



Full wwPDB X-ray Structure Validation Report ⓘ

Sep 7, 2023 – 01:44 pm BST

PDB ID : 8BU1
Title : Structure of DDB1 bound to DS17-engaged CDK12-cyclin K
Authors : Kozicka, Z.; Kempf, G.; Petzold, G.; Thoma, N.H.
Deposited on : 2022-11-30
Resolution : 2.98 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 : 4.02b-467
Mogul : 1.8.4, CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.35
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

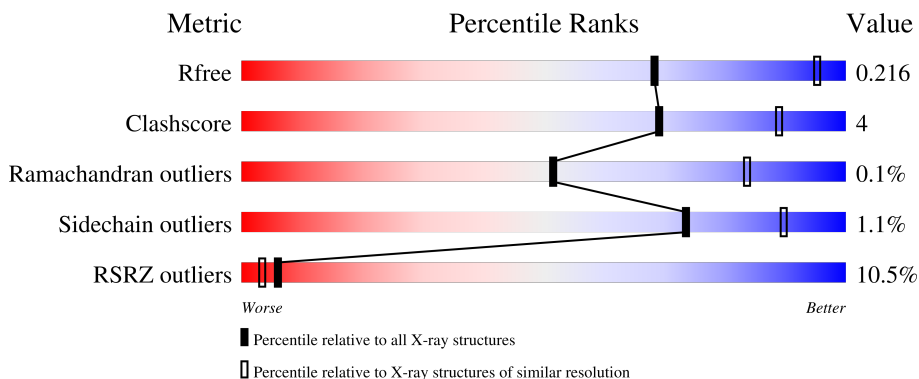
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.98 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	2754 (3.00-2.96)
Clashscore	141614	3103 (3.00-2.96)
Ramachandran outliers	138981	2993 (3.00-2.96)
Sidechain outliers	138945	2996 (3.00-2.96)
RSRZ outliers	127900	2644 (3.00-2.96)

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	840	
1	D	840	
1	G	840	
2	B	344	
2	E	344	

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Mol	Chain	Length	Quality of chain
2	H	344	
3	C	271	
3	F	271	
3	I	271	

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
4	GOL	C	302	-	-	-	X
4	GOL	H	1102	-	-	-	X
4	GOL	H	1103	-	-	-	X
4	GOL	I	302	-	-	-	X

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 67705 atoms, of which 33786 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 DNA damage-binding protein 1.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	H	N	O	S			
1	A	826	12936	4105	6449	1094	1252	36	6449	0	0
1	D	827	12957	4111	6462	1095	1253	36	6462	0	0
1	G	826	12938	4106	6452	1093	1251	36	6452	0	0

There are 39 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-3	GLY	-	expression tag	UNP Q16531
A	-2	GLY	-	expression tag	UNP Q16531
A	-1	GLY	-	expression tag	UNP Q16531
A	0	ARG	-	expression tag	UNP Q16531
A	700	GLY	-	linker	UNP Q16531
A	701	ASN	-	linker	UNP Q16531
A	702	GLY	-	linker	UNP Q16531
A	703	ASN	-	linker	UNP Q16531
A	704	SER	-	linker	UNP Q16531
A	705	GLY	-	linker	UNP Q16531
A	706	GLU	-	linker	UNP Q16531
A	707	ILE	-	linker	UNP Q16531
A	708	GLN	-	linker	UNP Q16531
D	-3	GLY	-	expression tag	UNP Q16531
D	-2	GLY	-	expression tag	UNP Q16531
D	-1	GLY	-	expression tag	UNP Q16531
D	0	ARG	-	expression tag	UNP Q16531
D	700	GLY	-	linker	UNP Q16531
D	701	ASN	-	linker	UNP Q16531
D	702	GLY	-	linker	UNP Q16531
D	703	ASN	-	linker	UNP Q16531
D	704	SER	-	linker	UNP Q16531
D	705	GLY	-	linker	UNP Q16531

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Chain	Residue	Modelled	Actual	Comment	Reference
D	706	GLU	-	linker	UNP Q16531
D	707	ILE	-	linker	UNP Q16531
D	708	GLN	-	linker	UNP Q16531
G	-3	GLY	-	expression tag	UNP Q16531
G	-2	GLY	-	expression tag	UNP Q16531
G	-1	GLY	-	expression tag	UNP Q16531
G	0	ARG	-	expression tag	UNP Q16531
G	700	GLY	-	linker	UNP Q16531
G	701	ASN	-	linker	UNP Q16531
G	702	GLY	-	linker	UNP Q16531
G	703	ASN	-	linker	UNP Q16531
G	704	SER	-	linker	UNP Q16531
G	705	GLY	-	linker	UNP Q16531
G	706	GLU	-	linker	UNP Q16531
G	707	ILE	-	linker	UNP Q16531
G	708	GLN	-	linker	UNP Q16531

- Molecule 2 is a protein called Cyclin-dependent kinase 12.

Mol	Chain	Residues	Atoms							ZeroOcc	AltConf	Trace
			Total	C	H	N	O	P	S			
2	B	330	Total	C	H	N	O	P	S	2702	0	0
			5395	1726	2702	455	494	1	17			
2	E	330	Total	C	H	N	O	P	S	2702	0	0
			5395	1726	2702	455	494	1	17			
2	H	330	Total	C	H	N	O	P	S	2701	0	0
			5394	1726	2701	455	494	1	17			

There are 15 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	709	GLY	-	expression tag	UNP Q9NYV4
B	710	GLY	-	expression tag	UNP Q9NYV4
B	711	GLY	-	expression tag	UNP Q9NYV4
B	965	ARG	LYS	engineered mutation	UNP Q9NYV4
B	1052	GLN	-	expression tag	UNP Q9NYV4
E	709	GLY	-	expression tag	UNP Q9NYV4
E	710	GLY	-	expression tag	UNP Q9NYV4
E	711	GLY	-	expression tag	UNP Q9NYV4
E	965	ARG	LYS	engineered mutation	UNP Q9NYV4
E	1052	GLN	-	expression tag	UNP Q9NYV4
H	709	GLY	-	expression tag	UNP Q9NYV4
H	710	GLY	-	expression tag	UNP Q9NYV4

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Chain	Residue	Modelled	Actual	Comment	Reference
H	711	GLY	-	expression tag	UNP Q9NYV4
H	965	ARG	LYS	engineered mutation	UNP Q9NYV4
H	1052	GLN	-	expression tag	UNP Q9NYV4

- Molecule 3 is a protein called Cyclin-K.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
3	C	248	Total	C	H	N	O	S	2048	0	0
			4111	1341	2048	346	363	13			
3	F	248	Total	C	H	N	O	S	2048	0	0
			4111	1341	2048	346	363	13			
3	I	248	Total	C	H	N	O	S	2048	0	0
			4111	1341	2048	346	363	13			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	-3	GLY	-	expression tag	UNP O75909
C	-2	GLY	-	expression tag	UNP O75909
C	-1	GLY	-	expression tag	UNP O75909
C	0	ARG	-	expression tag	UNP O75909
F	-3	GLY	-	expression tag	UNP O75909
F	-2	GLY	-	expression tag	UNP O75909
F	-1	GLY	-	expression tag	UNP O75909
F	0	ARG	-	expression tag	UNP O75909
I	-3	GLY	-	expression tag	UNP O75909
I	-2	GLY	-	expression tag	UNP O75909
I	-1	GLY	-	expression tag	UNP O75909
I	0	ARG	-	expression tag	UNP O75909

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃).



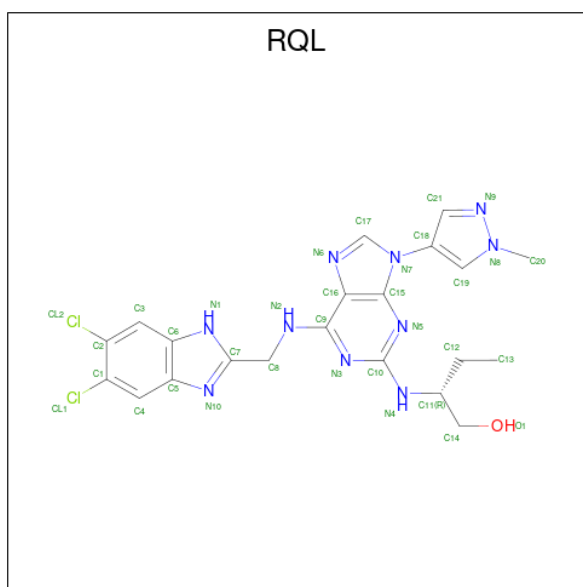
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	C	H	O	8	0
			14	3	8	3		
4	A	1	Total	C	H	O	8	0
			14	3	8	3		
4	A	1	Total	C	H	O	8	0
			14	3	8	3		
4	C	1	Total	C	H	O	8	0
			14	3	8	3		
4	C	1	Total	C	H	O	8	0
			14	3	8	3		
4	D	1	Total	C	H	O	8	0
			14	3	8	3		
4	D	1	Total	C	H	O	8	0
			14	3	8	3		
4	D	1	Total	C	H	O	8	0
			14	3	8	3		
4	F	1	Total	C	H	O	8	0
			14	3	8	3		
4	F	1	Total	C	H	O	8	0
			14	3	8	3		
4	G	1	Total	C	H	O	8	0
			14	3	8	3		
4	H	1	Total	C	H	O	8	0
			14	3	8	3		
4	H	1	Total	C	H	O	8	0
			14	3	8	3		
4	I	1	Total	C	H	O	8	0
			14	3	8	3		

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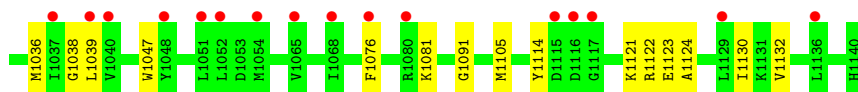
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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	H	O		
4	I	1	14	3	8	3	8	0

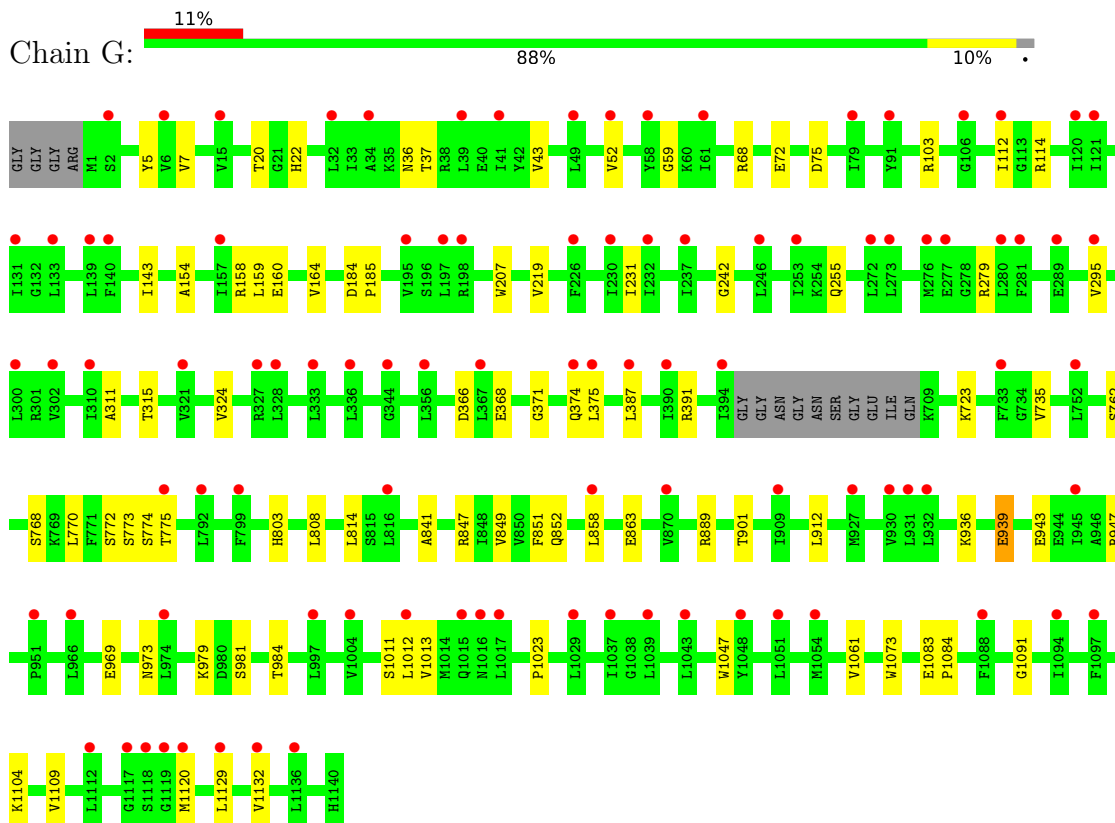
- Molecule 5 is (2 {R})-2-[[6-[[5,6-bis(chloranyl)-1 {H}-benzimidazol-2-yl]methylamino]-9-(1-methylpyrazol-4-yl)purin-2-yl]amino]butan-1-ol (three-letter code: RQL) (formula: C₂₁H₂₂Cl₂N₁₀O) (labeled as "Ligand of Interest" by depositor).



