



wwPDB X-ray Structure Validation Summary Report ⓘ

May 16, 2020 – 07:30 am BST

PDB ID : 6OCW
Title : Crystal Structure of Mycobacterium tuberculosis Proteasome in Complex with Phenylimidazole-based Inhibitor A85
Authors : Hsu, H.C.; Li, H.
Deposited on : 2019-03-25
Resolution : 2.60 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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 following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.11
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.11

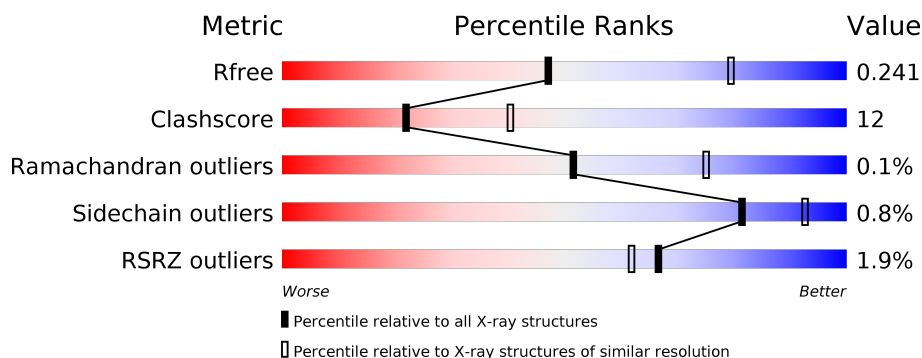
1 Overall quality at a glance

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.



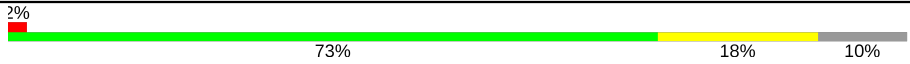



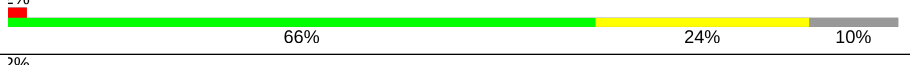
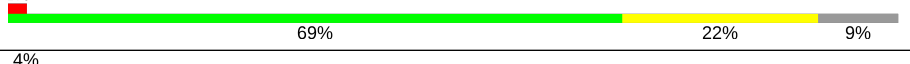
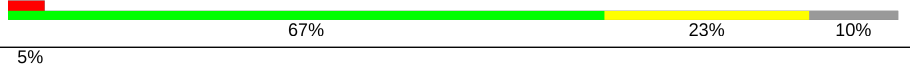

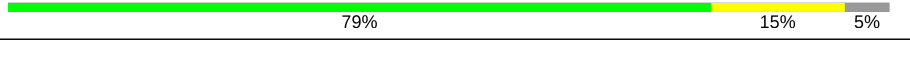


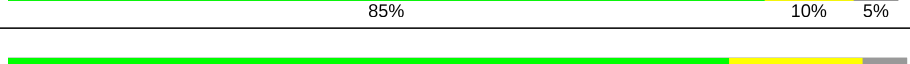

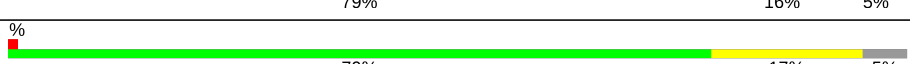

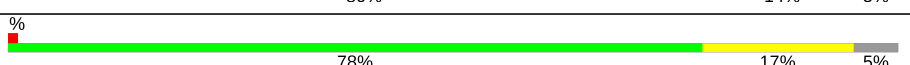
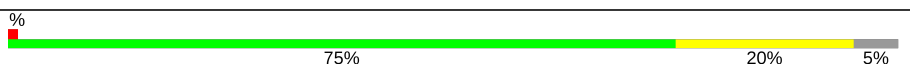
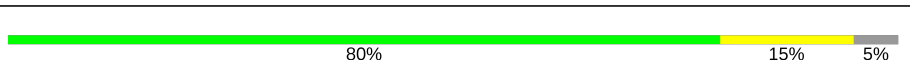
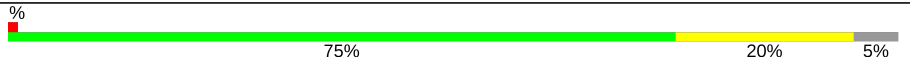
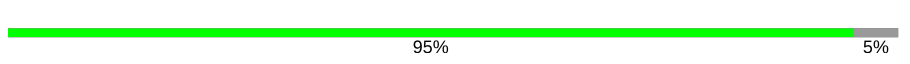
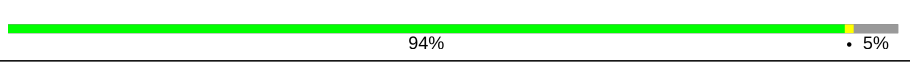
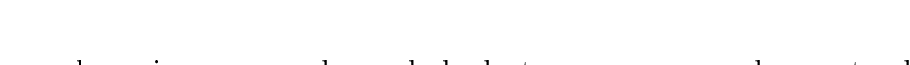
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	3163 (2.60-2.60)
Clashscore	141614	3518 (2.60-2.60)
Ramachandran outliers	138981	3455 (2.60-2.60)
Sidechain outliers	138945	3455 (2.60-2.60)
RSRZ outliers	127900	3104 (2.60-2.60)

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 on 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	240	<div> <div>72% 18% 9%</div> <div> <div>72%</div> <div>18%</div> <div>9%</div> </div> </div>
1	B	240	<div> <div>7% 60% 29% 10%</div> <div> <div>7%</div> <div>60%</div> <div>29%</div> <div>10%</div> </div> </div>
1	C	240	<div> <div>3% 58% 32% 10%</div> <div> <div>3%</div> <div>58%</div> <div>32%</div> <div>10%</div> </div> </div>
1	D	240	<div> <div>3% 68% 22% 10%</div> <div> <div>3%</div> <div>68%</div> <div>22%</div> <div>10%</div> </div> </div>
1	E	240	<div> <div>3% 61% 29% 10%</div> <div> <div>3%</div> <div>61%</div> <div>29%</div> <div>10%</div> </div> </div>
1	F	240	<div> <div>2% 60% 28% 11%</div> <div> <div>2%</div> <div>60%</div> <div>28%</div> <div>11%</div> </div> </div>

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Mol	Chain	Length	Quality of chain
1	G	240	
1	O	240	
1	P	240	
1	Q	240	
1	R	240	
1	S	240	
1	T	240	
1	U	240	
2	H	234	
2	I	234	
2	J	234	
2	K	234	
2	L	234	
2	M	234	
2	N	234	
2	V	234	
2	W	234	
2	X	234	
2	Y	234	
2	Z	234	
2	a	234	
2	b	234	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
5	CIT	X	302	-	-	X	-

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 48175 atoms, of which 175 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.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	218	Total	C	N	O	S	0	1	0
			1688	1056	310	318	4			
1	B	215	Total	C	N	O	S	0	0	0
			1660	1041	303	312	4			
1	C	216	Total	C	N	O	S	0	0	0
			1664	1043	304	313	4			
1	D	215	Total	C	N	O	S	0	0	0
			1655	1035	303	313	4			
1	E	216	Total	C	N	O	S	0	0	0
			1667	1045	304	314	4			
1	F	214	Total	C	N	O	S	0	1	0
			1664	1042	306	312	4			
1	G	216	Total	C	N	O	S	0	0	0
			1662	1040	304	314	4			
1	O	215	Total	C	N	O	S	0	0	0
			1660	1040	303	313	4			
1	P	216	Total	C	N	O	S	0	0	0
			1667	1045	304	314	4			
1	Q	215	Total	C	N	O	S	0	0	0
			1660	1041	303	312	4			
1	R	215	Total	C	N	O	S	0	0	0
			1657	1038	303	312	4			
1	S	218	Total	C	N	O	S	0	1	0
			1689	1056	310	319	4			
1	T	217	Total	C	N	O	S	0	0	0
			1671	1047	305	315	4			
1	U	216	Total	C	N	O	S	0	0	0
			1664	1043	304	313	4			

