Full wwPDB X-ray Structure Validation Report ⓘ

May 26, 2020 – 11:43 pm BST

PDB ID	:	4KNB
Title	:	C-Met in complex with OSI ligand
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Deposited on	:	2013-05-09
Resolution	:	2.40 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:

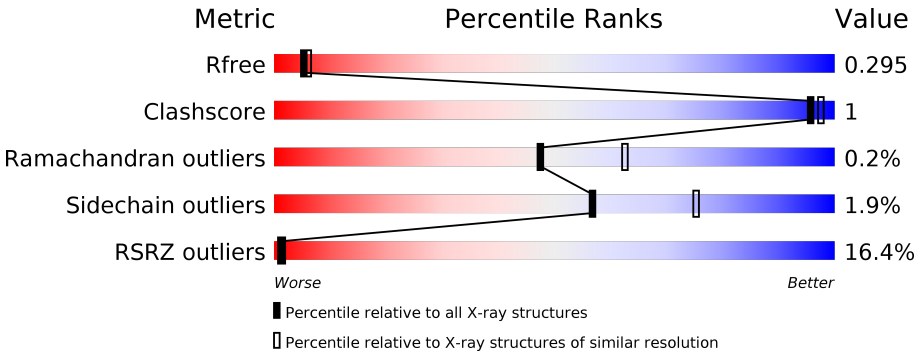
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.11
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.40 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	3907 (2.40-2.40)
Clashscore	141614	4398 (2.40-2.40)
Ramachandran outliers	138981	4318 (2.40-2.40)
Sidechain outliers	138945	4319 (2.40-2.40)
RSRZ outliers	127900	3811 (2.40-2.40)

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 <=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	287	11% 92% • 5%
1	B	287	16% 86% • 11%
1	C	287	12% 89% 5% • 6%
1	D	287	20% 82% • • 14%

2 Entry composition

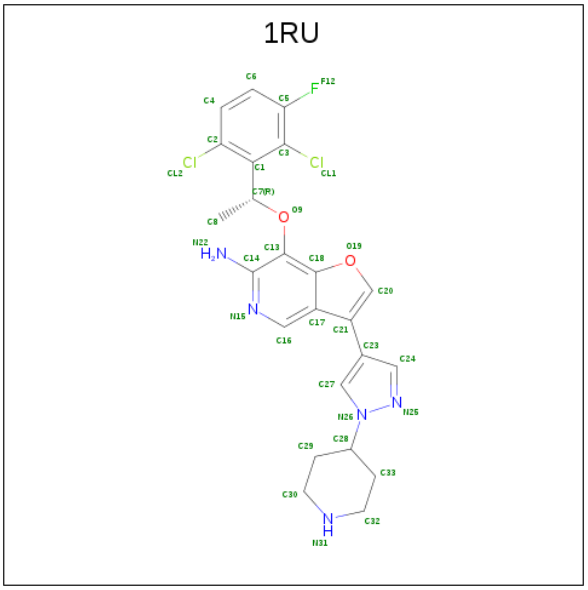
There are 4 unique types of molecules in this entry. The entry contains 8611 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Hepatocyte growth factor receptor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	273	Total	C	N	O	S	30	0	0
			2180	1412	370	383	15			
1	B	256	Total	C	N	O	S	19	3	0
			2074	1348	350	360	16			
1	C	271	Total	C	N	O	S	15	0	0
			2168	1408	369	376	15			
1	D	247	Total	C	N	O	S	20	1	0
			1961	1269	339	338	15			

- Molecule 2 is 7-[(1R)-1-(2,6-dichloro-3-fluorophenyl)ethoxy]-3-[1-(piperidin-4-yl)-1H-pyrazol-4-yl]furo[3,2-c]pyridin-6-amine (three-letter code: 1RU) (formula: $C_{23}H_{22}Cl_2FN_5O_2$).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total	C	Cl	F	N	O	0	0
			33	23	2	1	5	2		
2	B	1	Total	C	Cl	F	N	O	0	0
			33	23	2	1	5	2		

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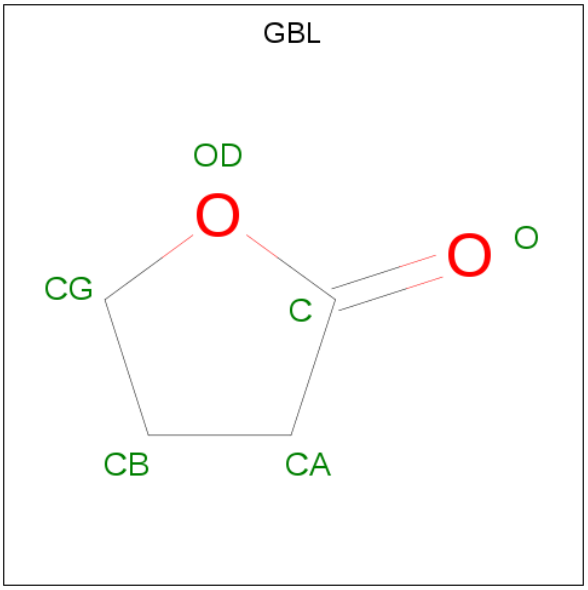
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	C	1	Total	C	Cl	F	N	O	0	0
			33	23	2	1	5	2		
2	D	1	Total	C	Cl	F	N	O	0	0
			33	23	2	1	5	2		

- Molecule 3 is GAMMA-BUTYROLACTONE (three-letter code: GBL) (formula: $C_4H_6O_2$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			6	4	2		
3	A	1	Total	C	O	0	0
			6	4	2		
3	B	1	Total	C	O	0	0
			6	4	2		

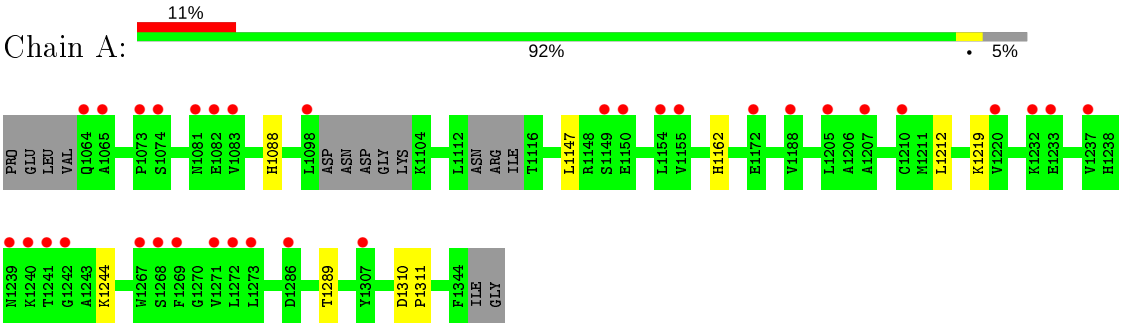
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	32	Total	O	0	0
			32	32		
4	B	20	Total	O	0	0
			20	20		
4	C	11	Total	O	0	0
			11	11		
4	D	15	Total	O	0	0
			15	15		

