Full wwPDB EM Validation Report ⓘ

Feb 22, 2026 – 07:13 PM EST

PDB ID	:	10IC / pdb_000010ic
EMDB ID	:	EMD-75185
Title	:	Rhesus rotavirus (consensus structure at 4.7 Angstrom resolution from cryo-ET)
Authors	:	de Sautu, M.; Leistner, C.; Kirchhausen, T.; Jenni, S.; Harrison, S.C.
Deposited on	:	2026-01-21
Resolution	:	4.70 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

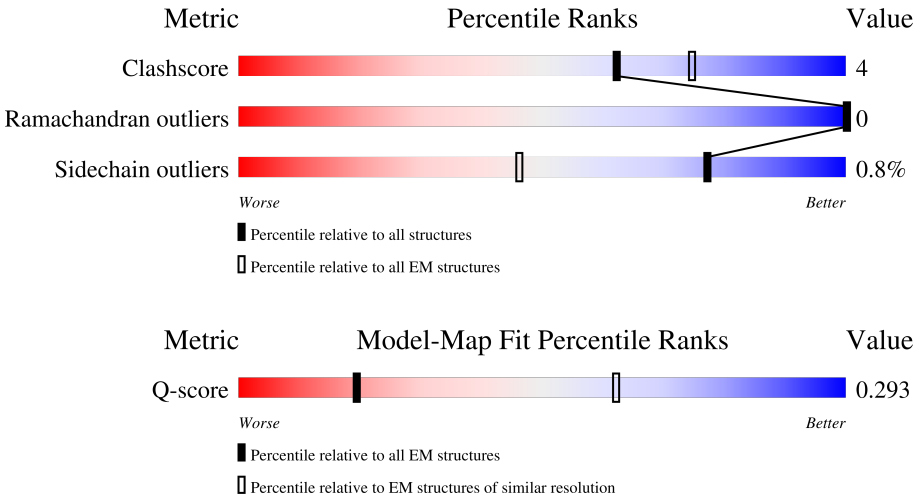
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive 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)	:	2.48.1

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 4.70 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	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	1989 (4.20 - 5.20)

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 <=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	0	326	70% 15% 15%
1	1	326	6% 69% 12% 19%
1	P	326	70% 11% 19%
1	Q	326	73% 10% 17%

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Mol	Chain	Length	Quality of chain
1	R	326	5% 70% 14% 15%
1	S	326	69% 12% 19%
1	T	326	73% 11% 15%
1	U	326	6% 67% 17% 15%
1	V	326	70% 15% 15%
1	W	326	6% 75% 10% 15%
1	X	326	75% 9% 17%
1	Y	326	71% 14% 15%
1	Z	326	75% 10% 15%
2	A	887	81% 7% 12%
2	B	887	83% 7% 10%
3	C	397	85% 15%
3	D	397	89% 11%
3	E	397	85% 14%
3	F	397	89% 10%
3	G	397	88% 11%
3	H	397	88% 12%
3	I	397	92% 8%
3	J	397	88% 12%
3	K	397	93% 7%
3	L	397	89% 11%
3	M	397	91% 9%
3	N	397	91% 9%
3	O	397	90% 10%

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 162885 atoms, of which 80654 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 Outer capsid glycoprotein VP7.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	0	276	Total	C	H	N	O	S	0	0
			4312	1389	2124	348	435	16		
1	Y	276	Total	C	H	N	O	S	0	0
			4312	1389	2124	348	435	16		
1	1	264	Total	C	H	N	O	S	0	0
			4108	1322	2023	329	418	16		
1	Z	276	Total	C	H	N	O	S	0	0
			4312	1389	2124	348	435	16		
1	P	264	Total	C	H	N	O	S	0	0
			4108	1322	2023	329	418	16		
1	Q	271	Total	C	H	N	O	S	0	0
			4234	1363	2087	341	427	16		
1	R	276	Total	C	H	N	O	S	0	0
			4312	1389	2124	348	435	16		
1	S	264	Total	C	H	N	O	S	0	0
			4108	1322	2023	329	418	16		
1	T	276	Total	C	H	N	O	S	0	0
			4312	1389	2124	348	435	16		
1	U	276	Total	C	H	N	O	S	0	0
			4312	1389	2124	348	435	16		
1	V	276	Total	C	H	N	O	S	0	0
			4312	1389	2124	348	435	16		
1	W	276	Total	C	H	N	O	S	0	0
			4312	1389	2124	348	435	16		
1	X	271	Total	C	H	N	O	S	0	0
			4234	1363	2087	341	427	16		

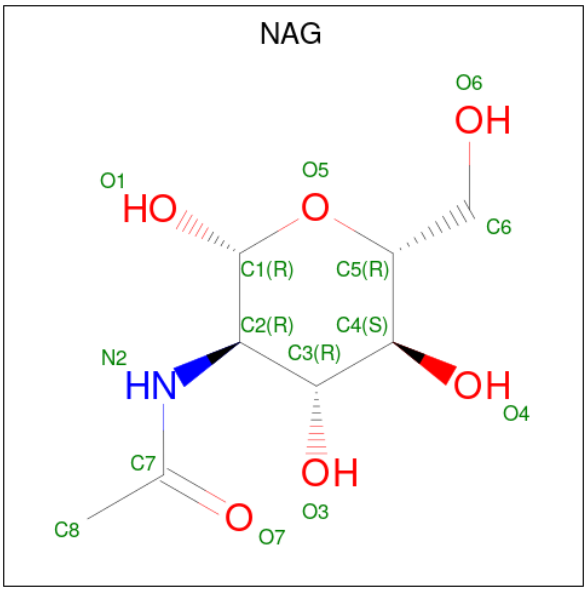
- Molecule 2 is a protein called Inner capsid protein VP2.

Mol	Chain	Residues	Atoms						AltConf	Trace
2	A	779	Total	C	H	N	O	S	0	0
			12749	4041	6387	1098	1187	36		
2	B	799	Total	C	H	N	O	S	0	0
			13098	4154	6563	1126	1219	36		

- Molecule 3 is a protein called Intermediate capsid protein VP6.

Mol	Chain	Residues	Atoms						AltConf	Trace
3	C	397	Total	C	H	N	O	S	0	0
			6275	2005	3111	551	593	15		
3	D	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		
3	E	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		
3	F	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		
3	G	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		
3	H	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		
3	I	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		
3	J	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		
3	K	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		
3	L	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		
3	M	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		
3	N	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		
3	O	396	Total	C	H	N	O	S	0	0
			6253	1999	3098	549	592	15		

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
4	0	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	Y	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	1	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	Z	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	P	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	Q	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	R	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	S	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	T	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	U	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	V	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	W	1	Total	C	H	N	O	0
			28	8	14	1	5	
4	X	1	Total	C	H	N	O	0
			28	8	14	1	5	

- Molecule 5 is CALCIUM ION (CCD ID: CA) (formula: Ca) (labeled as "Ligand of Interest"

by depositor).

Mol	Chain	Residues	Atoms	AltConf
5	0	4	Total Ca 4 4	0
5	Y	4	Total Ca 4 4	0
5	1	4	Total Ca 4 4	0
5	Z	4	Total Ca 4 4	0
5	P	4	Total Ca 4 4	0
5	Q	4	Total Ca 4 4	0
5	R	4	Total Ca 4 4	0
5	S	4	Total Ca 4 4	0
5	T	4	Total Ca 4 4	0
5	U	4	Total Ca 4 4	0
5	V	4	Total Ca 4 4	0
5	W	4	Total Ca 4 4	0
5	X	4	Total Ca 4 4	0

- Molecule 6 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	AltConf
6	C	2	Total Zn 2 2	0
6	D	1	Total Zn 1 1	0
6	E	1	Total Zn 1 1	0
6	F	2	Total Zn 2 2	0
6	G	1	Total Zn 1 1	0

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Mol	Chain	Residues	Atoms	AltConf
6	H	1	Total Zn 1 1	0
6	I	2	Total Zn 2 2	0
6	J	1	Total Zn 1 1	0
6	K	1	Total Zn 1 1	0
6	L	2	Total Zn 2 2	0
6	M	1	Total Zn 1 1	0
6	N	1	Total Zn 1 1	0
6	O	2	Total Zn 2 2	0

- Molecule 7 is CHLORIDE ION (CCD ID: CL) (formula: Cl) (labeled as "Ligand of Interest" by depositor).

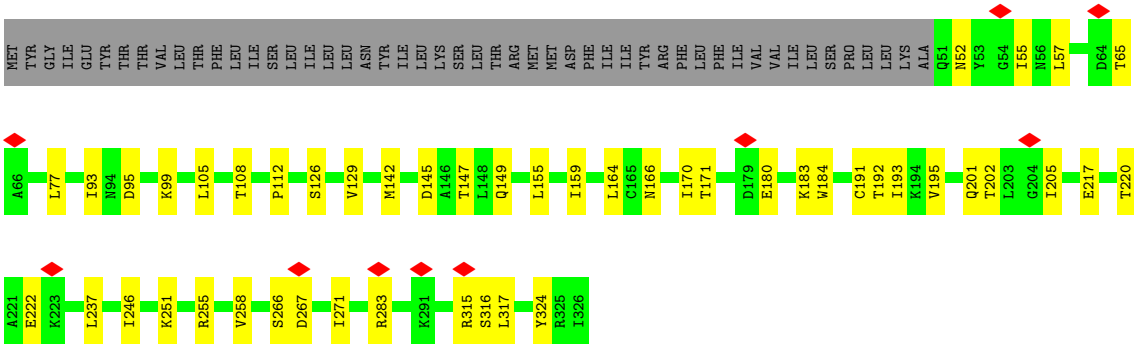
Mol	Chain	Residues	Atoms	AltConf
7	E	1	Total Cl 1 1	0
7	F	1	Total Cl 1 1	0
7	I	1	Total Cl 1 1	0
7	M	1	Total Cl 1 1	0
7	O	1	Total Cl 1 1	0

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.

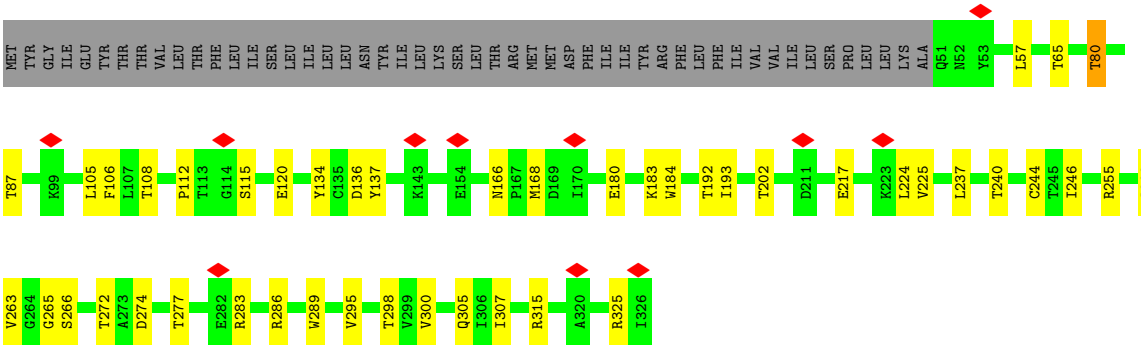
• Molecule 1: Outer capsid glycoprotein VP7

Chain 0:



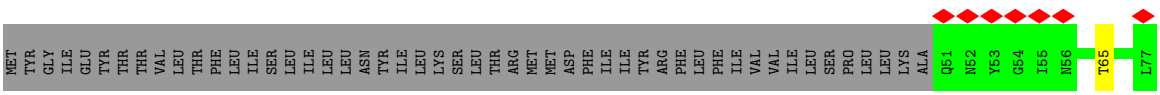
• Molecule 1: Outer capsid glycoprotein VP7

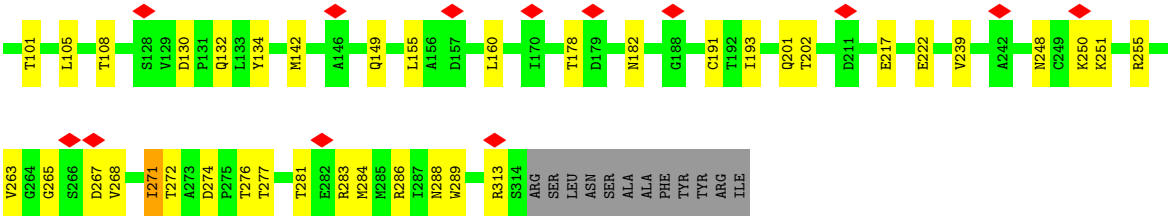
Chain Y:



• Molecule 1: Outer capsid glycoprotein VP7

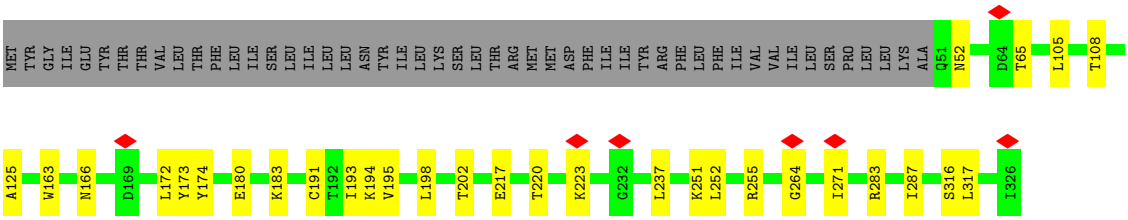
Chain 1:





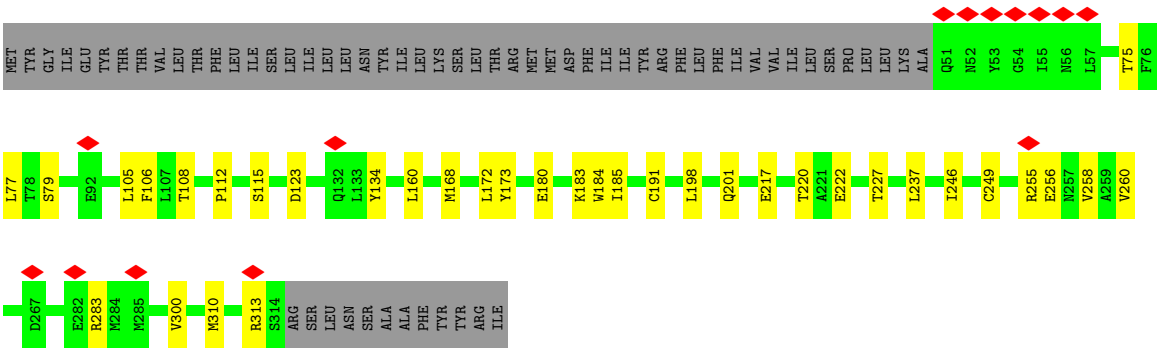
• Molecule 1: Outer capsid glycoprotein VP7

Chain Z:



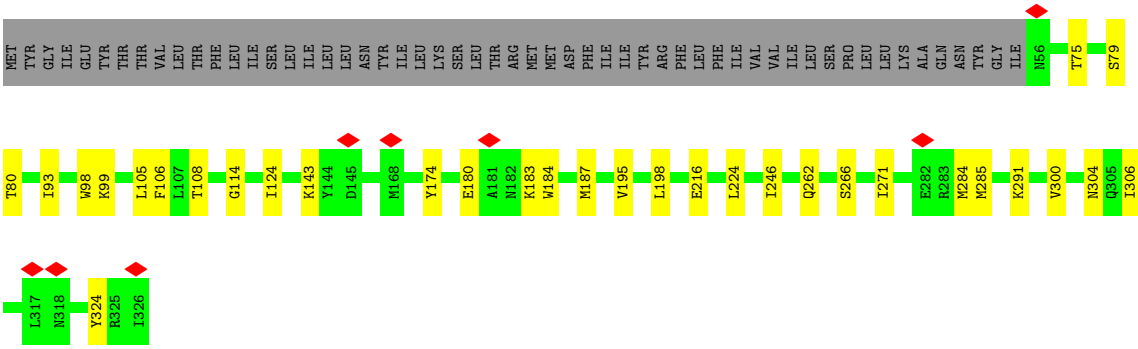
• Molecule 1: Outer capsid glycoprotein VP7

Chain P:



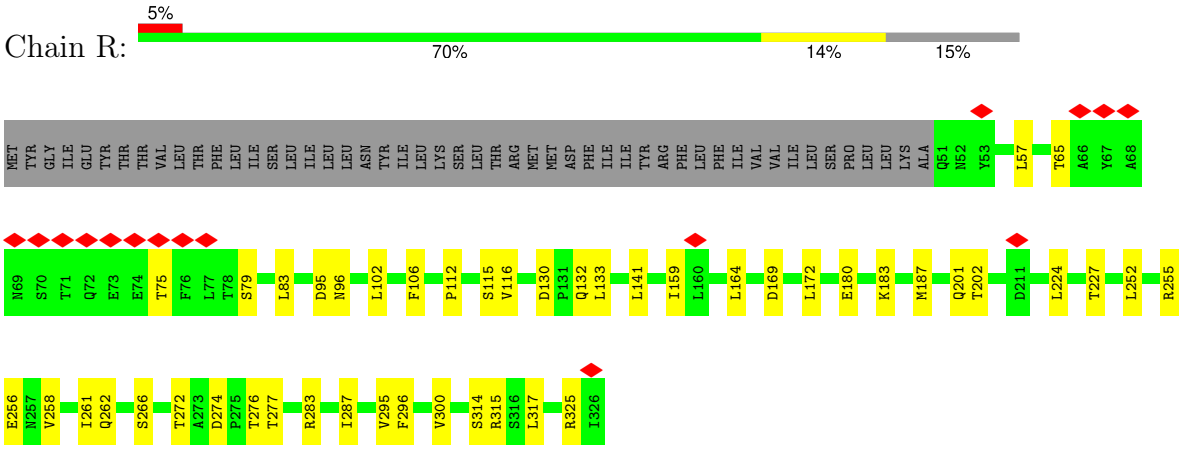
• Molecule 1: Outer capsid glycoprotein VP7

Chain Q:



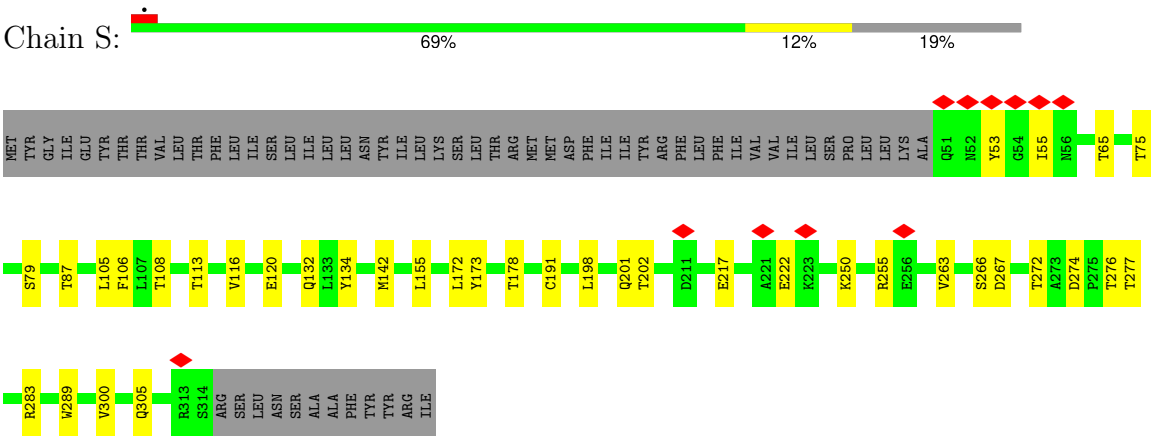
• Molecule 1: Outer capsid glycoprotein VP7

Chain R:



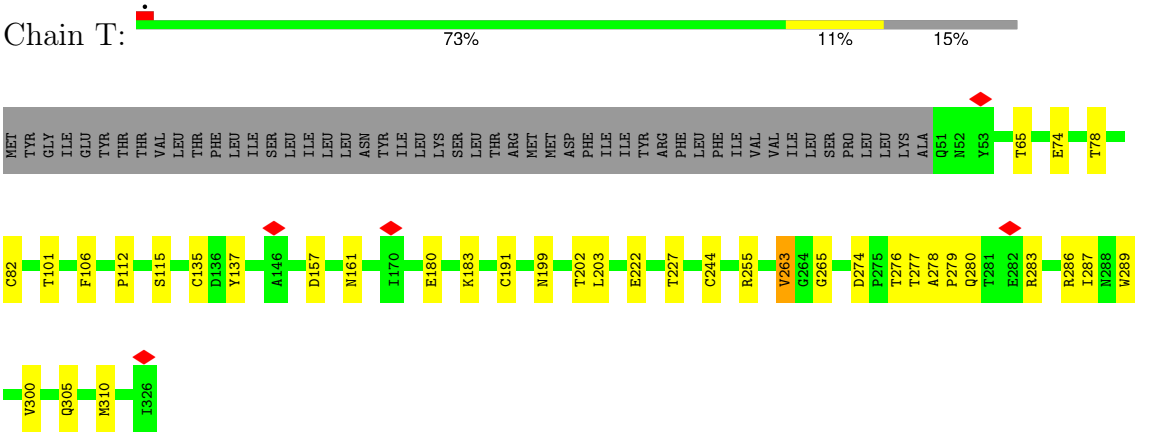
• Molecule 1: Outer capsid glycoprotein VP7

Chain S:



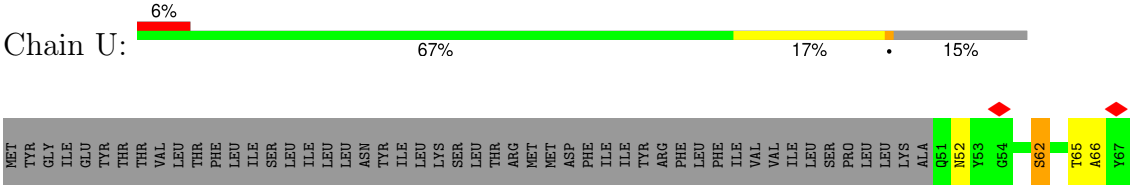
• Molecule 1: Outer capsid glycoprotein VP7

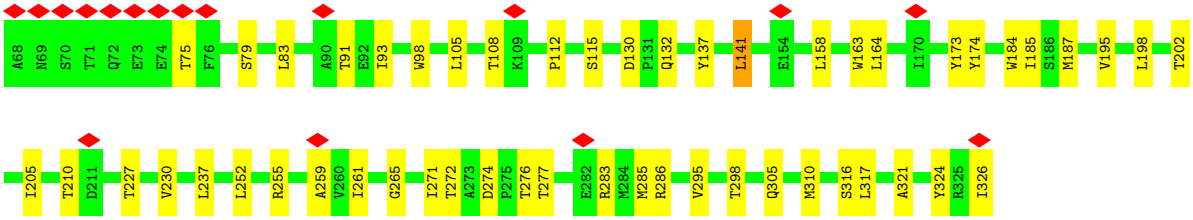
Chain T:



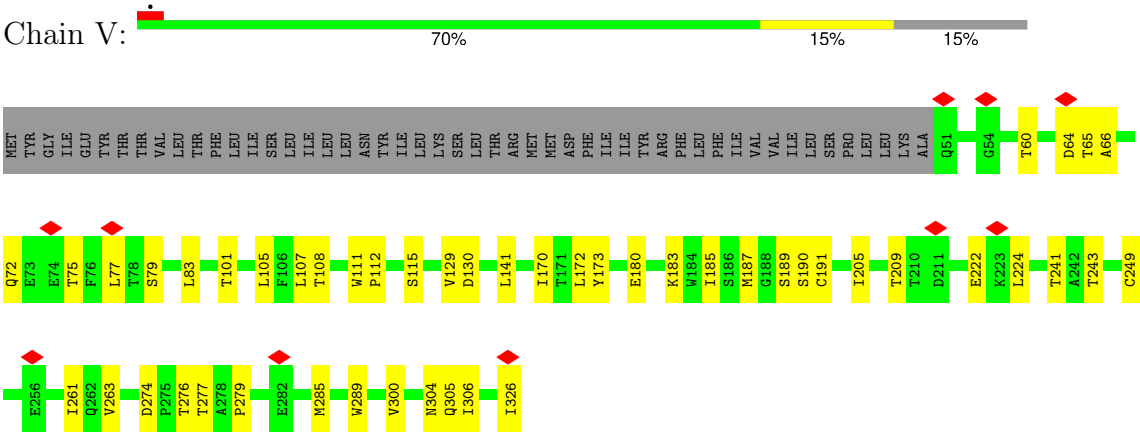
• Molecule 1: Outer capsid glycoprotein VP7

Chain U:

