



Full wwPDB EM Validation Report ⓘ

Nov 27, 2022 – 05:42 PM EST

PDB ID : 7KHC
EMDB ID : EMD-21879
Title : Escherichia coli RNA polymerase and rrnBP1 promoter closed complex
Authors : Shin, Y.; Qayyum, M.Z.; Murakami, K.S.
Deposited on : 2020-10-20
Resolution : 4.14 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:

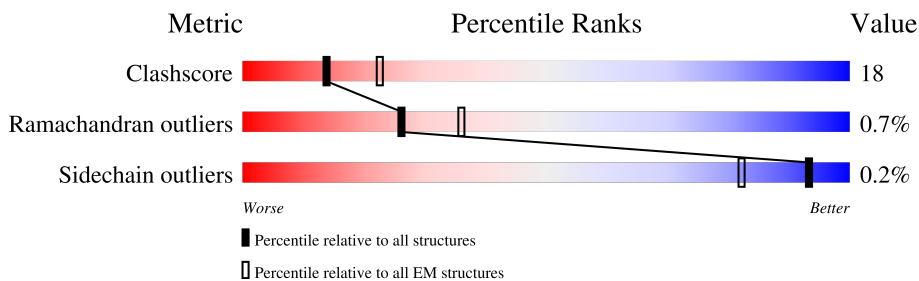
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

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 4.14 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.




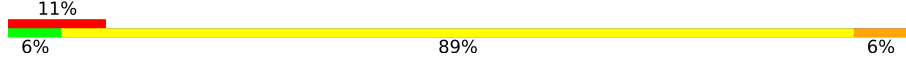
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	329	
1	B	329	
2	C	1342	
3	D	1407	
4	E	91	
5	F	613	
6	X	63	
7	Y	63	

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Mol	Chain	Length	Quality of chain
8	O	18	 39% 56% 6%
9	P	18	 11% 6% 89% 6%

2 Entry composition [i](#)

There are 13 unique types of molecules in this entry. The entry contains 33509 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called DNA-directed RNA polymerase subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	309	Total	C	N	O	S	0	0
			2407	1504	424	472	7		
1	B	316	Total	C	N	O	S	0	0
			2472	1545	436	483	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	C	1340	Total	C	N	O	S	0	0
			10570	6631	1841	2055	43		

- Molecule 3 is a protein called DNA-directed RNA polymerase subunit beta'.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	D	1342	Total	C	N	O	S	0	0
			10396	6530	1852	1965	49		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	E	76	Total	C	N	O	S	0	0
			605	368	115	121	1		

- Molecule 5 is a protein called RNA polymerase sigma factor RpoD.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	F	447	Total	C	N	O	S	0	0
			3640	2283	648	689	20		

- Molecule 6 is DNA/RNA hybrid called DNA/RNA (63-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	X	63	1278	613	224	378	63	0	0

- Molecule 7 is a DNA chain called DNA (63-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
7	Y	63	1305	622	242	378	63	0	0

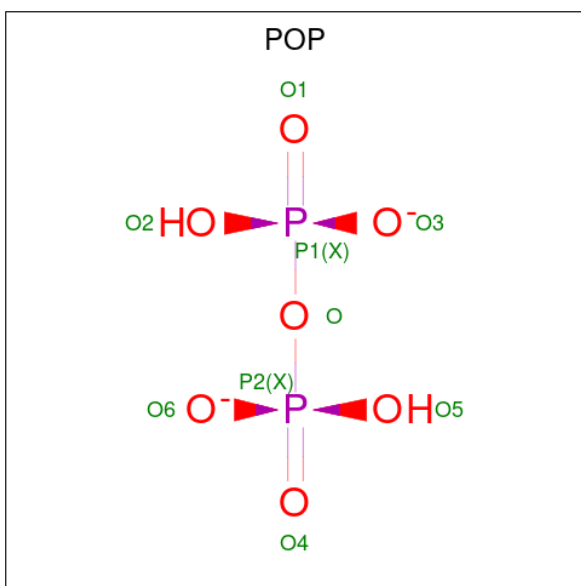
- Molecule 8 is a DNA chain called DNA (18 MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
8	O	18	370	175	71	106	18	0	0

- Molecule 9 is a DNA chain called DNA (18 MER).

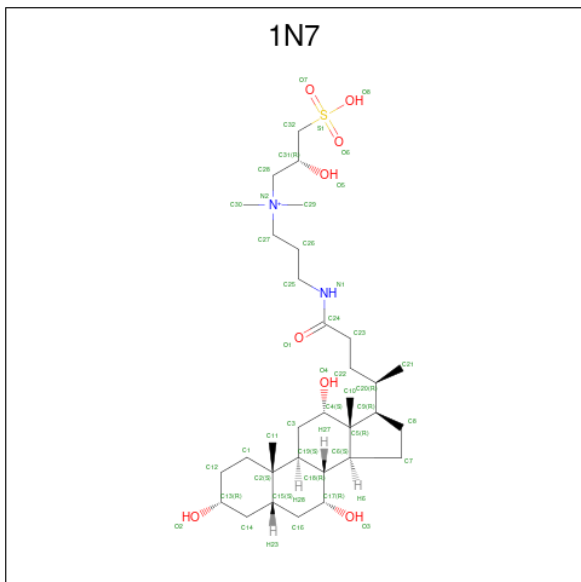
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
9	P	18	368	175	65	110	18	0	0

- Molecule 10 is PYROPHOSPHATE 2- (three-letter code: POP) (formula: $H_2O_7P_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
			Total	O	P	
10	C	1	9	7	2	0

- Molecule 11 is CHAPSO (three-letter code: 1N7) (formula: $C_{32}H_{59}N_2O_8S$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
11	C	1	86	64	4	16	2	0
11	C	1	86	64	4	16	2	0

- Molecule 12 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
12	D	1	1	1	0

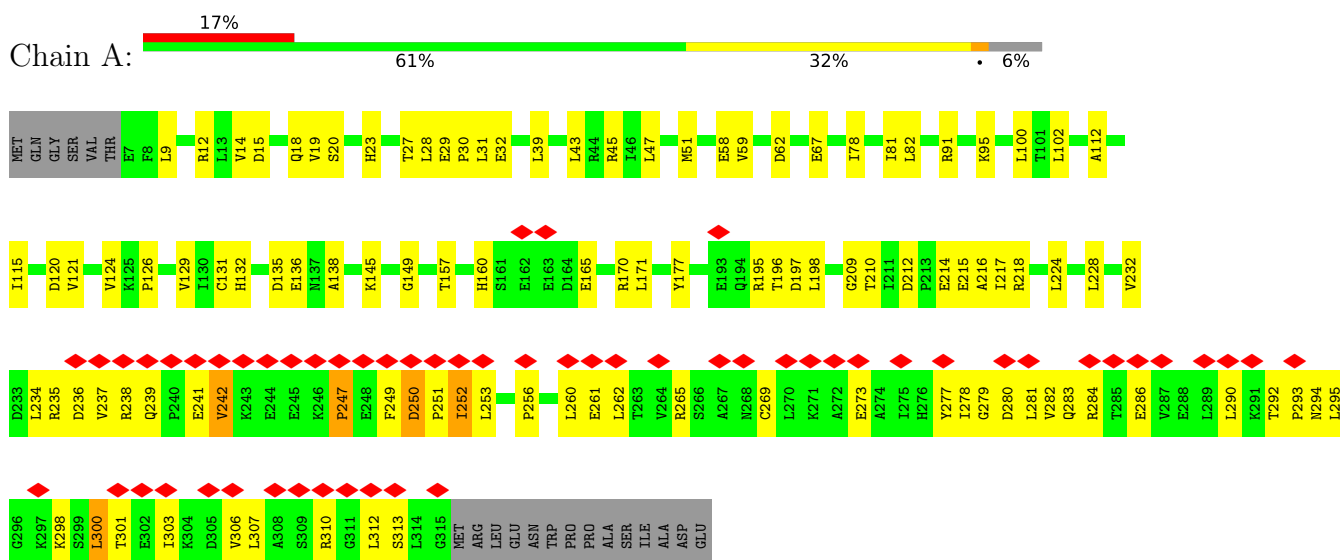
- Molecule 13 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
13	D	2	2	2	0

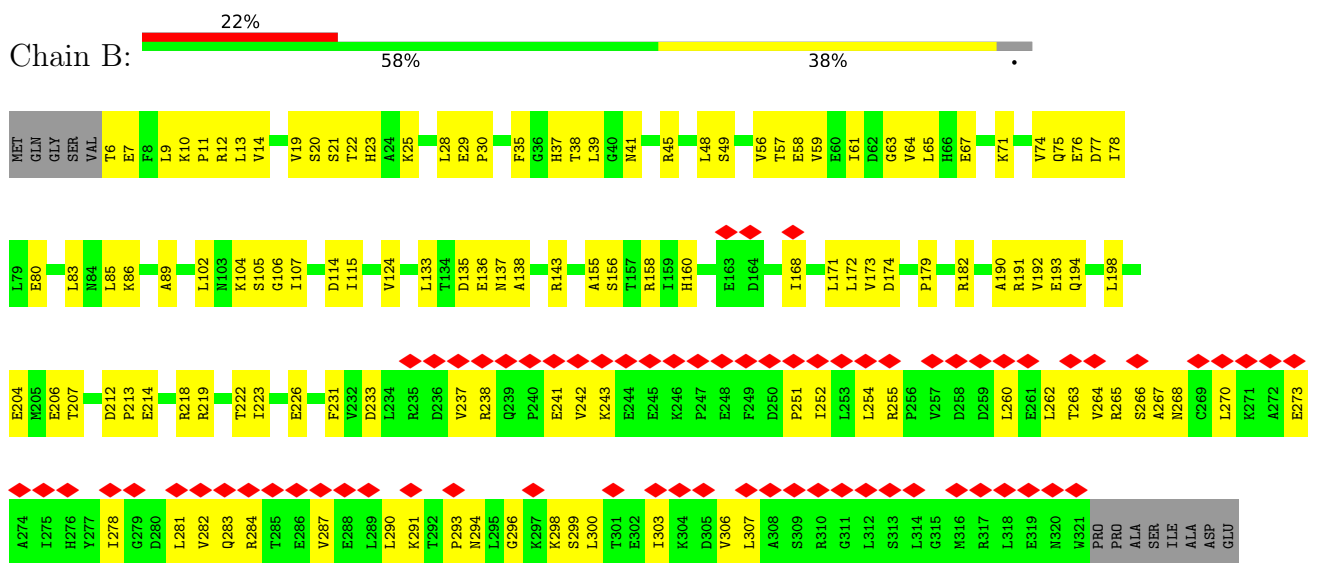
3 Residue-property plots

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

- Molecule 1: DNA-directed RNA polymerase subunit alpha

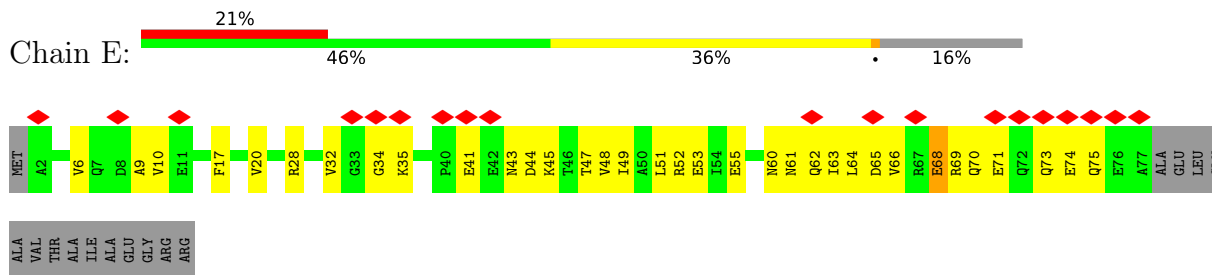


- Molecule 1: DNA-directed RNA polymerase subunit alpha

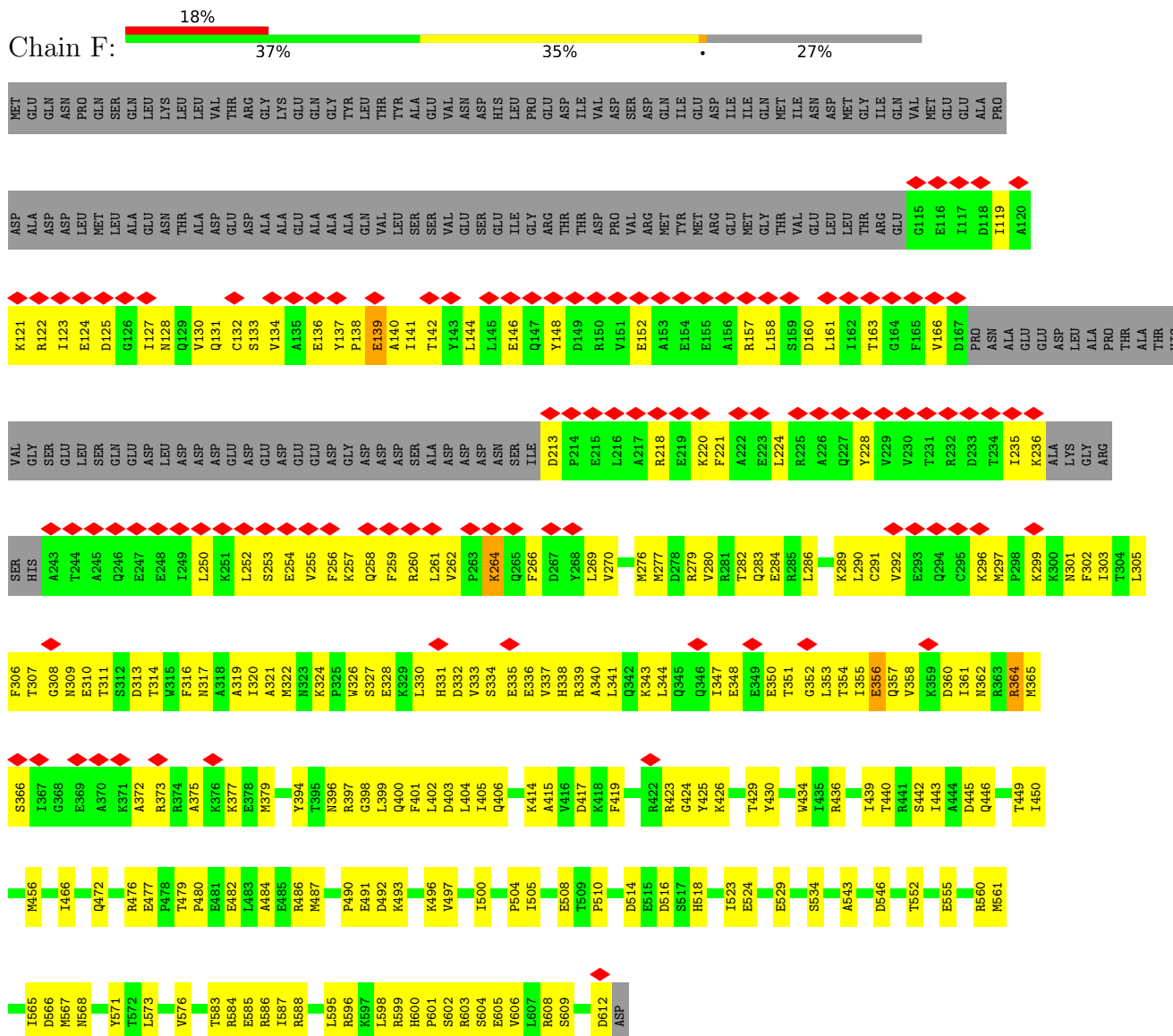


- Molecule 2: DNA-directed RNA polymerase subunit beta

• Molecule 4: DNA-directed RNA polymerase subunit omega

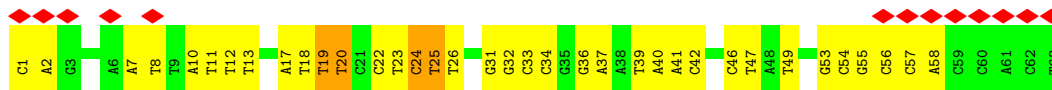


• Molecule 5: RNA polymerase sigma factor RpoD

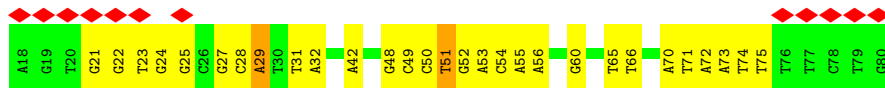


• Molecule 6: DNA/RNA (63-MER)

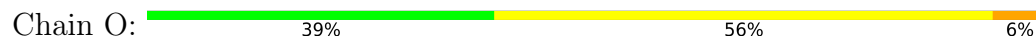




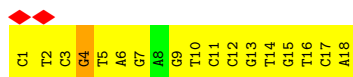
- Molecule 7: DNA (63-MER)



- Molecule 8: DNA (18 MER)



- Molecule 9: DNA (18 MER)



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	67187	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	45	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.075	Depositor
Minimum map value	-0.036	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.013	Depositor
Map size (\AA)	388.80002, 388.80002, 388.80002	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.08, 1.08, 1.08	Depositor

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: MG, POP, ZN, 1N7

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	0.29	0/2437	0.62	1/3301 (0.0%)
1	B	0.28	0/2504	0.63	0/3392
2	C	0.34	1/10739 (0.0%)	0.60	4/14489 (0.0%)
3	D	0.31	0/10553	0.60	1/14253 (0.0%)
4	E	0.37	1/607 (0.2%)	0.68	0/817
5	F	0.29	0/3689	0.63	0/4958
6	X	0.75	0/1430	1.17	7/2201 (0.3%)
7	Y	0.76	0/1466	1.14	3/2264 (0.1%)
8	O	0.81	0/415	1.14	1/638 (0.2%)
9	P	0.84	0/411	1.19	1/632 (0.2%)
All	All	0.39	2/34251 (0.0%)	0.70	18/46945 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	C	0	3
3	D	0	1
All	All	0	4

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	489	PRO	CG-CD	-7.57	1.25	1.50
4	E	68	GLU	CG-CD	-5.59	1.43	1.51

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	489	PRO	N-CD-CG	-9.01	89.69	103.20
3	D	1189	MET	CB-CG-SD	7.67	135.41	112.40
6	X	24	DC	O4'-C1'-N1	7.64	113.35	108.00
7	Y	51	DT	O4'-C1'-N1	6.71	112.69	108.00
2	C	489	PRO	CA-N-CD	-6.48	102.43	111.50
2	C	284	LEU	CA-CB-CG	6.24	129.64	115.30
2	C	284	LEU	CB-CG-CD1	-6.24	100.40	111.00
6	X	26	DT	O4'-C1'-N1	6.06	112.24	108.00
6	X	25	DT	O4'-C1'-N1	5.99	112.19	108.00
8	O	2	DG	O4'-C1'-N9	5.67	111.97	108.00
6	X	23	DT	O4'-C1'-N1	5.67	111.97	108.00
6	X	20	DT	O4'-C1'-N1	5.42	111.79	108.00
7	Y	29	DA	O4'-C1'-N9	5.30	111.71	108.00
6	X	49	DT	O4'-C1'-N1	5.24	111.67	108.00
9	P	4	DG	O4'-C1'-N9	5.21	111.64	108.00
7	Y	31	DT	O4'-C1'-N1	5.16	111.61	108.00
6	X	19	DT	O4'-C1'-N1	5.07	111.55	108.00
1	A	300	LEU	CB-CG-CD2	-5.00	102.50	111.00

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	C	198	ILE	Peptide
2	C	236	LYS	Peptide
2	C	595	THR	Peptide
3	D	1184	ASP	Peptide

5.2 Too-close contacts [\(i\)](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2407	0	2463	83	0
1	B	2472	0	2525	98	0
2	C	10570	0	10582	359	0
3	D	10396	0	10583	368	0
4	E	605	0	612	29	0
5	F	3640	0	3705	209	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	X	1278	0	713	30	0
7	Y	1305	0	713	31	0
8	O	370	0	202	10	0
9	P	368	0	204	21	0
10	C	9	0	0	1	0
11	C	86	0	116	8	0
12	D	1	0	0	0	0
13	D	2	0	0	0	0
All	All	33509	0	32418	1160	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 18.