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	9	MET	-	initiating methionine	UNP P9WHU1

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Chain	Residue	Modelled	Actual	Comment	Reference
B	9	MET	-	initiating methionine	UNP P9WHU1
C	9	MET	-	initiating methionine	UNP P9WHU1
D	9	MET	-	initiating methionine	UNP P9WHU1
E	9	MET	-	initiating methionine	UNP P9WHU1
F	9	MET	-	initiating methionine	UNP P9WHU1
G	9	MET	-	initiating methionine	UNP P9WHU1
O	9	MET	-	initiating methionine	UNP P9WHU1
P	9	MET	-	initiating methionine	UNP P9WHU1
Q	9	MET	-	initiating methionine	UNP P9WHU1
R	9	MET	-	initiating methionine	UNP P9WHU1
S	9	MET	-	initiating methionine	UNP P9WHU1
T	9	MET	-	initiating methionine	UNP P9WHU1
U	9	MET	-	initiating methionine	UNP P9WHU1

- Molecule 2 is a protein called Proteasome subunit beta.

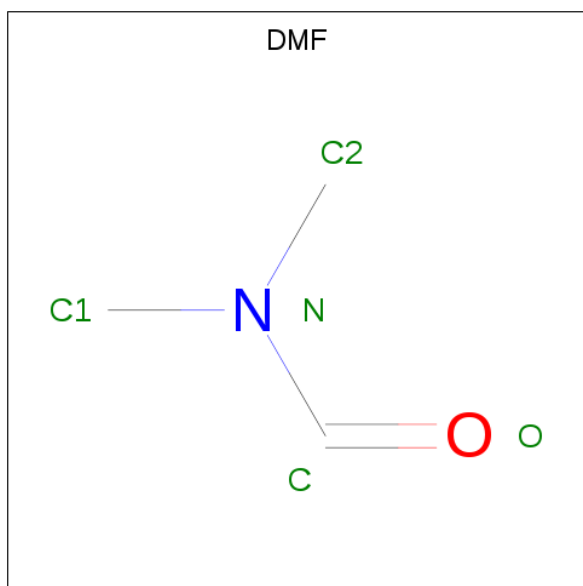
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	H	222	Total	C	N	O	S	0	0	0
			1638	1027	282	324	5			
2	I	222	Total	C	N	O	S	0	0	0
			1638	1027	282	324	5			
2	J	222	Total	C	N	O	S	0	0	0
			1638	1027	282	324	5			
2	K	223	Total	C	N	O	S	0	0	0
			1642	1029	283	325	5			
2	L	223	Total	C	N	O	S	0	0	0
			1642	1029	283	325	5			
2	M	222	Total	C	N	O	S	0	0	0
			1638	1027	282	324	5			
2	N	223	Total	C	N	O	S	0	0	0
			1642	1029	283	325	5			
2	V	223	Total	C	N	O	S	0	0	0
			1642	1029	283	325	5			
2	W	223	Total	C	N	O	S	0	0	0
			1642	1029	283	325	5			
2	X	222	Total	C	N	O	S	0	0	0
			1638	1027	282	324	5			
2	Y	223	Total	C	N	O	S	0	0	0
			1642	1029	283	325	5			
2	Z	222	Total	C	N	O	S	0	0	0
			1638	1027	282	324	5			
2	a	223	Total	C	N	O	S	0	0	0
			1642	1029	283	325	5			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	b	222	Total	C	N	O	S	0	0	0
			1638	1027	282	324	5			

- Molecule 3 is DIMETHYLFORMAMIDE (three-letter code: DMF) (formula: C_3H_7NO).



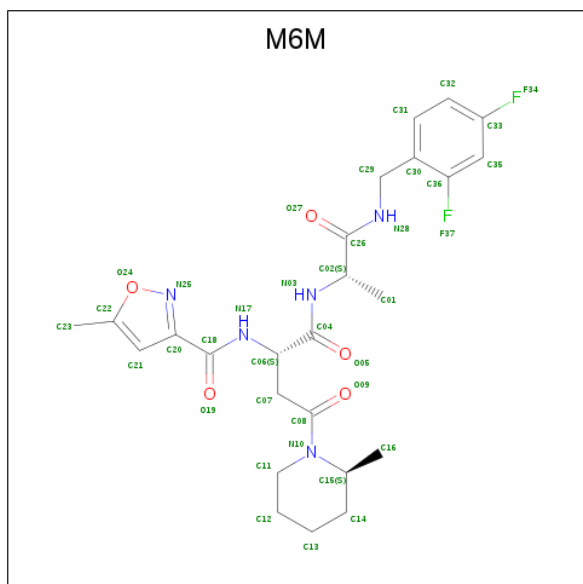
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	C	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	D	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	E	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	F	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	J	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	O	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	P	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	Q	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	R	1	Total	C	H	N	O	0	0
			12	3	7	1	1		

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	R	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	S	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	T	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	U	1	Total	C	H	N	O	0	0
			12	3	7	1	1		
3	a	1	Total	C	H	N	O	0	0
			12	3	7	1	1		

- Molecule 4 is N-{(2S)-1-((2S)-1-[(2,4-difluorobenzyl)amino]-1-oxopropan-2-yl)amino)-4-[(2S)-2-methylpiperidin-1-yl]-1,4-dioxobutan-2-yl}-5-methyl-1,2-oxazole-3-carboxamide (non-preferred name) (three-letter code: M6M) (formula: C₂₅H₃₁F₂N₅O₅).



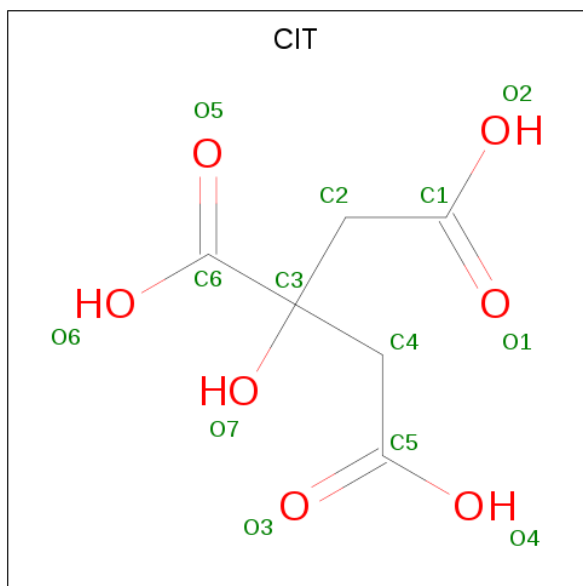
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	H	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	I	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	J	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	K	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	L	1	Total	C	F	N	O	0	0
			37	25	2	5	5		

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	M	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	N	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	V	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	W	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	X	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	Y	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	Z	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	a	1	Total	C	F	N	O	0	0
			37	25	2	5	5		
4	b	1	Total	C	F	N	O	0	0
			37	25	2	5	5		

- Molecule 5 is CITRIC ACID (three-letter code: CIT) (formula: C₆H₈O₇).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	H	1	Total	C	H	O	0	0
			18	6	5	7		
5	I	1	Total	C	H	O	0	0
			18	6	5	7		

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	J	1	Total	C	H	O	0	0
			18	6	5	7		
5	K	1	Total	C	H	O	0	0
			18	6	5	7		
5	L	1	Total	C	H	O	0	0
			18	6	5	7		
5	M	1	Total	C	H	O	0	0
			18	6	5	7		
5	N	1	Total	C	H	O	0	0
			18	6	5	7		
5	V	1	Total	C	H	O	0	0
			18	6	5	7		
5	W	1	Total	C	H	O	0	0
			18	6	5	7		
5	X	1	Total	C	H	O	0	0
			18	6	5	7		
5	Y	1	Total	C	H	O	0	0
			18	6	5	7		
5	Z	1	Total	C	H	O	0	0
			18	6	5	7		
5	a	1	Total	C	H	O	0	0
			18	6	5	7		
5	b	1	Total	C	H	O	0	0
			18	6	5	7		

