



wwPDB EM Validation Summary Report ⓘ

May 29, 2023 – 06:23 PM JST

PDB ID : 7XZH
EMDB ID : EMD-33527
Title : Cryo-EM structure of human LRRC8A
Authors : Liu, H.; Liao, J.
Deposited on : 2022-06-02
Resolution : 2.78 Å(reported)

This is a wwPDB EM Validation Summary 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.dev50
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) : 2.33

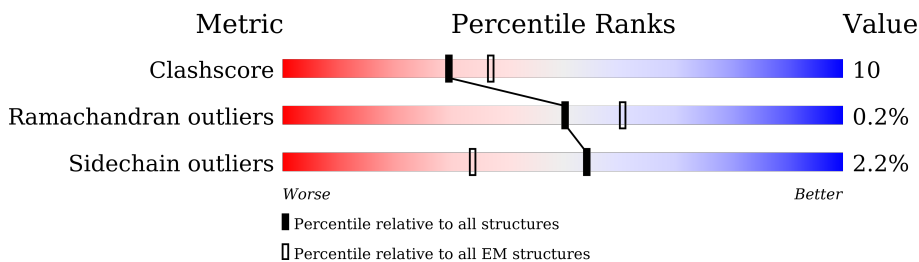
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.78 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	808	
1	B	808	
1	C	808	
1	D	808	
1	E	808	
1	F	808	

2 Entry composition [i](#)

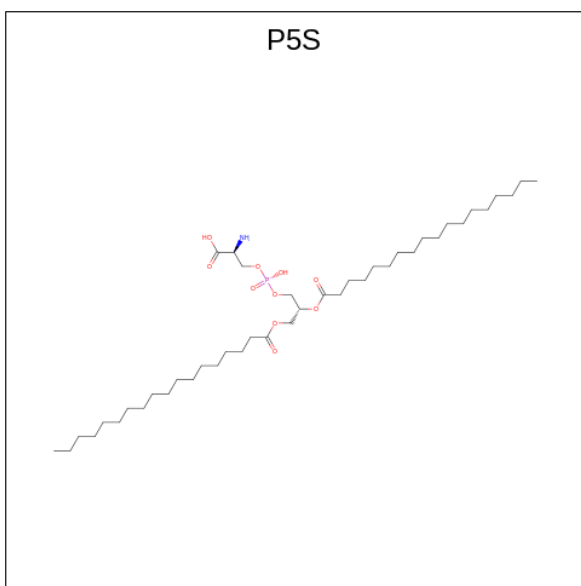
There are 4 unique types of molecules in this entry. The entry contains 37073 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Volume-regulated anion channel subunit LRRC8A.

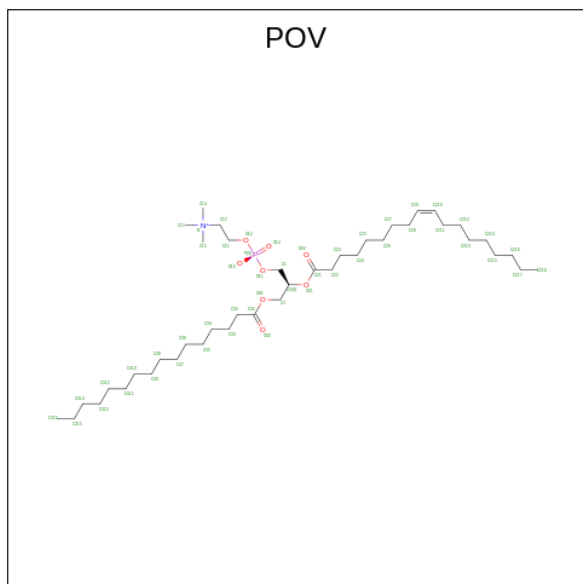
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	729	Total 6025	C 3922	N 1013	O 1064	S 26	0	0
1	B	730	Total 6032	C 3926	N 1014	O 1066	S 26	0	0
1	C	730	Total 6032	C 3926	N 1014	O 1066	S 26	0	0
1	D	730	Total 6032	C 3926	N 1014	O 1066	S 26	0	0
1	E	730	Total 6032	C 3926	N 1014	O 1066	S 26	0	0
1	F	730	Total 6032	C 3926	N 1014	O 1066	S 26	0	0

- Molecule 2 is O-[(R)-{[(2R)-2,3-bis(octadecanoyloxy)propyl]oxy}(hydroxy)phosphoryl]-L-serine (three-letter code: P5S) (formula: C₄₂H₈₂NO₁₀P) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
2	A	1	Total	C	N	O	P	0
			54	42	1	10	1	
2	B	1	Total	C	N	O	P	0
			54	42	1	10	1	
2	C	1	Total	C	N	O	P	0
			54	42	1	10	1	
2	D	1	Total	C	N	O	P	0
			54	42	1	10	1	
2	E	1	Total	C	N	O	P	0
			54	42	1	10	1	
2	F	1	Total	C	N	O	P	0
			54	42	1	10	1	

- Molecule 3 is (2S)-3-(hexadecanoyloxy)-2-[(9Z)-octadec-9-enoyloxy]propyl 2-(trimethylamm onio)ethyl phosphate (three-letter code: POV) (formula: C₄₂H₈₂NO₈P).



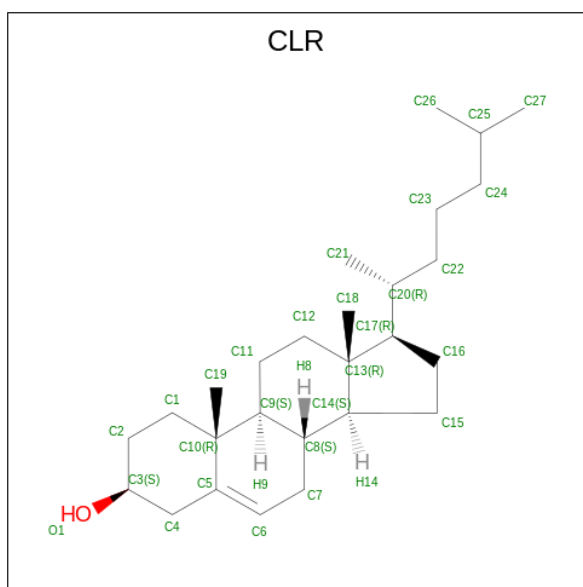
Mol	Chain	Residues	Atoms					AltConf
3	A	1	Total	C	N	O	P	0
			38	28	1	8	1	
3	B	1	Total	C	N	O	P	0
			38	28	1	8	1	
3	C	1	Total	C	N	O	P	0
			38	28	1	8	1	
3	D	1	Total	C	N	O	P	0
			38	28	1	8	1	
3	E	1	Total	C	N	O	P	0
			38	28	1	8	1	

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
3	F	1	38	28	1	8	1	0

- Molecule 4 is CHOLESTEROL (three-letter code: CLR) (formula: $C_{27}H_{46}O$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
			Total	C	O	
4	A	1	28	27	1	0
4	A	1	28	27	1	0
4	B	1	28	27	1	0
4	B	1	28	27	1	0
4	C	1	28	27	1	0
4	C	1	28	27	1	0
4	D	1	28	27	1	0
4	D	1	28	27	1	0
4	E	1	28	27	1	0
4	E	1	28	27	1	0

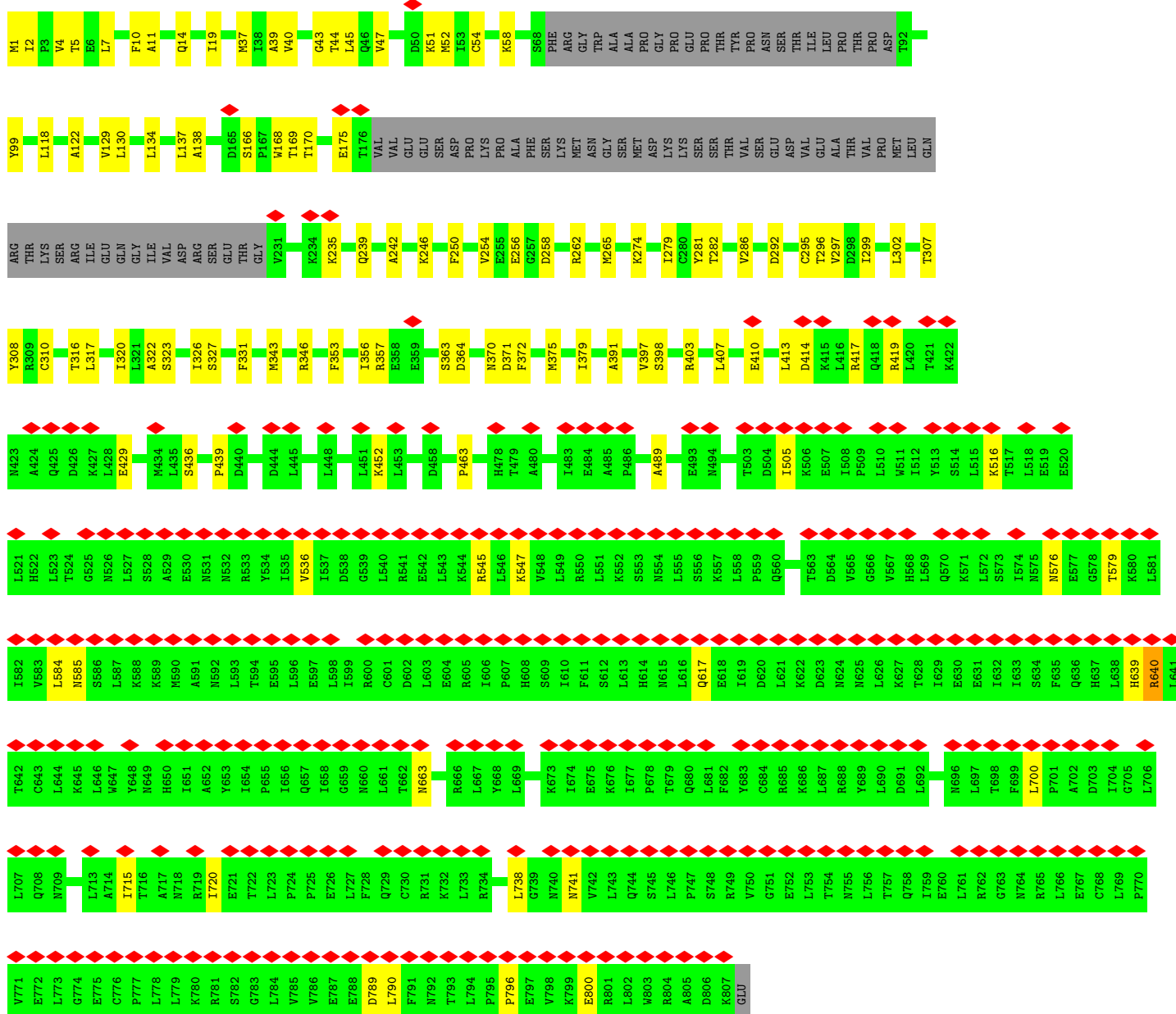
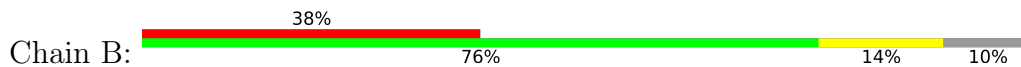
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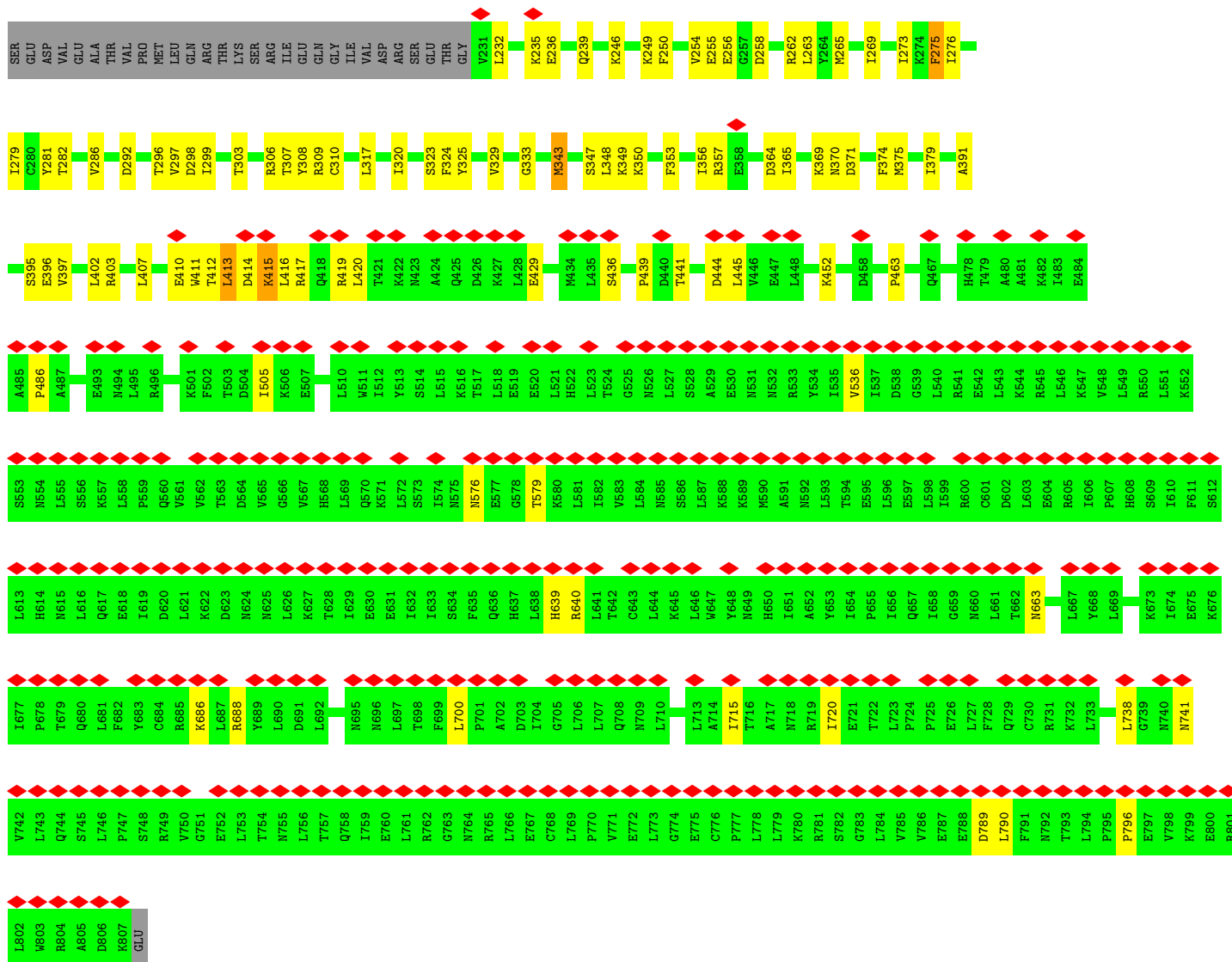
Mol	Chain	Residues	Atoms			AltConf
4	F	1	Total	C	O	0
			28	27	1	
4	F	1	Total	C	O	0
			28	27	1	



