



Full wwPDB X-ray Structure Validation Report ⓘ

Jan 31, 2016 – 11:38 PM GMT

PDB ID : 1XZW
Title : Sweet potato purple acid phosphatase/phosphate complex
Authors : Schenk, G.; Carrington, L.E.; Gahan, L.R.; Hamilton, S.E.; de Jersey, J.; Guddat, L.W.
Deposited on : 2004-11-12
Resolution : 2.50 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 (RC4), CSD as536be (2015)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20026688
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
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) : trunk26865

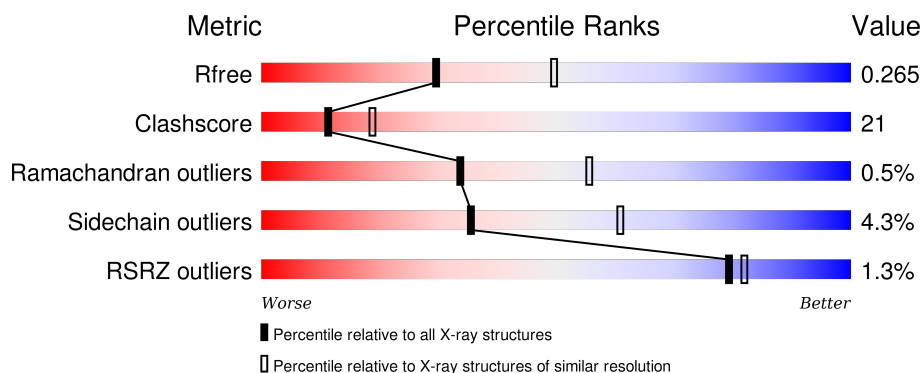
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 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}	91344	3553 (2.50-2.50)
Clashscore	102246	4242 (2.50-2.50)
Ramachandran outliers	100387	4156 (2.50-2.50)
Sidechain outliers	100360	4158 (2.50-2.50)
RSRZ outliers	91569	3562 (2.50-2.50)

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	426	<div> <div></div> <div>66%</div> <div>31%</div> <div>.</div> </div>
1	B	426	<div> <div></div> <div>67%</div> <div>30%</div> <div>.</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
2	NAG	A	433	X	-	-	-
2	NAG	A	436	X	-	-	-
2	FUC	A	438	-	-	X	-
2	MAN	A	439	X	-	-	-
4	FUC	A	440	X	-	-	-
4	FUC	A	443	X	-	-	-
5	FUC	B	945	X	-	X	-
7	NAG	B	935	X	-	-	-
7	FUC	B	938	X	-	-	-
7	NAG	B	939	X	-	-	-
7	MAN	B	941	X	-	-	-

2 Entry composition [i](#)

There are 11 unique types of molecules in this entry. The entry contains 7368 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 purple acid phosphatase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	424	Total	C	N	O	S	0	0	0
			3442	2211	577	646	8			
1	B	426	Total	C	N	O	S	0	0	0
			3457	2220	580	649	8			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	57	PHE	VAL	SEE REMARK 999	GB 6635441
B	557	PHE	VAL	SEE REMARK 999	GB 6635441

- Molecule 2 is a polymer of unknown type called SUGAR (4-MER).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	4	Total	C	N	O	0	0
			49	28	2	19		

- Molecule 3 is a polymer of unknown type called SUGAR (2-MER).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	2	Total	C	N	O	0	0
			28	16	2	10		

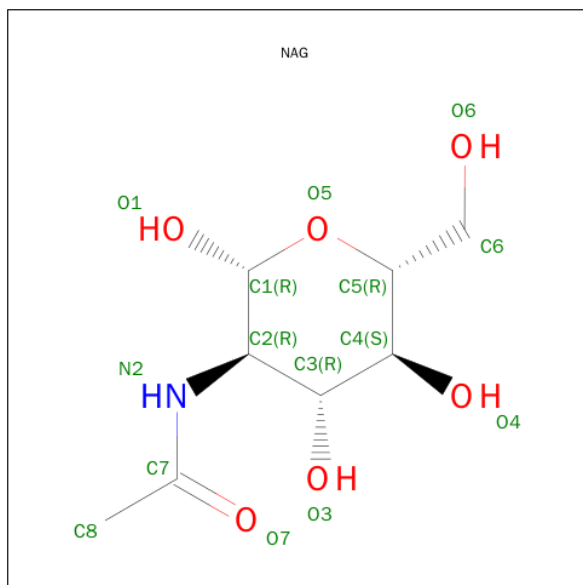
- Molecule 4 is a polymer of unknown type called SUGAR (2-MER).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	2	Total	C	N	O	0	0
			24	14	1	9		
4	A	2	Total	C	N	O	0	0
			24	14	1	9		

- Molecule 5 is a polymer of unknown type called SUGAR (2-MER).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	B	3	Total	C	N	O	0	0
			38	22	2	14		
5	B	3	Total	C	N	O	0	0
			38	22	2	14		

- Molecule 6 is SUGAR (3-MER) (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



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

- Molecule 7 is a polymer of unknown type called SUGAR (4-MER).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
7	B	4	Total	C	N	O	0	0
			49	28	2	19		

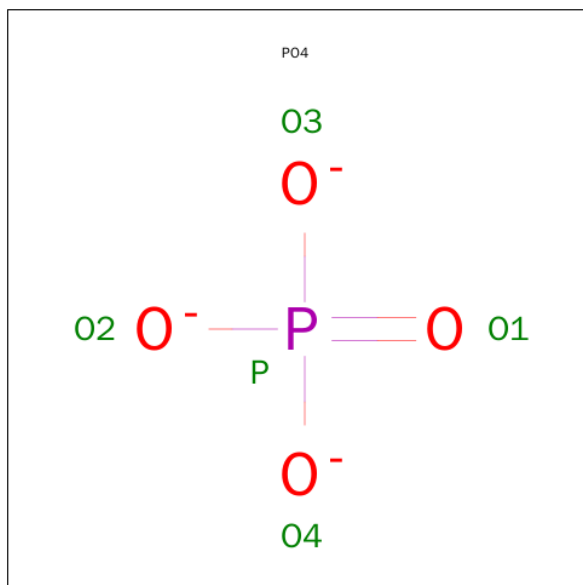
- Molecule 8 is FE (III) ION (three-letter code: FE) (formula: Fe).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	B	1	Total	Fe	0	0
			1	1		
8	A	1	Total	Fe	0	0
			1	1		

