



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 10, 2026 – 07:44 AM UTC

PDB ID : 5GSW / pdb_00005gsw
Title : Crystal structure of EV71 3C in complex with N69S 1.8k
Authors : Wang, Y.
Deposited on : 2016-08-17
Resolution : 3.19 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

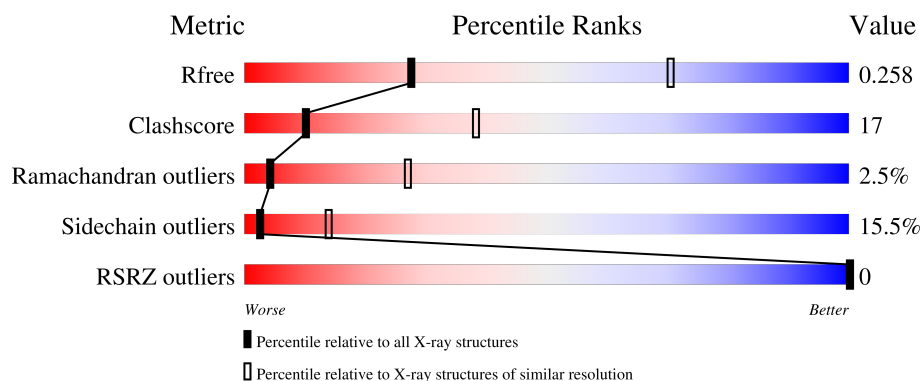
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.19 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	1466 (3.20-3.20)
Clashscore	190562	1573 (3.20-3.20)
Ramachandran outliers	187476	1548 (3.20-3.20)
Sidechain outliers	187428	1547 (3.20-3.20)
RSRZ outliers	180081	1466 (3.20-3.20)

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	183	 55% 38% 6% .
1	B	183	 55% 37% 7% .
1	C	183	 55% 36% 8% .
1	D	183	 51% 39% 9% ..
1	E	183	 50% 37% 11% ..

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 7172 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.

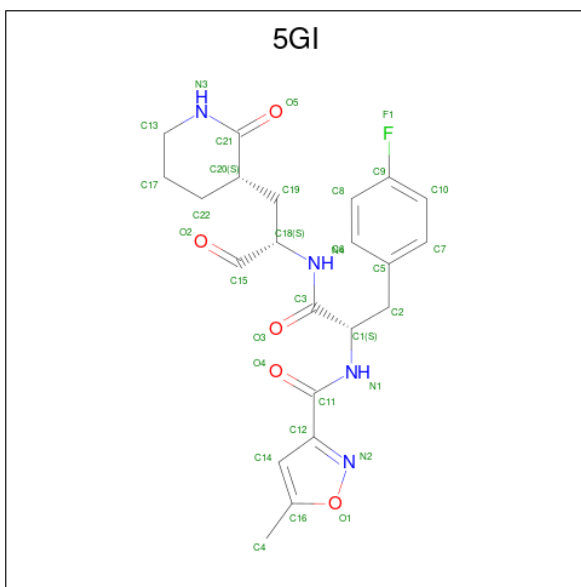
- Molecule 1 is a protein called 3C protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	181	Total	C	N	O	S	0	0	0
			1397	885	248	257	7			
1	B	180	Total	C	N	O	S	0	0	0
			1393	883	247	256	7			
1	C	181	Total	C	N	O	S	0	0	0
			1397	885	248	257	7			
1	D	181	Total	C	N	O	S	0	0	0
			1397	885	248	257	7			
1	E	181	Total	C	N	O	S	0	0	0
			1397	885	248	257	7			

There are 15 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	69	SER	ASN	engineered mutation	UNP E7E815
A	182	GLU	-	expression tag	UNP E7E815
A	183	GLN	-	expression tag	UNP E7E815
B	69	SER	ASN	engineered mutation	UNP E7E815
B	182	GLU	-	expression tag	UNP E7E815
B	183	GLN	-	expression tag	UNP E7E815
C	69	SER	ASN	engineered mutation	UNP E7E815
C	182	GLU	-	expression tag	UNP E7E815
C	183	GLN	-	expression tag	UNP E7E815
D	69	SER	ASN	engineered mutation	UNP E7E815
D	182	GLU	-	expression tag	UNP E7E815
D	183	GLN	-	expression tag	UNP E7E815
E	69	SER	ASN	engineered mutation	UNP E7E815
E	182	GLU	-	expression tag	UNP E7E815
E	183	GLN	-	expression tag	UNP E7E815

- Molecule 2 is {N}-[(2 {S})-3-(4-fluorophenyl)-1-oxidanylidene-1-[[[(2 {S})-1-oxidanylidene-3-[(3 {S})-2-oxidanylidene]piperidin-3-yl]propan-2-yl]amino]propan-2-yl]-5-methyl-1,2-oxazole-3-carboxamide (CCD ID: 5GI) (formula: C₂₂H₂₅FN₄O₅).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	F	N	O	0	0
			32	22	1	4	5		
2	B	1	Total	C	F	N	O	0	0
			32	22	1	4	5		
2	C	1	Total	C	F	N	O	0	0
			32	22	1	4	5		
2	D	1	Total	C	F	N	O	0	0
			32	22	1	4	5		
2	E	1	Total	C	F	N	O	0	0
			32	22	1	4	5		

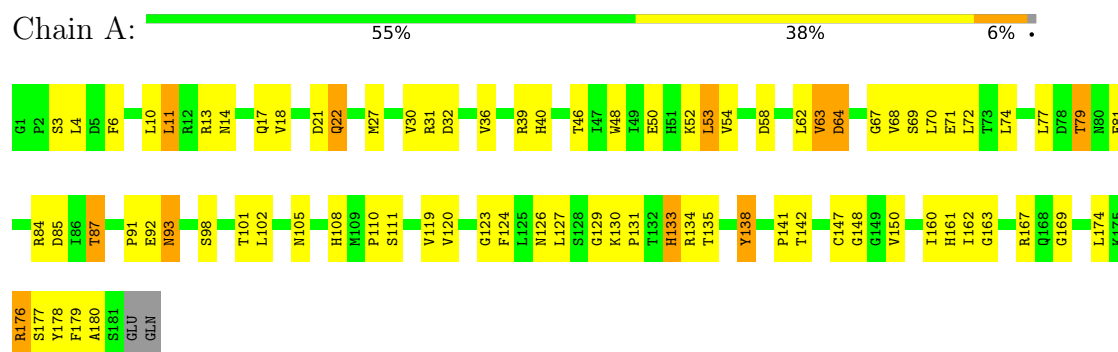
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	15	Total	O	0	0
			15	15		
3	B	4	Total	O	0	0
			4	4		
3	C	5	Total	O	0	0
			5	5		
3	D	3	Total	O	0	0
			3	3		
3	E	4	Total	O	0	0
			4	4		

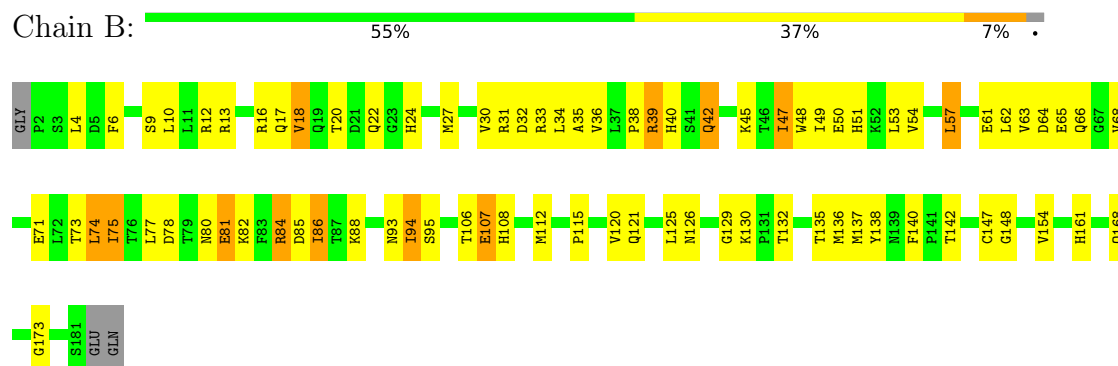
3 Residue-property plots [i](#)

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.

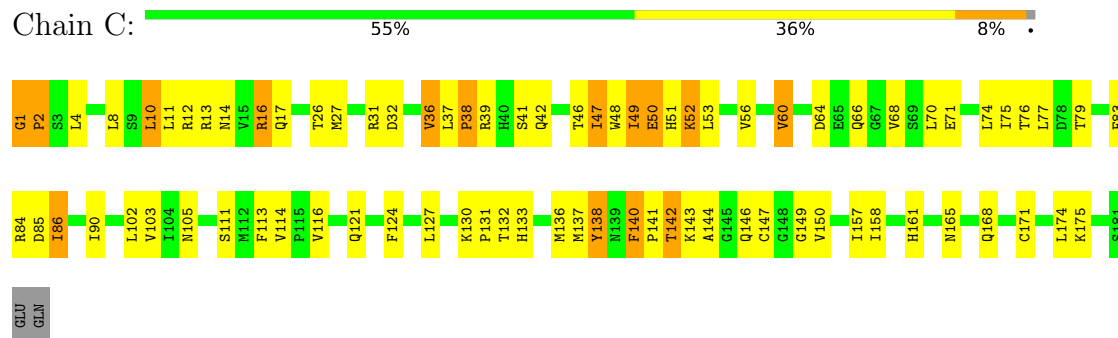
• Molecule 1: 3C protein



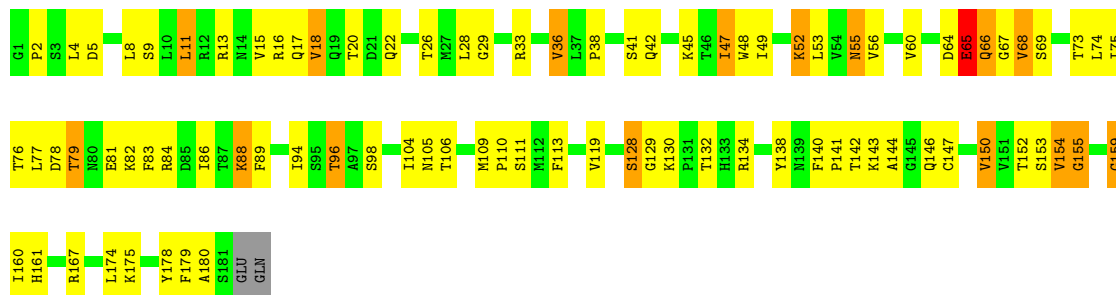
• Molecule 1: 3C protein



• Molecule 1: 3C protein



● Molecule 1: 3C protein

Chain D:  51% 39% 9% ..

