



## Full wwPDB X-ray Structure Validation Report

Sep 25, 2023 – 10:19 AM EDT

PDB ID : 5VQT  
Title : Crystal Structure of HIV-1 Reverse Transcriptase in Complex with 2-chloro-N-(6-cyano-3-(2-(2-(2,4-dioxo-3,4-dihydropyrimidin-1(2H)-yl)ethoxy)phenoxy)-4-methylnaphthalen-1-yl)-N-methylacetamide (JLJ686), a Non-nucleoside Inhibitor  
Authors : Chan, A.H.; Czyzyk, D.J.; Anderson, K.S.  
Deposited on : 2017-05-09  
Resolution : 2.56 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](mailto: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](#) ①) were used in the production of this report:

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtrriage (Phenix) : 1.13  
EDS : 2.35.1  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.35.1

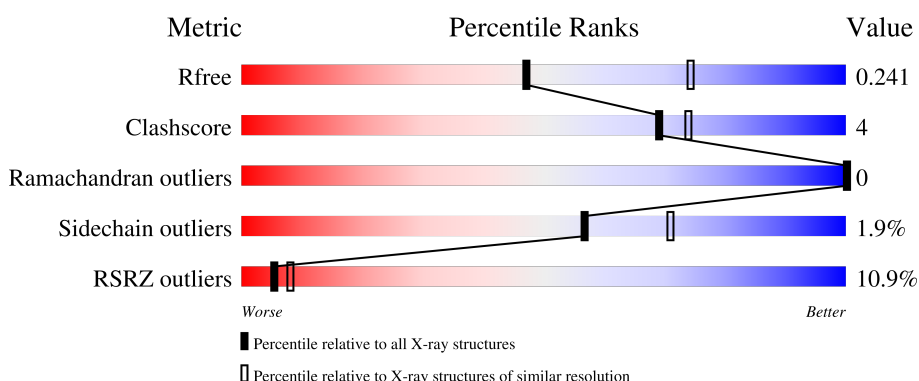
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.56 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))
$R_{free}$	130704	1279 (2.58-2.54)
Clashscore	141614	1327 (2.58-2.54)
Ramachandran outliers	138981	1312 (2.58-2.54)
Sidechain outliers	138945	1312 (2.58-2.54)
RSRZ outliers	127900	1269 (2.58-2.54)

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  $\geq 3$ , 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	557	
2	B	428	

## 2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 7788 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
			Total	C	N	O	S			
1	A	547	4413	2861	726	818	8	0	0	0

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	MET	-	expression tag	UNP P03366
A	0	VAL	-	expression tag	UNP P03366
A	172	ALA	LYS	engineered mutation	UNP P03366
A	173	ALA	LYS	engineered mutation	UNP P03366
A	280	SER	CYS	engineered mutation	UNP P03366

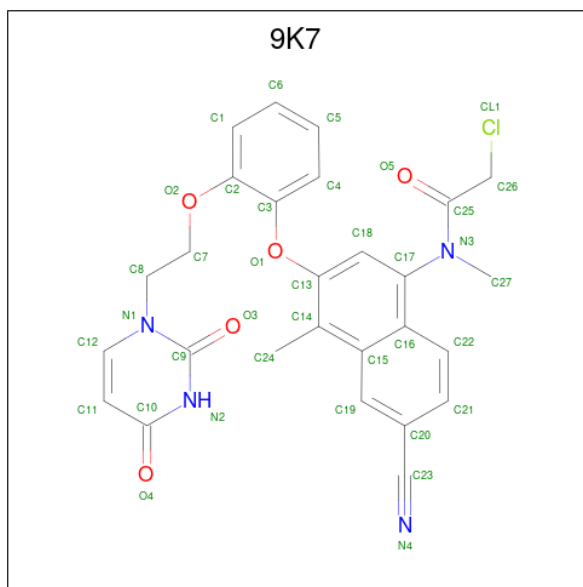
- Molecule 2 is a protein called p51 RT.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	400	3307	2152	547	602	6	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	280	SER	CYS	engineered mutation	UNP P03366

