



Full wwPDB EM Validation Report ⓘ

Mar 10, 2026 – 08:56 AM UTC

PDB ID : 7Z7V / pdb_00007z7v
EMDB ID : EMD-14538
Title : Complex I from E. coli, LMNG-purified, under Turnover at pH 6, Open-ready state
Authors : Kravchuk, V.; Kampjut, D.; Sazanov, L.
Deposited on : 2022-03-16
Resolution : 2.29 Å (reported)
Based on initial models : 4HEA, 3RKO

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

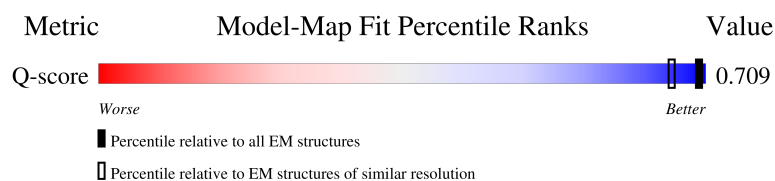
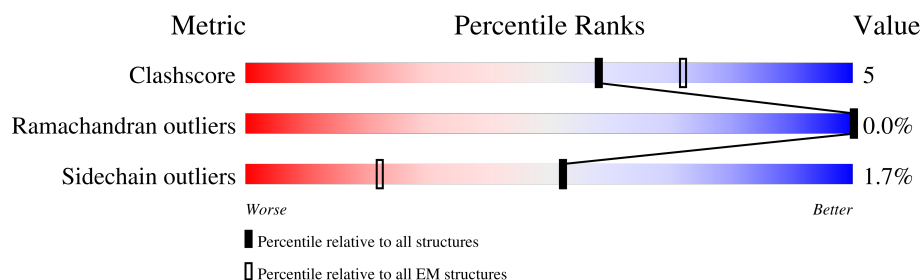
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.29 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	3699 (1.79 - 2.79)

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	F	445	 87% 11% .
2	E	166	 81% 13% . 6%
3	G	908	 89% 10%
4	C	596	 87% 11% .

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Mol	Chain	Length	Quality of chain
5	B	220	 74%16%10%
6	I	180	 89%11%
7	H	325	 82%17%.
8	A	147	 59%16%25%
9	L	613	 85%13%.
10	M	509	 84%14%.
11	N	485	 87%11%.
12	K	100	 83%17%
13	J	184	 75%13%12%

2 Entry composition

There are 22 unique types of molecules in this entry. The entry contains 39106 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 NADH-quinone oxidoreductase subunit F.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	F	439	Total	C	N	O	S	0	0
			3407	2162	596	629	20		

- Molecule 2 is a protein called NADH dehydrogenase I subunit E.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	E	156	Total	C	N	O	S	0	0
			1220	768	215	229	8		

- Molecule 3 is a protein called NADH-quinone oxidoreductase.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	G	905	Total	C	N	O	S	0	0
			7027	4392	1269	1329	37		

- Molecule 4 is a protein called NADH-quinone oxidoreductase subunit C/D.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	C	588	Total	C	N	O	S	0	0
			4739	3038	824	853	24		

- Molecule 5 is a protein called NADH-quinone oxidoreductase subunit B.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	B	198	Total	C	N	O	S	0	0
			1568	994	272	286	16		

- Molecule 6 is a protein called NADH-quinone oxidoreductase subunit I.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	I	180	Total	C	N	O	S	0	0
			1436	915	242	264	15		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H	323	Total	C	N	O	S	0	0
			2544	1707	400	419	18		

- Molecule 8 is a protein called NADH-quinone oxidoreductase subunit A.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	A	110	Total	C	N	O	S	0	0
			875	596	140	135	4		

- Molecule 9 is a protein called NADH dehydrogenase subunit L.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	L	605	Total	C	N	O	S	0	0
			4627	3076	740	779	32		

- Molecule 10 is a protein called NADH dehydrogenase I subunit M.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	M	504	Total	C	N	O	S	0	0
			3953	2661	617	646	29		

- Molecule 11 is a protein called NADH-quinone oxidoreductase subunit N.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	N	478	Total	C	N	O	S	0	0
			3620	2418	571	611	20		

- Molecule 12 is a protein called NADH-quinone oxidoreductase subunit K.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	K	100	Total	C	N	O	S	0	0
			760	494	132	129	5		

- Molecule 13 is a protein called NADH-quinone oxidoreductase subunit J.

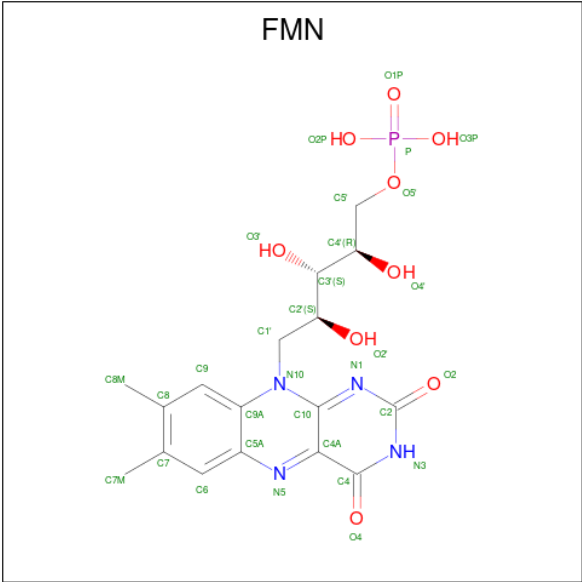
Mol	Chain	Residues	Atoms					AltConf	Trace
13	J	162	Total	C	N	O	S	0	0
			1226	824	188	207	7		

- Molecule 14 is IRON/SULFUR CLUSTER (CCD ID: SF4) (formula: Fe₄S₄).



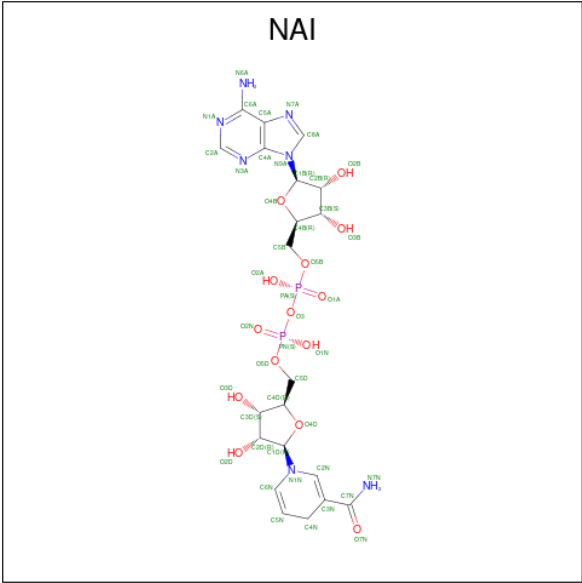
Mol	Chain	Residues	Atoms			AltConf
14	F	1	Total	Fe	S	0
			8	4	4	
14	G	1	Total	Fe	S	0
			8	4	4	
14	G	1	Total	Fe	S	0
			8	4	4	
14	G	1	Total	Fe	S	0
			8	4	4	
14	B	1	Total	Fe	S	0
			8	4	4	
14	I	1	Total	Fe	S	0
			8	4	4	
14	I	1	Total	Fe	S	0
			8	4	4	

- Molecule 15 is FLAVIN MONONUCLEOTIDE (CCD ID: FMN) (formula: $C_{17}H_{21}N_4O_9P$).



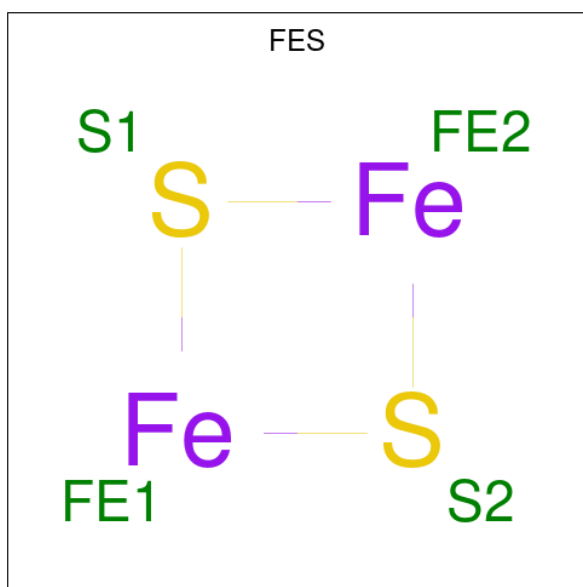
Mol	Chain	Residues	Atoms					AltConf
15	F	1	Total	C	N	O	P	0
			31	17	4	9	1	

- Molecule 16 is 1,4-DIHYDRONICOTINAMIDE ADENINE DINUCLEOTIDE (CCD ID: NAI) (formula: $C_{21}H_{29}N_7O_{14}P_2$).



Mol	Chain	Residues	Atoms					AltConf
16	F	1	Total	C	N	O	P	0
			44	21	7	14	2	

- Molecule 17 is FE2/S2 (INORGANIC) CLUSTER (CCD ID: FES) (formula: Fe_2S_2).

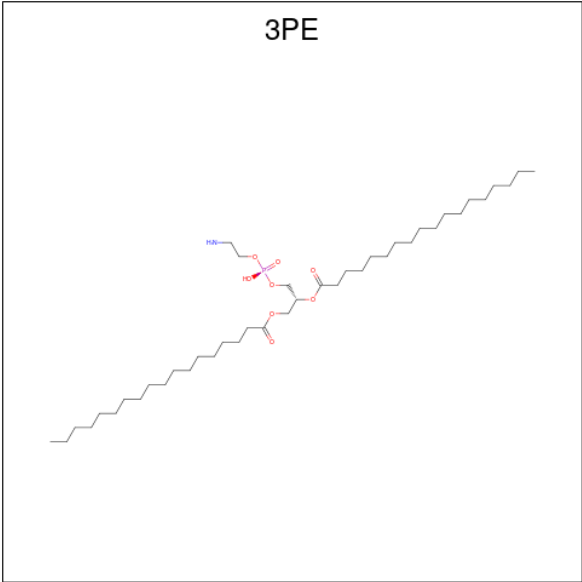


Mol	Chain	Residues	Atoms			AltConf
17	E	1	Total	Fe	S	0
			4	2	2	
17	G	1	Total	Fe	S	0
			4	2	2	

- Molecule 18 is CALCIUM ION (CCD ID: CA) (formula: Ca).

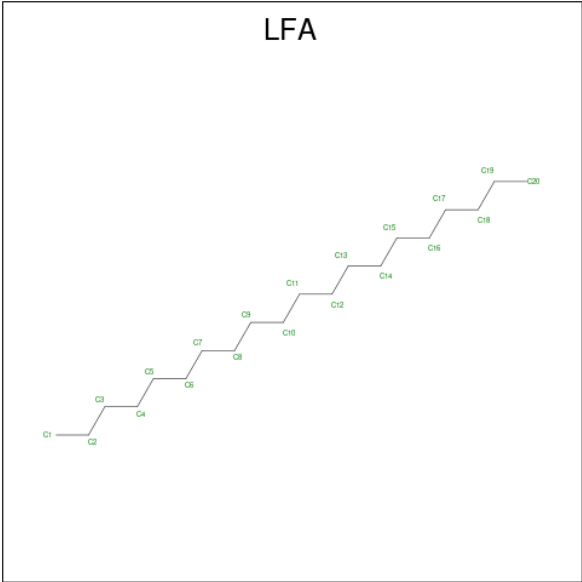
Mol	Chain	Residues	Atoms		AltConf
18	G	1	Total	Ca	0
			1	1	

- Molecule 19 is 1,2-Distearoyl-sn-glycerophosphoethanolamine (CCD ID: 3PE) (formula: C₄₁H₈₂NO₈P).



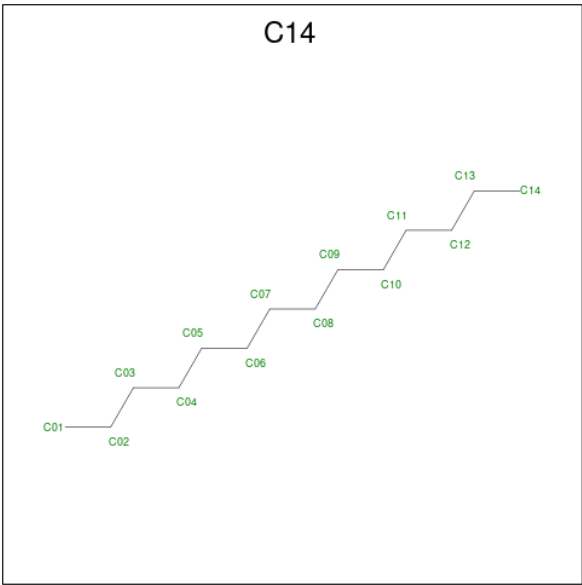
Mol	Chain	Residues	Atoms					AltConf
19	I	1	Total	C	N	O	P	0
			51	41	1	8	1	
19	H	1	Total	C	N	O	P	0
			51	41	1	8	1	
19	H	1	Total	C	N	O	P	0
			51	41	1	8	1	
19	A	1	Total	C	N	O	P	0
			34	24	1	8	1	
19	L	1	Total	C	N	O	P	0
			51	41	1	8	1	
19	L	1	Total	C	N	O	P	0
			49	39	1	8	1	
19	L	1	Total	C	N	O	P	0
			51	41	1	8	1	
19	M	1	Total	C	N	O	P	0
			51	41	1	8	1	
19	M	1	Total	C	N	O	P	0
			51	41	1	8	1	
19	M	1	Total	C	N	O	P	0
			51	41	1	8	1	
19	N	1	Total	C	N	O	P	0
			51	41	1	8	1	
19	J	1	Total	C	N	O	P	0
			51	41	1	8	1	

- Molecule 20 is EICOSANE (CCD ID: LFA) (formula: C₂₀H₄₂).



Mol	Chain	Residues	Atoms		AltConf
20	H	1	Total	C	0
			20	20	
20	L	1	Total	C	0
			20	20	
20	M	1	Total	C	0
			20	20	

- Molecule 21 is TETRADECANE (CCD ID: C14) (formula: C₁₄H₃₀).



Mol	Chain	Residues	Atoms		AltConf
21	N	1	Total	C	0
			14	14	

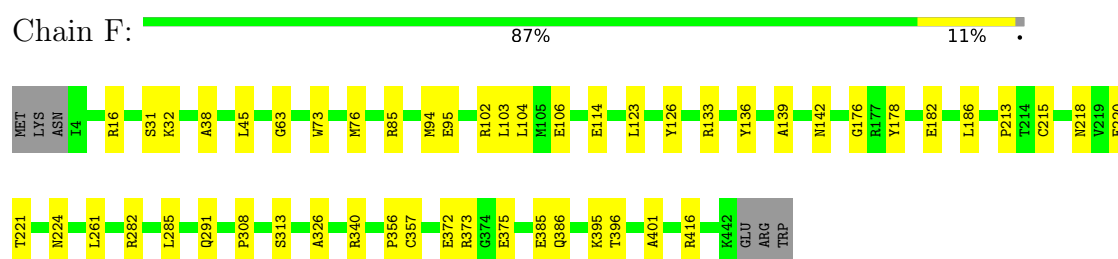
- Molecule 22 is water.

