Full wwPDB EM Validation Report ⓘ

Oct 27, 2024 – 04:41 PM EDT

PDB ID	:	7SCN
EMDB ID	:	EMD-25039
Title	:	Structure of H1 NC99 influenza hemagglutinin bound to Fab 310-63E6
Authors	:	Ward, A.; Torrents de la Pena, A.
Deposited on	:	2021-09-28
Resolution	:	3.02 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:

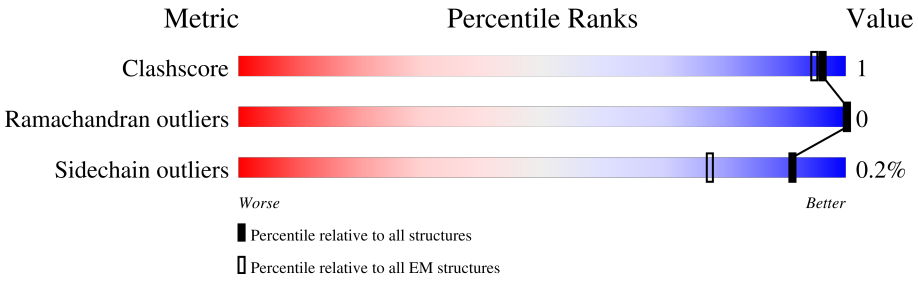
EMDB validation analysis	:	0.0.1.dev113
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.02 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	A	322	96%
1	C	322	96%
1	G	322	97%
2	B	231	6% 71% 27%
2	D	231	7% 71% 27%
2	I	231	6% 71% 27%
3	E	120	14% 90% 8%
3	H	120	13% 89% 8%

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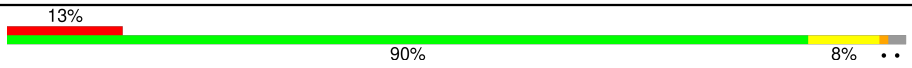
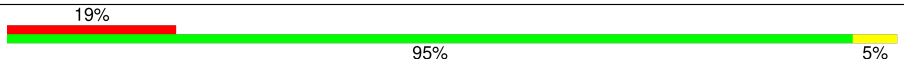
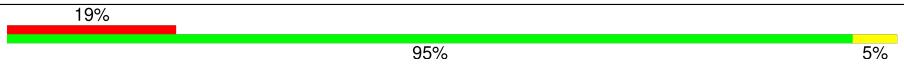
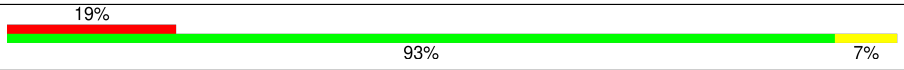
Mol	Chain	Length	Quality of chain
3	J	120	
4	F	108	
4	K	108	
4	L	108	

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 17145 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Hemagglutinin HA1 chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	321	Total	C	N	O	S	0	0
			2522	1597	435	479	11		
1	C	321	Total	C	N	O	S	0	0
			2522	1597	435	479	11		
1	G	321	Total	C	N	O	S	0	0
			2522	1597	435	479	11		

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	169	VAL	ALA	conflict	UNP Q289M7
A	190	ASN	ASP	conflict	UNP Q289M7
A	225	ASP	ASN	conflict	UNP Q289M7
A	255	TRP	ARG	conflict	UNP Q289M7
C	169	VAL	ALA	conflict	UNP Q289M7
C	190	ASN	ASP	conflict	UNP Q289M7
C	225	ASP	ASN	conflict	UNP Q289M7
C	255	TRP	ARG	conflict	UNP Q289M7
G	169	VAL	ALA	conflict	UNP Q289M7
G	190	ASN	ASP	conflict	UNP Q289M7
G	225	ASP	ASN	conflict	UNP Q289M7
G	255	TRP	ARG	conflict	UNP Q289M7

- Molecule 2 is a protein called Hemagglutinin HA2 chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	168	Total	C	N	O	S	0	0
			1362	852	234	269	7		
2	D	168	Total	C	N	O	S	0	0
			1362	852	234	269	7		
2	I	168	Total	C	N	O	S	0	0
			1362	852	234	269	7		

There are 159 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	327	ARG	-	expression tag	UNP Q289M7
B	328	GLU	-	expression tag	UNP Q289M7
B	329	THR	-	expression tag	UNP Q289M7
B	508	TYR	-	expression tag	UNP Q289M7
B	509	ILE	-	expression tag	UNP Q289M7
B	510	PRO	-	expression tag	UNP Q289M7
B	511	GLU	-	expression tag	UNP Q289M7
B	512	ALA	-	expression tag	UNP Q289M7
B	513	PRO	-	expression tag	UNP Q289M7
B	514	ARG	-	expression tag	UNP Q289M7
B	515	ASP	-	expression tag	UNP Q289M7
B	516	GLY	-	expression tag	UNP Q289M7
B	517	GLN	-	expression tag	UNP Q289M7
B	518	ALA	-	expression tag	UNP Q289M7
B	519	TYR	-	expression tag	UNP Q289M7
B	520	VAL	-	expression tag	UNP Q289M7
B	521	ARG	-	expression tag	UNP Q289M7
B	522	LYS	-	expression tag	UNP Q289M7
B	523	ASP	-	expression tag	UNP Q289M7
B	524	GLY	-	expression tag	UNP Q289M7
B	525	GLU	-	expression tag	UNP Q289M7
B	526	TRP	-	expression tag	UNP Q289M7
B	527	VAL	-	expression tag	UNP Q289M7
B	528	LEU	-	expression tag	UNP Q289M7
B	529	LEU	-	expression tag	UNP Q289M7
B	530	SER	-	expression tag	UNP Q289M7
B	531	THR	-	expression tag	UNP Q289M7
B	532	PHE	-	expression tag	UNP Q289M7
B	533	LEU	-	expression tag	UNP Q289M7
B	534	GLY	-	expression tag	UNP Q289M7
B	535	SER	-	expression tag	UNP Q289M7
B	536	GLY	-	expression tag	UNP Q289M7
B	537	LEU	-	expression tag	UNP Q289M7
B	538	ASN	-	expression tag	UNP Q289M7
B	539	ASP	-	expression tag	UNP Q289M7
B	540	ILE	-	expression tag	UNP Q289M7
B	541	PHE	-	expression tag	UNP Q289M7
B	542	GLU	-	expression tag	UNP Q289M7
B	543	ALA	-	expression tag	UNP Q289M7
B	544	GLN	-	expression tag	UNP Q289M7
B	545	LYS	-	expression tag	UNP Q289M7
B	546	ILE	-	expression tag	UNP Q289M7

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Chain	Residue	Modelled	Actual	Comment	Reference
B	547	GLU	-	expression tag	UNP Q289M7
B	548	TRP	-	expression tag	UNP Q289M7
B	549	HIS	-	expression tag	UNP Q289M7
B	550	GLU	-	expression tag	UNP Q289M7
B	551	GLY	-	expression tag	UNP Q289M7
B	552	HIS	-	expression tag	UNP Q289M7
B	553	HIS	-	expression tag	UNP Q289M7
B	554	HIS	-	expression tag	UNP Q289M7
B	555	HIS	-	expression tag	UNP Q289M7
B	556	HIS	-	expression tag	UNP Q289M7
B	557	HIS	-	expression tag	UNP Q289M7
D	327	ARG	-	expression tag	UNP Q289M7
D	328	GLU	-	expression tag	UNP Q289M7
D	329	THR	-	expression tag	UNP Q289M7
D	508	TYR	-	expression tag	UNP Q289M7
D	509	ILE	-	expression tag	UNP Q289M7
D	510	PRO	-	expression tag	UNP Q289M7
D	511	GLU	-	expression tag	UNP Q289M7
D	512	ALA	-	expression tag	UNP Q289M7
D	513	PRO	-	expression tag	UNP Q289M7
D	514	ARG	-	expression tag	UNP Q289M7
D	515	ASP	-	expression tag	UNP Q289M7
D	516	GLY	-	expression tag	UNP Q289M7
D	517	GLN	-	expression tag	UNP Q289M7
D	518	ALA	-	expression tag	UNP Q289M7
D	519	TYR	-	expression tag	UNP Q289M7
D	520	VAL	-	expression tag	UNP Q289M7
D	521	ARG	-	expression tag	UNP Q289M7
D	522	LYS	-	expression tag	UNP Q289M7
D	523	ASP	-	expression tag	UNP Q289M7
D	524	GLY	-	expression tag	UNP Q289M7
D	525	GLU	-	expression tag	UNP Q289M7
D	526	TRP	-	expression tag	UNP Q289M7
D	527	VAL	-	expression tag	UNP Q289M7
D	528	LEU	-	expression tag	UNP Q289M7
D	529	LEU	-	expression tag	UNP Q289M7
D	530	SER	-	expression tag	UNP Q289M7
D	531	THR	-	expression tag	UNP Q289M7
D	532	PHE	-	expression tag	UNP Q289M7
D	533	LEU	-	expression tag	UNP Q289M7
D	534	GLY	-	expression tag	UNP Q289M7
D	535	SER	-	expression tag	UNP Q289M7

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Chain	Residue	Modelled	Actual	Comment	Reference
D	536	GLY	-	expression tag	UNP Q289M7
D	537	LEU	-	expression tag	UNP Q289M7
D	538	ASN	-	expression tag	UNP Q289M7
D	539	ASP	-	expression tag	UNP Q289M7
D	540	ILE	-	expression tag	UNP Q289M7
D	541	PHE	-	expression tag	UNP Q289M7
D	542	GLU	-	expression tag	UNP Q289M7
D	543	ALA	-	expression tag	UNP Q289M7
D	544	GLN	-	expression tag	UNP Q289M7
D	545	LYS	-	expression tag	UNP Q289M7
D	546	ILE	-	expression tag	UNP Q289M7
D	547	GLU	-	expression tag	UNP Q289M7
D	548	TRP	-	expression tag	UNP Q289M7
D	549	HIS	-	expression tag	UNP Q289M7
D	550	GLU	-	expression tag	UNP Q289M7
D	551	GLY	-	expression tag	UNP Q289M7
D	552	HIS	-	expression tag	UNP Q289M7
D	553	HIS	-	expression tag	UNP Q289M7
D	554	HIS	-	expression tag	UNP Q289M7
D	555	HIS	-	expression tag	UNP Q289M7
D	556	HIS	-	expression tag	UNP Q289M7
D	557	HIS	-	expression tag	UNP Q289M7
I	327	ARG	-	expression tag	UNP Q289M7
I	328	GLU	-	expression tag	UNP Q289M7
I	329	THR	-	expression tag	UNP Q289M7
I	508	TYR	-	expression tag	UNP Q289M7
I	509	ILE	-	expression tag	UNP Q289M7
I	510	PRO	-	expression tag	UNP Q289M7
I	511	GLU	-	expression tag	UNP Q289M7
I	512	ALA	-	expression tag	UNP Q289M7
I	513	PRO	-	expression tag	UNP Q289M7
I	514	ARG	-	expression tag	UNP Q289M7
I	515	ASP	-	expression tag	UNP Q289M7
I	516	GLY	-	expression tag	UNP Q289M7
I	517	GLN	-	expression tag	UNP Q289M7
I	518	ALA	-	expression tag	UNP Q289M7
I	519	TYR	-	expression tag	UNP Q289M7
I	520	VAL	-	expression tag	UNP Q289M7
I	521	ARG	-	expression tag	UNP Q289M7
I	522	LYS	-	expression tag	UNP Q289M7
I	523	ASP	-	expression tag	UNP Q289M7
I	524	GLY	-	expression tag	UNP Q289M7

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Chain	Residue	Modelled	Actual	Comment	Reference
I	525	GLU	-	expression tag	UNP Q289M7
I	526	TRP	-	expression tag	UNP Q289M7
I	527	VAL	-	expression tag	UNP Q289M7
I	528	LEU	-	expression tag	UNP Q289M7
I	529	LEU	-	expression tag	UNP Q289M7
I	530	SER	-	expression tag	UNP Q289M7
I	531	THR	-	expression tag	UNP Q289M7
I	532	PHE	-	expression tag	UNP Q289M7
I	533	LEU	-	expression tag	UNP Q289M7
I	534	GLY	-	expression tag	UNP Q289M7
I	535	SER	-	expression tag	UNP Q289M7
I	536	GLY	-	expression tag	UNP Q289M7
I	537	LEU	-	expression tag	UNP Q289M7
I	538	ASN	-	expression tag	UNP Q289M7
I	539	ASP	-	expression tag	UNP Q289M7
I	540	ILE	-	expression tag	UNP Q289M7
I	541	PHE	-	expression tag	UNP Q289M7
I	542	GLU	-	expression tag	UNP Q289M7
I	543	ALA	-	expression tag	UNP Q289M7
I	544	GLN	-	expression tag	UNP Q289M7
I	545	LYS	-	expression tag	UNP Q289M7
I	546	ILE	-	expression tag	UNP Q289M7
I	547	GLU	-	expression tag	UNP Q289M7
I	548	TRP	-	expression tag	UNP Q289M7
I	549	HIS	-	expression tag	UNP Q289M7
I	550	GLU	-	expression tag	UNP Q289M7
I	551	GLY	-	expression tag	UNP Q289M7
I	552	HIS	-	expression tag	UNP Q289M7
I	553	HIS	-	expression tag	UNP Q289M7
I	554	HIS	-	expression tag	UNP Q289M7
I	555	HIS	-	expression tag	UNP Q289M7
I	556	HIS	-	expression tag	UNP Q289M7
I	557	HIS	-	expression tag	UNP Q289M7

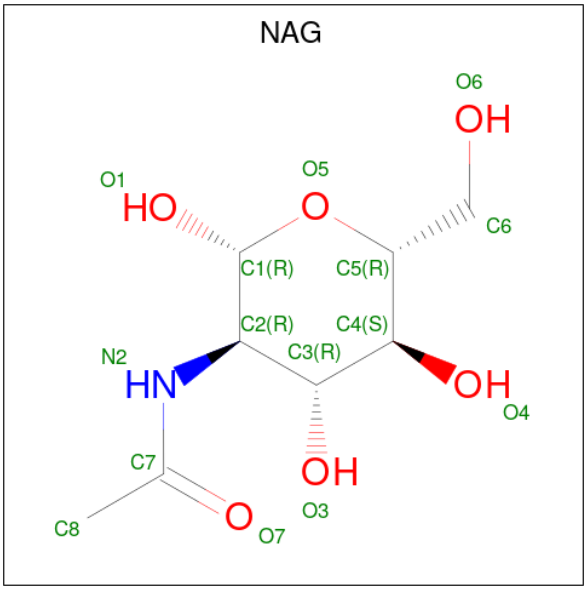
- Molecule 3 is a protein called 310-63E6 Fab, Heavy Chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	H	118	Total	C	N	O	S	0	0
			928	589	157	176	6		
3	E	118	Total	C	N	O	S	0	0
			928	589	157	176	6		
3	J	118	Total	C	N	O	S	0	0
			928	589	157	176	6		

- Molecule 4 is a protein called 310-63E6 Fab, Light Chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	L	108	Total	C	N	O	S	0	0
			833	524	142	165	2		
4	F	108	Total	C	N	O	S	0	0
			833	524	142	165	2		
4	K	108	Total	C	N	O	S	0	0
			833	524	142	165	2		

- Molecule 5 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$) (labeled as "Ligand of Interest" by depositor).