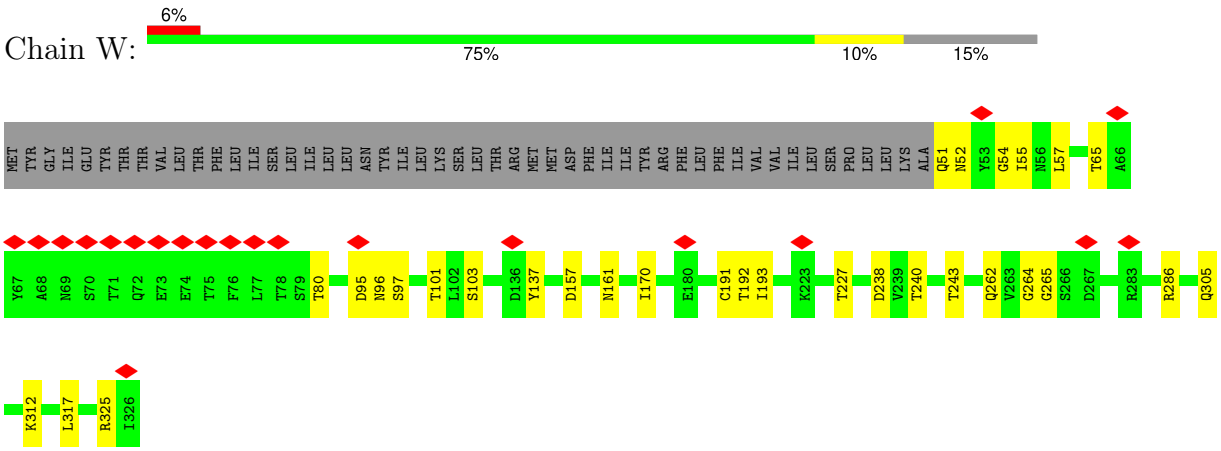




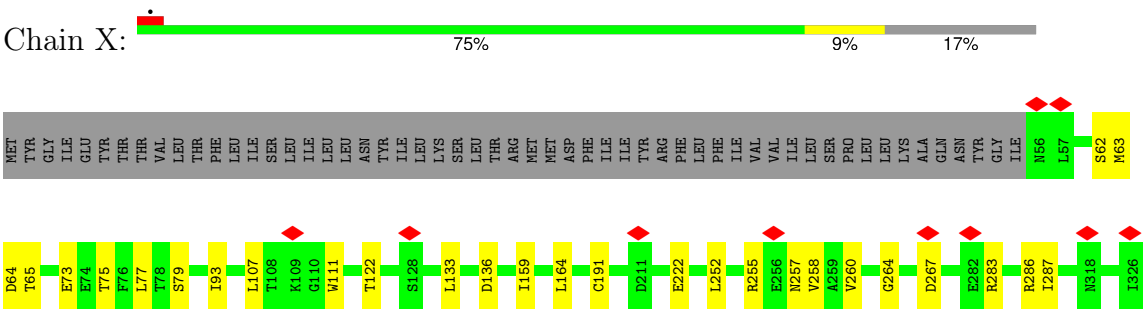
• Molecule 1: Outer capsid glycoprotein VP7



• Molecule 1: Outer capsid glycoprotein VP7

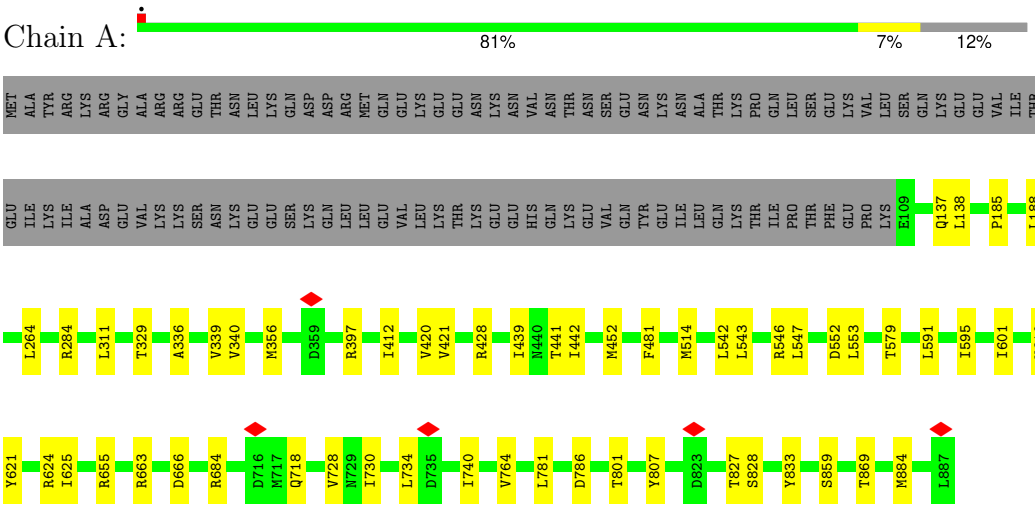


• Molecule 1: Outer capsid glycoprotein VP7



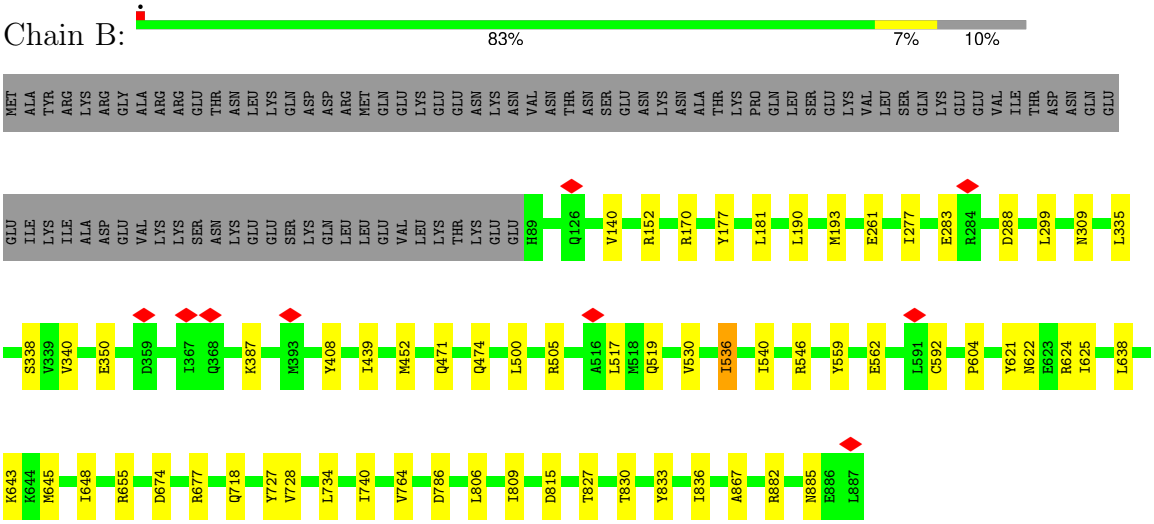
• Molecule 2: Inner capsid protein VP2

Chain A:



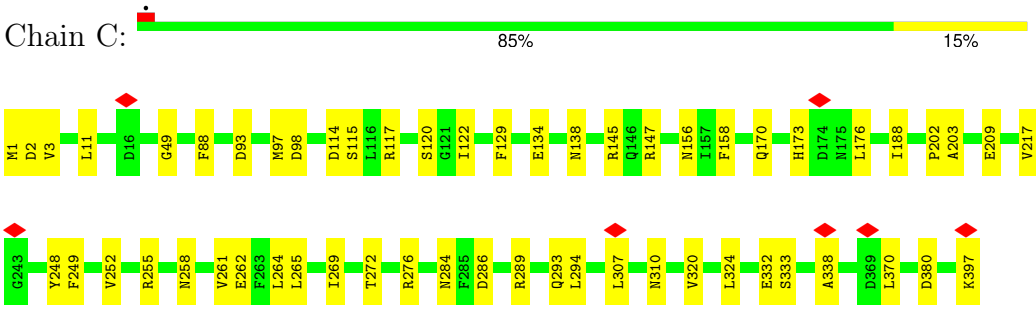
• Molecule 2: Inner capsid protein VP2

Chain B:



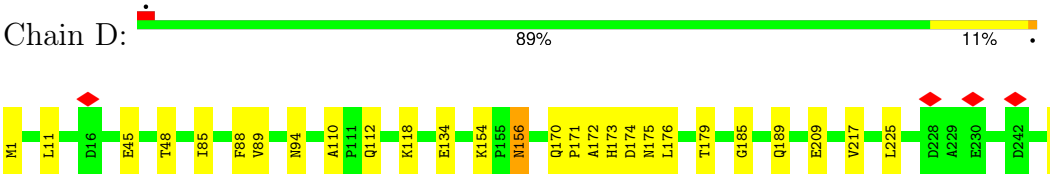
• Molecule 3: Intermediate capsid protein VP6

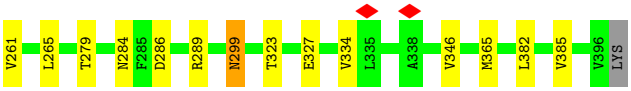
Chain C:



• Molecule 3: Intermediate capsid protein VP6

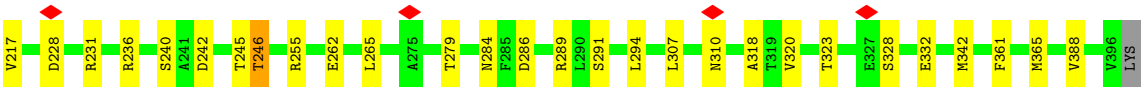
Chain D:





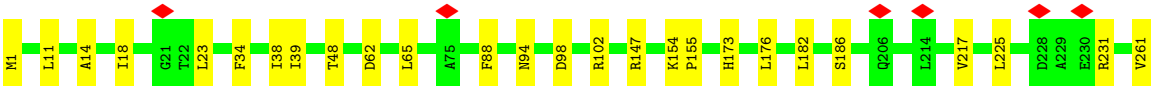
• Molecule 3: Intermediate capsid protein VP6

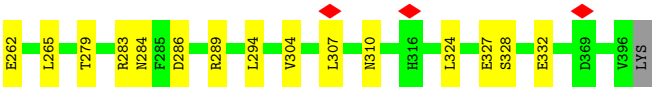
Chain E:



• Molecule 3: Intermediate capsid protein VP6

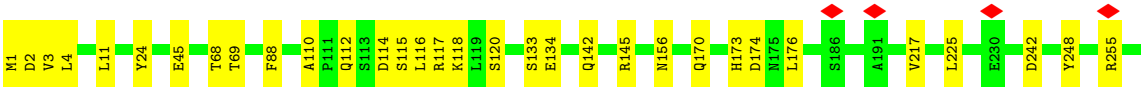
Chain F:

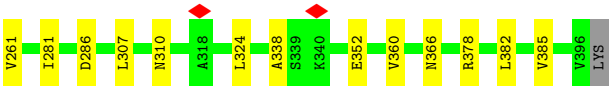




• Molecule 3: Intermediate capsid protein VP6

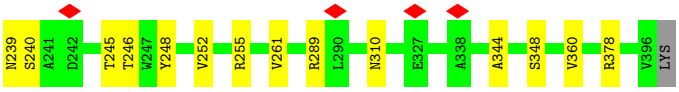
Chain G:





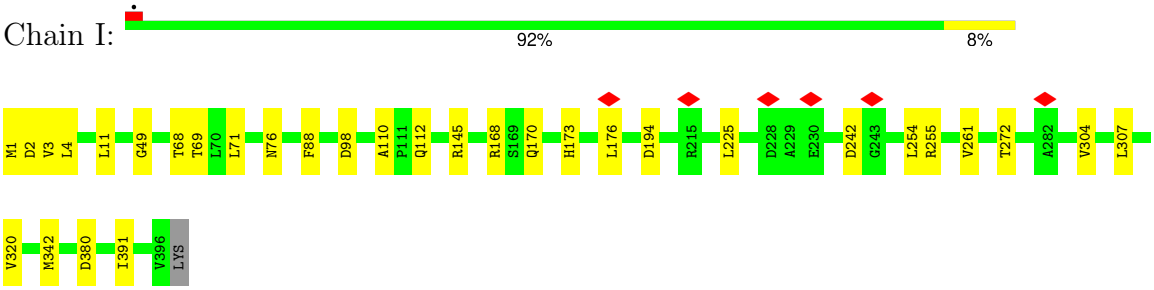
• Molecule 3: Intermediate capsid protein VP6

Chain H:



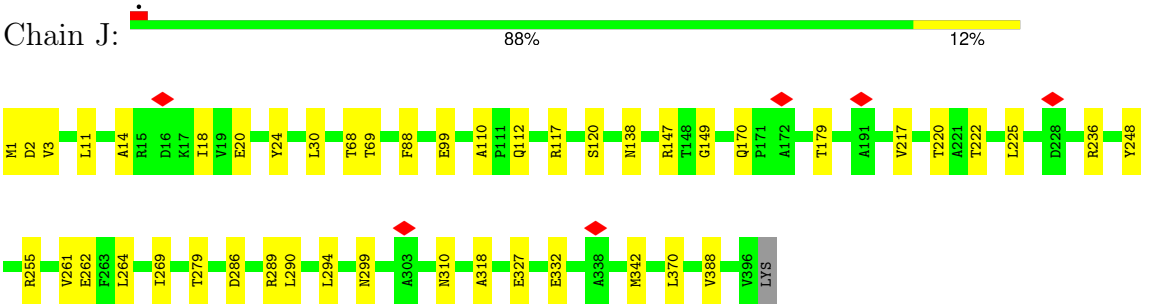
• Molecule 3: Intermediate capsid protein VP6

Chain I:



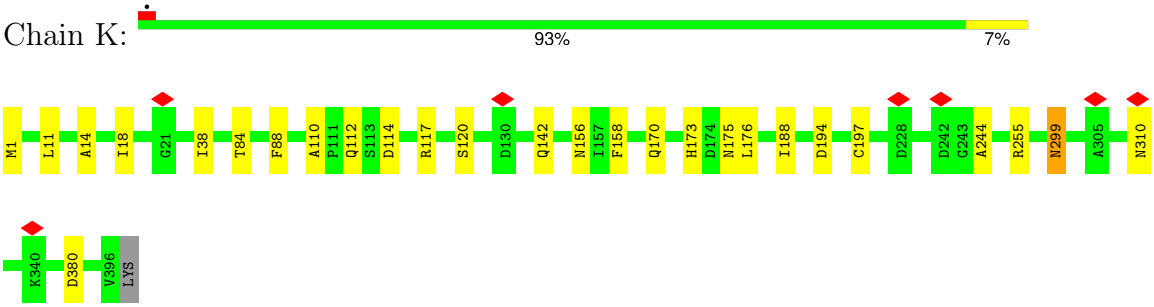
• Molecule 3: Intermediate capsid protein VP6

Chain J:



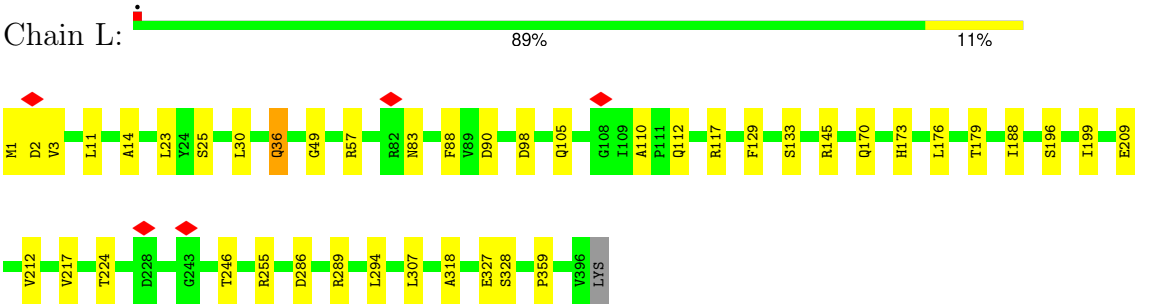
• Molecule 3: Intermediate capsid protein VP6

Chain K:



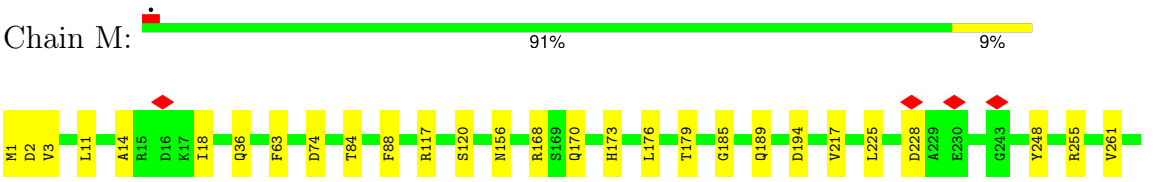
• Molecule 3: Intermediate capsid protein VP6

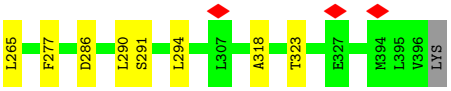
Chain L:



• Molecule 3: Intermediate capsid protein VP6

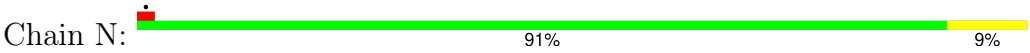
Chain M:





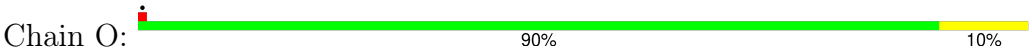
• Molecule 3: Intermediate capsid protein VP6

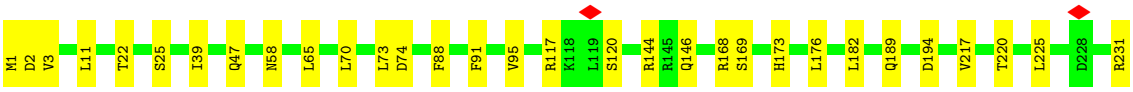
Chain N:



• Molecule 3: Intermediate capsid protein VP6

Chain O:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, I	Depositor
Number of subtomograms used	8565	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	156	Depositor
Minimum defocus (nm)	3000	Depositor
Maximum defocus (nm)	5000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.036	Depositor
Minimum map value	-0.020	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.006	Depositor
Map size (Å)	1187.84, 1187.84, 1187.84	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.32, 2.32, 2.32	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: CA, CL, FME, NAG, ZN

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	0	0.17	0/2234	0.32	0/3051
1	1	0.18	0/2128	0.31	0/2908
1	P	0.17	0/2128	0.29	0/2908
1	Q	0.16	0/2192	0.30	0/2994
1	R	0.17	0/2234	0.30	0/3051
1	S	0.17	0/2128	0.33	0/2908
1	T	0.17	0/2234	0.29	0/3051
1	U	0.17	0/2234	0.31	0/3051
1	V	0.17	0/2234	0.31	0/3051
1	W	0.16	0/2234	0.29	0/3051
1	X	0.16	0/2192	0.30	0/2994
1	Y	0.17	0/2234	0.29	0/3051
1	Z	0.17	0/2234	0.33	0/3051
2	A	0.23	0/6477	0.32	0/8788
2	B	0.23	0/6655	0.34	0/9029
3	C	0.21	0/3224	0.35	0/4387
3	D	0.21	0/3215	0.34	0/4376
3	E	0.21	0/3215	0.33	0/4376
3	F	0.21	0/3215	0.33	0/4376
3	G	0.21	0/3215	0.33	0/4376
3	H	0.20	0/3215	0.32	0/4376
3	I	0.21	0/3215	0.33	0/4376
3	J	0.21	0/3215	0.34	0/4376
3	K	0.20	0/3215	0.32	0/4376
3	L	0.21	0/3215	0.33	0/4376
3	M	0.21	0/3215	0.34	0/4376
3	N	0.21	0/3215	0.34	0/4376
3	O	0.21	0/3215	0.34	0/4376
All	All	0.20	0/83576	0.32	0/113836

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	0	2188	2124	2124	27	0
1	1	2085	2023	2023	27	0
1	P	2085	2023	2023	22	0
1	Q	2147	2087	2087	18	0
1	R	2188	2124	2124	31	0
1	S	2085	2023	2023	25	0
1	T	2188	2124	2124	22	0
1	U	2188	2124	2124	35	0
1	V	2188	2124	2124	31	0
1	W	2188	2124	2124	20	0
1	X	2147	2087	2087	14	0
1	Y	2188	2124	2124	30	0
1	Z	2188	2124	2124	22	0
2	A	6362	6387	6387	40	0
2	B	6535	6563	6563	38	0
3	C	3164	3111	3111	35	0
3	D	3155	3098	3098	26	0
3	E	3155	3098	3098	34	0
3	F	3155	3098	3098	28	0
3	G	3155	3098	3098	32	0
3	H	3155	3098	3098	30	0
3	I	3155	3098	3098	22	0
3	J	3155	3098	3098	32	0
3	K	3155	3098	3098	18	0
3	L	3155	3098	3098	24	0
3	M	3155	3098	3098	22	0
3	N	3155	3098	3098	24	0
3	O	3155	3098	3098	18	0
4	0	14	14	13	0	0
4	1	14	14	13	0	0
4	P	14	14	13	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	Q	14	14	13	0	0
4	R	14	14	13	0	0
4	S	14	14	13	0	0
4	T	14	14	13	0	0
4	U	14	14	13	0	0
4	V	14	14	13	0	0
4	W	14	14	13	0	0
4	X	14	14	13	0	0
4	Y	14	14	13	0	0
4	Z	14	14	13	0	0
5	0	4	0	0	0	0
5	1	4	0	0	0	0
5	P	4	0	0	0	0
5	Q	4	0	0	0	0
5	R	4	0	0	0	0
5	S	4	0	0	0	0
5	T	4	0	0	0	0
5	U	4	0	0	0	0
5	V	4	0	0	0	0
5	W	4	0	0	0	0
5	X	4	0	0	0	0
5	Y	4	0	0	0	0
5	Z	4	0	0	0	0
6	C	2	0	0	0	0
6	D	1	0	0	0	0
6	E	1	0	0	0	0
6	F	2	0	0	0	0
6	G	1	0	0	0	0
6	H	1	0	0	0	0
6	I	2	0	0	0	0
6	J	1	0	0	0	0
6	K	1	0	0	0	0
6	L	2	0	0	0	0
6	M	1	0	0	0	0
6	N	1	0	0	0	0
6	O	2	0	0	0	0
7	E	1	0	0	0	0
7	F	1	0	0	0	0
7	I	1	0	0	0	0
7	M	1	0	0	0	0
7	O	1	0	0	0	0
All	All	82231	80654	80641	668	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 4.

