



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 08:37 AM UTC

PDB ID : 8WUZ / pdb\_00008wuz  
Title : Development of 2-imino-2,3,5,6,7,8-hexahydropyrido[4,3-d]pyrimidin-4(1H)-one derivatives as human caseinolytic peptidase P (hClpP) activators  
Authors : Jiang, J.-X.; Ding, H.; Chen, M.-R.; Lu, M.-L.; Sun, H.-Y.; Xiao, Y.-B.  
Deposited on : 2023-10-22  
Resolution : 2.90 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](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>.

---

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

MolProbity : 4-5-2 with Phenix2.0  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtriage (Phenix) : 2.0  
EDS : 3.0  
Buster-report : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
CCP4 : 9.0.010 (Gargrove)  
Density-Fitness : 1.0.12  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

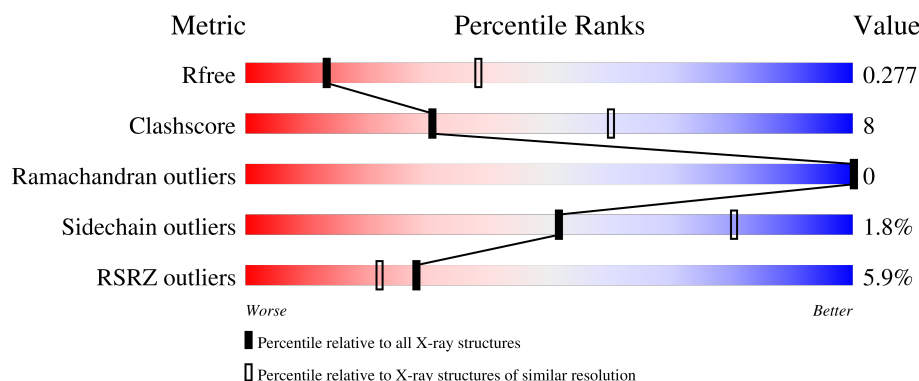
# 1 Overall quality at a glance

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))
$R_{free}$	180053	2481 (2.90-2.90)
Clashscore	190562	2690 (2.90-2.90)
Ramachandran outliers	187476	2623 (2.90-2.90)
Sidechain outliers	187428	2625 (2.90-2.90)
RSRZ outliers	180081	2481 (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	221	<div> <div>5%</div> <div> <div>65%</div> <div>18%</div> <div>•</div> <div>16%</div> </div> </div>
1	B	221	<div> <div>4%</div> <div> <div>67%</div> <div>15%</div> <div>•</div> <div>17%</div> </div> </div>
1	C	221	<div> <div>6%</div> <div> <div>65%</div> <div>16%</div> <div>•</div> <div>17%</div> </div> </div>
1	D	221	<div> <div>5%</div> <div> <div>68%</div> <div>14%</div> <div>17%</div> </div> </div>
1	E	221	<div> <div>3%</div> <div> <div>73%</div> <div>10%</div> <div>17%</div> </div> </div>

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Length	Quality of chain
1	F	221	<div><div></div><div>6%</div><div>63%</div><div>20%</div><div>17%</div></div>
1	G	221	<div><div></div><div>5%</div><div>62%</div><div>21%</div><div>17%</div></div>

## 2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 10128 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.

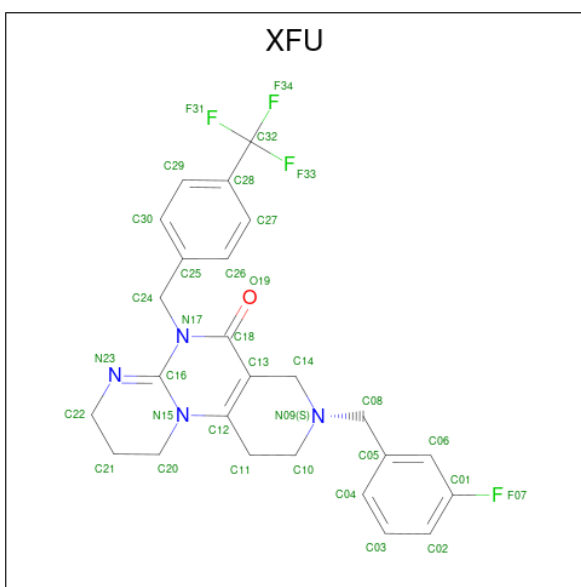
- Molecule 1 is a protein called ATP-dependent Clp protease proteolytic subunit, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	185	Total	C	N	O	S	0	0	0
			1420	904	244	259	13			
1	B	184	Total	C	N	O	S	0	0	0
			1412	901	240	258	13			
1	C	183	Total	C	N	O	S	0	0	0
			1407	898	239	257	13			
1	D	183	Total	C	N	O	S	0	0	0
			1411	899	242	257	13			
1	E	184	Total	C	N	O	S	0	0	0
			1418	904	243	258	13			
1	F	184	Total	C	N	O	S	0	0	0
			1408	899	239	257	13			
1	G	184	Total	C	N	O	S	0	0	0
			1406	898	237	258	13			

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	57	SER	-	expression tag	UNP Q16740
B	57	SER	-	expression tag	UNP Q16740
C	57	SER	-	expression tag	UNP Q16740
D	57	SER	-	expression tag	UNP Q16740
E	57	SER	-	expression tag	UNP Q16740
F	57	SER	-	expression tag	UNP Q16740
G	57	SER	-	expression tag	UNP Q16740

- Molecule 2 is 5-[(3-fluorophenyl)methyl]-9-[[4-(trifluoromethyl)phenyl]methyl]-1,5,9,11-tetrazatricyclo[8.4.0.0<sup>2,7</sup>]<sup>1</sup>tetradeca-2(7),10-dien-8-one (CCD ID: XFU) (formula: C<sub>25</sub>H<sub>24</sub>F<sub>4</sub>N<sub>4</sub>O).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	F	N	O	0	0
			34	25	4	4	1		
2	B	1	Total	C	F	N	O	0	0
			34	25	4	4	1		
2	C	1	Total	C	F	N	O	0	0
			34	25	4	4	1		
2	D	1	Total	C	F	N	O	0	0
			34	25	4	4	1		
2	E	1	Total	C	F	N	O	0	0
			34	25	4	4	1		
2	F	1	Total	C	F	N	O	0	0
			34	25	4	4	1		
2	G	1	Total	C	F	N	O	0	0
			34	25	4	4	1		

- Molecule 3 is BROMIDE ION (CCD ID: BR) (formula: Br).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total	Br	0	0
			1	1		
3	B	2	Total	Br	0	0
			2	2		
3	C	1	Total	Br	0	0
			1	1		
3	D	1	Total	Br	0	0
			1	1		
3	E	1	Total	Br	0	0
			1	1		

*Continued on next page...*

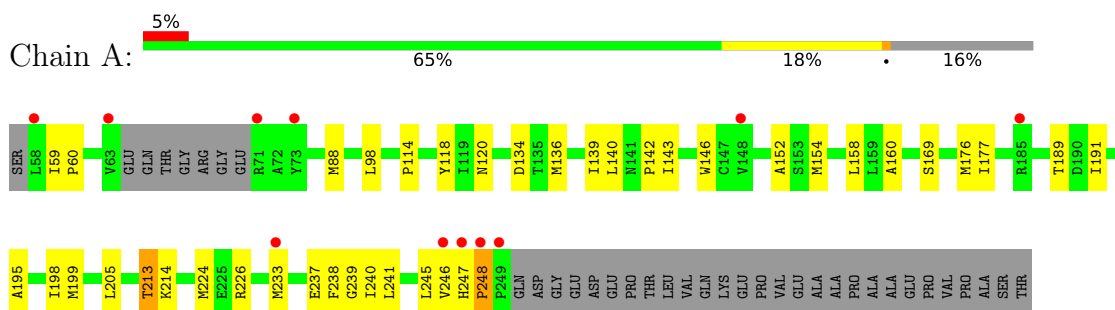
*Continued from previous page...*

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	F	1	Total 1	Br 1	0	0
3	G	1	Total 1	Br 1	0	0

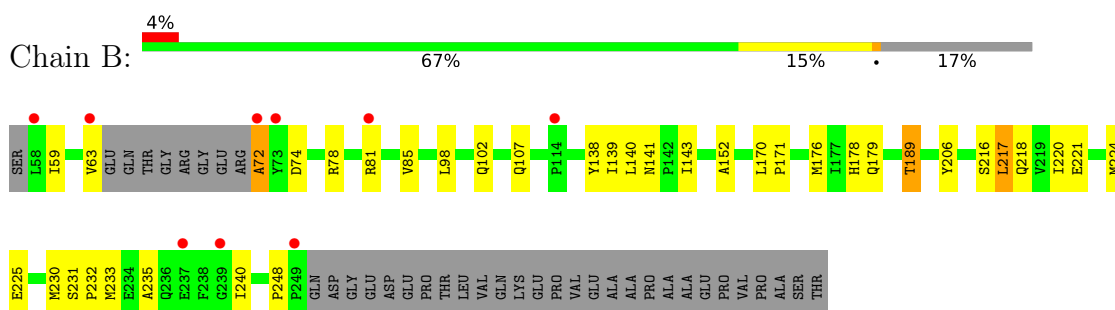
### 3 Residue-property plots [i](#)

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.

