



wwPDB X-ray Structure Validation Summary Report ⓘ

Feb 1, 2016 – 11:02 AM GMT

PDB ID : 3NOX
Title : Crystal structure of human DPP-IV in complex with Sa-(+)-(6-(aminomethyl)-5-(2,4-dichlorophenyl)-7-methylimidazo[1,2-a]pyrimidin-2-yl)(morpholino) methanone
Authors : Klei, H.E.
Deposited on : 2010-06-25
Resolution : 2.34 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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

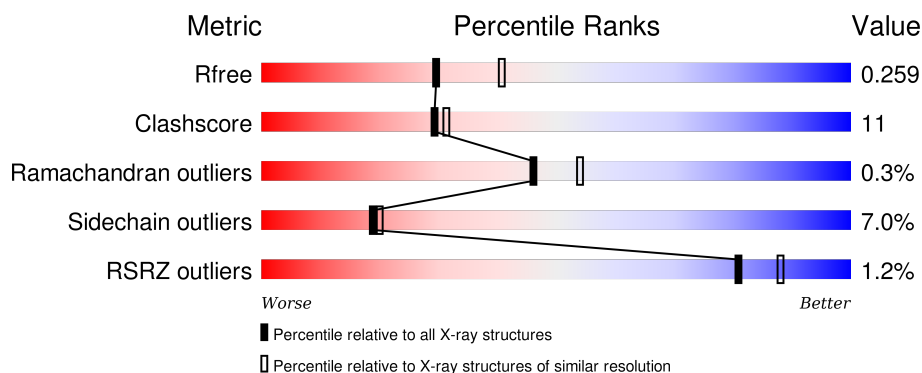
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.34 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	1406 (2.36-2.32)
Clashscore	102246	1509 (2.36-2.32)
Ramachandran outliers	100387	1490 (2.36-2.32)
Sidechain outliers	100360	1491 (2.36-2.32)
RSRZ outliers	91569	1412 (2.36-2.32)

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	753	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red 1%, orange 1%, yellow 22%, green 72%, grey 5%);"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> % 72% 22% • • </div> </div>
1	B	753	<div> <div style="width: 100%; height: 10px; background: linear-gradient(to right, red 1%, orange 1%, yellow 24%, green 70%, grey 5%);"></div> <div style="display: flex; justify-content: space-between; width: 100%;"> % 70% 24% • • </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	2191	-	-	-	X
2	NAG	A	5201	-	-	-	X
2	NAG	B	1501	X	-	-	X
2	NAG	B	2191	-	-	-	X
2	NAG	B	5201	-	-	-	X

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 12620 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 Dipeptidyl-peptidase 4 (CD26, adenosine deaminase complexing protein 2).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	727	Total	C	N	O	S	0	0	0
			5940	3817	973	1124	26			
1	B	727	Total	C	N	O	S	0	1	0
			5943	3819	977	1121	26			

There are 50 discrepancies between the modelled and reference sequences:

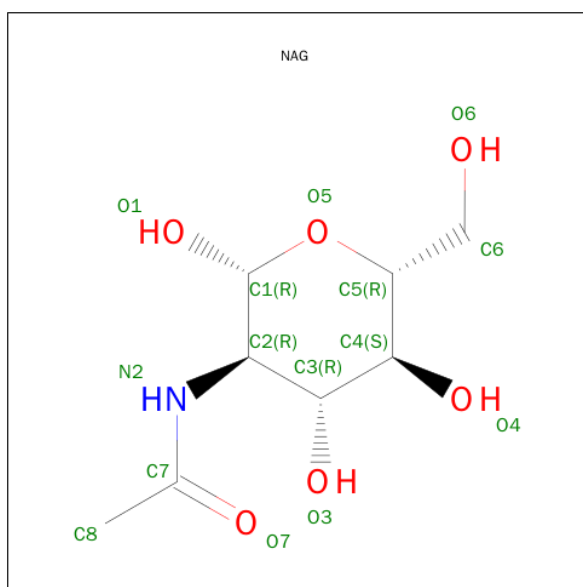
Chain	Residue	Modelled	Actual	Comment	Reference
A	37	GLU	-	EXPRESSION TAG	UNP Q53TN1
A	38	PHE	-	EXPRESSION TAG	UNP Q53TN1
A	767	PRO	-	EXPRESSION TAG	UNP Q53TN1
A	768	LEU	-	EXPRESSION TAG	UNP Q53TN1
A	769	GLU	-	EXPRESSION TAG	UNP Q53TN1
A	770	GLN	-	EXPRESSION TAG	UNP Q53TN1
A	771	LYS	-	EXPRESSION TAG	UNP Q53TN1
A	772	LEU	-	EXPRESSION TAG	UNP Q53TN1
A	773	ILE	-	EXPRESSION TAG	UNP Q53TN1
A	774	SER	-	EXPRESSION TAG	UNP Q53TN1
A	775	GLU	-	EXPRESSION TAG	UNP Q53TN1
A	776	GLU	-	EXPRESSION TAG	UNP Q53TN1
A	777	ASP	-	EXPRESSION TAG	UNP Q53TN1
A	778	LEU	-	EXPRESSION TAG	UNP Q53TN1
A	779	ASN	-	EXPRESSION TAG	UNP Q53TN1
A	780	SER	-	EXPRESSION TAG	UNP Q53TN1
A	781	ALA	-	EXPRESSION TAG	UNP Q53TN1
A	782	VAL	-	EXPRESSION TAG	UNP Q53TN1
A	783	ASP	-	EXPRESSION TAG	UNP Q53TN1
A	784	HIS	-	EXPRESSION TAG	UNP Q53TN1
A	785	HIS	-	EXPRESSION TAG	UNP Q53TN1
A	786	HIS	-	EXPRESSION TAG	UNP Q53TN1
A	787	HIS	-	EXPRESSION TAG	UNP Q53TN1
A	788	HIS	-	EXPRESSION TAG	UNP Q53TN1

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Chain	Residue	Modelled	Actual	Comment	Reference
A	789	HIS	-	EXPRESSION TAG	UNP Q53TN1
B	37	GLU	-	EXPRESSION TAG	UNP Q53TN1
B	38	PHE	-	EXPRESSION TAG	UNP Q53TN1
B	767	PRO	-	EXPRESSION TAG	UNP Q53TN1
B	768	LEU	-	EXPRESSION TAG	UNP Q53TN1
B	769	GLU	-	EXPRESSION TAG	UNP Q53TN1
B	770	GLN	-	EXPRESSION TAG	UNP Q53TN1
B	771	LYS	-	EXPRESSION TAG	UNP Q53TN1
B	772	LEU	-	EXPRESSION TAG	UNP Q53TN1
B	773	ILE	-	EXPRESSION TAG	UNP Q53TN1
B	774	SER	-	EXPRESSION TAG	UNP Q53TN1
B	775	GLU	-	EXPRESSION TAG	UNP Q53TN1
B	776	GLU	-	EXPRESSION TAG	UNP Q53TN1
B	777	ASP	-	EXPRESSION TAG	UNP Q53TN1
B	778	LEU	-	EXPRESSION TAG	UNP Q53TN1
B	779	ASN	-	EXPRESSION TAG	UNP Q53TN1
B	780	SER	-	EXPRESSION TAG	UNP Q53TN1
B	781	ALA	-	EXPRESSION TAG	UNP Q53TN1
B	782	VAL	-	EXPRESSION TAG	UNP Q53TN1
B	783	ASP	-	EXPRESSION TAG	UNP Q53TN1
B	784	HIS	-	EXPRESSION TAG	UNP Q53TN1
B	785	HIS	-	EXPRESSION TAG	UNP Q53TN1
B	786	HIS	-	EXPRESSION TAG	UNP Q53TN1
B	787	HIS	-	EXPRESSION TAG	UNP Q53TN1
B	788	HIS	-	EXPRESSION TAG	UNP Q53TN1
B	789	HIS	-	EXPRESSION TAG	UNP Q53TN1

- Molecule 2 is SUGAR (N-ACETYL-D-GLUCOSAMINE) (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).