- Molecule 3 is 2-chloro-N-(6-cyano-3-{2-[2-(2,4-dioxo-3,4-dihydropyrimidin-1(2H)-yl)ethoxy]phenoxy}-4-methylnaphthalen-1-yl)-N-methylacetamide (three-letter code: 9K7) (formula: C<sub>27</sub>H<sub>23</sub>ClN<sub>4</sub>O<sub>5</sub>).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	Cl	N	O		
3	A	1	37	27	1	4	5	0	0

- Molecule 4 is SULFATE ION (three-letter code: SO<sub>4</sub>) (formula: O<sub>4</sub>S).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	O	S		
4	A	1	5	4	1	0	0

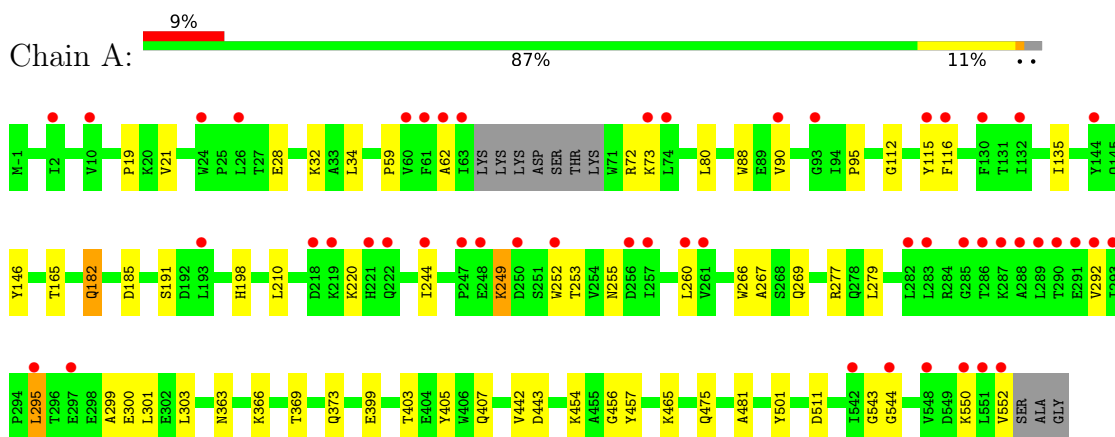
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	15	Total 15	O 15	0	0
5	B	11	Total 11	O 11	0	0

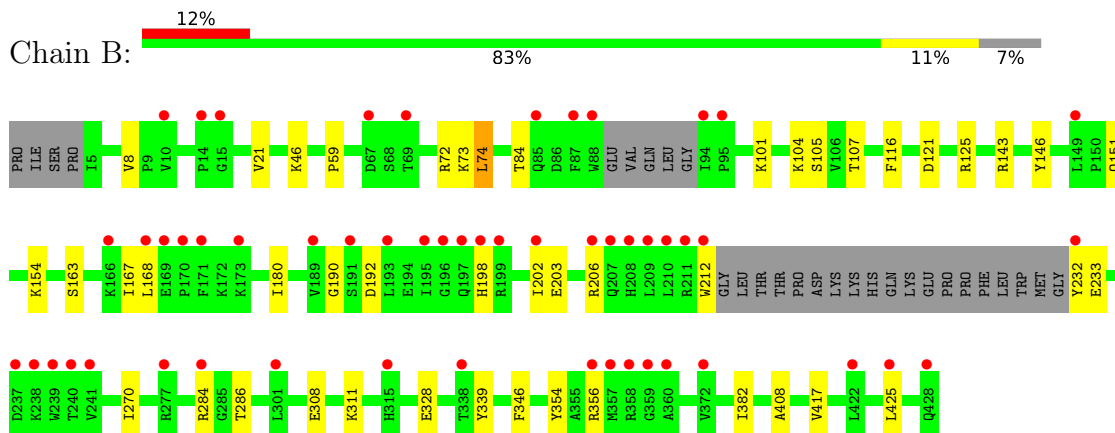
### 3 Residue-property plots [i](#)