All (1160) 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)
2:C:1142:ARG:NH2	2:C:1165:SER:O	1.87	1.08
3:D:1344:LEU:O	3:D:1346:GLY:N	1.97	0.97
3:D:210:SER:OG	9:P:7:DG:OP1	1.83	0.97
2:C:905:ILE:O	5:F:599:ARG:NH1	1.99	0.95
1:B:296:GLY:N	6:X:11:DT:OP1	2.00	0.93
3:D:528:THR:N	3:D:532:GLU:OE2	2.04	0.90
5:F:348:GLU:O	5:F:352:GLY:N	2.06	0.88
3:D:218:THR:OG1	3:D:222:LYS:NZ	2.07	0.88
3:D:91:GLU:OE2	3:D:101:ARG:NH2	2.09	0.85
1:A:236:ASP:OD2	1:A:238:ARG:NH1	2.11	0.84
3:D:123:ARG:NH2	3:D:1334:GLU:OE1	2.11	0.84
3:D:1368:ASP:OD1	3:D:1371:ARG:NH2	2.10	0.83
1:A:280:ASP:OD2	1:A:284:ARG:NH1	2.11	0.83
2:C:1246:ARG:NH1	3:D:348:ASP:OD1	2.11	0.83
1:B:214:GLU:OE2	1:B:218:ARG:NH2	2.12	0.82
3:D:144:TYR:OH	3:D:293:ARG:NH2	2.12	0.82
5:F:355:ILE:O	5:F:358:VAL:N	2.11	0.82
2:C:813:GLU:OE2	3:D:504:GLN:NE2	2.12	0.82
3:D:337:ARG:O	3:D:340:GLN:N	2.12	0.82
1:A:294:ASN:ND2	7:Y:71:DT:O4'	2.13	0.82
2:C:187:GLU:OE2	2:C:197:ARG:NE	2.12	0.81
2:C:785:ASP:OD1	2:C:791:LEU:N	2.13	0.81
2:C:1143:GLU:OE2	2:C:1147:ARG:NH1	2.13	0.81
2:C:1329:GLU:O	2:C:1332:SER:OG	1.99	0.80
5:F:283:GLN:NE2	5:F:336:GLU:OE1	2.17	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:1072:ASN:ND2	2:C:1111:GLN:OE1	2.16	0.78
3:D:278:ARG:NH2	5:F:403:ASP:OD1	2.17	0.77
1:A:218:ARG:NH1	1:B:231:PHE:O	2.16	0.77
2:C:678:ARG:NH1	2:C:681:MET:SD	2.57	0.77
5:F:132:CYS:O	5:F:253:SER:OG	2.02	0.77
4:E:69:ARG:O	4:E:73:GLN:NE2	2.17	0.76
2:C:1160:ASP:HB2	2:C:1161:LEU:HA	1.66	0.76
3:D:892:PHE:N	3:D:1281:GLU:OE2	2.18	0.76
3:D:1029:THR:OG1	3:D:1119:ASP:OD1	2.03	0.76
1:A:18:GLN:NE2	1:A:20:SER:O	2.18	0.76
1:A:95:LYS:NZ	1:A:120:ASP:OD2	2.17	0.76
5:F:124:GLU:OE1	5:F:128:ASN:ND2	2.19	0.75
3:D:482:ALA:O	3:D:488:ASN:ND2	2.19	0.75
2:C:226:GLU:OE1	2:C:245:ARG:NH1	2.19	0.75
5:F:163:THR:OG1	5:F:260:ARG:NE	2.19	0.75
2:C:308:GLU:N	2:C:308:GLU:OE1	2.20	0.74
2:C:583:GLU:OE2	11:C:1403:1N7:N1	2.20	0.74
2:C:201:ARG:NH1	2:C:370:MET:SD	2.61	0.74
3:D:814:CYS:SG	3:D:883:ARG:NH2	2.61	0.73
2:C:233:ARG:NH1	2:C:238:GLN:O	2.18	0.73
3:D:883:ARG:NH2	3:D:895:CYS:SG	2.61	0.73
2:C:60:GLN:NE2	2:C:67:GLU:OE1	2.21	0.73
2:C:197:ARG:NH1	2:C:201:ARG:O	2.22	0.72
2:C:398:SER:OG	11:C:1403:1N7:O3	2.06	0.72
5:F:303:ILE:O	5:F:307:THR:OG1	2.06	0.72
1:B:182:ARG:NH1	3:D:534:GLU:OE2	2.23	0.72
2:C:119:GLU:HB2	2:C:489:PRO:HD2	1.70	0.72
5:F:586:ARG:NH1	6:X:24:DC:OP2	2.22	0.72
2:C:469:VAL:O	2:C:472:GLU:HG3	1.91	0.71
1:A:58:GLU:OE2	1:A:170:ARG:NH1	2.22	0.71
1:A:157:THR:O	1:A:160:HIS:ND1	2.22	0.71
1:B:212:ASP:OD1	1:B:213:PRO:HD2	1.91	0.71
5:F:606:VAL:O	5:F:609:SER:OG	2.09	0.71
3:D:418:GLU:O	3:D:481:ARG:NH2	2.23	0.71
3:D:1148:ARG:NE	8:O:5:DA:OP1	2.24	0.71
2:C:490:GLN:O	5:F:472:GLN:NE2	2.25	0.70
2:C:20:GLN:N	2:C:20:GLN:OE1	2.25	0.70
2:C:557:ARG:NH2	2:C:611:GLU:OE1	2.25	0.70
5:F:490:PRO:O	5:F:491:GLU:HG2	1.91	0.70
3:D:1072:LYS:O	3:D:1075:ARG:NH1	2.25	0.69
5:F:317:ASN:O	5:F:321:ALA:N	2.25	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:1048:ARG:NH2	3:D:1110:GLU:OE1	2.24	0.69
1:A:51:MET:HE1	1:A:216:ALA:HA	1.75	0.69
2:C:866:ASP:OD2	2:C:944:ARG:NH1	2.26	0.69
1:B:77:ASP:OD1	1:B:78:ILE:N	2.25	0.68
2:C:1070:HIS:NE2	2:C:1114:GLU:OE1	2.25	0.68
1:A:234:LEU:O	1:B:218:ARG:NH2	2.26	0.67
1:A:265:ARG:NH2	1:A:294:ASN:O	2.27	0.67
1:A:14:VAL:HG22	1:A:15:ASP:H	1.60	0.67
3:D:1022:PRO:O	3:D:1126:GLN:NE2	2.27	0.67
5:F:133:SER:HB2	5:F:361:ILE:HG23	1.76	0.67
8:O:1:DT:H2 ^{''}	8:O:2:DG:H5 [']	1.75	0.66
5:F:138:PRO:HG3	5:F:353:LEU:HB2	1.77	0.66
1:B:12:ARG:HG3	1:B:13:LEU:HD12	1.78	0.66
2:C:48:GLY:O	2:C:51:ALA:N	2.27	0.66
3:D:1219:ASP:OD2	3:D:1220:ILE:N	2.30	0.66
5:F:136:GLU:OE2	5:F:364:ARG:NH2	2.29	0.65
5:F:484:ALA:HB2	5:F:491:GLU:HB3	1.78	0.65
2:C:106:GLU:HB3	2:C:109:ALA:HB2	1.78	0.65
2:C:189:ASP:OD1	2:C:193:ASN:N	2.29	0.65
5:F:127:ILE:O	5:F:130:VAL:HG12	1.97	0.65
3:D:132:LEU:O	3:D:136:GLU:OE1	2.15	0.65
3:D:312:ARG:O	3:D:314:ARG:HD3	1.97	0.65
8:O:1:DT:H2 [']	8:O:2:DG:C8	2.32	0.65
2:C:411:ARG:NH2	2:C:427:ASP:OD2	2.30	0.64
3:D:1159:ILE:HD12	3:D:1179:PRO:HG3	1.80	0.64
5:F:354:THR:O	5:F:357:GLN:NE2	2.30	0.64
1:B:105:SER:HA	1:B:138:ALA:O	1.96	0.64
2:C:221:LEU:O	2:C:227:LYS:NZ	2.29	0.64
1:A:131:CYS:SG	1:A:132:HIS:N	2.71	0.64
3:D:1043:GLY:N	3:D:1046:ILE:O	2.20	0.64
1:B:23:HIS:ND1	1:B:206:GLU:OE2	2.31	0.64
4:E:65:ASP:HA	4:E:68:GLU:OE1	1.98	0.64
3:D:133:ARG:HE	3:D:137:ARG:HG3	1.63	0.64
3:D:973:LEU:HB2	3:D:1003:LEU:HB3	1.81	0.63
5:F:439:ILE:O	5:F:443:ILE:HD12	1.98	0.63
2:C:558:VAL:HG12	2:C:573:ASN:OD1	1.98	0.63
3:D:883:ARG:NH2	3:D:898:CYS:SG	2.66	0.63
5:F:121:LYS:O	5:F:124:GLU:HG3	1.98	0.63
2:C:1244:HIS:NE2	2:C:1265:PHE:O	2.31	0.63
5:F:415:ALA:O	5:F:419:PHE:N	2.32	0.63
1:A:135:ASP:HB3	1:A:138:ALA:HB2	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:1318:SER:OG	3:D:1342:ASP:OD2	2.05	0.62
2:C:582:ASN:OD1	2:C:583:GLU:N	2.30	0.62
2:C:987:GLU:OE1	2:C:987:GLU:N	2.24	0.62
2:C:267:ARG:NH1	2:C:268:ARG:O	2.32	0.62
3:D:337:ARG:O	3:D:339:ARG:N	2.32	0.62
5:F:138:PRO:C	5:F:140:ALA:H	2.03	0.62
2:C:231:GLU:HB2	2:C:233:ARG:HH11	1.63	0.62
1:B:192:VAL:O	1:B:194:GLN:N	2.29	0.61
1:B:273:GLU:O	1:B:284:ARG:NH2	2.32	0.61
3:D:424:ASN:OD1	3:D:425:ARG:N	2.33	0.61
5:F:317:ASN:HA	5:F:320:ILE:HG12	1.82	0.61
5:F:584:ARG:HG3	5:F:585:GLU:H	1.66	0.61
2:C:1160:ASP:CB	2:C:1161:LEU:HA	2.31	0.61
3:D:73:GLY:O	3:D:76:LYS:NZ	2.33	0.60
3:D:1179:PRO:HD2	3:D:1184:ASP:HA	1.83	0.60
5:F:355:ILE:O	5:F:357:GLN:N	2.34	0.60
4:E:64:LEU:O	4:E:68:GLU:OE1	2.19	0.60
2:C:211:ARG:NH1	2:C:357:ASN:O	2.35	0.60
2:C:238:GLN:HA	2:C:287:VAL:HG12	1.83	0.60
5:F:565:ILE:O	5:F:566:ASP:OD1	2.19	0.60
3:D:712:GLN:OE1	3:D:713:GLU:O	2.20	0.59
3:D:1205:GLU:N	3:D:1208:ASP:OD2	2.31	0.59
5:F:308:GLY:N	5:F:356:GLU:OE2	2.29	0.59
2:C:549:ASP:OD2	3:D:777:HIS:NE2	2.35	0.59
3:D:1143:ASP:O	3:D:1147:ALA:N	2.35	0.59
1:B:20:SER:O	1:B:22:THR:N	2.35	0.59
3:D:1158:GLU:N	3:D:1158:GLU:OE2	2.33	0.59
3:D:1341:ARG:NH1	3:D:1343:GLU:OE2	2.35	0.59
3:D:174:ASP:OD2	5:F:362:ASN:ND2	2.36	0.59
1:A:256:PRO:HA	1:A:277:TYR:HA	1.83	0.59
1:B:48:LEU:HD11	3:D:535:ARG:HD2	1.85	0.59
2:C:696:ASP:OD1	2:C:697:LYS:N	2.31	0.59
5:F:398:GLY:O	5:F:399:LEU:HD22	2.02	0.58
2:C:233:ARG:CZ	2:C:284:LEU:HD11	2.32	0.58
2:C:660:VAL:HG13	2:C:661:VAL:HG13	1.85	0.58
3:D:694:SER:HB2	3:D:738:ARG:HE	1.68	0.58
3:D:810:THR:O	3:D:911:LYS:NZ	2.31	0.58
5:F:127:ILE:O	5:F:131:GLN:HG2	2.03	0.58
5:F:401:PHE:HA	5:F:404:LEU:HD12	1.83	0.58
2:C:739:ASP:OD1	2:C:740:GLU:N	2.35	0.58
2:C:1157:GLN:HG3	2:C:1159:VAL:HG13	1.83	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:290:GLU:OE2	2:C:290:GLU:N	2.34	0.58
1:A:307:LEU:HA	1:A:310:ARG:HB2	1.85	0.58
3:D:201:LEU:HB3	3:D:217:LEU:HD11	1.86	0.58
1:A:9:LEU:N	1:A:32:GLU:OE2	2.36	0.58
2:C:528:ARG:NH2	2:C:576:SER:O	2.35	0.58
3:D:1036:ARG:NE	3:D:1081:VAL:HG21	2.18	0.58
2:C:233:ARG:NH2	2:C:238:GLN:HB2	2.18	0.57
3:D:140:TYR:OH	3:D:312:ARG:NE	2.38	0.57
3:D:301:GLU:HA	3:D:304:ASP:OD1	2.04	0.57
6:X:19:DT:H2''	6:X:20:DT:H71	1.86	0.57
3:D:156:ARG:NH2	3:D:191:SER:OG	2.38	0.57
3:D:848:VAL:HG22	3:D:858:VAL:HG22	1.86	0.57
4:E:65:ASP:HA	4:E:68:GLU:CD	2.24	0.57
5:F:130:VAL:O	5:F:133:SER:OG	2.22	0.57
1:B:191:ARG:NH2	3:D:413:ASP:OD2	2.38	0.57
2:C:558:VAL:CG1	2:C:573:ASN:OD1	2.52	0.57
3:D:849:LEU:HD12	3:D:855:ASP:H	1.70	0.57
3:D:1267:VAL:HG23	3:D:1301:THR:HG23	1.86	0.57
5:F:585:GLU:OE2	5:F:588:ARG:NH2	2.37	0.57
2:C:323:ALA:O	2:C:327:GLN:OE1	2.22	0.57
3:D:357:VAL:HG13	3:D:358:GLY:H	1.68	0.57
3:D:557:LYS:HA	3:D:562:GLU:O	2.05	0.57
3:D:1310:THR:O	3:D:1313:SER:OG	2.21	0.57
1:A:260:LEU:CD2	1:A:262:LEU:HD21	2.34	0.57
5:F:524:GLU:N	5:F:524:GLU:OE1	2.38	0.57
1:A:129:VAL:HG21	1:A:132:HIS:HE1	1.69	0.57
3:D:765:GLU:N	3:D:765:GLU:OE2	2.37	0.57
5:F:347:ILE:O	5:F:350:GLU:HG3	2.05	0.57
5:F:588:ARG:NH1	7:Y:53:DA:N7	2.52	0.57
1:A:247:PRO:HG2	1:A:250:ASP:HA	1.87	0.57
5:F:301:ASN:OD1	5:F:302:PHE:N	2.37	0.57
5:F:514:ASP:O	5:F:516:ASP:N	2.38	0.57
1:A:45:ARG:NH2	2:C:1216:ARG:O	2.37	0.56
2:C:530:ILE:O	2:C:572:ILE:O	2.23	0.56
3:D:925:GLU:HG3	3:D:926:PRO:HD3	1.86	0.56
3:D:985:ILE:HG23	3:D:989:GLY:HA2	1.88	0.56
3:D:742:GLY:O	3:D:762:ASN:HB3	2.04	0.56
5:F:373:ARG:O	5:F:377:LYS:HG3	2.06	0.56
4:E:32:VAL:O	4:E:34:GLY:N	2.34	0.56
5:F:529:GLU:OE2	5:F:534:SER:N	2.38	0.56
3:D:665:GLN:OE1	3:D:678:ARG:NH1	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:35:PHE:HA	1:B:38:THR:HG22	1.87	0.56
2:C:801:ARG:NH1	2:C:1092:THR:OG1	2.38	0.56
3:D:743:MET:HE1	3:D:758:PRO:HG2	1.88	0.56
5:F:279:ARG:O	5:F:282:THR:OG1	2.19	0.56
2:C:843:THR:OG1	2:C:846:GLY:O	2.24	0.56
4:E:17:PHE:O	4:E:20:VAL:HG12	2.04	0.56
5:F:144:LEU:HD12	5:F:261:LEU:HD11	1.88	0.56
2:C:738:GLU:HA	2:C:741:MET:SD	2.46	0.56
3:D:961:SER:OG	3:D:981:GLU:HB3	2.06	0.56
5:F:347:ILE:O	5:F:351:THR:HG22	2.05	0.56
2:C:1006:GLU:OE1	2:C:1006:GLU:N	2.37	0.55
3:D:426:ALA:HB3	3:D:427:PRO:HD3	1.87	0.55
1:A:269:CYS:HB3	1:A:295:LEU:HD12	1.88	0.55
2:C:231:GLU:O	2:C:233:ARG:NH1	2.39	0.55
2:C:398:SER:HB3	2:C:401:GLY:H	1.71	0.55
2:C:473:ARG:O	2:C:477:GLU:OE1	2.24	0.55
2:C:595:THR:O	2:C:597:GLY:N	2.39	0.55
5:F:161:LEU:HA	5:F:260:ARG:O	2.06	0.55
1:B:80:GLU:OE2	3:D:551:ARG:NH2	2.40	0.55
1:B:156:SER:O	1:B:160:HIS:ND1	2.39	0.55
2:C:624:ASP:O	2:C:626:GLU:N	2.37	0.55
3:D:1216:ALA:O	3:D:1219:ASP:OD2	2.25	0.55
5:F:331:HIS:HA	5:F:334:SER:OG	2.06	0.55
1:A:273:GLU:OE1	1:A:292:THR:OG1	2.23	0.55
2:C:1312:ASN:OD1	2:C:1313:HIS:N	2.39	0.55
3:D:1252:HIS:O	3:D:1255:VAL:HG22	2.07	0.55
1:B:10:LYS:HG2	1:B:11:PRO:HD2	1.88	0.55
2:C:234:ASP:O	2:C:235:ASN:HB2	2.04	0.55
2:C:402:ARG:HG2	2:C:416:GLY:H	1.72	0.55
2:C:1290:MET:HA	2:C:1294:LYS:HG3	1.88	0.55
3:D:338:PHE:CE2	3:D:1324:SER:HB2	2.42	0.55
3:D:370:LYS:O	3:D:373:ALA:N	2.40	0.55
3:D:960:LEU:HB3	3:D:963:VAL:HG11	1.88	0.55
5:F:297:MET:HE2	5:F:302:PHE:CA	2.37	0.55
2:C:914:LYS:HD3	2:C:915:ASP:H	1.72	0.55
3:D:18:ASP:N	3:D:18:ASP:OD1	2.40	0.55
2:C:1285:TYR:CD2	3:D:475:GLU:HB3	2.43	0.55
1:A:252:ILE:HG22	1:A:252:ILE:O	2.07	0.54
2:C:296:VAL:O	2:C:335:THR:OG1	2.18	0.54
3:D:963:VAL:HB	3:D:980:THR:HG23	1.88	0.54
1:A:102:LEU:HD13	1:A:115:ILE:HA	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:237:VAL:HG22	1:B:238:ARG:H	1.71	0.54
2:C:238:GLN:HB3	2:C:286:GLU:HA	1.89	0.54
5:F:119:ILE:HG21	5:F:379:MET:HB2	1.88	0.54
5:F:567:MET:SD	5:F:568:ASN:N	2.81	0.54
1:B:135:ASP:OD1	1:B:136:GLU:N	2.40	0.54
1:B:251:PRO:O	1:B:254:LEU:HD22	2.08	0.54
2:C:420:LEU:HD12	2:C:420:LEU:O	2.06	0.54
2:C:915:ASP:OD1	2:C:916:SER:N	2.40	0.54
5:F:123:ILE:HD13	5:F:372:ALA:HB1	1.89	0.54
5:F:134:VAL:HG21	5:F:266:PHE:CE1	2.42	0.54
2:C:303:ASP:OD2	2:C:306:THR:OG1	2.26	0.54
2:C:722:GLY:N	2:C:777:VAL:O	2.41	0.54
4:E:65:ASP:HA	4:E:68:GLU:OE2	2.07	0.54
5:F:297:MET:SD	5:F:326:TRP:CZ2	3.01	0.54
7:Y:71:DT:H2"	7:Y:72:DA:C8	2.42	0.54
2:C:230:PHE:CE1	2:C:292:ILE:HG12	2.43	0.54
4:E:68:GLU:O	4:E:71:GLU:HG3	2.08	0.54
5:F:148:TYR:HD2	5:F:161:LEU:HD21	1.73	0.54
5:F:449:THR:HG21	5:F:504:PRO:HG3	1.89	0.54
2:C:895:LEU:HD12	2:C:899:GLU:HG3	1.89	0.54
3:D:45:ASN:O	3:D:47:ARG:N	2.41	0.54
1:A:250:ASP:O	1:A:253:LEU:N	2.41	0.54
3:D:40:LYS:HB3	3:D:42:GLU:OE1	2.08	0.54
2:C:696:ASP:O	2:C:697:LYS:HB3	2.08	0.53
3:D:978:ARG:HD3	3:D:999:TYR:HB2	1.88	0.53
5:F:314:THR:HA	5:F:317:ASN:OD1	2.07	0.53
2:C:271:ALA:O	2:C:275:ARG:HG3	2.08	0.53
5:F:166:VAL:H	5:F:258:GLN:HG2	1.73	0.53
5:F:595:LEU:O	5:F:599:ARG:HG2	2.08	0.53
2:C:233:ARG:CZ	2:C:238:GLN:HB2	2.38	0.53
2:C:1058:ARG:NE	2:C:1240:ASP:OD1	2.41	0.53
2:C:303:ASP:O	2:C:307:GLY:N	2.37	0.53
2:C:472:GLU:O	2:C:475:VAL:HG12	2.08	0.53
2:C:1131:MET:HE3	2:C:1141:LEU:HG	1.90	0.53
3:D:58:CYS:SG	3:D:60:ARG:HG2	2.47	0.53
2:C:150:HIS:CD2	2:C:454:ARG:HE	2.26	0.53
2:C:986:ALA:HA	2:C:989:LEU:HB3	1.91	0.53
2:C:464:PHE:O	2:C:468:LEU:HD23	2.09	0.53
5:F:334:SER:HA	5:F:337:VAL:HG12	1.90	0.53
5:F:508:GLU:OE1	5:F:508:GLU:N	2.42	0.53
6:X:22:DC:O2	7:Y:60:DG:N2	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:1259:LEU:O	2:C:1266:GLY:HA2	2.09	0.53
3:D:1323:ALA:HA	3:D:1331:VAL:HG21	1.91	0.53
1:A:294:ASN:HA	6:X:12:DT:H4'	1.90	0.53
2:C:36:GLN:NE2	2:C:40:GLU:OE1	2.34	0.53
2:C:120:GLN:OE1	2:C:120:GLN:N	2.39	0.53
2:C:748:ILE:HD11	2:C:966:ILE:HG22	1.89	0.53
2:C:1030:GLU:O	2:C:1033:ARG:HG2	2.09	0.53
3:D:789:LYS:NZ	3:D:929:GLN:O	2.39	0.53
5:F:157:ARG:HE	5:F:158:LEU:H	1.57	0.53
2:C:12:ARG:HD3	2:C:1183:ALA:HB2	1.91	0.53
2:C:205:PRO:O	2:C:208:ILE:HG22	2.08	0.53
2:C:1254:VAL:HG13	2:C:1255:THR:H	1.74	0.53
1:B:155:ALA:N	1:B:174:ASP:OD1	2.32	0.52
5:F:291:CYS:SG	5:F:297:MET:HB3	2.48	0.52
2:C:41:GLN:NE2	2:C:73:TYR:O	2.42	0.52
2:C:475:VAL:HG23	2:C:492:MET:HB3	1.91	0.52
2:C:1101:LEU:HD12	3:D:505:ASP:OD1	2.08	0.52
3:D:233:LYS:HB3	3:D:235:GLU:OE1	2.10	0.52
3:D:1033:GLY:O	3:D:1115:ILE:HG12	2.10	0.52
3:D:475:GLU:OE1	3:D:475:GLU:N	2.35	0.52
3:D:582:ILE:HD11	3:D:627:THR:HG21	1.91	0.52
