



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 12:43 PM UTC

PDB ID : 5L6B / pdb_00005l6b
Title : Yeast 20S proteasome with mouse beta5i (1-138) and mouse beta6 (97-111; 118-133) in complex with ONX 0914
Authors : Groll, M.; Huber, E.M.
Deposited on : 2016-05-28
Resolution : 2.60 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

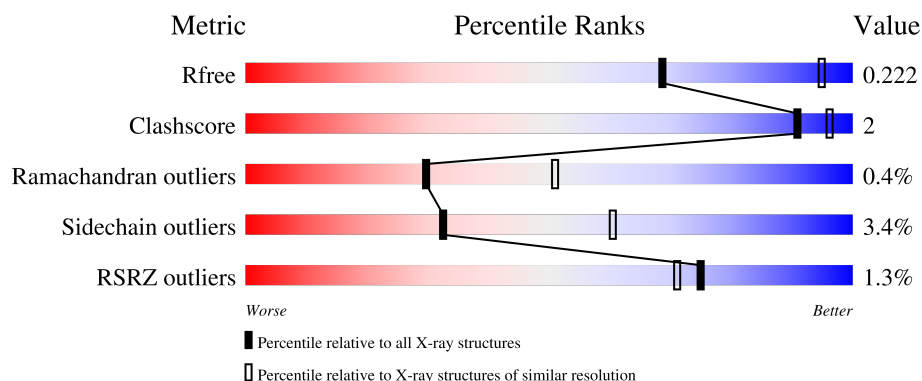
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.60 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	4008 (2.60-2.60)
Clashscore	190562	4347 (2.60-2.60)
Ramachandran outliers	187476	4277 (2.60-2.60)
Sidechain outliers	187428	4277 (2.60-2.60)
RSRZ outliers	180081	4008 (2.60-2.60)

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	250	 98%
1	O	250	 98%
2	B	258	 86% 8% • 5%
2	P	258	 86% 7% • 5%
3	C	254	 87% 6% • 6%

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Mol	Chain	Length	Quality of chain
3	Q	254	
4	D	260	
4	R	260	
5	E	234	
5	S	234	
6	F	288	
6	T	288	
7	G	252	
7	U	252	
8	H	232	
8	V	232	
9	I	205	
9	W	205	
10	J	198	
10	X	198	
11	K	211	
11	Y	211	
12	L	222	
12	Z	222	
13	M	246	
13	a	246	
14	N	196	
14	b	196	

2 Entry composition

There are 19 unique types of molecules in this entry. The entry contains 50147 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 Proteasome subunit alpha type-2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	250	Total	C	N	O	S	0	0	0
			1915	1219	315	377	4			
1	O	250	Total	C	N	O	S	0	0	0
			1915	1219	315	377	4			

- Molecule 2 is a protein called Proteasome subunit alpha type-3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	244	Total	C	N	O	S	0	0	0
			1904	1201	321	379	3			
2	P	244	Total	C	N	O	S	0	0	0
			1904	1201	321	379	3			

- Molecule 3 is a protein called Proteasome subunit alpha type-4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	240	Total	C	N	O	S	0	0	0
			1881	1176	329	372	4			
3	Q	240	Total	C	N	O	S	0	0	0
			1881	1176	329	372	4			

- Molecule 4 is a protein called Proteasome subunit alpha type-5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	235	Total	C	N	O	S	0	0	0
			1813	1136	304	366	7			
4	R	235	Total	C	N	O	S	0	0	0
			1813	1136	304	366	7			

- Molecule 5 is a protein called Proteasome subunit alpha type-6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	E	231	Total	C	N	O	S	0	0	0
			1773	1114	307	348	4			
5	S	231	Total	C	N	O	S	0	0	0
			1773	1114	307	348	4			

- Molecule 6 is a protein called Probable proteasome subunit alpha type-7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	F	243	Total	C	N	O	S	0	0	0
			1892	1203	329	356	4			
6	T	243	Total	C	N	O	S	0	0	0
			1892	1203	329	356	4			

- Molecule 7 is a protein called Proteasome subunit alpha type-1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	G	241	Total	C	N	O	S	0	0	0
			1907	1214	320	365	8			
7	U	241	Total	C	N	O	S	0	0	0
			1907	1214	320	365	8			

- Molecule 8 is a protein called Proteasome subunit beta type-2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	H	226	Total	C	N	O	S	0	0	0
			1719	1082	298	332	7			
8	V	226	Total	C	N	O	S	0	0	0
			1719	1082	298	332	7			

- Molecule 9 is a protein called Proteasome subunit beta type-3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	I	204	Total	C	N	O	S	0	0	0
			1581	1010	258	305	8			
9	W	204	Total	C	N	O	S	0	0	0
			1581	1010	258	305	8			

- Molecule 10 is a protein called Proteasome subunit beta type-4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	J	195	Total	C	N	O	S	0	0	0
			1561	992	264	299	6			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	X	195	Total	C	N	O	S	0	0	0
			1561	992	264	299	6			

- Molecule 11 is a protein called Proteasome subunit beta type-8,Proteasome subunit beta type-5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	K	211	Total	C	N	O	S	0	0	0
			1645	1039	281	313	12			
11	Y	211	Total	C	N	O	S	0	0	0
			1645	1039	281	313	12			

- Molecule 12 is a protein called Proteasome subunit beta type-6,Proteasome subunit beta type-1,Proteasome subunit beta type-6,Proteasome subunit beta type-1,Proteasome subunit beta type-6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	L	222	Total	C	N	O	S	0	0	0
			1764	1119	305	336	4			
12	Z	222	Total	C	N	O	S	0	0	0
			1764	1119	305	336	4			

- Molecule 13 is a protein called Proteasome subunit beta type-7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	M	233	Total	C	N	O	S	0	1	0
			1832	1159	315	351	7			
13	a	233	Total	C	N	O	S	0	0	0
			1824	1154	312	351	7			

- Molecule 14 is a protein called Proteasome subunit beta type-1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	N	196	Total	C	N	O	S	0	0	0
			1512	955	250	300	7			
14	b	196	Total	C	N	O	S	0	0	0
			1512	955	250	300	7			

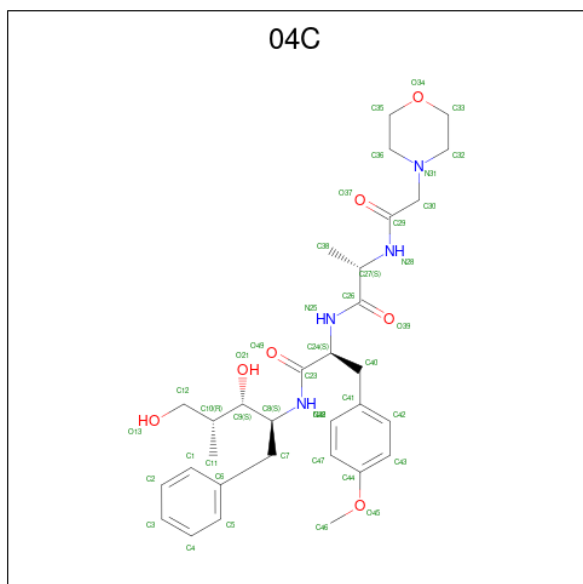
- Molecule 15 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
15	G	1	Total Mg 1 1	0	0
15	I	2	Total Mg 2 2	0	0
15	J	1	Total Mg 1 1	0	0
15	K	1	Total Mg 1 1	0	0
15	L	1	Total Mg 1 1	0	0
15	N	1	Total Mg 1 1	0	0
15	Z	1	Total Mg 1 1	0	0

- Molecule 16 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

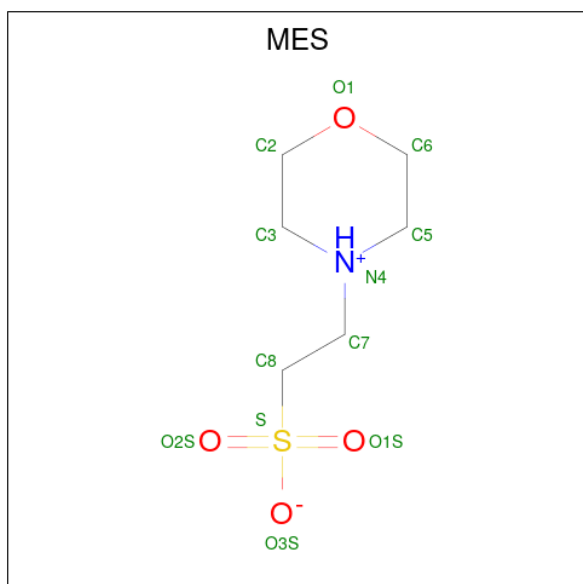
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
16	G	1	Total Cl 1 1	0	0
16	U	1	Total Cl 1 1	0	0

- Molecule 17 is 1,2,4-trideoxy-4-methyl-2-{[N-(morpholin-4-ylacetyl)-L-alanyl-O-methyl-L-tyrosyl]amino}-1-phenyl-D-xylitol (CCD ID: 04C) (formula: C₃₁H₄₄N₄O₇).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
17	H	1	Total	C	N	O	0	0
			42	31	4	7		
17	K	1	Total	C	N	O	0	0
			42	31	4	7		
17	N	1	Total	C	N	O	0	0
			42	31	4	7		
17	V	1	Total	C	N	O	0	0
			42	31	4	7		
17	Y	1	Total	C	N	O	0	0
			42	31	4	7		
17	b	1	Total	C	N	O	0	0
			42	31	4	7		

- Molecule 18 is 2-(N-MORPHOLINO)-ETHANESULFONIC ACID (CCD ID: MES) (formula: C₆H₁₃NO₄S).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
18	H	1	Total	C	N	O	S	0	0
			12	6	1	4	1		
18	K	1	Total	C	N	O	S	0	0
			12	6	1	4	1		
18	V	1	Total	C	N	O	S	0	0
			12	6	1	4	1		
18	Y	1	Total	C	N	O	S	0	0
			12	6	1	4	1		

- Molecule 19 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
19	A	23	Total O 23 23	0	0
19	B	11	Total O 11 11	0	0
19	C	14	Total O 14 14	0	0
19	D	10	Total O 10 10	0	0
19	E	7	Total O 7 7	0	0
19	F	21	Total O 21 21	0	0
19	G	23	Total O 23 23	0	0
19	H	32	Total O 32 32	0	0
19	I	13	Total O 13 13	0	0
19	J	17	Total O 17 17	0	0
19	K	12	Total O 12 12	0	0
19	L	20	Total O 20 20	0	0
19	M	24	Total O 24 24	0	0
19	N	17	Total O 17 17	0	0
19	O	14	Total O 14 14	0	0
19	P	16	Total O 16 16	0	0
19	Q	7	Total O 7 7	0	0
19	R	7	Total O 7 7	0	0
19	S	4	Total O 4 4	0	0
19	T	14	Total O 14 14	0	0
19	U	22	Total O 22 22	0	0
19	V	30	Total O 30 30	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
19	W	13	Total 13	O 13	0	0
19	X	13	Total 13	O 13	0	0
19	Y	15	Total 15	O 15	0	0
19	Z	12	Total 12	O 12	0	0
19	a	21	Total 21	O 21	0	0
19	b	15	Total 15	O 15	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: Proteasome subunit alpha type-2

Chain A:  98% .



- Molecule 1: Proteasome subunit alpha type-2

Chain O:  98% ..



- Molecule 2: Proteasome subunit alpha type-3

Chain B:  3% 86% 8% . 5%



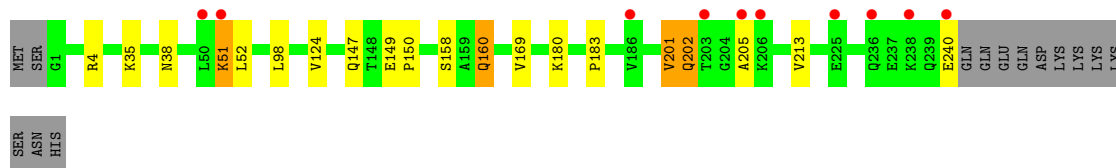
- Molecule 2: Proteasome subunit alpha type-3

Chain P:  2% 86% 7% . 5%



- Molecule 3: Proteasome subunit alpha type-4

Chain C:  4% 87% 6% . 6%

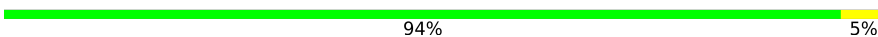


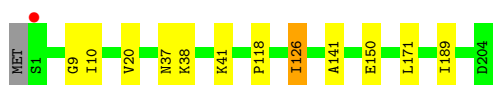
MET	SER	G1	D2	D3	R4	K35	N38	T49	L50	K51	L52	L98	Q147	T148	E149	P150	S158	A159	Q160	V169	K175	K180	P183	V201	Q202	A205	V213	K238	Q239	E240	GLN	GLN	GLU	GLN	ASP	LYS	LYS	LYS	LYS	SER	ASN	ASP
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[illegible][illegible]

MET
 PHE
 ARG
 N3
 T9
 F12
 K29
 E54
 L55
 L71
 A77
 P78
 L87
 A107
 L188
 K231
 Y232
 I233

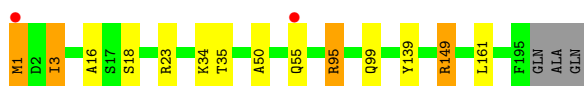
MET	THR	SER	ILE	GLY	T2	Q19	N123	L172	E181	E201	D202	C215	N221	Q240	N244	GLY	ASP	ASP	ASP	GLU	GLU	GLU	ASP	ASP	SER	ASP	ASN	VAL	MET	SER	SER	ASP	GLU	GLU	ASN	ALA	ALA	PRO	VAL	ALA	THR	ASN	ALA	ASN	ALA	THR	THR	GLN	GLU
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Chain W:  94% 5%

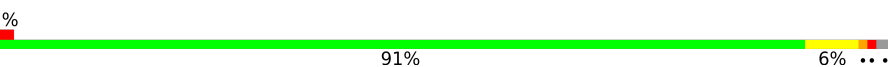


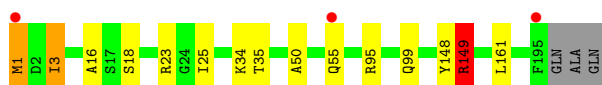
- Molecule 10: Proteasome subunit beta type-4

Chain J:  91% 5% . .