- Molecule 9 is MANGANESE (II) ION (three-letter code: MN) (formula: Mn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
9	B	1	Total	Mn	0	0
			1	1		
9	A	1	Total	Mn	0	0
			1	1		

- Molecule 10 is PHOSPHATE ION (three-letter code: PO4) (formula: O₄P).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
10	A	1	Total	O	P	0	0
			5	4	1		
10	B	1	Total	O	P	0	0
			5	4	1		
10	B	1	Total	O	P	0	0
			5	4	1		
10	A	1	Total	O	P	0	0
			5	4	1		

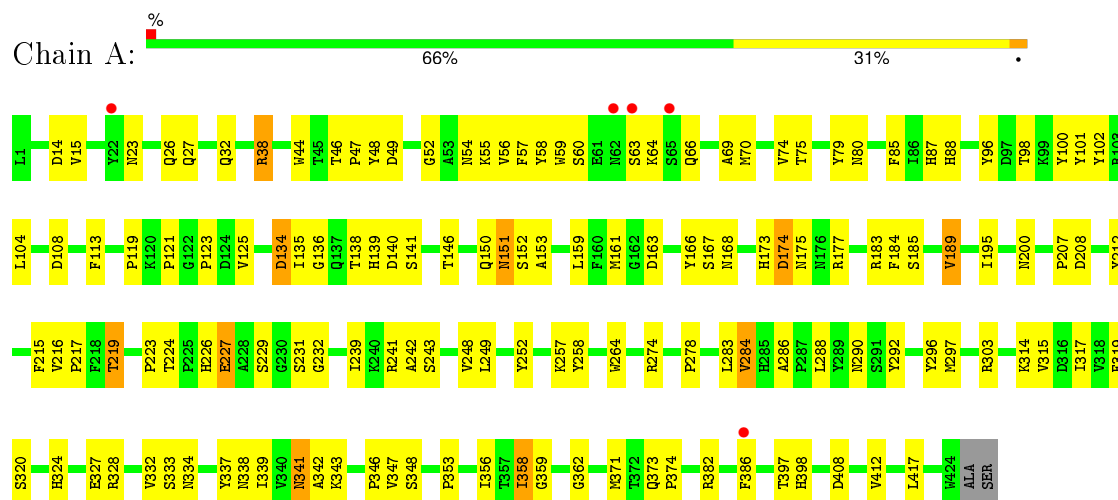
- Molecule 11 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
11	A	81	Total	O	0	0
			81	81		
11	B	100	Total	O	0	0
			100	100		

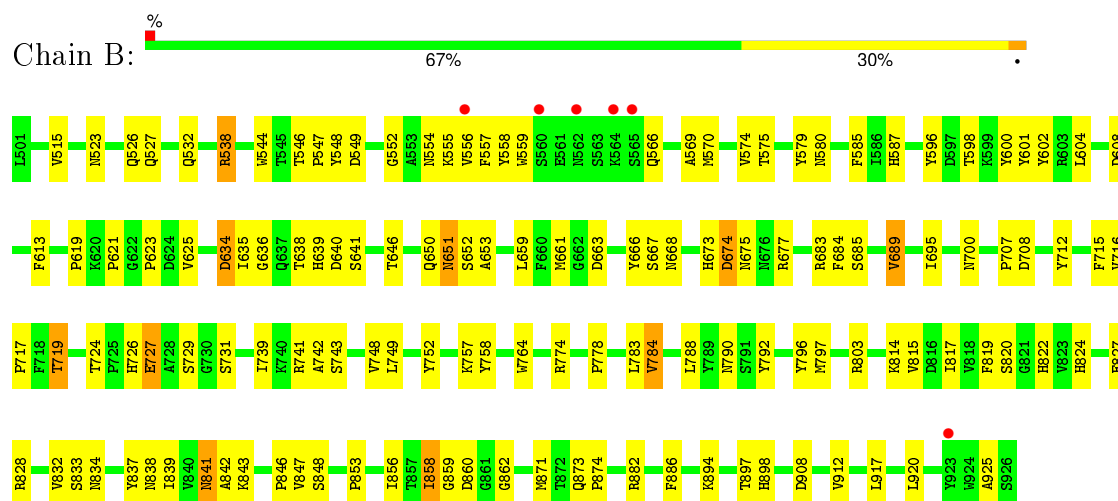
3 Residue-property plots

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: purple acid phosphatase



- Molecule 1: purple acid phosphatase



4 Data and refinement statistics

Property	Value	Source
Space group	P 65 2 2	Depositor
Cell constants a, b, c, α , β , γ	116.15Å 116.15Å 291.95Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	95.10 – 2.50 95.10 – 2.50	Depositor EDS
% Data completeness (in resolution range)	88.1 (95.10-2.50) 88.0 (95.10-2.50)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	0.07	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.52 (at 2.48Å)	Xtriage
Refinement program	X-PLOR 3.843	Depositor
R, R_{free}	0.238 , 0.264 0.233 , 0.265	Depositor DCC
R_{free} test set	3634 reflections (10.01%)	DCC
Wilson B-factor (Å ²)	42.4	Xtriage
Anisotropy	0.263	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 38.3	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.27$	Xtriage
Outliers	0 of 37188 reflections	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	7368	wwPDB-VP
Average B, all atoms (Å ²)	41.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.64% 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, 0.375 respectively for untwinned datasets, and 0.333, 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: NAG, PO4, MN, FUC, MAN, FE

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	0.41	0/3568	0.64	0/4876
1	B	0.40	0/3583	0.64	0/4895
All	All	0.41	0/7151	0.64	0/9771

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
2	A	3	0
4	A	2	0
5	B	1	0
7	B	4	0
All	All	10	0

There are no bond length outliers.

There are no bond angle outliers.

All (10) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
2	A	433	NAG	C1
2	A	436	NAG	C1
2	A	439	MAN	C1
4	A	440	FUC	C1
4	A	443	FUC	C1
7	B	935	NAG	C1
7	B	938	FUC	C1
7	B	939	NAG	C1
7	B	941	MAN	C1

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Mol	Chain	Res	Type	Atom
5	B	945	FUC	C1

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	3442	0	3149	133	0
1	B	3457	0	3167	134	0
2	A	49	0	43	8	0
3	A	28	0	25	2	0
4	A	48	0	44	2	0
5	B	76	0	68	11	0
6	B	14	0	13	0	0
7	B	49	0	43	7	0
8	A	1	0	0	0	0
8	B	1	0	0	0	0
9	A	1	0	0	0	0
9	B	1	0	0	0	0
10	A	10	0	0	0	0
10	B	10	0	0	1	0
11	A	81	0	0	2	0
11	B	100	0	0	1	0
All	All	7368	0	6552	283	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 21.

