



## Full wwPDB EM Validation Report ⓘ

Mar 10, 2026 – 04:37 AM UTC

PDB ID : 8XKS / pdb\_00008xks  
EMDB ID : EMD-38424  
Title : The cryo-EM structure of Orf2971-FtsHi motor complex  
Authors : Wang, N.; Li, M.  
Deposited on : 2023-12-24  
Resolution : 3.20 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](mailto: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>.

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

EMDB validation analysis : 0.0.1.dev132  
Mogul : 2022.3.0, CSD as543be (2022)  
MolProbity : 4-5-2 with Phenix2.0  
Buster-report : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

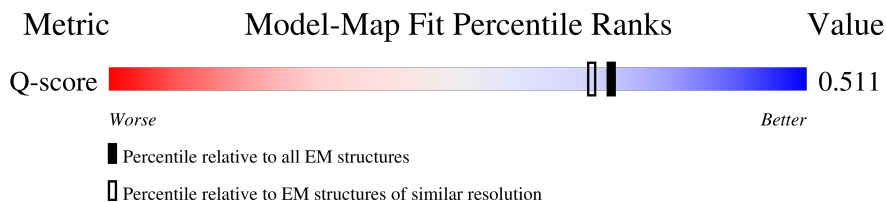
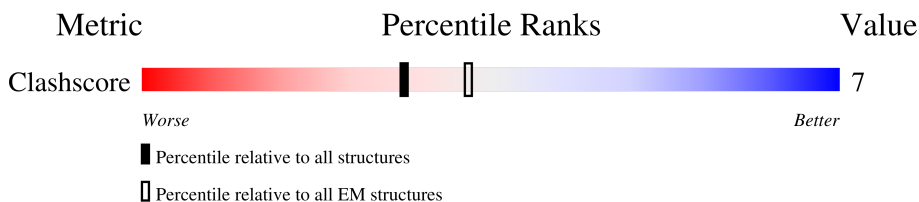
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*


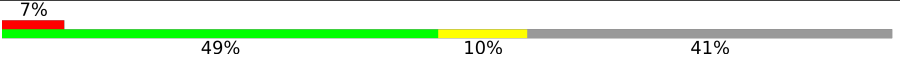
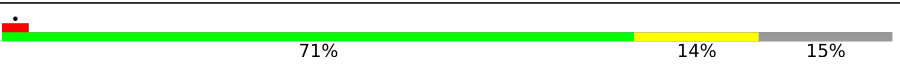
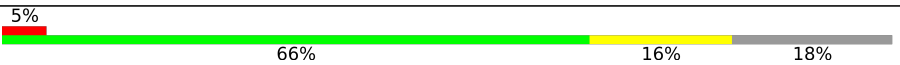
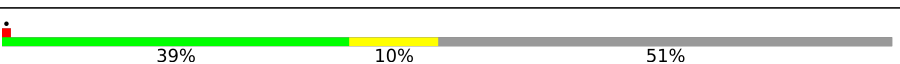

The reported resolution of this entry is 3.20 Å.

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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Q-score	-	25397	15020 ( 2.70 - 3.70 )

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  $\geq 3$ , 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	982	
2	B	1024	
3	C	462	
4	D	1178	
5	E	2971	
6	F	1058	

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Mol	Chain	Length	Quality of chain
6	G	1058	
7	H	691	
8	I	330	
9	J	365	
10	K	682	
11	L	255	
12	M	303	
13	N	324	
14	O	471	
15	P	555	
16	Q	495	
17	R	117	
18	S	137	
19	T	299	

## 2 Entry composition [i](#)

There are 25 unique types of molecules in this entry. The entry contains 67528 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 Ctap1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	715	Total	C	N	O	S	0	0
			5557	3504	1001	1038	14		

- Molecule 2 is a protein called Fhl2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	603	Total	C	N	O	S	0	0
			4588	2880	830	859	19		

- Molecule 3 is a protein called 4Fe-4S ferredoxin-type domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	391	Total	C	N	O	S	0	0
			3085	1940	555	569	21		

- Molecule 4 is a protein called AAA+ ATPase domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	971	Total	C	N	O	S	0	0
			7551	4796	1323	1396	36		

- Molecule 5 is a protein called Uncharacterized 341.7 kDa protein in psbD-psbC intergenic region.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	1458	Total	C	N	O	S	0	0
			12035	7819	2048	2142	26		

- Molecule 6 is a protein called AAA+ ATPase domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	676	Total	C	N	O	S	0	0
			5216	3291	927	967	31		

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Mol	Chain	Residues	Atoms					AltConf	Trace
6	G	674	Total	C	N	O	S	0	0
			5260	3327	928	977	28		

- Molecule 7 is a protein called Flagellar associated protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H	500	Total	C	N	O	S	0	0
			3670	2289	681	690	10		

- Molecule 8 is a protein called Tic22.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	204	Total	C	N	O	S	0	0
			1619	1035	277	298	9		

- Molecule 9 is a protein called FaxL.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	J	274	Total	C	N	O	S	0	0
			2101	1326	393	368	14		

- Molecule 10 is a protein called Fatty acid desaturase domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	K	370	Total	C	N	O	S	0	0
			2853	1866	486	485	16		

- Molecule 11 is a protein called Moc25.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L	185	Total	C	N	O	S	0	0
			1541	1017	267	250	7		

- Molecule 12 is a protein called Moc29.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	M	135	Total	C	N	O	S	0	0
			1127	762	185	176	4		

- Molecule 13 is a protein called Moc34.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	N	125	Total	C	N	O	S	0	0
			1005	627	181	196	1		

- Molecule 14 is a protein called Moc45.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	O	197	Total	C	N	O	S	0	0
			1517	1012	246	253	6		

- Molecule 15 is a protein called PcyA1.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	P	406	Total	C	N	O	S	0	0
			3245	2061	547	616	21		

- Molecule 16 is a protein called ADP-ribosylglycohydrolase.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q	386	Total	C	N	O	S	0	0
			2880	1811	531	534	4		

- Molecule 17 is a protein called Acyl carrier protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R	85	Total	C	N	O	P S	0	0
			633	393	99	137	1 3		

- Molecule 18 is a protein called Moc13.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	114	Total	C	N	O	S	0	0
			909	579	168	159	3		

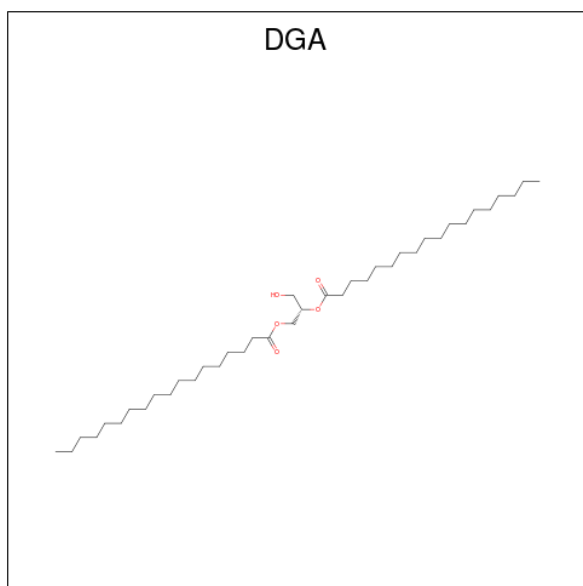
- Molecule 19 is a protein called Moc31.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	T	107	Total	C	N	O	S	0	0
			840	524	144	170	2		

- Molecule 20 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

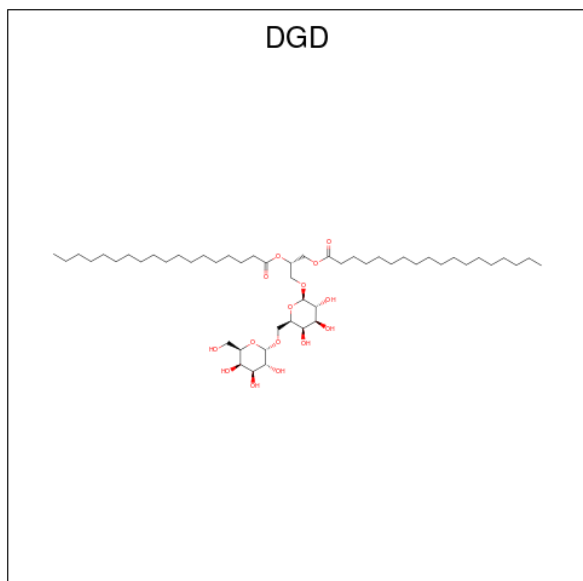
Mol	Chain	Residues	Atoms		AltConf
20	C	2	Total	Zn	0
			2	2	

- Molecule 21 is DIACYL GLYCEROL (CCD ID: DGA) (formula:  $C_{39}H_{76}O_5$ ) (labeled as "Ligand of Interest" by depositor).



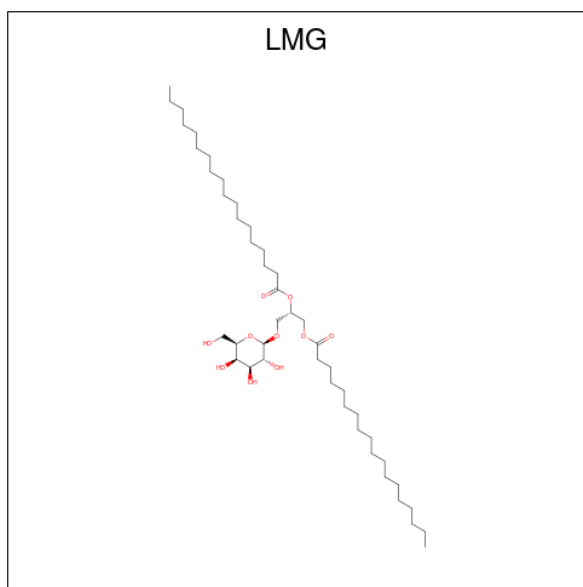
Mol	Chain	Residues	Atoms			AltConf
21	H	1	Total	C	O	0
			36	31	5	

- Molecule 22 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (CCD ID: DGD) (formula:  $C_{51}H_{96}O_{15}$ ).



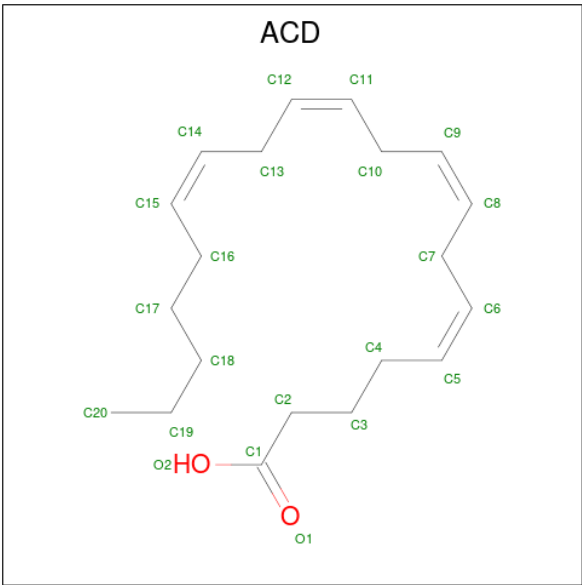
Mol	Chain	Residues	Atoms			AltConf
22	J	1	Total	C	O	0
			47	32	15	
22	L	1	Total	C	O	0
			66	51	15	

- Molecule 23 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (CCD ID: LMG) (formula:  $C_{45}H_{86}O_{10}$ ).



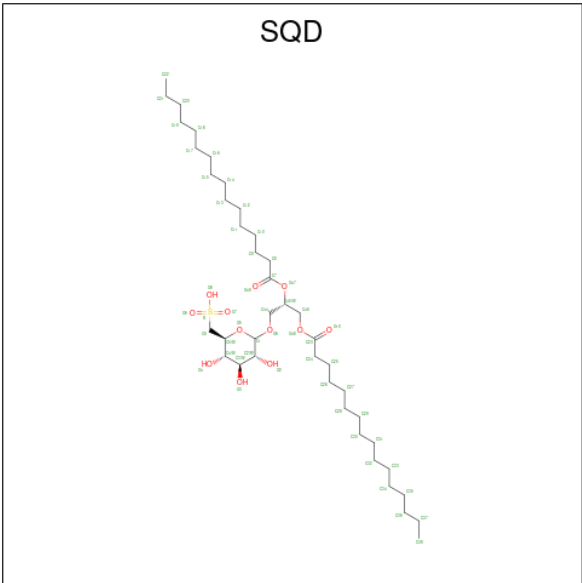
Mol	Chain	Residues	Atoms			AltConf
23	J	1	Total	C	O	0
			41	31	10	
23	L	1	Total	C	O	0
			47	37	10	

- Molecule 24 is ARACHIDONIC ACID (CCD ID: ACD) (formula:  $C_{20}H_{32}O_2$ ) (labeled as "Ligand of Interest" by depositor).



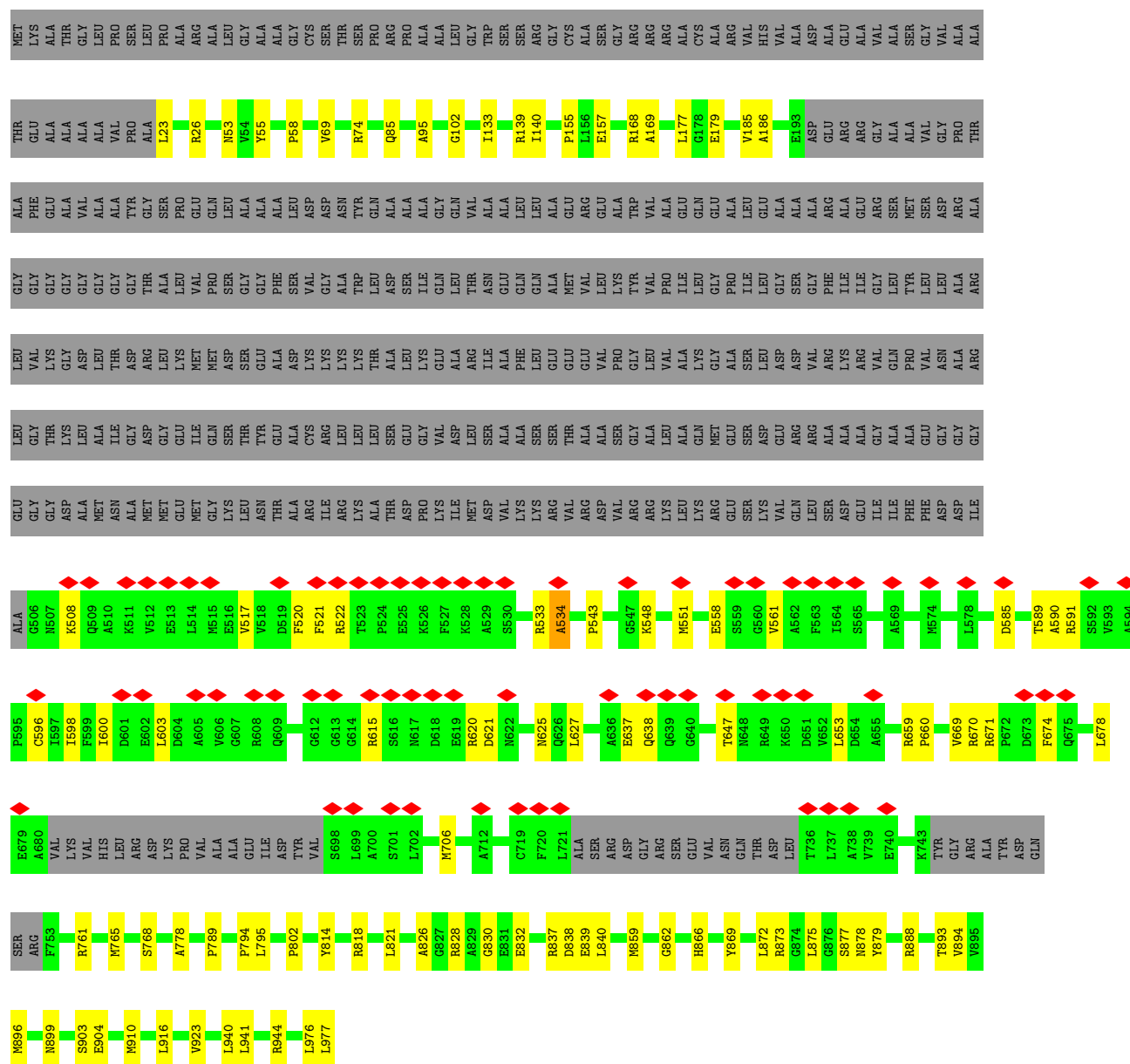
Mol	Chain	Residues	Atoms			AltConf
24	K	1	Total	C	O	0
			21	20	1	

- Molecule 25 is 1,2-DI-O-ACYL-3-O-[6-DEOXY-6-SULFO-ALPHA-D-GLUCOPYRANOSYL]-SN-GLYCEROL (CCD ID: SQD) (formula:  $C_{41}H_{78}O_{12}S$ ).

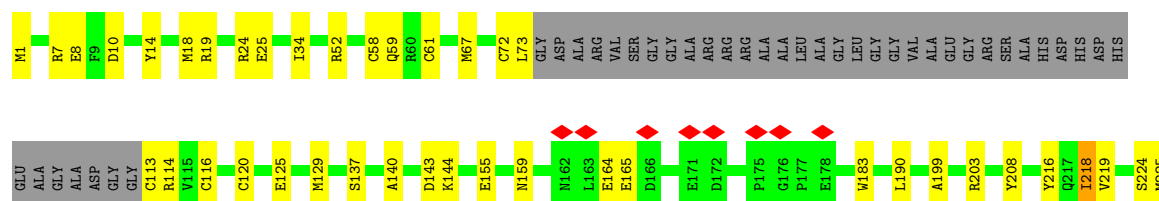


Mol	Chain	Residues	Atoms				AltConf
25	L	1	Total	C	O	S	0
			36	23	12	1	

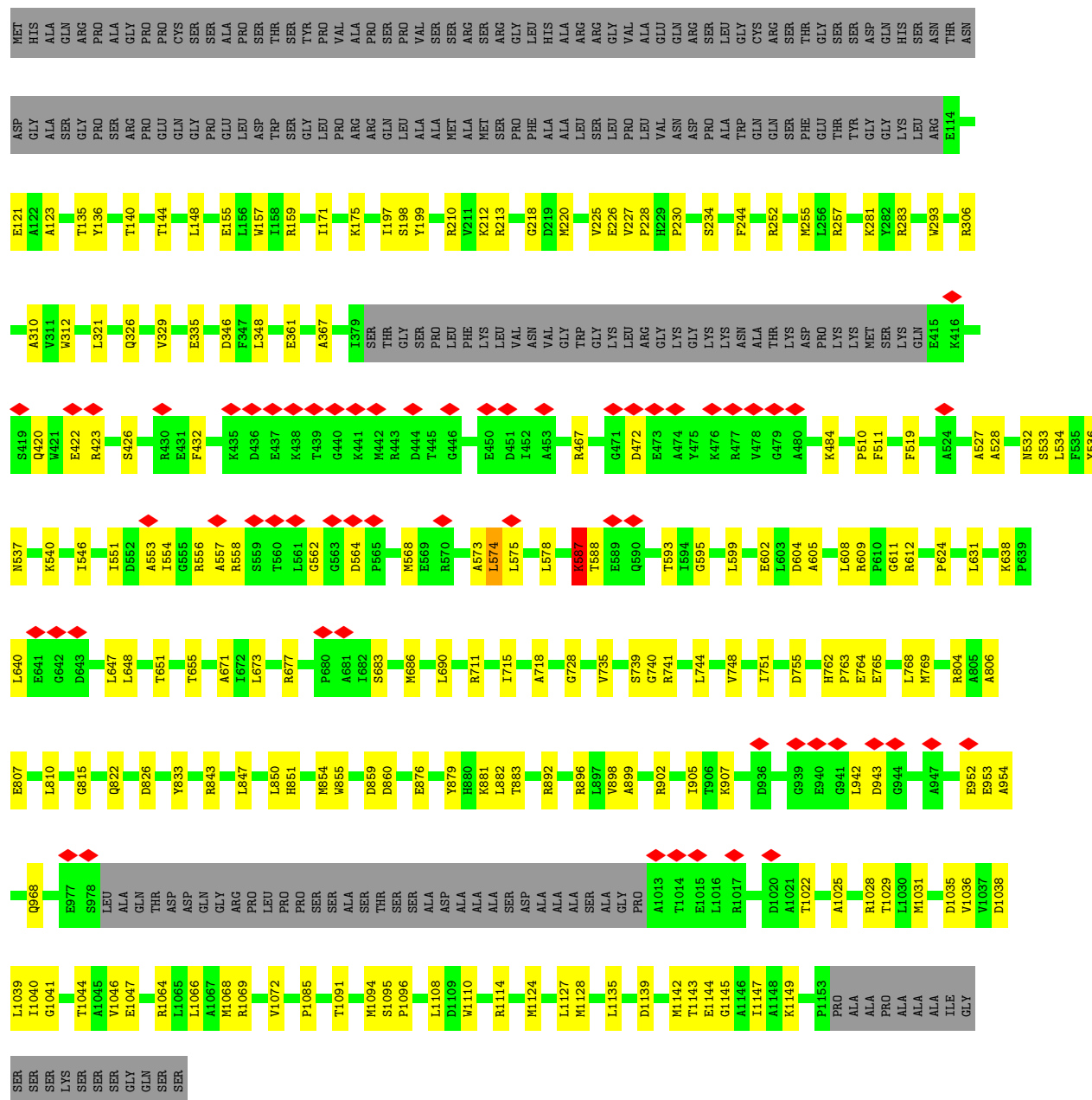




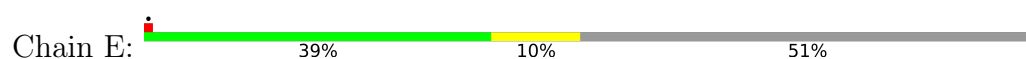
• Molecule 3: 4Fe-4S ferredoxin-type domain-containing protein



- Molecule 4: AAA+ ATPase domain-containing protein



- Molecule 5: Uncharacterized 341.7 kDa protein in psbD-psbC intergenic region







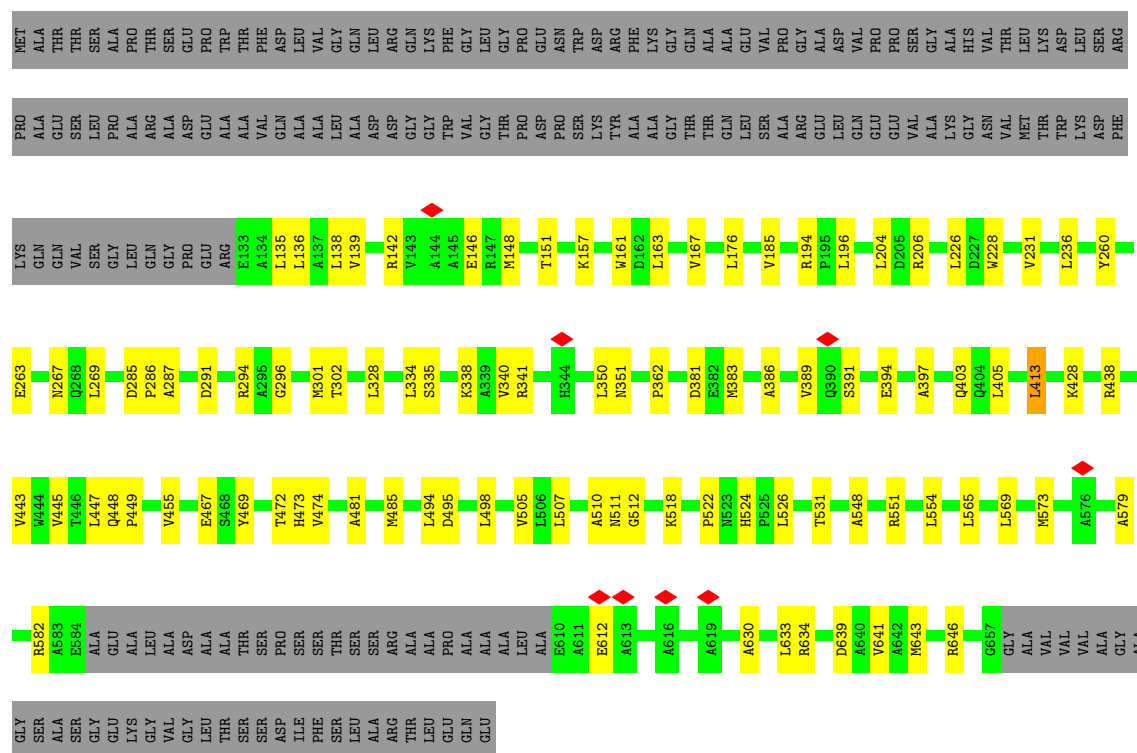


- Molecule 6: AAA+ ATPase domain-containing protein

Chain G:  51% 12% 36%

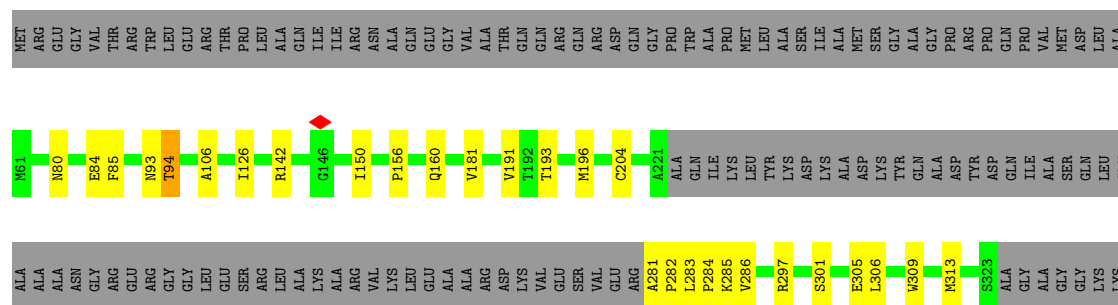
PHE	LYS	PRO	PRO	ASP	THR	PRO	PRO	GLU	GLY	GLY	SER	SER	GLY	GLY	GLY	GLY	ALA	ALA	ALA	ALA	GLU	GLY	SER	ALA	ALA	PRO	GLN	THR	PRO	ASP	LEU	SER	SER	GLY	ALA	ALA	ARG	GLY	LYS	THR	THR	TRP	PHE	ALA	ALA	THR	ALA	ALA	TYR	ASP	ASP	ALA	PRO	ARG	ASN	ASN	ALA	ALA	ASP	GLY	ASP	THR	THR	LYS	LYS	GLU	HIS	G1032	M1036	M1037	Y1058
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Chain H:  58% 14% 28%



