



wwPDB EM Validation Summary Report ⓘ

Nov 19, 2022 – 09:45 AM EST

PDB ID : 7T3Q
EMDB ID : EMD-25668
Title : IP3 and ATP bound type 3 IP3 receptor in the pre-active B state
Authors : Schmitz, E.A.; Takahashi, H.; Karakas, E.
Deposited on : 2021-12-08
Resolution : 3.30 Å (reported)
Based on initial model : 6UQK

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:

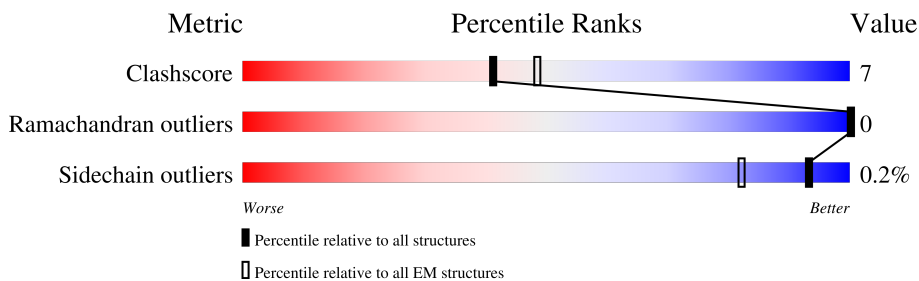
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (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 3.30 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	2633	
1	B	2633	
1	C	2633	
1	D	2633	

2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 68124 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.

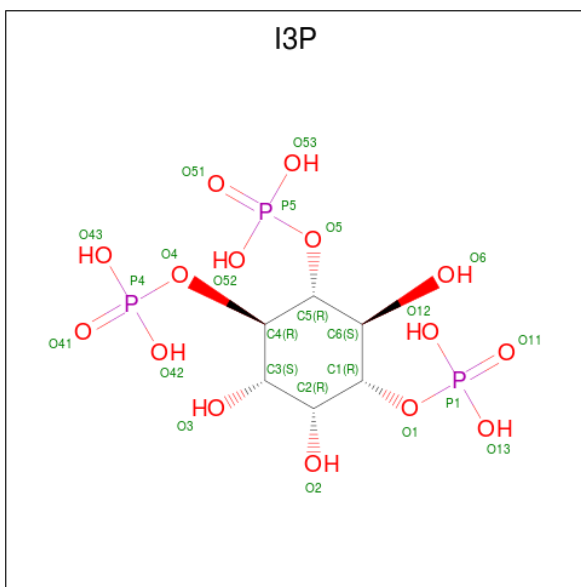
- Molecule 1 is a protein called Inositol 1,4,5-trisphosphate receptor type 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2103	16975	10850	2907	3114	104	0	0
1	B	2103	16975	10850	2907	3114	104	0	0
1	C	2103	16975	10850	2907	3114	104	0	0
1	D	2103	16975	10850	2907	3114	104	0	0

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

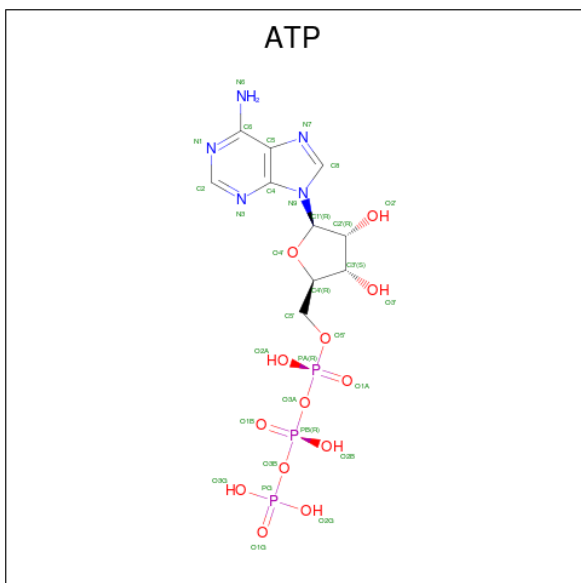
Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
2	A	1	1	1	0
2	B	1	1	1	0
2	C	1	1	1	0
2	D	1	1	1	0

- Molecule 3 is D-MYO-INOSITOL-1,4,5-TRIPHOSPHATE (three-letter code: I3P) (formula: $C_6H_{15}O_{15}P_3$).



Mol	Chain	Residues	Atoms			AltConf	
			Total	C	O		P
3	A	1	24	6	15	3	0
3	B	1	24	6	15	3	0
3	C	1	24	6	15	3	0
3	D	1	24	6	15	3	0

- Molecule 4 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$).

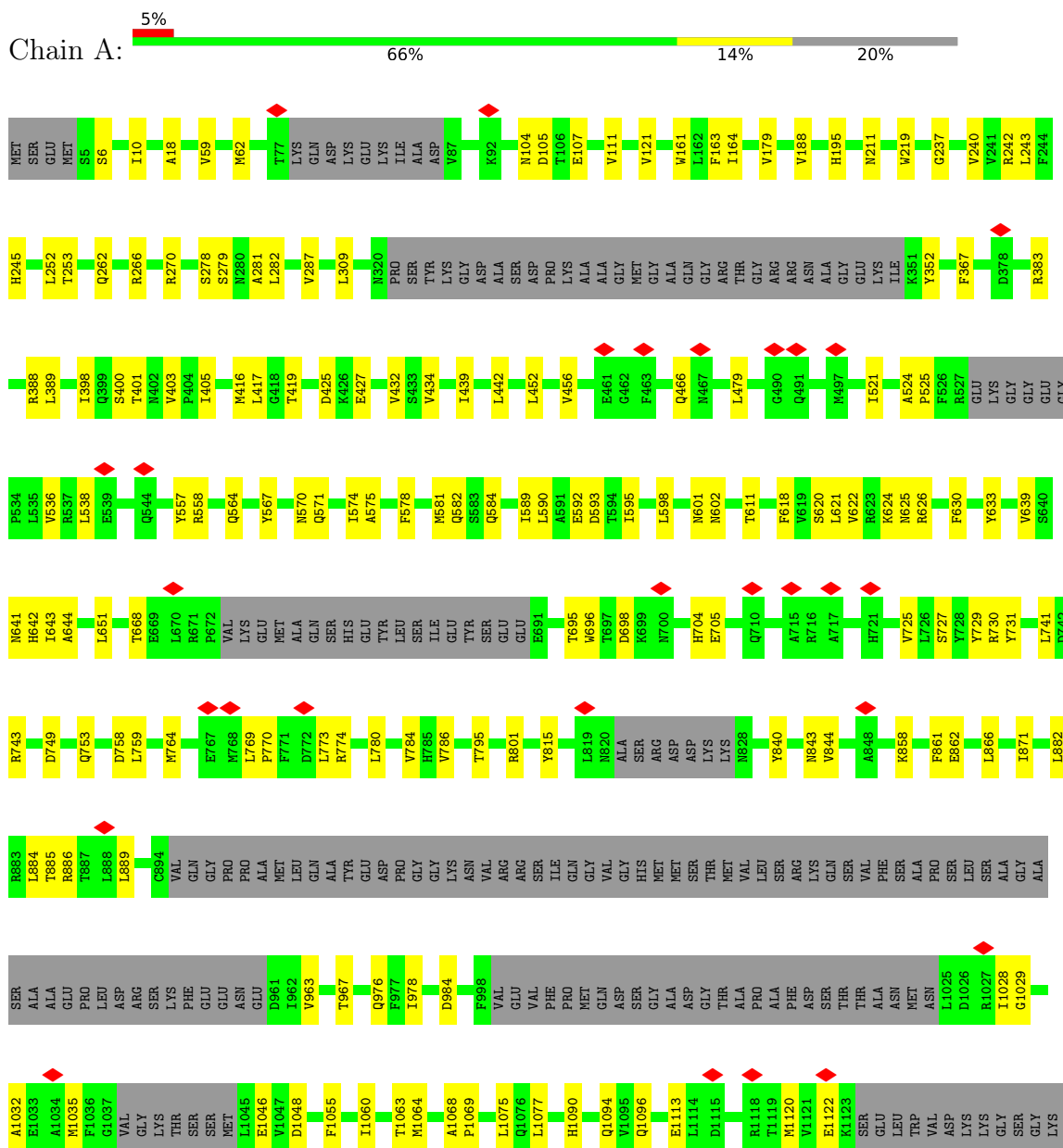


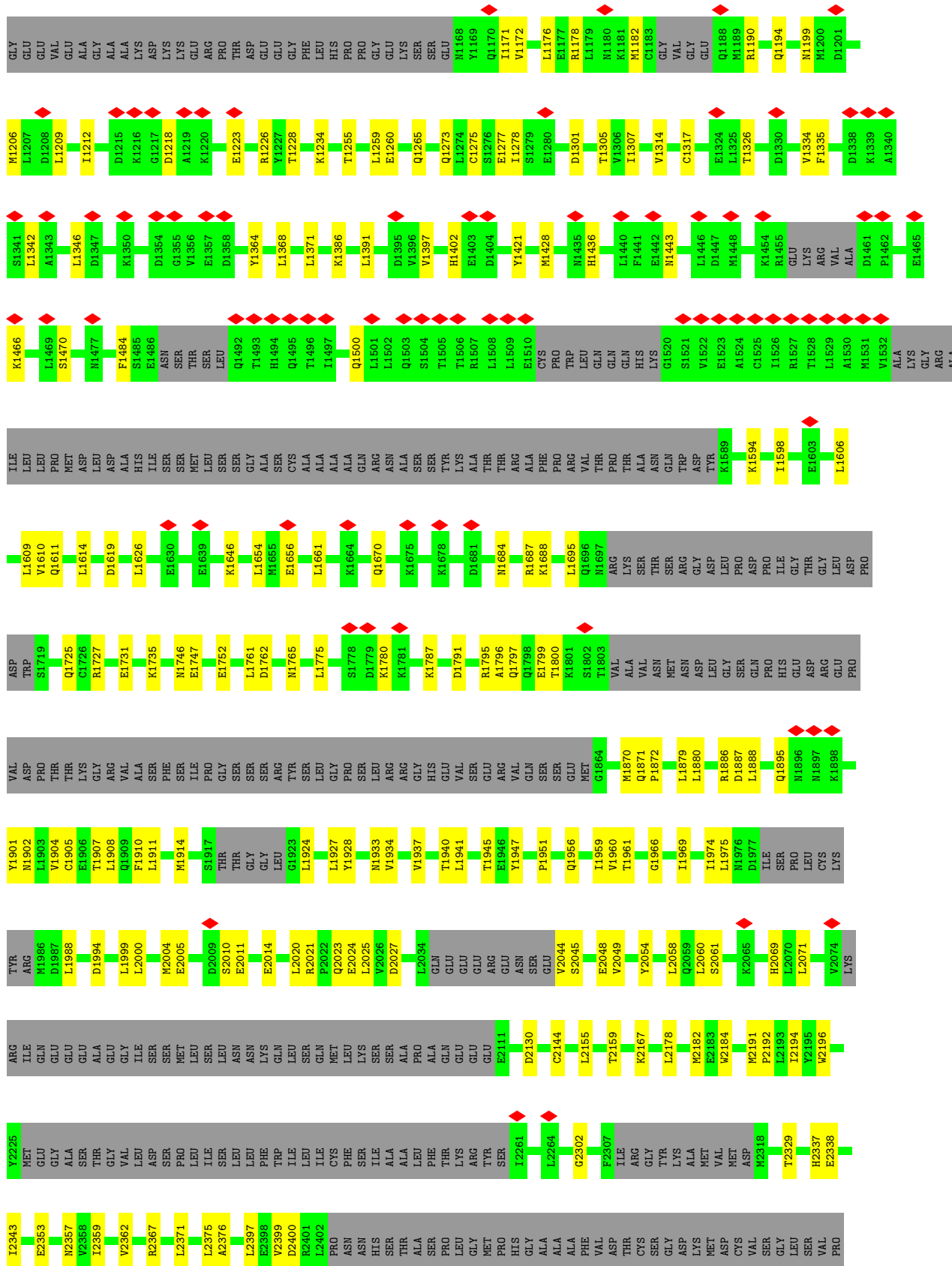
Mol	Chain	Residues	Atoms					AltConf
4	A	1	Total 31	C 10	N 5	O 13	P 3	0
4	B	1	Total 31	C 10	N 5	O 13	P 3	0
4	C	1	Total 31	C 10	N 5	O 13	P 3	0
4	D	1	Total 31	C 10	N 5	O 13	P 3	0

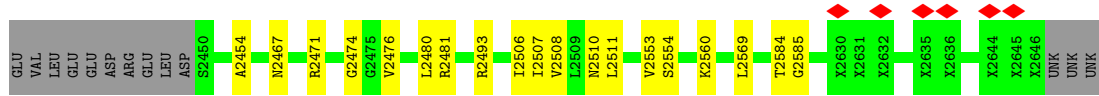
3 Residue-property plots [i](#)

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.

