



Full wwPDB EM Validation Report ⓘ

Mar 20, 2024 – 12:39 AM JST

PDB ID : 6KHI
EMDB ID : EMD-9989
Title : Supercomplex for cyclic electron transport in cyanobacteria
Authors : Pan, X.; Cao, D.; Xie, F.; Zhang, X.; Li, M.
Deposited on : 2019-07-15
Resolution : 3.00 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

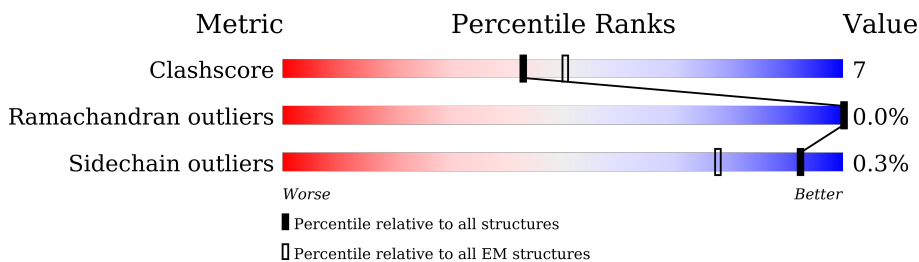
EMDB validation analysis : 0.0.1.dev70
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

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 3.00 Å.

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



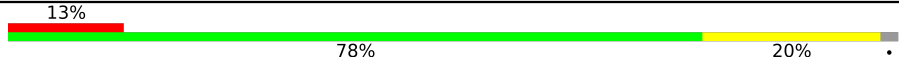
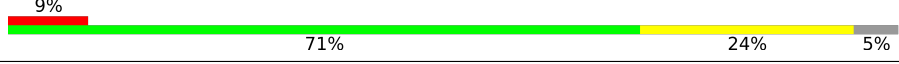

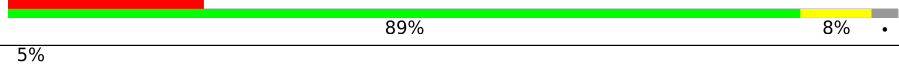

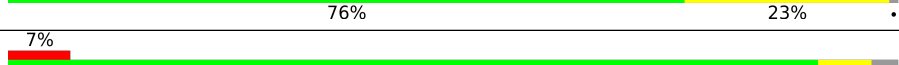
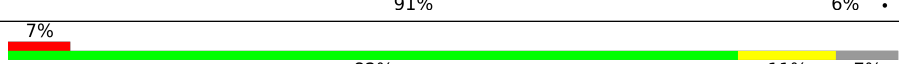
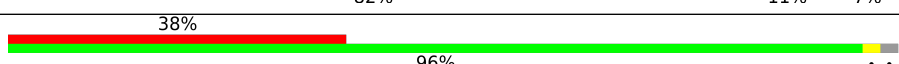
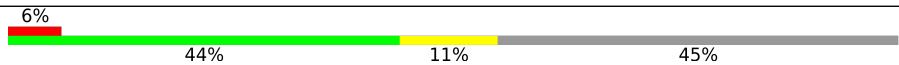
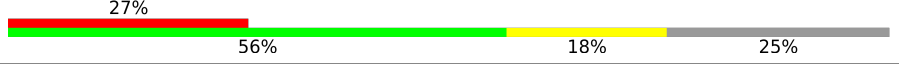
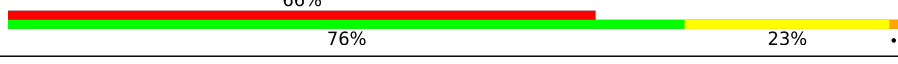

Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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

Mol	Chain	Length	Quality of chain
1	A	372	
2	B	515	
3	C	132	
4	D	529	
5	E	101	
6	F	656	
7	G	200	
8	H	394	

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Mol	Chain	Length	Quality of chain
9	I	196	
10	J	168	
11	K	237	
12	L	76	
13	M	111	
14	N	150	
15	O	70	
16	P	44	
17	Q	45	
18	S	110	
19	V	146	
20	1	98	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
24	BCR	D	602	-	X	-	-
24	BCR	D	603	-	X	-	-

2 Entry composition

There are 27 unique types of molecules in this entry. The entry contains 32635 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 NAD(P)H-quinone oxidoreductase subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	366	2821	1893	439	478	11	0	0

- Molecule 2 is a protein called NAD(P)H-quinone oxidoreductase subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	492	3724	2472	578	658	16	0	0

- Molecule 3 is a protein called NAD(P)H-quinone oxidoreductase subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	120	971	665	149	153	4	0	0

- Molecule 4 is a protein called NAD(P)H-quinone oxidoreductase chain 4 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	504	3897	2614	606	655	22	0	0

- Molecule 5 is a protein called NAD(P)H-quinone oxidoreductase subunit 4L.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	100	775	512	127	133	3	0	0

- Molecule 6 is a protein called NADH dehydrogenase subunit 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	641	4945	3285	778	845	37	0	0

- Molecule 7 is a protein called NADH-quinone oxidoreductase subunit J.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	G	169	1278	855	200	219	4	0	0

- Molecule 8 is a protein called NAD(P)H-quinone oxidoreductase subunit H.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	H	393	3177	2048	545	565	19	0	0

- Molecule 9 is a protein called NAD(P)H-quinone oxidoreductase subunit I.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	I	192	1537	979	264	281	13	0	0

- Molecule 10 is a protein called NAD(P)H-quinone oxidoreductase subunit J.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	J	160	1307	836	222	244	5	0	0

- Molecule 11 is a protein called NAD(P)H-quinone oxidoreductase subunit K.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	K	205	1590	1019	275	283	13	0	0

- Molecule 12 is a protein called NAD(P)H-quinone oxidoreductase subunit L.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	L	74	595	409	91	94	1	0	0

- Molecule 13 is a protein called NAD(P)H-quinone oxidoreductase subunit M.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	M	111	885	551	161	171	2	0	0

- Molecule 14 is a protein called NAD(P)H-quinone oxidoreductase subunit N.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	148	Total	C	N	O	S	0	0
			1165	758	201	205	1		

- Molecule 15 is a protein called NAD(P)H-quinone oxidoreductase subunit O.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	O	68	Total	C	N	O	S	0	0
			538	349	91	98			

- Molecule 16 is a protein called proton-translocating NADH-quinone dehydrogenase subunit P.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	P	41	Total	C	N	O	S	0	0
			321	212	52	55	2		

- Molecule 17 is a protein called proton-translocating NADH-quinone dehydrogenase subunit Q.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Q	44	Total	C	N	O	S	0	0
			333	222	53	56	2		

- Molecule 18 is a protein called Tlr0636 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	60	Total	C	N	O	S	0	0
			469	304	74	89	2		

- Molecule 19 is a protein called Tlr0472 protein.

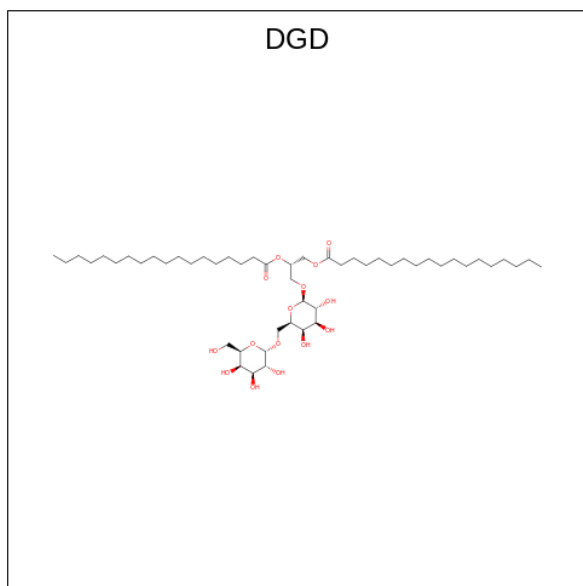
Mol	Chain	Residues	Atoms					AltConf	Trace
19	V	109	Total	C	N	O	S	0	0
			838	545	139	150	4		

- Molecule 20 is a protein called Ferredoxin-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	1	98	Total	C	N	O	S	0	0
			756	468	117	165	6		

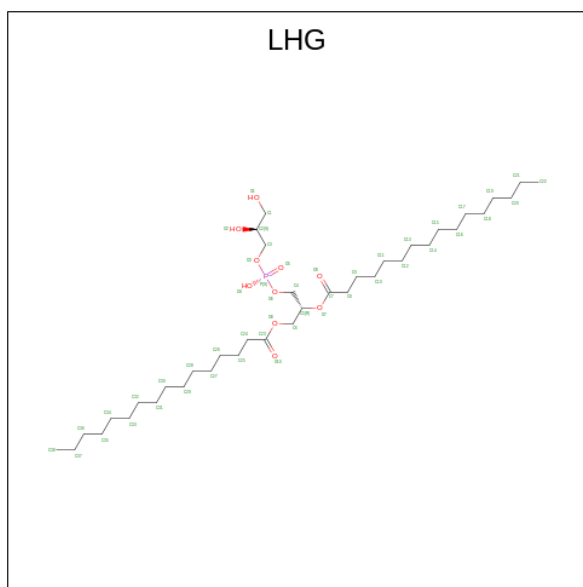
- Molecule 21 is DIGALACTOSYL DIACYL GLYCEROL (DGDG) (three-letter code: DGD)

(formula: $C_{51}H_{96}O_{15}$) (labeled as "Ligand of Interest" by depositor).



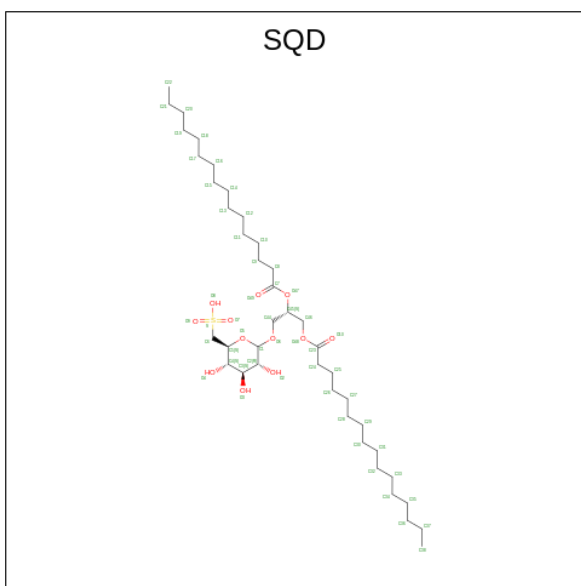
Mol	Chain	Residues	Atoms			AltConf
21	A	1	Total	C	O	0
			62	47	15	
21	A	1	Total	C	O	0
			62	47	15	

- Molecule 22 is 1,2-DIPALMITOYL-PHOSPHATIDYL-GLYCEROLE (three-letter code: LHG) (formula: $C_{38}H_{75}O_{10}P$) (labeled as "Ligand of Interest" by depositor).



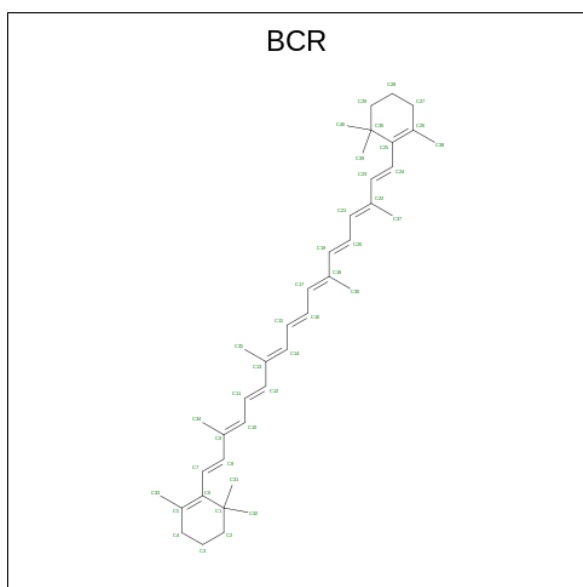
Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
22	B	1	46	35	10	1	0
22	C	1	43	32	10	1	0
22	F	1	49	38	10	1	0
22	F	1	36	25	10	1	0
22	F	1	44	33	10	1	0
22	I	1	44	33	10	1	0

- Molecule 23 is 1,2-DI-O-ACYL-3-O-[6-DEOXY-6-SULFO-ALPHA-D-GLUCOPYRANOSYL]-SN-GLYCEROL (three-letter code: SQD) (formula: $C_{41}H_{78}O_{12}S$) (labeled as "Ligand of Interest" by depositor).



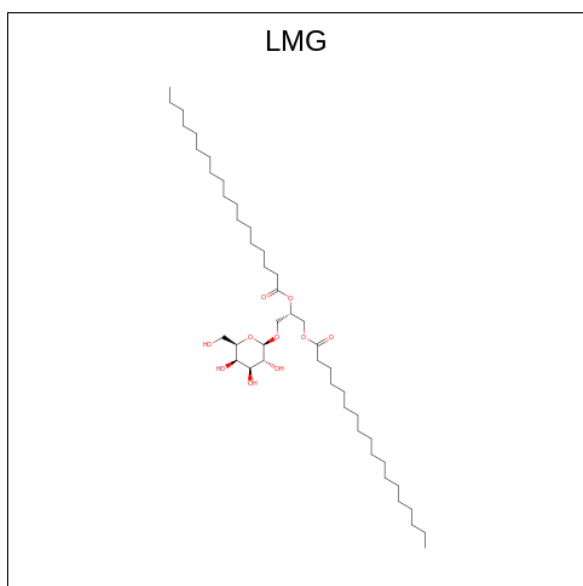
Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	S	
23	C	1	40	27	12	1	0
23	D	1	54	41	12	1	0
23	L	1	38	25	12	1	0

- Molecule 24 is BETA-CAROTENE (three-letter code: BCR) (formula: $C_{40}H_{56}$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	AltConf
24	D	1	Total C 40 40	0
24	D	1	Total C 40 40	0

- Molecule 25 is 1,2-DISTEAROYL-MONOGALACTOSYL-DIGLYCERIDE (three-letter code: LMG) (formula: $C_{45}H_{86}O_{10}$) (labeled as "Ligand of Interest" by depositor).



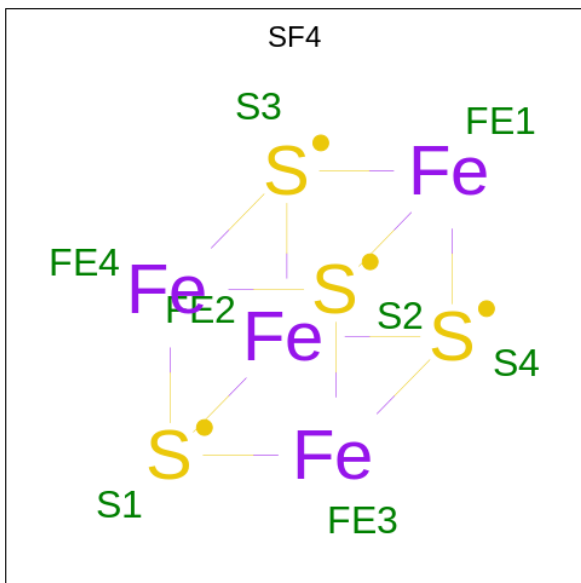
Mol	Chain	Residues	Atoms	AltConf
25	F	1	Total C O 47 37 10	0

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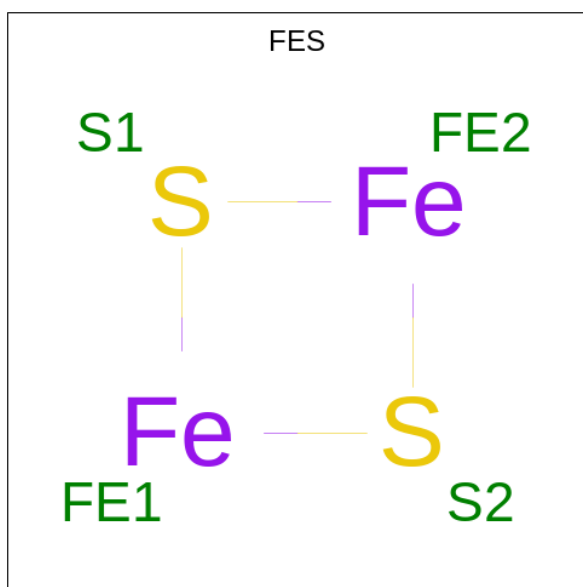
Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
25	F	1	40	30	10	0

- Molecule 26 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe₄S₄) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
26	I	1	8	4	4	0
26	I	1	8	4	4	0
26	K	1	8	4	4	0

- Molecule 27 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe₂S₂) (labeled as "Ligand of Interest" by depositor).

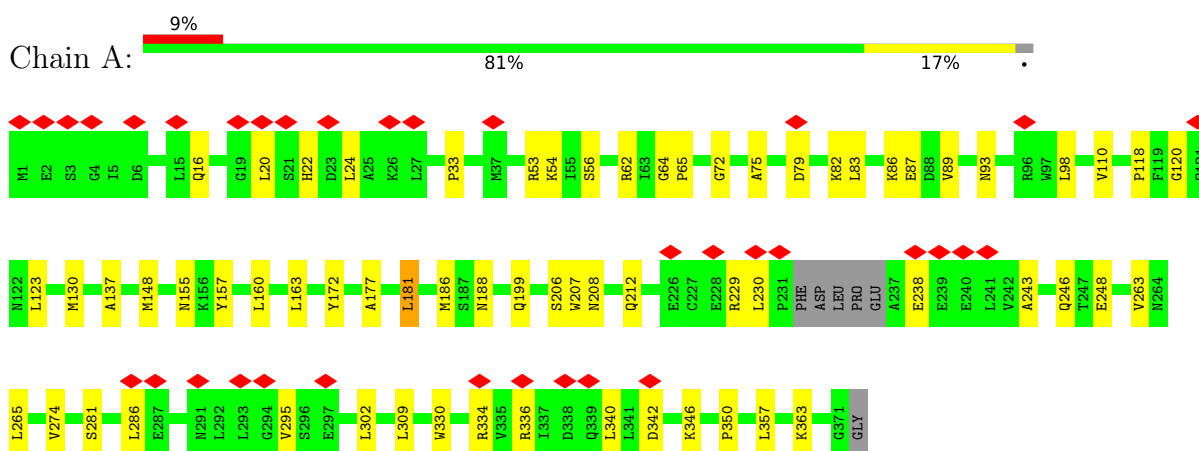


Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
27	1	1	4	2	2	0

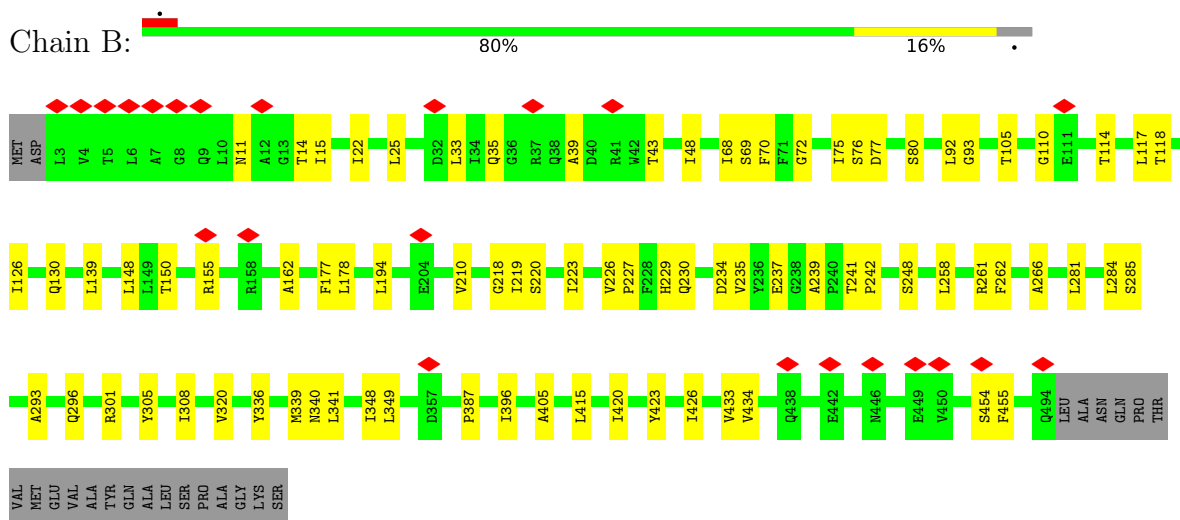
3 Residue-property plots

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

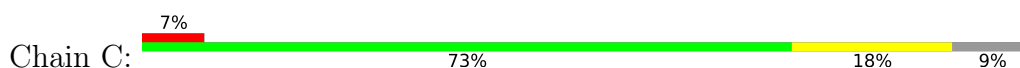
- Molecule 1: NAD(P)H-quinone oxidoreductase subunit 1

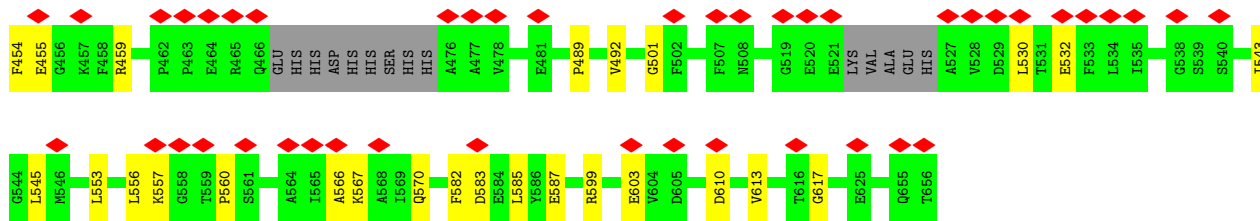


- Molecule 2: NAD(P)H-quinone oxidoreductase subunit 2

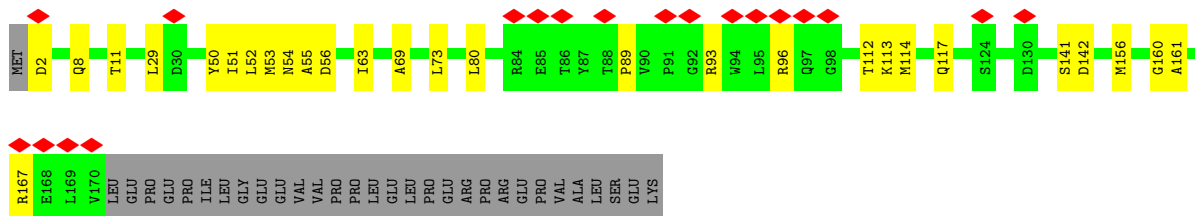


- Molecule 3: NAD(P)H-quinone oxidoreductase subunit 3

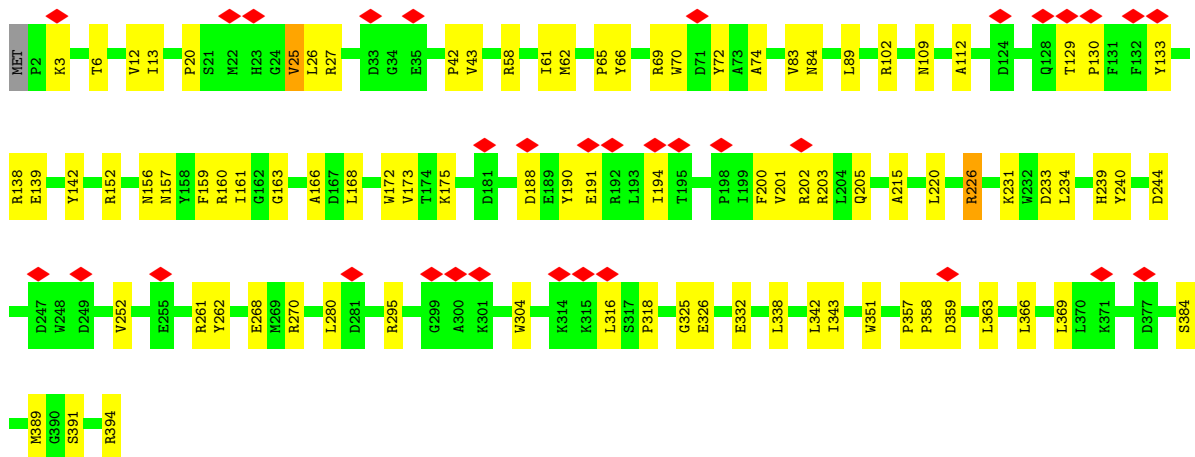
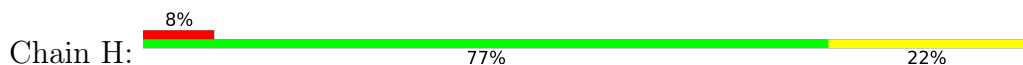




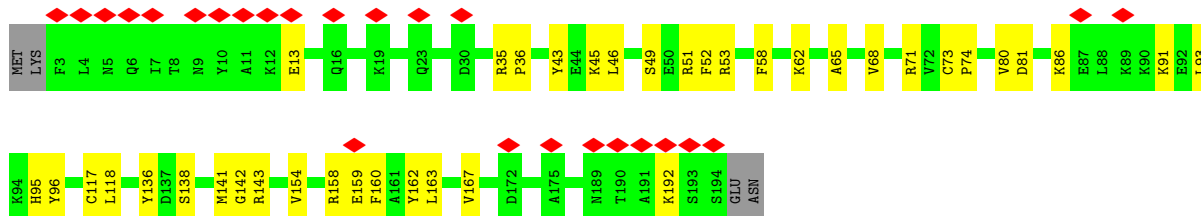
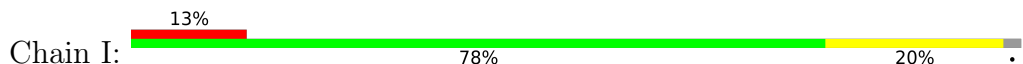
• Molecule 7: NADH-quinone oxidoreductase subunit J



