



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 07:00 PM UTC

PDB ID : 7FKK / pdb_00007fkk
Title : PanDDA analysis group deposition – Aar2/RNaseH in complex with fragment P04D12 from the F2X-Universal Library
Authors : Barthel, T.; Wollenhaupt, J.; Lima, G.M.A.; Wahl, M.C.; Weiss, M.S.
Deposited on : 2022-08-26
Resolution : 1.63 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

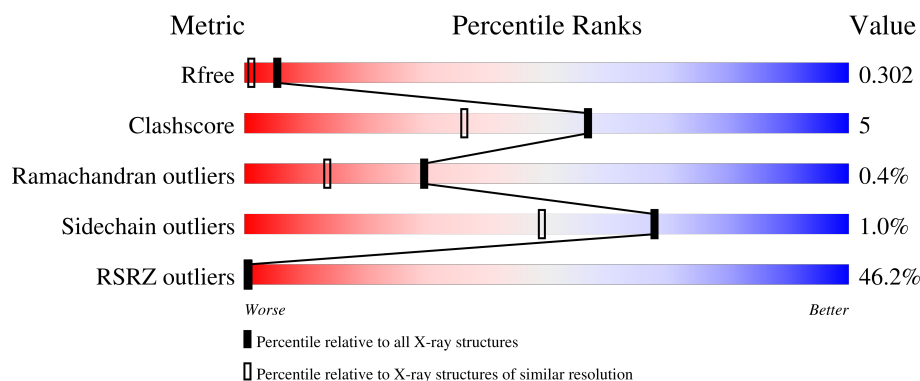
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.63 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	1141 (1.64-1.64)
Clashscore	190562	1171 (1.64-1.64)
Ramachandran outliers	187476	1151 (1.64-1.64)
Sidechain outliers	187428	1150 (1.64-1.64)
RSRZ outliers	180081	1141 (1.64-1.64)

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	258	48% 77% 12% 8%
2	B	308	40% 89% 8%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 9228 atoms, of which 4524 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 Pre-mRNA-splicing factor 8.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	H	N	O	S			
1	A	237	4068	1287	2060	336	373	12	18	21	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1833	GLY	-	expression tag	UNP P33334
A	1834	ALA	-	expression tag	UNP P33334
A	1835	MET	-	expression tag	UNP P33334

- Molecule 2 is a protein called A1 cistron-splicing factor AAR2.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	H	N	O	S			
2	B	300	5044	1654	2464	421	485	20	22	17	0

There are 20 discrepancies between the modelled and reference sequences:

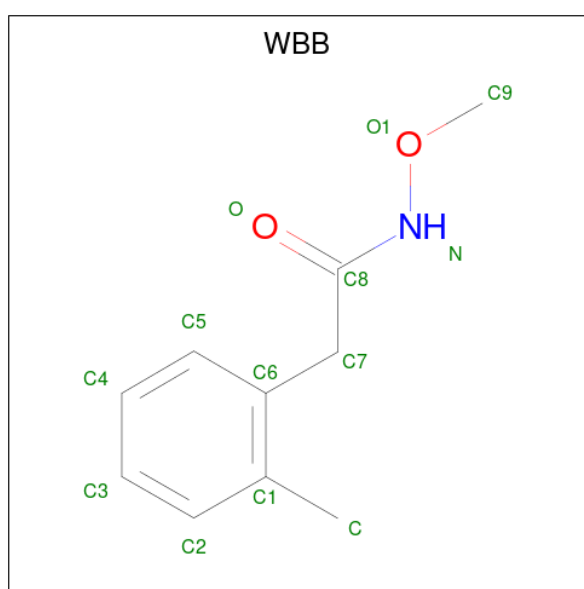
Chain	Residue	Modelled	Actual	Comment	Reference
B	-3	GLY	-	expression tag	UNP P32357
B	-2	ALA	-	expression tag	UNP P32357
B	-1	MET	-	expression tag	UNP P32357
B	0	ALA	-	expression tag	UNP P32357
B	166	SER	LEU	conflict	UNP P32357
B	167	SER	LYS	conflict	UNP P32357
B	?	-	LEU	deletion	UNP P32357
B	?	-	GLN	deletion	UNP P32357
B	?	-	LYS	deletion	UNP P32357
B	?	-	ALA	deletion	UNP P32357
B	?	-	GLY	deletion	UNP P32357
B	?	-	SER	deletion	UNP P32357
B	?	-	LYS	deletion	UNP P32357

