



Full wwPDB EM Validation Report ⓘ

Nov 21, 2022 – 05:10 PM EST

PDB ID : 7SHE
EMDB ID : EMD-25125
Title : Cryo-EM structure of human GPR158
Authors : Patil, D.N.; Singh, S.; Singh, A.K.; Martemyanov, K.A.
Deposited on : 2021-10-08
Resolution : 3.40 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.3

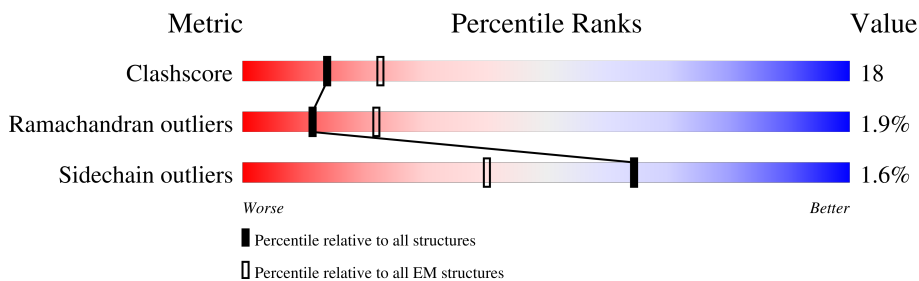
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.40 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	781	
1	B	781	

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
4	CLR	A	803	X	-	-	-
4	CLR	B	802	X	-	-	-
4	CLR	B	808	X	-	-	-

2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 8990 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.

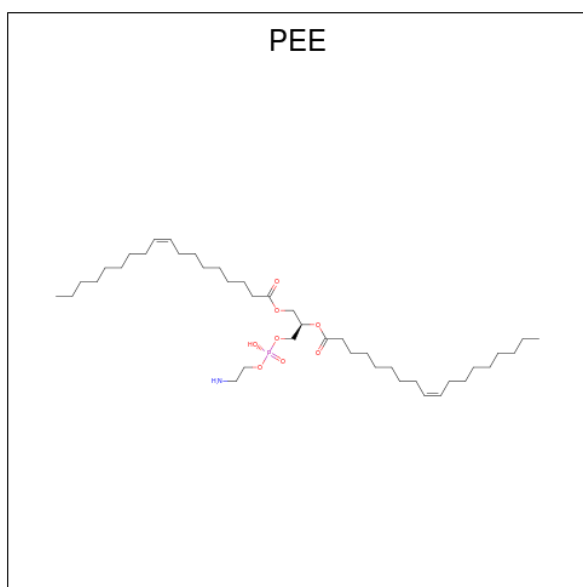
- Molecule 1 is a protein called G-protein coupled receptor 158.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	541	4131	2678	695	728	30	0	0
1	B	540	4136	2681	698	727	30	0	0

There are 12 discrepancies between the modelled and reference sequences:

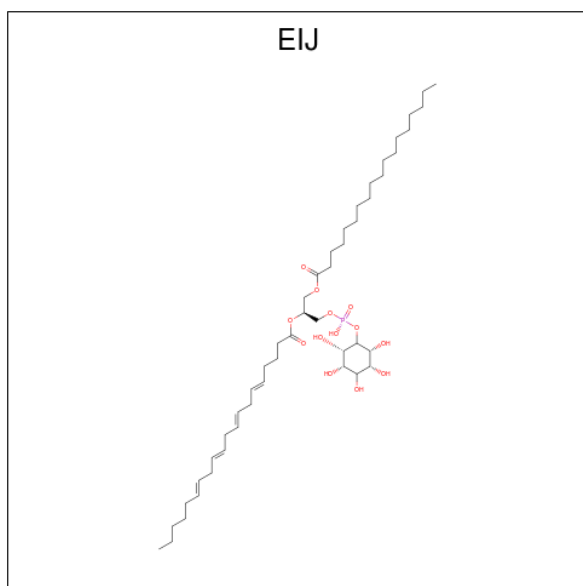
Chain	Residue	Modelled	Actual	Comment	Reference
A	776	LEU	-	expression tag	UNP Q5T848
A	777	GLU	-	expression tag	UNP Q5T848
A	778	VAL	-	expression tag	UNP Q5T848
A	779	LEU	-	expression tag	UNP Q5T848
A	780	PHE	-	expression tag	UNP Q5T848
A	781	GLN	-	expression tag	UNP Q5T848
B	776	LEU	-	expression tag	UNP Q5T848
B	777	GLU	-	expression tag	UNP Q5T848
B	778	VAL	-	expression tag	UNP Q5T848
B	779	LEU	-	expression tag	UNP Q5T848
B	780	PHE	-	expression tag	UNP Q5T848
B	781	GLN	-	expression tag	UNP Q5T848

- Molecule 2 is 1,2-dioleoyl-sn-glycero-3-phosphoethanolamine (three-letter code: PEE) (formula: C₄₁H₇₈NO₈P).



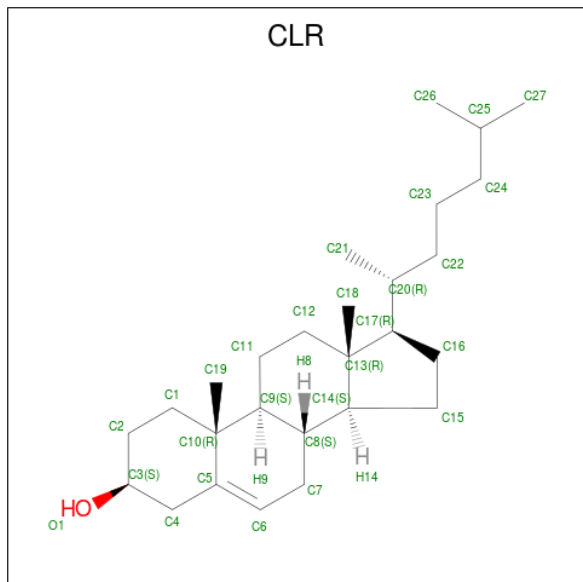
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
2	A	1	51	41	1	8	1	0

- Molecule 3 is (2S)-1-[(S)-hydroxy{[(1S,2R,3R,4R,5S,6S)-2,3,4,5,6-pentahydroxycyclohexyl]oxy}phosphoryl]oxy}-3-(octadecanoyloxy)propan-2-yl (5E,8E,11E,14E)-icosa-5,8,11,14-tetraenoate (three-letter code: EIJ) (formula: C₄₇H₈₃O₁₃P) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
3	A	1	56	42	13	1	0

- Molecule 4 is CHOLESTEROL (three-letter code: CLR) (formula: C₂₇H₄₆O) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
4	A	1	Total	C	O	0
			308	297	11	
4	A	1	Total	C	O	0
			308	297	11	
4	A	1	Total	C	O	0
			308	297	11	
4	A	1	Total	C	O	0
			308	297	11	
4	A	1	Total	C	O	0
			308	297	11	
4	A	1	Total	C	O	0
			308	297	11	
4	A	1	Total	C	O	0
			308	297	11	
4	A	1	Total	C	O	0
			308	297	11	
4	A	1	Total	C	O	0
			308	297	11	
4	B	1	Total	C	O	0
			308	297	11	

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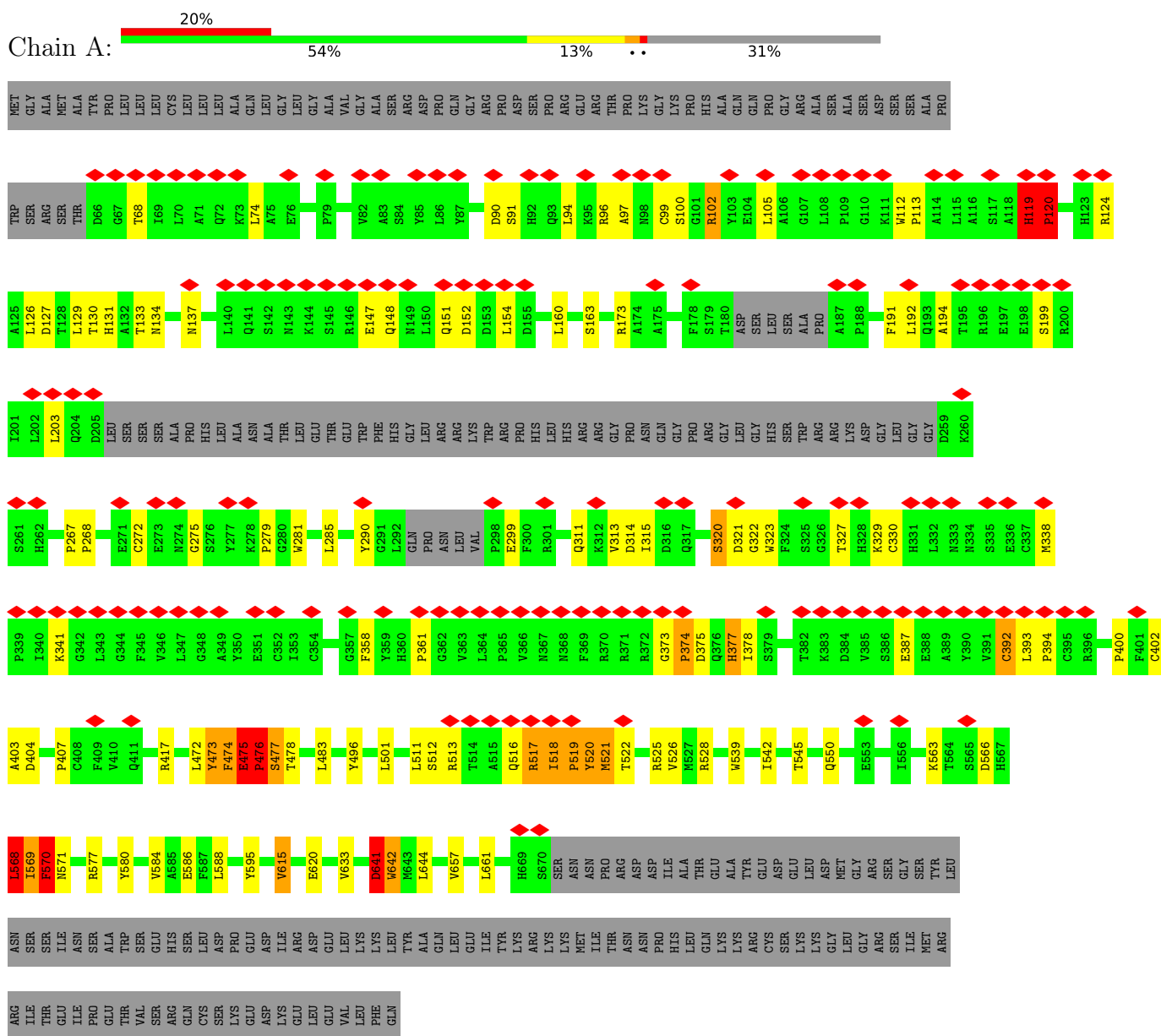
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Mol	Chain	Residues	Atoms			AltConf
4	B	1	Total 308	C 297	O 11	0
4	B	1	Total 308	C 297	O 11	0
4	B	1	Total 308	C 297	O 11	0
4	B	1	Total 308	C 297	O 11	0
4	B	1	Total 308	C 297	O 11	0
4	B	1	Total 308	C 297	O 11	0
4	B	1	Total 308	C 297	O 11	0
4	B	1	Total 308	C 297	O 11	0
4	B	1	Total 308	C 297	O 11	0
4	B	1	Total 308	C 297	O 11	0

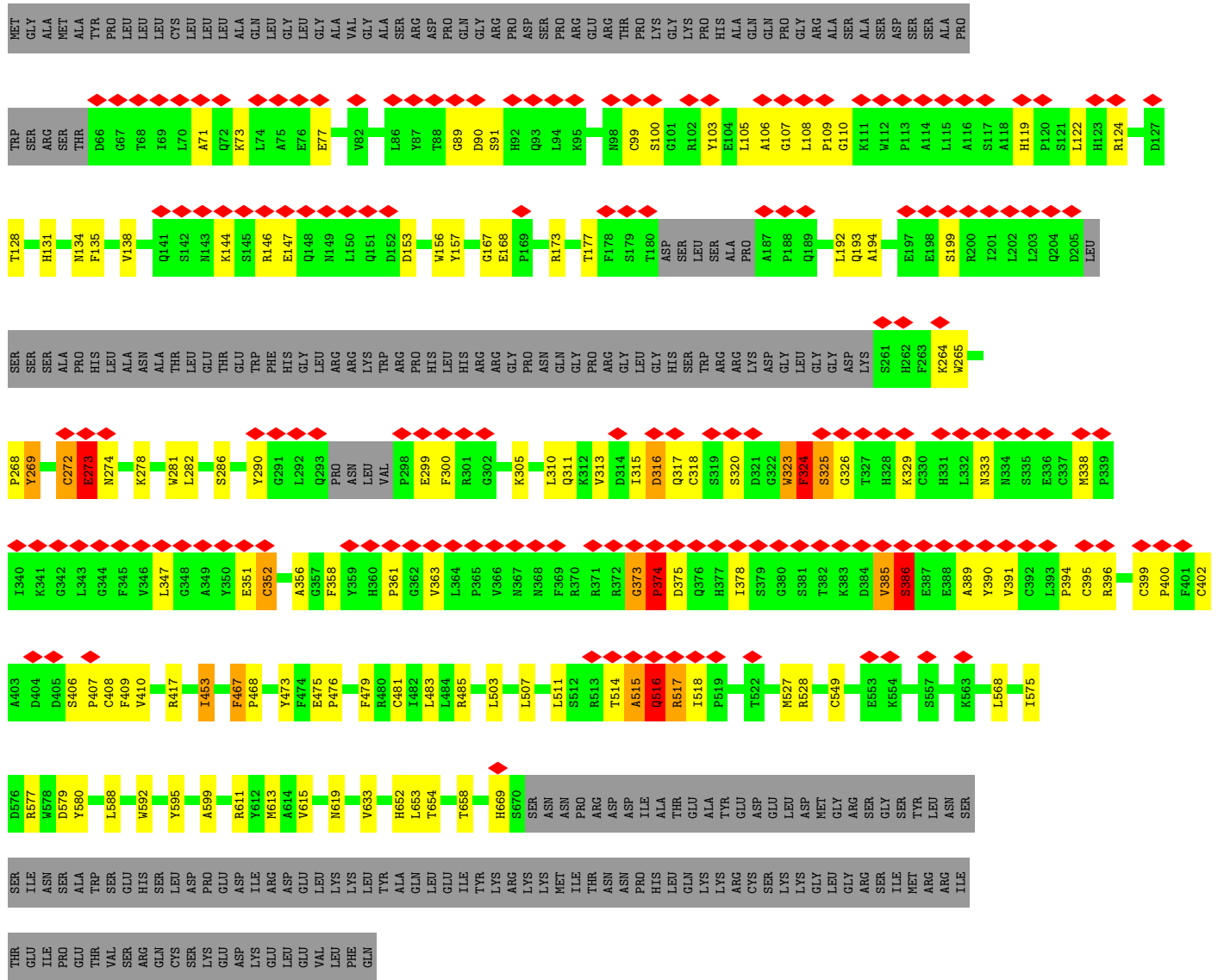
3 Residue-property plots

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: G-protein coupled receptor 158



- Molecule 1: G-protein coupled receptor 158



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	263237	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	5.034	Depositor
Minimum map value	-1.445	Depositor
Average map value	0.021	Depositor
Map value standard deviation	0.072	Depositor
Recommended contour level	0.593	Depositor
Map size (Å)	349.2, 349.2, 349.2	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.873, 0.873, 0.873	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: CLR, PEE, EIJ

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	0.88	24/4233 (0.6%)	0.92	34/5761 (0.6%)
1	B	0.38	2/4240 (0.0%)	0.87	26/5772 (0.5%)
All	All	0.68	26/8473 (0.3%)	0.90	60/11533 (0.5%)

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
1	A	1	6
1	B	0	4
All	All	1	10

