



# Full wwPDB X-ray Structure Validation Report ⓘ

Oct 10, 2023 – 04:37 AM EDT

PDB ID : 7SHU  
Title : IgE-Fc in complex with omalizumab variant C02  
Authors : Pennington, L.F.; Jardetzky, T.J.; Kleinboelting, S.  
Deposited on : 2021-10-11  
Resolution : 2.75 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

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>.

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.35.1  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.35.1

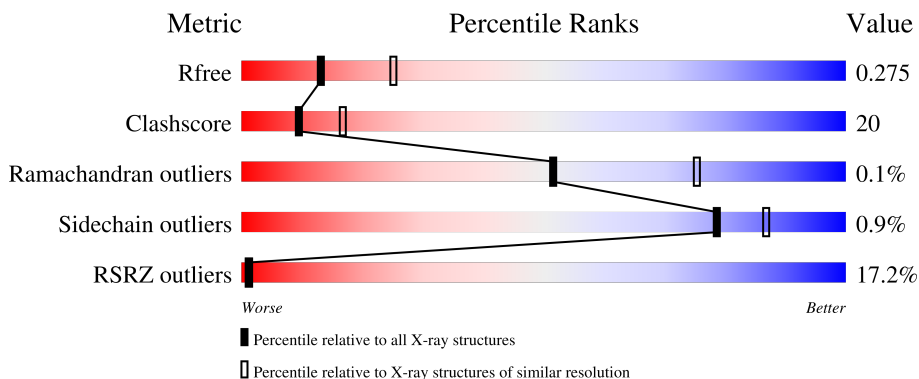
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.75 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)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	1235 (2.78-2.74)
Clashscore	141614	1277 (2.78-2.74)
Ramachandran outliers	138981	1257 (2.78-2.74)
Sidechain outliers	138945	1257 (2.78-2.74)
RSRZ outliers	127900	1207 (2.78-2.74)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	C	123	 4% 63% 36% ..
1	E	123	 3% 76% 22% .
2	D	134	 7% 57% 29% 14%
2	F	134	 2% 61% 22% 16%
3	A	220	 46% 37% 37% 25%

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Mol	Chain	Length	Quality of chain
3	B	220	
4	G	4	
5	H	3	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	NAG	G	1	-	-	X	-
4	NAG	G	2	-	-	-	X

## 2 Entry composition

There are 9 unique types of molecules in this entry. The entry contains 6555 atoms, of which 6 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 omalizumab variant C02 VH.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	E	120	Total	C	N	O	S	0	0	0
			932	589	161	179	3			
1	C	122	Total	C	N	O	S	0	0	0
			938	592	163	180	3			

- Molecule 2 is a protein called omalizumab variant C02 VL.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	F	112	Total	C	N	O	S	0	0	0
			846	523	140	180	3			
2	D	115	Total	C	N	O	S	0	0	0
			862	533	143	183	3			

- Molecule 3 is a protein called Immunoglobulin heavy constant epsilon.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	B	203	Total	C	N	O	S	0	0	0
			1578	986	289	297	6			
3	A	166	Total	C	N	O	S	0	0	0
			1271	799	225	241	6			

There are 4 discrepancies between the modelled and reference sequences:

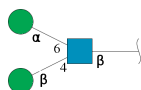
Chain	Residue	Modelled	Actual	Comment	Reference
B	326	GLY	-	expression tag	UNP P01854
B	327	SER	-	expression tag	UNP P01854
A	326	GLY	-	expression tag	UNP P01854
A	327	SER	-	expression tag	UNP P01854

- Molecule 4 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-beta-D-mannopyranos e-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



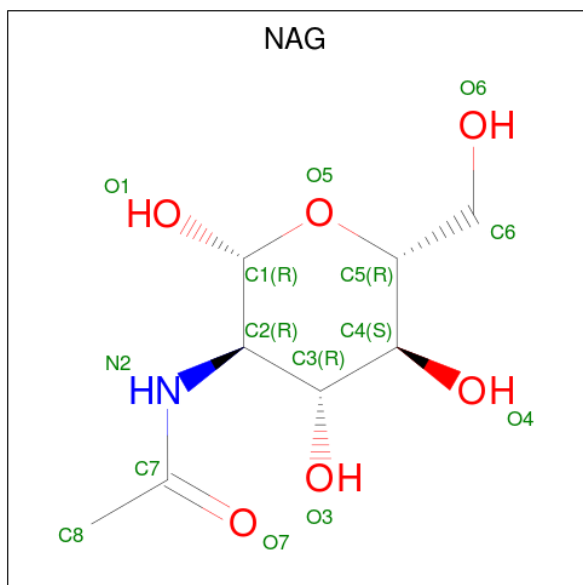
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace	
			Total	C	N				O
4	G	4	50	28	2	20	0	0	0

- Molecule 5 is an oligosaccharide called beta-D-mannopyranose-(1-4)-[alpha-D-mannopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose.



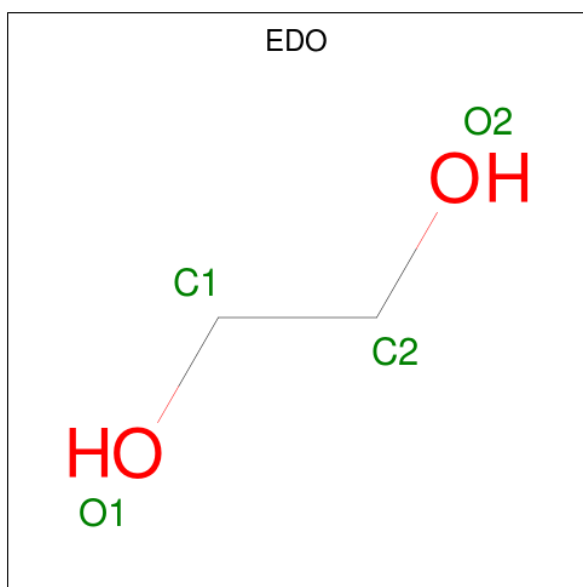
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace	
			Total	C	N				O
5	H	3	36	20	1	15	0	0	0

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



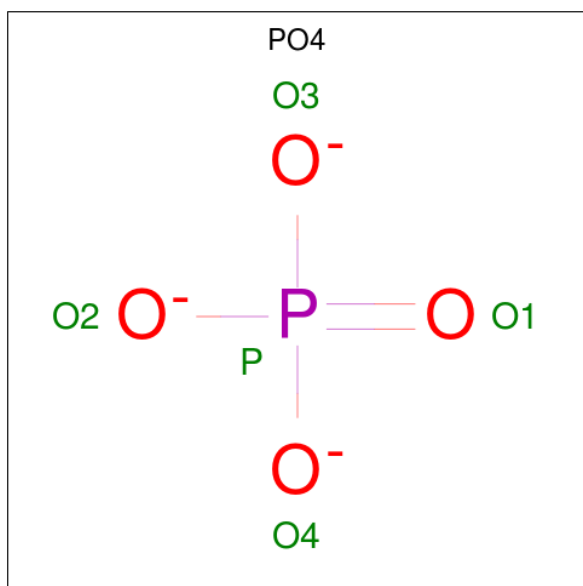
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	
			Total	C	N			O
6	E	1	14	8	1	5	0	0

- Molecule 7 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula:  $C_2H_6O_2$ ).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	H	O		
7	E	1	10	2	6	2	0	0

- Molecule 8 is PHOSPHATE ION (three-letter code: PO4) (formula: O<sub>4</sub>P).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	O	P		
8	E	1	5	4	1	0	0