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

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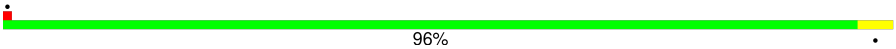
Mol	Chain	Residues	Atoms				AltConf
5	C	1	Total	C	N	O	0
			14	8	1	5	
5	C	1	Total	C	N	O	0
			14	8	1	5	
5	C	1	Total	C	N	O	0
			14	8	1	5	
5	G	1	Total	C	N	O	0
			14	8	1	5	
5	G	1	Total	C	N	O	0
			14	8	1	5	
5	G	1	Total	C	N	O	0
			14	8	1	5	
5	G	1	Total	C	N	O	0
			14	8	1	5	
5	G	1	Total	C	N	O	0
			14	8	1	5	

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.

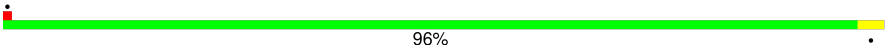
• Molecule 1: Hemagglutinin HA1 chain

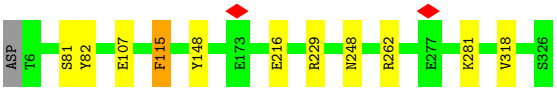
Chain A:



• Molecule 1: Hemagglutinin HA1 chain

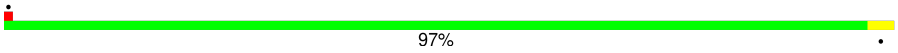
Chain C:

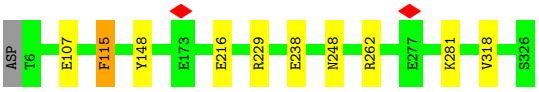




• Molecule 1: Hemagglutinin HA1 chain

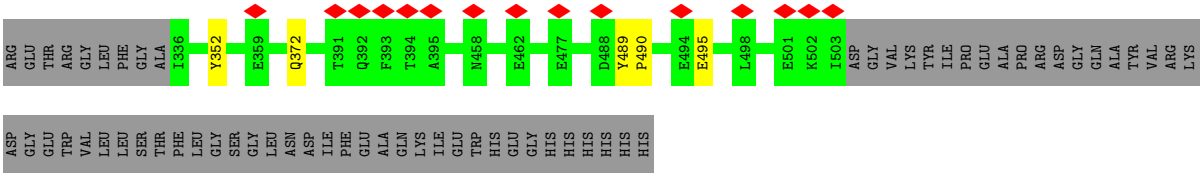
Chain G:





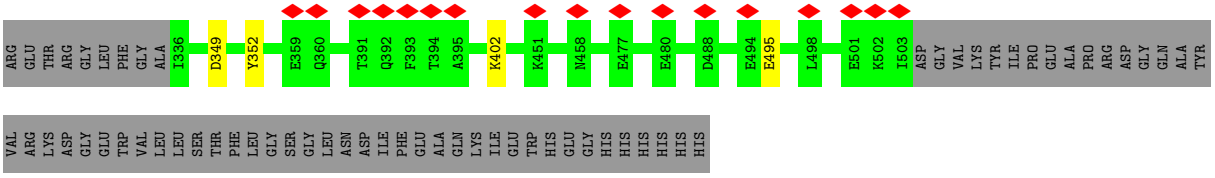
• Molecule 2: Hemagglutinin HA2 chain

Chain B:



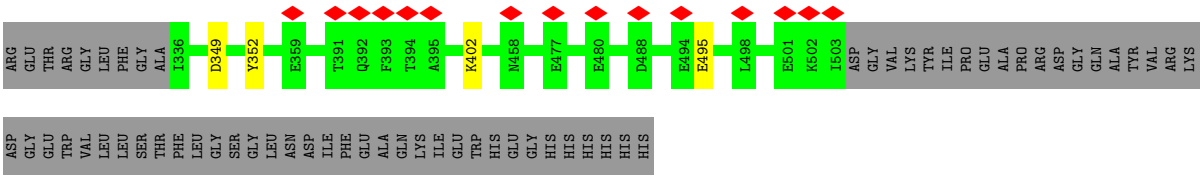
• Molecule 2: Hemagglutinin HA2 chain

Chain D:



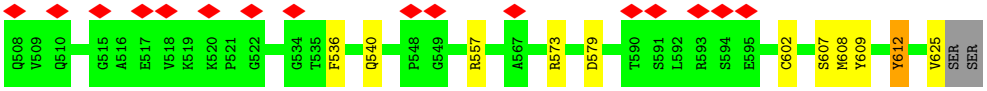
• Molecule 2: Hemagglutinin HA2 chain

Chain I:



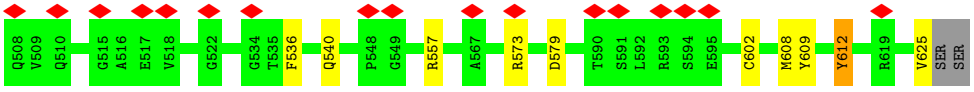
• Molecule 3: 310-63E6 Fab, Heavy Chain

Chain H:



• Molecule 3: 310-63E6 Fab, Heavy Chain

Chain E:

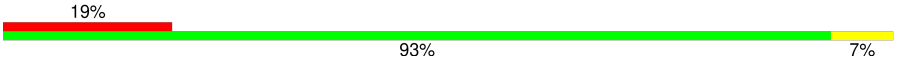


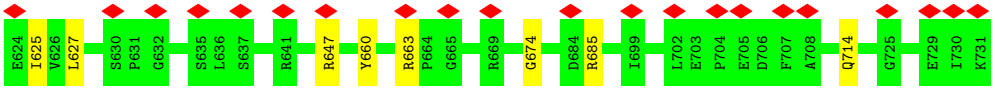
• Molecule 3: 310-63E6 Fab, Heavy Chain

Chain J:

• Molecule 4: 310-63E6 Fab, Light Chain

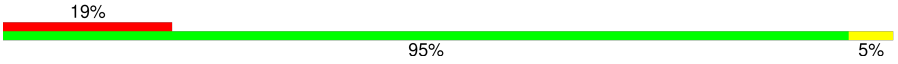
Chain L:

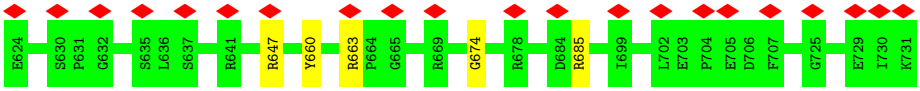




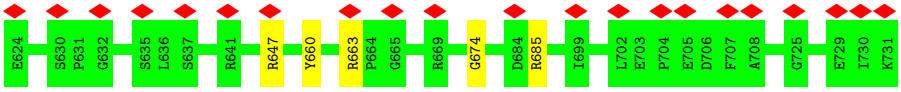
• Molecule 4: 310-63E6 Fab, Light Chain

Chain F:





• Molecule 4: 310-63E6 Fab, Light Chain



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C3	Depositor
Number of particles used	123683	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	49.88	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	36000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.127	Depositor
Minimum map value	-0.075	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.017	Depositor
Map size (Å)	368.0, 368.0, 368.0	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.15, 1.15, 1.15	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: NAG

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	1.20	5/2590 (0.2%)	0.91	3/3530 (0.1%)
1	C	1.20	5/2590 (0.2%)	0.91	3/3530 (0.1%)
1	G	1.20	5/2590 (0.2%)	0.91	3/3530 (0.1%)
2	B	1.15	2/1388 (0.1%)	0.82	0/1865
2	D	1.15	2/1388 (0.1%)	0.82	0/1865
2	I	1.15	2/1388 (0.1%)	0.82	0/1865
3	E	1.22	4/950 (0.4%)	1.03	2/1289 (0.2%)
3	H	1.22	4/950 (0.4%)	1.03	2/1289 (0.2%)
3	J	1.22	4/950 (0.4%)	1.03	2/1289 (0.2%)
4	F	1.07	0/853	1.02	6/1160 (0.5%)
4	K	1.07	0/853	1.02	6/1160 (0.5%)
4	L	1.07	0/853	1.02	6/1160 (0.5%)
All	All	1.17	33/17343 (0.2%)	0.93	33/23532 (0.1%)

All (33) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	602	CYS	CB-SG	-10.10	1.65	1.82
3	J	602	CYS	CB-SG	-10.08	1.65	1.82
3	H	602	CYS	CB-SG	-10.04	1.65	1.82
3	E	612	TYR	CB-CG	8.27	1.64	1.51
3	H	612	TYR	CB-CG	8.23	1.64	1.51
3	J	612	TYR	CB-CG	8.19	1.64	1.51
1	A	318	VAL	CB-CG2	-8.02	1.35	1.52
1	C	318	VAL	CB-CG2	-8.00	1.36	1.52
1	G	318	VAL	CB-CG2	-7.99	1.36	1.52
1	A	148	TYR	CG-CD2	-6.14	1.31	1.39
1	G	148	TYR	CG-CD2	-6.08	1.31	1.39
1	C	148	TYR	CG-CD2	-6.03	1.31	1.39
1	A	248	ASN	CB-CG	-5.39	1.38	1.51
1	G	248	ASN	CB-CG	-5.39	1.38	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	248	ASN	CB-CG	-5.38	1.38	1.51
1	C	107	GLU	CD-OE1	-5.31	1.19	1.25
2	B	495	GLU	CD-OE1	-5.26	1.19	1.25
1	G	107	GLU	CD-OE1	-5.26	1.19	1.25
2	D	495	GLU	CD-OE1	-5.25	1.19	1.25
1	A	107	GLU	CD-OE1	-5.21	1.20	1.25
1	C	216	GLU	CD-OE1	-5.17	1.20	1.25
2	I	495	GLU	CD-OE1	-5.17	1.20	1.25
2	I	352	TYR	CB-CG	-5.17	1.44	1.51
2	B	352	TYR	CB-CG	-5.15	1.44	1.51
3	H	625	VAL	CB-CG1	5.14	1.63	1.52
1	A	216	GLU	CD-OE1	-5.12	1.20	1.25
2	D	352	TYR	CB-CG	-5.12	1.44	1.51
3	J	625	VAL	CB-CG1	5.12	1.63	1.52
3	E	625	VAL	CB-CG1	5.11	1.63	1.52
1	G	216	GLU	CD-OE1	-5.05	1.20	1.25
3	H	536	PHE	CB-CG	-5.04	1.42	1.51
3	J	536	PHE	CB-CG	-5.03	1.42	1.51
3	E	536	PHE	CB-CG	-5.02	1.42	1.51

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	K	647	ARG	NE-CZ-NH2	-8.12	116.24	120.30
4	L	647	ARG	NE-CZ-NH2	-8.12	116.24	120.30
4	F	647	ARG	NE-CZ-NH2	-8.09	116.25	120.30
4	F	685	ARG	NE-CZ-NH2	-7.59	116.50	120.30
4	L	685	ARG	NE-CZ-NH2	-7.58	116.51	120.30
3	H	609	TYR	N-CA-C	-7.58	90.55	111.00
3	E	609	TYR	N-CA-C	-7.57	90.57	111.00
3	J	609	TYR	N-CA-C	-7.57	90.58	111.00
4	K	685	ARG	NE-CZ-NH2	-7.54	116.53	120.30
3	J	573	ARG	NE-CZ-NH2	-6.94	116.83	120.30
3	E	573	ARG	NE-CZ-NH2	-6.89	116.85	120.30
3	H	573	ARG	NE-CZ-NH2	-6.84	116.88	120.30
1	G	115	PHE	CB-CG-CD1	6.79	125.55	120.80
1	A	115	PHE	CB-CG-CD1	6.75	125.53	120.80
1	C	115	PHE	CB-CG-CD1	6.72	125.51	120.80
4	L	674	GLY	N-CA-C	-6.39	97.12	113.10
4	K	674	GLY	N-CA-C	-6.39	97.13	113.10
4	F	674	GLY	N-CA-C	-6.38	97.15	113.10
1	C	262	ARG	NE-CZ-NH2	-6.27	117.16	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	K	663	ARG	NE-CZ-NH2	-6.26	117.17	120.30
1	G	262	ARG	NE-CZ-NH2	-6.26	117.17	120.30
1	A	262	ARG	NE-CZ-NH2	-6.23	117.19	120.30
4	L	663	ARG	NE-CZ-NH2	-6.15	117.22	120.30
4	F	663	ARG	NE-CZ-NH2	-6.14	117.23	120.30
1	C	229	ARG	NE-CZ-NH1	5.72	123.16	120.30
1	A	229	ARG	NE-CZ-NH1	5.70	123.15	120.30
1	G	229	ARG	NE-CZ-NH1	5.68	123.14	120.30
4	F	663	ARG	NE-CZ-NH1	5.30	122.95	120.30
4	L	663	ARG	NE-CZ-NH1	5.26	122.93	120.30
4	K	663	ARG	NE-CZ-NH1	5.25	122.92	120.30
4	K	660	TYR	CB-CG-CD2	-5.09	117.95	121.00
4	F	660	TYR	CB-CG-CD2	-5.03	117.98	121.00
4	L	660	TYR	CB-CG-CD2	-5.02	117.99	121.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2522	0	2434	5	0
1	C	2522	0	2434	2	0
1	G	2522	0	2434	2	0
2	B	1362	0	1294	4	0
2	D	1362	0	1294	2	0
2	I	1362	0	1294	2	0
3	E	928	0	902	3	0
3	H	928	0	902	6	0
3	J	928	0	902	3	0
4	F	833	0	803	0	0
4	K	833	0	803	0	0
4	L	833	0	801	6	0
5	A	70	0	64	0	0
5	C	70	0	64	0	0
5	G	70	0	64	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	17145	0	16489	27	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 1.