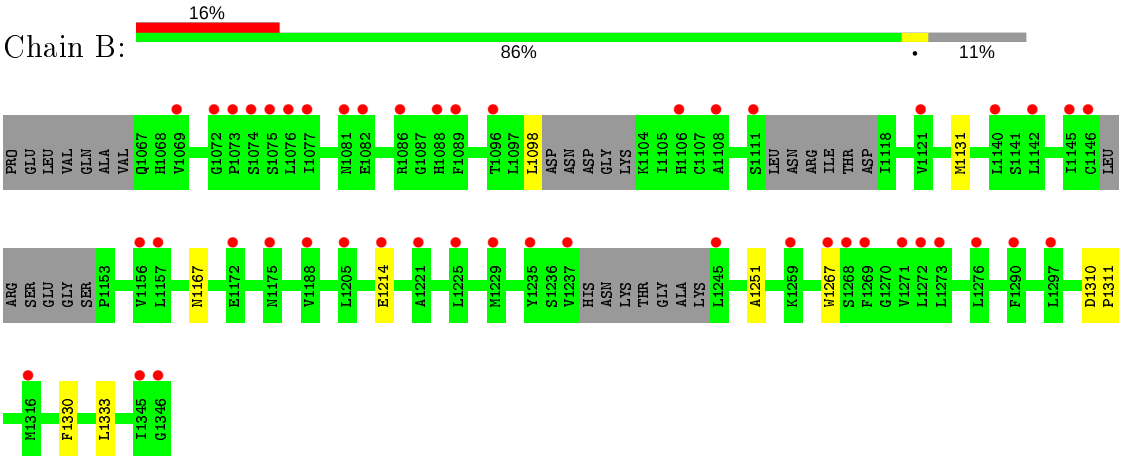
3 Residue-property plots (i)

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.

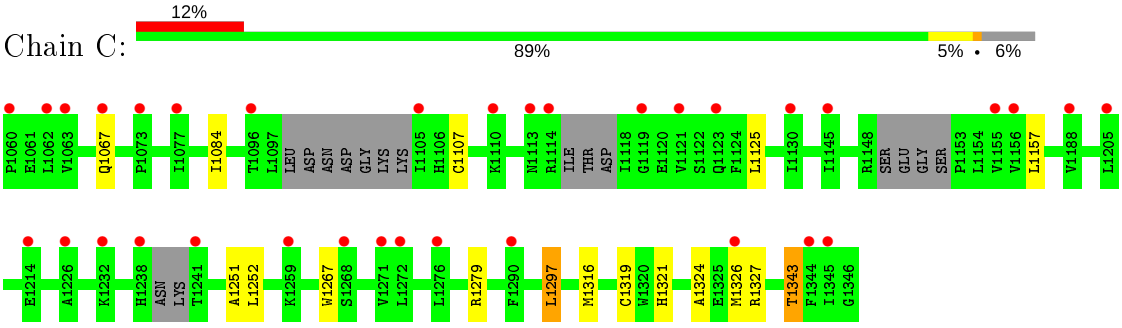
- Molecule 1: Hepatocyte growth factor receptor



- Molecule 1: Hepatocyte growth factor receptor

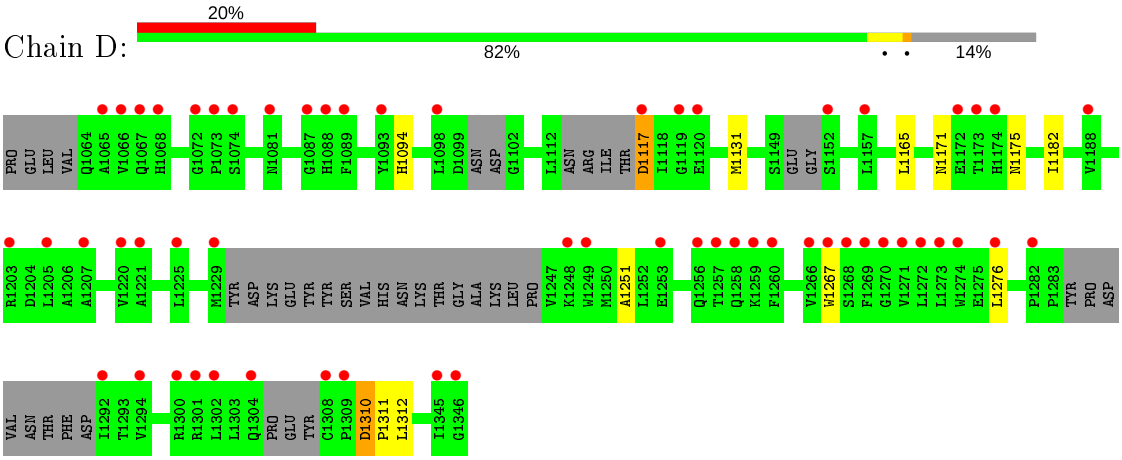


- Molecule 1: Hepatocyte growth factor receptor



- Molecule 1: Hepatocyte growth factor receptor

Chain D:


20%
82%
14%
PRO GLU LEU VAL Q1064 A1065 V1066 Q1067 H1068 G1072 P1073 S1074 N1081 G1087 H1088 F1089 Y1093 H1094 L1098 D1099 ASN ASP G1102 L1112 ASN ARG ILE THR D1117 I1118 G1119 E1120 M1131 S1149 GLU GLY S1152 L1157 L1165 N1171 E1172 T1173 H1174 N1175 I1182 V1188
R1203 D1204 L1205 A1206 A1207 V1220 A1221 L1225 M1229 TYR ASP LYS GLU TYR TYR SER VAL HIS ASN LYS THR GLY ALA LYS LEU PRO V1247 K1248 W1249 M1250 A1251 L1252 E1253 Q1256 T1257 Q1258 K1259 F1260 V1266 W1267 S1268 F1269 G1270 V1271 L1272 L1273 W1274 E1275 L1276 P1282 P1283 TYR PRO ASP
VAL ASN THR PHE ASP I1292 T1293 V1294 R1300 R1301 L1302 L1303 Q1304 PRO GLU TYR C1308 P1309 D1310 P1311 L1312 I1345 G1346

