



Full wwPDB X-ray Structure Validation Report ⓘ

May 14, 2020 – 04:44 am BST

PDB ID : 5TUQ
Title : Crystal Structure of a 6-Cyclohexylmethyl-3-hydroxypyrimidine-2,4-dione Inhibitor in Complex with HIV Reverse Transcriptase
Authors : Kirby, K.A.; Sarafianos, S.G.
Deposited on : 2016-11-07
Resolution : 2.71 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 following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.11
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) : 2.11

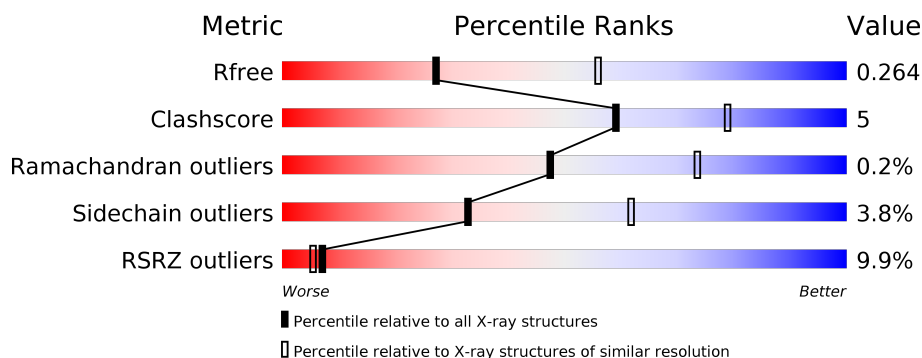
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.71 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	2808 (2.70-2.70)
Clashscore	141614	3122 (2.70-2.70)
Ramachandran outliers	138981	3069 (2.70-2.70)
Sidechain outliers	138945	3069 (2.70-2.70)
RSRZ outliers	127900	2737 (2.70-2.70)

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 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	<div> <div>11%</div> <div> <div></div> <div>83%</div> <div>15%</div> <div></div> </div> </div>
2	B	429	<div> <div>7%</div> <div> <div></div> <div>83%</div> <div>10%</div> <div>6%</div> </div> </div>

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 8021 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 HIV-1 REVERSE TRANSCRIPTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	555	Total	C	N	O	S	0	0	0
			4516	2924	751	834	7			

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	MET	-	initiating methionine	UNP P03366
A	0	VAL	-	expression tag	UNP P03366
A	280	SER	CYS	engineered mutation	UNP P03366

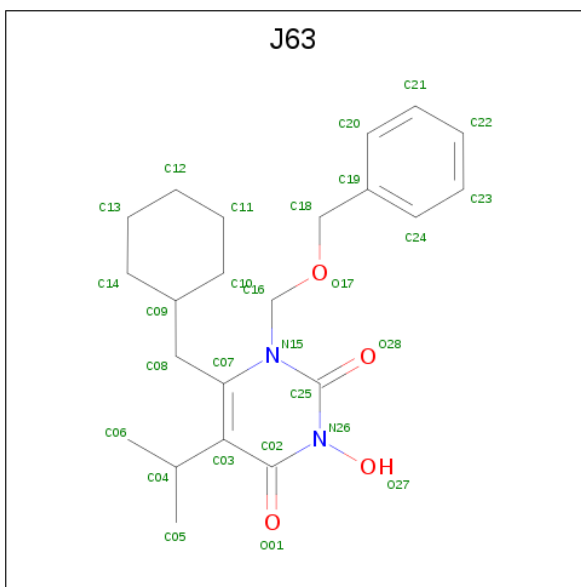
- Molecule 2 is a protein called HIV-1 REVERSE TRANSCRIPTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	405	Total	C	N	O	S	0	0	0
			3354	2185	555	607	7			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	0	GLY	-	expression tag	UNP P03366
B	280	SER	CYS	engineered mutation	UNP P03366

- Molecule 3 is 1-[(benzyloxy)methyl]-6-(cyclohexylmethyl)-3-hydroxy-5-(propan-2-yl)pyrimidine-2,4(1H,3H)-dione (three-letter code: J63) (formula: C₂₂H₃₀N₂O₄).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			28	22	2	4		