All (283) 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:A:436:NAG:H4	2:A:438:FUC:H61	1.23	1.14
1:B:638:THR:HG23	1:B:640:ASP:H	1.34	0.91
1:A:23:ASN:HD21	1:A:48:TYR:H	1.16	0.91
1:A:138:THR:HG23	1:A:140:ASP:H	1.37	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:523:ASN:HD22	1:B:547:PRO:HG2	1.38	0.88
1:A:23:ASN:HD22	1:A:47:PRO:HG2	1.38	0.85
1:B:523:ASN:HD21	1:B:548:TYR:H	1.20	0.84
1:A:80:ASN:CG	2:A:433:NAG:HN2	1.81	0.84
1:B:555:LYS:HD2	1:B:555:LYS:N	1.97	0.80
1:B:555:LYS:HG3	1:B:570:MET:SD	2.22	0.80
1:B:546:THR:HG22	1:B:587:HIS:HE1	1.48	0.77
1:A:55:LYS:HD2	1:A:55:LYS:N	2.00	0.77
1:A:227:GLU:CD	1:A:227:GLU:H	1.88	0.76
1:B:727:GLU:H	1:B:727:GLU:CD	1.89	0.76
1:A:26:GLN:HE21	1:A:27:GLN:HE21	1.34	0.76
1:A:46:THR:HG22	1:A:87:HIS:HE1	1.51	0.75
1:B:638:THR:HG23	1:B:640:ASP:N	2.01	0.74
1:A:96:TYR:O	1:A:98:THR:HG23	1.86	0.74
1:B:596:TYR:O	1:B:598:THR:HG23	1.87	0.74
1:A:52:GLY:H	1:A:55:LYS:NZ	1.85	0.73
1:B:749:LEU:HB2	1:B:784:VAL:HG13	1.69	0.73
1:B:526:GLN:HE21	1:B:527:GLN:HE21	1.35	0.73
1:A:249:LEU:HB2	1:A:284:VAL:HG13	1.70	0.73
1:B:774:ARG:NH2	1:B:814:LYS:O	2.21	0.73
1:B:552:GLY:H	1:B:555:LYS:NZ	1.87	0.73
1:A:138:THR:HG23	1:A:140:ASP:N	2.02	0.73
1:A:290:ASN:HD21	1:A:292:TYR:HB2	1.54	0.73
1:B:552:GLY:HA2	1:B:555:LYS:HD3	1.70	0.72
1:A:52:GLY:HA2	1:A:55:LYS:HD3	1.70	0.71
1:A:55:LYS:HG3	1:A:70:MET:SD	2.31	0.71
1:B:790:ASN:HD21	1:B:792:TYR:HB2	1.56	0.71
1:A:315:VAL:O	1:A:353:PRO:HB3	1.90	0.71
1:A:274:ARG:NH2	1:A:314:LYS:O	2.24	0.71
1:A:26:GLN:NE2	1:A:27:GLN:HE21	1.89	0.70
1:B:526:GLN:NE2	1:B:527:GLN:HE21	1.90	0.70
1:A:290:ASN:ND2	1:A:292:TYR:H	1.89	0.69
1:A:23:ASN:ND2	1:A:48:TYR:H	1.88	0.69
1:B:523:ASN:ND2	1:B:548:TYR:H	1.90	0.69
1:A:56:VAL:HG12	1:A:104:LEU:HD11	1.74	0.69
1:A:54:ASN:ND2	1:A:87:HIS:HD2	1.91	0.69
1:B:790:ASN:ND2	1:B:792:TYR:H	1.91	0.68
1:A:15:VAL:HG21	1:A:184:PHE:HD1	1.58	0.68
1:B:556:VAL:HG12	1:B:604:LEU:HD11	1.76	0.67
1:B:815:VAL:O	1:B:853:PRO:HB3	1.95	0.67
1:A:195:ILE:HD13	1:A:239:ILE:HD11	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:715:PHE:O	1:B:719:THR:HB	1.95	0.66
1:B:841:ASN:HD22	1:B:842:ALA:N	1.93	0.66
5:B:940:NAG:O5	5:B:945:FUC:H61	1.97	0.65
1:B:749:LEU:HB2	1:B:784:VAL:CG1	2.26	0.64
1:A:215:PHE:O	1:A:219:THR:HB	1.96	0.64
1:B:554:ASN:HD22	1:B:587:HIS:HD2	1.46	0.64
1:B:554:ASN:ND2	1:B:587:HIS:HD2	1.95	0.64
1:B:695:ILE:HD13	1:B:739:ILE:HD11	1.78	0.64
5:B:933:NAG:H5	5:B:936:NAG:H82	1.79	0.64
1:A:249:LEU:HB2	1:A:284:VAL:CG1	2.28	0.63
1:A:248:VAL:HG22	1:A:283:LEU:HD12	1.81	0.63
1:A:54:ASN:HD22	1:A:87:HIS:HD2	1.47	0.63
1:A:54:ASN:HD22	1:A:87:HIS:CD2	2.15	0.63
1:A:216:VAL:HB	1:A:217:PRO:HD3	1.81	0.62
1:B:546:THR:CG2	1:B:587:HIS:HE1	2.12	0.62
1:B:554:ASN:HD22	1:B:587:HIS:CD2	2.18	0.62
1:A:80:ASN:CG	2:A:433:NAG:N2	2.53	0.61
1:A:15:VAL:CG2	1:A:184:PHE:HD1	2.12	0.61
1:A:46:THR:HG23	1:A:48:TYR:O	2.00	0.61
1:A:341:ASN:HD22	1:A:342:ALA:N	1.98	0.61
1:B:651:ASN:HD22	1:B:651:ASN:C	2.04	0.61
1:B:716:VAL:HB	1:B:717:PRO:HD3	1.82	0.61
1:A:23:ASN:ND2	1:A:47:PRO:HG2	2.14	0.61
1:B:532:GLN:NE2	1:B:741:ARG:HE	1.98	0.61
1:A:15:VAL:HG21	1:A:184:PHE:CD1	2.35	0.61
1:B:748:VAL:HG22	1:B:783:LEU:HD12	1.82	0.60
