



wwPDB EM Validation Summary Report ⓘ

Mar 6, 2026 – 01:38 PM UTC

PDB ID : 7O7P / pdb_00007o7p
EMDB ID : EMD-12752
Title : (h-alpha2M)4 activated state
Authors : Luque, D.; Goulas, T.; Mata, C.P.; Mendes, S.R.; Gomis-Ruth, F.X.; Caston, J.R.
Deposited on : 2021-04-13
Resolution : 4.60 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:

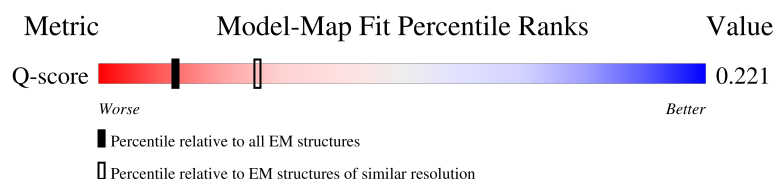
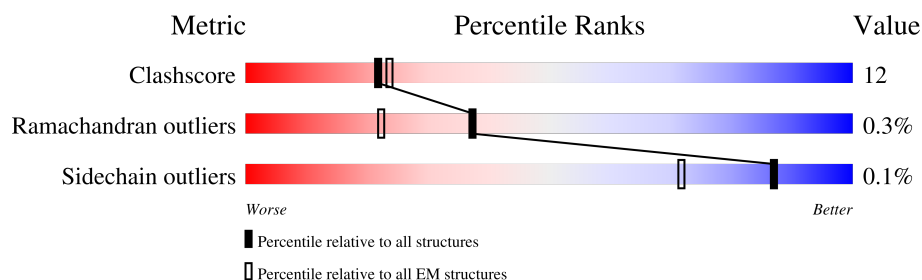
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 4.60 Å.

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



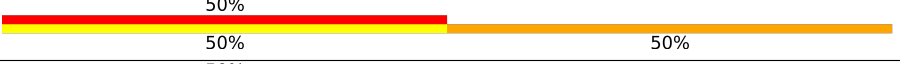
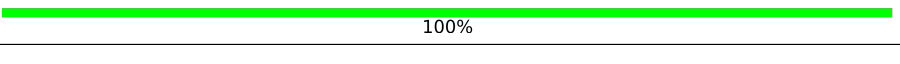
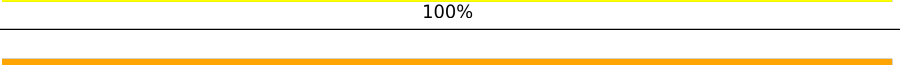
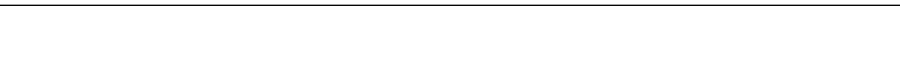
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	2407 (4.10 - 5.10)

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	1474	
1	B	1474	
1	C	1474	
1	D	1474	

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Mol	Chain	Length	Quality of chain
2	E	2	
2	F	2	
2	G	2	
2	H	2	
2	I	2	
2	J	2	
2	K	2	
2	L	2	

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
2	NAG	L	1	X	-	X	-

2 Entry composition

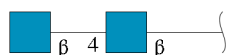
There are 3 unique types of molecules in this entry. The entry contains 40295 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Alpha-2-macroglobulin.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1277	Total	C	N	O	S	0	0
			9967	6336	1673	1915	43		
1	B	1275	Total	C	N	O	S	0	0
			9944	6322	1670	1909	43		
1	C	1274	Total	C	N	O	S	0	0
			9940	6320	1669	1908	43		
1	D	1274	Total	C	N	O	S	0	0
			9940	6320	1669	1908	43		

- Molecule 2 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
2	E	2	Total	C	N	O	0	0
			28	16	2	10		
2	F	2	Total	C	N	O	0	0
			28	16	2	10		
2	G	2	Total	C	N	O	0	0
			28	16	2	10		
2	H	2	Total	C	N	O	0	0
			28	16	2	10		
2	I	2	Total	C	N	O	0	0
			28	16	2	10		
2	J	2	Total	C	N	O	0	0
			28	16	2	10		
2	K	2	Total	C	N	O	0	0
			28	16	2	10		
2	L	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).

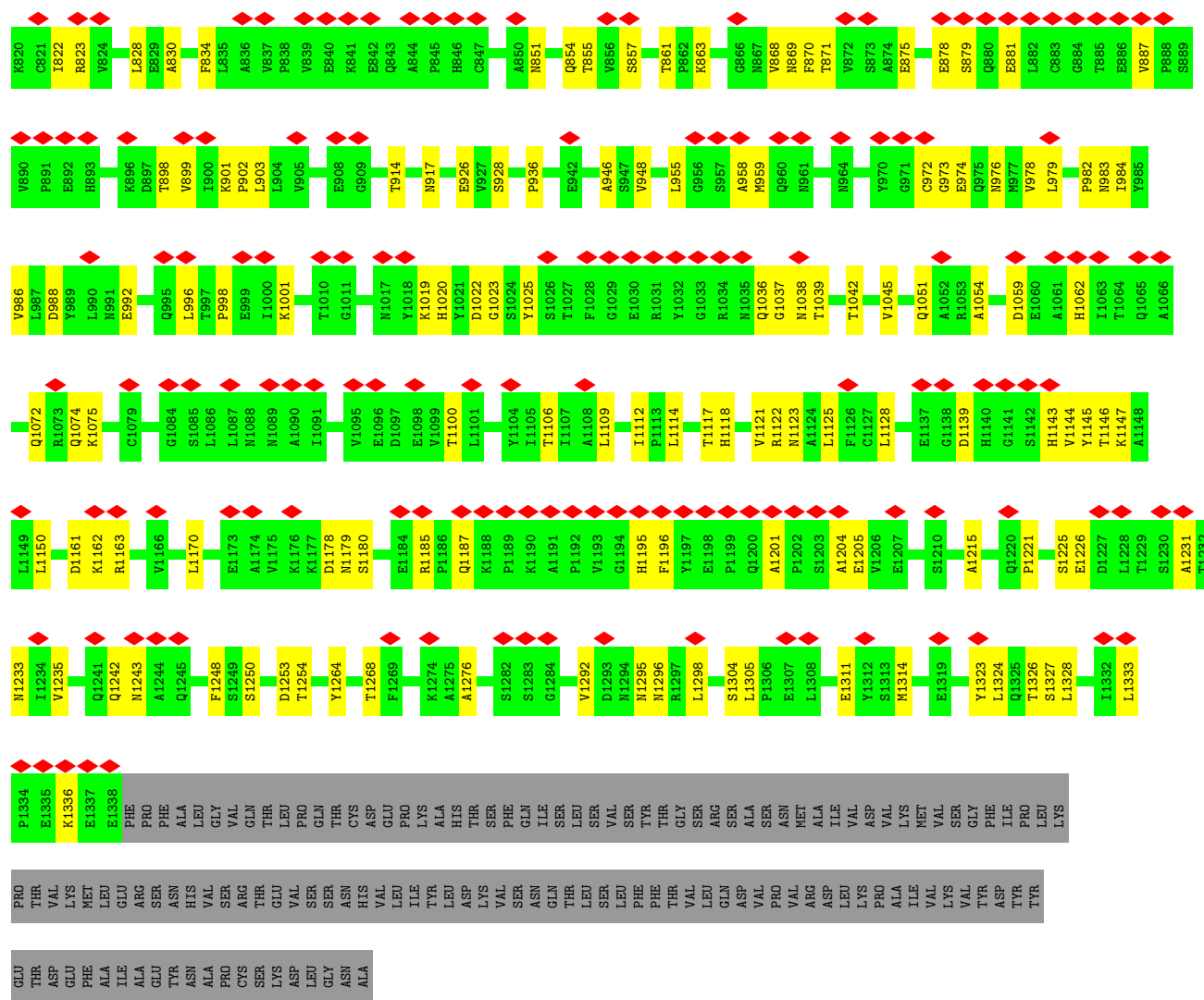


Mol	Chain	Residues	Atoms				AltConf
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	

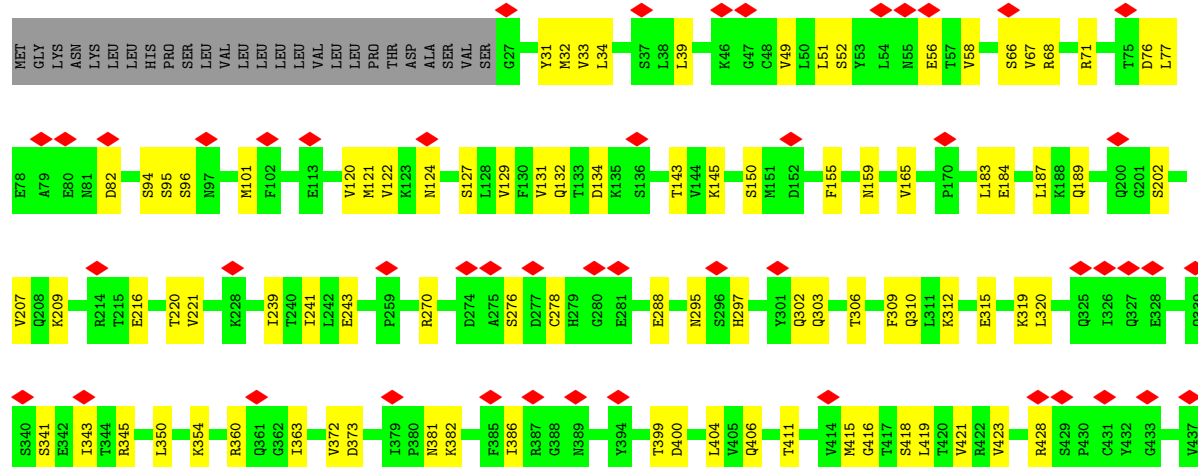
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Mol	Chain	Residues	Atoms				AltConf
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	D	1	Total	C	N	O	0
			14	8	1	5	
3	D	1	Total	C	N	O	0
			14	8	1	5	
3	D	1	Total	C	N	O	0
			14	8	1	5	
3	D	1	Total	C	N	O	0
			14	8	1	5	



