



Full wwPDB X-ray Structure Validation Report

Feb 28, 2014 – 05:21 AM GMT

PDB ID : 2YBT
Title : CRYSTAL STRUCTURE OF HUMAN ACIDIC CHITINASE IN COMPLEX
WITH BISDIONIN C
Authors : Sutherland, T.E.; Andersen, O.A.; Betou, M.; Eggleston, I.M.; Maizels, R.M.;
Van Aalten, D.; Allen, J.E.
Deposited on : 2011-03-10
Resolution : 2.22 Å(reported)

This is a full wwPDB 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/ValidationPDFNotes.html>

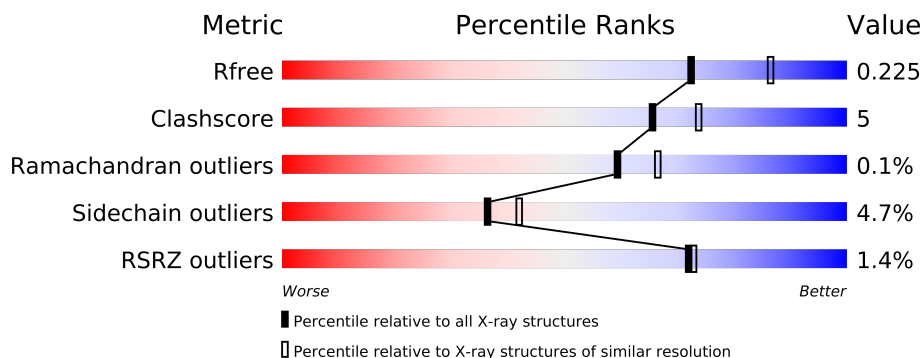
The following versions of software and data (see [references](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.15 2013
Xtriage (Phenix) : dev-1323
EDS : stable22639
Percentile statistics : 21963
Refmac : 5.8.0049
CCP4 : 6.3.0 (Settle)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : stable22683

1 Overall quality at a glance

The reported resolution of this entry is 2.22 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}	66092	3340 (2.24-2.20)
Clashscore	79885	4208 (2.24-2.20)
Ramachandran outliers	78287	4135 (2.24-2.20)
Sidechain outliers	78261	4136 (2.24-2.20)
RSRZ outliers	66119	3341 (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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density.

Mol	Chain	Length	Quality of chain
1	A	381	
1	B	381	
1	C	381	
1	D	381	
1	E	381	
1	F	381	

The following table lists non-polymeric compounds that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Geometry	Electron density
2	GOL	A	1398	-	X
2	GOL	B	1398	-	X

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Mol	Type	Chain	Res	Geometry	Electron density
2	GOL	C	1398	-	X
2	GOL	D	1398	-	X
2	GOL	E	1398	-	X
3	DW0	B	1399	-	X
3	DW0	C	1400	-	X
3	DW0	E	1400	-	X
3	DW0	F	1400	-	X

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 19339 atoms, of which 0 are hydrogen and 0 are deuterium.

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 ACIDIC MAMMALIAN CHITINASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	377	Total	C	N	O	S	0	0	0
			2983	1924	485	560	14			
1	B	377	Total	C	N	O	S	0	0	0
			2983	1924	485	560	14			
1	C	377	Total	C	N	O	S	0	0	0
			2983	1924	485	560	14			
1	D	377	Total	C	N	O	S	0	0	0
			2983	1924	485	560	14			
1	E	377	Total	C	N	O	S	0	0	0
			2983	1924	485	560	14			
1	F	377	Total	C	N	O	S	0	0	0
			2983	1924	485	560	14			

There are 36 discrepancies between the modelled and reference sequences:

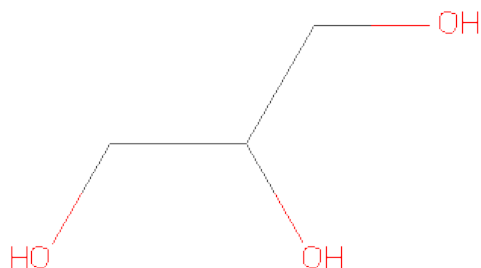
Chain	Residue	Modelled	Actual	Comment	Reference
A	18	GLU	-	EXPRESSION TAG	UNP Q9BZP6
A	19	ALA	-	EXPRESSION TAG	UNP Q9BZP6
A	20	GLU	-	EXPRESSION TAG	UNP Q9BZP6
A	45	ASP	ASN	VARIANT	UNP Q9BZP6
A	47	ASN	ASP	VARIANT	UNP Q9BZP6
A	61	MET	ARG	VARIANT	UNP Q9BZP6
B	18	GLU	-	EXPRESSION TAG	UNP Q9BZP6
B	19	ALA	-	EXPRESSION TAG	UNP Q9BZP6
B	20	GLU	-	EXPRESSION TAG	UNP Q9BZP6
B	45	ASP	ASN	VARIANT	UNP Q9BZP6
B	47	ASN	ASP	VARIANT	UNP Q9BZP6
B	61	MET	ARG	VARIANT	UNP Q9BZP6
C	18	GLU	-	EXPRESSION TAG	UNP Q9BZP6
C	19	ALA	-	EXPRESSION TAG	UNP Q9BZP6
C	20	GLU	-	EXPRESSION TAG	UNP Q9BZP6
C	45	ASP	ASN	VARIANT	UNP Q9BZP6
C	47	ASN	ASP	VARIANT	UNP Q9BZP6

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Chain	Residue	Modelled	Actual	Comment	Reference
C	61	MET	ARG	VARIANT	UNP Q9BZP6
D	18	GLU	-	EXPRESSION TAG	UNP Q9BZP6
D	19	ALA	-	EXPRESSION TAG	UNP Q9BZP6
D	20	GLU	-	EXPRESSION TAG	UNP Q9BZP6
D	45	ASP	ASN	VARIANT	UNP Q9BZP6
D	47	ASN	ASP	VARIANT	UNP Q9BZP6
D	61	MET	ARG	VARIANT	UNP Q9BZP6
E	18	GLU	-	EXPRESSION TAG	UNP Q9BZP6
E	19	ALA	-	EXPRESSION TAG	UNP Q9BZP6
E	20	GLU	-	EXPRESSION TAG	UNP Q9BZP6
E	45	ASP	ASN	VARIANT	UNP Q9BZP6
E	47	ASN	ASP	VARIANT	UNP Q9BZP6
E	61	MET	ARG	VARIANT	UNP Q9BZP6
F	18	GLU	-	EXPRESSION TAG	UNP Q9BZP6
F	19	ALA	-	EXPRESSION TAG	UNP Q9BZP6
F	20	GLU	-	EXPRESSION TAG	UNP Q9BZP6
F	45	ASP	ASN	VARIANT	UNP Q9BZP6
F	47	ASN	ASP	VARIANT	UNP Q9BZP6
F	61	MET	ARG	VARIANT	UNP Q9BZP6

- Molecule 2 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃).



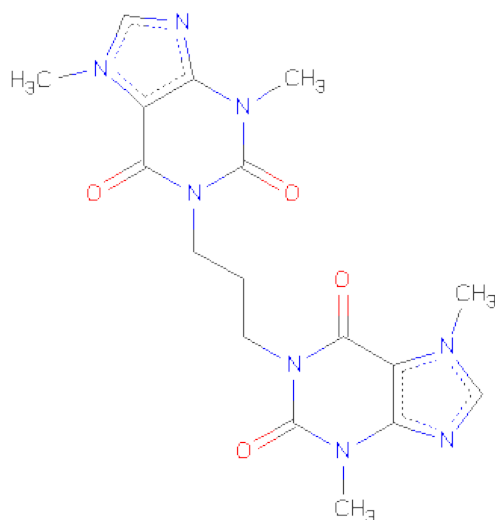
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			6	3	3		
2	B	1	Total	C	O	0	0
			6	3	3		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	C	1	Total	C	O	0	0
			6	3	3		
2	D	1	Total	C	O	0	0
			6	3	3		
2	E	1	Total	C	O	0	0
			6	3	3		
2	F	1	Total	C	O	0	0
			6	3	3		

- Molecule 3 is 1,1'-PROPANE-1,3-DIYLBIS(3,7-DIMETHYL-3,7-DIHYDRO-1H-PURINE-2,6-DIONE) (three-letter code: DW0) (formula: C₁₇H₂₀N₈O₄).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			29	17	8	4		
3	A	1	Total	C	N	O	0	0
			29	17	8	4		
3	B	1	Total	C	N	O	0	0
			29	17	8	4		
3	B	1	Total	C	N	O	0	0
			29	17	8	4		
3	C	1	Total	C	N	O	0	0
			29	17	8	4		
3	C	1	Total	C	N	O	0	0
			29	17	8	4		
3	D	1	Total	C	N	O	0	0
			29	17	8	4		

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	D	1	Total	C	N	O	0	0
			29	17	8	4		
3	E	1	Total	C	N	O	0	0
			29	17	8	4		
3	E	1	Total	C	N	O	0	0
			29	17	8	4		
3	F	1	Total	C	N	O	0	0
			29	17	8	4		
3	F	1	Total	C	N	O	0	0
			29	17	8	4		

- Molecule 4 is water.

