



Full wwPDB X-ray Structure Validation Report ⓘ

Nov 20, 2023 – 10:23 PM JST

PDB ID : 7DPM
Title : Crystal structure of SARS-CoV-2 Spike RBD in complex with MW06 Fab
Authors : Wang, J.; Jiao, S.; Wang, R.; Zhang, J.; Zhang, M.; Wang, M.
Deposited on : 2020-12-20
Resolution : 3.30 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

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>.

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 : 2.36
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) : 2.36

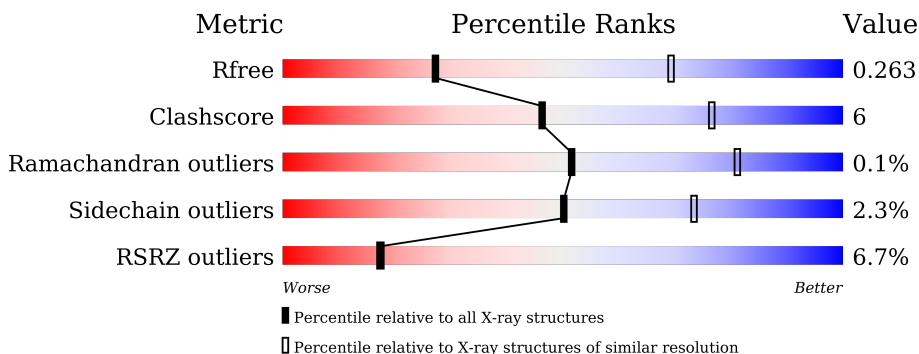
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.30 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	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)
RSRZ outliers	127900	1115 (3.34-3.26)

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 ≥ 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	A	230	 81% 18% .
1	D	230	 81% 17% ..
1	G	230	 80% 18% ..
1	J	230	 27% 77% 14% . 9%
2	B	214	 86% 14%
2	E	214	 7% 83% 16% .

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Mol	Chain	Length	Quality of chain
2	H	214	 83% 17%
2	K	214	 26% 83% 15%
3	C	223	 74% 14% 12%
3	F	223	 74% 14% 13%
3	I	223	 4% 75% 12% 13%
3	L	223	 3% 76% 11% 13%
4	M	3	 33% 67%

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 19571 atoms, of which 0 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 heavy chain of MW06.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	230	Total 1714	C 1079	N 285	O 342	S 8	0	0	0
1	D	228	Total 1702	C 1073	N 283	O 339	S 7	0	0	0
1	G	228	Total 1702	C 1073	N 283	O 339	S 7	0	0	0
1	J	210	Total 1578	C 994	N 262	O 315	S 7	0	0	0

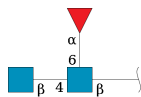
- Molecule 2 is a protein called light chain of MW06.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	214	Total 1646	C 1030	N 278	O 331	S 7	0	0	0
2	E	214	Total 1646	C 1030	N 278	O 331	S 7	0	0	0
2	H	214	Total 1646	C 1030	N 278	O 331	S 7	0	0	0
2	K	212	Total 1631	C 1022	N 276	O 327	S 6	0	0	0

- Molecule 3 is a protein called Spike protein S1.

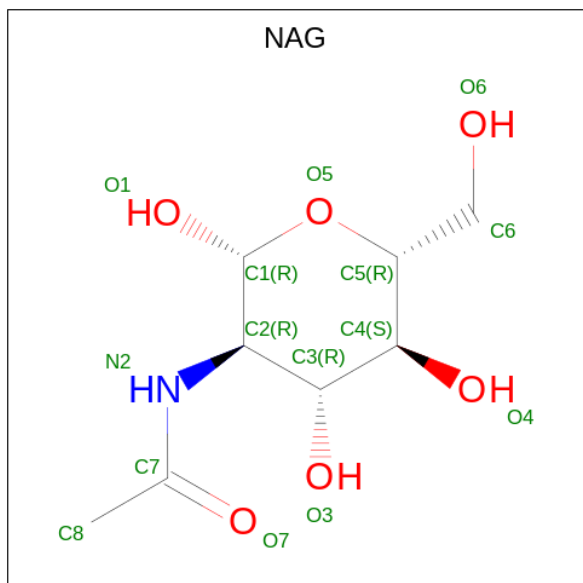
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	196	Total 1552	C 995	N 259	O 290	S 8	0	0	0
3	F	195	Total 1543	C 989	N 257	O 289	S 8	0	0	0
3	I	195	Total 1543	C 989	N 257	O 289	S 8	0	0	0
3	L	195	Total 1543	C 989	N 257	O 289	S 8	0	0	0

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



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
4	M	3	38	22	2	14	0	0	0

- Molecule 5 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: C₈H₁₅NO₆).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
5	F	1	14	8	1	5	0	0
5	I	1	14	8	1	5	0	0
5	L	1	14	8	1	5	0	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	10	Total 10 O	0	0

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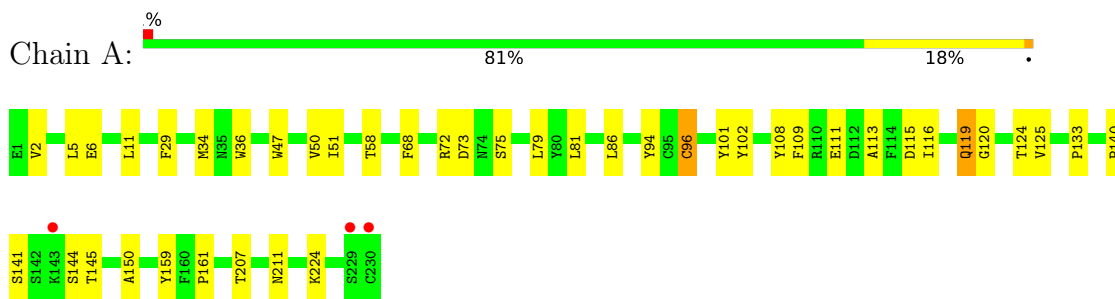
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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	B	9	Total O 9 9	0	0
6	C	10	Total O 10 10	0	0
6	D	1	Total O 1 1	0	0
6	F	6	Total O 6 6	0	0
6	G	1	Total O 1 1	0	0
6	H	3	Total O 3 3	0	0
6	I	2	Total O 2 2	0	0
6	L	3	Total O 3 3	0	0

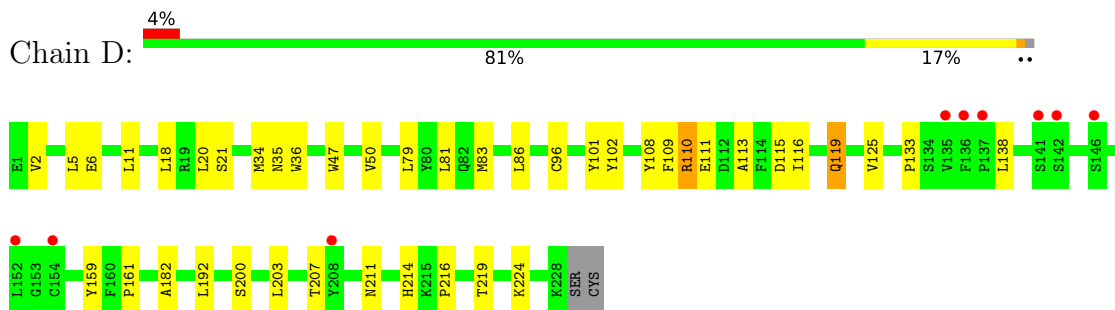
3 Residue-property plots [i](#)

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.