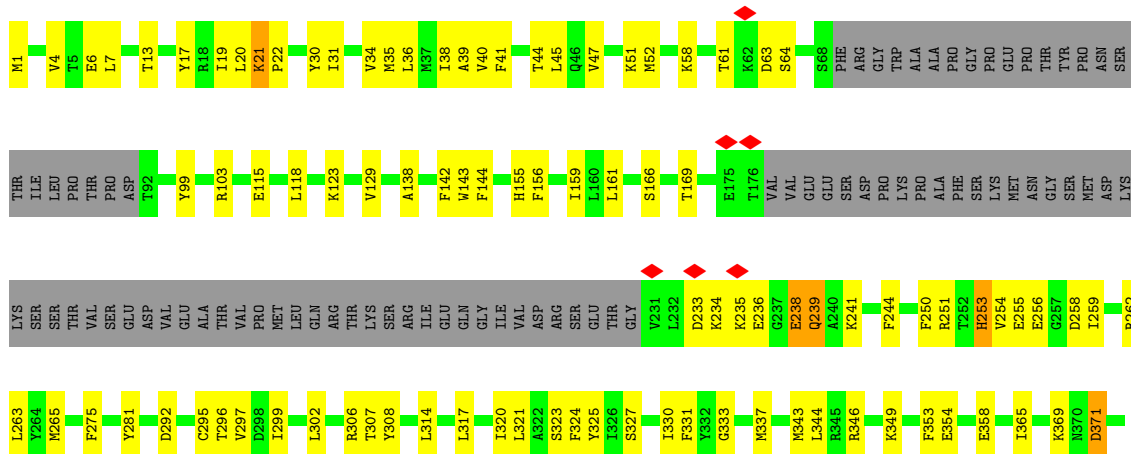
• Molecule 1: Volume-regulated anion channel subunit LRRC8A

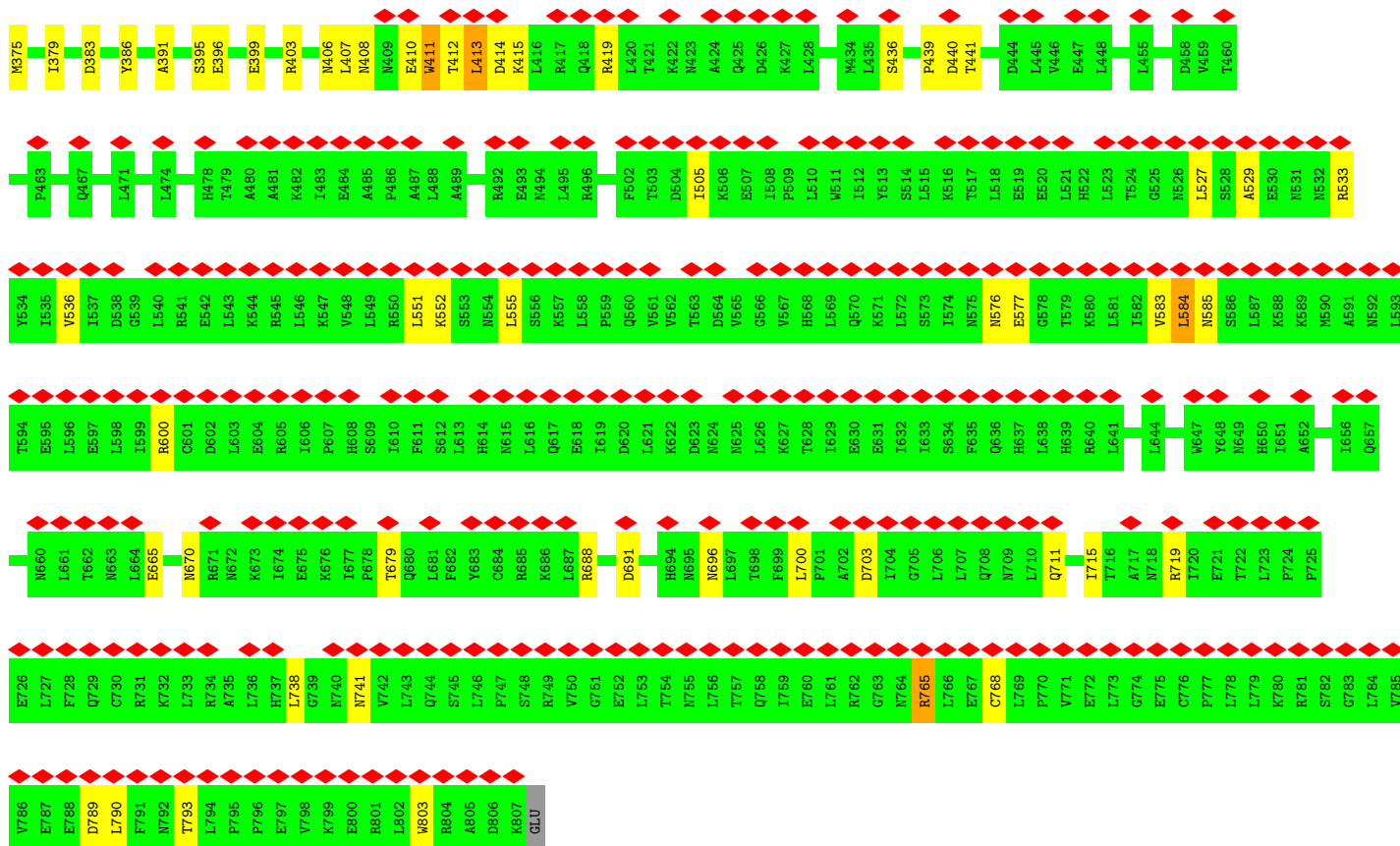


• Molecule 1: Volume-regulated anion channel subunit LRRC8A

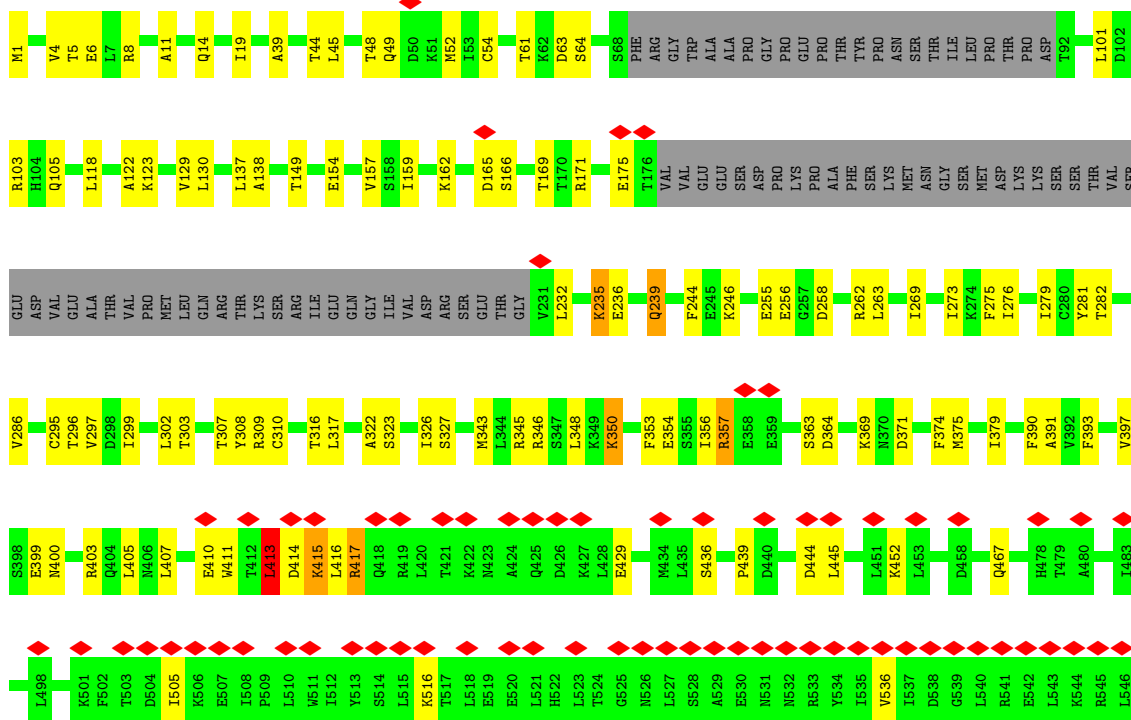
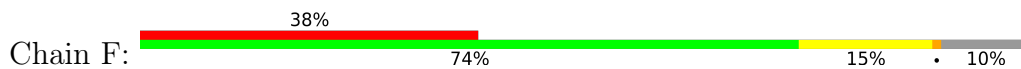


• Molecule 1: Volume-regulated anion channel subunit LRRC8A





● Molecule 1: Volume-regulated anion channel subunit LRRC8A



L568	P569	Q560	T563	D564	V565	G566	V567	H568	L569	Q570	K571	L572	S573	I574	N575	N576	E577	G578	T579	K580	L581	I582	V583	L584	N585	S586	L587	K588	K589	H590	A591	N592	L593	T594	E595	L596	E597	L598	I599	R600	C601	D602	L603	E604	R605	I606	P607	H608	S609	I610	F611	S612	L613	H614	N615	L616	Q617	E618	
I619	D620	L621	K622	D623	M624	M625	L626	K627	T628	I629	E630	E631	I632	I633	S634	F635	Q636	H637	L638	H639	R640	L641	T642	C643	L644	K645	L646	W647	Y648	M649	H650	I651	A652	Y653	I654	P655	I656	Q657	I658	G659	M660	L661	T662	N663	L664	L667	Y668	L669	K673	I674	E675	K676	I677	P678	Q680	L681			
F682	Y683	C684	R685	K686	L687	R688	Y689	L690	D691	L692	M696	L697	T698	F699	L700	P701	A702	D703	I704	G705	L706	L707	Q708	N709	L713	A714	I715	T716	A717	N718	R719	I720	E721	T722	L723	P724	P725	E726	L727	F728	Q729	C730	R731	K732	L733	R734	L738	G739	N740	N741	V742	L743	Q744	S745	L746	P747			
S748	R749	V750	G751	E752	L753	T754	N755	L756	T757	Q758	I759	E760	L761	R762	G763	N764	R765	L766	E767	C768	L769	F770	V771	E772	L773	G774	E775	C776	P777	L778	L779	K780	R781	S782	G783	L784	V785	V786	E787	E788	D789	L790	F791	N792	T793	L794	P795	P796	E797	V798	K799	E800	R801	L802	M803	R804	A805	D806	K807

GLU

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	31640	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.023	Depositor
Minimum map value	-0.735	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.065	Depositor
Recommended contour level	0.3	Depositor
Map size (Å)	312.0, 312.0, 312.0	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.04, 1.04, 1.04	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: POV, P5S, CLR

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.39	0/6161	0.57	0/8353
1	B	0.38	0/6168	0.56	0/8363
1	C	0.39	0/6168	0.57	0/8363
1	D	0.38	0/6168	0.57	0/8363
1	E	0.38	0/6168	0.57	0/8363
1	F	0.38	0/6168	0.56	0/8363
All	All	0.38	0/37001	0.57	0/50168

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	6025	0	6189	148	0
1	B	6032	0	6196	128	0
1	C	6032	0	6196	120	0
1	D	6032	0	6196	144	0
1	E	6032	0	6196	138	0
1	F	6032	0	6196	134	0
2	A	54	0	80	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	54	0	80	2	0
2	C	54	0	80	4	0
2	D	54	0	80	3	0
2	E	54	0	80	2	0
2	F	54	0	80	6	0
3	A	38	0	48	5	0
3	B	38	0	48	2	0
3	C	38	0	48	1	0
3	D	38	0	48	0	0
3	E	38	0	48	0	0
3	F	38	0	48	1	0
4	A	56	0	92	17	0
4	B	56	0	92	14	0
4	C	56	0	92	13	0
4	D	56	0	92	20	0
4	E	56	0	92	26	0
4	F	56	0	92	17	0
All	All	37073	0	38489	761	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 10.

The worst 5 of 761 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:E:331:PHE:CE1	4:E:904:CLR:H261	1.43	1.52
1:E:407:LEU:CD2	1:E:439:PRO:HG3	1.63	1.27
1:C:790:LEU:O	1:C:793:THR:HG22	1.38	1.22
1:E:790:LEU:O	1:E:793:THR:HG22	1.38	1.20
1:E:331:PHE:CE1	4:E:904:CLR:C26	2.25	1.18

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	723/808 (90%)	680 (94%)	41 (6%)	2 (0%)	41	70
1	B	724/808 (90%)	697 (96%)	26 (4%)	1 (0%)	51	80
1	C	724/808 (90%)	689 (95%)	34 (5%)	1 (0%)	51	80
1	D	724/808 (90%)	691 (95%)	33 (5%)	0	100	100
1	E	724/808 (90%)	691 (95%)	32 (4%)	1 (0%)	51	80
1	F	724/808 (90%)	694 (96%)	28 (4%)	2 (0%)	41	70
All	All	4343/4848 (90%)	4142 (95%)	194 (4%)	7 (0%)	50	76

5 of 7 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	584	LEU
1	F	413	LEU
1	A	585	ASN
1	B	585	ASN
1	C	585	ASN

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	678/748 (91%)	662 (98%)	16 (2%)	49	78
1	B	679/748 (91%)	673 (99%)	6 (1%)	78	92
1	C	679/748 (91%)	663 (98%)	16 (2%)	49	78
1	D	679/748 (91%)	663 (98%)	16 (2%)	49	78
1	E	679/748 (91%)	658 (97%)	21 (3%)	40	71
1	F	679/748 (91%)	663 (98%)	16 (2%)	49	78
All	All	4073/4488 (91%)	3982 (98%)	91 (2%)	54	80

5 of 91 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	238	GLU
1	E	415	LYS
1	E	241	LYS
1	E	346	ARG
1	F	5	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 8 such sidechains are listed below:

Mol	Chain	Res	Type
1	F	409	ASN
1	E	404	GLN
1	C	418	GLN
1	C	404	GLN
1	D	409	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
3	POV	B	904	-	37,37,51	1.12	2 (5%)	43,45,59	1.03	3 (6%)
4	CLR	B	902	-	31,31,31	0.92	2 (6%)	48,48,48	1.35	6 (12%)
2	P5S	E	901	-	52,53,53	0.93	2 (3%)	56,60,60	1.13	4 (7%)
2	P5S	F	901	-	52,53,53	0.91	2 (3%)	56,60,60	1.10	4 (7%)
4	CLR	D	903	-	31,31,31	0.99	2 (6%)	48,48,48	1.80	11 (22%)
2	P5S	B	903	-	52,53,53	0.92	2 (3%)	56,60,60	1.11	5 (8%)
4	CLR	C	901	-	31,31,31	1.05	2 (6%)	48,48,48	1.78	8 (16%)
4	CLR	C	902	-	31,31,31	0.92	2 (6%)	48,48,48	1.53	11 (22%)
4	CLR	D	904	-	31,31,31	0.91	2 (6%)	48,48,48	1.27	5 (10%)
4	CLR	E	904	-	31,31,31	0.86	2 (6%)	48,48,48	1.52	10 (20%)
4	CLR	F	904	-	31,31,31	0.91	2 (6%)	48,48,48	1.27	4 (8%)
3	POV	C	904	-	37,37,51	1.11	2 (5%)	43,45,59	1.03	3 (6%)
4	CLR	A	904	-	31,31,31	0.75	1 (3%)	48,48,48	1.26	5 (10%)
4	CLR	E	903	-	31,31,31	0.96	2 (6%)	48,48,48	2.02	13 (27%)
4	CLR	F	903	-	31,31,31	1.03	2 (6%)	48,48,48	2.06	15 (31%)
2	P5S	C	903	-	52,53,53	0.93	2 (3%)	56,60,60	1.15	5 (8%)
3	POV	F	902	-	37,37,51	1.12	2 (5%)	43,45,59	1.03	3 (6%)
3	POV	E	902	-	37,37,51	1.12	2 (5%)	43,45,59	1.03	3 (6%)
3	POV	D	902	-	37,37,51	1.12	2 (5%)	43,45,59	1.03	3 (6%)
4	CLR	A	903	-	31,31,31	1.06	3 (9%)	48,48,48	1.89	12 (25%)
3	POV	A	902	-	37,37,51	1.12	2 (5%)	43,45,59	1.03	3 (6%)
4	CLR	B	901	-	31,31,31	0.57	0	48,48,48	1.33	7 (14%)
2	P5S	A	901	-	52,53,53	0.95	2 (3%)	56,60,60	1.17	4 (7%)
2	P5S	D	901	-	52,53,53	0.92	2 (3%)	56,60,60	1.08	4 (7%)