1:A:57:PHE:O	1:A:102:TYR:HA	2.01	0.60
1:B:651:ASN:HD22	1:B:652:SER:N	2.00	0.60
1:A:332:VAL:HG22	1:A:333:SER:N	2.16	0.60
1:B:832:VAL:HG22	1:B:833:SER:N	2.17	0.60
1:A:151:ASN:ND2	1:A:153:ALA:H	2.00	0.60
1:B:788:LEU:HD13	1:B:803:ARG:HA	1.85	0.59
1:B:726:HIS:HD2	1:B:731:SER:O	1.85	0.59
1:B:555:LYS:HE3	1:B:570:MET:SD	2.43	0.59
1:A:151:ASN:HD22	1:A:151:ASN:C	2.05	0.59
1:B:651:ASN:ND2	1:B:653:ALA:H	2.00	0.59
1:B:638:THR:HG22	1:B:641:SER:H	1.67	0.59
4:A:437:NAG:O4	4:A:443:FUC:H2	2.03	0.59
1:A:151:ASN:HD22	1:A:152:SER:N	2.01	0.58
1:B:538:ARG:HD2	1:B:596:TYR:CZ	2.38	0.58
1:A:226:HIS:HD2	1:A:231:SER:O	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:515:VAL:HG21	1:B:684:PHE:HD1	1.69	0.58
1:A:52:GLY:H	1:A:55:LYS:HZ3	1.52	0.58
1:B:546:THR:HG23	1:B:548:TYR:O	2.03	0.58
1:A:332:VAL:HG23	1:A:347:VAL:O	2.03	0.58
1:A:52:GLY:CA	1:A:55:LYS:HD3	2.34	0.57
1:B:552:GLY:CA	1:B:555:LYS:HD3	2.34	0.57
1:B:663:ASP:HB3	1:B:666:TYR:CE1	2.39	0.57
1:A:56:VAL:HG12	1:A:104:LEU:CD1	2.34	0.57
1:A:288:LEU:HD13	1:A:303:ARG:HA	1.86	0.57
1:B:832:VAL:HG23	1:B:847:VAL:O	2.05	0.57
1:A:46:THR:CG2	1:A:87:HIS:HE1	2.17	0.57
1:A:138:THR:HG22	1:A:141:SER:H	1.69	0.57
1:B:556:VAL:HG12	1:B:604:LEU:CD1	2.35	0.57
1:B:557:PHE:O	1:B:602:TYR:HA	2.04	0.56
5:B:937:NAG:N2	5:B:945:FUC:H2	2.21	0.56
2:A:433:NAG:O7	2:A:438:FUC:H2	2.06	0.55
1:A:163:ASP:HB3	1:A:166:TYR:CE1	2.41	0.55
1:B:523:ASN:ND2	1:B:547:PRO:HG2	2.14	0.55
1:B:659:LEU:HD23	1:B:695:ILE:HD12	1.90	0.54
1:B:559:TRP:HB3	1:B:566:GLN:HA	1.89	0.54
1:B:828:ARG:NH2	1:B:917:LEU:HD13	2.22	0.54
2:A:436:NAG:H2	2:A:438:FUC:H63	1.90	0.54
1:B:580:ASN:HB2	5:B:933:NAG:H83	1.89	0.54
1:A:297:MET:CE	1:B:838:ASN:HA	2.37	0.54
1:A:26:GLN:NE2	1:A:183:ARG:HE	2.06	0.54
1:B:554:ASN:C	1:B:555:LYS:HD2	2.29	0.53
1:A:227:GLU:N	1:A:227:GLU:CD	2.59	0.53
5:B:937:NAG:H82	5:B:945:FUC:H2	1.89	0.53
1:B:552:GLY:H	1:B:555:LYS:HZ3	1.52	0.53
2:A:436:NAG:C4	2:A:438:FUC:H61	2.16	0.53
1:A:328:ARG:NH2	1:A:417:LEU:HD13	2.23	0.53
1:B:546:THR:HG22	1:B:587:HIS:CE1	2.38	0.53
1:B:526:GLN:HE21	1:B:527:GLN:HG3	1.74	0.53
1:A:337:TYR:CZ	1:A:339:ILE:HA	2.43	0.53
1:B:828:ARG:HH21	1:B:917:LEU:HD13	1.75	0.52
1:B:837:TYR:CZ	1:B:839:ILE:HA	2.44	0.52
1:B:523:ASN:HD22	1:B:547:PRO:CG	2.17	0.52
1:A:327:GLU:HG2	11:A:1146:HOH:O	2.09	0.52
1:A:26:GLN:HE21	1:A:27:GLN:HG3	1.73	0.52
1:A:159:LEU:HD23	1:A:195:ILE:HD12	1.92	0.52
1:B:727:GLU:CD	1:B:727:GLU:N	2.61	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:841:ASN:ND2	1:B:843:LYS:H	2.09	0.51
1:A:151:ASN:HD22	1:A:153:ALA:H	1.58	0.51
1:A:26:GLN:HE22	1:A:183:ARG:HE	1.57	0.51
1:A:332:VAL:HG23	1:A:347:VAL:C	2.31	0.51
1:A:54:ASN:C	1:A:55:LYS:HD2	2.30	0.51
1:A:32:GLN:NE2	1:A:241:ARG:HE	2.08	0.50
1:B:659:LEU:CD2	1:B:695:ILE:HD12	2.42	0.50
1:B:661:MET:HE2	1:B:858:ILE:HD12	1.94	0.50
1:A:138:THR:CG2	1:A:362:GLY:O	2.59	0.50
1:A:134:ASP:HB3	1:A:166:TYR:OH	2.12	0.50
1:A:200:ASN:HB3	1:A:252:TYR:CZ	2.47	0.50
1:A:138:THR:HG23	1:A:139:HIS:N	2.27	0.50
1:B:873:GLN:HG3	1:B:874:PRO:HA	1.93	0.50
1:A:161:MET:HE2	1:A:358:ILE:HD12	1.94	0.49
1:B:556:VAL:HG23	1:B:569:ALA:HB3	1.94	0.49