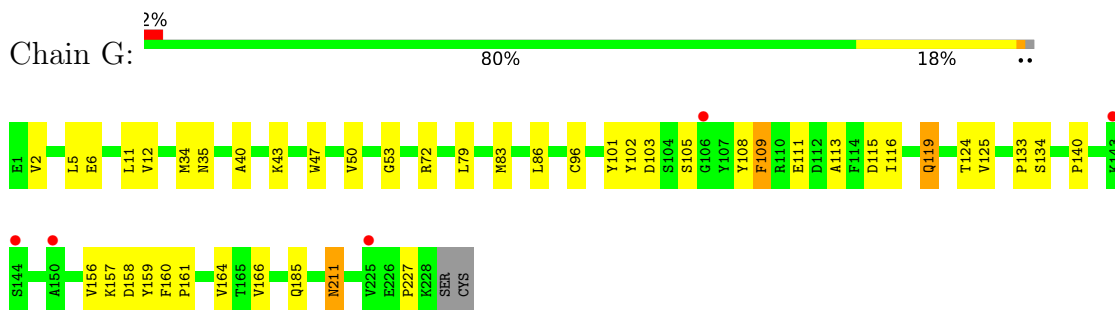
- Molecule 1: heavy chain of MW06



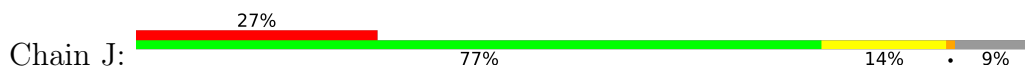
- Molecule 1: heavy chain of MW06

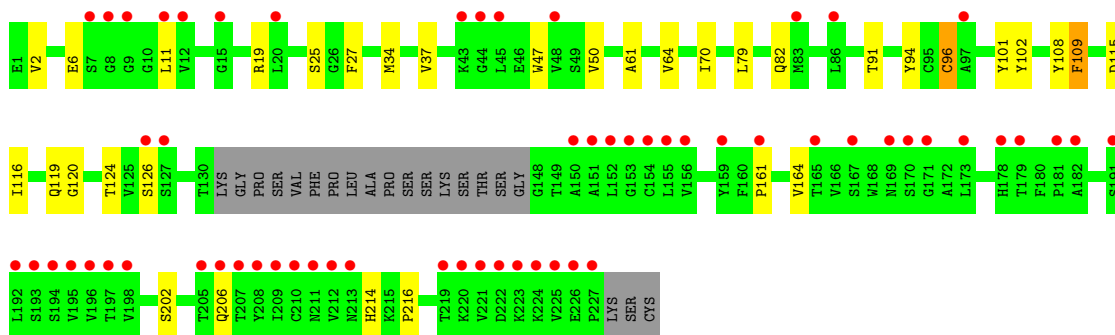


- Molecule 1: heavy chain of MW06

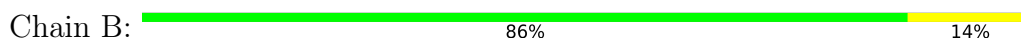


- Molecule 1: heavy chain of MW06

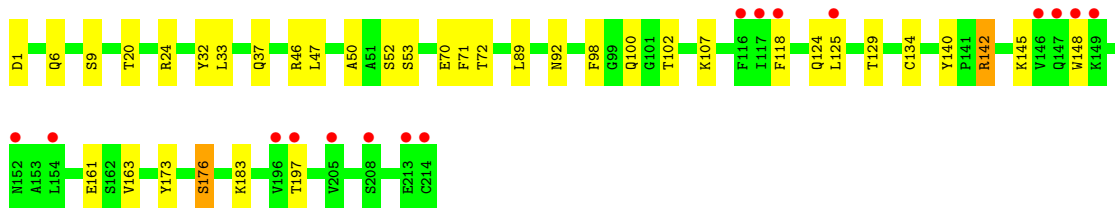
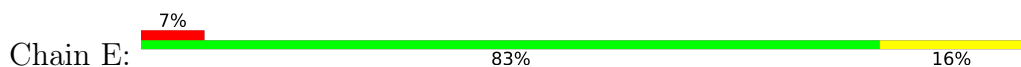




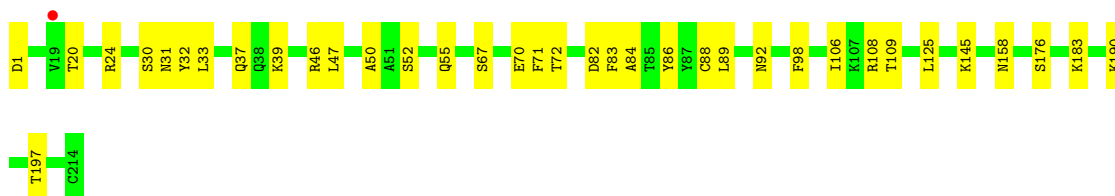
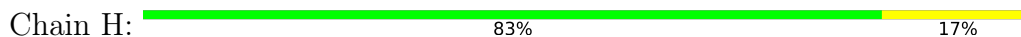
• Molecule 2: light chain of MW06



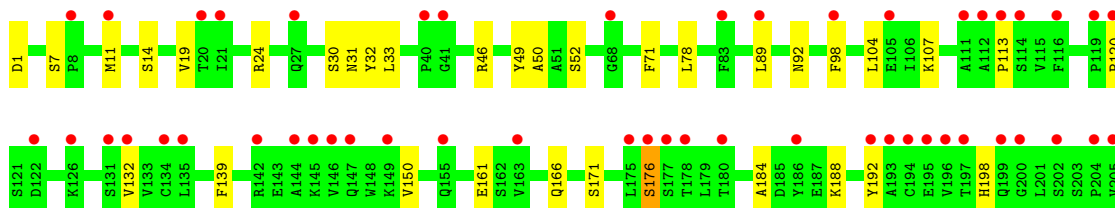
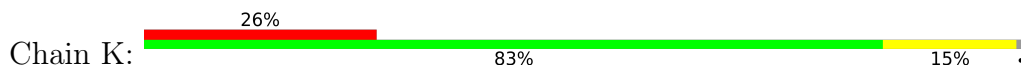
• Molecule 2: light chain of MW06

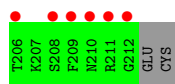


• Molecule 2: light chain of MW06



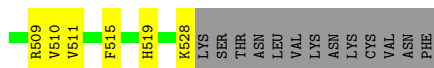
• Molecule 2: light chain of MW06





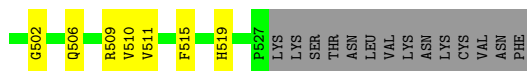
- Molecule 3: Spike protein S1

Chain C: 74% 14% 12%



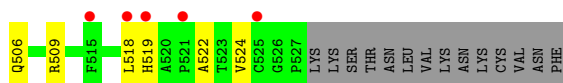
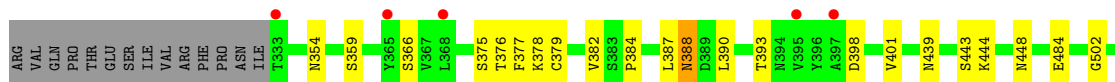
- Molecule 3: Spike protein S1

Chain F: 74% 14% 13%



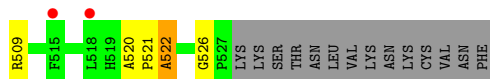
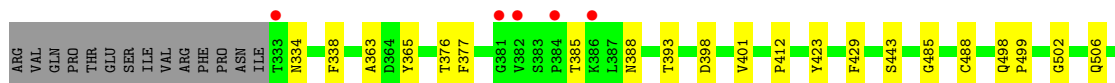
- Molecule 3: Spike protein S1