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
3	POV	B	904	-	-	13/41/41/55	-
4	CLR	B	902	-	-	6/10/68/68	0/4/4/4
2	P5S	E	901	-	-	31/59/59/59	-
2	P5S	F	901	-	-	37/59/59/59	-
4	CLR	D	903	-	-	4/10/68/68	0/4/4/4

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	P5S	B	903	-	-	39/59/59/59	-
4	CLR	C	901	-	-	6/10/68/68	0/4/4/4
4	CLR	C	902	-	-	8/10/68/68	0/4/4/4
4	CLR	D	904	-	-	7/10/68/68	0/4/4/4
4	CLR	E	904	-	-	8/10/68/68	0/4/4/4
4	CLR	F	904	-	-	7/10/68/68	0/4/4/4
3	POV	C	904	-	-	13/41/41/55	-
4	CLR	A	904	-	-	9/10/68/68	0/4/4/4
4	CLR	E	903	-	-	7/10/68/68	0/4/4/4
4	CLR	F	903	-	-	7/10/68/68	0/4/4/4
2	P5S	C	903	-	-	30/59/59/59	-
3	POV	F	902	-	-	13/41/41/55	-
3	POV	E	902	-	-	13/41/41/55	-
3	POV	D	902	-	-	13/41/41/55	-
4	CLR	A	903	-	-	7/10/68/68	0/4/4/4
3	POV	A	902	-	-	13/41/41/55	-
4	CLR	B	901	-	-	1/10/68/68	0/4/4/4
2	P5S	A	901	-	-	28/59/59/59	-
2	P5S	D	901	-	-	40/59/59/59	-

The worst 5 of 46 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	902	POV	O31-C31	4.39	1.46	1.33
2	A	901	P5S	O37-C38	4.38	1.46	1.34
3	F	902	POV	O31-C31	4.37	1.46	1.33
3	B	904	POV	O31-C31	4.36	1.46	1.33
3	D	902	POV	O31-C31	4.36	1.46	1.33

The worst 5 of 151 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	E	903	CLR	C13-C14-C8	-6.13	105.30	114.38
4	A	903	CLR	C1-C2-C3	5.62	117.67	110.47
4	F	903	CLR	C13-C14-C8	-5.57	106.13	114.38
4	A	903	CLR	C13-C17-C20	-5.45	110.95	119.49
4	F	903	CLR	C13-C17-C20	-5.44	110.96	119.49

There are no chirality outliers.

5 of 360 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	901	P5S	O37-C2-C3-O16
2	A	901	P5S	C3-O16-P12-O13
2	A	901	P5S	O18-C17-O19-C1
2	A	901	P5S	C20-C17-O19-C1
2	A	901	P5S	C39-C38-O37-C2

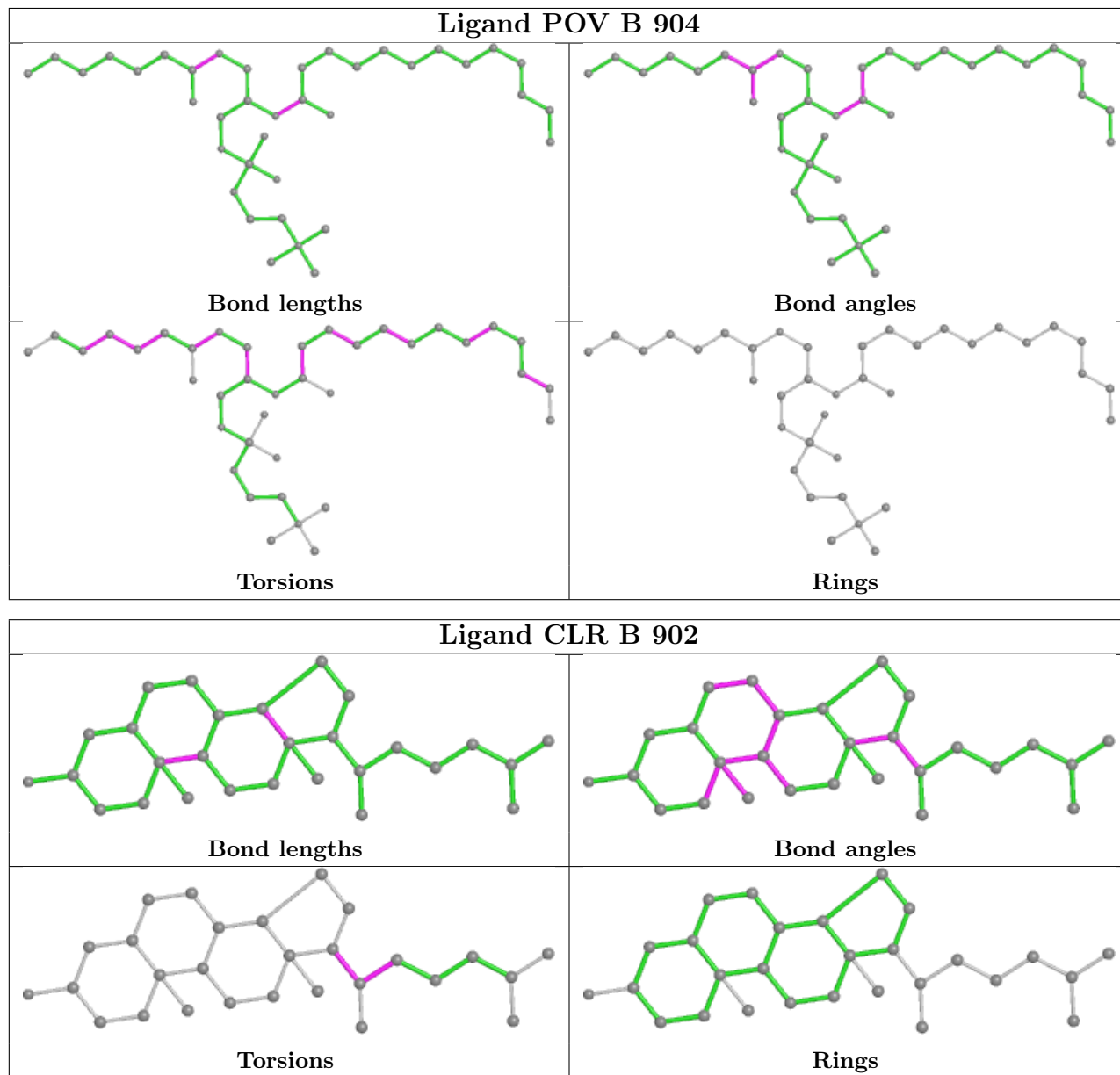
There are no ring outliers.

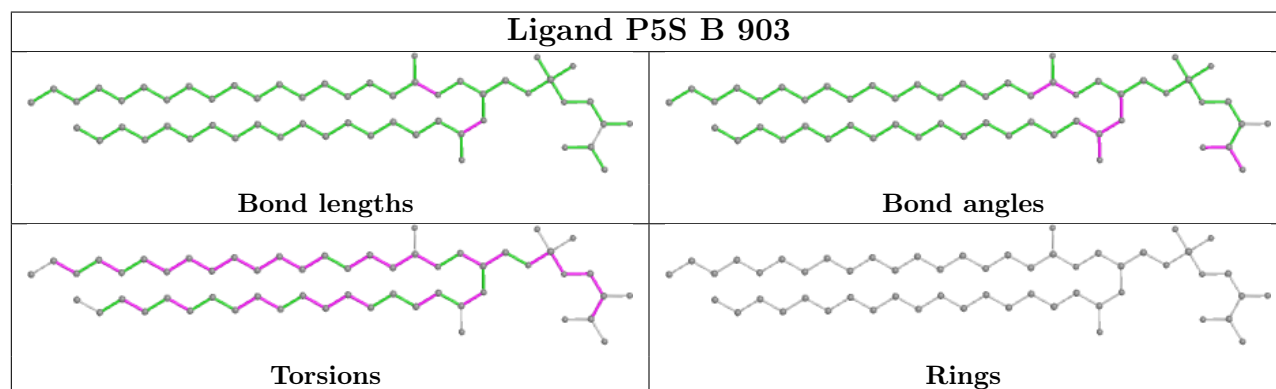
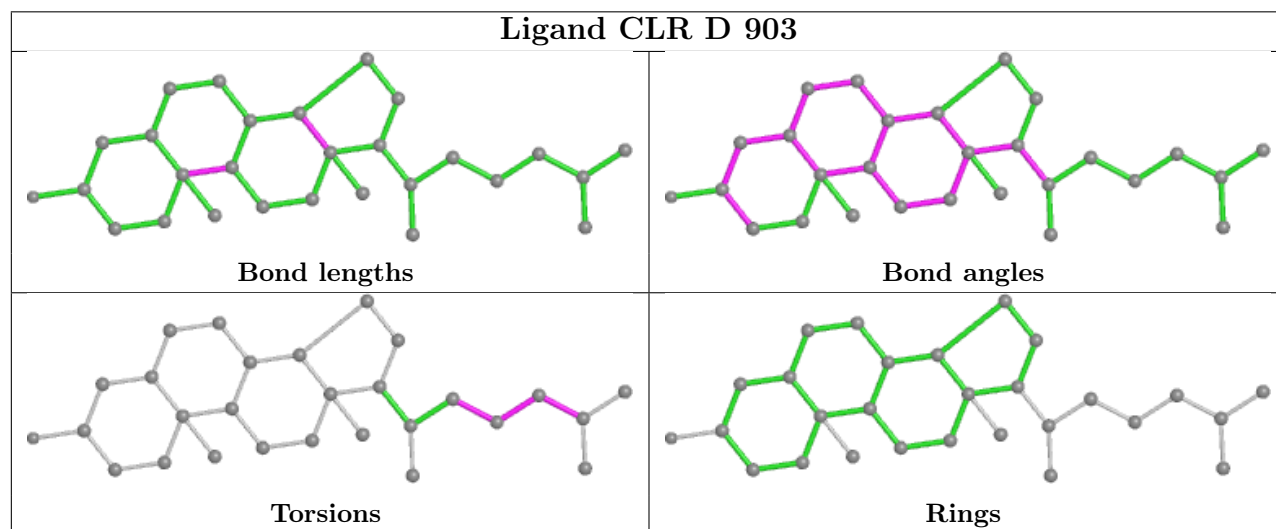
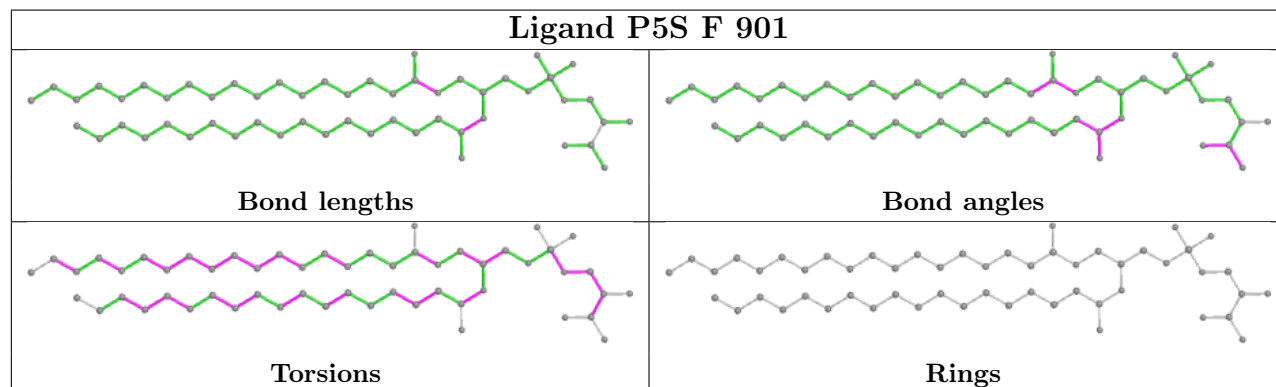
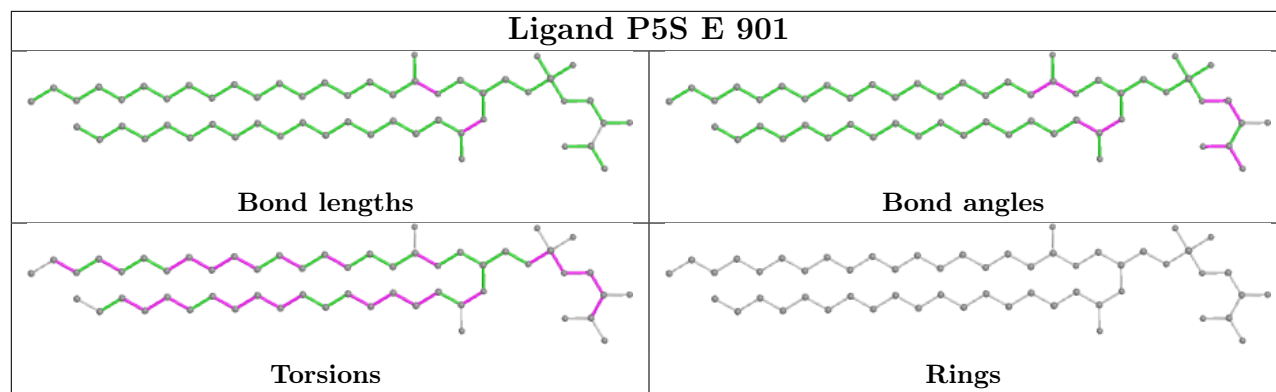
22 monomers are involved in 128 short contacts:

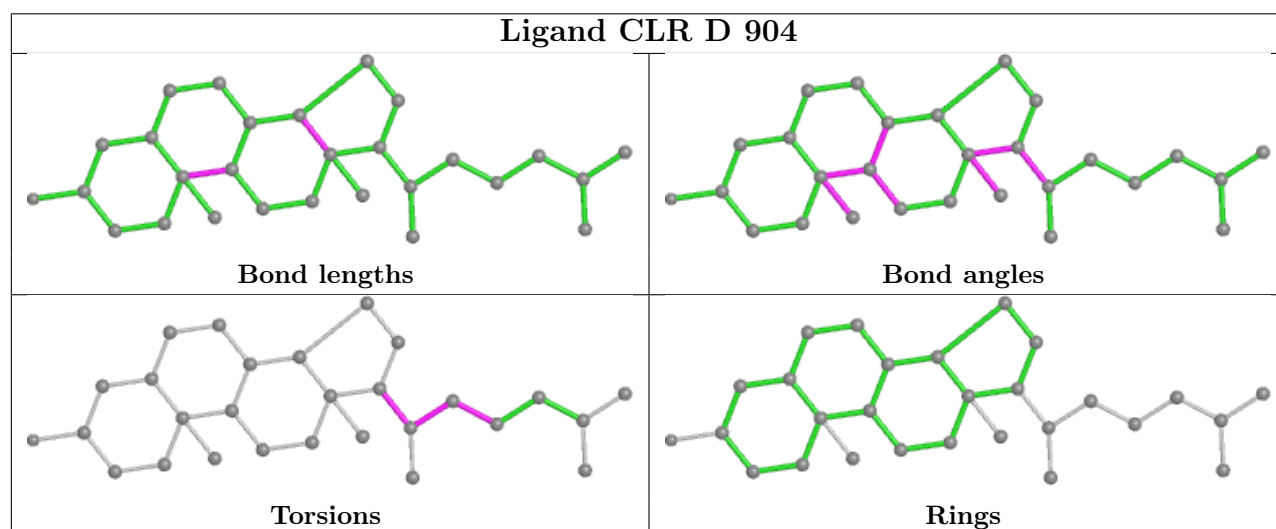
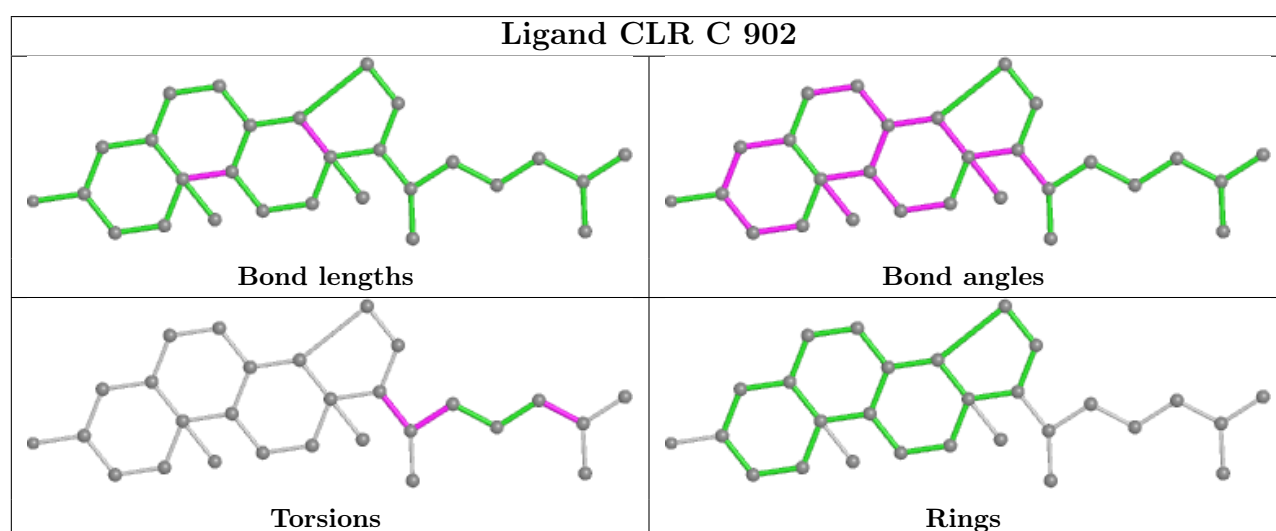
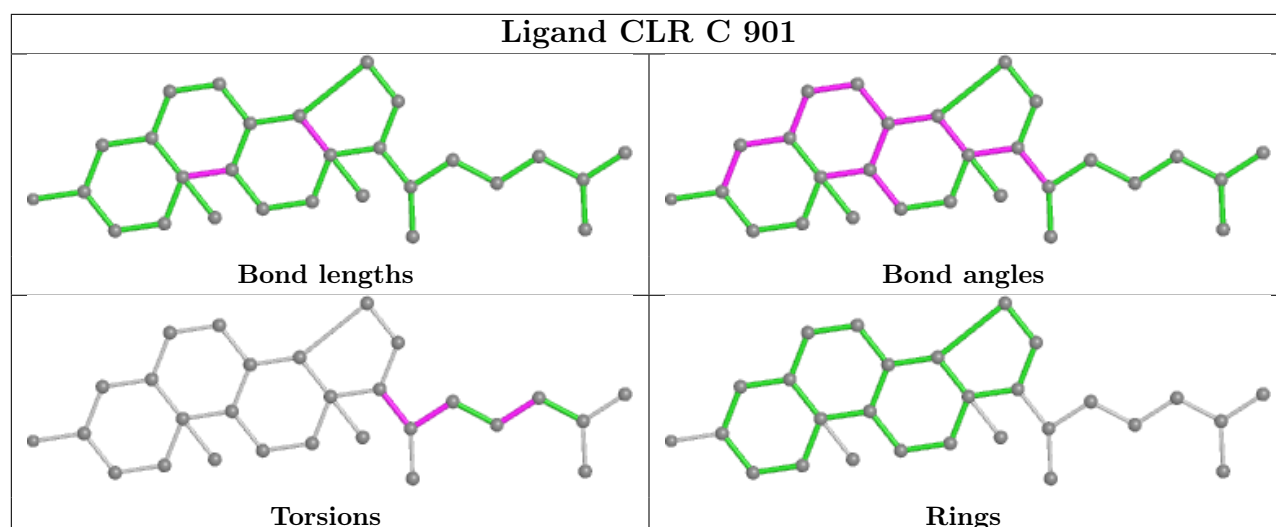
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	904	POV	2	0
4	B	902	CLR	5	0
2	E	901	P5S	2	0
2	F	901	P5S	6	0
4	D	903	CLR	12	0
2	B	903	P5S	2	0
4	C	901	CLR	11	0
4	C	902	CLR	2	0
4	D	904	CLR	8	0
4	E	904	CLR	16	0
4	F	904	CLR	8	0
3	C	904	POV	1	0
4	A	904	CLR	2	0
4	E	903	CLR	10	0
4	F	903	CLR	9	0
2	C	903	P5S	4	0
3	F	902	POV	1	0
4	A	903	CLR	16	0
3	A	902	POV	5	0
4	B	901	CLR	9	0
2	A	901	P5S	1	0
2	D	901	P5S	3	0

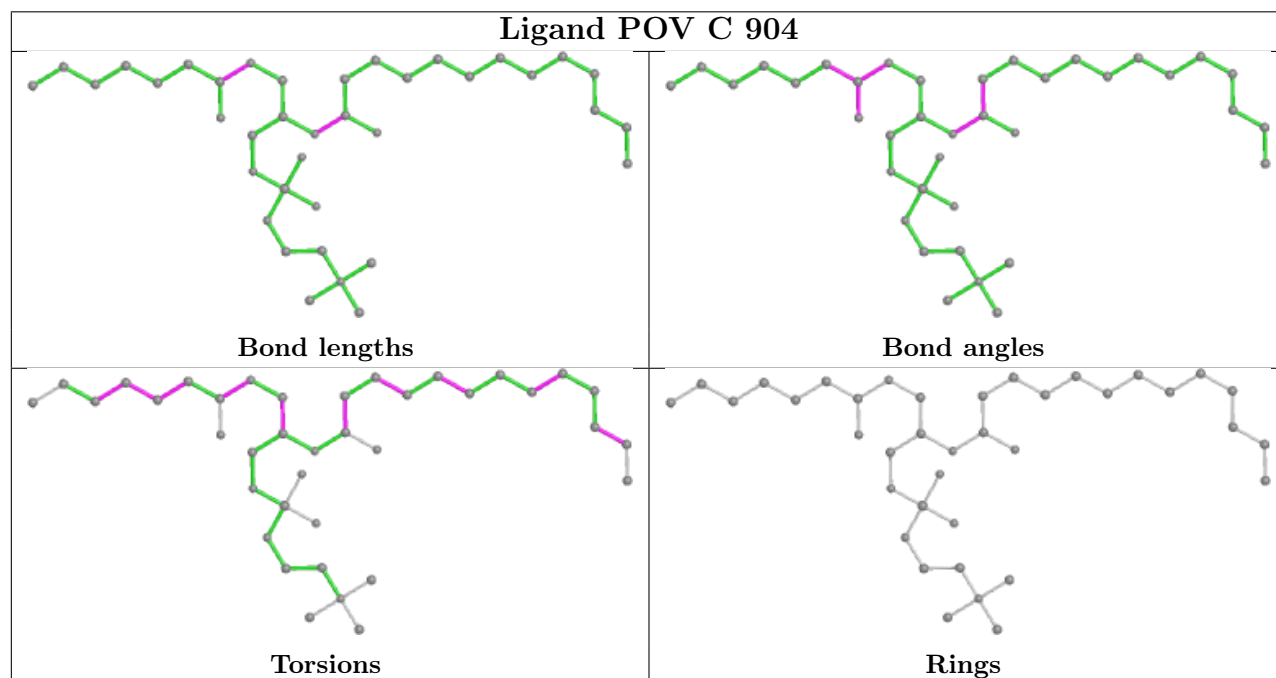
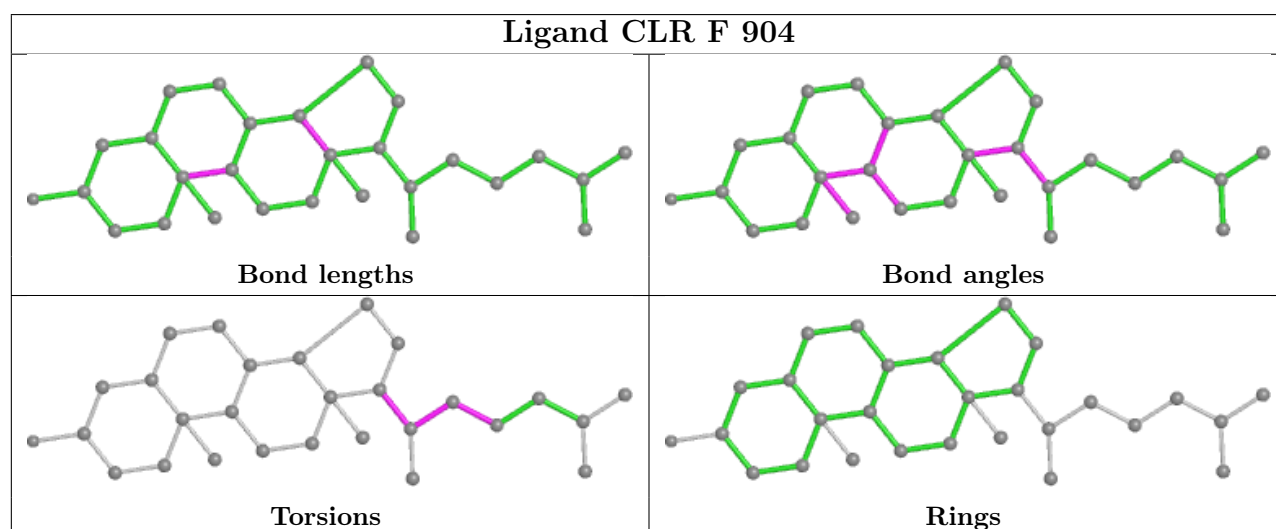
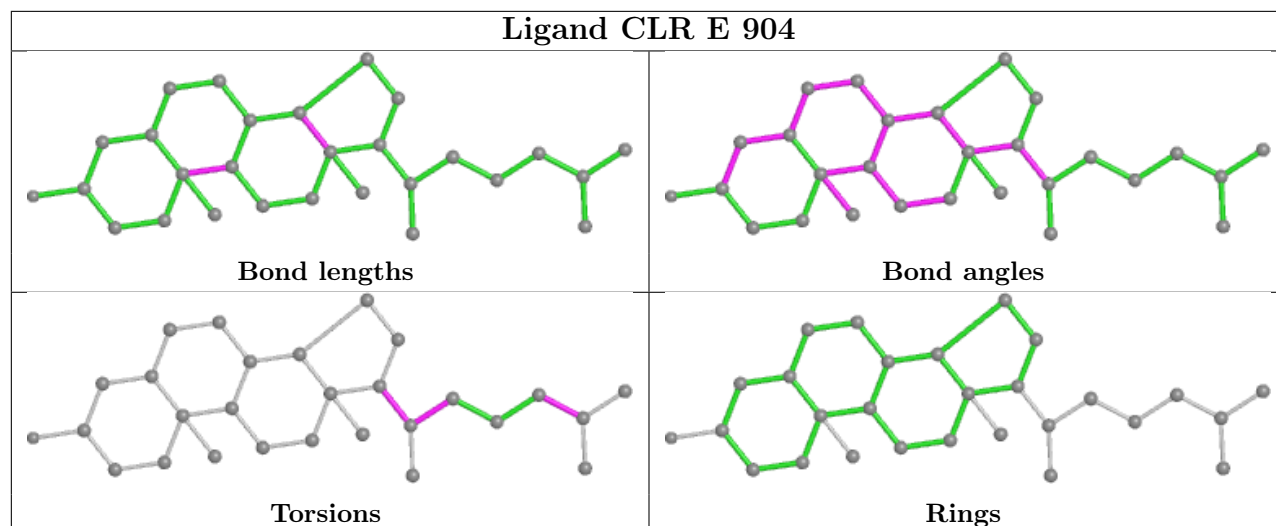
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring

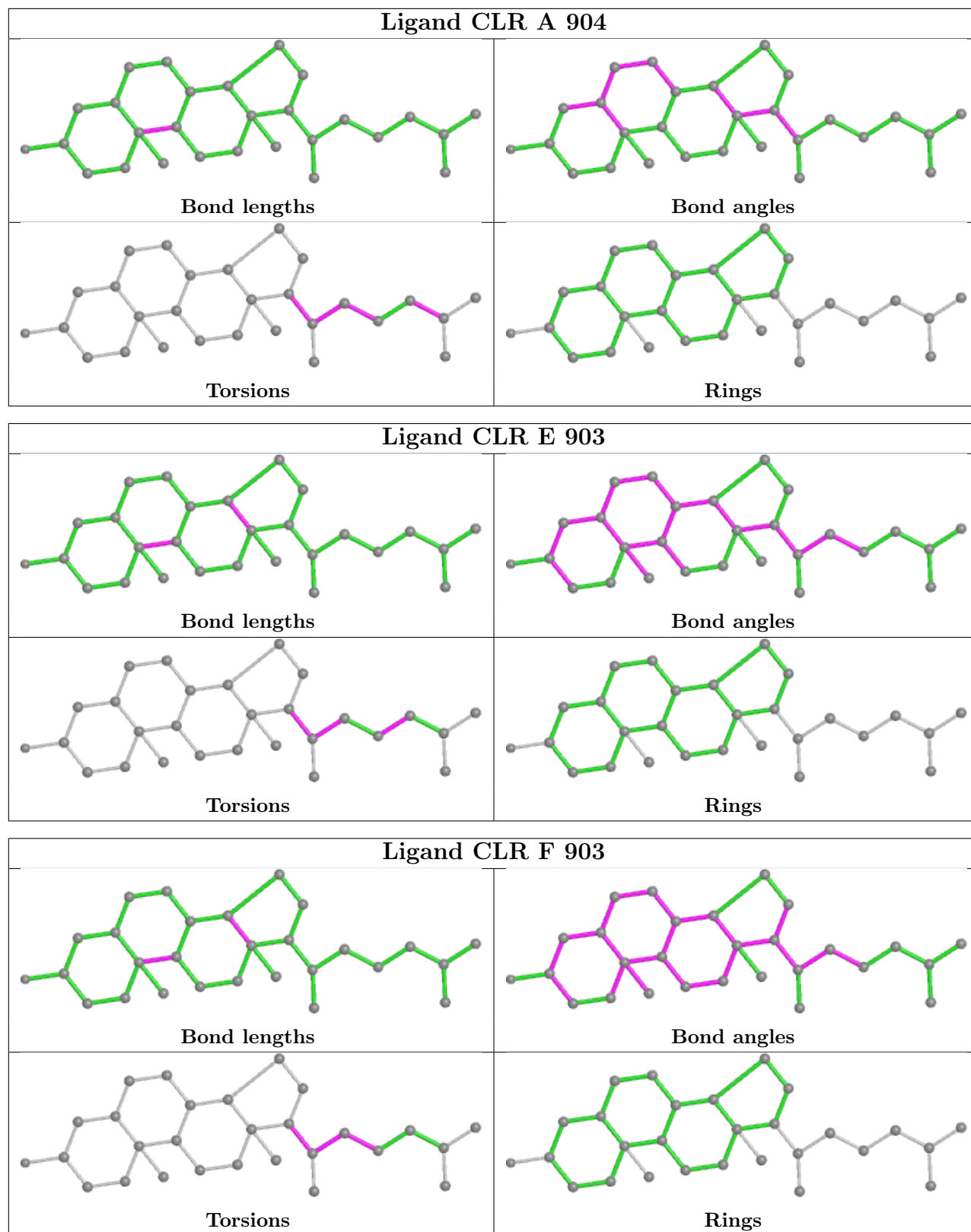
in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

