



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 12:34 PM UTC

PDB ID : 3JPW / pdb_00003jpw
Title : Crystal structure of amino terminal domain of the NMDA receptor subunit NR2B
Authors : Karakas, E.; Simorowski, N.; Furukawa, H.
Deposited on : 2009-09-04
Resolution : 2.80 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

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

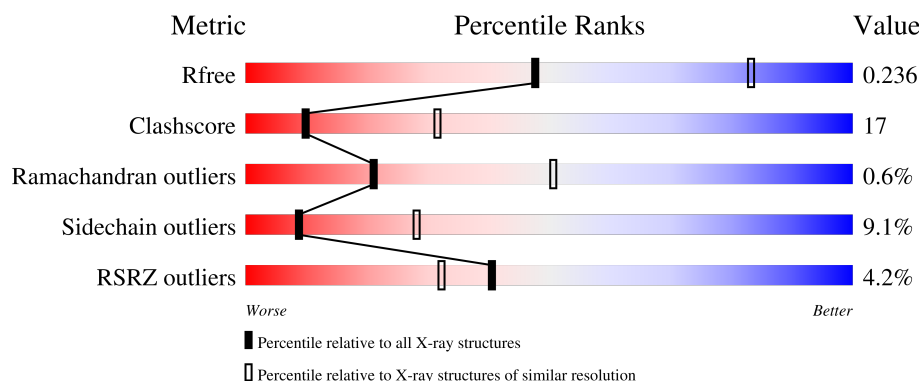
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 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}	180053	3866 (2.80-2.80)
Clashscore	190562	4276 (2.80-2.80)
Ramachandran outliers	187476	4196 (2.80-2.80)
Sidechain outliers	187428	4198 (2.80-2.80)
RSRZ outliers	180081	3869 (2.80-2.80)

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 of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. 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	363	

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	501	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	CL	A	606	-	-	X	-
3	CL	A	612	-	-	X	-
4	NA	A	701	-	-	-	X

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 2843 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.

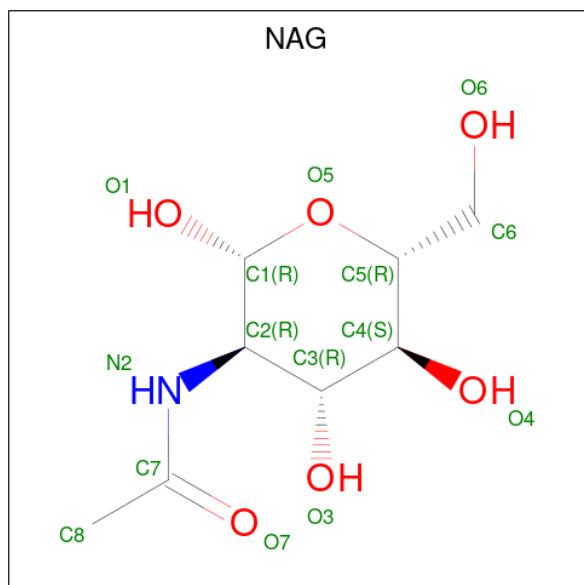
- Molecule 1 is a protein called Glutamate [NMDA] receptor subunit epsilon-2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	359	Total	C	N	O	S	0	3	0
			2779	1786	442	535	16			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	348	ASP	ASN	engineered mutation	UNP Q00960

- Molecule 2 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: 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		

- Molecule 3 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	17	Total	Cl	0	0
			17	17		

- Molecule 4 is SODIUM ION (CCD ID: NA) (formula: Na).

