Full wwPDB X-ray Structure Validation Report ⓘ

Jun 17, 2024 – 02:48 AM EDT

PDB ID	:	5NZ1
Title	:	Structure of Transcriptional Regulatory Repressor Protein - EthR from Mycobacterium Tuberculosis in complex with sutezolid
Authors	:	Mendes, V.; Blaszczyk, M.; Nikiforov, P.O.; Blundell, T.L.
Deposited on	:	2017-05-12
Resolution	:	2.33 Å(reported)

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

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

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

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

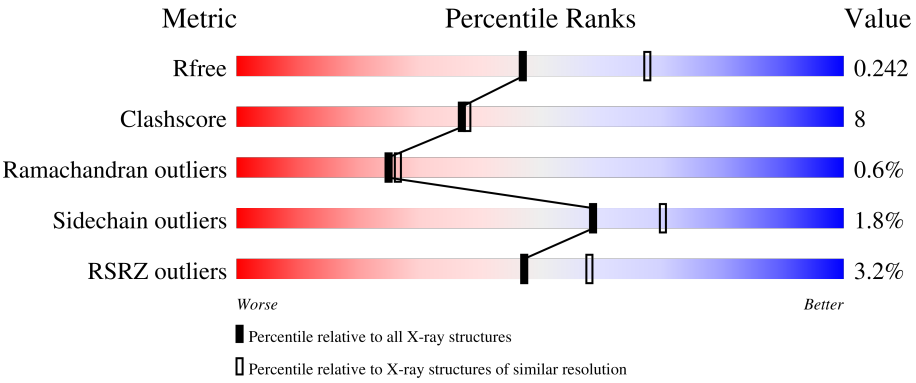
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.37.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

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 2.33 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	2096 (2.36-2.32)
Clashscore	141614	2193 (2.36-2.32)
Ramachandran outliers	138981	2159 (2.36-2.32)
Sidechain outliers	138945	2160 (2.36-2.32)
RSRZ outliers	127900	2067 (2.36-2.32)

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	228	71% 13% 16%
1	B	228	78% 6% 15%
1	C	228	75% 7% 17%
1	D	228	68% 15% 15%
1	E	228	77% 7% 15%

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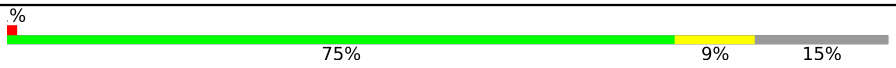
Mol	Chain	Length	Quality of chain
1	F	228	
1	G	228	
1	H	228	

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 11873 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 HTH-type transcriptional regulator EthR.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	191	Total	C	N	O	S	0	0	0
			1480	936	256	284	4			
1	B	193	Total	C	N	O	S	0	0	0
			1496	948	258	286	4			
1	C	189	Total	C	N	O	S	0	0	0
			1462	927	249	282	4			
1	D	193	Total	C	N	O	S	0	0	0
			1475	937	251	283	4			
1	E	193	Total	C	N	O	S	0	0	0
			1491	944	256	287	4			
1	F	193	Total	C	N	O	S	0	0	0
			1495	946	257	288	4			
1	G	192	Total	C	N	O	S	0	0	0
			1431	907	249	272	3			
1	H	178	Total	C	N	O	S	0	0	0
			1246	787	214	242	3			

There are 104 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-3	MET	-	initiating methionine	UNP P9WMC1
A	-2	ASP	-	expression tag	UNP P9WMC1
A	-1	ILE	-	expression tag	UNP P9WMC1
A	0	GLU	-	expression tag	UNP P9WMC1
A	1	PHE	-	expression tag	UNP P9WMC1
A	217	GLY	-	expression tag	UNP P9WMC1
A	218	SER	-	expression tag	UNP P9WMC1
A	219	HIS	-	expression tag	UNP P9WMC1
A	220	HIS	-	expression tag	UNP P9WMC1
A	221	HIS	-	expression tag	UNP P9WMC1
A	222	HIS	-	expression tag	UNP P9WMC1
A	223	HIS	-	expression tag	UNP P9WMC1
A	224	HIS	-	expression tag	UNP P9WMC1

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-3	MET	-	initiating methionine	UNP P9WMC1
B	-2	ASP	-	expression tag	UNP P9WMC1
B	-1	ILE	-	expression tag	UNP P9WMC1
B	0	GLU	-	expression tag	UNP P9WMC1
B	1	PHE	-	expression tag	UNP P9WMC1
B	217	GLY	-	expression tag	UNP P9WMC1
B	218	SER	-	expression tag	UNP P9WMC1
B	219	HIS	-	expression tag	UNP P9WMC1
B	220	HIS	-	expression tag	UNP P9WMC1
B	221	HIS	-	expression tag	UNP P9WMC1
B	222	HIS	-	expression tag	UNP P9WMC1
B	223	HIS	-	expression tag	UNP P9WMC1
B	224	HIS	-	expression tag	UNP P9WMC1
C	-3	MET	-	initiating methionine	UNP P9WMC1
C	-2	ASP	-	expression tag	UNP P9WMC1
C	-1	ILE	-	expression tag	UNP P9WMC1
C	0	GLU	-	expression tag	UNP P9WMC1
C	1	PHE	-	expression tag	UNP P9WMC1
C	217	GLY	-	expression tag	UNP P9WMC1
C	218	SER	-	expression tag	UNP P9WMC1
C	219	HIS	-	expression tag	UNP P9WMC1
C	220	HIS	-	expression tag	UNP P9WMC1
C	221	HIS	-	expression tag	UNP P9WMC1
C	222	HIS	-	expression tag	UNP P9WMC1
C	223	HIS	-	expression tag	UNP P9WMC1
C	224	HIS	-	expression tag	UNP P9WMC1
D	-3	MET	-	initiating methionine	UNP P9WMC1
D	-2	ASP	-	expression tag	UNP P9WMC1
D	-1	ILE	-	expression tag	UNP P9WMC1
D	0	GLU	-	expression tag	UNP P9WMC1
D	1	PHE	-	expression tag	UNP P9WMC1
D	217	GLY	-	expression tag	UNP P9WMC1
D	218	SER	-	expression tag	UNP P9WMC1
D	219	HIS	-	expression tag	UNP P9WMC1
D	220	HIS	-	expression tag	UNP P9WMC1
D	221	HIS	-	expression tag	UNP P9WMC1
D	222	HIS	-	expression tag	UNP P9WMC1
D	223	HIS	-	expression tag	UNP P9WMC1
D	224	HIS	-	expression tag	UNP P9WMC1
E	-3	MET	-	initiating methionine	UNP P9WMC1
E	-2	ASP	-	expression tag	UNP P9WMC1
E	-1	ILE	-	expression tag	UNP P9WMC1