All (668) 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:Y:272:THR:HG21	1:Y:277:THR:HG23	1.45	0.96
1:U:173:TYR:HH	1:W:103:SER:HG	1.04	0.89
1:U:272:THR:HG21	1:U:277:THR:HG23	1.55	0.88
1:U:255:ARG:O	1:U:283:ARG:NH1	2.09	0.84
1:U:105:LEU:O	1:U:108:THR:OG1	1.96	0.83
1:Q:75:THR:O	1:Q:79:SER:OG	1.95	0.83
1:R:75:THR:O	1:R:79:SER:OG	1.96	0.82
1:X:62:SER:OG	1:X:64:ASP:OD1	1.98	0.81
3:K:142:GLN:OE1	3:L:145:ARG:NH1	2.14	0.80
1:X:75:THR:O	1:X:79:SER:OG	2.00	0.79
1:Y:255:ARG:O	1:Y:283:ARG:NH1	2.15	0.79
1:V:75:THR:O	1:V:79:SER:OG	1.99	0.79
1:Y:105:LEU:O	1:Y:108:THR:OG1	2.02	0.78
1:0:217:GLU:OE2	1:0:220:THR:OG1	2.00	0.77
1:S:75:THR:O	1:S:79:SER:OG	2.00	0.77
3:I:49:GLY:N	3:I:98:ASP:OD2	2.17	0.77
3:C:338:ALA:O	3:E:328:SER:OG	2.02	0.77
1:S:255:ARG:O	1:S:283:ARG:NH1	2.17	0.77
3:C:134:GLU:OE2	3:C:138:ASN:ND2	2.18	0.76
1:1:105:LEU:O	1:1:108:THR:OG1	2.02	0.76
2:B:261:GLU:OE1	3:N:69:THR:OG1	2.01	0.76
3:D:209:GLU:OE2	3:D:289:ARG:NH1	2.18	0.76
1:R:255:ARG:O	1:R:283:ARG:NH1	2.19	0.76
1:W:265:GLY:O	1:W:286:ARG:NH1	2.18	0.76
1:R:256:GLU:OE1	1:R:314:SER:OG	2.03	0.76
1:1:271:ILE:HD13	1:1:284:MET:HE1	1.68	0.75
1:Q:105:LEU:O	1:Q:108:THR:OG1	2.04	0.75
3:C:209:GLU:OE2	3:C:289:ARG:NH1	2.20	0.74
1:Z:255:ARG:O	1:Z:283:ARG:NH1	2.20	0.74
1:T:112:PRO:O	1:T:115:SER:OG	2.05	0.74
1:0:180:GLU:O	1:0:183:LYS:NZ	2.21	0.74
1:Z:105:LEU:O	1:Z:108:THR:OG1	2.05	0.73
2:A:786:ASP:OD2	2:A:828:SER:OG	2.07	0.73
1:T:255:ARG:O	1:T:283:ARG:NH1	2.21	0.73
1:T:274:ASP:OD2	1:T:276:THR:OG1	2.06	0.73
1:S:105:LEU:O	1:S:108:THR:OG1	2.07	0.72
1:P:105:LEU:O	1:P:108:THR:OG1	2.06	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:262:GLU:OE2	3:J:289:ARG:NH2	2.23	0.72
1:U:112:PRO:O	1:U:115:SER:OG	2.05	0.72
3:H:310:ASN:OD1	1:T:305:GLN:NE2	2.23	0.72
3:L:49:GLY:N	3:L:98:ASP:OD2	2.23	0.72
1:P:217:GLU:OE2	1:P:220:THR:OG1	2.07	0.71
3:C:117:ARG:O	3:C:120:SER:OG	2.08	0.71
1:1:160:LEU:HD13	1:1:284:MET:HE2	1.72	0.71
1:S:87:THR:OG1	1:S:120:GLU:OE2	2.07	0.71
1:U:75:THR:O	1:U:79:SER:OG	2.06	0.71
1:V:105:LEU:O	1:V:108:THR:OG1	2.07	0.71
1:U:265:GLY:O	1:U:286:ARG:NH1	2.23	0.70
1:U:83:LEU:HD22	1:U:141:LEU:HD11	1.73	0.70
1:1:130:ASP:OD1	1:1:132:GLN:NE2	2.24	0.70
1:R:201:GLN:O	1:R:202:THR:OG1	2.07	0.70
3:K:255:ARG:NH1	1:W:65:THR:O	2.24	0.69
1:S:178:THR:OG1	1:S:250:LYS:NZ	2.25	0.69
2:B:471:GLN:HB3	3:H:80:THR:HG21	1.73	0.69
3:C:49:GLY:N	3:C:98:ASP:OD2	2.26	0.69
3:C:397:LYS:NZ	3:E:151:THR:OG1	2.21	0.68
3:E:228:ASP:O	3:E:323:THR:OG1	2.10	0.68
2:A:601:ILE:HD11	2:A:869:THR:CG2	2.24	0.68
3:E:255:ARG:NH2	1:R:65:THR:O	2.26	0.68
1:Y:265:GLY:O	1:Y:286:ARG:NH1	2.27	0.68
3:J:147:ARG:NH1	3:J:332:GLU:OE2	2.26	0.68
3:G:110:ALA:O	3:G:112:GLN:NE2	2.27	0.67
2:B:288:ASP:OD2	2:B:559:TYR:OH	2.06	0.67
1:V:277:THR:HG22	1:V:279:PRO:HD3	1.75	0.67
1:0:142:MET:HE2	1:0:155:LEU:HD23	1.76	0.67
3:J:68:THR:HG22	3:J:69:THR:H	1.60	0.67
1:1:271:ILE:CD1	1:1:284:MET:HE1	2.24	0.67
2:B:882:ARG:O	2:B:885:ASN:ND2	2.28	0.67
2:A:546:ARG:NH2	2:A:595:ILE:O	2.28	0.66
3:N:225:LEU:HD21	3:N:261:VAL:HG21	1.77	0.66
1:U:272:THR:HG21	1:U:277:THR:O	1.95	0.66
3:C:225:LEU:HD22	3:C:261:VAL:HG21	1.77	0.66
3:K:310:ASN:OD1	1:W:305:GLN:NE2	2.28	0.66
1:0:266:SER:OG	1:0:267:ASP:N	2.28	0.66
3:H:110:ALA:O	3:H:112:GLN:NE2	2.29	0.66
3:D:225:LEU:HD11	3:D:261:VAL:HG21	1.76	0.66
3:I:255:ARG:NH1	1:X:65:THR:O	2.29	0.66
1:V:77:LEU:HD13	1:V:112:PRO:HG3	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:T:180:GLU:O	1:T:183:LYS:NZ	2.28	0.66
3:K:194:ASP:OD1	3:K:197:CYS:N	2.28	0.66
3:M:117:ARG:O	3:M:120:SER:OG	2.14	0.66
3:O:117:ARG:O	3:O:120:SER:OG	2.14	0.65
1:Q:180:GLU:O	1:Q:183:LYS:NZ	2.29	0.65
1:S:198:LEU:HD22	1:S:202:THR:O	1.97	0.65
3:O:47:GLN:OE1	3:O:58:ASN:ND2	2.28	0.65
1:U:174:TYR:CD2	1:U:198:LEU:HD11	2.31	0.65
1:R:164:LEU:HB2	1:R:252:LEU:HD21	1.78	0.65
1:V:172:LEU:HD22	1:V:173:TYR:CE1	2.32	0.64
3:D:279:THR:OG1	3:E:156:ASN:ND2	2.30	0.64
1:Q:114:GLY:O	1:Q:324:TYR:OH	2.06	0.64
3:C:147:ARG:NH1	3:C:332:GLU:OE2	2.31	0.64
3:D:134:GLU:OE2	3:D:134:GLU:N	2.27	0.63
1:1:178:THR:OG1	1:1:250:LYS:NZ	2.31	0.63
3:G:45:GLU:O	3:G:118:LYS:NZ	2.31	0.63
1:S:201:GLN:N	1:S:201:GLN:OE1	2.31	0.63
1:R:95:ASP:OD1	1:R:96:ASN:N	2.31	0.63
1:Y:65:THR:O	3:J:255:ARG:NH1	2.31	0.63
3:E:117:ARG:O	3:E:120:SER:OG	2.16	0.62
1:P:201:GLN:N	1:P:201:GLN:OE1	2.31	0.62
3:E:361:PHE:CE2	3:E:365:MET:HE1	2.34	0.62
1:S:191:CYS:N	1:S:222:GLU:O	2.32	0.62
1:V:274:ASP:OD2	1:V:276:THR:OG1	2.17	0.62
1:Z:65:THR:O	3:M:255:ARG:NH1	2.31	0.62
2:B:645:MET:HA	2:B:648:ILE:HD12	1.82	0.62
1:1:263:VAL:HG12	1:1:289:TRP:CD1	2.34	0.62
1:P:255:ARG:O	1:P:283:ARG:NH2	2.33	0.62
3:H:117:ARG:O	3:H:120:SER:OG	2.17	0.62
1:T:277:THR:HG22	1:T:279:PRO:HD3	1.81	0.62
3:H:255:ARG:NH1	1:T:65:THR:O	2.32	0.62
1:U:252:LEU:HD11	1:W:317:LEU:HD21	1.82	0.61
2:A:601:ILE:HD11	2:A:869:THR:HG21	1.81	0.61
1:S:106:PHE:CD2	1:S:116:VAL:HG11	2.35	0.61
3:I:307:LEU:HD11	3:J:248:TYR:CD1	2.35	0.61
1:Y:305:GLN:NE2	3:J:310:ASN:OD1	2.33	0.61
2:B:140:VAL:HG11	2:B:152:ARG:HD2	1.81	0.61
1:Q:262:GLN:NE2	1:Q:266:SER:O	2.33	0.61
2:B:335:LEU:O	2:B:338:SER:OG	2.19	0.61
3:D:225:LEU:HD11	3:D:261:VAL:CG2	2.31	0.61
1:S:272:THR:HG21	1:S:277:THR:O	1.99	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:265:GLY:O	1:1:286:ARG:NH1	2.32	0.61
1:0:65:THR:O	3:N:255:ARG:NH1	2.34	0.61
1:R:262:GLN:NE2	1:R:266:SER:O	2.33	0.61
3:F:155:PRO:O	3:F:186:SER:OG	2.16	0.61
1:R:272:THR:HG21	1:R:277:THR:HG23	1.82	0.60
3:D:45:GLU:O	3:D:118:LYS:NZ	2.34	0.60
3:I:225:LEU:HD22	3:I:261:VAL:HG21	1.83	0.60
3:L:224:THR:OG1	3:L:327:GLU:OE2	2.19	0.60
1:P:106:PHE:CE2	1:P:300:VAL:HG22	2.36	0.60
3:G:307:LEU:HD11	3:H:248:TYR:CD1	2.37	0.60
3:J:117:ARG:O	3:J:120:SER:OG	2.19	0.60
3:E:294:LEU:HD11	3:E:318:ALA:HB1	1.84	0.59
3:G:117:ARG:O	3:G:120:SER:OG	2.20	0.59
3:H:173:HIS:HA	3:H:176:LEU:HD21	1.84	0.59
1:1:274:ASP:OD1	1:1:276:THR:OG1	2.20	0.59
3:J:217:VAL:HG22	3:J:286:ASP:HB3	1.84	0.59
2:A:663:ARG:NH1	2:B:350:GLU:OE2	2.36	0.59
3:G:24:TYR:OH	3:G:68:THR:HG23	2.03	0.59
3:C:217:VAL:HG22	3:C:286:ASP:HB3	1.85	0.59
1:P:185:ILE:HD12	1:P:249:CYS:HB2	1.85	0.58
1:X:164:LEU:HB2	1:X:252:LEU:HD11	1.85	0.58
3:J:68:THR:O	3:J:69:THR:OG1	2.17	0.58
1:Z:316:SER:OG	1:R:325:ARG:NH2	2.36	0.58
3:F:307:LEU:HD11	3:G:248:TYR:CD1	2.39	0.58
3:J:14:ALA:HA	3:J:30:LEU:HD21	1.83	0.58
1:R:164:LEU:CB	1:R:252:LEU:HD21	2.33	0.58
1:Z:217:GLU:OE2	1:Z:220:THR:OG1	2.21	0.58
2:A:188:LEU:HD22	2:A:264:LEU:HD21	1.85	0.58
2:B:283:GLU:OE1	3:I:71:LEU:HD12	2.03	0.58
1:1:65:THR:O	3:L:255:ARG:NH2	2.34	0.58
3:E:110:ALA:O	3:E:112:GLN:NE2	2.37	0.58
3:K:117:ARG:O	3:K:120:SER:OG	2.21	0.58
3:G:225:LEU:HD22	3:G:261:VAL:HG21	1.86	0.57
3:C:380:ASP:OD2	3:N:145:ARG:NH2	2.37	0.57
3:L:307:LEU:HD11	3:M:248:TYR:CD1	2.39	0.57
3:I:110:ALA:O	3:I:112:GLN:NE2	2.37	0.57
2:A:412:ILE:CG2	2:A:543:LEU:HD22	2.35	0.57
1:Y:184:TRP:CZ3	1:Y:237:LEU:HD21	2.40	0.57
3:C:93:ASP:OD2	3:C:97:MET:HE2	2.05	0.57
3:J:299:ASN:ND2	3:K:244:ALA:O	2.38	0.57
1:Q:285:MET:HE1	1:Q:306:ILE:HG23	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:248:TYR:CD1	3:E:307:LEU:HD11	2.39	0.57
1:U:137:TYR:HD1	1:U:310:MET:HE2	1.69	0.57
1:Y:272:THR:CG2	1:Y:277:THR:HG23	2.30	0.56
3:N:294:LEU:HD12	3:N:320:VAL:HG13	1.87	0.56
2:B:546:ARG:NH1	2:B:592:CYS:O	2.37	0.56
3:H:104:SER:OG	3:H:106:ARG:O	2.23	0.56
3:O:217:VAL:HG22	3:O:286:ASP:HB3	1.86	0.56
1:R:274:ASP:OD2	1:R:276:THR:OG1	2.17	0.56
1:W:191:CYS:SG	1:W:193:ILE:HD11	2.46	0.56
3:F:11:LEU:HD21	3:F:88:PHE:HB3	1.87	0.56
2:B:190:LEU:HD23	2:B:193:MET:HE3	1.86	0.56
3:G:142:GLN:O	3:I:145:ARG:NH1	2.37	0.56
1:U:274:ASP:OD2	1:U:277:THR:HG22	2.06	0.56
3:J:11:LEU:HD21	3:J:88:PHE:HB3	1.88	0.56
3:J:225:LEU:HD22	3:J:261:VAL:HG21	1.87	0.56
3:K:380:ASP:OD1	3:L:145:ARG:NH2	2.39	0.56
3:L:105:GLN:NE2	3:L:359:PRO:O	2.38	0.56
1:0:255:ARG:O	1:0:283:ARG:NH1	2.39	0.56
1:1:65:THR:O	3:L:255:ARG:NH1	2.39	0.56
1:U:163:TRP:O	1:W:317:LEU:HD22	2.06	0.56
3:C:265:LEU:HD22	3:C:284:ASN:OD1	2.06	0.55
3:I:173:HIS:HA	3:I:176:LEU:HD21	1.88	0.55
1:R:287:ILE:HD11	1:R:295:VAL:HG13	1.88	0.55
1:Y:272:THR:HG21	1:Y:277:THR:O	2.07	0.55
3:H:165:THR:OG1	1:V:60:THR:HG23	2.06	0.55
1:Y:180:GLU:O	1:Y:183:LYS:NZ	2.38	0.55
3:F:304:VAL:HA	3:F:307:LEU:HD12	1.87	0.55
3:F:310:ASN:OD1	1:U:305:GLN:NE2	2.39	0.55
1:R:159:ILE:CG2	1:R:258:VAL:HG11	2.37	0.55
3:C:255:ARG:NH1	1:S:65:THR:O	2.37	0.55
3:F:225:LEU:HD13	3:F:324:LEU:CD1	2.36	0.55
1:S:274:ASP:OD2	1:S:276:THR:OG1	2.20	0.55
3:G:11:LEU:HD21	3:G:88:PHE:HB3	1.88	0.55
3:G:145:ARG:NH2	3:I:380:ASP:OD1	2.40	0.55
3:H:209:GLU:OE2	3:H:289:ARG:NH1	2.40	0.55
1:T:191:CYS:N	1:T:222:GLU:O	2.36	0.55
1:Z:251:LYS:NZ	1:Z:271:ILE:O	2.37	0.55
3:H:225:LEU:HD22	3:H:261:VAL:HG21	1.89	0.55
1:W:97:SER:O	1:W:101:THR:HG23	2.07	0.55
3:F:217:VAL:HG22	3:F:286:ASP:HB3	1.88	0.55
3:F:225:LEU:HD13	3:F:324:LEU:HD13	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:225:LEU:CD2	3:J:261:VAL:HG21	2.36	0.55
3:L:112:GLN:O	3:L:117:ARG:NH1	2.39	0.55
3:K:173:HIS:HA	3:K:176:LEU:HD21	1.89	0.55
1:V:72:GLN:NE2	1:V:304:ASN:OD1	2.39	0.55
3:F:225:LEU:HD22	3:F:261:VAL:HG21	1.89	0.55
1:Z:172:LEU:HD22	1:Z:173:TYR:CE1	2.42	0.54
1:R:201:GLN:N	1:R:201:GLN:OE1	2.40	0.54
3:O:344:ALA:O	3:O:348:SER:OG	2.20	0.54
1:0:105:LEU:O	1:0:108:THR:OG1	2.24	0.54
1:1:255:ARG:O	1:1:283:ARG:NH1	2.40	0.54
1:Y:217:GLU:N	1:Y:217:GLU:OE1	2.39	0.54
1:Y:262:GLN:NE2	1:Y:266:SER:O	2.37	0.54
1:Z:252:LEU:HD12	1:R:317:LEU:HD21	1.90	0.54
1:X:267:ASP:OD1	1:X:286:ARG:NE	2.37	0.54
1:0:149:GLN:NE2	1:1:288:ASN:OD1	2.41	0.54
3:N:228:ASP:O	3:N:323:THR:OG1	2.20	0.54
2:A:552:ASP:HB3	2:A:884:MET:HE2	1.90	0.53
3:F:279:THR:OG1	3:G:156:ASN:ND2	2.40	0.53
1:V:185:ILE:HD12	1:V:249:CYS:CB	2.38	0.53
2:A:329:THR:HG22	2:A:397:ARG:HD2	1.88	0.53
3:E:361:PHE:CD2	3:E:365:MET:HE1	2.44	0.53
3:H:112:GLN:O	3:H:117:ARG:NH2	2.41	0.53
3:I:11:LEU:HD21	3:I:88:PHE:HB3	1.91	0.53
3:N:261:VAL:HG22	3:N:290:LEU:HD23	1.91	0.53
3:M:294:LEU:HD11	3:M:318:ALA:HB1	1.91	0.53
1:R:112:PRO:O	1:R:115:SER:OG	2.25	0.53
1:T:202:THR:HG22	1:T:202:THR:O	2.09	0.53
1:T:265:GLY:O	1:T:286:ARG:NH1	2.42	0.53
1:P:180:GLU:O	1:P:183:LYS:NZ	2.42	0.53
3:H:11:LEU:HD21	3:H:88:PHE:HB3	1.91	0.53
3:L:217:VAL:HG22	3:L:286:ASP:HB3	1.89	0.53
1:U:62:SER:O	1:U:65:THR:HG23	2.09	0.53
1:X:191:CYS:N	1:X:222:GLU:O	2.39	0.53
3:M:225:LEU:CD2	3:M:261:VAL:HG21	2.39	0.52
2:A:621:TYR:CZ	2:A:625:ILE:HD11	2.45	0.52
1:X:133:LEU:HD13	1:X:258:VAL:HG21	1.90	0.52
3:J:110:ALA:O	3:J:112:GLN:NE2	2.43	0.52
3:N:334:VAL:HG23	3:N:382:LEU:HD12	1.92	0.52
1:0:126:SER:O	1:0:129:VAL:HG22	2.10	0.52
1:Z:163:TRP:O	1:R:317:LEU:HD22	2.09	0.52
3:E:294:LEU:HD12	3:E:320:VAL:HG13	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:11:LEU:HD21	3:G:88:PHE:CB	2.40	0.52
3:C:262:GLU:HG3	3:C:272:THR:HG22	1.91	0.52
3:K:14:ALA:HB1	3:K:18:ILE:HD12	1.92	0.52
3:G:24:TYR:CZ	3:G:68:THR:HG23	2.44	0.52
1:0:93:ILE:HG22	1:0:95:ASP:H	1.75	0.52
1:0:192:THR:C	1:0:193:ILE:HD12	2.35	0.52
3:F:14:ALA:HB1	3:F:18:ILE:HD12	1.92	0.52
3:L:36:GLN:HE21	3:L:36:GLN:HA	1.74	0.52
1:U:65:THR:OG1	1:U:66:ALA:N	2.42	0.52
1:U:276:THR:HG22	1:V:285:MET:HE3	1.90	0.52
1:U:184:TRP:CZ3	1:U:237:LEU:HD21	2.45	0.51
1:0:201:GLN:O	1:0:202:THR:OG1	2.19	0.51
1:Z:252:LEU:CD1	1:R:317:LEU:HD21	2.40	0.51
3:E:135:TYR:CE1	3:E:342:MET:HE3	2.44	0.51
3:J:24:TYR:CE1	3:J:68:THR:HG23	2.46	0.51
3:J:261:VAL:HG22	3:J:290:LEU:HD23	1.92	0.51
3:N:114:ASP:OD1	3:N:115:SER:N	2.43	0.51
1:Q:271:ILE:HG12	1:Q:284:MET:HE1	1.92	0.51
2:B:474:GLN:NE2	2:B:519:GLN:OE1	2.42	0.51
3:I:242:ASP:OD1	3:I:242:ASP:N	2.44	0.51
3:N:250:ASN:ND2	3:N:315:GLU:O	2.42	0.51
3:O:168:ARG:NH2	3:O:194:ASP:OD1	2.39	0.51
1:0:145:ASP:OD2	1:0:147:THR:OG1	2.29	0.51
1:Y:112:PRO:O	1:Y:115:SER:OG	2.27	0.51
1:1:267:ASP:OD1	1:1:286:ARG:NE	2.41	0.51
3:E:199:ILE:HD13	3:E:310:ASN:HA	1.93	0.51
3:G:4:LEU:HD22	3:G:116:LEU:HD13	1.91	0.51
3:M:228:ASP:O	3:M:323:THR:OG1	2.28	0.51
3:J:11:LEU:HD21	3:J:88:PHE:CB	2.41	0.51
3:D:11:LEU:HD21	3:D:88:PHE:HB3	1.93	0.51
3:H:114:ASP:OD1	3:H:115:SER:N	2.43	0.51
3:N:11:LEU:HD21	3:N:88:PHE:HB3	1.93	0.51
2:A:624:ARG:HD2	2:A:655:ARG:HB3	1.93	0.51
3:M:261:VAL:HG22	3:M:290:LEU:HD23	1.92	0.51
1:Y:106:PHE:CZ	1:Y:300:VAL:HG22	2.46	0.51
2:B:621:TYR:CZ	2:B:625:ILE:HD11	2.46	0.51
1:Y:202:THR:HG22	1:Y:202:THR:O	2.12	0.50
1:S:132:GLN:OE1	1:S:134:TYR:OH	2.12	0.50
1:S:202:THR:O	1:S:202:THR:HG22	2.11	0.50
1:0:166:ASN:OD1	1:Y:315:ARG:NH2	2.43	0.50
3:G:360:VAL:O	3:G:378:ARG:NE	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:2:ASP:OD1	3:L:3:VAL:N	2.45	0.50
1:S:266:SER:OG	1:S:267:ASP:N	2.44	0.50
3:D:217:VAL:HG22	3:D:286:ASP:HB3	1.93	0.50
3:E:14:ALA:HA	3:E:30:LEU:HD21	1.93	0.50
3:E:114:ASP:OD1	3:E:115:SER:N	2.44	0.50
3:O:2:ASP:OD1	3:O:3:VAL:N	2.44	0.50
1:R:141:LEU:HD23	1:R:261:ILE:HB	1.94	0.50
1:0:159:ILE:HD12	1:0:258:VAL:HG11	1.93	0.50
1:Z:202:THR:O	1:Z:202:THR:HG22	2.11	0.50
1:W:262:GLN:NE2	1:W:264:GLY:O	2.44	0.50
1:P:184:TRP:CZ3	1:P:237:LEU:HD21	2.47	0.50
3:E:240:SER:OG	3:E:242:ASP:OD1	2.28	0.50
1:U:295:VAL:O	1:U:298:THR:OG1	2.27	0.50
2:B:505:ARG:NH2	2:B:562:GLU:OE1	2.41	0.49
3:N:217:VAL:HG22	3:N:286:ASP:HB3	1.94	0.49
3:D:334:VAL:HG23	3:D:382:LEU:HD12	1.94	0.49
3:F:34:PHE:CE2	3:F:38:ILE:HD11	2.48	0.49
3:G:225:LEU:CD2	3:G:261:VAL:HG21	2.43	0.49
3:L:57:ARG:NH2	3:L:90:ASP:OD2	2.45	0.49
1:U:230:VAL:HG22	1:V:300:VAL:HG13	1.93	0.49
3:J:24:TYR:CZ	3:J:68:THR:HG23	2.48	0.49
1:P:112:PRO:O	1:P:115:SER:OG	2.30	0.49
1:U:93:ILE:HD13	1:U:98:TRP:CE3	2.48	0.49
3:H:38:ILE:HD11	3:H:84:THR:HG21	1.93	0.49
1:1:134:TYR:O	1:1:313:ARG:NH1	2.46	0.49
3:D:11:LEU:HD21	3:D:88:PHE:CB	2.42	0.49
3:M:11:LEU:HD21	3:M:88:PHE:HB3	1.94	0.49
1:S:142:MET:HE3	1:S:155:LEU:HD23	1.95	0.49
1:Z:174:TYR:CD1	1:Z:198:LEU:HD11	2.48	0.49
1:P:134:TYR:O	1:P:313:ARG:NH1	2.45	0.49
1:Q:291:LYS:NZ	1:S:217:GLU:OE1	2.45	0.49
3:G:114:ASP:OD1	3:G:115:SER:N	2.46	0.49
3:H:11:LEU:HD21	3:H:88:PHE:CB	2.42	0.49
1:1:191:CYS:N	1:1:222:GLU:O	2.44	0.49
3:D:346:VAL:HG11	3:D:365:MET:HE2	1.95	0.49
3:F:173:HIS:HA	3:F:176:LEU:HD21	1.95	0.49
1:V:65:THR:O	1:V:66:ALA:HB3	2.13	0.49
1:1:142:MET:HE2	1:1:155:LEU:HD23	1.94	0.48
2:B:786:ASP:OD2	2:B:830:THR:OG1	2.23	0.48
3:C:225:LEU:HD13	3:C:324:LEU:HD13	1.95	0.48
1:0:55:ILE:HD12	1:0:57:LEU:HG	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:225:LEU:HD13	3:G:324:LEU:CD1	2.43	0.48
3:L:11:LEU:HD21	3:L:88:PHE:HB3	1.95	0.48
1:U:185:ILE:HG22	1:U:187:MET:HE2	1.95	0.48
2:B:277:ILE:HD11	2:B:299:LEU:HD11	1.96	0.48
3:H:245:THR:OG1	3:H:246:THR:N	2.46	0.48
3:L:209:GLU:OE2	3:L:289:ARG:NH2	2.46	0.48
1:U:261:ILE:HG12	1:U:285:MET:HE2	1.94	0.48
1:W:51:GLN:O	1:W:54:GLY:N	2.45	0.48
2:A:781:LEU:HD13	2:A:807:TYR:CD2	2.48	0.48
1:R:133:LEU:HD13	1:R:258:VAL:HG21	1.95	0.48
1:T:82:CYS:N	1:T:135:CYS:SG	2.86	0.48
3:O:11:LEU:HD21	3:O:88:PHE:HB3	1.96	0.48
1:U:259:ALA:HB1	1:U:285:MET:HE1	1.96	0.48
3:C:255:ARG:NH2	1:S:65:THR:O	2.45	0.48
1:W:192:THR:C	1:W:193:ILE:HD12	2.39	0.48
1:W:240:THR:HG1	1:W:243:THR:HG1	1.59	0.48
3:H:45:GLU:O	3:H:118:LYS:NZ	2.46	0.48
2:A:514:MET:HG2	2:A:547:LEU:HD22	1.96	0.48
3:H:255:ARG:NH2	1:T:65:THR:O	2.47	0.48
1:R:130:ASP:OD2	1:R:132:GLN:NE2	2.42	0.48
1:P:258:VAL:C	1:P:310:MET:HE1	2.39	0.48
2:A:728:VAL:HG22	2:A:730:ILE:HG13	1.96	0.47
3:F:265:LEU:HD22	3:F:284:ASN:ND2	2.29	0.47
3:H:2:ASP:OD1	3:H:3:VAL:N	2.46	0.47
3:I:11:LEU:HD21	3:I:88:PHE:CB	2.44	0.47
1:Q:93:ILE:HD13	1:Q:98:TRP:CE3	2.49	0.47
1:Q:271:ILE:C	1:Q:271:ILE:HD12	2.39	0.47
1:U:205:ILE:HG22	1:V:101:THR:HG22	1.95	0.47
3:C:294:LEU:HD12	3:C:320:VAL:HG13	1.95	0.47
3:E:147:ARG:NH1	3:E:332:GLU:OE2	2.47	0.47
3:E:135:TYR:CZ	3:E:342:MET:HE3	2.50	0.47
3:F:147:ARG:NH1	3:F:332:GLU:OE2	2.47	0.47
3:N:17:LYS:HB3	3:N:27:VAL:HG12	1.96	0.47
3:N:173:HIS:HA	3:N:176:LEU:HD21	1.97	0.47
3:N:225:LEU:CD2	3:N:261:VAL:HG21	2.42	0.47
3:O:144:ARG:O	3:O:146:GLN:NE2	2.48	0.47
1:V:129:VAL:O	1:V:129:VAL:HG12	2.14	0.47
2:A:481:PHE:HD2	3:G:69:THR:HG23	1.80	0.47
3:K:110:ALA:O	3:K:112:GLN:NE2	2.45	0.47
3:L:110:ALA:O	3:L:112:GLN:NE2	2.47	0.47
2:B:815:ASP:OD1	2:B:815:ASP:N	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:173:HIS:HA	3:C:176:LEU:HD21	1.95	0.47