Mol	Chain	Residues	Atoms		AltConf
22	F	122	Total 122	O 122	0
22	E	30	Total 30	O 30	0
22	G	374	Total 374	O 374	0
22	C	194	Total 194	O 194	0
22	B	67	Total 67	O 67	0
22	I	96	Total 96	O 96	0
22	H	49	Total 49	O 49	0
22	A	14	Total 14	O 14	0
22	L	95	Total 95	O 95	0
22	M	115	Total 115	O 115	0
22	N	93	Total 93	O 93	0
22	K	21	Total 21	O 21	0
22	J	27	Total 27	O 27	0

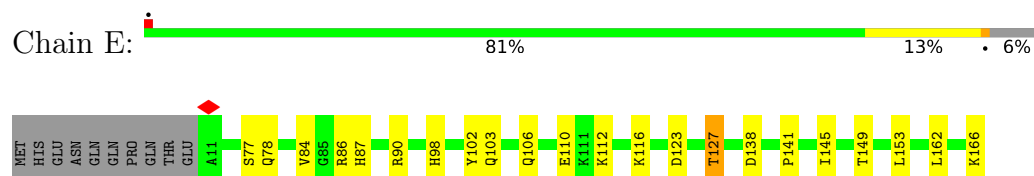
3 Residue-property plots

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.

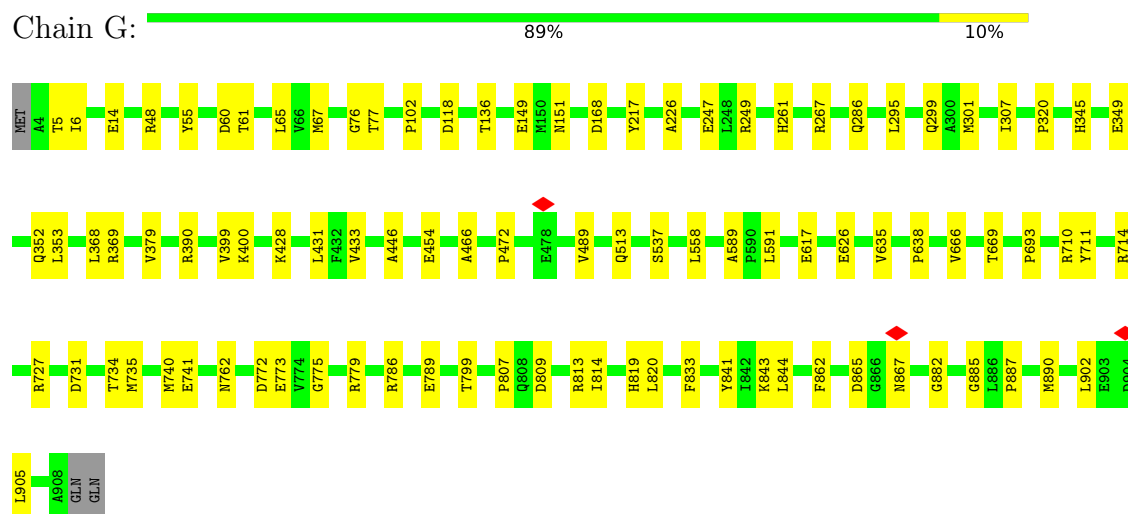
• Molecule 1: NADH-quinone oxidoreductase subunit F



• Molecule 2: NADH dehydrogenase I subunit E

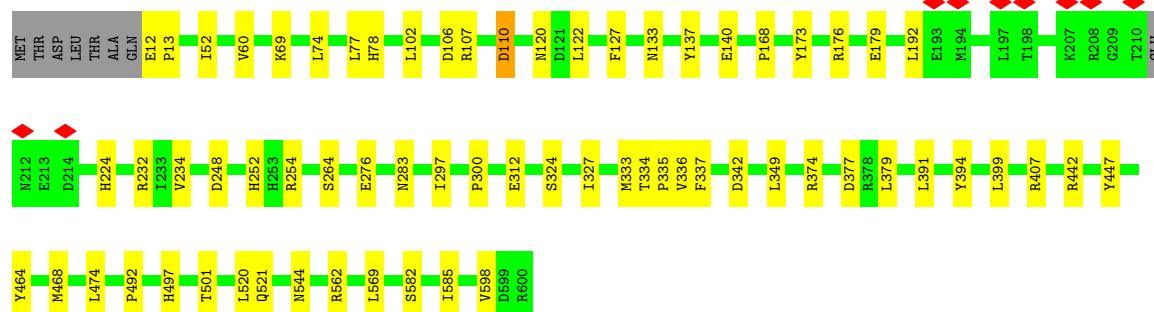


• Molecule 3: NADH-quinone oxidoreductase



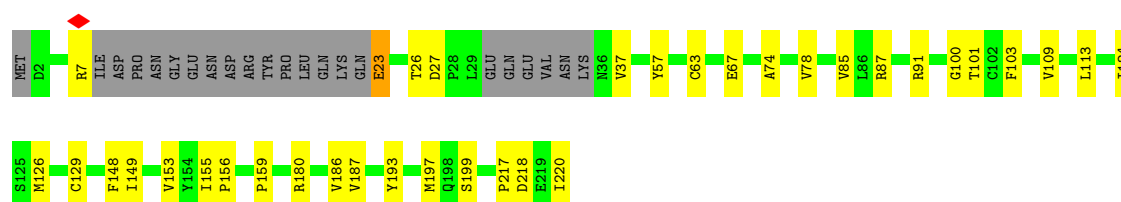
• Molecule 4: NADH-quinone oxidoreductase subunit C/D

Chain C:  87% 11%



• Molecule 5: NADH-quinone oxidoreductase subunit B

Chain B:  74% 16% 10%



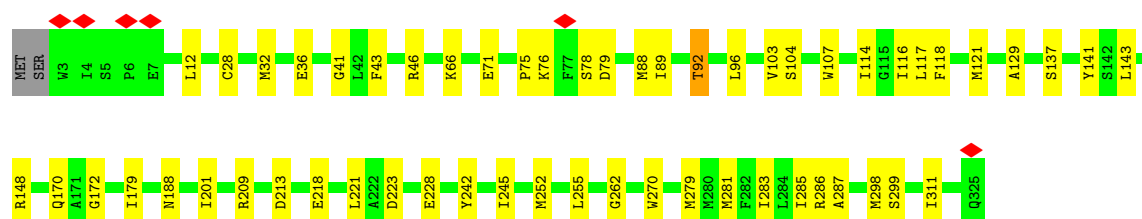
• Molecule 6: NADH-quinone oxidoreductase subunit I

Chain I:  89% 11%



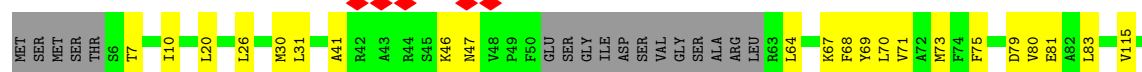
• Molecule 7: NADH-quinone oxidoreductase subunit H

Chain H:  82% 17%



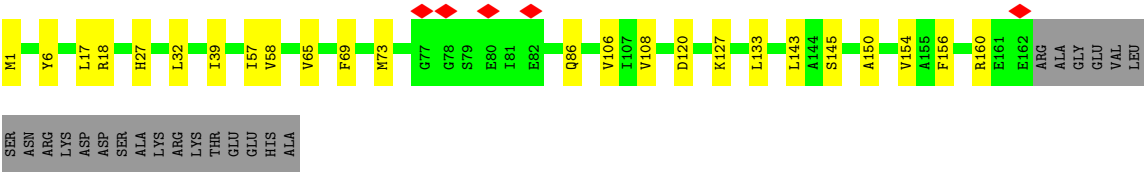
• Molecule 8: NADH-quinone oxidoreductase subunit A

Chain A:  59% 16% 25%





● Molecule 13: NADH-quinone oxidoreductase subunit J



SER
ASN
ARG
LYS
ASP
ASP
SER
ALA
LYS
ARG
LYS
THR
GLU
HIS
ALA

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	317174	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 ($e^-/\text{\AA}^2$)	80	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.748	Depositor
Minimum map value	-0.104	Depositor
Average map value	0.005	Depositor
Map value standard deviation	0.025	Depositor
Recommended contour level	0.06	Depositor
Map size (Å)	153.0, 210.5, 237.5	wwPDB
Map dimensions	306, 421, 475	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.5, 0.5, 0.5	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: C14, 3PE, FMN, SF4, CA, FES, LFA, NAI

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	F	0.20	0/3486	0.37	0/4713
2	E	0.20	0/1248	0.40	0/1691
3	G	0.21	0/7178	0.40	0/9733
4	C	0.22	0/4869	0.40	0/6607
5	B	0.23	0/1601	0.40	0/2168
6	I	0.21	0/1470	0.40	0/1985
7	H	0.26	0/2620	0.43	0/3565
8	A	0.22	0/902	0.40	0/1226
9	L	0.19	0/4745	0.39	0/6465
10	M	0.23	0/4074	0.45	0/5546
11	N	0.22	0/3709	0.43	0/5061
12	K	0.20	0/769	0.41	0/1040
13	J	0.20	0/1252	0.43	0/1708
All	All	0.22	0/37923	0.41	0/51508

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	E	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	E	145	ILE	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	F	3407	0	3374	31	0
2	E	1220	0	1187	14	0
3	G	7027	0	6829	51	0
4	C	4739	0	4650	41	0
5	B	1568	0	1553	20	0
6	I	1436	0	1415	16	0
7	H	2544	0	2591	38	0
8	A	875	0	890	21	0
9	L	4627	0	4770	49	0
10	M	3953	0	4053	47	0
11	N	3620	0	3790	37	0
12	K	760	0	817	14	0
13	J	1226	0	1297	23	0
14	B	8	0	0	1	0
14	F	8	0	0	0	0
14	G	24	0	0	0	0
14	I	16	0	0	0	0
15	F	31	0	19	1	0
16	F	44	0	27	3	0
17	E	4	0	0	0	0
17	G	4	0	0	0	0
18	G	1	0	0	0	0
19	A	34	0	42	3	0
19	H	102	0	164	8	0
19	I	51	0	82	1	0
19	J	51	0	82	5	0
19	L	151	0	239	6	0
19	M	153	0	246	3	0
19	N	51	0	82	2	0
20	H	20	0	42	2	0
20	L	20	0	42	0	0
20	M	20	0	42	1	0
21	N	14	0	30	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
22	A	14	0	0	0	0
22	B	67	0	0	0	0
22	C	194	0	0	2	0
22	E	30	0	0	2	0
22	F	122	0	0	1	0
22	G	374	0	0	1	0
22	H	49	0	0	0	0
22	I	96	0	0	0	0
22	J	27	0	0	0	0
22	K	21	0	0	2	0
22	L	95	0	0	1	0
22	M	115	0	0	0	0
22	N	93	0	0	0	0
All	All	39106	0	38355	360	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 5.