All (27) 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)
4:L:627:LEU:CD1	4:L:714:GLN:OE1	1.75	1.34
4:L:627:LEU:HD11	4:L:714:GLN:OE1	0.89	1.05
2:B:372:GLN:NE2	3:H:607:SER:OG	2.10	0.83
2:B:372:GLN:OE1	3:H:612:TYR:HD2	1.76	0.69
4:L:625:ILE:HG21	4:L:714:GLN:HG3	1.75	0.68
4:L:627:LEU:CG	4:L:714:GLN:OE1	2.43	0.66
2:B:372:GLN:OE1	3:H:612:TYR:CD2	2.51	0.64
1:A:38:GLU:OE2	1:A:289:ILE:HB	2.09	0.53
1:C:281:LYS:NZ	3:E:579:ASP:OD2	2.42	0.53
1:A:281:LYS:NZ	3:H:579:ASP:OD2	2.42	0.53
1:G:281:LYS:NZ	3:J:579:ASP:OD2	2.42	0.53
4:L:625:ILE:HG22	4:L:714:GLN:NE2	2.27	0.49
2:D:349:ASP:OD1	2:D:349:ASP:N	2.44	0.49
2:I:349:ASP:OD1	2:I:349:ASP:N	2.44	0.47
3:J:608:MET:HB2	3:J:612:TYR:O	2.15	0.47
3:H:608:MET:HB2	3:H:612:TYR:O	2.15	0.46
3:E:608:MET:HB2	3:E:612:TYR:O	2.15	0.46
3:J:540:GLN:HE21	3:J:557:ARG:HB2	1.81	0.46
1:A:38:GLU:CD	1:A:289:ILE:HB	2.37	0.45
3:H:540:GLN:HE21	3:H:557:ARG:HB2	1.81	0.45
3:E:540:GLN:HE21	3:E:557:ARG:HB2	1.81	0.45
4:L:627:LEU:HG	4:L:714:GLN:NE2	2.33	0.43
2:D:402:LYS:NZ	1:G:238:GLU:OE2	2.46	0.42
1:A:238:GLU:OE2	2:I:402:LYS:NZ	2.46	0.42
1:A:39:ASP:N	1:A:39:ASP:OD1	2.52	0.41
1:C:81:SER:HG	1:C:82:TYR:HD2	1.67	0.41
2:B:489:TYR:HB3	2:B:490:PRO:HD3	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	319/322 (99%)	314 (98%)	5 (2%)	0	100	100
1	C	319/322 (99%)	314 (98%)	5 (2%)	0	100	100
1	G	319/322 (99%)	314 (98%)	5 (2%)	0	100	100
2	B	166/231 (72%)	165 (99%)	1 (1%)	0	100	100
2	D	166/231 (72%)	165 (99%)	1 (1%)	0	100	100
2	I	166/231 (72%)	165 (99%)	1 (1%)	0	100	100
3	E	116/120 (97%)	112 (97%)	4 (3%)	0	100	100
3	H	116/120 (97%)	112 (97%)	4 (3%)	0	100	100
3	J	116/120 (97%)	112 (97%)	4 (3%)	0	100	100
4	F	106/108 (98%)	105 (99%)	1 (1%)	0	100	100
4	K	106/108 (98%)	105 (99%)	1 (1%)	0	100	100
4	L	106/108 (98%)	105 (99%)	1 (1%)	0	100	100
All	All	2121/2343 (90%)	2088 (98%)	33 (2%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	282/283 (100%)	281 (100%)	1 (0%)	89	95
1	C	282/283 (100%)	281 (100%)	1 (0%)	89	95

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	G	282/283 (100%)	281 (100%)	1 (0%)	89 95
2	B	147/198 (74%)	147 (100%)	0	100 100
2	D	147/198 (74%)	147 (100%)	0	100 100
2	I	147/198 (74%)	147 (100%)	0	100 100
3	E	100/102 (98%)	100 (100%)	0	100 100
3	H	100/102 (98%)	100 (100%)	0	100 100
3	J	100/102 (98%)	100 (100%)	0	100 100
4	F	90/90 (100%)	90 (100%)	0	100 100
4	K	90/90 (100%)	90 (100%)	0	100 100
4	L	90/90 (100%)	90 (100%)	0	100 100
All	All	1857/2019 (92%)	1854 (100%)	3 (0%)	91 97

All (3) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	115	PHE
1	C	115	PHE
1	G	115	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
3	H	540	GLN
3	E	540	GLN
3	J	540	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

15 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
5	NAG	G	401	1	14,14,15	2.07	5 (35%)	17,19,21	1.13	2 (11%)
5	NAG	A	404	1	14,14,15	2.05	6 (42%)	17,19,21	6.66	5 (29%)
5	NAG	C	403	1	14,14,15	2.16	5 (35%)	17,19,21	1.14	2 (11%)
5	NAG	C	402	1	14,14,15	2.15	5 (35%)	17,19,21	1.01	1 (5%)
5	NAG	C	405	1	14,14,15	2.22	6 (42%)	17,19,21	0.97	1 (5%)
5	NAG	G	404	1	14,14,15	2.05	6 (42%)	17,19,21	6.66	5 (29%)
5	NAG	A	403	1	14,14,15	2.17	5 (35%)	17,19,21	1.15	2 (11%)
5	NAG	C	401	1	14,14,15	2.07	5 (35%)	17,19,21	1.12	2 (11%)
5	NAG	G	403	1	14,14,15	2.16	5 (35%)	17,19,21	1.14	2 (11%)
5	NAG	A	401	1	14,14,15	2.06	5 (35%)	17,19,21	1.13	2 (11%)
5	NAG	A	402	1	14,14,15	2.16	5 (35%)	17,19,21	1.01	1 (5%)
5	NAG	C	404	1	14,14,15	2.06	6 (42%)	17,19,21	6.66	5 (29%)
5	NAG	G	405	1	14,14,15	2.22	6 (42%)	17,19,21	0.97	1 (5%)
5	NAG	G	402	1	14,14,15	2.16	5 (35%)	17,19,21	1.02	1 (5%)
5	NAG	A	405	1	14,14,15	2.22	6 (42%)	17,19,21	0.97	1 (5%)

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
5	NAG	G	401	1	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	NAG	A	404	1	-	3/6/23/26	0/1/1/1
5	NAG	C	403	1	-	1/6/23/26	0/1/1/1
5	NAG	C	402	1	-	0/6/23/26	0/1/1/1
5	NAG	C	405	1	-	0/6/23/26	0/1/1/1
5	NAG	G	404	1	-	3/6/23/26	0/1/1/1
5	NAG	A	403	1	-	1/6/23/26	0/1/1/1
5	NAG	C	401	1	-	0/6/23/26	0/1/1/1
5	NAG	G	403	1	-	1/6/23/26	0/1/1/1
5	NAG	A	401	1	-	0/6/23/26	0/1/1/1
5	NAG	A	402	1	-	0/6/23/26	0/1/1/1
5	NAG	C	404	1	-	3/6/23/26	0/1/1/1
5	NAG	G	405	1	-	0/6/23/26	0/1/1/1
5	NAG	G	402	1	-	0/6/23/26	0/1/1/1
5	NAG	A	405	1	-	0/6/23/26	0/1/1/1

All (81) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	403	NAG	C1-C2	5.99	1.60	1.52
5	C	403	NAG	C1-C2	5.94	1.60	1.52
5	G	403	NAG	C1-C2	5.88	1.60	1.52
5	G	405	NAG	C1-C2	5.70	1.60	1.52
5	C	405	NAG	C1-C2	5.70	1.60	1.52
5	A	405	NAG	C1-C2	5.68	1.60	1.52
5	A	402	NAG	C1-C2	5.56	1.59	1.52
5	G	402	NAG	C1-C2	5.54	1.59	1.52
5	C	402	NAG	C1-C2	5.54	1.59	1.52
5	C	404	NAG	C1-C2	5.46	1.59	1.52
5	A	404	NAG	C1-C2	5.46	1.59	1.52
5	G	404	NAG	C1-C2	5.44	1.59	1.52
5	G	401	NAG	C1-C2	5.37	1.59	1.52
5	C	401	NAG	C1-C2	5.31	1.59	1.52
5	A	401	NAG	C1-C2	5.29	1.59	1.52
5	C	405	NAG	O5-C5	3.25	1.49	1.43
5	A	405	NAG	O5-C5	3.25	1.49	1.43
5	G	405	NAG	O5-C5	3.23	1.49	1.43
5	A	402	NAG	O5-C5	3.20	1.49	1.43
5	C	402	NAG	O5-C5	3.18	1.49	1.43
5	G	402	NAG	O5-C5	3.15	1.49	1.43
5	A	401	NAG	O5-C5	2.87	1.49	1.43
5	C	401	NAG	O5-C5	2.84	1.49	1.43
5	C	404	NAG	O5-C5	2.83	1.48	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	G	401	NAG	O5-C5	2.83	1.48	1.43
5	G	404	NAG	O5-C5	2.79	1.48	1.43
5	A	404	NAG	O5-C5	2.78	1.48	1.43
5	G	403	NAG	O5-C5	2.72	1.48	1.43
5	A	403	NAG	O5-C5	2.68	1.48	1.43
5	C	403	NAG	O5-C5	2.66	1.48	1.43
5	G	402	NAG	O5-C1	2.58	1.48	1.43
5	C	402	NAG	O5-C1	2.56	1.48	1.43
5	A	402	NAG	O5-C1	2.54	1.48	1.43
5	C	403	NAG	C2-N2	2.48	1.50	1.46
5	G	403	NAG	C2-N2	2.47	1.50	1.46
5	A	403	NAG	C2-N2	2.47	1.50	1.46
5	C	405	NAG	O5-C1	2.45	1.47	1.43
5	A	404	NAG	C4-C5	2.44	1.58	1.53
5	G	405	NAG	O5-C1	2.44	1.47	1.43
5	G	404	NAG	C4-C5	2.43	1.58	1.53
5	A	405	NAG	O5-C1	2.43	1.47	1.43
5	C	404	NAG	C4-C5	2.42	1.58	1.53
5	A	401	NAG	C3-C2	2.39	1.57	1.52
5	C	405	NAG	C3-C2	2.36	1.57	1.52
5	G	405	NAG	C3-C2	2.35	1.57	1.52
5	C	401	NAG	C3-C2	2.34	1.57	1.52
5	A	405	NAG	C2-N2	2.34	1.50	1.46
5	G	401	NAG	C3-C2	2.33	1.57	1.52
5	A	405	NAG	C3-C2	2.33	1.57	1.52
5	G	405	NAG	C2-N2	2.32	1.50	1.46
5	A	402	NAG	C3-C2	2.30	1.57	1.52
5	C	401	NAG	O5-C1	2.30	1.47	1.43
5	G	402	NAG	C3-C2	2.30	1.57	1.52
5	C	405	NAG	C2-N2	2.29	1.50	1.46
5	G	401	NAG	O5-C1	2.28	1.47	1.43
5	A	401	NAG	O5-C1	2.26	1.47	1.43
5	C	402	NAG	C3-C2	2.25	1.57	1.52
5	G	403	NAG	C3-C2	2.22	1.57	1.52
5	G	404	NAG	C4-C3	2.22	1.58	1.52
5	C	403	NAG	C3-C2	2.20	1.57	1.52
5	C	404	NAG	C4-C3	2.20	1.58	1.52
5	A	404	NAG	C4-C3	2.19	1.58	1.52
5	A	403	NAG	C3-C2	2.19	1.57	1.52
5	A	405	NAG	C4-C5	2.16	1.57	1.53
5	C	405	NAG	C4-C5	2.16	1.57	1.53
5	G	402	NAG	C4-C5	2.14	1.57	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	402	NAG	C4-C5	2.14	1.57	1.53
5	G	401	NAG	C4-C5	2.13	1.57	1.53
5	G	405	NAG	C4-C5	2.13	1.57	1.53
5	C	402	NAG	C4-C5	2.13	1.57	1.53
5	A	404	NAG	O5-C1	2.12	1.47	1.43
5	G	403	NAG	O5-C1	2.11	1.47	1.43
5	C	404	NAG	O5-C1	2.10	1.47	1.43
5	G	404	NAG	O5-C1	2.10	1.47	1.43
5	C	403	NAG	O5-C1	2.09	1.47	1.43
5	C	401	NAG	C4-C5	2.09	1.57	1.53
5	A	401	NAG	C4-C5	2.09	1.57	1.53
5	C	404	NAG	C3-C2	2.08	1.56	1.52
5	A	404	NAG	C3-C2	2.05	1.56	1.52
5	A	403	NAG	O5-C1	2.04	1.47	1.43
5	G	404	NAG	C3-C2	2.02	1.56	1.52

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	G	404	NAG	C2-N2-C7	26.45	158.35	122.90
5	C	404	NAG	C2-N2-C7	26.43	158.32	122.90
5	A	404	NAG	C2-N2-C7	26.43	158.31	122.90
5	A	404	NAG	C8-C7-N2	4.79	124.07	116.12
5	G	404	NAG	C8-C7-N2	4.79	124.07	116.12
5	C	404	NAG	C8-C7-N2	4.79	124.06	116.12
5	A	404	NAG	O7-C7-N2	-3.09	116.52	121.98
5	C	404	NAG	O7-C7-N2	-3.08	116.54	121.98
5	G	404	NAG	O7-C7-N2	-3.07	116.55	121.98
5	C	404	NAG	O5-C5-C6	-2.55	102.71	107.66
5	G	404	NAG	O5-C5-C6	-2.53	102.73	107.66
5	A	404	NAG	O5-C5-C6	-2.53	102.74	107.66
5	A	405	NAG	C8-C7-N2	2.44	120.17	116.12
5	G	405	NAG	C8-C7-N2	2.44	120.16	116.12
5	A	404	NAG	C1-O5-C5	2.44	115.45	112.19
5	G	404	NAG	C1-O5-C5	2.44	115.45	112.19
5	C	405	NAG	C8-C7-N2	2.44	120.16	116.12
5	C	404	NAG	C1-O5-C5	2.41	115.42	112.19
5	A	403	NAG	C1-O5-C5	2.36	115.35	112.19
5	C	403	NAG	C1-O5-C5	2.33	115.31	112.19
5	G	403	NAG	C1-O5-C5	2.31	115.29	112.19
5	G	402	NAG	C8-C7-N2	2.30	119.93	116.12
5	G	401	NAG	C8-C7-N2	2.29	119.92	116.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	A	401	NAG	C8-C7-N2	2.29	119.92	116.12
5	C	402	NAG	C8-C7-N2	2.28	119.89	116.12
5	A	402	NAG	C8-C7-N2	2.27	119.89	116.12
5	C	401	NAG	C1-O5-C5	2.25	115.21	112.19
5	C	401	NAG	C8-C7-N2	2.25	119.85	116.12
5	C	403	NAG	C8-C7-N2	2.25	119.85	116.12
5	A	401	NAG	C1-O5-C5	2.25	115.20	112.19
5	G	401	NAG	C1-O5-C5	2.24	115.19	112.19
5	A	403	NAG	C8-C7-N2	2.23	119.82	116.12
5	G	403	NAG	C8-C7-N2	2.23	119.81	116.12

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	404	NAG	C8-C7-N2-C2
5	A	404	NAG	O7-C7-N2-C2
5	C	404	NAG	C8-C7-N2-C2
5	C	404	NAG	O7-C7-N2-C2
5	G	404	NAG	C8-C7-N2-C2
5	G	404	NAG	O7-C7-N2-C2
5	A	403	NAG	O5-C5-C6-O6
5	C	403	NAG	O5-C5-C6-O6
5	G	403	NAG	O5-C5-C6-O6
5	A	404	NAG	O5-C5-C6-O6
5	C	404	NAG	O5-C5-C6-O6
5	G	404	NAG	O5-C5-C6-O6

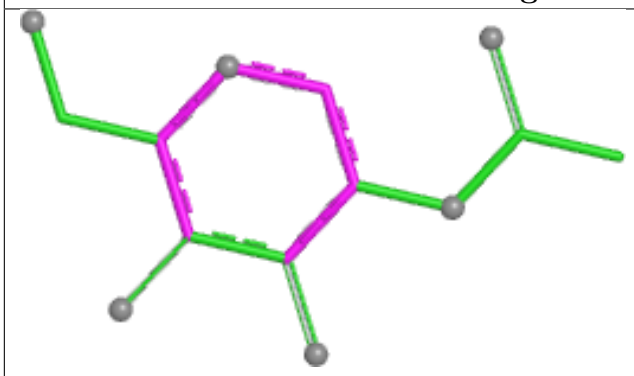
There are no ring outliers.

