Full wwPDB EM Validation Report ⓘ

Jun 16, 2026 – 01:37 pm BST

PDB ID : 30KH / pdb_000030kh
EMDB ID : EMD-57856
Title : Structure of human Trpm4 in native lipid vesicles at 8 degrees celsius
Authors : Schneiter, D.; Ekundayo, B.; Stahlberg, H.; Abriel, H.
Deposited on : 2026-04-30
Resolution : 3.70 Å(reported)
Based on initial model : 9B92

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

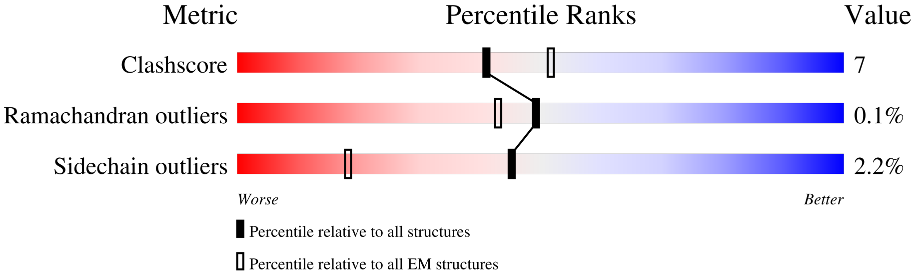
EMDB validation analysis : 0.0.1.dev132
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data 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

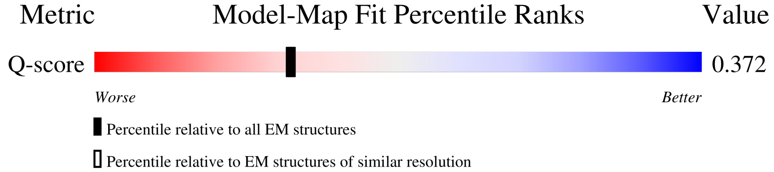
1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 3.70 Å.

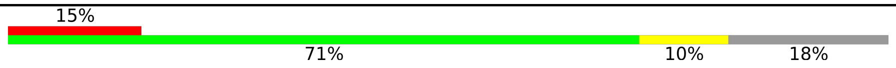
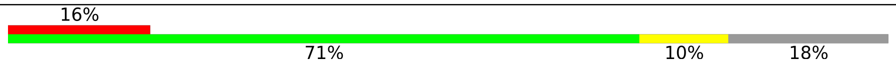
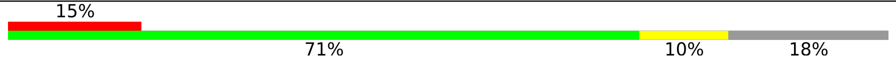
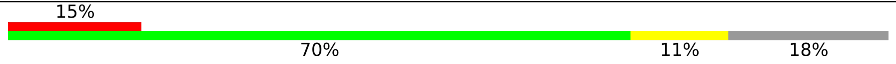
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	11569 (3.20 - 4.20)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1214	
1	B	1214	
1	C	1214	
1	D	1214	

2 Entry composition (i)

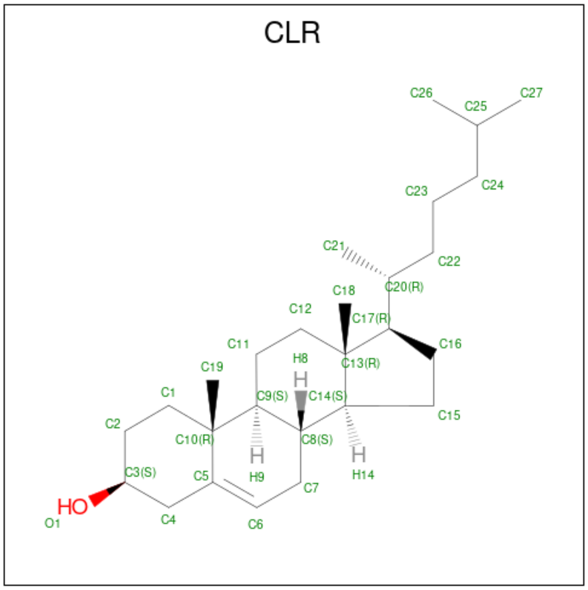
There are 2 unique types of molecules in this entry. The entry contains 61004 atoms, of which 30388 are hydrogens and 0 are deuteriums.

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 Transient receptor potential cation channel subfamily M member 4.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
1	A	990	14807	4851	7321	1322	1275	38	0	0
1	B	990	14807	4851	7321	1322	1275	38	0	0
1	C	990	14807	4851	7321	1322	1275	38	0	0
1	D	990	14807	4851	7321	1322	1275	38	0	0

- Molecule 2 is CHOLESTEROL (CCD ID: CLR) (formula: $C_{27}H_{46}O$).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	H	O	
2	A	1	74	27	46	1	0
2	A	1	74	27	46	1	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
2	A	1	Total C H O 74 27 46 1	0
2	A	1	Total C H O 74 27 46 1	0
2	A	1	Total C H O 74 27 46 1	0
2	A	1	Total C H O 74 27 46 1	0
2	B	1	Total C H O 74 27 46 1	0
2	B	1	Total C H O 74 27 46 1	0
2	B	1	Total C H O 74 27 46 1	0
2	B	1	Total C H O 74 27 46 1	0
2	B	1	Total C H O 74 27 46 1	0
2	B	1	Total C H O 74 27 46 1	0
2	B	1	Total C H O 74 27 46 1	0
2	C	1	Total C H O 74 27 46 1	0
2	C	1	Total C H O 74 27 46 1	0
2	C	1	Total C H O 74 27 46 1	0
2	C	1	Total C H O 74 27 46 1	0
2	C	1	Total C H O 74 27 46 1	0
2	D	1	Total C H O 74 27 46 1	0
2	D	1	Total C H O 74 27 46 1	0
2	D	1	Total C H O 74 27 46 1	0
2	D	1	Total C H O 74 27 46 1	0
2	D	1	Total C H O 74 27 46 1	0

Continued on next page...

Continued from previous page...

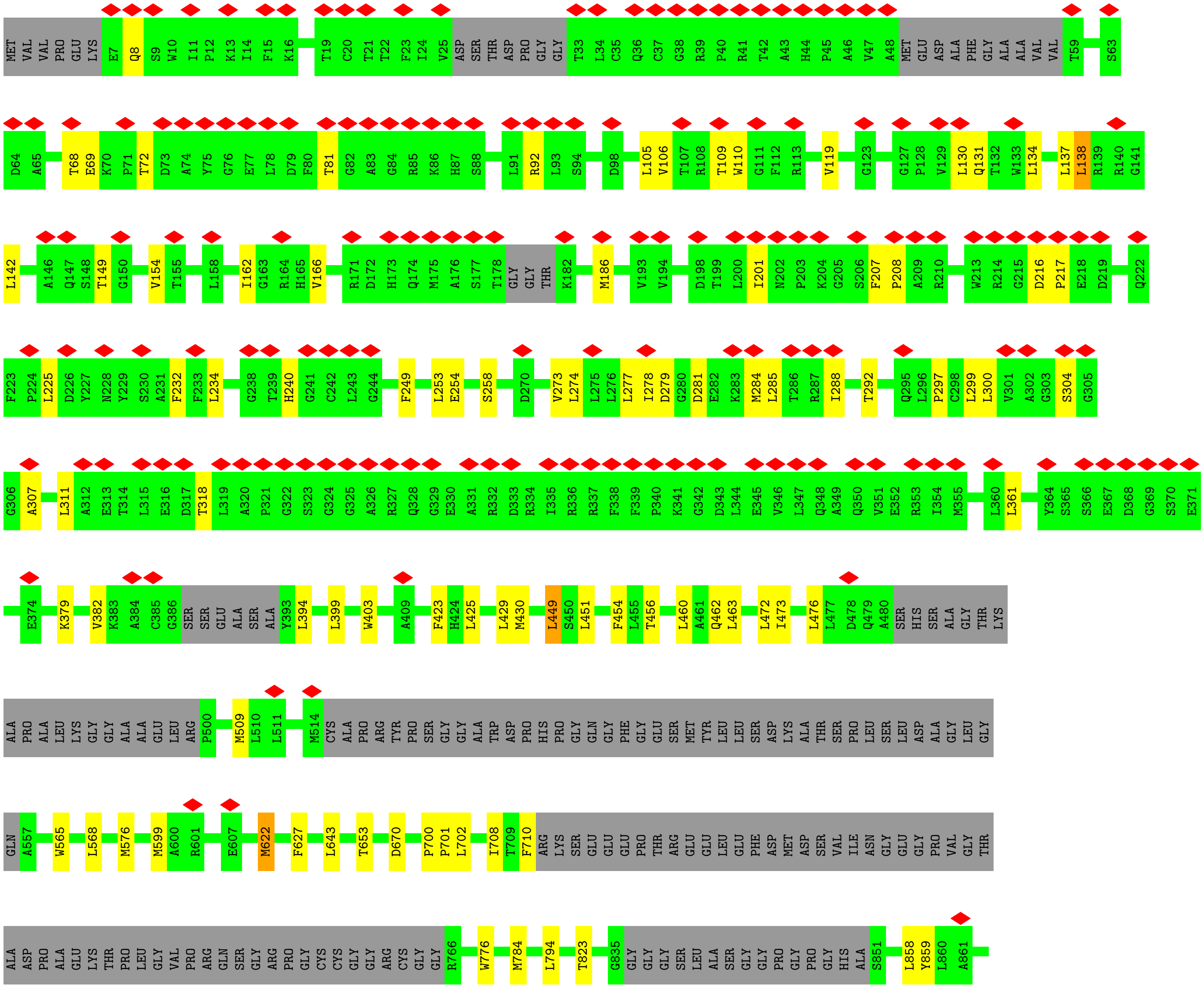
Mol	**Chain**	**Residues**	**Atoms**				**AltConf**
			Total	C	H	O	
2	D	1	74	27	46	1	0

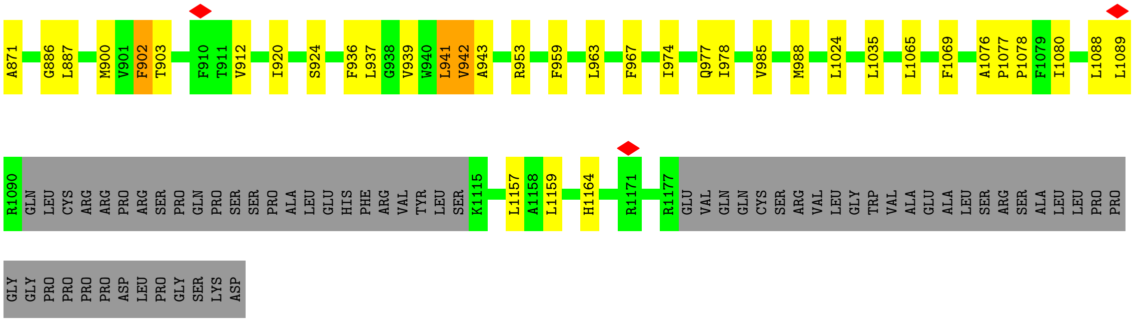
3 Residue-property plots ⓘ

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

- Molecule 1: Transient receptor potential cation channel subfamily M member 4

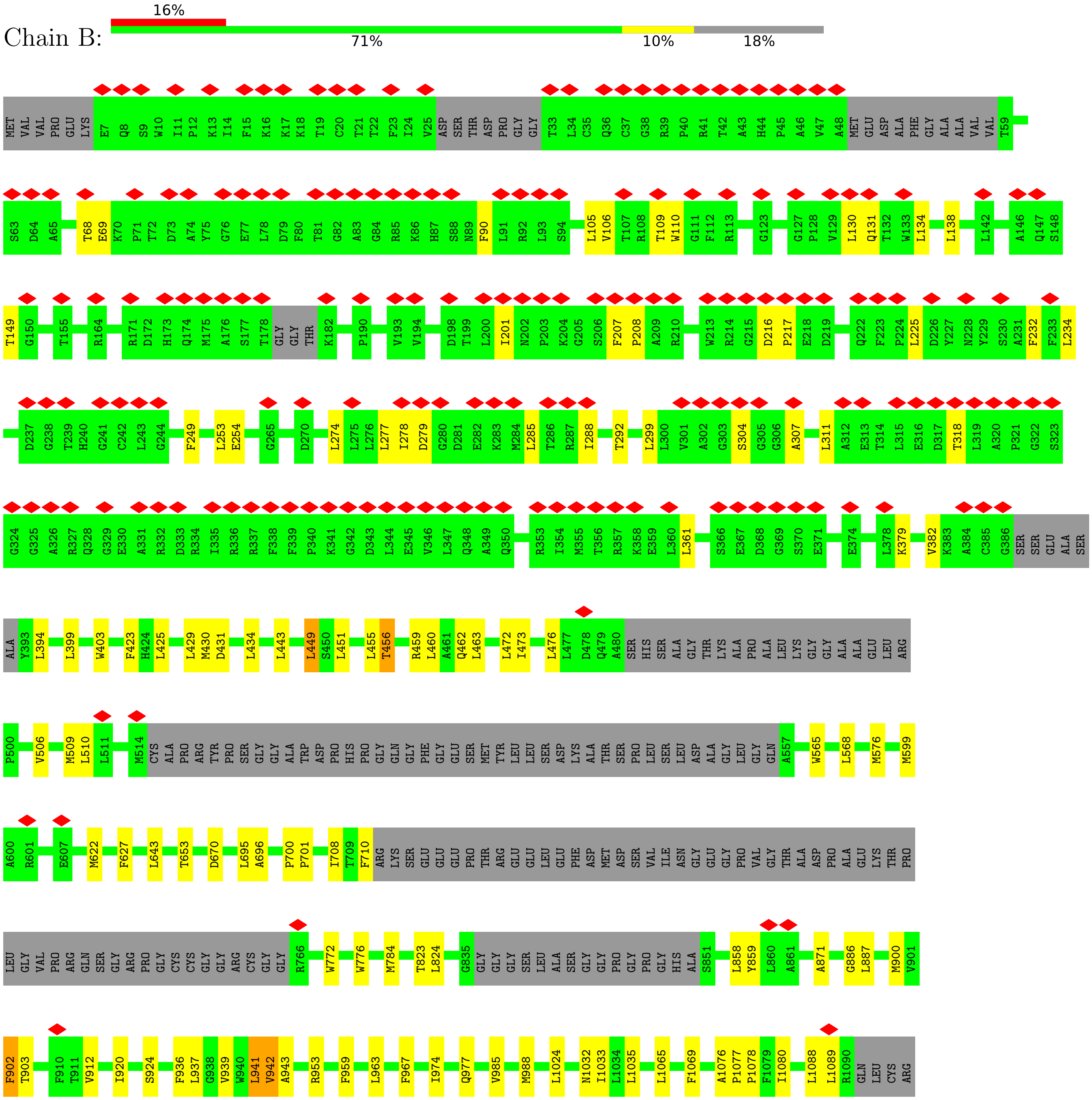
Chain A:

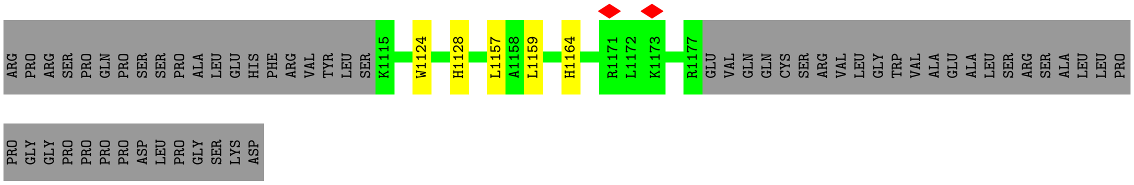




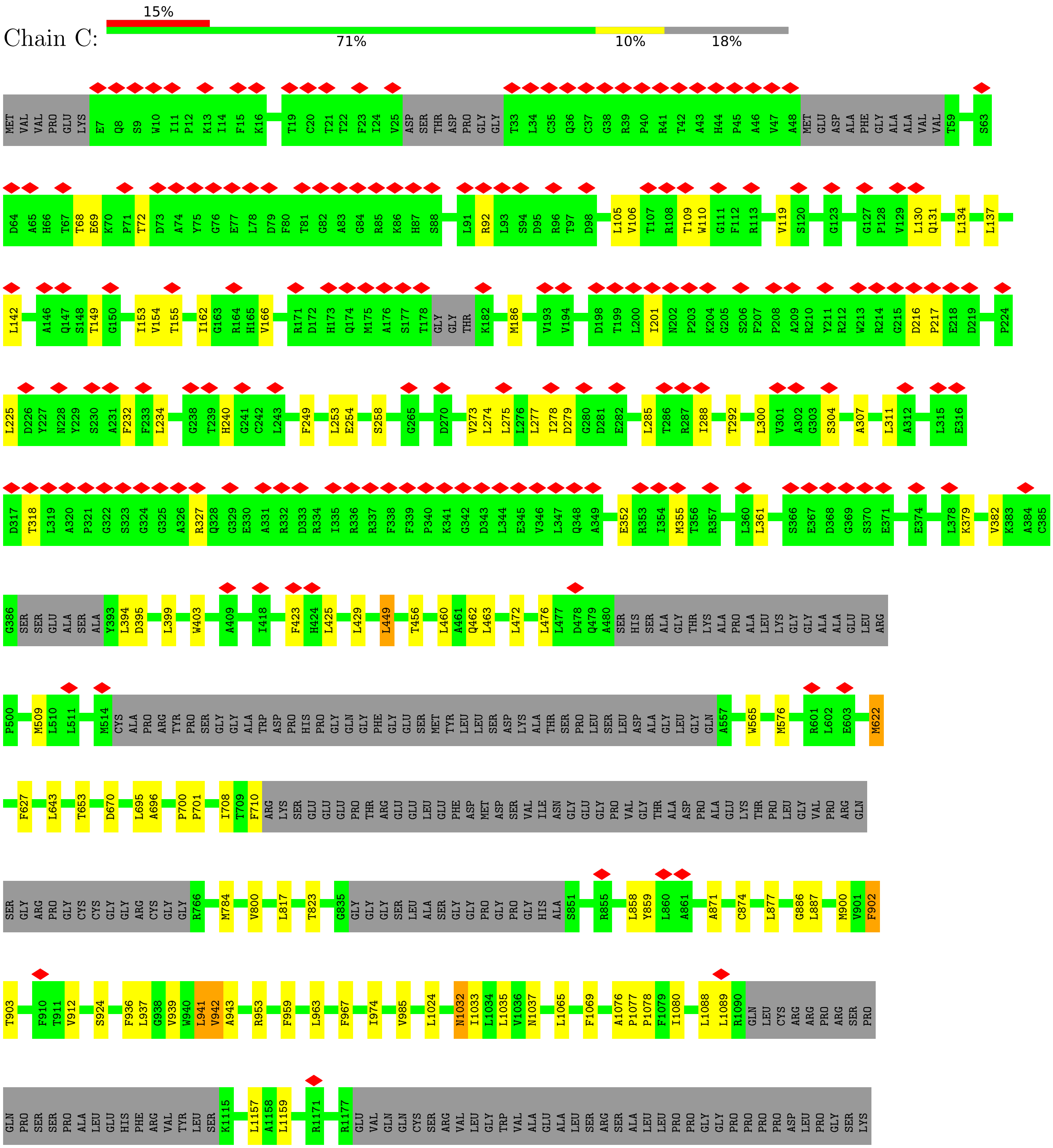
• Molecule 1: Transient receptor potential cation channel subfamily M member 4

Chain B:

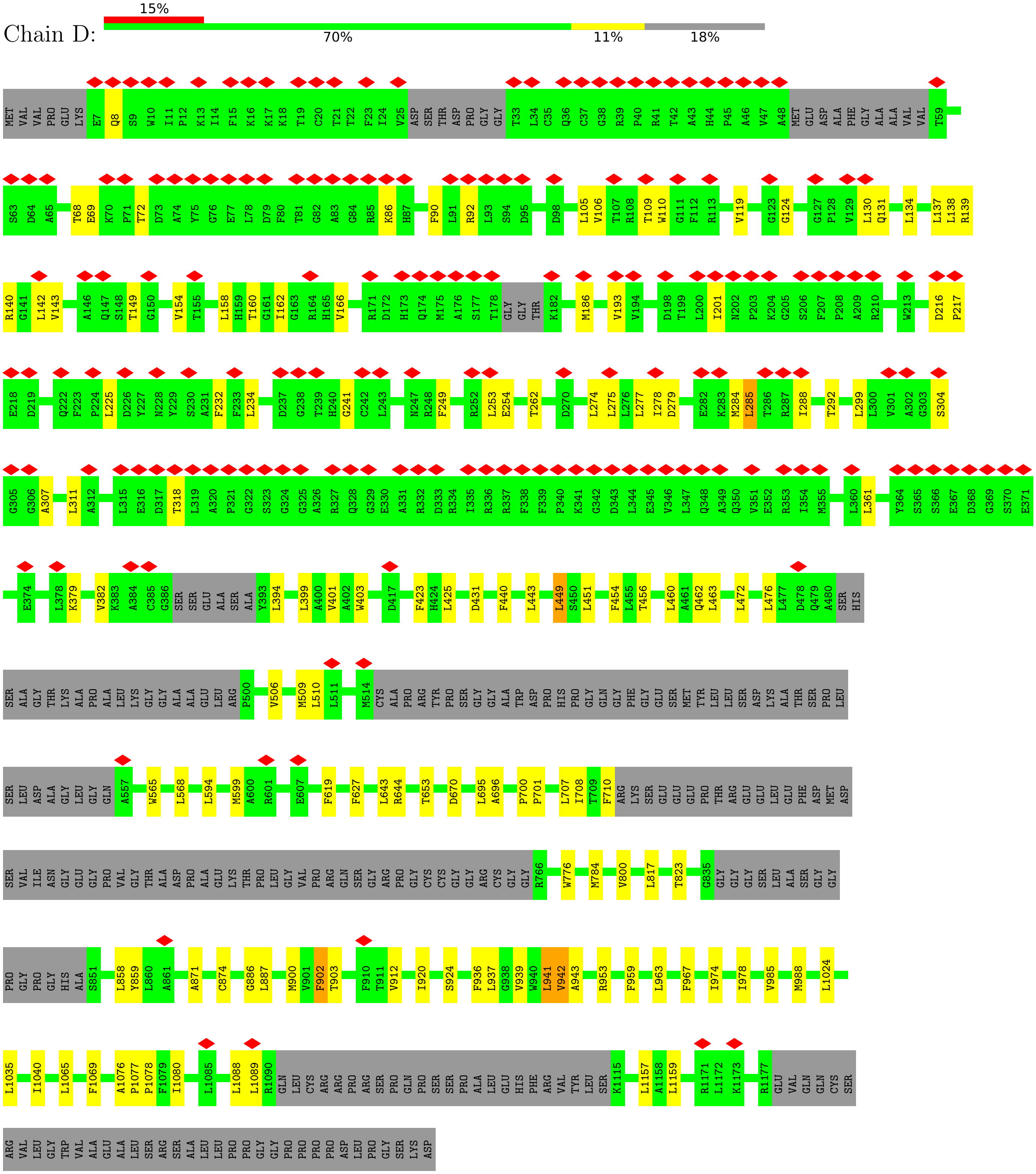




- Molecule 1: Transient receptor potential cation channel subfamily M member 4



- Molecule 1: Transient receptor potential cation channel subfamily M member 4



4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	131852	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 $(e^-/\text{Å}^2)$	50.0	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.532	Depositor
Minimum map value	-0.382	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.012	Depositor
Recommended contour level	0.06	Depositor
Map size (Å)	365.19998, 365.19998, 365.19998	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.9129999, 0.9129999, 0.9129999	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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	0.11	0/7658	0.26	0/10420
1	B	0.11	0/7658	0.26	0/10420
1	C	0.12	0/7658	0.27	0/10420
1	D	0.12	0/7658	0.27	0/10420
All	All	0.12	0/30632	0.27	0/41680

