Full wwPDB X-ray Structure Validation Report ⓘ

Jun 12, 2024 – 11:16 PM EDT

PDB ID	:	3WI6
Title	:	Crystal structure of MAPKAP Kinase-2 (MK2) in complex with non-selective inhibitor
Authors	:	Fujino, A.; Fukushima, K.; Kubota, T.; Matsumoto, Y.; Takimoto-Kamimura, M.
Deposited on	:	2013-09-06
Resolution	:	2.99 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

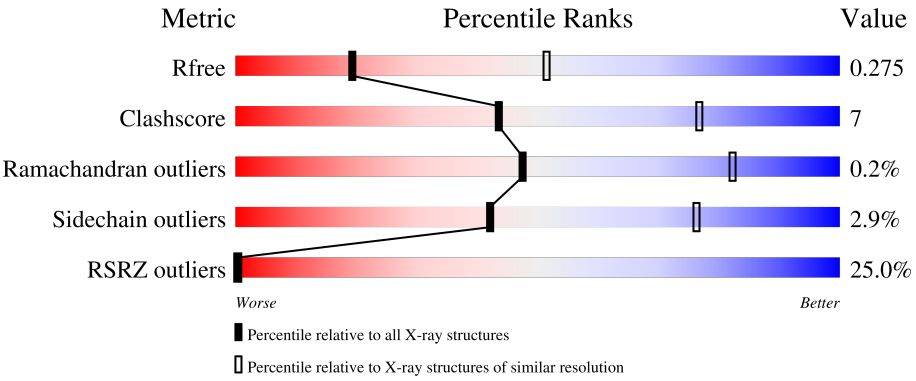
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	2.36.2
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

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 2.99 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



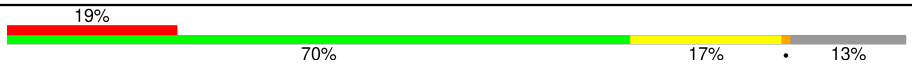
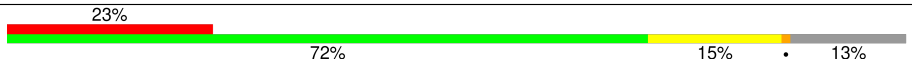
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	2092 (3.00-3.00)
Clashscore	141614	2416 (3.00-3.00)
Ramachandran outliers	138981	2333 (3.00-3.00)
Sidechain outliers	138945	2336 (3.00-3.00)
RSRZ outliers	127900	1990 (3.00-3.00)

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 <=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	324	24% 71% 15% 13%
1	B	324	21% 69% 18% • 13%
1	C	324	22% 70% 17% • 13%
1	D	324	23% 71% 15% • 13%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	E	324	
1	F	324	

2 Entry composition (i)

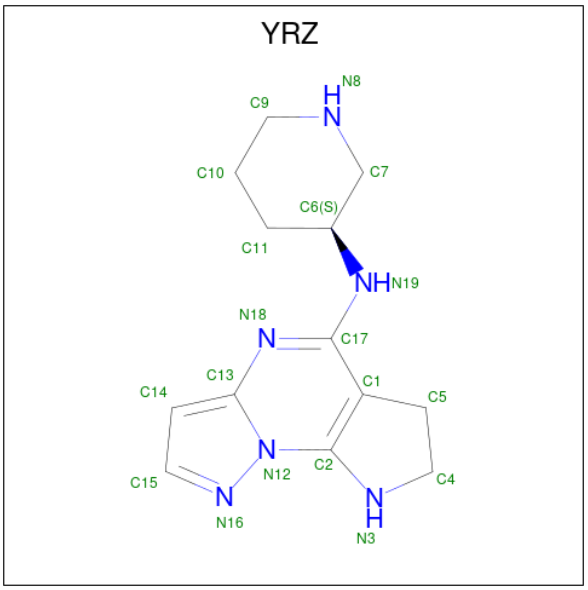
There are 2 unique types of molecules in this entry. The entry contains 13553 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 MAP kinase-activated protein kinase 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	282	Total	C	N	O	S	0	0	0
			2233	1429	380	407	17			
1	B	283	Total	C	N	O	S	0	0	0
			2241	1433	381	410	17			
1	C	283	Total	C	N	O	S	0	0	0
			2237	1431	381	408	17			
1	D	282	Total	C	N	O	S	0	0	0
			2237	1431	380	409	17			
1	E	283	Total	C	N	O	S	0	0	0
			2249	1439	382	411	17			
1	F	283	Total	C	N	O	S	0	0	0
			2242	1434	382	409	17			

- Molecule 2 is N-[(3S)-piperidin-3-yl]-7,8-dihydro-6H-pyrazolo[1,5-a]pyrrolo[3,2-e]pyrimidin-5-amine (three-letter code: YRZ) (formula: $C_{13}H_{18}N_6$).



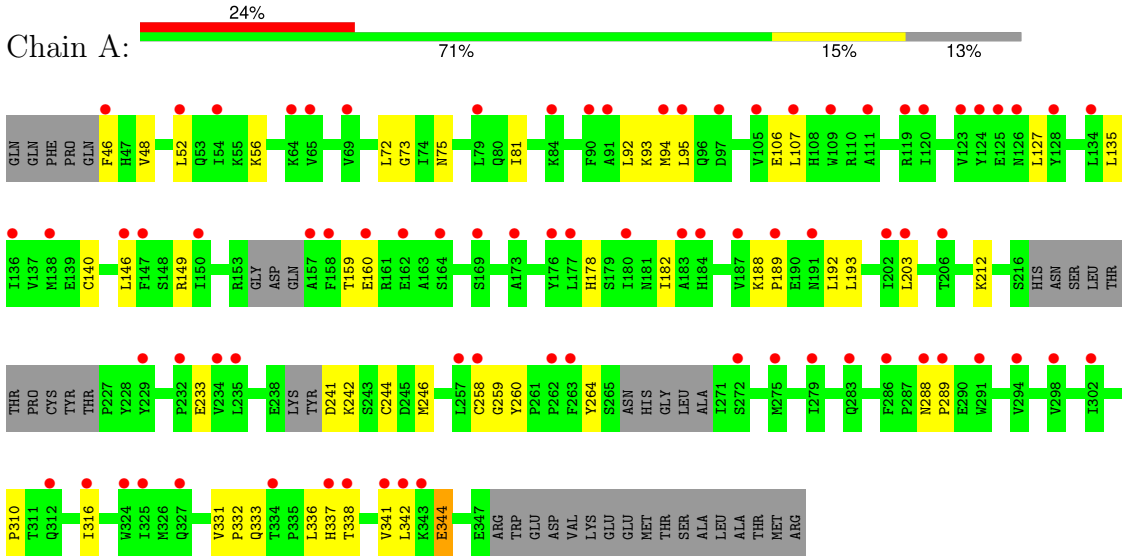
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	N	0	0
			19	13	6		
2	B	1	Total	C	N	0	0
			19	13	6		
2	C	1	Total	C	N	0	0
			19	13	6		
2	D	1	Total	C	N	0	0
			19	13	6		
2	E	1	Total	C	N	0	0
			19	13	6		
2	F	1	Total	C	N	0	0
			19	13	6		

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.

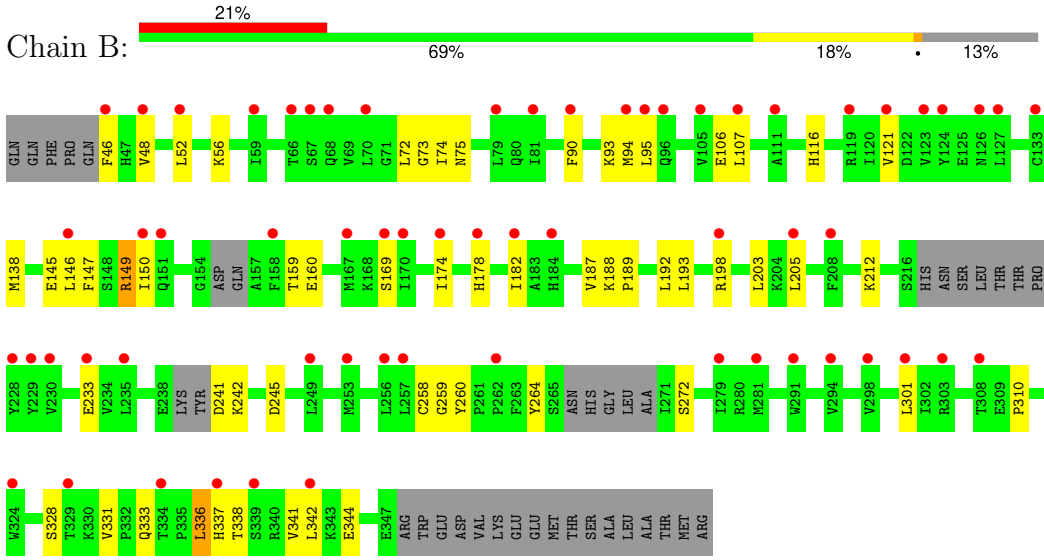
• Molecule 1: MAP kinase-activated protein kinase 2

Chain A:



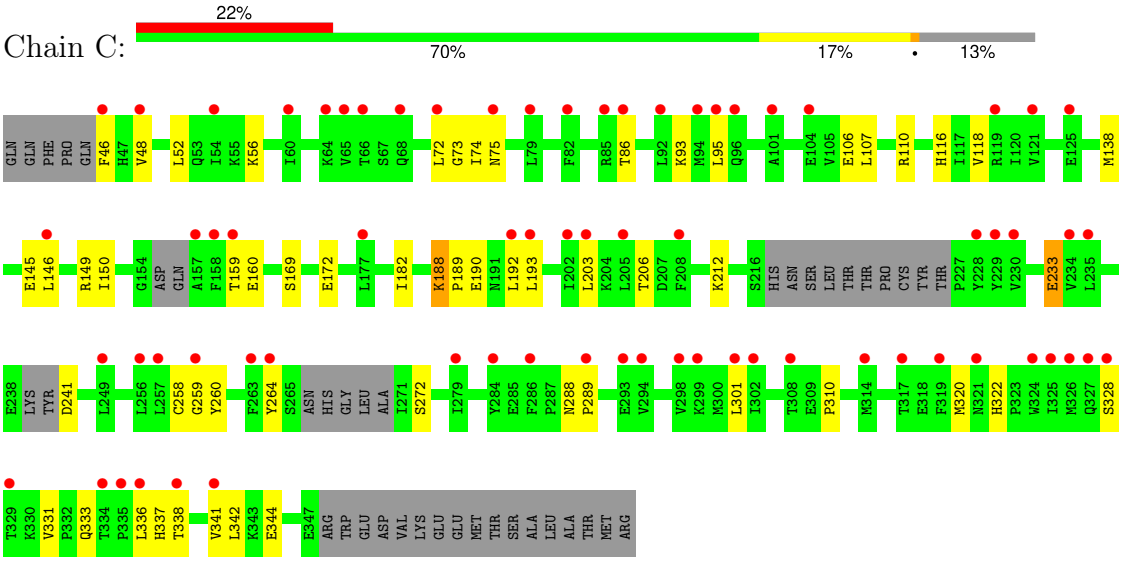
• Molecule 1: MAP kinase-activated protein kinase 2