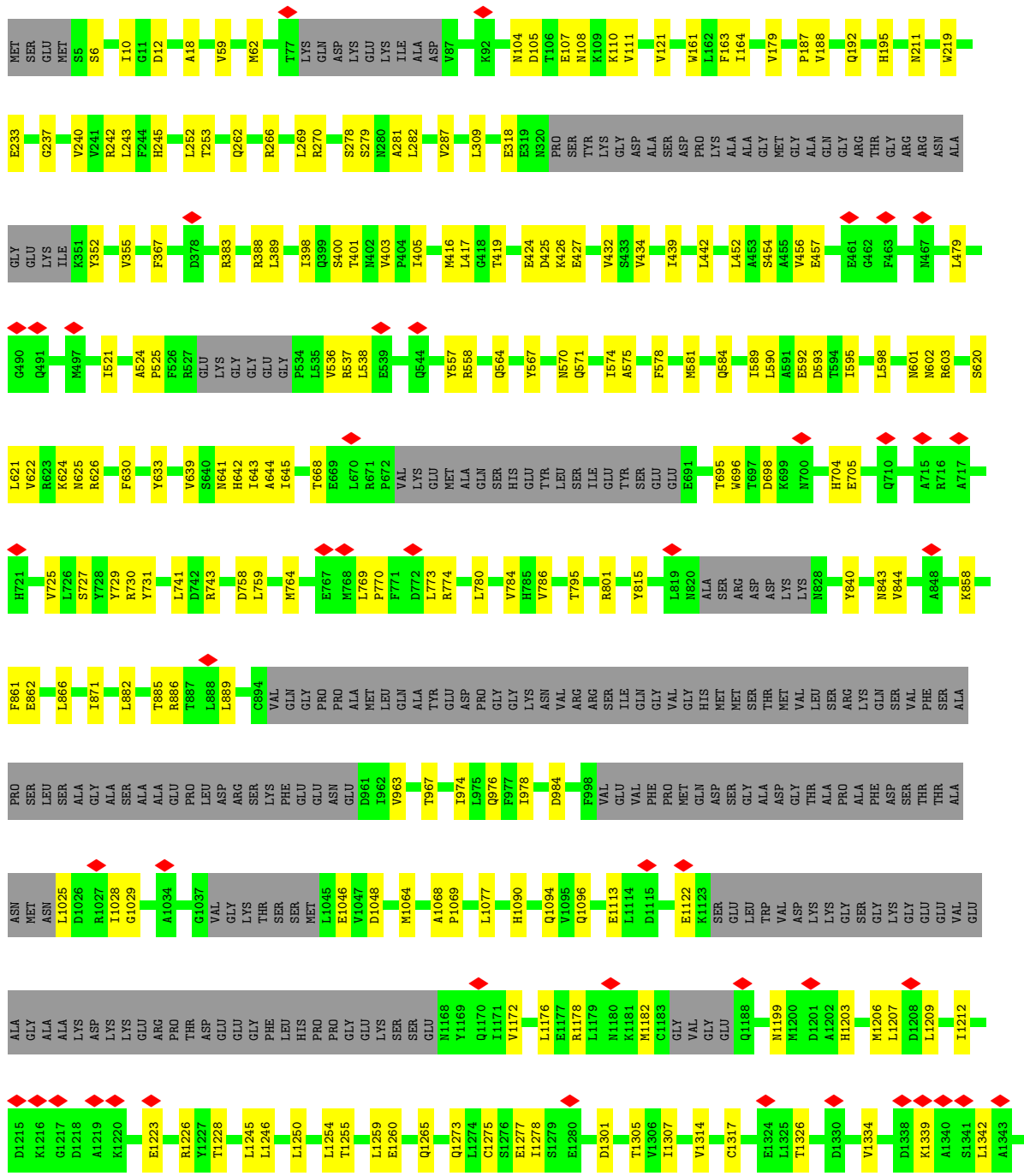
- Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3

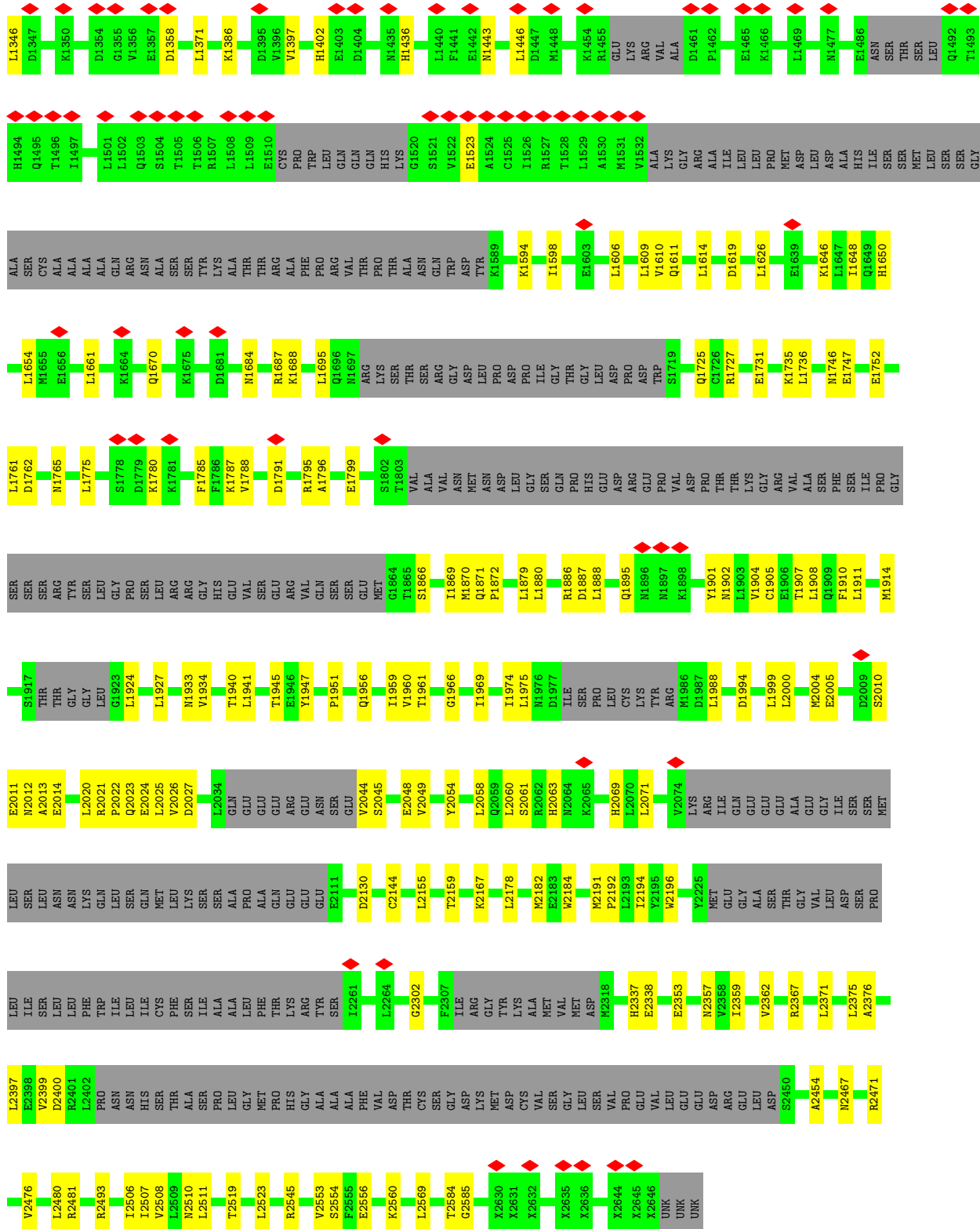






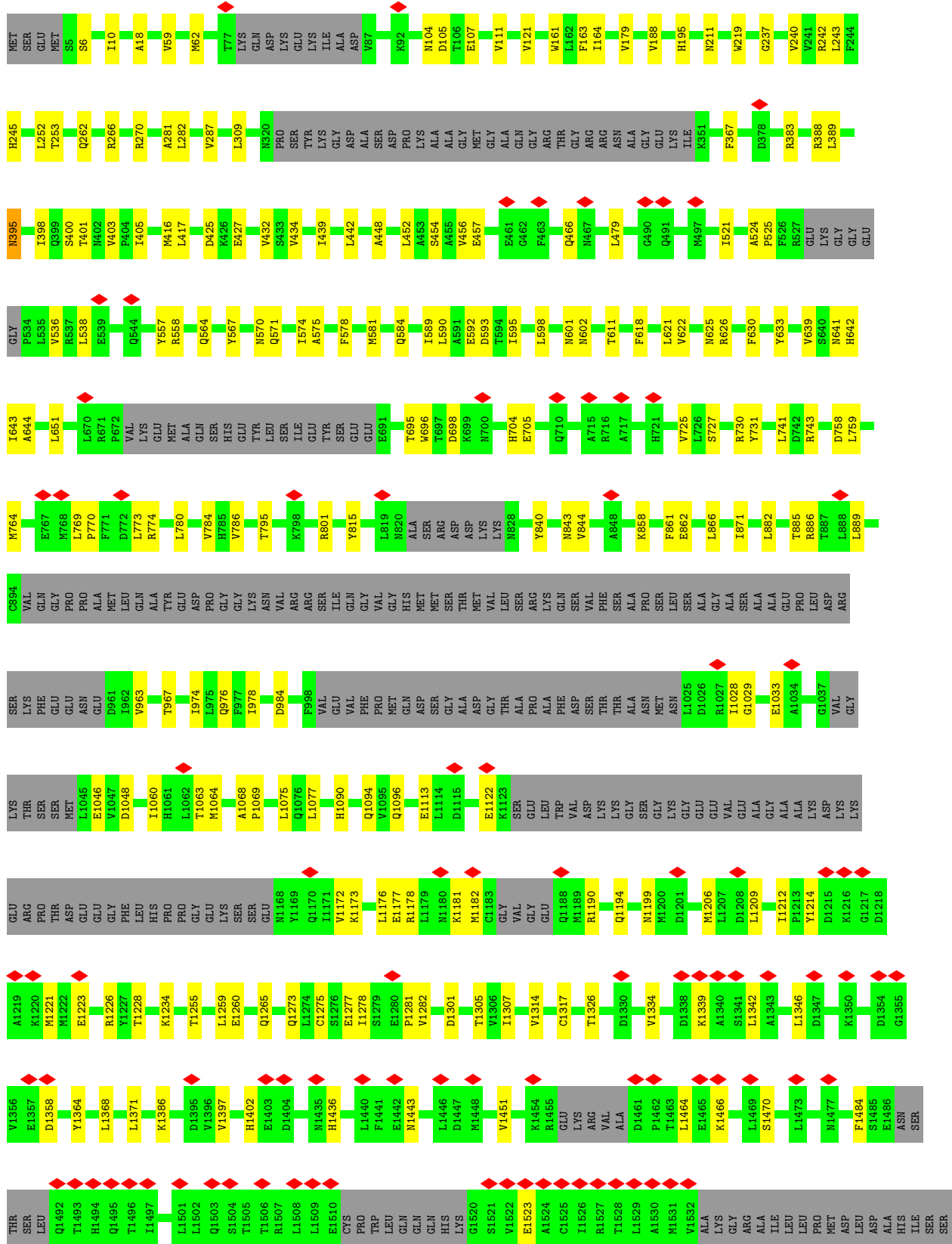
● Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3

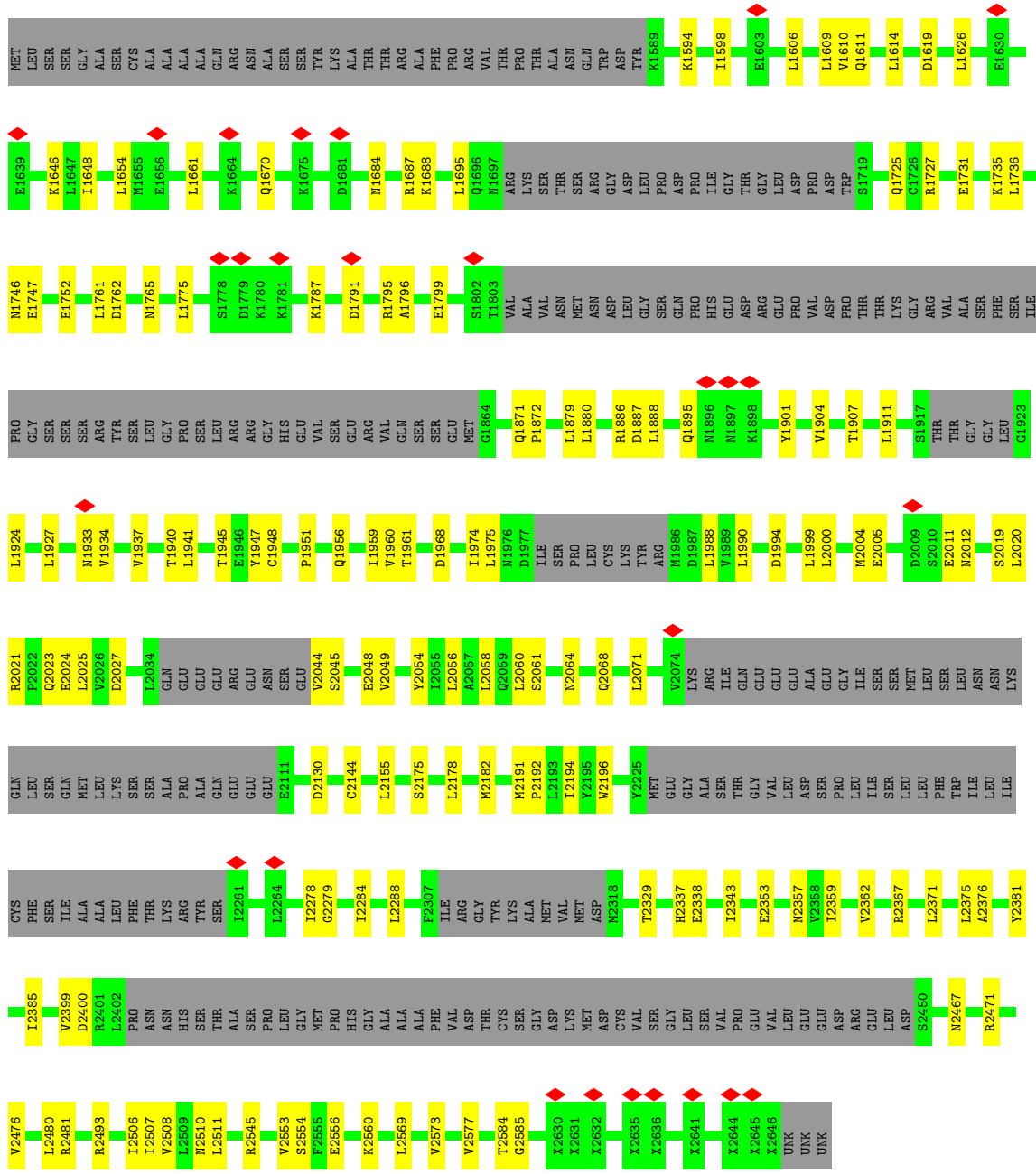




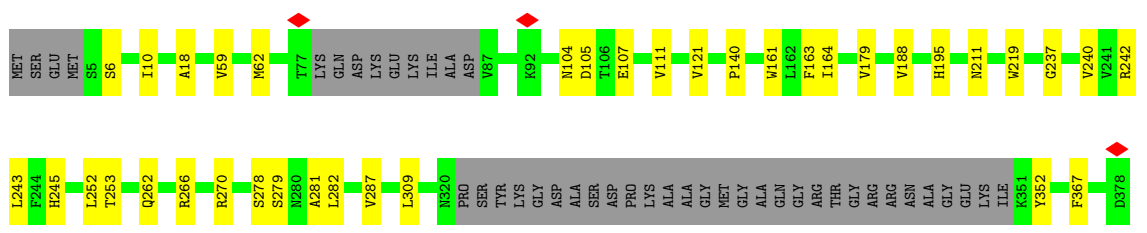
● Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3