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

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

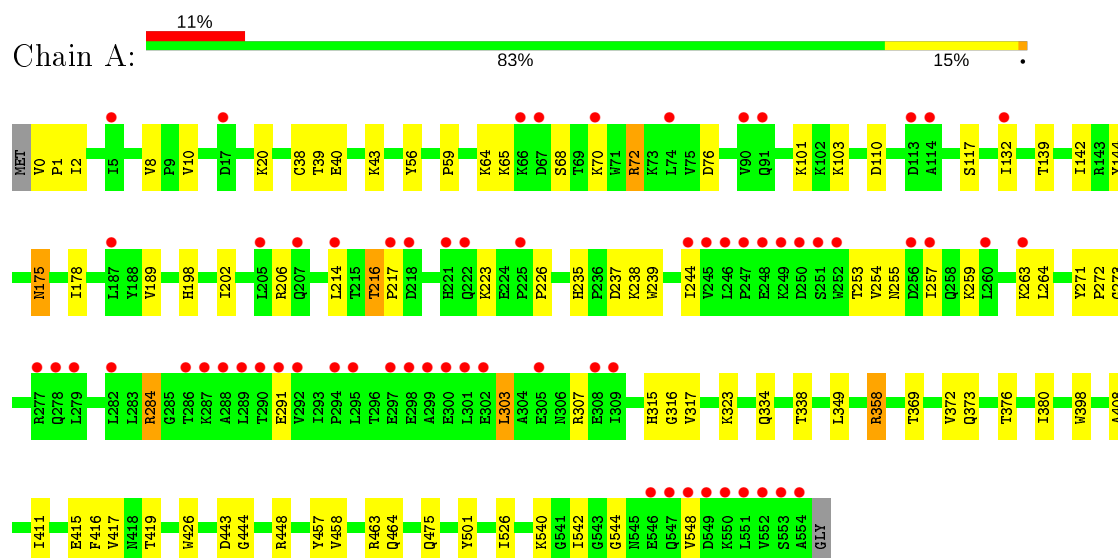
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	75	Total	O	0	0
			75	75		
5	B	47	Total	O	0	0
			47	47		

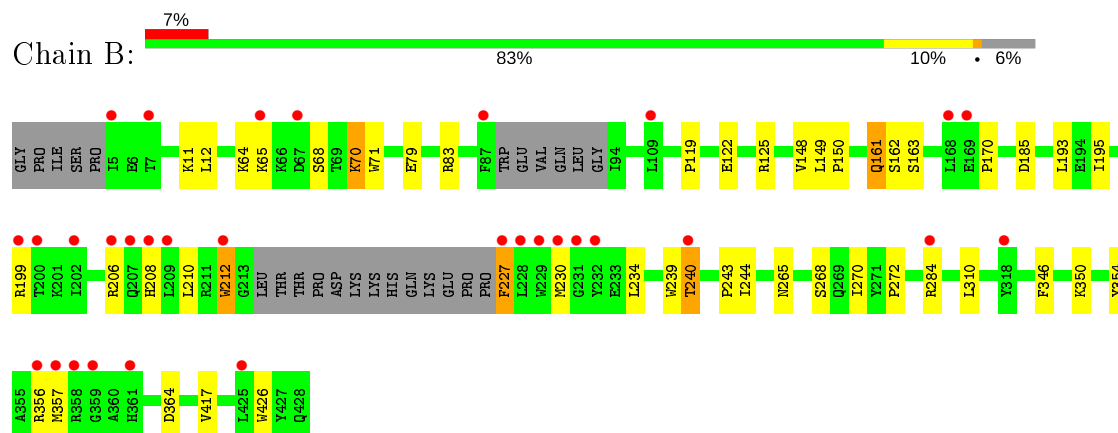
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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: HIV-1 REVERSE TRANSCRIPTASE



• Molecule 2: HIV-1 REVERSE TRANSCRIPTASE



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	161.90 Å 72.36 Å 107.33 Å 90.00° 99.87° 90.00°	Depositor
Resolution (Å)	48.02 – 2.71 48.02 – 2.70	Depositor EDS
% Data completeness (in resolution range)	99.7 (48.02-2.71) 99.7 (48.02-2.70)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.41 (at 2.69 Å)	Xtriage
Refinement program	PHENIX (1.11.1 _2575)	Depositor
R, R_{free}	0.212 , 0.265 0.212 , 0.264	Depositor DCC
R_{free} test set	1680 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	76.7	Xtriage
Anisotropy	0.296	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 67.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	8021	wwPDB-VP
Average B, all atoms (Å ²)	97.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.33% 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: J63, MG

