



Full wwPDB X-ray Structure Validation Report ⓘ

Jul 11, 2024 – 06:05 PM EDT

PDB ID : 8UDZ
Title : The Structure of LTBP-49247 Fab Bound to TGFbeta1 Small Latent Complex
Authors : Streich Jr., F.C.; Nicholls, S.B.; Boston, C.J.; Ramachandran, S.
Deposited on : 2023-09-29
Resolution : 2.21 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)
Xtrriage (Phenix) : 1.13
EDS : 2.37.1
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) : 2.37.1

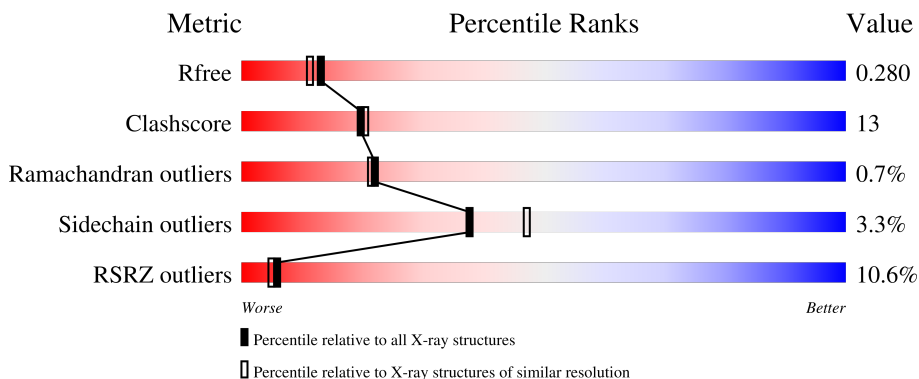
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.21 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	5912 (2.24-2.20)
Clashscore	141614	6646 (2.24-2.20)
Ramachandran outliers	138981	6543 (2.24-2.20)
Sidechain outliers	138945	6544 (2.24-2.20)
RSRZ outliers	127900	5797 (2.24-2.20)

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	361	
1	B	361	
2	C	233	
2	E	233	
3	D	218	

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Mol	Chain	Length	Quality of chain
3	F	218	 88% 9% ..
4	G	5	 20% 80%

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 11329 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 Transforming growth factor beta-1 proprotein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	257	Total	C	N	O	S	0	0	0
			2062	1315	360	371	16			
1	B	294	Total	C	N	O	S	0	1	0
			2374	1520	413	424	17			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	33	SER	CYS	engineered mutation	UNP P01137
A	278	ALA	ARG	engineered mutation	UNP P01137
B	33	SER	CYS	engineered mutation	UNP P01137
B	278	ALA	ARG	engineered mutation	UNP P01137

- Molecule 2 is a protein called LTBP-49247 Fab Heavy Chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	C	220	Total	C	N	O	S	0	0	0
			1654	1044	291	313	6			
2	E	223	Total	C	N	O	S	0	0	0
			1676	1057	295	318	6			

- Molecule 3 is a protein called LTBP-49247 Fab Light Chain.

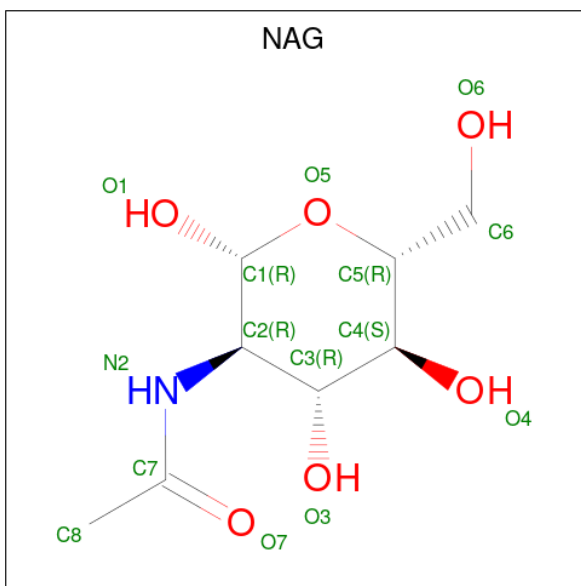
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	D	214	Total	C	N	O	S	0	0	0
			1621	1006	270	340	5			
3	F	214	Total	C	N	O	S	0	0	0
			1621	1006	270	340	5			

- Molecule 4 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(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	5	61	34	2	25	0	0	0

- Molecule 5 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		
5	A	1	14	8	1	5	0	0
5	B	1	14	8	1	5	0	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
6	A	26	26	26	0	0
6	B	30	30	30	0	0
6	C	21	21	21	0	0
6	D	30	30	30	0	0

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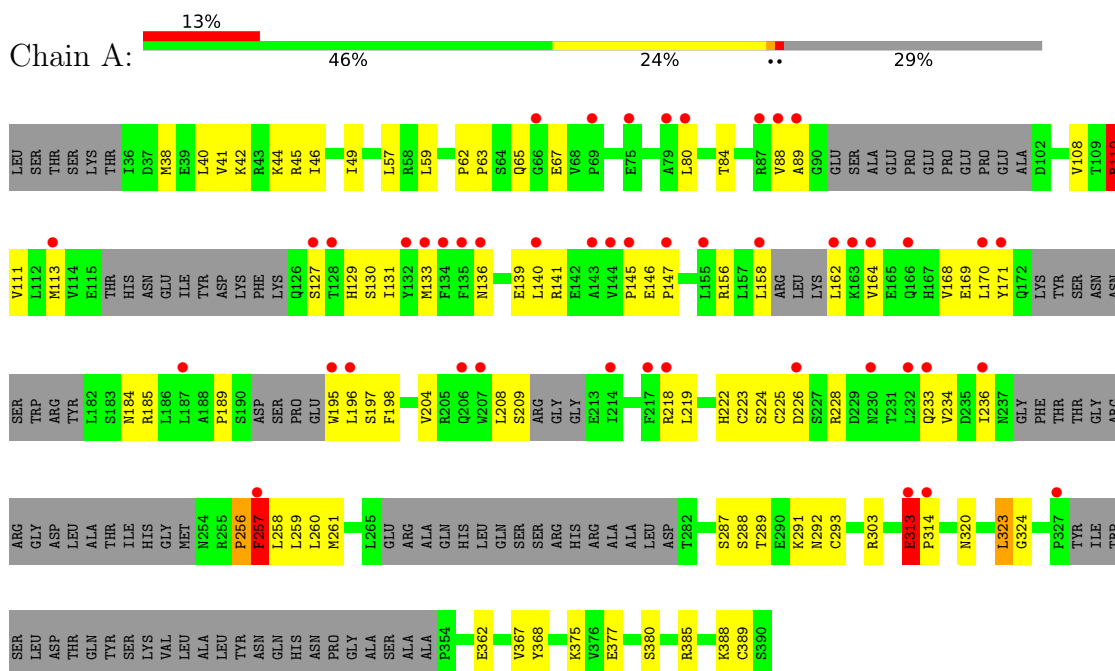
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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	E	28	Total O 28 28	0	0
6	F	97	Total O 97 97	0	0

