



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 04:27 PM UTC

PDB ID : 4B3Q / pdb_00004b3q
Title : Structures of HIV-1 RT and RNA-DNA Complex Reveal a Unique RT Con-
formation and Substrate Interface
Authors : Lapkouski, M.; Tian, L.; Miller, J.T.; Le Grice, S.F.J.; Yang, W.
Deposited on : 2012-07-25
Resolution : 5.00 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
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
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

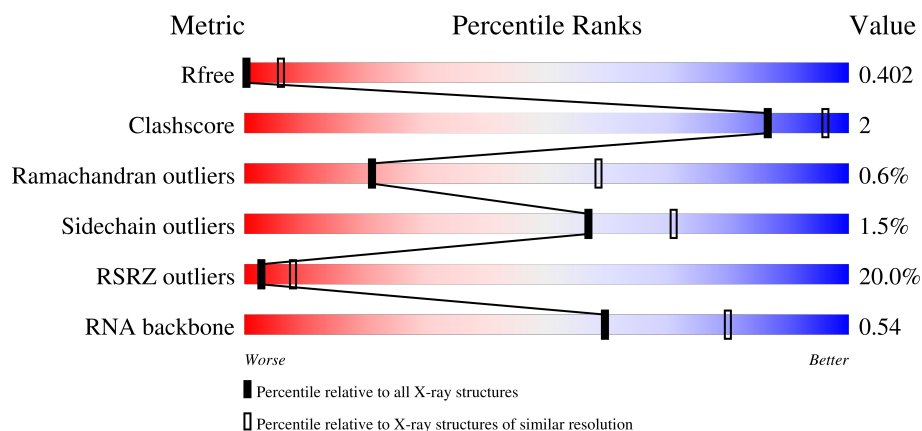
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 5.00 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	1009 (6.02-3.98)
Clashscore	190562	1040 (6.00-4.00)
Ramachandran outliers	187476	1015 (6.06-3.92)
Sidechain outliers	187428	1136 (6.10-3.90)
RSRZ outliers	180081	1004 (6.02-3.98)
RNA backbone	3983	1045 (6.76-3.10)

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	560	
2	B	454	
3	D	25	
4	R	34	

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
5	NVP	A	999	-	X	-	-

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 8433 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 REVERSE TRANSCRIPTASE/RIBONUCLEASE H.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	543	Total	C	N	O	S	0	0	0
			4271	2758	702	803	8			

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	68	GLY	SER	engineered mutation	UNP P04585
A	83	LYS	ARG	engineered mutation	UNP P04585
A	411	VAL	ILE	engineered mutation	UNP P04585
A	447	SER	ASN	engineered mutation	UNP P04585
A	461	LYS	ARG	engineered mutation	UNP P04585
A	483	HIS	TYR	engineered mutation	UNP P04585
A	559	ILE	VAL	engineered mutation	UNP P04585

- Molecule 2 is a protein called P51 RT.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	410	Total	C	N	O	S	0	0	0
			3264	2122	528	607	7			

There are 17 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-13	MET	-	expression tag	UNP P04585
B	-12	ARG	-	expression tag	UNP P04585
B	-11	GLY	-	expression tag	UNP P04585
B	-10	SER	-	expression tag	UNP P04585
B	-9	HIS	-	expression tag	UNP P04585
B	-8	HIS	-	expression tag	UNP P04585
B	-7	HIS	-	expression tag	UNP P04585
B	-6	HIS	-	expression tag	UNP P04585
B	-5	HIS	-	expression tag	UNP P04585

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-4	HIS	-	expression tag	UNP P04585
B	-3	GLY	-	expression tag	UNP P04585
B	-2	SER	-	expression tag	UNP P04585
B	-1	GLN	-	expression tag	UNP P04585
B	0	LEU	-	expression tag	UNP P04585
B	68	GLY	SER	engineered mutation	UNP P04585
B	83	LYS	ARG	engineered mutation	UNP P04585
B	411	VAL	ILE	engineered mutation	UNP P04585