3:F:98:ASP:OD1	3:F:102:ARG:NE	2.40	0.47
3:L:196:SER:HB2	3:L:199:ILE:HG22	1.97	0.47
3:M:156:ASN:ND2	3:M:185:GLY:HA2	2.30	0.47
1:Q:187:MET:HG3	1:Q:224:LEU:HD13	1.97	0.47
2:A:356:MET:HG2	2:A:542:LEU:HD22	1.96	0.47
3:D:172:ALA:HB3	3:D:174:ASP:OD1	2.14	0.47
3:E:231:ARG:O	3:E:236:ARG:NH2	2.44	0.47
3:M:63:PHE:CD1	3:M:84:THR:HG23	2.49	0.47
1:V:185:ILE:HD12	1:V:249:CYS:HB2	1.95	0.47
1:0:184:TRP:HB3	1:0:246:ILE:HD11	1.97	0.47
1:Y:166:ASN:ND2	1:Y:325:ARG:O	2.47	0.47
2:A:397:ARG:NH2	2:A:579:THR:OG1	2.43	0.47
2:B:740:ILE:HD12	2:B:764:VAL:HG21	1.97	0.47
3:E:2:ASP:OD1	3:E:3:VAL:N	2.46	0.47
3:E:217:VAL:HG22	3:E:286:ASP:HB3	1.96	0.47
3:E:265:LEU:HD22	3:E:284:ASN:ND2	2.29	0.47
3:G:68:THR:O	3:G:68:THR:HG22	2.13	0.47
3:H:11:LEU:HG	3:H:37:MET:HE1	1.96	0.47
1:Z:166:ASN:OD1	1:R:315:ARG:NH2	2.47	0.47
3:J:294:LEU:HD11	3:J:318:ALA:HB1	1.97	0.47
1:W:51:GLN:O	1:W:55:ILE:N	2.48	0.47
1:Z:195:VAL:HG12	1:Z:237:LEU:CD2	2.45	0.47
2:A:718:GLN:HA	2:A:827:THR:HG22	1.97	0.47
2:B:190:LEU:HD23	2:B:193:MET:CE	2.44	0.47
3:C:11:LEU:HD21	3:C:88:PHE:CB	2.45	0.47
3:C:310:ASN:OD1	1:S:305:GLN:NE2	2.47	0.47
3:G:242:ASP:OD1	3:G:242:ASP:N	2.43	0.47
1:Y:295:VAL:O	1:Y:298:THR:OG1	2.31	0.47
1:Z:65:THR:O	3:M:255:ARG:NH2	2.48	0.47
2:B:517:LEU:HB2	2:B:540:ILE:HG23	1.96	0.47
2:B:500:LEU:O	3:I:68:THR:OG1	2.26	0.46
1:P:172:LEU:HD23	1:P:173:TYR:CZ	2.51	0.46
1:U:164:LEU:HD22	1:U:324:TYR:CZ	2.49	0.46
3:C:158:PHE:CZ	3:C:188:ILE:HD11	2.50	0.46
3:M:11:LEU:HD21	3:M:88:PHE:CB	2.45	0.46
1:Q:124:ILE:HD11	1:Q:143:LYS:O	2.16	0.46
1:S:106:PHE:CE2	1:S:300:VAL:HG22	2.50	0.46
1:V:130:ASP:CA	1:V:187:MET:HE3	2.46	0.46
2:A:137:GLN:O	2:A:138:LEU:HD12	2.15	0.46
3:M:173:HIS:HA	3:M:176:LEU:HD21	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:V:141:LEU:HD23	1:V:261:ILE:HB	1.97	0.46
2:A:420:VAL:HG23	2:A:421:VAL:HG23	1.97	0.46
3:C:2:ASP:OD1	3:C:3:VAL:N	2.48	0.46
3:M:217:VAL:HG22	3:M:286:ASP:HB3	1.98	0.46
1:X:255:ARG:O	1:X:283:ARG:NH1	2.49	0.46
3:D:154:LYS:N	3:D:327:GLU:O	2.41	0.46
1:T:106:PHE:CZ	1:T:300:VAL:HG22	2.50	0.46
2:A:339:VAL:HG11	2:A:610:TYR:HB2	1.96	0.46
3:H:188:ILE:HD13	3:H:212:VAL:HG21	1.98	0.46
1:P:185:ILE:HD12	1:P:249:CYS:CB	2.46	0.46
1:U:321:ALA:N	1:U:326:ILE:O	2.48	0.46
3:O:22:THR:HG22	3:O:73:LEU:HD12	1.97	0.46
1:R:106:PHE:CE2	1:R:300:VAL:HG22	2.50	0.46
1:0:170:ILE:O	1:0:171:THR:OG1	2.24	0.46
1:1:193:ILE:CD1	1:1:239:VAL:HG13	2.45	0.46
2:A:801:THR:O	2:A:801:THR:HG22	2.15	0.46
3:C:114:ASP:OD1	3:C:115:SER:N	2.48	0.46
3:F:283:ARG:NH1	3:G:352:GLU:OE1	2.49	0.46
3:G:170:GLN:NE2	3:G:174:ASP:OD2	2.49	0.46
1:T:74:GLU:O	1:T:78:THR:HG22	2.16	0.46
1:Y:87:THR:HG23	1:Y:120:GLU:OE2	2.16	0.46
2:A:781:LEU:HD13	2:A:807:TYR:CE2	2.51	0.46
3:C:11:LEU:HD21	3:C:88:PHE:HB3	1.98	0.46
3:E:262:GLU:OE1	3:E:289:ARG:NH1	2.49	0.46
3:I:2:ASP:OD1	3:I:3:VAL:N	2.49	0.46
1:1:263:VAL:HG12	1:1:289:TRP:CG	2.51	0.45
1:Z:264:GLY:N	1:Z:287:ILE:O	2.41	0.45
2:A:441:THR:HB	2:A:442:ILE:HD12	1.96	0.45
3:E:11:LEU:HD21	3:E:88:PHE:CB	2.45	0.45
3:L:173:HIS:HA	3:L:176:LEU:HD21	1.98	0.45
1:S:172:LEU:HD23	1:S:173:TYR:CZ	2.50	0.45
3:F:11:LEU:HD21	3:F:88:PHE:CB	2.47	0.45
1:Y:263:VAL:HG12	1:Y:289:TRP:CD1	2.52	0.45
3:L:11:LEU:HD21	3:L:88:PHE:CB	2.47	0.45
1:R:187:MET:CG	1:R:224:LEU:HD13	2.46	0.45
1:1:182:ASN:ND2	1:1:248:ASN:OD1	2.46	0.45
3:D:265:LEU:HD22	3:D:284:ASN:ND2	2.32	0.45
3:F:23:LEU:HD11	3:H:36:GLN:HB2	1.98	0.45
3:K:11:LEU:HD21	3:K:88:PHE:HB3	1.99	0.45
3:M:168:ARG:NH2	3:M:194:ASP:OD1	2.43	0.45
3:O:39:ILE:HG12	3:O:65:LEU:HD21	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:251:LYS:NZ	1:0:271:ILE:O	2.47	0.45
2:A:412:ILE:HG22	2:A:543:LEU:HD22	1.98	0.45
2:A:734:LEU:HD21	2:A:833:TYR:CG	2.51	0.45
3:C:225:LEU:HD23	3:C:276:ARG:O	2.16	0.45
3:D:170:GLN:HB2	3:D:171:PRO:HD2	1.99	0.45
1:Y:192:THR:C	1:Y:193:ILE:HD12	2.40	0.45
3:M:189:GLN:HG2	3:M:323:THR:HG23	1.99	0.45
1:P:168:MET:HE3	1:P:246:ILE:HG12	1.99	0.45
1:V:170:ILE:HD11	1:V:241:THR:CG2	2.46	0.45
2:B:408:TYR:CG	2:B:536:ILE:HD13	2.52	0.45
3:C:258:ASN:ND2	3:C:293:GLN:OE1	2.50	0.45
1:0:52:ASN:ND2	1:Y:57:LEU:O	2.46	0.45
2:B:728:VAL:CG2	2:B:806:LEU:HD11	2.47	0.45
3:I:254:LEU:O	3:I:320:VAL:HG12	2.16	0.45
1:S:53:TYR:O	1:S:55:ILE:N	2.48	0.45
3:J:138:ASN:ND2	3:J:149:GLY:O	2.45	0.44
1:0:191:CYS:N	1:0:222:GLU:O	2.45	0.44
3:C:145:ARG:NH2	3:N:380:ASP:OD1	2.50	0.44
2:B:277:ILE:CD1	2:B:299:LEU:HD11	2.48	0.44
2:B:621:TYR:CE2	2:B:625:ILE:HD11	2.53	0.44
3:C:307:LEU:HD11	3:D:248:TYR:CD1	2.53	0.44
3:E:188:ILE:HD13	3:E:212:VAL:HG21	1.99	0.44
1:U:195:VAL:HG23	1:U:237:LEU:HD23	1.98	0.44
3:C:264:LEU:HD21	3:C:269:ILE:HD13	1.99	0.44
3:J:14:ALA:HB1	3:J:18:ILE:HD12	1.99	0.44
3:N:11:LEU:HD21	3:N:88:PHE:CB	2.48	0.44
1:Q:80:THR:OG1	1:Q:324:TYR:O	2.35	0.44
1:R:102:LEU:HD21	1:R:296:PHE:HB3	1.99	0.44
1:T:278:ALA:O	1:T:280:GLN:NE2	2.48	0.44
1:U:52:ASN:ND2	1:W:57:LEU:O	2.48	0.44
3:F:225:LEU:CD2	3:F:261:VAL:HG21	2.47	0.44
3:O:70:LEU:HD12	3:O:74:ASP:OD1	2.17	0.44
1:U:230:VAL:HG22	1:V:300:VAL:CG1	2.47	0.44
1:V:190:SER:OG	1:V:243:THR:HG21	2.18	0.44
1:Z:52:ASN:ND2	1:R:57:LEU:O	2.46	0.44
2:B:734:LEU:HD21	2:B:833:TYR:CG	2.52	0.44
3:H:10:THR:HB	3:H:37:MET:HE3	1.99	0.44
1:P:160:LEU:HD21	1:P:260:VAL:HG23	2.00	0.44
1:V:285:MET:HE2	1:V:306:ILE:HG12	1.99	0.44
2:A:195:VAL:HG21	2:A:209:SER:HA	1.99	0.44
1:P:191:CYS:N	1:P:222:GLU:O	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:P:256:GLU:O	1:P:310:MET:HE3	2.17	0.44
1:S:106:PHE:CZ	1:S:300:VAL:HG22	2.52	0.44
2:A:666:ASP:OD1	2:A:666:ASP:N	2.51	0.43
2:A:728:VAL:HG23	2:A:807:TYR:O	2.18	0.43
3:M:225:LEU:HD22	3:M:261:VAL:HG21	2.00	0.43
3:H:169:SER:HA	3:H:176:LEU:HD23	2.00	0.43
1:P:106:PHE:CZ	1:P:300:VAL:HG22	2.53	0.43
1:U:316:SER:OG	1:W:325:ARG:NH2	2.51	0.43
3:D:110:ALA:O	3:D:112:GLN:NE2	2.51	0.43
3:G:173:HIS:HA	3:G:176:LEU:HD21	1.99	0.43
3:K:299:ASN:N	3:K:299:ASN:OD1	2.51	0.43
1:W:95:ASP:OD1	1:W:96:ASN:N	2.50	0.43
1:Z:316:SER:O	1:Z:317:LEU:HD12	2.19	0.43
3:G:382:LEU:HA	3:G:385:VAL:HG22	2.00	0.43
3:K:38:ILE:HD11	3:K:84:THR:HG21	2.00	0.43
1:W:157:ASP:OD1	1:W:161:ASN:ND2	2.47	0.43
1:W:193:ILE:HD12	1:W:193:ILE:N	2.33	0.43
1:Y:80:THR:N	1:Y:136:ASP:OD2	2.47	0.43
1:1:217:GLU:OE1	1:1:217:GLU:N	2.45	0.43
3:C:225:LEU:HD13	3:C:324:LEU:CD1	2.49	0.43
3:L:23:LEU:HD11	3:N:36:GLN:HB2	2.01	0.43
3:M:225:LEU:HD21	3:M:261:VAL:HG21	2.00	0.43
1:1:251:LYS:NZ	1:1:271:ILE:O	2.52	0.43
2:B:604:PRO:HB3	2:B:867:ALA:HB1	2.00	0.43
1:Q:106:PHE:CE2	1:Q:300:VAL:HG22	2.54	0.43
1:W:170:ILE:HD13	1:W:238:ASP:HA	2.00	0.43
1:Z:173:TYR:OH	1:R:116:VAL:O	2.08	0.43
3:E:11:LEU:HD21	3:E:88:PHE:HB3	1.99	0.43
3:F:307:LEU:HD11	3:G:248:TYR:CG	2.54	0.43
3:M:225:LEU:O	3:M:277:PHE:O	2.37	0.43
3:O:173:HIS:HA	3:O:176:LEU:HD21	2.00	0.43
1:U:130:ASP:OD2	1:U:132:GLN:NE2	2.52	0.43
2:A:621:TYR:CE2	2:A:625:ILE:HD11	2.53	0.43
1:V:180:GLU:O	1:V:183:LYS:NZ	2.50	0.43
1:Y:168:MET:HE2	1:Y:246:ILE:HG12	2.01	0.43
1:Y:224:LEU:HD12	1:Y:225:VAL:N	2.34	0.43
1:Z:180:GLU:O	1:Z:183:LYS:NZ	2.52	0.43
2:A:188:LEU:HD22	2:A:264:LEU:CD2	2.48	0.43
3:C:202:PRO:O	3:C:203:ALA:HB3	2.19	0.43
3:E:57:ARG:NH1	3:E:94:ASN:OD1	2.50	0.43
3:G:255:ARG:HD2	1:V:64:ASP:HA	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:69:THR:HG22	3:I:69:THR:O	2.18	0.43
1:T:263:VAL:HG12	1:T:289:TRP:CD1	2.53	0.43
1:P:77:LEU:HD23	1:P:112:PRO:HG3	2.00	0.43
1:T:101:THR:HG22	1:V:205:ILE:HG22	2.00	0.43
2:A:601:ILE:HD11	2:A:869:THR:HG23	1.98	0.42
3:F:39:ILE:HD11	3:F:65:LEU:HD11	2.01	0.42
3:H:225:LEU:CD2	3:H:261:VAL:HG21	2.49	0.42
3:M:2:ASP:OD1	3:M:3:VAL:N	2.52	0.42
1:X:73:GLU:OE2	1:X:77:LEU:HD11	2.19	0.42
2:B:727:TYR:HB2	2:B:809:ILE:HB	2.01	0.42
3:J:236:ARG:NH2	1:X:63:MET:SD	2.92	0.42
1:X:136:ASP:O	1:X:257:ASN:HB2	2.19	0.42
1:Z:191:CYS:SG	1:Z:193:ILE:HD11	2.59	0.42
2:A:336:ALA:O	2:A:340:VAL:HG23	2.18	0.42
3:E:165:THR:HG22	3:E:181:TRP:HZ3	1.84	0.42
3:H:344:ALA:O	3:H:348:SER:OG	2.29	0.42
3:I:225:LEU:CD2	3:I:261:VAL:HG21	2.48	0.42
1:Q:184:TRP:HB3	1:Q:246:ILE:HD11	2.01	0.42
2:B:643:LYS:HZ3	2:B:648:ILE:HD11	1.84	0.42
3:E:173:HIS:HA	3:E:176:LEU:HD21	2.02	0.42
3:O:91:PHE:O	3:O:95:VAL:HG23	2.20	0.42
1:T:263:VAL:HG12	1:T:289:TRP:CG	2.55	0.42
2:B:170:ARG:NE	2:B:638:LEU:O	2.50	0.42
3:J:220:THR:O	3:J:220:THR:HG22	2.18	0.42
3:O:225:LEU:CD2	3:O:261:VAL:HG21	2.49	0.42
1:R:169:ASP:OD2	1:R:172:LEU:HD12	2.19	0.42
1:V:189:SER:HB2	1:V:243:THR:HG22	2.02	0.42
1:1:281:THR:HB	1:1:284:MET:HE3	2.01	0.42
2:A:553:LEU:HD21	2:A:591:LEU:HG	2.01	0.42
2:B:309:ASN:O	2:B:622:ASN:ND2	2.45	0.42
3:I:76:ASN:ND2	3:M:74:ASP:OD2	2.44	0.42
3:J:2:ASP:OD1	3:J:3:VAL:N	2.52	0.42
3:L:14:ALA:HA	3:L:30:LEU:HD21	2.02	0.42
1:P:75:THR:O	1:P:79:SER:OG	2.31	0.42
1:P:168:MET:HB2	1:P:246:ILE:HG23	2.02	0.42
1:S:113:THR:HG22	1:S:113:THR:O	2.19	0.42
3:K:158:PHE:CZ	3:K:188:ILE:HD11	2.55	0.42
1:Q:304:ASN:OD1	1:Q:304:ASN:N	2.51	0.42
1:T:199:ASN:OD1	1:T:203:LEU:N	2.52	0.42
1:V:112:PRO:O	1:V:115:SER:OG	2.28	0.42
1:0:316:SER:O	1:0:317:LEU:HG	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:149:GLN:HG2	1:1:268:VAL:HG21	2.02	0.42
3:C:156:ASN:ND2	3:E:279:THR:OG1	2.48	0.42
3:F:294:LEU:HD13	3:F:294:LEU:C	2.45	0.42
3:L:188:ILE:HD13	3:L:212:VAL:HG21	2.02	0.42
1:V:191:CYS:N	1:V:222:GLU:O	2.45	0.42
1:0:77:LEU:HD23	1:0:112:PRO:HG3	2.02	0.42
3:F:154:LYS:N	3:F:327:GLU:O	2.46	0.42
3:J:264:LEU:HD12	3:J:269:ILE:HA	2.02	0.42
3:N:189:GLN:HG3	3:N:323:THR:HG23	2.02	0.42
1:0:205:ILE:HG22	1:1:101:THR:HG22	2.01	0.41
2:B:177:TYR:CZ	2:B:181:LEU:HD11	2.55	0.41
1:Y:134:TYR:O	1:Y:315:ARG:NH1	2.54	0.41
3:C:122:ILE:HG23	3:L:83:ASN:CG	2.45	0.41
3:D:156:ASN:ND2	3:D:185:GLY:HA2	2.35	0.41
2:A:439:ILE:HG21	2:A:452:MET:HE3	2.01	0.41
3:C:235:PRO:HA	3:C:249:PHE:O	2.21	0.41
3:I:168:ARG:NH2	3:I:194:ASP:OD1	2.43	0.41
3:N:225:LEU:HD21	3:N:261:VAL:CG2	2.48	0.41
3:O:220:THR:HG22	3:O:220:THR:O	2.20	0.41
1:T:157:ASP:OD1	1:T:161:ASN:ND2	2.54	0.41
3:J:342:MET:HE3	3:J:342:MET:HA	2.01	0.41
1:1:201:GLN:O	1:1:202:THR:HG22	2.20	0.41
3:H:239:ASN:ND2	3:H:240:SER:O	2.54	0.41
3:J:279:THR:OG1	3:K:156:ASN:ND2	2.53	0.41
3:O:334:VAL:HG13	3:O:383:GLN:HG3	2.01	0.41
1:0:195:VAL:HG22	1:0:237:LEU:CD2	2.51	0.41
1:1:272:THR:HG21	1:1:277:THR:O	2.19	0.41
2:B:439:ILE:HG21	2:B:452:MET:HE3	2.02	0.41
3:F:262:GLU:OE1	3:F:289:ARG:NH1	2.53	0.41
3:M:14:ALA:HB1	3:M:18:ILE:HD12	2.01	0.41
1:P:168:MET:HE1	1:P:184:TRP:CG	2.56	0.41
2:B:718:GLN:HA	2:B:827:THR:HG22	2.02	0.41
3:G:281:ILE:HD12	3:H:344:ALA:HB2	2.03	0.41
3:I:304:VAL:HA	3:I:307:LEU:HD12	2.01	0.41
3:N:117:ARG:O	3:N:120:SER:OG	2.35	0.41
1:R:180:GLU:O	1:R:183:LYS:NZ	2.48	0.41
2:A:185:PRO:O	2:A:684:ARG:NH2	2.53	0.41
3:D:48:THR:HG21	3:D:94:ASN:HB3	2.02	0.41
3:J:68:THR:HG22	3:J:69:THR:N	2.32	0.41
3:K:170:GLN:HE22	3:K:175:ASN:H	1.68	0.41
3:N:196:SER:HB2	3:N:199:ILE:HG22	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:O:182:LEU:HD22	3:O:231:ARG:NE	2.36	0.41
3:O:189:GLN:HG3	3:O:323:THR:HG23	2.02	0.41
1:Y:106:PHE:CE2	1:Y:300:VAL:HG22	2.56	0.41
1:Y:137:TYR:CG	1:Y:307:ILE:HD12	2.56	0.41
1:Y:240:THR:O	1:Y:244:CYS:N	2.54	0.41
1:Y:274:ASP:HB3	1:Y:277:THR:HG22	2.03	0.41
3:D:173:HIS:HA	3:D:176:LEU:HD21	2.03	0.41
3:E:99:GLU:HG2	3:E:388:VAL:HG21	2.02	0.41
3:E:245:THR:OG1	3:E:246:THR:N	2.53	0.41
3:F:328:SER:OG	3:G:338:ALA:O	2.39	0.41
3:I:4:LEU:HG	3:I:391:ILE:HG21	2.02	0.41
3:I:342:MET:HA	3:I:342:MET:HE3	2.02	0.41
3:K:114:ASP:OD1	3:K:117:ARG:NH2	2.52	0.41
1:T:137:TYR:HD1	1:T:310:MET:HE2	1.85	0.41
1:T:263:VAL:HG13	1:T:287:ILE:HD11	2.03	0.41
1:U:202:THR:O	1:U:202:THR:HG22	2.21	0.41
1:X:107:LEU:HA	1:X:111:TRP:O	2.21	0.41
3:D:299:ASN:N	3:D:299:ASN:OD1	2.53	0.41
3:D:382:LEU:HA	3:D:385:VAL:HG22	2.03	0.41
1:Q:174:TYR:CD2	1:Q:198:LEU:HD13	2.56	0.41
1:Q:195:VAL:O	1:Q:216:GLU:N	2.53	0.41
1:X:264:GLY:N	1:X:287:ILE:O	2.47	0.41
2:B:624:ARG:HD2	2:B:655:ARG:HB3	2.03	0.40
3:F:48:THR:HG21	3:F:94:ASN:HB3	2.02	0.40
3:G:217:VAL:HG22	3:G:286:ASP:HB3	2.03	0.40
3:H:360:VAL:O	3:H:378:ARG:NE	2.46	0.40
3:N:34:PHE:CE1	3:N:38:ILE:HD11	2.56	0.40
1:R:274:ASP:OD2	1:R:277:THR:HG22	2.22	0.40
1:V:263:VAL:HG12	1:V:289:TRP:CD1	2.56	0.40
1:Z:125:ALA:HB1	1:Z:223:LYS:HG3	2.03	0.40
2:A:620:ASN:O	2:A:624:ARG:HG2	2.21	0.40
2:B:340:VAL:HG11	2:B:387:LYS:HA	2.03	0.40
3:F:182:LEU:HD22	3:F:231:ARG:CD	2.51	0.40
3:G:2:ASP:OD1	3:G:3:VAL:N	2.54	0.40
2:A:311:LEU:O	2:A:618:HIS:NE2	2.44	0.40
2:A:428:ARG:HG2	2:B:530:VAL:HG11	2.03	0.40
3:D:85:ILE:O	3:D:89:VAL:HG23	2.22	0.40
3:D:245:THR:HG22	3:D:246:THR:H	1.86	0.40
3:E:170:GLN:NE2	3:E:175:ASN:O	2.41	0.40
3:N:342:MET:HA	3:N:342:MET:HE3	2.03	0.40
1:W:137:TYR:OH	1:W:312:LYS:HG3	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:740:ILE:HD12	2:A:764:VAL:HG21	2.02	0.40
3:D:189:GLN:HG3	3:D:323:THR:HG23	2.04	0.40
3:J:99:GLU:HG2	3:J:388:VAL:HG21	2.04	0.40
3:J:222:THR:HG23	3:J:327:GLU:HB2	2.04	0.40
3:J:370:LEU:C	3:J:370:LEU:HD13	2.46	0.40
3:K:11:LEU:HD21	3:K:88:PHE:CB	2.51	0.40
1:S:263:VAL:HG12	1:S:289:TRP:CD1	2.57	0.40
1:U:276:THR:CG2	1:V:285:MET:HE3	2.50	0.40
1:0:164:LEU:HD22	1:0:324:TYR:CZ	2.55	0.40
1:0:193:ILE:HD12	1:0:193:ILE:N	2.36	0.40
2:B:674:ASP:OD1	2:B:677:ARG:NH2	2.55	0.40
3:D:170:GLN:NE2	3:D:175:ASN:H	2.20	0.40
3:G:310:ASN:OD1	1:V:305:GLN:NE2	2.54	0.40
3:L:294:LEU:HD11	3:L:318:ALA:HB1	2.04	0.40
1:V:107:LEU:HA	1:V:111:TRP:O	2.22	0.40
1:X:159:ILE:HD11	1:X:260:VAL:CG2	2.52	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	274/326 (84%)	259 (94%)	15 (6%)	0	100	100
1	1	262/326 (80%)	249 (95%)	13 (5%)	0	100	100
1	P	262/326 (80%)	250 (95%)	12 (5%)	0	100	100
1	Q	269/326 (82%)	263 (98%)	6 (2%)	0	100	100
1	R	274/326 (84%)	265 (97%)	9 (3%)	0	100	100
1	S	262/326 (80%)	254 (97%)	8 (3%)	0	100	100
1	T	274/326 (84%)	272 (99%)	2 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	U	274/326 (84%)	261 (95%)	13 (5%)	0	100	100
1	V	274/326 (84%)	259 (94%)	15 (6%)	0	100	100
1	W	274/326 (84%)	267 (97%)	7 (3%)	0	100	100
1	X	269/326 (82%)	260 (97%)	9 (3%)	0	100	100
1	Y	274/326 (84%)	269 (98%)	5 (2%)	0	100	100
1	Z	274/326 (84%)	262 (96%)	12 (4%)	0	100	100
2	A	777/887 (88%)	763 (98%)	14 (2%)	0	100	100
2	B	797/887 (90%)	784 (98%)	13 (2%)	0	100	100
3	C	395/397 (100%)	380 (96%)	15 (4%)	0	100	100
3	D	394/397 (99%)	384 (98%)	10 (2%)	0	100	100
3	E	394/397 (99%)	384 (98%)	10 (2%)	0	100	100
3	F	394/397 (99%)	381 (97%)	13 (3%)	0	100	100
3	G	394/397 (99%)	382 (97%)	12 (3%)	0	100	100
3	H	394/397 (99%)	387 (98%)	7 (2%)	0	100	100
3	I	394/397 (99%)	387 (98%)	7 (2%)	0	100	100
3	J	394/397 (99%)	384 (98%)	10 (2%)	0	100	100
3	K	394/397 (99%)	382 (97%)	12 (3%)	0	100	100
3	L	394/397 (99%)	383 (97%)	11 (3%)	0	100	100
3	M	394/397 (99%)	380 (96%)	14 (4%)	0	100	100
3	N	394/397 (99%)	383 (97%)	11 (3%)	0	100	100
3	O	394/397 (99%)	385 (98%)	9 (2%)	0	100	100
All	All	10213/11173 (91%)	9919 (97%)	294 (3%)	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	0	247/295 (84%)	245 (99%)	2 (1%)	79	85
1	1	237/295 (80%)	236 (100%)	1 (0%)	89	91
1	P	237/295 (80%)	234 (99%)	3 (1%)	65	77
1	Q	243/295 (82%)	242 (100%)	1 (0%)	89	91
1	R	247/295 (84%)	245 (99%)	2 (1%)	79	85
1	S	237/295 (80%)	237 (100%)	0	100	100
1	T	247/295 (84%)	244 (99%)	3 (1%)	67	79
1	U	247/295 (84%)	239 (97%)	8 (3%)	34	54
1	V	247/295 (84%)	243 (98%)	4 (2%)	58	75
1	W	247/295 (84%)	244 (99%)	3 (1%)	67	79
1	X	243/295 (82%)	241 (99%)	2 (1%)	79	85
1	Y	247/295 (84%)	246 (100%)	1 (0%)	89	91
1	Z	247/295 (84%)	246 (100%)	1 (0%)	89	91
2	A	715/818 (87%)	713 (100%)	2 (0%)	91	92
2	B	735/818 (90%)	733 (100%)	2 (0%)	91	92
3	C	349/349 (100%)	344 (99%)	5 (1%)	62	76
3	D	348/349 (100%)	345 (99%)	3 (1%)	75	83
3	E	348/349 (100%)	346 (99%)	2 (1%)	84	88
3	F	348/349 (100%)	347 (100%)	1 (0%)	91	92
3	G	348/349 (100%)	345 (99%)	3 (1%)	75	83
3	H	348/349 (100%)	344 (99%)	4 (1%)	70	80
3	I	348/349 (100%)	346 (99%)	2 (1%)	84	88
3	J	348/349 (100%)	345 (99%)	3 (1%)	75	83
3	K	348/349 (100%)	347 (100%)	1 (0%)	91	92
3	L	348/349 (100%)	340 (98%)	8 (2%)	45	65
3	M	348/349 (100%)	343 (99%)	5 (1%)	62	76
3	N	348/349 (100%)	348 (100%)	0	100	100
3	O	348/349 (100%)	346 (99%)	2 (1%)	84	88
All	All	9148/10008 (91%)	9074 (99%)	74 (1%)	77	85