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	0.26	0/4634	0.47	0/6297
2	B	0.25	0/3449	0.46	0/4681
All	All	0.26	0/8083	0.46	0/10978

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

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	4516	0	4579	52	0
2	B	3354	0	3384	23	0
3	A	28	0	0	0	0
4	A	1	0	0	0	0
5	A	75	0	0	6	0
5	B	47	0	0	0	0
All	All	8021	0	7963	74	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 5.

All (74) 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)
2:B:70:LYS:HD2	2:B:71:TRP:N	2.09	0.68
2:B:240:THR:O	2:B:350:LYS:NZ	2.28	0.67
1:A:239:TRP:O	5:A:701:HOH:O	2.13	0.65
1:A:206:ARG:NE	1:A:216:THR:OG1	2.31	0.63
2:B:70:LYS:HD2	2:B:71:TRP:H	1.65	0.62
2:B:206:ARG:O	2:B:210:LEU:N	2.34	0.59
1:A:132:ILE:HD12	1:A:142:ILE:HD11	1.85	0.58
2:B:354:TYR:HB3	2:B:357:MET:HE3	1.85	0.58
1:A:178:ILE:HD11	1:A:189:VAL:HG12	1.86	0.58
1:A:316:GLY:O	5:A:701:HOH:O	2.17	0.58
1:A:316:GLY:N	5:A:701:HOH:O	2.31	0.56
1:A:369:THR:O	1:A:373:GLN:HG2	2.07	0.54
1:A:284:ARG:HH22	1:A:358:ARG:HD2	1.71	0.54
1:A:59:PRO:HG2	1:A:76:ASP:HB3	1.89	0.54
1:A:239:TRP:N	5:A:701:HOH:O	2.26	0.52
1:A:540:LYS:HB2	1:A:542:ILE:HD12	1.91	0.52
2:B:212:TRP:CD1	2:B:212:TRP:N	2.79	0.51
1:A:317:VAL:O	1:A:349:LEU:HD23	2.12	0.50
1:A:372:VAL:HG11	1:A:411:ILE:HG23	1.94	0.50
1:A:376:THR:O	1:A:380:ILE:HG12	2.12	0.50
2:B:234:LEU:HD23	2:B:239:TRP:HZ2	1.77	0.50
2:B:65:LYS:HE3	2:B:227:PHE:CE1	2.47	0.49
1:A:206:ARG:HE	1:A:216:THR:HG1	1.57	0.48
1:A:273:GLY:HA2	1:A:338:THR:HG21	1.95	0.48
2:B:11:LYS:HD3	2:B:12:LEU:O	2.13	0.48
1:A:202:ILE:O	1:A:206:ARG:HG3	2.13	0.48
2:B:265:ASN:O	2:B:268:SER:OG	2.33	0.47
1:A:255:ASN:O	1:A:259:LYS:HD3	2.15	0.47
1:A:226:PRO:HB3	1:A:235:HIS:CE1	2.50	0.46
2:B:79:GLU:OE2	2:B:83:ARG:NH1	2.48	0.46
1:A:417:VAL:HG22	1:A:419:THR:HG23	1.97	0.46
1:A:544:GLY:O	1:A:548:VAL:HG12	2.15	0.46
1:A:443:ASP:OD1	1:A:444:GLY:N	2.49	0.46
1:A:443:ASP:HB2	1:A:548:VAL:HG13	1.97	0.46