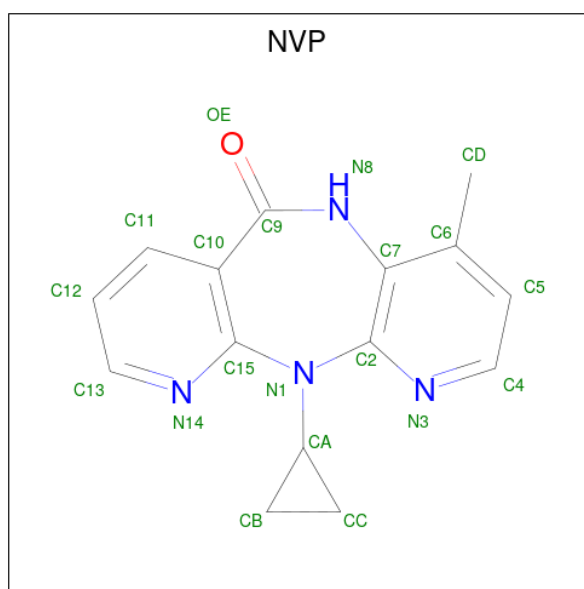
- Molecule 3 is a DNA chain called PRIMER DNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	D	21	Total	C	N	O	P	0	0	0
			430	206	73	130	21			

- Molecule 4 is a RNA chain called TEMPLATE RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	R	21	Total	C	N	O	P	0	0	0
			448	201	83	143	21			

- Molecule 5 is 11-CYCLOPROPYL-5,11-DIHYDRO-4-METHYL-6H-DIPYRIDO[3,2-B:2',3'-E][1,4]DIAZEPIN-6-ONE (CCD ID: NVP) (formula: C₁₅H₁₄N₄O).

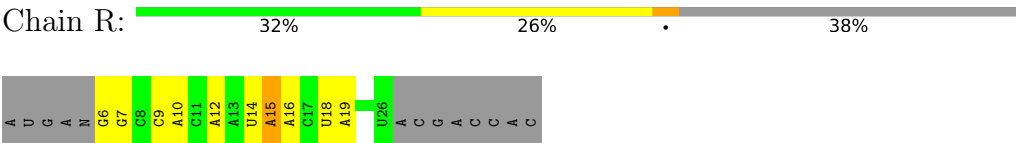


Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	N	O	0	0
			20	15	4	1		

● Molecule 3: PRIMER DNA



● Molecule 4: TEMPLATE RNA



4 Data and refinement statistics

Property	Value	Source
Space group	H 3 2	Depositor
Cell constants a, b, c, α , β , γ	272.70Å 272.70Å 233.10Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	29.99 – 5.00 29.99 – 5.00	Depositor EDS
% Data completeness (in resolution range)	89.8 (29.99-5.00) 89.4 (29.99-5.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.14	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.09 (at 5.06Å)	Xtriage
Refinement program	PHENIX (PHENIX.REFINE)	Depositor
R, R_{free}	0.361 , 0.407 0.363 , 0.402	Depositor DCC
R_{free} test set	664 reflections (5.10%)	wwPDB-VP
Wilson B-factor (Å ²)	170.4	Xtriage
Anisotropy	0.486	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.26 , 70.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.81	EDS
Total number of atoms	8433	wwPDB-VP
Average B, all atoms (Å ²)	149.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.76% 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: NVP

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	0.59	0/4380	0.74	1/5978 (0.0%)
2	B	0.58	0/3353	0.71	0/4574
3	D	0.28	0/480	0.61	0/739
4	R	0.40	0/501	0.64	0/778
All	All	0.56	0/8714	0.72	1/12069 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	225	PRO	N-CA-C	5.38	117.27	110.70

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	4271	0	4186	14	0
2	B	3264	0	3199	10	0
3	D	430	0	240	7	0
4	R	448	0	228	4	0
5	A	20	0	12	0	0
All	All	8433	0	7865	34	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 2.