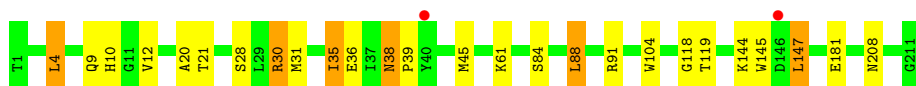
- Molecule 10: Proteasome subunit beta type-4

Chain X:  91% 6% . . .



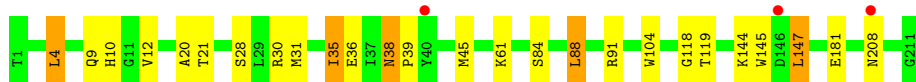
- Molecule 11: Proteasome subunit beta type-8, Proteasome subunit beta type-5

Chain K:  88% 9% .

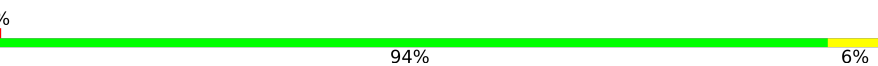


- Molecule 11: Proteasome subunit beta type-8, Proteasome subunit beta type-5

Chain Y:  88% 10% .

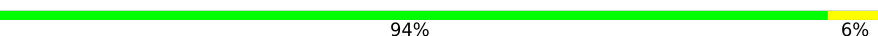


- Molecule 12: Proteasome subunit beta type-6, Proteasome subunit beta type-1, Proteasome subunit beta type-6, Proteasome subunit beta type-1, Proteasome subunit beta type-6

Chain L:  94% 6%

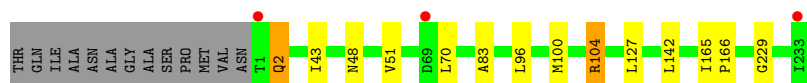
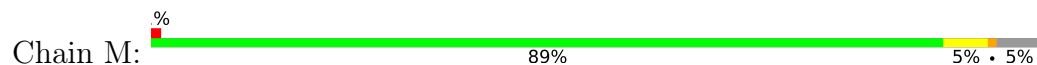


- Molecule 12: Proteasome subunit beta type-6, Proteasome subunit beta type-1, Proteasome subunit beta type-6, Proteasome subunit beta type-1, Proteasome subunit beta type-6

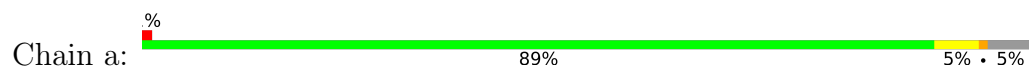
Chain Z:  94% 6%



- Molecule 13: Proteasome subunit beta type-7



- Molecule 13: Proteasome subunit beta type-7



- Molecule 14: Proteasome subunit beta type-1



- Molecule 14: Proteasome subunit beta type-1



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	135.19Å 300.84Å 145.39Å 90.00° 112.94° 90.00°	Depositor
Resolution (Å)	15.00 – 2.60 15.00 – 2.60	Depositor EDS
% Data completeness (in resolution range)	98.7 (15.00-2.60) 98.2 (15.00-2.60)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.40 (at 2.61Å)	Xtriage
Refinement program	REFMAC 5.7.0032	Depositor
R, R_{free}	0.196 , 0.221 0.201 , 0.222	Depositor DCC
R_{free} test set	16023 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	58.0	Xtriage
Anisotropy	0.113	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 53.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	50147	wwPDB-VP
Average B, all atoms (Å ²)	64.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.38% 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: MES, 04C, MG, CL

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	0.40	0/1952	0.68	0/2642
1	O	0.40	0/1952	0.68	0/2642
2	B	0.41	0/1934	0.68	0/2618
2	P	0.40	0/1934	0.68	0/2618
3	C	0.40	0/1910	0.70	1/2586 (0.0%)
3	Q	0.40	0/1910	0.70	1/2586 (0.0%)
4	D	0.39	0/1837	0.66	0/2475
4	R	0.39	0/1837	0.66	0/2475
5	E	0.40	0/1800	0.65	0/2433
5	S	0.40	0/1800	0.65	0/2433
6	F	0.40	0/1932	0.69	0/2609
6	T	0.40	0/1932	0.69	0/2609
7	G	0.39	0/1945	0.67	0/2634
7	U	0.39	0/1945	0.67	0/2634
8	H	0.36	0/1750	0.68	1/2373 (0.0%)
8	V	0.37	0/1750	0.68	1/2373 (0.0%)
9	I	0.34	0/1611	0.69	0/2174
9	W	0.34	0/1611	0.69	0/2174
10	J	0.38	0/1589	0.86	5/2142 (0.2%)
10	X	0.37	0/1589	0.79	6/2142 (0.3%)
11	K	0.36	0/1681	0.72	0/2268
11	Y	0.35	0/1681	0.72	0/2268
12	L	0.36	0/1802	0.71	2/2430 (0.1%)
12	Z	0.37	0/1802	0.72	1/2430 (0.0%)
13	M	0.37	0/1866	0.68	0/2528
13	a	0.37	0/1855	0.68	0/2514
14	N	0.36	0/1541	0.69	0/2087
14	b	0.36	0/1541	0.69	0/2087
All	All	0.38	0/50289	0.69	18/67984 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if

the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
10	J	0	2
10	X	0	1
All	All	0	3

There are no bond length outliers.

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	J	149	ARG	NE-CZ-NH1	-12.18	109.32	121.50
10	J	95	ARG	CD-NE-CZ	12.11	141.35	124.40
10	J	149	ARG	CD-NE-CZ	10.63	139.28	124.40
10	J	149	ARG	NE-CZ-NH2	10.36	128.52	119.20
10	J	95	ARG	NE-CZ-NH2	-10.17	110.05	119.20
10	X	95	ARG	NE-CZ-NH2	9.21	127.49	119.20
10	X	95	ARG	NE-CZ-NH1	-9.14	112.36	121.50
10	X	149	ARG	NE-CZ-NH2	-9.06	111.04	119.20
12	L	100	ARG	CG-CD-NE	8.91	131.60	112.00
12	Z	100	ARG	CG-CD-NE	8.83	131.43	112.00
10	X	149	ARG	CD-NE-CZ	7.83	135.36	124.40
10	X	95	ARG	CD-NE-CZ	6.61	133.65	124.40
10	X	149	ARG	NE-CZ-NH1	6.48	127.98	121.50
3	Q	201	VAL	N-CA-C	6.38	116.54	110.42
3	C	201	VAL	N-CA-C	6.35	116.52	110.42
8	H	1	THR	N-CA-C	5.58	126.63	111.00
8	V	1	THR	N-CA-C	5.53	126.49	111.00
12	L	100	ARG	CB-CG-CD	5.35	123.61	111.30

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
10	J	149	ARG	Sidechain
10	J	95	ARG	Sidechain
10	X	149	ARG	Sidechain

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	1915	0	1929	1	0
1	O	1915	0	1929	3	0
2	B	1904	0	1904	10	0
2	P	1904	0	1904	9	0
3	C	1881	0	1895	7	0
3	Q	1881	0	1895	6	0
4	D	1813	0	1797	4	0
4	R	1813	0	1797	4	0
5	E	1773	0	1775	3	0
5	S	1773	0	1775	3	0
6	F	1892	0	1883	1	0
6	T	1892	0	1883	2	0
7	G	1907	0	1901	3	0
7	U	1907	0	1901	5	0
8	H	1719	0	1716	13	0
8	V	1719	0	1716	10	0
9	I	1581	0	1574	8	0
9	W	1581	0	1574	7	0
10	J	1561	0	1569	8	0
10	X	1561	0	1569	9	0
11	K	1645	0	1589	16	0
11	Y	1645	0	1589	16	0
12	L	1764	0	1716	5	0
12	Z	1764	0	1716	5	0
13	M	1832	0	1845	6	0
13	a	1824	0	1832	7	0
14	N	1512	0	1478	9	0
14	b	1512	0	1478	7	0
15	G	1	0	0	0	0
15	I	2	0	0	0	0
15	J	1	0	0	0	0
15	K	1	0	0	0	0
15	L	1	0	0	0	0
15	N	1	0	0	0	0
15	Z	1	0	0	0	0
16	G	1	0	0	0	0
16	U	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
17	H	42	0	42	2	0
17	K	42	0	42	3	0
17	N	42	0	42	4	0
17	V	42	0	42	3	0
17	Y	42	0	42	1	0
17	b	42	0	42	4	0
18	H	12	0	13	0	0
18	K	12	0	13	3	0
18	V	12	0	13	1	0
18	Y	12	0	13	1	0
19	A	23	0	0	0	0
19	B	11	0	0	2	0
19	C	14	0	0	0	0
19	D	10	0	0	0	0
19	E	7	0	0	0	0
19	F	21	0	0	0	0
19	G	23	0	0	0	0
19	H	32	0	0	0	0
19	I	13	0	0	0	0
19	J	17	0	0	0	0
19	K	12	0	0	0	0
19	L	20	0	0	0	0
19	M	24	0	0	1	0
19	N	17	0	0	1	0
19	O	14	0	0	0	0
19	P	16	0	0	1	0
19	Q	7	0	0	0	0
19	R	7	0	0	0	0
19	S	4	0	0	0	0
19	T	14	0	0	0	0
19	U	22	0	0	1	0
19	V	30	0	0	0	0
19	W	13	0	0	0	0
19	X	13	0	0	0	0
19	Y	15	0	0	0	0
19	Z	12	0	0	0	0
19	a	21	0	0	1	0
19	b	15	0	0	1	0
All	All	50147	0	49433	171	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 2.