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Chain	Residue	Modelled	Actual	Comment	Reference
E	0	GLU	-	expression tag	UNP P9WMC1
E	1	PHE	-	expression tag	UNP P9WMC1
E	217	GLY	-	expression tag	UNP P9WMC1
E	218	SER	-	expression tag	UNP P9WMC1
E	219	HIS	-	expression tag	UNP P9WMC1
E	220	HIS	-	expression tag	UNP P9WMC1
E	221	HIS	-	expression tag	UNP P9WMC1
E	222	HIS	-	expression tag	UNP P9WMC1
E	223	HIS	-	expression tag	UNP P9WMC1
E	224	HIS	-	expression tag	UNP P9WMC1
F	-3	MET	-	initiating methionine	UNP P9WMC1
F	-2	ASP	-	expression tag	UNP P9WMC1
F	-1	ILE	-	expression tag	UNP P9WMC1
F	0	GLU	-	expression tag	UNP P9WMC1
F	1	PHE	-	expression tag	UNP P9WMC1
F	217	GLY	-	expression tag	UNP P9WMC1
F	218	SER	-	expression tag	UNP P9WMC1
F	219	HIS	-	expression tag	UNP P9WMC1
F	220	HIS	-	expression tag	UNP P9WMC1
F	221	HIS	-	expression tag	UNP P9WMC1
F	222	HIS	-	expression tag	UNP P9WMC1
F	223	HIS	-	expression tag	UNP P9WMC1
F	224	HIS	-	expression tag	UNP P9WMC1
G	-3	MET	-	initiating methionine	UNP P9WMC1
G	-2	ASP	-	expression tag	UNP P9WMC1
G	-1	ILE	-	expression tag	UNP P9WMC1
G	0	GLU	-	expression tag	UNP P9WMC1
G	1	PHE	-	expression tag	UNP P9WMC1
G	217	GLY	-	expression tag	UNP P9WMC1
G	218	SER	-	expression tag	UNP P9WMC1
G	219	HIS	-	expression tag	UNP P9WMC1
G	220	HIS	-	expression tag	UNP P9WMC1
G	221	HIS	-	expression tag	UNP P9WMC1
G	222	HIS	-	expression tag	UNP P9WMC1
G	223	HIS	-	expression tag	UNP P9WMC1
G	224	HIS	-	expression tag	UNP P9WMC1
H	-3	MET	-	initiating methionine	UNP P9WMC1
H	-2	ASP	-	expression tag	UNP P9WMC1
H	-1	ILE	-	expression tag	UNP P9WMC1
H	0	GLU	-	expression tag	UNP P9WMC1
H	1	PHE	-	expression tag	UNP P9WMC1
H	217	GLY	-	expression tag	UNP P9WMC1

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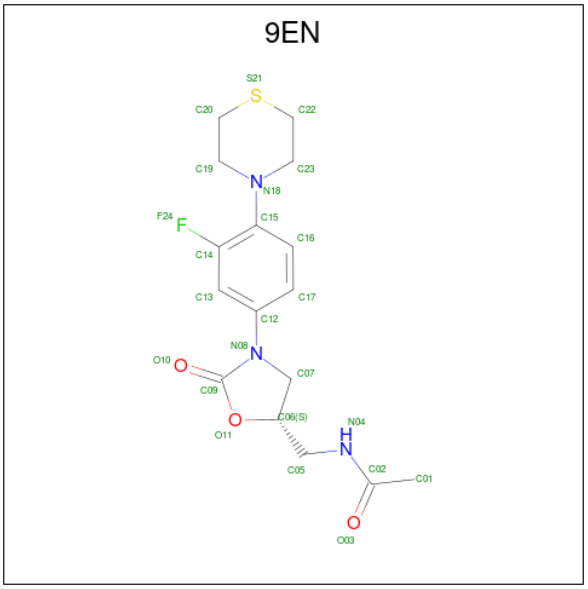
Chain	Residue	Modelled	Actual	Comment	Reference
H	218	SER	-	expression tag	UNP P9WMC1
H	219	HIS	-	expression tag	UNP P9WMC1
H	220	HIS	-	expression tag	UNP P9WMC1
H	221	HIS	-	expression tag	UNP P9WMC1
H	222	HIS	-	expression tag	UNP P9WMC1
H	223	HIS	-	expression tag	UNP P9WMC1
H	224	HIS	-	expression tag	UNP P9WMC1

- Molecule 2 is {N}-[[(5 {S})-3-(3-fluoranyl-4-thiomorpholin-4-yl-phenyl)-2-oxidanylidene-1,3 -oxazolidin-5-yl]methyl]ethanamide (three-letter code: 9EN) (formula: $C_{16}H_{20}FN_3O_3S$).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total	C	F	N	O	S	0	0
			24	16	1	3	3	1		
2	C	1	Total	C	F	N	O	S	0	0
			24	16	1	3	3	1		
2	D	1	Total	C	F	N	O	S	0	0
			24	16	1	3	3	1		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	46	Total	O	0	0
			46	46		
3	B	41	Total	O	0	0
			41	41		

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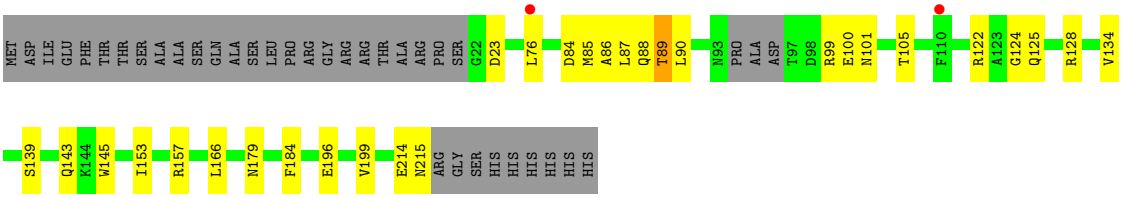
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	C	59	Total O 59 59	0	0
3	D	17	Total O 17 17	0	0
3	E	30	Total O 30 30	0	0
3	F	24	Total O 24 24	0	0
3	G	7	Total O 7 7	0	0
3	H	1	Total O 1 1	0	0

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.

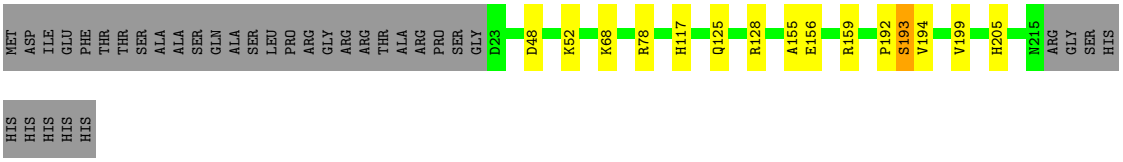
• Molecule 1: HTH-type transcriptional regulator EthR

Chain A:



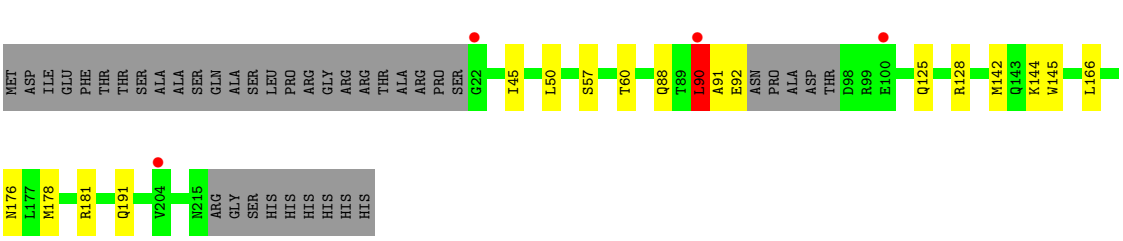
• Molecule 1: HTH-type transcriptional regulator EthR

Chain B:



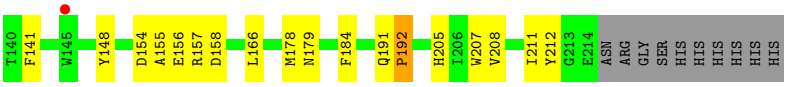
• Molecule 1: HTH-type transcriptional regulator EthR

Chain C:

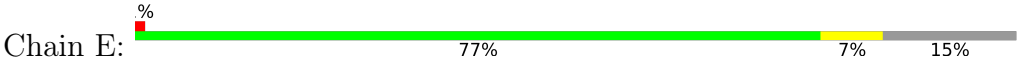


• Molecule 1: HTH-type transcriptional regulator EthR

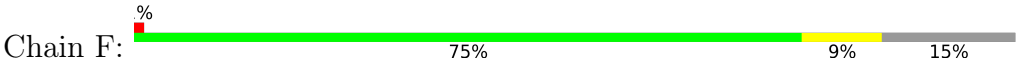
Chain D:

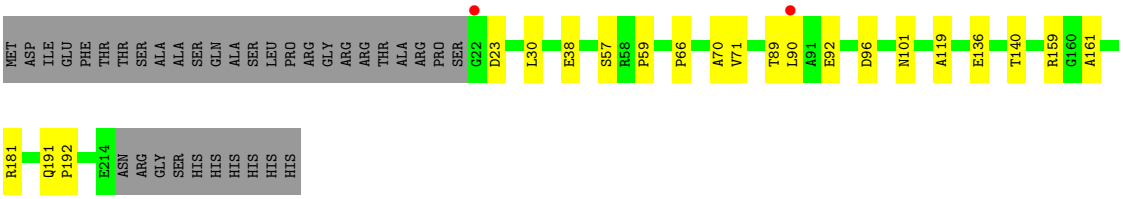


• Molecule 1: HTH-type transcriptional regulator EthR

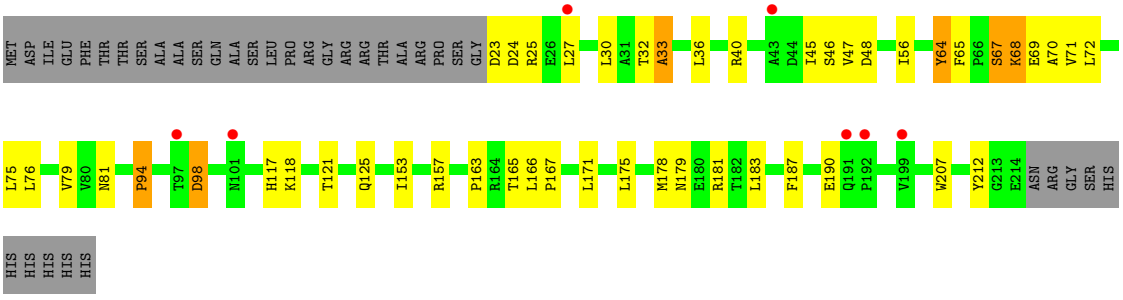


• Molecule 1: HTH-type transcriptional regulator EthR

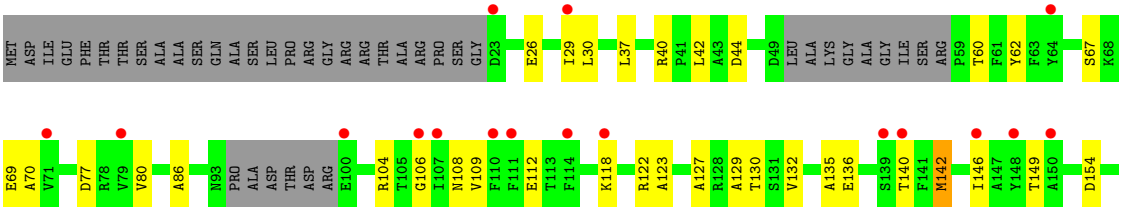


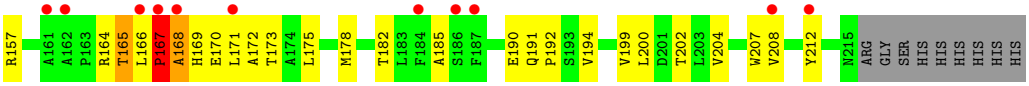


• Molecule 1: HTH-type transcriptional regulator EthR



• Molecule 1: HTH-type transcriptional regulator EthR




R157
A161
A162
P163
R164
T165
L166
P167
A168
H169
E170
L171
A172
T173
A174
L175
M178
T182
L183
F184
A185
S186
F187
E190
Q191
P192
S193
V194
V199
L200
D201
T202
L203
V204
W207
V208
Y212
N215
ARG
GLY
SER
HIS
HIS
HIS
HIS
HIS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	85.86Å 144.84Å 150.74Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	104.44 – 2.33 104.44 – 2.33	Depositor EDS
% Data completeness (in resolution range)	99.9 (104.44-2.33) 99.9 (104.44-2.33)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.36 (at 2.32Å)	Xtriage
Refinement program	PHENIX 1.10_2155	Depositor
R, R_{free}	0.191 , 0.244 0.193 , 0.242	Depositor DCC
R_{free} test set	4140 reflections (5.12%)	wwPDB-VP
Wilson B-factor (Å^2)	52.7	Xtriage
Anisotropy	0.200	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 46.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.47$, $< L^2 > = 0.30$	Xtriage
Estimated twinning fraction	0.019 for -h,l,k	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	11873	wwPDB-VP
Average B, all atoms (Å^2)	75.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.23% 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: 9EN

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	0.50	0/1509	0.59	0/2056
1	B	0.52	0/1527	0.58	0/2083
1	C	0.48	0/1491	0.60	2/2032 (0.1%)
1	D	0.52	0/1506	0.64	1/2057 (0.0%)
1	E	0.44	0/1522	0.55	0/2077
1	F	0.43	0/1526	0.58	0/2082
1	G	0.43	0/1460	0.58	0/1999
1	H	0.40	0/1268	0.61	0/1743
All	All	0.47	0/11809	0.59	3/16129 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	166	LEU	CA-CB-CG	6.39	129.99	115.30
1	C	90	LEU	CB-CG-CD1	5.78	120.83	111.00
1	C	90	LEU	CA-CB-CG	5.28	127.43	115.30