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Chain	Residue	Modelled	Actual	Comment	Reference
B	?	-	MET	deletion	UNP P32357
B	?	-	GLU	deletion	UNP P32357
B	?	-	ALA	deletion	UNP P32357
B	?	-	LYS	deletion	UNP P32357
B	?	-	ASN	deletion	UNP P32357
B	?	-	GLU	deletion	UNP P32357
B	170	SER	ASP	conflict	UNP P32357

- Molecule 3 is N-methoxy-2-(2-methylphenyl)acetamide (CCD ID: WBB) (formula: $C_{10}H_{13}NO_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			13	10	1	2		

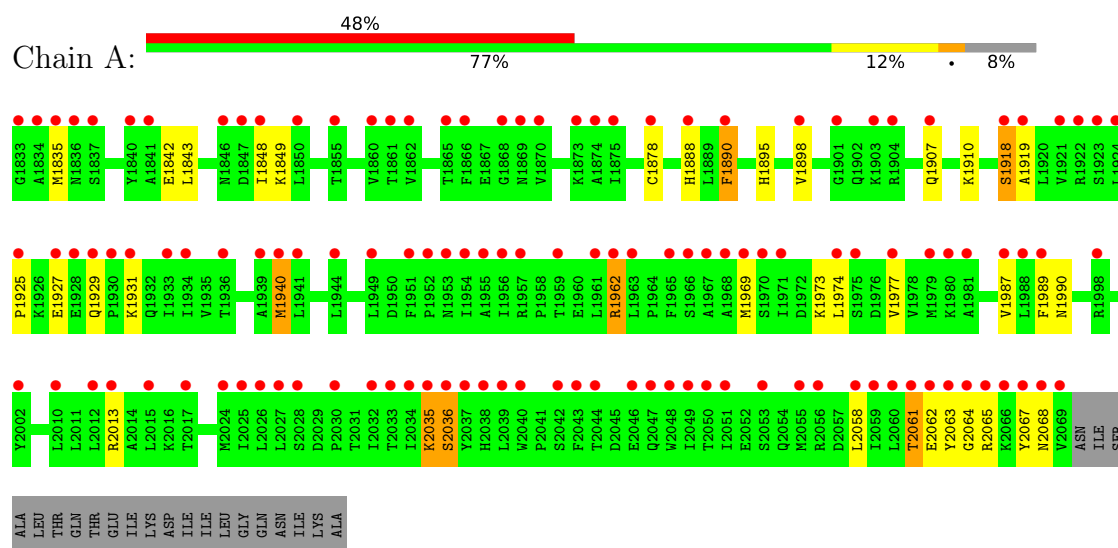
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	48	Total	O	0	0
			48	48		
4	B	55	Total	O	0	0
			55	55		