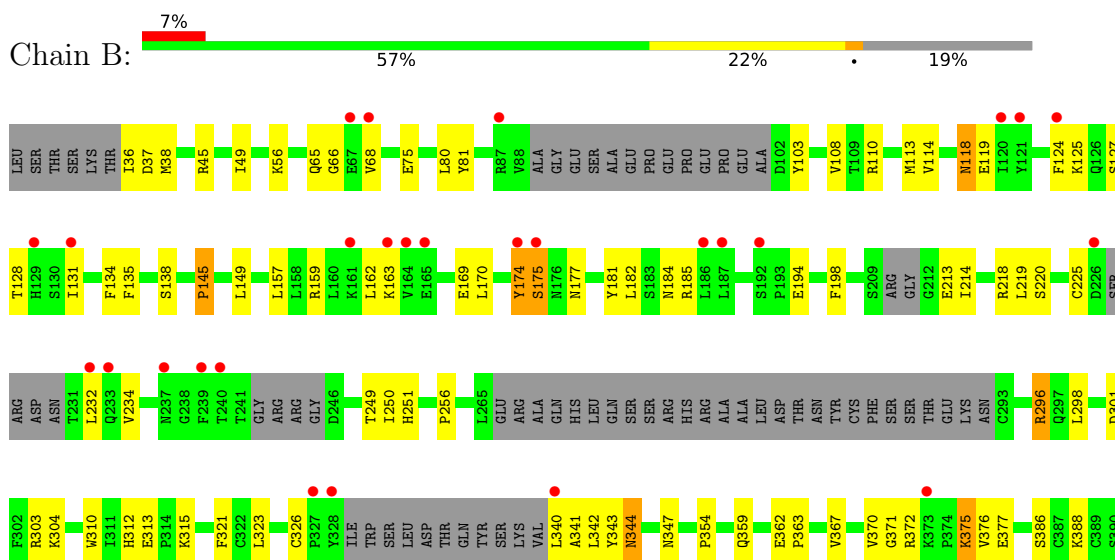
3 Residue-property plots i

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.

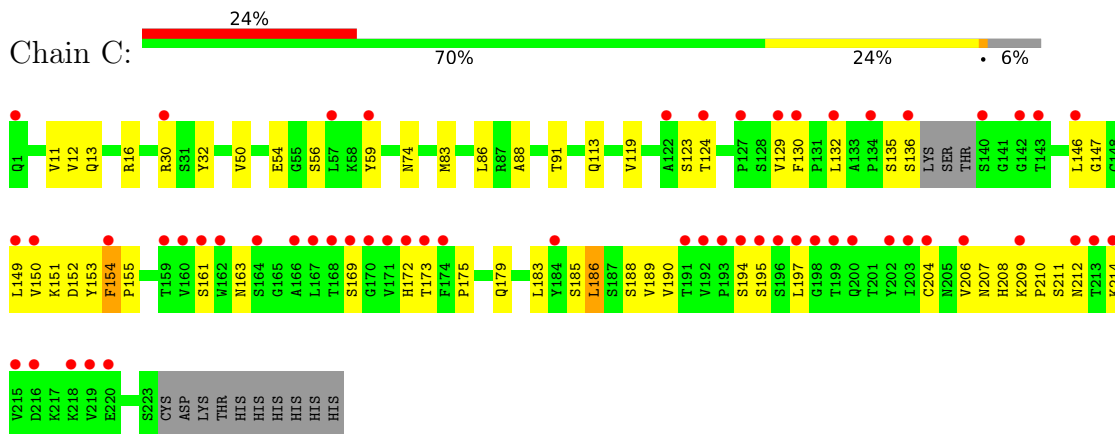
- Molecule 1: Transforming growth factor beta-1 proprotein



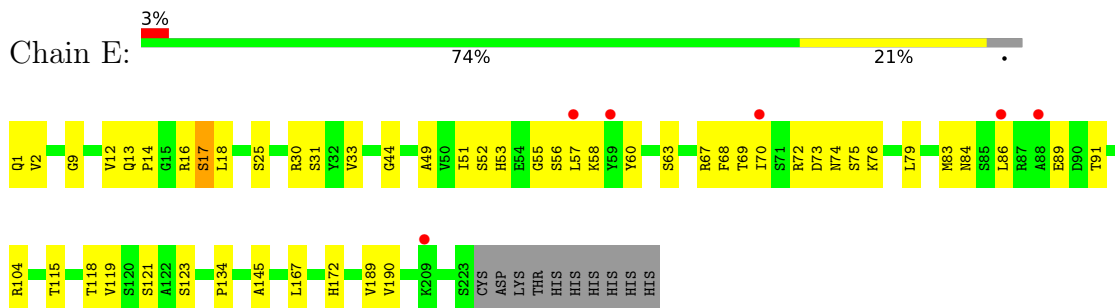
- Molecule 1: Transforming growth factor beta-1 proprotein



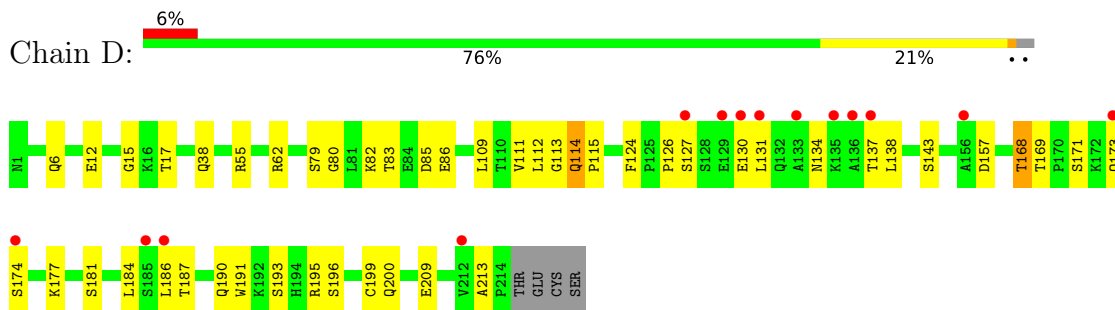
- Molecule 2: LTBP-49247 Fab Heavy Chain



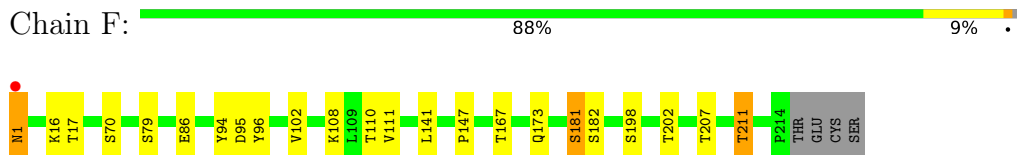
- Molecule 2: LTBP-49247 Fab Heavy Chain



- Molecule 3: LTBP-49247 Fab Light Chain



- Molecule 3: LTBP-49247 Fab Light Chain



- Molecule 4: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



MAC1
MAC2
BMA3
MAN4
MAN5

4 Data and refinement statistics

Property	Value	Source
Space group	P 2 21 21	Depositor
Cell constants a, b, c, α , β , γ	73.50Å 141.91Å 186.12Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	73.50 – 2.21 73.50 – 2.21	Depositor EDS
% Data completeness (in resolution range)	99.5 (73.50-2.21) 99.5 (73.50-2.21)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.99 (at 2.20Å)	Xtrriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.232 , 0.264 0.245 , 0.280	Depositor DCC
R_{free} test set	4891 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å ²)	62.3	Xtrriage
Anisotropy	0.067	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 50.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	11329	wwPDB-VP
Average B, all atoms (Å ²)	82.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.35% 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: BMA, MAN, 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	0.48	1/2102 (0.0%)	0.68	0/2838
1	B	0.48	0/2432	0.65	0/3292
2	C	0.47	0/1693	0.68	1/2300 (0.0%)
2	E	0.43	0/1716	0.65	0/2332
3	D	0.47	0/1660	0.64	0/2267
3	F	0.53	0/1660	0.68	0/2267
All	All	0.48	1/11263 (0.0%)	0.66	1/15296 (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	A	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	257	PHE	CE2-CZ	5.37	1.47	1.37

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	186	LEU	CA-CB-CG	5.11	127.05	115.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	110	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	A	2062	0	2067	85	0
1	B	2374	0	2373	69	0
2	C	1654	0	1641	47	0
2	E	1676	0	1667	40	0
3	D	1621	0	1544	37	0
3	F	1621	0	1544	23	0
4	G	61	0	52	0	0
5	A	14	0	13	0	0
5	B	14	0	13	0	0
6	A	26	0	0	1	0
6	B	30	0	0	1	0
6	C	21	0	0	0	0
6	D	30	0	0	1	0
6	E	28	0	0	0	0
6	F	97	0	0	2	0
All	All	11329	0	10914	280	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 13.