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	44.71Å 85.92Å 156.47Å 90.00° 91.47° 90.00°	Depositor
Resolution (Å)	24.95 – 2.40 24.95 – 2.40	Depositor EDS
% Data completeness (in resolution range)	100.0 (24.95-2.40) 99.4 (24.95-2.40)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.05 (at 2.39Å)	Xtriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.240 , 0.288 0.248 , 0.295	Depositor DCC
R_{free} test set	1062 reflections (2.30%)	wwPDB-VP
Wilson B-factor (Å^2)	59.0	Xtriage
Anisotropy	0.135	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.28 , 52.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	0.028 for h,-k,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	8611	wwPDB-VP
Average B, all atoms (Å^2)	84.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.48% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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: GBL, 1RU

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	0.36	0/2235	0.51	0/3023
1	B	0.35	0/2126	0.48	0/2870
1	C	0.35	0/2222	0.49	0/3003
1	D	0.32	0/2002	0.46	0/2695
All	All	0.34	0/8585	0.49	0/11591

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	2180	0	2200	3	0
1	B	2074	0	2094	3	0
1	C	2168	0	2193	7	0
1	D	1961	0	2005	6	0
2	A	33	0	22	0	0
2	B	33	0	22	0	0
2	C	33	0	22	1	0
2	D	33	0	22	0	0
3	A	12	0	12	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	6	0	6	0	0
4	A	32	0	0	1	0
4	B	20	0	0	0	0
4	C	11	0	0	0	0
4	D	15	0	0	0	0
All	All	8611	0	8598	19	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 1.

All (19) 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:D:1117:ASP:OD1	1:D:1117:ASP:N	2.41	0.54
1:C:1251:ALA:HA	1:C:1267:TRP:CD2	2.46	0.51
1:A:1219:LYS:NZ	4:A:1513:HOH:O	2.47	0.48
1:D:1310:ASP:N	1:D:1311:PRO:HD2	2.29	0.48
1:C:1084:ILE:O	2:C:1401:1RU:H7	2.14	0.48
1:C:1252:LEU:HD11	1:C:1297:LEU:HD13	1.96	0.47
1:D:1251:ALA:HA	1:D:1267:TRP:CD2	2.52	0.44
1:C:1321:HIS:CD2	1:C:1326:MET:HB2	2.52	0.43
1:B:1310:ASP:HB2	1:B:1311:PRO:HD3	2.00	0.43
1:B:1251:ALA:HA	1:B:1267:TRP:CD2	2.54	0.43
1:A:1162:HIS:HB2	1:A:1212:LEU:HB3	2.00	0.43
1:D:1251:ALA:HA	1:D:1267:TRP:CG	2.53	0.43
1:C:1107:CYS:HB2	1:C:1157:LEU:O	2.20	0.42
1:D:1182:ILE:HG12	1:D:1312:LEU:HD22	2.01	0.42
1:A:1310:ASP:HB2	1:A:1311:PRO:HD3	2.02	0.41
1:C:1324:ALA:HA	1:C:1327:ARG:CZ	2.50	0.41
1:D:1165:LEU:HD21	1:D:1276:LEU:HD21	2.03	0.41
1:C:1316:MET:O	1:C:1319:CYS:HB2	2.21	0.40
1:B:1330:PHE:HA	1:B:1333:LEU:HD12	2.03	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	267/287 (93%)	260 (97%)	7 (3%)	0	100	100
1	B	248/287 (86%)	240 (97%)	8 (3%)	0	100	100
1	C	261/287 (91%)	252 (97%)	7 (3%)	2 (1%)	19	29
1	D	234/287 (82%)	228 (97%)	6 (3%)	0	100	100
All	All	1010/1148 (88%)	980 (97%)	28 (3%)	2 (0%)	47	62

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	1343	THR
1	C	1067	GLN

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	242/254 (95%)	238 (98%)	4 (2%)	60	78
1	B	231/254 (91%)	227 (98%)	4 (2%)	60	78
1	C	240/254 (94%)	236 (98%)	4 (2%)	60	78
1	D	218/254 (86%)	212 (97%)	6 (3%)	43	63
All	All	931/1016 (92%)	913 (98%)	18 (2%)	57	75

All (18) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1088	HIS
1	A	1147	LEU
1	A	1244	LYS
1	A	1289	THR
1	B	1098	LEU
1	B	1131	MET
1	B	1167	ASN
1	B	1214	GLU
1	C	1125	LEU
1	C	1279	ARG
1	C	1297	LEU
1	C	1343	THR
1	D	1094	HIS
1	D	1117	ASP
1	D	1131	MET
1	D	1171	ASN
1	D	1175	ASN
1	D	1310	ASP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1123	GLN
1	A	1167	ASN
1	A	1304	GLN
1	B	1123	GLN
1	B	1167	ASN
1	B	1174	HIS
1	B	1304	GLN
1	C	1064	GLN
1	C	1081	ASN
1	C	1304	GLN
1	C	1321	HIS
1	D	1167	ASN
1	D	1171	ASN

5.3.3 RNA

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 carbohydrates in this entry.

5.6 Ligand geometry (i)

7 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	$\#\|Z\| > 2$
2	1RU	A	1401	-	30,37,37	1.29	4 (13%)	32,54,54	1.69	8 (25%)
2	1RU	B	1401	-	30,37,37	1.28	4 (13%)	32,54,54	1.85	9 (28%)
2	1RU	C	1401	-	30,37,37	1.28	4 (13%)	32,54,54	1.81	9 (28%)
3	GBL	B	1402	-	6,6,6	0.52	0	7,7,7	0.99	1 (14%)
3	GBL	A	1402	-	6,6,6	0.57	0	7,7,7	0.86	0
3	GBL	A	1403	-	6,6,6	0.58	0	7,7,7	0.80	0
2	1RU	D	1401	-	30,37,37	1.28	4 (13%)	32,54,54	1.80	8 (25%)

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	1RU	A	1401	-	-	3/10/24/24	0/5/5/5
3	GBL	A	1403	-	-	-	0/1/1/1
2	1RU	C	1401	-	-	2/10/24/24	0/5/5/5
3	GBL	B	1402	-	-	-	0/1/1/1
3	GBL	A	1402	-	-	-	0/1/1/1
2	1RU	B	1401	-	-	3/10/24/24	0/5/5/5

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	1RU	D	1401	-	-	3/10/24/24	0/5/5/5

