



wwPDB X-ray Structure Validation Summary Report ⓘ

Feb 1, 2016 – 04:01 PM GMT

PDB ID : 4E36
Title : Crystal structure of the human Endoplasmic Reticulum Aminopeptidase 2 variant N392K
Authors : Birtley, J.R.; Saridakis, E.; Pegias, P.; Stratikos, E.; Mavridis, I.M.
Deposited on : 2012-03-09
Resolution : 3.22 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

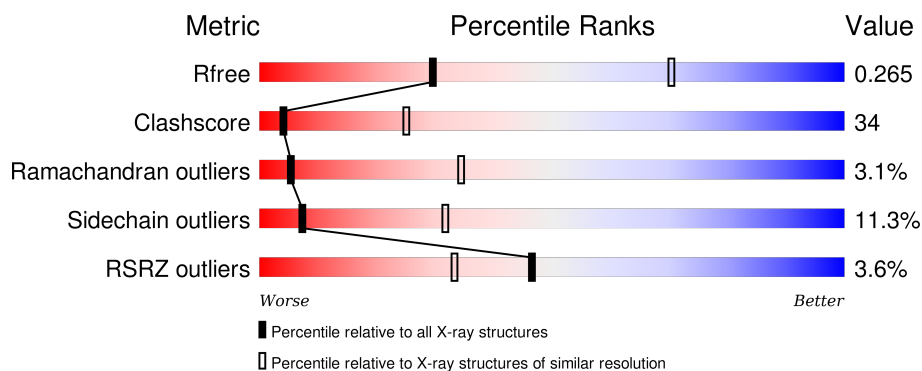
1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.22 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}	91344	1095 (3.26-3.18)
Clashscore	102246	1046 (3.24-3.20)
Ramachandran outliers	100387	1026 (3.24-3.20)
Sidechain outliers	100360	1025 (3.24-3.20)
RSRZ outliers	91569	1100 (3.26-3.18)

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	967	
1	B	967	

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	LYS	A	1001	-	-	-	X
2	LYS	B	1005	-	-	-	X
5	MES	A	1009	-	-	-	X
5	MES	B	1010	-	-	-	X
7	MAN	B	1001	-	-	X	-

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 14341 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.

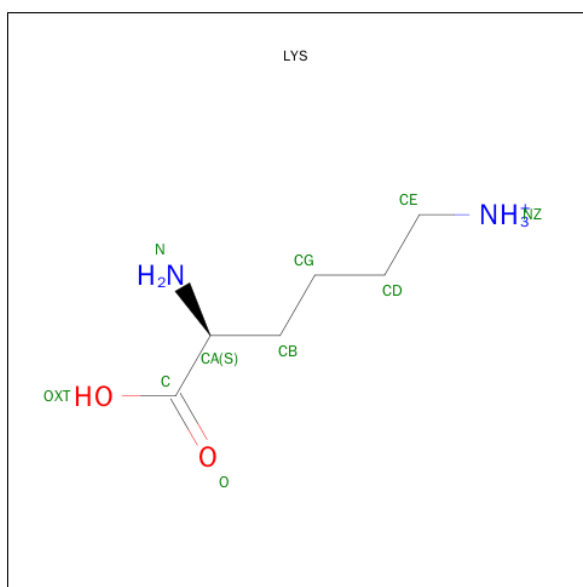
- Molecule 1 is a protein called Endoplasmic reticulum aminopeptidase 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	869	Total	C	N	O	S	2	2	0
			7030	4537	1167	1299	27			
1	B	859	Total	C	N	O	S	0	0	0
			6969	4501	1157	1284	27			

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	2	VAL	PHE	SEE REMARK 999	UNP Q6P179
A	961	ARG	-	EXPRESSION TAG	UNP Q6P179
A	962	HIS	-	EXPRESSION TAG	UNP Q6P179
A	963	HIS	-	EXPRESSION TAG	UNP Q6P179
A	964	HIS	-	EXPRESSION TAG	UNP Q6P179
A	965	HIS	-	EXPRESSION TAG	UNP Q6P179
A	966	HIS	-	EXPRESSION TAG	UNP Q6P179
A	967	HIS	-	EXPRESSION TAG	UNP Q6P179
B	2	VAL	PHE	SEE REMARK 999	UNP Q6P179
B	961	ARG	-	EXPRESSION TAG	UNP Q6P179
B	962	HIS	-	EXPRESSION TAG	UNP Q6P179
B	963	HIS	-	EXPRESSION TAG	UNP Q6P179
B	964	HIS	-	EXPRESSION TAG	UNP Q6P179
B	965	HIS	-	EXPRESSION TAG	UNP Q6P179
B	966	HIS	-	EXPRESSION TAG	UNP Q6P179
B	967	HIS	-	EXPRESSION TAG	UNP Q6P179