All (34) 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)
3:D:17:DT:H2'	3:D:18:DG:H8	1.65	0.62
3:D:16:DT:H2'	3:D:17:DT:C6	2.43	0.54
2:B:264:LEU:HD12	2:B:274:ILE:HG21	1.91	0.53
3:D:17:DT:H2'	3:D:18:DG:C8	2.44	0.53
1:A:317:VAL:HG21	1:A:347:LYS:HB3	1.91	0.52
2:B:263:LYS:HE2	2:B:425:LEU:HB3	1.91	0.52
1:A:343:GLN:HG3	1:A:349:LEU:HD11	1.91	0.51
2:B:255:ASN:HB2	2:B:289:LEU:HB3	1.93	0.50
1:A:253:THR:HA	1:A:292:VAL:HG22	1.95	0.49
1:A:444:GLY:HA2	1:A:552:VAL:HG11	1.95	0.48
1:A:54:ASN:HB3	1:A:143:ARG:HH21	1.78	0.48
4:R:6:G:H2'	4:R:7:G:C8	2.49	0.48
4:R:9:C:H2'	4:R:10:A:C8	2.49	0.47
2:B:325:LEU:HD23	2:B:387:PRO:HB3	1.97	0.47
1:A:120:LEU:HD21	1:A:124:PHE:HD2	1.80	0.47
1:A:376:THR:O	1:A:380:ILE:HG12	2.16	0.46
2:B:362:THR:HB	2:B:367:GLN:HE21	1.81	0.45
1:A:363:ASN:HD22	1:A:509:GLN:HB2	1.81	0.45
2:B:254:VAL:HB	2:B:289:LEU:HA	1.98	0.45
1:A:449:GLU:C	1:A:451:LYS:H	2.24	0.45
1:A:480:GLN:HE21	1:A:517:LEU:HD11	1.81	0.45
1:A:408:ALA:HB2	2:B:331:LYS:HD2	1.98	0.45
3:D:18:DG:H2'	3:D:19:DT:C6	2.53	0.44
3:D:8:DT:H2'	3:D:9:DA:C8	2.53	0.43
4:R:9:C:H2'	4:R:10:A:H8	1.82	0.43
1:A:420:PRO:HB2	1:A:421:PRO:HD3	2.01	0.43
2:B:275:LYS:HD3	2:B:277:ARG:HH12	1.84	0.43
3:D:12:DG:H2'	3:D:13:DT:C6	2.53	0.43
1:A:312:GLU:HA	1:A:313:PRO:HD3	1.88	0.42
2:B:101:LYS:HB3	2:B:382:ILE:HA	2.02	0.42
2:B:149:LEU:HA	2:B:150:PRO:HD3	1.84	0.41
1:A:169:GLU:HB3	1:A:170:PRO:HD3	2.02	0.41
4:R:14:U:H2'	4:R:15:A:C8	2.56	0.40
3:D:8:DT:H2'	3:D:9:DA:H8	1.86	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	539/560 (96%)	505 (94%)	29 (5%)	5 (1%)	14	50
2	B	406/454 (89%)	392 (97%)	13 (3%)	1 (0%)	43	77
All	All	945/1014 (93%)	897 (95%)	42 (4%)	6 (1%)	21	58

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	6	GLU
1	A	184	MET
1	A	253	THR
1	A	363	ASN
1	A	292	VAL
2	B	184	MET

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	453/499 (91%)	445 (98%)	8 (2%)	51	67
2	B	347/411 (84%)	343 (99%)	4 (1%)	63	74
All	All	800/910 (88%)	788 (98%)	12 (2%)	57	71

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	ILE
1	A	202	ILE
1	A	246	LEU
1	A	295	LEU
1	A	301	LEU
1	A	323	LYS
1	A	330	GLN
1	A	517	LEU
2	B	50	ILE
2	B	214	LEU
2	B	289	LEU
2	B	303	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	145	GLN
1	A	265	ASN
1	A	330	GLN
1	A	340	GLN
1	A	367	GLN
1	A	474	ASN
1	A	480	GLN
1	A	494	ASN
2	B	23	GLN
2	B	242	GLN
2	B	332	GLN
2	B	373	GLN
2	B	394	GLN
2	B	428	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
4	R	20/34 (58%)	5 (25%)	0

All (5) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
4	R	12	A
4	R	15	A

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Mol	Chain	Res	Type
4	R	16	A
4	R	18	U
4	R	19	A

There are no RNA pucker outliers to report.

