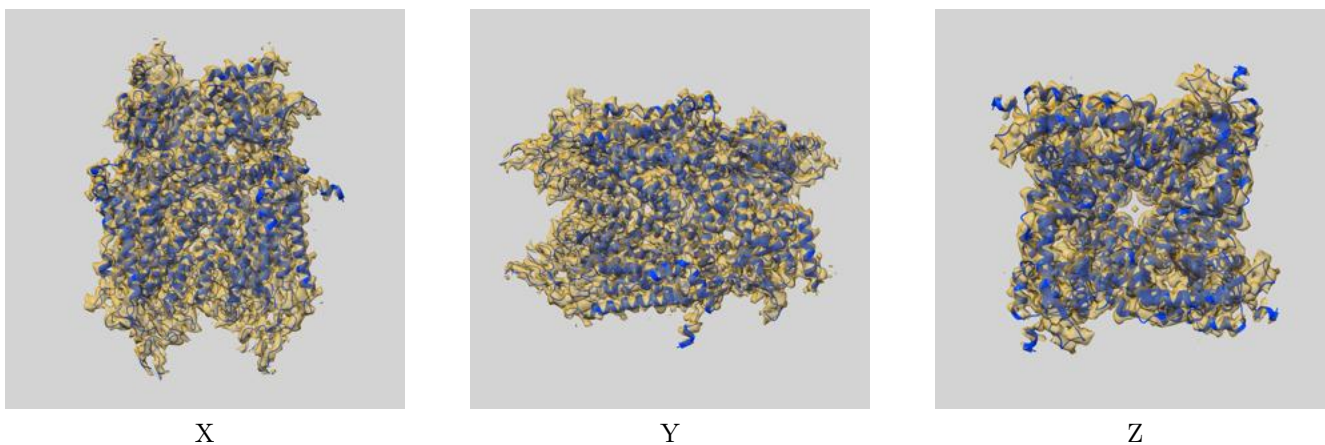
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

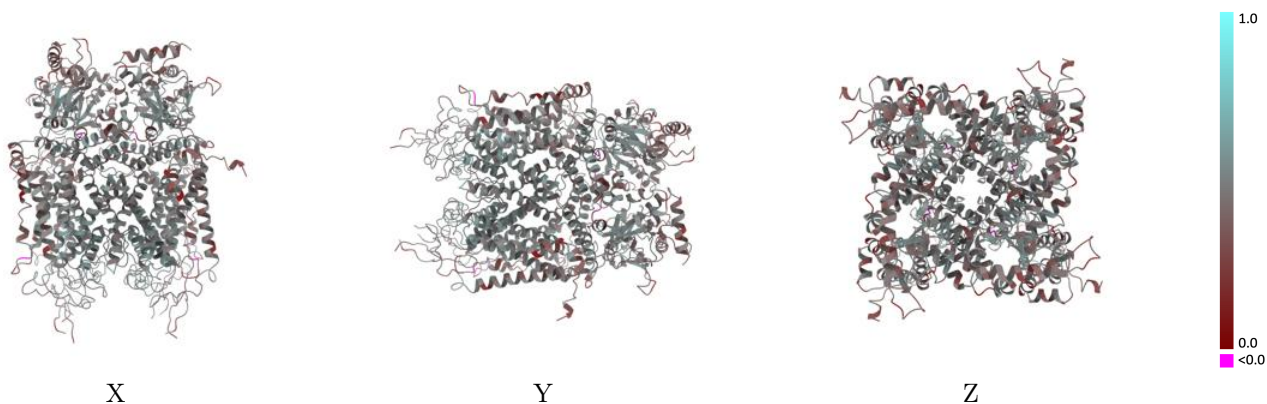
This section contains information regarding the fit between EMDB map EMD-6656 and PDB model 5H3O. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay [i](#)



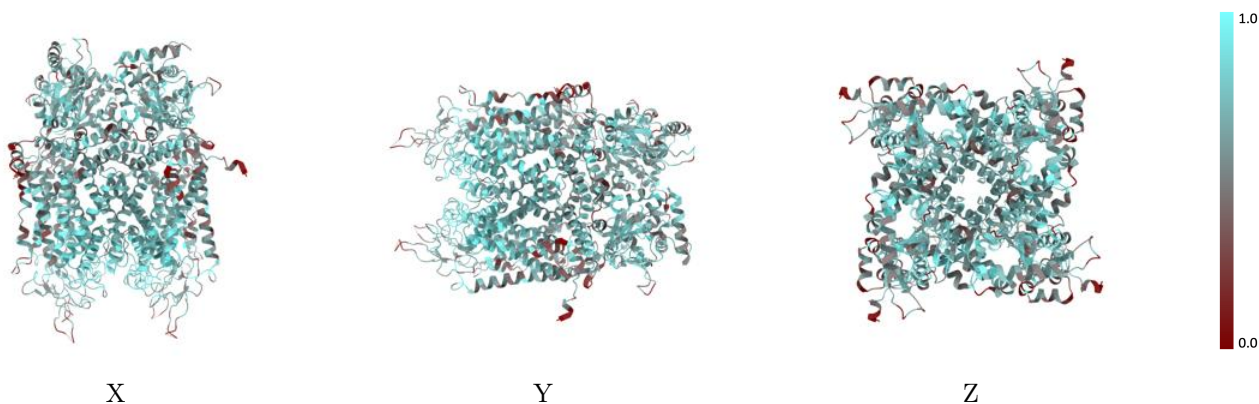
The images above show the 3D surface view of the map at the recommended contour level 0.0426 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