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	1480	0	1437	18	0
1	B	1496	0	1461	12	0
1	C	1462	0	1418	19	0
1	D	1475	0	1430	27	0
1	E	1491	0	1449	9	0
1	F	1495	0	1455	11	0
1	G	1431	0	1355	40	0
1	H	1246	0	1109	55	0
2	A	24	0	0	1	0
2	C	24	0	0	2	0
2	D	24	0	0	2	0
3	A	46	0	0	1	0
3	B	41	0	0	1	0
3	C	59	0	0	1	0
3	D	17	0	0	0	0
3	E	30	0	0	1	0
3	F	24	0	0	0	0
3	G	7	0	0	0	0
3	H	1	0	0	0	0
All	All	11873	0	11114	177	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 (177) 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:H:167:PRO:HB2	1:H:170:GLU:OE2	1.29	1.32
1:H:171:LEU:O	1:H:175:LEU:HD22	1.65	0.96
1:H:171:LEU:O	1:H:175:LEU:CD2	2.16	0.94
1:G:178:MET:HB2	1:H:178:MET:HG3	1.52	0.91
1:H:157:ARG:HH22	1:H:165:THR:HG23	1.38	0.87
1:G:68:LYS:O	1:G:71:VAL:HG22	1.76	0.86
1:H:157:ARG:NH2	1:H:165:THR:H	1.76	0.84
1:H:157:ARG:HH22	1:H:165:THR:H	1.28	0.81
1:F:89:THR:O	1:F:92:GLU:HB2	1.81	0.80
1:H:157:ARG:NH2	1:H:165:THR:HG23	1.96	0.79
1:H:171:LEU:HD23	1:H:175:LEU:HD21	1.65	0.78
1:H:146:ILE:HG21	1:H:173:THR:HG22	1.68	0.76
1:A:179:ASN:ND2	2:A:301:9EN:O10	2.19	0.75
1:H:167:PRO:CB	1:H:170:GLU:OE2	2.22	0.75
1:F:38:GLU:HG3	1:F:119:ALA:HB2	1.67	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:42:LEU:HD11	1:H:69:GLU:HA	1.69	0.73
1:H:154:ASP:HA	1:H:157:ARG:HG3	1.71	0.72
1:G:25:ARG:HD2	1:G:56:ILE:HG21	1.72	0.72
1:G:67:SER:O	1:G:70:ALA:N	2.15	0.72
1:H:77:ASP:HA	1:H:80:VAL:HG12	1.72	0.72
1:G:46:SER:O	1:G:48:ASP:N	2.23	0.71
1:G:181:ARG:NH2	1:G:190:GLU:OE1	2.23	0.71
1:E:96:ASP:OD2	1:E:101:ASN:ND2	2.24	0.70
1:D:117:HIS:O	1:D:121:THR:HG23	1.94	0.68
1:G:23:ASP:OD1	1:G:25:ARG:N	2.27	0.68
1:H:171:LEU:HD23	1:H:175:LEU:CD2	2.24	0.67
1:H:171:LEU:O	1:H:171:LEU:HD23	1.94	0.66
1:D:91:ALA:HB1	1:D:148:TYR:OH	1.96	0.66
1:H:194:VAL:HG13	1:H:199:VAL:HG22	1.79	0.65
1:G:40:ARG:HG3	1:G:45:ILE:HD11	1.79	0.65
1:C:178:MET:HB2	1:D:178:MET:HB2	1.78	0.65
1:H:165:THR:OG1	1:H:166:LEU:N	2.30	0.64
1:H:171:LEU:HD23	1:H:171:LEU:C	2.17	0.64
1:E:87:LEU:HD21	1:E:148:TYR:CE2	2.31	0.64
1:B:117:HIS:HE1	1:C:88:GLN:HE21	1.46	0.64
1:A:153:ILE:O	1:A:157:ARG:HG3	1.97	0.63
1:G:25:ARG:HD2	1:G:56:ILE:CG2	2.28	0.63
1:B:194:VAL:HB	1:B:199:VAL:HG12	1.81	0.62
1:H:104:ARG:HG3	1:H:200:LEU:HD11	1.79	0.62
1:G:166:LEU:HD21	1:H:202:THR:HA	1.81	0.62
1:H:171:LEU:CD2	1:H:175:LEU:HD21	2.30	0.62
1:G:72:LEU:C	1:G:72:LEU:HD23	2.20	0.61
1:B:156:GLU:OE2	1:B:159:ARG:NH2	2.33	0.60
1:G:71:VAL:HG23	1:G:72:LEU:N	2.14	0.60
1:G:179:ASN:O	1:G:183:LEU:HB2	2.01	0.60
1:C:57:SER:OG	1:C:60:THR:HG23	2.02	0.60
1:G:94:PRO:HB3	1:G:98:ASP:CB	2.33	0.58
1:B:48:ASP:O	1:B:52:LYS:HG2	2.04	0.57
1:A:86:ALA:O	1:A:90:LEU:HD23	2.04	0.57
1:D:179:ASN:ND2	2:D:301:9EN:O10	2.33	0.57
1:H:67:SER:OG	1:H:70:ALA:N	2.37	0.56
1:D:90:LEU:C	1:D:90:LEU:HD12	2.24	0.56
1:H:200:LEU:O	1:H:204:VAL:HG23	2.05	0.56
1:H:175:LEU:HD22	1:H:175:LEU:H	1.71	0.56
1:G:32:THR:O	1:G:36:LEU:HD12	2.05	0.56
1:G:165:THR:OG1	1:G:166:LEU:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:214:GLU:O	1:A:215:ASN:HB2	2.07	0.54
1:H:185:ALA:HA	1:H:190:GLU:OE2	2.06	0.54
1:G:153:ILE:O	1:G:157:ARG:HG3	2.08	0.54
1:G:171:LEU:O	1:G:175:LEU:HD12	2.08	0.54
1:F:191:GLN:NE2	1:F:192:PRO:HA	2.23	0.54
1:G:30:LEU:HD21	1:G:65:PHE:CZ	2.43	0.53
1:D:155:ALA:O	1:D:157:ARG:N	2.42	0.53
1:H:157:ARG:CZ	1:H:164:ARG:HA	2.38	0.53
1:A:125:GLN:HG2	1:A:184:PHE:CZ	2.44	0.53
1:A:122:ARG:NH2	3:A:401:HOH:O	2.42	0.53
1:B:117:HIS:CE1	1:C:88:GLN:HE21	2.25	0.52
1:A:128:ARG:HG2	1:A:134:VAL:HG12	1.90	0.52
1:G:65:PHE:CG	1:G:71:VAL:HG12	2.45	0.52
1:C:191:GLN:O	1:D:139:SER:OG	2.22	0.52
1:A:87:LEU:HA	1:A:90:LEU:HD21	1.90	0.52
1:D:179:ASN:HD22	2:D:301:9EN:C09	2.23	0.52
1:H:86:ALA:HB3	1:H:109:VAL:HG21	1.91	0.52
1:G:71:VAL:CG2	1:G:72:LEU:N	2.72	0.51
1:E:118:LYS:O	1:E:122:ARG:HG3	2.09	0.51
1:H:146:ILE:HG12	1:H:173:THR:HA	1.93	0.51
1:G:117:HIS:O	1:G:121:THR:HG23	2.11	0.51
1:G:175:LEU:HD22	1:G:207:TRP:HA	1.92	0.51
1:C:166:LEU:HD11	1:D:205:HIS:HB3	1.93	0.51
1:D:155:ALA:O	1:D:158:ASP:N	2.43	0.51
1:E:198:ARG:NH2	3:E:303:HOH:O	2.44	0.51
1:B:117:HIS:HE1	1:C:88:GLN:NE2	2.08	0.51
1:A:196:GLU:O	1:A:199:VAL:HG12	2.11	0.50
1:G:163:PRO:HD2	1:G:212:TYR:HA	1.93	0.50
1:C:90:LEU:HD12	1:C:91:ALA:N	2.27	0.50
1:A:99:ARG:HG3	1:A:100:GLU:N	2.27	0.50
1:H:132:VAL:HA	1:H:135:ALA:HB3	1.94	0.49
1:H:149:THR:HB	1:H:172:ALA:HB1	1.94	0.49
1:D:34:GLU:OE2	1:D:117:HIS:HD2	1.95	0.49
1:A:101:ASN:O	1:A:105:THR:HG23	2.13	0.49
1:G:72:LEU:HD23	1:G:72:LEU:O	2.12	0.49
1:C:181:ARG:HH21	1:D:128:ARG:HH22	1.61	0.49
1:G:75:LEU:O	1:G:79:VAL:HG23	2.13	0.48
1:H:157:ARG:CZ	1:H:165:THR:H	2.26	0.48
1:G:23:ASP:OD2	1:G:64:TYR:OH	2.31	0.48
1:B:68:LYS:HG2	3:B:321:HOH:O	2.14	0.48
1:A:76:LEU:HD13	1:A:124:GLY:HA3	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:139:SER:O	1:A:143:GLN:HG3	2.14	0.47
1:H:167:PRO:O	1:H:169:HIS:N	2.46	0.47
1:D:154:ASP:HA	1:D:157:ARG:HD2	1.96	0.47
1:F:57:SER:HB2	1:F:59:PRO:HD2	1.95	0.47
1:G:118:LYS:HG2	1:G:187:PHE:HB3	1.96	0.47
1:H:157:ARG:HH22	1:H:165:THR:CG2	2.17	0.47
1:C:91:ALA:HA	1:C:92:GLU:HA	1.70	0.47
1:D:96:ASP:OD1	1:D:97:THR:N	2.48	0.47
1:H:26:GLU:HB2	1:H:30:LEU:HD11	1.97	0.47
1:G:178:MET:SD	1:H:178:MET:HE3	2.55	0.46
1:A:85:MET:O	1:A:89:THR:HG23	2.14	0.46
1:H:122:ARG:HG3	1:H:123:ALA:N	2.29	0.46
1:A:84:ASP:OD2	1:A:145:TRP:NE1	2.37	0.46
1:C:144:LYS:NZ	3:C:401:HOH:O	2.36	0.46
1:G:23:ASP:OD1	1:G:24:ASP:N	2.49	0.46
1:G:40:ARG:HG3	1:G:45:ILE:CD1	2.45	0.46
1:H:142:MET:O	1:H:146:ILE:HD12	2.15	0.45
1:H:166:LEU:O	1:H:168:ALA:N	2.49	0.45
1:C:176:ASN:HD22	2:C:301:9EN:C07	2.30	0.45
1:C:181:ARG:NH2	1:D:128:ARG:HH22	2.14	0.45
1:H:106:GLY:O	1:H:109:VAL:HG12	2.17	0.45
1:D:207:TRP:O	1:D:211:ILE:HG13	2.16	0.45
1:F:136:GLU:O	1:F:140:THR:HG23	2.16	0.45
1:H:157:ARG:NH1	1:H:164:ARG:HA	2.32	0.45
1:G:68:LYS:HG2	1:G:69:GLU:N	2.32	0.45
1:H:191:GLN:HA	1:H:192:PRO:HA	1.80	0.45
1:H:208:VAL:O	1:H:212:TYR:HD1	2.00	0.45
1:D:80:VAL:HG11	1:D:141:PHE:CD2	2.51	0.45
1:H:175:LEU:HB3	1:H:207:TRP:CE2	2.52	0.45
1:A:84:ASP:O	1:A:88:GLN:HG3	2.16	0.44
1:G:72:LEU:C	1:G:72:LEU:CD2	2.85	0.44
1:F:159:ARG:HH12	1:F:161:ALA:HB2	1.82	0.44
1:H:37:LEU:HA	1:H:40:ARG:O	2.17	0.44
1:D:122:ARG:HA	1:D:184:PHE:HE1	1.83	0.44
1:E:39:ASP:HB2	1:E:40:ARG:HH11	1.83	0.44
1:F:96:ASP:OD2	1:F:101:ASN:ND2	2.49	0.44
1:D:60:THR:HA	1:D:63:PHE:HD2	1.82	0.44
1:D:90:LEU:C	1:D:90:LEU:CD1	2.86	0.44
1:G:71:VAL:CG2	1:G:72:LEU:H	2.31	0.43
1:C:125:GLN:O	1:C:128:ARG:HB2	2.19	0.43
1:G:166:LEU:HD23	1:H:202:THR:HG23	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:48:ASP:OD1	1:E:48:ASP:N	2.50	0.43
1:D:52:LYS:HE3	1:D:52:LYS:HB2	1.32	0.43
1:G:33:ALA:O	1:G:36:LEU:N	2.52	0.43
1:C:142:MET:HE1	1:C:145:TRP:HE3	1.84	0.42
1:A:87:LEU:HA	1:A:90:LEU:CD2	2.49	0.42
1:C:142:MET:HE1	1:C:145:TRP:CE3	2.54	0.42
1:G:166:LEU:CD2	1:H:202:THR:HA	2.47	0.42
1:D:50:LEU:HD23	1:D:50:LEU:HA	1.84	0.42
1:E:38:GLU:HG2	1:E:119:ALA:HB2	2.01	0.42
1:H:136:GLU:O	1:H:140:THR:HG22	2.20	0.42
1:H:169:HIS:O	1:H:173:THR:HG23	2.18	0.42
1:B:125:GLN:OE1	1:B:128:ARG:NH1	2.50	0.42
1:B:192:PRO:O	1:B:193:SER:HB3	2.20	0.42
1:F:66:PRO:HD2	1:F:70:ALA:CB	2.50	0.42
1:F:90:LEU:N	1:F:90:LEU:HD23	2.35	0.42
1:E:46:SER:OG	1:E:49:ASP:OD2	2.18	0.42
1:G:72:LEU:HD23	1:G:76:LEU:HG	2.02	0.42
1:H:60:THR:C	1:H:62:TYR:H	2.24	0.41
1:B:78:ARG:HE	1:B:78:ARG:HB2	1.75	0.41
1:C:91:ALA:HA	1:C:92:GLU:HG3	2.02	0.41
1:F:181:ARG:HA	1:F:181:ARG:HD2	1.78	0.41
1:H:29:ILE:HD12	1:H:30:LEU:HD12	2.02	0.41
1:C:45:ILE:HG22	1:C:50:LEU:HD22	2.03	0.41
1:D:25:ARG:HH11	1:D:25:ARG:HD3	1.72	0.41
1:D:75:LEU:HD13	1:D:120:VAL:HG22	2.01	0.41
1:H:182:THR:O	1:H:185:ALA:HB3	2.20	0.41
1:A:166:LEU:HD11	1:B:205:HIS:HB3	2.02	0.40
1:D:155:ALA:C	1:D:157:ARG:N	2.73	0.40
1:F:30:LEU:HD23	1:F:71:VAL:HG13	2.04	0.40
1:H:127:ALA:C	1:H:129:ALA:N	2.73	0.40
1:B:155:ALA:O	1:B:159:ARG:HG3	2.20	0.40
1:D:191:GLN:HA	1:D:192:PRO:HA	1.82	0.40
1:G:27:LEU:HD12	1:G:27:LEU:H	1.85	0.40
1:H:108:ASN:O	1:H:112:GLU:HG2	2.22	0.40
1:H:118:LYS:H	1:H:118:LYS:HG3	1.70	0.40
1:C:142:MET:CE	2:C:301:9EN:C05	3.00	0.40
1:D:208:VAL:O	1:D:212:TYR:HD1	2.04	0.40
1:G:30:LEU:HB3	1:G:75:LEU:HD21	2.03	0.40
1:E:40:ARG:HB2	1:E:44:ASP:HB2	2.04	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	187/228 (82%)	185 (99%)	2 (1%)	0	100	100
1	B	191/228 (84%)	188 (98%)	3 (2%)	0	100	100
1	C	185/228 (81%)	182 (98%)	3 (2%)	0	100	100
1	D	191/228 (84%)	182 (95%)	8 (4%)	1 (0%)	29	31
1	E	191/228 (84%)	187 (98%)	4 (2%)	0	100	100
1	F	191/228 (84%)	187 (98%)	4 (2%)	0	100	100
1	G	190/228 (83%)	177 (93%)	8 (4%)	5 (3%)	5	2
1	H	172/228 (75%)	153 (89%)	16 (9%)	3 (2%)	9	6
All	All	1498/1824 (82%)	1441 (96%)	48 (3%)	9 (1%)	25	26