All (360) 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:F:95:GLU:HB2	16:F:503:NAI:H42N	1.62	0.78
12:K:6:HIS:HD1	13:J:6:TYR:HH	1.35	0.73
11:N:339:GLY:HA3	11:N:379:MET:HE3	1.70	0.72
10:M:181:SER:HB2	10:M:230:ALA:HA	1.74	0.67
11:N:217:LYS:HB3	11:N:250:ILE:HD13	1.77	0.67
1:F:357:CYS:HB2	1:F:401:ALA:HB2	1.78	0.65
10:M:145:MET:HE2	11:N:388:MET:HE1	1.77	0.65
9:L:223:LEU:HD13	9:L:283:VAL:HG22	1.79	0.64
7:H:36:GLU:HG2	7:H:283:ILE:HD12	1.78	0.64
3:G:862:PHE:HB3	3:G:905:LEU:HD23	1.79	0.63
11:N:385:GLY:HA3	11:N:395:LYS:HE2	1.79	0.63
4:C:276:GLU:HB3	4:C:283:ASN:HD21	1.64	0.62
12:K:85:ARG:NH1	22:K:201:HOH:O	2.33	0.61
12:K:9:ILE:HG12	13:J:108:VAL:HG22	1.82	0.61
9:L:179:VAL:HG22	10:M:426:THR:HG22	1.81	0.61
2:E:84:VAL:HB	2:E:127:THR:HG21	1.83	0.60
8:A:64:LEU:HD12	13:J:73:MET:HA	1.84	0.60
7:H:218:GLU:HB3	7:H:221:LEU:HD13	1.82	0.60
3:G:711:TYR:HB3	3:G:740:MET:HE3	1.83	0.60
7:H:96:LEU:HD22	8:A:20:LEU:HD23	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:626:GLU:OE1	3:G:786:ARG:NH1	2.36	0.59
6:I:24:ALA:HB2	7:H:43:PHE:HD1	1.68	0.58
2:E:90:ARG:NH1	22:E:302:HOH:O	2.35	0.58
11:N:111:ILE:HG21	13:J:150:ALA:HB2	1.86	0.58
10:M:187:ILE:HD11	11:N:399:LEU:HD22	1.85	0.58
5:B:126:MET:HG3	5:B:155:ILE:HD12	1.86	0.58
10:M:19:GLN:OE1	10:M:22:ARG:NH1	2.35	0.57
9:L:11:PRO:HB2	9:L:125:ALA:HB2	1.86	0.57
4:C:77:LEU:HB3	4:C:137:TYR:HB3	1.86	0.56
1:F:373:ARG:NH1	1:F:375:GLU:OE1	2.37	0.56
4:C:283:ASN:ND2	22:C:714:HOH:O	2.36	0.56
19:H:403:3PE:H341	19:J:201:3PE:H321	1.87	0.56
4:C:232:ARG:HB2	4:C:248:ASP:HB3	1.87	0.56
11:N:118:LEU:HD22	13:J:143:LEU:HD13	1.86	0.56
4:C:334:THR:OG1	7:H:287:ALA:O	2.24	0.56
19:H:401:3PE:H2H2	19:H:401:3PE:H3E2	1.87	0.56
11:N:248:ILE:HG12	11:N:330:LEU:HD22	1.87	0.56
9:L:247:THR:HG21	9:L:350:GLY:HA3	1.86	0.56
6:I:15:ARG:HH22	19:I:203:3PE:H112	1.69	0.55
8:A:68:PHE:HB3	13:J:69:PHE:HE2	1.70	0.55
8:A:119:ARG:NH1	19:A:201:3PE:O12	2.37	0.55
5:B:180:ARG:HB2	5:B:193:TYR:HB2	1.89	0.55
3:G:472:PRO:HG3	3:G:799:THR:HA	1.88	0.55
4:C:69:LYS:HB3	4:C:107:ARG:HG3	1.89	0.55
7:H:179:ILE:HG21	7:H:255:LEU:HD23	1.89	0.55
6:I:156:MET:O	6:I:161:LYS:NZ	2.40	0.54
3:G:727:ARG:HD3	4:C:179:GLU:HB2	1.90	0.54
9:L:164:GLY:CA	10:M:441:HIS:HE1	2.20	0.54
9:L:577:ARG:NH1	19:L:804:3PE:O22	2.33	0.54
10:M:122:TRP:CD2	10:M:149:PRO:HG3	2.42	0.54
3:G:814:ILE:HD11	3:G:902:LEU:HD13	1.91	0.53
1:F:16:ARG:HG2	1:F:32:LYS:HD2	1.91	0.53
1:F:218:ASN:ND2	15:F:502:FMN:O2	2.36	0.53
6:I:154:ALA:O	6:I:161:LYS:NZ	2.37	0.53
3:G:6:ILE:HG22	3:G:77:THR:HB	1.91	0.53
9:L:115:ARG:NH1	22:L:910:HOH:O	2.42	0.53
5:B:7:ARG:NH2	5:B:23:GLU:OE1	2.42	0.53
4:C:569:LEU:HD22	4:C:598:VAL:HG21	1.91	0.52
11:N:312:ALA:O	11:N:322:SER:OG	2.26	0.52
1:F:73:TRP:CD1	1:F:215:CYS:HG	2.26	0.52
11:N:57:GLN:NE2	19:N:602:3PE:O32	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:5:THR:O	3:G:76:GLY:N	2.40	0.52
10:M:215:MET:HE3	10:M:220:GLU:HG3	1.90	0.52
7:H:281:MET:HE2	19:H:401:3PE:H2G1	1.91	0.52
8:A:69:TYR:HB2	13:J:73:MET:HE1	1.91	0.52
10:M:414:SER:O	10:M:418:VAL:N	2.34	0.52
9:L:368:LEU:HD23	9:L:372:ILE:HD11	1.91	0.52
2:E:90:ARG:NH1	22:E:305:HOH:O	2.42	0.51
2:E:123:ASP:OD1	2:E:123:ASP:N	2.39	0.51
7:H:148:ARG:NH1	7:H:218:GLU:OE2	2.43	0.51
12:K:99:ARG:NH1	22:K:203:HOH:O	2.43	0.51
4:C:254:ARG:HG3	5:B:103:PHE:HE1	1.74	0.51
7:H:76:LYS:HE2	8:A:47:ASN:HD21	1.75	0.51
6:I:59:ARG:NH2	6:I:142:PRO:O	2.43	0.51
11:N:77:THR:HG23	11:N:117:ILE:HG12	1.92	0.51
5:B:91:ARG:NH2	8:A:46:LYS:O	2.44	0.51
19:L:801:3PE:H2A2	19:L:803:3PE:H2I2	1.92	0.50
1:F:282:ARG:HB2	1:F:285:LEU:HD12	1.93	0.50
8:A:41:ALA:O	8:A:46:LYS:NZ	2.40	0.50
5:B:101:THR:HA	5:B:129:CYS:HB3	1.92	0.50
7:H:213:ASP:OD1	7:H:213:ASP:N	2.41	0.50
7:H:242:TYR:HA	7:H:245:ILE:HD12	1.94	0.50
10:M:3:LEU:HB3	10:M:132:LEU:HD13	1.93	0.50
4:C:69:LYS:HG2	4:C:106:ASP:HB3	1.94	0.50
6:I:48:ILE:HG12	6:I:116:LEU:HG	1.94	0.50
11:N:8:LEU:HD23	11:N:11:LEU:HD12	1.94	0.50
8:A:80:VAL:O	8:A:83:LEU:HG	2.12	0.50
11:N:171:LEU:HD23	12:K:42:SER:HB2	1.93	0.49
4:C:110:ASP:OD2	4:C:442:ARG:NH1	2.46	0.49
5:B:217:PRO:HB3	6:I:43:ARG:HB3	1.92	0.49
10:M:404:PHE:O	10:M:408:PHE:HB2	2.12	0.49
9:L:344:LEU:HB2	9:L:460:LEU:HB3	1.94	0.49
10:M:142:PHE:HA	10:M:145:MET:HG2	1.95	0.49
10:M:415:PHE:HB2	10:M:422:THR:HG21	1.95	0.49
2:E:87:HIS:NE2	2:E:166:LYS:OXT	2.46	0.49
3:G:261:HIS:CD2	3:G:369:ARG:HD2	2.48	0.49
3:G:295:LEU:HA	3:G:299:GLN:HE21	1.78	0.49
4:C:407:ARG:NH2	22:C:729:HOH:O	2.44	0.49
19:H:401:3PE:H3B2	19:H:401:3PE:H2A1	1.95	0.49
3:G:168:ASP:OD1	3:G:400:LYS:NZ	2.46	0.49
3:G:865:ASP:OD2	3:G:867:ASN:ND2	2.45	0.49
8:A:83:LEU:HD23	13:J:58:VAL:HG21	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:887:PRO:HB2	3:G:890:MET:HG3	1.95	0.48
1:F:220:GLU:O	1:F:224:ASN:ND2	2.40	0.48
9:L:163:ASN:HD22	9:L:244:ALA:HB1	1.79	0.48
10:M:499:TRP:O	10:M:503:SER:OG	2.29	0.48
4:C:337:PHE:HB3	5:B:74:ALA:HB2	1.95	0.48
5:B:186:VAL:HG23	5:B:187:VAL:HG23	1.95	0.48
7:H:137:SER:HB2	7:H:228:GLU:HG3	1.96	0.48
7:H:209:ARG:HD3	7:H:245:ILE:HD11	1.96	0.48
9:L:431:ARG:HG3	9:L:512:TRP:CE2	2.49	0.48
1:F:63:GLY:O	16:F:503:NAI:H2N	2.13	0.48
4:C:52:ILE:HD12	4:C:60:VAL:HG21	1.95	0.47
9:L:119:TYR:OH	19:L:801:3PE:O32	2.30	0.47
1:F:176:GLY:O	2:E:77:SER:OG	2.32	0.47
3:G:617:GLU:HG2	3:G:638:PRO:HG3	1.95	0.47
4:C:544:ASN:ND2	4:C:562:ARG:O	2.45	0.47
11:N:305:HIS:ND1	11:N:329:TYR:OH	2.38	0.47
3:G:431:LEU:O	3:G:446:ALA:N	2.47	0.47
7:H:104:SER:HB3	7:H:107:TRP:HB2	1.96	0.47
8:A:67:LYS:HD3	8:A:70:LEU:HD12	1.96	0.47
10:M:127:VAL:HG11	10:M:264:LEU:HD13	1.96	0.47
3:G:307:ILE:HG21	3:G:591:LEU:HD13	1.97	0.47
10:M:79:ILE:HA	10:M:138:LEU:HD22	1.96	0.47
11:N:421:GLY:HA2	11:N:424:TYR:CE2	2.50	0.47
1:F:308:PRO:O	1:F:313:SER:OG	2.28	0.47
5:B:26:THR:OG1	5:B:27:ASP:N	2.47	0.47
9:L:89:LEU:O	9:L:93:THR:OG1	2.27	0.47
9:L:260:THR:HB	9:L:335:LEU:HD11	1.96	0.47
10:M:314:LEU:O	10:M:318:THR:HG23	2.14	0.47
1:F:176:GLY:HA3	2:E:78:GLN:HG2	1.97	0.47
2:E:86:ARG:NH1	2:E:166:LYS:O	2.48	0.47
10:M:381:MET:HB2	10:M:385:PRO:HD3	1.96	0.47
19:H:403:3PE:H3B1	19:J:201:3PE:H3B2	1.97	0.47
7:H:71:GLU:OE2	8:A:46:LYS:NZ	2.41	0.47
9:L:273:PHE:HB3	9:L:280:LEU:HD13	1.97	0.47
10:M:391:PHE:O	10:M:395:THR:HG23	2.15	0.47
5:B:197:MET:HE2	5:B:197:MET:HB3	1.79	0.47
1:F:356:PRO:HB2	1:F:396:THR:HG22	1.97	0.46
3:G:741:GLU:OE2	4:C:176:ARG:NH1	2.40	0.46
3:G:819:HIS:NE2	3:G:841:TYR:OH	2.41	0.46
8:A:115:VAL:HG21	19:A:201:3PE:H252	1.96	0.46
11:N:231:TYR:OH	11:N:247:LYS:NZ	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:103:VAL:HG21	20:H:402:LFA:H81	1.97	0.46
4:C:391:LEU:HD22	4:C:474:LEU:HD22	1.97	0.46
7:H:28:CYS:O	7:H:32:MET:HB2	2.15	0.46
10:M:236:PRO:HG3	10:M:244:LEU:HD22	1.96	0.46
13:J:120:ASP:OD1	13:J:120:ASP:N	2.42	0.46
3:G:320:PRO:HB2	3:G:537:SER:HB2	1.98	0.46
9:L:205:PRO:HD3	9:L:275:MET:HE1	1.98	0.46
10:M:474:LEU:HD22	20:M:1002:LFA:H41	1.97	0.46
2:E:112:LYS:HD2	2:E:162:LEU:HD12	1.98	0.46
3:G:286:GLN:HB2	3:G:295:LEU:HD11	1.98	0.46
1:F:38:ALA:HB2	1:F:114:GLU:HG3	1.97	0.46
3:G:428:LYS:HE3	3:G:428:LYS:HB3	1.76	0.46
3:G:731:ASP:OD2	3:G:734:THR:OG1	2.31	0.46
11:N:141:GLY:HA3	13:J:154:VAL:HG22	1.97	0.46
3:G:399:VAL:HG13	3:G:428:LYS:HB2	1.97	0.46
1:F:136:TYR:HB3	1:F:139:ALA:HB3	1.97	0.46
10:M:45:GLN:HE22	10:M:49:GLN:HE21	1.63	0.46
4:C:133:ASN:OD1	4:C:133:ASN:N	2.43	0.45
3:G:843:LYS:HB2	3:G:885:GLY:HA3	1.98	0.45
4:C:374:ARG:NH2	5:B:218:ASP:OD2	2.49	0.45
19:H:403:3PE:N	19:J:201:3PE:O14	2.46	0.45
10:M:370:ASP:HB3	10:M:373:MET:HG2	1.98	0.45
1:F:386:GLN:NE2	22:F:618:HOH:O	2.49	0.45
3:G:247:GLU:HG3	3:G:249:ARG:HE	1.81	0.45
3:G:267:ARG:HA	3:G:833:PHE:HZ	1.82	0.45
7:H:75:PRO:HB2	7:H:78:SER:HB3	1.98	0.45
4:C:78:HIS:HE2	4:C:140:GLU:HG2	1.81	0.45
9:L:33:VAL:O	9:L:37:SER:OG	2.30	0.45
2:E:116:LYS:HD3	2:E:116:LYS:HA	1.73	0.45
10:M:72:ILE:HB	10:M:77:ILE:HB	1.97	0.45
10:M:175:PHE:CD1	11:N:426:LEU:HD21	2.51	0.45
1:F:85:ARG:HG2	1:F:213:PRO:HB2	1.98	0.45
11:N:330:LEU:HD23	11:N:330:LEU:HA	1.81	0.45
11:N:336:SER:HA	11:N:379:MET:SD	2.56	0.45
11:N:386:ILE:O	11:N:389:THR:OG1	2.27	0.45
11:N:481:ALA:HB2	19:N:602:3PE:H241	1.99	0.45
4:C:297:ILE:HG12	4:C:497:HIS:CG	2.51	0.45
7:H:311:ILE:HD11	19:A:201:3PE:H371	1.98	0.45
9:L:457:LEU:O	9:L:461:LEU:HB2	2.17	0.45
9:L:488:GLY:O	9:L:492:THR:HG23	2.16	0.45
9:L:568:MET:HE2	9:L:568:MET:HB3	1.90	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:170:GLN:NE2	7:H:188:ASN:OD1	2.49	0.45
8:A:31:LEU:HD23	8:A:31:LEU:HA	1.83	0.45
2:E:106:GLN:O	2:E:110:GLU:HG2	2.16	0.45
7:H:201:ILE:HG12	19:H:401:3PE:H381	1.98	0.45
13:J:1:MET:HB2	19:J:201:3PE:H112	1.98	0.45
5:B:67:GLU:HG3	5:B:159:PRO:HB2	1.98	0.44
7:H:41:GLY:HA2	7:H:46:ARG:HG3	2.00	0.44
11:N:197:MET:HE3	11:N:197:MET:HB3	1.92	0.44
5:B:156:PRO:HG2	6:I:122:MET:HB3	1.99	0.44
7:H:79:ASP:OD1	13:J:27:HIS:NE2	2.42	0.44
10:M:208:GLU:HA	10:M:211:LEU:HD12	2.00	0.44
10:M:432:ALA:HA	10:M:435:TYR:CE2	2.52	0.44
11:N:387:PRO:O	11:N:388:MET:HG2	2.16	0.44
9:L:606:LEU:HB3	13:J:106:VAL:HG11	1.98	0.44
3:G:102:PRO:HG3	3:G:151:ASN:HB3	1.98	0.44
10:M:71:TRP:HB2	10:M:79:ILE:HG13	1.98	0.44
7:H:172:GLY:O	13:J:127:LYS:NZ	2.51	0.44
7:H:262:GLY:HA3	7:H:270:TRP:CD1	2.52	0.44
13:J:18:ARG:HE	13:J:18:ARG:HB3	1.62	0.44
1:F:178:TYR:OH	16:F:503:NAI:H5N	2.18	0.44
1:F:340:ARG:NE	1:F:372:GLU:OE1	2.46	0.44
4:C:224:HIS:CE1	4:C:585:ILE:HD11	2.53	0.44
5:B:57:TYR:HE2	5:B:113:LEU:HD13	1.82	0.44
5:B:148:PHE:CD2	5:B:149:ILE:HG23	2.52	0.44
8:A:7:THR:HA	8:A:10:ILE:HG12	1.99	0.44
13:J:57:ILE:HG22	13:J:58:VAL:HG23	2.00	0.44
2:E:138:ASP:OD1	2:E:138:ASP:N	2.48	0.44
7:H:89:ILE:HB	7:H:129:ALA:HB2	1.99	0.44
19:M:1004:3PE:H351	21:N:601:C14:H122	2.00	0.44
4:C:324:SER:HB2	4:C:336:VAL:HA	2.00	0.44
1:F:76:MET:HE2	1:F:123:LEU:HD22	2.00	0.43
3:G:267:ARG:HB2	3:G:820:LEU:HG	1.99	0.43
7:H:36:GLU:OE2	7:H:286:ARG:NH1	2.49	0.43
7:H:114:ILE:HB	7:H:117:LEU:HB2	2.00	0.43
6:I:24:ALA:HB2	7:H:43:PHE:CD1	2.51	0.43
12:K:33:ILE:HG23	13:J:32:LEU:HD22	1.99	0.43
1:F:182:GLU:O	1:F:186:LEU:N	2.44	0.43
3:G:379:VAL:HB	3:G:433:VAL:HG12	2.00	0.43
4:C:342:ASP:OD2	4:C:394:TYR:OH	2.28	0.43
9:L:164:GLY:C	10:M:441:HIS:HE1	2.26	0.43
9:L:173:VAL:HG22	19:M:1001:3PE:H391	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:118:ASP:OD1	3:G:762:ASN:ND2	2.47	0.43
9:L:551:LYS:HA	9:L:551:LYS:HD3	1.67	0.43
7:H:88:MET:HE2	7:H:88:MET:HB3	1.82	0.43
7:H:103:VAL:HG11	20:H:402:LFA:H61	2.01	0.43
9:L:361:ASN:HB3	9:L:364:LYS:HG2	1.99	0.43
1:F:103:LEU:HD22	1:F:261:LEU:HD23	2.01	0.43
4:C:74:LEU:HA	4:C:102:LEU:HD23	2.00	0.43
4:C:276:GLU:HB3	4:C:283:ASN:ND2	2.33	0.43
6:I:161:LYS:HE3	6:I:166:ALA:HB2	2.00	0.43
9:L:168:MET:HG3	10:M:441:HIS:CE1	2.53	0.43
3:G:710:ARG:NH1	22:G:1136:HOH:O	2.43	0.43
5:B:85:VAL:HG12	5:B:87:ARG:HH11	1.83	0.43
9:L:425:THR:HA	9:L:428:TYR:CE2	2.54	0.43
11:N:388:MET:HB3	11:N:388:MET:HE2	1.65	0.43
10:M:155:ALA:O	10:M:167:ARG:NH1	2.52	0.43
12:K:43:ALA:HB1	12:K:62:TYR:HD1	1.84	0.43
3:G:149:GLU:OE2	6:I:163:LYS:NZ	2.42	0.43
3:G:226:ALA:HB3	3:G:635:VAL:HG22	2.00	0.43
9:L:164:GLY:CA	10:M:441:HIS:CE1	3.01	0.43
9:L:164:GLY:O	10:M:441:HIS:HE1	2.02	0.43
9:L:318:TYR:OH	9:L:418:GLY:O	2.25	0.43
19:L:804:3PE:H2F1	19:M:1003:3PE:H3D2	2.00	0.43
11:N:1:MET:H1	11:N:1:MET:HG3	1.68	0.43
1:F:106:GLU:O	1:F:142:ASN:ND2	2.49	0.42
3:G:772:ASP:OD1	3:G:773:GLU:N	2.50	0.42
8:A:64:LEU:HB2	13:J:73:MET:HG3	2.01	0.42
7:H:141:TYR:HB3	7:H:223:ASP:HA	2.01	0.42
9:L:263:VAL:HG13	9:L:323:LEU:HD11	2.01	0.42
9:L:354:LEU:HD23	9:L:354:LEU:HA	1.91	0.42
11:N:176:LEU:HD22	11:N:202:LEU:HD11	2.01	0.42
11:N:198:LEU:HD21	11:N:263:VAL:HA	2.00	0.42
9:L:133:ALA:HB1	9:L:138:LEU:HB3	2.01	0.42
1:F:395:LYS:HE3	3:G:65:LEU:HD12	2.02	0.42
11:N:52:LEU:HD23	11:N:52:LEU:HA	1.91	0.42
11:N:390:LEU:HD21	11:N:474:LEU:HD22	2.01	0.42
12:K:92:ILE:HD12	12:K:92:ILE:HA	1.91	0.42
1:F:16:ARG:NH1	1:F:32:LYS:O	2.49	0.42
4:C:120:ASN:OD1	4:C:120:ASN:N	2.52	0.42
4:C:464:TYR:O	4:C:468:MET:HG2	2.20	0.42
8:A:75:PHE:O	8:A:79:ASP:HB2	2.19	0.42
10:M:263:LEU:HD11	10:M:356:PHE:HD2	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:N:311:VAL:HG22	11:N:410:LEU:HD13	2.01	0.42
3:G:558:LEU:HD22	3:G:589:ALA:HB2	2.02	0.42
2:E:141:PRO:HG2	2:E:153:LEU:HB2	2.01	0.42
3:G:353:LEU:HD21	3:G:513:GLN:HG3	2.01	0.42
3:G:454:GLU:OE1	3:G:813:ARG:NH1	2.42	0.42
7:H:285:ILE:HD13	7:H:285:ILE:HA	1.86	0.42
9:L:390:PRO:HA	9:L:396:PHE:CG	2.54	0.42
9:L:415:MET:HE2	9:L:415:MET:HB3	1.90	0.42
3:G:368:LEU:HD21	3:G:390:ARG:HB3	2.02	0.42
9:L:99:ILE:HG21	9:L:252:LEU:HG	2.01	0.42
9:L:271:GLY:O	9:L:275:MET:HG3	2.20	0.42
2:E:98:HIS:HA	2:E:102:TYR:HD1	1.84	0.42
3:G:345:HIS:NE2	3:G:349:GLU:OE1	2.52	0.42
3:G:772:ASP:HB3	3:G:779:ARG:HA	2.01	0.42
9:L:65:TRP:HB2	19:L:803:3PE:H122	2.01	0.42
9:L:175:ARG:NH2	10:M:396:LEU:O	2.52	0.42
11:N:206:GLY:O	11:N:210:MET:HG3	2.20	0.41
11:N:288:ALA:HB2	11:N:300:TYR:HB2	2.01	0.41
8:A:69:TYR:OH	12:K:74:SER:O	2.36	0.41
13:J:86:GLN:H	13:J:86:GLN:HG3	1.64	0.41
5:B:124:ILE:HG12	5:B:153:VAL:HB	2.01	0.41
1:F:102:ARG:O	1:F:106:GLU:HB2	2.21	0.41
4:C:327:ILE:HG21	4:C:335:PRO:HG2	2.01	0.41
7:H:32:MET:HG3	7:H:279:MET:HE3	2.02	0.41
9:L:380:LEU:HD23	9:L:380:LEU:HA	1.89	0.41
13:J:65:VAL:O	13:J:69:PHE:HB2	2.21	0.41
3:G:466:ALA:HB3	3:G:489:VAL:HG21	2.02	0.41
3:G:693:PRO:HG2	3:G:735:MET:SD	2.61	0.41
4:C:12:GLU:HA	4:C:13:PRO:HD3	1.90	0.41
6:I:80:ALA:HB2	6:I:90:GLU:HB2	2.01	0.41
7:H:66:LYS:HB3	7:H:66:LYS:HE3	1.85	0.41
10:M:143:TRP:CZ2	10:M:234:LYS:HE2	2.55	0.41
10:M:164:GLY:O	10:M:168:ILE:HG12	2.21	0.41
10:M:224:MET:HE3	10:M:224:MET:HB3	1.98	0.41
10:M:271:LEU:HA	10:M:275:SER:HB2	2.03	0.41
13:J:156:PHE:CZ	13:J:160:ARG:HD3	2.56	0.41
3:G:301:MET:HE2	3:G:301:MET:HA	2.03	0.41
3:G:369:ARG:NH2	3:G:775:GLY:O	2.48	0.41
3:G:714:ARG:NH1	3:G:740:MET:SD	2.93	0.41
4:C:334:THR:HG21	6:I:20:ILE:HD12	2.02	0.41
7:H:298:MET:HE1	8:A:71:VAL:HG21	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:26:LEU:O	8:A:30:MET:HG3	2.20	0.41
9:L:168:MET:HE2	9:L:168:MET:HB3	1.91	0.41
10:M:464:GLU:HA	10:M:467:MET:HE2	2.02	0.41
11:N:375:VAL:O	11:N:379:MET:HG2	2.21	0.41
12:K:43:ALA:HB1	12:K:62:TYR:CD1	2.56	0.41
3:G:844:LEU:HD23	3:G:844:LEU:HA	1.95	0.41
12:K:83:LEU:O	12:K:87:ARG:HB2	2.20	0.41
3:G:217:TYR:HB3	6:I:79:LYS:HD2	2.03	0.41
4:C:168:PRO:HA	4:C:173:TYR:CG	2.56	0.41
7:H:118:PHE:HA	7:H:121:MET:SD	2.60	0.41
9:L:232:GLN:HA	9:L:290:THR:HG21	2.03	0.41
10:M:144:GLU:HB2	11:N:387:PRO:HG2	2.02	0.41
10:M:258:ASP:O	10:M:263:LEU:HG	2.20	0.41
4:C:501:THR:HG23	4:C:521:GLN:HB3	2.02	0.41
7:H:92:THR:O	7:H:96:LEU:HG	2.21	0.41
9:L:107:MET:HE3	9:L:107:MET:HB3	1.98	0.41
9:L:253:ILE:HG23	9:L:258:MET:HB3	2.03	0.41
9:L:522:ILE:O	9:L:525:SER:OG	2.33	0.41
11:N:14:LEU:HD21	13:J:143:LEU:HD11	2.03	0.41
12:K:63:ILE:HD13	13:J:133:LEU:HD11	2.03	0.41
3:G:48:ARG:HA	3:G:67:MET:SD	2.61	0.41
3:G:55:TYR:HB3	3:G:60:ASP:HB3	2.02	0.41
3:G:807:PRO:HB3	3:G:882:GLY:HA3	2.03	0.41
4:C:300:PRO:HG3	4:C:492:PRO:HG2	2.03	0.41
19:L:804:3PE:H232	19:L:804:3PE:H262	1.93	0.41
10:M:160:LYS:HD3	10:M:160:LYS:HA	1.90	0.41
1:F:385:GLU:OE2	1:F:416:ARG:NH1	2.45	0.40
4:C:192:LEU:HD21	5:B:109:VAL:HG22	2.04	0.40
4:C:520:LEU:HD23	4:C:520:LEU:HA	1.91	0.40
5:B:100:GLY:HA2	14:B:301:SF4:S4	2.62	0.40
9:L:253:ILE:HG22	9:L:254:HIS:HD2	1.86	0.40
12:K:25:ARG:HD2	12:K:25:ARG:HA	1.82	0.40
1:F:104:LEU:HD23	1:F:104:LEU:HA	1.94	0.40
1:F:291:GLN:O	1:F:326:ALA:HA	2.21	0.40
4:C:122:LEU:HD23	4:C:122:LEU:HA	1.92	0.40
4:C:252:HIS:O	4:C:252:HIS:ND1	2.51	0.40
4:C:349:LEU:HD13	4:C:379:LEU:HB2	2.03	0.40
6:I:48:ILE:HB	6:I:96:PHE:HZ	1.87	0.40
6:I:96:PHE:CG	6:I:122:MET:HE1	2.56	0.40
10:M:100:LEU:HD22	10:M:467:MET:HB2	2.03	0.40
4:C:333:MET:H	4:C:333:MET:HG3	1.64	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:73:MET:HE3	8:A:73:MET:HB3	1.93	0.40
9:L:291:LEU:HA	9:L:314:SER:HA	2.04	0.40
9:L:599:SER:HB3	12:K:19:LEU:HD21	2.04	0.40
10:M:381:MET:HE2	10:M:381:MET:HB3	1.83	0.40
1:F:45:LEU:HD23	1:F:45:LEU:HA	1.94	0.40
1:F:133:ARG:HD3	1:F:136:TYR:CE1	2.56	0.40
10:M:47:TRP:CG	10:M:88:LEU:HD11	2.56	0.40
10:M:291:MET:SD	10:M:418:VAL:HG21	2.62	0.40
11:N:480:LEU:HD23	11:N:480:LEU:HA	1.87	0.40
4:C:312:GLU:OE2	4:C:447:TYR:OH	2.31	0.40
19:H:403:3PE:H261	19:J:201:3PE:H271	2.03	0.40
9:L:12:LEU:HD23	9:L:12:LEU:HA	1.95	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	F	437/445 (98%)	429 (98%)	8 (2%)	0	100	100
2	E	154/166 (93%)	150 (97%)	4 (3%)	0	100	100
3	G	903/908 (99%)	884 (98%)	18 (2%)	1 (0%)	48	60
4	C	584/596 (98%)	570 (98%)	14 (2%)	0	100	100
5	B	192/220 (87%)	182 (95%)	10 (5%)	0	100	100
6	I	178/180 (99%)	175 (98%)	3 (2%)	0	100	100
7	H	321/325 (99%)	313 (98%)	8 (2%)	0	100	100
8	A	106/147 (72%)	106 (100%)	0	0	100	100
9	L	601/613 (98%)	588 (98%)	13 (2%)	0	100	100
10	M	502/509 (99%)	493 (98%)	9 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	N	474/485 (98%)	465 (98%)	8 (2%)	1 (0%)	43	55
12	K	98/100 (98%)	95 (97%)	3 (3%)	0	100	100
13	J	160/184 (87%)	159 (99%)	1 (1%)	0	100	100
All	All	4710/4878 (97%)	4609 (98%)	99 (2%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	G	669	THR
11	N	64	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	F	353/359 (98%)	349 (99%)	4 (1%)	65	81
2	E	129/139 (93%)	126 (98%)	3 (2%)	44	63
3	G	733/736 (100%)	726 (99%)	7 (1%)	68	82
4	C	505/515 (98%)	498 (99%)	7 (1%)	59	76
5	B	171/192 (89%)	165 (96%)	6 (4%)	32	48
6	I	154/154 (100%)	153 (99%)	1 (1%)	78	89
7	H	267/269 (99%)	261 (98%)	6 (2%)	45	65
8	A	87/119 (73%)	86 (99%)	1 (1%)	65	81
9	L	480/485 (99%)	464 (97%)	16 (3%)	33	50
10	M	413/418 (99%)	407 (98%)	6 (2%)	57	75
11	N	380/385 (99%)	377 (99%)	3 (1%)	73	86
12	K	79/79 (100%)	77 (98%)	2 (2%)	42	60
13	J	128/146 (88%)	125 (98%)	3 (2%)	44	63
All	All	3879/3996 (97%)	3814 (98%)	65 (2%)	52	72