1:B:832:VAL:HG23	1:B:847:VAL:C	2.32	0.49
1:B:651:ASN:HD22	1:B:653:ALA:H	1.59	0.49
1:A:55:LYS:HE3	1:A:70:MET:SD	2.52	0.49
1:B:556:VAL:CG2	1:B:569:ALA:HB3	2.41	0.49
1:A:229:SER:HG	1:A:264:TRP:HZ2	1.61	0.49
1:A:373:GLN:HG3	1:A:374:PRO:HA	1.95	0.49
1:A:328:ARG:HH21	1:A:417:LEU:HD13	1.78	0.49
1:A:185:SER:O	1:A:189:VAL:HG23	2.12	0.48
1:B:638:THR:HG23	1:B:639:HIS:N	2.27	0.48
1:A:138:THR:HG21	1:A:362:GLY:O	2.14	0.48
1:A:159:LEU:CD2	1:A:195:ILE:HD12	2.44	0.48
5:B:937:NAG:H82	5:B:945:FUC:C2	2.42	0.48
1:B:515:VAL:CG2	1:B:684:PHE:HD1	2.26	0.48
1:B:700:ASN:HB3	1:B:752:TYR:CZ	2.48	0.48
1:B:621:PRO:HA	1:B:742:ALA:O	2.14	0.48
7:B:935:NAG:O3	7:B:939:NAG:C1	2.62	0.48
1:A:46:THR:CG2	1:A:48:TYR:O	2.61	0.48
1:A:163:ASP:HB3	1:A:166:TYR:CZ	2.49	0.48
1:A:14:ASP:OD1	3:A:434:NAG:H83	2.14	0.48
1:B:638:THR:CG2	1:B:862:GLY:O	2.62	0.47
1:B:729:SER:HG	1:B:764:TRP:HZ2	1.62	0.47
1:B:824:HIS:HA	1:B:859:GLY:O	2.14	0.47
1:B:796:TYR:CD2	1:B:797:MET:HG3	2.49	0.47
1:A:44:TRP:CH2	1:A:56:VAL:HG13	2.50	0.47
1:B:856:ILE:HG22	1:B:858:ILE:HG12	1.96	0.47
7:B:939:NAG:H62	7:B:941:MAN:C1	2.43	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:23:ASN:HD22	1:A:47:PRO:CG	2.18	0.47
5:B:945:FUC:H63	5:B:945:FUC:O3	2.14	0.47
1:B:638:THR:HG21	1:B:862:GLY:O	2.15	0.47
1:B:894:LYS:HG3	7:B:935:NAG:C6	2.44	0.47
1:B:894:LYS:HG3	7:B:935:NAG:H61	1.96	0.47
1:A:324:HIS:HA	1:A:359:GLY:O	2.14	0.47
1:B:803:ARG:NH1	1:B:834:ASN:HB3	2.30	0.47
4:A:437:NAG:O3	4:A:443:FUC:H63	2.15	0.47
1:B:515:VAL:HG21	1:B:684:PHE:CD1	2.47	0.47
1:A:296:TYR:CD2	1:A:297:MET:HG3	2.50	0.47
7:B:939:NAG:C6	7:B:941:MAN:C1	2.92	0.47
1:A:341:ASN:ND2	1:A:343:LYS:H	2.13	0.46
1:A:102:TYR:CZ	1:A:113:PHE:HB2	2.50	0.46
1:B:685:SER:O	1:B:689:VAL:HG23	2.15	0.46
1:B:707:PRO:HB3	1:B:712:TYR:CE2	2.50	0.46
1:A:207:PRO:HB3	1:A:212:TYR:CE2	2.50	0.46
1:A:121:PRO:HA	1:A:242:ALA:O	2.15	0.46
1:B:635:ILE:HG23	1:B:636:GLY:N	2.30	0.46
1:B:796:TYR:CE2	1:B:797:MET:HG3	2.51	0.46
1:B:623:PRO:HA	1:B:778:PRO:HD3	1.98	0.46
1:B:784:VAL:O	1:B:820:SER:HA	2.15	0.46
1:B:546:THR:CG2	1:B:548:TYR:O	2.63	0.46
5:B:937:NAG:C7	5:B:945:FUC:H2	2.46	0.46
1:A:135:ILE:HG23	1:A:136:GLY:N	2.30	0.46
1:A:59:TRP:HB3	1:A:66:GLN:HA	1.97	0.46
1:B:602:TYR:CZ	1:B:613:PHE:HB2	2.50	0.46
1:A:296:TYR:CE2	1:A:297:MET:HG3	2.50	0.46
1:A:284:VAL:O	1:A:320:SER:HA	2.16	0.46
1:A:303:ARG:NH1	1:A:334:ASN:HB3	2.29	0.46
1:B:897:THR:OG1	1:B:898:HIS:ND1	2.40	0.46
1:B:544:TRP:CH2	1:B:556:VAL:HG13	2.51	0.45
1:B:894:LYS:CB	7:B:935:NAG:H62	2.46	0.45
1:A:56:VAL:CG2	1:A:69:ALA:HB3	2.46	0.45
1:A:52:GLY:H	1:A:55:LYS:HZ2	1.63	0.45
1:B:532:GLN:HE21	1:B:532:GLN:HB2	1.63	0.45
1:A:332:VAL:HG21	1:A:346:PRO:HB2	1.98	0.45
1:B:663:ASP:HB3	1:B:666:TYR:CZ	2.52	0.45
3:A:434:NAG:H62	3:A:442:NAG:C7	2.47	0.45
1:B:549:ASP:HB2	1:B:585:PHE:CD1	2.52	0.45
1:A:286:ALA:HB3	11:A:1092:HOH:O	2.17	0.45
1:B:526:GLN:NE2	1:B:683:ARG:HE	2.14	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:937:NAG:O3	5:B:945:FUC:H63	2.17	0.45
1:B:634:ASP:HB3	1:B:666:TYR:OH	2.16	0.45
1:B:920:LEU:HD12	1:B:925:ALA:HB1	1.98	0.45
1:A:123:PRO:HA	1:A:278:PRO:HD3	1.99	0.45
1:B:757:LYS:O	1:B:758:TYR:HB2	2.17	0.45