● Molecule 1: 3C protein

Chain E:  50% 37% 11% ..

4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	94.50Å 70.53Å 94.92Å 90.00° 118.23° 90.00°	Depositor
Resolution (Å)	48.62 – 3.19 48.62 – 3.19	Depositor EDS
% Data completeness (in resolution range)	96.8 (48.62-3.19) 90.2 (48.62-3.19)	Depositor EDS
R_{merge}	0.16	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.07 (at 3.19Å)	Xtriage
Refinement program	PHENIX 1.9_1692	Depositor
R, R_{free}	0.189 , 0.268 0.191 , 0.258	Depositor DCC
R_{free} test set	1832 reflections (9.85%)	wwPDB-VP
Wilson B-factor (Å ²)	40.9	Xtriage
Anisotropy	0.319	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 54.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.44$, $\langle L^2 \rangle = 0.27$	Xtriage
Estimated twinning fraction	0.037 for -h-l,k,h 0.037 for l,k,-h-l 0.047 for h,-k,-h-l 0.056 for -h-l,-k,l 0.053 for l,-k,h	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	7172	wwPDB-VP
Average B, all atoms (Å ²)	36.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.66% 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: 5GI

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	0.88	0/1424	1.12	6/1928 (0.3%)
1	B	0.72	0/1420	1.10	4/1922 (0.2%)
1	C	0.72	0/1424	1.20	10/1928 (0.5%)
1	D	0.73	0/1424	1.11	5/1928 (0.3%)
1	E	0.69	0/1424	1.25	12/1928 (0.6%)
All	All	0.75	0/7116	1.16	37/9634 (0.4%)

There are no bond length outliers.

All (37) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	1	GLY	CA-C-N	13.16	136.28	119.84
1	E	1	GLY	C-N-CA	13.16	136.28	119.84
1	C	1	GLY	CA-C-N	8.89	130.96	119.84
1	C	1	GLY	C-N-CA	8.89	130.96	119.84
1	E	140	PHE	CA-C-N	7.02	128.61	119.84
1	E	140	PHE	C-N-CA	7.02	128.61	119.84
1	A	79	THR	N-CA-C	6.91	119.58	109.07
1	C	140	PHE	CA-C-N	6.64	128.14	119.84
1	C	140	PHE	C-N-CA	6.64	128.14	119.84
1	C	60	VAL	N-CA-C	6.60	117.39	107.75
1	E	5	ASP	N-CA-C	-6.43	103.39	111.11
1	B	45	LYS	N-CA-C	-6.07	104.78	111.82
1	A	129	GLY	N-CA-C	-6.00	107.16	113.58
1	A	98	SER	CA-C-N	-5.99	114.25	122.87
1	A	98	SER	C-N-CA	-5.99	114.25	122.87
1	E	159	GLY	N-CA-C	5.86	119.64	110.91
1	A	141	PRO	CA-C-N	5.78	129.32	121.05
1	A	141	PRO	C-N-CA	5.78	129.32	121.05
1	E	32	ASP	CB-CA-C	-5.57	109.66	117.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	155	GLY	N-CA-C	-5.52	106.96	116.01
1	C	90	ILE	CA-C-N	-5.47	114.32	119.85
1	C	90	ILE	C-N-CA	-5.47	114.32	119.85
1	D	159	GLY	N-CA-C	5.45	118.71	110.75
1	C	38	PRO	CA-C-O	-5.39	115.47	121.23
1	C	70	LEU	N-CA-C	-5.35	106.76	113.28
1	B	75	ILE	N-CA-C	5.30	116.11	108.48
1	D	150	VAL	N-CA-C	5.24	115.75	108.84
1	E	143	LYS	N-CA-C	5.18	116.86	109.14
1	E	56	VAL	CB-CA-C	-5.18	106.77	112.68
1	E	11	LEU	N-CA-C	5.15	118.43	112.97
1	D	60	VAL	N-CA-C	5.14	114.98	107.37
1	E	154	VAL	N-CA-C	5.11	119.98	109.34
1	C	32	ASP	CB-CA-C	-5.06	110.34	117.23
1	B	42	GLN	CA-C-N	5.03	125.03	119.90
1	B	42	GLN	C-N-CA	5.03	125.03	119.90
1	D	129	GLY	N-CA-C	-5.02	104.12	114.16
1	E	149	GLY	N-CA-C	-5.01	106.17	111.93

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	1397	0	1415	57	0
1	B	1393	0	1411	44	0
1	C	1397	0	1416	45	1
1	D	1397	0	1416	53	1
1	E	1397	0	1416	51	0
2	A	32	0	0	1	0
2	B	32	0	0	1	0
2	C	32	0	0	2	0
2	D	32	0	0	4	0
2	E	32	0	0	4	0
3	A	15	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	4	0	0	0	0
3	C	5	0	0	0	0
3	D	3	0	0	1	0
3	E	4	0	0	0	0
All	All	7172	0	7074	245	1

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 17.

