



# wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 17, 2025 – 04:14 PM JST

PDB ID : 8X7H  
Title : Crystal structure of the ternary complex of GID4-PROTAC(NEP162)-BRD4 (BD1).  
Authors : Dong, C.; Yan, X.; Li, Y.  
Deposited on : 2023-11-24  
Resolution : 2.90 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.21  
EDS : 3.0  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
CCP4 : 9.0.004 (Gargrove)  
Density-Fitness : 1.0.11  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.41.4

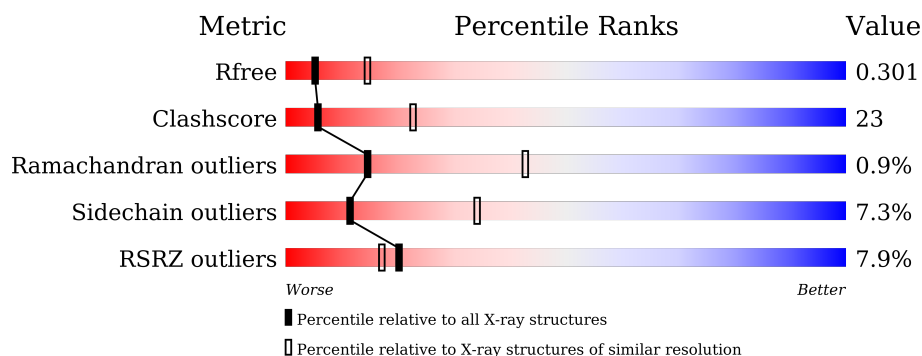
# 1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.90 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))
$R_{free}$	164625	2335 (2.90-2.90)
Clashscore	180529	2564 (2.90-2.90)
Ramachandran outliers	177936	2514 (2.90-2.90)
Sidechain outliers	177891	2516 (2.90-2.90)
RSRZ outliers	164620	2337 (2.90-2.90)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	167	<div> <div>7%</div> <div>59%</div> <div>34%</div> <div>5%</div> <div>.</div> </div>
1	C	167	<div> <div>10%</div> <div>56%</div> <div>38%</div> <div>.</div> <div>.</div> </div>
1	E	167	<div> <div>7%</div> <div>57%</div> <div>36%</div> <div>5%</div> <div>.</div> </div>
1	G	167	<div> <div>5%</div> <div>56%</div> <div>35%</div> <div>5%</div> <div>.</div> </div>
2	B	126	<div> <div>5%</div> <div>55%</div> <div>28%</div> <div>.</div> <div>17%</div> </div>
2	D	126	<div> <div>9%</div> <div>58%</div> <div>25%</div> <div>17%</div> </div>

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Mol	Chain	Length	Quality of chain
2	F	126	 7% 61% 22% • 16%
2	H	126	 8% 57% 25% • 17%

## 2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 8411 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Glucose-induced degradation protein 4 homolog.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	162	Total	C	N	O	S	0	0	0
			1211	788	192	228	3			
1	C	163	Total	C	N	O	S	0	0	0
			1196	775	192	226	3			
1	E	164	Total	C	N	O	S	0	0	0
			1260	821	204	232	3			
1	G	160	Total	C	N	O	S	0	0	0
			1240	805	203	229	3			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	123	GLY	-	expression tag	UNP Q8IVV7
C	123	GLY	-	expression tag	UNP Q8IVV7
E	123	GLY	-	expression tag	UNP Q8IVV7
G	123	GLY	-	expression tag	UNP Q8IVV7

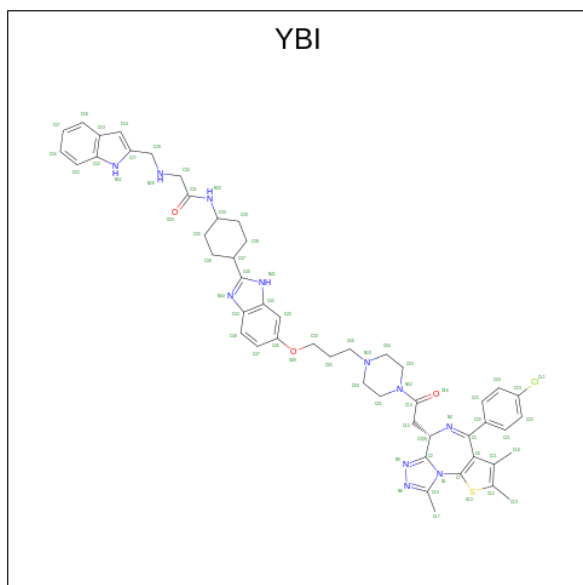
- Molecule 2 is a protein called Bromodomain-containing protein 4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	105	Total	C	N	O	S	0	0	0
			800	519	126	149	6			
2	D	105	Total	C	N	O	S	0	0	0
			792	517	122	147	6			
2	F	106	Total	C	N	O	S	0	0	0
			760	487	124	143	6			
2	H	105	Total	C	N	O	S	0	0	0
			776	502	123	145	6			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	43	GLY	-	expression tag	UNP O60885
D	43	GLY	-	expression tag	UNP O60885
F	43	GLY	-	expression tag	UNP O60885
H	43	GLY	-	expression tag	UNP O60885