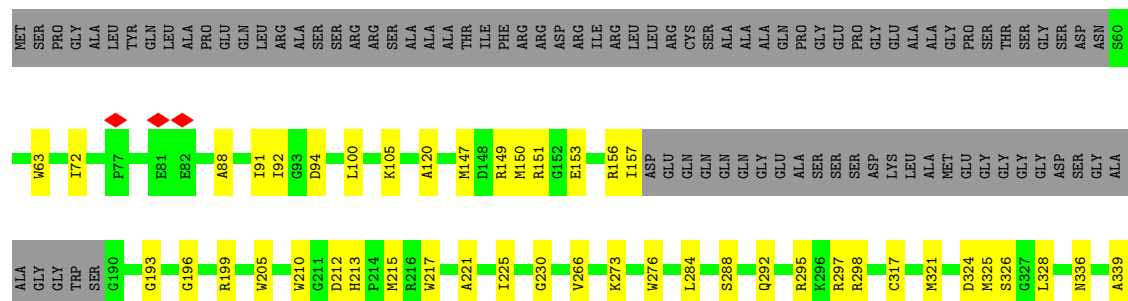
### • Molecule 8: Tic22

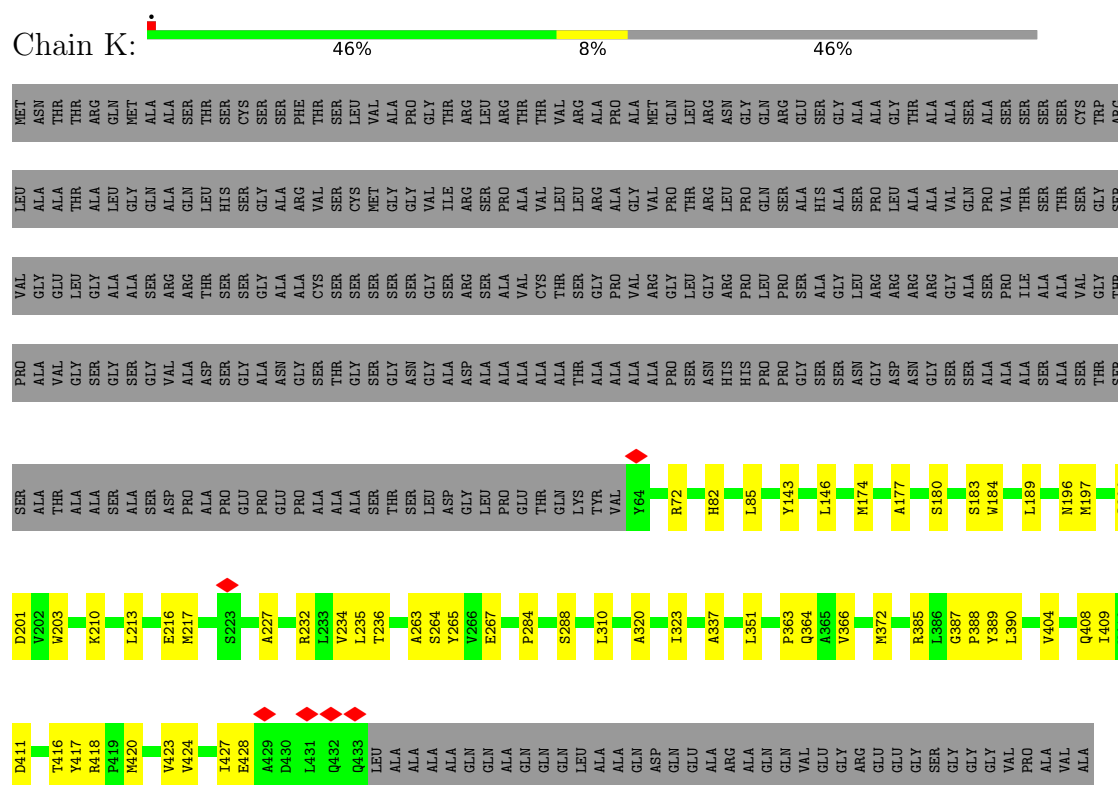
Chain I:  53% 8% 38%



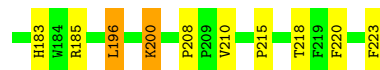
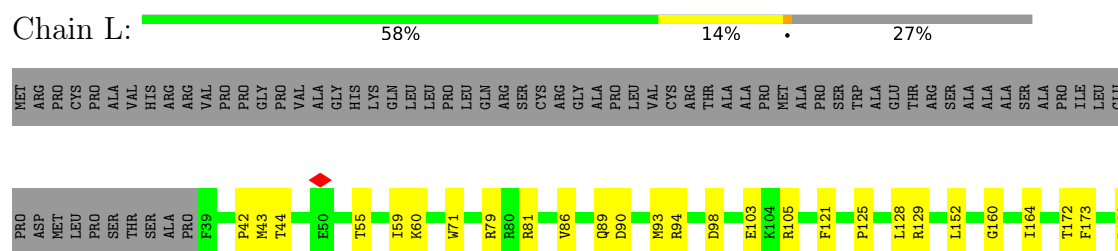
### • Molecule 9: FaxL

Chain J:  61% 15% 25%

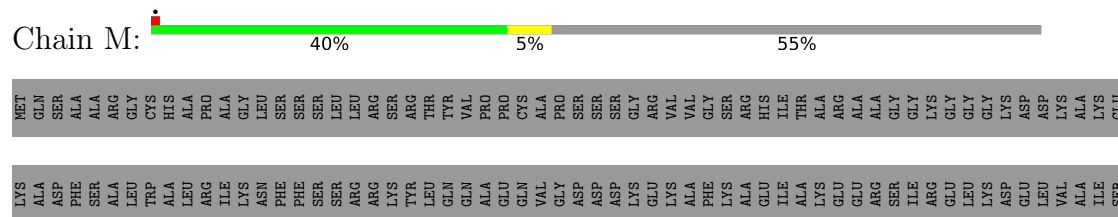




- Molecule 11: Moc25



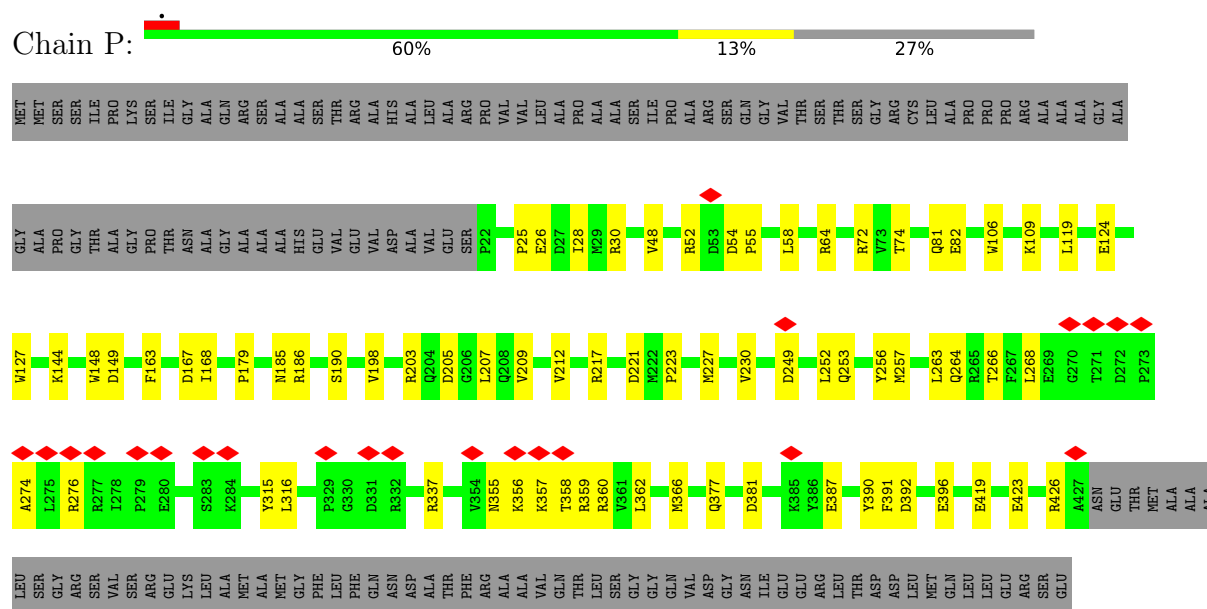
- Molecule 12: Moc29





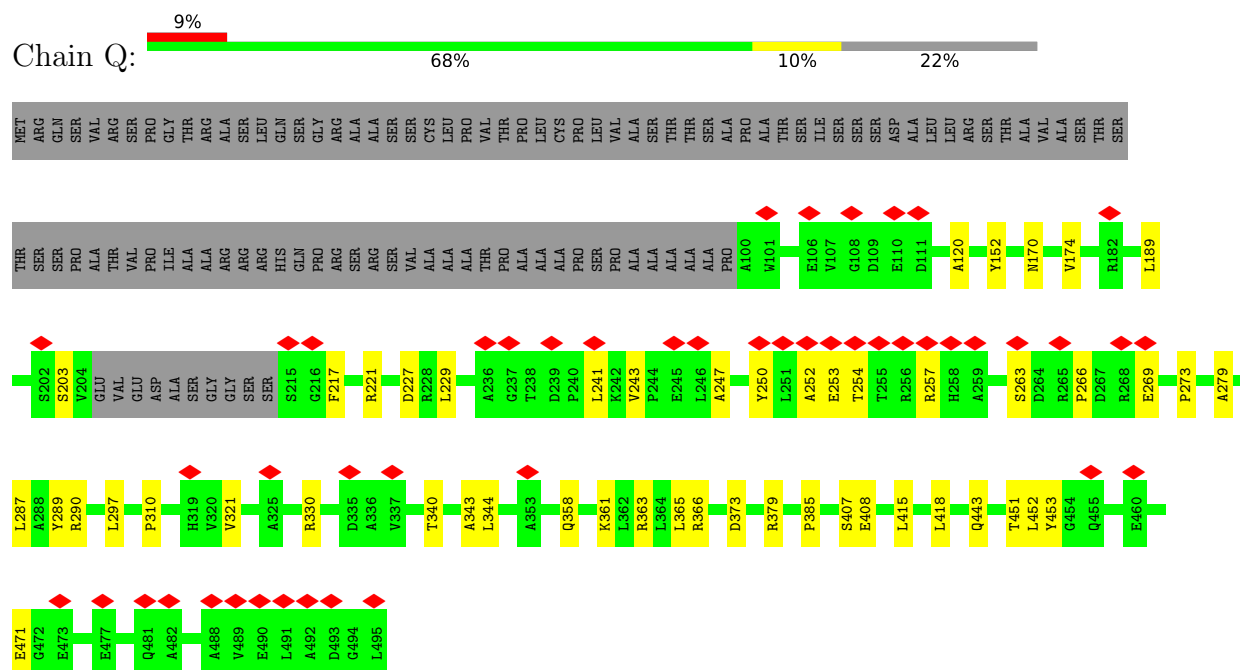
- Molecule 15: PcyA1

Chain P:



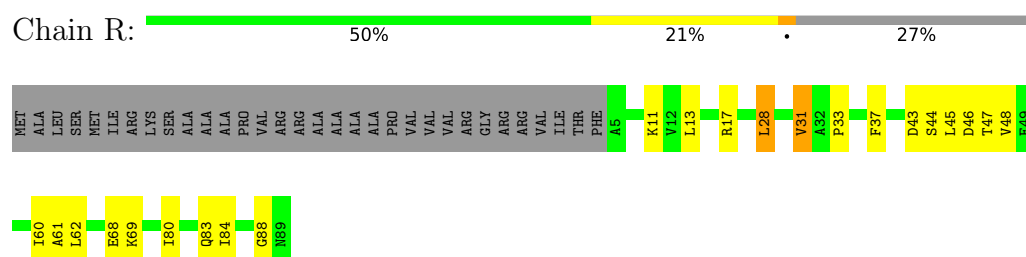
- Molecule 16: ADP-ribosylglycohydrolase

Chain Q:

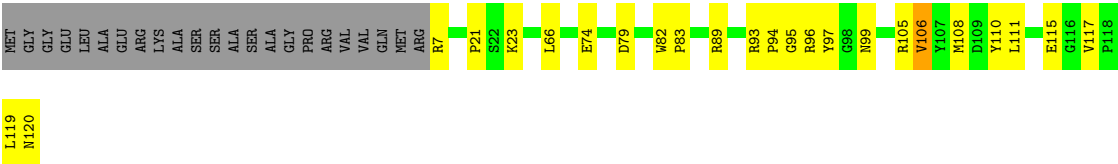


- Molecule 17: Acyl carrier protein

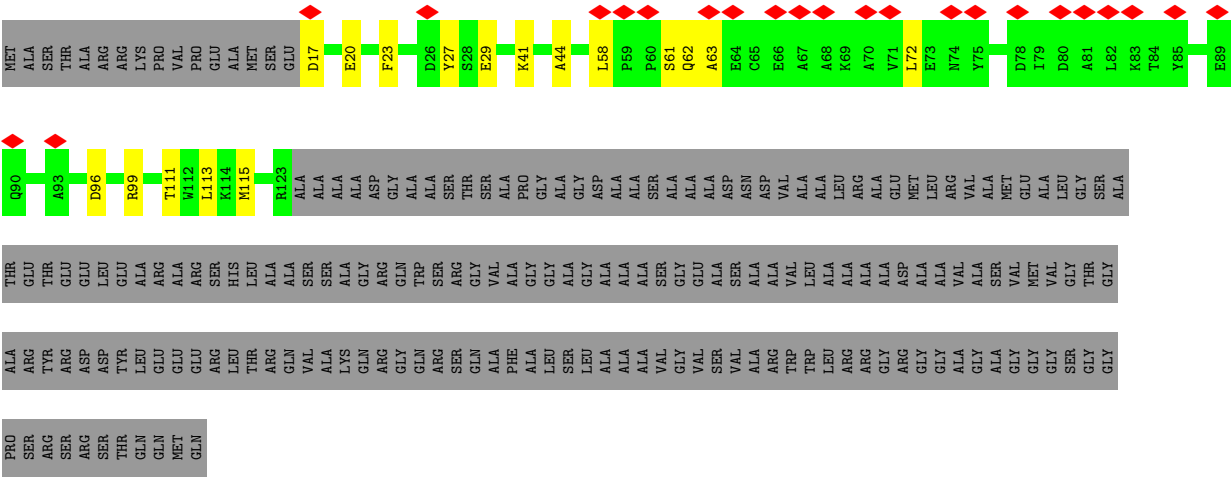
Chain R:



● Molecule 18: Moc13



● Molecule 19: Moc31



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	127613	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	0.099	Depositor
Minimum map value	-0.000	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.00943	Depositor
Map size (Å)	436.8, 436.8, 436.8	wwPDB
Map dimensions	420, 420, 420	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.04, 1.04, 1.04	Depositor

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: ACD, DGA, DGD, SEP, SQD, ZN, LMG

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	0.25	0/5693	0.56	6/7745 (0.1%)
2	B	0.20	0/4671	0.46	0/6328
3	C	0.23	0/3172	0.49	1/4315 (0.0%)
4	D	0.31	3/7715 (0.0%)	0.55	7/10469 (0.1%)
5	E	0.28	1/12285 (0.0%)	0.56	7/16600 (0.0%)
6	F	0.28	1/5322 (0.0%)	0.59	5/7210 (0.1%)
6	G	0.26	0/5367	0.54	1/7277 (0.0%)
7	H	0.27	1/3747 (0.0%)	0.58	0/5108
8	I	0.29	0/1652	0.57	2/2238 (0.1%)
9	J	0.28	0/2159	0.49	0/2934
10	K	0.26	0/2954	0.55	2/4054 (0.0%)
11	L	0.29	1/1600 (0.1%)	0.61	3/2186 (0.1%)
12	M	0.32	0/1175	0.53	0/1613
13	N	0.37	0/1024	0.69	1/1391 (0.1%)
14	O	0.24	0/1561	0.53	1/2135 (0.0%)
15	P	0.23	0/3323	0.50	1/4513 (0.0%)
16	Q	0.18	0/2946	0.44	0/4014
17	R	0.29	0/624	0.68	2/839 (0.2%)
18	S	0.38	1/933 (0.1%)	0.57	1/1266 (0.1%)
19	T	0.30	1/856 (0.1%)	0.55	0/1159
All	All	0.27	9/68779 (0.0%)	0.54	40/93394 (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	B	0	1
4	D	0	2
5	E	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
6	F	0	2
6	G	0	1
13	N	0	1
All	All	0	8

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	1096	PRO	CG-CD	-10.96	1.13	1.50
4	D	1096	PRO	N-CD	6.67	1.57	1.47
7	H	413	LEU	CG-CD2	-6.56	1.30	1.52
4	D	574	LEU	CG-CD1	-5.96	1.32	1.52
18	S	106	VAL	CB-CG1	-5.75	1.33	1.52
5	E	1184	LEU	CG-CD1	-5.56	1.34	1.52
6	F	885	ASP	C-N	5.35	1.38	1.33
19	T	44	ALA	C-N	5.08	1.39	1.34
11	L	196	LEU	CG-CD2	-5.01	1.36	1.52

All (40) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	D	1096	PRO	N-CD-CG	-13.31	83.23	103.20
5	E	1186	PRO	CA-N-CD	-12.35	94.72	112.00
1	A	262	PRO	CA-N-CD	-11.27	96.22	112.00
1	A	379	PRO	CA-N-CD	-10.94	96.68	112.00
4	D	1096	PRO	N-CA-CB	-8.19	94.66	103.25
6	F	344	PRO	CA-N-CD	-8.17	100.56	112.00
10	K	388	PRO	CA-N-CD	-8.15	100.60	112.00
5	E	1186	PRO	N-CD-CG	-8.06	91.11	103.20
4	D	1096	PRO	CA-CB-CG	-7.94	89.41	104.50
1	A	262	PRO	N-CD-CG	-7.52	91.93	103.20
6	F	428	LEU	CB-CG-CD1	-7.27	88.89	110.70
11	L	196	LEU	CB-CG-CD1	-7.08	89.46	110.70
5	E	2633	PRO	CA-N-CD	-6.88	102.38	112.00
15	P	74	THR	OG1-CB-CG2	-6.70	95.91	109.30
4	D	1147	ILE	N-CA-C	-6.63	107.41	113.71
11	L	200	LYS	CD-CE-NZ	-6.50	91.08	111.90
6	F	977	PRO	CA-N-CD	-6.33	103.14	112.00
17	R	28	LEU	CD1-CG-CD2	-6.32	96.89	110.80
6	F	319	LEU	CA-C-N	6.28	133.54	121.54
6	F	319	LEU	C-N-CA	6.28	133.54	121.54
3	C	218	ILE	N-CA-C	-6.25	106.68	111.62

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	D	587	LYS	CA-C-N	6.11	132.70	121.70
4	D	587	LYS	C-N-CA	6.11	132.70	121.70
1	A	126	THR	CA-C-N	6.02	136.50	121.80
1	A	126	THR	C-N-CA	6.02	136.50	121.80
1	A	379	PRO	N-CD-CG	-5.65	94.72	103.20
5	E	2695	PRO	N-CA-C	5.65	117.59	110.70
13	N	114	VAL	CG1-CB-CG2	-5.63	98.41	110.80
4	D	510	PRO	CA-N-CD	-5.53	104.25	112.00
14	O	242	VAL	CA-CB-CG2	5.44	119.65	110.40
18	S	21	PRO	CA-N-CD	-5.31	104.56	112.00
5	E	1186	PRO	CA-C-N	5.30	128.77	120.82
5	E	1186	PRO	C-N-CA	5.30	128.77	120.82
8	I	94	THR	OG1-CB-CG2	-5.27	98.76	109.30
17	R	31	VAL	CG1-CB-CG2	-5.23	99.30	110.80
5	E	1260	LEU	CB-CG-CD2	-5.21	95.06	110.70
11	L	196	LEU	CB-CG-CD2	5.18	126.24	110.70
6	G	389	VAL	CA-CB-CG2	5.10	119.07	110.40
8	I	94	THR	CA-CB-CG2	5.08	119.14	110.50
10	K	388	PRO	N-CA-C	5.01	122.80	112.47

There are no chirality outliers.

All (8) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	534	ALA	Peptide
4	D	1095	SER	Peptide
4	D	587	LYS	Peptide
5	E	970	PHE	Peptide
6	F	1013	TRP	Peptide
6	F	368	LEU	Peptide
6	G	565	ALA	Peptide
13	N	13	GLU	Peptide

## 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	5557	0	5450	87	0
2	B	4588	0	4601	73	0
3	C	3085	0	2929	53	0
4	D	7551	0	7556	137	0
5	E	12035	0	12354	254	0
6	F	5216	0	5183	108	0
6	G	5260	0	5225	101	0
7	H	3670	0	3637	72	0
8	I	1619	0	1621	20	0
9	J	2101	0	2056	50	0
10	K	2853	0	2798	42	0
11	L	1541	0	1534	31	0
12	M	1127	0	1096	18	0
13	N	1005	0	987	26	0
14	O	1517	0	1516	18	0
15	P	3245	0	3153	47	0
16	Q	2880	0	2825	32	0
17	R	633	0	636	18	0
18	S	909	0	904	27	0
19	T	840	0	810	12	0
20	C	2	0	0	0	0
21	H	36	0	57	3	0
22	J	47	0	52	2	0
22	L	66	0	96	0	0
23	J	41	0	52	6	0
23	L	47	0	64	2	0
24	K	21	0	31	1	0
25	L	36	0	36	2	0
All	All	67528	0	67259	1005	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 7.

