



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 07:50 PM UTC

PDB ID : 7UVR / pdb_00007uvr
Title : Crystal structure of human ClpP protease in complex with TR-65
Authors : Mabanglo, M.F.; Houry, W.A.
Deposited on : 2022-05-02
Resolution : 2.86 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:

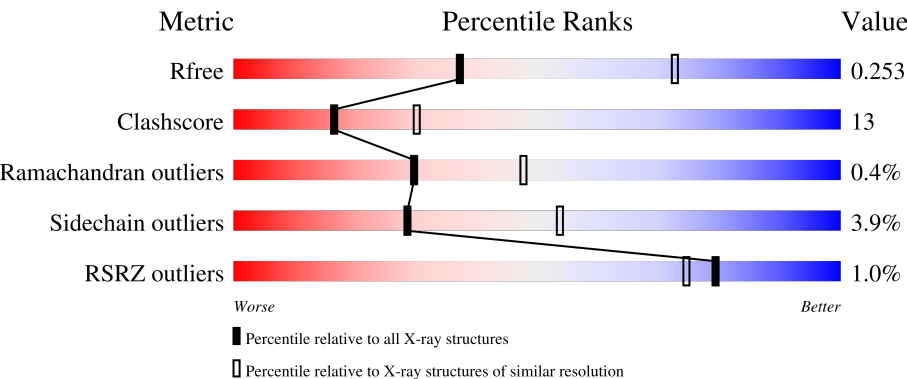
MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal 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 i

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

The reported resolution of this entry is 2.86 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	1407 (2.88-2.84)
Clashscore	190562	1446 (2.88-2.84)
Ramachandran outliers	187476	1406 (2.88-2.84)
Sidechain outliers	187428	1407 (2.88-2.84)
RSRZ outliers	180081	1408 (2.88-2.84)

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	221	56%23%•20%
1	B	221	% 57%21%•21%
1	C	221	% 61%16%•22%
1	D	221	% 56%24%20%
1	E	221	% 46%30%•23%

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Mol	Chain	Length	Quality of chain
1	F	221	% 58%21%20%
1	G	221	% 52%25%•21%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 9866 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.

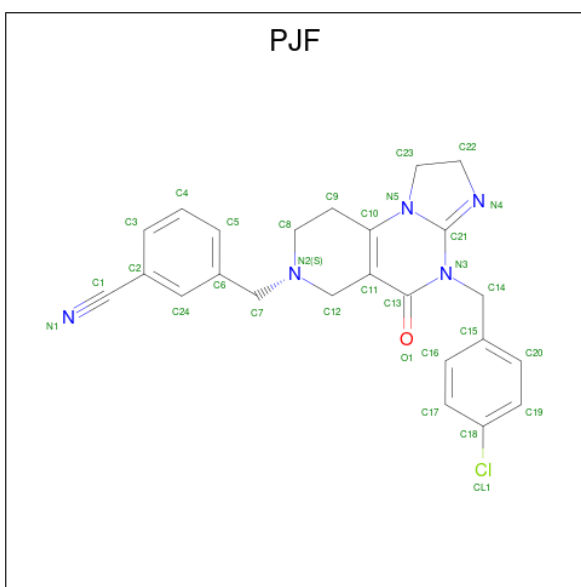
- Molecule 1 is a protein called ATP-dependent Clp protease proteolytic subunit, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	176	Total	C	N	O	S	0	0	0
			1375	878	234	250	13			
1	B	174	Total	C	N	O	S	0	0	0
			1360	870	232	245	13			
1	C	173	Total	C	N	O	S	0	0	0
			1349	864	228	244	13			
1	D	177	Total	C	N	O	S	0	0	0
			1382	883	235	251	13			
1	E	171	Total	C	N	O	S	0	0	0
			1333	852	227	241	13			
1	F	176	Total	C	N	O	S	0	1	0
			1374	879	234	247	14			
1	G	175	Total	C	N	O	S	0	0	0
			1366	873	233	247	13			

There are 7 discrepancies between the modelled and reference sequences:

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

- Molecule 2 is 3-[[[(10R)-4-[(4-chlorophenyl)methyl]-5-oxo-1,2,4,5,8,9-hexahydroimidazo[1,2-a]pyrido[3,4-e]pyrimidin-7(6H)-yl)methyl]benzonitrile (CCD ID: PJF) (formula: C₂₄H₂₂ClN₅O) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	Cl	N	O	0	0
			31	24	1	5	1		
2	B	1	Total	C	Cl	N	O	0	0
			31	24	1	5	1		
2	C	1	Total	C	Cl	N	O	0	0
			31	24	1	5	1		
2	D	1	Total	C	Cl	N	O	0	0
			31	24	1	5	1		
2	E	1	Total	C	Cl	N	O	0	0
			31	24	1	5	1		
2	F	1	Total	C	Cl	N	O	0	0
			31	24	1	5	1		
2	G	1	Total	C	Cl	N	O	0	0
			31	24	1	5	1		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	19	Total	O	0	0
			19	19		
3	B	10	Total	O	0	0
			10	10		
3	C	8	Total	O	0	0
			8	8		
3	D	18	Total	O	0	0
			18	18		
3	E	17	Total	O	0	0
			17	17		

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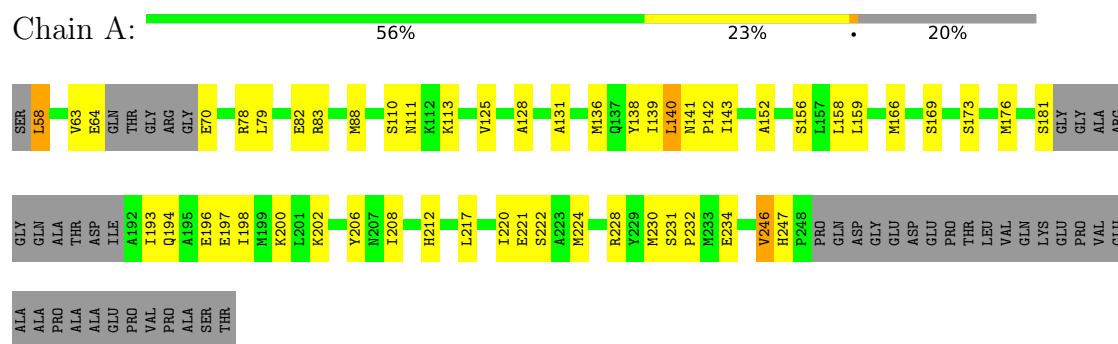
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	F	19	Total	O	0	0
			19	19		
3	G	19	Total	O	0	0
			19	19		

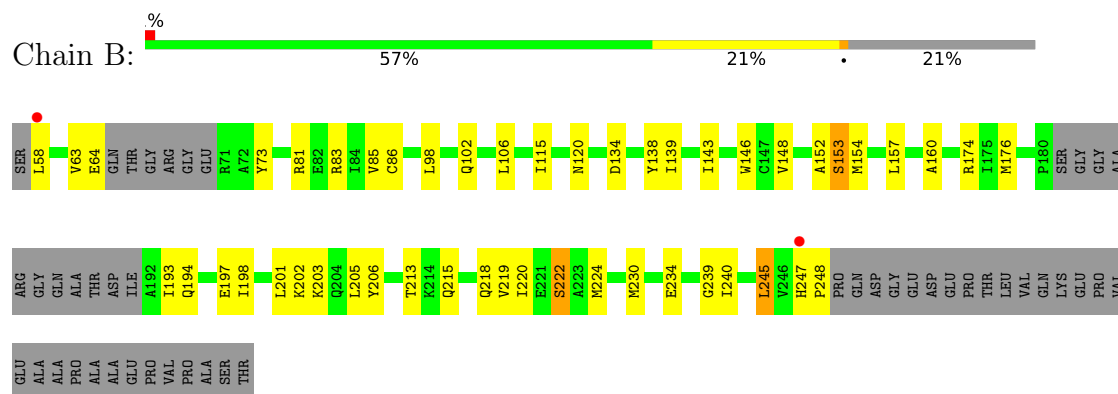
3 Residue-property plots

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.

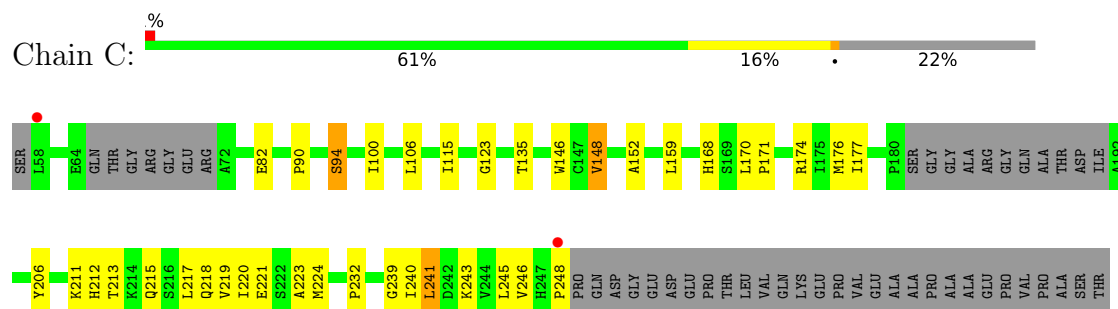
- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial



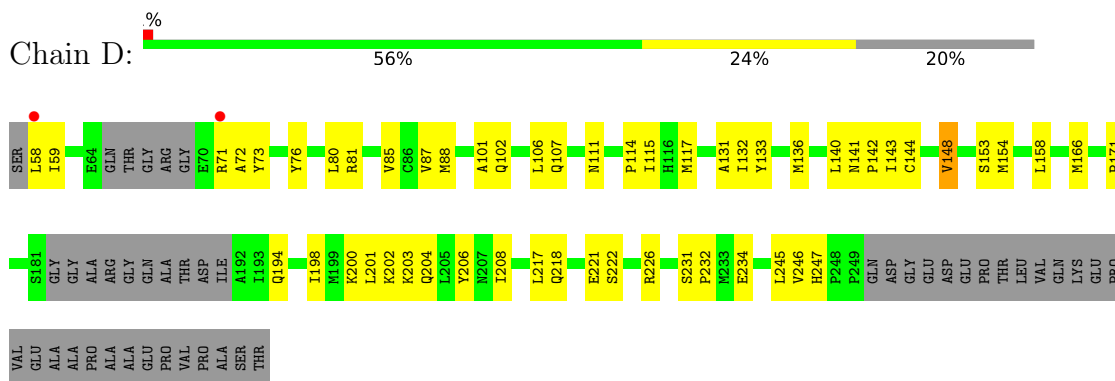
- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial



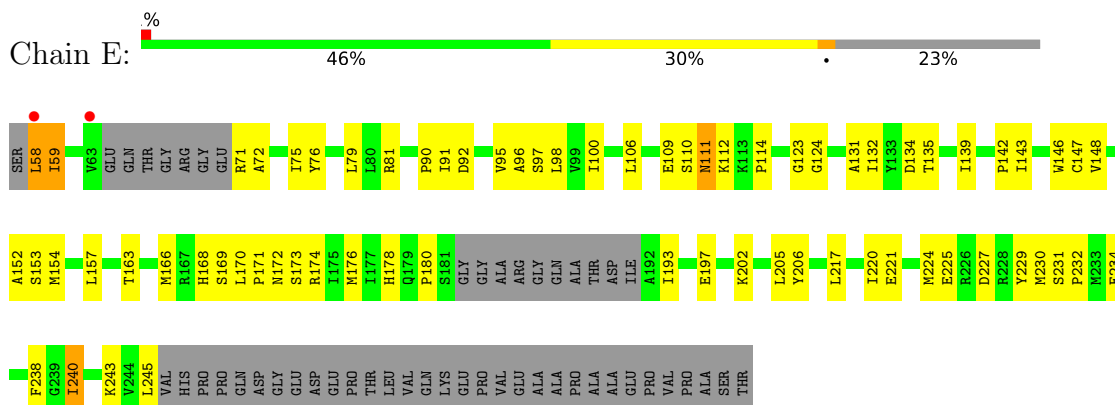
- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial



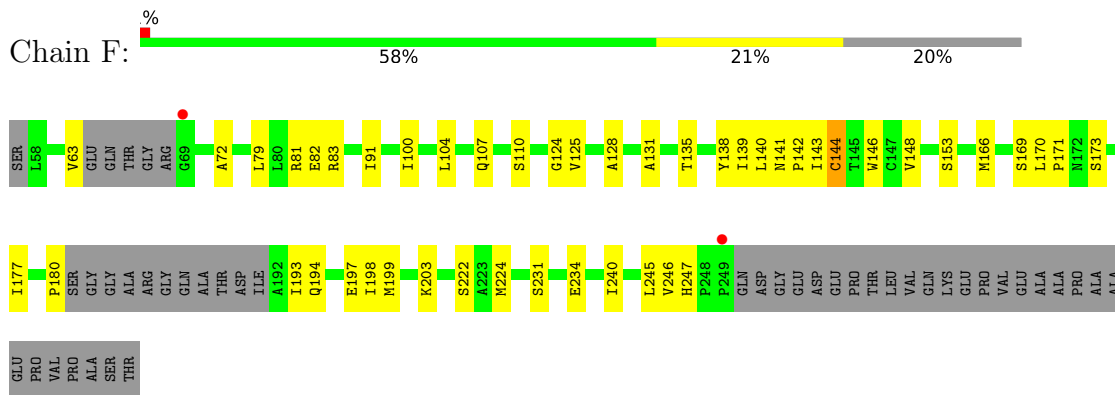
- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial



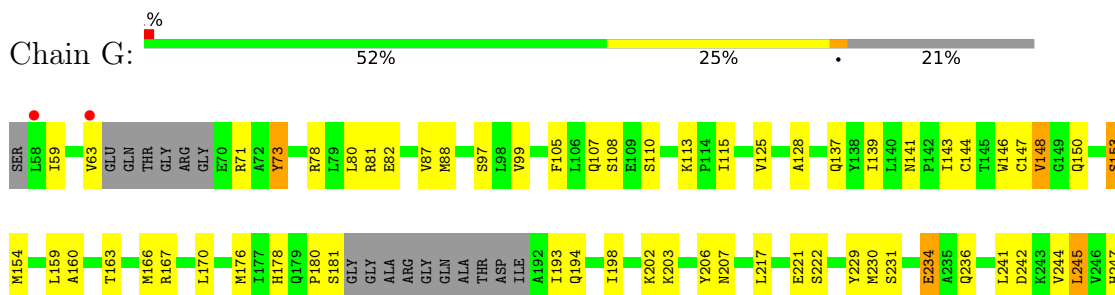
- Molecule 1: ATP-dependent Clp protease proteolytic subunit, mitochondrial



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



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



P248
PRO
GLN
ASP
GLY
GLU
ASP
GLU
PRO
THR
LEU
VAL
GLN
LYS
GLU
PRO
VAL
GLU
ALA
ALA
PRO
ALA
ALA
GLU
PRO
VAL
PRO
ALA
SER
THR

4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	142.17Å 152.51Å 104.27Å 90.00° 118.10° 90.00°	Depositor
Resolution (Å)	29.35 – 2.86 29.35 – 2.86	Depositor EDS
% Data completeness (in resolution range)	99.4 (29.35-2.86) 99.3 (29.35-2.86)	Depositor EDS
R_{merge}	0.21	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.24 (at 2.85Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.203 , 0.253 0.206 , 0.253	Depositor DCC
R_{free} test set	2000 reflections (4.42%)	wwPDB-VP
Wilson B-factor (Å ²)	50.1	Xtriage
Anisotropy	0.204	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 47.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	9866	wwPDB-VP
Average B, all atoms (Å ²)	46.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 10.92% 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

5.1 Standard geometry

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

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	0.53	0/1399	0.75	0/1891
1	B	0.51	0/1384	0.70	0/1871
1	C	0.51	0/1373	0.69	0/1857
1	D	0.54	0/1407	0.75	0/1903
1	E	0.55	0/1355	0.76	0/1830
1	F	0.51	0/1402	0.75	0/1896
1	G	0.53	0/1390	0.72	0/1879
All	All	0.53	0/9710	0.73	0/13127

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1375	0	1415	42	1
1	B	1360	0	1404	37	0
1	C	1349	0	1391	30	0
1	D	1382	0	1422	38	1
1	E	1333	0	1380	55	1
1	F	1374	0	1419	30	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	G	1366	0	1409	42	1
2	A	31	0	0	3	0
2	B	31	0	0	0	0
2	C	31	0	0	2	0
2	D	31	0	0	1	0
2	E	31	0	0	1	0
2	F	31	0	0	0	0
2	G	31	0	0	2	0
3	A	19	0	0	2	0
3	B	10	0	0	0	0
3	C	8	0	0	0	0
3	D	18	0	0	1	0
3	E	17	0	0	5	0
3	F	19	0	0	1	0
3	G	19	0	0	0	0
All	All	9866	0	9840	252	2

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 13.