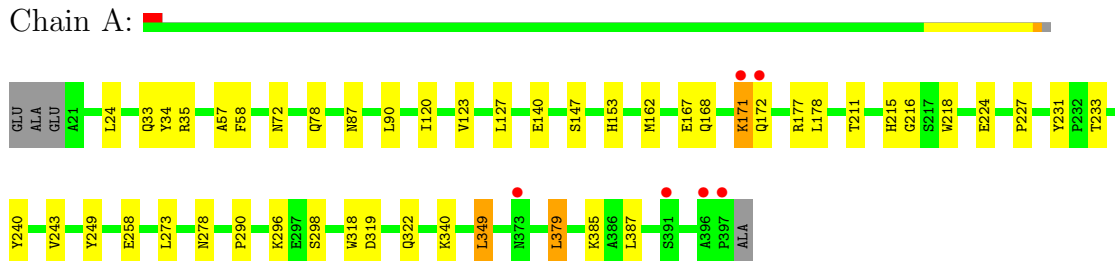
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	202	Total	O	0	0
			202	202		
4	B	193	Total	O	0	0
			193	193		
4	C	197	Total	O	0	0
			197	197		
4	D	146	Total	O	0	0
			146	146		
4	E	187	Total	O	0	0
			187	187		
4	F	132	Total	O	0	0
			132	132		

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 errors 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.

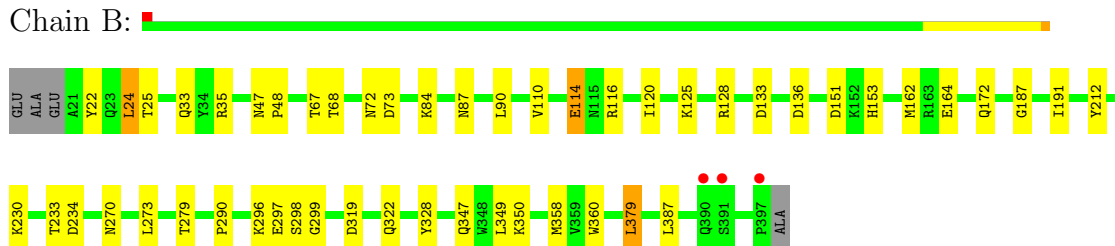
• Molecule 1: ACIDIC MAMMALIAN CHITINASE

Chain A:



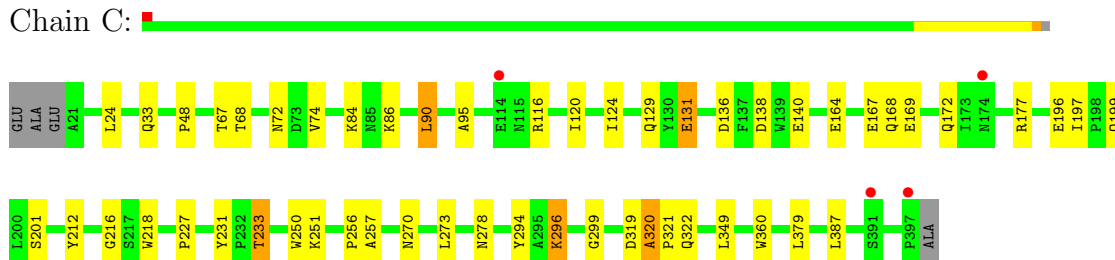
• Molecule 1: ACIDIC MAMMALIAN CHITINASE

Chain B:



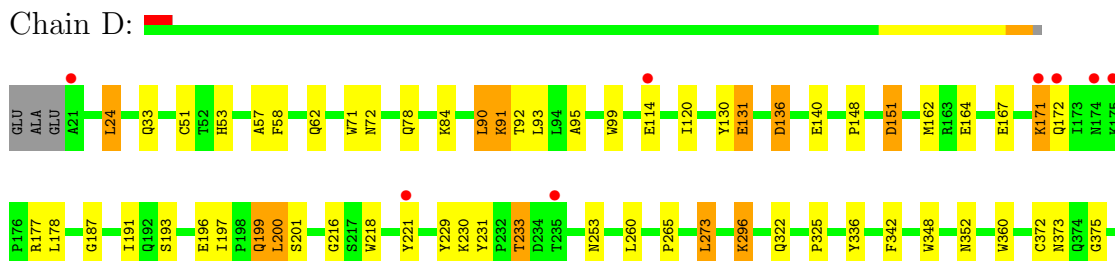
• Molecule 1: ACIDIC MAMMALIAN CHITINASE

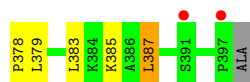
Chain C:



• Molecule 1: ACIDIC MAMMALIAN CHITINASE

Chain D:





• Molecule 1: ACIDIC MAMMALIAN CHITINASE

Chain E:



• Molecule 1: ACIDIC MAMMALIAN CHITINASE

Chain F:



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	145.21Å 149.07Å 152.08Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.07 – 2.22 19.99 – 2.22	Depositor EDS
% Data completeness (in resolution range)	99.2 (20.07-2.22) 99.2 (19.99-2.22)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.33 (at 2.21Å)	Xtriage
Refinement program	REFMAC 5.5.0102	Depositor
R, R_{free}	0.181 , 0.228 0.181 , 0.225	Depositor DCC
R_{free} test set	1631 reflections (1.02%)	DCC
Wilson B-factor (Å ²)	30.8	Xtriage
Anisotropy	0.315	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.37 , 28.5	EDS
Estimated twinning fraction	0.016 for -h,l,k 0.043 for -l,-k,-h 0.015 for k,h,-l 0.005 for k,l,h 0.005 for l,h,k	Xtriage
L-test for twinning	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Outliers	0 of 161979 reflections	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	19339	wwPDB-VP
Average B, all atoms (Å ²)	31.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.23% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, DW0

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	1.08	4/3076 (0.1%)	0.92	2/4194 (0.0%)
1	B	1.10	2/3076 (0.1%)	0.91	7/4194 (0.2%)
1	C	1.11	4/3076 (0.1%)	0.92	3/4194 (0.1%)
1	D	1.03	2/3076 (0.1%)	0.88	4/4194 (0.1%)
1	E	1.06	1/3076 (0.0%)	0.88	3/4194 (0.1%)
1	F	0.98	1/3076 (0.0%)	0.84	2/4194 (0.0%)
All	All	1.06	14/18456 (0.1%)	0.89	21/25164 (0.1%)

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	278	ASN	CB-CG	7.91	1.69	1.51
1	D	221	TYR	CD2-CE2	6.12	1.48	1.39
1	C	320	ALA	CA-CB	6.09	1.65	1.52
1	A	278	ASN	CB-CG	6.00	1.64	1.51
1	A	258	GLU	CG-CD	5.84	1.60	1.51
1	A	298	SER	CB-OG	-5.75	1.34	1.42
1	A	249	TYR	CD2-CE2	5.60	1.47	1.39
1	B	114	GLU	CG-CD	5.56	1.60	1.51
1	B	164	GLU	CG-CD	5.53	1.60	1.51
1	E	320	ALA	CA-CB	5.52	1.64	1.52
1	C	231	TYR	CD1-CE1	5.42	1.47	1.39
1	C	164	GLU	CB-CG	5.22	1.62	1.52
1	F	297	GLU	CB-CG	-5.14	1.42	1.52
1	D	114	GLU	CG-CD	5.08	1.59	1.51

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	35	ARG	NE-CZ-NH2	-7.41	116.59	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	136	ASP	CB-CG-OD1	7.07	124.66	118.30
1	D	273	LEU	CB-CG-CD1	5.79	120.85	111.00
1	A	349	LEU	CA-CB-CG	5.73	128.48	115.30
1	E	379	LEU	CB-CG-CD1	5.71	120.71	111.00
1	B	35	ARG	NE-CZ-NH2	-5.67	117.46	120.30
1	B	379	LEU	CB-CG-CD2	5.65	120.61	111.00
1	C	296	LYS	CD-CE-NZ	-5.65	98.70	111.70
1	B	24	LEU	CB-CG-CD2	5.57	120.47	111.00
1	D	273	LEU	CA-CB-CG	5.55	128.07	115.30
1	B	151	ASP	CB-CG-OD1	5.54	123.28	118.30
1	B	73	ASP	CB-CG-OD1	5.49	123.24	118.30
1	D	136	ASP	CB-CG-OD2	-5.28	113.55	118.30
1	C	90	LEU	CA-CB-CG	5.27	127.42	115.30
1	F	24	LEU	CB-CG-CD2	5.26	119.95	111.00
1	E	35	ARG	NE-CZ-NH2	-5.19	117.71	120.30
1	D	151	ASP	CB-CG-OD1	5.15	122.94	118.30
1	F	35	ARG	NE-CZ-NH2	-5.14	117.73	120.30
1	E	365	ASP	CB-CG-OD1	5.08	122.87	118.30
1	C	319	ASP	CB-CG-OD2	-5.01	113.79	118.30
1	B	234	ASP	CB-CG-OD1	5.01	122.81	118.30

There are no chirality outliers.