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	20	Total	O	0	0
			20	20		
6	B	18	Total	O	0	0
			18	18		
6	C	19	Total	O	0	0
			19	19		
6	D	20	Total	O	0	0
			20	20		
6	E	19	Total	O	0	0
			19	19		
6	F	17	Total	O	0	0
			17	17		
6	G	32	Total	O	0	0
			32	32		

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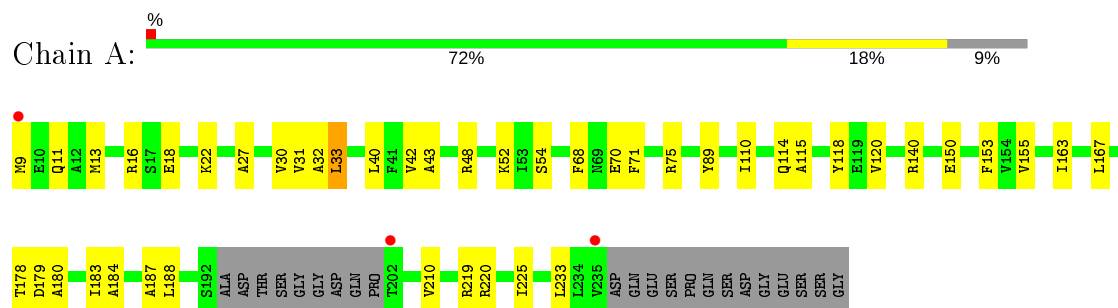
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	H	33	Total 33	O 33	0	0
6	I	42	Total 42	O 42	0	0
6	J	45	Total 45	O 45	0	0
6	K	45	Total 45	O 45	0	0
6	L	45	Total 45	O 45	0	0
6	M	45	Total 45	O 45	0	0
6	N	43	Total 43	O 43	0	0
6	O	24	Total 24	O 24	0	0
6	P	22	Total 22	O 22	0	0
6	Q	35	Total 35	O 35	0	0
6	R	24	Total 24	O 24	0	0
6	S	30	Total 30	O 30	0	0
6	T	19	Total 19	O 19	0	0
6	U	22	Total 22	O 22	0	0
6	V	53	Total 53	O 53	0	0
6	W	47	Total 47	O 47	0	0
6	X	47	Total 47	O 47	0	0
6	Y	42	Total 42	O 42	0	0
6	Z	50	Total 50	O 50	0	0
6	a	38	Total 38	O 38	0	0
6	b	41	Total 41	O 41	0	0

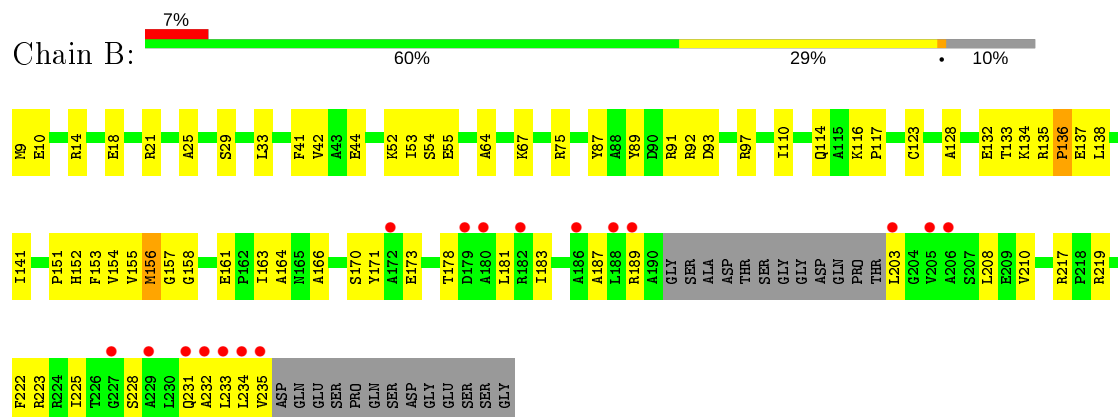
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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.