All (1005) 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)
6:F:672:MET:HE1	6:F:680:VAL:HG22	1.46	0.95
8:I:281:ALA:HB3	8:I:282:PRO:HD3	1.46	0.93
5:E:348:THR:HG23	5:E:1374:LYS:HB2	1.53	0.89
5:E:902:LYS:HD3	6:G:288:ASP:HB3	1.54	0.89
9:J:147:MET:HA	9:J:150:MET:HE2	1.56	0.86
5:E:615:ASN:N	5:E:615:ASN:HD22	1.76	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:L:90:ASP:O	11:L:94:ARG:HB2	1.80	0.81
3:C:113:CYS:HB3	3:C:116:CYS:SG	2.20	0.81
16:Q:340:THR:HG22	16:Q:343:ALA:H	1.46	0.81
10:K:72:ARG:NH1	10:K:390:LEU:O	2.15	0.79
10:K:72:ARG:NH2	10:K:387:GLY:O	2.15	0.78
6:G:604:PHE:HD1	18:S:93:ARG:HD2	1.48	0.78
9:J:339:ALA:HB2	12:M:169:ASN:HD21	1.46	0.78
8:I:80:ASN:HB2	8:I:84:GLU:HB2	1.66	0.76
5:E:544:ILE:O	7:H:228:TRP:HB2	1.86	0.76
1:A:228:LEU:O	3:C:342:LYS:NZ	2.19	0.75
5:E:338:PRO:HG3	5:E:1401:LEU:HB3	1.70	0.74
9:J:153:GLU:HG2	9:J:156:ARG:HH21	1.52	0.74
5:E:1773:THR:O	5:E:1777:ASP:HB3	1.88	0.74
10:K:72:ARG:HH11	10:K:72:ARG:HG2	1.52	0.73
1:A:256:TYR:HA	1:A:289:PRO:HG3	1.70	0.72
4:D:1124:MET:HE3	4:D:1149:LYS:HZ3	1.52	0.72
14:O:440:ARG:HH22	18:S:96:ARG:N	1.88	0.71
5:E:272:LYS:HG3	5:E:276:LYS:HE2	1.71	0.71
18:S:95:GLY:O	18:S:99:ASN:ND2	2.24	0.71
6:F:561:LEU:HD22	6:F:569:LEU:HB2	1.73	0.71
5:E:2079:LEU:HD22	6:F:435:GLN:HG3	1.72	0.70
6:F:434:ARG:HH21	6:F:437:PHE:HD2	1.39	0.70
12:M:256:PHE:CE1	14:O:242:VAL:HG22	2.27	0.70
6:G:604:PHE:CD1	18:S:93:ARG:HD2	2.27	0.69
6:G:451:LEU:HD22	6:G:557:THR:HA	1.74	0.69
7:H:554:LEU:HD23	7:H:639:ASP:HB2	1.74	0.69
4:D:1072:VAL:HG22	6:G:821:MET:HE2	1.76	0.68
6:G:561:LEU:HD11	6:G:569:LEU:HB2	1.75	0.68
1:A:652:ARG:NH1	1:A:885:GLU:HG2	2.09	0.68
5:E:1248:TYR:CE2	13:N:15:ARG:HG3	2.29	0.67
5:E:1953:ILE:HG22	5:E:1975:TYR:HB2	1.75	0.67
6:F:321:GLU:HG2	6:F:365:LYS:HE3	1.74	0.67
3:C:8:GLU:OE1	18:S:105:ARG:NH1	2.28	0.67
7:H:146:GLU:HG3	7:H:161:TRP:HB2	1.76	0.67
4:D:810:LEU:HG	4:D:943:ASP:HB3	1.76	0.67
6:F:319:LEU:HD13	6:F:365:LYS:HB2	1.76	0.67
6:G:827:THR:HG23	6:G:829:MET:HG2	1.77	0.66
4:D:968:GLN:N	4:D:968:GLN:OE1	2.29	0.66
6:G:411:MET:HE1	14:O:431:LYS:HG3	1.76	0.66
5:E:2378:ASN:OD1	10:K:267:GLU:HB2	1.95	0.66
5:E:2351:PHE:HA	5:E:2416:ASN:ND2	2.09	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:221:TYR:HE2	6:G:294:GLU:HB3	1.62	0.65
4:D:762:HIS:NE2	6:G:778:ASN:O	2.29	0.65
17:R:37:PHE:HE2	17:R:50:ILE:HG21	1.62	0.64
1:A:287:ASP:C	1:A:289:PRO:HD2	2.22	0.64
16:Q:273:PRO:HB3	16:Q:310:PRO:HD2	1.78	0.64
2:B:873:ARG:NH2	2:B:899:ASN:O	2.29	0.64
5:E:940:SER:O	5:E:944:ARG:HG3	1.98	0.64
6:G:493:ARG:HH21	15:P:426:ARG:HG3	1.62	0.64
7:H:296:GLY:HA3	7:H:485:MET:HE2	1.80	0.64
1:A:904:ARG:H	1:A:909:ARG:HH21	1.44	0.64
5:E:547:LEU:HD21	7:H:448:GLN:HE21	1.63	0.64
2:B:789:PRO:HB3	2:B:794:PRO:HA	1.80	0.64
2:B:977:LEU:HD22	4:D:711:ARG:HD2	1.80	0.64
5:E:2959:THR:O	5:E:2963:ILE:HG13	1.98	0.64
7:H:579:ALA:HA	7:H:582:ARG:HE	1.63	0.64
10:K:320:ALA:HB3	10:K:323:ILE:HD12	1.80	0.63
15:P:207:LEU:HD21	15:P:362:LEU:HD11	1.80	0.63
7:H:135:LEU:HB3	7:H:138:LEU:HB3	1.78	0.63
5:E:1743:LEU:O	5:E:1747:ILE:HG13	1.99	0.63
4:D:1142:MET:HE1	4:D:1149:LYS:HE2	1.79	0.63
4:D:226:GLU:HB3	4:D:281:LYS:HD2	1.80	0.63
6:G:547:SER:HA	6:G:589:GLU:HG3	1.80	0.62
5:E:1672:ILE:HD11	5:E:1759:THR:HB	1.81	0.62
5:E:2245:LEU:HD11	5:E:2284:LEU:HD11	1.79	0.62
16:Q:170:ASN:ND2	16:Q:227:ASP:OD2	2.33	0.62
6:F:324:TYR:HD2	6:F:369:PRO:HD2	1.64	0.62
5:E:2250:ILE:HD13	5:E:2715:ARG:HB2	1.82	0.62
3:C:330:ARG:NH2	4:D:218:GLY:O	2.33	0.62
7:H:185:VAL:HG23	7:H:196:LEU:HB2	1.80	0.62
7:H:524:HIS:ND1	7:H:526:LEU:O	2.33	0.62
18:S:117:VAL:HG22	18:S:119:LEU:HD23	1.82	0.61
16:Q:287:LEU:HD22	16:Q:451:THR:HG22	1.82	0.61
4:D:624:PRO:HG2	5:E:2744:SER:HB3	1.81	0.61
6:G:189:GLU:HG3	13:N:123:PRO:HG3	1.83	0.61
15:P:26:GLU:O	15:P:30:ARG:HG3	2.00	0.61
5:E:2177:ASN:OD1	5:E:2892:ASN:ND2	2.34	0.61
5:E:2331:PRO:HB3	6:F:682:GLY:HA3	1.81	0.61
6:G:222:ASP:OD1	6:G:222:ASP:N	2.28	0.61
5:E:2523:VAL:HG13	5:E:2968:PHE:HZ	1.66	0.61
10:K:404:VAL:O	10:K:408:GLN:NE2	2.31	0.61
5:E:2563:LYS:HG3	6:F:726:GLY:HA2	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:272:LYS:O	5:E:276:LYS:HD3	2.01	0.60
6:F:977:PRO:HA	9:J:63:TRP:CZ3	2.36	0.60
2:B:778:ALA:HA	2:B:976:LEU:HD13	1.83	0.60
4:D:220:MET:HB3	4:D:293:TRP:HE1	1.66	0.60
10:K:232:ARG:O	10:K:236:THR:OG1	2.18	0.60
5:E:2662:LEU:HD23	5:E:2665:ILE:HD11	1.84	0.60
4:D:527:ALA:HB1	4:D:573:ALA:HB2	1.83	0.60
5:E:1260:LEU:HD21	6:G:222:ASP:OD1	2.02	0.60
13:N:93:ASN:OD1	13:N:96:ARG:NH2	2.35	0.60
1:A:187:ARG:HA	1:A:294:LEU:HB2	1.83	0.60
12:M:256:PHE:CZ	14:O:242:VAL:HG22	2.36	0.60
15:P:377:GLN:N	15:P:377:GLN:OE1	2.35	0.60
10:K:411:ASP:CG	10:K:418:ARG:HH12	2.10	0.60
14:O:230:THR:HG23	14:O:233:GLY:H	1.67	0.60
1:A:59:PRO:HD3	2:B:186:ALA:HB1	1.84	0.60
6:F:1019:TYR:HB3	6:G:1037:MET:HE1	1.82	0.60
8:I:281:ALA:HB3	8:I:282:PRO:CD	2.27	0.60
16:Q:266:PRO:HA	16:Q:269:GLU:HG2	1.84	0.59
16:Q:363:ARG:HH21	16:Q:366:ARG:HH12	1.47	0.59
5:E:1227:GLN:NE2	5:E:1334:ASN:O	2.34	0.59
6:G:541:ASP:O	6:G:553:ARG:NH2	2.36	0.59
1:A:886:LEU:HD22	1:A:891:LEU:HG	1.84	0.59
4:D:197:ILE:HG13	4:D:198:SER:H	1.66	0.59
6:F:650:MET:HG2	6:F:684:MET:SD	2.43	0.59
1:A:784:SER:O	2:B:837:ARG:NH2	2.36	0.59
3:C:58:CYS:HB2	3:C:309:CYS:SG	2.42	0.59
15:P:355:ASN:HD21	15:P:359:ARG:HB3	1.66	0.59
6:G:516:GLY:H	6:G:519:LYS:HD3	1.68	0.59
2:B:866:HIS:HB3	2:B:869:TYR:HB2	1.83	0.59
3:C:258:ASN:HB3	3:C:261:ALA:HB3	1.83	0.59
4:D:765:GLU:O	4:D:769:MET:HG2	2.02	0.59
7:H:565:LEU:HB3	7:H:643:MET:HE1	1.84	0.59
5:E:2250:ILE:HG21	5:E:2715:ARG:HD3	1.85	0.59
6:G:340:ARG:NH1	6:G:341:PHE:O	2.36	0.59
9:J:266:VAL:HG13	9:J:328:LEU:HD21	1.85	0.58
16:Q:365:LEU:HD21	16:Q:415:LEU:HB2	1.84	0.58
2:B:177:LEU:HG	2:B:179:GLU:H	1.66	0.58
2:B:761:ARG:NH1	2:B:839:GLU:O	2.36	0.58
7:H:428:LYS:O	7:H:438:ARG:NH1	2.36	0.58
2:B:826:ALA:HA	2:B:923:VAL:HG11	1.84	0.58
3:C:199:ALA:HB2	19:T:27:TYR:CE2	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:257:ARG:NH2	4:D:326:GLN:OE1	2.36	0.58
4:D:902:ARG:HD3	4:D:943:ASP:HB2	1.86	0.58
6:F:537:CYS:SG	6:F:538:SER:N	2.76	0.58
6:G:281:ALA:HB1	6:G:286:MET:HE3	1.85	0.58
10:K:213:LEU:O	10:K:217:MET:HB2	2.03	0.58
9:J:193:GLY:H	9:J:217:TRP:HE1	1.50	0.58
1:A:123:GLN:HG3	1:A:125:PRO:HD2	1.84	0.58
2:B:517:VAL:HA	2:B:520:PHE:CE1	2.38	0.58
5:E:1307:LEU:O	5:E:1311:THR:OG1	2.21	0.58
5:E:2402:THR:OG1	5:E:2404:ARG:NH1	2.37	0.58
6:F:402:GLN:OE1	6:F:405:ARG:NH1	2.36	0.58
6:G:598:LEU:HD11	6:G:625:ALA:HB1	1.85	0.58
13:N:71:ARG:NH2	13:N:86:GLU:OE2	2.36	0.58
5:E:1246:THR:HG22	5:E:1248:TYR:H	1.68	0.58
6:F:703:ASP:OD1	11:L:81:ARG:NH2	2.34	0.58
1:A:711:GLN:O	1:A:719:ARG:NH2	2.36	0.57
4:D:422:GLU:O	4:D:426:SER:HB2	2.04	0.57
5:E:2297:THR:HA	5:E:2300:LEU:HD12	1.86	0.57
3:C:143:ASP:OD1	5:E:1241:ASN:ND2	2.36	0.57
6:F:768:GLU:OE2	6:F:787:VAL:HB	2.04	0.57
6:G:282:LYS:HB3	6:G:284:GLU:OE2	2.05	0.57
1:A:591:PRO:O	1:A:596:ARG:NH2	2.37	0.57
5:E:1188:LEU:HD21	5:E:1233:LEU:HD13	1.86	0.57
9:J:343:SER:O	9:J:349:ARG:NH2	2.37	0.57
4:D:599:LEU:HB3	4:D:602:GLU:HG3	1.86	0.57
11:L:43:MET:SD	11:L:43:MET:N	2.77	0.57
2:B:517:VAL:HA	2:B:520:PHE:HE1	1.69	0.57
12:M:171:ARG:NH2	18:S:79:ASP:OD1	2.37	0.57
1:A:667:ARG:HB2	1:A:712:PRO:HB2	1.85	0.57
6:F:653:HIS:ND1	6:F:681:MET:SD	2.78	0.57
15:P:25:PRO:HA	15:P:28:ILE:HD12	1.87	0.57
1:A:105:PRO:HB3	2:B:58:PRO:HB2	1.87	0.57
8:I:281:ALA:CB	8:I:282:PRO:HD3	2.29	0.57
10:K:217:MET:HG2	10:K:427:ILE:HG13	1.86	0.56
15:P:356:LYS:HB3	15:P:360:ARG:HD2	1.88	0.56
1:A:187:ARG:HB3	1:A:211:THR:HB	1.86	0.56
3:C:386:ALA:HB1	7:H:194:ARG:HH22	1.70	0.56
4:D:213:ARG:HB3	4:D:226:GLU:HB2	1.87	0.56
1:A:311:THR:HG22	1:A:315:MET:HE3	1.85	0.56
13:N:112:GLU:HA	13:N:116:VAL:HG22	1.86	0.56
14:O:440:ARG:HH22	18:S:95:GLY:C	2.13	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:P:190:SER:O	15:P:217:ARG:NH2	2.38	0.56
17:R:61:ALA:O	17:R:83:GLN:NE2	2.38	0.56
5:E:2004:ILE:HG21	5:E:2044:THR:HB	1.87	0.56
5:E:2888:ASN:ND2	5:E:2889:PHE:O	2.38	0.56
11:L:86:VAL:HG23	11:L:89:GLN:HB3	1.87	0.56
1:A:782:GLY:O	2:B:828:ARG:NH2	2.38	0.56
6:F:479:ASP:N	6:F:479:ASP:OD1	2.38	0.56
1:A:328:TRP:O	1:A:382:ARG:NH2	2.39	0.56
5:E:2248:ASN:O	5:E:2711:LYS:NZ	2.38	0.56
5:E:1182:TRP:HB3	5:E:1230:LEU:HD13	1.86	0.55
6:F:1034:HIS:ND1	15:P:167:ASP:OD2	2.35	0.55
1:A:688:ILE:HG21	1:A:720:THR:HG21	1.86	0.55
3:C:125:GLU:OE2	4:D:210:ARG:NH2	2.33	0.55
6:G:885:ASP:OD1	6:G:885:ASP:N	2.35	0.55
14:O:238:THR:O	14:O:242:VAL:HG23	2.07	0.55
4:D:528:ALA:O	4:D:532:ASN:ND2	2.39	0.55
6:G:440:TYR:HA	6:G:443:GLU:HB3	1.88	0.55
8:I:191:VAL:HG21	8:I:313:MET:HE1	1.88	0.55
16:Q:361:LYS:HE3	16:Q:408:GLU:HG2	1.88	0.55
5:E:2352:THR:O	5:E:2356:GLU:HG3	2.07	0.55
6:F:421:HIS:ND1	6:F:421:HIS:O	2.39	0.55
15:P:198:VAL:HG22	15:P:212:VAL:HG22	1.88	0.55
5:E:1251:ARG:HH11	6:G:213:GLN:HG2	1.71	0.55
5:E:2677:VAL:O	6:F:842:ARG:NH1	2.39	0.55
6:F:731:GLY:HA2	6:F:739:ASP:HA	1.88	0.55
16:Q:229:LEU:HD21	16:Q:247:ALA:HA	1.87	0.55
5:E:1374:LYS:NZ	6:F:346:LYS:HE3	2.22	0.55
11:L:121:PHE:O	11:L:129:ARG:NH2	2.40	0.55
3:C:241:PRO:HA	3:C:244:ASN:HB2	1.89	0.55
4:D:1035:ASP:OD1	4:D:1035:ASP:N	2.39	0.55
5:E:910:LYS:HG3	13:N:116:VAL:HG11	1.88	0.55
7:H:285:ASP:OD1	7:H:286:PRO:HD2	2.07	0.55
7:H:633:LEU:HD12	7:H:641:VAL:HG22	1.89	0.55
12:M:256:PHE:HE1	14:O:242:VAL:HG22	1.71	0.55
4:D:899:ALA:HB2	4:D:942:LEU:HD13	1.89	0.55
4:D:159:ARG:HG3	4:D:175:LYS:HG3	1.88	0.55
9:J:273:LYS:NZ	11:L:218:THR:O	2.39	0.55
2:B:814:TYR:OH	2:B:818:ARG:NH1	2.40	0.54
4:D:735:VAL:HG13	4:D:748:VAL:HG22	1.89	0.54
5:E:2246:LYS:HZ3	5:E:2271:SER:HA	1.72	0.54
6:G:396:ARG:NH1	12:M:194:TYR:O	2.34	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:P:209:VAL:HG22	15:P:230:VAL:HG22	1.88	0.54
2:B:95:ALA:HA	3:C:120:CYS:HA	1.88	0.54
2:B:600:ILE:HD12	2:B:603:LEU:HD21	1.90	0.54
6:F:646:ARG:O	6:F:650:MET:HE3	2.08	0.54
4:D:806:ALA:HA	4:D:898:VAL:HG11	1.88	0.54
4:D:1064:ARG:O	4:D:1068:MET:HG2	2.08	0.54
6:F:324:TYR:CD2	6:F:369:PRO:HD2	2.41	0.54
10:K:82:HIS:O	10:K:85:LEU:HB3	2.07	0.54
14:O:376:ASP:O	14:O:380:TRP:HB2	2.07	0.54
16:Q:221:ARG:HH12	16:Q:471:GLU:HG3	1.72	0.54
7:H:301:MET:HG3	7:H:485:MET:HE1	1.89	0.54
3:C:224:SER:HB2	3:C:227:GLU:HG3	1.89	0.54
4:D:711:ARG:NH2	4:D:815:GLY:O	2.38	0.54
2:B:625:ASN:HD22	4:D:553:ALA:HB2	1.71	0.54
3:C:238:SER:OG	5:E:1232:ARG:NH1	2.40	0.54
4:D:833:TYR:OH	5:E:2726:ARG:NH1	2.40	0.54
6:F:686:ARG:HG3	6:F:707:ALA:HB1	1.90	0.54
6:G:555:ARG:HH12	18:S:96:ARG:N	2.05	0.54
5:E:1674:ILE:O	5:E:1674:ILE:HG13	2.07	0.54
15:P:252:LEU:HB2	15:P:257:MET:SD	2.48	0.54
3:C:7:ARG:HA	3:C:10:ASP:OD2	2.08	0.54
3:C:144:LYS:NZ	3:C:208:TYR:OH	2.41	0.54
4:D:631:LEU:HD13	4:D:651:THR:HG23	1.90	0.54
5:E:2706:ARG:NH1	5:E:2871:GLN:OE1	2.40	0.54
6:F:1037:MET:O	6:G:1036:ASN:ND2	2.38	0.54
10:K:201:ASP:O	10:K:203:TRP:N	2.40	0.54
16:Q:363:ARG:HE	16:Q:366:ARG:HH22	1.56	0.53
1:A:99:ARG:NH2	1:A:109:ASP:OD2	2.41	0.53
1:A:356:LEU:HD22	5:E:1442:SER:HB2	1.91	0.53
2:B:508:LYS:HE2	2:B:670:ARG:HB2	1.90	0.53
3:C:183:TRP:HZ2	5:E:944:ARG:NH1	2.06	0.53
4:D:1046:VAL:HG12	4:D:1135:LEU:HD21	1.89	0.53
5:E:1785:THR:O	5:E:1789:TYR:HD1	1.92	0.53
5:E:2031:ASP:HB3	5:E:2034:VAL:HG12	1.91	0.53
1:A:902:THR:OG1	1:A:903:SER:N	2.40	0.53
4:D:367:ALA:HA	6:G:425:LEU:HD13	1.91	0.53
5:E:2013:ILE:HA	5:E:2310:LYS:HG2	1.90	0.53
5:E:2941:ASN:ND2	6:G:793:ASN:O	2.41	0.53
7:H:569:LEU:O	7:H:573:MET:HG3	2.08	0.53
1:A:51:LEU:HD12	1:A:117:ARG:HH21	1.72	0.53
6:F:518:GLY:O	6:F:522:LEU:HB2	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:163:ALA:HB1	6:F:375:LEU:HD11	1.91	0.53
4:D:608:LEU:HD22	5:E:2236:VAL:HB	1.90	0.53
11:L:59:ILE:HD11	17:R:88:GLY:HA2	1.91	0.53
2:B:543:PRO:HD3	2:B:670:ARG:HH11	1.73	0.53
5:E:2412:LEU:HB3	5:E:2445:LEU:HD21	1.90	0.53
6:F:345:GLU:HG2	6:F:347:ASN:HB2	1.91	0.53
2:B:85:GLN:NE2	2:B:155:PRO:O	2.40	0.53
2:B:133:ILE:HG21	2:B:140:ILE:HG21	1.89	0.53
4:D:587:LYS:HB2	4:D:588:THR:HA	1.90	0.53
5:E:2142:ILE:HG23	6:F:840:ILE:HG12	1.90	0.53
14:O:115:VAL:HG13	14:O:362:PHE:HD1	1.74	0.53
17:R:48:VAL:HA	17:R:51:MET:HE2	1.90	0.53
6:F:440:TYR:HE1	18:S:117:VAL:HG21	1.74	0.53
9:J:199:ARG:CZ	11:L:200:LYS:HD3	2.39	0.52
5:E:622:TYR:CE1	7:H:185:VAL:HG13	2.43	0.52
5:E:2246:LYS:NZ	5:E:2271:SER:HA	2.24	0.52
7:H:495:ASP:HB3	7:H:498:LEU:HB3	1.90	0.52
18:S:83:PRO:HD2	18:S:89:ARG:HG3	1.91	0.52
5:E:2727:LYS:NZ	5:E:2728:SER:O	2.43	0.52
19:T:62:GLN:HG2	19:T:63:ALA:H	1.73	0.52
1:A:667:ARG:HG2	1:A:714:GLY:H	1.75	0.52
1:A:337:GLU:HB2	1:A:343:ASP:HB2	1.91	0.52
5:E:1231:ILE:HG12	5:E:1333:LEU:HD13	1.91	0.52
5:E:1678:ASN:ND2	18:S:115:GLU:OE1	2.42	0.52
5:E:2911:ILE:HG12	6:F:1037:MET:HE3	1.92	0.52
15:P:274:ALA:O	15:P:276:ARG:NH1	2.34	0.52
12:M:129:PRO:HB2	12:M:132:ALA:HB3	1.89	0.52
1:A:58:LEU:HD12	1:A:114:HIS:HA	1.92	0.52
2:B:585:ASP:O	2:B:589:THR:HG23	2.10	0.52
4:D:155:GLU:HG3	6:G:350:MET:HE1	1.91	0.52
1:A:256:TYR:O	2:B:74:ARG:NH2	2.39	0.52
4:D:1031:MET:HE1	4:D:1040:ILE:HD13	1.92	0.52
1:A:273:SER:OG	1:A:274:SER:N	2.42	0.52
4:D:255:MET:HE1	13:N:121:LEU:HD21	1.92	0.52
4:D:686:MET:O	4:D:690:LEU:HD12	2.09	0.52
6:F:977:PRO:HA	9:J:63:TRP:HZ3	1.74	0.52
2:B:879:TYR:OH	5:E:2716:ASP:OD1	2.26	0.52
7:H:405:LEU:HD21	7:H:474:VAL:HG11	1.92	0.52
2:B:862:GLY:O	4:D:804:ARG:NH1	2.40	0.51
6:G:487:GLU:HG3	6:G:498:LEU:HD11	1.90	0.51
15:P:356:LYS:HA	15:P:360:ARG:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:2970:ARG:HH21	9:J:151:ARG:HH21	1.59	0.51
2:B:802:PRO:HA	5:E:2811:ASN:HD21	1.75	0.51
4:D:420:GLN:OE1	4:D:423:ARG:NH2	2.44	0.51
6:G:532:VAL:HG23	6:G:566:PRO:HB2	1.90	0.51
4:D:683:SER:HB3	4:D:686:MET:HE3	1.92	0.51
6:G:746:ARG:HG2	6:G:936:LEU:HD23	1.92	0.51
10:K:180:SER:HB2	10:K:183:SER:HB2	1.92	0.51
2:B:615:ARG:HD3	4:D:562:GLY:HA2	1.92	0.51
4:D:575:LEU:HD22	6:G:540:THR:HG23	1.91	0.51
5:E:267:TYR:HB2	5:E:271:GLN:HE21	1.76	0.51
5:E:2377:GLN:HB2	10:K:264:SER:HB3	1.92	0.51
6:F:326:GLN:O	6:F:330:LEU:HG	2.10	0.51
7:H:448:GLN:OE1	7:H:473:HIS:NE2	2.39	0.51
4:D:226:GLU:HG3	4:D:283:ARG:HG2	1.92	0.51
4:D:850:LEU:HD22	4:D:1127:LEU:HD21	1.91	0.51
4:D:1040:ILE:HD12	4:D:1044:THR:HB	1.93	0.51
6:G:617:ASN:OD1	6:G:617:ASN:N	2.44	0.51
3:C:164:GLU:O	5:E:962:ARG:NH2	2.44	0.51
4:D:715:ILE:HD11	4:D:807:GLU:HG3	1.92	0.51
6:G:523:ALA:HA	6:G:526:ILE:HD12	1.92	0.51
17:R:13:LEU:HD21	17:R:33:PRO:HG3	1.93	0.51
4:D:558:ARG:HB3	6:G:583:ALA:HB3	1.93	0.51
5:E:2966:ASN:ND2	15:P:396:GLU:OE2	2.42	0.51
4:D:136:TYR:CZ	6:G:340:ARG:HG2	2.46	0.51
5:E:2714:PHE:O	5:E:2719:THR:OG1	2.27	0.51
7:H:285:ASP:OD2	7:H:287:ALA:HB3	2.11	0.51
1:A:708:VAL:HG23	1:A:880:LEU:HD21	1.93	0.50
4:D:826:ASP:OD1	5:E:2800:ARG:NH1	2.45	0.50
5:E:2273:SER:O	5:E:2275:ARG:N	2.43	0.50
1:A:800:SER:HB2	1:A:828:VAL:HG12	1.93	0.50
2:B:168:ARG:HH12	5:E:795:THR:HG23	1.75	0.50
3:C:413:ASP:O	4:D:252:ARG:NH1	2.44	0.50
6:F:717:LEU:HD22	6:F:729:VAL:HG22	1.94	0.50
4:D:557:ALA:HB2	4:D:604:ASP:HA	1.93	0.50
4:D:605:ALA:O	4:D:609:ARG:NH1	2.43	0.50
4:D:876:GLU:OE2	5:E:2887:TRP:NE1	2.42	0.50
4:D:1124:MET:HE3	4:D:1149:LYS:NZ	2.25	0.50
6:F:1013:TRP:O	6:F:1015:ALA:N	2.44	0.50
5:E:2401:LYS:HA	5:E:2404:ARG:NH1	2.27	0.50
6:F:680:VAL:O	6:F:684:MET:HG2	2.11	0.50
7:H:260:TYR:HB2	7:H:302:THR:HG23	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:1145:GLY:O	4:D:1149:LYS:HD3	2.12	0.50