1:A:56:VAL:HG23	1:A:69:ALA:HB3	1.99	0.45
1:A:356:ILE:HG22	1:A:358:ILE:HG12	1.98	0.45
1:B:832:VAL:HG21	1:B:846:PRO:HB2	1.99	0.44
1:A:32:GLN:HE21	1:A:32:GLN:HB2	1.61	0.44
1:A:408:ASP:HB3	1:A:412:VAL:HB	2.00	0.44
1:A:146:THR:O	1:A:150:GLN:HG3	2.16	0.44
1:B:897:THR:HB	1:B:925:ALA:HB2	2.00	0.44
1:B:832:VAL:HG22	1:B:833:SER:H	1.83	0.44
1:B:646:THR:O	1:B:650:GLN:HG3	2.17	0.44
1:A:232:GLY:HA3	1:B:712:TYR:HB3	2.00	0.44
1:B:894:LYS:HB3	7:B:935:NAG:H62	2.00	0.44
1:A:338:ASN:HA	1:B:797:MET:HE2	2.00	0.44
1:A:38:ARG:HD2	1:A:96:TYR:CZ	2.52	0.44
1:B:908:ASP:HB3	1:B:912:VAL:HB	2.00	0.43
1:A:173:HIS:O	1:A:174:ASP:C	2.57	0.43
1:A:397:THR:OG1	1:A:398:HIS:ND1	2.41	0.43
1:B:558:TYR:HA	1:B:601:TYR:O	2.19	0.43
1:A:98:THR:OG1	1:A:100:TYR:CE2	2.72	0.43
1:B:574:VAL:HG22	1:B:575:THR:N	2.33	0.43
1:B:673:HIS:O	1:B:674:ASP:C	2.57	0.43
1:B:862:GLY:HA2	1:B:886:PHE:CE1	2.53	0.43
1:A:338:ASN:HA	1:B:797:MET:CE	2.48	0.43
1:A:59:TRP:CZ3	1:A:66:GLN:NE2	2.87	0.43
1:B:667:SER:HB2	1:B:677:ARG:HB2	2.01	0.43
1:A:257:LYS:O	1:A:258:TYR:HB2	2.18	0.43
1:A:74:VAL:HG22	1:A:75:THR:N	2.34	0.43
1:B:817:ILE:HD13	1:B:819:PHE:CZ	2.53	0.43
1:B:862:GLY:HA2	1:B:886:PHE:CD1	2.54	0.42
1:A:161:MET:HE2	1:A:358:ILE:CD1	2.49	0.42
1:A:243:SER:HB2	1:A:278:PRO:HD2	2.00	0.42
1:A:58:TYR:HA	1:A:101:TYR:O	2.18	0.42
1:A:123:PRO:HA	1:A:278:PRO:CD	2.49	0.42
1:B:532:GLN:HE22	1:B:741:ARG:HE	1.65	0.42
2:A:438:FUC:H63	2:A:438:FUC:O3	2.20	0.42
1:A:79:TYR:CG	1:A:80:ASN:N	2.88	0.42
1:B:526:GLN:HE21	1:B:527:GLN:NE2	2.11	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:297:MET:HE2	1:B:838:ASN:HA	2.01	0.42
1:B:822:HIS:O	10:B:931:PO4:O3	2.37	0.42
1:B:832:VAL:CG2	1:B:833:SER:N	2.83	0.42
1:B:552:GLY:H	1:B:555:LYS:HZ2	1.65	0.42
1:A:332:VAL:HG22	1:A:333:SER:H	1.83	0.42
1:A:23:ASN:ND2	1:A:48:TYR:N	2.64	0.41
1:B:623:PRO:HA	1:B:778:PRO:CD	2.49	0.41
1:A:26:GLN:HE21	1:A:27:GLN:NE2	2.10	0.41
1:B:598:THR:OG1	1:B:600:TYR:CE2	2.74	0.41
1:B:743:SER:HB2	1:B:778:PRO:HD2	2.01	0.41
1:A:119:PRO:HG2	1:A:125:VAL:HG11	2.02	0.41
1:A:362:GLY:HA2	1:A:386:PHE:CE1	2.55	0.41
1:B:526:GLN:HE22	1:B:683:ARG:HE	1.68	0.41
1:A:138:THR:CG2	1:A:141:SER:H	2.34	0.41
1:A:88:HIS:CE1	1:A:223:PRO:HD3	2.56	0.41
1:A:317:ILE:HD13	1:A:319:PHE:CZ	2.56	0.41
1:B:847:VAL:HG12	1:B:848:SER:N	2.36	0.41
1:A:297:MET:SD	1:B:838:ASN:HA	2.61	0.41
5:B:942:FUC:H62	11:B:1129:HOH:O	2.21	0.41
2:A:436:NAG:H2	2:A:438:FUC:C6	2.50	0.41
1:A:292:TYR:HE1	1:A:327:GLU:HB2	1.86	0.41
1:B:619:PRO:HG2	1:B:625:VAL:HG11	2.03	0.41
1:B:579:TYR:CG	1:B:580:ASN:N	2.88	0.41
1:A:46:THR:HG22	1:A:87:HIS:CE1	2.41	0.40
1:B:668:ASN:HA	1:B:673:HIS:HA	2.02	0.40
1:A:49:ASP:HB2	1:A:85:PHE:CD1	2.56	0.40
5:B:937:NAG:C8	5:B:945:FUC:H2	2.51	0.40
1:A:168:ASN:HA	1:A:173:HIS:HA	2.02	0.40
1:A:167:SER:HB2	1:A:177:ARG:HB2	2.02	0.40
1:B:792:TYR:HE1	1:B:827:GLU:HB2	1.86	0.40
1:A:15:VAL:HG22	1:A:184:PHE:HA	2.03	0.40
1:A:347:VAL:HG12	1:A:348:SER:N	2.36	0.40
1:B:860:ASP:OD1	1:B:860:ASP:N	2.55	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	422/426 (99%)	392 (93%)	27 (6%)	3 (1%)	26	46
1	B	424/426 (100%)	398 (94%)	25 (6%)	1 (0%)	52	75
All	All	846/852 (99%)	790 (93%)	52 (6%)	4 (0%)	34	55