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

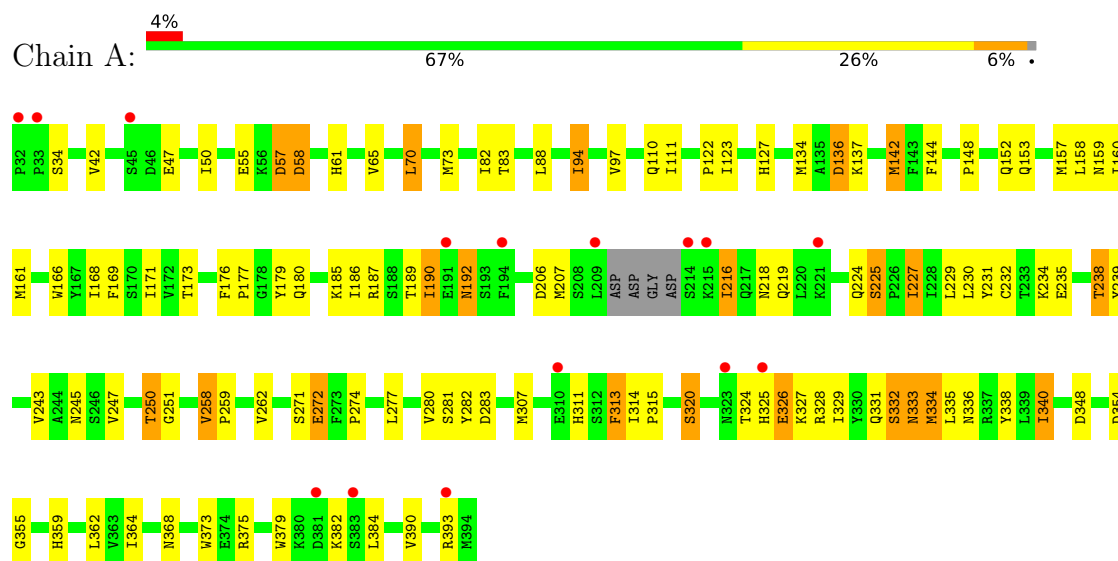
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	18	Total	O	0	0
			18	18		

3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Glutamate [NMDA] receptor subunit epsilon-2



4 Data and refinement statistics

Property	Value	Source
Space group	P 31 2 1	Depositor
Cell constants a, b, c, α , β , γ	142.97Å 142.97Å 89.26Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	28.93 – 2.80 28.93 – 2.80	Depositor EDS
% Data completeness (in resolution range)	99.2 (28.93-2.80) 99.1 (28.93-2.80)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.30 (at 2.80Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.197 , 0.231 0.197 , 0.236	Depositor DCC
R_{free} test set	1338 reflections (5.17%)	wwPDB-VP
Wilson B-factor (Å ²)	82.3	Xtriage
Anisotropy	0.569	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 64.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	0.025 for -h,-k,l	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	2843	wwPDB-VP
Average B, all atoms (Å ²)	92.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.30% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: CL, NAG, NA

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	0.60	0/2862	0.91	6/3905 (0.2%)

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	A	328	ARG	N-CA-C	-5.98	106.63	112.97
1	A	329	ILE	N-CA-C	5.74	116.48	110.62
1	A	313	PHE	N-CA-C	5.39	116.46	108.60
1	A	282	TYR	N-CA-C	-5.22	105.19	112.03
1	A	94	ILE	N-CA-C	5.18	115.42	108.17
1	A	225	SER	N-CA-C	5.07	117.36	110.01

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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	2779	0	2633	95	0
2	A	28	0	26	0	0
3	A	17	0	0	7	0
4	A	1	0	0	0	0
5	A	18	0	0	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	2843	0	2659	96	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 17.