All (245) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:63:VAL:HG12	1:A:68:VAL:O	1.69	0.92
1:E:13:ARG:O	1:E:16:ARG:NH1	2.17	0.78
1:E:87:THR:HA	1:E:90:ILE:HD12	1.65	0.76
1:D:11:LEU:HD23	1:D:15:VAL:HB	1.68	0.75
1:A:64:ASP:HB2	1:A:68:VAL:H	1.51	0.75
1:D:159:GLY:HA2	1:D:174:LEU:HG	1.70	0.73
1:C:138:TYR:OH	1:C:161:HIS:ND1	2.22	0.73
1:C:13:ARG:C	1:C:16:ARG:HH22	1.98	0.71
1:E:147:CYS:SG	2:E:201:5GI:N4	2.64	0.71
1:E:20:THR:HG22	1:E:47:ILE:HD11	1.72	0.71
1:D:142:THR:HG21	1:D:161:HIS:CE1	2.27	0.69
1:D:142:THR:HG21	1:D:161:HIS:HE1	1.57	0.68
1:B:18:VAL:HG22	1:B:49:ILE:HG12	1.76	0.66
1:E:46:THR:HG22	1:E:55:ASN:HA	1.77	0.66
1:D:64:ASP:HB3	1:D:68:VAL:HG23	1.78	0.66
1:B:27:MET:HE1	1:B:49:ILE:HD13	1.78	0.65
1:C:124:PHE:CZ	1:C:131:PRO:HB3	2.31	0.65
1:E:140:PHE:O	1:E:142:THR:N	2.28	0.65
1:A:68:VAL:HG12	1:A:69:SER:N	2.13	0.64
1:E:11:LEU:HD12	1:E:152:THR:HG21	1.79	0.64
1:B:20:THR:HG22	1:B:47:ILE:HG13	1.79	0.63
1:C:142:THR:HG21	1:C:161:HIS:CE1	2.32	0.63
1:A:142:THR:HG21	1:A:169:GLY:HA2	1.81	0.63
1:A:14:ASN:OD1	1:A:84:ARG:NH2	2.33	0.62
1:C:11:LEU:HD12	1:C:113:PHE:HE1	1.65	0.62
1:D:153:SER:O	1:D:155:GLY:N	2.32	0.62
1:B:93:ASN:O	1:B:95:SER:OG	2.17	0.62
1:B:80:ASN:N	1:B:81:GLU:OE2	2.31	0.61
1:C:147:CYS:SG	2:C:201:5GI:N4	2.74	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:13:ARG:HG2	1:A:84:ARG:HE	1.66	0.61
1:A:46:THR:HB	1:A:53:LEU:HD21	1.83	0.61
1:C:136:MET:HE1	1:C:158:ILE:HD12	1.82	0.60
1:D:13:ARG:NH2	1:D:84:ARG:HD3	2.16	0.60
1:C:49:ILE:O	1:C:52:LYS:HG3	2.02	0.60
1:B:94:ILE:HD13	1:B:173:GLY:HA3	1.83	0.60
1:B:112:MET:HE2	1:D:167:ARG:HG3	1.83	0.60
1:A:40:HIS:ND1	1:A:71:GLU:OE2	2.33	0.60
1:C:31:ARG:HB3	1:C:85:ASP:HA	1.84	0.60
1:E:121:GLN:HA	1:E:136:MET:HG2	1.85	0.59
1:C:39:ARG:NH2	1:C:71:GLU:OE1	2.35	0.59
1:C:64:ASP:HB3	1:C:66:GLN:H	1.67	0.59
1:D:160:ILE:HG12	1:D:174:LEU:HD21	1.85	0.59
1:C:11:LEU:HD12	1:C:113:PHE:CE1	2.37	0.58
1:D:64:ASP:O	1:D:67:GLY:N	2.30	0.58
1:C:8:LEU:O	1:C:12:ARG:HG3	2.03	0.58
1:E:1:GLY:O	1:E:4:LEU:HD23	2.03	0.58
1:D:36:VAL:HG13	1:D:74:LEU:HG	1.86	0.58
1:E:147:CYS:SG	2:E:201:5GI:C15	2.93	0.57
1:C:144:ALA:HA	2:C:201:5GI:C19	2.34	0.57
1:D:147:CYS:SG	2:D:201:5GI:N4	2.78	0.57
1:E:14:ASN:ND2	1:E:84:ARG:O	2.38	0.57
1:A:21:ASP:OD1	1:B:84:ARG:NH1	2.38	0.57
1:B:142:THR:HG21	1:B:161:HIS:CE1	2.40	0.56
1:C:11:LEU:HD11	1:C:111:SER:HA	1.88	0.56
1:D:48:TRP:CZ2	1:D:53:LEU:HB2	2.41	0.56
1:C:10:LEU:HD12	1:C:14:ASN:HB2	1.87	0.56
1:D:88:LYS:HE2	1:D:89:PHE:CZ	2.40	0.56
1:E:65:GLU:HG2	1:E:66:GLN:OE1	2.06	0.56
1:A:62:LEU:HD21	1:A:74:LEU:HD13	1.86	0.56
1:E:28:LEU:HB3	1:E:36:VAL:HG23	1.88	0.56
1:B:142:THR:HG21	1:B:161:HIS:HE1	1.69	0.56
1:B:125:LEU:HD23	1:B:135:THR:HG21	1.88	0.55
1:A:17:GLN:HG2	1:A:105:ASN:O	2.06	0.55
1:B:38:PRO:O	1:B:40:HIS:N	2.40	0.55
1:C:142:THR:HG21	1:C:161:HIS:HE1	1.72	0.55
1:E:153:SER:O	1:E:155:GLY:N	2.40	0.55
1:A:102:LEU:HD12	1:A:150:VAL:O	2.07	0.55
1:C:140:PHE:CG	1:C:141:PRO:HD2	2.42	0.55
1:B:62:LEU:HD21	1:B:74:LEU:HD22	1.87	0.54
1:A:64:ASP:HB2	1:A:68:VAL:N	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:92:GLU:HG2	1:A:176:ARG:HH21	1.72	0.54
1:B:24:HIS:CE1	1:B:108:HIS:NE2	2.76	0.54
1:A:178:TYR:HB2	1:A:179:PHE:CE1	2.42	0.54
1:A:119:VAL:HG22	1:A:138:TYR:HD2	1.73	0.54
1:B:48:TRP:CH2	1:B:53:LEU:HD12	2.43	0.53
1:E:138:TYR:OH	1:E:161:HIS:ND1	2.30	0.53
1:D:26:THR:HG23	1:D:105:ASN:H	1.74	0.53
1:D:11:LEU:HD12	1:D:113:PHE:CZ	2.44	0.53
1:B:140:PHE:O	1:B:142:THR:N	2.41	0.52
1:A:39:ARG:HB2	1:A:72:LEU:N	2.24	0.52
1:E:4:LEU:HB3	1:E:101:THR:HG21	1.91	0.52
1:D:18:VAL:HG23	1:D:49:ILE:HG23	1.91	0.51
1:D:106:THR:OG1	1:D:109:MET:N	2.43	0.51
1:B:38:PRO:HD3	1:B:148:GLY:HA2	1.91	0.51
1:D:175:LYS:NZ	3:D:301:HOH:O	2.44	0.51
1:E:68:VAL:HB	1:E:133:HIS:HD2	1.76	0.51
1:D:75:ILE:HD12	1:D:77:LEU:HD21	1.92	0.51
1:E:125:LEU:HD11	1:E:127:LEU:HD21	1.92	0.51
1:E:164:GLY:HA2	1:E:170:PHE:HD2	1.74	0.51
1:C:77:LEU:HD12	1:C:83:PHE:HE2	1.76	0.51
1:A:64:ASP:CB	1:A:68:VAL:H	2.22	0.51
1:E:33:ARG:O	1:E:77:LEU:N	2.38	0.51
1:B:50:GLU:O	1:B:51:HIS:HB2	2.09	0.51
1:D:48:TRP:NE1	1:D:53:LEU:HD12	2.26	0.51
1:A:71:GLU:O	1:A:71:GLU:HG3	2.10	0.50
1:D:153:SER:C	1:D:155:GLY:H	2.19	0.50
1:A:126:ASN:ND2	1:A:131:PRO:HG3	2.27	0.50
1:D:26:THR:CG2	1:D:105:ASN:H	2.25	0.50
1:A:127:LEU:CD1	1:A:163:GLY:HA3	2.40	0.50
1:B:71:GLU:HB2	1:B:132:THR:HG21	1.94	0.50
1:A:142:THR:HG21	1:A:169:GLY:CA	2.41	0.49
1:B:31:ARG:HB3	1:B:85:ASP:HA	1.93	0.49
1:A:68:VAL:HG12	1:A:69:SER:H	1.76	0.49
1:E:30:VAL:HA	1:E:86:ILE:HD11	1.94	0.49
1:A:124:PHE:CE1	1:A:131:PRO:HB3	2.47	0.49
1:C:143:LYS:N	1:C:146:GLN:OE1	2.24	0.49
1:D:4:LEU:O	1:D:8:LEU:HD13	2.12	0.49
1:E:65:GLU:HG2	1:E:66:GLN:CD	2.38	0.49
1:A:91:PRO:HB2	1:A:93:ASN:O	2.13	0.49
1:A:68:VAL:CG1	1:A:69:SER:N	2.76	0.49
1:A:160:ILE:HG12	1:A:174:LEU:HD21	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:50:GLU:O	1:E:51:HIS:HB2	2.12	0.49
1:A:69:SER:O	1:A:70:LEU:HD23	2.12	0.49
1:D:78:ASP:O	1:D:79:THR:HG23	2.13	0.49
1:E:39:ARG:HB3	1:E:71:GLU:OE2	2.12	0.49
1:E:3:SER:OG	1:E:101:THR:HG23	2.14	0.48
1:A:64:ASP:C	1:A:67:GLY:H	2.21	0.48
1:A:127:LEU:HD11	1:A:163:GLY:HA3	1.94	0.48
1:C:13:ARG:O	1:C:16:ARG:NH2	2.39	0.48
1:D:20:THR:C	1:D:22:GLN:H	2.21	0.48
1:E:19:GLN:O	1:E:48:TRP:HD1	1.96	0.48
1:C:64:ASP:HB2	1:C:68:VAL:HB	1.95	0.48
1:C:4:LEU:HD12	1:C:113:PHE:CE2	2.48	0.48
1:D:79:THR:HB	1:D:81:GLU:OE2	2.12	0.48
1:D:106:THR:O	1:D:109:MET:N	2.46	0.48
1:A:108:HIS:O	1:A:110:PRO:HD3	2.14	0.48
1:C:157:ILE:HG22	1:C:174:LEU:HD12	1.94	0.48
1:E:70:LEU:HD22	1:E:134:ARG:HD2	1.95	0.48
1:C:12:ARG:O	1:C:16:ARG:NH1	2.45	0.47
1:A:133:HIS:HB3	1:A:134:ARG:HG3	1.95	0.47
1:E:12:ARG:HH11	1:E:12:ARG:HB3	1.79	0.47
1:A:147:CYS:HB2	2:A:201:5GI:C15	2.22	0.47
1:C:26:THR:HG21	1:C:149:GLY:HA2	1.96	0.47
1:C:46:THR:HG21	1:C:53:LEU:HD21	1.97	0.47
1:E:91:PRO:HD3	1:E:157:ILE:O	2.14	0.47
1:A:30:VAL:HG12	1:A:31:ARG:HG2	1.97	0.47
1:E:153:SER:OG	1:E:154:VAL:HG22	2.15	0.47
1:A:31:ARG:HD2	1:A:32:ASP:OD2	2.15	0.46
1:B:137:MET:HG2	1:B:138:TYR:N	2.31	0.46
1:C:50:GLU:C	1:C:52:LYS:H	2.23	0.46
1:E:72:LEU:HD21	1:E:172:ALA:HB3	1.97	0.46
1:C:130:LYS:HA	1:C:131:PRO:HD3	1.76	0.46
1:D:104:ILE:HD13	1:D:146:GLN:HG2	1.97	0.46
1:C:60:VAL:O	1:C:74:LEU:N	2.35	0.46
1:E:58:ASP:OD1	1:E:59:ALA:N	2.48	0.46
1:E:90:ILE:O	1:E:176:ARG:NH2	2.47	0.46
1:E:18:VAL:HA	1:E:48:TRP:O	2.16	0.46
1:A:123:GLY:O	1:A:135:THR:OG1	2.28	0.46
1:C:36:VAL:HG13	1:C:74:LEU:HD12	1.97	0.46
1:D:144:ALA:HA	2:D:201:5GI:C19	2.46	0.46
1:E:142:THR:OG1	1:E:161:HIS:CE1	2.69	0.46
1:B:126:ASN:OD1	1:B:129:GLY:N	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1:GLY:HA3	1:C:2:PRO:HD2	1.67	0.46
1:C:165:ASN:HD21	1:C:168:GLN:HB2	1.80	0.46
1:C:86:ILE:HG13	1:C:157:ILE:CD1	2.46	0.45
1:D:17:GLN:HA	1:D:105:ASN:O	2.16	0.45
1:A:54:VAL:HG11	1:A:77:LEU:HD22	1.97	0.45
1:D:74:LEU:HD21	1:D:179:PHE:CD1	2.51	0.45
1:E:57:LEU:HD12	1:E:77:LEU:O	2.16	0.45
1:D:65:GLU:CD	1:D:134:ARG:HH22	2.24	0.45
1:E:26:THR:HB	1:E:148:GLY:C	2.41	0.45
1:E:147:CYS:SG	2:E:201:5GI:C18	3.05	0.45
1:B:51:HIS:NE2	1:B:107:GLU:OE1	2.47	0.45
1:B:35:ALA:HB3	1:B:75:ILE:HG13	1.98	0.45
1:D:64:ASP:C	1:D:66:GLN:H	2.25	0.45
1:E:36:VAL:O	1:E:37:LEU:HG	2.16	0.45
1:D:47:ILE:HG22	1:D:56:VAL:HG22	1.99	0.45
1:B:137:MET:SD	1:B:168:GLN:HG2	2.57	0.45
1:D:55:ASN:ND2	1:D:78:ASP:HB3	2.32	0.45
1:E:26:THR:HB	1:E:148:GLY:O	2.16	0.44
1:A:6:PHE:CE1	1:A:10:LEU:HD22	2.52	0.44
1:A:92:GLU:CD	1:A:176:ARG:HH21	2.25	0.44
1:D:83:PHE:O	1:D:84:ARG:C	2.60	0.44
1:B:32:ASP:HA	1:B:82:LYS:HB3	1.99	0.44
1:B:32:ASP:O	1:B:82:LYS:HA	2.18	0.44
1:B:147:CYS:SG	2:B:201:5GI:N4	2.91	0.44
1:E:64:ASP:HB3	1:E:68:VAL:H	1.82	0.44
1:A:138:TYR:OH	1:A:161:HIS:ND1	2.32	0.44
1:D:48:TRP:CZ3	1:D:52:LYS:HA	2.53	0.44
1:A:68:VAL:CG1	1:A:69:SER:H	2.31	0.44
1:B:34:LEU:HD12	1:B:35:ALA:H	1.83	0.44
1:D:33:ARG:CZ	1:D:33:ARG:HB2	2.45	0.44
1:A:27:MET:HB3	1:A:27:MET:HE2	1.79	0.43
1:A:64:ASP:O	1:A:67:GLY:N	2.47	0.43
1:C:103:VAL:O	1:C:150:VAL:N	2.48	0.43
1:E:137:MET:HG2	1:E:138:TYR:N	2.33	0.43
1:B:57:LEU:HD21	1:B:78:ASP:HB2	2.00	0.43
1:D:96:THR:HG22	1:D:119:VAL:O	2.18	0.43
1:C:38:PRO:O	1:C:39:ARG:C	2.62	0.43
1:D:175:LYS:HG2	1:D:178:TYR:CE1	2.54	0.43
1:A:71:GLU:HG2	1:A:162:ILE:HG21	1.99	0.43
1:A:119:VAL:HG22	1:A:138:TYR:CD2	2.51	0.43
1:A:178:TYR:HB2	1:A:179:PHE:CD1	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:57:LEU:HD11	1:B:78:ASP:HA	2.01	0.43
1:D:38:PRO:HG2	1:D:41:SER:HB3	2.01	0.43
1:B:49:ILE:HD12	1:B:54:VAL:HG21	2.01	0.43
1:E:142:THR:HG23	2:E:201:5GI:O5	2.19	0.43
1:A:127:LEU:HD23	1:A:127:LEU:HA	1.79	0.43
1:C:46:THR:CG2	1:C:53:LEU:HD21	2.48	0.43
1:B:30:VAL:O	1:B:86:ILE:HD13	2.19	0.43
1:A:92:GLU:CG	1:A:176:ARG:HH21	2.32	0.42
1:D:140:PHE:CG	1:D:141:PRO:HD2	2.54	0.42
1:C:121:GLN:HA	1:C:136:MET:HG2	1.99	0.42
1:D:28:LEU:HD13	1:D:150:VAL:HG21	2.00	0.42
1:E:69:SER:O	1:E:70:LEU:HD23	2.20	0.42
1:A:85:ASP:CG	1:A:87:THR:HG1	2.27	0.42
1:E:31:ARG:HB3	1:E:85:ASP:OD1	2.19	0.42
1:A:71:GLU:HG2	1:A:162:ILE:CG2	2.50	0.42
1:A:22:GLN:O	1:B:88:LYS:HD2	2.20	0.42
1:A:11:LEU:HD11	1:A:111:SER:HA	2.02	0.41
1:E:176:ARG:C	1:E:178:TYR:H	2.27	0.41
1:B:39:ARG:HA	1:B:73:THR:OG1	2.20	0.41
1:C:114:VAL:O	1:C:116:VAL:HG13	2.20	0.41
1:A:21:ASP:CG	1:B:84:ARG:HH11	2.29	0.41
1:A:48:TRP:CH2	1:B:6:PHE:HA	2.55	0.41
1:C:27:MET:HB2	1:C:37:LEU:HD21	2.03	0.41
1:A:4:LEU:HD21	1:A:101:THR:HG21	2.03	0.41
1:E:30:VAL:HA	1:E:86:ILE:CD1	2.50	0.41
1:D:147:CYS:HG	2:D:201:5GI:C15	2.32	0.41
1:E:11:LEU:HD23	1:E:14:ASN:HB2	2.02	0.41
1:B:18:VAL:CG2	1:B:49:ILE:HG12	2.48	0.41
1:B:33:ARG:HE	1:B:33:ARG:HB2	1.40	0.41
1:C:17:GLN:HG2	1:C:105:ASN:O	2.21	0.41
1:C:84:ARG:HG2	1:C:85:ASP:N	2.35	0.41
1:C:138:TYR:HE1	1:C:171:CYS:HB3	1.85	0.41
1:E:68:VAL:HB	1:E:133:HIS:CD2	2.54	0.41
1:A:148:GLY:O	1:A:160:ILE:HG23	2.21	0.41
1:B:75:ILE:HD12	1:B:77:LEU:HD21	2.03	0.41
1:D:20:THR:C	1:D:22:GLN:N	2.79	0.41
1:D:142:THR:CG2	1:D:161:HIS:CE1	3.01	0.41
1:D:160:ILE:HD11	1:D:174:LEU:HD11	2.03	0.41
1:E:104:ILE:HD13	1:E:146:GLN:HG2	2.02	0.41
1:B:17:GLN:HG2	1:B:106:THR:C	2.46	0.40
1:D:29:GLY:HA3	1:D:83:PHE:CD1	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:64:ASP:HB3	1:E:68:VAL:HG23	2.02	0.40
1:B:84:ARG:HG2	1:B:86:ILE:HG22	2.03	0.40
1:D:110:PRO:O	1:D:111:SER:C	2.63	0.40
1:D:130:LYS:HD2	2:D:201:5GI:F1	2.11	0.40
1:A:79:THR:HB	1:A:81:GLU:H	1.86	0.40
1:C:47:ILE:HG12	1:C:48:TRP:N	2.36	0.40
1:C:137:MET:SD	1:C:168:GLN:HG2	2.61	0.40
1:D:81:GLU:H	1:D:81:GLU:CD	2.30	0.40
1:B:126:ASN:HD21	1:B:129:GLY:C	2.30	0.40
1:B:136:MET:HE3	1:B:136:MET:HB2	1.93	0.40
1:D:69:SER:O	1:D:132:THR:HA	2.22	0.40