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: Reverse transcriptase/ribonuclease H



- Molecule 2: p51 RT



## 4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	162.50Å 73.47Å 108.50Å 90.00° 99.54° 90.00°	Depositor
Resolution (Å)	43.21 – 2.56 43.21 – 2.56	Depositor EDS
% Data completeness (in resolution range)	99.5 (43.21-2.56) 95.1 (43.21-2.56)	Depositor EDS
$R_{merge}$	0.07	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.64 (at 2.54Å)	Xtrriage
Refinement program	PHENIX 1.10.1_2155	Depositor
R, $R_{free}$	0.226 , 0.241 0.226 , 0.241	Depositor DCC
$R_{free}$ test set	2000 reflections (4.89%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	60.3	Xtrriage
Anisotropy	0.137	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.31 , 42.0	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	7788	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	74.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.83% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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: 9K7, SO4

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	0.24	0/4530	0.42	0/6169
2	B	0.25	0/3401	0.41	0/4622
All	All	0.24	0/7931	0.42	0/10791

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 [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	4413	0	4419	36	0
2	B	3307	0	3316	24	0
3	A	37	0	0	1	0
4	A	5	0	0	0	0
5	A	15	0	0	0	0
5	B	11	0	0	0	0
All	All	7788	0	7735	57	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 4.

All (57) 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:544:GLY:HA2	2:B:286:THR:HG22	1.68	0.74
1:A:543:GLY:HA3	2:B:284:ARG:HA	1.73	0.69
2:B:308:GLU:HA	2:B:311:LYS:HE2	1.75	0.69
1:A:253:THR:HG22	1:A:292:VAL:HG22	1.76	0.67
2:B:73:LYS:NZ	2:B:146:TYR:OH	2.29	0.65
1:A:28:GLU:HG3	1:A:135:ILE:HD12	1.78	0.65
2:B:203:GLU:HA	2:B:206:ARG:HG2	1.87	0.56
1:A:443:ASP:HB3	1:A:550:LYS:HD3	1.87	0.56
2:B:72:ARG:NH2	2:B:151:GLN:OE1	2.38	0.56
2:B:107:THR:OG1	2:B:198:HIS:NE2	2.37	0.54
1:A:252:TRP:HB2	1:A:295:LEU:HD11	1.90	0.52
1:A:28:GLU:HG2	1:A:32:LYS:HE3	1.93	0.50
1:A:165:THR:OG1	1:A:182:GLN:OE1	2.22	0.50
1:A:244:ILE:HG13	1:A:267:ALA:HB2	1.93	0.50
1:A:454:LYS:HZ2	1:A:552:VAL:HB	1.76	0.50
1:A:363:ASN:HD21	1:A:366:LYS:HE3	1.78	0.49
1:A:112:GLY:HA2	1:A:185:ASP:HB2	1.95	0.49
1:A:249:LYS:HB2	1:A:252:TRP:CE2	2.47	0.49
1:A:363:ASN:HA	1:A:511:ASP:OD1	2.13	0.49
1:A:253:THR:OG1	1:A:255:ASN:OD1	2.31	0.49
1:A:252:TRP:HD1	1:A:295:LEU:HD21	1.78	0.48
1:A:88:TRP:CD1	2:B:143:ARG:HD2	2.48	0.48
2:B:328:GLU:O	2:B:339:TYR:HA	2.13	0.48
1:A:260:LEU:HD21	1:A:303:LEU:HD13	1.96	0.47
1:A:95:PRO:HG2	3:A:601:9K7:O5	2.15	0.46
2:B:84:THR:HB	2:B:154:LYS:HE2	1.98	0.46
1:A:369:THR:O	1:A:373:GLN:HG2	2.15	0.46
1:A:34:LEU:HD21	1:A:62:ALA:HB2	1.98	0.45
1:A:363:ASN:ND2	1:A:366:LYS:HE3	2.31	0.45
2:B:21:VAL:HB	2:B:59:PRO:HD3	1.97	0.45
2:B:167:ILE:HG12	2:B:212:TRP:CE3	2.50	0.45
1:A:399:GLU:O	1:A:403:THR:OG1	2.27	0.45
2:B:163:SER:O	2:B:167:ILE:HG13	2.16	0.45
2:B:168:LEU:HD13	2:B:180:ILE:HG21	1.97	0.45
2:B:104:LYS:HB2	2:B:192:ASP:HA	1.99	0.45
1:A:21:VAL:HB	1:A:59:PRO:HD3	1.99	0.44
1:A:475:GLN:HB3	1:A:501:TYR:CE2	2.53	0.43
1:A:279:LEU:HD23	1:A:299:ALA:HB1	2.01	0.42
1:A:405:TYR:CE2	1:A:407:GLN:HB2	2.53	0.42
2:B:425:LEU:HD23	2:B:425:LEU:HA	1.89	0.42
2:B:270:ILE:HG12	2:B:346:PHE:HB3	2.01	0.42