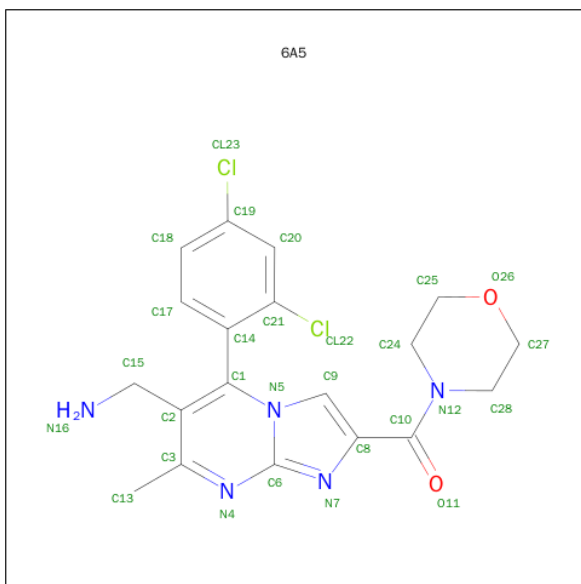


Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			14	8	1	5		
2	A	1	Total	C	N	O	0	0
			14	8	1	5		
2	A	1	Total	C	N	O	0	0
			14	8	1	5		
2	A	1	Total	C	N	O	0	0
			14	8	1	5		
2	B	1	Total	C	N	O	0	0
			14	8	1	5		
2	B	1	Total	C	N	O	0	0
			14	8	1	5		
2	B	1	Total	C	N	O	0	0
			14	8	1	5		
2	B	1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

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

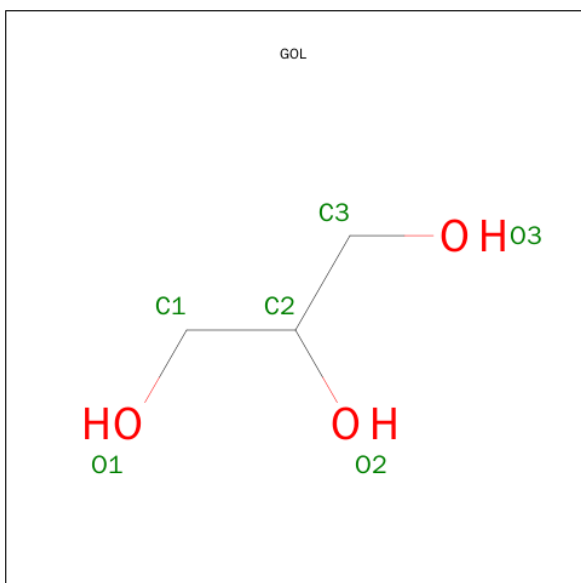
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	2	Total	C	N	O	0	0
			28	16	2	10		
3	B	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 4 is SA-(+)-(6-(AMINOMETHYL)-5-(2,4-DICHLOROPHENYL)-7-METHYLIMIDAZO[1,2-A]PYRIMIDIN-2-YL)(MORPHOLINO)METHANONE (three-letter code: 6A5) (formula: $C_{19}H_{19}Cl_2N_5O_2$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	A	1	Total	C	Cl	N	O	0	0
			28	19	2	5	2		
4	B	1	Total	C	Cl	N	O	0	0
			28	19	2	5	2		

- Molecule 5 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



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

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	224	Total	O	0	0
			224	224		
6	B	255	Total	O	0	0
			255	255		



ASP
HIS
HIS
HIS
HIS
HIS
HIS

4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	65.45Å 67.07Å 420.44Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	35.62 – 2.34 35.62 – 2.34	Depositor EDS
% Data completeness (in resolution range)	86.1 (35.62-2.34) 86.1 (35.62-2.34)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.98 (at 2.34Å)	Xtriage
Refinement program	PHENIX (PHENIX.REFINE: DEV_446)	Depositor
R, R_{free}	0.196 , 0.264 0.193 , 0.259	Depositor DCC
R_{free} test set	1540 reflections (2.29%)	DCC
Wilson B-factor (Å ²)	34.3	Xtriage
Anisotropy	0.603	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 39.4	EDS
Estimated twinning fraction	0.049 for k,h,-l	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.44$, $\langle L^2 \rangle = 0.27$	Xtriage
Outliers	1 of 68734 reflections (0.001%)	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	12620	wwPDB-VP
Average B, all atoms (Å ²)	42.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.80% 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: GOL, NAG, 6A5

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	0.42	0/6112	0.57	0/8316
1	B	0.43	0/6118	0.60	0/8324
All	All	0.42	0/12230	0.58	0/16640

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	5940	0	5633	134	0
1	B	5943	0	5639	136	0
2	A	70	0	65	4	0
2	B	70	0	65	1	0
3	A	28	0	25	0	0
3	B	28	0	25	0	0
4	A	28	0	19	1	0
4	B	28	0	19	0	0
5	B	6	0	8	1	0
6	A	224	0	0	6	0
6	B	255	0	0	5	0
All	All	12620	0	11498	266	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 11.

