Full wwPDB EM Validation Report

Jun 2, 2026 – 06:27 PM EDT

PDB ID	:	10RK / pdb_000010rk
EMDB ID	:	EMD-75409
Title	:	Heparin-induced trans tetrameric complex of VEGF, VEGFR2 and Neuropilin 1
Authors	:	Chen, L.; Bai, X.; Zhang, X.
Deposited on	:	2026-02-03
Resolution	:	3.65 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:

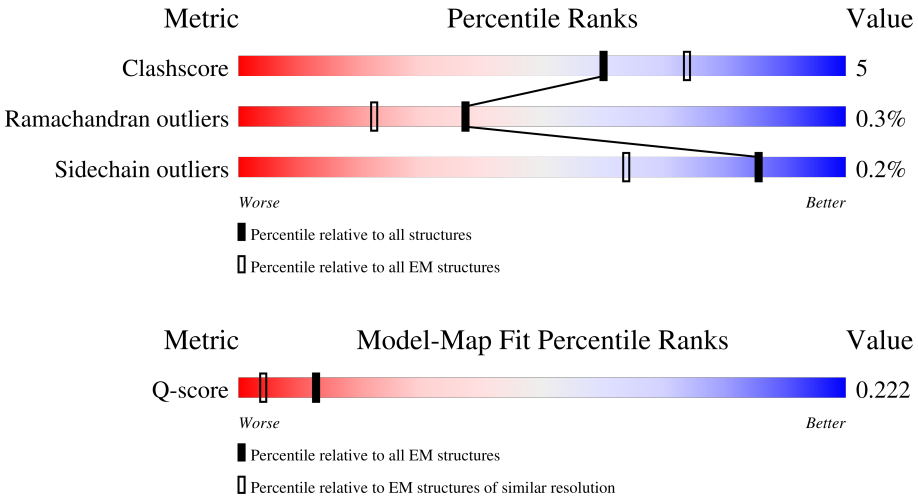
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13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

1 Overall quality at a glance

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

The reported resolution of this entry is 3.65 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	11564 (3.15 - 4.15)

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	E	847	57% 9% 34%
1	F	847	56% 7% 37%
1	K	847	58% 8% 34%
1	L	847	56% 7% 37%

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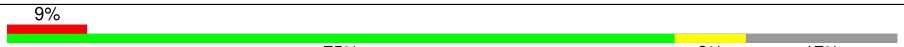
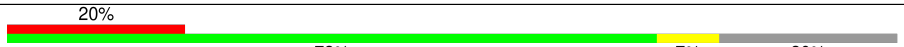
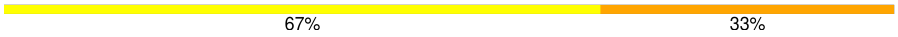
Mol	Chain	Length	Quality of chain
2	A	175	
2	B	175	
2	G	175	
2	H	175	
3	C	754	
3	D	754	
3	I	754	
3	J	754	
4	M	2	
4	N	2	
5	O	6	
5	P	6	

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 81918 atoms, of which 40452 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 Neuropilin-1.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	E	561	Total	C	H	N	O	S	0	0
			8771	2838	4307	752	849	25		
1	K	561	Total	C	H	N	O	S	0	0
			8771	2838	4307	752	849	25		
1	F	537	Total	C	H	N	O	S	0	0
			8334	2702	4090	716	804	22		
1	L	537	Total	C	H	N	O	S	0	0
			8334	2702	4090	716	804	22		

There are 52 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	19	GLU	-	expression tag	UNP P97333
E	20	LEU	-	expression tag	UNP P97333
E	21	GLU	-	expression tag	UNP P97333
E	856	GLY	-	expression tag	UNP P97333
E	857	THR	-	expression tag	UNP P97333
E	858	HIS	-	expression tag	UNP P97333
E	859	HIS	-	expression tag	UNP P97333
E	860	HIS	-	expression tag	UNP P97333
E	861	HIS	-	expression tag	UNP P97333
E	862	HIS	-	expression tag	UNP P97333
E	863	HIS	-	expression tag	UNP P97333
E	864	HIS	-	expression tag	UNP P97333
E	865	HIS	-	expression tag	UNP P97333
K	19	GLU	-	expression tag	UNP P97333
K	20	LEU	-	expression tag	UNP P97333
K	21	GLU	-	expression tag	UNP P97333
K	856	GLY	-	expression tag	UNP P97333
K	857	THR	-	expression tag	UNP P97333
K	858	HIS	-	expression tag	UNP P97333
K	859	HIS	-	expression tag	UNP P97333
K	860	HIS	-	expression tag	UNP P97333
K	861	HIS	-	expression tag	UNP P97333

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Chain	Residue	Modelled	Actual	Comment	Reference
K	862	HIS	-	expression tag	UNP P97333
K	863	HIS	-	expression tag	UNP P97333
K	864	HIS	-	expression tag	UNP P97333
K	865	HIS	-	expression tag	UNP P97333
F	19	GLU	-	expression tag	UNP P97333
F	20	LEU	-	expression tag	UNP P97333
F	21	GLU	-	expression tag	UNP P97333
F	856	GLY	-	expression tag	UNP P97333
F	857	THR	-	expression tag	UNP P97333
F	858	HIS	-	expression tag	UNP P97333
F	859	HIS	-	expression tag	UNP P97333
F	860	HIS	-	expression tag	UNP P97333
F	861	HIS	-	expression tag	UNP P97333
F	862	HIS	-	expression tag	UNP P97333
F	863	HIS	-	expression tag	UNP P97333
F	864	HIS	-	expression tag	UNP P97333
F	865	HIS	-	expression tag	UNP P97333
L	19	GLU	-	expression tag	UNP P97333
L	20	LEU	-	expression tag	UNP P97333
L	21	GLU	-	expression tag	UNP P97333
L	856	GLY	-	expression tag	UNP P97333
L	857	THR	-	expression tag	UNP P97333
L	858	HIS	-	expression tag	UNP P97333
L	859	HIS	-	expression tag	UNP P97333
L	860	HIS	-	expression tag	UNP P97333
L	861	HIS	-	expression tag	UNP P97333
L	862	HIS	-	expression tag	UNP P97333
L	863	HIS	-	expression tag	UNP P97333
L	864	HIS	-	expression tag	UNP P97333
L	865	HIS	-	expression tag	UNP P97333

- Molecule 2 is a protein called Isoform VEGF-1 of Vascular endothelial growth factor A, long form.

Mol	Chain	Residues	Atoms						AltConf	Trace
2	A	146	Total	C	H	N	O	S	0	0
			2333	725	1147	220	220	21		
2	B	146	Total	C	H	N	O	S	0	0
			2333	725	1147	220	220	21		
2	G	146	Total	C	H	N	O	S	0	0
			2333	725	1147	220	220	21		
2	H	146	Total	C	H	N	O	S	0	0
			2333	725	1147	220	220	21		

There are 44 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	16	GLU	-	expression tag	UNP Q00731
A	17	LEU	-	expression tag	UNP Q00731
A	18	GLU	-	expression tag	UNP Q00731
A	19	HIS	-	expression tag	UNP Q00731
A	20	HIS	-	expression tag	UNP Q00731
A	21	HIS	-	expression tag	UNP Q00731
A	22	HIS	-	expression tag	UNP Q00731
A	23	HIS	-	expression tag	UNP Q00731
A	24	HIS	-	expression tag	UNP Q00731
A	25	HIS	-	expression tag	UNP Q00731
A	26	HIS	-	expression tag	UNP Q00731
B	16	GLU	-	expression tag	UNP Q00731
B	17	LEU	-	expression tag	UNP Q00731
B	18	GLU	-	expression tag	UNP Q00731
B	19	HIS	-	expression tag	UNP Q00731
B	20	HIS	-	expression tag	UNP Q00731
B	21	HIS	-	expression tag	UNP Q00731
B	22	HIS	-	expression tag	UNP Q00731
B	23	HIS	-	expression tag	UNP Q00731
B	24	HIS	-	expression tag	UNP Q00731
B	25	HIS	-	expression tag	UNP Q00731
B	26	HIS	-	expression tag	UNP Q00731
G	16	GLU	-	expression tag	UNP Q00731
G	17	LEU	-	expression tag	UNP Q00731
G	18	GLU	-	expression tag	UNP Q00731
G	19	HIS	-	expression tag	UNP Q00731
G	20	HIS	-	expression tag	UNP Q00731
G	21	HIS	-	expression tag	UNP Q00731
G	22	HIS	-	expression tag	UNP Q00731
G	23	HIS	-	expression tag	UNP Q00731
G	24	HIS	-	expression tag	UNP Q00731
G	25	HIS	-	expression tag	UNP Q00731
G	26	HIS	-	expression tag	UNP Q00731
H	16	GLU	-	expression tag	UNP Q00731
H	17	LEU	-	expression tag	UNP Q00731
H	18	GLU	-	expression tag	UNP Q00731
H	19	HIS	-	expression tag	UNP Q00731
H	20	HIS	-	expression tag	UNP Q00731
H	21	HIS	-	expression tag	UNP Q00731
H	22	HIS	-	expression tag	UNP Q00731
H	23	HIS	-	expression tag	UNP Q00731
H	24	HIS	-	expression tag	UNP Q00731

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Chain	Residue	Modelled	Actual	Comment	Reference
H	25	HIS	-	expression tag	UNP Q00731
H	26	HIS	-	expression tag	UNP Q00731

- Molecule 3 is a protein called Vascular endothelial growth factor receptor 2.

Mol	Chain	Residues	Atoms						AltConf	Trace
3	C	604	Total	C	H	N	O	S	0	0
			9390	2979	4681	814	892	24		
3	D	604	Total	C	H	N	O	S	0	0
			9418	2986	4696	817	894	25		
3	I	604	Total	C	H	N	O	S	0	0
			9390	2979	4681	814	892	24		
3	J	604	Total	C	H	N	O	S	0	0
			9418	2986	4696	817	894	25		

There are 52 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	17	GLU	-	expression tag	UNP P35918
C	18	LEU	-	expression tag	UNP P35918
C	19	GLU	-	expression tag	UNP P35918
C	761	GLY	-	expression tag	UNP P35918
C	762	THR	-	expression tag	UNP P35918
C	763	HIS	-	expression tag	UNP P35918
C	764	HIS	-	expression tag	UNP P35918
C	765	HIS	-	expression tag	UNP P35918
C	766	HIS	-	expression tag	UNP P35918
C	767	HIS	-	expression tag	UNP P35918
C	768	HIS	-	expression tag	UNP P35918
C	769	HIS	-	expression tag	UNP P35918
C	770	HIS	-	expression tag	UNP P35918
D	17	GLU	-	expression tag	UNP P35918
D	18	LEU	-	expression tag	UNP P35918
D	19	GLU	-	expression tag	UNP P35918
D	761	GLY	-	expression tag	UNP P35918
D	762	THR	-	expression tag	UNP P35918
D	763	HIS	-	expression tag	UNP P35918
D	764	HIS	-	expression tag	UNP P35918
D	765	HIS	-	expression tag	UNP P35918
D	766	HIS	-	expression tag	UNP P35918
D	767	HIS	-	expression tag	UNP P35918
D	768	HIS	-	expression tag	UNP P35918

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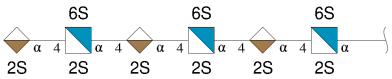
Chain	Residue	Modelled	Actual	Comment	Reference
D	769	HIS	-	expression tag	UNP P35918
D	770	HIS	-	expression tag	UNP P35918
I	17	GLU	-	expression tag	UNP P35918
I	18	LEU	-	expression tag	UNP P35918
I	19	GLU	-	expression tag	UNP P35918
I	761	GLY	-	expression tag	UNP P35918
I	762	THR	-	expression tag	UNP P35918
I	763	HIS	-	expression tag	UNP P35918
I	764	HIS	-	expression tag	UNP P35918
I	765	HIS	-	expression tag	UNP P35918
I	766	HIS	-	expression tag	UNP P35918
I	767	HIS	-	expression tag	UNP P35918
I	768	HIS	-	expression tag	UNP P35918
I	769	HIS	-	expression tag	UNP P35918
I	770	HIS	-	expression tag	UNP P35918
J	17	GLU	-	expression tag	UNP P35918
J	18	LEU	-	expression tag	UNP P35918
J	19	GLU	-	expression tag	UNP P35918
J	761	GLY	-	expression tag	UNP P35918
J	762	THR	-	expression tag	UNP P35918
J	763	HIS	-	expression tag	UNP P35918
J	764	HIS	-	expression tag	UNP P35918
J	765	HIS	-	expression tag	UNP P35918
J	766	HIS	-	expression tag	UNP P35918
J	767	HIS	-	expression tag	UNP P35918
J	768	HIS	-	expression tag	UNP P35918
J	769	HIS	-	expression tag	UNP P35918
J	770	HIS	-	expression tag	UNP P35918

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

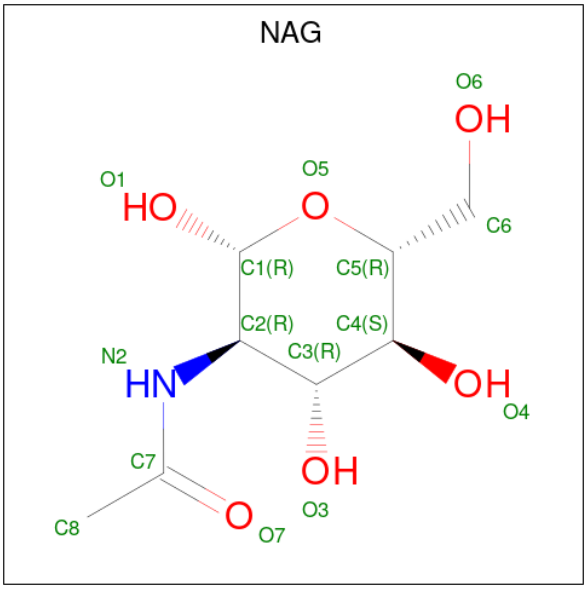
Mol	Chain	Residues	Atoms					AltConf	Trace
4	M	2	Total	C	H	N	O	0	0
			55	16	27	2	10		
4	N	2	Total	C	H	N	O	0	0
			55	16	27	2	10		

- Molecule 5 is an oligosaccharide called 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose.



Mol	Chain	Residues	Atoms						AltConf	Trace
5	O	6	Total	C	H	N	O	S	0	0
			153	36	47	3	58	9		
5	P	6	Total	C	H	N	O	S	0	0
			153	36	47	3	58	9		

- Molecule 6 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms					AltConf
6	E	1	Total	C	H	N	O	0
			28	8	14	1	5	
6	K	1	Total	C	H	N	O	0
			28	8	14	1	5	
6	C	1	Total	C	H	N	O	0
			28	8	14	1	5	
6	C	1	Total	C	H	N	O	0
			28	8	14	1	5	
6	F	1	Total	C	H	N	O	0
			28	8	14	1	5	

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Mol	Chain	Residues	Atoms					AltConf
6	D	1	Total	C	H	N	O	0
			28	8	14	1	5	
6	D	1	Total	C	H	N	O	0
			28	8	14	1	5	
6	I	1	Total	C	H	N	O	0
			28	8	14	1	5	
6	I	1	Total	C	H	N	O	0
			28	8	14	1	5	
6	L	1	Total	C	H	N	O	0
			28	8	14	1	5	
6	J	1	Total	C	H	N	O	0
			28	8	14	1	5	
6	J	1	Total	C	H	N	O	0
			28	8	14	1	5	

- Molecule 7 is CALCIUM ION (CCD ID: CA) (formula: Ca).

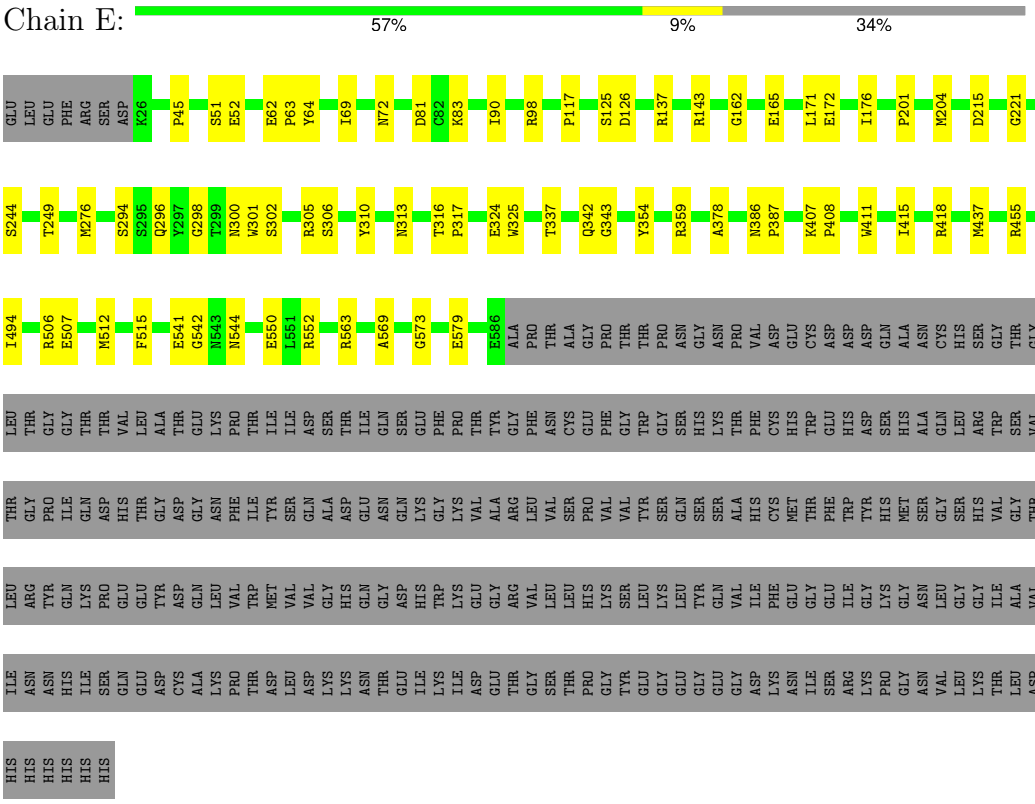
Mol	Chain	Residues	Atoms		AltConf
7	E	2	Total	Ca	0
			2	2	
7	K	2	Total	Ca	0
			2	2	
7	F	2	Total	Ca	0
			2	2	
7	L	2	Total	Ca	0
			2	2	

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.