5:F:138:PRO:O	5:F:140:ALA:N	2.42	0.52
8:O:16:DG:H2''	8:O:17:DA:C8	2.44	0.52
3:D:514:THR:HG21	3:D:596:LEU:HB3	1.92	0.52
2:C:387:ASN:HA	2:C:391:SER:HB3	1.91	0.52
2:C:895:LEU:HB2	2:C:899:GLU:OE2	2.10	0.52
3:D:218:THR:HA	3:D:221:ILE:HG22	1.90	0.52
3:D:235:GLU:OE1	3:D:235:GLU:N	2.39	0.52
3:D:353:SER:OG	3:D:354:VAL:N	2.42	0.52
3:D:957:SER:HB3	3:D:985:ILE:HB	1.91	0.52
4:E:52:ARG:HH11	4:E:52:ARG:HG2	1.75	0.52
1:A:135:ASP:OD1	1:A:136:GLU:N	2.43	0.52
1:B:241:GLU:HG3	1:B:242:VAL:H	1.74	0.52
6:X:10:A:C2	7:Y:72:DA:C2	2.97	0.52
2:C:345:PRO:O	2:C:349:GLU:HG2	2.09	0.52
3:D:1006:GLY:N	3:D:1009:GLU:OE1	2.43	0.52
3:D:1172:LYS:HG2	3:D:1191:PRO:HA	1.92	0.52
1:A:29:GLU:HB2	1:A:30:PRO:HD3	1.90	0.52
1:B:86:LYS:HG2	1:B:173:VAL:CG1	2.40	0.52
3:D:45:ASN:HB3	3:D:48:THR:O	2.10	0.52
3:D:77:ARG:HG3	3:D:79:LYS:H	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:1157:ALA:O	3:D:1207:GLY:N	2.41	0.52
5:F:160:ASP:HB2	5:F:262:VAL:HG12	1.92	0.52
5:F:426:LYS:O	5:F:429:THR:HG22	2.10	0.52
1:B:242:VAL:HG12	1:B:243:LYS:H	1.75	0.52
2:C:179:TYR:HB2	2:C:397:LEU:O	2.10	0.52
2:C:231:GLU:HB2	2:C:233:ARG:NH1	2.25	0.51
3:D:682:VAL:O	3:D:685:ILE:HG12	2.10	0.51
5:F:442:SER:HA	5:F:445:ASP:OD2	2.09	0.51
2:C:942:ASP:OD2	2:C:1048:LYS:NZ	2.38	0.51
2:C:1244:HIS:CE1	2:C:1265:PHE:O	2.64	0.51
3:D:342:LEU:O	3:D:342:LEU:HD23	2.10	0.51
5:F:283:GLN:O	5:F:286:LEU:HG	2.10	0.51
1:A:19:VAL:HG23	1:A:23:HIS:HB3	1.91	0.51
2:C:33:ASP:O	2:C:37:LYS:HG2	2.10	0.51
2:C:727:VAL:HG23	2:C:732:ILE:CD1	2.40	0.51
3:D:337:ARG:HG3	3:D:338:PHE:H	1.74	0.51
5:F:492:ASP:O	5:F:496:LYS:HG3	2.10	0.51
1:A:58:GLU:HG2	1:A:145:LYS:HB3	1.91	0.51
2:C:611:GLU:OE2	2:C:637:ARG:NH2	2.43	0.51
3:D:826:ILE:HG13	3:D:826:ILE:O	2.10	0.51
3:D:1033:GLY:HA3	3:D:1082:ASP:HA	1.93	0.51
2:C:253:PHE:HB3	2:C:288:PRO:HG3	1.91	0.51
2:C:1106:ARG:NH2	10:C:1401:POP:O4	2.41	0.51
1:A:301:THR:HG21	1:B:291:LYS:HD2	1.93	0.51
1:A:303:ILE:O	1:A:307:LEU:HD13	2.10	0.51
3:D:749:LYS:HB2	3:D:750:PRO:HD2	1.92	0.51
3:D:860:ARG:HG2	3:D:861:ASN:H	1.76	0.51
3:D:527:LEU:HB2	3:D:550:VAL:HG12	1.92	0.51
3:D:975:ILE:O	3:D:1000:GLY:N	2.40	0.51
2:C:1254:VAL:O	3:D:99:ARG:NH2	2.39	0.51
3:D:166:LEU:O	3:D:169:LEU:HG	2.11	0.51
3:D:740:LEU:O	3:D:762:ASN:ND2	2.44	0.51
5:F:334:SER:O	5:F:337:VAL:HG12	2.11	0.51
2:C:465:ARG:HE	2:C:469:VAL:CG1	2.24	0.51
2:C:725:GLN:NE2	11:C:1402:1N7:H32	2.26	0.51
2:C:1120:ALA:HB1	2:C:1198:LEU:HD22	1.93	0.51
3:D:339:ARG:HE	3:D:798:ARG:NH1	2.09	0.51
1:A:279:GLY:O	1:A:283:GLN:HG3	2.11	0.51
2:C:119:GLU:OE1	2:C:489:PRO:HD2	2.11	0.51
2:C:761:GLN:N	2:C:761:GLN:OE1	2.43	0.51
2:C:990:ASP:OD1	2:C:991:LYS:N	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:1298:VAL:N	3:D:1299:GLY:HA3	2.25	0.51
4:E:49:ILE:HG22	4:E:53:GLU:OE2	2.11	0.51
3:D:798:ARG:HH22	3:D:1325:PHE:HB2	1.76	0.50
6:X:40:DA:C2	7:Y:42:DA:C2	2.99	0.50
1:A:100:LEU:HD23	1:A:115:ILE:HG21	1.92	0.50
1:B:9:LEU:HD21	1:B:30:PRO:HG2	1.93	0.50
1:B:158:ARG:HB2	1:B:172:LEU:HD21	1.93	0.50
3:D:326:SER:N	3:D:329:ASP:OD2	2.44	0.50
2:C:233:ARG:NE	2:C:284:LEU:HD11	2.26	0.50
3:D:1057:SER:OG	3:D:1058:SER:N	2.44	0.50
5:F:357:GLN:O	5:F:361:ILE:HG13	2.10	0.50
6:X:19:DT:H2''	6:X:20:DT:C7	2.42	0.50
7:Y:48:DG:H2''	7:Y:49:DC:OP2	2.10	0.50
1:A:59:VAL:O	1:A:171:LEU:HB2	2.10	0.50
2:C:325:LEU:HD12	2:C:330:HIS:HB2	1.93	0.50
3:D:289:ASP:O	3:D:292:VAL:HG22	2.11	0.50
5:F:436:ARG:O	5:F:440:THR:HG22	2.12	0.50
2:C:1105:SER:OG	3:D:731:ARG:HB3	2.12	0.50
2:C:1291:LEU:O	3:D:345:LYS:NZ	2.37	0.50
3:D:976:THR:HA	3:D:999:TYR:CE1	2.47	0.50
6:X:31:DG:H2''	6:X:32:DG:C8	2.46	0.50
2:C:962:GLU:O	2:C:966:ILE:HG13	2.12	0.50
5:F:316:PHE:O	5:F:320:ILE:HG12	2.11	0.50
2:C:854:ILE:O	2:C:857:VAL:HG22	2.11	0.50
5:F:306:PHE:CZ	5:F:310:GLU:HG3	2.47	0.50
1:B:14:VAL:HG12	1:B:28:LEU:HD13	1.92	0.50
1:B:262:LEU:HD13	1:B:266:SER:HB2	1.94	0.50
2:C:615:VAL:HG23	2:C:650:VAL:HA	1.94	0.50
2:C:1004:ASP:O	2:C:1005:GLU:HG3	2.11	0.50
2:C:1129:ASN:OD1	2:C:1177:ARG:NH2	2.44	0.50
3:D:967:VAL:HG22	3:D:973:LEU:HG	1.94	0.50
5:F:429:THR:OG1	7:Y:32:DA:OP2	2.25	0.50
8:O:2:DG:H1'	8:O:3:DA:C8	2.46	0.50
2:C:201:ARG:NH2	2:C:369:MET:O	2.44	0.49
2:C:228:VAL:HG22	2:C:245:ARG:CZ	2.42	0.49
2:C:358:ASP:OD1	2:C:359:ARG:N	2.43	0.49
2:C:562:GLU:O	2:C:562:GLU:OE1	2.29	0.49
2:C:850:ILE:HG22	2:C:850:ILE:O	2.11	0.49
3:D:1048:ARG:HG2	3:D:1050:THR:OG1	2.11	0.49
5:F:133:SER:HB2	5:F:361:ILE:CG2	2.39	0.49
5:F:361:ILE:O	5:F:365:MET:HG3	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:405:PHE:O	2:C:408:SER:OG	2.28	0.49
5:F:125:ASP:OD1	5:F:166:VAL:HG12	2.12	0.49
5:F:131:GLN:CD	5:F:260:ARG:HA	2.32	0.49
5:F:419:PHE:HA	5:F:430:TYR:CE2	2.47	0.49
1:B:212:ASP:OD1	1:B:213:PRO:CD	2.59	0.49
2:C:691:PRO:HD2	2:C:763:THR:HG21	1.94	0.49
2:C:1106:ARG:O	2:C:1108:ASN:N	2.43	0.49
9:P:16:DT:H2''	9:P:17:DC:C5	2.47	0.49
1:A:224:LEU:O	1:A:228:LEU:HD23	2.12	0.49
5:F:358:VAL:HA	5:F:361:ILE:HD12	1.94	0.49
7:Y:21:DG:H2''	7:Y:22:DG:C8	2.48	0.49
2:C:18:ARG:CZ	2:C:620:ASN:HA	2.43	0.49
2:C:786:GLY:N	2:C:789:THR:OG1	2.45	0.49
5:F:148:TYR:O	5:F:152:GLU:HG3	2.13	0.49
8:O:15:DC:H2''	8:O:16:DG:C8	2.48	0.49
2:C:413:GLU:OE2	2:C:415:GLU:N	2.43	0.49
5:F:423:ARG:NH1	5:F:424:GLY:O	2.46	0.49
5:F:484:ALA:CB	5:F:491:GLU:HB3	2.41	0.49
2:C:896:THR:O	2:C:899:GLU:HG2	2.12	0.49
3:D:960:LEU:HB3	3:D:963:VAL:CG1	2.43	0.49
2:C:493:ILE:O	5:F:472:GLN:NE2	2.42	0.49
3:D:598:LYS:O	3:D:601:ILE:HG22	2.13	0.49
2:C:742:TYR:N	2:C:746:ALA:HB2	2.28	0.49
3:D:148:GLU:OE1	3:D:148:GLU:O	2.30	0.49
3:D:253:VAL:HG11	5:F:523:ILE:HG21	1.95	0.49
3:D:1060:VAL:O	3:D:1060:VAL:HG23	2.13	0.49
5:F:604:SER:O	5:F:608:ARG:N	2.40	0.49
1:A:14:VAL:HG21	1:A:29:GLU:OE2	2.11	0.49
1:A:249:PHE:O	1:A:253:LEU:HB3	2.13	0.49
2:C:255:ILE:HB	2:C:263:VAL:HB	1.95	0.49
3:D:244:VAL:HG23	3:D:269:TYR:CE2	2.47	0.49
3:D:416:ILE:HG23	3:D:439:PRO:HG2	1.95	0.49
1:B:287:VAL:O	1:B:291:LYS:HG2	2.13	0.48
2:C:199:ASP:N	2:C:199:ASP:OD1	2.45	0.48
2:C:960:LEU:O	2:C:963:GLU:HG3	2.13	0.48
2:C:1192:GLU:HA	2:C:1195:ILE:HD12	1.95	0.48
2:C:1274:GLU:HG3	3:D:428:THR:HG21	1.95	0.48
3:D:120:LEU:HB2	3:D:121:PRO:HD3	1.95	0.48
3:D:330:MET:O	3:D:337:ARG:HB2	2.12	0.48
3:D:338:PHE:CE2	3:D:1324:SER:HA	2.48	0.48
5:F:144:LEU:HD11	5:F:256:PHE:CZ	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:F:220:LYS:O	5:F:224:LEU:HD13	2.13	0.48
5:F:283:GLN:NE2	5:F:337:VAL:HA	2.28	0.48
9:P:2:DT:H2"	9:P:3:DC:C5	2.48	0.48
1:B:233:ASP:N	1:B:233:ASP:OD1	2.46	0.48
3:D:552:ILE:HD11	3:D:570:LYS:HG3	1.94	0.48
5:F:414:LYS:HA	5:F:417:ASP:OD1	2.13	0.48
2:C:94:ALA:HB2	2:C:129:LEU:HD11	1.94	0.48
2:C:840:SER:HB3	2:C:850:ILE:HD11	1.94	0.48
3:D:113:HIS:CE1	3:D:115:TRP:HB2	2.47	0.48
3:D:680:ASN:O	3:D:683:ILE:HG22	2.13	0.48
3:D:1082:ASP:HB2	3:D:1088:VAL:CG1	2.43	0.48
5:F:344:LEU:O	5:F:348:GLU:HG3	2.13	0.48
5:F:493:LYS:O	5:F:497:VAL:HG23	2.13	0.48
1:A:239:GLN:HB2	1:A:241:GLU:OE1	2.13	0.48
1:B:278:ILE:O	1:B:282:VAL:HG22	2.13	0.48
2:C:320:ASP:OD1	2:C:321:LEU:HD12	2.13	0.48
3:D:316:ILE:HG22	3:D:317:THR:H	1.77	0.48
4:E:44:ASP:HB3	4:E:48:VAL:CG2	2.43	0.48
5:F:484:ALA:O	5:F:487:MET:O	2.32	0.48
1:A:235:ARG:C	1:A:237:VAL:H	2.16	0.48
2:C:577:VAL:HG13	2:C:578:TYR:N	2.29	0.48
5:F:317:ASN:HA	5:F:320:ILE:CG1	2.41	0.48
7:Y:54:DC:C2	7:Y:55:DA:N7	2.81	0.48
2:C:992:LEU:HD13	2:C:996:ARG:HB3	1.96	0.48
2:C:1101:LEU:CD2	3:D:725:MET:HG2	2.44	0.48
3:D:19:ALA:HA	3:D:1342:ASP:O	2.13	0.48
3:D:825:VAL:HG13	3:D:825:VAL:O	2.13	0.48
3:D:1036:ARG:CD	3:D:1081:VAL:CG2	2.91	0.48
3:D:656:GLU:OE1	3:D:692:ARG:NH2	2.43	0.48
3:D:1062:LEU:HA	3:D:1103:GLY:HA2	1.96	0.48
3:D:1081:VAL:HA	3:D:1087:ASP:HA	1.96	0.48
5:F:213:ASP:N	5:F:213:ASP:OD1	2.47	0.48
5:F:319:ALA:HB1	5:F:327:SER:HB2	1.95	0.48
1:A:282:VAL:HG13	1:A:313:SER:O	2.13	0.48
2:C:840:SER:O	2:C:1047:LEU:N	2.47	0.48
3:D:1138:LEU:H	3:D:1139:PRO:CD	2.26	0.48
3:D:1178:THR:HG23	3:D:1184:ASP:OD1	2.14	0.48
5:F:560:ARG:NH1	5:F:566:ASP:OD2	2.46	0.48
7:Y:74:DT:H2"	7:Y:75:DT:H71	1.95	0.48
1:A:165:GLU:O	1:A:165:GLU:HG2	2.14	0.48
9:P:12:DC:C2	9:P:13:DG:C5	3.02	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:61:ILE:HG21	1:B:64:VAL:HG12	1.95	0.48
1:B:83:LEU:HD12	3:D:528:THR:HA	1.96	0.48
3:D:204:GLU:OE1	3:D:217:LEU:CD2	2.62	0.48
3:D:954:ASN:O	3:D:984:LEU:HD21	2.14	0.48
3:D:1314:LEU:HD12	3:D:1326:GLN:HE22	1.79	0.48
3:D:678:ARG:O	3:D:682:VAL:HG12	2.14	0.47
3:D:1032:SER:HA	3:D:1115:ILE:HG13	1.96	0.47
5:F:279:ARG:NH2	5:F:340:ALA:HA	2.29	0.47
1:B:19:VAL:O	1:B:20:SER:OG	2.32	0.47
2:C:563:THR:O	2:C:680:LEU:HD11	2.14	0.47
3:D:151:MET:HE3	5:F:284:GLU:OE1	2.14	0.47
3:D:785:ASP:OD1	3:D:789:LYS:HE3	2.14	0.47
3:D:789:LYS:HE2	3:D:931:THR:HA	1.95	0.47
3:D:963:VAL:HG23	3:D:977:SER:HB2	1.96	0.47
5:F:601:PRO:O	5:F:602:SER:OG	2.28	0.47
1:A:39:LEU:O	1:A:43:LEU:HD23	2.14	0.47
2:C:46:GLN:O	2:C:51:ALA:HB2	2.14	0.47
2:C:238:GLN:HG2	2:C:286:GLU:HG3	1.97	0.47
2:C:905:ILE:HG22	2:C:906:PHE:CD1	2.49	0.47
2:C:1002:LEU:HB3	2:C:1008:GLN:OE1	2.15	0.47
2:C:1164:PHE:HE1	2:C:1167:GLU:HB3	1.78	0.47
3:D:407:VAL:O	3:D:411:ILE:HG12	2.13	0.47
3:D:586:GLY:HA3	3:D:612:LEU:HD11	1.97	0.47
3:D:1348:LYS:O	3:D:1352:ILE:HG12	2.15	0.47
9:P:17:DC:H5"	9:P:17:DC:H6	1.79	0.47
1:A:281:LEU:HD21	1:A:307:LEU:HD11	1.97	0.47
1:B:59:VAL:HA	1:B:143:ARG:O	2.15	0.47
1:B:156:SER:O	1:B:160:HIS:CG	2.67	0.47
1:B:192:VAL:C	1:B:194:GLN:H	2.17	0.47
2:C:158:ASP:HB3	2:C:173:ASN:OD1	2.14	0.47
2:C:211:ARG:NH2	2:C:217:THR:OG1	2.46	0.47
2:C:360:LEU:HD12	2:C:361:SER:N	2.29	0.47
2:C:840:SER:OG	2:C:1048:LYS:HG2	2.14	0.47
2:C:1255:THR:O	2:C:1257:GLN:N	2.41	0.47
3:D:146:VAL:HG22	3:D:158:GLN:O	2.14	0.47
3:D:252:LEU:O	3:D:252:LEU:HD23	2.14	0.47
3:D:591:ILE:HG13	3:D:592:VAL:N	2.29	0.47
3:D:958:ILE:HG13	3:D:1011:VAL:HG21	1.96	0.47
3:D:1150:PRO:O	3:D:1152:GLU:N	2.46	0.47
5:F:334:SER:O	5:F:338:HIS:CD2	2.67	0.47
2:C:231:GLU:HG2	2:C:332:ARG:HD3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:1276:TRP:HH2	3:D:798:ARG:HG3	1.79	0.47
3:D:552:ILE:HD12	3:D:589:TYR:CD1	2.49	0.47
3:D:1036:ARG:CD	3:D:1081:VAL:HG22	2.45	0.47
3:D:1110:GLU:O	3:D:1113:VAL:HG22	2.14	0.47
5:F:131:GLN:OE1	5:F:266:PHE:CE2	2.67	0.47
5:F:600:HIS:HB2	5:F:603:ARG:NH2	2.29	0.47
2:C:106:GLU:HB2	2:C:114:VAL:CG2	2.44	0.47
2:C:1117:LEU:HD12	2:C:1195:ILE:HG12	1.97	0.47
4:E:61:ASN:OD1	4:E:62:GLN:N	2.47	0.47
5:F:602:SER:H	5:F:605:GLU:HG2	1.79	0.47
1:B:63:GLY:HA3	1:B:71:LYS:HE2	1.97	0.47
1:B:158:ARG:HE	1:B:172:LEU:HD11	1.79	0.47
2:C:759:SER:HG	2:C:763:THR:N	2.12	0.47
3:D:103:GLY:C	3:D:244:VAL:HG12	2.35	0.47
3:D:644:MET:HG2	3:D:644:MET:O	2.15	0.47
3:D:833:GLU:OE1	3:D:1242:ARG:NE	2.35	0.47
3:D:1239:ASP:HA	3:D:1242:ARG:HG2	1.97	0.47
4:E:60:ASN:H	4:E:63:ILE:HG22	1.80	0.47
5:F:132:CYS:HB2	5:F:257:LYS:HG3	1.95	0.47
5:F:561:MET:HE2	5:F:571:TYR:HB2	1.97	0.47
6:X:41:DA:H2''	6:X:42:DC:C6	2.49	0.47
1:B:303:ILE:O	1:B:306:VAL:HG22	2.15	0.47
2:C:185:ASP:HB2	2:C:197:ARG:HG3	1.97	0.47
2:C:237:LEU:CD1	2:C:322:LEU:HD13	2.45	0.47
3:D:848:VAL:H	3:D:858:VAL:HG22	1.80	0.47
4:E:47:THR:HG23	4:E:48:VAL:N	2.30	0.47
5:F:138:PRO:HG3	5:F:353:LEU:CB	2.43	0.47
1:B:74:VAL:HG12	1:B:133:LEU:HD23	1.97	0.47
2:C:728:ASP:O	2:C:730:SER:N	2.47	0.47
2:C:1258:PRO:CG	3:D:346:ARG:O	2.63	0.47
3:D:1166:GLY:O	3:D:1167:LYS:C	2.54	0.47
3:D:1227:HIS:HA	3:D:1230:THR:HG22	1.97	0.47
5:F:134:VAL:HG13	5:F:269:LEU:CD2	2.44	0.47
5:F:476:ARG:O	5:F:477:GLU:HB2	2.15	0.47
1:B:6:THR:OG1	1:B:7:GLU:N	2.48	0.47
3:D:215:LYS:O	3:D:218:THR:HG22	2.15	0.47
5:F:266:PHE:O	5:F:270:VAL:HG12	2.16	0.47
5:F:543:ALA:HA	5:F:546:ASP:OD1	2.14	0.47
5:F:567:MET:SD	5:F:568:ASN:O	2.73	0.47
1:A:112:ALA:HB3	1:A:126:PRO:HA	1.97	0.46
1:B:75:GLN:HG2	1:B:76:GLU:N	2.29	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:37:LYS:HB3	2:C:47:TYR:CD2	2.50	0.46
2:C:1060:ILE:HD11	2:C:1076:ILE:CD1	2.45	0.46
2:C:1340:GLU:HG2	2:C:1341:ASP:N	2.30	0.46
3:D:339:ARG:HE	3:D:798:ARG:CZ	2.28	0.46
7:Y:24:DG:H2''	7:Y:25:DG:C8	2.51	0.46
2:C:37:LYS:HB3	2:C:47:TYR:CE2	2.49	0.46
2:C:766:ASN:OD1	2:C:767:GLN:N	2.48	0.46
3:D:45:ASN:O	3:D:46:TYR:CG	2.68	0.46
3:D:214:ARG:O	3:D:218:THR:HG22	2.16	0.46
5:F:466:ILE:HG23	5:F:486:ARG:HG2	1.97	0.46
7:Y:70:DA:H2''	7:Y:71:DT:C5	2.50	0.46
7:Y:73:DA:H2''	7:Y:74:DT:H71	1.96	0.46
9:P:1:DC:H2''	9:P:2:DT:H71	1.97	0.46
1:A:195:ARG:HG2	1:A:198:LEU:HG	1.97	0.46
2:C:561:ILE:O	2:C:680:LEU:HD13	2.15	0.46
2:C:918:LEU:HD23	2:C:918:LEU:O	2.14	0.46
3:D:367:GLY:HA3	3:D:448:GLN:HB2	1.97	0.46
3:D:1136:GLY:HA2	3:D:1140:ARG:HB2	1.97	0.46
6:X:7:DA:H2''	6:X:8:DT:OP2	2.14	0.46
5:F:379:MET:O	5:F:379:MET:HG3	2.16	0.46
1:A:286:GLU:CD	1:A:300:LEU:HD21	2.35	0.46
1:B:252:ILE:O	1:B:255:ARG:NH1	2.49	0.46
1:B:263:THR:HG23	1:B:266:SER:H	1.81	0.46
2:C:1151:LEU:HD22	2:C:1198:LEU:HD12	1.97	0.46
3:D:809:VAL:HG13	3:D:809:VAL:O	2.15	0.46
3:D:1027:VAL:O	3:D:1121:LEU:N	2.42	0.46
5:F:439:ILE:O	5:F:443:ILE:CD1	2.63	0.46