No monomer is involved in short contacts.

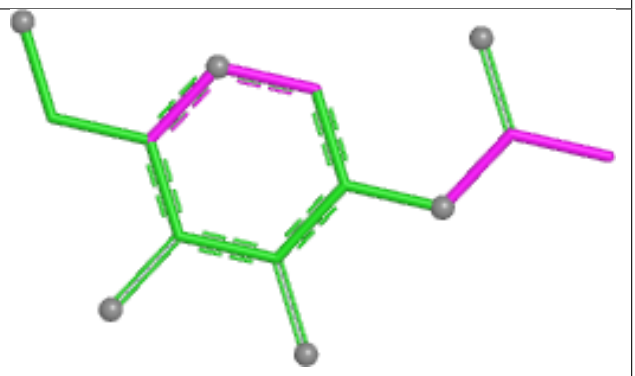
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

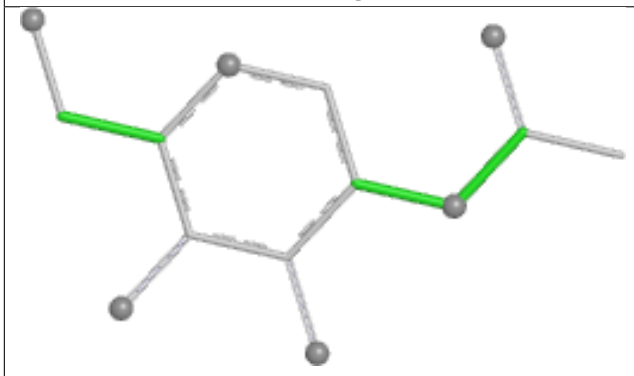
Ligand NAG G 401



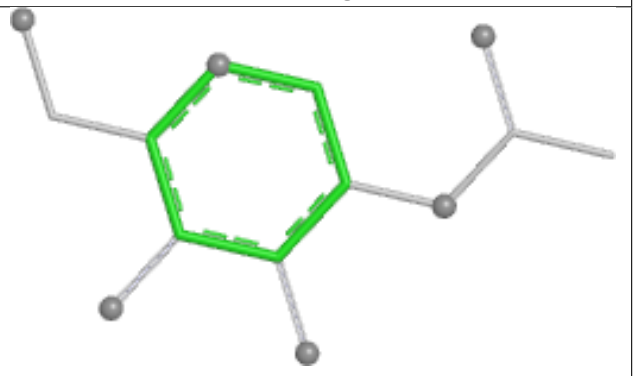
Bond lengths



Bond angles

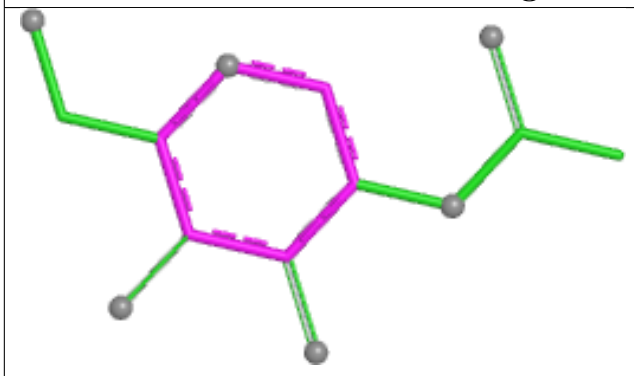


Torsions

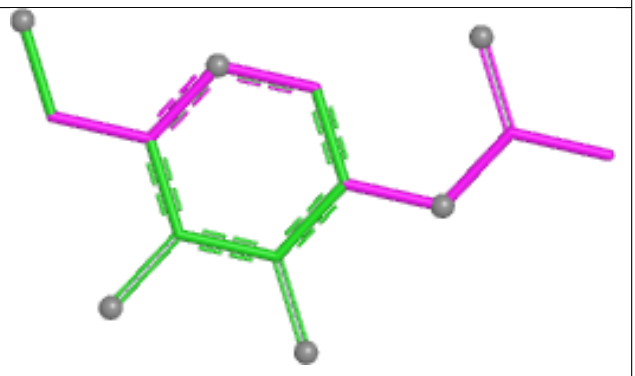


Rings

Ligand NAG A 404



Bond lengths



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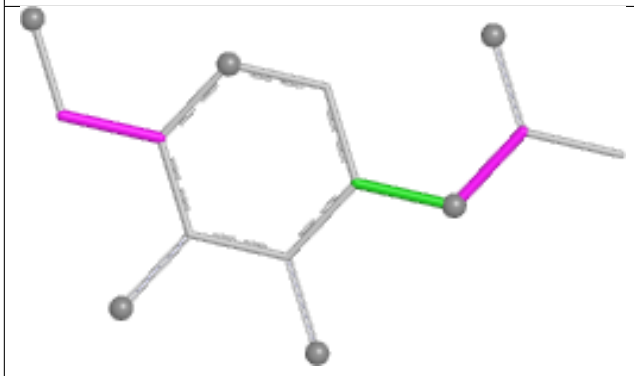

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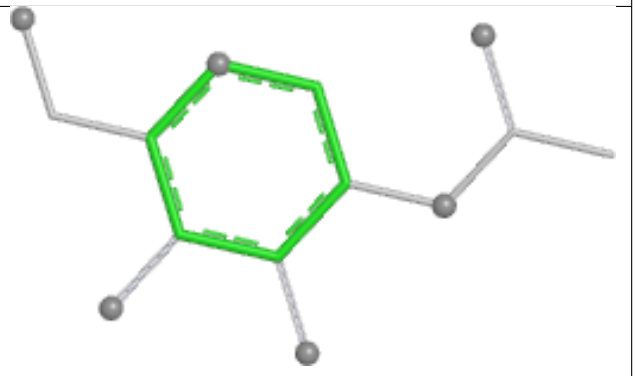
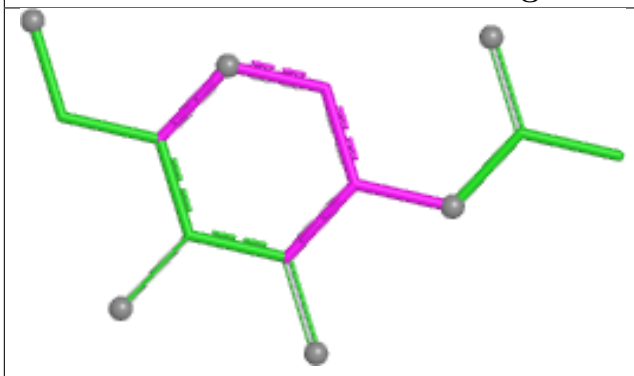


Rings

Ligand NAG C 403



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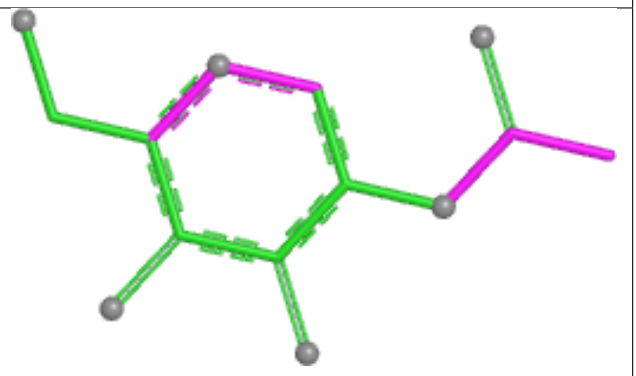
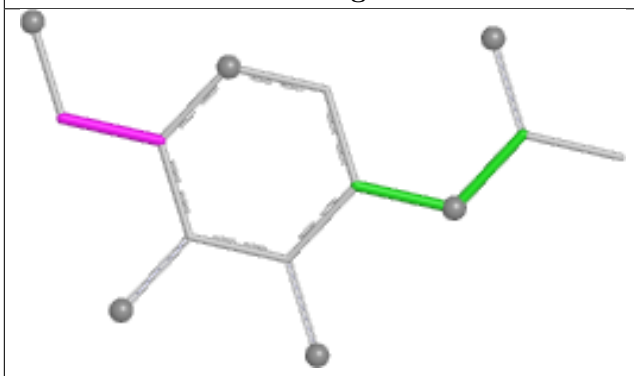


Bond angles



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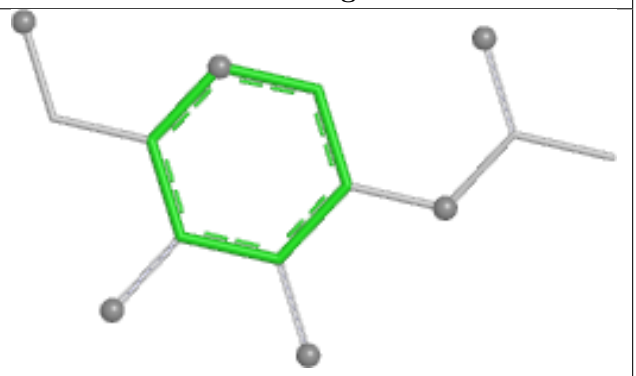
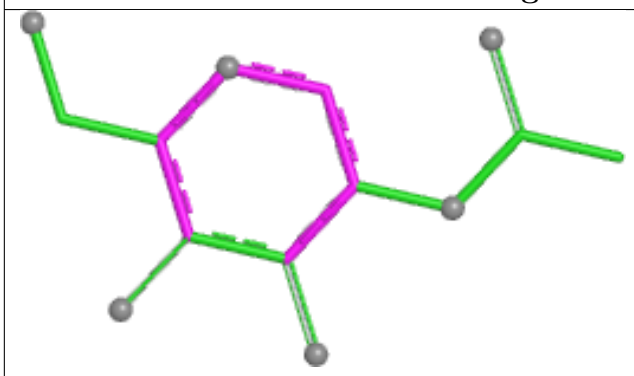


Rings

Ligand NAG C 402



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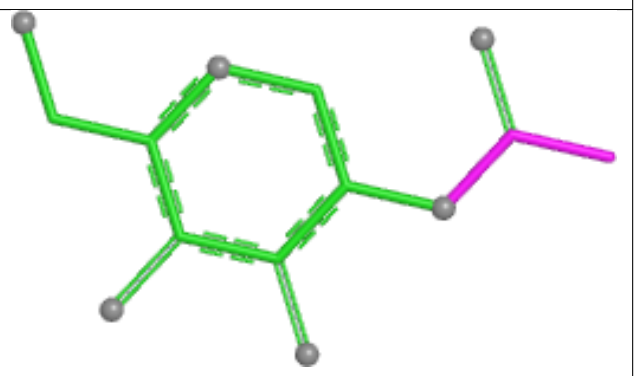
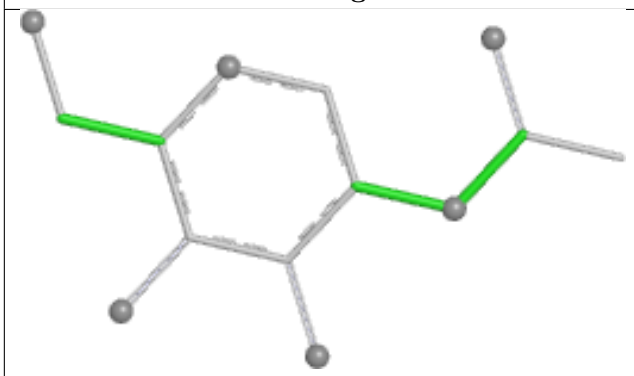


Bond angles



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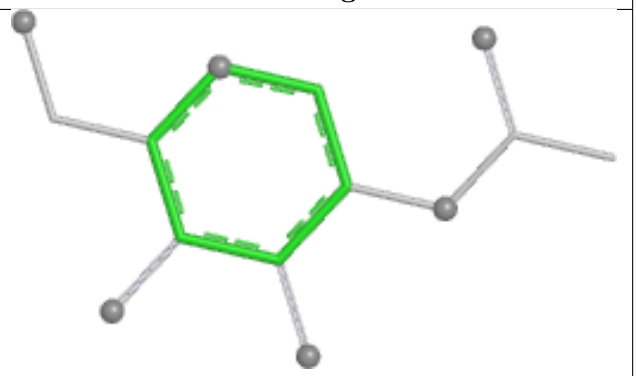
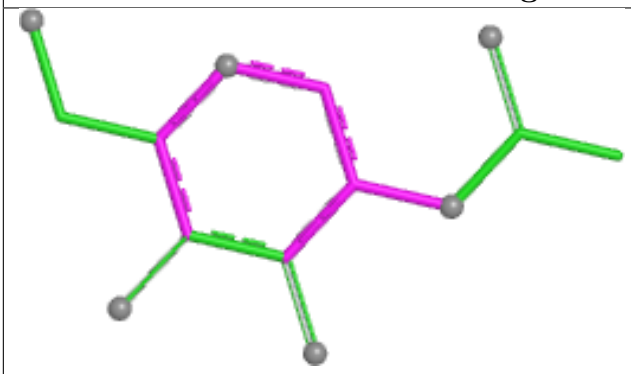


Rings

Ligand NAG C 405



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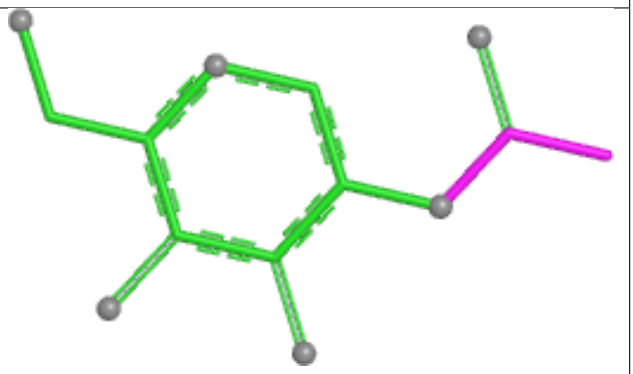

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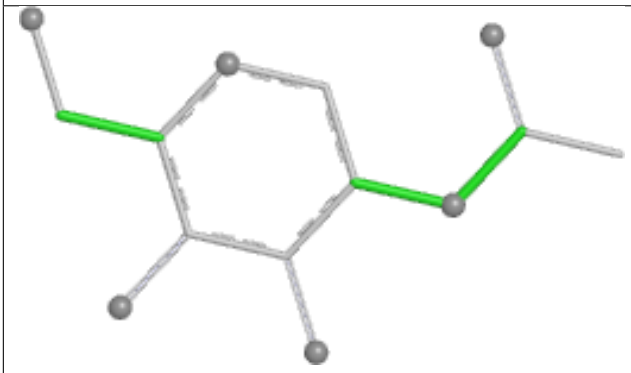

