



Full wwPDB X-ray Structure Validation Report ⓘ

Sep 7, 2023 – 01:48 pm BST

PDB ID : 8BUE
Title : Structure of DDB1 bound to Z11-engaged CDK12-cyclin K
Authors : Kozicka, Z.; Kempf, G.; Petzold, G.; Thoma, N.H.
Deposited on : 2022-11-30
Resolution : 3.25 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

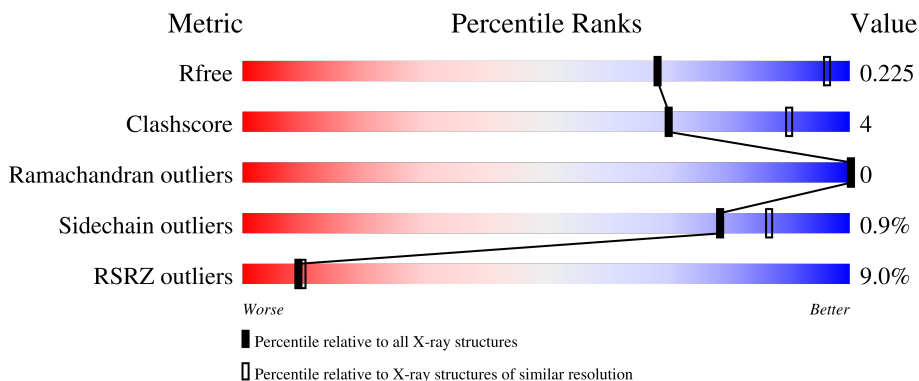
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.25 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	1191 (3.30-3.22)
Clashscore	141614	1251 (3.30-3.22)
Ramachandran outliers	138981	1229 (3.30-3.22)
Sidechain outliers	138945	1228 (3.30-3.22)
RSRZ outliers	127900	1154 (3.30-3.22)

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	 10% 87% 11%
1	D	840	 8% 88% 11%
1	G	840	 9% 87% 11%
2	B	344	 15% 83% 12%
2	E	344	 8% 83% 11% 6%

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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	SO4	F	301	-	-	-	X

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 67598 atoms, of which 33625 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	12937	4105	6450	1094	1252	36	6450	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	329	Total	C	H	N	O	P	S	2697	0	0
			5384	1723	2697	454	492	1	17			
2	E	325	Total	C	H	N	O	P	S	2663	0	0
			5309	1695	2663	447	486	1	17			
2	H	329	Total	C	H	N	O	P	S	2697	0	0
			5384	1723	2697	454	492	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 SULFATE ION (three-letter code: SO4) (formula: O₄S).



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

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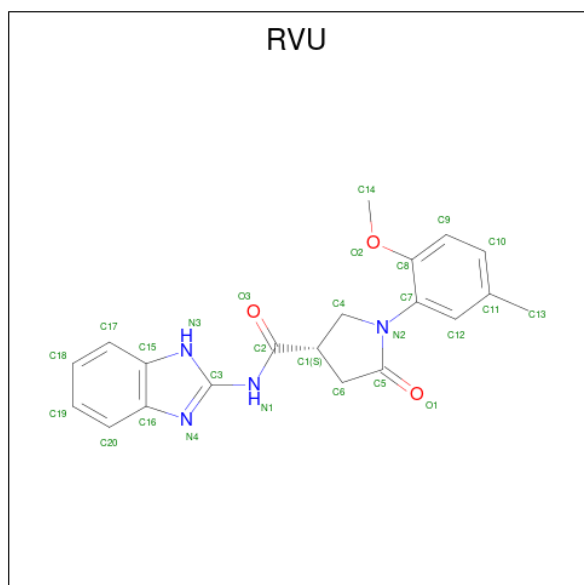
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	O	S		
4	D	1	5	4	1	0	0
4	D	1	5	4	1	0	0
4	D	1	5	4	1	0	0
4	D	1	5	4	1	0	0
4	D	1	5	4	1	0	0
4	D	1	5	4	1	0	0
4	D	1	5	4	1	0	0
4	D	1	5	4	1	0	0
4	D	1	5	4	1	0	0
4	E	1	5	4	1	0	0
4	E	1	5	4	1	0	0
4	F	1	5	4	1	0	0
4	F	1	5	4	1	0	0
4	F	1	5	4	1	0	0
4	F	1	5	4	1	0	0
4	G	1	5	4	1	0	0
4	G	1	5	4	1	0	0
4	G	1	5	4	1	0	0
4	G	1	5	4	1	0	0
4	G	1	5	4	1	0	0
4	G	1	5	4	1	0	0
4	G	1	5	4	1	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	G	1	Total	O	S	0	0
			5	4	1		
4	H	1	Total	O	S	0	0
			5	4	1		
4	H	1	Total	O	S	0	0
			5	4	1		
4	H	1	Total	O	S	0	0
			5	4	1		
4	H	1	Total	O	S	0	0
			5	4	1		
4	I	1	Total	O	S	0	0
			5	4	1		
4	I	1	Total	O	S	0	0
			5	4	1		
4	I	1	Total	O	S	0	0
			5	4	1		

- Molecule 5 is {N}-(1 {H}-benzimidazol-2-yl)-1-(2-methoxy-5-methyl-phenyl)-5-oxidanylide ne-pyrrolidine-3-carboxamide (three-letter code: RVU) (formula: C₂₀H₂₀N₄O₃) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
5	B	1	Total	C	H	N	O	20	0
			47	20	20	4	3		
5	E	1	Total	C	H	N	O	20	0
			47	20	20	4	3		

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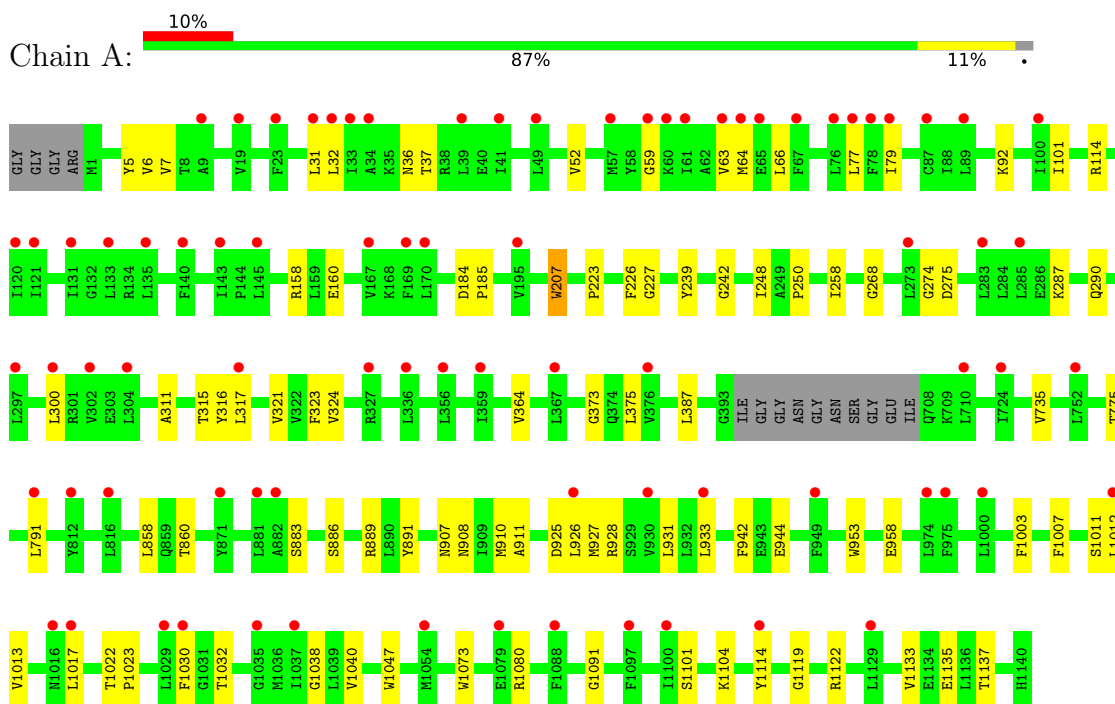
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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	H	N	O		
5	H	1	47	20	20	4	3	20	0

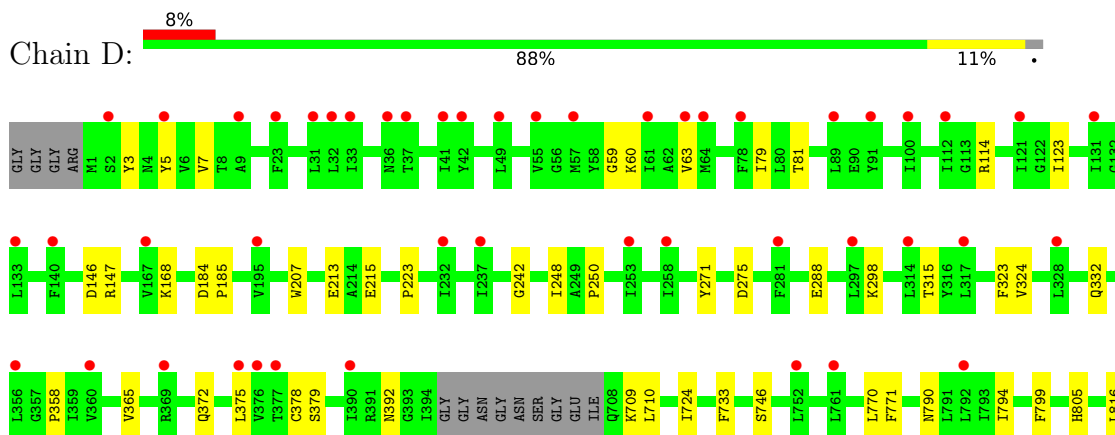
3 Residue-property plots [i](#)

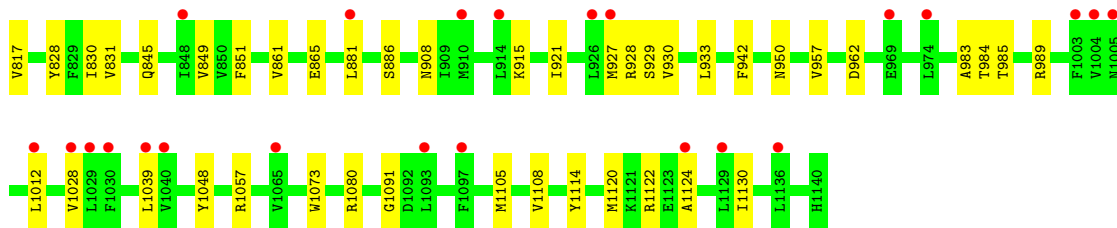
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: DNA damage-binding protein 1