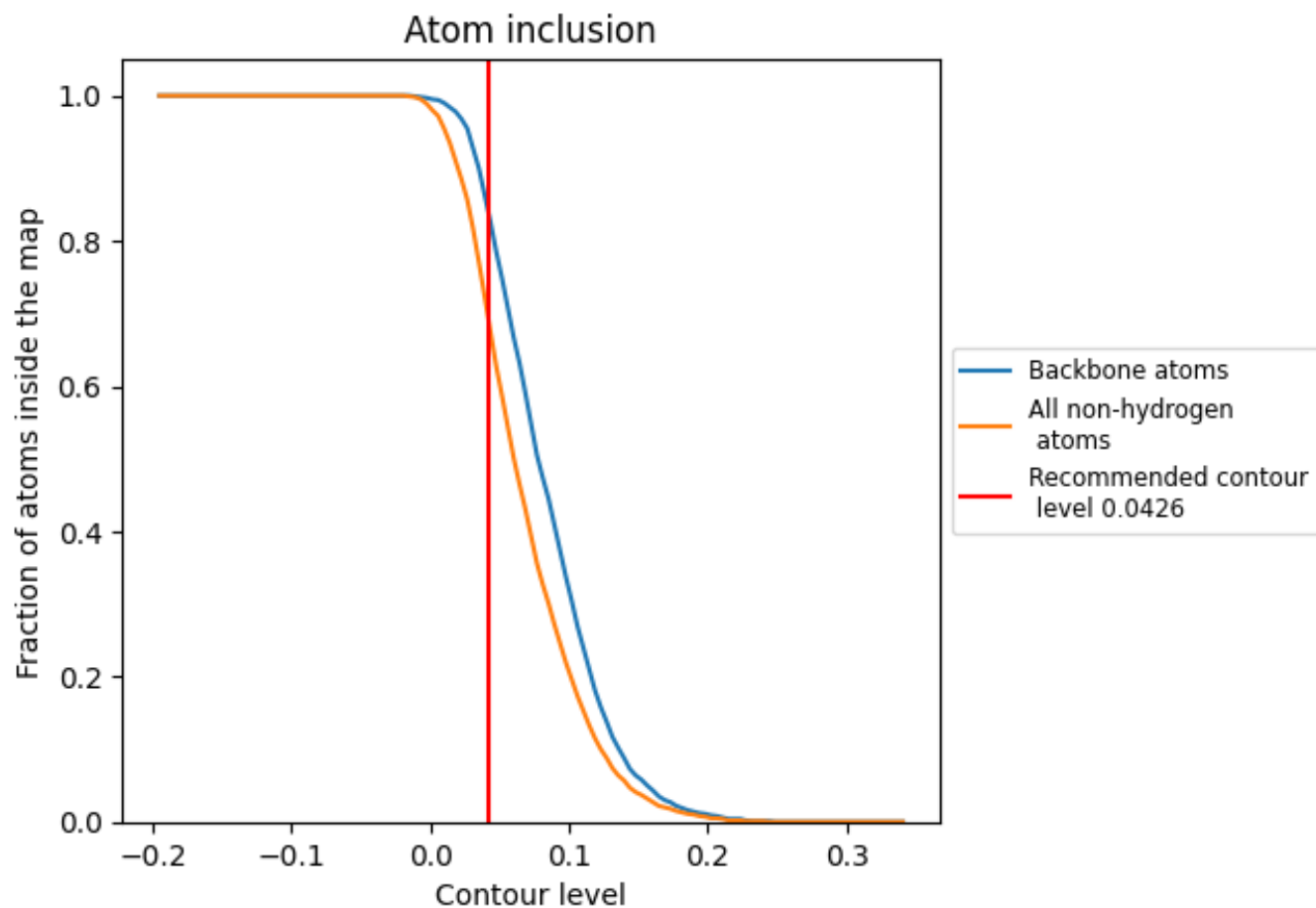
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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](#)



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 (0.0426).








9.4 Atom inclusion [i](#)



At the recommended contour level, 83% of all backbone atoms, 68% 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 (0.0426) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6840	 0.4560
A	 0.6860	 0.4570
B	 0.6840	 0.4560
C	 0.6820	 0.4560
D	 0.6820	 0.4560