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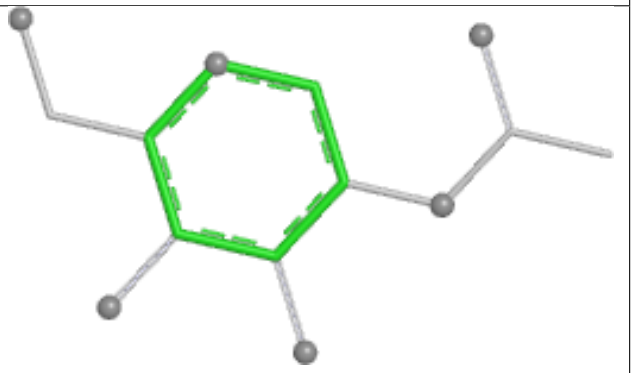
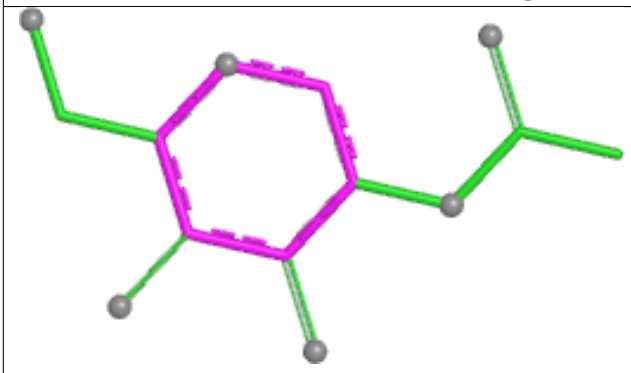


Rings

Ligand NAG G 404



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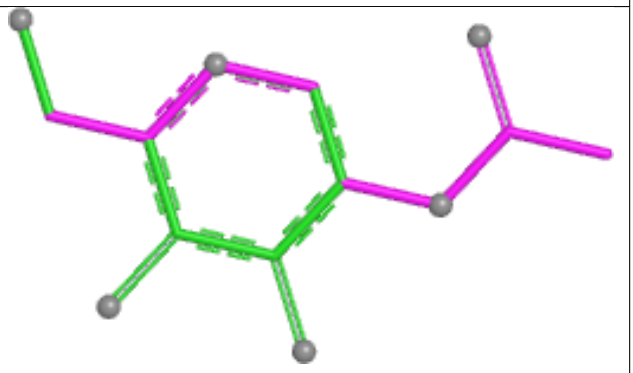

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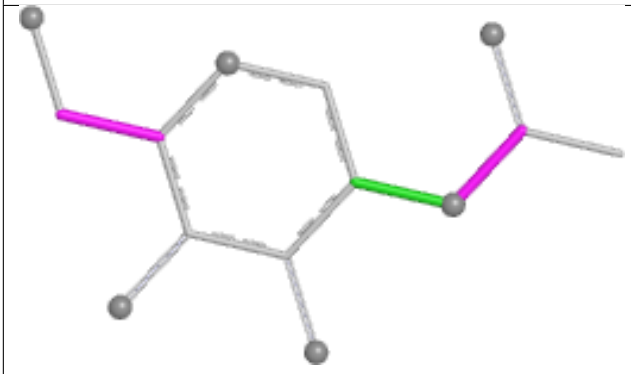

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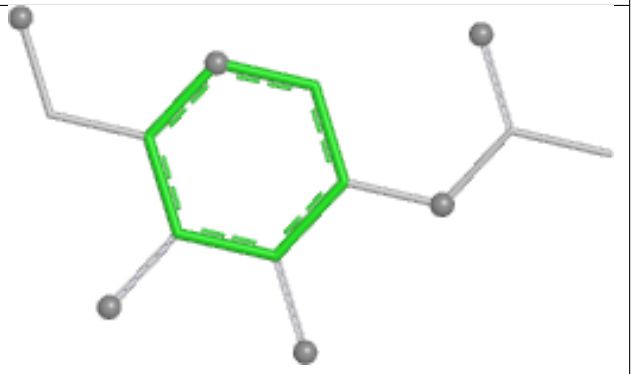
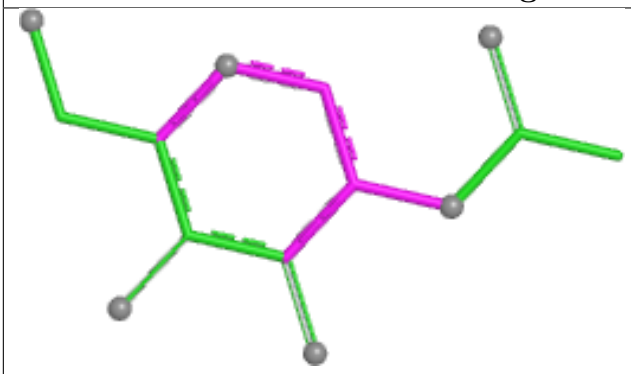


Rings

Ligand NAG A 403



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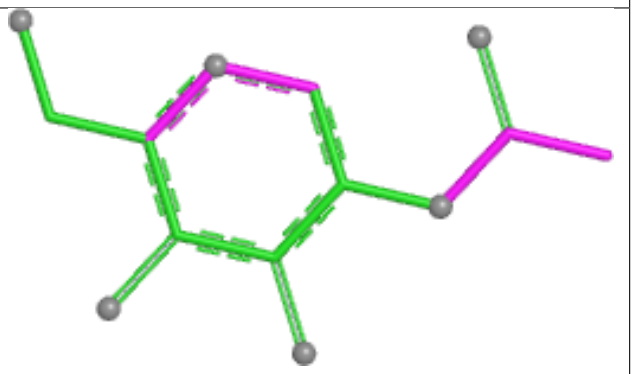

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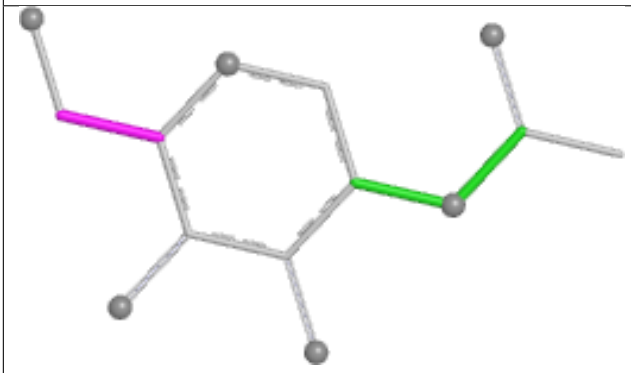

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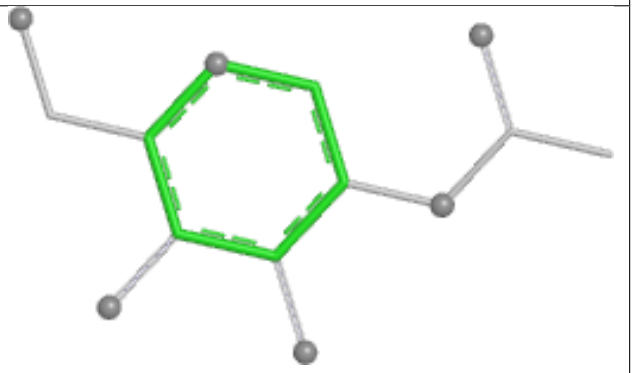
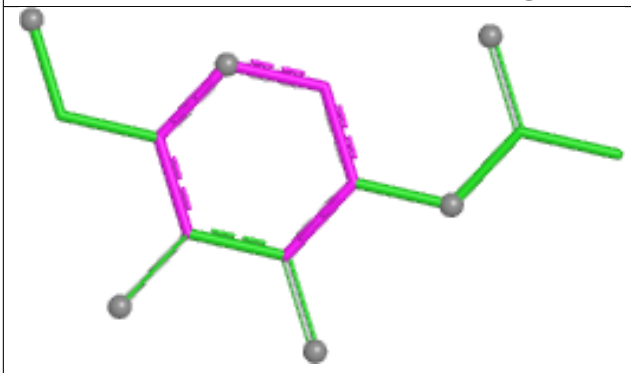


Rings

Ligand NAG C 401



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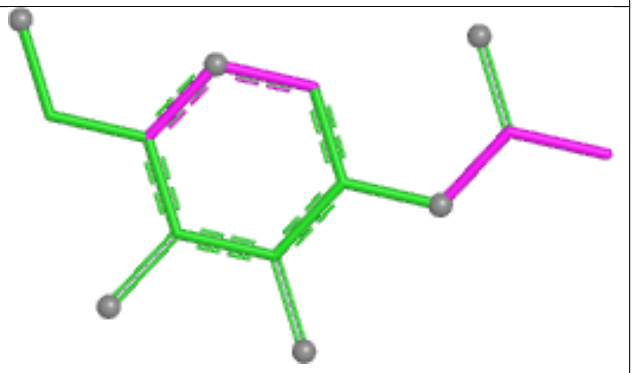
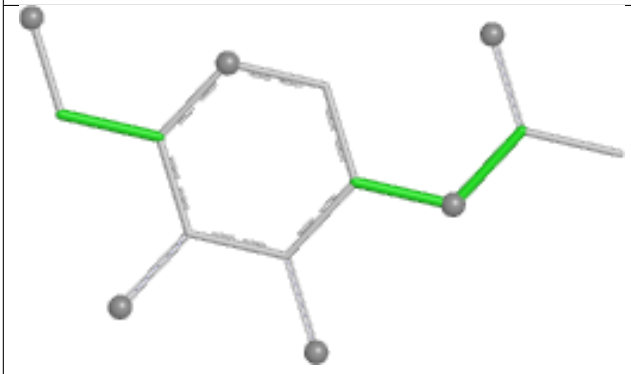


Bond angles



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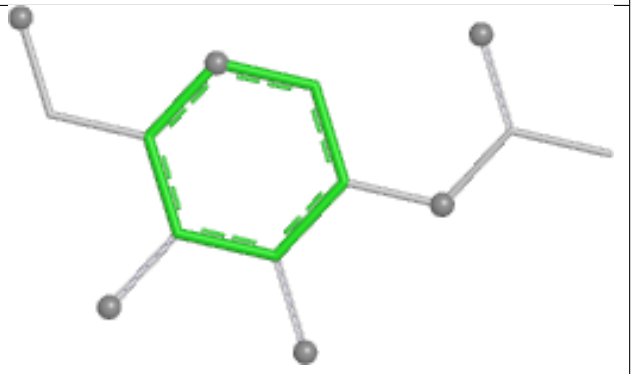
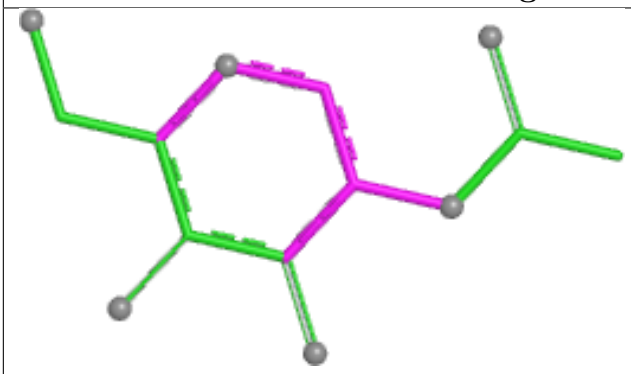
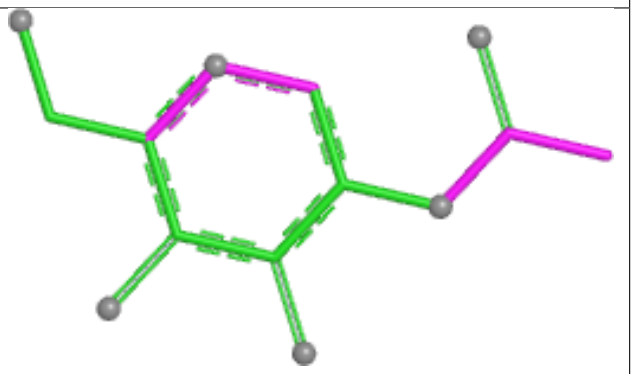