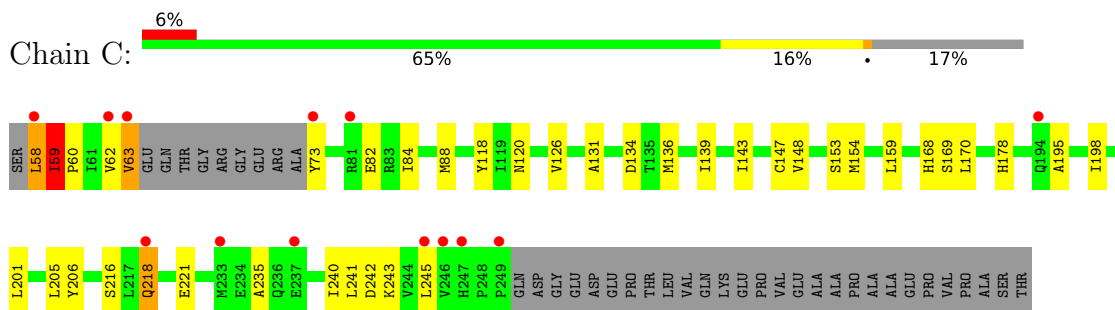
- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial



- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial

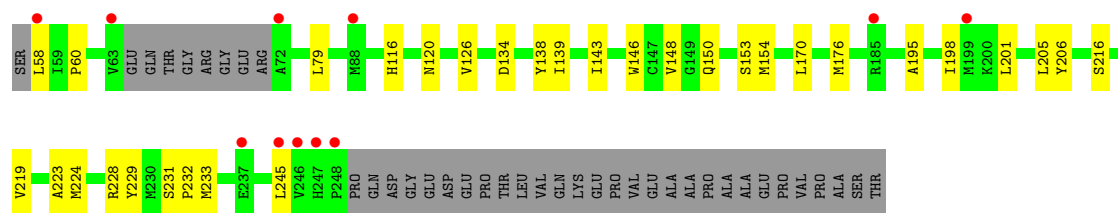


- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial

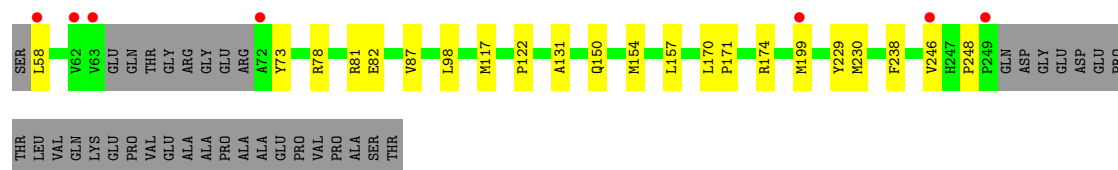
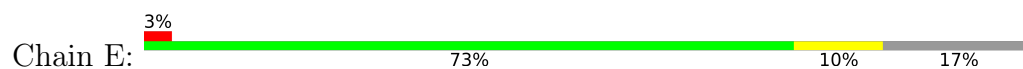


- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial

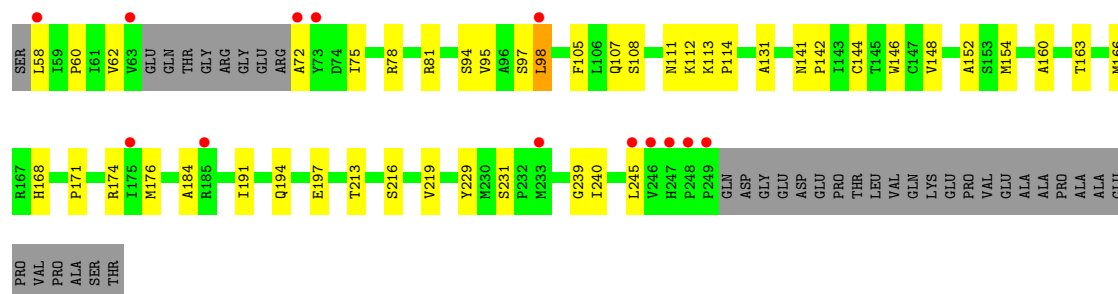




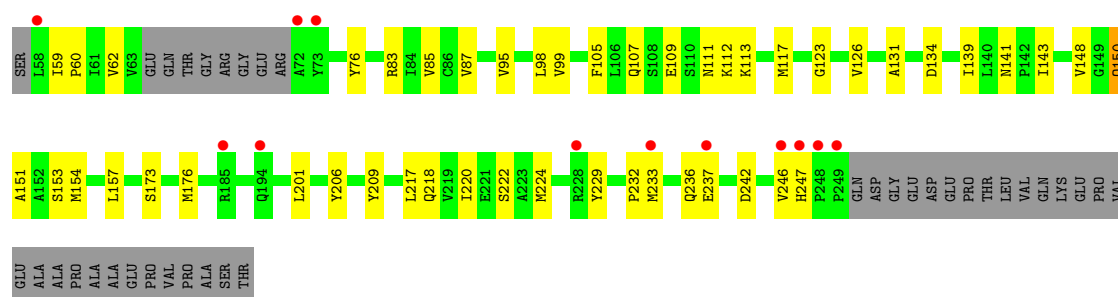
- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial



- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial



- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial





## 4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	148.28Å 184.94Å 163.22Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.75 – 2.90 47.75 – 2.90	Depositor EDS
% Data completeness (in resolution range)	99.9 (47.75-2.90) 99.8 (47.75-2.90)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.74 (at 2.91Å)	Xtriage
Refinement program	PHENIX (1.18.2_3874: ???)	Depositor
R, $R_{free}$	0.233 , 0.276 0.236 , 0.277	Depositor DCC
$R_{free}$ test set	2000 reflections (3.97%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	38.1	Xtriage
Anisotropy	0.799	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.35 , 36.2	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.45$ , $\langle L^2 \rangle = 0.27$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.89	EDS
Total number of atoms	10128	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	38.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 9.16% 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: XFU, BR

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	0.72	0/1446	0.78	2/1958 (0.1%)
1	B	0.73	1/1438 (0.1%)	0.78	3/1948 (0.2%)
1	C	0.50	0/1433	0.77	4/1941 (0.2%)
1	D	0.55	0/1436	0.72	0/1943
1	E	0.45	0/1444	0.66	0/1955
1	F	0.74	0/1434	0.75	2/1943 (0.1%)
1	G	0.60	0/1432	0.68	1/1941 (0.1%)
All	All	0.62	1/10063 (0.0%)	0.73	12/13629 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	225	GLU	C-O	-7.54	1.15	1.24

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	72	ALA	CA-C-N	-7.32	110.39	122.39
1	B	72	ALA	C-N-CA	-7.32	110.39	122.39
1	C	218	GLN	CB-CG-CD	6.52	123.68	112.60
1	B	231	SER	N-CA-C	-6.06	103.04	110.31
1	F	231	SER	N-CA-C	-5.96	103.16	110.31
1	C	59	ILE	N-CA-C	-5.94	101.05	108.05
1	A	248	PRO	N-CA-C	5.51	117.43	110.70
1	A	213	THR	N-CA-C	-5.51	106.72	113.50
1	C	218	GLN	N-CA-CB	-5.33	102.28	110.01
1	C	218	GLN	CA-CB-CG	5.05	124.20	114.10
1	G	109	GLU	CA-CB-CG	5.05	124.19	114.10
1	F	95	VAL	N-CA-C	-5.01	105.51	110.62

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1420	0	1453	36	0
1	B	1412	0	1449	30	0
1	C	1407	0	1444	29	0
1	D	1411	0	1453	25	0
1	E	1418	0	1460	16	0
1	F	1408	0	1443	30	0
1	G	1406	0	1438	34	0
2	A	34	0	0	0	0
2	B	34	0	0	0	0
2	C	34	0	0	0	0
2	D	34	0	0	2	0
2	E	34	0	0	0	0
2	F	34	0	0	0	0
2	G	34	0	0	0	0
3	A	1	0	0	0	0
3	B	2	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	1	0
3	E	1	0	0	0	0
3	F	1	0	0	1	0
3	G	1	0	0	1	0
All	All	10128	0	10140	168	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 8.

All (168) 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:226:ARG:HH12	1:B:189:THR:HB	1.29	0.95
1:A:248:PRO:HG3	1:B:140:LEU:HD21	1.45	0.95

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:60:PRO:HG2	1:F:75:ILE:HD12	1.64	0.80
1:A:226:ARG:HH12	1:B:189:THR:CB	1.97	0.76
1:A:226:ARG:NH1	1:B:189:THR:HB	2.01	0.74
1:G:126:VAL:HG21	1:G:201:LEU:HD21	1.72	0.71
1:B:206:TYR:HB3	1:B:217:LEU:HD11	1.74	0.70
1:G:236:GLN:NE2	1:G:242:ASP:O	2.23	0.69
1:A:136:MET:HE3	1:A:158:LEU:HD22	1.75	0.67
1:C:126:VAL:HG11	1:C:201:LEU:HD21	1.76	0.67
1:A:59:ILE:HG13	1:E:58:LEU:HD13	1.76	0.66
1:F:142:PRO:HB3	1:F:166:MET:HE1	1.78	0.65
1:C:88:MET:HG2	1:C:120:ASN:HB3	1.77	0.65
1:G:123:GLY:HA3	1:G:153:SER:HB3	1.76	0.65
1:A:139:ILE:HD11	1:A:143:ILE:HD11	1.79	0.64
1:A:248:PRO:HG3	1:B:140:LEU:CD2	2.22	0.64
1:F:60:PRO:HG2	1:F:75:ILE:CD1	2.28	0.63
1:A:195:ALA:O	1:A:198:ILE:HG22	1.99	0.63
1:D:170:LEU:HD22	1:G:134:ASP:HB3	1.81	0.63
1:C:169:SER:HB2	1:C:241:LEU:HD22	1.80	0.62
1:B:248:PRO:HG3	1:D:138:TYR:CZ	2.35	0.62
1:B:230:MET:HE1	1:B:240:ILE:HD12	1.82	0.61
1:A:88:MET:HE3	1:A:118:TYR:HB3	1.83	0.61
1:F:174:ARG:HH21	1:F:229:TYR:HB3	1.64	0.61
1:D:116:HIS:HD2	1:D:146:TRP:HE1	1.48	0.61
1:C:131:ALA:HB1	1:F:148:VAL:HG12	1.83	0.60
1:E:78:ARG:HH12	1:E:82:GLU:HG2	1.65	0.60
1:A:88:MET:HG2	1:A:120:ASN:HB3	1.84	0.60
1:F:107:GLN:HG3	1:F:141:ASN:OD1	2.02	0.59
1:F:163:THR:HB	1:F:166:MET:HE3	1.84	0.59
1:G:87:VAL:HG21	1:G:117:MET:HE3	1.83	0.59
1:G:139:ILE:HD11	1:G:143:ILE:HD11	1.85	0.58
1:B:230:MET:HE3	1:B:235:ALA:HA	1.85	0.58
1:C:154:MET:HE1	1:C:205:LEU:HD22	1.85	0.58
1:A:198:ILE:HG23	1:A:199:MET:HE2	1.85	0.58
1:C:168:HIS:HD2	1:C:245:LEU:HD11	1.68	0.58
1:G:154:MET:HA	1:G:154:MET:HE2	1.84	0.58
1:D:126:VAL:HG11	1:D:201:LEU:HD21	1.85	0.58
1:B:63:VAL:HG23	1:B:72:ALA:N	2.19	0.57
1:F:168:HIS:HD2	1:F:245:LEU:HD21	1.70	0.57
1:A:60:PRO:HD2	1:B:98:LEU:HD11	1.86	0.57
1:G:83:ARG:HD2	1:G:113:LYS:HD2	1.87	0.57
1:F:168:HIS:CD2	1:F:245:LEU:HD21	2.41	0.56