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](#)

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	$\# Z > 2$
5	NVP	A	999	-	23,23,23	12.71	12 (52%)	34,34,34	28.21	17 (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
5	NVP	A	999	-	-	2/4/6/6	0/4/4/4

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	999	NVP	CA-N1	48.99	2.57	1.46
5	A	999	NVP	C15-N1	20.12	1.62	1.42
5	A	999	NVP	C2-N1	19.12	1.61	1.42
5	A	999	NVP	C10-C9	-14.61	1.31	1.49
5	A	999	NVP	C7-N8	-14.10	1.24	1.42
5	A	999	NVP	C9-N8	-8.21	1.27	1.35
5	A	999	NVP	C10-C15	4.76	1.47	1.40
5	A	999	NVP	C7-C6	3.36	1.45	1.40
5	A	999	NVP	OE-C9	-2.74	1.16	1.23
5	A	999	NVP	C12-C13	2.38	1.44	1.37
5	A	999	NVP	C12-C11	2.15	1.42	1.38
5	A	999	NVP	C11-C10	2.13	1.43	1.39

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	999	NVP	CB-CA-N1	-143.34	31.28	116.09
5	A	999	NVP	CC-CA-N1	-73.32	72.71	116.09
5	A	999	NVP	C2-N1-CA	-15.53	104.07	116.34
5	A	999	NVP	C15-N1-C2	13.87	130.55	115.29
5	A	999	NVP	OE-C9-C10	-13.87	105.70	119.61
5	A	999	NVP	OE-C9-N8	-13.14	107.58	120.38
5	A	999	NVP	C15-N1-CA	11.39	125.34	116.34
5	A	999	NVP	C10-C9-N8	7.17	127.22	120.22
5	A	999	NVP	C7-N8-C9	6.70	133.81	128.29
5	A	999	NVP	N14-C15-N1	4.77	120.27	116.67
5	A	999	NVP	N3-C2-N1	4.58	120.12	116.67
5	A	999	NVP	C5-C4-N3	-3.38	119.83	123.97
5	A	999	NVP	C4-N3-C2	3.19	122.27	115.05
5	A	999	NVP	C13-N14-C15	3.19	122.27	115.05
5	A	999	NVP	C15-C10-C9	-3.15	120.93	124.01
5	A	999	NVP	C7-C2-N1	-2.85	119.05	120.14
5	A	999	NVP	C12-C13-N14	-2.38	119.65	123.42

There are no chirality outliers.

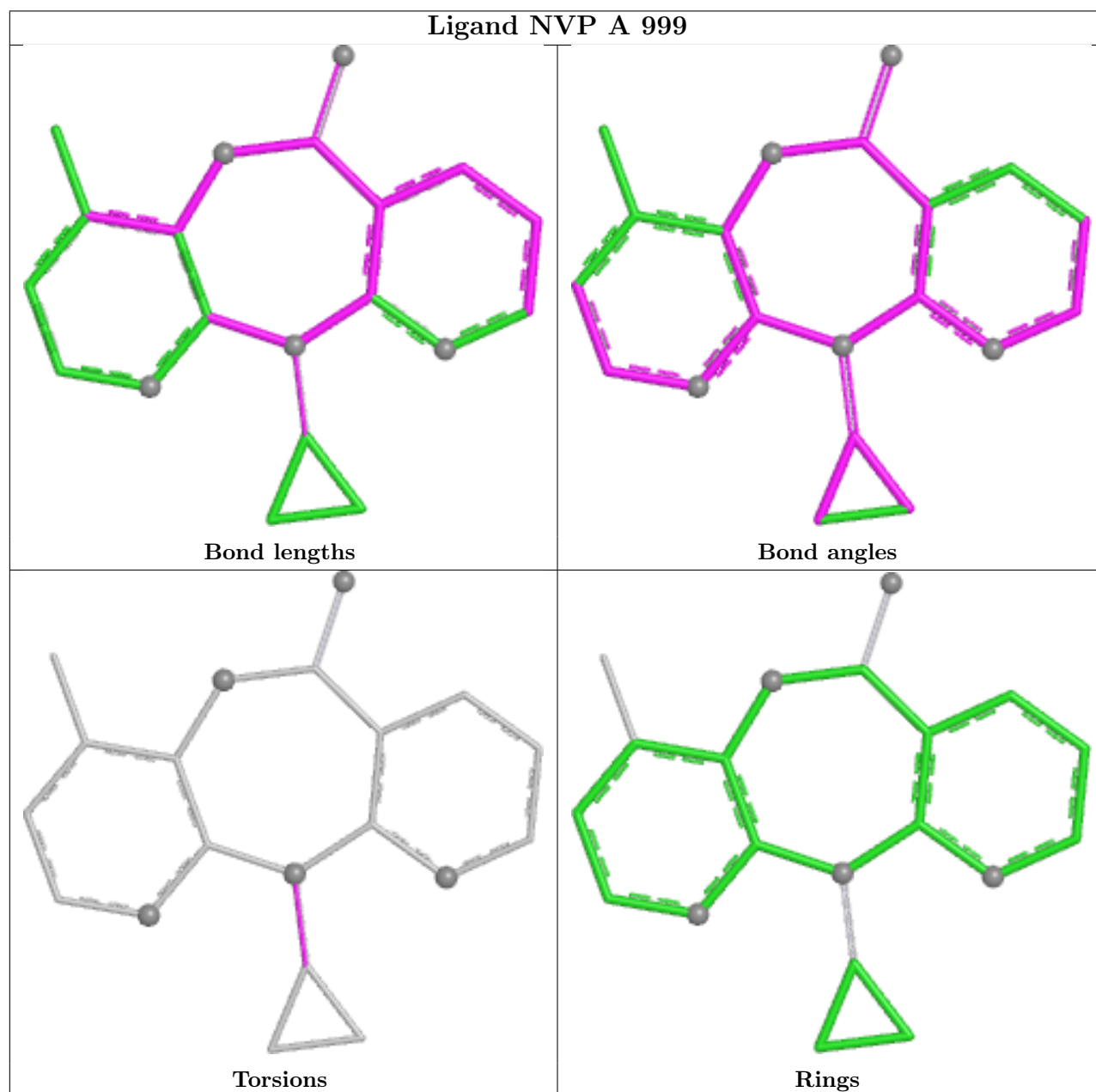
All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	999	NVP	CB-CA-N1-C15
5	A	999	NVP	CC-CA-N1-C15