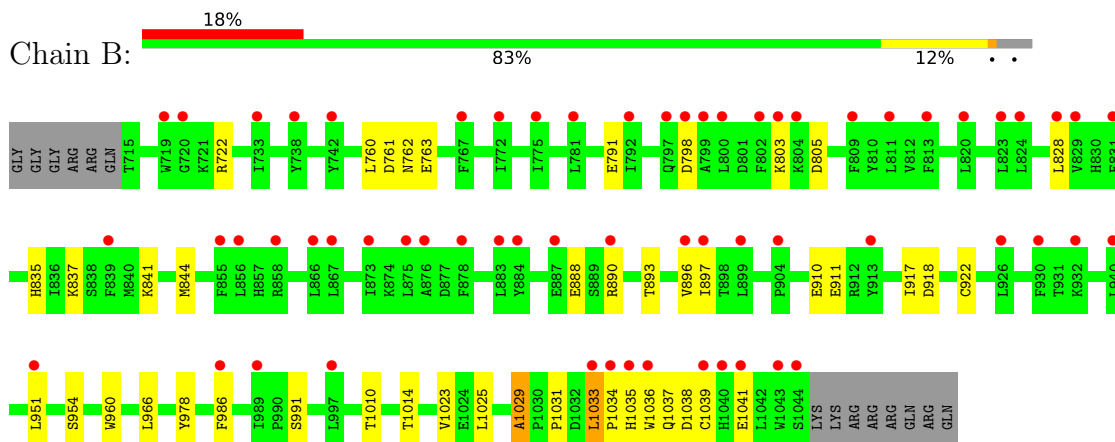
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
			Total	C	Cl	H	N	O		
5	B	1	49	20	2	18	8	1	18	0
5	E	1	49	20	2	18	8	1	18	0
5	H	1	49	20	2	18	8	1	18	0



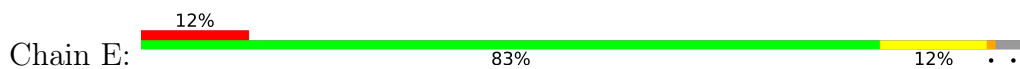
- Molecule 1: DNA damage-binding protein 1

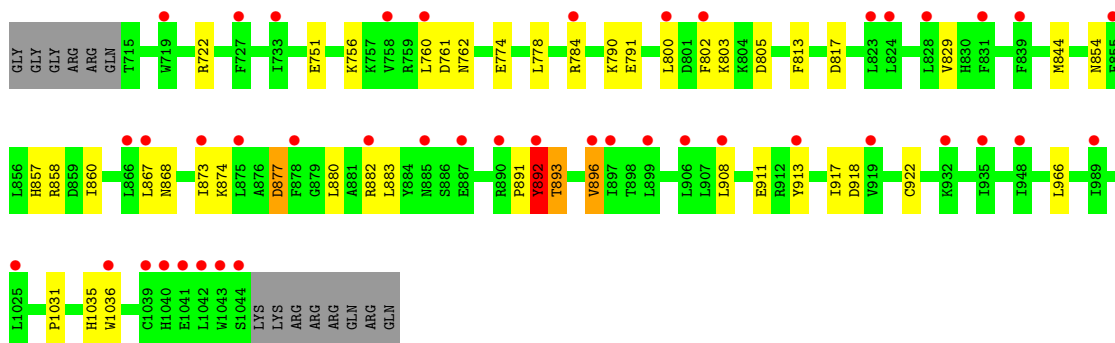


- Molecule 2: Cyclin-dependent kinase 12

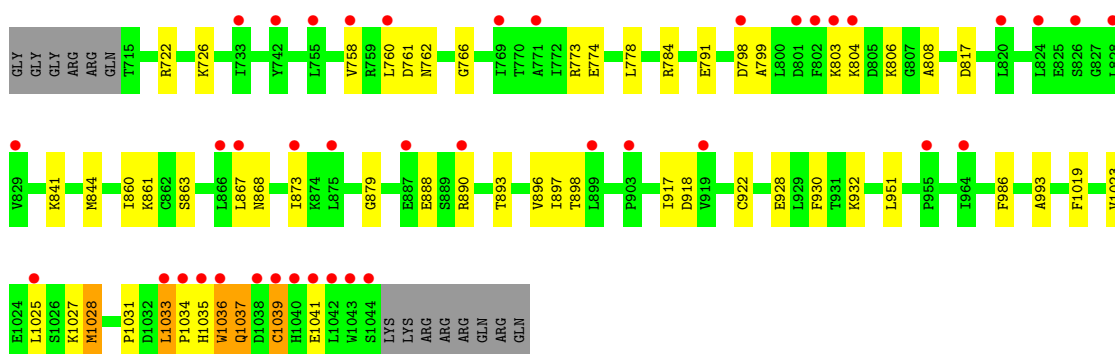
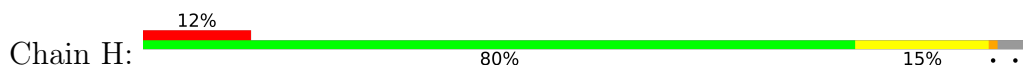


- Molecule 2: Cyclin-dependent kinase 12

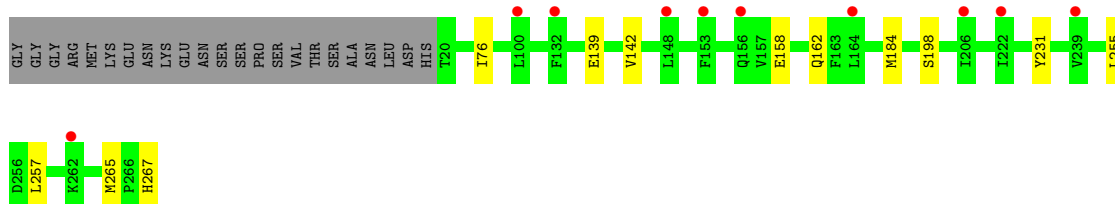
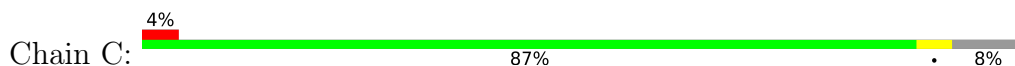




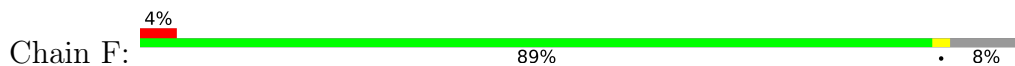
- Molecule 2: Cyclin-dependent kinase 12



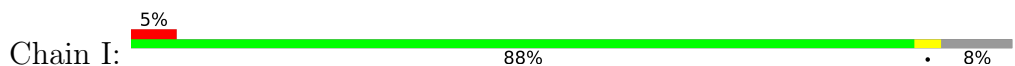
- Molecule 3: Cyclin-K

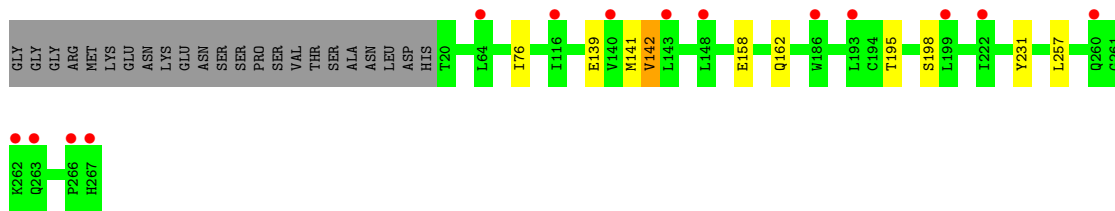


- Molecule 3: Cyclin-K



- Molecule 3: Cyclin-K





4 Data and refinement statistics i

Property	Value	Source
Space group	P 31 2 1	Depositor
Cell constants a, b, c, α , β , γ	249.45Å 249.45Å 218.45Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	60.12 – 2.98 216.03 – 2.98	Depositor EDS
% Data completeness (in resolution range)	87.6 (60.12-2.98) 87.7 (216.03-2.98)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.58 (at 2.96Å)	Xtrriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.193 , 0.218 0.192 , 0.216	Depositor DCC
R_{free} test set	6883 reflections (4.95%)	wwPDB-VP
Wilson B-factor (Å ²)	102.7	Xtrriage
Anisotropy	0.005	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 63.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.009 for -h,-k,l	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	67705	wwPDB-VP
Average B, all atoms (Å ²)	113.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.68% 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: GOL, TPO, RQL

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	0.28	0/6604	0.55	0/8931
1	D	0.29	0/6612	0.55	1/8942 (0.0%)
1	G	0.29	0/6603	0.55	0/8930
2	B	0.28	0/2743	0.54	0/3699
2	E	0.51	5/2743 (0.2%)	0.60	2/3699 (0.1%)
2	H	0.29	0/2743	0.53	0/3699
3	C	0.27	0/2120	0.48	0/2868
3	F	0.28	0/2120	0.49	0/2868
3	I	0.28	0/2120	0.49	0/2868
All	All	0.31	5/34408 (0.0%)	0.54	3/46504 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
2	E	0	1

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	892	TYR	CE2-CZ	-14.09	1.20	1.38
2	E	892	TYR	CG-CD2	9.38	1.51	1.39
2	E	892	TYR	CA-CB	7.41	1.70	1.53
2	E	892	TYR	CB-CG	7.23	1.62	1.51
2	E	892	TYR	CG-CD1	-5.17	1.32	1.39

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	892	TYR	CB-CG-CD2	9.71	126.82	121.00
2	E	892	TYR	CD1-CE1-CZ	8.83	127.74	119.80
1	D	68	ARG	NE-CZ-NH1	5.14	122.87	120.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	E	892	TYR	Sidechain