- Molecule 2 is LYSINE (three-letter code: LYS) (formula: C₆H₁₅N₂O₂).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			10	6	2	2		
2	B	1	Total	C	N	O	0	0
			10	6	2	2		

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

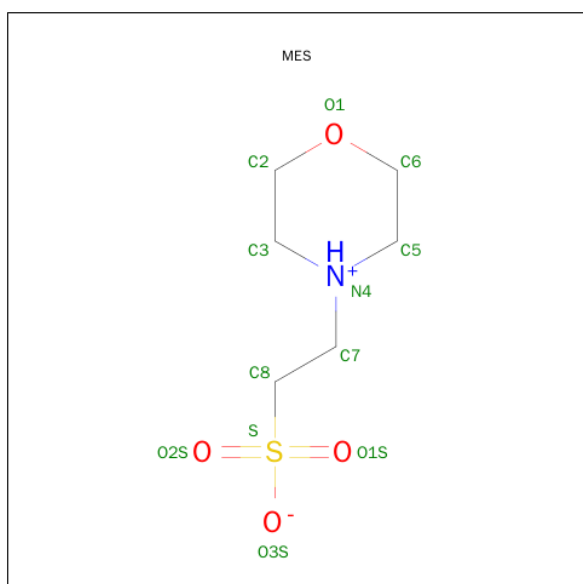
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	2	Total	C	N	O	0	0
			28	16	2	10		
3	A	2	Total	C	N	O	0	0
			28	16	2	10		
3	B	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 4 is SUGAR (N-ACETYL-D-GLUCOSAMINE) (three-letter code: NAG) (formula: C₈H₁₅NO₆).



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

- Molecule 5 is 2-(N-MORPHOLINO)-ETHANESULFONIC ACID (three-letter code: MES) (formula: $C_6H_{13}NO_4S$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	A	1	Total	C	N	O	S	0	0
			12	6	1	4	1		
5	B	1	Total	C	N	O	S	0	0
			12	6	1	4	1		

- Molecule 6 is ZINC ION (three-letter code: ZN) (formula: Zn).

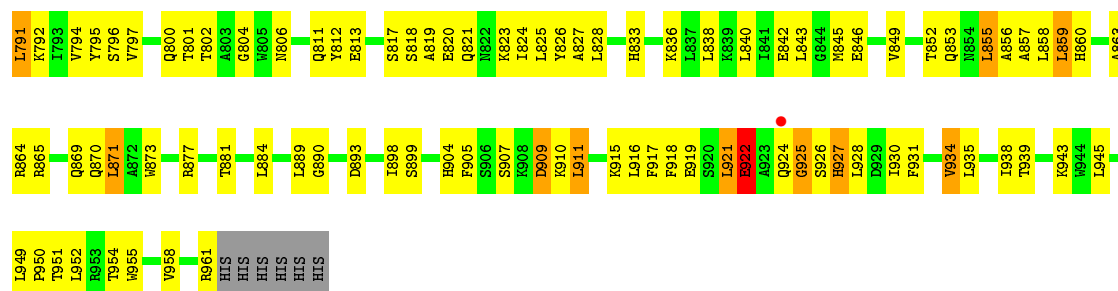
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	B	1	Total	Zn	0	0
			1	1		
6	A	1	Total	Zn	0	0
			1	1		