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:58:LEU:HD21	1:G:59:ILE:HG13	1.87	0.56
1:G:176:MET:HG3	1:G:229:TYR:CE1	2.42	0.55
1:E:87:VAL:HG21	1:E:117:MET:HE3	1.88	0.55
1:F:168:HIS:HB3	1:F:245:LEU:CD2	2.36	0.55
1:C:216:SER:OG	1:C:218:GLN:HB3	2.07	0.55
1:B:170:LEU:HD13	1:D:134:ASP:HB3	1.89	0.54
1:E:154:MET:HE1	1:E:157:LEU:HD13	1.88	0.54
1:F:197:GLU:HG3	1:G:229:TYR:CD2	2.43	0.54
1:E:174:ARG:HH21	1:E:229:TYR:HB3	1.73	0.54
1:A:146:TRP:HZ3	1:A:245:LEU:HD13	1.73	0.53
1:D:153:SER:OG	1:D:154:MET:N	2.42	0.53
1:F:131:ALA:HB1	1:G:148:VAL:HG12	1.90	0.53
1:F:78:ARG:O	1:F:81:ARG:HB2	2.09	0.53
1:G:220:ILE:HG23	1:G:224:MET:HE2	1.90	0.53
1:A:136:MET:CE	1:A:158:LEU:HD22	2.39	0.53
1:G:209:TYR:CD2	1:G:224:MET:HE1	2.43	0.53
1:D:148:VAL:HG22	1:D:170:LEU:HD12	1.90	0.53
1:G:236:GLN:HE21	1:G:242:ASP:C	2.15	0.52
1:A:247:HIS:HB3	1:A:248:PRO:HD2	1.91	0.51
1:B:152:ALA:HB1	1:B:176:MET:HE3	1.92	0.51
1:D:154:MET:HA	1:D:154:MET:HE2	1.93	0.51
1:F:163:THR:HB	1:F:166:MET:CE	2.41	0.51
1:A:59:ILE:HG13	1:E:58:LEU:CD1	2.40	0.50
1:C:147:CYS:HB2	1:C:159:LEU:HD22	1.93	0.50
1:A:248:PRO:HD3	1:B:138:TYR:O	2.11	0.50
1:C:58:LEU:HD12	1:C:59:ILE:H	1.76	0.50
1:C:134:ASP:CG	1:F:171:PRO:HD2	2.36	0.50
1:D:154:MET:HE1	1:D:205:LEU:HD22	1.94	0.50
1:A:213:THR:O	1:A:214:LYS:HB2	2.12	0.49
1:D:148:VAL:HG12	1:G:131:ALA:HB1	1.93	0.49
1:B:139:ILE:HD11	1:B:143:ILE:HD11	1.94	0.49
1:B:171:PRO:O	1:B:232:PRO:HG2	2.12	0.49
1:F:160:ALA:HB2	1:F:240:ILE:HG23	1.93	0.49
1:A:160:ALA:HB2	1:A:240:ILE:HG23	1.94	0.49
1:B:107:GLN:HG3	1:B:141:ASN:OD1	2.13	0.48
1:C:60:PRO:HD2	1:E:98:LEU:HD11	1.95	0.48
1:G:85:VAL:HG11	1:G:99:VAL:HG13	1.96	0.48
1:G:173:SER:O	1:G:232:PRO:HD3	2.14	0.48
1:A:213:THR:HG22	1:A:238:PHE:O	2.13	0.48
1:C:195:ALA:O	1:C:198:ILE:HG22	2.14	0.48
1:C:58:LEU:CG	1:C:59:ILE:H	2.27	0.48

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:139:ILE:HD11	1:D:143:ILE:HD11	1.96	0.48
1:A:146:TRP:HZ3	1:A:245:LEU:CD1	2.26	0.47
1:A:226:ARG:HH12	1:B:189:THR:CG2	2.27	0.47
1:A:213:THR:HA	1:A:239:GLY:O	2.13	0.47
1:F:60:PRO:CG	1:F:75:ILE:HD12	2.40	0.47
1:A:246:VAL:O	1:A:247:HIS:HB2	2.13	0.47
1:C:153:SER:HB2	1:C:178:HIS:CE1	2.50	0.47
1:G:206:TYR:CD1	1:G:224:MET:HE3	2.50	0.47
1:G:246:VAL:HG12	1:G:247:HIS:CE1	2.50	0.47
1:D:216:SER:OG	1:D:219:VAL:HG23	2.15	0.47
1:G:107:GLN:HG3	1:G:141:ASN:OD1	2.15	0.46
1:E:73:TYR:OH	1:E:81:ARG:NH2	2.39	0.46
1:G:153:SER:OG	1:G:154:MET:N	2.48	0.46
1:E:230:MET:HE1	1:E:238:PHE:CG	2.51	0.46
1:C:88:MET:HE3	1:C:118:TYR:HB3	1.97	0.46
1:G:111:ASN:O	1:G:112:LYS:HE2	2.15	0.46
1:G:154:MET:HE1	1:G:157:LEU:HD13	1.98	0.46
1:A:114:PRO:HA	1:A:142:PRO:HD2	1.97	0.46
1:C:153:SER:OG	1:C:154:MET:N	2.48	0.46
1:D:60:PRO:HD3	1:G:98:LEU:HD11	1.97	0.46
1:D:176:MET:HA	1:D:228:ARG:O	2.15	0.46
1:F:216:SER:OG	1:F:219:VAL:HG23	2.15	0.46
1:F:98:LEU:HD21	1:G:60:PRO:HD2	1.97	0.46
1:C:139:ILE:HD11	1:C:143:ILE:HD11	1.97	0.45
1:D:79:LEU:HD23	2:D:301:XFU:F31	2.05	0.45
1:C:62:VAL:HG22	1:C:73:TYR:O	2.17	0.45
1:F:213:THR:HA	1:F:239:GLY:O	2.17	0.45
1:A:98:LEU:HD23	1:A:98:LEU:HA	1.84	0.45
1:A:177:ILE:HD12	1:A:224:MET:HG3	1.97	0.45
1:A:248:PRO:CG	1:B:140:LEU:HD21	2.33	0.45
1:A:154:MET:HE1	1:A:205:LEU:HD22	1.99	0.45
1:D:206:TYR:CE1	1:D:224:MET:HE2	2.51	0.45
1:D:58:LEU:HG	1:G:76:TYR:CD2	2.52	0.45
1:B:206:TYR:CE2	1:B:221:GLU:HA	2.52	0.45
1:C:148:VAL:HG12	1:E:131:ALA:HB1	2.00	0.44
1:F:194:GLN:NE2	1:G:229:TYR:OH	2.49	0.44
1:C:62:VAL:HG23	1:C:63:VAL:H	1.83	0.44
1:F:62:VAL:O	1:F:72:ALA:HA	2.17	0.44
1:F:152:ALA:HB1	1:F:176:MET:HE3	1.99	0.44
2:D:301:XFU:F33	1:G:105:PHE:HB2	2.08	0.44
1:B:98:LEU:HD12	1:B:98:LEU:HA	1.77	0.44

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:85:VAL:HG13	1:B:102:GLN:OE1	2.17	0.43
1:C:136:MET:HE3	1:C:143:ILE:HG21	2.00	0.43
1:A:152:ALA:HB1	1:A:176:MET:HE3	2.00	0.43
1:D:223:ALA:O	1:D:228:ARG:HG2	2.18	0.43
1:E:122:PRO:HB3	1:E:150:GLN:NE2	2.33	0.43
1:F:105:PHE:CZ	1:G:62:VAL:HB	2.54	0.43
1:B:216:SER:O	1:B:220:ILE:HG12	2.18	0.43
1:A:134:ASP:HB3	1:E:170:LEU:HD13	2.01	0.43
1:C:170:LEU:HD13	1:C:170:LEU:HA	1.86	0.43
1:B:78:ARG:O	1:B:81:ARG:HB2	2.18	0.43
1:E:199:MET:HE2	1:E:199:MET:HB3	1.87	0.43
1:C:82:GLU:HB2	1:C:84:ILE:HD12	2.01	0.42
1:B:206:TYR:CE1	1:B:224:MET:HE2	2.53	0.42
1:D:120:ASN:HA	1:D:150:GLN:O	2.19	0.42
1:F:111:ASN:O	1:F:112:LYS:HE2	2.19	0.42
1:G:233:MET:O	1:G:237:GLU:OE1	2.37	0.42
1:A:233:MET:O	1:A:237:GLU:HG2	2.18	0.42
1:B:178:HIS:CD2	1:B:178:HIS:C	2.97	0.42
1:B:248:PRO:HG3	1:D:138:TYR:CE1	2.54	0.42
1:C:235:ALA:HB1	1:C:240:ILE:HB	2.01	0.42
1:D:154:MET:HE3	3:D:302:BR:BR	2.75	0.42
1:E:171:PRO:HG3	1:E:246:VAL:HA	2.00	0.42
1:F:113:LYS:HG3	1:F:114:PRO:HD2	2.02	0.42
1:C:59:ILE:HD12	1:E:98:LEU:CD1	2.50	0.41
1:D:195:ALA:HA	1:D:198:ILE:HG22	2.02	0.41
1:F:154:MET:HE3	3:F:302:BR:BR	2.75	0.41
1:G:95:VAL:O	1:G:99:VAL:HG23	2.20	0.41
1:G:153:SER:OG	3:G:302:BR:BR	2.90	0.41
1:C:154:MET:HA	1:C:154:MET:HE2	2.03	0.41
1:F:184:ALA:HB1	1:F:191:ILE:HD13	2.02	0.41
1:B:107:GLN:NE2	1:B:140:LEU:HD23	2.35	0.41
1:C:134:ASP:OD1	1:F:171:PRO:HD2	2.21	0.41
1:B:59:ILE:HG21	1:B:74:ASP:HB2	2.03	0.41
1:G:150:GLN:HG2	1:G:151:ALA:N	2.31	0.41
1:A:146:TRP:CZ3	1:A:245:LEU:CD1	3.03	0.40
1:C:206:TYR:CE2	1:C:221:GLU:HA	2.56	0.40
1:A:140:LEU:HD21	1:E:248:PRO:HG2	2.02	0.40
1:F:144:CYS:HB3	1:F:146:TRP:HE1	1.87	0.40
1:C:242:ASP:C	1:C:243:LYS:HG3	2.47	0.40
1:D:231:SER:O	1:D:232:PRO:C	2.64	0.40
1:A:169:SER:HB2	1:A:241:LEU:HD22	2.04	0.40