- Molecule 3 is {N}-[4-[6-[3-[4-[2-[(9 {S})-7-(4-chlorophenyl)-4,5,13-trimethyl-3-thia-1,8,11,12-tetrazatricyclo[8.3.0.0<sup>^</sup>{2,6}}]trideca-2(6),4,7,10,12-pentaen-9-yl]ethanoyl]piperazin-1-yl]propoxy]-1 {H}-benzimidazol-2-yl]cyclohexyl]-2-(1 {H}-indol-2-ylmethylamino)ethanamide (three-letter code: YBI) (formula: C<sub>50</sub>H<sub>56</sub>ClN<sub>11</sub>O<sub>3</sub>S) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
3	A	1	Total	C	Cl	N	O	S	0	0
			66	50	1	11	3	1		
3	C	1	Total	C	Cl	N	O	S	0	0
			66	50	1	11	3	1		
3	E	1	Total	C	Cl	N	O	S	0	0
			66	50	1	11	3	1		
3	G	1	Total	C	Cl	N	O	S	0	0
			66	50	1	11	3	1		

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total	C	O	0	0
			6	3	3		
4	D	1	Total	C	O	0	0
			6	3	3		
4	D	1	Total	C	O	0	0
			6	3	3		
4	D	1	Total	C	O	0	0
			6	3	3		
4	D	1	Total	C	O	0	0
			6	3	3		
4	G	1	Total	C	O	0	0
			6	3	3		
4	G	1	Total	C	O	0	0
			6	3	3		
4	H	1	Total	C	O	0	0
			6	3	3		

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	11	Total	O	0	0
			11	11		
5	B	11	Total	O	0	0
			11	11		
5	C	10	Total	O	0	0
			10	10		
5	D	12	Total	O	0	0
			12	12		

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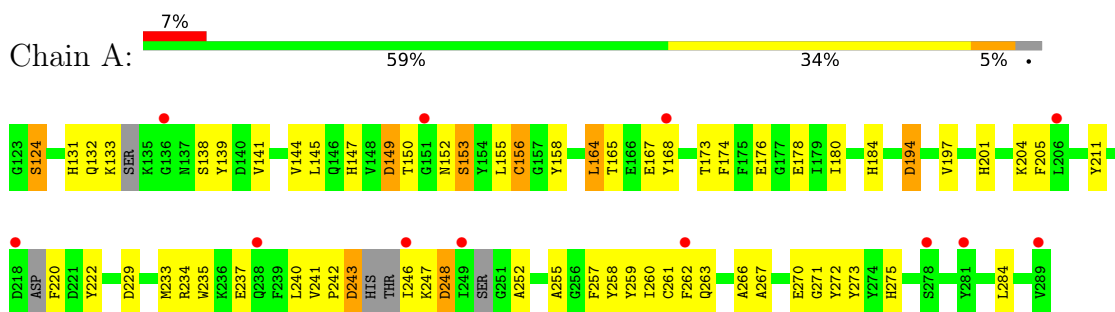
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	E	7	Total 7	O 7	0	0
5	F	4	Total 4	O 4	0	0
5	G	6	Total 6	O 6	0	0
5	H	3	Total 3	O 3	0	0

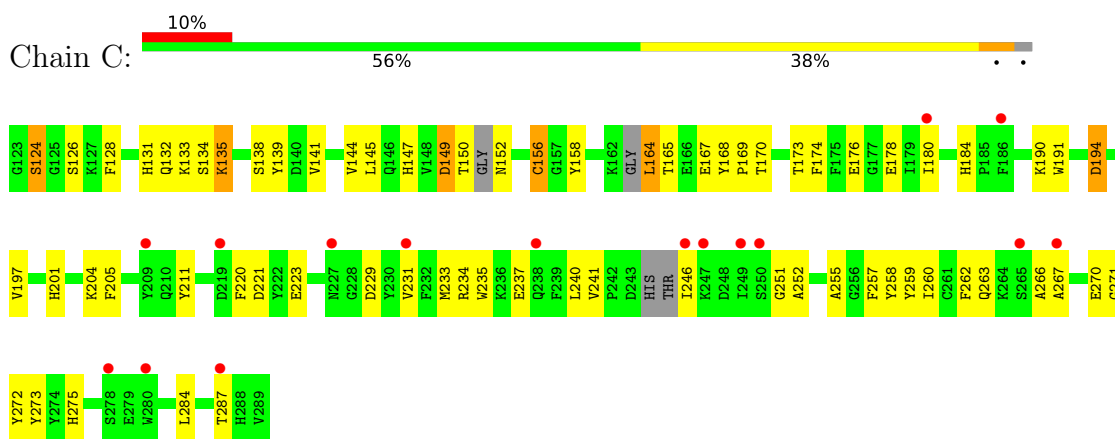
### 3 Residue-property plots [i](#)