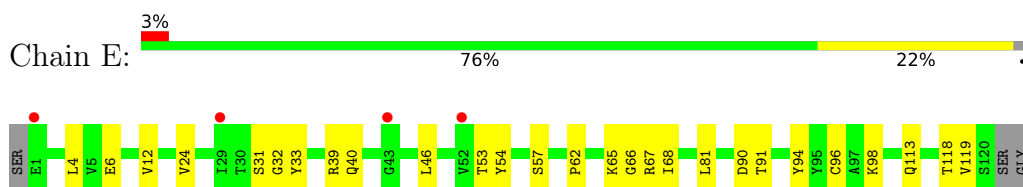
- Molecule 9 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	E	1	Total O 1 1	0	0
9	F	1	Total O 1 1	0	0
9	B	5	Total O 5 5	0	0
9	C	5	Total O 5 5	0	0
9	A	1	Total O 1 1	0	0

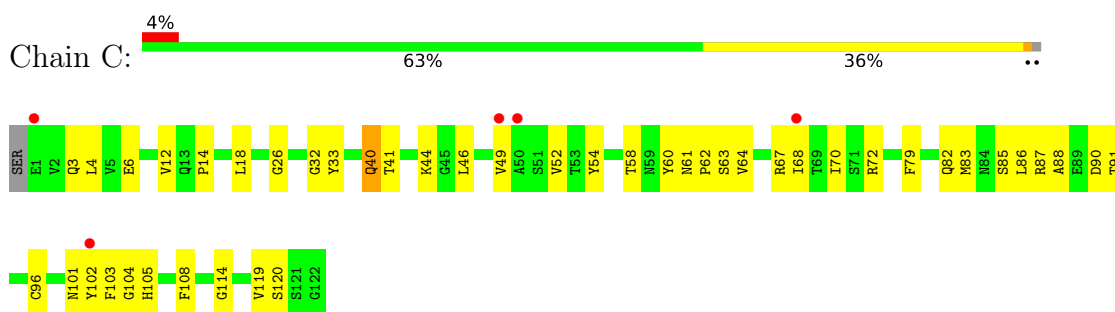
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron 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 dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). 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.

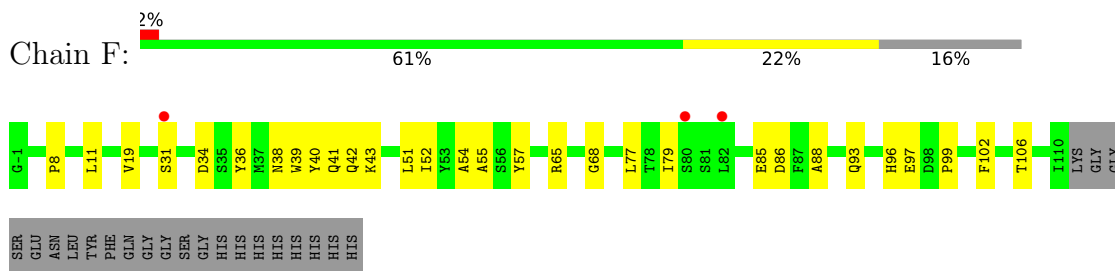
- Molecule 1: omalizumab variant C02 VH



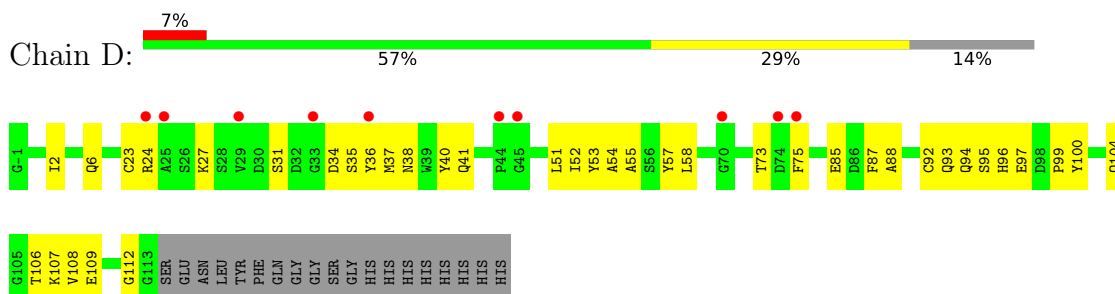
- Molecule 1: omalizumab variant C02 VH



- Molecule 2: omalizumab variant C02 VL

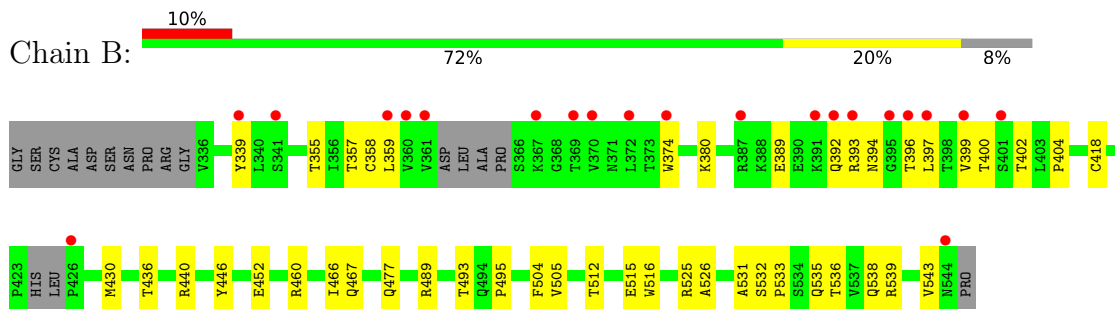


- Molecule 2: omalizumab variant C02 VL

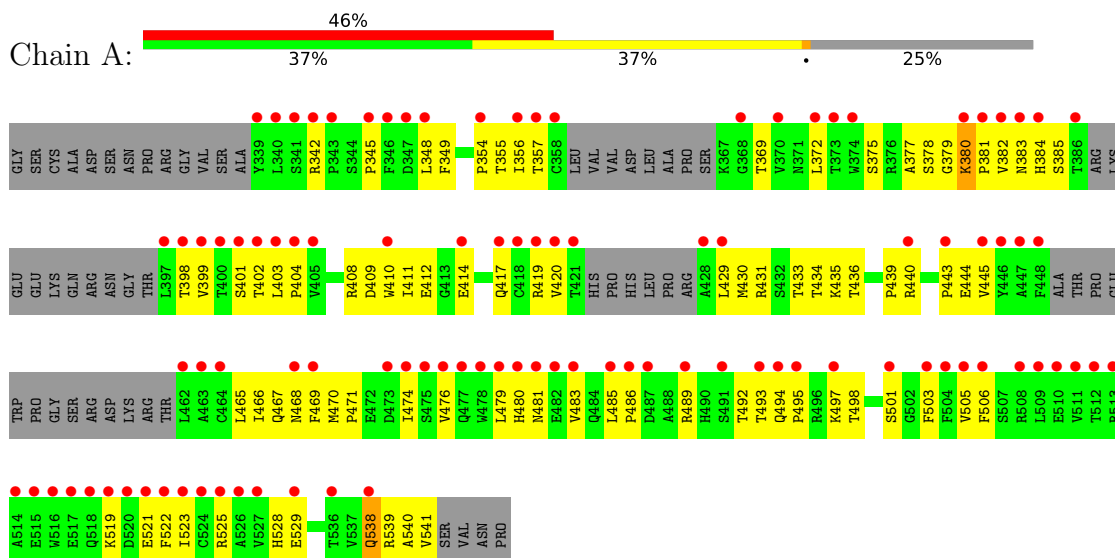




- Molecule 3: Immunoglobulin heavy constant epsilon



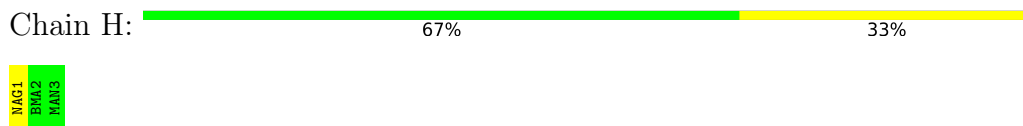
- Molecule 3: Immunoglobulin heavy constant epsilon



- Molecule 4: alpha-D-mannopyranose-(1-3)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 5: beta-D-mannopyranose-(1-4)-[alpha-D-mannopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose



## 4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	90.07Å 176.12Å 142.76Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.19 – 2.75 49.18 – 2.75	Depositor EDS
% Data completeness (in resolution range)	99.9 (49.19-2.75) 99.9 (49.18-2.75)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.65 (at 2.77Å)	Xtrriage
Refinement program	PHENIX 1.10_2155	Depositor
R, $R_{free}$	0.220 , 0.275 0.222 , 0.275	Depositor DCC
$R_{free}$ test set	1494 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	74.6	Xtrriage
Anisotropy	0.522	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.34 , 71.7	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	6555	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	98.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.08% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: BMA, EDO, NAG, PO4, MAN

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	C	0.27	0/963	0.45	0/1311
1	E	0.27	0/957	0.46	0/1303
2	D	0.27	0/881	0.46	0/1195
2	F	0.27	0/864	0.46	0/1173
3	A	0.25	0/1296	0.45	0/1761
3	B	0.26	0/1616	0.46	0/2198
All	All	0.26	0/6577	0.46	0/8941

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	938	0	885	43	1
1	E	932	0	881	25	0
2	D	862	0	801	34	1
2	F	846	0	795	24	0
3	A	1271	0	1227	101	0
3	B	1578	0	1527	37	0
4	G	50	0	42	10	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	H	36	0	31	0	0
6	E	14	0	13	0	0
7	E	4	6	6	0	0
8	E	5	0	0	0	0
9	A	1	0	0	0	0
9	B	5	0	0	0	0
9	C	5	0	0	0	0
9	E	1	0	0	0	0
9	F	1	0	0	0	0
All	All	6549	6	6208	250	1

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 20.

