



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 19, 2018 – 11:00 PM EST

PDB ID : 2WII
Title : Complement C3b in complex with factor H domains 1-4
Authors : Wu, J.; Janssen, B.J.C.; Gros, P.
Deposited on : 2009-05-12
Resolution : 2.70 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

<http://wwpdb.org/validation/2016/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7.2 (RC1), CSD as538be (2017)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20030736
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : rb-20030736

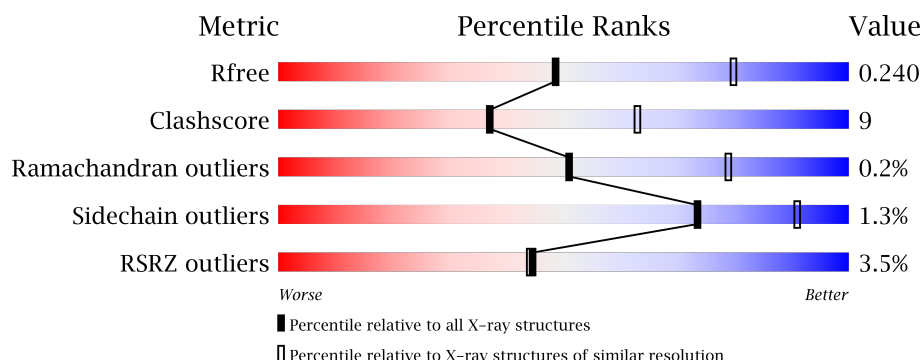
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.70 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}	100719	2259 (2.70-2.70)
Clashscore	112137	2590 (2.70-2.70)
Ramachandran outliers	110173	2550 (2.70-2.70)
Sidechain outliers	110143	2550 (2.70-2.70)
RSRZ outliers	101464	2275 (2.70-2.70)

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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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	645	<div> <div style="width: 100%; height: 10px; background-color: red;"></div> <div style="display: flex; justify-content: space-between;"> 78% 21% </div> </div>
2	B	915	<div> <div style="width: 100%; height: 10px; background-color: red;"></div> <div style="display: flex; justify-content: space-between;"> 77% 21% </div> </div>
3	C	277	<div> <div style="width: 100%; height: 10px; background-color: red;"></div> <div style="display: flex; justify-content: space-between;"> 68% 20% 12% </div> </div>

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
5	GOL	A	1644	-	-	-	X
5	GOL	A	1645	-	-	-	X
5	GOL	A	1646	-	-	-	X
5	GOL	B	2642	-	-	-	X
5	GOL	B	2643	-	-	-	X
5	GOL	B	2645	-	-	-	X
5	GOL	B	2646	-	-	-	X
5	GOL	B	2647	-	-	-	X
5	GOL	B	2648	-	-	-	X
5	GOL	B	2649	-	-	-	X
5	GOL	B	2651	-	-	-	X
5	GOL	B	2652	-	-	-	X
5	GOL	B	2653	-	-	-	X
5	GOL	C	1248	-	-	-	X

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 14442 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 COMPLEMENT C3 BETA CHAIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	640	Total	C	N	O	S	0	0	0
			4992	3179	846	952	15			

- Molecule 2 is a protein called COMPLEMENT C3B ALPHA' CHAIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	896	Total	C	N	O	S	0	0	0
			7157	4536	1203	1380	38			

- Molecule 3 is a protein called COMPLEMENT FACTOR H.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	245	Total	C	N	O	S	0	0	0
			1932	1206	330	376	20			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	44	ILE	VAL	variant	UNP P08603

- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Ca	0	0
			1	1		

- Molecule 5 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃).



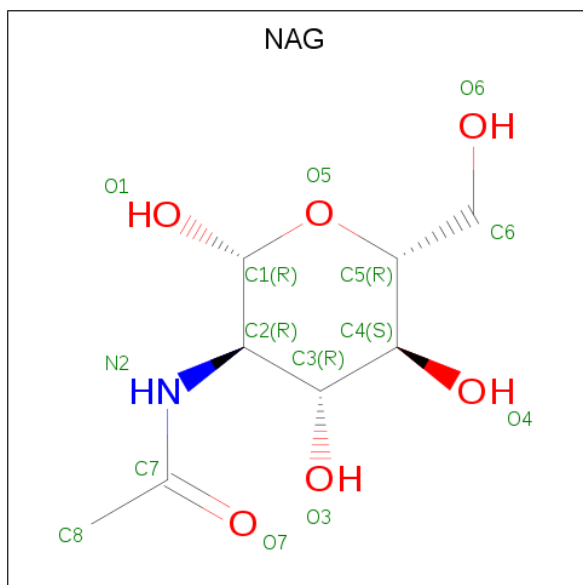
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	O	0	0
			6	3	3		
5	A	1	Total	C	O	0	0
			6	3	3		
5	A	1	Total	C	O	0	0
			6	3	3		
5	B	1	Total	C	O	0	0
			6	3	3		
5	B	1	Total	C	O	0	0
			6	3	3		
5	B	1	Total	C	O	0	0
			6	3	3		
5	B	1	Total	C	O	0	0
			6	3	3		
5	B	1	Total	C	O	0	0
			6	3	3		
5	B	1	Total	C	O	0	0
			6	3	3		
5	B	1	Total	C	O	0	0
			6	3	3		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	B	1	Total	C	O	0	0
			6	3	3		
5	B	1	Total	C	O	0	0
			6	3	3		
5	C	1	Total	C	O	0	0
			6	3	3		

- Molecule 6 is N-ACETYL-D-GLUCOSAMINE (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



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

- Molecule 7 is BETA-D-MANNOSE (three-letter code: BMA) (formula: $C_6H_{12}O_6$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	A	1	Total	C	O	0	0
			11	6	5		
7	A	1	Total	C	O	0	0
			11	6	5		
7	A	1	Total	C	O	0	0
			11	6	5		
7	A	1	Total	C	O	0	0
			11	6	5		