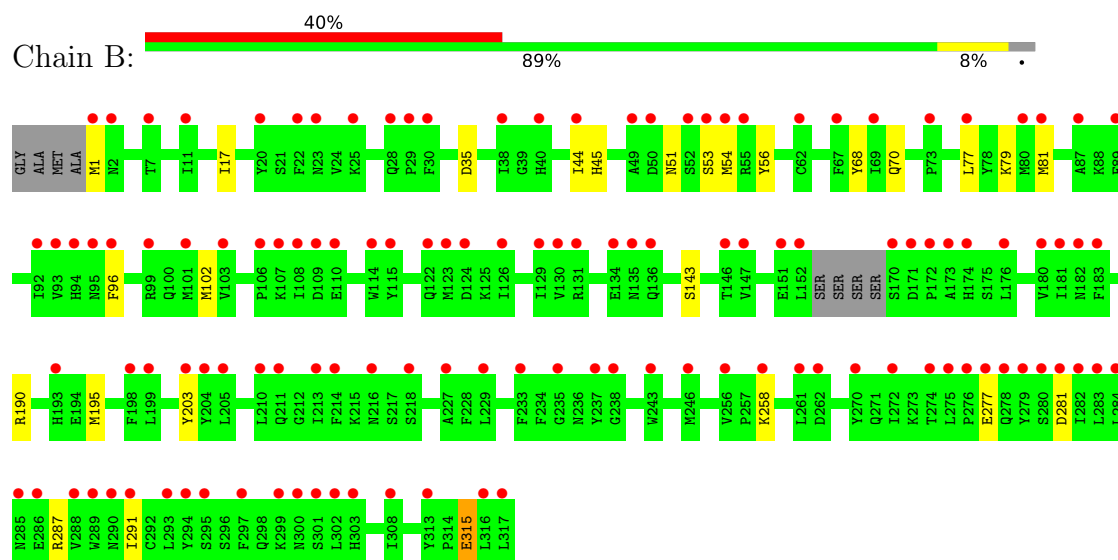
3 Residue-property plots

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: Pre-mRNA-splicing factor 8



• Molecule 2: A1 cistron-splicing factor AAR2



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	88.42Å 81.77Å 93.58Å 90.00° 108.64° 90.00°	Depositor
Resolution (Å)	44.34 – 1.63 44.34 – 1.63	Depositor EDS
% Data completeness (in resolution range)	99.3 (44.34-1.63) 99.9 (44.34-1.63)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.96 (at 1.63Å)	Xtriage
Refinement program	PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.256 , 0.292 0.268 , 0.302	Depositor DCC
R_{free} test set	2100 reflections (2.66%)	wwPDB-VP
Wilson B-factor (Å ²)	38.0	Xtriage
Anisotropy	0.354	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.41 , 46.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	9228	wwPDB-VP
Average B, all atoms (Å ²)	72.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.82% 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

5.1 Standard geometry

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

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	0.85	6/2149 (0.3%)	0.98	13/2911 (0.4%)
2	B	0.68	0/2739	0.78	0/3699
All	All	0.76	6/4888 (0.1%)	0.88	13/6610 (0.2%)

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	2

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1929	GLN	C-N	14.54	1.52	1.33
1	A	1940	MET	SD-CE	-7.21	1.61	1.79
1	A	1919[A]	ALA	N-CA	6.20	1.54	1.46
1	A	1919[B]	ALA	N-CA	6.20	1.54	1.46
1	A	1918[A]	SER	C-N	5.86	1.42	1.33
1	A	1918[B]	SER	C-N	5.86	1.42	1.33

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	2035	LYS	CB-CA-C	7.85	122.15	109.90
1	A	1929	GLN	CA-C-N	7.62	127.55	119.85
1	A	1929	GLN	C-N-CA	7.62	127.55	119.85
1	A	1918[A]	SER	CA-C-N	-7.43	108.13	121.14
1	A	1918[A]	SER	C-N-CA	-7.43	108.13	121.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1918[B]	SER	CA-C-N	-7.43	108.13	121.14
1	A	1918[B]	SER	C-N-CA	-7.43	108.13	121.14
1	A	1973	LYS	CB-CA-C	6.54	121.97	110.85
1	A	1990	ASN	N-CA-C	-6.31	98.93	108.96
1	A	2036	SER	CA-C-N	5.47	132.88	121.94
1	A	2036	SER	C-N-CA	5.47	132.88	121.94
1	A	1973	LYS	CA-C-O	-5.41	114.69	120.42
1	A	1925	PRO	N-CA-CB	5.19	108.27	103.39

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1918[A]	SER	Mainchain
1	A	1918[B]	SER	Mainchain

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	2008	2060	1974	23	4
2	B	2580	2464	2398	20	0
3	A	13	0	0	3	0
4	A	48	0	0	1	0
4	B	55	0	0	0	0
All	All	4704	4524	4372	42	4

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 5.