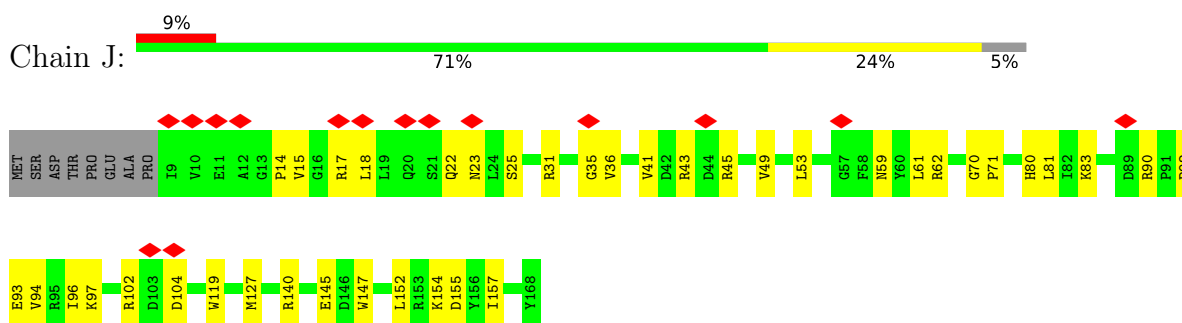
• Molecule 8: NAD(P)H-quinone oxidoreductase subunit H



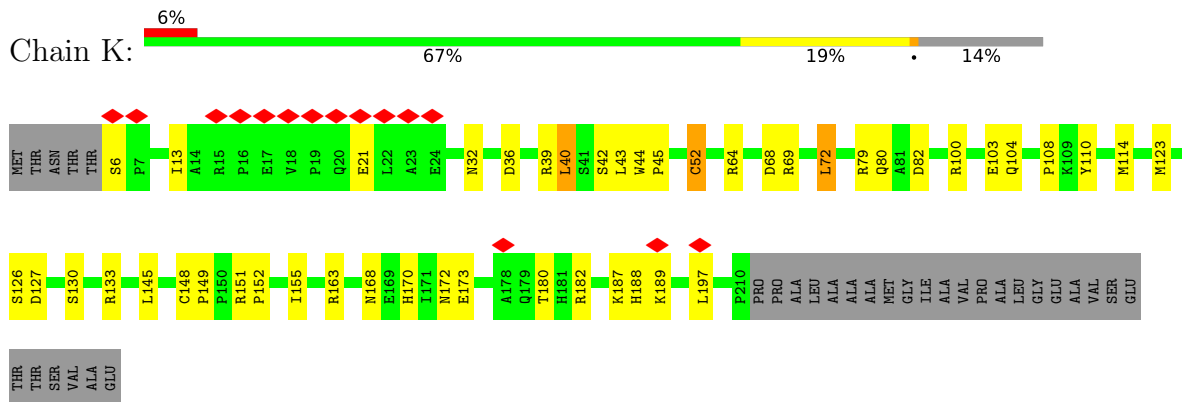
• Molecule 9: NAD(P)H-quinone oxidoreductase subunit I



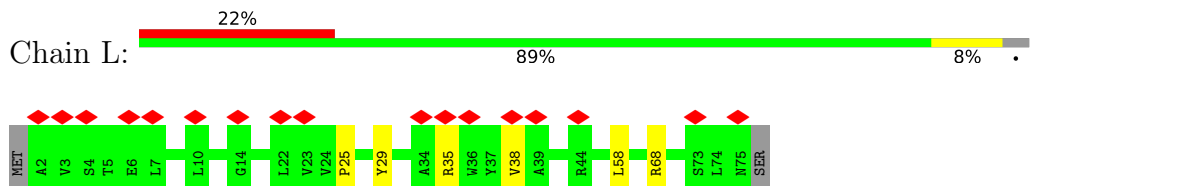
• Molecule 10: NAD(P)H-quinone oxidoreductase subunit J



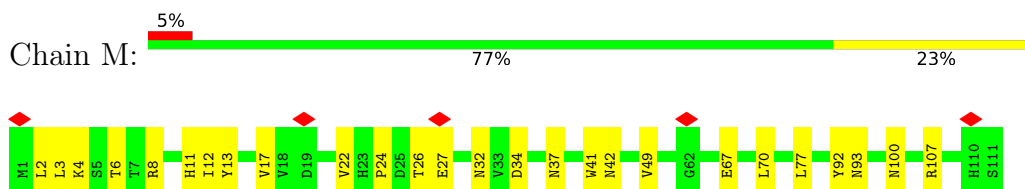
- Molecule 11: NAD(P)H-quinone oxidoreductase subunit K



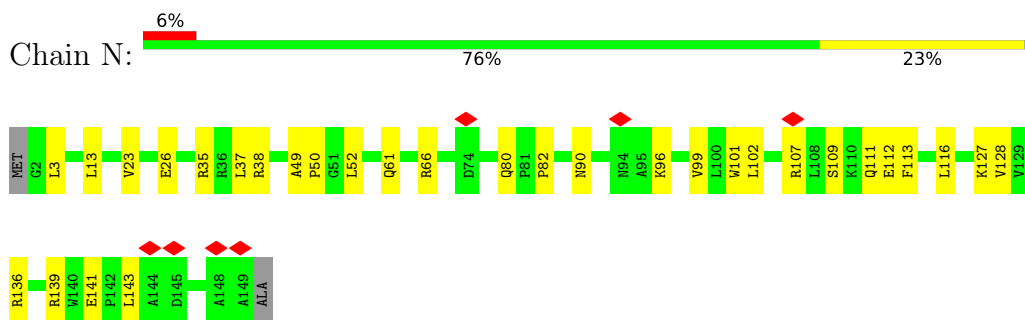
- Molecule 12: NAD(P)H-quinone oxidoreductase subunit L



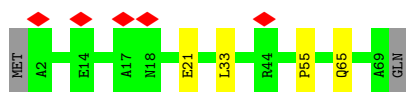
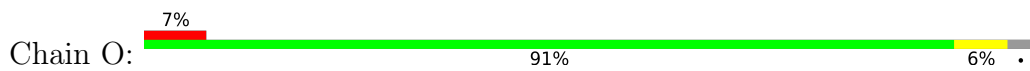
- Molecule 13: NAD(P)H-quinone oxidoreductase subunit M



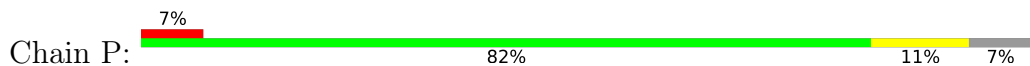
- Molecule 14: NAD(P)H-quinone oxidoreductase subunit N



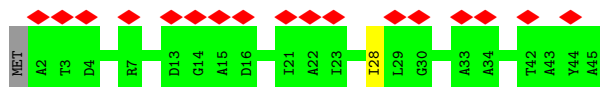
- Molecule 15: NAD(P)H-quinone oxidoreductase subunit O



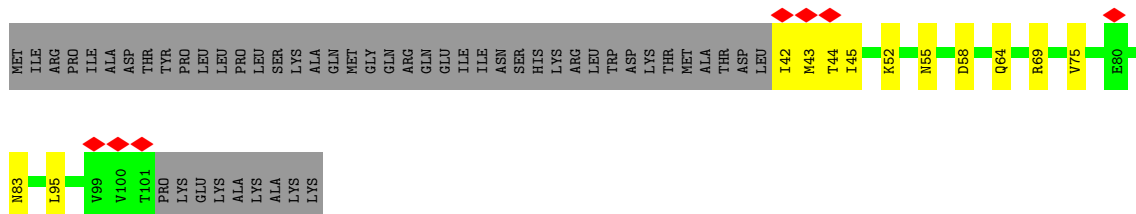
- Molecule 16: proton-translocating NADH-quinone dehydrogenase subunit P



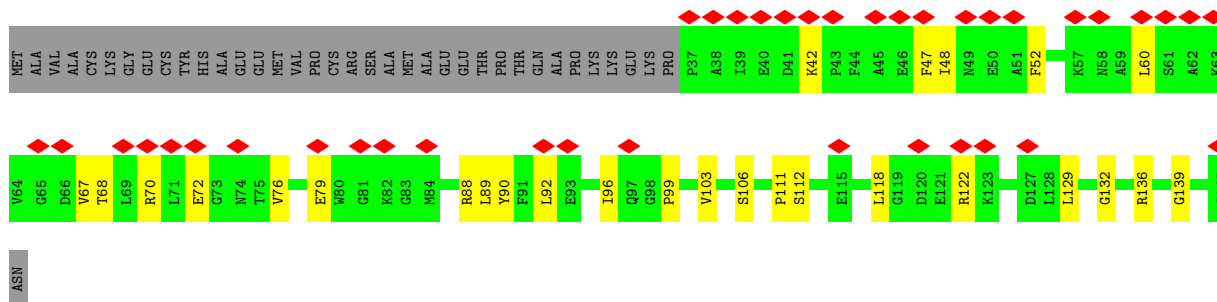
- Molecule 17: proton-translocating NADH-quinone dehydrogenase subunit Q



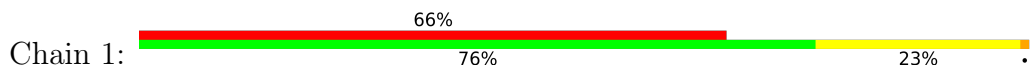
- Molecule 18: Thr0636 protein

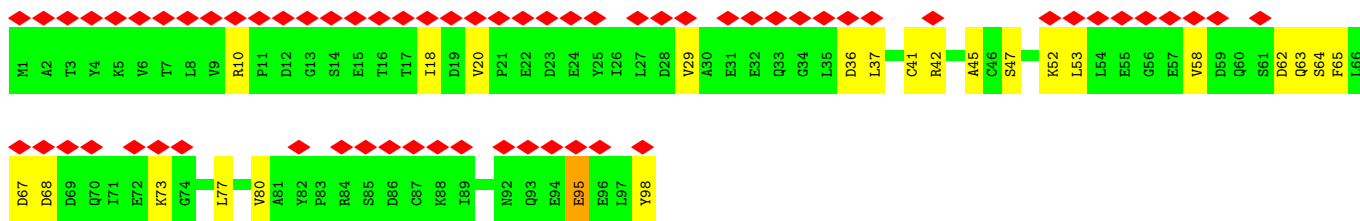


- Molecule 19: Thr0472 protein



- Molecule 20: Ferredoxin-1





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	152003	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60.0	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.417	Depositor
Minimum map value	-0.117	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.007	Depositor
Recommended contour level	0.06	Depositor
Map size (Å)	416.0, 416.0, 416.0	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.04, 1.04, 1.04	Depositor

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: SQD, DGD, SF4, LMG, LHG, FES, BCR

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	0.32	0/2891	0.56	1/3949 (0.0%)
2	B	0.32	0/3810	0.55	0/5198
3	C	0.33	0/1001	0.63	1/1365 (0.1%)
4	D	0.33	0/4004	0.53	0/5464
5	E	0.29	0/785	0.50	0/1067
6	F	0.31	0/5087	0.54	0/6930
7	G	0.30	0/1304	0.49	0/1786
8	H	0.34	0/3260	0.55	0/4417
9	I	0.37	0/1575	0.56	0/2135
10	J	0.30	0/1343	0.53	0/1829
11	K	0.36	0/1630	0.64	2/2218 (0.1%)
12	L	0.30	0/615	0.52	0/842
13	M	0.30	0/901	0.55	0/1222
14	N	0.30	0/1197	0.55	0/1628
15	O	0.31	0/550	0.56	0/748
16	P	0.30	0/330	0.55	0/448
17	Q	0.25	0/342	0.42	0/466
18	S	0.32	0/478	0.56	0/652
19	V	0.30	0/857	0.61	0/1155
20	1	0.28	0/766	0.52	0/1039
All	All	0.32	0/32726	0.55	4/44558 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	53	LEU	CA-CB-CG	7.31	132.10	115.30
11	K	72	LEU	CA-CB-CG	6.95	131.29	115.30
11	K	40	LEU	CA-CB-CG	5.08	126.98	115.30
1	A	181	LEU	CA-CB-CG	5.04	126.90	115.30