All (171) 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)
10:J:23:ARG:NH2	11:K:119:THR:OG1	1.92	1.02
10:X:23:ARG:NH2	11:Y:119:THR:OG1	1.94	1.00
17:V:301:04C:H9	17:V:301:04C:H24	1.62	0.81
17:H:301:04C:H9	17:H:301:04C:H24	1.61	0.79
17:b:201:04C:O13	19:b:301:HOH:O	2.06	0.73
8:V:35:HIS:HB3	8:V:56:THR:HG21	1.73	0.70
8:H:35:HIS:HB3	8:H:56:THR:HG21	1.73	0.69
8:H:50:ALA:HB3	9:I:126:ILE:HD12	1.77	0.66
8:V:113:ILE:HG13	8:V:119:THR:HG22	1.77	0.66
17:N:201:04C:O13	19:N:301:HOH:O	2.15	0.65
8:V:50:ALA:HB3	9:W:126:ILE:HD12	1.77	0.64
14:b:152:VAL:HA	14:b:175:MET:HE1	1.81	0.63
14:N:152:VAL:HA	14:N:175:MET:HE1	1.81	0.62
2:B:113:ARG:NE	19:B:301:HOH:O	2.26	0.61
12:L:52:MET:CE	12:L:65:VAL:HA	2.32	0.59
8:V:113:ILE:CG1	8:V:119:THR:HG22	2.33	0.58
12:Z:52:MET:CE	12:Z:65:VAL:HA	2.34	0.58
17:b:201:04C:O13	17:b:201:04C:O21	2.17	0.57
8:H:113:ILE:CG1	8:H:119:THR:HG22	2.36	0.56
4:R:89:VAL:HG12	11:Y:61:LYS:HG3	1.86	0.56
10:J:1:MET:HG2	10:J:34:LYS:HE3	1.88	0.55
11:K:208:ASN:O	9:W:38:LYS:NZ	2.40	0.55
2:B:93:HIS:HB3	19:B:301:HOH:O	2.07	0.54
4:D:89:VAL:HG12	11:K:61:LYS:HG3	1.89	0.54
8:H:35:HIS:CB	8:H:56:THR:HG21	2.38	0.54
10:X:1:MET:HG2	10:X:34:LYS:HE3	1.88	0.54
9:I:38:LYS:NZ	11:Y:208:ASN:O	2.41	0.54
7:U:23:PHE:O	7:U:26:THR:HB	2.08	0.53
11:Y:30:ARG:O	12:Z:132:GLN:NE2	2.30	0.53
17:Y:301:04C:H36	18:Y:302:MES:H81	1.89	0.53
8:H:112:SER:OG	8:H:120:ASP:HB3	2.09	0.53
8:V:35:HIS:CB	8:V:56:THR:HG21	2.38	0.53
17:V:301:04C:H9	17:V:301:04C:C46	2.38	0.52
7:G:23:PHE:O	7:G:26:THR:HB	2.09	0.52
17:K:301:04C:C12	18:K:303:MES:H72	2.40	0.52
14:b:83:LYS:HG3	14:b:119:VAL:CG2	2.40	0.51
8:V:112:SER:OG	8:V:120:ASP:HB3	2.11	0.51
12:L:31:THR:HG23	12:L:36:ASN:HD21	1.75	0.51
14:N:83:LYS:HG3	14:N:119:VAL:CG2	2.40	0.51
8:H:196:ARG:NH2	9:I:150:GLU:O	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:55:GLN:CD	11:K:88:LEU:HG	2.36	0.51
12:Z:31:THR:HG23	12:Z:36:ASN:HD21	1.76	0.51
17:K:301:04C:H36	18:K:303:MES:H72	1.92	0.51
14:b:45:ARG:CZ	17:b:201:04C:H44	2.41	0.51
10:J:16:ALA:HB2	10:J:161:LEU:HD21	1.93	0.51
3:C:201:VAL:O	3:C:202:GLN:CB	2.59	0.50
14:N:45:ARG:CZ	17:N:201:04C:H44	2.40	0.50
17:N:201:04C:O13	17:N:201:04C:O21	2.18	0.50
3:Q:201:VAL:O	3:Q:202:GLN:CB	2.59	0.50
10:X:16:ALA:HB2	10:X:161:LEU:HD21	1.94	0.50
3:Q:51:LYS:O	3:Q:52:LEU:HB2	2.11	0.50
10:X:23:ARG:NH2	10:X:50:ALA:HB1	2.26	0.50
2:P:50:LYS:O	2:P:51:VAL:C	2.55	0.49
3:C:51:LYS:O	3:C:52:LEU:HB2	2.11	0.49
17:V:301:04C:H37	18:V:302:MES:O1S	2.12	0.49
14:b:176:VAL:HG12	14:b:178:LEU:HD13	1.94	0.49
9:W:20:VAL:HG23	9:W:189:ILE:HB	1.95	0.49
10:J:23:ARG:NH2	10:J:50:ALA:HB1	2.26	0.49
14:N:176:VAL:HG12	14:N:178:LEU:HD13	1.95	0.49
2:B:50:LYS:O	2:B:51:VAL:C	2.55	0.49
17:H:301:04C:H9	17:H:301:04C:C46	2.38	0.49
8:H:113:ILE:HG12	8:H:119:THR:HG22	1.94	0.48
11:Y:88:LEU:HD11	11:Y:118:GLY:HA3	1.95	0.48
3:C:160:GLN:HE21	3:C:160:GLN:HA	1.78	0.48
9:I:20:VAL:HG13	9:I:118:PRO:HB3	1.95	0.48
11:K:88:LEU:HD11	11:K:118:GLY:HA3	1.95	0.48
9:W:20:VAL:HG13	9:W:118:PRO:HB3	1.95	0.48
3:Q:160:GLN:HE21	3:Q:160:GLN:HA	1.79	0.48
9:I:20:VAL:HG23	9:I:189:ILE:HB	1.94	0.47
11:Y:88:LEU:CD1	11:Y:118:GLY:HA3	2.44	0.47
2:B:217:LYS:C	2:B:219:ALA:H	2.23	0.47
17:K:301:04C:O21	18:K:303:MES:O3S	2.33	0.47
10:X:55:GLN:CD	11:Y:88:LEU:HG	2.39	0.47
9:I:10:ILE:HG21	9:I:141:ALA:HB3	1.97	0.47
10:X:3:ILE:HG23	10:X:18:SER:HB3	1.97	0.47
12:Z:4:PRO:O	13:a:104:ARG:NH1	2.40	0.47
2:P:217:LYS:C	2:P:219:ALA:H	2.22	0.46
11:K:88:LEU:CD1	11:K:118:GLY:HA3	2.44	0.46
10:J:3:ILE:HG23	10:J:18:SER:HB3	1.97	0.46
9:W:10:ILE:HG21	9:W:141:ALA:HB3	1.97	0.46
11:Y:104:TRP:CE2	11:Y:181:GLU:HB3	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:12:PHE:H	6:T:19:GLN:HE22	1.63	0.46
8:V:112:SER:HB3	8:V:125:LEU:HD13	1.98	0.45
10:X:148:TYR:O	10:X:149:ARG:HD3	2.15	0.45
8:H:112:SER:HB3	8:H:125:LEU:HD13	1.99	0.45
9:W:9:GLY:HA3	9:W:41:LYS:HE2	1.99	0.45
11:K:104:TRP:CE2	11:K:181:GLU:HB3	2.51	0.45
11:K:20:ALA:HB3	11:K:28:SER:HB3	1.99	0.45
3:C:35:LYS:HG2	3:C:158:SER:O	2.17	0.45
9:I:9:GLY:HA3	9:I:41:LYS:HE2	1.99	0.45
10:J:55:GLN:NE2	11:K:88:LEU:HD11	2.32	0.45
1:O:122:THR:HG22	2:P:128:ARG:HH21	1.81	0.45
2:B:221:ASP:O	2:B:223:GLU:N	2.50	0.44
2:P:221:ASP:O	2:P:223:GLU:N	2.51	0.44
11:K:35:ILE:HB	11:K:45:MET:HE3	1.99	0.44
8:H:113:ILE:HG13	8:H:119:THR:HG22	2.00	0.44
13:M:127:LEU:HG	13:M:142:LEU:HD12	1.99	0.44
2:P:113:ARG:NE	19:P:301:HOH:O	2.50	0.44
2:B:47:ALA:HB1	2:B:64:LYS:HD2	2.00	0.44
8:V:84:LYS:HG3	8:V:85:GLN:N	2.32	0.44
3:Q:35:LYS:HG2	3:Q:158:SER:O	2.18	0.43
13:a:2:GLN:NE2	19:a:301:HOH:O	2.49	0.43
2:P:47:ALA:HB1	2:P:64:LYS:HD2	2.00	0.43
1:O:23:TYR:CD1	7:U:12:PRO:HA	2.52	0.43
11:Y:20:ALA:HB3	11:Y:28:SER:HB3	1.99	0.43
11:K:9:GLN:HB3	11:K:10:HIS:CD2	2.53	0.43
11:Y:144:LYS:HB2	11:Y:147:LEU:HD13	2.01	0.43
5:E:12:PHE:H	6:F:19:GLN:HE22	1.67	0.43
7:G:78:ILE:N	7:G:79:PRO:CD	2.82	0.43
8:H:84:LYS:HG3	8:H:85:GLN:N	2.33	0.43
13:M:96:LEU:O	13:M:100:MET:HG2	2.19	0.43
11:K:144:LYS:HB2	11:K:147:LEU:HD13	2.01	0.43
3:Q:201:VAL:O	3:Q:202:GLN:HB3	2.19	0.43
4:D:160:ASN:HB3	4:D:179:TRP:CE2	2.54	0.43
7:U:78:ILE:N	7:U:79:PRO:CD	2.82	0.43
11:Y:38:ASN:OD1	11:Y:38:ASN:C	2.62	0.42
12:Z:8:ASN:HA	12:Z:30:ILE:O	2.19	0.42
12:L:8:ASN:HA	12:L:30:ILE:O	2.19	0.42
10:X:55:GLN:NE2	11:Y:88:LEU:HD11	2.34	0.42
2:P:50:LYS:HD3	2:P:50:LYS:HA	1.83	0.42
4:D:91:HIS:HB3	4:D:99:ILE:CG2	2.49	0.42
11:K:38:ASN:OD1	11:K:38:ASN:C	2.62	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:Y:9:GLN:HB3	11:Y:10:HIS:CD2	2.54	0.42
3:C:149:GLU:HB2	3:C:150:PRO:HD2	2.01	0.42
1:A:122:THR:HG22	2:B:128:ARG:HH21	1.85	0.42
3:C:201:VAL:O	3:C:202:GLN:HB3	2.19	0.42
7:G:149:ASP:HB2	7:G:150:PRO:CD	2.50	0.42
8:H:113:ILE:HD13	8:H:113:ILE:HG21	1.76	0.42
3:Q:149:GLU:HB2	3:Q:150:PRO:HD2	2.01	0.42
4:R:160:ASN:HB3	4:R:179:TRP:CE2	2.54	0.42
8:V:104:ASP:HB2	8:V:105:PRO:HD2	2.01	0.42
5:S:87:LEU:HD21	5:S:107:ALA:HB1	2.01	0.42
11:Y:9:GLN:HB2	11:Y:145:TRP:O	2.20	0.42
1:O:1:MET:HG3	6:T:122:TYR:CZ	2.55	0.42
5:S:77:ALA:N	5:S:78:PRO:CD	2.83	0.42
2:B:145:TYR:OH	2:B:217:LYS:N	2.53	0.42
8:H:104:ASP:HB2	8:H:105:PRO:HD2	2.00	0.42
2:P:145:TYR:OH	2:P:217:LYS:N	2.53	0.42
7:U:149:ASP:HB2	7:U:150:PRO:CD	2.50	0.42
7:U:203:ASP:HB3	19:U:419:HOH:O	2.19	0.42
13:a:127:LEU:HG	13:a:142:LEU:HD12	2.00	0.41
11:Y:35:ILE:HB	11:Y:45:MET:HE3	2.00	0.41
2:B:151:ASN:HB2	2:B:152:PRO:CD	2.50	0.41
11:K:4:LEU:HD22	11:K:4:LEU:C	2.45	0.41
11:Y:4:LEU:C	11:Y:4:LEU:HD22	2.45	0.41
13:a:96:LEU:O	13:a:100:MET:HG2	2.19	0.41
5:E:77:ALA:N	5:E:78:PRO:CD	2.84	0.41
14:N:45:ARG:NH2	17:N:201:04C:H44	2.35	0.41
5:E:87:LEU:HD21	5:E:107:ALA:HB1	2.02	0.41
13:M:43:ILE:HG13	13:M:51:VAL:HB	2.02	0.41
8:V:196:ARG:NH2	9:W:150:GLU:O	2.53	0.41
2:P:151:ASN:HB2	2:P:152:PRO:CD	2.50	0.41
10:J:139:TYR:OH	10:X:25:ILE:O	2.38	0.41
13:M:2:GLN:NE2	19:M:301:HOH:O	2.52	0.41
11:K:9:GLN:HB2	11:K:145:TRP:O	2.20	0.41
14:N:133:PHE:HA	14:b:132:THR:O	2.21	0.41
4:R:91:HIS:HB3	4:R:99:ILE:CG2	2.50	0.41
13:a:43:ILE:HG13	13:a:51:VAL:HB	2.02	0.41
13:M:165:ILE:HB	13:M:166:PRO:HD3	2.03	0.41
14:b:36:ARG:HG3	14:b:42:TRP:CE2	2.56	0.41
2:B:124:HIS:HB3	3:C:124:VAL:HG12	2.04	0.40
14:b:45:ARG:NH2	17:b:201:04C:H44	2.36	0.40
8:H:120:ASP:OD1	14:N:28:ASN:ND2	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:26:LEU:HD21	9:I:185:VAL:HG23	2.04	0.40
11:K:30:ARG:O	12:L:132:GLN:NE2	2.35	0.40
13:a:165:ILE:HB	13:a:166:PRO:HD3	2.04	0.40
12:L:4:PRO:O	13:M:104:ARG:NH1	2.48	0.40
4:R:88:ALA:HA	4:R:99:ILE:HG21	2.03	0.40
4:D:88:ALA:HA	4:D:99:ILE:HG21	2.02	0.40
14:N:35:THR:HG21	13:a:228:TYR:HE2	1.86	0.40
14:N:36:ARG:HG3	14:N:42:TRP:CE2	2.56	0.40

There are no symmetry-related clashes.