1:B:65:LEU:HB3	1:B:168:ILE:CG2	2.46	0.46
2:C:299:LYS:HD3	2:C:301:TYR:CZ	2.51	0.46
2:C:672:GLU:HG3	2:C:673:HIS:CD2	2.50	0.46
2:C:989:LEU:HD11	2:C:997:TRP:CG	2.50	0.46
3:D:372:MET:O	3:D:376:LEU:HD23	2.16	0.46
3:D:949:SER:HA	3:D:1018:ALA:O	2.16	0.46
3:D:1163:VAL:HG22	3:D:1175:LEU:HD22	1.97	0.46
3:D:1282:TYR:O	3:D:1286:LYS:HG2	2.16	0.46
5:F:139:GLU:OE1	5:F:350:GLU:O	2.33	0.46
9:P:14:DT:H2''	9:P:15:DG:H8	1.81	0.46
2:C:21:VAL:HG11	2:C:592:ARG:HD2	1.97	0.46
2:C:765:ILE:HG13	2:C:765:ILE:O	2.16	0.46
5:F:297:MET:HE2	5:F:302:PHE:N	2.30	0.46
5:F:332:ASP:OD1	5:F:333:VAL:N	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:595:THR:O	2:C:598:VAL:N	2.49	0.46
2:C:800:MET:SD	2:C:1096:ILE:HD11	2.56	0.46
2:C:1021:LEU:O	2:C:1024:GLU:HG3	2.15	0.46
3:D:107:LEU:HB3	3:D:240:THR:O	2.15	0.46
1:A:45:ARG:HH12	1:B:37:HIS:HB2	1.81	0.46
1:A:293:PRO:HA	6:X:13:DT:H5 ⁺	1.98	0.46
2:C:183:TRP:H	2:C:199:ASP:HB3	1.80	0.46
2:C:397:LEU:O	2:C:398:SER:HB2	2.15	0.46
2:C:400:VAL:HG23	11:C:1403:1N7:H7	1.97	0.46
2:C:778:GLU:N	2:C:781:ASP:OD2	2.34	0.46
1:A:307:LEU:HB3	1:A:312:LEU:O	2.15	0.46
1:B:278:ILE:O	1:B:282:VAL:HG13	2.16	0.46
2:C:46:GLN:OE1	11:C:1403:1N7:H32	2.16	0.46
2:C:826:ASP:OD2	2:C:829:THR:OG1	2.25	0.46
3:D:1108:GLN:HG2	3:D:1109:LEU:N	2.31	0.46
1:B:14:VAL:HG23	1:B:14:VAL:O	2.16	0.45
2:C:93:SER:OG	2:C:94:ALA:N	2.50	0.45
2:C:239:MET:SD	2:C:240:GLU:O	2.75	0.45
2:C:297:VAL:HG12	2:C:315:MET:O	2.16	0.45
2:C:1292:THR:HG23	2:C:1293:VAL:N	2.32	0.45
3:D:709:ARG:HG3	3:D:710:ASP:H	1.81	0.45
4:E:41:GLU:OE1	4:E:43:ASN:N	2.43	0.45
4:E:71:GLU:OE2	4:E:75:GLN:OE1	2.34	0.45
5:F:119:ILE:O	5:F:123:ILE:HG12	2.15	0.45
5:F:130:VAL:HA	5:F:133:SER:OG	2.16	0.45
5:F:299:LYS:O	5:F:303:ILE:HG12	2.16	0.45
5:F:322:MET:HB3	5:F:324:LYS:HE2	1.98	0.45
5:F:573:LEU:O	5:F:576:VAL:HG12	2.16	0.45
1:A:228:LEU:O	1:A:232:VAL:HG23	2.16	0.45
2:C:242:VAL:HB	2:C:245:ARG:HB2	1.98	0.45
2:C:594:VAL:HG23	2:C:652:TYR:HA	1.99	0.45
2:C:1246:ARG:HD2	2:C:1266:GLY:C	2.37	0.45
3:D:78:LEU:HB3	3:D:81:ARG:NH2	2.32	0.45
3:D:357:VAL:HG13	3:D:358:GLY:N	2.31	0.45
3:D:714:GLU:HG2	3:D:715:LYS:H	1.80	0.45
3:D:885:VAL:HG12	3:D:1254:GLU:HB3	1.97	0.45
5:F:138:PRO:CG	5:F:353:LEU:HB2	2.45	0.45
1:B:219:ARG:O	1:B:223:ILE:HG13	2.17	0.45
2:C:466:VAL:O	2:C:469:VAL:HG22	2.16	0.45
2:C:800:MET:HE1	2:C:828:PHE:CE2	2.52	0.45
3:D:47:ARG:HE	3:D:47:ARG:HA	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:525:MET:O	3:D:548:VAL:HG13	2.16	0.45
4:E:63:ILE:O	4:E:66:VAL:HG22	2.16	0.45
5:F:310:GLU:O	5:F:310:GLU:HG2	2.16	0.45
9:P:14:DT:C2	9:P:15:DG:N7	2.84	0.45
1:A:197:ASP:OD1	1:A:197:ASP:N	2.49	0.45
1:A:290:LEU:HD22	1:A:300:LEU:HD22	1.98	0.45
1:B:290:LEU:HD11	1:B:300:LEU:HD22	1.97	0.45
2:C:107:ARG:HA	2:C:108:GLU:HA	1.65	0.45
2:C:402:ARG:HG2	2:C:416:GLY:N	2.32	0.45
2:C:764:CYS:SG	2:C:833:ILE:HG13	2.56	0.45
3:D:915:ILE:O	3:D:918:ILE:HG12	2.16	0.45
3:D:1161:GLY:HA3	3:D:1178:THR:O	2.16	0.45
4:E:63:ILE:HA	4:E:66:VAL:HG22	1.99	0.45
5:F:449:THR:HG23	5:F:450:ILE:N	2.32	0.45
5:F:584:ARG:NE	5:F:584:ARG:HA	2.31	0.45
7:Y:51:DT:H2"	7:Y:52:DG:H8	1.81	0.45
1:A:14:VAL:HG12	1:A:27:THR:O	2.17	0.45
1:B:264:VAL:HG12	1:B:268:ASN:OD1	2.17	0.45
2:C:309:LEU:HD11	2:C:311:CYS:O	2.16	0.45
2:C:519:ASN:OD1	2:C:520:PRO:HD2	2.16	0.45
3:D:256:ASP:OD1	3:D:256:ASP:N	2.49	0.45
3:D:530:PRO:O	3:D:533:ALA:HB3	2.17	0.45
3:D:1050:THR:HA	3:D:1057:SER:HA	1.98	0.45
3:D:1181:ASP:OD1	3:D:1181:ASP:N	2.47	0.45
5:F:144:LEU:HD11	5:F:256:PHE:CE1	2.51	0.45
1:B:38:THR:HG23	1:B:39:LEU:N	2.32	0.45
1:B:104:LYS:NZ	1:B:114:ASP:OD2	2.50	0.45
11:C:1403:1N7:H5	11:C:1403:1N7:H31	1.97	0.45
3:D:61:ILE:HG23	3:D:62:PHE:N	2.32	0.45
3:D:532:GLU:O	3:D:535:ARG:HB2	2.17	0.45
3:D:1003:LEU:HD12	3:D:1017:VAL:O	2.17	0.45
5:F:583:THR:O	5:F:584:ARG:HB2	2.17	0.45
1:A:100:LEU:HD21	1:A:121:VAL:HG21	1.97	0.45
1:A:251:PRO:C	1:A:253:LEU:H	2.20	0.45
1:B:20:SER:HG	1:B:23:HIS:HB3	1.81	0.45
1:B:267:ALA:O	1:B:270:LEU:HG	2.16	0.45
4:E:34:GLY:O	4:E:35:LYS:HD2	2.16	0.45
5:F:445:ASP:OD1	5:F:446:GLN:N	2.49	0.45
2:C:409:LEU:C	2:C:410:LEU:HD23	2.37	0.45
2:C:901:LEU:O	2:C:905:ILE:HG13	2.17	0.45
2:C:972:PHE:HD2	2:C:994:ARG:HE	1.64	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:146:VAL:O	3:D:156:ARG:O	2.35	0.45
3:D:210:SER:O	3:D:214:ARG:HG3	2.16	0.45
3:D:334:LYS:O	3:D:340:GLN:HB2	2.17	0.45
3:D:1108:GLN:OE1	3:D:1123:ARG:NH1	2.50	0.45
3:D:1138:LEU:HB3	3:D:1139:PRO:HD3	1.98	0.45
3:D:1178:THR:HG23	3:D:1184:ASP:CG	2.36	0.45
5:F:612:ASP:OD1	5:F:612:ASP:N	2.49	0.45
8:O:3:DA:H2''	8:O:4:DC:H5'	1.98	0.45
2:C:138:ILE:HG21	2:C:143:ARG:HD2	1.98	0.45
2:C:353:VAL:O	2:C:355:PRO:HD3	2.15	0.45
2:C:561:ILE:HD13	2:C:661:VAL:HG12	1.99	0.45
2:C:782:VAL:HG13	2:C:782:VAL:O	2.17	0.45
2:C:813:GLU:C	2:C:815:SER:H	2.20	0.45
3:D:1080:ILE:HG22	3:D:1088:VAL:CG2	2.47	0.45
5:F:137:TYR:HB2	5:F:361:ILE:HD13	1.97	0.45
5:F:252:LEU:HA	5:F:255:VAL:HG22	1.98	0.45
1:A:262:LEU:CD1	1:A:303:ILE:HG12	2.47	0.45
1:B:190:ALA:O	1:B:198:LEU:HB2	2.17	0.45
2:C:813:GLU:O	2:C:815:SER:N	2.50	0.45
2:C:1304:MET:O	2:C:1308:ILE:HG12	2.17	0.45
3:D:414:GLU:O	4:E:45:LYS:NZ	2.41	0.45
3:D:710:ASP:OD1	3:D:711:GLY:N	2.50	0.45
3:D:822:MET:SD	3:D:838:ARG:NH2	2.89	0.45
3:D:1146:GLU:OE2	3:D:1310:THR:HG23	2.17	0.45
5:F:305:LEU:HD12	5:F:306:PHE:N	2.31	0.45
9:P:16:DT:H2''	9:P:17:DC:C6	2.52	0.45
1:B:61:ILE:HG22	1:B:63:GLY:H	1.81	0.44
2:C:145:ILE:HB	2:C:456:VAL:HG22	1.98	0.44
3:D:141:PHE:HA	3:D:180:MET:HG2	1.99	0.44
3:D:930:LEU:HD11	3:D:1244:GLN:HG2	1.98	0.44
3:D:1158:GLU:O	3:D:1206:ARG:HB2	2.17	0.44
3:D:1198:VAL:HG21	3:D:1204:VAL:CG1	2.47	0.44
4:E:70:GLN:O	4:E:74:GLU:HG3	2.16	0.44
5:F:161:LEU:O	5:F:260:ARG:N	2.49	0.44
5:F:166:VAL:HG11	5:F:257:LYS:HZ2	1.82	0.44
1:B:102:LEU:CD2	1:B:115:ILE:HA	2.48	0.44
2:C:468:LEU:HA	2:C:471:VAL:HG12	1.99	0.44
2:C:615:VAL:HG12	2:C:638:SER:HB2	1.98	0.44
2:C:1254:VAL:HG13	2:C:1255:THR:N	2.32	0.44
3:D:1350:ASN:OD1	3:D:1358:PRO:HD3	2.17	0.44
4:E:51:LEU:O	4:E:55:GLU:HG3	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:F:250:LEU:O	5:F:254:GLU:HG2	2.16	0.44
5:F:277:MET:HE3	5:F:277:MET:O	2.17	0.44
1:B:57:THR:O	1:B:173:VAL:N	2.44	0.44
2:C:413:GLU:OE2	2:C:415:GLU:O	2.35	0.44
2:C:705:GLU:OE1	2:C:705:GLU:N	2.45	0.44
2:C:1101:LEU:HD13	3:D:504:GLN:HB2	2.00	0.44
2:C:1340:GLU:CD	3:D:1341:ARG:HE	2.20	0.44
3:D:1254:GLU:O	3:D:1257:VAL:HG22	2.17	0.44
5:F:148:TYR:CE2	5:F:221:PHE:CD2	3.06	0.44
5:F:320:ILE:HG23	5:F:328:GLU:HG2	1.98	0.44
5:F:479:THR:O	5:F:482:GLU:N	2.50	0.44
9:P:17:DC:H2'	9:P:18:DA:C8	2.52	0.44
2:C:246:LEU:HD12	2:C:246:LEU:H	1.81	0.44
2:C:1043:ALA:O	2:C:1046:VAL:HG22	2.17	0.44
3:D:38:VAL:O	3:D:38:VAL:HG13	2.17	0.44
3:D:295:GLU:HA	3:D:298:MET:HE2	2.00	0.44
3:D:473:THR:HG23	3:D:476:ALA:H	1.83	0.44
3:D:902:ASP:O	3:D:903:LEU:HG	2.17	0.44
2:C:267:ARG:HD3	2:C:268:ARG:O	2.17	0.44
2:C:296:VAL:O	2:C:335:THR:HA	2.18	0.44
2:C:685:MET:SD	2:C:1073:LYS:HD3	2.58	0.44
2:C:812:PHE:HE2	3:D:454:CYS:HG	1.66	0.44
3:D:510:LEU:O	3:D:514:THR:HG22	2.18	0.44
3:D:772:TYR:O	3:D:773:PHE:C	2.55	0.44
3:D:831:VAL:O	3:D:831:VAL:HG13	2.17	0.44
3:D:1267:VAL:O	3:D:1274:PHE:CZ	2.70	0.44
5:F:133:SER:OG	5:F:365:MET:HG2	2.18	0.44
5:F:138:PRO:C	5:F:140:ALA:N	2.69	0.44
1:A:67:GLU:O	1:A:78:ILE:HB	2.18	0.44
1:A:195:ARG:HE	1:A:196:THR:H	1.66	0.44
2:C:184:LEU:HD11	2:C:389:PHE:CE1	2.53	0.44
2:C:511:LEU:HD23	2:C:511:LEU:H	1.83	0.44
2:C:1270:PHE:CE1	2:C:1274:GLU:HB3	2.53	0.44
3:D:834:PRO:O	3:D:837:ASP:OD2	2.35	0.44
3:D:1105:ALA:HB1	3:D:1122:ALA:HB1	1.98	0.44
5:F:128:ASN:HB3	5:F:257:LYS:HG2	2.00	0.44
1:B:179:PRO:C	1:B:207:THR:HG1	2.21	0.44
2:C:230:PHE:CE1	2:C:239:MET:HB2	2.53	0.44
2:C:319:LEU:O	2:C:322:LEU:HG	2.18	0.44
2:C:755:LYS:O	2:C:756:TYR:C	2.56	0.44
2:C:1264:GLN:O	2:C:1265:PHE:C	2.56	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:322:ARG:NH1	5:F:510:PRO:HD2	2.33	0.44
3:D:587:LEU:HD21	3:D:608:CYS:HA	1.99	0.44
3:D:639:VAL:O	3:D:639:VAL:HG23	2.18	0.44
3:D:1067:ARG:HH12	3:D:1075:ARG:HG3	1.83	0.44
5:F:309:ASN:O	5:F:311:THR:HG23	2.18	0.44
5:F:423:ARG:HG2	5:F:423:ARG:HH21	1.83	0.44
5:F:596:ARG:HA	5:F:599:ARG:HG2	2.00	0.44
1:A:124:VAL:HG11	1:A:209:GLY:O	2.18	0.44
1:B:25:LYS:HD2	1:B:204:GLU:OE2	2.17	0.44
2:C:189:ASP:OD1	2:C:192:ASP:N	2.51	0.44
2:C:263:VAL:HG11	2:C:269:ILE:HG12	2.00	0.44
2:C:371:ARG:HB2	2:C:374:GLU:OE2	2.18	0.44
2:C:808:ASN:O	2:C:810:TYR:N	2.50	0.44
2:C:1160:ASP:HB2	2:C:1162:SER:H	1.82	0.44
3:D:337:ARG:O	3:D:338:PHE:C	2.56	0.44
3:D:355:ILE:HG21	3:D:466:MET:SD	2.57	0.44
3:D:769:VAL:HG23	3:D:770:LEU:H	1.82	0.44
2:C:178:PRO:HD2	2:C:183:TRP:CD1	2.53	0.44
2:C:624:ASP:O	2:C:625:GLU:HG3	2.18	0.44
2:C:1337:ILE:HD11	3:D:20:ILE:HG22	1.99	0.44
3:D:343:LEU:HD11	3:D:1352:ILE:CD1	2.48	0.44
3:D:416:ILE:CG2	3:D:439:PRO:HG2	2.48	0.44
1:B:12:ARG:O	1:B:29:GLU:O	2.35	0.43
2:C:90:VAL:HG12	2:C:91:THR:N	2.32	0.43
2:C:233:ARG:NH2	2:C:284:LEU:HD11	2.33	0.43
2:C:934:PHE:HB3	2:C:1040:ASP:OD2	2.18	0.43
3:D:197:GLU:OE2	3:D:220:ARG:NH1	2.44	0.43
3:D:268:LEU:HD11	3:D:324:LEU:CD1	2.48	0.43
3:D:502:PRO:HB3	3:D:506:VAL:CG2	2.48	0.43
1:B:65:LEU:HB3	1:B:168:ILE:HG22	1.99	0.43
2:C:239:MET:HE3	2:C:285:ILE:HD11	2.00	0.43
3:D:1159:ILE:HG12	3:D:1177:ILE:HD12	1.99	0.43
5:F:496:LYS:O	5:F:500:ILE:HG12	2.18	0.43
7:Y:53:DA:C4	7:Y:54:DC:C5	3.05	0.43
1:A:91:ARG:HD2	1:A:210:THR:HA	2.01	0.43
1:B:107:ILE:HG12	1:B:135:ASP:HA	2.01	0.43
1:B:296:GLY:CA	6:X:11:DT:OP1	2.64	0.43
2:C:262:TYR:HB3	2:C:277:LEU:HD11	2.00	0.43
2:C:393:ASP:OD2	2:C:394:ARG:N	2.50	0.43
2:C:499:SER:HA	2:C:502:VAL:HG22	1.98	0.43
2:C:821:ARG:HB2	2:C:1082:ILE:HD13	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:1270:PHE:CE2	2:C:1290:MET:SD	3.11	0.43
3:D:225:GLU:HA	3:D:228:VAL:HG22	2.00	0.43
3:D:1011:VAL:HG12	3:D:1015:GLU:HB3	2.00	0.43
5:F:141:ILE:HD12	5:F:141:ILE:H	1.84	0.43
5:F:261:LEU:HB2	5:F:266:PHE:CD2	2.53	0.43
2:C:158:ASP:OD1	2:C:159:SER:N	2.51	0.43
2:C:254:ASP:OD1	2:C:254:ASP:N	2.51	0.43
2:C:474:ALA:HA	2:C:477:GLU:OE1	2.19	0.43
3:D:259:ARG:NE	5:F:505:ILE:HD11	2.34	0.43
3:D:316:ILE:HG22	3:D:317:THR:N	2.33	0.43
3:D:714:GLU:HG2	3:D:715:LYS:N	2.33	0.43
3:D:1042:ASP:HB3	3:D:1048:ARG:HB2	2.00	0.43
5:F:140:ALA:O	5:F:144:LEU:HB2	2.18	0.43
1:A:242:VAL:HG23	1:A:242:VAL:O	2.18	0.43
1:A:262:LEU:CD2	1:A:306:VAL:HG21	2.48	0.43
1:A:298:LYS:HD3	6:X:12:DT:OP1	2.18	0.43
1:B:299:SER:O	1:B:303:ILE:HG12	2.18	0.43
2:C:106:GLU:HB2	2:C:114:VAL:HG21	1.98	0.43
2:C:320:ASP:OD1	2:C:320:ASP:N	2.51	0.43
2:C:836:LEU:HD21	2:C:921:PRO:HD3	2.00	0.43
2:C:1142:ARG:NH2	2:C:1169:VAL:HG21	2.33	0.43
3:D:571:ASP:OD1	3:D:571:ASP:N	2.43	0.43
3:D:654:ILE:O	3:D:658:GLU:HG3	2.18	0.43
3:D:1059:LEU:HD12	3:D:1110:GLU:OE2	2.18	0.43
5:F:313:ASP:OD1	5:F:341:LEU:HG	2.18	0.43
5:F:360:ASP:O	5:F:364:ARG:NE	2.41	0.43
9:P:11:DC:H2''	9:P:12:DC:C6	2.53	0.43
9:P:11:DC:C2	9:P:12:DC:C4	3.06	0.43
1:A:129:VAL:HG21	1:A:132:HIS:CE1	2.51	0.43
3:D:147:ILE:O	3:D:177:ASP:HB2	2.18	0.43
3:D:1150:PRO:C	3:D:1152:GLU:H	2.21	0.43
4:E:32:VAL:O	4:E:32:VAL:HG13	2.19	0.43
6:X:32:DG:H2''	6:X:33:DC:C5	2.54	0.43
1:A:278:ILE:O	1:A:282:VAL:HG23	2.19	0.43
2:C:71:VAL:HG21	2:C:118:LYS:NZ	2.34	0.43
2:C:209:ILE:O	2:C:213:LEU:HD13	2.19	0.43
2:C:708:VAL:HG21	2:C:794:LEU:HD22	1.99	0.43
2:C:1298:VAL:HG13	2:C:1299:ASN:N	2.34	0.43
3:D:1003:LEU:HA	3:D:1017:VAL:O	2.18	0.43
5:F:586:ARG:HH12	6:X:24:DC:P	2.38	0.43
3:D:271:ARG:HH12	3:D:315:ALA:HB1	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:502:PRO:HB3	3:D:506:VAL:HG21	2.01	0.43
3:D:649:LYS:HD2	3:D:649:LYS:N	2.34	0.43
3:D:844:THR:OG1	3:D:861:ASN:HA	2.19	0.43
3:D:1062:LEU:HB2	3:D:1067:ARG:HA	2.00	0.43
5:F:127:ILE:HA	5:F:130:VAL:HG12	2.00	0.43
5:F:302:PHE:O	5:F:306:PHE:HB3	2.18	0.43
7:Y:55:DA:H2''	7:Y:56:DA:OP2	2.18	0.43
2:C:596:ASP:OD1	2:C:597:GLY:N	2.51	0.43
2:C:882:ILE:HG23	2:C:917:SER:OG	2.19	0.43
3:D:143:SER:HB2	3:D:160:LEU:O	2.19	0.43
3:D:844:THR:CG2	3:D:864:LEU:HD21	2.48	0.43
3:D:858:VAL:HG23	3:D:858:VAL:O	2.19	0.43
3:D:978:ARG:CZ	3:D:1197:ASN:O	2.67	0.43
5:F:119:ILE:HD13	5:F:379:MET:HG2	2.01	0.43
5:F:262:VAL:HG21	5:F:264:LYS:HE3	2.00	0.43
5:F:355:ILE:O	5:F:358:VAL:HG12	2.19	0.43
1:A:241:GLU:O	1:A:242:VAL:C	2.57	0.43
1:B:41:ASN:ND2	2:C:1217:THR:O	2.44	0.43
2:C:208:ILE:HD11	2:C:365:GLU:HB3	2.01	0.43
2:C:590:PRO:HB2	2:C:655:VAL:HG21	2.01	0.43
3:D:270:ARG:O	3:D:273:ILE:HG22	2.19	0.43
5:F:297:MET:HE2	5:F:302:PHE:HB2	1.99	0.43
8:O:17:DA:H2''	8:O:18:DG:C8	2.54	0.43
9:P:3:DC:H2''	9:P:4:DG:C8	2.54	0.43
1:A:253:LEU:HD12	1:A:279:GLY:HA2	2.01	0.42
2:C:397:LEU:O	2:C:398:SER:CB	2.67	0.42
2:C:673:HIS:ND1	3:D:765:GLU:O	2.51	0.42
3:D:92:VAL:O	3:D:92:VAL:HG13	2.19	0.42
3:D:173:GLY:CA	5:F:366:SER:HB3	2.49	0.42
3:D:567:THR:HG23	3:D:567:THR:O	2.19	0.42
3:D:909:ILE:HD11	3:D:913:GLU:HB3	2.01	0.42
5:F:326:TRP:O	5:F:330:LEU:HG	2.19	0.42