Chain B:



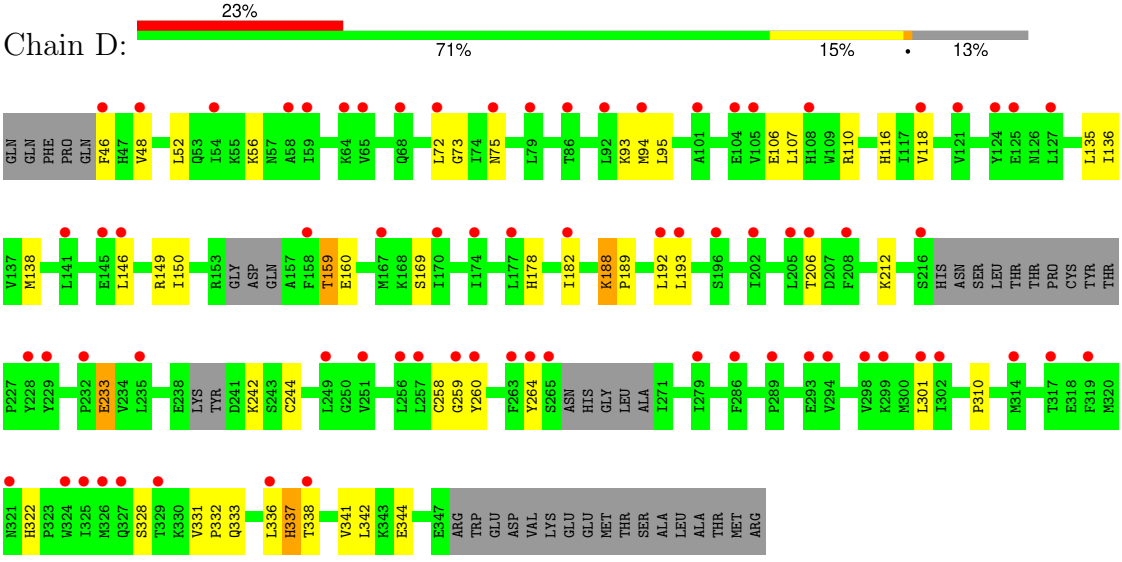
• Molecule 1: MAP kinase-activated protein kinase 2

Chain C:



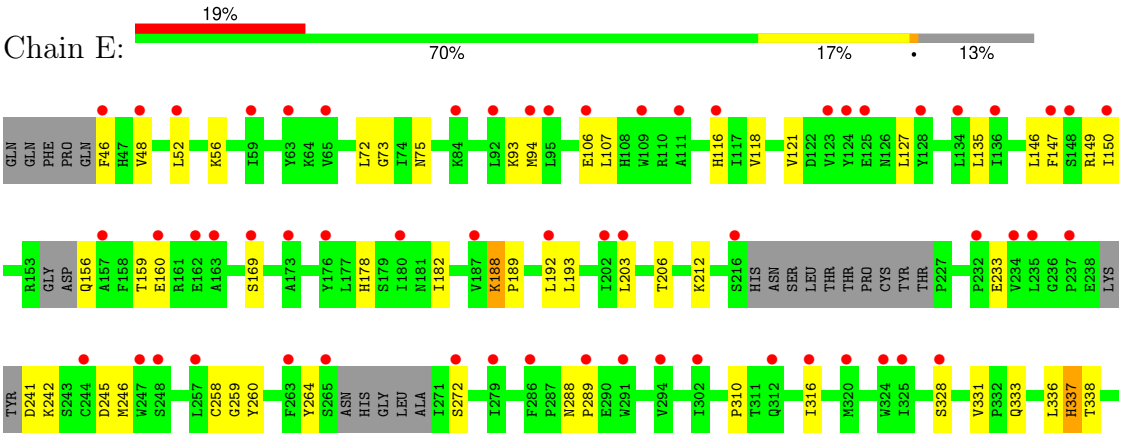
• Molecule 1: MAP kinase-activated protein kinase 2

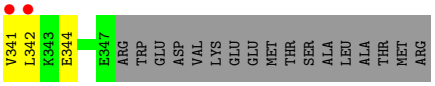
Chain D:



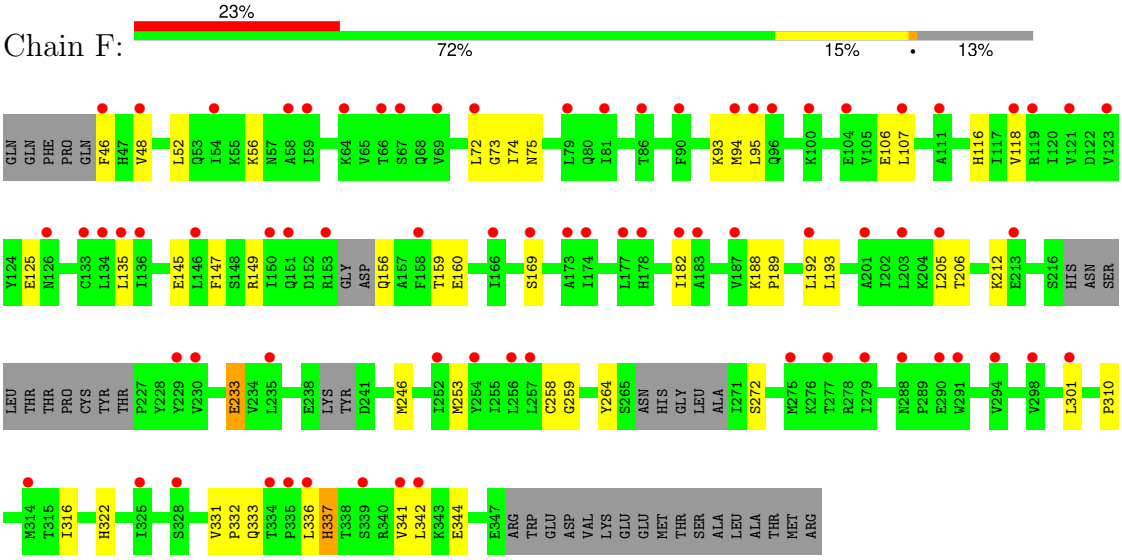
• Molecule 1: MAP kinase-activated protein kinase 2

Chain E:





• Molecule 1: MAP kinase-activated protein kinase 2



4 Data and refinement statistics (i)

Property	Value	Source
Space group	I 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	180.06Å 179.68Å 254.10Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	30.00 – 2.99 45.02 – 2.99	Depositor EDS
% Data completeness (in resolution range)	99.3 (30.00-2.99) 99.0 (45.02-2.99)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.28 (at 3.01Å)	Xtriage
Refinement program	REFMAC 5.5.0109	Depositor
R, R_{free}	0.240 , 0.283 0.235 , 0.275	Depositor DCC
R_{free} test set	4136 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	82.4	Xtriage
Anisotropy	0.111	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 45.0	EDS
L-test for twinning[2]	$< \|L\| > = 0.51$, $< L^2 > = 0.35$	Xtriage
Estimated twinning fraction	0.466 for -1/2*h+1/2*k+1/2*l,1/2*h-1/2*k+1/2*l,h+k 0.467 for -1/2*h+1/2*k-1/2*l,1/2*h-1/2*k-1/2*l,-h-k 0.469 for k,h,-l 0.459 for -1/2*h-1/2*k-1/2*l,-1/2*h-1/2*k+1/2*l,-h+k 0.467 for -1/2*h-1/2*k+1/2*l,-1/2*h-1/2*k-1/2*l,h-k	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	13553	wwPDB-VP
Average B, all atoms (Å^2)	79.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.49% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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: YRZ

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	0.92	2/2280 (0.1%)	0.75	0/3083
1	B	0.91	0/2288	0.77	1/3093 (0.0%)
1	C	0.90	0/2284	0.76	0/3088
1	D	0.91	1/2284 (0.0%)	0.76	0/3088
1	E	0.89	0/2296	0.76	2/3104 (0.1%)
1	F	0.90	1/2289 (0.0%)	0.77	1/3095 (0.0%)
All	All	0.91	4/13721 (0.0%)	0.76	4/18551 (0.0%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	244	CYS	CB-SG	-5.23	1.73	1.81
1	A	140	CYS	CB-SG	-5.14	1.73	1.81
1	D	244	CYS	CB-SG	-5.03	1.73	1.81
1	F	125	GLU	CD-OE1	5.03	1.31	1.25

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	E	245	ASP	CB-CG-OD2	-5.39	113.45	118.30
1	B	245	ASP	CB-CG-OD2	-5.26	113.57	118.30
1	E	121	VAL	CB-CA-C	-5.18	101.56	111.40
1	F	205	LEU	CB-CG-CD2	-5.12	102.30	111.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2233	0	2209	28	0
1	B	2241	0	2216	35	0
1	C	2237	0	2212	35	0
1	D	2237	0	2213	31	0
1	E	2249	0	2230	29	0
1	F	2242	0	2217	30	0
2	A	19	0	18	0	0
2	B	19	0	18	0	0
2	C	19	0	18	0	0
2	D	19	0	18	0	0
2	E	19	0	18	0	0
2	F	19	0	18	1	0
All	All	13553	0	13405	180	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 7.