All (26) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	642	TRP	C-O	-17.15	0.90	1.23
1	A	120	PRO	N-CD	16.93	1.71	1.47
1	A	476	PRO	C-O	-15.01	0.93	1.23
1	A	570	PHE	C-O	-14.56	0.95	1.23
1	B	374	PRO	N-CA	13.11	1.69	1.47
1	A	374	PRO	N-CA	12.82	1.69	1.47
1	A	477	SER	C-O	-11.72	1.01	1.23
1	A	569	ILE	C-O	-11.11	1.02	1.23
1	A	571	ASN	C-O	-10.65	1.03	1.23
1	A	477	SER	CA-CB	-10.14	1.37	1.52
1	A	474	PHE	C-O	-8.92	1.06	1.23
1	A	475	GLU	C-N	8.86	1.51	1.34
1	A	473	TYR	C-O	-8.63	1.06	1.23
1	A	568	LEU	C-O	-8.41	1.07	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	476	PRO	N-CD	-7.57	1.37	1.47
1	A	475	GLU	C-O	-7.33	1.09	1.23
1	A	473	TYR	CZ-OH	-6.06	1.27	1.37
1	B	373	GLY	C-N	6.06	1.45	1.34
1	A	473	TYR	CE2-CZ	-5.86	1.30	1.38
1	A	570	PHE	CG-CD2	-5.78	1.30	1.38
1	A	570	PHE	CE2-CZ	-5.73	1.26	1.37
1	A	475	GLU	CD-OE2	-5.56	1.19	1.25
1	A	475	GLU	CD-OE1	-5.50	1.19	1.25
1	A	373	GLY	C-N	5.29	1.44	1.34
1	A	474	PHE	CG-CD1	-5.18	1.30	1.38
1	A	474	PHE	CG-CD2	-5.04	1.31	1.38

All (60) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	390	TYR	N-CA-C	18.46	160.85	111.00
1	B	100	SER	N-CA-CB	-18.01	83.49	110.50
1	A	516	GLN	N-CA-C	15.32	152.37	111.00
1	A	403	ALA	N-CA-CB	-14.27	90.12	110.10
1	B	385	VAL	CB-CA-C	-13.36	86.02	111.40
1	B	389	ALA	CB-CA-C	-12.68	91.08	110.10
1	A	516	GLN	CB-CA-C	-12.39	85.62	110.40
1	A	119	HIS	C-N-CD	-11.56	95.16	120.60
1	A	322	GLY	N-CA-C	11.32	141.40	113.10
1	B	391	VAL	N-CA-CB	-10.80	87.74	111.50
1	B	99	CYS	CB-CA-C	-10.79	88.83	110.40
1	B	323	TRP	CB-CA-C	-10.78	88.85	110.40
1	B	374	PRO	CA-N-CD	-10.63	96.61	111.50
1	A	403	ALA	N-CA-C	10.57	139.54	111.00
1	A	374	PRO	CA-N-CD	-10.53	96.76	111.50
1	A	474	PHE	CA-C-O	-10.17	98.75	120.10
1	A	320	SER	N-CA-C	-9.93	84.20	111.00
1	B	269	TYR	CB-CA-C	9.79	129.98	110.40
1	B	389	ALA	N-CA-C	9.57	136.84	111.00
1	A	323	TRP	N-CA-CB	9.53	127.76	110.60
1	B	517	ARG	N-CA-CB	-9.39	93.70	110.60
1	B	390	TYR	CB-CA-C	-9.18	92.04	110.40
1	B	390	TYR	N-CA-CB	-8.95	94.50	110.60
1	B	99	CYS	N-CA-C	-8.45	88.19	111.00
1	A	120	PRO	CA-N-CD	-8.28	99.90	111.50
1	A	477	SER	CB-CA-C	-8.26	94.42	110.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	519	PRO	N-CA-C	8.09	133.14	112.10
1	A	402	CYS	N-CA-C	7.91	132.34	111.00
1	B	324	PHE	CB-CA-C	-7.44	95.52	110.40
1	B	515	ALA	CB-CA-C	7.37	121.15	110.10
1	A	475	GLU	N-CA-CB	-7.29	97.49	110.60
1	A	571	ASN	CB-CA-C	-7.23	95.94	110.40
1	B	272	CYS	CB-CA-C	-7.18	96.04	110.40
1	B	325	SER	N-CA-C	-6.97	92.17	111.00
1	A	474	PHE	CA-C-N	6.90	132.38	117.20
1	A	568	LEU	C-N-CA	6.78	138.64	121.70
1	A	570	PHE	N-CA-CB	-6.74	98.46	110.60
1	A	475	GLU	N-CA-C	6.57	128.73	111.00
1	B	324	PHE	N-CA-C	6.30	128.00	111.00
1	B	273	GLU	N-CA-CB	-6.28	99.30	110.60
1	B	386	SER	N-CA-C	-6.22	94.21	111.00
1	A	475	GLU	CA-C-N	6.18	134.42	117.10
1	B	300	PHE	N-CA-CB	-6.16	99.52	110.60
1	B	517	ARG	N-CA-C	6.13	127.56	111.00
1	A	517	ARG	N-CA-CB	-6.03	99.75	110.60
1	B	385	VAL	N-CA-C	6.01	127.23	111.00
1	A	321	ASP	N-CA-CB	-5.91	99.97	110.60
1	A	323	TRP	N-CA-C	-5.86	95.17	111.00
1	A	519	PRO	N-CD-CG	-5.71	94.63	103.20
1	B	269	TYR	N-CA-CB	-5.67	100.39	110.60
1	A	474	PHE	N-CA-C	-5.61	95.84	111.00
1	A	102	ARG	C-N-CA	-5.55	107.82	121.70
1	A	641	ASP	O-C-N	-5.50	113.90	122.70
1	B	516	GLN	C-N-CA	5.44	135.30	121.70
1	A	476	PRO	N-CD-CG	-5.31	95.24	103.20
1	A	476	PRO	C-N-CA	5.29	134.91	121.70
1	A	120	PRO	N-CA-C	-5.15	98.71	112.10
1	A	517	ARG	N-CA-C	-5.08	97.30	111.00
1	A	404	ASP	N-CA-CB	5.05	119.69	110.60
1	A	377	HIS	C-N-CA	5.02	134.25	121.70

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	402	CYS	CA

All (10) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	472	LEU	Mainchain
1	A	474	PHE	Mainchain
1	A	566	ASP	Mainchain
1	A	570	PHE	Mainchain
1	A	641	ASP	Mainchain
1	A	642	TRP	Mainchain
1	B	268	PRO	Mainchain
1	B	278	LYS	Peptide
1	B	352	CYS	Peptide
1	B	467	PHE	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4131	0	3987	133	0
1	B	4136	0	3995	135	0
2	A	51	0	82	4	0
3	A	56	0	0	4	0
4	A	308	0	504	56	0
4	B	308	0	506	76	0
All	All	8990	0	9074	317	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 18.

All (317) 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:B:103:TYR:HE1	1:B:106:ALA:CB	1.20	1.52
1:A:374:PRO:CA	1:A:374:PRO:N	1.69	1.49
1:B:580:TYR:CD2	4:B:805:CLR:H151	1.51	1.46
1:B:374:PRO:N	1:B:374:PRO:CA	1.69	1.46
1:A:120:PRO:N	1:A:120:PRO:CD	1.71	1.45
1:A:513:ARG:CD	1:A:518:ILE:HD11	1.44	1.44
1:B:103:TYR:CE1	1:B:106:ALA:HB2	1.54	1.43
1:A:513:ARG:HD2	1:A:518:ILE:CD1	1.56	1.34