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	674	ASP
1	A	174	ASP
1	A	63	SER
1	A	64	LYS

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	360/366 (98%)	344 (96%)	16 (4%)	35	60
1	B	362/366 (99%)	347 (96%)	15 (4%)	37	63
All	All	722/732 (99%)	691 (96%)	31 (4%)	35	61

All (31) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	38	ARG
1	A	60	SER

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Mol	Chain	Res	Type
1	A	108	ASP
1	A	134	ASP
1	A	151	ASN
1	A	175	ASN
1	A	189	VAL
1	A	208	ASP
1	A	219	THR
1	A	224	THR
1	A	227	GLU
1	A	284	VAL
1	A	341	ASN
1	A	358	ILE
1	A	371	MET
1	A	382	ARG
1	B	538	ARG
1	B	608	ASP
1	B	634	ASP
1	B	651	ASN
1	B	675	ASN
1	B	689	VAL
1	B	708	ASP
1	B	719	THR
1	B	724	THR
1	B	727	GLU
1	B	784	VAL
1	B	841	ASN
1	B	858	ILE
1	B	871	MET
1	B	882	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (25) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	23	ASN
1	A	26	GLN
1	A	29	HIS
1	A	32	GLN
1	A	54	ASN
1	A	87	HIS
1	A	147	HIS
1	A	151	ASN
1	A	226	HIS

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Mol	Chain	Res	Type
1	A	290	ASN
1	A	341	ASN
1	A	388	HIS
1	B	523	ASN
1	B	526	GLN
1	B	529	HIS
1	B	532	GLN
1	B	554	ASN
1	B	566	GLN
1	B	587	HIS
1	B	651	ASN
1	B	672	ASN
1	B	726	HIS
1	B	790	ASN
1	B	841	ASN
1	B	888	HIS

5.3.3 RNA ⓘ

There are no RNA molecules 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 ⓘ

20 carbohydrates 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	NAG	A	433	1,2	14,14,15	1.04	2 (14%)	15,19,21	0.60	0
3	NAG	A	434	1,3	14,14,15	0.60	0	15,19,21	0.73	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	NAG	A	435	1,4	14,14,15	0.52	0	15,19,21	0.80	1 (6%)
2	NAG	A	436	2	14,14,15	0.91	1 (7%)	15,19,21	1.17	2 (13%)
4	NAG	A	437	1,4	14,14,15	0.46	0	15,19,21	0.91	1 (6%)
2	FUC	A	438	2	10,10,11	0.39	0	14,14,16	0.88	1 (7%)
2	MAN	A	439	2	11,11,12	0.78	0	14,15,17	1.26	1 (7%)
4	FUC	A	440	4	10,10,11	0.64	0	14,14,16	0.64	0
3	NAG	A	442	3	14,14,15	0.54	0	15,19,21	0.69	0
4	FUC	A	443	4	10,10,11	0.64	0	14,14,16	1.17	2 (14%)
5	NAG	B	933	1,5	14,14,15	0.59	0	15,19,21	0.84	1 (6%)
7	NAG	B	935	1,7	14,14,15	0.89	1 (7%)	15,19,21	1.72	3 (20%)
5	NAG	B	936	5	14,14,15	0.57	0	15,19,21	0.98	1 (6%)
5	NAG	B	937	1,5	14,14,15	0.65	0	15,19,21	1.08	2 (13%)
7	FUC	B	938	7	10,10,11	0.59	0	14,14,16	1.28	1 (7%)
7	NAG	B	939	7	14,14,15	0.68	0	15,19,21	1.19	2 (13%)
5	NAG	B	940	5	14,14,15	0.67	0	15,19,21	0.98	2 (13%)
7	MAN	B	941	7	11,11,12	0.65	0	14,15,17	0.43	0
5	FUC	B	942	5	10,10,11	0.54	0	14,14,16	0.64	0
5	FUC	B	945	5	10,10,11	0.48	0	14,14,16	0.91	1 (7%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAG	A	433	1,2	1/1/5/7	0/6/23/26	0/1/1/1
3	NAG	A	434	1,3	-	0/6/23/26	0/1/1/1
4	NAG	A	435	1,4	-	2/6/23/26	0/1/1/1
2	NAG	A	436	2	1/1/5/7	0/6/23/26	0/1/1/1
4	NAG	A	437	1,4	-	0/6/23/26	0/1/1/1
2	FUC	A	438	2	-	0/0/17/20	0/1/1/1
2	MAN	A	439	2	1/1/4/5	0/2/19/22	0/1/1/1
4	FUC	A	440	4	1/1/4/5	0/0/17/20	0/1/1/1
3	NAG	A	442	3	-	0/6/23/26	0/1/1/1
4	FUC	A	443	4	1/1/4/5	0/0/17/20	0/1/1/1
5	NAG	B	933	1,5	-	0/6/23/26	0/1/1/1
7	NAG	B	935	1,7	1/1/5/7	0/6/23/26	0/1/1/1
5	NAG	B	936	5	-	0/6/23/26	0/1/1/1
5	NAG	B	937	1,5	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	FUC	B	938	7	1/1/4/5	0/0/17/20	0/1/1/1
7	NAG	B	939	7	1/1/5/7	0/6/23/26	0/1/1/1
5	NAG	B	940	5	-	1/6/23/26	0/1/1/1
7	MAN	B	941	7	1/1/4/5	0/2/19/22	0/1/1/1
5	FUC	B	942	5	-	0/0/17/20	0/1/1/1
5	FUC	B	945	5	1/1/4/5	0/0/17/20	0/1/1/1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	B	935	NAG	C1-C2	2.03	1.55	1.52
2	A	433	NAG	C1-C2	2.10	1.55	1.52
2	A	436	NAG	C1-C2	2.25	1.55	1.52
2	A	433	NAG	C3-C2	2.28	1.57	1.52

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	B	935	NAG	C4-C3-C2	-4.77	103.81	111.23
7	B	935	NAG	C2-N2-C7	-2.75	119.51	123.04
2	A	436	NAG	C2-N2-C7	-2.74	119.52	123.04
5	B	936	NAG	C2-N2-C7	-2.59	119.71	123.04
2	A	436	NAG	C4-C3-C2	-2.56	107.25	111.23
5	B	933	NAG	C2-N2-C7	-2.54	119.78	123.04
5	B	940	NAG	C2-N2-C7	-2.51	119.81	123.04
4	A	437	NAG	C2-N2-C7	-2.45	119.89	123.04
7	B	939	NAG	C2-N2-C7	-2.34	120.03	123.04
4	A	435	NAG	C2-N2-C7	-2.31	120.07	123.04
5	B	937	NAG	C2-N2-C7	-2.15	120.28	123.04
4	A	443	FUC	C1-O5-C5	2.09	115.61	112.38
5	B	940	NAG	C1-O5-C5	2.18	115.02	112.25
7	B	935	NAG	O4-C4-C3	2.31	115.53	110.34
5	B	937	NAG	O3-C3-C2	2.32	113.70	109.11
2	A	438	FUC	C1-O5-C5	2.49	116.23	112.38
5	B	945	FUC	C1-O5-C5	2.60	116.39	112.38
4	A	443	FUC	C3-C4-C5	2.81	114.45	109.72
7	B	939	NAG	C1-O5-C5	2.85	115.86	112.25
7	B	938	FUC	C1-C2-C3	3.11	113.22	109.54
2	A	439	MAN	C1-C2-C3	4.35	114.69	109.54