All (180) 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:C:337:HIS:O	1:C:341:VAL:HG23	1.81	0.81
1:E:337:HIS:O	1:E:341:VAL:HG23	1.83	0.79
1:A:337:HIS:O	1:A:341:VAL:HG23	1.83	0.78
1:D:337:HIS:O	1:D:341:VAL:HG23	1.85	0.77
1:D:159:THR:HG22	1:D:333:GLN:O	1.86	0.74
1:A:159:THR:HG22	1:A:333:GLN:O	1.87	0.73
1:E:159:THR:HG22	1:E:333:GLN:O	1.90	0.70
1:B:337:HIS:O	1:B:341:VAL:HG23	1.95	0.67
1:D:52:LEU:HD23	1:D:106:GLU:OE2	1.98	0.64
1:E:344:GLU:N	1:E:344:GLU:OE2	2.31	0.64
1:D:344:GLU:N	1:D:344:GLU:OE2	2.31	0.63
1:B:72:LEU:HD23	1:B:73:GLY:N	2.13	0.63
1:A:344:GLU:N	1:A:344:GLU:OE2	2.33	0.61
1:B:160:GLU:HA	1:B:336:LEU:HD21	1.84	0.60
1:B:301:LEU:HD13	1:B:322:HIS:CD2	2.37	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:192:LEU:C	1:B:193:LEU:HD23	2.23	0.59
1:C:110:ARG:HG2	1:E:127:LEU:HD11	1.84	0.59
1:A:127:LEU:HD11	1:D:110:ARG:HG2	1.83	0.59
1:D:72:LEU:HD23	1:D:73:GLY:N	2.18	0.59
1:F:301:LEU:HD13	1:F:322:HIS:CD2	2.37	0.59
1:C:344:GLU:N	1:C:344:GLU:OE2	2.35	0.59
1:C:192:LEU:C	1:C:193:LEU:HD23	2.23	0.59
1:B:344:GLU:N	1:B:344:GLU:OE2	2.36	0.58
1:E:146:LEU:HD13	1:E:203:LEU:HD21	1.85	0.58
1:F:192:LEU:C	1:F:193:LEU:HD23	2.24	0.58
1:C:160:GLU:HA	1:C:336:LEU:HD21	1.85	0.58
1:C:146:LEU:O	1:C:150:ILE:HD13	2.04	0.58
1:D:160:GLU:HA	1:D:336:LEU:HD21	1.86	0.58
1:F:337:HIS:O	1:F:341:VAL:HG23	2.04	0.57
1:D:107:LEU:HD22	1:D:182:ILE:HG12	1.86	0.57
1:A:258:CYS:SG	1:A:259:GLY:N	2.78	0.57
1:A:94:MET:HG2	1:A:135:LEU:HD22	1.85	0.57
1:C:301:LEU:HD13	1:C:322:HIS:CD2	2.38	0.57
1:F:344:GLU:N	1:F:344:GLU:OE2	2.37	0.56
1:F:258:CYS:SG	1:F:259:GLY:N	2.78	0.56
1:C:52:LEU:HD23	1:C:106:GLU:OE2	2.06	0.56
1:D:75:ASN:HB3	1:D:95:LEU:HD22	1.88	0.55
1:E:94:MET:HG2	1:E:135:LEU:HD22	1.88	0.55
1:B:178:HIS:CE1	1:B:242:LYS:HB2	2.42	0.54
1:D:146:LEU:O	1:D:150:ILE:HD13	2.08	0.54
1:C:146:LEU:HD13	1:C:203:LEU:HD21	1.90	0.54
1:A:160:GLU:HA	1:A:336:LEU:HD21	1.90	0.54
1:B:159:THR:HG22	1:B:333:GLN:O	2.07	0.54
1:C:107:LEU:HD22	1:C:182:ILE:HG12	1.89	0.54
1:C:338:THR:O	1:C:342:LEU:HB2	2.08	0.54
1:F:107:LEU:HD22	1:F:182:ILE:HG12	1.89	0.54
1:F:159:THR:HG22	1:F:333:GLN:O	2.07	0.53
1:D:72:LEU:HD23	1:D:73:GLY:H	1.72	0.53
1:A:310:PRO:HG3	1:C:233:GLU:HG2	1.89	0.53
1:F:72:LEU:HD23	1:F:73:GLY:N	2.24	0.53
1:B:94:MET:HG2	1:B:135:LEU:HD22	1.89	0.53
1:B:107:LEU:HD22	1:B:182:ILE:HG12	1.90	0.53
1:F:75:ASN:HB3	1:F:95:LEU:HD22	1.91	0.53
1:F:193:LEU:HD23	1:F:193:LEU:N	2.24	0.53
1:B:193:LEU:HD23	1:B:193:LEU:N	2.23	0.52
1:C:72:LEU:HD23	1:C:73:GLY:H	1.74	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:258:CYS:SG	1:C:260:TYR:CE2	3.02	0.52
1:C:75:ASN:HB3	1:C:95:LEU:HD22	1.92	0.52
1:B:258:CYS:SG	1:B:259:GLY:N	2.84	0.51
1:A:72:LEU:HD23	1:A:73:GLY:H	1.76	0.51
1:D:328:SER:O	1:D:331:VAL:HG12	2.11	0.51
1:C:46:PHE:CE1	1:C:48:VAL:HG21	2.46	0.50
1:F:94:MET:HG2	1:F:135:LEU:HD22	1.94	0.50
1:F:147:PHE:HB3	1:F:342:LEU:HD21	1.92	0.50
1:A:188:LYS:HB2	1:A:189:PRO:CD	2.42	0.50
1:F:246:MET:HE1	1:F:316:ILE:HA	1.94	0.50
1:A:75:ASN:HD22	1:A:93:LYS:CE	2.25	0.49
1:E:258:CYS:SG	1:E:259:GLY:N	2.85	0.49
1:E:233:GLU:HG2	1:F:310:PRO:HG3	1.93	0.49
1:D:94:MET:HG2	1:D:135:LEU:HD22	1.93	0.49
1:E:75:ASN:HD22	1:E:93:LYS:HE3	1.78	0.49
1:F:72:LEU:HD23	1:F:73:GLY:H	1.77	0.49
1:B:52:LEU:HD23	1:B:106:GLU:OE2	2.13	0.49
1:E:46:PHE:CE1	1:E:48:VAL:HG21	2.47	0.49
1:F:160:GLU:HA	1:F:336:LEU:HD21	1.94	0.49
1:B:46:PHE:CE1	1:B:48:VAL:HG21	2.48	0.49
1:D:178:HIS:CE1	1:D:242:LYS:HB2	2.47	0.49
1:D:310:PRO:HG3	1:F:233:GLU:HG2	1.96	0.48
1:C:159:THR:HG22	1:C:333:GLN:O	2.12	0.48
1:D:301:LEU:HD13	1:D:322:HIS:CD2	2.49	0.48
1:E:52:LEU:HD23	1:E:106:GLU:OE2	2.14	0.48
1:F:253:MET:HE1	1:F:301:LEU:CD2	2.44	0.48
1:D:233:GLU:HG2	1:E:310:PRO:HG3	1.95	0.47
1:D:258:CYS:SG	1:D:259:GLY:N	2.87	0.47
1:C:72:LEU:HD23	1:C:73:GLY:N	2.30	0.47
1:A:178:HIS:CE1	1:A:242:LYS:HB2	2.50	0.47
1:B:93:LYS:HD3	1:B:138:MET:HE1	1.96	0.47
1:B:75:ASN:HD22	1:B:93:LYS:HE3	1.79	0.47
1:B:233:GLU:HG2	1:C:310:PRO:HG3	1.96	0.47
1:C:258:CYS:SG	1:C:259:GLY:N	2.87	0.47
1:E:107:LEU:HD22	1:E:182:ILE:HG12	1.95	0.47
1:C:75:ASN:HD22	1:C:93:LYS:HE3	1.80	0.47
1:C:188:LYS:HB2	1:C:189:PRO:CD	2.45	0.47
1:A:46:PHE:CE1	1:A:48:VAL:HG21	2.50	0.47
1:B:188:LYS:HB2	1:B:189:PRO:CD	2.46	0.46
1:D:116:HIS:CE1	1:D:169:SER:HB2	2.50	0.46
1:B:338:THR:O	1:B:342:LEU:HB2	2.15	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:192:LEU:C	1:A:193:LEU:HD23	2.36	0.46
1:B:146:LEU:HD13	1:B:203:LEU:HD21	1.98	0.46
1:D:338:THR:O	1:D:342:LEU:HB2	2.16	0.46
1:B:149:ARG:NH2	1:B:198:ARG:O	2.49	0.46
1:A:233:GLU:HG2	1:B:310:PRO:HG3	1.98	0.46
1:C:328:SER:O	1:C:331:VAL:HG12	2.16	0.46
1:E:160:GLU:HA	1:E:336:LEU:HD21	1.97	0.46
1:B:174:ILE:HD11	1:B:187:VAL:HG21	1.97	0.45
1:C:93:LYS:HD3	1:C:138:MET:HE1	1.97	0.45
1:D:192:LEU:C	1:D:193:LEU:HD23	2.37	0.45
1:E:178:HIS:CE1	1:E:242:LYS:HB2	2.52	0.45
1:E:338:THR:O	1:E:342:LEU:HB2	2.17	0.45
1:F:46:PHE:CE1	1:F:48:VAL:HG21	2.52	0.45
1:A:246:MET:HE1	1:A:316:ILE:HA	1.98	0.45
1:B:328:SER:O	1:B:331:VAL:HG12	2.17	0.45
1:A:146:LEU:HD13	1:A:203:LEU:HD21	1.99	0.44
1:F:253:MET:HE1	1:F:301:LEU:HD21	1.99	0.44
1:E:192:LEU:C	1:E:193:LEU:HD23	2.38	0.44
1:A:75:ASN:HD22	1:A:93:LYS:HE3	1.82	0.44
1:E:258:CYS:SG	1:E:260:TYR:CE2	3.07	0.44
1:F:52:LEU:HD23	1:F:106:GLU:OE2	2.17	0.44
1:A:75:ASN:HB3	1:A:95:LEU:HD22	2.00	0.44
1:C:172:GLU:HG3	1:C:320:MET:HE1	2.00	0.44
1:B:116:HIS:CE1	1:B:169:SER:HB2	2.53	0.44
1:C:160:GLU:CA	1:C:336:LEU:HD21	2.47	0.43
1:E:188:LYS:HB2	1:E:189:PRO:CD	2.47	0.43
1:F:74:ILE:H	1:F:74:ILE:HD12	1.83	0.43
1:C:116:HIS:CE1	1:C:169:SER:HB2	2.53	0.43
1:C:288:ASN:HB3	1:C:289:PRO:HA	2.01	0.43
1:D:258:CYS:SG	1:D:260:TYR:CE2	3.06	0.43
1:E:147:PHE:HB3	1:E:342:LEU:HD21	2.00	0.43
1:C:74:ILE:H	1:C:74:ILE:HD12	1.83	0.43
1:F:75:ASN:HD22	1:F:93:LYS:HE3	1.84	0.43
1:B:46:PHE:CE1	1:B:48:VAL:CG2	3.02	0.43
1:D:188:LYS:HB2	1:D:189:PRO:CD	2.48	0.43
1:A:81:ILE:HD13	1:A:92:LEU:HB2	2.00	0.43
1:B:258:CYS:SG	1:B:260:TYR:CE2	3.12	0.43
1:C:190:GLU:OE1	1:C:190:GLU:N	2.49	0.43
1:A:288:ASN:HB3	1:A:289:PRO:HA	1.99	0.43
1:C:46:PHE:CE1	1:C:48:VAL:CG2	3.02	0.42
1:D:331:VAL:HG23	1:D:332:PRO:HD2	2.01	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:246:MET:HE1	1:E:316:ILE:HA	2.00	0.42
1:A:107:LEU:HD22	1:A:182:ILE:HG12	2.00	0.42
1:D:93:LYS:HD3	1:D:138:MET:HE1	2.01	0.42
1:D:118:VAL:HB	1:D:206:THR:HG22	2.00	0.42
1:F:145:GLU:HA	1:F:193:LEU:HD22	2.00	0.42
1:B:75:ASN:HB3	1:B:95:LEU:HD22	2.00	0.42
1:D:46:PHE:CE1	1:D:48:VAL:HG21	2.54	0.42
1:D:136:ILE:HG21	1:D:138:MET:HE2	2.01	0.42
1:E:46:PHE:CE1	1:E:48:VAL:CG2	3.03	0.42
1:D:160:GLU:CA	1:D:336:LEU:HD21	2.47	0.42
1:E:116:HIS:CE1	1:E:169:SER:HB2	2.55	0.42
1:F:118:VAL:HG21	2:F:901:YRZ:H17	2.01	0.42
1:D:159:THR:HG21	1:D:333:GLN:HB3	2.02	0.42
1:F:118:VAL:HB	1:F:206:THR:HG22	2.02	0.42
1:B:74:ILE:H	1:B:74:ILE:HD12	1.85	0.41
1:C:145:GLU:HA	1:C:193:LEU:HD22	2.01	0.41
1:E:72:LEU:HD23	1:E:73:GLY:H	1.85	0.41
1:E:146:LEU:HD13	1:E:203:LEU:CD2	2.49	0.41
1:A:258:CYS:SG	1:A:260:TYR:CE2	3.10	0.41
1:E:118:VAL:HB	1:E:206:THR:HG22	2.02	0.41
1:E:328:SER:O	1:E:331:VAL:HG12	2.20	0.41
1:A:338:THR:O	1:A:342:LEU:HB2	2.20	0.41
1:D:188:LYS:HB2	1:D:189:PRO:HD2	2.01	0.41
1:A:52:LEU:HD23	1:A:106:GLU:OE2	2.21	0.41
1:F:46:PHE:CE1	1:F:48:VAL:CG2	3.04	0.41
1:F:188:LYS:HB2	1:F:189:PRO:CD	2.51	0.41
1:F:331:VAL:HG23	1:F:332:PRO:HD2	2.03	0.41
1:B:72:LEU:HD23	1:B:73:GLY:H	1.84	0.41
1:C:193:LEU:HD23	1:C:193:LEU:N	2.35	0.41
1:A:331:VAL:HG23	1:A:332:PRO:HD2	2.03	0.41
1:B:192:LEU:HD21	1:B:205:LEU:HD13	2.02	0.41
1:E:288:ASN:HB3	1:E:289:PRO:HA	2.02	0.41
1:B:146:LEU:O	1:B:150:ILE:HD13	2.21	0.41
1:B:147:PHE:HB3	1:B:342:LEU:HD21	2.03	0.41
1:F:116:HIS:CE1	1:F:169:SER:HB2	2.56	0.41
1:E:146:LEU:O	1:E:150:ILE:HD13	2.21	0.41
1:A:75:ASN:HB3	1:A:95:LEU:CD2	2.51	0.40
1:B:90:PHE:CE2	1:B:121:VAL:HG21	2.56	0.40
1:B:145:GLU:HA	1:B:193:LEU:HD22	2.03	0.40
1:C:118:VAL:HB	1:C:206:THR:HG22	2.03	0.40
1:C:258:CYS:SG	1:C:260:TYR:CD2	3.14	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:72:LEU:HD23	1:A:73:GLY:N	2.36	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	272/324 (84%)	258 (95%)	14 (5%)	0	100	100
1	B	273/324 (84%)	258 (94%)	14 (5%)	1 (0%)	34	72
1	C	273/324 (84%)	257 (94%)	15 (6%)	1 (0%)	34	72
1	D	272/324 (84%)	257 (94%)	15 (6%)	0	100	100
1	E	273/324 (84%)	260 (95%)	12 (4%)	1 (0%)	34	72
1	F	273/324 (84%)	261 (96%)	11 (4%)	1 (0%)	34	72
All	All	1636/1944 (84%)	1551 (95%)	81 (5%)	4 (0%)	47	82