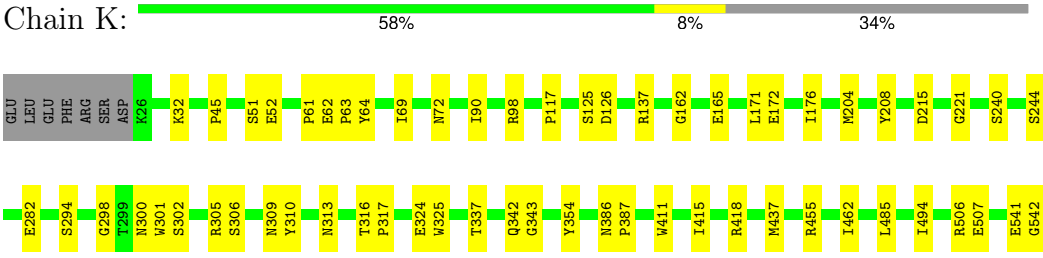
- Molecule 1: Neuropilin-1

Chain E:



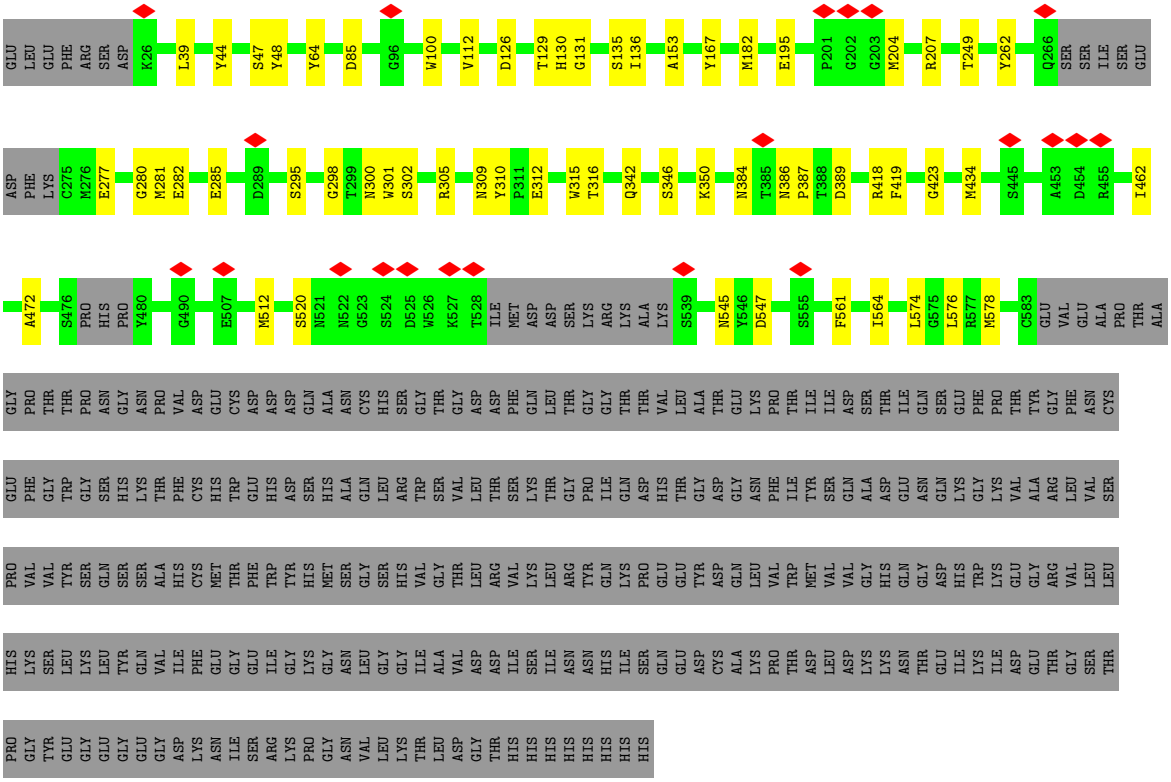
- Molecule 1: Neuropilin-1

Chain K:



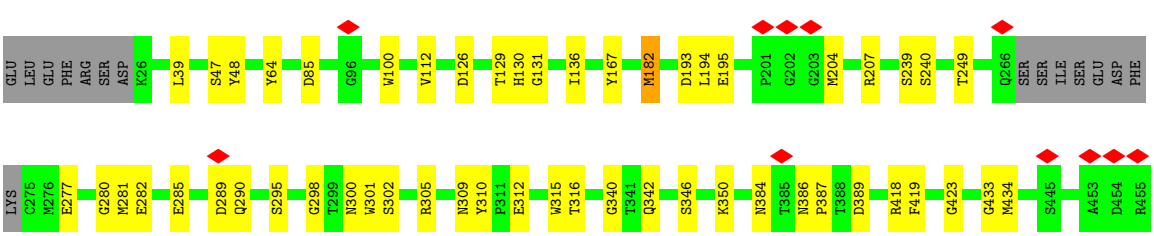
• Molecule 1: Neuropilin-1

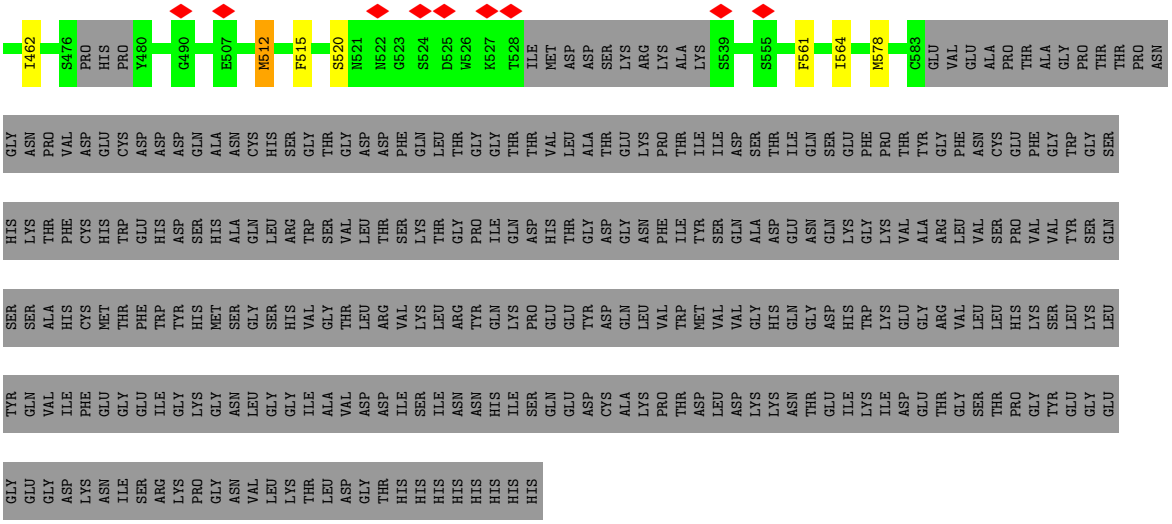
Chain F:



• Molecule 1: Neuropilin-1

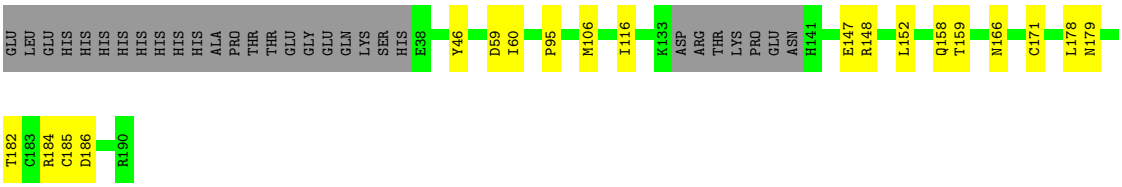
Chain L:





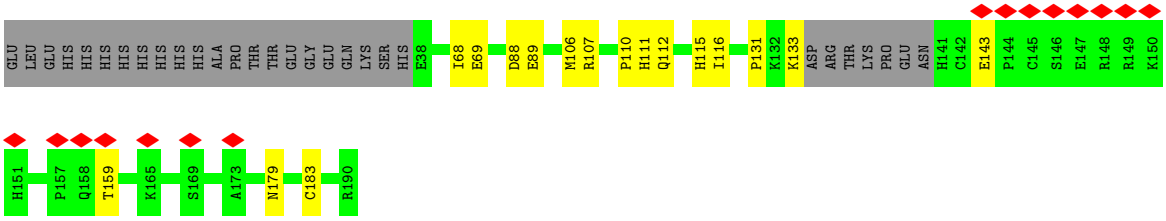
• Molecule 2: Isoform VEGF-1 of Vascular endothelial growth factor A, long form

Chain A:



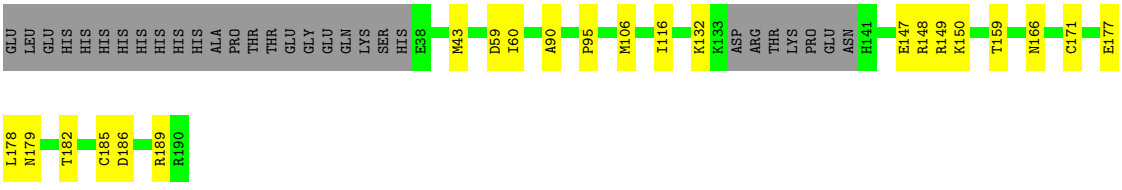
• Molecule 2: Isoform VEGF-1 of Vascular endothelial growth factor A, long form

Chain B:



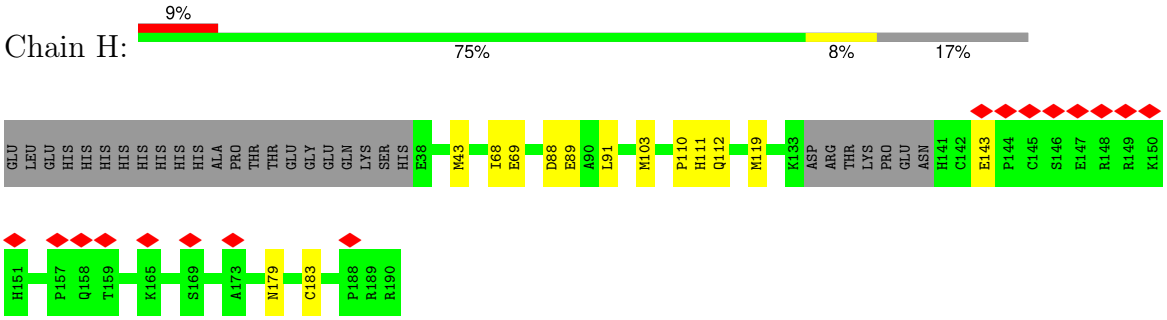
• Molecule 2: Isoform VEGF-1 of Vascular endothelial growth factor A, long form

Chain G:



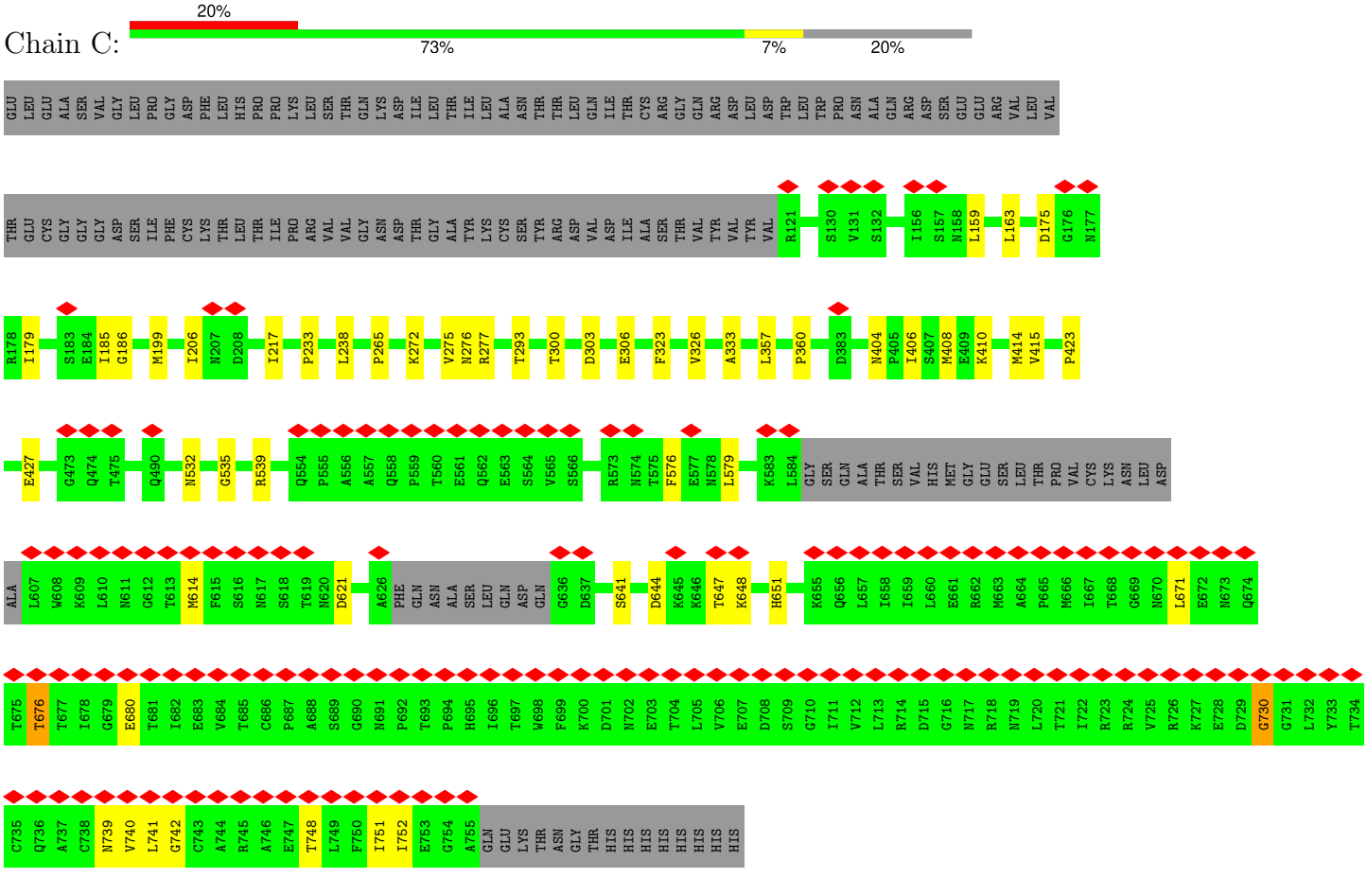
• Molecule 2: Isoform VEGF-1 of Vascular endothelial growth factor A, long form

Chain H:



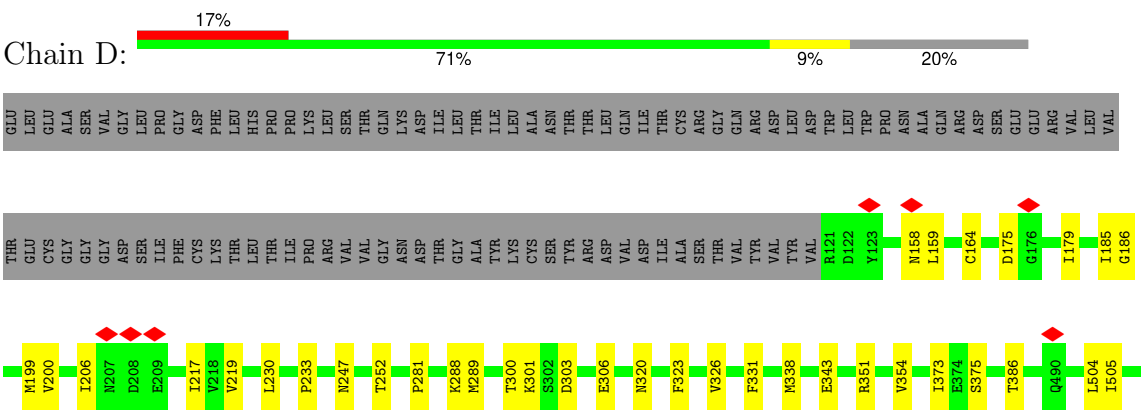
• Molecule 3: Vascular endothelial growth factor receptor 2

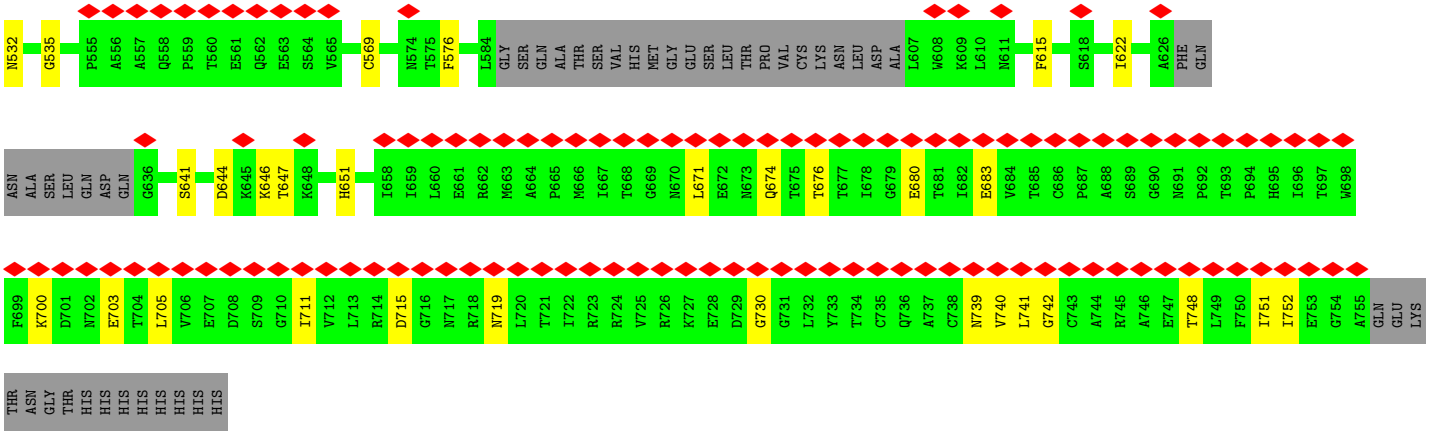
Chain C:



• Molecule 3: Vascular endothelial growth factor receptor 2

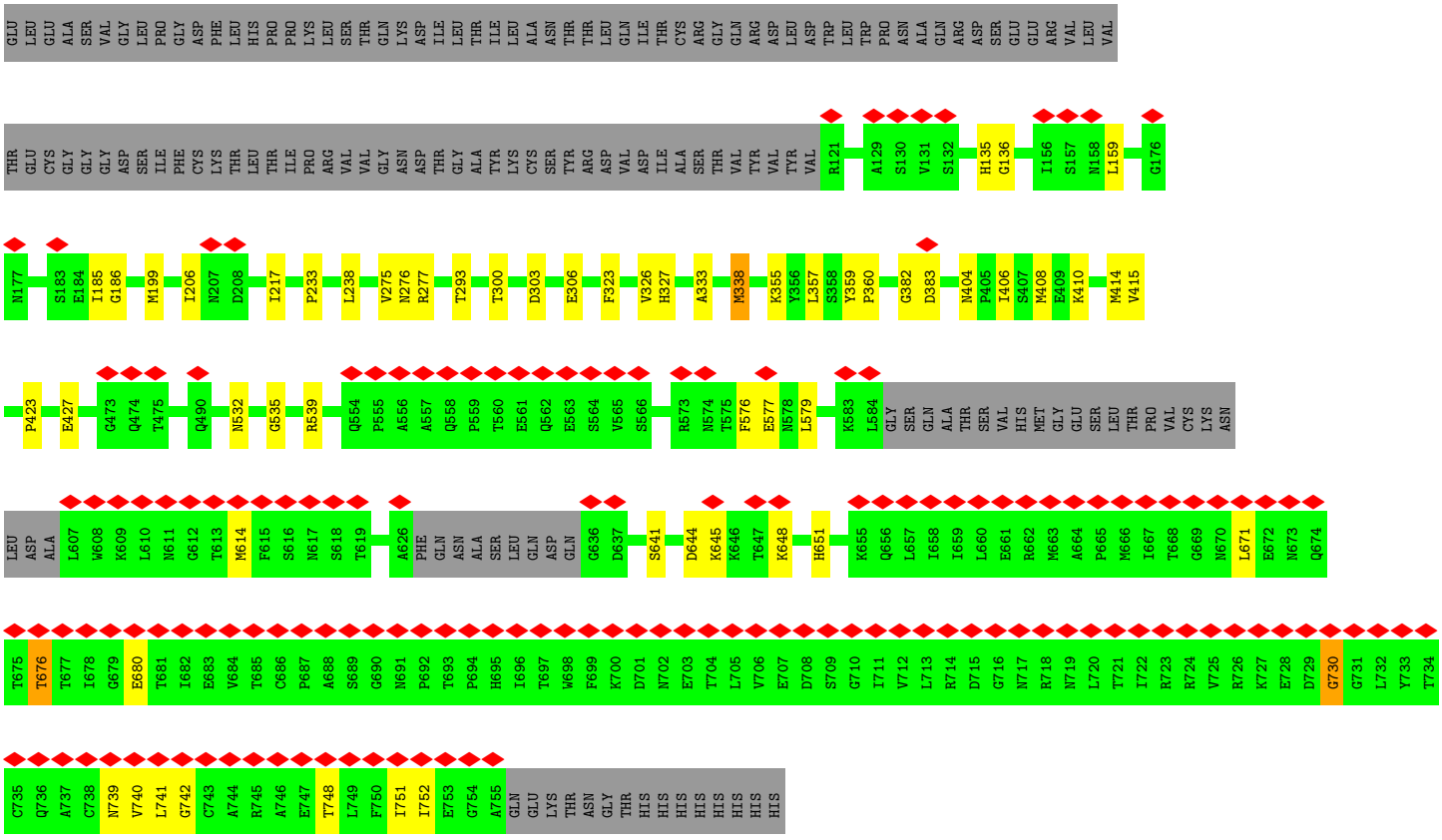
Chain D:





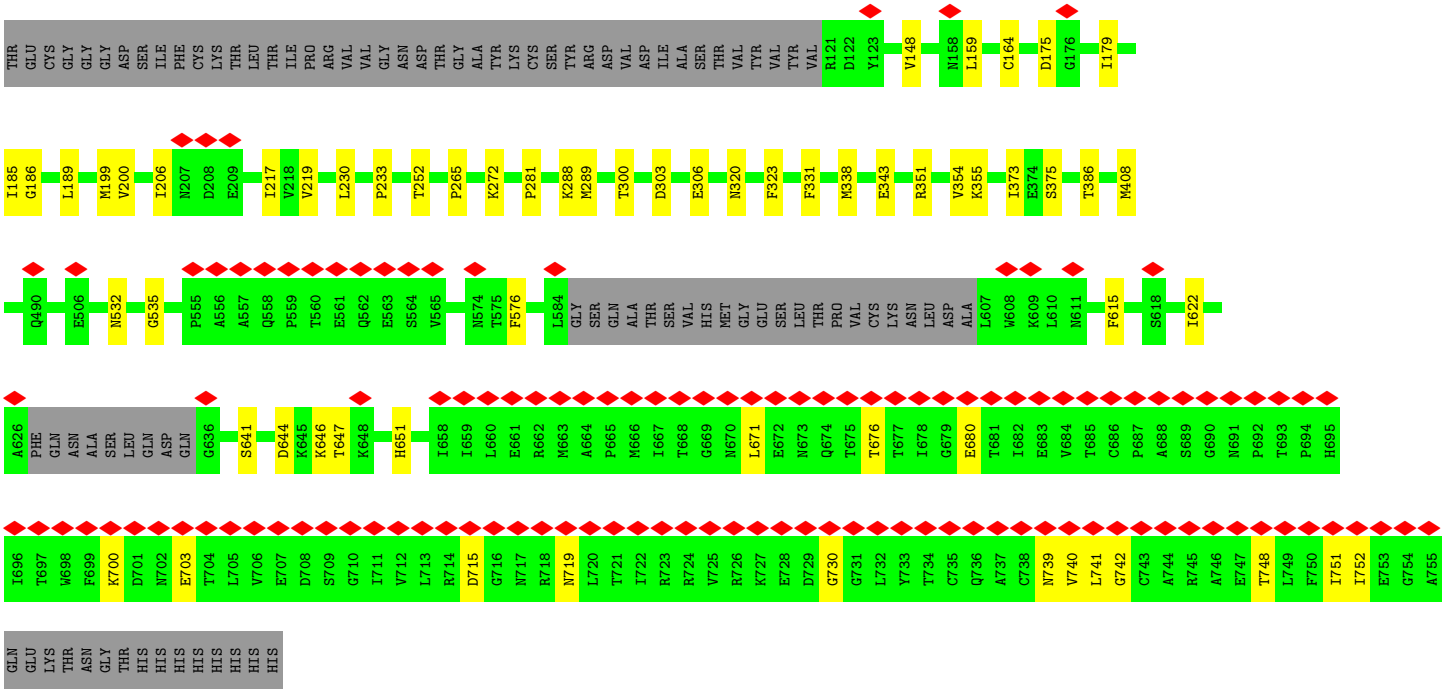
• Molecule 3: Vascular endothelial growth factor receptor 2

Chain I:



• Molecule 3: Vascular endothelial growth factor receptor 2

Chain J:



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

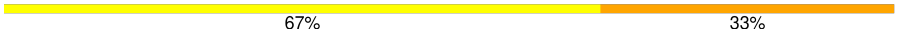
Chain M:

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

Chain N:

• Molecule 5: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose

Chain O:



• Molecule 5: 2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose-(1-4)-2-O-sulfo-alpha-L-idopyranuronic acid-(1-4)-2-deoxy-6-O-sulfo-2-(sulfoamino)-alpha-D-glucopyranose

Chain P:

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	75176	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 ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.033	Depositor
Minimum map value	-0.012	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.003	Depositor
Map size (Å)	426.4, 426.4, 426.4	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.066, 1.066, 1.066	Depositor

5 Model quality

5.1 Standard geometry

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

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	E	0.33	0/4585	0.48	0/6207
1	F	0.13	0/4357	0.40	0/5901
1	K	0.32	0/4585	0.48	0/6207
1	L	0.13	0/4357	0.41	2/5901 (0.0%)
2	A	0.17	0/1208	0.51	0/1620
2	B	0.15	0/1208	0.48	0/1620
2	G	0.16	0/1208	0.50	0/1620
2	H	0.16	0/1208	0.50	0/1620
3	C	0.12	0/4809	0.39	0/6541
3	D	0.18	0/4822	0.39	0/6556
3	I	0.12	0/4809	0.39	0/6541
3	J	0.18	0/4822	0.39	0/6556
All	All	0.20	0/41978	0.43	2/56890 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	E	0	1
1	K	0	1
All	All	0	2

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	L	182	MET	CB-CG-SD	5.25	128.43	112.70
1	L	182	MET	CG-SD-CE	5.02	111.95	100.90

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	E	563	ARG	Sidechain
1	K	563	ARG	Sidechain

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	E	4464	4307	4305	53	0
1	F	4244	4090	4074	38	0
1	K	4464	4307	4306	45	0
1	L	4244	4090	4074	39	0
2	A	1186	1147	1141	13	0
2	B	1186	1147	1141	9	0
2	G	1186	1147	1141	13	0
2	H	1186	1147	1141	10	0
3	C	4709	4681	4653	37	0
3	D	4722	4696	4675	39	0
3	I	4709	4681	4653	38	0
3	J	4722	4696	4675	40	0
4	M	28	27	25	3	0
4	N	28	27	25	3	0
5	O	106	47	36	1	0
5	P	106	47	36	2	0
6	C	28	28	26	0	0
6	D	28	28	26	1	0
6	E	14	14	13	0	0
6	F	14	14	13	0	0
6	I	28	28	26	0	0
6	J	28	28	26	0	0
6	K	14	14	13	0	0
6	L	14	14	13	0	0
7	E	2	0	0	0	0
7	F	2	0	0	0	0
7	K	2	0	0	0	0
7	L	2	0	0	0	0
All	All	41466	40452	40257	370	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 5.