• Molecule 1: Alpha-2-macroglobulin





Q1072	R1073	Q1074	K1075	D1076	N1077	G1078	C1079	G1084	S1085	L1086	L1087	N1088	M1089	A1090	I1091	V1095	E1096	D1097	E1098	V1099	T1100	L1101	I1104	I1105	T1106	I1107	A1108	L1109	I1112	P1113	L1114	T1117	H1118	V1121	R1122	N1123	A1124	L1125	F1126	C1127	L1128	E1137	G1138	D1139	H1140	G1141	S1142	H1143	V1144	T1145	K1147			
L879	P882	N883	V886	L890	N891	Q895	L896	T897	P898	E899	I1000	K1001	T1010	G1011	M1017	Y1018	V1021	G1023	S1024	Y1025	S1026	T1027	F1028	G1029	E1030	R1031	Y1032	G1033	R1034	N1035	Q1036	G1037	N1038	T1039	T1042	V1045	A1052	D1059	E1060	A1061	H1062	T1063	V1064	T1065	A1066									
R823	V824	A830	F834	L835	A836	V837	P838	E839	K841	E842	Q843	A844	P845	H846	C847	A850	N851	Q854	T855	L856	S857	T861	P862	K863	C866	N867	V868	N869	T871	V872	S873	A874	E875	E878	S879	Q880	E881	L882	C883	G884	T885	E886	V887	P888	S889	P891	E892	H893						
K896	D897	T898	V899	I900	K901	P902	L903	L904	V905	E908	G909	T914	N917	S918	E919	L920	E926	V927	S928	L931	S932	L933	P936	P937	N938	E942	A946	S947	V948	L955	G956	S957	A958	M959	Q960	N961	T962	Q963	N964	Y970	G971	C972	G973	E974	Q975	N976	M977	V978						
P882	N883	V886	L890	N891	Q895	L896	T897	P898	E899	I1000	K1001	T1010	G1011	M1017	Y1018	V1021	G1023	S1024	Y1025	S1026	T1027	F1028	G1029	E1030	R1031	Y1032	G1033	R1034	N1035	Q1036	G1037	N1038	T1039	T1042	V1045	A1052	D1059	E1060	A1061	H1062	T1063	V1064	T1065	A1066										
D76	L77	E78	A79	E80	N81	D82	V83	L84	A88	V91	S94	S95	S96	N97	F102	Q112	E113	F114	K115	K116	R117	T118	T119	V120	M121	V122	K123	N124	E125	D126	S127	L128	V129	F130	V131	Q132	T133	D134	K135	S136	I137	D274	A275	S276	D277	C278	H279	G280	E281	S150	M151	H156	P157	L158
MET	GLY	LYS	ASN	LYS	LEU	LEU	HIS	PRO	SER	LEU	VAL	LEU	LEU	VAL	LEU	PRO	THR	ASP	ALA	SER	VAL	SER	GLY	K28	P29	Q30	V33	L34	S37	L38	L39	H40	T41	E42	T43	K46	G47	C48	V49	L50	L51	S52	Y53	L54	N55	E56	S56	V67	R68	F74	T76			




WORLD WIDE
PDB
PROTEIN DATA BANK

Chain G:  100%

MAG1
MAG2

- Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain H:  50% 50%

MAG1
MAG2

- Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain I:  50% 100%


MAG1
MAG2

- Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain J:  100%

MAG1
MAG2

- Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain K:  100%

MAG1
MAG2

- Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain L:  50% 50%

MAG1
MAG2

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	118333	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	39.6	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	3250	Depositor
Magnification	47775	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.070	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.0135	Depositor
Map size (\AA)	335.04, 335.04, 335.04	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.047, 1.047, 1.047	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: NAG

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	0.43	0/10188	0.65	2/13841 (0.0%)
1	B	0.45	0/10165	0.66	4/13811 (0.0%)
1	C	0.43	0/10161	0.65	3/13806 (0.0%)
1	D	0.45	0/10161	0.66	3/13806 (0.0%)
All	All	0.44	0/40675	0.65	12/55264 (0.0%)

There are no bond length outliers.

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

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	821	CYS	CA-CB-SG	7.11	130.74	114.40
1	D	821	CYS	CA-CB-SG	7.11	130.74	114.40
1	A	1112	ILE	N-CA-C	-6.03	103.41	109.02
1	C	1112	ILE	N-CA-C	-6.03	103.41	109.02
1	A	235	VAL	N-CA-C	-5.79	102.47	109.01

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	9967	0	9865	231	0
1	B	9944	0	9843	234	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	9940	0	9840	231	0
1	D	9940	0	9840	216	0
2	E	28	0	25	1	0
2	F	28	0	25	4	0
2	G	28	0	25	0	0
2	H	28	0	25	8	0
2	I	28	0	25	2	0
2	J	28	0	25	5	0
2	K	28	0	25	0	0
2	L	28	0	25	11	0
3	A	70	0	65	3	0
3	B	70	0	65	1	0
3	C	70	0	65	4	0
3	D	70	0	65	1	0
All	All	40295	0	39848	927	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 12.

The worst 5 of 927 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:A:730:THR:N	1:A:898:THR:HG1	1.45	1.14
1:C:730:THR:N	1:C:898:THR:HG1	1.46	1.14
1:B:769:ALA:HB3	1:B:781:SER:HB3	1.40	1.03
2:L:2:NAG:H83	2:L:2:NAG:H3	1.42	1.02
1:D:769:ALA:HB3	1:D:781:SER:HB3	1.40	1.01

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	1273/1474 (86%)	1104 (87%)	163 (13%)	6 (0%)	24	63
1	B	1271/1474 (86%)	1109 (87%)	160 (13%)	2 (0%)	43	77
1	C	1270/1474 (86%)	1104 (87%)	159 (12%)	7 (1%)	21	58
1	D	1270/1474 (86%)	1108 (87%)	161 (13%)	1 (0%)	48	83
All	All	5084/5896 (86%)	4425 (87%)	643 (13%)	16 (0%)	37	71

5 of 16 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	53	TYR
1	B	1333	LEU
1	C	53	TYR
1	A	1204	ALA
1	C	1204	ALA

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1115/1290 (86%)	1115 (100%)	0	100	100
1	B	1112/1290 (86%)	1111 (100%)	1 (0%)	88	88
1	C	1112/1290 (86%)	1108 (100%)	4 (0%)	84	82
1	D	1112/1290 (86%)	1111 (100%)	1 (0%)	88	88
All	All	4451/5160 (86%)	4445 (100%)	6 (0%)	87	88

5 of 6 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	991	ASN
1	C	1335	GLU
1	D	991	ASN
1	C	869	ASN
1	B	991	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 39 such sidechains are listed below:

Mol	Chain	Res	Type
1	D	200	GLN
1	D	1020	HIS
1	D	279	HIS
1	D	644	ASN
1	D	1072	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

16 monosaccharides 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	$\# Z > 2$
2	NAG	E	1	2,1	14,14,15	0.39	0	17,19,21	1.14	1 (5%)
2	NAG	E	2	2	14,14,15	0.28	0	17,19,21	0.59	0
2	NAG	F	1	2,1	14,14,15	0.29	0	17,19,21	0.43	0
2	NAG	F	2	2	14,14,15	0.30	0	17,19,21	0.45	0
2	NAG	G	1	2,1	14,14,15	0.25	0	17,19,21	0.56	0
2	NAG	G	2	2	14,14,15	0.30	0	17,19,21	0.48	0
2	NAG	H	1	2,1	14,14,15	0.41	0	17,19,21	1.19	2 (11%)
2	NAG	H	2	2	14,14,15	0.29	0	17,19,21	0.51	0
2	NAG	I	1	2,1	14,14,15	0.31	0	17,19,21	0.75	0
2	NAG	I	2	2	14,14,15	0.29	0	17,19,21	0.49	0
2	NAG	J	1	2,1	14,14,15	0.39	0	17,19,21	1.55	3 (17%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	NAG	J	2	2	14,14,15	0.53	0	17,19,21	1.38	2 (11%)
2	NAG	K	1	2,1	14,14,15	0.26	0	17,19,21	0.49	0
2	NAG	K	2	2	14,14,15	0.29	0	17,19,21	0.49	0
2	NAG	L	1	2,1	14,14,15	0.30	0	17,19,21	0.84	1 (5%)
2	NAG	L	2	2	14,14,15	0.33	0	17,19,21	0.55	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
2	NAG	E	1	2,1	-	3/6/23/26	0/1/1/1
2	NAG	E	2	2	-	2/6/23/26	0/1/1/1
2	NAG	F	1	2,1	-	4/6/23/26	0/1/1/1
2	NAG	F	2	2	-	3/6/23/26	0/1/1/1
2	NAG	G	1	2,1	-	3/6/23/26	0/1/1/1
2	NAG	G	2	2	-	4/6/23/26	0/1/1/1
2	NAG	H	1	2,1	-	4/6/23/26	0/1/1/1
2	NAG	H	2	2	-	5/6/23/26	0/1/1/1
2	NAG	I	1	2,1	-	4/6/23/26	0/1/1/1
2	NAG	I	2	2	-	3/6/23/26	0/1/1/1
2	NAG	J	1	2,1	-	4/6/23/26	0/1/1/1
2	NAG	J	2	2	-	3/6/23/26	0/1/1/1
2	NAG	K	1	2,1	-	4/6/23/26	0/1/1/1
2	NAG	K	2	2	-	4/6/23/26	0/1/1/1
2	NAG	L	1	2,1	1/1/5/7	4/6/23/26	0/1/1/1
2	NAG	L	2	2	-	5/6/23/26	0/1/1/1

There are no bond length outliers.