8:O:3:DA:C6	8:O:4:DC:C4	3.07	0.42
1:A:47:LEU:O	1:A:51:MET:HG2	2.19	0.42
1:B:251:PRO:O	1:B:254:LEU:CD2	2.67	0.42
1:B:296:GLY:HA3	6:X:11:DT:P	2.59	0.42
2:C:231:GLU:CB	2:C:233:ARG:HH11	2.31	0.42
2:C:745:GLU:OE1	2:C:1017:GLN:HG2	2.18	0.42
2:C:896:THR:HG23	2:C:899:GLU:HG2	2.01	0.42
2:C:989:LEU:O	2:C:992:LEU:HG	2.19	0.42
3:D:291:ILE:HG23	5:F:406:GLN:HE22	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:806:ASP:OD2	3:D:806:ASP:N	2.52	0.42
3:D:850:LYS:C	3:D:852:GLY:H	2.22	0.42
3:D:987:GLU:OE1	3:D:987:GLU:N	2.41	0.42
3:D:1171:GLY:O	3:D:1172:LYS:HG3	2.20	0.42
4:E:65:ASP:CA	4:E:68:GLU:OE1	2.66	0.42
7:Y:54:DC:H2''	7:Y:55:DA:H8	1.84	0.42
9:P:9:DG:C8	9:P:10:DT:H72	2.53	0.42
1:B:23:HIS:HA	1:B:206:GLU:HG2	2.00	0.42
1:B:71:LYS:HB3	1:B:74:VAL:CG2	2.48	0.42
1:B:265:ARG:H	7:Y:74:DT:H5''	1.84	0.42
1:B:283:GLN:O	1:B:283:GLN:HG3	2.19	0.42
2:C:256:GLU:HB3	2:C:261:VAL:HA	2.01	0.42
2:C:718:ALA:HB2	2:C:783:LEU:HD21	2.01	0.42
2:C:883:LEU:HD21	2:C:1052:VAL:HG21	2.01	0.42
2:C:233:ARG:NH2	2:C:284:LEU:CD1	2.82	0.42
2:C:726:TYR:CZ	2:C:728:ASP:HB2	2.54	0.42
2:C:1285:TYR:CD1	3:D:1356:LEU:HD21	2.55	0.42
3:D:218:THR:O	3:D:221:ILE:HG22	2.19	0.42
5:F:425:TYR:CE2	5:F:429:THR:HG23	2.55	0.42
6:X:57:DC:H2''	6:X:58:DA:C8	2.54	0.42
7:Y:27:DG:C4	7:Y:28:DC:C4	3.07	0.42
1:A:212:ASP:OD1	1:A:215:GLU:HB3	2.20	0.42
1:B:192:VAL:HG23	1:B:198:LEU:HG	2.01	0.42
2:C:302:ILE:HA	2:C:309:LEU:HA	2.01	0.42
2:C:802:VAL:HG12	2:C:1096:ILE:HB	2.01	0.42
3:D:111:THR:HG21	3:D:303:VAL:HG11	2.00	0.42
1:A:14:VAL:HG11	1:A:29:GLU:CD	2.40	0.42
2:C:196:VAL:HG11	2:C:209:ILE:HG12	2.00	0.42
2:C:216:THR:OG1	2:C:219:GLN:HB2	2.19	0.42
2:C:464:PHE:CE2	2:C:468:LEU:HD21	2.55	0.42
2:C:1164:PHE:CE1	2:C:1167:GLU:N	2.85	0.42
11:C:1402:1N7:H18	11:C:1402:1N7:H24	2.00	0.42
3:D:45:ASN:O	3:D:46:TYR:CD1	2.72	0.42
3:D:74:LYS:NZ	3:D:86:GLU:OE1	2.50	0.42
5:F:339:ARG:HA	5:F:339:ARG:NE	2.35	0.42
5:F:479:THR:OG1	5:F:480:PRO:HD2	2.19	0.42
7:Y:50:DC:H2''	7:Y:51:DT:C7	2.50	0.42
1:B:293:PRO:O	1:B:294:ASN:HB2	2.20	0.42
2:C:44:GLU:O	2:C:44:GLU:HG2	2.20	0.42
2:C:66:SER:O	2:C:479:LEU:HD21	2.19	0.42
2:C:231:GLU:C	2:C:233:ARG:HH11	2.23	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:905:ILE:HG23	5:F:598:LEU:CD1	2.49	0.42
2:C:975:ILE:HG13	2:C:1014:LEU:HD23	2.02	0.42
2:C:1125:GLY:O	2:C:1128:ILE:HG22	2.19	0.42
3:D:704:GLU:O	3:D:706:VAL:HG23	2.19	0.42
3:D:749:LYS:HG2	3:D:753:SER:O	2.19	0.42
5:F:320:ILE:HD12	5:F:328:GLU:HA	2.01	0.42
3:D:162:GLU:O	3:D:166:LEU:HG	2.20	0.42
3:D:204:GLU:OE1	3:D:217:LEU:HD22	2.19	0.42
3:D:1144:LEU:HD11	3:D:1236:GLU:HG2	2.01	0.42
4:E:6:VAL:O	4:E:10:VAL:HG23	2.20	0.42
4:E:47:THR:CG2	4:E:48:VAL:N	2.83	0.42
5:F:138:PRO:HG2	5:F:351:THR:OG1	2.19	0.42
5:F:344:LEU:HD21	5:F:355:ILE:HD11	2.01	0.42
5:F:360:ASP:HB3	5:F:364:ARG:NH2	2.34	0.42
6:X:53:DG:H2"	6:X:54:DC:C6	2.54	0.42
1:B:281:LEU:HD22	1:B:307:LEU:HD21	2.02	0.42
2:C:1304:MET:HE2	2:C:1304:MET:HB2	1.82	0.42
3:D:259:ARG:CZ	5:F:505:ILE:HD11	2.50	0.42
3:D:691:ASP:OD2	3:D:691:ASP:C	2.58	0.42
3:D:1316:THR:HG22	3:D:1317:GLU:N	2.35	0.42
5:F:333:VAL:HG22	5:F:333:VAL:O	2.19	0.42
1:A:295:LEU:O	6:X:13:DT:OP1	2.38	0.42
1:B:59:VAL:HG23	1:B:143:ARG:O	2.20	0.42
1:B:106:GLY:O	1:B:138:ALA:HB1	2.20	0.42
2:C:529:ARG:HD3	2:C:572:ILE:HG23	2.02	0.42
2:C:624:ASP:C	2:C:625:GLU:HG3	2.40	0.42
2:C:696:ASP:O	2:C:790:ASP:CB	2.68	0.42
2:C:982:GLY:HA3	2:C:1002:LEU:HD11	2.02	0.42
3:D:370:LYS:HD2	3:D:443:GLU:OE2	2.19	0.42
3:D:793:SER:HB3	3:D:927:GLY:O	2.20	0.42
3:D:930:LEU:H	3:D:930:LEU:HD12	1.84	0.42
3:D:1002:VAL:HB	3:D:1019:ASN:HB2	2.01	0.42
4:E:6:VAL:HG22	4:E:9:ALA:HB3	2.01	0.42
5:F:279:ARG:NH1	5:F:343:LYS:HB3	2.34	0.42
5:F:552:THR:OG1	5:F:555:GLU:HB2	2.19	0.42
2:C:131:THR:HG22	2:C:132:ASP:H	1.85	0.41
2:C:1003:THR:HG1	2:C:1005:GLU:CD	2.23	0.41
2:C:1083:GLU:OE1	2:C:1083:GLU:N	2.41	0.41
2:C:1164:PHE:HE1	2:C:1167:GLU:H	1.62	0.41
2:C:1245:ALA:HB1	3:D:376:LEU:HD22	2.02	0.41
2:C:1247:SER:HB3	3:D:375:GLU:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:641:ILE:O	3:D:644:MET:SD	2.77	0.41
3:D:1065:ALA:HB2	3:D:1173:ARG:HB2	2.02	0.41
3:D:1169:THR:HG23	3:D:1169:THR:O	2.20	0.41
5:F:142:THR:HG22	5:F:146:GLU:OE2	2.20	0.41
5:F:224:LEU:HA	5:F:252:LEU:HD11	2.02	0.41
9:P:16:DT:C2	9:P:17:DC:C4	3.08	0.41
1:B:56:VAL:HG11	1:B:85:LEU:HD13	2.01	0.41
2:C:551:HIS:H	2:C:554:HIS:CE1	2.38	0.41
2:C:1120:ALA:HB1	2:C:1198:LEU:CD2	2.50	0.41
2:C:1255:THR:O	2:C:1255:THR:HG23	2.20	0.41
3:D:674:THR:OG1	3:D:677:GLU:HG3	2.20	0.41
3:D:804:ALA:O	3:D:916:GLY:HA3	2.19	0.41
3:D:1159:ILE:H	3:D:1177:ILE:HD12	1.84	0.41
9:P:12:DC:H2''	9:P:13:DG:C8	2.55	0.41
1:A:214:GLU:O	1:A:217:ILE:HG22	2.20	0.41
1:B:48:LEU:CD1	3:D:535:ARG:HD2	2.49	0.41
2:C:560:PRO:HB2	3:D:776:THR:HG21	2.01	0.41
2:C:728:ASP:C	2:C:730:SER:H	2.23	0.41
3:D:19:ALA:HA	3:D:1343:GLU:HA	2.02	0.41
3:D:641:ILE:O	3:D:764:ARG:NH1	2.53	0.41
3:D:708:ASN:HA	3:D:713:GLU:HA	2.02	0.41
3:D:1226:VAL:O	3:D:1229:VAL:HG12	2.20	0.41
5:F:335:GLU:O	5:F:339:ARG:HG2	2.20	0.41
5:F:415:ALA:HB2	5:F:434:TRP:HB2	2.01	0.41
5:F:573:LEU:HD23	7:Y:52:DG:OP2	2.21	0.41
7:Y:55:DA:C4	7:Y:56:DA:C8	3.09	0.41
2:C:595:THR:HB	2:C:598:VAL:HG13	2.02	0.41
2:C:1024:GLU:HA	2:C:1027:LYS:HG2	2.02	0.41
3:D:126:LEU:HD21	3:D:220:ARG:HA	2.02	0.41
3:D:137:ARG:O	3:D:142:GLU:HB3	2.21	0.41
5:F:355:ILE:O	5:F:356:GLU:C	2.59	0.41
6:X:1:DC:H2''	6:X:2:DA:C8	2.55	0.41
7:Y:74:DT:C2'	7:Y:75:DT:H71	2.51	0.41
1:B:89:ALA:HB3	1:B:124:VAL:HG12	2.02	0.41
2:C:14:ASP:HB3	2:C:1157:GLN:OE1	2.20	0.41
2:C:222:ASP:HA	2:C:227:LYS:CE	2.50	0.41
2:C:275:ARG:O	2:C:279:LYS:HG2	2.21	0.41
2:C:453:ILE:HG22	2:C:585:GLY:O	2.20	0.41
2:C:1002:LEU:HD12	2:C:1003:THR:H	1.86	0.41
3:D:43:THR:HG23	3:D:44:ILE:N	2.35	0.41
3:D:174:ASP:C	3:D:176:PHE:N	2.73	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:532:GLU:O	3:D:536:LEU:HD23	2.20	0.41
3:D:820:ILE:HG22	3:D:1227:HIS:ND1	2.35	0.41
3:D:1036:ARG:CD	3:D:1081:VAL:HG21	2.51	0.41
3:D:1073:ASP:OD1	3:D:1073:ASP:N	2.47	0.41
5:F:123:ILE:O	5:F:127:ILE:HG12	2.20	0.41
5:F:148:TYR:CD2	5:F:161:LEU:HD21	2.54	0.41
1:A:28:LEU:HB3	1:A:31:LEU:HD21	2.03	0.41
1:A:78:ILE:O	1:A:82:LEU:HD13	2.21	0.41
1:B:83:LEU:HD21	3:D:526:VAL:CG1	2.50	0.41
2:C:122:VAL:HG21	2:C:493:ILE:HD11	2.02	0.41
2:C:543:ALA:HA	2:C:544:GLY:HA3	1.82	0.41
2:C:809:GLY:O	3:D:359:PRO:HG3	2.20	0.41
2:C:1323:PHE:CZ	2:C:1327:LEU:HD11	2.56	0.41
3:D:167:ASP:O	3:D:170:GLU:HG3	2.19	0.41
3:D:262:THR:HB	3:D:266:ASN:OD1	2.21	0.41
3:D:557:LYS:HB3	3:D:563:LEU:HD23	2.01	0.41
7:Y:27:DG:H2"	7:Y:28:DC:C6	2.56	0.41
1:A:301:THR:HG21	1:B:291:LYS:CD	2.51	0.41
1:B:67:GLU:HG3	1:B:171:LEU:HD22	2.02	0.41
1:B:298:LYS:NZ	6:X:10:A:OP1	2.44	0.41
2:C:48:GLY:O	2:C:49:LEU:C	2.58	0.41
2:C:56:VAL:HG13	2:C:57:PHE:N	2.36	0.41
3:D:1108:GLN:HG2	3:D:1109:LEU:H	1.86	0.41
5:F:291:CYS:O	5:F:296:LYS:N	2.48	0.41
5:F:595:LEU:O	5:F:598:LEU:HG	2.21	0.41
7:Y:28:DC:C2	7:Y:29:DA:C5	3.08	0.41
1:B:222:THR:O	1:B:226:GLU:HG2	2.21	0.41
2:C:43:PRO:HG2	2:C:44:GLU:OE1	2.21	0.41
2:C:159:SER:O	2:C:171:LEU:O	2.39	0.41
2:C:321:LEU:O	2:C:325:LEU:HD23	2.20	0.41
2:C:545:PHE:O	2:C:546:GLU:C	2.59	0.41
2:C:560:PRO:O	3:D:780:ARG:NH2	2.54	0.41
2:C:726:TYR:HB3	2:C:733:VAL:HB	2.03	0.41
2:C:1105:SER:HA	3:D:736:GLN:OE1	2.21	0.41
11:C:1402:1N7:H14	11:C:1402:1N7:H29	1.83	0.41
3:D:53:ARG:HA	3:D:54:ASP:HA	1.77	0.41
3:D:62:PHE:O	3:D:101:ARG:HD2	2.20	0.41
3:D:572:THR:OG1	3:D:573:THR:N	2.54	0.41
3:D:643:ASP:O	3:D:720:ASN:ND2	2.46	0.41
3:D:770:LEU:HD12	3:D:771:GLN:N	2.36	0.41
3:D:809:VAL:HG13	3:D:912:GLY:H	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:966:VAL:HG23	3:D:974:VAL:CG1	2.49	0.41
3:D:1023:HIS:O	3:D:1024:THR:OG1	2.35	0.41
5:F:400:GLN:O	5:F:403:ASP:N	2.53	0.41
6:X:36:DG:H2''	6:X:37:DA:C8	2.56	0.41
7:Y:71:DT:C4	7:Y:72:DA:N6	2.88	0.41
9:P:5:DT:C2	9:P:6:DA:C5	3.09	0.41
9:P:10:DT:H2''	9:P:11:DC:C6	2.55	0.41
1:A:78:ILE:HA	1:A:81:ILE:HD12	2.02	0.41
1:A:149:GLY:O	1:A:177:TYR:HB3	2.20	0.41
1:B:242:VAL:HG12	1:B:243:LYS:N	2.34	0.41
1:B:294:ASN:HA	6:X:11:DT:H5''	2.03	0.41
2:C:302:ILE:HG22	2:C:309:LEU:HD13	2.02	0.41
2:C:436:ARG:O	2:C:436:ARG:NH1	2.53	0.41
2:C:444:ASP:OD1	2:C:444:ASP:N	2.50	0.41
2:C:625:GLU:OE1	2:C:626:GLU:HG3	2.21	0.41
2:C:700:VAL:CG1	2:C:1117:LEU:HD22	2.50	0.41
2:C:759:SER:OG	2:C:763:THR:N	2.52	0.41
2:C:1340:GLU:HB3	3:D:19:ALA:O	2.20	0.41
3:D:334:LYS:NZ	9:P:18:DA:OP1	2.46	0.41
3:D:780:ARG:HG2	3:D:780:ARG:HH11	1.86	0.41
3:D:807:LEU:HD21	3:D:1259:GLN:OE1	2.21	0.41
3:D:1036:ARG:HD3	3:D:1081:VAL:CG2	2.51	0.41
3:D:1172:LYS:O	3:D:1189:MET:SD	2.78	0.41
3:D:1298:VAL:N	3:D:1299:GLY:CA	2.84	0.41
4:E:63:ILE:HD12	4:E:66:VAL:CG2	2.51	0.41
5:F:256:PHE:CE1	5:F:259:PHE:HB2	2.55	0.41
5:F:289:LYS:HD2	5:F:290:LEU:HD22	2.02	0.41
5:F:292:VAL:HA	5:F:296:LYS:HA	2.02	0.41
5:F:402:LEU:HA	5:F:405:ILE:HG12	2.03	0.41
5:F:605:GLU:O	5:F:608:ARG:HB3	2.21	0.41
6:X:33:DC:H2''	6:X:34:DC:C6	2.55	0.41
1:A:252:ILE:HG22	1:A:312:LEU:CD1	2.51	0.41
1:A:286:GLU:OE1	1:A:300:LEU:HD21	2.21	0.41
2:C:59:ILE:HG21	2:C:475:VAL:CG1	2.51	0.41
2:C:233:ARG:HH21	2:C:284:LEU:HG	1.85	0.41
3:D:125:GLY:HA2	3:D:135:ILE:CD1	2.51	0.41
3:D:528:THR:HG22	3:D:532:GLU:OE2	2.21	0.41
3:D:704:GLU:O	3:D:706:VAL:N	2.54	0.41
3:D:961:SER:OG	3:D:981:GLU:OE1	2.36	0.41
3:D:1170:LYS:O	3:D:1170:LYS:HG2	2.21	0.41
5:F:394:TYR:HA	5:F:397:ARG:NH1	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:X:46:DC:H2''	6:X:47:DT:H72	2.03	0.41
7:Y:27:DG:H2''	7:Y:28:DC:C5	2.56	0.41
7:Y:50:DC:C2'	7:Y:51:DT:H72	2.51	0.41
1:B:83:LEU:HD12	3:D:528:THR:CA	2.51	0.40
1:B:260:LEU:HD22	1:B:306:VAL:HB	2.02	0.40
2:C:232:ILE:HD12	2:C:330:HIS:O	2.20	0.40
2:C:459:MET:SD	2:C:511:LEU:HD11	2.61	0.40
2:C:559:CYS:HB2	2:C:662:SER:HB3	2.04	0.40
3:D:34:SER:CB	3:D:104:HIS:HB3	2.50	0.40
3:D:370:LYS:HE3	3:D:409:TRP:CZ3	2.56	0.40
3:D:709:ARG:CG	3:D:710:ASP:H	2.34	0.40
3:D:1044:GLN:HG3	3:D:1045:THR:H	1.85	0.40
3:D:1150:PRO:HG3	3:D:1214:PRO:HB2	2.03	0.40
5:F:276:MET:HG3	5:F:347:ILE:HG21	2.03	0.40
5:F:442:SER:O	5:F:446:GLN:HG2	2.21	0.40
1:A:253:LEU:CD1	1:A:279:GLY:HA2	2.51	0.40
1:B:45:ARG:O	1:B:49:SER:OG	2.39	0.40
1:B:137:ASN:O	1:B:138:ALA:C	2.59	0.40
2:C:431:LYS:O	2:C:435:ILE:HG13	2.21	0.40
3:D:963:VAL:HG22	3:D:964:LYS:N	2.36	0.40
3:D:1327:GLU:HG3	9:P:16:DT:OP1	2.21	0.40
3:D:1353:VAL:O	3:D:1353:VAL:HG12	2.20	0.40
5:F:122:ARG:HG3	5:F:375:ALA:HB2	2.03	0.40
5:F:228:TYR:HB2	5:F:252:LEU:CD2	2.51	0.40
5:F:277:MET:O	5:F:280:VAL:HG22	2.21	0.40
5:F:326:TRP:CG	5:F:327:SER:N	2.89	0.40
5:F:508:GLU:HA	5:F:518:HIS:HB3	2.03	0.40
5:F:586:ARG:HB2	6:X:25:DT:C7	2.51	0.40
6:X:39:DT:OP2	6:X:39:DT:H2'	2.21	0.40
7:Y:65:DT:H2''	7:Y:66:DT:H72	2.02	0.40
8:O:7:DG:H2''	8:O:8:DG:C8	2.56	0.40
9:P:14:DT:H2''	9:P:15:DG:C8	2.55	0.40
2:C:33:ASP:OD1	2:C:34:SER:N	2.54	0.40
2:C:119:GLU:OE2	2:C:490:GLN:HB3	2.21	0.40
2:C:220:ILE:O	2:C:224:PHE:HD1	2.03	0.40
2:C:232:ILE:HG12	2:C:237:LEU:HD23	2.03	0.40
2:C:322:LEU:HD12	2:C:323:ALA:N	2.37	0.40
2:C:678:ARG:NH2	2:C:1106:ARG:HD3	2.35	0.40
2:C:685:MET:SD	2:C:1073:LYS:HG2	2.61	0.40
2:C:800:MET:SD	2:C:1096:ILE:CD1	3.09	0.40
2:C:812:PHE:HA	3:D:505:ASP:OD2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:1286:THR:HG22	3:D:476:ALA:HB1	2.03	0.40
2:C:1313:HIS:O	4:E:28:ARG:NH2	2.54	0.40
3:D:275:ARG:NH1	3:D:298:MET:O	2.54	0.40
3:D:342:LEU:HD22	3:D:1352:ILE:HD12	2.04	0.40
5:F:163:THR:HG21	5:F:260:ARG:HH21	1.87	0.40
5:F:261:LEU:HB2	5:F:266:PHE:HD2	1.86	0.40
5:F:576:VAL:HG13	5:F:587:ILE:HG12	2.03	0.40
6:X:17:DA:C8	6:X:18:DT:H72	2.57	0.40
6:X:55:DG:H2''	6:X:56:DC:C5	2.56	0.40
7:Y:23:DT:H2''	7:Y:24:DG:C8	2.57	0.40
2:C:1288:GLN:O	2:C:1292:THR:HG22	2.21	0.40
3:D:122:SER:CB	3:D:132:LEU:HD13	2.52	0.40
3:D:832:LYS:HG2	3:D:1242:ARG:HD3	2.02	0.40
3:D:930:LEU:HD11	3:D:1244:GLN:CG	2.51	0.40
3:D:1159:ILE:CG1	3:D:1177:ILE:HD12	2.52	0.40
5:F:235:ILE:HG23	5:F:236:LYS:N	2.37	0.40
1:A:62:ASP:OD1	1:A:62:ASP:N	2.54	0.40
1:B:57:THR:HG23	1:B:58:GLU:H	1.86	0.40
2:C:211:ARG:NE	2:C:354:ASP:OD2	2.45	0.40
2:C:1103:VAL:HG22	2:C:1111:GLN:HE21	1.87	0.40
2:C:1331:ARG:NH2	2:C:1337:ILE:O	2.54	0.40
3:D:356:THR:O	3:D:448:GLN:HA	2.21	0.40
3:D:515:ARG:O	3:D:545:HIS:CB	2.69	0.40
3:D:770:LEU:O	3:D:774:ILE:HG12	2.21	0.40
3:D:807:LEU:HD21	3:D:1259:GLN:CD	2.42	0.40
5:F:148:TYR:OH	5:F:218:ARG:HA	2.22	0.40
5:F:161:LEU:CA	5:F:260:ARG:O	2.69	0.40
5:F:456:MET:SD	5:F:497:VAL:HG22	2.61	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	307/329 (93%)	255 (83%)	47 (15%)	5 (2%)	9	44
1	B	314/329 (95%)	271 (86%)	41 (13%)	2 (1%)	25	64
2	C	1338/1342 (100%)	1227 (92%)	105 (8%)	6 (0%)	34	71
3	D	1336/1407 (95%)	1210 (91%)	115 (9%)	11 (1%)	19	59
4	E	74/91 (81%)	69 (93%)	5 (7%)	0	100	100
5	F	441/613 (72%)	397 (90%)	41 (9%)	3 (1%)	22	61
All	All	3810/4111 (93%)	3429 (90%)	354 (9%)	27 (1%)	26	61