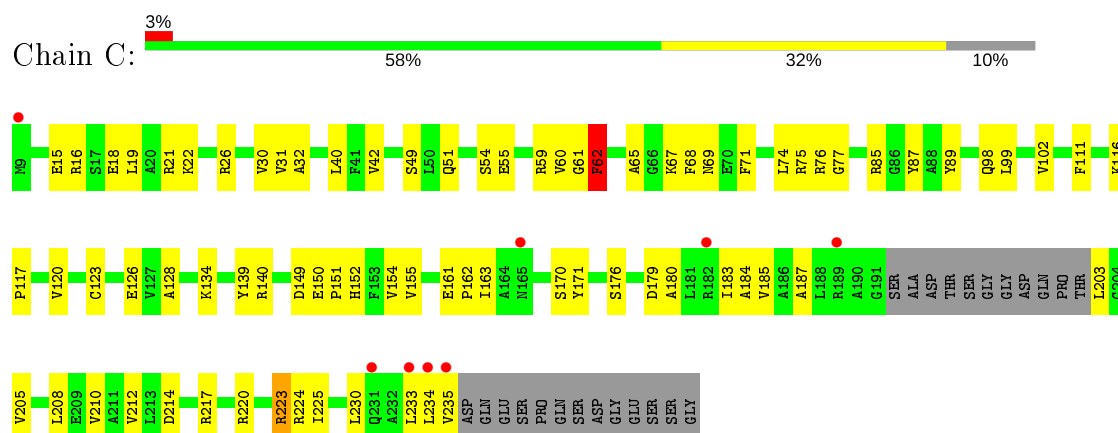
• Molecule 1: Proteasome subunit alpha



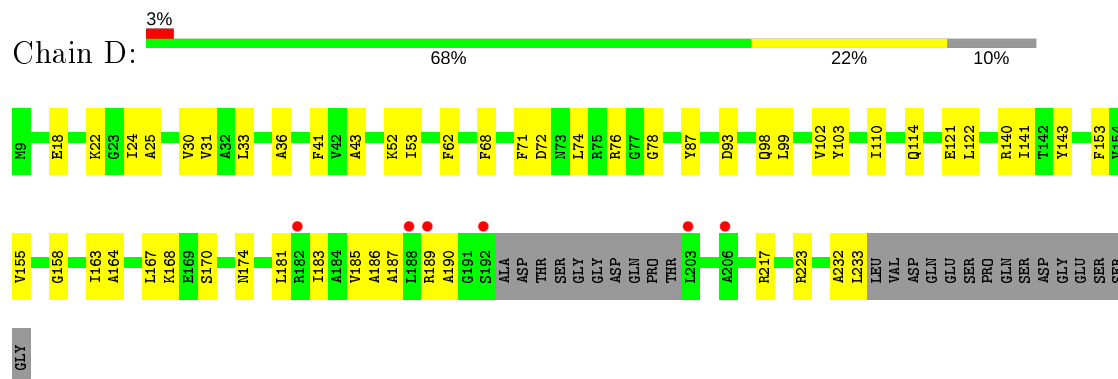
• Molecule 1: Proteasome subunit alpha



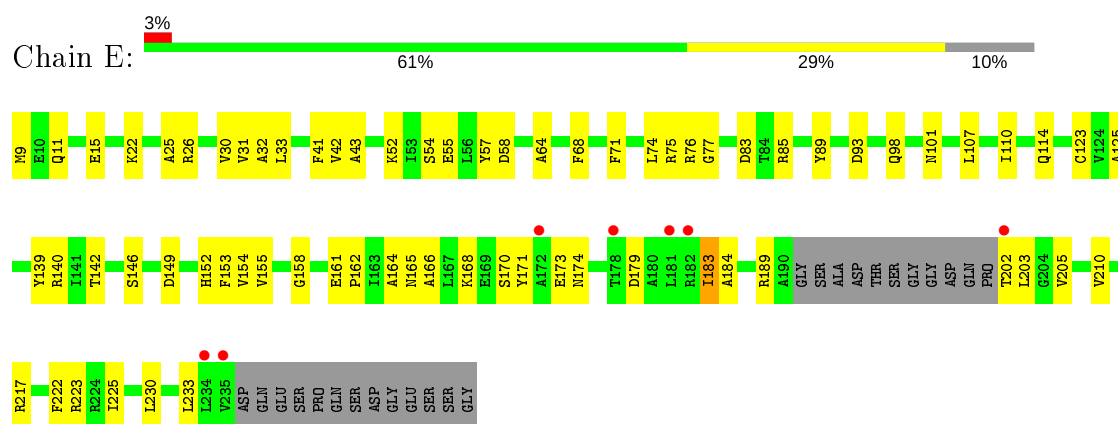
• Molecule 1: Proteasome subunit alpha



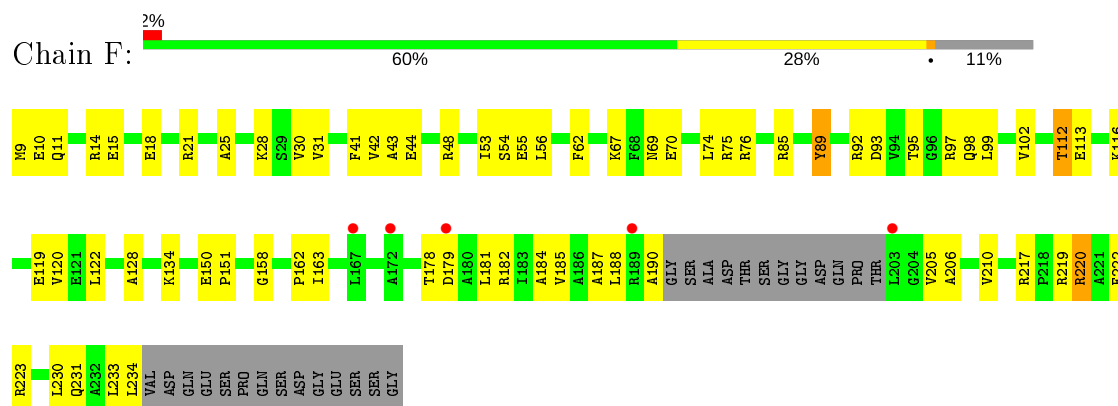
- Molecule 1: Proteasome subunit alpha



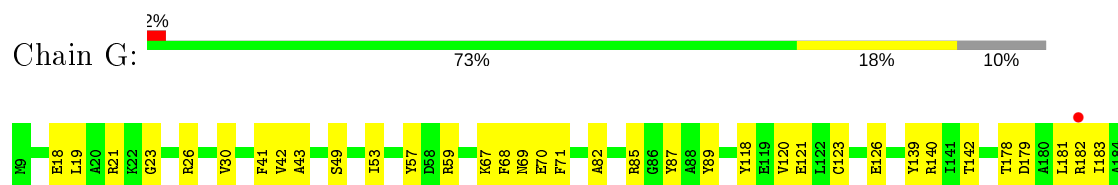
- Molecule 1: Proteasome subunit alpha



- Molecule 1: Proteasome subunit alpha

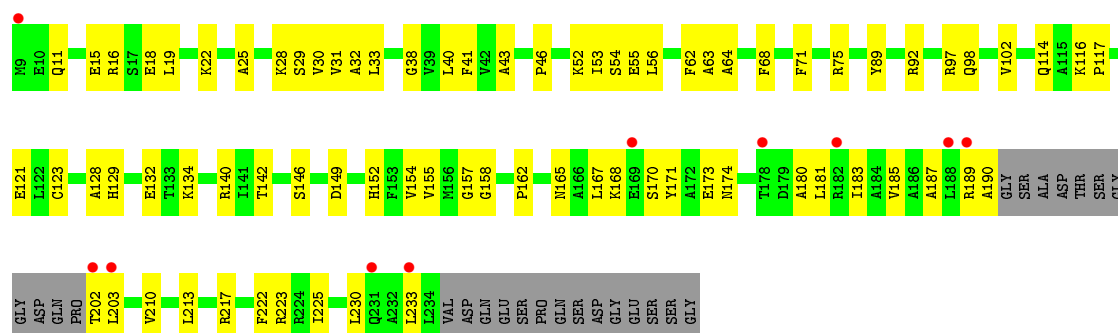


- Molecule 1: Proteasome subunit alpha

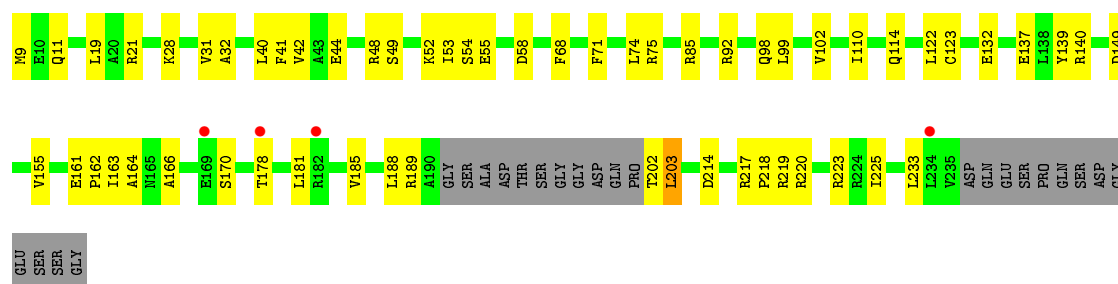




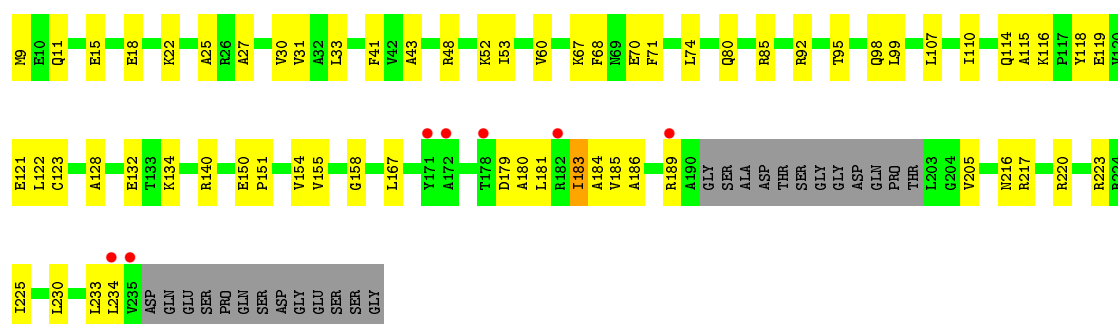
- Molecule 1: Proteasome subunit alpha



- Molecule 1: Proteasome subunit alpha

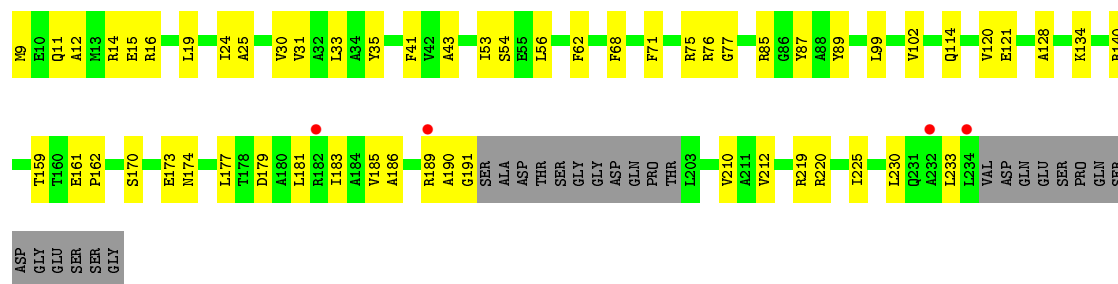


- Molecule 1: Proteasome subunit alpha

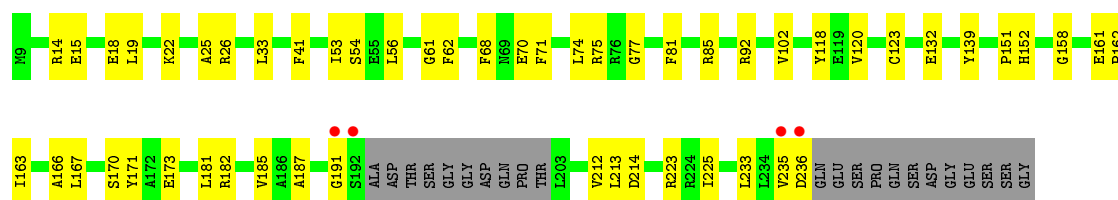


- Molecule 1: Proteasome subunit alpha