All (96) 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:320:SER:HB3	3:A:610:CL:CL	1.94	1.04
1:A:158:LEU:HD23	1:A:161:MET:HE1	1.48	0.96
1:A:158:LEU:HD23	1:A:161:MET:CE	2.02	0.89
1:A:148:PRO:HG3	1:A:362:LEU:HD21	1.56	0.88
1:A:144:PHE:CE1	1:A:340:ILE:HD11	2.11	0.85
1:A:180:GLN:HG2	3:A:606:CL:CL	2.19	0.80
1:A:379:TRP:CH2	1:A:382:LYS:HA	2.24	0.71
1:A:324:THR:C	1:A:326:GLU:H	1.97	0.71
1:A:50:ILE:HD12	1:A:70:LEU:HD22	1.75	0.69
1:A:158:LEU:HA	1:A:161:MET:CE	2.22	0.68
1:A:50:ILE:HD12	1:A:70:LEU:CD2	2.25	0.67
1:A:277:LEU:HD23	1:A:373:TRP:CH2	2.30	0.67
1:A:137:LYS:HE2	1:A:354:ASP:O	1.95	0.67
1:A:324:THR:HB	1:A:326:GLU:HB2	1.78	0.66
1:A:235:GLU:HG3	5:A:9:HOH:O	1.95	0.65
1:A:157:MET:HE3	1:A:229:LEU:HD22	1.78	0.65
1:A:307:MET:HE2	1:A:315:PRO:HD3	1.79	0.64
1:A:159:ASN:HB3	1:A:384:LEU:HD22	1.80	0.63
1:A:158:LEU:HA	1:A:161:MET:HE3	1.80	0.63
1:A:173:THR:HG22	1:A:231:TYR:HB3	1.80	0.63
1:A:157:MET:CE	1:A:229:LEU:HD22	2.28	0.63
1:A:160:ILE:HD11	1:A:364:ILE:HG12	1.82	0.61
1:A:277:LEU:HD23	1:A:373:TRP:HH2	1.68	0.59
1:A:375:ARG:HG3	3:A:607:CL:CL	2.41	0.57
1:A:142:MET:CE	1:A:336:ASN:HB2	2.35	0.57
1:A:348:ASP:OD2	1:A:359:HIS:HD2	1.87	0.57
1:A:243:VAL:O	1:A:247:VAL:HG23	2.05	0.57
1:A:187:ARG:O	1:A:190:ILE:HG22	2.05	0.56
1:A:144:PHE:CZ	1:A:340:ILE:HD11	2.41	0.55
1:A:148:PRO:HB2	1:A:153:GLN:HG3	1.86	0.55
1:A:250:THR:CG2	1:A:251:GLY:N	2.69	0.55
1:A:34:SER:HB2	1:A:65:VAL:O	2.07	0.55
1:A:144:PHE:HE1	1:A:340:ILE:HD11	1.67	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:332:SER:OG	1:A:333:ASN:N	2.40	0.54
1:A:245[A]:ASN:OD1	1:A:250:THR:HG21	2.07	0.54
1:A:152:GLN:NE2	5:A:2:HOH:O	2.37	0.54
1:A:166:TRP:HB3	1:A:227:ILE:HG12	1.90	0.53
1:A:230:LEU:O	1:A:259:PRO:HD3	2.09	0.52
1:A:58:ASP:OD2	1:A:61:HIS:HA	2.10	0.52
1:A:224:GLN:HE21	1:A:224:GLN:HA	1.73	0.52
1:A:280:VAL:HG12	1:A:281:SER:N	2.23	0.52
1:A:379:TRP:CZ2	1:A:382:LYS:HA	2.45	0.51
1:A:158:LEU:HA	1:A:161:MET:HE2	1.92	0.51
1:A:88:LEU:HG	1:A:94:ILE:CD1	2.41	0.50
1:A:234:LYS:O	1:A:238:THR:HG23	2.12	0.49
1:A:307:MET:CE	1:A:315:PRO:HD3	2.41	0.49
1:A:313:PHE:CZ	1:A:334:MET:HE1	2.48	0.48
1:A:160:ILE:HD11	1:A:364:ILE:CG1	2.43	0.48
1:A:55:GLU:HG3	1:A:57:ASP:OD1	2.13	0.48
1:A:142:MET:HE3	1:A:336:ASN:HB2	1.95	0.48
1:A:97:VAL:HB	1:A:123:ILE:HG12	1.94	0.48
1:A:348:ASP:OD2	1:A:359:HIS:CD2	2.65	0.47
1:A:42:VAL:HG22	1:A:73:MET:HB2	1.95	0.47
1:A:327:LYS:HE3	1:A:327:LYS:HB2	1.76	0.47
1:A:144:PHE:CE1	1:A:340:ILE:CD1	2.91	0.47
1:A:122:PRO:HA	1:A:142:MET:HB2	1.96	0.47
1:A:88:LEU:HG	1:A:94:ILE:HD11	1.97	0.47
1:A:179:TYR:CE1	1:A:180:GLN:HG3	2.50	0.46
1:A:307:MET:HB2	1:A:338:TYR:CD2	2.50	0.46
1:A:368:ASN:OD1	1:A:368:ASN:C	2.58	0.46
1:A:142:MET:HB3	1:A:142:MET:HE2	1.67	0.46
1:A:332:SER:O	1:A:334:MET:N	2.49	0.46
1:A:332:SER:O	1:A:333:ASN:C	2.58	0.45
1:A:169:PHE:HB2	1:A:227:ILE:HG22	1.98	0.45
1:A:311:HIS:O	1:A:313:PHE:HD2	1.98	0.45
1:A:216:ILE:HG22	1:A:243:VAL:HG11	1.97	0.45
1:A:238:THR:O	1:A:272:GLU:HG3	2.16	0.45
1:A:137:LYS:HE2	1:A:355:GLY:HA3	1.97	0.45
1:A:207:MET:HE1	1:A:239:TYR:HD2	1.82	0.44
1:A:333:ASN:N	1:A:333:ASN:HD22	2.15	0.44
1:A:258:VAL:HG13	1:A:262:VAL:HB	1.99	0.44
1:A:324:THR:C	1:A:326:GLU:N	2.66	0.44
1:A:340:ILE:HA	1:A:340:ILE:HD12	1.60	0.43
1:A:250:THR:HG23	1:A:274:PRO:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:47:GLU:HA	1:A:47:GLU:OE1	2.17	0.43
1:A:171:ILE:HD11	1:A:186:ILE:HG21	2.00	0.43
1:A:82:ILE:HG23	1:A:83:THR:N	2.34	0.42
1:A:185:LYS:O	1:A:189:THR:HG23	2.20	0.42
1:A:110:GLN:NE2	1:A:134:MET:HE3	2.34	0.42
1:A:180:GLN:CG	3:A:606:CL:CL	2.98	0.42
1:A:331:GLN:O	1:A:332:SER:C	2.62	0.41
1:A:206:ASP:N	3:A:612:CL:CL	2.87	0.41
1:A:230:LEU:HB3	1:A:258:VAL:HG23	2.02	0.41
1:A:136:ASP:OD2	1:A:136:ASP:N	2.45	0.41
1:A:231:TYR:O	1:A:232:CYS:HB3	2.21	0.41
1:A:219:GLN:NE2	3:A:612:CL:CL	2.91	0.41
1:A:158:LEU:HD23	1:A:161:MET:HE3	1.97	0.41
1:A:250:THR:HG22	1:A:251:GLY:N	2.36	0.41
1:A:332:SER:C	1:A:334:MET:N	2.79	0.41
1:A:192:ASN:ND2	1:A:192:ASN:H	2.19	0.40
1:A:280:VAL:CG1	1:A:281:SER:N	2.84	0.40
1:A:224:GLN:HA	1:A:224:GLN:NE2	2.36	0.40
1:A:307:MET:HB2	1:A:338:TYR:CE2	2.56	0.40
1:A:127:HIS:HE1	1:A:283:ASP:OD1	2.05	0.40
1:A:176:PHE:O	1:A:177:PRO:C	2.65	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	358/363 (99%)	325 (91%)	31 (9%)	2 (1%)	21 51