There are no planarity outliers.

5.2 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 hydrogens added by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, and the number in parentheses is this value normalized per 1000 atoms of the molecule in the chain. The Symm-Clashes column gives symmetry related clashes, in the same way as for the Clashes column.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2983	0	2828	27	0
1	B	2983	0	2828	24	0
1	C	2983	0	2828	27	0
1	D	2983	0	2828	42	0
1	E	2983	0	2828	31	0
1	F	2983	0	2828	39	0
2	A	6	0	8	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	6	0	8	0	0
2	C	6	0	8	0	0
2	D	6	0	8	0	0
2	E	6	0	8	0	0
2	F	6	0	8	0	0
3	A	58	0	40	4	0
3	B	58	0	40	1	0
3	C	58	0	40	3	0
3	D	58	0	40	5	0
3	E	58	0	40	3	0
3	F	58	0	40	3	0
4	A	202	0	0	1	0
4	B	193	0	0	3	0
4	C	197	0	0	3	0
4	D	146	0	0	1	0
4	E	187	0	0	2	0
4	F	132	0	0	2	0
All	All	19339	0	17256	186	0

Clashscore is defined as the number of clashes calculated for the entry per 1000 atoms (including hydrogens) of the entry. The overall clashscore for this entry is 5.

All (186) close contacts within the same asymmetric unit are listed below.

Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:231:TYR:HD2	1:A:233:THR:HG22	1.26	0.97
1:A:33:GLN:HE22	1:A:72:ASN:HD21	1.20	0.90
1:E:33:GLN:HE22	1:E:72:ASN:HD21	1.27	0.82
1:C:33:GLN:HE22	1:C:72:ASN:HD21	1.30	0.77
1:C:196:GLU:HB3	1:C:199:GLN:HE21	1.49	0.76
1:A:231:TYR:CD2	1:A:233:THR:HG22	2.17	0.72
1:D:140:GLU:OE2	3:D:1399:DW0:HAAB	1.91	0.71
1:E:196:GLU:HB3	1:E:199:GLN:HE21	1.54	0.71
1:F:33:GLN:HE22	1:F:72:ASN:HD21	1.38	0.70
1:B:114:GLU:HB2	4:B:2057:HOH:O	1.91	0.69
1:F:199:GLN:HE21	1:F:199:GLN:H	1.40	0.68
1:B:33:GLN:HE22	1:B:72:ASN:HD21	1.40	0.67
1:F:273:LEU:O	4:F:2088:HOH:O	2.14	0.66
1:A:318:TRP:CH2	1:A:340:LYS:HD3	2.31	0.64
1:A:33:GLN:NE2	1:A:72:ASN:HD21	1.95	0.64
1:D:33:GLN:HE22	1:D:72:ASN:HD21	1.46	0.64
1:F:140:GLU:OE2	3:F:1399:DW0:HAAB	1.99	0.62
1:A:33:GLN:HE22	1:A:72:ASN:ND2	1.97	0.62

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:D:229:TYR:O	1:D:322:GLN:HG2	2.00	0.62
1:C:167:GLU:HG3	1:C:177:ARG:HD3	1.82	0.61
1:F:339:ILE:HD12	1:F:374:GLN:NE2	2.15	0.61
1:C:196:GLU:HB3	1:C:199:GLN:NE2	2.16	0.60
1:F:177:ARG:HG2	1:F:178:LEU:O	2.01	0.60
1:F:167:GLU:HG3	1:F:177:ARG:HD3	1.82	0.60
1:C:296:LYS:HE2	1:E:244:ASP:OD2	2.00	0.60
1:A:231:TYR:HD2	1:A:233:THR:CG2	2.08	0.60
1:D:383:LEU:O	1:D:387:LEU:HB2	2.02	0.59
1:C:116:ARG:O	1:C:120:ILE:HG13	2.03	0.58
1:D:325:PRO:HD2	1:D:336:TYR:O	2.03	0.57
1:D:196:GLU:HB3	1:D:199:GLN:NE2	2.19	0.57
1:D:148:PRO:HD2	1:D:151:ASP:OD2	2.05	0.57
1:F:198:PRO:HD2	1:F:199:GLN:NE2	2.20	0.56
1:F:33:GLN:NE2	1:F:72:ASN:HD21	2.03	0.56
1:F:199:GLN:NE2	1:F:199:GLN:H	2.02	0.55
1:D:253:ASN:N	1:D:253:ASN:ND2	2.55	0.55
1:E:138:ASP:OD2	3:E:1399:DW0:CAA	2.54	0.55
1:B:297:GLU:HG3	4:B:2154:HOH:O	2.06	0.55
1:E:216:GLY:HA3	1:E:218:TRP:CZ3	2.42	0.55
1:E:138:ASP:OD2	3:E:1399:DW0:HAA	2.07	0.55
1:A:167:GLU:HG3	1:A:177:ARG:HD3	1.89	0.55
1:B:347:GLN:HE22	1:B:350:LYS:NZ	2.05	0.55
1:F:67:THR:HG23	1:F:68:THR:O	2.08	0.54
1:E:270:ASN:OD1	1:E:299:GLY:HA2	2.07	0.54
1:E:312:ASN:HB2	4:E:2150:HOH:O	2.07	0.54
1:A:227:PRO:HB2	1:A:322:GLN:HB3	1.90	0.53
1:F:360:TRP:CD1	3:F:1399:DW0:HACB	2.44	0.53
1:D:199:GLN:NE2	1:D:199:GLN:H	2.07	0.52
1:F:216:GLY:HA3	1:F:218:TRP:CZ3	2.45	0.52
1:C:124:ILE:HG21	1:C:169:GLU:HG3	1.92	0.52
1:A:215:HIS:HB2	1:A:224:GLU:O	2.08	0.52
1:C:136:ASP:OD2	1:C:138:ASP:OD1	2.28	0.52
1:B:22:TYR:CZ	1:B:350:LYS:HG2	2.45	0.52
1:B:33:GLN:NE2	1:B:72:ASN:HD21	2.07	0.51
1:F:170:ALA:HB2	1:F:177:ARG:HA	1.93	0.51
1:D:253:ASN:N	1:D:253:ASN:HD22	2.09	0.51
1:B:319:ASP:OD2	1:B:322:GLN:NE2	2.38	0.51
1:E:170:ALA:O	1:E:174:ASN:HA	2.10	0.51
1:D:33:GLN:NE2	1:D:72:ASN:HD21	2.09	0.50
1:F:104:ALA:HB3	1:F:105:PRO:HD3	1.92	0.50
1:B:84:LYS:HE3	1:B:133:ASP:OD2	2.12	0.50