All (250) 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)
3:A:403:LEU:HD12	3:A:404:PRO:HD2	1.24	1.18
3:A:525:ARG:HG2	3:A:538:GLN:HB3	1.28	1.10
3:A:355:THR:HG22	3:A:404:PRO:HA	1.39	1.02
3:A:348:LEU:HD12	3:A:354:PRO:HG3	1.46	0.97
3:A:523:ILE:HA	3:A:540:ALA:HB2	1.45	0.96
3:A:497:LYS:HZ1	3:A:501:SER:HA	1.39	0.88
3:A:540:ALA:O	3:A:541:VAL:HG23	1.79	0.82
3:A:485:LEU:HD11	3:A:489:ARG:HH21	1.43	0.82
1:C:12:VAL:HG11	1:C:86:LEU:HD12	1.62	0.80
3:A:348:LEU:CD1	3:A:354:PRO:HG3	2.11	0.80
3:B:396:THR:OG1	4:G:1:NAG:H82	1.82	0.79
3:A:480:HIS:O	3:A:483:VAL:HG12	1.83	0.78
3:B:477:GLN:HE21	3:B:525:ARG:HD2	1.48	0.78
3:A:485:LEU:HG	3:A:489:ARG:HD3	1.66	0.77
3:A:523:ILE:HG12	3:A:540:ALA:CB	2.16	0.76
1:C:104:GLY:N	3:A:380:LYS:HE2	2.02	0.74
1:E:40:GLN:HB2	1:E:46:LEU:HD13	1.69	0.74
3:B:397:LEU:HD21	3:B:399:VAL:HG23	1.70	0.74
3:A:485:LEU:CG	3:A:489:ARG:HD3	2.18	0.73
3:A:403:LEU:HD12	3:A:404:PRO:CD	2.14	0.71
1:E:67:ARG:NH2	1:E:90:ASP:OD2	2.24	0.70
4:G:1:NAG:O3	4:G:2:NAG:O5	2.09	0.70
1:E:62:PRO:HD2	2:F:99:PRO:HG3	1.74	0.69
3:A:497:LYS:NZ	3:A:501:SER:HA	2.06	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:523:ILE:CA	3:A:540:ALA:HB2	2.22	0.69
3:A:384:HIS:HA	3:A:403:LEU:HD13	1.74	0.69
1:E:4:LEU:HD22	1:E:24:VAL:HG22	1.74	0.69
2:D:34:ASP:HB2	3:A:419:ARG:HH12	1.57	0.69
3:A:345:PRO:HG2	3:A:474:ILE:HA	1.75	0.68
3:A:485:LEU:HD11	3:A:489:ARG:NH2	2.09	0.68
1:E:40:GLN:HB2	1:E:46:LEU:CD1	2.23	0.68
3:A:385:SER:H	3:A:403:LEU:HD13	1.59	0.67
3:A:523:ILE:HA	3:A:540:ALA:CB	2.24	0.67
2:F:54:ALA:HB3	2:F:57:TYR:HD1	1.59	0.67
3:B:539:ARG:NH2	1:C:3:GLN:OE1	2.28	0.67
3:B:394:ASN:H	4:G:1:NAG:H83	1.60	0.67
1:C:67:ARG:NH1	1:C:85:SER:O	2.27	0.67
1:E:31:SER:O	3:B:380:LYS:HE3	1.95	0.67
1:E:39:ARG:O	1:E:46:LEU:HD12	1.94	0.66
1:C:104:GLY:CA	3:A:380:LYS:HE2	2.26	0.66
3:A:410:TRP:CZ3	3:A:435:LYS:HD3	2.31	0.66
3:B:355:THR:HG22	3:B:404:PRO:HA	1.78	0.66
3:A:357:THR:HG22	3:A:402:THR:HG23	1.76	0.66
3:A:541:VAL:HG12	3:A:541:VAL:O	1.94	0.65
3:B:525:ARG:NE	3:B:538:GLN:OE1	2.28	0.65
3:B:436:THR:O	3:B:440:ARG:NH2	2.24	0.65
3:A:372:LEU:CD2	3:A:420:VAL:HG22	2.26	0.65
3:A:379:GLY:C	3:A:381:PRO:HD2	2.17	0.65
3:A:429:LEU:HD13	3:A:430:MET:N	2.13	0.64
1:C:61:ASN:OD1	1:C:63:SER:OG	2.15	0.64
1:E:12:VAL:O	1:E:119:VAL:HA	1.99	0.61
2:D:54:ALA:HB3	2:D:57:TYR:HD1	1.65	0.61
1:C:52:VAL:HG23	1:C:70:ILE:HD13	1.82	0.61
3:A:385:SER:N	3:A:403:LEU:HD13	2.16	0.61
1:C:72:ARG:HA	1:C:79:PHE:HA	1.83	0.60
1:C:14:PRO:HG3	1:C:120:SER:O	2.02	0.59
3:A:480:HIS:NE2	3:A:519:LYS:HB3	2.17	0.59
2:F:31:SER:HB3	2:F:36:TYR:HE1	1.67	0.59
3:B:389:GLU:HG2	3:B:399:VAL:HG22	1.83	0.59
2:F:38:ASN:ND2	2:F:93:GLN:OE1	2.35	0.59
3:A:357:THR:HG22	3:A:402:THR:OG1	2.03	0.59
3:A:479:LEU:N	3:A:523:ILE:O	2.21	0.59
2:F:52:ILE:HG23	2:F:57:TYR:O	2.03	0.59
1:E:39:ARG:NH1	1:E:90:ASP:HA	2.17	0.58
3:A:497:LYS:HG3	3:A:498:THR:O	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:65:ARG:NH1	2:F:86:ASP:OD2	2.36	0.58
2:D:37:MET:HE3	2:D:92:CYS:HB2	1.86	0.58
3:A:342:ARG:HG2	3:A:433:THR:OG1	2.03	0.58
1:C:40:GLN:HB3	1:C:46:LEU:HD23	1.86	0.57
3:B:357:THR:HG22	3:B:402:THR:HG22	1.86	0.57
2:D:41:GLN:HB2	2:D:51:LEU:HD11	1.86	0.57
1:E:40:GLN:CB	1:E:46:LEU:HD13	2.34	0.57
2:D:6:GLN:OE1	2:D:92:CYS:N	2.37	0.57
2:D:23:CYS:SG	2:D:37:MET:HE2	2.45	0.57
1:E:53:THR:HG22	1:E:57:SER:HB2	1.85	0.57
2:D:88:ALA:H	2:D:108:VAL:HG22	1.70	0.57
2:D:107:LYS:HE2	2:D:109:GLU:HG2	1.88	0.56
3:A:479:LEU:HA	3:A:483:VAL:O	2.05	0.56
1:C:64:VAL:O	1:C:67:ARG:HG2	2.05	0.56
3:A:357:THR:HG22	3:A:402:THR:CG2	2.36	0.56
2:D:6:GLN:NE2	2:D:106:THR:HG23	2.20	0.56
2:F:54:ALA:HB3	2:F:57:TYR:CD1	2.40	0.55
1:E:53:THR:CG2	1:E:57:SER:HB2	2.37	0.55
1:C:54:TYR:O	1:C:72:ARG:NH1	2.34	0.55
1:C:68:ILE:HG12	1:C:83:MET:HA	1.89	0.55
2:D:31:SER:HB3	2:D:36:TYR:CE1	2.42	0.55
1:C:41:THR:HB	1:C:44:LYS:HD2	1.89	0.55
1:C:88:ALA:O	1:C:91:THR:HG23	2.05	0.55
2:F:41:GLN:HB2	2:F:51:LEU:HD11	1.89	0.54
2:D:54:ALA:HB3	2:D:57:TYR:CD1	2.40	0.54
3:A:493:THR:HB	3:A:506:PHE:H	1.71	0.54
3:A:443:PRO:HB2	3:A:466:ILE:HG23	1.88	0.54
3:B:359:LEU:HD12	3:B:400:THR:HG22	1.90	0.54
3:B:452:GLU:HB2	3:B:460:ARG:NH2	2.23	0.54
3:A:380:LYS:N	3:A:381:PRO:CD	2.71	0.54
1:C:68:ILE:HD13	1:C:83:MET:HG2	1.90	0.53
3:A:443:PRO:HB3	3:A:469:PHE:HB3	1.89	0.53
2:F:93:GLN:HB2	2:F:102:PHE:CD2	2.43	0.53
2:D:34:ASP:HB2	3:A:419:ARG:NH1	2.21	0.53
3:B:339:TYR:CE1	4:G:3:BMA:H62	2.43	0.53
3:B:477:GLN:NE2	3:B:525:ARG:HD2	2.18	0.53
3:B:466:ILE:HD13	3:B:526:ALA:HB2	1.91	0.53
1:C:12:VAL:HG11	1:C:86:LEU:CD1	2.38	0.53
2:D:27:LYS:NZ	2:D:97:GLU:OE1	2.41	0.52
2:D:37:MET:CE	2:D:92:CYS:HB2	2.39	0.52
3:B:532:SER:O	1:C:26:GLY:N	2.34	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:485:LEU:HD12	3:A:486:PRO:HD2	1.91	0.52
1:C:91:THR:CG2	1:C:119:VAL:H	2.23	0.52
2:D:52:ILE:CD1	2:D:58:LEU:HD23	2.39	0.52
3:A:468:ASN:N	3:A:503:PHE:O	2.43	0.51
1:C:91:THR:HG22	1:C:119:VAL:HG23	1.93	0.51
3:B:460:ARG:HG3	3:B:543:VAL:HG11	1.91	0.51
4:G:1:NAG:HO3	4:G:2:NAG:C5	2.23	0.51
1:E:62:PRO:CD	2:F:99:PRO:HG3	2.40	0.51
4:G:1:NAG:O3	4:G:2:NAG:C1	2.58	0.51
3:A:439:PRO:HG2	3:A:470:MET:CE	2.41	0.51
3:A:372:LEU:HD22	3:A:420:VAL:HG22	1.92	0.50
1:E:91:THR:HG23	1:E:118:THR:HA	1.93	0.50
3:B:397:LEU:CD2	3:B:399:VAL:HG23	2.41	0.50
1:C:68:ILE:HG23	1:C:82:GLN:O	2.12	0.50
3:B:359:LEU:HD22	4:G:3:BMA:O2	2.11	0.50
1:C:103:PHE:CZ	3:A:419:ARG:HB2	2.47	0.50
2:D:87:PHE:HA	2:D:108:VAL:CG2	2.42	0.50
3:A:469:PHE:HZ	3:A:505:VAL:HG13	1.75	0.50
1:C:52:VAL:HG22	1:C:58:THR:HG22	1.95	0.49