All (280) 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:F:17:THR:HG22	3:F:79:SER:CA	1.75	1.16
3:F:17:THR:CG2	3:F:79:SER:HA	1.88	1.03
3:F:17:THR:HG22	3:F:79:SER:HA	0.97	0.97
2:C:30:ARG:HG3	2:C:74:ASN:ND2	1.83	0.94
2:E:49:ALA:HB1	2:E:70:ILE:HD11	1.55	0.88
1:A:113:MET:SD	1:A:133:MET:HG2	2.17	0.84
1:B:113:MET:HE1	1:B:256:PRO:HD2	1.62	0.82
1:A:80:LEU:HD12	1:A:110:ARG:HB3	1.61	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:228:ARG:NH1	1:B:124:PHE:CD1	2.49	0.81
1:A:113:MET:CE	1:A:256:PRO:HG2	2.13	0.79
2:E:51:ILE:HG22	2:E:58:LYS:HG2	1.64	0.79
1:B:303:ARG:HD2	1:B:315:LYS:HE2	1.65	0.79
1:A:88:VAL:HG21	1:A:195:TRP:HB2	1.63	0.79
1:B:80:LEU:HD13	1:B:110:ARG:HB2	1.66	0.77
3:D:187:THR:HG1	3:D:190:GLN:H	1.34	0.75
2:E:33:VAL:HG22	2:E:52:SER:HA	1.69	0.74
3:D:173:GLN:HG2	3:D:174:SER:N	2.04	0.72
2:C:155:PRO:HB2	2:C:210:PRO:HG2	1.72	0.70
2:E:83:MET:HB3	2:E:86:LEU:HD21	1.72	0.70
1:A:113:MET:HE2	1:A:256:PRO:HG2	1.73	0.70
2:C:11:VAL:HG21	2:C:154:PHE:HZ	1.57	0.70
2:C:173:THR:HG23	2:C:188:SER:HB2	1.74	0.70
2:C:207:ASN:HA	2:C:214:LYS:HD2	1.74	0.70
1:A:289:THR:HG22	1:A:291:LYS:HG2	1.74	0.70
2:C:11:VAL:HG21	2:C:154:PHE:CZ	2.27	0.69
2:C:151:LYS:NZ	2:C:152:ASP:OD2	2.23	0.69
3:F:110:THR:HG21	3:F:147:PRO:HB3	1.74	0.69
3:D:168:THR:HG22	3:D:181:SER:H	1.55	0.69
1:A:67:GLU:OE1	1:A:67:GLU:N	2.20	0.69
3:D:86:GLU:HB2	3:D:111:VAL:HG12	1.74	0.69
1:A:88:VAL:HG21	1:A:195:TRP:CB	2.23	0.68
1:A:113:MET:SD	1:A:133:MET:HA	2.34	0.68
1:A:88:VAL:HG12	1:A:89:ALA:H	1.59	0.67
3:F:17:THR:HG22	3:F:79:SER:CB	2.25	0.66
3:D:200:GLN:HB3	3:D:209:GLU:HG3	1.79	0.65
1:A:42:LYS:O	1:A:46:ILE:HG13	1.96	0.65
3:F:167:THR:HG23	3:F:182:SER:HB3	1.78	0.65
3:D:173:GLN:HG2	3:D:174:SER:H	1.62	0.65
2:E:12:VAL:HG21	2:E:18:LEU:HG	1.79	0.64
3:D:173:GLN:OE1	3:D:177:LYS:HB2	1.98	0.64
3:F:141:LEU:HD23	3:F:181:SER:HB3	1.79	0.64
1:B:170:LEU:HD12	1:B:182:LEU:HD12	1.79	0.64
1:B:303:ARG:H	1:B:315:LYS:NZ	1.95	0.64
2:C:154:PHE:HB3	2:C:155:PRO:HD3	1.79	0.64
1:A:257:PHE:CZ	1:A:259:LEU:HB2	2.33	0.63
1:A:313:GLU:HG3	1:B:81:TYR:CE2	2.34	0.63
1:A:80:LEU:O	1:A:84:THR:HG23	1.99	0.63
1:B:66:GLY:H	1:B:68:VAL:HG22	1.64	0.63
3:F:17:THR:CG2	3:F:79:SER:CB	2.77	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:17:THR:CG2	3:F:79:SER:HB2	2.28	0.63
1:A:127:SER:HG	1:A:130:SER:H	1.47	0.62
2:E:189:VAL:HG21	3:F:141:LEU:HD13	1.82	0.61
1:A:113:MET:SD	1:A:133:MET:CG	2.87	0.61
2:C:88:ALA:O	2:C:91:THR:HG22	2.01	0.60
1:A:113:MET:SD	1:A:133:MET:CB	2.89	0.60
1:A:113:MET:HE1	1:A:256:PRO:HG2	1.83	0.60
3:D:186:LEU:HD22	3:D:190:GLN:NE2	2.17	0.60
2:C:194:SER:HA	2:C:197:LEU:HG	1.82	0.60
1:B:159:ARG:NH2	1:B:194:GLU:OE1	2.34	0.59
1:B:359:GLN:HB3	1:B:386:SER:OG	2.03	0.59
1:A:45:ARG:O	1:A:49:ILE:HG12	2.02	0.59
2:C:146:LEU:HB2	2:C:190:VAL:HG23	1.84	0.59
1:B:312:HIS:O	1:B:313:GLU:HG2	2.01	0.59
1:B:301:ASP:HB3	1:B:304:LYS:HB2	1.86	0.58
3:D:173:GLN:CG	3:D:174:SER:H	2.15	0.58
3:F:17:THR:HG21	3:F:79:SER:HB2	1.83	0.58
2:E:17:SER:OG	2:E:84:ASN:HA	2.04	0.58
3:D:186:LEU:HB3	3:D:190:GLN:HE21	1.69	0.57
2:E:67:ARG:O	2:E:84:ASN:HB2	2.03	0.57
1:A:185:ARG:NH2	1:A:198:PHE:HA	2.19	0.57
2:E:49:ALA:CB	2:E:70:ILE:HD11	2.31	0.57
3:D:113:GLY:O	3:D:114:GLN:HB3	2.04	0.57
2:C:172:HIS:HB3	2:C:189:VAL:HG12	1.85	0.57
2:E:12:VAL:HG12	2:E:13:GLN:O	2.05	0.57
1:A:168:VAL:O	1:A:184:ASN:HB2	2.04	0.57
2:E:86:LEU:HB3	2:E:119:VAL:HG21	1.87	0.56
1:A:170:LEU:HA	1:A:218:ARG:O	2.06	0.56
1:A:131:ILE:HD12	1:A:219:LEU:HD12	1.87	0.56
3:D:126:PRO:HD3	3:D:138:LEU:HD23	1.87	0.56
1:A:257:PHE:CE1	1:A:259:LEU:HB2	2.41	0.56
2:E:68:PHE:CZ	2:E:83:MET:HG2	2.40	0.56
1:A:170:LEU:HD12	1:A:218:ARG:O	2.06	0.56
1:A:162:LEU:HD12	1:A:189:PRO:HA	1.87	0.55
1:A:62:PRO:HB3	1:B:310:TRP:NE1	2.22	0.55
2:C:132:LEU:HD12	2:C:147:GLY:HA3	1.88	0.55
1:B:375:LYS:HD3	1:B:377:GLU:OE2	2.06	0.55
1:B:175:SER:HB2	1:B:177:ASN:OD1	2.07	0.55
1:B:218:ARG:HE	1:B:220:SER:HG	1.53	0.55
1:A:196:LEU:HD23	1:A:197:SER:N	2.22	0.55
1:B:45:ARG:O	1:B:49:ILE:HG12	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:375:LYS:HE2	1:A:377:GLU:OE2	2.07	0.54
1:B:303:ARG:H	1:B:315:LYS:HZ3	1.53	0.54
1:B:342:LEU:O	1:B:344:ASN:N	2.39	0.54
2:E:91:THR:HG23	2:E:118:THR:HA	1.88	0.54
1:B:312:HIS:O	1:B:313:GLU:CG	2.56	0.54