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7486	7321	7323	107	0
1	B	7486	7321	7323	106	0
1	C	7486	7321	7323	106	0
1	D	7486	7321	7323	108	0
2	A	168	276	270	10	0
2	B	196	322	315	12	0
2	C	140	230	225	7	0
2	D	168	276	270	8	0
All	All	30616	30388	30372	422	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 (422) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:394:LEU:HD11	1:C:399:LEU:HD21	1.54	0.87
1:B:568:LEU:HD12	1:B:599:MET:HE1	1.65	0.78
1:B:900:MET:HE3	1:B:900:MET:HA	1.67	0.76
1:D:900:MET:HE3	1:D:900:MET:HA	1.67	0.75
1:C:1076:ALA:HB1	1:C:1077:PRO:HD2	1.69	0.73
1:A:858:LEU:HD12	1:A:859:TYR:N	2.04	0.72
1:D:1076:ALA:HB1	1:D:1077:PRO:HD2	1.72	0.72
1:A:1076:ALA:HB1	1:A:1077:PRO:HD2	1.70	0.72
1:B:506:VAL:O	1:B:510:LEU:HD12	1.89	0.71
1:A:900:MET:HE3	1:A:900:MET:HA	1.72	0.71
1:B:1076:ALA:HB1	1:B:1077:PRO:HD2	1.72	0.71
1:C:352:GLU:O	1:C:355:MET:HE3	1.91	0.70
1:D:394:LEU:HD12	1:D:399:LEU:HD21	1.73	0.70
1:B:394:LEU:HD12	1:B:399:LEU:HD21	1.76	0.68
1:D:858:LEU:HD12	1:D:859:TYR:N	2.07	0.68
1:A:823:THR:HG21	1:A:1077:PRO:O	1.95	0.67
1:D:823:THR:HG21	1:D:1077:PRO:O	1.94	0.67
1:A:253:LEU:HD12	1:A:254:GLU:N	2.10	0.66
1:A:1157:LEU:HD22	1:D:1159:LEU:HD21	1.77	0.66
1:B:253:LEU:HD12	1:B:254:GLU:N	2.10	0.66
1:D:138:LEU:HD12	1:D:139:ARG:N	2.10	0.66
1:B:823:THR:HG21	1:B:1077:PRO:O	1.97	0.65
1:B:292:THR:HG21	1:B:361:LEU:HD11	1.79	0.65
1:A:292:THR:HG21	1:A:361:LEU:HD11	1.79	0.64
1:C:823:THR:HG21	1:C:1077:PRO:O	1.97	0.64
1:C:858:LEU:HD12	1:C:859:TYR:N	2.12	0.64
1:A:394:LEU:HD12	1:A:399:LEU:HD21	1.79	0.64
1:B:109:THR:HG23	1:B:110:TRP:CD1	2.33	0.64
1:B:708:ILE:C	1:B:708:ILE:HD12	2.23	0.64
1:C:292:THR:HG21	1:C:361:LEU:HD11	1.81	0.63
1:B:858:LEU:HD12	1:B:859:TYR:N	2.14	0.63
1:A:900:MET:HE1	1:D:943:ALA:HB1	1.81	0.62
1:D:253:LEU:HD12	1:D:254:GLU:N	2.14	0.62
1:A:1159:LEU:HD21	1:B:1157:LEU:HD22	1.82	0.62
1:C:253:LEU:HD12	1:C:254:GLU:N	2.14	0.62
1:B:277:LEU:HD22	1:B:288:ILE:CD1	2.29	0.62
1:B:936:PHE:CD1	1:B:1035:LEU:HD11	2.35	0.62

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:277:LEU:HD22	1:D:288:ILE:CD1	2.30	0.62
1:A:277:LEU:HD22	1:A:288:ILE:CD1	2.30	0.62
1:C:1159:LEU:HD21	1:D:1157:LEU:HD22	1.82	0.62
2:B:1307:CLR:H121	2:B:1307:CLR:H212	1.82	0.61
1:A:472:LEU:O	1:A:476:LEU:HD22	2.00	0.61
1:D:109:THR:HG23	1:D:110:TRP:CD1	2.35	0.61
1:A:109:THR:HG23	1:A:110:TRP:CD1	2.34	0.61
2:A:1302:CLR:H121	2:A:1302:CLR:H212	1.81	0.61
1:C:277:LEU:HD22	1:C:288:ILE:CD1	2.29	0.61
1:B:106:VAL:HG23	1:B:110:TRP:HE3	1.66	0.61
1:A:106:VAL:HG23	1:A:110:TRP:HE3	1.66	0.60
1:A:943:ALA:HB1	1:B:900:MET:HE1	1.82	0.60
2:A:1304:CLR:H121	2:A:1304:CLR:H212	1.83	0.60
1:C:106:VAL:HG23	1:C:110:TRP:HE3	1.66	0.60
1:A:943:ALA:HB2	1:B:903:THR:HG21	1.84	0.60
1:C:472:LEU:O	1:C:476:LEU:HD22	2.01	0.60
2:D:1304:CLR:H121	2:D:1304:CLR:H212	1.83	0.60
1:C:943:ALA:HB2	1:D:903:THR:HG21	1.84	0.60
1:B:900:MET:HE3	1:B:900:MET:CA	2.32	0.60
1:C:162:ILE:O	1:C:166:VAL:HG13	2.02	0.60
1:C:109:THR:HG23	1:C:110:TRP:CD1	2.36	0.60
1:D:472:LEU:O	1:D:476:LEU:HD22	2.01	0.60
2:C:1305:CLR:H121	2:C:1305:CLR:H212	1.82	0.60
2:B:1301:CLR:H121	2:B:1301:CLR:H212	1.84	0.59
1:D:292:THR:HG21	1:D:361:LEU:HD11	1.83	0.59
1:D:106:VAL:HG23	1:D:110:TRP:HE3	1.67	0.59
1:D:162:ILE:O	1:D:166:VAL:HG13	2.01	0.59
2:B:1305:CLR:H212	2:B:1305:CLR:H121	1.82	0.59
1:C:119:VAL:HG21	1:C:142:LEU:HD11	1.84	0.59
1:B:943:ALA:HB2	1:C:903:THR:HG21	1.85	0.59
2:A:1303:CLR:H121	2:A:1303:CLR:H212	1.84	0.59
1:A:162:ILE:O	1:A:166:VAL:HG13	2.02	0.59
1:A:568:LEU:HD12	1:A:599:MET:HE1	1.83	0.59
1:C:943:ALA:HB1	1:D:900:MET:HE1	1.85	0.59
2:D:1301:CLR:H212	2:D:1301:CLR:H121	1.83	0.59
1:C:936:PHE:CD2	1:C:1035:LEU:HD11	2.38	0.58
2:B:1306:CLR:H121	2:B:1306:CLR:H212	1.85	0.58
2:D:1302:CLR:H121	2:D:1302:CLR:H212	1.85	0.58
1:A:249:PHE:CE2	1:A:253:LEU:HD23	2.38	0.58
1:A:936:PHE:CD1	1:A:1035:LEU:HD11	2.38	0.58
2:C:1303:CLR:H121	2:C:1303:CLR:H212	1.85	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:943:ALA:HB1	1:B:900:MET:CE	2.33	0.58
1:A:900:MET:CE	1:D:943:ALA:HB1	2.34	0.57
1:B:1159:LEU:HD21	1:C:1157:LEU:HD22	1.86	0.57
1:D:900:MET:HE3	1:D:900:MET:CA	2.32	0.57
1:A:460:LEU:HD23	1:A:460:LEU:O	2.05	0.57
1:A:903:THR:HG21	1:D:943:ALA:HB2	1.86	0.57
2:B:1304:CLR:H121	2:B:1304:CLR:H212	1.86	0.57
1:D:936:PHE:HD1	1:D:1035:LEU:HD11	1.69	0.57
2:A:1301:CLR:H121	2:A:1301:CLR:H212	1.87	0.57
1:B:627:PHE:CZ	1:B:643:LEU:HD11	2.40	0.57
1:A:627:PHE:CZ	1:A:643:LEU:HD11	2.40	0.56
1:B:708:ILE:HD11	1:B:710:PHE:CE1	2.38	0.56
1:C:460:LEU:O	1:C:460:LEU:HD23	2.05	0.56
1:C:943:ALA:HB1	1:D:900:MET:CE	2.35	0.56
1:D:936:PHE:CD1	1:D:1035:LEU:HD11	2.40	0.56
1:B:460:LEU:HD23	1:B:460:LEU:O	2.05	0.56
1:A:472:LEU:H	1:A:472:LEU:HD12	1.70	0.56
2:C:1304:CLR:H212	2:C:1304:CLR:H121	1.86	0.56
1:C:234:LEU:HD12	1:C:234:LEU:H	1.70	0.56
2:D:1303:CLR:H121	2:D:1303:CLR:H212	1.86	0.56
1:A:900:MET:HE3	1:A:900:MET:CA	2.34	0.56
2:B:1303:CLR:H121	2:B:1303:CLR:H212	1.88	0.56
1:C:627:PHE:CZ	1:C:643:LEU:HD11	2.40	0.56
1:B:912:VAL:CG2	1:B:1065:LEU:HD22	2.36	0.56
1:D:695:LEU:HD12	1:D:696:ALA:N	2.21	0.56
2:A:1306:CLR:H212	2:A:1306:CLR:H121	1.88	0.55
1:C:463:LEU:HD11	1:C:565:TRP:CZ2	2.41	0.55
1:D:105:LEU:O	1:D:109:THR:HG22	2.06	0.55
1:D:124:GLY:N	1:D:284:MET:HE1	2.21	0.55
1:D:627:PHE:CZ	1:D:643:LEU:HD11	2.41	0.55
1:D:912:VAL:CG2	1:D:1065:LEU:HD22	2.36	0.55
1:B:234:LEU:HD12	1:B:234:LEU:H	1.71	0.55
1:C:105:LEU:O	1:C:109:THR:HG22	2.06	0.55
2:C:1302:CLR:H121	2:C:1302:CLR:H212	1.89	0.55
1:B:985:VAL:HG12	1:B:985:VAL:O	2.06	0.55
1:C:943:ALA:CB	1:D:903:THR:HG21	2.36	0.54
1:D:463:LEU:HD11	1:D:565:TRP:CZ2	2.43	0.54
1:A:105:LEU:O	1:A:109:THR:HG22	2.07	0.54
1:A:277:LEU:HD11	1:A:279:ASP:O	2.07	0.54
1:D:460:LEU:HD23	1:D:460:LEU:O	2.07	0.54
1:A:943:ALA:CB	1:B:900:MET:HE1	2.37	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:472:LEU:O	1:B:476:LEU:HD22	2.07	0.54
1:C:1077:PRO:HA	1:C:1080:ILE:HD12	1.90	0.54
1:D:401:VAL:HG12	1:D:440:PHE:CD2	2.43	0.54
1:B:943:ALA:CB	1:C:903:THR:HG21	2.38	0.54
1:A:425:LEU:HB3	1:A:449:LEU:HD11	1.90	0.54
1:C:912:VAL:CG2	1:C:1065:LEU:HD22	2.38	0.54
2:D:1306:CLR:H121	2:D:1306:CLR:H212	1.90	0.54
1:C:695:LEU:HD12	1:C:696:ALA:N	2.23	0.54
1:A:985:VAL:HG12	1:A:985:VAL:O	2.08	0.54
1:C:1157:LEU:HD23	1:C:1157:LEU:C	2.33	0.54
1:A:900:MET:HE1	1:D:943:ALA:CB	2.38	0.53
1:B:429:LEU:C	1:B:429:LEU:HD12	2.33	0.53
1:B:249:PHE:CE1	1:B:253:LEU:HD23	2.43	0.53
1:B:105:LEU:O	1:B:109:THR:HG22	2.08	0.53
1:B:959:PHE:HB2	2:B:1306:CLR:H193	1.90	0.53
1:D:670:ASP:OD1	1:D:670:ASP:C	2.52	0.53
1:A:943:ALA:CB	1:B:903:THR:HG21	2.39	0.53
1:C:985:VAL:HG12	1:C:985:VAL:O	2.09	0.53
1:C:1032:ASN:O	1:C:1033:ILE:HD13	2.08	0.53
1:A:670:ASP:OD1	1:A:670:ASP:C	2.52	0.53
1:A:959:PHE:HB2	2:B:1301:CLR:H193	1.91	0.53
1:B:941:LEU:HD12	1:B:941:LEU:C	2.34	0.53
1:A:912:VAL:CG2	1:A:1065:LEU:HD22	2.37	0.53
1:A:1157:LEU:HD23	1:A:1157:LEU:C	2.33	0.53
1:A:936:PHE:HD1	1:A:1035:LEU:HD11	1.73	0.52
1:B:936:PHE:HD1	1:B:1035:LEU:HD11	1.72	0.52
1:D:941:LEU:HD12	1:D:941:LEU:C	2.34	0.52
1:A:912:VAL:HG21	1:A:1065:LEU:HD22	1.92	0.52
1:D:1157:LEU:C	1:D:1157:LEU:HD23	2.34	0.52
1:D:234:LEU:HD12	1:D:234:LEU:H	1.75	0.52
1:A:131:GLN:HG2	1:A:134:LEU:HD12	1.92	0.52
1:B:1077:PRO:HG2	1:B:1078:PRO:HD3	1.91	0.52
1:B:277:LEU:HD11	1:B:279:ASP:O	2.10	0.52
1:B:695:LEU:HD12	1:B:696:ALA:N	2.25	0.52
1:C:959:PHE:HB2	2:D:1302:CLR:H193	1.92	0.52
1:A:903:THR:HG21	1:D:943:ALA:CB	2.41	0.51
1:B:131:GLN:HG2	1:B:134:LEU:HD12	1.93	0.51
1:B:285:LEU:C	1:B:285:LEU:HD23	2.35	0.51
1:D:1077:PRO:HG2	1:D:1078:PRO:HD3	1.91	0.51
1:B:1157:LEU:C	1:B:1157:LEU:HD23	2.36	0.51
1:C:900:MET:HA	1:C:900:MET:HE3	1.92	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:1303:CLR:H193	1:D:959:PHE:HB2	1.92	0.51
1:B:1077:PRO:HA	1:B:1080:ILE:HD12	1.92	0.51
1:C:1077:PRO:HG2	1:C:1078:PRO:HD3	1.93	0.51
1:C:943:ALA:CB	1:D:900:MET:HE1	2.40	0.51
1:C:936:PHE:HD2	1:C:1035:LEU:HD11	1.75	0.51
1:D:131:GLN:HG2	1:D:134:LEU:HD12	1.92	0.51
1:A:1077:PRO:HA	1:A:1080:ILE:HD12	1.93	0.51
1:D:1077:PRO:HA	1:D:1080:ILE:HD12	1.93	0.51
1:A:937:LEU:HD11	1:A:974:ILE:HD11	1.93	0.51
1:A:1077:PRO:HG2	1:A:1078:PRO:HD3	1.92	0.51
1:C:912:VAL:HG21	1:C:1065:LEU:HD22	1.92	0.51
1:C:1076:ALA:HB1	1:C:1077:PRO:CD	2.41	0.51
1:B:1076:ALA:HB1	1:B:1077:PRO:CD	2.41	0.51
1:B:429:LEU:HD12	1:B:430:MET:N	2.26	0.50
1:C:509:MET:HE2	1:C:509:MET:N	2.26	0.50
1:D:510:LEU:HD12	1:D:510:LEU:H	1.76	0.50
1:D:924:SER:OG	2:D:1304:CLR:H191	2.12	0.50
1:B:912:VAL:HG21	1:B:1065:LEU:HD22	1.92	0.50
1:A:134:LEU:HD11	1:A:304:SER:HA	1.93	0.50
1:A:68:THR:HG22	1:A:69:GLU:H	1.76	0.50
1:A:463:LEU:HD11	1:A:565:TRP:CZ2	2.47	0.50
1:A:784:MET:HE1	2:A:1305:CLR:H181	1.94	0.50
1:C:285:LEU:HD23	1:C:285:LEU:C	2.36	0.50
1:D:106:VAL:HG23	1:D:110:TRP:CE3	2.46	0.50
1:C:784:MET:HE1	2:C:1301:CLR:H181	1.95	0.49
1:B:106:VAL:HG23	1:B:110:TRP:CE3	2.45	0.49
1:B:130:LEU:HD21	1:B:278:ILE:HD11	1.95	0.49
1:C:858:LEU:HD12	1:C:858:LEU:C	2.38	0.49
1:A:886:GLY:O	1:A:887:LEU:HD23	2.11	0.49
1:B:670:ASP:OD1	1:B:670:ASP:C	2.54	0.49
1:D:912:VAL:HG21	1:D:1065:LEU:HD22	1.94	0.49
1:C:149:THR:HG23	1:C:403:TRP:CG	2.48	0.49
1:C:240:HIS:CG	1:C:240:HIS:O	2.65	0.49
1:D:985:VAL:HG12	1:D:985:VAL:O	2.12	0.49
1:C:277:LEU:HD11	1:C:279:ASP:O	2.13	0.49
1:A:130:LEU:HD21	1:A:278:ILE:HD11	1.95	0.48
1:B:510:LEU:HD12	1:B:510:LEU:H	1.77	0.48
1:D:149:THR:HG23	1:D:403:TRP:CG	2.48	0.48
1:D:277:LEU:HD11	1:D:279:ASP:O	2.13	0.48
1:A:106:VAL:HG23	1:A:110:TRP:CE3	2.47	0.48
1:C:941:LEU:C	1:C:941:LEU:HD12	2.39	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:708:ILE:HD11	1:C:710:PHE:CE1	2.49	0.48
1:B:1124:TRP:HE1	1:B:1128:HIS:CE1	2.31	0.48
1:D:431:ASP:OD1	1:D:431:ASP:C	2.56	0.48
1:B:943:ALA:HB1	1:C:900:MET:CE	2.43	0.48
1:C:886:GLY:O	1:C:887:LEU:HD23	2.12	0.48
1:B:431:ASP:OD2	1:B:431:ASP:C	2.57	0.48
1:D:134:LEU:HD11	1:D:304:SER:HA	1.94	0.48
1:A:429:LEU:HD12	1:A:430:MET:N	2.29	0.48
1:A:311:LEU:HD22	1:A:311:LEU:H	1.78	0.48
1:A:1024:LEU:HD12	1:A:1024:LEU:O	2.14	0.48
1:B:568:LEU:HD12	1:B:599:MET:CE	2.41	0.48
1:B:943:ALA:HB1	1:C:900:MET:HE1	1.96	0.48
1:A:941:LEU:C	1:A:941:LEU:HD12	2.39	0.47
1:B:463:LEU:HD11	1:B:565:TRP:CZ2	2.49	0.47
1:C:137:LEU:O	1:C:137:LEU:HD12	2.14	0.47
1:B:430:MET:HE1	1:B:434:LEU:HD11	1.96	0.47
1:C:274:LEU:HD12	1:C:275:LEU:N	2.30	0.47
1:A:277:LEU:HD12	1:A:278:ILE:N	2.28	0.47
1:B:134:LEU:HD11	1:B:304:SER:HA	1.95	0.47
1:D:253:LEU:HD12	1:D:253:LEU:C	2.40	0.47
1:C:131:GLN:HG2	1:C:134:LEU:HD12	1.96	0.47
1:C:201:ILE:HG23	1:C:201:ILE:O	2.15	0.47
1:D:886:GLY:O	1:D:887:LEU:HD23	2.14	0.47
1:C:134:LEU:HD11	1:C:304:SER:HA	1.97	0.47
1:C:1024:LEU:O	1:C:1024:LEU:HD12	2.15	0.47
1:C:106:VAL:HG23	1:C:110:TRP:CE3	2.46	0.47
1:D:443:LEU:C	1:D:443:LEU:HD23	2.40	0.47
1:D:506:VAL:O	1:D:510:LEU:HD12	2.15	0.47
1:B:201:ILE:O	1:B:201:ILE:HG23	2.15	0.47
1:D:138:LEU:HD12	1:D:138:LEU:C	2.40	0.47
1:D:1076:ALA:HB1	1:D:1077:PRO:CD	2.42	0.47
1:A:201:ILE:HG23	1:A:201:ILE:O	2.15	0.46
1:B:225:LEU:HD13	1:B:232:PHE:CE2	2.50	0.46
1:C:253:LEU:HD12	1:C:253:LEU:C	2.41	0.46
1:D:140:ARG:O	1:D:140:ARG:HG2	2.15	0.46
1:A:149:THR:HG23	1:A:403:TRP:CG	2.50	0.46
1:A:700:PRO:N	1:A:701:PRO:CD	2.79	0.46
1:C:149:THR:HG22	1:C:149:THR:O	2.14	0.46
1:C:429:LEU:HD12	1:C:429:LEU:C	2.41	0.46
1:C:877:LEU:O	1:C:877:LEU:HD23	2.15	0.46
1:B:149:THR:HG22	1:B:149:THR:O	2.16	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:443:LEU:HD23	1:B:443:LEU:C	2.41	0.46
1:C:394:LEU:HD11	1:C:399:LEU:CD2	2.36	0.46
1:C:900:MET:HE3	1:C:900:MET:CA	2.45	0.46
1:C:937:LEU:HD11	1:C:974:ILE:HD11	1.97	0.46
1:B:1024:LEU:HD12	1:B:1024:LEU:O	2.15	0.46
1:C:394:LEU:HD12	1:C:395:ASP:H	1.81	0.46
1:D:937:LEU:HD11	1:D:974:ILE:HD11	1.97	0.46
1:C:249:PHE:CE2	1:C:253:LEU:HD23	2.51	0.46
1:A:234:LEU:HD12	1:A:234:LEU:H	1.81	0.45
1:A:708:ILE:HD11	1:A:710:PHE:CE1	2.50	0.45
1:B:149:THR:HG23	1:B:403:TRP:CG	2.51	0.45
1:B:886:GLY:O	1:B:887:LEU:HD23	2.16	0.45
1:A:277:LEU:HD21	1:A:307:ALA:O	2.17	0.45
1:C:924:SER:OG	2:C:1303:CLR:H191	2.15	0.45
1:D:72:THR:HG23	1:D:92:ARG:HB3	1.99	0.45
1:A:225:LEU:HD13	1:A:232:PHE:CE2	2.51	0.45
1:B:459:ARG:HA	1:B:462:GLN:OE1	2.16	0.45
1:A:1088:LEU:O	1:A:1089:LEU:HG	2.17	0.45
1:D:1065:LEU:C	1:D:1065:LEU:HD23	2.42	0.45
1:D:137:LEU:HD12	1:D:137:LEU:O	2.16	0.45
1:D:149:THR:HG22	1:D:149:THR:O	2.16	0.45
1:A:137:LEU:O	1:A:137:LEU:HD12	2.17	0.45
1:A:509:MET:N	1:A:509:MET:HE2	2.31	0.45
1:B:784:MET:HE1	2:B:1302:CLR:H181	1.99	0.45
1:B:1088:LEU:O	1:B:1089:LEU:HG	2.17	0.45
1:C:1080:ILE:HG22	1:C:1080:ILE:O	2.17	0.45
1:C:1088:LEU:O	1:C:1089:LEU:HG	2.17	0.45
1:D:1024:LEU:HD12	1:D:1024:LEU:O	2.16	0.45
1:A:149:THR:HG22	1:A:149:THR:O	2.17	0.45
1:B:1065:LEU:C	1:B:1065:LEU:HD23	2.42	0.45
1:C:784:MET:HE2	1:C:784:MET:HA	1.99	0.45
1:D:201:ILE:HG23	1:D:201:ILE:O	2.15	0.45
1:A:1080:ILE:O	1:A:1080:ILE:HG22	2.16	0.45
1:D:249:PHE:CE2	1:D:253:LEU:HD23	2.52	0.45
1:D:68:THR:HG22	1:D:69:GLU:H	1.81	0.45
1:D:130:LEU:HD21	1:D:278:ILE:HD11	1.99	0.45
1:D:425:LEU:HB3	1:D:449:LEU:HD11	1.99	0.45
1:D:225:LEU:HD13	1:D:232:PHE:CE2	2.53	0.44
1:D:1080:ILE:O	1:D:1080:ILE:HG22	2.16	0.44
1:D:1088:LEU:O	1:D:1089:LEU:HG	2.17	0.44
1:A:253:LEU:HD12	1:A:253:LEU:C	2.42	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:924:SER:OG	2:B:1305:CLR:H191	2.16	0.44
1:B:1080:ILE:O	1:B:1080:ILE:HG22	2.16	0.44
1:D:942:VAL:HG22	1:D:967:PHE:CE1	2.53	0.44
1:A:924:SER:OG	2:A:1302:CLR:H191	2.17	0.44
1:C:225:LEU:HD13	1:C:232:PHE:CE2	2.53	0.44
1:B:455:LEU:HD23	1:B:456:THR:N	2.32	0.44
1:C:327:ARG:NE	1:C:327:ARG:HA	2.32	0.44
1:C:379:LYS:HA	1:C:382:VAL:HG12	2.00	0.44
1:D:277:LEU:HD12	1:D:278:ILE:N	2.32	0.44
1:D:708:ILE:HD11	1:D:710:PHE:CE1	2.52	0.44
1:A:1065:LEU:C	1:A:1065:LEU:HD23	2.43	0.44
1:B:937:LEU:HD11	1:B:974:ILE:HD11	1.98	0.44
1:C:153:ILE:HG23	1:C:153:ILE:O	2.18	0.44
1:B:138:LEU:C	1:B:138:LEU:HD12	2.43	0.44
1:C:311:LEU:HD22	1:C:311:LEU:H	1.83	0.44
1:A:1076:ALA:HB1	1:A:1077:PRO:CD	2.44	0.44
1:C:130:LEU:HD21	1:C:278:ILE:HD11	1.99	0.44
1:D:451:LEU:H	1:D:451:LEU:HD23	1.83	0.44
1:A:871:ALA:HB1	1:A:902:PHE:CE1	2.52	0.44
1:B:311:LEU:H	1:B:311:LEU:HD22	1.83	0.44
1:D:871:ALA:HB1	1:D:902:PHE:CE1	2.53	0.43
1:D:644:ARG:O	1:D:644:ARG:HG2	2.18	0.43
1:D:858:LEU:HD12	1:D:858:LEU:C	2.44	0.43
1:B:68:THR:HG22	1:B:69:GLU:H	1.82	0.43
2:B:1302:CLR:H121	2:B:1302:CLR:H212	2.00	0.43
1:A:451:LEU:H	1:A:451:LEU:HD23	1.84	0.43
1:A:794:LEU:HD23	1:A:794:LEU:HA	1.92	0.43
1:B:277:LEU:HD21	1:B:307:ALA:O	2.19	0.43
1:C:277:LEU:HD21	1:C:307:ALA:O	2.18	0.43
1:C:871:ALA:HB1	1:C:902:PHE:CE1	2.53	0.43
1:C:1065:LEU:HD23	1:C:1065:LEU:C	2.43	0.43
1:D:154:VAL:HG12	1:D:186:MET:HB3	2.01	0.43
1:D:568:LEU:HD23	1:D:599:MET:HE1	1.99	0.43
1:D:985:VAL:HA	1:D:988:MET:SD	2.59	0.43
1:A:258:SER:HB2	1:A:273:VAL:HG21	2.00	0.43
1:A:784:MET:HE2	1:A:784:MET:HA	2.00	0.43
1:C:234:LEU:HD12	1:C:234:LEU:N	2.33	0.43
1:C:425:LEU:HB3	1:C:449:LEU:HD11	2.00	0.43
1:A:924:SER:HB2	2:A:1302:CLR:H8	2.01	0.43
1:B:871:ALA:HB1	1:B:902:PHE:CE1	2.53	0.43
1:C:68:THR:HG22	1:C:69:GLU:H	1.81	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:277:LEU:HD21	1:D:307:ALA:O	2.18	0.43
1:A:942:VAL:HG22	1:A:967:PHE:CE1	2.54	0.43
1:B:277:LEU:HD12	1:B:278:ILE:N	2.33	0.43
1:D:311:LEU:H	1:D:311:LEU:HD22	1.84	0.43
1:D:700:PRO:N	1:D:701:PRO:CD	2.82	0.43
1:A:119:VAL:HG21	1:A:142:LEU:HD11	2.01	0.43
1:C:355:MET:SD	1:C:355:MET:C	3.01	0.43
1:C:1032:ASN:O	1:C:1032:ASN:ND2	2.47	0.43
2:A:1305:CLR:H121	2:A:1305:CLR:H212	2.00	0.43
1:B:576:MET:SD	1:B:622:MET:HE1	2.58	0.43
1:D:285:LEU:C	1:D:285:LEU:HD23	2.44	0.43
1:A:394:LEU:HD12	1:A:399:LEU:CD2	2.46	0.42
1:B:249:PHE:CD1	1:B:249:PHE:C	2.96	0.42
1:C:216:ASP:N	1:C:217:PRO:HD2	2.34	0.42
1:A:937:LEU:HD11	1:A:974:ILE:CD1	2.49	0.42
1:B:425:LEU:HB3	1:B:449:LEU:HD11	2.01	0.42
1:C:154:VAL:HG12	1:C:186:MET:HB3	2.00	0.42
1:D:193:VAL:HG13	1:D:241:GLY:HA3	2.01	0.42
1:D:509:MET:N	1:D:509:MET:HE2	2.34	0.42
1:A:379:LYS:HA	1:A:382:VAL:HG12	2.01	0.42
1:B:943:ALA:CB	1:C:900:MET:HE1	2.50	0.42
1:D:119:VAL:HG21	1:D:142:LEU:HD11	2.02	0.42
1:A:72:THR:HG23	1:A:92:ARG:HB3	2.02	0.42
1:A:978:ILE:HD13	1:B:977:GLN:HG3	2.01	0.42
1:C:700:PRO:N	1:C:701:PRO:CD	2.83	0.42
1:D:959:PHE:CE1	1:D:963:LEU:HD22	2.55	0.42
1:D:86:LYS:O	1:D:86:LYS:HG2	2.19	0.42
1:A:138:LEU:HD12	1:A:138:LEU:C	2.45	0.42
1:A:285:LEU:HD23	1:A:285:LEU:C	2.45	0.42
1:B:216:ASP:N	1:B:217:PRO:HD2	2.35	0.42
1:D:299:LEU:HD23	1:D:299:LEU:C	2.44	0.42
1:D:953:ARG:O	1:D:953:ARG:HG2	2.20	0.42
1:B:274:LEU:HD11	1:B:299:LEU:HB2	2.02	0.42
1:B:700:PRO:N	1:B:701:PRO:CD	2.83	0.42
1:B:942:VAL:HG22	1:B:967:PHE:CE1	2.54	0.42
1:A:977:GLN:HG3	1:D:978:ILE:HD13	2.01	0.41
1:C:72:THR:HG23	1:C:92:ARG:HB3	2.02	0.41
1:C:871:ALA:HB1	1:C:902:PHE:CD1	2.55	0.41
1:D:149:THR:HG23	1:D:403:TRP:HB3	2.02	0.41
1:D:216:ASP:N	1:D:217:PRO:HD2	2.35	0.41
1:A:240:HIS:O	1:A:240:HIS:CG	2.71	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:473:ILE:HD12	1:A:473:ILE:H	1.85	0.41
1:B:90:PHE:CB	1:B:234:LEU:HD11	2.50	0.41
1:C:800:VAL:HG11	1:C:817:LEU:HD22	2.02	0.41
1:D:139:ARG:O	1:D:143:VAL:HB	2.20	0.41
1:D:707:LEU:HD12	1:D:707:LEU:H	1.85	0.41
1:A:871:ALA:HB1	1:A:902:PHE:CD1	2.55	0.41
1:B:451:LEU:HD23	1:B:451:LEU:H	1.86	0.41
1:A:81:THR:HG22	1:B:451:LEU:HD23	2.02	0.41
1:C:670:ASP:OD1	1:C:670:ASP:C	2.63	0.41
1:D:274:LEU:HD12	1:D:275:LEU:N	2.35	0.41
1:A:300:LEU:HD22	1:A:300:LEU:N	2.36	0.41
1:B:700:PRO:N	1:B:701:PRO:HD2	2.36	0.41
1:C:576:MET:SD	1:C:622:MET:HE1	2.61	0.41
1:D:158:LEU:HD12	1:D:160:THR:N	2.34	0.41
1:A:216:ASP:N	1:A:217:PRO:HD2	2.35	0.41
1:A:953:ARG:O	1:A:953:ARG:HG2	2.19	0.41
1:B:959:PHE:CE1	1:B:963:LEU:HD22	2.56	0.41
1:C:307:ALA:O	1:C:311:LEU:HD23	2.21	0.41
1:D:90:PHE:CB	1:D:234:LEU:HD11	2.50	0.41
1:A:154:VAL:HG12	1:A:186:MET:HB3	2.02	0.41
1:A:959:PHE:CE1	1:A:963:LEU:HD22	2.55	0.41
1:B:924:SER:HB2	2:B:1305:CLR:H8	2.03	0.41
1:B:1032:ASN:O	1:B:1033:ILE:HD13	2.21	0.41
1:C:953:ARG:O	1:C:953:ARG:HG2	2.19	0.41
1:D:800:VAL:HG11	1:D:817:LEU:HD22	2.02	0.41
1:D:871:ALA:HB1	1:D:902:PHE:CD1	2.56	0.41
1:A:281:ASP:H	1:A:284:MET:HE3	1.86	0.41
1:A:985:VAL:HA	1:A:988:MET:SD	2.61	0.41
1:B:253:LEU:HD12	1:B:253:LEU:C	2.46	0.41
1:B:379:LYS:HA	1:B:382:VAL:HG12	2.03	0.41
1:B:772:TRP:O	1:B:776:TRP:HB2	2.21	0.41
1:C:300:LEU:HD22	1:C:300:LEU:N	2.36	0.41
1:C:1037:ASN:OD1	1:D:1040:ILE:HD11	2.21	0.41
1:A:576:MET:SD	1:A:622:MET:HE1	2.61	0.41
1:C:959:PHE:CE1	1:C:963:LEU:HD22	2.56	0.41
2:D:1305:CLR:H121	2:D:1305:CLR:H212	2.03	0.41
1:A:299:LEU:HD23	1:A:299:LEU:C	2.46	0.40
1:B:307:ALA:O	1:B:311:LEU:HD23	2.21	0.40
1:B:871:ALA:HB1	1:B:902:PHE:CD1	2.56	0.40
1:C:700:PRO:N	1:C:701:PRO:HD2	2.36	0.40
1:C:784:MET:CE	2:C:1301:CLR:H181	2.51	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:942:VAL:HG22	1:C:967:PHE:CE1	2.56	0.40
1:A:149:THR:HG23	1:A:403:TRP:HB3	2.04	0.40
1:A:207:PHE:HB2	1:A:208:PRO:HD3	2.04	0.40
1:B:953:ARG:O	1:B:953:ARG:HG2	2.21	0.40
1:C:1035:LEU:HD23	1:C:1035:LEU:HA	1.96	0.40
1:D:379:LYS:HA	1:D:382:VAL:HG12	2.03	0.40
1:D:451:LEU:HD23	1:D:451:LEU:N	2.36	0.40
1:A:249:PHE:CD2	1:A:249:PHE:C	2.98	0.40
1:A:277:LEU:HD22	1:A:288:ILE:HD12	2.02	0.40
1:B:473:ILE:H	1:B:473:ILE:HD12	1.87	0.40
1:B:985:VAL:HA	1:B:988:MET:SD	2.61	0.40
1:C:258:SER:HB2	1:C:273:VAL:HG21	2.03	0.40
1:C:877:LEU:HD23	1:C:877:LEU:C	2.47	0.40
1:A:274:LEU:HD12	1:A:297:PRO:HB2	2.03	0.40
1:B:207:PHE:HB2	1:B:208:PRO:HD3	2.04	0.40
1:B:509:MET:HE2	1:B:509:MET:HA	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	970/1214 (80%)	915 (94%)	54 (6%)	1 (0%)	48	78
1	B	970/1214 (80%)	917 (94%)	52 (5%)	1 (0%)	48	78
1	C	970/1214 (80%)	919 (95%)	50 (5%)	1 (0%)	48	78
1	D	970/1214 (80%)	915 (94%)	54 (6%)	1 (0%)	48	78
All	All	3880/4856 (80%)	3666 (94%)	210 (5%)	4 (0%)	49	78