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:366:LYS:HE2	1:A:405:TYR:OH	2.19	0.42
1:A:73:LYS:NZ	1:A:146:TYR:OH	2.52	0.42
2:B:354:TYR:CE1	2:B:356:ARG:HB3	2.54	0.42
2:B:105:SER:O	2:B:190:GLY:HA2	2.19	0.41
1:A:442:VAL:HB	1:A:481:ALA:HB1	2.02	0.41
1:A:456:GLY:HA3	1:A:465:LYS:O	2.20	0.41
1:A:19:PRO:HG3	1:A:80:LEU:HB2	2.02	0.41
1:A:191:SER:OG	1:A:198:HIS:ND1	2.39	0.41
2:B:101:LYS:HD3	2:B:382:ILE:HG23	2.02	0.41
1:A:62:ALA:HA	1:A:72:ARG:O	2.21	0.41
1:A:266:TRP:O	1:A:269:GLN:HG2	2.21	0.41
2:B:121:ASP:O	2:B:125:ARG:HG3	2.21	0.41
2:B:46:LYS:HE2	2:B:116:PHE:HB3	2.03	0.40
1:A:442:VAL:HG12	1:A:457:TYR:HB3	2.02	0.40
2:B:74:LEU:HD21	2:B:408:ALA:O	2.21	0.40
2:B:202:ILE:HD13	2:B:202:ILE:HA	1.91	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	543/557 (98%)	530 (98%)	13 (2%)	0	100	100
2	B	394/428 (92%)	385 (98%)	9 (2%)	0	100	100
All	All	937/985 (95%)	915 (98%)	22 (2%)	0	100	100

There are no Ramachandran outliers to report.

### 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	479/495 (97%)	468 (98%)	11 (2%)	50	64
2	B	362/390 (93%)	357 (99%)	5 (1%)	67	78
All	All	841/885 (95%)	825 (98%)	16 (2%)	57	71

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	90	VAL
1	A	115	TYR
1	A	116	PHE
1	A	182	GLN
1	A	210	LEU
1	A	220	LYS
1	A	249	LYS
1	A	277	ARG
1	A	295	LEU
1	A	300	GLU
1	A	301	LEU
2	B	8	VAL
2	B	74	LEU
2	B	232	TYR
2	B	233	GLU
2	B	417	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

### 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 monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

2 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
3	9K7	A	601	-	39,40,40	0.99	2 (5%)	53,56,56	1.13	4 (7%)
4	SO4	A	602	-	4,4,4	0.17	0	6,6,6	0.05	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	9K7	A	601	-	-	1/22/22/22	0/4/4/4

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	601	9K7	C9-N1	2.69	1.41	1.37
3	A	601	9K7	C22-C21	2.18	1.41	1.36

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	601	9K7	C16-C17-N3	4.08	122.80	118.97

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	601	9K7	C13-O1-C3	3.19	125.62	118.04
3	A	601	9K7	C25-C26-CL1	2.74	115.80	111.19
3	A	601	9K7	C18-C13-C14	-2.25	119.82	122.45

There are no chirality outliers.