The worst 5 of 9 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	J	2	NAG	O5-C1-C2	3.74	117.08	111.29
2	J	1	NAG	C4-C3-C2	-3.71	105.59	111.02
2	H	1	NAG	C4-C3-C2	3.15	115.64	111.02
2	J	2	NAG	C3-C4-C5	-2.73	105.29	110.23
2	J	1	NAG	O5-C1-C2	2.61	115.33	111.29

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
2	L	1	NAG	C1

5 of 59 torsion outliers are listed below:

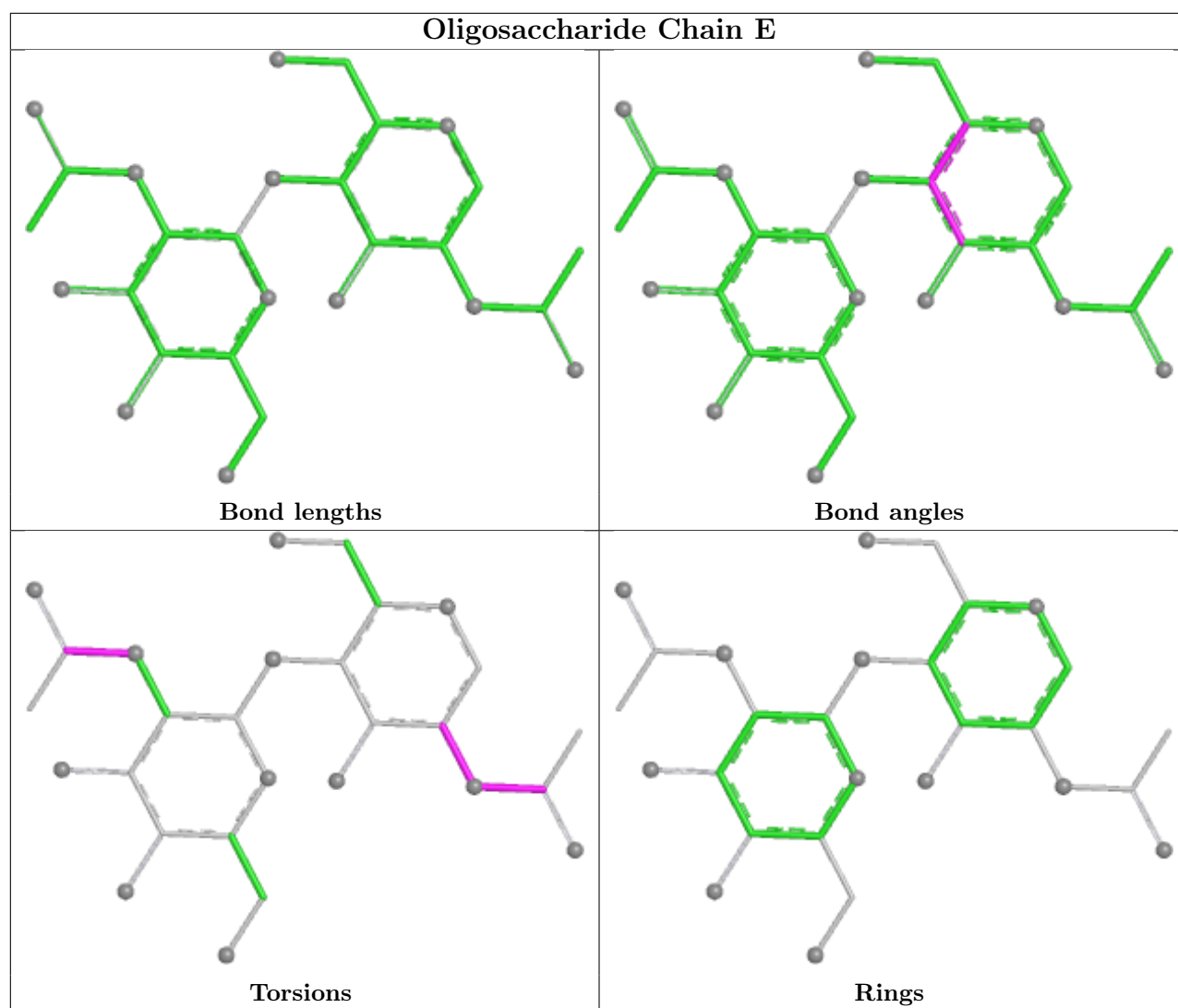
Mol	Chain	Res	Type	Atoms
2	E	1	NAG	C1-C2-N2-C7
2	E	2	NAG	C8-C7-N2-C2
2	E	2	NAG	O7-C7-N2-C2
2	F	1	NAG	C8-C7-N2-C2
2	F	1	NAG	O7-C7-N2-C2

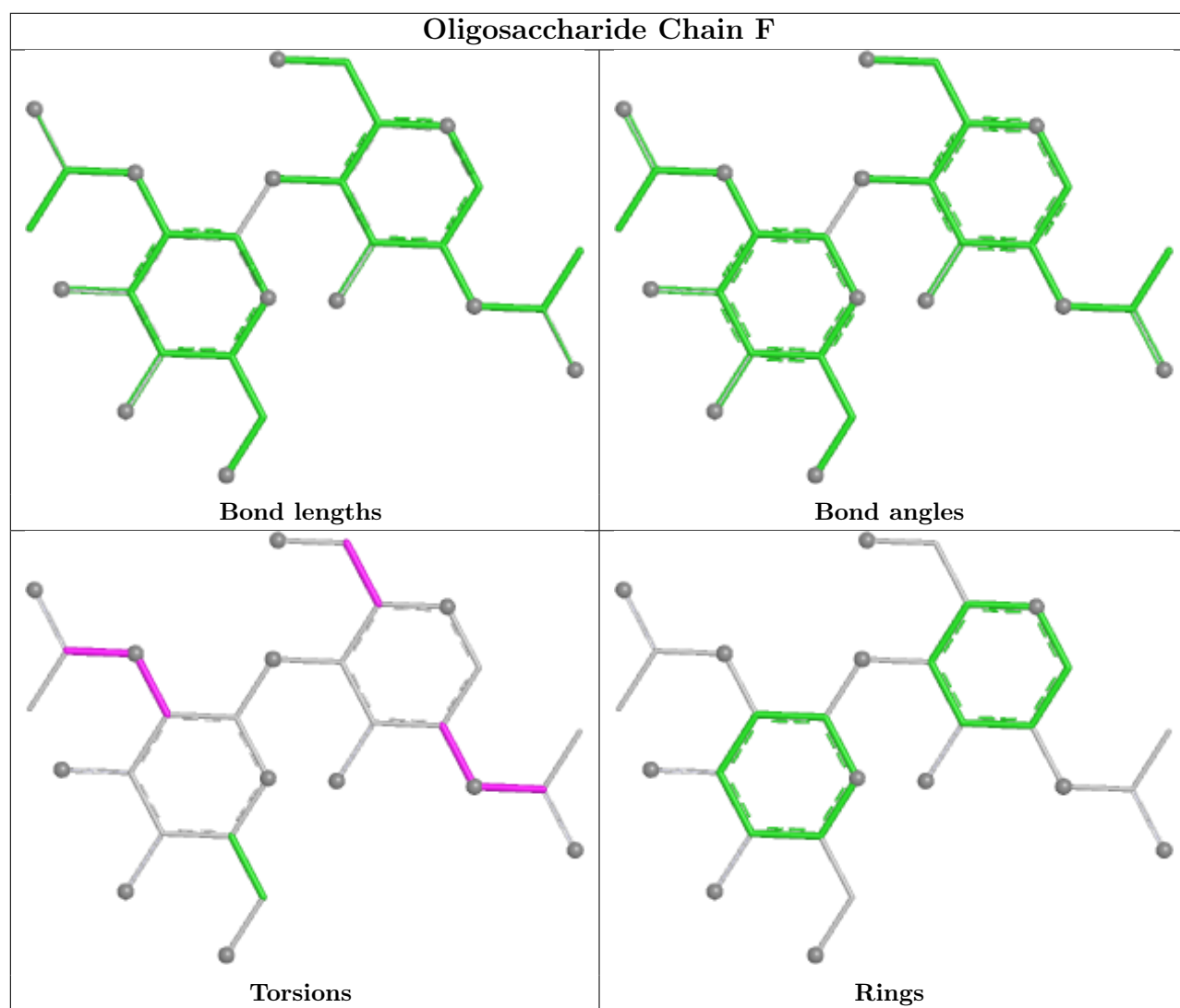
There are no ring outliers.

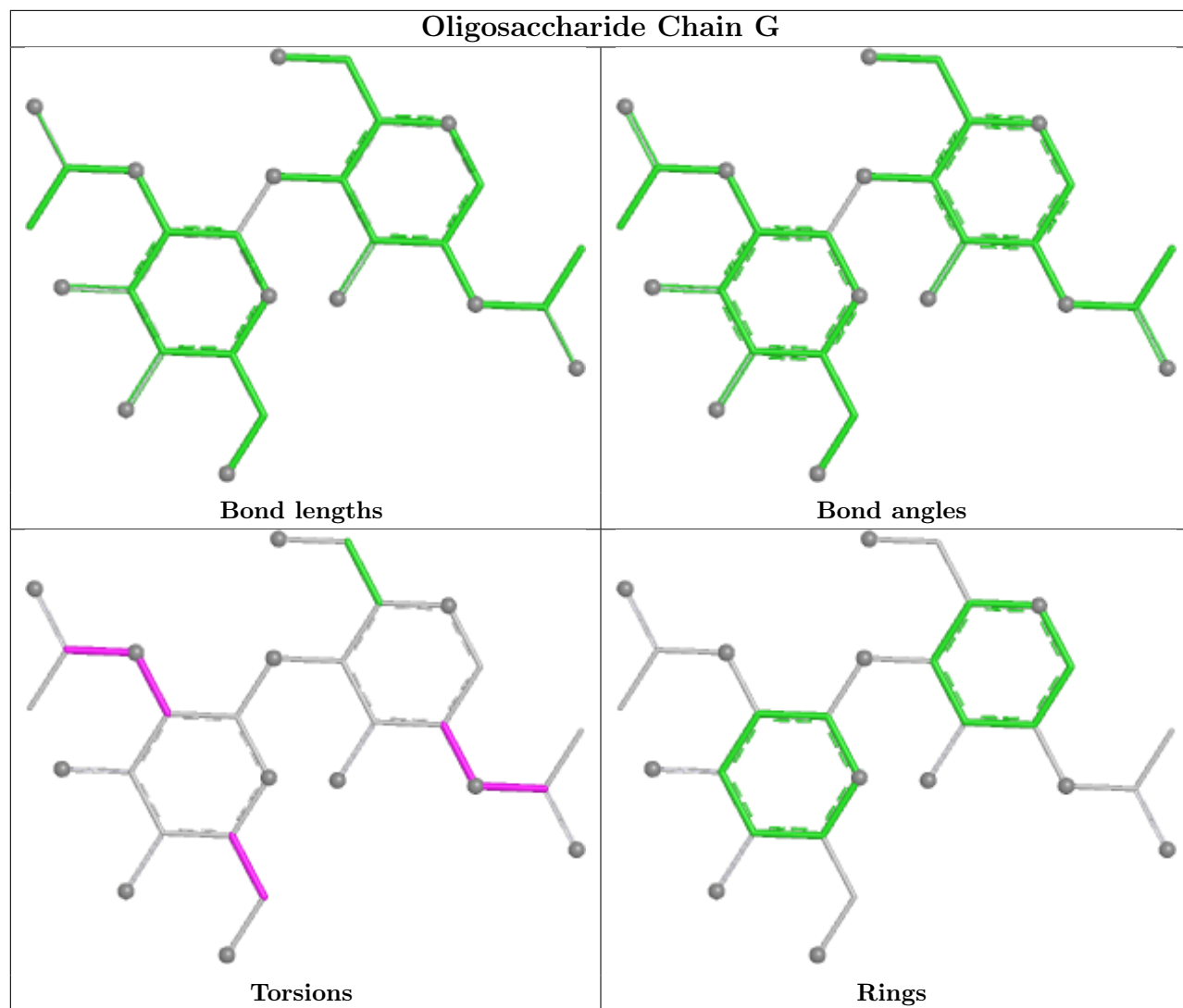
11 monomers are involved in 31 short contacts:

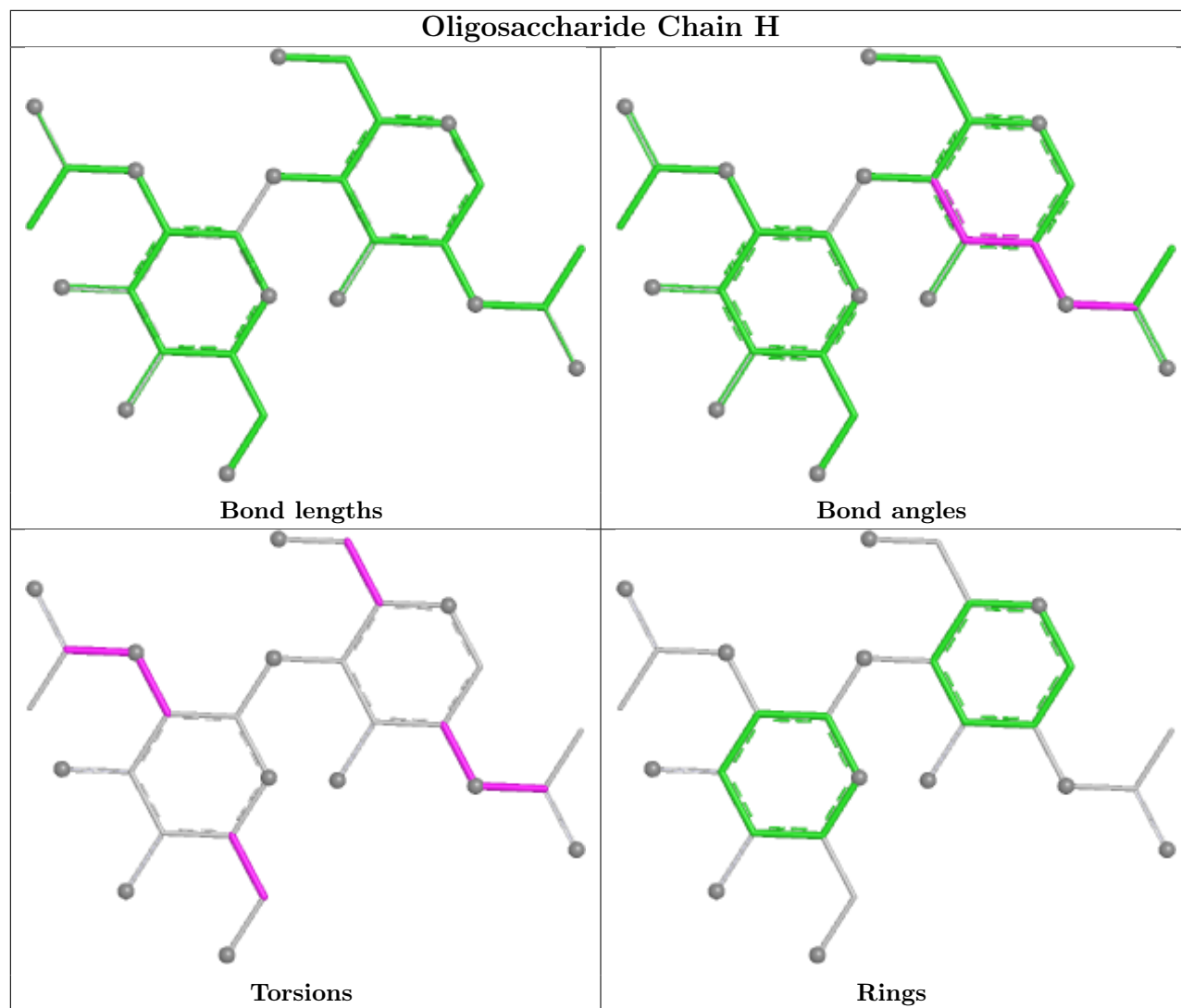
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	E	1	NAG	1	0
2	H	1	NAG	4	0
2	E	2	NAG	1	0
2	I	2	NAG	1	0
2	J	1	NAG	4	0
2	H	2	NAG	4	0
2	J	2	NAG	5	0
2	L	1	NAG	8	0
2	L	2	NAG	4	0
2	I	1	NAG	2	0
2	F	2	NAG	4	0

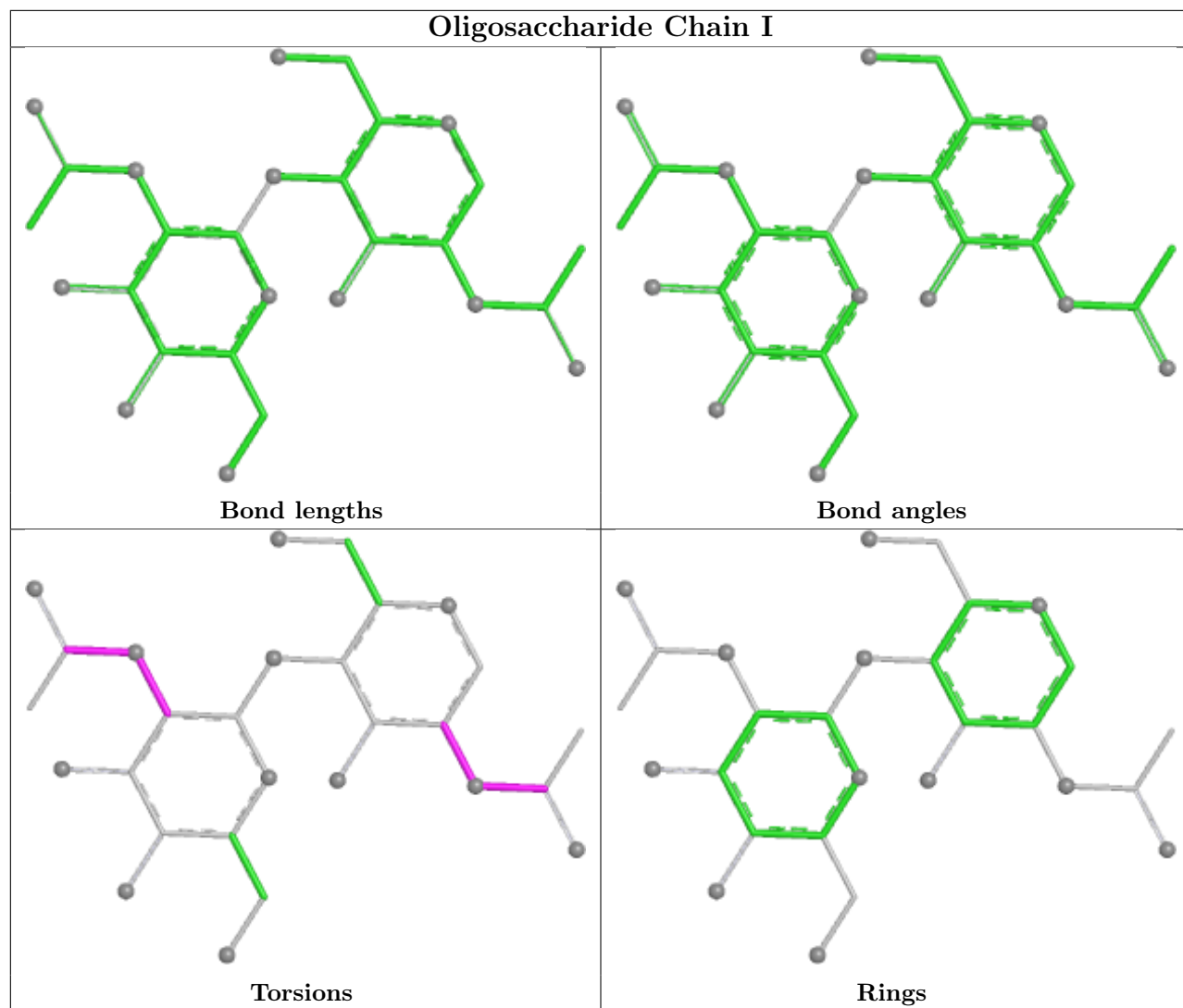
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