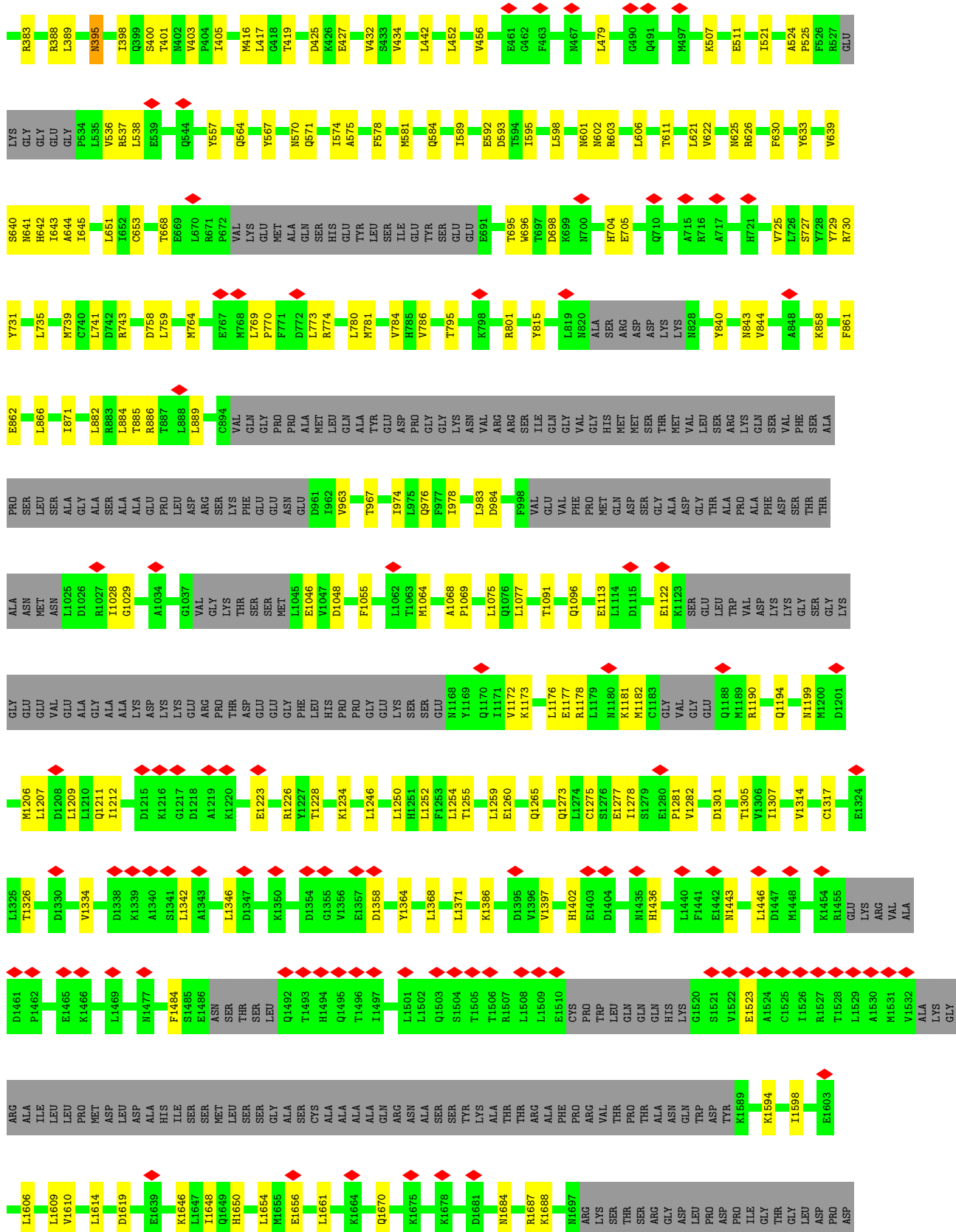






• Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3





TRP	S1719	PRO	VAL	ASP	Q1725	THR	G1726	LYS	E1727	ARG	E1731	VAL	K1735	ALA	L1736	THR	M1746	ILE	E1747	LEU	E1752	GLY	L1761	SER	D1762	ARG	M1765	LYS	L1775	GLY	S1778	D1779	K1780	K1781	ARG	F1785	F1786	K1787	V1788	GLU	D1791	ARG	R1795	A1796	E1799	S1802	T1803	VAL	ALA	VAL	ASN	ASN	ASN	ASP	LEU	GLY	SER	GLN	PRO	HIS	HIS	GLU	ASP	ARG	GLU	
PRO	VAL	ASP	VAL	THR	THR	THR	THR	LYS	GLY	ARG	LEU	VAL	VAL	ALA	ALA	SER	PHE	SER	ILE	LEU	PRO	PRO	GLY	GLY	SER	SER	SER	SER	ARG	THR	TYR	SER	LEU	GLY	PRO	SER	SER	ARG	ARG	ARG	GLY	GLY	HIS	GLU	VAL	SER	SER	GLU	GLU	VAL	VAL	ASN	MET	ASN	ASP	LEU	GLY	SER	GLN	PRO	HIS	HIS	GLU	ASP	ARG	GLU
K1898	Y1901	V1904	T1907	L1908	L1911	M1914	S1917	THR	THR	GLY	GLY	LEU	G1923	L1924	L1927	M1933	V1934	G1936	V1937	T1940	L1941	T1945	F1946	Y1947	C1948	P1951	Q1956	I1959	V1960	T1961	D1968	I1974	L1975	M1976	D1977	ILE	SER	PRO	LEU	CYS	LYS	TYR	ARG	G1884	V1887	Q1871	P1872	L1879	L1880	R1886	D1887	L1888	Q1895	N1896	N1897											
M1986	D1987	L1988	D1994	L1989	L2000	E2005	D2009	S2010	E2011	N2012	S2019	R2020	L2021	Q2023	E2024	L2025	V2026	D2027	L2034	GLN	GLU	GLU	GLU	ARG	GLU	ASN	ASN	SER	F1946	Y1947	C1948	P1951	Q1956	I1959	V1960	T1961	D1968	I1974	L1975	M1976	D1977	ILE	SER	PRO	LEU	CYS	LYS	TYR	ARG	GLU																
ALA	GLU	GLY	ILE	SER	MET	SER	SER	ASN	ASN	LYS	GLN	LEU	SER	SER	MET	GLN	LEU	LYS	SER	ALA	ALA	PRO	ALA	ALA	GLN	GLU	GLU	E2111	C2144	L2155	Q2164	G2165	S2166	L2178	M2182	M2191	P2192	L2194	Y2195	W2196	Y2225	MET	GLU	GLY	ALA	ALA	SER	THR	GLY	VAL	LEU															
ASP	SER	PRO	LEU	ILE	SER	LEU	PHE	TRP	LEU	ILE	ILE	CYS	PHE	SER	ILE	ASN	ALA	ALA	LEU	PHE	THR	ALA	PRO	ARG	TYR	SER	L2261	L2284	F2307	ILE	ARG	GLY	TYR	LYS	ALA	VAL	MET	MET	ASP	M2318	T2329	H2337	E2338	L2343	E2353	T2354	L2355	F2356	M2357	V2358	I2359	V2362														
R2367	L2371	L2375	A2376	Y2381	I2385	V2399	D2400	R2403	L2402	PRO	ASN	ASN	HIS	ALA	SER	THR	ALA	PRO	LEU	GLY	MET	HIS	GLY	ALA	ALA	PHE	VAL	ASP	THR	CYS	SER	GLY	ASP	LYS	MET	ASP	CYS	VAL	SER	GLY	LEU	SER	VAL	PRO	GLU	VAL	VAL	LEU	GLU	GLU	ASP	ARG	GLU													
LEU	ASP	S2450	G2474	G2475	V2476	L2480	R2481	R2493	I2506	I2507	V2508	L2509	M2510	L2511	R2545	V2553	S2554	F2555	E2556	K2560	L2569	V2573	V2577	T2584	G2585	X2630	X2631	X2632	X2635	X2636	X2641	X2644	X2645	X2646	UNK	UNK	UNK																													

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	153765	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)	800	Depositor
Maximum defocus (nm)	1600	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	2.697	Depositor
Minimum map value	-1.599	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.053	Depositor
Recommended contour level	0.2	Depositor
Map size (Å)	397.44, 397.44, 397.44	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.828, 0.828, 0.828	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: ATP, ZN, I3P

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	0.28	0/17183	0.47	0/23197
1	B	0.29	0/17183	0.48	0/23197
1	C	0.28	0/17183	0.48	0/23197
1	D	0.28	0/17183	0.47	0/23197
All	All	0.28	0/68732	0.48	0/92788

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 [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	16975	0	17059	258	0
1	B	16975	0	17059	262	0
1	C	16975	0	17059	248	0
1	D	16975	0	17059	252	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
3	A	24	0	9	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	24	0	9	3	0
3	C	24	0	9	2	0
3	D	24	0	9	2	0
4	A	31	0	12	1	0
4	B	31	0	12	1	0
4	C	31	0	12	1	0
4	D	31	0	12	1	0
All	All	68124	0	68320	1003	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

The worst 5 of 1003 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:1895:GLN:NE2	1:B:1901:TYR:O	2.09	0.85
1:A:1895:GLN:NE2	1:A:1901:TYR:O	2.10	0.85
1:D:1895:GLN:NE2	1:D:1901:TYR:O	2.10	0.84
1:D:240:VAL:HG11	1:D:309:LEU:HD11	1.61	0.83
1:C:1895:GLN:NE2	1:C:1901:TYR:O	2.10	0.82

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	2036/2633 (77%)	1945 (96%)	91 (4%)	0	100	100
1	B	2036/2633 (77%)	1942 (95%)	94 (5%)	0	100	100
1	C	2036/2633 (77%)	1946 (96%)	90 (4%)	0	100	100
1	D	2036/2633 (77%)	1943 (95%)	93 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
All	All	8144/10532 (77%)	7776 (96%)	368 (4%)	0	100	100

There are no Ramachandran outliers to report.

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	1896/2329 (81%)	1893 (100%)	3 (0%)	93	97
1	B	1896/2329 (81%)	1893 (100%)	3 (0%)	93	97
1	C	1896/2329 (81%)	1893 (100%)	3 (0%)	93	97
1	D	1896/2329 (81%)	1893 (100%)	3 (0%)	93	97
All	All	7584/9316 (81%)	7572 (100%)	12 (0%)	93	97

5 of 12 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	395	ASN
1	C	1443	ASN
1	D	1443	ASN
1	D	383	ARG
1	B	383	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 21 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	2063	HIS
1	D	1090	HIS
1	D	2357	ASN
1	D	1273	GLN
1	D	1061	HIS

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](#)

Of 12 ligands modelled in this entry, 4 are monoatomic - leaving 8 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
3	I3P	B	2702	-	24,24,24	1.26	3 (12%)	36,39,39	0.51	0
4	ATP	B	2703	-	26,33,33	0.63	0	31,52,52	1.06	2 (6%)
4	ATP	A	2703	-	26,33,33	0.63	0	31,52,52	1.07	2 (6%)
4	ATP	C	2703	-	26,33,33	0.63	0	31,52,52	1.07	2 (6%)
3	I3P	D	2702	-	24,24,24	1.26	3 (12%)	36,39,39	0.52	0
3	I3P	A	2702	-	24,24,24	1.26	3 (12%)	36,39,39	0.50	0
3	I3P	C	2702	-	24,24,24	1.26	3 (12%)	36,39,39	0.50	0
4	ATP	D	2703	-	26,33,33	0.63	0	31,52,52	1.07	2 (6%)

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	I3P	B	2702	-	-	3/15/39/39	0/1/1/1
4	ATP	B	2703	-	-	2/18/38/38	0/3/3/3
4	ATP	A	2703	-	-	2/18/38/38	0/3/3/3
4	ATP	C	2703	-	-	2/18/38/38	0/3/3/3
3	I3P	D	2702	-	-	1/15/39/39	0/1/1/1
3	I3P	A	2702	-	-	2/15/39/39	0/1/1/1
3	I3P	C	2702	-	-	2/15/39/39	0/1/1/1
4	ATP	D	2703	-	-	2/18/38/38	0/3/3/3

The worst 5 of 12 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	2702	I3P	P4-O4	3.01	1.65	1.59
3	A	2702	I3P	P1-O1	2.98	1.64	1.59
3	C	2702	I3P	P1-O1	2.97	1.64	1.59
3	A	2702	I3P	P4-O4	2.96	1.64	1.59
3	B	2702	I3P	P4-O4	2.96	1.64	1.59

The worst 5 of 8 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	D	2703	ATP	C5-C6-N6	2.34	123.91	120.35
4	C	2703	ATP	C5-C6-N6	2.32	123.87	120.35
4	A	2703	ATP	C5-C6-N6	2.30	123.84	120.35
4	B	2703	ATP	C5-C6-N6	2.30	123.84	120.35
4	A	2703	ATP	PB-O3B-PG	2.04	139.83	132.83

There are no chirality outliers.