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	6487	6449	6451	35	0
1	D	6495	6462	6464	56	0
1	G	6486	6452	6454	57	0
2	B	2693	2702	2701	27	0
2	E	2693	2702	2702	36	0
2	H	2693	2701	2701	36	0
3	C	2063	2048	2048	8	0
3	F	2063	2048	2048	6	0
3	I	2063	2048	2048	8	0
4	A	18	24	24	0	0
4	C	12	16	16	0	0
4	D	18	24	24	0	0
4	F	12	16	16	0	0
4	G	6	8	8	0	0
4	H	12	16	16	1	0
4	I	12	16	16	0	0
5	B	31	18	0	0	0
5	E	31	18	0	0	0
5	H	31	18	0	0	0
All	All	33919	33786	33737	253	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 (253) 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:986:ASP:OD1	1:A:989:ARG:NH2	1.91	1.02
1:G:723:LYS:NZ	1:G:814:LEU:O	1.93	1.02
2:E:882:ARG:HH12	2:E:892:TYR:HA	1.23	1.00
3:F:231:TYR:OH	3:F:236:GLU:OE1	1.88	0.92
2:E:858:ARG:NH1	2:E:882:ARG:HG3	1.91	0.85
1:D:22:HIS:HB2	1:D:68:ARG:NH2	1.91	0.85
2:E:858:ARG:HH11	2:E:882:ARG:HG3	1.42	0.84
1:A:857:LYS:HD2	1:A:859:GLN:NE2	1.92	0.84
2:E:882:ARG:NH1	2:E:892:TYR:HA	1.93	0.82
1:A:1118:SER:OG	1:A:1122:ARG:NH1	2.16	0.79
1:G:770:LEU:HD11	1:G:863:GLU:HG2	1.63	0.78
1:D:22:HIS:HB2	1:D:68:ARG:HH22	1.49	0.76
1:G:773:SER:O	1:G:775:THR:N	2.20	0.75
2:E:891:PRO:HB3	2:E:911:GLU:OE2	1.88	0.73
1:D:43:VAL:HG23	1:D:52:VAL:HG11	1.69	0.73
1:D:1114:TYR:CZ	1:D:1122:ARG:HB2	2.26	0.71
1:D:68:ARG:NE	1:D:75:ASP:OD1	2.26	0.67
1:G:22:HIS:HB2	1:G:68:ARG:NH2	2.11	0.66
1:D:1114:TYR:HD2	1:D:1124:ALA:HA	1.62	0.65
2:E:882:ARG:CZ	2:E:892:TYR:CD2	2.80	0.64
1:G:723:LYS:CE	1:G:814:LEU:O	2.47	0.63
1:G:1047:TRP:HZ3	1:G:1132:VAL:HG13	1.63	0.61
2:H:803:LYS:NZ	3:I:139:GLU:OE2	2.25	0.61
1:D:1114:TYR:OH	1:D:1122:ARG:CZ	2.50	0.60
1:A:857:LYS:HD2	1:A:859:GLN:HE22	1.65	0.60
1:D:1029:LEU:HD23	1:D:1039:LEU:HD13	1.83	0.60
2:H:1037:GLN:O	2:H:1037:GLN:HG2	2.00	0.60
1:D:158:ARG:NH1	1:D:160:GLU:OE1	2.33	0.60
1:G:43:VAL:HG23	1:G:52:VAL:HG21	1.84	0.60
1:G:72:GLU:OE2	1:G:103:ARG:NH2	2.35	0.59
2:B:1035:HIS:CD2	2:B:1037:GLN:HG2	2.36	0.59
3:I:76:ILE:CD1	3:I:198:SER:HB3	2.33	0.59
2:B:835:HIS:HD2	2:B:1029:ALA:HB1	1.68	0.59
3:I:76:ILE:HD12	3:I:198:SER:HB3	1.83	0.59
1:G:858:LEU:HD12	1:G:858:LEU:O	2.04	0.58
3:I:158:GLU:OE1	3:I:162:GLN:NE2	2.35	0.58
1:D:172:GLY:HA2	1:D:224:GLU:OE1	2.04	0.57
1:G:1109:VAL:HG12	1:G:1129:LEU:HD12	1.86	0.57
1:D:207:TRP:HB3	1:D:242:GLY:HA2	1.87	0.57
2:B:951:LEU:HD21	2:B:986:PHE:HE2	1.70	0.57
2:E:891:PRO:HB3	2:E:911:GLU:CD	2.24	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:41:ILE:O	1:D:52:VAL:HG22	2.04	0.56
2:H:1031:PRO:HB2	2:H:1033:LEU:HD13	1.87	0.56
1:D:1114:TYR:CD2	1:D:1124:ALA:HA	2.39	0.56
1:A:775:THR:HG22	1:A:775:THR:O	2.06	0.56
1:D:226:PHE:CE1	1:D:287:LYS:HG2	2.41	0.55
2:B:841:LYS:HG2	2:B:1025:LEU:HD21	1.86	0.55
1:D:1114:TYR:HE2	1:D:1123:GLU:O	1.89	0.55
1:D:292:ASP:HB2	1:D:294:THR:HG22	1.87	0.55
1:G:770:LEU:HD11	1:G:863:GLU:CG	2.33	0.55
1:A:207:TRP:HB3	1:A:242:GLY:HA2	1.89	0.55
1:A:36:ASN:O	1:A:37:THR:OG1	2.19	0.54
2:H:760:LEU:HD12	2:H:760:LEU:N	2.23	0.54
2:B:803:LYS:NZ	3:C:139:GLU:OE2	2.35	0.54
1:G:219:VAL:HG22	1:G:231:ILE:CD1	2.38	0.54
1:G:1047:TRP:CZ3	1:G:1132:VAL:HG13	2.41	0.54
2:E:751:GLU:OE1	2:E:790:LYS:NZ	2.37	0.54
1:D:226:PHE:CZ	1:D:287:LYS:HG2	2.42	0.54
1:A:857:LYS:HD2	1:A:859:GLN:HE21	1.69	0.53
3:C:158:GLU:OE1	3:C:162:GLN:NE2	2.41	0.53
2:E:892:TYR:HB3	2:E:913:TYR:OH	2.08	0.53
1:D:43:VAL:HG23	1:D:52:VAL:CG1	2.38	0.53
2:B:798:ASP:OD1	2:B:805:ASP:HB2	2.09	0.53
1:D:816:LEU:HD13	1:D:831:VAL:HG22	1.90	0.53
2:H:844:MET:HE3	2:H:922:CYS:HB3	1.91	0.53
2:E:858:ARG:HH21	2:E:896:VAL:HG11	1.74	0.53
1:G:969:GLU:OE2	1:G:973:ASN:ND2	2.37	0.53
1:G:1023:PRO:HB3	1:G:1047:TRP:CE2	2.45	0.52
1:A:50:ARG:NH1	1:A:52:VAL:HG12	2.25	0.51
1:D:1105:MET:SD	1:D:1130:ILE:HD11	2.49	0.51
2:H:803:LYS:HG2	3:I:142:VAL:HG11	1.93	0.51
1:D:213:GLU:HG2	1:D:215:GLU:H	1.76	0.51
1:G:36:ASN:O	1:G:37:THR:OG1	2.20	0.51
2:E:722:ARG:NH1	2:E:791:GLU:OE2	2.44	0.50
2:E:760:LEU:HD12	2:E:760:LEU:N	2.25	0.50
2:B:803:LYS:HG2	3:C:142:VAL:HG11	1.93	0.50
2:H:1033:LEU:CB	2:H:1034:PRO:HD2	2.42	0.50
2:H:867:LEU:HD13	2:H:873:ILE:HD11	1.93	0.50
1:D:368:GLU:N	1:D:368:GLU:OE1	2.45	0.50
2:H:722:ARG:HE	2:H:726:LYS:HG3	1.76	0.50
1:D:709:LYS:HG2	1:D:710:LEU:N	2.27	0.50
1:D:1114:TYR:OH	1:D:1122:ARG:NE	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:224:GLU:N	1:D:225:PRO:HD2	2.27	0.50
1:A:983:ALA:HA	1:A:989:ARG:HH11	1.77	0.50
1:D:68:ARG:CZ	1:D:75:ASP:OD1	2.60	0.50
1:G:1061:VAL:HG11	1:G:1104:LYS:HB3	1.94	0.50
1:D:1076:PHE:CE2	1:D:1081:LYS:HE3	2.46	0.49
1:D:375:LEU:HB2	1:D:1012:LEU:HD21	1.94	0.49
2:E:858:ARG:NH1	2:E:882:ARG:CG	2.71	0.49
1:G:841:ALA:O	2:H:1036:TRP:HB3	2.11	0.49
2:E:844:MET:HE3	2:E:922:CYS:HB3	1.94	0.49
1:G:255:GLN:OE1	1:G:279:ARG:NH1	2.46	0.49
2:B:888:GLU:OE1	2:B:890:ARG:CZ	2.61	0.49
1:D:41:ILE:HB	1:D:52:VAL:CG2	2.42	0.49
1:G:159:LEU:HD21	1:G:164:VAL:HG21	1.94	0.49
1:D:146:ASP:OD1	1:D:147:ARG:N	2.46	0.49
2:E:854:ASN:O	2:E:883:LEU:HD12	2.13	0.49
1:G:68:ARG:NE	1:G:75:ASP:OD1	2.45	0.49
2:E:858:ARG:NH2	2:E:893:TPO:OG1	2.46	0.48
1:D:7:VAL:HG12	1:D:1091:GLY:HA3	1.95	0.48
1:D:60:LYS:O	1:D:81:THR:HA	2.13	0.48
1:G:311:ALA:HB2	1:G:324:VAL:HG13	1.96	0.48
1:G:1011:SER:OG	1:G:1013:VAL:HG22	2.14	0.48
1:G:5:TYR:CE2	1:G:7:VAL:HG13	2.49	0.48
1:A:248:ILE:HG12	1:A:250:PRO:HD3	1.95	0.48
1:G:7:VAL:HG12	1:G:1091:GLY:HA3	1.96	0.48
1:G:114:ARG:HD3	2:H:930:PHE:O	2.14	0.47
1:G:852:GLN:O	1:G:858:LEU:HA	2.14	0.47
1:A:7:VAL:HG12	1:A:1091:GLY:HA3	1.96	0.47
2:H:1033:LEU:HB3	2:H:1034:PRO:HD2	1.95	0.47
1:D:18:CYS:SG	1:D:313:CYS:SG	3.08	0.47
2:H:758:VAL:O	2:H:808:ALA:HB1	2.14	0.47
2:H:917:ILE:HG13	2:H:918:ASP:N	2.29	0.47
2:H:761:ASP:OD1	2:H:762:ASN:N	2.48	0.47
1:G:984:THR:O	1:G:984:THR:HG22	2.14	0.47
2:B:917:ILE:HG13	2:B:918:ASP:N	2.30	0.46
1:D:770:LEU:HD13	1:D:865:GLU:HB2	1.98	0.46
2:H:817:ASP:HB2	2:H:868:ASN:HA	1.96	0.46
2:H:861:LYS:HD2	4:H:1102:GOL:H32	1.97	0.46
1:A:1030:PHE:CZ	1:A:1038:GLY:HA3	2.51	0.46
2:B:1031:PRO:HB2	2:B:1033:LEU:HD13	1.97	0.46
1:D:36:ASN:ND2	1:D:1001:GLY:O	2.48	0.46
2:B:1035:HIS:NE2	2:B:1037:GLN:HG2	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1114:TYR:CE2	1:D:1123:GLU:O	2.68	0.46
1:G:368:GLU:N	1:G:368:GLU:OE1	2.48	0.46
2:H:1033:LEU:HG	2:H:1034:PRO:HD2	1.98	0.46