Rings

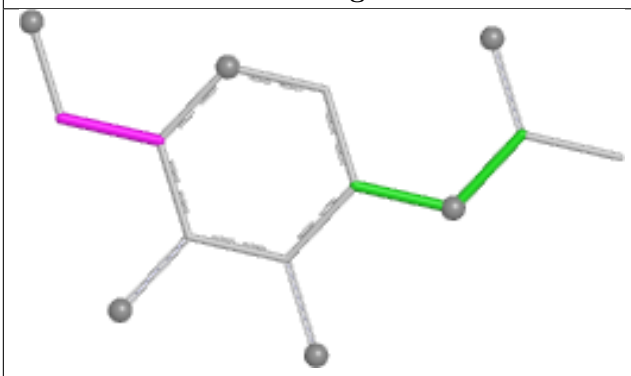
Ligand NAG G 403



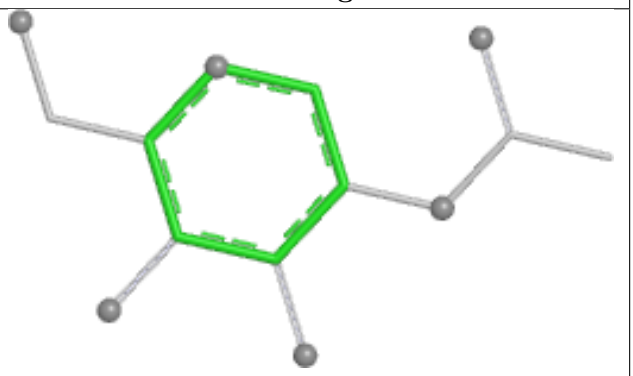
Bond lengths



Bond angles

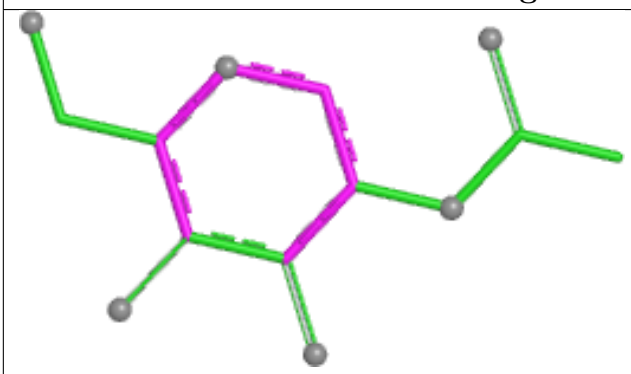


Torsions

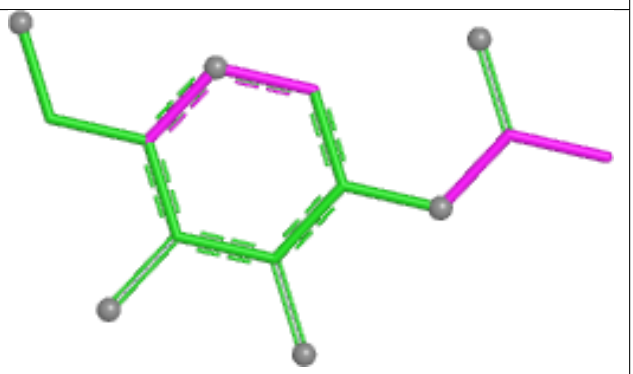


Rings

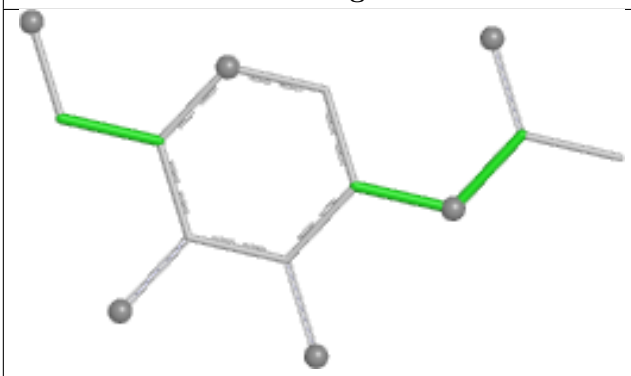
Ligand NAG A 401



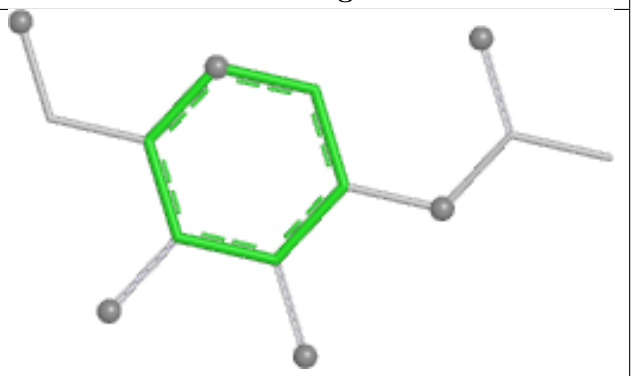
Bond lengths



Bond angles

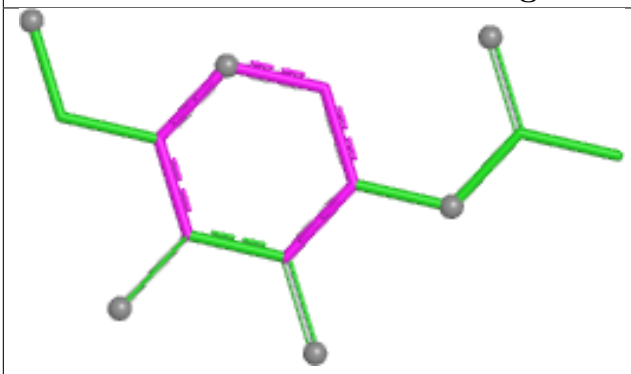


Torsions

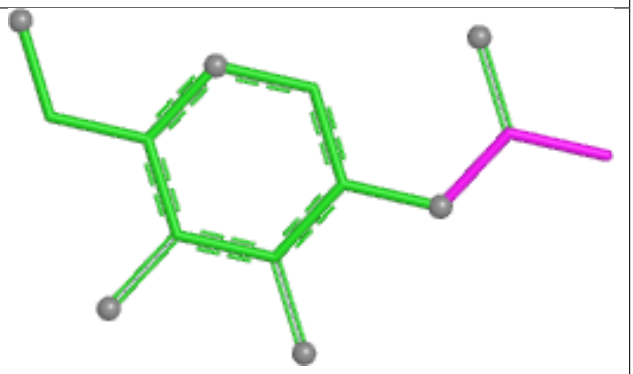


Rings

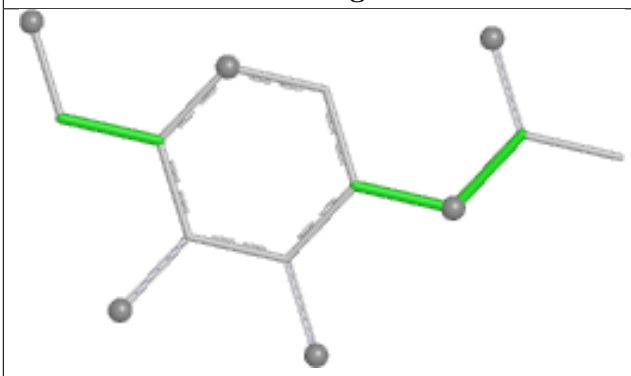
Ligand NAG A 402



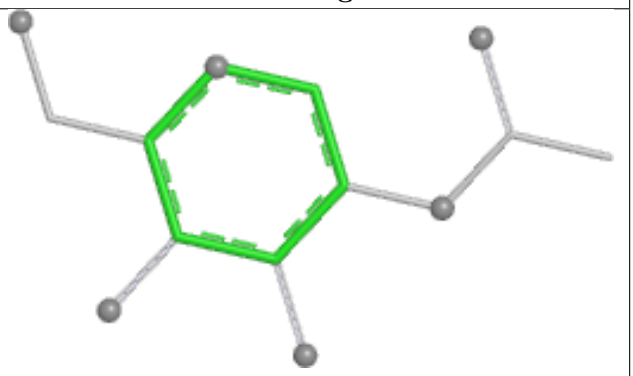
Bond lengths



Bond angles

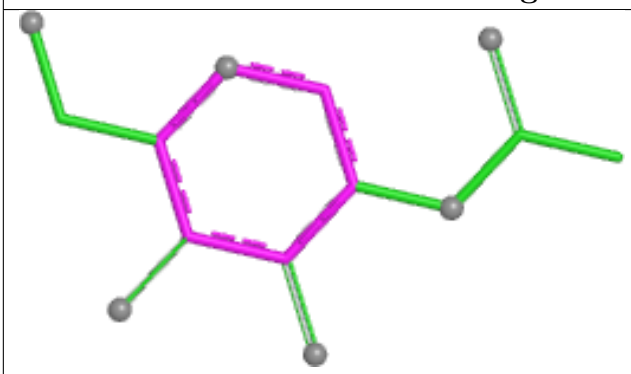


Torsions

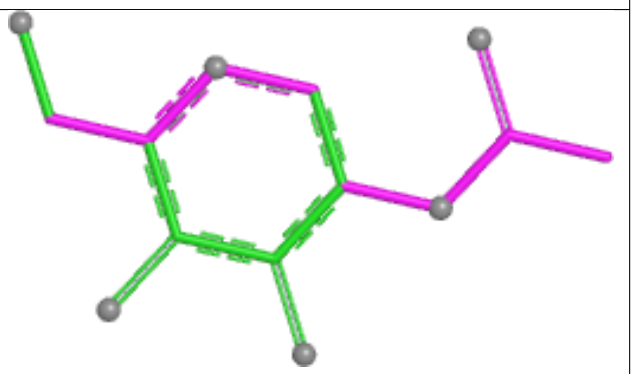


Rings

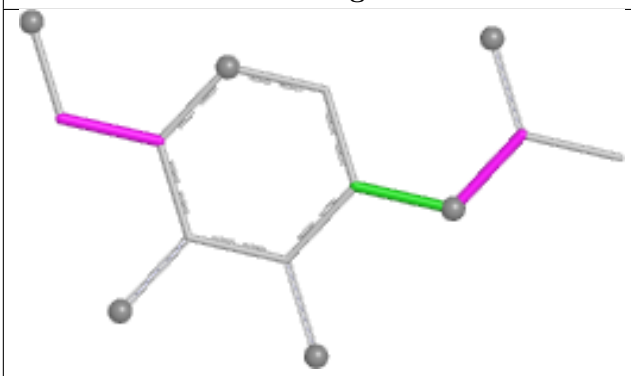
Ligand NAG C 404



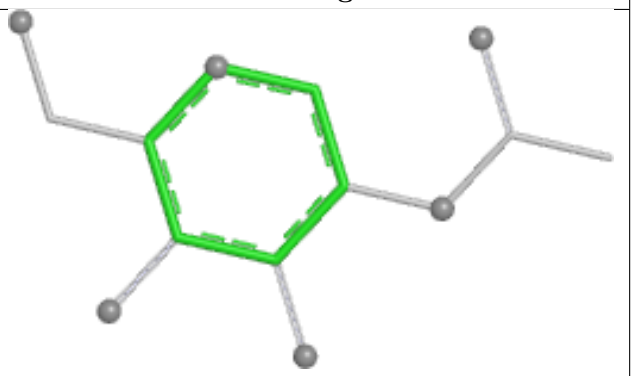
Bond lengths



Bond angles

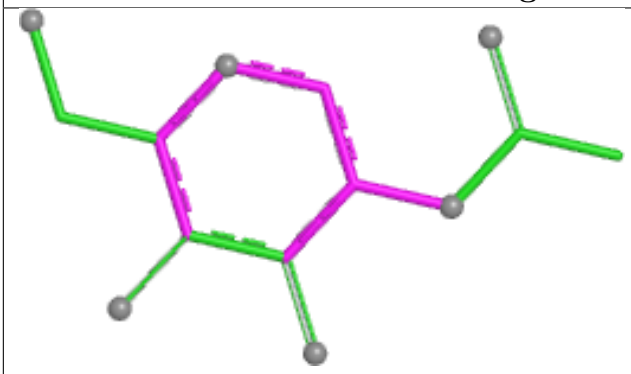


Torsions

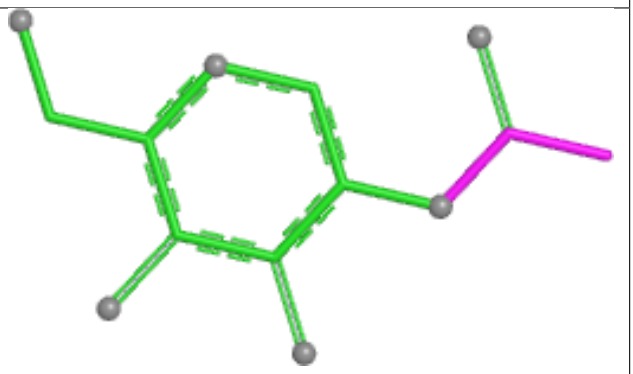


Rings

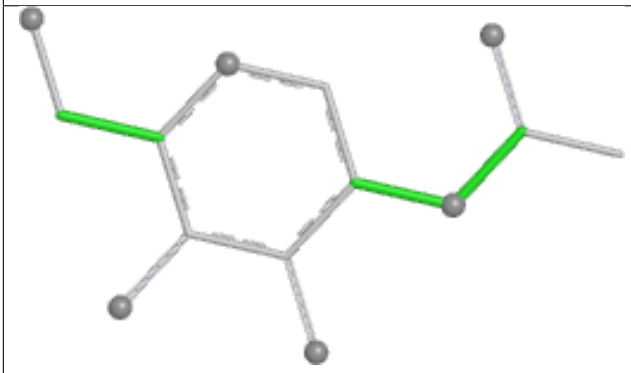
Ligand NAG G 405



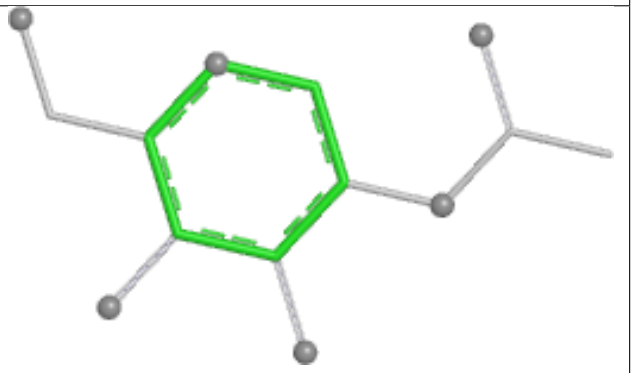
Bond lengths



Bond angles

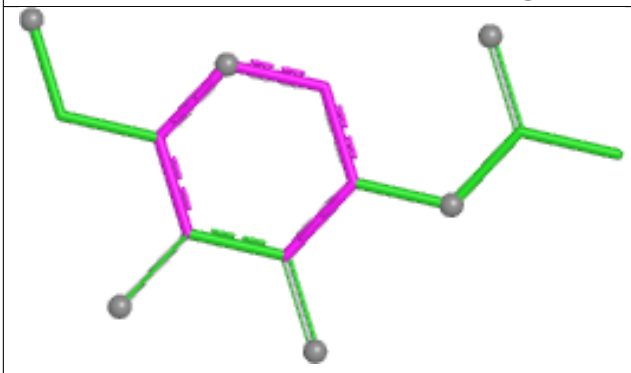


Torsions

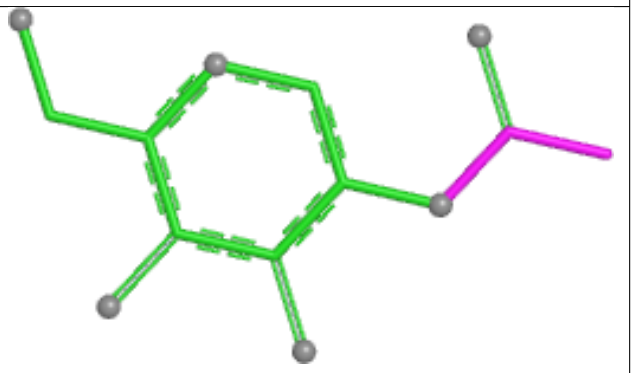


Rings

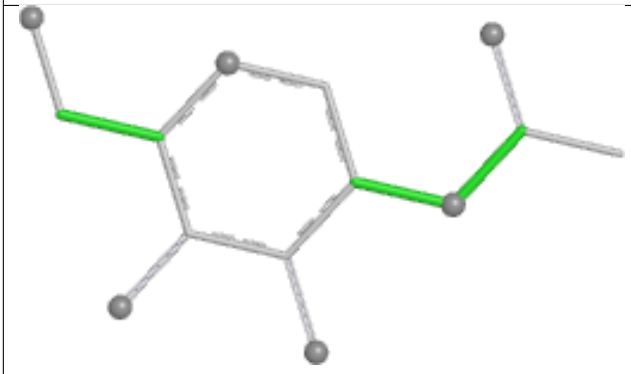
Ligand NAG G 402



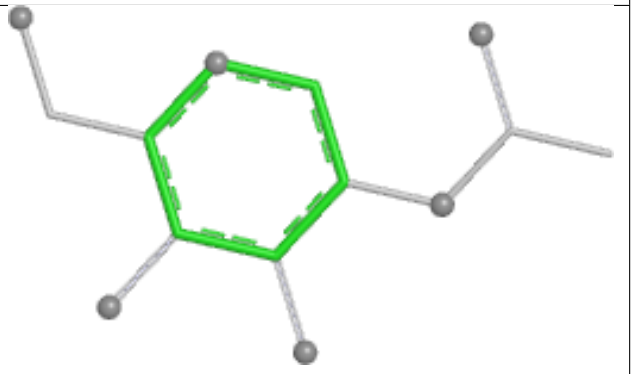
Bond lengths



Bond angles

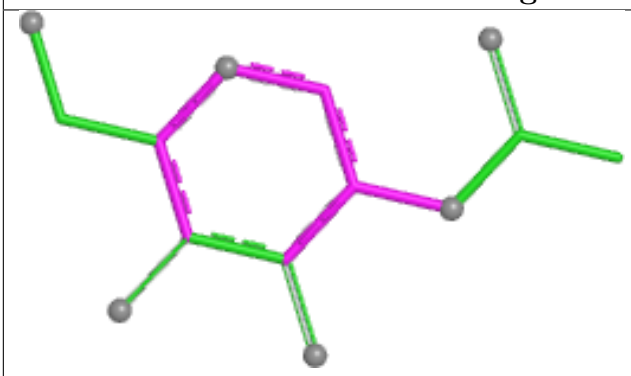


Torsions

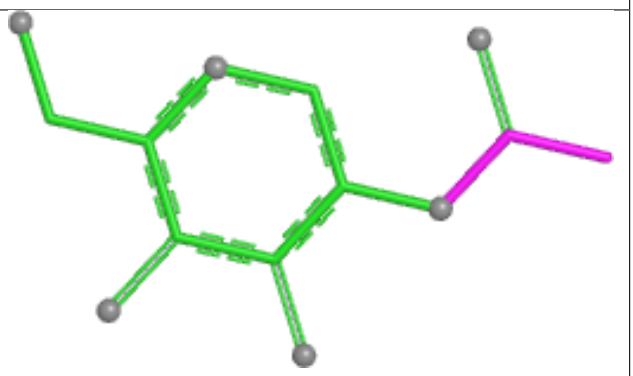


Rings

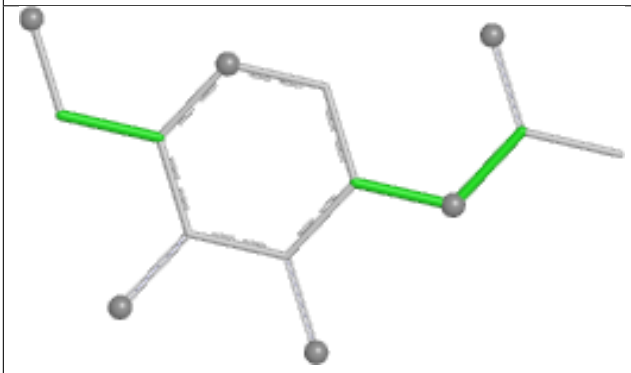
Ligand NAG A 405



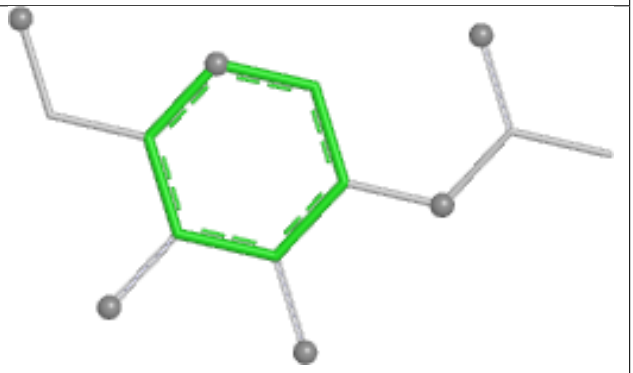
Bond lengths



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.

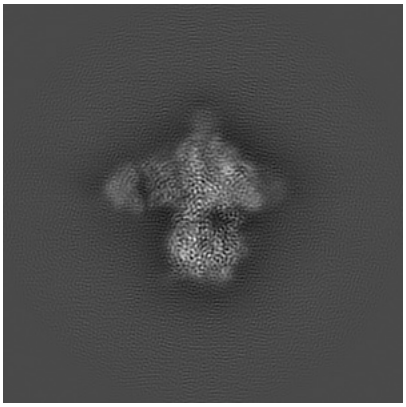