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	325	HIS
1	A	333	ASN

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	299/326 (92%)	272 (91%)	27 (9%)	9 28

All (27) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	57	ASP
1	A	58	ASP
1	A	70	LEU
1	A	111	ILE
1	A	136	ASP
1	A	142	MET
1	A	168	ILE
1	A	190	ILE
1	A	192	ASN
1	A	216	ILE
1	A	218	ASN
1	A	225	SER
1	A	227	ILE
1	A	238	THR
1	A	250	THR
1	A	258	VAL
1	A	271	SER
1	A	272	GLU
1	A	314	ILE
1	A	320	SER
1	A	326	GLU
1	A	332	SER
1	A	334	MET
1	A	335	LEU
1	A	340	ILE

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Mol	Chain	Res	Type
1	A	390	VAL
1	A	393	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	110	GLN
1	A	127	HIS
1	A	159	ASN
1	A	180	GLN
1	A	192	ASN
1	A	224	GLN
1	A	333	ASN
1	A	359	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 20 ligands modelled in this entry, 18 are monoatomic - leaving 2 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	NAG	A	502	1	14,14,15	1.25	1 (7%)	17,19,21	1.92	6 (35%)
2	NAG	A	501	1	14,14,15	1.25	1 (7%)	17,19,21	1.93	6 (35%)