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:179:GLN:HB3	1:B:206:TYR:OH	2.21	0.40
1:D:176:MET:HG3	1:D:229:TYR:CD1	2.56	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	181/221 (82%)	175 (97%)	6 (3%)	0	100	100
1	B	180/221 (81%)	176 (98%)	4 (2%)	0	100	100
1	C	179/221 (81%)	175 (98%)	4 (2%)	0	100	100
1	D	179/221 (81%)	176 (98%)	3 (2%)	0	100	100
1	E	180/221 (81%)	176 (98%)	4 (2%)	0	100	100
1	F	180/221 (81%)	176 (98%)	4 (2%)	0	100	100
1	G	180/221 (81%)	175 (97%)	5 (3%)	0	100	100
All	All	1259/1547 (81%)	1229 (98%)	30 (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	155/185 (84%)	153 (99%)	2 (1%)	61	86
1	B	155/185 (84%)	151 (97%)	4 (3%)	40	73
1	C	155/185 (84%)	152 (98%)	3 (2%)	50	79
1	D	155/185 (84%)	153 (99%)	2 (1%)	61	86
1	E	156/185 (84%)	156 (100%)	0	100	100
1	F	154/185 (83%)	149 (97%)	5 (3%)	34	68
1	G	154/185 (83%)	150 (97%)	4 (3%)	40	73
All	All	1084/1295 (84%)	1064 (98%)	20 (2%)	51	80

All (20) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	189	THR
1	A	191	ILE
1	B	189	THR
1	B	217	LEU
1	B	218	GLN
1	B	233	MET
1	C	58	LEU
1	C	59	ILE
1	C	63	VAL
1	D	233	MET
1	D	245	LEU
1	F	58	LEU
1	F	94	SER
1	F	97	SER
1	F	98	LEU
1	F	108	SER
1	G	150	GLN
1	G	217	LEU
1	G	218	GLN
1	G	222	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (22) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	107	GLN
1	A	137	GLN
1	A	168	HIS

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
1	A	194	GLN
1	A	247	HIS
1	B	120	ASN
1	B	194	GLN
1	B	218	GLN
1	C	137	GLN
1	C	168	HIS
1	C	204	GLN
1	D	116	HIS
1	D	137	GLN
1	D	168	HIS
1	D	178	HIS
1	D	218	GLN
1	F	168	HIS
1	F	179	GLN
1	F	194	GLN
1	G	150	GLN
1	G	218	GLN
1	G	247	HIS

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

## 5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry ⓘ

Of 15 ligands modelled in this entry, 8 are monoatomic - leaving 7 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the

expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
2	XFU	F	301	-	38,38,38	2.27	9 (23%)	49,56,56	1.40	8 (16%)
2	XFU	C	301	-	38,38,38	2.29	9 (23%)	49,56,56	1.41	9 (18%)
2	XFU	D	301	-	38,38,38	2.32	9 (23%)	49,56,56	1.31	8 (16%)
2	XFU	A	301	-	38,38,38	2.30	9 (23%)	49,56,56	1.35	5 (10%)
2	XFU	G	301	-	38,38,38	2.31	8 (21%)	49,56,56	1.45	10 (20%)
2	XFU	E	301	-	38,38,38	2.27	8 (21%)	49,56,56	1.33	7 (14%)
2	XFU	B	301	-	38,38,38	2.27	9 (23%)	49,56,56	1.54	9 (18%)

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	XFU	F	301	-	-	1/14/30/30	0/5/5/5
2	XFU	C	301	-	-	0/14/30/30	0/5/5/5
2	XFU	D	301	-	-	0/14/30/30	0/5/5/5
2	XFU	A	301	-	-	0/14/30/30	0/5/5/5
2	XFU	G	301	-	-	0/14/30/30	0/5/5/5
2	XFU	E	301	-	-	0/14/30/30	0/5/5/5
2	XFU	B	301	-	-	2/14/30/30	0/5/5/5

All (61) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	G	301	XFU	C08-N09	-10.34	1.27	1.47
2	D	301	XFU	C08-N09	-10.16	1.28	1.47
2	E	301	XFU	C08-N09	-10.00	1.28	1.47
2	A	301	XFU	C08-N09	-9.98	1.28	1.47
2	C	301	XFU	C08-N09	-9.91	1.28	1.47
2	F	301	XFU	C08-N09	-9.83	1.28	1.47
2	B	301	XFU	C08-N09	-9.81	1.28	1.47
2	D	301	XFU	C16-N23	-4.66	1.23	1.29
2	A	301	XFU	C16-N23	-4.60	1.23	1.29
2	B	301	XFU	C10-N09	-4.57	1.34	1.46
2	G	301	XFU	C10-N09	-4.54	1.34	1.46
2	D	301	XFU	C10-N09	-4.51	1.34	1.46
2	F	301	XFU	C10-N09	-4.47	1.34	1.46

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	301	XFU	C16-N23	-4.43	1.23	1.29
2	E	301	XFU	C10-N09	-4.42	1.35	1.46
2	C	301	XFU	C10-N09	-4.41	1.35	1.46
2	A	301	XFU	C10-N09	-4.36	1.35	1.46
2	C	301	XFU	C16-N23	-4.28	1.23	1.29
2	E	301	XFU	C16-N23	-4.23	1.23	1.29
2	G	301	XFU	C16-N23	-4.14	1.24	1.29
2	B	301	XFU	C16-N23	-4.11	1.24	1.29
2	B	301	XFU	C08-C05	3.11	1.57	1.51
2	A	301	XFU	O19-C18	-3.01	1.16	1.23
2	B	301	XFU	O19-C18	-2.97	1.17	1.23
2	C	301	XFU	O19-C18	-2.96	1.17	1.23
2	D	301	XFU	O19-C18	-2.96	1.17	1.23
2	F	301	XFU	O19-C18	-2.89	1.17	1.23
2	E	301	XFU	O19-C18	-2.87	1.17	1.23
2	G	301	XFU	O19-C18	-2.81	1.17	1.23
2	G	301	XFU	C16-N17	2.79	1.43	1.38
2	C	301	XFU	C16-N17	2.76	1.43	1.38
2	E	301	XFU	C08-C05	2.71	1.56	1.51
2	A	301	XFU	C12-N15	2.70	1.44	1.39
2	F	301	XFU	C08-C05	2.68	1.56	1.51
2	G	301	XFU	C08-C05	2.67	1.56	1.51
2	C	301	XFU	C08-C05	2.65	1.56	1.51
2	A	301	XFU	C08-C05	2.65	1.56	1.51
2	B	301	XFU	C16-N17	2.63	1.43	1.38
2	F	301	XFU	C16-N17	2.60	1.43	1.38
2	C	301	XFU	C12-N15	2.59	1.44	1.39
2	E	301	XFU	C18-N17	-2.55	1.35	1.40
2	D	301	XFU	C16-N17	2.51	1.43	1.38
2	A	301	XFU	C18-N17	-2.50	1.35	1.40
2	G	301	XFU	C18-N17	-2.42	1.36	1.40
2	E	301	XFU	C16-N17	2.39	1.42	1.38
2	D	301	XFU	C08-C05	2.39	1.55	1.51
2	C	301	XFU	C18-N17	-2.38	1.36	1.40
2	D	301	XFU	C18-N17	-2.37	1.36	1.40
2	F	301	XFU	C12-N15	2.34	1.44	1.39
2	F	301	XFU	C18-N17	-2.33	1.36	1.40
2	D	301	XFU	C24-C25	2.29	1.55	1.51
2	D	301	XFU	C12-N15	2.29	1.44	1.39
2	A	301	XFU	C16-N17	2.28	1.42	1.38
2	C	301	XFU	C24-C25	2.21	1.55	1.51
2	E	301	XFU	C12-N15	2.17	1.43	1.39

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	301	XFU	C24-C25	2.16	1.55	1.51
2	B	301	XFU	C12-N15	2.15	1.43	1.39
2	A	301	XFU	C24-C25	2.14	1.55	1.51
2	F	301	XFU	C24-C25	2.12	1.55	1.51
2	G	301	XFU	C12-N15	2.12	1.43	1.39
2	B	301	XFU	C18-N17	-2.07	1.36	1.40