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

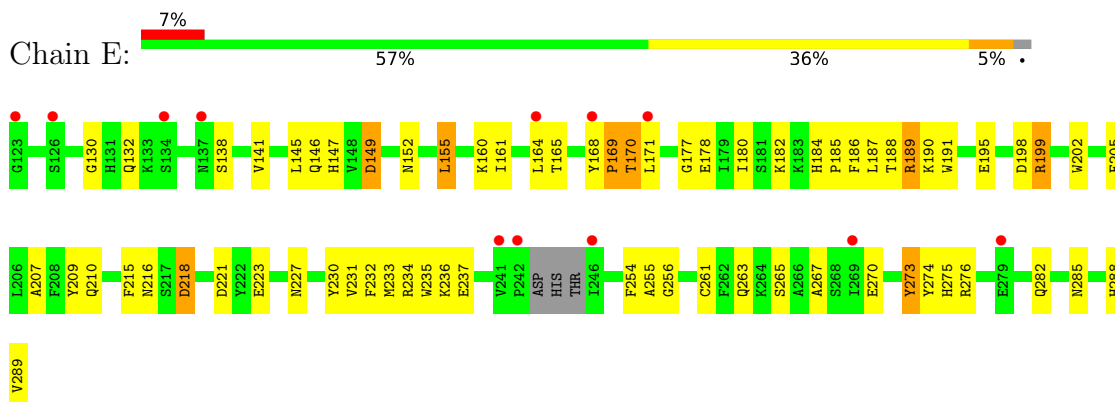
- Molecule 1: Glucose-induced degradation protein 4 homolog



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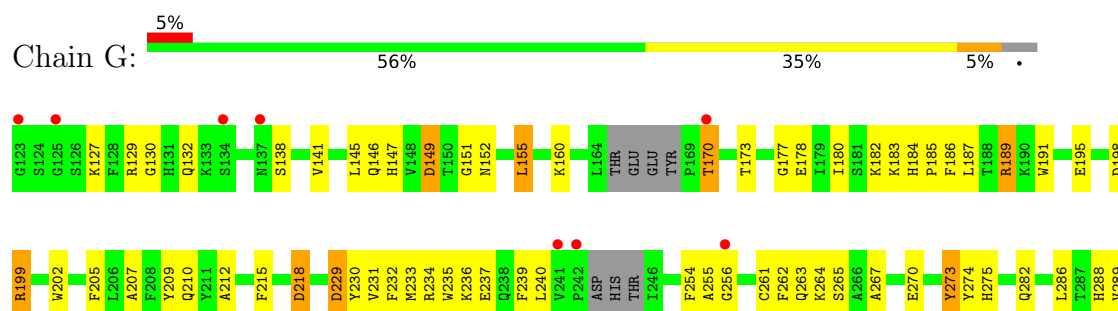


- Molecule 1: Glucose-induced degradation protein 4 homolog

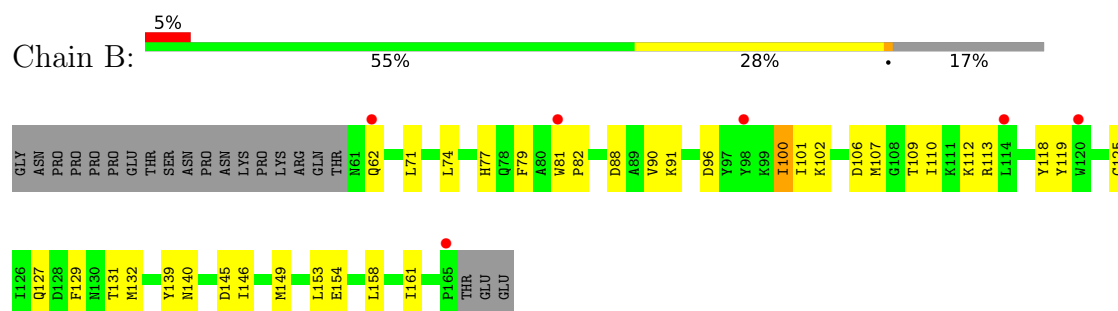




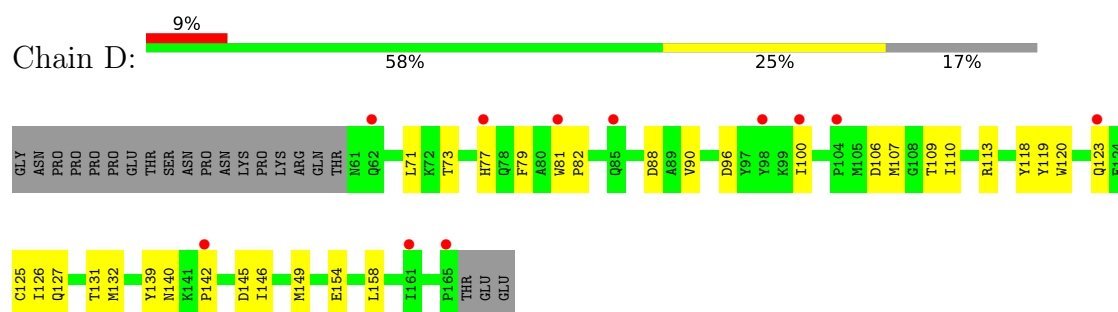
- Molecule 1: Glucose-induced degradation protein 4 homolog