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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 ⓘ

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	543/560 (96%)	1.41	133 (24%) 2 6	132, 150, 159, 170	0
2	B	410/454 (90%)	1.05	66 (16%) 4 10	133, 149, 157, 163	0
3	D	21/25 (84%)	0.75	0 100 100	137, 148, 156, 160	0
4	R	21/34 (61%)	0.14	0 100 100	140, 149, 159, 160	0
All	All	995/1073 (92%)	1.22	199 (20%) 3 8	132, 149, 158, 170	0

All (199) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	359	GLY	11.0
1	A	358	ARG	9.1
1	A	133	PRO	7.2
1	A	496	VAL	6.4
1	A	128	THR	6.4
2	B	381	VAL	6.0
1	A	283	LEU	5.9
1	A	19	PRO	5.3
2	B	182	GLN	5.1
1	A	188	TYR	5.0
1	A	89	GLU	4.9
1	A	427	TYR	4.9
1	A	258	GLN	4.7
1	A	251	SER	4.7
1	A	506	ILE	4.6
1	A	18	GLY	4.4
1	A	132	ILE	4.4
2	B	410	TRP	4.3
2	B	412	PRO	4.2
1	A	87	PHE	4.1
1	A	130	PHE	4.1

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Mol	Chain	Res	Type	RSRZ
1	A	4	PRO	4.1
1	A	144	TYR	4.1
1	A	146	TYR	4.0
2	B	215	THR	4.0
2	B	81	ASN	4.0
1	A	117	SER	4.0
1	A	377	THR	3.9
1	A	473	THR	3.9
1	A	120	LEU	3.9
1	A	514	GLU	3.8
1	A	282	LEU	3.8
1	A	91	GLN	3.8
2	B	128	THR	3.8
1	A	8	VAL	3.7
1	A	484	LEU	3.6
1	A	414	TRP	3.6
1	A	523	GLU	3.6
2	B	204	GLU	3.6
1	A	279	LEU	3.6
2	B	243	PRO	3.6
2	B	62	ALA	3.6
1	A	294	PRO	3.5
2	B	138	GLU	3.5
2	B	241	VAL	3.5
2	B	146	TYR	3.5
1	A	111	VAL	3.5
1	A	109	LEU	3.4
1	A	187	LEU	3.4
2	B	283	LEU	3.4
1	A	362	THR	3.4
1	A	263	LYS	3.3
1	A	355	ALA	3.3
1	A	154	LYS	3.3
1	A	497	THR	3.3
1	A	391	LEU	3.3
1	A	480	GLN	3.3
1	A	267	ALA	3.3
1	A	228	LEU	3.3
1	A	456	GLY	3.2
1	A	124	PHE	3.2
1	A	426	TRP	3.2
1	A	531	VAL	3.1