3:A:440:ARG:HG2	3:A:471:PRO:HD3	1.94	0.49
3:A:485:LEU:CD1	3:A:486:PRO:HD2	2.42	0.49
3:B:467:GLN:HA	3:B:504:PHE:HA	1.93	0.49
3:A:465:LEU:C	3:A:466:ILE:HD12	2.32	0.49
1:E:68:ILE:HD11	1:E:81:LEU:HD21	1.95	0.49
3:A:430:MET:HG2	3:A:431:ARG:N	2.28	0.49
1:E:39:ARG:HD3	1:E:94:TYR:CE2	2.48	0.49
3:B:446:TYR:HA	3:B:539:ARG:HD2	1.94	0.49
1:C:6:GLU:CD	1:C:114:GLY:H	2.15	0.49
2:D:2:ILE:HG21	2:D:94:GLN:HG2	1.93	0.49
2:D:87:PHE:HA	2:D:108:VAL:HG23	1.93	0.49
3:A:409:ASP:HB3	3:A:414:GLU:HG3	1.93	0.49
1:E:6:GLU:HG3	1:E:96:CYS:SG	2.53	0.49
3:A:465:LEU:HD13	3:A:506:PHE:CZ	2.47	0.49
1:E:33:TYR:CD2	1:E:98:LYS:HE2	2.48	0.49
2:D:93:GLN:HE21	2:D:100:TYR:HB3	1.77	0.49
3:A:345:PRO:HG2	3:A:474:ILE:CA	2.42	0.48
2:D:52:ILE:HD13	2:D:58:LEU:HD23	1.94	0.48
3:A:485:LEU:CD2	3:A:489:ARG:HD3	2.43	0.48
3:A:495:PRO:HA	3:A:505:VAL:HG12	1.94	0.48
1:E:32:GLY:HA2	1:E:54:TYR:CG	2.49	0.48
3:A:355:THR:HG22	3:A:404:PRO:CA	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:6:GLU:HG3	1:C:96:CYS:HB2	1.96	0.47
1:C:91:THR:HG22	1:C:119:VAL:H	1.80	0.47
3:A:522:PHE:O	3:A:540:ALA:HB1	2.15	0.47
1:C:62:PRO:HD2	2:D:99:PRO:HG3	1.96	0.47
2:D:34:ASP:CB	3:A:419:ARG:HH12	2.25	0.47
3:A:398:THR:HG22	3:A:399:VAL:HG23	1.96	0.47
2:D:2:ILE:HD11	2:D:27:LYS:HB2	1.97	0.47
3:A:466:ILE:HG22	3:A:469:PHE:CE2	2.50	0.47
3:A:519:LYS:HE3	3:A:521:GLU:HB3	1.96	0.47
1:C:4:LEU:HD23	1:C:96:CYS:SG	2.54	0.47
3:A:476:VAL:HG11	3:A:492:THR:OG1	2.15	0.46
2:F:54:ALA:O	2:F:55:ALA:HB3	2.15	0.46
3:A:435:LYS:HD2	3:A:436:THR:H	1.81	0.46
1:E:32:GLY:HA2	1:E:54:TYR:CD1	2.51	0.46
3:A:369:THR:HG23	3:A:369:THR:O	2.16	0.46
2:F:19:VAL:HG22	2:F:79:ILE:HB	1.97	0.46
1:C:64:VAL:O	1:C:64:VAL:HG22	2.16	0.46
1:C:87:ARG:O	1:C:90:ASP:HB2	2.16	0.46
1:C:61:ASN:HD22	1:C:62:PRO:HD2	1.81	0.46
1:C:12:VAL:HG21	1:C:18:LEU:HD22	1.98	0.45
2:D:96:HIS:ND1	2:D:97:GLU:HG3	2.32	0.45
3:A:349:PHE:HE1	3:A:411:ILE:HD11	1.81	0.45
3:A:409:ASP:HA	3:A:412:GLU:HG2	1.98	0.45
3:B:392:GLN:HA	3:B:393:ARG:HA	1.60	0.45
3:A:379:GLY:C	3:A:381:PRO:CD	2.85	0.45
3:A:357:THR:HA	3:A:401:SER:O	2.17	0.45
2:F:19:VAL:HG21	2:F:79:ILE:HD12	1.99	0.45
3:B:531:ALA:HB3	3:B:535:GLN:HA	1.98	0.45
3:A:445:VAL:HA	3:A:465:LEU:O	2.16	0.45
3:A:466:ILE:HG22	3:A:469:PHE:CD2	2.52	0.45
2:F:65:ARG:HH12	2:F:86:ASP:CG	2.18	0.45
2:F:96:HIS:ND1	2:F:97:GLU:HG3	2.32	0.45
2:D:31:SER:HB3	2:D:36:TYR:HE1	1.81	0.45
3:B:512:THR:OG1	3:B:515:GLU:HG3	2.17	0.45
1:C:103:PHE:CD2	3:A:375:SER:HB2	2.52	0.45
3:A:356:ILE:O	3:A:402:THR:HA	2.17	0.45
1:C:49:VAL:HG13	1:C:64:VAL:HG11	1.99	0.45
2:D:6:GLN:O	2:D:104:GLN:NE2	2.48	0.45
3:A:383:ASN:O	3:A:403:LEU:HD11	2.17	0.45
3:A:525:ARG:HG2	3:A:538:GLN:CB	2.21	0.45
4:G:1:NAG:H83	4:G:1:NAG:C1	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:460:ARG:HG2	3:B:516:TRP:CZ3	2.51	0.45
3:A:539:ARG:O	3:A:540:ALA:HB2	2.16	0.44
1:E:39:ARG:HH12	1:E:90:ASP:HA	1.82	0.44
3:A:410:TRP:CH2	3:A:435:LYS:HD3	2.53	0.44
2:F:55:ALA:O	2:F:68:GLY:HA3	2.18	0.44
1:C:102:TYR:HD1	3:A:417:GLN:NE2	2.16	0.44
1:C:105:HIS:ND1	2:D:95:SER:O	2.32	0.44
2:F:8:PRO:O	2:F:106:THR:HG23	2.17	0.44
2:F:40:TYR:HE2	2:F:93:GLN:HB3	1.82	0.44
3:B:358:CYS:HB2	3:B:374:TRP:CH2	2.53	0.44
3:A:485:LEU:HD12	3:A:486:PRO:CD	2.48	0.44
1:C:4:LEU:N	1:C:4:LEU:HD12	2.31	0.44
3:A:493:THR:HG22	3:A:494:GLN:O	2.17	0.44
3:B:525:ARG:HG3	3:B:536:THR:HG23	1.98	0.44
2:F:93:GLN:HB2	2:F:102:PHE:CE2	2.52	0.43
3:A:528:HIS:CG	3:A:529:GLU:H	2.36	0.43
1:E:91:THR:OG1	1:E:119:VAL:HG22	2.18	0.43
2:D:24:ARG:HA	2:D:73:THR:O	2.19	0.43
3:A:378:SER:OG	3:A:414:GLU:OE1	2.32	0.43
3:B:493:THR:O	3:B:505:VAL:HG22	2.17	0.43
1:C:54:TYR:OH	3:A:381:PRO:HD3	2.18	0.43
3:A:357:THR:CG2	3:A:402:THR:HG23	2.45	0.43
1:C:108:PHE:HD1	2:D:40:TYR:HH	1.61	0.43
3:B:489:ARG:NH1	3:B:515:GLU:OE2	2.52	0.42
2:F:39:TRP:CD2	2:F:77:LEU:HB2	2.55	0.42
3:B:358:CYS:HB2	3:B:374:TRP:CZ2	2.54	0.42
2:D:35:SER:HB3	2:D:75:PHE:CZ	2.53	0.42
3:A:342:ARG:HD3	3:A:434:THR:O	2.20	0.42
3:A:529:GLU:O	3:A:529:GLU:HG2	2.20	0.42
3:A:378:SER:CB	3:A:414:GLU:OE1	2.68	0.42
3:A:523:ILE:HG12	3:A:540:ALA:HB1	1.99	0.42
1:C:32:GLY:O	1:C:33:TYR:HB2	2.20	0.42
2:F:43:LYS:HE2	2:F:85:GLU:O	2.19	0.42
1:C:101:ASN:O	3:A:377:ALA:HA	2.18	0.42
4:G:2:NAG:HO3	4:G:3:BMA:C1	2.33	0.42
2:F:19:VAL:CG2	2:F:79:ILE:HD12	2.49	0.42
3:B:418:CYS:O	3:B:430:MET:HA	2.19	0.42
1:E:40:GLN:CG	1:E:46:LEU:HD13	2.49	0.42
3:A:408:ARG:O	3:A:412:GLU:HG2	2.19	0.42
3:A:485:LEU:HD21	3:A:489:ARG:HD3	2.00	0.42
3:B:394:ASN:N	4:G:1:NAG:H83	2.33	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:108:VAL:HG23	2:D:108:VAL:O	2.19	0.42
3:A:378:SER:HB3	3:A:414:GLU:OE1	2.19	0.41
2:F:42:GLN:O	2:F:88:ALA:HB1	2.20	0.41
3:A:444:GLU:N	3:A:444:GLU:OE2	2.54	0.41
3:A:481:ASN:O	3:A:481:ASN:ND2	2.52	0.41
1:E:65:LYS:HD2	1:E:66:GLY:H	1.85	0.41
1:E:39:ARG:HB3	1:E:94:TYR:CD2	2.56	0.41
2:D:38:ASN:OD1	2:D:53:TYR:HA	2.21	0.41
3:A:466:ILE:HD12	3:A:466:ILE:N	2.36	0.41
1:C:33:TYR:CD1	3:A:378:SER:HA	2.56	0.41
1:C:60:TYR:CZ	1:C:70:ILE:HG22	2.56	0.41
3:A:523:ILE:CB	3:A:540:ALA:HB2	2.50	0.41
2:F:11:LEU:C	2:F:11:LEU:HD12	2.41	0.40
3:B:460:ARG:HD3	3:B:460:ARG:HA	1.87	0.40
3:B:495:PRO:HA	3:B:505:VAL:HG23	2.03	0.40
2:D:37:MET:O	2:D:55:ALA:N	2.50	0.40
3:A:357:THR:HG22	3:A:402:THR:CB	2.51	0.40
2:D:85:GLU:OE1	2:D:85:GLU:N	2.53	0.40
3:A:485:LEU:HG	3:A:486:PRO:HD2	2.03	0.40
3:B:532:SER:HA	3:B:533:PRO:HA	1.68	0.40
3:B:397:LEU:HD23	3:B:397:LEU:C	2.41	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:44:LYS:NZ	2:D:112:GLY:O[3_455]	2.07	0.13