All (1) 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:C:165:ASN:ND2	1:D:111:SER:O[1_455]	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	179/183 (98%)	151 (84%)	27 (15%)	1 (1%)	21	56
1	B	178/183 (97%)	149 (84%)	23 (13%)	6 (3%)	3	20
1	C	179/183 (98%)	151 (84%)	25 (14%)	3 (2%)	7	35
1	D	179/183 (98%)	156 (87%)	18 (10%)	5 (3%)	4	25
1	E	179/183 (98%)	145 (81%)	27 (15%)	7 (4%)	2	18
All	All	894/915 (98%)	752 (84%)	120 (13%)	22 (2%)	4	27

All (22) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	9	SER
1	B	10	LEU
1	B	39	ARG
1	B	64	ASP
1	D	154	VAL
1	C	51	HIS
1	D	65	GLU
1	D	128	SER
1	E	2	PRO
1	E	141	PRO
1	E	154	VAL
1	A	180	ALA
1	B	115	PRO
1	B	154	VAL
1	C	2	PRO
1	D	2	PRO
1	D	180	ALA
1	E	12	ARG
1	E	128	SER
1	C	127	LEU
1	E	117	GLY
1	E	131	PRO

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	155/157 (99%)	135 (87%)	20 (13%)	4	20
1	B	155/157 (99%)	131 (84%)	24 (16%)	2	14
1	C	155/157 (99%)	135 (87%)	20 (13%)	4	20
1	D	155/157 (99%)	127 (82%)	28 (18%)	2	9
1	E	155/157 (99%)	127 (82%)	28 (18%)	2	9
All	All	775/785 (99%)	655 (84%)	120 (16%)	2	14

All (120) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	SER
1	A	11	LEU
1	A	18	VAL
1	A	22	GLN
1	A	36	VAL
1	A	50	GLU
1	A	52	LYS
1	A	53	LEU
1	A	58	ASP
1	A	63	VAL
1	A	64	ASP
1	A	87	THR
1	A	93	ASN
1	A	120	VAL
1	A	130	LYS
1	A	133	HIS
1	A	138	TYR
1	A	167	ARG
1	A	176	ARG
1	A	177	SER
1	B	4	LEU
1	B	12	ARG
1	B	13	ARG
1	B	16	ARG
1	B	18	VAL
1	B	22	GLN
1	B	36	VAL
1	B	42	GLN
1	B	47	ILE
1	B	57	LEU
1	B	61	GLU
1	B	63	VAL
1	B	65	GLU
1	B	66	GLN
1	B	68	VAL
1	B	74	LEU
1	B	81	GLU
1	B	84	ARG
1	B	86	ILE
1	B	94	ILE
1	B	107	GLU
1	B	120	VAL
1	B	121	GLN

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Mol	Chain	Res	Type
1	B	130	LYS
1	C	10	LEU
1	C	16	ARG
1	C	36	VAL
1	C	41	SER
1	C	42	GLN
1	C	47	ILE
1	C	49	ILE
1	C	50	GLU
1	C	52	LYS
1	C	56	VAL
1	C	75	ILE
1	C	76	THR
1	C	79	THR
1	C	86	ILE
1	C	102	LEU
1	C	132	THR
1	C	133	HIS
1	C	138	TYR
1	C	142	THR
1	C	175	LYS
1	D	5	ASP
1	D	9	SER
1	D	11	LEU
1	D	16	ARG
1	D	18	VAL
1	D	36	VAL
1	D	42	GLN
1	D	45	LYS
1	D	47	ILE
1	D	52	LYS
1	D	55	ASN
1	D	65	GLU
1	D	66	GLN
1	D	68	VAL
1	D	73	THR
1	D	76	THR
1	D	79	THR
1	D	82	LYS
1	D	86	ILE
1	D	88	LYS
1	D	94	ILE

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Mol	Chain	Res	Type
1	D	96	THR
1	D	98	SER
1	D	128	SER
1	D	138	TYR
1	D	143	LYS
1	D	152	THR
1	D	154	VAL
1	E	4	LEU
1	E	8	LEU
1	E	10	LEU
1	E	12	ARG
1	E	13	ARG
1	E	30	VAL
1	E	36	VAL
1	E	47	ILE
1	E	50	GLU
1	E	52	LYS
1	E	60	VAL
1	E	62	LEU
1	E	65	GLU
1	E	68	VAL
1	E	84	ARG
1	E	87	THR
1	E	88	LYS
1	E	102	LEU
1	E	104	ILE
1	E	109	MET
1	E	120	VAL
1	E	137	MET
1	E	138	TYR
1	E	142	THR
1	E	143	LYS
1	E	152	THR
1	E	153	SER
1	E	177	SER

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	66	GLN
1	A	108	HIS
1	B	24	HIS

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Mol	Chain	Res	Type
1	B	55	ASN
1	B	93	ASN
1	C	24	HIS
1	C	133	HIS
1	D	24	HIS
1	D	55	ASN
1	D	66	GLN
1	E	19	GLN
1	E	24	HIS

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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