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

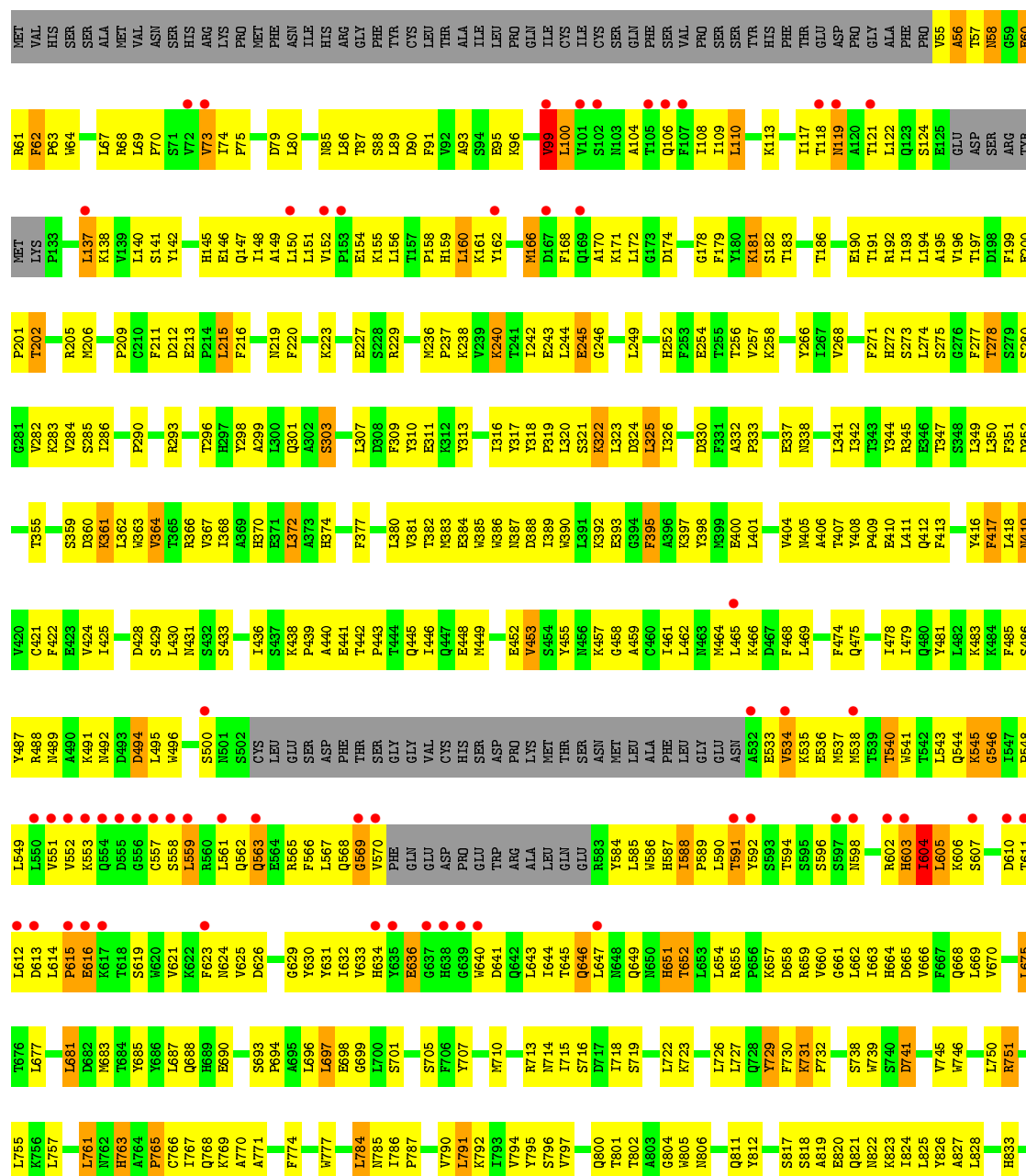
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
7	B	4	Total	C	N	O	0	0
			50	28	2	20		

- Molecule 8 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	A	66	Total	O	0	0
			66	66		
8	B	40	Total	O	0	0
			40	40		



• Molecule 1: Endoplasmic reticulum aminopeptidase 2





4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	74.34Å 134.45Å 127.37Å 90.00° 90.85° 90.00°	Depositor
Resolution (Å)	11.00 – 3.22 59.45 – 3.22	Depositor EDS
% Data completeness (in resolution range)	89.4 (11.00-3.22) 99.1 (59.45-3.22)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.59 (at 3.19Å)	Xtriage
Refinement program	PHENIX (phenix.refine)	Depositor
R, R_{free}	0.209 , 0.261 0.211 , 0.265	Depositor DCC
R_{free} test set	1965 reflections (5.27%)	DCC
Wilson B-factor (Å ²)	69.6	Xtriage
Anisotropy	0.302	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 65.1	EDS
Estimated twinning fraction	0.037 for h,-k,-l	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Outliers	0 of 40288 reflections	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	14341	wwPDB-VP
Average B, all atoms (Å ²)	71.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.01% 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: ZN, NAG, MES, MAN

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	0.37	0/7207	0.54	0/9769
1	B	0.39	0/7139	0.54	0/9674
All	All	0.38	0/14346	0.54	0/19443

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	922	GLU	Peptide

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	7030	0	6950	459	1
1	B	6969	0	6937	495	1
2	A	10	0	12	0	0
2	B	10	0	12	4	0
3	A	56	0	50	7	0
3	B	28	0	25	2	0
4	A	42	0	39	2	0
4	B	14	0	13	0	0
5	A	12	0	12	1	0
5	B	12	0	12	4	0
6	A	1	0	0	0	0
6	B	1	0	0	0	0
7	B	50	0	43	6	0
8	A	66	0	0	5	0
8	B	40	0	0	8	0
All	All	14341	0	14105	961	2

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 34.