All (74) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	0	99	LYS
1	0	315	ARG
1	Y	80	THR
1	1	271	ILE
1	Z	194	LYS
2	A	284	ARG
2	A	859	SER
2	B	536	ILE
2	B	836	ILE
3	C	129	PHE
3	C	170	GLN
3	C	252	VAL
3	C	333	SER
3	C	370	LEU
3	D	156	ASN
3	D	179	THR
3	D	299	ASN
3	E	246	THR
3	E	291	SER
3	F	62	ASP
3	G	133	SER
3	G	134	GLU
3	G	366	ASN
3	H	129	PHE
3	H	170	GLN
3	H	179	THR
3	H	252	VAL
3	I	170	GLN
3	I	272	THR
3	J	20	GLU
3	J	170	GLN
3	J	179	THR
3	K	299	ASN
3	L	25	SER
3	L	36	GLN
3	L	129	PHE
3	L	133	SER
3	L	170	GLN
3	L	179	THR
3	L	246	THR
3	L	328	SER
3	M	36	GLN
3	M	170	GLN

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Mol	Chain	Res	Type
3	M	179	THR
3	M	265	LEU
3	M	291	SER
3	O	25	SER
3	O	169	SER
1	P	123	ASP
1	P	198	LEU
1	P	227	THR
1	Q	99	LYS
1	R	83	LEU
1	R	227	THR
1	T	227	THR
1	T	244	CYS
1	T	263	VAL
1	U	62	SER
1	U	91	THR
1	U	141	LEU
1	U	158	LEU
1	U	210	THR
1	U	227	THR
1	U	271	ILE
1	U	317	LEU
1	V	83	LEU
1	V	209	THR
1	V	224	LEU
1	V	326	ILE
1	W	52	ASN
1	W	80	THR
1	W	227	THR
1	X	93	ILE
1	X	122	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (120) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	104	GLN
1	0	288	ASN
1	0	305	GLN
1	Y	72	GLN
1	Y	235	HIS
1	Y	305	GLN
1	1	262	GLN

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Mol	Chain	Res	Type
1	Z	72	GLN
2	A	257	HIS
2	A	298	ASN
2	A	316	ASN
2	A	484	ASN
2	A	511	ASN
2	A	642	GLN
2	A	657	GLN
2	A	708	GLN
2	A	756	ASN
2	A	760	ASN
2	A	835	GLN
2	B	137	GLN
2	B	175	ASN
2	B	279	ASN
2	B	460	GLN
2	B	609	HIS
2	B	657	GLN
2	B	695	ASN
2	B	733	ASN
2	B	756	ASN
2	B	852	ASN
3	C	33	GLN
3	C	140	ASN
3	D	26	ASN
3	D	36	GLN
3	D	47	GLN
3	D	128	ASN
3	D	206	GLN
3	D	345	ASN
3	E	36	GLN
3	E	146	GLN
3	E	206	GLN
3	E	257	ASN
3	F	128	ASN
3	F	140	ASN
3	F	142	GLN
3	F	167	ASN
3	F	206	GLN
3	F	257	ASN
3	F	258	ASN
3	F	310	ASN

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Mol	Chain	Res	Type
3	G	26	ASN
3	G	140	ASN
3	G	183	ASN
3	G	206	GLN
3	G	210	HIS
3	G	239	ASN
3	H	44	ASN
3	H	47	GLN
3	H	128	ASN
3	H	175	ASN
3	H	200	ASN
3	H	206	GLN
3	H	345	ASN
3	I	32	GLN
3	I	44	ASN
3	I	142	GLN
3	I	146	GLN
3	I	258	ASN
3	I	266	ASN
3	J	26	ASN
3	J	44	ASN
3	J	128	ASN
3	J	140	ASN
3	J	183	ASN
3	J	206	GLN
3	K	32	GLN
3	K	128	ASN
3	K	140	ASN
3	L	36	GLN
3	L	140	ASN
3	L	175	ASN
3	L	189	GLN
3	L	200	ASN
3	L	204	ASN
3	L	206	GLN
3	M	32	GLN
3	M	140	ASN
3	M	156	ASN
3	M	204	ASN
3	M	206	GLN
3	M	345	ASN
3	N	146	GLN

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Mol	Chain	Res	Type
3	N	183	ASN
3	N	204	ASN
3	N	257	ASN
3	O	128	ASN
3	O	140	ASN
3	O	206	GLN
3	O	345	ASN
1	P	176	GLN
1	P	234	ASN
1	Q	149	GLN
1	R	52	ASN
1	R	304	ASN
1	R	305	GLN
1	S	149	GLN
1	S	280	GLN
1	T	138	ASN
1	T	166	ASN
1	T	305	GLN
1	U	262	GLN
1	U	305	GLN
1	U	308	GLN
1	V	176	GLN
1	V	280	GLN
1	V	305	GLN
1	W	104	GLN
1	X	94	ASN
1	X	176	GLN
1	X	288	ASN
1	X	304	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

13 non-standard protein/DNA/RNA residues 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	FME	F	1	3	8,9,10	0.37	0	8,9,11	1.17	1 (12%)
3	FME	K	1	3	8,9,10	0.37	0	8,9,11	1.16	1 (12%)
3	FME	D	1	3	8,9,10	0.37	0	8,9,11	1.21	1 (12%)
3	FME	C	1	3	8,9,10	0.36	0	8,9,11	1.09	1 (12%)
3	FME	L	1	3	8,9,10	0.37	0	8,9,11	1.11	1 (12%)
3	FME	N	1	3	8,9,10	0.37	0	8,9,11	1.14	1 (12%)
3	FME	M	1	3	8,9,10	0.38	0	8,9,11	1.33	1 (12%)
3	FME	E	1	3	8,9,10	0.38	0	8,9,11	1.10	1 (12%)
3	FME	J	1	3	8,9,10	0.37	0	8,9,11	1.01	1 (12%)
3	FME	O	1	3	8,9,10	0.37	0	8,9,11	1.01	1 (12%)
3	FME	I	1	3	8,9,10	0.37	0	8,9,11	1.25	1 (12%)
3	FME	G	1	3	8,9,10	0.36	0	8,9,11	1.22	1 (12%)
3	FME	H	1	3	8,9,10	0.38	0	8,9,11	1.14	1 (12%)

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	FME	F	1	3	-	1/7/9/11	-
3	FME	K	1	3	-	1/7/9/11	-
3	FME	D	1	3	-	1/7/9/11	-
3	FME	C	1	3	-	1/7/9/11	-
3	FME	L	1	3	-	1/7/9/11	-
3	FME	N	1	3	-	1/7/9/11	-
3	FME	M	1	3	-	1/7/9/11	-
3	FME	E	1	3	-	1/7/9/11	-
3	FME	J	1	3	-	1/7/9/11	-
3	FME	O	1	3	-	2/7/9/11	-
3	FME	I	1	3	-	2/7/9/11	-
3	FME	G	1	3	-	2/7/9/11	-
3	FME	H	1	3	-	1/7/9/11	-

There are no bond length outliers.

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	M	1	FME	CA-N-CN	3.13	127.63	122.82
3	I	1	FME	CA-N-CN	2.91	127.30	122.82
3	D	1	FME	CA-N-CN	2.80	127.13	122.82
3	G	1	FME	CA-N-CN	2.79	127.12	122.82
3	F	1	FME	CA-N-CN	2.75	127.06	122.82
3	H	1	FME	CA-N-CN	2.64	126.89	122.82
3	N	1	FME	CA-N-CN	2.56	126.76	122.82
3	K	1	FME	CA-N-CN	2.55	126.75	122.82
3	L	1	FME	CA-N-CN	2.47	126.61	122.82
3	E	1	FME	CA-N-CN	2.46	126.61	122.82
3	C	1	FME	CA-N-CN	2.42	126.54	122.82
3	O	1	FME	CA-N-CN	2.17	126.16	122.82
3	J	1	FME	CA-N-CN	2.14	126.11	122.82

There are no chirality outliers.

All (16) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	C	1	FME	O1-CN-N-CA
3	D	1	FME	O1-CN-N-CA
3	E	1	FME	O1-CN-N-CA
3	F	1	FME	O1-CN-N-CA
3	G	1	FME	O1-CN-N-CA
3	H	1	FME	O1-CN-N-CA
3	I	1	FME	O1-CN-N-CA
3	J	1	FME	O1-CN-N-CA
3	K	1	FME	O1-CN-N-CA
3	L	1	FME	O1-CN-N-CA
3	M	1	FME	O1-CN-N-CA
3	N	1	FME	O1-CN-N-CA
3	O	1	FME	O1-CN-N-CA
3	G	1	FME	N-CA-CB-CG
3	I	1	FME	N-CA-CB-CG
3	O	1	FME	N-CA-CB-CG

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 88 ligands modelled in this entry, 75 are monoatomic - leaving 13 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	$\#\|Z\| > 2$
4	NAG	0	401	1	14,14,15	0.74	0	17,19,21	1.01	1 (5%)
4	NAG	P	401	1	14,14,15	0.75	0	17,19,21	0.99	1 (5%)
4	NAG	S	404	1	14,14,15	0.71	0	17,19,21	0.96	0
4	NAG	Y	401	1	14,14,15	0.72	0	17,19,21	1.17	2 (11%)
4	NAG	R	401	1	14,14,15	0.70	0	17,19,21	0.94	0
4	NAG	X	403	1	14,14,15	0.73	0	17,19,21	0.96	1 (5%)
4	NAG	T	401	1	14,14,15	0.71	0	17,19,21	0.93	0
4	NAG	Z	401	1	14,14,15	0.65	0	17,19,21	1.21	2 (11%)
4	NAG	1	401	1	14,14,15	0.71	0	17,19,21	0.99	1 (5%)
4	NAG	V	401	1	14,14,15	0.70	0	17,19,21	1.06	1 (5%)
4	NAG	U	401	1	14,14,15	0.69	0	17,19,21	0.93	1 (5%)
4	NAG	W	401	1	14,14,15	0.72	0	17,19,21	1.27	1 (5%)
4	NAG	Q	401	1	14,14,15	0.68	0	17,19,21	1.01	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	0	401	1	-	2/6/23/26	0/1/1/1
4	NAG	P	401	1	-	4/6/23/26	0/1/1/1
4	NAG	S	404	1	-	4/6/23/26	0/1/1/1
4	NAG	Y	401	1	-	3/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	R	401	1	-	2/6/23/26	0/1/1/1
4	NAG	X	403	1	-	4/6/23/26	0/1/1/1
4	NAG	T	401	1	-	2/6/23/26	0/1/1/1
4	NAG	Z	401	1	-	3/6/23/26	0/1/1/1
4	NAG	1	401	1	-	2/6/23/26	0/1/1/1
4	NAG	V	401	1	-	4/6/23/26	0/1/1/1
4	NAG	U	401	1	-	2/6/23/26	0/1/1/1
4	NAG	W	401	1	-	1/6/23/26	0/1/1/1
4	NAG	Q	401	1	-	4/6/23/26	0/1/1/1

There are no bond length outliers.

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	W	401	NAG	C2-N2-C7	3.09	127.05	122.90
4	V	401	NAG	C1-O5-C5	2.71	115.82	112.19
4	P	401	NAG	O5-C1-C2	-2.61	107.25	111.29
4	Z	401	NAG	O5-C1-C2	-2.58	107.31	111.29
4	0	401	NAG	O5-C1-C2	-2.53	107.38	111.29
4	Y	401	NAG	C2-N2-C7	2.50	126.25	122.90
4	Z	401	NAG	C2-N2-C7	2.30	125.98	122.90
4	1	401	NAG	C2-N2-C7	2.20	125.85	122.90
4	X	403	NAG	O5-C1-C2	-2.20	107.89	111.29
4	U	401	NAG	C1-O5-C5	2.14	115.06	112.19
4	Y	401	NAG	O5-C1-C2	-2.10	108.04	111.29

There are no chirality outliers.

All (37) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	Y	401	NAG	C1-C2-N2-C7
4	1	401	NAG	C1-C2-N2-C7
4	Z	401	NAG	C1-C2-N2-C7
4	T	401	NAG	C1-C2-N2-C7
4	W	401	NAG	C1-C2-N2-C7
4	X	403	NAG	C1-C2-N2-C7
4	X	403	NAG	O5-C5-C6-O6
4	V	401	NAG	O5-C5-C6-O6
4	Q	401	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
4	V	401	NAG	C4-C5-C6-O6
4	X	403	NAG	C4-C5-C6-O6
4	P	401	NAG	C4-C5-C6-O6
4	Q	401	NAG	O5-C5-C6-O6
4	P	401	NAG	O5-C5-C6-O6
4	Y	401	NAG	C4-C5-C6-O6
4	Z	401	NAG	C4-C5-C6-O6
4	0	401	NAG	C1-C2-N2-C7
4	P	401	NAG	C1-C2-N2-C7
4	R	401	NAG	C1-C2-N2-C7
4	S	404	NAG	C1-C2-N2-C7
4	Y	401	NAG	O5-C5-C6-O6
4	Q	401	NAG	C3-C2-N2-C7
4	R	401	NAG	C3-C2-N2-C7
4	T	401	NAG	C3-C2-N2-C7
4	U	401	NAG	C3-C2-N2-C7
4	V	401	NAG	C3-C2-N2-C7
4	X	403	NAG	C3-C2-N2-C7
4	Z	401	NAG	O5-C5-C6-O6
4	S	404	NAG	C4-C5-C6-O6
4	Q	401	NAG	C1-C2-N2-C7
4	U	401	NAG	C1-C2-N2-C7
4	V	401	NAG	C1-C2-N2-C7
4	0	401	NAG	C3-C2-N2-C7
4	1	401	NAG	C3-C2-N2-C7
4	P	401	NAG	C3-C2-N2-C7
4	S	404	NAG	C3-C2-N2-C7
4	S	404	NAG	O5-C5-C6-O6

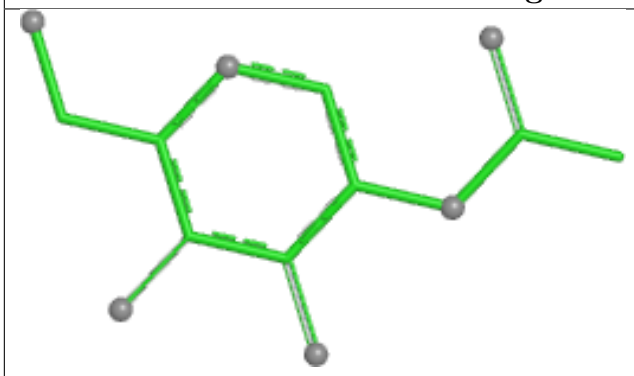
There are no ring outliers.

No monomer is involved in short contacts.

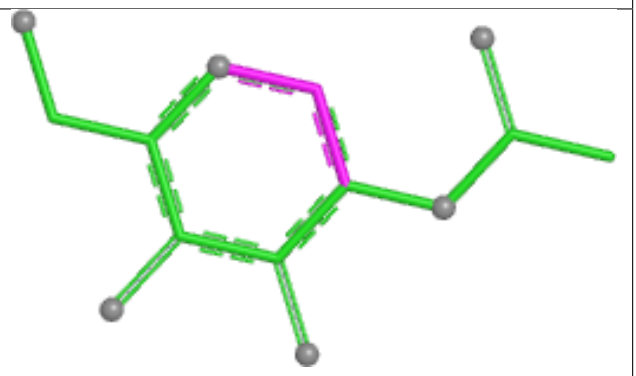
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

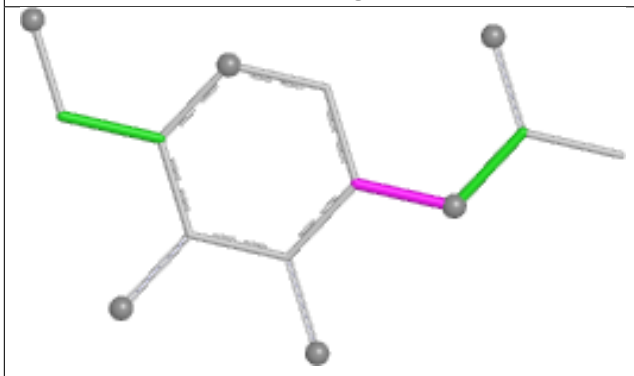
Ligand NAG 0 401



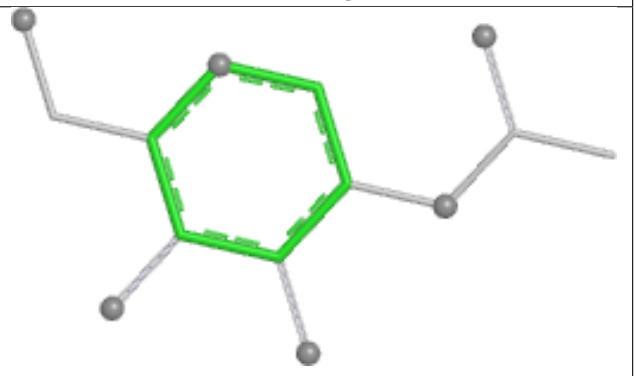
Bond lengths



Bond angles

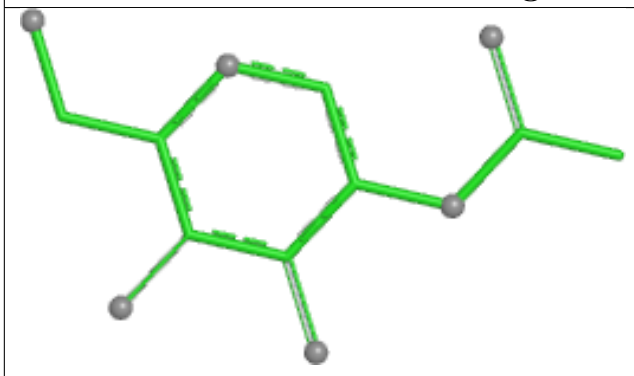


Torsions



Rings

Ligand NAG P 401



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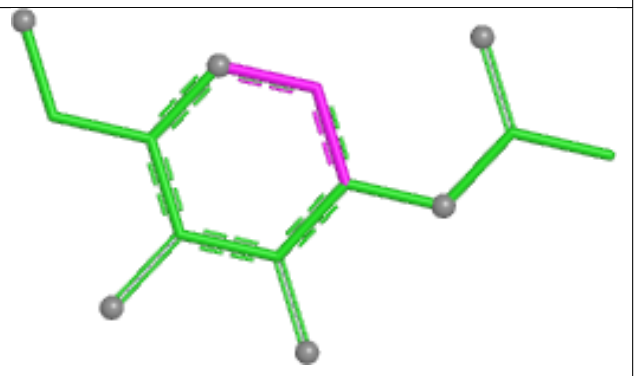

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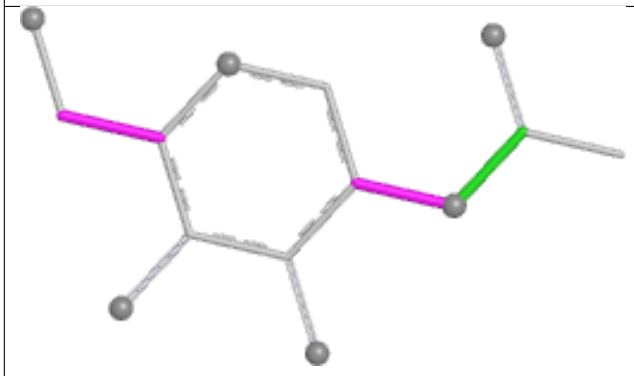

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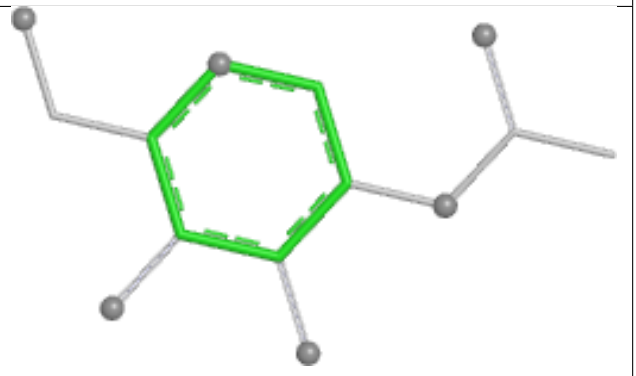

Rings

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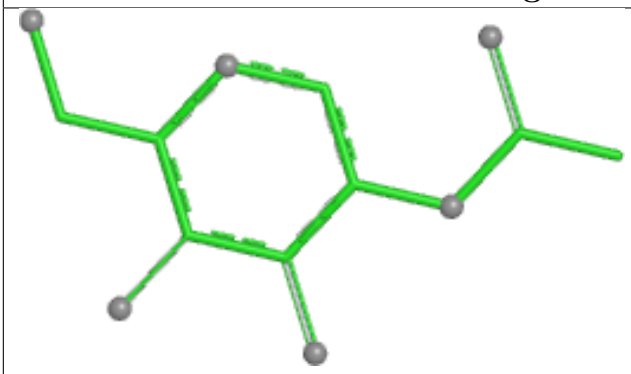

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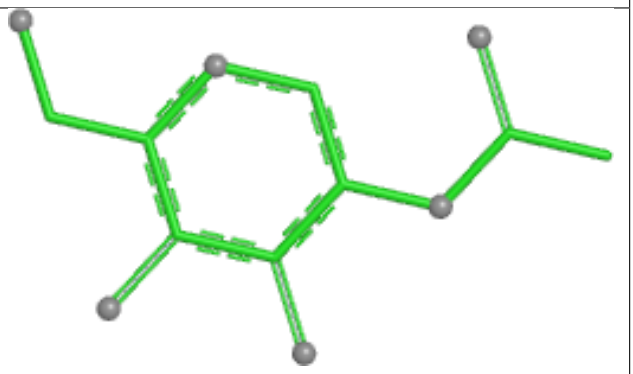