1:A:223:CYS:HB3	1:A:236:ILE:HG13	1.89	0.53
2:C:208:HIS:CD2	2:C:210:PRO:HD2	2.42	0.53
1:B:127:SER:OG	1:B:128:THR:N	2.42	0.53
1:A:88:VAL:HG11	1:A:195:TRP:C	2.29	0.53
2:C:129:VAL:HG22	2:C:150:VAL:HG12	1.91	0.53
3:F:95:ASP:O	3:F:96:TYR:HB2	2.10	0.52
1:A:147:PRO:HG3	1:A:208:LEU:O	2.10	0.52
1:B:170:LEU:CD1	1:B:182:LEU:HD12	2.39	0.52
3:D:17:THR:HB	3:D:79:SER:HA	1.91	0.52
3:D:138:LEU:HD12	3:D:184:LEU:HD23	1.91	0.52
1:A:185:ARG:HH21	1:A:198:PHE:HA	1.75	0.52
3:D:62:ARG:NH2	3:D:85:ASP:OD1	2.42	0.52
1:B:113:MET:HB2	1:B:135:PHE:CZ	2.45	0.52
1:B:362:GLU:HB2	1:B:363:PRO:HD2	1.92	0.52
2:C:132:LEU:HD13	3:D:124:PHE:CE2	2.45	0.52
2:C:154:PHE:CB	2:C:155:PRO:HD3	2.40	0.52
2:E:17:SER:HG	2:E:84:ASN:HA	1.73	0.52
2:E:12:VAL:HG11	2:E:86:LEU:HD12	1.92	0.52
1:A:84:THR:HG21	1:A:108:VAL:HG11	1.92	0.51
1:B:131:ILE:CG2	1:B:219:LEU:HB3	2.39	0.51
1:B:326:CYS:HB3	1:B:354:PRO:HB2	1.92	0.51
1:A:257:PHE:CD1	1:A:258:LEU:N	2.79	0.51
2:C:130:PHE:HD2	2:C:149:LEU:HD22	1.75	0.51
2:E:12:VAL:HG13	2:E:16:ARG:HB2	1.93	0.51
1:A:313:GLU:HB3	1:A:314:PRO:HD3	1.92	0.51
1:A:313:GLU:HB2	1:A:367:VAL:HB	1.93	0.51
1:B:342:LEU:C	1:B:344:ASN:H	2.13	0.51
1:A:41:VAL:HG21	1:B:323:LEU:HD22	1.93	0.50
1:A:171:TYR:HB2	1:A:218:ARG:HB2	1.93	0.50
1:A:225:CYS:HA	1:A:233:GLN:O	2.12	0.50
1:A:303:ARG:NH1	6:A:501:HOH:O	2.45	0.50
2:C:151:LYS:HG2	2:C:152:ASP:OD2	2.12	0.50
1:A:38:MET:HG2	1:A:42:LYS:HE2	1.93	0.50
1:A:111:VAL:HG21	1:A:140:LEU:HD23	1.93	0.50
1:A:113:MET:SD	1:A:133:MET:CA	3.00	0.49
1:B:249:THR:O	1:B:256:PRO:HD3	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:313:GLU:HB3	1:A:314:PRO:CD	2.41	0.49
1:A:204:VAL:HG11	1:A:260:LEU:HD21	1.94	0.49
1:A:127:SER:OG	1:A:130:SER:N	2.38	0.49
1:A:292:ASN:O	1:A:324:GLY:HA3	2.12	0.49
1:A:45:ARG:HG2	1:B:298:LEU:HD23	1.95	0.49
1:A:145:PRO:HB2	1:A:146:GLU:OE1	2.12	0.49
2:E:104:ARG:HB3	3:F:94:TYR:CG	2.48	0.49
1:B:113:MET:HG2	1:B:114:VAL:N	2.27	0.48
2:C:129:VAL:HG21	2:C:206:VAL:HG11	1.95	0.48
1:B:174:TYR:O	1:B:175:SER:C	2.51	0.48
1:B:177:ASN:OD1	1:B:177:ASN:N	2.46	0.48
1:B:312:HIS:O	1:B:313:GLU:OE2	2.30	0.48
3:F:17:THR:CG2	3:F:79:SER:CA	2.64	0.48
1:A:224:SER:O	1:A:234:VAL:HA	2.14	0.48
1:A:228:ARG:HA	1:A:228:ARG:NE	2.28	0.48
1:A:287:SER:O	1:A:288:SER:HB3	2.13	0.48
3:D:62:ARG:HH21	3:D:85:ASP:CG	2.17	0.48
1:A:257:PHE:CD1	1:A:257:PHE:C	2.87	0.48
2:C:208:HIS:O	2:C:214:LYS:HE2	2.14	0.48
3:D:86:GLU:HG3	3:D:109:LEU:O	2.14	0.48
2:E:9:GLY:HA3	2:E:115:THR:HB	1.96	0.48
2:E:189:VAL:CG2	3:F:141:LEU:HD13	2.44	0.48
1:A:362:GLU:OE2	1:A:385:ARG:HD3	2.14	0.48
2:C:179:GLN:OE1	2:C:185:SER:OG	2.32	0.47
3:D:83:THR:HA	3:D:111:VAL:HG11	1.96	0.47
1:A:113:MET:HE2	1:A:256:PRO:CG	2.43	0.47
3:D:173:GLN:CG	3:D:174:SER:N	2.65	0.47
1:A:169:GLU:OE2	1:A:222:HIS:HD2	1.97	0.47
1:A:156:ARG:HB2	1:A:257:PHE:CD2	2.50	0.47
2:C:12:VAL:O	2:C:119:VAL:HA	2.15	0.47
2:C:30:ARG:O	2:C:30:ARG:HG2	2.14	0.47
3:D:82:LYS:O	3:D:111:VAL:HG21	2.15	0.47
3:D:168:THR:HG23	3:D:169:THR:O	2.15	0.47
2:E:172:HIS:NE2	3:F:173:GLN:OE1	2.43	0.47
1:B:232:LEU:HD21	1:B:234:VAL:HG23	1.97	0.47
3:D:86:GLU:HB2	3:D:111:VAL:CG1	2.44	0.47
1:B:118:ASN:OD1	1:B:119:GLU:HG3	2.15	0.47
2:C:149:LEU:HD21	2:C:151:LYS:HB2	1.97	0.47
1:A:62:PRO:HB3	1:B:310:TRP:CD1	2.50	0.46
2:C:208:HIS:CE1	2:C:211:SER:HG	2.30	0.46
1:B:181:TYR:OH	1:B:184:ASN:ND2	2.43	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:153:TYR:C	2:C:183:LEU:HD22	2.34	0.46
1:A:261:MET:HE3	1:A:261:MET:HB2	1.80	0.46
1:B:37:ASP:OD2	2:C:32:TYR:OH	2.28	0.46
2:E:73:ASP:OD1	2:E:76:LYS:NZ	2.47	0.46
2:E:134:PRO:HA	2:E:145:ALA:O	2.15	0.46
2:C:150:VAL:CG2	2:C:186:LEU:HG	2.45	0.46
3:D:168:THR:CG2	3:D:181:SER:H	2.26	0.45
2:C:83:MET:HE2	2:C:86:LEU:HD21	1.97	0.45
1:B:315:LYS:HA	1:B:315:LYS:HD2	1.69	0.45
1:B:359:GLN:HA	1:B:388:LYS:HE2	1.98	0.45
1:A:141:ARG:HH21	1:A:209:SER:C	2.19	0.45
1:B:312:HIS:O	1:B:313:GLU:CD	2.55	0.45
3:F:202:THR:OG1	3:F:207:THR:HG22	2.17	0.45
3:D:196:SER:HB2	3:D:213:ALA:HB2	1.97	0.45
1:B:80:LEU:HD11	1:B:108:VAL:HG12	1.98	0.45
2:C:175:PRO:HG2	3:D:171:SER:OG	2.16	0.45
1:A:141:ARG:O	1:A:145:PRO:HA	2.17	0.45
1:B:36:ILE:HD12	1:B:36:ILE:N	2.32	0.45
3:D:187:THR:OG1	3:D:190:GLN:HG3	2.17	0.45
2:E:83:MET:HB3	2:E:86:LEU:CD2	2.44	0.45