1:A:311:ALA:HB2	1:A:324:VAL:HG13	1.98	0.46
1:G:22:HIS:HB2	1:G:68:ARG:HH22	1.79	0.46
1:A:59:GLY:HA2	1:A:1073:TRP:CZ3	2.51	0.45
1:D:387:LEU:HG	1:D:717:LEU:HD11	1.99	0.45
1:A:889:ARG:HD2	1:A:891:TYR:CZ	2.51	0.45
1:A:5:TYR:CE2	1:A:7:VAL:HG13	2.52	0.45
1:A:6:VAL:HG22	1:A:1040:VAL:HG22	1.98	0.45
1:A:184:ASP:HB2	1:A:185:PRO:CD	2.46	0.45
2:E:917:ILE:HG13	2:E:918:ASP:N	2.32	0.45
2:E:908:LEU:HB2	2:E:966:LEU:HD13	1.97	0.45
1:A:375:LEU:HB2	1:A:1012:LEU:HD21	1.99	0.45
1:G:374:GLN:NE2	1:G:391:ARG:HD3	2.32	0.45
1:D:767:SER:O	1:D:769:LYS:HD2	2.17	0.45
2:E:756:LYS:HD2	2:E:813:PHE:CE1	2.52	0.45
2:E:867:LEU:HD21	2:E:1031:PRO:HG3	1.98	0.45
2:B:803:LYS:HA	3:C:142:VAL:HG11	1.99	0.44
1:D:849:VAL:HG11	1:D:851:PHE:CZ	2.53	0.44
1:G:184:ASP:HB2	1:G:185:PRO:CD	2.47	0.44
1:G:770:LEU:HD12	1:G:847:ARG:CD	2.47	0.44
1:G:207:TRP:HB3	1:G:242:GLY:HA2	1.98	0.44
1:G:912:LEU:HD22	2:H:1039:CYS:HB2	1.99	0.44
1:D:5:TYR:CE2	1:D:7:VAL:HG13	2.53	0.44
2:E:858:ARG:HE	2:E:896:VAL:HG11	1.83	0.44
1:G:112:ILE:HD13	2:H:986:PHE:CE2	2.53	0.44
1:A:857:LYS:CD	1:A:859:GLN:NE2	2.73	0.44
2:B:844:MET:HE3	2:B:922:CYS:HB3	2.00	0.44
1:D:1030:PHE:CZ	1:D:1038:GLY:HA3	2.53	0.44
1:D:1114:TYR:O	1:D:1121:LYS:HA	2.18	0.44
1:G:762:SER:O	1:G:803:HIS:HA	2.18	0.44
1:G:768:SER:HB3	1:G:808:LEU:HD11	1.98	0.44
1:A:953:TRP:HZ2	2:B:1038:ASP:O	2.01	0.44
2:H:928:GLU:O	2:H:932:LYS:N	2.46	0.44
2:B:828:LEU:HB3	2:B:1034:PRO:HG3	1.99	0.43
2:H:867:LEU:HD13	2:H:873:ILE:CD1	2.48	0.43
2:H:993:ALA:HB2	2:H:1019:PHE:CE1	2.53	0.43
2:B:910:GLU:O	2:B:911:GLU:HB3	2.17	0.43
1:A:248:ILE:HD12	1:A:300:LEU:O	2.18	0.43
1:A:387:LEU:HD11	1:A:735:VAL:HG21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1083:GLU:OE1	1:G:1084:PRO:HD2	2.18	0.43
2:E:858:ARG:NH1	2:E:880:LEU:O	2.51	0.43
2:B:798:ASP:OD1	2:B:798:ASP:O	2.37	0.43
2:B:837:LYS:HB3	2:B:1023:VAL:HG21	2.00	0.43
2:B:841:LYS:CD	2:B:1025:LEU:HD21	2.48	0.43
3:C:76:ILE:CD1	3:C:198:SER:HB3	2.48	0.43
2:E:774:GLU:HG2	2:E:778:LEU:HD12	2.00	0.43
1:G:59:GLY:HA2	1:G:1073:TRP:CE3	2.53	0.43
1:G:775:THR:O	1:G:775:THR:HG22	2.19	0.43
1:D:213:GLU:OE2	1:D:234:GLN:N	2.51	0.43
1:D:378:CYS:SG	1:D:724:ILE:HB	2.58	0.43
2:E:805:ASP:OD2	3:F:145:ARG:HD3	2.19	0.43
3:F:76:ILE:HD12	3:F:159:HIS:CE1	2.53	0.43
2:E:857:HIS:NE2	2:E:877:ASP:O	2.52	0.43
2:H:798:ASP:OD1	2:H:799:ALA:N	2.52	0.43
1:A:849:VAL:HG11	1:A:851:PHE:CZ	2.54	0.42
3:I:195:THR:CG2	3:I:257:LEU:HD11	2.49	0.42
2:E:761:ASP:OD1	2:E:762:ASN:N	2.53	0.42
2:E:800:LEU:O	2:E:800:LEU:HG	2.18	0.42
1:G:375:LEU:HB2	1:G:1012:LEU:HD21	2.01	0.42
2:B:761:ASP:OD1	2:B:762:ASN:N	2.52	0.42
2:E:784:ARG:O	2:E:874:LYS:HE2	2.19	0.42
2:E:802:PHE:HB3	3:F:146:ILE:HD11	2.01	0.42
1:G:889:ARG:HD3	1:G:901:THR:HG23	2.00	0.42
2:E:867:LEU:HD13	2:E:873:ILE:CD1	2.49	0.42
2:H:804:LYS:O	2:H:806:LYS:HG2	2.19	0.42
2:B:803:LYS:HA	3:C:142:VAL:CG1	2.49	0.42
1:G:773:SER:C	1:G:775:THR:H	2.15	0.42
2:H:766:GLY:N	3:I:141:MET:HE1	2.34	0.42
2:H:773:ARG:HD2	2:H:879:GLY:O	2.19	0.42
3:C:255:LEU:HD22	3:C:265:MET:SD	2.59	0.42
2:H:784:ARG:HH22	2:H:1028:MET:HE1	1.84	0.42
2:H:841:LYS:HD2	2:H:1023:VAL:HB	2.01	0.42
1:A:315:THR:O	1:A:315:THR:HG23	2.18	0.42
1:A:1076:PHE:CE1	1:A:1081:LYS:HE3	2.54	0.42
1:D:184:ASP:HB2	1:D:185:PRO:CD	2.50	0.42
1:A:92:LYS:HD2	1:A:101:ILE:HD11	2.01	0.42
1:G:43:VAL:HG23	1:G:52:VAL:CG2	2.47	0.42
1:G:143:ILE:HG12	1:G:154:ALA:HB2	2.02	0.42
1:G:770:LEU:HD12	1:G:847:ARG:HD3	2.01	0.42
2:B:841:LYS:HD3	2:B:1025:LEU:CD2	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1010:THR:O	2:B:1014:THR:HG23	2.19	0.42
1:D:52:VAL:HG23	1:D:53:LYS:N	2.35	0.42
1:G:59:GLY:HA2	1:G:1073:TRP:CZ3	2.55	0.41
2:H:722:ARG:NH1	2:H:791:GLU:OE2	2.53	0.41
1:D:22:HIS:CB	1:D:68:ARG:HH22	2.26	0.41
1:D:771:PHE:O	1:D:772:SER:C	2.59	0.41
1:D:1027:SER:OG	1:D:1039:LEU:HD11	2.20	0.41
2:E:892:TYR:CB	2:E:913:TYR:CZ	3.03	0.41
1:G:387:LEU:HD11	1:G:735:VAL:HG21	2.02	0.41
3:I:195:THR:HG21	3:I:257:LEU:HD11	2.02	0.41
1:D:1047:TRP:CZ3	1:D:1132:VAL:HG13	2.55	0.41
1:G:979:LYS:O	1:G:981:SER:N	2.43	0.41
2:H:951:LEU:HD21	2:H:986:PHE:HE2	1.85	0.41
3:C:184:MET:CE	3:C:267:HIS:HA	2.50	0.41
1:D:35:LYS:O	1:D:36:ASN:C	2.59	0.41
1:D:1029:LEU:CD2	1:D:1039:LEU:HD13	2.48	0.41
2:E:803:LYS:HA	3:F:142:VAL:HG11	2.02	0.41
2:E:892:TYR:HB3	2:E:913:TYR:CZ	2.55	0.41
2:B:722:ARG:NH1	2:B:791:GLU:OE2	2.52	0.41
1:D:315:THR:HG23	1:D:315:THR:O	2.20	0.41
1:D:367:LEU:HD12	1:D:374:GLN:OE1	2.21	0.41
2:E:858:ARG:HH21	2:E:896:VAL:CG1	2.32	0.41
1:G:315:THR:O	1:G:315:THR:HG23	2.19	0.41
1:D:226:PHE:CZ	1:D:287:LYS:CG	3.03	0.41
1:G:20:THR:HG23	1:G:315:THR:OG1	2.20	0.41
1:G:849:VAL:HG11	1:G:851:PHE:CZ	2.56	0.41
1:G:936:LYS:HB3	1:G:939:GLU:HG3	2.03	0.41
2:H:774:GLU:HG2	2:H:778:LEU:HD12	2.02	0.41
1:A:143:ILE:HG12	1:A:154:ALA:HB2	2.03	0.41
2:B:960:TRP:CZ2	2:B:966:LEU:HD11	2.56	0.41
2:E:803:LYS:HA	3:F:142:VAL:CG1	2.51	0.41
1:G:936:LYS:HE3	1:G:943:GLU:OE1	2.21	0.41
2:H:888:GLU:OE2	2:H:890:ARG:NH2	2.54	0.41
1:A:774:SER:O	1:A:775:THR:HB	2.21	0.41
1:G:366:ASP:OD2	1:G:371:GLY:N	2.54	0.41
2:H:760:LEU:HD12	2:H:760:LEU:H	1.86	0.41
2:E:817:ASP:HB2	2:E:868:ASN:HA	2.03	0.40
2:H:1027:LYS:O	2:H:1028:MET:C	2.58	0.40
1:A:985:THR:OG1	1:A:988:GLU:HG3	2.20	0.40
1:A:1024:THR:HB	1:A:1041:THR:HG21	2.04	0.40
1:A:1028:VAL:O	1:A:1039:LEU:HD12	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:762:ASN:OD1	2:B:763:GLU:N	2.54	0.40
1:D:946:ALA:HB1	1:D:992:LEU:HG	2.04	0.40
1:G:158:ARG:NH1	1:G:160:GLU:OE1	2.42	0.40
1:A:971:ALA:HB3	1:A:973:ASN:HD22	1.86	0.40
1:A:1017:LEU:HD23	1:A:1017:LEU:HA	1.90	0.40
2:B:954:SER:OG	2:B:978:TYR:N	2.52	0.40
2:H:722:ARG:HH21	2:H:726:LYS:HB3	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	822/840 (98%)	799 (97%)	23 (3%)	0	100	100
1	D	823/840 (98%)	806 (98%)	16 (2%)	1 (0%)	51	83
1	G	822/840 (98%)	799 (97%)	21 (3%)	2 (0%)	47	80
2	B	327/344 (95%)	315 (96%)	11 (3%)	1 (0%)	41	74
2	E	327/344 (95%)	318 (97%)	8 (2%)	1 (0%)	41	74
2	H	327/344 (95%)	317 (97%)	9 (3%)	1 (0%)	41	74
3	C	246/271 (91%)	242 (98%)	4 (2%)	0	100	100
3	F	246/271 (91%)	242 (98%)	4 (2%)	0	100	100
3	I	246/271 (91%)	242 (98%)	4 (2%)	0	100	100
All	All	4186/4365 (96%)	4080 (98%)	100 (2%)	6 (0%)	51	83