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	1401	1RU	C16-C17	-3.65	1.37	1.42
2	A	1401	1RU	C16-C17	-3.61	1.37	1.42
2	B	1401	1RU	C16-C17	-3.56	1.38	1.42
2	D	1401	1RU	C16-C17	-3.53	1.38	1.42
2	D	1401	1RU	C16-N15	3.27	1.39	1.32
2	B	1401	1RU	C16-N15	3.26	1.39	1.32
2	C	1401	1RU	C16-N15	3.19	1.39	1.32
2	A	1401	1RU	C16-N15	3.14	1.39	1.32
2	B	1401	1RU	C14-N22	2.96	1.41	1.34
2	C	1401	1RU	C14-N22	2.90	1.41	1.34
2	A	1401	1RU	C14-N22	2.88	1.41	1.34
2	D	1401	1RU	C14-N22	2.83	1.41	1.34
2	D	1401	1RU	C17-C18	-2.56	1.38	1.43
2	B	1401	1RU	C17-C18	-2.47	1.38	1.43
2	A	1401	1RU	C17-C18	-2.46	1.38	1.43
2	C	1401	1RU	C17-C18	-2.36	1.38	1.43

All (35) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	1401	1RU	C8-C7-C1	-4.86	107.76	113.48
2	B	1401	1RU	C8-C7-C1	-4.76	107.87	113.48
2	A	1401	1RU	C8-C7-C1	-4.54	108.13	113.48
2	D	1401	1RU	O9-C7-C1	4.45	114.21	107.64
2	C	1401	1RU	C8-C7-C1	-4.31	108.41	113.48
2	C	1401	1RU	C2-C1-C3	3.75	119.23	114.90
2	B	1401	1RU	O9-C7-C1	3.47	112.76	107.64
2	A	1401	1RU	C2-C1-C3	3.30	118.70	114.90
2	B	1401	1RU	C2-C1-C3	3.25	118.65	114.90
2	D	1401	1RU	C2-C1-C3	3.11	118.49	114.90
2	C	1401	1RU	O9-C7-C1	2.96	112.01	107.64
2	B	1401	1RU	C20-C21-C17	-2.95	101.25	108.63
2	D	1401	1RU	C16-N15-C14	2.92	121.68	118.69
2	C	1401	1RU	C20-C21-C17	-2.91	101.35	108.63
2	C	1401	1RU	O9-C13-C18	2.86	124.81	120.22
2	A	1401	1RU	O9-C7-C1	2.72	111.66	107.64
2	C	1401	1RU	C16-N15-C14	2.65	121.40	118.69

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1401	1RU	C16-N15-C14	2.59	121.34	118.69
2	A	1401	1RU	O9-C7-C8	2.58	110.77	105.53
2	B	1401	1RU	O9-C13-C18	2.55	124.31	120.22
2	D	1401	1RU	C20-C21-C17	-2.53	102.31	108.63
2	A	1401	1RU	C20-C21-C17	-2.51	102.35	108.63
2	D	1401	1RU	O9-C7-C8	2.44	110.50	105.53
2	A	1401	1RU	C16-N15-C14	2.44	121.19	118.69
2	B	1401	1RU	C21-C17-C18	-2.44	105.08	107.41
2	D	1401	1RU	O9-C13-C18	2.41	124.09	120.22
2	A	1401	1RU	O9-C13-C18	2.39	124.05	120.22
2	B	1401	1RU	C30-C29-C28	2.38	112.31	110.44
2	C	1401	1RU	O9-C7-C8	2.31	110.23	105.53
2	B	1401	1RU	O9-C7-C8	2.21	110.04	105.53
2	C	1401	1RU	C4-C2-C1	-2.11	119.75	122.39
3	B	1402	GBL	OD-C-O	2.08	125.89	120.24
2	A	1401	1RU	C21-C17-C18	-2.07	105.43	107.41
2	D	1401	1RU	C21-C17-C18	-2.06	105.44	107.41
2	C	1401	1RU	C32-C33-C28	2.05	112.05	110.44

There are no chirality outliers.

All (11) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1401	1RU	C18-C13-O9-C7
2	B	1401	1RU	C18-C13-O9-C7
2	B	1401	1RU	C14-C13-O9-C7
2	C	1401	1RU	C18-C13-O9-C7
2	D	1401	1RU	C18-C13-O9-C7
2	A	1401	1RU	C14-C13-O9-C7
2	C	1401	1RU	C14-C13-O9-C7
2	D	1401	1RU	C14-C13-O9-C7
2	A	1401	1RU	C20-C21-C23-C27
2	B	1401	1RU	C20-C21-C23-C27
2	D	1401	1RU	C20-C21-C23-C27

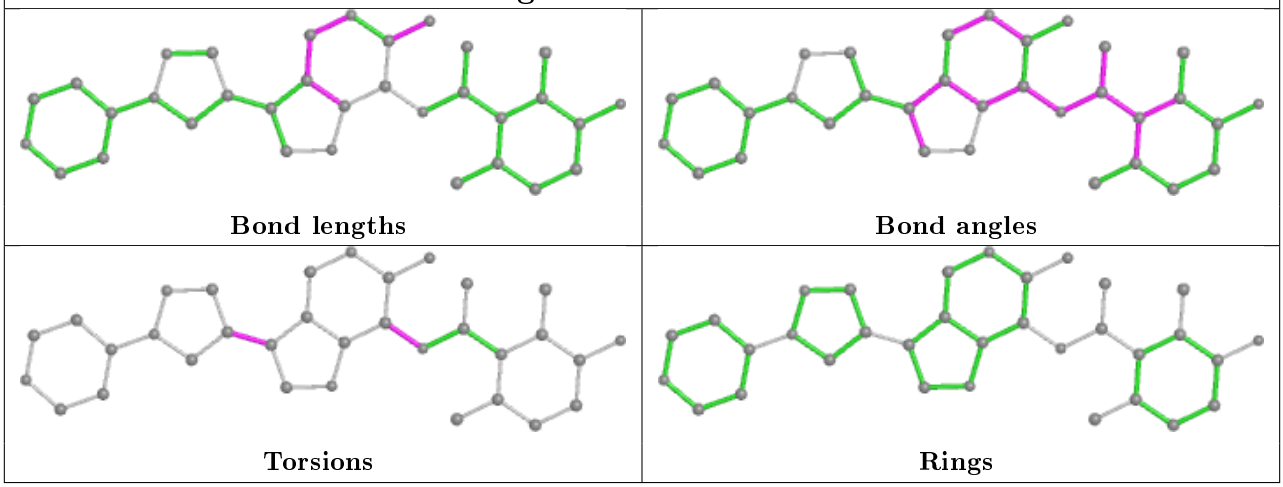
There are no ring outliers.