## 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 X-ray entries followed by that with respect to entries of similar resolution.

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	C	120/123 (98%)	117 (98%)	3 (2%)	0	100	100
1	E	118/123 (96%)	114 (97%)	4 (3%)	0	100	100
2	D	113/134 (84%)	108 (96%)	5 (4%)	0	100	100
2	F	110/134 (82%)	106 (96%)	4 (4%)	0	100	100
3	A	156/220 (71%)	141 (90%)	14 (9%)	1 (1%)	25	42
3	B	197/220 (90%)	188 (95%)	9 (5%)	0	100	100
All	All	814/954 (85%)	774 (95%)	39 (5%)	1 (0%)	51	75

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	A	380	LYS

### 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 X-ray entries followed by that with respect to entries of similar resolution.

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	C	99/101 (98%)	98 (99%)	1 (1%)	76	85
1	E	99/101 (98%)	98 (99%)	1 (1%)	76	85
2	D	95/113 (84%)	95 (100%)	0	100	100
2	F	95/113 (84%)	94 (99%)	1 (1%)	73	84
3	A	138/193 (72%)	135 (98%)	3 (2%)	52	70
3	B	172/193 (89%)	172 (100%)	0	100	100
All	All	698/814 (86%)	692 (99%)	6 (1%)	78	87

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	113	GLN
2	F	34	ASP
1	C	40	GLN
3	A	382	VAL

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Mol	Chain	Res	Type
3	A	467	GLN
3	A	538	GLN

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

Mol	Chain	Res	Type
3	B	477	GLN
1	C	82	GLN
3	A	417	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](#)

7 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	G	1	4	14,14,15	0.44	0	17,19,21	0.63	0
4	NAG	G	2	4	14,14,15	0.50	0	17,19,21	0.56	0
4	BMA	G	3	4	11,11,12	0.84	1 (9%)	15,15,17	0.93	0
4	MAN	G	4	4	11,11,12	0.77	0	15,15,17	0.88	0
5	NAG	H	1	5,1	14,14,15	0.30	0	17,19,21	0.67	1 (5%)
5	BMA	H	2	5	11,11,12	0.71	0	15,15,17	0.79	0
5	MAN	H	3	5	11,11,12	0.79	0	15,15,17	0.92	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	G	1	4	-	2/6/23/26	0/1/1/1
4	NAG	G	2	4	-	3/6/23/26	0/1/1/1
4	BMA	G	3	4	-	1/2/19/22	0/1/1/1
4	MAN	G	4	4	-	0/2/19/22	0/1/1/1
5	NAG	H	1	5,1	-	0/6/23/26	0/1/1/1
5	BMA	H	2	5	-	0/2/19/22	0/1/1/1
5	MAN	H	3	5	-	2/2/19/22	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	G	3	BMA	C1-C2	2.50	1.57	1.52

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	H	1	NAG	C1-O5-C5	2.05	114.97	112.19

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	G	1	NAG	C8-C7-N2-C2
4	G	1	NAG	O7-C7-N2-C2
4	G	2	NAG	C8-C7-N2-C2
4	G	2	NAG	O7-C7-N2-C2
5	H	3	MAN	O5-C5-C6-O6
5	H	3	MAN	C4-C5-C6-O6
4	G	2	NAG	O5-C5-C6-O6
4	G	3	BMA	O5-C5-C6-O6

There are no ring outliers.

3 monomers are involved in 10 short contacts:

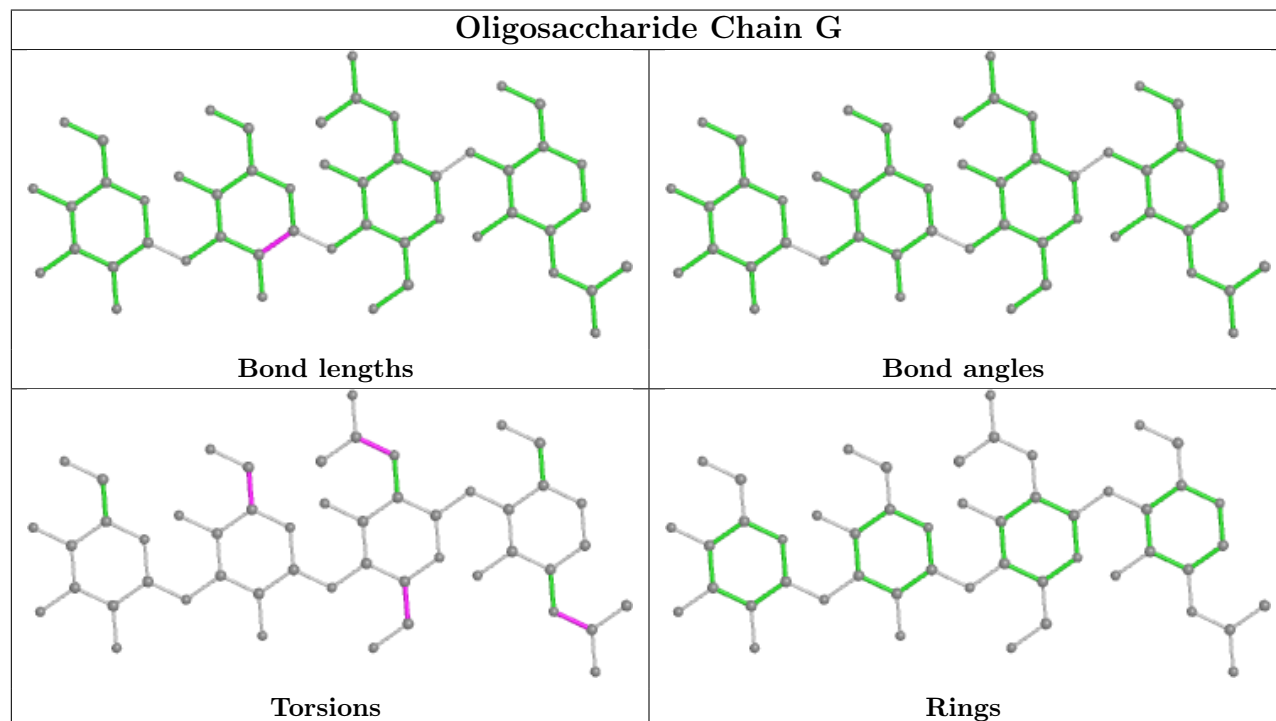
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	G	2	NAG	4	0

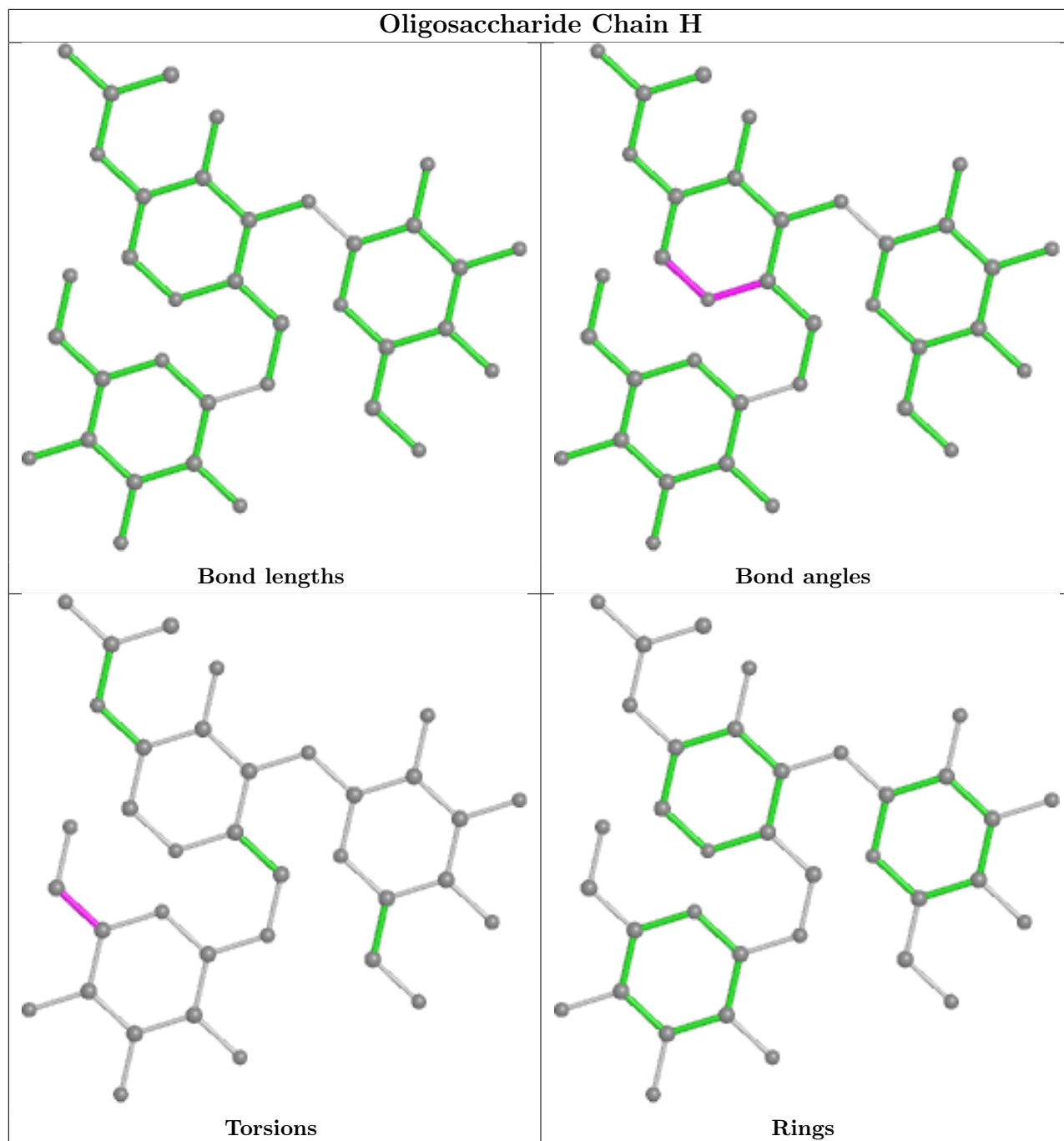
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Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	G	3	BMA	3	0
4	G	1	NAG	7	0