2:C:50:VAL:HG12	2:C:59:TYR:HB2	1.98	0.44
1:A:222:HIS:NE2	1:B:169:GLU:OE2	2.42	0.44
1:B:347:ASN:CG	1:B:354:PRO:HG3	2.37	0.44
1:A:289:THR:CG2	1:A:291:LYS:HG2	2.45	0.44
2:C:124:THR:HA	2:C:154:PHE:HB3	1.98	0.44
3:D:112:LEU:HA	3:D:112:LEU:HD23	1.60	0.44
2:E:51:ILE:HD11	2:E:79:LEU:CD1	2.47	0.44
1:B:340:LEU:HG	1:B:341:ALA:H	1.81	0.44
2:E:30:ARG:HG2	2:E:74:ASN:HB3	1.99	0.44
2:E:55:GLY:O	2:E:57:LEU:N	2.51	0.44
1:A:40:LEU:HD11	2:E:31:SER:HB2	1.99	0.44
1:B:65:GLN:OE1	1:B:68:VAL:HG11	2.18	0.44
3:F:108:LYS:NZ	6:F:308:HOH:O	2.50	0.44
1:A:195:TRP:HB3	1:A:196:LEU:H	1.59	0.44
2:E:63:SER:O	2:E:67:ARG:NH2	2.45	0.44
1:A:368:TYR:HE1	1:A:377:GLU:HG3	1.82	0.44
1:A:156:ARG:HG3	1:A:257:PHE:CE2	2.53	0.43
2:C:208:HIS:HD2	2:C:210:PRO:HD2	1.82	0.43
1:A:185:ARG:HG3	1:A:198:PHE:CE1	2.53	0.43
1:B:367:VAL:HG22	1:B:376:VAL:HG22	2.01	0.43
3:F:198:SER:OG	3:F:211:THR:HB	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:113:MET:SD	1:A:133:MET:HB3	2.59	0.43
2:E:14:PRO:HA	2:E:119:VAL:CG1	2.48	0.43
2:E:30:ARG:O	2:E:53:HIS:HB2	2.17	0.43
1:A:57:LEU:O	1:A:59:LEU:HD13	2.19	0.43
1:B:218:ARG:NE	1:B:220:SER:OG	2.37	0.43
1:B:162:LEU:HD12	1:B:163:LYS:H	1.82	0.43
2:E:44:GLY:HA3	6:F:336:HOH:O	2.19	0.43
3:D:131:LEU:HD11	3:D:191:TRP:HD1	1.83	0.43
3:D:134:ASN:O	3:D:134:ASN:ND2	2.51	0.43
1:A:136:ASN:OD1	1:A:139:GLU:HB2	2.18	0.43
2:C:13:GLN:H	2:C:13:GLN:HG2	1.70	0.43
2:E:12:VAL:CG1	2:E:16:ARG:HB2	2.49	0.43
3:D:12:GLU:O	3:D:112:LEU:HB2	2.19	0.42
1:A:67:GLU:OE2	1:B:371:GLY:O	2.37	0.42
1:B:370:VAL:HG11	1:B:375:LYS:HE2	2.01	0.42
2:C:12:VAL:HG11	2:C:86:LEU:HD13	2.01	0.42
3:D:83:THR:O	3:D:111:VAL:HG11	2.20	0.42
3:D:130:GLU:OE2	3:D:137:THR:HG23	2.19	0.42
3:F:1:ASN:HB2	3:F:102:VAL:HG21	2.01	0.42
2:C:130:PHE:CE2	3:D:130:GLU:HG3	2.54	0.42
1:A:380:SER:O	1:B:56:LYS:HE2	2.20	0.42
3:D:157:ASP:OD1	3:D:195:ARG:HB2	2.19	0.42
1:A:127:SER:OG	1:A:129:HIS:N	2.50	0.42
1:B:341:ALA:HB1	1:B:343:TYR:HD2	1.83	0.42
2:C:155:PRO:HG2	2:C:210:PRO:HB3	2.01	0.42
1:A:67:GLU:HG2	1:B:372:ARG:HB3	2.02	0.42
1:A:323:LEU:HD22	1:B:38[B]:MET:HG2	2.02	0.42
1:B:296:ARG:HB2	1:B:321:PHE:CE1	2.54	0.42
2:C:30:ARG:HD2	2:C:74:ASN:HB3	2.01	0.42
2:C:54:GLU:OE1	2:C:56:SER:N	2.53	0.42
2:E:51:ILE:HD11	2:E:79:LEU:HD12	2.02	0.42
1:B:213:GLU:O	1:B:214:ILE:HD13	2.19	0.42
2:E:14:PRO:HD3	2:E:121:SER:OG	2.20	0.42
2:E:51:ILE:HD12	2:E:72:ARG:HD2	2.02	0.42
1:A:162:LEU:HD13	1:A:164:VAL:O	2.20	0.42
2:E:89:GLU:OE1	2:E:89:GLU:N	2.52	0.42
2:E:1:GLN:HB3	2:E:2:VAL:H	1.59	0.41
3:F:17:THR:HG21	3:F:79:SER:CB	2.45	0.41
1:A:169:GLU:O	1:A:219:LEU:HA	2.20	0.41
2:C:154:PHE:O	2:C:155:PRO:C	2.59	0.41
3:D:15:GLY:O	3:D:80:GLY:HA2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:60:TYR:OH	2:E:69:THR:HA	2.20	0.41
1:A:222:HIS:HE2	1:B:169:GLU:CD	2.23	0.41
2:C:154:PHE:CD2	2:C:155:PRO:HD3	2.55	0.41
1:B:145:PRO:HG2	1:B:149:LEU:HD12	2.02	0.41
1:A:63:PRO:O	1:A:65:GLN:HG2	2.20	0.41
2:E:68:PHE:N	2:E:68:PHE:CD1	2.89	0.41
1:A:88:VAL:HG12	1:A:89:ALA:N	2.31	0.41
1:B:340:LEU:CG	1:B:341:ALA:H	2.33	0.41
1:B:131:ILE:HD11	1:B:250:ILE:HG23	2.02	0.41
2:C:135:SER:OG	2:C:136:SER:N	2.53	0.41
3:F:16:LYS:HA	3:F:16:LYS:HD3	1.90	0.41
3:F:86:GLU:CG	3:F:111:VAL:H	2.34	0.41
1:B:56:LYS:HE3	1:B:103:TYR:O	2.21	0.40
1:B:75:GLU:HG3	6:B:503:HOH:O	2.21	0.40
2:C:12:VAL:HG22	2:C:16:ARG:HB2	2.03	0.40
2:C:209:LYS:HB2	2:C:210:PRO:HD3	2.02	0.40
2:E:167:LEU:HD21	2:E:190:VAL:HG11	2.03	0.40
2:C:83:MET:HB3	2:C:86:LEU:HD21	2.02	0.40
2:C:212:ASN:HA	2:C:214:LYS:HE3	2.03	0.40
1:A:44:LYS:N	1:A:44:LYS:HD3	2.34	0.40
1:B:359:GLN:HG3	1:B:388:LYS:HD3	2.02	0.40
1:A:84:THR:CG2	1:A:108:VAL:HG11	2.52	0.40
1:B:370:VAL:HG11	1:B:375:LYS:CE	2.51	0.40
1:B:114:VAL:HG22	1:B:134:PHE:O	2.22	0.40
1:B:185:ARG:HG3	1:B:198:PHE:CE2	2.56	0.40
3:D:55:ARG:HD2	6:D:304:HOH:O	2.22	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 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	237/361 (66%)	223 (94%)	11 (5%)	3 (1%)	12	9
1	B	281/361 (78%)	258 (92%)	20 (7%)	3 (1%)	14	11
2	C	216/233 (93%)	204 (94%)	11 (5%)	1 (0%)	29	30
2	E	221/233 (95%)	211 (96%)	9 (4%)	1 (0%)	29	30
3	D	212/218 (97%)	201 (95%)	10 (5%)	1 (0%)	29	30
3	F	212/218 (97%)	205 (97%)	7 (3%)	0	100	100
All	All	1379/1624 (85%)	1302 (94%)	68 (5%)	9 (1%)	22	21