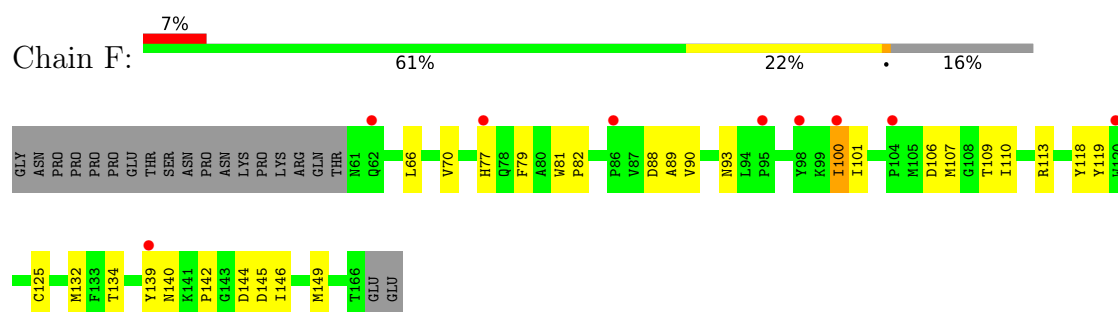
- Molecule 2: Bromodomain-containing protein 4



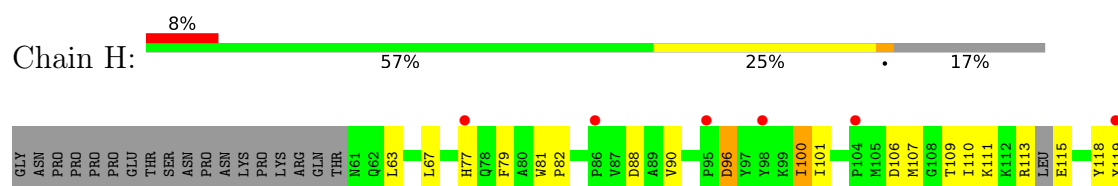
- Molecule 2: Bromodomain-containing protein 4



- Molecule 2: Bromodomain-containing protein 4



- Molecule 2: Bromodomain-containing protein 4





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	56.85Å 87.61Å 88.44Å 103.09° 90.90° 106.23°	Depositor
Resolution (Å)	38.46 – 2.90 38.46 – 2.90	Depositor EDS
% Data completeness (in resolution range)	97.1 (38.46-2.90) 97.1 (38.46-2.90)	Depositor EDS
$R_{merge}$	0.09	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.29 (at 2.90Å)	Xtriage
Refinement program	PHENIX (1.20.1_4487: ???)	Depositor
R, $R_{free}$	0.235 , 0.301 0.244 , 0.301	Depositor DCC
$R_{free}$ test set	33433 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	59.9	Xtriage
Anisotropy	0.456	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 117.7	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.51$ , $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	0.000 for h,-h-k,-l	Xtriage
$F_o, F_c$ correlation	0.92	EDS
Total number of atoms	8411	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	78.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 15.27% of the height of the origin peak. No significant pseudotranslation is detected.*

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

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: YBI, GOL

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	0.64	0/1248	0.81	0/1700
1	C	0.64	0/1232	0.82	0/1685
1	E	0.77	0/1301	0.94	0/1771
1	G	0.77	0/1278	0.95	0/1734
2	B	0.61	0/824	0.83	0/1132
2	D	0.57	0/816	0.83	0/1124
2	F	0.57	0/780	0.81	0/1072
2	H	0.58	0/796	0.88	0/1092
All	All	0.66	0/8275	0.87	0/11310

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
1	G	0	2

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	G	129	ARG	Sidechain
1	G	189	ARG	Sidechain

## 5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1211	0	958	57	0
1	C	1196	0	909	54	0
1	E	1260	0	1040	72	0
1	G	1240	0	1039	63	0
2	B	800	0	671	32	0
2	D	792	0	659	34	0
2	F	760	0	608	20	0
2	H	776	0	648	23	0
3	A	66	0	0	4	0
3	C	66	0	0	2	0
3	E	66	0	0	0	0
3	G	66	0	0	0	0
4	B	6	0	8	1	0
4	D	24	0	31	1	0
4	G	12	0	16	0	0
4	H	6	0	8	0	0
5	A	11	0	0	0	0
5	B	11	0	0	1	0
5	C	10	0	0	1	0
5	D	12	0	0	1	0
5	E	7	0	0	2	0
5	F	4	0	0	0	0
5	G	6	0	0	1	0
5	H	3	0	0	1	0
All	All	8411	0	6595	341	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 23.