All (370) 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:K:455:ARG:O	1:K:455:ARG:NE	1.93	1.02
1:E:455:ARG:O	1:E:455:ARG:NE	1.93	0.99
1:F:342:GLN:N	1:F:418:ARG:O	2.09	0.86
1:L:342:GLN:N	1:L:418:ARG:O	2.08	0.86
3:D:343:GLU:OE2	3:D:343:GLU:N	2.09	0.85
3:J:343:GLU:OE2	3:J:343:GLU:N	2.09	0.84
2:A:179:ASN:OD1	2:A:182:THR:OG1	2.01	0.75
1:K:541:GLU:OE2	1:K:542:GLY:N	2.20	0.74
1:E:541:GLU:OE2	1:E:542:GLY:N	2.21	0.74
2:A:158:GLN:N	2:A:158:GLN:OE1	2.22	0.72
2:G:179:ASN:OD1	2:G:182:THR:OG1	2.01	0.71
1:E:165:GLU:OE2	1:E:165:GLU:N	2.25	0.70
1:L:182:MET:HE3	1:L:182:MET:O	1.92	0.70
1:K:165:GLU:N	1:K:165:GLU:OE2	2.24	0.70
4:M:2:NAG:O7	4:M:2:NAG:O3	2.08	0.70
4:N:2:NAG:O7	4:N:2:NAG:O3	2.10	0.70
3:C:410:LYS:NZ	1:F:195:GLU:OE2	2.28	0.67
3:J:300:THR:N	3:J:303:ASP:OD2	2.25	0.67
1:E:276:MET:HE2	1:E:337:THR:HG21	1.76	0.66
1:K:276:MET:HE2	1:K:337:THR:HG21	1.77	0.66
3:D:739:ASN:OD1	3:D:742:GLY:N	2.28	0.66
3:J:739:ASN:OD1	3:J:742:GLY:N	2.28	0.65
3:C:614:MET:HE2	3:C:621:ASP:HB3	1.80	0.64
3:I:410:LYS:NZ	1:L:195:GLU:OE2	2.27	0.64
3:J:751:ILE:C	3:J:752:ILE:HD12	2.22	0.64
3:D:751:ILE:C	3:D:752:ILE:HD12	2.22	0.63
3:D:300:THR:N	3:D:303:ASP:OD2	2.26	0.63
3:C:751:ILE:C	3:C:752:ILE:HD12	2.25	0.61
3:I:751:ILE:C	3:I:752:ILE:HD12	2.25	0.61
3:I:300:THR:N	3:I:303:ASP:OD2	2.34	0.61
1:E:52:GLU:N	1:E:125:SER:OG	2.34	0.60
2:B:143:GLU:OE1	2:B:143:GLU:N	2.31	0.60
1:L:281:MET:SD	1:L:419:PHE:O	2.60	0.60
2:H:68:ILE:HD12	2:H:69:GLU:N	2.17	0.60
2:B:68:ILE:HD12	2:B:69:GLU:N	2.16	0.59
1:F:281:MET:SD	1:F:419:PHE:O	2.60	0.59
1:E:215:ASP:OD1	1:E:240:SER:OG	2.18	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:199:MET:HE1	3:C:217:ILE:HD11	1.83	0.59
1:E:359:ARG:N	1:E:407:LYS:O	2.31	0.59
3:J:373:ILE:HG22	3:J:375:SER:H	1.68	0.58
3:D:373:ILE:HG22	3:D:375:SER:H	1.68	0.58
3:C:427:GLU:OE1	3:C:539:ARG:NH1	2.37	0.58
3:J:532:ASN:OD1	3:J:535:GLY:N	2.36	0.58
3:D:532:ASN:OD1	3:D:535:GLY:N	2.36	0.57
2:G:186:ASP:OD1	2:G:186:ASP:N	2.37	0.57
3:C:333:ALA:N	3:C:357:LEU:O	2.37	0.57
2:A:184:ARG:NH1	2:A:186:ASP:OD2	2.34	0.57
3:C:300:THR:N	3:C:303:ASP:OD2	2.34	0.57
3:I:427:GLU:OE1	3:I:539:ARG:NH1	2.38	0.56
3:I:739:ASN:OD1	3:I:742:GLY:N	2.38	0.56
3:J:730:GLY:HA2	3:J:752:ILE:HD13	1.88	0.56
3:C:739:ASN:OD1	3:C:742:GLY:N	2.38	0.56
3:I:333:ALA:N	3:I:357:LEU:O	2.38	0.56
1:F:512:MET:HE2	1:F:576:LEU:HB2	1.88	0.55
2:H:143:GLU:OE1	2:H:143:GLU:N	2.32	0.55
1:E:176:ILE:HD13	1:E:244:SER:HB2	1.89	0.55
1:K:176:ILE:HD13	1:K:244:SER:HB2	1.89	0.55
3:D:730:GLY:HA2	3:D:752:ILE:HD13	1.88	0.55
3:I:199:MET:HE1	3:I:217:ILE:HD11	1.90	0.54
1:K:507:GLU:O	1:K:507:GLU:CD	2.51	0.54
2:A:147:GLU:OE2	2:A:148:ARG:NH2	2.39	0.54
3:J:671:LEU:HB2	3:J:748:THR:CG2	2.38	0.54
4:M:2:NAG:HO3	4:M:2:NAG:C7	2.19	0.54
1:E:507:GLU:CD	1:E:507:GLU:O	2.50	0.53
3:I:338:MET:HE2	3:I:338:MET:HA	1.89	0.53
3:I:275:VAL:O	3:I:293:THR:N	2.39	0.53
3:I:338:MET:HE3	3:I:355:LYS:H	1.73	0.53
3:D:671:LEU:HB2	3:D:748:THR:CG2	2.38	0.53
1:E:51:SER:N	1:E:126:ASP:O	2.34	0.52
1:E:544:ASN:ND2	1:E:550:GLU:OE2	2.41	0.52
1:F:280:GLY:HA3	1:F:285:GLU:HB3	1.90	0.52
3:D:217:ILE:HD12	3:D:217:ILE:N	2.25	0.52
1:L:280:GLY:HA3	1:L:285:GLU:HB3	1.90	0.52
1:L:182:MET:SD	1:L:240:SER:O	2.68	0.52
1:E:204:MET:O	1:E:204:MET:HG3	2.10	0.52
1:K:204:MET:HG3	1:K:204:MET:O	2.10	0.52
1:F:182:MET:SD	1:F:434:MET:O	2.68	0.52
1:K:204:MET:O	1:K:204:MET:CG	2.59	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:215:ASP:OD1	1:K:240:SER:OG	2.18	0.51
1:K:411:TRP:CE3	1:K:415:ILE:HD11	2.45	0.51
3:J:217:ILE:N	3:J:217:ILE:HD12	2.24	0.51
2:G:166:ASN:ND2	2:G:185:CYS:SG	2.71	0.51
1:E:437:MET:HB2	1:E:579:GLU:OE1	2.11	0.51
1:F:310:TYR:O	1:F:418:ARG:NH1	2.42	0.51
1:E:204:MET:O	1:E:204:MET:CG	2.59	0.50
3:J:159:LEU:HD22	3:J:206:ILE:HD11	1.94	0.50
1:E:494:ILE:O	1:E:494:ILE:HG13	2.10	0.50
1:F:512:MET:CE	1:F:576:LEU:HB2	2.41	0.50
1:K:298:GLY:O	1:K:302:SER:N	2.45	0.50
2:H:43:MET:HE1	3:J:199:MET:CE	2.42	0.50
3:J:646:LYS:HG3	3:J:647:THR:H	1.76	0.50
1:K:494:ILE:O	1:K:494:ILE:HG13	2.10	0.50
1:E:231:LYS:O	1:E:231:LYS:HG3	2.12	0.50
1:F:204:MET:HG3	1:F:204:MET:O	2.12	0.49
3:D:646:LYS:HG3	3:D:647:THR:H	1.76	0.49
3:I:730:GLY:HA2	3:I:752:ILE:HD13	1.94	0.49
1:K:342:GLN:N	1:K:418:ARG:O	2.45	0.49
3:C:576:PHE:HA	3:C:644:ASP:HA	1.95	0.49
1:L:204:MET:O	1:L:204:MET:HG3	2.12	0.49
3:J:715:ASP:OD2	3:J:719:ASN:ND2	2.40	0.49
1:E:359:ARG:HD2	1:E:378:ALA:HB1	1.94	0.49
1:L:384:ASN:ND2	1:L:389:ASP:O	2.46	0.49
1:F:301:TRP:O	1:F:315:TRP:HA	2.12	0.49
3:I:739:ASN:OD1	3:I:739:ASN:C	2.56	0.49
1:F:277:GLU:N	1:F:423:GLY:O	2.45	0.49
3:J:676:THR:HG23	3:J:680:GLU:HB2	1.94	0.49
1:K:69:ILE:HA	1:K:137:ARG:O	2.13	0.49
3:I:414:MET:SD	3:I:415:VAL:N	2.86	0.49
2:H:43:MET:HE1	3:J:199:MET:HE1	1.95	0.49
1:L:301:TRP:O	1:L:315:TRP:HA	2.13	0.49
3:C:414:MET:SD	3:C:415:VAL:N	2.86	0.48
1:F:384:ASN:ND2	1:F:389:ASP:O	2.46	0.48
3:D:159:LEU:HD22	3:D:206:ILE:HD11	1.94	0.48
4:N:2:NAG:HO3	4:N:2:NAG:C7	2.22	0.48
1:K:298:GLY:O	1:K:301:TRP:N	2.45	0.48
3:C:730:GLY:HA2	3:C:752:ILE:HD13	1.94	0.48
3:C:739:ASN:OD1	3:C:739:ASN:C	2.56	0.48
3:C:275:VAL:O	3:C:293:THR:N	2.40	0.48
1:E:69:ILE:HA	1:E:137:ARG:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:298:GLY:O	1:E:302:SER:N	2.46	0.48
1:K:506:ARG:HH11	1:K:506:ARG:H	1.61	0.48
3:C:532:ASN:OD1	3:C:535:GLY:N	2.46	0.48
1:F:346:SER:O	1:F:350:LYS:N	2.46	0.48
3:D:301:LYS:NZ	3:D:326:VAL:O	2.42	0.48
1:E:437:MET:HE1	1:E:462:ILE:CG2	2.44	0.48
3:D:676:THR:HG23	3:D:680:GLU:HB2	1.94	0.48
3:I:576:PHE:HA	3:I:644:ASP:HA	1.95	0.48
2:B:107:ARG:O	2:B:115:HIS:N	2.47	0.48
1:E:462:ILE:HD13	1:E:485:LEU:HD21	1.95	0.47
2:G:147:GLU:CD	2:G:147:GLU:H	2.22	0.47
2:B:179:ASN:O	2:B:183:CYS:N	2.47	0.47
1:L:310:TYR:O	1:L:418:ARG:NH1	2.42	0.47
1:E:310:TYR:O	1:E:418:ARG:NH1	2.47	0.47
1:K:310:TYR:O	1:K:418:ARG:NH1	2.46	0.47
1:K:544:ASN:ND2	1:K:550:GLU:OE2	2.40	0.47
1:F:282:GLU:OE2	1:F:309:ASN:ND2	2.43	0.47
1:L:282:GLU:OE2	1:L:309:ASN:ND2	2.43	0.47
1:E:506:ARG:H	1:E:506:ARG:HH11	1.60	0.47
2:A:166:ASN:ND2	2:A:185:CYS:SG	2.71	0.47
3:C:739:ASN:OD1	3:C:741:LEU:N	2.48	0.47
2:B:106:MET:HA	2:B:116:ILE:HA	1.97	0.47
3:C:671:LEU:HB2	3:C:748:THR:OG1	2.15	0.47
1:E:143:ARG:NH1	1:E:143:ARG:HB3	2.30	0.47
1:K:437:MET:HB2	1:K:579:GLU:OE2	2.14	0.47
3:I:577:GLU:OE1	3:I:645:LYS:NZ	2.35	0.47
1:K:437:MET:HE1	1:K:462:ILE:CG2	2.45	0.47
3:I:360:PRO:HD3	3:I:406:ILE:HD12	1.96	0.47
2:B:131:PRO:O	2:B:133:LYS:NZ	2.48	0.47
3:C:614:MET:CE	3:C:621:ASP:HB3	2.45	0.47
1:E:62:GLU:HG2	1:E:64:TYR:CE2	2.50	0.47
3:J:338:MET:CE	3:J:355:LYS:H	2.28	0.47
1:F:462:ILE:HD12	1:F:462:ILE:N	2.31	0.47
1:E:298:GLY:O	1:E:301:TRP:N	2.45	0.46
1:L:305:ARG:NH1	1:L:312:GLU:OE2	2.41	0.46
3:I:532:ASN:OD1	3:I:535:GLY:N	2.46	0.46
1:F:295:SER:O	1:F:315:TRP:NE1	2.46	0.46
1:F:512:MET:SD	1:F:512:MET:N	2.73	0.46
3:I:671:LEU:HB2	3:I:748:THR:OG1	2.15	0.46
3:J:281:PRO:HA	3:J:289:MET:SD	2.56	0.46
2:A:159:THR:O	2:A:159:THR:HG22	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:159:THR:HG22	2:G:159:THR:O	2.14	0.46
1:L:462:ILE:N	1:L:462:ILE:HD12	2.31	0.46
1:F:305:ARG:NH1	1:F:312:GLU:OE2	2.42	0.46
1:K:62:GLU:HG2	1:K:64:TYR:CE2	2.50	0.46
2:H:179:ASN:O	2:H:183:CYS:N	2.47	0.46
1:L:520:SER:O	1:L:561:PHE:N	2.49	0.46
1:K:52:GLU:N	1:K:125:SER:OG	2.48	0.46
2:H:88:ASP:C	2:H:88:ASP:OD1	2.59	0.46
1:L:386:ASN:HB2	1:L:387:PRO:HD2	1.98	0.46
3:C:159:LEU:HD22	3:C:206:ILE:HD11	1.98	0.46
1:K:90:ILE:HG23	1:K:98:ARG:O	2.15	0.46
2:B:88:ASP:OD1	2:B:88:ASP:C	2.59	0.46
3:D:281:PRO:HA	3:D:289:MET:SD	2.55	0.46
3:I:159:LEU:HD22	3:I:206:ILE:HD11	1.97	0.45
1:E:81:ASP:OD2	1:E:83:LYS:NZ	2.45	0.45
3:I:739:ASN:OD1	3:I:741:LEU:N	2.48	0.45
1:L:300:ASN:O	1:L:305:ARG:CD	2.64	0.45
1:L:346:SER:O	1:L:350:LYS:N	2.46	0.45
1:K:571:HIS:CE1	2:A:148:ARG:O	2.69	0.45
3:D:615:PHE:CE2	3:D:622:ILE:HD13	2.52	0.45
1:L:298:GLY:O	1:L:302:SER:N	2.50	0.45
1:E:90:ILE:HG23	1:E:98:ARG:O	2.15	0.45
2:B:88:ASP:OD1	2:B:89:GLU:N	2.50	0.45
1:F:300:ASN:O	1:F:305:ARG:CD	2.64	0.45
2:G:43:MET:HE2	3:I:135:HIS:NE2	2.30	0.45
3:C:414:MET:HE3	3:C:414:MET:C	2.42	0.45
3:D:739:ASN:OD1	3:D:739:ASN:C	2.60	0.45
3:I:404:ASN:O	3:I:408:MET:N	2.50	0.45
1:F:520:SER:O	1:F:561:PHE:N	2.49	0.45
1:K:462:ILE:HD13	1:K:485:LEU:HD21	1.98	0.45
1:F:386:ASN:HB2	1:F:387:PRO:HD2	1.98	0.45
2:H:88:ASP:OD1	2:H:89:GLU:N	2.50	0.45
3:I:414:MET:C	3:I:414:MET:HE3	2.41	0.45
1:E:550:GLU:OE1	1:E:552:ARG:NH2	2.47	0.44
3:C:404:ASN:O	3:C:408:MET:N	2.49	0.44
3:D:219:VAL:HG23	3:D:219:VAL:O	2.17	0.44
1:L:277:GLU:N	1:L:423:GLY:O	2.45	0.44
2:G:59:ASP:OD2	2:G:60:ILE:N	2.50	0.44
1:L:295:SER:O	1:L:315:TRP:NE1	2.46	0.44
1:K:51:SER:N	1:K:126:ASP:O	2.37	0.44
1:E:296:GLN:HA	1:E:317:PRO:HA	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:63:PRO:HA	1:K:117:PRO:HB3	1.99	0.44
1:L:64:TYR:C	1:L:64:TYR:CD1	2.96	0.44
1:E:386:ASN:HB2	1:E:387:PRO:HD2	1.98	0.44
3:C:579:LEU:HD13	3:C:614:MET:HE1	1.99	0.44
3:C:641:SER:HA	3:C:651:HIS:O	2.18	0.44
1:F:298:GLY:O	1:F:302:SER:N	2.50	0.44
3:J:615:PHE:CE2	3:J:622:ILE:HD13	2.52	0.44
3:J:700:LYS:N	3:J:703:GLU:O	2.45	0.44
3:J:739:ASN:OD1	3:J:739:ASN:C	2.60	0.44
1:E:342:GLN:N	1:E:418:ARG:O	2.46	0.44
3:I:579:LEU:HD13	3:I:614:MET:CE	2.48	0.44
3:D:175:ASP:N	3:D:179:ILE:O	2.47	0.44
3:D:252:THR:N	3:D:288:LYS:O	2.49	0.44
1:K:386:ASN:HB2	1:K:387:PRO:HD2	1.98	0.44
1:E:306:SER:O	1:E:418:ARG:HA	2.18	0.43
3:D:715:ASP:OD2	3:D:719:ASN:ND2	2.40	0.43
3:J:532:ASN:OD1	3:J:532:ASN:C	2.61	0.43
1:F:64:TYR:CD1	1:F:64:TYR:C	2.96	0.43
3:J:175:ASP:N	3:J:179:ILE:O	2.48	0.43
1:E:45:PRO:HG3	3:D:331:PHE:CZ	2.53	0.43
2:A:59:ASP:OD2	2:A:60:ILE:N	2.51	0.43
2:G:148:ARG:HB2	2:G:149:ARG:CZ	2.48	0.43
3:J:219:VAL:HG23	3:J:219:VAL:O	2.17	0.43
3:C:276:ASN:O	3:C:277:ARG:NH1	2.48	0.43
1:F:564:ILE:HG13	1:F:578:MET:SD	2.58	0.43
3:I:641:SER:HA	3:I:651:HIS:O	2.18	0.43
1:K:579:GLU:OE2	1:K:579:GLU:HA	2.18	0.43
1:K:343:GLY:HA3	1:K:354:TYR:HB3	2.00	0.43
3:C:360:PRO:HD3	3:C:406:ILE:HD12	2.00	0.43
1:F:472:ALA:HB1	1:F:574:LEU:O	2.18	0.43
3:D:532:ASN:OD1	3:D:532:ASN:C	2.61	0.43
2:G:171:CYS:SG	2:G:178:LEU:HB2	2.58	0.43
3:J:185:ILE:HG13	3:J:186:GLY:N	2.34	0.43
1:K:300:ASN:O	1:K:305:ARG:CD	2.67	0.43
3:I:408:MET:HB2	1:L:207:ARG:HH22	1.83	0.43
1:K:300:ASN:O	1:K:313:ASN:HB2	2.19	0.43
3:C:265:PRO:O	3:C:272:LYS:NZ	2.48	0.43
1:K:45:PRO:HG3	3:J:331:PHE:CZ	2.54	0.43
3:D:185:ILE:HG13	3:D:186:GLY:N	2.34	0.43
3:D:338:MET:HE1	3:D:354:VAL:HA	2.00	0.43
3:I:676:THR:HG23	3:I:680:GLU:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:569:ALA:HB1	1:E:573:GLY:O	2.19	0.42
2:H:103:MET:O	2:H:119:MET:N	2.36	0.42
1:L:48:TYR:CE1	1:L:85:ASP:OD2	2.72	0.42
1:E:162:GLY:O	1:E:165:GLU:N	2.44	0.42
1:E:172:GLU:O	1:E:172:GLU:OE2	2.37	0.42
1:E:343:GLY:HA3	1:E:354:TYR:HB3	2.01	0.42
1:E:408:PRO:HG3	1:E:415:ILE:HD12	2.01	0.42
1:E:579:GLU:OE1	1:E:579:GLU:HA	2.19	0.42
3:C:676:THR:HG23	3:C:680:GLU:HB2	2.00	0.42
3:D:700:LYS:N	3:D:703:GLU:O	2.45	0.42
1:E:215:ASP:O	1:E:221:GLY:HA3	2.19	0.42
2:A:171:CYS:SG	2:A:178:LEU:HB2	2.59	0.42
3:J:199:MET:HG3	3:J:200:VAL:N	2.34	0.42
1:E:63:PRO:HA	1:E:117:PRO:HB3	2.00	0.42
2:H:110:PRO:C	2:H:112:GLN:H	2.28	0.42
1:E:300:ASN:O	1:E:305:ARG:CD	2.67	0.42
2:A:148:ARG:HG2	5:P:3:SGN:O4S	2.19	0.42
3:D:739:ASN:OD1	3:D:741:LEU:N	2.52	0.42
3:I:532:ASN:OD1	3:I:532:ASN:C	2.62	0.42
3:C:532:ASN:OD1	3:C:532:ASN:C	2.62	0.42
3:I:238:LEU:O	3:I:327:HIS:N	2.45	0.42
3:I:238:LEU:O	3:I:326:VAL:HA	2.20	0.42
3:J:641:SER:HA	3:J:651:HIS:O	2.20	0.42
3:D:576:PHE:HA	3:D:644:ASP:HA	2.02	0.42
1:L:182:MET:HE1	1:L:239:SER:O	2.20	0.42
1:L:281:MET:HE1	1:L:419:PHE:CE2	2.55	0.42
3:J:300:THR:O	3:J:303:ASP:N	2.52	0.42
4:N:1:NAG:H4	4:N:2:NAG:N2	2.35	0.42
3:I:306:GLU:HA	3:I:323:PHE:HA	2.02	0.42
3:J:576:PHE:HA	3:J:644:ASP:HA	2.02	0.42
1:K:215:ASP:O	1:K:221:GLY:HA3	2.19	0.42
3:D:351:ARG:HA	3:D:386:THR:HA	2.01	0.42
3:I:185:ILE:HG13	3:I:186:GLY:N	2.35	0.42
2:G:90:ALA:O	2:G:132:LYS:HG3	2.20	0.42
1:L:182:MET:HE2	1:L:434:MET:H	1.85	0.42
3:J:739:ASN:OD1	3:J:741:LEU:N	2.53	0.42
1:E:171:LEU:N	1:E:249:THR:OG1	2.52	0.41
1:E:411:TRP:CE3	1:E:415:ILE:HD11	2.54	0.41
1:K:32:LYS:HE3	1:K:61:PRO:HA	2.02	0.41
3:C:175:ASP:OD2	3:C:179:ILE:HB	2.20	0.41
3:C:185:ILE:HG13	3:C:186:GLY:N	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:564:ILE:HG13	1:L:578:MET:SD	2.60	0.41
3:J:230:LEU:CD1	3:J:320:ASN:HB3	2.50	0.41
3:C:306:GLU:HA	3:C:323:PHE:HA	2.02	0.41
3:I:136:GLY:O	3:I:217:ILE:N	2.42	0.41
1:L:39:LEU:N	1:L:136:ILE:O	2.51	0.41
1:K:282:GLU:OE2	1:K:309:ASN:ND2	2.39	0.41
1:K:550:GLU:OE1	1:K:552:ARG:NH2	2.47	0.41
1:L:47:SER:HA	1:L:131:GLY:O	2.21	0.41
1:K:172:GLU:OE2	1:K:172:GLU:O	2.37	0.41
3:D:641:SER:HA	3:D:651:HIS:O	2.20	0.41
1:K:162:GLY:O	1:K:165:GLU:N	2.44	0.41
1:K:208:TYR:OH	3:J:408:MET:O	2.34	0.41
3:C:238:LEU:O	3:C:326:VAL:HA	2.20	0.41
3:C:408:MET:HE3	3:C:408:MET:HA	2.03	0.41
1:F:39:LEU:N	1:F:136:ILE:O	2.50	0.41
1:F:47:SER:HA	1:F:131:GLY:O	2.20	0.41
3:D:164:CYS:O	3:D:200:VAL:HA	2.21	0.41
3:D:674:GLN:NE2	3:D:683:GLU:O	2.51	0.41
2:H:91:LEU:HD22	2:H:91:LEU:N	2.36	0.41
1:L:512:MET:CE	1:L:515:PHE:CD1	3.04	0.41
3:J:252:THR:N	3:J:288:LYS:O	2.50	0.41
1:K:171:LEU:N	1:K:249:THR:OG1	2.52	0.41
1:K:306:SER:O	1:K:418:ARG:HA	2.21	0.41
3:C:644:ASP:OD2	3:C:647:THR:HG22	2.21	0.41
1:F:545:ASN:OD1	1:F:547:ASP:N	2.52	0.41
1:L:129:THR:HG22	1:L:130:HIS:N	2.35	0.41
3:J:164:CYS:O	3:J:200:VAL:HA	2.21	0.41
4:M:1:NAG:H4	4:M:2:NAG:N2	2.36	0.41
3:C:644:ASP:OD1	3:C:648:LYS:N	2.53	0.41
1:F:281:MET:HE1	1:F:419:PHE:CE2	2.55	0.41
3:I:644:ASP:OD1	3:I:648:LYS:N	2.53	0.41
1:L:289:ASP:OD1	1:L:290:GLN:N	2.54	0.41
3:J:338:MET:HE1	3:J:355:LYS:H	1.84	0.41
1:E:506:ARG:H	1:E:506:ARG:NH1	2.18	0.41
1:K:317:PRO:CB	1:K:324:GLU:HG2	2.51	0.41
3:C:408:MET:HB2	1:F:207:ARG:HH22	1.85	0.41
3:D:230:LEU:CD1	3:D:320:ASN:HB3	2.51	0.41
3:D:569:CYS:O	3:D:622:ILE:HA	2.21	0.41
1:L:167:TYR:CD1	1:L:249:THR:HG21	2.56	0.41
3:J:265:PRO:O	3:J:272:LYS:NZ	2.52	0.41
1:E:64:TYR:CD1	1:E:64:TYR:C	2.99	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:300:ASN:O	1:E:313:ASN:HB2	2.20	0.41
1:E:512:MET:HE3	1:E:515:PHE:CD1	2.55	0.41
2:B:110:PRO:C	2:B:112:GLN:H	2.28	0.41
1:F:48:TYR:CE1	1:F:85:ASP:OD2	2.73	0.41
1:F:100:TRP:CZ2	1:F:112:VAL:HG13	2.56	0.41
1:F:126:ASP:OD1	1:F:126:ASP:C	2.64	0.41
3:D:705:LEU:HD11	3:D:711:ILE:HD13	2.02	0.41
3:I:276:ASN:O	3:I:277:ARG:NH1	2.48	0.41
1:L:126:ASP:OD1	1:L:126:ASP:C	2.64	0.41
1:E:81:ASP:O	1:E:81:ASP:CG	2.64	0.40
1:F:167:TYR:CD1	1:F:249:THR:HG21	2.56	0.40
3:D:158:ASN:OD1	3:D:158:ASN:C	2.64	0.40
3:D:306:GLU:HA	3:D:323:PHE:HA	2.03	0.40
1:L:100:TRP:CZ2	1:L:112:VAL:HG13	2.56	0.40
1:L:182:MET:HE2	1:L:433:GLY:CA	2.51	0.40
3:J:148:VAL:HG22	3:J:189:LEU:O	2.21	0.40
1:K:584:GLU:OE1	1:K:585:VAL:N	2.50	0.40
1:F:129:THR:HG22	1:F:130:HIS:N	2.35	0.40
2:G:106:MET:HA	2:G:116:ILE:HA	2.03	0.40
3:I:238:LEU:HA	3:I:359:TYR:OH	2.22	0.40
3:I:382:GLY:O	3:I:383:ASP:CG	2.65	0.40
1:L:301:TRP:CE3	1:L:316:THR:HB	2.56	0.40
5:O:4:IDS:H4	5:O:5:SGN:N2	2.37	0.40
2:A:46:TYR:HE2	3:C:199:MET:HE2	1.87	0.40
2:A:106:MET:HA	2:A:116:ILE:HA	2.03	0.40
2:G:150:LYS:HE3	2:G:150:LYS:HA	2.03	0.40
1:L:193:ASP:O	1:L:194:LEU:HD23	2.22	0.40
1:L:340:GLY:O	1:L:419:PHE:HA	2.22	0.40
3:J:306:GLU:HA	3:J:323:PHE:HA	2.02	0.40
5:P:5:SGN:H4	5:P:6:IDS:C5	2.52	0.40
1:E:294:SER:HB3	1:E:325:TRP:CE2	2.56	0.40
3:C:163:LEU:C	3:C:163:LEU:HD23	2.47	0.40
1:F:44:TYR:CE2	1:F:135:SER:HB2	2.57	0.40
3:D:504:LEU:C	3:D:505:ILE:HG13	2.47	0.40
2:G:177:GLU:OE2	2:G:189:ARG:HA	2.21	0.40
3:J:351:ARG:HA	3:J:386:THR:HA	2.02	0.40
1:E:201:PRO:HG3	1:E:204:MET:HG3	2.03	0.40
1:E:317:PRO:CB	1:E:324:GLU:HG2	2.51	0.40
1:K:294:SER:HB3	1:K:325:TRP:CE2	2.56	0.40
2:A:152:LEU:HD13	2:A:184:ARG:HA	2.04	0.40
1:F:153:ALA:O	1:F:262:TYR:OH	2.35	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:301:TRP:CE3	1:F:316:THR:HB	2.56	0.40
3:D:199:MET:HG3	3:D:200:VAL:N	2.36	0.40
3:D:247:ASN:ND2	6:D:801:NAG:O7	2.54	0.40
3:I:577:GLU:O	3:I:577:GLU:HG3	2.21	0.40
3:J:338:MET:HE1	3:J:354:VAL:HA	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	E	559/847 (66%)	524 (94%)	35 (6%)	0	100	100
1	F	529/847 (62%)	506 (96%)	23 (4%)	0	100	100
1	K	559/847 (66%)	524 (94%)	35 (6%)	0	100	100
1	L	529/847 (62%)	506 (96%)	23 (4%)	0	100	100
2	A	142/175 (81%)	131 (92%)	10 (7%)	1 (1%)	18	48
2	B	142/175 (81%)	132 (93%)	9 (6%)	1 (1%)	18	48
2	G	142/175 (81%)	131 (92%)	10 (7%)	1 (1%)	18	48
2	H	142/175 (81%)	132 (93%)	9 (6%)	1 (1%)	18	48
3	C	598/754 (79%)	565 (94%)	29 (5%)	4 (1%)	18	48
3	D	598/754 (79%)	564 (94%)	32 (5%)	2 (0%)	36	64
3	I	598/754 (79%)	565 (94%)	29 (5%)	4 (1%)	18	48
3	J	598/754 (79%)	564 (94%)	32 (5%)	2 (0%)	36	64
All	All	5136/7104 (72%)	4844 (94%)	276 (5%)	16 (0%)	37	64