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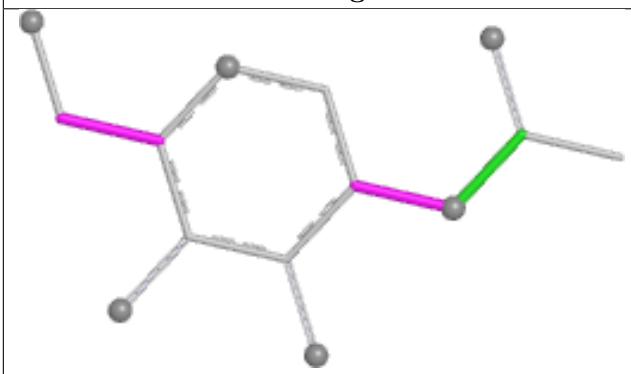

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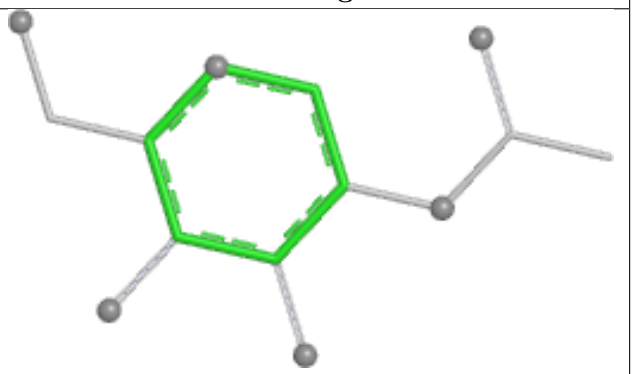
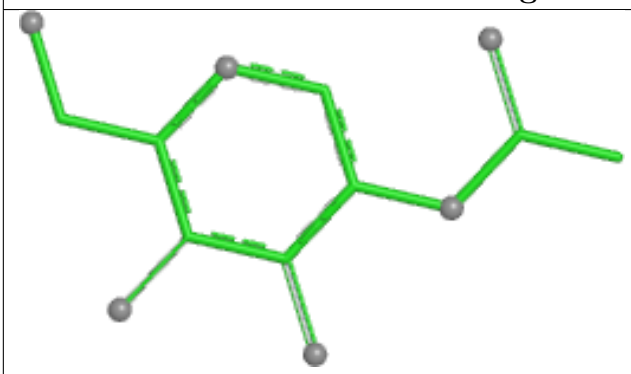


Rings

Ligand NAG Y 401



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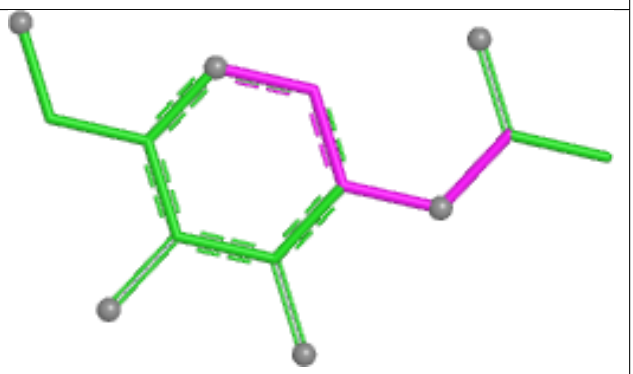

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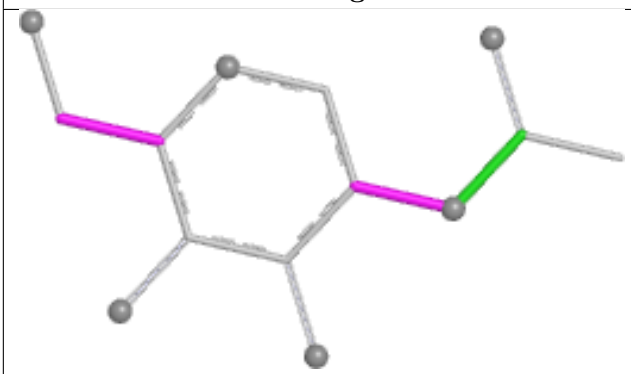

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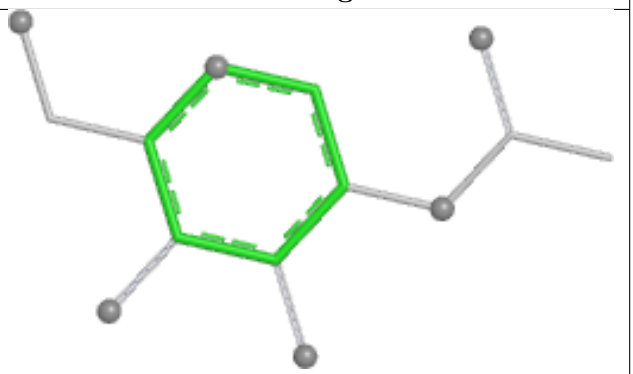

Rings

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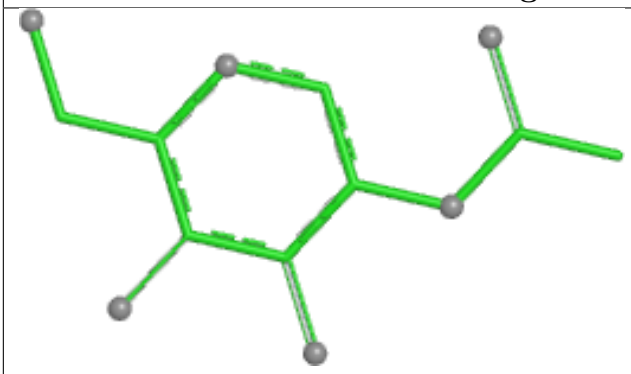

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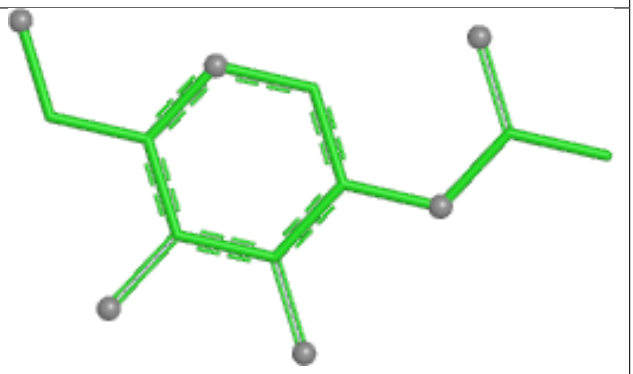

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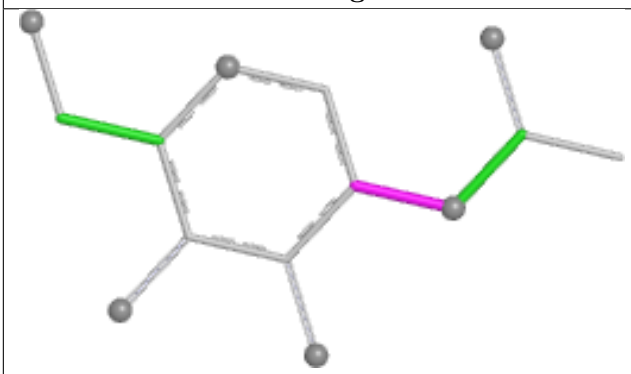

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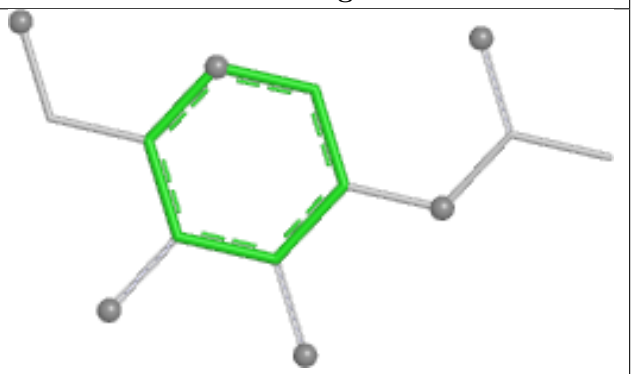

Rings

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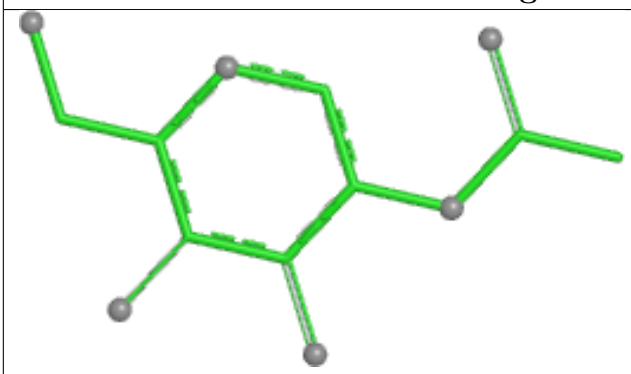

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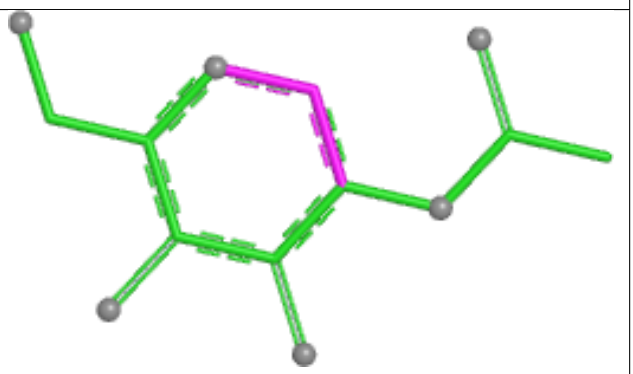

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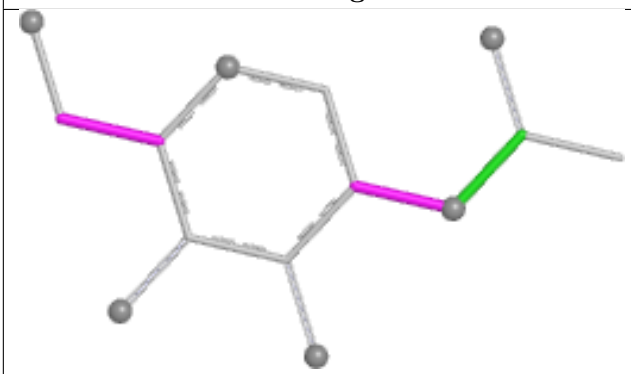

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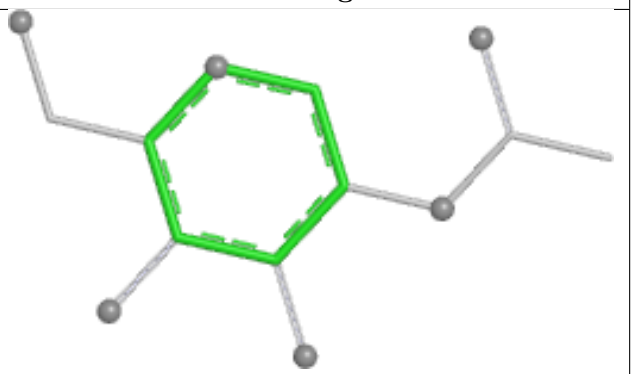

Rings

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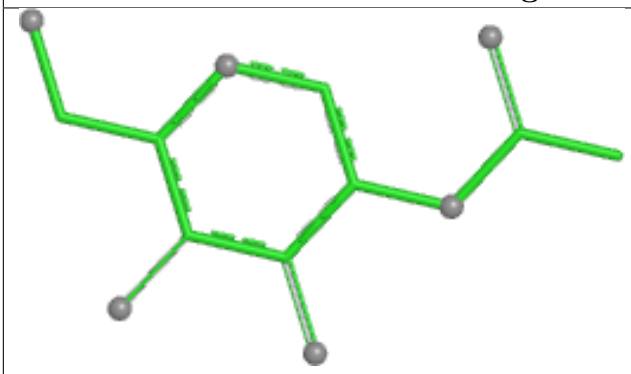

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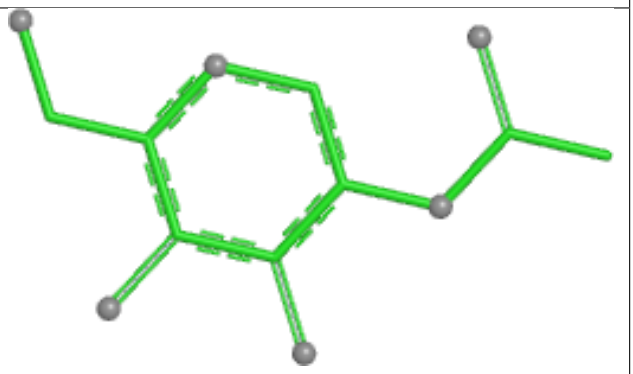

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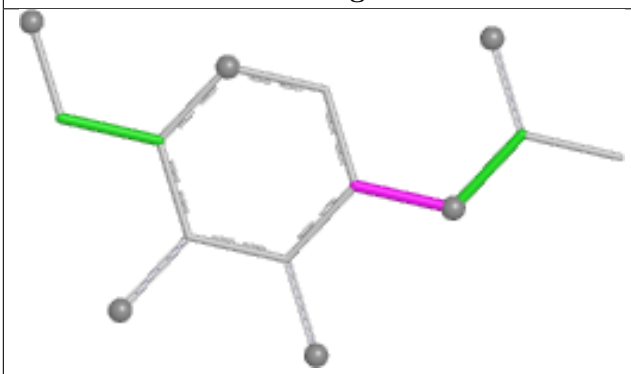

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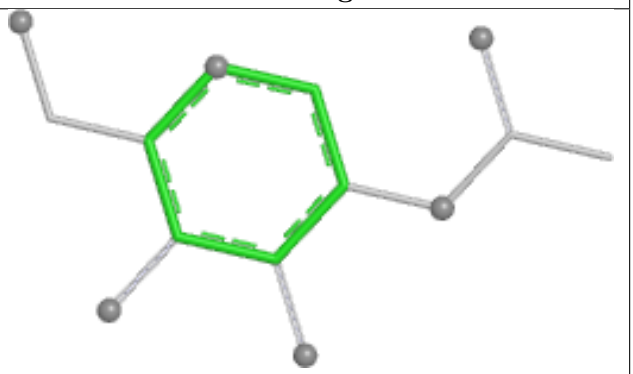

Rings

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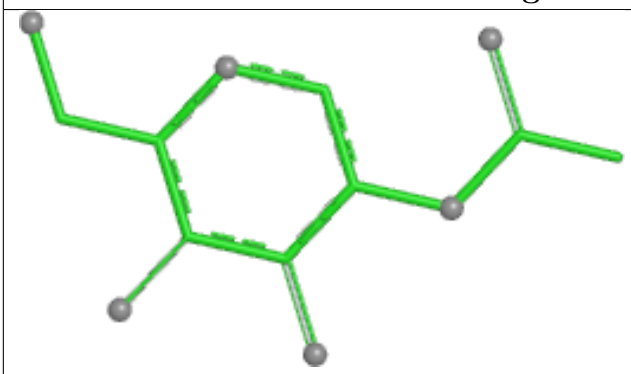

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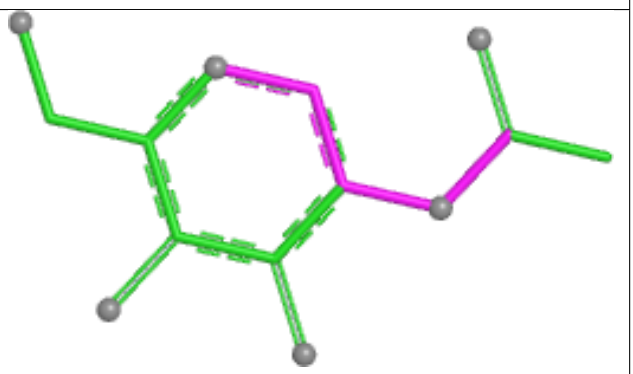

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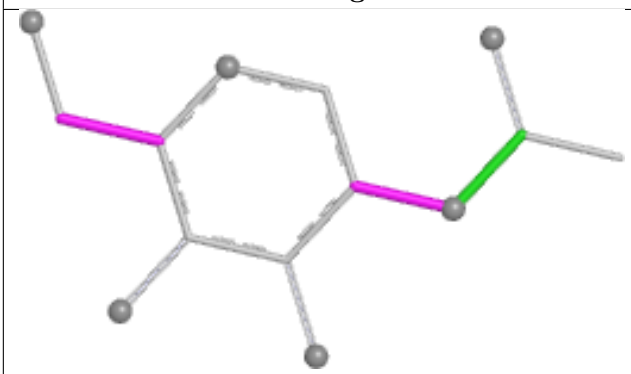

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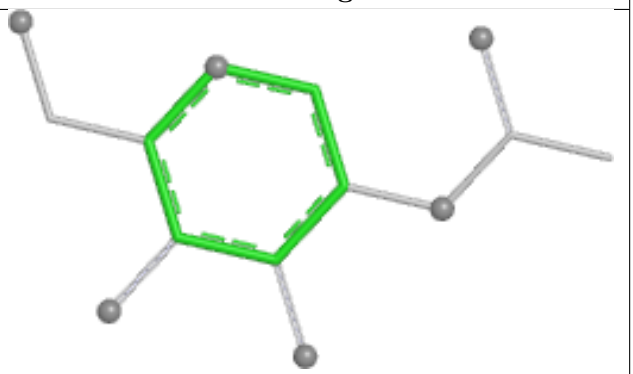
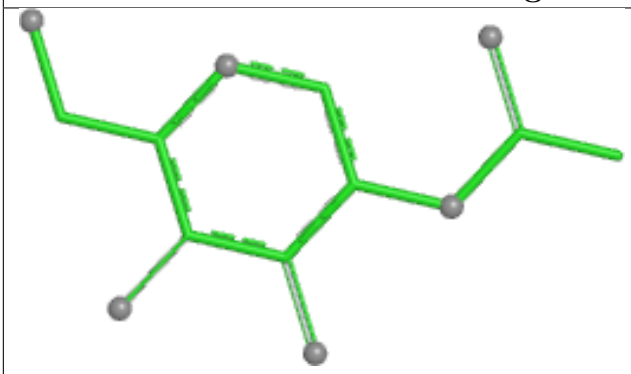


Rings

Ligand NAG 1 401



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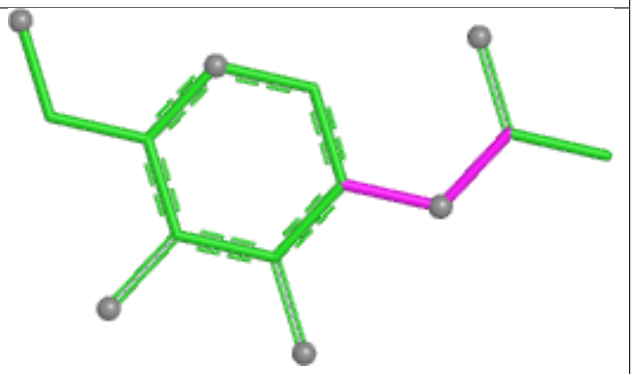

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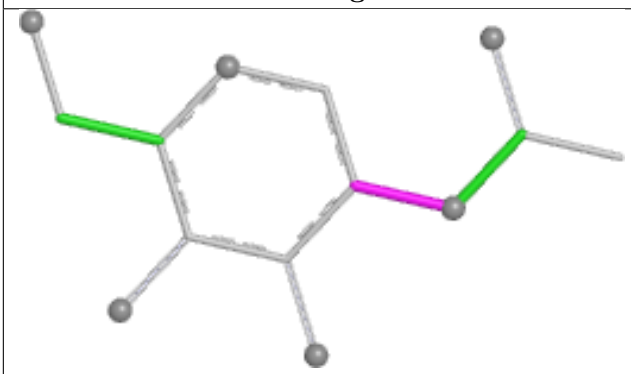

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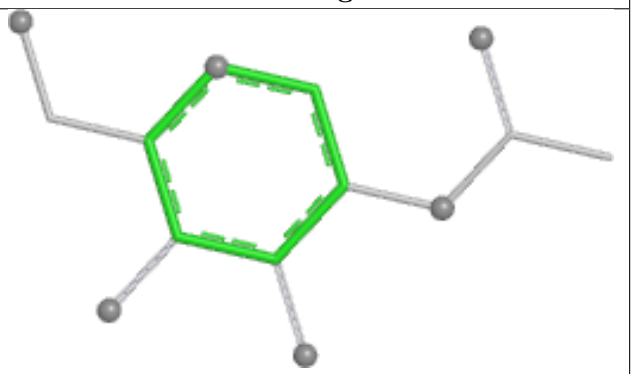
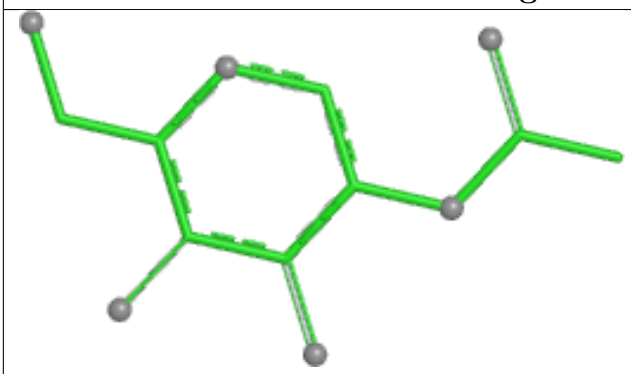


Rings

Ligand NAG V 401



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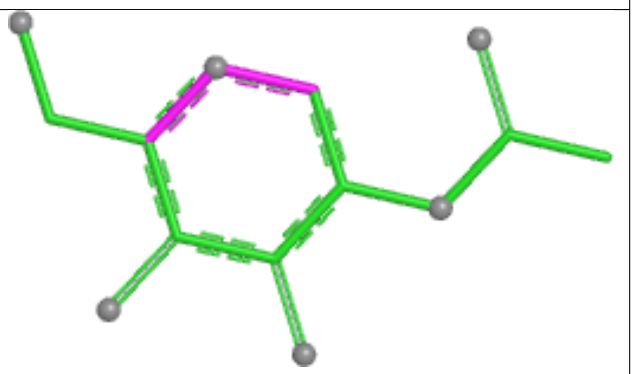

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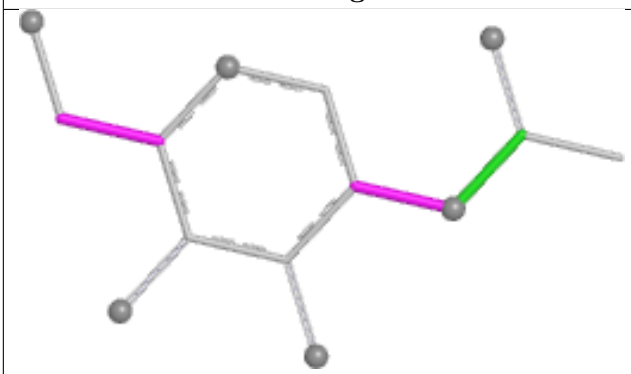

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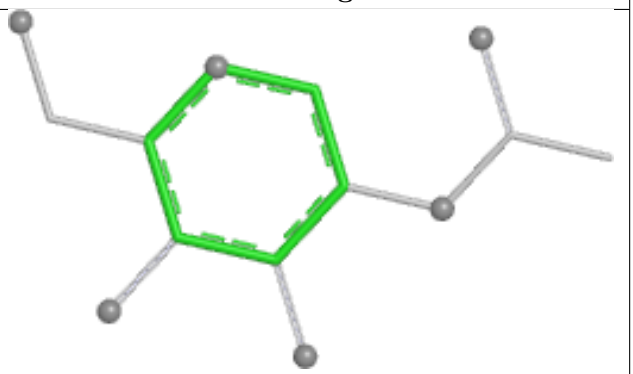

Rings

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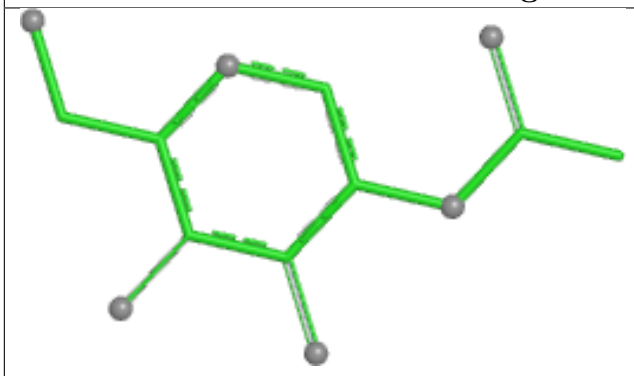

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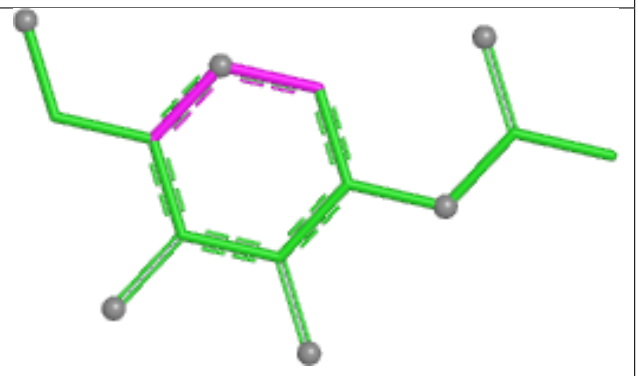

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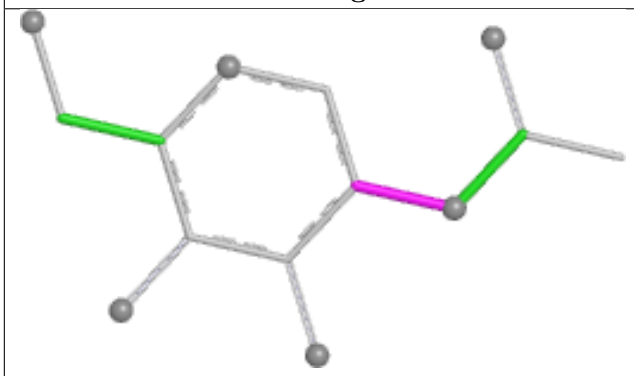