1:A:458:VAL:HG12	1:A:464:GLN:HG2	1.98	0.46
1:A:223:LYS:HA	1:A:223:LYS:HD3	1.77	0.46
1:A:254:VAL:O	1:A:257:ILE:HG13	2.16	0.46
2:B:119:PRO:HA	2:B:148:VAL:HA	1.98	0.45
2:B:354:TYR:HB3	2:B:357:MET:CE	2.45	0.45
1:A:238:LYS:HB2	5:A:701:HOH:O	2.16	0.45
1:A:237:ASP:OD1	1:A:237:ASP:N	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:175:ASN:O	1:A:178:ILE:HG22	2.16	0.44
1:A:475:GLN:HB3	1:A:501:TYR:CE2	2.51	0.44
1:A:39:THR:O	1:A:43:LYS:HG3	2.17	0.44
1:A:101:LYS:O	1:A:103:LYS:HG2	2.18	0.44
1:A:254:VAL:N	1:A:291:GLU:O	2.51	0.44
1:A:398:TRP:CZ2	1:A:411:ILE:HG13	2.53	0.44
1:A:408:ALA:HB1	2:B:364:ASP:HB3	1.99	0.43
2:B:270:ILE:HG12	2:B:346:PHE:HB3	1.99	0.43
1:A:259:LYS:N	1:A:259:LYS:HD2	2.33	0.43
2:B:65:LYS:HE3	2:B:227:PHE:CD1	2.54	0.43
2:B:230:MET:HB3	2:B:230:MET:HE3	1.73	0.43
2:B:161:GLN:HG3	2:B:162:SER:N	2.34	0.42
1:A:72:ARG:HA	1:A:72:ARG:HD2	1.83	0.42
1:A:110:ASP:HB3	1:A:217:PRO:HG2	2.01	0.42
1:A:457:TYR:HE1	1:A:463:ARG:HG2	1.85	0.42
2:B:122:GLU:HA	2:B:125:ARG:HG3	2.01	0.42
2:B:149:LEU:HA	2:B:150:PRO:HD3	1.89	0.42
2:B:65:LYS:HB2	2:B:68:SER:HB2	2.00	0.42
1:A:244:ILE:HG23	1:A:263:LYS:HD3	2.00	0.42
1:A:38:CYS:HB3	1:A:144:TYR:CE2	2.54	0.41
1:A:426:TRP:HB3	1:A:526:ILE:HG12	2.02	0.41
1:A:198:HIS:O	1:A:202:ILE:HG12	2.20	0.41
1:A:271:TYR:HA	1:A:272:PRO:HD3	1.91	0.41
1:A:315:HIS:HB2	5:A:701:HOH:O	2.20	0.41
2:B:170:PRO:HG2	2:B:208:HIS:CE1	2.56	0.41
1:A:20:LYS:HD3	1:A:56:TYR:HA	2.02	0.41
2:B:244:ILE:HG23	2:B:310:LEU:HD13	2.02	0.41
1:A:8:VAL:O	1:A:10:VAL:HG23	2.20	0.41
1:A:303:LEU:O	1:A:307:ARG:HG2	2.21	0.41
1:A:0:VAL:HA	1:A:1:PRO:HD3	1.90	0.40
1:A:415:GLU:OE2	1:A:416:PHE:N	2.50	0.40
1:A:214:LEU:HA	1:A:214:LEU:HD23	1.81	0.40
1:A:253:THR:OG1	1:A:254:VAL:N	2.55	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	553/557 (99%)	532 (96%)	21 (4%)	0	100	100
2	B	399/429 (93%)	378 (95%)	19 (5%)	2 (0%)	29	54
All	All	952/986 (97%)	910 (96%)	40 (4%)	2 (0%)	47	73