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	772	SER

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Mol	Chain	Res	Type
2	E	877	ASP
1	G	774	SER
1	G	772	SER
2	H	1028	MET
2	B	1029	ALA

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	721/728 (99%)	717 (99%)	4 (1%)	86	94
1	D	722/728 (99%)	718 (99%)	4 (1%)	86	94
1	G	721/728 (99%)	717 (99%)	4 (1%)	86	94
2	B	297/308 (96%)	289 (97%)	8 (3%)	44	75
2	E	297/308 (96%)	292 (98%)	5 (2%)	60	84
2	H	297/308 (96%)	285 (96%)	12 (4%)	31	66
3	C	223/242 (92%)	221 (99%)	2 (1%)	78	91
3	F	223/242 (92%)	222 (100%)	1 (0%)	91	97
3	I	223/242 (92%)	221 (99%)	2 (1%)	78	91
All	All	3724/3834 (97%)	3682 (99%)	42 (1%)	73	90

All (42) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	207	TRP
1	A	290	GLN
1	A	766	SER
1	A	947	ARG
2	B	760	LEU
2	B	896	VAL
2	B	897	ILE
2	B	991	SER
2	B	1033	LEU

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Mol	Chain	Res	Type
2	B	1036	TRP
2	B	1039	CYS
2	B	1041	GLU
3	C	231	TYR
3	C	257	LEU
1	D	383	LYS
1	D	766	SER
1	D	947	ARG
1	D	1036	MET
2	E	829	VAL
2	E	860	ILE
2	E	896	VAL
2	E	1035	HIS
2	E	1036	TRP
3	F	231	TYR
1	G	295	VAL
1	G	939	GLU
1	G	947	ARG
1	G	1120	MET
2	H	860	ILE
2	H	863	SER
2	H	896	VAL
2	H	897	ILE
2	H	898	THR
2	H	1025	LEU
2	H	1033	LEU
2	H	1035	HIS
2	H	1036	TRP
2	H	1037	GLN
2	H	1039	CYS
2	H	1041	GLU
3	I	142	VAL
3	I	231	TYR

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

Mol	Chain	Res	Type
1	A	189	HIS
1	A	859	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

3 non-standard protein/DNA/RNA residues 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	TPO	E	893	2	8,10,11	1.63	1 (12%)	10,14,16	1.32	2 (20%)
2	TPO	H	893	2	8,10,11	1.79	2 (25%)	10,14,16	1.00	0
2	TPO	B	893	2	8,10,11	1.59	1 (12%)	10,14,16	1.53	1 (10%)

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	TPO	E	893	2	-	4/9/11/13	-
2	TPO	H	893	2	-	4/9/11/13	-
2	TPO	B	893	2	-	1/9/11/13	-

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	893	TPO	P-O1P	3.40	1.61	1.50
2	H	893	TPO	P-O1P	3.38	1.61	1.50
2	B	893	TPO	P-O1P	3.36	1.61	1.50
2	H	893	TPO	CB-CA	2.57	1.59	1.53

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	893	TPO	P-OG1-CB	-4.19	110.56	123.21
2	E	893	TPO	P-OG1-CB	-2.71	115.04	123.21
2	E	893	TPO	CG2-CB-CA	-2.18	108.86	113.16

There are no chirality outliers.

All (9) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	E	893	TPO	N-CA-CB-CG2
2	E	893	TPO	N-CA-CB-OG1
2	E	893	TPO	C-CA-CB-CG2
2	E	893	TPO	CG2-CB-OG1-P
2	H	893	TPO	N-CA-CB-CG2
2	H	893	TPO	N-CA-CB-OG1
2	H	893	TPO	C-CA-CB-CG2
2	H	893	TPO	CG2-CB-OG1-P
2	B	893	TPO	O-C-CA-CB

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	E	893	TPO	1	0

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

18 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
4	GOL	A	1201	-	5,5,5	0.75	0	5,5,5	0.99	0
4	GOL	G	1201	-	5,5,5	0.81	0	5,5,5	1.08	0
4	GOL	H	1103	-	5,5,5	0.77	0	5,5,5	1.04	0
5	RQL	E	1101	-	28,34,38	0.84	0	27,49,55	1.61	4 (14%)
4	GOL	D	1201	-	5,5,5	0.70	0	5,5,5	0.91	0
4	GOL	A	1202	-	5,5,5	0.76	0	5,5,5	1.00	0
5	RQL	H	1101	-	28,34,38	0.86	0	27,49,55	1.32	4 (14%)
4	GOL	A	1203	-	5,5,5	0.75	0	5,5,5	1.09	0
4	GOL	D	1202	-	5,5,5	0.76	0	5,5,5	1.07	0
4	GOL	F	302	-	5,5,5	0.72	0	5,5,5	0.89	0
4	GOL	C	301	-	5,5,5	0.90	0	5,5,5	1.10	0
4	GOL	H	1102	-	5,5,5	0.51	0	5,5,5	0.58	0
4	GOL	F	301	-	5,5,5	0.73	0	5,5,5	0.95	0
4	GOL	I	302	-	5,5,5	0.78	0	5,5,5	1.02	0
4	GOL	C	302	-	5,5,5	0.81	0	5,5,5	1.11	0
5	RQL	B	1101	-	28,34,38	0.85	0	27,49,55	1.36	4 (14%)
4	GOL	D	1203	-	5,5,5	0.80	0	5,5,5	1.06	0
4	GOL	I	301	-	5,5,5	0.68	0	5,5,5	0.90	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
4	GOL	A	1201	-	-	0/4/4/4	-
4	GOL	G	1201	-	-	0/4/4/4	-
4	GOL	H	1103	-	-	2/4/4/4	-
5	RQL	E	1101	-	-	4/11/17/17	0/4/4/5
4	GOL	D	1201	-	-	0/4/4/4	-
4	GOL	A	1202	-	-	1/4/4/4	-
5	RQL	H	1101	-	-	3/11/17/17	0/4/4/5
4	GOL	A	1203	-	-	0/4/4/4	-
4	GOL	D	1202	-	-	0/4/4/4	-
4	GOL	F	302	-	-	0/4/4/4	-
4	GOL	C	301	-	-	0/4/4/4	-
4	GOL	H	1102	-	-	2/4/4/4	-
4	GOL	F	301	-	-	0/4/4/4	-
4	GOL	I	302	-	-	1/4/4/4	-
4	GOL	C	302	-	-	2/4/4/4	-
5	RQL	B	1101	-	-	4/11/17/17	0/4/4/5

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GOL	D	1203	-	-	0/4/4/4	-
4	GOL	I	301	-	-	0/4/4/4	-

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	E	1101	RQL	C12-C11-C14	5.64	120.81	111.72
5	B	1101	RQL	C12-C11-C14	3.57	117.47	111.72
5	E	1101	RQL	C16-C9-N3	-2.82	118.46	120.81
5	B	1101	RQL	C16-C9-N3	-2.78	118.50	120.81
5	H	1101	RQL	C2-C3-C6	-2.61	117.16	119.70
5	H	1101	RQL	C12-C11-C14	2.60	115.91	111.72
5	H	1101	RQL	C16-C9-N3	-2.57	118.67	120.81
5	E	1101	RQL	C2-C3-C6	-2.53	117.23	119.70
5	B	1101	RQL	C2-C3-C6	-2.53	117.23	119.70
5	E	1101	RQL	C10-N5-C15	-2.32	112.65	115.28
5	B	1101	RQL	C10-N5-C15	-2.21	112.77	115.28
5	H	1101	RQL	C10-N5-C15	-2.09	112.90	115.28

There are no chirality outliers.

All (19) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	C	302	GOL	O1-C1-C2-O2
4	C	302	GOL	O1-C1-C2-C3
5	B	1101	RQL	N3-C10-N4-C11
5	B	1101	RQL	N5-C10-N4-C11
5	B	1101	RQL	C14-C11-C12-C13
5	B	1101	RQL	N4-C11-C12-C13
5	E	1101	RQL	N3-C10-N4-C11
5	E	1101	RQL	N5-C10-N4-C11
5	E	1101	RQL	C14-C11-C12-C13
5	E	1101	RQL	N4-C11-C12-C13
5	H	1101	RQL	N3-C10-N4-C11
5	H	1101	RQL	N5-C10-N4-C11
4	H	1102	GOL	O1-C1-C2-C3
4	H	1103	GOL	O1-C1-C2-C3
4	H	1103	GOL	O1-C1-C2-O2
4	H	1102	GOL	O1-C1-C2-O2
5	H	1101	RQL	N4-C11-C12-C13

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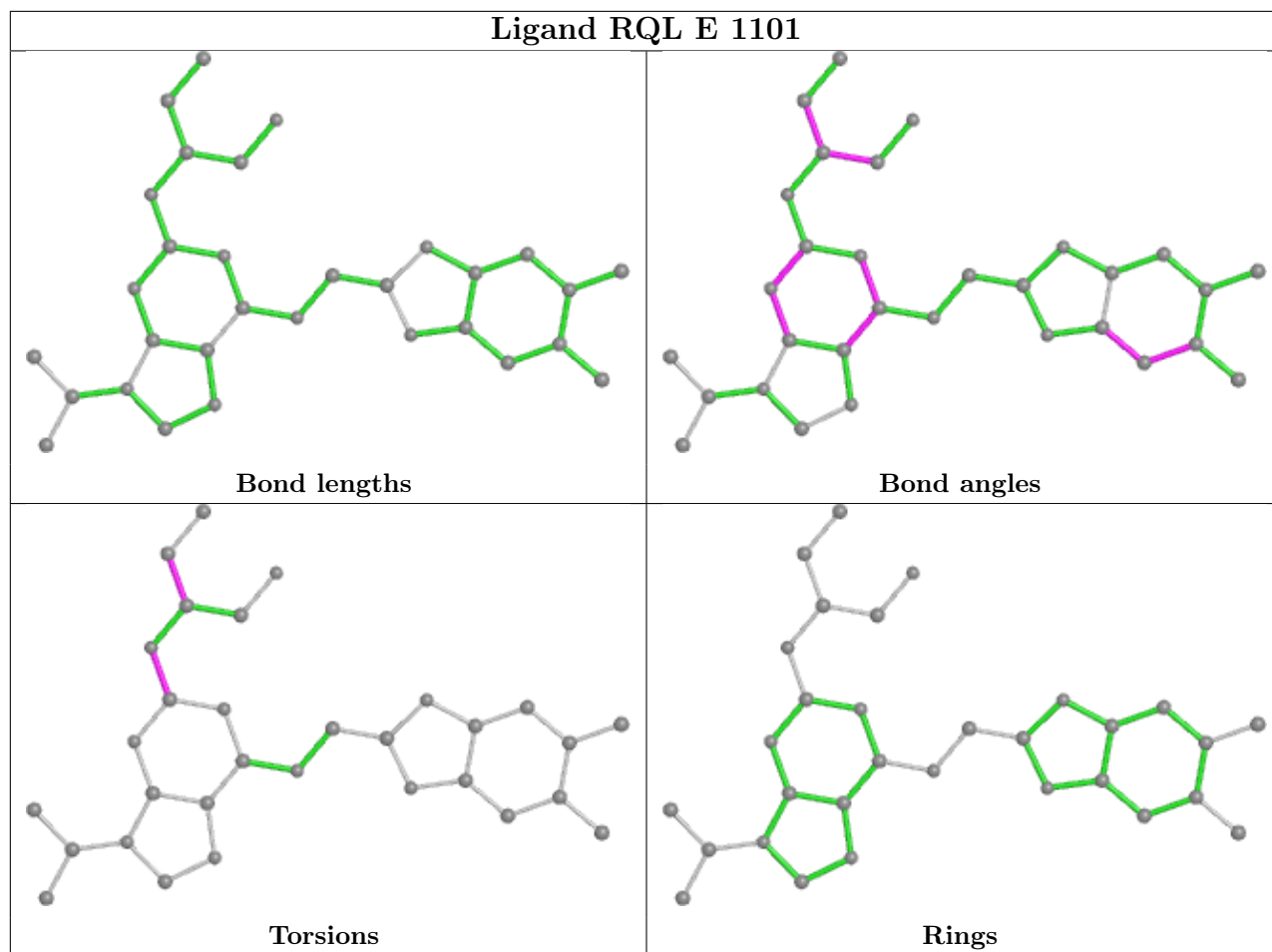
Mol	Chain	Res	Type	Atoms
4	A	1202	GOL	O2-C2-C3-O3
4	I	302	GOL	O1-C1-C2-C3