The worst 5 of 341 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:G:180:ILE:HG12	1:G:232:PHE:O	1.64	0.97
1:E:180:ILE:HG12	1:E:232:PHE:O	1.64	0.96
1:A:205:PHE:HE1	1:A:270:GLU:HG2	1.36	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:205:PHE:HE1	1:C:270:GLU:HG2	1.36	0.89
1:C:233:MET:HE3	1:C:235:TRP:HE1	1.38	0.88

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	152/167 (91%)	131 (86%)	20 (13%)	1 (1%)	19	49
1	C	155/167 (93%)	132 (85%)	19 (12%)	4 (3%)	4	17
1	E	160/167 (96%)	138 (86%)	19 (12%)	3 (2%)	6	24
1	G	154/167 (92%)	138 (90%)	16 (10%)	0	100	100
2	B	103/126 (82%)	82 (80%)	21 (20%)	0	100	100
2	D	103/126 (82%)	84 (82%)	19 (18%)	0	100	100
2	F	104/126 (82%)	84 (81%)	20 (19%)	0	100	100
2	H	101/126 (80%)	81 (80%)	19 (19%)	1 (1%)	13	40
All	All	1032/1172 (88%)	870 (84%)	153 (15%)	9 (1%)	14	43

5 of 9 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	169	PRO
1	E	276	ARG
1	C	169	PRO
1	E	189	ARG
1	C	135	LYS

### 5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	100/147 (68%)	90 (90%)	10 (10%)	6	20
1	C	92/147 (63%)	82 (89%)	10 (11%)	5	17
1	E	109/147 (74%)	99 (91%)	10 (9%)	7	24
1	G	110/147 (75%)	99 (90%)	11 (10%)	6	20
2	B	72/118 (61%)	68 (94%)	4 (6%)	17	47
2	D	70/118 (59%)	70 (100%)	0	100	100
2	F	62/118 (52%)	61 (98%)	1 (2%)	58	84
2	H	68/118 (58%)	64 (94%)	4 (6%)	16	45
All	All	683/1060 (64%)	633 (93%)	50 (7%)	11	34

5 of 50 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	216	ASN
1	G	149	ASP
2	H	161	ILE
1	E	218	ASP
1	E	282	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 12 such sidechains are listed below:

Mol	Chain	Res	Type
2	F	77	HIS
2	F	140	ASN
2	H	140	ASN
1	G	238	GLN
2	D	77	HIS

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

12 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	YBI	C	301	-	64,75,75	3.60	24 (37%)	71,108,108	2.47	28 (39%)
4	GOL	H	201	-	5,5,5	0.81	0	5,5,5	1.23	0
3	YBI	A	301	-	64,75,75	3.60	24 (37%)	71,108,108	2.47	27 (38%)
4	GOL	D	204	-	5,5,5	0.87	0	5,5,5	1.12	0
3	YBI	E	301	-	64,75,75	3.48	31 (48%)	71,108,108	1.59	13 (18%)
4	GOL	D	201	-	5,5,5	1.17	1 (20%)	5,5,5	1.29	0
4	GOL	D	203	-	5,5,5	1.59	1 (20%)	5,5,5	0.85	0
4	GOL	G	302	-	5,5,5	1.07	0	5,5,5	0.92	0
4	GOL	G	303	-	5,5,5	0.93	0	5,5,5	0.93	0
3	YBI	G	301	-	64,75,75	3.45	31 (48%)	71,108,108	1.58	15 (21%)
4	GOL	B	201	-	5,5,5	0.09	0	5,5,5	0.29	0
4	GOL	D	202	-	5,5,5	1.30	1 (20%)	5,5,5	0.85	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	YBI	C	301	-	-	6/27/69/69	0/9/10/10

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GOL	H	201	-	-	4/4/4/4	-
3	YBI	A	301	-	-	6/27/69/69	0/9/10/10
4	GOL	D	204	-	-	1/4/4/4	-
3	YBI	E	301	-	-	6/27/69/69	0/9/10/10
4	GOL	D	201	-	-	4/4/4/4	-
4	GOL	D	203	-	-	4/4/4/4	-
4	GOL	G	302	-	-	0/4/4/4	-
4	GOL	G	303	-	-	2/4/4/4	-
3	YBI	G	301	-	-	6/27/69/69	0/9/10/10
4	GOL	B	201	-	-	0/4/4/4	-
4	GOL	D	202	-	-	2/4/4/4	-

The worst 5 of 113 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	301	YBI	C5-N4	17.01	1.50	1.28
3	A	301	YBI	C5-N4	16.94	1.50	1.28
3	E	301	YBI	C5-N4	16.19	1.49	1.28
3	G	301	YBI	C5-N4	16.00	1.49	1.28
3	G	301	YBI	C66-N59	-7.11	1.31	1.47

The worst 5 of 83 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	301	YBI	C3-N4-C5	8.29	125.66	117.62
3	C	301	YBI	C3-N4-C5	8.23	125.60	117.62
3	C	301	YBI	C21-C22-C23	6.58	126.18	119.24
3	A	301	YBI	C21-C22-C23	6.52	126.12	119.24
3	C	301	YBI	C38-C39-C34	6.49	118.67	111.48

There are no chirality outliers.