The worst 5 of 961 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:227:GLU:HG3	3:A:1002:NAG:H82	1.27	1.07
1:A:227:GLU:HG3	3:A:1002:NAG:C8	1.84	1.07
1:A:56:ALA:HB1	1:A:57:THR:HA	1.40	1.02
1:B:488:ARG:HG2	1:B:489:ASN:H	1.24	1.00
1:B:741:ASP:OD2	1:B:787:PRO:HB3	1.61	0.99

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:280:SER:O	1:A:961:ARG:NH2[2_655]	2.11	0.09
1:B:320:LEU:O	1:B:961:ARG:NH1[2_556]	2.19	0.01

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	863/967 (89%)	729 (84%)	108 (12%)	26 (3%)	5	36
1	B	851/967 (88%)	710 (83%)	114 (13%)	27 (3%)	5	33
All	All	1714/1934 (89%)	1439 (84%)	222 (13%)	53 (3%)	5	34

5 of 53 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	55	VAL
1	A	119	ASN
1	A	583	ARG
1	A	596	SER
1	A	603	HIS

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	768/870 (88%)	679 (88%)	89 (12%)	7	30
1	B	768/870 (88%)	684 (89%)	84 (11%)	8	33
All	All	1536/1740 (88%)	1363 (89%)	173 (11%)	7	32

5 of 173 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	871	LEU

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Mol	Chain	Res	Type
1	B	117	ILE
1	B	855	LEU
1	A	893	ASP
1	A	934	VAL

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 47 such sidechains are listed below:

Mol	Chain	Res	Type
1	A	924	GLN
1	B	145	HIS
1	B	879	ASN
1	A	959	ASN
1	B	147	GLN

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 ⓘ

10 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	1002	1,3	14,14,15	0.80	0	15,19,21	2.35	6 (40%)
3	NAG	A	1003	3	14,14,15	0.41	0	15,19,21	1.65	2 (13%)
3	NAG	A	1004	1,3	14,14,15	0.62	0	15,19,21	1.72	2 (13%)
3	NAG	A	1005	3	14,14,15	0.59	0	15,19,21	0.76	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
7	MAN	B	1001	7	11,11,12	0.68	0	14,15,17	1.03	0
7	MAN	B	1002	7	11,11,12	0.58	0	14,15,17	0.69	0
7	NAG	B	1003	1,7	14,14,15	0.37	0	15,19,21	1.58	3 (20%)
7	NAG	B	1004	7	14,14,15	0.54	0	15,19,21	1.11	1 (6%)
3	NAG	B	1007	1,3	14,14,15	0.47	0	15,19,21	0.71	0
3	NAG	B	1008	3	14,14,15	0.53	0	15,19,21	1.16	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
3	NAG	A	1002	1,3	-	0/6/23/26	0/1/1/1
3	NAG	A	1003	3	-	0/6/23/26	0/1/1/1
3	NAG	A	1004	1,3	-	0/6/23/26	0/1/1/1
3	NAG	A	1005	3	-	0/6/23/26	0/1/1/1
7	MAN	B	1001	7	-	0/2/19/22	0/1/1/1
7	MAN	B	1002	7	-	0/2/19/22	0/1/1/1
7	NAG	B	1003	1,7	-	0/6/23/26	0/1/1/1
7	NAG	B	1004	7	-	0/6/23/26	0/1/1/1
3	NAG	B	1007	1,3	-	0/6/23/26	0/1/1/1
3	NAG	B	1008	3	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

The worst 5 of 15 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	1002	NAG	C3-C4-C5	-4.28	102.73	110.20
3	A	1002	NAG	C1-O5-C5	-4.07	107.08	112.25
3	A	1004	NAG	C2-N2-C7	-3.54	118.49	123.04
7	B	1003	NAG	C4-C3-C2	-3.53	105.75	111.23
3	A	1002	NAG	C2-N2-C7	-3.47	118.58	123.04

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

8 monomers are involved in 15 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1002	NAG	5	0
3	A	1003	NAG	1	0
3	A	1004	NAG	2	0
3	A	1005	NAG	1	0
7	B	1001	MAN	6	0
7	B	1002	MAN	5	0
3	B	1007	NAG	2	0
3	B	1008	NAG	1	0