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	175	SER
2	C	154	PHE
1	A	313	GLU
2	E	56	SER
1	B	251	HIS
1	B	125	LYS
1	A	256	PRO
1	A	320	ASN
3	D	114	GLN

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	234/321 (73%)	225 (96%)	9 (4%)	33	41
1	B	265/321 (83%)	256 (97%)	9 (3%)	37	46
2	C	182/195 (93%)	175 (96%)	7 (4%)	33	41
2	E	185/195 (95%)	181 (98%)	4 (2%)	52	64
3	D	187/191 (98%)	179 (96%)	8 (4%)	29	35
3	F	187/191 (98%)	183 (98%)	4 (2%)	53	65
All	All	1240/1414 (88%)	1199 (97%)	41 (3%)	38	47

All (41) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	110	ARG
1	A	158	LEU
1	A	226	ASP
1	A	257	PHE
1	A	293	CYS
1	A	313	GLU
1	A	323	LEU
1	A	388	LYS
1	A	389	CYS
1	B	118	ASN
1	B	138	SER
1	B	145	PRO
1	B	157	LEU
1	B	174	TYR
1	B	225	CYS
1	B	296	ARG
1	B	344	ASN
1	B	375	LYS
2	C	113	GLN
2	C	123	SER
2	C	161	SER
2	C	163	ASN
2	C	169	SER
2	C	195	SER
2	C	204	CYS
3	D	6	GLN
3	D	38	GLN
3	D	115	PRO
3	D	127	SER
3	D	143	SER
3	D	168	THR
3	D	193	SER
3	D	199	CYS
2	E	17	SER
2	E	25	SER
2	E	75	SER
2	E	123	SER
3	F	1	ASN
3	F	70	SER
3	F	181	SER
3	F	211	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
3	D	134	ASN
3	D	190	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](#)

5 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	1,4	14,14,15	0.35	0	17,19,21	0.65	0
4	NAG	G	2	4	14,14,15	0.37	0	17,19,21	0.75	1 (5%)
4	BMA	G	3	4	11,11,12	1.04	0	15,15,17	1.39	3 (20%)
4	MAN	G	4	4	11,11,12	1.60	3 (27%)	15,15,17	1.14	2 (13%)
4	MAN	G	5	4	11,11,12	1.58	3 (27%)	15,15,17	1.50	4 (26%)

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	1,4	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	G	2	4	-	2/6/23/26	0/1/1/1
4	BMA	G	3	4	-	0/2/19/22	0/1/1/1
4	MAN	G	4	4	-	0/2/19/22	0/1/1/1
4	MAN	G	5	4	-	2/2/19/22	0/1/1/1

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	G	5	MAN	C2-C3	3.50	1.57	1.52
4	G	4	MAN	C1-C2	3.24	1.59	1.52
4	G	5	MAN	C1-C2	2.59	1.58	1.52
4	G	4	MAN	O5-C5	2.45	1.48	1.43
4	G	5	MAN	O5-C5	2.16	1.47	1.43
4	G	4	MAN	C2-C3	2.12	1.55	1.52

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	G	5	MAN	C1-O5-C5	3.60	117.07	112.19
4	G	4	MAN	C1-O5-C5	3.13	116.43	112.19
4	G	5	MAN	C1-C2-C3	2.69	112.98	109.67
4	G	2	NAG	C1-O5-C5	2.58	115.69	112.19
4	G	3	BMA	C1-O5-C5	2.56	115.67	112.19
4	G	3	BMA	O2-C2-C3	-2.25	105.62	110.14
4	G	3	BMA	C1-C2-C3	2.19	112.35	109.67
4	G	4	MAN	O2-C2-C3	-2.15	105.84	110.14
4	G	5	MAN	O2-C2-C3	-2.12	105.89	110.14
4	G	5	MAN	O3-C3-C2	2.06	113.94	109.99

There are no chirality outliers.