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	272	SER
1	F	272	SER
1	B	272	SER
1	C	272	SER

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	243/293 (83%)	237 (98%)	6 (2%)	47	79
1	B	244/293 (83%)	238 (98%)	6 (2%)	47	79
1	C	243/293 (83%)	235 (97%)	8 (3%)	38	73
1	D	244/293 (83%)	236 (97%)	8 (3%)	38	73
1	E	246/293 (84%)	238 (97%)	8 (3%)	38	73
1	F	244/293 (83%)	237 (97%)	7 (3%)	42	76
All	All	1464/1758 (83%)	1421 (97%)	43 (3%)	42	76

All (43) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	56	LYS
1	A	149	ARG
1	A	212	LYS
1	A	241	ASP
1	A	264	TYR
1	A	344	GLU
1	B	56	LYS
1	B	149	ARG
1	B	212	LYS
1	B	241	ASP
1	B	264	TYR
1	B	336	LEU
1	C	56	LYS
1	C	86	THR
1	C	149	ARG
1	C	188	LYS
1	C	212	LYS
1	C	233	GLU
1	C	241	ASP
1	C	264	TYR
1	D	56	LYS
1	D	149	ARG
1	D	159	THR
1	D	188	LYS
1	D	212	LYS
1	D	233	GLU
1	D	264	TYR
1	D	337	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	E	56	LYS
1	E	149	ARG
1	E	156	GLN
1	E	188	LYS
1	E	212	LYS
1	E	241	ASP
1	E	264	TYR
1	E	337	HIS
1	F	56	LYS
1	F	149	ARG
1	F	156	GLN
1	F	212	LYS
1	F	233	GLU
1	F	264	TYR
1	F	337	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (41) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	53	GLN
1	A	68	GLN
1	A	75	ASN
1	A	80	GLN
1	A	87	GLN
1	A	184	HIS
1	A	304	ASN
1	B	53	GLN
1	B	75	ASN
1	B	80	GLN
1	B	87	GLN
1	B	184	HIS
1	B	304	ASN
1	C	53	GLN
1	C	75	ASN
1	C	80	GLN
1	C	87	GLN
1	C	126	ASN
1	C	184	HIS
1	C	304	ASN
1	D	53	GLN
1	D	68	GLN
1	D	75	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	D	80	GLN
1	D	87	GLN
1	D	184	HIS
1	D	304	ASN
1	E	53	GLN
1	E	68	GLN
1	E	75	ASN
1	E	80	GLN
1	E	87	GLN
1	E	184	HIS
1	E	304	ASN
1	F	53	GLN
1	F	68	GLN
1	F	75	ASN
1	F	80	GLN
1	F	87	GLN
1	F	184	HIS
1	F	304	ASN

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 monosaccharides in this entry.

5.6 Ligand geometry

6 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	YRZ	C	901	-	13,22,22	1.30	2 (15%)	15,31,31	2.12	5 (33%)
2	YRZ	A	901	-	13,22,22	1.41	3 (23%)	15,31,31	2.17	3 (20%)
2	YRZ	F	901	-	13,22,22	1.14	2 (15%)	15,31,31	2.39	5 (33%)
2	YRZ	B	901	-	13,22,22	1.48	3 (23%)	15,31,31	2.24	5 (33%)
2	YRZ	D	901	-	13,22,22	1.45	2 (15%)	15,31,31	2.25	5 (33%)
2	YRZ	E	901	-	13,22,22	1.29	2 (15%)	15,31,31	2.35	5 (33%)

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	YRZ	C	901	-	-	0/4/18/18	0/4/4/4
2	YRZ	A	901	-	-	0/4/18/18	0/4/4/4
2	YRZ	F	901	-	-	1/4/18/18	0/4/4/4
2	YRZ	B	901	-	-	0/4/18/18	0/4/4/4
2	YRZ	D	901	-	-	0/4/18/18	0/4/4/4
2	YRZ	E	901	-	-	1/4/18/18	0/4/4/4

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	901	YRZ	C17-N18	3.46	1.36	1.31
2	D	901	YRZ	C17-N18	3.40	1.36	1.31
2	A	901	YRZ	C17-N18	3.23	1.35	1.31
2	E	901	YRZ	C17-N18	3.09	1.35	1.31
2	C	901	YRZ	C17-N18	2.95	1.35	1.31
2	B	901	YRZ	C1-C17	2.57	1.47	1.42
2	C	901	YRZ	C1-C17	2.57	1.47	1.42
2	D	901	YRZ	C1-C17	2.46	1.47	1.42
2	A	901	YRZ	C1-C17	2.42	1.47	1.42
2	E	901	YRZ	C1-C17	2.40	1.47	1.42
2	B	901	YRZ	C13-N18	2.34	1.37	1.34
2	F	901	YRZ	C17-N18	2.24	1.34	1.31
2	A	901	YRZ	C13-N18	2.24	1.37	1.34
2	F	901	YRZ	C1-C17	2.10	1.46	1.42

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	F	901	YRZ	C1-C17-N18	-6.35	115.74	122.68
2	E	901	YRZ	C1-C17-N18	-5.96	116.17	122.68
2	D	901	YRZ	C1-C17-N18	-5.83	116.31	122.68
2	C	901	YRZ	C1-C17-N18	-5.66	116.50	122.68
2	B	901	YRZ	C1-C17-N18	-5.60	116.56	122.68
2	A	901	YRZ	C1-C17-N18	-5.50	116.67	122.68
2	F	901	YRZ	C14-C13-N12	-3.92	102.42	108.11
2	A	901	YRZ	C14-C13-N12	-3.84	102.53	108.11
2	D	901	YRZ	C14-C13-N12	-3.77	102.64	108.11
2	C	901	YRZ	C14-C13-N12	-3.74	102.68	108.11
2	B	901	YRZ	C14-C13-N12	-3.72	102.71	108.11
2	E	901	YRZ	C14-C13-N12	-3.58	102.92	108.11
2	E	901	YRZ	C17-N18-C13	3.23	120.37	117.58
2	B	901	YRZ	N19-C17-N18	2.88	124.01	118.59
2	D	901	YRZ	N19-C17-N18	2.81	123.87	118.59
2	F	901	YRZ	N19-C17-N18	2.80	123.85	118.59
2	F	901	YRZ	C17-N18-C13	2.75	119.96	117.58
2	A	901	YRZ	N19-C17-N18	2.68	123.64	118.59
2	E	901	YRZ	N19-C17-N18	2.62	123.51	118.59
2	E	901	YRZ	C4-C5-C1	-2.49	100.21	103.16
2	B	901	YRZ	C4-C5-C1	-2.48	100.21	103.16
2	C	901	YRZ	N19-C17-N18	2.45	123.20	118.59
2	D	901	YRZ	C17-N18-C13	2.35	119.61	117.58
2	F	901	YRZ	C4-C5-C1	-2.27	100.46	103.16
2	D	901	YRZ	C4-C5-C1	-2.20	100.55	103.16
2	C	901	YRZ	C4-C5-C1	-2.09	100.68	103.16
2	C	901	YRZ	C17-N18-C13	2.08	119.38	117.58
2	B	901	YRZ	C17-N18-C13	2.06	119.36	117.58

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	E	901	YRZ	N18-C17-N19-C6
2	F	901	YRZ	N18-C17-N19-C6

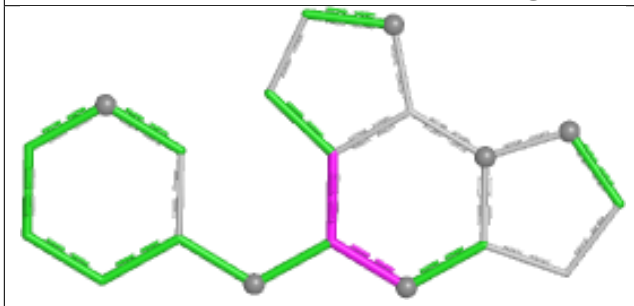
There are no ring outliers.