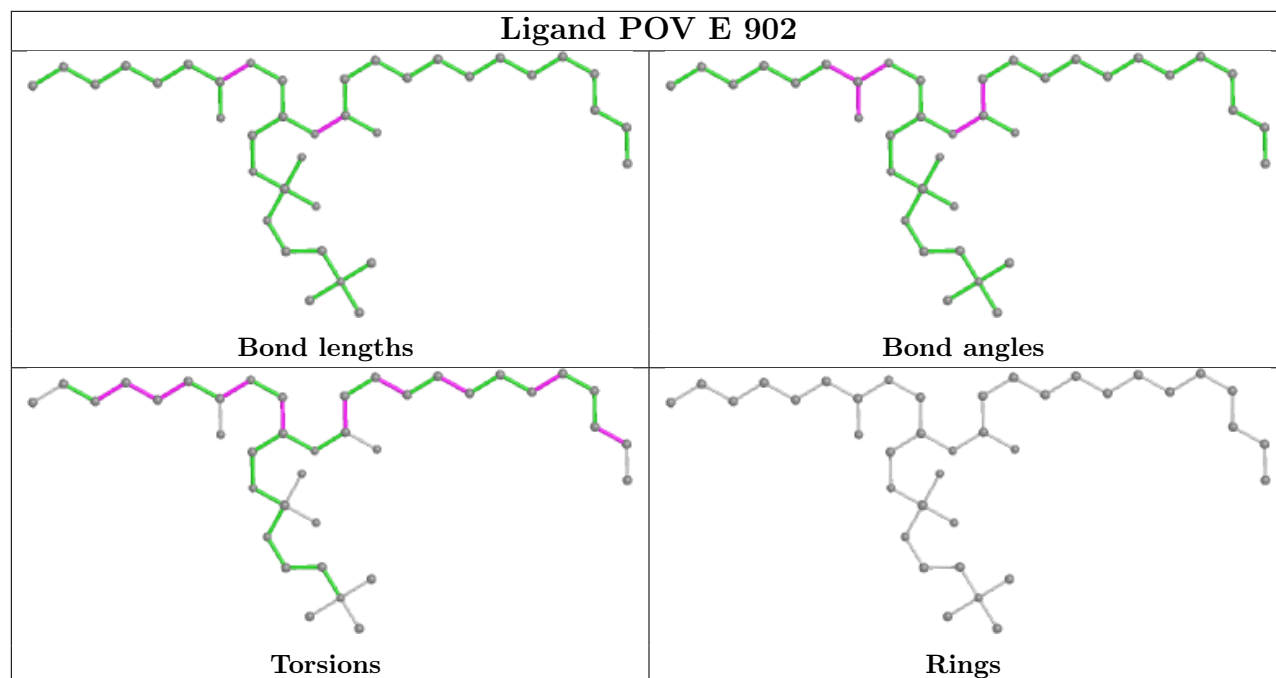
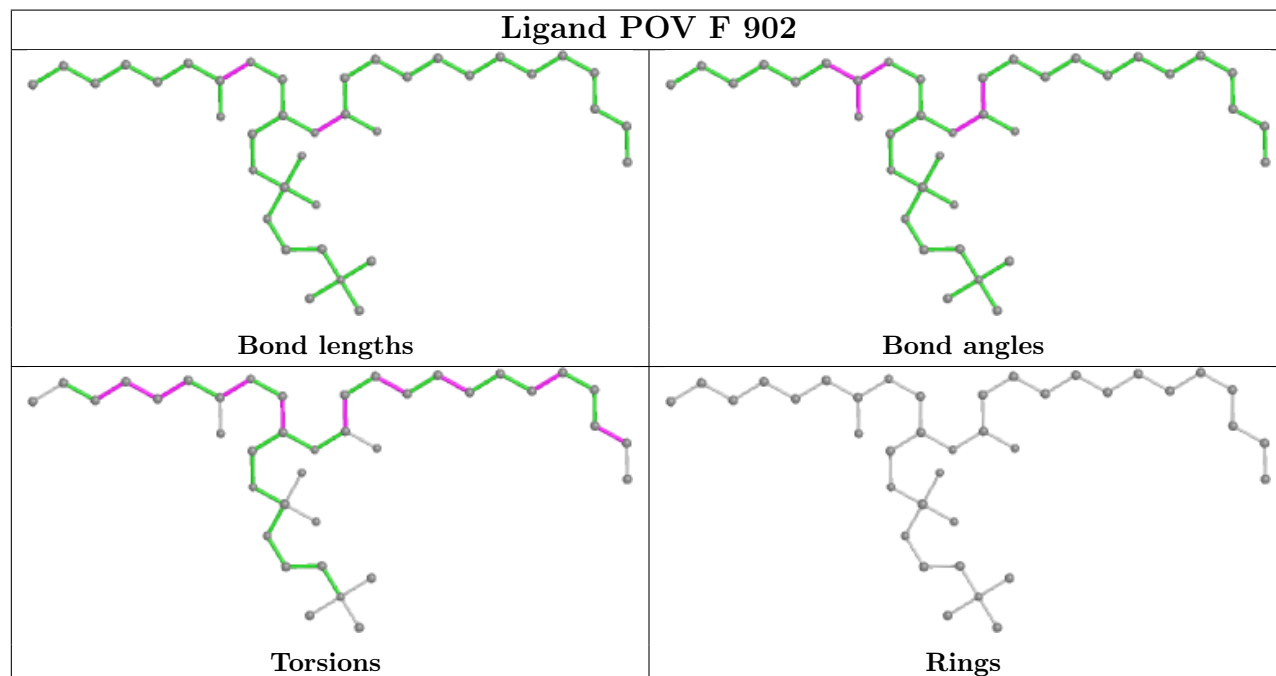
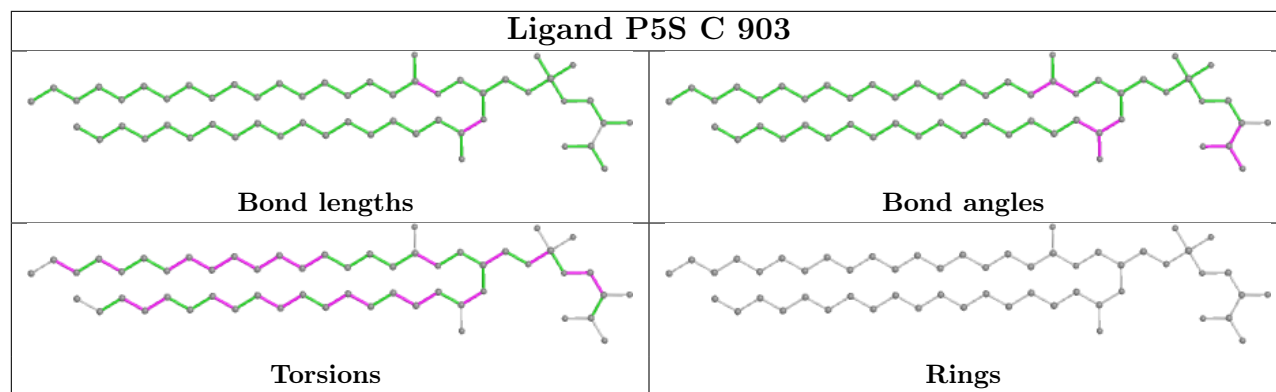


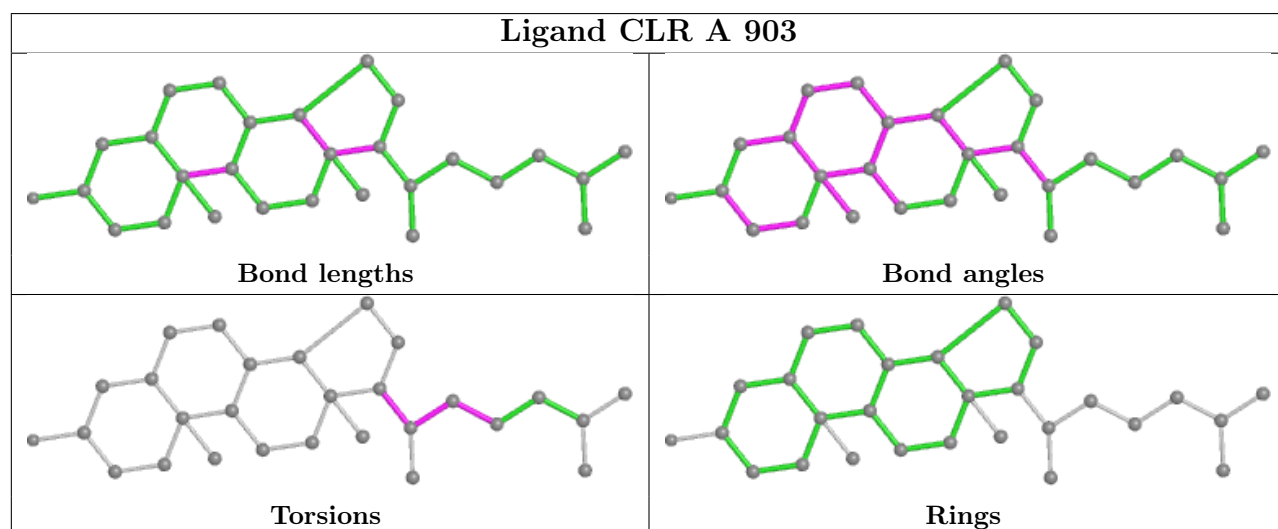
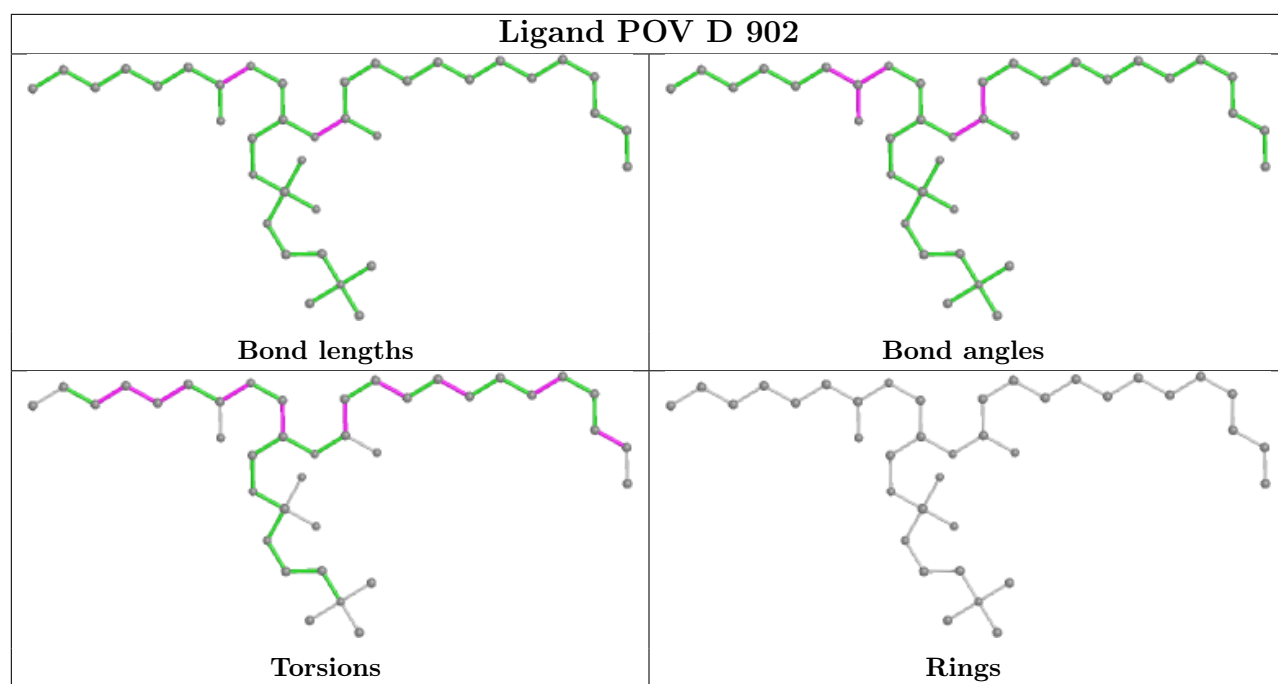