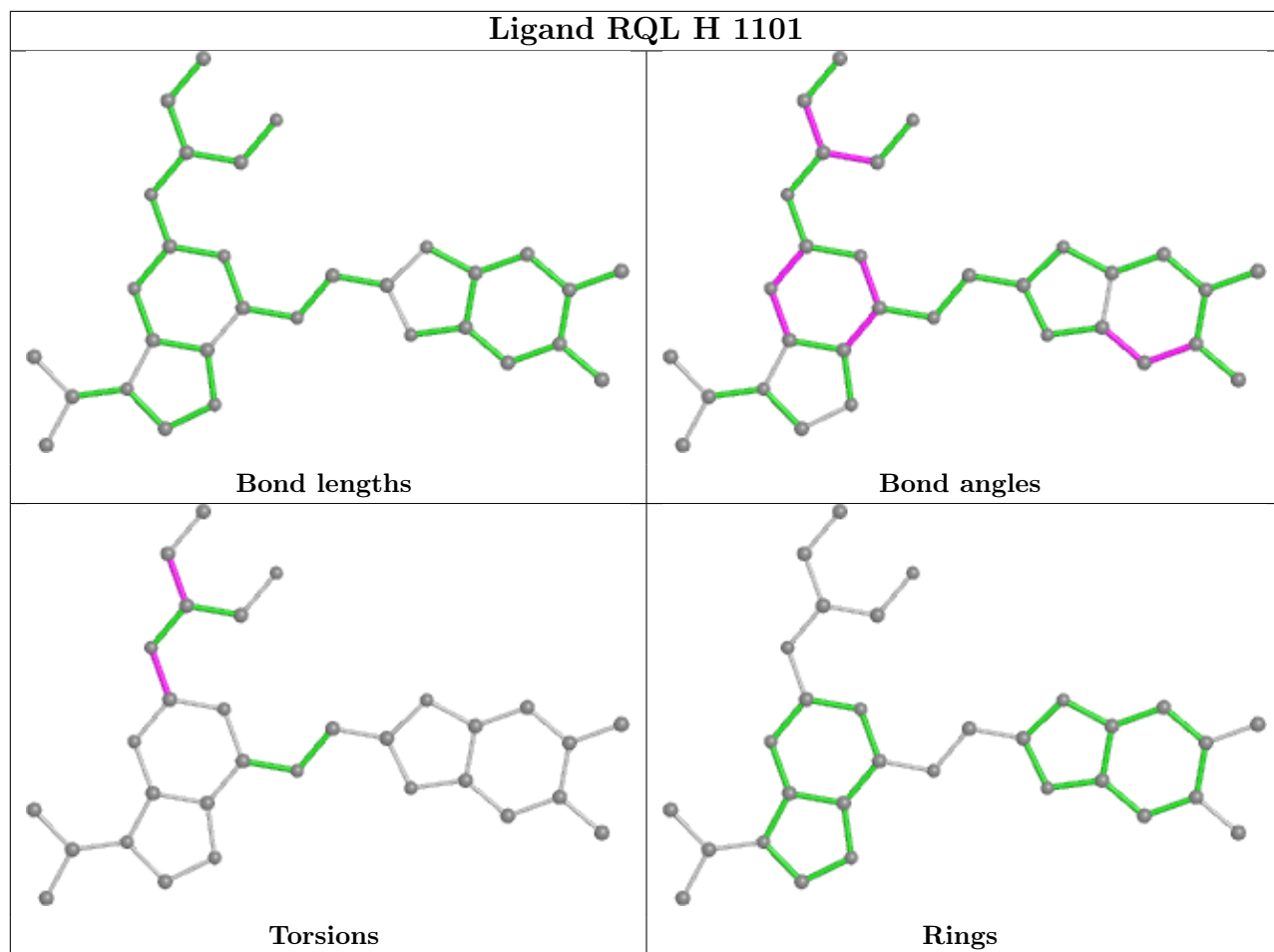
There are no ring outliers.

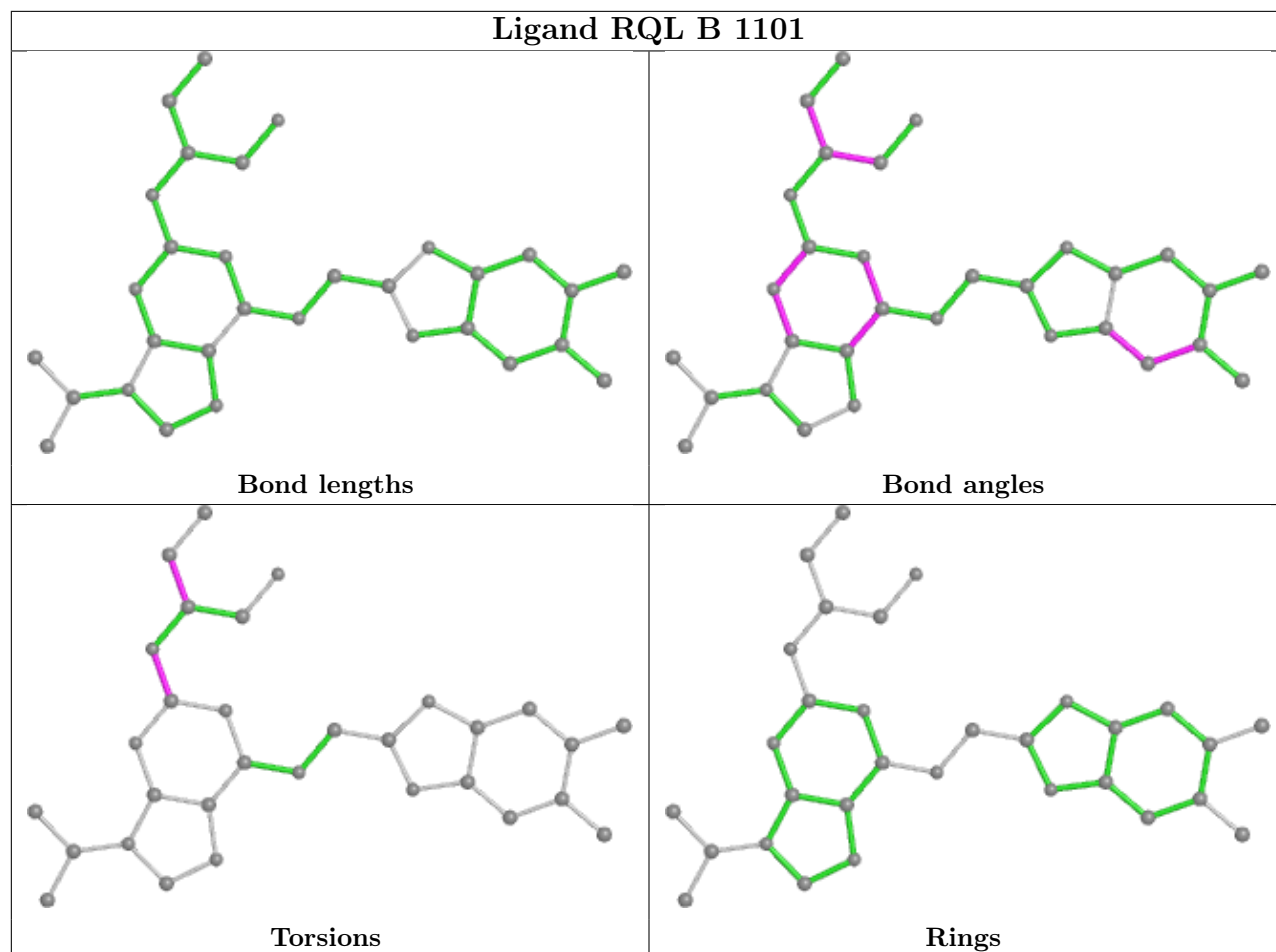
1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	H	1102	GOL	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, 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	826/840 (98%)	0.86	74 (8%) 9 5	69, 99, 175, 319	0
1	D	827/840 (98%)	0.82	93 (11%) 5 3	68, 102, 169, 260	0
1	G	826/840 (98%)	0.83	96 (11%) 4 2	70, 102, 171, 233	0
2	B	329/344 (95%)	1.18	62 (18%) 1 0	77, 101, 169, 253	0
2	E	329/344 (95%)	1.08	43 (13%) 3 1	75, 99, 173, 204	0
2	H	329/344 (95%)	1.09	40 (12%) 4 2	61, 81, 165, 205	0
3	C	248/271 (91%)	0.77	10 (4%) 38 23	74, 91, 130, 185	0
3	F	248/271 (91%)	0.85	11 (4%) 34 20	62, 79, 116, 186	0
3	I	248/271 (91%)	0.86	14 (5%) 24 13	64, 82, 122, 189	0
All	All	4210/4365 (96%)	0.90	443 (10%) 6 3	61, 96, 168, 319	0

All (443) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	E	1043	TRP	11.8
2	H	1043	TRP	10.0
2	B	1044	SER	9.6
2	B	1043	TRP	9.3
2	B	800	LEU	9.3
2	B	798	ASP	8.7
2	E	1041	GLU	8.6
1	A	1118	SER	7.6
2	H	1044	SER	7.1
2	E	1044	SER	7.1
2	H	1039	CYS	6.7
2	B	1034	PRO	6.6
1	A	1016	ASN	6.5
1	D	1117	GLY	5.7
2	H	1036	TRP	5.5

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Mol	Chain	Res	Type	RSRZ
2	B	896	VAL	5.4
2	B	802	PHE	5.4
2	H	1041	GLU	5.2
1	A	1018	GLY	5.1
2	H	1034	PRO	5.0
2	H	1038	ASP	5.0
1	D	1115	ASP	5.0
1	A	1114	TYR	4.8
3	I	267	HIS	4.8
2	E	1036	TRP	4.7
2	B	799	ALA	4.6
2	B	1039	CYS	4.6
2	H	798	ASP	4.4
2	H	801	ASP	4.4
2	B	828	LEU	4.2
2	E	1040	HIS	4.2
1	G	49	LEU	4.2
1	G	1129	LEU	4.1
1	A	1097	PHE	4.1
1	D	1116	ASP	4.1
2	B	876	ALA	4.0
2	E	896	VAL	4.0
1	G	1097	PHE	3.8
1	D	39	LEU	3.8
2	B	839	PHE	3.7
1	A	195	VAL	3.7
1	G	327	ARG	3.7
2	H	803	LYS	3.7
2	B	887	GLU	3.7
1	D	91	TYR	3.6
1	A	1019	GLU	3.6
2	E	802	PHE	3.6
1	D	281	PHE	3.6
1	A	143	ILE	3.6
2	E	800	LEU	3.6
2	B	1041	GLU	3.6
1	G	1136	LEU	3.5
1	G	394	ILE	3.4
2	B	804	LYS	3.4
3	I	260	GLN	3.4
1	A	226	PHE	3.4
1	G	61	ILE	3.4