The worst 5 of 266 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)
1:A:273:THR:HB	6:A:805:HOH:O	1.49	1.12
1:B:177:GLU:HB2	1:B:180:LEU:HD23	1.40	1.03
1:B:600:THR:HG22	1:B:601:PHE:H	1.31	0.95
1:B:600:THR:HG22	1:B:601:PHE:N	1.83	0.93
1:A:319:ILE:HD12	1:A:319:ILE:H	1.34	0.92

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	725/753 (96%)	680 (94%)	42 (6%)	3 (0%)	39	45
1	B	726/753 (96%)	688 (95%)	37 (5%)	1 (0%)	56	67
All	All	1451/1506 (96%)	1368 (94%)	79 (5%)	4 (0%)	46	54

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	389	ILE
1	A	146	GLU
1	A	242	SER
1	B	242	SER

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	646/677 (95%)	604 (94%)	42 (6%)	21	24
1	B	646/677 (95%)	597 (92%)	49 (8%)	16	17
All	All	1292/1354 (95%)	1201 (93%)	91 (7%)	19	20

5 of 91 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	736	THR
1	B	156	THR
1	B	619	VAL
1	B	42	THR
1	B	94	THR

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 15 such sidechains are listed below:

Mol	Chain	Res	Type
1	A	592	HIS
1	A	612	GLN
1	B	383	HIS
1	A	533	HIS
1	B	169	ASN

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 ⓘ

4 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	$\# Z > 2$
3	NAG	A	2291	1,3	14,14,15	0.53	0	15,19,21	0.67	0
3	NAG	A	2292	3	14,14,15	0.45	0	15,19,21	1.37	1 (6%)
3	NAG	B	2291	1,3	14,14,15	0.56	0	15,19,21	1.30	1 (6%)
3	NAG	B	2292	3	14,14,15	0.69	0	15,19,21	1.52	4 (26%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	A	2291	1,3	-	0/6/23/26	0/1/1/1
3	NAG	A	2292	3	-	0/6/23/26	0/1/1/1
3	NAG	B	2291	1,3	-	0/6/23/26	0/1/1/1
3	NAG	B	2292	3	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

The worst 5 of 6 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	2291	NAG	C2-N2-C7	-3.70	118.29	123.04
3	B	2292	NAG	C2-N2-C7	-2.60	119.70	123.04
3	B	2292	NAG	C1-O5-C5	-2.28	109.36	112.25
3	B	2292	NAG	C4-C3-C2	2.05	114.42	111.23
3	B	2292	NAG	C3-C4-C5	3.18	115.73	110.20

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.6 Ligand geometry

13 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	$\# Z > 2$
4	6A5	A	1	-	25,31,31	1.23	3 (12%)	31,45,45	1.25	3 (9%)
2	NAG	A	1501	1	14,14,15	0.48	0	15,19,21	1.20	2 (13%)
2	NAG	A	2191	1	14,14,15	0.55	0	15,19,21	1.30	1 (6%)
2	NAG	A	2811	-	14,14,15	0.57	0	15,19,21	1.30	2 (13%)
2	NAG	A	5201	1	14,14,15	0.44	0	15,19,21	1.19	2 (13%)
2	NAG	A	851	1	14,14,15	0.57	0	15,19,21	0.86	0
5	GOL	B	1	-	5,5,5	0.30	0	5,5,5	0.37	0
2	NAG	B	1501	1	14,14,15	0.72	0	15,19,21	1.27	2 (13%)
4	6A5	B	2	-	25,31,31	1.54	5 (20%)	31,45,45	1.66	8 (25%)
2	NAG	B	2191	1	14,14,15	0.62	0	15,19,21	1.05	1 (6%)
2	NAG	B	5201	1	14,14,15	0.59	0	15,19,21	0.99	0
2	NAG	B	851	1	14,14,15	0.50	0	15,19,21	1.37	2 (13%)
2	NAG	B	921	1	14,14,15	0.41	0	15,19,21	0.95	1 (6%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	6A5	A	1	-	-	0/8/22/22	0/4/4/4
2	NAG	A	1501	1	-	0/6/23/26	0/1/1/1
2	NAG	A	2191	1	-	0/6/23/26	0/1/1/1
2	NAG	A	2811	-	-	0/6/23/26	0/1/1/1
2	NAG	A	5201	1	-	0/6/23/26	0/1/1/1
2	NAG	A	851	1	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	GOL	B	1	-	-	0/4/4/4	0/0/0/0
2	NAG	B	1501	1	1/1/5/7	0/6/23/26	0/1/1/1
4	6A5	B	2	-	-	0/8/22/22	0/4/4/4
2	NAG	B	2191	1	-	0/6/23/26	0/1/1/1
2	NAG	B	5201	1	-	0/6/23/26	0/1/1/1
2	NAG	B	851	1	-	0/6/23/26	0/1/1/1
2	NAG	B	921	1	-	0/6/23/26	0/1/1/1