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	248/250 (99%)	239 (96%)	8 (3%)	1 (0%)	30	51
1	O	248/250 (99%)	239 (96%)	8 (3%)	1 (0%)	30	51
2	B	242/258 (94%)	234 (97%)	4 (2%)	4 (2%)	7	15
2	P	242/258 (94%)	234 (97%)	4 (2%)	4 (2%)	7	15
3	C	238/254 (94%)	233 (98%)	2 (1%)	3 (1%)	9	21
3	Q	238/254 (94%)	233 (98%)	2 (1%)	3 (1%)	9	21
4	D	231/260 (89%)	228 (99%)	3 (1%)	0	100	100
4	R	231/260 (89%)	228 (99%)	3 (1%)	0	100	100
5	E	229/234 (98%)	221 (96%)	8 (4%)	0	100	100
5	S	229/234 (98%)	221 (96%)	8 (4%)	0	100	100
6	F	241/288 (84%)	237 (98%)	4 (2%)	0	100	100
6	T	241/288 (84%)	237 (98%)	4 (2%)	0	100	100
7	G	239/252 (95%)	237 (99%)	2 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
7	U	239/252 (95%)	237 (99%)	2 (1%)	0	100	100
8	H	224/232 (97%)	219 (98%)	5 (2%)	0	100	100
8	V	224/232 (97%)	219 (98%)	5 (2%)	0	100	100
9	I	202/205 (98%)	195 (96%)	7 (4%)	0	100	100
9	W	202/205 (98%)	195 (96%)	7 (4%)	0	100	100
10	J	193/198 (98%)	190 (98%)	3 (2%)	0	100	100
10	X	193/198 (98%)	190 (98%)	3 (2%)	0	100	100
11	K	209/211 (99%)	201 (96%)	7 (3%)	1 (0%)	24	46
11	Y	209/211 (99%)	200 (96%)	8 (4%)	1 (0%)	24	46
12	L	220/222 (99%)	215 (98%)	5 (2%)	0	100	100
12	Z	220/222 (99%)	215 (98%)	5 (2%)	0	100	100
13	M	232/246 (94%)	224 (97%)	6 (3%)	2 (1%)	14	30
13	a	231/246 (94%)	223 (96%)	6 (3%)	2 (1%)	14	30
14	N	194/196 (99%)	188 (97%)	6 (3%)	0	100	100
14	b	194/196 (99%)	188 (97%)	6 (3%)	0	100	100
All	All	6283/6612 (95%)	6120 (97%)	141 (2%)	22 (0%)	30	51

All (22) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	51	VAL
2	B	222	GLY
3	C	202	GLN
2	P	51	VAL
2	P	222	GLY
3	Q	202	GLN
1	A	2	THR
2	B	218	GLY
1	O	2	THR
2	P	218	GLY
3	C	205	ALA
3	Q	205	ALA
2	B	220	ASN
2	P	220	ASN
13	M	83	ALA
13	a	83	ALA
3	C	183	PRO

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Mol	Chain	Res	Type
11	K	39	PRO
3	Q	183	PRO
11	Y	39	PRO
13	M	229	GLY
13	a	229	GLY

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	209/209 (100%)	205 (98%)	4 (2%)	50	75
1	O	209/209 (100%)	205 (98%)	4 (2%)	50	75
2	B	203/216 (94%)	196 (97%)	7 (3%)	32	60
2	P	203/216 (94%)	196 (97%)	7 (3%)	32	60
3	C	212/226 (94%)	202 (95%)	10 (5%)	23	48
3	Q	212/226 (94%)	202 (95%)	10 (5%)	23	48
4	D	194/215 (90%)	185 (95%)	9 (5%)	24	49
4	R	194/215 (90%)	185 (95%)	9 (5%)	24	49
5	E	190/193 (98%)	184 (97%)	6 (3%)	34	62
5	S	190/193 (98%)	184 (97%)	6 (3%)	34	62
6	F	201/239 (84%)	195 (97%)	6 (3%)	36	64
6	T	201/239 (84%)	195 (97%)	6 (3%)	36	64
7	G	206/210 (98%)	198 (96%)	8 (4%)	28	55
7	U	206/210 (98%)	198 (96%)	8 (4%)	28	55
8	H	185/190 (97%)	178 (96%)	7 (4%)	29	56
8	V	185/190 (97%)	178 (96%)	7 (4%)	29	56
9	I	172/173 (99%)	169 (98%)	3 (2%)	53	78
9	W	172/173 (99%)	169 (98%)	3 (2%)	53	78
10	J	173/175 (99%)	169 (98%)	4 (2%)	44	71
10	X	173/175 (99%)	169 (98%)	4 (2%)	44	71

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
11	K	172/172 (100%)	160 (93%)	12 (7%)	14	31
11	Y	172/172 (100%)	161 (94%)	11 (6%)	16	35
12	L	186/186 (100%)	180 (97%)	6 (3%)	34	62
12	Z	186/186 (100%)	180 (97%)	6 (3%)	34	62
13	M	200/208 (96%)	196 (98%)	4 (2%)	48	74
13	a	199/208 (96%)	195 (98%)	4 (2%)	48	74
14	N	162/162 (100%)	157 (97%)	5 (3%)	35	63
14	b	162/162 (100%)	157 (97%)	5 (3%)	35	63
All	All	5329/5548 (96%)	5148 (97%)	181 (3%)	32	60

All (181) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MET
1	A	122	THR
1	A	157	PHE
1	A	250	LEU
2	B	50	LYS
2	B	55	LEU
2	B	79	LEU
2	B	102	ASN
2	B	113	ARG
2	B	191	LEU
2	B	238	LEU
3	C	4	ARG
3	C	38	ASN
3	C	51	LYS
3	C	98	LEU
3	C	147	GLN
3	C	160	GLN
3	C	169	VAL
3	C	180	LYS
3	C	213	VAL
3	C	240	GLU
4	D	20	LEU
4	D	51	LEU
4	D	99	ILE
4	D	176	LEU
4	D	193	LEU

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Mol	Chain	Res	Type
4	D	214	ILE
4	D	235	LEU
4	D	236	LYS
4	D	242	GLU
5	E	9	THR
5	E	29	LYS
5	E	55	LEU
5	E	71	LEU
5	E	188	LEU
5	E	231	LYS
6	F	123	ASN
6	F	172	LEU
6	F	181	GLU
6	F	201	GLU
6	F	221	ASN
6	F	240	GLN
7	G	13	GLU
7	G	26	THR
7	G	75	ASN
7	G	115	LEU
7	G	122	ARG
7	G	125	MET
7	G	235	ARG
7	G	236	LEU
8	H	20	SER
8	H	56	THR
8	H	68	LEU
8	H	91	GLN
8	H	113	ILE
8	H	127	LEU
8	H	196	ARG
9	I	37	ASN
9	I	126	ILE
9	I	171	LEU
10	J	1	MET
10	J	3	ILE
10	J	35	THR
10	J	99	GLN
11	K	4	LEU
11	K	12	VAL
11	K	21	THR
11	K	30	ARG

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Mol	Chain	Res	Type
11	K	31	MET
11	K	35	ILE
11	K	36	GLU
11	K	38	ASN
11	K	84	SER
11	K	88	LEU
11	K	91	ARG
11	K	147	LEU
12	L	23	LEU
12	L	49	ASN
12	L	99	SER
12	L	100	ARG
12	L	150	LEU
12	L	161	GLU
13	M	2	GLN
13	M	48	ASN
13	M	70	LEU
13	M	104	ARG
14	N	9	LYS
14	N	104	ASP
14	N	107	LYS
14	N	119	VAL
14	N	178	LEU
1	O	1	MET
1	O	122	THR
1	O	157	PHE
1	O	250	LEU
2	P	50	LYS
2	P	55	LEU
2	P	79	LEU
2	P	102	ASN
2	P	113	ARG
2	P	191	LEU
2	P	238	LEU
3	Q	4	ARG
3	Q	38	ASN
3	Q	51	LYS
3	Q	98	LEU
3	Q	147	GLN
3	Q	160	GLN
3	Q	169	VAL
3	Q	180	LYS

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Mol	Chain	Res	Type
3	Q	213	VAL
3	Q	240	GLU
4	R	20	LEU
4	R	51	LEU
4	R	99	ILE
4	R	176	LEU
4	R	193	LEU
4	R	214	ILE
4	R	235	LEU
4	R	236	LYS
4	R	242	GLU
5	S	9	THR
5	S	29	LYS
5	S	55	LEU
5	S	71	LEU
5	S	188	LEU
5	S	231	LYS
6	T	123	ASN
6	T	172	LEU
6	T	181	GLU
6	T	201	GLU
6	T	221	ASN
6	T	240	GLN
7	U	13	GLU
7	U	26	THR
7	U	75	ASN
7	U	115	LEU
7	U	122	ARG
7	U	125	MET
7	U	235	ARG
7	U	236	LEU
8	V	20	SER
8	V	56	THR
8	V	68	LEU
8	V	91	GLN
8	V	113	ILE
8	V	127	LEU
8	V	196	ARG
9	W	37	ASN
9	W	126	ILE
9	W	171	LEU
10	X	1	MET

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Mol	Chain	Res	Type
10	X	3	ILE
10	X	35	THR
10	X	99	GLN
11	Y	4	LEU
11	Y	12	VAL
11	Y	21	THR
11	Y	31	MET
11	Y	35	ILE
11	Y	36	GLU
11	Y	38	ASN
11	Y	84	SER
11	Y	88	LEU
11	Y	91	ARG
11	Y	147	LEU
12	Z	23	LEU
12	Z	49	ASN
12	Z	99	SER
12	Z	100	ARG
12	Z	150	LEU
12	Z	161	GLU
13	a	2	GLN
13	a	48	ASN
13	a	70	LEU
13	a	104	ARG
14	b	9	LYS
14	b	104	ASP
14	b	107	LYS
14	b	119	VAL
14	b	178	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (117) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	123	GLN
2	B	124	HIS
3	C	17	GLN
3	C	116	GLN
3	C	120	GLN
3	C	147	GLN
3	C	160	GLN
4	D	15	GLN
4	D	91	HIS

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Mol	Chain	Res	Type
4	D	100	ASN
4	D	106	GLN
4	D	146	GLN
4	D	180	HIS
4	D	225	ASN
5	E	68	HIS
5	E	92	ASN
5	E	99	ASN
5	E	116	GLN
5	E	118	ASN
5	E	120	GLN
5	E	151	ASN
5	E	184	ASN
6	F	19	GLN
6	F	86	ASN
6	F	123	ASN
6	F	143	HIS
7	G	75	ASN
7	G	114	ASN
7	G	117	GLN
7	G	121	GLN
7	G	175	ASN
8	H	30	ASN
8	H	66	HIS
8	H	189	ASN
9	I	37	ASN
9	I	63	ASN
9	I	88	GLN
9	I	203	GLN
10	J	10	GLN
10	J	55	GLN
10	J	63	ASN
11	K	32	ASN
11	K	142	ASN
11	K	175	ASN
12	L	3	ASN
12	L	49	ASN
12	L	70	ASN
12	L	79	HIS
12	L	109	ASN
12	L	152	ASN
12	L	153	GLN

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Mol	Chain	Res	Type
12	L	158	ASN
12	L	197	GLN
13	M	26	ASN
13	M	48	ASN
13	M	62	HIS
13	M	108	ASN
13	M	149	HIS
14	N	38	HIS
14	N	141	ASN
14	N	161	GLN
2	P	119	GLN
2	P	123	GLN
2	P	124	HIS
2	P	176	GLN
3	Q	17	GLN
3	Q	116	GLN
3	Q	120	GLN
3	Q	147	GLN
3	Q	160	GLN
4	R	15	GLN
4	R	91	HIS
4	R	100	ASN
4	R	106	GLN
4	R	160	ASN
4	R	225	ASN
5	S	68	HIS
5	S	92	ASN
5	S	99	ASN
5	S	116	GLN
5	S	120	GLN
5	S	184	ASN
6	T	19	GLN
6	T	86	ASN
6	T	123	ASN
7	U	114	ASN
7	U	117	GLN
7	U	121	GLN
7	U	172	ASN
7	U	175	ASN
8	V	30	ASN
8	V	189	ASN
9	W	63	ASN

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Mol	Chain	Res	Type
9	W	88	GLN
9	W	203	GLN
10	X	55	GLN
10	X	63	ASN
11	Y	32	ASN
11	Y	142	ASN
11	Y	175	ASN
12	Z	3	ASN
12	Z	49	ASN
12	Z	70	ASN
12	Z	79	HIS
12	Z	109	ASN
12	Z	152	ASN
12	Z	153	GLN
12	Z	158	ASN
12	Z	197	GLN
13	a	26	ASN
13	a	48	ASN
13	a	62	HIS
13	a	108	ASN
13	a	149	HIS
14	b	38	HIS
14	b	141	ASN
14	b	161	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 20 ligands modelled in this entry, 10 are monoatomic - leaving 10 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
17	04C	K	301	11	44,44,44	1.34	3 (6%)	54,58,58	1.34	9 (16%)
18	MES	Y	302	-	12,12,12	2.35	1 (8%)	15,16,16	1.11	1 (6%)
18	MES	K	303	-	12,12,12	2.21	1 (8%)	15,16,16	1.15	1 (6%)
17	04C	V	301	8	44,44,44	1.23	3 (6%)	54,58,58	1.15	5 (9%)
17	04C	N	201	14	44,44,44	1.40	3 (6%)	54,58,58	1.38	8 (14%)
18	MES	H	302	-	12,12,12	2.27	1 (8%)	15,16,16	1.10	1 (6%)
18	MES	V	302	-	12,12,12	2.22	1 (8%)	15,16,16	1.34	2 (13%)
17	04C	H	301	8	44,44,44	1.26	3 (6%)	54,58,58	1.15	4 (7%)
17	04C	b	201	14	44,44,44	1.39	3 (6%)	54,58,58	1.38	8 (14%)
17	04C	Y	301	11	44,44,44	1.34	3 (6%)	54,58,58	1.33	9 (16%)

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
17	04C	K	301	11	-	13/44/52/52	0/3/3/3
18	MES	Y	302	-	-	1/6/14/14	0/1/1/1
18	MES	K	303	-	-	3/6/14/14	0/1/1/1
17	04C	V	301	8	-	16/44/52/52	0/3/3/3
17	04C	N	201	14	-	10/44/52/52	0/3/3/3
18	MES	H	302	-	-	3/6/14/14	0/1/1/1
18	MES	V	302	-	-	3/6/14/14	0/1/1/1
17	04C	H	301	8	-	16/44/52/52	0/3/3/3
17	04C	b	201	14	-	10/44/52/52	0/3/3/3
17	04C	Y	301	11	-	13/44/52/52	0/3/3/3