All (252) 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:73:TYR:OH	1:G:81:ARG:NH1	2.05	0.90
1:B:203:LYS:HD3	1:B:206:TYR:HD2	1.40	0.85
2:A:301:PJF:N4	3:A:401:HOH:O	2.10	0.82
1:E:206:TYR:CE1	1:E:224:MET:HE2	2.15	0.81
1:A:193:ILE:HD12	1:A:197:GLU:HG3	1.64	0.80
1:D:58:LEU:HD22	1:D:59:ILE:H	1.47	0.79
1:A:58:LEU:HD21	1:G:59:ILE:HD11	1.67	0.77
1:C:152:ALA:HB1	1:C:176:MET:HE2	1.66	0.77
1:F:142:PRO:HB3	1:F:166:MET:HE1	1.66	0.77
1:A:78:ARG:HH12	1:A:82:GLU:HG2	1.51	0.75
1:G:148:VAL:HG13	1:G:170:LEU:HD12	1.68	0.74
1:C:148:VAL:HG21	2:C:301:PJF:N1	2.05	0.72
1:E:109:GLU:OE2	3:E:401:HOH:O	2.08	0.71
1:F:144[B]:CYS:HB2	1:F:166:MET:HB3	1.73	0.71
1:D:136:MET:HE1	1:D:158:LEU:HD22	1.73	0.70
1:E:170:LEU:HG	1:E:245:LEU:HD11	1.72	0.70
1:A:78:ARG:NH1	1:A:82:GLU:HG2	2.08	0.69
1:E:152:ALA:HB1	1:E:176:MET:HE2	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:112:LYS:HE3	1:E:112:LYS:HA	1.76	0.67
1:A:152:ALA:HB1	1:A:176:MET:HE2	1.77	0.66
1:E:139:ILE:HD11	1:E:143:ILE:HD11	1.77	0.65
1:E:230:MET:HB3	1:E:234:GLU:HB2	1.79	0.65
1:F:107:GLN:HA	1:F:141:ASN:HD21	1.62	0.65
1:E:96:ALA:HA	1:E:132:ILE:HD11	1.80	0.64
1:F:171:PRO:HG3	1:F:246:VAL:HG22	1.78	0.64
1:A:156:SER:HA	1:A:159:LEU:HB3	1.79	0.64
1:F:144[B]:CYS:SG	1:F:146:TRP:NE1	2.72	0.63
1:G:107:GLN:HG3	1:G:141:ASN:OD1	1.99	0.63
1:D:136:MET:HG2	1:D:143:ILE:HD13	1.81	0.63
1:E:81:ARG:HD3	1:E:81:ARG:C	2.23	0.63
1:A:136:MET:HE2	1:A:158:LEU:HD22	1.80	0.63
1:G:193:ILE:HD11	1:G:198:ILE:HG13	1.78	0.63
1:G:217:LEU:O	1:G:221:GLU:HG3	2.00	0.62
1:F:193:ILE:HD12	1:F:197:GLU:HG3	1.80	0.62
1:D:133:TYR:HA	1:D:136:MET:HE3	1.82	0.61
1:G:139:ILE:HD11	1:G:143:ILE:HD11	1.80	0.61
1:G:153:SER:HB2	1:G:180:PRO:HD3	1.80	0.61
1:C:218:GLN:CD	1:C:218:GLN:H	2.08	0.61
1:D:111:ASN:HB3	1:D:140:LEU:HD12	1.81	0.61
1:B:120:ASN:HB2	1:B:148:VAL:HG13	1.83	0.61
1:G:236:GLN:NE2	1:G:242:ASP:O	2.35	0.60
1:B:230:MET:HB3	1:B:234:GLU:HB3	1.84	0.60
1:G:78:ARG:NH1	1:G:82:GLU:HG2	2.17	0.60
1:F:139:ILE:HD11	1:F:143:ILE:HD11	1.83	0.60
1:B:203:LYS:HD3	1:B:206:TYR:CD2	2.29	0.60
1:E:76:TYR:HA	1:E:79:LEU:HD12	1.83	0.59
1:G:203:LYS:HD2	1:G:206:TYR:HD2	1.67	0.59
1:A:200:LYS:NZ	1:B:174:ARG:HH22	2.00	0.58
1:E:148:VAL:HG21	2:E:301:PJF:N1	2.18	0.58
1:C:177:ILE:HD11	1:C:223:ALA:HB1	1.84	0.58
1:E:81:ARG:HD3	1:E:81:ARG:O	2.03	0.58
1:B:83:ARG:HG2	1:B:106:LEU:HD22	1.86	0.58
1:A:139:ILE:HD11	1:A:143:ILE:HD11	1.84	0.58
1:G:153:SER:OG	1:G:154:MET:N	2.37	0.58
1:E:71:ARG:HD2	1:E:72:ALA:N	2.18	0.58
1:E:206:TYR:CD1	1:E:224:MET:HE2	2.38	0.57
1:G:193:ILE:CD1	1:G:198:ILE:HG13	2.34	0.57
1:F:171:PRO:HD3	1:F:245:LEU:O	2.04	0.57
1:A:82:GLU:OE1	3:A:401:HOH:O	2.17	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:100:ILE:HG23	1:F:135:THR:HG21	1.86	0.57
1:E:231:SER:OG	1:E:234:GLU:HG3	2.06	0.56
1:A:202:LYS:HE2	1:A:206:TYR:OH	2.06	0.56
1:B:153:SER:OG	1:B:154:MET:N	2.39	0.56
1:F:231:SER:OG	1:F:234:GLU:HG3	2.05	0.56
1:E:217:LEU:O	1:E:221:GLU:HG3	2.06	0.55
1:B:152:ALA:HB1	1:B:176:MET:HE2	1.86	0.55
1:E:173:SER:O	1:E:232:PRO:HD3	2.06	0.55
1:G:78:ARG:HH12	1:G:82:GLU:HG2	1.72	0.55
1:D:200:LYS:NZ	1:E:174:ARG:HH22	2.04	0.55
1:A:169:SER:OG	1:A:173:SER:HB2	2.07	0.55
1:F:246:VAL:HG12	1:F:247:HIS:CE1	2.41	0.54
1:C:171:PRO:HG3	1:C:246:VAL:HG22	1.88	0.54
1:D:200:LYS:HZ3	1:E:174:ARG:HH22	1.56	0.54
1:B:138:TYR:CE1	1:C:248:PRO:HD3	2.44	0.53
1:E:178:HIS:O	1:E:180:PRO:HD3	2.08	0.53
1:B:193:ILE:HD12	1:B:197:GLU:HB3	1.90	0.53
1:F:107:GLN:NE2	3:F:401:HOH:O	2.31	0.53
1:A:193:ILE:HD12	1:A:197:GLU:CG	2.35	0.53
1:B:201:LEU:HD21	1:C:174:ARG:HD3	1.89	0.53
1:C:146:TRP:CH2	1:C:245:LEU:HD12	2.44	0.53
1:E:193:ILE:HD12	1:E:197:GLU:HG3	1.90	0.52
1:C:206:TYR:CE1	1:C:224:MET:HE2	2.44	0.52
1:B:134:ASP:HB3	1:C:170:LEU:HD13	1.91	0.52
1:C:106:LEU:HD13	1:C:115:ILE:HG12	1.92	0.52
1:E:174:ARG:HB3	1:E:229:TYR:CD2	2.45	0.52
1:A:78:ARG:HH12	1:A:82:GLU:CG	2.21	0.52
1:D:131:ALA:HB1	1:E:148:VAL:HG12	1.91	0.52
1:E:153:SER:OG	1:E:154:MET:N	2.41	0.52
1:B:73:TYR:CZ	1:B:81:ARG:HD3	2.45	0.51
1:E:111:ASN:OD1	1:E:111:ASN:N	2.41	0.51
1:E:154:MET:HA	1:E:154:MET:HE2	1.92	0.51
1:D:136:MET:CE	1:D:158:LEU:HD22	2.40	0.51
1:G:148:VAL:HG21	2:G:301:PJF:N1	2.25	0.51
1:D:73:TYR:OH	1:D:81:ARG:NE	2.44	0.51
1:E:168:HIS:HD2	1:E:243:LYS:HB2	1.75	0.51
1:A:64:GLU:O	1:A:70:GLU:HA	2.11	0.50
1:G:163:THR:O	1:G:166:MET:HB2	2.09	0.50
1:F:91:ILE:HB	1:F:124:GLY:HA3	1.93	0.50
1:G:180:PRO:O	1:G:181:SER:HB2	2.12	0.50
1:B:193:ILE:HD11	1:B:198:ILE:HG12	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:173:SER:O	1:A:232:PRO:HD3	2.11	0.49
1:B:157:LEU:HD13	1:B:205:LEU:HD22	1.93	0.49
1:D:148:VAL:HG21	2:D:301:PJF:N1	2.27	0.49
1:B:64:GLU:HG3	1:B:81:ARG:HH12	1.77	0.49
1:A:136:MET:HE1	1:A:158:LEU:HA	1.94	0.49
1:A:194:GLN:O	1:A:198:ILE:HG13	2.11	0.49
1:G:125:VAL:HG12	1:G:128:ALA:H	1.77	0.49
1:F:177:ILE:HG21	1:F:240:ILE:HD11	1.95	0.49
1:A:58:LEU:HD11	1:G:59:ILE:CD1	2.42	0.48
1:D:218:GLN:HB2	3:D:409:HOH:O	2.13	0.48
1:E:168:HIS:CD2	1:E:243:LYS:HB2	2.47	0.48
1:D:231:SER:OG	1:D:234:GLU:HG3	2.12	0.48
1:E:71:ARG:HD2	1:E:72:ALA:H	1.78	0.48
1:G:144:CYS:SG	1:G:166:MET:HE2	2.52	0.48
1:E:71:ARG:HH22	1:F:72:ALA:HB2	1.78	0.48
1:C:148:VAL:HG13	1:C:170:LEU:HD12	1.96	0.48
1:F:197:GLU:HG2	1:G:229:TYR:CD1	2.48	0.48
1:D:153:SER:OG	1:D:154:MET:N	2.46	0.48
1:F:193:ILE:CD1	1:F:197:GLU:HG3	2.44	0.47
1:C:220:ILE:O	1:C:223:ALA:HB3	2.14	0.47
1:G:207:ASN:ND2	1:G:217:LEU:HD21	2.29	0.47
1:D:106:LEU:HD13	1:D:115:ILE:HG12	1.97	0.47
1:E:154:MET:HE1	1:E:205:LEU:HD22	1.95	0.47
1:G:159:LEU:HD21	1:G:241:LEU:HD21	1.94	0.47
1:B:194:GLN:O	1:B:198:ILE:HG13	2.13	0.47
1:C:168:HIS:CD2	1:C:243:LYS:HD3	2.48	0.47
1:B:146:TRP:HZ3	1:B:245:LEU:HD13	1.79	0.47
1:G:231:SER:OG	1:G:234:GLU:HG3	2.15	0.47
1:E:171:PRO:HD3	1:E:245:LEU:HD12	1.97	0.47
1:G:176:MET:HE2	1:G:178:HIS:HB3	1.96	0.47
1:D:85:VAL:O	1:D:117:MET:HA	2.15	0.47
1:E:243:LYS:NZ	3:E:403:HOH:O	2.46	0.47
1:G:160:ALA:HA	1:G:167:ARG:HD2	1.96	0.47
1:B:138:TYR:CZ	1:C:248:PRO:HD3	2.50	0.46
1:D:132:ILE:HG22	1:D:136:MET:HE2	1.96	0.46
1:A:200:LYS:HZ3	1:B:174:ARG:HH22	1.64	0.46
2:A:301:PJF:CL1	1:G:105:PHE:HB2	2.53	0.46
1:E:134:ASP:HB3	1:F:170:LEU:HD23	1.97	0.46
1:E:238:PHE:HB3	1:E:240:ILE:HD12	1.97	0.46
1:D:194:GLN:O	1:D:198:ILE:HG13	2.16	0.46
1:E:91:ILE:O	1:E:124:GLY:HA3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:58:LEU:HD12	1:A:58:LEU:HA	1.72	0.46
1:E:90:PRO:HA	1:E:123:GLY:O	2.16	0.46
1:E:147:CYS:HB3	1:E:169:SER:HB2	1.98	0.46
1:F:81:ARG:C	1:F:83:ARG:H	2.25	0.45
1:B:203:LYS:HA	1:B:206:TYR:CD2	2.51	0.45
1:G:230:MET:HB3	1:G:234:GLU:HB2	1.97	0.45
1:A:82:GLU:HG3	2:A:301:PJF:C19	2.46	0.45
1:A:110:SER:O	1:A:141:ASN:ND2	2.48	0.45
1:A:152:ALA:HB1	1:A:176:MET:CE	2.46	0.45
1:E:123:GLY:HA3	3:E:402:HOH:O	2.15	0.45
1:B:198:ILE:HG13	1:B:198:ILE:H	1.48	0.45
1:D:71:ARG:HG2	1:D:72:ALA:N	2.30	0.45
1:D:201:LEU:HD23	1:D:201:LEU:HA	1.77	0.45
1:E:71:ARG:NH2	1:F:63:VAL:HG22	2.31	0.45
1:A:142:PRO:CB	1:A:166:MET:HE1	2.46	0.45
1:F:138:TYR:CD1	1:G:247:HIS:HA	2.52	0.45
1:B:98:LEU:O	1:B:102:GLN:HG3	2.17	0.45
1:A:111:ASN:HA	1:A:141:ASN:ND2	2.31	0.45
1:G:110:SER:HB3	1:G:113:LYS:HB2	1.99	0.44
1:A:220:ILE:O	1:A:224:MET:HG2	2.17	0.44
1:C:146:TRP:HH2	1:C:245:LEU:HD12	1.82	0.44
1:D:101:ALA:HB1	1:E:75:ILE:HG12	1.99	0.44
1:A:111:ASN:HB2	1:A:140:LEU:HB2	2.00	0.44
1:B:73:TYR:CE2	1:B:81:ARG:HD3	2.53	0.44
1:B:202:LYS:HG2	1:B:206:TYR:CZ	2.52	0.44
1:E:98:LEU:HA	1:E:98:LEU:HD12	1.67	0.44
1:F:177:ILE:HG13	1:F:224:MET:HG2	1.98	0.44
1:G:194:GLN:O	1:G:198:ILE:HD12	2.18	0.44
1:E:163:THR:O	1:E:166:MET:HB2	2.18	0.44
1:F:194:GLN:O	1:F:198:ILE:HG13	2.18	0.44
1:E:131:ALA:HB1	1:F:148:VAL:HG22	1.98	0.44
1:E:153:SER:OG	3:E:402:HOH:O	2.21	0.44
1:E:202:LYS:NZ	3:E:404:HOH:O	2.48	0.44
1:G:203:LYS:HD2	1:G:203:LYS:HA	1.68	0.44
1:A:176:MET:HG3	1:A:228:ARG:O	2.18	0.44
1:A:128:ALA:O	1:A:131:ALA:HB3	2.17	0.43
1:C:217:LEU:O	1:C:221:GLU:HG3	2.18	0.43
1:E:58:LEU:C	1:E:59:ILE:HG12	2.43	0.43
1:A:217:LEU:O	1:A:221:GLU:HG3	2.17	0.43
1:C:82:GLU:HG3	2:C:301:PJF:N4	2.33	0.43
1:B:139:ILE:HD11	1:B:143:ILE:HD11	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:203:LYS:HA	1:D:206:TYR:CD2	2.54	0.43
1:D:246:VAL:HG12	1:D:247:HIS:CE1	2.53	0.43
1:A:142:PRO:HB3	1:A:166:MET:HE1	2.01	0.43
1:B:193:ILE:CD1	1:B:198:ILE:HG12	2.49	0.43
1:D:59:ILE:HD12	1:D:76:TYR:HE2	1.84	0.43
1:D:136:MET:HG2	1:D:143:ILE:CD1	2.48	0.43
1:D:136:MET:HE3	1:D:136:MET:HB2	1.82	0.43
1:F:125:VAL:HB	1:F:128:ALA:HB3	2.01	0.43
1:F:153:SER:OG	1:F:180:PRO:HD2	2.18	0.43
1:C:94:SER:HA	1:D:88:MET:HE2	2.00	0.43
1:E:114:PRO:HG3	1:E:142:PRO:HG2	2.00	0.43
1:B:215:GLN:OE1	1:B:219:VAL:HG11	2.18	0.43
1:G:71:ARG:HD3	1:G:73:TYR:HE1	1.83	0.43
1:A:83:ARG:NH2	1:A:113:LYS:O	2.46	0.43
1:A:231:SER:OG	1:A:234:GLU:HG3	2.19	0.43
1:C:100:ILE:HG23	1:C:135:THR:HG21	2.00	0.43
1:C:215:GLN:OE1	1:C:219:VAL:HG11	2.17	0.43
1:D:171:PRO:O	1:D:232:PRO:HG2	2.18	0.43
1:C:171:PRO:HD3	1:C:245:LEU:O	2.19	0.42
1:G:87:VAL:HG22	1:G:99:VAL:HG21	2.00	0.42
1:A:246:VAL:HG12	1:A:247:HIS:CE1	2.54	0.42
1:A:206:TYR:CD1	1:A:224:MET:HE2	2.54	0.42
1:D:80:LEU:HD11	1:D:102:GLN:HB3	2.01	0.42
1:B:220:ILE:O	1:B:224:MET:HG3	2.19	0.42
1:C:213:THR:HG22	1:C:239:GLY:C	2.44	0.42
1:A:138:TYR:CD1	1:B:247:HIS:HA	2.55	0.42
1:B:160:ALA:HA	1:B:240:ILE:O	2.20	0.42
1:D:87:VAL:HG21	1:D:117:MET:HE3	2.01	0.42
1:G:88:MET:HE3	1:G:88:MET:HB3	1.98	0.42
1:D:114:PRO:HA	1:D:142:PRO:O	2.20	0.42
1:E:106:LEU:HD23	1:E:106:LEU:HA	1.75	0.42
1:E:100:ILE:HG23	1:E:135:THR:HG21	2.02	0.41
1:F:104:LEU:HD22	2:G:301:PJF:O1	2.21	0.41
1:F:131:ALA:HB1	1:G:148:VAL:HG12	2.02	0.41
1:C:217:LEU:HD23	1:C:217:LEU:HA	1.76	0.41
1:D:204:GLN:NE2	1:E:172:ASN:OD1	2.52	0.41
1:G:147:CYS:HB2	1:G:159:LEU:HD13	2.01	0.41
1:G:146:TRP:CZ3	1:G:245:LEU:HD21	2.55	0.41
1:A:230:MET:HB3	1:A:234:GLU:HB2	2.03	0.41
1:F:199:MET:CE	1:F:203:LYS:HE3	2.51	0.41
1:G:80:LEU:HD12	1:G:80:LEU:HA	1.62	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:143:ILE:H	1:G:163:THR:CG2	2.33	0.41
1:B:247:HIS:HB2	1:B:248:PRO:CD	2.51	0.41
1:C:159:LEU:HD21	1:C:241:LEU:HD23	2.02	0.41
1:A:208:ILE:O	1:A:212:HIS:HD2	2.03	0.41
1:B:203:LYS:HA	1:B:206:TYR:HD2	1.85	0.41
1:B:203:LYS:O	1:B:206:TYR:HB2	2.21	0.41
1:B:213:THR:HG22	1:B:239:GLY:C	2.45	0.41
1:D:203:LYS:HA	1:D:206:TYR:HD2	1.86	0.41
1:E:157:LEU:HD13	1:E:205:LEU:HD22	2.03	0.41
1:A:111:ASN:HA	1:A:141:ASN:HD21	1.84	0.41
1:D:202:LYS:HD2	1:D:206:TYR:CZ	2.55	0.41
1:E:92:ASP:OD1	1:E:95:VAL:HG23	2.21	0.41
1:A:79:LEU:HA	1:A:79:LEU:HD23	1.72	0.41
1:A:88:MET:HG3	1:G:97:SER:HB2	2.03	0.41
1:B:85:VAL:HG13	1:B:102:GLN:NE2	2.35	0.41
1:D:171:PRO:HD3	1:D:245:LEU:O	2.21	0.41
1:F:169:SER:OG	1:F:173:SER:HB2	2.21	0.41
1:C:90:PRO:HA	1:C:123:GLY:O	2.21	0.40
1:C:211:LYS:HE2	1:C:212:HIS:CE1	2.57	0.40
1:D:144:CYS:HA	1:D:166:MET:HB3	2.02	0.40
1:C:171:PRO:O	1:C:232:PRO:HG2	2.22	0.40
1:C:177:ILE:CG2	1:C:240:ILE:HD11	2.52	0.40
1:E:146:TRP:HZ3	1:E:245:LEU:HD21	1.87	0.40
1:B:218:GLN:O	1:B:222:SER:OG	2.39	0.40
1:C:148:VAL:CG1	1:C:170:LEU:HD12	2.51	0.40
1:D:107:GLN:HG3	1:D:141:ASN:OD1	2.22	0.40
1:E:220:ILE:HD13	1:E:220:ILE:HA	1.85	0.40
1:D:217:LEU:O	1:D:221:GLU:HG3	2.22	0.40
1:G:236:GLN:HA	1:G:241:LEU:HB2	2.03	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:196:GLU:OE2	1:G:206:TYR:OH[2_556]	2.16	0.04
1:D:226:ARG:NH1	1:E:225:GLU:OE1[2_556]	2.16	0.04