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	D	740	VAL
3	J	740	VAL
2	B	111	HIS
3	C	740	VAL
2	H	111	HIS
3	I	740	VAL
3	D	233	PRO
3	J	233	PRO
3	C	423	PRO
3	I	423	PRO
3	C	233	PRO
3	C	730	GLY
3	I	233	PRO
3	I	730	GLY
2	A	95	PRO
2	G	95	PRO

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	E	491/737 (67%)	489 (100%)	2 (0%)	84 79
1	F	462/737 (63%)	462 (100%)	0	100 100
1	K	491/737 (67%)	489 (100%)	2 (0%)	84 79
1	L	462/737 (63%)	461 (100%)	1 (0%)	87 84
2	A	139/168 (83%)	139 (100%)	0	100 100
2	B	139/168 (83%)	138 (99%)	1 (1%)	76 76
2	G	139/168 (83%)	139 (100%)	0	100 100
2	H	139/168 (83%)	139 (100%)	0	100 100
3	C	522/665 (78%)	521 (100%)	1 (0%)	87 84
3	D	525/665 (79%)	525 (100%)	0	100 100
3	I	522/665 (78%)	520 (100%)	2 (0%)	84 79
3	J	525/665 (79%)	525 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	4556/6280 (72%)	4547 (100%)	9 (0%)	85 84

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	72	ASN
1	E	316	THR
1	K	72	ASN
1	K	316	THR
2	B	159	THR
3	C	676	THR
3	I	338	MET
3	I	676	THR
1	L	512	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (32) such sidechains are listed below:

Mol	Chain	Res	Type
1	E	130	HIS
1	E	287	HIS
1	E	543	ASN
1	K	130	HIS
1	K	287	HIS
1	K	543	ASN
1	K	571	HIS
2	B	100	ASN
2	B	112	GLN
2	B	123	GLN
2	B	155	GLN
3	C	263	HIS
3	C	369	ASN
3	C	456	HIS
3	C	457	HIS
3	C	620	ASN
1	F	196	GLN
1	F	261	ASN
1	F	501	GLN
3	D	620	ASN
2	G	112	GLN
2	H	100	ASN
2	H	112	GLN

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Mol	Chain	Res	Type
2	H	123	GLN
2	H	155	GLN
3	I	369	ASN
3	I	620	ASN
1	L	196	GLN
1	L	261	ASN
1	L	501	GLN
1	L	543	ASN
3	J	620	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

16 monosaccharides are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	NAG	M	1	1,4	14,14,15	0.86	0	17,19,21	1.41	2 (11%)
4	NAG	M	2	4	14,14,15	0.82	0	17,19,21	1.20	1 (5%)
4	NAG	N	1	1,4	14,14,15	0.87	0	17,19,21	1.39	2 (11%)
4	NAG	N	2	4	14,14,15	0.82	0	17,19,21	1.16	1 (5%)
5	SGN	O	1	5	20,20,20	0.62	0	25,31,31	1.46	3 (12%)
5	IDS	O	2	5	16,16,17	0.94	1 (6%)	16,24,26	0.94	0
5	SGN	O	3	5	19,19,20	0.71	0	23,29,31	1.96	5 (21%)
5	IDS	O	4	5	16,16,17	0.95	1 (6%)	16,24,26	0.96	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
5	SGN	O	5	5	19,19,20	0.81	1 (5%)	23,29,31	2.11	5 (21%)
5	IDS	O	6	5	16,16,17	1.04	2 (12%)	16,24,26	0.91	0
5	SGN	P	1	5	20,20,20	0.63	0	25,31,31	1.46	3 (12%)
5	IDS	P	2	5	16,16,17	0.95	1 (6%)	16,24,26	0.94	0
5	SGN	P	3	5	19,19,20	0.70	0	23,29,31	1.92	5 (21%)
5	IDS	P	4	5	16,16,17	0.95	1 (6%)	16,24,26	0.93	0
5	SGN	P	5	5	19,19,20	0.76	0	23,29,31	2.08	6 (26%)
5	IDS	P	6	5	16,16,17	1.03	2 (12%)	16,24,26	0.91	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	M	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	M	2	4	-	2/6/23/26	0/1/1/1
4	NAG	N	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	N	2	4	-	2/6/23/26	0/1/1/1
5	SGN	O	1	5	-	3/11/31/31	0/1/1/1
5	IDS	O	2	5	-	0/9/26/29	0/1/1/1
5	SGN	O	3	5	-	1/11/28/31	0/1/1/1
5	IDS	O	4	5	-	0/9/26/29	0/1/1/1
5	SGN	O	5	5	-	0/11/28/31	0/1/1/1
5	IDS	O	6	5	-	0/9/26/29	0/1/1/1
5	SGN	P	1	5	-	3/11/31/31	0/1/1/1
5	IDS	P	2	5	-	0/9/26/29	0/1/1/1
5	SGN	P	3	5	-	1/11/28/31	0/1/1/1
5	IDS	P	4	5	-	0/9/26/29	0/1/1/1
5	SGN	P	5	5	-	0/11/28/31	0/1/1/1
5	IDS	P	6	5	-	0/9/26/29	0/1/1/1

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	P	2	IDS	O6B-C6	-3.05	1.20	1.30
5	O	2	IDS	O6B-C6	-3.03	1.21	1.30
5	P	4	IDS	O6B-C6	-3.02	1.21	1.30
5	O	4	IDS	O6B-C6	-3.00	1.21	1.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	O	6	IDS	O6B-C6	-2.99	1.21	1.30
5	P	6	IDS	O6B-C6	-2.97	1.21	1.30
5	O	6	IDS	C1-C2	2.45	1.55	1.51
5	P	6	IDS	C1-C2	2.43	1.55	1.51
5	O	5	SGN	C1-C2	2.18	1.55	1.52

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	O	5	SGN	C1-O5-C5	6.97	121.52	112.19
5	P	5	SGN	C1-O5-C5	6.58	121.00	112.19
5	O	3	SGN	C1-O5-C5	5.83	120.00	112.19
5	P	3	SGN	C1-O5-C5	5.69	119.82	112.19
4	M	1	NAG	O5-C1-C2	-4.50	104.33	111.29
4	N	1	NAG	O5-C1-C2	-4.44	104.42	111.29
4	M	2	NAG	C1-O5-C5	3.85	117.35	112.19
4	N	2	NAG	C1-O5-C5	3.77	117.24	112.19
5	P	5	SGN	C4-C3-C2	-3.72	105.56	111.02
5	O	5	SGN	C4-C3-C2	-3.59	105.75	111.02
5	P	1	SGN	O5-C5-C4	3.44	115.91	109.70
5	O	3	SGN	O2S-S1-N2	-3.44	103.13	108.88
5	O	1	SGN	O5-C5-C4	3.41	115.84	109.70
5	P	3	SGN	O2S-S1-N2	-3.25	103.44	108.88
5	O	5	SGN	O2S-S1-N2	-3.23	103.48	108.88
5	P	1	SGN	O1S-S1-N2	-3.17	103.57	108.88
5	O	1	SGN	O1S-S1-N2	-3.17	103.58	108.88
5	P	5	SGN	O2S-S1-N2	-3.16	103.59	108.88
5	O	3	SGN	C1-C2-N2	3.15	115.20	110.22
5	P	3	SGN	C1-C2-N2	2.97	114.92	110.22
5	P	3	SGN	C4-C3-C2	-2.97	106.66	111.02
5	P	1	SGN	O2S-S1-N2	-2.92	104.00	108.88
5	O	1	SGN	O2S-S1-N2	-2.91	104.02	108.88
5	O	3	SGN	C4-C3-C2	-2.88	106.80	111.02
5	O	5	SGN	O1S-S1-N2	-2.75	104.28	108.88
5	P	5	SGN	O1S-S1-N2	-2.70	104.37	108.88
5	P	5	SGN	C1-C2-N2	2.40	114.01	110.22
4	M	1	NAG	C1-O5-C5	2.32	115.29	112.19
4	N	1	NAG	C1-O5-C5	2.30	115.28	112.19
5	P	3	SGN	O1S-S1-N2	-2.29	105.05	108.88
5	O	5	SGN	C1-C2-N2	2.12	113.57	110.22
5	O	3	SGN	O1S-S1-N2	-2.07	105.42	108.88
5	P	5	SGN	O5-C1-C2	2.06	114.47	111.29

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	O	1	SGN	C5-C6-O6-S2
5	P	1	SGN	C5-C6-O6-S2
4	M	2	NAG	C1-C2-N2-C7
4	N	2	NAG	C1-C2-N2-C7
5	O	1	SGN	C6-O6-S2-O5S
5	P	1	SGN	C6-O6-S2-O5S
5	O	3	SGN	C2-N2-S1-O1S
5	P	3	SGN	C2-N2-S1-O1S
4	M	2	NAG	C3-C2-N2-C7
4	N	2	NAG	C3-C2-N2-C7
5	O	1	SGN	C6-O6-S2-O4S
5	P	1	SGN	C6-O6-S2-O4S

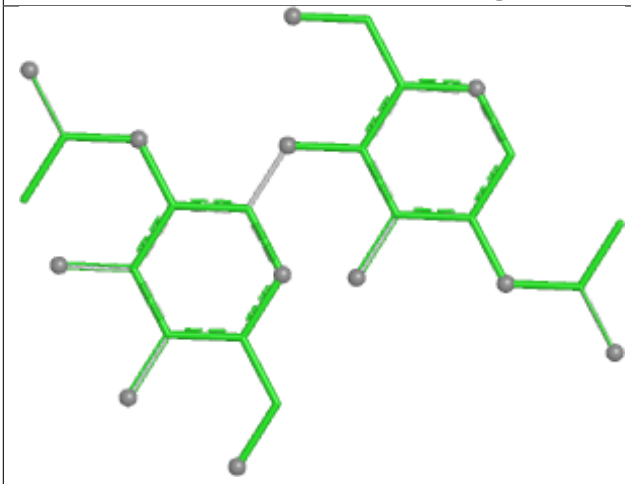
There are no ring outliers.