All (56) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	301	XFU	C08-N09-C14	3.80	115.33	110.51
2	A	301	XFU	C11-C12-N15	3.64	119.98	117.29
2	F	301	XFU	C11-C12-N15	3.60	119.95	117.29
2	G	301	XFU	N15-C16-N23	-3.45	121.61	124.14
2	C	301	XFU	C11-C12-N15	3.38	119.79	117.29
2	A	301	XFU	C13-C18-N17	3.19	120.71	115.16
2	C	301	XFU	C25-C24-N17	-3.15	107.82	113.09
2	B	301	XFU	C11-C10-N09	-3.10	108.41	111.19
2	B	301	XFU	C22-N23-C16	3.06	123.38	117.31
2	B	301	XFU	C13-C18-N17	3.04	120.44	115.16
2	C	301	XFU	C13-C18-N17	2.91	120.22	115.16
2	D	301	XFU	C11-C12-N15	2.91	119.44	117.29
2	F	301	XFU	C22-N23-C16	2.91	123.08	117.31
2	C	301	XFU	C22-N23-C16	2.89	123.04	117.31
2	D	301	XFU	C13-C18-N17	2.88	120.17	115.16
2	G	301	XFU	C13-C18-N17	2.83	120.07	115.16
2	B	301	XFU	C05-C08-N09	2.82	118.92	113.15
2	F	301	XFU	C13-C18-N17	2.80	120.03	115.16
2	B	301	XFU	O19-C18-C13	-2.79	119.76	125.06
2	E	301	XFU	C22-N23-C16	2.77	122.80	117.31
2	E	301	XFU	C11-C12-N15	2.76	119.33	117.29
2	B	301	XFU	N15-C16-N23	-2.76	122.12	124.14
2	G	301	XFU	C22-N23-C16	2.76	122.79	117.31
2	F	301	XFU	N15-C16-N23	-2.72	122.15	124.14
2	E	301	XFU	C13-C18-N17	2.70	119.84	115.16
2	C	301	XFU	N15-C16-N23	-2.66	122.19	124.14
2	D	301	XFU	N15-C16-N23	-2.65	122.19	124.14
2	D	301	XFU	C22-N23-C16	2.65	122.57	117.31
2	G	301	XFU	C25-C24-N17	-2.63	108.69	113.09
2	F	301	XFU	O19-C18-C13	-2.57	120.17	125.06
2	A	301	XFU	C22-N23-C16	2.53	122.34	117.31
2	E	301	XFU	N15-C16-N23	-2.51	122.30	124.14

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	301	XFU	O19-C18-C13	-2.48	120.34	125.06
2	B	301	XFU	C11-C12-N15	2.44	119.10	117.29
2	G	301	XFU	F33-C32-C28	-2.38	107.81	112.90
2	A	301	XFU	O19-C18-C13	-2.34	120.61	125.06
2	G	301	XFU	C11-C12-N15	2.34	119.02	117.29
2	D	301	XFU	F31-C32-C28	-2.29	108.00	112.90
2	D	301	XFU	C05-C08-N09	-2.28	108.49	113.15
2	G	301	XFU	O19-C18-C13	-2.27	120.74	125.06
2	A	301	XFU	F34-C32-C28	-2.26	108.06	112.90
2	F	301	XFU	C02-C01-C06	-2.23	120.28	123.23
2	G	301	XFU	C08-N09-C10	-2.20	106.33	111.07
2	F	301	XFU	C08-N09-C14	-2.17	107.76	110.51
2	E	301	XFU	F31-C32-C28	-2.16	108.28	112.90
2	B	301	XFU	C24-N17-C18	2.13	120.73	117.72
2	E	301	XFU	O19-C18-C13	-2.13	121.00	125.06
2	C	301	XFU	F34-C32-C28	-2.13	108.34	112.90
2	F	301	XFU	F31-C32-C28	-2.10	108.39	112.90
2	C	301	XFU	F31-C32-C28	-2.10	108.39	112.90
2	C	301	XFU	C05-C08-N09	-2.10	108.85	113.15
2	G	301	XFU	C02-C01-C06	-2.04	120.53	123.23
2	G	301	XFU	C29-C28-C27	2.04	121.07	118.03
2	E	301	XFU	F34-C32-C28	-2.03	108.55	112.90
2	C	301	XFU	O19-C18-C13	-2.03	121.20	125.06
2	D	301	XFU	C08-N09-C14	-2.03	107.94	110.51

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	301	XFU	C05-C08-N09-C14
2	B	301	XFU	C05-C08-N09-C10
2	F	301	XFU	C05-C08-N09-C14

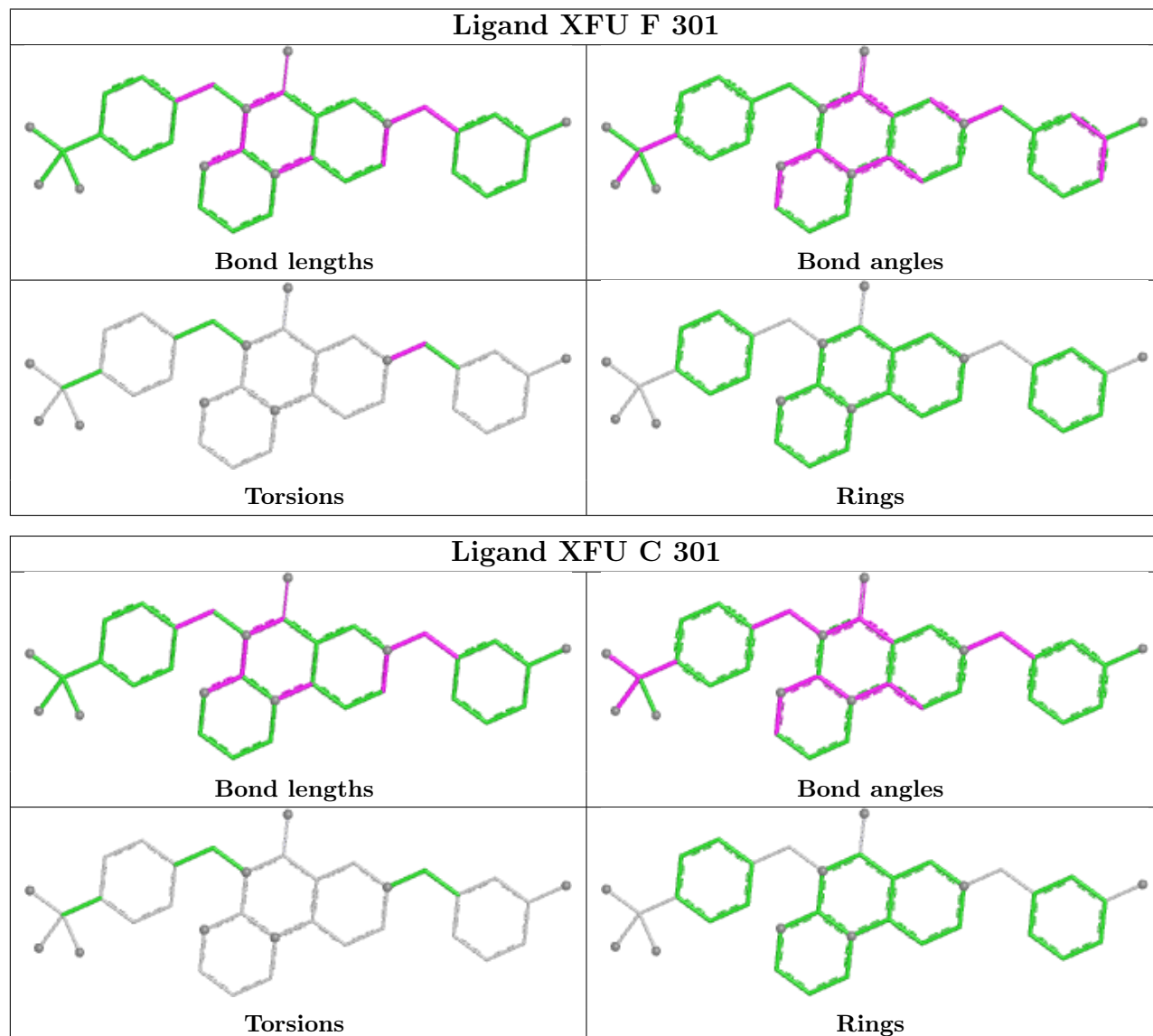
There are no ring outliers.