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	G	47	VAL
1	G	68	LYS
1	H	168	ALA
1	D	156	GLU
1	H	165	THR
1	G	98	ASP
1	G	33	ALA
1	G	67	SER
1	H	167	PRO

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	151/184 (82%)	149 (99%)	2 (1%)	69 79
1	B	153/184 (83%)	152 (99%)	1 (1%)	84 90
1	C	149/184 (81%)	148 (99%)	1 (1%)	84 90
1	D	149/184 (81%)	145 (97%)	4 (3%)	44 55
1	E	152/184 (83%)	149 (98%)	3 (2%)	55 66
1	F	153/184 (83%)	152 (99%)	1 (1%)	84 90
1	G	136/184 (74%)	131 (96%)	5 (4%)	34 43
1	H	107/184 (58%)	103 (96%)	4 (4%)	34 43
All	All	1150/1472 (78%)	1129 (98%)	21 (2%)	59 70

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	23	ASP
1	A	89	THR
1	B	193	SER
1	C	90	LEU
1	D	89	THR
1	D	90	LEU
1	D	121	THR
1	D	192	PRO
1	E	48	ASP
1	E	131	SER
1	E	195	PRO
1	F	23	ASP
1	G	64	TYR
1	G	81	ASN
1	G	94	PRO
1	G	125	GLN
1	G	167	PRO
1	H	44	ASP
1	H	130	THR
1	H	142	MET
1	H	167	PRO

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	88	GLN
1	B	117	HIS
1	C	88	GLN
1	C	176	ASN
1	D	117	HIS
1	E	88	GLN
1	E	191	GLN
1	F	191	GLN
1	G	82	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

3 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	9EN	A	301	-	26,26,26	4.79	13 (50%)	36,36,36	3.17	18 (50%)
2	9EN	C	301	-	26,26,26	4.63	13 (50%)	36,36,36	3.28	17 (47%)
2	9EN	D	301	-	26,26,26	4.93	12 (46%)	36,36,36	2.93	15 (41%)

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	9EN	A	301	-	-	2/13/33/33	0/3/3/3
2	9EN	C	301	-	-	5/13/33/33	0/3/3/3
2	9EN	D	301	-	-	3/13/33/33	0/3/3/3