The worst 5 of 8 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	2	6A5	C19-CL23	-3.35	1.66	1.74
4	B	2	6A5	C8-C10	-3.05	1.44	1.50
4	B	2	6A5	C14-C1	-2.55	1.45	1.48
4	A	1	6A5	C24-C25	2.00	1.58	1.50
4	B	2	6A5	C28-N12	2.13	1.50	1.47

The worst 5 of 24 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	2	6A5	C8-C9-N5	-4.09	103.07	107.71
2	A	2811	NAG	C2-N2-C7	-2.95	119.25	123.04
4	B	2	6A5	C13-C3-N4	-2.74	113.13	116.94
2	B	851	NAG	C2-N2-C7	-2.69	119.58	123.04
4	B	2	6A5	C28-N12-C10	-2.66	114.50	122.80

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
2	B	1501	NAG	C1

There are no torsion outliers.

There are no ring outliers.

5 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	1	6A5	1	0
2	A	2191	NAG	1	0
2	A	2811	NAG	3	0
5	B	1	GOL	1	0
2	B	2191	NAG	1	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 [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	727/753 (96%)	-0.12	10 (1%) 78 85	27, 40, 65, 78	0
1	B	727/753 (96%)	-0.21	8 (1%) 82 89	26, 38, 59, 78	0
All	All	1454/1506 (96%)	-0.16	18 (1%) 81 88	26, 39, 62, 78	0

The worst 5 of 18 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	279	VAL	5.2
1	A	279	VAL	4.6
1	B	766	PRO	4.4
1	B	278	SER	3.7
1	A	765	LEU	3.2

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
3	NAG	B	2291	14/15	0.91	0.13	0.54	43,54,67,72	0
3	NAG	A	2291	14/15	0.92	0.11	-0.09	41,51,56,60	0
3	NAG	A	2292	14/15	0.83	0.28	-	63,67,73,74	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(\AA^2)	Q<0.9
3	NAG	B	2292	14/15	0.91	0.25	-	61,71,80,84	0

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
2	NAG	A	5201	14/15	0.82	0.33	7.87	58,75,83,87	0
2	NAG	B	5201	14/15	0.83	0.30	7.58	50,62,81,84	0
2	NAG	B	2191	14/15	0.87	0.33	6.87	57,66,72,72	0
2	NAG	A	2191	14/15	0.69	0.34	3.30	70,76,80,82	0
2	NAG	B	1501	14/15	0.82	0.22	3.06	60,74,85,91	0
4	6A5	A	1	28/28	0.90	0.17	-0.03	31,40,49,58	0
4	6A5	B	2	28/28	0.93	0.16	-0.14	30,40,52,61	0
2	NAG	B	851	14/15	0.97	0.08	-1.24	30,39,42,42	0
2	NAG	A	851	14/15	0.97	0.07	-1.78	39,41,45,45	0
5	GOL	B	1	6/6	0.83	0.17	-	43,52,57,64	0
2	NAG	A	2811	14/15	0.86	0.26	-	65,75,79,81	0
2	NAG	A	1501	14/15	0.88	0.17	-	69,75,84,85	0
2	NAG	B	921	14/15	0.86	0.21	-	70,75,82,82	0

6.5 Other polymers [i](#)

There are no such residues in this entry.