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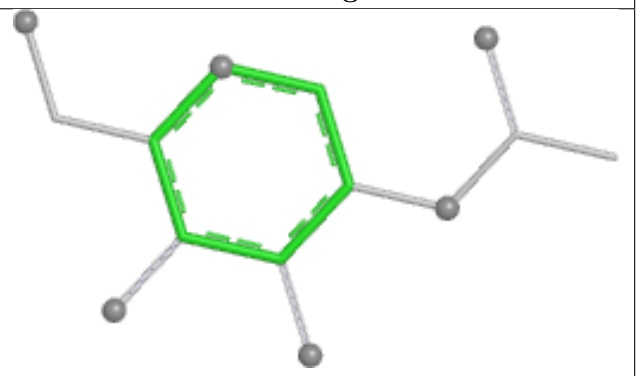

Rings

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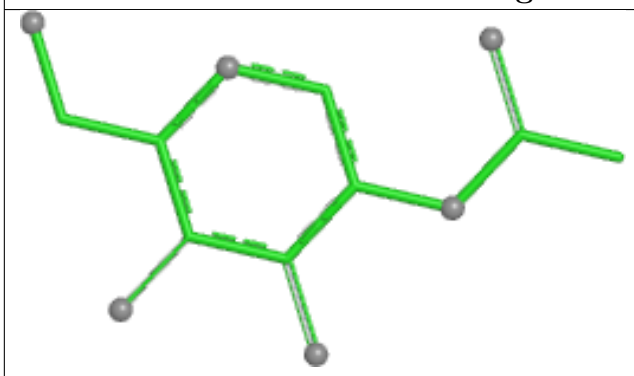
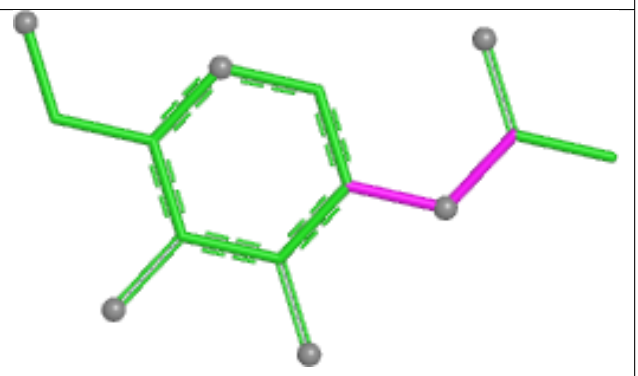
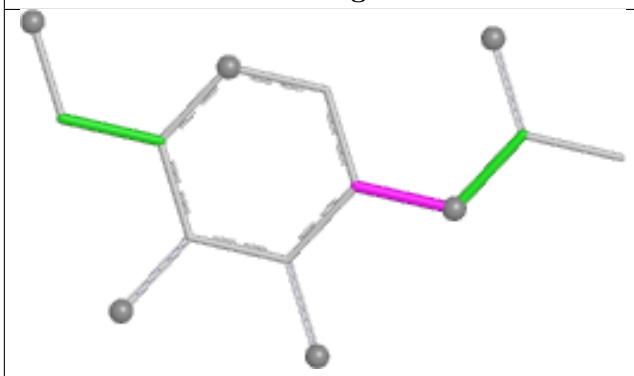


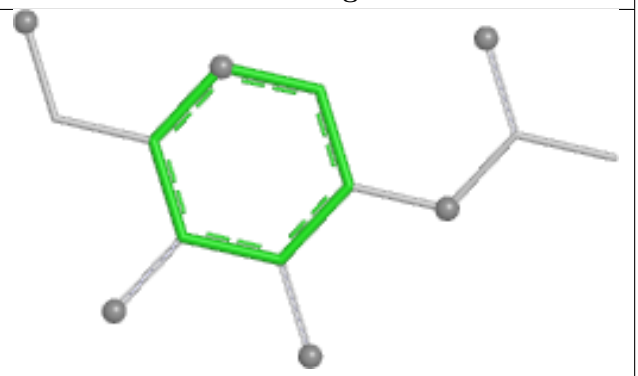
Bond lengths



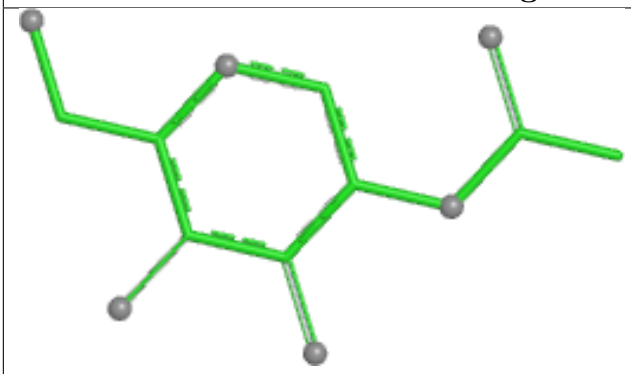
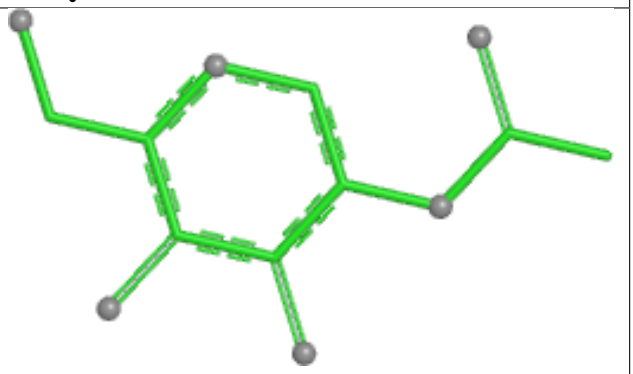
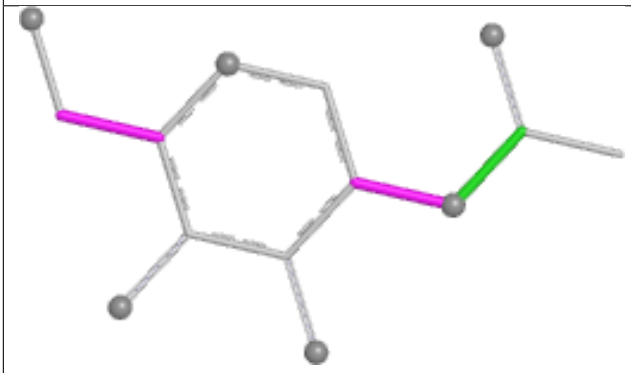
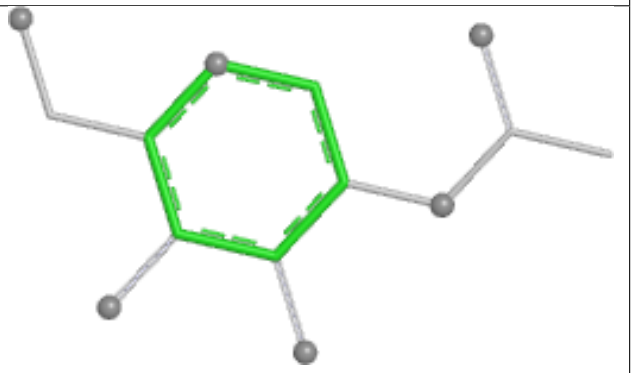
Bond angles



Torsions



Rings

Ligand NAG Q 401	
	
Bond lengths	Bond angles
	
Torsions	Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

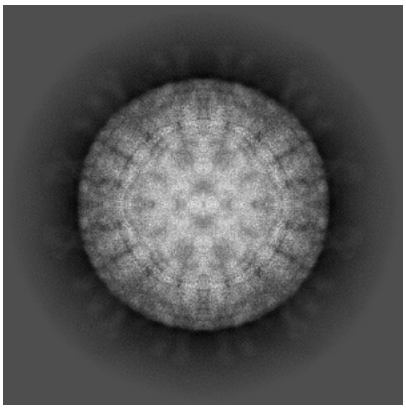
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-75185. These allow visual inspection of the internal detail of the map and identification of artifacts.

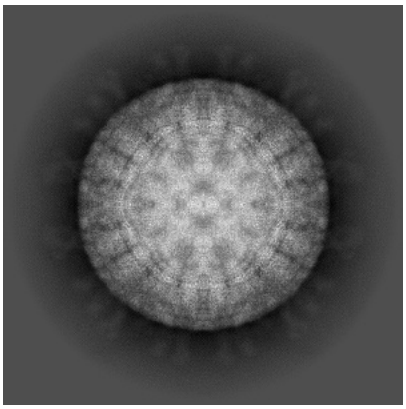
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

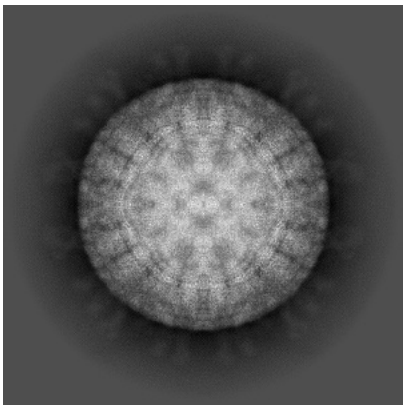
6.1.1 Primary map



X

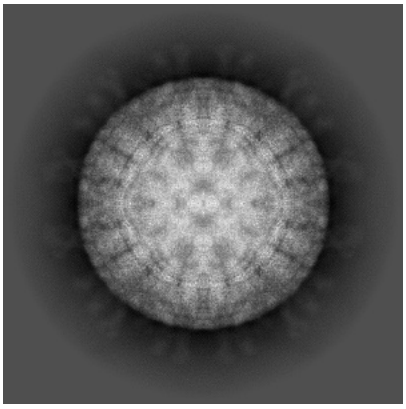


Y

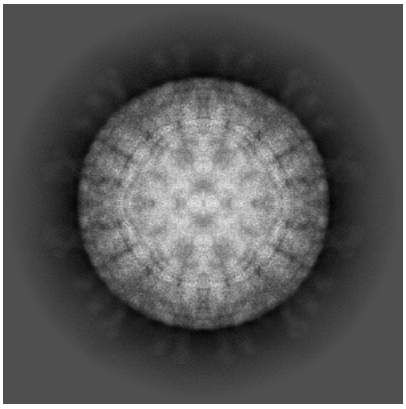


Z

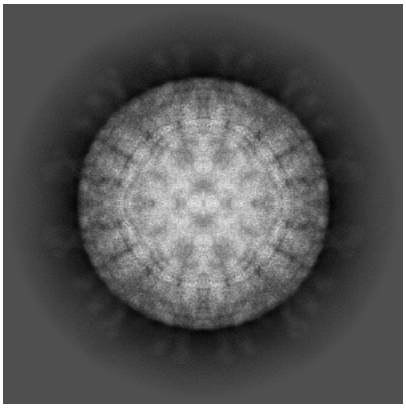
6.1.2 Raw map



X



Y

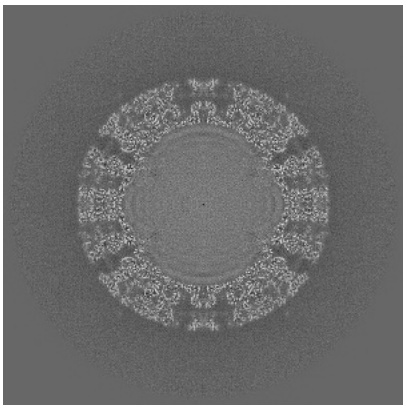


Z

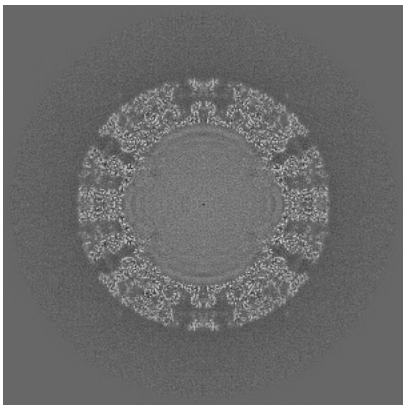
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

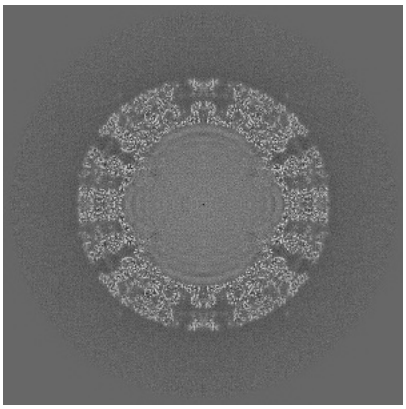
6.2.1 Primary map



X Index: 256

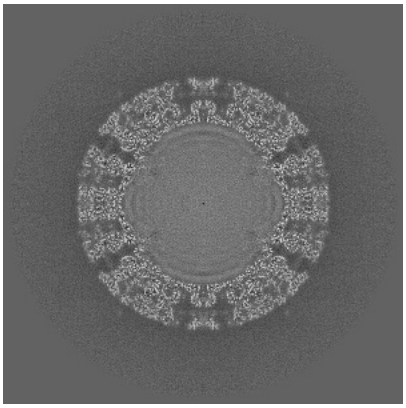


Y Index: 256

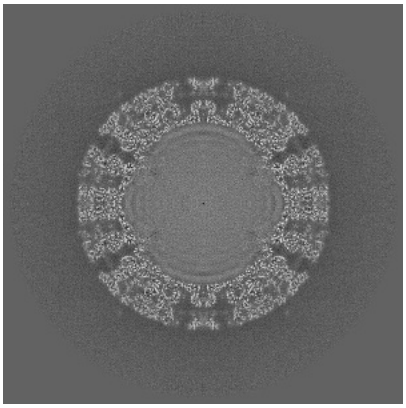


Z Index: 256

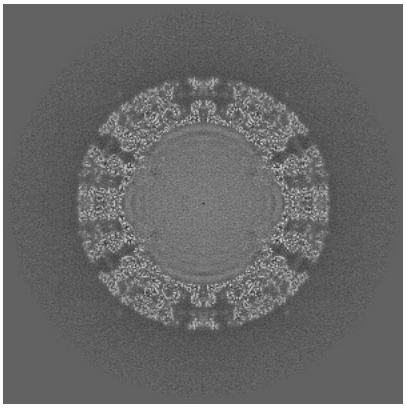
6.2.2 Raw map



X Index: 256



Y Index: 256

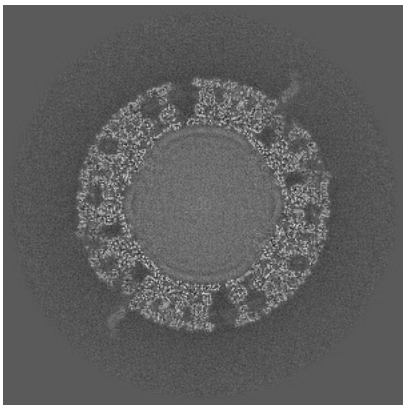


Z Index: 256

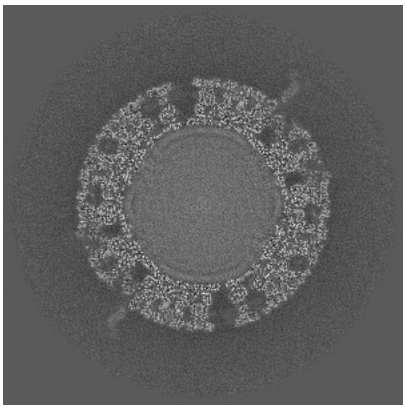
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

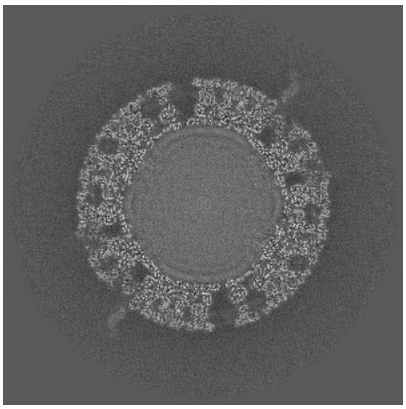
6.3.1 Primary map



X Index: 265

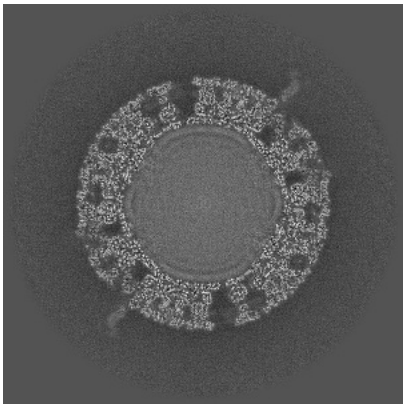


Y Index: 265

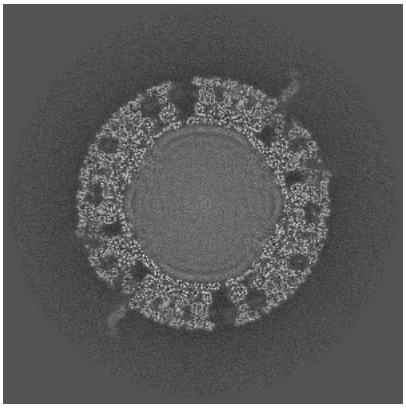


Z Index: 265

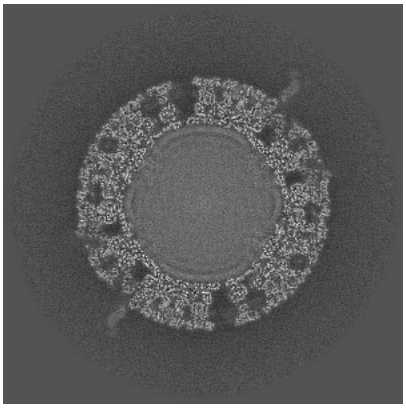
6.3.2 Raw map



X Index: 265



Y Index: 265

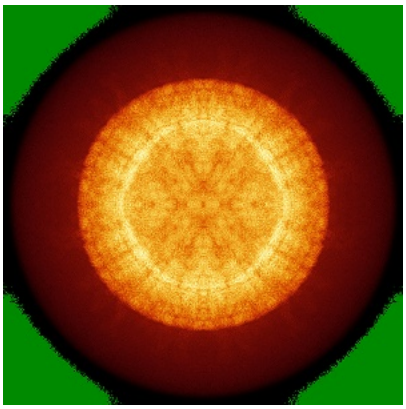


Z Index: 265

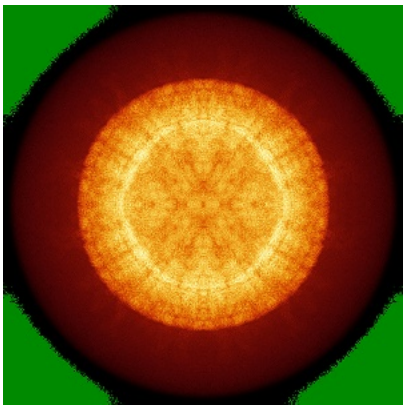
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

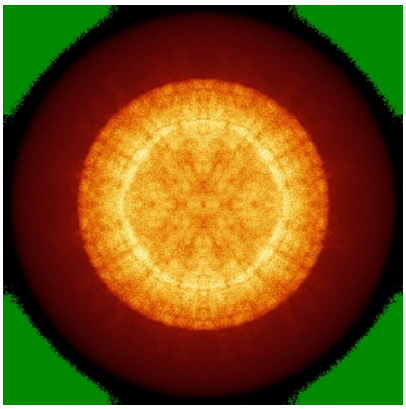
6.4.1 Primary map



X

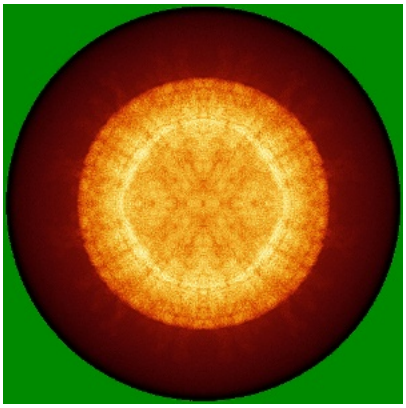


Y

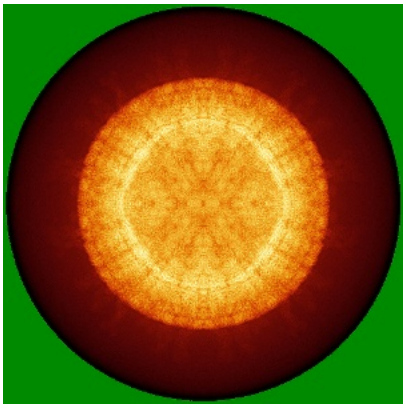


Z

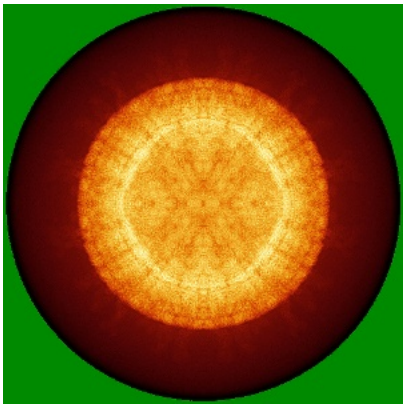
6.4.2 Raw map



X



Y

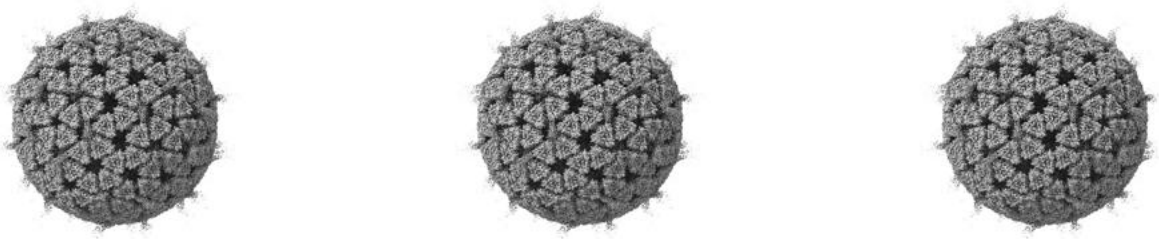


Z

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)

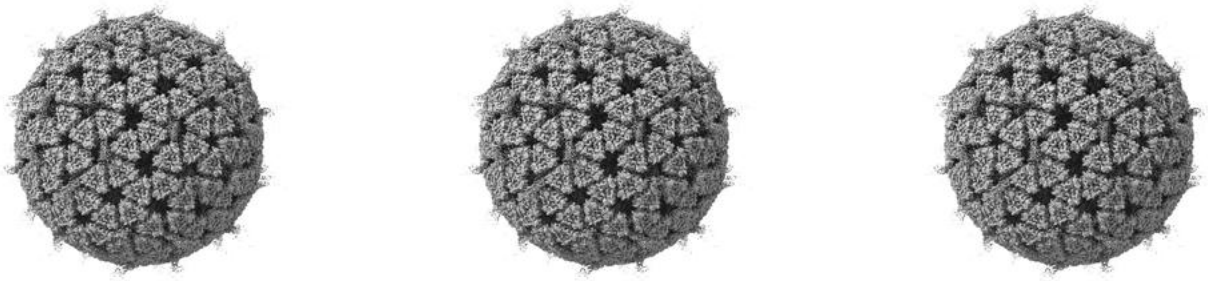
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.006. 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



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.