1 monomer is involved in 1 short contact:

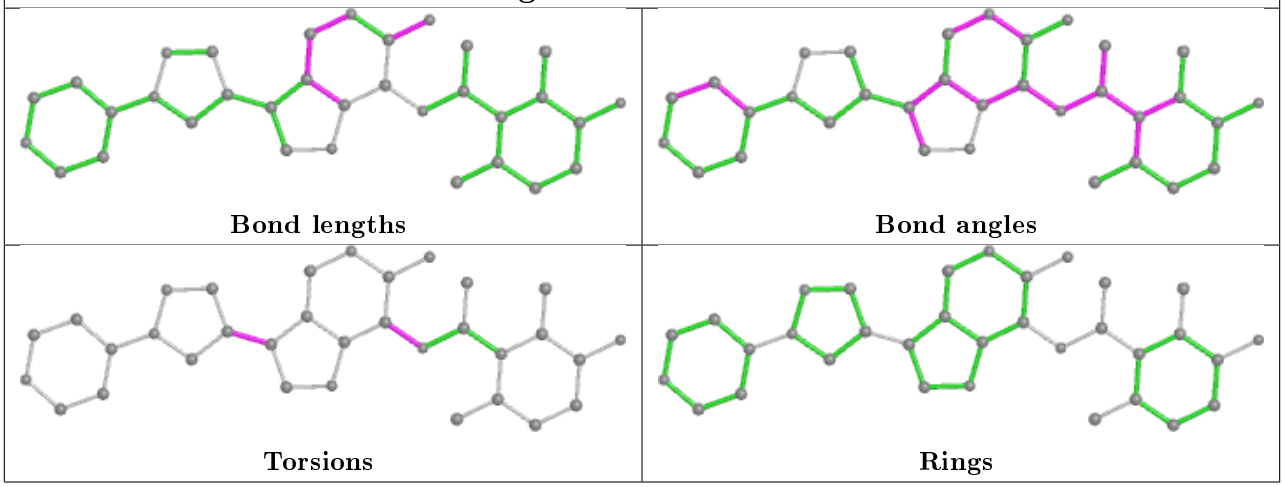
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	C	1401	1RU	1	0

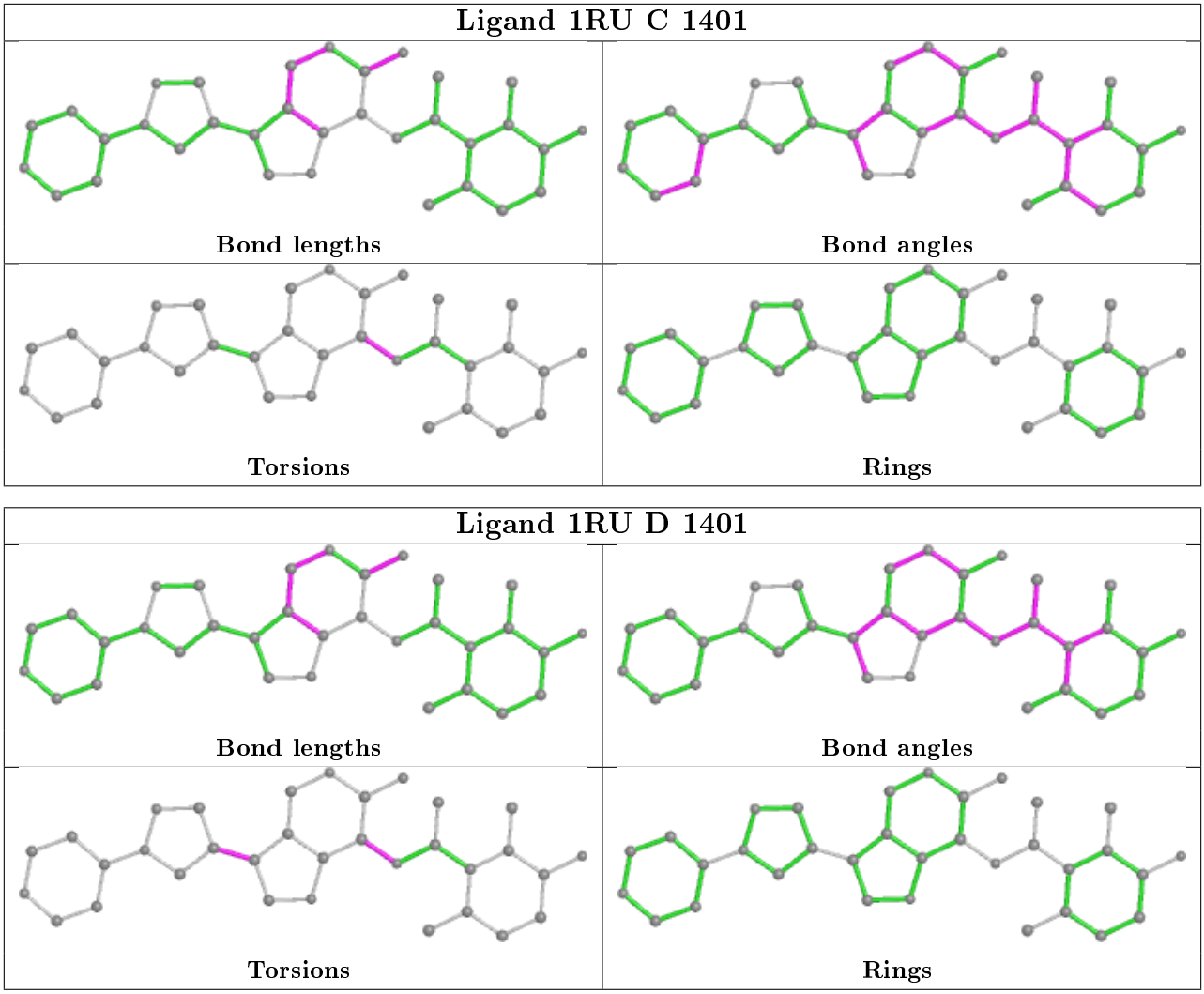
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 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.