All (38) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	301	9EN	C23-N18	13.18	1.67	1.46
2	A	301	9EN	C19-N18	12.78	1.66	1.46
2	C	301	9EN	C19-N18	12.48	1.66	1.46
2	D	301	9EN	C19-N18	12.43	1.66	1.46
2	A	301	9EN	C23-N18	12.26	1.66	1.46
2	C	301	9EN	C23-N18	11.99	1.65	1.46
2	D	301	9EN	C09-N08	10.86	1.47	1.36
2	A	301	9EN	C09-N08	10.14	1.46	1.36
2	C	301	9EN	C09-N08	7.05	1.43	1.36
2	D	301	9EN	O11-C09	6.79	1.44	1.35
2	C	301	9EN	C20-S21	-6.56	1.57	1.80
2	A	301	9EN	O11-C09	6.46	1.44	1.35
2	C	301	9EN	C22-S21	-6.27	1.58	1.80
2	A	301	9EN	C20-S21	-6.07	1.59	1.80
2	D	301	9EN	C22-S21	-5.92	1.59	1.80
2	D	301	9EN	C20-S21	-5.90	1.60	1.80
2	A	301	9EN	C22-S21	-5.72	1.60	1.80
2	C	301	9EN	O11-C06	-4.86	1.39	1.46
2	A	301	9EN	C02-N04	4.33	1.46	1.34
2	C	301	9EN	O11-C09	4.24	1.41	1.35
2	C	301	9EN	C07-C06	-4.10	1.46	1.52
2	D	301	9EN	C02-N04	4.03	1.45	1.34
2	C	301	9EN	C07-N08	-3.99	1.40	1.47
2	C	301	9EN	O03-C02	-3.45	1.15	1.23
2	A	301	9EN	O11-C06	-3.40	1.41	1.46
2	D	301	9EN	O11-C06	-3.33	1.41	1.46
2	C	301	9EN	O10-C09	-3.23	1.16	1.21
2	D	301	9EN	C07-C06	-3.03	1.47	1.52
2	C	301	9EN	C02-N04	2.97	1.42	1.34
2	C	301	9EN	C15-C14	-2.92	1.35	1.40
2	D	301	9EN	C07-N08	-2.92	1.42	1.47
2	A	301	9EN	C07-C06	-2.56	1.48	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	301	9EN	C07-N08	-2.33	1.43	1.47
2	D	301	9EN	C15-N18	2.25	1.46	1.41
2	A	301	9EN	O03-C02	-2.21	1.18	1.23
2	D	301	9EN	O03-C02	-2.18	1.18	1.23
2	A	301	9EN	C15-N18	2.14	1.46	1.41
2	A	301	9EN	C12-N08	2.10	1.47	1.43

All (50) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	C	301	9EN	C07-N08-C09	-10.29	105.32	111.28
2	A	301	9EN	C07-N08-C09	-9.61	105.72	111.28
2	D	301	9EN	C07-N08-C09	-9.04	106.05	111.28
2	D	301	9EN	C22-S21-C20	8.26	112.77	97.72
2	C	301	9EN	C06-O11-C09	-8.20	103.68	110.15
2	A	301	9EN	C06-O11-C09	-7.41	104.30	110.15
2	A	301	9EN	C22-S21-C20	6.69	109.92	97.72
2	C	301	9EN	C22-S21-C20	5.81	108.31	97.72
2	D	301	9EN	C06-C07-N08	5.61	107.45	101.81
2	A	301	9EN	C07-N08-C12	5.05	129.99	121.45
2	C	301	9EN	C07-N08-C12	5.04	129.97	121.45
2	D	301	9EN	C06-O11-C09	-4.94	106.25	110.15
2	C	301	9EN	O11-C06-C05	-4.85	105.03	109.33
2	A	301	9EN	C06-C07-N08	4.28	106.11	101.81
2	C	301	9EN	C23-N18-C15	3.81	125.30	116.27
2	C	301	9EN	O11-C09-N08	-3.79	107.22	109.83
2	D	301	9EN	C13-C14-C15	-3.75	120.24	123.34
2	A	301	9EN	C01-C02-N04	3.75	122.73	116.09
2	C	301	9EN	O11-C09-O10	3.72	126.50	122.37
2	D	301	9EN	C01-C02-N04	3.61	122.48	116.09
2	C	301	9EN	C01-C02-N04	3.43	122.16	116.09
2	A	301	9EN	O10-C09-N08	-3.41	126.21	128.91
2	A	301	9EN	C13-C14-C15	-3.39	120.54	123.34
2	A	301	9EN	C23-N18-C19	-3.32	104.18	111.52
2	C	301	9EN	O10-C09-N08	-3.31	126.28	128.91
2	A	301	9EN	C20-C19-N18	3.27	118.23	111.90
2	C	301	9EN	C06-C05-N04	-3.17	105.27	112.16
2	D	301	9EN	C22-C23-N18	2.91	117.53	111.90
2	C	301	9EN	C19-N18-C15	2.88	123.09	116.27
2	A	301	9EN	O11-C09-O10	2.83	125.50	122.37
2	D	301	9EN	C05-N04-C02	-2.72	118.55	122.75
2	D	301	9EN	C19-N18-C15	2.71	122.70	116.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	301	9EN	C17-C12-N08	2.60	123.98	120.18
2	A	301	9EN	O03-C02-C01	-2.53	117.35	122.06
2	A	301	9EN	C23-N18-C15	2.52	122.25	116.27
2	C	301	9EN	C17-C12-N08	2.42	123.72	120.18
2	D	301	9EN	O11-C09-N08	-2.41	108.17	109.83
2	D	301	9EN	C07-N08-C12	2.39	125.49	121.45
2	D	301	9EN	C12-N08-C09	2.32	128.39	125.91
2	A	301	9EN	O11-C09-N08	-2.24	108.29	109.83
2	C	301	9EN	O11-C06-C07	-2.19	102.36	104.57
2	A	301	9EN	C19-C20-S21	-2.18	109.75	112.51
2	C	301	9EN	C20-C19-N18	2.15	116.07	111.90
2	D	301	9EN	O10-C09-N08	-2.12	127.23	128.91
2	A	301	9EN	C12-C13-C14	2.11	121.83	119.21
2	C	301	9EN	C06-C07-N08	2.08	103.91	101.81
2	D	301	9EN	C07-C06-C05	-2.04	110.83	113.08
2	D	301	9EN	O11-C09-O10	2.01	124.60	122.37
2	C	301	9EN	C19-C20-S21	-2.01	109.98	112.51
2	A	301	9EN	C23-C22-S21	2.00	115.03	112.51

There are no chirality outliers.

All (10) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	301	9EN	N04-C05-C06-C07
2	A	301	9EN	N04-C05-C06-O11
2	D	301	9EN	N04-C05-C06-O11
2	C	301	9EN	C14-C15-N18-C23
2	C	301	9EN	N04-C05-C06-O11
2	D	301	9EN	N04-C05-C06-C07
2	C	301	9EN	C14-C15-N18-C19
2	D	301	9EN	C14-C15-N18-C23
2	C	301	9EN	C16-C15-N18-C23
2	C	301	9EN	C16-C15-N18-C19