5 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	5GI	A	201	-	33,34,34	2.77	12 (36%)	41,46,46	3.28	13 (31%)
2	5GI	E	201	-	33,34,34	2.91	9 (27%)	41,46,46	3.48	17 (41%)
2	5GI	C	201	-	33,34,34	3.03	10 (30%)	41,46,46	3.54	16 (39%)
2	5GI	D	201	-	33,34,34	2.96	9 (27%)	41,46,46	3.64	15 (36%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	5GI	B	201	-	33,34,34	2.97	9 (27%)	41,46,46	3.71	20 (48%)

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	5GI	A	201	-	-	2/25/37/37	0/3/3/3
2	5GI	E	201	-	-	1/25/37/37	0/3/3/3
2	5GI	C	201	-	-	2/25/37/37	0/3/3/3
2	5GI	D	201	-	-	3/25/37/37	0/3/3/3
2	5GI	B	201	-	-	4/25/37/37	0/3/3/3

All (49) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	201	5GI	O5-C21	8.77	1.40	1.23
2	E	201	5GI	O5-C21	8.60	1.39	1.23
2	B	201	5GI	O5-C21	8.42	1.39	1.23
2	B	201	5GI	C21-N3	8.29	1.47	1.33
2	D	201	5GI	O5-C21	8.24	1.39	1.23
2	C	201	5GI	C21-N3	8.19	1.47	1.33
2	D	201	5GI	C21-N3	8.19	1.47	1.33
2	A	201	5GI	C21-N3	7.67	1.46	1.33
2	E	201	5GI	C21-N3	7.66	1.46	1.33
2	A	201	5GI	O5-C21	6.95	1.36	1.23
2	A	201	5GI	O1-N2	-5.92	1.31	1.42
2	C	201	5GI	C14-C16	5.72	1.45	1.34
2	D	201	5GI	C14-C16	5.72	1.45	1.34
2	E	201	5GI	C14-C16	5.69	1.45	1.34
2	B	201	5GI	C14-C16	5.56	1.45	1.34
2	D	201	5GI	C11-N1	4.97	1.44	1.34
2	B	201	5GI	O1-N2	-4.95	1.33	1.42
2	E	201	5GI	O1-N2	-4.89	1.33	1.42
2	B	201	5GI	C11-N1	4.86	1.44	1.34
2	E	201	5GI	C11-N1	4.82	1.44	1.34
2	C	201	5GI	C11-N1	4.80	1.44	1.34
2	D	201	5GI	O1-N2	-4.79	1.33	1.42
2	C	201	5GI	O1-N2	-4.76	1.33	1.42
2	A	201	5GI	C14-C16	4.65	1.43	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	201	5GI	C3-N4	4.60	1.43	1.34
2	C	201	5GI	C12-C11	4.29	1.56	1.48
2	D	201	5GI	C12-C11	4.25	1.56	1.48
2	B	201	5GI	C12-C11	4.10	1.56	1.48
2	D	201	5GI	C3-N4	4.05	1.42	1.34
2	C	201	5GI	C3-N4	4.01	1.42	1.34
2	E	201	5GI	C3-N4	4.00	1.42	1.34
2	E	201	5GI	C12-C11	3.97	1.56	1.48
2	A	201	5GI	O1-C16	-3.71	1.30	1.35
2	A	201	5GI	C3-N4	3.49	1.41	1.34
2	C	201	5GI	C17-C22	-3.18	1.45	1.53
2	A	201	5GI	C11-N1	3.08	1.40	1.34
2	D	201	5GI	C17-C22	-3.05	1.45	1.53
2	B	201	5GI	C17-C22	-3.02	1.45	1.53
2	A	201	5GI	C1-N1	-3.01	1.39	1.45
2	E	201	5GI	C17-C22	-2.74	1.46	1.53
2	A	201	5GI	C18-N4	-2.72	1.42	1.46
2	A	201	5GI	C17-C22	-2.44	1.47	1.53
2	D	201	5GI	O1-C16	-2.40	1.31	1.35
2	C	201	5GI	O1-C16	-2.39	1.31	1.35
2	E	201	5GI	O1-C16	-2.37	1.31	1.35
2	B	201	5GI	O1-C16	-2.32	1.31	1.35
2	A	201	5GI	F1-C9	-2.18	1.31	1.36
2	A	201	5GI	O3-C3	-2.11	1.19	1.23
2	C	201	5GI	O2-C15	2.03	1.27	1.20

All (81) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	201	5GI	O5-C21-N3	-10.28	108.49	122.41
2	D	201	5GI	O5-C21-N3	-10.23	108.56	122.41
2	A	201	5GI	O5-C21-N3	-9.77	109.18	122.41
2	C	201	5GI	O5-C21-N3	-9.52	109.52	122.41
2	E	201	5GI	O5-C21-N3	-9.38	109.71	122.41
2	C	201	5GI	C14-C12-N2	-9.06	104.56	112.11
2	D	201	5GI	C14-C12-N2	-8.85	104.73	112.11
2	D	201	5GI	O5-C21-C20	-8.83	108.08	122.72
2	A	201	5GI	O5-C21-C20	-8.78	108.17	122.72
2	B	201	5GI	O5-C21-C20	-8.75	108.23	122.72
2	E	201	5GI	C14-C12-N2	-8.45	105.06	112.11
2	B	201	5GI	C14-C12-N2	-8.29	105.20	112.11
2	A	201	5GI	O1-C16-C4	7.39	126.06	115.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	201	5GI	C19-C18-C15	7.34	122.29	110.99
2	E	201	5GI	O1-C16-C4	7.33	125.98	115.89
2	C	201	5GI	O1-C16-C4	7.29	125.92	115.89
2	B	201	5GI	O1-C16-C4	7.22	125.82	115.89
2	D	201	5GI	O1-C16-C4	7.21	125.81	115.89
2	C	201	5GI	O1-N2-C12	6.90	112.39	104.91
2	D	201	5GI	O1-N2-C12	6.79	112.27	104.91
2	E	201	5GI	O1-N2-C12	6.71	112.19	104.91
2	B	201	5GI	O1-N2-C12	6.52	111.98	104.91
2	B	201	5GI	C1-C3-N4	6.42	130.33	116.63
2	E	201	5GI	O5-C21-C20	-6.39	112.13	122.72
2	C	201	5GI	C3-C1-N1	-5.92	95.11	111.11
2	C	201	5GI	C1-C3-N4	5.72	128.83	116.63
2	C	201	5GI	O5-C21-C20	-5.61	113.42	122.72
2	D	201	5GI	C1-C3-N4	5.52	128.40	116.63
2	A	201	5GI	C14-C12-N2	-5.48	107.54	112.11
2	B	201	5GI	C3-C1-N1	-5.08	97.38	111.11
2	A	201	5GI	O1-N2-C12	5.04	110.38	104.91
2	D	201	5GI	C3-C1-N1	-5.03	97.49	111.11
2	D	201	5GI	C12-C11-N1	5.02	122.35	115.22
2	C	201	5GI	C13-N3-C21	-5.01	112.23	125.79
2	C	201	5GI	C12-C11-N1	4.98	122.30	115.22
2	E	201	5GI	C3-C1-N1	-4.92	97.81	111.11
2	E	201	5GI	C13-N3-C21	-4.76	112.90	125.79
2	B	201	5GI	C13-N3-C21	-4.76	112.91	125.79
2	D	201	5GI	C13-N3-C21	-4.68	113.13	125.79
2	B	201	5GI	C12-C11-N1	4.55	121.69	115.22
2	E	201	5GI	C1-C3-N4	4.38	125.97	116.63
2	C	201	5GI	O3-C3-N4	-4.29	115.29	122.96
2	E	201	5GI	C12-C11-N1	4.21	121.20	115.22
2	A	201	5GI	C4-C16-C14	-4.20	126.79	134.05
2	B	201	5GI	O3-C3-N4	-4.11	115.59	122.96
2	D	201	5GI	O3-C3-N4	-3.95	115.88	122.96
2	B	201	5GI	C4-C16-C14	-3.83	127.43	134.05
2	A	201	5GI	C13-N3-C21	-3.79	115.54	125.79
2	E	201	5GI	C4-C16-C14	-3.75	127.58	134.05
2	E	201	5GI	C19-C18-C15	-3.73	105.25	110.99
2	C	201	5GI	C4-C16-C14	-3.64	127.76	134.05
2	D	201	5GI	C4-C16-C14	-3.64	127.76	134.05
2	E	201	5GI	C19-C18-N4	-3.42	105.52	110.69
2	E	201	5GI	O3-C3-N4	-3.37	116.92	122.96
2	C	201	5GI	O1-C16-C14	-3.17	106.32	109.88

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	201	5GI	C19-C20-C21	-3.16	104.92	111.03
2	A	201	5GI	O2-C15-C18	-3.09	116.81	124.77
2	D	201	5GI	O1-C16-C14	-3.08	106.43	109.88
2	B	201	5GI	O3-C3-C1	-3.07	114.04	120.48
2	E	201	5GI	O1-C16-C14	-3.06	106.45	109.88
2	B	201	5GI	C19-C18-N4	-2.91	106.29	110.69
2	A	201	5GI	C16-O1-N2	2.91	111.43	108.47
2	E	201	5GI	C15-C18-N4	2.91	115.11	109.50
2	B	201	5GI	O1-C16-C14	-2.79	106.75	109.88
2	A	201	5GI	C12-C11-N1	2.57	118.88	115.22
2	C	201	5GI	C16-O1-N2	2.56	111.08	108.47
2	D	201	5GI	C16-O1-N2	2.56	111.07	108.47
2	B	201	5GI	C16-O1-N2	2.55	111.07	108.47
2	A	201	5GI	C3-C1-N1	-2.52	104.29	111.11
2	E	201	5GI	C16-O1-N2	2.49	111.00	108.47
2	B	201	5GI	C19-C20-C21	-2.47	106.26	111.03
2	A	201	5GI	O1-C16-C14	-2.43	107.15	109.88
2	D	201	5GI	O3-C3-C1	-2.28	115.71	120.48
2	B	201	5GI	C2-C1-N1	-2.23	106.22	110.83
2	D	201	5GI	O4-C11-N1	-2.22	119.19	123.09
2	B	201	5GI	C19-C18-C15	2.21	114.39	110.99
2	C	201	5GI	O3-C3-C1	-2.19	115.88	120.48
2	C	201	5GI	O4-C11-N1	-2.19	119.24	123.09
2	C	201	5GI	C19-C18-C15	-2.18	107.63	110.99
2	B	201	5GI	O4-C11-N1	-2.13	119.35	123.09
2	B	201	5GI	C7-C5-C6	2.11	121.37	118.23