All (1) torsion outliers are listed below:

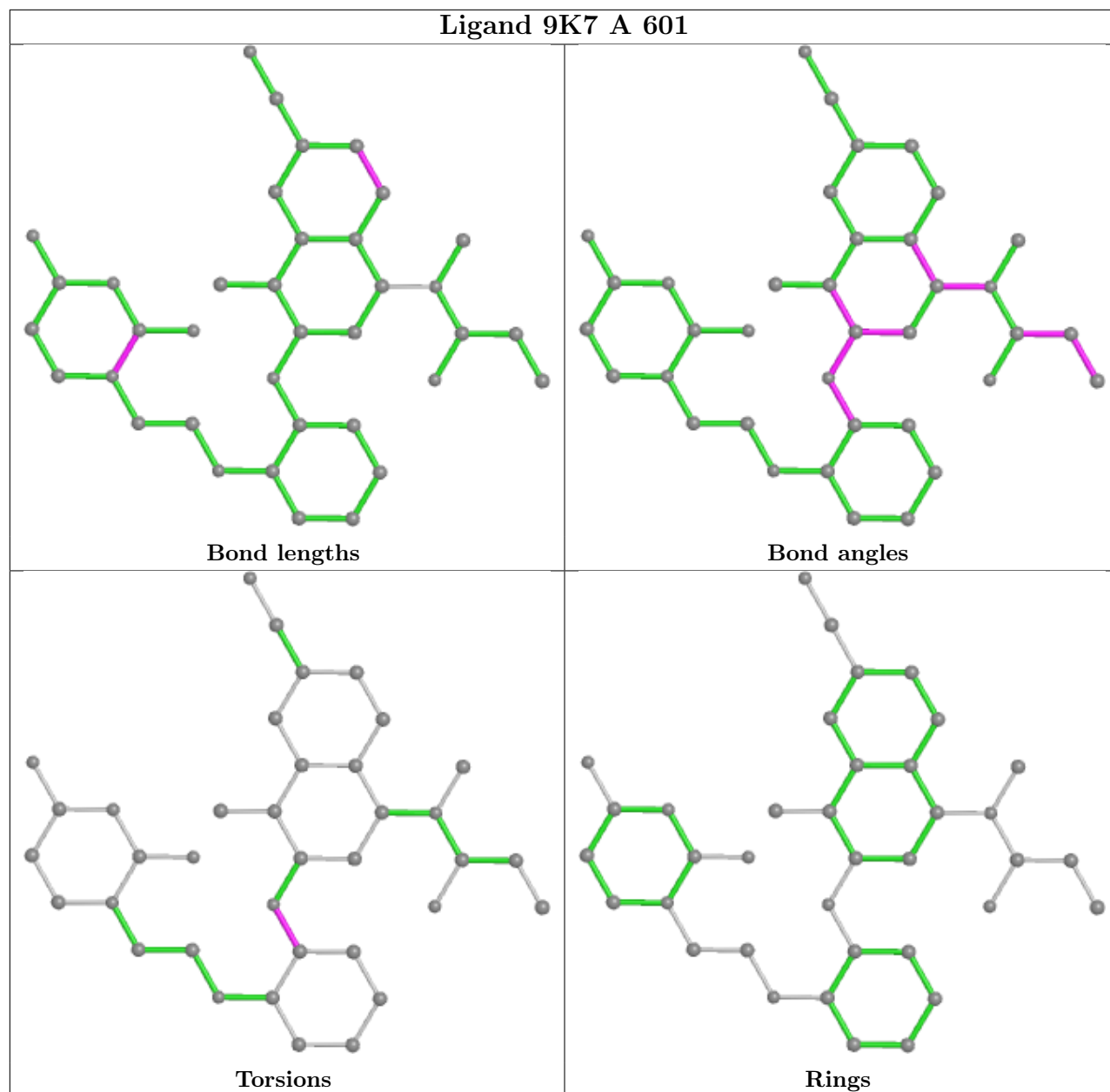
Mol	Chain	Res	Type	Atoms
3	A	601	9K7	C2-C3-O1-C13