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Mol	Chain	Res	Type	RSRZ
2	H	802	PHE	3.4
1	A	61	ILE	3.4
1	G	232	ILE	3.3
2	E	890	ARG	3.3
1	D	78	PHE	3.3
1	A	367	LEU	3.3
2	B	884	TYR	3.3
2	B	803	LYS	3.3
2	B	1036	TRP	3.3
1	D	195	VAL	3.3
1	G	336	LEU	3.3
1	A	23	PHE	3.2
2	H	1033	LEU	3.2
3	F	262	LYS	3.2
2	H	828	LEU	3.2
1	G	300	LEU	3.2
2	B	797	GLN	3.2
1	A	708	GLN	3.1
1	D	1129	LEU	3.1
1	A	752	LEU	3.1
1	G	34	ALA	3.1
1	G	289	GLU	3.1
2	E	760	LEU	3.1
2	B	890	ARG	3.1
1	D	179	CYS	3.1
1	D	376	VAL	3.1
1	A	812	TYR	3.1
1	G	374	GLN	3.1
1	D	761	LEU	3.1
1	G	328	LEU	3.1
2	E	839	PHE	3.1
1	G	106	GLY	3.1
1	G	131	ILE	3.1
1	D	159	LEU	3.0
1	G	1039	LEU	3.0
3	F	267	HIS	3.0
1	G	1118	SER	3.0
1	A	297	LEU	3.0
2	B	899	LEU	3.0
2	E	867	LEU	3.0
1	D	253	ILE	3.0
1	D	37	THR	3.0

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Mol	Chain	Res	Type	RSRZ
1	A	1021	SER	3.0
2	H	1035	HIS	3.0
1	A	135	LEU	2.9
1	A	1020	THR	2.9
2	B	1040	HIS	2.9
1	D	49	LEU	2.9
1	G	858	LEU	2.9
3	F	264	GLN	2.9
1	G	310	ILE	2.9
2	B	878	PHE	2.9
1	A	39	LEU	2.9
1	A	933	LEU	2.9
2	E	1042	LEU	2.9
1	A	387	LEU	2.9
1	D	1065	VAL	2.9
1	A	76	LEU	2.9
1	G	1016	ASN	2.9
2	E	758	VAL	2.9
1	A	372	GLN	2.9
1	G	133	LEU	2.9
1	D	1076	PHE	2.8
2	H	890	ARG	2.8
1	A	140	PHE	2.8
1	G	387	LEU	2.8
2	B	867	LEU	2.8
2	H	820	LEU	2.8
1	D	369	ARG	2.8
1	A	89	LEU	2.8
1	G	1017	LEU	2.8
1	A	131	ILE	2.8
2	H	826	SER	2.8
2	H	873	ILE	2.8
1	A	289	GLU	2.8
1	D	246	LEU	2.8
2	H	1040	HIS	2.8
1	A	977	CYS	2.8
3	C	164	LEU	2.8
1	G	1088	PHE	2.7
1	D	387	LEU	2.7
1	G	91	TYR	2.7
1	D	100	ILE	2.7
1	G	280	LEU	2.7

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Mol	Chain	Res	Type	RSRZ
1	G	302	VAL	2.7
2	H	829	VAL	2.7
2	H	867	LEU	2.7
1	A	1119	GLY	2.7
1	D	998	PHE	2.7
1	G	390	ILE	2.7
1	G	375	LEU	2.7
1	A	9	ALA	2.7
2	E	831	PHE	2.7
2	B	720	GLY	2.7
2	B	855	PHE	2.7
1	D	285	LEU	2.7
2	E	913	TYR	2.6
1	D	1000	LEU	2.6
1	D	1004	VAL	2.6
1	G	344	GLY	2.6
1	G	253	ILE	2.6
2	E	873	ILE	2.6
2	H	733	ILE	2.6
2	B	1033	LEU	2.6
1	G	1054	MET	2.6
1	D	1048	TYR	2.6
2	E	892	TYR	2.6
1	D	273	LEU	2.6
2	B	719	TRP	2.6
1	A	34	ALA	2.6
1	D	140	PHE	2.6
2	E	855	PHE	2.6
1	D	131	ILE	2.6
1	D	336	LEU	2.6
2	E	875	LEU	2.6
1	D	178	ILE	2.6
2	B	811	LEU	2.6
1	A	1116	ASP	2.6
1	A	49	LEU	2.5
1	D	333	LEU	2.5
1	G	295	VAL	2.5
1	G	2	SER	2.5
1	A	77	LEU	2.5
1	D	992	LEU	2.5
1	A	957	VAL	2.5
1	D	5	TYR	2.5

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Mol	Chain	Res	Type	RSRZ
1	D	390	ILE	2.5
1	A	145	LEU	2.5
1	D	272	LEU	2.5
1	G	775	THR	2.5
1	G	1094	ILE	2.5
2	B	883	LEU	2.5
1	D	1068	ILE	2.5
1	D	297	LEU	2.5
1	A	133	LEU	2.5
1	A	1112	LEU	2.5
1	G	276	MET	2.5
1	A	1012	LEU	2.5
1	D	33	ILE	2.5
1	G	1012	LEU	2.5
2	H	1025	LEU	2.5
1	G	140	PHE	2.5
1	A	232	ILE	2.5
1	A	336	LEU	2.5
1	G	237	ILE	2.5
1	D	202	PHE	2.4
2	B	829	VAL	2.4
2	B	986	PHE	2.4
2	E	828	LEU	2.4
1	A	1030	PHE	2.4
1	G	52	VAL	2.4
1	G	195	VAL	2.4
1	A	1024	THR	2.4
1	A	1029	LEU	2.4
1	D	1039	LEU	2.4
2	B	875	LEU	2.4
1	D	367	LEU	2.4
2	B	926	LEU	2.4
2	E	935	ILE	2.4
2	B	904	PRO	2.4
1	A	949	PHE	2.4
3	I	140	VAL	2.4
1	G	277	GLU	2.4
2	B	932	LYS	2.4
1	A	858	LEU	2.4
1	D	61	ILE	2.4
1	G	1029	LEU	2.4
2	B	940	LEU	2.4

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Mol	Chain	Res	Type	RSRZ
1	D	158	ARG	2.4
2	E	1039	CYS	2.4
2	B	997	LEU	2.4
1	D	951	PRO	2.4
2	B	809	PHE	2.4
1	D	143	ILE	2.4
2	B	866	LEU	2.4
2	E	908	LEU	2.4
2	H	755	LEU	2.4
1	D	721	PRO	2.4
1	G	6	VAL	2.4
3	C	132	PHE	2.4
2	B	742	TYR	2.4
2	H	955	PRO	2.4
1	G	909	ILE	2.4
1	G	966	LEU	2.4
1	G	974	LEU	2.4
2	E	733	ILE	2.4
2	E	824	LEU	2.4
3	F	164	LEU	2.4
2	E	882	ARG	2.4
2	H	899	LEU	2.4
2	B	930	PHE	2.3
2	H	919	VAL	2.3
1	D	834	ALA	2.3
2	B	733	ILE	2.3
2	E	906	LEU	2.3
3	C	100	LEU	2.3
1	G	930	VAL	2.3
1	D	327	ARG	2.3
1	G	931	LEU	2.3
2	B	772	ILE	2.3
2	B	824	LEU	2.3
2	H	964	ILE	2.3
1	A	1088	PHE	2.3
3	C	262	LYS	2.3
1	G	41	ILE	2.3
2	H	887	GLU	2.3
1	D	237	ILE	2.3
1	D	710	LEU	2.3
1	G	139	LEU	2.3
3	I	116	ILE	2.3

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Mol	Chain	Res	Type	RSRZ
1	D	226	PHE	2.3
1	A	1017	LEU	2.3
1	D	1136	LEU	2.3
1	G	230	ILE	2.3
2	B	781	LEU	2.3
2	E	866	LEU	2.3
2	H	760	LEU	2.3
2	H	875	LEU	2.3
2	E	878	PHE	2.3
1	G	1037	ILE	2.3
1	G	1112	LEU	2.3
1	G	226	PHE	2.3
3	C	153	PHE	2.3
3	I	263	GLN	2.3
1	A	91	TYR	2.3
1	A	317	LEU	2.3
1	G	367	LEU	2.3
1	G	997	LEU	2.3
1	D	310	ILE	2.3
1	G	1048	TYR	2.3
2	H	742	TYR	2.3
1	D	1033	VAL	2.3
3	F	157	VAL	2.3
1	G	198	ARG	2.3
1	G	816	LEU	2.3
3	F	143	LEU	2.3
2	E	784	ARG	2.2
1	A	57	MET	2.2
1	A	80	LEU	2.2
1	A	381	ALA	2.2
1	G	1043	LEU	2.2
2	E	719	TRP	2.2
1	D	135	LEU	2.2
1	G	356	LEU	2.2
1	G	932	LEU	2.2
3	F	76	ILE	2.2
2	B	1035	HIS	2.2
2	H	1042	LEU	2.2
2	B	775	ILE	2.2
3	C	222	ILE	2.2
1	G	58	TYR	2.2
2	B	913	TYR	2.2

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Mol	Chain	Res	Type	RSRZ
3	I	262	LYS	2.2
1	D	197	LEU	2.2
2	B	767	PHE	2.2
2	E	727	PHE	2.2
1	A	7	VAL	2.2
1	D	1040	VAL	2.2
1	D	802	LEU	2.2
1	D	987	GLU	2.2
1	D	230	ILE	2.2
1	D	232	ILE	2.2
1	D	848	ILE	2.2
1	D	1003	PHE	2.2
1	G	121	ILE	2.2
2	H	804	LYS	2.2
1	A	1000	LEU	2.2
1	G	246	LEU	2.2
3	I	193	LEU	2.2
1	D	133	LEU	2.2
1	D	300	LEU	2.2
1	A	82	ALA	2.2
1	A	715	VAL	2.2
1	A	1031	GLY	2.2
1	D	32	LEU	2.2
1	G	272	LEU	2.2
1	G	752	LEU	2.2
1	G	799	PHE	2.2
2	B	951	LEU	2.2
2	E	1025	LEU	2.2
1	G	1015	GLN	2.2
2	B	873	ILE	2.2
3	F	263	GLN	2.2
3	I	222	ILE	2.2
3	I	266	PRO	2.2
1	A	871	TYR	2.2
3	C	239	VAL	2.2
1	D	1031	GLY	2.1
1	D	931	LEU	2.1
1	G	39	LEU	2.1
2	B	738	TYR	2.1
1	D	1012	LEU	2.1
2	B	823	LEU	2.1
1	D	375	LEU	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	1037	ILE	2.1
3	C	156	GLN	2.1
1	D	207	TRP	2.1
1	G	927	MET	2.1
1	A	300	LEU	2.1
1	D	58	TYR	2.1
1	D	974	LEU	2.1
1	G	1051	LEU	2.1
2	B	813	PHE	2.1
3	I	64	LEU	2.1
3	I	143	LEU	2.1
1	G	157	ILE	2.1
1	G	945	ILE	2.1
2	H	769	ILE	2.1
2	H	903	PRO	2.1
1	G	197	LEU	2.1
2	B	820	LEU	2.1
1	D	252	ILE	2.1
1	G	112	ILE	2.1
2	B	792	ILE	2.1
2	B	989	ILE	2.1
2	E	948	ILE	2.1
1	G	1132	VAL	2.1
1	D	89	LEU	2.1
3	I	148	LEU	2.1
1	A	100	ILE	2.1
1	D	124	ILE	2.1
1	D	959	ILE	2.1
1	G	79	ILE	2.1
1	G	120	ILE	2.1
1	A	1132	VAL	2.1
1	D	843	PRO	2.1
1	G	951	PRO	2.1
2	E	919	VAL	2.1
1	A	304	LEU	2.1
1	D	31	LEU	2.1
2	B	831	PHE	2.1
1	A	956	ALA	2.1
1	A	15	VAL	2.1
1	A	36	ASN	2.1
2	E	885	ASN	2.1
1	D	1052	LEU	2.1