All (65) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	F	31	SER
1	F	94	MET
1	F	126	TYR
1	F	221	THR
2	E	103	GLN
2	E	127	THR
2	E	149	THR
3	G	14	GLU
3	G	61	THR
3	G	136	THR
3	G	352	GLN
3	G	666	VAL
3	G	789	GLU
3	G	809	ASP
4	C	110	ASP
4	C	127	PHE
4	C	234	VAL
4	C	264	SER
4	C	377	ASP
4	C	399	LEU
4	C	582	SER
5	B	23	GLU
5	B	37	VAL
5	B	63	CYS
5	B	78	VAL
5	B	199	SER
5	B	220	ILE
6	I	77	LEU
7	H	12	LEU
7	H	92	THR
7	H	116	ILE
7	H	143	LEU
7	H	252	MET
7	H	299	SER
8	A	81	GLU
9	L	27	GLU
9	L	61	SER
9	L	93	THR
9	L	146	VAL
9	L	247	THR
9	L	371	SER
9	L	379	PHE

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Mol	Chain	Res	Type
9	L	381	VAL
9	L	398	SER
9	L	482	THR
9	L	483	THR
9	L	489	SER
9	L	491	LEU
9	L	493	LEU
9	L	529	ARG
9	L	574	VAL
10	M	64	GLN
10	M	256	SER
10	M	303	TRP
10	M	374	MET
10	M	426	THR
10	M	456	GLU
11	N	358	SER
11	N	401	VAL
11	N	431	SER
12	K	1	MET
12	K	96	SER
13	J	17	LEU
13	J	39	ILE
13	J	145	SER

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

Mol	Chain	Res	Type
1	F	22	GLN
1	F	386	GLN
2	E	27	HIS
3	G	224	GLN
3	G	299	GLN
3	G	482	GLN
3	G	490	GLN
3	G	505	ASN
3	G	574	HIS
3	G	605	ASN
3	G	793	ASN
3	G	845	ASN
4	C	87	HIS
4	C	224	HIS
4	C	283	ASN

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Mol	Chain	Res	Type
4	C	449	ASN
4	C	487	ASN
4	C	535	GLN
5	B	52	ASN
7	H	175	ASN
7	H	323	GLN
9	L	78	ASN
9	L	163	ASN
9	L	190	ASN
9	L	438	HIS
9	L	481	GLN
9	L	537	ASN
10	M	45	GLN
10	M	64	GLN
10	M	416	GLN
10	M	441	HIS
11	N	285	ASN
11	N	472	GLN
12	K	84	HIS
13	J	83	GLN
13	J	117	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 28 ligands modelled in this entry, 1 is monoatomic - leaving 27 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The

Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
14	SF4	I	202	6	0,12,12	-	-	-		
14	SF4	G	1001	3	0,12,12	-	-	-		
16	NAI	F	503	-	47,48,48	0.28	0	64,73,73	0.33	0
14	SF4	I	201	6	0,12,12	-	-	-		
17	FES	E	201	2	0,4,4	-	-	-		
19	3PE	H	401	-	50,50,50	0.30	0	53,55,55	0.29	0
20	LFA	H	402	-	19,19,19	0.12	0	18,18,18	0.12	0
19	3PE	L	804	-	50,50,50	0.30	0	53,55,55	0.29	0
19	3PE	M	1003	-	50,50,50	0.30	0	53,55,55	0.28	0
19	3PE	N	602	-	50,50,50	0.29	0	53,55,55	0.32	0
14	SF4	F	501	1	0,12,12	-	-	-		
14	SF4	G	1003	3	0,12,12	-	-	-		
17	FES	G	1004	3	0,4,4	-	-	-		
19	3PE	M	1004	-	50,50,50	0.29	0	53,55,55	0.28	0
19	3PE	M	1001	-	50,50,50	0.30	0	53,55,55	0.33	0
20	LFA	M	1002	-	19,19,19	0.11	0	18,18,18	0.11	0
19	3PE	L	803	-	48,48,50	0.30	0	51,53,55	0.35	0
14	SF4	B	301	5	0,12,12	-	-	-		
19	3PE	H	403	-	50,50,50	0.30	0	53,55,55	0.35	0
15	FMN	F	502	-	33,33,33	1.07	2 (6%)	48,50,50	1.29	8 (16%)
19	3PE	A	201	-	33,33,50	0.36	0	36,38,55	0.32	0
19	3PE	I	203	-	50,50,50	0.29	0	53,55,55	0.30	0
20	LFA	L	802	-	19,19,19	0.13	0	18,18,18	0.11	0
21	C14	N	601	-	13,13,13	0.13	0	12,12,12	0.11	0
14	SF4	G	1002	3	0,12,12	-	-	-		
19	3PE	J	201	-	50,50,50	0.30	0	53,55,55	0.28	0
19	3PE	L	801	-	50,50,50	0.30	0	53,55,55	0.28	0

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
14	SF4	I	202	6	-	-	0/6/5/5
16	NAI	F	503	-	-	4/29/72/72	0/5/5/5
19	3PE	H	401	-	-	11/54/54/54	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	SF4	G	1001	3	-	-	0/6/5/5
14	SF4	I	201	6	-	-	0/6/5/5
17	FES	E	201	2	-	-	0/1/1/1
20	LFA	H	402	-	-	1/17/17/17	-
19	3PE	L	804	-	-	13/54/54/54	-
19	3PE	M	1003	-	-	8/54/54/54	-
19	3PE	N	602	-	-	10/54/54/54	-
14	SF4	F	501	1	-	-	0/6/5/5
14	SF4	G	1003	3	-	-	0/6/5/5
17	FES	G	1004	3	-	-	0/1/1/1
19	3PE	M	1004	-	-	13/54/54/54	-
19	3PE	M	1001	-	-	6/54/54/54	-
20	LFA	M	1002	-	-	0/17/17/17	-
19	3PE	L	803	-	-	13/52/52/54	-
14	SF4	B	301	5	-	-	0/6/5/5
19	3PE	H	403	-	-	10/54/54/54	-
15	FMN	F	502	-	-	10/18/18/18	0/3/3/3
19	3PE	A	201	-	-	9/37/37/54	-
19	3PE	I	203	-	-	13/54/54/54	-
20	LFA	L	802	-	-	0/17/17/17	-
21	C14	N	601	-	-	0/11/11/11	-
14	SF4	G	1002	3	-	-	0/6/5/5
19	3PE	J	201	-	-	12/54/54/54	-
19	3PE	L	801	-	-	9/54/54/54	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	F	502	FMN	C4A-N5	3.23	1.37	1.30
15	F	502	FMN	C10-N1	2.26	1.37	1.33

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	F	502	FMN	C4-N3-C2	-3.38	119.64	125.64
15	F	502	FMN	C4A-C10-N10	2.86	120.57	116.48
15	F	502	FMN	C4A-C4-N3	2.72	120.16	113.25
15	F	502	FMN	C10-C4A-N5	-2.45	119.80	124.81
15	F	502	FMN	O4-C4-C4A	-2.40	120.21	126.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	F	502	FMN	C4A-C10-N1	-2.22	119.16	124.59
15	F	502	FMN	O3P-P-O5'	2.11	112.16	106.67
15	F	502	FMN	C9A-C5A-N5	-2.07	120.26	122.45

There are no chirality outliers.