5 of 41 torsion outliers are listed below:

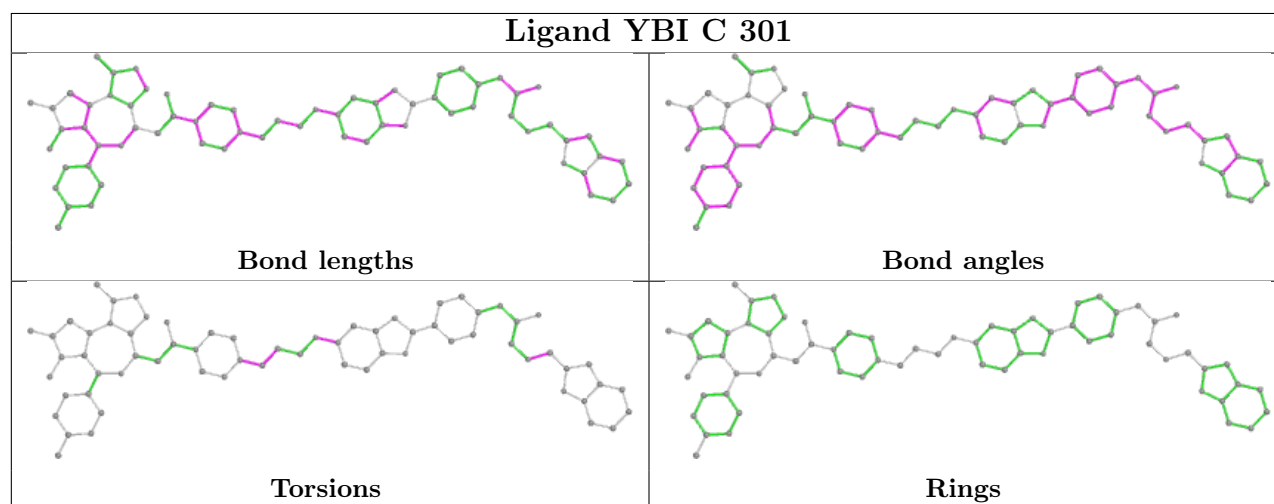
Mol	Chain	Res	Type	Atoms
3	A	301	YBI	C27-C28-N29-C30
3	C	301	YBI	C27-C28-N29-C30
4	D	201	GOL	O1-C1-C2-O2
4	D	201	GOL	O1-C1-C2-C3
4	D	202	GOL	C1-C2-C3-O3

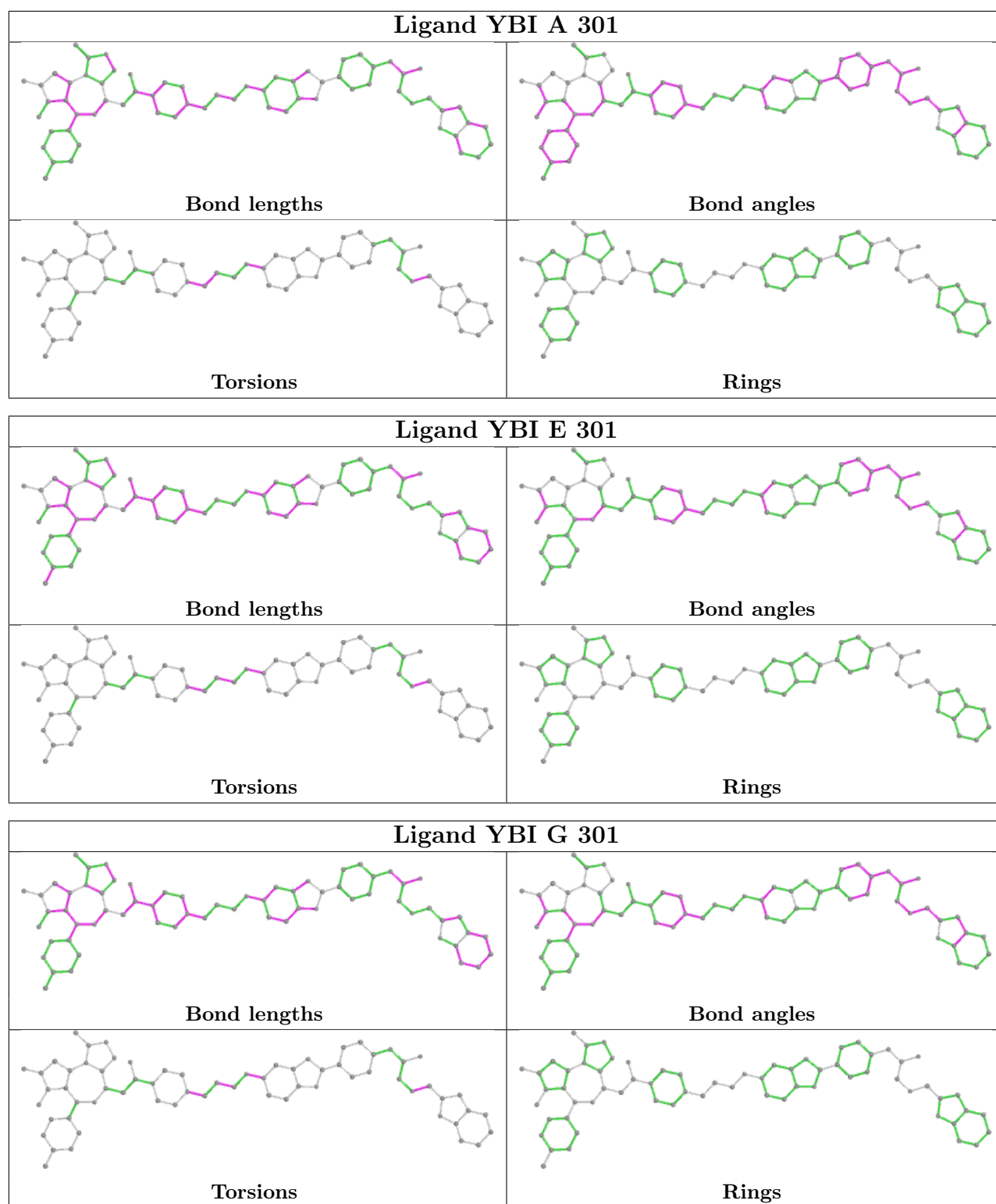
There are no ring outliers.