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	2821	0	2958	43	0
2	B	3724	0	3861	57	0
3	C	971	0	1001	23	0
4	D	3897	0	4046	74	0
5	E	775	0	825	8	0
6	F	4945	0	4997	65	0
7	G	1278	0	1360	23	0
8	H	3177	0	3157	62	0
9	I	1537	0	1505	30	0
10	J	1307	0	1264	26	0
11	K	1590	0	1621	42	0
12	L	595	0	608	4	0
13	M	885	0	865	18	0
14	N	1165	0	1176	28	0
15	O	538	0	549	3	0
16	P	321	0	317	5	0
17	Q	333	0	333	1	0
18	S	469	0	473	7	0
19	V	838	0	845	16	0
20	1	756	0	714	17	0
21	A	124	0	170	3	0
22	B	46	0	62	0	0
22	C	43	0	59	3	0
22	F	129	0	177	0	0
22	I	44	0	61	0	0
23	C	40	0	44	2	0
23	D	54	0	78	4	0
23	L	38	0	40	2	0
24	D	80	0	112	7	0
25	F	87	0	114	4	0
26	I	16	0	0	1	0
26	K	8	0	0	0	0
27	1	4	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	32635	0	33392	471	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 (471) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:22:ILE:O	2:B:25:LEU:HB3	1.82	0.80
8:H:130:PRO:O	8:H:133:TYR:HB2	1.86	0.74
10:J:62:ARG:O	10:J:80:HIS:HB3	1.94	0.68
8:H:326:GLU:HA	8:H:342:LEU:O	1.96	0.66
3:C:73:ARG:HD2	3:C:132:SER:HA	1.78	0.65
11:K:45:PRO:HD3	11:K:72:LEU:HB2	1.80	0.64
10:J:83:LYS:HD3	10:J:92:PRO:HG2	1.80	0.64
1:A:16:GLN:HE22	1:A:22:HIS:HB2	1.63	0.63
1:A:199:GLN:HE21	1:A:208:ASN:H	1.44	0.62
1:A:89:VAL:HG21	11:K:79:ARG:HD2	1.82	0.62
4:D:176:SER:HB2	4:D:221:ALA:HA	1.82	0.61
8:H:239:HIS:HD2	10:J:90:ARG:HH11	1.48	0.61
4:D:232:HIS:HD2	4:D:311:ILE:HD13	1.66	0.60
10:J:140:ARG:NH1	10:J:147:TRP:O	2.35	0.60
14:N:23:VAL:H	14:N:133:GLY:HA2	1.66	0.60
8:H:65:PRO:O	8:H:69:ARG:NH1	2.34	0.60
8:H:173:VAL:HG13	8:H:280:LEU:HD22	1.84	0.60
1:A:238:GLU:HG3	8:H:20:PRO:HD2	1.84	0.60
2:B:281:LEU:O	2:B:285:SER:HB2	2.01	0.60
11:K:39:ARG:NH1	11:K:110:TYR:OH	2.35	0.60
4:D:494:GLN:O	4:D:498:ARG:HB2	2.02	0.59
24:D:602:BCR:H23C	16:P:11:LEU:HD13	1.83	0.59
6:F:84:ALA:O	6:F:143:ASN:ND2	2.36	0.59
11:K:13:ILE:HG13	14:N:90:ASN:HD22	1.67	0.59
1:A:98:LEU:HB3	1:A:148:MET:HG2	1.84	0.59
2:B:35:GLN:HB2	2:B:39:ALA:HB2	1.84	0.59
6:F:108:MET:HG2	6:F:128:LEU:HD13	1.84	0.59
13:M:11:HIS:HB2	13:M:32:ASN:HB3	1.84	0.59
2:B:75:ILE:HD11	2:B:130:GLN:HE21	1.67	0.58
4:D:244:ALA:HB2	4:D:351:GLY:HA3	1.84	0.58
8:H:326:GLU:HB3	8:H:343:ILE:HG23	1.86	0.58
4:D:375:ILE:HG13	4:D:459:ALA:HB2	1.85	0.58
2:B:178:LEU:HB3	5:E:41:VAL:HG11	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:61:GLU:OE1	11:K:100:ARG:NH1	2.38	0.57
9:I:73:CYS:HA	26:I:202:SF4:S1	2.44	0.57
2:B:126:ILE:HD11	2:B:139:LEU:HA	1.87	0.57
4:D:21:ILE:O	4:D:114:ARG:NH1	2.37	0.57
6:F:238:VAL:HG13	6:F:243:GLN:HB2	1.87	0.57
9:I:163:LEU:HB3	9:I:167:VAL:HB	1.86	0.57
6:F:303:PHE:HA	6:F:438:THR:HG21	1.87	0.57
4:D:219:LEU:HD11	4:D:281:LEU:HD21	1.85	0.56
6:F:553:LEU:HA	6:F:557:LYS:HB2	1.87	0.56
6:F:440:GLY:HA3	6:F:543:ILE:HG13	1.86	0.56
19:V:118:LEU:HD11	19:V:132:GLY:HA3	1.87	0.56
6:F:189:LEU:HD12	6:F:236:GLY:HA3	1.86	0.56
9:I:71:ARG:NH1	20:1:64:SER:O	2.38	0.56
2:B:80:SER:OG	2:B:261:ARG:NH2	2.39	0.56
10:J:41:VAL:HG11	10:J:49:VAL:HG11	1.86	0.56
11:K:36:ASP:O	11:K:40:LEU:HB2	2.06	0.56
20:1:63:GLN:HB2	20:1:77:LEU:HD12	1.88	0.56
11:K:188:HIS:NE2	13:M:26:THR:O	2.39	0.56
6:F:90:ASP:H	6:F:93:ALA:HB3	1.70	0.55
6:F:99:ILE:HD11	6:F:347:MET:HG2	1.87	0.55
6:F:370:VAL:HG12	6:F:371:VAL:HG13	1.88	0.55
1:A:188:ASN:OD1	1:A:363:LYS:NZ	2.36	0.55
4:D:227:PRO:HB2	4:D:311:ILE:HG23	1.88	0.55
4:D:251:ALA:O	4:D:256:LYS:NZ	2.39	0.55
8:H:191:GLU:OE1	8:H:270:ARG:NH2	2.39	0.55
9:I:65:ALA:HB2	9:I:93:LEU:HB3	1.88	0.55
11:K:133:ARG:NH1	15:O:55:PRO:O	2.39	0.55
4:D:228:ILE:HG22	4:D:230:PRO:HD2	1.89	0.55
14:N:37:LEU:HD21	14:N:99:VAL:HG21	1.86	0.55
9:I:143:ARG:NH1	14:N:52:LEU:O	2.38	0.55
6:F:213:THR:O	6:F:217:ASN:ND2	2.39	0.55
10:J:43:ARG:NH1	10:J:104:ASP:O	2.39	0.55
4:D:109:VAL:HA	16:P:41:GLY:HA3	1.87	0.55
6:F:250:LEU:HD11	6:F:270:VAL:HG21	1.88	0.55
24:D:603:BCR:H15C	6:F:187:PHE:HE2	1.72	0.55
23:L:101:SQD:H251	23:L:101:SQD:H81	1.89	0.55
1:A:350:PRO:HB3	22:C:202:LHG:H151	1.89	0.54
4:D:268:ASP:O	4:D:498:ARG:NH2	2.40	0.54
6:F:530:LEU:HG	6:F:532:GLU:H	1.72	0.54
10:J:22:GLN:OE1	10:J:23:ASN:ND2	2.40	0.54
1:A:155:ASN:ND2	1:A:248:GLU:OE2	2.39	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:297:TYR:HB2	4:D:433:TYR:HB3	1.90	0.54
8:H:156:ASN:HA	9:I:53:ARG:HH22	1.73	0.54
11:K:163:ARG:NH1	14:N:26:GLU:O	2.41	0.54
4:D:140:PHE:HE1	4:D:177:SER:HB3	1.72	0.54
11:K:79:ARG:HH21	11:K:104:GLN:HG2	1.73	0.54
12:L:68:ARG:NH1	14:N:136:ARG:O	2.41	0.54
13:M:17:VAL:HG22	13:M:22:VAL:HG22	1.90	0.54
8:H:226:ARG:NH2	8:H:233:ASP:OD2	2.41	0.53
8:H:188:ASP:OD1	8:H:270:ARG:NH1	2.42	0.53
3:C:55:THR:O	11:K:104:GLN:NE2	2.42	0.53
3:C:75:TYR:OH	5:E:75:ALA:O	2.26	0.53
12:L:25:PRO:HB3	12:L:58:LEU:HD23	1.91	0.53
25:F:701:LMG:H142	25:F:701:LMG:H311	1.91	0.53
8:H:139:GLU:O	8:H:142:TYR:HB2	2.08	0.53
13:M:13:TYR:HB3	13:M:22:VAL:HG11	1.89	0.53
20:1:47:SER:HG	20:1:98:TYR:HH	1.51	0.53
1:A:230:LEU:HD22	1:A:334:ARG:HA	1.90	0.53
4:D:175:GLY:HA3	23:D:601:SQD:H351	1.91	0.53
1:A:120:GLY:HA3	1:A:123:LEU:HD12	1.90	0.53
2:B:234:ASP:OD1	2:B:301:ARG:NH2	2.41	0.53
4:D:378:MET:HB3	4:D:467:ILE:HG21	1.89	0.53
8:H:231:LYS:HG2	8:H:252:VAL:HG21	1.90	0.53
11:K:13:ILE:HG22	13:M:92:TYR:HB2	1.91	0.53
4:D:373:LYS:HB3	25:F:701:LMG:HC8	1.91	0.53
8:H:69:ARG:NH2	11:K:148:CYS:SG	2.81	0.53
2:B:68:ILE:HD11	2:B:72:GLY:HA2	1.90	0.52
24:D:603:BCR:H271	17:Q:28:ILE:HD12	1.92	0.52
1:A:33:PRO:HB3	21:A:401:DGD:HG2	1.90	0.52
10:J:127:MET:HB3	10:J:152:LEU:HB2	1.90	0.52
2:B:226:VAL:HG21	2:B:284:LEU:HG	1.91	0.52
8:H:157:ASN:HB3	8:H:160:ARG:HH21	1.74	0.52
6:F:553:LEU:HB3	6:F:560:PRO:HG2	1.92	0.52
13:M:2:LEU:HB2	13:M:24:PRO:HG3	1.91	0.52
24:D:603:BCR:H313	6:F:238:VAL:HG21	1.92	0.52
6:F:97:LEU:HD23	6:F:136:LEU:HD22	1.91	0.52
9:I:81:ASP:N	9:I:81:ASP:OD1	2.42	0.52
11:K:170:HIS:ND1	11:K:172:ASN:OD1	2.43	0.52
4:D:251:ALA:HA	4:D:255:LEU:HG	1.90	0.52
18:S:42:ILE:HG23	18:S:43:MET:HG2	1.92	0.52
19:V:96:ILE:HD11	19:V:129:LEU:HD11	1.92	0.52
6:F:307:THR:HB	25:F:703:LMG:H322	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:42:PRO:HG2	10:J:119:TRP:HZ2	1.75	0.52
2:B:433:VAL:O	4:D:112:LYS:NZ	2.43	0.52
8:H:102:ARG:NH2	8:H:163:GLY:O	2.42	0.51
1:A:87:GLU:HB3	3:C:45:PRO:HD2	1.91	0.51
2:B:237:GLU:OE1	2:B:301:ARG:NH1	2.43	0.51
14:N:61:GLN:H	14:N:82:PRO:HB3	1.75	0.51
2:B:387:PRO:HB3	4:D:141:LEU:HG	1.91	0.51
2:B:194:LEU:HD22	2:B:266:ALA:HB2	1.90	0.51
10:J:140:ARG:HB2	10:J:145:GLU:HA	1.92	0.51
4:D:215:TYR:O	4:D:219:LEU:HB2	2.10	0.51
5:E:88:ARG:NH2	5:E:95:LYS:O	2.43	0.51
6:F:566:ALA:O	6:F:570:GLN:NE2	2.44	0.51
8:H:166:ALA:HB2	18:S:83:ASN:HB2	1.93	0.51
8:H:58:ARG:HH22	11:K:126:SER:HB3	1.75	0.51
19:V:88:ARG:HB2	19:V:103:VAL:HG22	1.91	0.51
1:A:56:SER:HG	1:A:330:TRP:HE1	1.59	0.51
2:B:177:PHE:HB2	2:B:218:GLY:HA3	1.93	0.51
4:D:262:LEU:HD23	4:D:266:ASN:HD22	1.75	0.51
6:F:100:VAL:HG22	6:F:268:THR:HG23	1.91	0.51
11:K:114:MET:HG3	11:K:145:LEU:HD23	1.92	0.51
11:K:170:HIS:HA	14:N:35:ARG:HD2	1.93	0.51
6:F:567:LYS:HA	6:F:570:GLN:HE21	1.75	0.51
4:D:53:PHE:O	16:P:8:LYS:NZ	2.43	0.51
1:A:295:VAL:HB	1:A:302:LEU:HD22	1.93	0.51
8:H:62:MET:HB2	9:I:74:PRO:HA	1.94	0.50
1:A:72:GLY:O	1:A:75:ALA:HB3	2.11	0.50
2:B:11:ASN:HB2	2:B:69:SER:HB2	1.93	0.50
4:D:147:LEU:HD22	4:D:170:ILE:HG13	1.92	0.50
4:D:202:ALA:O	4:D:498:ARG:NH1	2.44	0.50
9:I:142:GLY:O	18:S:69:ARG:NH1	2.44	0.50
10:J:155:ASP:OD1	10:J:155:ASP:N	2.42	0.50
1:A:246:GLN:O	11:K:80:GLN:NE2	2.45	0.50
8:H:161:ILE:HB	8:H:316:LEU:HG	1.94	0.50
9:I:86:LYS:HG3	20:I:95:GLU:OE2	2.11	0.50
6:F:338:ALA:HB1	6:F:341:ALA:HB3	1.93	0.50
6:F:432:TRP:HA	6:F:435:THR:HG22	1.92	0.50
9:I:68:VAL:HG21	20:I:45:ALA:HB1	1.92	0.50
10:J:70:GLY:O	10:J:102:ARG:NH2	2.43	0.50
10:J:71:PRO:HB3	10:J:154:LYS:HB2	1.93	0.50
2:B:219:ILE:HG12	2:B:258:LEU:HD23	1.94	0.50
10:J:81:LEU:HD21	10:J:96:ILE:HD12	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:152:PRO:HA	11:K:155:ILE:HD12	1.93	0.50
19:V:136:ARG:O	19:V:136:ARG:NH1	2.44	0.50
8:H:27:ARG:HB2	8:H:43:VAL:HB	1.92	0.50
15:O:21:GLU:HG3	15:O:65:GLN:HE22	1.76	0.50
4:D:135:ASP:HB3	4:D:138:VAL:HB	1.94	0.50
8:H:72:TYR:CG	11:K:52:CYS:HB3	2.46	0.50
8:H:234:LEU:HB2	8:H:332:GLU:HB2	1.93	0.50
11:K:168:ASN:O	14:N:38:ARG:NH1	2.41	0.50
20:1:68:ASP:N	20:1:68:ASP:OD1	2.44	0.50
1:A:346:LYS:NZ	3:C:129:LEU:O	2.42	0.50
8:H:58:ARG:NH1	11:K:127:ASP:OD2	2.44	0.50
1:A:157:TYR:HE1	8:H:13:ILE:HG12	1.77	0.49
4:D:7:LEU:HD11	4:D:84:ALA:HB2	1.94	0.49
6:F:599:ARG:NH2	6:F:603:GLU:OE2	2.43	0.49
8:H:112:ALA:O	8:H:138:ARG:NH1	2.44	0.49
20:1:65:PHE:HB3	20:1:77:LEU:HD11	1.94	0.49
8:H:84:ASN:HD21	8:H:240:TYR:HE1	1.60	0.49
20:1:52:LYS:NZ	20:1:73:LYS:O	2.46	0.49
2:B:293:ALA:HA	2:B:296:GLN:HG2	1.95	0.49
8:H:61:ILE:HG21	8:H:318:PRO:HB3	1.94	0.49
9:I:62:LYS:HB2	9:I:117:CYS:HB3	1.94	0.49
8:H:318:PRO:HD2	20:1:64:SER:HB3	1.95	0.49
2:B:226:VAL:HB	2:B:285:SER:HA	1.95	0.49
8:H:142:TYR:HB3	8:H:152:ARG:HG2	1.94	0.49
2:B:14:THR:HG23	2:B:76:SER:HB2	1.95	0.48
7:G:93:ARG:HA	7:G:96:ARG:HD3	1.95	0.48
7:G:113:LYS:NZ	7:G:117:GLN:OE1	2.46	0.48
13:M:8:ARG:HH12	13:M:100:ASN:HD21	1.61	0.48
18:S:55:ASN:HB3	18:S:58:ASP:HB2	1.95	0.48
1:A:342:ASP:OD1	1:A:342:ASP:N	2.44	0.48
2:B:305:TYR:HA	2:B:308:ILE:HD12	1.95	0.48
4:D:484:LEU:HD13	24:D:602:BCR:H391	1.95	0.48
6:F:450:TYR:O	6:F:454:PHE:HB2	2.13	0.48
1:A:93:ASN:HD21	8:H:3:LYS:HG3	1.78	0.48
21:A:402:DGD:HA71	21:A:402:DGD:HB81	1.94	0.48
2:B:162:ALA:HB1	2:B:235:VAL:HA	1.94	0.48
4:D:408:SER:O	4:D:416:ARG:NH1	2.46	0.48
3:C:23:LEU:HB2	23:C:201:SQD:H132	1.94	0.48
7:G:11:THR:HG23	7:G:52:LEU:HD11	1.95	0.48
6:F:352:PHE:HB2	6:F:401:GLY:HA2	1.96	0.48
7:G:2:ASP:N	7:G:2:ASP:OD1	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:421:LEU:HB3	6:F:432:TRP:HE1	1.79	0.48
8:H:326:GLU:OE1	10:J:97:LYS:NZ	2.46	0.48
8:H:359:ASP:OD1	8:H:391:SER:OG	2.29	0.48
1:A:53:ARG:NH1	1:A:79:ASP:OD2	2.47	0.48
6:F:557:LYS:HD3	6:F:557:LYS:HA	1.73	0.48
6:F:260:ILE:HG23	6:F:264:ILE:HD12	1.95	0.48
10:J:15:VAL:HG11	10:J:94:VAL:HG21	1.95	0.48
4:D:218:PHE:HB3	4:D:266:ASN:HD21	1.79	0.48
13:M:41:TRP:HZ3	13:M:49:VAL:HG21	1.79	0.48
6:F:78:ALA:HB3	6:F:81:LEU:HB2	1.95	0.47
18:S:75:VAL:HG21	18:S:95:LEU:HD11	1.94	0.47
3:C:72:VAL:HG12	7:G:167:ARG:HE	1.79	0.47
9:I:35:ARG:NH1	9:I:36:PRO:O	2.48	0.47
1:A:137:ALA:HB1	7:G:63:ILE:HB	1.97	0.47
1:A:160:LEU:HA	1:A:163:LEU:HD12	1.96	0.47
2:B:69:SER:OG	2:B:70:PHE:N	2.47	0.47
4:D:168:LYS:NZ	6:F:610:ASP:OD1	2.42	0.47
6:F:410:PRO:HA	6:F:414:PHE:HE1	1.80	0.47
3:C:125:ARG:HA	22:C:202:LHG:HC41	1.97	0.47
19:V:60:LEU:HB3	19:V:67:VAL:HG11	1.95	0.47
19:V:70:ARG:NH2	19:V:72:GLU:OE1	2.48	0.47
10:J:14:PRO:HA	10:J:18:LEU:HB2	1.96	0.47
10:J:25:SER:O	10:J:45:ARG:NH1	2.48	0.47
6:F:107:VAL:HG21	6:F:263:LEU:HB2	1.95	0.47
13:M:4:LYS:HG3	13:M:6:THR:HG23	1.97	0.47
14:N:50:PRO:HG2	14:N:107:ARG:HH11	1.79	0.47
23:D:601:SQD:H81	6:F:617:GLY:HA3	1.97	0.47
6:F:55:SER:HB2	6:F:97:LEU:HB3	1.96	0.47
6:F:583:ASP:O	6:F:587:GLU:N	2.48	0.47
14:N:101:TRP:NE1	14:N:131:GLU:OE2	2.40	0.47
2:B:48:ILE:HG23	2:B:92:LEU:HD11	1.97	0.47
2:B:454:SER:OG	2:B:455:PHE:N	2.46	0.47
4:D:94:LEU:HD13	4:D:337:VAL:HG13	1.97	0.47
6:F:258:THR:HG23	6:F:316:LYS:HD3	1.96	0.47
11:K:180:THR:OG1	13:M:37:ASN:ND2	2.44	0.47
3:C:64:GLY:HA3	8:H:12:VAL:HB	1.96	0.47
3:C:81:PHE:O	3:C:85:ASP:HB2	2.15	0.47
4:D:90:PRO:HB3	4:D:484:LEU:HD11	1.97	0.46
6:F:408:VAL:HG23	6:F:545:LEU:HD21	1.96	0.46
14:N:111:GLN:HE22	19:V:106:SER:HB3	1.79	0.46
6:F:455:GLU:HB3	6:F:556:LEU:HD21	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:70:TRP:O	8:H:391:SER:N	2.48	0.46
2:B:150:THR:HG23	2:B:239:ALA:HB2	1.96	0.46
2:B:423:TYR:HB2	4:D:171:LEU:HD21	1.97	0.46
11:K:182:ARG:NH2	13:M:34:ASP:O	2.49	0.46
14:N:13:LEU:HD22	14:N:37:LEU:HD11	1.97	0.46
1:A:118:PRO:HD2	1:A:274:VAL:HG21	1.97	0.46
4:D:96:GLY:HA2	4:D:124:TYR:HE1	1.80	0.46
8:H:74:ALA:HB1	8:H:109:ASN:HB3	1.96	0.46
8:H:202:ARG:NH2	9:I:13:GLU:OE2	2.49	0.46
8:H:295:ARG:NH2	8:H:304:TRP:O	2.48	0.46
13:M:12:ILE:HG21	13:M:70:LEU:HD22	1.98	0.46
19:V:112:SER:O	19:V:112:SER:OG	2.33	0.46
3:C:121:VAL:HG22	22:C:202:LHG:H111	1.98	0.46
11:K:114:MET:HA	11:K:145:LEU:HB3	1.97	0.46
1:A:157:TYR:HB2	1:A:243:ALA:HB3	1.98	0.46
2:B:118:THR:HG21	7:G:156:MET:HB2	1.97	0.46
10:J:61:LEU:HA	10:J:81:LEU:HA	1.98	0.46
19:V:48:ILE:HA	19:V:52:PHE:HB3	1.98	0.46
19:V:76:VAL:HB	19:V:89:LEU:HB2	1.98	0.46
4:D:8:THR:OG1	4:D:68:GLU:OE2	2.29	0.46
4:D:431:PRO:HG2	6:F:183:ARG:HD3	1.98	0.46
10:J:36:VAL:HG22	10:J:93:GLU:HB2	1.97	0.46
18:S:44:THR:HG23	18:S:45:ILE:HD12	1.97	0.46
4:D:43:LEU:HD22	16:P:19:ILE:HA	1.98	0.45
8:H:357:PRO:HB3	8:H:391:SER:HB2	1.98	0.45
2:B:434:VAL:HA	4:D:156:ILE:HG12	1.98	0.45
4:D:256:LYS:O	4:D:260:TYR:N	2.43	0.45
7:G:141:SER:OG	7:G:142:ASP:N	2.49	0.45
8:H:215:ALA:HA	8:H:220:LEU:HD12	1.98	0.45
11:K:21:GLU:OE2	14:N:38:ARG:NH2	2.49	0.45
11:K:187:LYS:HD2	13:M:27:GLU:HG3	1.98	0.45
14:N:99:VAL:HG22	14:N:127:LYS:HB2	1.97	0.45
5:E:25:ARG:HH12	7:G:89:PRO:HA	1.81	0.45
8:H:201:VAL:O	8:H:205:GLN:N	2.48	0.45
11:K:130:SER:O	11:K:130:SER:OG	2.34	0.45
4:D:85:ASP:OD2	4:D:264:ARG:NH1	2.44	0.45
4:D:322:ALA:O	4:D:411:TYR:OH	2.29	0.45
4:D:460:GLU:OE1	4:D:462:ARG:NH1	2.45	0.45
6:F:556:LEU:HD23	6:F:556:LEU:HA	1.85	0.45
9:I:68:VAL:HG22	9:I:71:ARG:HH12	1.81	0.45
14:N:139:ARG:NH1	14:N:141:GLU:OE2	2.48	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:306:ILE:HG13	4:D:350:VAL:HG21	1.97	0.45
4:D:439:ARG:HA	4:D:443:TYR:HB2	1.98	0.45
23:D:601:SQD:H352	23:D:601:SQD:H131	1.98	0.45
2:B:242:PRO:HD3	2:B:348:ILE:HD11	1.99	0.45
4:D:211:GLN:HB3	4:D:273:ALA:HB2	1.98	0.45
6:F:52:MET:HB2	6:F:101:THR:HB	1.99	0.45
9:I:58:PHE:HB3	9:I:141:MET:HG3	1.98	0.45
5:E:49:ALA:HB1	5:E:57:ILE:HG23	1.99	0.45
6:F:266:ALA:HB1	6:F:353:LYS:HG3	1.99	0.45
2:B:148:LEU:HD13	7:G:160:GLY:HA3	1.98	0.45
12:L:35:ARG:HG3	12:L:38:VAL:HB	1.98	0.45
19:V:92:LEU:HB2	19:V:99:PRO:HG2	1.98	0.45
1:A:207:TRP:NE1	1:A:281:SER:OG	2.40	0.45
2:B:33:LEU:HD13	3:C:121:VAL:HG12	1.99	0.45
4:D:289:ILE:HG13	4:D:315:GLY:HA3	1.99	0.45
13:M:49:VAL:HG13	13:M:77:LEU:HD21	1.99	0.45
1:A:65:PRO:HA	11:K:69:ARG:HA	1.99	0.45
3:C:46:LYS:HD2	3:C:46:LYS:HA	1.78	0.45
10:J:53:LEU:HD12	10:J:96:ILE:HD11	1.99	0.45
14:N:96:LYS:HE2	14:N:96:LYS:HB2	1.82	0.45
2:B:336:TYR:HA	2:B:339:MET:HG2	1.98	0.44
6:F:302:ALA:HA	6:F:325:SER:HA	1.99	0.44
8:H:26:LEU:HD13	8:H:363:LEU:HD21	1.99	0.44
13:M:37:ASN:O	13:M:93:ASN:ND2	2.49	0.44
1:A:336:ARG:HG3	8:H:203:ARG:HH21	1.82	0.44
2:B:39:ALA:O	2:B:43:THR:OG1	2.28	0.44
2:B:33:LEU:HD21	3:C:122:TYR:HD1	1.83	0.44
3:C:57:GLU:HG2	3:C:62:PRO:HA	1.99	0.44
6:F:489:PRO:HA	6:F:492:VAL:HG12	1.99	0.44
9:I:49:SER:OG	9:I:51:ARG:O	2.34	0.44
19:V:68:THR:HB	19:V:79:GLU:HB3	1.99	0.44
13:M:107:ARG:HA	14:N:80:GLN:HA	2.00	0.44
2:B:220:SER:HA	2:B:223:ILE:HB	1.99	0.44
4:D:333:VAL:HA	4:D:336:MET:HG2	2.00	0.44
7:G:80:LEU:HA	8:H:6:THR:HG21	1.99	0.44
8:H:261:ARG:HE	8:H:384:SER:HB2	1.83	0.44
1:A:82:LYS:HE3	1:A:83:LEU:HG	2.00	0.44
4:D:187:MET:HG3	4:D:201:LEU:HD13	1.99	0.44
4:D:471:LEU:HD12	4:D:474:ILE:HD12	2.00	0.44
6:F:10:LEU:HD22	6:F:14:LEU:HG	1.99	0.44
8:H:244:ASP:OD1	8:H:244:ASP:N	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:49:ALA:HB2	14:N:102:LEU:HB3	1.99	0.44
4:D:256:LYS:HD2	4:D:336:MET:HB2	2.00	0.44
10:J:31:ARG:NH1	10:J:35:GLY:O	2.50	0.44
13:M:42:ASN:N	13:M:42:ASN:OD1	2.50	0.44
3:C:52:ARG:NH1	11:K:103:GLU:OE2	2.48	0.43
6:F:152:GLU:OE2	6:F:183:ARG:NH1	2.51	0.43
9:I:158:ARG:HB3	9:I:162:TYR:HB2	1.99	0.43
14:N:109:SER:OG	14:N:112:GLU:OE2	2.32	0.43
2:B:229:HIS:CD2	2:B:230:GLN:HG3	2.53	0.43
2:B:241:THR:HB	2:B:348:ILE:HD11	1.99	0.43
2:B:248:SER:OG	2:B:340:ASN:ND2	2.51	0.43
8:H:175:LYS:HD2	8:H:175:LYS:HA	1.69	0.43
4:D:30:LYS:HE3	4:D:32:ARG:HH21	1.83	0.43
5:E:46:ILE:HG22	7:G:53:MET:HG3	2.00	0.43
6:F:212:LEU:HD22	6:F:283:VAL:HG13	1.99	0.43
4:D:82:VAL:HG22	4:D:133:VAL:HG12	2.00	0.43
4:D:150:VAL:HG13	4:D:250:LEU:HD11	2.00	0.43
11:K:170:HIS:HB3	11:K:173:GLU:HB2	2.00	0.43
20:1:41:CYS:SG	20:1:42:ARG:N	2.92	0.43
2:B:77:ASP:OD1	2:B:261:ARG:NH2	2.51	0.43
6:F:37:ARG:NH1	6:F:116:ALA:O	2.51	0.43
8:H:194:ILE:HG23	8:H:200:PHE:HB3	2.00	0.43
9:I:138:SER:OG	19:V:139:GLY:O	2.34	0.43
11:K:42:SER:OG	11:K:43:LEU:N	2.51	0.43
11:K:44:TRP:O	11:K:82:ASP:N	2.44	0.43
20:1:62:ASP:HB3	20:1:80:VAL:HB	2.01	0.43
1:A:186:MET:SD	1:A:212:GLN:NE2	2.92	0.43
2:B:258:LEU:O	2:B:262:PHE:HB2	2.18	0.43
3:C:82:VAL:HG21	7:G:73:LEU:HD22	2.01	0.43
6:F:21:ILE:O	6:F:25:GLY:N	2.49	0.43
6:F:191:LEU:HA	6:F:194:VAL:HB	2.01	0.43
23:L:101:SQD:H61	14:N:3:LEU:HD23	2.01	0.43
1:A:86:LYS:NZ	11:K:108:PRO:O	2.52	0.43
2:B:226:VAL:HG13	2:B:227:PRO:HD3	2.01	0.43
4:D:180:ILE:HG12	4:D:221:ALA:HB1	2.01	0.43
4:D:364:GLU:O	4:D:447:ASN:ND2	2.50	0.43
6:F:240:LYS:HD2	6:F:269:MET:SD	2.58	0.43
1:A:206:SER:O	1:A:206:SER:OG	2.35	0.43
6:F:11:ILE:HG22	6:F:136:LEU:HD13	2.01	0.43
6:F:110:TYR:HD2	6:F:259:PRO:HG3	1.84	0.43
8:H:231:LYS:HA	8:H:252:VAL:HG21	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:6:SER:O	11:K:6:SER:OG	2.33	0.43
20:1:10:ARG:NH1	20:1:36:ASP:OD1	2.48	0.43
1:A:20:LEU:HB2	1:A:24:LEU:HD22	2.01	0.43
8:H:83:VAL:HG21	8:H:159:PHE:HB3	2.01	0.43
8:H:25:VAL:H	8:H:389:MET:HG3	1.83	0.42
9:I:118:LEU:HD23	9:I:118:LEU:HA	1.90	0.42
9:I:159:GLU:HG2	9:I:160:PHE:H	1.84	0.42
10:J:152:LEU:HD23	10:J:152:LEU:HA	1.87	0.42
2:B:320:VAL:HG13	2:B:405:ALA:HB3	2.00	0.42
3:C:82:VAL:HG22	7:G:69:ALA:HB1	2.01	0.42
4:D:34:ILE:HD13	4:D:114:ARG:HG2	2.01	0.42
1:A:357:LEU:HD21	3:C:113:ILE:HG21	2.01	0.42
9:I:52:PHE:CE1	11:K:151:ARG:HD2	2.54	0.42
19:V:42:LYS:HB2	19:V:47:PHE:HB2	1.99	0.42
1:A:177:ALA:O	1:A:181:LEU:HB2	2.20	0.42
4:D:108:PRO:HB3	16:P:32:TYR:CG	2.54	0.42
11:K:32:ASN:HD21	11:K:170:HIS:HA	1.85	0.42
14:N:99:VAL:HA	14:N:127:LYS:O	2.18	0.42
2:B:396:ILE:HD13	2:B:396:ILE:HA	1.90	0.42
4:D:88:SER:O	4:D:92:ILE:N	2.48	0.42
7:G:29:LEU:HD23	7:G:29:LEU:HA	1.91	0.42
8:H:66:TYR:HA	11:K:123:MET:HE1	2.01	0.42
14:N:102:LEU:HD12	14:N:130:VAL:HG22	2.02	0.42
1:A:229:ARG:HH21	1:A:265:LEU:HD22	1.84	0.42
14:N:113:PHE:HB3	14:N:143:LEU:HD22	2.01	0.42
1:A:172:TYR:OH	1:A:340:LEU:O	2.31	0.42
8:H:226:ARG:NH1	8:H:268:GLU:OE2	2.53	0.42
2:B:105:THR:O	2:B:155:ARG:NH1	2.53	0.42
2:B:110:GLY:O	2:B:114:THR:OG1	2.35	0.42
5:E:50:ASN:OD1	7:G:54:ASN:ND2	2.46	0.42
2:B:93:GLY:HA3	2:B:341:LEU:HD13	2.02	0.42
4:D:147:LEU:HD23	4:D:147:LEU:HA	1.93	0.42
4:D:161:LYS:HB3	4:D:161:LYS:HE2	1.85	0.42
6:F:127:TYR:HB3	6:F:161:LEU:HD11	2.01	0.42
6:F:311:THR:HG22	25:F:703:LMG:HC92	2.02	0.42
7:G:51:ILE:HD13	7:G:51:ILE:HA	1.89	0.42
19:V:90:TYR:HD1	19:V:90:TYR:HA	1.74	0.42
20:1:37:LEU:HD23	20:1:37:LEU:HA	1.93	0.42
4:D:10:ILE:HD13	4:D:49:ILE:HD13	2.02	0.42
6:F:210:ASP:OD1	6:F:210:ASP:N	2.52	0.42
9:I:45:LYS:H	9:I:154:VAL:HG13	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:80:VAL:HB	9:I:96:TYR:HD1	1.85	0.42
2:B:293:ALA:HB2	2:B:305:TYR:HB2	2.02	0.41
8:H:190:TYR:O	8:H:262:TYR:OH	2.32	0.41
14:N:3:LEU:HD12	14:N:3:LEU:HA	1.88	0.41
1:A:130:MET:HG3	7:G:56:ASP:HB3	2.02	0.41
2:B:126:ILE:HG23	2:B:258:LEU:HD13	2.01	0.41
2:B:210:VAL:HG21	7:G:114:MET:HG2	2.02	0.41
4:D:228:ILE:HG21	4:D:284:LEU:HD13	2.01	0.41
2:B:139:LEU:HD13	2:B:258:LEU:HD22	2.01	0.41
2:B:415:LEU:HD21	4:D:181:LEU:HD23	2.02	0.41
3:C:44:ARG:HA	3:C:45:PRO:HD3	1.82	0.41
23:C:201:SQD:H92	7:G:8:GLN:HG3	2.02	0.41
4:D:24:ILE:O	4:D:114:ARG:NH2	2.52	0.41
10:J:157:ILE:HG21	15:O:33:LEU:HD11	2.01	0.41
4:D:71:ASP:OD1	4:D:79:ARG:NH1	2.54	0.41
4:D:290:ILE:HG21	24:D:603:BCR:H23C	2.03	0.41
20:1:67:ASP:OD1	20:1:67:ASP:N	2.41	0.41
6:F:452:MET:HA	6:F:459:ARG:HH12	1.85	0.41
8:H:168:LEU:HD13	8:H:172:TRP:HB3	2.02	0.41
12:L:29:TYR:CZ	12:L:58:LEU:HD22	2.55	0.41
20:1:20:VAL:HG22	20:1:29:VAL:HG11	2.01	0.41
1:A:286:LEU:HD11	1:A:309:LEU:HD22	2.02	0.41
2:B:426:ILE:HD12	2:B:426:ILE:HA	1.88	0.41
6:F:161:LEU:HD22	6:F:260:ILE:HG13	2.02	0.41
8:H:89:LEU:HD11	8:H:325:GLY:HA3	2.01	0.41
19:V:103:VAL:HG21	19:V:111:PRO:HB3	2.03	0.41
21:A:402:DGD:HA21	21:A:402:DGD:HG11	1.85	0.41
24:D:602:BCR:H17C	24:D:602:BCR:H20C	1.84	0.41
1:A:110:VAL:HG22	1:A:263:VAL:HG12	2.03	0.41
4:D:24:ILE:HB	4:D:114:ARG:HH12	1.86	0.41
4:D:439:ARG:HH11	6:F:173:GLU:HG2	1.86	0.41
9:I:46:LEU:HD11	11:K:64:ARG:HH21	1.86	0.41
9:I:136:TYR:HB3	9:I:141:MET:HB3	2.02	0.41
9:I:159:GLU:OE1	9:I:159:GLU:N	2.53	0.41
14:N:116:LEU:HD22	14:N:128:VAL:HG11	2.03	0.41
2:B:15:ILE:HD12	2:B:15:ILE:HG23	1.91	0.41
2:B:420:ILE:HG12	23:D:601:SQD:H281	2.03	0.41
7:G:50:TYR:HB3	7:G:55:ALA:HB3	2.03	0.41
8:H:338:LEU:HD13	8:H:358:PRO:HD3	2.03	0.41
9:I:43:TYR:OH	14:N:26:GLU:OE1	2.34	0.41
18:S:52:LYS:HB3	18:S:64:GLN:HG2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:54:LYS:HD2	1:A:64:GLY:HA3	2.03	0.40
5:E:8:ILE:HG12	7:G:112:THR:HG23	2.03	0.40
2:B:25:LEU:HD12	2:B:117:LEU:HB3	2.01	0.40
6:F:92:LEU:HD13	6:F:343:LEU:HD13	2.03	0.40
9:I:95:HIS:CD2	14:N:66:ARG:HD2	2.56	0.40
11:K:197:LEU:HD12	11:K:197:LEU:HA	1.93	0.40
13:M:3:LEU:HB2	13:M:67:GLU:HG2	2.03	0.40
1:A:87:GLU:HA	3:C:44:ARG:HG3	2.03	0.40
2:B:349:LEU:HD12	2:B:349:LEU:HA	1.94	0.40
6:F:344:PHE:HZ	6:F:501:GLY:HA2	1.86	0.40
8:H:161:ILE:HD13	8:H:161:ILE:HA	1.93	0.40
8:H:366:LEU:HA	8:H:369:LEU:HB2	2.02	0.40
10:J:59:ASN:OD1	10:J:59:ASN:N	2.54	0.40
3:C:79:LEU:HD11	7:G:161:ALA:HB1	2.04	0.40
4:D:484:LEU:HG	4:D:488:TYR:HE2	1.87	0.40
8:H:351:TRP:HZ2	10:J:70:GLY:H	1.68	0.40
11:K:189:LYS:HD2	11:K:189:LYS:HA	1.89	0.40
20:I:18:ILE:HD12	20:I:29:VAL:HG13	2.02	0.40
1:A:62:ARG:HH22	11:K:68:ASP:HB2	1.85	0.40
4:D:168:LYS:HE3	6:F:613:VAL:HG11	2.02	0.40
4:D:251:ALA:HB3	4:D:347:PHE:CE2	2.57	0.40
4:D:287:VAL:O	4:D:291:TYR:CB	2.70	0.40
4:D:358:HIS:HD2	4:D:454:GLU:HG2	1.86	0.40
6:F:221:LEU:HD12	6:F:221:LEU:HA	1.92	0.40
6:F:582:PHE:O	6:F:585:LEU:HB3	2.21	0.40
8:H:27:ARG:O	8:H:42:PRO:HA	2.20	0.40
9:I:65:ALA:HB3	9:I:91:LYS:HB3	2.02	0.40
20:I:53:LEU:HD11	20:I:58:VAL:HG12	2.01	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [\(i\)](#)