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Mol	Chain	Res	Type	RSRZ
1	A	445	ALA	3.1
2	B	160	PHE	3.1
1	A	92	LEU	3.1
2	B	115	TYR	3.0
1	A	505	ILE	3.0
2	B	240	THR	3.0
1	A	295	LEU	3.0
2	B	124	PHE	3.0
1	A	256	ASP	3.0
1	A	423	VAL	3.0
1	A	468	THR	2.9
1	A	261	VAL	2.9
1	A	499	SER	2.9
2	B	409	THR	2.9
2	B	114	ALA	2.9
1	A	25	PRO	2.9
1	A	174	GLN	2.9
1	A	504	GLY	2.9
2	B	92	LEU	2.9
2	B	260	LEU	2.9
1	A	142	ILE	2.8
2	B	418	ASN	2.8
2	B	354	TYR	2.8
1	A	160	PHE	2.8
2	B	341	ILE	2.8
1	A	264	LEU	2.8
2	B	210	LEU	2.8
2	B	351	THR	2.8
2	B	179	VAL	2.8
2	B	190	GLY	2.8
1	A	348	ASN	2.7
2	B	118	VAL	2.7
1	A	106	VAL	2.7
1	A	255	ASN	2.7
2	B	13	LYS	2.7
1	A	207	GLN	2.7
1	A	290	THR	2.7
1	A	518	VAL	2.7
1	A	41	MET	2.7
1	A	301	LEU	2.7
1	A	93	GLY	2.7
1	A	509	GLN	2.7

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Mol	Chain	Res	Type	RSRZ
1	A	527	LYS	2.7
2	B	414	TRP	2.6
1	A	81	ASN	2.6
1	A	446	ALA	2.6
1	A	249	LYS	2.6
1	A	245	VAL	2.6
2	B	329	ILE	2.6
1	A	139	THR	2.6
1	A	260	LEU	2.6
1	A	507	GLN	2.6
2	B	244	ILE	2.6
1	A	10	VAL	2.6
1	A	98	ALA	2.6
2	B	416	PHE	2.5
1	A	383	TRP	2.5
1	A	78	ARG	2.5
1	A	189	VAL	2.5
1	A	539	HIS	2.5
2	B	200	THR	2.5
1	A	421	PRO	2.5
1	A	118	VAL	2.5
1	A	467	VAL	2.5
2	B	421	PRO	2.5
1	A	99	GLY	2.5
2	B	391	LEU	2.4
1	A	356	ARG	2.4
2	B	111	VAL	2.4
2	B	152	GLY	2.4
1	A	114	ALA	2.4
2	B	150	PRO	2.4
2	B	26	LEU	2.4
2	B	393	ILE	2.4
1	A	291	GLU	2.4
2	B	90	VAL	2.4
1	A	262	GLY	2.4
1	A	265	ASN	2.4
2	B	198	HIS	2.4
1	A	284	ARG	2.4
1	A	500	GLN	2.3
1	A	180	ILE	2.3
1	A	229	TRP	2.3
1	A	454	LYS	2.3

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Mol	Chain	Res	Type	RSRZ
2	B	82	LYS	2.3
2	B	417	VAL	2.3
1	A	225	PRO	2.3
1	A	38	CYS	2.3
1	A	127	TYR	2.3
2	B	382	ILE	2.3
2	B	87	PHE	2.3
1	A	88	TRP	2.3
1	A	350	LYS	2.3
1	A	211	ARG	2.3
1	A	202	ILE	2.2
1	A	97	PRO	2.2
1	A	461	LYS	2.2
1	A	474	ASN	2.2
2	B	84	THR	2.2
1	A	289	LEU	2.2
1	A	429	LEU	2.2
2	B	389	PHE	2.2
1	A	395	LYS	2.2
2	B	34	LEU	2.2
1	A	20	LYS	2.2
1	A	101	LYS	2.2
1	A	253	THR	2.2
2	B	276	VAL	2.2
1	A	246	LEU	2.1
2	B	154	LYS	2.1
2	B	144	TYR	2.1
2	B	94	ILE	2.1
1	A	490	GLY	2.1
1	A	219	LYS	2.1
2	B	73	LYS	2.1
1	A	364	ASP	2.1
1	A	360	ALA	2.1
1	A	170	PRO	2.1
2	B	133	PRO	2.1
1	A	110	ASP	2.1
1	A	173	LYS	2.1
1	A	437	ALA	2.1
1	A	58	THR	2.1
2	B	85	GLN	2.1
2	B	242	GLN	2.1
2	B	245	VAL	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	76	ASP	2.0
1	A	80	LEU	2.0
2	B	110	ASP	2.0
2	B	331	LYS	2.0
2	B	392	PRO	2.0
1	A	493	VAL	2.0
2	B	100	LEU	2.0
2	B	311	LYS	2.0
1	A	365	VAL	2.0
1	A	280	CYS	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](#)