All (142) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
15	F	502	FMN	C5'-O5'-P-O1P
15	F	502	FMN	C5'-O5'-P-O2P
16	F	503	NAI	C5B-O5B-PA-O1A
19	I	203	3PE	C11-O13-P-O11
19	I	203	3PE	C11-O13-P-O12
19	I	203	3PE	C11-O13-P-O14
19	H	401	3PE	C11-O13-P-O11
19	H	401	3PE	C11-O13-P-O14
19	H	401	3PE	O13-C11-C12-N
19	H	403	3PE	C11-O13-P-O12
19	H	403	3PE	O13-C11-C12-N
19	A	201	3PE	C1-O11-P-O12
19	A	201	3PE	C1-O11-P-O13
19	A	201	3PE	C11-O13-P-O11
19	A	201	3PE	O13-C11-C12-N
19	L	801	3PE	C1-O11-P-O14
19	L	801	3PE	O13-C11-C12-N
19	L	803	3PE	C1-O11-P-O13
19	L	803	3PE	C1-O11-P-O14
19	L	803	3PE	C11-O13-P-O14
19	L	804	3PE	C11-O13-P-O11
19	L	804	3PE	C11-O13-P-O12
19	M	1001	3PE	C11-O13-P-O11
19	M	1001	3PE	C11-O13-P-O12
19	M	1001	3PE	C11-O13-P-O14
19	M	1003	3PE	C1-O11-P-O14
19	M	1003	3PE	C11-O13-P-O14
19	M	1003	3PE	O13-C11-C12-N
19	M	1004	3PE	C1-O11-P-O12
19	M	1004	3PE	C11-O13-P-O11
19	M	1004	3PE	C11-O13-P-O14
19	M	1004	3PE	O13-C11-C12-N
19	N	602	3PE	O13-C11-C12-N
19	J	201	3PE	C1-O11-P-O12

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Mol	Chain	Res	Type	Atoms
19	J	201	3PE	C1-O11-P-O13
19	J	201	3PE	C1-O11-P-O14
19	J	201	3PE	C11-O13-P-O11
19	J	201	3PE	C11-O13-P-O12
19	J	201	3PE	C11-O13-P-O14
19	M	1004	3PE	C2-C1-O11-P
19	A	201	3PE	C31-C32-C33-C34
19	H	401	3PE	C3D-C3E-C3F-C3G
19	L	804	3PE	C24-C25-C26-C27
19	L	804	3PE	C2A-C2B-C2C-C2D
19	L	801	3PE	C2C-C2D-C2E-C2F
19	M	1004	3PE	C3E-C3F-C3G-C3H
19	I	203	3PE	C31-C32-C33-C34
19	I	203	3PE	C2A-C2B-C2C-C2D
19	N	602	3PE	C25-C26-C27-C28
19	L	801	3PE	C37-C38-C39-C3A
19	L	804	3PE	C3B-C3C-C3D-C3E
19	M	1004	3PE	C26-C27-C28-C29
20	H	402	LFA	C14-C15-C16-C17
19	L	801	3PE	C23-C24-C25-C26
19	I	203	3PE	C3A-C3B-C3C-C3D
19	J	201	3PE	C23-C24-C25-C26
19	L	804	3PE	O21-C2-C3-O31
19	L	803	3PE	C3A-C3B-C3C-C3D
19	L	803	3PE	C37-C38-C39-C3A
19	N	602	3PE	C2-C1-O11-P
19	L	804	3PE	C1-C2-C3-O31
19	H	401	3PE	C29-C2A-C2B-C2C
19	M	1004	3PE	C2E-C2F-C2G-C2H
19	M	1003	3PE	C23-C24-C25-C26
15	F	502	FMN	C2'-C3'-C4'-O4'
19	M	1003	3PE	C2-C1-O11-P
15	F	502	FMN	C5'-O5'-P-O3P
19	H	401	3PE	C36-C37-C38-C39
19	L	803	3PE	C35-C36-C37-C38
19	I	203	3PE	C3B-C3C-C3D-C3E
19	J	201	3PE	C21-C22-C23-C24
15	F	502	FMN	N10-C1'-C2'-O2'
15	F	502	FMN	N10-C1'-C2'-C3'
19	L	803	3PE	O11-C1-C2-O21
19	N	602	3PE	O11-C1-C2-O21
19	M	1003	3PE	C24-C25-C26-C27

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Mol	Chain	Res	Type	Atoms
15	F	502	FMN	O3'-C3'-C4'-C5'
16	F	503	NAI	C5B-O5B-PA-O3
19	H	403	3PE	C11-O13-P-O11
19	H	403	3PE	C11-O13-P-O14
19	A	201	3PE	C11-O13-P-O14
19	L	803	3PE	C1-O11-P-O12
19	L	804	3PE	C1-O11-P-O12
19	L	804	3PE	C1-O11-P-O13
19	L	804	3PE	C1-O11-P-O14
19	L	804	3PE	C11-O13-P-O14
19	M	1001	3PE	C1-O11-P-O14
19	N	602	3PE	C1-O11-P-O12
19	N	602	3PE	C1-O11-P-O13
19	N	602	3PE	C1-O11-P-O14
19	L	803	3PE	C2-C1-O11-P
19	J	201	3PE	C2-C1-O11-P
19	L	803	3PE	O11-C1-C2-C3
15	F	502	FMN	C2'-C3'-C4'-C5'
19	L	804	3PE	C2-C1-O11-P
19	N	602	3PE	O21-C21-C22-C23
19	J	201	3PE	O21-C21-C22-C23
15	F	502	FMN	C4'-C5'-O5'-P
19	A	201	3PE	C34-C35-C36-C37
19	H	403	3PE	C3C-C3D-C3E-C3F
15	F	502	FMN	O3'-C3'-C4'-O4'
19	L	803	3PE	O21-C2-C3-O31
19	H	403	3PE	C2F-C2G-C2H-C2I
19	L	801	3PE	C31-C32-C33-C34
16	F	503	NAI	O4D-C1D-N1N-C2N
19	N	602	3PE	C3B-C3C-C3D-C3E
19	I	203	3PE	C32-C33-C34-C35
19	J	201	3PE	O11-C1-C2-O21
19	J	201	3PE	O11-C1-C2-C3
19	H	401	3PE	O21-C2-C3-O31
19	L	801	3PE	C34-C35-C36-C37
16	F	503	NAI	C2D-C1D-N1N-C2N
19	M	1003	3PE	C35-C36-C37-C38
19	N	602	3PE	O31-C31-C32-C33
19	I	203	3PE	C2C-C2D-C2E-C2F
19	H	401	3PE	C1-C2-C3-O31
19	H	403	3PE	C34-C35-C36-C37
19	M	1004	3PE	C2F-C2G-C2H-C2I

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Mol	Chain	Res	Type	Atoms
19	M	1004	3PE	O31-C31-C32-C33
19	I	203	3PE	C38-C39-C3A-C3B
19	A	201	3PE	O31-C31-C32-C33
19	I	203	3PE	O31-C31-C32-C33
19	M	1001	3PE	O31-C31-C32-C33
19	L	801	3PE	C25-C26-C27-C28
19	L	804	3PE	C23-C24-C25-C26
19	M	1004	3PE	C29-C2A-C2B-C2C
19	L	801	3PE	O21-C2-C3-O31
19	I	203	3PE	C26-C27-C28-C29
19	M	1004	3PE	O32-C31-C32-C33
19	H	401	3PE	C25-C26-C27-C28
19	A	201	3PE	O32-C31-C32-C33
19	H	403	3PE	C23-C24-C25-C26
19	L	803	3PE	O21-C21-C22-C23
19	H	403	3PE	C26-C27-C28-C29
19	M	1003	3PE	C2C-C2D-C2E-C2F
19	I	203	3PE	O32-C31-C32-C33
19	M	1001	3PE	O32-C31-C32-C33
19	H	401	3PE	O31-C31-C32-C33
19	H	401	3PE	C38-C39-C3A-C3B
19	H	403	3PE	C3B-C3C-C3D-C3E
19	L	803	3PE	O22-C21-C22-C23
19	M	1004	3PE	O21-C21-C22-C23

There are no ring outliers.

18 monomers are involved in 31 short contacts:

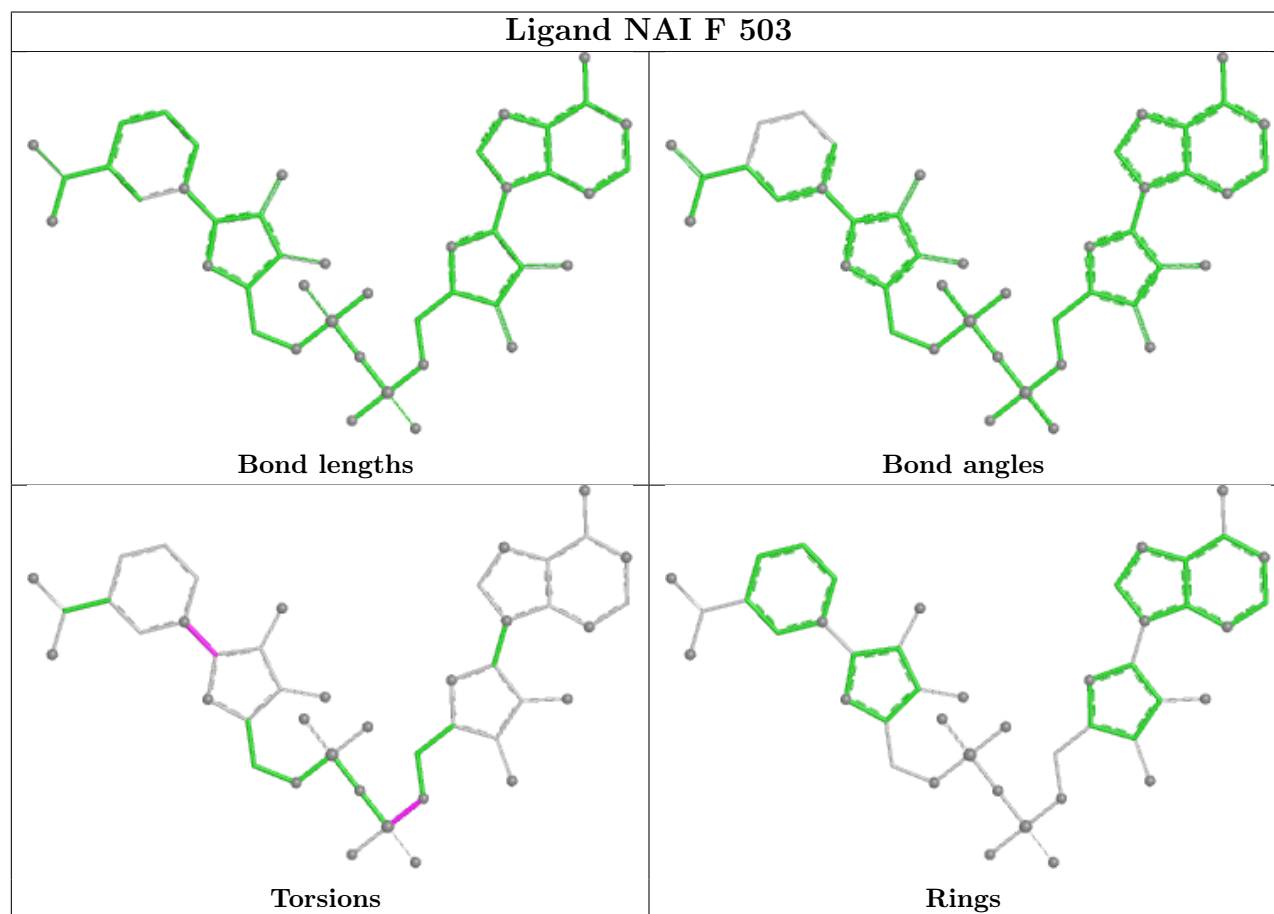
Mol	Chain	Res	Type	Clashes	Symm-Clashes
16	F	503	NAI	3	0
19	H	401	3PE	4	0
20	H	402	LFA	2	0
19	L	804	3PE	3	0
19	M	1003	3PE	1	0
19	N	602	3PE	2	0
19	M	1004	3PE	1	0
19	M	1001	3PE	1	0
20	M	1002	LFA	1	0
19	L	803	3PE	2	0
14	B	301	SF4	1	0
19	H	403	3PE	4	0
15	F	502	FMN	1	0