All (42) 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:1888:HIS:CE1	3:A:2101:WBB:C9	2.24	1.20
1:A:1888:HIS:ND1	3:A:2101:WBB:C9	2.13	1.10

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1962:ARG:O	1:A:2013:ARG:NH1	2.04	0.91
2:B:70:GLN:HB3	2:B:81:MET:HE2	1.70	0.74
1:A:1888:HIS:HE1	3:A:2101:WBB:C9	1.95	0.70
1:A:2061:THR:O	1:A:2064:GLY:N	2.29	0.66
2:B:96:PHE:HB2	2:B:102:MET:HE3	1.79	0.65
2:B:68:TYR:CE2	2:B:81:MET:HE3	2.35	0.62
1:A:2062:GLU:OE1	1:A:2065:ARG:NH1	2.34	0.61
1:A:2064:GLY:O	1:A:2068:ASN:N	2.33	0.60
2:B:96:PHE:CB	2:B:102:MET:HE3	2.31	0.59
2:B:51:ASN:ND2	2:B:53:SER:O	2.36	0.59
2:B:287:ARG:O	2:B:291:ILE:HD13	2.04	0.58
2:B:258:LYS:HD2	2:B:258:LYS:H	1.70	0.57
1:A:1842:GLU:OE1	4:A:2201:HOH:O	2.17	0.56
1:A:1848:ILE:H	1:A:1931[A]:LYS:HZ2	1.55	0.54
1:A:1843:LEU:HA	1:A:1849:LYS:HD2	1.94	0.50
1:A:1910:LYS:O	1:A:1940:MET:HE1	2.12	0.50
2:B:17:ILE:HD13	2:B:44[B]:ILE:CG1	2.41	0.50
1:A:1895:HIS:O	1:A:1898[A]:VAL:HG22	2.11	0.50
2:B:17:ILE:HD13	2:B:44[B]:ILE:HG12	1.94	0.49
1:A:1878:CYS:SG	1:A:1969:MET:HE3	2.53	0.48
2:B:70:GLN:HB3	2:B:81:MET:CE	2.42	0.47
1:A:1974:LEU:CD2	1:A:1989:PHE:CE1	2.98	0.46
1:A:2058:LEU:C	1:A:2058:LEU:HD23	2.41	0.46
1:A:1977:VAL:HG21	1:A:1987:VAL:HG21	1.96	0.46
2:B:53:SER:O	2:B:54[A]:MET:HB3	2.16	0.45
1:A:1962:ARG:HD3	1:A:1962:ARG:H	1.82	0.45
1:A:2063:TYR:CD1	1:A:2063:TYR:C	2.95	0.45
2:B:1:MET:HB3	2:B:35:ASP:HA	1.99	0.45
2:B:44[A]:ILE:O	2:B:44[A]:ILE:HG23	2.17	0.44
2:B:54[B]:MET:HE1	2:B:143:SER:HB3	2.00	0.43
2:B:315:GLU:H	2:B:315:GLU:CD	2.27	0.43
2:B:56:TYR:CZ	2:B:77:LEU:HB2	2.55	0.42
2:B:190:ARG:HD3	2:B:203[A]:TYR:CE2	2.54	0.41
1:A:1890:PHE:N	1:A:1890:PHE:CD1	2.87	0.41
2:B:277:GLU:CD	2:B:277:GLU:H	2.27	0.41
1:A:1907:GLN:HG2	2:B:195:MET:HE3	2.02	0.41
1:A:1974:LEU:O	1:A:1977:VAL:HG12	2.21	0.41
1:A:2063:TYR:O	1:A:2067:TYR:HD1	2.04	0.41
2:B:77:LEU:HD21	2:B:79:LYS:HE3	2.02	0.41