5:E:1248:TYR:CZ	13:N:15:ARG:HG3	2.46	0.50
6:F:885:ASP:HB3	6:F:886:PRO:HD3	1.94	0.50
8:I:284:PRO:O	8:I:286:VAL:N	2.45	0.50
1:A:67:GLU:OE1	5:E:790:ASN:ND2	2.45	0.50
1:A:735:ARG:NH1	2:B:838:ASP:OD1	2.45	0.50
4:D:1040:ILE:HG13	4:D:1041:GLY:N	2.26	0.50
5:E:2718:LEU:HG	5:E:2719:THR:HG23	1.94	0.50
10:K:416:THR:HB	10:K:418:ARG:NH1	2.27	0.50
18:S:120:ASN:N	18:S:120:ASN:OD1	2.43	0.50
1:A:942:PRO:HD2	2:B:903:SER:HB3	1.94	0.50
1:A:947:VAL:HG23	2:B:910:MET:HE1	1.94	0.50
7:H:142:ARG:O	7:H:146:GLU:N	2.45	0.50
5:E:2058:LEU:HD22	6:G:581:ARG:HD2	1.94	0.50
5:E:2126:GLU:HG3	5:E:2129:GLU:HB3	1.94	0.50
5:E:2351:PHE:HD1	5:E:2416:ASN:HD22	1.58	0.50
3:C:59:GLN:NE2	5:E:351:THR:O	2.45	0.49
15:P:127:TRP:HD1	15:P:316:LEU:HD11	1.77	0.49
15:P:357:LYS:HD2	15:P:358:THR:HG23	1.93	0.49
19:T:111:THR:O	19:T:115:MET:HG2	2.12	0.49
2:B:591:ARG:HE	2:B:637:GLU:HB3	1.77	0.49
5:E:2182:GLU:OE2	5:E:2687:ASN:ND2	2.45	0.49
1:A:829:SER:HB2	5:E:2824:LEU:HD11	1.92	0.49
2:B:548:LYS:HA	2:B:551:MET:HE2	1.93	0.49
2:B:620:ARG:NH2	2:B:621:ASP:OD1	2.45	0.49
3:C:225:MET:HE3	5:E:1326:HIS:ND1	2.27	0.49
4:D:673:LEU:HD11	4:D:677:ARG:HH21	1.77	0.49
5:E:1728:GLN:HG2	5:E:1729:LYS:H	1.76	0.49
6:F:918:MET:HE1	9:J:72:ILE:HD13	1.93	0.49
6:G:628:ARG:HD2	6:G:629:PRO:HD2	1.93	0.49
15:P:54:ASP:OD2	15:P:64:ARG:NH1	2.33	0.49
6:G:499:ARG:NH2	9:J:361:VAL:O	2.33	0.49
16:Q:254:THR:HG23	16:Q:257:ARG:HE	1.78	0.49
1:A:868:GLU:HG2	1:A:869:ARG:HG2	1.93	0.49
4:D:144:THR:O	12:M:202:TRP:NE1	2.42	0.49
4:D:953:GLU:OE1	4:D:954:ALA:N	2.37	0.49
5:E:274:LEU:HD22	10:K:189:LEU:HD13	1.94	0.49
6:F:355:ALA:O	9:J:297:ARG:NH1	2.46	0.49
7:H:148:MET:HB2	7:H:350:LEU:HD11	1.95	0.49
7:H:236:LEU:HD21	7:H:494:LEU:HD13	1.94	0.49
19:T:96:ASP:HA	19:T:99:ARG:HG2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:610:ALA:HB2	1:A:649:LEU:HA	1.95	0.49
5:E:1373:ASN:HA	6:F:389:VAL:HG21	1.94	0.49
5:E:2922:GLU:OE2	15:P:144:LYS:NZ	2.37	0.49
7:H:362:PRO:HB2	7:H:612:GLU:HG2	1.95	0.49
9:J:88:ALA:O	9:J:92:ILE:HG12	2.12	0.49
11:L:55:THR:OG1	11:L:103:GLU:OE1	2.30	0.49
11:L:105:ARG:NH1	11:L:223:PHE:O	2.46	0.49
1:A:849:ASP:OD2	1:A:922:PHE:N	2.45	0.49
5:E:567:LYS:NZ	7:H:512:GLY:O	2.46	0.49
5:E:2830:ARG:HD2	5:E:2865:ASP:HA	1.95	0.49
7:H:340:VAL:HG23	7:H:341:ARG:HE	1.77	0.49
5:E:467:THR:O	5:E:471:THR:HG23	2.12	0.49
9:J:149:ARG:NH2	11:L:44:THR:O	2.46	0.49
5:E:1289:LEU:HA	13:N:53:LEU:HD23	1.93	0.49
6:F:740:PRO:HG3	9:J:94:ASP:HB2	1.94	0.49
16:Q:250:TYR:HA	16:Q:253:GLU:HB3	1.94	0.49
4:D:1110:TRP:CE2	5:E:2640:ALA:HB3	2.48	0.49
5:E:2348:ILE:HD11	9:J:92:ILE:HD12	1.95	0.49
5:E:2421:GLN:OE1	15:P:81:GLN:NE2	2.41	0.49
6:F:377:HIS:O	6:F:381:ASN:ND2	2.46	0.49
9:J:339:ALA:HB2	12:M:169:ASN:ND2	2.21	0.49
10:K:416:THR:HB	10:K:418:ARG:HH11	1.78	0.49
15:P:253:GLN:HB2	15:P:256:TYR:HD2	1.76	0.49
2:B:561:VAL:HB	2:B:596:CYS:HA	1.94	0.48
5:E:1947:TRP:O	5:E:1951:GLN:NE2	2.46	0.48
5:E:2369:LYS:HE2	5:E:2406:GLY:H	1.77	0.48
11:L:172:THR:OG1	11:L:173:PHE:N	2.46	0.48
7:H:413:LEU:HD11	21:H:701:DGA:HA51	1.95	0.48
10:K:216:GLU:HG3	10:K:227:ALA:HB3	1.93	0.48
12:M:167:SER:OG	12:M:168:GLU:N	2.47	0.48
15:P:217:ARG:HH11	15:P:387:GLU:HG3	1.78	0.48
15:P:381:ASP:OD1	15:P:381:ASP:N	2.46	0.48
1:A:351:PRO:O	1:A:355:GLU:N	2.38	0.48
5:E:2090:ILE:HG22	5:E:2318:THR:HB	1.96	0.48
6:F:753:GLU:HG3	6:F:772:VAL:HG13	1.95	0.48
5:E:2555:PHE:HZ	5:E:2964:LEU:HD22	1.79	0.48
8:I:142:ARG:HD3	8:I:150:ILE:HG13	1.94	0.48
1:A:593:THR:OG1	1:A:594:GLU:N	2.42	0.48
5:E:2078:ALA:HB1	6:F:431:LYS:HE2	1.96	0.48
7:H:630:ALA:O	7:H:634:ARG:HG2	2.13	0.48
9:J:153:GLU:HG2	9:J:156:ARG:NH2	2.27	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:N:110:GLU:HA	13:N:113:ASP:HB3	1.96	0.48
15:P:106:TRP:HB2	15:P:109:LYS:HB3	1.94	0.48
4:D:896:ARG:HH21	4:D:952:GLU:HG3	1.78	0.48
5:E:969:PHE:HD2	5:E:971:PRO:HD2	1.79	0.48
11:L:105:ARG:NH2	11:L:220:PHE:O	2.46	0.48
11:L:180:ARG:HG2	11:L:185:ARG:HB2	1.96	0.48
2:B:671:ARG:HH11	2:B:706:MET:HA	1.78	0.48
5:E:2376:MET:HB3	10:K:263:ALA:HB1	1.96	0.48
6:F:439:ARG:NH1	18:S:108:MET:SD	2.87	0.48
16:Q:203:SER:HA	16:Q:217:PHE:HA	1.96	0.48
1:A:652:ARG:HH12	1:A:885:GLU:HG2	1.78	0.48
4:D:1114:ARG:HH21	6:G:908:GLU:HG3	1.79	0.48
5:E:630:ASN:HD22	7:H:163:LEU:HD22	1.79	0.48
6:F:676:THR:O	6:F:680:VAL:HG23	2.14	0.48
6:G:859:LEU:HD13	6:G:894:MET:HE3	1.96	0.48
10:K:143:TYR:HE2	10:K:177:ALA:HB2	1.76	0.48
2:B:508:LYS:HG3	2:B:670:ARG:H	1.79	0.48
3:C:190:LEU:HD23	5:E:979:ARG:HH21	1.79	0.48
4:D:533:SER:O	4:D:537:ASN:ND2	2.46	0.48
5:E:969:PHE:O	5:E:972:ARG:NH1	2.46	0.48
5:E:2347:ASN:OD1	5:E:2413:LYS:NZ	2.44	0.48
6:G:451:LEU:HD11	6:G:454:ARG:HD2	1.96	0.48
6:G:511:LEU:HD11	6:G:613:LEU:HD23	1.94	0.48
6:G:539:GLY:HA2	6:G:542:PHE:HD2	1.79	0.48
16:Q:174:VAL:HG22	16:Q:189:LEU:HD11	1.96	0.48
4:D:762:HIS:CD2	4:D:763:PRO:HD2	2.49	0.47
4:D:881:LYS:HD3	4:D:1139:ASP:HA	1.95	0.47
5:E:1672:ILE:HG22	18:S:94:PRO:HG3	1.96	0.47
5:E:2381:THR:HG23	5:E:2382:THR:HG22	1.95	0.47
5:E:2887:TRP:O	6:G:896:THR:OG1	2.32	0.47
10:K:210:LYS:HD2	10:K:411:ASP:HB2	1.95	0.47
16:Q:344:LEU:HD23	16:Q:418:LEU:HD21	1.95	0.47
17:R:43:ASP:OD1	17:R:46:ASP:N	2.44	0.47
6:F:493:ARG:NH2	6:F:529:GLU:O	2.47	0.47
6:G:927:ALA:HB1	6:G:950:LEU:HD22	1.95	0.47
10:K:72:ARG:NH1	10:K:72:ARG:HG2	2.25	0.47
5:E:2908:GLU:HG2	6:F:1031:HIS:HB3	1.95	0.47
4:D:892:ARG:HD2	4:D:952:GLU:CD	2.39	0.47
5:E:755:ILE:HG12	7:H:531:THR:HA	1.96	0.47
5:E:1386:SER:O	5:E:1388:LYS:N	2.47	0.47
5:E:2019:LEU:HD12	5:E:2317:THR:HG22	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:479:ASP:OD1	6:G:479:ASP:N	2.47	0.47
9:J:212:ASP:O	23:J:402:LMG:O3	2.30	0.47
1:A:280:ALA:O	1:A:283:ALA:HB3	2.14	0.47
2:B:185:VAL:HG22	2:B:186:ALA:H	1.79	0.47
2:B:888:ARG:NH2	5:E:2866:PHE:O	2.48	0.47
6:F:479:ASP:HA	6:F:482:LYS:HE2	1.97	0.47
6:G:387:THR:HG22	6:G:388:GLY:H	1.79	0.47
14:O:283:ARG:HB3	14:O:379:LEU:HD11	1.95	0.47
17:R:68:GLU:HG3	17:R:69:LYS:HG2	1.96	0.47
5:E:1785:THR:HG23	5:E:1789:TYR:CE1	2.50	0.47
6:F:804:GLU:HB3	6:F:963:THR:HG23	1.97	0.47
10:K:363:PRO:HA	10:K:366:VAL:HG22	1.95	0.47
11:L:183:HIS:NE2	17:R:55:GLU:OE2	2.41	0.47
12:M:234:PHE:HA	12:M:238:VAL:HG22	1.95	0.47
16:Q:289:TYR:HB2	16:Q:297:LEU:HD13	1.97	0.47
1:A:264:ALA:HA	1:A:267:ALA:HB3	1.97	0.47
1:A:327:ARG:HH12	5:E:1345:VAL:HG21	1.79	0.47
1:A:835:ASP:OD2	5:E:2706:ARG:NH2	2.40	0.47
4:D:728:GLY:HA2	4:D:769:MET:HB3	1.97	0.47
5:E:2524:LEU:HG	5:E:2586:GLY:HA3	1.96	0.47
5:E:2554:ILE:HD11	9:J:100:LEU:HD23	1.97	0.47
6:F:511:LEU:HB3	6:F:638:MET:HE1	1.96	0.47
6:F:601:MET:HA	6:F:601:MET:HE2	1.96	0.47
6:G:509:VAL:HG13	6:G:634:ARG:HG2	1.96	0.47
7:H:263:GLU:OE1	7:H:518:LYS:NZ	2.48	0.47
16:Q:243:VAL:O	16:Q:247:ALA:HB3	2.14	0.47
2:B:940:LEU:HD11	2:B:944:ARG:HH21	1.80	0.47
5:E:448:ASP:OD1	5:E:448:ASP:N	2.39	0.47
1:A:827:THR:OG1	1:A:833:ARG:NH1	2.42	0.47
5:E:553:ILE:O	5:E:557:LEU:HB2	2.14	0.47
5:E:1695:PRO:HA	5:E:1740:SER:HB2	1.96	0.47
5:E:2969:LYS:HD3	15:P:391:PHE:CE2	2.50	0.47
6:F:492:LEU:HD11	6:F:611:VAL:HG11	1.96	0.47
8:I:193:THR:OG1	8:I:196:MET:O	2.29	0.47
1:A:234:GLN:OE1	3:C:361:TYR:OH	2.31	0.47
2:B:768:SER:OG	2:B:830:GLY:HA3	2.15	0.47
6:G:220:GLN:HG3	6:G:221:TYR:H	1.80	0.47
12:M:256:PHE:HD1	12:M:256:PHE:N	2.13	0.47
1:A:760:THR:HG22	6:F:799:THR:HG22	1.97	0.46
4:D:546:ILE:HD12	4:D:593:THR:HG22	1.97	0.46
5:E:952:LYS:HD2	5:E:952:LYS:HA	1.75	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:2810:TRP:CD1	5:E:2812:GLY:H	2.33	0.46
6:F:647:ALA:O	6:F:651:GLN:HG3	2.15	0.46
5:E:1796:ALA:HA	5:E:1800:ILE:HG21	1.97	0.46
6:F:315:THR:O	6:F:315:THR:OG1	2.29	0.46
23:J:402:LMG:H321	23:J:402:LMG:H292	1.65	0.46
4:D:310:ALA:H	4:D:321:LEU:HD12	1.80	0.46
4:D:1143:THR:OG1	4:D:1144:GLU:N	2.48	0.46
5:E:1372:ASN:HA	5:E:1388:LYS:HG2	1.96	0.46
5:E:2930:LYS:HB3	5:E:2963:ILE:HG21	1.96	0.46
6:F:768:GLU:HG2	16:Q:263:SER:OG	2.14	0.46
7:H:391:SER:O	7:H:394:GLU:HG2	2.16	0.46
9:J:336:ASN:ND2	12:M:169:ASN:O	2.48	0.46
14:O:111:PRO:O	14:O:114:SER:OG	2.28	0.46
1:A:592:ASP:N	1:A:592:ASP:OD1	2.46	0.46
3:C:155:GLU:OE2	3:C:216:TYR:OH	2.33	0.46
5:E:2719:THR:OG1	5:E:2720:GLY:N	2.49	0.46
6:G:590:SER:HA	6:G:593:ILE:HG12	1.97	0.46
6:G:827:THR:OG1	6:G:828:GLY:N	2.49	0.46
16:Q:452:LEU:HD22	16:Q:453:TYR:CE1	2.50	0.46
19:T:17:ASP:HA	19:T:20:GLU:HB3	1.97	0.46
4:D:741:ARG:HD2	4:D:744:LEU:HD12	1.98	0.46
4:D:1022:THR:HG23	4:D:1066:LEU:HD21	1.97	0.46
6:G:630:GLY:N	6:G:633:ASP:OD2	2.45	0.46
15:P:119:LEU:HD22	15:P:227:MET:HE1	1.98	0.46
3:C:129:MET:HE3	4:D:230:PRO:HD2	1.97	0.46
4:D:554:ILE:O	4:D:574:LEU:HD11	2.15	0.46
5:E:1727:TYR:HA	5:E:1730:MET:HB2	1.98	0.46
5:E:1987:LEU:O	5:E:1994:GLN:NE2	2.49	0.46
5:E:2260:PRO:HB2	5:E:2262:GLU:OE1	2.16	0.46
6:G:562:ARG:NH2	6:G:600:GLN:OE1	2.39	0.46
9:J:210:TRP:H	23:J:402:LMG:HC3	1.81	0.46
19:T:41:LYS:HB2	19:T:41:LYS:HE3	1.71	0.46
1:A:291:LEU:HD11	1:A:292:ARG:NH2	2.31	0.46
4:D:348:LEU:HD23	4:D:348:LEU:HA	1.84	0.46
6:F:776:PRO:O	6:F:779:VAL:HB	2.16	0.46
6:F:914:GLU:OE1	6:F:968:TRP:NE1	2.48	0.46
7:H:467:GLU:OE1	7:H:469:TYR:OH	2.32	0.46
4:D:121:GLU:HG3	4:D:123:ALA:H	1.81	0.46
4:D:843:ARG:HD2	4:D:882:LEU:HD11	1.97	0.46
10:K:385:ARG:HA	10:K:385:ARG:HD2	1.75	0.46
15:P:221:ASP:OD2	15:P:337:ARG:NH2	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Q:290:ARG:O	16:Q:330:ARG:NH1	2.44	0.46
2:B:590:ALA:HB1	2:B:598:ILE:HD11	1.98	0.46
2:B:647:THR:HG21	2:B:653:LEU:HD11	1.98	0.46
3:C:52:ARG:NH2	4:D:346:ASP:OD2	2.37	0.46
3:C:61:CYS:HB3	3:C:306:CYS:SG	2.56	0.46
6:F:686:ARG:O	6:F:690:MET:HG2	2.15	0.46
7:H:151:THR:O	7:H:351:ASN:ND2	2.48	0.46
1:A:659:ASP:OD1	1:A:707:ARG:NH2	2.46	0.46
3:C:218:ILE:HG23	3:C:231:ASN:HB3	1.97	0.46
5:E:1260:LEU:HD23	5:E:1260:LEU:HA	1.60	0.46
2:B:896:MET:HG2	5:E:2875:PRO:HD2	1.97	0.45
3:C:1:MET:N	3:C:25:GLU:OE2	2.48	0.45
3:C:140:ALA:HB2	5:E:987:GLU:HG3	1.98	0.45
4:D:578:LEU:HD12	4:D:612:ARG:NE	2.30	0.45
5:E:905:THR:O	5:E:905:THR:OG1	2.30	0.45
5:E:954:LYS:HG3	5:E:959:GLU:HB2	1.98	0.45
5:E:2917:LEU:HD22	5:E:2924:LEU:HD11	1.97	0.45
13:N:58:ASN:HA	13:N:61:ILE:HD12	1.98	0.45
15:P:163:PHE:O	15:P:167:ASP:HB2	2.16	0.45
16:Q:120:ALA:HB1	16:Q:443:GLN:HG3	1.97	0.45
1:A:686:ILE:HG12	1:A:880:LEU:HD12	1.98	0.45
2:B:522:ARG:NH1	2:B:558:GLU:OE2	2.40	0.45
2:B:877:SER:OG	2:B:878:ASN:N	2.40	0.45
4:D:244:PHE:O	13:N:114:VAL:HG21	2.16	0.45
4:D:638:LYS:HD3	4:D:671:ALA:HB2	1.98	0.45
4:D:1028:ARG:O	6:G:825:GLN:NE2	2.47	0.45
5:E:1804:GLN:HE22	6:G:441:ARG:HH21	1.64	0.45
5:E:2414:ASP:OD1	5:E:2958:SER:OG	2.31	0.45
8:I:150:ILE:HG21	8:I:150:ILE:HD13	1.74	0.45
12:M:123:ARG:HA	12:M:123:ARG:HD3	1.80	0.45
15:P:148:TRP:O	15:P:185:ASN:ND2	2.41	0.45
18:S:74:GLU:CD	18:S:74:GLU:H	2.24	0.45
1:A:632:ASN:ND2	6:F:627:ILE:HG13	2.31	0.45
4:D:335:GLU:OE2	6:G:323:SER:OG	2.26	0.45
5:E:568:LEU:HD12	7:H:267:ASN:HB2	1.97	0.45
5:E:1374:LYS:HE2	6:F:344:PRO:HA	1.99	0.45
5:E:1676:PRO:HB3	18:S:111:LEU:HD13	1.99	0.45
5:E:1793:ASN:O	5:E:1795:ALA:N	2.49	0.45
6:F:594:ILE:HD11	6:F:626:LEU:HD23	1.99	0.45
6:G:571:ILE:HG13	6:G:614:GLY:HA2	1.98	0.45
7:H:291:ASP:OD1	7:H:294:ARG:NH2	2.36	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:221:ALA:O	9:J:225:ILE:HG23	2.16	0.45
1:A:684:LYS:NZ	1:A:685:GLU:OE2	2.43	0.45
2:B:765:MET:HE1	2:B:795:LEU:HD12	1.98	0.45
4:D:1038:ASP:OD1	4:D:1038:ASP:N	2.48	0.45
5:E:1182:TRP:HE3	5:E:1230:LEU:HD22	1.82	0.45
5:E:2943:ASN:N	5:E:2943:ASN:OD1	2.49	0.45
6:F:378:LEU:HB3	6:F:383:VAL:HB	1.99	0.45
6:F:688:ALA:HB2	6:F:699:ILE:HD11	1.99	0.45
9:J:156:ARG:NH1	9:J:157:ILE:HB	2.31	0.45
4:D:822:GLN:NE2	5:E:2808:GLN:OE1	2.50	0.45
5:E:2524:LEU:HD11	5:E:2913:THR:HG23	1.98	0.45
6:F:626:LEU:HA	6:F:631:ARG:HD3	1.98	0.45
6:F:779:VAL:HG12	6:F:781:THR:HG22	1.98	0.45
6:G:195:VAL:HG22	6:G:326:GLN:HG2	1.98	0.45
11:L:79:ARG:HG3	17:R:84:ILE:HG22	1.98	0.45
16:Q:250:TYR:O	16:Q:252:ALA:N	2.50	0.45
2:B:26:ARG:HH22	18:S:7:ARG:HG2	1.81	0.45
10:K:411:ASP:HB3	10:K:418:ARG:HH22	1.82	0.45
10:K:416:THR:O	10:K:418:ARG:HG3	2.15	0.45
2:B:522:ARG:NH1	2:B:558:GLU:O	2.50	0.45
5:E:1261:ARG:HA	5:E:1261:ARG:HD3	1.74	0.45
6:G:595:ASN:O	6:G:599:VAL:HG12	2.16	0.45
10:K:409:ILE:HD11	10:K:420:MET:HG3	1.98	0.45
1:A:51:LEU:HG	1:A:130:GLY:H	1.81	0.45
4:D:519:PHE:HZ	4:D:534:LEU:HD13	1.81	0.45
5:E:1956:GLN:NE2	5:E:1970:ASP:OD1	2.45	0.45
6:F:494:ASN:HB3	6:F:497:LEU:HB3	1.99	0.45
6:G:150:ARG:O	6:G:154:GLU:HG2	2.17	0.45
6:G:562:ARG:NH1	6:G:605:GLU:OE1	2.50	0.45
10:K:310:LEU:HD13	24:K:501:ACD:H192	1.98	0.45
17:R:62:LEU:HD23	17:R:62:LEU:HA	1.87	0.45
5:E:552:MET:HE1	7:H:449:PRO:HD3	1.98	0.45
5:E:2376:MET:HE1	9:J:120:ALA:HB1	1.98	0.45
9:J:354:GLN:HE21	9:J:354:GLN:HB3	1.50	0.45
23:J:402:LMG:H312	23:J:402:LMG:H341	1.71	0.45
13:N:46:THR:HG23	13:N:48:GLU:H	1.82	0.45
4:D:171:ILE:HA	5:E:1317:GLN:HE22	1.80	0.45
4:D:651:THR:O	4:D:655:THR:OG1	2.30	0.45
5:E:2178:LEU:O	5:E:2877:ARG:NH1	2.41	0.45
6:G:629:PRO:HA	6:G:633:ASP:CG	2.42	0.45
7:H:447:LEU:HD22	7:H:481:ALA:HA	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Q:373:ASP:N	16:Q:373:ASP:OD1	2.50	0.45
1:A:288:THR:N	1:A:289:PRO:HD2	2.32	0.44
4:D:212:LYS:HB2	4:D:228:PRO:HG3	1.98	0.44
5:E:1693:THR:HB	18:S:66:LEU:HD23	1.99	0.44
5:E:2510:LYS:HB2	5:E:2510:LYS:HE2	1.83	0.44
6:G:489:ILE:HD13	6:G:526:ILE:HG23	1.99	0.44
1:A:345:LEU:HA	1:A:348:GLU:HG3	1.98	0.44
5:E:1336:LYS:HB2	5:E:1336:LYS:HE2	1.70	0.44
7:H:236:LEU:HD23	7:H:236:LEU:HA	1.86	0.44
7:H:328:LEU:HD13	7:H:403:GLN:HG2	2.00	0.44
7:H:334:LEU:HD23	7:H:334:LEU:HA	1.86	0.44
1:A:684:LYS:HB2	1:A:684:LYS:HE2	1.76	0.44
4:D:536:TYR:O	4:D:540:LYS:HG2	2.17	0.44
5:E:630:ASN:OD1	7:H:167:VAL:HG13	2.16	0.44
5:E:1335:ILE:HG22	5:E:1339:VAL:HG23	2.00	0.44
5:E:2816:GLU:HB2	5:E:2822:VAL:HG22	1.99	0.44
4:D:484:LYS:HD2	4:D:611:GLY:HA2	2.00	0.44
6:G:389:VAL:HG23	6:G:390:THR:H	1.81	0.44
7:H:204:LEU:HD23	7:H:204:LEU:HA	1.87	0.44
15:P:366:MET:HB2	15:P:366:MET:HE2	1.66	0.44
17:R:17:ARG:HB3	17:R:31:VAL:HG23	1.99	0.44
4:D:879:TYR:O	4:D:883:THR:OG1	2.30	0.44
5:E:615:ASN:N	5:E:615:ASN:ND2	2.49	0.44
10:K:196:ASN:HB2	10:K:337:ALA:HB1	2.00	0.44
11:L:125:PRO:HG2	11:L:128:LEU:HG	2.00	0.44
17:R:80:ILE:O	17:R:84:ILE:HG12	2.18	0.44
4:D:553:ALA:HA	4:D:556:ARG:HH21	1.81	0.44
4:D:762:HIS:CE1	4:D:764:GLU:HB2	2.53	0.44
5:E:1777:ASP:OD1	6:G:560:ARG:NE	2.46	0.44
5:E:2351:PHE:HA	5:E:2416:ASN:HD21	1.83	0.44
15:P:124:GLU:OE2	15:P:186:ARG:NH1	2.44	0.44
3:C:295:HIS:HB3	5:E:1339:VAL:HG11	2.00	0.44
5:E:1179:GLN:HA	5:E:1182:TRP:HD1	1.83	0.44
5:E:2270:THR:HG23	5:E:2277:LYS:HA	2.00	0.44
10:K:364:GLN:HE22	10:K:372:MET:HA	1.83	0.44
15:P:72:ARG:NH2	15:P:82:GLU:OE1	2.47	0.44
2:B:832:GLU:HB2	2:B:840:LEU:HD21	2.00	0.44
5:E:910:LYS:HE2	13:N:116:VAL:HG12	1.99	0.44
5:E:1259:LYS:HG2	6:G:221:TYR:HA	2.00	0.44
5:E:1661:TYR:HA	18:S:105:ARG:HH22	1.83	0.44
5:E:2192:ILE:HG12	5:E:2695:PRO:HG2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:276:TRP:HB2	9:J:325:MET:HE1	2.00	0.44
9:J:284:LEU:O	9:J:288:SER:HB3	2.17	0.44
9:J:326:SER:HB3	11:L:215:PRO:HB2	2.00	0.44
23:J:402:LMG:H162	23:J:402:LMG:H132	1.79	0.44
1:A:181:PRO:O	1:A:292:ARG:NH1	2.51	0.44
1:A:361:ASN:HB2	6:F:425:LEU:HD21	1.99	0.44
1:A:676:LEU:HD23	6:F:793:ASN:HB3	2.00	0.44