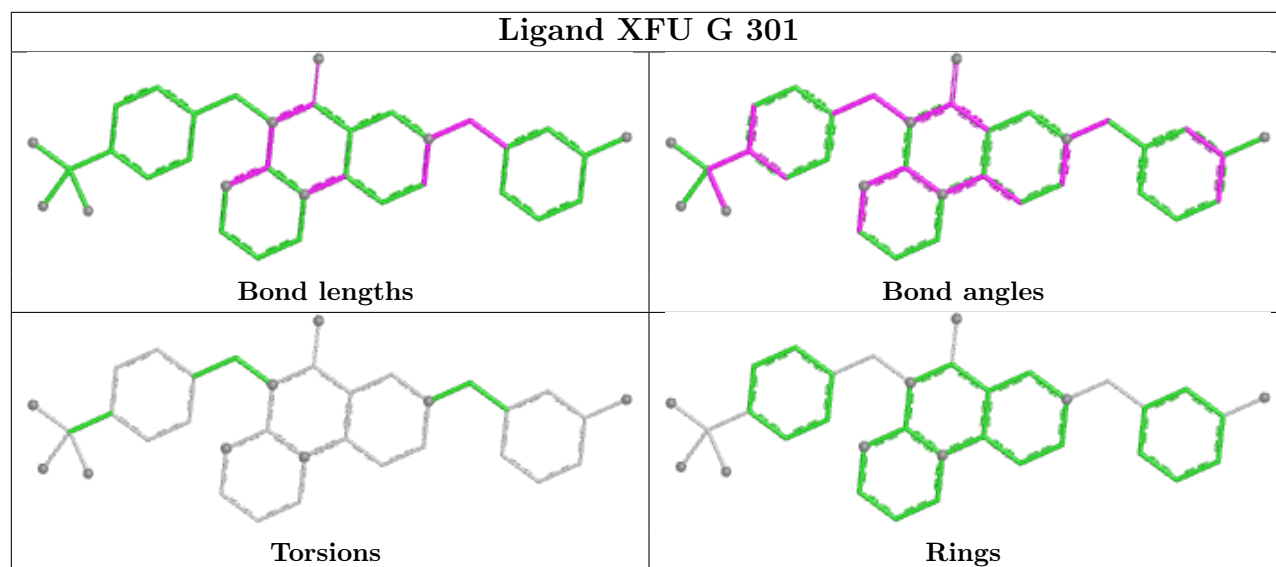
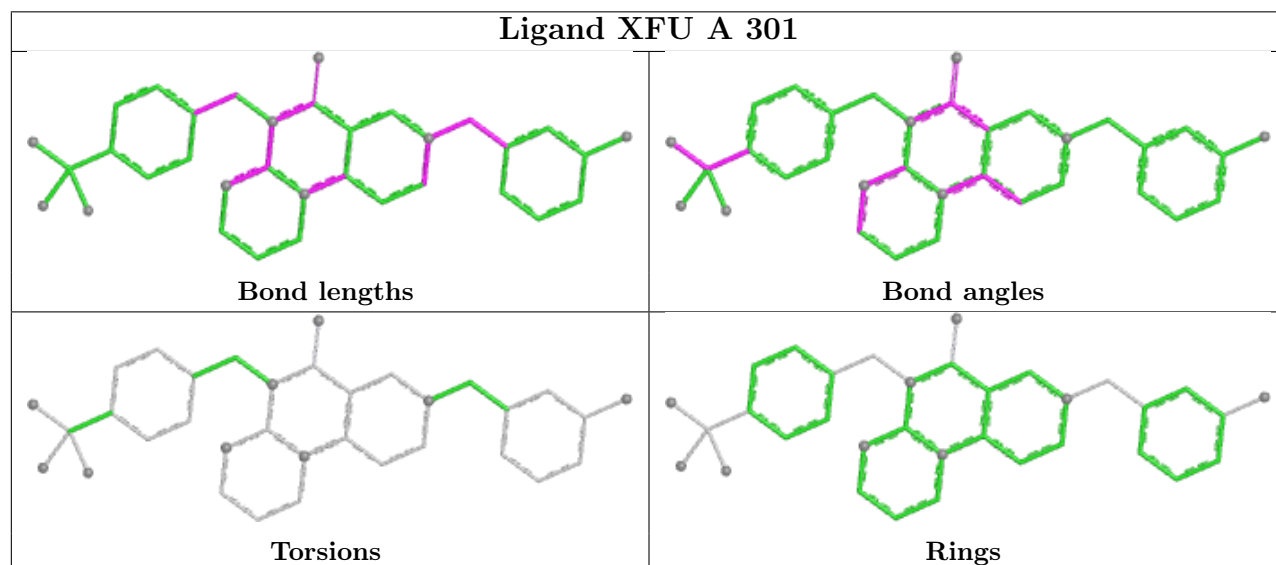
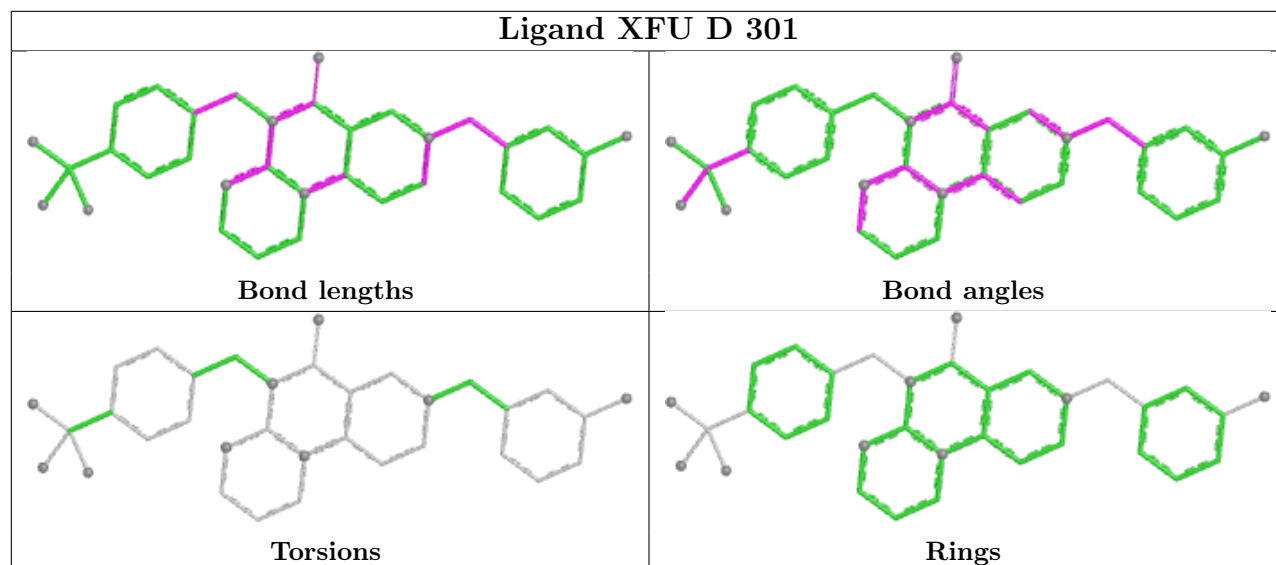
1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	301	XFU	2	0

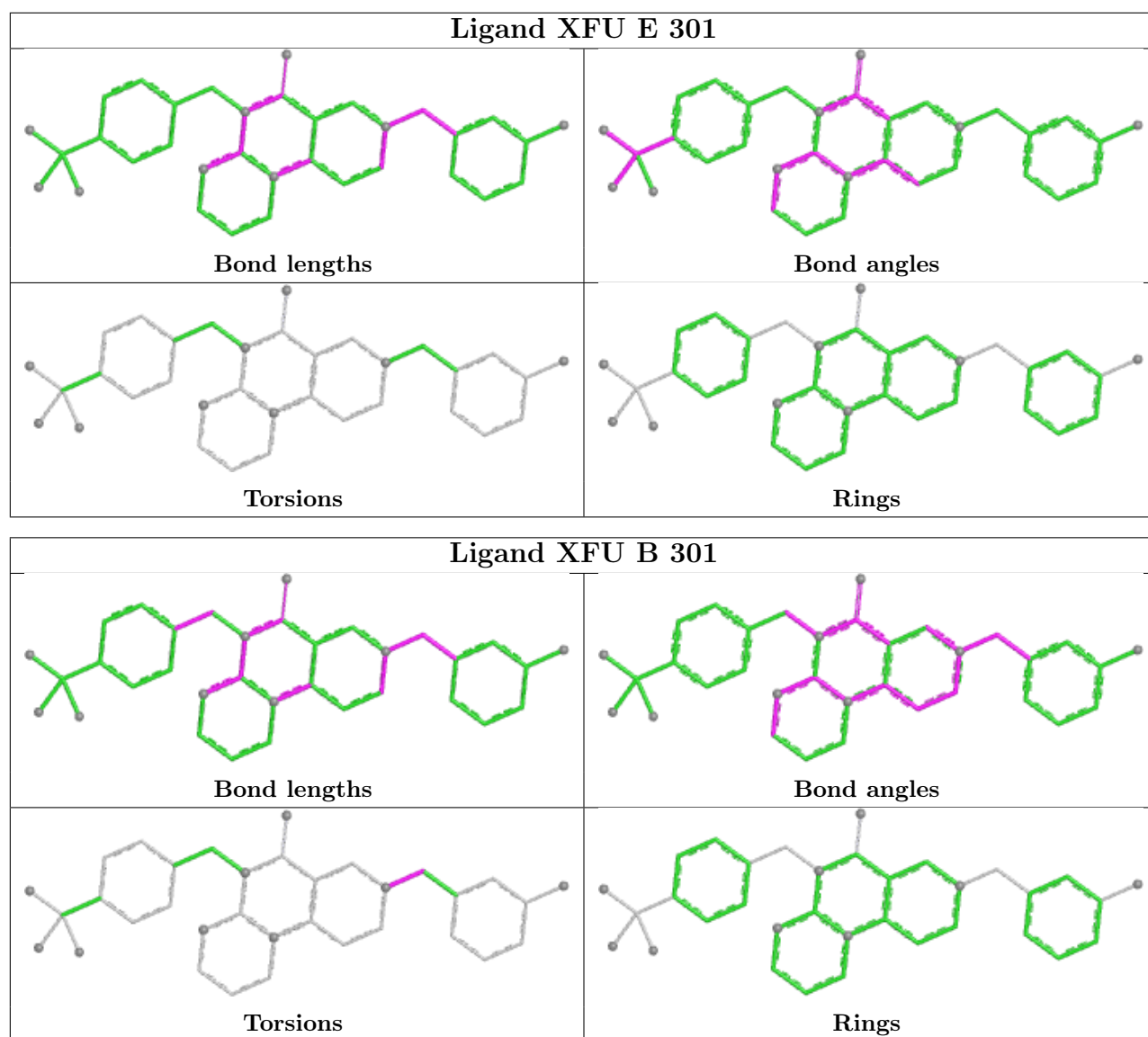
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In

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, 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	185/221 (83%)	0.56	11 (5%) 28 22	16, 30, 56, 99	0
1	B	184/221 (83%)	0.46	9 (4%) 35 27	18, 34, 54, 88	0
1	C	183/221 (82%)	0.46	13 (7%) 22 17	21, 33, 61, 93	0
1	D	183/221 (82%)	0.45	11 (6%) 27 21	20, 34, 59, 88	0
1	E	184/221 (83%)	0.35	7 (3%) 44 36	19, 33, 51, 76	0
1	F	184/221 (83%)	0.57	13 (7%) 22 17	23, 41, 63, 82	0
1	G	184/221 (83%)	0.50	12 (6%) 25 20	24, 40, 62, 90	0
All	All	1287/1547 (83%)	0.48	76 (5%) 28 22	16, 35, 61, 99	0

All (76) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	249	PRO	6.4
1	D	248	PRO	6.2
1	C	58	LEU	5.8
1	G	58	LEU	5.7
1	A	249	PRO	5.6
1	B	58	LEU	5.5
1	C	63	VAL	5.5
1	D	246	VAL	5.4
1	D	245	LEU	5.3
1	C	73	TYR	4.9
1	C	246	VAL	4.8
1	G	249	PRO	4.8
1	G	72	ALA	4.5
1	F	63	VAL	4.3
1	B	72	ALA	4.3
1	D	72	ALA	4.3
1	A	73	TYR	4.2