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	201	5GI	N1-C11-C12-C14
2	B	201	5GI	N1-C11-C12-C14
2	C	201	5GI	N1-C11-C12-C14
2	E	201	5GI	N1-C11-C12-C14
2	B	201	5GI	N1-C1-C2-C5
2	B	201	5GI	C1-C2-C5-C6
2	A	201	5GI	N1-C1-C2-C5
2	B	201	5GI	C1-C2-C5-C7
2	D	201	5GI	N1-C1-C2-C5
2	C	201	5GI	C1-C2-C5-C6
2	D	201	5GI	C1-C2-C5-C6

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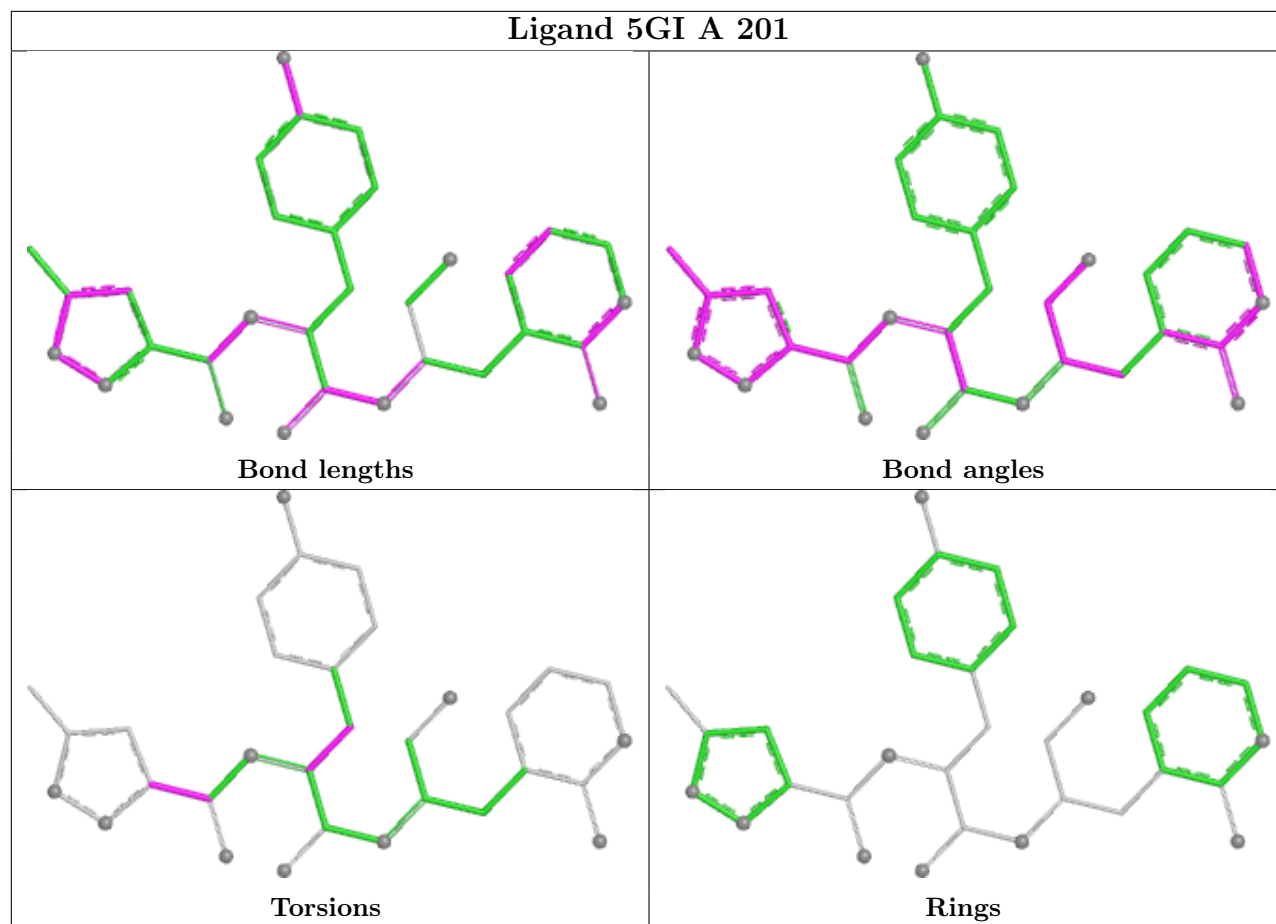
Mol	Chain	Res	Type	Atoms
2	D	201	5GI	N1-C11-C12-C14

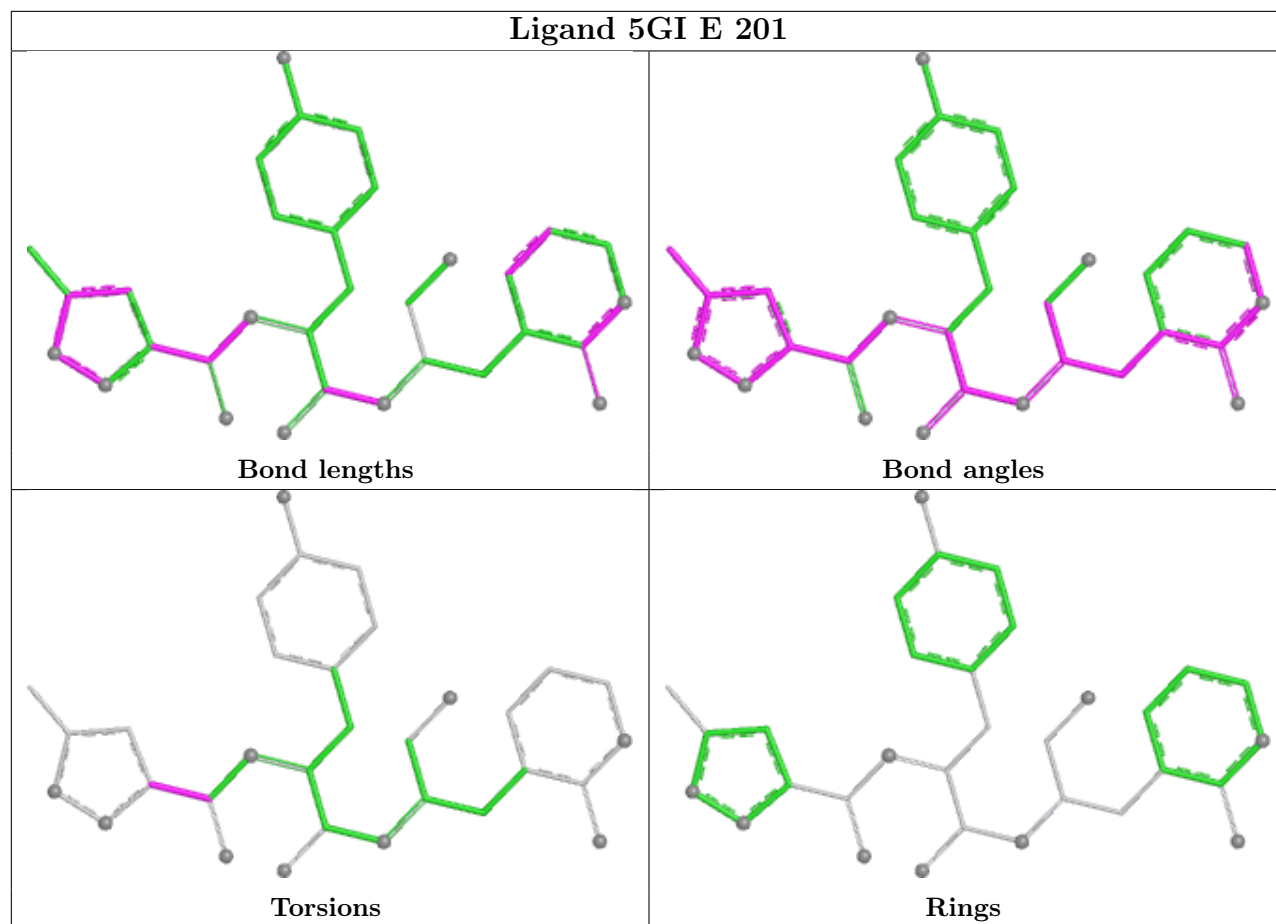
There are no ring outliers.