2:B:102:GLY:H	5:E:1228:ILE:HD13	1.82	0.44
5:E:2578:LEU:O	5:E:2582:MET:HG3	2.17	0.44
6:F:624:SER:HA	6:F:627:ILE:HD11	2.00	0.44
6:F:690:MET:HE3	11:L:81:ARG:HD3	2.00	0.44
3:C:203:ARG:HD2	19:T:23:PHE:HE2	1.83	0.43
4:D:855:TRP:CG	5:E:2719:THR:HG22	2.53	0.43
5:E:546:PRO:HA	5:E:744:LEU:HD22	2.00	0.43
7:H:381:ASP:O	7:H:383:MET:N	2.51	0.43
2:B:869:TYR:HE2	2:B:904:GLU:HG2	1.83	0.43
4:D:564:ASP:O	4:D:568:MET:HG3	2.18	0.43
4:D:718:ALA:HA	4:D:905:ILE:HG12	1.99	0.43
4:D:768:LEU:HD22	6:G:742:PRO:HD3	1.99	0.43
5:E:745:THR:HG22	7:H:226:LEU:HD21	2.00	0.43
5:E:2374:ASN:HB3	10:K:265:TYR:HB2	1.99	0.43
6:G:349:VAL:HG13	6:G:368:LEU:HD11	2.00	0.43
10:K:174:MET:HE1	10:K:184:TRP:CD1	2.53	0.43
10:K:409:ILE:O	10:K:417:TYR:HA	2.18	0.43
11:L:103:GLU:O	25:L:303:SQD:O4	2.25	0.43
15:P:419:GLU:O	15:P:423:GLU:HG2	2.18	0.43
1:A:287:ASP:O	1:A:288:THR:CB	2.65	0.43
2:B:521:PHE:HE2	2:B:561:VAL:HG11	1.84	0.43
2:B:615:ARG:HH11	4:D:562:GLY:HA2	1.84	0.43
3:C:24:ARG:NH2	5:E:1771:LYS:HE3	2.33	0.43
5:E:558:LYS:HA	7:H:341:ARG:HG2	1.99	0.43
5:E:1993:LEU:HD23	5:E:2338:ILE:HG21	2.01	0.43
5:E:2643:MET:HE2	5:E:2643:MET:HB3	1.79	0.43
5:E:2731:THR:OG1	5:E:2734:GLU:OE2	2.31	0.43
5:E:2742:LEU:O	5:E:2746:LYS:HG3	2.17	0.43
8:I:156:PRO:HB3	8:I:181:VAL:HA	1.99	0.43
15:P:48:VAL:HG12	15:P:52:ARG:HG3	2.01	0.43
1:A:287:ASP:C	1:A:289:PRO:CD	2.91	0.43
1:A:597:LEU:HD23	1:A:597:LEU:HA	1.89	0.43
3:C:72:CYS:O	3:C:73:LEU:HD23	2.18	0.43
3:C:328:LEU:HD11	6:G:395:LEU:HD13	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:1993:LEU:HD23	5:E:1993:LEU:HA	1.79	0.43
5:E:2126:GLU:OE1	5:E:2128:HIS:ND1	2.35	0.43
10:K:424:VAL:O	10:K:428:GLU:CB	2.66	0.43
11:L:93:MET:HB2	11:L:98:ASP:HB2	2.00	0.43
11:L:180:ARG:NH1	11:L:208:PRO:O	2.51	0.43
3:C:165:GLU:HA	5:E:971:PRO:HD3	2.00	0.43
4:D:648:LEU:HA	4:D:651:THR:HG22	2.01	0.43
4:D:1069:ARG:HA	4:D:1069:ARG:HD2	1.85	0.43
5:E:1666:GLU:O	5:E:1671:PHE:HE1	2.01	0.43
15:P:55:PRO:HB2	15:P:266:THR:HG21	2.00	0.43
2:B:894:VAL:HG12	2:B:896:MET:HG3	2.01	0.43
3:C:219:VAL:HG12	3:C:228:ASN:HB3	2.00	0.43
4:D:751:ILE:HB	4:D:755:ASP:HB2	2.01	0.43
5:E:960:THR:OG1	5:E:962:ARG:O	2.31	0.43
5:E:2568:LEU:HD11	9:J:91:ILE:HD11	2.00	0.43
5:E:2668:ARG:NH1	6:F:826:MET:O	2.52	0.43
6:F:428:LEU:O	6:F:430:ASN:N	2.48	0.43
6:G:207:ARG:HD3	6:G:310:LYS:HA	2.01	0.43
6:G:561:LEU:HD23	6:G:561:LEU:HA	1.64	0.43
7:H:639:ASP:OD1	7:H:639:ASP:N	2.51	0.43
9:J:292:GLN:HE22	9:J:295:ARG:HH21	1.67	0.43
1:A:240:PRO:HB3	6:F:375:LEU:HD13	1.99	0.43
4:D:321:LEU:HB2	6:G:185:LEU:HD11	1.99	0.43
5:E:569:LEU:HD23	5:E:569:LEU:HA	1.83	0.43
5:E:1980:THR:HG23	9:J:342:LYS:HD2	2.01	0.43
7:H:136:LEU:HD23	7:H:136:LEU:HA	1.91	0.43
9:J:150:MET:HG3	11:L:42:PRO:HB3	2.00	0.43
13:N:54:GLU:O	13:N:56:GLN:N	2.52	0.43
1:A:635:ASN:O	1:A:639:MET:HG2	2.18	0.43
2:B:872:LEU:HB2	2:B:873:ARG:HG3	2.00	0.43
3:C:277:GLU:OE1	5:E:1235:TRP:NE1	2.49	0.43
4:D:225:VAL:HG12	4:D:227:VAL:HG23	2.00	0.43
4:D:234:SER:OG	4:D:329:VAL:O	2.26	0.43
5:E:1729:LYS:HD3	5:E:1729:LYS:HA	1.86	0.43
5:E:1957:SER:HB3	5:E:1971:LEU:HB2	2.00	0.43
5:E:2414:ASP:OD1	5:E:2414:ASP:N	2.52	0.43
5:E:2528:LEU:HD22	5:E:2579:LEU:HD22	2.01	0.43
5:E:2718:LEU:O	5:E:2720:GLY:N	2.52	0.43
6:G:442:ARG:HA	6:G:445:LEU:HB2	1.99	0.43
8:I:305:GLU:HG3	8:I:309:TRP:CD1	2.54	0.43
17:R:17:ARG:HH12	17:R:28:LEU:HD21	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:61:ILE:HD11	19:T:115:MET:HE2	2.01	0.43
1:A:839:PRO:HD2	5:E:2689:LEU:HD12	1.99	0.43
2:B:551:MET:HE1	2:B:669:VAL:HG11	1.99	0.43
3:C:428:LEU:HD23	3:C:428:LEU:HA	1.80	0.43
5:E:901:PHE:CZ	5:E:944:ARG:HD3	2.54	0.43
5:E:2241:GLU:OE1	5:E:2244:ARG:NH1	2.52	0.43
5:E:2555:PHE:CZ	5:E:2964:LEU:HD22	2.53	0.43
5:E:2599:VAL:HG13	5:E:2643:MET:HG3	2.00	0.43
7:H:151:THR:OG1	7:H:157:LYS:NZ	2.52	0.43
8:I:285:LYS:HA	8:I:285:LYS:HD3	1.75	0.43
19:T:72:LEU:HD23	19:T:72:LEU:HA	1.93	0.43
1:A:815:SER:OG	1:A:816:THR:N	2.51	0.43
4:D:859:ASP:OD1	4:D:860:ASP:N	2.52	0.43
5:E:452:ILE:HD11	7:H:505:VAL:HG23	2.01	0.43
6:F:562:ARG:NH2	6:F:605:GLU:OE1	2.52	0.43
6:F:743:PRO:HA	6:F:746:ARG:HG2	2.01	0.43
6:F:758:LEU:HD23	6:F:921:LEU:HD23	2.01	0.43
6:F:1012:THR:HA	15:P:168:ILE:HG12	2.01	0.43
13:N:11:LEU:HD23	13:N:11:LEU:HA	1.89	0.43
17:R:54:LEU:HB3	17:R:80:ILE:HD11	1.99	0.43
4:D:312:TRP:HD1	7:H:185:VAL:HG12	1.84	0.42
4:D:361:GLU:HG3	13:N:16:LEU:HG	2.01	0.42
5:E:1243:ASN:HA	5:E:1325:PHE:HD2	1.84	0.42
5:E:1361:GLU:HG2	6:F:405:ARG:HE	1.84	0.42
7:H:445:VAL:HG21	21:H:701:DGA:HB1	2.01	0.42
1:A:306:ALA:HB3	1:A:309:SER:HB2	2.01	0.42
4:D:140:THR:O	4:D:144:THR:OG1	2.35	0.42
4:D:640:LEU:HD13	4:D:647:LEU:HD22	2.01	0.42
4:D:1036:VAL:HG12	4:D:1039:LEU:HD12	2.01	0.42
13:N:45:PRO:HB2	13:N:49:ASP:HB3	2.00	0.42
15:P:205:ASP:OD1	15:P:205:ASP:N	2.52	0.42
15:P:264:GLN:O	15:P:268:LEU:HB2	2.19	0.42
1:A:805:ILE:HD11	5:E:2699:SER:HB3	2.01	0.42
2:B:23:LEU:HB2	19:T:113:LEU:HD21	2.01	0.42
3:C:7:ARG:H	3:C:7:ARG:HG3	1.67	0.42
3:C:159:ASN:ND2	3:C:159:ASN:O	2.52	0.42
3:C:225:MET:HE1	5:E:1332:HIS:CE1	2.54	0.42
3:C:400:ARG:HD2	3:C:400:ARG:HA	1.83	0.42
4:D:306:ARG:HE	4:D:306:ARG:HB2	1.63	0.42
5:E:2379:LEU:HA	5:E:2379:LEU:HD12	1.77	0.42
6:F:361:GLU:HG3	9:J:298:ARG:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:846:MET:HE2	6:F:860:LEU:HD21	2.00	0.42
7:H:231:VAL:HA	7:H:505:VAL:HG11	2.01	0.42
8:I:106:ALA:HB1	8:I:126:ILE:HD12	2.00	0.42
11:L:160:GLY:O	11:L:164:ILE:HG13	2.19	0.42
3:C:183:TRP:HZ2	5:E:944:ARG:HH12	1.67	0.42
3:C:323:ALA:HB1	3:C:329:GLU:HA	2.01	0.42
5:E:2175:ILE:HD12	5:E:2183:ASN:HB2	2.01	0.42
5:E:2706:ARG:HD3	5:E:2871:GLN:HB3	2.01	0.42
9:J:199:ARG:HE	11:L:200:LYS:HB2	1.84	0.42
14:O:111:PRO:HG2	14:O:362:PHE:HE1	1.85	0.42
16:Q:358:GLN:OE1	16:Q:407:SER:HA	2.20	0.42
17:R:11:LYS:HB3	17:R:11:LYS:HE2	1.77	0.42
1:A:741:ARG:NE	1:A:819:MET:SD	2.89	0.42
4:D:135:THR:HG1	4:D:157:TRP:CD1	2.38	0.42
6:F:514:ALA:HB3	6:F:517:THR:HB	2.01	0.42
6:F:589:GLU:O	6:F:593:ILE:HG23	2.19	0.42
7:H:135:LEU:O	7:H:139:VAL:N	2.42	0.42
8:I:282:PRO:HD2	8:I:283:LEU:HD22	2.02	0.42
2:B:533:ARG:HG3	2:B:534:ALA:H	1.84	0.42
5:E:572:LYS:HE3	5:E:572:LYS:HB3	1.85	0.42
5:E:2331:PRO:HG2	6:F:679:ASP:HA	2.01	0.42
5:E:2371:ILE:HD13	9:J:266:VAL:HB	2.02	0.42
6:F:472:TRP:HB2	6:F:525:ALA:HB1	2.02	0.42
6:G:772:VAL:HG22	6:G:784:THR:HG23	2.02	0.42
22:J:401:DGD:HA82	23:L:301:LMG:H362	2.02	0.42
10:K:351:LEU:HD23	10:K:351:LEU:HA	1.90	0.42
2:B:169:ALA:HB2	5:E:809:ARG:HH12	1.84	0.42
2:B:637:GLU:HG3	2:B:638:GLN:H	1.83	0.42
3:C:67:MET:HE2	3:C:67:MET:HA	2.02	0.42
4:D:554:ILE:HD13	4:D:554:ILE:HA	1.89	0.42
5:E:967:THR:OG1	5:E:968:ARG:N	2.52	0.42
5:E:1699:ILE:O	5:E:1703:LEU:HB2	2.19	0.42
8:I:160:GLN:OE1	8:I:204:CYS:HA	2.20	0.42
10:K:409:ILE:HG21	10:K:423:VAL:HG11	2.02	0.42
15:P:249:ASP:OD1	15:P:249:ASP:N	2.43	0.42
16:Q:365:LEU:HD23	16:Q:365:LEU:HA	1.85	0.42
2:B:69:VAL:HG11	2:B:133:ILE:HD11	2.01	0.42
2:B:821:LEU:HD11	2:B:916:LEU:HD23	2.00	0.42
4:D:804:ARG:HA	4:D:804:ARG:HD3	1.88	0.42
5:E:619:LEU:HA	7:H:185:VAL:HG21	2.00	0.42
5:E:1762:ASP:OD1	5:E:1762:ASP:N	2.39	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:741:ILE:HA	6:F:742:PRO:HD3	1.90	0.42
6:G:742:PRO:HA	6:G:743:PRO:HD3	1.96	0.42
7:H:643:MET:HA	7:H:646:ARG:HG2	2.01	0.42
9:J:199:ARG:NH2	11:L:196:LEU:HD12	2.35	0.42
15:P:149:ASP:N	15:P:149:ASP:OD1	2.51	0.42
16:Q:279:ALA:HB1	16:Q:321:VAL:HG21	2.01	0.42
3:C:390:LYS:HD2	3:C:390:LYS:HA	1.87	0.42
4:D:467:ARG:NE	4:D:472:ASP:OD2	2.53	0.42
5:E:541:LEU:HD11	5:E:751:PHE:HB3	2.02	0.42
5:E:905:THR:H	13:N:107:THR:HG22	1.84	0.42
6:F:324:TYR:OH	6:F:374:LEU:HG	2.19	0.42
6:F:704:ILE:O	6:F:708:MET:HG3	2.20	0.42
6:G:485:ILE:O	6:G:489:ILE:HG12	2.20	0.42
15:P:127:TRP:CH2	15:P:198:VAL:HG23	2.55	0.42
2:B:941:LEU:HD12	2:B:941:LEU:HA	1.94	0.42
3:C:114:ARG:HD2	3:C:114:ARG:HA	1.75	0.42
6:G:376:ASP:OD1	7:H:206:ARG:NH1	2.51	0.42
6:G:438:ILE:HG13	6:G:441:ARG:HH11	1.85	0.42
7:H:338:LYS:HG2	7:H:386:ALA:HB3	2.01	0.42
9:J:156:ARG:HG2	9:J:156:ARG:HH11	1.85	0.42
9:J:213:HIS:HE2	9:J:324:ASP:HB3	1.85	0.42
10:K:234:VAL:HG12	10:K:235:LEU:HD23	2.01	0.42
10:K:387:GLY:O	10:K:389:TYR:N	2.53	0.42
25:L:303:SQD:H242	25:L:303:SQD:H272	1.87	0.42
12:M:169:ASN:HD22	12:M:169:ASN:HA	1.47	0.42
2:B:875:LEU:HB2	2:B:893:THR:HG21	2.01	0.41
4:D:484:LYS:H	4:D:484:LYS:HG2	1.44	0.41
4:D:851:HIS:HB3	4:D:854:MET:HG3	2.01	0.41
4:D:1108:LEU:HD23	4:D:1108:LEU:HA	1.87	0.41
5:E:2028:ASN:OD1	5:E:2028:ASN:N	2.52	0.41
6:F:650:MET:HB3	6:F:665:TRP:CE3	2.54	0.41
6:F:981:ASP:HB3	16:Q:385:PRO:HB3	2.01	0.41
9:J:215:MET:HE3	9:J:215:MET:HB3	1.79	0.41
1:A:200:VAL:HG12	6:F:405:ARG:HH12	1.86	0.41
1:A:636:GLU:HG3	1:A:657:GLY:HA2	2.01	0.41
2:B:139:ARG:HA	2:B:139:ARG:HD3	1.83	0.41
3:C:137:SER:HB2	5:E:990:LYS:HB2	2.02	0.41
4:D:1025:ALA:O	4:D:1029:THR:OG1	2.36	0.41
4:D:1091:THR:HA	4:D:1094:MET:HB2	2.01	0.41
6:G:491:TYR:HB2	6:G:498:LEU:HG	2.02	0.41
8:I:313:MET:HE2	8:I:313:MET:HB3	1.72	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:L:185:ARG:HE	11:L:210:VAL:HG11	1.84	0.41
12:M:256:PHE:N	12:M:256:PHE:CD1	2.87	0.41
14:O:231:VAL:O	14:O:235:LEU:HG	2.20	0.41
14:O:373:VAL:HG13	14:O:380:TRP:CE3	2.54	0.41
19:T:58:LEU:O	19:T:61:SER:OG	2.30	0.41
1:A:139:PRO:HA	2:B:157:GLU:HG3	2.03	0.41
1:A:629:ASP:HA	1:A:632:ASN:OD1	2.19	0.41
4:D:422:GLU:O	4:D:426:SER:CB	2.68	0.41
4:D:1047:GLU:HB2	4:D:1135:LEU:HD23	2.02	0.41
5:E:2797:ILE:O	5:E:2802:GLY:N	2.48	0.41
6:F:428:LEU:HD11	6:F:435:GLN:OE1	2.20	0.41
6:F:742:PRO:HD2	6:F:745:LEU:HD12	2.02	0.41
9:J:317:CYS:O	9:J:321:MET:HG3	2.20	0.41
11:L:60:LYS:NZ	11:L:71:TRP:O	2.41	0.41
16:Q:241:LEU:HD12	16:Q:241:LEU:HA	1.91	0.41
2:B:674:PHE:O	2:B:678:LEU:HD23	2.20	0.41
4:D:306:ARG:HD2	6:G:328:TRP:CD1	2.56	0.41
4:D:1142:MET:CE	4:D:1149:LYS:HE2	2.48	0.41
5:E:267:TYR:O	5:E:271:GLN:HB2	2.21	0.41
5:E:2276:ALA:O	5:E:2280:MET:HG2	2.21	0.41
7:H:548:ALA:HB1	7:H:551:ARG:NH1	2.35	0.41
9:J:199:ARG:HH21	11:L:200:LYS:HB2	1.86	0.41
6:G:844:MET:HE2	6:G:909:LEU:HD21	2.02	0.41
7:H:335:SER:HB3	7:H:389:VAL:HG12	2.03	0.41
7:H:455:VAL:HB	7:H:472:THR:HG22	2.01	0.41
13:N:79:ASN:CG	13:N:80:ASP:H	2.28	0.41
1:A:42:GLU:HB3	1:A:133:LEU:HD11	2.03	0.41
1:A:846:ARG:HD3	1:A:932:TYR:CZ	2.56	0.41
4:D:551:ILE:HD13	4:D:595:GLY:HA3	2.03	0.41
5:E:1259:LYS:HG2	6:G:221:TYR:HD1	1.86	0.41
5:E:1294:LYS:HB2	5:E:1294:LYS:HE2	1.94	0.41
5:E:2124:ARG:HB2	5:E:2124:ARG:NH1	2.36	0.41
6:F:440:TYR:CE1	18:S:117:VAL:HG21	2.55	0.41
7:H:522:PRO:HG3	8:I:306:LEU:HD22	2.03	0.41
9:J:196:GLY:HA2	9:J:205:TRP:CE2	2.56	0.41
10:K:146:LEU:HD23	10:K:146:LEU:HA	1.94	0.41
13:N:48:GLU:HG3	13:N:52:LYS:HG2	2.02	0.41
17:R:60:ILE:HG21	17:R:84:ILE:HD13	2.02	0.41
2:B:53:ASN:O	2:B:55:TYR:N	2.52	0.41
5:E:2176:SER:HB2	5:E:2178:LEU:HD12	2.02	0.41
15:P:358:THR:O	15:P:360:ARG:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:S:83:PRO:O	18:S:89:ARG:NH1	2.54	0.41
1:A:602:LEU:O	1:A:605:ARG:NH1	2.48	0.41
4:D:432:PHE:HB2	4:D:511:PHE:HB3	2.02	0.41
4:D:609:ARG:HD2	6:G:515:PRO:HG2	2.03	0.41
5:E:2654:LEU:O	5:E:2658:THR:OG1	2.38	0.41
6:F:322:LEU:HD13	6:F:364:CYS:HB3	2.03	0.41
7:H:394:GLU:HB2	7:H:397:ALA:HB3	2.03	0.41
10:K:284:PRO:O	10:K:288:SER:HB3	2.20	0.41
13:N:16:LEU:HA	13:N:19:VAL:HG22	2.03	0.41
15:P:179:PRO:HB2	15:P:203:ARG:HG2	2.02	0.41
1:A:878:LYS:HD2	16:Q:152:TYR:HA	2.03	0.41
3:C:14:TYR:O	3:C:18:MET:HG3	2.21	0.41
4:D:198:SER:OG	4:D:199:TYR:N	2.53	0.41
4:D:907:LYS:HB2	4:D:907:LYS:HE2	1.84	0.41
5:E:1182:TRP:HZ3	5:E:1233:LEU:HD23	1.85	0.41
5:E:1804:GLN:NE2	6:G:441:ARG:HH21	2.18	0.41
5:E:2090:ILE:HD12	5:E:2090:ILE:HA	1.91	0.41
5:E:2161:LEU:HB3	6:F:887:PHE:CZ	2.56	0.41
5:E:2417:ILE:HG12	5:E:2955:GLU:HB3	2.03	0.41
5:E:2552:ILE:HD11	9:J:105:LYS:HD3	2.02	0.41
5:E:2586:GLY:HA2	5:E:2913:THR:HG21	2.03	0.41
5:E:2589:ILE:HD13	5:E:2589:ILE:HA	1.86	0.41
6:F:581:ARG:NE	6:F:588:ASP:OD2	2.54	0.41
6:G:627:ILE:HD13	6:G:627:ILE:HA	1.91	0.41
7:H:269:LEU:HD23	7:H:383:MET:HG2	2.03	0.41
7:H:296:GLY:CA	7:H:485:MET:HE2	2.50	0.41
7:H:511:ASN:HD22	7:H:511:ASN:HA	1.68	0.41
7:H:565:LEU:HD12	7:H:565:LEU:HA	1.88	0.41
10:K:197:MET:HE2	10:K:200:GLN:HB3	2.03	0.41
23:L:301:LMG:H381	23:L:301:LMG:H352	1.78	0.41
12:M:175:GLU:OE1	18:S:82:TRP:NE1	2.50	0.41
15:P:217:ARG:HH22	15:P:390:TYR:HB3	1.86	0.41
18:S:106:VAL:O	18:S:110:TYR:HD1	2.03	0.41
1:A:378:ILE:HD13	1:A:378:ILE:HA	1.99	0.41
1:A:906:ARG:O	1:A:908:ALA:N	2.54	0.41
1:A:911:GLU:HA	16:Q:379:ARG:HH12	1.86	0.41
3:C:442:MET:SD	19:T:29:GLU:HG2	2.61	0.41
4:D:148:LEU:HD23	4:D:148:LEU:HA	1.96	0.41
4:D:739:SER:OG	4:D:740:GLY:N	2.52	0.41
5:E:1289:LEU:HB2	13:N:53:LEU:HB3	2.02	0.41
5:E:1407:ILE:HD13	5:E:1407:ILE:HA	1.93	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:672:MET:HE3	6:F:672:MET:HB3	1.62	0.41
7:H:443:VAL:HG21	21:H:701:DGA:HA61	2.03	0.41
10:K:213:LEU:O	10:K:217:MET:CB	2.67	0.41
12:M:211:LEU:HD12	12:M:229:LEU:HD11	2.02	0.41
2:B:627:LEU:HD12	2:B:627:LEU:HA	1.93	0.40
3:C:10:ASP:CG	3:C:19:ARG:HH22	2.28	0.40
4:D:1135:LEU:HD12	4:D:1135:LEU:HA	1.91	0.40
6:F:393:ASP:OD1	6:F:396:ARG:NH1	2.54	0.40
6:G:759:LEU:HD13	6:G:762:ILE:HD11	2.03	0.40
8:I:93:ASN:HB3	8:I:94:THR:H	1.63	0.40
11:L:152:LEU:HD22	17:R:45:LEU:HG	2.03	0.40
15:P:223:PRO:O	15:P:315:TYR:OH	2.33	0.40
2:B:659:ARG:HG2	2:B:660:PRO:HD2	2.02	0.40
5:E:325:GLN:HG2	5:E:1944:LEU:HD23	2.03	0.40
5:E:2079:LEU:HD11	6:F:438:ILE:HG13	2.03	0.40
5:E:2117:GLU:OE1	5:E:2123:GLN:HG3	2.22	0.40
6:G:504:ALA:HB1	9:J:363:MET:HB3	2.02	0.40
8:I:84:GLU:HB3	8:I:85:PHE:H	1.76	0.40
8:I:297:ARG:O	8:I:301:SER:HB3	2.21	0.40
9:J:230:GLY:N	22:J:401:DGD:HD2	2.37	0.40
13:N:36:GLU:C	13:N:38:ALA:H	2.30	0.40
14:O:380:TRP:HA	14:O:383:MET:HE3	2.04	0.40
14:O:395:LEU:HA	14:O:395:LEU:HD23	1.89	0.40
17:R:47:THR:O	17:R:51:MET:HG3	2.22	0.40
1:A:330:LEU:HD23	1:A:330:LEU:HA	1.94	0.40
1:A:661:PHE:CE2	6:F:627:ILE:HD12	2.56	0.40
1:A:878:LYS:HB2	16:Q:152:TYR:HB3	2.04	0.40
3:C:34:ILE:HG21	6:G:421:HIS:HB3	2.04	0.40
4:D:1085:PRO:HG3	6:G:925:TRP:CE3	2.56	0.40
5:E:624:GLN:HE22	7:H:176:LEU:C	2.29	0.40
5:E:1292:PHE:HE2	13:N:69:ARG:HA	1.87	0.40
6:F:368:LEU:HD13	6:F:374:LEU:HD11	2.03	0.40
6:F:909:LEU:HD23	6:F:909:LEU:HA	1.92	0.40
6:G:162:GLN:HB3	6:G:163:MET:H	1.53	0.40
14:O:440:ARG:NH2	18:S:97:TYR:H	2.19	0.40
15:P:58:LEU:HD12	15:P:263:LEU:HD21	2.03	0.40
4:D:847:LEU:HD21	4:D:1128:MET:HG2	2.04	0.40
5:E:903:LYS:HD3	5:E:903:LYS:HA	1.89	0.40
5:E:1292:PHE:CE2	13:N:69:ARG:HG2	2.57	0.40
5:E:1312:SER:OG	6:G:204:ARG:NH1	2.51	0.40
5:E:1960:SER:OG	5:E:1961:HIS:N	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:562:ARG:HD3	6:F:606:ASP:HB2	2.03	0.40
6:G:336:VAL:HA	6:G:353:THR:HA	2.02	0.40
6:G:499:ARG:NH1	9:J:359:GLY:O	2.54	0.40
7:H:507:LEU:HA	7:H:510:ALA:HB3	2.03	0.40
23:J:402:LMG:H201	23:J:402:LMG:H311	2.03	0.40
15:P:390:TYR:CE2	15:P:392:ASP:HB2	2.56	0.40
18:S:23:LYS:HE3	18:S:23:LYS:HB2	1.84	0.40
2:B:859:MET:HE3	2:B:859:MET:HB3	1.90	0.40
5:E:2658:THR:HG21	6:G:858:ASP:H	1.86	0.40
6:F:798:LEU:HD13	6:F:803:LEU:HD21	2.03	0.40
6:G:445:LEU:HA	6:G:445:LEU:HD23	1.85	0.40
6:G:505:ARG:HD2	9:J:364:ARG:HA	2.03	0.40
6:G:569:LEU:O	6:G:612:VAL:HA	2.21	0.40
11:L:93:MET:HA	11:L:98:ASP:H	1.85	0.40
18:S:95:GLY:C	18:S:99:ASN:HD21	2.29	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