5 of 16 torsion outliers are listed below:

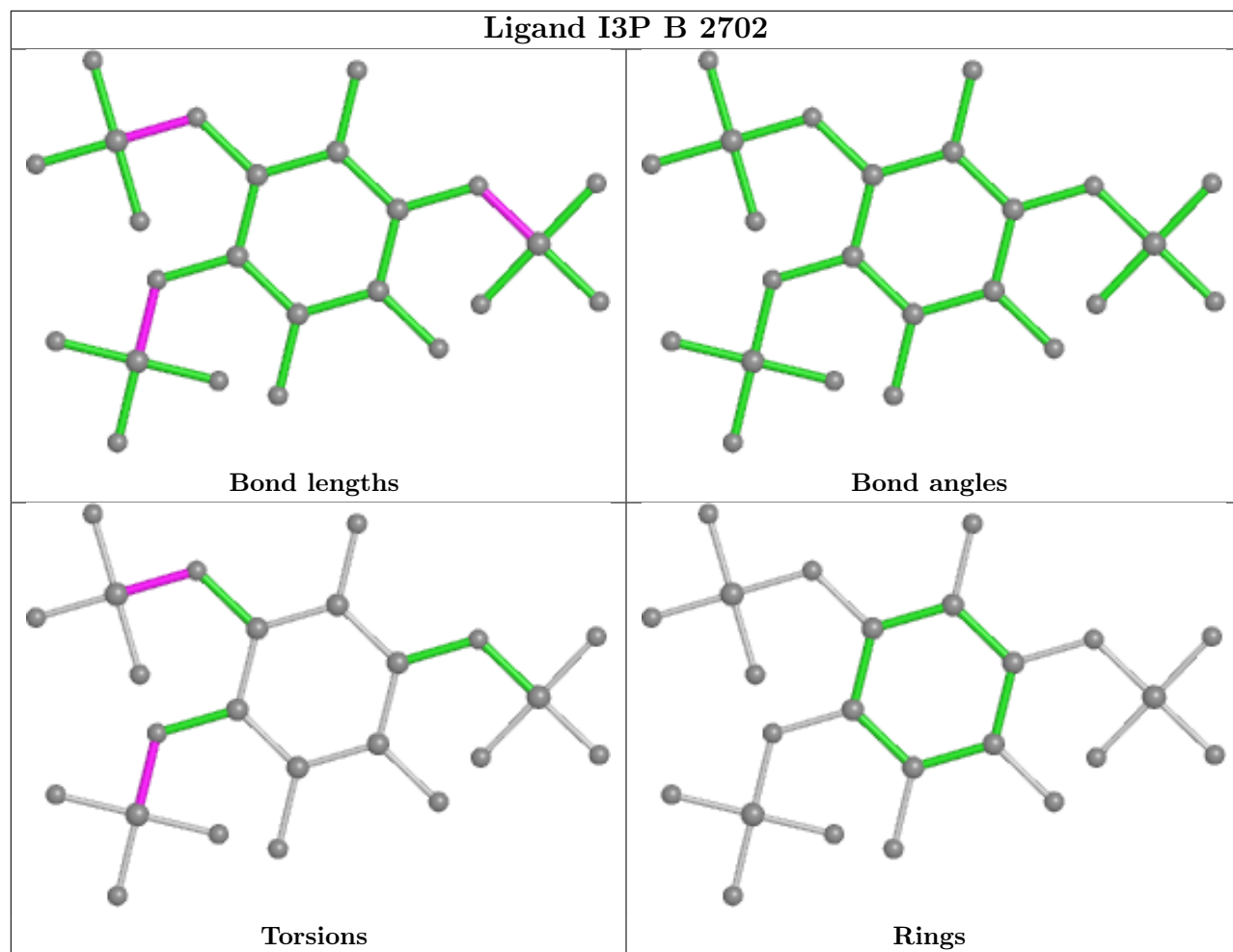
Mol	Chain	Res	Type	Atoms
3	A	2702	I3P	C5-O5-P5-O53
3	B	2702	I3P	C5-O5-P5-O53
3	C	2702	I3P	C5-O5-P5-O53
3	D	2702	I3P	C5-O5-P5-O53
4	A	2703	ATP	PB-O3A-PA-O5'

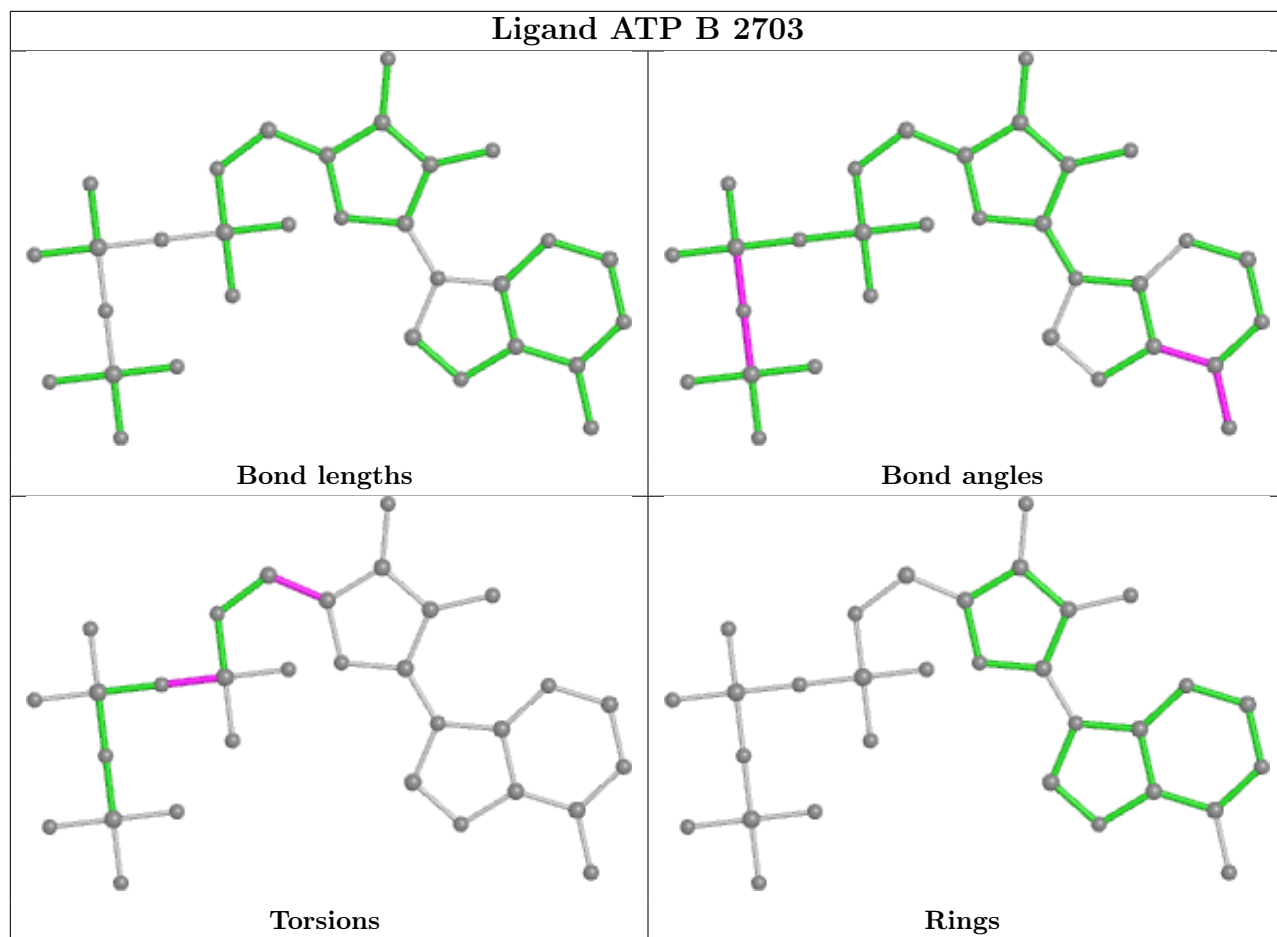
There are no ring outliers.

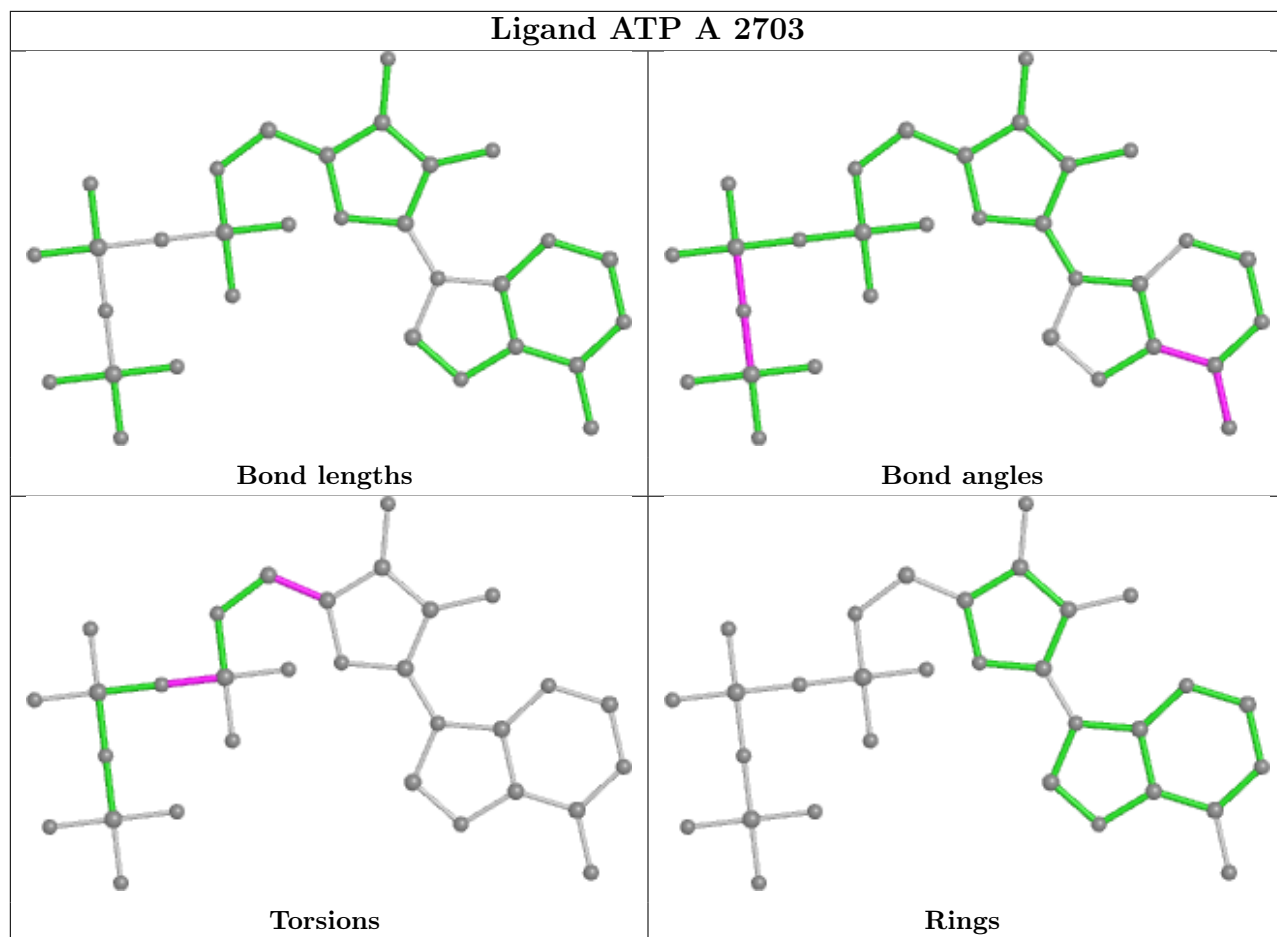
8 monomers are involved in 13 short contacts:

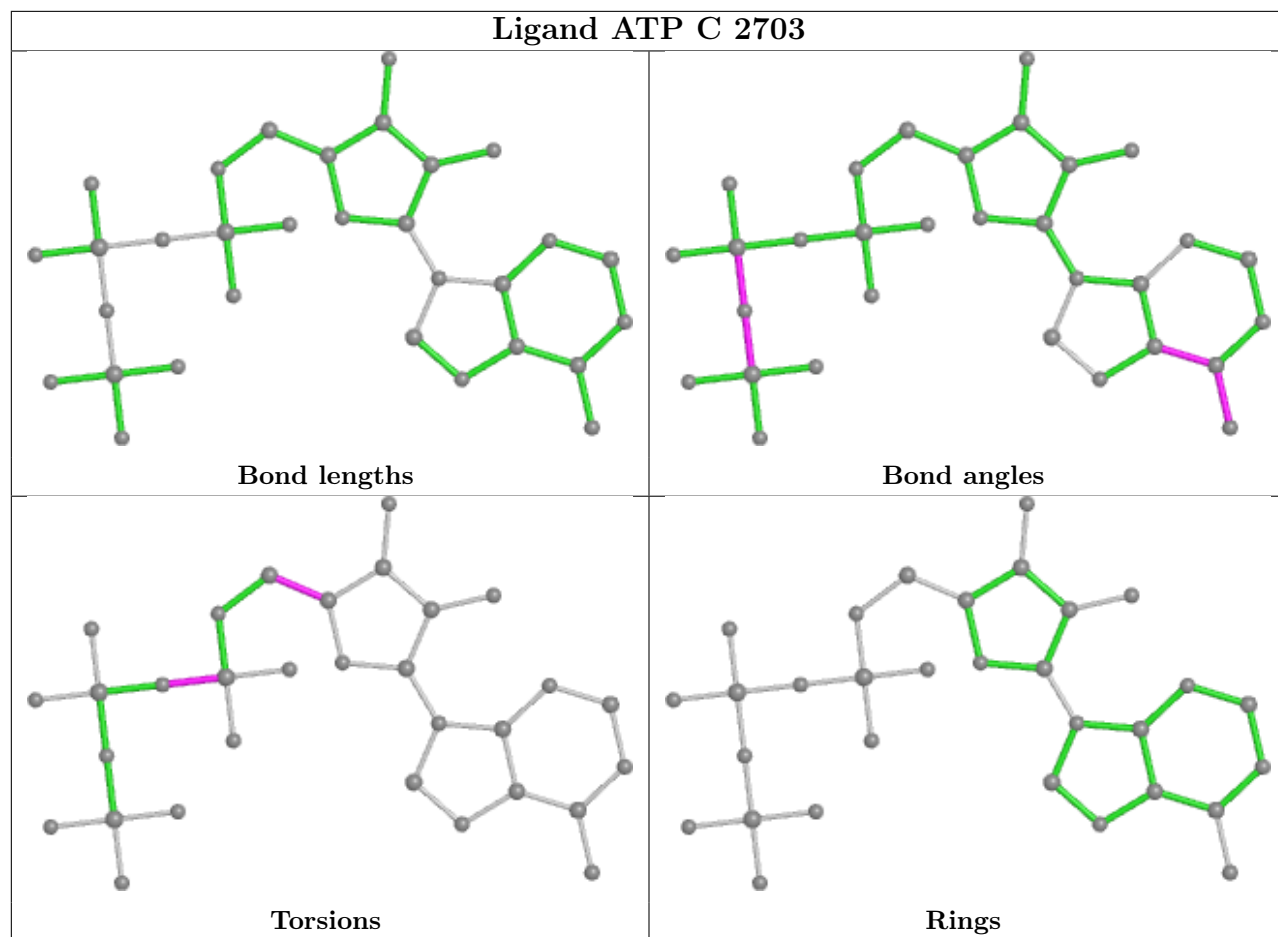
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	2702	I3P	3	0
4	B	2703	ATP	1	0
4	A	2703	ATP	1	0
4	C	2703	ATP	1	0
3	D	2702	I3P	2	0
3	A	2702	I3P	2	0
3	C	2702	I3P	2	0
4	D	2703	ATP	1	0

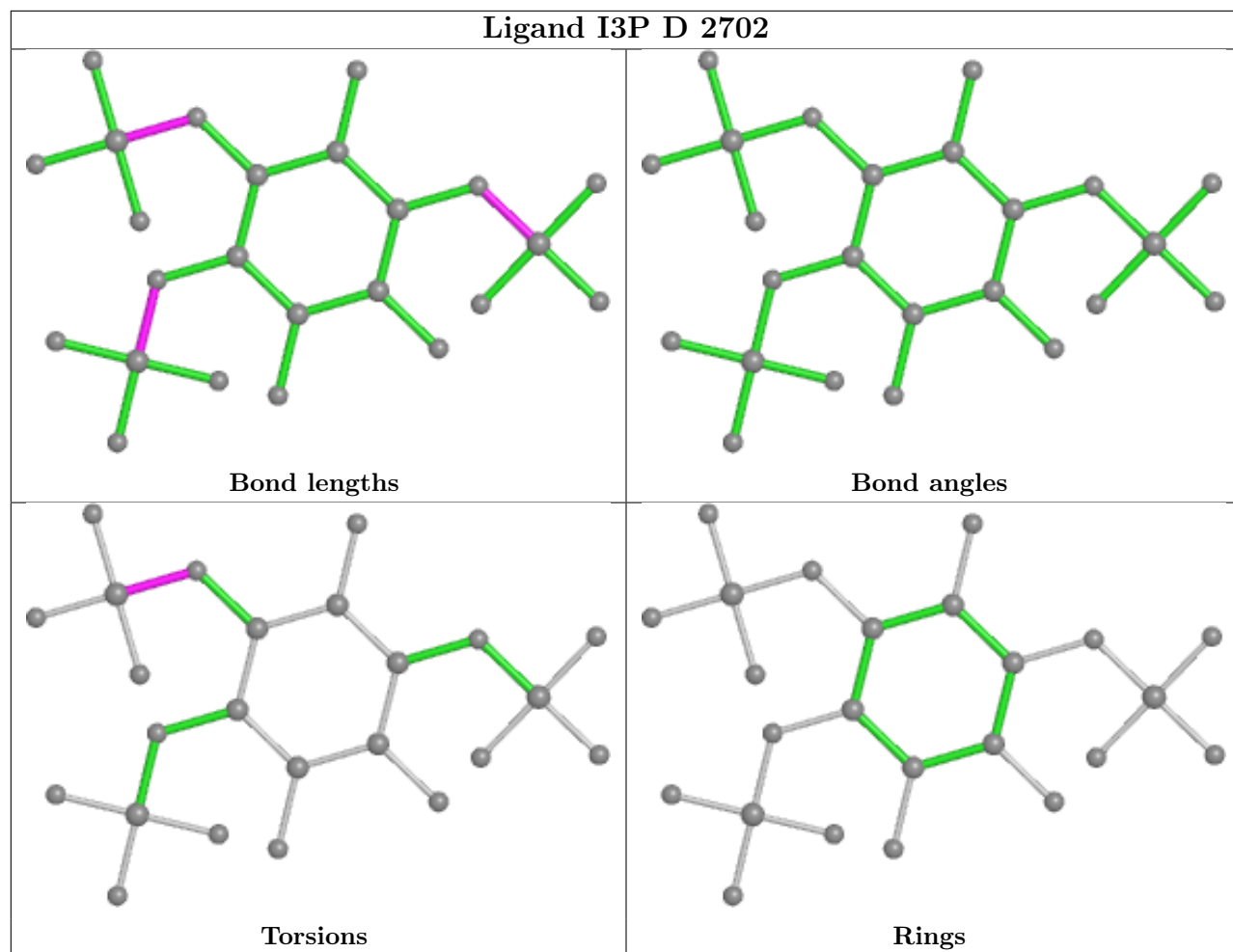
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