9 monomers are involved in 9 short contacts:

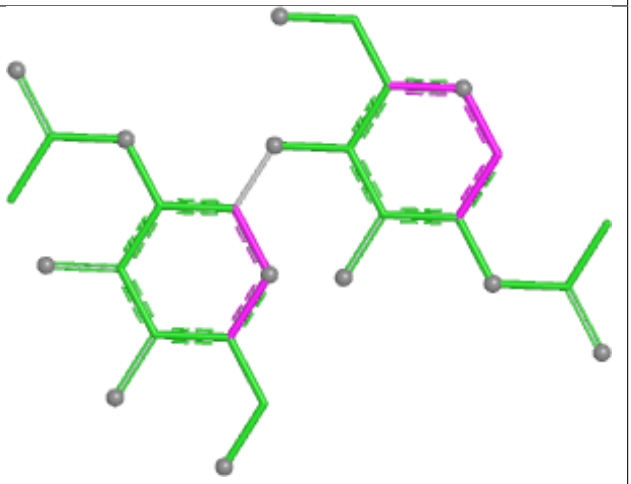
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	O	4	IDS	1	0
5	P	6	IDS	1	0
5	P	5	SGN	1	0
5	O	5	SGN	1	0
4	M	1	NAG	1	0
5	P	3	SGN	1	0
4	N	2	NAG	3	0
4	M	2	NAG	3	0
4	N	1	NAG	1	0

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

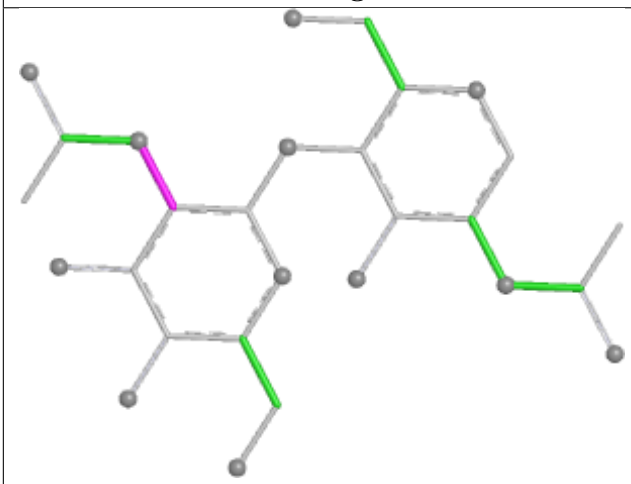
Oligosaccharide Chain M



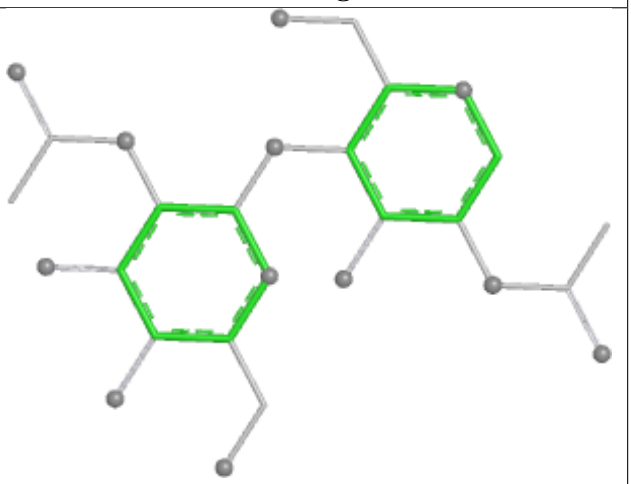
Bond lengths



Bond angles

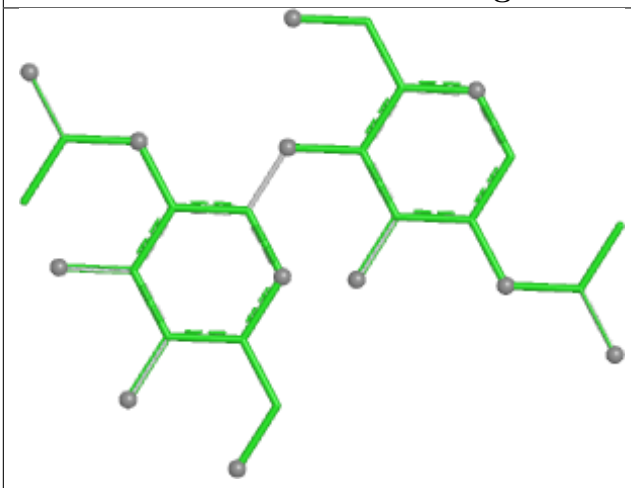


Torsions

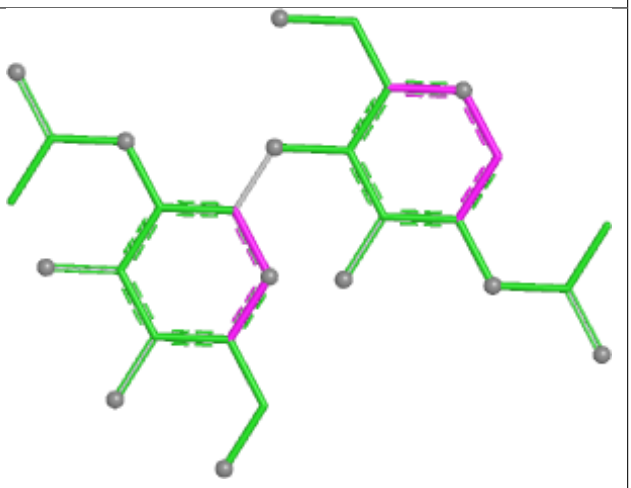


Rings

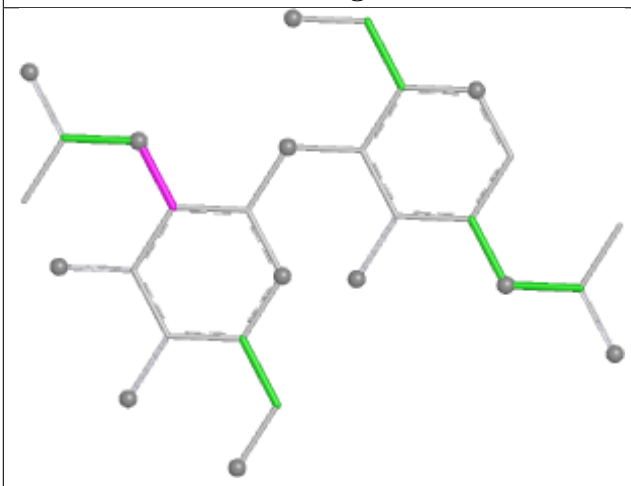
Oligosaccharide Chain N



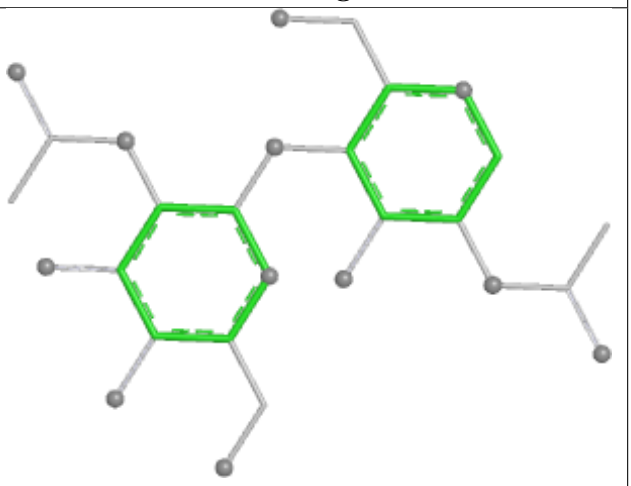
Bond lengths



Bond angles

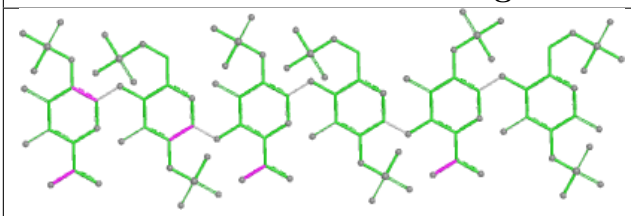


Torsions

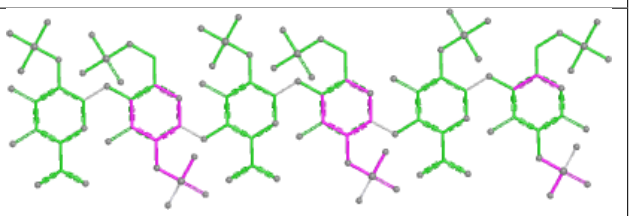


Rings

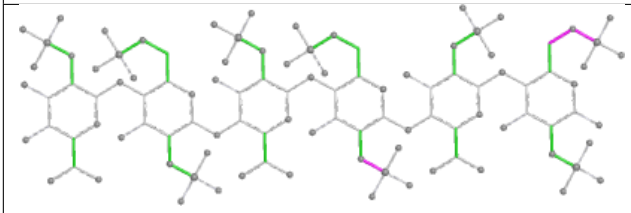
Oligosaccharide Chain O



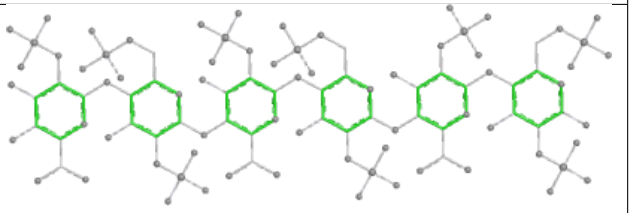
Bond lengths



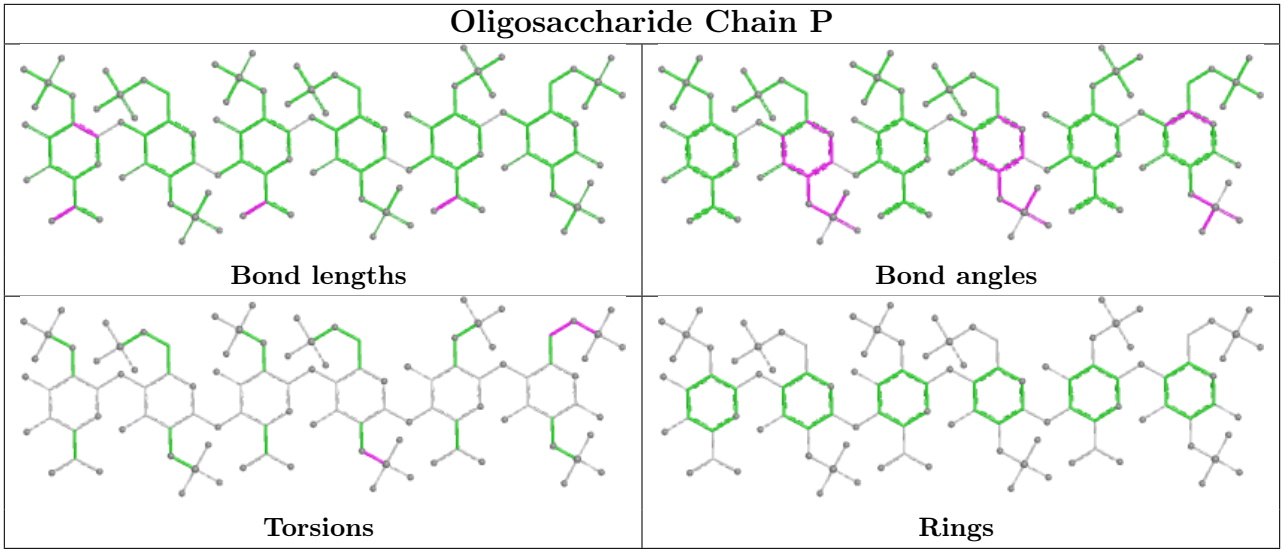
Bond angles



Torsions



Rings



5.6 Ligand geometry (i)

Of 20 ligands modelled in this entry, 8 are monoatomic - leaving 12 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	$\#\|Z\| > 2$
6	NAG	C	802	3	14,14,15	0.72	0	17,19,21	0.93	0
6	NAG	E	901	1	14,14,15	0.63	0	17,19,21	2.59	3 (17%)
6	NAG	F	901	1	14,14,15	0.72	0	17,19,21	0.81	0
6	NAG	K	901	1	14,14,15	0.64	0	17,19,21	2.60	3 (17%)
6	NAG	D	801	3	14,14,15	0.71	0	17,19,21	0.80	0
6	NAG	D	802	3	14,14,15	0.68	0	17,19,21	1.01	2 (11%)
6	NAG	C	801	3	14,14,15	0.72	0	17,19,21	0.81	0
6	NAG	I	802	3	14,14,15	0.71	0	17,19,21	0.92	0
6	NAG	L	901	1	14,14,15	0.71	0	17,19,21	0.81	0
6	NAG	J	802	3	14,14,15	0.69	0	17,19,21	1.00	2 (11%)
6	NAG	I	801	3	14,14,15	0.71	0	17,19,21	0.80	0
6	NAG	J	801	3	14,14,15	0.70	0	17,19,21	0.80	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
6	NAG	C	802	3	-	0/6/23/26	0/1/1/1
6	NAG	E	901	1	-	2/6/23/26	0/1/1/1
6	NAG	F	901	1	-	1/6/23/26	0/1/1/1
6	NAG	K	901	1	-	2/6/23/26	0/1/1/1
6	NAG	D	801	3	-	2/6/23/26	0/1/1/1
6	NAG	D	802	3	-	0/6/23/26	0/1/1/1
6	NAG	C	801	3	-	0/6/23/26	0/1/1/1
6	NAG	I	802	3	-	0/6/23/26	0/1/1/1
6	NAG	L	901	1	-	1/6/23/26	0/1/1/1
6	NAG	J	802	3	-	0/6/23/26	0/1/1/1
6	NAG	I	801	3	-	0/6/23/26	0/1/1/1
6	NAG	J	801	3	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	K	901	NAG	C1-O5-C5	8.92	124.14	112.19
6	E	901	NAG	C1-O5-C5	8.86	124.07	112.19
6	E	901	NAG	O5-C1-C2	4.12	117.67	111.29
6	K	901	NAG	O5-C1-C2	4.07	117.59	111.29
6	K	901	NAG	C4-C3-C2	-2.98	106.66	111.02
6	E	901	NAG	C4-C3-C2	-2.97	106.67	111.02
6	J	802	NAG	C4-C3-C2	-2.14	107.88	111.02
6	D	802	NAG	C4-C3-C2	-2.11	107.92	111.02
6	D	802	NAG	O5-C1-C2	-2.08	108.07	111.29
6	J	802	NAG	O5-C1-C2	-2.03	108.15	111.29

There are no chirality outliers.

All (10) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	K	901	NAG	O5-C5-C6-O6
6	E	901	NAG	O5-C5-C6-O6
6	J	801	NAG	C4-C5-C6-O6
6	D	801	NAG	C4-C5-C6-O6
6	J	801	NAG	O5-C5-C6-O6
6	D	801	NAG	O5-C5-C6-O6
6	K	901	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
6	F	901	NAG	O5-C5-C6-O6
6	L	901	NAG	O5-C5-C6-O6
6	E	901	NAG	C4-C5-C6-O6

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	D	801	NAG	1	0

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

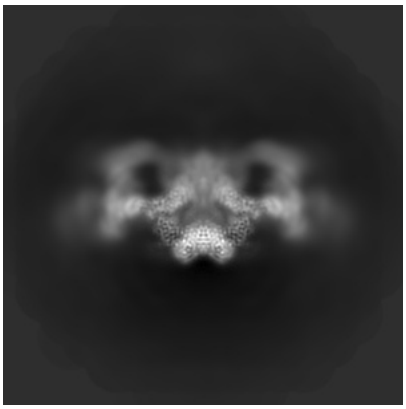
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-75409. These allow visual inspection of the internal detail of the map and identification of artifacts.

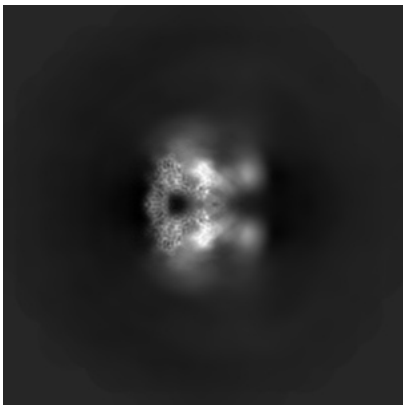
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

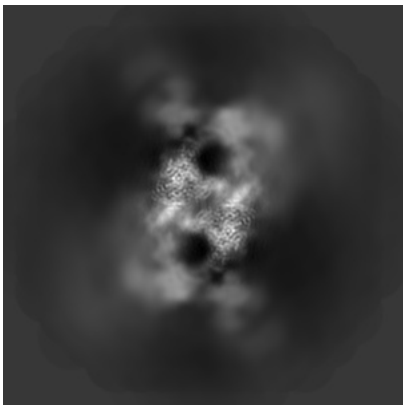
6.1.1 Primary map



X

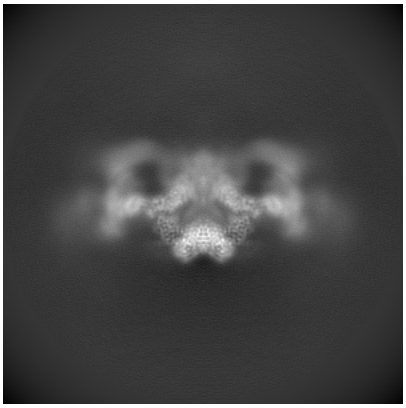


Y

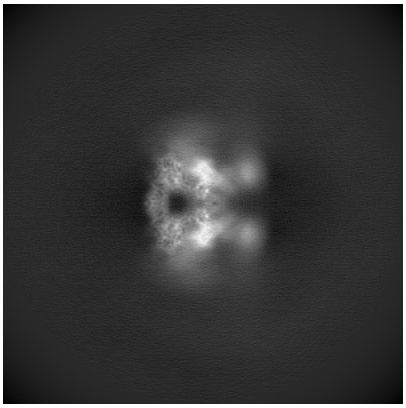


Z

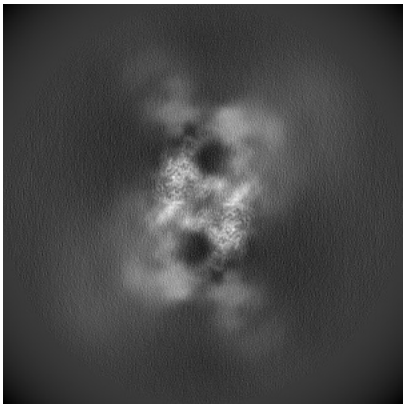
6.1.2 Raw map



X



Y



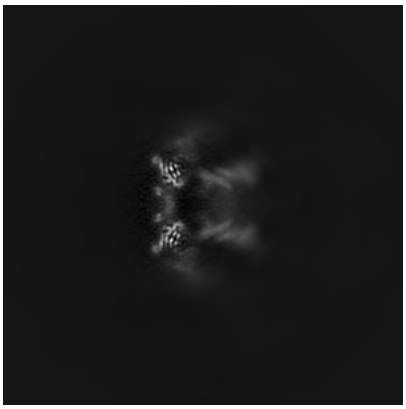
Z

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

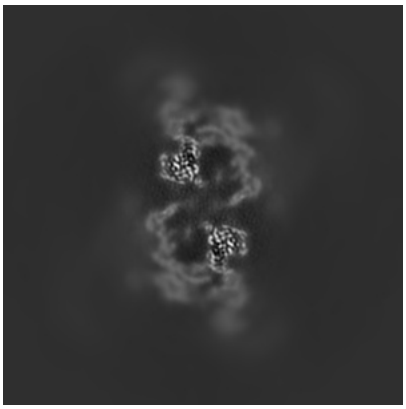
6.2 Central slices (i)