All (22) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
18	Y	302	MES	C8-S	-7.76	1.66	1.77
18	H	302	MES	C8-S	-7.55	1.67	1.77
18	V	302	MES	C8-S	-7.37	1.67	1.77
18	K	303	MES	C8-S	-7.16	1.67	1.77
17	Y	301	04C	C10-C9	5.57	1.62	1.53
17	K	301	04C	C10-C9	5.51	1.62	1.53
17	N	201	04C	C10-C9	5.43	1.62	1.53
17	b	201	04C	C10-C9	5.19	1.62	1.53
17	N	201	04C	C40-C41	-4.57	1.40	1.51
17	b	201	04C	C40-C41	-4.55	1.40	1.51
17	K	301	04C	C40-C41	-4.29	1.41	1.51
17	V	301	04C	C40-C41	-4.28	1.41	1.51
17	H	301	04C	C40-C41	-4.27	1.41	1.51
17	Y	301	04C	C40-C41	-4.20	1.41	1.51
17	H	301	04C	C7-C6	-4.16	1.41	1.51
17	H	301	04C	C10-C9	4.10	1.60	1.53
17	b	201	04C	C7-C6	-4.05	1.41	1.51
17	N	201	04C	C7-C6	-4.02	1.41	1.51
17	V	301	04C	C7-C6	-3.97	1.41	1.51
17	V	301	04C	C10-C9	3.92	1.60	1.53
17	Y	301	04C	C7-C6	-3.79	1.42	1.51
17	K	301	04C	C7-C6	-3.77	1.42	1.51

All (48) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	N	201	04C	C11-C10-C12	-5.38	102.91	109.76
17	b	201	04C	C11-C10-C12	-5.30	103.02	109.76
17	K	301	04C	C30-N31-C36	-4.23	104.56	111.14
17	Y	301	04C	C30-N31-C36	-4.11	104.75	111.14
17	K	301	04C	C35-C36-N31	4.03	116.25	110.12
17	H	301	04C	C29-C30-N31	-3.99	104.13	113.41
17	Y	301	04C	C35-C36-N31	3.95	116.12	110.12
17	V	301	04C	C29-C30-N31	-3.93	104.27	113.41
17	H	301	04C	O34-C35-C36	-3.48	104.27	111.77
17	V	301	04C	O34-C35-C36	-3.41	104.42	111.77
18	K	303	MES	O3S-S-C8	3.25	112.36	106.00
17	K	301	04C	C32-N31-C36	3.17	115.68	108.84
17	Y	301	04C	C32-N31-C36	3.17	115.67	108.84
18	V	302	MES	O1S-S-C8	3.10	111.41	106.73
17	Y	301	04C	O34-C35-C36	-2.81	105.72	111.77
18	Y	302	MES	O1S-S-C8	2.77	110.92	106.73
17	b	201	04C	C29-C30-N31	-2.77	106.98	113.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	K	301	04C	O34-C35-C36	-2.77	105.81	111.77
17	N	201	04C	C29-C30-N31	-2.73	107.06	113.41
17	b	201	04C	C33-C32-N31	-2.71	106.00	110.12
17	N	201	04C	C33-C32-N31	-2.65	106.09	110.12
17	b	201	04C	C7-C6-C5	2.65	125.84	120.90
17	K	301	04C	C7-C8-N22	-2.63	106.35	110.08
17	N	201	04C	C7-C6-C5	2.60	125.75	120.90
17	Y	301	04C	C7-C8-N22	-2.59	106.40	110.08
17	N	201	04C	C7-C6-C1	-2.59	116.08	120.90
17	b	201	04C	C7-C6-C1	-2.59	116.08	120.90
17	H	301	04C	C7-C6-C1	-2.54	116.17	120.90
18	H	302	MES	O2S-S-C8	2.53	110.55	106.73
17	V	301	04C	C7-C6-C5	2.51	125.58	120.90
17	V	301	04C	C7-C6-C1	-2.50	116.26	120.90
17	N	201	04C	O34-C35-C36	-2.49	106.41	111.77
17	H	301	04C	C7-C6-C5	2.45	125.47	120.90
17	b	201	04C	O13-C12-C10	-2.45	106.47	111.51
17	N	201	04C	O13-C12-C10	-2.45	106.48	111.51
18	V	302	MES	O3S-S-C8	2.44	110.77	106.00
17	K	301	04C	C7-C6-C5	2.43	125.43	120.90
17	b	201	04C	O34-C35-C36	-2.40	106.60	111.77
17	Y	301	04C	C7-C6-C5	2.40	125.36	120.90
17	Y	301	04C	C7-C6-C1	-2.36	116.52	120.90
17	K	301	04C	C7-C6-C1	-2.33	116.57	120.90
17	b	201	04C	C41-C40-C24	-2.28	107.30	113.36
17	N	201	04C	C41-C40-C24	-2.20	107.51	113.36
17	V	301	04C	C11-C10-C12	-2.19	106.98	109.76
17	K	301	04C	C29-C30-N31	-2.18	108.35	113.41
17	Y	301	04C	C41-C40-C24	-2.14	107.66	113.36
17	K	301	04C	C41-C40-C24	-2.12	107.73	113.36
17	Y	301	04C	C29-C30-N31	-2.09	108.54	113.41

There are no chirality outliers.

All (88) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
17	H	301	04C	C11-C10-C9-C8
17	H	301	04C	C12-C10-C9-C8
17	H	301	04C	C11-C10-C12-O13
17	K	301	04C	C11-C10-C9-C8
17	K	301	04C	C12-C10-C9-C8
17	K	301	04C	C9-C10-C12-O13

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Mol	Chain	Res	Type	Atoms
17	K	301	04C	C11-C10-C12-O13
17	N	201	04C	C11-C10-C9-C8
17	N	201	04C	C12-C10-C9-C8
17	V	301	04C	C11-C10-C9-C8
17	V	301	04C	C12-C10-C9-C8
17	V	301	04C	C11-C10-C12-O13
17	Y	301	04C	C11-C10-C9-C8
17	Y	301	04C	C12-C10-C9-C8
17	Y	301	04C	C9-C10-C12-O13
17	Y	301	04C	C11-C10-C12-O13
17	b	201	04C	C11-C10-C9-C8
17	b	201	04C	C12-C10-C9-C8
18	K	303	MES	C7-C8-S-O2S
18	K	303	MES	C7-C8-S-O3S
18	V	302	MES	C7-C8-S-O1S
18	V	302	MES	C7-C8-S-O3S
18	Y	302	MES	C8-C7-N4-C5
17	K	301	04C	C47-C44-O45-C46
17	Y	301	04C	C47-C44-O45-C46
17	H	301	04C	C43-C44-O45-C46
17	K	301	04C	C43-C44-O45-C46
17	Y	301	04C	C43-C44-O45-C46
17	V	301	04C	C43-C44-O45-C46
17	H	301	04C	C47-C44-O45-C46
17	V	301	04C	C47-C44-O45-C46
17	N	201	04C	N25-C24-C40-C41
17	b	201	04C	N25-C24-C40-C41
17	N	201	04C	C23-C24-C40-C41
17	N	201	04C	C5-C6-C7-C8
17	b	201	04C	C5-C6-C7-C8
17	K	301	04C	C12-C10-C9-O21
17	N	201	04C	C12-C10-C9-O21
17	V	301	04C	C11-C10-C9-O21
17	Y	301	04C	C12-C10-C9-O21
17	b	201	04C	C12-C10-C9-O21
17	b	201	04C	C23-C24-C40-C41
17	N	201	04C	C1-C6-C7-C8
17	b	201	04C	C1-C6-C7-C8
17	H	301	04C	C5-C6-C7-C8
17	K	301	04C	C5-C6-C7-C8
17	Y	301	04C	C5-C6-C7-C8
17	V	301	04C	C5-C6-C7-C8

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Mol	Chain	Res	Type	Atoms
17	H	301	04C	N28-C29-C30-N31
17	V	301	04C	N28-C29-C30-N31
17	K	301	04C	C1-C6-C7-C8
17	Y	301	04C	C1-C6-C7-C8
17	H	301	04C	C1-C6-C7-C8
17	V	301	04C	C1-C6-C7-C8
17	H	301	04C	C11-C10-C9-O21
17	K	301	04C	C11-C10-C9-O21
17	N	201	04C	C11-C10-C9-O21
17	Y	301	04C	C11-C10-C9-O21
17	b	201	04C	C11-C10-C9-O21
17	V	301	04C	N25-C24-C40-C41
17	H	301	04C	N25-C24-C40-C41
17	K	301	04C	N25-C24-C40-C41
17	Y	301	04C	N25-C24-C40-C41
17	H	301	04C	O37-C29-C30-N31
17	V	301	04C	O37-C29-C30-N31
18	H	302	MES	C7-C8-S-O3S
18	H	302	MES	C7-C8-S-O1S
18	H	302	MES	C7-C8-S-O2S
18	K	303	MES	C7-C8-S-O1S
18	V	302	MES	C7-C8-S-O2S
17	H	301	04C	C29-C30-N31-C36
17	H	301	04C	C29-C30-N31-C32
17	V	301	04C	C29-C30-N31-C36
17	V	301	04C	C29-C30-N31-C32
17	b	201	04C	N28-C29-C30-N31
17	N	201	04C	N28-C29-C30-N31
17	H	301	04C	C6-C7-C8-N22
17	V	301	04C	C6-C7-C8-N22
17	N	201	04C	O37-C29-C30-N31
17	b	201	04C	O37-C29-C30-N31
17	K	301	04C	O49-C23-C24-N25
17	Y	301	04C	O49-C23-C24-N25
17	H	301	04C	C9-C10-C12-O13
17	V	301	04C	C9-C10-C12-O13
17	K	301	04C	N22-C23-C24-N25
17	Y	301	04C	N22-C23-C24-N25
17	H	301	04C	C12-C10-C9-O21
17	V	301	04C	C12-C10-C9-O21

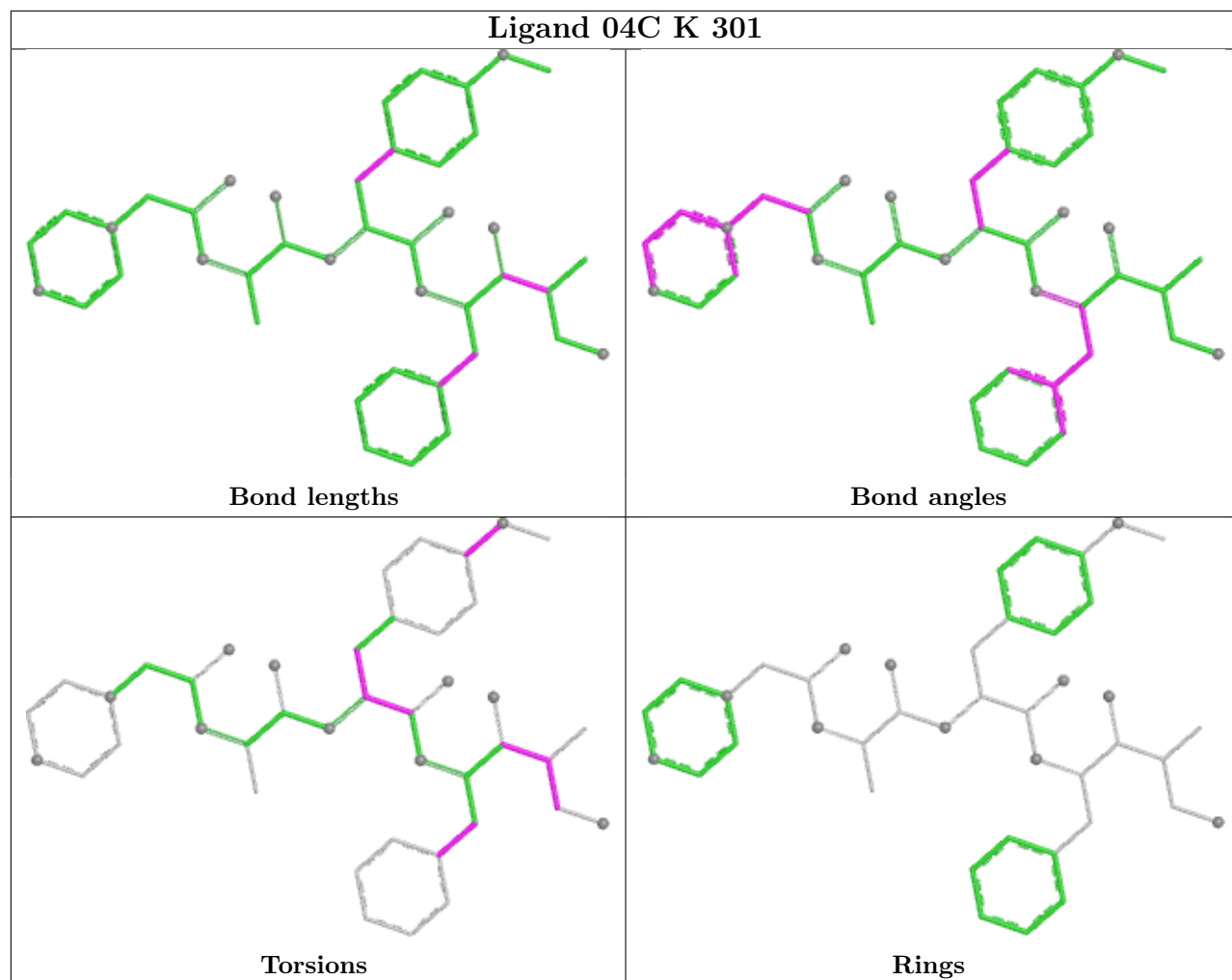
There are no ring outliers.