1 monomer is involved in 1 short contact:

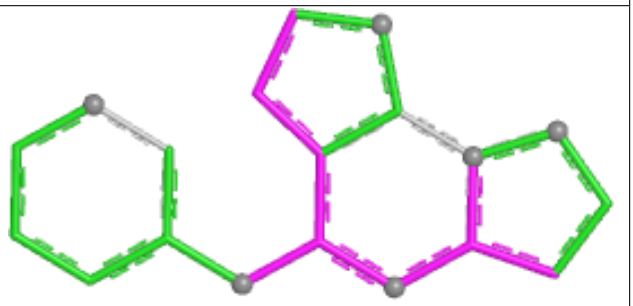
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	F	901	YRZ	1	0

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 then 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.

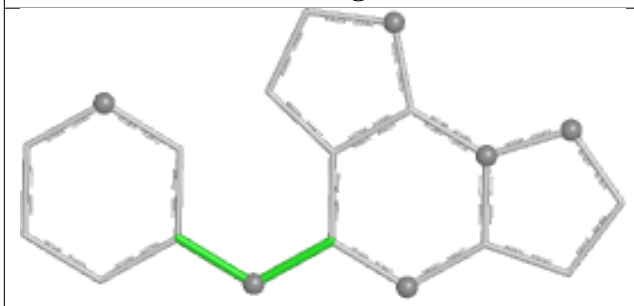
Ligand YRZ C 901



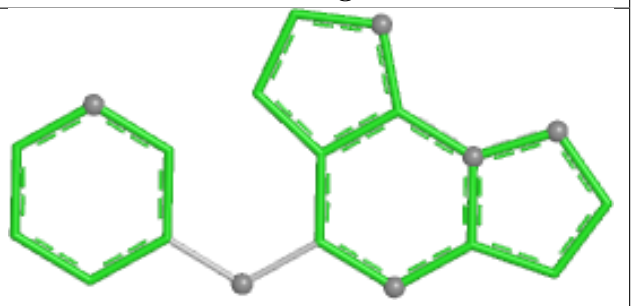
Bond lengths



Bond angles

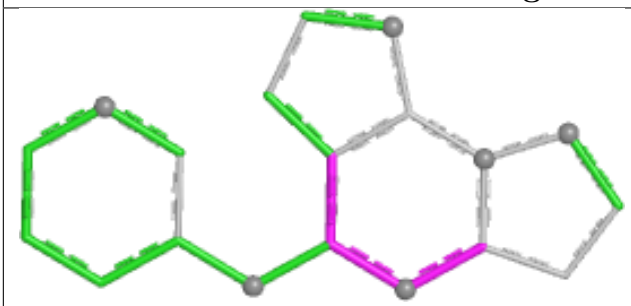


Torsions

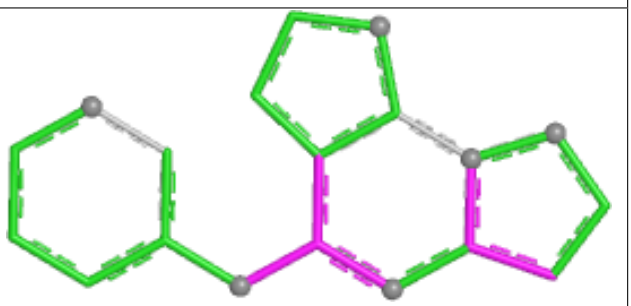


Rings

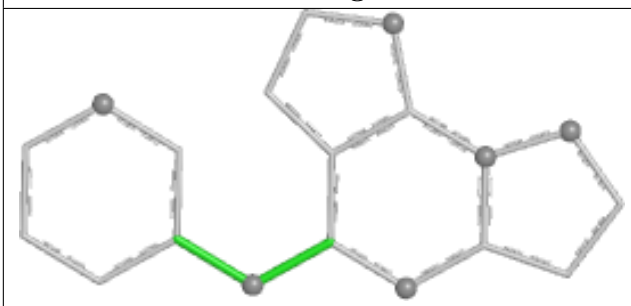
Ligand YRZ A 901



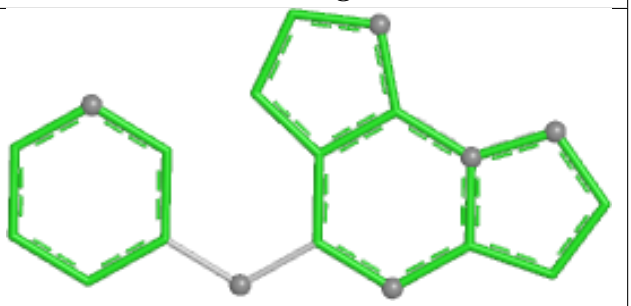
Bond lengths



Bond angles

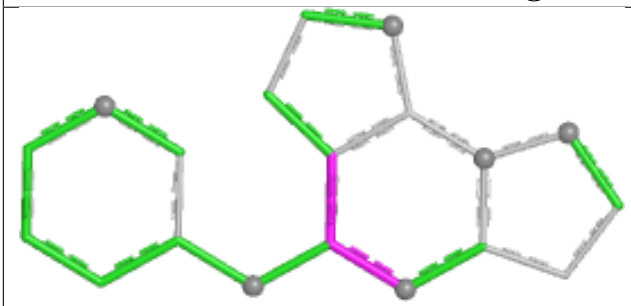


Torsions

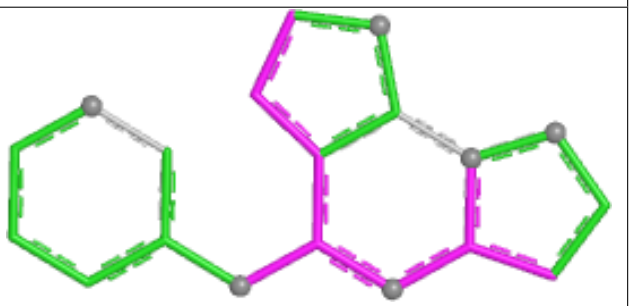


Rings

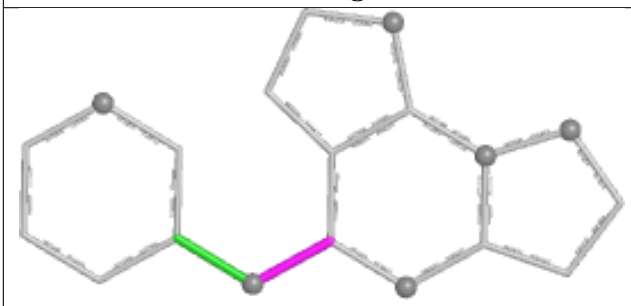
Ligand YRZ F 901



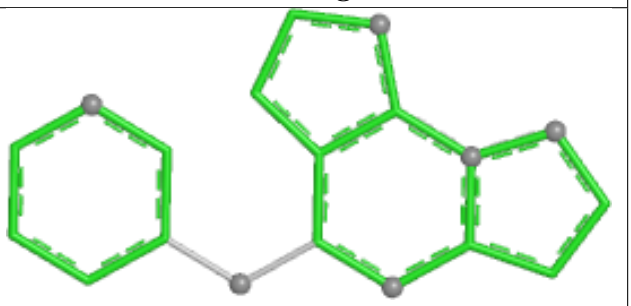
Bond lengths



Bond angles

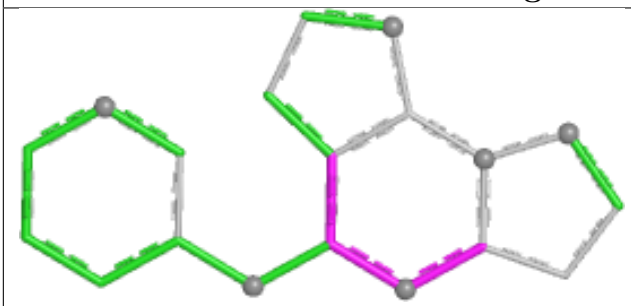


Torsions

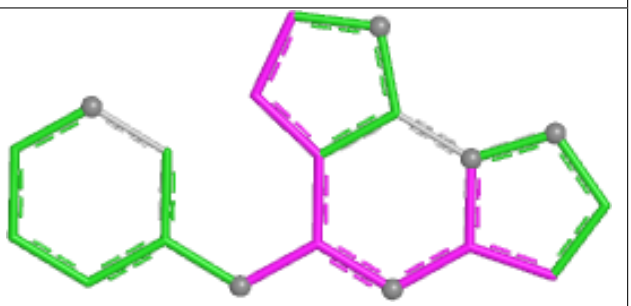


Rings

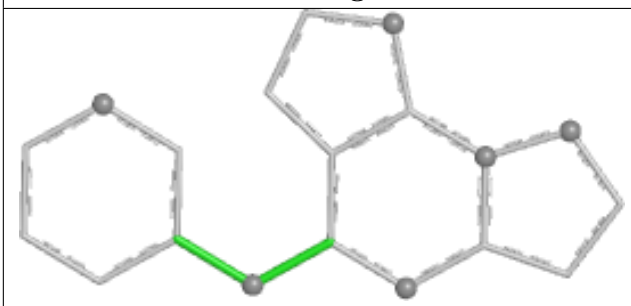
Ligand YRZ B 901



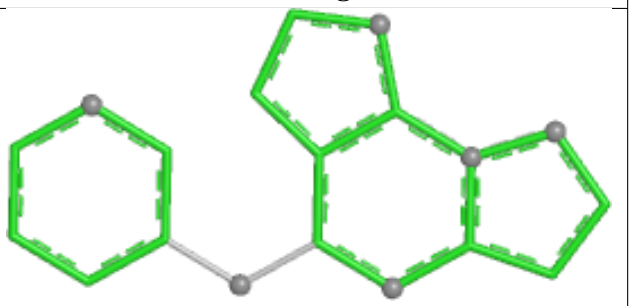
Bond lengths



Bond angles

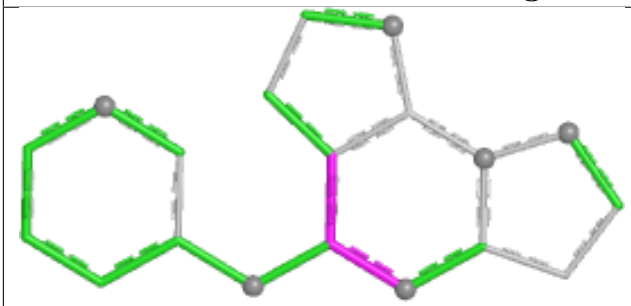


Torsions

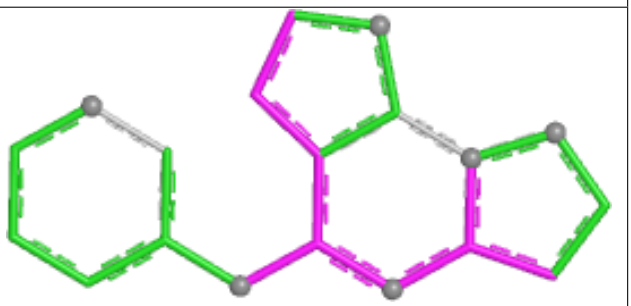


Rings

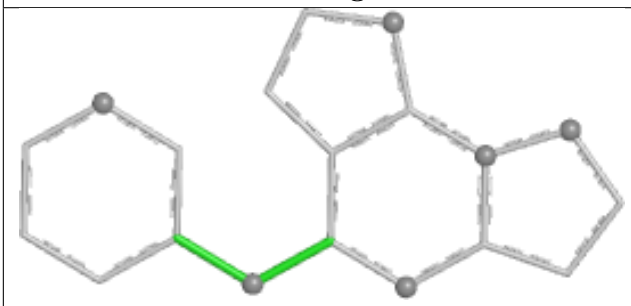
Ligand YRZ D 901



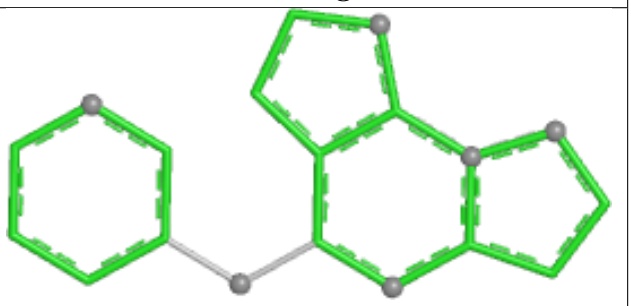
Bond lengths



Bond angles

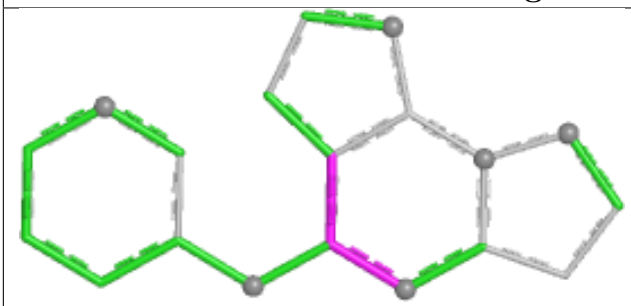


Torsions

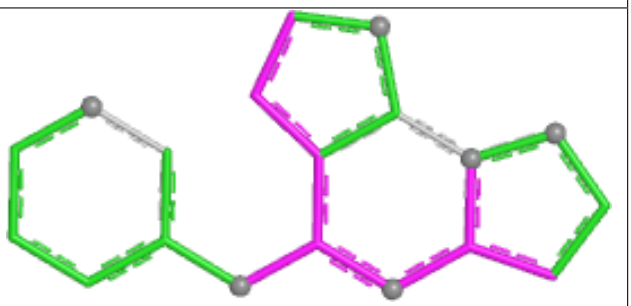


Rings

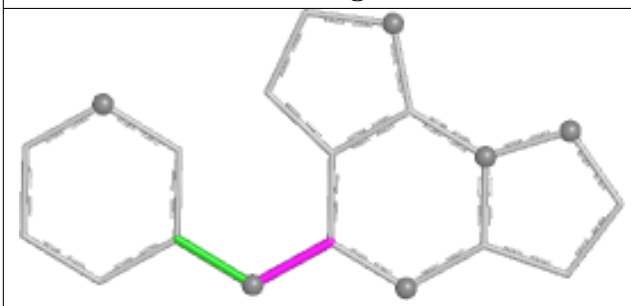
Ligand YRZ E 901



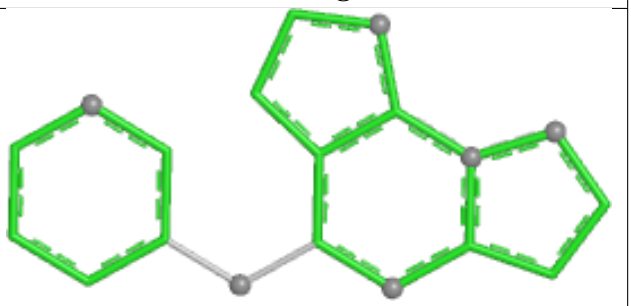
Bond lengths



Bond angles



Torsions



Rings

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^{th} 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	282/324 (87%)	1.43	78 (27%)	0	0	49, 75, 116, 133	0
1	B	283/324 (87%)	1.38	67 (23%)	0	0	49, 76, 116, 131	0
1	C	283/324 (87%)	1.38	71 (25%)	0	0	49, 76, 115, 130	0
1	D	282/324 (87%)	1.36	73 (25%)	0	0	48, 75, 113, 130	0
1	E	283/324 (87%)	1.32	61 (21%)	0	0	49, 76, 118, 132	0
1	F	283/324 (87%)	1.38	74 (26%)	0	0	49, 76, 119, 131	0
All	All	1696/1944 (87%)	1.37	424 (25%)	0	0	48, 76, 117, 133	0

All (424) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	339	SER	7.0
1	B	46	PHE	6.6
1	C	157	ALA	6.6
1	D	229	TYR	6.2
1	D	228	TYR	6.1
1	C	158	PHE	5.9
1	E	46	PHE	5.9
1	A	235	LEU	5.9
1	D	264	TYR	5.7
1	B	256	LEU	5.6
1	D	158	PHE	5.3
1	A	128	TYR	4.9
1	D	249	LEU	4.9
1	C	256	LEU	4.9
1	C	229	TYR	4.9
1	A	157	ALA	4.9
1	B	339	SER	4.8
1	D	256	LEU	4.8
1	C	230	VAL	4.7

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	E	279	ILE	4.7
1	A	169	SER	4.6
1	C	54	ILE	4.6
1	F	150	ILE	4.4
1	C	264	TYR	4.4
1	C	46	PHE	4.3
1	C	249	LEU	4.2
1	B	205	LEU	4.2
1	E	150	ILE	4.2