6.2.1 Primary map

X Index: 200

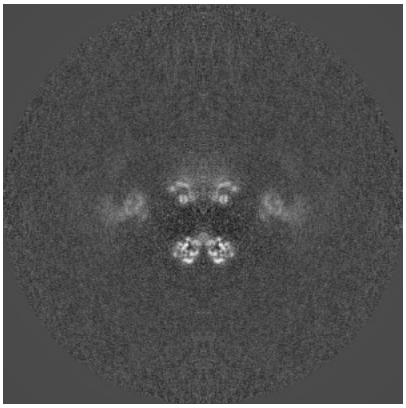


Y Index: 200

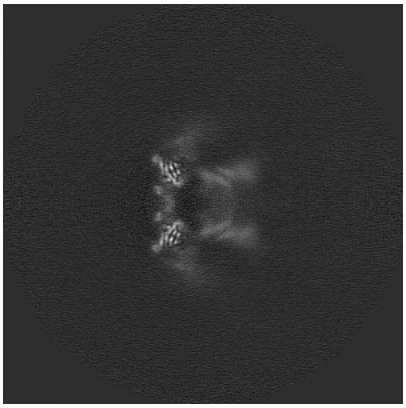


Z Index: 200

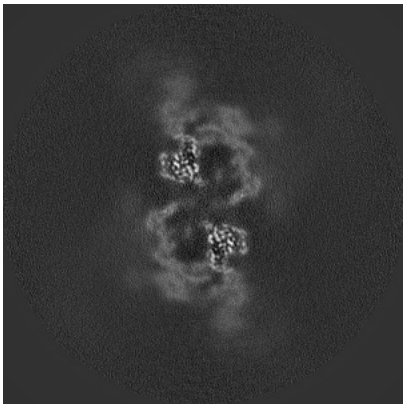
6.2.2 Raw map



X Index: 200



Y Index: 200

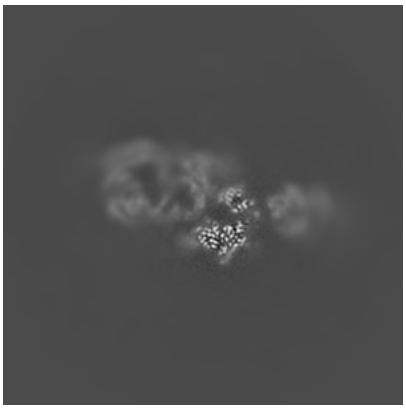


Z Index: 200

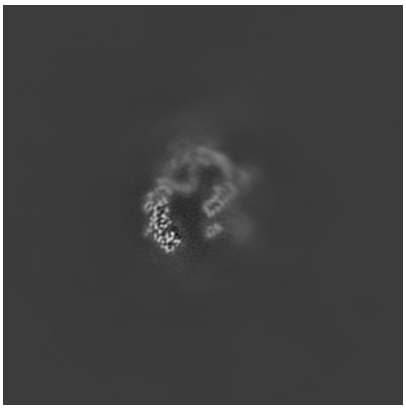
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

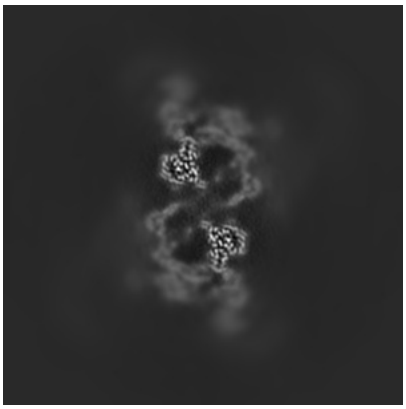
6.3.1 Primary map



X Index: 171

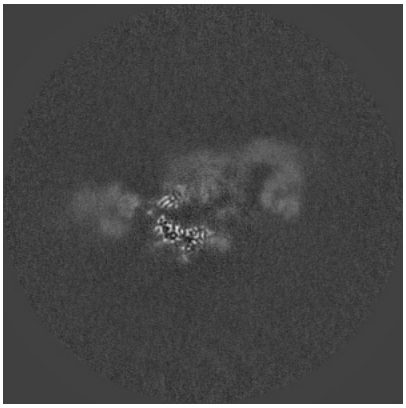


Y Index: 219

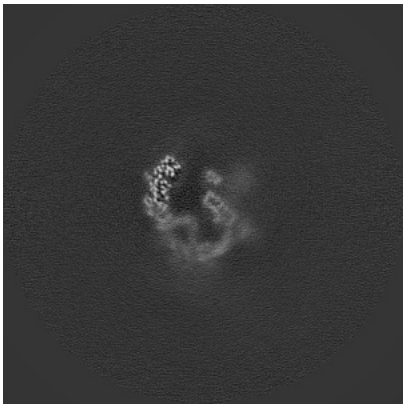


Z Index: 202

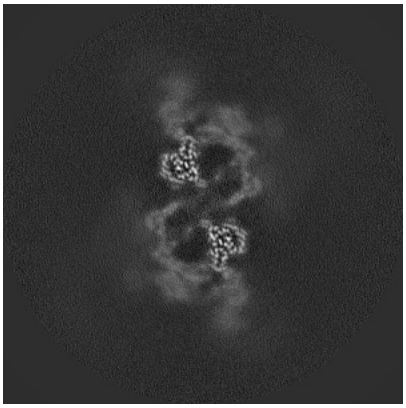
6.3.2 Raw map



X Index: 225



Y Index: 181

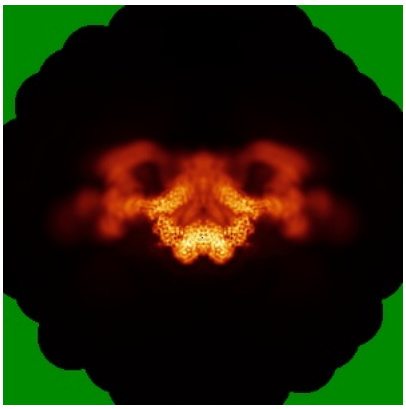


Z Index: 202

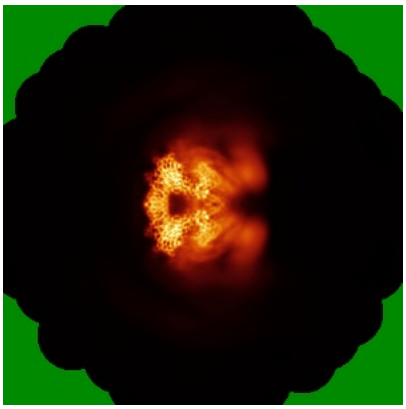
The images above show the largest variance slices of the map in three orthogonal directions.

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

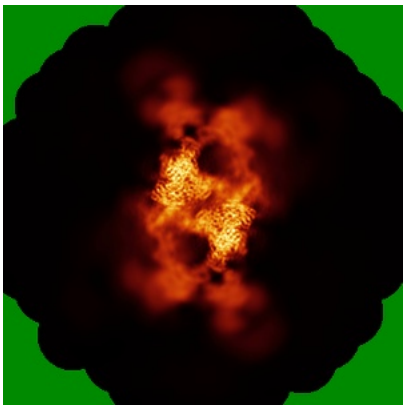
6.4.1 Primary map



X

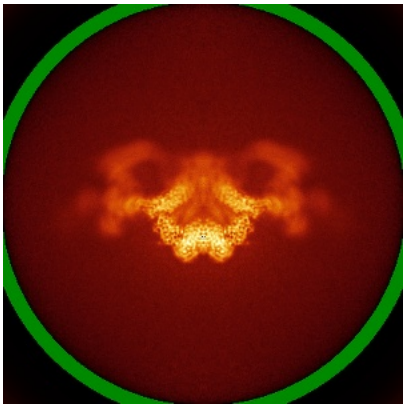


Y

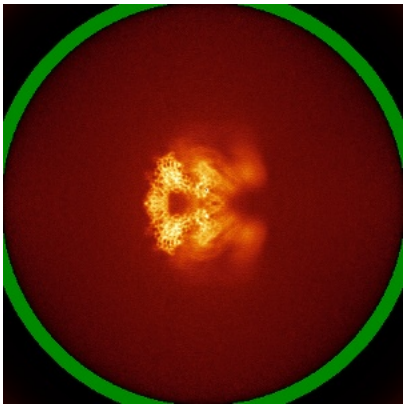


Z

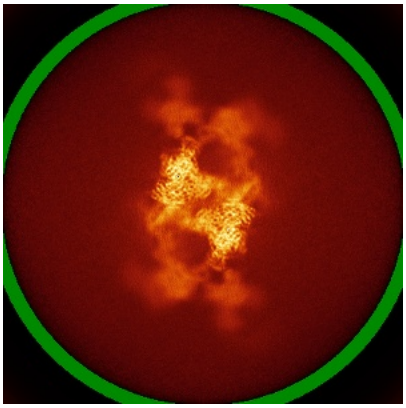
6.4.2 Raw map



X



Y

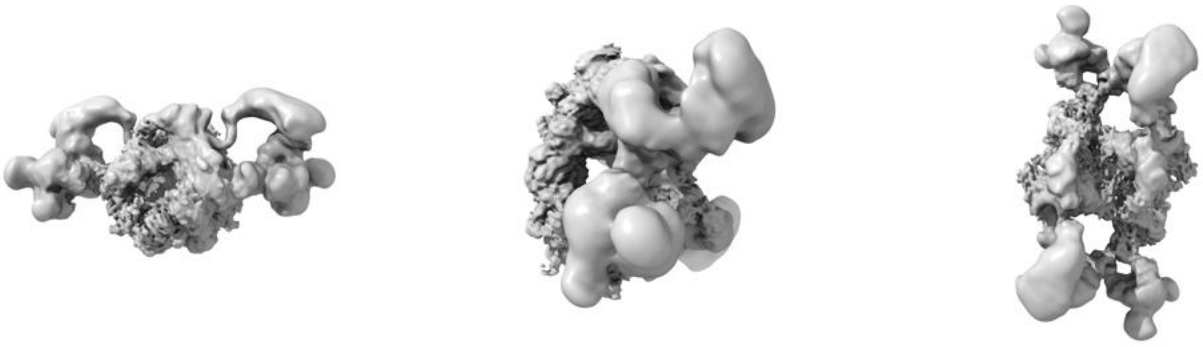


Z

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)

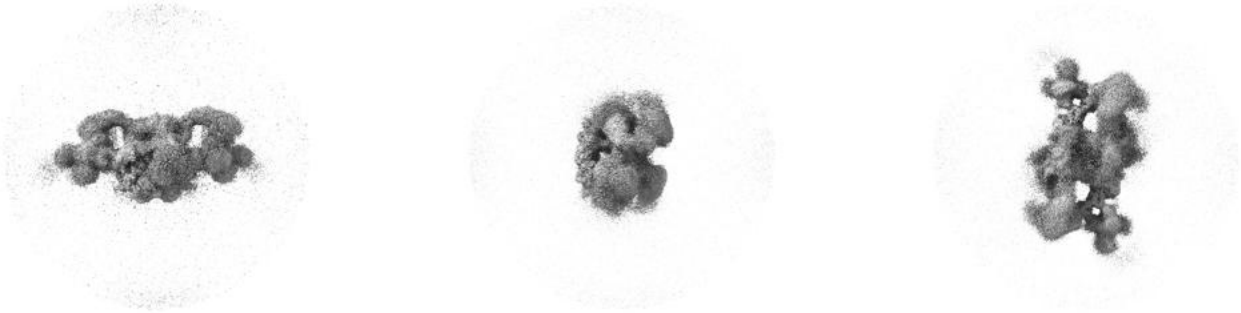
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.003. 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.

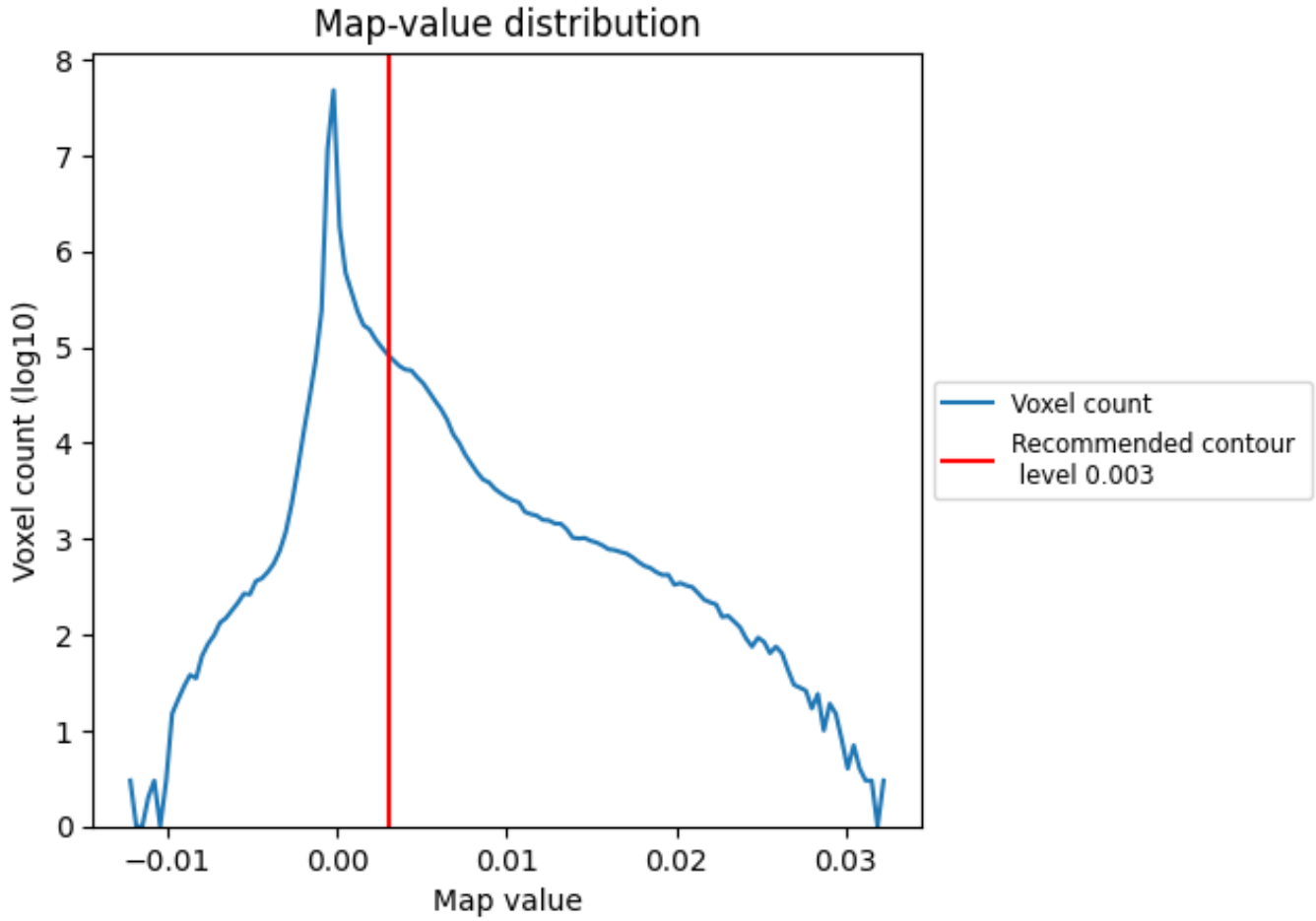
6.6 Mask visualisation (i)

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

7 Map analysis

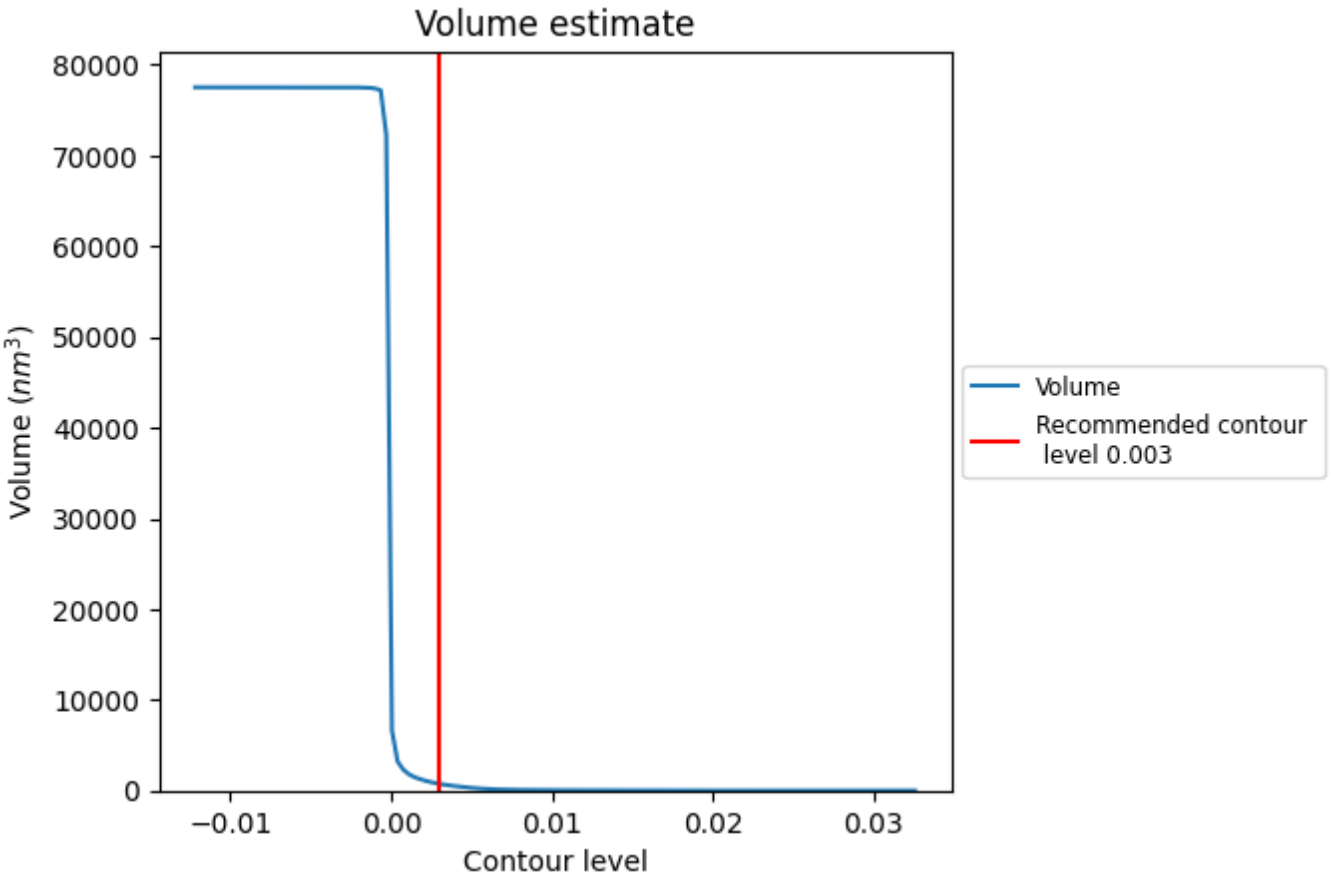
This section contains the results of statistical analysis of the map.