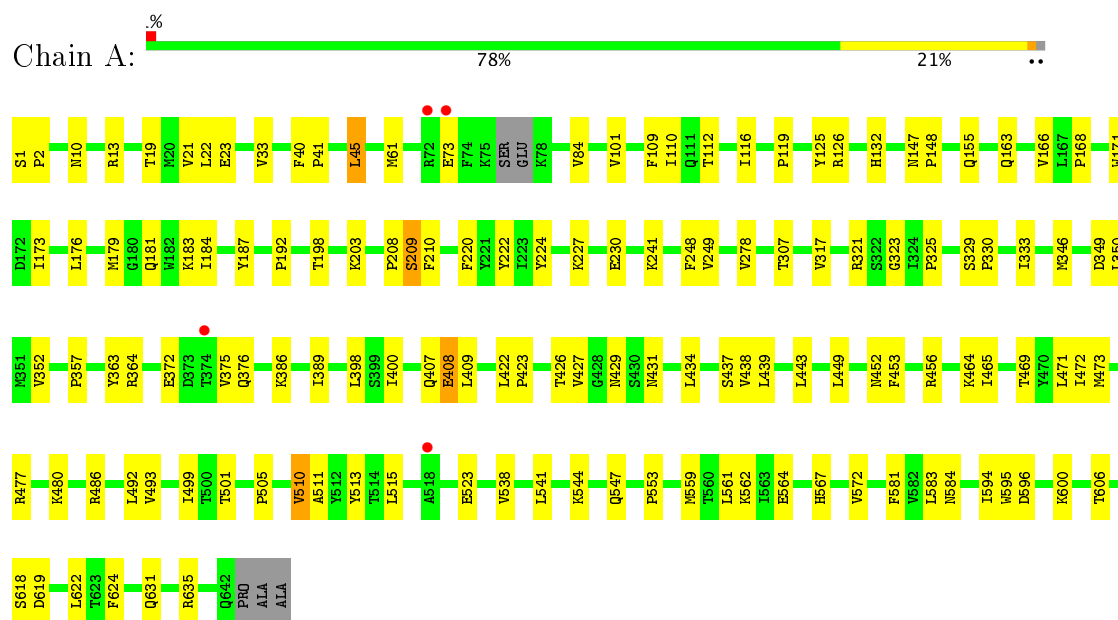
- Molecule 8 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	A	74	Total	O	0	0
			74	74		
8	B	81	Total	O	0	0
			81	81		
8	C	17	Total	O	0	0
			17	17		

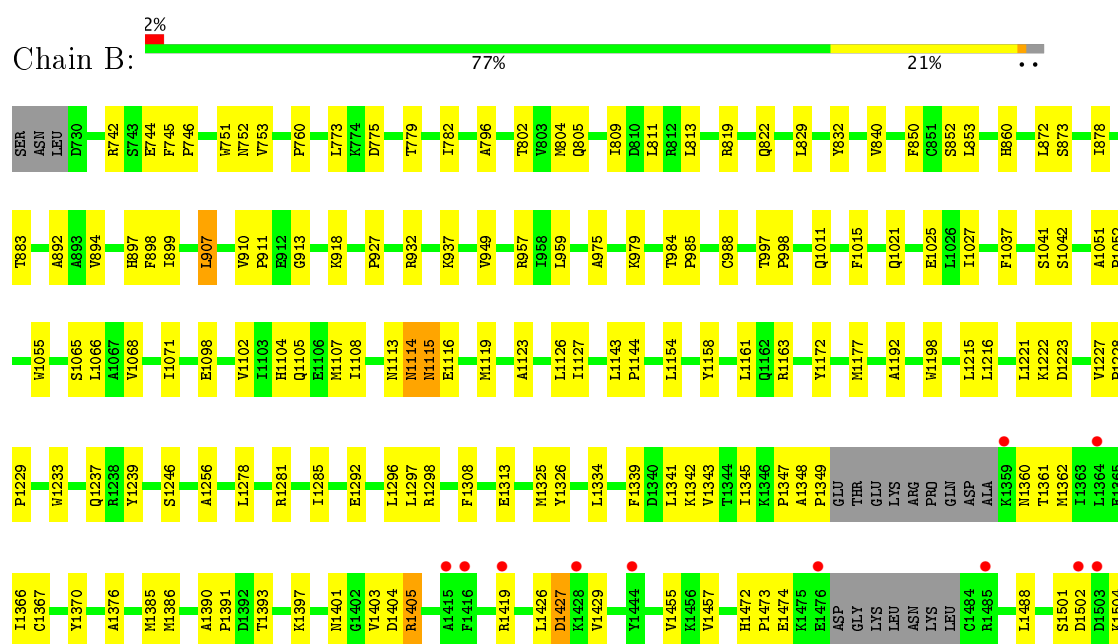
3 Residue-property plots

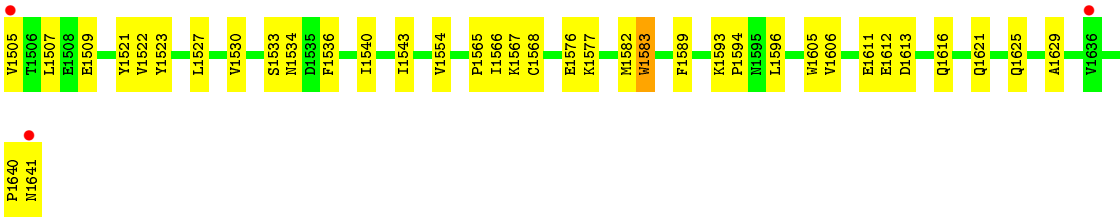
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are 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: COMPLEMENT C3 BETA CHAIN

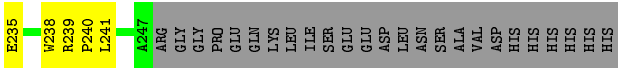
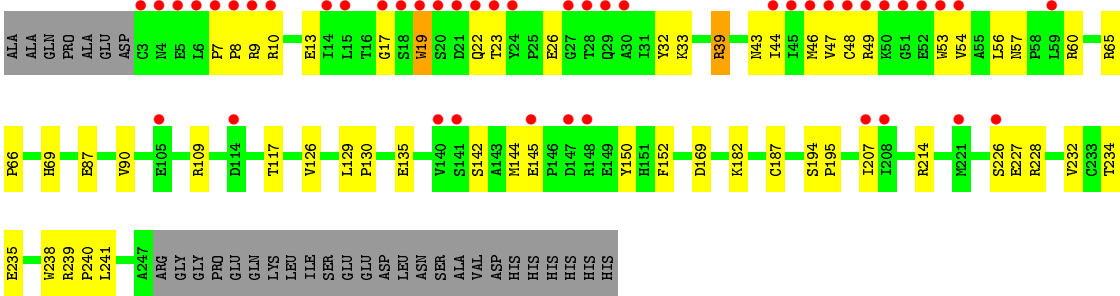