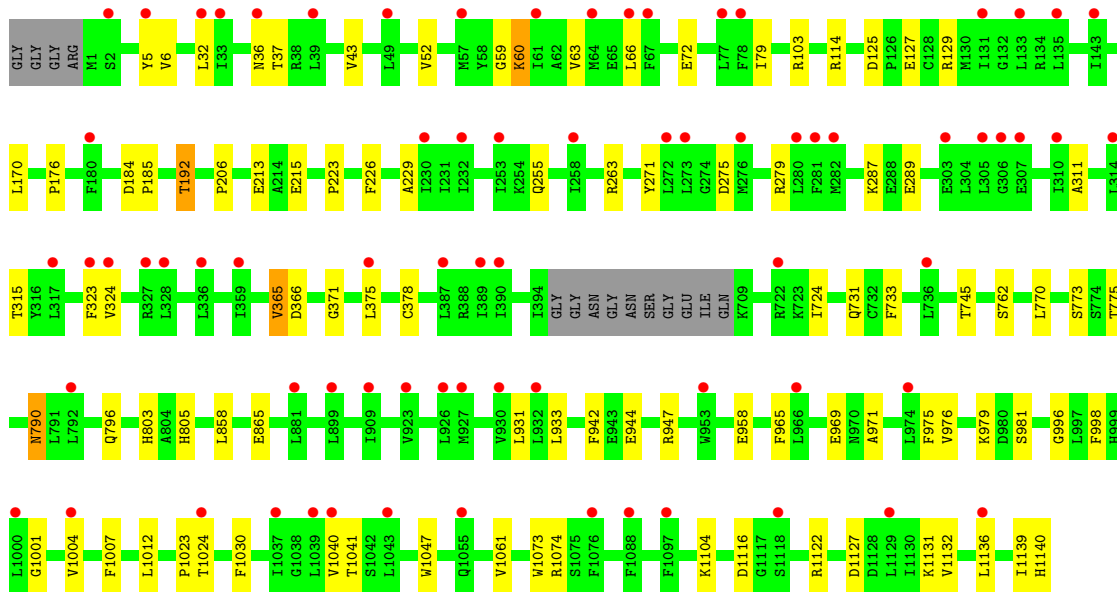
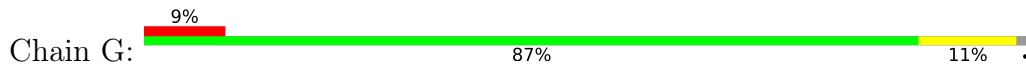


- Molecule 1: DNA damage-binding protein 1

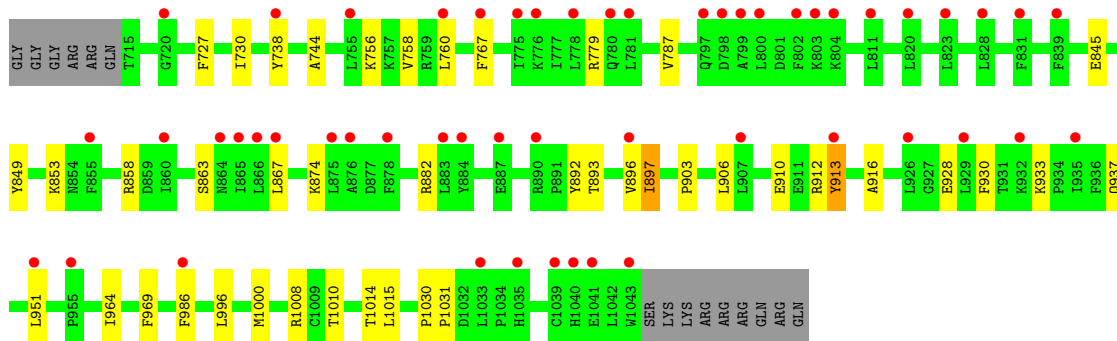
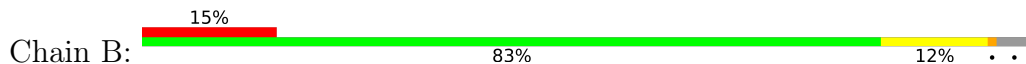




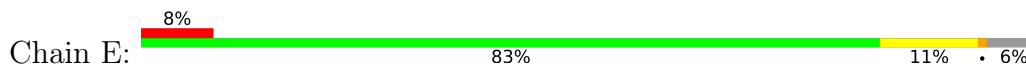
• Molecule 1: DNA damage-binding protein 1

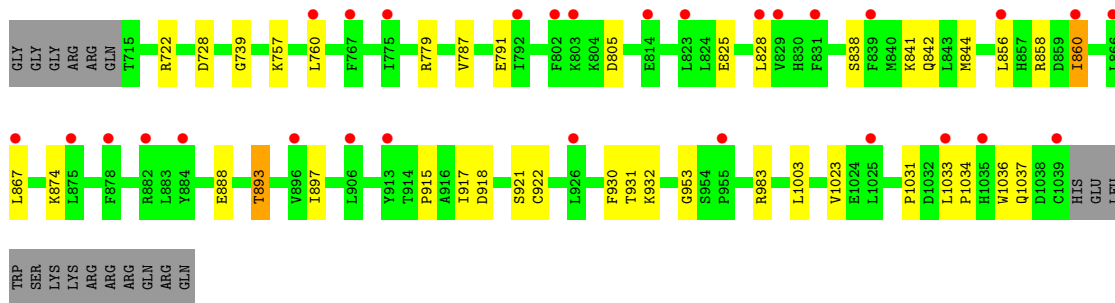


• Molecule 2: Cyclin-dependent kinase 12

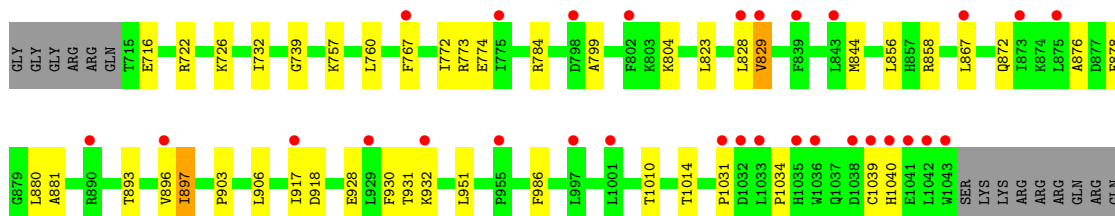
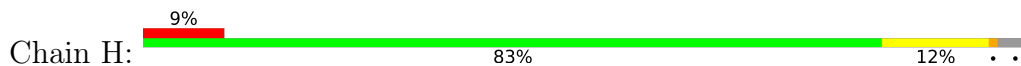


• Molecule 2: Cyclin-dependent kinase 12

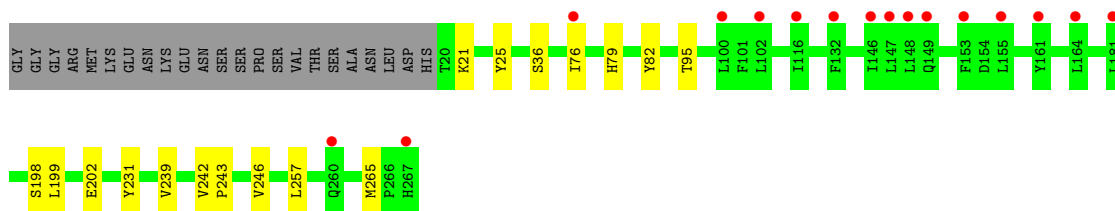
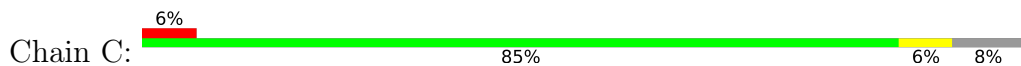




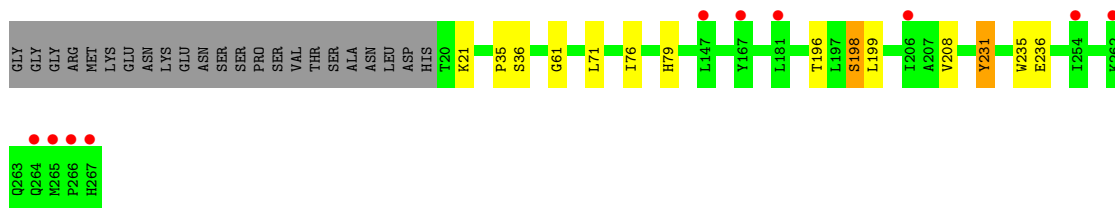
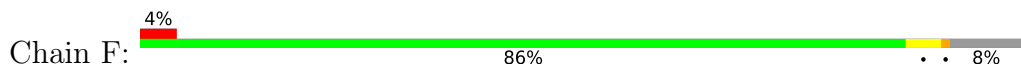
• Molecule 2: Cyclin-dependent kinase 12



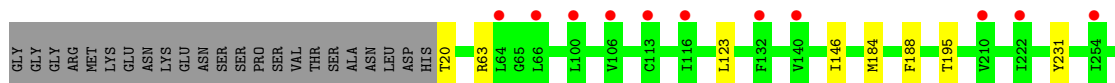
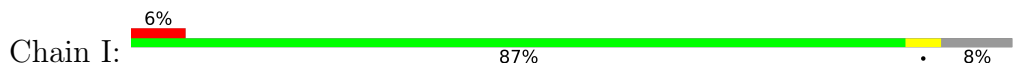
• Molecule 3: Cyclin-K

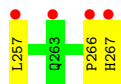


• Molecule 3: Cyclin-K



• 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	249.33Å 249.33Å 218.68Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	60.41 – 3.25 215.93 – 3.25	Depositor EDS
% Data completeness (in resolution range)	79.3 (60.41-3.25) 79.3 (215.93-3.25)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.51 (at 3.26Å)	Xtrriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.184 , 0.213 0.202 , 0.225	Depositor DCC
R_{free} test set	4845 reflections (4.94%)	wwPDB-VP
Wilson B-factor (Å ²)	134.4	Xtrriage
Anisotropy	0.020	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 92.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.28$	Xtrriage
Estimated twinning fraction	0.035 for -h,-k,l	Xtrriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	67598	wwPDB-VP
Average B, all atoms (Å ²)	156.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.60% 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: RVU, SO4, TPO