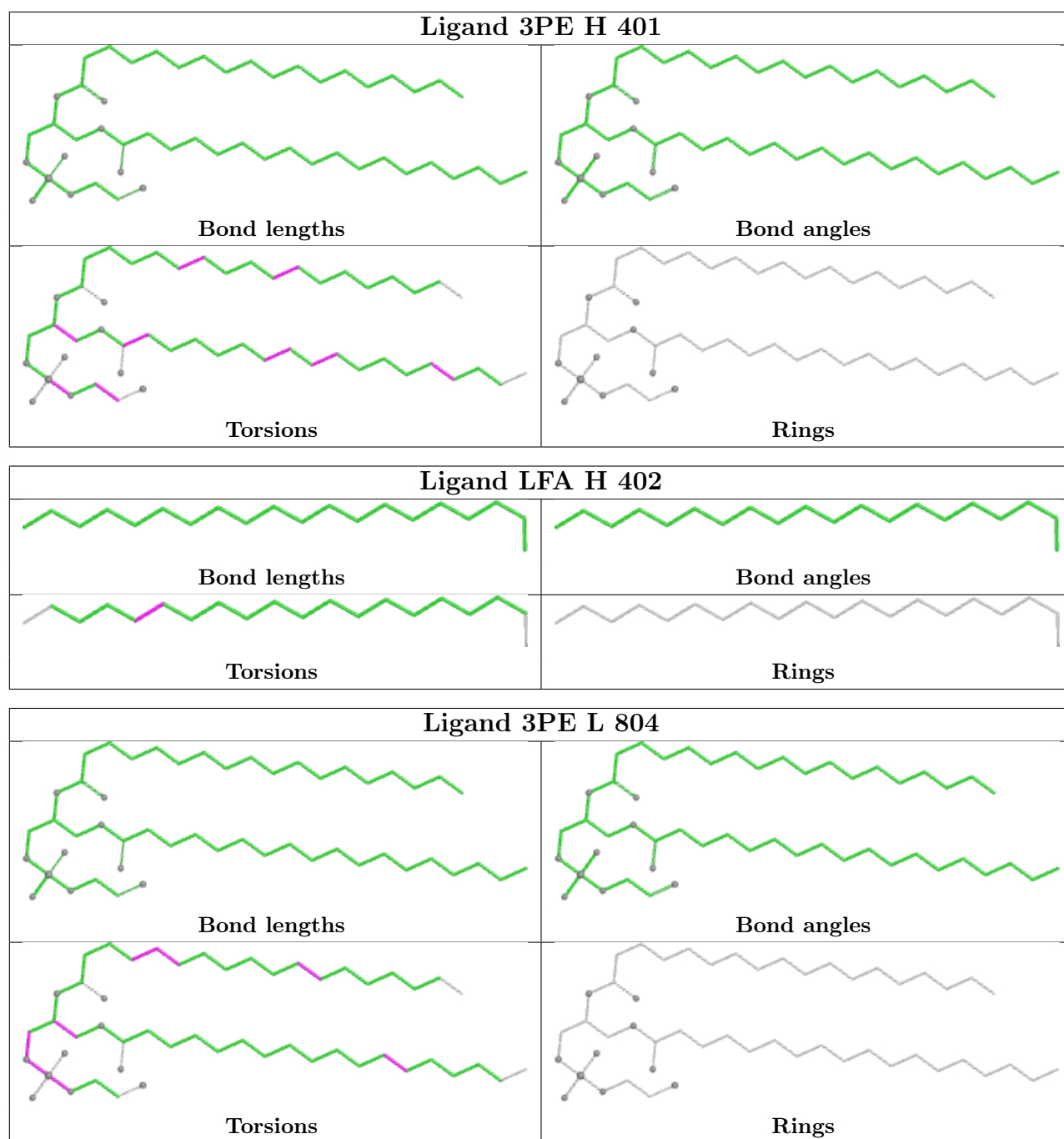
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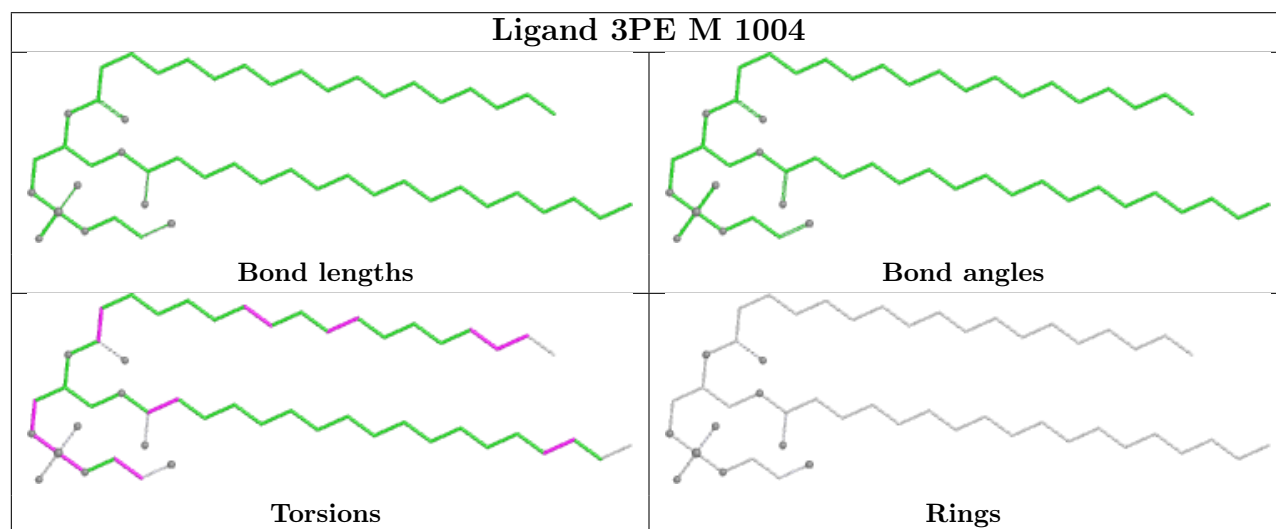
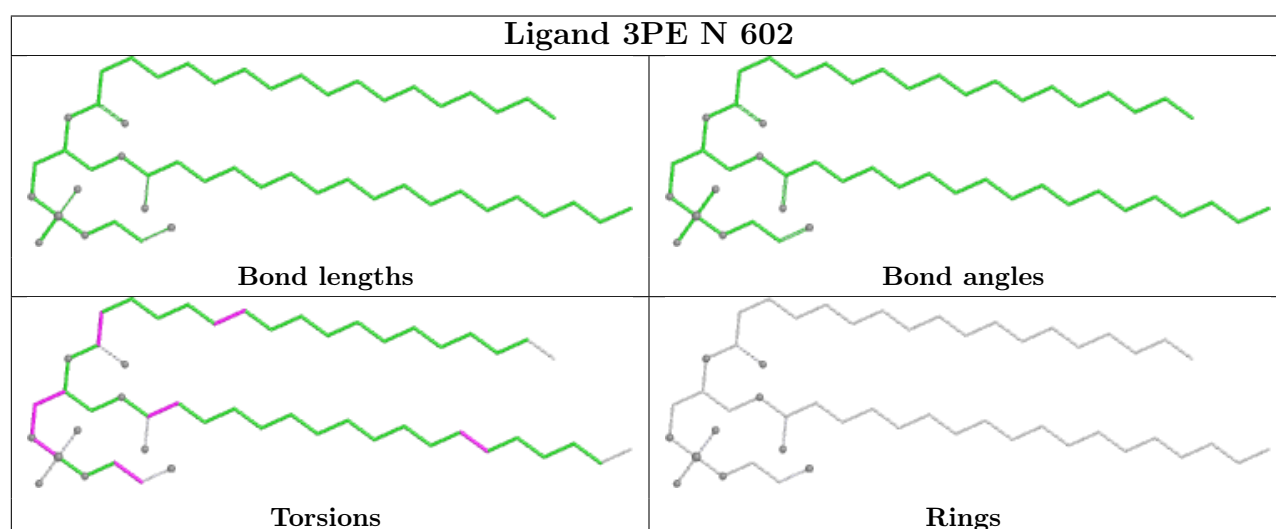
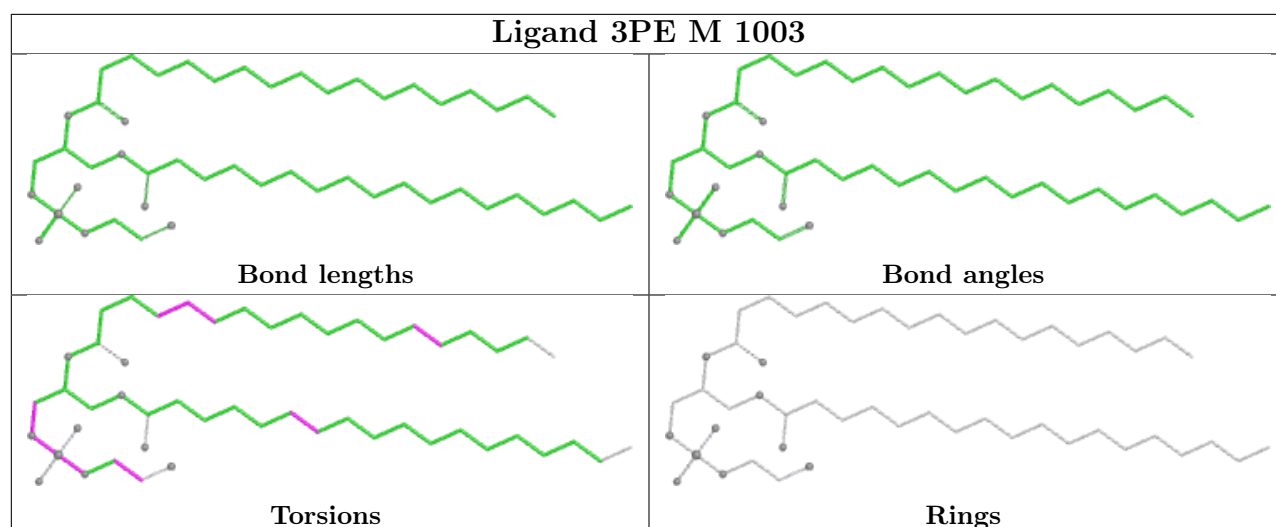
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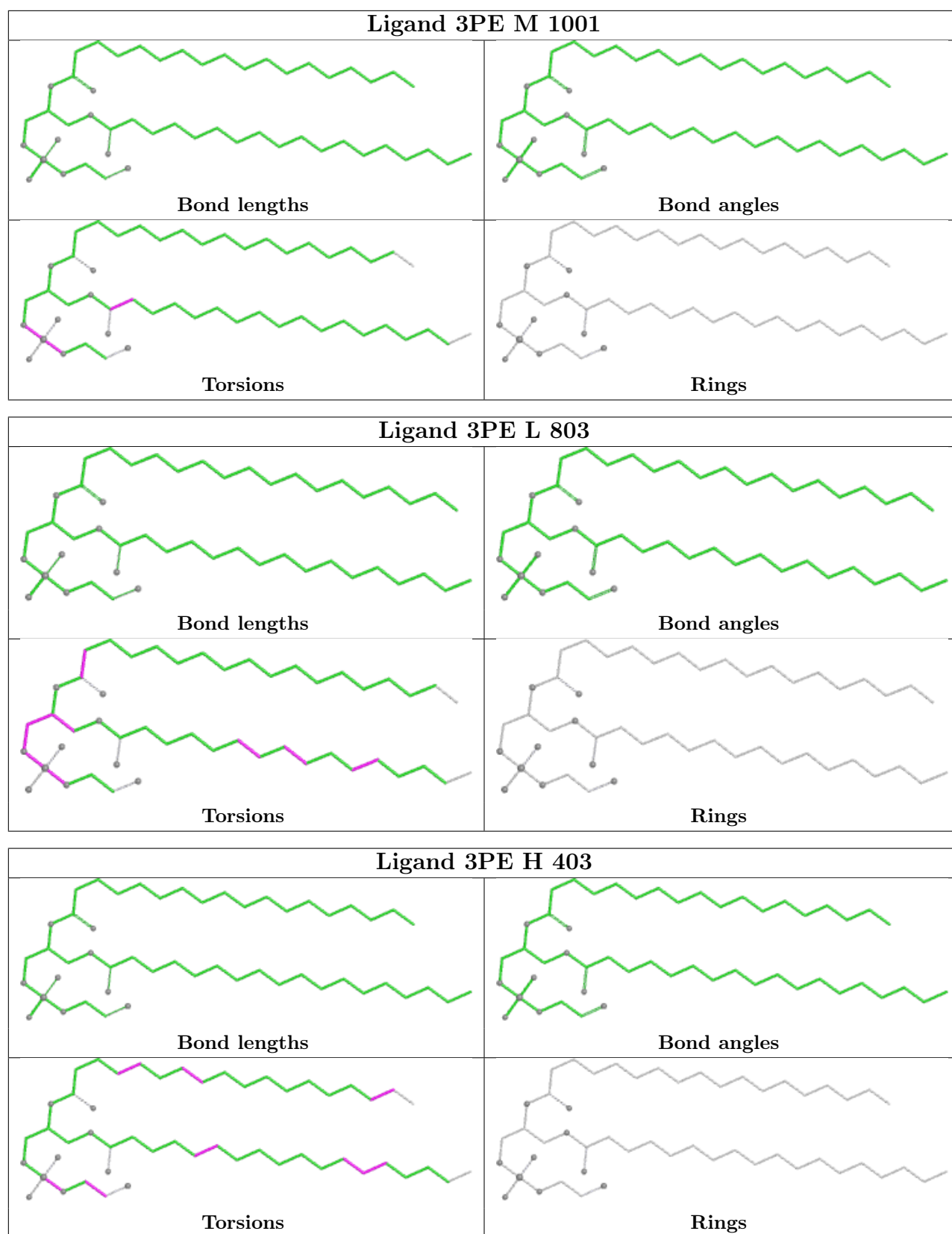
Mol	Chain	Res	Type	Clashes	Symm-Clashes
19	A	201	3PE	3	0
19	I	203	3PE	1	0
21	N	601	C14	1	0
19	J	201	3PE	5	0
19	L	801	3PE	2	0

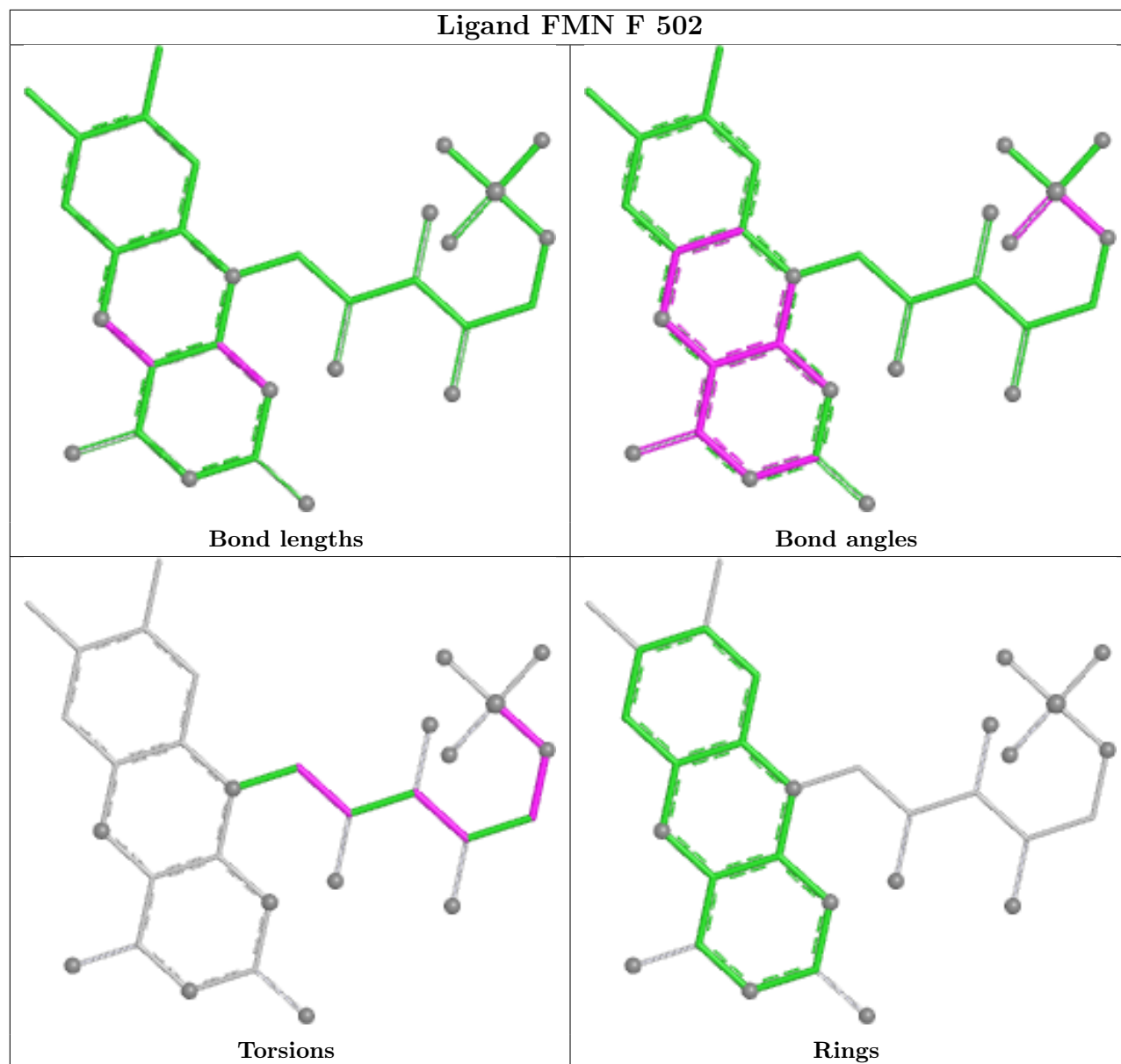
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