• Molecule 2: COMPLEMENT C3B ALPHA' CHAIN





● Molecule 3: COMPLEMENT FACTOR H



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α , β , γ	223.49 Å 84.95 Å 128.77 Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	64.48 – 2.70 64.48 – 2.70	Depositor EDS
% Data completeness (in resolution range)	99.6 (64.48-2.70) 99.6 (64.48-2.70)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.84 (at 2.69 Å)	Xtriage
Refinement program	PHENIX (PHENIX.REFINE)	Depositor
R, R_{free}	0.217 , 0.252 0.203 , 0.240	Depositor DCC
R_{free} test set	3434 reflections (5.06%)	DCC
Wilson B-factor (Å ²)	52.8	Xtriage
Anisotropy	0.401	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 39.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	14442	wwPDB-VP
Average B, all atoms (Å ²)	68.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.68% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, CA, BMA, 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	0.21	0/5092	0.37	0/6917
2	B	0.21	0/7300	0.36	0/9884
3	C	0.21	0/1981	0.37	0/2683
All	All	0.21	0/14373	0.36	0/19484

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

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	4992	0	5055	83	0
2	B	7157	0	7076	139	0
3	C	1932	0	1820	40	0
4	A	1	0	0	0	0
5	A	18	0	24	1	0
5	B	78	0	104	7	0
5	C	6	0	8	0	0
6	A	28	0	24	1	0
6	B	14	0	13	0	0
7	A	44	0	37	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	A	74	0	0	0	0
8	B	81	0	0	0	0
8	C	17	0	0	0	0
All	All	14442	0	14161	254	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 9.