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:103:TYR:CE1	1:B:106:ALA:CB	2.09	1.31
1:A:407:PRO:O	1:A:568:LEU:HD12	1.10	1.27
1:A:475:GLU:OE1	1:A:476:PRO:HD2	1.39	1.22
1:A:407:PRO:O	1:A:568:LEU:CD1	1.87	1.22
1:B:577:ARG:NH2	4:B:806:CLR:H22	1.53	1.21
1:A:580:TYR:HE2	4:A:809:CLR:H112	1.05	1.17
1:B:103:TYR:HE1	1:B:106:ALA:HB3	1.11	1.16
1:B:580:TYR:CD2	4:B:805:CLR:C15	2.27	1.16
1:B:588:LEU:HD22	4:B:801:CLR:H212	1.19	1.13
4:A:806:CLR:H152	4:A:807:CLR:H12	1.33	1.11
1:B:580:TYR:CE2	4:B:805:CLR:H151	1.86	1.10
1:B:580:TYR:HD2	4:B:805:CLR:C15	1.63	1.09
4:A:808:CLR:H191	4:B:807:CLR:H122	1.37	1.07
1:A:580:TYR:HE2	4:A:809:CLR:C11	1.69	1.05
1:A:563:LYS:CD	1:A:569:ILE:HG22	1.86	1.04
1:B:652:HIS:O	4:B:804:CLR:C26	2.07	1.03
1:A:577:ARG:HH21	4:A:810:CLR:H192	1.18	1.02
1:B:588:LEU:HD22	4:B:801:CLR:C21	1.90	1.01
1:A:119:HIS:C	1:A:120:PRO:CD	2.26	1.01
1:A:580:TYR:CE2	4:A:809:CLR:H112	1.95	1.01
1:B:528:ARG:HD2	4:B:807:CLR:H193	1.40	1.00
1:A:513:ARG:CG	1:A:518:ILE:HG13	1.91	0.99
1:A:513:ARG:HG2	1:A:518:ILE:HG13	1.46	0.98
1:B:103:TYR:CD1	1:B:106:ALA:HB2	1.98	0.98
1:A:513:ARG:CD	1:A:518:ILE:CD1	2.28	0.96
1:B:577:ARG:HH21	4:B:806:CLR:H22	1.13	0.96
1:B:105:LEU:HB3	1:B:324:PHE:CE1	2.01	0.94
1:B:652:HIS:O	4:B:804:CLR:H262	1.68	0.94
1:A:341:LYS:HA	1:A:375:ASP:CB	1.98	0.93
1:B:483:LEU:CD1	4:B:811:CLR:H213	2.00	0.91
1:B:105:LEU:CB	1:B:324:PHE:CE1	2.55	0.90
1:A:520:TYR:CE1	1:A:526:VAL:CG2	2.54	0.90
1:B:580:TYR:HD2	4:B:805:CLR:H151	1.09	0.90
1:A:475:GLU:OE1	1:A:476:PRO:CD	2.20	0.90
1:B:105:LEU:CB	1:B:324:PHE:HE1	1.85	0.90
1:A:563:LYS:HD2	1:A:569:ILE:HG22	1.53	0.89
1:B:549:CYS:SG	4:B:810:CLR:H11	2.14	0.88
1:A:513:ARG:CG	1:A:518:ILE:CG1	2.51	0.88
1:B:577:ARG:NH2	4:B:806:CLR:H192	1.89	0.88
1:A:513:ARG:CG	1:A:518:ILE:CD1	2.53	0.86
1:A:520:TYR:CE1	1:A:526:VAL:HG22	2.11	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:513:ARG:CG	1:A:518:ILE:HD11	2.07	0.84
4:A:808:CLR:C19	4:B:807:CLR:H122	2.07	0.84
1:A:374:PRO:HG3	1:A:400:PRO:HB3	1.56	0.84
1:A:407:PRO:HA	1:A:568:LEU:HD11	1.59	0.84
1:B:103:TYR:CE1	1:B:106:ALA:HB3	1.92	0.84
1:B:105:LEU:HB3	1:B:324:PHE:CD1	2.13	0.83
1:B:375:ASP:O	1:B:396:ARG:CB	2.25	0.83
1:A:520:TYR:HE1	1:A:526:VAL:CG2	1.91	0.83
1:A:320:SER:O	1:A:327:THR:N	2.11	0.83
1:B:577:ARG:HH21	4:B:806:CLR:C2	1.92	0.83
1:B:324:PHE:O	1:B:324:PHE:CG	2.32	0.82
1:B:577:ARG:HH21	4:B:806:CLR:H192	1.43	0.82
1:A:517:ARG:HG2	1:A:519:PRO:HG3	1.60	0.80
1:B:595:TYR:CE2	4:B:801:CLR:O1	2.35	0.80
1:A:545:THR:HG22	4:A:806:CLR:H151	1.62	0.80
1:B:669:HIS:ND1	4:B:804:CLR:O1	1.77	0.80
1:B:333:ASN:ND2	1:B:352:CYS:SG	2.55	0.80
1:B:269:TYR:O	1:B:281:TRP:HA	1.83	0.79
1:A:580:TYR:CE2	4:A:809:CLR:C11	2.61	0.79
4:A:806:CLR:H152	4:A:807:CLR:C1	2.12	0.79
1:A:513:ARG:HG3	1:A:518:ILE:HG13	1.64	0.78
1:B:105:LEU:HB2	1:B:324:PHE:HE1	1.48	0.78
1:B:619:ASN:ND2	4:B:803:CLR:H213	1.98	0.77
1:B:483:LEU:CD1	4:B:811:CLR:C21	2.62	0.77
1:A:577:ARG:NH2	4:A:810:CLR:H192	1.99	0.77
1:B:580:TYR:HD2	4:B:805:CLR:C16	1.98	0.77
1:A:520:TYR:HE1	1:A:526:VAL:HG23	1.50	0.76
1:A:520:TYR:CE1	1:A:526:VAL:HG23	2.20	0.76
1:B:273:GLU:CD	1:B:274:ASN:H	1.89	0.76
4:A:803:CLR:H182	4:A:803:CLR:H72	1.67	0.76
1:A:539:TRP:HA	4:B:806:CLR:H272	1.67	0.75
1:B:453:ILE:HD11	4:B:808:CLR:H6	1.69	0.75
1:A:528:ARG:HB3	4:A:804:CLR:H193	1.70	0.74
4:B:802:CLR:H182	4:B:802:CLR:H72	1.68	0.73
3:A:802:EIJ:O18	4:A:808:CLR:H21	1.88	0.72
1:A:513:ARG:HG3	1:A:518:ILE:CG1	2.18	0.72
1:A:580:TYR:CE2	4:A:809:CLR:C12	2.72	0.72
1:A:513:ARG:HG2	1:A:518:ILE:CG1	2.16	0.71
1:A:528:ARG:HB3	4:A:804:CLR:C19	2.20	0.71
1:A:341:LYS:CB	1:A:375:ASP:CB	2.69	0.71
1:A:545:THR:CG2	4:A:806:CLR:H151	2.21	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:453:ILE:HD12	4:B:809:CLR:H11	1.73	0.70
1:A:341:LYS:CA	1:A:375:ASP:CB	2.69	0.70
1:A:588:LEU:HD22	4:A:808:CLR:H212	1.74	0.70
1:A:314:ASP:HB3	1:A:361:PRO:HG2	1.74	0.70
1:B:479:PHE:HE2	4:B:811:CLR:H122	1.56	0.69
1:B:317:GLN:NE2	1:B:320:SER:OG	2.18	0.69
1:A:130:THR:O	1:A:134:ASN:ND2	2.26	0.68
1:B:105:LEU:HD23	1:B:324:PHE:CD1	2.27	0.68
1:A:563:LYS:HD3	1:A:569:ILE:HG22	1.75	0.68
1:A:615:VAL:HB	4:A:811:CLR:H182	1.77	0.67
1:A:147:GLU:HG2	1:A:148:GLN:H	1.59	0.67
1:B:615:VAL:HG11	4:B:803:CLR:H122	1.76	0.67
1:A:580:TYR:HE2	4:A:809:CLR:C12	2.08	0.66
1:B:577:ARG:HH22	4:B:806:CLR:H22	1.56	0.66
1:A:580:TYR:CD2	4:A:809:CLR:H121	2.31	0.66
1:A:377:HIS:CB	1:A:393:LEU:HA	2.26	0.66
1:B:71:ALA:HB2	1:B:329:LYS:HE3	1.78	0.66
1:B:194:ALA:HB3	1:B:199:SER:HA	1.77	0.66
1:A:615:VAL:HB	4:A:811:CLR:C18	2.25	0.65
4:A:804:CLR:H192	4:A:804:CLR:O1	1.96	0.65
1:B:527:MET:CE	4:B:808:CLR:H72	2.26	0.65
4:B:801:CLR:H242	4:B:801:CLR:H211	1.79	0.63
1:A:580:TYR:CE2	4:A:809:CLR:H121	2.33	0.63
1:B:105:LEU:CD2	1:B:324:PHE:CE1	2.81	0.63
1:B:483:LEU:HD11	4:B:811:CLR:H213	1.78	0.62
1:B:619:ASN:ND2	4:B:803:CLR:C21	2.61	0.62
1:B:89:GLY:O	1:B:91:SER:N	2.33	0.62
1:B:669:HIS:CE1	4:B:804:CLR:H1	2.06	0.62
1:A:194:ALA:HB3	1:A:199:SER:HA	1.81	0.61
1:B:324:PHE:O	1:B:324:PHE:CD2	2.53	0.61
1:B:128:THR:HA	1:B:131:HIS:CE1	2.35	0.61
1:B:417:ARG:NH2	1:B:473:TYR:O	2.34	0.61
1:A:542:ILE:HG21	4:B:806:CLR:H222	1.83	0.60
1:B:479:PHE:CE2	4:B:811:CLR:H122	2.35	0.60
1:A:154:LEU:HD11	1:A:191:PHE:HZ	1.67	0.60
1:B:528:ARG:CD	4:B:807:CLR:H193	2.24	0.60
1:B:669:HIS:CE1	4:B:804:CLR:O1	2.52	0.60
4:B:811:CLR:C24	4:B:811:CLR:H211	2.32	0.59
1:A:191:PHE:HE1	1:A:203:LEU:HD13	1.67	0.59
1:B:105:LEU:HD23	1:B:324:PHE:CE1	2.37	0.59
1:B:318:CYS:HA	1:B:325:SER:HB3	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:801:PEE:O2P	3:A:802:EIJ:O52	2.21	0.58
1:A:154:LEU:HD11	1:A:191:PHE:CZ	2.38	0.58
1:B:105:LEU:HD21	1:B:329:LYS:HE2	1.86	0.58
1:A:112:TRP:HZ2	1:A:267:PRO:HA	1.68	0.58
4:A:809:CLR:H272	4:A:809:CLR:H211	1.85	0.58
1:B:315:ILE:HG12	1:B:356:ALA:HA	1.85	0.58
1:B:527:MET:HE2	4:B:808:CLR:H72	1.84	0.58
1:A:513:ARG:HG2	1:A:518:ILE:CD1	2.30	0.58
1:A:131:HIS:HA	1:A:134:ASN:HD22	1.67	0.58
1:A:152:ASP:OD1	1:B:146:ARG:NH2	2.36	0.58
1:B:193:GLN:HB3	1:B:199:SER:HB2	1.84	0.58
1:B:317:GLN:HE21	1:B:320:SER:HG	1.50	0.58
1:B:290:TYR:HA	1:B:299:GLU:HG2	1.85	0.58
1:B:577:ARG:CZ	4:B:806:CLR:H192	2.34	0.58
1:A:512:SER:OG	1:A:519:PRO:HD3	2.04	0.57
1:A:68:THR:HG22	1:A:330:CYS:H	1.69	0.57
1:A:74:LEU:HD21	1:A:105:LEU:HD12	1.87	0.57
1:A:563:LYS:CE	1:A:569:ILE:HG22	2.35	0.57
1:A:521:MET:HE2	1:A:522:THR:H	1.70	0.56
1:B:408:CYS:SG	1:B:409:PHE:N	2.78	0.56
4:A:809:CLR:H272	4:A:809:CLR:C21	2.35	0.56
1:B:385:VAL:O	1:B:386:SER:CB	2.51	0.56
1:B:483:LEU:HD13	4:B:811:CLR:H213	1.88	0.56
1:B:483:LEU:HD12	4:B:811:CLR:C21	2.34	0.56
1:A:417:ARG:NH2	1:A:641:ASP:OD1	2.39	0.56
4:A:808:CLR:C19	4:B:807:CLR:C12	2.83	0.56
1:B:588:LEU:CD2	4:B:801:CLR:C21	2.77	0.56
1:B:326:GLY:H	1:B:329:LYS:HG3	1.71	0.55
1:A:476:PRO:O	1:A:476:PRO:HG2	2.06	0.55
1:A:377:HIS:HA	1:A:393:LEU:HA	1.89	0.55
1:A:513:ARG:HD2	1:A:518:ILE:HD11	0.64	0.55
4:B:801:CLR:H213	4:B:801:CLR:H183	1.88	0.55
1:A:392:CYS:O	1:A:392:CYS:SG	2.63	0.55
4:A:810:CLR:H183	4:A:810:CLR:H212	1.89	0.54
1:A:127:ASP:HA	1:A:130:THR:HG22	1.89	0.54
1:B:311:GLN:NE2	1:B:358:PHE:O	2.40	0.54
1:B:549:CYS:SG	4:B:810:CLR:C1	2.93	0.54
1:B:105:LEU:HB2	1:B:324:PHE:CE1	2.32	0.54
1:B:315:ILE:HG21	1:B:356:ALA:HA	1.90	0.54
4:A:809:CLR:H213	4:A:809:CLR:C27	2.38	0.54
1:A:580:TYR:CD2	4:A:809:CLR:C12	2.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:105:LEU:CD2	1:B:329:LYS:HE2	2.38	0.53
1:B:323:TRP:O	1:B:325:SER:N	2.34	0.53
1:A:119:HIS:C	1:A:120:PRO:HD3	2.22	0.53
1:B:669:HIS:HD1	4:B:804:CLR:H1	0.55	0.52
1:B:124:ARG:NH2	1:B:167:GLY:O	2.43	0.52
4:B:811:CLR:H211	4:B:811:CLR:H242	1.89	0.52
1:A:374:PRO:CG	1:A:400:PRO:HB3	2.35	0.51
1:A:528:ARG:CB	4:A:804:CLR:H193	2.39	0.51
1:A:407:PRO:CA	1:A:568:LEU:HD11	2.38	0.51
4:A:809:CLR:C21	4:A:809:CLR:C27	2.88	0.51
1:A:661:LEU:HD21	4:A:812:CLR:H193	1.93	0.51
1:B:374:PRO:HB3	1:B:400:PRO:HA	1.92	0.51
1:A:68:THR:HA	1:A:329:LYS:HA	1.92	0.51
1:A:584:VAL:O	1:A:588:LEU:HG	2.10	0.51
4:A:806:CLR:H8	4:A:807:CLR:H21	1.92	0.51
1:B:515:ALA:O	1:B:516:GLN:CB	2.59	0.51
1:B:399:CYS:SG	1:B:408:CYS:HB3	2.50	0.51
1:B:654:THR:O	1:B:658:THR:OG1	2.23	0.51
1:B:515:ALA:O	1:B:516:GLN:HB2	2.10	0.50
1:B:177:THR:HG23	1:B:305:LYS:NZ	2.27	0.50
1:B:575:ILE:HG23	1:B:579:ASP:HB2	1.92	0.50
1:B:653:LEU:HD22	4:B:803:CLR:H241	1.92	0.50
1:B:580:TYR:HD2	4:B:805:CLR:H161	1.77	0.50
4:B:806:CLR:H181	4:B:806:CLR:H221	1.94	0.50
1:A:407:PRO:C	1:A:568:LEU:CD1	2.73	0.50
1:A:570:PHE:O	1:A:570:PHE:CD2	2.66	0.49
4:A:808:CLR:H182	4:B:807:CLR:H17	1.94	0.49
4:A:809:CLR:H213	4:A:809:CLR:H273	1.93	0.49
1:A:633:VAL:HG22	4:A:809:CLR:H191	1.93	0.49
1:B:347:LEU:HA	1:B:351:GLU:HA	1.94	0.49
1:B:269:TYR:HB3	1:B:282:LEU:O	2.12	0.49
1:A:191:PHE:CE1	1:A:203:LEU:HD13	2.47	0.48
1:A:290:TYR:HA	1:A:299:GLU:HA	1.93	0.48
1:B:592:TRP:CD1	4:B:801:CLR:H6	2.49	0.48
1:A:417:ARG:HG2	1:A:473:TYR:HE1	1.78	0.48
4:B:801:CLR:H213	4:B:801:CLR:C18	2.43	0.48
1:B:122:LEU:HD12	1:B:265:TRP:HH2	1.79	0.48
4:A:808:CLR:H222	4:A:808:CLR:C18	2.43	0.48
4:B:801:CLR:C21	4:B:801:CLR:H242	2.40	0.48
4:A:809:CLR:H222	4:A:809:CLR:C18	2.44	0.48
1:B:134:ASN:O	1:B:138:VAL:HG23	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:320:SER:O	1:A:327:THR:OG1	2.28	0.48
4:A:803:CLR:H72	4:A:803:CLR:C18	2.42	0.48
1:A:569:ILE:O	1:A:569:ILE:HG13	2.12	0.47
1:A:119:HIS:HD2	1:A:313:VAL:HG22	1.79	0.47
1:A:588:LEU:HD22	4:A:808:CLR:C21	2.43	0.47
1:B:503:LEU:HD13	1:B:613:MET:HE3	1.96	0.47
1:A:550:GLN:HB2	1:B:577:ARG:HH11	1.79	0.47
1:B:615:VAL:CG1	4:B:803:CLR:H122	2.44	0.47
1:A:112:TRP:HE3	1:A:113:PRO:HD3	1.80	0.47
1:B:310:LEU:HD12	1:B:313:VAL:HG21	1.97	0.47
1:B:511:LEU:O	1:B:514:THR:OG1	2.32	0.47
1:A:133:THR:O	1:A:137:ASN:N	2.47	0.46
4:A:808:CLR:H25	4:A:810:CLR:H262	1.98	0.46
1:B:107:GLY:O	1:B:110:GLY:N	2.49	0.46
4:A:803:CLR:H232	4:A:803:CLR:H161	1.98	0.46
4:B:802:CLR:H72	4:B:802:CLR:C18	2.42	0.46
1:B:373:GLY:HA3	1:B:374:PRO:HD3	1.73	0.46
1:B:410:VAL:HG22	1:B:568:LEU:HD13	1.98	0.46
1:A:173:ARG:HE	1:A:192:LEU:HB2	1.81	0.46
1:A:377:HIS:CA	1:A:393:LEU:HA	2.46	0.45
1:A:417:ARG:HG2	1:A:473:TYR:CE1	2.51	0.45
1:B:272:CYS:O	1:B:273:GLU:C	2.54	0.45
1:A:477:SER:OG	1:A:478:THR:N	2.48	0.45
1:B:108:LEU:HD23	1:B:326:GLY:HA3	1.97	0.45
1:B:73:LYS:O	1:B:77:GLU:HG2	2.17	0.45
1:B:517:ARG:HG3	1:B:518:ILE:H	1.81	0.45
4:B:811:CLR:C21	4:B:811:CLR:H242	2.46	0.45
1:B:264:LYS:HZ2	1:B:286:SER:HB3	1.81	0.45
1:B:315:ILE:HG23	1:B:315:ILE:O	2.17	0.45
1:B:316:ASP:OD1	1:B:323:TRP:N	2.49	0.45
1:A:160:LEU:O	1:A:163:SER:OG	2.27	0.44
1:A:550:GLN:HG3	1:B:577:ARG:HD2	1.99	0.44
1:A:586:GLU:HG3	2:A:801:PEE:H81	1.98	0.44
1:B:507:LEU:HD13	1:B:599:ALA:HB1	1.99	0.44
2:A:801:PEE:H60	2:A:801:PEE:H55	1.75	0.44
1:A:279:PRO:O	1:A:311:GLN:NE2	2.50	0.44
3:A:802:EIJ:O45	3:A:802:EIJ:O54	2.35	0.44
1:A:90:ASP:O	1:A:94:LEU:HG	2.17	0.44
4:B:806:CLR:H221	4:B:806:CLR:C18	2.47	0.44
4:A:803:CLR:C16	4:A:803:CLR:C23	2.95	0.44
1:A:569:ILE:O	1:A:569:ILE:CG1	2.64	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:657:VAL:HG11	4:A:812:CLR:H183	2.00	0.44
4:A:809:CLR:H221	4:A:809:CLR:H162	1.83	0.44
1:A:94:LEU:HD23	1:A:94:LEU:HA	1.82	0.44
4:B:806:CLR:C18	4:B:806:CLR:C22	2.96	0.44
4:B:808:CLR:H213	4:B:808:CLR:H161	1.84	0.43
1:A:281:TRP:HE3	1:A:311:GLN:HE22	1.65	0.43
1:A:374:PRO:HB3	1:A:400:PRO:HA	2.00	0.43
1:B:361:PRO:HG2	1:B:363:VAL:HG22	1.98	0.43
1:B:467:PHE:N	1:B:468:PRO:HD2	2.34	0.43
1:B:549:CYS:SG	4:B:810:CLR:C2	3.06	0.43
1:A:475:GLU:OE1	1:A:475:GLU:CA	2.67	0.43
1:B:633:VAL:HG22	4:B:805:CLR:H12	2.01	0.43
4:B:801:CLR:H221	4:B:801:CLR:C12	2.48	0.43
1:A:112:TRP:HA	1:A:112:TRP:CE3	2.54	0.43
1:A:129:LEU:HD23	1:A:285:LEU:HD22	1.99	0.43
1:A:569:ILE:HD13	1:A:569:ILE:HG21	1.61	0.43
4:A:809:CLR:H273	4:A:809:CLR:H221	2.01	0.43
3:A:802:EIJ:O18	4:A:808:CLR:C2	2.65	0.43
1:B:173:ARG:HH12	1:B:192:LEU:HD13	1.84	0.43
1:B:475:GLU:HG2	1:B:476:PRO:HD2	2.00	0.43
1:A:595:TYR:HE2	4:A:808:CLR:H1	1.65	0.43
1:B:406:SER:HB3	1:B:407:PRO:HD3	2.00	0.43
1:B:481:CYS:SG	1:B:485:ARG:NH1	2.91	0.43
1:A:315:ILE:HD11	1:A:358:PHE:HB2	2.01	0.42
1:B:153:ASP:O	1:B:156:TRP:HB2	2.19	0.42
4:B:806:CLR:H221	4:B:806:CLR:H162	1.81	0.42
4:B:809:CLR:H263	4:B:809:CLR:H231	1.93	0.42
1:A:483:LEU:HD13	4:A:807:CLR:C15	2.49	0.42
4:B:808:CLR:H161	4:B:808:CLR:H231	2.01	0.42
4:A:809:CLR:H211	4:A:809:CLR:H232	1.84	0.42
4:A:808:CLR:H191	4:B:807:CLR:C12	2.27	0.42
1:B:395:CYS:HB3	1:B:402:CYS:HA	2.01	0.42
1:A:160:LEU:HD12	1:B:135:PHE:HE1	1.84	0.42
1:A:518:ILE:O	1:A:518:ILE:CG2	2.67	0.42
2:A:801:PEE:H34	2:A:801:PEE:H39	1.89	0.42
1:B:147:GLU:OE2	1:B:157:TYR:OH	2.34	0.42
1:A:91:SER:O	1:A:94:LEU:HB2	2.20	0.42
1:B:108:LEU:HB3	1:B:109:PRO:HD3	2.01	0.42
4:B:808:CLR:H14	4:B:808:CLR:H212	2.02	0.42
4:A:808:CLR:H221	4:A:808:CLR:H162	1.85	0.42
1:B:611:ARG:NH1	4:B:803:CLR:H3	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:592:TRP:HD1	4:B:801:CLR:H6	1.84	0.42
1:A:126:LEU:HD13	1:A:285:LEU:HD11	2.02	0.41
1:A:496:TYR:CZ	1:A:620:GLU:HG3	2.55	0.41
1:A:511:LEU:HD23	1:A:511:LEU:HA	1.91	0.41
1:A:563:LYS:HE3	1:A:569:ILE:CG2	2.50	0.41
1:B:105:LEU:HD21	1:B:329:LYS:CE	2.51	0.41
1:B:517:ARG:CG	1:B:518:ILE:H	2.33	0.41
1:A:112:TRP:CZ2	1:A:268:PRO:HD3	2.55	0.41
1:A:501:LEU:HB3	1:A:526:VAL:HG13	2.03	0.41
1:A:525:ARG:HA	1:A:525:ARG:HD2	1.85	0.41
4:A:808:CLR:H183	4:B:807:CLR:H221	2.03	0.41
4:B:804:CLR:H272	4:B:804:CLR:H232	1.91	0.41
1:A:96:ARG:O	1:A:275:GLY:HA2	2.21	0.41
1:A:644:LEU:HD23	1:A:644:LEU:HA	1.92	0.41
1:B:124:ARG:NH2	1:B:168:GLU:HG3	2.36	0.41
1:A:407:PRO:HA	1:A:568:LEU:CD1	2.42	0.41
4:A:809:CLR:H222	4:A:809:CLR:H183	2.02	0.41
1:A:520:TYR:CZ	1:A:526:VAL:HG22	2.53	0.40
1:A:119:HIS:CA	1:A:120:PRO:CD	2.99	0.40
1:A:151:GLN:HE21	1:B:146:ARG:HH12	1.70	0.40
4:A:808:CLR:H222	4:A:808:CLR:H183	2.04	0.40
1:B:518:ILE:HG23	1:B:518:ILE:O	2.20	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	533/781 (68%)	449 (84%)	75 (14%)	9 (2%)	9 34
1	B	532/781 (68%)	446 (84%)	75 (14%)	11 (2%)	7 30
All	All	1065/1562 (68%)	895 (84%)	150 (14%)	20 (2%)	11 31

All (20) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	119	HIS
1	A	338	MET
1	A	378	ILE
1	A	394	PRO
1	B	90	ASP
1	B	273	GLU
1	B	324	PHE
1	B	338	MET
1	B	386	SER
1	B	394	PRO
1	A	97	ALA
1	A	272	CYS
1	B	374	PRO
1	B	378	ILE
1	B	516	GLN
1	A	120	PRO
1	B	316	ASP
1	A	387	GLU
1	B	119	HIS
1	A	99	CYS