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	0/6604	0.61	0/8931
1	D	0.34	0/6612	0.60	0/8942
1	G	0.36	0/6603	0.60	0/8930
2	B	0.36	0/2737	0.60	0/3691
2	E	0.35	0/2693	0.61	0/3630
2	H	0.36	0/2737	0.62	1/3691 (0.0%)
3	C	0.36	0/2120	0.53	0/2868
3	F	0.37	0/2120	0.58	0/2868
3	I	0.35	0/2120	0.56	0/2868
All	All	0.35	0/34346	0.60	1/46419 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
2	H	876	ALA	N-CA-C	5.43	125.65	111.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	6487	6450	6451	52	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	6495	6462	6464	49	0
1	G	6486	6452	6454	56	0
2	B	2687	2697	2697	26	0
2	E	2646	2663	2663	25	0
2	H	2687	2697	2697	27	0
3	C	2063	2048	2048	8	0
3	F	2063	2048	2048	7	0
3	I	2063	2048	2048	6	0
4	A	35	0	0	1	0
4	B	10	0	0	0	0
4	C	15	0	0	0	0
4	D	50	0	0	0	0
4	E	10	0	0	1	0
4	F	20	0	0	0	0
4	G	40	0	0	0	0
4	H	20	0	0	0	0
4	I	15	0	0	0	0
5	B	27	20	0	0	0
5	E	27	20	0	1	0
5	H	27	20	0	0	0
All	All	33973	33625	33570	244	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 (244) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:231:TYR:OH	3:F:236:GLU:OE1	1.95	0.85
1:A:1022:THR:HB	1:A:1023:PRO:HD2	1.75	0.69
1:G:1047:TRP:HZ3	1:G:1132:VAL:HG13	1.61	0.64
2:E:867:LEU:HD21	2:E:1031:PRO:HG3	1.78	0.64
2:H:828:LEU:O	2:H:1034:PRO:HD2	1.98	0.63
1:G:311:ALA:HB2	1:G:324:VAL:HG13	1.83	0.60
1:A:31:LEU:HD22	1:A:317:LEU:HD21	1.83	0.60
1:D:816:LEU:HD13	1:D:831:VAL:HG22	1.82	0.60
1:G:114:ARG:HD3	2:H:930:PHE:O	2.03	0.59
2:H:896:VAL:HG13	2:H:897:ILE:HG12	1.84	0.59
1:G:770:LEU:HD21	1:G:865:GLU:HB2	1.84	0.58
3:F:79:HIS:HB3	3:F:199:LEU:HD11	1.85	0.58
1:A:775:THR:HG22	1:A:775:THR:O	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:773:SER:C	1:G:775:THR:H	2.07	0.58
1:G:43:VAL:HG23	1:G:52:VAL:HG21	1.84	0.57
1:A:207:TRP:HB3	1:A:242:GLY:HA2	1.86	0.56
1:G:1061:VAL:HG11	1:G:1104:LYS:HB3	1.88	0.56
1:D:207:TRP:HB3	1:D:242:GLY:HA2	1.88	0.56
2:B:1010:THR:O	2:B:1014:THR:HG23	2.06	0.56
1:G:192:THR:HB	1:G:206:PRO:HD2	1.88	0.55
2:B:896:VAL:HG13	2:B:897:ILE:HG12	1.88	0.55
1:D:983:ALA:O	1:D:984:THR:OG1	2.22	0.55
2:H:784:ARG:HH21	2:H:872:GLN:HG3	1.72	0.55
1:A:248:ILE:HG12	1:A:250:PRO:HD3	1.88	0.54
1:D:123:ILE:HG21	1:D:168:LYS:HA	1.88	0.54
2:H:1010:THR:O	2:H:1014:THR:HG23	2.08	0.54
1:D:1114:TYR:HB2	1:D:1124:ALA:HB2	1.88	0.54
1:A:889:ARG:HD2	1:A:891:TYR:CZ	2.43	0.54
2:H:917:ILE:HG13	2:H:918:ASP:N	2.23	0.54
1:A:860:THR:HG21	4:A:1203:SO4:O1	2.09	0.53
1:D:223:PRO:HD3	1:D:271:TYR:OH	2.09	0.53
1:G:5:TYR:HB3	1:G:1041:THR:HG23	1.91	0.53
1:A:59:GLY:HA2	1:A:1073:TRP:CZ3	2.44	0.53
2:B:787:VAL:HA	2:B:874:LYS:HD3	1.91	0.53
1:D:1080:ARG:HD3	2:E:825:GLU:HA	1.90	0.53
1:A:7:VAL:HG12	1:A:1091:GLY:HA3	1.91	0.52
1:D:372:GLN:NE2	1:D:392:ASN:O	2.42	0.52
1:D:770:LEU:HD13	1:D:865:GLU:HB2	1.92	0.52
2:E:856:LEU:HD11	2:E:915:PRO:HG3	1.91	0.52
2:B:951:LEU:HD21	2:B:986:PHE:HE2	1.74	0.52
1:D:7:VAL:HG12	1:D:1091:GLY:HA3	1.92	0.51
1:G:762:SER:O	1:G:803:HIS:HA	2.11	0.51
2:H:774:GLU:HG3	2:H:878:PHE:HB2	1.92	0.51
2:H:931:THR:O	2:H:932:LYS:HB2	2.10	0.51
1:G:933:LEU:HD22	1:G:942:PHE:HB3	1.93	0.51
1:A:364:VAL:HG22	1:A:375:LEU:HD13	1.92	0.51
1:G:375:LEU:HB2	1:G:1012:LEU:HD21	1.93	0.51
1:D:709:LYS:HG2	1:D:710:LEU:N	2.25	0.51
1:G:773:SER:O	1:G:775:THR:N	2.39	0.51
2:E:760:LEU:HD12	2:E:760:LEU:N	2.25	0.51
1:D:849:VAL:HG11	1:D:851:PHE:CZ	2.47	0.50
3:C:25:TYR:CZ	3:C:202:GLU:HG3	2.47	0.49
1:A:1114:TYR:HB2	1:A:1122:ARG:HB2	1.95	0.49
1:D:60:LYS:O	1:D:81:THR:HA	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:933:LEU:HD22	1:D:942:PHE:HB3	1.93	0.49
2:B:779:ARG:HB3	3:C:21:LYS:HE2	1.92	0.49
1:D:358:PRO:O	1:D:379:SER:HA	2.12	0.49
1:G:36:ASN:O	1:G:37:THR:OG1	2.25	0.49
1:G:184:ASP:HB2	1:G:185:PRO:CD	2.42	0.49
1:G:6:VAL:HG22	1:G:1040:VAL:HG22	1.94	0.49
1:G:790:ASN:HA	1:G:805:HIS:O	2.13	0.49
1:G:965:PHE:O	1:G:976:VAL:HA	2.13	0.49
2:H:856:LEU:O	2:H:881:ALA:HA	2.12	0.49
1:G:1116:ASP:HB3	1:G:1122:ARG:HH21	1.77	0.49
2:H:773:ARG:HD3	2:H:881:ALA:O	2.13	0.49
1:D:324:VAL:HB	1:D:332:GLN:HB2	1.94	0.49
1:D:1120:MET:HG3	1:D:1122:ARG:HG3	1.94	0.49
2:E:931:THR:O	2:E:932:LYS:HB2	2.13	0.49
1:A:6:VAL:HG22	1:A:1040:VAL:HG22	1.95	0.48
1:G:1127:ASP:O	1:G:1131:LYS:HG2	2.11	0.48
1:A:36:ASN:O	1:A:37:THR:OG1	2.25	0.48
3:C:76:ILE:CD1	3:C:198:SER:HB3	2.43	0.48
1:A:184:ASP:HB2	1:A:185:PRO:CD	2.44	0.48
1:D:928:ARG:HD3	5:E:1101:RVU:O1	2.13	0.48
2:E:722:ARG:NH1	2:E:791:GLU:OE2	2.46	0.48
2:E:838:SER:O	2:E:842:GLN:HG3	2.12	0.48
1:A:227:GLY:O	1:A:239:TYR:OH	2.22	0.48
1:A:5:TYR:CE2	1:A:7:VAL:HG13	2.49	0.48
3:C:243:PRO:HG2	3:C:246:VAL:HG23	1.96	0.48
1:G:43:VAL:HG23	1:G:52:VAL:CG2	2.44	0.48
1:A:1133:VAL:O	1:A:1137:THR:HG23	2.14	0.47
1:G:72:GLU:OE2	1:G:103:ARG:NH2	2.47	0.47
2:H:928:GLU:O	2:H:932:LYS:N	2.41	0.47
1:A:311:ALA:HB2	1:A:324:VAL:HG13	1.97	0.47
1:D:927:MET:HB3	2:E:828:LEU:HD12	1.96	0.47
1:D:985:THR:O	1:D:989:ARG:HG3	2.14	0.47
1:D:375:LEU:HB2	1:D:1012:LEU:HD21	1.96	0.47
1:A:933:LEU:HD22	1:A:942:PHE:HB3	1.95	0.47
2:E:739:GLY:HA3	2:E:757:LYS:O	2.14	0.47
1:A:317:LEU:HD11	1:A:323:PHE:HB2	1.97	0.47
2:H:823:LEU:HB3	2:H:829:VAL:HG13	1.97	0.47
1:A:248:ILE:HD12	1:A:300:LEU:O	2.15	0.47
1:D:5:TYR:CE2	1:D:7:VAL:HG13	2.50	0.47
2:E:844:MET:HE3	2:E:922:CYS:HB3	1.97	0.47
2:H:858:ARG:HB3	2:H:896:VAL:CG2	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:803:HIS:CD2	1:G:858:LEU:HG	2.50	0.47
1:D:146:ASP:OD1	1:D:147:ARG:N	2.49	0.47
1:D:315:THR:HG22	1:D:323:PHE:HB3	1.98	0.46
1:D:915:LYS:HE3	1:D:957:VAL:O	2.16	0.46
1:G:223:PRO:HD3	1:G:271:TYR:OH	2.15	0.46
2:H:722:ARG:HE	2:H:726:LYS:HG3	1.81	0.46
2:B:738:TYR:HE2	2:B:756:LYS:HB3	1.81	0.46
1:D:63:VAL:O	1:D:79:ILE:HA	2.15	0.46
1:D:288:GLU:HB2	1:D:298:LYS:HB2	1.98	0.46
2:E:888:GLU:HG2	2:E:888:GLU:O	2.15	0.46
2:H:823:LEU:HB3	2:H:829:VAL:CG1	2.46	0.46
1:A:886:SER:O	1:A:908:ASN:HB2	2.16	0.46
1:G:170:LEU:HD21	1:G:229:ALA:HB2	1.98	0.46
3:I:63:ARG:HE	3:I:123:LEU:HD21	1.81	0.46
3:F:76:ILE:HD12	3:F:198:SER:HB3	1.98	0.46
2:B:903:PRO:HG2	2:B:906:LEU:HG	1.98	0.46
1:D:886:SER:O	1:D:908:ASN:HB2	2.16	0.46
1:D:794:ILE:HG22	1:D:799:PHE:HA	1.98	0.46
1:G:1023:PRO:HB3	1:G:1047:TRP:CE2	2.50	0.46
1:A:114:ARG:HD3	2:B:930:PHE:O	2.16	0.45
2:B:933:LYS:HE3	2:B:937:GLN:HE21	1.80	0.45
2:E:1036:TRP:O	2:E:1037:GLN:HB2	2.17	0.45
1:A:1011:SER:OG	1:A:1013:VAL:HG22	2.15	0.45
2:B:727:PHE:HB3	2:B:744:ALA:HB1	1.97	0.45
2:B:760:LEU:HD23	2:B:760:LEU:H	1.80	0.45