4 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	301	YBI	2	0
3	A	301	YBI	4	0
4	D	204	GOL	1	0
4	B	201	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 ⓘ

There are no chain breaks in this entry.

## 6 Fit of model and data [i](#)

### 6.1 Protein, DNA and RNA chains [i](#)

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	162/167 (97%)	0.71	12 (7%) 22 19	37, 81, 125, 182	0
1	C	163/167 (97%)	0.68	16 (9%) 14 12	37, 81, 125, 167	0
1	E	164/167 (98%)	0.63	12 (7%) 22 19	27, 72, 120, 135	0
1	G	160/167 (95%)	0.56	8 (5%) 35 30	27, 71, 117, 135	0
2	B	105/126 (83%)	0.60	6 (5%) 30 26	42, 74, 112, 139	0
2	D	105/126 (83%)	0.69	11 (10%) 13 11	42, 73, 113, 157	0
2	F	106/126 (84%)	0.58	9 (8%) 18 15	42, 74, 107, 127	0
2	H	105/126 (83%)	0.69	10 (9%) 15 13	43, 74, 112, 135	0
All	All	1070/1172 (91%)	0.64	84 (7%) 20 17	27, 76, 121, 182	0

The worst 5 of 84 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	249	ILE	4.9
1	C	250	SER	4.2
2	D	123	GLN	4.0
2	D	62	GLN	3.6
2	F	98	TYR	3.5

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

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

### 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 6.4 Ligands

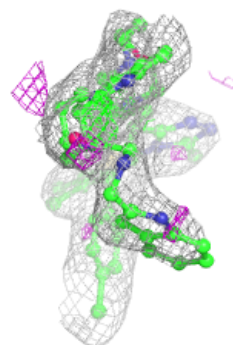
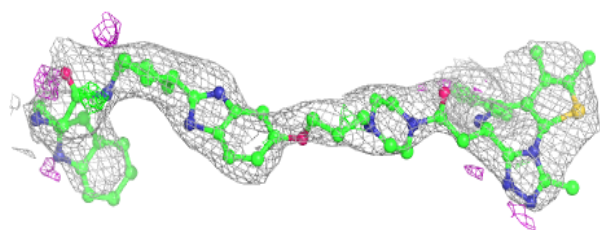
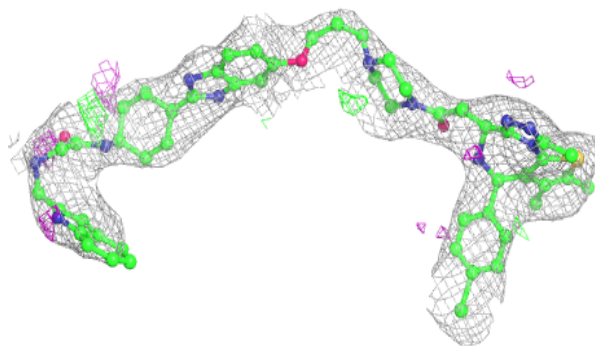
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
4	GOL	G	302	6/6	0.74	0.17	67,98,104,156	0
4	GOL	G	303	6/6	0.82	0.15	41,98,123,222	0
4	GOL	D	204	6/6	0.86	0.10	43,96,127,166	0
4	GOL	B	201	6/6	0.87	0.17	7,26,86,91	0
4	GOL	D	202	6/6	0.88	0.16	32,52,80,248	0
3	YBI	G	301	66/66	0.88	0.18	17,67,157,257	0
4	GOL	D	203	6/6	0.90	0.09	53,78,106,139	0
3	YBI	E	301	66/66	0.90	0.17	17,67,157,257	0
3	YBI	A	301	66/66	0.94	0.14	2,51,179,342	0
3	YBI	C	301	66/66	0.94	0.14	2,51,179,342	0
4	GOL	H	201	6/6	0.95	0.10	20,61,89,95	0
4	GOL	D	201	6/6	0.97	0.09	2,30,59,183	0