Chain I: 4% 75% 12% 13%



- Molecule 3: Spike protein S1

Chain L: 3% 76% 11% 13%



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

Chain M: 33% 67%



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	147.13Å 153.83Å 172.69Å 90.00° 95.88° 90.00°	Depositor
Resolution (Å)	47.52 – 3.30 47.52 – 3.30	Depositor EDS
% Data completeness (in resolution range)	99.2 (47.52-3.30) 99.3 (47.52-3.30)	Depositor EDS
R_{merge}	0.17	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.83 (at 3.33Å)	Xtrriage
Refinement program	PHENIX 1.14_3260	Depositor
R, R_{free}	0.217 , 0.263 0.217 , 0.263	Depositor DCC
R_{free} test set	2796 reflections (4.91%)	wwPDB-VP
Wilson B-factor (Å ²)	83.8	Xtrriage
Anisotropy	0.016	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.28 , 38.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	19571	wwPDB-VP
Average B, all atoms (Å ²)	95.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.59% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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: FUC, NAG

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.34	0/1755	0.56	0/2387
1	D	0.30	0/1743	0.52	0/2371
1	G	0.31	0/1743	0.51	0/2371
1	J	0.26	0/1614	0.49	0/2195
2	B	0.33	0/1682	0.54	0/2281
2	E	0.29	0/1682	0.50	0/2281
2	H	0.30	0/1682	0.52	0/2281
2	K	0.27	0/1667	0.49	0/2261
3	C	0.33	0/1596	0.49	0/2172
3	F	0.31	0/1587	0.50	0/2161
3	I	0.30	0/1587	0.48	0/2161
3	L	0.29	0/1587	0.48	0/2161
All	All	0.30	0/19925	0.51	0/27083

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	A	1714	0	1659	31	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	1702	0	1650	29	0
1	G	1702	0	1650	36	0
1	J	1578	0	1517	24	1
2	B	1646	0	1599	16	0
2	E	1646	0	1600	22	0
2	H	1646	0	1600	20	0
2	K	1631	0	1589	22	0
3	C	1552	0	1472	15	0
3	F	1543	0	1459	18	0
3	I	1543	0	1461	18	0
3	L	1543	0	1459	12	0
4	M	38	0	34	0	0
5	F	14	0	13	0	0
5	I	14	0	13	0	0
5	L	14	0	13	0	0
6	A	10	0	0	0	0
6	B	9	0	0	0	0
6	C	10	0	0	0	0
6	D	1	0	0	0	0
6	F	6	0	0	0	0
6	G	1	0	0	0	0
6	H	3	0	0	0	0
6	I	2	0	0	0	0
6	L	3	0	0	0	0
All	All	19571	0	18788	243	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 6.