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	272	PRO
2	B	243	PRO

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	496/497 (100%)	478 (96%)	18 (4%)	35	64
2	B	368/390 (94%)	353 (96%)	15 (4%)	30	59
All	All	864/887 (97%)	831 (96%)	33 (4%)	33	62

All (33) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	ILE
1	A	40	GLU
1	A	64	LYS
1	A	65	LYS

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Mol	Chain	Res	Type
1	A	68	SER
1	A	70	LYS
1	A	72	ARG
1	A	117	SER
1	A	139	THR
1	A	175	ASN
1	A	216	THR
1	A	264	LEU
1	A	284	ARG
1	A	303	LEU
1	A	323	LYS
1	A	334	GLN
1	A	358	ARG
1	A	448	ARG
2	B	64	LYS
2	B	70	LYS
2	B	161	GLN
2	B	163	SER
2	B	185	ASP
2	B	193	LEU
2	B	195	ILE
2	B	199	ARG
2	B	212	TRP
2	B	227	PHE
2	B	240	THR
2	B	284	ARG
2	B	356	ARG
2	B	417	VAL
2	B	426	TRP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	175	ASN
2	B	242	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 ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry ⓘ

Of 2 ligands modelled in this entry, 1 is monoatomic - leaving 1 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	$\# Z > 2$
3	J63	A	601	-	24,30,30	1.52	3 (12%)	23,41,41	1.67	1 (4%)

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	J63	A	601	-	-	3/12/22/22	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	601	J63	C07-N15	4.65	1.47	1.36
3	A	601	J63	C02-C03	4.51	1.51	1.41
3	A	601	J63	O27-N26	2.29	1.41	1.38

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	601	J63	C07-C03-C04	-7.07	111.62	121.42

There are no chirality outliers.

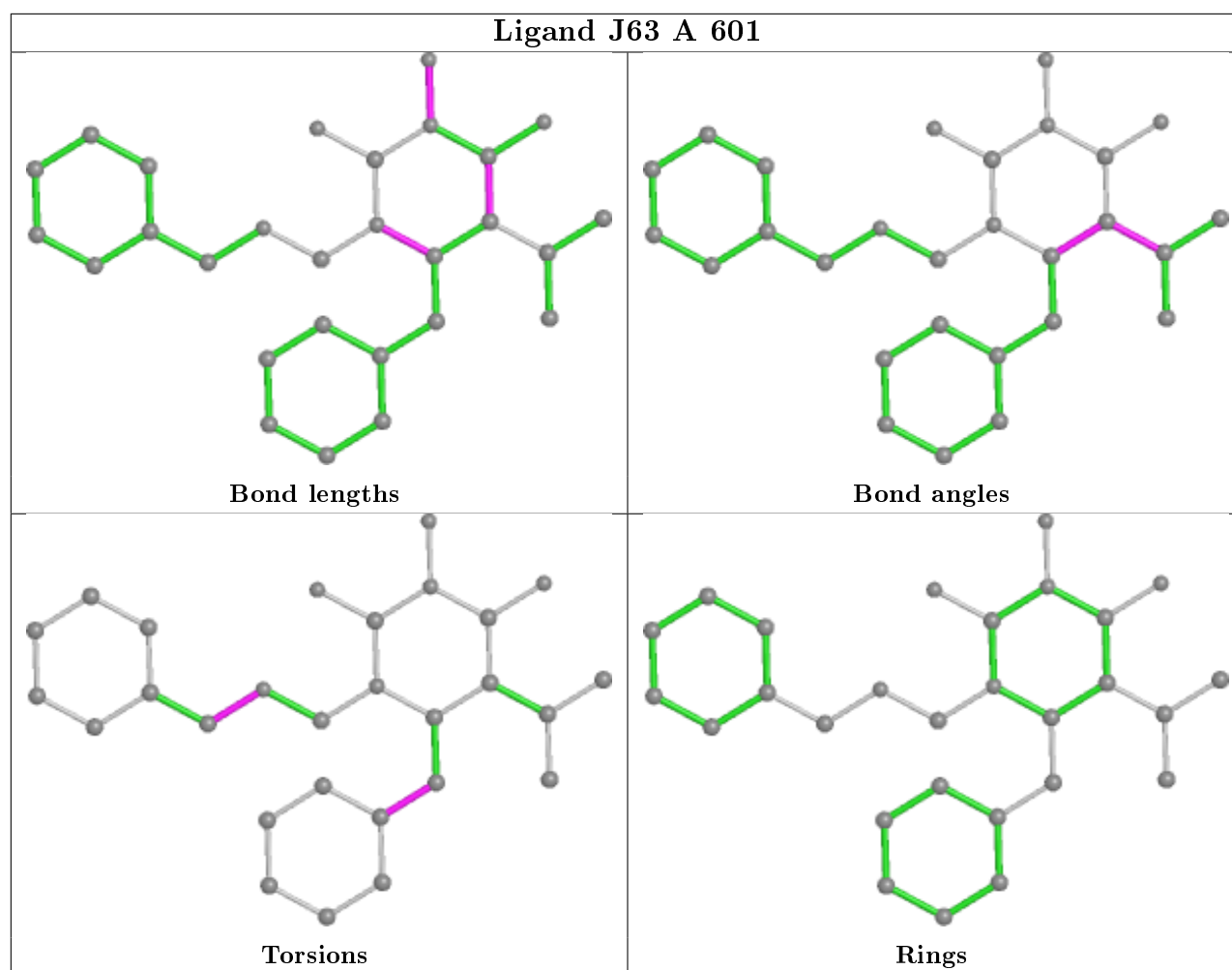
All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	601	J63	C07-C08-C09-C10
3	A	601	J63	C07-C08-C09-C14
3	A	601	J63	C19-C18-O17-C16