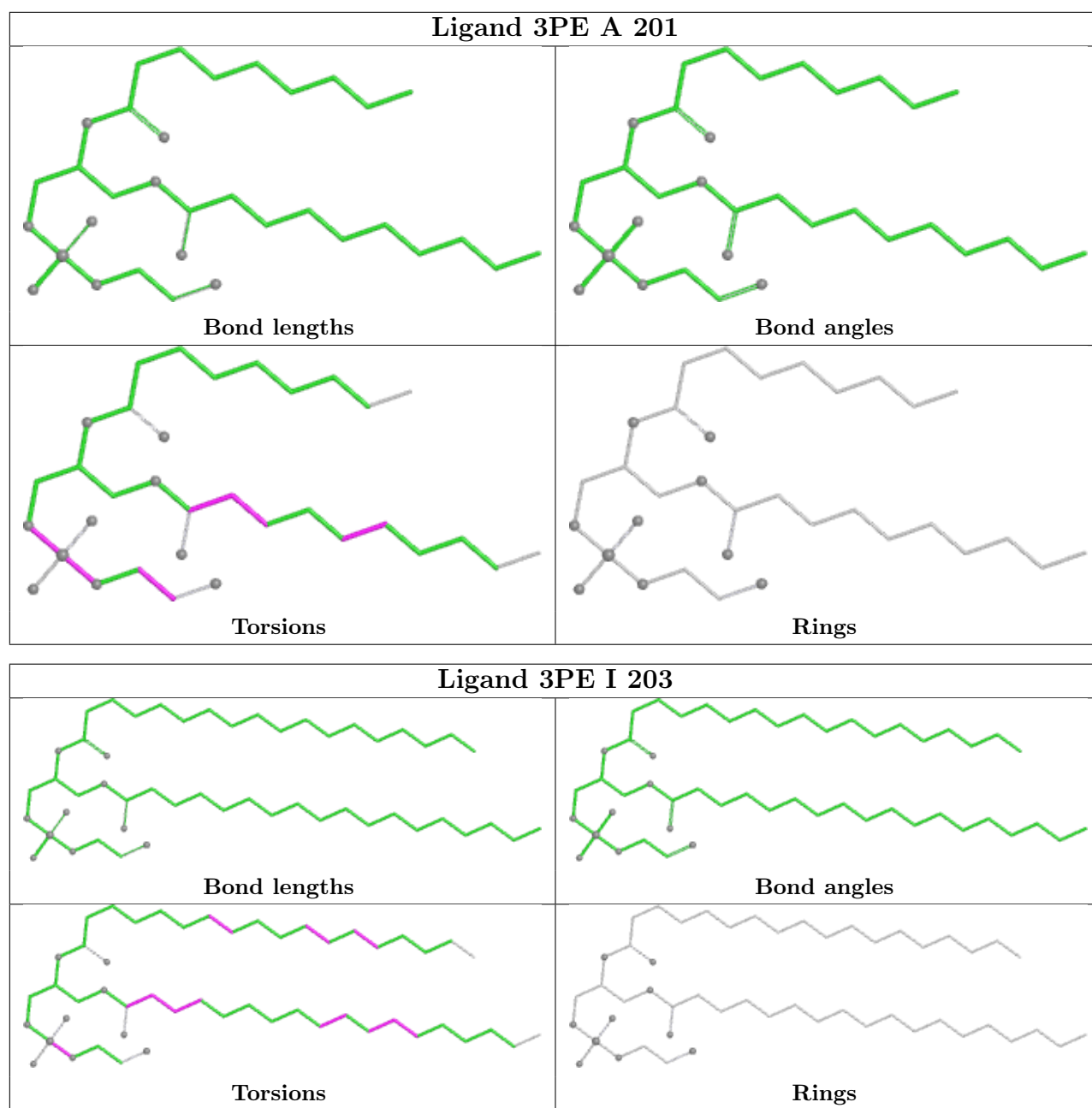


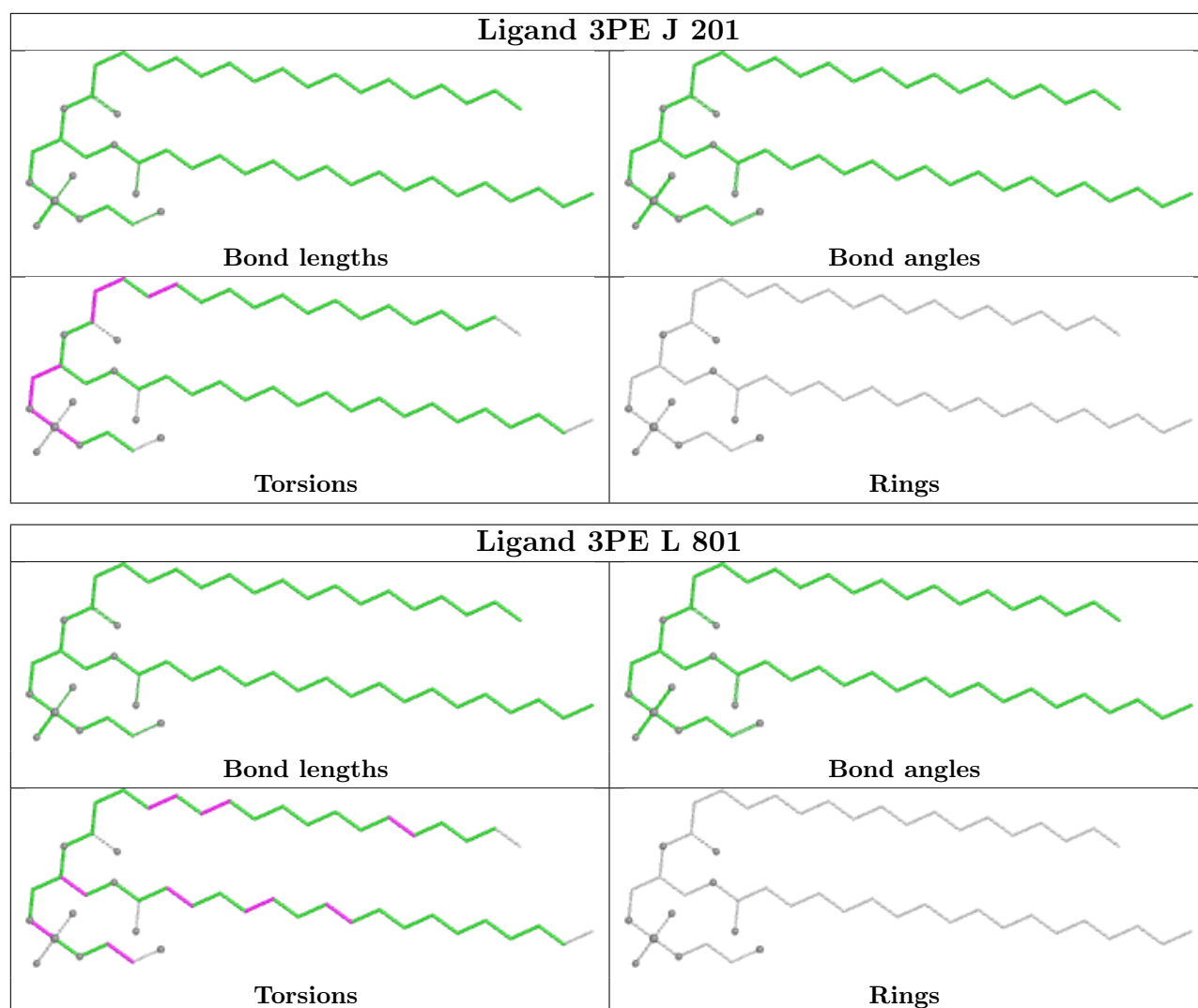












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

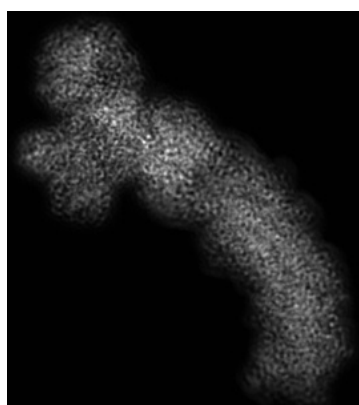
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-14538. These allow visual inspection of the internal detail of the map and identification of artifacts.

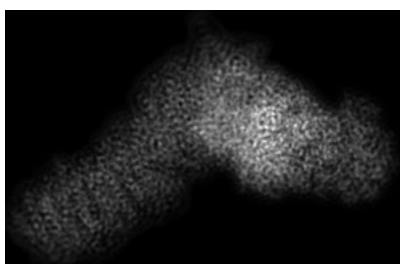
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

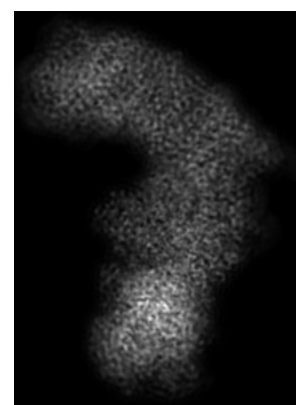
6.1.1 Primary map



X



Y



Z

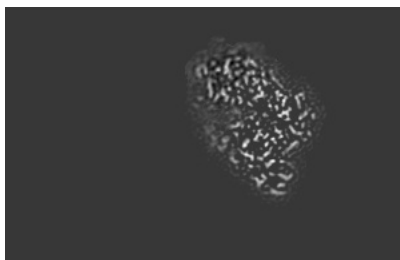
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

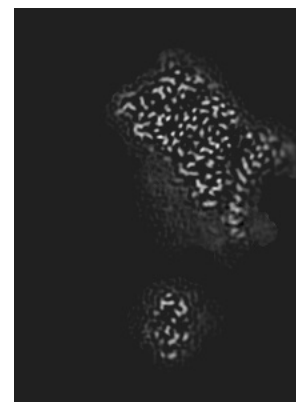
6.2.1 Primary map



X Index: 153



Y Index: 210



Z Index: 237

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: 167



Y Index: 110

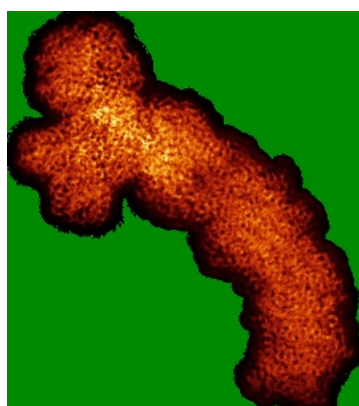


Z Index: 309

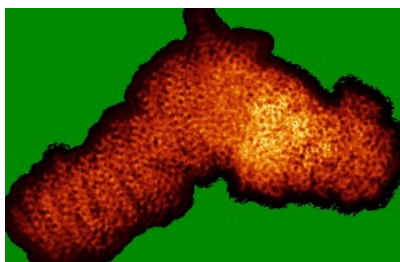
The images above show the largest variance slices of the map in three orthogonal directions.

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

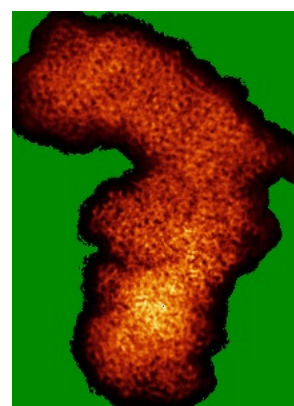
6.4.1 Primary map



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

This section was not generated.