9 monomers are involved in 17 short contacts:

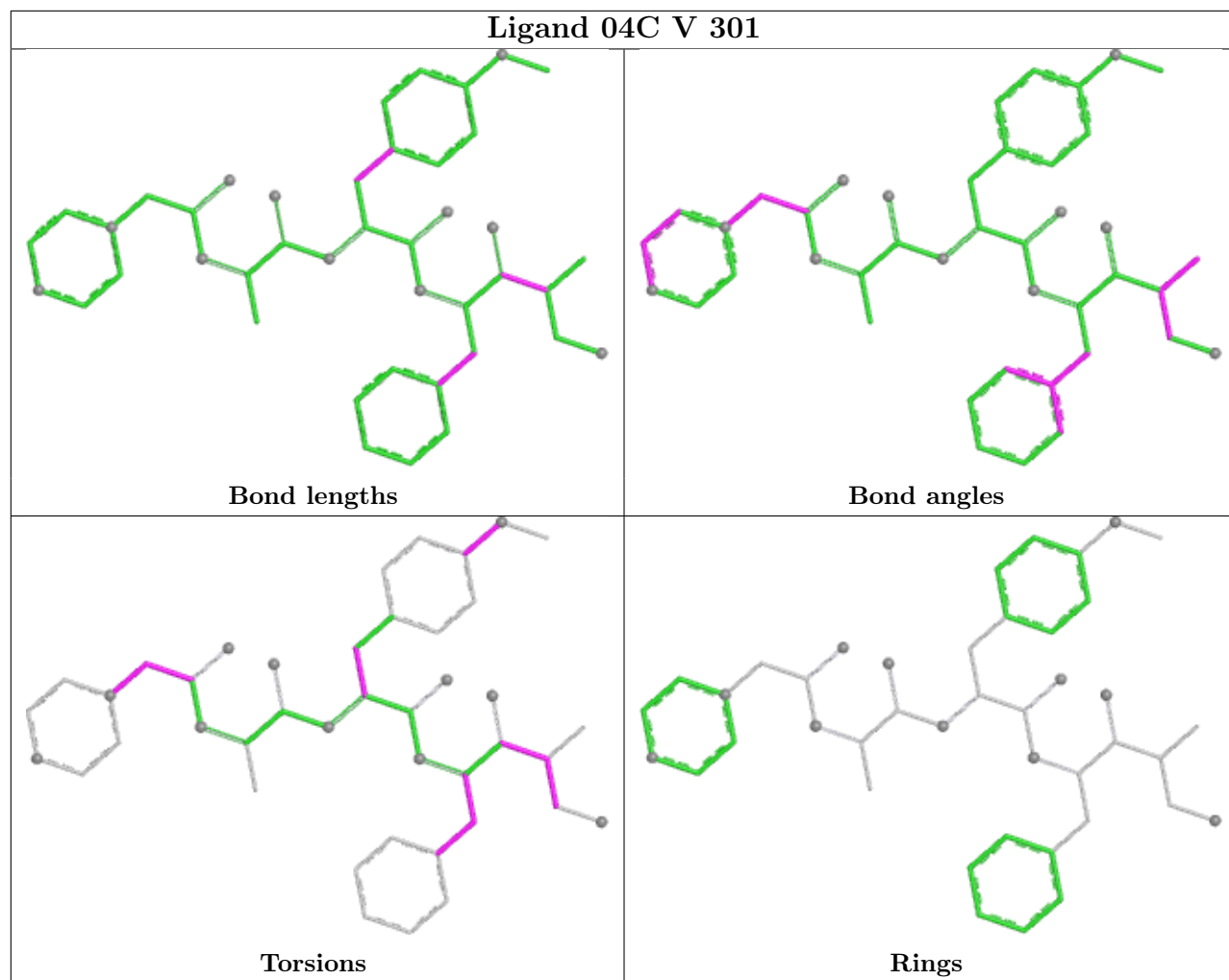
Mol	Chain	Res	Type	Clashes	Symm-Clashes
17	K	301	04C	3	0
18	Y	302	MES	1	0
18	K	303	MES	3	0
17	V	301	04C	3	0
17	N	201	04C	4	0
18	V	302	MES	1	0
17	H	301	04C	2	0
17	b	201	04C	4	0
17	Y	301	04C	1	0