All (4) 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:1927:GLU:HG3	1:A:2035:LYS:HZ1[2_656]	0.39	1.21
1:A:1927:GLU:HG3	1:A:2035:LYS:NZ[2_656]	1.13	0.47
1:A:1927:GLU:CG	1:A:2035:LYS:NZ[2_656]	1.90	0.30
1:A:1927:GLU:CG	1:A:2035:LYS:HZ1[2_656]	1.34	0.26

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	258/258 (100%)	249 (96%)	7 (3%)	2 (1%)	16	3
2	B	315/308 (102%)	304 (96%)	11 (4%)	0	100	100
All	All	573/566 (101%)	553 (96%)	18 (3%)	2 (0%)	30	20

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	2036	SER
1	A	2061	THR

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	237/233 (102%)	235 (99%)	2 (1%)	73	58
2	B	294/284 (104%)	290 (99%)	4 (1%)	59	35
All	All	531/517 (103%)	525 (99%)	6 (1%)	68	44

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1890	PHE
1	A	1962	ARG
2	B	45[A]	HIS
2	B	45[B]	HIS
2	B	281	ASP
2	B	315	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1869	ASN
2	B	2	ASN
2	B	259	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 ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

1 ligand is 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	WBB	A	2101	-	13,13,13	3.11	5 (38%)	14,16,16	0.99	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
3	WBB	A	2101	-	-	5/7/7/7	0/1/1/1

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	2101	WBB	O1-N	-7.60	1.33	1.40
3	A	2101	WBB	C8-N	5.44	1.41	1.32
3	A	2101	WBB	O-C8	-3.15	1.17	1.23
3	A	2101	WBB	C-C1	-2.99	1.45	1.51
3	A	2101	WBB	C2-C1	-2.48	1.34	1.39

There are no bond angle outliers.

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	2101	WBB	C7-C8-N-O1
3	A	2101	WBB	C6-C7-C8-N
3	A	2101	WBB	C8-N-O1-C9
3	A	2101	WBB	O-C8-N-O1
3	A	2101	WBB	C6-C7-C8-O

There are no ring outliers.

1 monomer is involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	2101	WBB	3	0

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	237/258 (91%)	2.38	124 (52%) 0 0	24, 66, 114, 205	12 (5%)
2	B	300/308 (97%)	1.99	124 (41%) 0 1	22, 64, 128, 185	9 (3%)
All	All	537/566 (94%)	2.16	248 (46%) 0 1	22, 65, 119, 205	21 (3%)

All (248) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	2069	VAL	9.1
1	A	1979[A]	MET	8.7
2	B	275	LEU	8.0
1	A	2037	TYR	7.5
2	B	152	LEU	7.3
2	B	54[A]	MET	6.7
1	A	1862	VAL	6.3
1	A	2039	LEU	6.3
1	A	2063	TYR	6.3
1	A	2036	SER	6.2
1	A	2064	GLY	6.2
1	A	1989	PHE	6.1
1	A	2060	LEU	5.8
2	B	170	SER	5.8
1	A	2040	TRP	5.7
1	A	2067	TYR	5.4
1	A	2048	TRP	5.4
1	A	2058	LEU	5.4
1	A	1969	MET	5.3
1	A	1860	VAL	5.3
2	B	101	MET	5.3
2	B	316	LEU	5.3
2	B	1	MET	5.1
2	B	282	ILE	5.1