All (243) 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:C:384:PRO:HA	3:C:387:LEU:HD23	1.52	0.92
2:E:142:ARG:HH22	2:E:163:VAL:HG11	1.44	0.83
1:A:5:LEU:HA	1:A:119:GLN:HE22	1.50	0.77
1:A:11:LEU:HD11	1:A:161:PRO:HG3	1.73	0.71
2:H:32:TYR:HD2	2:H:92:ASN:HA	1.57	0.69
3:F:468:ILE:HD11	2:H:158:ASN:HB3	1.75	0.68
1:J:108:TYR:HA	3:L:376:THR:HG23	1.76	0.68
1:G:5:LEU:HA	1:G:119:GLN:HE22	1.60	0.67
1:D:5:LEU:HA	1:D:119:GLN:HE22	1.60	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:11:LEU:HD11	1:G:161:PRO:HG3	1.79	0.65
2:B:32:TYR:HD2	2:B:92:ASN:HA	1.62	0.64
3:L:393:THR:HA	3:L:522:ALA:HA	1.78	0.64
2:E:24:ARG:HG2	2:E:70:GLU:HG3	1.80	0.64
1:A:207:THR:HG23	1:A:224:LYS:HE3	1.79	0.63
1:G:133:PRO:HB3	1:G:159:TYR:HB3	1.81	0.63
1:D:83:MET:HE2	1:D:86:LEU:HD21	1.80	0.63
1:A:108:TYR:HA	3:C:376:THR:HG23	1.80	0.62
1:G:108:TYR:HA	3:I:376:THR:HG23	1.79	0.62
1:A:145:THR:HG22	1:A:150:ALA:HB2	1.82	0.62
1:G:108:TYR:HB2	3:I:378:LYS:HE3	1.82	0.62
1:J:161:PRO:O	1:J:214:HIS:NE2	2.27	0.61
1:J:37:VAL:HG22	1:J:47:TRP:HA	1.83	0.60
1:D:133:PRO:HB3	1:D:159:TYR:HB3	1.83	0.60
1:A:133:PRO:HB3	1:A:159:TYR:HB3	1.83	0.59
1:D:6:GLU:OE2	1:D:96:CYS:N	2.36	0.58
3:I:388:ASN:OD1	3:I:388:ASN:N	2.35	0.58
2:H:108:ARG:NH1	2:H:109:THR:O	2.38	0.57
3:F:431:GLY:HA2	3:F:515:PHE:CE2	2.40	0.57
1:G:111:GLU:HG3	2:H:32:TYR:CE1	2.40	0.57
3:I:382:VAL:HG11	3:I:387:LEU:HD13	1.87	0.57
1:A:113:ALA:O	2:B:46:ARG:NH1	2.38	0.57
1:J:2:VAL:HG11	1:J:116:ILE:HD13	1.87	0.56
3:C:392:PHE:CD1	3:C:515:PHE:HB3	2.41	0.56
1:J:91:THR:HG23	1:J:124:THR:HA	1.86	0.56
3:L:388:ASN:O	3:L:526:GLY:HA3	2.04	0.56
2:K:46:ARG:HD3	2:K:49:TYR:HB3	1.86	0.56
2:E:142:ARG:NH2	2:E:163:VAL:HG11	2.19	0.56
3:L:520:ALA:HB1	3:L:521:PRO:HD2	1.88	0.55
1:D:2:VAL:HG11	1:D:116:ILE:HD13	1.88	0.55
1:G:11:LEU:HD23	1:G:124:THR:HB	1.87	0.55
2:E:32:TYR:HD2	2:E:92:ASN:HA	1.71	0.54
3:I:384:PRO:HA	3:I:387:LEU:HB2	1.89	0.54
3:I:393:THR:HA	3:I:522:ALA:HA	1.88	0.54
1:G:108:TYR:CD2	1:G:109:PHE:HB2	2.43	0.54
1:D:207:THR:HG23	1:D:224:LYS:HE3	1.89	0.54
1:G:158:ASP:OD1	1:G:185:GLN:NE2	2.35	0.54
2:H:39:LYS:HD3	2:H:84:ALA:HB2	1.90	0.54
2:K:32:TYR:HD2	2:K:92:ASN:HA	1.71	0.54
1:D:11:LEU:HD21	1:D:161:PRO:HG3	1.89	0.53
1:A:6:GLU:OE2	1:A:96:CYS:N	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:86:LEU:HB3	1:A:125:VAL:HG21	1.89	0.53
1:D:47:TRP:CZ2	1:D:50:VAL:HG23	2.44	0.53
3:C:350:VAL:HG22	3:C:422:ASN:HB3	1.90	0.53
2:E:33:LEU:HD22	2:E:71:PHE:CG	2.44	0.53
2:K:120:PRO:HD3	2:K:132:VAL:HG22	1.91	0.52
1:A:11:LEU:HD23	1:A:124:THR:HB	1.90	0.52
1:A:47:TRP:CZ2	1:A:50:VAL:HG23	2.44	0.52
1:J:101:TYR:HB3	1:J:108:TYR:HB3	1.91	0.52
1:G:156:VAL:HG11	1:G:164:VAL:HG11	1.91	0.52
1:A:94:TYR:O	1:A:120:GLY:HA2	2.10	0.52
2:H:37:GLN:HB2	2:H:47:LEU:HD11	1.91	0.52
1:J:47:TRP:CZ2	1:J:50:VAL:HG23	2.45	0.52
2:K:78:LEU:HD21	2:K:104:LEU:HD21	1.91	0.51
2:K:14:SER:HB3	2:K:107:LYS:HB3	1.92	0.51
2:K:33:LEU:HD22	2:K:71:PHE:CG	2.46	0.51
2:K:161:GLU:HA	2:K:176:SER:O	2.11	0.51
3:C:398:ASP:O	3:C:511:VAL:HA	2.11	0.51
1:D:111:GLU:HG3	2:E:32:TYR:CD1	2.45	0.51
1:D:34:MET:HB3	1:D:79:LEU:HD22	1.92	0.51
1:A:119:GLN:H	1:A:119:GLN:NE2	2.09	0.50
1:J:6:GLU:OE2	1:J:96:CYS:N	2.42	0.50
3:I:359:SER:HA	3:I:524:VAL:HG22	1.92	0.50
3:I:366:SER:HB2	3:I:388:ASN:ND2	2.27	0.50
2:H:89:LEU:HB2	2:H:98:PHE:CD1	2.47	0.50
2:E:6:GLN:O	2:E:100:GLN:NE2	2.43	0.50
2:K:113:PRO:HD3	2:K:198:HIS:ND1	2.27	0.50
1:J:94:TYR:O	1:J:120:GLY:HA2	2.12	0.50
2:H:24:ARG:NH2	2:H:70:GLU:OE2	2.42	0.50
2:K:7:SER:OG	2:K:24:ARG:NH1	2.44	0.50
3:F:392:PHE:CD1	3:F:515:PHE:HB3	2.47	0.49
1:J:34:MET:HB3	1:J:79:LEU:HD22	1.94	0.49
3:C:398:ASP:OD2	3:C:423:TYR:OH	2.28	0.49
1:D:108:TYR:HA	3:F:376:THR:HG23	1.94	0.49
1:A:36:TRP:NE1	1:A:81:LEU:HB2	2.28	0.49
1:G:47:TRP:CZ2	1:G:50:VAL:HG23	2.47	0.49
1:G:6:GLU:OE2	1:G:96:CYS:N	2.40	0.49
1:G:34:MET:HB3	1:G:79:LEU:HD22	1.94	0.48
1:A:47:TRP:HE1	1:A:50:VAL:HG23	1.77	0.48
1:D:20:LEU:HD12	1:D:81:LEU:HD23	1.96	0.48
3:I:518:LEU:HG	3:I:519:HIS:H	1.79	0.48
1:A:115:ASP:N	1:A:115:ASP:OD1	2.44	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:67:SER:HA	2:B:71:PHE:CE2	2.48	0.48
1:G:2:VAL:HG11	1:G:116:ILE:HD13	1.94	0.48
1:J:115:ASP:OD1	1:J:115:ASP:N	2.45	0.48
2:K:184:ALA:O	2:K:188:LYS:HG3	2.14	0.48
1:A:144:SER:HA	2:B:116:PHE:HD2	1.79	0.47
2:B:191:VAL:HG22	2:B:210:ASN:OD1	2.14	0.47
1:D:110:ARG:NH2	3:F:374:PHE:O	2.32	0.47
2:E:37:GLN:HB2	2:E:47:LEU:HD11	1.95	0.47
2:K:78:LEU:HD23	2:K:78:LEU:HA	1.68	0.47
2:H:33:LEU:HD22	2:H:71:PHE:CG	2.49	0.47
3:C:443:SER:HB3	3:C:499:PRO:HD3	1.96	0.47
1:A:73:ASP:OD1	1:A:75:SER:OG	2.23	0.47
3:F:366:SER:HB2	3:F:388:ASN:ND2	2.30	0.47
1:J:108:TYR:CD2	1:J:109:PHE:HB2	2.50	0.47
3:F:359:SER:HB3	3:F:394:ASN:OD1	2.15	0.47
1:G:101:TYR:HB3	1:G:108:TYR:HB3	1.97	0.47
1:A:2:VAL:HG11	1:A:116:ILE:HD13	1.97	0.47
1:D:113:ALA:O	2:E:46:ARG:NH1	2.47	0.47
1:G:40:ALA:HB3	1:G:43:LYS:HB2	1.96	0.47
3:L:412:PRO:HG3	3:L:429:PHE:HB3	1.96	0.47
1:D:115:ASP:OD1	1:D:115:ASP:N	2.47	0.46
3:L:502:GLY:O	3:L:506:GLN:HG3	2.15	0.46
1:D:47:TRP:HZ2	1:D:50:VAL:HG23	1.81	0.46
3:I:401:VAL:HG22	3:I:509:ARG:HG2	1.98	0.46
2:B:161:GLU:HA	2:B:176:SER:O	2.15	0.46
1:D:101:TYR:HB3	1:D:108:TYR:HB3	1.98	0.46
3:L:401:VAL:HG22	3:L:509:ARG:HG2	1.96	0.46
1:G:101:TYR:CE1	1:G:103:ASP:HB2	2.51	0.46
3:C:366:SER:HB2	3:C:388:ASN:ND2	2.31	0.46
1:D:36:TRP:CE2	1:D:81:LEU:HB2	2.51	0.46