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	424/677 (63%)	412 (97%)	12 (3%)	43	70
1	B	426/677 (63%)	424 (100%)	2 (0%)	88	94
All	All	850/1354 (63%)	836 (98%)	14 (2%)	64	81

All (14) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	100	SER
1	A	102	ARG
1	A	120	PRO

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Mol	Chain	Res	Type
1	A	124	ARG
1	A	392	CYS
1	A	475	GLU
1	A	476	PRO
1	A	518	ILE
1	A	520	TYR
1	A	521	MET
1	A	568	LEU
1	A	615	VAL
1	B	144	LYS
1	B	453	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	134	ASN
1	B	333	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

24 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the

expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	CLR	A	813	-	31,31,31	0.28	0	48,48,48	0.34	0
4	CLR	A	810	-	31,31,31	0.28	0	48,48,48	0.33	0
4	CLR	B	803	-	31,31,31	0.27	0	48,48,48	0.33	0
4	CLR	A	812	-	31,31,31	0.28	0	48,48,48	0.32	0
2	PEE	A	801	-	50,50,50	1.13	6 (12%)	53,55,55	1.01	2 (3%)
4	CLR	A	807	-	31,31,31	0.28	0	48,48,48	0.33	0
4	CLR	A	803	-	31,31,31	0.29	0	48,48,48	0.65	1 (2%)
4	CLR	A	804	-	31,31,31	0.29	0	48,48,48	0.34	0
4	CLR	B	809	-	31,31,31	0.28	0	48,48,48	0.32	0
3	EIJ	A	802	-	56,56,61	1.46	7 (12%)	65,68,73	1.29	5 (7%)
4	CLR	B	801	-	31,31,31	1.16	2 (6%)	48,48,48	2.58	18 (37%)
4	CLR	B	808	-	31,31,31	0.28	0	48,48,48	0.32	0
4	CLR	B	802	-	31,31,31	0.29	0	48,48,48	0.65	1 (2%)
4	CLR	A	809	-	31,31,31	0.27	0	48,48,48	0.39	0
4	CLR	B	811	-	31,31,31	0.29	0	48,48,48	0.32	0
4	CLR	A	808	-	31,31,31	0.27	0	48,48,48	0.38	0
4	CLR	B	805	-	31,31,31	0.28	0	48,48,48	0.34	0
4	CLR	B	806	-	31,31,31	0.28	0	48,48,48	0.34	0
4	CLR	B	804	-	31,31,31	0.27	0	48,48,48	0.36	0
4	CLR	B	807	-	31,31,31	0.28	0	48,48,48	0.32	0
4	CLR	A	806	-	31,31,31	0.29	0	48,48,48	0.33	0
4	CLR	B	810	-	31,31,31	0.28	0	48,48,48	0.33	0
4	CLR	A	811	-	31,31,31	0.29	0	48,48,48	0.32	0
4	CLR	A	805	-	31,31,31	0.28	0	48,48,48	0.33	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
4	CLR	A	813	-	-	3/10/68/68	0/4/4/4
4	CLR	A	810	-	-	4/10/68/68	0/4/4/4
4	CLR	B	803	-	-	8/10/68/68	0/4/4/4
4	CLR	A	812	-	-	3/10/68/68	0/4/4/4
2	PEE	A	801	-	-	31/54/54/54	-
4	CLR	A	807	-	-	2/10/68/68	0/4/4/4

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	CLR	A	803	-	1/1/10/11	5/10/68/68	0/4/4/4
4	CLR	A	804	-	-	8/10/68/68	0/4/4/4
4	CLR	B	809	-	-	4/10/68/68	0/4/4/4
4	CLR	B	808	-	1/1/10/11	8/10/68/68	0/4/4/4
4	CLR	B	801	-	-	6/10/68/68	0/4/4/4
3	EIJ	A	802	-	-	28/51/75/80	0/1/1/1
4	CLR	A	809	-	-	7/10/68/68	0/4/4/4
4	CLR	B	802	-	1/1/10/11	6/10/68/68	0/4/4/4
4	CLR	B	811	-	-	1/10/68/68	0/4/4/4
4	CLR	A	808	-	-	4/10/68/68	0/4/4/4
4	CLR	B	805	-	-	2/10/68/68	0/4/4/4
4	CLR	B	806	-	-	7/10/68/68	0/4/4/4
4	CLR	B	804	-	-	5/10/68/68	0/4/4/4
4	CLR	B	807	-	-	3/10/68/68	0/4/4/4
4	CLR	A	806	-	-	7/10/68/68	0/4/4/4
4	CLR	B	810	-	-	5/10/68/68	0/4/4/4
4	CLR	A	811	-	-	8/10/68/68	0/4/4/4
4	CLR	A	805	-	-	8/10/68/68	0/4/4/4

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	802	EIJ	C13-C12	4.14	1.55	1.31
3	A	802	EIJ	C10-C09	4.14	1.55	1.31
3	A	802	EIJ	C07-C06	3.86	1.54	1.31
3	A	802	EIJ	C04-C03	3.71	1.53	1.31
2	A	801	PEE	C18-C19	3.66	1.53	1.31
2	A	801	PEE	C39-C38	3.65	1.52	1.31
3	A	802	EIJ	O19-C17	3.25	1.43	1.34
3	A	802	EIJ	O22-C23	2.83	1.41	1.33
4	B	801	CLR	C8-C14	-2.76	1.48	1.53
2	A	801	PEE	O2-C2	-2.44	1.40	1.46
2	A	801	PEE	O3-C30	2.32	1.40	1.33
3	A	802	EIJ	C16-C17	2.26	1.57	1.50
2	A	801	PEE	O3-C3	-2.16	1.40	1.45
2	A	801	PEE	O2-C10	2.10	1.40	1.34
4	B	801	CLR	C7-C8	-2.06	1.49	1.53

All (27) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	801	CLR	C17-C13-C14	-6.11	92.83	100.07
4	B	801	CLR	C4-C5-C10	5.77	124.08	116.42
4	B	801	CLR	C11-C9-C10	5.15	119.86	113.08
4	B	801	CLR	C7-C8-C14	-5.05	103.58	110.91
3	A	802	EIJ	C51-C49-C47	4.66	118.96	110.82
4	B	801	CLR	C4-C5-C6	-4.56	114.04	120.61
4	B	801	CLR	O1-C3-C4	-4.48	100.08	109.68
3	A	802	EIJ	O19-C17-C16	4.28	120.73	111.50
2	A	801	PEE	O2-C10-C11	4.25	120.66	111.50
4	B	801	CLR	C3-C4-C5	4.13	119.04	112.03
4	B	801	CLR	C12-C13-C17	4.05	122.64	116.57
4	B	801	CLR	C2-C3-C4	3.84	115.57	110.31
3	A	802	EIJ	C53-C51-C49	3.65	117.19	110.82
4	B	801	CLR	C11-C12-C13	3.64	119.03	112.78
4	B	801	CLR	C19-C10-C1	3.52	114.99	109.43
4	B	801	CLR	C12-C11-C9	3.37	118.96	113.11
4	B	801	CLR	C7-C8-C9	3.35	113.77	109.71
3	A	802	EIJ	C49-C47-C46	3.10	116.76	109.68
4	B	801	CLR	C1-C2-C3	3.03	114.35	110.47
4	B	801	CLR	C16-C17-C13	-2.70	100.59	103.84
3	A	802	EIJ	O22-C23-C25	2.67	120.29	111.91
2	A	801	PEE	O3-C30-C31	2.61	120.09	111.91
4	B	801	CLR	C10-C9-C8	2.36	116.27	112.73
4	B	801	CLR	C12-C13-C14	2.17	110.64	107.27
4	B	801	CLR	C23-C22-C20	-2.08	109.04	115.03
4	B	802	CLR	C13-C14-C8	2.04	117.41	114.38
4	A	803	CLR	C13-C14-C8	2.01	117.36	114.38

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
4	A	803	CLR	C8
4	B	802	CLR	C8
4	B	808	CLR	C17

All (173) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	801	PEE	C4-O4P-P-O2P
2	A	801	PEE	C4-O4P-P-O1P
3	A	802	EIJ	C01-C02-C03-C04

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Mol	Chain	Res	Type	Atoms
4	A	812	CLR	C21-C20-C22-C23
4	B	806	CLR	C21-C20-C22-C23
4	B	808	CLR	C16-C17-C20-C22
4	A	803	CLR	C13-C17-C20-C22
4	B	803	CLR	C13-C17-C20-C22
4	B	804	CLR	C13-C17-C20-C22
4	B	810	CLR	C21-C20-C22-C23
4	A	803	CLR	C13-C17-C20-C21
4	B	803	CLR	C13-C17-C20-C21
4	B	801	CLR	C13-C17-C20-C22
4	B	802	CLR	C21-C20-C22-C23
4	A	803	CLR	C16-C17-C20-C21
4	B	803	CLR	C16-C17-C20-C21
4	B	804	CLR	C16-C17-C20-C21
4	B	804	CLR	C13-C17-C20-C21
4	A	811	CLR	C13-C17-C20-C22
4	A	813	CLR	C17-C20-C22-C23
4	B	806	CLR	C17-C20-C22-C23
4	A	804	CLR	C21-C20-C22-C23
4	A	805	CLR	C21-C20-C22-C23
4	B	801	CLR	C16-C17-C20-C22
4	A	806	CLR	C13-C17-C20-C22
4	A	813	CLR	C21-C20-C22-C23
4	B	806	CLR	C16-C17-C20-C21
4	B	808	CLR	C16-C17-C20-C21
4	A	809	CLR	C13-C17-C20-C22
4	B	806	CLR	C13-C17-C20-C22
2	A	801	PEE	C31-C32-C33-C34
4	B	805	CLR	C20-C22-C23-C24
4	A	811	CLR	C13-C17-C20-C21
4	B	803	CLR	C16-C17-C20-C22
4	A	808	CLR	C13-C17-C20-C22
4	A	805	CLR	C22-C23-C24-C25
4	B	808	CLR	C20-C22-C23-C24
4	A	812	CLR	C17-C20-C22-C23
4	B	810	CLR	C17-C20-C22-C23
2	A	801	PEE	C31-C30-O3-C3
4	A	811	CLR	C20-C22-C23-C24
2	A	801	PEE	C30-C31-C32-C33
3	A	802	EIJ	C14-C15-C16-C17
4	A	804	CLR	C20-C22-C23-C24
4	A	807	CLR	C22-C23-C24-C25

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Mol	Chain	Res	Type	Atoms
4	B	802	CLR	C22-C23-C24-C25
4	B	810	CLR	C22-C23-C24-C25
4	A	803	CLR	C16-C17-C20-C22
4	A	810	CLR	C17-C20-C22-C23
4	A	808	CLR	C20-C22-C23-C24
4	B	803	CLR	C20-C22-C23-C24
4	B	807	CLR	C20-C22-C23-C24
4	B	811	CLR	C22-C23-C24-C25
4	A	809	CLR	C13-C17-C20-C21
4	B	806	CLR	C13-C17-C20-C21
2	A	801	PEE	O5-C30-O3-C3
4	B	804	CLR	C16-C17-C20-C22
4	A	810	CLR	C21-C20-C22-C23
4	A	806	CLR	C20-C22-C23-C24
4	A	807	CLR	C20-C22-C23-C24
4	A	809	CLR	C16-C17-C20-C21
4	A	808	CLR	C13-C17-C20-C21
4	A	813	CLR	C22-C23-C24-C25
2	A	801	PEE	C4-O4P-P-O3P
4	A	808	CLR	C16-C17-C20-C21
4	A	811	CLR	C16-C17-C20-C21
4	B	801	CLR	C16-C17-C20-C21
4	A	806	CLR	C13-C17-C20-C21
4	A	804	CLR	C23-C24-C25-C27
4	B	806	CLR	C23-C24-C25-C27
3	A	802	EIJ	C25-C23-O22-C21
4	A	811	CLR	C16-C17-C20-C22
3	A	802	EIJ	C23-C25-C26-C27
4	B	801	CLR	C23-C24-C25-C26
4	B	810	CLR	C23-C24-C25-C26
2	A	801	PEE	C32-C33-C34-C35
3	A	802	EIJ	O24-C23-O22-C21
4	A	806	CLR	C23-C24-C25-C26
4	B	807	CLR	C23-C24-C25-C26
2	A	801	PEE	C11-C12-C13-C14
4	A	804	CLR	C23-C24-C25-C26
4	B	801	CLR	C23-C24-C25-C27
4	B	808	CLR	C23-C24-C25-C26
4	B	810	CLR	C23-C24-C25-C27
3	A	802	EIJ	C31-C32-C33-C34
3	A	802	EIJ	C27-C28-C29-C30
3	A	802	EIJ	C16-C17-O19-C20

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Mol	Chain	Res	Type	Atoms
4	A	806	CLR	C16-C17-C20-C21
2	A	801	PEE	C43-C44-C45-C46
2	A	801	PEE	C19-C20-C21-C22
4	B	807	CLR	C23-C24-C25-C27
2	A	801	PEE	C10-C11-C12-C13
3	A	802	EIJ	O18-C17-O19-C20
4	A	805	CLR	C13-C17-C20-C22
4	B	808	CLR	C13-C17-C20-C22
4	B	806	CLR	C23-C24-C25-C26
4	A	806	CLR	C16-C17-C20-C22
4	A	811	CLR	C22-C23-C24-C25
4	A	809	CLR	C23-C24-C25-C26
3	A	802	EIJ	C32-C33-C34-C35
4	A	806	CLR	C23-C24-C25-C27
4	B	808	CLR	C23-C24-C25-C27
3	A	802	EIJ	C25-C26-C27-C28
2	A	801	PEE	C36-C37-C38-C39
4	A	812	CLR	C22-C23-C24-C25
2	A	801	PEE	C33-C34-C35-C36
3	A	802	EIJ	C36-C37-C38-C39
4	B	803	CLR	C23-C24-C25-C26
2	A	801	PEE	C1-C2-C3-O3
4	B	803	CLR	C21-C20-C22-C23
4	A	805	CLR	C16-C17-C20-C21
4	A	805	CLR	C13-C17-C20-C21
4	B	808	CLR	C13-C17-C20-C21
4	A	804	CLR	C13-C17-C20-C22
4	B	809	CLR	C20-C22-C23-C24
4	A	804	CLR	C16-C17-C20-C21
4	A	805	CLR	C16-C17-C20-C22
2	A	801	PEE	C44-C45-C46-C47
4	A	804	CLR	C13-C17-C20-C21
2	A	801	PEE	C38-C39-C40-C41
4	B	803	CLR	C23-C24-C25-C27
2	A	801	PEE	C22-C23-C24-C25
4	A	804	CLR	C16-C17-C20-C22
3	A	802	EIJ	C34-C35-C36-C37
3	A	802	EIJ	C04-C05-C06-C07
3	A	802	EIJ	C09-C10-C11-C12
3	A	802	EIJ	O19-C20-C21-O22
4	A	809	CLR	C20-C22-C23-C24
4	B	801	CLR	C20-C22-C23-C24

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Mol	Chain	Res	Type	Atoms
4	A	809	CLR	C23-C24-C25-C27
4	B	802	CLR	C13-C17-C20-C22
3	A	802	EIJ	C29-C30-C31-C32
2	A	801	PEE	C34-C35-C36-C37
3	A	802	EIJ	C26-C27-C28-C29
4	A	803	CLR	C20-C22-C23-C24
4	A	805	CLR	C20-C22-C23-C24
4	A	811	CLR	C23-C24-C25-C27
3	A	802	EIJ	C40-C20-C21-O22
2	A	801	PEE	O3P-C1-C2-O2
4	B	802	CLR	C13-C17-C20-C21
3	A	802	EIJ	C40-O41-P42-O45
3	A	802	EIJ	C40-O41-P42-O43
2	A	801	PEE	O3P-C1-C2-C3
4	B	802	CLR	C16-C17-C20-C22
2	A	801	PEE	C42-C43-C44-C45
3	A	802	EIJ	O19-C20-C40-O41
2	A	801	PEE	O2-C2-C3-O3
3	A	802	EIJ	C08-C09-C10-C11
2	A	801	PEE	C16-C17-C18-C19
3	A	802	EIJ	C21-C20-C40-O41
4	B	808	CLR	C17-C20-C22-C23
4	A	809	CLR	C22-C23-C24-C25
4	B	802	CLR	C16-C17-C20-C21
2	A	801	PEE	C39-C40-C41-C42
2	A	801	PEE	C18-C19-C20-C21
2	A	801	PEE	C21-C22-C23-C24
3	A	802	EIJ	C10-C11-C12-C13
4	A	810	CLR	C13-C17-C20-C21
3	A	802	EIJ	C28-C29-C30-C31
3	A	802	EIJ	C30-C31-C32-C33
3	A	802	EIJ	C05-C06-C07-C08
2	A	801	PEE	C13-C14-C15-C16
2	A	801	PEE	C12-C13-C14-C15
2	A	801	PEE	O4-C10-O2-C2
4	B	809	CLR	C13-C17-C20-C21
4	A	805	CLR	C23-C24-C25-C26
4	B	809	CLR	C16-C17-C20-C22
2	A	801	PEE	C14-C15-C16-C17
4	B	809	CLR	C22-C23-C24-C25
4	A	810	CLR	C23-C24-C25-C26
4	B	805	CLR	C23-C24-C25-C27