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	170/221 (77%)	161 (95%)	8 (5%)	1 (1%)	21	38
1	B	168/221 (76%)	160 (95%)	8 (5%)	0	100	100
1	C	167/221 (76%)	156 (93%)	11 (7%)	0	100	100
1	D	171/221 (77%)	163 (95%)	8 (5%)	0	100	100
1	E	165/221 (75%)	157 (95%)	6 (4%)	2 (1%)	10	22
1	F	171/221 (77%)	163 (95%)	6 (4%)	2 (1%)	10	22
1	G	169/221 (76%)	165 (98%)	4 (2%)	0	100	100
All	All	1181/1547 (76%)	1125 (95%)	51 (4%)	5 (0%)	30	48

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	227	ASP
1	E	110	SER
1	F	110	SER
1	F	82	GLU
1	A	125	VAL

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	153/185 (83%)	147 (96%)	6 (4%)	28	54
1	B	151/185 (82%)	144 (95%)	7 (5%)	24	48

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	150/185 (81%)	147 (98%)	3 (2%)	48	71
1	D	154/185 (83%)	151 (98%)	3 (2%)	50	72
1	E	148/185 (80%)	143 (97%)	5 (3%)	32	58
1	F	153/185 (83%)	148 (97%)	5 (3%)	33	58
1	G	152/185 (82%)	139 (91%)	13 (9%)	10	21
All	All	1061/1295 (82%)	1019 (96%)	42 (4%)	28	53