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-25039. These allow visual inspection of the internal detail of the map and identification of artifacts.

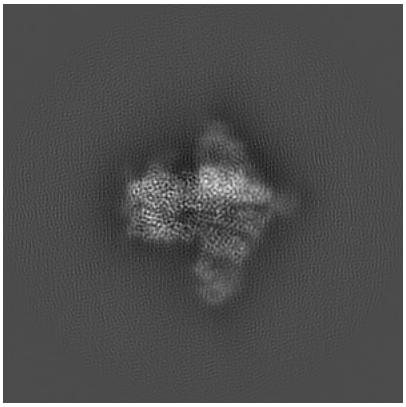
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

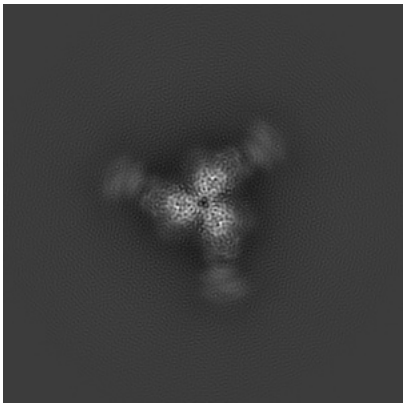
6.1.1 Primary map



X



Y

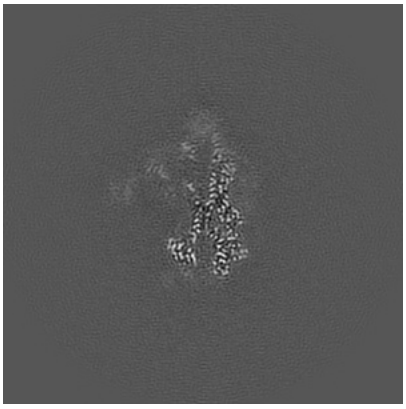


Z

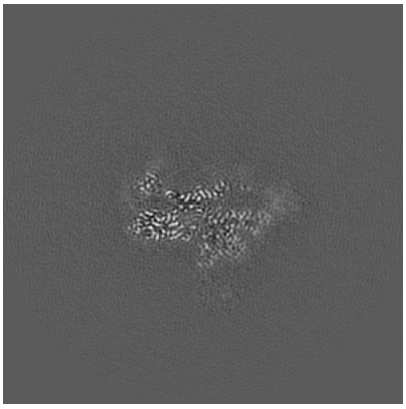
The images above show the map projected in three orthogonal directions.

6.2 Central slices

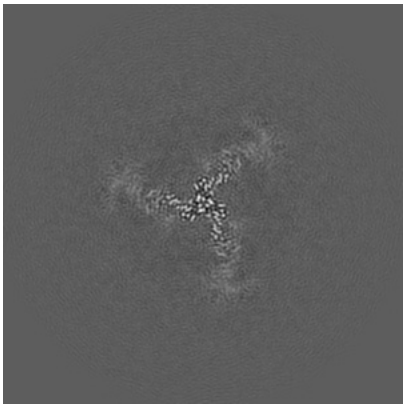
6.2.1 Primary map



X Index: 160



Y Index: 160

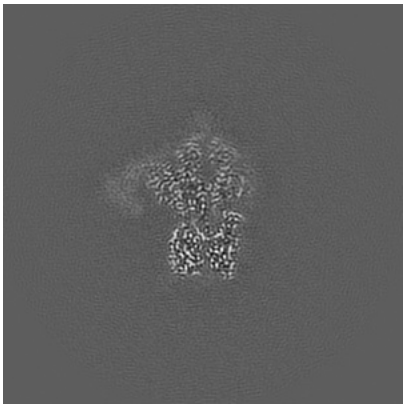


Z Index: 160

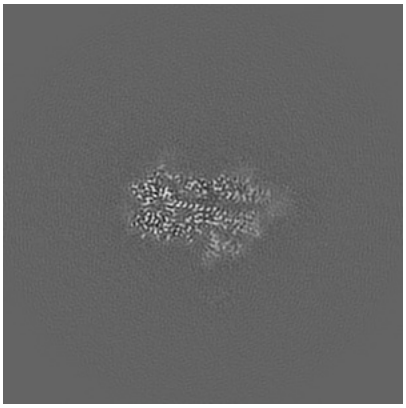
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

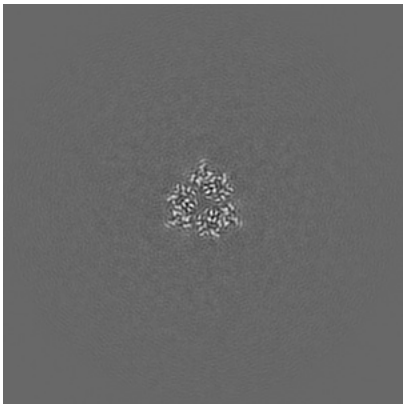
6.3.1 Primary map



X Index: 169



Y Index: 153

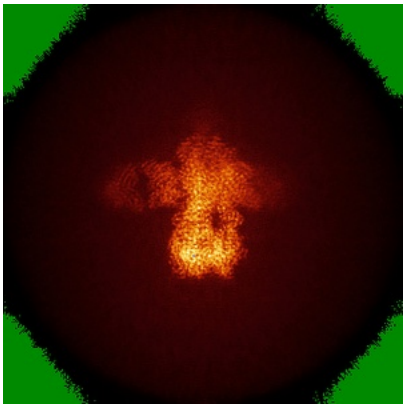


Z Index: 121

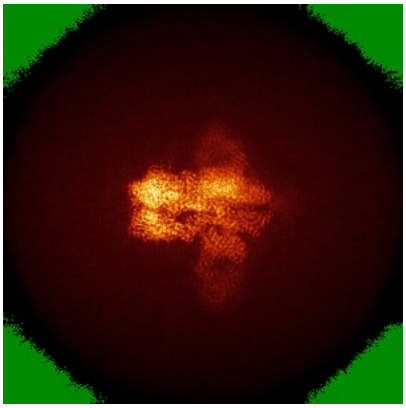
The images above show the largest variance slices of the map in three orthogonal directions.

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

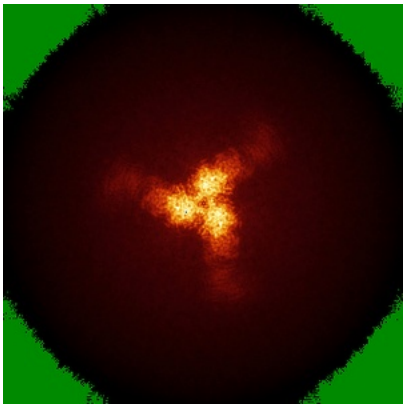
6.4.1 Primary map



X



Y



Z

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

6.5 Orthogonal surface views (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 0.017. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

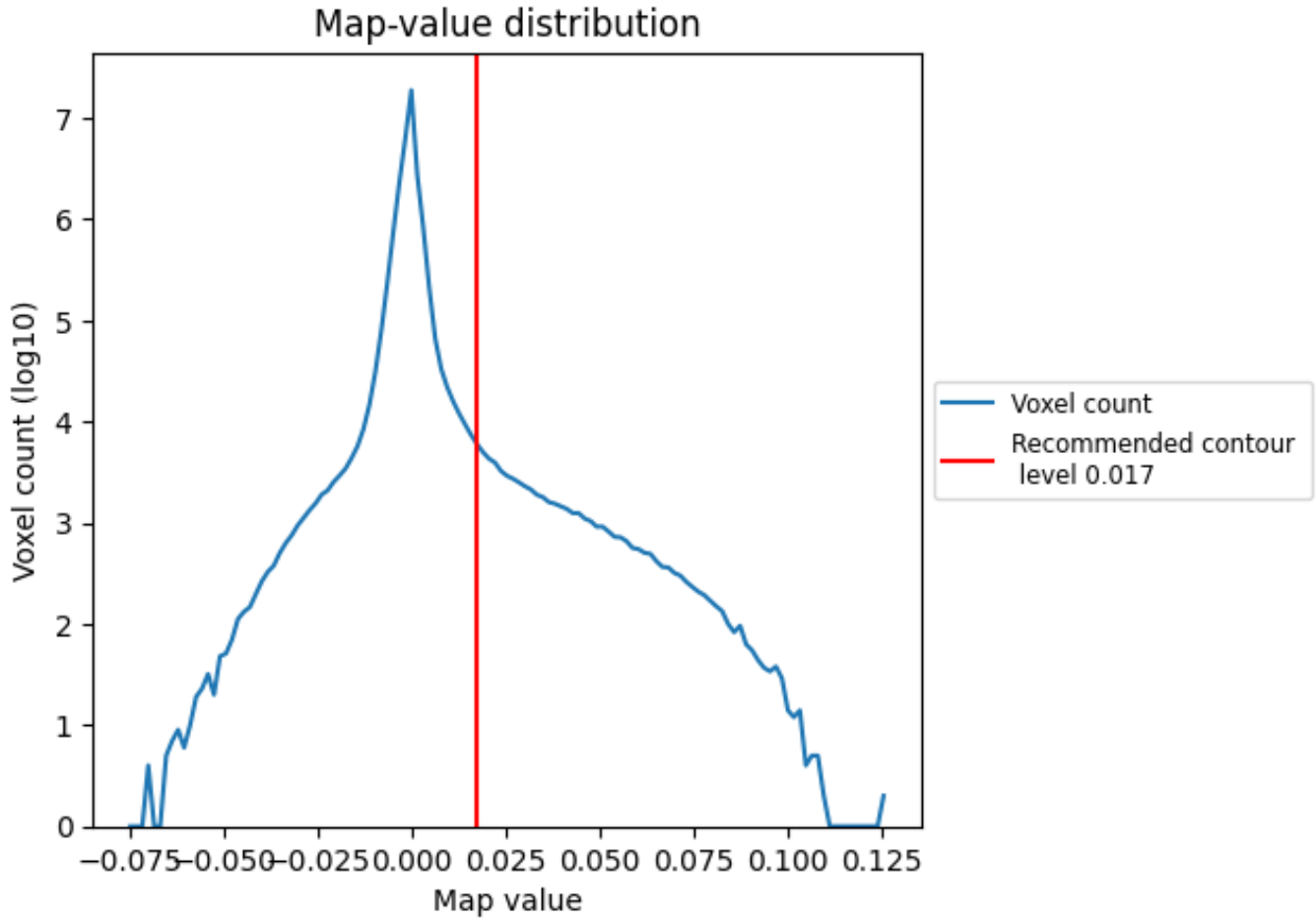
6.6 Mask visualisation (i)

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

7 Map analysis

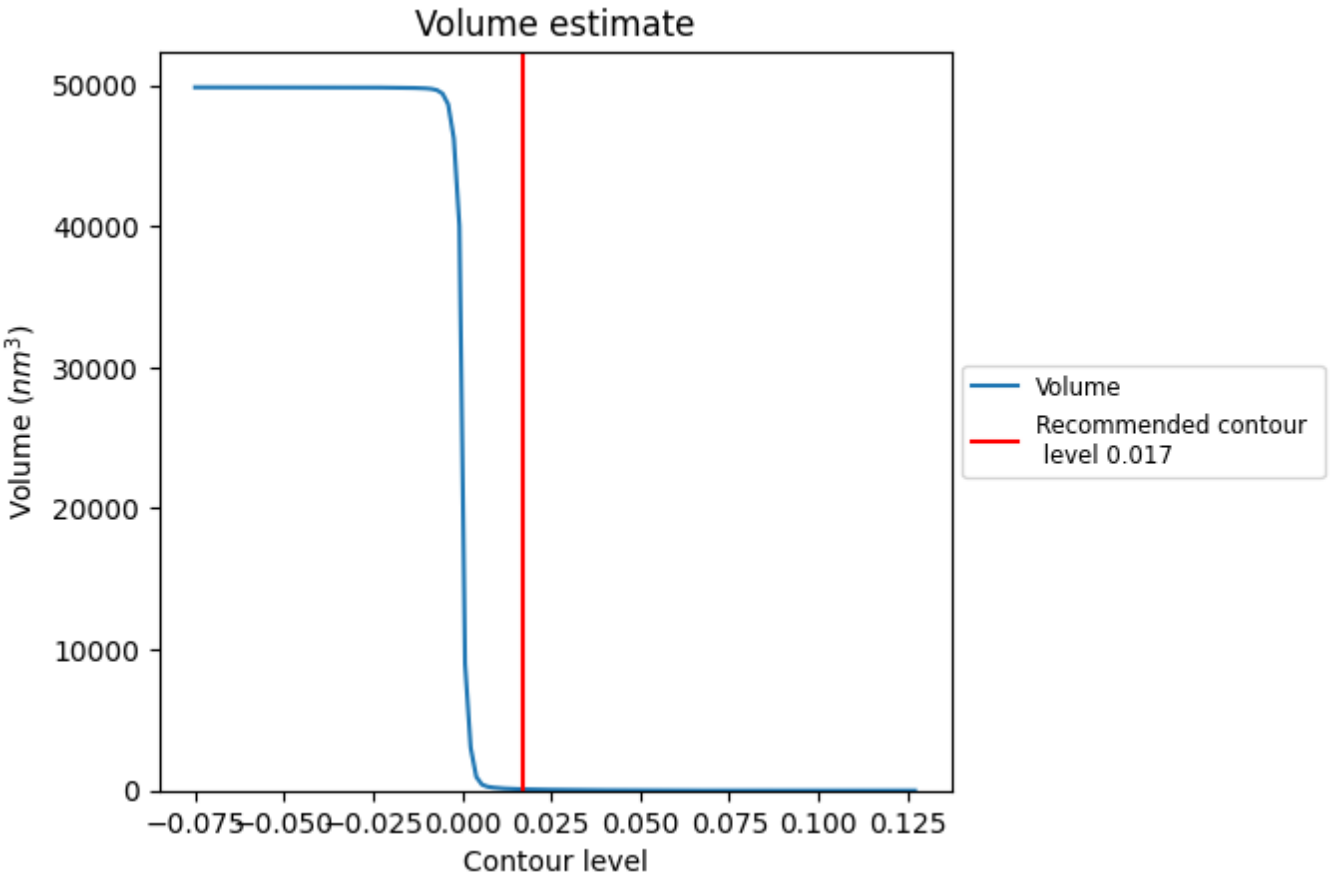
This section contains the results of statistical analysis of the map.