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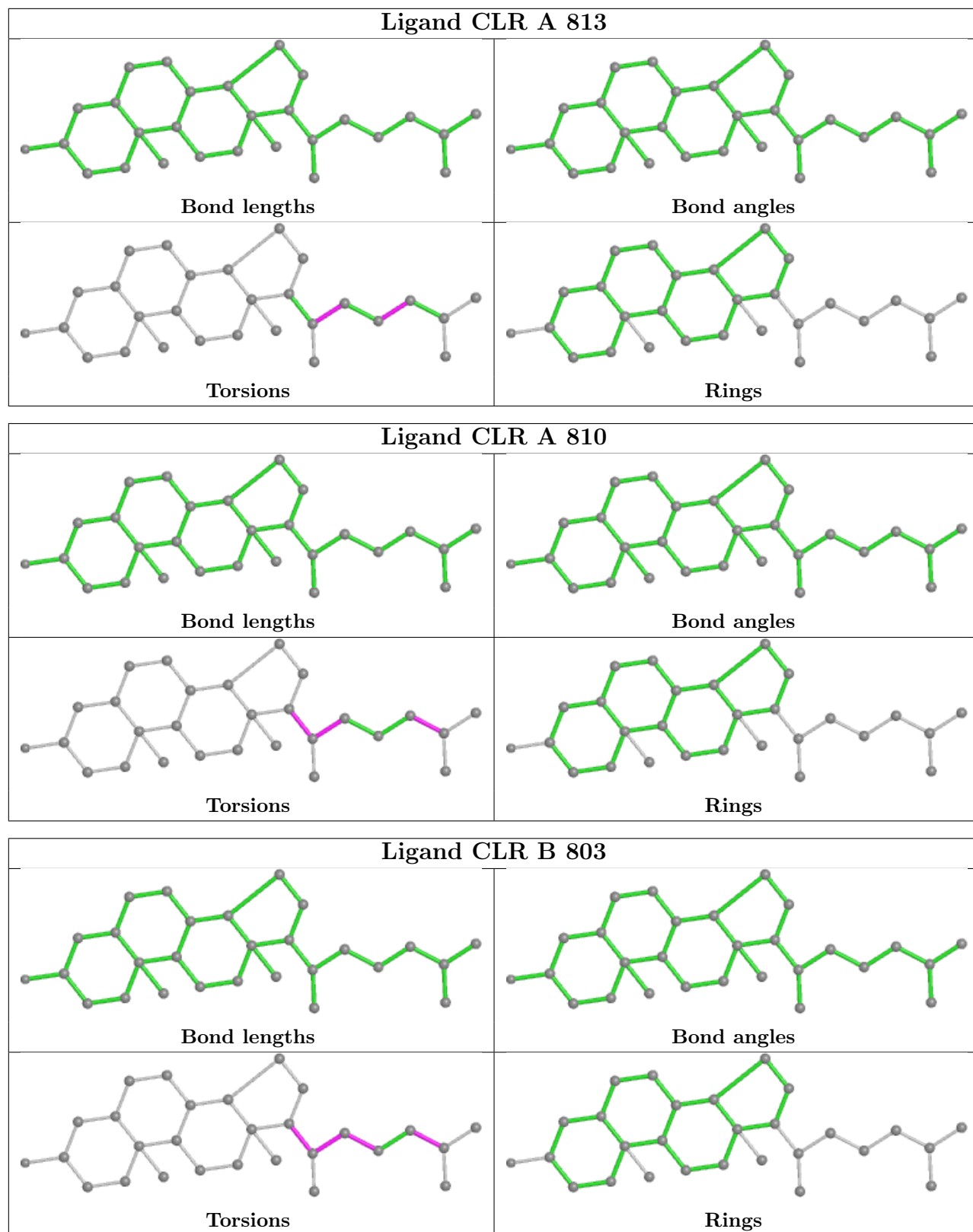
Mol	Chain	Res	Type	Atoms
4	B	804	CLR	C21-C20-C22-C23
4	A	811	CLR	C23-C24-C25-C26

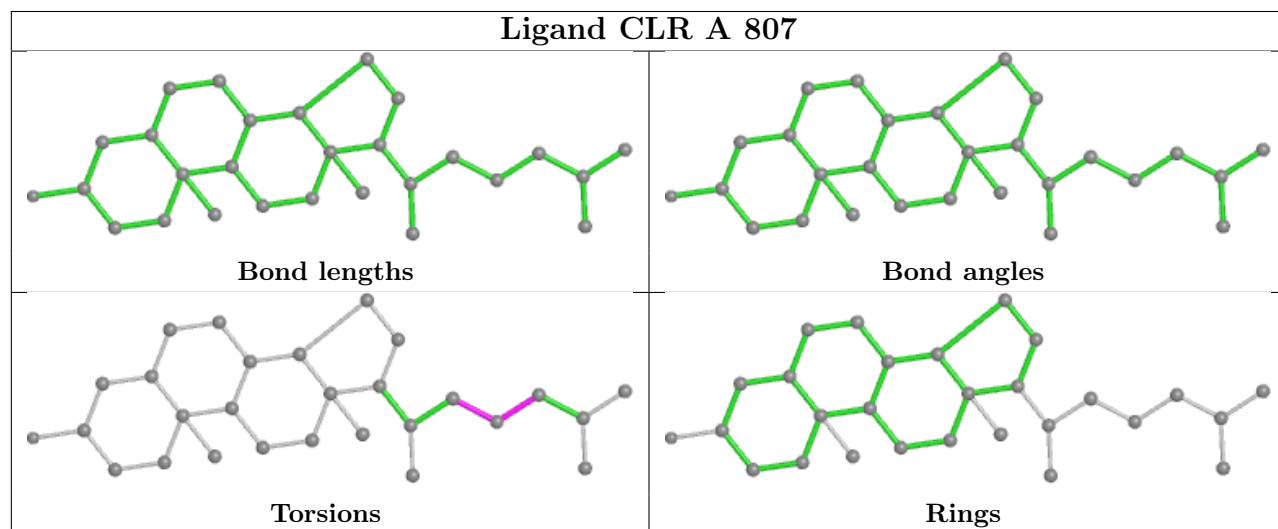
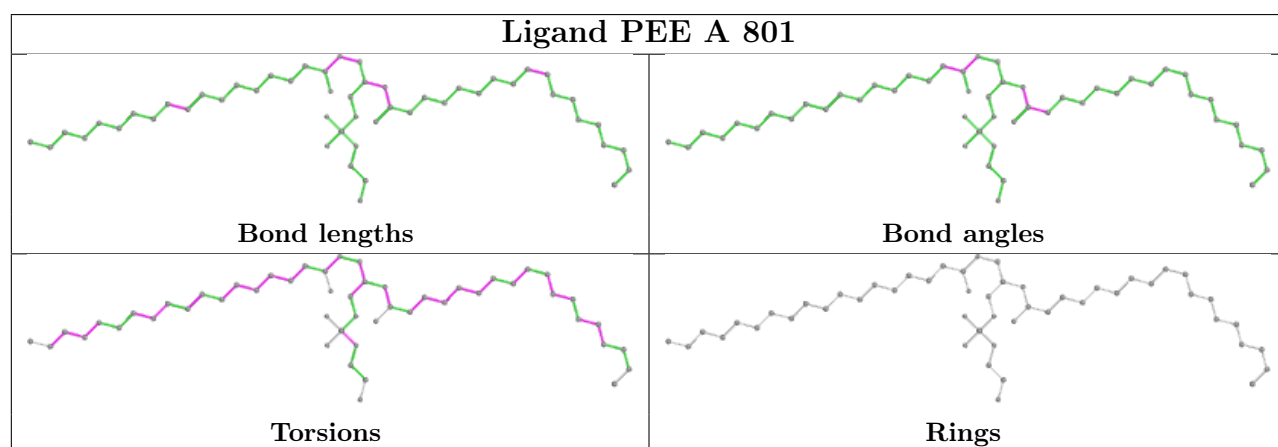
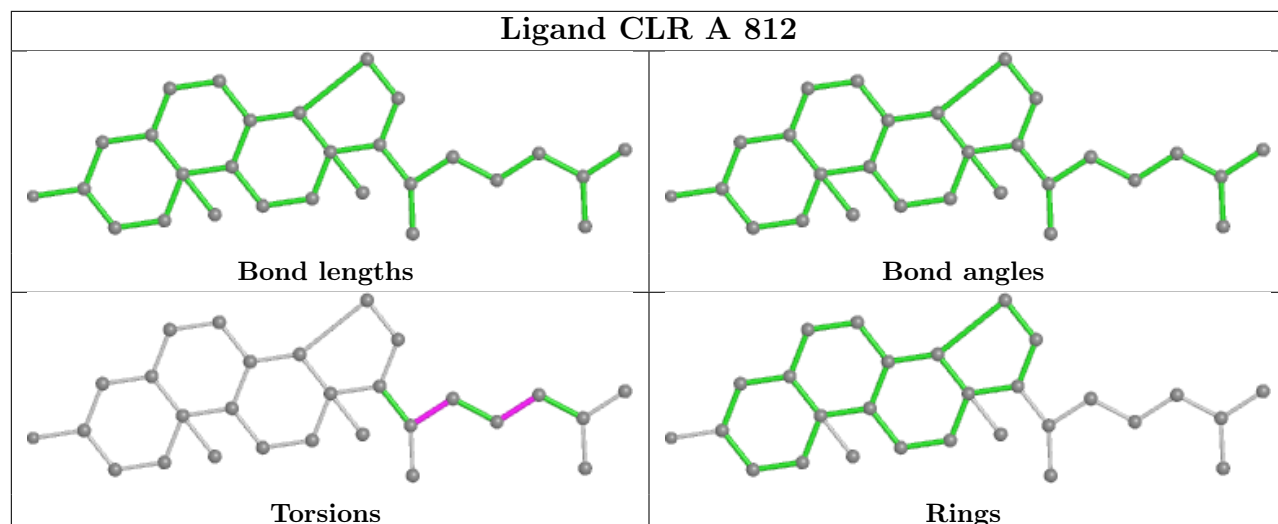
There are no ring outliers.

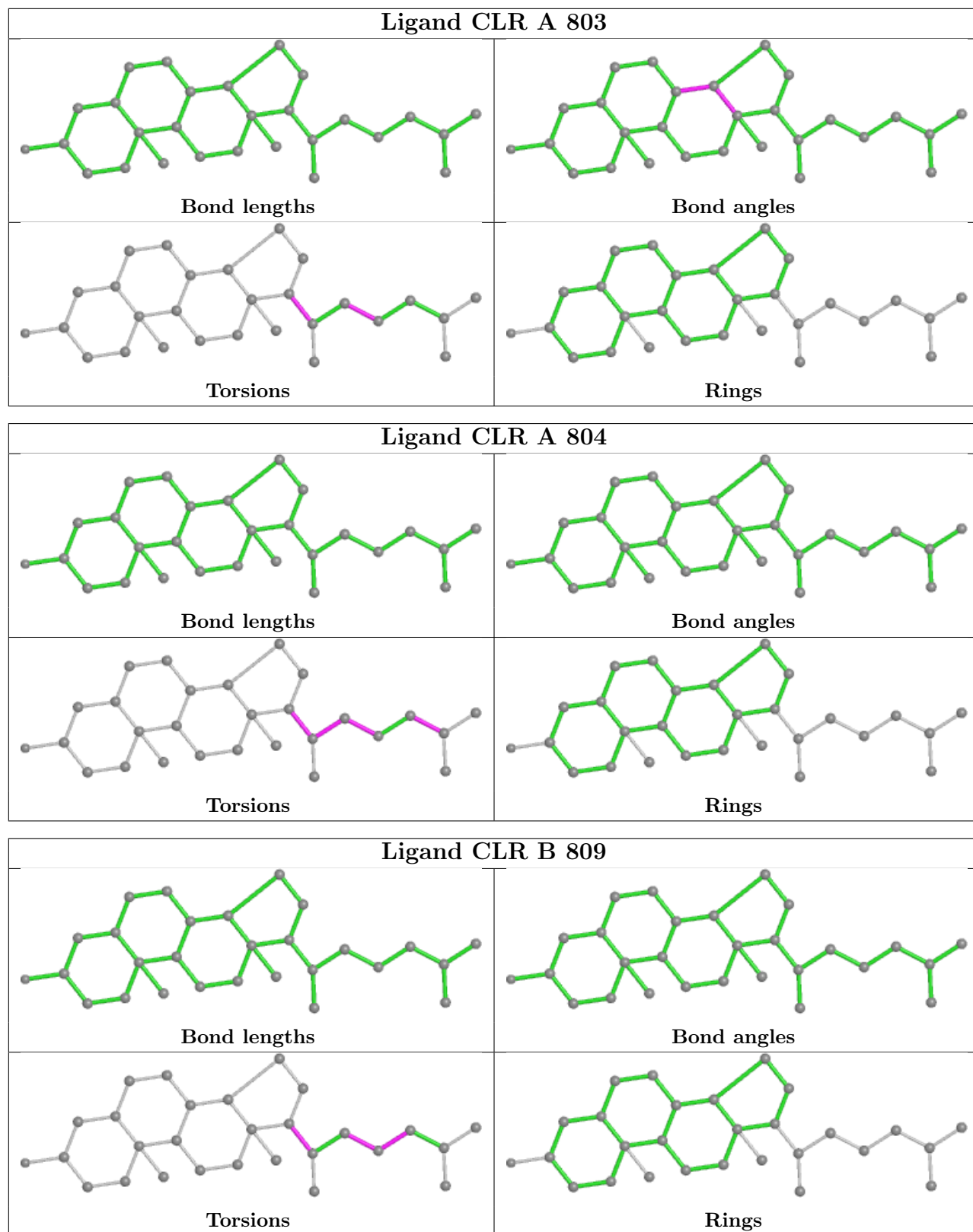
22 monomers are involved in 131 short contacts:

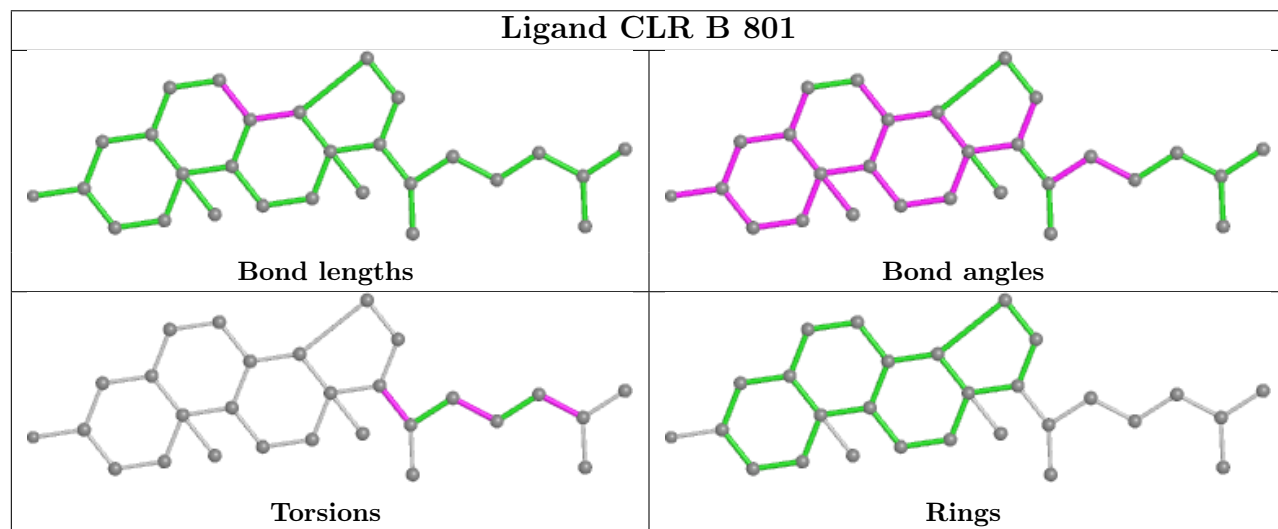
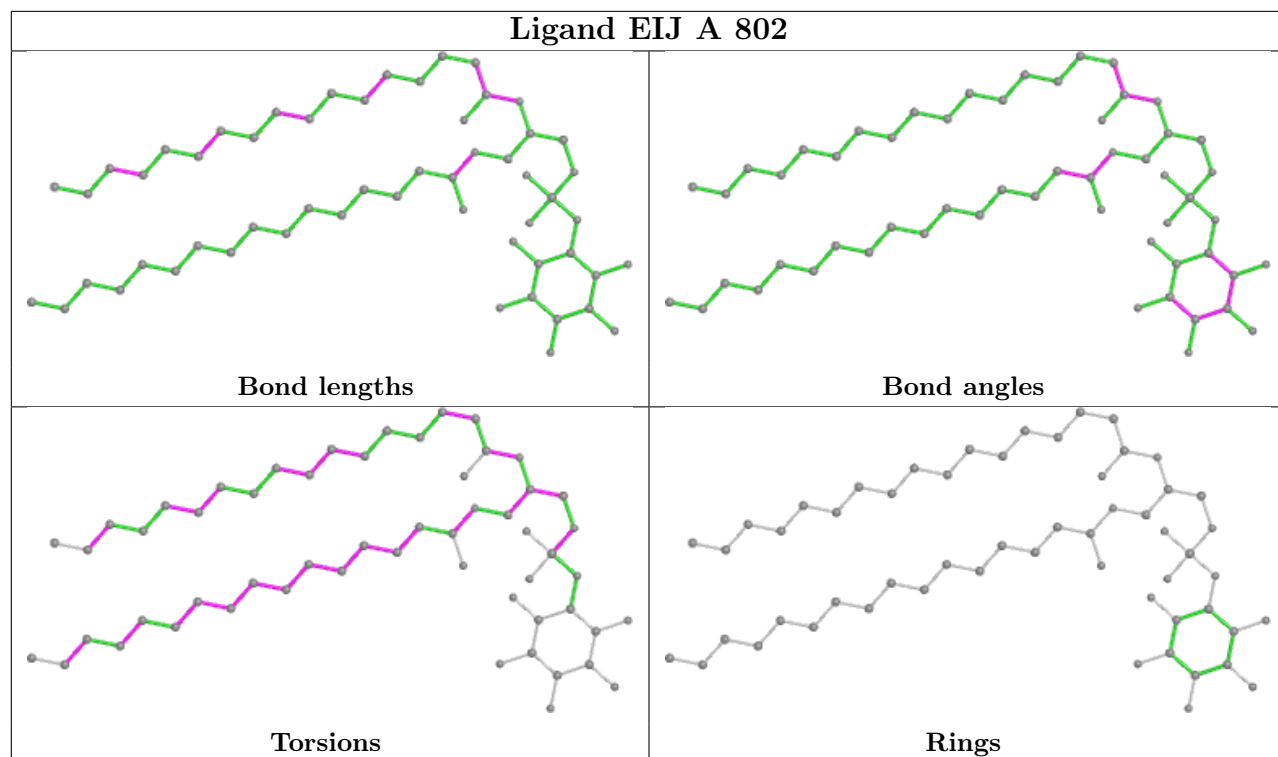
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	810	CLR	4	0
4	B	803	CLR	6	0
4	A	812	CLR	2	0
2	A	801	PEE	4	0
4	A	807	CLR	4	0
4	A	803	CLR	4	0
4	A	804	CLR	4	0
4	B	809	CLR	2	0
3	A	802	EIJ	4	0
4	B	801	CLR	11	0
4	B	808	CLR	6	0
4	B	802	CLR	2	0
4	A	809	CLR	20	0
4	B	811	CLR	10	0
4	A	808	CLR	15	0
4	B	805	CLR	8	0
4	B	806	CLR	13	0
4	B	804	CLR	7	0
4	B	807	CLR	8	0
4	A	806	CLR	5	0
4	B	810	CLR	3	0
4	A	811	CLR	2	0

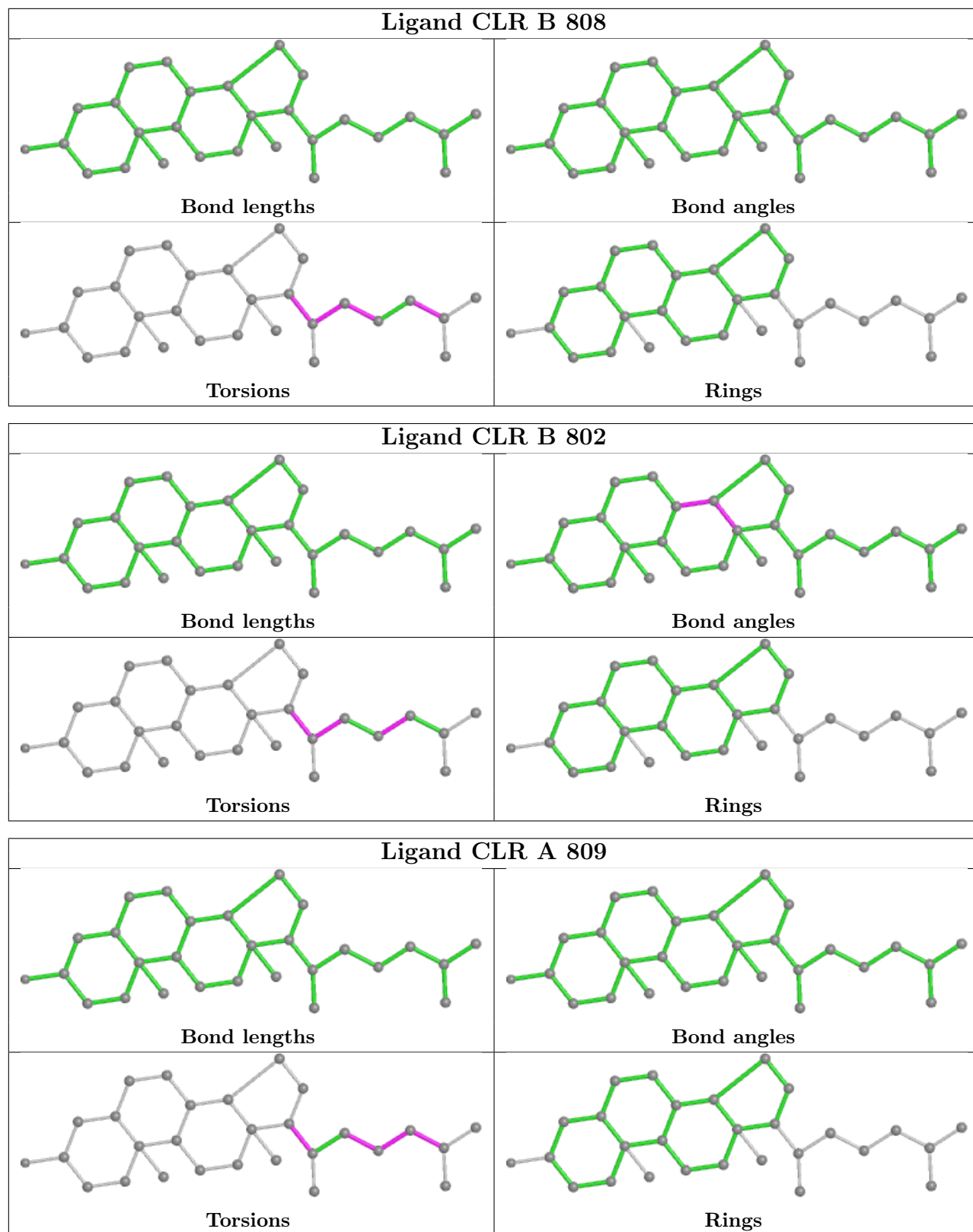
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

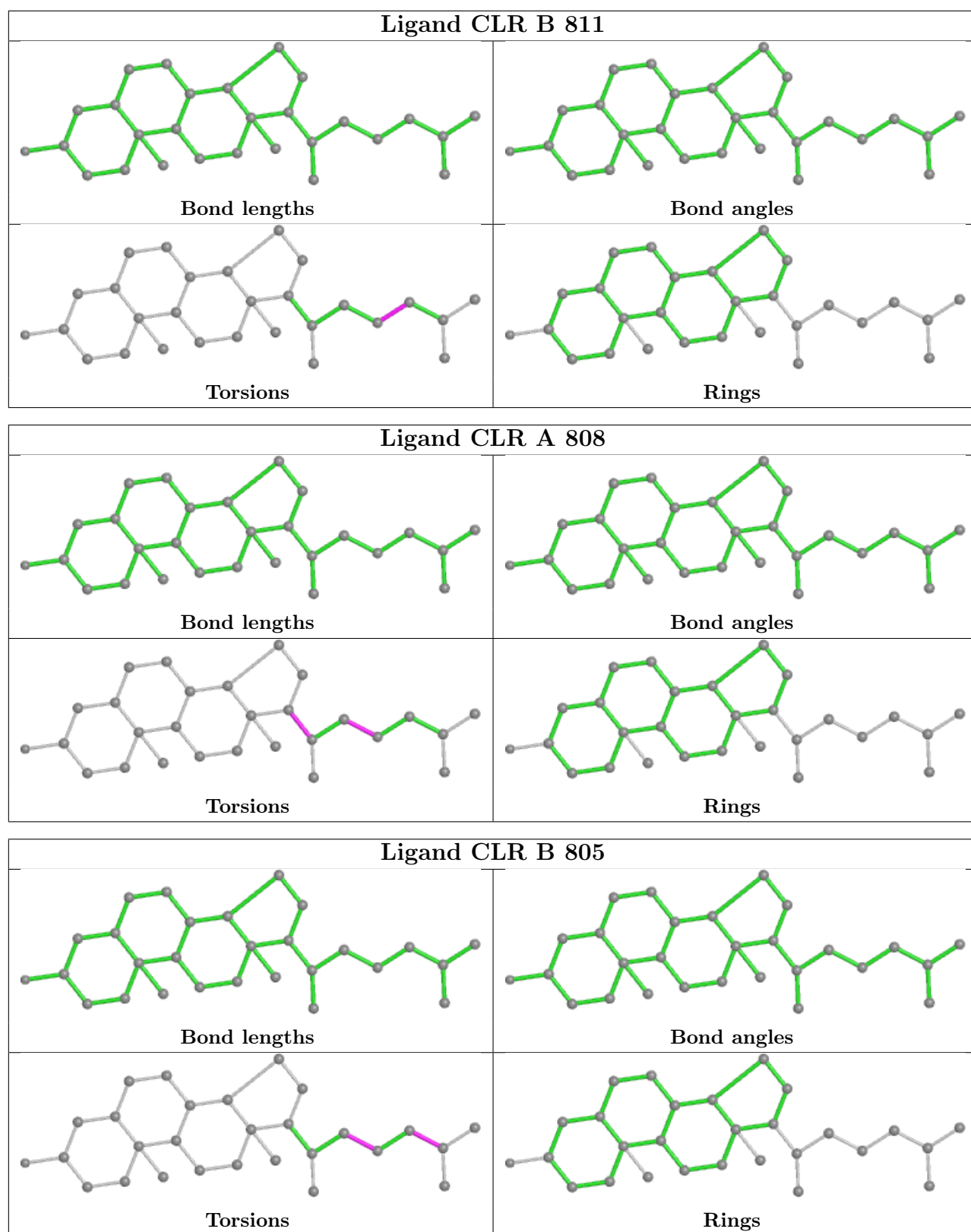


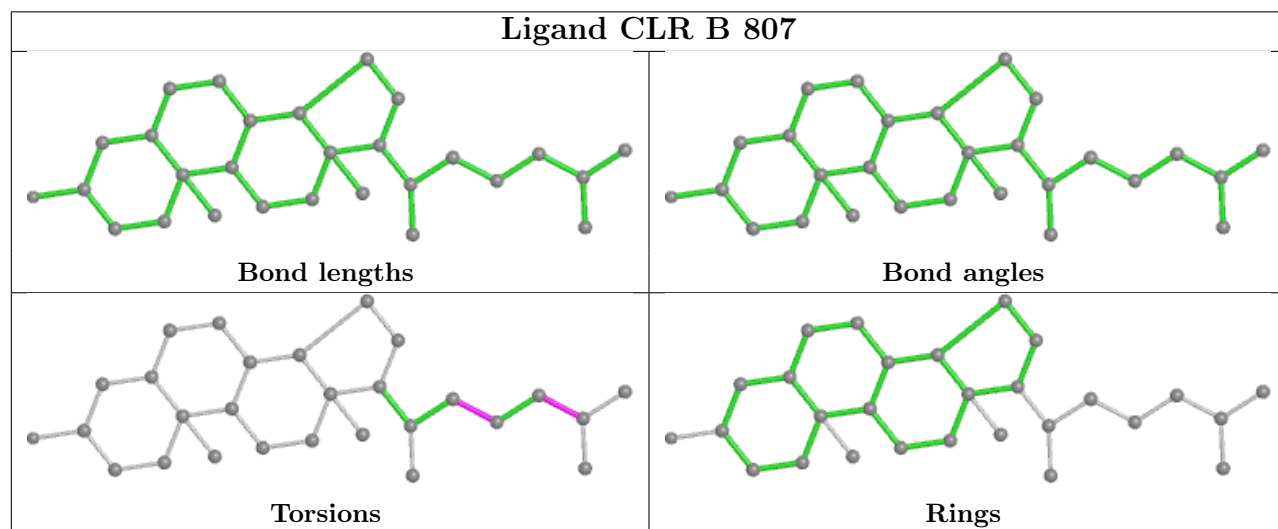
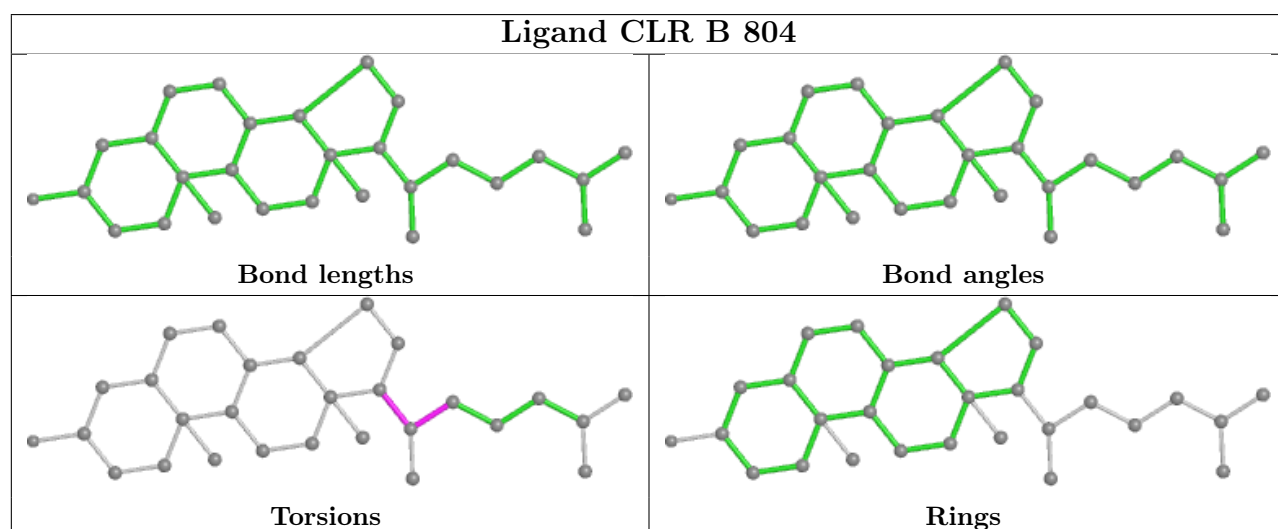
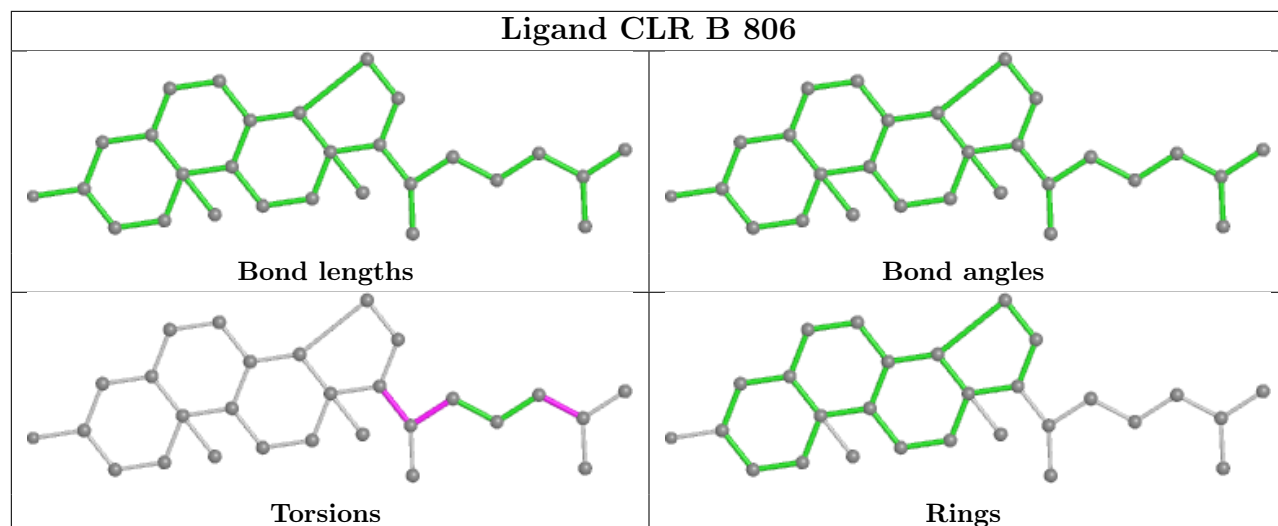