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

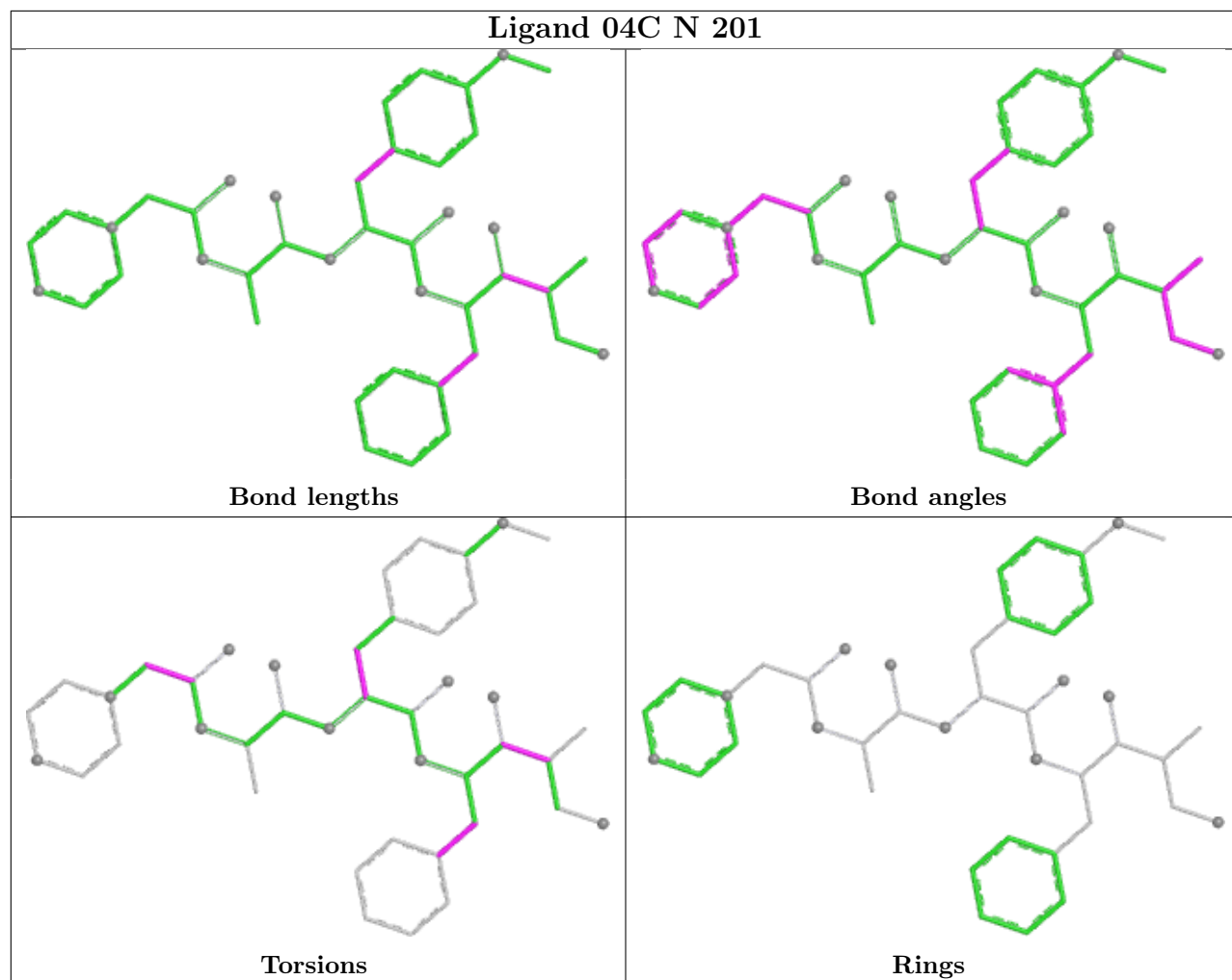
Ligand 04C K 301



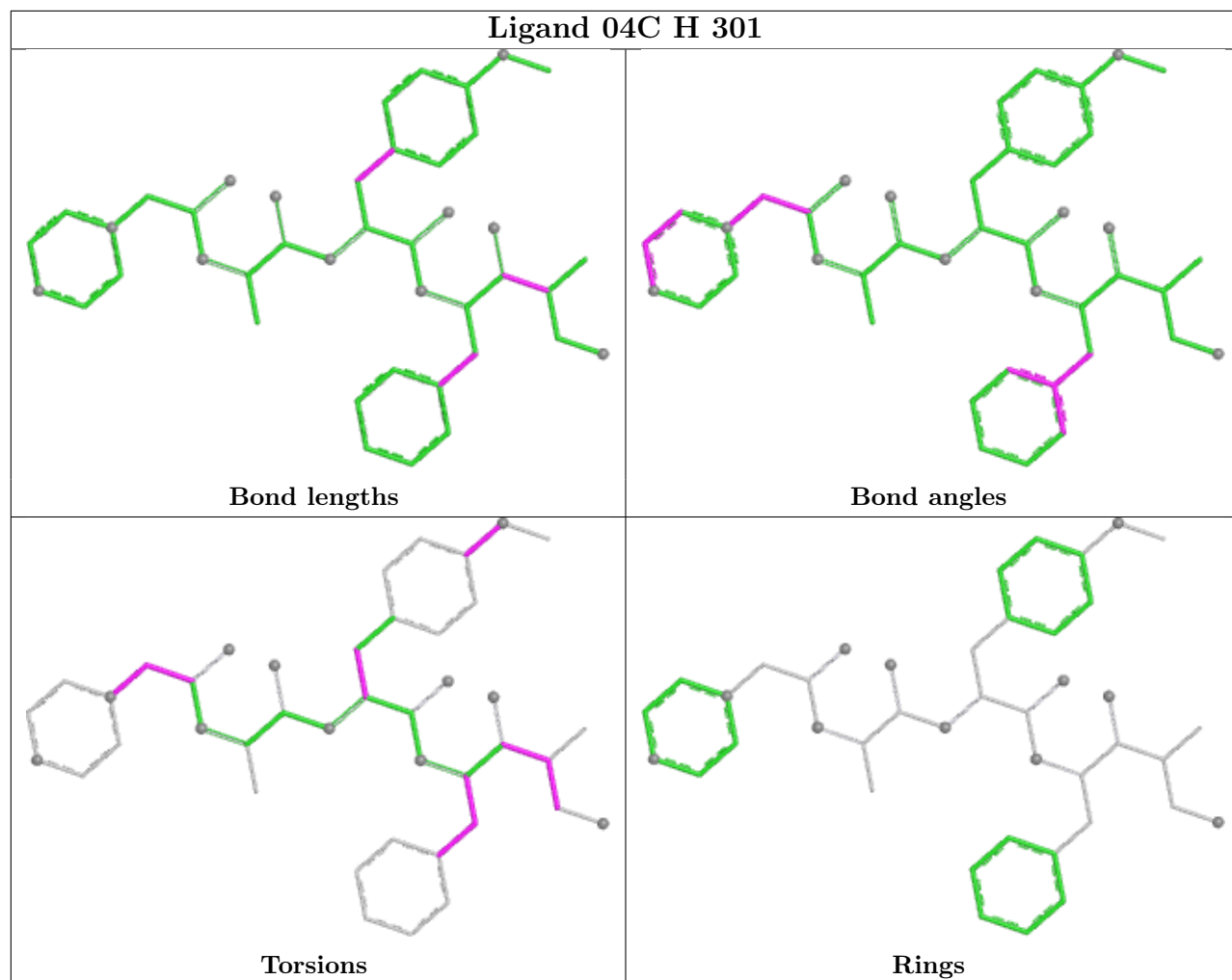
Ligand 04C V 301



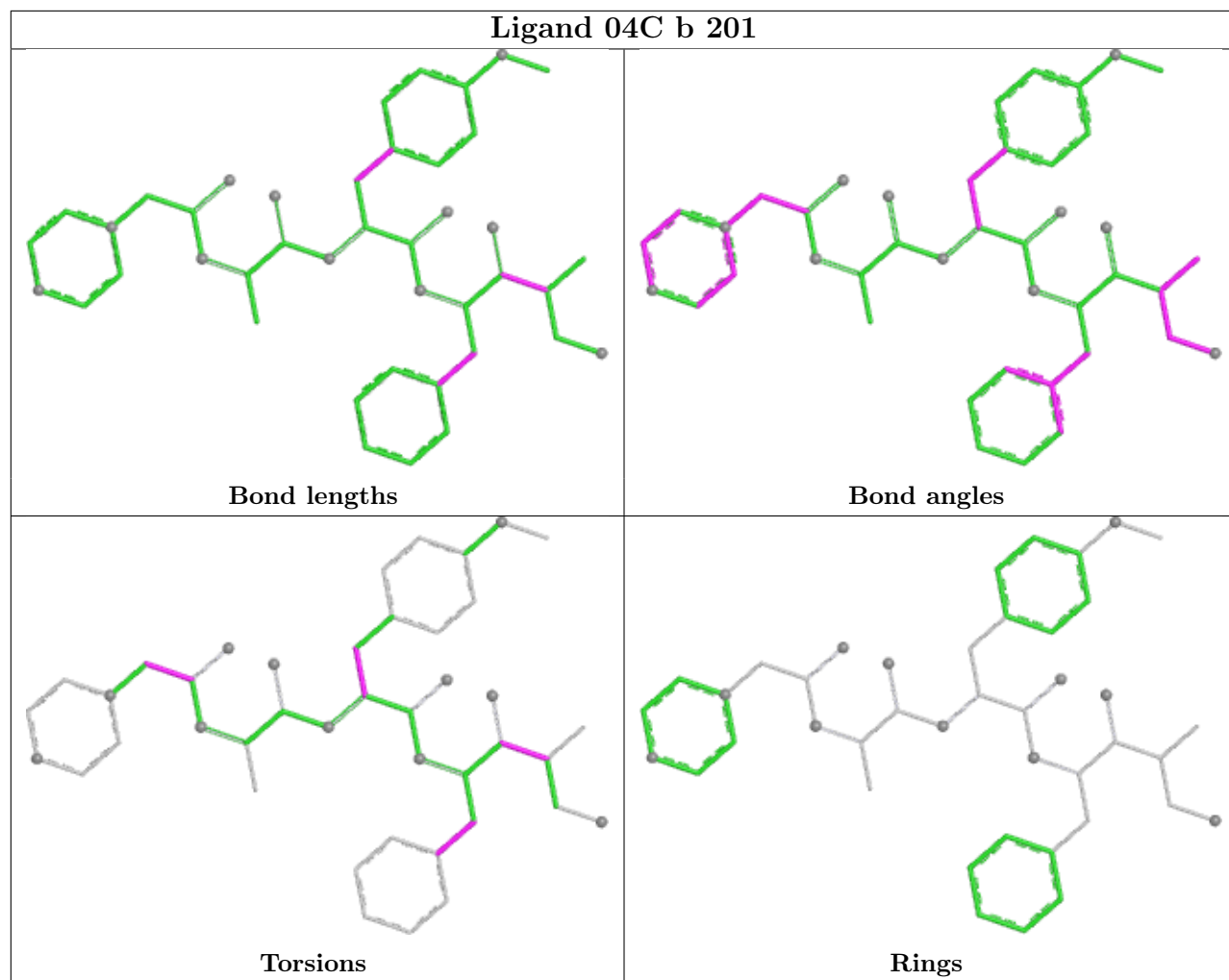
Ligand 04C N 201

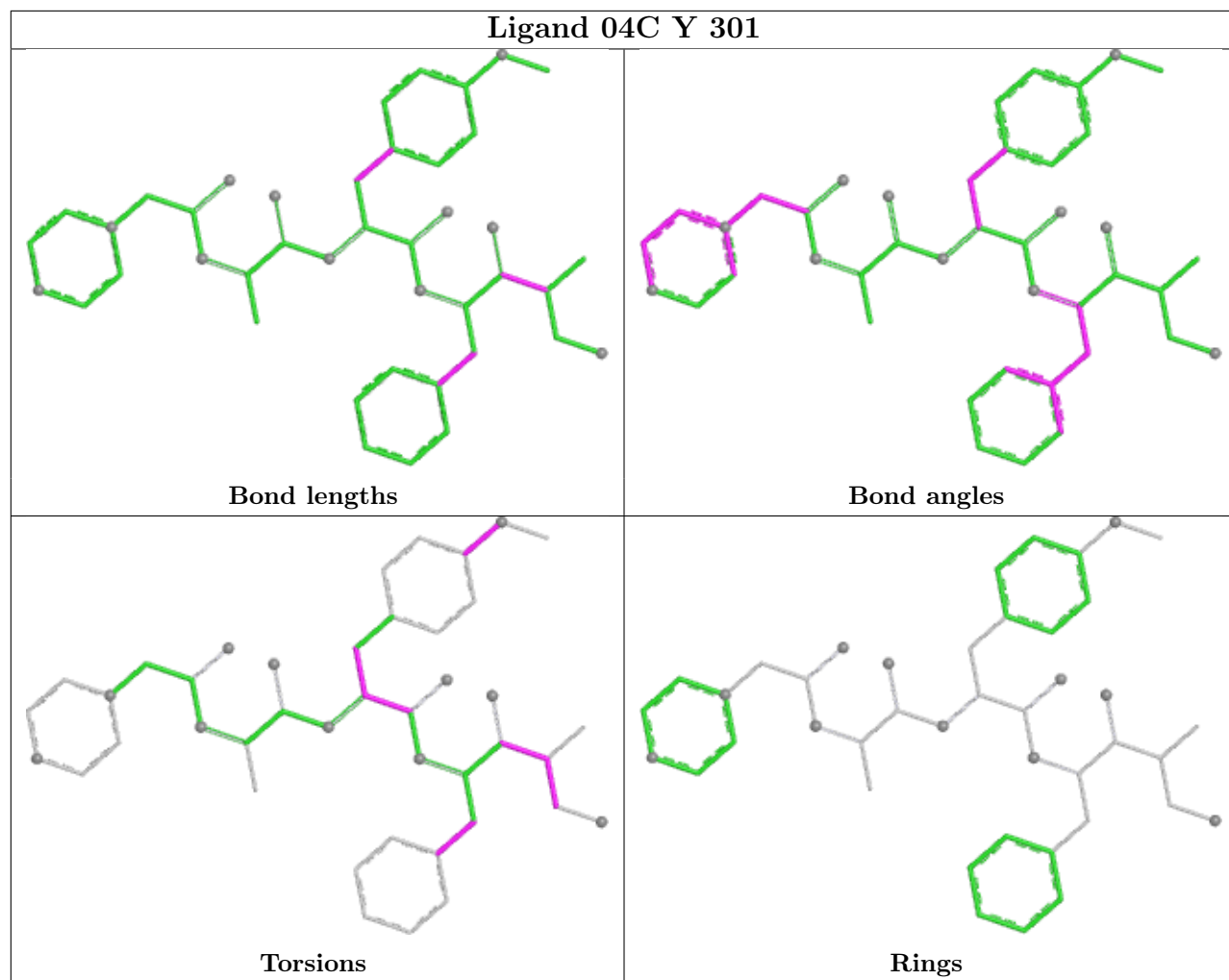


Ligand 04C H 301



Ligand 04C b 201





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, 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	250/250 (100%)	-0.32	1 (0%) 88 86	38, 55, 90, 128	0
1	O	250/250 (100%)	-0.30	3 (1%) 76 73	41, 58, 101, 137	0
2	B	244/258 (94%)	-0.05	7 (2%) 53 48	40, 59, 106, 156	0
2	P	244/258 (94%)	-0.19	4 (1%) 70 66	42, 61, 103, 151	0
3	C	240/254 (94%)	0.08	10 (4%) 40 35	39, 66, 133, 166	0
3	Q	240/254 (94%)	0.12	8 (3%) 49 43	28, 73, 149, 185	0
4	D	235/260 (90%)	-0.12	6 (2%) 57 51	44, 63, 95, 126	0
4	R	235/260 (90%)	0.06	7 (2%) 52 47	50, 71, 111, 141	0
5	E	231/234 (98%)	-0.11	1 (0%) 88 86	44, 64, 109, 155	0
5	S	231/234 (98%)	0.03	3 (1%) 75 71	48, 71, 114, 145	0
6	F	243/288 (84%)	-0.23	2 (0%) 82 80	36, 58, 106, 137	0
6	T	243/288 (84%)	-0.15	7 (2%) 53 48	40, 66, 122, 148	0
7	G	241/252 (95%)	-0.30	1 (0%) 88 86	37, 55, 92, 148	0
7	U	241/252 (95%)	-0.29	2 (0%) 82 80	40, 55, 92, 130	0
8	H	226/232 (97%)	-0.29	2 (0%) 81 78	37, 53, 91, 145	0
8	V	226/232 (97%)	-0.30	2 (0%) 81 78	38, 52, 91, 161	0
9	I	204/205 (99%)	-0.44	0 100 100	37, 52, 83, 109	0
9	W	204/205 (99%)	-0.43	1 (0%) 87 85	37, 54, 84, 108	0
10	J	195/198 (98%)	-0.31	2 (1%) 79 76	37, 55, 81, 123	0
10	X	195/198 (98%)	-0.33	3 (1%) 72 68	38, 56, 82, 136	0
11	K	211/211 (100%)	-0.03	2 (0%) 81 78	38, 62, 93, 119	0
11	Y	211/211 (100%)	0.01	3 (1%) 73 69	37, 65, 94, 123	0
12	L	222/222 (100%)	-0.18	2 (0%) 81 78	43, 57, 107, 134	0
12	Z	222/222 (100%)	-0.15	1 (0%) 87 85	33, 61, 107, 139	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
13	M	233/246 (94%)	-0.32	3 (1%) 75 71	32, 53, 85, 108	1 (0%)
13	a	233/246 (94%)	-0.34	2 (0%) 81 78	38, 56, 87, 117	0
14	N	196/196 (100%)	-0.45	0 100 100	35, 49, 80, 107	0
14	b	196/196 (100%)	-0.48	0 100 100	37, 49, 80, 108	0
All	All	6342/6612 (95%)	-0.20	85 (1%) 75 71	28, 59, 104, 185	1 (0%)

All (85) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	218	GLY	6.5
10	X	1	MET	5.7
12	L	174	TYR	4.6
4	R	113	LEU	4.3
10	J	1	MET	4.3
12	Z	174	TYR	3.8
13	a	1	THR	3.6
10	J	55	GLN	3.5
2	P	51	VAL	3.4
3	C	205	ALA	3.3
2	B	219	ALA	3.3
3	Q	205	ALA	3.2
3	Q	50	LEU	3.1
4	R	114	ARG	3.1
2	P	218	GLY	2.9
3	C	51	LYS	2.9
6	T	243	ILE	2.9
6	F	215	CYS	2.9
3	C	50	LEU	2.8
6	T	205	GLU	2.8
1	O	249	ALA	2.8
7	U	168	GLU	2.7
3	Q	175	LYS	2.7
4	R	112	ALA	2.7
11	Y	146	ASP	2.7
3	C	238	LYS	2.7
4	R	125	LEU	2.7
1	O	53	SER	2.7
9	W	1	SER	2.7
13	a	69	ASP	2.6
8	H	223	ILE	2.6
11	K	146	ASP	2.6

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Mol	Chain	Res	Type	RSRZ
3	Q	51	LYS	2.6
4	R	117	GLU	2.5
2	B	222	GLY	2.5
13	M	1	THR	2.5
8	V	224	GLN	2.5
6	T	178	HIS	2.5
3	Q	240	GLU	2.5
11	Y	40	TYR	2.5
6	T	215	CYS	2.5
4	D	167	GLY	2.5
3	Q	49	THR	2.4
8	H	208	GLY	2.4
4	D	241	ALA	2.4
3	C	225	GLU	2.4
3	C	203	THR	2.4
2	P	93	HIS	2.4
7	G	242	GLN	2.4
10	X	55	GLN	2.3
2	P	219	ALA	2.3
2	B	221	ASP	2.3
6	T	14	ASP	2.3
4	R	116	GLY	2.3
4	D	113	LEU	2.3
1	A	1	MET	2.3
11	Y	208	ASN	2.3
2	B	1	GLY	2.3
4	D	78	ARG	2.3
8	V	223	ILE	2.2
13	M	69	ASP	2.2
6	T	204	LYS	2.2
12	L	136	CYS	2.2
3	C	206	LYS	2.2
3	Q	3	ASP	2.2
10	X	195	PHE	2.2
7	U	242	GLN	2.2
4	R	238	LYS	2.2
3	C	236	GLN	2.1
5	E	54	GLU	2.1
3	Q	238	LYS	2.1
2	B	93	HIS	2.1
2	B	217	LYS	2.1
1	O	1	MET	2.1

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Mol	Chain	Res	Type	RSRZ
3	C	186	VAL	2.1
3	C	240	GLU	2.0
4	D	112	ALA	2.0
4	D	117	GLU	2.0
5	S	173	ARG	2.0
6	T	244	ASN	2.0
13	M	233	ILE	2.0
5	S	207	VAL	2.0
11	K	40	TYR	2.0
6	F	202	ASP	2.0
5	S	55	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 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
17	04C	Y	301	42/42	0.77	0.17	36,61,87,90	42
17	04C	N	201	42/42	0.78	0.15	41,58,77,78	0
15	MG	Z	301	1/1	0.84	0.11	71,71,71,71	0
17	04C	K	301	42/42	0.84	0.13	37,56,82,87	0
17	04C	b	201	42/42	0.84	0.14	41,62,82,85	0
18	MES	Y	302	12/12	0.87	0.15	37,39,59,59	12
17	04C	H	301	42/42	0.92	0.09	40,46,71,75	0
18	MES	V	302	12/12	0.92	0.13	56,58,69,73	0
15	MG	G	301	1/1	0.92	0.06	62,62,62,62	0
17	04C	V	301	42/42	0.93	0.09	40,46,80,84	0
18	MES	H	302	12/12	0.94	0.12	58,61,73,75	0
18	MES	K	303	12/12	0.95	0.16	19,20,33,35	12

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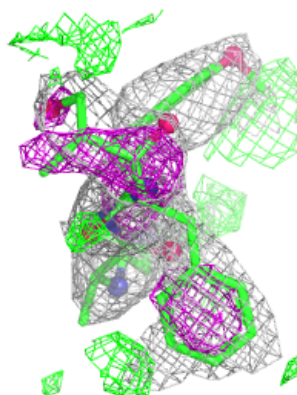
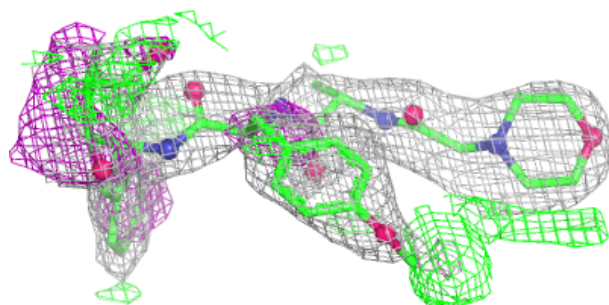
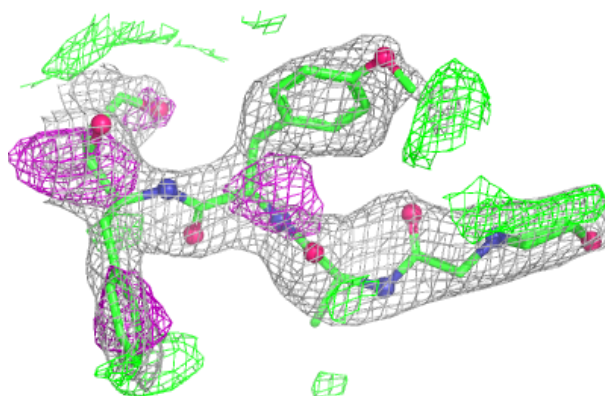
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
15	MG	I	301	1/1	0.96	0.06	63,63,63,63	0
15	MG	L	301	1/1	0.97	0.06	64,64,64,64	0
15	MG	K	302	1/1	0.97	0.08	51,51,51,51	0
15	MG	J	201	1/1	0.98	0.12	58,58,58,58	0
16	CL	G	302	1/1	0.98	0.07	43,43,43,43	0
15	MG	N	202	1/1	0.99	0.04	52,52,52,52	0
16	CL	U	301	1/1	0.99	0.06	44,44,44,44	0
15	MG	I	302	1/1	0.99	0.05	64,64,64,64	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.