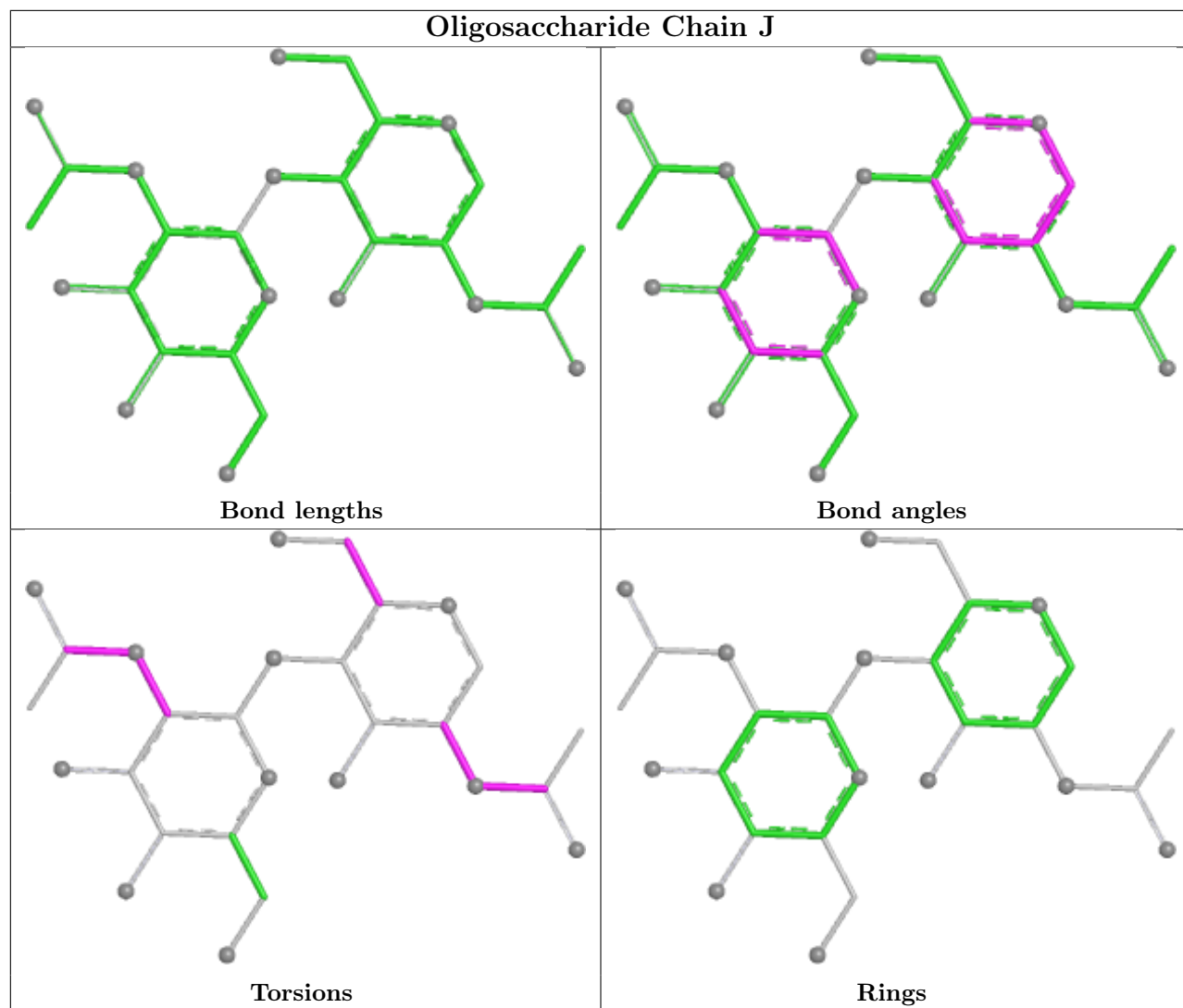


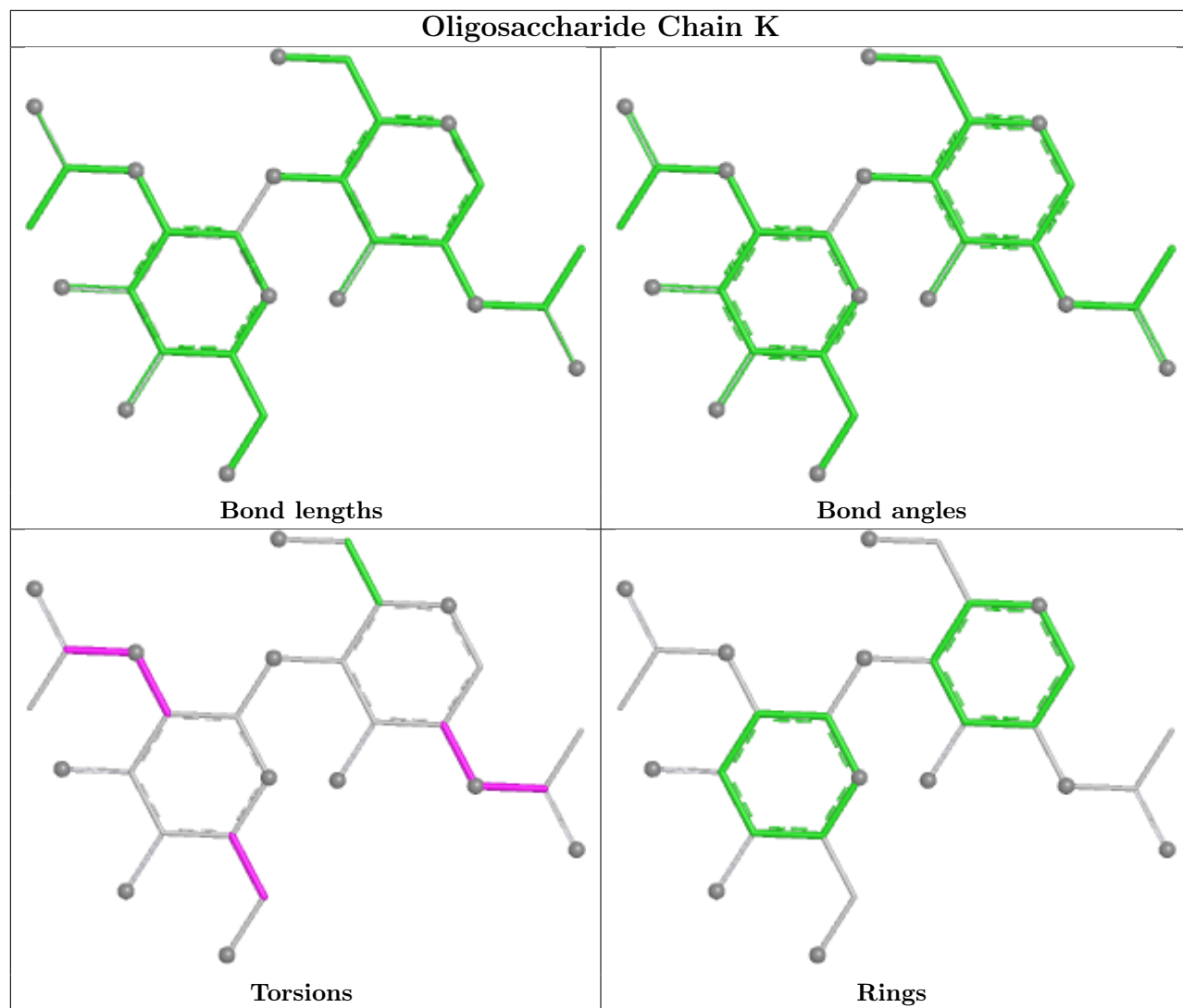


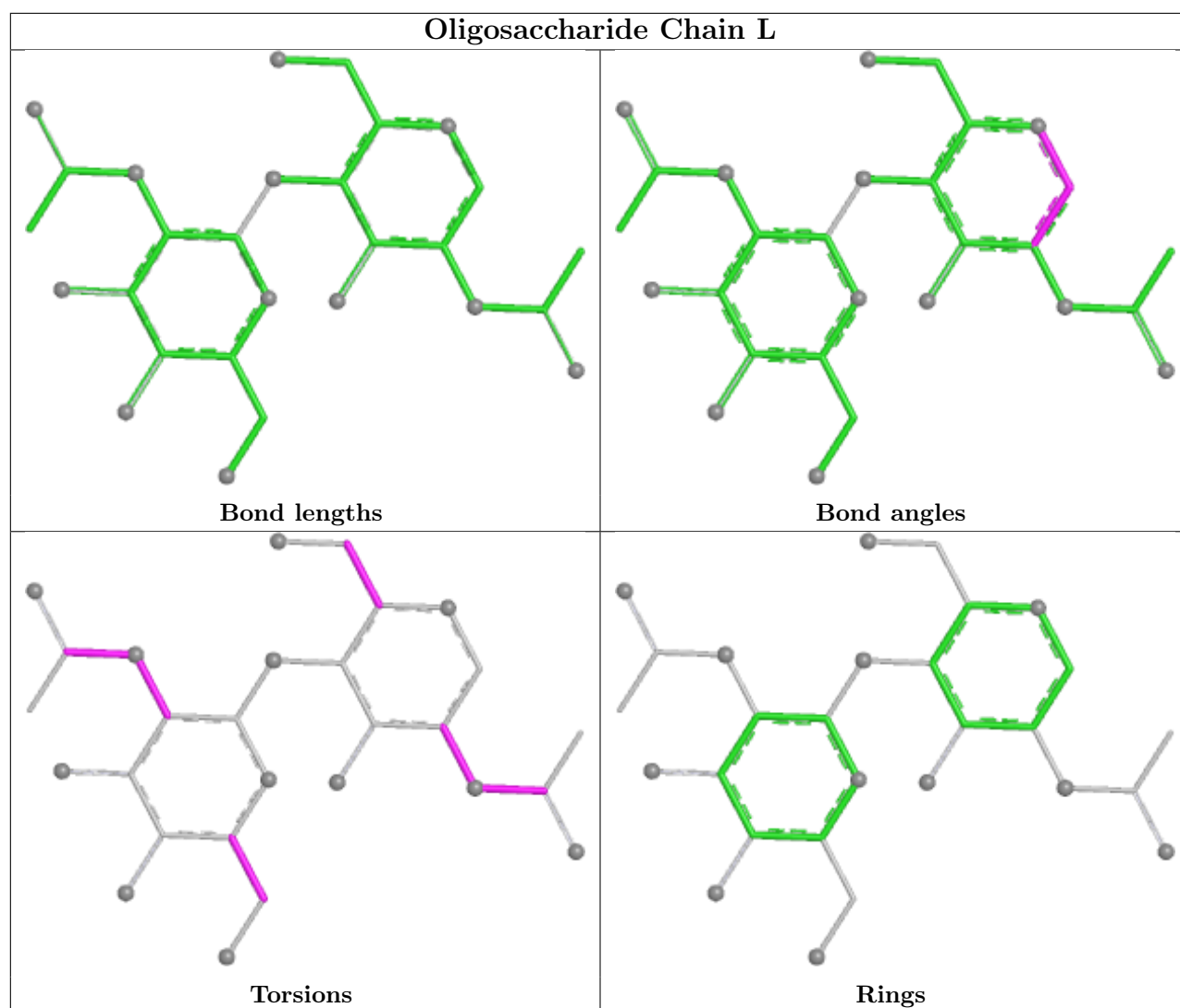












5.6 Ligand geometry [i](#)

20 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	NAG	C	2001	1	14,14,15	0.38	0	17,19,21	0.65	0
3	NAG	A	2002	1	14,14,15	1.98	4 (28%)	17,19,21	1.07	1 (5%)
3	NAG	B	2001	1	14,14,15	2.12	4 (28%)	17,19,21	2.08	5 (29%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	NAG	D	2001	1	14,14,15	2.12	4 (28%)	17,19,21	2.08	5 (29%)
3	NAG	C	2004	1	14,14,15	1.87	4 (28%)	17,19,21	1.51	3 (17%)
3	NAG	B	2003	1	14,14,15	1.84	6 (42%)	17,19,21	1.10	1 (5%)
3	NAG	C	2005	1	14,14,15	1.76	3 (21%)	17,19,21	1.55	4 (23%)
3	NAG	D	2005	1	14,14,15	1.93	5 (35%)	17,19,21	1.47	2 (11%)
3	NAG	A	2005	1	14,14,15	1.76	3 (21%)	17,19,21	1.55	4 (23%)
3	NAG	D	2002	1	14,14,15	1.94	3 (21%)	17,19,21	1.07	1 (5%)
3	NAG	D	2004	1	14,14,15	1.80	3 (21%)	17,19,21	1.35	2 (11%)
3	NAG	B	2004	1	14,14,15	1.80	3 (21%)	17,19,21	1.35	2 (11%)
3	NAG	C	2002	1	14,14,15	1.98	4 (28%)	17,19,21	1.07	1 (5%)
3	NAG	B	2002	1	14,14,15	1.94	3 (21%)	17,19,21	1.07	1 (5%)
3	NAG	A	2004	1	14,14,15	1.87	4 (28%)	17,19,21	1.51	3 (17%)
3	NAG	A	2001	1	14,14,15	1.89	3 (21%)	17,19,21	1.11	2 (11%)
3	NAG	D	2003	1	14,14,15	1.84	6 (42%)	17,19,21	1.10	1 (5%)
3	NAG	B	2005	1	14,14,15	1.93	5 (35%)	17,19,21	1.47	2 (11%)
3	NAG	C	2003	1	14,14,15	1.95	4 (28%)	17,19,21	2.00	5 (29%)
3	NAG	A	2003	1	14,14,15	1.95	4 (28%)	17,19,21	2.00	5 (29%)