3:C:82:TYR:CE2	3:C:95:THR:HG21	2.52	0.45
2:E:787:VAL:HA	2:E:874:LYS:HD3	1.99	0.45
3:F:61:GLY:HA3	3:F:71:LEU:CD2	2.47	0.45
1:A:226:PHE:CE2	1:A:287:LYS:HG2	2.51	0.45
2:B:849:TYR:O	2:B:853:LYS:HG2	2.17	0.45
1:A:1080:ARG:NH1	2:B:928:GLU:OE2	2.44	0.45
1:G:59:GLY:HA2	1:G:1073:TRP:CE3	2.52	0.45
2:H:858:ARG:NE	2:H:880:LEU:O	2.49	0.45
1:D:929:SER:HB2	1:D:950:ASN:O	2.17	0.45
1:G:127:GLU:HB2	1:G:129:ARG:HG3	1.98	0.45
1:G:998:PHE:CZ	1:G:1074:ARG:HD2	2.52	0.45
3:I:195:THR:CG2	3:I:257:LEU:HD11	2.47	0.45
2:H:844:MET:HA	2:H:844:MET:HE2	1.98	0.45
1:A:791:LEU:HD23	1:A:858:LEU:HD21	1.99	0.44
1:A:1003:PHE:O	1:A:1032:THR:HA	2.18	0.44
3:C:239:VAL:HG12	3:C:242:VAL:HG23	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1114:TYR:HB2	1:D:1124:ALA:CB	2.46	0.44
1:D:114:ARG:HD3	2:E:930:PHE:O	2.17	0.44
2:H:760:LEU:HD21	2:H:767:PHE:HD2	1.82	0.44
2:B:1030:PRO:HA	2:B:1031:PRO:HD3	1.88	0.44
1:D:248:ILE:HG12	1:D:250:PRO:HD3	2.00	0.44
1:G:213:GLU:HG2	1:G:215:GLU:H	1.82	0.44
2:B:906:LEU:HD21	2:B:913:TYR:CD2	2.53	0.44
1:G:1024:THR:HG21	1:G:1139:ILE:HD13	2.00	0.44
2:H:951:LEU:HD21	2:H:986:PHE:HE2	1.82	0.44
1:A:910:MET:O	1:A:925:ASP:HA	2.18	0.44
2:E:779:ARG:HB3	3:F:21:LYS:HE2	2.00	0.44
1:G:63:VAL:O	1:G:79:ILE:HA	2.18	0.44
1:G:32:LEU:HD13	1:G:66:LEU:HD11	2.00	0.44
2:B:758:VAL:HG11	2:B:767:PHE:CZ	2.53	0.44
2:H:799:ALA:HB1	2:H:804:LYS:HB2	2.00	0.44
1:A:387:LEU:HD11	1:A:735:VAL:HG21	1.98	0.43
2:E:893:TPO:HG22	2:E:893:TPO:O1P	2.17	0.43
1:D:3:TYR:HB3	1:D:1048:TYR:HB2	2.00	0.43
1:A:927:MET:O	1:A:928:ARG:HB2	2.19	0.43
1:G:365:VAL:HG11	1:G:733:PHE:CZ	2.53	0.43
1:D:184:ASP:HB2	1:D:185:PRO:CD	2.49	0.43
1:G:226:PHE:CE1	1:G:287:LYS:HG2	2.53	0.43
2:H:716:GLU:HG3	3:I:20:THR:N	2.33	0.43
2:B:933:LYS:HE3	2:B:937:GLN:NE2	2.34	0.43
2:E:841:LYS:HD2	2:E:1023:VAL:HB	2.01	0.43
2:E:917:ILE:HG13	2:E:918:ASP:N	2.34	0.43
2:E:953:GLY:O	2:E:1003:LEU:HD11	2.18	0.43
1:G:223:PRO:HG3	1:G:263:ARG:HH11	1.83	0.43
1:A:883:SER:HB2	1:A:911:ALA:HB3	2.00	0.43
1:D:275:ASP:OD1	1:D:275:ASP:C	2.57	0.43
1:A:1030:PHE:CZ	1:A:1038:GLY:HA3	2.54	0.43
2:B:996:LEU:O	2:B:1000:MET:HG3	2.18	0.43
1:G:1136:LEU:O	1:G:1139:ILE:HG12	2.19	0.43
1:A:373:GLY:O	1:A:1012:LEU:HD23	2.18	0.43
1:D:378:CYS:SG	1:D:724:ILE:HB	2.58	0.43
2:H:867:LEU:HD21	2:H:1031:PRO:HG3	1.99	0.43
1:D:213:GLU:HG2	1:D:215:GLU:H	1.84	0.42
1:D:817:VAL:HG12	1:D:830:ILE:HB	2.01	0.42
2:E:828:LEU:O	2:E:1034:PRO:HD2	2.18	0.42
1:A:1119:GLY:H	1:A:1122:ARG:HH21	1.67	0.42
1:A:958:GLU:HB2	1:A:1007:PHE:CB	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:60:LYS:HE2	1:G:1001:GLY:O	2.20	0.42
1:G:125:ASP:OD2	1:G:176:PRO:HB3	2.19	0.42
1:G:275:ASP:C	1:G:275:ASP:OD1	2.58	0.42
1:A:32:LEU:HD13	1:A:66:LEU:HD11	2.02	0.42
1:A:64:MET:HG3	1:A:77:LEU:HD11	2.01	0.42
1:D:1057:ARG:HD3	1:D:1108:VAL:O	2.19	0.42
2:E:858:ARG:O	2:E:897:ILE:HG12	2.19	0.42
3:I:195:THR:HG21	3:I:257:LEU:HD11	2.01	0.42
1:A:63:VAL:O	1:A:79:ILE:HA	2.20	0.42
1:A:1119:GLY:HA3	1:A:1122:ARG:NE	2.34	0.42
2:B:892:TYR:HB3	2:B:913:TYR:OH	2.19	0.42
1:D:771:PHE:CE1	1:D:845:GLN:HB3	2.55	0.42
1:D:881:LEU:HD21	1:D:921:ILE:HG21	2.01	0.42
1:D:1028:VAL:O	1:D:1039:LEU:HA	2.20	0.42
2:H:739:GLY:HA3	2:H:757:LYS:O	2.20	0.42
1:A:258:ILE:HG23	1:A:274:GLY:O	2.20	0.42
1:A:1022:THR:HG22	1:A:1135:GLU:OE2	2.19	0.42
2:B:910:GLU:HG3	2:B:912:ARG:H	1.84	0.42
1:D:7:VAL:CG1	1:D:1091:GLY:HA3	2.49	0.42
1:G:378:CYS:SG	1:G:724:ILE:HB	2.60	0.42
1:G:975:PHE:HA	1:G:996:GLY:O	2.20	0.42
3:I:266:PRO:O	3:I:267:HIS:C	2.58	0.42
1:A:316:TYR:O	1:A:321:VAL:O	2.38	0.41
3:F:208:VAL:HG11	3:F:235:TRP:HB2	2.01	0.41
1:G:944:GLU:OE1	2:H:732:ILE:HG22	2.20	0.41
1:G:979:LYS:O	1:G:981:SER:N	2.43	0.41
3:C:265:MET:SD	3:C:265:MET:N	2.93	0.41
1:A:907:ASN:HB2	2:B:730:ILE:HG22	2.01	0.41
2:B:964:ILE:HA	2:B:969:PHE:CD2	2.55	0.41
1:G:731:GLN:OE1	1:G:796:GLN:NE2	2.53	0.41
1:G:1061:VAL:HG13	1:G:1104:LYS:HD2	2.01	0.41
1:A:1023:PRO:HB3	1:A:1047:TRP:CE2	2.55	0.41
1:G:255:GLN:HB2	1:G:279:ARG:HH22	1.85	0.41
1:G:773:SER:C	1:G:775:THR:N	2.73	0.41
1:G:366:ASP:OD2	1:G:371:GLY:N	2.53	0.41
1:G:969:GLU:HG3	1:G:971:ALA:H	1.85	0.41
1:D:365:VAL:HG11	1:D:733:PHE:HZ	1.84	0.41
3:F:35:PRO:HD3	1:G:745:THR:OG1	2.21	0.41
1:A:158:ARG:HH12	1:A:160:GLU:HG2	1.84	0.41
2:B:916:ALA:HB1	2:B:1008:ARG:HD2	2.03	0.41
1:A:223:PRO:HD2	1:A:268:GLY:HA3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:931:LEU:HD11	1:A:944:GLU:HG2	2.01	0.41
2:B:858:ARG:HH12	2:B:882:ARG:HD3	1.86	0.41
3:C:79:HIS:HB3	3:C:199:LEU:HD11	2.02	0.41
1:D:828:TYR:CE1	1:D:861:VAL:HG21	2.55	0.41
1:D:1105:MET:SD	1:D:1130:ILE:HD11	2.61	0.41
1:G:858:LEU:HD12	1:G:858:LEU:O	2.21	0.41
1:G:958:GLU:HB2	1:G:1007:PHE:CB	2.50	0.41
1:A:92:LYS:HD2	1:A:101:ILE:HD11	2.02	0.41
1:A:258:ILE:HA	1:A:275:ASP:HA	2.02	0.41
2:B:845:GLU:HA	2:B:1015:LEU:HD11	2.02	0.41
2:E:983:ARG:HD3	4:E:1102:SO4:O3	2.20	0.41
1:G:315:THR:CG2	1:G:323:PHE:HB3	2.51	0.41
1:D:59:GLY:HA2	1:D:1073:TRP:CZ3	2.56	0.40
1:D:790:ASN:HA	1:D:805:HIS:O	2.20	0.40
2:E:760:LEU:HD12	2:E:760:LEU:H	1.86	0.40
3:I:184:MET:HG2	3:I:188:PHE:CE2	2.56	0.40
2:B:892:TYR:HB3	2:B:913:TYR:CZ	2.56	0.40
2:E:844:MET:HE2	2:E:844:MET:HA	2.04	0.40
1:A:926:LEU:O	1:A:953:TRP:HA	2.22	0.40
2:H:903:PRO:HG2	2:H:906:LEU:HG	2.03	0.40
1:G:931:LEU:HD22	1:G:947:ARG:HH21	1.86	0.40
1:G:1004:VAL:HG13	1:G:1030:PHE:HB2	2.04	0.40
1:A:1101:SER:OG	1:A:1104:LYS:HG2	2.21	0.40
2:E:860:ILE:HB	2:E:921:SER:CB	2.52	0.40
2:H:767:PHE:HD1	2:H:772:ILE:HG13	1.86	0.40
2:H:1039:CYS:SG	2:H:1040:HIS:N	2.95	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%)	801 (97%)	22 (3%)	0	100	100
1	G	822/840 (98%)	802 (98%)	20 (2%)	0	100	100
2	B	326/344 (95%)	315 (97%)	11 (3%)	0	100	100
2	E	322/344 (94%)	312 (97%)	10 (3%)	0	100	100
2	H	326/344 (95%)	317 (97%)	9 (3%)	0	100	100
3	C	246/271 (91%)	244 (99%)	2 (1%)	0	100	100
3	F	246/271 (91%)	244 (99%)	2 (1%)	0	100	100
3	I	246/271 (91%)	244 (99%)	2 (1%)	0	100	100
All	All	4179/4365 (96%)	4078 (98%)	101 (2%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	721/728 (99%)	716 (99%)	5 (1%)	84	90
1	D	722/728 (99%)	719 (100%)	3 (0%)	91	94
1	G	721/728 (99%)	715 (99%)	6 (1%)	81	89
2	B	296/308 (96%)	292 (99%)	4 (1%)	67	81
2	E	292/308 (95%)	288 (99%)	4 (1%)	67	81
2	H	296/308 (96%)	294 (99%)	2 (1%)	84	90
3	C	223/242 (92%)	220 (99%)	3 (1%)	69	82
3	F	223/242 (92%)	219 (98%)	4 (2%)	59	77
3	I	223/242 (92%)	221 (99%)	2 (1%)	78	87
All	All	3717/3834 (97%)	3684 (99%)	33 (1%)	78	87