1:D:182:ALA:HA	1:D:192:LEU:HB3	1.98	0.46
1:G:115:ASP:OD1	1:G:115:ASP:N	2.47	0.46
3:C:365:TYR:CG	3:C:387:LEU:HD11	2.51	0.46
3:C:431:GLY:HA2	3:C:515:PHE:CE2	2.51	0.46
1:G:140:PRO:HG2	1:G:227:PRO:HB3	1.97	0.46
1:J:2:VAL:HG13	1:J:27:PHE:CD1	2.50	0.46
1:J:11:LEU:HD11	1:J:126:SER:HB3	1.98	0.46
2:B:124:GLN:O	2:B:127:SER:OG	2.23	0.45
1:G:12:VAL:HG13	1:G:125:VAL:HG22	1.99	0.45
1:D:119:GLN:NE2	1:D:119:GLN:H	2.14	0.45
2:B:145:LYS:HB3	2:B:197:THR:OG1	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:476:GLY:N	3:F:487:ASN:HB3	2.32	0.45
2:K:166:GLN:HE21	2:K:171:SER:HB3	1.81	0.45
3:C:454:ARG:NH2	3:C:467:ASP:O	2.48	0.45
2:E:142:ARG:HB3	2:E:173:TYR:CG	2.52	0.45
1:G:35:ASN:ND2	1:G:50:VAL:HG22	2.32	0.45
1:A:111:GLU:HG3	2:B:32:TYR:CE1	2.52	0.45
1:D:214:HIS:CD2	1:D:216:PRO:HD2	2.52	0.45
1:G:83:MET:HE2	1:G:86:LEU:HD21	1.97	0.45
3:C:412:PRO:HG3	3:C:429:PHE:HB3	1.98	0.45
1:J:161:PRO:HD2	1:J:216:PRO:HB2	1.99	0.44
2:E:134:CYS:HB2	2:E:148:TRP:CH2	2.51	0.44
3:F:354:ASN:O	3:F:398:ASP:HA	2.17	0.44
2:H:125:LEU:O	2:H:183:LYS:HD2	2.17	0.44
3:L:398:ASP:OD2	3:L:423:TYR:OH	2.30	0.44
2:B:33:LEU:HD22	2:B:71:PHE:CD2	2.53	0.44
3:F:357:ARG:NH2	2:H:190:LYS:HD3	2.32	0.44
1:G:113:ALA:O	2:H:46:ARG:NH1	2.50	0.44
3:F:412:PRO:HG3	3:F:429:PHE:HB3	1.99	0.44
1:A:36:TRP:CE2	1:A:81:LEU:HB2	2.53	0.44
2:B:78:LEU:HD23	2:B:78:LEU:HA	1.81	0.44
2:E:89:LEU:HB2	2:E:98:PHE:CD2	2.53	0.44
2:H:82:ASP:O	2:H:86:TYR:OH	2.25	0.44
3:F:350:VAL:HG22	3:F:422:ASN:HB3	1.99	0.44
1:A:47:TRP:HZ2	1:A:50:VAL:HG23	1.83	0.44
1:A:101:TYR:HB3	1:A:108:TYR:HB3	1.99	0.44
1:D:35:ASN:CG	1:D:50:VAL:HG22	2.39	0.44
2:E:50:ALA:C	2:E:52:SER:H	2.21	0.44
2:H:33:LEU:HD11	2:H:88:CYS:HB2	2.00	0.44
1:J:2:VAL:HG12	1:J:116:ILE:HG21	2.00	0.44
2:K:113:PRO:HB3	2:K:139:PHE:HB3	1.99	0.44
3:F:398:ASP:O	3:F:511:VAL:HA	2.18	0.43
1:J:115:ASP:HB3	2:K:46:ARG:NH1	2.33	0.43
1:D:6:GLU:HA	1:D:21:SER:O	2.19	0.43
1:G:86:LEU:HB3	1:G:125:VAL:HG21	2.00	0.43
2:H:30:SER:OG	2:H:31:ASN:N	2.50	0.43
3:I:439:ASN:O	3:I:443:SER:HB2	2.18	0.43
1:J:47:TRP:HZ2	1:J:50:VAL:HG23	1.82	0.43
1:D:200:SER:HA	1:D:203:LEU:HG	2.00	0.43
1:J:202:SER:HB2	1:J:206:GLN:HG2	1.99	0.43
3:L:443:SER:HB3	3:L:499:PRO:HD3	1.99	0.43
2:K:50:ALA:C	2:K:52:SER:H	2.22	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:355:ARG:HD3	3:C:396:TYR:CD1	2.54	0.43
2:H:145:LYS:HB3	2:H:197:THR:OG1	2.19	0.43
1:J:70:ILE:HD11	1:J:79:LEU:HD11	2.00	0.43
2:K:11:MET:SD	2:K:19:VAL:HG13	2.58	0.43
3:F:431:GLY:HA2	3:F:515:PHE:CD2	2.54	0.43
2:H:67:SER:HA	2:H:71:PHE:CE2	2.54	0.43
3:I:354:ASN:O	3:I:398:ASP:HA	2.19	0.43
2:H:50:ALA:C	2:H:52:SER:H	2.22	0.43
2:H:83:PHE:CE2	2:H:106:ILE:HG12	2.53	0.43
3:I:390:LEU:HD12	3:I:390:LEU:HA	1.80	0.43
2:E:125:LEU:O	2:E:183:LYS:HD2	2.18	0.43
1:A:111:GLU:HG3	2:B:32:TYR:CD1	2.54	0.42
2:H:20:THR:HG23	2:H:72:THR:HG23	2.01	0.42
3:I:502:GLY:O	3:I:506:GLN:HG3	2.18	0.42
3:F:349:SER:OG	3:F:451:TYR:HA	2.19	0.42
1:J:61:ALA:HB3	1:J:64:VAL:HG22	2.02	0.42
3:L:365:TYR:HD2	3:L:388:ASN:HB3	1.84	0.42
1:G:105:SER:HB2	3:I:379:CYS:O	2.20	0.42
3:I:444:LYS:HB2	3:I:448:ASN:HB2	2.02	0.42
1:A:68:PHE:HB3	1:A:81:LEU:HD11	2.02	0.42
1:A:140:PRO:HA	1:A:144:SER:OG	2.20	0.42
1:A:141:SER:O	1:A:145:THR:HG23	2.20	0.42
2:E:145:LYS:HD3	2:E:145:LYS:HA	1.91	0.42
1:G:157:LYS:NZ	1:G:185:GLN:OE1	2.52	0.42
1:G:166:VAL:HA	1:G:211:ASN:O	2.20	0.42
1:J:47:TRP:HE1	1:J:50:VAL:HG23	1.85	0.42
2:K:166:GLN:NE2	2:K:171:SER:HB3	2.35	0.42
3:F:502:GLY:O	3:F:506:GLN:HG3	2.20	0.42
1:J:164:VAL:HG22	1:J:214:HIS:HB2	2.01	0.42
1:A:47:TRP:NE1	1:A:50:VAL:HG23	2.34	0.41
2:B:2:ILE:HD13	2:B:29:ILE:HG22	2.01	0.41
2:K:30:SER:OG	2:K:31:ASN:N	2.52	0.41
3:L:485:GLY:H	3:L:488:CYS:HB2	1.85	0.41
1:D:47:TRP:HE1	1:D:50:VAL:HG23	1.85	0.41
1:D:133:PRO:HD2	1:D:219:THR:HG21	2.03	0.41
1:G:53:GLY:HA2	1:G:72:ARG:NH1	2.35	0.41
3:I:359:SER:HA	3:I:524:VAL:CG2	2.50	0.41
1:G:47:TRP:HE1	1:G:50:VAL:HG23	1.85	0.41
2:B:78:LEU:HD21	2:B:104:LEU:HD21	2.02	0.41
1:D:18:LEU:HD12	1:D:18:LEU:HA	1.94	0.41
1:G:160:PHE:HA	1:G:161:PRO:HA	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:338:PHE:HE2	3:L:363:ALA:HB1	1.85	0.41
2:E:20:THR:HG23	2:E:72:THR:HG23	2.03	0.41
1:A:51:ILE:HG13	1:A:58:THR:HG22	2.03	0.41
2:E:9:SER:O	2:E:102:THR:HA	2.20	0.41
2:E:107:LYS:HA	2:E:140:TYR:OH	2.20	0.41
2:E:161:GLU:HA	2:E:176:SER:O	2.20	0.41
3:F:399:SER:HA	3:F:510:VAL:O	2.20	0.41
1:J:19:ARG:HG3	1:J:82:GLN:HG2	2.03	0.41
3:C:401:VAL:HG22	3:C:509:ARG:HG2	2.03	0.41
3:F:401:VAL:HG22	3:F:509:ARG:HG2	2.03	0.41
1:G:12:VAL:O	1:G:125:VAL:HA	2.20	0.41
1:G:47:TRP:HZ2	1:G:50:VAL:HG23	1.86	0.41
1:G:119:GLN:H	1:G:119:GLN:HE21	1.69	0.41
1:D:138:LEU:HB3	2:E:118:PHE:CD1	2.56	0.41
1:A:34:MET:HB3	1:A:79:LEU:HD22	2.03	0.40
2:E:124:GLN:HG2	2:E:129:THR:O	2.21	0.40
1:G:5:LEU:HD23	1:G:119:GLN:HE22	1.86	0.40
2:K:46:ARG:NH2	2:K:49:TYR:HB3	2.36	0.40
2:K:166:GLN:HG2	2:K:171:SER:HA	2.03	0.40
2:B:108:ARG:NH1	2:B:109:THR:O	2.54	0.40
3:C:399:SER:HA	3:C:510:VAL:O	2.21	0.40
2:B:89:LEU:HB2	2:B:98:PHE:CD1	2.56	0.40
1:D:86:LEU:HB3	1:D:125:VAL:HG21	2.01	0.40
1:G:133:PRO:CB	1:G:159:TYR:HB3	2.51	0.40
2:K:89:LEU:HB2	2:K:98:PHE:CD2	2.56	0.40
2:K:150:VAL:HG22	2:K:192:TYR:CD1	2.57	0.40
1:A:29:PHE:O	1:A:72:ARG:NH2	2.54	0.40
2:E:145:LYS:HB2	2:E:197:THR:OG1	2.21	0.40
1:G:111:GLU:OE1	3:I:375:SER:HB2	2.22	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:J:25:SER:OG	1:J:25:SER:OG[2_656]	2.06	0.14