5.6 Ligand geometry [i](#)

Of 10 ligands modelled in this entry, 2 are monoatomic - leaving 8 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	$\# Z > 2$
2	LYS	A	1001	6	6,9,9	0.33	0	4,10,10	0.41	0
4	NAG	A	1006	1	14,14,15	0.51	0	15,19,21	1.52	2 (13%)
4	NAG	A	1007	1	14,14,15	0.58	0	15,19,21	2.26	5 (33%)
4	NAG	A	1008	1	14,14,15	0.47	0	15,19,21	0.85	0
5	MES	A	1009	-	11,12,12	0.64	0	14,16,16	2.90	7 (50%)
2	LYS	B	1005	6	6,9,9	0.35	0	4,10,10	0.34	0
4	NAG	B	1009	1	14,14,15	0.41	0	15,19,21	1.42	3 (20%)
5	MES	B	1010	-	11,12,12	0.67	0	14,16,16	2.75	7 (50%)

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	LYS	A	1001	6	-	0/5/9/9	0/0/0/0
4	NAG	A	1006	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1007	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1008	1	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	MES	A	1009	-	-	0/6/14/14	0/1/1/1
2	LYS	B	1005	6	-	0/5/9/9	0/0/0/0
4	NAG	B	1009	1	-	0/6/23/26	0/1/1/1
5	MES	B	1010	-	-	0/6/14/14	0/1/1/1

There are no bond length outliers.

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

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	1010	MES	C6-C5-N4	-4.43	103.41	110.12
4	A	1007	NAG	C3-C4-C5	-4.33	102.64	110.20
4	A	1007	NAG	C2-N2-C7	-4.12	117.75	123.04
5	A	1009	MES	C6-C5-N4	-3.76	104.42	110.12
5	B	1010	MES	C2-C3-N4	-3.40	104.98	110.12

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

4 monomers are involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	1007	NAG	2	0
5	A	1009	MES	1	0
2	B	1005	LYS	4	0
5	B	1010	MES	4	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	869/967 (89%)	-0.04	4 (0%) 91 87	33, 67, 111, 147	2 (0%)
1	B	859/967 (88%)	0.20	59 (6%) 20 12	34, 70, 116, 146	0
All	All	1728/1934 (89%)	0.08	63 (3%) 46 33	33, 68, 114, 147	2 (0%)

The worst 5 of 63 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	615	PRO	5.3
1	B	613	ASP	5.0
1	B	559	LEU	4.9
1	B	561	LEU	4.8
1	B	553	LYS	4.8

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	A	1002	14/15	0.85	0.28	0.92	64,79,83,87	0
7	NAG	B	1003	14/15	0.92	0.24	0.25	56,73,85,87	0
3	NAG	B	1007	14/15	0.91	0.26	0.02	68,91,111,112	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(\AA^2)	Q<0.9
7	NAG	B	1004	14/15	0.90	0.19	-0.17	50,77,92,102	0
3	NAG	A	1003	14/15	0.93	0.14	-0.91	65,82,87,91	0
3	NAG	A	1004	14/15	0.92	0.15	-2.72	46,53,69,70	0
7	MAN	B	1001	11/12	0.80	0.17	-	72,97,108,112	0
7	MAN	B	1002	11/12	0.82	0.31	-	96,113,135,142	0
3	NAG	B	1008	14/15	0.75	0.33	-	84,113,127,133	0
3	NAG	A	1005	14/15	0.86	0.21	-	60,81,88,99	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(\AA^2)	Q<0.9
5	MES	A	1009	12/12	0.78	0.43	7.87	57,72,86,95	12
5	MES	B	1010	12/12	0.82	0.40	4.07	57,65,73,84	12
2	LYS	B	1005	10/10	0.92	0.33	3.66	46,59,65,69	0
2	LYS	A	1001	10/10	0.97	0.31	2.01	34,45,52,53	0
6	ZN	B	1006	1/1	0.99	0.20	0.42	46,46,46,46	0
6	ZN	A	1010	1/1	0.99	0.26	-0.67	32,32,32,32	0
4	NAG	A	1006	14/15	0.92	0.19	-1.48	62,85,87,88	0
4	NAG	B	1009	14/15	0.79	0.28	-	76,101,110,112	0
4	NAG	A	1008	14/15	0.87	0.14	-	96,107,114,117	0
4	NAG	A	1007	14/15	0.86	0.28	-	88,104,121,130	0

6.5 Other polymers

There are no such residues in this entry.