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

Mol	Chain	Res	Type
1	A	52	VAL
1	A	207	TRP
1	A	290	GLN
1	A	315	THR
1	A	1017	LEU
2	B	863	SER
2	B	867	LEU
2	B	897	ILE
2	B	913	TYR
3	C	36	SER
3	C	231	TYR
3	C	257	LEU
1	D	746	SER
1	D	930	VAL
1	D	962	ASP
2	E	728	ASP
2	E	805	ASP
2	E	860	ILE
2	E	1033	LEU
3	F	36	SER
3	F	196	THR
3	F	198	SER
3	F	231	TYR
1	G	60	LYS
1	G	192	THR
1	G	289	GLU
1	G	365	VAL
1	G	790	ASN
1	G	1140	HIS
2	H	829	VAL
2	H	897	ILE
3	I	146	ILE
3	I	231	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	727	GLN
2	B	830	HIS
2	B	944	GLN
2	B	999	HIS
1	D	261	HIS
1	G	370	GLN

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Mol	Chain	Res	Type
2	H	999	HIS

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	1.70	1 (12%)	10,14,16	1.36	2 (20%)
2	TPO	B	893	2	8,10,11	1.19	0	10,14,16	1.49	2 (20%)
2	TPO	H	893	2	8,10,11	1.48	1 (12%)	10,14,16	1.13	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	-	6/9/11/13	-
2	TPO	B	893	2	-	0/9/11/13	-
2	TPO	H	893	2	-	1/9/11/13	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	893	TPO	P-O1P	3.45	1.61	1.50
2	H	893	TPO	P-OG1	2.51	1.64	1.59

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
2	B	893	TPO	P-OG1-CB	-3.14	113.72	123.21
2	E	893	TPO	P-OG1-CB	-2.46	115.79	123.21
2	E	893	TPO	CG2-CB-CA	-2.41	108.41	113.16
2	H	893	TPO	CG2-CB-CA	-2.39	108.45	113.16
2	B	893	TPO	CG2-CB-CA	-2.04	109.13	113.16

There are no chirality outliers.

All (7) 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	O-C-CA-CB
2	E	893	TPO	CG2-CB-OG1-P
2	H	893	TPO	CB-OG1-P-O1P
2	E	893	TPO	CB-OG1-P-O3P

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](#)

46 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	SO4	D	1207	-	4,4,4	0.18	0	6,6,6	0.09	0
4	SO4	F	304	-	4,4,4	0.18	0	6,6,6	0.16	0
4	SO4	D	1206	-	4,4,4	0.22	0	6,6,6	0.08	0
4	SO4	A	1204	-	4,4,4	0.24	0	6,6,6	0.13	0
4	SO4	G	1202	-	4,4,4	0.19	0	6,6,6	0.04	0
4	SO4	G	1207	-	4,4,4	0.20	0	6,6,6	0.09	0
4	SO4	D	1201	-	4,4,4	0.19	0	6,6,6	0.05	0
4	SO4	G	1205	-	4,4,4	0.22	0	6,6,6	0.10	0
4	SO4	G	1204	-	4,4,4	0.21	0	6,6,6	0.07	0
4	SO4	D	1205	-	4,4,4	0.23	0	6,6,6	0.06	0
4	SO4	D	1204	-	4,4,4	0.25	0	6,6,6	0.05	0
4	SO4	A	1202	-	4,4,4	0.20	0	6,6,6	0.08	0
4	SO4	F	302	-	4,4,4	0.21	0	6,6,6	0.07	0
4	SO4	G	1208	-	4,4,4	0.25	0	6,6,6	0.06	0
4	SO4	C	303	-	4,4,4	0.22	0	6,6,6	0.13	0
4	SO4	D	1208	-	4,4,4	0.25	0	6,6,6	0.08	0
4	SO4	H	1103	-	4,4,4	0.25	0	6,6,6	0.07	0
4	SO4	G	1203	-	4,4,4	0.19	0	6,6,6	0.08	0
4	SO4	D	1209	-	4,4,4	0.27	0	6,6,6	0.06	0
4	SO4	A	1201	-	4,4,4	0.21	0	6,6,6	0.05	0
4	SO4	A	1206	-	4,4,4	0.20	0	6,6,6	0.08	0
4	SO4	H	1105	-	4,4,4	0.23	0	6,6,6	0.07	0
4	SO4	D	1210	-	4,4,4	0.19	0	6,6,6	0.08	0
4	SO4	G	1201	-	4,4,4	0.21	0	6,6,6	0.07	0
4	SO4	D	1202	-	4,4,4	0.20	0	6,6,6	0.07	0
4	SO4	A	1207	-	4,4,4	0.19	0	6,6,6	0.09	0
4	SO4	E	1103	-	4,4,4	0.22	0	6,6,6	0.08	0
4	SO4	F	301	-	4,4,4	0.22	0	6,6,6	0.10	0
4	SO4	B	1102	-	4,4,4	0.24	0	6,6,6	0.08	0
4	SO4	H	1104	-	4,4,4	0.23	0	6,6,6	0.07	0
4	SO4	A	1205	-	4,4,4	0.22	0	6,6,6	0.07	0
4	SO4	A	1203	-	4,4,4	0.22	0	6,6,6	0.12	0
4	SO4	B	1103	-	4,4,4	0.23	0	6,6,6	0.07	0
4	SO4	D	1203	-	4,4,4	0.19	0	6,6,6	0.07	0
4	SO4	C	301	-	4,4,4	0.20	0	6,6,6	0.05	0
4	SO4	H	1102	-	4,4,4	0.22	0	6,6,6	0.05	0
5	RVU	B	1101	-	30,30,30	0.76	0	32,43,43	1.06	3 (9%)
5	RVU	H	1101	-	30,30,30	0.75	0	32,43,43	1.09	3 (9%)
4	SO4	F	303	-	4,4,4	0.16	0	6,6,6	0.06	0
4	SO4	I	303	-	4,4,4	0.22	0	6,6,6	0.12	0
4	SO4	E	1102	-	4,4,4	0.25	0	6,6,6	0.09	0
5	RVU	E	1101	-	30,30,30	0.73	0	32,43,43	1.11	2 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	SO4	I	301	-	4,4,4	0.22	0	6,6,6	0.06	0
4	SO4	C	302	-	4,4,4	0.23	0	6,6,6	0.07	0
4	SO4	G	1206	-	4,4,4	0.25	0	6,6,6	0.07	0
4	SO4	I	302	-	4,4,4	0.16	0	6,6,6	0.09	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
5	RVU	B	1101	-	-	2/12/26/26	0/4/4/4
5	RVU	H	1101	-	-	2/12/26/26	0/4/4/4
5	RVU	E	1101	-	-	2/12/26/26	0/4/4/4

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	E	1101	RVU	C3-N1-C2	-3.22	125.41	130.28
5	H	1101	RVU	C3-N1-C2	-2.68	126.22	130.28
5	E	1101	RVU	C18-C17-C15	-2.37	116.68	120.08
5	B	1101	RVU	C3-N1-C2	-2.30	126.80	130.28
5	H	1101	RVU	C18-C17-C15	-2.29	116.79	120.08
5	B	1101	RVU	C18-C17-C15	-2.25	116.85	120.08
5	H	1101	RVU	C1-C4-N2	-2.19	101.64	104.33
5	B	1101	RVU	C4-N2-C7	-2.18	117.84	121.49

There are no chirality outliers.

All (6) torsion outliers are listed below:

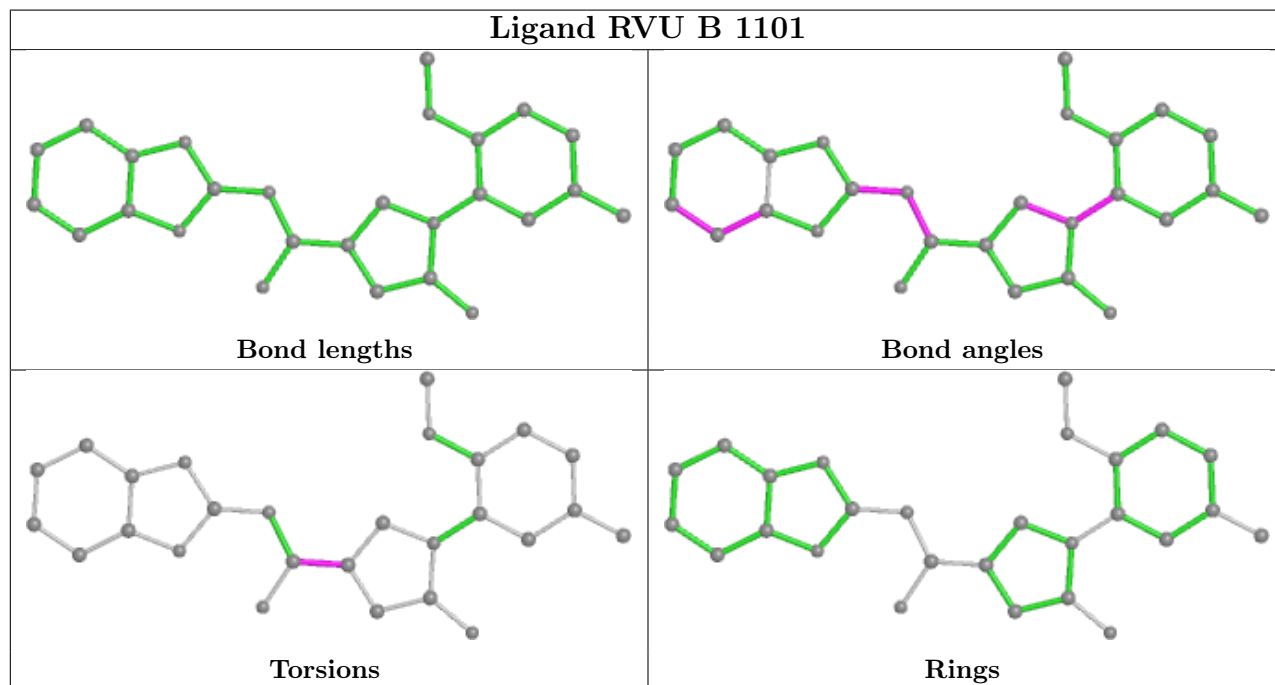
Mol	Chain	Res	Type	Atoms
5	B	1101	RVU	C4-C1-C2-N1
5	B	1101	RVU	C4-C1-C2-O3
5	E	1101	RVU	C4-C1-C2-N1
5	E	1101	RVU	C4-C1-C2-O3
5	H	1101	RVU	C4-C1-C2-N1
5	H	1101	RVU	C4-C1-C2-O3