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	RSRZ
1	B	63	VAL	4.2
1	A	71	ARG	4.0
1	F	58	LEU	3.9
1	E	246	VAL	3.5
1	A	248	PRO	3.5
1	G	247	HIS	3.5
1	B	249	PRO	3.4
1	B	73	TYR	3.4
1	A	63	VAL	3.4
1	C	245	LEU	3.3
1	F	249	PRO	3.3
1	A	247	HIS	3.3
1	D	247	HIS	3.2
1	E	249	PRO	3.2
1	F	73	TYR	3.1
1	G	228	ARG	3.1
1	A	246	VAL	3.0
1	D	58	LEU	3.0
1	E	62	VAL	3.0
1	C	218	GLN	2.9
1	F	185	ARG	2.9
1	E	72	ALA	2.8
1	D	88	MET	2.8
1	F	246	VAL	2.8
1	E	58	LEU	2.8
1	E	199	MET	2.8
1	A	58	LEU	2.8
1	G	73	TYR	2.8
1	D	63	VAL	2.6
1	G	233	MET	2.6
1	B	237	GLU	2.6
1	E	63	VAL	2.6
1	G	194	GLN	2.5
1	C	247	HIS	2.5
1	G	237	GLU	2.4
1	D	185	ARG	2.4
1	G	246	VAL	2.4
1	C	62	VAL	2.4
1	A	233	MET	2.3
1	C	194	GLN	2.3
1	G	185	ARG	2.3
1	F	72	ALA	2.3

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	RSRZ
1	C	81	ARG	2.3
1	D	199	MET	2.2
1	F	248	PRO	2.2
1	F	247	HIS	2.2
1	C	233	MET	2.2
1	F	233	MET	2.2
1	B	81	ARG	2.2
1	A	148	VAL	2.2
1	B	114	PRO	2.2
1	G	248	PRO	2.2
1	A	185	ARG	2.1
1	C	237	GLU	2.1
1	F	98	LEU	2.1
1	D	237	GLU	2.1
1	F	245	LEU	2.0
1	F	175	ILE	2.0
1	B	239	GLY	2.0

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

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

## 6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<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.

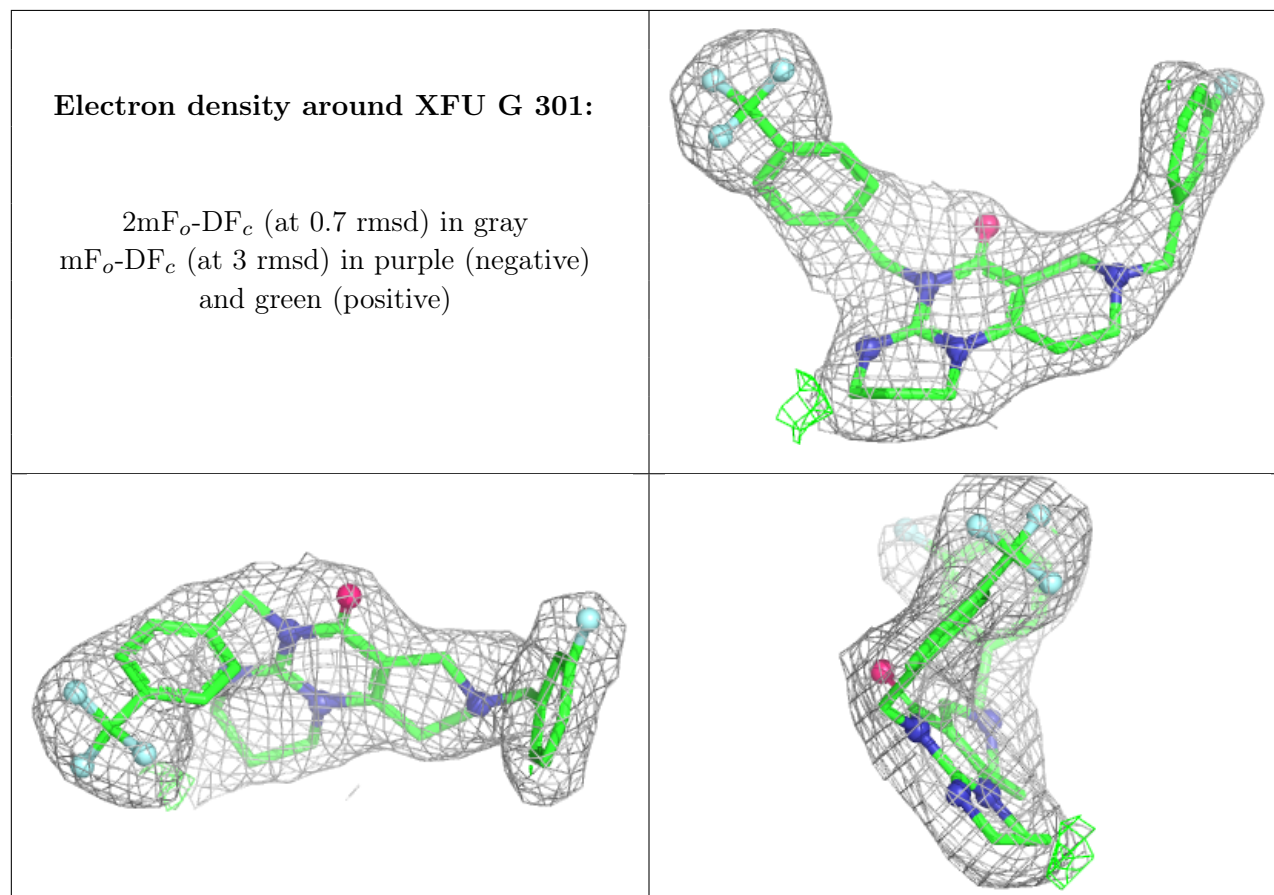
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
3	BR	B	303	1/1	0.77	0.18	128,128,128,128	0
2	XFU	G	301	34/34	0.89	0.15	55,58,59,59	0
2	XFU	C	301	34/34	0.89	0.14	39,40,40,40	0
2	XFU	B	301	34/34	0.90	0.14	41,42,42,43	0
2	XFU	E	301	34/34	0.91	0.14	40,41,42,42	0
2	XFU	F	301	34/34	0.91	0.13	43,44,45,45	0

*Continued on next page...*

*Continued from previous page...*

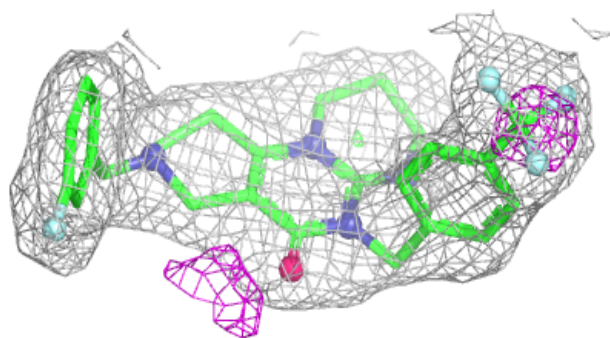
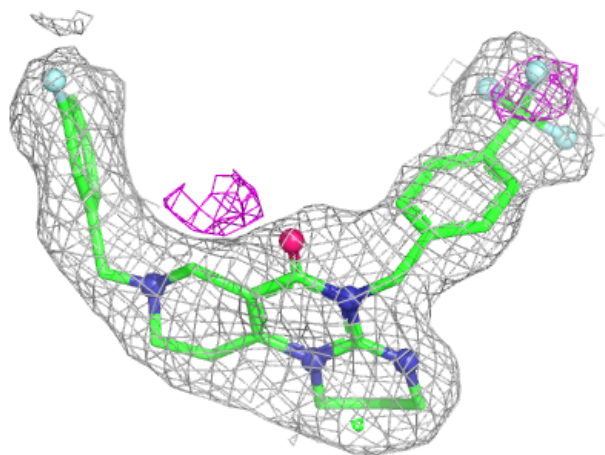
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
2	XFU	A	301	34/34	0.91	0.12	35,35,37,37	0
2	XFU	D	301	34/34	0.91	0.12	38,39,39,39	0
3	BR	B	302	1/1	0.97	0.07	62,62,62,62	0
3	BR	A	302	1/1	0.97	0.06	63,63,63,63	0
3	BR	E	302	1/1	0.97	0.09	73,73,73,73	0
3	BR	G	302	1/1	0.97	0.06	75,75,75,75	0
3	BR	F	302	1/1	0.98	0.06	81,81,81,81	0
3	BR	D	302	1/1	0.98	0.05	62,62,62,62	0
3	BR	C	302	1/1	0.99	0.04	66,66,66,66	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.



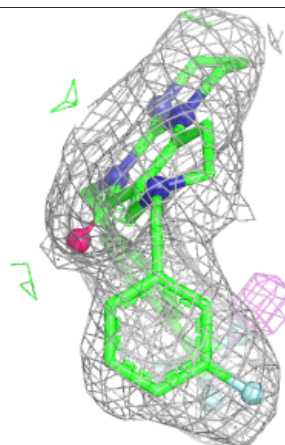
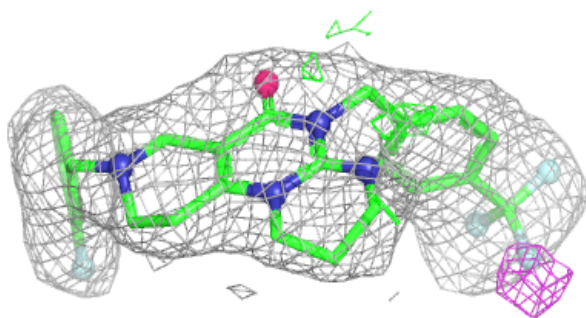
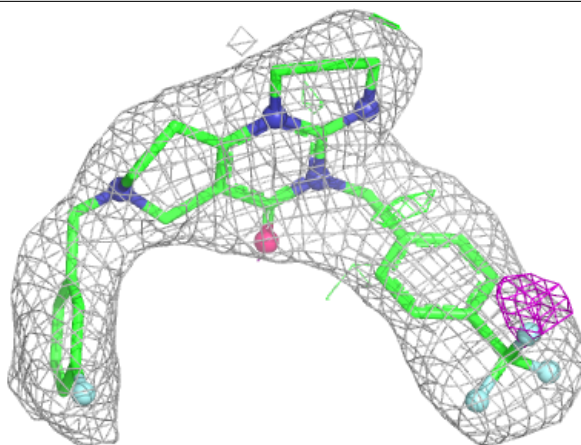
**Electron density around XFU C 301:**