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	NAG	C	2001	1	-	4/6/23/26	0/1/1/1
3	NAG	A	2002	1	-	3/6/23/26	0/1/1/1
3	NAG	B	2001	1	-	4/6/23/26	0/1/1/1
3	NAG	D	2001	1	-	4/6/23/26	0/1/1/1
3	NAG	C	2004	1	-	2/6/23/26	0/1/1/1
3	NAG	B	2003	1	-	2/6/23/26	0/1/1/1
3	NAG	C	2005	1	-	3/6/23/26	0/1/1/1
3	NAG	D	2005	1	-	3/6/23/26	0/1/1/1
3	NAG	A	2005	1	-	3/6/23/26	0/1/1/1
3	NAG	D	2002	1	-	3/6/23/26	0/1/1/1
3	NAG	D	2004	1	-	1/6/23/26	0/1/1/1
3	NAG	B	2004	1	-	1/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	C	2002	1	-	3/6/23/26	0/1/1/1
3	NAG	B	2002	1	-	3/6/23/26	0/1/1/1
3	NAG	A	2004	1	-	2/6/23/26	0/1/1/1
3	NAG	A	2001	1	-	4/6/23/26	0/1/1/1
3	NAG	D	2003	1	-	2/6/23/26	0/1/1/1
3	NAG	B	2005	1	-	3/6/23/26	0/1/1/1
3	NAG	C	2003	1	-	5/6/23/26	0/1/1/1
3	NAG	A	2003	1	-	5/6/23/26	0/1/1/1

The worst 5 of 75 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	2001	NAG	O5-C1	4.40	1.51	1.43
3	D	2001	NAG	O5-C1	4.40	1.51	1.43
3	A	2002	NAG	O5-C1	4.39	1.51	1.43
3	C	2002	NAG	O5-C1	4.39	1.51	1.43
3	B	2002	NAG	O5-C1	4.20	1.50	1.43

The worst 5 of 50 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	2003	NAG	C8-C7-N2	5.72	125.60	116.12
3	B	2001	NAG	C8-C7-N2	5.72	125.60	116.12
3	C	2003	NAG	C8-C7-N2	5.72	125.60	116.12
3	D	2001	NAG	C8-C7-N2	5.72	125.60	116.12
3	B	2005	NAG	C8-C7-N2	3.82	122.45	116.12

There are no chirality outliers.

5 of 60 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	2001	NAG	C4-C5-C6-O6
3	A	2001	NAG	O5-C5-C6-O6
3	C	2001	NAG	C8-C7-N2-C2
3	C	2001	NAG	O7-C7-N2-C2
3	A	2003	NAG	C8-C7-N2-C2

There are no ring outliers.

9 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	2001	NAG	1	0
3	A	2002	NAG	1	0
3	C	2004	NAG	1	0
3	C	2005	NAG	1	0
3	A	2005	NAG	1	0
3	D	2004	NAG	1	0
3	B	2004	NAG	1	0
3	C	2002	NAG	1	0
3	A	2004	NAG	1	0

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.

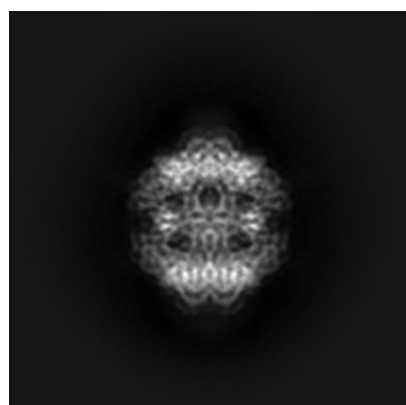
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-12752. These allow visual inspection of the internal detail of the map and identification of artifacts.

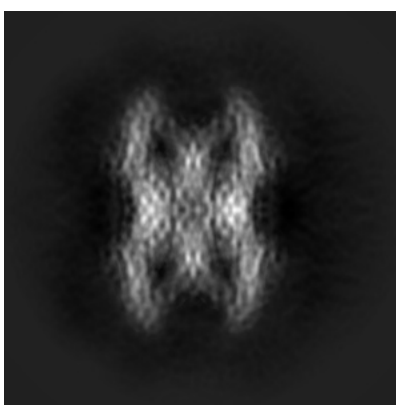
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

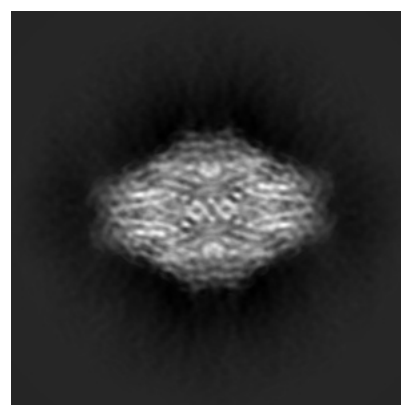
6.1.1 Primary map



X



Y



Z

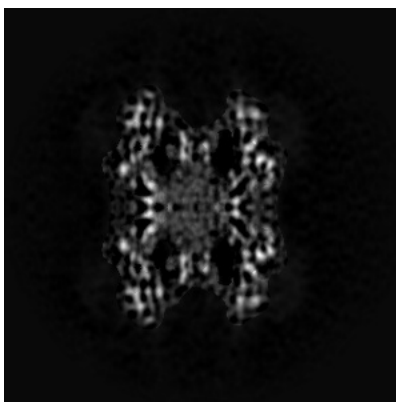
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

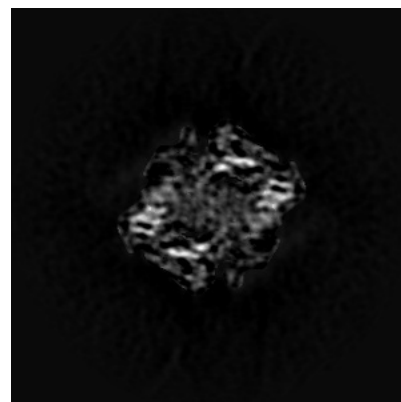
6.2.1 Primary map



X Index: 160



Y Index: 160

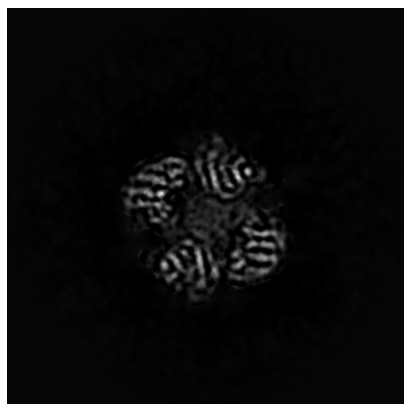


Z Index: 160

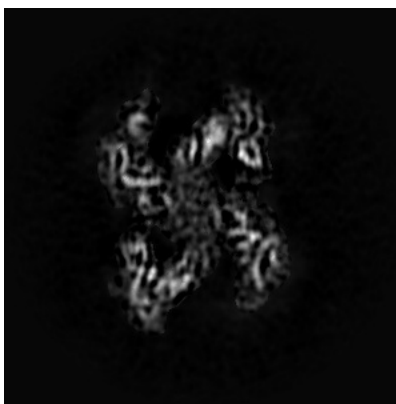
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

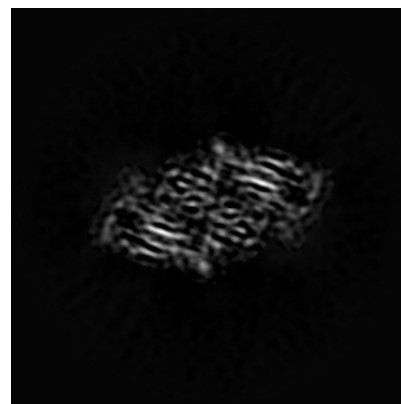
6.3.1 Primary map



X Index: 148



Y Index: 171

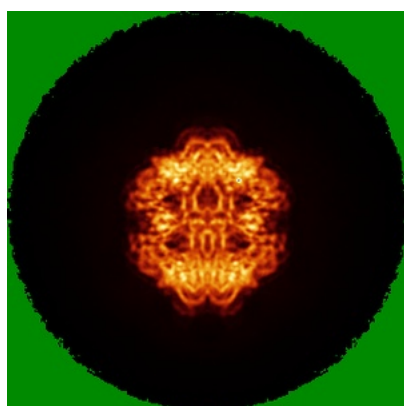


Z Index: 192

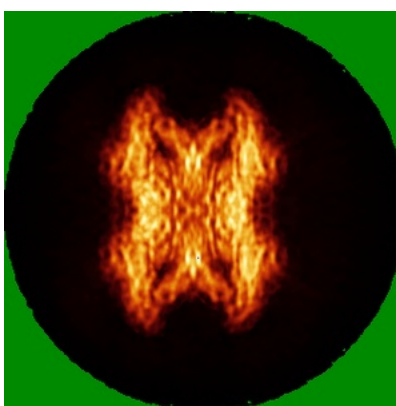
The images above show the largest variance slices of the map in three orthogonal directions.

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

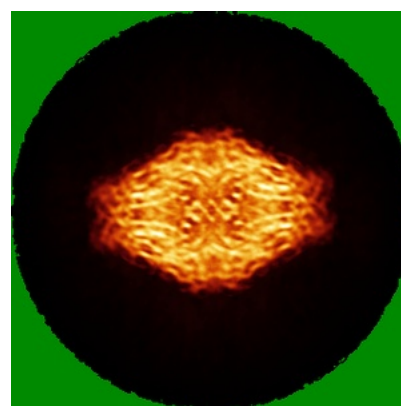
6.4.1 Primary map



X



Y



Z

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

6.5 Orthogonal surface views

This section was not generated.