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	318	THR
1	B	318	THR
1	C	318	THR
1	D	318	THR

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	729/1000 (73%)	711 (98%)	18 (2%)	42	61
1	B	729/1000 (73%)	717 (98%)	12 (2%)	55	68
1	C	729/1000 (73%)	715 (98%)	14 (2%)	50	65
1	D	729/1000 (73%)	709 (97%)	20 (3%)	39	59
All	All	2916/4000 (73%)	2852 (98%)	64 (2%)	45	63

All (64) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	8	GLN
1	A	138	LEU
1	A	423	PHE
1	A	449	LEU
1	A	454	PHE
1	A	456	THR
1	A	462	GLN
1	A	622	MET
1	A	653	THR
1	A	702	LEU
1	A	776	TRP
1	A	902	PHE
1	A	920	ILE
1	A	939	VAL
1	A	941	LEU
1	A	942	VAL
1	A	1069	PHE
1	A	1164	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	423	PHE
1	B	449	LEU
1	B	456	THR
1	B	653	THR
1	B	824	LEU
1	B	902	PHE
1	B	920	ILE
1	B	939	VAL
1	B	941	LEU
1	B	942	VAL
1	B	1069	PHE
1	B	1164	HIS
1	C	155	THR
1	C	423	PHE
1	C	449	LEU
1	C	456	THR
1	C	462	GLN
1	C	622	MET
1	C	653	THR
1	C	874	CYS
1	C	902	PHE
1	C	939	VAL
1	C	941	LEU
1	C	942	VAL
1	C	1032	ASN
1	C	1069	PHE
1	D	8	GLN
1	D	262	THR
1	D	285	LEU
1	D	423	PHE
1	D	449	LEU
1	D	454	PHE
1	D	456	THR
1	D	462	GLN
1	D	594	LEU
1	D	619	PHE
1	D	653	THR
1	D	776	TRP
1	D	784	MET
1	D	874	CYS
1	D	902	PHE
1	D	920	ILE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	D	939	VAL
1	D	941	LEU
1	D	942	VAL
1	D	1069	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	435	ASN
1	A	447	HIS
1	A	673	GLN
1	A	1002	HIS
1	B	889	HIS
1	B	1084	HIS
1	C	1084	HIS
1	D	447	HIS
1	D	1032	ASN
1	D	1084	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

24 ligands are 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	$\#\|Z\| > 2$
2	CLR	D	1301	-	31,31,31	3.98	15 (48%)	48,48,48	1.86	12 (25%)
2	CLR	C	1304	-	31,31,31	3.99	15 (48%)	48,48,48	1.76	12 (25%)
2	CLR	C	1305	-	31,31,31	3.98	15 (48%)	48,48,48	1.86	13 (27%)
2	CLR	C	1301	-	31,31,31	4.03	15 (48%)	48,48,48	1.98	19 (39%)
2	CLR	A	1301	-	31,31,31	3.99	15 (48%)	48,48,48	1.75	12 (25%)
2	CLR	D	1303	-	31,31,31	3.98	15 (48%)	48,48,48	1.75	12 (25%)
2	CLR	A	1303	-	31,31,31	4.02	15 (48%)	48,48,48	1.82	12 (25%)
2	CLR	A	1302	-	31,31,31	4.03	15 (48%)	48,48,48	1.80	9 (18%)
2	CLR	B	1304	-	31,31,31	3.99	15 (48%)	48,48,48	1.76	12 (25%)
2	CLR	D	1305	-	31,31,31	4.03	15 (48%)	48,48,48	1.99	19 (39%)
2	CLR	B	1307	-	31,31,31	3.98	15 (48%)	48,48,48	1.87	13 (27%)
2	CLR	B	1305	-	31,31,31	4.03	15 (48%)	48,48,48	1.80	10 (20%)
2	CLR	B	1303	-	31,31,31	4.01	14 (45%)	48,48,48	1.84	13 (27%)
2	CLR	A	1304	-	31,31,31	3.98	15 (48%)	48,48,48	1.86	13 (27%)
2	CLR	C	1303	-	31,31,31	4.03	15 (48%)	48,48,48	1.82	12 (25%)
2	CLR	A	1305	-	31,31,31	4.03	15 (48%)	48,48,48	1.96	19 (39%)
2	CLR	B	1302	-	31,31,31	4.02	15 (48%)	48,48,48	1.96	19 (39%)
2	CLR	A	1306	-	31,31,31	4.01	15 (48%)	48,48,48	1.86	13 (27%)
2	CLR	B	1301	-	31,31,31	4.02	15 (48%)	48,48,48	1.83	12 (25%)
2	CLR	B	1306	-	31,31,31	4.02	15 (48%)	48,48,48	1.84	12 (25%)
2	CLR	D	1302	-	31,31,31	4.02	15 (48%)	48,48,48	1.83	12 (25%)
2	CLR	D	1304	-	31,31,31	4.03	15 (48%)	48,48,48	1.80	11 (22%)
2	CLR	D	1306	-	31,31,31	4.02	15 (48%)	48,48,48	1.85	13 (27%)
2	CLR	C	1302	-	31,31,31	4.02	15 (48%)	48,48,48	1.83	13 (27%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	CLR	D	1301	-	-	0/10/68/68	0/4/4/4
2	CLR	C	1304	-	-	0/10/68/68	0/4/4/4

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	CLR	C	1305	-	-	0/10/68/68	0/4/4/4
2	CLR	C	1301	-	-	2/10/68/68	0/4/4/4
2	CLR	A	1301	-	-	0/10/68/68	0/4/4/4
2	CLR	D	1303	-	-	0/10/68/68	0/4/4/4
2	CLR	A	1303	-	-	2/10/68/68	0/4/4/4
2	CLR	A	1302	-	-	1/10/68/68	0/4/4/4
2	CLR	B	1304	-	-	1/10/68/68	0/4/4/4
2	CLR	D	1305	-	-	1/10/68/68	0/4/4/4
2	CLR	B	1307	-	-	0/10/68/68	0/4/4/4
2	CLR	B	1305	-	-	1/10/68/68	0/4/4/4
2	CLR	B	1303	-	-	0/10/68/68	0/4/4/4
2	CLR	A	1304	-	-	0/10/68/68	0/4/4/4
2	CLR	C	1303	-	-	0/10/68/68	0/4/4/4
2	CLR	A	1305	-	-	1/10/68/68	0/4/4/4
2	CLR	B	1302	-	-	2/10/68/68	0/4/4/4
2	CLR	A	1306	-	-	0/10/68/68	0/4/4/4
2	CLR	B	1301	-	-	2/10/68/68	0/4/4/4
2	CLR	B	1306	-	-	2/10/68/68	0/4/4/4
2	CLR	D	1302	-	-	2/10/68/68	0/4/4/4
2	CLR	D	1304	-	-	0/10/68/68	0/4/4/4
2	CLR	D	1306	-	-	0/10/68/68	0/4/4/4
2	CLR	C	1302	-	-	0/10/68/68	0/4/4/4

All (359) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	1304	CLR	C11-C9	9.96	1.70	1.53
2	A	1302	CLR	C11-C9	9.95	1.70	1.53
2	B	1305	CLR	C11-C9	9.94	1.70	1.53
2	C	1303	CLR	C11-C9	9.93	1.70	1.53
2	A	1303	CLR	C11-C9	9.85	1.70	1.53
2	C	1301	CLR	C11-C9	9.85	1.70	1.53
2	D	1305	CLR	C11-C9	9.85	1.70	1.53
2	B	1301	CLR	C11-C9	9.85	1.70	1.53
2	B	1302	CLR	C11-C9	9.84	1.70	1.53
2	A	1305	CLR	C11-C9	9.83	1.70	1.53
2	D	1302	CLR	C11-C9	9.83	1.70	1.53
2	B	1306	CLR	C11-C9	9.83	1.70	1.53
2	D	1306	CLR	C11-C9	9.73	1.70	1.53
2	A	1306	CLR	C11-C9	9.67	1.70	1.53
2	C	1302	CLR	C11-C9	9.63	1.69	1.53

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	1303	CLR	C11-C9	9.59	1.69	1.53
2	A	1301	CLR	C11-C9	9.59	1.69	1.53
2	B	1304	CLR	C11-C9	9.57	1.69	1.53
2	C	1304	CLR	C11-C9	9.56	1.69	1.53
2	B	1303	CLR	C11-C9	9.53	1.69	1.53
2	D	1301	CLR	C11-C9	9.51	1.69	1.53
2	A	1304	CLR	C11-C9	9.49	1.69	1.53
2	C	1305	CLR	C11-C9	9.46	1.69	1.53
2	B	1307	CLR	C11-C9	9.45	1.69	1.53
2	D	1304	CLR	C2-C3	8.38	1.71	1.51
2	A	1302	CLR	C2-C3	8.38	1.71	1.51
2	B	1301	CLR	C2-C3	8.38	1.71	1.51
2	B	1306	CLR	C2-C3	8.38	1.71	1.51
2	D	1302	CLR	C2-C3	8.37	1.71	1.51
2	B	1305	CLR	C2-C3	8.37	1.71	1.51
2	A	1303	CLR	C2-C3	8.37	1.71	1.51
2	C	1303	CLR	C2-C3	8.37	1.71	1.51
2	C	1302	CLR	C2-C3	8.34	1.71	1.51
2	A	1306	CLR	C2-C3	8.33	1.71	1.51
2	D	1306	CLR	C2-C3	8.33	1.71	1.51
2	B	1303	CLR	C2-C3	8.31	1.71	1.51
2	C	1304	CLR	C2-C3	8.21	1.71	1.51
2	A	1301	CLR	C2-C3	8.20	1.71	1.51
2	D	1303	CLR	C2-C3	8.20	1.71	1.51
2	B	1304	CLR	C2-C3	8.20	1.71	1.51
2	A	1305	CLR	C2-C3	8.15	1.71	1.51
2	B	1307	CLR	C6-C5	8.15	1.50	1.33
2	C	1301	CLR	C6-C5	8.15	1.50	1.33
2	C	1301	CLR	C2-C3	8.14	1.71	1.51
2	B	1302	CLR	C2-C3	8.14	1.71	1.51
2	C	1305	CLR	C6-C5	8.14	1.50	1.33
2	A	1304	CLR	C6-C5	8.14	1.50	1.33
2	D	1305	CLR	C2-C3	8.13	1.71	1.51
2	D	1305	CLR	C6-C5	8.13	1.50	1.33
2	D	1301	CLR	C6-C5	8.13	1.50	1.33
2	B	1302	CLR	C6-C5	8.11	1.50	1.33
2	A	1305	CLR	C6-C5	8.10	1.50	1.33
2	B	1307	CLR	C2-C3	8.07	1.70	1.51
2	A	1304	CLR	C2-C3	8.07	1.70	1.51
2	C	1305	CLR	C2-C3	8.06	1.70	1.51
2	D	1301	CLR	C2-C3	8.06	1.70	1.51
2	A	1303	CLR	C6-C5	7.94	1.50	1.33

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1304	CLR	C6-C5	7.94	1.50	1.33
2	C	1304	CLR	C6-C5	7.93	1.50	1.33
2	A	1301	CLR	C6-C5	7.93	1.50	1.33
2	B	1301	CLR	C6-C5	7.93	1.50	1.33
2	D	1303	CLR	C6-C5	7.93	1.50	1.33
2	B	1303	CLR	C6-C5	7.92	1.50	1.33
2	A	1306	CLR	C6-C5	7.92	1.50	1.33
2	B	1306	CLR	C6-C5	7.92	1.50	1.33
2	D	1304	CLR	C6-C5	7.92	1.50	1.33
2	C	1303	CLR	C6-C5	7.91	1.50	1.33
2	A	1302	CLR	C6-C5	7.91	1.50	1.33
2	D	1302	CLR	C6-C5	7.91	1.50	1.33
2	B	1305	CLR	C6-C5	7.90	1.50	1.33
2	D	1306	CLR	C6-C5	7.90	1.50	1.33
2	C	1302	CLR	C6-C5	7.86	1.50	1.33
2	C	1302	CLR	C4-C5	-7.53	1.35	1.51
2	D	1305	CLR	C4-C5	-7.48	1.35	1.51
2	C	1301	CLR	C4-C5	-7.47	1.35	1.51
2	B	1302	CLR	C4-C5	-7.45	1.35	1.51
2	B	1303	CLR	C4-C5	-7.45	1.35	1.51
2	A	1305	CLR	C4-C5	-7.45	1.35	1.51
2	D	1306	CLR	C4-C5	-7.38	1.35	1.51
2	C	1303	CLR	C4-C5	-7.37	1.35	1.51
2	A	1302	CLR	C4-C5	-7.36	1.35	1.51
2	D	1304	CLR	C4-C5	-7.36	1.35	1.51
2	A	1306	CLR	C4-C5	-7.36	1.35	1.51
2	B	1305	CLR	C4-C5	-7.36	1.35	1.51
2	B	1304	CLR	C4-C5	-7.34	1.35	1.51
2	A	1301	CLR	C4-C5	-7.33	1.35	1.51
2	D	1302	CLR	C4-C5	-7.33	1.35	1.51
2	B	1306	CLR	C4-C5	-7.33	1.35	1.51
2	C	1304	CLR	C4-C5	-7.32	1.35	1.51
2	B	1307	CLR	C4-C5	-7.32	1.35	1.51
2	B	1301	CLR	C4-C5	-7.32	1.35	1.51
2	A	1303	CLR	C4-C5	-7.32	1.35	1.51
2	D	1303	CLR	C4-C5	-7.32	1.35	1.51
2	D	1301	CLR	C4-C5	-7.30	1.35	1.51
2	A	1304	CLR	C4-C5	-7.30	1.35	1.51
2	C	1305	CLR	C4-C5	-7.30	1.35	1.51
2	D	1304	CLR	C1-C2	6.44	1.67	1.53
2	A	1302	CLR	C1-C2	6.43	1.67	1.53
2	C	1302	CLR	C1-C2	6.43	1.67	1.53

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1305	CLR	C1-C2	6.42	1.67	1.53
2	C	1303	CLR	C1-C2	6.42	1.67	1.53
2	D	1306	CLR	C1-C2	6.39	1.67	1.53
2	B	1306	CLR	C1-C2	6.33	1.66	1.53
2	D	1302	CLR	C1-C2	6.33	1.66	1.53
2	C	1301	CLR	C1-C2	6.33	1.66	1.53
2	A	1303	CLR	C1-C2	6.32	1.66	1.53
2	A	1306	CLR	C1-C2	6.32	1.66	1.53
2	B	1301	CLR	C1-C2	6.32	1.66	1.53
2	A	1305	CLR	C1-C2	6.31	1.66	1.53
2	B	1302	CLR	C1-C2	6.31	1.66	1.53
2	D	1305	CLR	C1-C2	6.30	1.66	1.53
2	B	1303	CLR	C1-C2	6.28	1.66	1.53
2	B	1304	CLR	C1-C2	6.28	1.66	1.53
2	C	1304	CLR	C1-C2	6.28	1.66	1.53
2	D	1303	CLR	C1-C2	6.28	1.66	1.53
2	A	1301	CLR	C1-C2	6.28	1.66	1.53
2	B	1307	CLR	C1-C2	6.18	1.66	1.53
2	D	1301	CLR	C1-C2	6.18	1.66	1.53
2	A	1304	CLR	C1-C2	6.17	1.66	1.53
2	C	1305	CLR	C1-C2	6.17	1.66	1.53
2	B	1307	CLR	C16-C15	5.93	1.70	1.54
2	C	1305	CLR	C16-C15	5.92	1.70	1.54
2	A	1304	CLR	C16-C15	5.92	1.70	1.54
2	D	1301	CLR	C16-C15	5.91	1.70	1.54
2	A	1303	CLR	C16-C15	5.87	1.70	1.54
2	B	1301	CLR	C16-C15	5.86	1.70	1.54
2	B	1306	CLR	C16-C15	5.85	1.70	1.54
2	D	1302	CLR	C16-C15	5.85	1.70	1.54
2	C	1304	CLR	C16-C15	5.83	1.70	1.54
2	B	1304	CLR	C16-C15	5.82	1.70	1.54
2	A	1301	CLR	C16-C15	5.82	1.70	1.54
2	D	1303	CLR	C16-C15	5.82	1.70	1.54
2	A	1305	CLR	C16-C15	5.80	1.69	1.54
2	C	1302	CLR	C16-C15	5.79	1.69	1.54
2	B	1303	CLR	C16-C15	5.79	1.69	1.54
2	C	1303	CLR	C16-C15	5.78	1.69	1.54
2	B	1302	CLR	C16-C15	5.78	1.69	1.54
2	A	1306	CLR	C16-C15	5.78	1.69	1.54
2	C	1301	CLR	C16-C15	5.78	1.69	1.54
2	D	1304	CLR	C16-C15	5.77	1.69	1.54
2	A	1302	CLR	C16-C15	5.76	1.69	1.54