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:D:187:GLY:O	1:D:191:ILE:HG13	2.11	0.50
1:D:231:TYR:HD2	1:D:233:THR:HB	1.76	0.50
1:F:216:GLY:HA3	1:F:218:TRP:CH2	2.47	0.50
1:F:198:PRO:HD2	1:F:199:GLN:HE22	1.76	0.49
1:C:33:GLN:NE2	1:C:72:ASN:HD21	2.07	0.49
1:A:211:THR:HB	1:A:243:VAL:HG22	1.95	0.49
1:F:231:TYR:CG	1:F:232:PRO:HD2	2.47	0.49
1:C:74:VAL:HG23	4:C:2031:HOH:O	2.13	0.48
1:B:187:GLY:O	1:B:191:ILE:HG13	2.13	0.48
1:E:104:ALA:HB3	1:E:105:PRO:HD3	1.94	0.48
1:E:124:ILE:HG21	1:E:169:GLU:HG3	1.94	0.48
1:E:103:THR:HG22	1:E:139:TRP:HE1	1.79	0.48
1:B:296:LYS:HE3	1:F:34:TYR:O	2.14	0.48
1:A:140:GLU:OE2	3:A:1399:DW0:HAAB	2.14	0.48
1:C:201:SER:HB3	1:C:256:PRO:HD2	1.96	0.47
1:B:360:TRP:CD1	3:B:1399:DW0:HACB	2.49	0.47
1:A:177:ARG:HG2	1:A:178:LEU:O	2.14	0.47
1:D:197:ILE:O	1:D:201:SER:OG	2.24	0.47
1:D:375:GLY:O	1:D:378:PRO:HD3	2.15	0.47
1:C:48:PRO:HG3	1:C:86:LYS:HD2	1.96	0.46
1:D:99:TRP:CZ3	3:D:1400:DW0:HA0	2.51	0.46
1:B:67:THR:HG23	1:B:68:THR:O	2.15	0.46
1:F:25:THR:O	1:F:358:MET:HA	2.16	0.46
1:D:360:TRP:CD1	3:D:1399:DW0:HACB	2.50	0.46
1:A:120:ILE:HG12	1:A:162:MET:CE	2.45	0.46
1:F:270:ASN:OD1	1:F:299:GLY:HA2	2.15	0.46
1:C:251:LYS:HD2	1:C:257:ALA:HB2	1.97	0.46
1:D:177:ARG:HG2	1:D:178:LEU:O	2.15	0.46
1:D:53:HIS:CD2	1:D:91:LYS:HB2	2.51	0.46
3:A:1400:DW0:HAA	1:D:62:GLN:NE2	2.31	0.45
1:A:319:ASP:OD2	1:A:322:GLN:NE2	2.33	0.45
1:B:87:ASN:C	1:B:87:ASN:OD1	2.54	0.45
1:F:49:CYS:O	1:F:384:LYS:HE2	2.16	0.45
1:D:84:LYS:HG2	1:D:90:LEU:HB3	1.98	0.45
1:D:24:LEU:O	1:D:51:CYS:HB3	2.16	0.45
1:C:140:GLU:OE2	3:C:1399:DW0:HAAB	2.16	0.45
1:C:216:GLY:HA3	1:C:218:TRP:CZ3	2.51	0.45
1:B:290:PRO:HA	1:F:71:TRP:CD2	2.52	0.45
1:F:33:GLN:HE22	1:F:72:ASN:ND2	2.09	0.44
1:C:233:THR:HG21	4:C:2108:HOH:O	2.15	0.44
1:D:348:TRP:O	1:D:352:ASN:ND2	2.42	0.44
1:F:91:LYS:HD3	1:F:91:LYS:HA	1.90	0.44

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:D:130:TYR:O	1:D:131:GLU:HB2	2.17	0.44
1:D:99:TRP:CZ2	3:D:1400:DW0:CAP	3.01	0.44
1:B:270:ASN:OD1	1:B:299:GLY:HA2	2.18	0.44
1:D:196:GLU:O	1:D:200:LEU:HB2	2.18	0.44
1:E:140:GLU:OE2	3:E:1399:DW0:HAAB	2.17	0.44
1:B:298:SER:OG	1:F:71:TRP:HD1	2.00	0.44
1:C:270:ASN:OD1	1:C:299:GLY:HA2	2.18	0.44
1:E:177:ARG:HG2	1:E:178:LEU:O	2.18	0.44
1:D:199:GLN:HE21	1:D:199:GLN:H	1.63	0.44
1:C:294:TYR:CZ	1:E:230:LYS:HD3	2.53	0.44
1:E:216:GLY:HA3	1:E:218:TRP:CH2	2.53	0.43
1:D:93:LEU:HD12	1:D:93:LEU:N	2.33	0.43
1:B:120:ILE:HG12	1:B:162:MET:CE	2.48	0.43
1:F:167:GLU:HG3	1:F:177:ARG:CD	2.48	0.43
1:F:183:ALA:HA	1:F:208:HIS:O	2.19	0.43
1:E:106:PHE:O	1:E:110:VAL:HG22	2.19	0.43
3:A:1400:DW0:OAF	3:A:1400:DW0:HAB	2.19	0.43
1:E:127:LEU:HD12	1:E:178:LEU:HD13	2.01	0.43
1:D:171:LYS:NZ	1:D:171:LYS:HB2	2.34	0.43
1:F:59:ALA:HB2	1:F:94:LEU:HD21	2.01	0.43
1:D:216:GLY:HA3	1:D:218:TRP:CH2	2.54	0.43
1:F:99:TRP:CZ3	3:F:1400:DW0:HA0	2.54	0.42
1:E:163:ARG:NH1	1:E:203:TYR:O	2.49	0.42
1:A:34:TYR:O	1:D:296:LYS:HE3	2.18	0.42
1:E:147:SER:HA	1:E:148:PRO:HD2	1.67	0.42
1:C:95:ALA:HA	1:C:136:ASP:O	2.18	0.42
1:F:251:LYS:HD3	1:F:257:ALA:HB2	2.01	0.42
1:F:360:TRP:HA	1:F:361:ALA:HA	1.80	0.42
1:B:25:THR:O	1:B:358:MET:HA	2.19	0.42
1:E:148:PRO:HB2	1:E:150:GLN:CD	2.39	0.42
1:B:110:VAL:HA	1:B:116:ARG:HG2	2.01	0.42
1:A:216:GLY:HA3	1:A:218:TRP:CH2	2.55	0.42
3:D:1400:DW0:HAB	3:D:1400:DW0:OAF	2.19	0.42
1:A:171:LYS:HE2	1:A:171:LYS:HB3	1.86	0.42
1:B:279:THR:HG21	1:B:328:TYR:CE2	2.54	0.42
1:F:379:LEU:HA	1:F:379:LEU:HD12	1.93	0.42
1:E:33:GLN:NE2	1:E:72:ASN:HD21	2.06	0.42
1:C:196:GLU:CB	1:C:199:GLN:HE21	2.26	0.42
1:B:47:ASN:HA	1:B:48:PRO:HD2	1.91	0.42
1:A:385:LYS:HE3	1:A:385:LYS:HB2	1.71	0.42
1:B:153:HIS:HB3	4:B:2082:HOH:O	2.20	0.42
1:E:33:GLN:HE22	1:E:72:ASN:ND2	2.07	0.41

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:E:275:ASN:OD1	1:E:277:SER:HB2	2.20	0.41
1:E:157:VAL:O	1:E:161:GLU:HG3	2.20	0.41
1:B:33:GLN:HE22	1:B:72:ASN:ND2	2.14	0.41
3:C:1400:DW0:C8	3:C:1400:DW0:HABB	2.49	0.41
1:C:129:GLN:NE2	4:C:2057:HOH:O	2.52	0.41
1:A:290:PRO:HA	1:D:71:TRP:CD2	2.54	0.41
1:C:227:PRO:CB	1:C:322:GLN:HB3	2.51	0.41
1:A:123:VAL:O	1:A:127:LEU:HG	2.20	0.41
1:A:57:ALA:HA	1:A:58:PHE:HA	1.89	0.41
1:C:197:ILE:HG12	1:C:250:TRP:CZ3	2.55	0.41
1:E:115:ASN:N	1:E:115:ASN:HD22	2.18	0.41
1:F:159:VAL:HG21	1:F:200:LEU:HD21	2.02	0.41
1:A:227:PRO:CB	1:A:322:GLN:HB3	2.51	0.41
3:A:1400:DW0:HAA	1:D:62:GLN:HE21	1.85	0.41
1:A:379:LEU:HD12	1:A:379:LEU:HA	1.85	0.41
1:D:372:CYS:HB2	4:D:2133:HOH:O	2.19	0.41
1:F:225:ASN:OD1	1:F:269:HIS:HD2	2.04	0.41
1:D:57:ALA:HA	1:D:58:PHE:HA	1.88	0.41
1:C:84:LYS:NZ	1:C:131:GLU:O	2.54	0.41
1:C:320:ALA:N	1:C:321:PRO:HD2	2.35	0.41
1:F:269:HIS:HA	1:F:299:GLY:O	2.21	0.41
1:C:360:TRP:CD1	3:C:1399:DW0:HACB	2.56	0.41
1:D:92:THR:C	1:D:93:LEU:HD12	2.41	0.41
1:E:196:GLU:HB3	1:E:199:GLN:NE2	2.29	0.41
1:F:271:PHE:CD1	1:F:271:PHE:N	2.89	0.41
1:D:33:GLN:HE22	1:D:72:ASN:ND2	2.17	0.40
1:D:260:LEU:HD23	1:D:260:LEU:HA	1.97	0.40
1:D:120:ILE:HG12	1:D:162:MET:CE	2.51	0.40
1:D:95:ALA:HA	1:D:136:ASP:HB3	2.03	0.40
1:E:103:THR:HG22	1:E:139:TRP:NE1	2.36	0.40
1:B:128:ARG:HA	1:B:128:ARG:HD3	1.92	0.40
1:D:167:GLU:HG3	1:D:177:ARG:HD3	2.03	0.40
1:E:302:ALA:O	1:E:303:TYR:C	2.60	0.40
1:D:216:GLY:HA3	1:D:218:TRP:CZ3	2.56	0.40
1:A:87:ASN:OD1	1:A:87:ASN:C	2.59	0.40
1:C:67:THR:HG23	1:C:68:THR:O	2.22	0.40
1:A:153:HIS:HB3	4:A:2090:HOH:O	2.21	0.40
1:F:270:ASN:C	1:F:271:PHE:CD1	2.94	0.40
1:A:240:TYR:CD1	1:A:240:TYR:N	2.88	0.40
1:E:129:GLN:HE21	1:E:129:GLN:HB2	1.76	0.40
1:F:372:CYS:HB2	4:F:2119:HOH:O	2.20	0.40
1:E:390:GLN:HB2	4:E:2180:HOH:O	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone ⓘ