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

Mol	Chain	Res	Type
1	A	58	LEU
1	A	63	VAL
1	A	140	LEU
1	A	181	SER
1	A	222	SER
1	A	246	VAL
1	B	58	LEU
1	B	63	VAL
1	B	86	CYS
1	B	115	ILE
1	B	153	SER
1	B	222	SER
1	B	245	LEU
1	C	94	SER
1	C	148	VAL
1	C	241	LEU
1	D	148	VAL
1	D	208	ILE
1	D	222	SER
1	E	58	LEU
1	E	59	ILE
1	E	97	SER
1	E	111	ASN
1	E	240	ILE
1	F	79	LEU
1	F	140	LEU
1	F	144[A]	CYS
1	F	144[B]	CYS
1	F	222	SER
1	G	63	VAL

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Mol	Chain	Res	Type
1	G	73	TYR
1	G	108	SER
1	G	115	ILE
1	G	137	GLN
1	G	148	VAL
1	G	150	GLN
1	G	153	SER
1	G	202	LYS
1	G	222	SER
1	G	234	GLU
1	G	244	VAL
1	G	245	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	116	HIS
1	A	150	GLN
1	A	194	GLN
1	A	204	GLN
1	A	236	GLN
1	B	179	GLN
1	B	204	GLN
1	D	120	ASN
1	D	168	HIS
1	F	247	HIS
1	G	116	HIS
1	G	179	GLN

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

7 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	PJF	F	301	-	35,35,35	0.78	1 (2%)	43,50,50	1.09	5 (11%)
2	PJF	B	301	-	35,35,35	0.68	1 (2%)	43,50,50	1.06	4 (9%)
2	PJF	G	301	-	35,35,35	0.92	3 (8%)	43,50,50	1.05	5 (11%)
2	PJF	A	301	-	35,35,35	0.71	1 (2%)	43,50,50	1.01	3 (6%)
2	PJF	C	301	-	35,35,35	0.81	1 (2%)	43,50,50	1.10	5 (11%)
2	PJF	D	301	-	35,35,35	0.82	1 (2%)	43,50,50	0.91	3 (6%)
2	PJF	E	301	-	35,35,35	0.89	3 (8%)	43,50,50	0.98	3 (6%)

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	PJF	F	301	-	-	0/10/25/25	0/5/5/5
2	PJF	B	301	-	-	0/10/25/25	0/5/5/5
2	PJF	G	301	-	-	0/10/25/25	0/5/5/5
2	PJF	A	301	-	-	0/10/25/25	0/5/5/5
2	PJF	C	301	-	-	0/10/25/25	0/5/5/5
2	PJF	D	301	-	-	1/10/25/25	0/5/5/5
2	PJF	E	301	-	-	0/10/25/25	0/5/5/5

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	301	PJF	C21-N4	3.40	1.30	1.28
2	F	301	PJF	C21-N4	2.79	1.30	1.28
2	C	301	PJF	C21-N4	2.69	1.30	1.28
2	D	301	PJF	C21-N4	2.63	1.30	1.28
2	G	301	PJF	C10-N5	-2.63	1.34	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	G	301	PJF	C21-N4	2.47	1.30	1.28
2	A	301	PJF	C21-N4	2.24	1.29	1.28
2	G	301	PJF	C13-C11	-2.16	1.39	1.44
2	E	301	PJF	C13-C11	-2.09	1.39	1.44
2	E	301	PJF	C13-N3	-2.07	1.36	1.40
2	B	301	PJF	C13-C11	-2.01	1.39	1.44

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	301	PJF	C7-N2-C12	3.51	114.96	110.51
2	C	301	PJF	C7-N2-C12	3.12	114.46	110.51
2	F	301	PJF	C9-C8-N2	-2.97	108.53	111.19
2	E	301	PJF	C11-C13-N3	2.97	120.32	115.16
2	B	301	PJF	C11-C13-N3	2.80	120.02	115.16
2	B	301	PJF	C22-C23-N5	-2.77	99.30	101.30
2	B	301	PJF	O1-C13-C11	-2.74	119.84	125.06
2	A	301	PJF	C9-C8-N2	-2.74	108.73	111.19
2	F	301	PJF	C14-N3-C13	2.70	121.53	117.72
2	C	301	PJF	C11-C13-N3	2.69	119.83	115.16
2	E	301	PJF	O1-C13-C11	-2.67	119.99	125.06
2	C	301	PJF	O1-C13-C11	-2.59	120.13	125.06
2	F	301	PJF	O1-C13-C11	-2.58	120.15	125.06
2	G	301	PJF	O1-C13-C11	-2.57	120.17	125.06
2	D	301	PJF	C11-C13-N3	2.53	119.55	115.16
2	C	301	PJF	C22-C23-N5	-2.51	99.49	101.30
2	D	301	PJF	O1-C13-C11	-2.46	120.38	125.06
2	G	301	PJF	C11-C13-N3	2.43	119.38	115.16
2	A	301	PJF	C11-C13-N3	2.43	119.38	115.16
2	G	301	PJF	C22-C23-N5	-2.41	99.56	101.30
2	G	301	PJF	C14-N3-C13	2.39	121.09	117.72
2	C	301	PJF	C14-N3-C13	2.38	121.08	117.72
2	G	301	PJF	C2-C1-N1	-2.30	172.19	177.87
2	B	301	PJF	C14-N3-C13	2.26	120.91	117.72
2	E	301	PJF	C14-N3-C13	2.24	120.89	117.72
2	F	301	PJF	C11-C13-N3	2.21	119.01	115.16
2	A	301	PJF	O1-C13-C11	-2.18	120.92	125.06
2	D	301	PJF	C14-N3-C13	2.05	120.61	117.72

There are no chirality outliers.

All (1) torsion outliers are listed below:

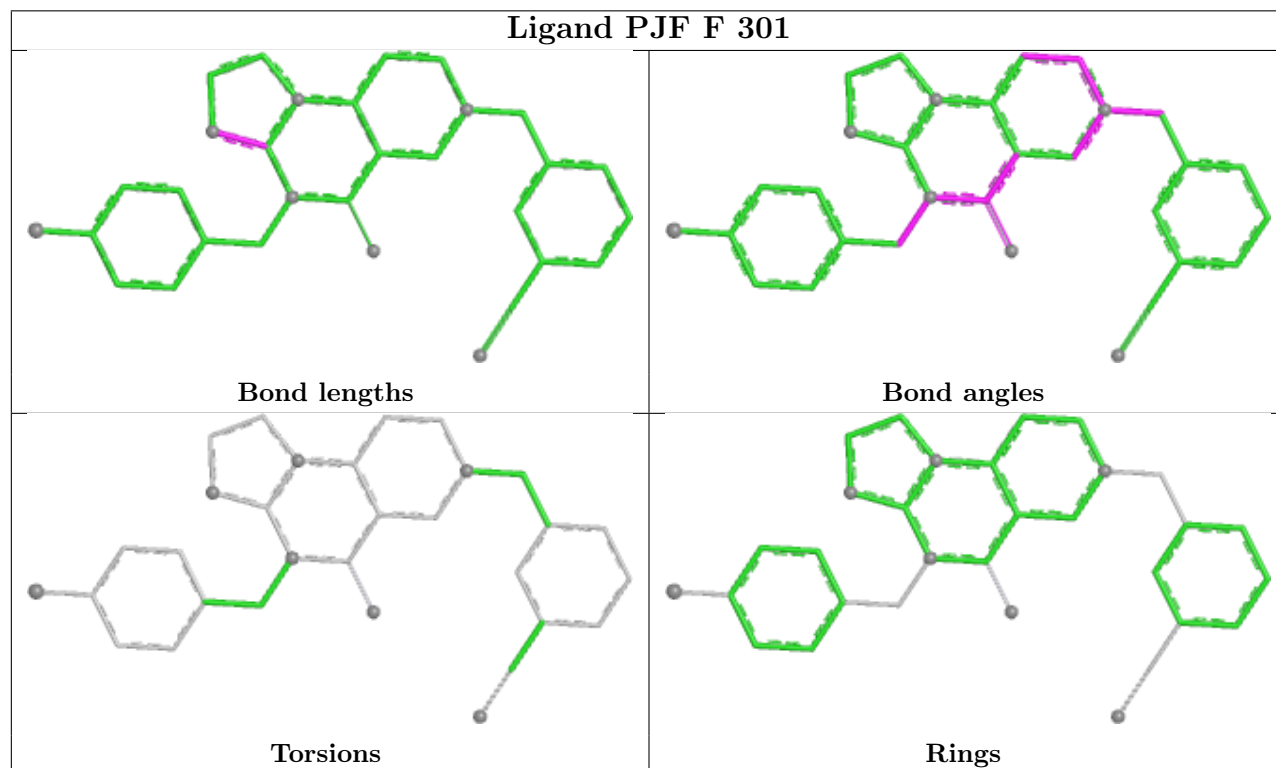
Mol	Chain	Res	Type	Atoms
2	D	301	PJF	C6-C7-N2-C8