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

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	362/372 (97%)	329 (91%)	33 (9%)	0	100	100
2	B	490/515 (95%)	465 (95%)	25 (5%)	0	100	100
3	C	118/132 (89%)	106 (90%)	12 (10%)	0	100	100
4	D	502/529 (95%)	474 (94%)	28 (6%)	0	100	100
5	E	98/101 (97%)	94 (96%)	4 (4%)	0	100	100
6	F	635/656 (97%)	574 (90%)	61 (10%)	0	100	100
7	G	167/200 (84%)	159 (95%)	8 (5%)	0	100	100
8	H	391/394 (99%)	342 (88%)	49 (12%)	0	100	100
9	I	190/196 (97%)	166 (87%)	24 (13%)	0	100	100
10	J	158/168 (94%)	135 (85%)	23 (15%)	0	100	100
11	K	203/237 (86%)	184 (91%)	18 (9%)	1 (0%)	29	68
12	L	72/76 (95%)	65 (90%)	7 (10%)	0	100	100
13	M	109/111 (98%)	93 (85%)	16 (15%)	0	100	100
14	N	146/150 (97%)	132 (90%)	14 (10%)	0	100	100
15	O	66/70 (94%)	61 (92%)	5 (8%)	0	100	100
16	P	39/44 (89%)	36 (92%)	3 (8%)	0	100	100
17	Q	42/45 (93%)	42 (100%)	0	0	100	100
18	S	58/110 (53%)	54 (93%)	4 (7%)	0	100	100
19	V	107/146 (73%)	86 (80%)	21 (20%)	0	100	100
20	1	96/98 (98%)	89 (93%)	7 (7%)	0	100	100
All	All	4049/4350 (93%)	3686 (91%)	362 (9%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
11	K	149	PRO

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	297/302 (98%)	297 (100%)	0	100	100
2	B	395/413 (96%)	395 (100%)	0	100	100
3	C	99/109 (91%)	99 (100%)	0	100	100
4	D	404/424 (95%)	404 (100%)	0	100	100
5	E	81/82 (99%)	81 (100%)	0	100	100
6	F	513/527 (97%)	512 (100%)	1 (0%)	93	98
7	G	137/166 (82%)	137 (100%)	0	100	100
8	H	337/338 (100%)	333 (99%)	4 (1%)	71	90
9	I	168/172 (98%)	167 (99%)	1 (1%)	86	95
10	J	141/148 (95%)	140 (99%)	1 (1%)	84	94
11	K	174/196 (89%)	173 (99%)	1 (1%)	86	95
12	L	61/63 (97%)	61 (100%)	0	100	100
13	M	96/96 (100%)	96 (100%)	0	100	100
14	N	119/120 (99%)	119 (100%)	0	100	100
15	O	57/59 (97%)	57 (100%)	0	100	100
16	P	35/37 (95%)	35 (100%)	0	100	100
17	Q	31/32 (97%)	31 (100%)	0	100	100
18	S	53/97 (55%)	53 (100%)	0	100	100
19	V	87/118 (74%)	86 (99%)	1 (1%)	73	90
20	1	86/86 (100%)	85 (99%)	1 (1%)	71	90
All	All	3371/3585 (94%)	3361 (100%)	10 (0%)	92	97

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	F	218	THR
8	H	25	VAL
8	H	129	THR
8	H	226	ARG
8	H	394	ARG
9	I	192	LYS
10	J	17	ARG
11	K	52	CYS
19	V	122	ARG
20	1	95	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (36) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	16	GLN
1	A	93	ASN
1	A	199	GLN
1	A	208	ASN
2	B	130	GLN
2	B	191	HIS
2	B	296	GLN
2	B	340	ASN
2	B	404	GLN
4	D	134	GLN
4	D	232	HIS
4	D	266	ASN
4	D	274	HIS
4	D	358	HIS
5	E	2	GLN
6	F	217	ASN
6	F	265	HIS
6	F	349	HIS
6	F	570	GLN
6	F	600	GLN
8	H	48	HIS
8	H	239	HIS
9	I	6	GLN
9	I	189	ASN
11	K	32	ASN
11	K	200	GLN
12	L	70	GLN
13	M	9	HIS
14	N	90	ASN
14	N	111	GLN
14	N	121	GLN
18	S	91	GLN
19	V	49	ASN
19	V	86	GLN
19	V	135	GLN
20	1	70	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

19 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
22	LHG	I	201	-	43,43,48	0.94	4 (9%)	46,49,54	1.08	2 (4%)
22	LHG	F	702	-	48,48,48	0.90	4 (8%)	51,54,54	1.08	2 (3%)
27	FES	1	101	20	0,4,4	-	-	-	-	-
21	DGD	A	402	-	63,63,67	1.23	6 (9%)	77,77,81	1.18	4 (5%)
24	BCR	D	603	-	41,41,41	5.53	17 (41%)	56,56,56	5.36	33 (58%)
23	SQD	C	201	-	39,40,54	2.18	11 (28%)	48,51,65	6.39	6 (12%)
25	LMG	F	701	-	47,47,55	0.87	2 (4%)	55,55,63	1.41	7 (12%)
25	LMG	F	703	-	40,40,55	0.93	1 (2%)	48,48,63	1.24	4 (8%)
23	SQD	D	601	-	53,54,54	1.90	11 (20%)	62,65,65	5.64	6 (9%)
24	BCR	D	602	-	41,41,41	5.49	17 (41%)	56,56,56	5.54	36 (64%)
23	SQD	L	101	-	37,38,54	2.19	10 (27%)	46,49,65	6.52	9 (19%)
26	SF4	K	301	11	0,12,12	-	-	-	-	-
22	LHG	B	601	-	45,45,48	0.93	4 (8%)	48,51,54	1.09	2 (4%)
22	LHG	C	202	-	42,42,48	0.95	4 (9%)	45,48,54	1.09	2 (4%)
22	LHG	F	704	-	35,35,48	1.04	4 (11%)	38,41,54	1.14	2 (5%)
21	DGD	A	401	-	63,63,67	1.22	5 (7%)	77,77,81	1.16	4 (5%)
26	SF4	I	202	9	0,12,12	-	-	-	-	-
22	LHG	F	705	-	43,43,48	0.95	4 (9%)	46,49,54	1.08	2 (4%)
26	SF4	I	203	9	0,12,12	-	-	-	-	-

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
22	LHG	I	201	-	-	19/48/48/53	-
22	LHG	F	702	-	-	26/53/53/53	-
27	FES	1	101	20	-	-	0/1/1/1
21	DGD	A	402	-	-	15/51/91/95	0/2/2/2
24	BCR	D	603	-	-	15/29/63/63	0/2/2/2
23	SQD	C	201	-	-	15/35/55/69	0/1/1/1
25	LMG	F	701	-	-	23/42/62/70	0/1/1/1
25	LMG	F	703	-	-	14/35/55/70	0/1/1/1
23	SQD	D	601	-	-	25/49/69/69	0/1/1/1
24	BCR	D	602	-	-	16/29/63/63	0/2/2/2
23	SQD	L	101	-	-	22/33/53/69	0/1/1/1
26	SF4	K	301	11	-	-	0/6/5/5
22	LHG	B	601	-	-	23/50/50/53	-
22	LHG	C	202	-	-	23/47/47/53	-
22	LHG	F	704	-	-	19/40/40/53	-
21	DGD	A	401	-	-	24/51/91/95	0/2/2/2
26	SF4	I	202	9	-	-	0/6/5/5
22	LHG	F	705	-	-	23/48/48/53	-
26	SF4	I	203	9	-	-	0/6/5/5

All (104) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	D	602	BCR	C10-C9	14.87	1.55	1.35
24	D	603	BCR	C10-C9	14.76	1.55	1.35
24	D	603	BCR	C14-C13	14.53	1.55	1.35
24	D	603	BCR	C17-C18	14.50	1.55	1.35
24	D	602	BCR	C14-C13	13.85	1.54	1.35
24	D	602	BCR	C17-C18	13.79	1.54	1.35
24	D	602	BCR	C21-C22	13.63	1.53	1.35
24	D	603	BCR	C21-C22	13.58	1.53	1.35
24	D	602	BCR	C26-C25	12.55	1.56	1.34
24	D	603	BCR	C26-C25	12.39	1.55	1.34
24	D	602	BCR	C5-C6	12.05	1.55	1.34
24	D	603	BCR	C5-C6	11.28	1.54	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
23	D	601	SQD	O9-S	7.26	1.66	1.45
23	C	201	SQD	O9-S	7.25	1.66	1.45
23	L	101	SQD	O9-S	7.13	1.66	1.45
23	C	201	SQD	O8-S	5.34	1.66	1.47
23	D	601	SQD	O8-S	5.27	1.66	1.47
23	L	101	SQD	O8-S	5.20	1.66	1.47
24	D	603	BCR	C23-C22	4.37	1.55	1.45
23	C	201	SQD	O5-C5	4.25	1.54	1.44
23	D	601	SQD	O5-C5	4.22	1.54	1.44
23	L	101	SQD	C6-S	-4.17	1.62	1.77
24	D	602	BCR	C23-C22	4.11	1.54	1.45
23	L	101	SQD	O5-C5	4.11	1.54	1.44
23	D	601	SQD	C6-S	-4.10	1.62	1.77
23	C	201	SQD	C6-S	-4.03	1.62	1.77
24	D	603	BCR	C15-C14	4.02	1.55	1.43
24	D	602	BCR	C11-C10	3.96	1.55	1.43
24	D	603	BCR	C11-C10	3.94	1.55	1.43
21	A	401	DGD	O6E-C1E	3.70	1.51	1.41
24	D	602	BCR	C15-C14	3.69	1.54	1.43
21	A	402	DGD	O6D-C1D	3.59	1.51	1.41
21	A	402	DGD	O6E-C1E	3.55	1.50	1.41
24	D	602	BCR	C7-C6	3.53	1.57	1.45
24	D	603	BCR	C16-C17	3.51	1.54	1.43
24	D	603	BCR	C19-C18	3.42	1.53	1.45
24	D	602	BCR	C16-C17	3.38	1.53	1.43
24	D	603	BCR	C20-C21	3.37	1.53	1.43
24	D	603	BCR	C12-C13	3.36	1.53	1.45
21	A	401	DGD	O6D-C1D	3.32	1.50	1.41
24	D	602	BCR	C20-C21	3.28	1.53	1.43
21	A	401	DGD	O2G-C1B	3.26	1.43	1.34
24	D	602	BCR	C19-C18	3.24	1.52	1.45
21	A	402	DGD	O2G-C1B	3.23	1.43	1.34
24	D	602	BCR	C24-C25	3.17	1.56	1.45
24	D	603	BCR	C7-C6	3.17	1.56	1.45
24	D	603	BCR	C24-C25	3.14	1.56	1.45
24	D	602	BCR	C12-C13	3.13	1.52	1.45
23	C	201	SQD	O48-C23	3.11	1.42	1.33
23	L	101	SQD	O48-C23	3.08	1.42	1.33
23	D	601	SQD	O48-C23	2.92	1.41	1.33
23	C	201	SQD	O47-C45	-2.80	1.39	1.46
23	D	601	SQD	O47-C45	-2.78	1.39	1.46
24	D	603	BCR	C8-C9	2.67	1.51	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
23	D	601	SQD	O5-C1	2.64	1.48	1.41
22	C	202	LHG	O7-C5	-2.58	1.40	1.46
22	F	705	LHG	O7-C5	-2.57	1.40	1.46
21	A	402	DGD	O1G-C1A	2.55	1.40	1.33
22	B	601	LHG	O7-C5	-2.55	1.40	1.46
25	F	701	LMG	C4-C5	2.55	1.58	1.53
23	C	201	SQD	O5-C1	2.52	1.48	1.41
22	F	702	LHG	O7-C5	-2.51	1.40	1.46
23	C	201	SQD	O47-C7	2.51	1.41	1.34
22	C	202	LHG	O8-C23	2.50	1.40	1.33
23	L	101	SQD	O47-C7	2.50	1.41	1.34
22	F	705	LHG	O8-C23	2.49	1.40	1.33
25	F	703	LMG	C4-C5	2.48	1.58	1.53
21	A	402	DGD	O1G-C1G	-2.48	1.39	1.45
23	D	601	SQD	O2-C2	2.47	1.48	1.43
22	F	702	LHG	O8-C23	2.47	1.40	1.33
24	D	602	BCR	C8-C9	2.45	1.51	1.45
22	F	704	LHG	O7-C5	-2.45	1.40	1.46
21	A	401	DGD	O1G-C1A	2.45	1.40	1.33
22	I	201	LHG	O7-C5	-2.45	1.40	1.46
21	A	401	DGD	O1G-C1G	-2.45	1.39	1.45
23	D	601	SQD	O47-C7	2.42	1.41	1.34
22	I	201	LHG	O8-C23	2.42	1.40	1.33
22	B	601	LHG	O8-C23	2.41	1.40	1.33
22	F	704	LHG	O8-C23	2.36	1.40	1.33
23	L	101	SQD	O2-C2	2.34	1.48	1.43
23	L	101	SQD	O5-C1	2.33	1.47	1.41
23	L	101	SQD	O47-C45	-2.33	1.40	1.46
23	C	201	SQD	O3-C3	2.30	1.48	1.43
25	F	701	LMG	O6-C1	2.29	1.47	1.41
23	C	201	SQD	O2-C2	2.28	1.48	1.43
23	D	601	SQD	O3-C3	2.27	1.48	1.43
24	D	602	BCR	C30-C25	2.27	1.56	1.53
23	L	101	SQD	O3-C3	2.26	1.48	1.43
22	I	201	LHG	O7-C7	2.23	1.40	1.34
23	C	201	SQD	C3-C2	-2.21	1.46	1.52
23	D	601	SQD	C3-C2	-2.21	1.46	1.52
22	F	704	LHG	O7-C7	2.20	1.40	1.34
22	F	702	LHG	O7-C7	2.19	1.40	1.34
22	B	601	LHG	O8-C6	-2.18	1.40	1.45
22	B	601	LHG	O7-C7	2.17	1.40	1.34
22	F	704	LHG	O8-C6	-2.15	1.40	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	C	202	LHG	O7-C7	2.13	1.40	1.34
22	F	705	LHG	O8-C6	-2.12	1.40	1.45
22	F	705	LHG	O7-C7	2.12	1.40	1.34
22	I	201	LHG	O8-C6	-2.09	1.40	1.45
24	D	603	BCR	C38-C26	2.08	1.54	1.50
22	F	702	LHG	O8-C6	-2.08	1.40	1.45
21	A	402	DGD	O2G-C2G	-2.05	1.41	1.46
22	C	202	LHG	O8-C6	-2.04	1.40	1.45

All (121) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
23	D	601	SQD	O9-S-C6	29.71	142.25	106.94
23	C	201	SQD	O9-S-C6	29.68	142.22	106.94
23	L	101	SQD	O9-S-C6	29.64	142.17	106.94
23	C	201	SQD	O7-S-C6	-28.12	73.52	106.94
23	D	601	SQD	O7-S-C6	-28.00	73.66	106.94
23	L	101	SQD	O7-S-C6	-27.72	73.99	106.94
24	D	603	BCR	C33-C5-C6	-14.33	108.44	124.53
24	D	602	BCR	C33-C5-C6	-14.00	108.80	124.53
24	D	602	BCR	C20-C21-C22	-12.66	109.24	127.31
23	D	601	SQD	O8-S-O7	11.58	139.58	111.27
23	C	201	SQD	O8-S-O7	11.44	139.23	111.27
24	D	603	BCR	C38-C26-C25	-11.34	111.79	124.53
24	D	603	BCR	C15-C14-C13	-11.28	111.22	127.31
23	L	101	SQD	O8-S-O7	11.18	138.59	111.27
24	D	602	BCR	C11-C10-C9	-10.87	111.80	127.31
23	C	201	SQD	O9-S-O7	-10.66	77.07	113.95
23	D	601	SQD	O9-S-O7	-10.62	77.21	113.95
23	L	101	SQD	O9-S-O7	-10.49	77.64	113.95
24	D	602	BCR	C15-C14-C13	-10.48	112.35	127.31
24	D	602	BCR	C36-C18-C17	-10.36	108.41	122.92
24	D	603	BCR	C16-C17-C18	-10.35	112.54	127.31
24	D	602	BCR	C38-C26-C25	-10.35	112.91	124.53
24	D	603	BCR	C11-C10-C9	-10.28	112.64	127.31
24	D	602	BCR	C16-C17-C18	-10.28	112.64	127.31
24	D	602	BCR	C35-C13-C14	-10.02	108.89	122.92
24	D	602	BCR	C37-C22-C21	-9.77	109.24	122.92
24	D	602	BCR	C34-C9-C10	-9.65	109.41	122.92
24	D	603	BCR	C35-C13-C14	-9.53	109.57	122.92
24	D	603	BCR	C36-C18-C17	-9.22	110.01	122.92
24	D	603	BCR	C20-C21-C22	-9.04	114.41	127.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	D	603	BCR	C37-C22-C21	-8.81	110.58	122.92
24	D	603	BCR	C34-C9-C10	-8.37	111.20	122.92
24	D	603	BCR	C23-C22-C21	-7.61	107.27	118.94
24	D	603	BCR	C8-C9-C10	-6.73	108.61	118.94
24	D	602	BCR	C37-C22-C23	-6.58	107.71	118.08
24	D	602	BCR	C12-C13-C14	-6.23	109.39	118.94
24	D	603	BCR	C1-C6-C5	-6.22	113.85	122.61
24	D	603	BCR	C35-C13-C12	-6.18	108.34	118.08
24	D	603	BCR	C19-C18-C17	-6.05	109.66	118.94
24	D	602	BCR	C19-C18-C17	-6.03	109.69	118.94
24	D	603	BCR	C4-C5-C6	-5.93	114.12	122.73
24	D	602	BCR	C8-C9-C10	-5.86	109.94	118.94
24	D	602	BCR	C27-C26-C25	-5.65	114.52	122.73
24	D	603	BCR	C7-C6-C5	-5.58	107.96	121.46
24	D	602	BCR	C36-C18-C19	-5.56	109.32	118.08
24	D	602	BCR	C34-C9-C8	-5.48	109.44	118.08
24	D	602	BCR	C35-C13-C12	-5.05	110.12	118.08
24	D	603	BCR	C12-C13-C14	-4.97	111.32	118.94
24	D	602	BCR	C30-C25-C26	-4.94	115.65	122.61
24	D	602	BCR	C23-C22-C21	-4.88	111.45	118.94
24	D	603	BCR	C24-C25-C26	-4.85	109.72	121.46
24	D	603	BCR	C37-C22-C23	-4.83	110.47	118.08
24	D	603	BCR	C30-C25-C26	-4.72	115.96	122.61
24	D	603	BCR	C36-C18-C19	-4.61	110.81	118.08
24	D	603	BCR	C34-C9-C8	-4.60	110.83	118.08
24	D	602	BCR	C4-C5-C6	-4.56	116.11	122.73
24	D	603	BCR	C27-C26-C25	-4.56	116.11	122.73
24	D	602	BCR	C1-C6-C5	-4.45	116.35	122.61
24	D	602	BCR	C33-C5-C4	-4.40	105.16	113.62
24	D	602	BCR	C7-C8-C9	-4.31	119.73	126.23
22	F	702	LHG	O7-C7-C8	4.27	120.70	111.50
23	D	601	SQD	O47-C7-C8	4.26	120.68	111.50
22	F	704	LHG	O7-C7-C8	4.14	120.43	111.50
22	C	202	LHG	O7-C7-C8	4.08	120.29	111.50
21	A	402	DGD	O2G-C1B-C2B	4.01	120.15	111.50
24	D	602	BCR	C29-C30-C25	3.96	116.58	110.48
22	B	601	LHG	O7-C7-C8	3.94	119.99	111.50
22	I	201	LHG	O7-C7-C8	3.92	119.95	111.50
23	L	101	SQD	O47-C7-C8	3.88	119.87	111.50
22	F	705	LHG	O7-C7-C8	3.88	119.86	111.50
24	D	602	BCR	C24-C25-C26	-3.85	112.13	121.46
24	D	602	BCR	C7-C6-C5	-3.80	112.26	121.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
21	A	401	DGD	O2G-C1B-C2B	3.78	119.66	111.50
24	D	603	BCR	C7-C8-C9	-3.75	120.57	126.23
24	D	602	BCR	C23-C24-C25	-3.52	117.32	127.20
23	C	201	SQD	O47-C7-C8	3.51	119.08	111.50
24	D	603	BCR	C38-C26-C27	-3.15	107.57	113.62
24	D	603	BCR	C29-C30-C25	3.10	115.25	110.48
21	A	402	DGD	C4E-C3E-C2E	3.06	116.16	110.82
21	A	401	DGD	C4D-C3D-C2D	3.06	116.16	110.82
23	L	101	SQD	C4-C3-C2	3.06	116.16	110.82
25	F	701	LMG	O6-C5-C4	2.99	115.13	109.69
24	D	603	BCR	C11-C12-C13	-2.97	118.09	126.42
21	A	402	DGD	O1G-C1A-C2A	2.87	120.90	111.91
25	F	703	LMG	O6-C1-O1	-2.82	103.31	109.97
24	D	602	BCR	C38-C26-C27	-2.79	108.26	113.62
22	F	705	LHG	O8-C23-C24	2.70	120.39	111.91
24	D	602	BCR	C11-C12-C13	-2.64	118.99	126.42
22	F	704	LHG	O8-C23-C24	2.64	120.19	111.91
23	C	201	SQD	O48-C23-C24	2.62	120.12	111.91
22	F	702	LHG	O8-C23-C24	2.61	120.11	111.91
22	C	202	LHG	O8-C23-C24	2.61	120.09	111.91
21	A	401	DGD	O1G-C1A-C2A	2.60	120.08	111.91
23	L	101	SQD	O48-C23-C24	2.58	119.99	111.91
25	F	703	LMG	O3-C3-C2	-2.57	104.40	110.35
22	B	601	LHG	O8-C23-C24	2.54	119.89	111.91
22	I	201	LHG	O8-C23-C24	2.52	119.82	111.91
25	F	703	LMG	O1-C1-C2	-2.50	104.40	108.30
24	D	603	BCR	C2-C1-C6	2.49	114.32	110.48
24	D	603	BCR	C33-C5-C4	-2.47	108.87	113.62
25	F	701	LMG	C1-O6-C5	2.47	118.53	113.69
21	A	401	DGD	O3G-C1D-C2D	2.45	112.13	108.30
25	F	701	LMG	O6-C1-C2	2.44	115.52	110.35
25	F	703	LMG	O1-C7-C8	-2.44	105.01	110.90
25	F	701	LMG	O3-C3-C2	-2.41	104.77	110.35
24	D	602	BCR	C15-C16-C17	-2.41	118.53	123.47
24	D	603	BCR	C23-C24-C25	-2.38	120.52	127.20
25	F	701	LMG	C38-C37-C36	-2.34	102.55	114.42
23	L	101	SQD	C1-O5-C5	-2.34	109.10	113.69
24	D	602	BCR	C1-C6-C7	-2.31	109.25	115.78
23	D	601	SQD	O48-C23-C24	2.27	119.03	111.91
21	A	402	DGD	C3E-C4E-C5E	2.27	114.28	110.24
24	D	603	BCR	C1-C6-C7	-2.26	109.39	115.78
24	D	602	BCR	C28-C27-C26	-2.26	110.05	114.08

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	D	602	BCR	C40-C30-C25	-2.23	106.68	110.30
25	F	701	LMG	O2-C2-C1	-2.23	104.64	110.05
24	D	602	BCR	C2-C1-C6	2.16	113.81	110.48
24	D	602	BCR	C20-C19-C18	-2.16	120.35	126.42
23	L	101	SQD	O6-C1-C2	2.13	111.63	108.30
24	D	603	BCR	C24-C23-C22	-2.10	123.06	126.23
25	F	701	LMG	O7-C10-O9	-2.05	118.74	123.70

There are no chirality outliers.