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





## 5.6 Ligand geometry [i](#)

3 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
6	NAG	E	201	1	14,14,15	0.46	0	17,19,21	0.52	0
7	EDO	E	202	-	3,3,3	0.48	0	2,2,2	0.31	0
8	PO4	E	203	-	4,4,4	1.03	0	6,6,6	0.57	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	E	201	1	-	0/6/23/26	0/1/1/1
7	EDO	E	202	-	-	0/1/1/1	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 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 Fit of model and data

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	C	122/123 (99%)	0.79	5 (4%) 37 44	57, 90, 134, 142	0
1	E	120/123 (97%)	0.77	4 (3%) 46 54	52, 80, 119, 170	0
2	D	115/134 (85%)	1.01	10 (8%) 10 12	59, 86, 126, 189	0
2	F	112/134 (83%)	0.54	3 (2%) 54 63	52, 73, 106, 123	0
3	A	166/220 (75%)	2.81	101 (60%) 0 0	89, 147, 198, 220	0
3	B	203/220 (92%)	1.00	21 (10%) 6 7	51, 80, 151, 212	0
All	All	838/954 (87%)	1.23	144 (17%) 1 1	51, 88, 170, 220	0

All (144) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	A	522	PHE	12.8
3	A	356	ILE	10.8
3	A	419	ARG	9.8
3	A	518	GLN	8.7
3	A	511	VAL	8.1
3	A	525	ARG	7.6
3	A	463	ALA	6.6
3	A	420	VAL	6.3
3	A	403	LEU	6.3
3	A	462	LEU	6.2
3	A	399	VAL	6.1
3	A	519	LYS	6.1
3	A	469	PHE	6.1
3	A	480	HIS	6.0
3	B	396	THR	6.0
3	B	397	LEU	5.7
3	A	523	ILE	5.6
3	A	372	LEU	5.6
3	A	348	LEU	5.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	A	474	ILE	5.5
3	A	517	GLU	5.4
3	A	358	CYS	5.4
3	A	370	VAL	5.2
3	A	503	PHE	5.2
3	A	524	CYS	5.2
3	A	526	ALA	5.2
3	A	478	TRP	5.0
3	A	521	GLU	5.0
3	A	514	ALA	4.9
3	A	477	GLN	4.9
3	A	445	VAL	4.8
3	A	398	THR	4.8
3	A	448	PHE	4.6
3	A	513	ARG	4.5
3	A	381	PRO	4.5
3	A	342	ARG	4.5
3	B	359	LEU	4.4
3	A	475	SER	4.3
3	A	357	THR	4.3
3	A	346	PHE	4.3
3	B	393	ARG	4.2
3	A	476	VAL	4.1
2	D	33	GLY	3.9
3	A	373	THR	3.9
3	B	374	TRP	3.9
3	A	400	THR	3.8
3	A	527	VAL	3.8
3	B	361	VAL	3.8
3	A	483	VAL	3.7
3	A	383	ASN	3.7
3	A	401	SER	3.6
3	B	544	ASN	3.6
3	B	395	GLY	3.6
3	A	405	VAL	3.6
3	A	529	GLU	3.6
3	B	387	ARG	3.5
3	A	512	THR	3.5
3	A	343	PRO	3.4
3	A	447	ALA	3.4
3	A	509	LEU	3.4
3	A	428	ALA	3.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	49	VAL	3.4
1	C	102	TYR	3.4
3	A	397	LEU	3.3
3	B	392	GLN	3.3
3	A	414	GLU	3.2
3	A	374	TRP	3.2
3	A	487	ASP	3.2
3	A	402	THR	3.2
2	D	75	PHE	3.2
2	D	36	TYR	3.2
3	A	486	PRO	3.2
3	B	367	LYS	3.1
3	A	368	GLY	3.1
3	A	384	HIS	3.0
1	C	1	GLU	3.0
1	C	68	ILE	3.0
3	A	464	CYS	3.0
3	A	515	GLU	3.0
3	A	446	TYR	2.9
2	F	80	SER	2.9
3	B	372	LEU	2.9
3	A	421	THR	2.9
2	D	44	PRO	2.9
3	B	369	THR	2.9
3	A	339	TYR	2.9
3	A	345	PRO	2.9
3	A	341	SER	2.9
3	A	491	SER	2.9
3	B	370	VAL	2.9
3	A	410	TRP	2.8
3	A	508	ARG	2.8
3	A	485	LEU	2.8
3	A	340	LEU	2.7
3	A	497	LYS	2.7
2	D	45	GLY	2.7
3	A	504	PHE	2.7
3	A	386	THR	2.7
3	A	429	LEU	2.7
3	A	481	ASN	2.7
3	A	516	TRP	2.6
3	B	360	VAL	2.6
3	A	520	ASP	2.6

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	A	538	GLN	2.6
3	A	510	GLU	2.6
3	A	440	ARG	2.6
3	A	382	VAL	2.6
3	A	494	GLN	2.5
3	A	354	PRO	2.5
3	A	493	THR	2.5
3	A	495	PRO	2.5
1	E	1	GLU	2.5
3	B	399	VAL	2.5
3	B	339	TYR	2.5
1	E	52	VAL	2.5
3	A	506	PHE	2.4
2	D	74	ASP	2.4
3	A	473	ASP	2.4
2	D	29	VAL	2.4
3	B	426	PRO	2.4
3	A	479	LEU	2.4
2	D	70	GLY	2.3
2	D	24	ARG	2.3
3	A	404	PRO	2.3
3	B	341	SER	2.3
1	C	50	ALA	2.3
3	A	505	VAL	2.3
2	F	31	SER	2.2
3	A	347	ASP	2.2
3	A	443	PRO	2.2
3	A	536	THR	2.2
3	A	482	GLU	2.2
3	B	391	LYS	2.2
3	A	418	CYS	2.2
3	A	489	ARG	2.2
3	A	501	SER	2.1
3	B	401	SER	2.1
1	E	29	ILE	2.0
3	A	468	ASN	2.0
2	F	82	LEU	2.0
2	D	25	ALA	2.0
3	A	380	LYS	2.0
1	E	43	GLY	2.0
3	A	417	GLN	2.0