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	1306	CLR	C16-C15	5.76	1.69	1.54
2	D	1305	CLR	C16-C15	5.76	1.69	1.54
2	B	1305	CLR	C16-C15	5.76	1.69	1.54
2	A	1305	CLR	C7-C8	-5.39	1.44	1.53
2	C	1302	CLR	C7-C8	-5.39	1.44	1.53
2	D	1305	CLR	C7-C8	-5.38	1.44	1.53
2	B	1302	CLR	C7-C8	-5.38	1.44	1.53
2	B	1303	CLR	C7-C8	-5.38	1.44	1.53
2	D	1306	CLR	C7-C8	-5.37	1.44	1.53
2	C	1303	CLR	C7-C8	-5.37	1.44	1.53
2	A	1306	CLR	C7-C8	-5.37	1.44	1.53
2	C	1301	CLR	C7-C8	-5.36	1.44	1.53
2	D	1304	CLR	C7-C8	-5.36	1.44	1.53
2	A	1302	CLR	C7-C8	-5.35	1.44	1.53
2	B	1305	CLR	C7-C8	-5.35	1.44	1.53
2	B	1306	CLR	C7-C8	-5.32	1.44	1.53
2	D	1302	CLR	C7-C8	-5.32	1.44	1.53
2	A	1303	CLR	C7-C8	-5.31	1.44	1.53
2	B	1301	CLR	C7-C8	-5.31	1.44	1.53
2	D	1301	CLR	C7-C8	-5.28	1.44	1.53
2	A	1304	CLR	C7-C8	-5.28	1.44	1.53
2	B	1307	CLR	C7-C8	-5.28	1.44	1.53
2	C	1305	CLR	C7-C8	-5.26	1.44	1.53
2	C	1304	CLR	C7-C8	-5.23	1.44	1.53
2	B	1304	CLR	C7-C8	-5.23	1.44	1.53
2	A	1301	CLR	C7-C8	-5.23	1.44	1.53
2	D	1303	CLR	C7-C8	-5.20	1.44	1.53
2	C	1301	CLR	O1-C3	-5.08	1.28	1.43
2	A	1305	CLR	O1-C3	-5.08	1.28	1.43
2	B	1302	CLR	O1-C3	-5.08	1.28	1.43
2	D	1305	CLR	O1-C3	-5.08	1.28	1.43
2	D	1301	CLR	O1-C3	-5.07	1.28	1.43
2	A	1304	CLR	O1-C3	-5.07	1.28	1.43
2	C	1305	CLR	O1-C3	-5.06	1.28	1.43
2	B	1307	CLR	O1-C3	-5.06	1.28	1.43
2	B	1304	CLR	O1-C3	-5.05	1.28	1.43
2	A	1301	CLR	O1-C3	-5.04	1.28	1.43
2	D	1303	CLR	O1-C3	-5.04	1.28	1.43
2	C	1303	CLR	O1-C3	-5.04	1.28	1.43
2	B	1305	CLR	O1-C3	-5.04	1.28	1.43
2	A	1302	CLR	O1-C3	-5.04	1.28	1.43
2	D	1304	CLR	O1-C3	-5.04	1.28	1.43

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	1304	CLR	O1-C3	-5.04	1.28	1.43
2	C	1302	CLR	O1-C3	-5.04	1.28	1.43
2	D	1302	CLR	O1-C3	-5.04	1.28	1.43
2	A	1303	CLR	O1-C3	-5.03	1.28	1.43
2	B	1303	CLR	O1-C3	-5.03	1.28	1.43
2	B	1306	CLR	O1-C3	-5.03	1.28	1.43
2	B	1301	CLR	O1-C3	-5.03	1.28	1.43
2	A	1306	CLR	O1-C3	-5.01	1.28	1.43
2	D	1306	CLR	O1-C3	-5.01	1.28	1.43
2	D	1305	CLR	C12-C13	-4.75	1.45	1.54
2	C	1301	CLR	C12-C13	-4.73	1.45	1.54
2	D	1301	CLR	C12-C13	-4.73	1.45	1.54
2	B	1307	CLR	C12-C13	-4.71	1.45	1.54
2	A	1305	CLR	C12-C13	-4.71	1.45	1.54
2	C	1305	CLR	C12-C13	-4.71	1.45	1.54
2	A	1304	CLR	C12-C13	-4.71	1.45	1.54
2	B	1302	CLR	C12-C13	-4.69	1.45	1.54
2	C	1304	CLR	C12-C13	-4.66	1.45	1.54
2	B	1306	CLR	C1-C10	-4.65	1.45	1.54
2	B	1304	CLR	C12-C13	-4.65	1.45	1.54
2	D	1302	CLR	C1-C10	-4.65	1.45	1.54
2	B	1303	CLR	C12-C13	-4.64	1.45	1.54
2	A	1301	CLR	C12-C13	-4.64	1.45	1.54
2	B	1301	CLR	C1-C10	-4.64	1.45	1.54
2	D	1303	CLR	C12-C13	-4.64	1.45	1.54
2	C	1302	CLR	C12-C13	-4.63	1.45	1.54
2	A	1303	CLR	C1-C10	-4.62	1.45	1.54
2	D	1304	CLR	C1-C10	-4.61	1.45	1.54
2	A	1306	CLR	C12-C13	-4.60	1.45	1.54
2	A	1302	CLR	C1-C10	-4.60	1.45	1.54
2	D	1306	CLR	C12-C13	-4.60	1.45	1.54
2	C	1303	CLR	C1-C10	-4.60	1.45	1.54
2	B	1305	CLR	C1-C10	-4.59	1.45	1.54
2	B	1303	CLR	C1-C10	-4.56	1.45	1.54
2	A	1306	CLR	C1-C10	-4.56	1.45	1.54
2	D	1306	CLR	C1-C10	-4.52	1.45	1.54
2	C	1302	CLR	C1-C10	-4.51	1.45	1.54
2	D	1303	CLR	C1-C10	-4.49	1.45	1.54
2	A	1301	CLR	C1-C10	-4.49	1.45	1.54
2	C	1304	CLR	C1-C10	-4.48	1.45	1.54
2	C	1305	CLR	C1-C10	-4.47	1.45	1.54
2	A	1304	CLR	C1-C10	-4.47	1.45	1.54

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1304	CLR	C1-C10	-4.47	1.45	1.54
2	D	1301	CLR	C1-C10	-4.46	1.45	1.54
2	B	1307	CLR	C1-C10	-4.45	1.45	1.54
2	D	1302	CLR	C12-C13	-4.43	1.46	1.54
2	B	1306	CLR	C12-C13	-4.43	1.46	1.54
2	A	1302	CLR	C12-C13	-4.42	1.46	1.54
2	A	1303	CLR	C12-C13	-4.42	1.46	1.54
2	B	1305	CLR	C12-C13	-4.41	1.46	1.54
2	B	1301	CLR	C12-C13	-4.41	1.46	1.54
2	D	1304	CLR	C12-C13	-4.41	1.46	1.54
2	C	1303	CLR	C12-C13	-4.41	1.46	1.54
2	B	1302	CLR	C1-C10	-4.40	1.45	1.54
2	A	1305	CLR	C1-C10	-4.40	1.45	1.54
2	D	1305	CLR	C1-C10	-4.40	1.45	1.54
2	C	1301	CLR	C1-C10	-4.38	1.45	1.54
2	D	1305	CLR	C10-C9	-3.64	1.49	1.56
2	C	1301	CLR	C10-C9	-3.62	1.50	1.56
2	B	1303	CLR	C10-C9	-3.60	1.50	1.56
2	B	1302	CLR	C10-C9	-3.60	1.50	1.56
2	A	1305	CLR	C10-C9	-3.58	1.50	1.56
2	B	1307	CLR	C10-C9	-3.56	1.50	1.56
2	A	1304	CLR	C10-C9	-3.54	1.50	1.56
2	C	1305	CLR	C10-C9	-3.54	1.50	1.56
2	C	1304	CLR	C10-C9	-3.54	1.50	1.56
2	B	1304	CLR	C10-C9	-3.54	1.50	1.56
2	A	1301	CLR	C10-C9	-3.53	1.50	1.56
2	D	1303	CLR	C10-C9	-3.53	1.50	1.56
2	D	1301	CLR	C10-C9	-3.52	1.50	1.56
2	A	1306	CLR	C10-C9	-3.52	1.50	1.56
2	D	1306	CLR	C10-C9	-3.46	1.50	1.56
2	C	1302	CLR	C10-C9	-3.37	1.50	1.56
2	C	1303	CLR	C10-C5	3.32	1.59	1.52
2	D	1304	CLR	C10-C5	3.32	1.59	1.52
2	B	1305	CLR	C10-C5	3.30	1.59	1.52
2	A	1302	CLR	C10-C5	3.30	1.59	1.52
2	D	1306	CLR	C10-C5	3.25	1.59	1.52
2	C	1303	CLR	C10-C9	-3.18	1.50	1.56
2	B	1304	CLR	C10-C5	3.17	1.59	1.52
2	B	1305	CLR	C10-C9	-3.17	1.50	1.56
2	D	1302	CLR	C10-C9	-3.17	1.50	1.56
2	A	1303	CLR	C10-C5	3.17	1.59	1.52
2	B	1306	CLR	C10-C5	3.17	1.59	1.52

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	1304	CLR	C10-C9	-3.16	1.50	1.56
2	B	1306	CLR	C10-C9	-3.16	1.50	1.56
2	A	1306	CLR	C10-C5	3.16	1.59	1.52
2	D	1303	CLR	C10-C5	3.16	1.59	1.52
2	D	1302	CLR	C10-C5	3.16	1.59	1.52
2	A	1303	CLR	C10-C9	-3.16	1.50	1.56
2	B	1301	CLR	C10-C5	3.16	1.59	1.52
2	A	1301	CLR	C10-C5	3.15	1.59	1.52
2	C	1304	CLR	C10-C5	3.15	1.59	1.52
2	A	1302	CLR	C10-C9	-3.15	1.50	1.56
2	B	1301	CLR	C10-C9	-3.14	1.50	1.56
2	C	1302	CLR	C10-C5	3.13	1.59	1.52
2	B	1302	CLR	C10-C5	3.12	1.59	1.52
2	C	1301	CLR	C10-C5	3.12	1.59	1.52
2	A	1305	CLR	C10-C5	3.12	1.59	1.52
2	B	1301	CLR	C4-C3	3.09	1.57	1.52
2	B	1303	CLR	C10-C5	3.09	1.59	1.52
2	D	1305	CLR	C10-C5	3.08	1.59	1.52
2	A	1303	CLR	C4-C3	3.05	1.57	1.52
2	B	1306	CLR	C4-C3	3.05	1.57	1.52
2	B	1307	CLR	C10-C5	3.04	1.58	1.52
2	D	1302	CLR	C4-C3	3.03	1.57	1.52
2	C	1305	CLR	C10-C5	3.03	1.58	1.52
2	A	1304	CLR	C10-C5	3.03	1.58	1.52
2	D	1301	CLR	C10-C5	3.02	1.58	1.52
2	A	1306	CLR	C4-C3	2.98	1.57	1.52
2	A	1302	CLR	C4-C3	2.96	1.57	1.52
2	D	1304	CLR	C4-C3	2.95	1.57	1.52
2	C	1303	CLR	C4-C3	2.94	1.57	1.52
2	B	1305	CLR	C4-C3	2.93	1.57	1.52
2	C	1302	CLR	C13-C14	-2.92	1.49	1.55
2	B	1303	CLR	C4-C3	2.90	1.57	1.52
2	D	1306	CLR	C13-C14	-2.90	1.49	1.55
2	A	1306	CLR	C13-C14	-2.89	1.49	1.55
2	D	1305	CLR	C13-C14	-2.89	1.49	1.55
2	D	1306	CLR	C4-C3	2.88	1.57	1.52
2	B	1303	CLR	C13-C14	-2.88	1.49	1.55
2	D	1302	CLR	C13-C14	-2.87	1.49	1.55
2	C	1301	CLR	C13-C14	-2.86	1.49	1.55
2	B	1306	CLR	C13-C14	-2.86	1.49	1.55
2	B	1301	CLR	C13-C14	-2.86	1.49	1.55
2	B	1302	CLR	C13-C14	-2.85	1.49	1.55

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1303	CLR	C13-C14	-2.85	1.49	1.55
2	C	1303	CLR	C13-C14	-2.85	1.49	1.55
2	C	1305	CLR	C4-C3	2.84	1.57	1.52
2	A	1305	CLR	C13-C14	-2.84	1.49	1.55
2	A	1304	CLR	C4-C3	2.84	1.57	1.52
2	C	1302	CLR	C4-C3	2.84	1.57	1.52
2	A	1302	CLR	C13-C14	-2.84	1.49	1.55
2	D	1301	CLR	C4-C3	2.83	1.57	1.52
2	B	1305	CLR	C13-C14	-2.83	1.49	1.55
2	B	1307	CLR	C4-C3	2.83	1.57	1.52
2	D	1304	CLR	C13-C14	-2.82	1.49	1.55
2	B	1304	CLR	C13-C14	-2.82	1.49	1.55
2	B	1307	CLR	C13-C14	-2.82	1.49	1.55
2	A	1304	CLR	C13-C14	-2.82	1.49	1.55
2	C	1305	CLR	C13-C14	-2.81	1.49	1.55
2	D	1301	CLR	C13-C14	-2.81	1.49	1.55
2	A	1301	CLR	C13-C14	-2.80	1.49	1.55
2	C	1304	CLR	C13-C14	-2.79	1.49	1.55
2	D	1303	CLR	C13-C14	-2.76	1.49	1.55
2	C	1304	CLR	C4-C3	2.74	1.56	1.52
2	D	1303	CLR	C4-C3	2.74	1.56	1.52
2	A	1301	CLR	C4-C3	2.73	1.56	1.52
2	B	1302	CLR	C4-C3	2.73	1.56	1.52
2	A	1305	CLR	C4-C3	2.73	1.56	1.52
2	B	1304	CLR	C4-C3	2.72	1.56	1.52
2	C	1301	CLR	C4-C3	2.72	1.56	1.52
2	D	1305	CLR	C4-C3	2.72	1.56	1.52
2	C	1301	CLR	C12-C11	2.24	1.58	1.53
2	D	1305	CLR	C12-C11	2.24	1.58	1.53
2	B	1302	CLR	C12-C11	2.23	1.58	1.53
2	A	1305	CLR	C12-C11	2.23	1.58	1.53
2	B	1306	CLR	C12-C11	2.23	1.58	1.53
2	B	1301	CLR	C12-C11	2.23	1.58	1.53
2	D	1302	CLR	C12-C11	2.22	1.58	1.53
2	A	1303	CLR	C12-C11	2.21	1.58	1.53
2	A	1302	CLR	C12-C11	2.17	1.58	1.53
2	B	1305	CLR	C12-C11	2.17	1.58	1.53
2	D	1304	CLR	C12-C11	2.16	1.58	1.53
2	C	1303	CLR	C12-C11	2.14	1.58	1.53
2	D	1306	CLR	C12-C11	2.09	1.57	1.53
2	A	1306	CLR	C12-C11	2.06	1.57	1.53
2	D	1303	CLR	C12-C11	2.04	1.57	1.53

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1301	CLR	C12-C11	2.04	1.57	1.53
2	D	1301	CLR	C12-C11	2.04	1.57	1.53
2	B	1304	CLR	C12-C11	2.03	1.57	1.53
2	C	1304	CLR	C12-C11	2.02	1.57	1.53
2	A	1304	CLR	C12-C11	2.02	1.57	1.53
2	C	1305	CLR	C12-C11	2.01	1.57	1.53
2	B	1307	CLR	C12-C11	2.00	1.57	1.53
2	C	1302	CLR	C12-C11	2.00	1.57	1.53

All (317) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	1306	CLR	C4-C5-C10	5.98	124.36	116.42
2	D	1306	CLR	C4-C5-C10	5.83	124.16	116.42
2	B	1303	CLR	C4-C5-C10	5.74	124.05	116.42
2	D	1303	CLR	C4-C5-C10	5.57	123.81	116.42
2	C	1304	CLR	C4-C5-C10	5.56	123.81	116.42
2	B	1304	CLR	C4-C5-C10	5.55	123.80	116.42
2	A	1301	CLR	C4-C5-C10	5.54	123.78	116.42
2	B	1306	CLR	C4-C5-C10	5.53	123.77	116.42
2	D	1302	CLR	C4-C5-C10	5.53	123.77	116.42
2	B	1301	CLR	C4-C5-C10	5.50	123.73	116.42
2	A	1303	CLR	C4-C5-C10	5.48	123.70	116.42
2	B	1305	CLR	C4-C5-C10	5.39	123.58	116.42
2	D	1304	CLR	C4-C5-C10	5.38	123.57	116.42
2	D	1301	CLR	C4-C5-C10	5.38	123.56	116.42
2	C	1305	CLR	C4-C5-C10	5.37	123.56	116.42
2	A	1304	CLR	C4-C5-C10	5.37	123.55	116.42
2	A	1302	CLR	C4-C5-C10	5.36	123.53	116.42
2	C	1303	CLR	C4-C5-C10	5.35	123.52	116.42
2	C	1302	CLR	C4-C5-C10	5.34	123.52	116.42
2	B	1307	CLR	C4-C5-C10	5.31	123.47	116.42
2	B	1302	CLR	C4-C5-C10	5.16	123.28	116.42
2	A	1305	CLR	C4-C5-C10	5.14	123.25	116.42
2	C	1301	CLR	C15-C14-C8	-5.11	110.67	119.08
2	D	1305	CLR	C4-C5-C10	5.10	123.19	116.42
2	B	1302	CLR	C15-C14-C8	-5.09	110.71	119.08
2	C	1301	CLR	C4-C5-C10	5.08	123.17	116.42
2	A	1305	CLR	C15-C14-C8	-5.07	110.73	119.08
2	D	1305	CLR	C15-C14-C8	-5.02	110.81	119.08
2	A	1306	CLR	C15-C14-C8	-4.82	111.15	119.08
2	B	1303	CLR	C15-C14-C8	-4.80	111.18	119.08

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	1306	CLR	C15-C14-C8	-4.78	111.21	119.08
2	A	1302	CLR	C15-C14-C8	-4.74	111.27	119.08
2	C	1304	CLR	C15-C14-C8	-4.72	111.31	119.08
2	B	1305	CLR	C15-C14-C8	-4.72	111.31	119.08
2	D	1303	CLR	C15-C14-C8	-4.70	111.34	119.08
2	B	1306	CLR	C15-C14-C8	-4.69	111.35	119.08
2	D	1302	CLR	C15-C14-C8	-4.69	111.36	119.08
2	A	1301	CLR	C15-C14-C8	-4.68	111.38	119.08
2	B	1304	CLR	C15-C14-C8	-4.68	111.38	119.08
2	D	1301	CLR	C15-C14-C8	-4.67	111.39	119.08
2	B	1301	CLR	C15-C14-C8	-4.67	111.39	119.08
2	D	1304	CLR	C15-C14-C8	-4.66	111.41	119.08
2	A	1303	CLR	C15-C14-C8	-4.65	111.43	119.08
2	B	1307	CLR	C15-C14-C8	-4.65	111.43	119.08
2	A	1304	CLR	C15-C14-C8	-4.63	111.45	119.08
2	C	1305	CLR	C15-C14-C8	-4.63	111.46	119.08
2	C	1302	CLR	C15-C14-C8	-4.62	111.48	119.08
2	C	1303	CLR	C15-C14-C8	-4.61	111.50	119.08
2	A	1302	CLR	C8-C7-C6	-3.96	107.04	112.73
2	B	1301	CLR	C17-C13-C14	3.92	104.71	100.07
2	A	1303	CLR	C17-C13-C14	3.88	104.67	100.07
2	C	1303	CLR	C8-C7-C6	-3.86	107.18	112.73
2	B	1306	CLR	C17-C13-C14	3.83	104.61	100.07
2	D	1302	CLR	C17-C13-C14	3.82	104.60	100.07
2	D	1305	CLR	C17-C13-C14	3.82	104.60	100.07
2	A	1305	CLR	C17-C13-C14	3.82	104.60	100.07
2	B	1307	CLR	C17-C13-C14	3.81	104.59	100.07
2	D	1304	CLR	C8-C7-C6	-3.81	107.26	112.73
2	D	1301	CLR	C17-C13-C14	3.77	104.54	100.07
2	C	1302	CLR	C17-C13-C14	3.76	104.53	100.07
2	B	1305	CLR	C8-C7-C6	-3.76	107.33	112.73
2	B	1302	CLR	C17-C13-C14	3.73	104.50	100.07
2	A	1304	CLR	C17-C13-C14	3.73	104.49	100.07
2	C	1305	CLR	C17-C13-C14	3.67	104.42	100.07
2	C	1301	CLR	C17-C13-C14	3.64	104.38	100.07
2	C	1303	CLR	C17-C13-C14	3.56	104.29	100.07
2	D	1304	CLR	C17-C13-C14	3.54	104.27	100.07
2	B	1305	CLR	C17-C13-C14	3.47	104.19	100.07
2	A	1302	CLR	C17-C13-C14	3.45	104.17	100.07
2	D	1306	CLR	C17-C13-C14	3.37	104.07	100.07
2	A	1306	CLR	C17-C13-C14	3.34	104.03	100.07
2	B	1303	CLR	C17-C13-C14	3.24	103.91	100.07

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	1305	CLR	C1-C2-C3	-3.22	106.33	110.47
2	C	1302	CLR	C8-C7-C6	-3.22	108.11	112.73
2	D	1301	CLR	C1-C2-C3	-3.20	106.37	110.47
2	A	1304	CLR	C1-C2-C3	-3.13	106.45	110.47
2	B	1306	CLR	C8-C7-C6	-3.09	108.30	112.73
2	A	1302	CLR	C7-C6-C5	-3.09	119.37	125.06
2	B	1307	CLR	C21-C20-C22	-3.08	105.53	110.36
2	A	1304	CLR	C21-C20-C22	-3.08	105.54	110.36
2	B	1307	CLR	C1-C2-C3	-3.07	106.53	110.47
2	C	1305	CLR	C21-C20-C22	-3.07	105.55	110.36
2	D	1303	CLR	C16-C15-C14	-3.06	99.07	105.13
2	D	1304	CLR	C7-C6-C5	-3.05	119.43	125.06
2	C	1303	CLR	C7-C6-C5	-3.05	119.44	125.06
2	B	1305	CLR	C7-C6-C5	-3.03	119.48	125.06
2	D	1301	CLR	C21-C20-C22	-3.02	105.63	110.36
2	B	1301	CLR	C8-C7-C6	-3.02	108.40	112.73
2	A	1301	CLR	C16-C15-C14	-3.02	99.15	105.13
2	C	1304	CLR	C16-C15-C14	-3.02	99.15	105.13
2	D	1306	CLR	C21-C20-C22	-3.01	105.65	110.36
2	B	1304	CLR	C16-C15-C14	-3.01	99.17	105.13
2	D	1302	CLR	C8-C7-C6	-3.00	108.42	112.73
2	A	1303	CLR	C8-C7-C6	-2.95	108.49	112.73
2	C	1304	CLR	C21-C20-C22	-2.94	105.76	110.36
2	C	1301	CLR	C7-C8-C9	-2.93	106.16	109.71
2	B	1304	CLR	C21-C20-C22	-2.93	105.77	110.36
2	B	1306	CLR	C21-C20-C22	-2.92	105.78	110.36
2	C	1302	CLR	C21-C20-C22	-2.92	105.78	110.36
2	A	1306	CLR	C21-C20-C22	-2.92	105.79	110.36
2	A	1301	CLR	C21-C20-C22	-2.90	105.82	110.36
2	B	1301	CLR	C21-C20-C22	-2.90	105.82	110.36
2	B	1303	CLR	C21-C20-C22	-2.89	105.83	110.36
2	A	1306	CLR	C4-C5-C6	-2.89	116.44	120.61
2	D	1302	CLR	C21-C20-C22	-2.88	105.85	110.36
2	D	1305	CLR	C21-C20-C22	-2.88	105.85	110.36
2	D	1305	CLR	C16-C15-C14	-2.87	99.44	105.13
2	B	1306	CLR	C7-C6-C5	-2.87	119.76	125.06
2	A	1303	CLR	C21-C20-C22	-2.87	105.87	110.36
2	B	1303	CLR	C16-C15-C14	-2.86	99.46	105.13
2	D	1303	CLR	C21-C20-C22	-2.86	105.89	110.36
2	D	1306	CLR	C4-C5-C6	-2.85	116.51	120.61
2	B	1304	CLR	C16-C17-C20	-2.84	107.74	112.15
2	C	1304	CLR	C16-C17-C20	-2.84	107.75	112.15