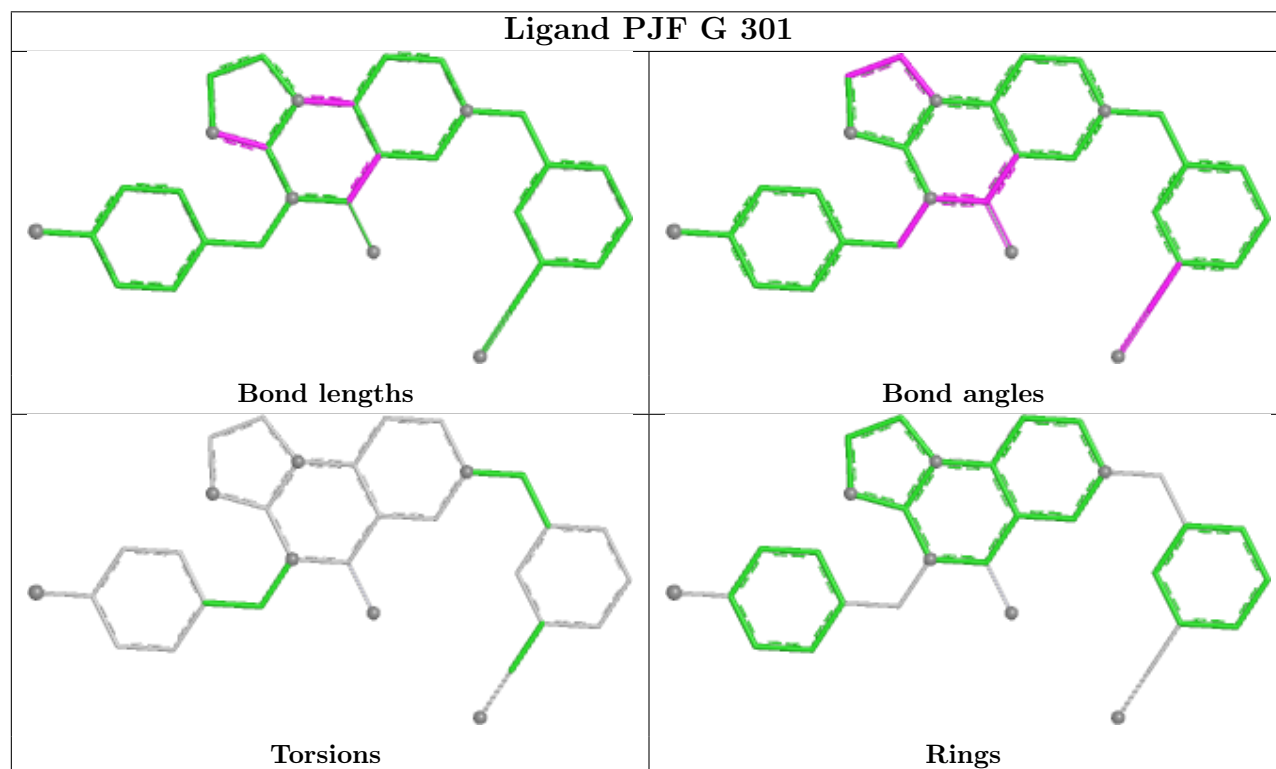
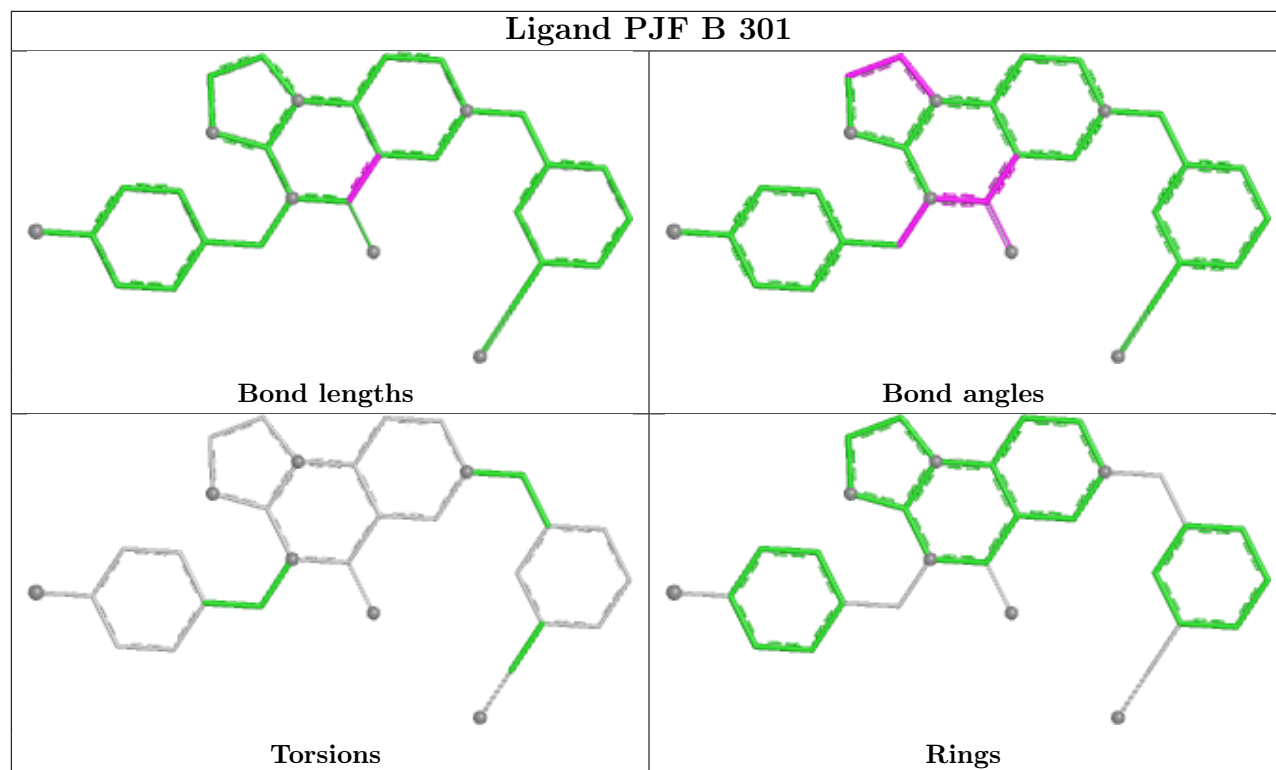
There are no ring outliers.

5 monomers are involved in 9 short contacts:

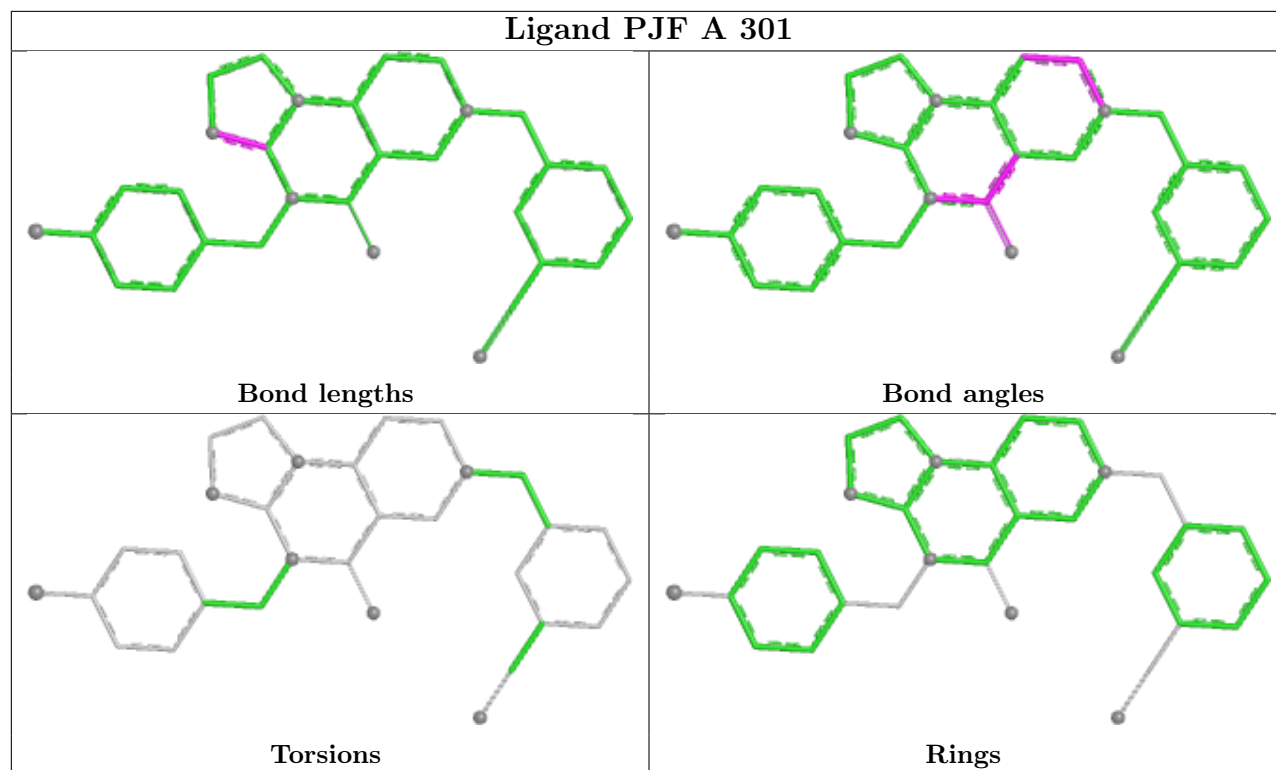
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	G	301	PJF	2	0
2	A	301	PJF	3	0
2	C	301	PJF	2	0
2	D	301	PJF	1	0
2	E	301	PJF	1	0

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.