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	555/557 (99%)	0.67	64 (11%) 4 4	51, 99, 143, 158	0
2	B	405/429 (94%)	0.55	31 (7%) 13 11	51, 90, 140, 158	0
All	All	960/986 (97%)	0.62	95 (9%) 7 5	51, 95, 141, 158	0

All (95) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	227	PHE	7.7
1	A	552	VAL	7.7
1	A	252	TRP	6.9
1	A	301	LEU	6.7
2	B	357	MET	6.6
2	B	209	LEU	6.5
1	A	554	ALA	6.4
1	A	298	GLU	6.3
1	A	297	GLU	6.2
1	A	290	THR	6.0
1	A	250	ASP	5.8
1	A	553	SER	5.8
1	A	300	GLU	5.6
1	A	214	LEU	5.6
2	B	5	ILE	5.5
1	A	295	LEU	5.5
1	A	286	THR	5.4
1	A	288	ALA	5.3
2	B	359	GLY	5.1
1	A	292	VAL	5.1
1	A	257	ILE	4.7
1	A	221	HIS	4.7
1	A	546	GLU	4.7
2	B	230	MET	4.5

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Mol	Chain	Res	Type	RSRZ
2	B	231	GLY	4.5
1	A	248	GLU	4.4
1	A	551	LEU	4.3
2	B	168	LEU	4.3
1	A	256	ASP	4.2
2	B	200	THR	4.2
2	B	229	TRP	4.1
1	A	289	LEU	4.0
1	A	548	VAL	4.0
2	B	228	LEU	3.9
2	B	358	ARG	3.9
1	A	294	PRO	3.8
1	A	302	GLU	3.8
1	A	547	GLN	3.7
1	A	549	ASP	3.7
2	B	202	ILE	3.7
1	A	282	LEU	3.6
1	A	246	LEU	3.6
1	A	67	ASP	3.6
2	B	87	PHE	3.5
2	B	212	TRP	3.5
2	B	356	ARG	3.5
2	B	240	THR	3.5
1	A	74	LEU	3.4
1	A	263	LYS	3.3
2	B	67	ASP	3.3
2	B	109	LEU	3.2
1	A	90	VAL	3.1
2	B	361	HIS	3.1
2	B	65	LYS	3.1
1	A	225	PRO	3.1
2	B	232	TYR	3.0
1	A	70	LYS	3.0
1	A	113	ASP	2.9
1	A	277	ARG	2.9
1	A	260	LEU	2.9
1	A	305	GLU	2.9
1	A	244	ILE	2.8
1	A	245	VAL	2.8
1	A	218	ASP	2.8
1	A	308	GLU	2.8
1	A	66	LYS	2.7

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Mol	Chain	Res	Type	RSRZ
1	A	291	GLU	2.7
1	A	287	LYS	2.7
1	A	309	ILE	2.7
1	A	278	GLN	2.7
1	A	299	ALA	2.6
1	A	132	ILE	2.6
1	A	550	LYS	2.6
2	B	206	ARG	2.6
2	B	208	HIS	2.5
1	A	91	GLN	2.5
2	B	169	GLU	2.5
2	B	207	GLN	2.5
1	A	5	ILE	2.5
1	A	247	PRO	2.4
1	A	222	GLN	2.3
1	A	114	ALA	2.3
2	B	7	THR	2.2
1	A	251	SER	2.2
1	A	187	LEU	2.1
2	B	318	TYR	2.1
1	A	217	PRO	2.1
1	A	249	LYS	2.1
2	B	425	LEU	2.1
2	B	284	ARG	2.1
1	A	279	LEU	2.0
2	B	199	ARG	2.0
1	A	207	GLN	2.0
1	A	205	LEU	2.0
1	A	17	ASP	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 ⓘ