All (27) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	261	GLU
3	D	338	PHE
3	D	1345	ARG
5	F	139	GLU
5	F	356	GLU
1	A	242	VAL
1	B	21	SER
1	B	193	GLU
2	C	398	SER
2	C	625	GLU
3	D	258	GLY
3	D	588	PRO
1	A	247	PRO
3	D	46	TYR
3	D	345	LYS
3	D	860	ARG
3	D	1138	LEU
3	D	1151	LYS
1	A	250	ASP
2	C	1160	ASP
3	D	337	ARG
5	F	396	ASN
3	D	49	PHE
2	C	39	ILE
1	A	252	ILE
2	C	45	GLY
2	C	1223	ARG

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	269/286 (94%)	268 (100%)	1 (0%)	91	94
1	B	276/286 (96%)	276 (100%)	0	100	100
2	C	1155/1157 (100%)	1153 (100%)	2 (0%)	93	96
3	D	1114/1168 (95%)	1112 (100%)	2 (0%)	93	96
4	E	65/75 (87%)	65 (100%)	0	100	100
5	F	397/540 (74%)	395 (100%)	2 (0%)	88	93
All	All	3276/3512 (93%)	3269 (100%)	7 (0%)	93	96

All (7) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	12	ARG
2	C	267	ARG
2	C	890	LYS
3	D	314	ARG
3	D	695	LYS
5	F	264	LYS
5	F	364	ARG