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	1301	CLR	C16-C17-C20	-2.84	107.76	112.15
2	D	1302	CLR	C7-C6-C5	-2.83	119.84	125.06
2	B	1301	CLR	C7-C6-C5	-2.82	119.85	125.06
2	C	1302	CLR	C7-C6-C5	-2.82	119.86	125.06
2	D	1306	CLR	C16-C15-C14	-2.81	99.56	105.13
2	D	1303	CLR	C16-C17-C20	-2.81	107.80	112.15
2	A	1305	CLR	C7-C8-C9	-2.81	106.31	109.71
2	A	1303	CLR	C7-C6-C5	-2.80	119.89	125.06
2	A	1306	CLR	C16-C15-C14	-2.80	99.59	105.13
2	A	1305	CLR	C21-C20-C22	-2.79	105.98	110.36
2	C	1301	CLR	C16-C15-C14	-2.79	99.60	105.13
2	B	1302	CLR	C21-C20-C22	-2.78	106.01	110.36
2	C	1301	CLR	C21-C20-C22	-2.77	106.03	110.36
2	D	1306	CLR	C8-C7-C6	-2.77	108.76	112.73
2	C	1302	CLR	C12-C13-C17	-2.76	112.43	116.57
2	D	1305	CLR	C7-C8-C9	-2.76	106.37	109.71
2	B	1303	CLR	C4-C5-C6	-2.75	116.65	120.61
2	C	1305	CLR	C10-C5-C6	-2.75	118.70	122.90
2	A	1304	CLR	C10-C5-C6	-2.74	118.72	122.90
2	D	1301	CLR	C10-C5-C6	-2.74	118.72	122.90
2	B	1302	CLR	C16-C15-C14	-2.73	99.72	105.13
2	B	1302	CLR	C7-C8-C9	-2.71	106.42	109.71
2	B	1302	CLR	C1-C2-C3	-2.71	106.99	110.47
2	D	1305	CLR	C1-C2-C3	-2.70	107.01	110.47
2	B	1307	CLR	C10-C5-C6	-2.69	118.79	122.90
2	C	1302	CLR	C16-C15-C14	-2.69	99.81	105.13
2	A	1305	CLR	C16-C15-C14	-2.67	99.84	105.13
2	C	1301	CLR	C16-C17-C20	-2.67	108.02	112.15
2	D	1306	CLR	C7-C6-C5	-2.65	120.18	125.06
2	D	1305	CLR	C12-C13-C17	-2.64	112.62	116.57
2	C	1302	CLR	C4-C5-C6	-2.64	116.80	120.61
2	D	1301	CLR	C16-C15-C14	-2.62	99.94	105.13
2	A	1305	CLR	C1-C2-C3	-2.62	107.10	110.47
2	B	1303	CLR	C12-C13-C17	-2.62	112.65	116.57
2	B	1301	CLR	C10-C5-C6	-2.62	118.90	122.90
2	A	1304	CLR	C16-C15-C14	-2.61	99.95	105.13
2	B	1306	CLR	C10-C5-C6	-2.61	118.90	122.90
2	D	1302	CLR	C10-C5-C6	-2.61	118.91	122.90
2	C	1305	CLR	C16-C15-C14	-2.61	99.96	105.13
2	A	1306	CLR	C8-C7-C6	-2.61	108.99	112.73
2	D	1305	CLR	C10-C5-C6	-2.60	118.92	122.90
2	C	1301	CLR	C8-C7-C6	-2.60	109.00	112.73

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	C	1301	CLR	C10-C5-C6	-2.59	118.93	122.90
2	B	1303	CLR	C8-C7-C6	-2.59	109.01	112.73
2	C	1304	CLR	C10-C5-C6	-2.59	118.94	122.90
2	A	1303	CLR	C10-C5-C6	-2.59	118.94	122.90
2	C	1301	CLR	C1-C2-C3	-2.59	107.15	110.47
2	A	1305	CLR	C10-C5-C6	-2.58	118.95	122.90
2	B	1302	CLR	C10-C5-C6	-2.58	118.96	122.90
2	A	1301	CLR	C10-C5-C6	-2.56	118.98	122.90
2	D	1303	CLR	C10-C5-C6	-2.56	118.98	122.90
2	A	1305	CLR	C8-C7-C6	-2.56	109.06	112.73
2	B	1304	CLR	C10-C5-C6	-2.56	118.99	122.90
2	B	1307	CLR	C16-C15-C14	-2.55	100.08	105.13
2	A	1304	CLR	C23-C22-C20	-2.55	107.70	115.03
2	D	1306	CLR	C12-C13-C17	-2.55	112.76	116.57
2	A	1306	CLR	C12-C13-C17	-2.54	112.76	116.57
2	B	1307	CLR	C23-C22-C20	-2.54	107.75	115.03
2	C	1303	CLR	C21-C20-C22	-2.53	106.39	110.36
2	C	1301	CLR	C14-C8-C9	2.53	112.48	109.09
2	D	1301	CLR	C23-C22-C20	-2.53	107.77	115.03
2	C	1305	CLR	C23-C22-C20	-2.51	107.80	115.03
2	A	1306	CLR	C7-C6-C5	-2.51	120.42	125.06
2	B	1303	CLR	C7-C6-C5	-2.50	120.44	125.06
2	B	1302	CLR	C8-C7-C6	-2.49	109.16	112.73
2	D	1306	CLR	C16-C17-C20	-2.46	108.34	112.15
2	A	1305	CLR	C16-C17-C20	-2.46	108.34	112.15
2	B	1305	CLR	C4-C5-C6	-2.45	117.08	120.61
2	A	1306	CLR	C10-C5-C6	-2.44	119.16	122.90
2	D	1304	CLR	C4-C5-C6	-2.44	117.08	120.61
2	B	1302	CLR	C16-C17-C20	-2.44	108.36	112.15
2	C	1303	CLR	C4-C5-C6	-2.43	117.11	120.61
2	D	1305	CLR	C8-C7-C6	-2.43	109.25	112.73
2	D	1305	CLR	C3-C4-C5	-2.42	107.92	112.03
2	A	1301	CLR	C7-C6-C5	-2.41	120.61	125.06
2	A	1302	CLR	C4-C5-C6	-2.41	117.13	120.61
2	C	1304	CLR	C7-C6-C5	-2.40	120.62	125.06
2	B	1304	CLR	C7-C6-C5	-2.40	120.63	125.06
2	B	1306	CLR	C7-C8-C9	-2.40	106.81	109.71
2	D	1305	CLR	C1-C10-C5	2.40	113.15	108.75
2	D	1301	CLR	C12-C13-C17	-2.39	112.99	116.57
2	D	1303	CLR	C7-C6-C5	-2.39	120.65	125.06
2	B	1303	CLR	C16-C17-C20	-2.39	108.45	112.15
2	A	1305	CLR	C3-C4-C5	-2.39	107.98	112.03

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	1301	CLR	C12-C13-C17	-2.38	113.00	116.57
2	D	1305	CLR	C16-C17-C20	-2.38	108.47	112.15
2	D	1303	CLR	C4-C5-C6	-2.38	117.18	120.61
2	A	1306	CLR	C16-C17-C20	-2.38	108.47	112.15
2	B	1303	CLR	C10-C5-C6	-2.37	119.27	122.90
2	A	1304	CLR	C12-C13-C17	-2.37	113.02	116.57
2	B	1304	CLR	C4-C5-C6	-2.37	117.19	120.61
2	A	1305	CLR	C23-C22-C20	-2.37	108.23	115.03
2	B	1306	CLR	C16-C15-C14	-2.37	100.44	105.13
2	C	1301	CLR	C3-C4-C5	-2.37	108.01	112.03
2	C	1301	CLR	C1-C10-C5	2.37	113.08	108.75
2	B	1303	CLR	C1-C2-C3	-2.36	107.44	110.47
2	B	1302	CLR	C3-C4-C5	-2.35	108.03	112.03
2	A	1305	CLR	C14-C8-C9	2.35	112.24	109.09
2	A	1301	CLR	C4-C5-C6	-2.35	117.22	120.61
2	D	1302	CLR	C16-C15-C14	-2.35	100.47	105.13
2	B	1302	CLR	C14-C8-C9	2.35	112.23	109.09
2	D	1306	CLR	C10-C5-C6	-2.34	119.31	122.90
2	C	1305	CLR	C12-C13-C17	-2.34	113.06	116.57
2	C	1304	CLR	C4-C5-C6	-2.34	117.23	120.61
2	A	1302	CLR	C10-C5-C6	-2.34	119.33	122.90
2	B	1305	CLR	C10-C5-C6	-2.33	119.34	122.90
2	B	1302	CLR	C23-C22-C20	-2.33	108.34	115.03
2	D	1304	CLR	C10-C5-C6	-2.33	119.34	122.90
2	B	1307	CLR	C12-C13-C17	-2.32	113.09	116.57
2	C	1303	CLR	C16-C15-C14	-2.32	100.53	105.13
2	D	1305	CLR	C23-C22-C20	-2.31	108.38	115.03
2	C	1303	CLR	C10-C5-C6	-2.31	119.37	122.90
2	D	1305	CLR	C2-C3-C4	-2.31	107.14	110.31
2	B	1301	CLR	C16-C15-C14	-2.30	100.57	105.13
2	B	1301	CLR	C7-C8-C9	-2.30	106.92	109.71
2	A	1305	CLR	C12-C13-C17	-2.30	113.13	116.57
2	B	1302	CLR	C12-C13-C17	-2.30	113.14	116.57
2	A	1303	CLR	C12-C13-C17	-2.29	113.14	116.57
2	B	1306	CLR	C4-C5-C6	-2.29	117.31	120.61
2	D	1302	CLR	C4-C5-C6	-2.29	117.31	120.61
2	B	1306	CLR	C16-C17-C20	-2.29	108.60	112.15
2	D	1302	CLR	C7-C8-C9	-2.29	106.94	109.71
2	A	1305	CLR	C7-C6-C5	-2.28	120.85	125.06
2	B	1307	CLR	C13-C17-C20	-2.28	115.92	119.49
2	A	1303	CLR	C16-C15-C14	-2.28	100.62	105.13
2	C	1301	CLR	C23-C22-C20	-2.28	108.48	115.03

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	1302	CLR	C12-C13-C17	-2.27	113.17	116.57
2	B	1301	CLR	C12-C13-C17	-2.27	113.17	116.57
2	A	1303	CLR	C4-C5-C6	-2.27	117.34	120.61
2	D	1302	CLR	C16-C17-C20	-2.27	108.64	112.15
2	B	1301	CLR	C4-C5-C6	-2.26	117.35	120.61
2	A	1303	CLR	C7-C8-C9	-2.26	106.97	109.71
2	C	1301	CLR	C7-C6-C5	-2.26	120.89	125.06
2	B	1302	CLR	C7-C6-C5	-2.26	120.89	125.06
2	C	1301	CLR	C10-C9-C8	-2.25	109.35	112.73
2	C	1302	CLR	C16-C17-C20	-2.25	108.66	112.15
2	B	1306	CLR	C12-C13-C17	-2.25	113.20	116.57
2	D	1304	CLR	C16-C15-C14	-2.25	100.68	105.13
2	B	1304	CLR	C23-C22-C20	-2.24	108.58	115.03
2	D	1303	CLR	C1-C2-C3	-2.24	107.59	110.47
2	D	1304	CLR	C21-C20-C22	-2.23	106.86	110.36
2	A	1304	CLR	C13-C17-C20	-2.23	115.99	119.49
2	D	1305	CLR	C14-C8-C9	2.23	112.07	109.09
2	C	1305	CLR	C13-C17-C20	-2.22	116.00	119.49
2	B	1305	CLR	C16-C15-C14	-2.22	100.73	105.13
2	B	1301	CLR	C16-C17-C20	-2.22	108.71	112.15
2	D	1301	CLR	C13-C17-C20	-2.22	116.02	119.49
2	C	1302	CLR	C1-C2-C3	-2.22	107.62	110.47
2	B	1304	CLR	C12-C13-C17	-2.21	113.26	116.57
2	A	1301	CLR	C12-C13-C17	-2.20	113.27	116.57
2	D	1305	CLR	C7-C6-C5	-2.20	121.00	125.06
2	A	1301	CLR	C23-C22-C20	-2.19	108.74	115.03
2	C	1304	CLR	C23-C22-C20	-2.19	108.75	115.03
2	A	1302	CLR	C16-C15-C14	-2.19	100.80	105.13
2	B	1302	CLR	C1-C10-C5	2.18	112.74	108.75
2	C	1301	CLR	C2-C3-C4	-2.17	107.33	110.31
2	C	1302	CLR	C13-C17-C20	-2.17	116.09	119.49
2	D	1303	CLR	C12-C13-C17	-2.17	113.33	116.57
2	A	1306	CLR	C13-C17-C20	-2.16	116.10	119.49
2	B	1302	CLR	C2-C3-C4	-2.16	107.35	110.31
2	A	1306	CLR	C1-C2-C3	-2.15	107.70	110.47
2	A	1301	CLR	C17-C13-C14	2.15	102.62	100.07
2	A	1305	CLR	C11-C12-C13	-2.15	109.10	112.78
2	B	1302	CLR	C11-C12-C13	-2.14	109.10	112.78
2	C	1304	CLR	C1-C2-C3	-2.14	107.72	110.47
2	A	1305	CLR	C1-C10-C5	2.14	112.67	108.75
2	B	1304	CLR	C17-C13-C14	2.13	102.60	100.07
2	C	1304	CLR	C12-C13-C17	-2.13	113.38	116.57

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	1303	CLR	C16-C17-C20	-2.13	108.85	112.15
2	D	1305	CLR	C10-C9-C8	-2.12	109.55	112.73
2	C	1301	CLR	C11-C12-C13	-2.12	109.14	112.78
2	D	1303	CLR	C23-C22-C20	-2.12	108.95	115.03
2	C	1302	CLR	C10-C5-C6	-2.12	119.66	122.90
2	A	1301	CLR	C1-C2-C3	-2.11	107.76	110.47
2	C	1303	CLR	C12-C13-C17	-2.11	113.41	116.57
2	D	1306	CLR	C13-C17-C20	-2.10	116.19	119.49
2	A	1305	CLR	C2-C3-C4	-2.10	107.42	110.31
2	D	1306	CLR	C1-C2-C3	-2.10	107.77	110.47
2	C	1303	CLR	C13-C17-C20	-2.10	116.20	119.49
2	A	1304	CLR	C7-C8-C9	-2.09	107.17	109.71
2	D	1304	CLR	C12-C13-C17	-2.09	113.45	116.57
2	C	1303	CLR	C16-C17-C20	-2.09	108.92	112.15
2	D	1305	CLR	C11-C12-C13	-2.08	109.21	112.78
2	B	1303	CLR	C13-C17-C20	-2.07	116.24	119.49
2	A	1302	CLR	C21-C20-C22	-2.07	107.12	110.36
2	A	1304	CLR	C7-C6-C5	-2.06	121.26	125.06
2	B	1305	CLR	C21-C20-C22	-2.06	107.14	110.36
2	D	1303	CLR	C17-C13-C14	2.06	102.51	100.07
2	B	1307	CLR	C7-C8-C9	-2.05	107.23	109.71
2	D	1301	CLR	C7-C6-C5	-2.05	121.28	125.06
2	D	1304	CLR	C16-C17-C20	-2.04	108.99	112.15
2	B	1304	CLR	C1-C2-C3	-2.03	107.86	110.47
2	C	1304	CLR	C17-C13-C14	2.03	102.47	100.07
2	C	1305	CLR	C7-C6-C5	-2.03	121.32	125.06
2	B	1305	CLR	C16-C17-C20	-2.03	109.01	112.15
2	B	1307	CLR	C7-C6-C5	-2.03	121.32	125.06
2	C	1305	CLR	C7-C8-C9	-2.02	107.27	109.71
2	B	1302	CLR	C10-C9-C8	-2.02	109.71	112.73
2	D	1301	CLR	C4-C5-C6	-2.02	117.70	120.61
2	A	1304	CLR	C4-C5-C6	-2.01	117.71	120.61
2	B	1307	CLR	C4-C5-C6	-2.01	117.72	120.61
2	A	1305	CLR	C10-C9-C8	-2.01	109.73	112.73
2	C	1305	CLR	C4-C5-C6	-2.00	117.72	120.61

There are no chirality outliers.

All (17) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1303	CLR	C20-C22-C23-C24
2	B	1301	CLR	C20-C22-C23-C24

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
2	B	1306	CLR	C20-C22-C23-C24
2	D	1302	CLR	C20-C22-C23-C24
2	C	1301	CLR	C21-C20-C22-C23
2	B	1302	CLR	C21-C20-C22-C23
2	D	1305	CLR	C21-C20-C22-C23
2	A	1305	CLR	C21-C20-C22-C23
2	C	1301	CLR	C17-C20-C22-C23
2	B	1306	CLR	C23-C24-C25-C27
2	B	1302	CLR	C17-C20-C22-C23
2	B	1301	CLR	C23-C24-C25-C27
2	A	1302	CLR	C20-C22-C23-C24
2	B	1305	CLR	C20-C22-C23-C24
2	D	1302	CLR	C23-C24-C25-C27
2	A	1303	CLR	C23-C24-C25-C27
2	B	1304	CLR	C20-C22-C23-C24

There are no ring outliers.

24 monomers are involved in 37 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	1301	CLR	1	0
2	C	1304	CLR	1	0
2	C	1305	CLR	1	0
2	C	1301	CLR	2	0
2	A	1301	CLR	1	0
2	D	1303	CLR	1	0
2	A	1303	CLR	2	0
2	A	1302	CLR	3	0
2	B	1304	CLR	1	0
2	D	1305	CLR	1	0
2	B	1307	CLR	1	0
2	B	1305	CLR	3	0
2	B	1303	CLR	1	0
2	A	1304	CLR	1	0
2	C	1303	CLR	2	0
2	A	1305	CLR	2	0
2	B	1302	CLR	2	0
2	A	1306	CLR	1	0
2	B	1301	CLR	2	0
2	B	1306	CLR	2	0
2	D	1302	CLR	2	0
2	D	1304	CLR	2	0

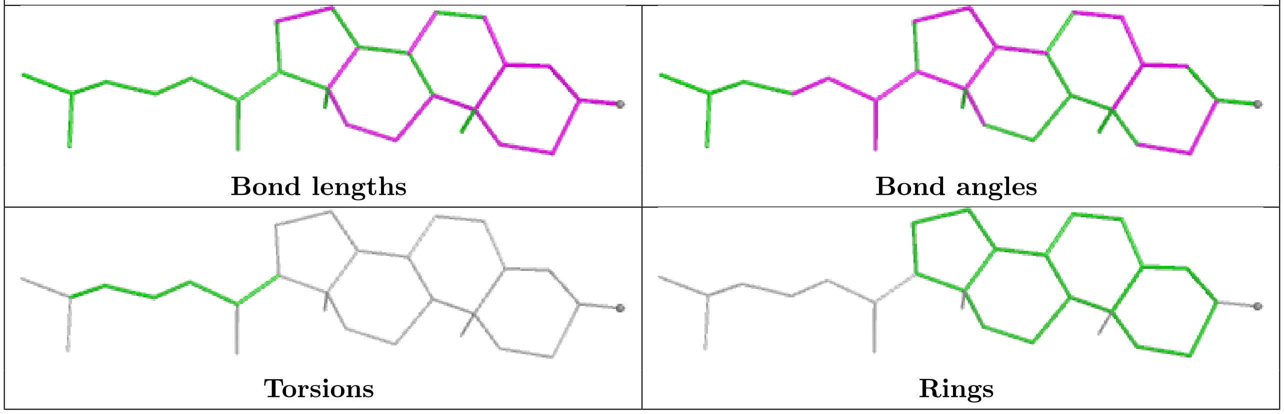
Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	1306	CLR	1	0
2	C	1302	CLR	1	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 then 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.