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	A	228/230 (99%)	220 (96%)	8 (4%)	0	100	100
1	D	226/230 (98%)	214 (95%)	12 (5%)	0	100	100
1	G	226/230 (98%)	218 (96%)	8 (4%)	0	100	100
1	J	206/230 (90%)	201 (98%)	5 (2%)	0	100	100
2	B	212/214 (99%)	203 (96%)	9 (4%)	0	100	100
2	E	212/214 (99%)	203 (96%)	9 (4%)	0	100	100
2	H	212/214 (99%)	202 (95%)	10 (5%)	0	100	100
2	K	210/214 (98%)	202 (96%)	8 (4%)	0	100	100
3	C	194/223 (87%)	180 (93%)	14 (7%)	0	100	100
3	F	193/223 (86%)	179 (93%)	14 (7%)	0	100	100
3	I	193/223 (86%)	181 (94%)	12 (6%)	0	100	100
3	L	193/223 (86%)	176 (91%)	15 (8%)	2 (1%)	15	46
All	All	2505/2668 (94%)	2379 (95%)	124 (5%)	2 (0%)	51	81

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	L	385	THR
3	L	522	ALA

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	A	191/191 (100%)	186 (97%)	5 (3%)	46	71
1	D	189/191 (99%)	184 (97%)	5 (3%)	46	71
1	G	189/191 (99%)	184 (97%)	5 (3%)	46	71
1	J	174/191 (91%)	170 (98%)	4 (2%)	50	73
2	B	187/187 (100%)	180 (96%)	7 (4%)	34	63
2	E	187/187 (100%)	183 (98%)	4 (2%)	53	75
2	H	187/187 (100%)	184 (98%)	3 (2%)	62	79
2	K	185/187 (99%)	183 (99%)	2 (1%)	73	85
3	C	169/196 (86%)	163 (96%)	6 (4%)	35	63
3	F	168/196 (86%)	165 (98%)	3 (2%)	59	78
3	I	168/196 (86%)	165 (98%)	3 (2%)	59	78
3	L	168/196 (86%)	165 (98%)	3 (2%)	59	78
All	All	2162/2296 (94%)	2112 (98%)	50 (2%)	50	73

All (50) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	96	CYS
1	A	102	TYR
1	A	109	PHE
1	A	119	GLN
1	A	211	ASN
2	B	1	ASP
2	B	53	SER
2	B	54	LEU
2	B	70	GLU
2	B	100	GLN
2	B	142	ARG
2	B	190	LYS
3	C	334	ASN
3	C	354	ASN
3	C	377	PHE
3	C	403	ARG
3	C	519	HIS
3	C	528	LYS
1	D	102	TYR
1	D	109	PHE
1	D	110	ARG
1	D	119	GLN

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Mol	Chain	Res	Type
1	D	211	ASN
2	E	1	ASP
2	E	53	SER
2	E	142	ARG
2	E	176	SER
3	F	377	PHE
3	F	408	ARG
3	F	519	HIS
1	G	102	TYR
1	G	109	PHE
1	G	119	GLN
1	G	134	SER
1	G	211	ASN
2	H	1	ASP
2	H	55	GLN
2	H	176	SER
3	I	377	PHE
3	I	388	ASN
3	I	484	GLU
1	J	96	CYS
1	J	102	TYR
1	J	109	PHE
1	J	119	GLN
2	K	1	ASP
2	K	176	SER
3	L	334	ASN
3	L	377	PHE
3	L	498	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	77	ASN
1	A	119	GLN
3	C	334	ASN
3	C	498	GLN
1	D	77	ASN
1	D	119	GLN
1	G	77	ASN
1	G	119	GLN
2	H	55	GLN
1	J	77	ASN

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Mol	Chain	Res	Type
3	L	334	ASN
3	L	360	ASN
3	L	501	ASN

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](#)

3 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	4,3	14,14,15	0.30	0	17,19,21	0.81	1 (5%)
4	NAG	M	2	4	14,14,15	0.42	0	17,19,21	0.49	0
4	FUC	M	3	4	10,10,11	0.92	0	14,14,16	0.89	1 (7%)

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	4,3	-	2/6/23/26	0/1/1/1
4	NAG	M	2	4	-	1/6/23/26	0/1/1/1
4	FUC	M	3	4	-	-	0/1/1/1

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	M	1	NAG	C1-O5-C5	2.96	116.20	112.19
4	M	3	FUC	C1-C2-C3	2.18	112.34	109.67

There are no chirality outliers.