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

Mol	Chain	Res	Type
2	C	41	GLN
3	D	488	ASN
3	D	712	GLN
4	E	73	GLN

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 [i](#)

Of 6 ligands modelled in this entry, 3 are monoatomic - leaving 3 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
10	POP	C	1401	-	6,8,8	0.76	0	13,13,13	1.39	1 (7%)
11	1N7	C	1403	-	45,46,46	4.03	19 (42%)	69,72,72	2.00	20 (28%)
11	1N7	C	1402	-	45,46,46	4.10	20 (44%)	69,72,72	2.43	22 (31%)

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
10	POP	C	1401	-	-	0/6/6/6	-
11	1N7	C	1403	-	-	6/27/92/92	0/4/4/4
11	1N7	C	1402	-	-	6/27/92/92	0/4/4/4

All (39) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	C	1402	1N7	C3-C4	-12.69	1.31	1.53
11	C	1403	1N7	C3-C4	-12.45	1.32	1.53
11	C	1402	1N7	C5-C9	-11.28	1.36	1.55

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	C	1403	1N7	C5-C9	-10.92	1.36	1.55
11	C	1402	1N7	C3-C19	-9.14	1.38	1.53
11	C	1403	1N7	C3-C19	-9.08	1.38	1.53
11	C	1402	1N7	C2-C19	7.09	1.69	1.56
11	C	1403	1N7	C24-N1	6.66	1.48	1.33
11	C	1403	1N7	C5-C4	6.62	1.64	1.54
11	C	1402	1N7	C24-N1	6.53	1.48	1.33
11	C	1402	1N7	C5-C4	6.48	1.64	1.54
11	C	1403	1N7	C2-C19	6.40	1.67	1.56
11	C	1403	1N7	C7-C6	-6.19	1.41	1.54
11	C	1402	1N7	C7-C6	-5.98	1.42	1.54
11	C	1402	1N7	C18-C19	-5.72	1.42	1.53
11	C	1403	1N7	C18-C19	-5.62	1.42	1.53
11	C	1402	1N7	C8-C7	5.42	1.68	1.54
11	C	1403	1N7	C8-C7	5.14	1.68	1.54
11	C	1403	1N7	C5-C6	4.79	1.63	1.55
11	C	1402	1N7	C5-C6	4.77	1.63	1.55
11	C	1402	1N7	C18-C6	4.49	1.62	1.53
11	C	1403	1N7	C18-C6	4.48	1.62	1.53
11	C	1402	1N7	C20-C9	4.24	1.61	1.54
11	C	1403	1N7	C2-C15	-4.10	1.48	1.55
11	C	1403	1N7	C20-C9	3.29	1.60	1.54
11	C	1403	1N7	O3-C17	-3.25	1.36	1.43
11	C	1402	1N7	O3-C17	-3.17	1.36	1.43
11	C	1402	1N7	C2-C15	-3.00	1.50	1.55
11	C	1403	1N7	C23-C24	2.89	1.56	1.51
11	C	1402	1N7	C8-C9	2.83	1.60	1.54
11	C	1402	1N7	C23-C24	2.78	1.56	1.51
11	C	1402	1N7	O1-C24	-2.54	1.18	1.23
11	C	1403	1N7	O1-C24	-2.51	1.18	1.23
11	C	1402	1N7	O7-S1	2.43	1.52	1.45
11	C	1403	1N7	O7-S1	2.42	1.52	1.45
11	C	1402	1N7	C14-C15	2.22	1.57	1.53
11	C	1403	1N7	C8-C9	2.22	1.59	1.54
11	C	1402	1N7	O6-S1	2.08	1.51	1.45
11	C	1403	1N7	O6-S1	2.04	1.51	1.45

All (43) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	C	1402	1N7	C5-C6-C18	-8.07	104.43	114.74
11	C	1402	1N7	C5-C9-C20	-7.68	110.33	119.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	C	1403	1N7	C5-C6-C18	-6.29	106.70	114.74
11	C	1403	1N7	C6-C5-C4	-5.39	102.38	107.40
11	C	1402	1N7	C16-C17-C18	-5.33	105.79	111.48
11	C	1402	1N7	C23-C22-C20	-5.07	105.25	114.52
11	C	1402	1N7	C8-C9-C20	4.63	119.32	112.15
11	C	1403	1N7	C5-C9-C20	-4.37	114.28	119.50
10	C	1401	POP	P2-O-P1	-4.10	118.76	132.83
11	C	1402	1N7	C1-C2-C15	3.86	113.47	107.77
11	C	1402	1N7	C8-C7-C6	-3.85	97.51	105.13
11	C	1403	1N7	O7-S1-C32	3.76	111.41	106.94
11	C	1403	1N7	O6-S1-O7	-3.66	101.27	113.95
11	C	1403	1N7	O6-S1-C32	3.61	111.23	106.94
11	C	1402	1N7	O6-S1-O7	-3.54	101.71	113.95
11	C	1403	1N7	C8-C7-C6	-3.52	98.15	105.13
11	C	1402	1N7	O6-S1-C32	3.52	111.12	106.94
11	C	1403	1N7	C23-C22-C20	-3.45	108.22	114.52
11	C	1402	1N7	O7-S1-C32	3.37	110.94	106.94
11	C	1403	1N7	C3-C19-C2	-3.28	110.34	113.73
11	C	1402	1N7	C21-C20-C9	-3.26	107.93	112.92
11	C	1402	1N7	C1-C12-C13	-3.07	106.53	110.47
11	C	1402	1N7	C11-C2-C15	-3.07	105.16	110.36
11	C	1402	1N7	C22-C20-C9	2.97	116.42	110.28
11	C	1403	1N7	C15-C14-C13	-2.95	108.43	112.76
11	C	1402	1N7	C2-C19-C18	-2.88	108.73	111.82
11	C	1403	1N7	C6-C18-C17	-2.88	107.99	111.81
11	C	1403	1N7	O8-S1-C32	2.87	110.32	105.74
11	C	1403	1N7	C2-C19-C18	-2.87	108.74	111.82
11	C	1402	1N7	O8-S1-C32	2.84	110.26	105.74
11	C	1402	1N7	C16-C15-C14	-2.82	107.94	111.19
11	C	1402	1N7	C19-C2-C15	2.76	112.46	108.58
11	C	1403	1N7	C14-C13-C12	-2.73	107.29	110.55
11	C	1403	1N7	C21-C20-C9	-2.61	108.92	112.92
11	C	1402	1N7	C15-C16-C17	-2.54	111.66	114.46
11	C	1403	1N7	C31-C28-N2	-2.48	112.86	116.81
11	C	1402	1N7	C19-C18-C17	-2.34	109.08	111.88
11	C	1402	1N7	C9-C5-C4	-2.34	115.53	117.67
11	C	1402	1N7	C16-C15-C2	2.23	115.02	112.66
11	C	1403	1N7	C15-C16-C17	-2.18	112.06	114.46
11	C	1403	1N7	C26-C27-N2	-2.10	110.92	115.38
11	C	1403	1N7	C19-C3-C4	2.10	117.08	114.30
11	C	1403	1N7	C19-C18-C6	-2.00	106.96	109.71

There are no chirality outliers.

All (12) torsion outliers are listed below:

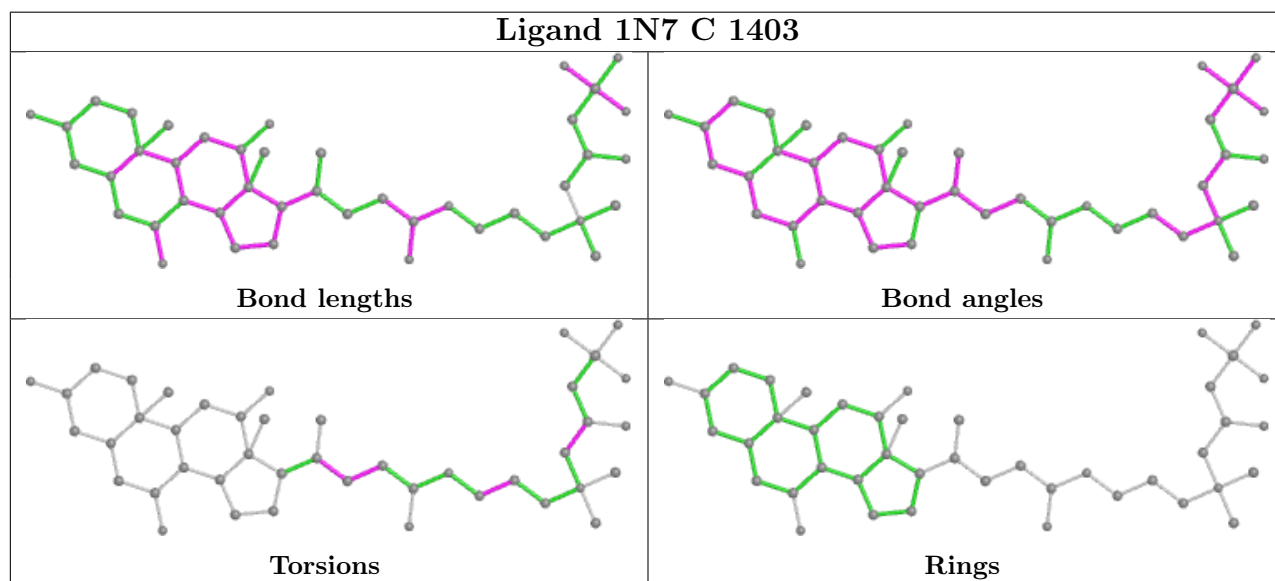
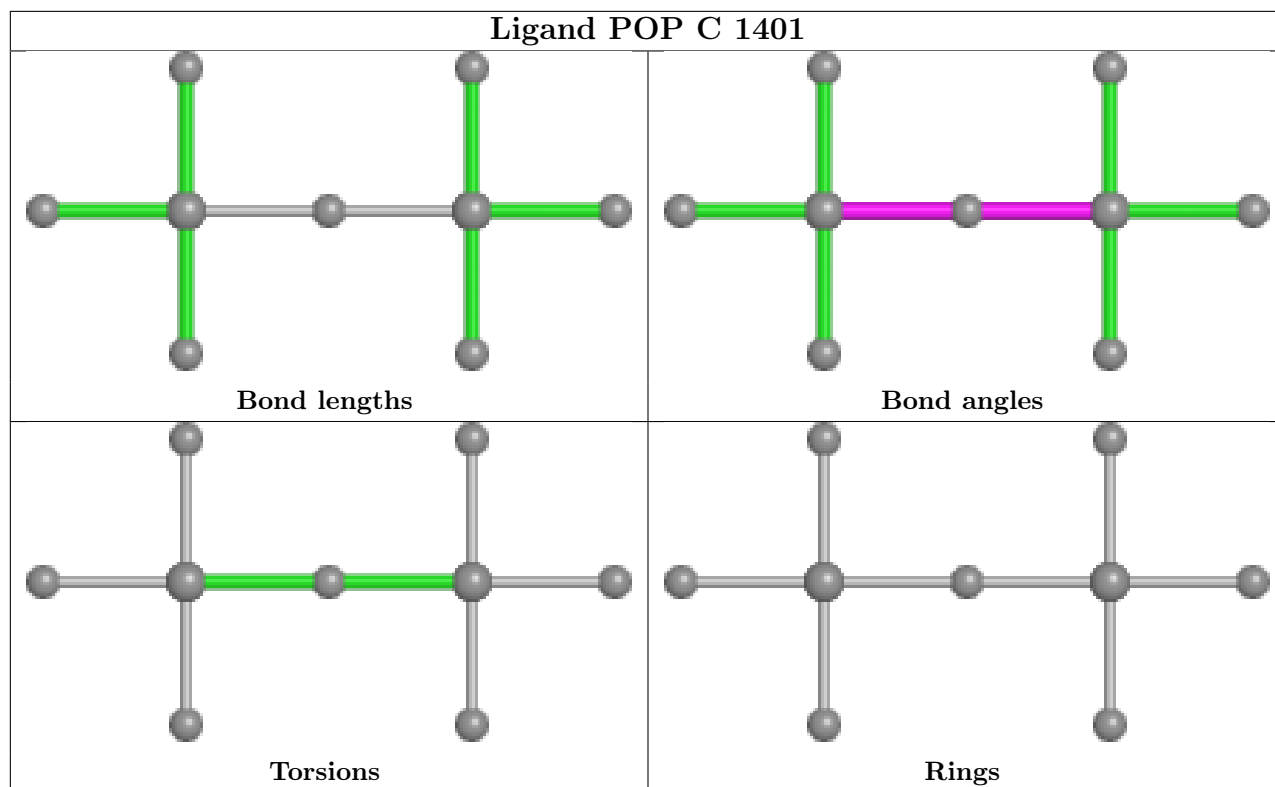
Mol	Chain	Res	Type	Atoms
11	C	1402	1N7	C21-C20-C9-C5
11	C	1402	1N7	C22-C20-C9-C5
11	C	1402	1N7	C22-C20-C9-C8
11	C	1402	1N7	N2-C28-C31-C32
11	C	1402	1N7	N2-C28-C31-O5
11	C	1403	1N7	N2-C28-C31-C32
11	C	1403	1N7	N2-C28-C31-O5
11	C	1402	1N7	C21-C20-C9-C8
11	C	1403	1N7	N1-C25-C26-C27
11	C	1403	1N7	C9-C20-C22-C23
11	C	1403	1N7	C21-C20-C22-C23
11	C	1403	1N7	C20-C22-C23-C24

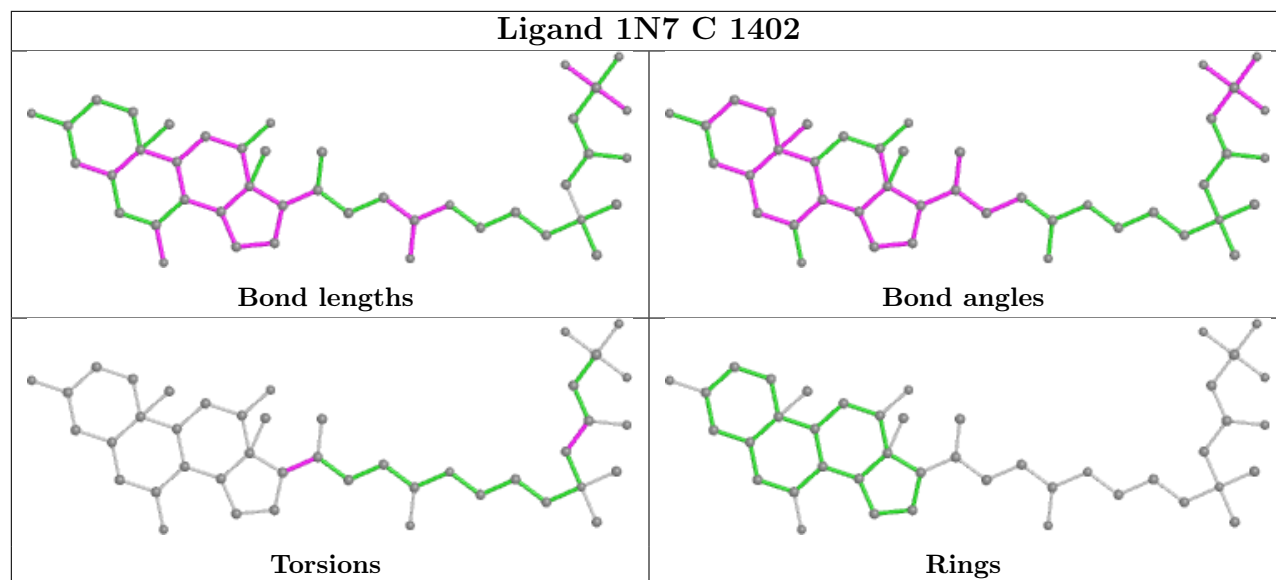
There are no ring outliers.

3 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
10	C	1401	POP	1	0
11	C	1403	1N7	5	0
11	C	1402	1N7	3	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.

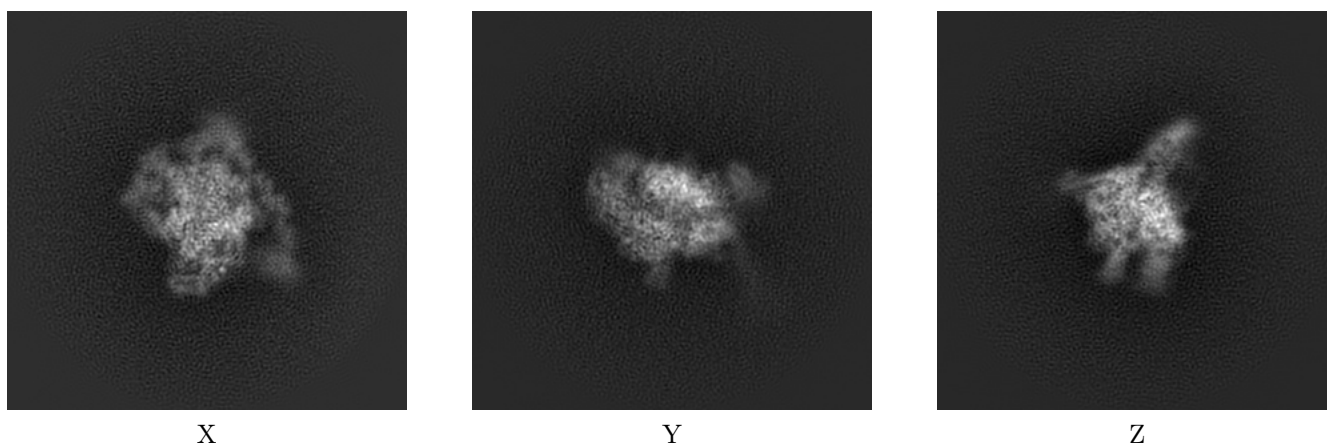
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-21879. 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](#)

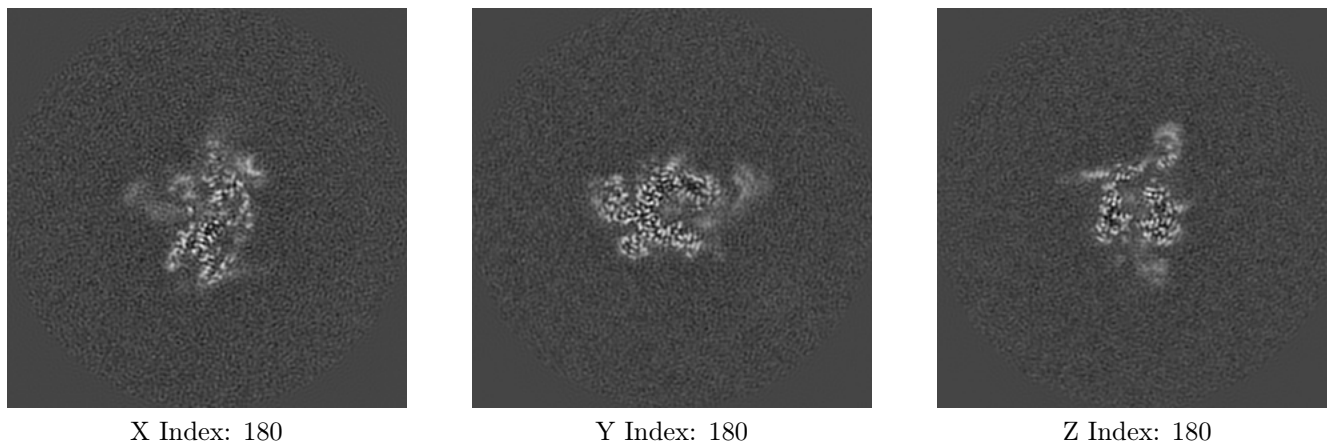
6.1.1 Primary map



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

6.2 Central slices [i](#)

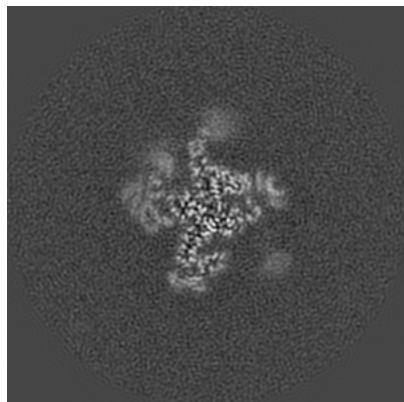
6.2.1 Primary map



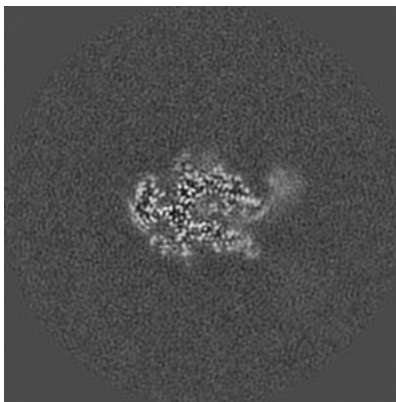
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

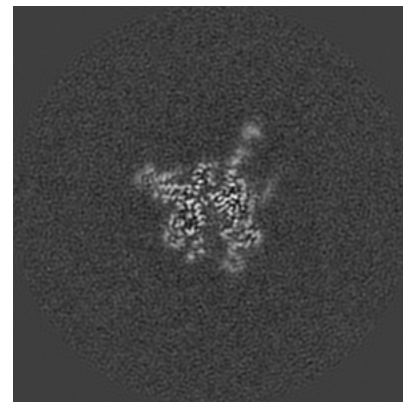
6.3.1 Primary map



X Index: 197



Y Index: 185



Z Index: 167

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

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.013. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