All (254) 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)
2:B:1405:ARG:HG3	2:B:1405:ARG:HH11	1.28	0.96
2:B:840:VAL:HG22	2:B:894:VAL:HG12	1.56	0.88
3:C:49:ARG:HE	3:C:54:VAL:HG21	1.40	0.86
2:B:1640:PRO:O	2:B:1641:ASN:HB2	1.80	0.82
1:A:452:ASN:HB3	1:A:492:LEU:HD11	1.65	0.77
2:B:753:VAL:HG23	5:B:2649:GOL:H2	1.67	0.76
2:B:742:ARG:HB3	2:B:775:ASP:HB3	1.67	0.75
2:B:850:PHE:HZ	2:B:907:LEU:HD11	1.51	0.75
2:B:1405:ARG:HG3	2:B:1405:ARG:NH1	1.97	0.73
2:B:1098:GLU:HG2	5:B:2653:GOL:H2	1.71	0.72
1:A:505:PRO:HG3	1:A:595:TRP:CE3	2.24	0.72
2:B:1027:ILE:HG22	2:B:1071:ILE:HD13	1.74	0.69
2:B:1126:LEU:HD21	2:B:1177:MET:CE	2.23	0.68
2:B:957:ARG:HG3	2:B:1325:MET:HE1	1.75	0.68
1:A:19:THR:HG21	6:A:1647:NAG:H82	1.76	0.68
2:B:811:LEU:HG	2:B:813:LEU:HD13	1.77	0.66
1:A:408:GLU:HG2	1:A:409:LEU:HD12	1.78	0.66
1:A:22:LEU:HD13	1:A:33:VAL:HG11	1.78	0.65
2:B:894:VAL:HG23	2:B:897:HIS:HB2	1.80	0.64
2:B:1341:LEU:HD12	2:B:1457:VAL:HG22	1.80	0.64
1:A:330:PRO:HG2	1:A:409:LEU:HD21	1.80	0.63
1:A:443:LEU:HD21	1:A:499:ILE:HG13	1.81	0.62
1:A:176:LEU:HD21	5:B:2646:GOL:H32	1.82	0.62
3:C:22:GLN:HG3	3:C:23:THR:HG23	1.81	0.61
1:A:23:GLU:HG2	1:A:61:MET:HG3	1.83	0.61
2:B:1228:PRO:HB2	2:B:1229:PRO:HD3	1.83	0.61
3:C:194:SER:HB2	3:C:207:ILE:HA	1.82	0.61
1:A:116:ILE:HD11	1:A:203:LYS:HB3	1.83	0.60
2:B:959:LEU:HD22	2:B:1297:LEU:HD11	1.83	0.59
1:A:1:SER:HB3	1:A:2:PRO:HD3	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1376:ALA:HB3	2:B:1429:VAL:HG22	1.85	0.59
2:B:852:SER:HA	2:B:1488:LEU:HD11	1.85	0.59
2:B:1403:VAL:HG13	2:B:1405:ARG:HG3	1.86	0.57
2:B:850:PHE:CZ	2:B:907:LEU:HD11	2.37	0.57
1:A:438:VAL:HG13	1:A:449:LEU:HD11	1.86	0.57
3:C:32:TYR:CE2	3:C:46:MET:HG3	2.40	0.57
1:A:208:PRO:O	1:A:209:SER:HB3	2.05	0.56
1:A:45:LEU:HD21	1:A:73:GLU:HG3	1.88	0.56
1:A:426:THR:HG23	1:A:429:ASN:HA	1.88	0.56
2:B:932:ARG:HH12	2:B:937:LYS:HB2	1.70	0.55
2:B:1405:ARG:HD3	2:B:1426:LEU:HD22	1.87	0.55
2:B:1341:LEU:CD2	2:B:1343:VAL:HG23	2.36	0.55
2:B:1370:TYR:CD1	2:B:1376:ALA:HB2	2.42	0.55
2:B:1533:SER:HB3	2:B:1536:PHE:O	2.07	0.55
3:C:17:GLY:HA3	3:C:19:TRP:CZ3	2.42	0.54
3:C:10:ARG:HB2	3:C:13:GLU:HB2	1.90	0.54
2:B:1143:LEU:HB3	2:B:1144:PRO:HD3	1.88	0.54
3:C:57:ASN:HB3	3:C:60:ARG:HB3	1.90	0.54
1:A:147:ASN:HB2	1:A:148:PRO:HD2	1.88	0.54
1:A:181:GLN:O	1:A:183:LYS:HE3	2.08	0.54
2:B:1104:HIS:O	2:B:1107:MET:HG2	2.08	0.54
3:C:126:VAL:HG22	3:C:152:PHE:HB2	1.90	0.54
3:C:169:ASP:OD1	3:C:182:LYS:HD2	2.08	0.53
3:C:47:VAL:HG21	3:C:56:LEU:HD12	1.89	0.53
3:C:39:ARG:HG2	3:C:65:ARG:HA	1.90	0.53
7:A:1649:BMA:H4	7:A:1652:BMA:O2	2.08	0.53
2:B:1114:ASN:O	2:B:1115:ASN:O	2.25	0.53
2:B:1593:LYS:HB3	2:B:1594:PRO:HD3	1.90	0.53
1:A:13:ARG:HH11	1:A:132:HIS:CD2	2.26	0.53
2:B:1192:ALA:HB2	2:B:1198:TRP:CZ2	2.43	0.53
1:A:567:HIS:CG	2:B:760:PRO:HG3	2.44	0.52
2:B:1119:MET:HG3	2:B:1161:LEU:HD21	1.91	0.52
1:A:227:LYS:HD3	1:A:230:GLU:OE2	2.09	0.52
2:B:1347:PRO:HA	2:B:1362:MET:HG2	1.90	0.52
2:B:1589:PHE:HB3	2:B:1596:LEU:HD11	1.90	0.52
2:B:913:GLY:HA3	2:B:949:VAL:HG21	1.90	0.52
1:A:472:ILE:HD12	1:A:480:LYS:HB3	1.92	0.52
2:B:1403:VAL:HG13	2:B:1405:ARG:CG	2.40	0.52
1:A:561:LEU:HD21	2:B:782:ILE:HD13	1.92	0.52
3:C:19:TRP:H	3:C:19:TRP:HE3	1.58	0.52
2:B:872:LEU:HD23	2:B:873:SER:N	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:997:THR:HB	2:B:998:PRO:HD3	1.90	0.51
2:B:1391:PRO:HD2	2:B:1419:ARG:HD3	1.91	0.51
2:B:809:ILE:HD11	2:B:892:ALA:HB3	1.93	0.51
1:A:544:LYS:HD2	1:A:562:LYS:HD2	1.93	0.51
1:A:510:VAL:HG11	1:A:622:LEU:HD12	1.91	0.51
2:B:1385:MET:HG3	2:B:1391:PRO:HD3	1.92	0.51
2:B:1521:TYR:HB2	2:B:1523:TYR:CZ	2.46	0.51
1:A:389:ILE:HD11	1:A:398:LEU:HD21	1.93	0.51
2:B:1370:TYR:CG	2:B:1376:ALA:HB2	2.46	0.51
1:A:464:LYS:HE3	1:A:515:LEU:HA	1.93	0.51
3:C:234:THR:HG22	3:C:235:GLU:N	2.25	0.51
1:A:350:LEU:HD21	1:A:400:ILE:HG21	1.93	0.50
2:B:1501:SER:O	2:B:1505:VAL:HG23	2.11	0.50
2:B:819:ARG:HE	2:B:883:THR:HG23	1.77	0.50