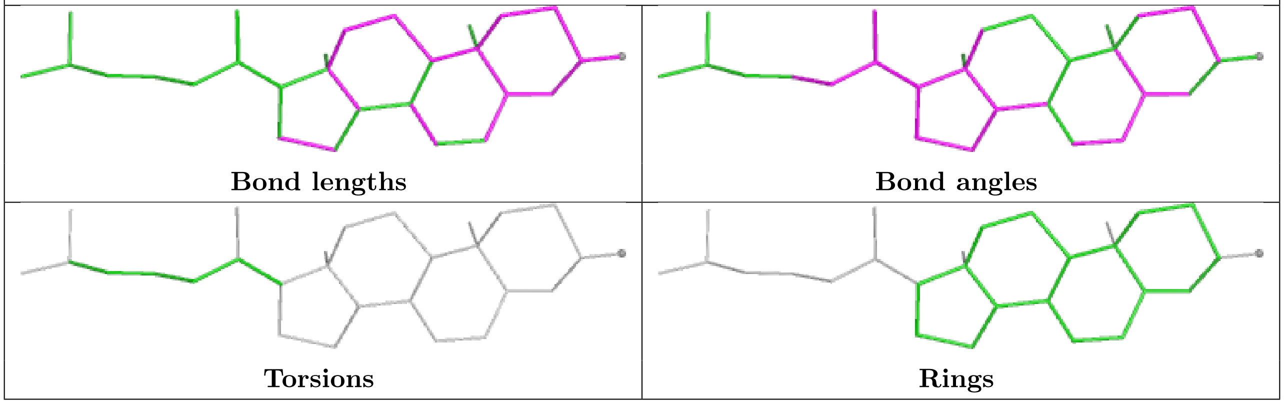
Ligand CLR D 1301



Bond lengths **Bond angles**

Torsions **Rings**

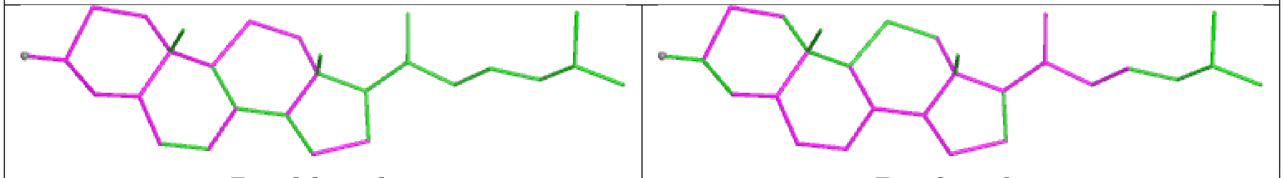
Ligand CLR C 1304



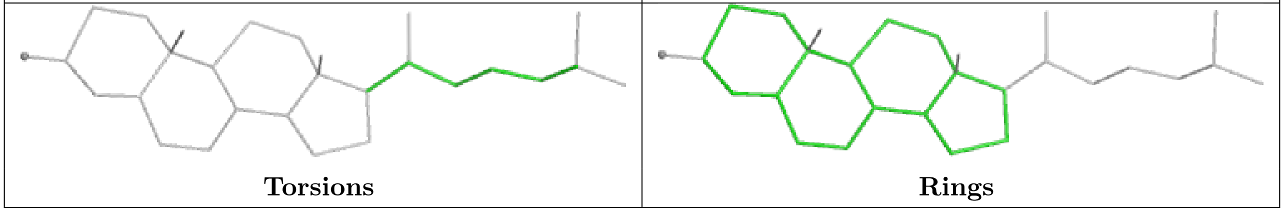
Bond lengths **Bond angles**

Torsions **Rings**

Ligand CLR C 1305

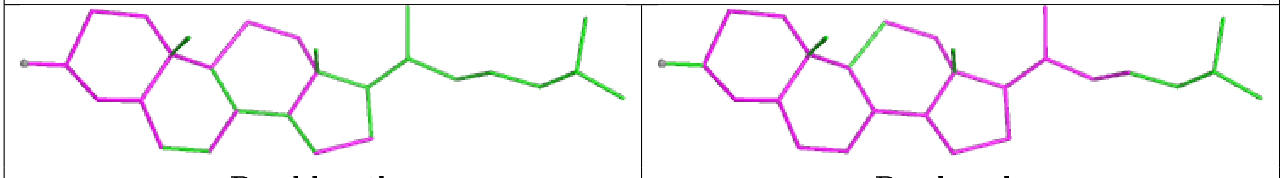


Bond lengths Bond angles

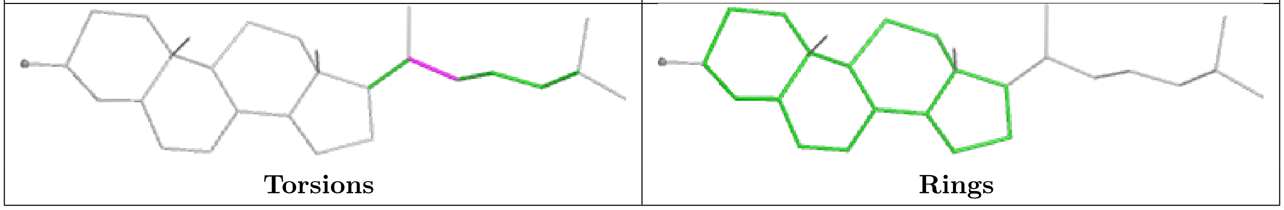


Torsions Rings

Ligand CLR C 1301

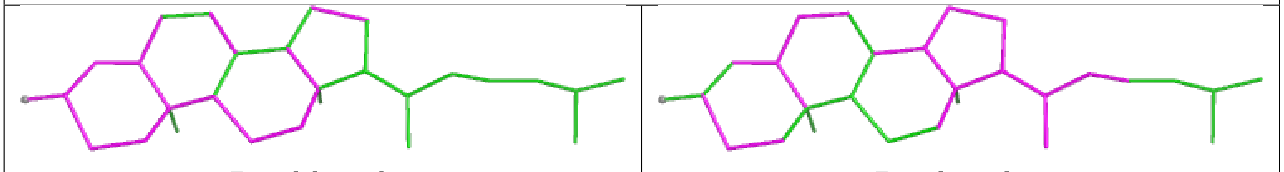


Bond lengths Bond angles

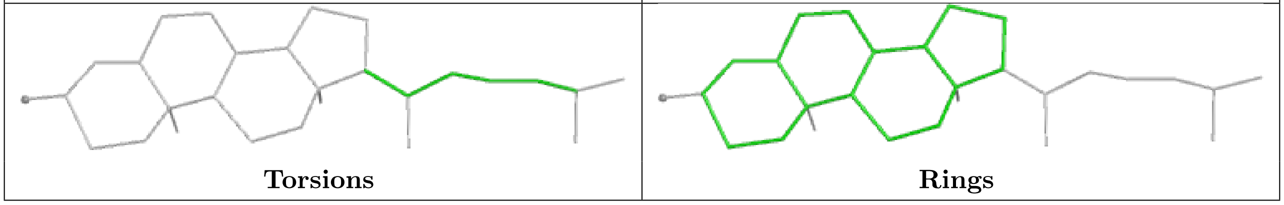


Torsions Rings

Ligand CLR A 1301

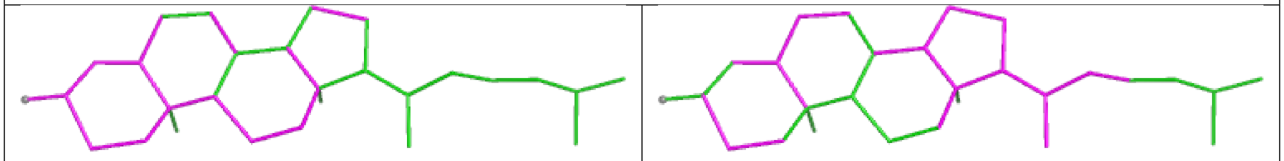


Bond lengths Bond angles



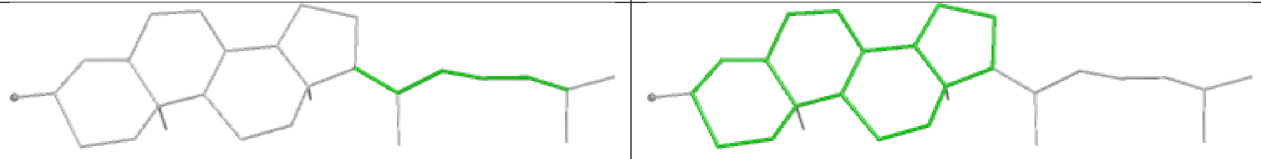
Torsions Rings

Ligand CLR D 1303



Bond lengths

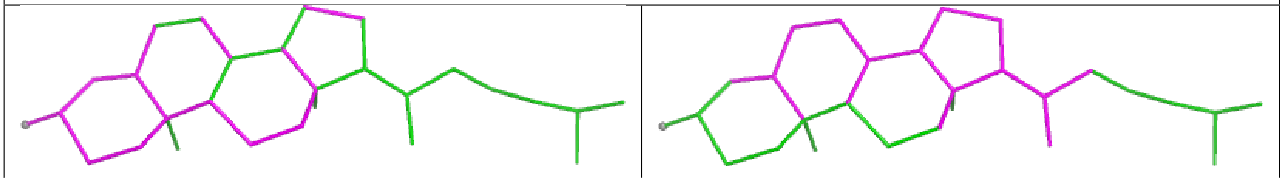
Bond angles



Torsions

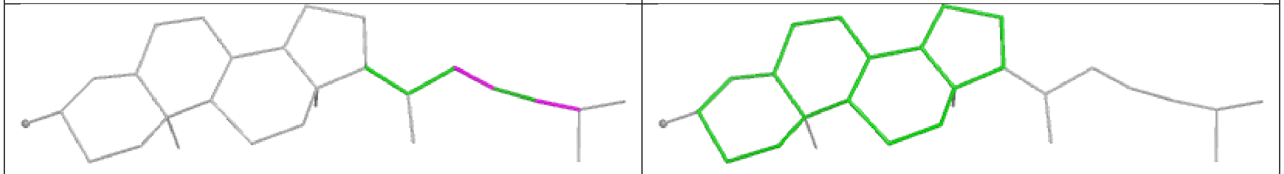
Rings

Ligand CLR A 1303



Bond lengths

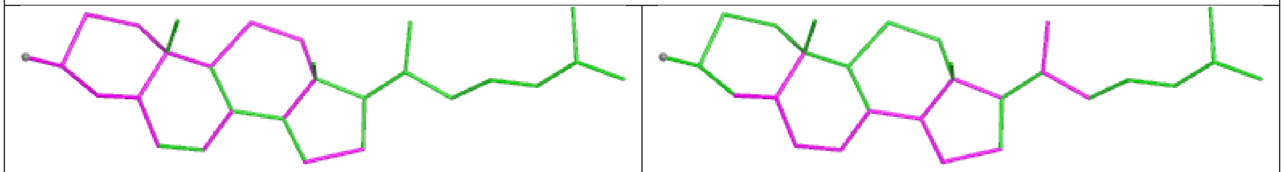
Bond angles



Torsions

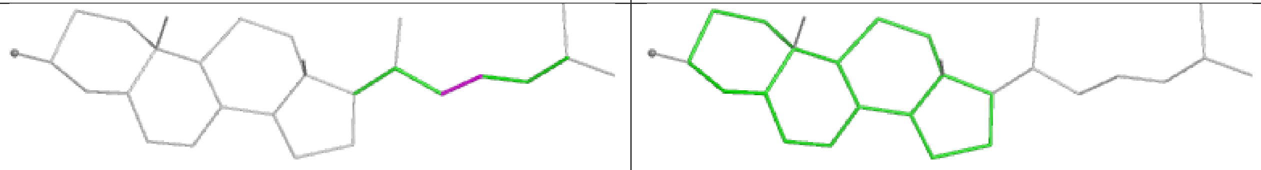
Rings

Ligand CLR A 1302



Bond lengths

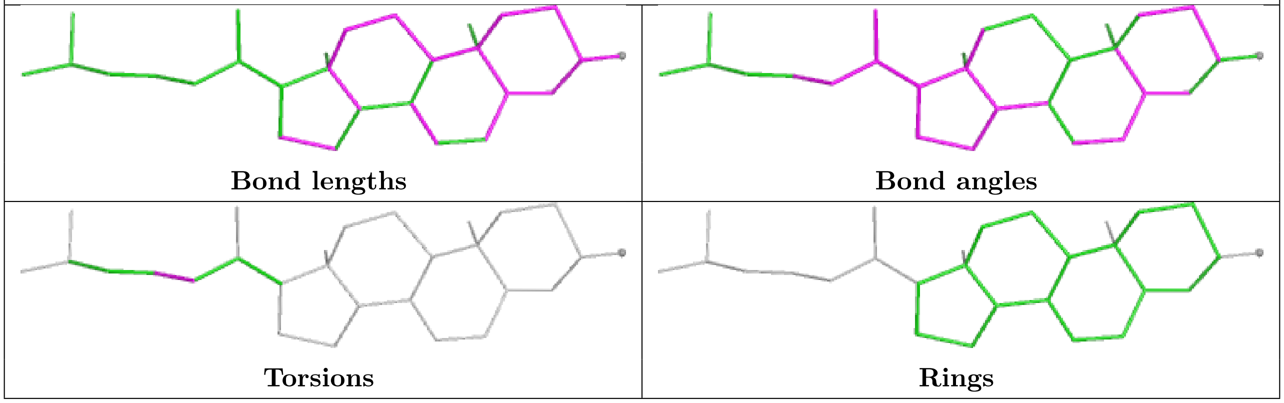
Bond angles



Torsions

Rings

Ligand CLR B 1304



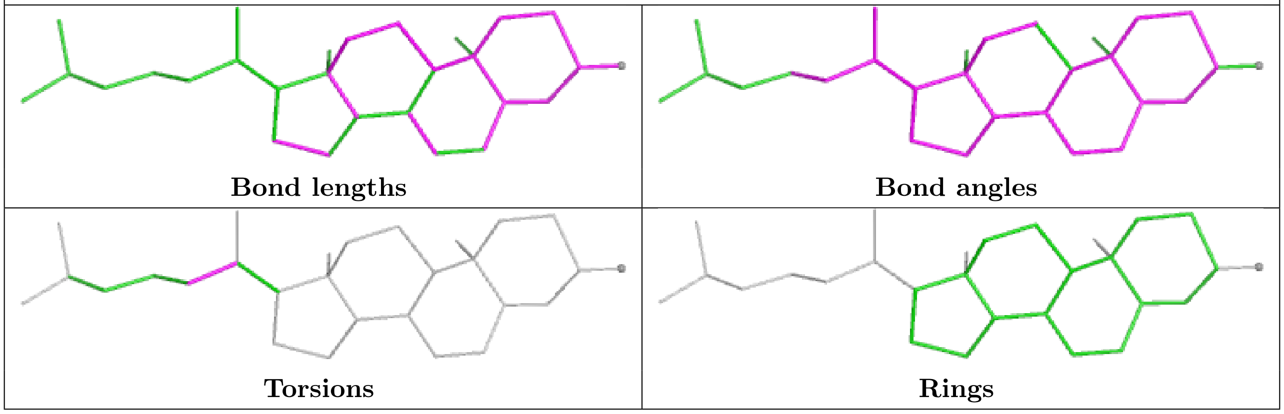
Bond lengths

Bond angles

Torsions

Rings

Ligand CLR D 1305



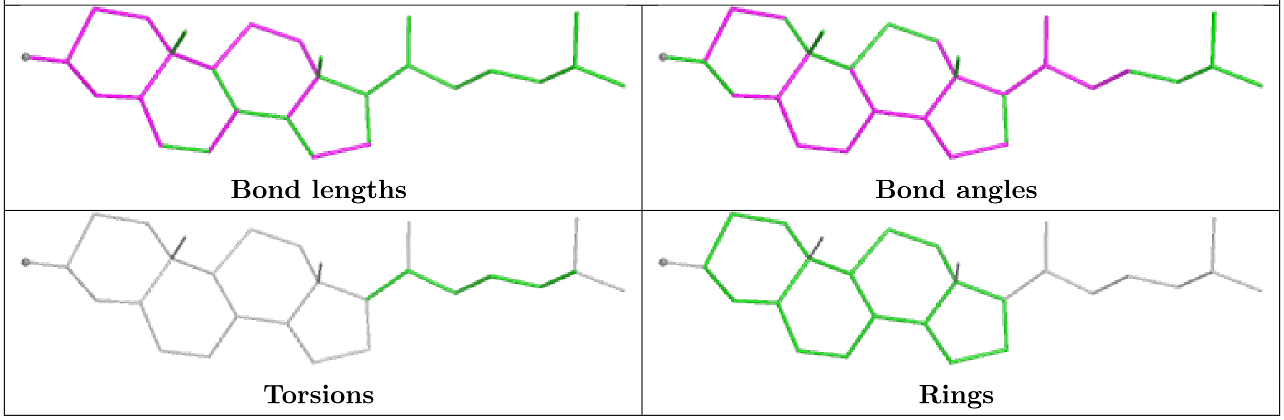
Bond lengths

Bond angles

Torsions

Rings

Ligand CLR B 1307



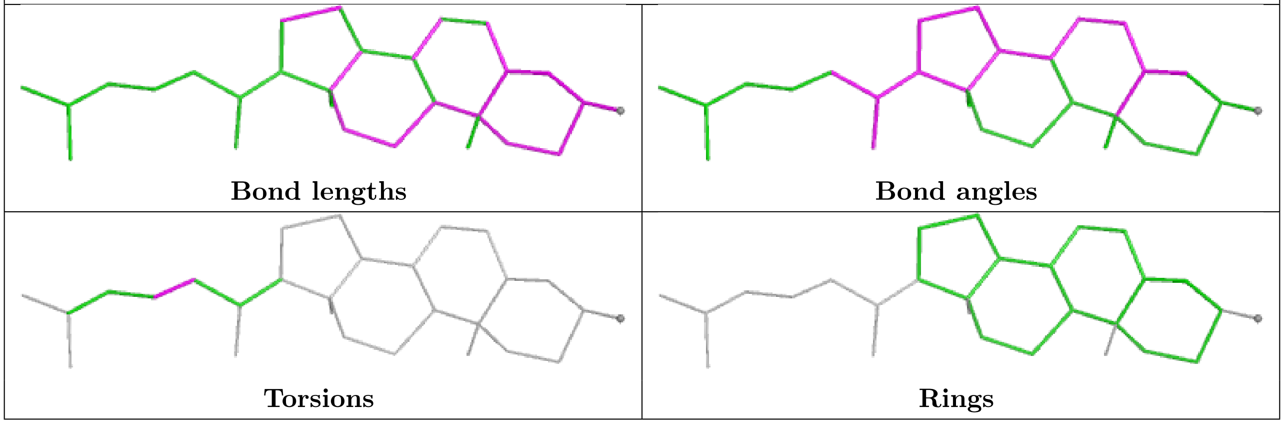
Bond lengths

Bond angles

Torsions

Rings

Ligand CLR B 1305



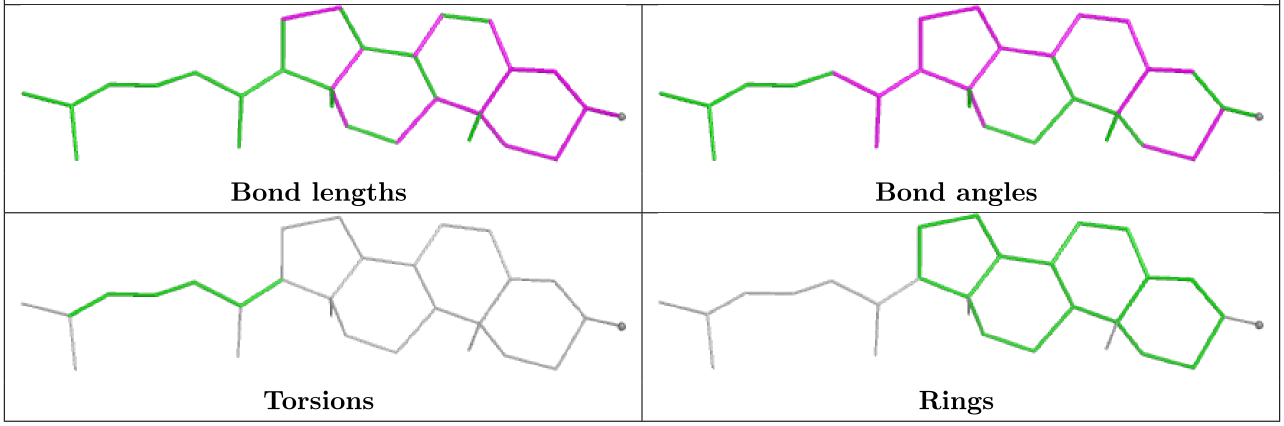
Bond lengths

Bond angles

Torsions

Rings

Ligand CLR B 1303



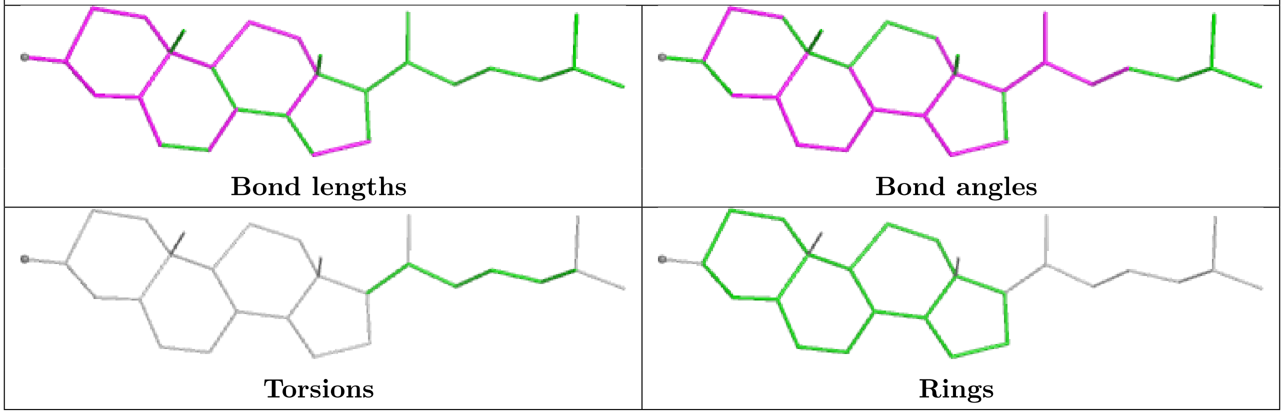
Bond lengths

Bond angles

Torsions

Rings

Ligand CLR A 1304



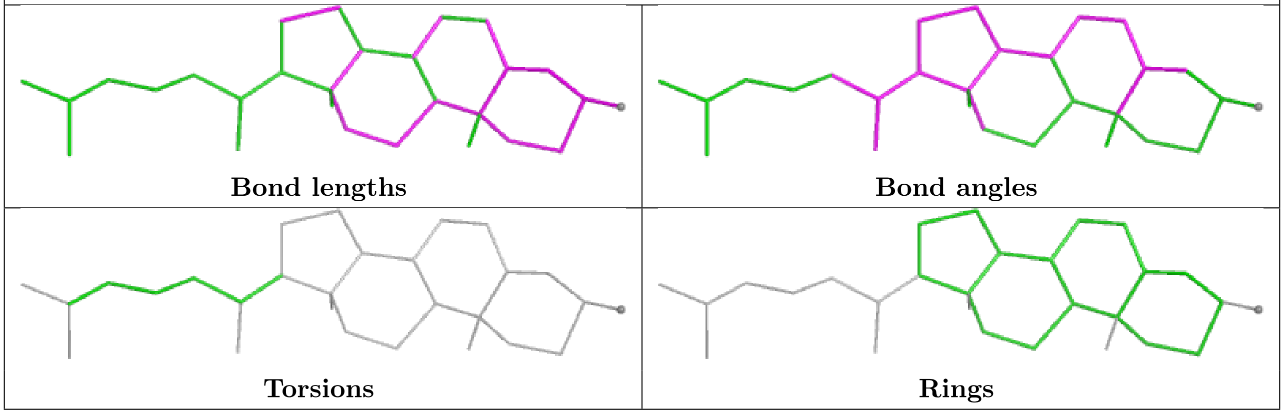
Bond lengths

Bond angles

Torsions

Rings

Ligand CLR C 1303



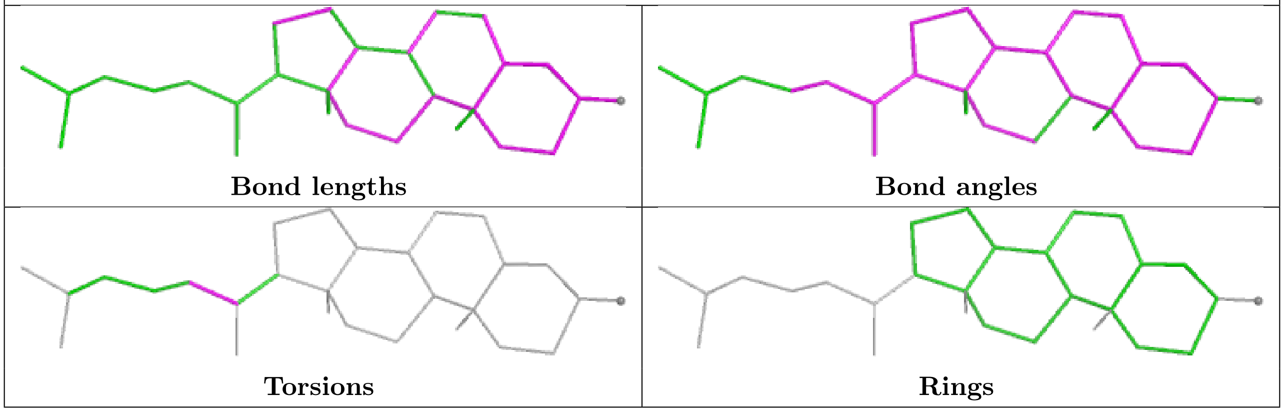
Bond lengths

Bond angles

Torsions

Rings

Ligand CLR A 1305



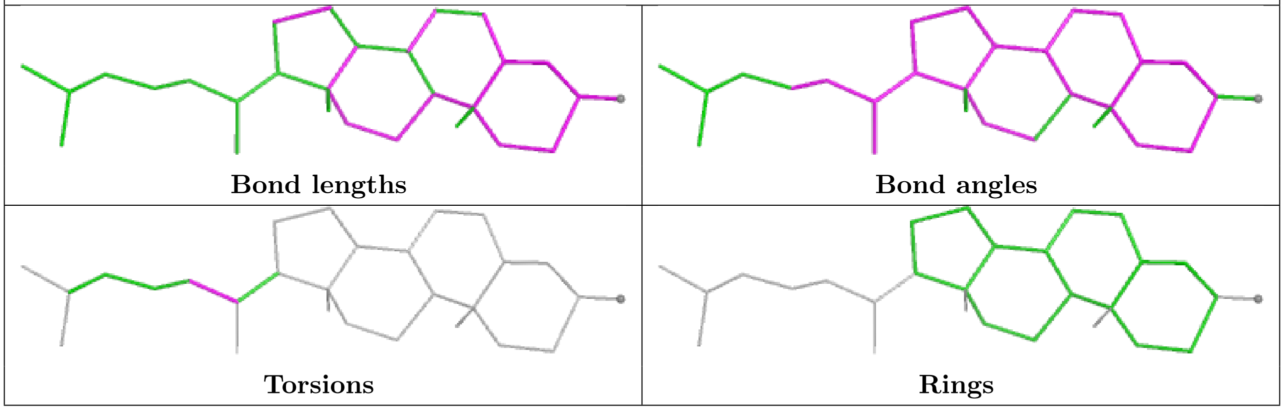
Bond lengths

Bond angles

Torsions

Rings

Ligand CLR B 1302



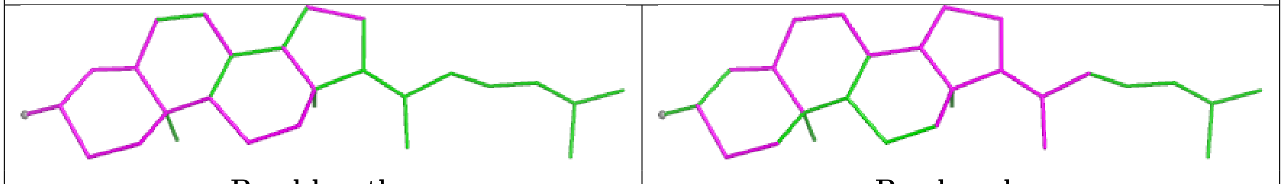
Bond lengths

Bond angles

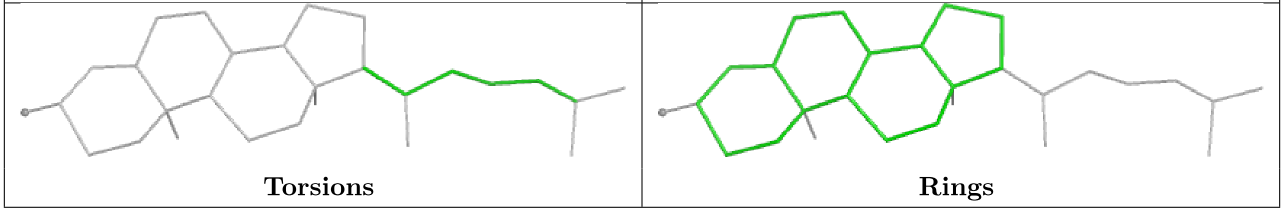
Torsions

Rings

Ligand CLR A 1306

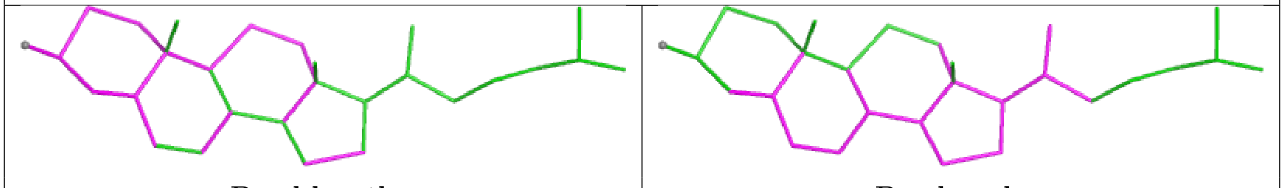


Bond lengths Bond angles

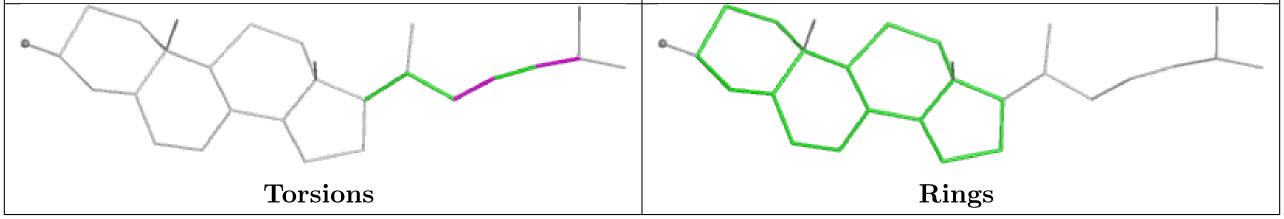


Torsions Rings

Ligand CLR B 1301