### 5.3.2 Protein sidechains [i](#)

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

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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	$\# Z  > 2$
17	SEP	R	44	17	8,9,10	1.64	1 (12%)	7,12,14	1.20	1 (14%)

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
17	SEP	R	44	17	-	3/6/8/10	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
17	R	44	SEP	P-O1P	3.53	1.61	1.50

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	R	44	SEP	OG-CB-CA	2.28	110.36	108.14

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
17	R	44	SEP	CB-OG-P-O2P
17	R	44	SEP	CB-OG-P-O3P
17	R	44	SEP	CB-OG-P-O1P

There are no ring outliers.

No monomer is involved in short contacts.

## 5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry

Of 9 ligands modelled in this entry, 2 are monoatomic - leaving 7 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
25	SQD	L	303	-	34,36,54	1.79	5 (14%)	44,47,65	2.03	13 (29%)
22	DGD	J	401	-	48,48,67	1.18	3 (6%)	62,62,81	1.30	8 (12%)
22	DGD	L	302	-	67,67,67	1.15	6 (8%)	81,81,81	1.09	8 (9%)
23	LMG	J	402	-	41,41,55	1.02	1 (2%)	49,49,63	1.12	5 (10%)
24	ACD	K	501	-	19,20,21	2.57	5 (26%)	18,19,21	1.21	1 (5%)
23	LMG	L	301	-	47,47,55	0.94	1 (2%)	55,55,63	1.04	5 (9%)
21	DGA	H	701	-	35,35,43	0.70	0	37,37,45	0.91	2 (5%)

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
25	SQD	L	303	-	-	14/31/51/69	0/1/1/1
22	DGD	J	401	-	-	12/36/76/95	0/2/2/2
22	DGD	L	302	-	-	38/55/95/95	0/2/2/2
23	LMG	J	402	-	-	19/36/56/70	0/1/1/1
24	ACD	K	501	-	-	10/18/18/19	-
23	LMG	L	301	-	-	21/42/62/70	0/1/1/1
21	DGA	H	701	-	-	21/37/37/45	-

All (21) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	L	303	SQD	O9-S	5.52	1.60	1.45
24	K	501	ACD	O1-C1	5.19	1.49	1.20
25	L	303	SQD	O7-S	5.15	1.59	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	K	501	ACD	C9-C8	4.57	1.57	1.31
24	K	501	ACD	C12-C11	4.54	1.57	1.31
24	K	501	ACD	C15-C14	4.52	1.57	1.31
24	K	501	ACD	C6-C5	4.49	1.57	1.31
25	L	303	SQD	O8-S	3.83	1.61	1.47
22	L	302	DGD	C3G-C2G	2.56	1.58	1.50
22	J	401	DGD	C3G-C2G	2.49	1.58	1.50
23	L	301	LMG	C7-C8	2.49	1.58	1.50
22	L	302	DGD	O5D-C1E	2.40	1.44	1.40
23	J	402	LMG	C7-C8	2.37	1.58	1.50
25	L	303	SQD	C46-C45	2.31	1.58	1.50
22	L	302	DGD	C6D-C5D	2.28	1.58	1.51
25	L	303	SQD	O4-C4	-2.23	1.37	1.43
22	J	401	DGD	C1G-C2G	2.22	1.57	1.50
22	J	401	DGD	C4D-C5D	2.15	1.57	1.53
22	L	302	DGD	C1G-C2G	2.12	1.57	1.50
22	L	302	DGD	C3E-C2E	2.10	1.57	1.52
22	L	302	DGD	C4D-C5D	2.01	1.57	1.53

All (42) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	L	303	SQD	O9-S-C6	7.73	118.30	106.76
25	L	303	SQD	O8-S-C6	3.97	113.63	105.97
22	J	401	DGD	O3G-C1D-C2D	3.68	113.87	108.27
25	L	303	SQD	O7-S-C6	3.67	112.24	106.76
22	J	401	DGD	O2G-C1B-C2B	3.65	119.38	111.48
25	L	303	SQD	O8-S-O7	-3.48	102.68	111.40
22	L	302	DGD	O3G-C1D-C2D	3.47	113.55	108.27
25	L	303	SQD	O8-S-O9	-3.26	103.25	111.40
25	L	303	SQD	O47-C7-C8	3.22	118.46	111.48
22	J	401	DGD	O6E-C1E-O5D	-3.18	102.53	110.04
22	L	302	DGD	O2G-C1B-C2B	3.15	118.30	111.48
23	L	301	LMG	O7-C10-C11	3.02	118.02	111.48
25	L	303	SQD	O5-C1-O6	-3.02	102.90	110.04
23	J	402	LMG	O2-C2-C1	-3.02	102.88	110.08
23	J	402	LMG	O7-C10-C11	2.99	117.96	111.48
21	H	701	DGA	OXT-CG3-CG2	-2.87	104.39	111.77
24	K	501	ACD	O1-C1-C2	-2.79	102.99	126.30
25	L	303	SQD	O9-S-O7	-2.67	105.13	113.82
23	L	301	LMG	O2-C2-C1	-2.54	104.02	110.08
23	J	402	LMG	O7-C10-O9	-2.52	117.82	123.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
22	J	401	DGD	O6D-C1D-O3G	-2.51	104.12	110.04
23	L	301	LMG	O7-C10-O9	-2.48	117.90	123.70
23	L	301	LMG	O4-C4-C3	-2.42	104.67	110.38
22	L	302	DGD	O3E-C3E-C4E	-2.40	104.71	110.38
25	L	303	SQD	O6-C1-C2	2.40	111.91	108.27
22	L	302	DGD	O1G-C1G-C2G	2.38	115.24	108.40
22	L	302	DGD	O5E-C6E-C5E	-2.35	103.34	111.33
22	J	401	DGD	O2G-C1B-O1B	-2.34	118.23	123.70
22	J	401	DGD	O5E-C6E-C5E	-2.32	103.42	111.33
23	J	402	LMG	O4-C4-C3	-2.31	104.93	110.38
22	L	302	DGD	O2G-C1B-O1B	-2.18	118.61	123.70
23	J	402	LMG	O6-C1-O1	-2.18	104.90	110.04
25	L	303	SQD	O48-C23-O10	-2.14	118.26	123.63
22	J	401	DGD	O1G-C1G-C2G	2.12	114.51	108.40
22	L	302	DGD	O6E-C5E-C4E	2.10	113.47	109.70
22	L	302	DGD	C6D-O5D-C1E	2.09	118.27	113.80
22	J	401	DGD	O3E-C3E-C4E	-2.07	105.49	110.38
21	H	701	DGA	CG2-OG2-CB1	2.07	122.76	117.80
25	L	303	SQD	O47-C7-O49	-2.03	118.95	123.70
25	L	303	SQD	O48-C23-C24	2.02	118.00	111.83
23	L	301	LMG	O6-C1-O1	-2.01	105.29	110.04
25	L	303	SQD	C1-C2-C3	-2.01	105.78	110.01

There are no chirality outliers.

All (135) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
21	H	701	DGA	CB2-CB1-OG2-CG2
22	J	401	DGD	C2B-C1B-O2G-C2G
22	J	401	DGD	O1B-C1B-O2G-C2G
22	L	302	DGD	C2B-C1B-O2G-C2G
22	L	302	DGD	O2G-C2G-C3G-O3G
22	L	302	DGD	O6D-C1D-O3G-C3G
22	L	302	DGD	O6E-C1E-O5D-C6D
23	L	301	LMG	O9-C10-O7-C8
24	K	501	ACD	C9-C10-C11-C12
25	L	303	SQD	O49-C7-O47-C45
25	L	303	SQD	C8-C7-O47-C45
25	L	303	SQD	C5-C6-S-O9
21	H	701	DGA	OB1-CB1-OG2-CG2
22	L	302	DGD	O1B-C1B-O2G-C2G
23	L	301	LMG	C11-C10-O7-C8

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Mol	Chain	Res	Type	Atoms
22	L	302	DGD	O1A-C1A-O1G-C1G
22	L	302	DGD	C2A-C1A-O1G-C1G
23	J	402	LMG	C29-C30-C31-C32
23	J	402	LMG	O6-C5-C6-O5
22	L	302	DGD	O6E-C5E-C6E-O5E
23	J	402	LMG	C4-C5-C6-O5
22	L	302	DGD	CAA-CBA-CCA-CDA
23	J	402	LMG	C13-C14-C15-C16
22	L	302	DGD	CCA-CDA-CEA-CFA
23	J	402	LMG	C29-C28-O8-C9
22	L	302	DGD	C3A-C4A-C5A-C6A
22	L	302	DGD	C6B-C7B-C8B-C9B
22	L	302	DGD	C2E-C1E-O5D-C6D
25	L	303	SQD	C24-C25-C26-C27
22	L	302	DGD	C1A-C2A-C3A-C4A
21	H	701	DGA	CBB-CAB-CB9-CB8
24	K	501	ACD	C13-C14-C15-C16
22	J	401	DGD	C2A-C1A-O1G-C1G
21	H	701	DGA	CB1-CB2-CB3-CB4
25	L	303	SQD	C23-C24-C25-C26
23	J	402	LMG	O10-C28-O8-C9
23	L	301	LMG	O6-C1-O1-C7
23	J	402	LMG	C28-C29-C30-C31
22	L	302	DGD	C4E-C5E-C6E-O5E
23	J	402	LMG	C11-C10-O7-C8
22	J	401	DGD	O1A-C1A-O1G-C1G
22	L	302	DGD	C2D-C1D-O3G-C3G
22	L	302	DGD	C2B-C3B-C4B-C5B
23	J	402	LMG	O9-C10-O7-C8
23	J	402	LMG	C10-C11-C12-C13
23	L	301	LMG	C4-C5-C6-O5
21	H	701	DGA	CA2-CA1-OG1-CG1
22	L	302	DGD	C2A-C3A-C4A-C5A
23	L	301	LMG	C31-C32-C33-C34
23	L	301	LMG	C12-C13-C14-C15
23	L	301	LMG	C33-C34-C35-C36
21	H	701	DGA	CCB-CDB-CEB-CFB
22	L	302	DGD	CDB-CEB-CFB-CGB
24	K	501	ACD	C16-C17-C18-C19
23	J	402	LMG	C14-C15-C16-C17
22	L	302	DGD	CDA-CEA-CFA-CGA
23	J	402	LMG	C11-C12-C13-C14

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Mol	Chain	Res	Type	Atoms
23	J	402	LMG	C17-C18-C19-C20
23	L	301	LMG	C14-C15-C16-C17
23	J	402	LMG	C30-C31-C32-C33
21	H	701	DGA	OA1-CA1-OG1-CG1
23	J	402	LMG	C18-C19-C20-C21
21	H	701	DGA	CB4-CB5-CB6-CB7
23	L	301	LMG	C18-C19-C20-C21
22	L	302	DGD	CBA-CCA-CDA-CEA
23	L	301	LMG	C30-C31-C32-C33
25	L	303	SQD	C24-C23-O48-C46
21	H	701	DGA	CAB-CBB-CCB-CDB
22	L	302	DGD	CAB-CBB-CCB-CDB
21	H	701	DGA	CB6-CB7-CB8-CB9
22	J	401	DGD	C1B-C2B-C3B-C4B
23	L	301	LMG	C15-C16-C17-C18
21	H	701	DGA	CB9-CAB-CBB-CCB
23	L	301	LMG	O1-C7-C8-O7
22	J	401	DGD	C2A-C3A-C4A-C5A
23	L	301	LMG	C35-C36-C37-C38
22	L	302	DGD	CEB-CFB-CGB-CHB
21	H	701	DGA	CA5-CA6-CA7-CA8
23	L	301	LMG	O6-C5-C6-O5
22	L	302	DGD	C3B-C4B-C5B-C6B
23	J	402	LMG	C12-C13-C14-C15
23	J	402	LMG	C32-C33-C34-C35
22	L	302	DGD	CCB-CDB-CEB-CFB
25	L	303	SQD	O10-C23-O48-C46
23	J	402	LMG	C31-C32-C33-C34
24	K	501	ACD	C2-C3-C4-C5
21	H	701	DGA	CB2-CB3-CB4-CB5
23	L	301	LMG	C11-C12-C13-C14
24	K	501	ACD	C7-C8-C9-C10
22	L	302	DGD	O1G-C1G-C2G-O2G
22	J	401	DGD	C3B-C4B-C5B-C6B
22	L	302	DGD	CFA-CGA-CHA-CIA
23	L	301	LMG	C20-C21-C22-C23
22	J	401	DGD	C3A-C4A-C5A-C6A
22	L	302	DGD	CEA-CFA-CGA-CHA
22	L	302	DGD	C1G-C2G-C3G-O3G
23	L	301	LMG	O1-C7-C8-C9
25	L	303	SQD	C44-C45-C46-O48
22	L	302	DGD	C6A-C7A-C8A-C9A

*Continued on next page...*

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Mol	Chain	Res	Type	Atoms
22	L	302	DGD	C8A-C9A-CAA-CBA
21	H	701	DGA	CB3-CB4-CB5-CB6
23	L	301	LMG	C37-C38-C39-C40
24	K	501	ACD	C17-C18-C19-C20
24	K	501	ACD	C6-C7-C8-C9
24	K	501	ACD	C11-C10-C9-C8
22	L	302	DGD	C4A-C5A-C6A-C7A
22	L	302	DGD	CBB-CCB-CDB-CEB
22	L	302	DGD	CFB-CGB-CHB-CIB
22	J	401	DGD	C2B-C3B-C4B-C5B
23	L	301	LMG	C34-C35-C36-C37
21	H	701	DGA	CA7-CA8-CA9-CAA
22	J	401	DGD	C4A-C5A-C6A-C7A
25	L	303	SQD	C5-C6-S-O8
25	L	303	SQD	C7-C8-C9-C10
25	L	303	SQD	C27-C28-C29-C30
25	L	303	SQD	C5-C6-S-O7
25	L	303	SQD	O47-C45-C46-O48
21	H	701	DGA	OG1-CG1-CG2-CG3
22	L	302	DGD	O1G-C1G-C2G-C3G
21	H	701	DGA	CFB-CGB-CHB-CIB
21	H	701	DGA	CG3-CG2-OG2-CB1
21	H	701	DGA	CDB-CEB-CFB-CGB
21	H	701	DGA	CBB-CCB-CDB-CEB
24	K	501	ACD	C12-C13-C14-C15
22	L	302	DGD	C1B-C2B-C3B-C4B
22	L	302	DGD	O1G-C1A-C2A-C3A
22	J	401	DGD	O6E-C1E-O5D-C6D
23	J	402	LMG	O7-C10-C11-C12
22	L	302	DGD	C5D-C6D-O5D-C1E
25	L	303	SQD	C45-C44-O6-C1
24	K	501	ACD	C10-C11-C12-C13
23	L	301	LMG	C29-C30-C31-C32
22	J	401	DGD	C7A-C8A-C9A-CAA
23	L	301	LMG	C13-C14-C15-C16
21	H	701	DGA	CA1-CA2-CA3-CA4

There are no ring outliers.