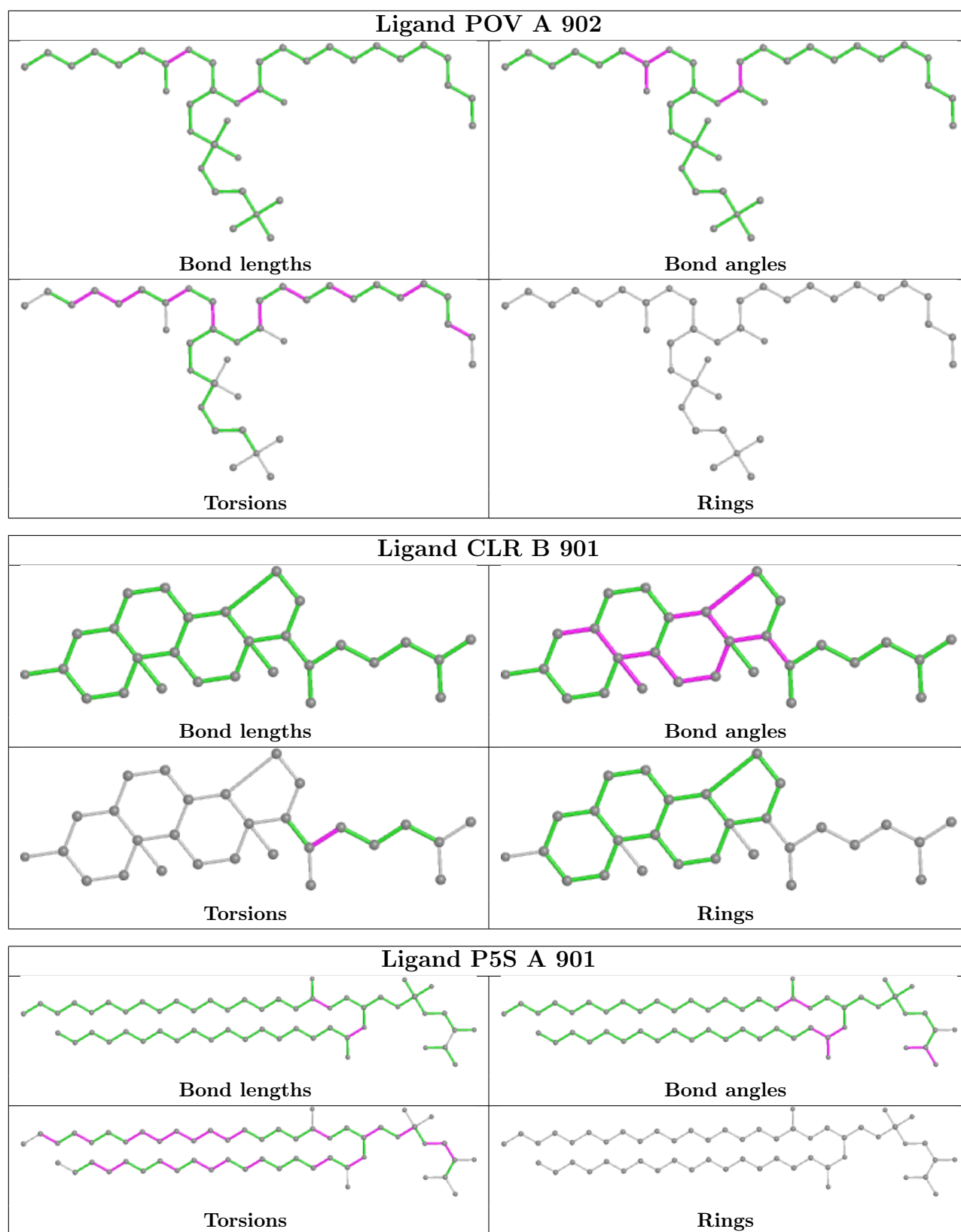


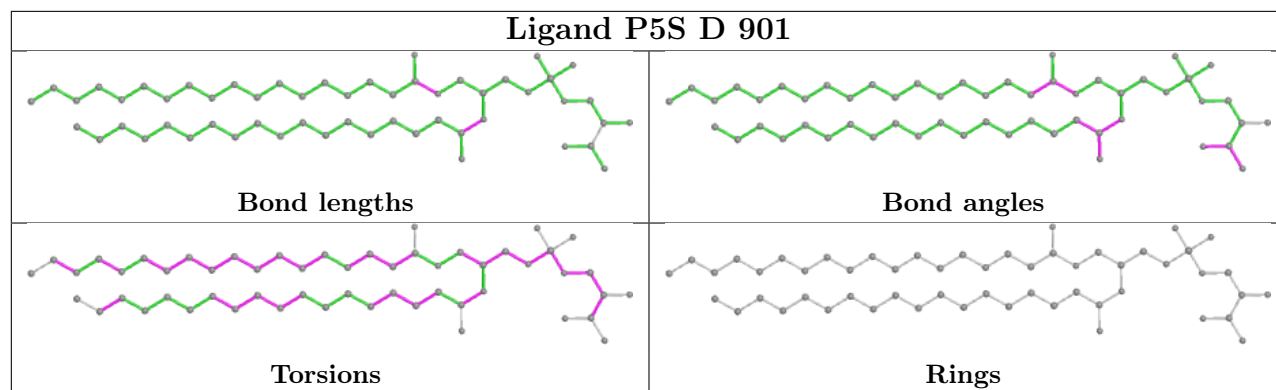












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

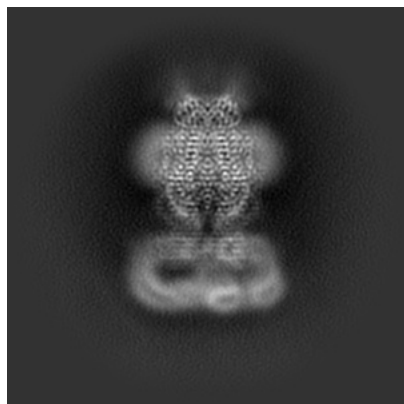
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-33527. These allow visual inspection of the internal detail of the map and identification of artifacts.

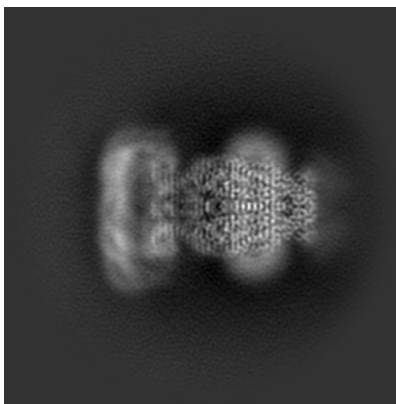
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

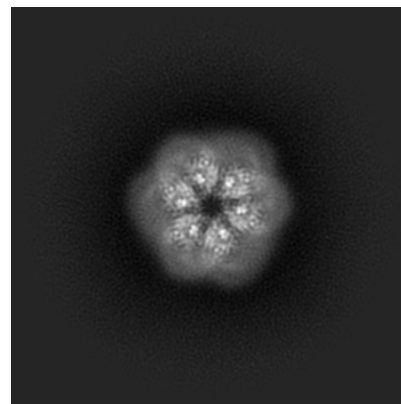
6.1.1 Primary map



X

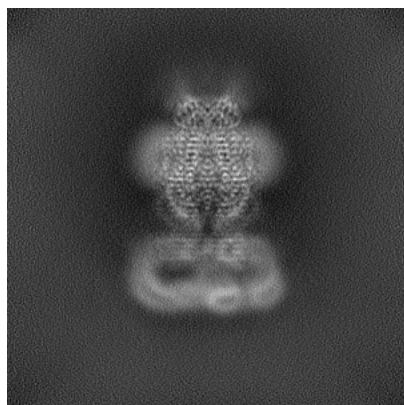


Y

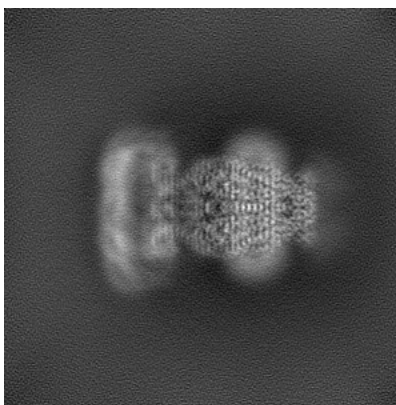


Z

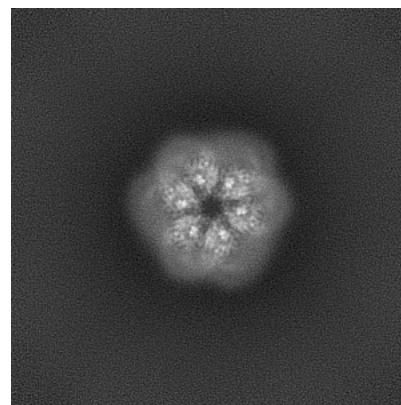
6.1.2 Raw map



X



Y

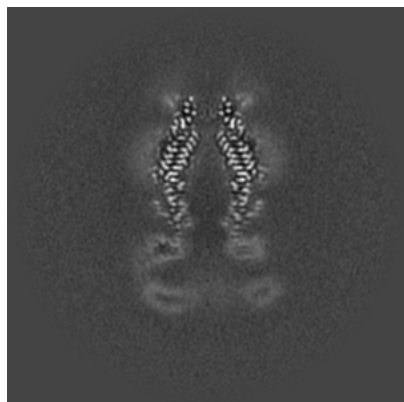


Z

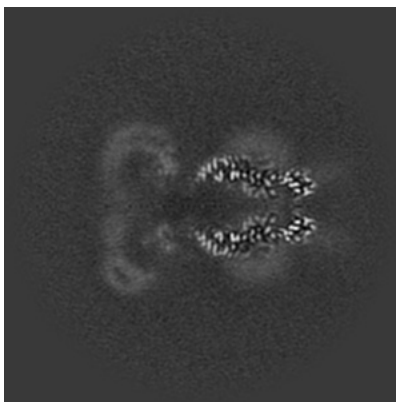
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

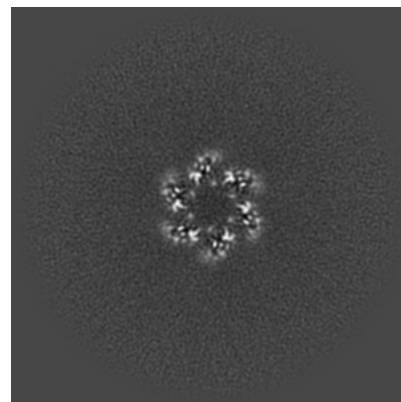
6.2.1 Primary map



X Index: 150

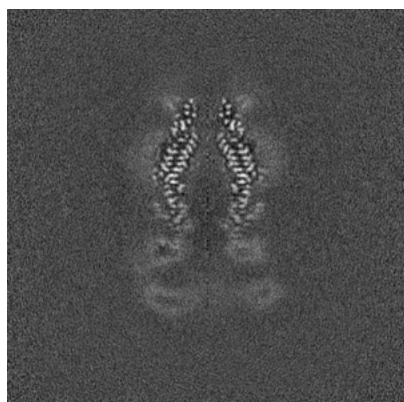


Y Index: 150

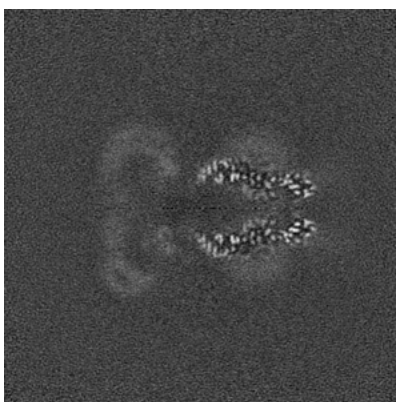


Z Index: 150

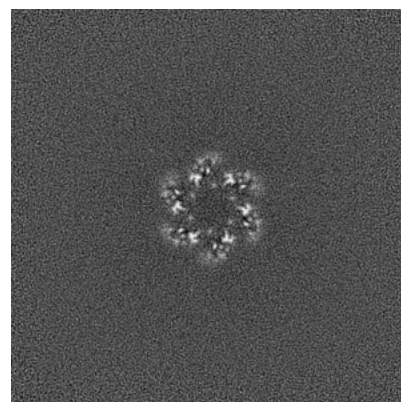
6.2.2 Raw map



X Index: 150



Y Index: 150

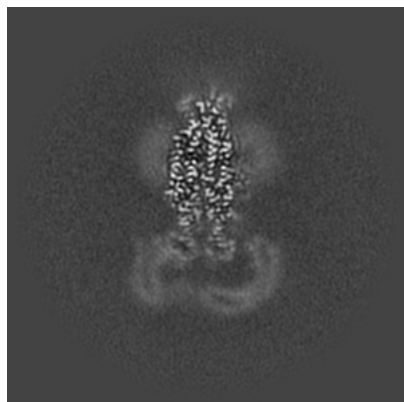


Z Index: 150

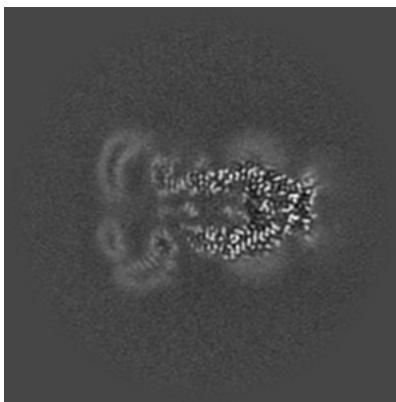
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

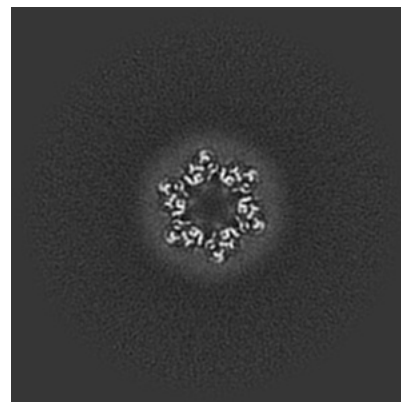
6.3.1 Primary map



X Index: 129

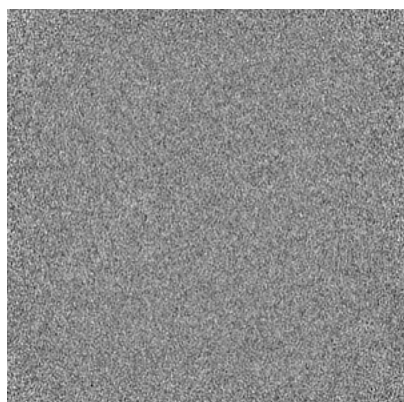


Y Index: 164

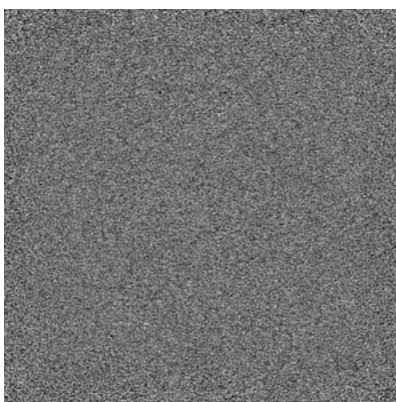


Z Index: 171

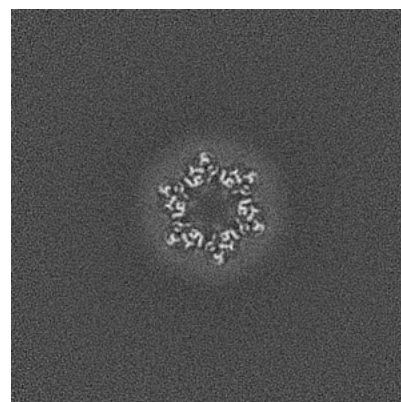
6.3.2 Raw map



X Index: 0



Y Index: 0

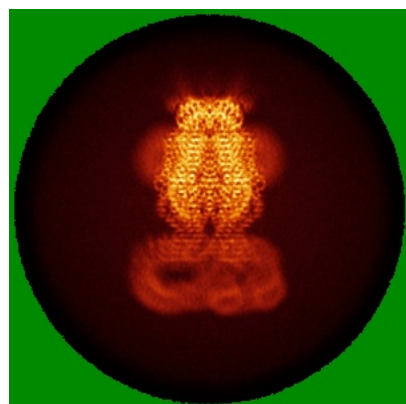


Z Index: 171

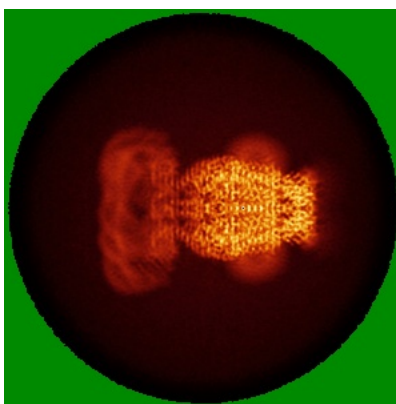
The images above show the largest variance slices of the map in three orthogonal directions.