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



**Electron density around XFU B 301:**

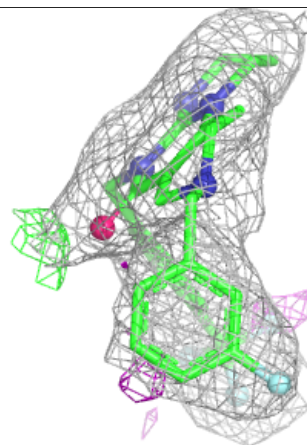
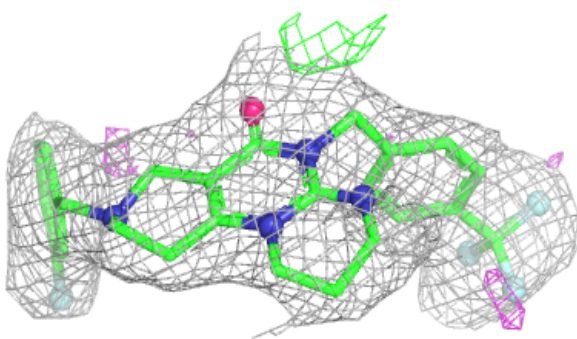
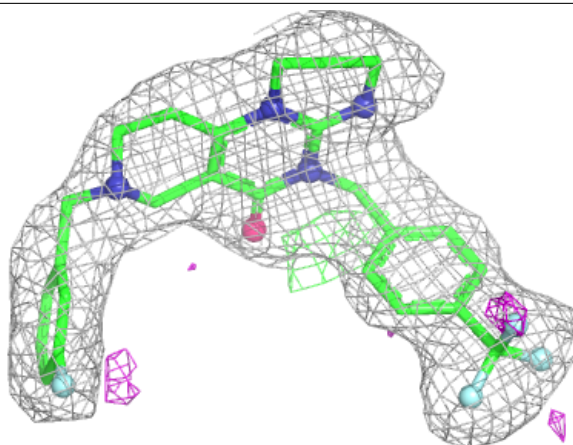
$2mF_o - DF_c$  (at 0.7 rmsd) in gray  
 $mF_o - DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





**Electron density around XFU E 301:**

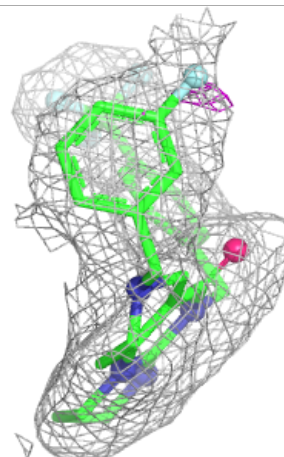
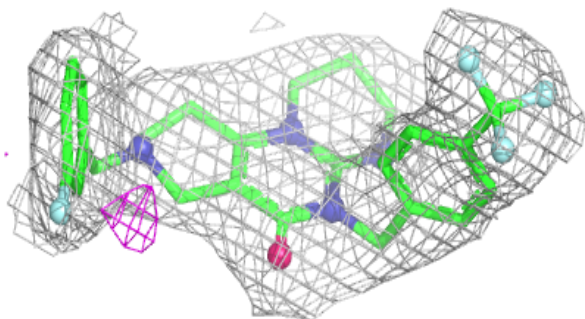
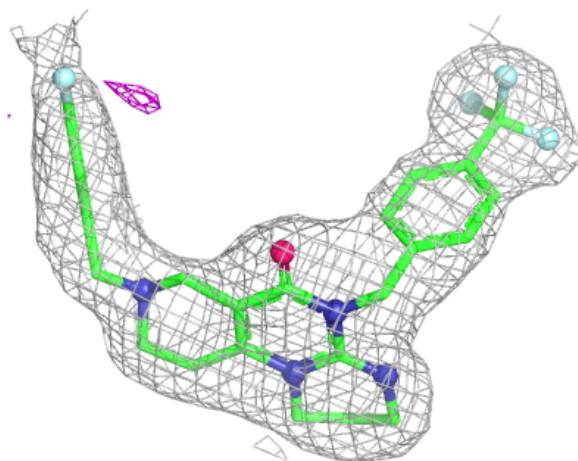
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





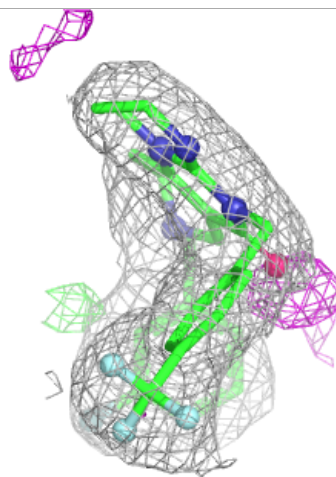
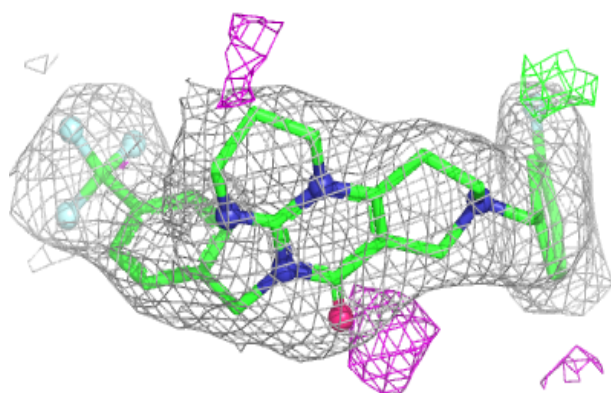
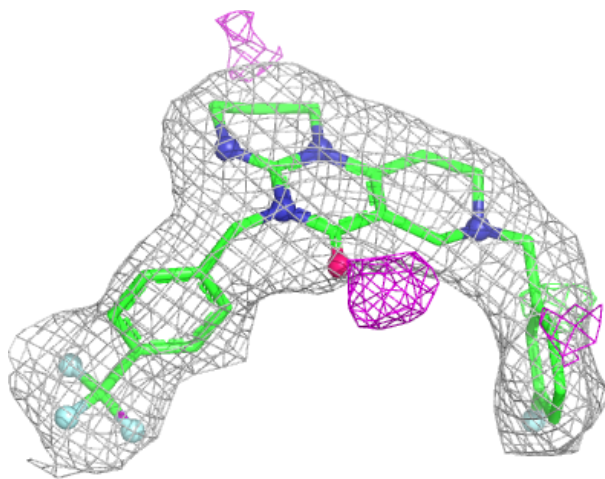
**Electron density around XFU F 301:**

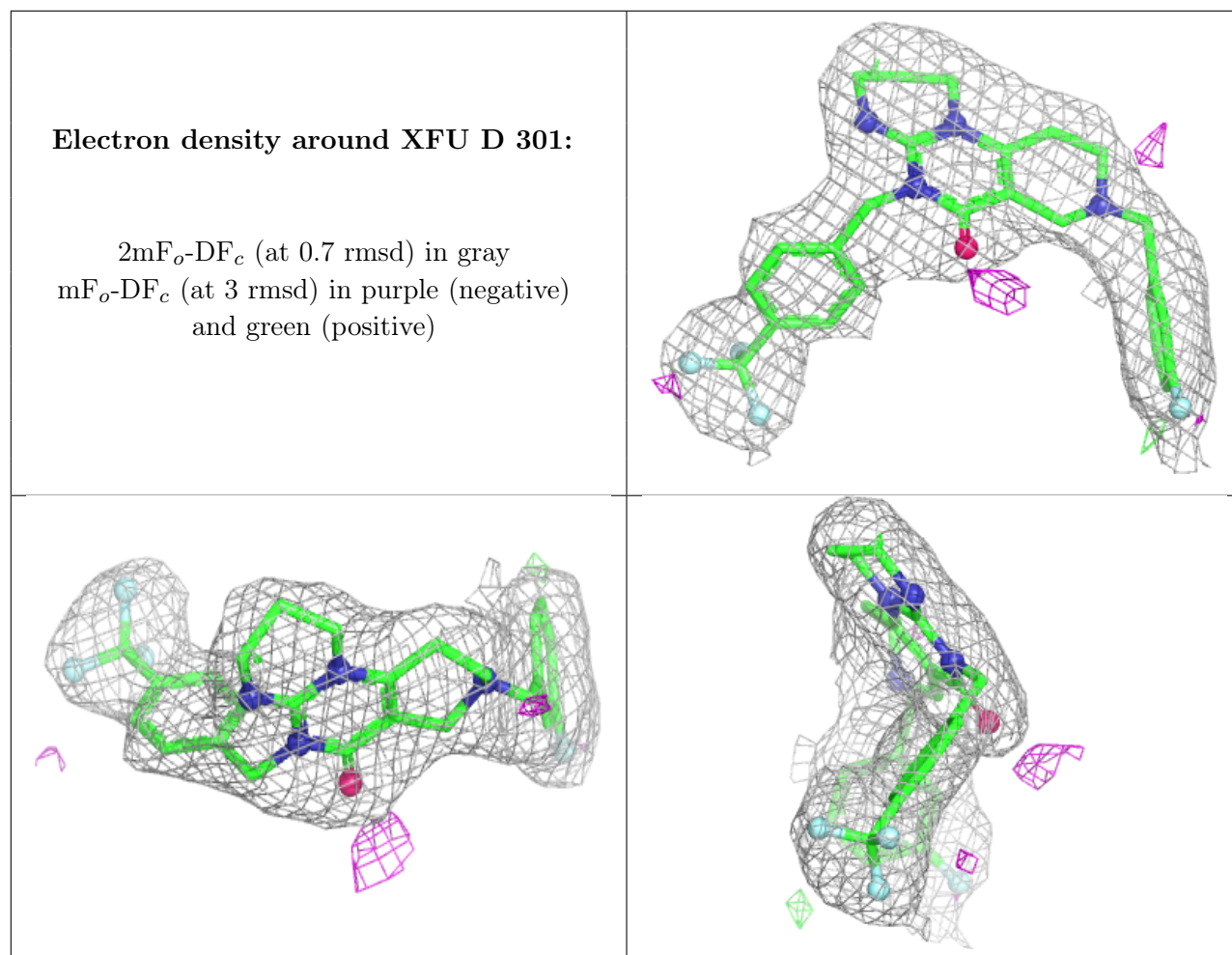
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around XFU 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)





## 6.5 Other polymers ⓘ

There are no such residues in this entry.