6 monomers are involved in 15 short contacts:

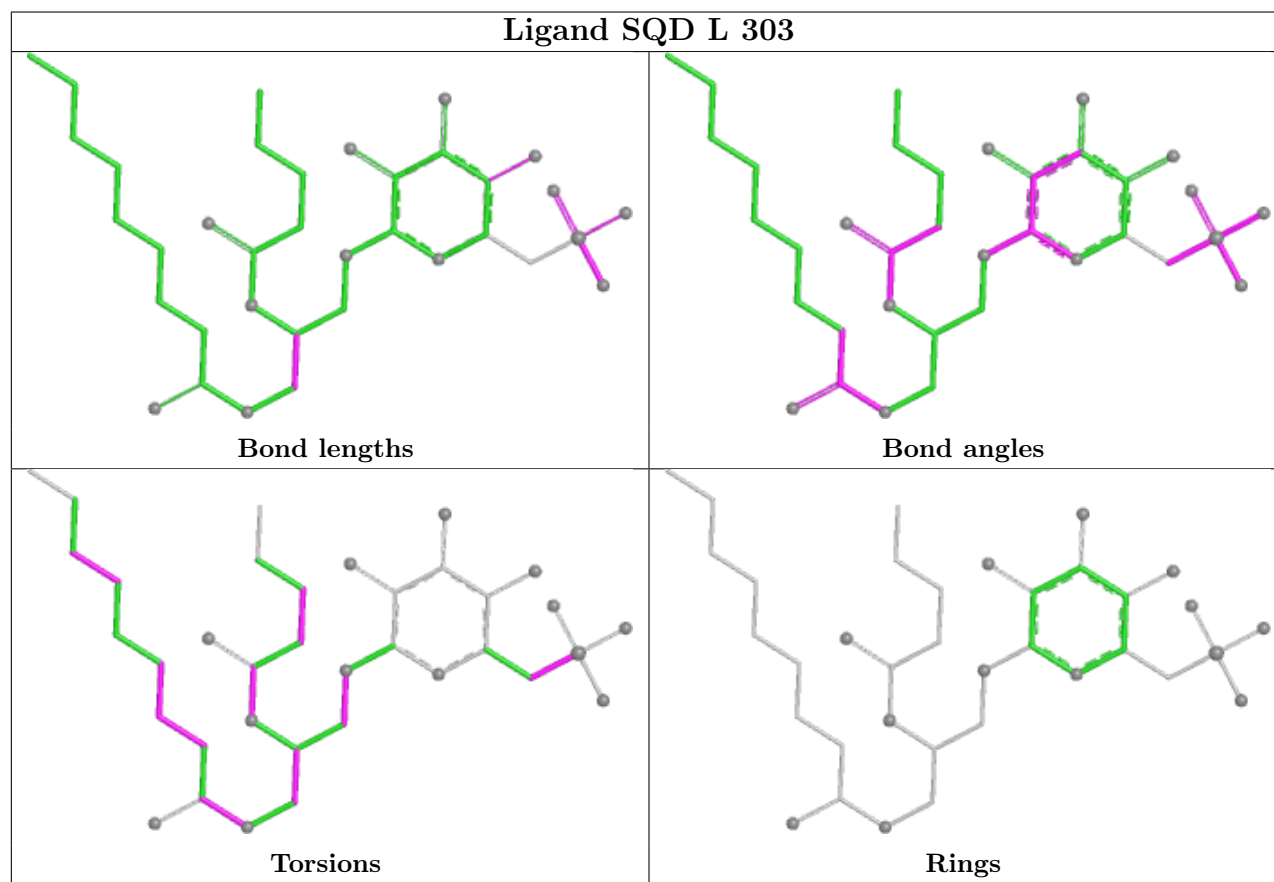
Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	L	303	SQD	2	0

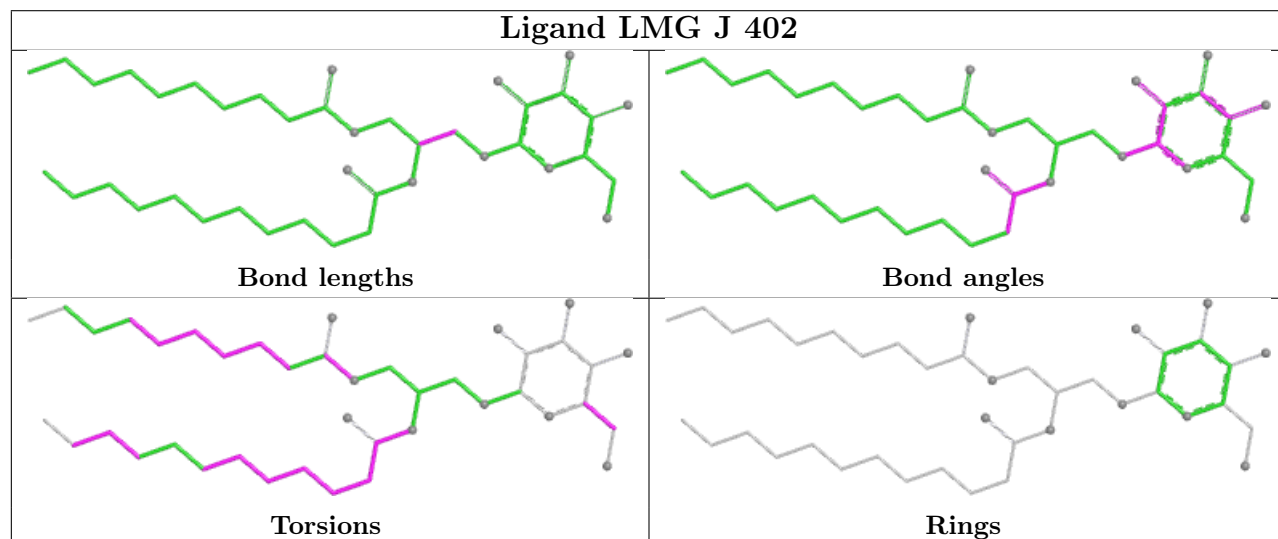
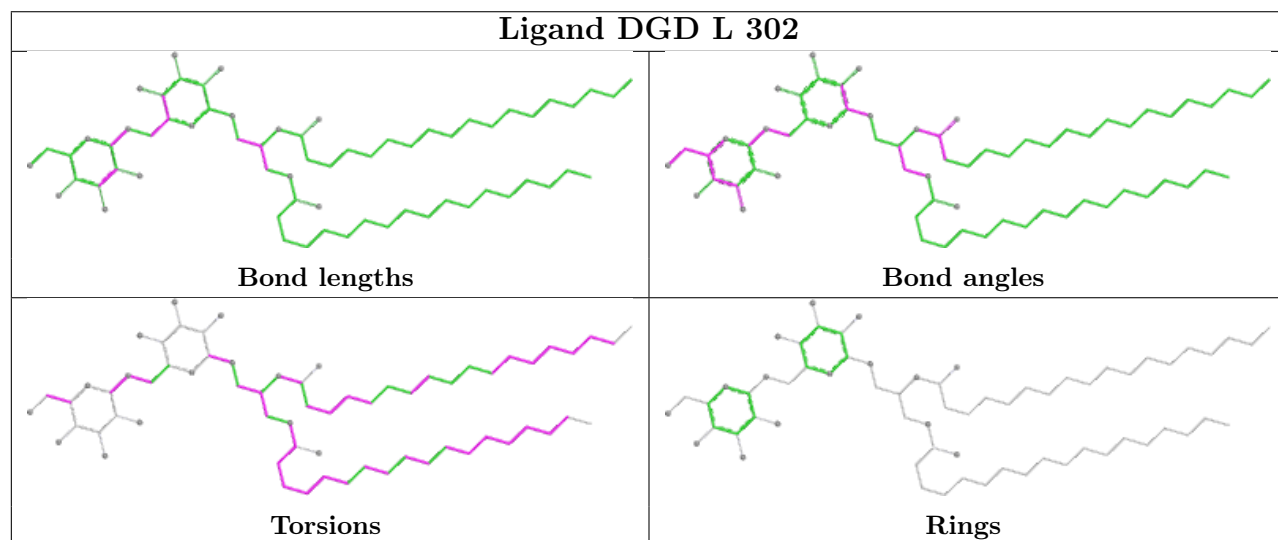
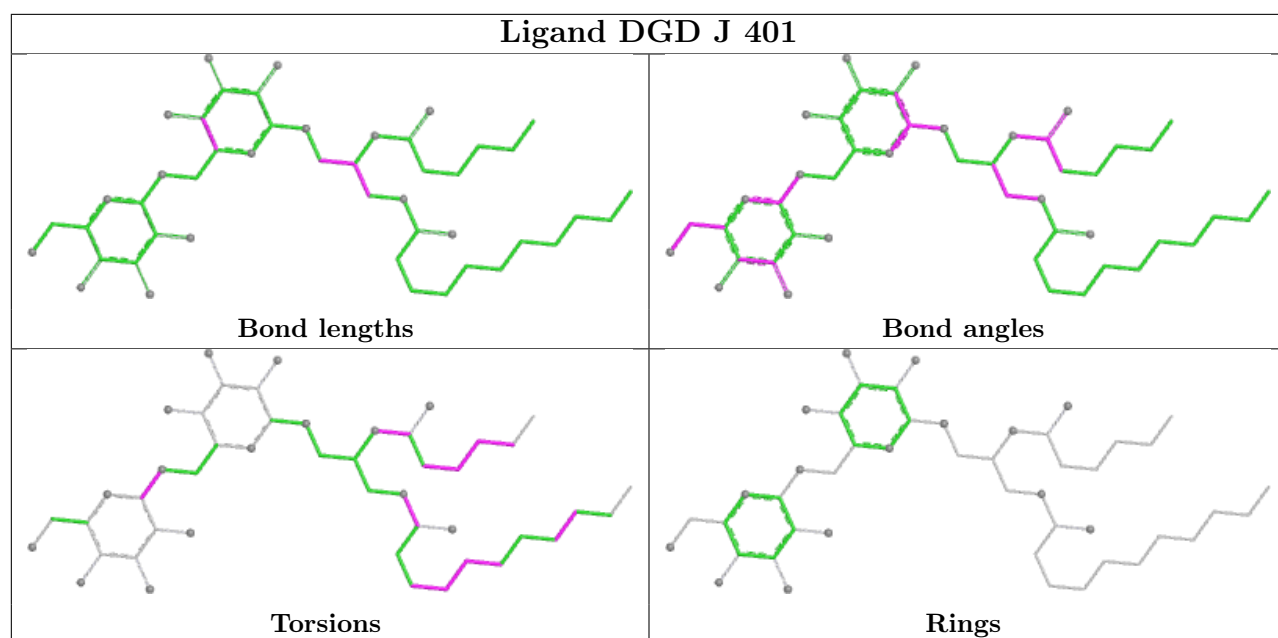
*Continued on next page...*

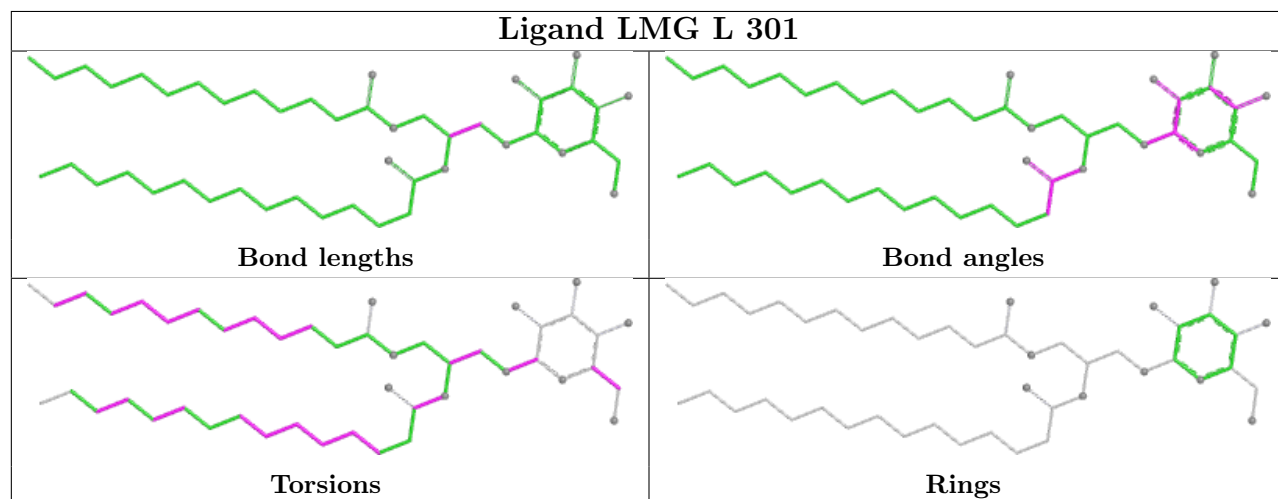
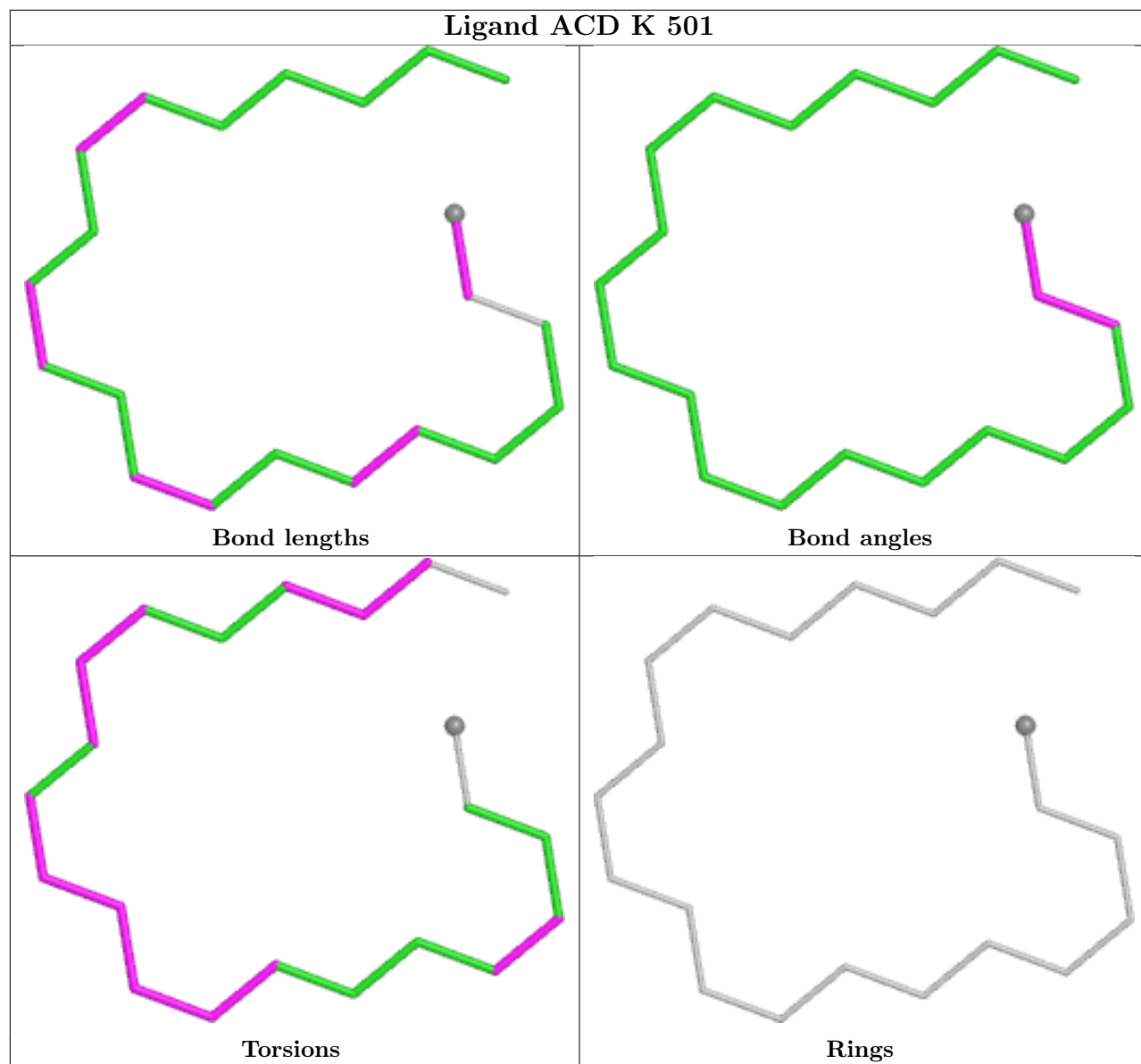
*Continued from previous page...*

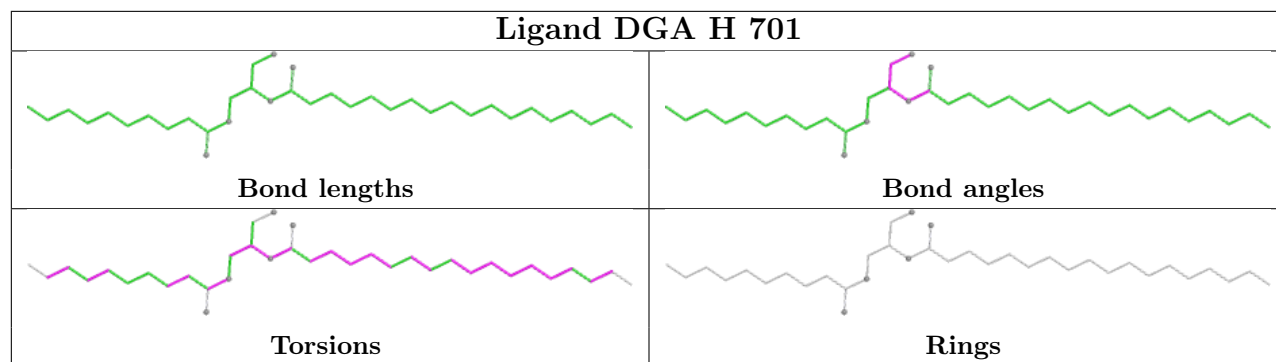
Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	J	401	DGD	2	0
23	J	402	LMG	6	0
24	K	501	ACD	1	0
23	L	301	LMG	2	0
21	H	701	DGA	3	0

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.

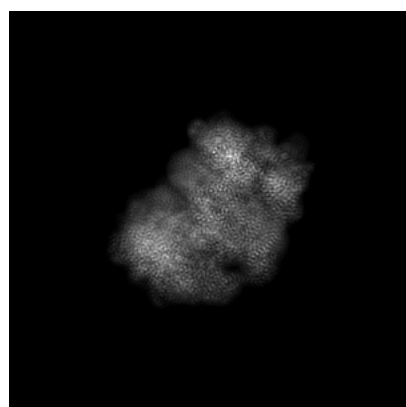
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-38424. These allow visual inspection of the internal detail of the map and identification of artifacts.

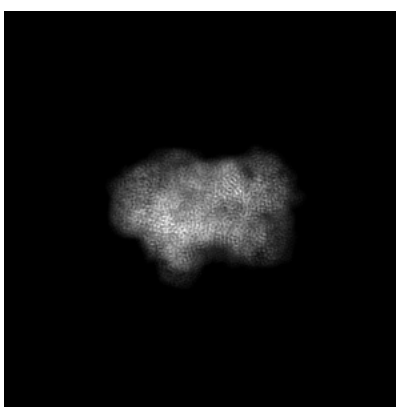
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

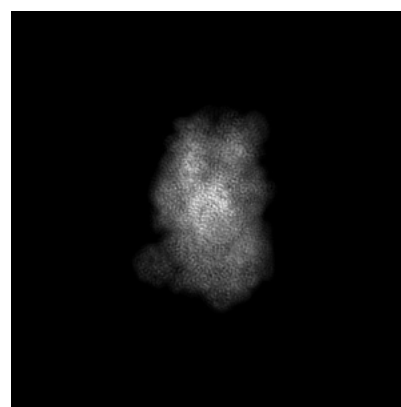
#### 6.1.1 Primary map



X



Y

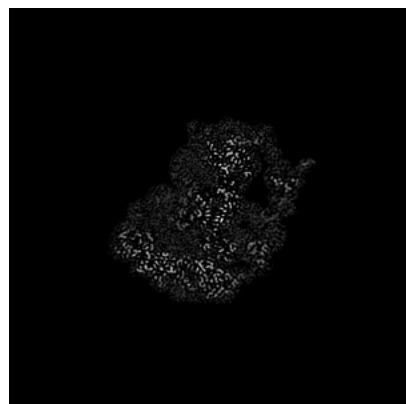


Z

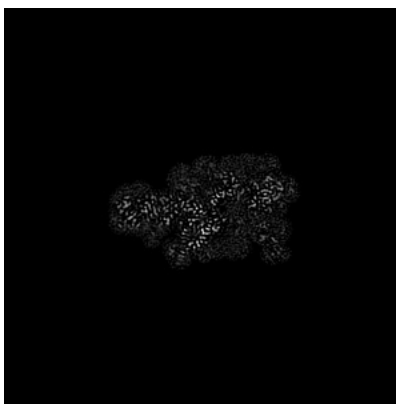
The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

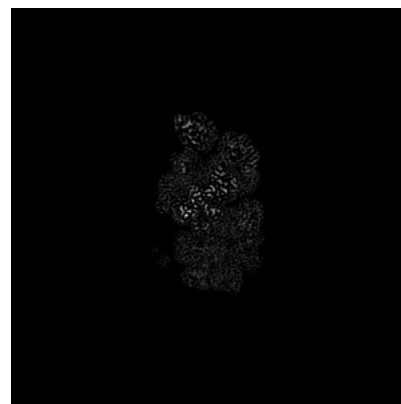
#### 6.2.1 Primary map



X Index: 210



Y Index: 210

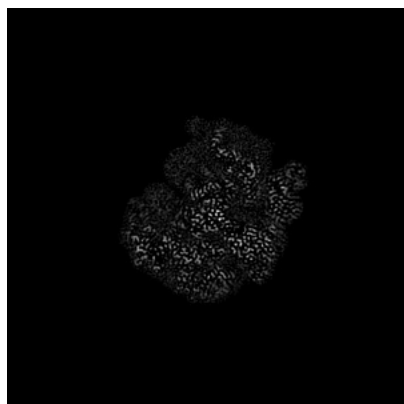


Z Index: 210

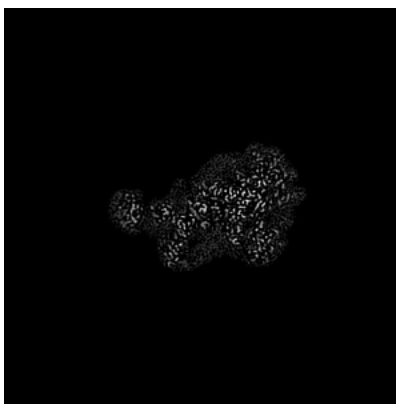
The images above show central slices of the map in three orthogonal directions.

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

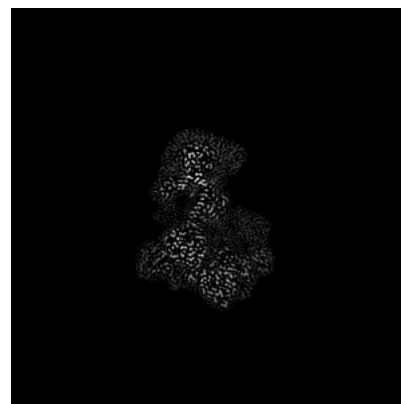
### 6.3.1 Primary map



X Index: 195



Y Index: 228

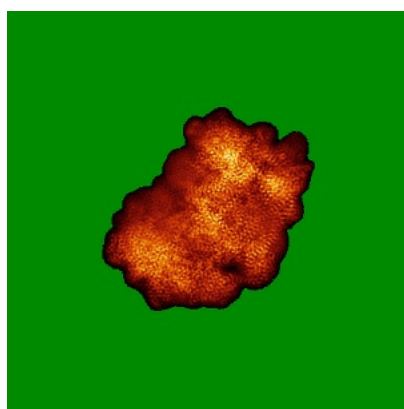


Z Index: 171

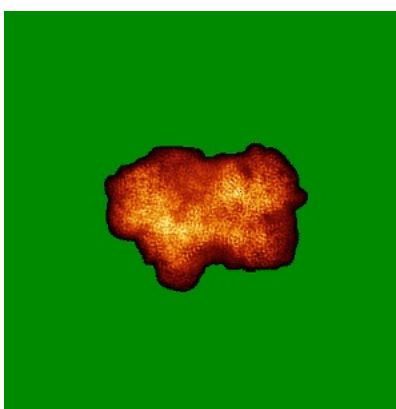
The images above show the largest variance slices of the map in three orthogonal directions.