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

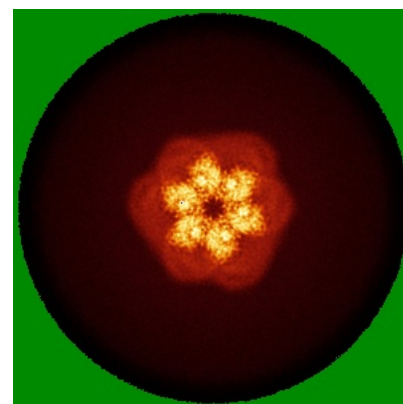
6.4.1 Primary map



X

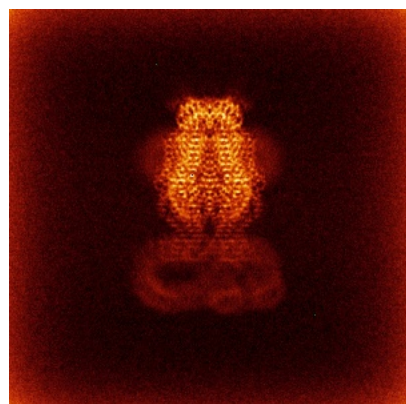


Y

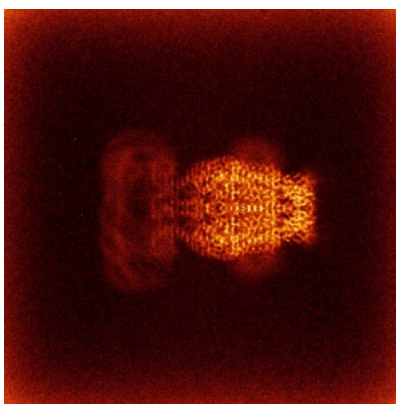


Z

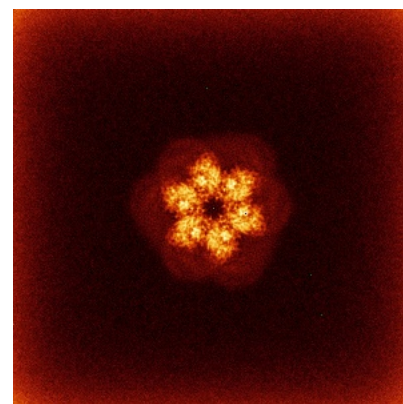
6.4.2 Raw map



X



Y

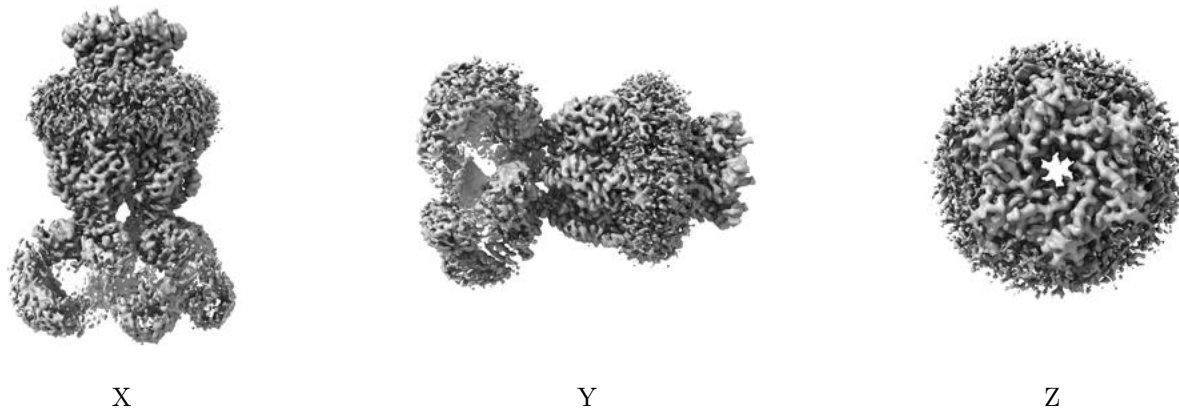


Z

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

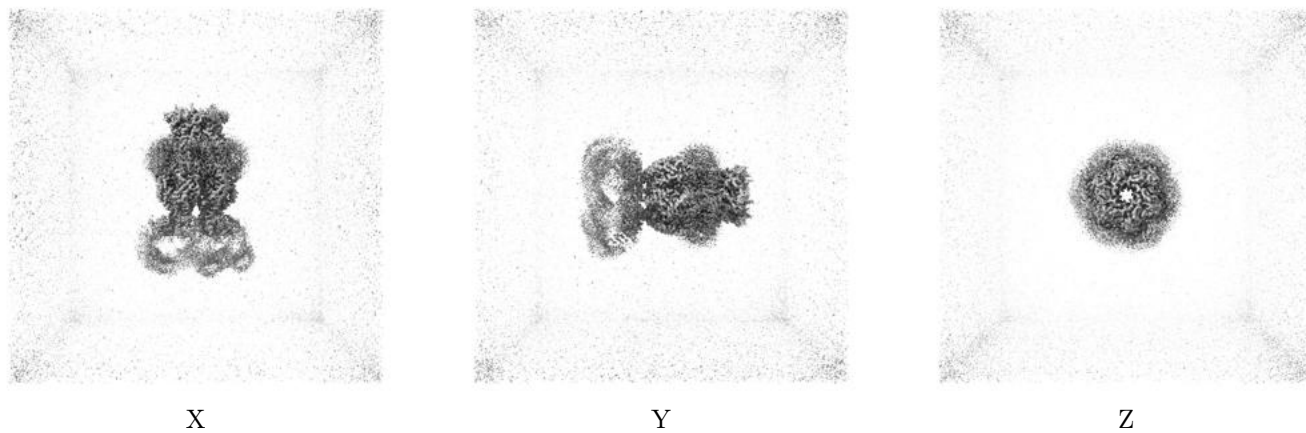
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.3. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

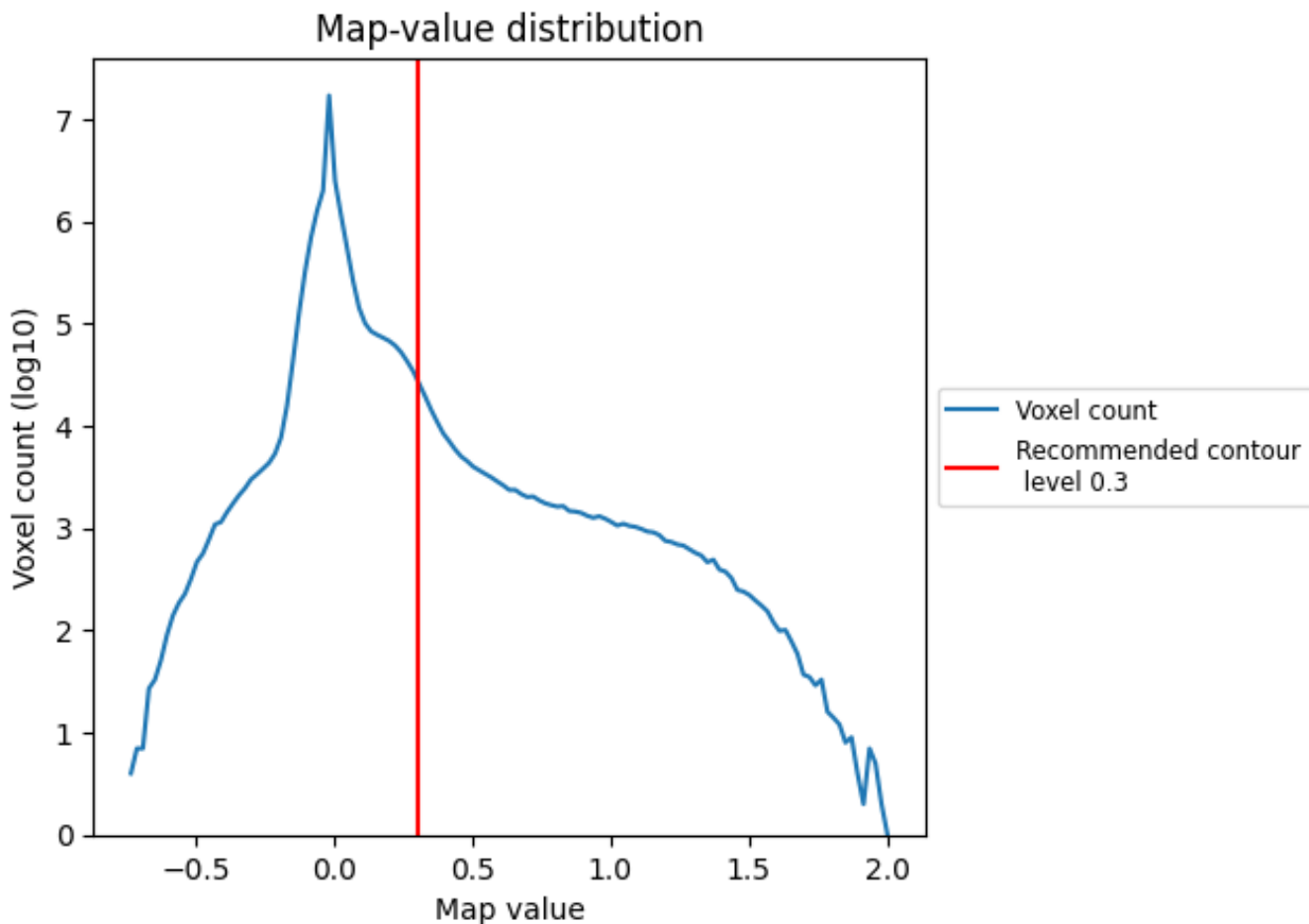
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

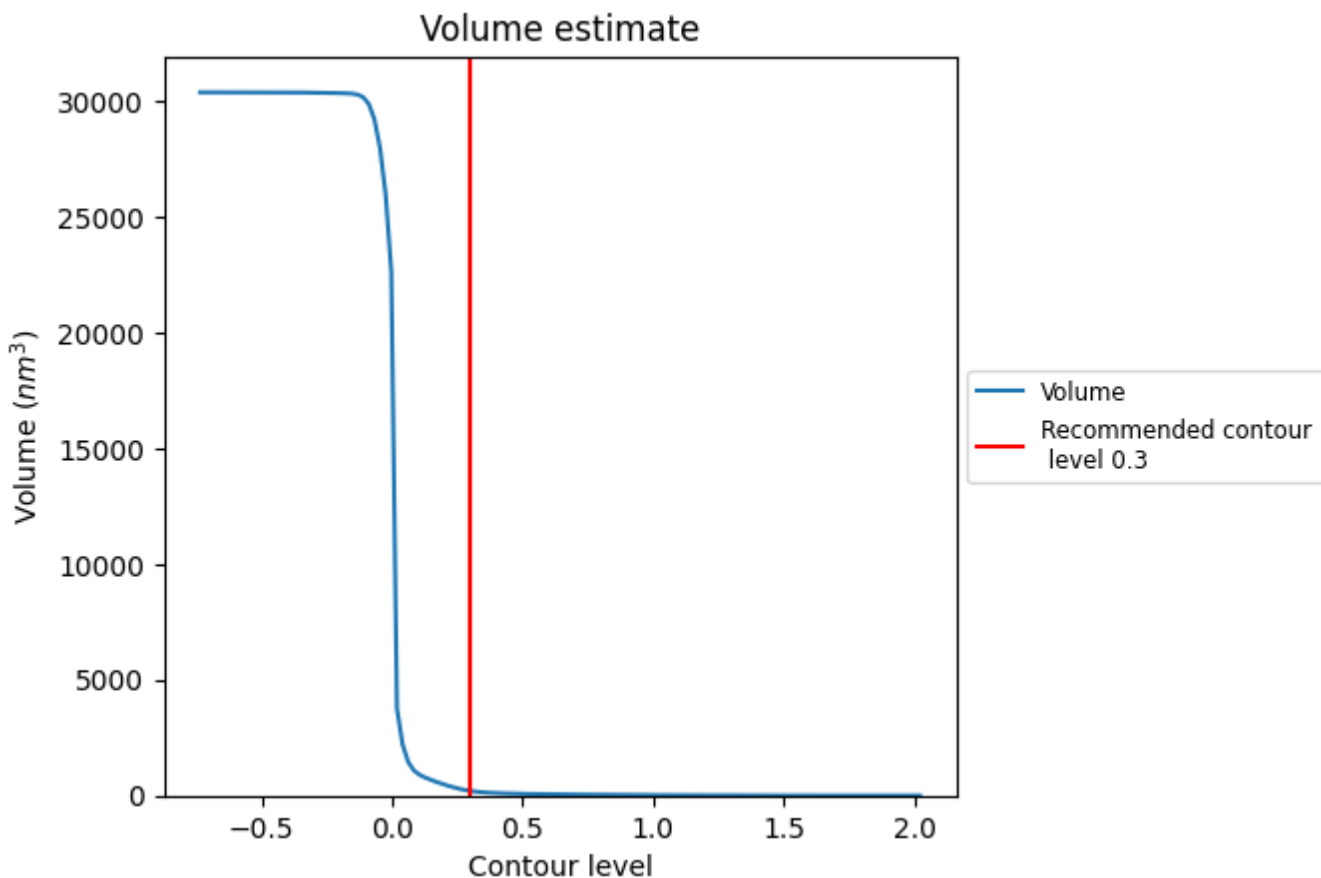
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

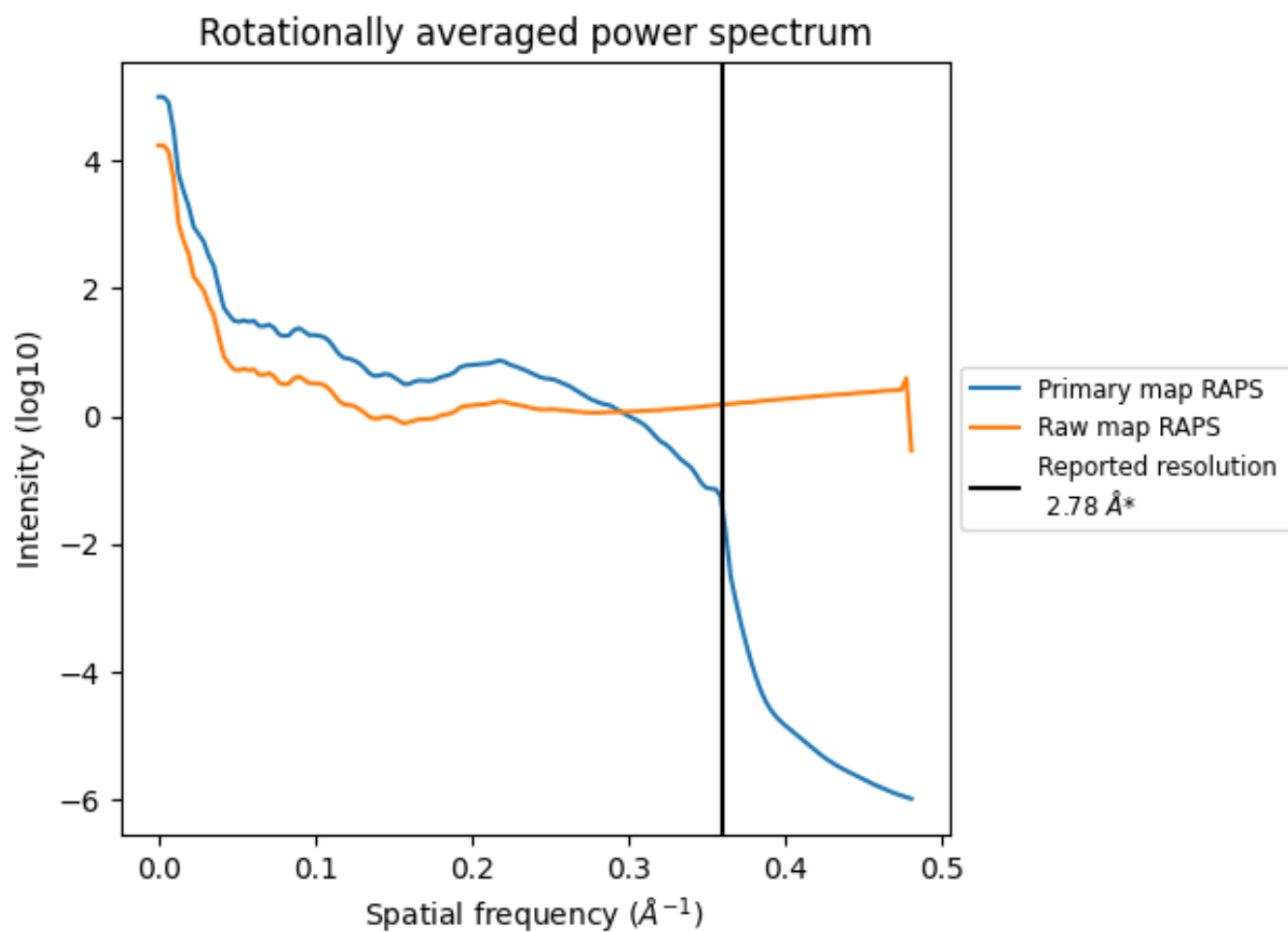
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 201 nm³; this corresponds to an approximate mass of 182 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](#)