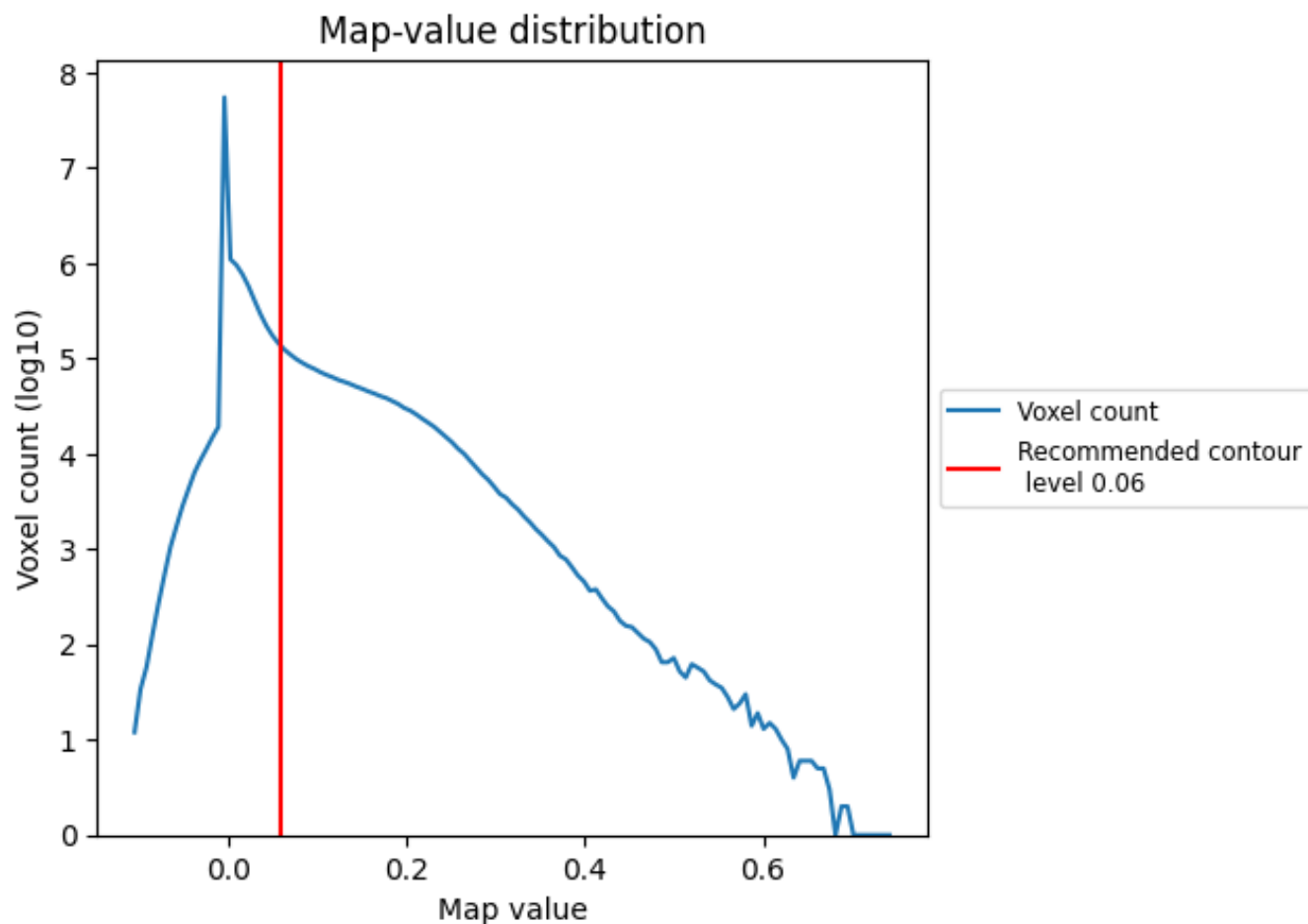
6.6 Mask visualisation

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

7 Map analysis [i](#)

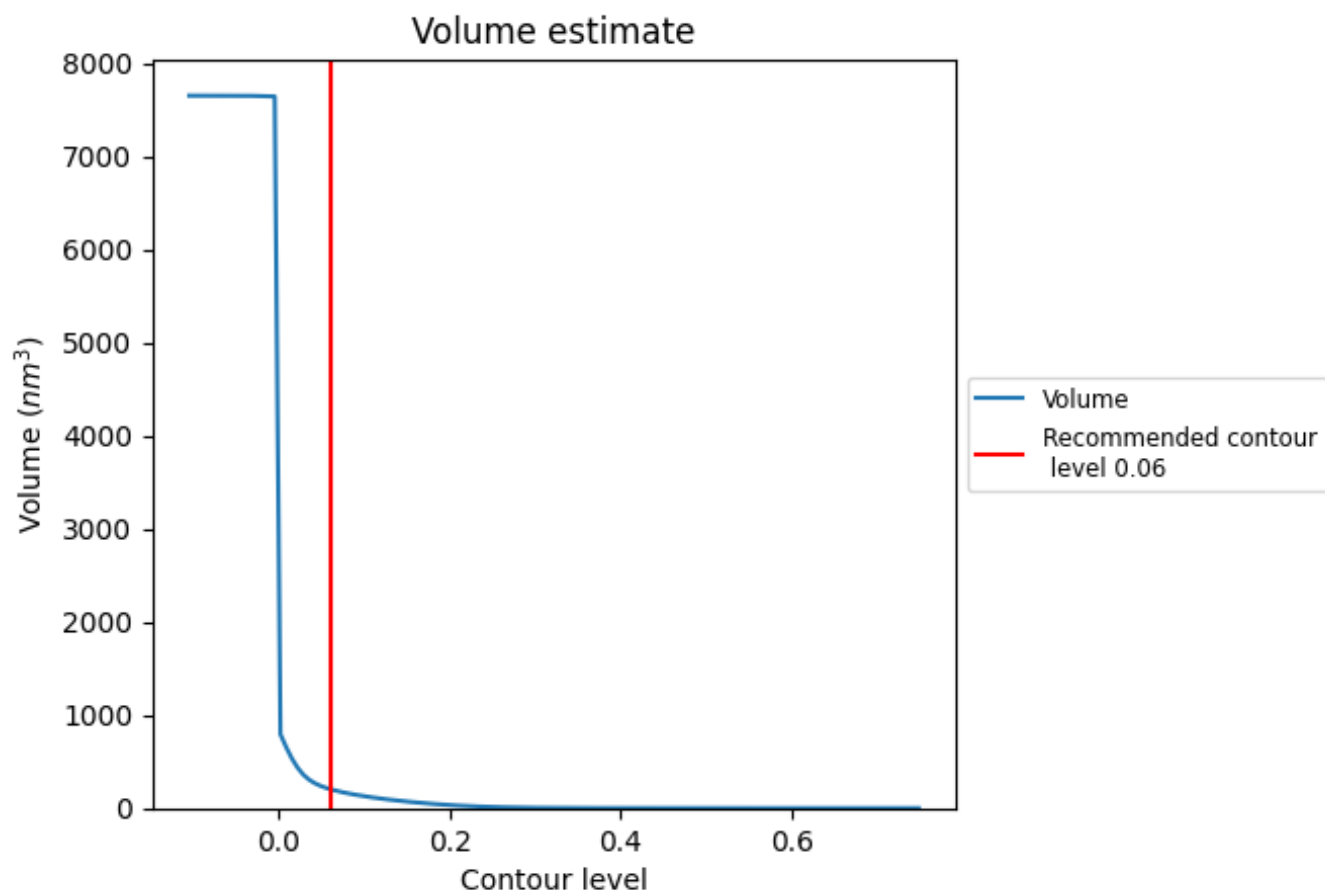
This section contains the results of statistical analysis of the map.

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 [i](#)



The volume at the recommended contour level is 205 nm^3 ; this corresponds to an approximate mass of 185 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.

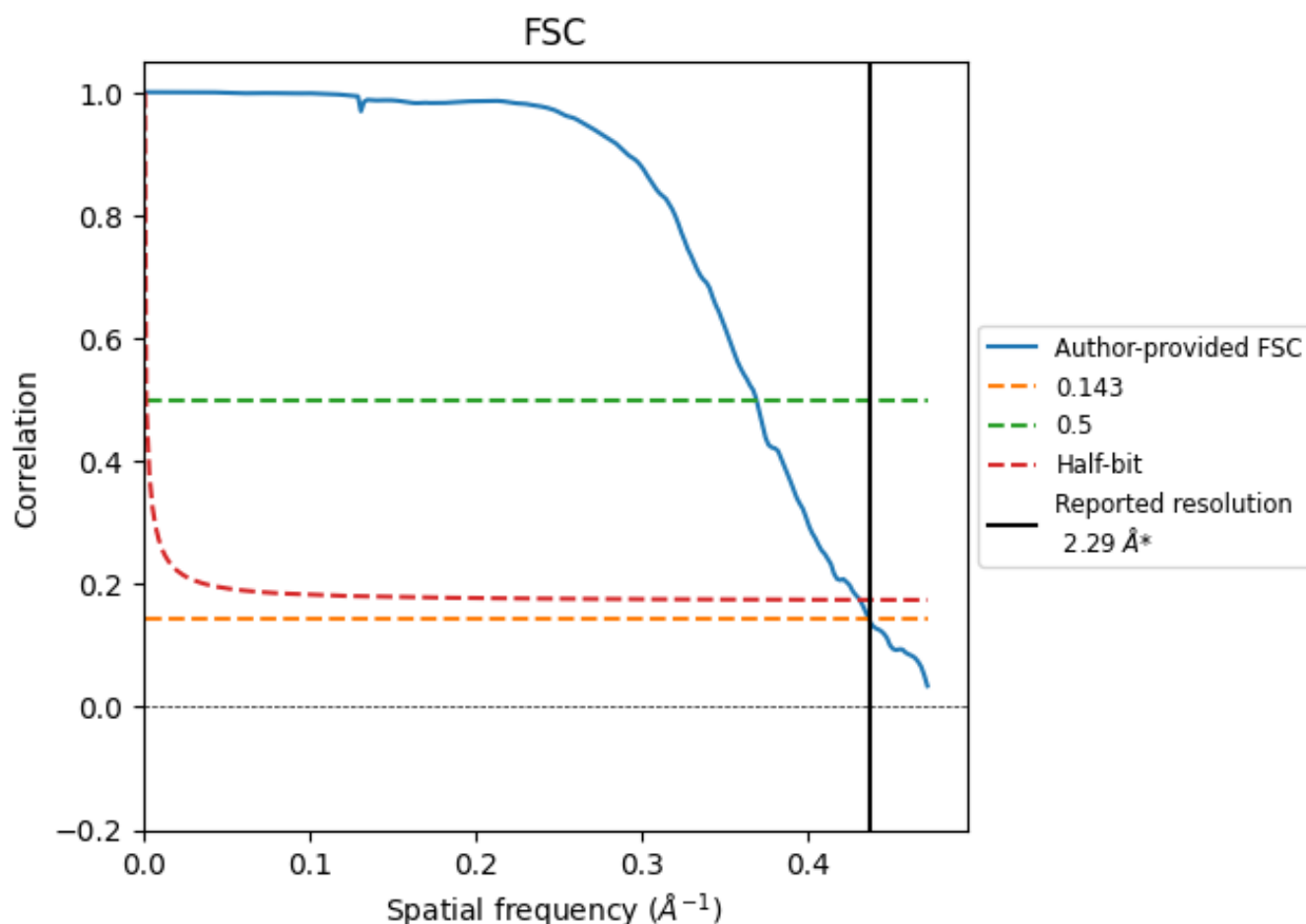
7.3 Rotationally averaged power spectrum [i](#)

This section was not generated. The rotationally averaged power spectrum is only generated for cubic maps.

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.437 Å⁻¹

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.29	-	-
Author-provided FSC curve	2.29	2.71	2.32
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

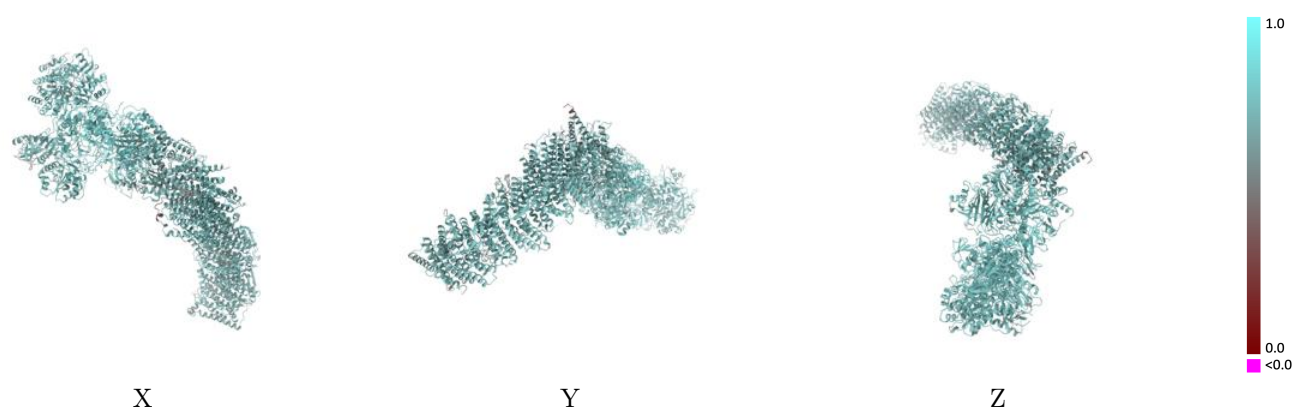
9 Map-model fit [i](#)

This section contains information regarding the fit between EMD map EMD-14538 and PDB model 7Z7V. Per-residue inclusion information can be found in section 3 on page 12.

9.1 Map-model overlay [i](#)

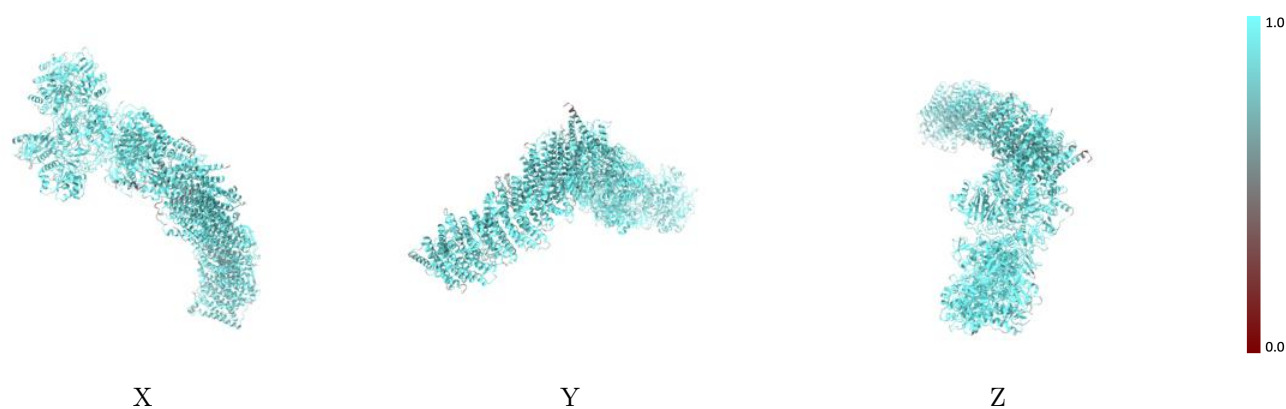
This section was not generated.

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



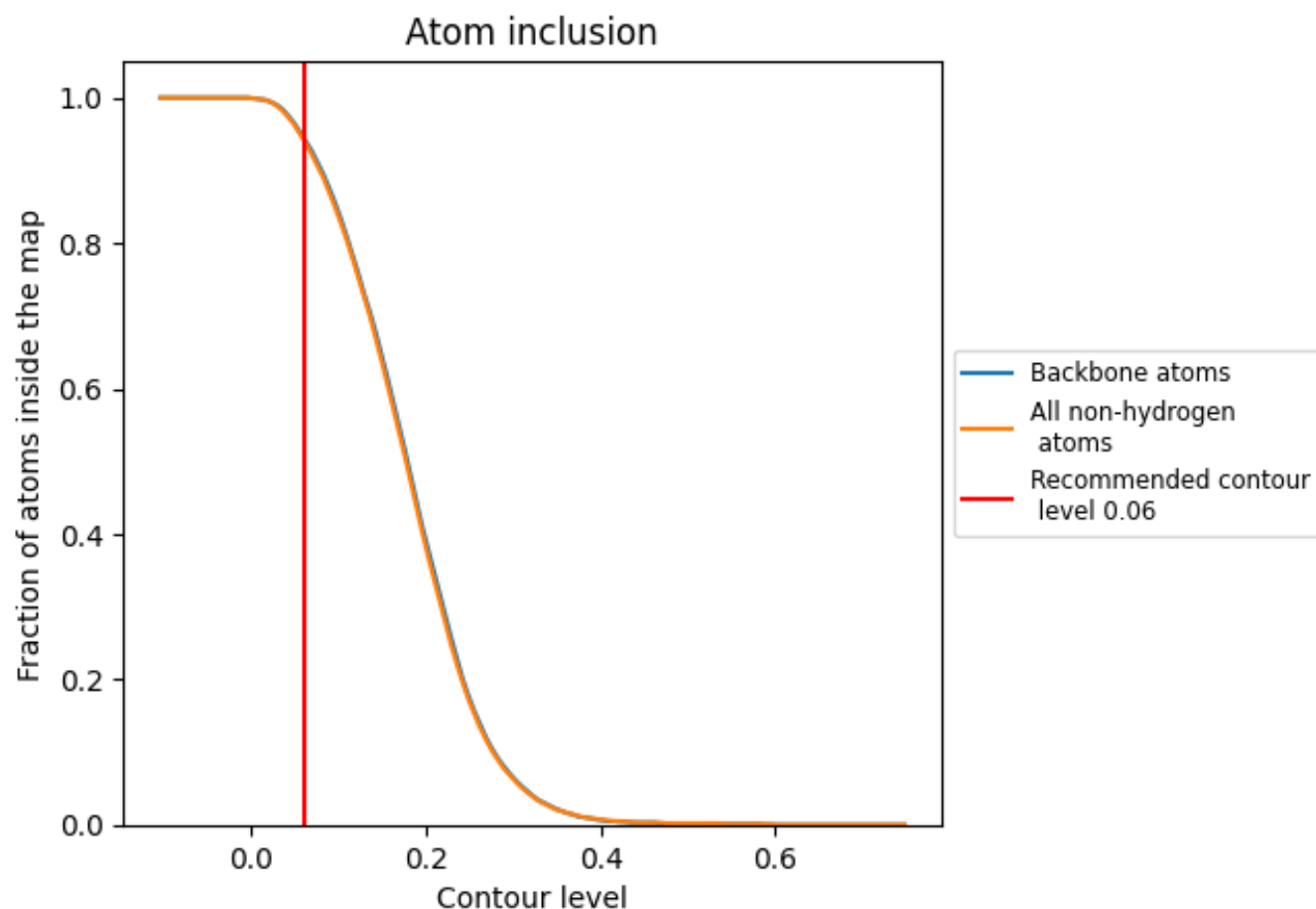
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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, 94% of all backbone atoms, 94% 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	0.9410	0.7090
A	0.8830	0.6660
B	0.9590	0.7270
C	0.9520	0.7310
E	0.9420	0.7050
F	0.9610	0.7170
G	0.9610	0.7370
H	0.9160	0.6610
I	0.9510	0.7430
J	0.9100	0.6830
K	0.9760	0.7290
L	0.9110	0.6710
M	0.9410	0.6990
N	0.9550	0.7120

1.0

0.0

<0.0