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	375/381 (98%)	361 (96%)	14 (4%)	0	100	100
1	B	375/381 (98%)	366 (98%)	9 (2%)	0	100	100
1	C	375/381 (98%)	368 (98%)	7 (2%)	0	100	100
1	D	375/381 (98%)	363 (97%)	11 (3%)	1 (0%)	50	53
1	E	375/381 (98%)	365 (97%)	9 (2%)	1 (0%)	50	53
1	F	375/381 (98%)	364 (97%)	10 (3%)	1 (0%)	50	53
All	All	2250/2286 (98%)	2187 (97%)	60 (3%)	3 (0%)	59	66

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	174	ASN
1	F	131	GLU
1	D	131	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	312/314 (99%)	300 (96%)	12 (4%)	44	53
1	B	312/314 (99%)	301 (96%)	11 (4%)	48	57
1	C	312/314 (99%)	301 (96%)	11 (4%)	48	57
1	D	312/314 (99%)	292 (94%)	20 (6%)	25	26

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	E	312/314 (99%)	297 (95%)	15 (5%)	35	40
1	F	312/314 (99%)	293 (94%)	19 (6%)	26	28
All	All	1872/1884 (99%)	1784 (95%)	88 (5%)	36	42

All (88) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	24	LEU
1	A	78	GLN
1	A	90	LEU
1	A	147	SER
1	A	168	GLN
1	A	171	LYS
1	A	172	GLN
1	A	273	LEU
1	A	296	LYS
1	A	349	LEU
1	A	379	LEU
1	A	387	LEU
1	B	24	LEU
1	B	90	LEU
1	B	125	LYS
1	B	172	GLN
1	B	212	TYR
1	B	230	LYS
1	B	233	THR
1	B	273	LEU
1	B	349	LEU
1	B	379	LEU
1	B	387	LEU
1	C	24	LEU
1	C	90	LEU
1	C	131	GLU
1	C	168	GLN
1	C	172	GLN
1	C	212	TYR
1	C	233	THR
1	C	273	LEU
1	C	349	LEU
1	C	379	LEU
1	C	387	LEU

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Mol	Chain	Res	Type
1	D	24	LEU
1	D	78	GLN
1	D	90	LEU
1	D	91	LYS
1	D	164	GLU
1	D	171	LYS
1	D	172	GLN
1	D	193	SER
1	D	199	GLN
1	D	200	LEU
1	D	230	LYS
1	D	233	THR
1	D	265	PRO
1	D	273	LEU
1	D	296	LYS
1	D	342	PHE
1	D	373	ASN
1	D	379	LEU
1	D	385	LYS
1	D	387	LEU
1	E	24	LEU
1	E	90	LEU
1	E	114	GLU
1	E	147	SER
1	E	156	THR
1	E	200	LEU
1	E	212	TYR
1	E	233	THR
1	E	265	PRO
1	E	273	LEU
1	E	324	VAL
1	E	337	ASP
1	E	379	LEU
1	E	385	LYS
1	E	387	LEU
1	F	24	LEU
1	F	53	HIS
1	F	86	LYS
1	F	90	LEU
1	F	147	SER
1	F	172	GLN
1	F	199	GLN

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Mol	Chain	Res	Type
1	F	200	LEU
1	F	201	SER
1	F	221	TYR
1	F	230	LYS
1	F	233	THR
1	F	273	LEU
1	F	296	LYS
1	F	337	ASP
1	F	349	LEU
1	F	373	ASN
1	F	379	LEU
1	F	387	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (64) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	33	GLN
1	A	64	ASN
1	A	85	ASN
1	A	115	ASN
1	A	129	GLN
1	A	168	GLN
1	A	192	GLN
1	A	199	GLN
1	A	312	ASN
1	A	347	GLN
1	B	33	GLN
1	B	62	GLN
1	B	64	ASN
1	B	85	ASN
1	B	100	ASN
1	B	115	ASN
1	B	129	GLN
1	B	160	GLN
1	B	172	GLN
1	B	192	GLN
1	B	312	ASN
1	B	347	GLN
1	C	33	GLN
1	C	62	GLN
1	C	64	ASN
1	C	78	GLN

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Mol	Chain	Res	Type
1	C	100	ASN
1	C	115	ASN
1	C	117	GLN
1	C	129	GLN
1	C	199	GLN
1	D	33	GLN
1	D	62	GLN
1	D	64	ASN
1	D	100	ASN
1	D	115	ASN
1	D	129	GLN
1	D	192	GLN
1	D	199	GLN
1	D	202	GLN
1	D	347	GLN
1	D	373	ASN
1	E	33	GLN
1	E	64	ASN
1	E	78	GLN
1	E	85	ASN
1	E	100	ASN
1	E	115	ASN
1	E	129	GLN
1	E	160	GLN
1	E	192	GLN
1	E	199	GLN
1	F	33	GLN
1	F	64	ASN
1	F	100	ASN
1	F	115	ASN
1	F	129	GLN
1	F	160	GLN
1	F	168	GLN
1	F	192	GLN
1	F	199	GLN
1	F	347	GLN
1	F	373	ASN
1	F	390	GLN

5.3.3 RNA ⓘ

There are no RNA chains in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry ⓘ

18 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	$\# Z > 2$
2	GOL	A	1398	-	5,5,5	0.41	0	5,5,5	1.24	1 (20%)
3	DW0	A	1399	-	32,32,32	1.70	9 (28%)	39,49,49	2.46	15 (38%)
3	DW0	A	1400	-	32,32,32	2.05	8 (25%)	39,49,49	2.79	16 (41%)
2	GOL	B	1398	-	5,5,5	0.33	0	5,5,5	0.95	0
3	DW0	B	1399	-	32,32,32	2.10	10 (31%)	39,49,49	2.22	15 (38%)
3	DW0	B	1400	-	32,32,32	2.04	6 (18%)	39,49,49	2.56	15 (38%)
2	GOL	C	1398	-	5,5,5	0.25	0	5,5,5	1.07	0
3	DW0	C	1399	-	32,32,32	1.79	8 (25%)	39,49,49	2.44	14 (35%)
3	DW0	C	1400	-	32,32,32	2.07	8 (25%)	39,49,49	2.52	15 (38%)
2	GOL	D	1398	-	5,5,5	0.38	0	5,5,5	0.88	0
3	DW0	D	1399	-	32,32,32	1.94	7 (21%)	39,49,49	2.55	16 (41%)
3	DW0	D	1400	-	32,32,32	2.49	9 (28%)	39,49,49	2.98	13 (33%)
2	GOL	E	1398	-	5,5,5	0.50	0	5,5,5	1.13	0
3	DW0	E	1399	-	32,32,32	2.20	8 (25%)	39,49,49	2.51	18 (46%)
3	DW0	E	1400	-	32,32,32	2.02	6 (18%)	39,49,49	2.38	13 (33%)
2	GOL	F	1398	-	5,5,5	0.42	0	5,5,5	0.48	0
3	DW0	F	1399	-	32,32,32	1.90	10 (31%)	39,49,49	2.67	17 (43%)
3	DW0	F	1400	-	32,32,32	2.49	8 (25%)	39,49,49	2.73	15 (38%)

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
2	GOL	A	1398	-	-	0/4/4/4	0/0/0/0
3	DW0	A	1399	-	-	0/6/6/6	0/0/4/4
3	DW0	A	1400	-	-	0/6/6/6	0/0/4/4
2	GOL	B	1398	-	-	0/4/4/4	0/0/0/0
3	DW0	B	1399	-	-	0/6/6/6	0/0/4/4
3	DW0	B	1400	-	-	0/6/6/6	0/0/4/4
2	GOL	C	1398	-	-	0/4/4/4	0/0/0/0
3	DW0	C	1399	-	-	0/6/6/6	0/0/4/4
3	DW0	C	1400	-	-	0/6/6/6	0/0/4/4
2	GOL	D	1398	-	-	0/4/4/4	0/0/0/0
3	DW0	D	1399	-	-	0/6/6/6	0/0/4/4
3	DW0	D	1400	-	-	0/6/6/6	0/0/4/4
2	GOL	E	1398	-	-	0/4/4/4	0/0/0/0
3	DW0	E	1399	-	-	0/6/6/6	0/0/4/4
3	DW0	E	1400	-	-	0/6/6/6	0/0/4/4
2	GOL	F	1398	-	-	0/4/4/4	0/0/0/0
3	DW0	F	1399	-	-	0/6/6/6	0/0/4/4
3	DW0	F	1400	-	-	0/6/6/6	0/0/4/4