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Mol	Chain	Res	Type	RSRZ
2	B	261	LEU	5.1
2	B	203[A]	TYR	5.1
2	B	172	PRO	5.0
1	A	1835	MET	4.8
2	B	313	TYR	4.6
1	A	1988	LEU	4.5
1	A	2061	THR	4.5
2	B	124	ASP	4.4
1	A	1951	PHE	4.4
2	B	279	TYR	4.4
1	A	2065	ARG	4.3
2	B	29	PRO	4.3
2	B	174	HIS	4.3
1	A	1924	LEU	4.2
1	A	2056[A]	ARG	4.2
2	B	297	PHE	4.2
2	B	106	PRO	4.2
1	A	1866	PHE	4.2
1	A	1940	MET	4.2
1	A	2038	HIS	4.2
1	A	2027	LEU	4.2
1	A	2042	SER	4.1
2	B	67	PHE	4.1
2	B	173	ALA	4.1
1	A	1834	ALA	4.1
2	B	103	VAL	4.1
1	A	2035	LYS	4.1
2	B	256	VAL	4.0
1	A	1956	ILE	4.0
2	B	146	THR	3.9
1	A	1965	PHE	3.9
1	A	2034	ILE	3.9
2	B	210	LEU	3.9
1	A	1840	TYR	3.9
1	A	2026	LEU	3.9
1	A	2068	ASN	3.9
2	B	11	ILE	3.8
2	B	69	ILE	3.8
2	B	246	MET	3.8
1	A	1890	PHE	3.8
1	A	2015	LEU	3.8
2	B	214	PHE	3.7

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Mol	Chain	Res	Type	RSRZ
1	A	1833	GLY	3.7
2	B	53	SER	3.7
1	A	2051	ILE	3.7
2	B	22	PHE	3.7
2	B	49	ALA	3.7
1	A	2059	ILE	3.6
2	B	129	ILE	3.6
2	B	205	LEU	3.6
1	A	1961[A]	LEU	3.6
2	B	317	LEU	3.6
1	A	2049	ILE	3.6
1	A	2066	LYS	3.6
1	A	1931[A]	LYS	3.5
2	B	93	VAL	3.5
2	B	130	VAL	3.5
2	B	283	LEU	3.5
2	B	285	ASN	3.4
2	B	289	TRP	3.4
2	B	2	ASN	3.4
2	B	288	VAL	3.4
2	B	204[A]	TYR	3.3
1	A	1929	GLN	3.3
1	A	2032	ILE	3.3
2	B	94	HIS	3.3
1	A	1949	LEU	3.3
2	B	295	SER	3.3
1	A	2047	GLN	3.3
1	A	2028	SER	3.3
2	B	52	SER	3.3
2	B	126	ILE	3.2
2	B	62	CYS	3.2
1	A	1874	ALA	3.2
2	B	38	ILE	3.2
1	A	1869	ASN	3.2
1	A	1878	CYS	3.2
2	B	131	ARG	3.2
2	B	110	GLU	3.2
1	A	1927	GLU	3.1
2	B	55[A]	ARG	3.1
1	A	1971	ILE	3.1
2	B	229	LEU	3.1
1	A	1967	ALA	3.1

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Mol	Chain	Res	Type	RSRZ
1	A	1962	ARG	3.1
2	B	134	GLU	3.1
2	B	171	ASP	3.1
1	A	1963	LEU	3.1
1	A	1875	ILE	3.0
2	B	308	ILE	3.0
2	B	303	HIS	3.0
2	B	213	ILE	3.0
2	B	281	ASP	3.0
1	A	1925	PRO	3.0
2	B	199	LEU	2.9
1	A	2030	PRO	2.9
1	A	1837	SER	2.9
2	B	107	LYS	2.9
1	A	2017[A]	THR	2.9
2	B	87	ALA	2.9
1	A	1846	ASN	2.9
1	A	1944	LEU	2.9
1	A	2053[A]	SER	2.9
2	B	216	ASN	2.9
1	A	1919[A]	ALA	2.9
1	A	1998	ARG	2.9
2	B	293	LEU	2.9
1	A	1952	PRO	2.9
1	A	1921	VAL	2.8
1	A	1974	LEU	2.8
2	B	276	PRO	2.8
2	B	302	LEU	2.8
1	A	1953	ASN	2.8
2	B	30	PHE	2.8
1	A	1868	GLY	2.8
1	A	1987	VAL	2.8
2	B	291	ILE	2.8
2	B	20	TYR	2.8
2	B	237	TYR	2.8
1	A	1934	ILE	2.8
2	B	81	MET	2.8
2	B	258	LYS	2.8
1	A	1975	SER	2.8
1	A	1888	HIS	2.7
2	B	182	ASN	2.7
1	A	2043	PHE	2.7