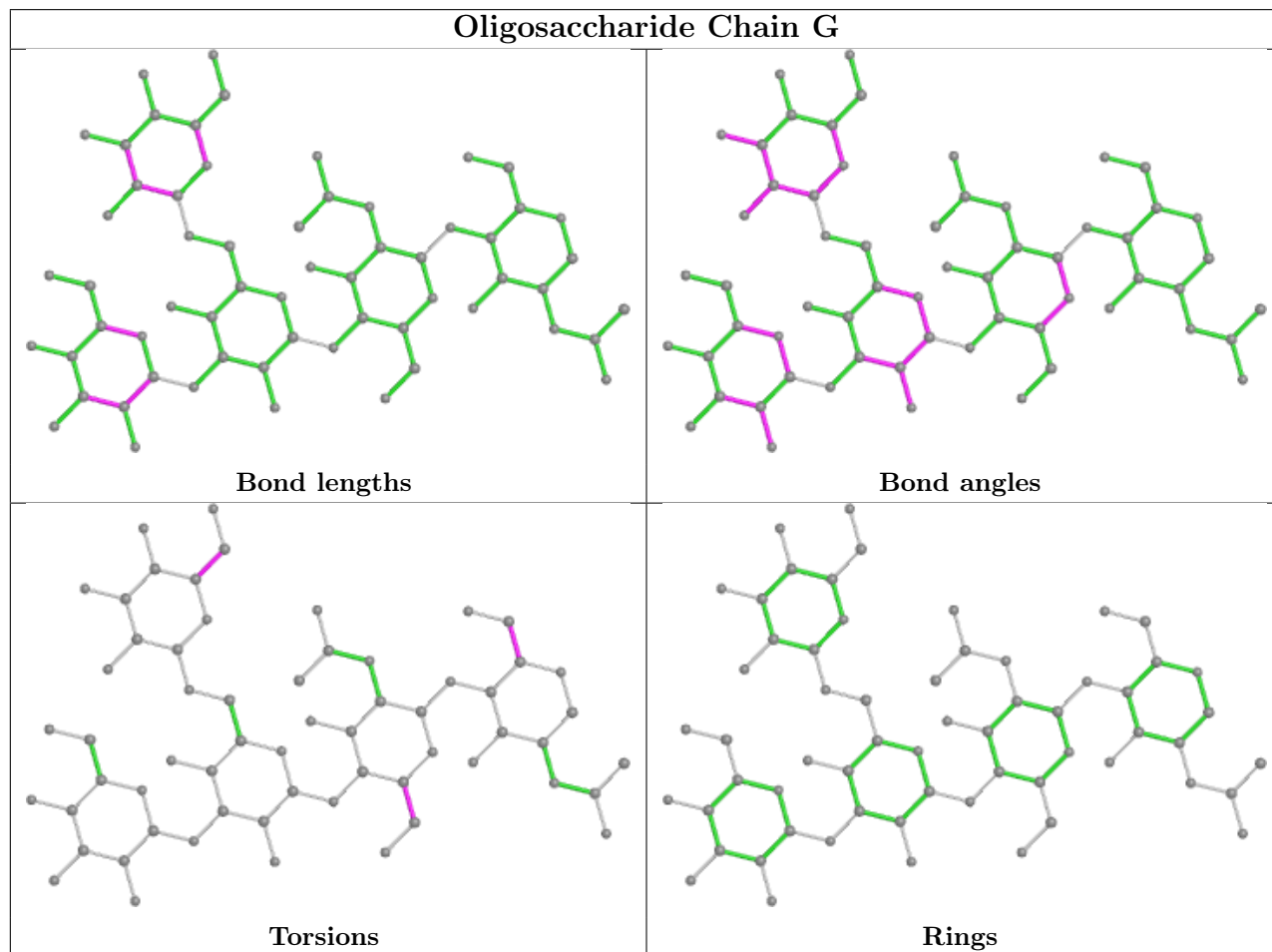
All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	G	2	NAG	O5-C5-C6-O6
4	G	5	MAN	O5-C5-C6-O6
4	G	2	NAG	C4-C5-C6-O6
4	G	1	NAG	C4-C5-C6-O6
4	G	1	NAG	O5-C5-C6-O6
4	G	5	MAN	C4-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](#)

2 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	A	401	1	14,14,15	0.38	0	17,19,21	0.49	0
5	NAG	B	401	1	14,14,15	0.72	0	17,19,21	0.68	1 (5%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	NAG	A	401	1	-	2/6/23/26	0/1/1/1
5	NAG	B	401	1	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	401	NAG	C1-O5-C5	2.32	115.33	112.19

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	401	NAG	C4-C5-C6-O6
5	A	401	NAG	O5-C5-C6-O6
5	B	401	NAG	O5-C5-C6-O6
5	B	401	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

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, 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	257/361 (71%)	0.93	46 (17%) 1 1	30, 95, 128, 136	0
1	B	294/361 (81%)	0.68	27 (9%) 9 7	49, 76, 119, 140	0
2	C	220/233 (94%)	1.32	57 (25%) 0 0	44, 88, 159, 186	0
2	E	223/233 (95%)	0.36	6 (2%) 54 52	54, 79, 114, 132	0
3	D	214/218 (98%)	0.64	14 (6%) 18 17	45, 78, 131, 158	0
3	F	214/218 (98%)	0.50	1 (0%) 91 90	43, 55, 81, 112	0
All	All	1422/1624 (87%)	0.74	151 (10%) 6 5	30, 76, 132, 186	0

All (151) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	C	191	THR	12.0
1	B	121	TYR	11.4
2	C	162	TRP	10.0
2	C	198	GLY	9.4
1	B	124	PHE	8.1
1	A	87	ARG	7.9
3	D	186	LEU	7.4
2	C	160	VAL	7.1
2	C	146	LEU	7.1
1	A	66	GLY	7.0
2	C	142	GLY	6.9
2	C	219	VAL	6.8
1	B	187	LEU	6.3
2	C	168	THR	5.9
2	C	215	VAL	5.9
2	C	154	PHE	5.8
1	B	161	LYS	5.6
1	A	88	VAL	5.2
1	A	230	ASN	5.2

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Mol	Chain	Res	Type	RSRZ
2	C	213	THR	5.1
2	C	134	PRO	4.8
2	E	70	ILE	4.7
1	B	165	GLU	4.7
2	C	202	TYR	4.5
2	C	206	VAL	4.5
1	A	327	PRO	4.5
2	C	171	VAL	4.4
1	B	186	LEU	4.4
1	A	195	TRP	4.3
1	A	75	GLU	4.3
2	C	136	SER	4.3
3	D	130	GLU	4.2
2	C	195	SER	4.2
2	C	127	PRO	4.2
2	C	173	THR	4.1
2	C	140	SER	4.0
2	C	161	SER	4.0
2	E	88	ALA	3.9
1	B	174	TYR	3.9
1	B	237	ASN	3.9
1	A	140	LEU	3.9
2	C	196	SER	3.9
3	D	137	THR	3.8
1	A	162	LEU	3.8
1	B	68	VAL	3.8
1	A	133	MET	3.8
2	C	197	LEU	3.8
2	C	192	VAL	3.8
2	C	132	LEU	3.8
2	C	124	THR	3.7
2	C	203	ILE	3.7
3	D	133	ALA	3.7
2	C	199	THR	3.7
3	D	174	SER	3.7
1	A	134	PHE	3.6
3	D	212	VAL	3.6
2	C	122	ALA	3.6
2	C	150	VAL	3.5
1	B	232	LEU	3.5
2	C	130	PHE	3.5
1	A	257	PHE	3.4