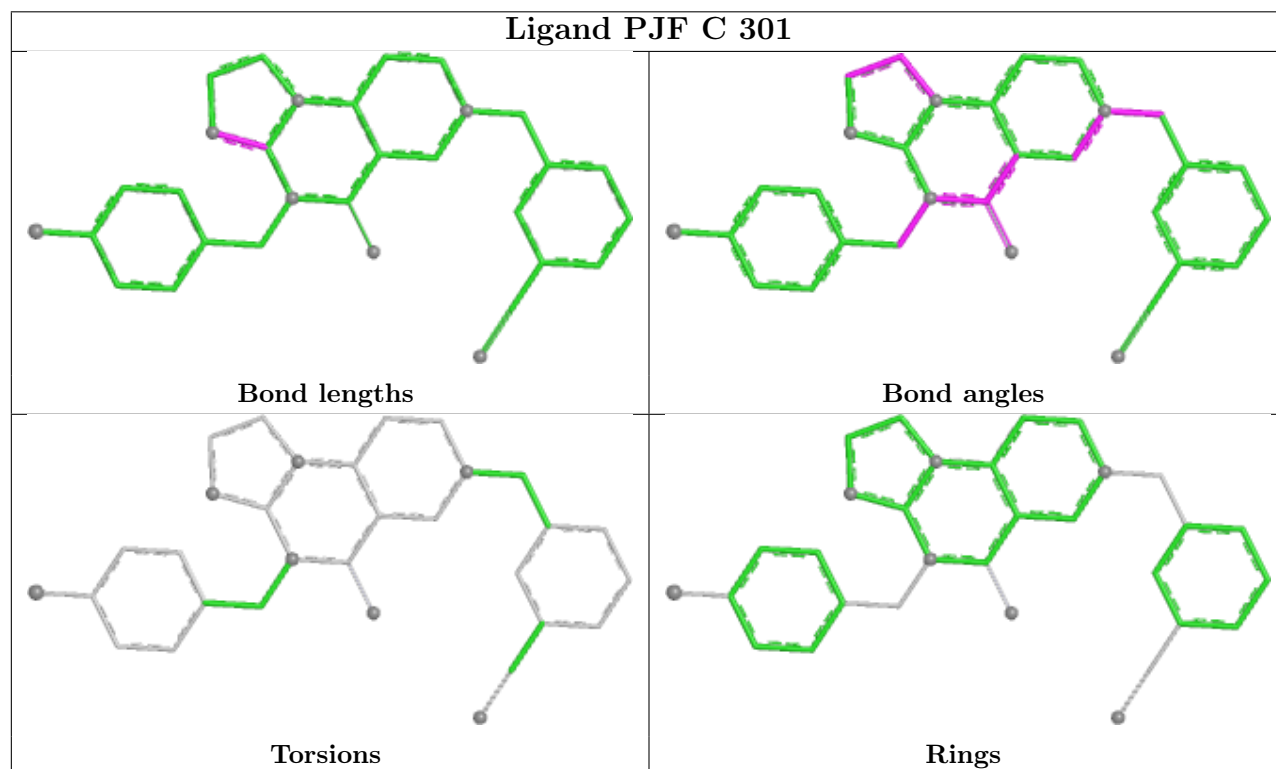


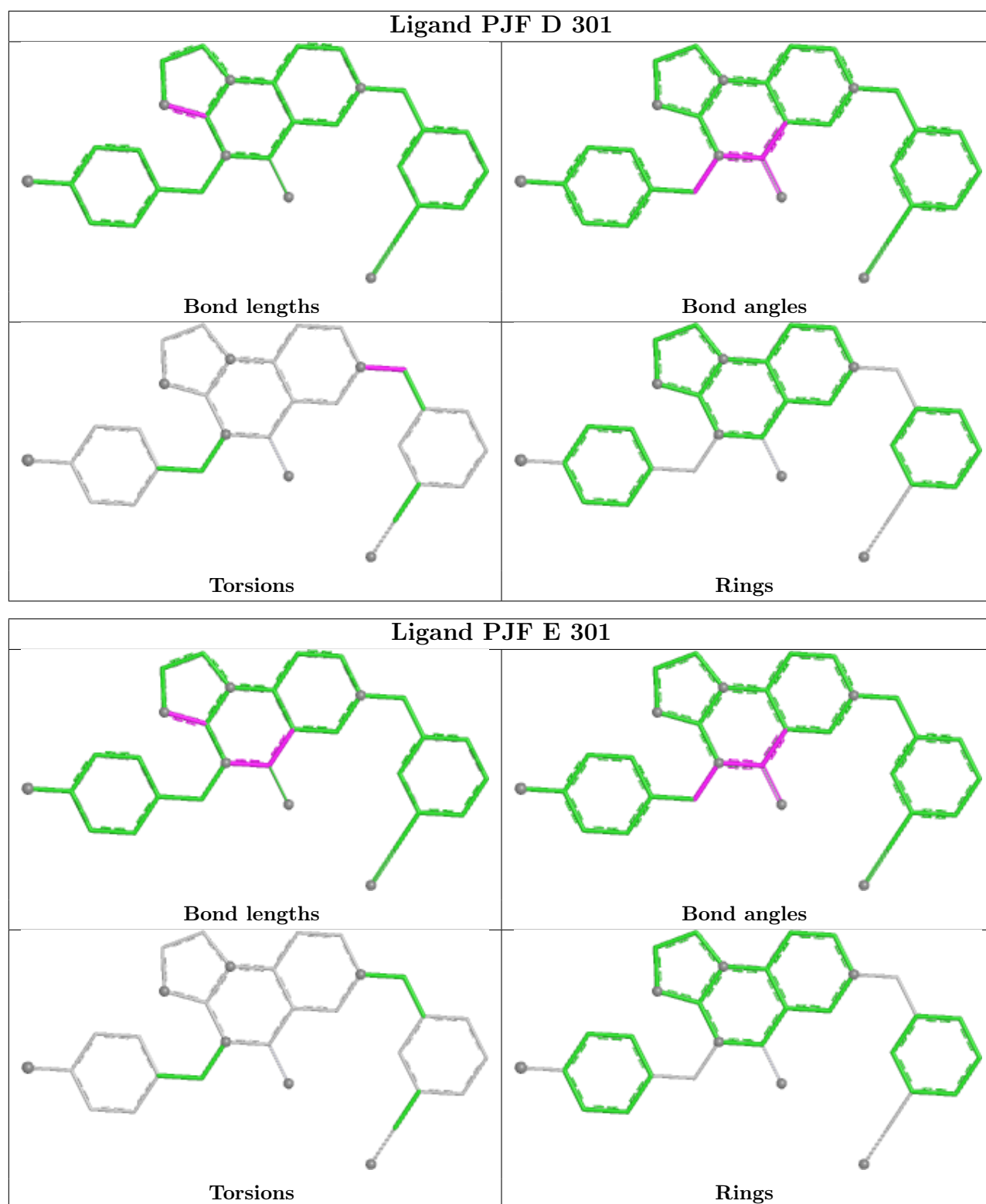


Ligand PJF A 301



Ligand PJF C 301





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 ⓘ

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	176/221 (79%)	-0.22	0 100 100	35, 43, 63, 81	0
1	B	174/221 (78%)	-0.23	2 (1%) 78 73	37, 47, 63, 82	0
1	C	173/221 (78%)	-0.19	2 (1%) 76 71	34, 46, 61, 77	0
1	D	177/221 (80%)	-0.22	2 (1%) 78 73	34, 43, 69, 92	0
1	E	171/221 (77%)	-0.22	2 (1%) 76 71	36, 44, 60, 76	0
1	F	176/221 (79%)	-0.25	2 (1%) 78 73	27, 43, 64, 79	1 (0%)
1	G	175/221 (79%)	-0.18	2 (1%) 78 73	37, 44, 62, 88	0
All	All	1222/1547 (78%)	-0.22	12 (0%) 79 74	27, 45, 64, 92	1 (0%)

All (12) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	58	LEU	3.4
1	G	63	VAL	3.3
1	E	63	VAL	3.1
1	B	58	LEU	2.8
1	G	58	LEU	2.6
1	F	69	GLY	2.4
1	D	58	LEU	2.4
1	C	248	PRO	2.4
1	B	247	HIS	2.3
1	C	58	LEU	2.2
1	D	71	ARG	2.2
1	F	249	PRO	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

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

6.3 Carbohydrates

There are no oligosaccharides in this entry.

6.4 Ligands

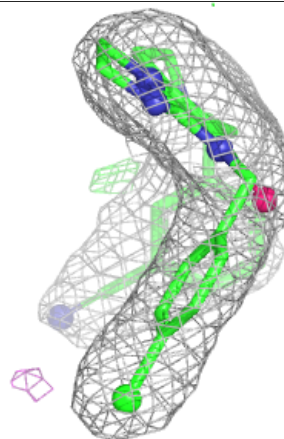
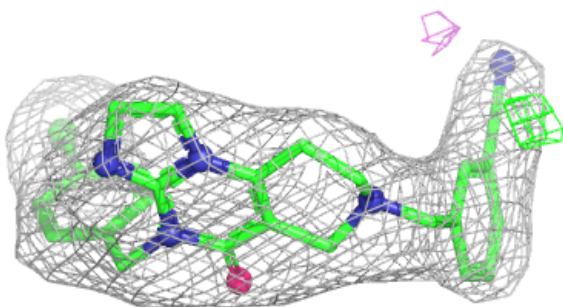
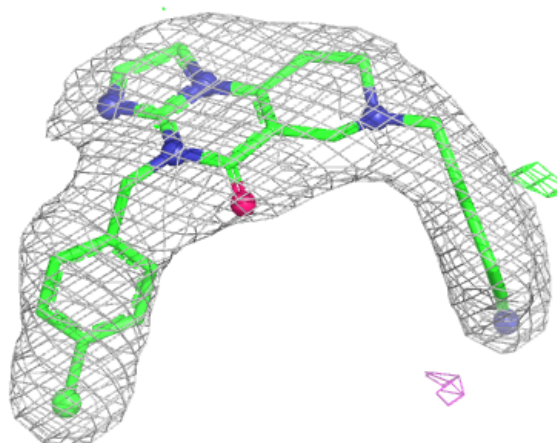
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists 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	PJF	B	301	31/31	0.94	0.09	42,47,53,64	0
2	PJF	C	301	31/31	0.94	0.09	39,48,55,62	0
2	PJF	E	301	31/31	0.94	0.09	34,43,49,60	0
2	PJF	G	301	31/31	0.94	0.09	33,40,43,62	0
2	PJF	F	301	31/31	0.95	0.08	37,44,50,59	0
2	PJF	D	301	31/31	0.95	0.09	38,47,52,59	0
2	PJF	A	301	31/31	0.96	0.07	34,42,47,61	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.