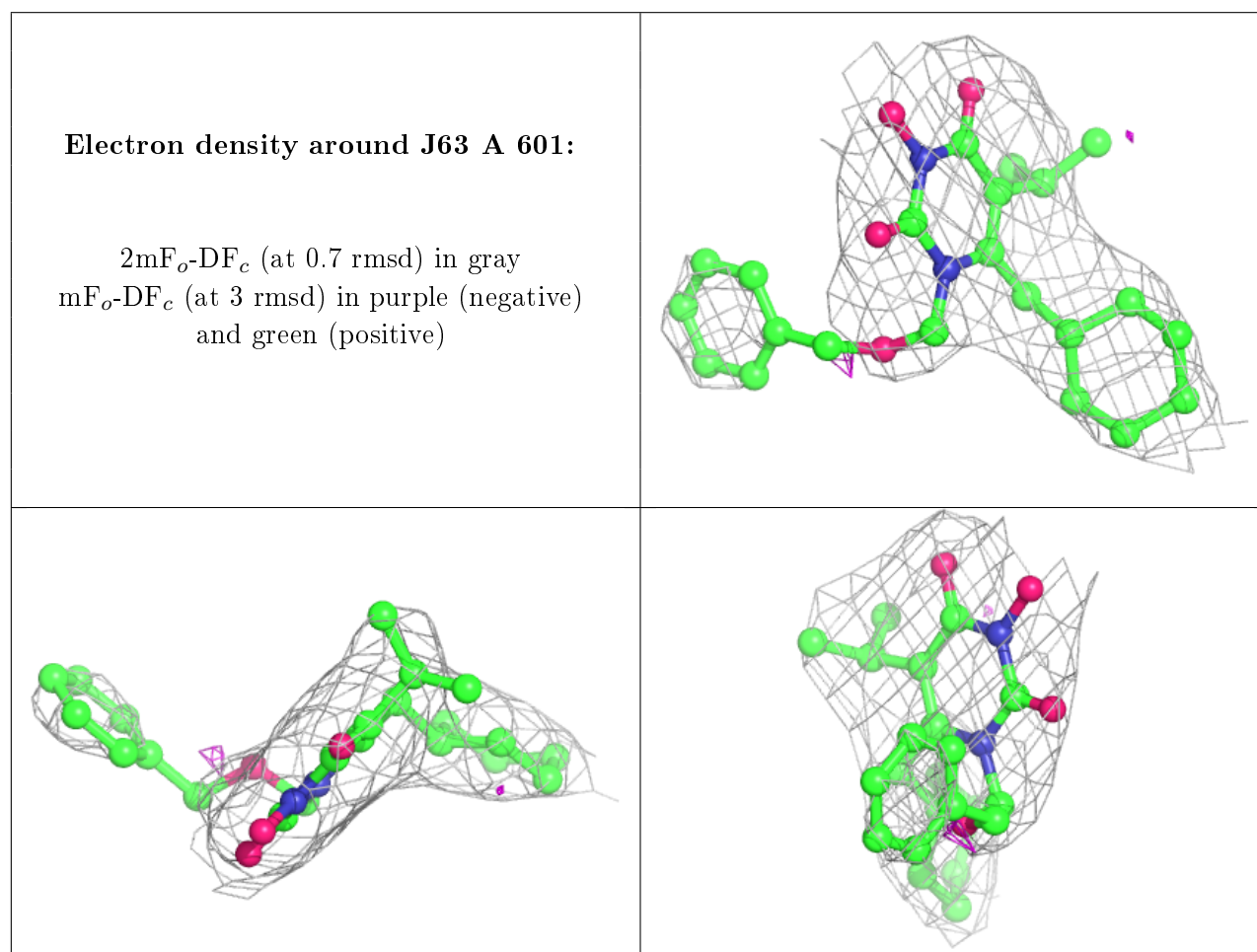
There are no carbohydrates in this entry.

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(Å ²)	Q<0.9
4	MG	A	602	1/1	0.88	0.40	124,124,124,124	0
3	J63	A	601	28/28	0.93	0.28	81,92,123,133	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.