All (302) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
22	B	601	LHG	C3-O3-P-O5
22	B	601	LHG	C4-O6-P-O3
22	B	601	LHG	C4-O6-P-O4
22	B	601	LHG	C4-O6-P-O5
22	C	202	LHG	O1-C1-C2-O2
22	C	202	LHG	O1-C1-C2-C3
22	C	202	LHG	C1-C2-C3-O3
22	C	202	LHG	O2-C2-C3-O3
22	C	202	LHG	C8-C7-O7-C5
22	F	702	LHG	O1-C1-C2-O2
22	F	702	LHG	O1-C1-C2-C3
22	F	702	LHG	C4-O6-P-O4
22	F	702	LHG	C4-O6-P-O5
22	F	702	LHG	O9-C7-O7-C5
22	F	702	LHG	C8-C7-O7-C5
22	F	704	LHG	C3-O3-P-O5
22	F	704	LHG	O9-C7-O7-C5
22	F	704	LHG	C8-C7-O7-C5
22	F	705	LHG	C3-O3-P-O4
22	F	705	LHG	C3-O3-P-O5
22	F	705	LHG	C5-C4-O6-P
22	I	201	LHG	C1-C2-C3-O3
22	I	201	LHG	C2-C3-O3-P
23	C	201	SQD	C5-C6-S-O7
23	C	201	SQD	C5-C6-S-O8
23	D	601	SQD	C2-C1-O6-C44
23	D	601	SQD	O5-C1-O6-C44
23	D	601	SQD	C8-C7-O47-C45
23	D	601	SQD	C5-C6-S-O7
23	D	601	SQD	C5-C6-S-O8

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Mol	Chain	Res	Type	Atoms
23	L	101	SQD	C45-C44-O6-C1
23	L	101	SQD	C46-C45-O47-C7
23	L	101	SQD	C8-C7-O47-C45
23	L	101	SQD	O5-C5-C6-S
23	L	101	SQD	C5-C6-S-O7
23	L	101	SQD	C5-C6-S-O8
24	D	602	BCR	C5-C6-C7-C8
24	D	602	BCR	C7-C8-C9-C34
24	D	602	BCR	C11-C10-C9-C34
24	D	602	BCR	C11-C12-C13-C35
24	D	602	BCR	C12-C13-C14-C15
24	D	602	BCR	C16-C17-C18-C36
24	D	602	BCR	C36-C18-C19-C20
24	D	602	BCR	C19-C20-C21-C22
24	D	602	BCR	C20-C21-C22-C37
24	D	602	BCR	C23-C24-C25-C26
24	D	603	BCR	C5-C6-C7-C8
24	D	603	BCR	C11-C10-C9-C34
24	D	603	BCR	C11-C12-C13-C35
24	D	603	BCR	C35-C13-C14-C15
24	D	603	BCR	C13-C14-C15-C16
24	D	603	BCR	C16-C17-C18-C19
24	D	603	BCR	C16-C17-C18-C36
24	D	603	BCR	C20-C21-C22-C37
24	D	603	BCR	C21-C22-C23-C24
24	D	603	BCR	C23-C24-C25-C26
21	A	402	DGD	O1A-C1A-O1G-C1G
21	A	402	DGD	C2A-C1A-O1G-C1G
22	B	601	LHG	O10-C23-O8-C6
21	A	401	DGD	O6E-C5E-C6E-O5E
21	A	401	DGD	O1B-C1B-O2G-C2G
22	C	202	LHG	O9-C7-O7-C5
23	D	601	SQD	O49-C7-O47-C45
23	L	101	SQD	O49-C7-O47-C45
25	F	701	LMG	O9-C10-O7-C8
22	B	601	LHG	C24-C23-O8-C6
22	F	705	LHG	C24-C23-O8-C6
23	D	601	SQD	C24-C23-O48-C46
22	F	702	LHG	O10-C23-O8-C6
23	D	601	SQD	O10-C23-O48-C46
22	F	705	LHG	O2-C2-C3-O3
22	I	201	LHG	O2-C2-C3-O3

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Mol	Chain	Res	Type	Atoms
23	L	101	SQD	C24-C23-O48-C46
22	F	705	LHG	O10-C23-O8-C6
23	L	101	SQD	O10-C23-O48-C46
25	F	701	LMG	O10-C28-O8-C9
21	A	401	DGD	C4E-C5E-C6E-O5E
21	A	401	DGD	C2B-C1B-O2G-C2G
25	F	701	LMG	C11-C10-O7-C8
22	F	702	LHG	C24-C23-O8-C6
21	A	402	DGD	O6D-C1D-O3G-C3G
21	A	401	DGD	C4D-C5D-C6D-O5D
22	F	705	LHG	C1-C2-C3-O3
25	F	701	LMG	C29-C28-O8-C9
24	D	602	BCR	C15-C16-C17-C18
24	D	603	BCR	C9-C10-C11-C12
24	D	602	BCR	C17-C18-C19-C20
24	D	602	BCR	C21-C22-C23-C24
22	F	704	LHG	C7-C8-C9-C10
25	F	703	LMG	C28-C29-C30-C31
22	B	601	LHG	C23-C24-C25-C26
22	F	702	LHG	C4-O6-P-O3
22	F	705	LHG	C3-O3-P-O6
24	D	602	BCR	C35-C13-C14-C15
21	A	402	DGD	C3B-C4B-C5B-C6B
22	F	702	LHG	C16-C17-C18-C19
22	I	201	LHG	C14-C15-C16-C17
25	F	703	LMG	C34-C35-C36-C37
21	A	401	DGD	C5A-C6A-C7A-C8A
22	C	202	LHG	C34-C35-C36-C37
23	C	201	SQD	C10-C11-C12-C13
23	D	601	SQD	C14-C15-C16-C17
23	D	601	SQD	C25-C26-C27-C28
22	C	202	LHG	C25-C26-C27-C28
23	D	601	SQD	C28-C29-C30-C31
21	A	402	DGD	CBB-CCB-CDB-CEB
25	F	703	LMG	C12-C13-C14-C15
24	D	602	BCR	C11-C10-C9-C8
24	D	603	BCR	C11-C10-C9-C8
22	C	202	LHG	C11-C10-C9-C8
23	L	101	SQD	C26-C27-C28-C29
25	F	701	LMG	C34-C35-C36-C37
22	B	601	LHG	C14-C15-C16-C17
22	F	704	LHG	O1-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
22	F	705	LHG	O1-C1-C2-C3
24	D	603	BCR	C7-C8-C9-C10
24	D	603	BCR	C17-C18-C19-C20
25	F	701	LMG	C35-C36-C37-C38
23	D	601	SQD	C9-C10-C11-C12
21	A	401	DGD	O6D-C5D-C6D-O5D
22	B	601	LHG	C25-C26-C27-C28
22	F	702	LHG	C28-C29-C30-C31
22	I	201	LHG	C16-C17-C18-C19
22	F	702	LHG	C15-C16-C17-C18
25	F	701	LMG	C20-C21-C22-C23
22	C	202	LHG	C12-C13-C14-C15
22	I	201	LHG	C26-C27-C28-C29
25	F	701	LMG	C33-C34-C35-C36
22	B	601	LHG	C15-C16-C17-C18
25	F	701	LMG	C18-C19-C20-C21
22	F	702	LHG	C14-C15-C16-C17
23	D	601	SQD	C16-C17-C18-C19
22	I	201	LHG	C18-C19-C20-C21
23	C	201	SQD	C24-C23-O48-C46
22	F	705	LHG	C8-C7-O7-C5
22	I	201	LHG	C25-C26-C27-C28
22	F	705	LHG	O9-C7-O7-C5
21	A	401	DGD	C1A-C2A-C3A-C4A
21	A	401	DGD	C2A-C1A-O1G-C1G
23	L	101	SQD	C11-C10-C9-C8
21	A	401	DGD	C1B-C2B-C3B-C4B
22	C	202	LHG	C7-C8-C9-C10
21	A	402	DGD	C2B-C1B-O2G-C2G
22	I	201	LHG	C8-C7-O7-C5
23	D	601	SQD	C26-C27-C28-C29
25	F	701	LMG	C16-C17-C18-C19
23	D	601	SQD	O47-C45-C46-O48
22	I	201	LHG	C11-C10-C9-C8
25	F	703	LMG	O6-C5-C6-O5
24	D	602	BCR	C37-C22-C23-C24
23	C	201	SQD	O10-C23-O48-C46
23	D	601	SQD	C11-C12-C13-C14
22	B	601	LHG	C3-O3-P-O6
22	F	704	LHG	O6-C4-C5-C6
23	L	101	SQD	C7-C8-C9-C10
23	L	101	SQD	C23-C24-C25-C26

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Mol	Chain	Res	Type	Atoms
23	D	601	SQD	C24-C25-C26-C27
22	F	704	LHG	C29-C30-C31-C32
25	F	703	LMG	C29-C30-C31-C32
21	A	401	DGD	O1A-C1A-O1G-C1G
21	A	401	DGD	O1G-C1G-C2G-C3G
22	F	702	LHG	C4-C5-C6-O8
22	F	704	LHG	C4-C5-C6-O8
23	L	101	SQD	C44-C45-C46-O48
25	F	701	LMG	C7-C8-C9-O8
25	F	703	LMG	O1-C7-C8-C9
23	L	101	SQD	C9-C10-C11-C12
22	B	601	LHG	C7-C8-C9-C10
21	A	402	DGD	C7A-C8A-C9A-CAA
23	L	101	SQD	C10-C11-C12-C13
21	A	401	DGD	C2A-C3A-C4A-C5A
22	B	601	LHG	C24-C25-C26-C27
25	F	701	LMG	O6-C5-C6-O5
21	A	401	DGD	CBB-CCB-CDB-CEB
23	C	201	SQD	C9-C10-C11-C12
21	A	401	DGD	C1G-C2G-O2G-C1B
25	F	701	LMG	C7-C8-O7-C10
21	A	402	DGD	O1B-C1B-O2G-C2G
22	C	202	LHG	C24-C23-O8-C6
22	B	601	LHG	O6-C4-C5-O7
22	F	705	LHG	O7-C5-C6-O8
23	C	201	SQD	O47-C45-C46-O48
25	F	701	LMG	O7-C8-C9-O8
21	A	401	DGD	CFB-CGB-CHB-CIB
22	I	201	LHG	O9-C7-O7-C5
23	C	201	SQD	C28-C29-C30-C31
21	A	401	DGD	CCB-CDB-CEB-CFB
21	A	402	DGD	CCB-CDB-CEB-CFB
22	F	704	LHG	C9-C10-C11-C12
23	L	101	SQD	C28-C29-C30-C31
25	F	701	LMG	C13-C14-C15-C16
23	C	201	SQD	C26-C27-C28-C29
23	L	101	SQD	C25-C26-C27-C28
25	F	703	LMG	C32-C33-C34-C35
22	F	704	LHG	C11-C10-C9-C8
22	B	601	LHG	O6-C4-C5-C6
22	F	705	LHG	C7-C8-C9-C10
25	F	701	LMG	C28-C29-C30-C31

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Mol	Chain	Res	Type	Atoms
23	D	601	SQD	C23-C24-C25-C26
22	B	601	LHG	C32-C33-C34-C35
23	D	601	SQD	C11-C10-C9-C8
22	C	202	LHG	C4-C5-C6-O8
22	F	705	LHG	C4-C5-C6-O8
22	I	201	LHG	C4-C5-C6-O8
23	D	601	SQD	C44-C45-C46-O48
22	C	202	LHG	O10-C23-O8-C6
22	F	705	LHG	C28-C29-C30-C31
22	F	704	LHG	C3-O3-P-O6
22	F	704	LHG	O6-C4-C5-O7
21	A	401	DGD	C2D-C1D-O3G-C3G
22	F	702	LHG	O7-C5-C6-O8
21	A	402	DGD	C3A-C4A-C5A-C6A
22	C	202	LHG	C13-C14-C15-C16
21	A	402	DGD	C9B-CAB-CBB-CCB
25	F	701	LMG	C17-C18-C19-C20
22	F	702	LHG	C2-C3-O3-P
25	F	701	LMG	C29-C30-C31-C32
22	C	202	LHG	C35-C36-C37-C38
23	C	201	SQD	C24-C25-C26-C27
22	F	705	LHG	C11-C12-C13-C14
22	F	702	LHG	O6-C4-C5-C6
22	C	202	LHG	C24-C25-C26-C27
21	A	401	DGD	C4B-C5B-C6B-C7B
25	F	701	LMG	C15-C16-C17-C18
21	A	401	DGD	CAA-CBA-CCA-CDA
23	D	601	SQD	C33-C34-C35-C36
23	L	101	SQD	C24-C25-C26-C27
22	B	601	LHG	C27-C28-C29-C30
21	A	401	DGD	O6D-C1D-O3G-C3G
22	B	601	LHG	C30-C31-C32-C33
22	F	705	LHG	C2-C3-O3-P
22	F	702	LHG	O6-C4-C5-O7
21	A	401	DGD	C8A-C9A-CAA-CBA
21	A	402	DGD	C6A-C7A-C8A-C9A
22	C	202	LHG	O7-C5-C6-O8
22	B	601	LHG	C26-C27-C28-C29
22	F	705	LHG	O1-C1-C2-O2
22	B	601	LHG	C33-C34-C35-C36
21	A	401	DGD	C3B-C4B-C5B-C6B
22	F	705	LHG	C29-C30-C31-C32

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Mol	Chain	Res	Type	Atoms
22	F	702	LHG	C29-C30-C31-C32
22	F	705	LHG	C4-O6-P-O4
22	I	201	LHG	C3-O3-P-O5
22	I	201	LHG	C4-O6-P-O4
25	F	701	LMG	C21-C22-C23-C24
23	C	201	SQD	O5-C5-C6-S
22	F	704	LHG	C24-C23-O8-C6
22	B	601	LHG	C8-C7-O7-C5
25	F	703	LMG	C11-C10-O7-C8
25	F	701	LMG	C31-C32-C33-C34
23	C	201	SQD	C44-C45-C46-O48
23	D	601	SQD	O6-C44-C45-C46
21	A	401	DGD	O1G-C1G-C2G-O2G
22	F	704	LHG	O7-C5-C6-O8
22	I	201	LHG	O7-C5-C6-O8
23	D	601	SQD	O6-C44-C45-O47
25	F	703	LMG	O1-C7-C8-O7
22	F	704	LHG	O10-C23-O8-C6
22	B	601	LHG	O9-C7-O7-C5
22	I	201	LHG	C27-C28-C29-C30
22	F	705	LHG	C27-C28-C29-C30
22	F	702	LHG	C12-C13-C14-C15
23	L	101	SQD	O47-C45-C46-O48
22	C	202	LHG	C4-O6-P-O3
22	F	702	LHG	C3-O3-P-O6
22	I	201	LHG	C4-O6-P-O3
23	C	201	SQD	C27-C28-C29-C30
22	F	702	LHG	C18-C19-C20-C21
23	D	601	SQD	C30-C31-C32-C33
21	A	402	DGD	C8A-C9A-CAA-CBA
22	F	702	LHG	C19-C20-C21-C22
25	F	703	LMG	O6-C1-O1-C7
22	C	202	LHG	C26-C27-C28-C29
21	A	402	DGD	O1G-C1G-C2G-O2G
22	C	202	LHG	C30-C31-C32-C33
23	C	201	SQD	C11-C10-C9-C8
22	I	201	LHG	C15-C16-C17-C18
22	B	601	LHG	C11-C12-C13-C14
23	D	601	SQD	C12-C13-C14-C15
25	F	703	LMG	C8-C7-O1-C1
22	F	702	LHG	C30-C31-C32-C33
25	F	701	LMG	C14-C15-C16-C17

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Mol	Chain	Res	Type	Atoms
22	F	704	LHG	O1-C1-C2-O2
24	D	603	BCR	C11-C12-C13-C14
25	F	701	LMG	O7-C10-C11-C12
22	C	202	LHG	C9-C10-C11-C12
22	F	705	LHG	O6-C4-C5-C6
23	L	101	SQD	O48-C23-C24-C25
22	F	704	LHG	O8-C23-C24-C25
23	C	201	SQD	C25-C26-C27-C28
25	F	703	LMG	O9-C10-O7-C8
21	A	402	DGD	CAA-CBA-CCA-CDA
25	F	703	LMG	C13-C14-C15-C16
22	F	702	LHG	C1-C2-C3-O3
22	F	702	LHG	C3-O3-P-O5
22	F	704	LHG	C4-O6-P-O5
22	F	704	LHG	O10-C23-C24-C25
22	C	202	LHG	C11-C12-C13-C14
23	L	101	SQD	O10-C23-C24-C25
22	I	201	LHG	O7-C7-C8-C9
22	F	705	LHG	C23-C24-C25-C26
25	F	703	LMG	C15-C16-C17-C18

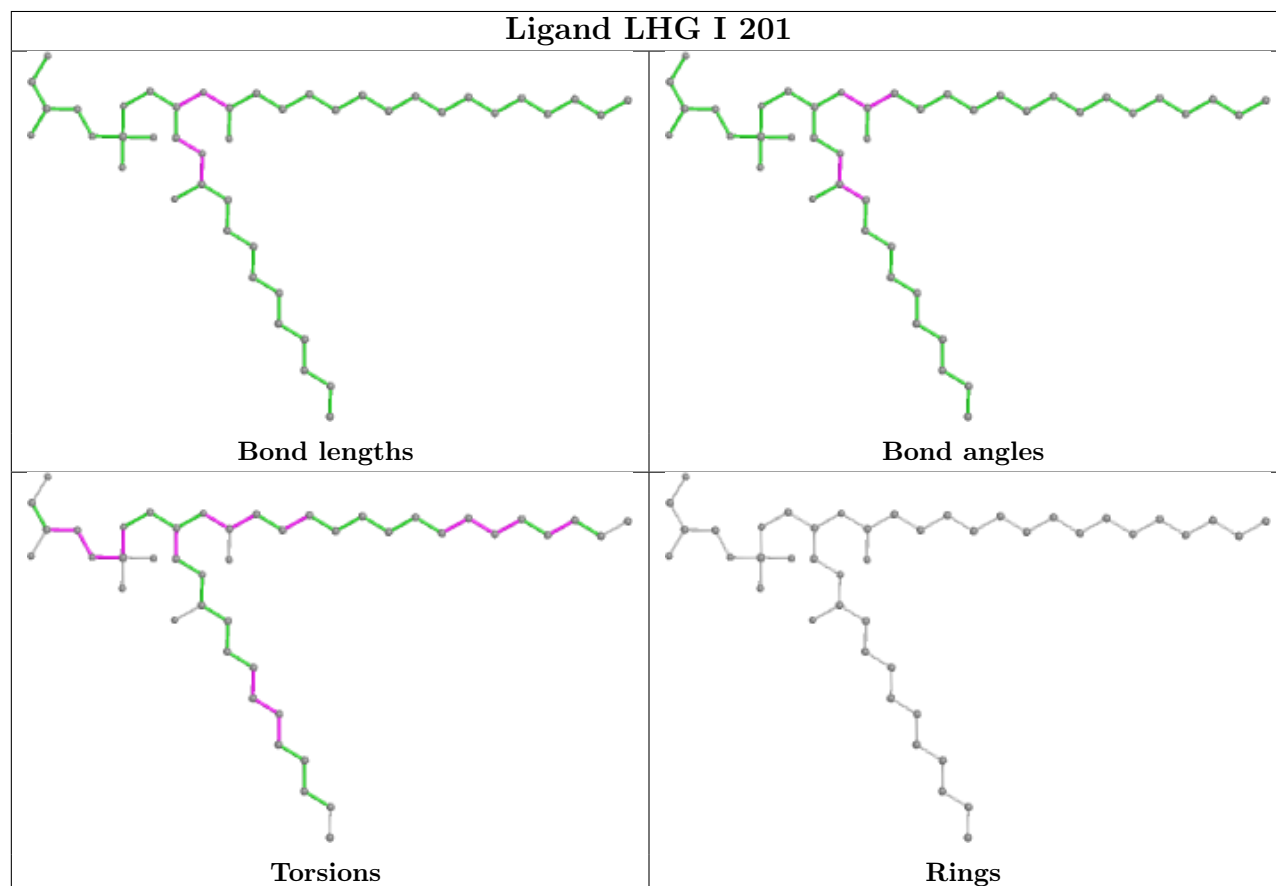
There are no ring outliers.

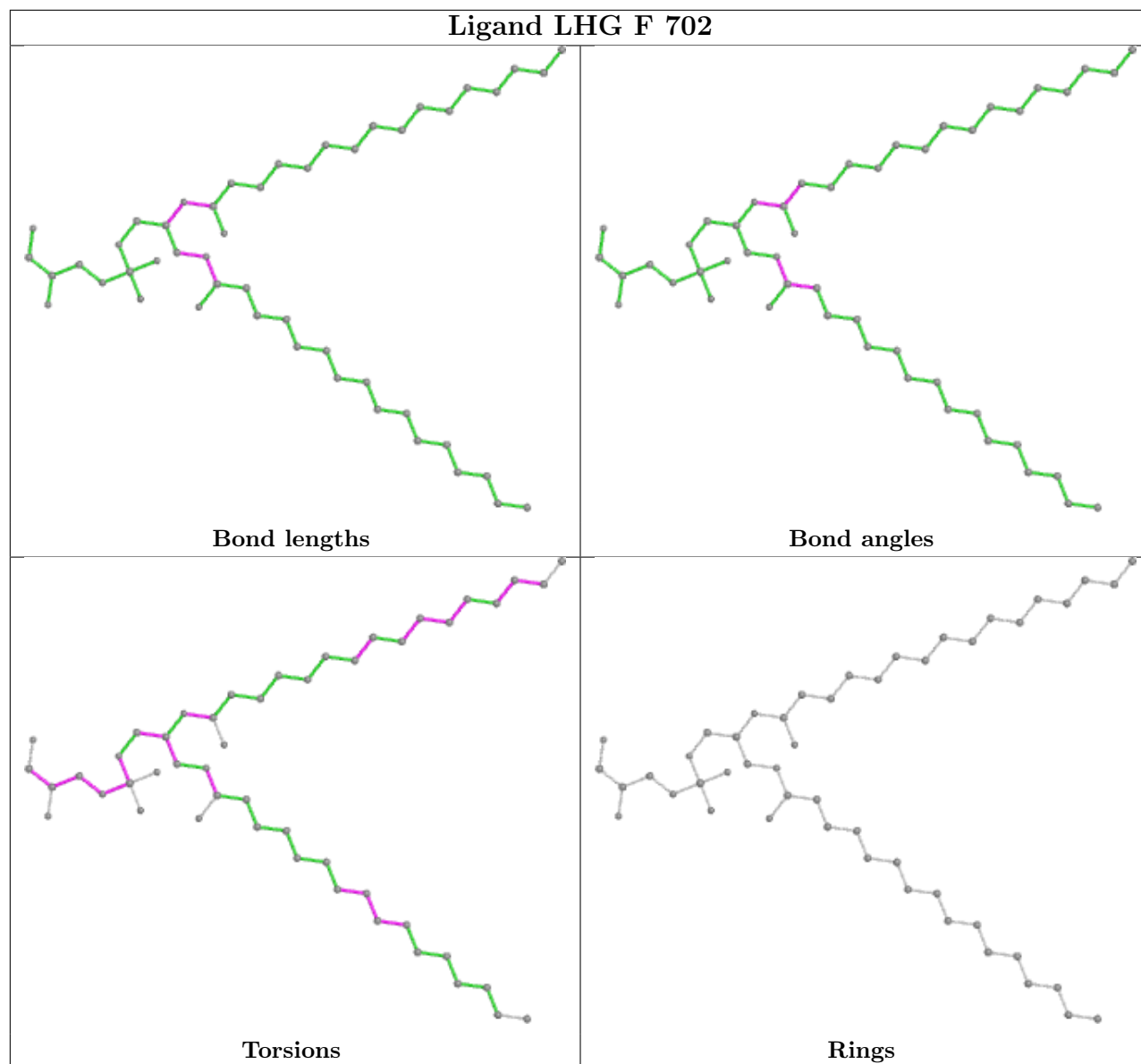
11 monomers are involved in 26 short contacts:

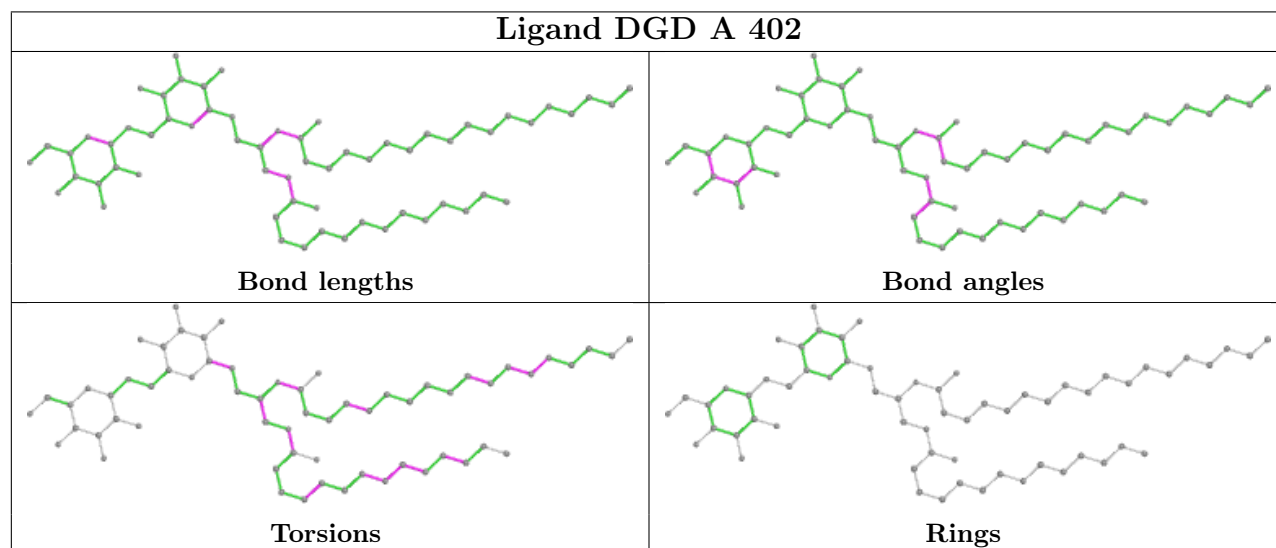
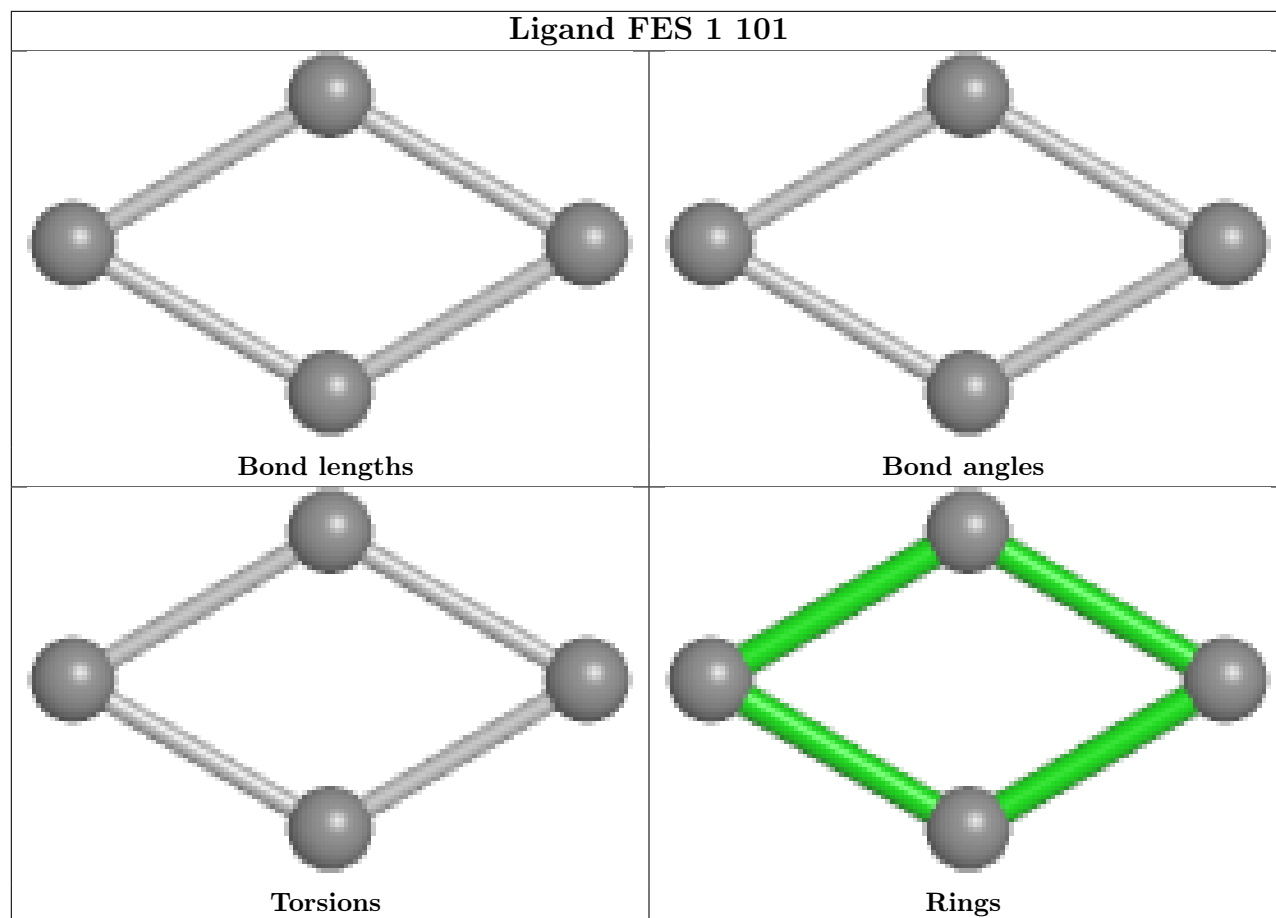
Mol	Chain	Res	Type	Clashes	Symm-Clashes
21	A	402	DGD	2	0
24	D	603	BCR	4	0
23	C	201	SQD	2	0
25	F	701	LMG	2	0
25	F	703	LMG	2	0
23	D	601	SQD	4	0
24	D	602	BCR	3	0
23	L	101	SQD	2	0
22	C	202	LHG	3	0
21	A	401	DGD	1	0
26	I	202	SF4	1	0

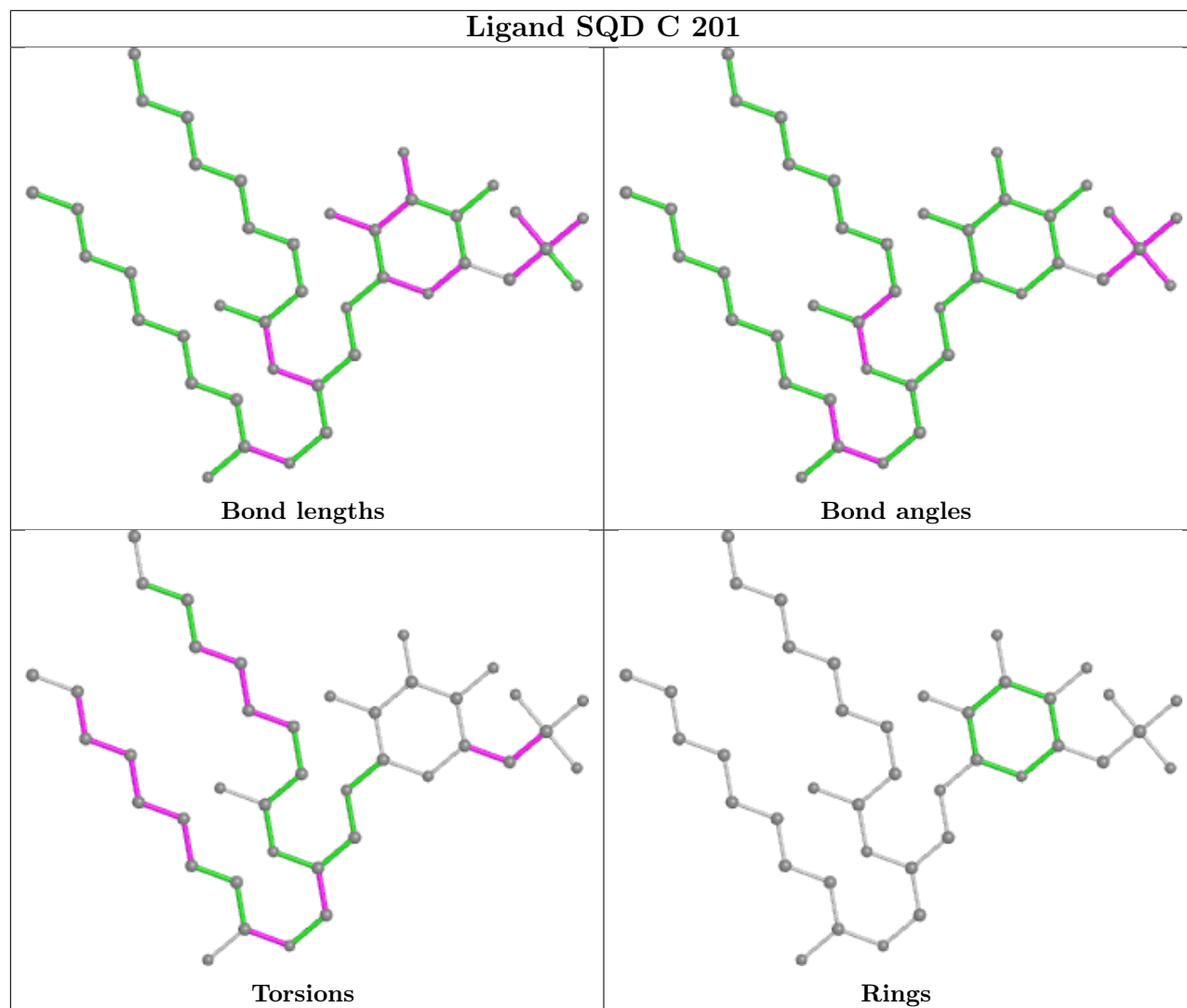
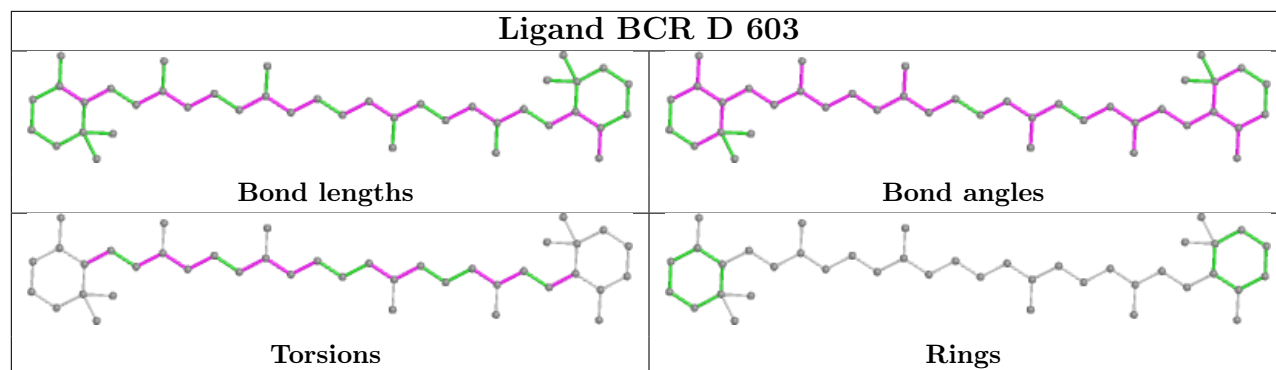
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less 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.

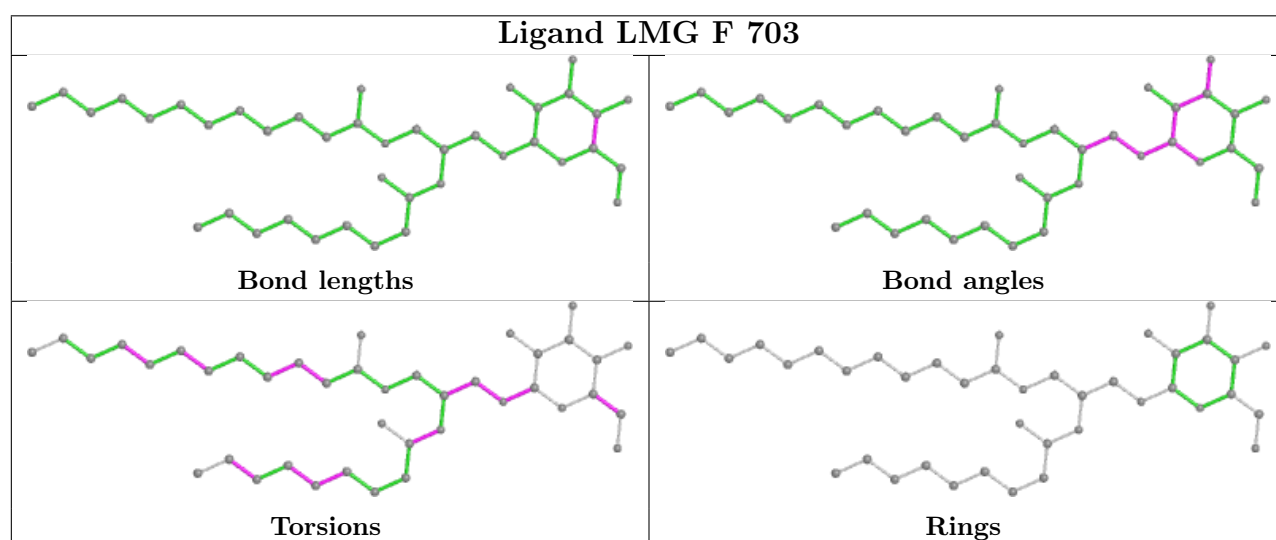
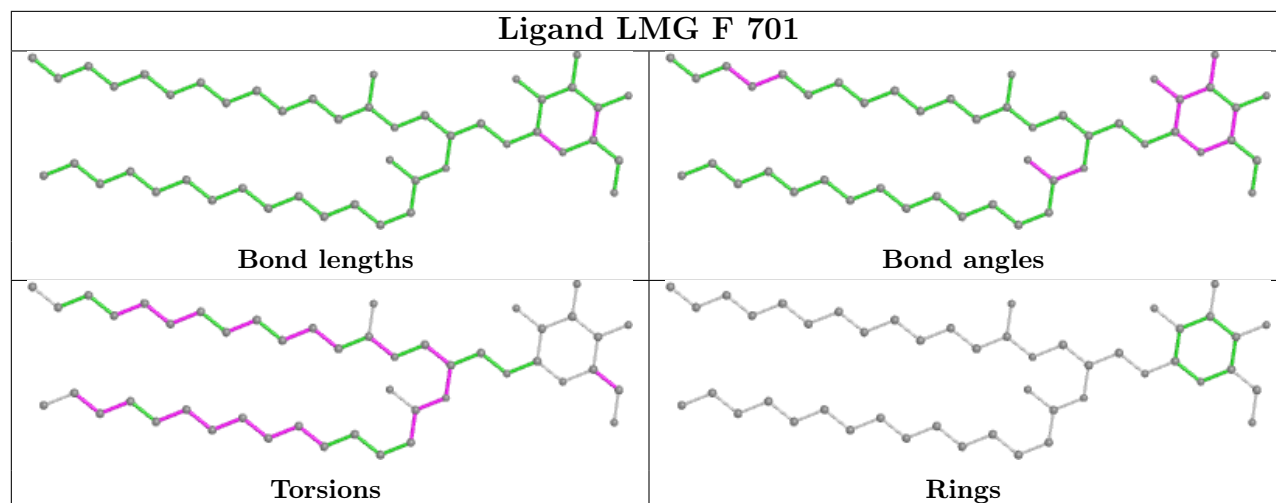
Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD 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.

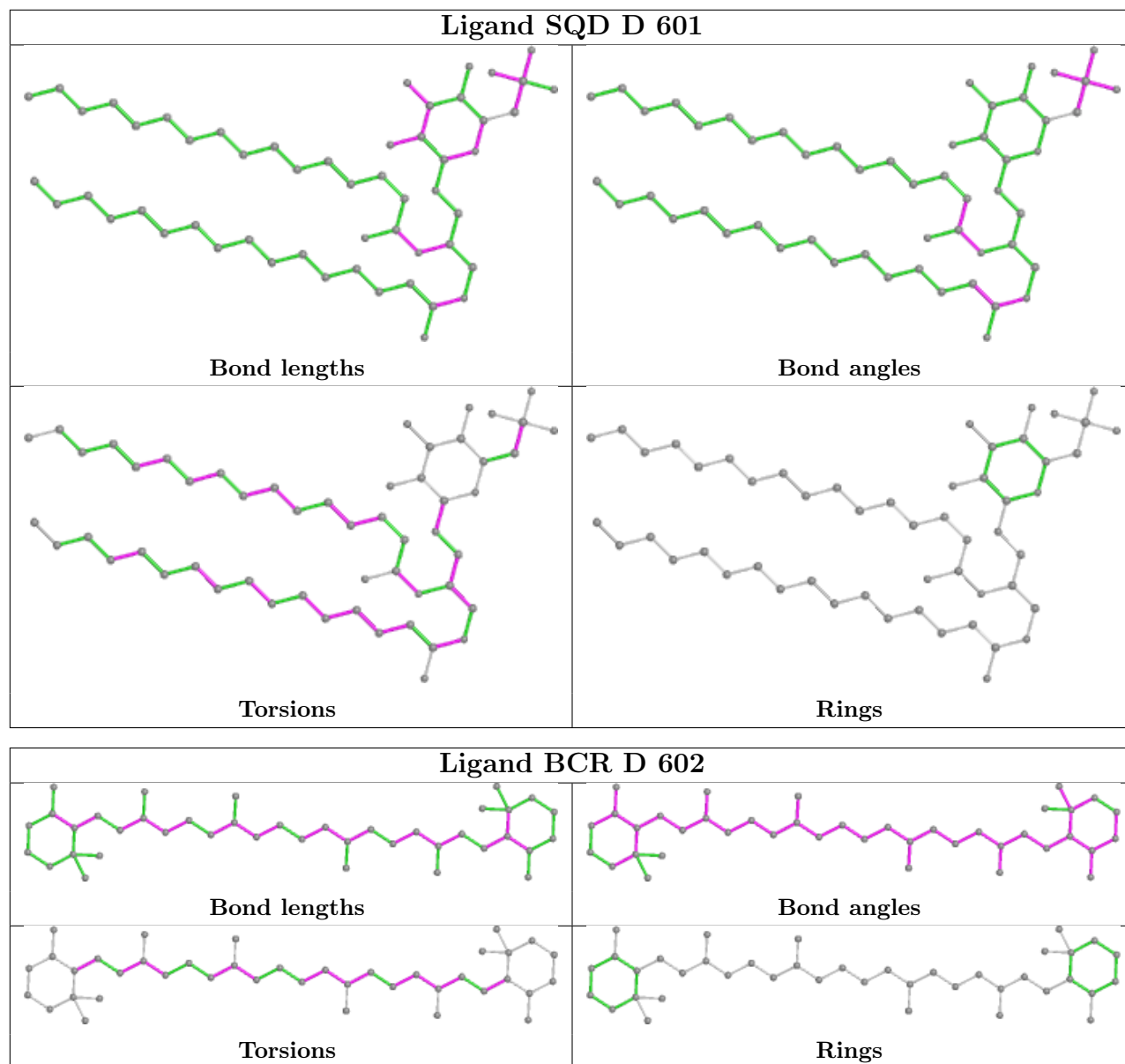


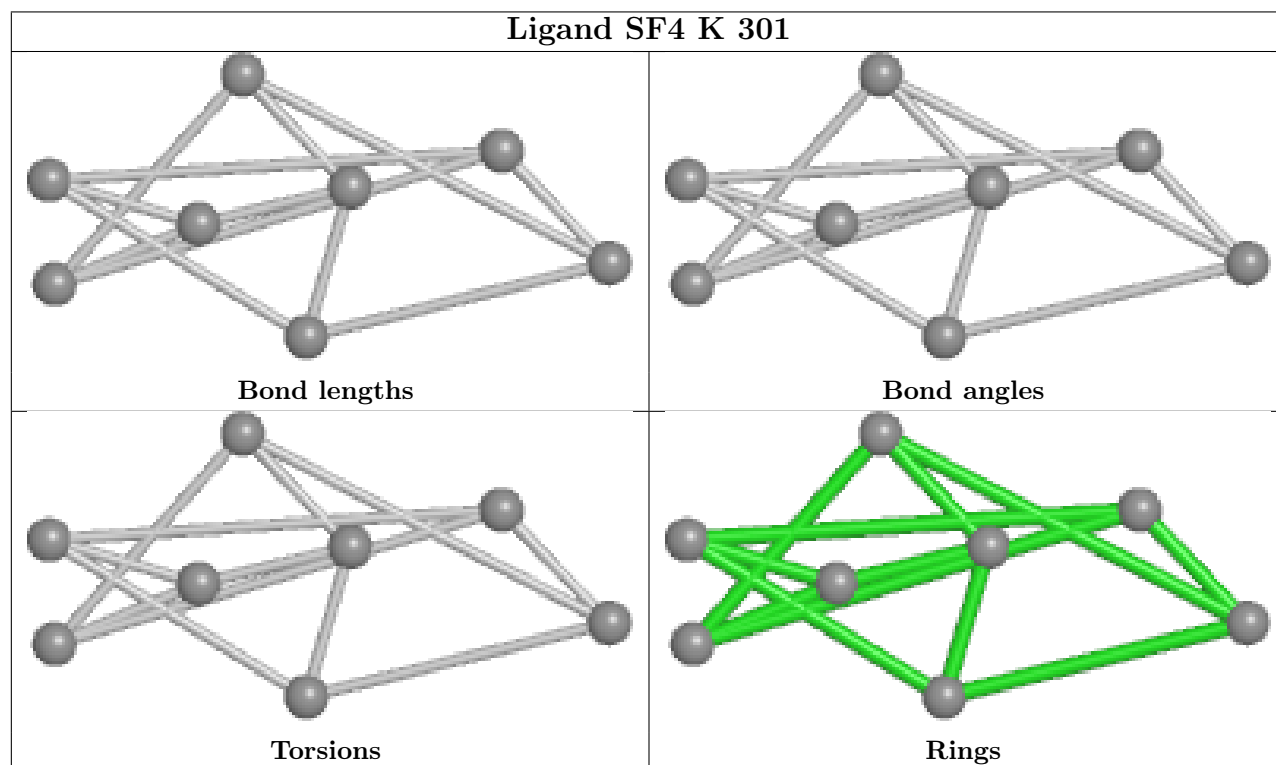
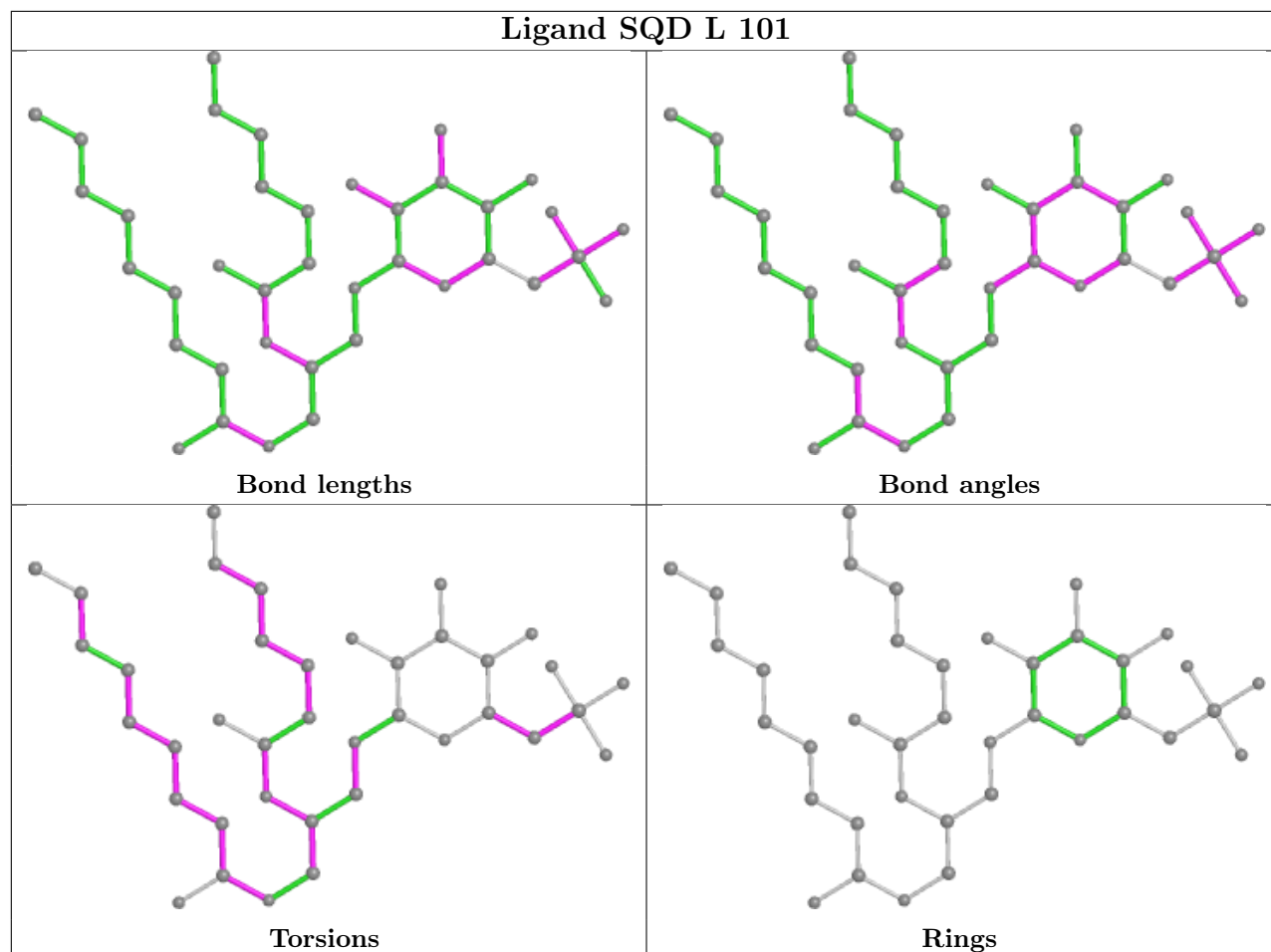