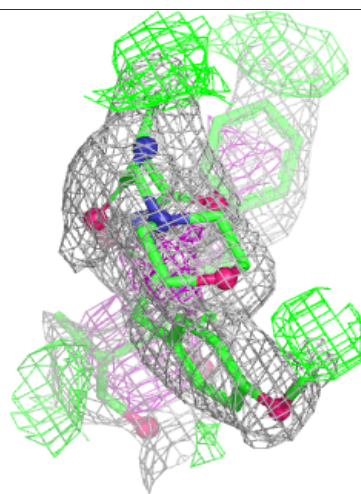
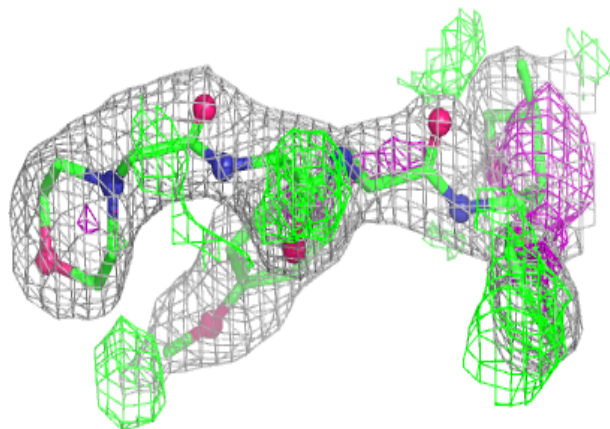
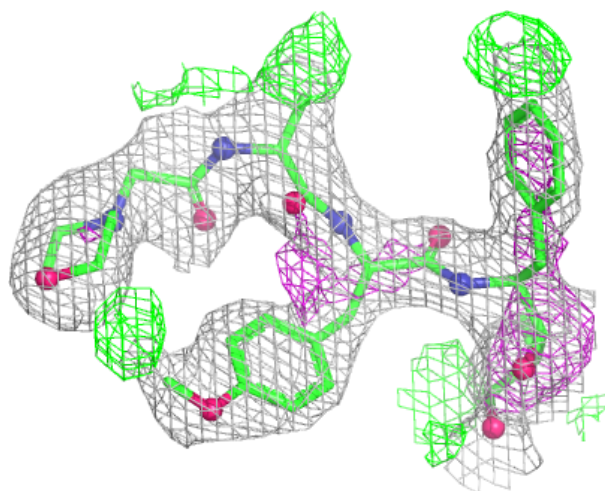
Electron density around 04C Y 301:

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



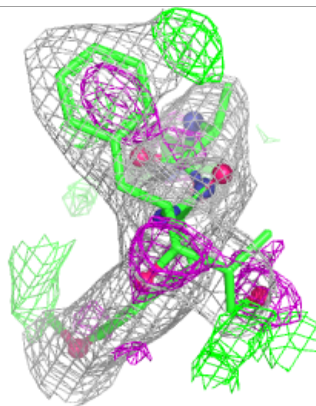
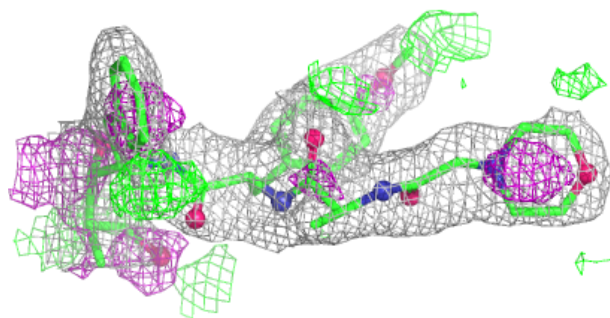
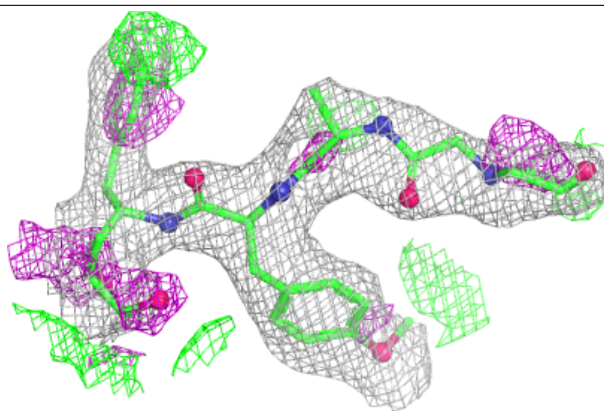
Electron density around 04C N 201:

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



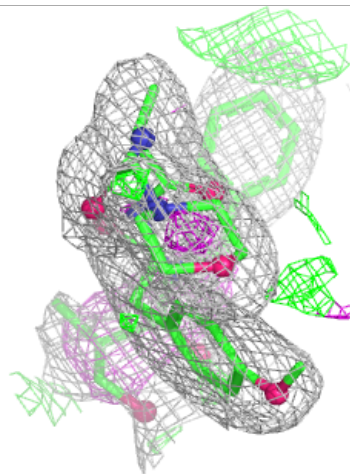
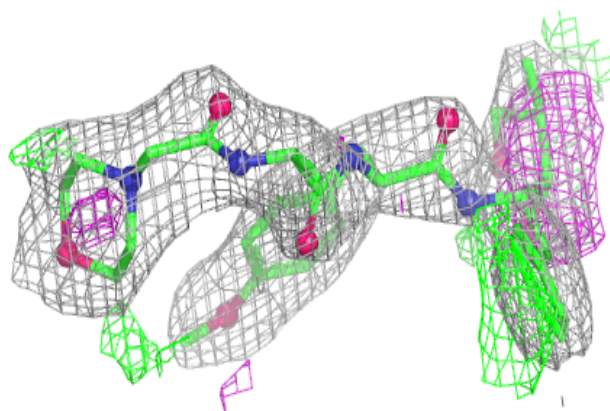
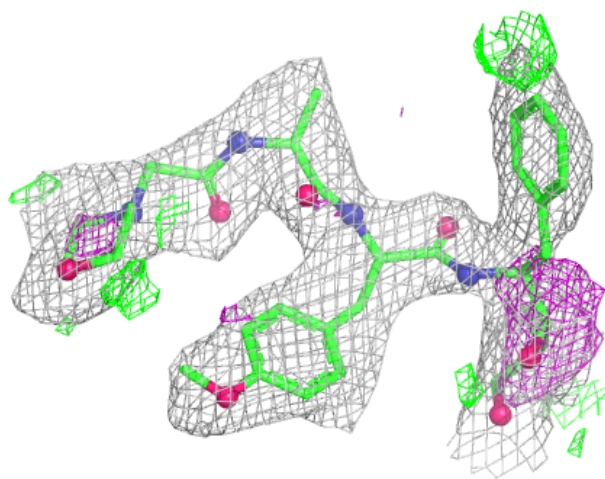
Electron density around 04C K 301:

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



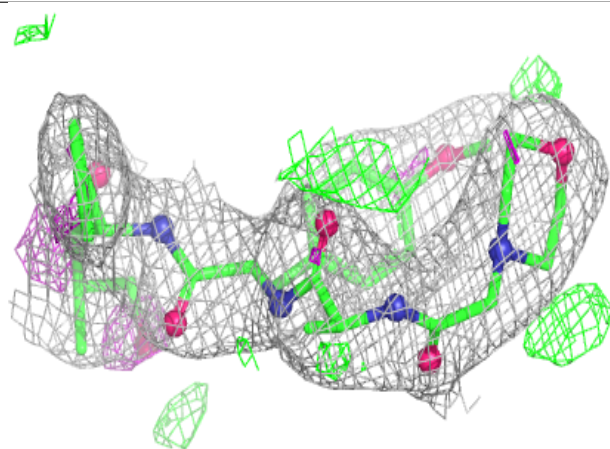
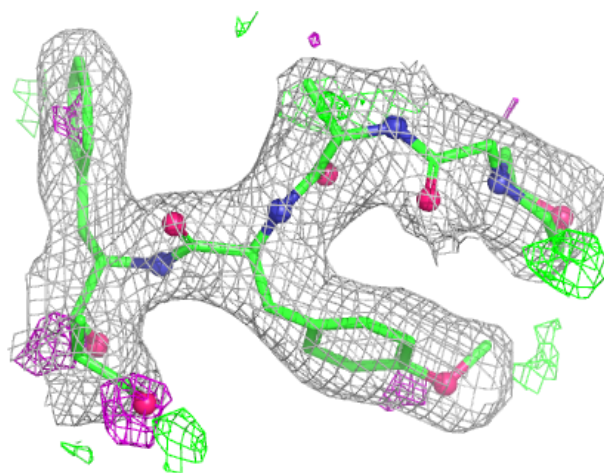
Electron density around 04C b 201:

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



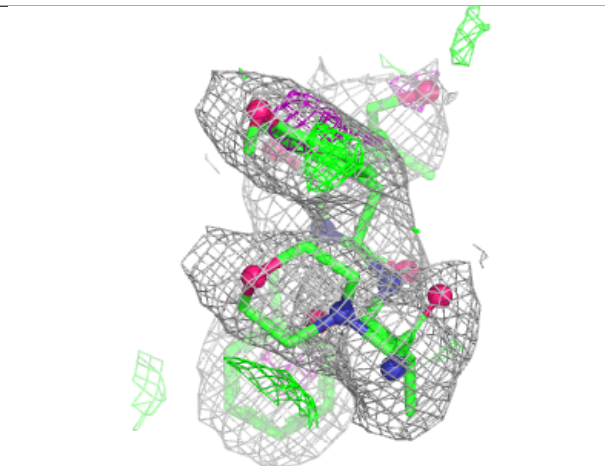
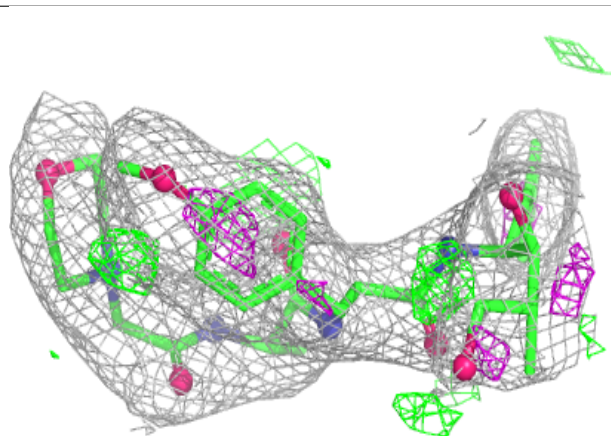
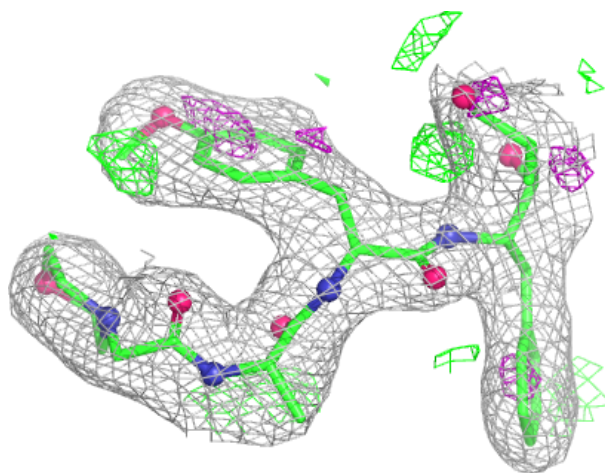
Electron density around 04C H 301:

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



Electron density around 04C V 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.