3:C:32:TYR:HB2	3:C:44:ILE:O	2.10	0.50
2:B:1472:HIS:CD2	2:B:1473:PRO:HD2	2.47	0.50
2:B:1192:ALA:HB2	2:B:1198:TRP:CE2	2.47	0.50
2:B:1298:ARG:HH12	3:C:144:MET:HG3	1.76	0.50
2:B:1239:TYR:OH	2:B:1246:SER:HB2	2.12	0.50
2:B:744:GLU:C	2:B:746:PRO:HD3	2.32	0.50
2:B:1393:THR:O	2:B:1397:LYS:HG3	2.12	0.49
1:A:208:PRO:O	1:A:209:SER:CB	2.60	0.49
2:B:898:PHE:CZ	3:C:39:ARG:HD3	2.47	0.49
3:C:109:ARG:HG2	3:C:117:THR:O	2.12	0.49
2:B:894:VAL:CG2	2:B:897:HIS:HB2	2.42	0.49
1:A:349:ASP:HB3	1:A:386:LYS:HE3	1.93	0.49
2:B:1403:VAL:O	2:B:1405:ARG:HG2	2.13	0.49
7:A:1649:BMA:H4	7:A:1652:BMA:C2	2.43	0.48
2:B:1126:LEU:HD21	2:B:1177:MET:HE1	1.95	0.48
1:A:249:VAL:HG11	1:A:278:VAL:HG11	1.95	0.48
3:C:48:CYS:HB2	3:C:53:TRP:CZ3	2.49	0.48
2:B:1345:ILE:HD11	2:B:1362:MET:HB3	1.96	0.48
1:A:241:LYS:HG3	2:B:832:TYR:CE2	2.49	0.48
2:B:822:GLN:OE1	2:B:1488:LEU:HD23	2.14	0.48
2:B:745:PHE:N	2:B:746:PRO:HD3	2.28	0.48
2:B:1386:MET:SD	2:B:1473:PRO:HD3	2.54	0.48
1:A:544:LYS:HG3	1:A:562:LYS:HB3	1.95	0.47
3:C:142:SER:HB2	3:C:150:TYR:OH	2.15	0.47
1:A:606:THR:OG1	1:A:619:ASP:HB3	2.14	0.47
3:C:19:TRP:HE3	3:C:19:TRP:N	2.12	0.47
1:A:155:GLN:HG3	2:B:1296:LEU:HD13	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1341:LEU:HD23	2:B:1342:LYS:N	2.30	0.47
2:B:1068:VAL:O	3:C:228:ARG:HD2	2.14	0.47
1:A:10:ASN:HD21	1:A:618:SER:HA	1.80	0.47
2:B:1233:TRP:O	2:B:1237:GLN:HG2	2.14	0.47
2:B:1419:ARG:O	2:B:1419:ARG:HG2	2.15	0.47
2:B:907:LEU:H	2:B:907:LEU:HD12	1.79	0.47
3:C:195:PRO:HG3	3:C:238:TRP:NE1	2.30	0.47
1:A:464:LYS:HD3	1:A:515:LEU:HB2	1.97	0.46
2:B:988:CYS:HA	2:B:1037:PHE:CZ	2.50	0.46
1:A:323:GLY:O	1:A:325:PRO:HD3	2.15	0.46
2:B:1115:ASN:C	2:B:1116:GLU:HG2	2.35	0.46
2:B:1534:ASN:O	2:B:1566:ILE:HD13	2.16	0.46
1:A:187:TYR:CD1	1:A:192:PRO:HA	2.51	0.46
3:C:7:PRO:HA	3:C:8:PRO:HD3	1.79	0.46
1:A:426:THR:HG21	1:A:431:ASN:H	1.80	0.46
3:C:234:THR:HG22	3:C:235:GLU:H	1.80	0.46
1:A:437:SER:OG	1:A:452:ASN:HB2	2.15	0.46
1:A:163:GLN:HB3	1:A:166:VAL:O	2.16	0.46
2:B:1611:GLU:HA	5:B:2652:GOL:H12	1.98	0.46
2:B:1522:VAL:HG22	2:B:1583:TRP:HB2	1.98	0.46
2:B:753:VAL:CG2	5:B:2649:GOL:H2	2.41	0.46
1:A:171:TRP:CZ3	1:A:173:ILE:HG12	2.52	0.45
3:C:238:TRP:HB2	3:C:241:LEU:HD23	1.97	0.45
3:C:226:SER:O	3:C:227:GLU:HB2	2.17	0.45
2:B:1341:LEU:HD11	2:B:1455:VAL:HG12	1.98	0.45
2:B:1341:LEU:HD21	2:B:1343:VAL:HG23	1.98	0.45
1:A:407:GLN:O	1:A:408:GLU:CB	2.64	0.45
2:B:1521:TYR:O	2:B:1583:TRP:HB2	2.16	0.45
1:A:469:THR:O	1:A:511:ALA:HA	2.17	0.45
2:B:1102:VAL:HG22	5:B:2653:GOL:O3	2.16	0.45
2:B:1583:TRP:C	2:B:1583:TRP:CD1	2.90	0.45
2:B:1105:GLN:O	2:B:1108:ILE:HG12	2.17	0.45
2:B:1339:PHE:HE2	2:B:1429:VAL:HG21	1.82	0.45
1:A:112:THR:HG22	1:A:125:TYR:HB3	1.99	0.45
2:B:1582:MET:HE3	2:B:1606:VAL:HG22	1.98	0.45
1:A:222:TYR:CE2	1:A:224:TYR:HB2	2.52	0.45
1:A:329:SER:HA	1:A:330:PRO:HD3	1.81	0.45
2:B:979:LYS:HD3	2:B:1015:PHE:CE1	2.52	0.45
2:B:918:LYS:HE2	2:B:1326:TYR:OH	2.17	0.45
2:B:1576:GLU:O	2:B:1577:LYS:HB2	2.17	0.45
1:A:126:ARG:HG3	2:B:751:TRP:CZ2	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:501:THR:HB	1:A:538:VAL:HG13	1.99	0.44
1:A:109:PHE:CZ	1:A:594:ILE:HG23	2.51	0.44
2:B:1154:LEU:O	2:B:1158:TYR:HB2	2.17	0.44
1:A:330:PRO:O	1:A:357:PRO:HD3	2.17	0.44
1:A:596:ASP:O	1:A:600:LYS:HG2	2.16	0.44
2:B:1041:SER:O	2:B:1042:SER:HB2	2.18	0.44
2:B:1582:MET:HA	2:B:1605:TRP:O	2.16	0.44
2:B:1278:LEU:HD23	2:B:1308:PHE:HB3	2.00	0.44
2:B:853:LEU:HD12	2:B:860:HIS:CE1	2.52	0.44
3:C:56:LEU:HD23	3:C:56:LEU:O	2.17	0.44
1:A:465:ILE:HB	1:A:486:ARG:HH11	1.83	0.44
2:B:1278:LEU:HD12	2:B:1281:ARG:HG3	2.00	0.44
2:B:1360:ASN:OD1	2:B:1361:THR:N	2.51	0.44
1:A:350:LEU:CD2	1:A:400:ILE:HG21	2.48	0.44
2:B:1401:ASN:O	2:B:1403:VAL:HG12	2.18	0.44
1:A:624:PHE:O	1:A:631:GLN:HA	2.18	0.43
2:B:779:THR:OG1	2:B:802:THR:HG22	2.17	0.43
1:A:126:ARG:CZ	1:A:572:VAL:HB	2.48	0.43
2:B:1113:ASN:O	2:B:1114:ASN:C	2.57	0.43
1:A:110:ILE:HB	1:A:198:THR:OG1	2.19	0.43