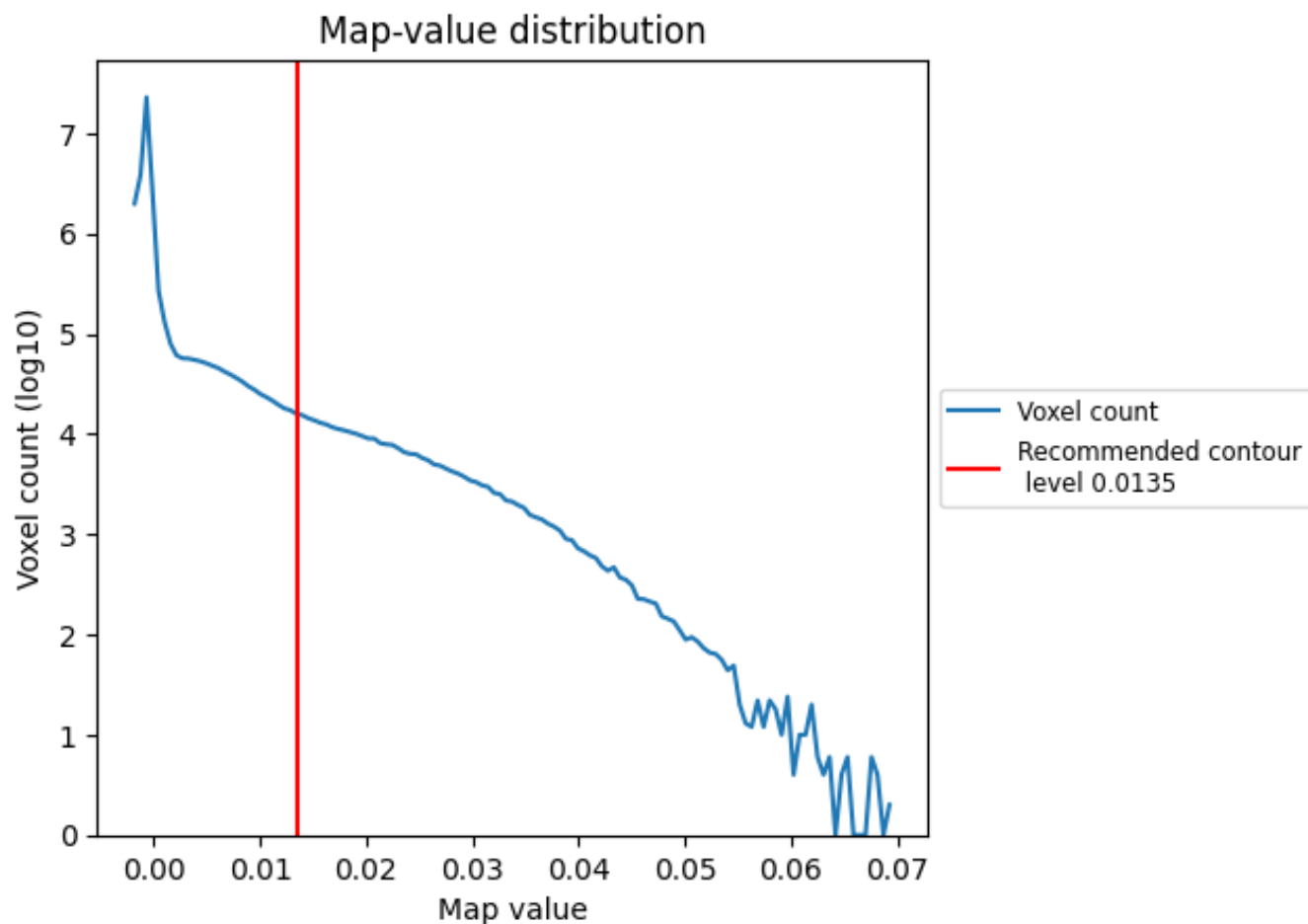
6.6 Mask visualisation

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

7 Map analysis [i](#)

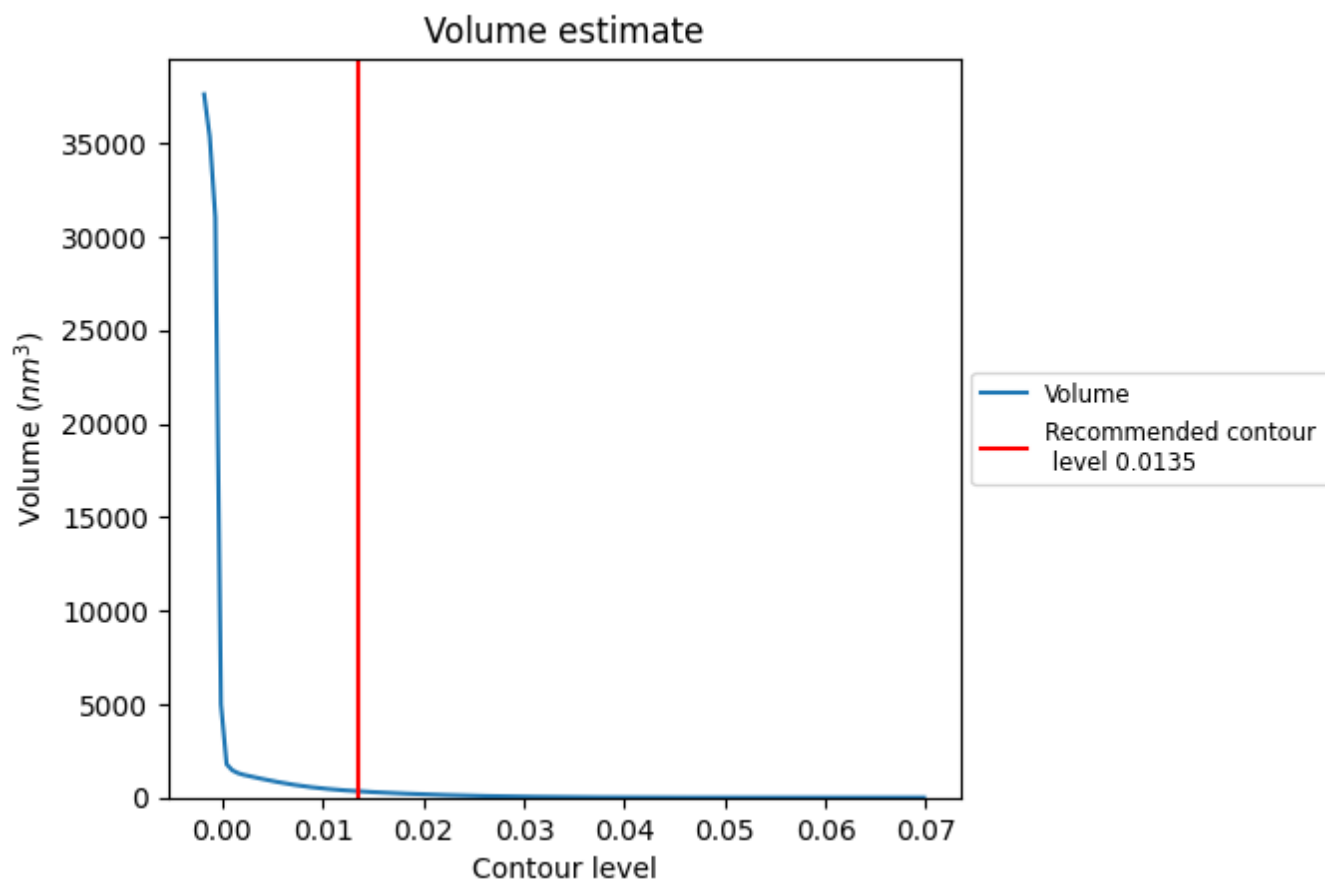
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

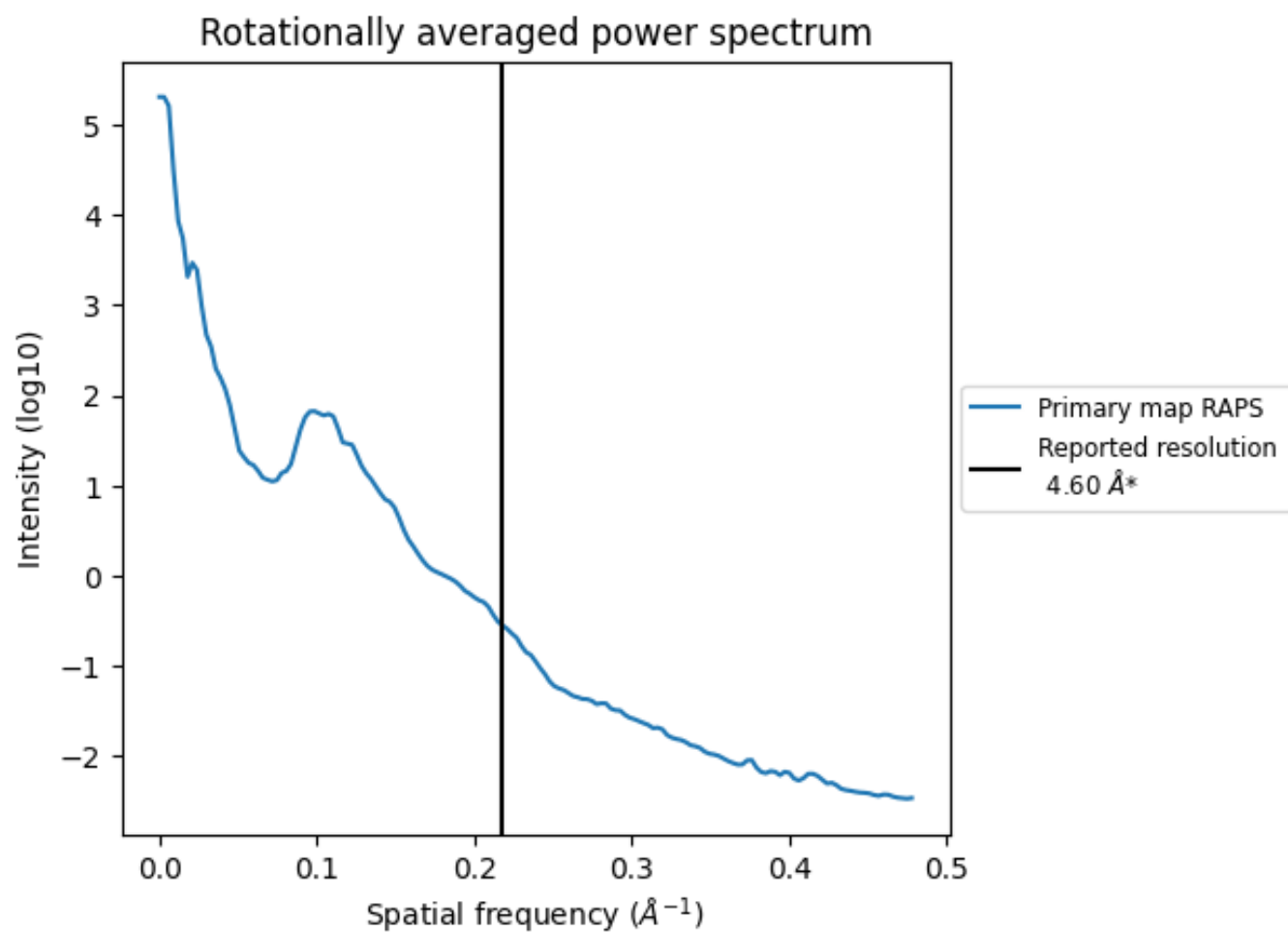
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 339 nm³; this corresponds to an approximate mass of 306 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 ⓘ