Ligand 1RU A 1401



Ligand 1RU B 1401





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, 95^{th} 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	273/287 (95%)	0.55	33 (12%)	4 3	43, 65, 117, 151	10 (3%)
1	B	256/287 (89%)	0.86	47 (18%)	1 1	48, 76, 163, 272	7 (2%)
1	C	271/287 (94%)	0.64	34 (12%)	3 3	44, 76, 141, 240	6 (2%)
1	D	247/287 (86%)	1.16	58 (23%)	0 0	52, 86, 138, 194	7 (2%)
All	All	1047/1148 (91%)	0.79	172 (16%)	1 1	43, 76, 141, 272	30 (2%)

All (172) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	1073	PRO	8.4
1	A	1241	THR	6.4
1	B	1345	ILE	5.8
1	D	1074[A]	SER	5.7
1	B	1082	GLU	5.7
1	B	1346	GLY	5.7
1	D	1088	HIS	5.7
1	D	1258	GLN	5.5
1	D	1345	ILE	5.3
1	B	1205	LEU	4.9
1	D	1257	THR	4.9
1	D	1272	LEU	4.9
1	A	1240	LYS	4.8
1	B	1290	PHE	4.8
1	D	1220	VAL	4.8
1	D	1259	LYS	4.6
1	D	1072	GLY	4.6
1	D	1173	THR	4.6
1	D	1221	ALA	4.5
1	D	1346	GLY	4.4
1	D	1205	LEU	4.3

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Mol	Chain	Res	Type	RSRZ
1	D	1229	MET	4.3
1	D	1119	GLY	4.1
1	C	1272	LEU	4.1
1	A	1269	PHE	4.1
1	D	1152	SER	4.0
1	C	1114	ARG	4.0
1	D	1266	VAL	3.9
1	B	1268	SER	3.9
1	B	1271	VAL	3.9
1	D	1276	LEU	3.9
1	A	1083	VAL	3.8
1	D	1087	GLY	3.6
1	C	1063	VAL	3.6
1	D	1065	ALA	3.6
1	D	1260	PHE	3.6
1	D	1269	PHE	3.6
1	D	1268	SER	3.6
1	C	1077	ILE	3.5
1	A	1065	ALA	3.5
1	C	1121	VAL	3.5
1	B	1072	GLY	3.5
1	A	1273	LEU	3.5
1	D	1068	HIS	3.4
1	A	1286	ASP	3.4
1	A	1268	SER	3.4
1	C	1344	PHE	3.4
1	D	1274	TRP	3.4
1	D	1271	VAL	3.3
1	B	1157	LEU	3.3
1	B	1221	ALA	3.3
1	D	1273	LEU	3.3
1	C	1268	SER	3.3
1	C	1062	LEU	3.2
1	D	1117	ASP	3.2
1	D	1172	GLU	3.2
1	D	1225	LEU	3.2
1	C	1214	GLU	3.1
1	D	1248	LYS	3.1
1	D	1308	CYS	3.1
1	A	1272	LEU	3.1
1	A	1239	ASN	3.0
1	A	1205	LEU	3.0

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Mol	Chain	Res	Type	RSRZ
1	B	1237	VAL	3.0
1	D	1294	VAL	3.0
1	A	1271	VAL	3.0
1	C	1259	LYS	3.0
1	D	1081	ASN	3.0
1	B	1088	HIS	3.0
1	B	1245	LEU	3.0
1	C	1073	PRO	2.9
1	B	1214	GLU	2.9
1	D	1256	GLN	2.9
1	D	1157	LEU	2.9
1	D	1270	GLY	2.8
1	C	1119	GLY	2.8
1	C	1067	GLN	2.8
1	B	1272	LEU	2.8
1	C	1123	GLN	2.7
1	B	1145	ILE	2.7
1	B	1146[A]	CYS	2.7
1	C	1290	PHE	2.7
1	D	1089	PHE	2.7
1	B	1156	VAL	2.7
1	D	1098	LEU	2.7
1	C	1110	LYS	2.7
1	D	1302	LEU	2.7
1	C	1113	ASN	2.7
1	D	1309	PRO	2.7
1	A	1081	ASN	2.7
1	B	1081	ASN	2.7
1	A	1155	VAL	2.6
1	A	1188	VAL	2.6
1	C	1205	LEU	2.6
1	B	1106	HIS	2.6
1	D	1249	TRP	2.6
1	B	1074[A]	SER	2.6
1	A	1242	GLY	2.6
1	B	1086	ARG	2.6
1	C	1060	PRO	2.6
1	D	1253	GLU	2.6
1	B	1096	THR	2.6
1	C	1096	THR	2.6
1	B	1076	LEU	2.6
1	A	1150	GLU	2.5

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Mol	Chain	Res	Type	RSRZ
1	A	1098	LEU	2.5
1	C	1130	ILE	2.5
1	A	1064	GLN	2.5
1	A	1207	ALA	2.5
1	B	1075	SER	2.5
1	B	1111	SER	2.5
1	B	1108	ALA	2.5
1	D	1207	ALA	2.5
1	C	1155	VAL	2.5
1	D	1188	VAL	2.4
1	C	1156	VAL	2.4
1	B	1172	GLU	2.4
1	C	1241	THR	2.4
1	B	1140	LEU	2.4
1	B	1269	PHE	2.4
1	A	1210	CYS	2.4
1	B	1297	LEU	2.4
1	A	1232	LYS	2.4
1	A	1172	GLU	2.4
1	D	1203	ARG	2.3
1	A	1307	TYR	2.3
1	B	1175	ASN	2.3
1	B	1229	MET	2.3
1	B	1089	PHE	2.3
1	A	1074	SER	2.3
1	B	1121	VAL	2.3
1	C	1188	VAL	2.3
1	B	1073	PRO	2.3
1	B	1267	TRP	2.3
1	D	1120	GLU	2.3
1	D	1066	VAL	2.3
1	B	1235	TYR	2.3
1	A	1154	LEU	2.2
1	A	1237	VAL	2.2
1	C	1238	HIS	2.2
1	D	1267	TRP	2.2
1	A	1082	GLU	2.2
1	D	1292	ILE	2.2
1	D	1301	ARG	2.2
1	D	1304	GLN	2.2
1	C	1276	LEU	2.2
1	B	1273	LEU	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	1316	MET	2.1
1	D	1093	TYR	2.1
1	B	1259	LYS	2.1
1	D	1282	PRO	2.1
1	B	1276	LEU	2.1
1	D	1174	HIS	2.1
1	D	1067	GLN	2.1
1	B	1225	LEU	2.1
1	A	1220	VAL	2.1
1	C	1105	ILE	2.1
1	B	1069	VAL	2.1
1	D	1300	ARG	2.1
1	C	1232	LYS	2.1
1	B	1188	VAL	2.1
1	C	1271	VAL	2.1
1	C	1145	ILE	2.1
1	A	1233	GLU	2.1
1	C	1326	MET	2.0
1	B	1142	LEU	2.0
1	A	1073	PRO	2.0
1	B	1077	ILE	2.0
1	A	1267	TRP	2.0
1	C	1226	ALA	2.0
1	A	1149	SER	2.0
1	C	1345	ILE	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 carbohydrates in this entry.