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	601	9K7	1	0

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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	547/557 (98%)	0.64	50 (9%) <b>9</b> <b>12</b>	41, 74, 115, 146	0
2	B	400/428 (93%)	0.84	53 (13%) <b>3</b> <b>4</b>	44, 69, 122, 136	0
All	All	947/985 (96%)	0.72	103 (10%) <b>5</b> <b>8</b>	41, 72, 118, 146	0

All (103) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	358	ARG	9.7
2	B	359	GLY	9.4
1	A	221	HIS	9.0
1	A	289	LEU	8.3
1	A	260	LEU	6.4
1	A	290	THR	6.1
2	B	168	LEU	5.8
1	A	548	VAL	5.7
1	A	288	ALA	5.5
2	B	232	TYR	5.4
2	B	67	ASP	5.1
2	B	195	ILE	5.1
2	B	241	VAL	5.1
2	B	212	TRP	5.0
1	A	252	TRP	4.9
2	B	88	TRP	4.9
1	A	257	ILE	4.8
2	B	87	PHE	4.8
1	A	24	TRP	4.6
2	B	207	GLN	4.5
1	A	295	LEU	4.5
1	A	256	ASP	4.5
2	B	166	LYS	4.4
1	A	218	ASP	4.3

*Continued on next page...*



*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	219	LYS	4.3
1	A	552	VAL	4.2
1	A	90	VAL	4.2
2	B	240	THR	4.1
1	A	62	ALA	4.1
1	A	286	THR	4.1
2	B	202	ILE	4.0
1	A	544	GLY	3.9
2	B	206	ARG	3.9
1	A	292	VAL	3.9
2	B	209	LEU	3.8
1	A	250	ASP	3.7
1	A	287	LYS	3.7
2	B	238	LYS	3.6
2	B	193	LEU	3.6
2	B	196	GLY	3.6
1	A	261	VAL	3.5
2	B	191	SER	3.5
2	B	239	TRP	3.5
1	A	222	GLN	3.5
1	A	116	PHE	3.4
1	A	285	GLY	3.4
2	B	284	ARG	3.3
2	B	356	ARG	3.3
1	A	551	LEU	3.3
2	B	149	LEU	3.2
1	A	63	ILE	3.2
1	A	550	LYS	3.2
2	B	198	HIS	3.0
1	A	73	LYS	3.0
2	B	199	ARG	3.0
1	A	297	GLU	2.9
2	B	301	LEU	2.9
2	B	85	GLN	2.9
1	A	144	TYR	2.9
1	A	60	VAL	2.8
2	B	208	HIS	2.8
1	A	282	LEU	2.8
2	B	189	VAL	2.8
2	B	210	LEU	2.8
2	B	94	ILE	2.7
1	A	247	PRO	2.6

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	RSRZ
1	A	61	PHE	2.6
2	B	171	PHE	2.6
1	A	193	LEU	2.6
2	B	372	VAL	2.5
2	B	360	ALA	2.5
2	B	10	VAL	2.5
1	A	293	ILE	2.5
2	B	357	MET	2.5
2	B	95	PRO	2.4
2	B	69	THR	2.4
2	B	425	LEU	2.4
1	A	130	PHE	2.4
2	B	197	GLN	2.3
1	A	74	LEU	2.3
1	A	291	GLU	2.3
1	A	244	ILE	2.3
2	B	15	GLY	2.3
2	B	14	PRO	2.3
2	B	211	ARG	2.3
1	A	542	ILE	2.3
2	B	315	HIS	2.3
2	B	422	LEU	2.2
2	B	277	ARG	2.2
2	B	169	GLU	2.2
1	A	10	VAL	2.2
1	A	26	LEU	2.2
2	B	338	THR	2.2
1	A	93	GLY	2.2
1	A	283	LEU	2.2
1	A	132	ILE	2.1
2	B	170	PRO	2.1
2	B	173	LYS	2.1
2	B	237	ASP	2.1
1	A	248	GLU	2.0
2	B	428	GLN	2.0
1	A	2	ILE	2.0
1	A	115	TYR	2.0