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.

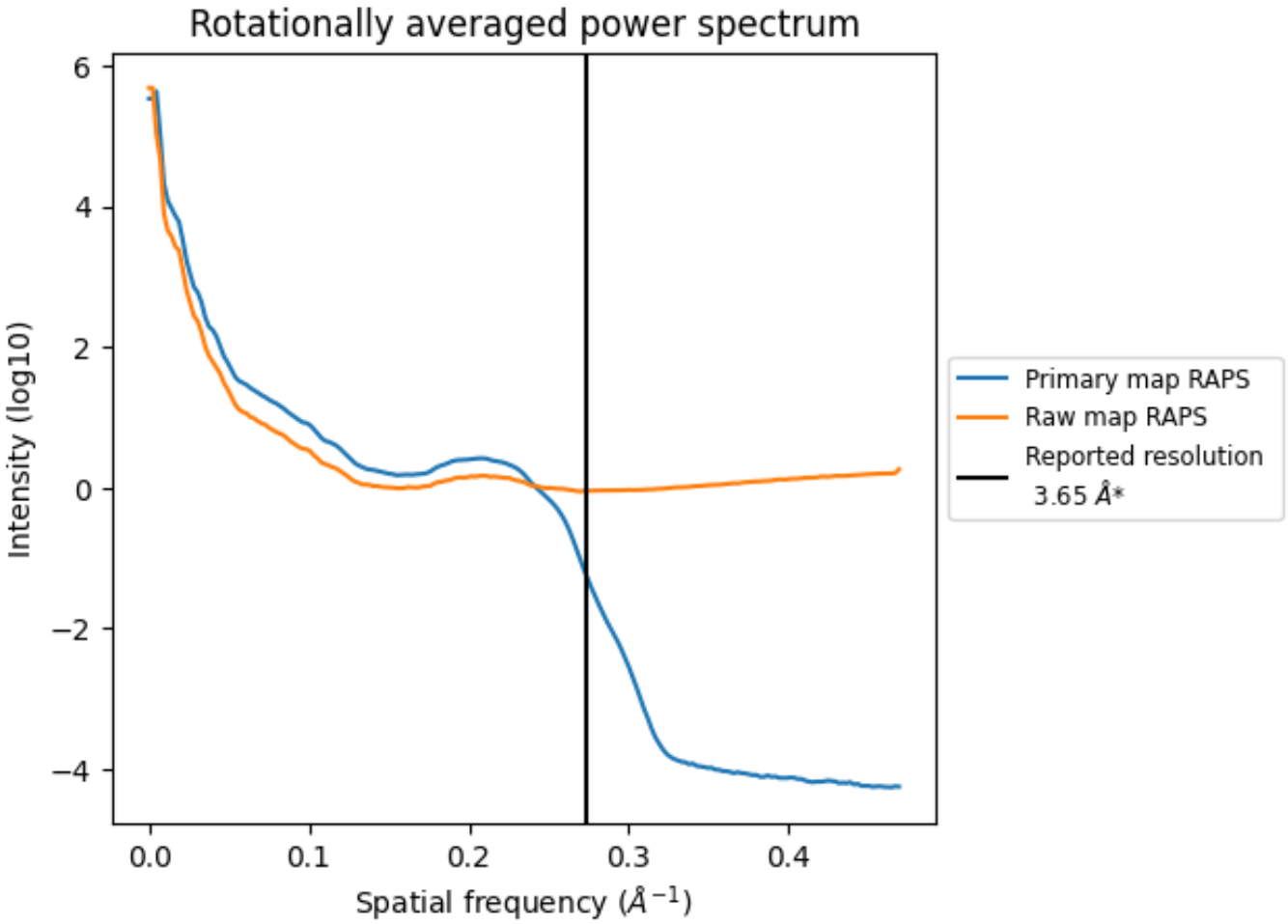
7.2 Volume estimate



The volume at the recommended contour level is 741 nm^3; this corresponds to an approximate mass of 669 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)

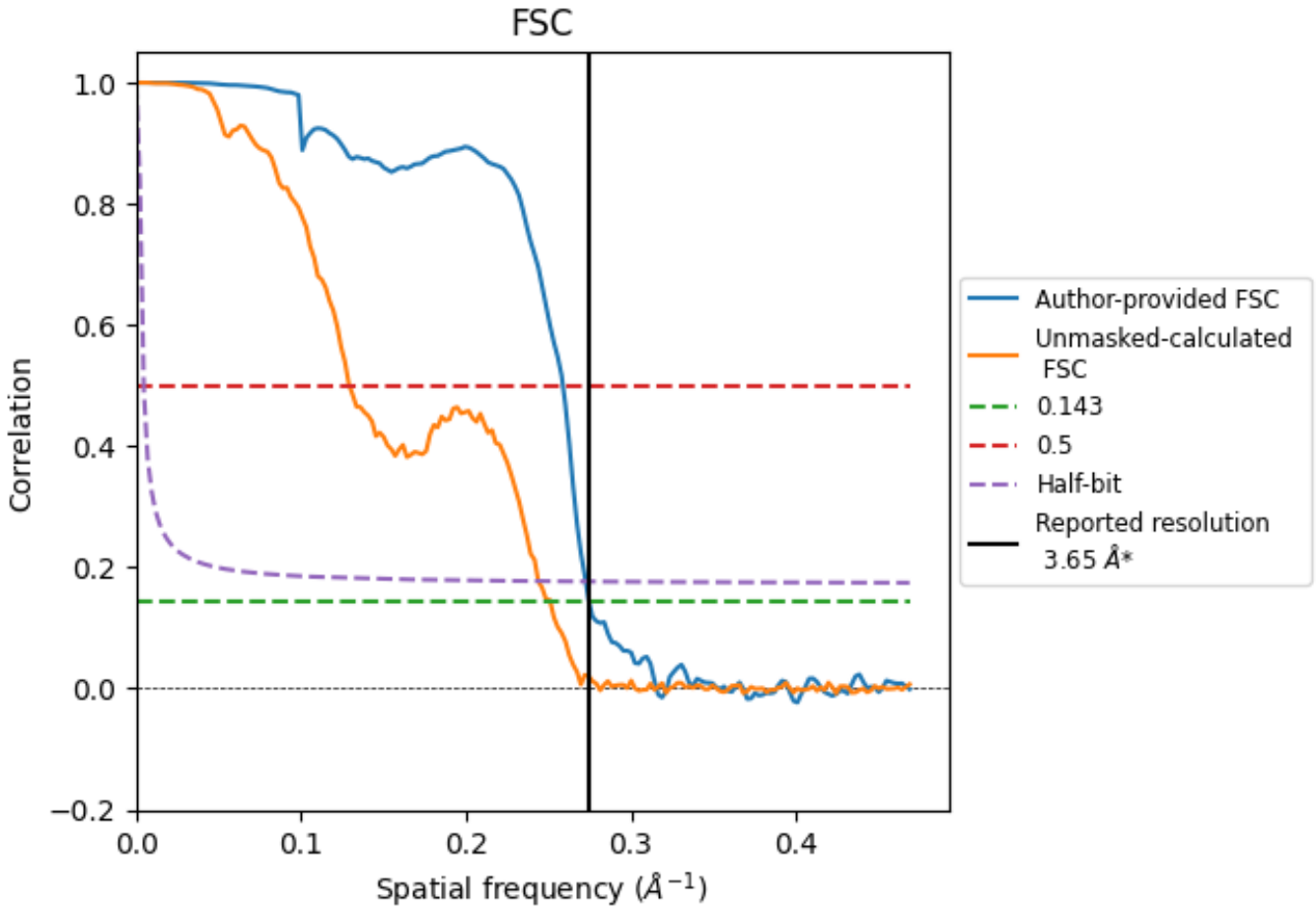


*Reported resolution corresponds to spatial frequency of 0.274 $Å^{-1}$

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 0.274 Å^{-1}

8.2 Resolution estimates (i)

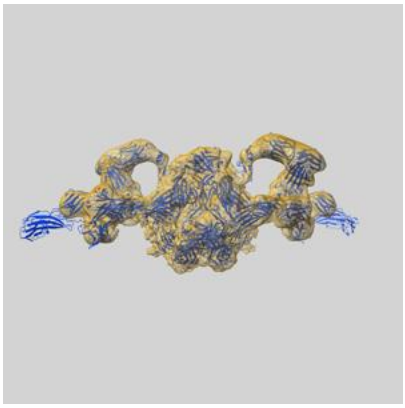
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.65	-	-
Author-provided FSC curve	3.64	3.86	3.67
Unmasked-calculated*	3.98	7.73	4.10

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

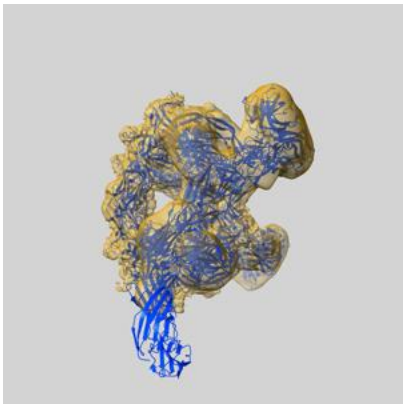
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-75409 and PDB model 10RK. Per-residue inclusion information can be found in section 3 on page 11.

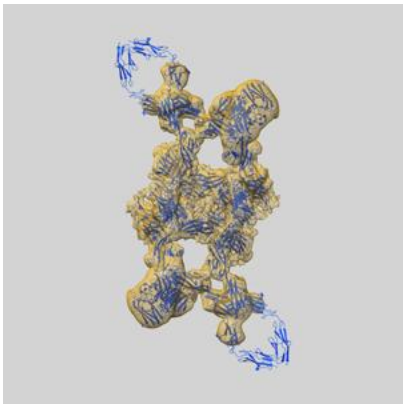
9.1 Map-model overlay



X



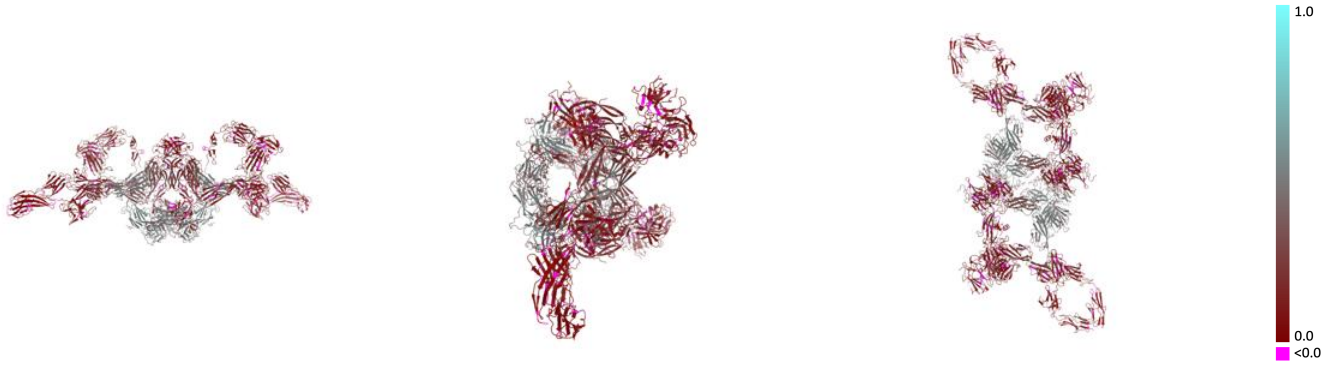
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.003 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.

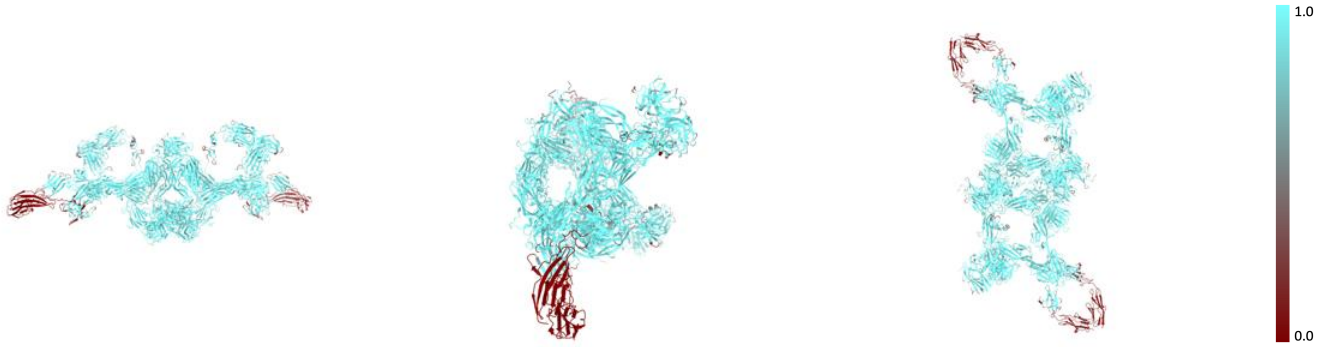
9.2 Q-score mapped to coordinate model (i)



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.

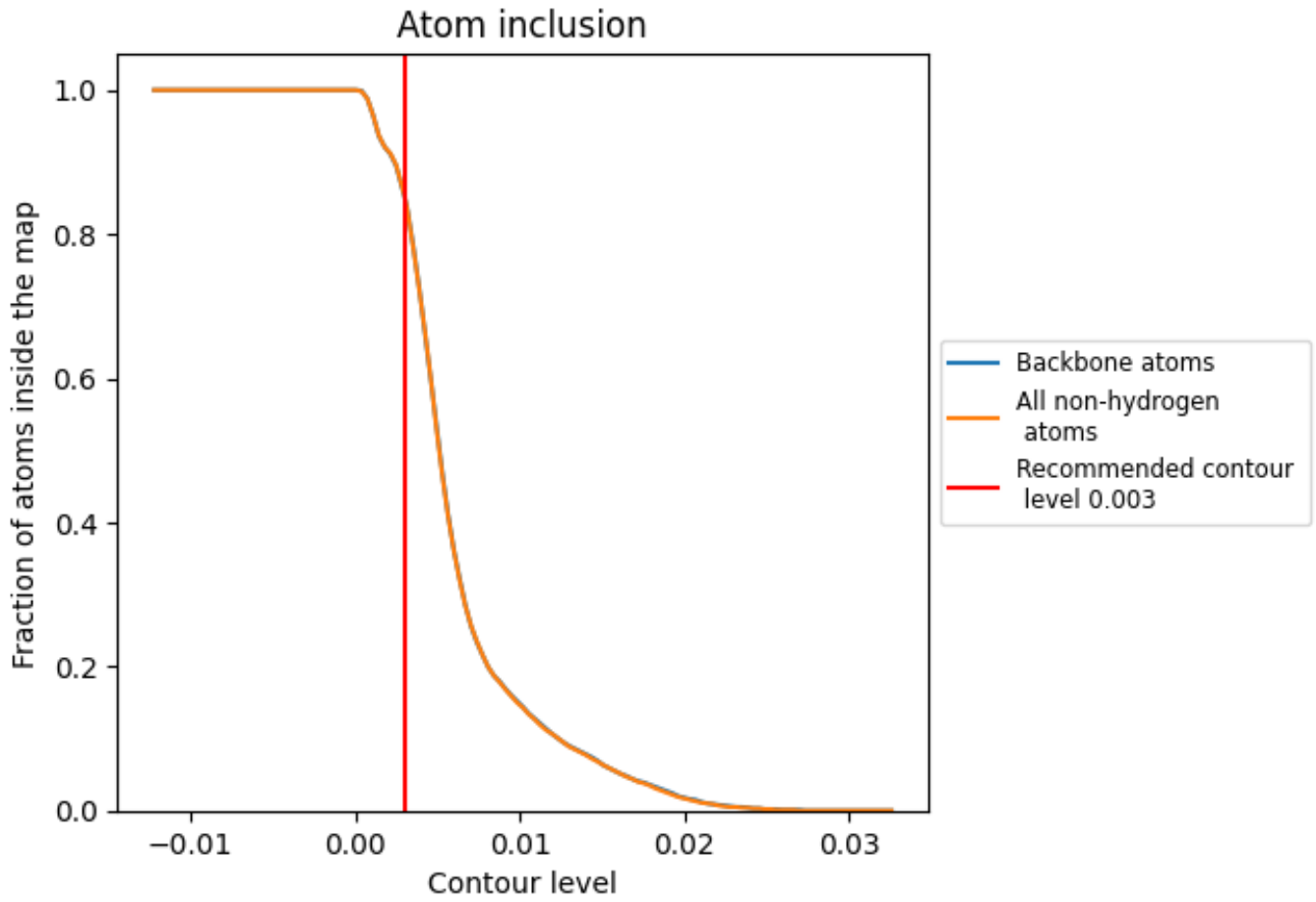
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.003).

9.4 Atom inclusion (i)



At the recommended contour level, 85% of all backbone atoms, 85% 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 (0.003) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8540	0.2220
A	0.9740	0.1920
B	0.8620	0.1530
C	0.7240	0.1330
D	0.7680	0.2060
E	0.9790	0.4620
F	0.9280	0.1130
G	0.9780	0.1950
H	0.8570	0.1570
I	0.7220	0.1340
J	0.7680	0.2040
K	0.9790	0.4590
L	0.9300	0.1100
M	0.9640	0.4670
N	0.9640	0.4540
O	0.9910	0.2720
P	0.9910	0.2650