1:A:456:ARG:HA	5:A:1646:GOL:O3	2.18	0.43
2:B:1123:ALA:O	2:B:1127:ILE:HG13	2.19	0.43
1:A:363:TYR:CZ	1:A:364:ARG:HG3	2.53	0.43
2:B:1051:ALA:HA	2:B:1052:PRO:HD3	1.92	0.43
2:B:1066:LEU:O	2:B:1066:LEU:HD23	2.18	0.43
2:B:1540:ILE:N	2:B:1540:ILE:HD12	2.33	0.43
1:A:84:VAL:HG13	1:A:101:VAL:HG21	2.00	0.43
2:B:1390:ALA:HA	2:B:1391:PRO:HD3	1.92	0.43
2:B:1507:LEU:HD11	2:B:1629:ALA:HB3	2.00	0.43
1:A:422:LEU:HA	1:A:423:PRO:HD3	1.90	0.43
2:B:1543:ILE:HG13	2:B:1554:VAL:HG21	1.99	0.43
2:B:1565:PRO:HB2	2:B:1567:LYS:HG2	2.00	0.43
2:B:910:VAL:HG13	2:B:911:PRO:HD2	2.01	0.43
1:A:10:ASN:HB3	1:A:635:ARG:HD3	2.01	0.42
1:A:40:PHE:HA	1:A:41:PRO:HA	1.80	0.42
2:B:1342:LYS:HB2	2:B:1367:CYS:HB2	2.01	0.42
3:C:19:TRP:CE3	3:C:19:TRP:N	2.87	0.42
2:B:1404:ASP:HB3	2:B:1427:ASP:HB2	2.00	0.42
2:B:1565:PRO:HG2	2:B:1568:CYS:SG	2.59	0.42
2:B:1021:GLN:O	2:B:1025:GLU:HG2	2.19	0.42
2:B:1472:HIS:CG	2:B:1473:PRO:HD2	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1172:TYR:CE1	2:B:1216:LEU:HB3	2.54	0.42
1:A:220:PHE:HB3	1:A:357:PRO:HG2	2.00	0.42
1:A:453:PHE:HB2	1:A:493:VAL:CG2	2.49	0.42
1:A:434:LEU:HB2	1:A:513:TYR:HE2	1.84	0.42
2:B:1281:ARG:HH11	2:B:1285:ILE:HD11	1.85	0.42
2:B:1348:ALA:HA	2:B:1349:PRO:HD3	1.92	0.42
1:A:248:PHE:HB2	1:A:307:THR:HB	2.02	0.42
2:B:1391:PRO:HD2	2:B:1419:ARG:CD	2.50	0.42
3:C:135:GLU:O	3:C:187:CYS:HB2	2.19	0.42
1:A:166:VAL:O	1:A:168:PRO:HD3	2.19	0.42
2:B:1055:TRP:CZ2	2:B:1108:ILE:HA	2.55	0.42
1:A:553:PRO:HB3	2:B:773:LEU:CD1	2.50	0.42
2:B:804:MET:HG2	2:B:805:GLN:N	2.35	0.42
3:C:126:VAL:CG2	3:C:152:PHE:HB2	2.50	0.42
3:C:65:ARG:HA	3:C:66:PRO:HD3	1.79	0.42
2:B:984:THR:HA	2:B:985:PRO:HD3	1.92	0.42
1:A:333:ILE:HG23	1:A:352:VAL:HG13	2.01	0.41
1:A:372:GLU:HB3	1:A:375:VAL:HG23	2.02	0.41
2:B:1612:GLU:O	2:B:1616:GLN:HG2	2.20	0.41
1:A:547:GLN:NE2	1:A:559:MET:HG3	2.35	0.41
1:A:408:GLU:CG	1:A:409:LEU:HD12	2.49	0.41
2:B:1405:ARG:CG	2:B:1405:ARG:NH1	2.73	0.41
2:B:829:LEU:HD12	2:B:829:LEU:N	2.36	0.41
2:B:894:VAL:HG22	2:B:899:ILE:HB	2.02	0.41
1:A:346:MET:HG2	1:A:456:ARG:HD3	2.02	0.41
2:B:975:ALA:HB2	2:B:1011:GLN:HB3	2.03	0.41
3:C:9:ARG:HG2	3:C:9:ARG:O	2.20	0.41
1:A:210:PHE:O	1:A:317:VAL:HG21	2.20	0.41
2:B:1223:ASP:O	2:B:1227:VAL:HG23	2.20	0.41
1:A:541:LEU:HG	2:B:796:ALA:HB2	2.03	0.41
3:C:129:LEU:HA	3:C:130:PRO:HD3	1.97	0.41
1:A:21:VAL:HG21	1:A:471:LEU:HD23	2.02	0.41
3:C:238:TRP:O	3:C:239:ARG:HD2	2.21	0.41
3:C:87:GLU:O	3:C:90:VAL:HG22	2.20	0.41
2:B:1065:SER:O	2:B:1068:VAL:HG22	2.21	0.41
2:B:1292:GLU:CD	2:B:1292:GLU:H	2.23	0.41
3:C:195:PRO:HG3	3:C:238:TRP:CD1	2.56	0.41
2:B:1504:LYS:NZ	2:B:1504:LYS:HB3	2.36	0.41
2:B:1621:GLN:O	2:B:1625:GLN:HG2	2.20	0.41
1:A:110:ILE:HD13	1:A:184:ILE:HG22	2.03	0.40
1:A:119:PRO:HG2	1:A:179:MET:HE1	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:510:VAL:HG11	1:A:622:LEU:CD1	2.51	0.40
2:B:1215:LEU:HD23	2:B:1256:ALA:HB1	2.04	0.40
2:B:1343:VAL:HG22	2:B:1366:ILE:HG12	2.03	0.40
3:C:214:ARG:HG2	3:C:232:VAL:HG22	2.03	0.40
7:A:1649:BMA:O3	7:A:1652:BMA:H61	2.22	0.40
1:A:473:MET:SD	1:A:622:LEU:HD21	2.62	0.40
2:B:1278:LEU:HD23	2:B:1308:PHE:CB	2.52	0.40
1:A:581:PHE:HA	1:A:584:ASN:O	2.21	0.40
2:B:1505:VAL:HA	2:B:1509:GLU:OE1	2.20	0.40
2:B:1527:LEU:HD21	2:B:1530:VAL:HG22	2.04	0.40
2:B:752:ASN:HD21	5:B:2643:GOL:H31	1.86	0.40
2:B:927:PRO:HB3	2:B:1313:GLU:HA	2.02	0.40
2:B:1221:LEU:O	2:B:1222:LYS:HB2	2.22	0.40
1:A:427:VAL:HB	1:A:523:GLU:HG3	2.03	0.40
2:B:1473:PRO:O	2:B:1474:GLU:HB2	2.21	0.40
2:B:852:SER:HB3	2:B:878:ILE:HG22	2.02	0.40
3:C:239:ARG:HA	3:C:240:PRO:HA	1.85	0.40
3:C:33:LYS:HA	3:C:43:ASN:OD1	2.22	0.40
2:B:744:GLU:HG3	3:C:69:HIS:HB3	2.03	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	636/645 (99%)	617 (97%)	18 (3%)	1 (0%)	51	79
2	B	890/915 (97%)	866 (97%)	22 (2%)	2 (0%)	51	79
3	C	243/277 (88%)	227 (93%)	15 (6%)	1 (0%)	38	66
All	All	1769/1837 (96%)	1710 (97%)	55 (3%)	4 (0%)	51	79