1	F	46	PHE	4.2
1	C	228	TYR	4.1
1	A	46	PHE	4.1
1	C	66	THR	4.1
1	A	147	PHE	4.1
1	F	67	SER	4.1
1	E	265	SER	4.1
1	F	257	LEU	4.1
1	E	216	SER	4.1
1	C	286	PHE	4.1
1	D	326	MET	4.0
1	F	64	LYS	4.0
1	A	150	ILE	4.0
1	B	334	THR	4.0
1	D	54	ILE	4.0
1	B	230	VAL	4.0
1	D	329	THR	3.9
1	C	338	THR	3.9
1	C	294	VAL	3.9
1	D	235	LEU	3.9
1	B	133	CYS	3.9
1	F	95	LEU	3.8
1	F	290	GLU	3.8
1	A	289	PRO	3.8
1	D	263	PHE	3.8
1	B	94	MET	3.8
1	B	257	LEU	3.7
1	B	337	HIS	3.7
1	F	48	VAL	3.7
1	B	342	LEU	3.7
1	F	182	ILE	3.7
1	D	72	LEU	3.7
1	D	324	TRP	3.6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	E	342	LEU	3.6
1	A	125	GLU	3.6
1	E	157	ALA	3.6
1	A	187	VAL	3.6
1	D	338	THR	3.6
1	B	235	LEU	3.6
1	B	95	LEU	3.6
1	F	153	ARG	3.6
1	D	92	LEU	3.6
1	A	234	VAL	3.6
1	F	235	LEU	3.5
1	D	208	PHE	3.5
1	B	308	THR	3.5
1	C	208	PHE	3.5
1	C	72	LEU	3.4
1	F	118	VAL	3.4
1	D	257	LEU	3.4
1	A	279	ILE	3.4
1	F	183	ALA	3.4
1	F	291	TRP	3.4
1	C	302	ILE	3.4
1	C	259	GLY	3.4
1	B	249	LEU	3.4
1	C	159	THR	3.4
1	E	169	SER	3.3
1	A	263	PHE	3.3
1	E	234	VAL	3.3
1	B	298	VAL	3.3
1	C	329	THR	3.3
1	E	94	MET	3.3
1	F	94	MET	3.3
1	D	79	LEU	3.3
1	A	341	VAL	3.3
1	A	312	GLN	3.3
1	B	68	GLN	3.3
1	D	265	SER	3.2
1	D	260	TYR	3.2
1	F	294	VAL	3.2
1	E	232	PRO	3.2
1	F	229	TYR	3.2
1	B	127	LEU	3.2
1	E	128	TYR	3.2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	F	79	LEU	3.2
1	C	65	VAL	3.2
1	B	150	ILE	3.2
1	B	301	LEU	3.2
1	B	174	ILE	3.2
1	A	111	ALA	3.2
1	D	294	VAL	3.2
1	D	286	PHE	3.2
1	A	160	GLU	3.2
1	B	67	SER	3.1
1	D	46	PHE	3.1
1	C	234	VAL	3.1
1	F	342	LEU	3.1
1	A	124	TYR	3.1
1	C	263	PHE	3.1
1	C	289	PRO	3.1
1	B	48	VAL	3.1
1	E	52	LEU	3.1
1	A	232	PRO	3.1
1	D	336	LEU	3.1
1	A	342	LEU	3.1
1	F	72	LEU	3.1
1	A	164	SER	3.1
1	C	279	ILE	3.1
1	C	48	VAL	3.1
1	D	325	ILE	3.0
1	C	92	LEU	3.0
1	A	275	MET	3.0
1	B	279	ILE	3.0
1	E	124	TYR	3.0
1	F	121	VAL	3.0
1	B	70	LEU	3.0
1	C	94	MET	3.0
1	A	298	VAL	3.0
1	B	146	LEU	2.9
1	C	146	LEU	2.9
1	C	235	LEU	2.9
1	C	257	LEU	2.9
1	C	75	ASN	2.9
1	B	303	ARG	2.9
1	F	123	VAL	2.9
1	A	337	HIS	2.9

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	B	229	TYR	2.9
1	F	104	GLU	2.9
1	D	48	VAL	2.9
1	F	256	LEU	2.9
1	F	279	ILE	2.9
1	F	86	THR	2.9
1	B	329	THR	2.9
1	D	289	PRO	2.8
1	E	289	PRO	2.8
1	A	136	ILE	2.8
1	F	158	PHE	2.8
1	E	123	VAL	2.8
1	E	162	GLU	2.8
1	C	64	LYS	2.8
1	E	134	LEU	2.8
1	A	302	ILE	2.8
1	B	134	LEU	2.8
1	C	324	TRP	2.8
1	A	272	SER	2.8
1	B	66	THR	2.8
1	C	205	LEU	2.8
1	A	324	TRP	2.8
1	E	324	TRP	2.8
1	A	189	PRO	2.8
1	F	192	LEU	2.8
1	C	96	GLN	2.8
1	C	202	ILE	2.8
1	D	86	THR	2.8
1	F	96	GLN	2.8
1	B	314	MET	2.7
1	E	263	PHE	2.7
1	F	334	THR	2.7
1	A	94	MET	2.7
1	C	192	LEU	2.7
1	E	65	VAL	2.7
1	E	312	GLN	2.7
1	D	317	THR	2.7
1	A	158	PHE	2.7
1	D	321	ASN	2.7
1	F	81	ILE	2.7
1	B	119	ARG	2.7
1	F	201	ALA	2.7