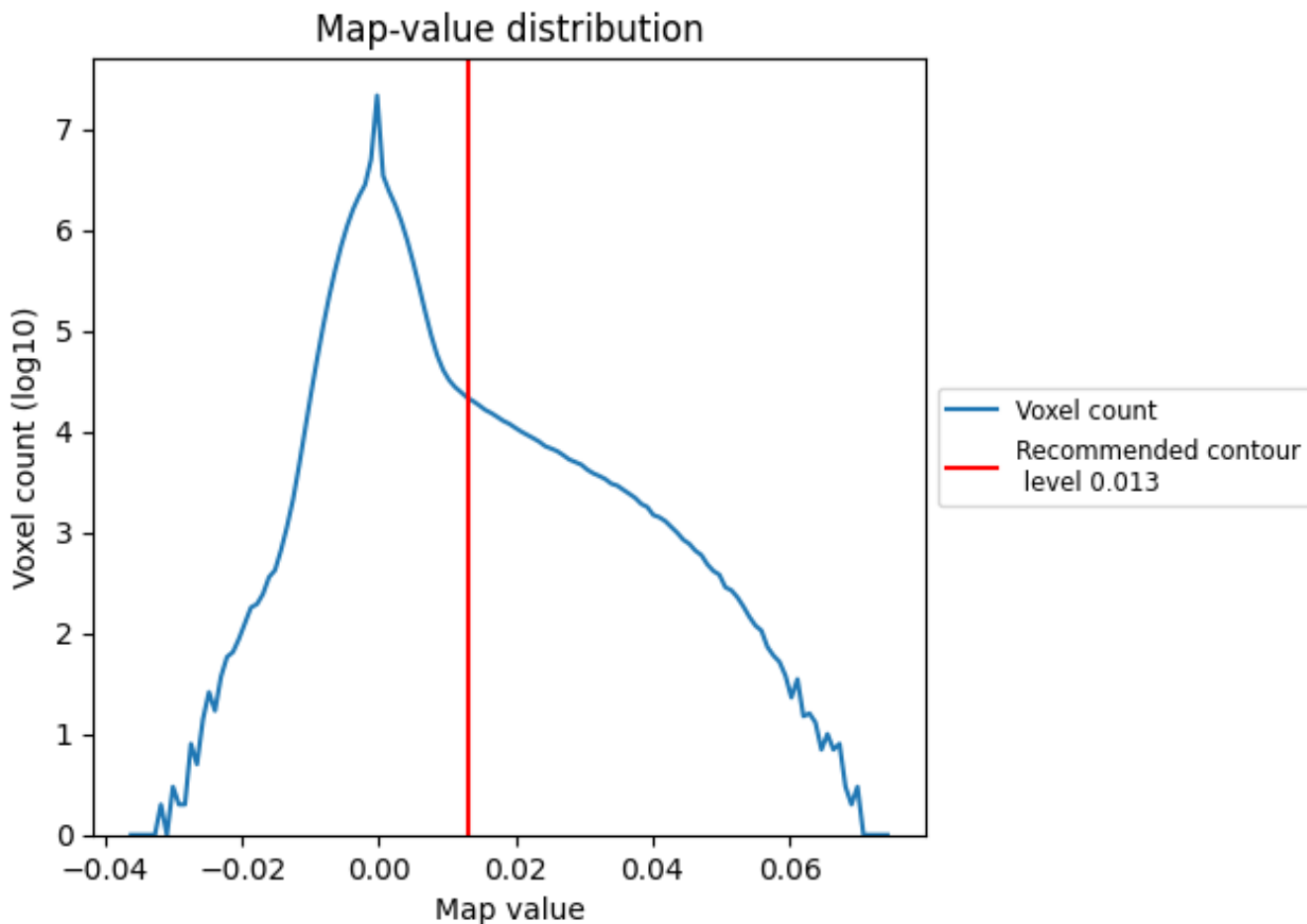
6.5 Mask visualisation

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

7 Map analysis [i](#)

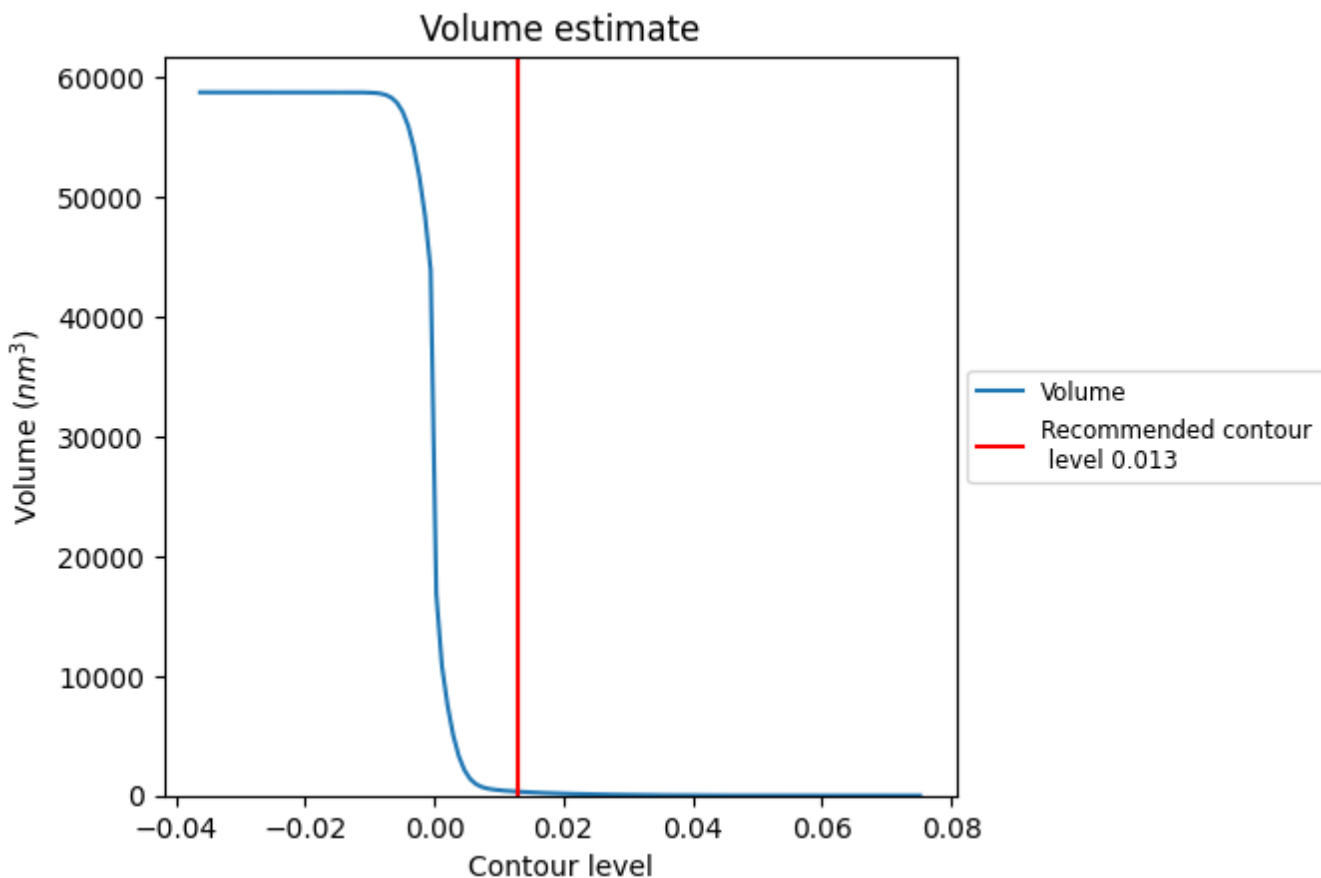
This section contains the results of statistical analysis of the map.

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.

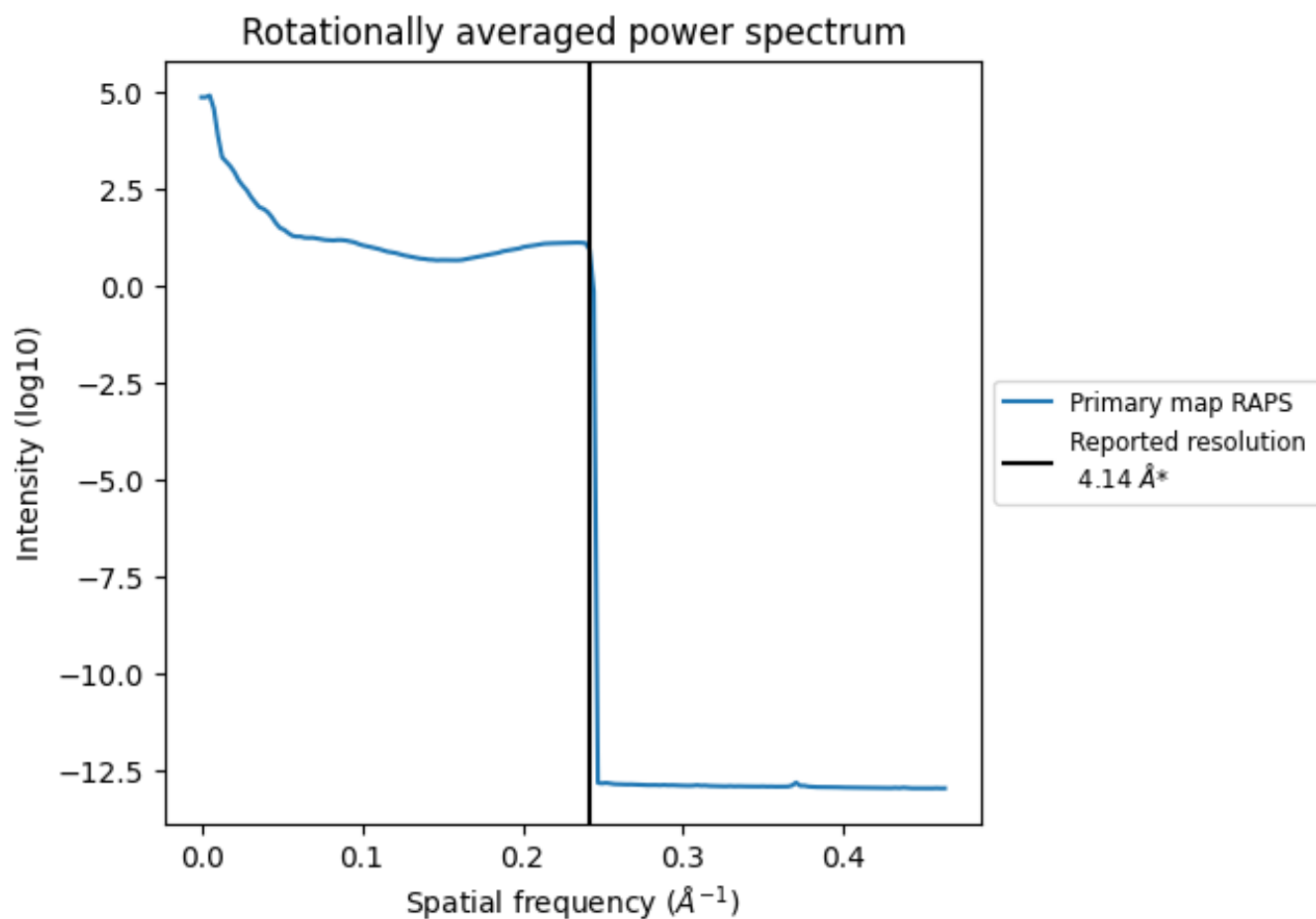
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 327 nm³; this corresponds to an approximate mass of 295 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 0.242 Å⁻¹

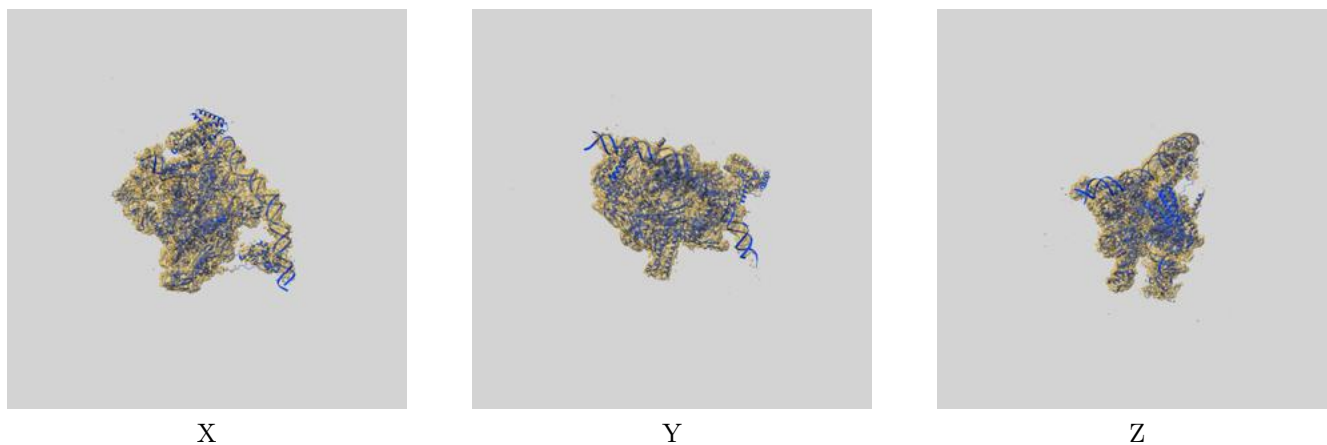
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

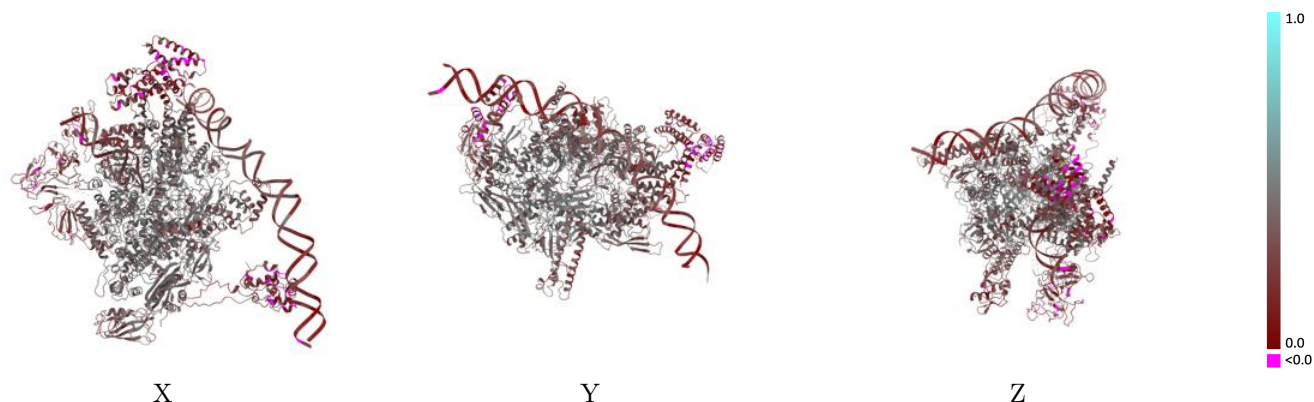
This section contains information regarding the fit between EMDB map EMD-21879 and PDB model 7KHC. Per-residue inclusion information can be found in section [3](#) on page [7](#).

9.1 Map-model overlay [i](#)



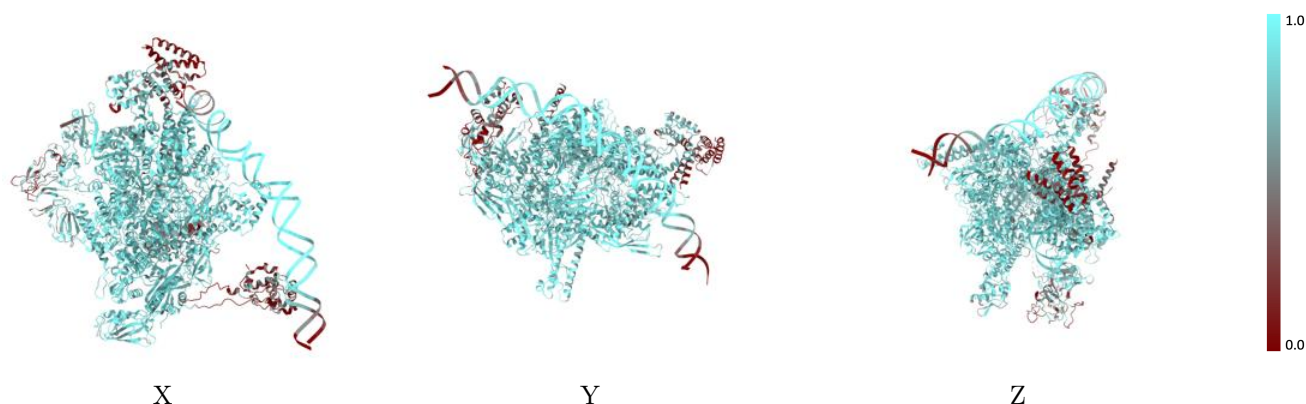
The images above show the 3D surface view of the map at the recommended contour level 0.013 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



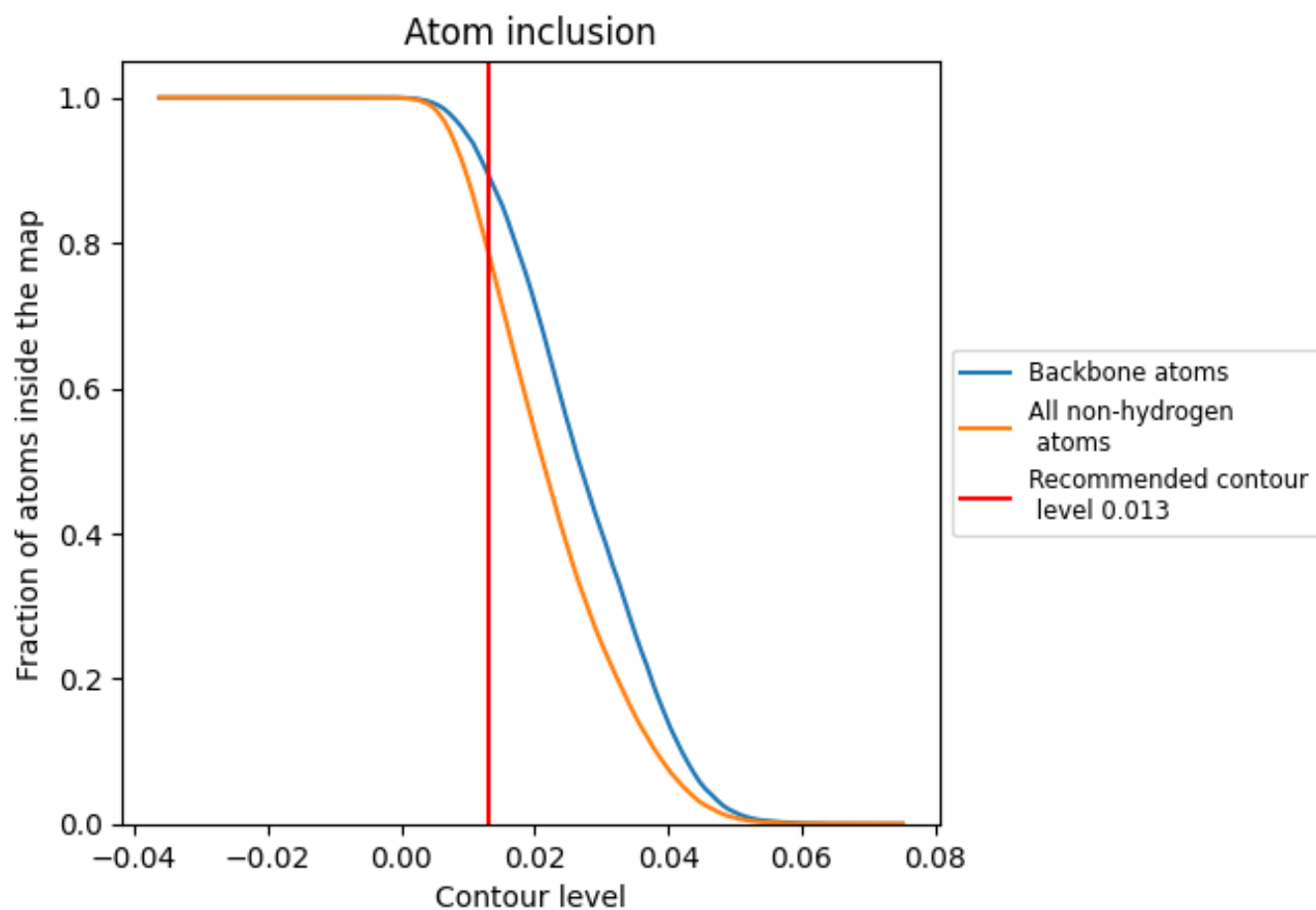
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.013).























9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 79% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.013) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7900	 0.3570
A	 0.7057	 0.3580
B	 0.6599	 0.3310
C	 0.8696	 0.4070
D	 0.8314	 0.3870
E	 0.5671	 0.3720
F	 0.6537	 0.2600
O	 0.8351	 0.2130
P	 0.8505	 0.2720
X	 0.7214	 0.2050
Y	 0.7341	 0.2250