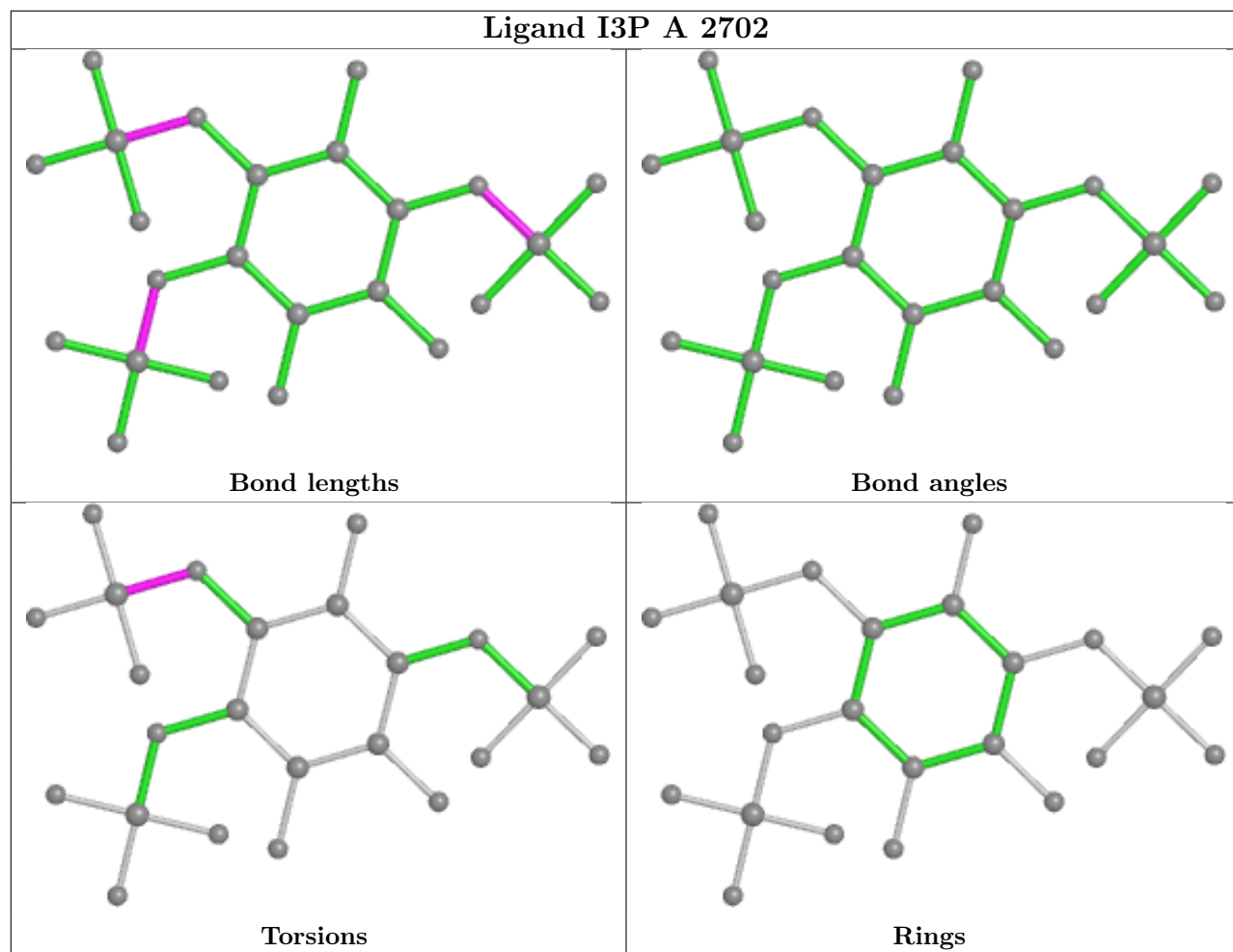


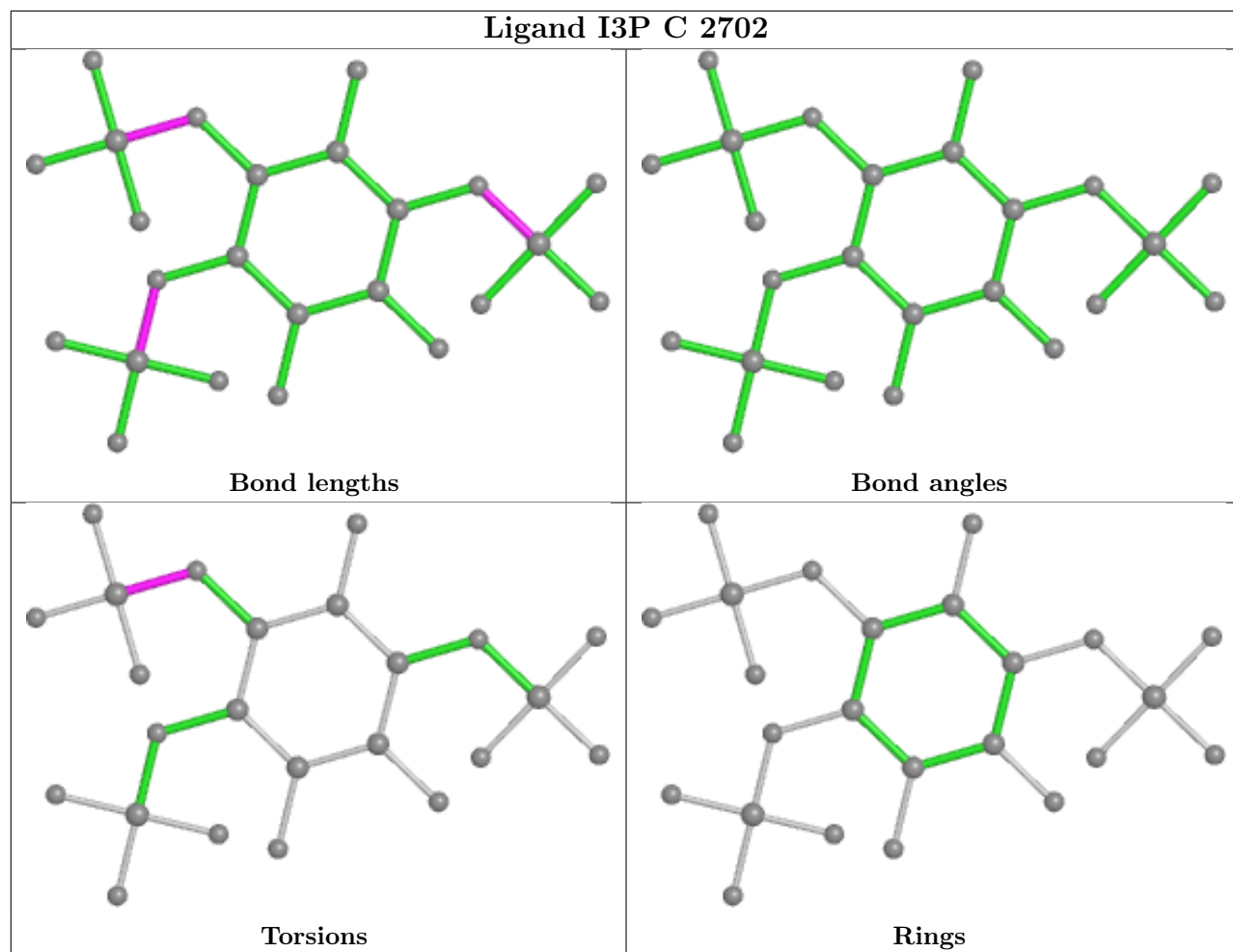


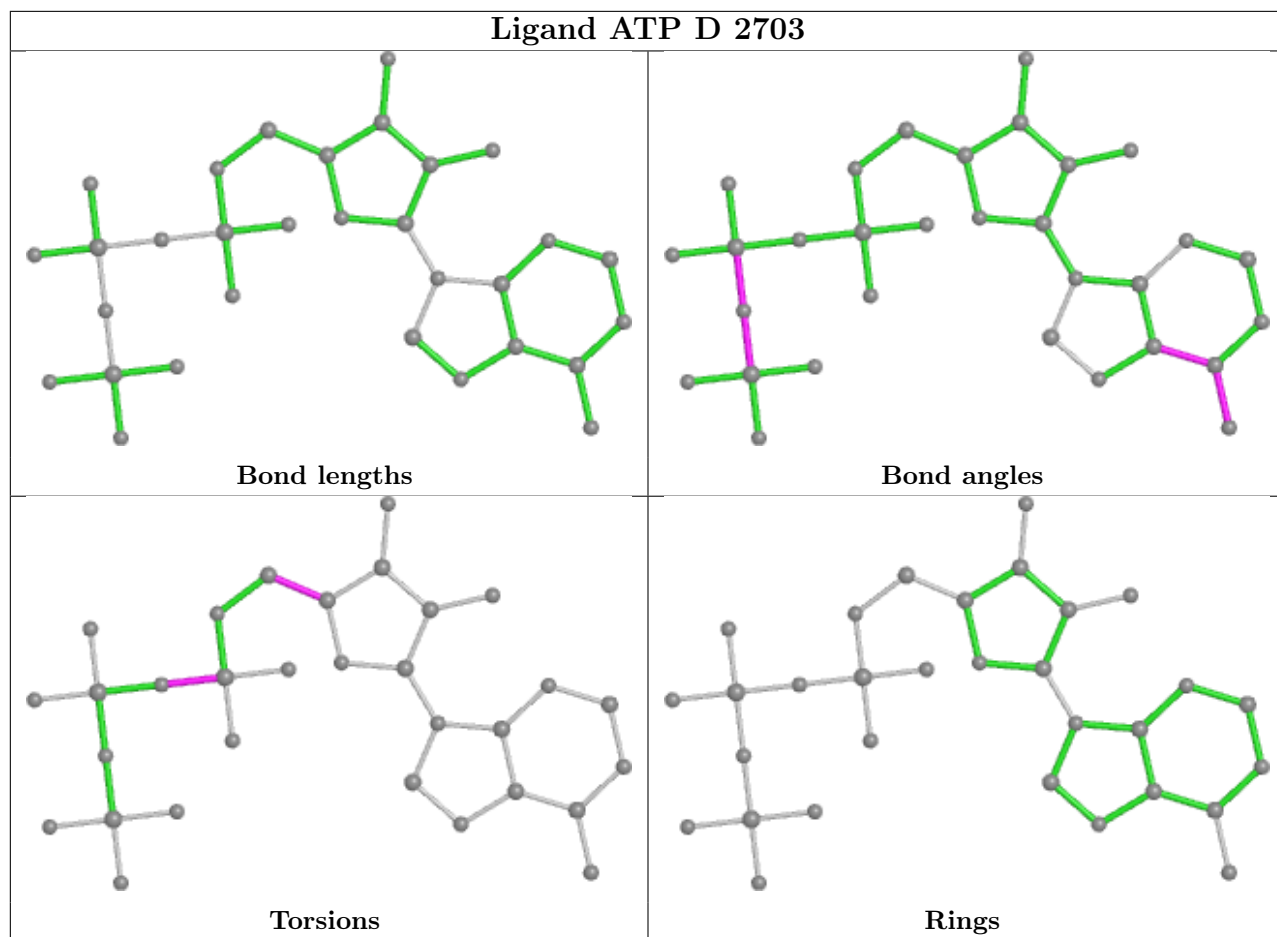












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	B	1
1	D	1
1	A	1
1	C	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	2611:VAL	C	2628:UNK	N	25.94
1	D	2611:VAL	C	2628:UNK	N	25.94

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	2611:VAL	C	2628:UNK	N	25.93
1	C	2611:VAL	C	2628:UNK	N	25.93

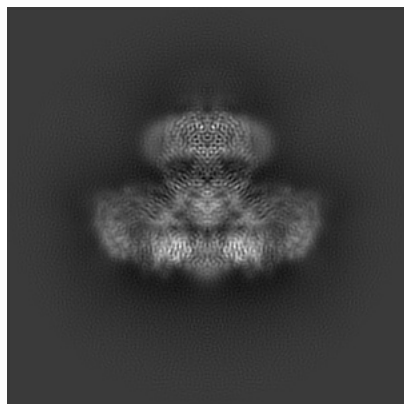
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-25668. These allow visual inspection of the internal detail of the map and identification of artifacts.

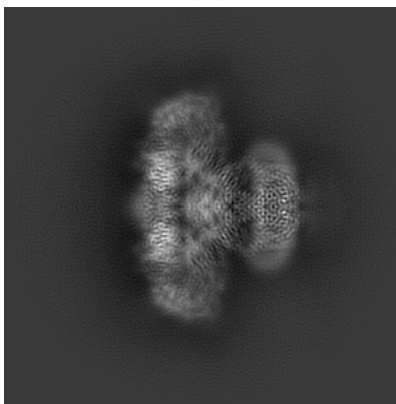
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

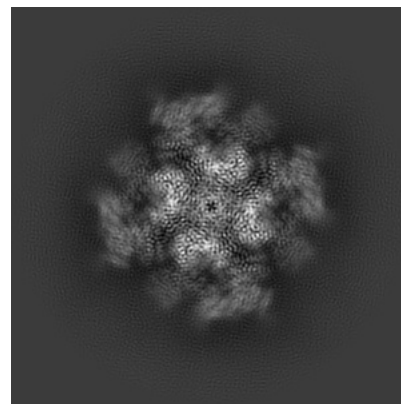
6.1.1 Primary map



X

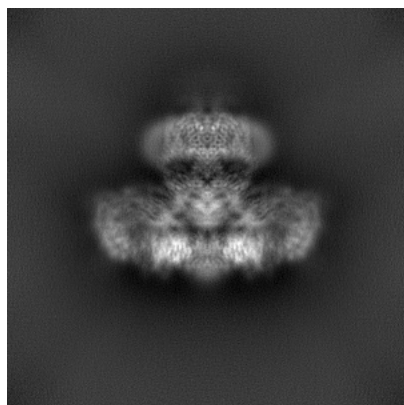


Y

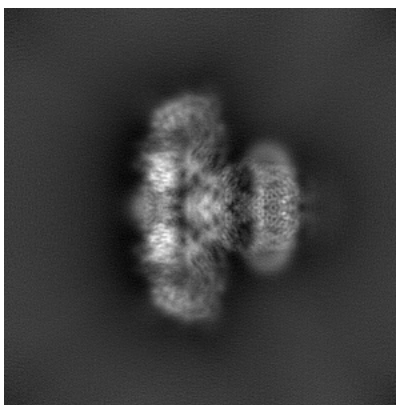


Z

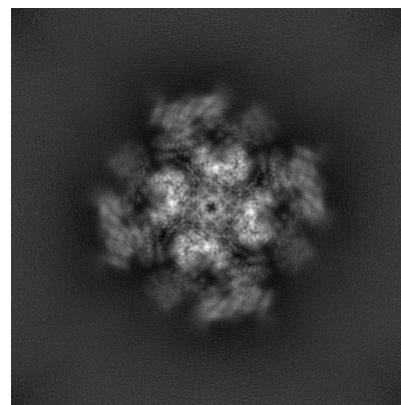
6.1.2 Raw map



X



Y

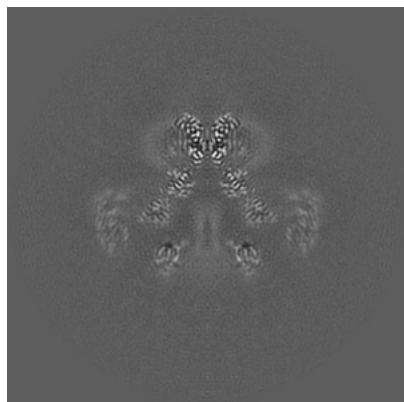


Z

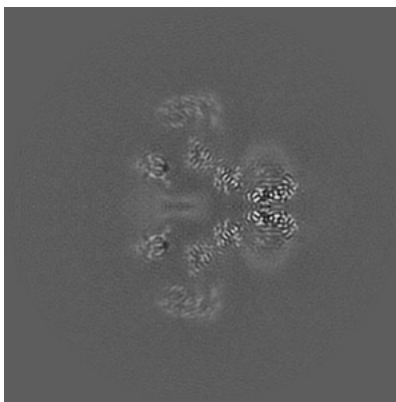
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

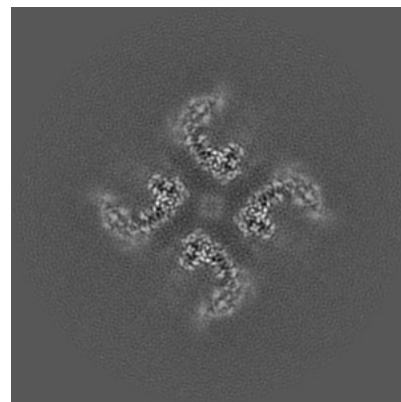
6.2.1 Primary map



X Index: 240

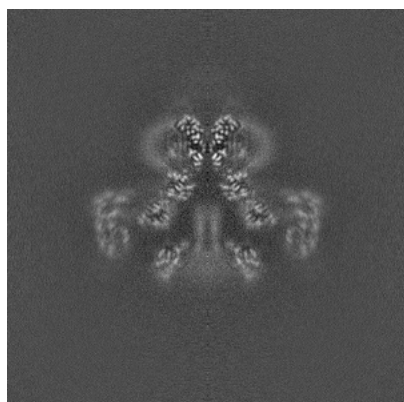


Y Index: 240

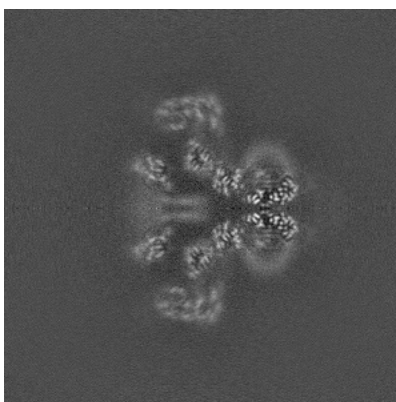


Z Index: 240

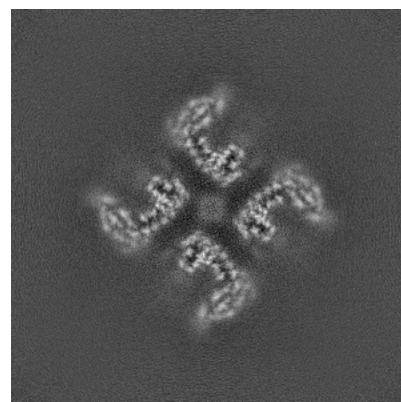
6.2.2 Raw map



X Index: 240



Y Index: 240

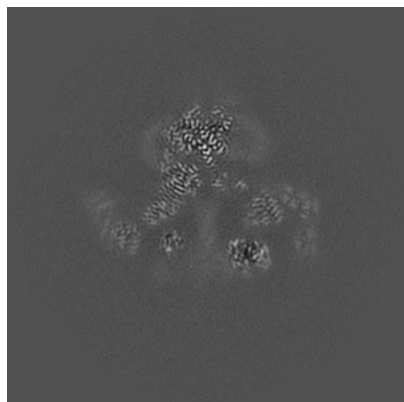


Z Index: 240

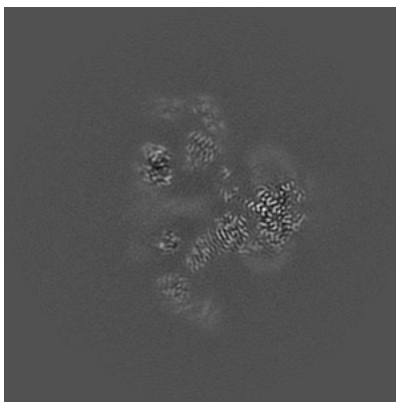
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