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	502	1	-	0/6/23/26	0/1/1/1
2	NAG	A	501	1	1/1/5/7	4/6/23/26	0/1/1/1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	501	NAG	C7-N2	3.51	1.45	1.34
2	A	502	NAG	C7-N2	3.48	1.45	1.34

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	501	NAG	O5-C5-C6	3.64	114.75	107.66
2	A	502	NAG	O5-C5-C6	3.64	114.74	107.66
2	A	502	NAG	C1-C2-N2	2.75	114.77	110.43
2	A	501	NAG	C1-C2-N2	2.72	114.71	110.43
2	A	501	NAG	O3-C3-C2	2.60	114.80	109.40
2	A	502	NAG	O3-C3-C2	2.59	114.79	109.40
2	A	501	NAG	C8-C7-N2	2.33	119.99	116.12
2	A	502	NAG	C8-C7-N2	2.33	119.98	116.12
2	A	502	NAG	O4-C4-C5	2.26	114.90	109.32
2	A	501	NAG	O4-C4-C5	2.25	114.86	109.32
2	A	501	NAG	C2-N2-C7	-2.18	119.97	122.90
2	A	502	NAG	C2-N2-C7	-2.14	120.03	122.90

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
2	A	501	NAG	C1

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	501	NAG	O5-C5-C6-O6
2	A	501	NAG	C4-C5-C6-O6
2	A	501	NAG	C3-C2-N2-C7
2	A	501	NAG	C1-C2-N2-C7

There are no ring outliers.

No monomer is involved in short contacts.

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	359/363 (98%)	0.10	15 (4%) 40 32	64, 89, 124, 145	1 (0%)

All (15) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	214	SER	6.0
1	A	32	PRO	5.6
1	A	209	LEU	4.7
1	A	45	SER	4.1
1	A	325	HIS	3.5
1	A	381	ASP	2.9
1	A	194	PHE	2.8
1	A	215	LYS	2.6
1	A	221	LYS	2.5
1	A	191	GLU	2.3
1	A	383	SER	2.3
1	A	33	PRO	2.1
1	A	310	GLU	2.1
1	A	323	ASN	2.1
1	A	393	ARG	2.0

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides 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. 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	B-factors(Å ²)	Q<0.9
2	NAG	A	501	14/15	0.27	0.20	151,171,175,176	0
4	NA	A	701	1/1	0.55	0.44	84,84,84,84	0
2	NAG	A	502	14/15	0.69	0.18	149,158,168,172	0
3	CL	A	612	1/1	0.76	0.19	110,110,110,110	1
3	CL	A	613	1/1	0.79	0.18	130,130,130,130	0
3	CL	A	609	1/1	0.82	0.21	100,100,100,100	1
3	CL	A	615	1/1	0.82	0.21	105,105,105,105	1
3	CL	A	608	1/1	0.82	0.17	118,118,118,118	0
3	CL	A	607	1/1	0.83	0.19	93,93,93,93	1
3	CL	A	611	1/1	0.83	0.22	124,124,124,124	0
3	CL	A	602	1/1	0.85	0.23	105,105,105,105	0
3	CL	A	606	1/1	0.88	0.28	101,101,101,101	1
3	CL	A	616	1/1	0.91	0.17	107,107,107,107	0
3	CL	A	604	1/1	0.93	0.31	84,84,84,84	1
3	CL	A	617	1/1	0.93	0.11	92,92,92,92	0
3	CL	A	610	1/1	0.93	0.12	89,89,89,89	1
3	CL	A	614	1/1	0.94	0.15	99,99,99,99	0
3	CL	A	605	1/1	0.95	0.15	89,89,89,89	0
3	CL	A	601	1/1	0.96	0.10	73,73,73,73	0
3	CL	A	603	1/1	0.98	0.08	94,94,94,94	0

6.5 Other polymers ⓘ

There are no such residues in this entry.