6.4 Ligands (i)

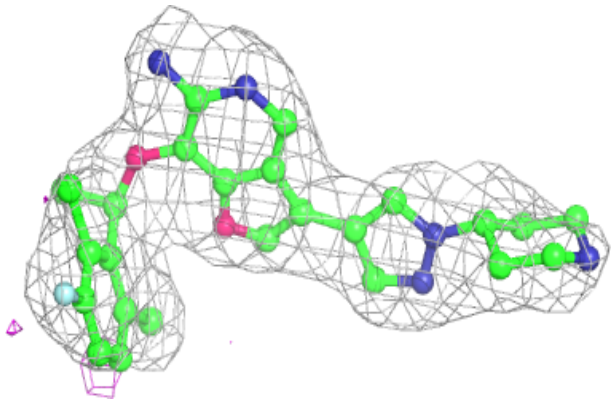
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

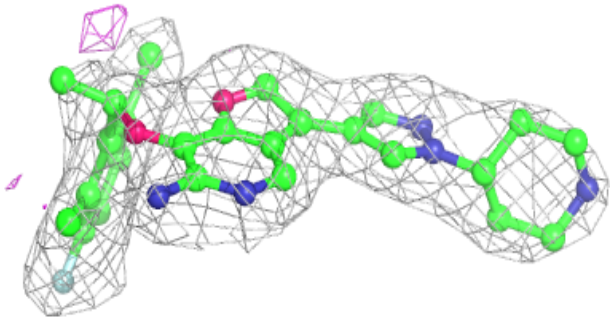
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	1RU	B	1401	33/33	0.83	0.20	79,84,87,90	0
2	1RU	D	1401	33/33	0.83	0.20	79,85,94,94	0
2	1RU	C	1401	33/33	0.86	0.17	70,74,82,84	0
2	1RU	A	1401	33/33	0.86	0.17	64,68,75,76	0
3	GBL	A	1402	6/6	0.89	0.18	81,81,81,81	0
3	GBL	B	1402	6/6	0.92	0.36	78,80,80,81	0
3	GBL	A	1403	6/6	0.94	0.19	77,77,78,78	0

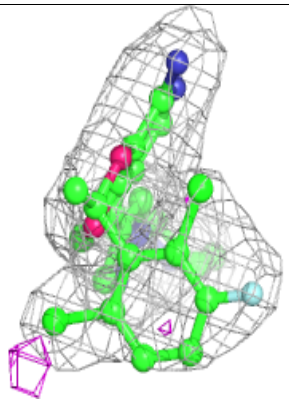
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around 1RU B 1401:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