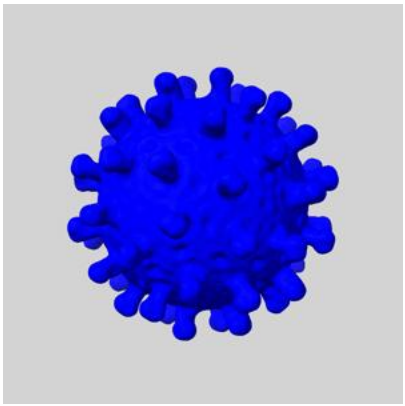
6.6 Mask visualisation

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

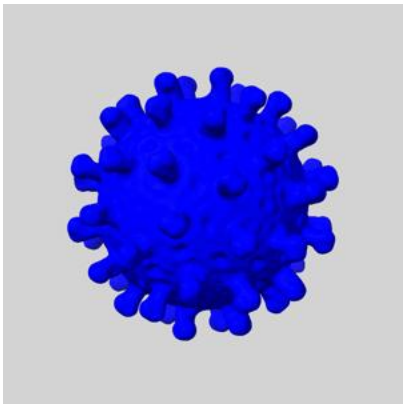
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

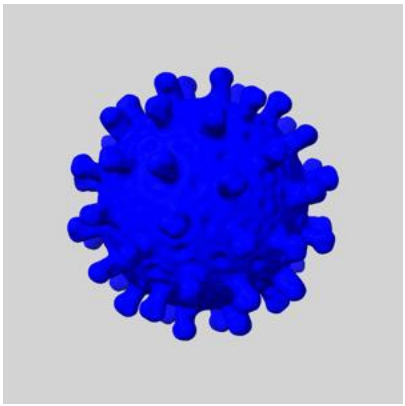
6.6.1 emd_75185_msk_1.map



X



Y

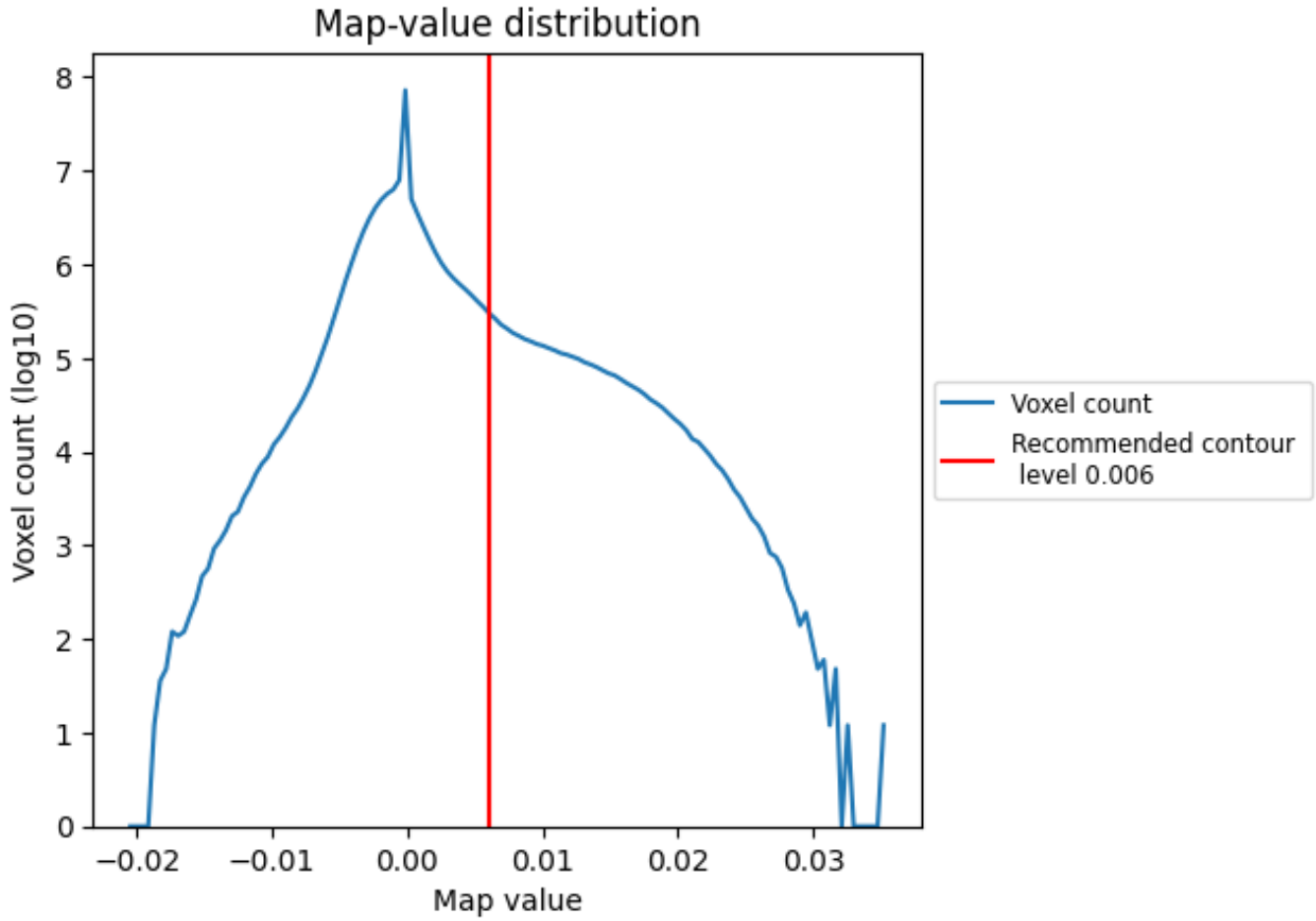


Z

7 Map analysis

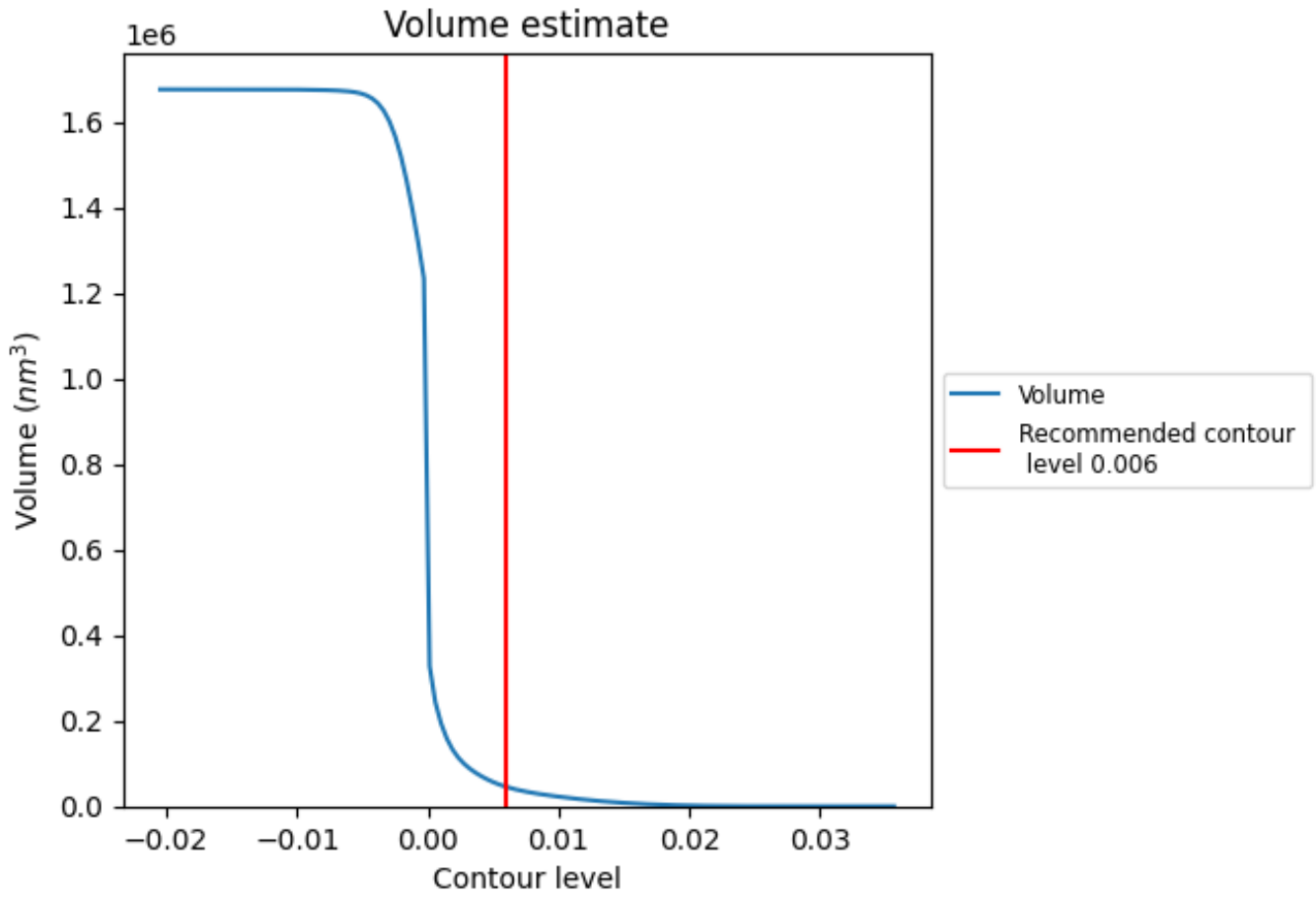
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

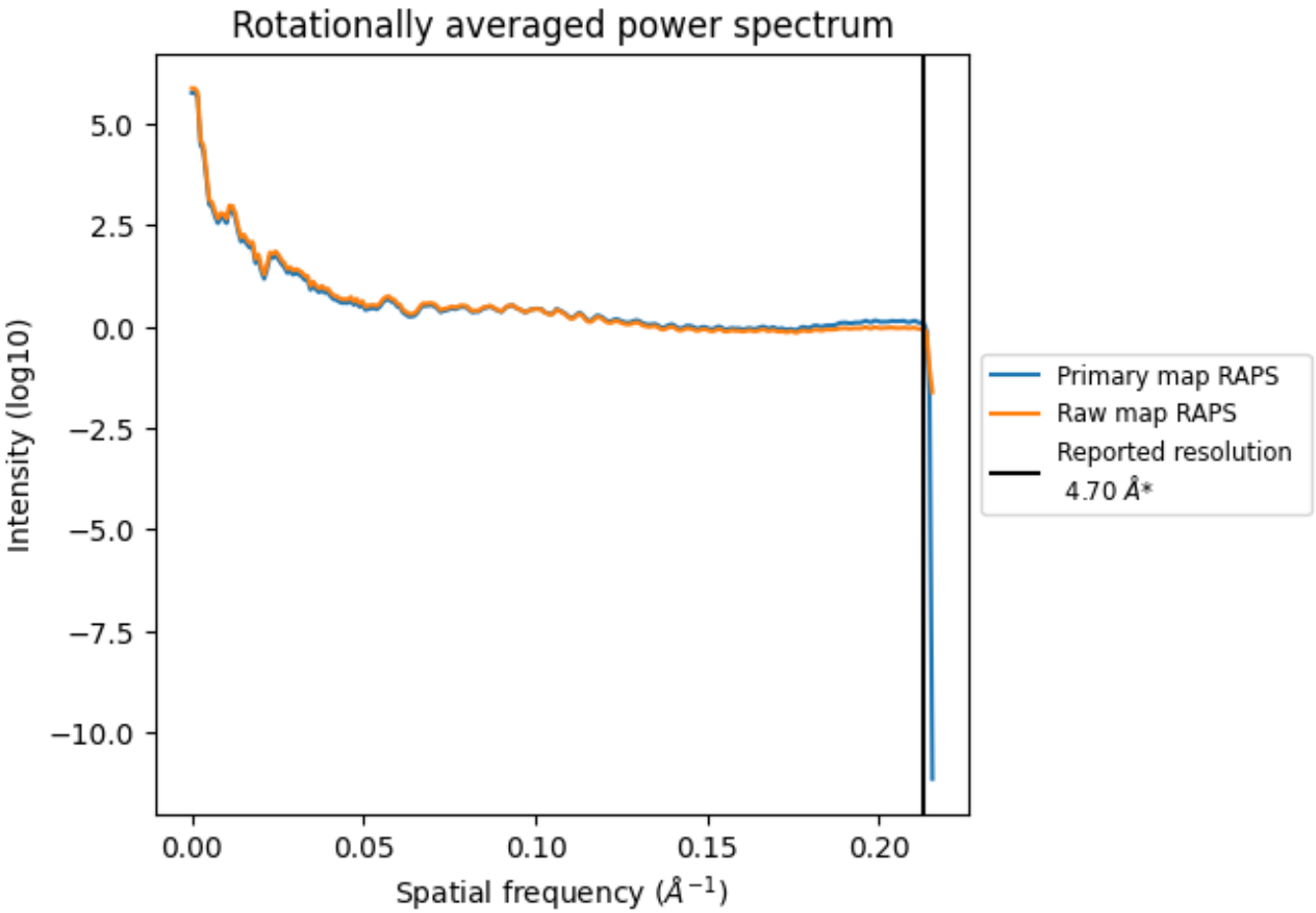
7.2 Volume estimate (i)



The volume at the recommended contour level is 45383 nm^3; this corresponds to an approximate mass of 40996 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)

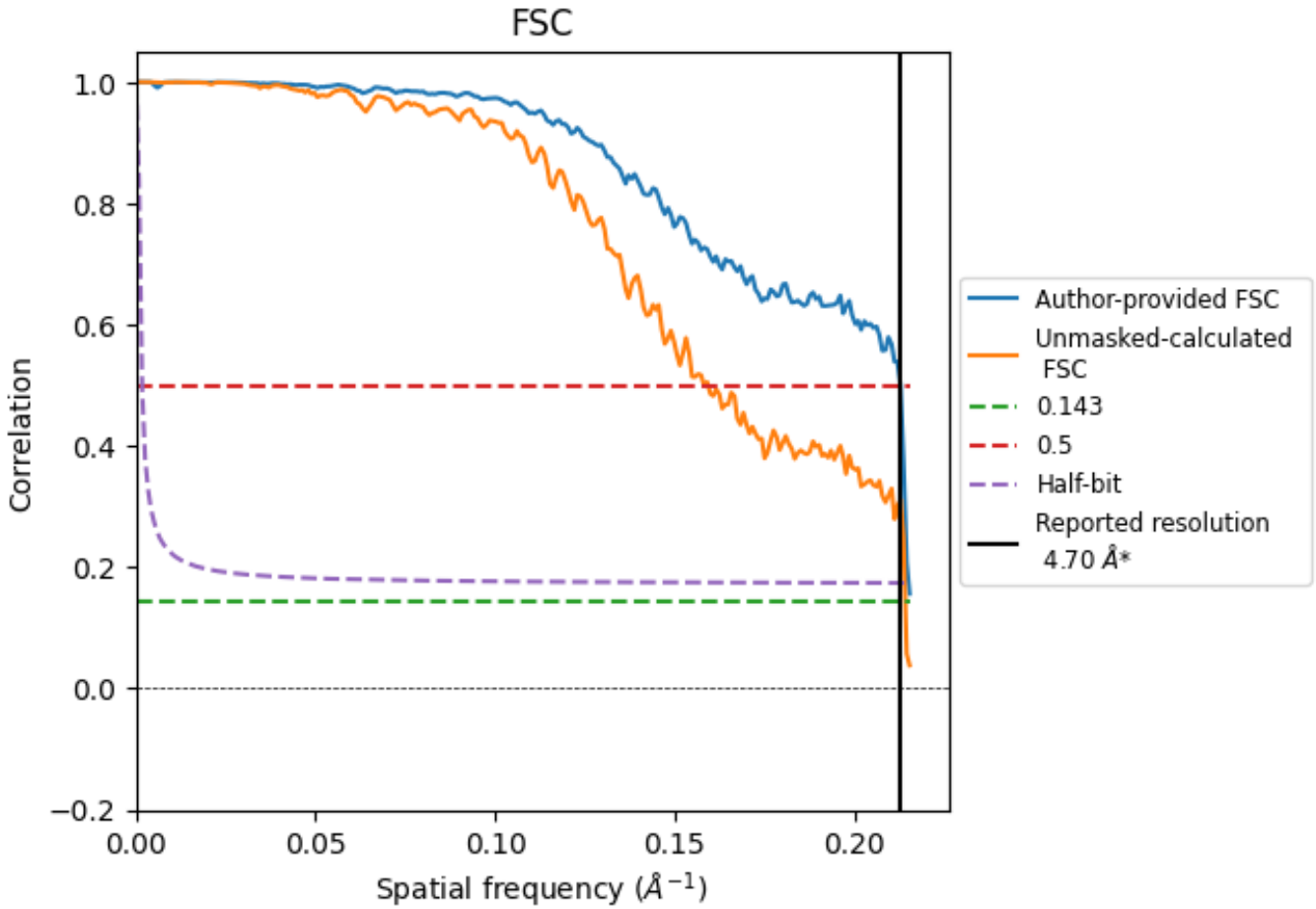


*Reported resolution corresponds to spatial frequency of 0.213 $Å^{-1}$

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.213 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.70	-	-
Author-provided FSC curve	-	4.69	4.65
Unmasked-calculated*	4.67	6.32	4.67

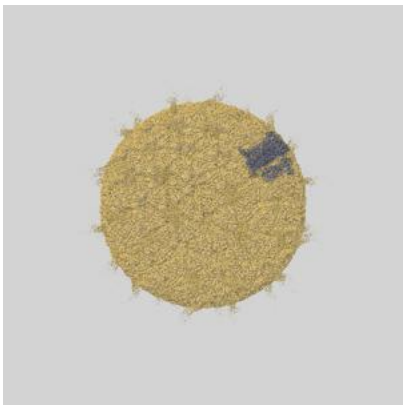
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit

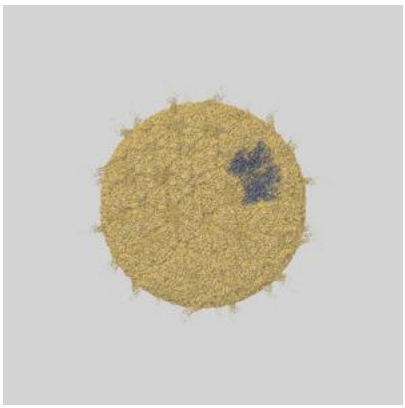
This section contains information regarding the fit between EMDB map EMD-75185 and PDB model 10IC. Per-residue inclusion information can be found in section 3 on page 9.

9.1 Map-model overlays

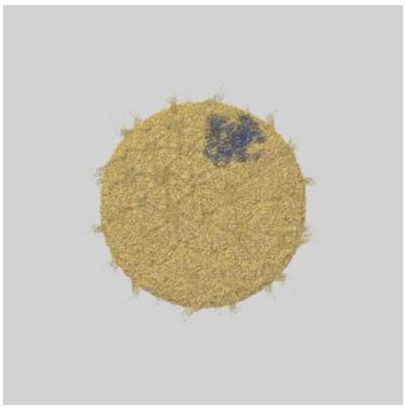
9.1.1 Map-model overlay



X

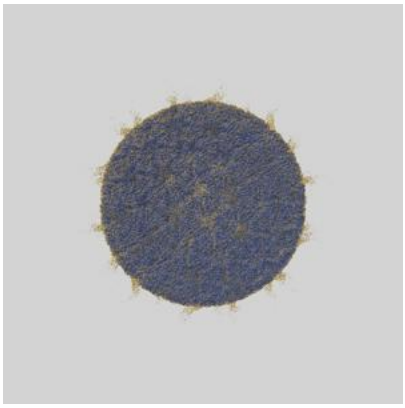


Y

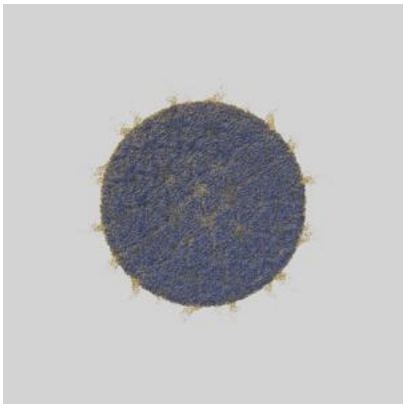


Z

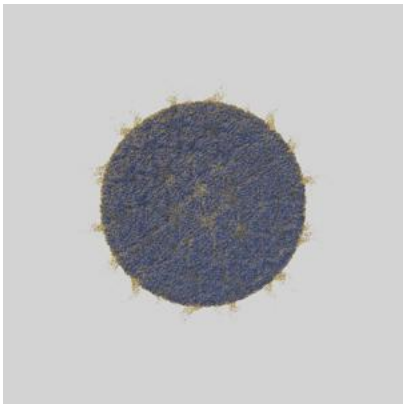
9.1.2 Map-model assembly overlay



X



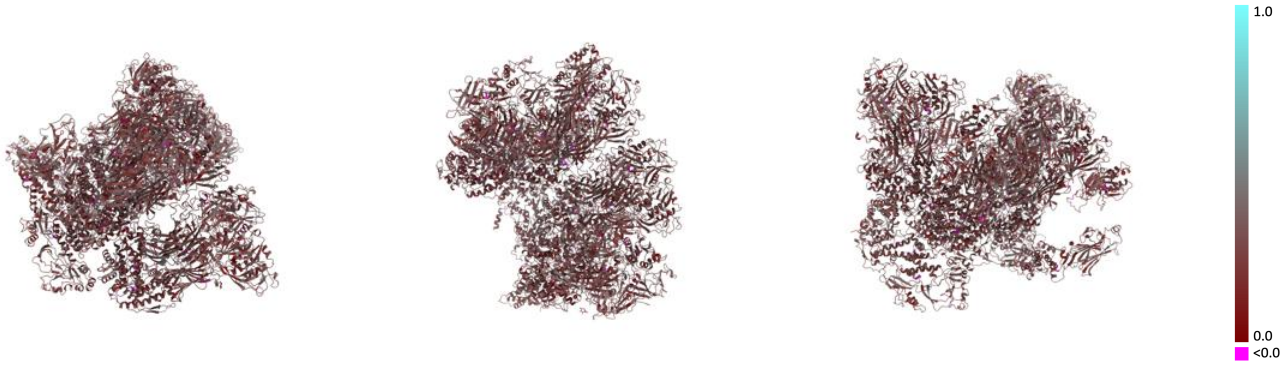
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.006 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.

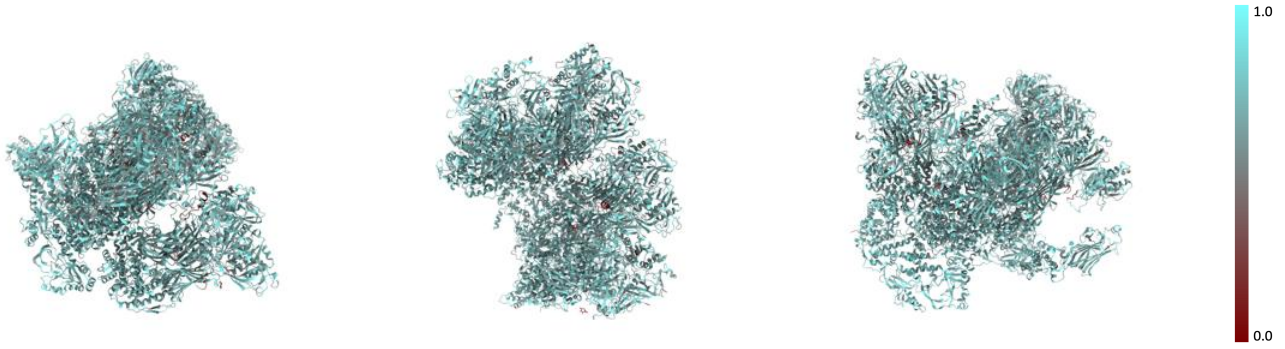
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according 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.

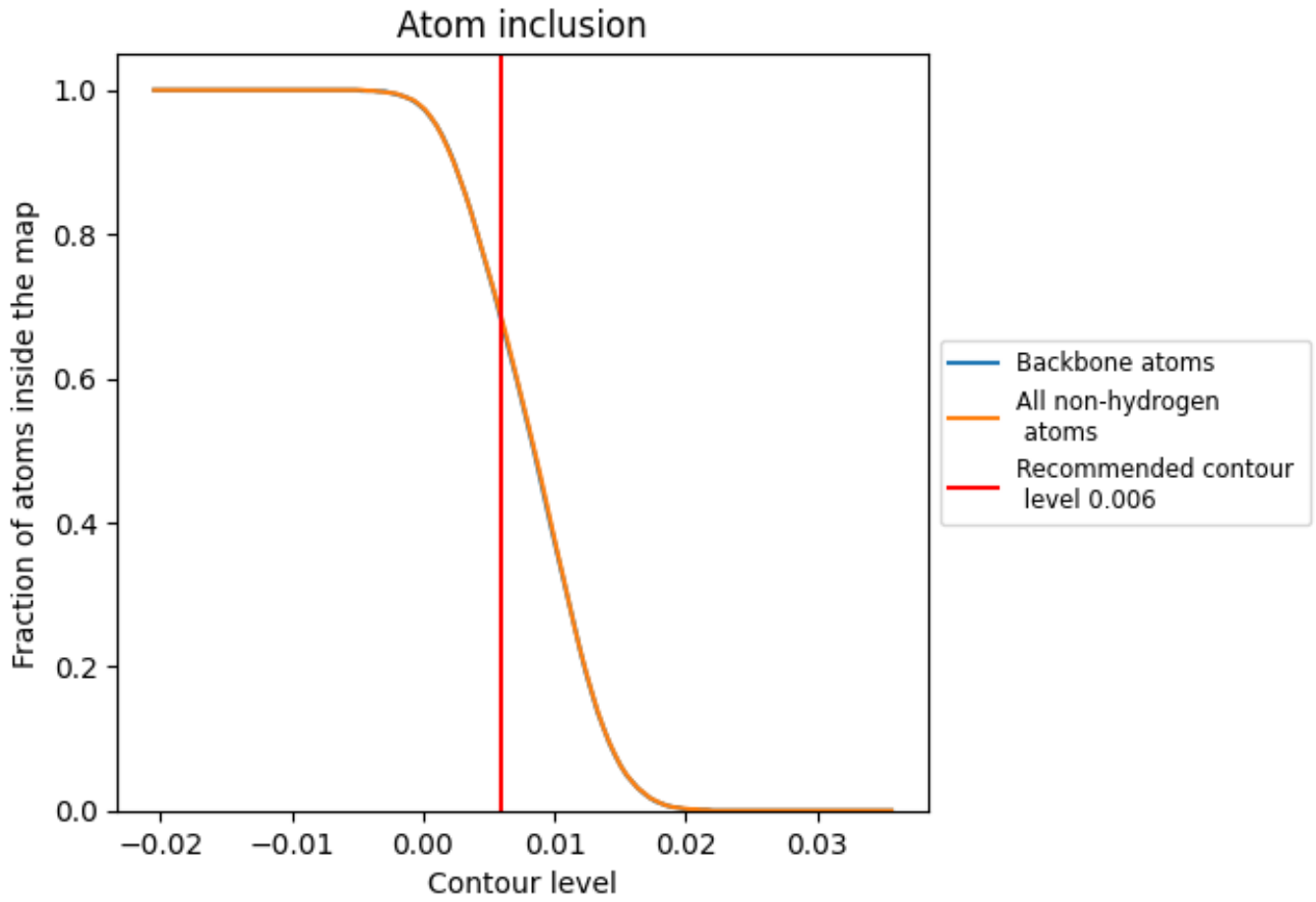
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.006).

9.4 Atom inclusion (i)



At the recommended contour level, 68% of all backbone atoms, 68% 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 (0.006) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6810	0.2930
0	0.6630	0.2970
1	0.6500	0.2860
A	0.7360	0.2940
B	0.7300	0.2900
C	0.7000	0.2940
D	0.6990	0.2920
E	0.7020	0.2990
F	0.6960	0.2970
G	0.6900	0.2930
H	0.6950	0.2930
I	0.6970	0.2910
J	0.7010	0.2970
K	0.7050	0.2890
L	0.7010	0.2920
M	0.7050	0.2920
N	0.7030	0.2980
O	0.7000	0.2970
P	0.6520	0.2820
Q	0.6740	0.2900
R	0.6610	0.2880
S	0.6630	0.2800
T	0.6740	0.3010
U	0.6460	0.2890
V	0.6640	0.2930
W	0.6510	0.2900
X	0.6790	0.3010
Y	0.6720	0.2950
Z	0.6700	0.2970