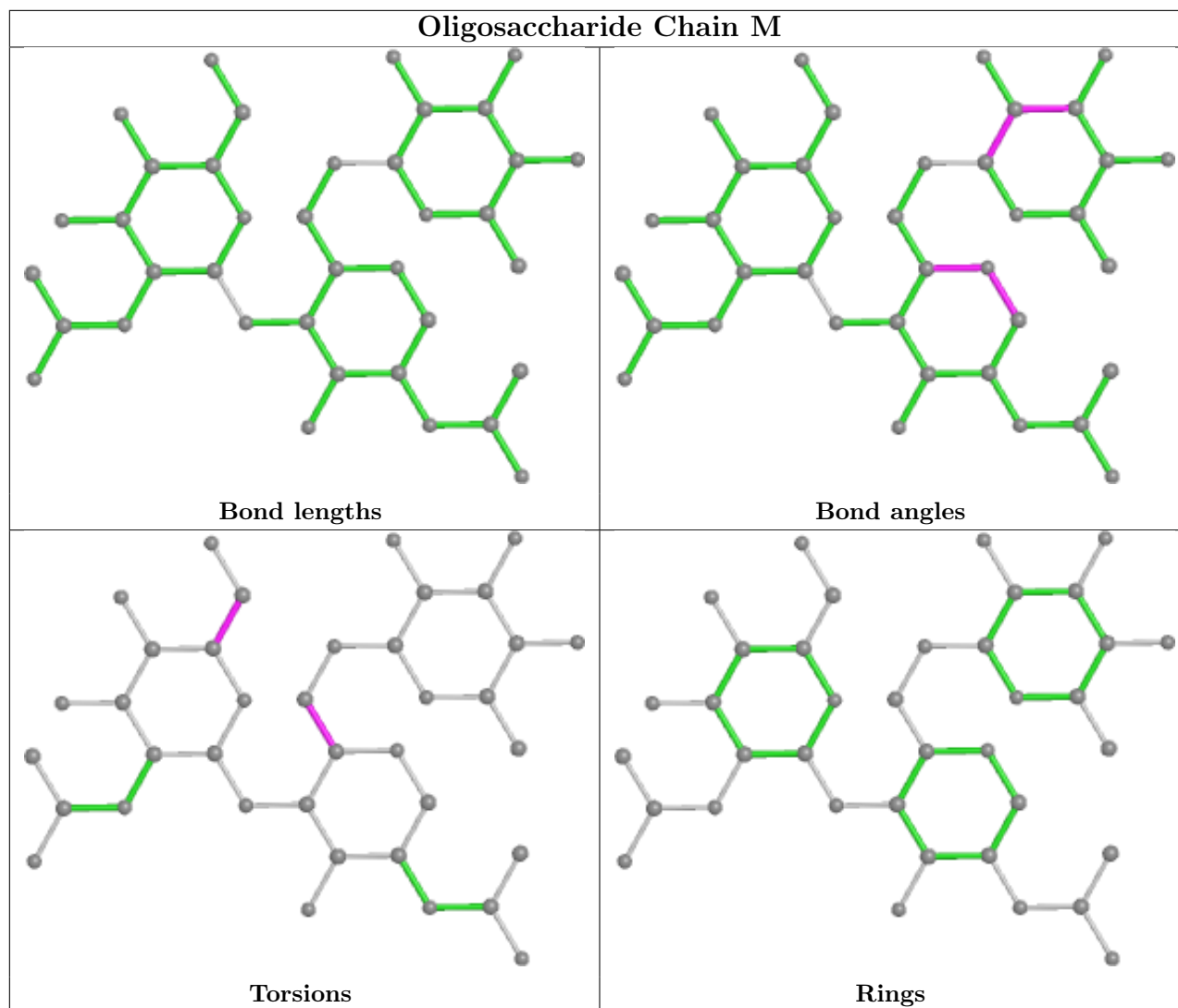
All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	M	1	NAG	O5-C5-C6-O6
4	M	1	NAG	C4-C5-C6-O6
4	M	2	NAG	O5-C5-C6-O6

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for 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	$\# Z > 2$
5	NAG	F	601	3	14,14,15	0.38	0	17,19,21	0.55	0
5	NAG	I	601	3	14,14,15	0.47	0	17,19,21	0.57	0
5	NAG	L	601	3	14,14,15	0.29	0	17,19,21	0.47	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
5	NAG	F	601	3	-	2/6/23/26	0/1/1/1
5	NAG	I	601	3	-	2/6/23/26	0/1/1/1
5	NAG	L	601	3	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	F	601	NAG	O5-C5-C6-O6
5	I	601	NAG	O5-C5-C6-O6
5	F	601	NAG	C4-C5-C6-O6
5	I	601	NAG	C4-C5-C6-O6

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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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, 95th 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 ²)	Q<0.9
1	A	230/230 (100%)	-0.07	3 (1%) 77 77	35, 55, 94, 141	0
1	D	228/230 (99%)	0.27	9 (3%) 39 37	62, 80, 128, 165	0
1	G	228/230 (99%)	0.15	5 (2%) 62 60	67, 88, 115, 124	0
1	J	210/230 (91%)	1.64	61 (29%) 0 0	94, 168, 190, 199	0
2	B	214/214 (100%)	-0.09	0 100 100	42, 59, 74, 117	0
2	E	214/214 (100%)	0.35	16 (7%) 14 13	66, 97, 141, 150	0
2	H	214/214 (100%)	-0.03	1 (0%) 91 91	64, 81, 98, 118	0
2	K	212/214 (99%)	1.49	56 (26%) 0 0	100, 157, 188, 195	0
3	C	196/223 (87%)	0.08	1 (0%) 91 91	49, 68, 91, 126	0
3	F	195/223 (87%)	-0.06	0 100 100	57, 78, 108, 125	0
3	I	195/223 (87%)	0.28	10 (5%) 28 26	74, 96, 150, 167	0
3	L	195/223 (87%)	0.33	7 (3%) 42 40	78, 102, 143, 157	0
All	All	2531/2668 (94%)	0.36	169 (6%) 17 17	35, 86, 175, 199	0

All (169) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	K	144	ALA	9.8
2	K	197	THR	9.7
1	J	196	VAL	9.5
2	K	177	SER	9.3
1	J	151	ALA	9.2
2	K	178	THR	8.8
2	K	176	SER	8.7
2	K	145	LYS	8.4
1	J	195	VAL	8.4
1	J	152	LEU	8.2
1	J	126	SER	7.7

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Mol	Chain	Res	Type	RSRZ
2	K	209	PHE	7.2
1	D	146	SER	6.8
1	J	209	ILE	6.8
1	J	8	GLY	6.7
1	J	153	GLY	6.3
1	J	225	VAL	6.2
1	J	224	LYS	6.1
2	K	134	CYS	6.1
1	J	9	GLY	6.0
1	J	213	ASN	5.7
1	J	212	VAL	5.7
1	J	194	SER	5.6
2	K	114	SER	5.4
2	K	146	VAL	5.4
2	K	196	VAL	5.3
1	J	181	PRO	5.1
1	J	210	CYS	5.0
1	J	182	ALA	5.0
1	J	156	VAL	4.9
1	J	223	LYS	4.8
2	K	112	ALA	4.7
1	J	220	LYS	4.6
1	J	227	PRO	4.6
2	K	186	TYR	4.5
3	C	333	THR	4.5
2	K	208	SER	4.5
1	J	197	THR	4.5
2	K	194	CYS	4.4
1	J	44	GLY	4.4
3	L	333	THR	4.4
1	J	150	ALA	4.4
1	J	173	LEU	4.4
2	K	131	SER	4.3
2	K	192	TYR	4.2
2	K	193	ALA	4.2
2	K	210	ASN	4.2
1	G	144	SER	4.2
2	K	135	LEU	4.2
2	E	147	GLN	4.1
1	J	192	LEU	4.1
1	J	179	THR	4.1
3	I	333	THR	4.1

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Mol	Chain	Res	Type	RSRZ
2	E	196	VAL	4.1
1	J	7	SER	4.0
1	J	171	GLY	3.9
2	E	148	TRP	3.9
2	K	195	GLU	3.8
1	J	219	THR	3.7
2	K	122	ASP	3.7
2	K	111	ALA	3.5
1	J	15	GLY	3.5
1	J	211	ASN	3.5
2	K	68	GLY	3.5
2	K	27	GLN	3.4
2	K	163	VAL	3.4
2	K	205	VAL	3.3
2	K	11	MET	3.3
1	D	142	SER	3.3
2	E	154	LEU	3.3
2	K	175	LEU	3.3
1	G	225	VAL	3.3
1	J	12	VAL	3.3
2	K	20	THR	3.2
2	K	126	LYS	3.2
1	D	152	LEU	3.2
1	J	86	LEU	3.2
1	J	155	LEU	3.2
2	K	147	GLN	3.2
3	L	518	LEU	3.2
2	E	214	CYS	3.2
1	J	169	ASN	3.1
1	D	137	PRO	3.1
2	K	21	ILE	3.1
2	K	132	VAL	3.0
1	J	191	SER	3.0
3	I	518	LEU	3.0
2	K	155	GLN	2.9
3	I	519	HIS	2.9
2	K	41	GLY	2.8
1	J	221	VAL	2.8
3	L	386	LYS	2.8
3	L	384	PRO	2.8
2	K	149	LYS	2.8
1	J	159	TYR	2.8