## 6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

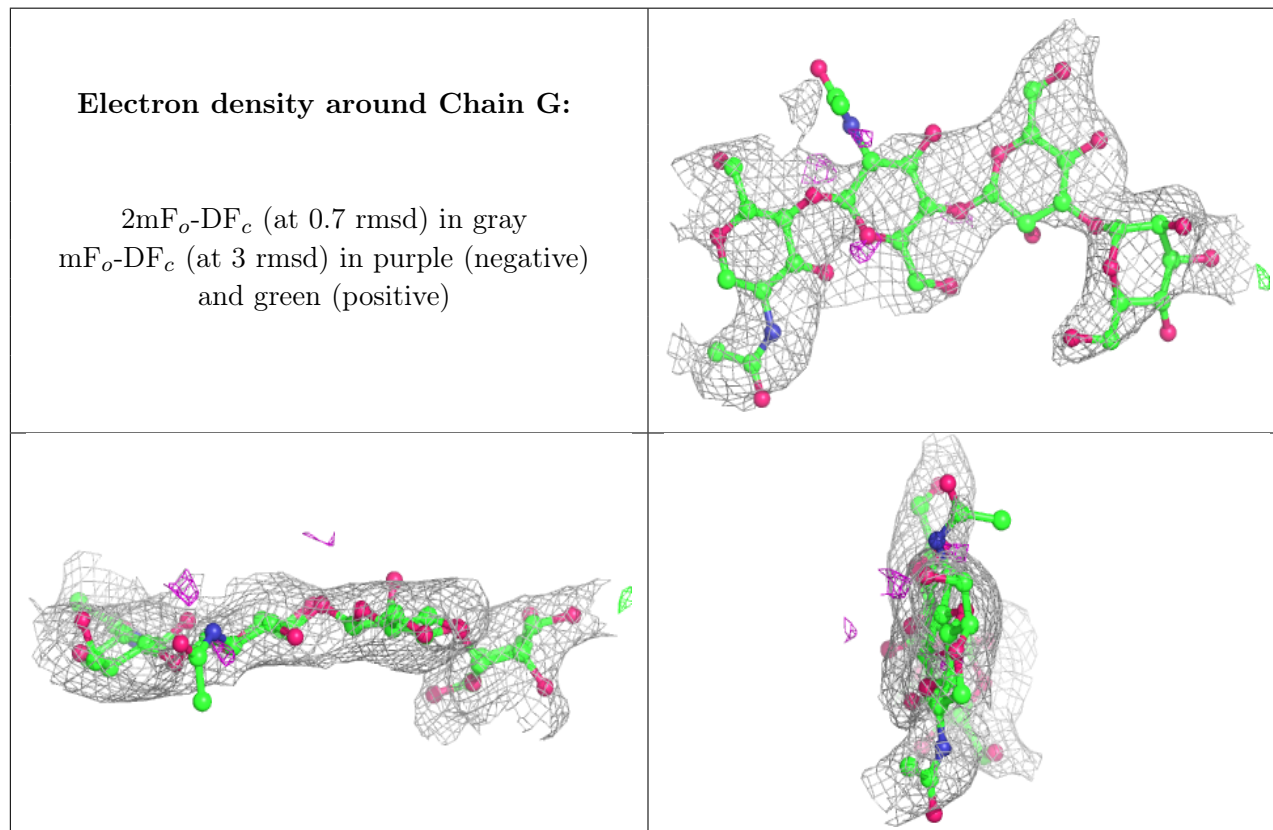
There are no non-standard protein/DNA/RNA residues in this entry.

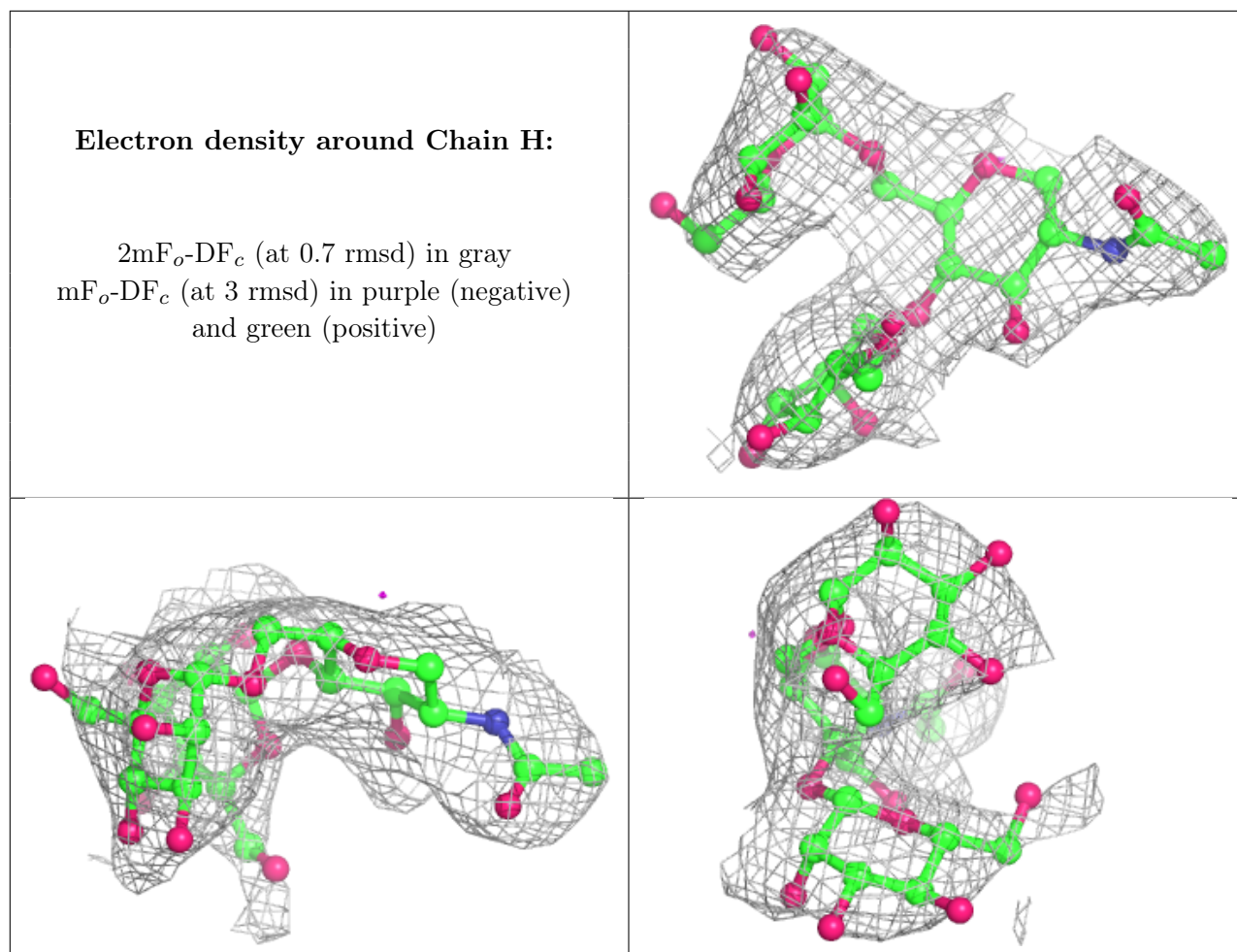
## 6.3 Carbohydrates [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q < 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
4	NAG	G	1	14/15	0.55	0.34	124,147,150,151	0
4	MAN	G	4	11/12	0.57	0.28	130,139,144,146	0
4	BMA	G	3	11/12	0.60	0.32	92,133,144,146	0
4	NAG	G	2	14/15	0.73	0.41	128,145,152,153	0
5	BMA	H	2	11/12	0.82	0.18	125,133,143,157	0
5	MAN	H	3	11/12	0.89	0.16	112,123,129,129	0
5	NAG	H	1	14/15	0.92	0.17	66,86,101,108	0

The following is a graphical depiction of the model fit to experimental electron density for oligosaccharide. Each fit is shown from different orientation to approximate a three-dimensional view.





## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q < 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
6	NAG	E	201	14/15	0.84	0.17	69,97,103,109	0
7	EDO	E	202	4/4	0.86	0.23	76,92,96,96	0
8	PO4	E	203	5/5	0.89	0.47	170,173,191,205	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.