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	1115	ASN
1	A	209	SER
2	B	1114	ASN
3	C	145	GLU

5.3.2 Protein sidechains ⓘ

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	564/567 (100%)	555 (98%)	9 (2%)	68	89
2	B	793/810 (98%)	785 (99%)	8 (1%)	80	93
3	C	214/240 (89%)	211 (99%)	3 (1%)	71	90
All	All	1571/1617 (97%)	1551 (99%)	20 (1%)	73	91

All (20) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	45	LEU
1	A	321	ARG
1	A	376	GLN
1	A	408	GLU
1	A	439	LEU
1	A	477	ARG
1	A	510	VAL
1	A	564	GLU
1	A	583	LEU
2	B	907	LEU
2	B	1163	ARG
2	B	1334	LEU
2	B	1405	ARG
2	B	1427	ASP
2	B	1502	ASP
2	B	1583	TRP
2	B	1613	ASP
3	C	19	TRP
3	C	26	GLU

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Mol	Chain	Res	Type
3	C	39	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	834	GLN
2	B	836	GLN
2	B	1204	GLN
2	B	1237	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 25 ligands modelled in this entry, 1 is monoatomic - leaving 24 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
5	GOL	A	1644	-	5,5,5	0.35	0	5,5,5	0.26	0
5	GOL	A	1645	-	5,5,5	0.35	0	5,5,5	0.27	0
5	GOL	A	1646	-	5,5,5	0.34	0	5,5,5	0.25	0
6	NAG	A	1647	1,6	14,14,15	0.52	0	15,19,21	0.90	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	NAG	A	1648	7,6	14,14,15	0.73	0	15,19,21	1.15	2 (13%)
7	BMA	A	1649	7,6	11,11,12	0.82	0	13,15,17	1.63	1 (7%)
7	BMA	A	1650	7	11,11,12	0.64	0	13,15,17	1.42	3 (23%)
7	BMA	A	1651	7	11,11,12	0.62	0	13,15,17	1.09	1 (7%)
7	BMA	A	1652	7	11,11,12	0.56	0	13,15,17	0.94	1 (7%)
5	GOL	B	2642	-	5,5,5	0.35	0	5,5,5	0.26	0
5	GOL	B	2643	-	5,5,5	0.34	0	5,5,5	0.25	0
5	GOL	B	2644	-	5,5,5	0.35	0	5,5,5	0.25	0
5	GOL	B	2645	-	5,5,5	0.36	0	5,5,5	0.27	0
5	GOL	B	2646	-	5,5,5	0.34	0	5,5,5	0.25	0
5	GOL	B	2647	-	5,5,5	0.35	0	5,5,5	0.27	0
5	GOL	B	2648	-	5,5,5	0.35	0	5,5,5	0.28	0
5	GOL	B	2649	-	5,5,5	0.35	0	5,5,5	0.24	0
5	GOL	B	2650	-	5,5,5	0.34	0	5,5,5	0.25	0
5	GOL	B	2651	-	5,5,5	0.34	0	5,5,5	0.25	0
5	GOL	B	2652	-	5,5,5	0.34	0	5,5,5	0.25	0
5	GOL	B	2653	-	5,5,5	0.35	0	5,5,5	0.27	0
5	GOL	B	2654	-	5,5,5	0.35	0	5,5,5	0.26	0
6	NAG	B	2655	2	14,14,15	0.52	0	15,19,21	0.75	1 (6%)
5	GOL	C	1248	-	5,5,5	0.35	0	5,5,5	0.24	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	GOL	A	1644	-	-	0/4/4/4	0/0/0/0
5	GOL	A	1645	-	-	0/4/4/4	0/0/0/0
5	GOL	A	1646	-	-	0/4/4/4	0/0/0/0
6	NAG	A	1647	1,6	-	0/6/23/26	0/1/1/1
6	NAG	A	1648	7,6	-	0/6/23/26	0/1/1/1
7	BMA	A	1649	7,6	-	0/2/19/22	0/1/1/1
7	BMA	A	1650	7	-	0/2/19/22	0/1/1/1
7	BMA	A	1651	7	-	0/2/19/22	0/1/1/1
7	BMA	A	1652	7	-	0/2/19/22	1/1/1/1
5	GOL	B	2642	-	-	0/4/4/4	0/0/0/0
5	GOL	B	2643	-	-	0/4/4/4	0/0/0/0
5	GOL	B	2644	-	-	0/4/4/4	0/0/0/0
5	GOL	B	2645	-	-	0/4/4/4	0/0/0/0
5	GOL	B	2646	-	-	0/4/4/4	0/0/0/0

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	GOL	B	2647	-	-	0/4/4/4	0/0/0/0
5	GOL	B	2648	-	-	0/4/4/4	0/0/0/0
5	GOL	B	2649	-	-	0/4/4/4	0/0/0/0
5	GOL	B	2650	-	-	0/4/4/4	0/0/0/0
5	GOL	B	2651	-	-	0/4/4/4	0/0/0/0
5	GOL	B	2652	-	-	0/4/4/4	0/0/0/0
5	GOL	B	2653	-	-	0/4/4/4	0/0/0/0
5	GOL	B	2654	-	-	0/4/4/4	0/0/0/0
6	NAG	B	2655	2	-	0/6/23/26	0/1/1/1
5	GOL	C	1248	-	-	0/4/4/4	0/0/0/0

There are no bond length outliers.