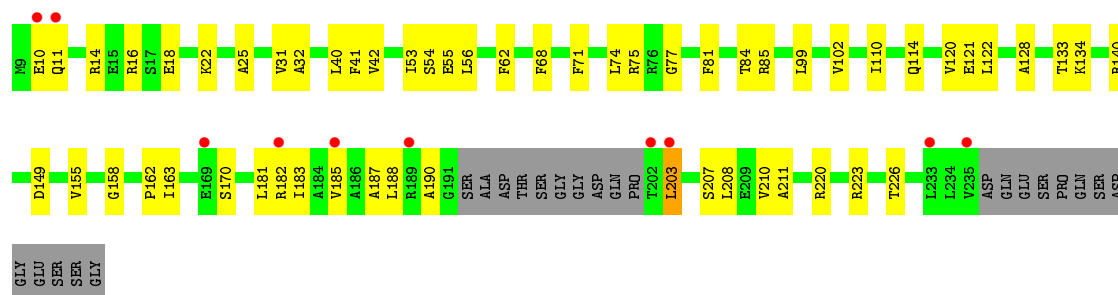




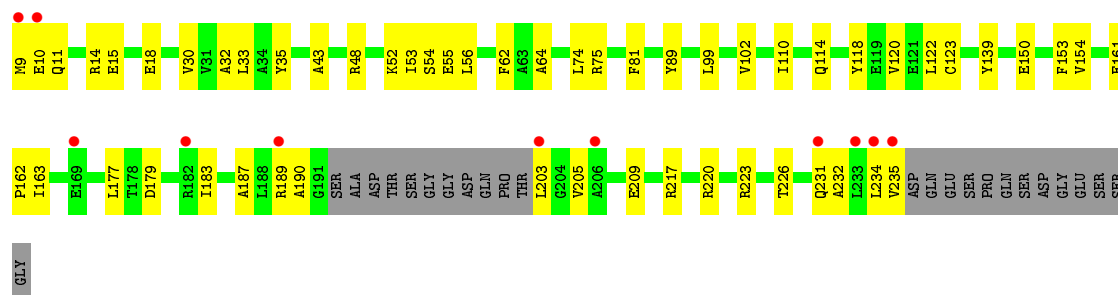
- Molecule 1: Proteasome subunit alpha



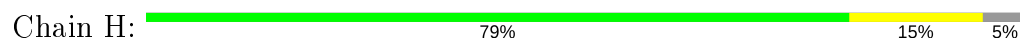
- Molecule 1: Proteasome subunit alpha

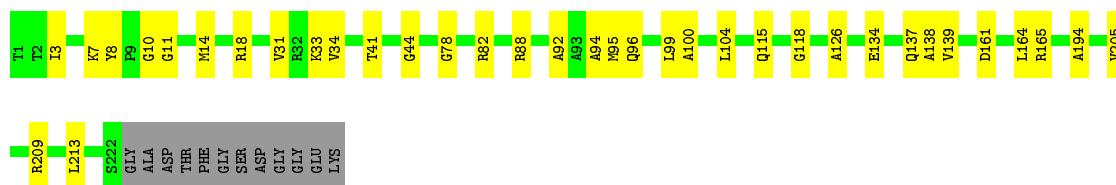


- Molecule 1: Proteasome subunit alpha



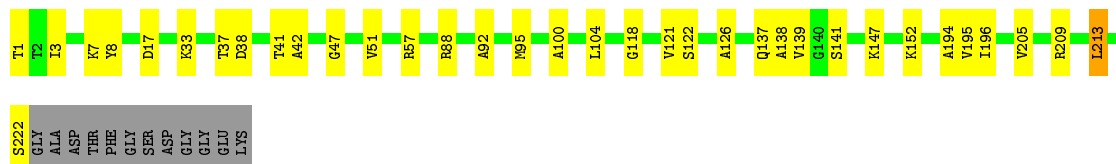
- Molecule 2: Proteasome subunit beta





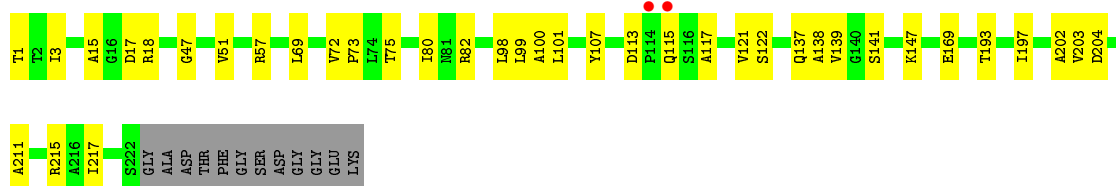
- Molecule 2: Proteasome subunit beta

Chain I: 80% 15% 5%



- Molecule 2: Proteasome subunit beta

Chain J: 79% 16% 5%



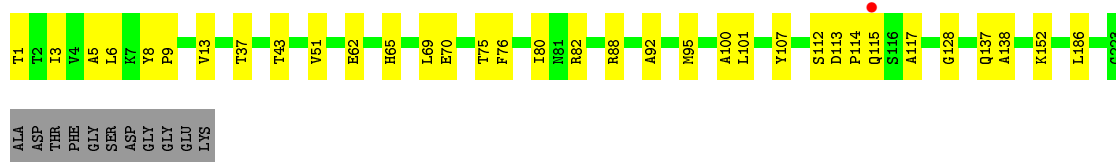
- Molecule 2: Proteasome subunit beta

Chain K: 85% 10% 5%



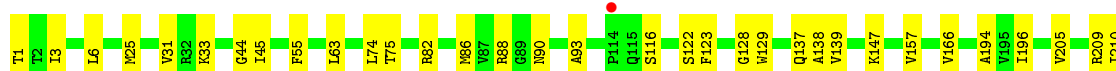
- Molecule 2: Proteasome subunit beta

Chain L: 81% 15% 5%



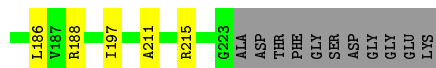
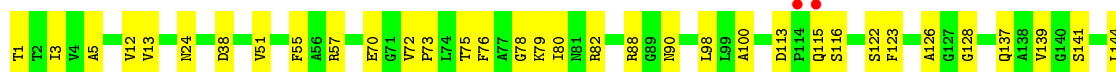
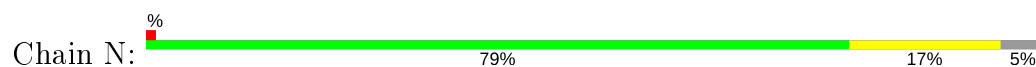
- Molecule 2: Proteasome subunit beta