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	F	301	LEU	2.7
1	F	134	LEU	2.7
1	B	182	ILE	2.7
1	C	85	ARG	2.7
1	E	63	TYR	2.7
1	E	294	VAL	2.7
1	D	182	ILE	2.6
1	D	293	GLU	2.6
1	C	95	LEU	2.6
1	F	335	PRO	2.6
1	C	326	MET	2.6
1	D	196	SER	2.6
1	E	59	ILE	2.6
1	E	235	LEU	2.6
1	E	125	GLU	2.6
1	E	244	CYS	2.6
1	F	174	ILE	2.6
1	A	134	LEU	2.6
1	B	169	SER	2.6
1	F	177	LEU	2.6
1	A	109	TRP	2.6
1	A	338	THR	2.6
1	A	97	ASP	2.6
1	C	298	VAL	2.6
1	F	341	VAL	2.6
1	E	325	ILE	2.6
1	D	298	VAL	2.6
1	E	160	GLU	2.6
1	D	64	LYS	2.6
1	B	81	ILE	2.6
1	C	79	LEU	2.6
1	F	205	LEU	2.6
1	A	123	VAL	2.6
1	E	111	ALA	2.6
1	B	59	ILE	2.5
1	C	334	THR	2.5
1	B	123	VAL	2.5
1	F	230	VAL	2.5
1	B	228	TYR	2.5
1	E	302	ILE	2.5
1	A	191	ASN	2.5
1	B	262	PRO	2.5

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	B	107	LEU	2.5
1	A	294	VAL	2.5
1	F	298	VAL	2.5
1	E	147	PHE	2.5
1	B	124	TYR	2.5
1	A	180	ILE	2.5
1	F	166	ILE	2.5
1	F	203	LEU	2.5
1	C	68	GLN	2.5
1	C	327	GLN	2.5
1	F	325	ILE	2.5
1	E	203	LEU	2.5
1	F	90	PHE	2.5
1	D	108	HIS	2.5
1	E	163	ALA	2.5
1	A	176	TYR	2.5
1	C	284	TYR	2.5
1	E	286	PHE	2.5
1	A	173	ALA	2.5
1	F	66	THR	2.5
1	B	52	LEU	2.5
1	B	79	LEU	2.5
1	F	252	ILE	2.5
1	F	126	ASN	2.5
1	A	79	LEU	2.5
1	F	328	SER	2.4
1	C	321	ASN	2.4
1	F	288	ASN	2.4
1	A	52	LEU	2.4
1	D	94	MET	2.4
1	B	151	GLN	2.4
1	D	259	GLY	2.4
1	A	291	TRP	2.4
1	E	95	LEU	2.4
1	B	121	VAL	2.4
1	B	198	ARG	2.4
1	A	202	ILE	2.4
1	D	193	LEU	2.4
1	D	167	MET	2.4
1	B	233	GLU	2.4
1	D	319	PHE	2.4
1	B	96	GLN	2.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	54	ILE	2.4
1	A	146	LEU	2.4
1	A	343	LYS	2.4
1	B	126	ASN	2.4
1	A	162	GLU	2.4
1	D	124	TYR	2.4
1	C	314	MET	2.4
1	E	109	TRP	2.4
1	E	173	ALA	2.4
1	C	203	LEU	2.4
1	F	59	ILE	2.4
1	A	84	LYS	2.4
1	D	314	MET	2.4
1	A	177	LEU	2.4
1	B	208	PHE	2.3
1	D	232	PRO	2.3
1	C	193	LEU	2.3
1	D	177	LEU	2.3
1	D	125	GLU	2.3
1	E	48	VAL	2.3
1	D	59	ILE	2.3
1	E	257	LEU	2.3
1	D	101	ALA	2.3
1	C	293	GLU	2.3
1	D	145	GLU	2.3
1	E	316	ILE	2.3
1	B	291	TRP	2.3
1	B	294	VAL	2.3
1	A	138	MET	2.3
1	F	119	ARG	2.3
1	E	176	TYR	2.3
1	F	58	ALA	2.3
1	A	286	PHE	2.3
1	C	341	VAL	2.3
1	D	327	GLN	2.3
1	B	253	MET	2.3
1	D	141	LEU	2.3
1	F	133	CYS	2.3
1	C	60	ILE	2.3
1	A	203	LEU	2.3
1	C	119	ARG	2.3
1	D	205	LEU	2.3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	F	107	LEU	2.3
1	A	316	ILE	2.3
1	A	288	ASN	2.3
1	E	148	SER	2.3
1	E	341	VAL	2.3
1	E	180	ILE	2.3
1	F	254	TYR	2.3
1	A	107	LEU	2.2
1	C	177	LEU	2.2
1	F	135	LEU	2.2
1	A	120	ILE	2.2
1	A	95	LEU	2.2
1	F	275	MET	2.2
1	A	69	VAL	2.2
1	D	251	VAL	2.2
1	C	86	THR	2.2
1	C	301	LEU	2.2
1	D	192	LEU	2.2
1	B	281	MET	2.2
1	E	106	GLU	2.2
1	F	136	ILE	2.2
1	E	247	TRP	2.2
1	D	121	VAL	2.2
1	D	127	LEU	2.2
1	E	328	SER	2.2
1	F	169	SER	2.2
1	A	64	LYS	2.2
1	C	104	GLU	2.2
1	A	262	PRO	2.2
1	C	335	PRO	2.2
1	C	125	GLU	2.2
1	B	135	LEU	2.2
1	A	325	ILE	2.2
1	B	158	PHE	2.2
1	B	178	HIS	2.2
1	C	308	THR	2.2
1	F	54	ILE	2.2
1	C	101	ALA	2.2
1	E	202	ILE	2.2
1	A	327	GLN	2.2
1	C	336	LEU	2.2
1	A	183	ALA	2.2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	283	GLN	2.2
1	F	314	MET	2.2
1	A	65	VAL	2.2
1	E	187	VAL	2.2
1	A	90	PHE	2.1
1	A	184	HIS	2.1
1	C	328	SER	2.1
1	A	229	TYR	2.1
1	D	279	ILE	2.1
1	A	257	LEU	2.1
1	A	91	ALA	2.1
1	D	104	GLU	2.1
1	E	136	ILE	2.1
1	D	105	VAL	2.1
1	D	302	ILE	2.1
1	A	105	VAL	2.1
1	C	121	VAL	2.1
1	D	299	LYS	2.1
1	C	317	THR	2.1
1	D	206	THR	2.1
1	F	336	LEU	2.1
1	D	58	ALA	2.1
1	D	174	ILE	2.1
1	A	258	CYS	2.1
1	D	75	ASN	2.1
1	A	119	ARG	2.1
1	D	301	LEU	2.1
1	F	213	GLU	2.1
1	F	151	GLN	2.1
1	E	320	MET	2.1
1	E	116	HIS	2.1
1	E	248	SER	2.1
1	E	272	SER	2.1
1	F	146	LEU	2.1
1	F	173	ALA	2.1
1	A	126	ASN	2.1
1	D	65	VAL	2.1
1	E	237	PRO	2.1
1	B	90	PHE	2.1
1	B	324	TRP	2.1
1	D	146	LEU	2.1
1	D	216	SER	2.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	E	84	LYS	2.1
1	F	100	LYS	2.1
1	C	325	ILE	2.1
1	B	184	HIS	2.0
1	E	291	TRP	2.0
1	B	170	ILE	2.0
1	A	334	THR	2.0
1	D	118	VAL	2.0
1	C	319	PHE	2.0
1	D	170	ILE	2.0
1	D	202	ILE	2.0
1	A	206	THR	2.0
1	F	277	THR	2.0
1	B	105	VAL	2.0
1	B	167	MET	2.0
1	F	187	VAL	2.0
1	F	178	HIS	2.0
1	C	299	LYS	2.0
1	B	111	ALA	2.0
1	F	111	ALA	2.0
1	F	69	VAL	2.0
1	D	68	GLN	2.0
1	E	192	LEU	2.0
1	B	136	ILE	2.0
1	B	322	HIS	2.0
1	C	82	PHE	2.0
1	E	92	LEU	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 monosaccharides in this entry.

6.4 Ligands (i)

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

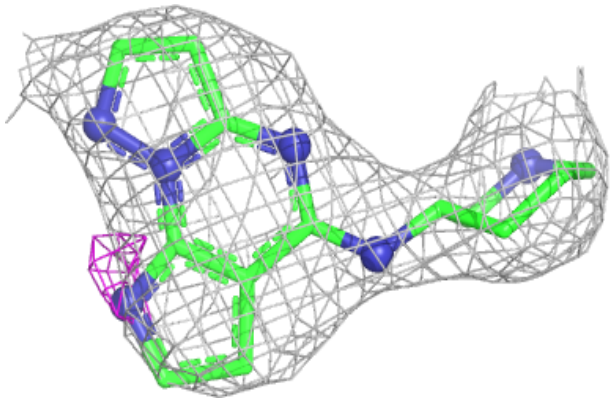
median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

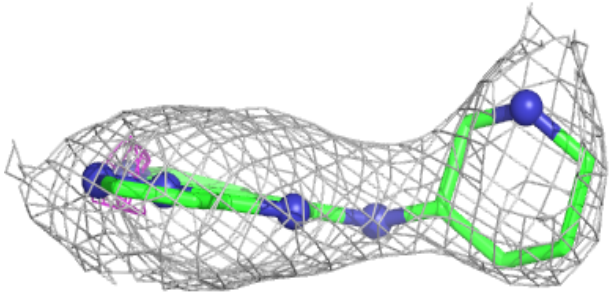
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	YRZ	D	901	19/19	0.93	0.42	68,70,72,73	0
2	YRZ	F	901	19/19	0.94	0.32	69,70,76,76	0
2	YRZ	C	901	19/19	0.95	0.44	71,72,79,80	0
2	YRZ	A	901	19/19	0.95	0.30	67,68,71,73	0
2	YRZ	B	901	19/19	0.95	0.29	72,73,76,77	0
2	YRZ	E	901	19/19	0.96	0.30	66,68,74,74	0

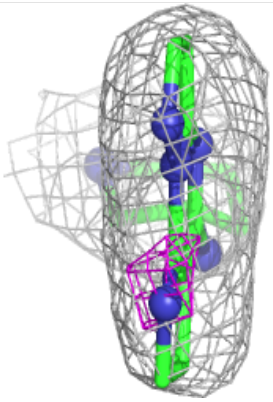
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around YRZ D 901:

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

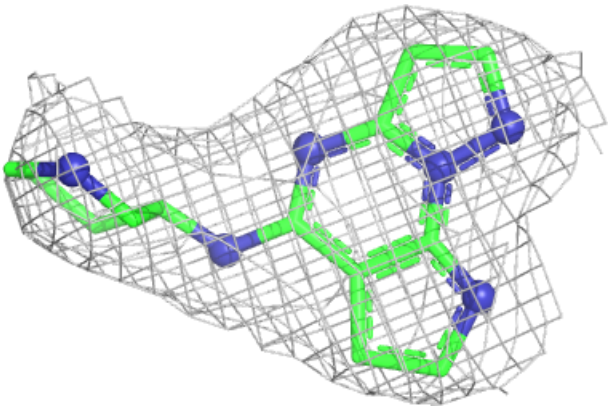


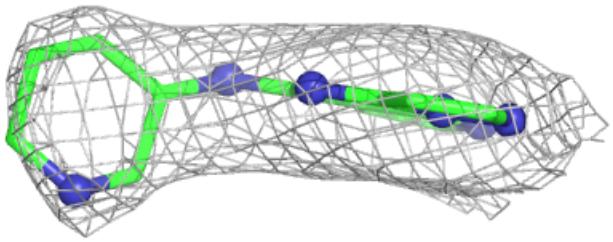


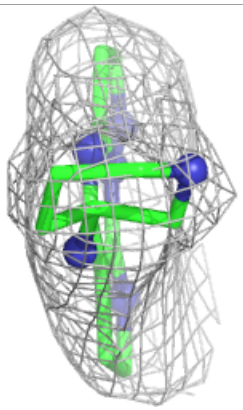


Electron density around YRZ F 901:

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

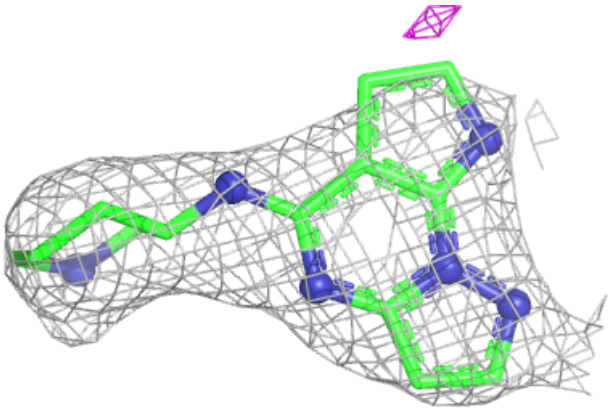


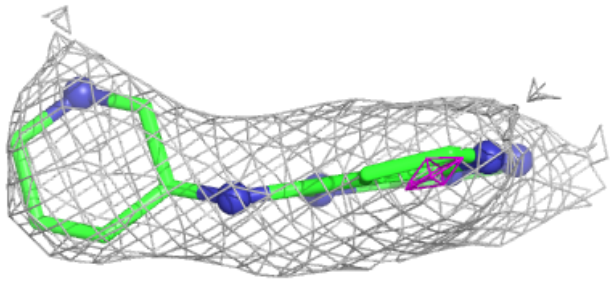


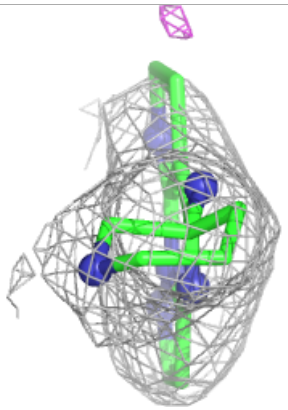


Electron density around YRZ C 901:

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

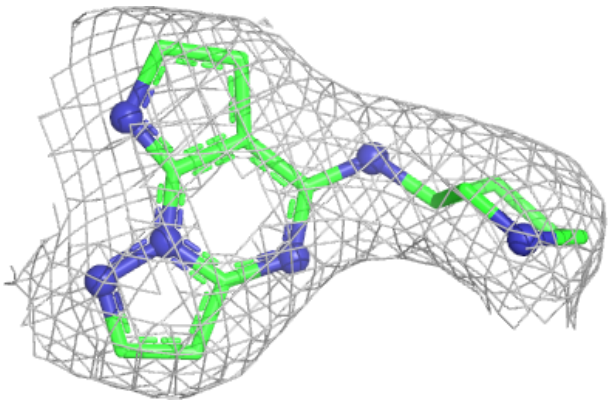


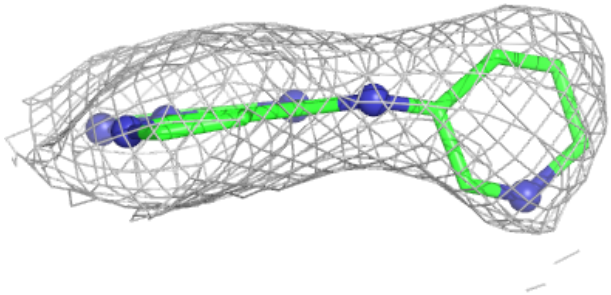


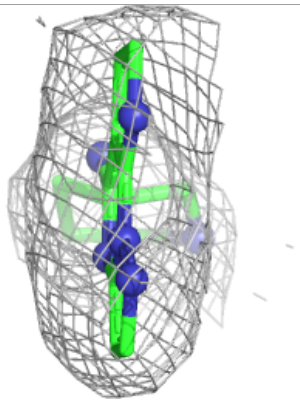


Electron density around YRZ A 901:

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

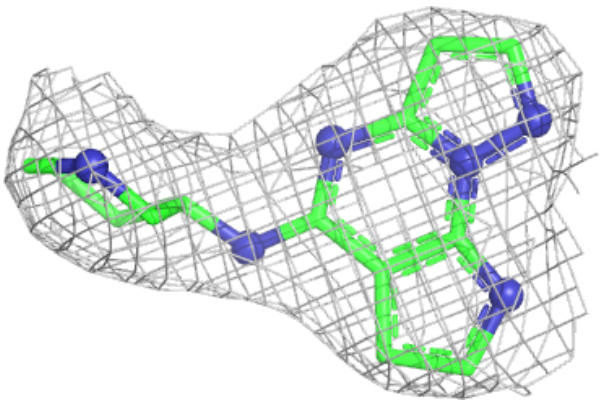


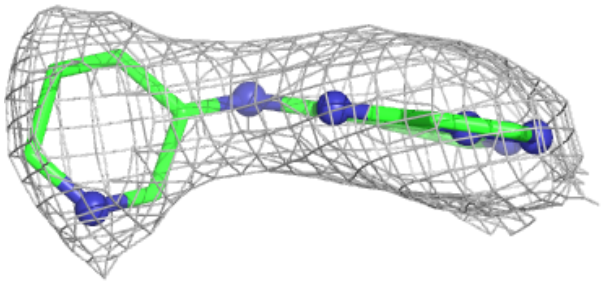


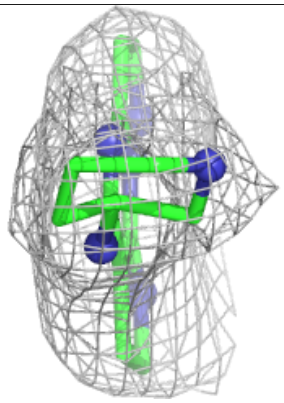


Electron density around YRZ B 901:

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

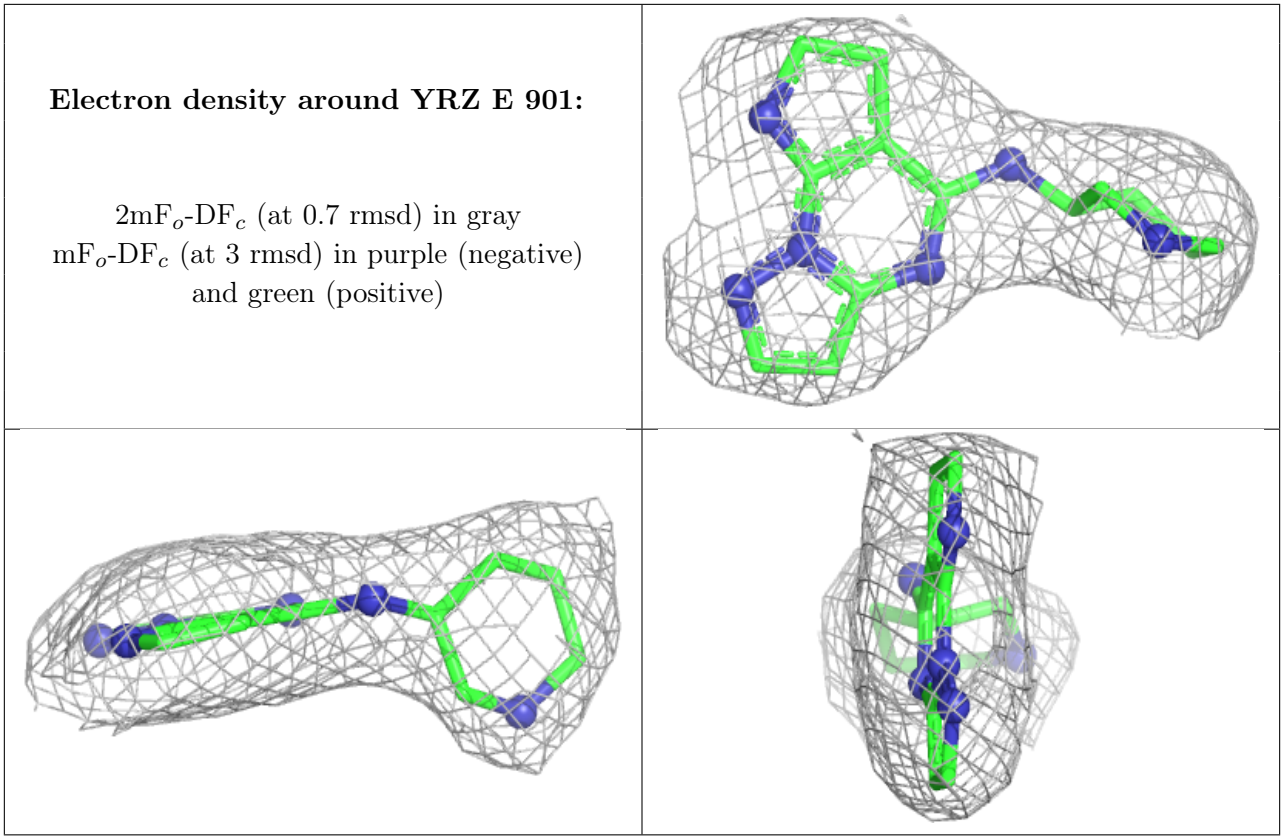






Electron density around YRZ E 901:

$2mF_o$-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.