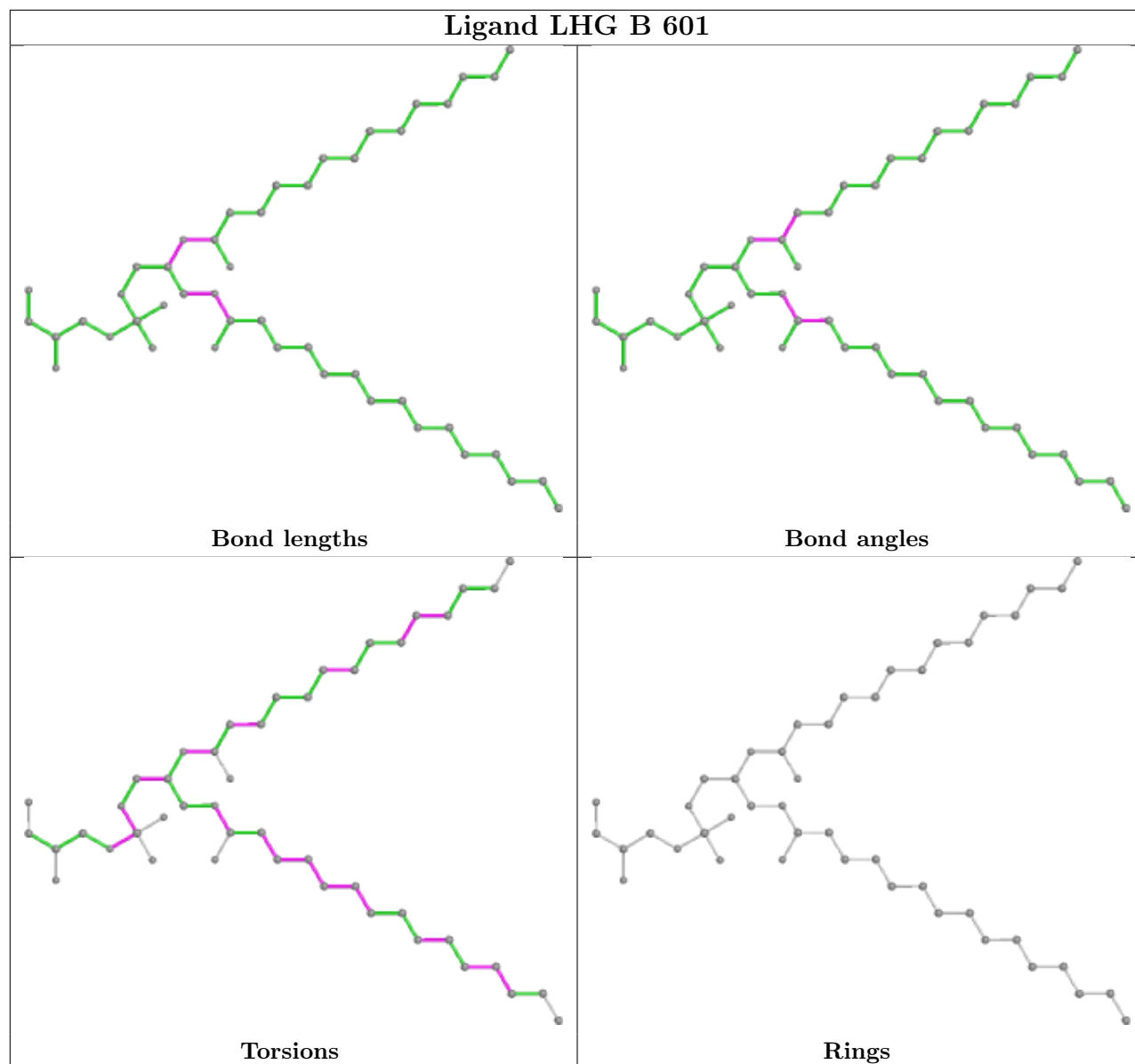


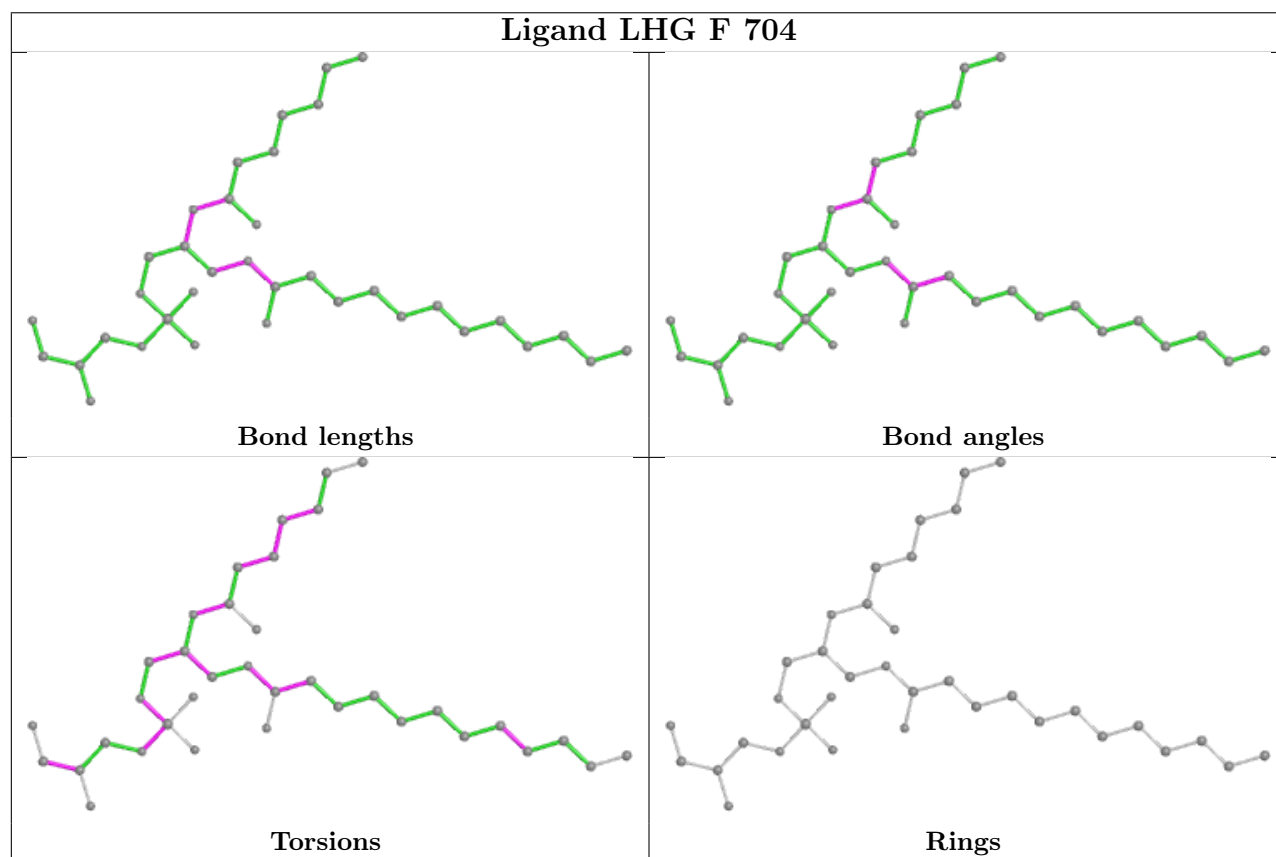
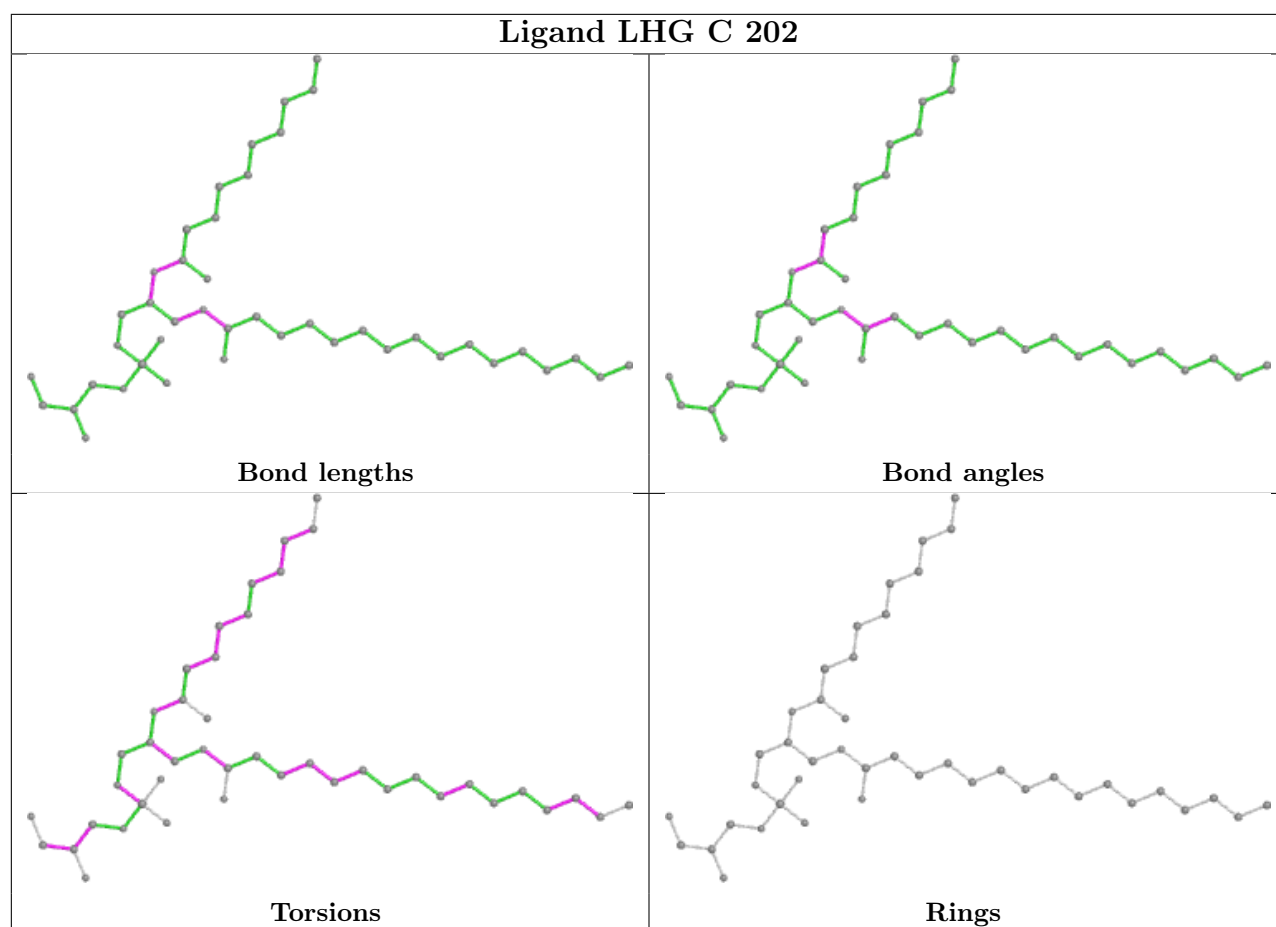


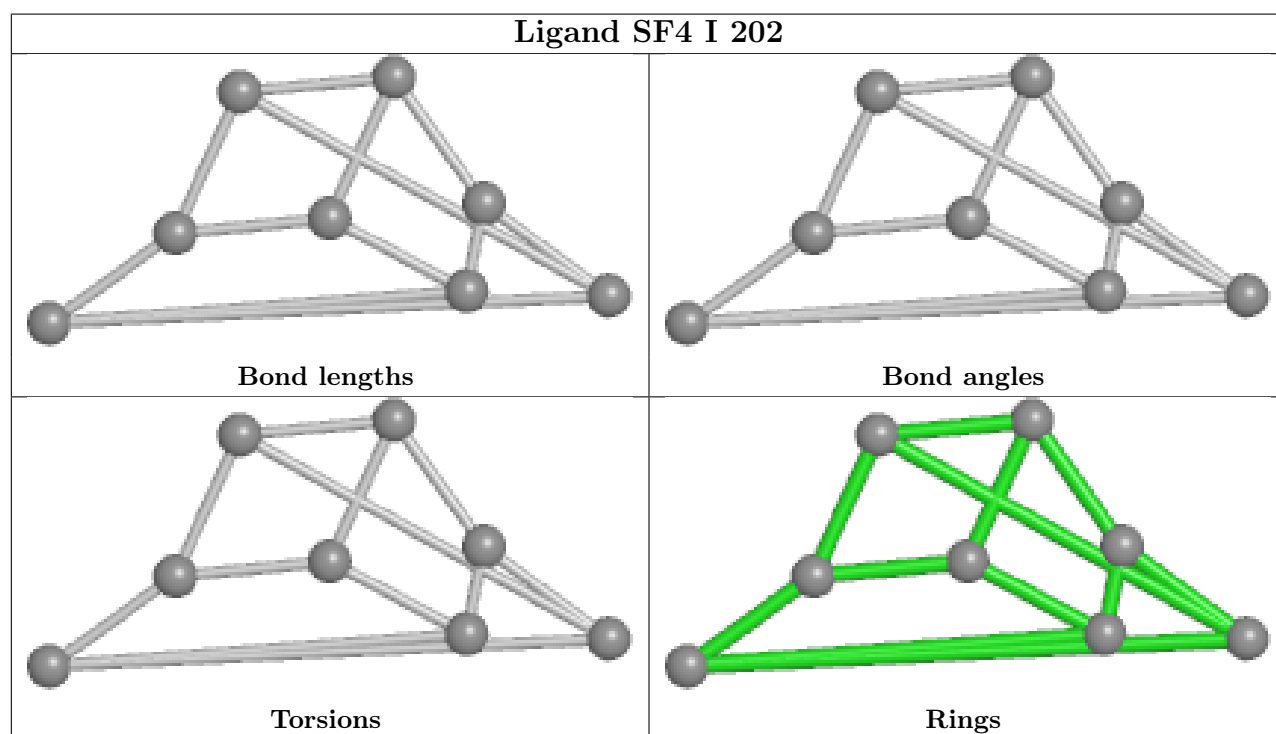
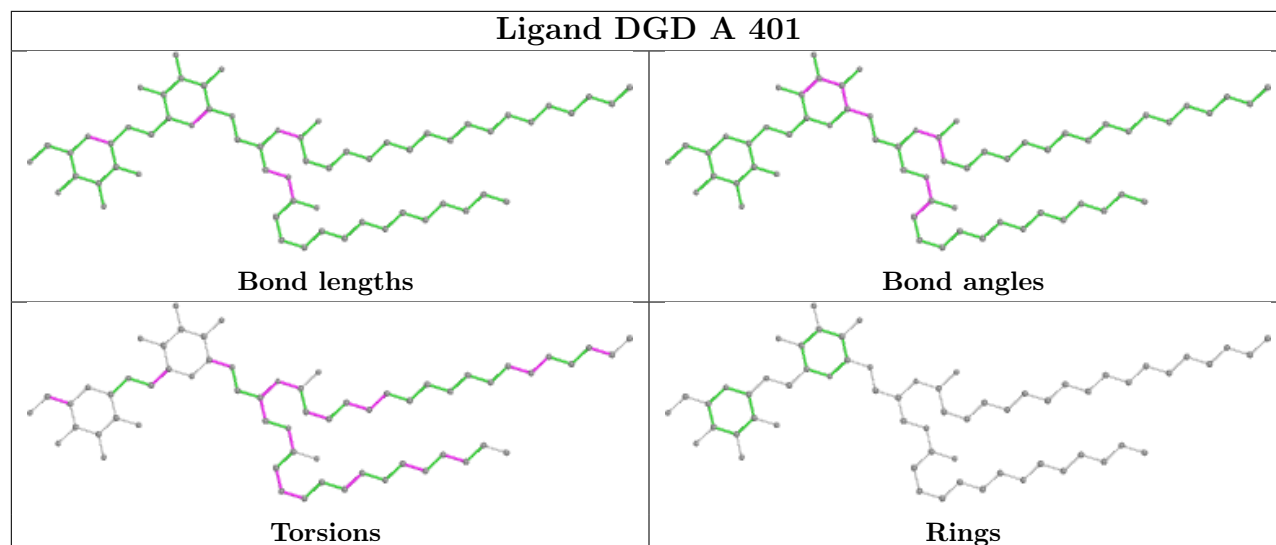


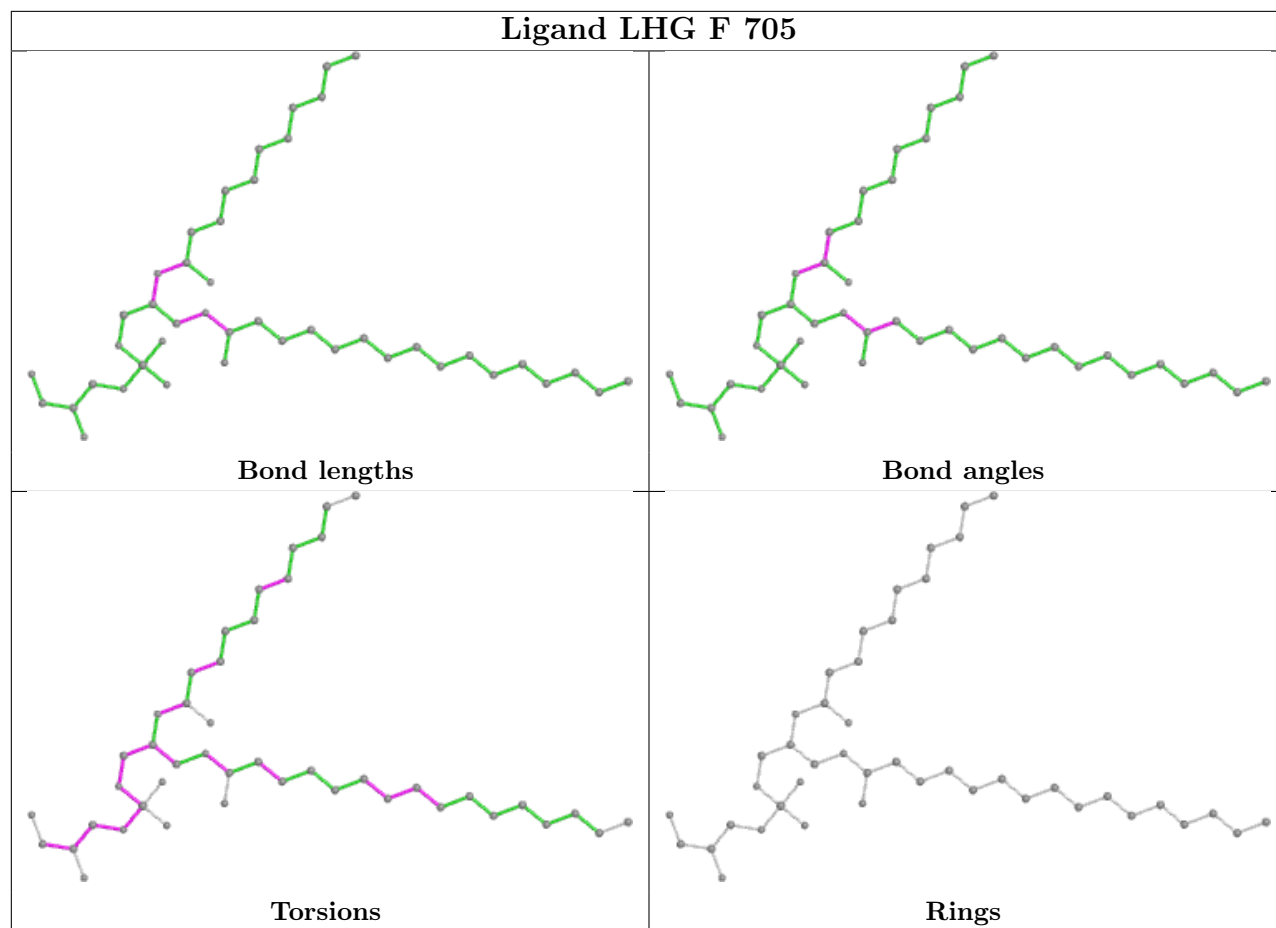


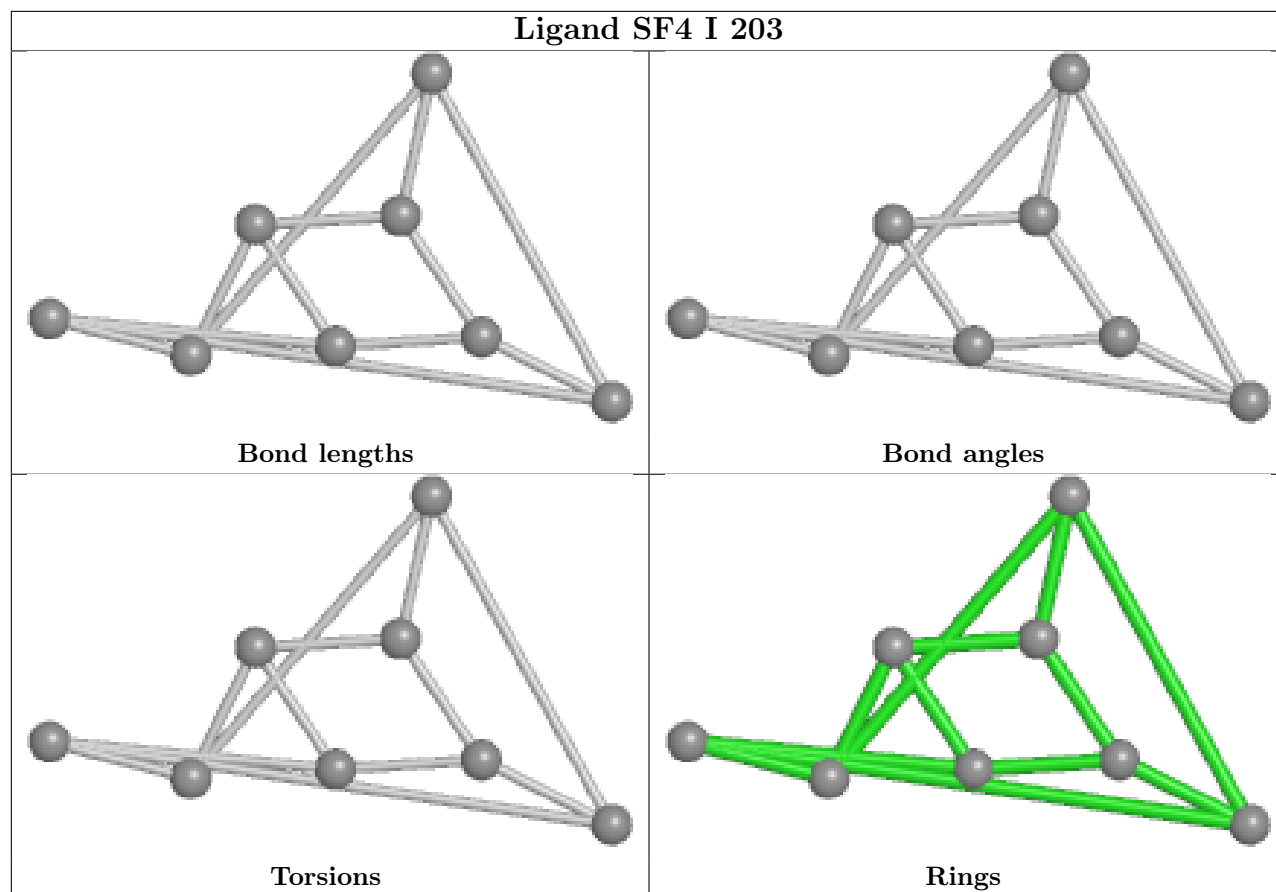












5.7 Other polymers [i](#)

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-9989. These allow visual inspection of the internal detail of the map and identification of artifacts.