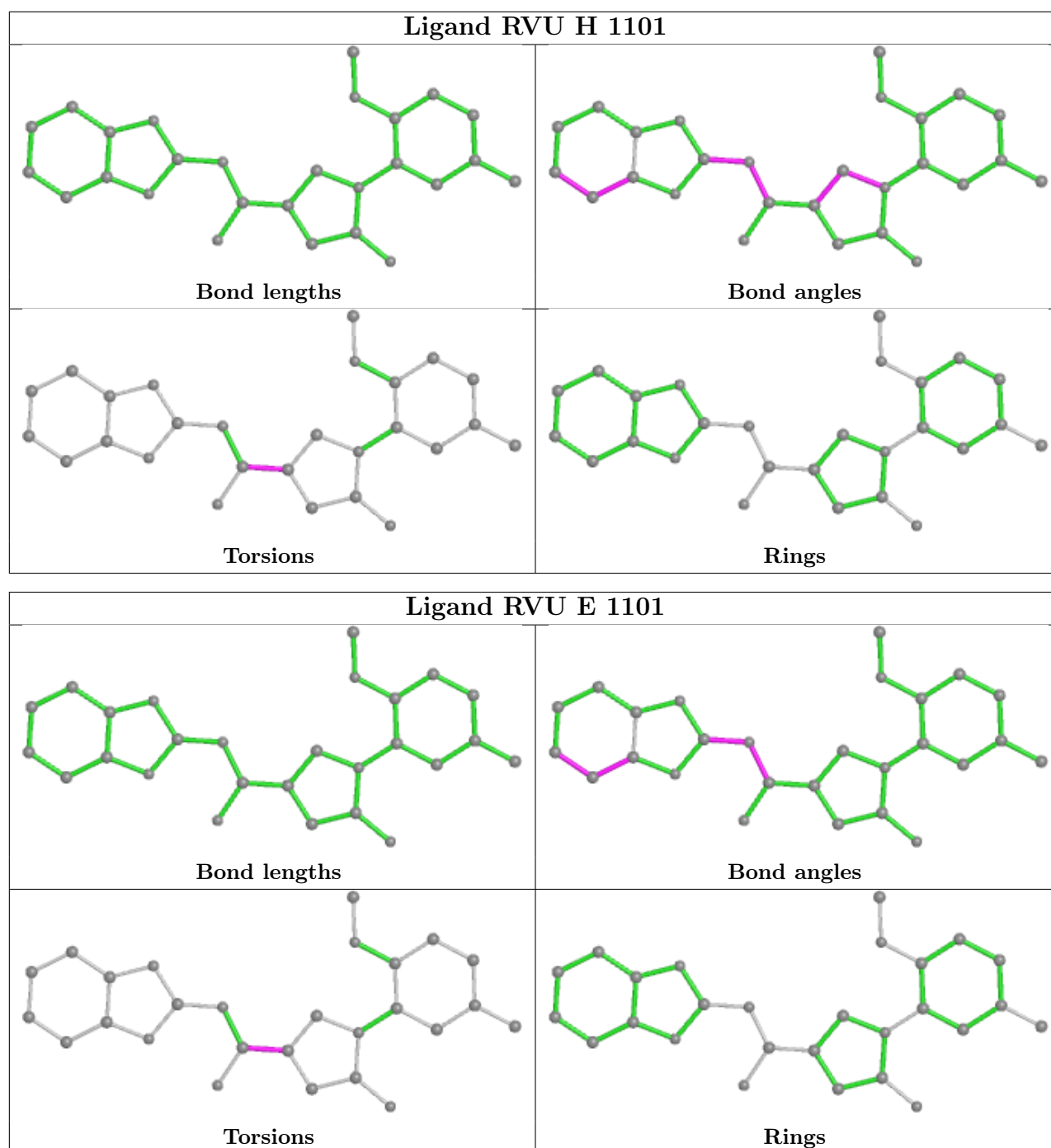
There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	1203	SO4	1	0
4	E	1102	SO4	1	0
5	E	1101	RVU	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%)	0.63	81 (9%) 7 7	105, 141, 210, 292	0
1	D	827/840 (98%)	0.55	70 (8%) 10 10	96, 135, 201, 269	0
1	G	826/840 (98%)	0.55	74 (8%) 9 10	103, 142, 213, 308	0
2	B	328/344 (95%)	0.77	52 (15%) 1 2	112, 146, 215, 239	0
2	E	324/344 (94%)	0.71	29 (8%) 9 10	105, 137, 203, 240	0
2	H	328/344 (95%)	0.76	30 (9%) 9 10	91, 122, 199, 270	0
3	C	248/271 (91%)	0.60	16 (6%) 18 18	109, 135, 173, 246	0
3	F	248/271 (91%)	0.62	10 (4%) 38 35	92, 118, 155, 229	0
3	I	248/271 (91%)	0.64	15 (6%) 21 21	97, 121, 162, 236	0
All	All	4203/4365 (96%)	0.62	377 (8%) 9 10	91, 136, 206, 308	0

All (377) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	1016	ASN	10.1
2	H	1039	CYS	7.6
2	H	1043	TRP	7.5
1	A	1017	LEU	6.5
2	B	1035	HIS	6.4
2	H	1035	HIS	6.0
2	E	1035	HIS	5.4
2	H	798	ASP	5.4
2	B	1043	TRP	5.1
1	A	1097	PHE	4.7
3	F	264	GLN	4.7
3	I	266	PRO	4.7
2	B	1033	LEU	4.5
2	H	1040	HIS	4.5
3	C	267	HIS	4.4

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Mol	Chain	Res	Type	RSRZ
1	A	926	LEU	4.2
2	H	1038	ASP	4.1
2	B	800	LEU	4.1
1	A	135	LEU	4.1
2	B	860	ILE	4.0
1	A	33	ILE	4.0
1	D	1129	LEU	3.9
1	A	133	LEU	3.9
2	H	1036	TRP	3.8
2	B	798	ASP	3.8
1	A	89	LEU	3.8
1	G	1040	VAL	3.7
2	E	896	VAL	3.7
1	A	23	PHE	3.7
1	A	79	ILE	3.7
3	F	267	HIS	3.7
1	G	133	LEU	3.7
2	B	878	PHE	3.7
2	E	1039	CYS	3.7
1	A	57	MET	3.6
1	G	1118	SER	3.6
1	G	131	ILE	3.6
1	A	1029	LEU	3.6
1	G	232	ILE	3.6
1	A	39	LEU	3.6
1	A	195	VAL	3.6
1	G	61	ILE	3.5
1	A	32	LEU	3.5
2	E	829	VAL	3.5
1	A	367	LEU	3.4
2	H	1033	LEU	3.4
3	I	267	HIS	3.4
1	D	195	VAL	3.4
2	H	1031	PRO	3.4
1	D	2	SER	3.4
1	G	317	LEU	3.3
3	C	155	LEU	3.3
2	B	828	LEU	3.3
2	B	884	TYR	3.3
1	A	930	VAL	3.3
2	B	1041	GLU	3.3
1	G	387	LEU	3.3

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Mol	Chain	Res	Type	RSRZ
2	E	878	PHE	3.3
1	A	64	MET	3.3
3	F	266	PRO	3.2
1	D	32	LEU	3.2
1	A	100	ILE	3.2
1	D	133	LEU	3.2
1	A	949	PHE	3.2
1	G	390	ILE	3.2
2	E	882	ARG	3.2
1	A	297	LEU	3.2
1	G	1097	PHE	3.2
2	B	875	LEU	3.1
2	H	828	LEU	3.1
2	E	831	PHE	3.1
2	B	929	LEU	3.1
3	C	153	PHE	3.1
1	A	131	ILE	3.1
2	B	776	LYS	3.1
2	H	839	PHE	3.1
1	G	280	LEU	3.1
1	G	314	LEU	3.1
1	A	9	ALA	3.0
1	G	5	TYR	3.0
2	B	896	VAL	3.0
1	A	317	LEU	3.0
1	G	1136	LEU	3.0
2	E	856	LEU	3.0
1	D	33	ILE	3.0
1	D	100	ILE	3.0
2	H	1041	GLU	3.0
1	G	273	LEU	3.0
2	B	1040	HIS	3.0
1	A	59	GLY	2.9
1	A	1000	LEU	2.9
1	G	36	ASN	2.9
1	D	31	LEU	2.9
1	A	1035	GLY	2.9
2	B	839	PHE	2.9
1	A	273	LEU	2.9
1	D	761	LEU	2.9
1	A	63	VAL	2.9
1	A	49	LEU	2.9

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Mol	Chain	Res	Type	RSRZ
1	G	39	LEU	2.9
1	G	230	ILE	2.9
1	A	78	PHE	2.9
1	D	974	LEU	2.9
1	D	390	ILE	2.8
1	G	1000	LEU	2.8
1	G	323	PHE	2.8
1	G	1039	LEU	2.8
2	B	1039	CYS	2.8
1	A	34	ALA	2.8
1	G	966	LEU	2.8
1	A	304	LEU	2.8
1	D	328	LEU	2.8
2	E	828	LEU	2.8
1	A	61	ILE	2.8
1	D	5	TYR	2.8
2	B	913	TYR	2.8
1	D	78	PHE	2.8
1	G	1088	PHE	2.8
1	A	356	LEU	2.8
3	I	257	LEU	2.8
1	G	327	ARG	2.8
3	C	76	ILE	2.8
3	F	265	MET	2.8
3	C	164	LEU	2.7
2	B	865	ILE	2.7
2	E	767	PHE	2.7
2	B	935	ILE	2.7
1	D	37	THR	2.7
1	D	1029	LEU	2.7
1	A	121	ILE	2.7
1	G	272	LEU	2.7
1	D	927	MET	2.7
1	A	41	ILE	2.7
2	B	831	PHE	2.7
3	C	161	TYR	2.7
1	A	19	VAL	2.7
2	B	811	LEU	2.7
2	E	926	LEU	2.6
1	A	31	LEU	2.6
1	D	42	TYR	2.6
2	H	767	PHE	2.6