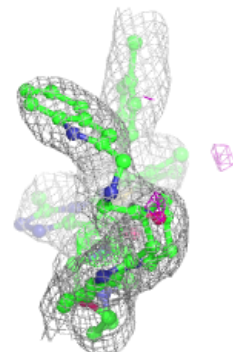
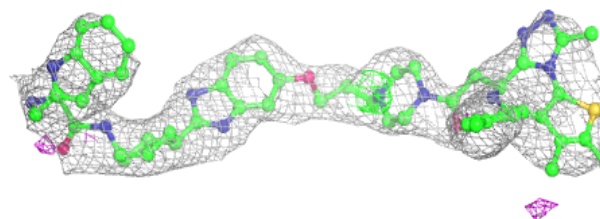
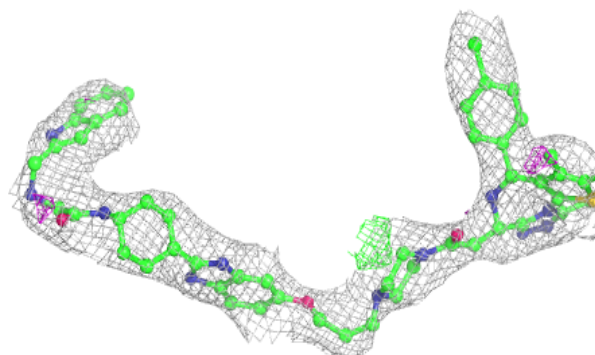
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

**Electron density around YBI G 301:**

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

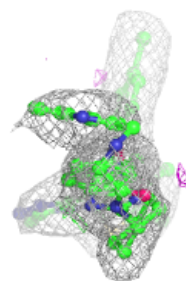
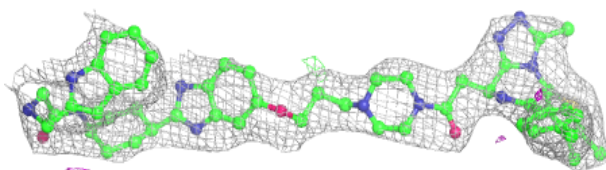
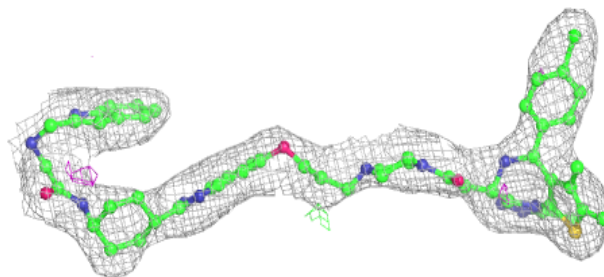
**Electron density around YBI E 301:**

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

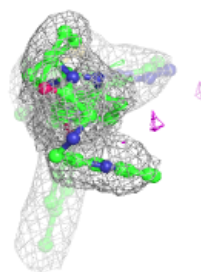
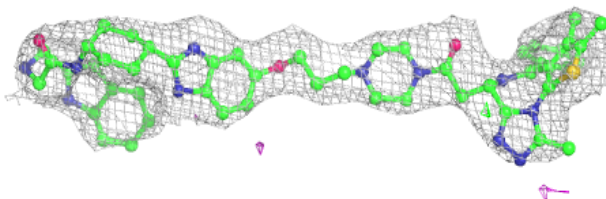
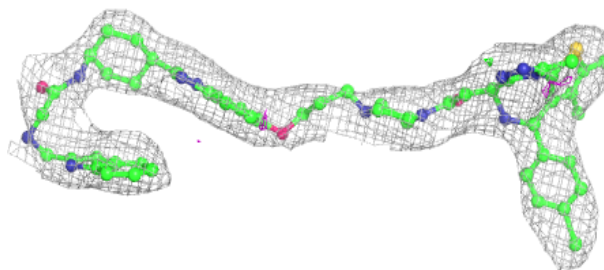


**Electron density around YBI A 301:**

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

**Electron density around YBI C 301:**

$2mF_o-DF_c$  (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.