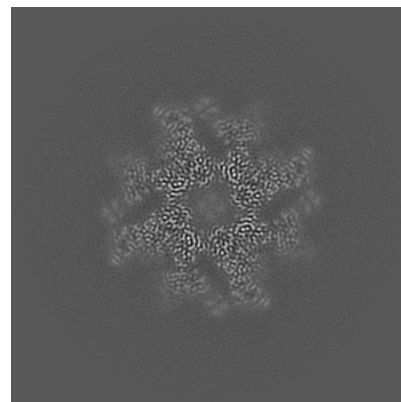
6.3.1 Primary map



X Index: 230

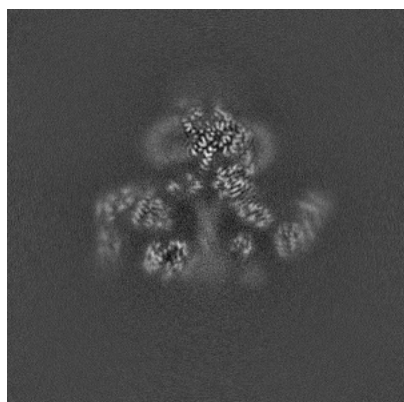


Y Index: 250

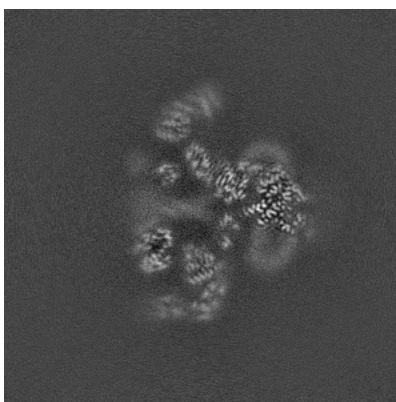


Z Index: 191

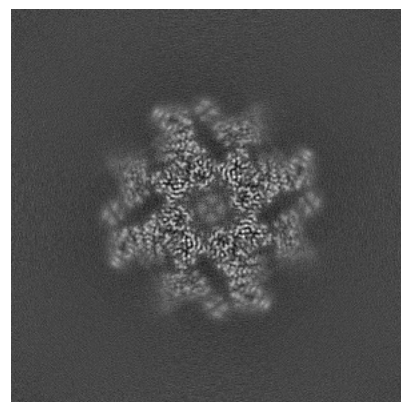
6.3.2 Raw map



X Index: 250



Y Index: 230



Z Index: 191

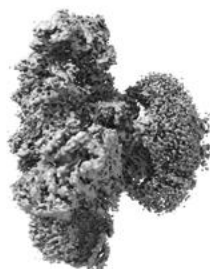
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

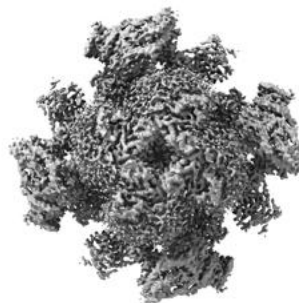
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.2. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

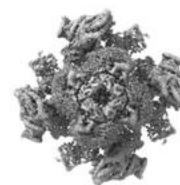
6.4.2 Raw map



X



Y



Z

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

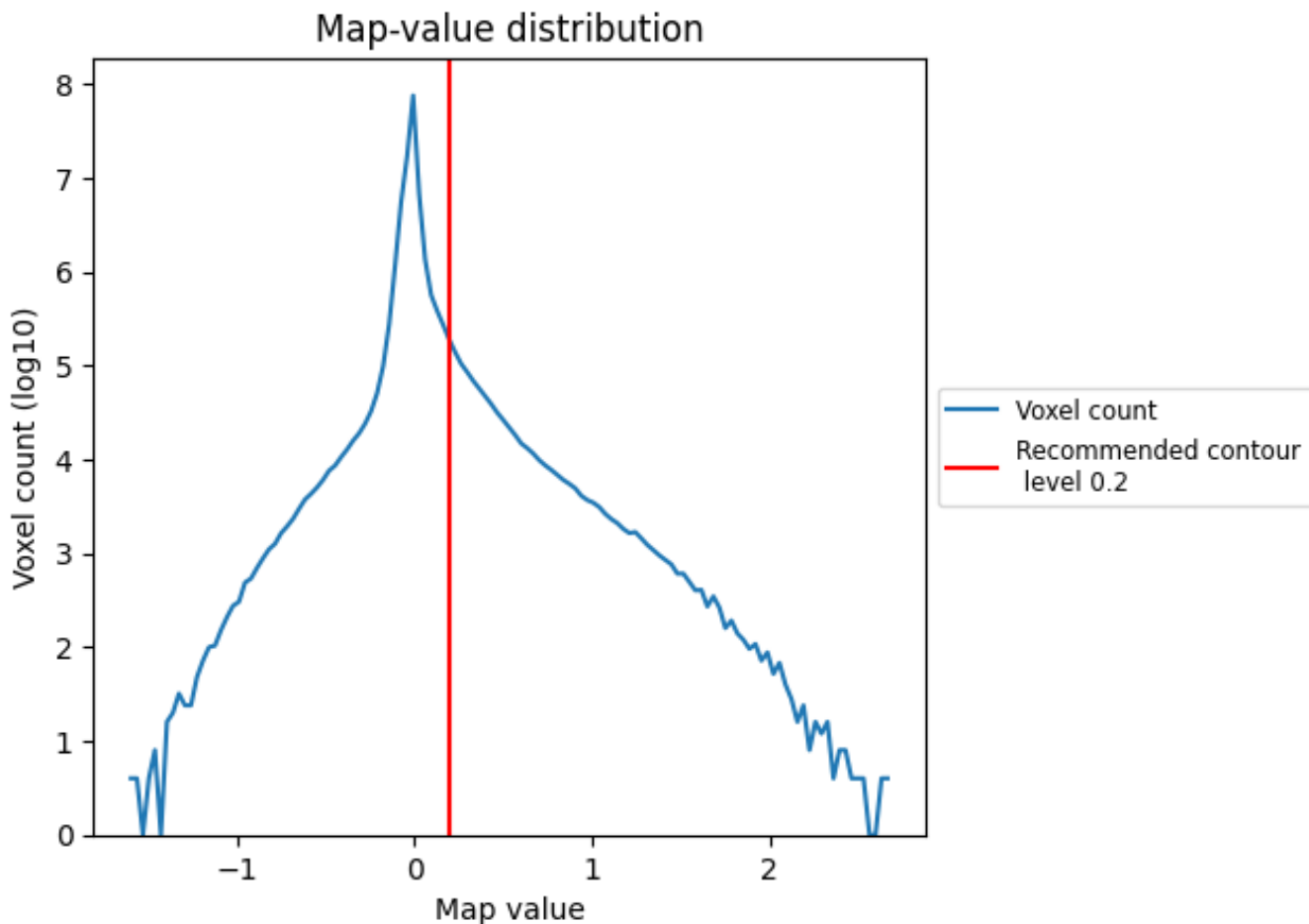
6.5 Mask visualisation [i](#)

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

7 Map analysis [i](#)

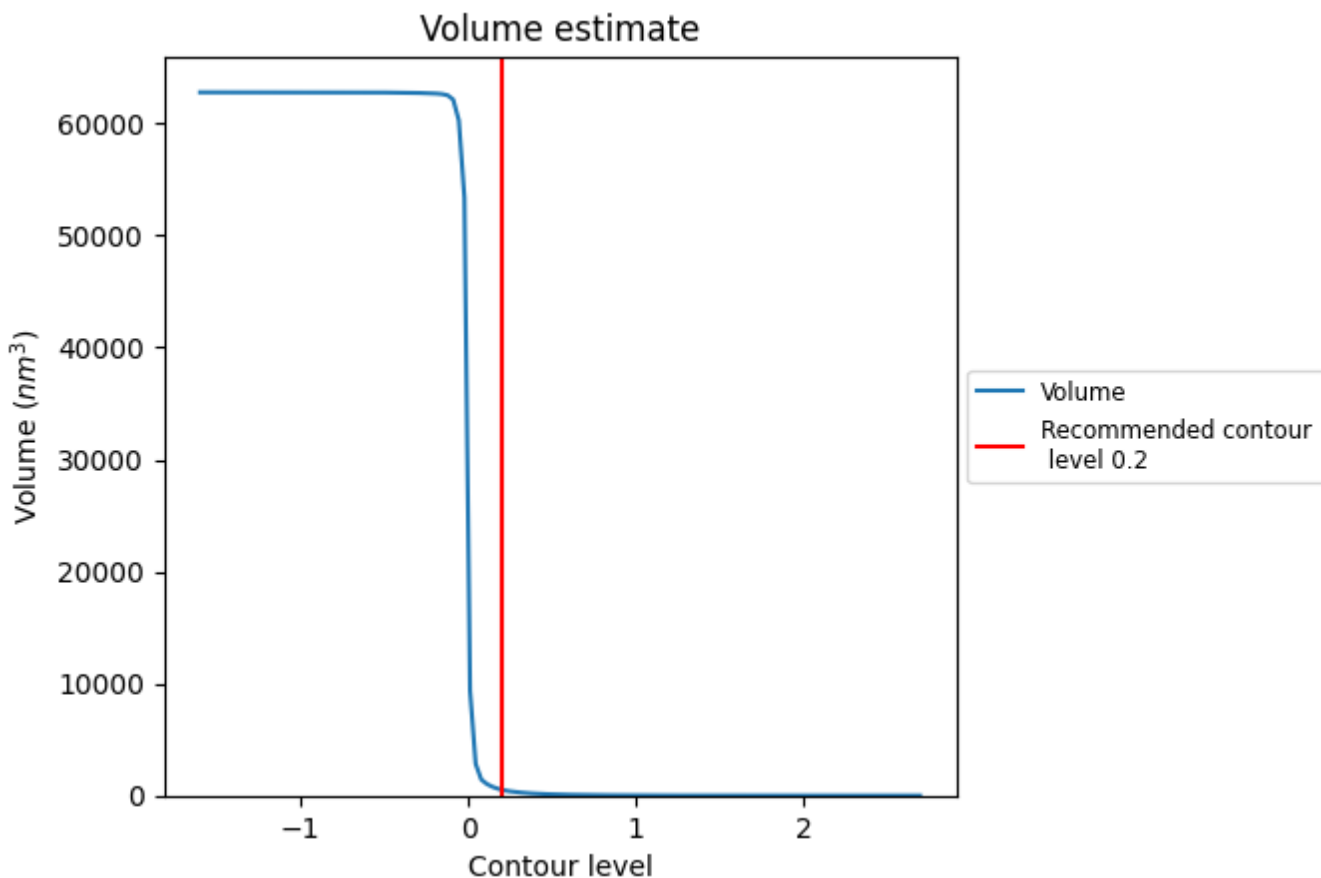
This section contains the results of statistical analysis of the map.

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.

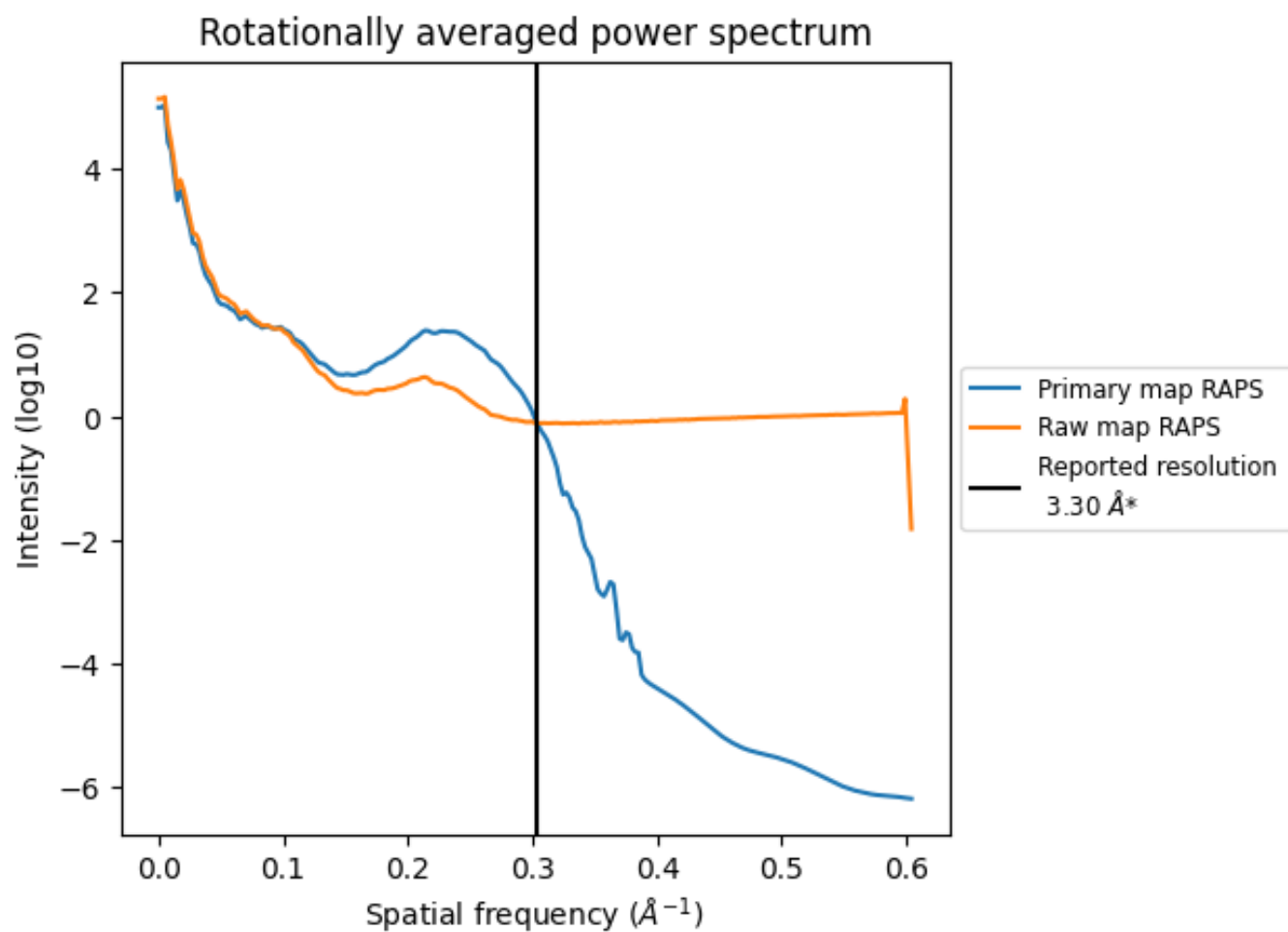
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 527 nm³; this corresponds to an approximate mass of 476 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](#)