*Reported resolution corresponds to spatial frequency of 0.217 Å⁻¹

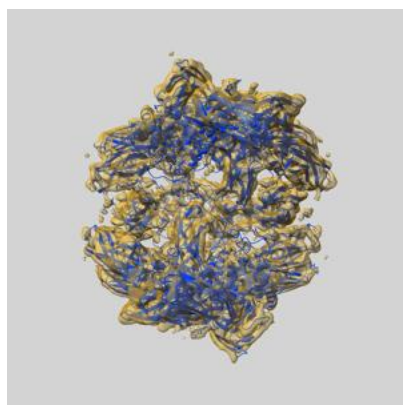
8 Fourier-Shell correlation

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

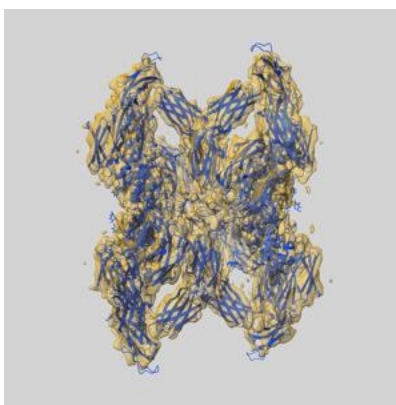
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-12752 and PDB model 7O7P. Per-residue inclusion information can be found in section [3](#) on page [7](#).

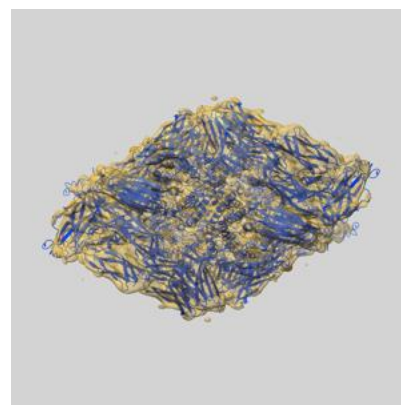
9.1 Map-model overlay [i](#)



X



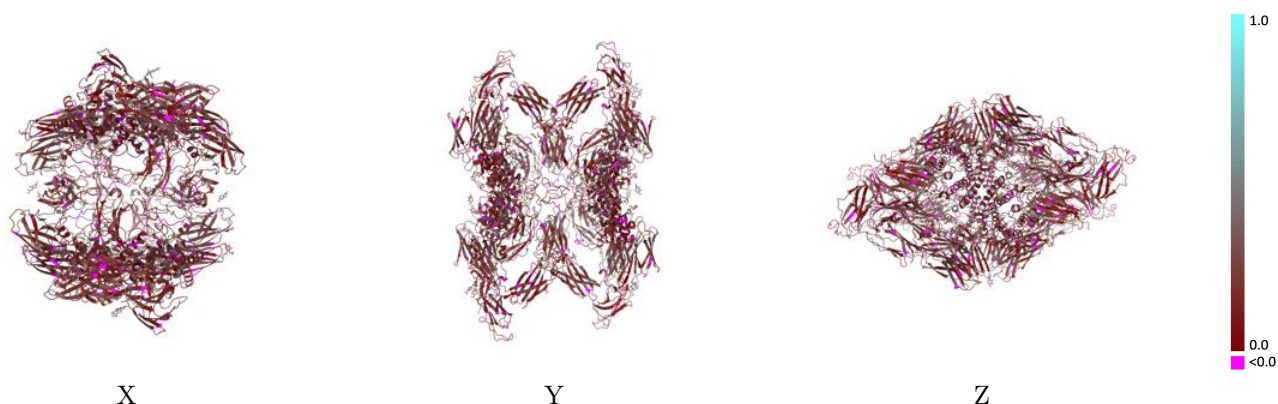
Y



Z

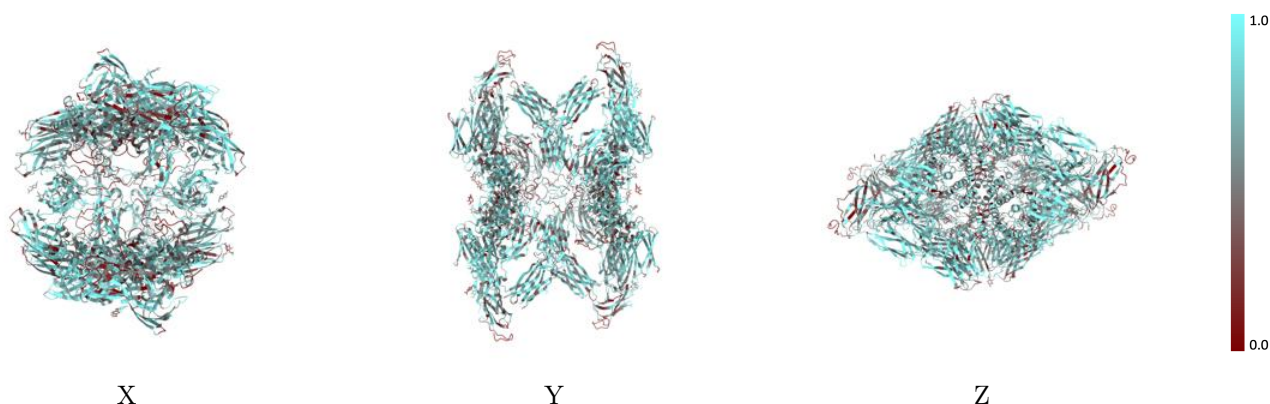
The images above show the 3D surface view of the map at the recommended contour level 0.0135 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



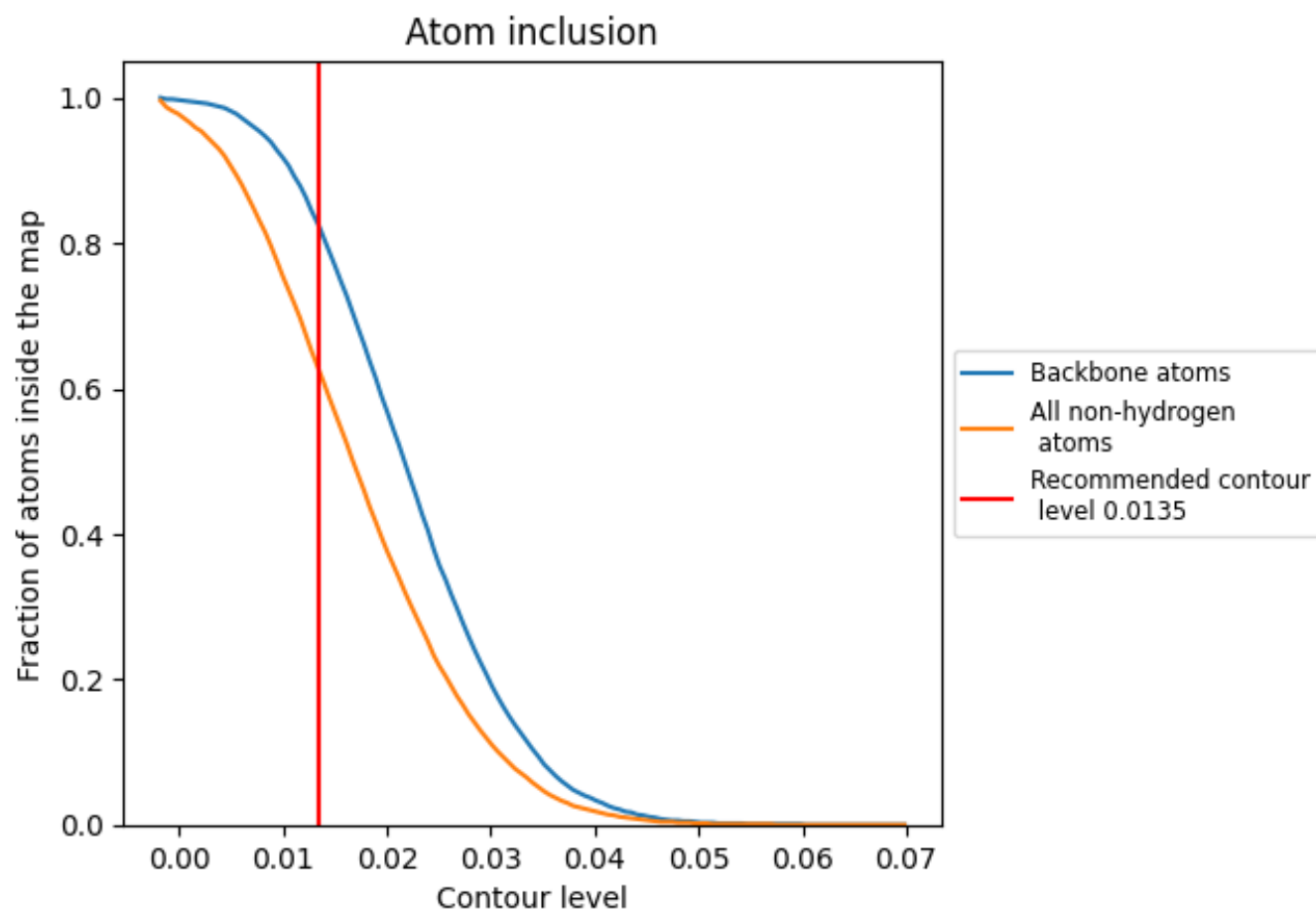
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0135).

9.4 Atom inclusion ⓘ



At the recommended contour level, 82% of all backbone atoms, 62% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0135) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	<div></div> 0.6240	<div></div> 0.2210
A	<div></div> 0.6170	<div></div> 0.2180
B	<div></div> 0.6300	<div></div> 0.2240
C	<div></div> 0.6190	<div></div> 0.2180
D	<div></div> 0.6300	<div></div> 0.2230
E	<div></div> 0.5710	<div></div> 0.4050
F	<div></div> 0.4290	<div></div> 0.2050
G	<div></div> 0.6790	<div></div> 0.4180
H	<div></div> 0.6430	<div></div> 0.2730
I	<div></div> 0.3930	<div></div> 0.2870
J	<div></div> 0.6430	<div></div> 0.2090
K	<div></div> 0.6790	<div></div> 0.4430
L	<div></div> 0.6790	<div></div> 0.2560

1.0

0.0

<0.0