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Mol	Chain	Res	Type	RSRZ
3	C	146	ILE	2.6
2	B	720	GLY	2.6
1	G	64	MET	2.6
1	D	297	LEU	2.6
3	F	262	LYS	2.6
1	A	140	PHE	2.6
1	G	1043	LEU	2.6
1	A	1088	PHE	2.6
1	D	1097	PHE	2.6
2	B	876	ALA	2.6
1	D	1040	VAL	2.6
2	E	823	LEU	2.6
1	A	60	LYS	2.6
1	A	285	LEU	2.6
1	D	926	LEU	2.6
1	D	1012	LEU	2.6
1	G	143	ILE	2.6
2	B	781	LEU	2.6
1	D	167	VAL	2.6
2	E	906	LEU	2.6
1	A	67	PHE	2.6
1	A	1012	LEU	2.6
1	A	120	ILE	2.6
1	G	258	ILE	2.6
1	G	1037	ILE	2.6
1	A	975	PHE	2.5
1	D	140	PHE	2.5
2	B	855	PHE	2.5
2	H	829	VAL	2.5
1	D	317	LEU	2.5
1	G	77	LEU	2.5
1	D	1005	ASN	2.5
1	A	145	LEU	2.5
1	G	336	LEU	2.5
1	D	253	ILE	2.5
2	H	917	ILE	2.5
1	A	1129	LEU	2.5
1	G	66	LEU	2.5
2	B	803	LYS	2.5
1	G	1004	VAL	2.5
1	G	1055	GLN	2.5
1	A	881	LEU	2.5

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Mol	Chain	Res	Type	RSRZ
2	B	775	ILE	2.5
2	E	760	LEU	2.5
1	G	722	ARG	2.5
3	C	147	LEU	2.5
1	D	237	ILE	2.5
3	C	116	ILE	2.5
3	C	132	PHE	2.5
1	D	1136	LEU	2.5
1	G	32	LEU	2.5
2	E	839	PHE	2.5
1	G	303	GLU	2.5
1	A	1114	TYR	2.5
1	G	49	LEU	2.5
2	B	738	TYR	2.5
1	D	377	THR	2.5
2	B	820	LEU	2.5
2	B	883	LEU	2.5
2	H	955	PRO	2.5
1	A	87	CYS	2.4
1	D	23	PHE	2.4
2	E	860	ILE	2.4
1	G	253	ILE	2.4
1	G	1129	LEU	2.4
2	E	1025	LEU	2.4
1	A	359	ILE	2.4
3	I	222	ILE	2.4
2	B	867	LEU	2.4
2	B	932	LYS	2.4
1	A	1054	MET	2.4
1	D	57	MET	2.4
1	G	306	GLY	2.4
1	G	281	PHE	2.4
1	D	131	ILE	2.4
1	G	359	ILE	2.4
2	B	951	LEU	2.4
1	D	121	ILE	2.4
1	D	356	LEU	2.4
2	E	867	LEU	2.4
1	D	1004	VAL	2.4
1	D	1003	PHE	2.4
2	B	864	ASN	2.4
1	G	33	ILE	2.4

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Mol	Chain	Res	Type	RSRZ
2	E	1033	LEU	2.4
3	I	113	CYS	2.4
3	F	206	ILE	2.4
1	A	77	LEU	2.4
2	B	760	LEU	2.4
1	D	281	PHE	2.3
1	A	376	VAL	2.3
3	I	140	VAL	2.3
1	G	932	LEU	2.3
2	B	823	LEU	2.3
2	B	887	GLU	2.3
2	H	1032	ASP	2.3
2	H	775	ILE	2.3
3	C	181	LEU	2.3
1	D	61	ILE	2.3
2	E	875	LEU	2.3
1	A	1037	ILE	2.3
3	F	254	ILE	2.3
2	B	780	GLN	2.3
1	A	170	LEU	2.3
1	A	816	LEU	2.3
2	E	775	ILE	2.3
2	H	873	ILE	2.3
1	D	232	ILE	2.3
2	E	884	TYR	2.3
2	B	955	PRO	2.3
1	A	336	LEU	2.3
3	I	66	LEU	2.3
1	D	91	TYR	2.3
1	G	78	PHE	2.3
1	D	910	MET	2.3
1	D	89	LEU	2.3
1	G	328	LEU	2.3
1	G	974	LEU	2.3
3	C	100	LEU	2.3
3	I	64	LEU	2.3
2	H	802	PHE	2.3
1	A	710	LEU	2.3
1	G	57	MET	2.3
1	G	389	ILE	2.3
1	D	914	LEU	2.2
2	H	1042	LEU	2.2

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Mol	Chain	Res	Type	RSRZ
1	G	180	PHE	2.2
1	A	812	TYR	2.2
1	A	1079	GLU	2.2
2	B	778	LEU	2.2
1	G	909	ILE	2.2
1	A	302	VAL	2.2
1	D	63	VAL	2.2
2	H	843	LEU	2.2
1	A	871	TYR	2.2
2	B	767	PHE	2.2
1	D	36	ASN	2.2
3	F	167	TYR	2.2
1	A	76	LEU	2.2
1	D	49	LEU	2.2
1	D	64	MET	2.2
1	D	369	ARG	2.2
2	B	986	PHE	2.2
2	E	955	PRO	2.2
1	A	752	LEU	2.2
3	I	100	LEU	2.2
2	H	890	ARG	2.2
2	B	799	ALA	2.2
2	B	755	LEU	2.2
2	B	926	LEU	2.2
2	E	802	PHE	2.2
1	G	276	MET	2.2
3	I	106	VAL	2.2
1	A	882	ALA	2.2
1	A	974	LEU	2.2
2	H	929	LEU	2.2
2	B	802	PHE	2.2
2	H	997	LEU	2.2
3	I	263	GLN	2.2
1	D	1030	PHE	2.2
1	A	143	ILE	2.2
1	D	258	ILE	2.2
1	D	360	VAL	2.2
1	G	282	MET	2.2
1	A	933	LEU	2.2
1	G	67	PHE	2.2
2	E	866	LEU	2.1
1	D	1124	ALA	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	724	ILE	2.1
1	A	1100	ILE	2.1
1	G	307	GLU	2.1
1	G	310	ILE	2.1
3	C	149	GLN	2.1
1	G	736	LEU	2.1
1	G	1024	THR	2.1
2	H	932	LYS	2.1
1	D	55	VAL	2.1
1	D	376	VAL	2.1
3	C	260	GLN	2.1
1	D	1039	LEU	2.1
2	H	1001	LEU	2.1
2	E	913	TYR	2.1
1	D	848	ILE	2.1
2	E	814	GLU	2.1
2	B	866	LEU	2.1
3	F	147	LEU	2.1
2	B	890	ARG	2.1
1	G	923	VAL	2.1
1	D	375	LEU	2.1
1	G	792	LEU	2.1
1	D	9	ALA	2.1
1	A	283	LEU	2.1
1	G	926	LEU	2.1
3	F	181	LEU	2.1
3	I	210	VAL	2.1
1	G	881	LEU	2.1
1	A	1030	PHE	2.1
1	A	65	GLU	2.1
1	G	953	TRP	2.1
3	I	116	ILE	2.1
2	H	867	LEU	2.1
1	G	2	SER	2.1
1	G	324	VAL	2.1
1	A	300	LEU	2.1
1	D	1093	LEU	2.1
2	H	875	LEU	2.1
2	B	804	LYS	2.1
1	D	1065	VAL	2.1
1	G	930	VAL	2.1
2	H	896	VAL	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	791	LEU	2.1
3	C	102	LEU	2.1
3	I	254	ILE	2.1
2	B	797	GLN	2.0
1	D	969	GLU	2.0
1	A	167	VAL	2.0
1	D	41	ILE	2.0
2	B	907	LEU	2.0
2	E	792	ILE	2.0
1	G	135	LEU	2.0
1	G	899	LEU	2.0
1	A	327	ARG	2.0
1	D	112	ILE	2.0
1	D	792	LEU	2.0
1	G	375	LEU	2.0
1	D	314	LEU	2.0
2	E	803	LYS	2.0
3	C	148	LEU	2.0
1	A	169	PHE	2.0
1	G	1076	PHE	2.0
1	G	927	MET	2.0
1	D	881	LEU	2.0
3	I	132	PHE	2.0
1	D	752	LEU	2.0
1	D	1028	VAL	2.0
1	G	305	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	0.87	0.15	183,196,237,239	6
2	TPO	H	893	11/12	0.87	0.24	141,159,191,194	6
2	TPO	B	893	11/12	0.89	0.15	188,204,247,248	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.