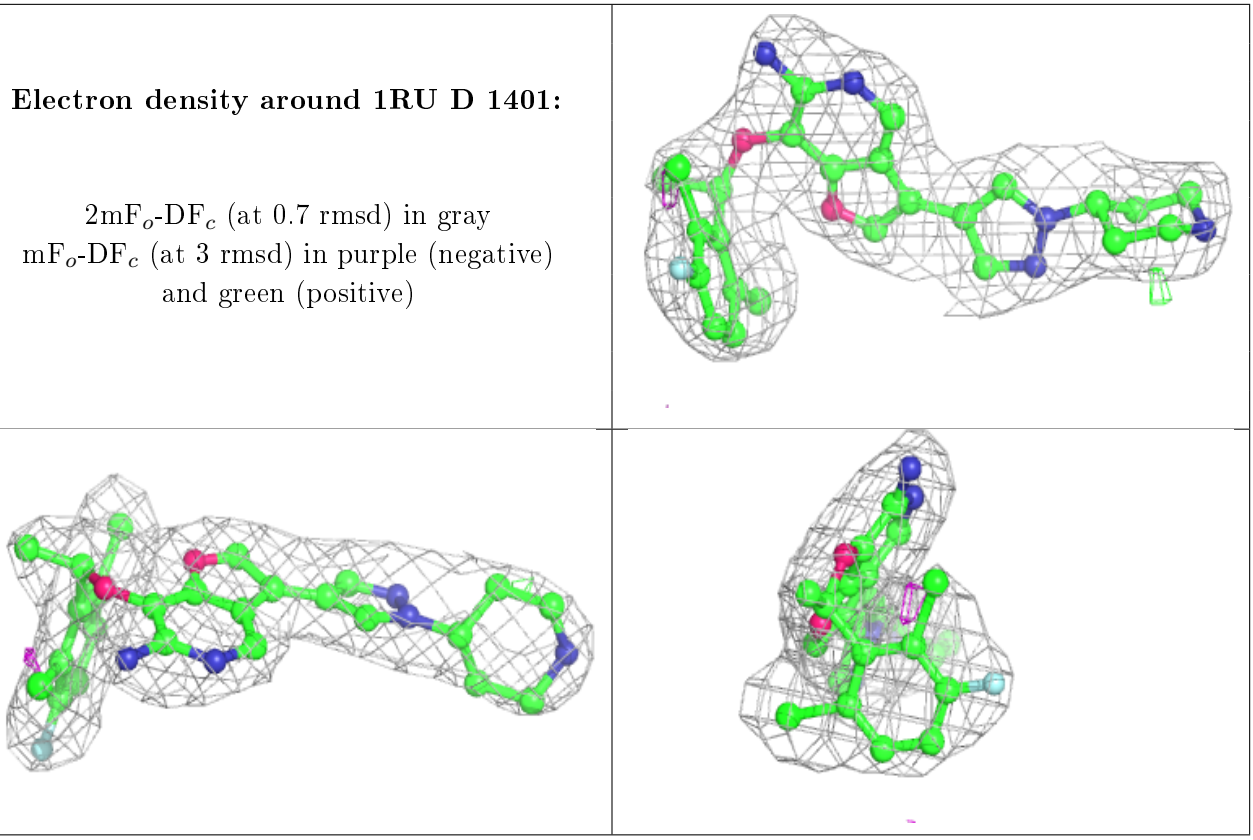






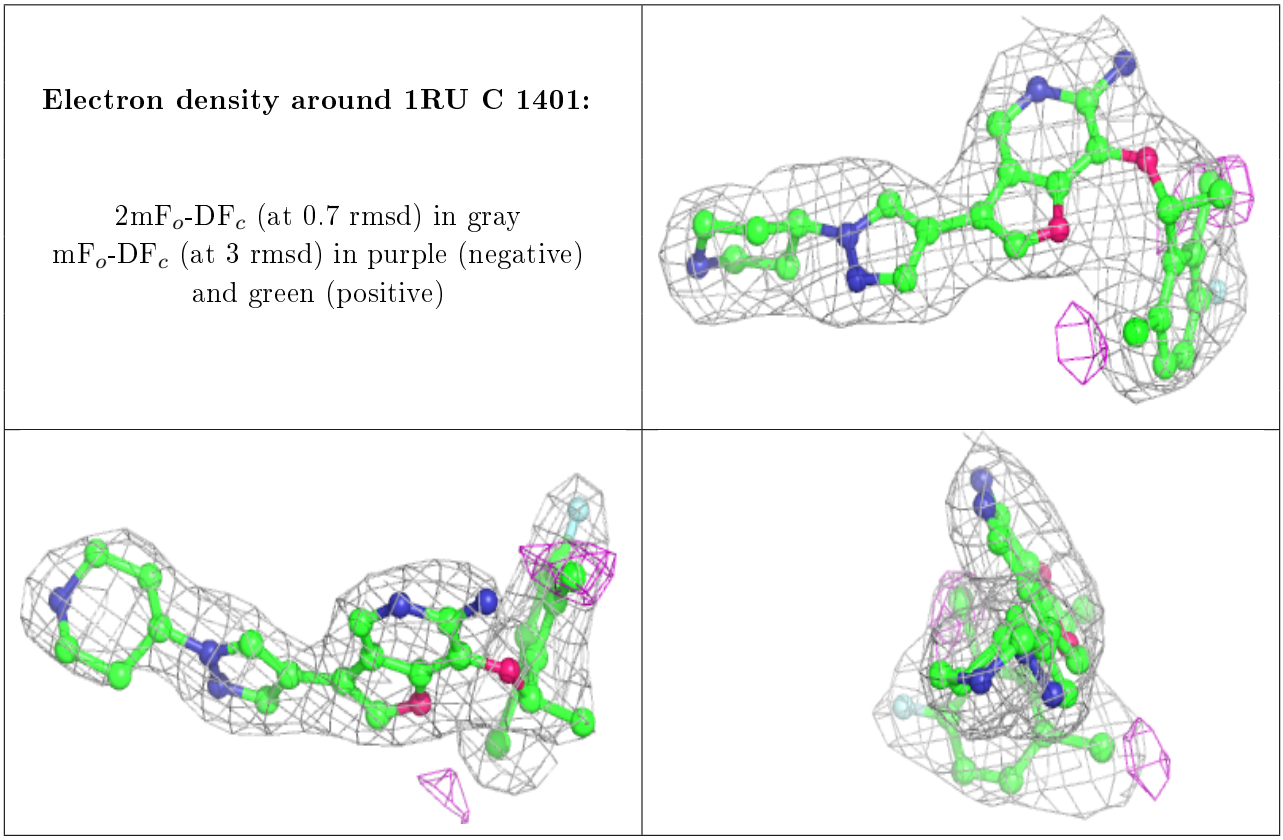
Electron density around 1RU D 1401:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



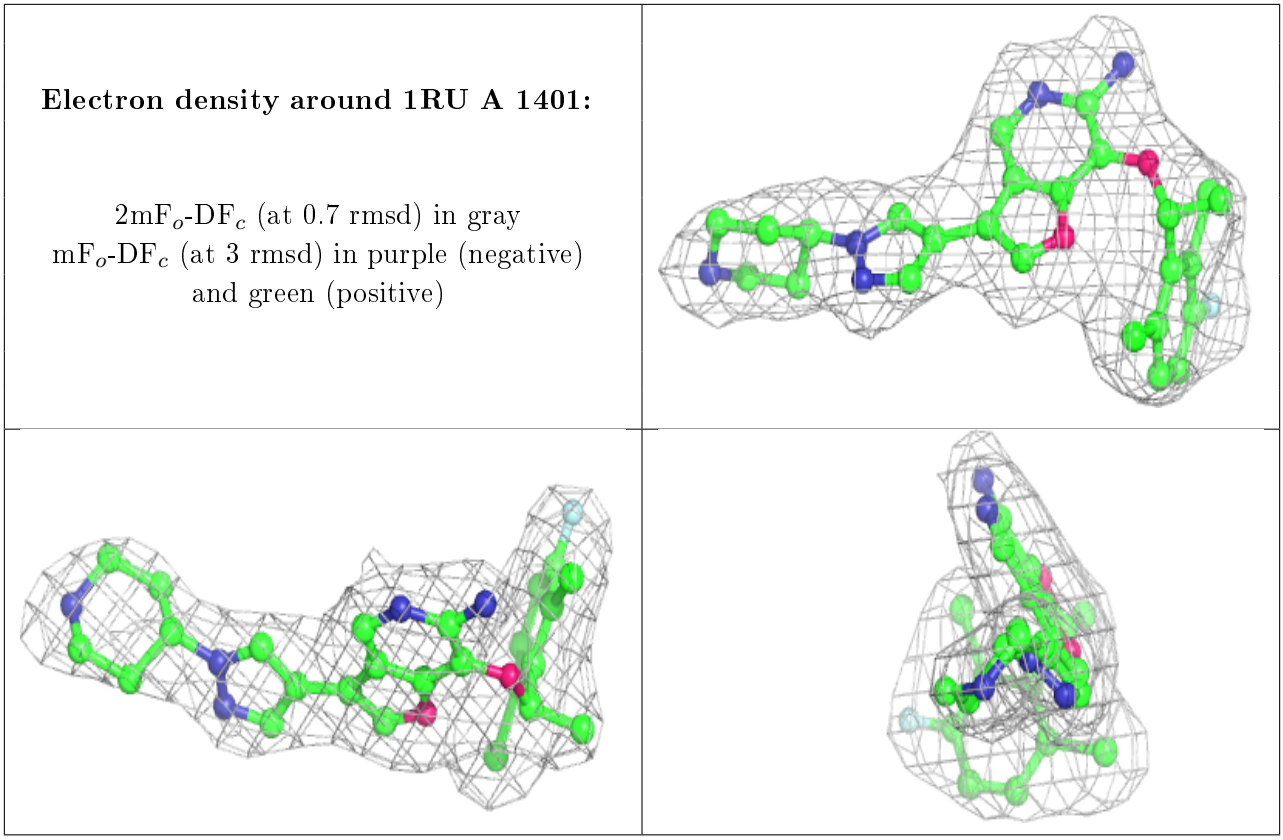
Electron density around 1RU C 1401:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around 1RU A 1401:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers

There are no such residues in this entry.