Chain M: 79% 16% 5%

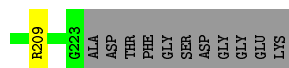
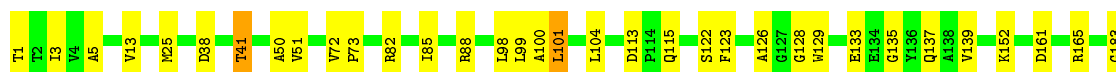
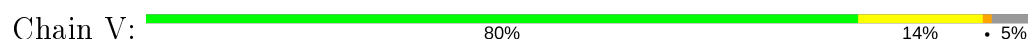




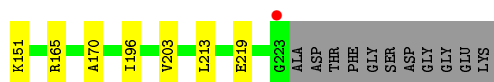
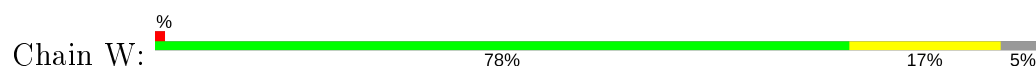
- Molecule 2: Proteasome subunit beta



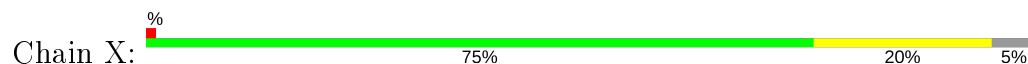
- Molecule 2: Proteasome subunit beta



- Molecule 2: Proteasome subunit beta

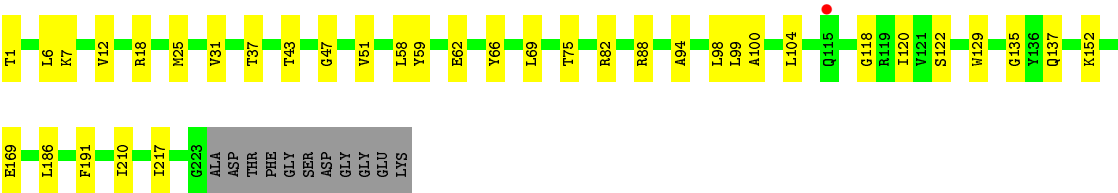


- Molecule 2: Proteasome subunit beta

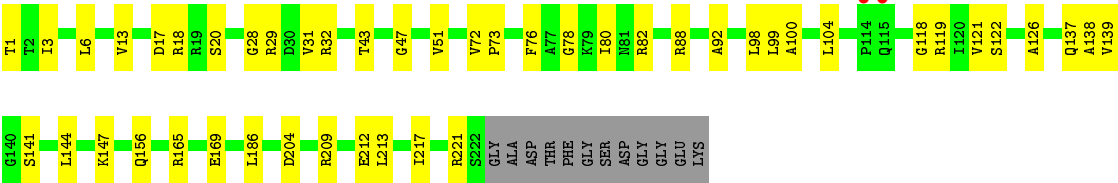
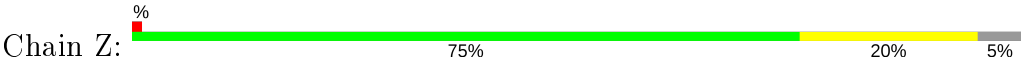


- Molecule 2: Proteasome subunit beta

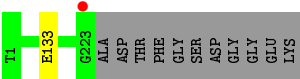
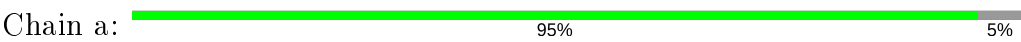




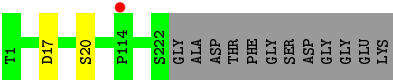
• Molecule 2: Proteasome subunit beta



• Molecule 2: Proteasome subunit beta



• Molecule 2: Proteasome subunit beta



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	120.18Å 198.65Å 166.35Å 90.00° 103.58° 90.00°	Depositor
Resolution (Å)	42.82 – 2.60 42.82 – 2.60	Depositor EDS
% Data completeness (in resolution range)	96.6 (42.82-2.60) 96.6 (42.82-2.60)	Depositor EDS
R_{merge}	0.14	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.14 (at 2.61Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.185 , 0.241 0.186 , 0.241	Depositor DCC
R_{free} test set	11122 reflections (4.96%)	wwPDB-VP
Wilson B-factor (Å ²)	29.0	Xtriage
Anisotropy	0.358	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 46.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	48175	wwPDB-VP
Average B, all atoms (Å ²)	32.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.87% 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 [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: M6M, DMF, CIT

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	0.59	2/1712 (0.1%)	0.60	0/2311
1	B	0.35	0/1684	0.55	0/2274
1	C	0.50	3/1688 (0.2%)	0.54	0/2279
1	D	0.35	0/1679	0.54	0/2266
1	E	0.35	0/1691	0.54	0/2284
1	F	0.58	2/1688 (0.1%)	0.56	0/2278
1	G	0.47	0/1686	0.56	0/2276
1	O	0.34	0/1684	0.55	0/2274
1	P	0.35	0/1691	0.54	0/2284
1	Q	0.37	0/1684	0.55	0/2274
1	R	0.34	0/1681	0.54	0/2269
1	S	0.39	0/1713	0.56	0/2312
1	T	0.35	0/1695	0.52	0/2289
1	U	0.36	0/1688	0.55	0/2279
2	H	0.37	0/1662	0.59	0/2254
2	I	0.38	0/1662	0.59	0/2254
2	J	0.36	0/1662	0.56	0/2254
2	K	0.37	0/1666	0.59	0/2259
2	L	0.37	0/1666	0.58	0/2259
2	M	0.36	0/1662	0.57	0/2254
2	N	0.37	0/1666	0.57	0/2259
2	V	0.38	0/1666	0.59	0/2259
2	W	0.39	0/1666	0.61	1/2259 (0.0%)
2	X	0.37	0/1662	0.57	0/2254
2	Y	0.38	0/1666	0.57	0/2259
2	Z	0.37	0/1662	0.59	0/2254
2	a	0.37	0/1666	0.57	0/2259
2	b	0.37	0/1662	0.57	0/2254
All	All	0.39	7/46960 (0.0%)	0.57	1/63540 (0.0%)

The worst 5 of 7 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	89	TYR	CE1-CZ	-6.70	1.29	1.38
1	A	89	TYR	CE1-CZ	-6.20	1.30	1.38
1	C	62	PHE	C-O	-5.43	1.13	1.23
1	F	220	ARG	CZ-NH2	-5.26	1.26	1.33
1	A	89	TYR	CG-CD1	-5.17	1.32	1.39

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	W	144	LEU	CB-CG-CD2	5.38	120.14	111.00