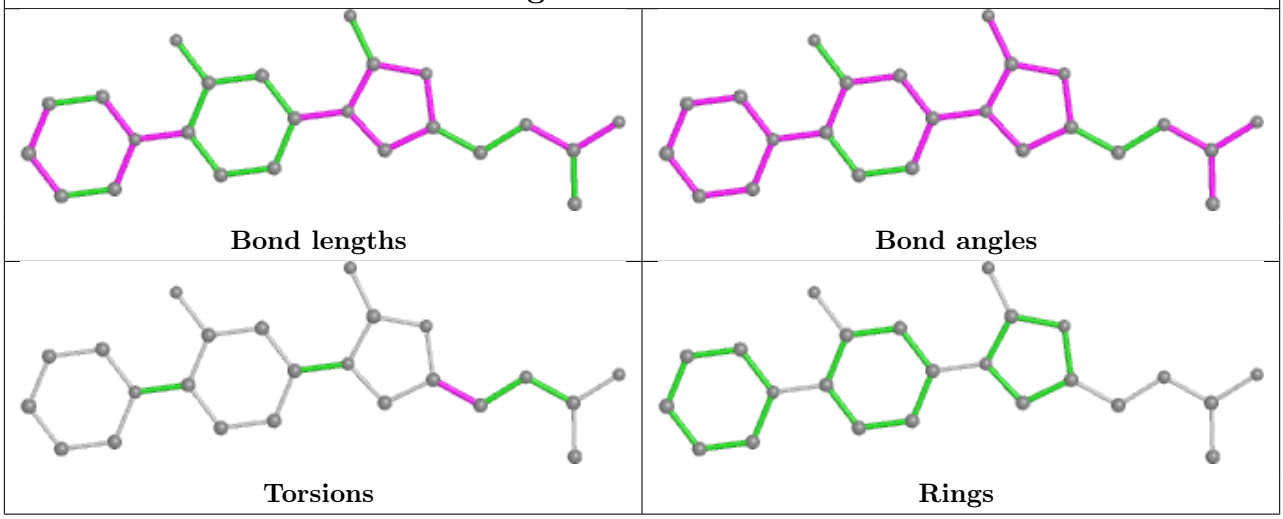
There are no ring outliers.

3 monomers are involved in 5 short contacts:

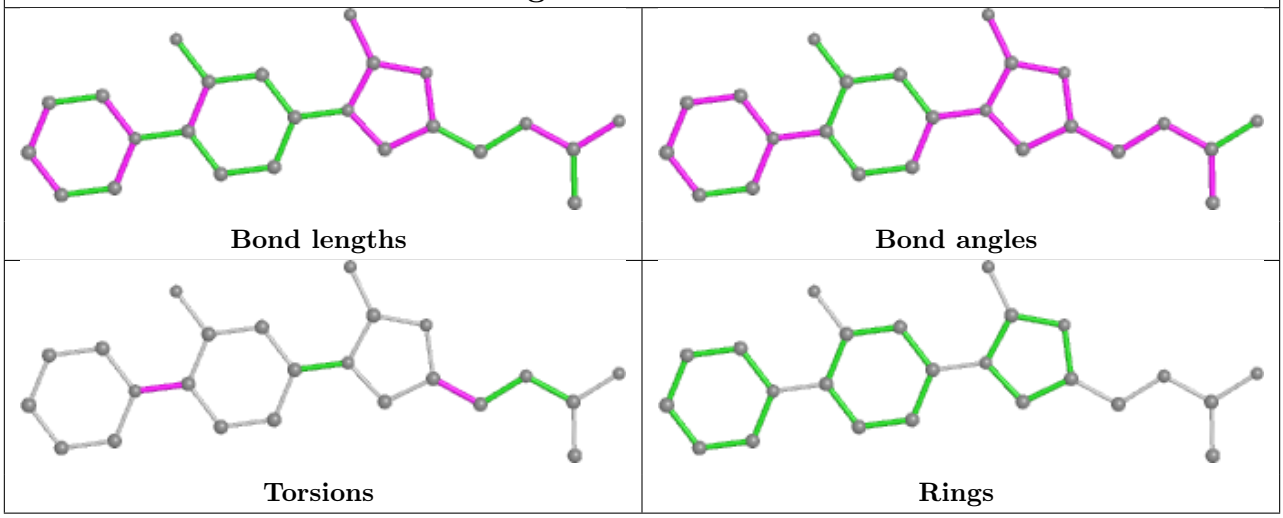
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	301	9EN	1	0
2	C	301	9EN	2	0
2	D	301	9EN	2	0

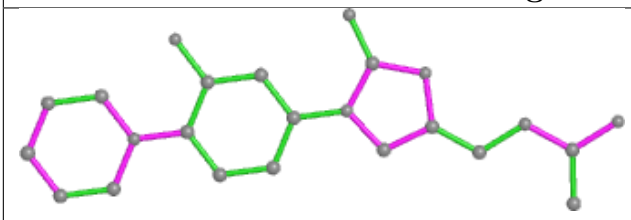
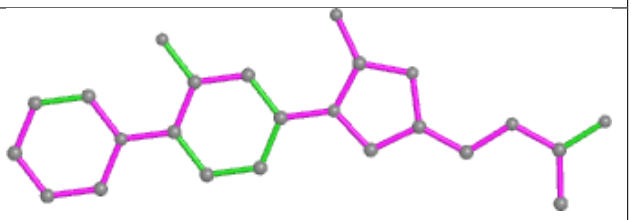
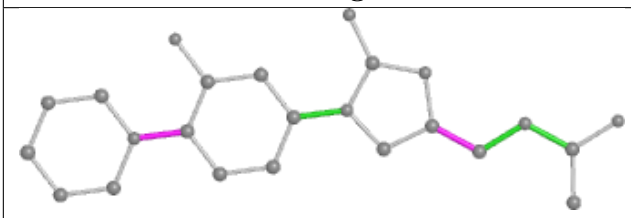
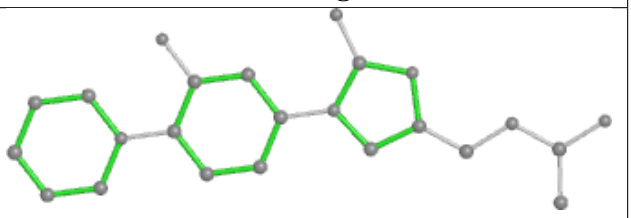
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less 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 9EN A 301



Ligand 9EN C 301



Ligand 9EN D 301	
 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	191/228 (83%)	-0.00	2 (1%) 82 88	37, 53, 90, 133	0
1	B	193/228 (84%)	-0.06	0 100 100	36, 54, 98, 152	0
1	C	189/228 (82%)	0.02	4 (2%) 63 73	41, 55, 95, 124	0
1	D	193/228 (84%)	-0.02	2 (1%) 82 88	45, 68, 129, 177	0
1	E	193/228 (84%)	0.04	3 (1%) 72 80	43, 64, 104, 163	0
1	F	193/228 (84%)	-0.06	2 (1%) 82 88	48, 63, 114, 158	0
1	G	192/228 (84%)	0.13	7 (3%) 42 53	59, 94, 138, 168	0
1	H	178/228 (78%)	0.78	28 (15%) 2 3	75, 124, 165, 180	0
All	All	1522/1824 (83%)	0.10	48 (3%) 47 58	36, 66, 139, 180	0

All (48) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	H	140	THR	6.8
1	H	186	SER	5.4
1	H	29	ILE	5.2
1	H	71	VAL	4.4
1	E	95	ALA	3.9
1	H	171	LEU	3.7
1	H	167	PRO	3.6
1	H	107	ILE	3.6
1	H	111	PHE	3.1
1	E	97	THR	3.1
1	H	168	ALA	3.0
1	H	162	ALA	3.0
1	C	90	LEU	2.9
1	H	114	PHE	2.9
1	H	110	PHE	2.9
1	H	64	TYR	2.9

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Mol	Chain	Res	Type	RSRZ
1	G	191	GLN	2.8
1	G	97	THR	2.7
1	G	27	LEU	2.7
1	G	192	PRO	2.6
1	H	146	ILE	2.6
1	C	22	GLY	2.6
1	H	161	ALA	2.5
1	H	212	TYR	2.5
1	H	23	ASP	2.5
1	H	139	SER	2.4
1	H	184	PHE	2.4
1	D	95	ALA	2.4
1	H	187	PHE	2.4
1	F	22	GLY	2.4
1	C	204	VAL	2.3
1	F	90	LEU	2.2
1	H	100	GLU	2.2
1	H	148	TYR	2.2
1	A	76	LEU	2.2
1	H	106	GLY	2.2
1	H	166	LEU	2.2
1	H	208	VAL	2.1
1	H	118	LYS	2.1
1	A	110	PHE	2.1
1	C	100	GLU	2.1
1	G	101	ASN	2.1
1	G	43	ALA	2.1
1	H	150	ALA	2.1
1	H	79	VAL	2.1
1	E	90	LEU	2.0
1	G	199	VAL	2.0
1	D	145	TRP	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)