All (97) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	1400	DW0	CAR-NAZ	7.28	1.46	1.38
3	D	1400	DW0	CAR-NAZ	6.79	1.45	1.38
3	B	1399	DW0	CAR-NAZ	6.58	1.45	1.38
3	F	1400	DW0	CAR-N10	6.57	1.45	1.38
3	E	1399	DW0	C2-N1	6.18	1.45	1.38
3	E	1399	DW0	CAR-NAZ	5.85	1.44	1.38
3	F	1400	DW0	C2-N1	5.55	1.44	1.38
3	D	1399	DW0	CAR-N10	5.45	1.44	1.38
3	B	1400	DW0	CAR-NAZ	5.44	1.44	1.38
3	C	1400	DW0	C2-N1	5.40	1.44	1.38
3	E	1400	DW0	CAR-N10	5.24	1.44	1.38
3	D	1400	DW0	C2-N1	5.15	1.44	1.38
3	B	1400	DW0	C5-N7	-4.98	1.32	1.39
3	D	1400	DW0	CAR-N10	4.87	1.43	1.38
3	D	1400	DW0	C5-N7	-4.78	1.33	1.39
3	A	1400	DW0	C5-N7	-4.63	1.33	1.39
3	A	1400	DW0	CAR-N10	4.63	1.43	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	1400	DW0	C5-N7	-4.58	1.33	1.39
3	B	1399	DW0	C2-N3	4.47	1.43	1.38
3	E	1400	DW0	C2-N3	4.47	1.43	1.38
3	C	1399	DW0	CAR-NAZ	4.44	1.43	1.38
3	F	1399	DW0	C2-N1	4.42	1.43	1.38
3	C	1399	DW0	CAV-NAX	-4.41	1.33	1.39
3	D	1399	DW0	CAV-NAX	-4.39	1.33	1.39
3	B	1400	DW0	CAR-N10	4.37	1.43	1.38
3	F	1400	DW0	C5-N7	-4.37	1.33	1.39
3	E	1399	DW0	CAR-N10	4.31	1.43	1.38
3	E	1400	DW0	CAV-NAX	-4.26	1.33	1.39
3	F	1399	DW0	CAR-N10	4.25	1.43	1.38
3	A	1400	DW0	CAR-NAZ	4.14	1.42	1.38
3	E	1400	DW0	CAR-NAZ	4.14	1.42	1.38
3	D	1400	DW0	C2-N3	4.13	1.42	1.38
3	E	1399	DW0	C2-N3	4.11	1.42	1.38
3	C	1400	DW0	C2-N3	4.08	1.42	1.38
3	C	1400	DW0	CAV-NAX	-4.02	1.34	1.39
3	E	1399	DW0	CAV-NAX	-3.97	1.34	1.39
3	A	1400	DW0	C2-N3	3.97	1.42	1.38
3	C	1399	DW0	C2-N3	3.94	1.42	1.38
3	A	1399	DW0	CAR-N10	3.93	1.42	1.38
3	C	1400	DW0	C6-N1	3.92	1.46	1.35
3	D	1400	DW0	CAV-NAX	-3.83	1.34	1.39
3	F	1399	DW0	CAR-NAZ	3.81	1.42	1.38
3	D	1399	DW0	CAP-N10	3.75	1.46	1.35
3	C	1400	DW0	CAR-N10	3.71	1.42	1.38
3	C	1400	DW0	CAR-NAZ	3.64	1.42	1.38
3	B	1399	DW0	C4-N9	3.63	1.37	1.33
3	D	1400	DW0	CAP-N10	3.59	1.45	1.35
3	B	1400	DW0	C2-N1	3.58	1.42	1.38
3	F	1399	DW0	C6-N1	3.58	1.45	1.35
3	A	1400	DW0	CAV-NAX	-3.57	1.34	1.39
3	A	1400	DW0	CAT-NAN	3.50	1.36	1.33
3	B	1400	DW0	CAP-N10	3.45	1.45	1.35
3	C	1400	DW0	C5-N7	-3.43	1.34	1.39
3	F	1400	DW0	CAV-NAX	-3.40	1.34	1.39
3	A	1399	DW0	C4-N3	3.35	1.46	1.38
3	B	1400	DW0	CAV-NAX	-3.25	1.35	1.39
3	A	1400	DW0	CAP-N10	3.18	1.44	1.35
3	B	1399	DW0	CAP-N10	3.16	1.44	1.35
3	A	1399	DW0	CAV-NAX	-3.13	1.35	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	1399	DW0	C4-N9	3.05	1.36	1.33
3	D	1399	DW0	C4-N9	3.02	1.36	1.33
3	F	1400	DW0	C2-N3	2.96	1.41	1.38
3	A	1399	DW0	CAP-N10	2.96	1.43	1.35
3	B	1399	DW0	C4-N3	2.95	1.45	1.38
3	B	1399	DW0	CAR-N10	2.93	1.41	1.38
3	F	1400	DW0	CAP-N10	2.91	1.43	1.35
3	C	1399	DW0	C5-C4	2.87	1.44	1.40
3	D	1399	DW0	C2-N1	2.83	1.41	1.38
3	F	1399	DW0	CAP-N10	2.81	1.43	1.35
3	A	1399	DW0	C6-N1	2.71	1.43	1.35
3	A	1399	DW0	C4-N9	2.71	1.36	1.33
3	E	1399	DW0	CAP-N10	2.70	1.43	1.35
3	B	1399	DW0	CAV-NAX	-2.62	1.35	1.39
3	F	1399	DW0	CAV-NAX	-2.58	1.35	1.39
3	C	1400	DW0	CAP-N10	2.55	1.42	1.35
3	D	1400	DW0	C6-N1	2.52	1.42	1.35
3	C	1399	DW0	C6-N1	2.48	1.42	1.35
3	D	1399	DW0	C4-N3	2.40	1.44	1.38
3	F	1399	DW0	C4-N3	2.35	1.43	1.38
3	B	1399	DW0	C6-C5	2.34	1.45	1.41
3	B	1399	DW0	CAV-CAT	2.34	1.43	1.40
3	E	1400	DW0	CAP-N10	2.31	1.42	1.35
3	C	1399	DW0	C4-N9	2.31	1.35	1.33
3	B	1399	DW0	C6-N1	2.28	1.41	1.35
3	C	1399	DW0	CAP-N10	2.27	1.41	1.35
3	A	1399	DW0	CAT-NAN	-2.22	1.31	1.33
3	F	1400	DW0	C6-N1	2.15	1.41	1.35
3	F	1399	DW0	C6-C5	2.14	1.44	1.41
3	A	1400	DW0	C6-N1	2.14	1.41	1.35
3	C	1399	DW0	C4-N3	2.09	1.43	1.38
3	A	1399	DW0	CAR-NAZ	-2.09	1.36	1.38
3	E	1399	DW0	C4-N9	2.08	1.35	1.33
3	D	1399	DW0	CAT-NAN	2.06	1.35	1.33
3	F	1399	DW0	C5-C4	2.05	1.43	1.40
3	E	1399	DW0	C6-N1	2.03	1.41	1.35
3	A	1399	DW0	O2-C2	2.01	1.27	1.23
3	D	1400	DW0	CAC-N3	2.01	1.52	1.48

All (183) bond angle outliers are listed below:

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	1400	DW0	CAL-CA0-N10	8.35	119.10	112.31
3	D	1400	DW0	CAP-N10-CAR	-8.08	117.08	123.42
3	E	1400	DW0	CAP-N10-CAR	-7.09	117.85	123.42
3	F	1400	DW0	CAP-N10-CAR	-6.95	117.97	123.42
3	A	1400	DW0	NAN-CAT-NAZ	6.92	132.78	128.19
3	B	1399	DW0	N9-C4-N3	6.71	132.64	128.19
3	D	1399	DW0	CAV-CAP-N10	-6.69	115.25	120.37
3	B	1400	DW0	CAP-N10-CAR	-6.64	118.20	123.42
3	D	1400	DW0	NAN-CAT-NAZ	6.60	132.56	128.19
3	A	1400	DW0	CAP-N10-CAR	-6.53	118.29	123.42
3	C	1400	DW0	C6-N1-C2	-6.50	118.31	123.42
3	F	1400	DW0	C6-N1-C2	-6.21	118.54	123.42
3	E	1399	DW0	C6-N1-C2	-6.20	118.55	123.42
3	D	1400	DW0	CAL-CAK-N1	-6.19	107.27	112.31
3	C	1399	DW0	N9-C4-N3	6.17	132.28	128.19
3	F	1399	DW0	CAV-CAP-N10	-6.14	115.67	120.37
3	E	1400	DW0	C6-N1-C2	-6.10	118.63	123.42
3	C	1400	DW0	CAP-N10-CAR	-6.08	118.65	123.42
3	B	1400	DW0	NAN-CAT-NAZ	6.05	132.20	128.19
3	D	1399	DW0	N9-C4-N3	5.79	132.03	128.19
3	D	1399	DW0	CAJ-NAX-CAV	5.73	111.34	107.07
3	A	1400	DW0	N9-C4-N3	5.66	131.94	128.19
3	A	1399	DW0	C5-C4-N9	-5.57	106.22	112.46
3	A	1400	DW0	C6-N1-C2	-5.56	119.06	123.42
3	A	1399	DW0	N9-C4-N3	5.55	131.87	128.19
3	E	1399	DW0	CAP-N10-CAR	-5.20	119.33	123.42
3	C	1399	DW0	CAL-CAK-N1	5.11	116.46	112.31
3	E	1399	DW0	N9-C4-N3	5.10	131.57	128.19
3	C	1400	DW0	C8-N7-C5	5.09	110.86	107.07
3	F	1399	DW0	CAJ-NAX-CAV	5.05	110.84	107.07
3	F	1400	DW0	CAL-CA0-N10	4.99	116.36	112.31
3	A	1399	DW0	C6-C5-C4	-4.87	116.43	119.92
3	A	1399	DW0	CAV-CAP-N10	-4.85	116.66	120.37
3	B	1400	DW0	CAJ-NAX-CAV	4.70	110.58	107.07
3	F	1399	DW0	N9-C4-N3	4.70	131.31	128.19
3	F	1399	DW0	CAL-CA0-N10	4.64	116.09	112.31
3	A	1400	DW0	CAJ-NAX-CAV	4.62	110.52	107.07
3	F	1400	DW0	NAN-CAT-NAZ	4.54	131.20	128.19
3	F	1399	DW0	C6-N1-C2	-4.52	119.87	123.42
3	F	1400	DW0	CAJ-NAX-CAV	4.51	110.44	107.07
3	B	1400	DW0	C6-N1-C2	-4.50	119.88	123.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	1399	DW0	C5-C4-N9	-4.41	107.52	112.46
3	F	1399	DW0	C8-N7-C5	4.40	110.35	107.07
3	B	1400	DW0	CAV-CAT-NAN	-4.38	107.56	112.46
3	E	1399	DW0	C5-C4-N9	-4.37	107.56	112.46
3	F	1400	DW0	N9-C4-N3	4.36	131.08	128.19
3	D	1399	DW0	C8-N7-C5	4.32	110.29	107.07
3	C	1399	DW0	C6-N1-C2	-4.23	120.10	123.42
3	C	1400	DW0	CAL-CAK-N1	4.23	115.75	112.31
3	A	1399	DW0	CAA-N7-C5	4.22	130.88	125.61
3	E	1400	DW0	C8-N7-C5	4.21	110.21	107.07
3	A	1399	DW0	CAJ-NAX-CAV	4.18	110.19	107.07
3	F	1399	DW0	CAA-N7-C5	4.18	130.84	125.61
3	D	1399	DW0	C5-C4-N9	-4.17	107.78	112.46
3	F	1399	DW0	C5-C4-N9	-4.13	107.83	112.46
3	B	1399	DW0	C8-N7-C5	4.07	110.10	107.07
3	E	1399	DW0	CAL-CA0-N10	4.04	115.59	112.31
3	D	1400	DW0	CAV-CAT-NAN	-4.02	107.96	112.46
3	A	1400	DW0	CAV-CAT-NAN	-4.00	107.98	112.46
3	C	1400	DW0	CAV-CAT-NAN	-3.98	108.00	112.46
3	C	1399	DW0	C8-N7-C5	3.96	110.03	107.07
3	C	1399	DW0	CAJ-NAX-CAV	3.95	110.02	107.07
3	D	1400	DW0	C6-N1-C2	-3.90	120.36	123.42
3	B	1400	DW0	CAL-CA0-N10	3.83	115.43	112.31
3	A	1400	DW0	C5-C4-N9	-3.82	108.19	112.46
3	F	1400	DW0	C8-N7-C5	3.66	109.80	107.07
3	A	1400	DW0	CAL-CA0-N10	3.61	115.24	112.31
3	C	1400	DW0	NAN-CAT-NAZ	3.58	130.56	128.19
3	E	1399	DW0	C8-N7-C5	3.57	109.73	107.07
3	A	1399	DW0	CAP-N10-CAR	-3.53	120.65	123.42
3	F	1400	DW0	N1-C2-N3	3.53	121.79	116.53
3	D	1399	DW0	CAP-CAV-CAT	3.52	122.45	119.92
3	C	1399	DW0	CAP-N10-CAR	-3.51	120.66	123.42
3	A	1399	DW0	N10-CAR-NAZ	3.48	121.73	116.53
3	F	1400	DW0	CAV-CAT-NAN	-3.48	108.56	112.46
3	E	1400	DW0	N10-CAR-NAZ	3.46	121.70	116.53
3	D	1400	DW0	C5-C4-N9	-3.46	108.59	112.46
3	B	1399	DW0	C5-C4-N9	-3.43	108.62	112.46
3	D	1400	DW0	CAJ-NAX-CAV	3.43	109.63	107.07
3	E	1399	DW0	CAJ-NAX-CAV	3.34	109.56	107.07
3	B	1399	DW0	CAV-CAP-N10	-3.33	117.82	120.37
3	F	1400	DW0	C5-C4-N9	-3.28	108.78	112.46
3	E	1400	DW0	CAJ-NAX-CAV	3.27	109.51	107.07