All (10) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
7	B	935	NAG	C1
5	B	945	FUC	C1
2	A	439	MAN	C1
7	B	939	NAG	C1
7	B	941	MAN	C1
7	B	938	FUC	C1
2	A	433	NAG	C1
4	A	443	FUC	C1
4	A	440	FUC	C1
2	A	436	NAG	C1

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	B	940	NAG	O7-C7-N2-C2
4	A	435	NAG	O7-C7-N2-C2
4	A	435	NAG	C8-C7-N2-C2

There are no ring outliers.

16 monomers are involved in 30 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	433	NAG	3	0
3	A	434	NAG	2	0
2	A	436	NAG	4	0
4	A	437	NAG	2	0
2	A	438	FUC	6	0
3	A	442	NAG	1	0
4	A	443	FUC	2	0
5	B	933	NAG	2	0
7	B	935	NAG	5	0
5	B	936	NAG	1	0
5	B	937	NAG	6	0
7	B	939	NAG	3	0
5	B	940	NAG	1	0
7	B	941	MAN	2	0
5	B	942	FUC	1	0
5	B	945	FUC	8	0

5.6 Ligand geometry

Of 9 ligands modelled in this entry, 4 are monoatomic - leaving 5 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	$\# Z > 2$
10	PO4	A	431	9,8	4,4,4	1.21	0	6,6,6	0.27	0
10	PO4	A	451	-	4,4,4	0.78	0	6,6,6	0.26	0
10	PO4	B	450	-	4,4,4	0.73	0	6,6,6	0.26	0
10	PO4	B	931	9,8	4,4,4	1.44	0	6,6,6	0.27	0
6	NAG	B	934	1	14,14,15	0.65	0	15,19,21	0.68	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
10	PO4	A	431	9,8	-	0/0/0/0	0/0/0/0
10	PO4	A	451	-	-	0/0/0/0	0/0/0/0
10	PO4	B	450	-	-	0/0/0/0	0/0/0/0
10	PO4	B	931	9,8	-	0/0/0/0	0/0/0/0
6	NAG	B	934	1	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
10	B	931	PO4	1	0

5.7 Other polymers [i](#)

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 [i](#)

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

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	424/426 (99%)	0.19	5 (1%) 81 83	27, 40, 55, 81	0
1	B	426/426 (100%)	0.32	6 (1%) 78 80	26, 38, 52, 78	0
All	All	850/852 (99%)	0.26	11 (1%) 79 82	26, 39, 54, 81	0

All (11) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	565	SER	6.6
1	A	62	ASN	4.4
1	A	22	TYR	3.3
1	A	65	SER	3.2
1	B	560	SER	2.6
1	B	923	TYR	2.4
1	B	562	ASN	2.3
1	A	386	PHE	2.3
1	A	63	SER	2.3
1	B	556	VAL	2.2
1	B	564	LYS	2.1

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. 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(Å ²)	Q<0.9
7	NAG	B	935	14/15	0.92	0.20	0.31	46,48,52,53	0
3	NAG	A	434	14/15	0.95	0.12	-1.52	54,57,64,64	0
5	FUC	B	945	10/11	0.69	0.28	-	78,80,81,81	0
2	MAN	A	439	11/12	0.67	0.31	-	97,99,100,100	0
7	NAG	B	939	14/15	0.89	0.22	-	54,56,59,61	0
4	NAG	A	435	14/15	0.85	0.18	-	61,64,67,71	0
3	NAG	A	442	14/15	0.83	0.20	-	67,70,71,72	0
5	FUC	B	942	10/11	0.72	0.30	-	84,86,87,88	0
7	MAN	B	941	11/12	0.68	0.18	-	63,65,66,67	0
5	NAG	B	940	14/15	0.75	0.24	-	70,72,74,74	0
5	NAG	B	933	14/15	0.85	0.29	-	70,74,79,81	0
7	FUC	B	938	10/11	0.79	0.25	-	47,51,54,54	0
5	NAG	B	937	14/15	0.86	0.23	-	63,66,71,74	0
5	NAG	B	936	14/15	0.88	0.22	-	81,82,83,83	0
2	NAG	A	433	14/15	0.68	0.27	-	77,81,88,91	0
2	FUC	A	438	10/11	0.83	0.24	-	90,92,93,94	0
4	FUC	A	443	10/11	0.83	0.20	-	85,87,88,89	0
4	NAG	A	437	14/15	0.84	0.17	-	70,75,78,82	0
4	FUC	A	440	10/11	0.86	0.23	-	74,78,79,79	0
2	NAG	A	436	14/15	0.76	0.30	-	93,95,96,99	0

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	RSCC	RSR	LLDF	B-factors(Å ²)	Q<0.9
10	PO4	B	450	5/5	0.88	0.20	0.88	55,56,56,60	0
10	PO4	A	431	5/5	0.99	0.15	-0.52	51,51,53,53	0
6	NAG	B	934	14/15	0.95	0.13	-1.06	43,44,45,45	0
10	PO4	A	451	5/5	0.91	0.13	-1.86	55,56,56,60	0
10	PO4	B	931	5/5	0.99	0.11	-2.72	40,40,42,44	0
9	MN	A	430	1/1	0.99	0.09	-3.91	40,40,40,40	0
8	FE	B	929	1/1	0.97	0.06	-6.02	50,50,50,50	0
9	MN	B	930	1/1	0.99	0.10	-6.24	36,36,36,36	0
8	FE	A	429	1/1	0.96	0.04	-6.65	63,63,63,63	0

6.5 Other polymers

There are no such residues in this entry.