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Mol	Chain	Res	Type	RSRZ
2	B	89	PHE	2.7
2	B	115	TYR	2.7
1	A	1861	THR	2.7
2	B	108	ILE	2.7
1	A	1836	ASN	2.7
2	B	135	ASN	2.7
2	B	300	ASN	2.7
1	A	2024[A]	MET	2.7
2	B	227	ALA	2.7
2	B	211[A]	GLN	2.7
1	A	1970	SER	2.6
2	B	301	SER	2.6
2	B	233	PHE	2.6
1	A	2033	THR	2.6
2	B	274	THR	2.6
2	B	50	ASP	2.6
1	A	1928	GLU	2.6
1	A	1968	ALA	2.6
1	A	1966	SER	2.6
2	B	183	PHE	2.6
2	B	235	GLY	2.6
2	B	114	TRP	2.6
2	B	80	MET	2.6
1	A	2050	THR	2.6
1	A	1954	ILE	2.6
2	B	181	ILE	2.6
1	A	1907	GLN	2.5
2	B	151	GLU	2.5
1	A	1850	LEU	2.5
1	A	2044	THR	2.5
1	A	1922	ARG	2.5
1	A	2013	ARG	2.5
2	B	122[A]	GLN	2.5
2	B	136	GLN	2.4
1	A	2010	LEU	2.4
2	B	77	LEU	2.4
1	A	2046	GLU	2.4
2	B	277	GLU	2.4
2	B	180	VAL	2.4
1	A	1918[A]	SER	2.4
1	A	1923	SER	2.4
1	A	1955	ALA	2.4

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Mol	Chain	Res	Type	RSRZ
2	B	280	SER	2.4
2	B	109	ASP	2.4
1	A	1873	LYS	2.4
1	A	2012	LEU	2.4
2	B	284	LEU	2.4
1	A	1939	ALA	2.4
1	A	1855[A]	THR	2.4
1	A	1980[A]	LYS	2.3
1	A	2002[A]	TYR	2.3
2	B	272	ILE	2.3
1	A	1957	ARG	2.3
2	B	262	ASP	2.3
2	B	73	PRO	2.3
2	B	25	LYS	2.3
2	B	238	GLY	2.3
2	B	40	HIS	2.2
1	A	1936	THR	2.2
2	B	95	ASN	2.2
2	B	294	TYR	2.2
1	A	1848	ILE	2.2
1	A	2025	ILE	2.2
2	B	278	GLN	2.2
1	A	1870	VAL	2.2
1	A	1865	THR	2.2
2	B	243	TRP	2.2
1	A	2055	MET	2.2
1	A	2062	GLU	2.2
2	B	96	PHE	2.2
2	B	198	PHE	2.2
1	A	1981	ALA	2.2
1	A	1901	GLY	2.2
2	B	299	LYS	2.2
1	A	1933	ILE	2.2
1	A	1959	THR	2.2
2	B	7	THR	2.2
1	A	1847	ASP	2.1
2	B	123[A]	MET	2.1
1	A	1977	VAL	2.1
2	B	218	SER	2.1
2	B	286	GLU	2.1
2	B	44[A]	ILE	2.1
1	A	1941	LEU	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	1904	ARG	2.1
2	B	193	HIS	2.1
1	A	1841	ALA	2.1
1	A	1898[A]	VAL	2.1
2	B	147	VAL	2.1
2	B	23	ASN	2.1
2	B	99	ARG	2.1
2	B	176	LEU	2.1
2	B	290	ASN	2.0
1	A	1930	PRO	2.0
2	B	28	GLN	2.0
2	B	92	ILE	2.0
2	B	270	TYR	2.0
1	A	1903	LYS	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 [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. 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($\text{\AA}^2$)	Q<0.9
3	WBB	A	2101	13/13	0.70	0.19	20,20,20,20	13

6.5 Other polymers [i](#)

There are no such residues in this entry.