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	1400	DW0	N1-C2-N3	3.26	121.39	116.53
3	E	1400	DW0	N1-C2-N3	3.25	121.38	116.53
3	A	1400	DW0	N10-CAR-NAZ	3.23	121.36	116.53
3	A	1399	DW0	CAK-CAL-CA0	-3.18	102.33	111.52
3	F	1399	DW0	C6-C5-C4	-3.18	117.64	119.92
3	D	1400	DW0	CA0-N10-CAR	3.14	125.20	119.95
3	B	1399	DW0	C6-N1-C2	-3.09	120.99	123.42
3	E	1399	DW0	CAP-CAV-CAT	3.08	122.14	119.92
3	C	1399	DW0	CAV-CAP-N10	-3.06	118.03	120.37
3	F	1399	DW0	CAA-N7-C8	-3.04	118.81	125.33
3	D	1399	DW0	CAL-CAK-N1	3.04	114.78	112.31
3	A	1400	DW0	CAL-CAK-N1	-3.04	109.84	112.31
3	A	1399	DW0	CAV-CAT-NAN	-3.03	109.07	112.46
3	E	1400	DW0	N9-C4-N3	3.02	130.20	128.19
3	C	1399	DW0	N10-CAR-NAZ	3.02	121.04	116.53
3	B	1399	DW0	CAP-N10-CAR	-2.99	121.07	123.42
3	D	1399	DW0	CAA-N7-C5	2.97	129.33	125.61
3	C	1400	DW0	CAJ-NAX-CAV	2.94	109.27	107.07
3	C	1399	DW0	N1-C2-N3	2.93	120.91	116.53
3	E	1400	DW0	C6-C5-C4	2.92	122.02	119.92
3	B	1400	DW0	C5-C6-N1	-2.92	118.13	120.37
3	C	1400	DW0	N10-CAR-NAZ	2.92	120.88	116.53
3	E	1399	DW0	CAV-CAT-NAN	-2.86	109.25	112.46
3	F	1400	DW0	C6-C5-C4	2.84	121.96	119.92
3	C	1400	DW0	N1-C2-N3	2.82	120.74	116.53
3	E	1399	DW0	N10-CAR-NAZ	2.82	120.74	116.53
3	A	1400	DW0	N1-C2-N3	2.82	120.73	116.53
3	B	1399	DW0	N10-CAR-NAZ	2.80	120.71	116.53
3	A	1400	DW0	CAP-CAV-CAT	2.78	121.92	119.92
3	B	1400	DW0	CA0-N10-CAR	2.76	124.58	119.95
3	B	1400	DW0	C5-C4-N9	-2.74	109.39	112.46
3	B	1399	DW0	CAB-NAX-CAV	2.73	129.02	125.61
3	F	1399	DW0	CAP-CAV-CAT	2.72	121.88	119.92
3	F	1399	DW0	CA0-N10-CAR	-2.72	115.41	119.95
3	B	1399	DW0	CAK-CAL-CA0	-2.71	103.69	111.52
3	D	1399	DW0	CAK-CAL-CA0	-2.63	103.92	111.52
3	F	1399	DW0	N10-CAR-NAZ	2.59	120.39	116.53
3	D	1400	DW0	N10-CAR-NAZ	2.57	120.36	116.53
3	B	1400	DW0	CAC-N3-C2	2.56	125.01	119.51
3	A	1400	DW0	C8-N7-C5	2.56	108.98	107.07
3	B	1400	DW0	NAN-CAJ-NAX	-2.56	107.12	114.36
3	F	1400	DW0	CA0-N10-CAR	2.56	124.23	119.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	1399	DW0	CAV-CAT-NAN	-2.54	109.61	112.46
3	B	1400	DW0	C8-N7-C5	2.51	108.94	107.07
3	E	1399	DW0	C8-N9-C4	2.49	109.91	102.94
3	D	1399	DW0	CAV-CAT-NAN	-2.48	109.68	112.46
3	B	1399	DW0	CAA-N7-C5	2.48	128.71	125.61
3	C	1400	DW0	CAC-N3-C4	-2.48	115.63	121.17
3	A	1399	DW0	NAN-CAJ-NAX	-2.47	107.37	114.36
3	B	1399	DW0	C6-C5-C4	-2.45	118.17	119.92
3	C	1400	DW0	CAC-N3-C2	2.44	124.75	119.51
3	A	1400	DW0	C6-C5-C4	2.43	121.67	119.92
3	E	1399	DW0	CAV-CAP-N10	-2.41	118.53	120.37
3	B	1399	DW0	C5-C4-N3	-2.40	118.74	124.85
3	C	1400	DW0	CAK-CAL-CA0	2.39	118.42	111.52
3	F	1399	DW0	C8-N9-C4	2.38	109.60	102.94
3	D	1400	DW0	CAC-N3-C2	2.38	124.63	119.51
3	B	1399	DW0	CAJ-NAX-CAV	2.35	108.82	107.07
3	E	1400	DW0	N9-C8-N7	-2.33	107.78	114.36
3	D	1399	DW0	CAA-N7-C8	-2.32	120.34	125.33
3	D	1399	DW0	NAN-CAJ-NAX	-2.32	107.80	114.36
3	E	1399	DW0	N9-C8-N7	-2.31	107.83	114.36
3	E	1400	DW0	C5-C4-N9	-2.29	109.89	112.46
3	D	1399	DW0	N10-CAR-NAZ	2.27	119.92	116.53
3	A	1399	DW0	CAK-N1-C2	-2.26	116.17	119.95
3	E	1399	DW0	CAK-N1-C2	2.26	123.74	119.95
3	F	1400	DW0	CAK-N1-C2	2.25	123.71	119.95
3	D	1400	DW0	CAP-CAV-CAT	2.24	121.53	119.92
3	C	1399	DW0	CAV-CAT-NAN	-2.23	109.96	112.46
3	B	1400	DW0	CAJ-NAN-CAT	2.23	109.16	102.94
3	E	1400	DW0	CA0-N10-CAR	2.21	123.65	119.95
3	A	1400	DW0	CAV-CAT-NAZ	-2.21	119.24	124.85
3	A	1399	DW0	C8-N9-C4	2.19	109.05	102.94
3	E	1399	DW0	C5-C6-N1	2.19	122.04	120.37
3	E	1400	DW0	CAC-N3-C2	2.19	124.20	119.51
3	F	1399	DW0	N9-C8-N7	-2.18	108.18	114.36
3	D	1399	DW0	C6-N1-C2	-2.18	121.71	123.42
3	D	1399	DW0	C8-N9-C4	2.16	108.98	102.94
3	A	1400	DW0	NAN-CAJ-NAX	-2.15	108.27	114.36
3	E	1399	DW0	CAA-N7-C5	2.15	128.30	125.61
3	E	1399	DW0	N1-C2-N3	2.14	119.72	116.53
3	E	1399	DW0	CAD-NAZ-CAR	2.13	124.09	119.51
3	C	1399	DW0	C8-N9-C4	2.12	108.85	102.94
3	F	1399	DW0	N1-C2-N3	2.12	119.69	116.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	1400	DW0	CAV-CAT-NAZ	-2.11	119.47	124.85
3	C	1399	DW0	CAD-NAZ-CAR	2.11	124.04	119.51
3	B	1399	DW0	C8-N9-C4	2.11	108.83	102.94
3	F	1400	DW0	NAN-CAJ-NAX	-2.09	108.44	114.36
3	C	1399	DW0	CAL-CA0-N10	2.09	114.01	112.31
3	C	1400	DW0	N9-C8-N7	-2.09	108.46	114.36
3	A	1399	DW0	CAA-N7-C8	-2.09	120.86	125.33
3	F	1400	DW0	N10-CAR-NAZ	2.08	119.64	116.53
3	E	1400	DW0	CAP-CAV-CAT	2.07	121.41	119.92
3	D	1399	DW0	N9-C8-N7	-2.07	108.50	114.36
2	A	1398	GOL	O2-C2-C1	2.05	117.56	108.22
3	C	1400	DW0	NAN-CAJ-NAX	-2.05	108.57	114.36
3	C	1400	DW0	C5-C4-N9	-2.04	110.17	112.46
3	A	1399	DW0	CAJ-NAN-CAT	2.04	108.63	102.94
3	F	1399	DW0	CAT-CAV-NAX	-2.02	102.54	107.89
3	B	1400	DW0	N10-CAR-NAZ	2.01	119.53	116.53

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues

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	377/381 (98%)	-0.52	6 (1%)	68 70	16, 25, 44, 63	0
1	B	377/381 (98%)	-0.54	3 (0%)	83 85	17, 26, 42, 63	0
1	C	377/381 (98%)	-0.52	4 (1%)	77 78	15, 27, 45, 66	0
1	D	377/381 (98%)	-0.33	10 (2%)	52 53	17, 34, 59, 75	0
1	E	377/381 (98%)	-0.46	4 (1%)	77 78	15, 28, 49, 70	0
1	F	377/381 (98%)	-0.27	6 (1%)	68 70	19, 37, 61, 73	0
All	All	2262/2286 (98%)	-0.44	33 (1%)	72 71	15, 29, 52, 75	0

All (33) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	397	PRO	4.5
1	D	174	ASN	4.4
1	A	391	SER	4.0
1	B	391	SER	3.6
1	B	397	PRO	3.6
1	E	391	SER	3.3
1	D	171	LYS	3.1
1	D	21	ALA	3.0
1	C	174	ASN	3.0
1	A	397	PRO	3.0
1	D	221	TYR	3.0
1	A	373	ASN	2.9
1	F	114	GLU	2.9
1	F	397	PRO	2.8
1	F	174	ASN	2.7
1	F	171	LYS	2.6
1	F	390	GLN	2.6
1	E	174	ASN	2.5
1	A	172	GLN	2.4

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Mol	Chain	Res	Type	RSRZ
1	C	391	SER	2.3
1	E	397	PRO	2.3
1	D	235	THR	2.3
1	D	114	GLU	2.2
1	B	390	GLN	2.2
1	D	175	LYS	2.2
1	F	235	THR	2.2
1	A	171	LYS	2.1
1	A	396	ALA	2.1
1	C	397	PRO	2.1
1	E	146	GLY	2.1
1	D	391	SER	2.0
1	D	172	GLN	2.0
1	C	114	GLU	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

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

6.3 Carbohydrates ⓘ

There are no carbohydrates in this entry.

6.4 Ligands ⓘ

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	RSR	LLDF	B-factors(Å ²)	Q<0.9
3	DW0	C	1400	29/29	0.17	6.09	30,41,49,49	29
3	DW0	E	1400	29/29	0.15	3.48	33,42,48,50	29
2	GOL	E	1398	6/6	0.16	3.36	29,41,47,49	0
2	GOL	C	1398	6/6	0.17	3.05	39,49,56,63	0
3	DW0	F	1400	29/29	0.22	2.71	51,55,58,59	29
2	GOL	D	1398	6/6	0.14	2.70	28,35,42,47	0
3	DW0	B	1399	29/29	0.12	2.70	29,38,48,49	0

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Mol	Type	Chain	Res	Atoms	RSR	LLDF	B-factors(\AA^2)	Q<0.9
2	GOL	A	1398	6/6	0.10	2.41	26,34,40,47	0
2	GOL	B	1398	6/6	0.10	2.23	34,41,45,46	0
3	DW0	D	1399	29/29	0.13	1.94	38,44,49,51	0
3	DW0	D	1400	29/29	0.18	1.80	42,45,50,51	29
3	DW0	B	1400	29/29	0.20	1.56	41,45,49,50	29
3	DW0	F	1399	29/29	0.13	1.46	44,48,52,54	0
3	DW0	A	1400	29/29	0.20	1.40	41,50,59,59	29
3	DW0	A	1399	29/29	0.10	1.25	25,34,38,45	0
2	GOL	F	1398	6/6	0.10	0.97	36,43,46,50	0
3	DW0	C	1399	29/29	0.11	0.67	28,39,56,57	0
3	DW0	E	1399	29/29	0.11	0.45	29,36,49,51	0

6.5 Other polymers ⓘ

There are no such residues in this entry.