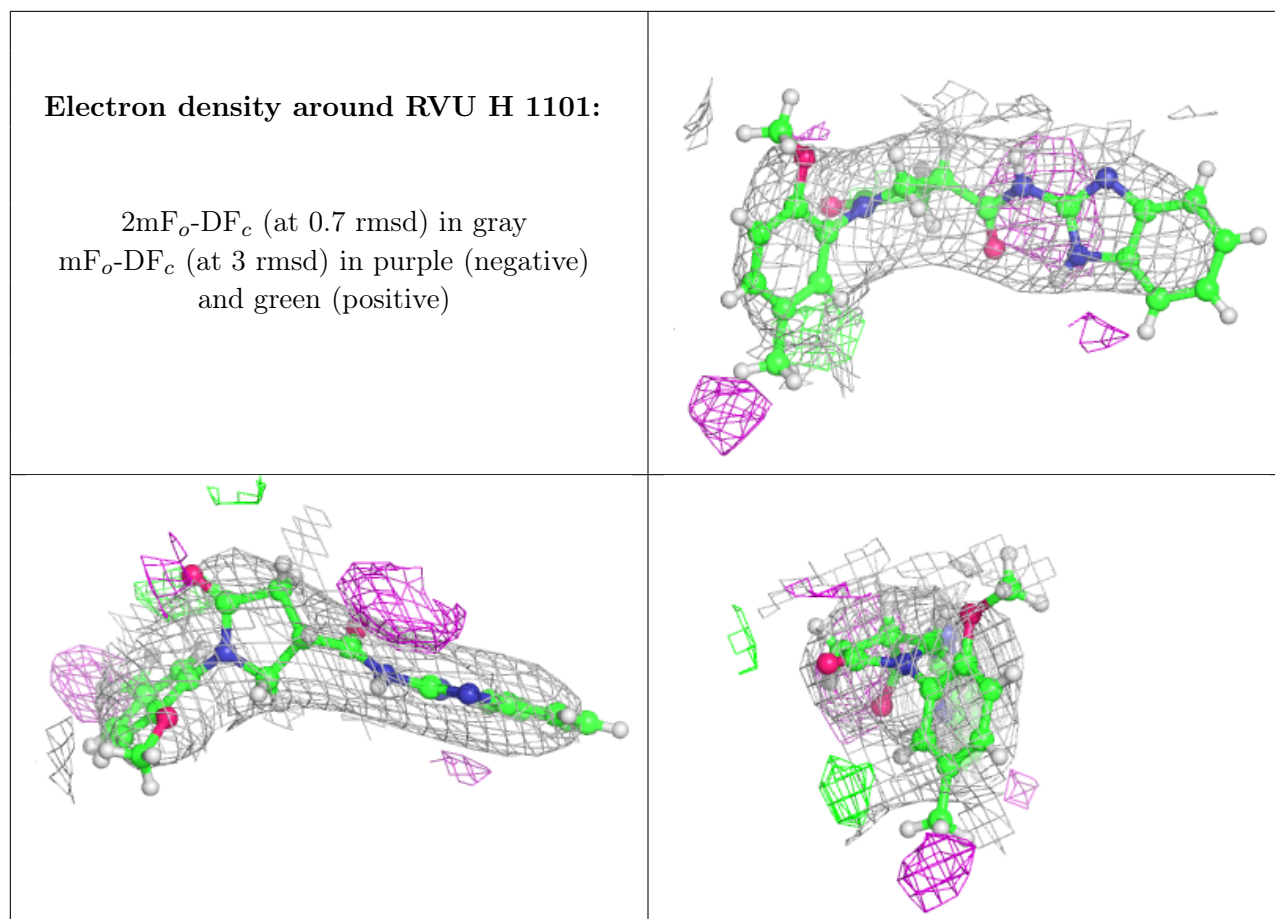
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
4	SO4	I	303	5/5	0.68	0.19	161,162,166,192	0
4	SO4	D	1205	5/5	0.73	0.13	159,162,177,199	0
4	SO4	D	1207	5/5	0.74	0.26	146,154,156,189	0
4	SO4	E	1102	5/5	0.75	0.21	163,172,176,208	0
4	SO4	D	1206	5/5	0.76	0.29	146,157,159,198	0
4	SO4	C	302	5/5	0.77	0.14	154,161,170,190	0
4	SO4	F	304	5/5	0.78	0.19	152,153,156,182	0
4	SO4	A	1205	5/5	0.78	0.26	163,170,174,206	0
4	SO4	F	301	5/5	0.79	0.44	144,161,163,193	0
4	SO4	D	1208	5/5	0.81	0.17	162,163,168,196	0
4	SO4	H	1105	5/5	0.81	0.16	156,162,169,200	0
4	SO4	F	302	5/5	0.81	0.14	157,162,166,193	0
4	SO4	D	1203	5/5	0.82	0.23	141,153,161,193	0
4	SO4	G	1207	5/5	0.83	0.20	149,157,163,195	0
4	SO4	C	303	5/5	0.83	0.11	161,169,170,194	0
4	SO4	D	1204	5/5	0.83	0.20	153,156,174,194	0
4	SO4	G	1208	5/5	0.84	0.37	168,170,176,201	0
4	SO4	G	1206	5/5	0.84	0.09	177,177,183,211	0
4	SO4	G	1204	5/5	0.84	0.14	150,160,164,190	0
4	SO4	A	1204	5/5	0.85	0.16	175,176,179,204	0
4	SO4	D	1210	5/5	0.86	0.16	141,144,154,163	0
4	SO4	G	1201	5/5	0.86	0.17	144,147,151,162	0
4	SO4	A	1201	5/5	0.87	0.16	147,153,155,171	0
4	SO4	A	1202	5/5	0.87	0.16	140,147,147,173	0
4	SO4	A	1203	5/5	0.88	0.30	141,151,170,188	0
4	SO4	D	1202	5/5	0.88	0.19	140,152,161,184	0
4	SO4	D	1201	5/5	0.89	0.18	135,140,149,151	0
4	SO4	D	1209	5/5	0.89	0.21	180,182,187,212	0
4	SO4	G	1203	5/5	0.89	0.19	132,138,153,163	0
4	SO4	C	301	5/5	0.90	0.23	137,139,150,158	0
4	SO4	A	1206	5/5	0.90	0.15	144,148,152,167	0
4	SO4	G	1205	5/5	0.90	0.17	155,170,181,201	0

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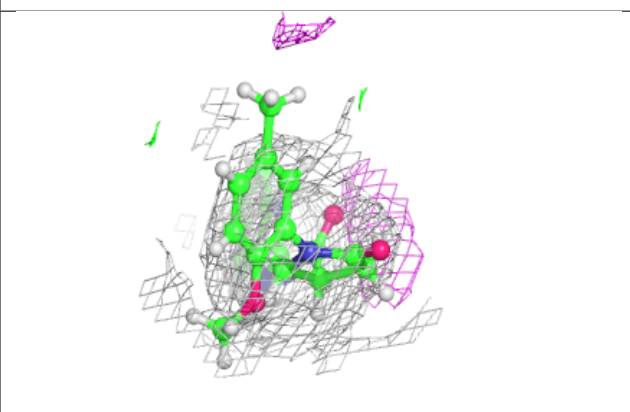
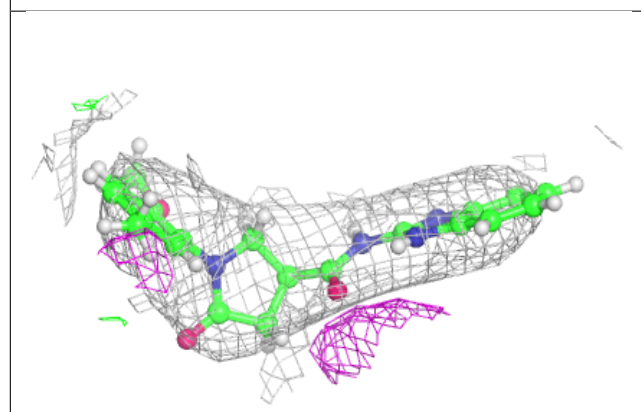
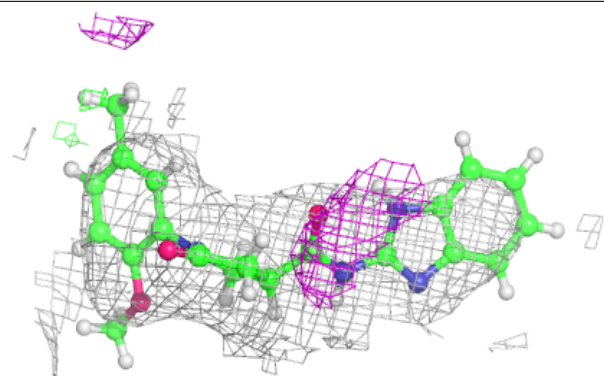
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
4	SO4	A	1207	5/5	0.90	0.14	134,153,171,184	0
4	SO4	G	1202	5/5	0.91	0.14	146,150,156,177	0
4	SO4	H	1103	5/5	0.91	0.10	158,161,177,199	0
4	SO4	E	1103	5/5	0.92	0.12	158,164,167,194	0
4	SO4	B	1102	5/5	0.92	0.12	165,169,173,200	0
4	SO4	I	301	5/5	0.92	0.13	147,154,168,185	0
4	SO4	H	1102	5/5	0.92	0.16	164,164,179,195	0
4	SO4	I	302	5/5	0.93	0.20	124,124,146,147	0
4	SO4	H	1104	5/5	0.93	0.11	150,156,171,190	0
5	RVU	H	1101	27/27	0.94	0.51	102,122,147,148	20
5	RVU	B	1101	27/27	0.95	0.47	111,130,156,159	20
5	RVU	E	1101	27/27	0.95	0.48	104,122,148,158	20
4	SO4	B	1103	5/5	0.95	0.11	163,164,175,200	0
4	SO4	F	303	5/5	0.96	0.17	116,120,136,138	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.

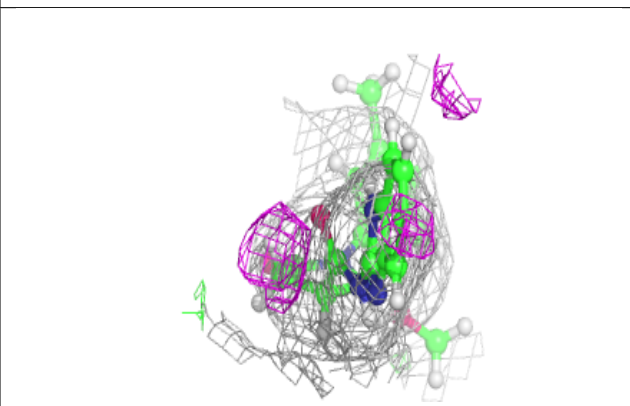
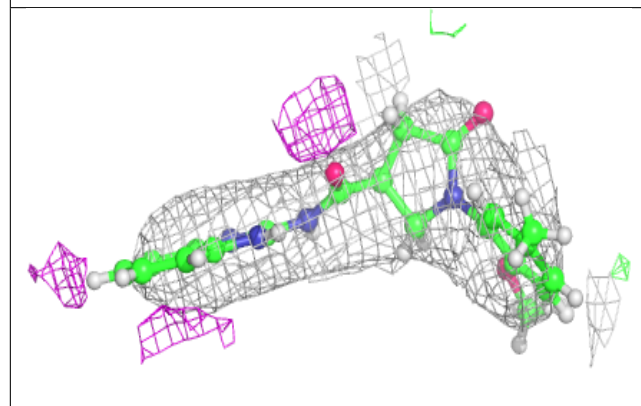
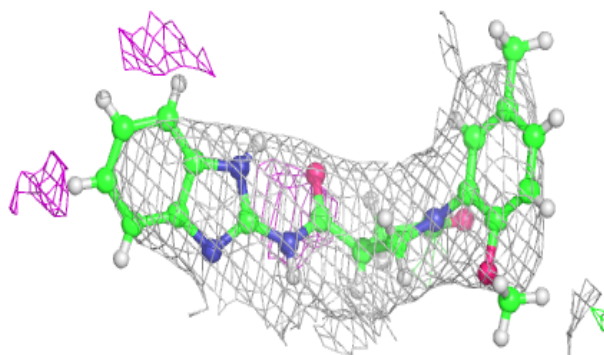


Electron density around RVU B 1101:

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

**Electron density around RVU E 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.