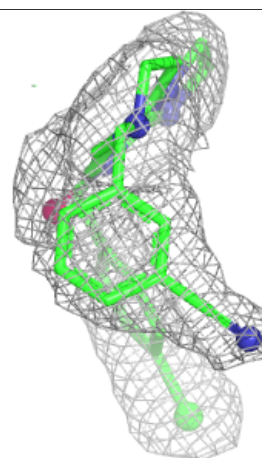
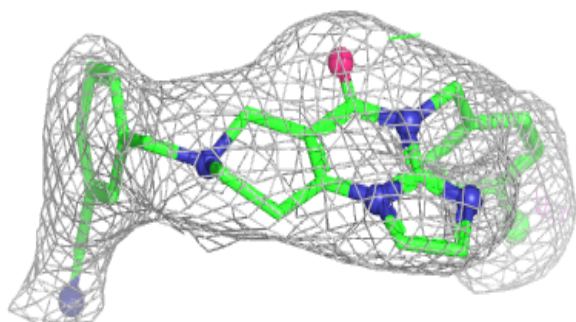
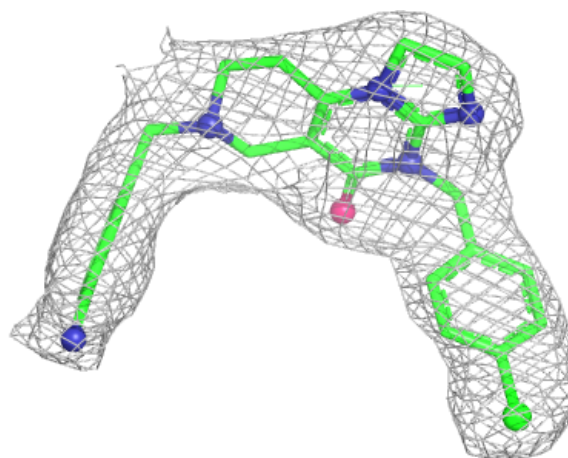
Electron density around PJF B 301:

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



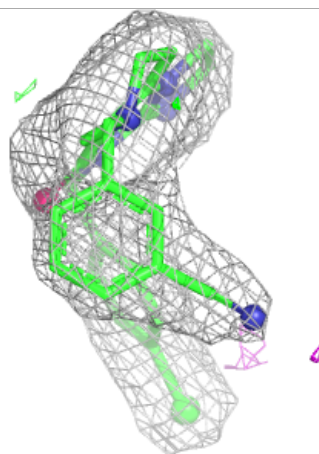
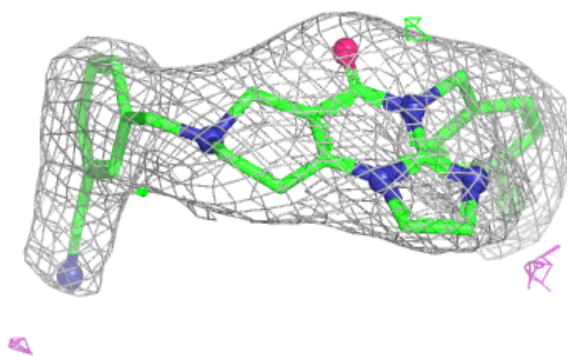
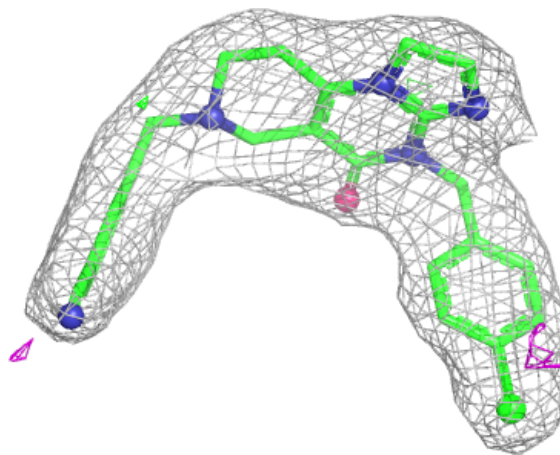
Electron density around PJF C 301:

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



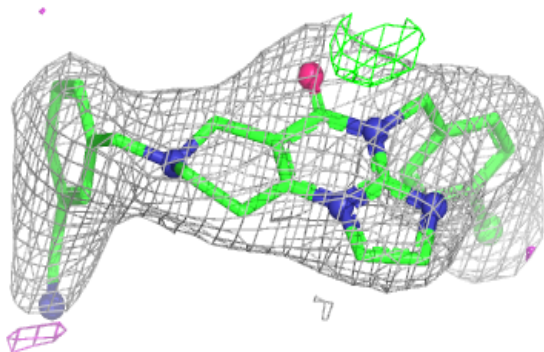
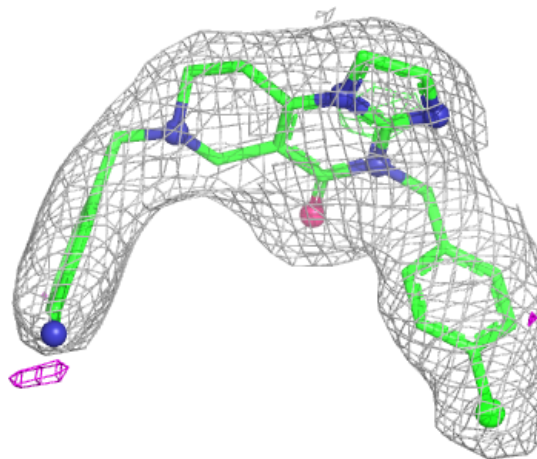
Electron density around PJF E 301:

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



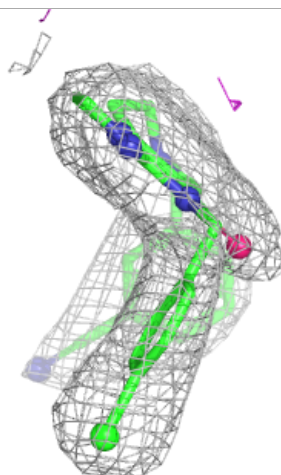
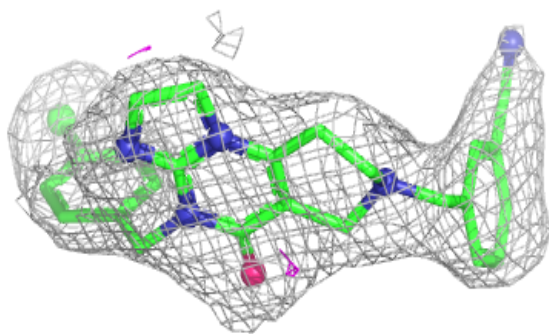
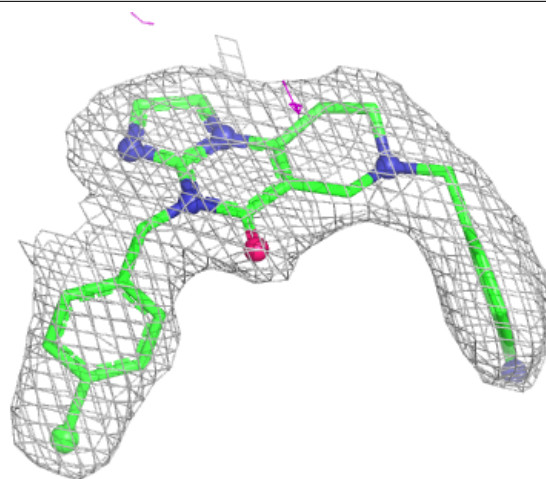
Electron density around PJF G 301:

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



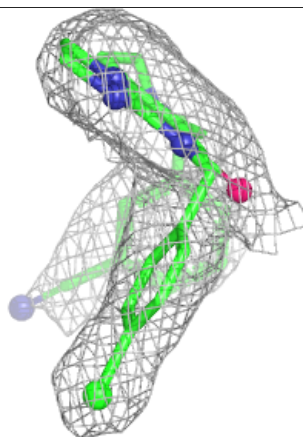
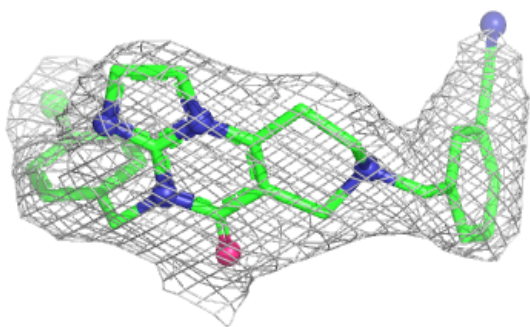
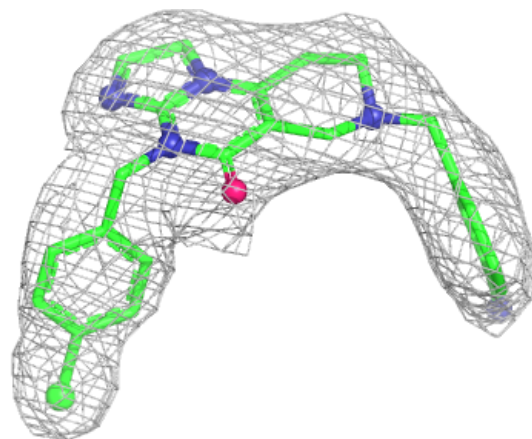
Electron density around PJF F 301:

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



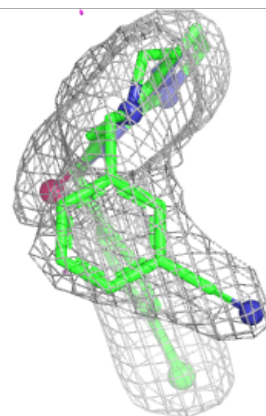
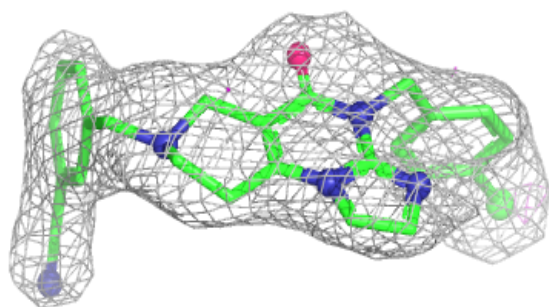
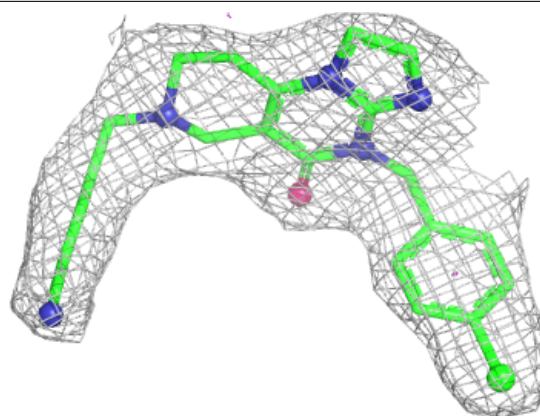
Electron density around PJF D 301:

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



Electron density around PJF 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 [i](#)

There are no such residues in this entry.