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.

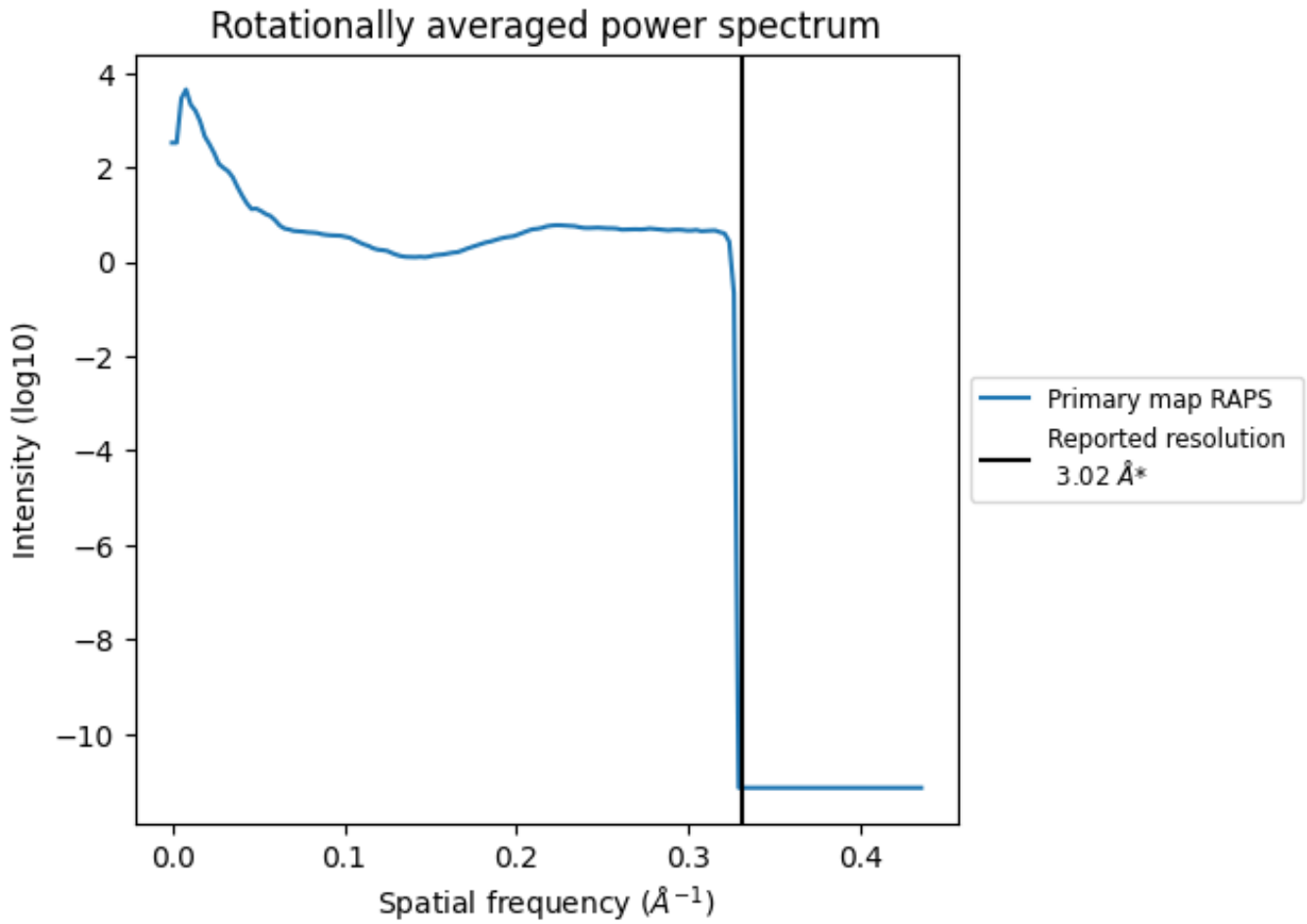
7.2 Volume estimate



The volume at the recommended contour level is 94 nm^3; this corresponds to an approximate mass of 85 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 0.331 Å^{-1}

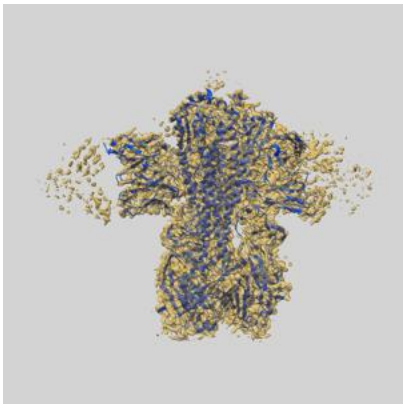
8 Fourier-Shell correlation (i)

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

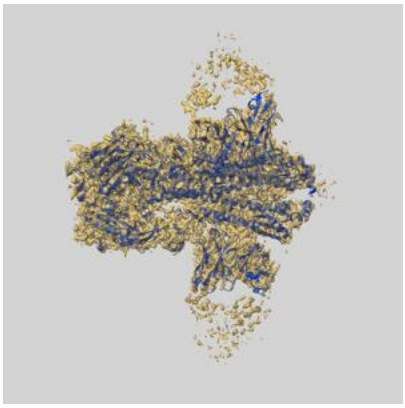
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-25039 and PDB model 7SCN. Per-residue inclusion information can be found in section 3 on page 11.

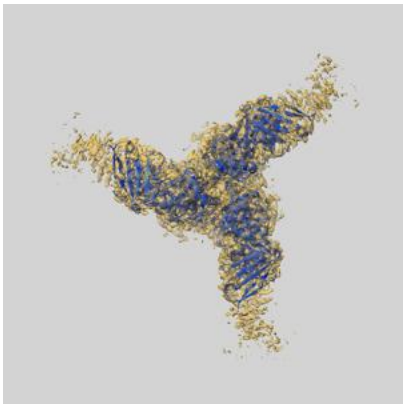
9.1 Map-model overlay



X



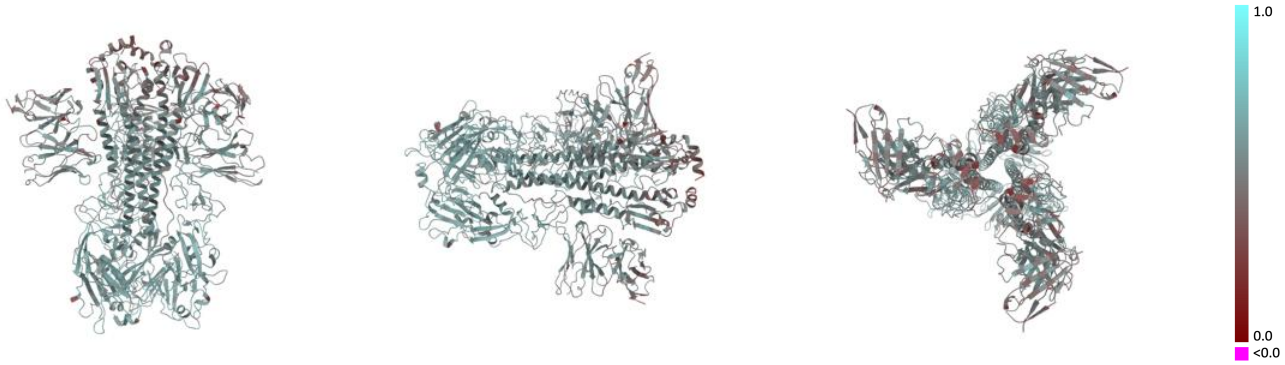
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.017 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.

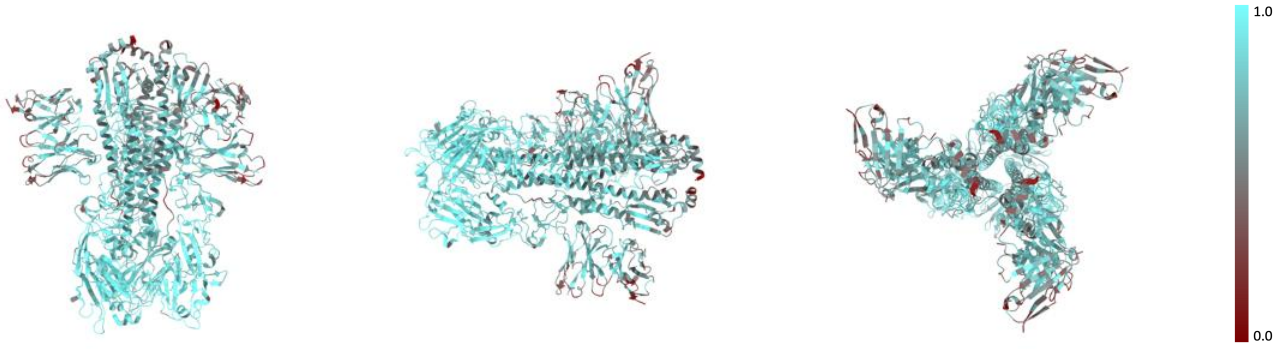
9.2 Q-score mapped to coordinate model (i)



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.

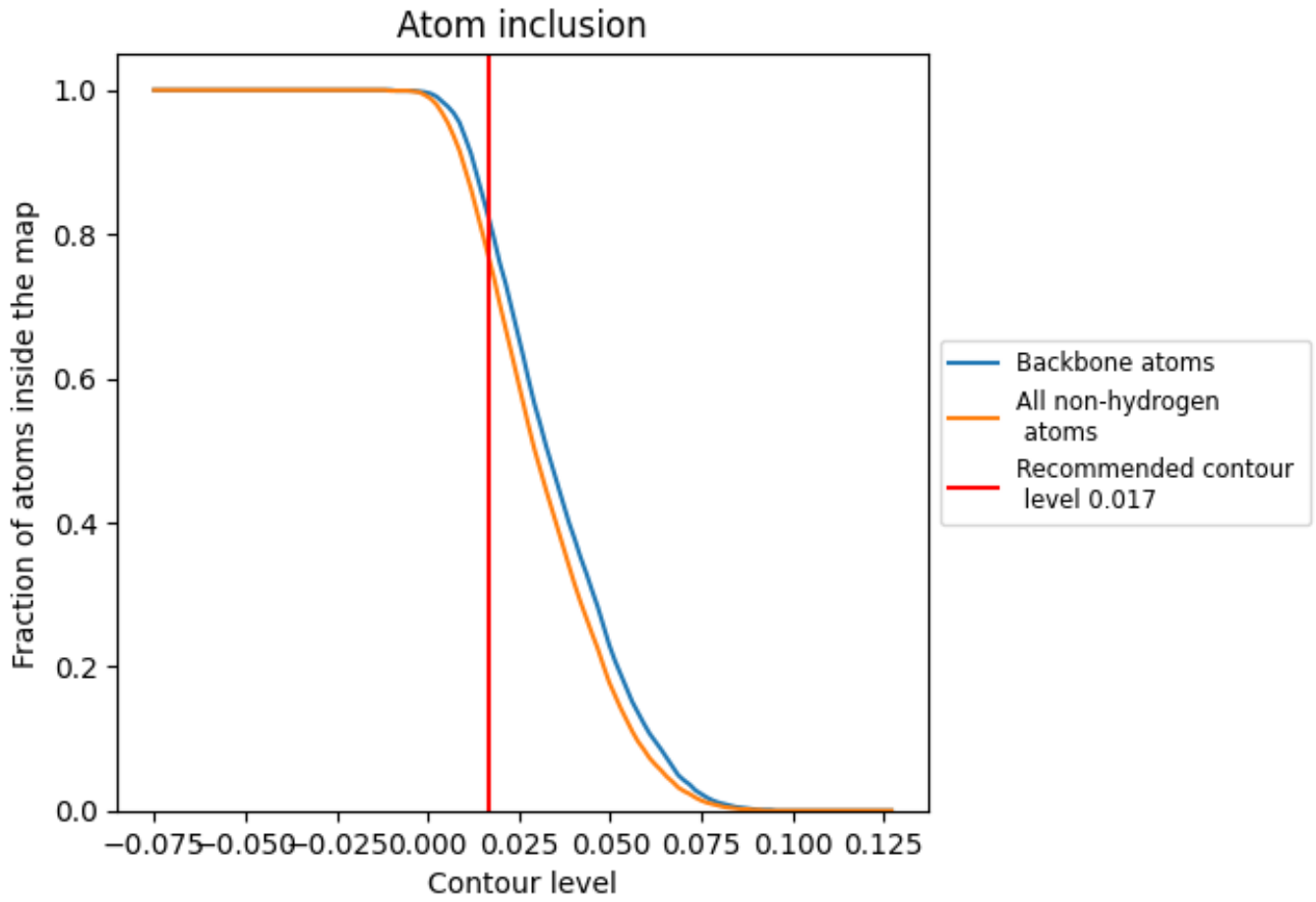
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.017).

9.4 Atom inclusion (i)



At the recommended contour level, 82% of all backbone atoms, 76% 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 (0.017) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7630	0.5340
A	0.8710	0.5790
B	0.6980	0.5020
C	0.8690	0.5770
D	0.6920	0.4970
E	0.6870	0.5100
F	0.6110	0.4770
G	0.8760	0.5760
H	0.6870	0.5130
I	0.6980	0.5000
J	0.6920	0.5130
K	0.6160	0.4800
L	0.6180	0.4810