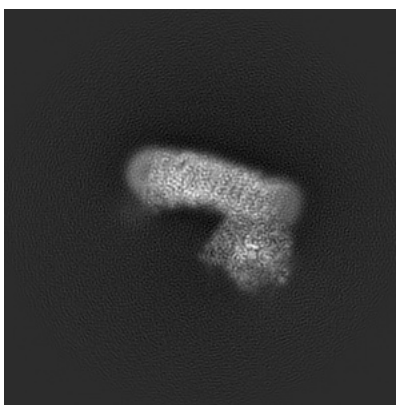
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

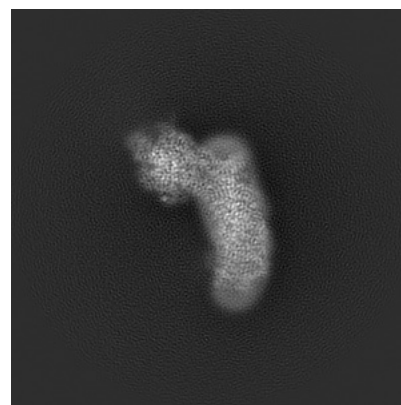
6.1.1 Primary map



X



Y



Z

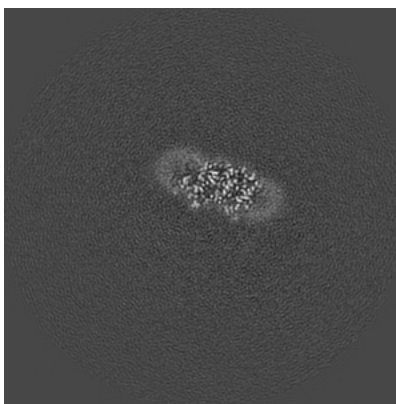
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

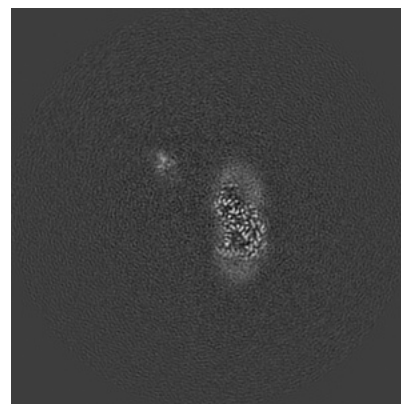
6.2.1 Primary map



X Index: 200



Y Index: 200

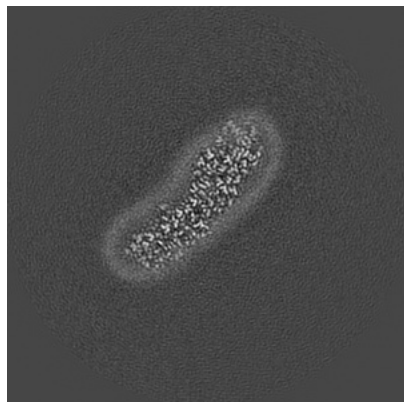


Z Index: 200

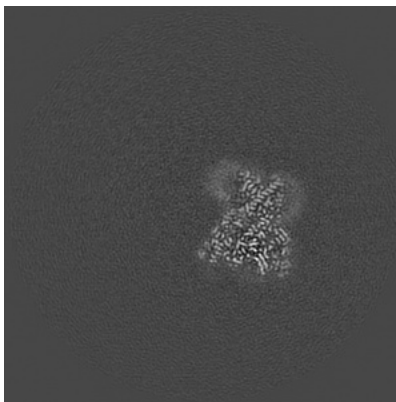
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

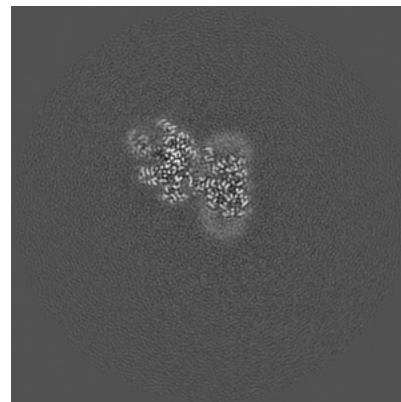
6.3.1 Primary map



X Index: 221



Y Index: 246

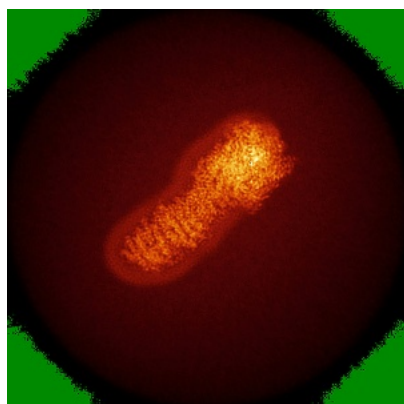


Z Index: 242

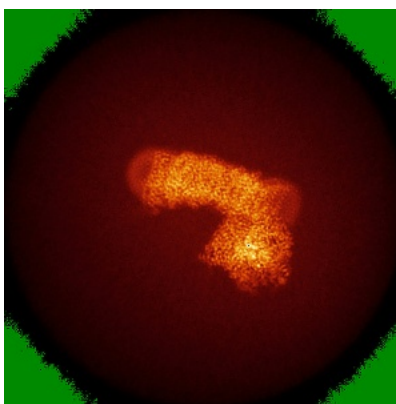
The images above show the largest variance slices of the map in three orthogonal directions.

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

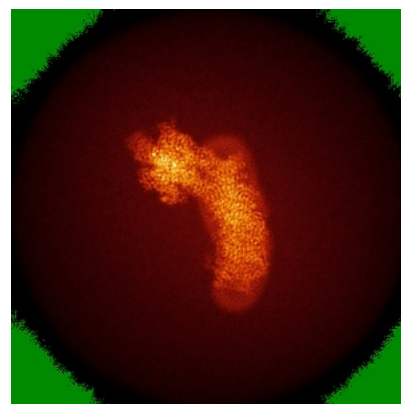
6.4.1 Primary map



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

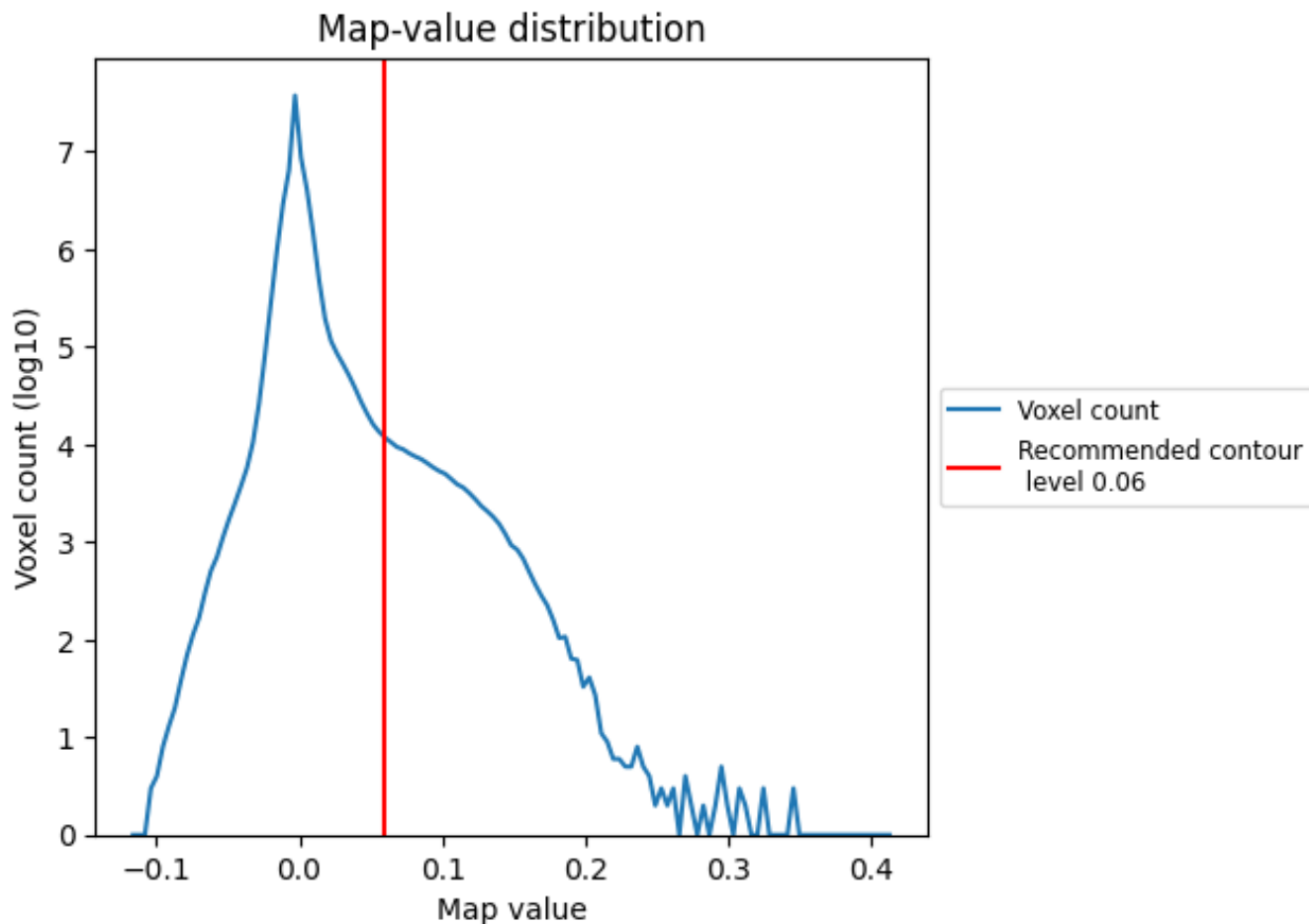
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

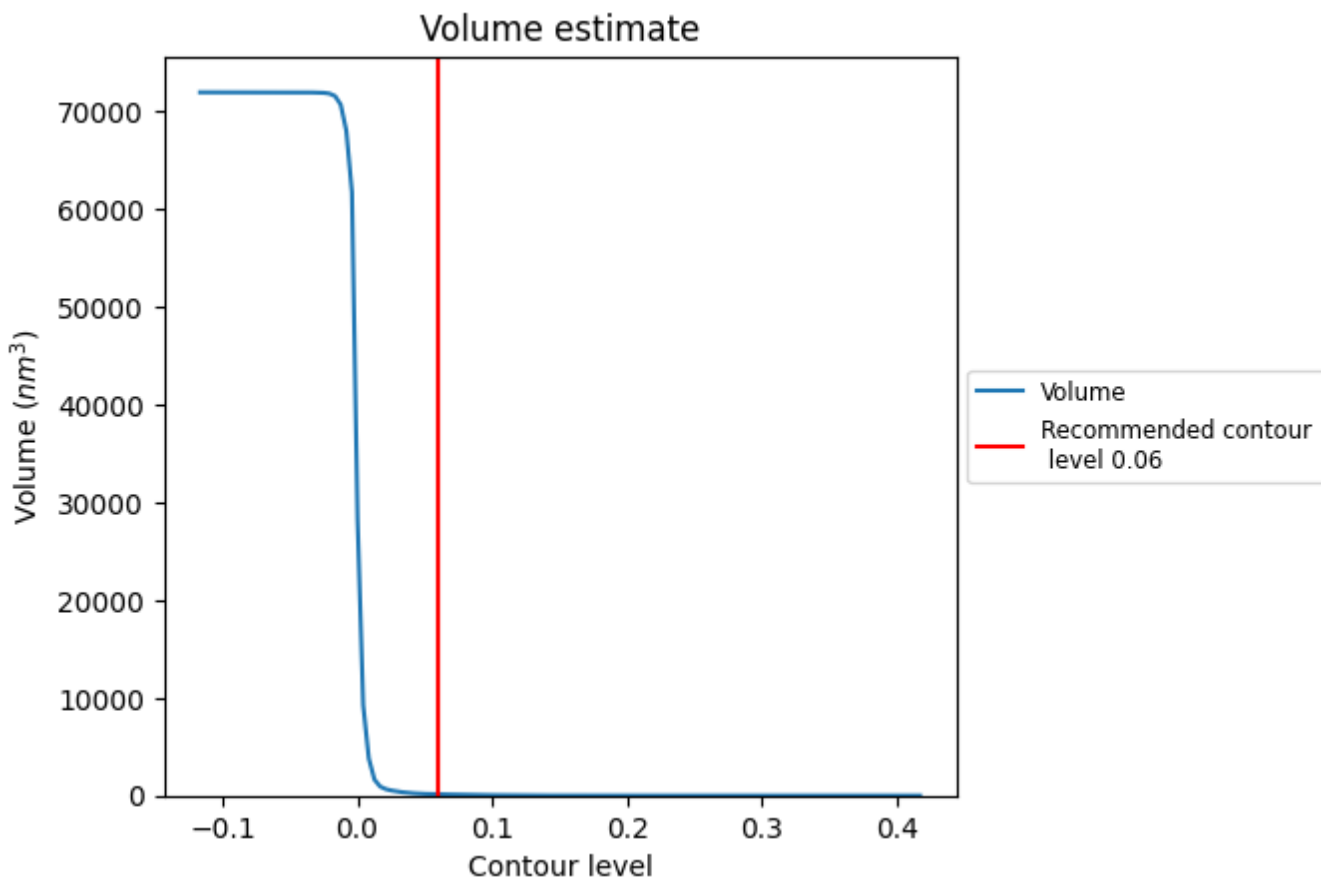
This section contains the results of statistical analysis of the map.

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.

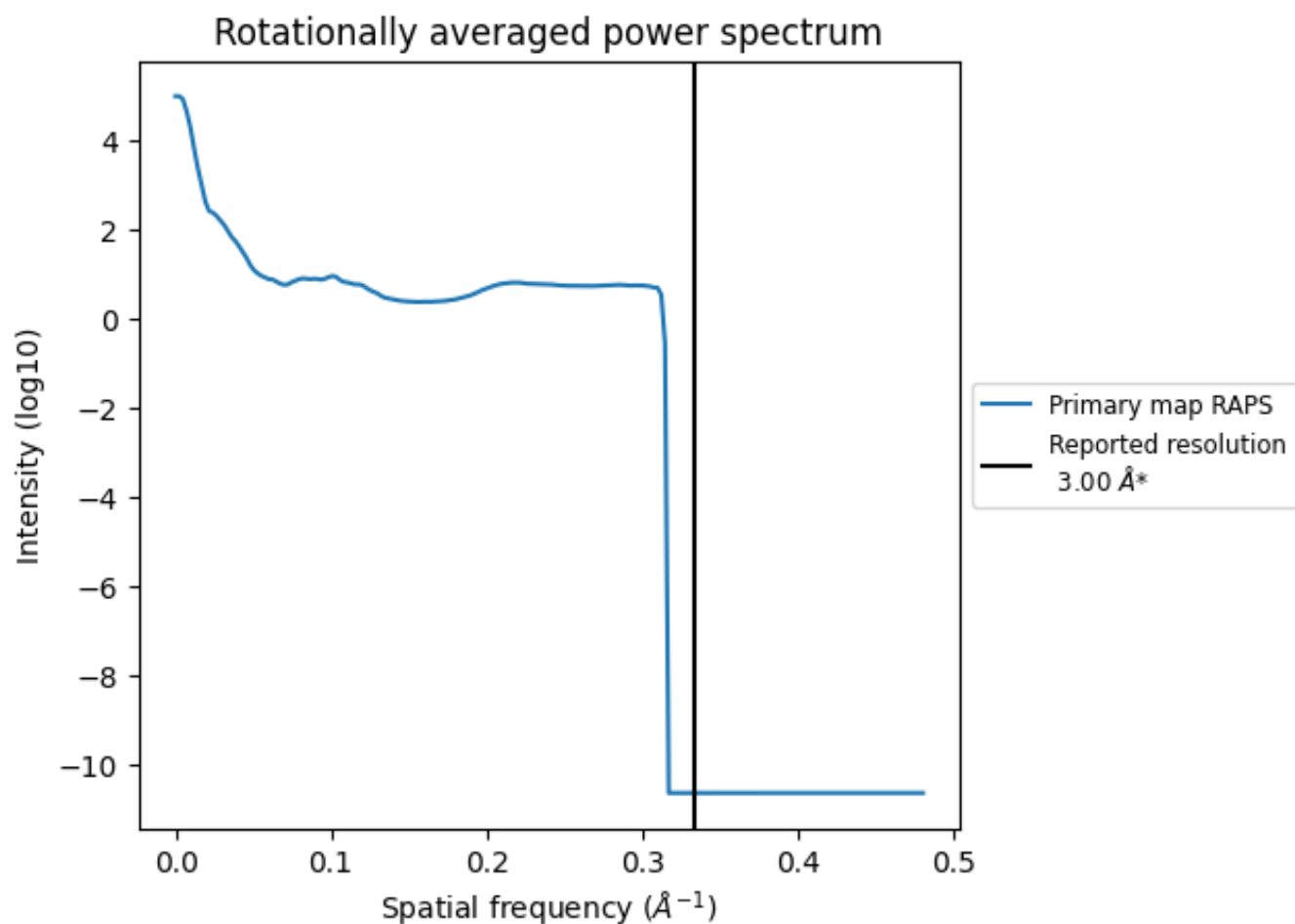
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 132 nm³; this corresponds to an approximate mass of 120 kDa.

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

7.3 Rotationally averaged power spectrum [\(i\)](#)



*Reported resolution corresponds to spatial frequency of 0.333 Å⁻¹

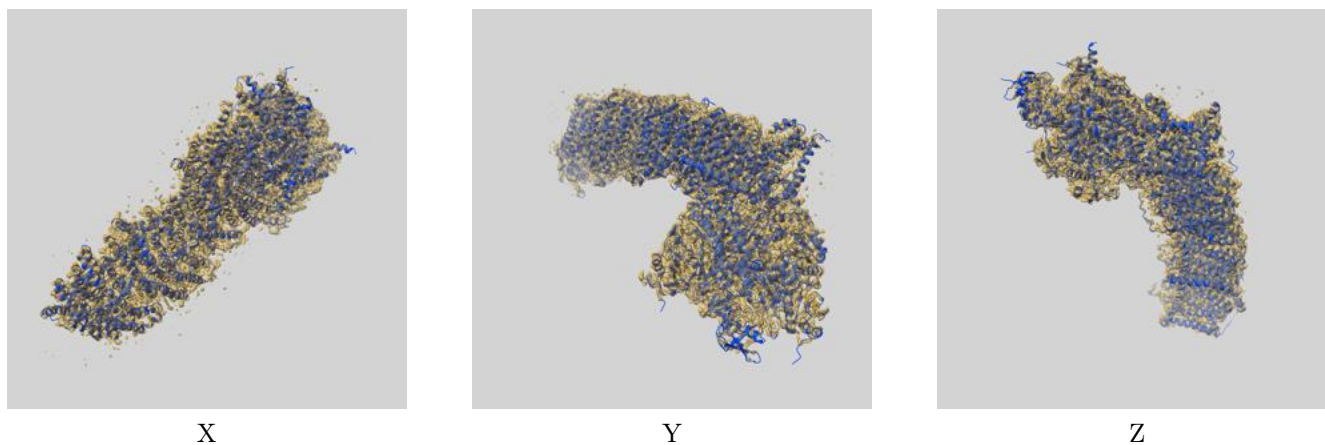
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

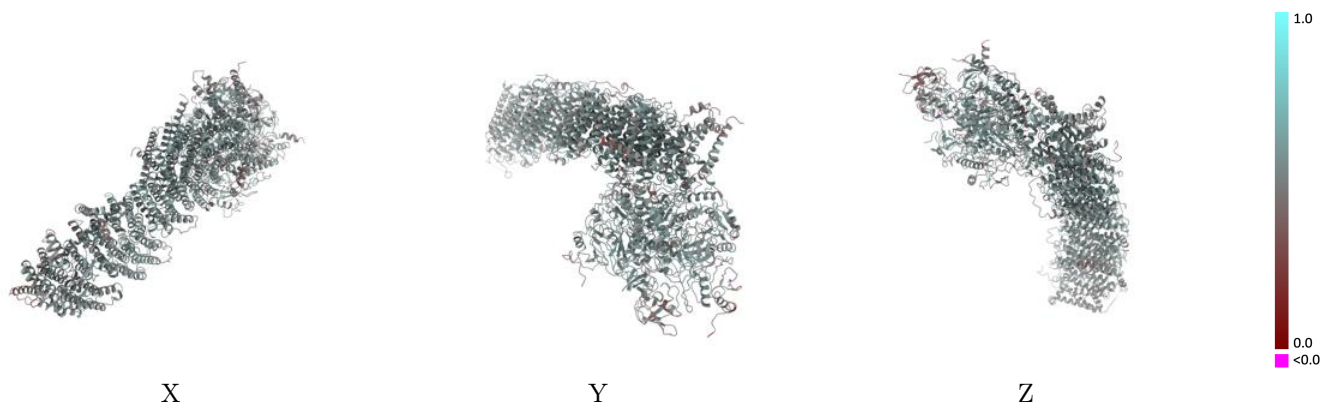
This section contains information regarding the fit between EMDB map EMD-9989 and PDB model 6KHI. Per-residue inclusion information can be found in section 3 on page 12.

9.1 Map-model overlay [i](#)



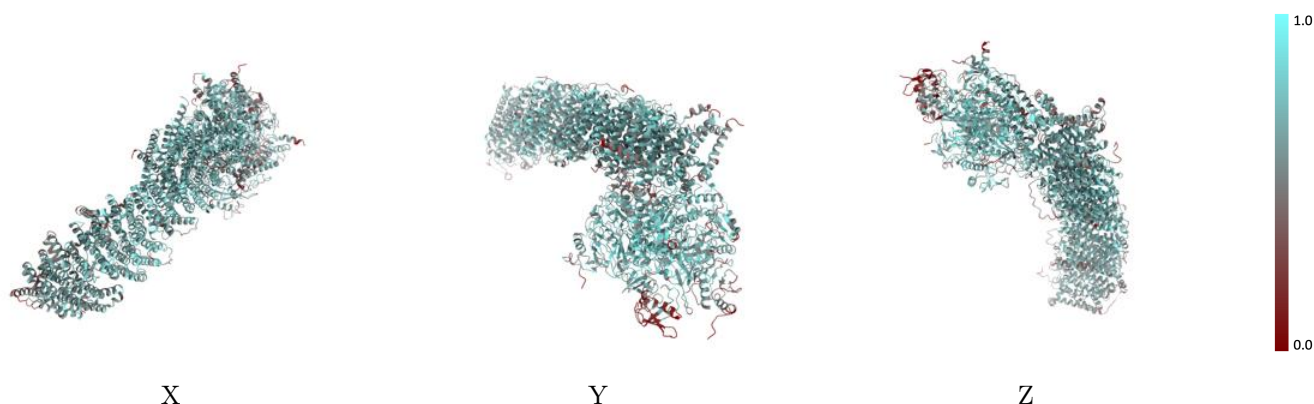
The images above show the 3D surface view of the map at the recommended contour level 0.06 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



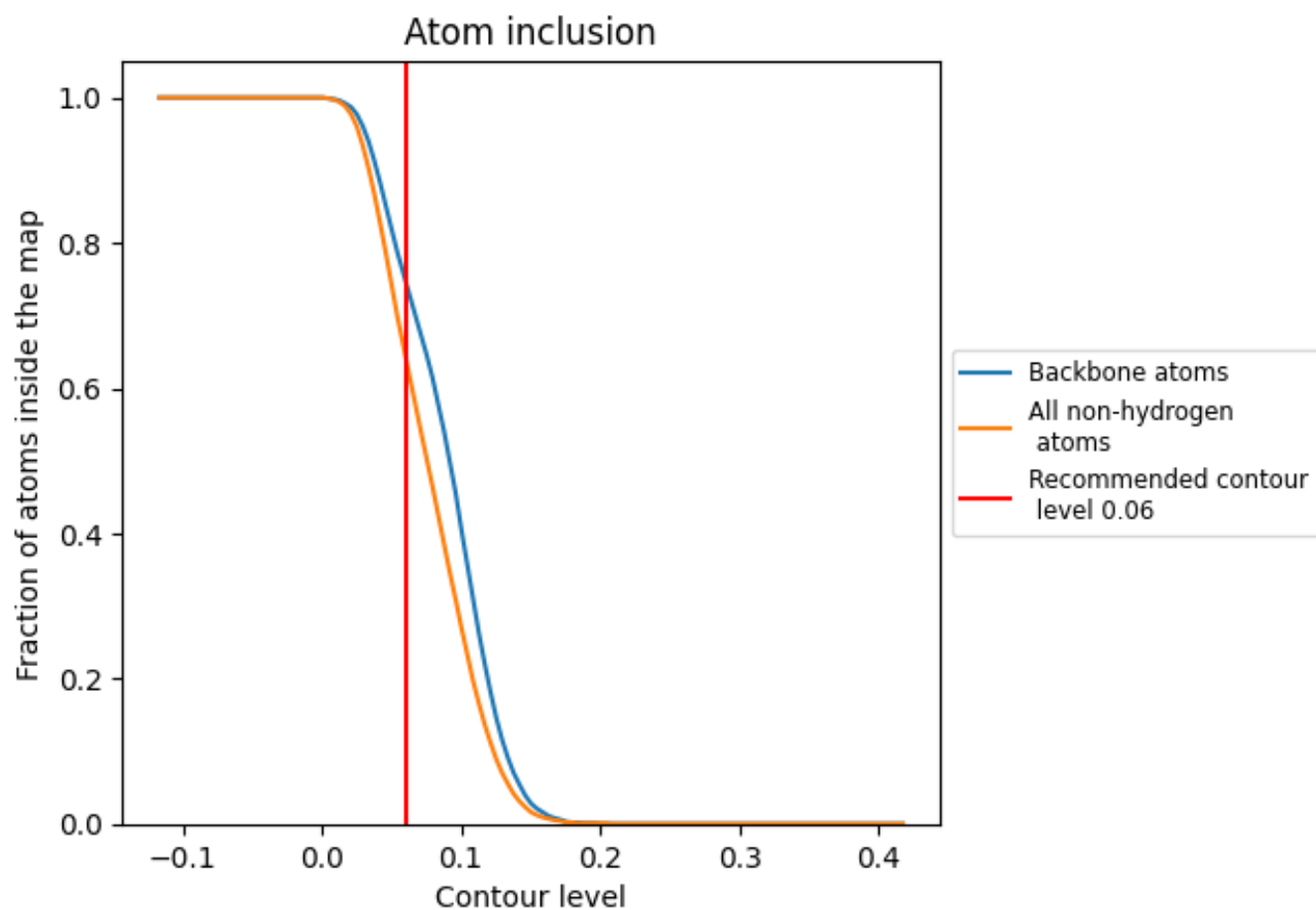
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.06).











































9.4 Atom inclusion [i](#)



At the recommended contour level, 75% of all backbone atoms, 64% 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	 0.6450	 0.5250
1	 0.2890	 0.4610
A	 0.6410	 0.5260
B	 0.6920	 0.5410
C	 0.6360	 0.5270
D	 0.6890	 0.5390
E	 0.6890	 0.5400
F	 0.5890	 0.5040
G	 0.6340	 0.5320
H	 0.6850	 0.5330
I	 0.6710	 0.5260
J	 0.6840	 0.5260
K	 0.7160	 0.5400
L	 0.5840	 0.5040
M	 0.6970	 0.5330
N	 0.6970	 0.5370
O	 0.6710	 0.5540
P	 0.6810	 0.5310
Q	 0.4480	 0.4860
S	 0.6140	 0.5260
V	 0.4640	 0.4610