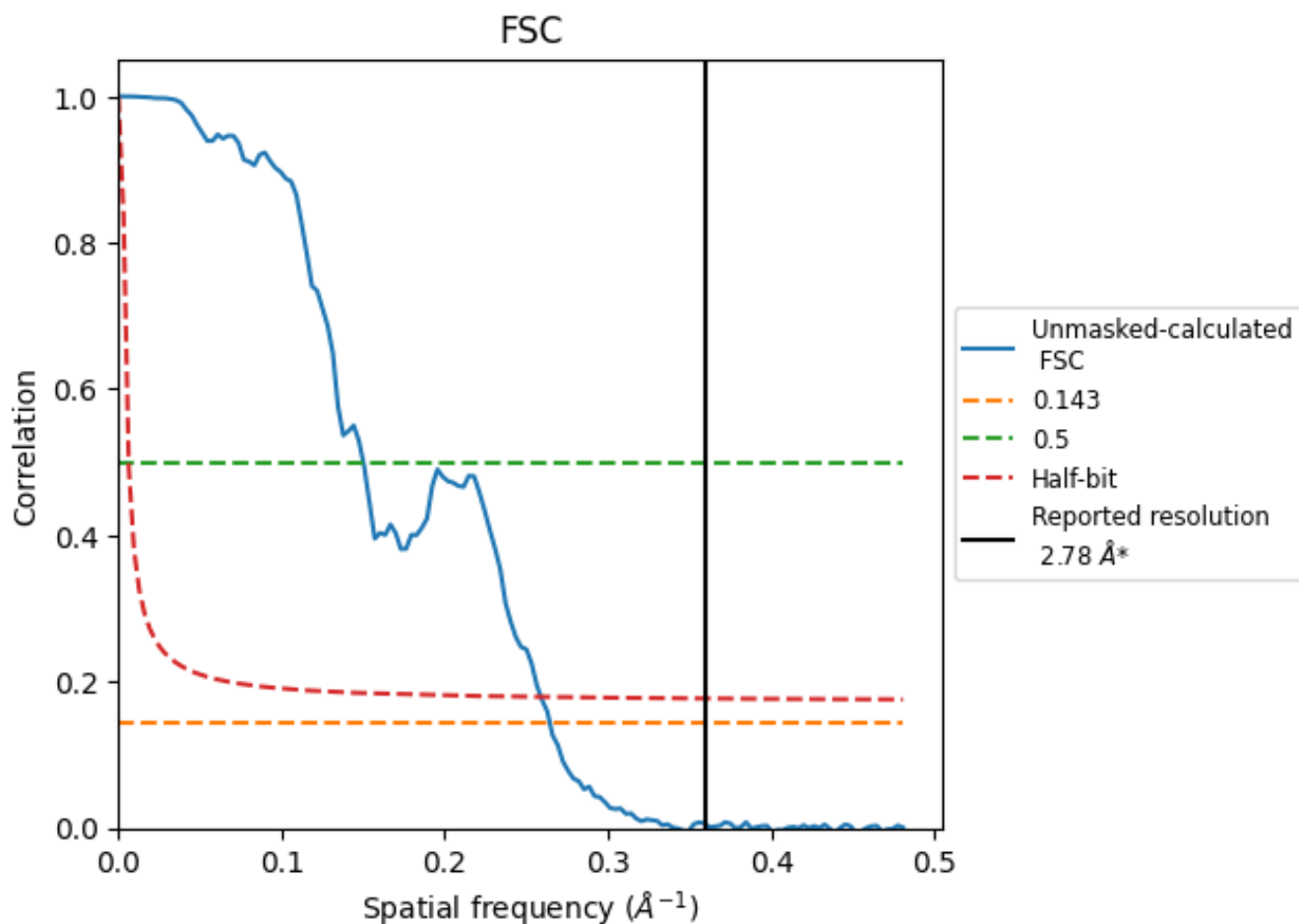


*Reported resolution corresponds to spatial frequency of 0.360 Å⁻¹

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 0.360 Å⁻¹

8.2 Resolution estimates [i](#)

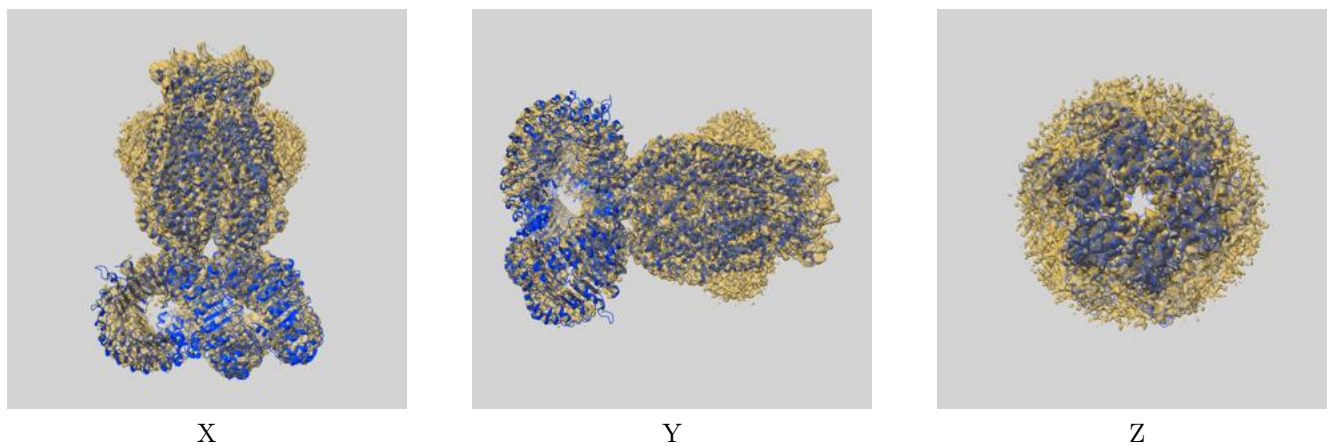
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.78	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.78	6.66	3.86

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.78 differs from the reported value 2.78 by more than 10 %

9 Map-model fit [i](#)

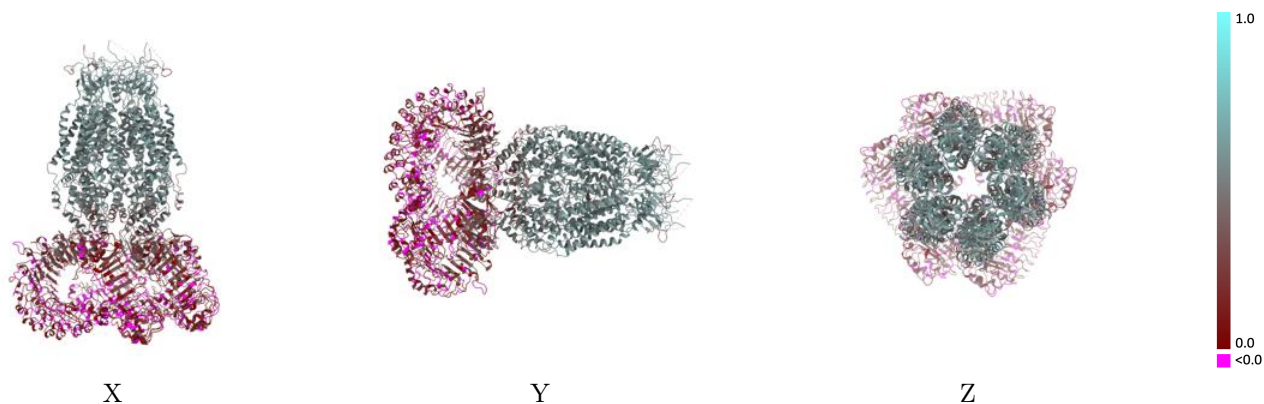
This section contains information regarding the fit between EMDB map EMD-33527 and PDB model 7XZH. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay [i](#)



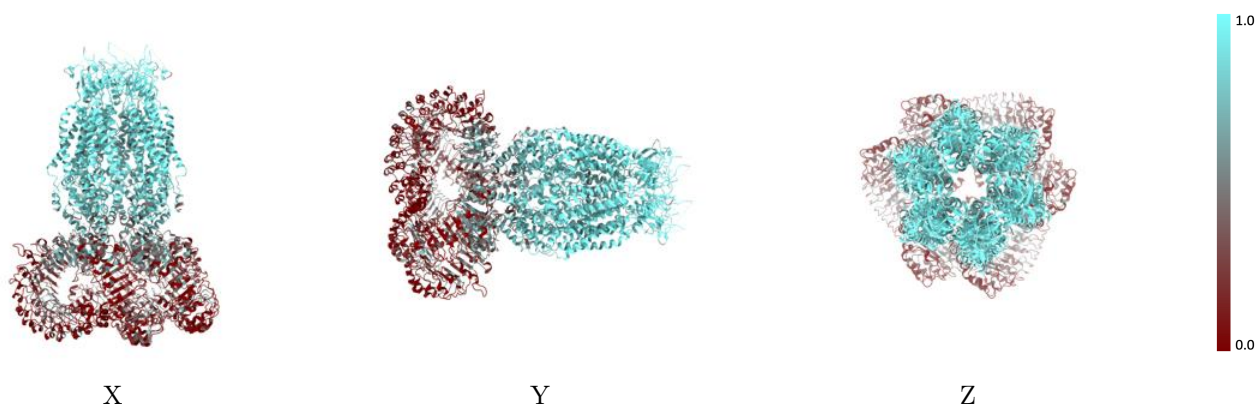
The images above show the 3D surface view of the map at the recommended contour level 0.3 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



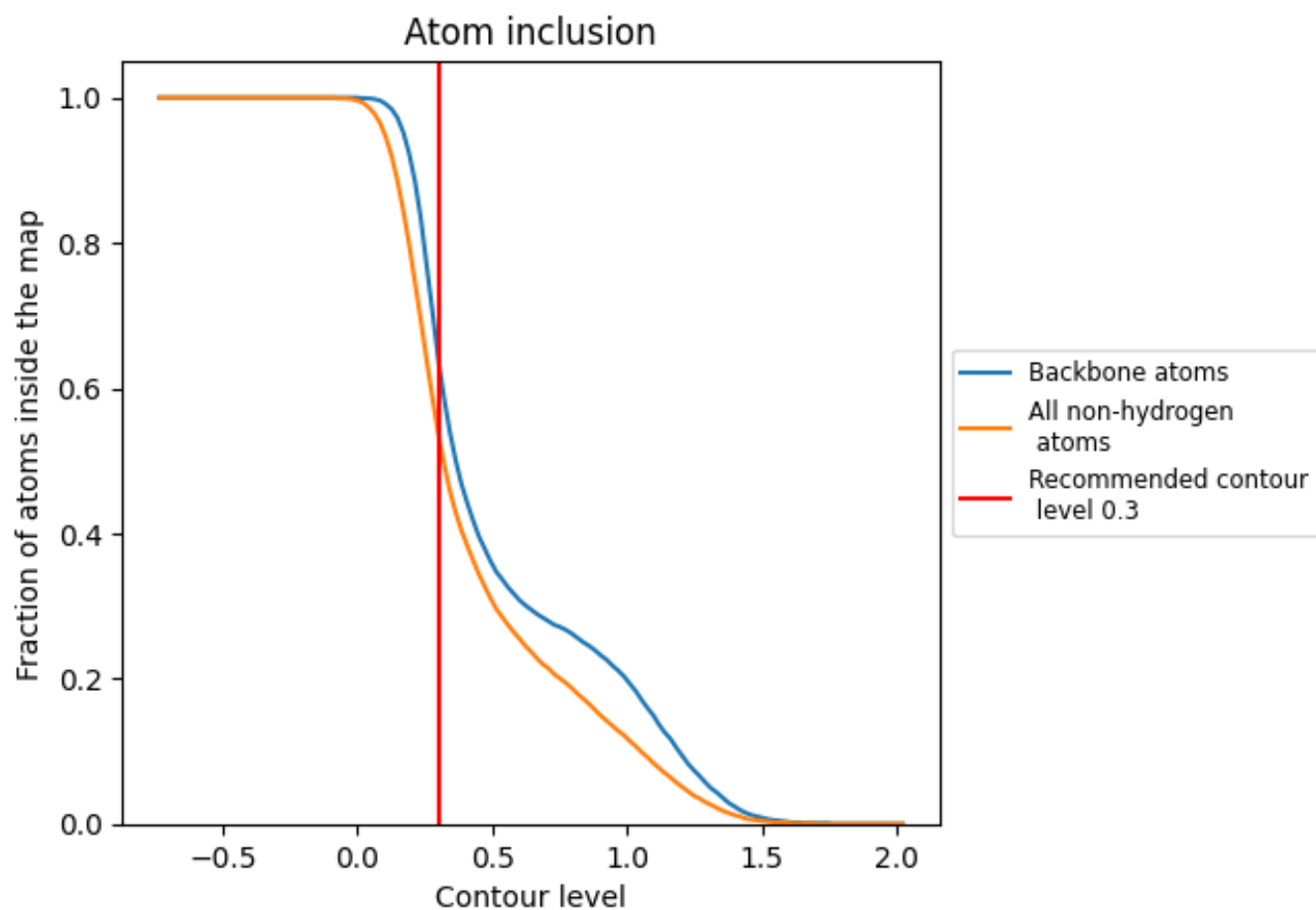
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.3).















9.4 Atom inclusion [i](#)



At the recommended contour level, 64% of all backbone atoms, 54% 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 (0.3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5360	 0.3220
A	 0.5300	 0.3100
B	 0.5420	 0.3360
C	 0.5330	 0.3110
D	 0.5380	 0.3310
E	 0.5320	 0.3140
F	 0.5410	 0.3320