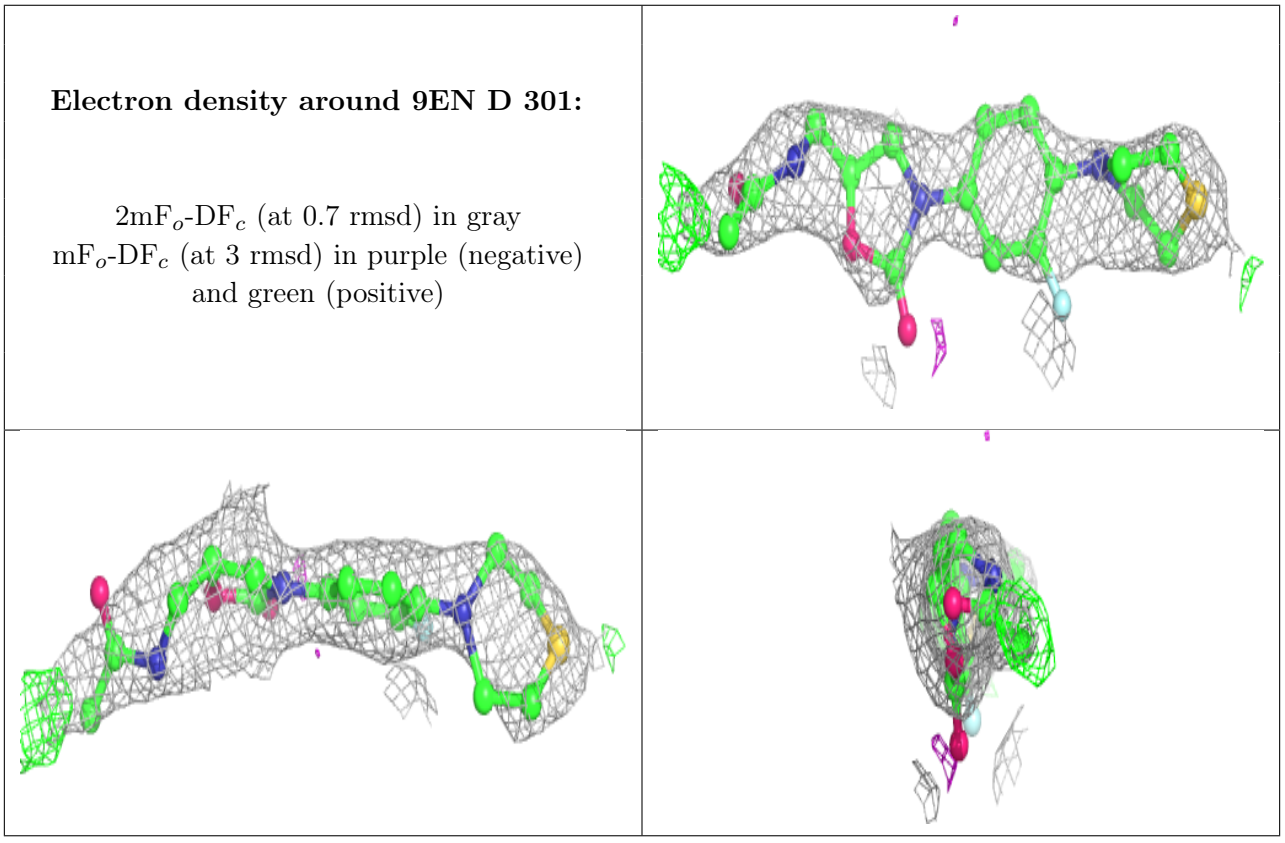
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' 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	9EN	D	301	24/24	0.86	0.33	114,129,134,140	0
2	9EN	A	301	24/24	0.91	0.40	73,106,112,128	0
2	9EN	C	301	24/24	0.95	0.18	65,78,96,98	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.

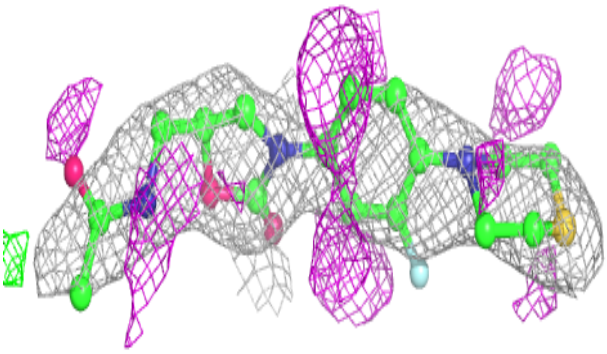
Electron density around 9EN D 301:

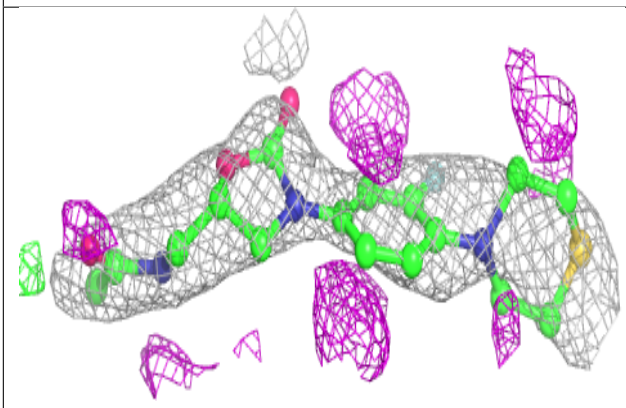
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

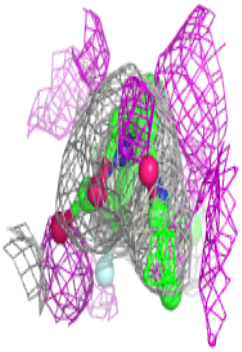


Electron density around 9EN A 301:

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

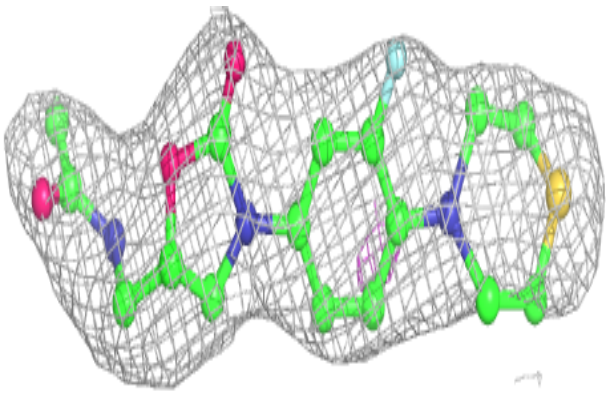


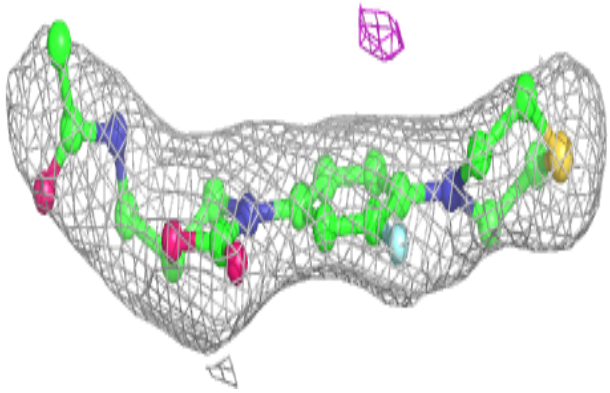


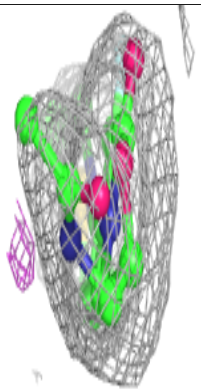


Electron density around 9EN C 301:

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







6.5 Other polymers (i)

There are no such residues in this entry.