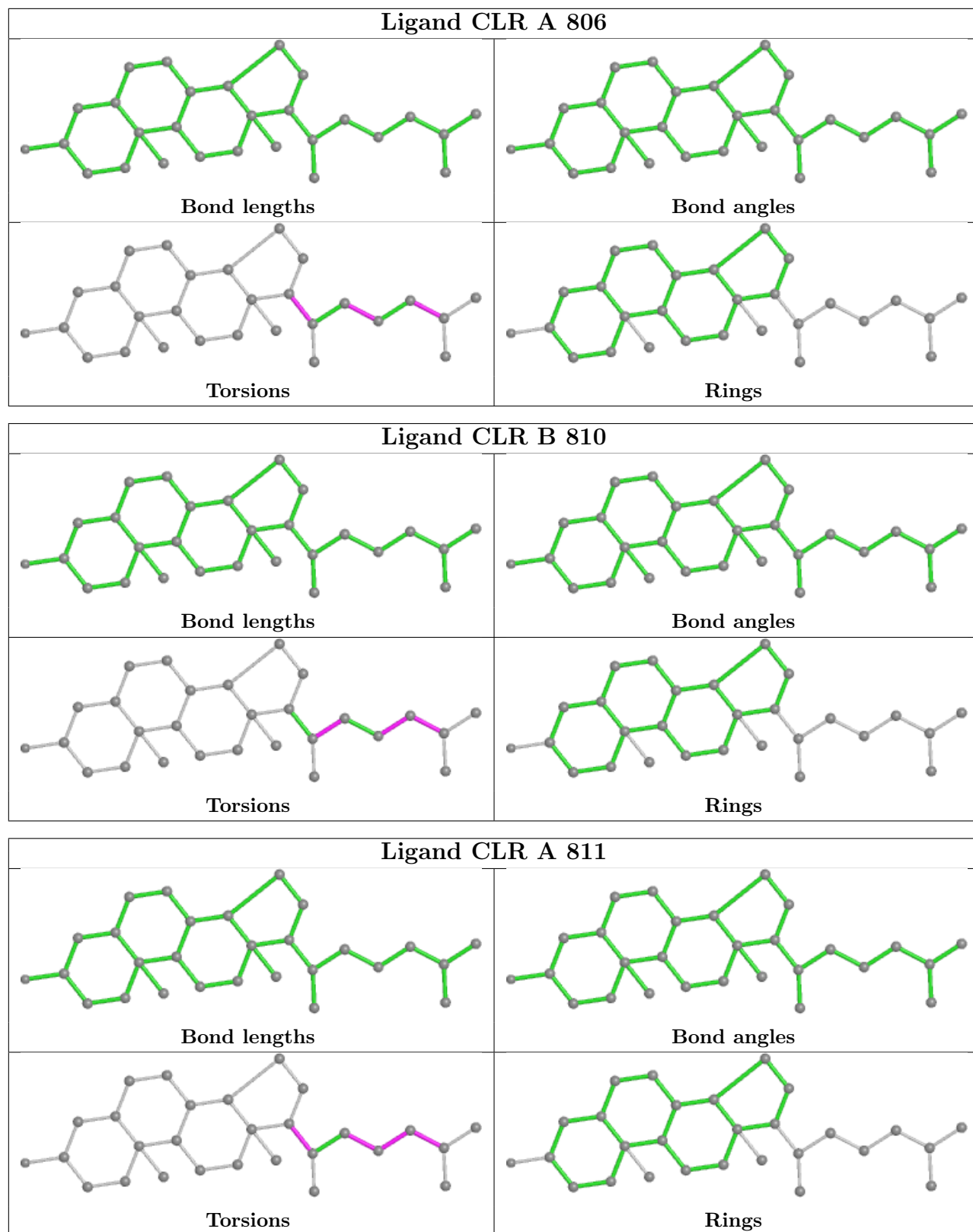


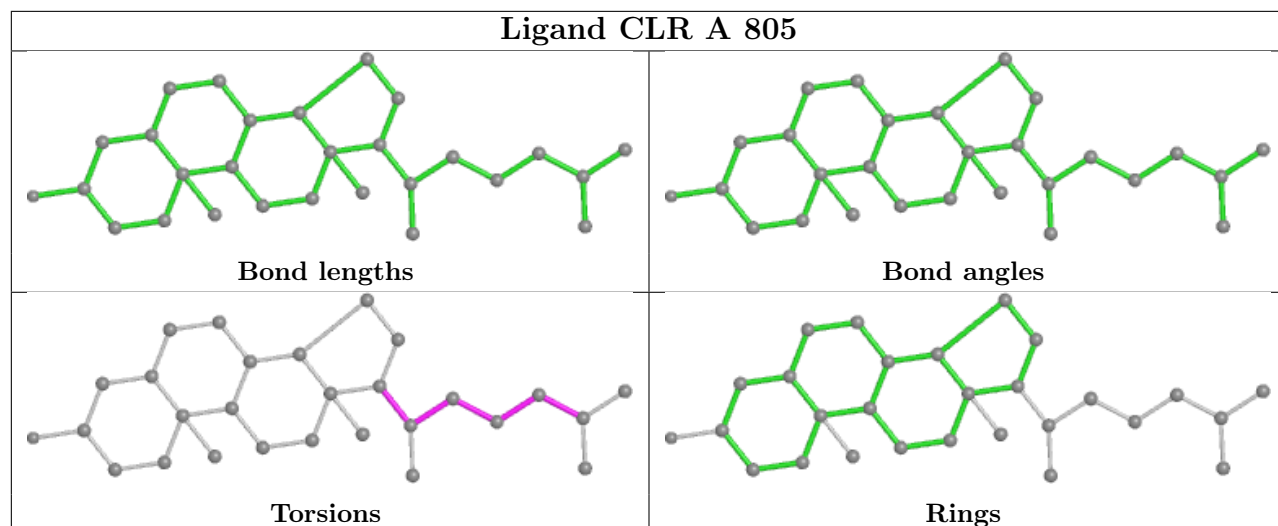












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

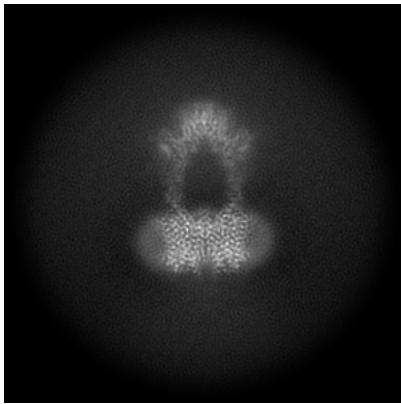
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-25125. These allow visual inspection of the internal detail of the map and identification of artifacts.

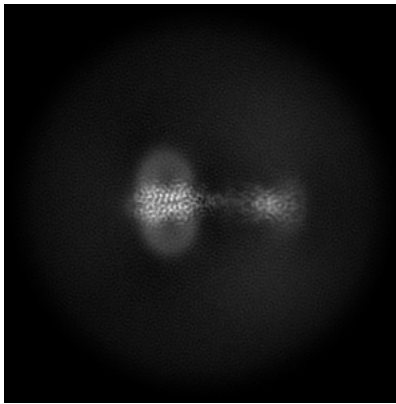
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

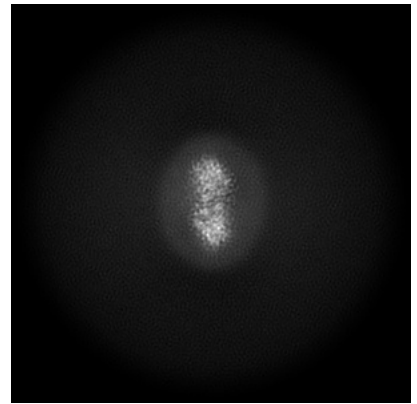
6.1.1 Primary map



X



Y

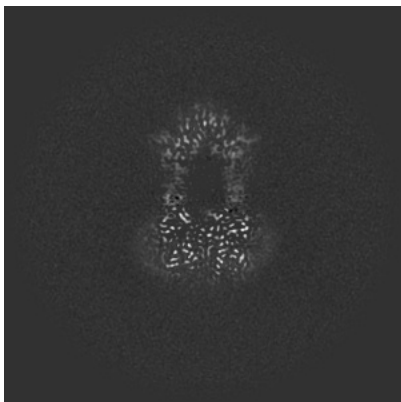


Z

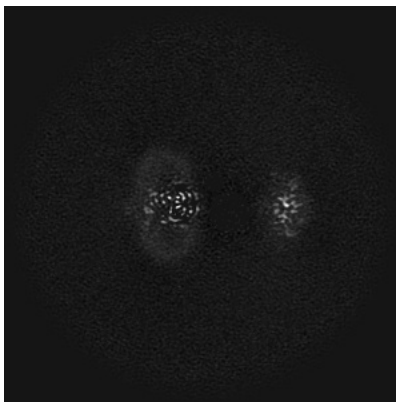
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

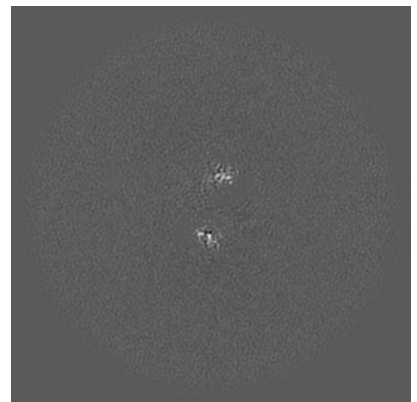
6.2.1 Primary map



X Index: 200



Y Index: 200

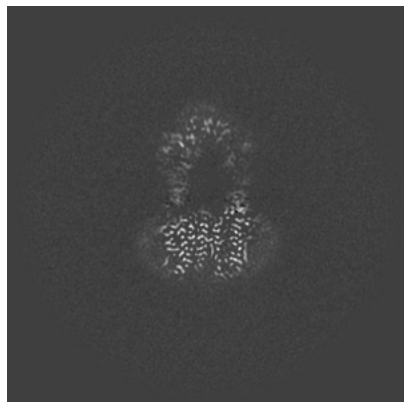


Z Index: 200

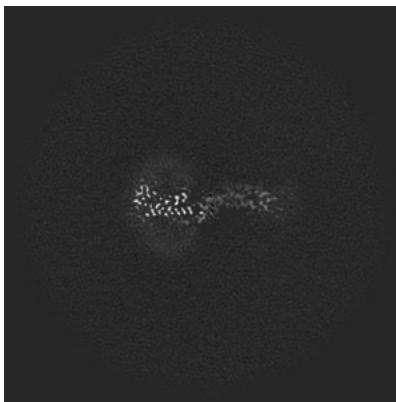
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

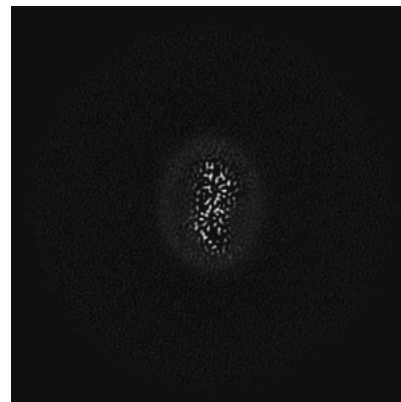
6.3.1 Primary map



X Index: 207



Y Index: 171



Z Index: 175

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

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.593. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