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Mol	Chain	Res	Type	RSRZ
3	I	199	LEU	2.1
2	E	897	ILE	2.1
3	F	254	ILE	2.1
1	G	1119	GLY	2.1
1	A	365	VAL	2.1
1	D	1028	VAL	2.1
2	E	932	LYS	2.1
2	B	856	LEU	2.0
2	E	823	LEU	2.0
2	B	858	ARG	2.0
2	E	887	GLU	2.0
2	H	758	VAL	2.0
1	A	78	PHE	2.0
1	D	23	PHE	2.0
1	G	281	PHE	2.0
1	D	101	ILE	2.0
1	A	1061	VAL	2.0
1	G	15	VAL	2.0
1	G	321	VAL	2.0
1	D	821	LEU	2.0
1	D	1051	LEU	2.0
1	G	273	LEU	2.0
1	G	733	PHE	2.0
3	C	148	LEU	2.0
1	A	369	ARG	2.0
1	D	1080	ARG	2.0
1	A	921	ILE	2.0
1	G	1117	GLY	2.0
2	E	989	ILE	2.0
1	A	1040	VAL	2.0
1	D	1054	MET	2.0
1	G	870	VAL	2.0
1	G	1004	VAL	2.0
3	F	238	PHE	2.0
1	G	32	LEU	2.0
1	G	333	LEU	2.0
1	G	792	LEU	2.0
2	E	899	LEU	2.0
2	H	824	LEU	2.0
2	H	866	LEU	2.0
1	D	1037	ILE	2.0
2	B	897	ILE	2.0

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Mol	Chain	Res	Type	RSRZ
3	C	206	ILE	2.0
2	H	771	ALA	2.0
3	I	186	TRP	2.0
1	D	7	VAL	2.0
1	G	1120	MET	2.0
1	D	708	GLN	2.0
1	D	922	LEU	2.0
3	F	257	LEU	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [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
2	TPO	E	893	11/12	0.73	0.26	153,172,207,215	6
2	TPO	H	893	11/12	0.84	0.26	99,122,147,149	5
2	TPO	B	893	11/12	0.86	0.20	148,167,200,202	6

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, 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.

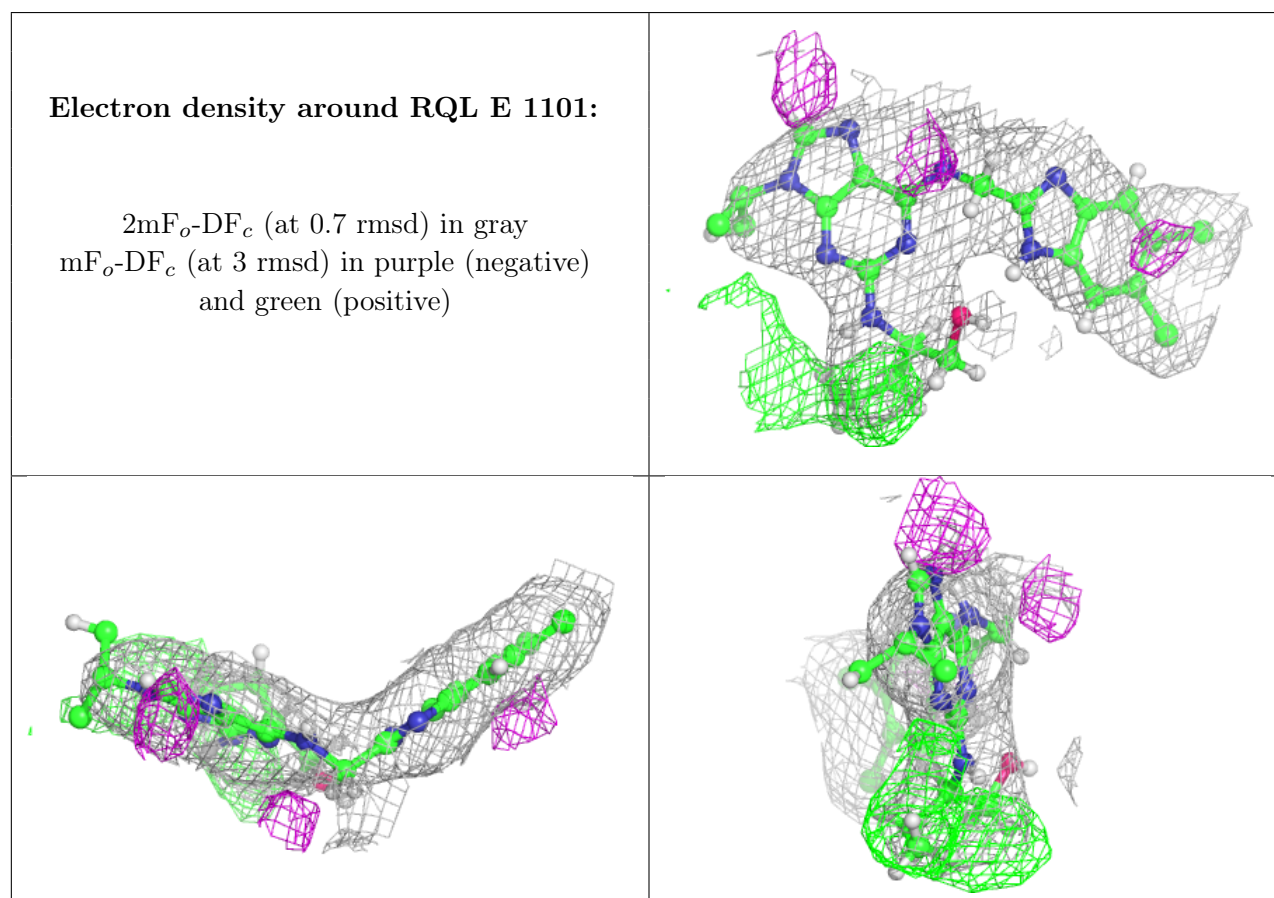
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
4	GOL	H	1102	6/6	0.35	0.53	90,113,127,136	8
4	GOL	I	302	6/6	0.55	0.48	96,116,124,126	8
4	GOL	H	1103	6/6	0.70	0.54	89,108,136,136	8
4	GOL	A	1201	6/6	0.72	0.21	108,130,136,140	8
4	GOL	G	1201	6/6	0.73	0.27	99,119,135,136	8
4	GOL	C	302	6/6	0.76	0.41	87,105,122,122	8
4	GOL	D	1201	6/6	0.76	0.23	106,128,143,149	8

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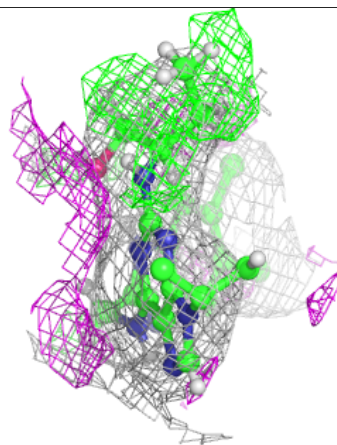
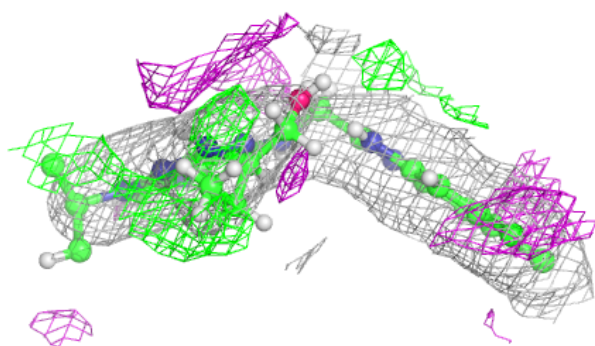
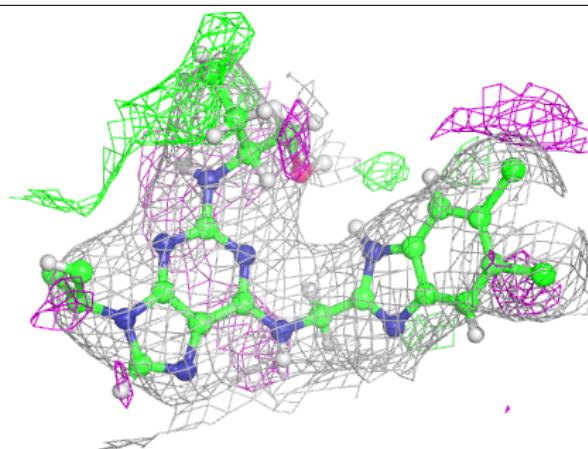
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
4	GOL	C	301	6/6	0.84	0.22	96,116,130,130	8
4	GOL	F	302	6/6	0.84	0.55	101,121,146,146	8
4	GOL	D	1202	6/6	0.86	0.59	91,109,119,130	8
4	GOL	I	301	6/6	0.88	0.16	85,103,117,122	8
4	GOL	A	1202	6/6	0.88	0.48	88,111,117,135	8
4	GOL	F	301	6/6	0.90	0.16	92,111,121,124	8
4	GOL	A	1203	6/6	0.91	0.25	82,99,116,121	8
4	GOL	D	1203	6/6	0.93	0.21	89,107,116,120	8
5	RQL	E	1101	31/34	0.93	0.32	79,91,114,119	18
5	RQL	H	1101	31/34	0.94	0.30	69,83,103,104	18
5	RQL	B	1101	31/34	0.95	0.27	72,87,105,114	18

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.

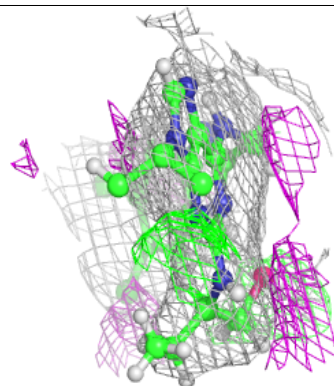
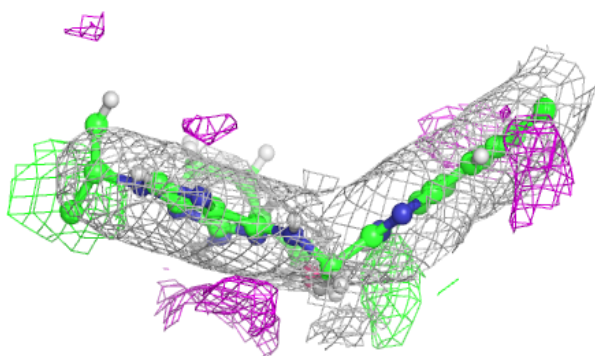
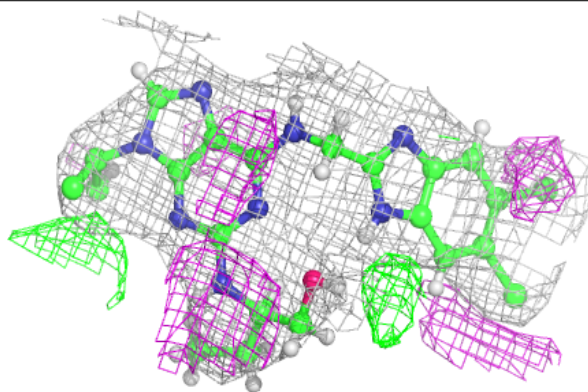


Electron density around RQL H 1101:

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

**Electron density around RQL B 1101:**

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



6.5 Other polymers [i](#)

There are no such residues in this entry.