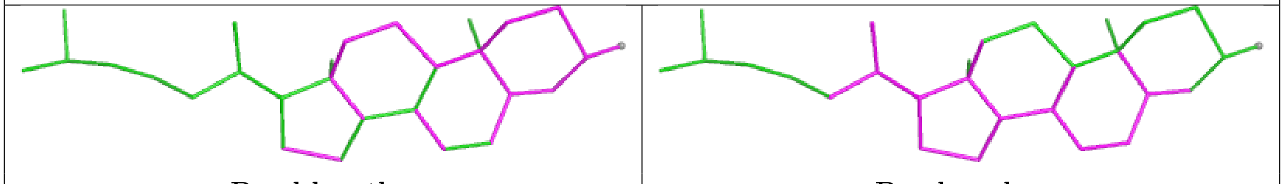


Bond lengths Bond angles

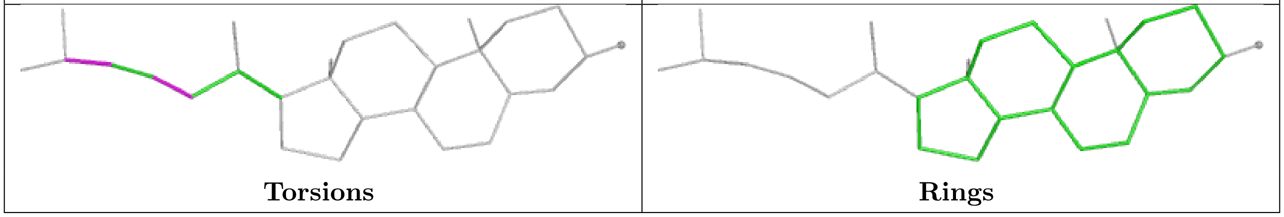


Torsions Rings

Ligand CLR B 1306

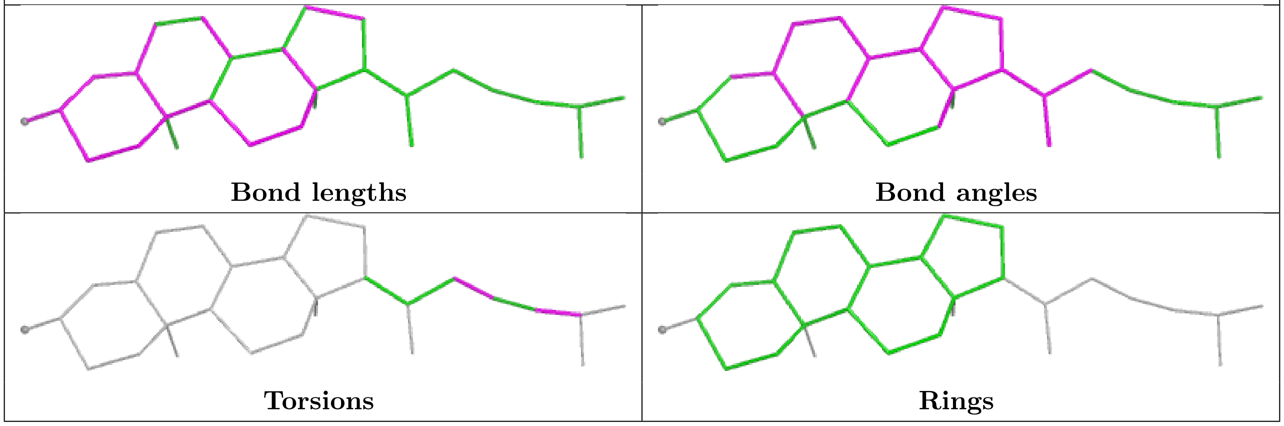


Bond lengths Bond angles



Torsions Rings

Ligand CLR D 1302



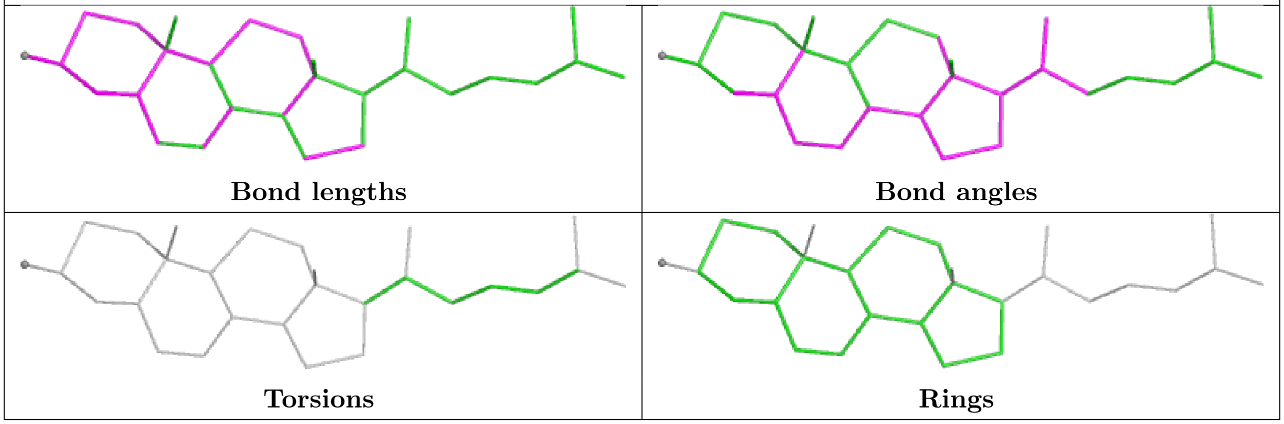
Bond lengths

Bond angles

Torsions

Rings

Ligand CLR D 1304



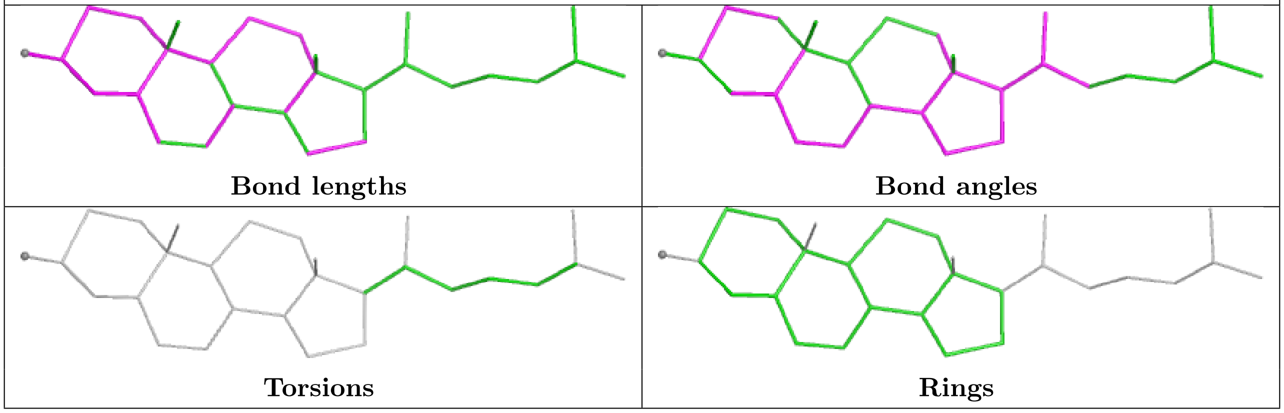
Bond lengths

Bond angles

Torsions

Rings

Ligand CLR D 1306



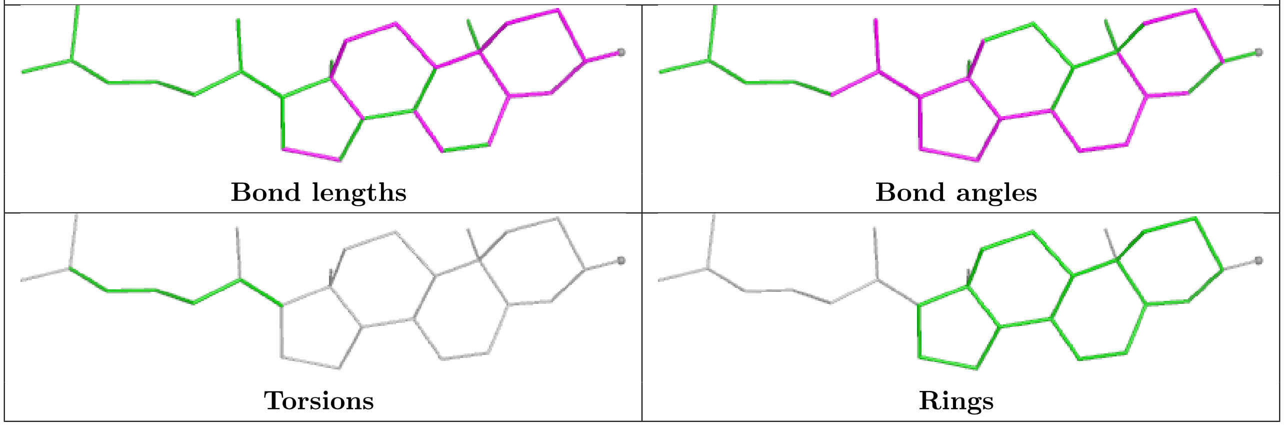
Bond lengths

Bond angles

Torsions

Rings

Ligand CLR C 1302


Bond lengths
Bond angles
Torsions
Rings

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

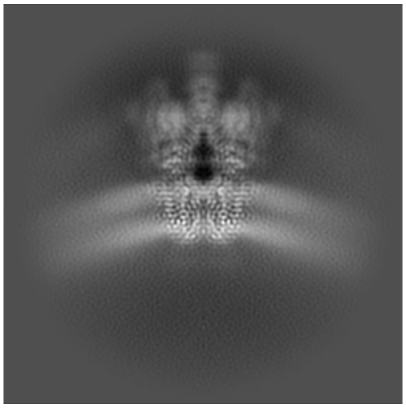
6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-57856. These allow visual inspection of the internal detail of the map and identification of artifacts.

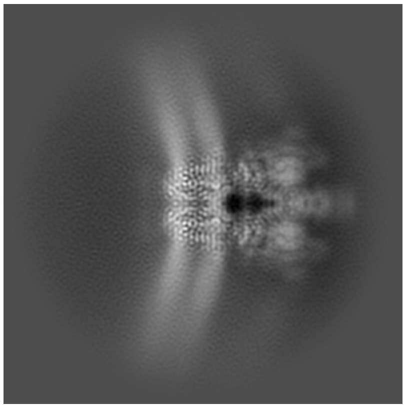
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections ⓘ

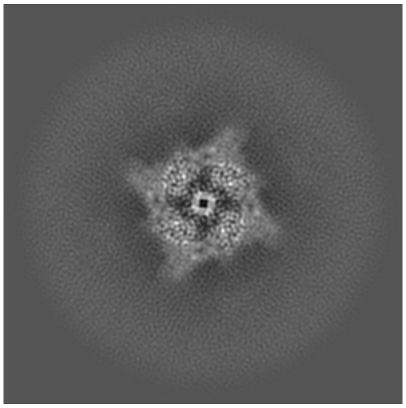
6.1.1 Primary map



X

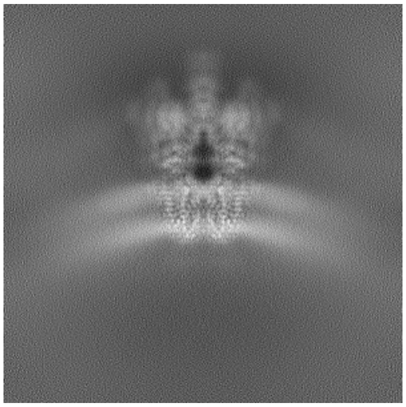


Y

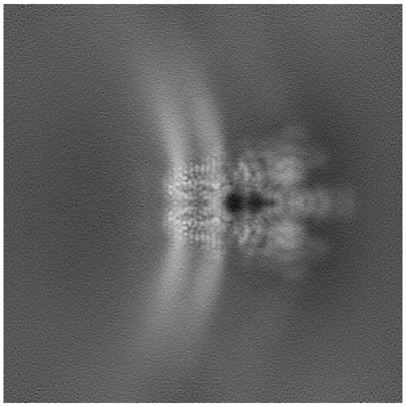


Z

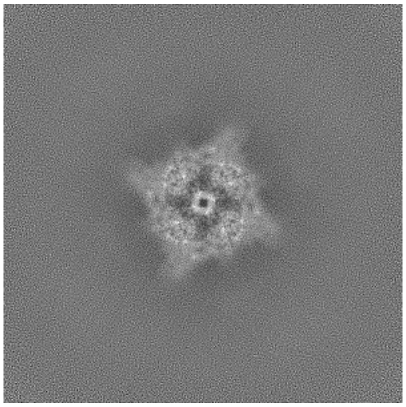
6.1.2 Raw map



X



Y

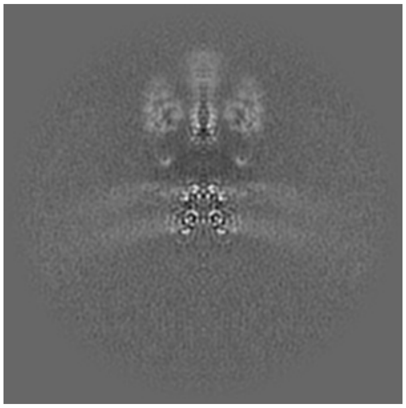


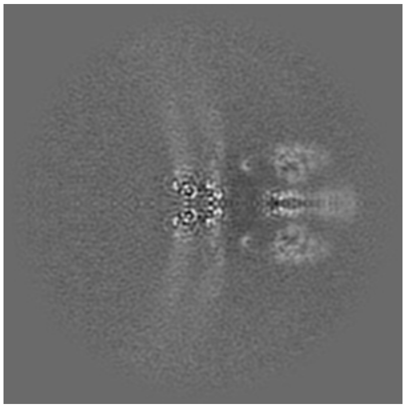
Z

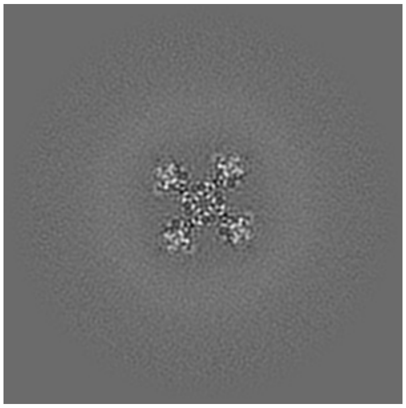
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ

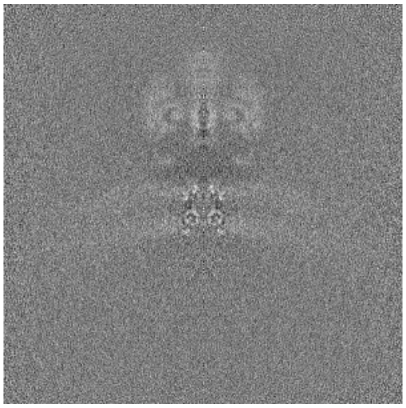
6.2.1 Primary map

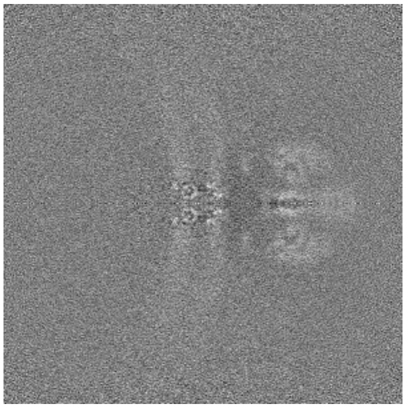

X Index: 200

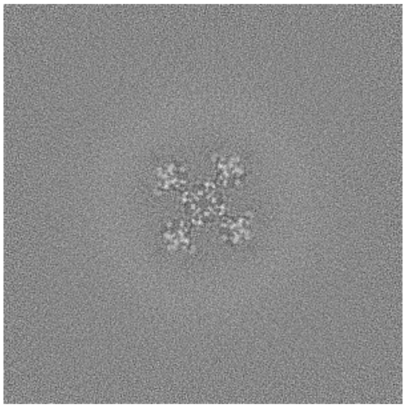

Y Index: 200


Z Index: 200

6.2.2 Raw map


X Index: 200

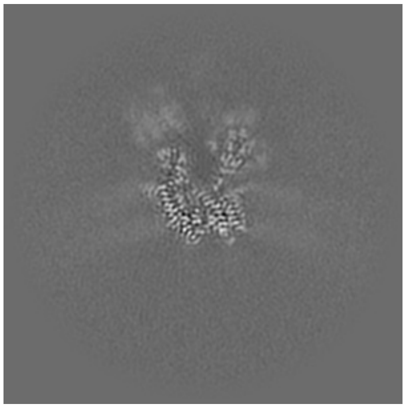

Y Index: 200


Z Index: 200

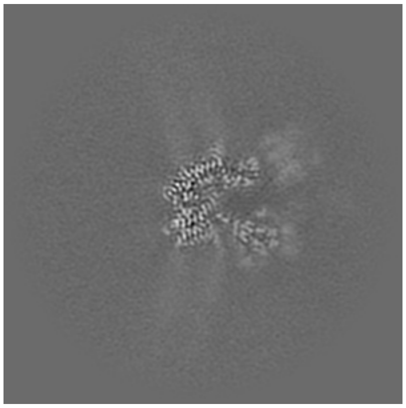
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices

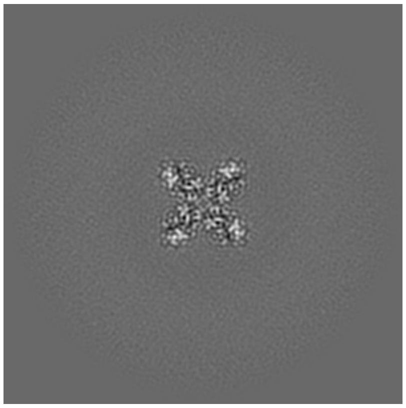
6.3.1 Primary map



X Index: 180

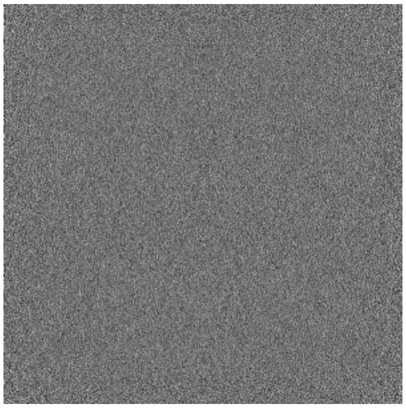


Y Index: 180

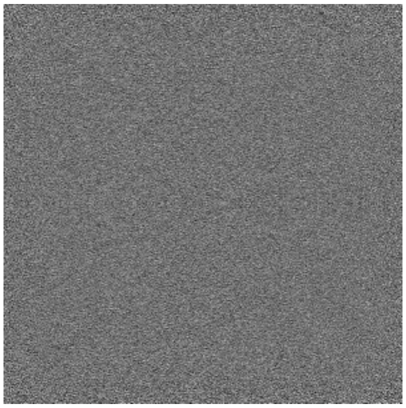


Z Index: 188

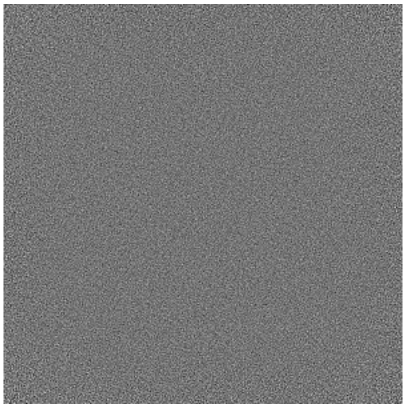
6.3.2 Raw map



X Index: 0



Y Index: 0

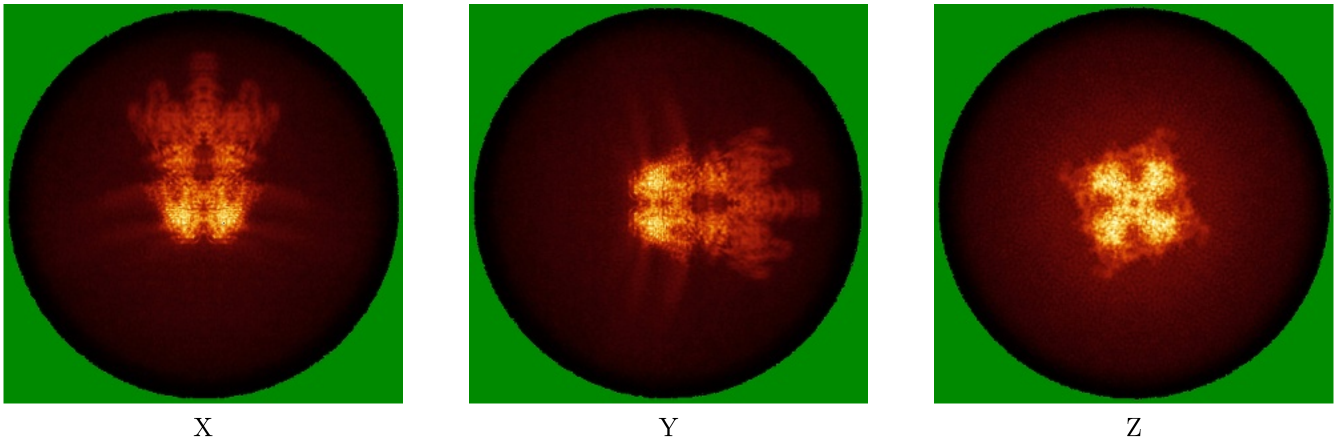


Z Index: 399

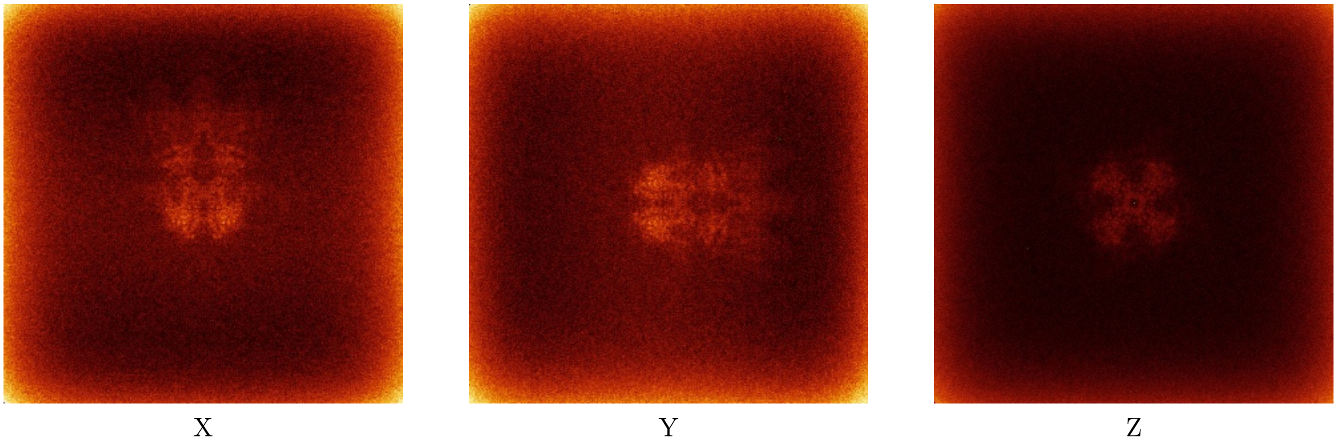
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



6.4.2 Raw map



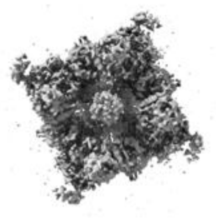
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views