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	A	1650	BMA	C1-C2-C3	-3.08	105.74	109.65
7	A	1650	BMA	O5-C1-C2	-2.83	106.35	110.79
7	A	1651	BMA	C1-O5-C5	-2.51	108.71	112.17
6	A	1648	NAG	C2-N2-C7	-2.16	119.79	122.94
7	A	1650	BMA	C3-C4-C5	2.15	114.00	110.22
6	B	2655	NAG	C1-O5-C5	2.28	115.31	112.17
7	A	1652	BMA	C1-O5-C5	2.31	115.35	112.17
6	A	1648	NAG	C4-C3-C2	2.90	115.27	111.02
7	A	1649	BMA	C1-C2-C3	5.15	116.18	109.65

There are no chirality outliers.

There are no torsion outliers.

All (1) ring outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	A	1652	BMA	C1-C2-C3-C4-C5-O5

9 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	1646	GOL	1	0
6	A	1647	NAG	1	0
7	A	1649	BMA	3	0
7	A	1652	BMA	3	0
5	B	2643	GOL	1	0
5	B	2646	GOL	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	2649	GOL	2	0
5	B	2652	GOL	1	0
5	B	2653	GOL	2	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 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	640/645 (99%)	0.07	4 (0%) 89 90	29, 55, 98, 146	0
2	B	896/915 (97%)	0.11	14 (1%) 72 73	29, 62, 115, 161	0
3	C	245/277 (88%)	0.93	45 (18%) 1 1	45, 79, 175, 204	0
All	All	1781/1837 (96%)	0.21	63 (3%) 44 44	29, 61, 121, 204	0

All (63) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	C	30	ALA	7.8
3	C	6	LEU	6.6
3	C	23	THR	6.4
3	C	54	VAL	6.1
3	C	20	SER	5.6
2	B	1416	PHE	5.5
3	C	9	ARG	5.3
3	C	50	LYS	5.3
3	C	49	ARG	5.3
3	C	15	LEU	4.6
3	C	7	PRO	4.6
3	C	19	TRP	4.6
3	C	140	VAL	4.4
3	C	51	GLY	4.4
3	C	44	ILE	4.3
3	C	21	ASP	4.2
2	B	1502	ASP	4.0
2	B	1503	ASP	3.9
3	C	27	GLY	3.9
3	C	29	GLN	3.8
2	B	1444	TYR	3.7
3	C	148	ARG	3.7
3	C	22	GLN	3.5

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Mol	Chain	Res	Type	RSRZ
3	C	52	GLU	3.5
3	C	18	SER	3.5
3	C	59	LEU	3.3
3	C	4	ASN	3.2
3	C	45	ILE	3.1
3	C	46	MET	3.0
2	B	1419	ARG	3.0
3	C	48	CYS	2.9
3	C	207	ILE	2.9
3	C	53	TRP	2.8
3	C	141	SER	2.7
3	C	47	VAL	2.7
2	B	1476	GLU	2.7
3	C	145	GLU	2.7
3	C	5	GLU	2.6
3	C	105	GLU	2.6
3	C	114	ASP	2.5
3	C	208	ILE	2.5
1	A	374	THR	2.4
3	C	10	ARG	2.4
3	C	147	ASP	2.4
2	B	1641	ASN	2.4
1	A	518	ALA	2.4
3	C	3	CYS	2.3
3	C	17	GLY	2.3
2	B	1505	VAL	2.3
1	A	73	GLU	2.2
2	B	1415	ALA	2.2
2	B	1364	LEU	2.2
2	B	1359	LYS	2.2
1	A	72	ARG	2.2
3	C	226	SER	2.1
3	C	28	THR	2.1
3	C	24	TYR	2.1
3	C	221	MET	2.1
2	B	1485	ARG	2.1
3	C	8	PRO	2.1
2	B	1428	LYS	2.0
2	B	1636	VAL	2.0
3	C	14	ILE	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](#)

There are no carbohydrates in this entry.

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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(\AA^2)	Q<0.9
5	GOL	A	1645	6/6	0.80	0.53	19.04	116,119,123,125	0
5	GOL	B	2649	6/6	0.84	0.46	15.26	77,85,92,93	0
5	GOL	B	2645	6/6	0.90	0.28	9.50	72,88,92,94	0
5	GOL	B	2648	6/6	0.92	0.35	7.71	72,89,100,104	0
5	GOL	B	2646	6/6	0.87	0.38	6.81	91,99,101,110	0
5	GOL	B	2651	6/6	0.74	0.56	6.29	105,114,116,118	0
5	GOL	B	2647	6/6	0.76	0.30	6.27	63,74,80,80	0
5	GOL	B	2653	6/6	0.91	0.28	4.29	63,72,80,81	0
5	GOL	C	1248	6/6	0.63	0.34	4.16	69,84,85,91	0
5	GOL	A	1646	6/6	0.89	0.29	3.86	61,74,76,78	0
5	GOL	A	1644	6/6	0.87	0.26	3.65	73,81,86,90	0
5	GOL	B	2643	6/6	0.91	0.24	2.51	44,74,77,77	0
5	GOL	B	2642	6/6	0.93	0.28	2.34	68,77,79,82	0
5	GOL	B	2652	6/6	0.86	0.28	2.05	80,94,101,103	0
4	CA	A	1643	1/1	0.77	0.17	0.57	63,63,63,63	0
6	NAG	A	1647	14/15	0.90	0.18	0.14	48,65,90,94	0
5	GOL	B	2644	6/6	0.89	0.24	0.02	61,73,79,81	0
5	GOL	B	2650	6/6	0.82	0.27	-	88,106,110,110	0
6	NAG	A	1648	14/15	0.79	0.21	-	109,119,136,148	0
7	BMA	A	1652	11/12	0.59	0.32	-	140,151,162,164	0
7	BMA	A	1649	11/12	0.66	0.24	-	157,162,165,166	0
7	BMA	A	1650	11/12	0.67	0.25	-	144,155,158,160	0
5	GOL	B	2654	6/6	0.87	0.28	-	79,84,88,98	0
7	BMA	A	1651	11/12	0.75	0.27	-	134,143,148,150	0
6	NAG	B	2655	14/15	0.84	0.31	-	106,124,140,140	0

6.5 Other polymers [i](#)

There are no such residues in this entry.