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

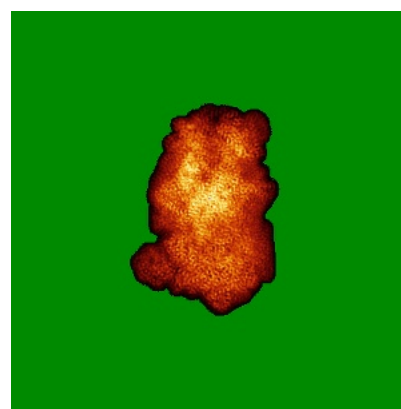
### 6.4.1 Primary map



X



Y

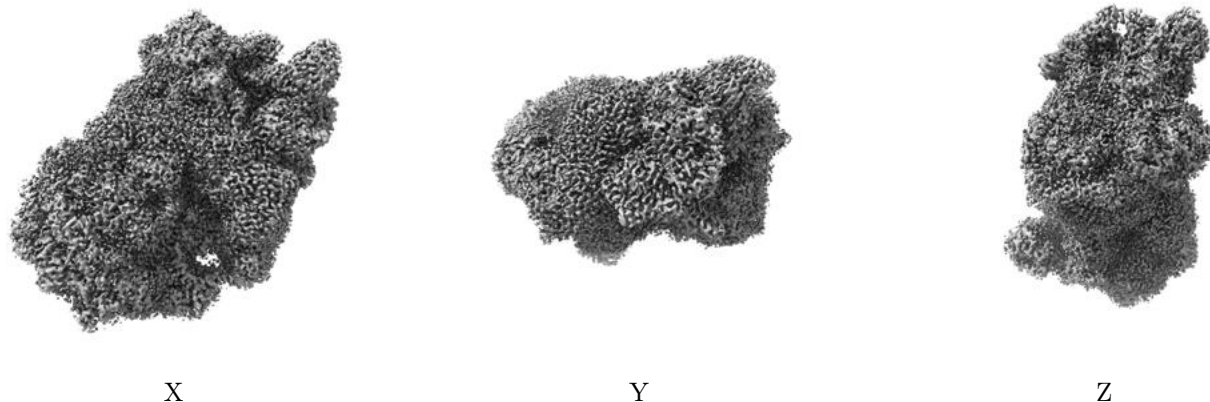


Z

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 0.00943. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

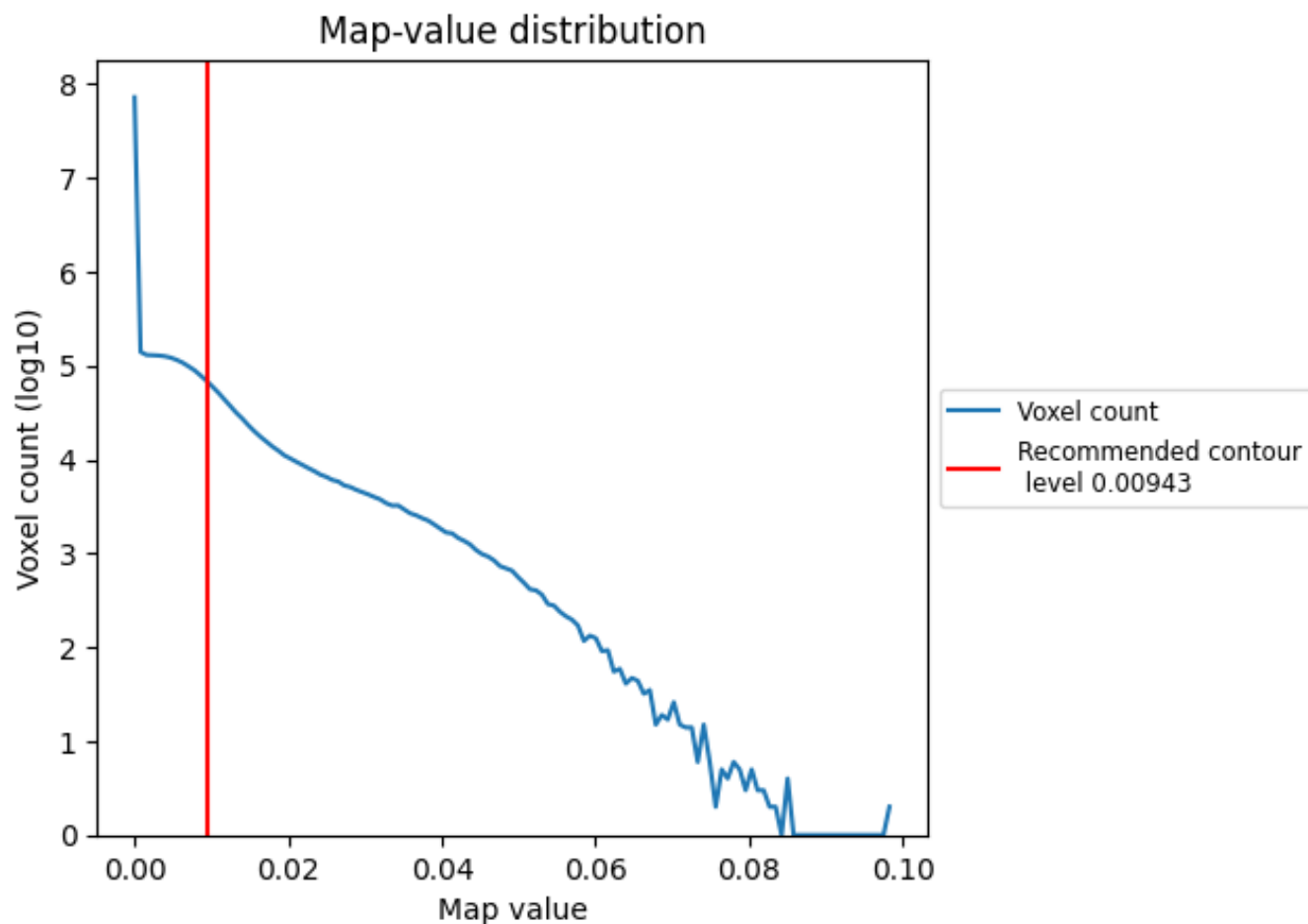
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

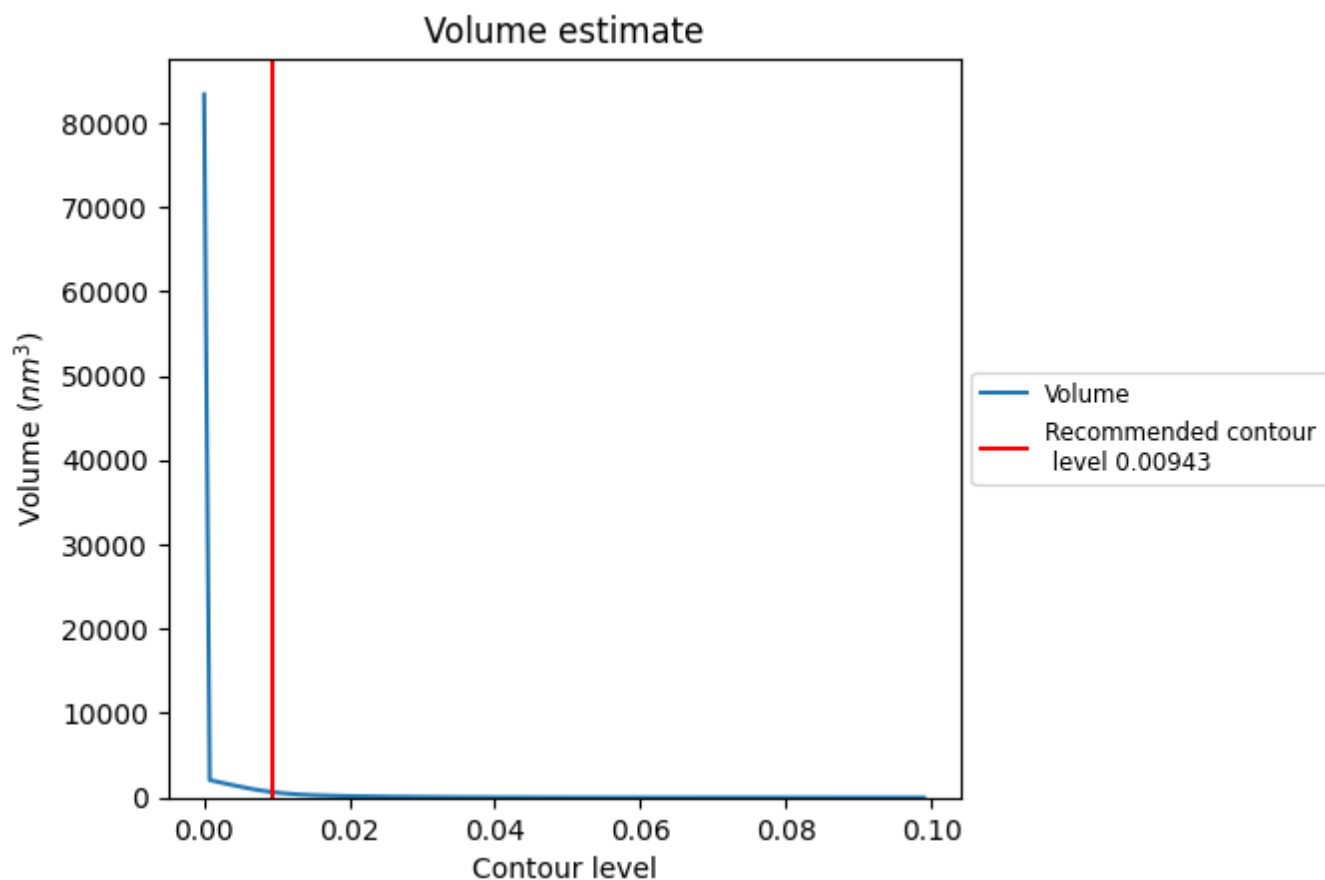
This section contains the results of statistical analysis of the map.

### 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.

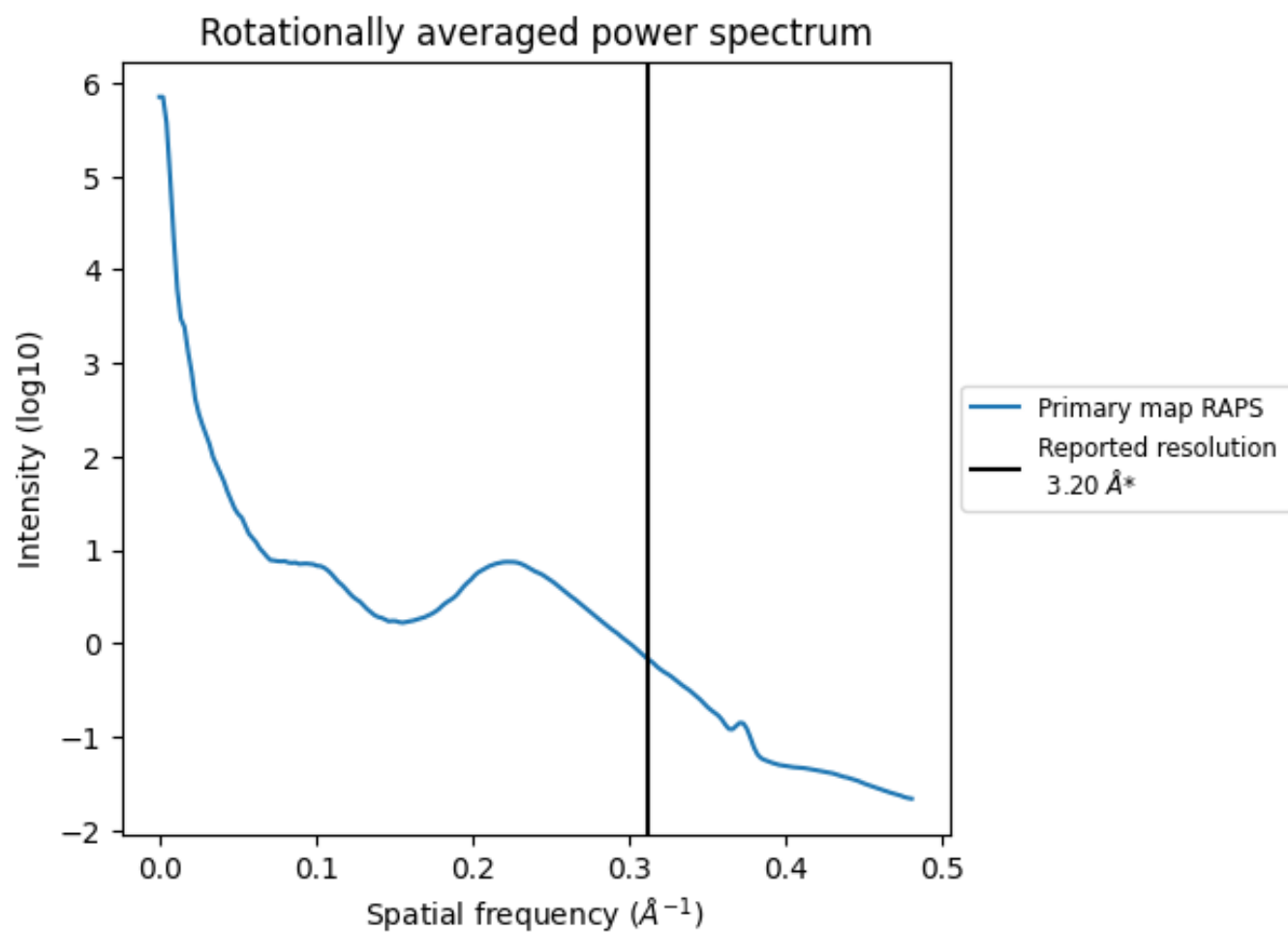
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 644 nm<sup>3</sup>; this corresponds to an approximate mass of 582 kDa.

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

### 7.3 Rotationally averaged power spectrum ⓘ



\*Reported resolution corresponds to spatial frequency of 0.312 Å<sup>-1</sup>

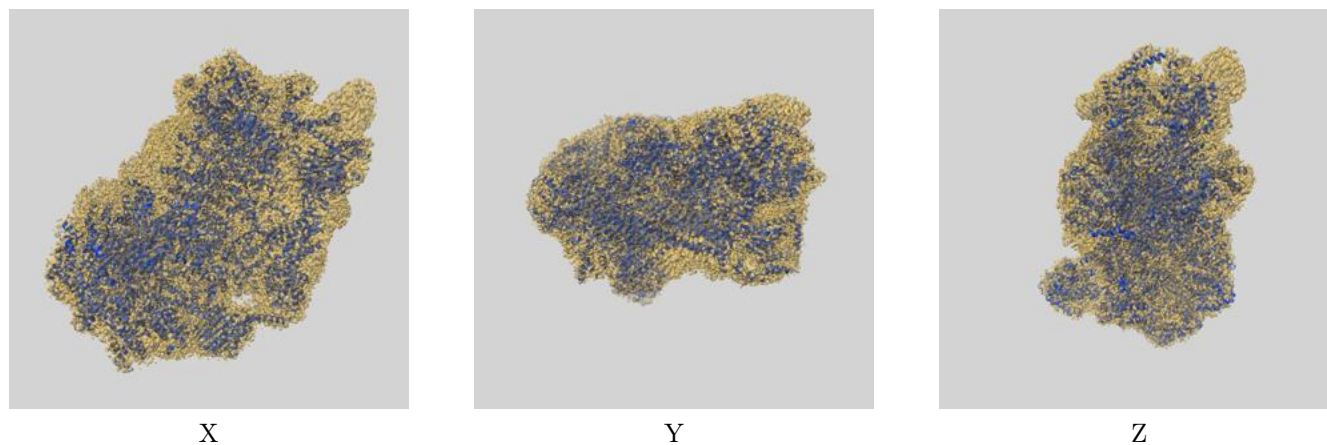
## 8 Fourier-Shell correlation

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

## 9 Map-model fit [i](#)

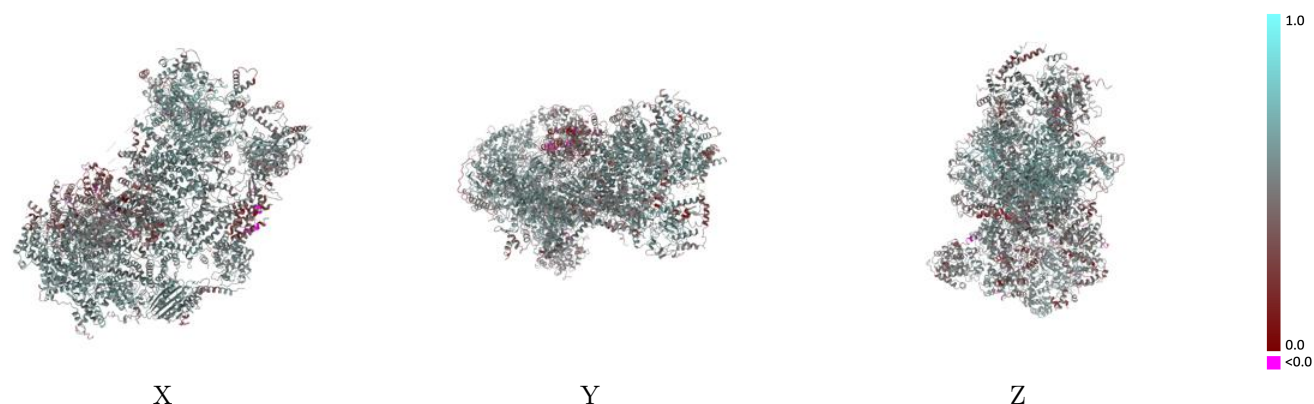
This section contains information regarding the fit between EMDB map EMD-38424 and PDB model 8XKS. Per-residue inclusion information can be found in section 3 on page 10.

### 9.1 Map-model overlay [i](#)



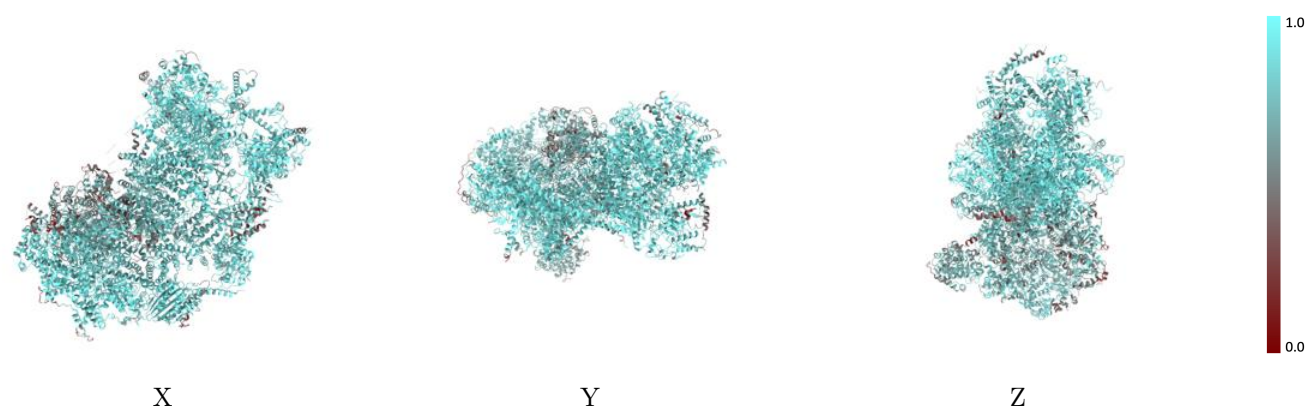
The images above show the 3D surface view of the map at the recommended contour level 0.00943 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



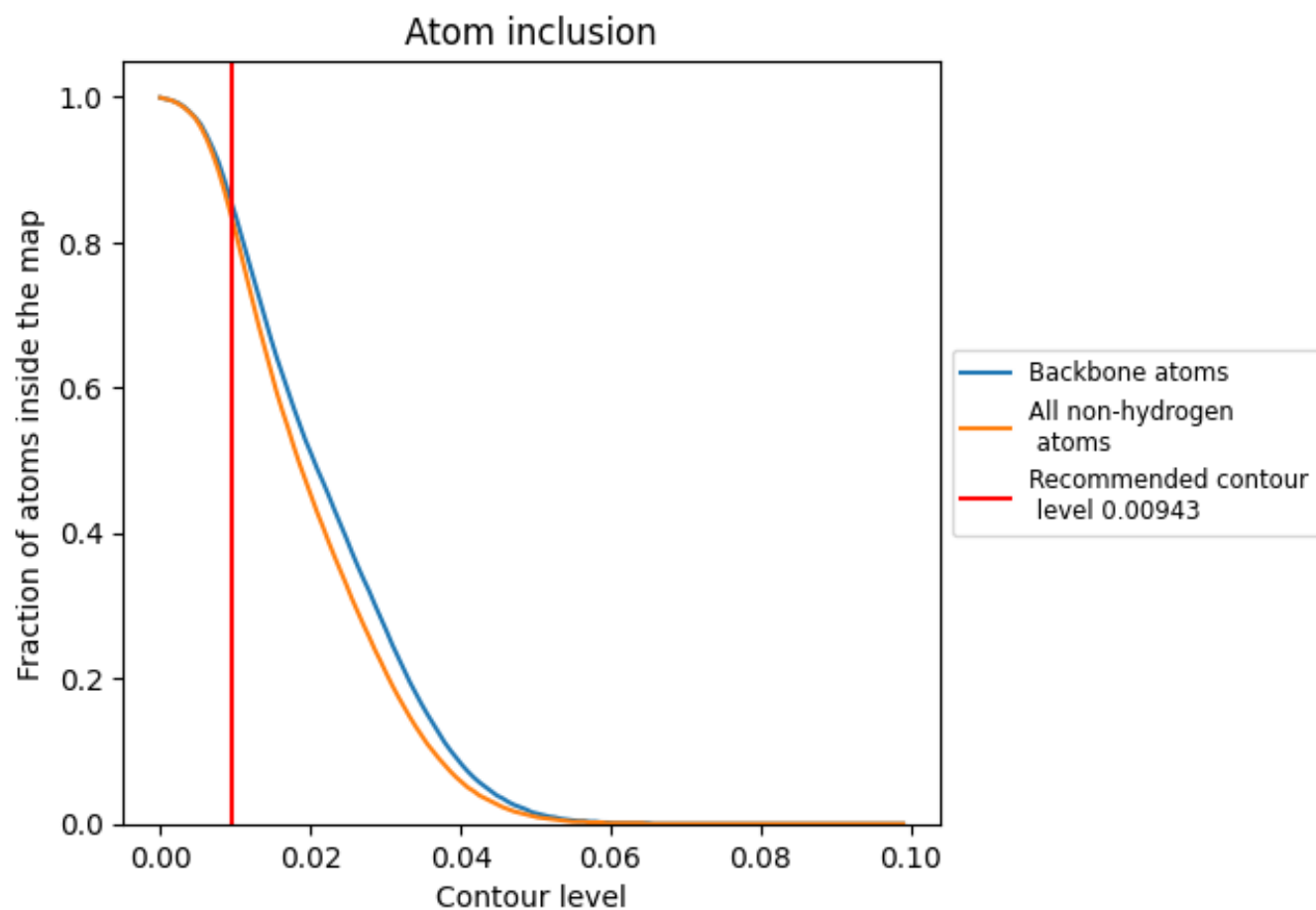
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.00943).











































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 86% of all backbone atoms, 84% 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 (0.00943) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8370	 0.5110
A	 0.8280	 0.5030
B	 0.7880	 0.5030
C	 0.8910	 0.5550
D	 0.8360	 0.5250
E	 0.8710	 0.5370
F	 0.8080	 0.4820
G	 0.8420	 0.5100
H	 0.8520	 0.4910
I	 0.8730	 0.4820
J	 0.8950	 0.5490
K	 0.8880	 0.5240
L	 0.9040	 0.5420
M	 0.8900	 0.5450
N	 0.8020	 0.4790
O	 0.7080	 0.3800
P	 0.8280	 0.5150
Q	 0.7010	 0.4660
R	 0.8300	 0.4890
S	 0.8830	 0.5530
T	 0.6920	 0.4480