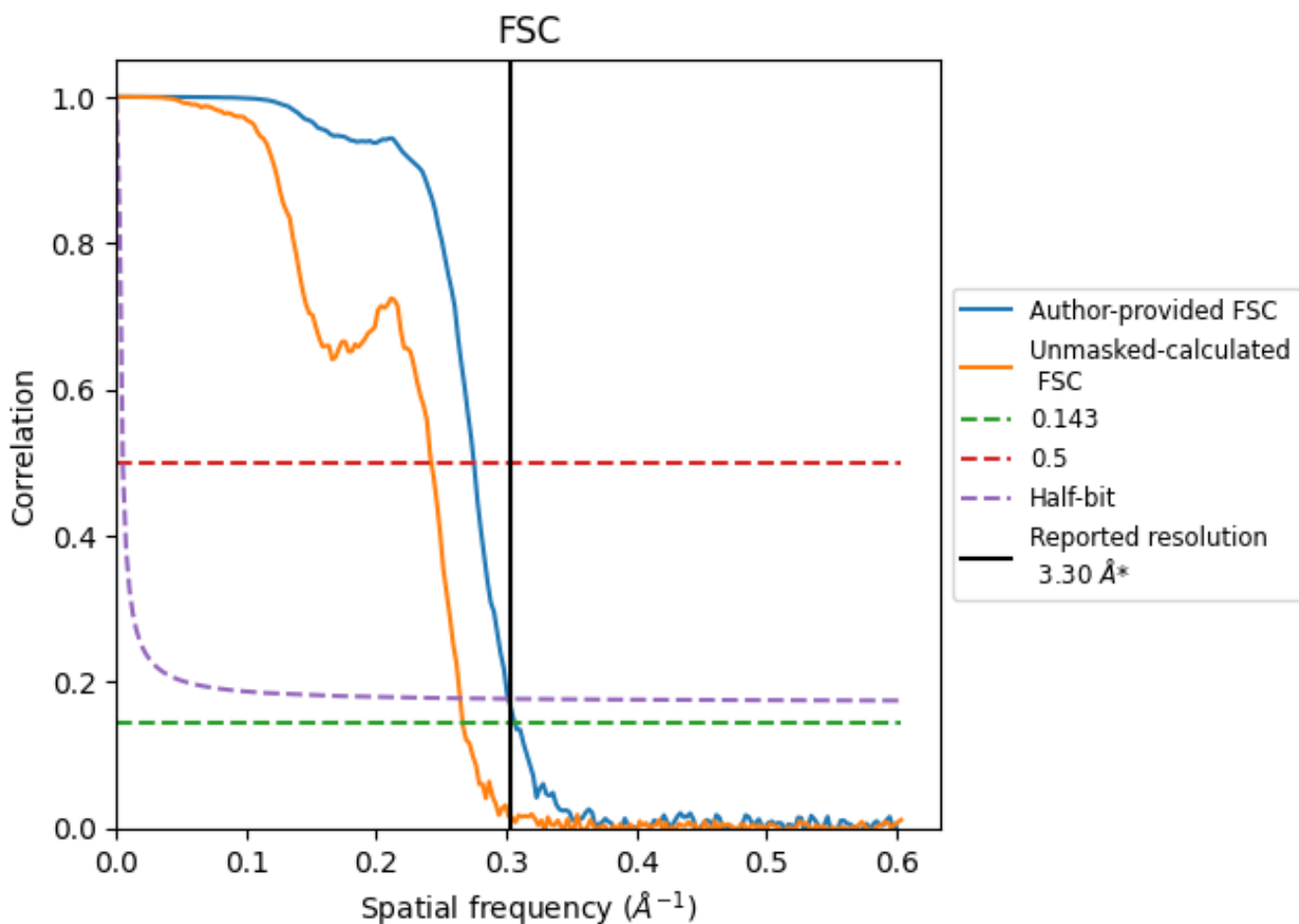


*Reported resolution corresponds to spatial frequency of 0.303 Å⁻¹

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 0.303 Å⁻¹

8.2 Resolution estimates [i](#)

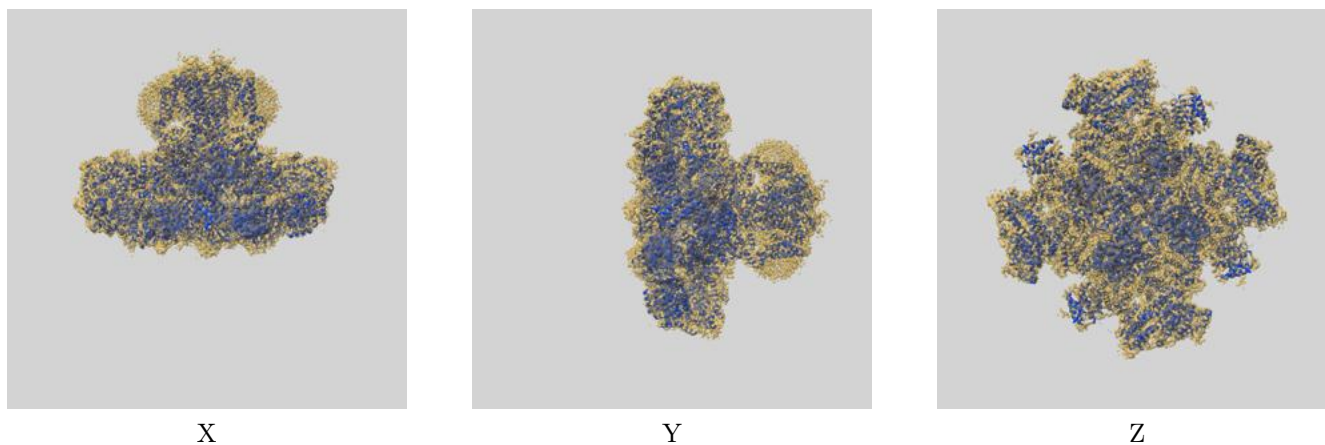
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.30	-	-
Author-provided FSC curve	3.26	3.64	3.32
Unmasked-calculated*	3.75	4.13	3.78

*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 3.75 differs from the reported value 3.3 by more than 10 %

9 Map-model fit [i](#)

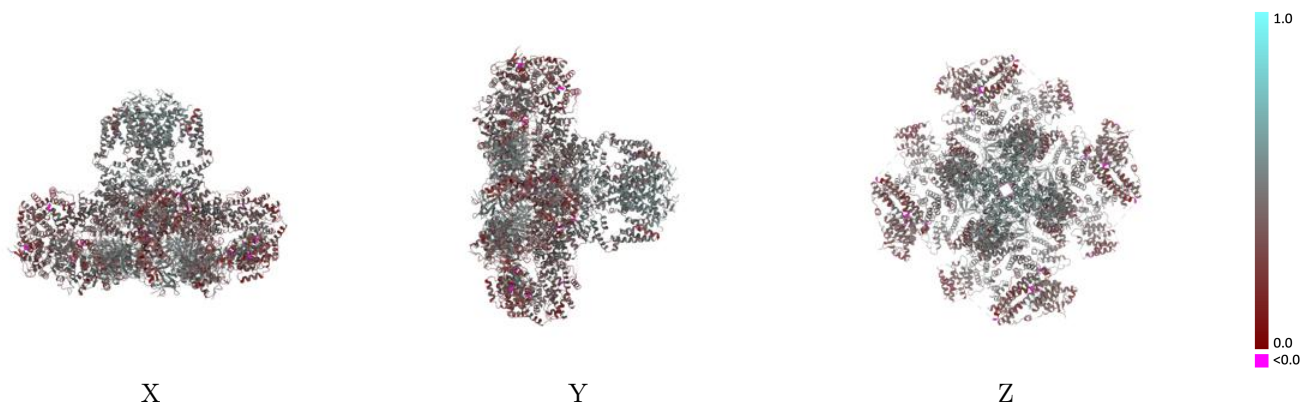
This section contains information regarding the fit between EMDB map EMD-25668 and PDB model 7T3Q. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay [i](#)



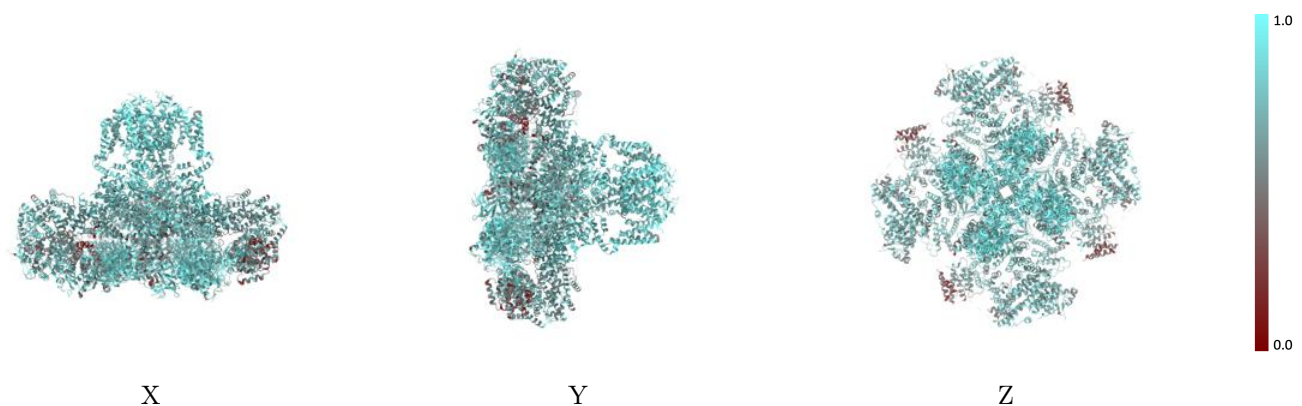
The images above show the 3D surface view of the map at the recommended contour level 0.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



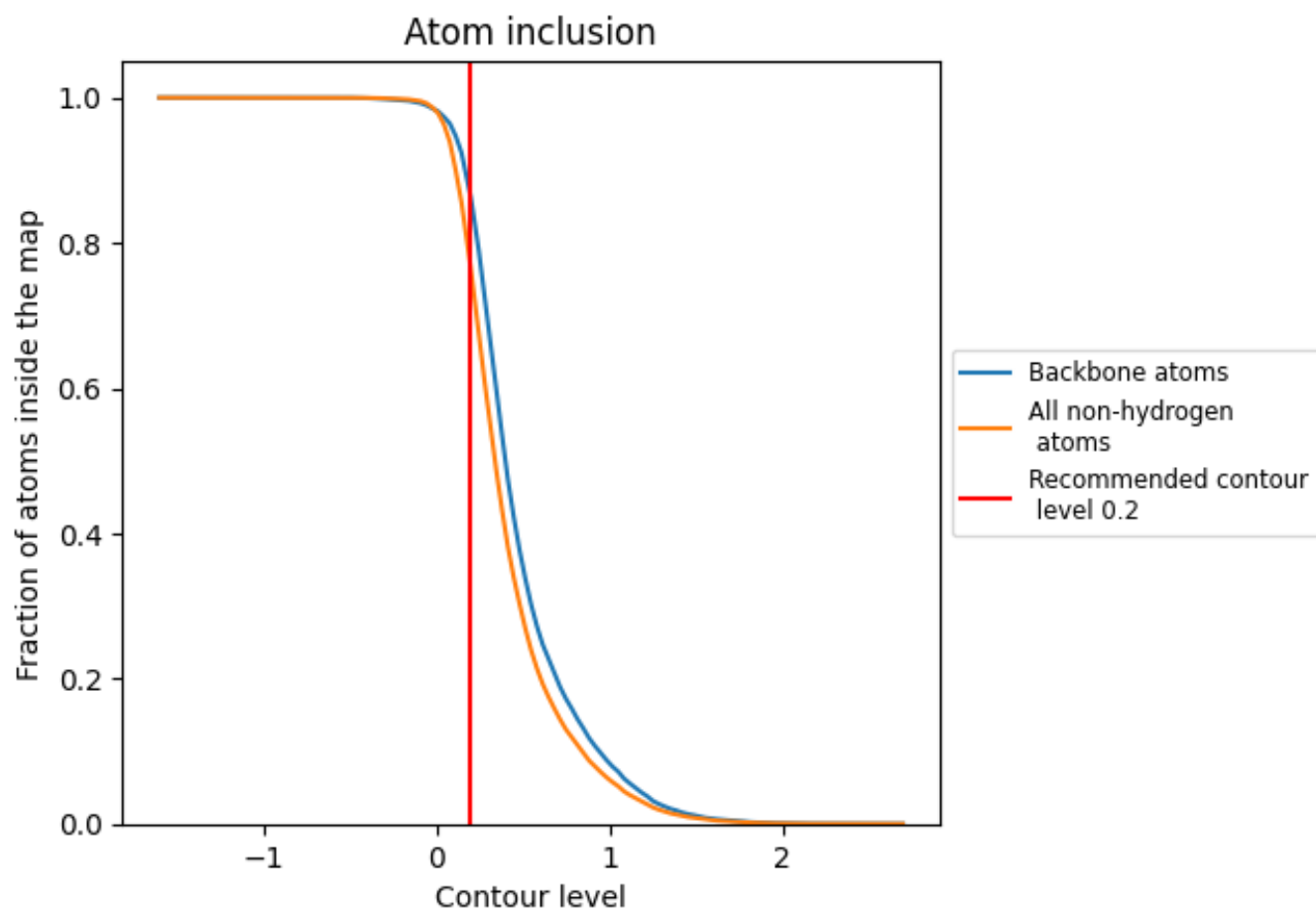
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.2).











9.4 Atom inclusion [i](#)



At the recommended contour level, 86% of all backbone atoms, 77% 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 (0.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7660	 0.4190
A	 0.7650	 0.4200
B	 0.7674	 0.4200
C	 0.7659	 0.4190
D	 0.7657	 0.4190