6.5.1 Primary map

X

Y



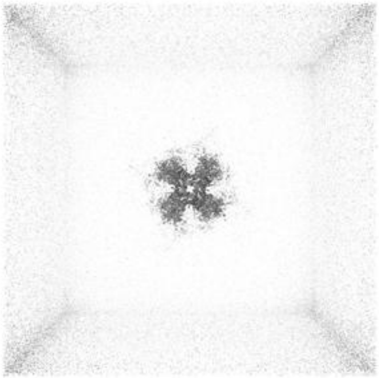
Z

The images above show the 3D surface view of the map at the recommended contour level 0.06. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X

Y



Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

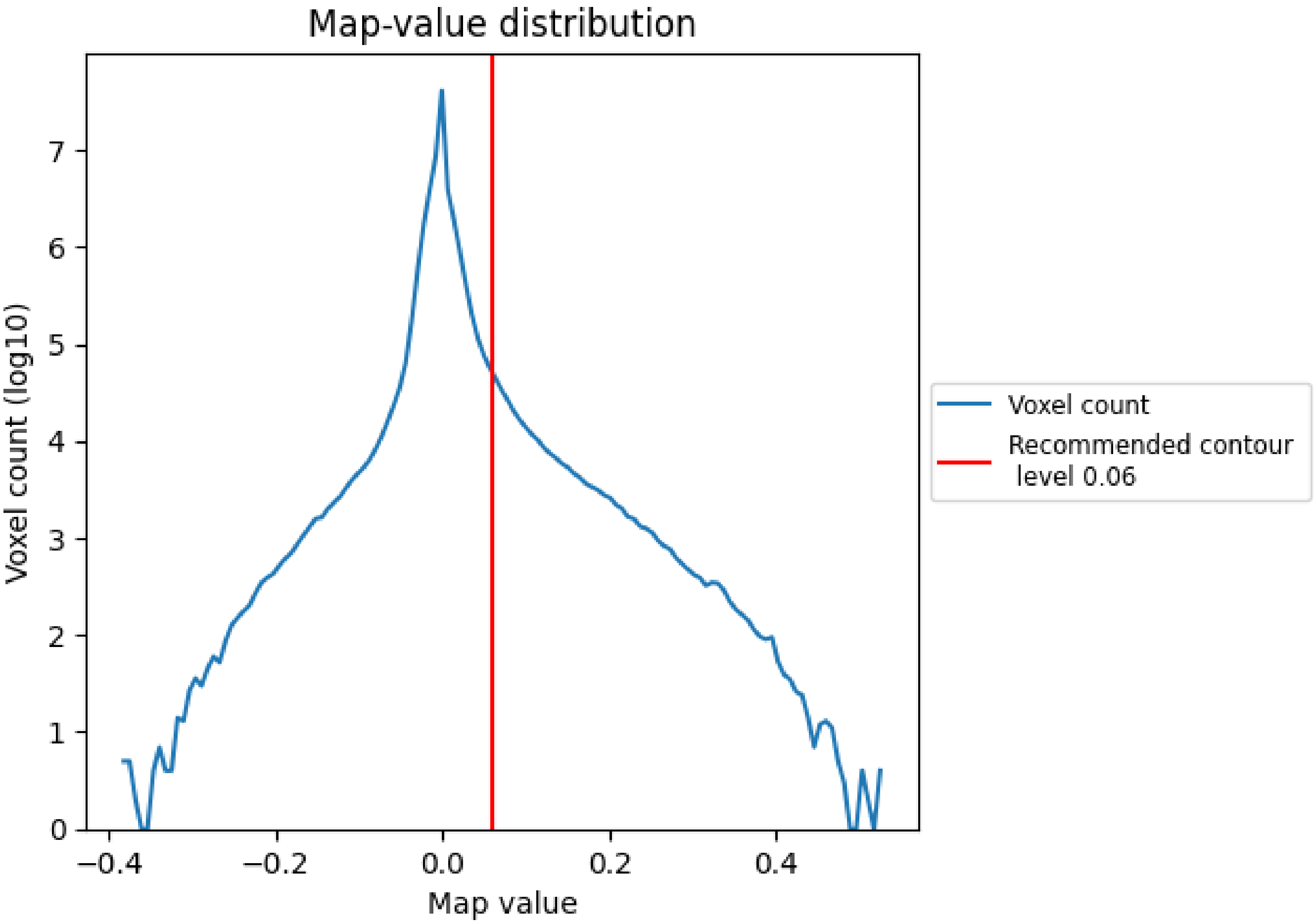
6.6 Mask visualisation

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

7 Map analysis (i)

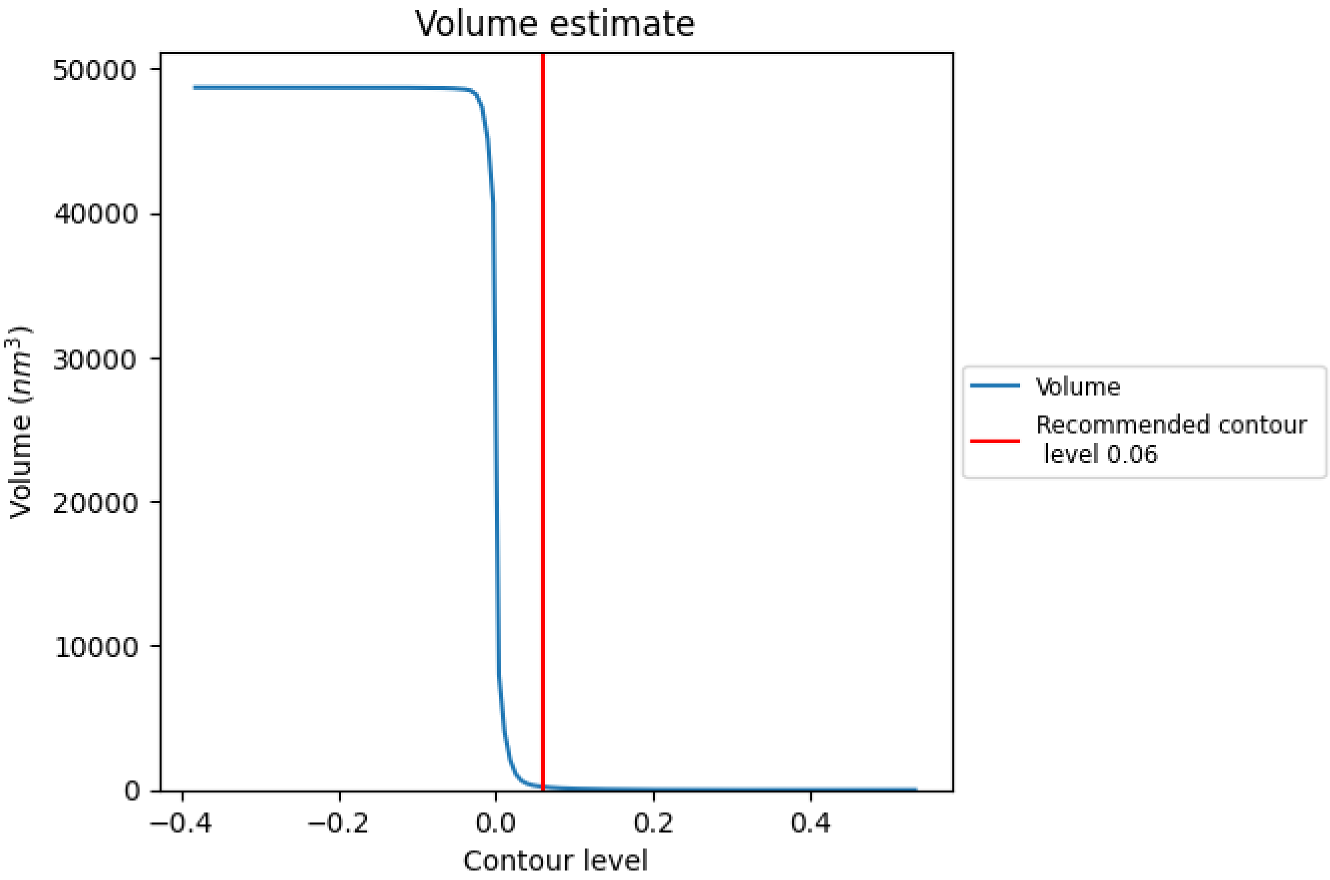
This section contains the results of statistical analysis of the map.

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.

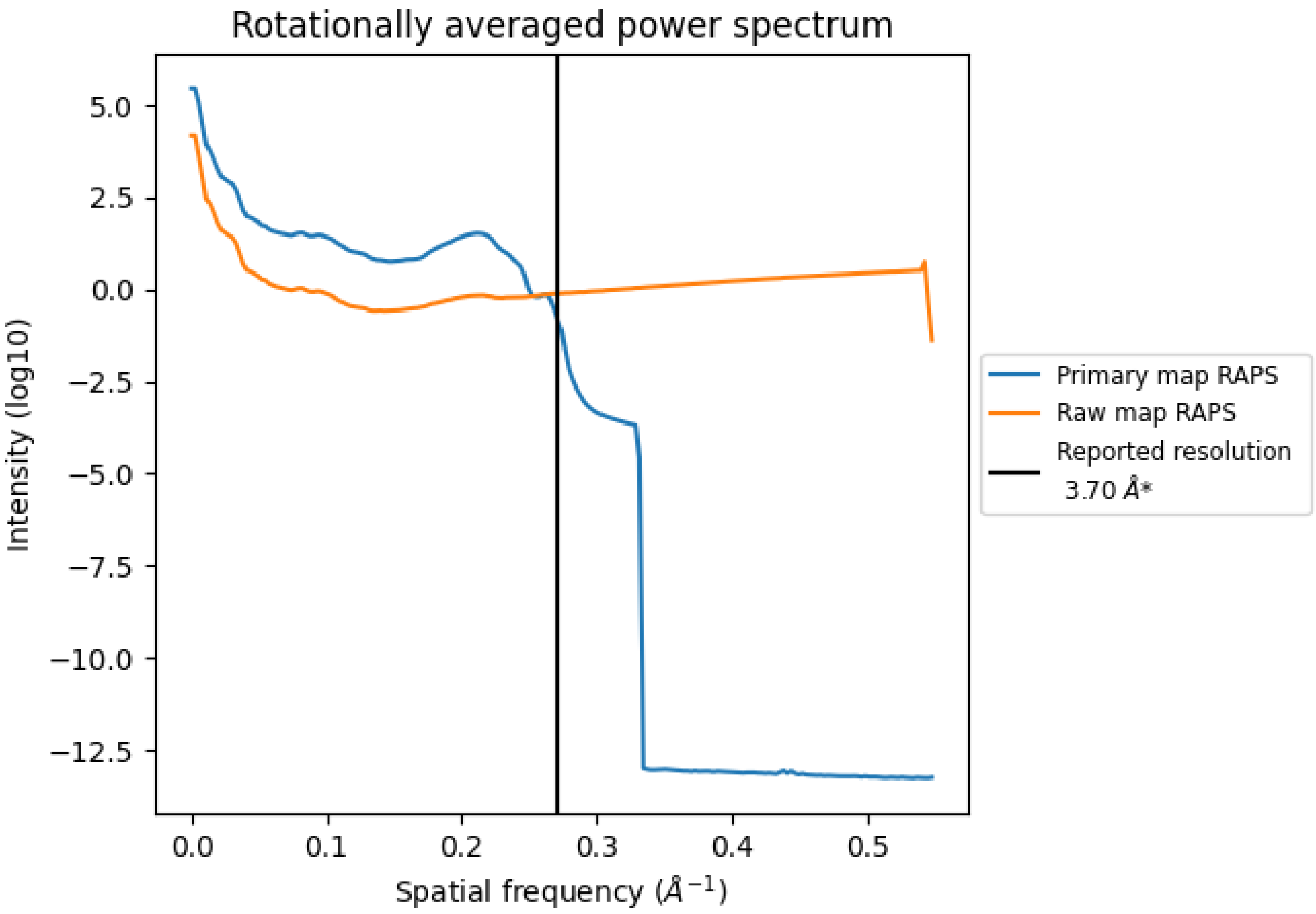
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 218 nm^3; this corresponds to an approximate mass of 197 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 ⓘ

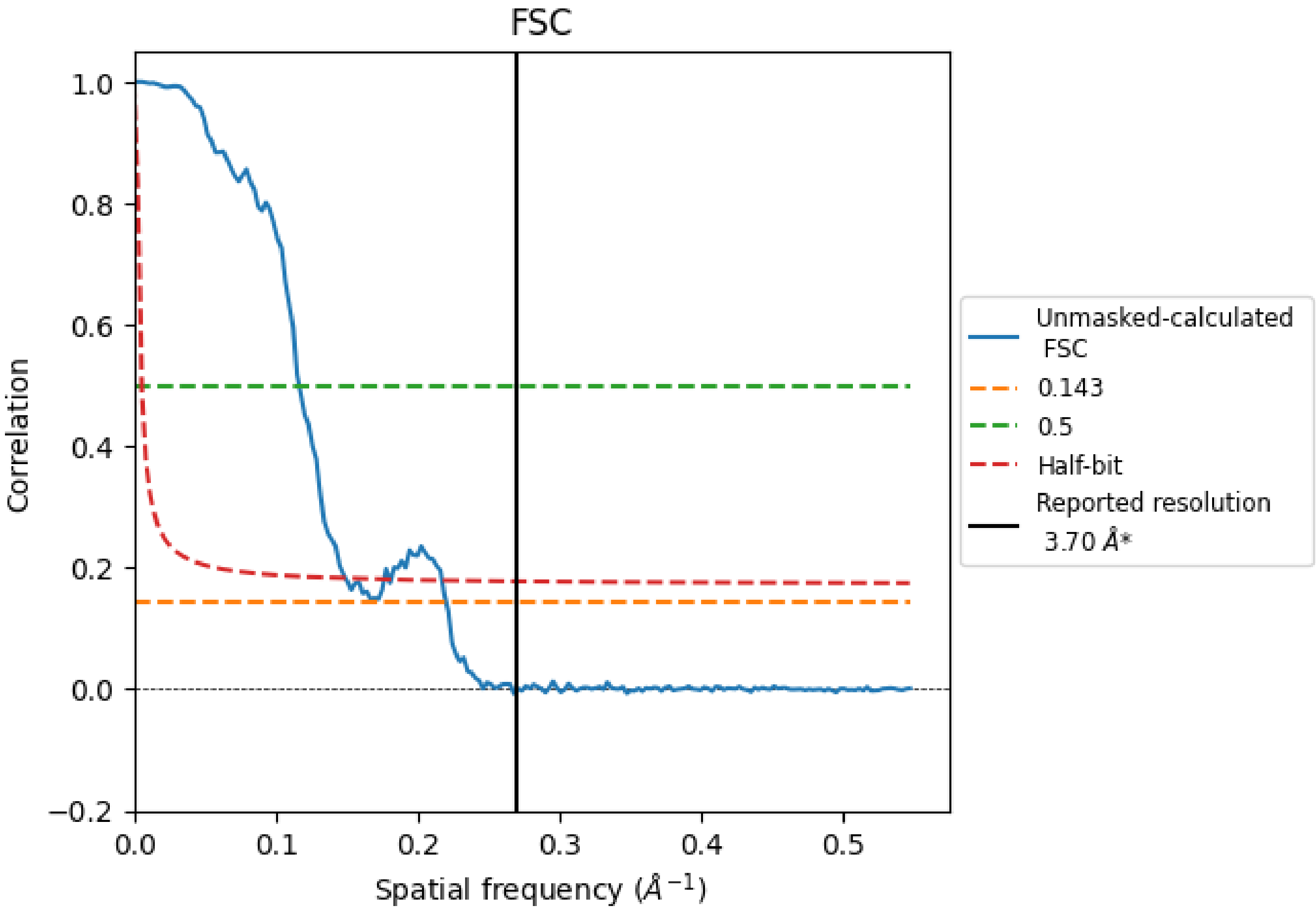


*Reported resolution corresponds to spatial frequency of 0.270 Å^{-1}

8 Fourier-Shell correlation ⓘ

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC ⓘ



*Reported resolution corresponds to spatial frequency of 0.270 $Å^{-1}$

8.2 Resolution estimates ⓘ

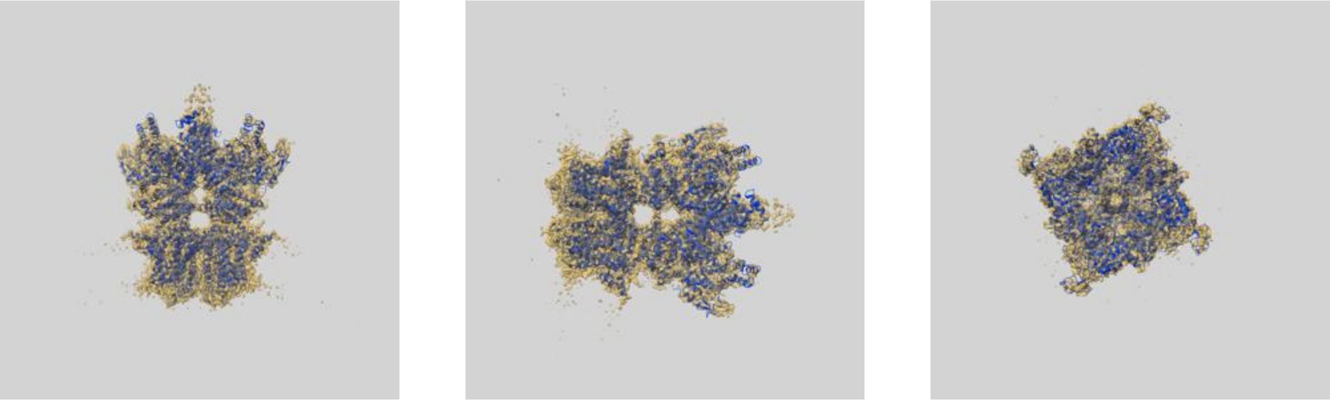
Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.54	8.58	6.69

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.54 differs from the reported value 3.7 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-57856 and PDB model 30KH. Per-residue inclusion information can be found in section 3 on page 6.

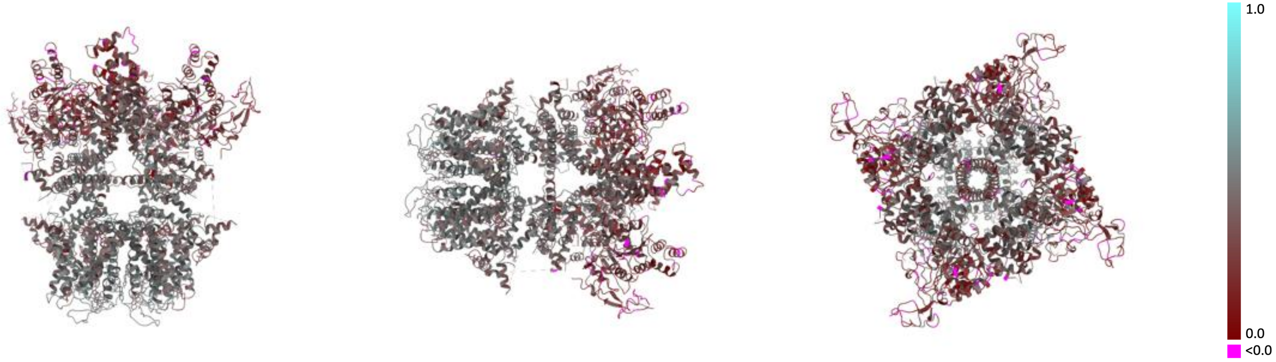
9.1 Map-model overlay ⓘ



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.06 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

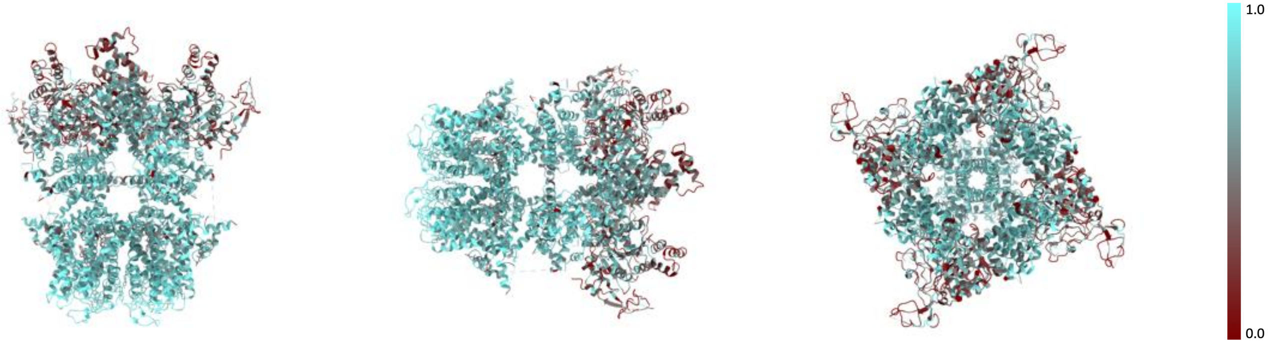
9.2 Q-score mapped to coordinate model ⓘ



X Y Z

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

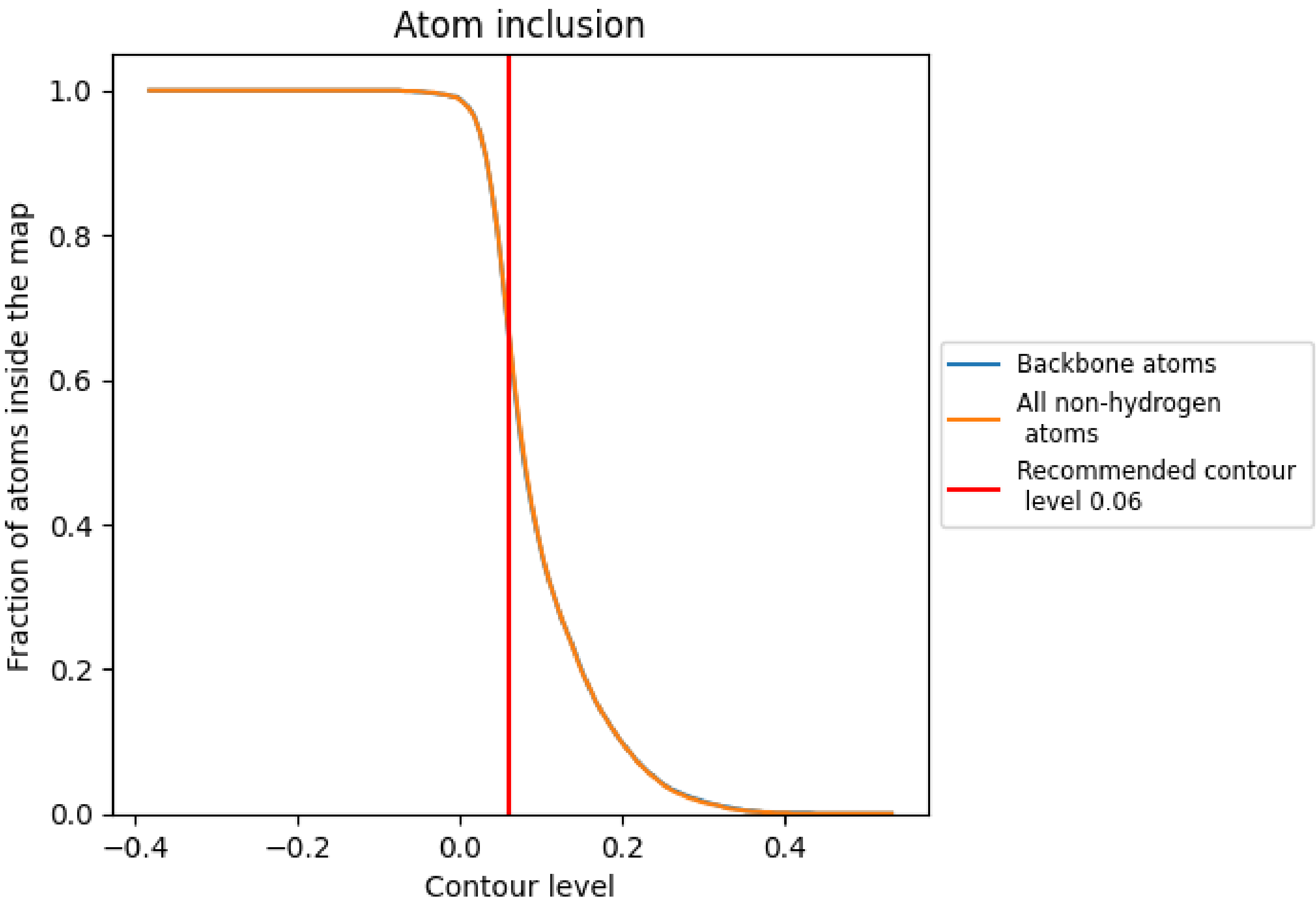
9.3 Atom inclusion mapped to coordinate model ⓘ



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.06).

9.4 Atom inclusion ⓘ



At the recommended contour level, 67% of all backbone atoms, 68% 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 (0.06) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	🟦 0.6750	🟫 0.3720
A	🟦 0.6850	🟫 0.3740
B	🟦 0.6820	🟫 0.3720
C	🟦 0.6850	🟫 0.3700
D	🟦 0.6860	🟫 0.3710