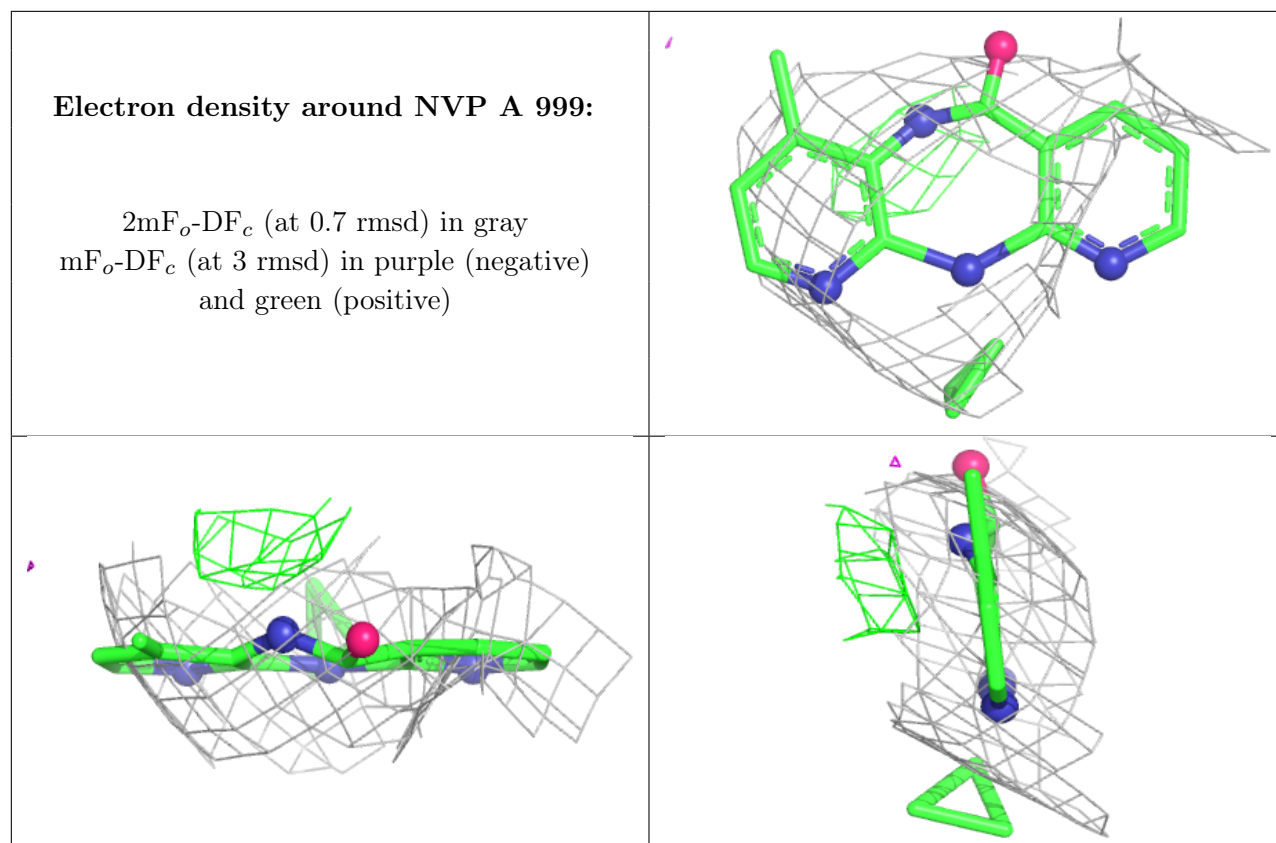
There are no oligosaccharides in this entry.

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
5	NVP	A	999	20/20	0.77	0.28	131,148,159,161	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.



6.5 Other polymers [i](#)

There are no such residues in this entry.