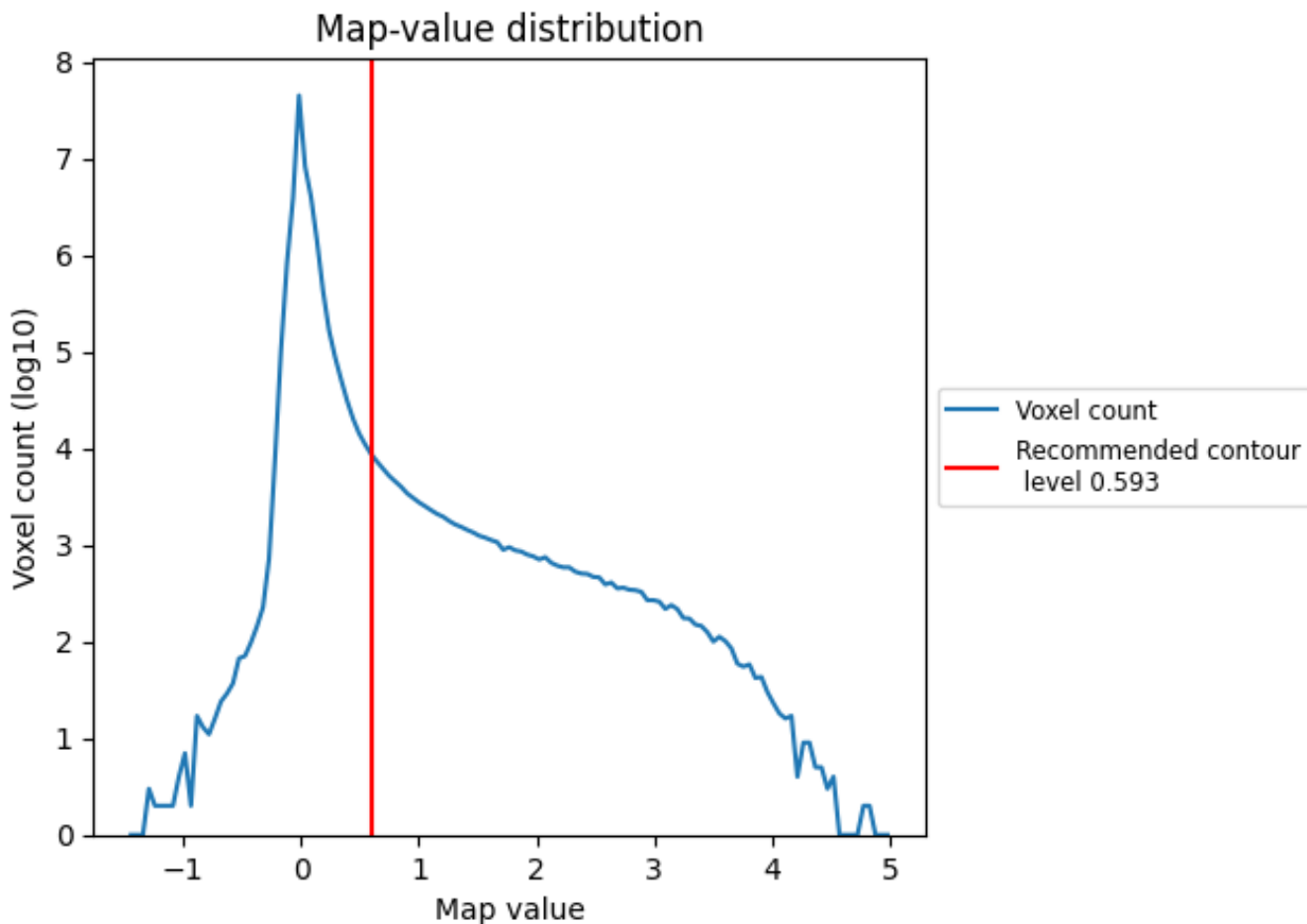
6.5 Mask visualisation

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

7 Map analysis [i](#)

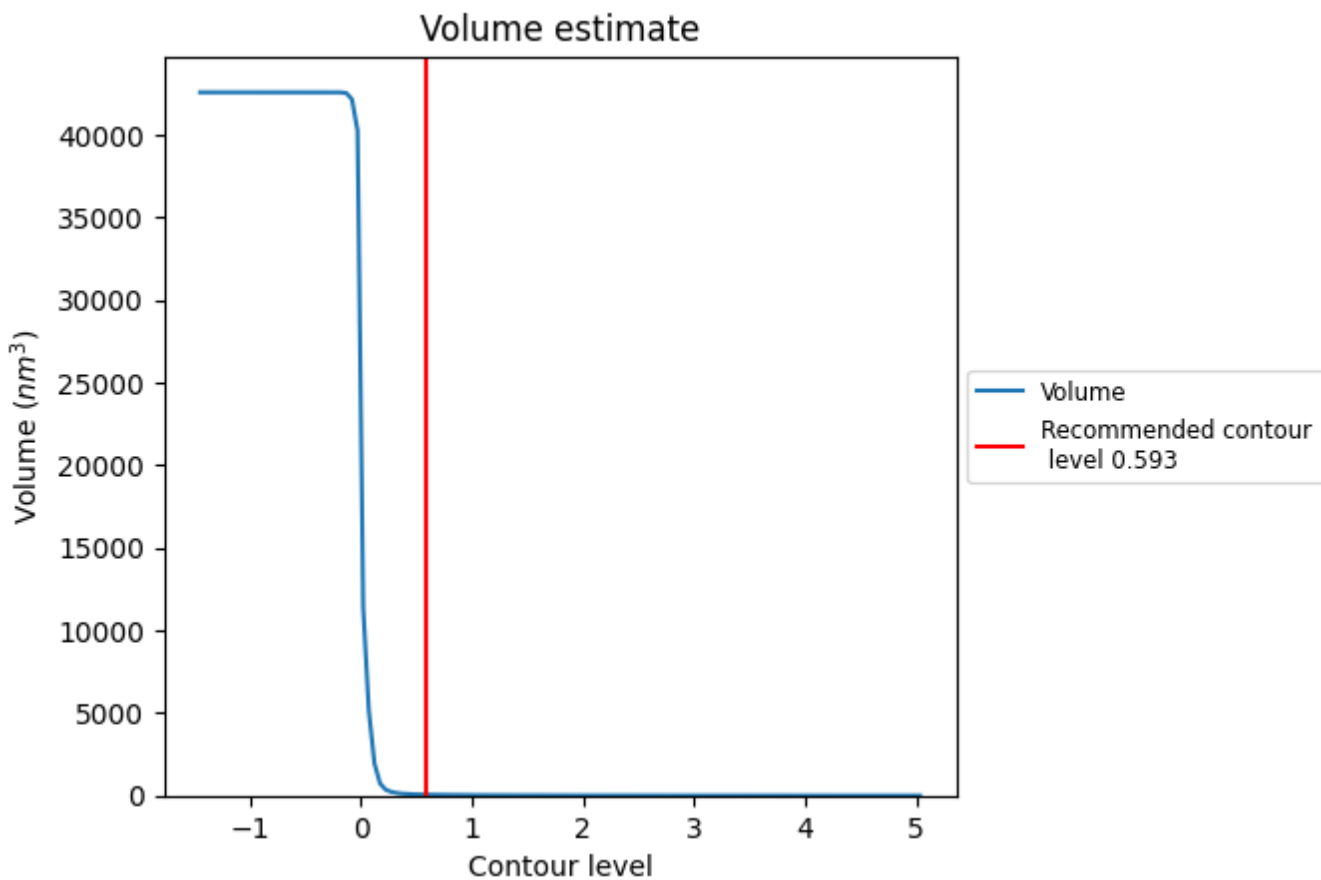
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

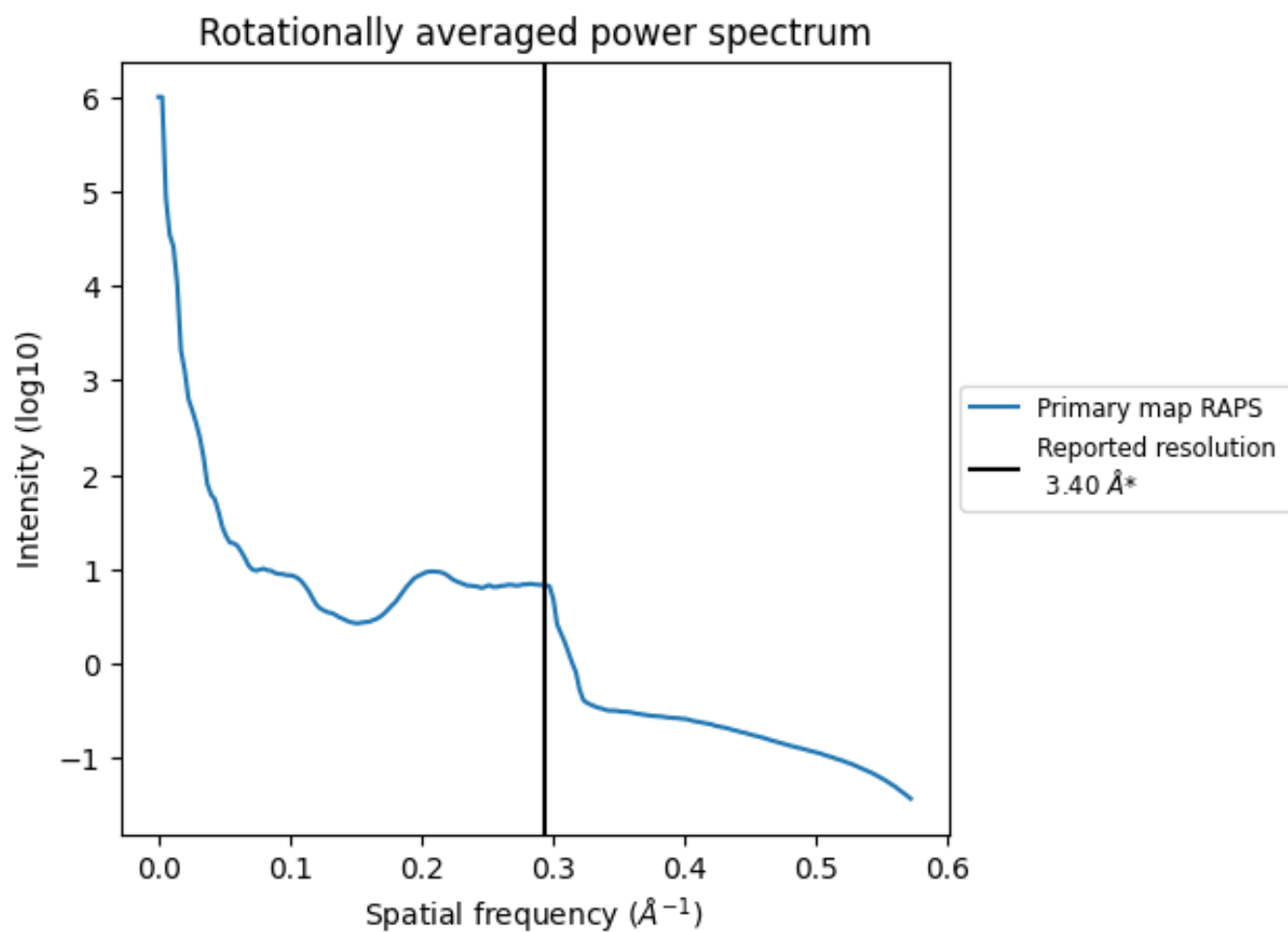
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 56 nm³; this corresponds to an approximate mass of 50 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 0.294\AA^{-1}

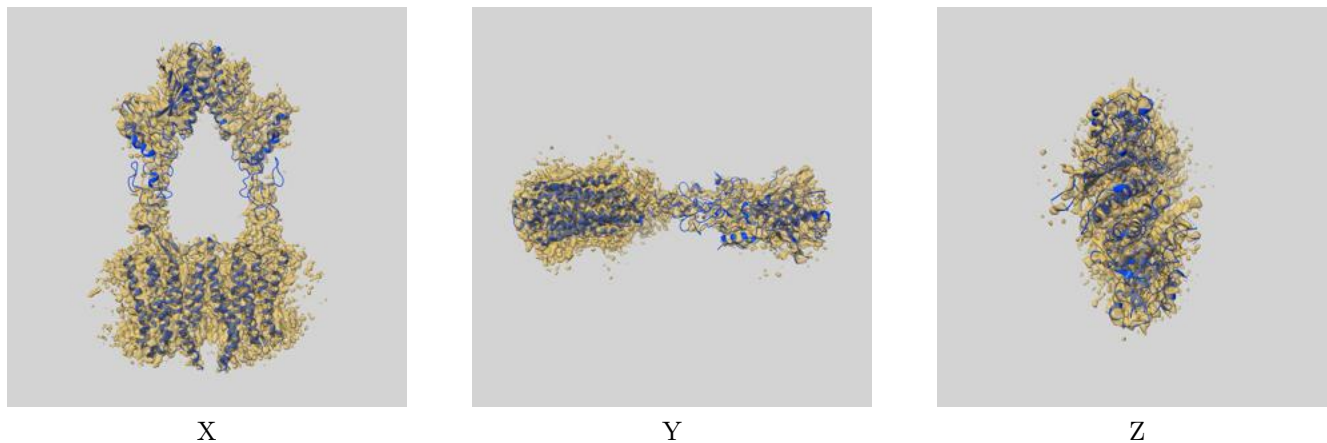
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

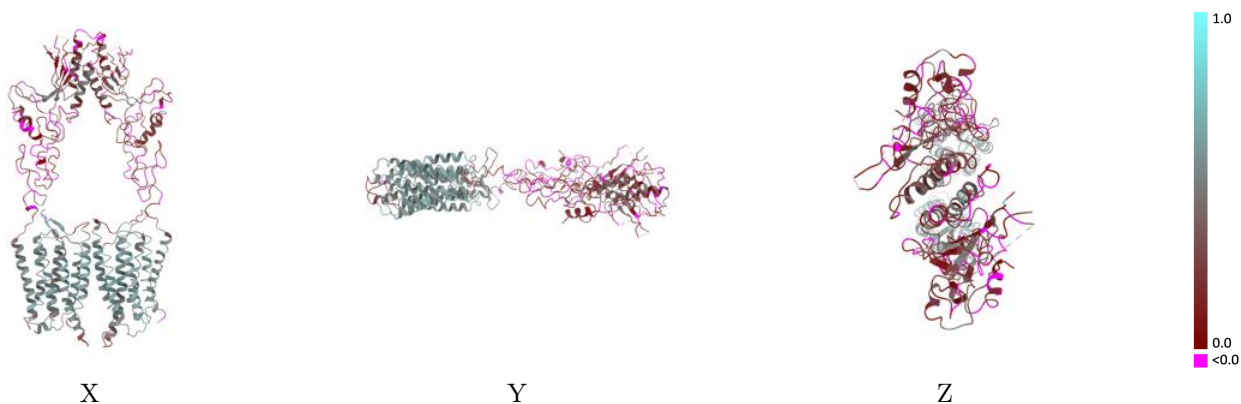
This section contains information regarding the fit between EMDB map EMD-25125 and PDB model 7SHE. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay [i](#)



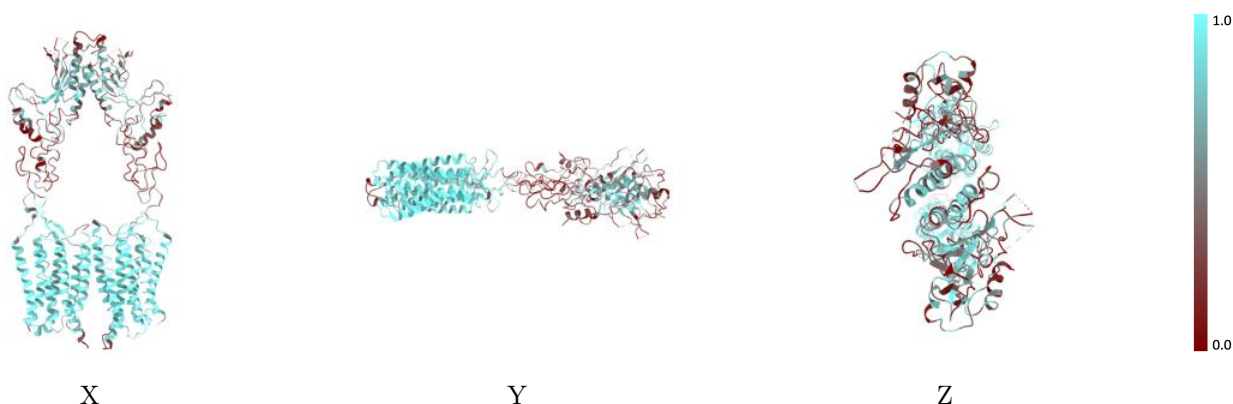
The images above show the 3D surface view of the map at the recommended contour level 0.593 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



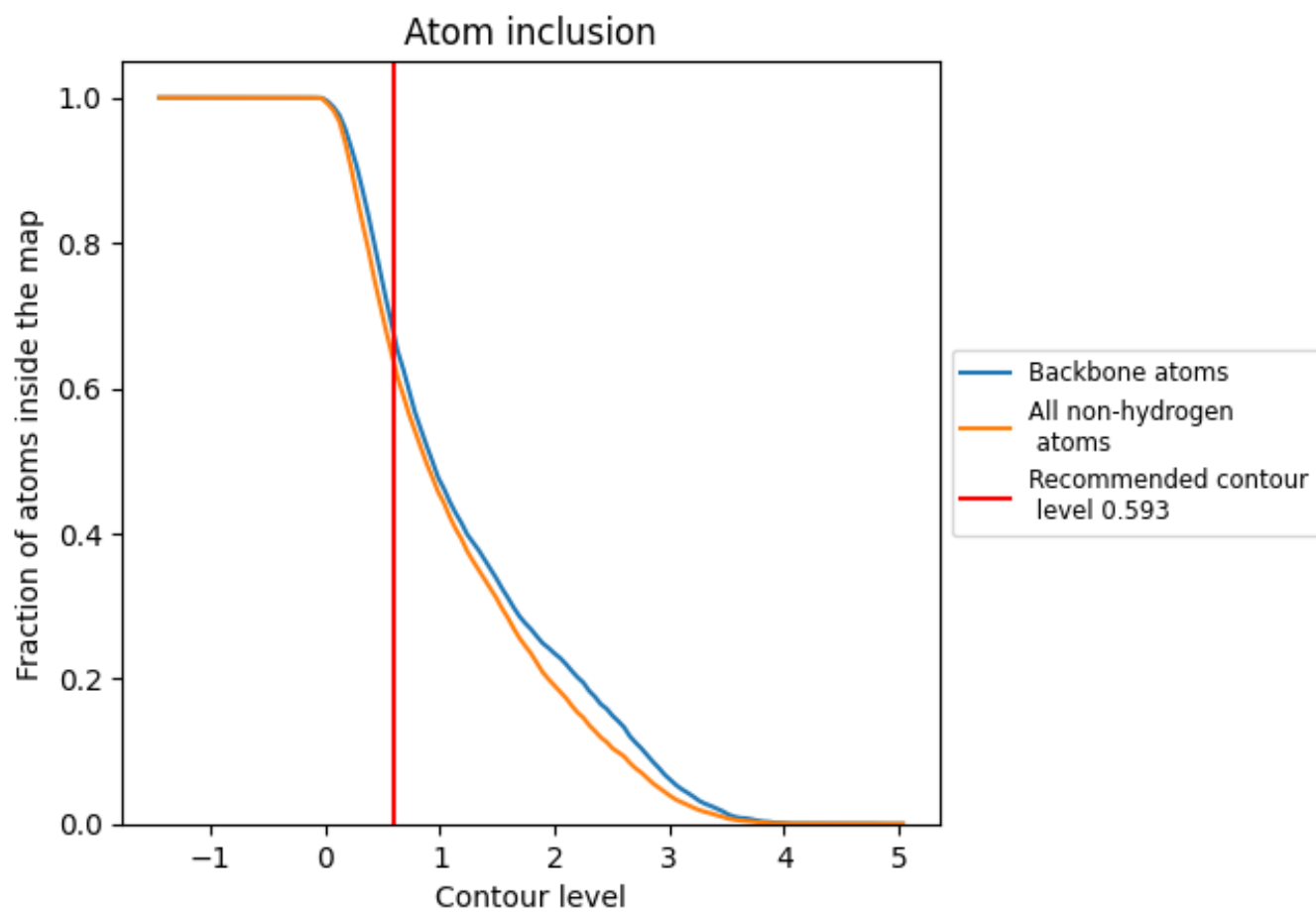
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.593).







9.4 Atom inclusion [i](#)



At the recommended contour level, 68% of all backbone atoms, 64% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.593) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6377	 0.3520
A	 0.6494	 0.3520
B	 0.6257	 0.3510