## 6.2 Non-standard residues in protein, DNA, RNA chains

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

### 6.3 Carbohydrates [i](#)

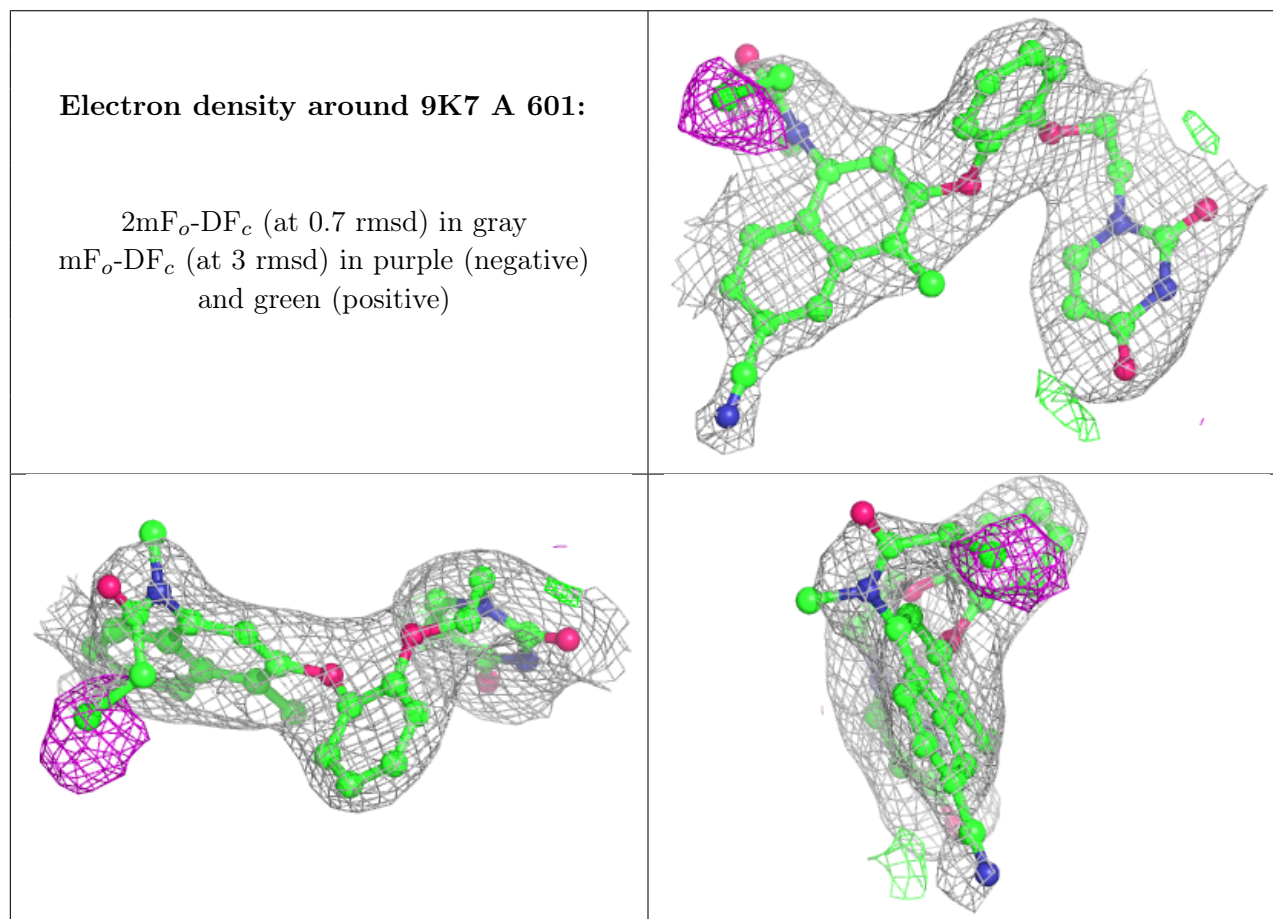
There are no monosaccharides in this entry.

### 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
4	SO4	A	602	5/5	0.87	0.24	130,134,155,157	0
3	9K7	A	601	37/37	0.91	0.21	61,68,91,110	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.