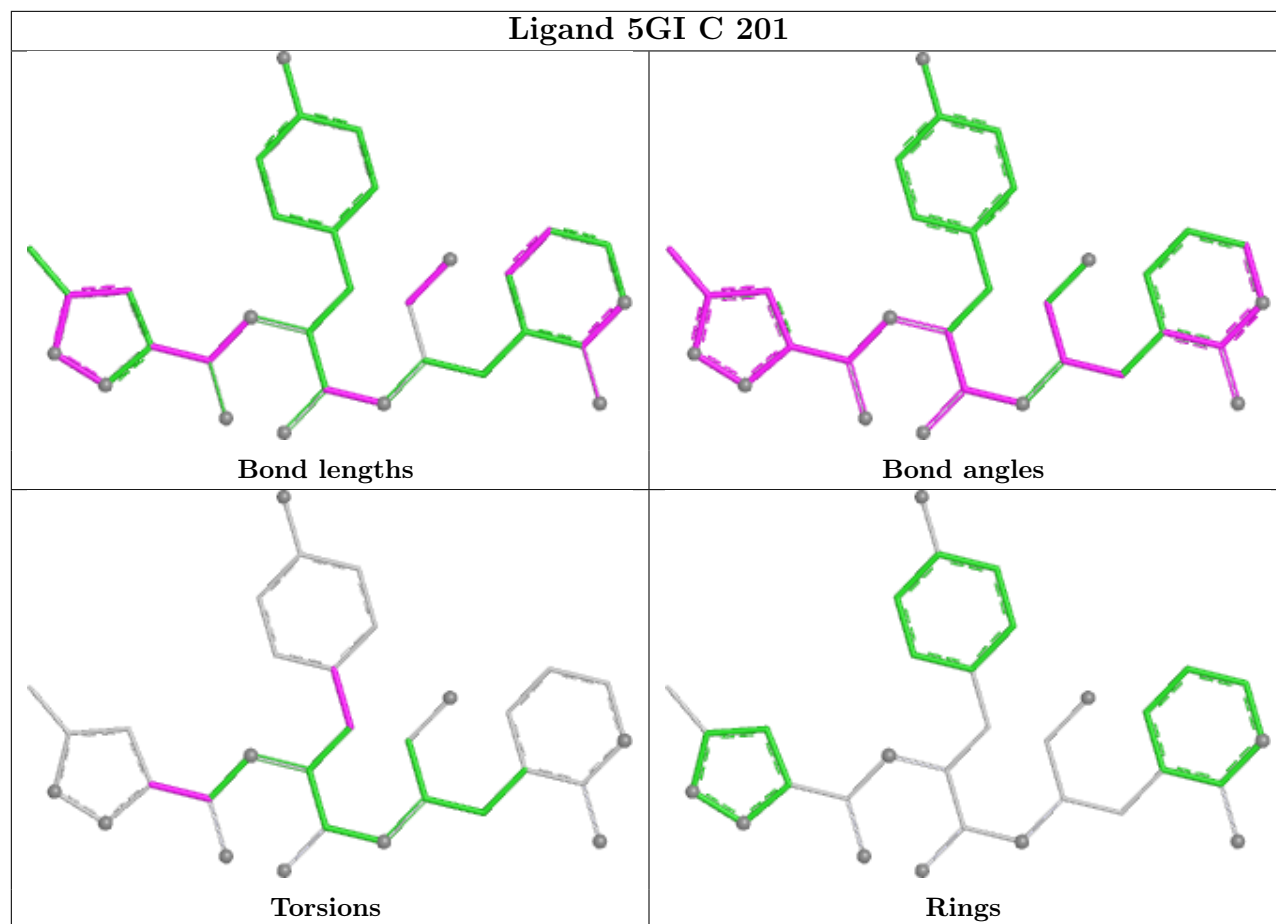
5 monomers are involved in 12 short contacts:

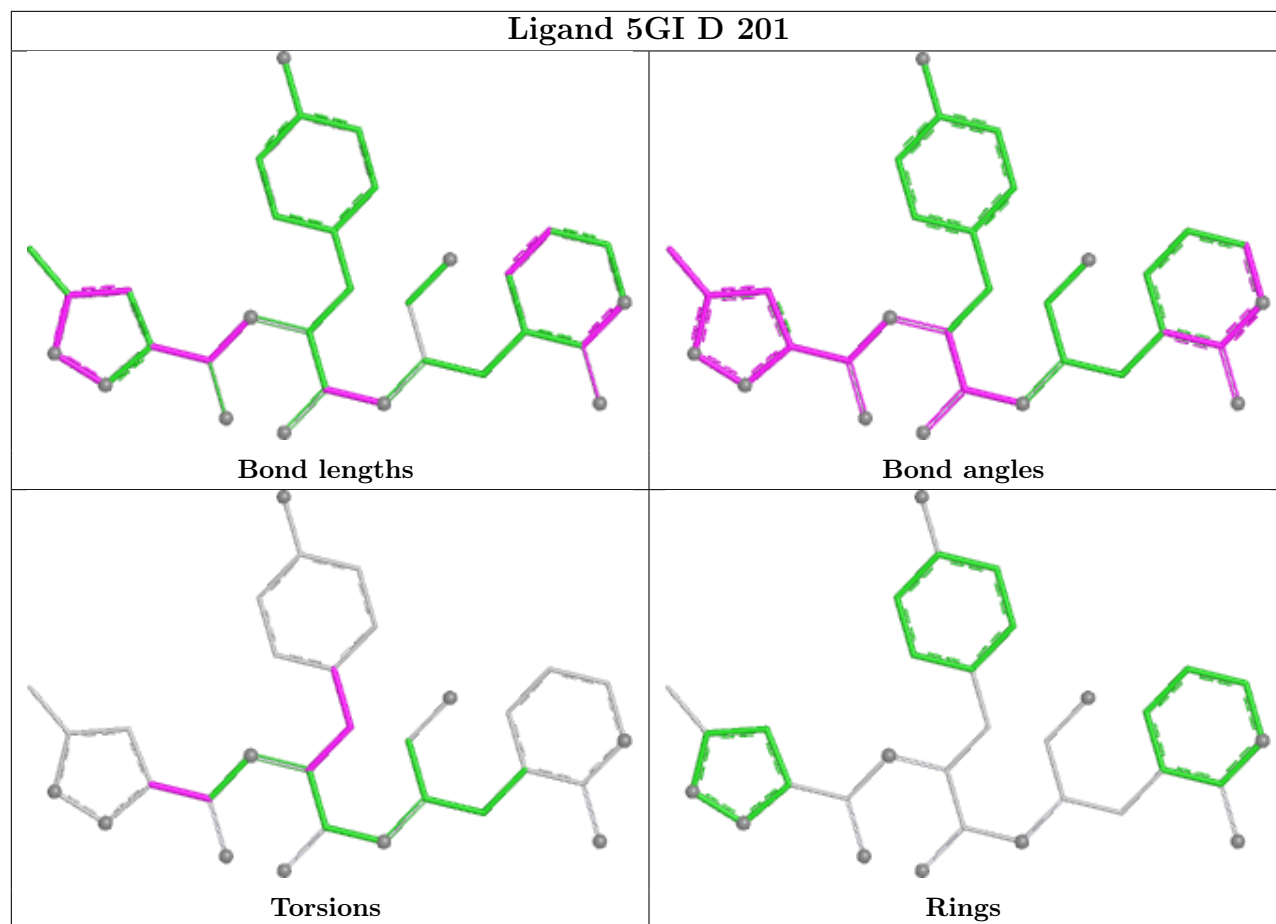
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	201	5GI	1	0
2	E	201	5GI	4	0
2	C	201	5GI	2	0
2	D	201	5GI	4	0
2	B	201	5GI	1	0

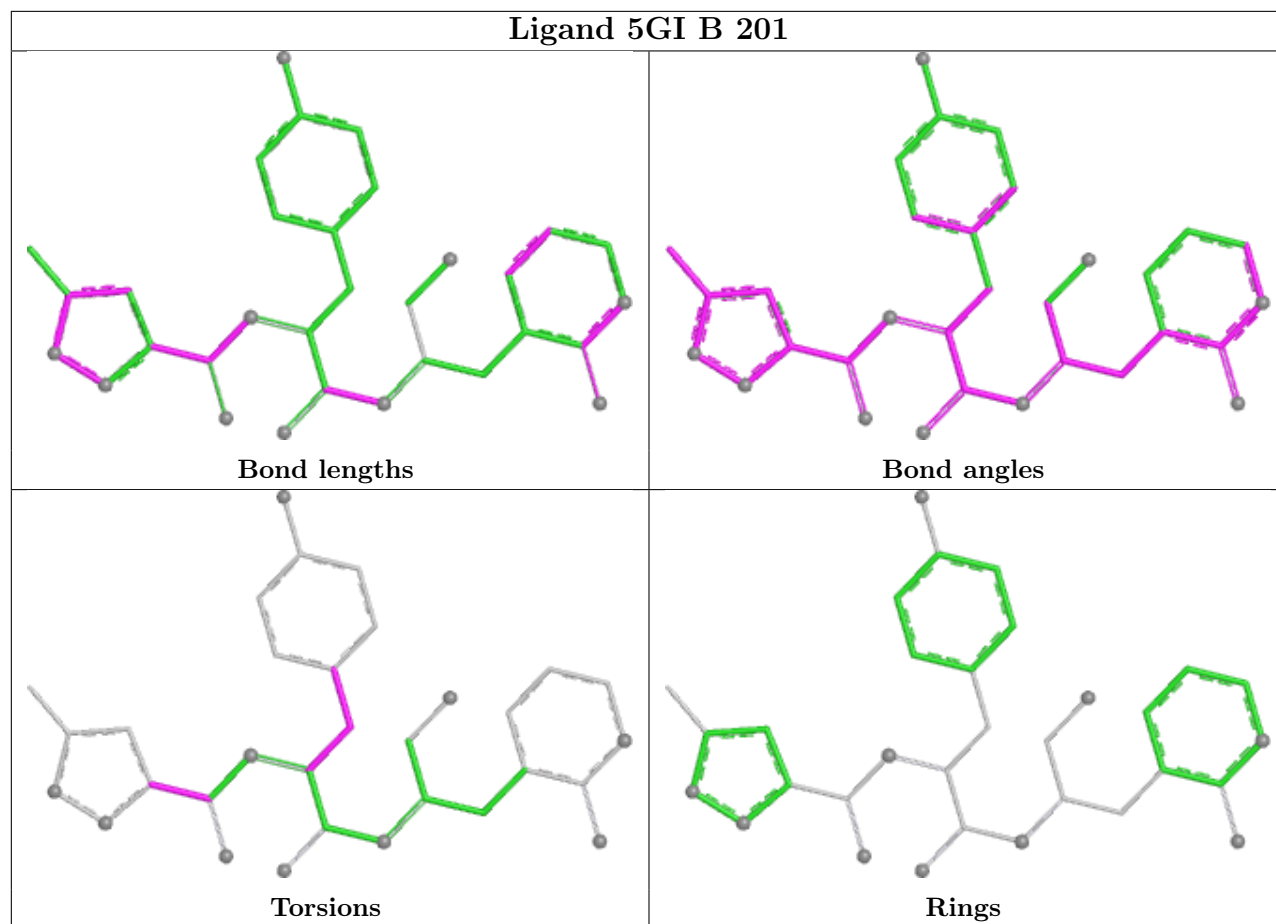
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.











5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

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

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

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	181/183 (98%)	-0.59	0 100 100	11, 26, 43, 61	0
1	B	180/183 (98%)	-0.61	0 100 100	14, 29, 50, 73	0
1	C	181/183 (98%)	-0.46	0 100 100	20, 34, 55, 70	0
1	D	181/183 (98%)	-0.40	0 100 100	15, 40, 66, 80	0
1	E	181/183 (98%)	-0.29	0 100 100	23, 44, 68, 88	0
All	All	904/915 (98%)	-0.47	0 100 100	11, 34, 60, 88	0

There are no RSRZ outliers to report.