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Mol	Chain	Res	Type	RSRZ
2	K	180	THR	2.8
1	G	106	GLY	2.7
1	D	141	SER	2.7
1	J	207	THR	2.7
3	I	395	VAL	2.7
3	L	382	VAL	2.7
2	K	202	SER	2.6
2	E	118	PHE	2.6
2	E	208	SER	2.6
3	I	368	LEU	2.6
1	G	143	LYS	2.6
3	L	381	GLY	2.6
1	G	150	ALA	2.6
1	J	45	LEU	2.6
1	A	143	LYS	2.6
1	J	165	THR	2.6
1	J	127	SER	2.5
2	K	40	PRO	2.5
2	E	146	VAL	2.5
1	D	136	PHE	2.5
1	J	48	VAL	2.5
2	K	119	PRO	2.5
1	J	11	LEU	2.5
2	K	89	LEU	2.5
3	I	525	CYS	2.4
1	J	198	VAL	2.4
3	I	397	ALA	2.4
2	E	197	THR	2.4
1	J	154	CYS	2.4
2	E	117	ILE	2.4
2	K	200	GLY	2.4
2	H	19	VAL	2.3
1	J	206	GLN	2.3
3	I	365	TYR	2.3
1	J	193	SER	2.3
2	K	199	GLN	2.3
2	E	125	LEU	2.3
2	K	83	PHE	2.3
1	J	43	LYS	2.3
2	E	152	ASN	2.3
1	J	20	LEU	2.2
2	K	116	PHE	2.2

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Mol	Chain	Res	Type	RSRZ
1	J	83	MET	2.2
3	I	515	PHE	2.2
3	L	515	PHE	2.2
1	J	178	HIS	2.2
1	A	229	SER	2.2
2	K	211	ARG	2.2
1	A	230	CYS	2.2
1	J	226	GLU	2.1
2	E	213	GLU	2.1
2	K	105	GLU	2.1
1	D	135	VAL	2.1
1	J	161	PRO	2.1
2	K	204	PRO	2.1
2	K	113	PRO	2.1
1	J	97	ALA	2.1
2	E	149	LYS	2.1
2	E	205	VAL	2.1
2	K	212	GLY	2.1
3	I	521	PRO	2.1
1	D	208	TYR	2.1
1	J	167	SER	2.1
1	J	170	SER	2.1
2	K	120	PRO	2.1
1	J	208	TYR	2.1
2	E	116	PHE	2.1
2	K	206	THR	2.1
1	J	222	ASP	2.1
2	K	98	PHE	2.0
2	K	8	PRO	2.0
2	K	142	ARG	2.0
1	J	205	THR	2.0
1	D	154	CYS	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.

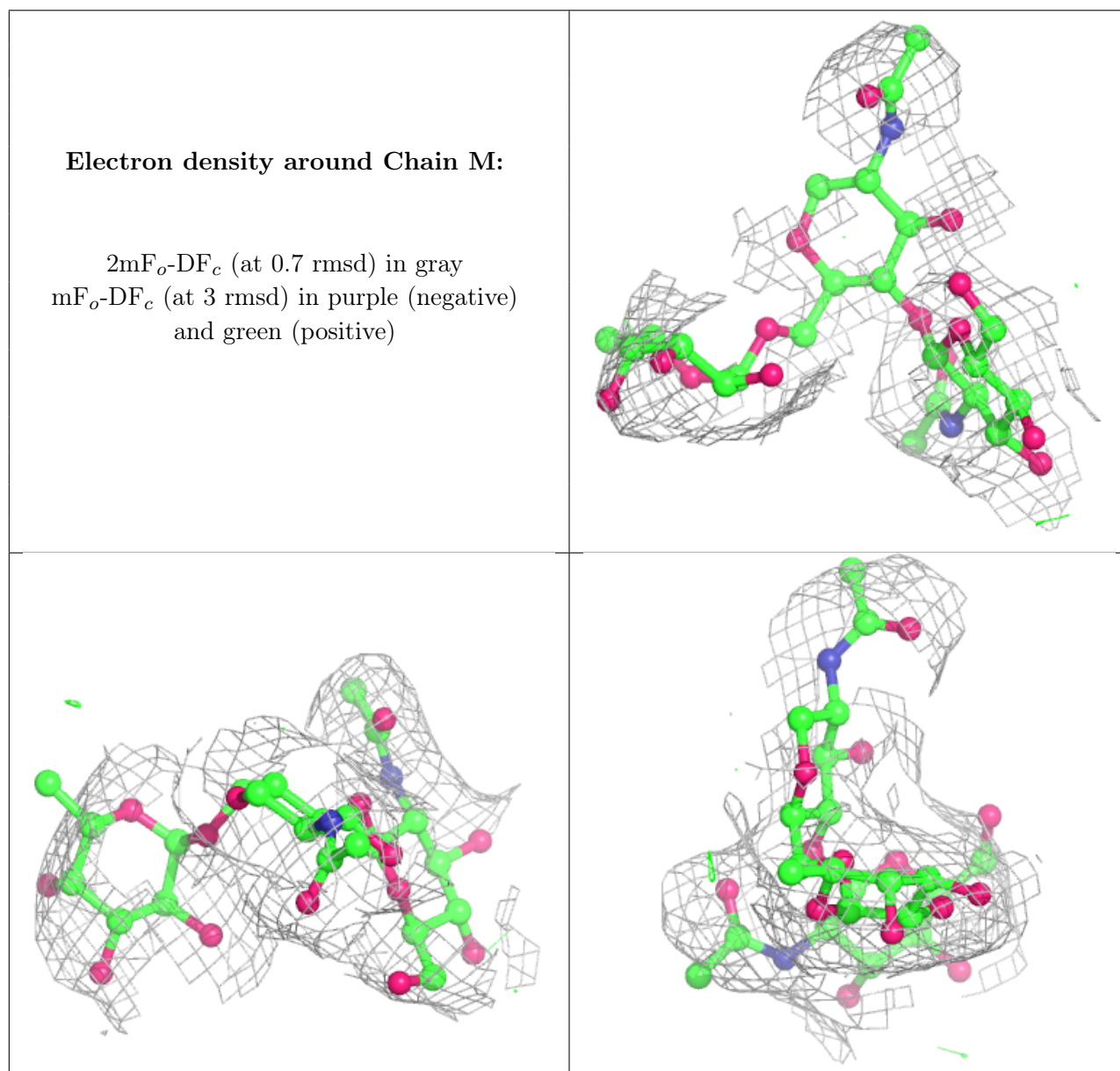
6.3 Carbohydrates [i](#)

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, 95th 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 ²)	Q<0.9
4	FUC	M	3	10/11	0.82	0.21	101,113,115,116	0
4	NAG	M	2	14/15	0.83	0.17	95,104,111,113	0
4	NAG	M	1	14/15	0.93	0.15	68,90,101,105	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, 95th 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 ²)	Q<0.9
5	NAG	I	601	14/15	0.79	0.16	106,109,115,116	0
5	NAG	L	601	14/15	0.83	0.24	111,120,126,127	0
5	NAG	F	601	14/15	0.87	0.15	83,86,93,100	0

6.5 Other polymers [i](#)

There are no such residues in this entry.