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Mol	Chain	Res	Type	RSRZ
1	B	340	LEU	3.4
1	A	232	LEU	3.4
1	A	163	LYS	3.4
1	B	120	ILE	3.3
1	A	144	VAL	3.3
1	A	132	TYR	3.3
1	A	217	PHE	3.3
1	A	69	PRO	3.2
3	D	173	GLN	3.2
2	E	59	TYR	3.2
2	C	200	GLN	3.2
1	A	89	ALA	3.2
2	C	169	SER	3.2
2	C	170	GLY	3.2
2	C	129	VAL	3.2
1	B	67	GLU	3.1
2	C	166	ALA	3.1
1	A	207	TRP	3.1
2	C	218	LYS	3.1
2	C	212	ASN	3.1
2	C	167	LEU	3.0
3	D	185	SER	3.0
2	C	220	GLU	2.9
2	C	184	TYR	2.9
2	C	30	ARG	2.9
1	B	87	ARG	2.9
1	A	147	PRO	2.9
3	D	135	LYS	2.9
2	C	204	CYS	2.9
2	C	159	THR	2.8
1	B	239	PHE	2.8
1	A	166	GLN	2.8
2	C	193	PRO	2.8
2	C	143	THR	2.8
1	A	155	LEU	2.7
2	C	174	PHE	2.7
1	A	196	LEU	2.7
1	A	214	ILE	2.7
1	B	163	LYS	2.7
1	A	79	ALA	2.7
1	A	164	VAL	2.6
1	A	226	ASP	2.6

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Mol	Chain	Res	Type	RSRZ
2	C	214	LYS	2.5
1	B	192	SER	2.5
3	D	131	LEU	2.5
3	D	136	ALA	2.5
1	B	175	SER	2.5
1	B	131	ILE	2.5
1	A	143	ALA	2.5
1	A	127	SER	2.5
2	C	194	SER	2.5
2	C	216	ASP	2.5
1	A	135	PHE	2.4
2	C	172	HIS	2.4
2	C	57	LEU	2.4
2	C	209	LYS	2.4
1	A	236	ILE	2.4
1	B	164	VAL	2.4
1	B	328	TYR	2.4
1	A	80	LEU	2.4
2	C	59	TYR	2.3
1	A	187	LEU	2.3
1	B	327	PRO	2.3
2	E	86	LEU	2.3
1	A	233	GLN	2.3
1	A	170	LEU	2.3
2	C	1	GLN	2.3
2	E	209	LYS	2.3
1	A	171	TYR	2.3
1	A	218	ARG	2.3
1	A	313	GLU	2.2
1	A	136	ASN	2.2
1	B	240	THR	2.2
1	A	145	PRO	2.2
1	B	373	LYS	2.2
1	A	158	LEU	2.2
2	C	164	SER	2.2
3	D	127	SER	2.2
2	C	149	LEU	2.2
1	B	129	HIS	2.1
1	A	206	GLN	2.1
1	B	233	GLN	2.1
1	A	128	THR	2.1
2	E	57	LEU	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	226	ASP	2.1
3	F	1	ASN	2.1
3	D	156	ALA	2.1
3	D	129	GLU	2.0
1	A	314	PRO	2.0
1	A	113	MET	2.0

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

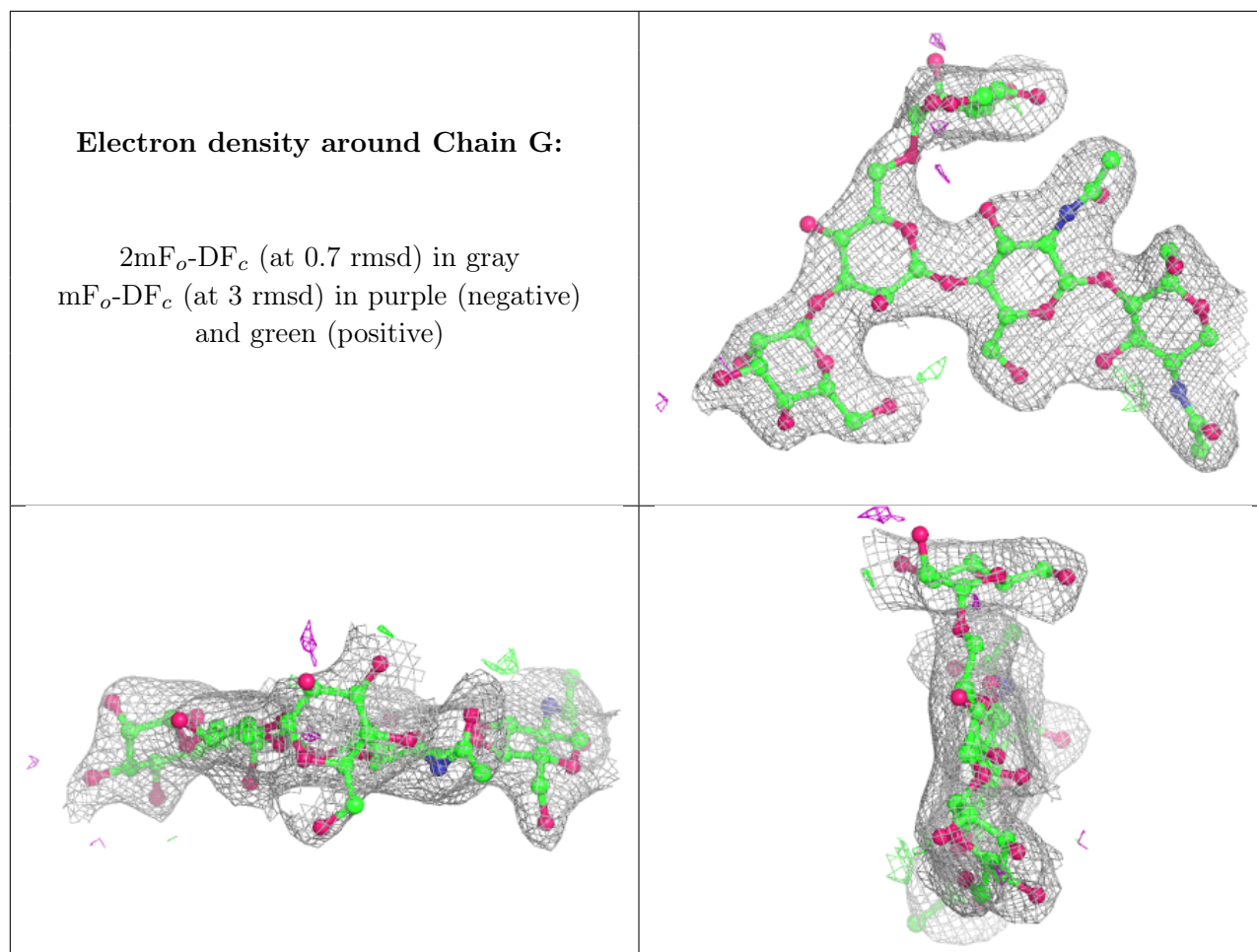
There are no non-standard protein/DNA/RNA residues in this entry.

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	MAN	G	5	11/12	0.62	0.22	107,113,115,120	0
4	NAG	G	2	14/15	0.88	0.12	78,85,93,95	0
4	BMA	G	3	11/12	0.90	0.13	86,91,100,110	0
4	MAN	G	4	11/12	0.91	0.14	79,81,86,86	0
4	NAG	G	1	14/15	0.95	0.11	66,72,79,84	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(\AA^2)	Q<0.9
5	NAG	B	401	14/15	0.80	0.14	104,111,120,120	0
5	NAG	A	401	14/15	0.82	0.24	110,120,125,125	0

6.5 Other polymers [i](#)

There are no such residues in this entry.