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	1688	0	1692	32	0
1	B	1660	0	1665	67	0
1	C	1664	0	1668	72	0
1	D	1655	0	1653	45	0
1	E	1667	0	1672	67	0
1	F	1664	0	1668	60	0
1	G	1662	0	1662	34	0
1	O	1660	0	1663	59	0
1	P	1667	0	1672	56	0
1	Q	1660	0	1665	62	0
1	R	1657	0	1659	48	0
1	S	1689	0	1689	37	0
1	T	1671	0	1675	44	1
1	U	1664	0	1668	46	0
2	H	1638	0	1633	24	0
2	I	1638	0	1633	28	0
2	J	1638	0	1633	29	0
2	K	1642	0	1636	23	0
2	L	1642	0	1636	29	0
2	M	1638	0	1633	30	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	N	1642	0	1636	31	0
2	V	1642	0	1636	36	0
2	W	1642	0	1636	32	1
2	X	1638	0	1633	39	0
2	Y	1642	0	1636	44	0
2	Z	1638	0	1633	36	0
2	a	1642	0	1636	0	0
2	b	1638	0	1633	0	0
3	A	5	7	7	0	0
3	C	5	7	7	2	0
3	D	5	7	7	0	0
3	E	5	7	7	2	0
3	F	5	7	7	0	0
3	J	5	7	7	1	0
3	O	5	7	7	2	0
3	P	5	7	7	0	0
3	Q	5	7	7	2	0
3	R	10	14	14	2	0
3	S	5	7	7	2	0
3	T	5	7	7	2	0
3	U	5	7	7	0	0
3	a	5	7	7	0	0
4	H	37	0	0	1	0
4	I	37	0	0	0	0
4	J	37	0	0	0	0
4	K	37	0	0	0	0
4	L	37	0	0	0	0
4	M	37	0	0	1	0
4	N	37	0	0	0	0
4	V	37	0	0	0	0
4	W	37	0	0	1	0
4	X	37	0	0	0	0
4	Y	37	0	0	0	0
4	Z	37	0	0	0	0
4	a	37	0	0	0	0
4	b	37	0	0	0	0
5	H	13	5	5	1	0
5	I	13	5	5	5	0
5	J	13	5	5	3	0
5	K	13	5	5	5	0
5	L	13	5	5	2	0
5	M	13	5	5	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	N	13	5	5	2	0
5	V	13	5	5	5	0
5	W	13	5	5	2	0
5	X	13	5	5	7	0
5	Y	13	5	5	5	0
5	Z	13	5	5	4	0
5	a	13	5	5	0	0
5	b	13	5	5	0	0
6	A	20	0	0	3	0
6	B	18	0	0	3	0
6	C	19	0	0	4	0
6	D	20	0	0	4	0
6	E	19	0	0	1	0
6	F	17	0	0	2	0
6	G	32	0	0	6	0
6	H	33	0	0	0	0
6	I	42	0	0	0	0
6	J	45	0	0	0	0
6	K	45	0	0	2	0
6	L	45	0	0	1	0
6	M	45	0	0	2	0
6	N	43	0	0	0	0
6	O	24	0	0	1	0
6	P	22	0	0	5	0
6	Q	35	0	0	6	0
6	R	24	0	0	2	0
6	S	30	0	0	1	0
6	T	19	0	0	2	0
6	U	22	0	0	0	0
6	V	53	0	0	5	0
6	W	47	0	0	2	0
6	X	47	0	0	2	0
6	Y	42	0	0	3	0
6	Z	50	0	0	2	0
6	a	38	0	0	0	0
6	b	41	0	0	0	0
All	All	48000	175	46429	1036	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 12.

The worst 5 of 1036 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:F:231:GLN:HA	1:F:234:LEU:HD23	1.34	1.10
1:Q:30:VAL:HG13	1:Q:43:ALA:HB2	1.37	1.06
1:R:210:VAL:HG11	1:R:230:LEU:HD13	1.40	1.02
1:E:30:VAL:HG13	1:E:43:ALA:HB2	1.42	1.01
1:C:185:VAL:HG13	1:C:203:LEU:HD23	1.42	1.00

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:T:11:GLN:NE2	2:W:219:GLU:OE2[2_848]	2.18	0.02

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	215/240 (90%)	209 (97%)	6 (3%)	0	100	100
1	B	211/240 (88%)	203 (96%)	6 (3%)	2 (1%)	17	35
1	C	212/240 (88%)	204 (96%)	8 (4%)	0	100	100
1	D	211/240 (88%)	198 (94%)	13 (6%)	0	100	100
1	E	212/240 (88%)	205 (97%)	7 (3%)	0	100	100
1	F	211/240 (88%)	199 (94%)	12 (6%)	0	100	100
1	G	212/240 (88%)	203 (96%)	9 (4%)	0	100	100
1	O	211/240 (88%)	205 (97%)	6 (3%)	0	100	100
1	P	212/240 (88%)	201 (95%)	11 (5%)	0	100	100
1	Q	211/240 (88%)	202 (96%)	9 (4%)	0	100	100
1	R	211/240 (88%)	204 (97%)	6 (3%)	1 (0%)	29	52
1	S	215/240 (90%)	207 (96%)	7 (3%)	1 (0%)	29	52
1	T	213/240 (89%)	204 (96%)	9 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	U	212/240 (88%)	203 (96%)	9 (4%)	0	100	100
2	H	220/234 (94%)	214 (97%)	6 (3%)	0	100	100
2	I	220/234 (94%)	216 (98%)	4 (2%)	0	100	100
2	J	220/234 (94%)	218 (99%)	2 (1%)	0	100	100
2	K	221/234 (94%)	218 (99%)	3 (1%)	0	100	100
2	L	221/234 (94%)	215 (97%)	6 (3%)	0	100	100
2	M	220/234 (94%)	217 (99%)	3 (1%)	0	100	100
2	N	221/234 (94%)	216 (98%)	5 (2%)	0	100	100
2	V	221/234 (94%)	217 (98%)	4 (2%)	0	100	100
2	W	221/234 (94%)	217 (98%)	4 (2%)	0	100	100
2	X	220/234 (94%)	217 (99%)	3 (1%)	0	100	100
2	Y	221/234 (94%)	213 (96%)	8 (4%)	0	100	100
2	Z	220/234 (94%)	216 (98%)	4 (2%)	0	100	100
2	a	221/234 (94%)	215 (97%)	6 (3%)	0	100	100
2	b	220/234 (94%)	216 (98%)	4 (2%)	0	100	100
All	All	6056/6636 (91%)	5872 (97%)	180 (3%)	4 (0%)	51	75

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	R	190	ALA
1	S	151	PRO
1	B	136	PRO
1	B	151	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	168/184 (91%)	167 (99%)	1 (1%)	86	95

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	165/184 (90%)	163 (99%)	2 (1%)	71	87
1	C	165/184 (90%)	162 (98%)	3 (2%)	59	80
1	D	164/184 (89%)	164 (100%)	0	100	100
1	E	166/184 (90%)	165 (99%)	1 (1%)	86	95
1	F	165/184 (90%)	162 (98%)	3 (2%)	59	80
1	G	165/184 (90%)	165 (100%)	0	100	100
1	O	165/184 (90%)	165 (100%)	0	100	100
1	P	166/184 (90%)	165 (99%)	1 (1%)	86	95
1	Q	165/184 (90%)	164 (99%)	1 (1%)	86	95
1	R	164/184 (89%)	162 (99%)	2 (1%)	71	87
1	S	168/184 (91%)	167 (99%)	1 (1%)	86	95
1	T	166/184 (90%)	163 (98%)	3 (2%)	59	80
1	U	165/184 (90%)	164 (99%)	1 (1%)	86	95
2	H	165/172 (96%)	165 (100%)	0	100	100
2	I	165/172 (96%)	161 (98%)	4 (2%)	49	74
2	J	165/172 (96%)	163 (99%)	2 (1%)	71	87
2	K	165/172 (96%)	164 (99%)	1 (1%)	86	95
2	L	165/172 (96%)	164 (99%)	1 (1%)	86	95
2	M	165/172 (96%)	165 (100%)	0	100	100
2	N	165/172 (96%)	165 (100%)	0	100	100
2	V	165/172 (96%)	163 (99%)	2 (1%)	71	87
2	W	165/172 (96%)	165 (100%)	0	100	100
2	X	165/172 (96%)	163 (99%)	2 (1%)	71	87
2	Y	165/172 (96%)	165 (100%)	0	100	100
2	Z	165/172 (96%)	163 (99%)	2 (1%)	71	87
2	a	165/172 (96%)	164 (99%)	1 (1%)	86	95
2	b	165/172 (96%)	163 (99%)	2 (1%)	71	87
All	All	4627/4984 (93%)	4591 (99%)	36 (1%)	81	92

5 of 36 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	K	3	ILE

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Mol	Chain	Res	Type
1	R	31	VAL
2	a	133	GLU
1	P	203	LEU
1	R	33	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 8 such sidechains are listed below:

Mol	Chain	Res	Type
1	G	98	GLN
1	S	216	ASN
1	Q	98	GLN
1	E	101	ASN
1	P	101	ASN

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 carbohydrates in this entry.