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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	5GI	D	201	32/32	0.85	0.16	48,54,66,66	0
2	5GI	E	201	32/32	0.85	0.15	52,58,71,72	0
2	5GI	C	201	32/32	0.87	0.15	47,52,64,64	0

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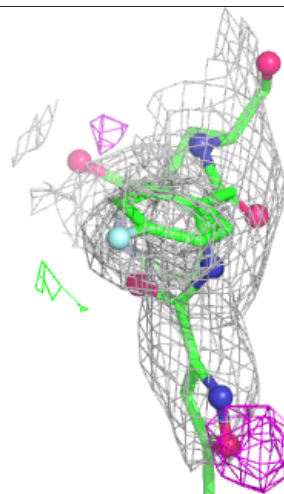
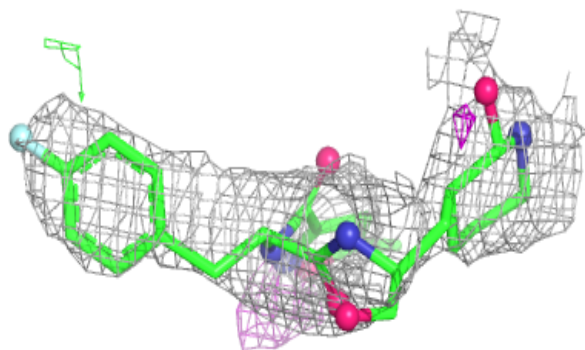
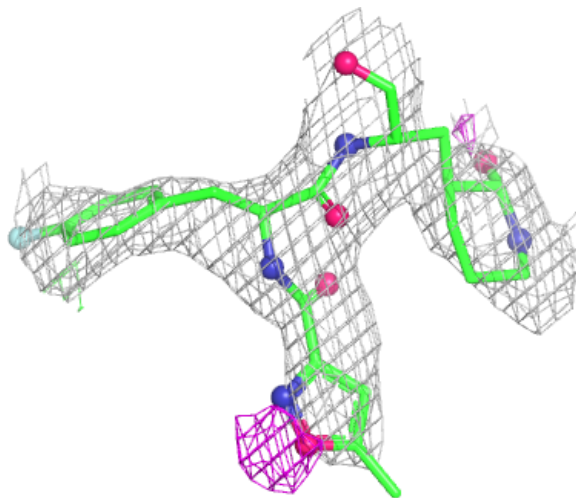
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	5GI	A	201	32/32	0.90	0.13	43,49,59,60	0
2	5GI	B	201	32/32	0.91	0.13	49,54,66,67	0

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.

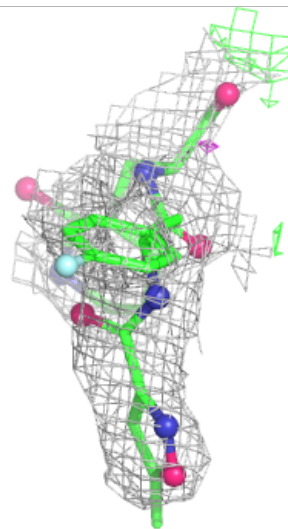
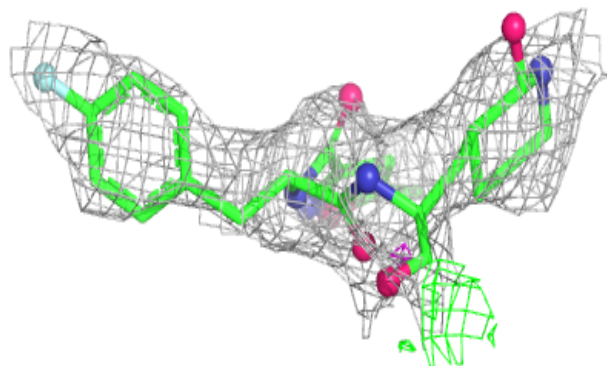
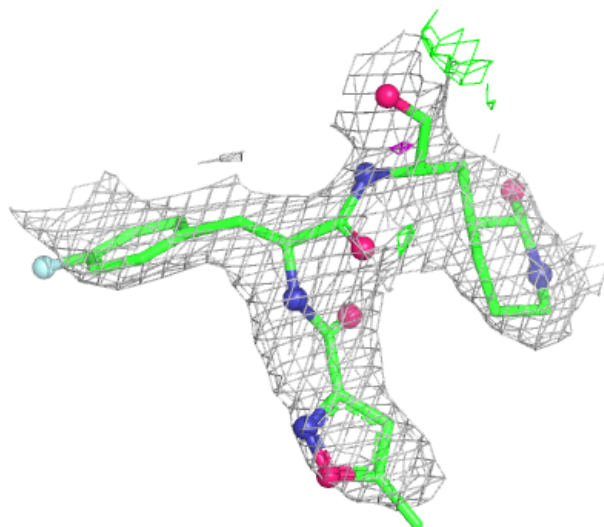
Electron density around 5GI D 201:

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



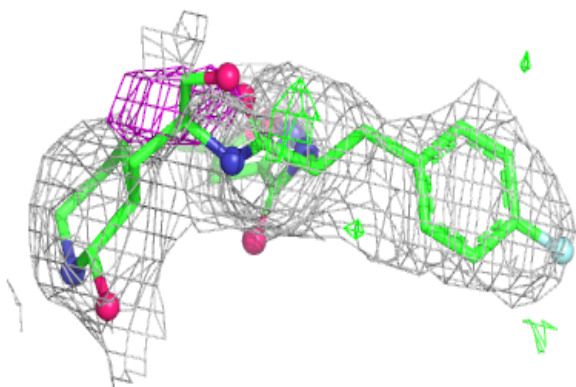
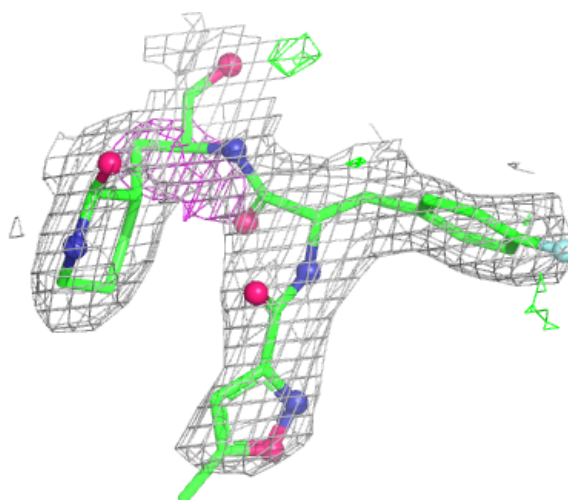
Electron density around 5GI E 201:

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



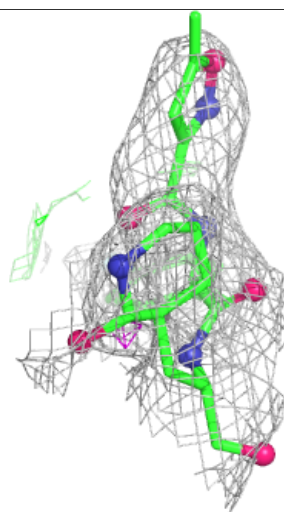
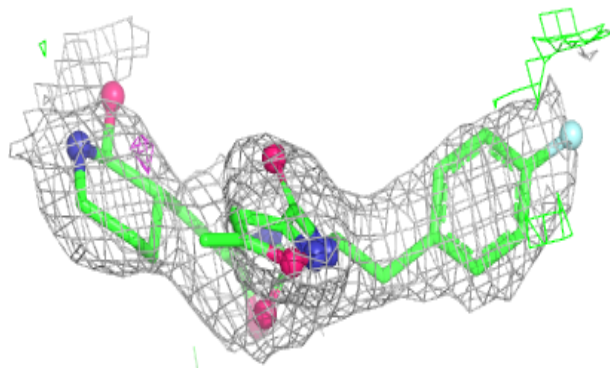
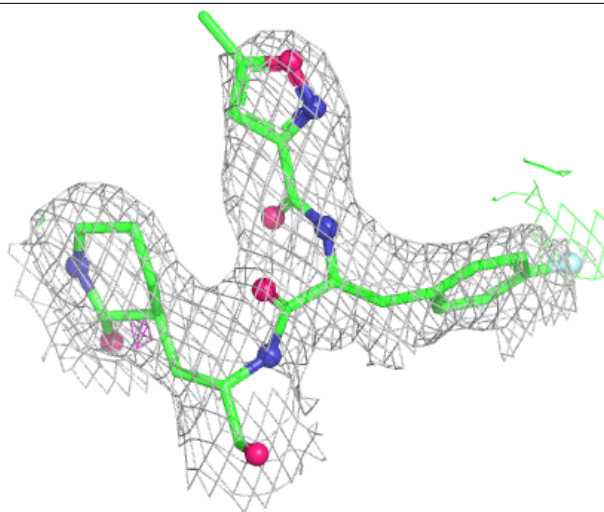
Electron density around 5GI C 201:

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



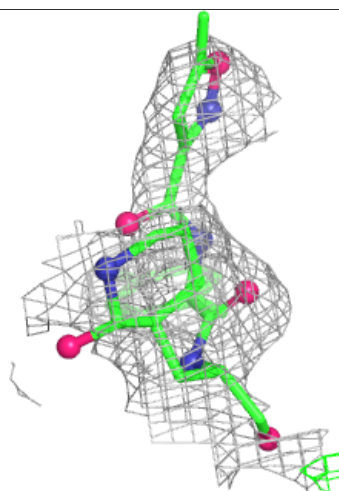
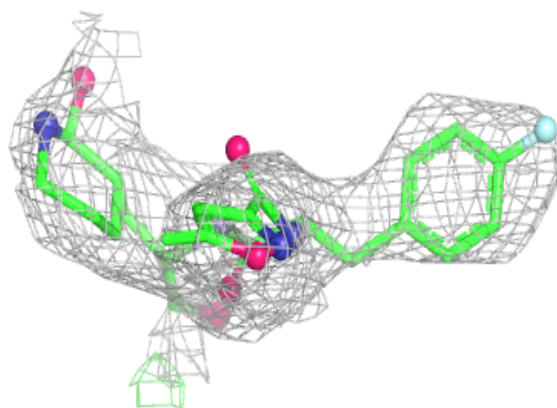
Electron density around 5GI A 201:

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



Electron density around 5GI B 201:

$2mF_o-DF_c$ (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.