5.6 Ligand geometry [i](#)

43 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
4	M6M	L	301	-	37,39,39	2.99	13 (35%)	46,54,54	2.64	12 (26%)
5	CIT	Y	302	-	3,12,12	1.82	1 (33%)	3,17,17	1.96	1 (33%)
5	CIT	V	302	-	3,12,12	1.35	0	3,17,17	2.61	2 (66%)
4	M6M	M	301	-	37,39,39	2.97	12 (32%)	46,54,54	2.73	18 (39%)
5	CIT	Z	302	-	3,12,12	1.49	0	3,17,17	1.79	2 (66%)
4	M6M	Z	301	-	37,39,39	3.08	14 (37%)	46,54,54	2.48	13 (28%)
4	M6M	a	301	-	37,39,39	3.10	13 (35%)	46,54,54	2.67	16 (34%)
4	M6M	b	301	-	37,39,39	3.09	13 (35%)	46,54,54	2.72	16 (34%)
3	DMF	J	303	-	4,4,4	0.31	0	4,4,4	0.32	0
5	CIT	L	302	-	3,12,12	1.18	0	3,17,17	1.63	1 (33%)
3	DMF	R	302	-	4,4,4	0.36	0	4,4,4	0.54	0
5	CIT	H	302	-	3,12,12	1.01	0	3,17,17	1.65	1 (33%)
4	M6M	H	301	-	37,39,39	3.11	14 (37%)	46,54,54	2.54	16 (34%)
3	DMF	D	301	-	4,4,4	0.36	0	4,4,4	0.29	0
3	DMF	F	301	-	4,4,4	0.33	0	4,4,4	0.50	0
4	M6M	I	301	-	37,39,39	3.07	12 (32%)	46,54,54	2.61	12 (26%)
5	CIT	M	302	-	3,12,12	1.65	1 (33%)	3,17,17	1.87	1 (33%)
4	M6M	X	301	-	37,39,39	2.88	13 (35%)	46,54,54	2.54	15 (32%)
3	DMF	A	301	-	4,4,4	0.41	0	4,4,4	0.28	0
3	DMF	P	301	-	4,4,4	0.44	0	4,4,4	0.71	0
5	CIT	a	302	-	3,12,12	1.21	0	3,17,17	1.60	1 (33%)
4	M6M	Y	301	-	37,39,39	3.02	12 (32%)	46,54,54	2.41	12 (26%)
5	CIT	J	302	-	3,12,12	1.32	0	3,17,17	2.59	1 (33%)
4	M6M	J	301	-	37,39,39	3.10	13 (35%)	46,54,54	2.70	16 (34%)
3	DMF	E	301	-	4,4,4	0.43	0	4,4,4	0.43	0
4	M6M	V	301	-	37,39,39	3.08	11 (29%)	46,54,54	2.42	17 (36%)
3	DMF	S	301	-	4,4,4	0.31	0	4,4,4	0.37	0
5	CIT	N	302	-	3,12,12	1.40	0	3,17,17	1.60	1 (33%)
5	CIT	I	302	-	3,12,12	1.25	0	3,17,17	3.04	2 (66%)
3	DMF	T	301	-	4,4,4	0.41	0	4,4,4	0.44	0
4	M6M	W	301	-	37,39,39	3.04	13 (35%)	46,54,54	2.49	14 (30%)
3	DMF	C	301	-	4,4,4	0.37	0	4,4,4	0.45	0
3	DMF	R	301	-	4,4,4	0.35	0	4,4,4	0.50	0
4	M6M	N	301	-	37,39,39	3.16	13 (35%)	46,54,54	2.57	16 (34%)
5	CIT	W	302	-	3,12,12	1.13	0	3,17,17	5.04	2 (66%)
3	DMF	Q	301	-	4,4,4	0.42	0	4,4,4	0.64	0
5	CIT	b	302	-	3,12,12	1.30	0	3,17,17	1.58	1 (33%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	DMF	a	303	-	4,4,4	0.44	0	4,4,4	0.38	0
3	DMF	O	301	-	4,4,4	0.46	0	4,4,4	0.51	0
5	CIT	K	302	-	3,12,12	0.88	0	3,17,17	1.83	1 (33%)
5	CIT	X	302	-	3,12,12	2.08	1 (33%)	3,17,17	1.92	2 (66%)
3	DMF	U	301	-	4,4,4	0.42	0	4,4,4	0.60	0
4	M6M	K	301	-	37,39,39	3.06	14 (37%)	46,54,54	2.48	13 (28%)

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
4	M6M	L	301	-	-	2/30/44/44	0/3/3/3
5	CIT	Y	302	-	-	2/6/16/16	-
5	CIT	V	302	-	-	3/6/16/16	-
4	M6M	M	301	-	-	2/30/44/44	0/3/3/3
5	CIT	Z	302	-	-	2/6/16/16	-
4	M6M	Z	301	-	-	3/30/44/44	1/3/3/3
4	M6M	a	301	-	-	3/30/44/44	0/3/3/3
4	M6M	b	301	-	-	2/30/44/44	1/3/3/3
3	DMF	J	303	-	-	2/2/2/2	-
5	CIT	L	302	-	-	2/6/16/16	-
3	DMF	R	302	-	-	2/2/2/2	-
5	CIT	H	302	-	-	6/6/16/16	-
4	M6M	H	301	-	-	2/30/44/44	1/3/3/3
3	DMF	D	301	-	-	0/2/2/2	-
3	DMF	F	301	-	-	0/2/2/2	-
4	M6M	I	301	-	-	2/30/44/44	0/3/3/3
5	CIT	M	302	-	-	2/6/16/16	-
4	M6M	X	301	-	-	3/30/44/44	0/3/3/3
3	DMF	A	301	-	-	0/2/2/2	-
3	DMF	P	301	-	-	2/2/2/2	-
5	CIT	a	302	-	-	4/6/16/16	-
4	M6M	Y	301	-	-	2/30/44/44	1/3/3/3
5	CIT	J	302	-	-	3/6/16/16	-
4	M6M	J	301	-	-	3/30/44/44	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	DMF	E	301	-	-	0/2/2/2	-
4	M6M	V	301	-	-	3/30/44/44	0/3/3/3
3	DMF	S	301	-	-	0/2/2/2	-
5	CIT	N	302	-	-	2/6/16/16	-
5	CIT	I	302	-	-	4/6/16/16	-
3	DMF	T	301	-	-	0/2/2/2	-
4	M6M	W	301	-	-	2/30/44/44	1/3/3/3
3	DMF	C	301	-	-	2/2/2/2	-
3	DMF	R	301	-	-	0/2/2/2	-
4	M6M	N	301	-	-	3/30/44/44	1/3/3/3
5	CIT	W	302	-	-	3/6/16/16	-
3	DMF	Q	301	-	-	2/2/2/2	-
5	CIT	b	302	-	-	2/6/16/16	-
3	DMF	a	303	-	-	1/2/2/2	-
3	DMF	O	301	-	-	0/2/2/2	-
5	CIT	K	302	-	-	1/6/16/16	-
5	CIT	X	302	-	-	2/6/16/16	-
3	DMF	U	301	-	-	0/2/2/2	-
4	M6M	K	301	-	-	3/30/44/44	0/3/3/3

The worst 5 of 183 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	N	301	M6M	C15-N10	10.16	1.59	1.47
4	V	301	M6M	C15-N10	9.93	1.59	1.47
4	b	301	M6M	C15-N10	9.70	1.59	1.47
4	J	301	M6M	C15-N10	9.50	1.58	1.47
4	I	301	M6M	C15-N10	9.29	1.58	1.47

The worst 5 of 225 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	a	301	M6M	C11-N10-C15	-13.64	91.91	114.92
4	M	301	M6M	C11-N10-C15	-12.62	93.63	114.92
4	I	301	M6M	C11-N10-C15	-12.59	93.67	114.92
4	L	301	M6M	C11-N10-C15	-12.53	93.79	114.92
4	J	301	M6M	C11-N10-C15	-12.10	94.52	114.92

There are no chirality outliers.

5 of 84 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	L	301	M6M	O19-C18-C20-C21
5	V	302	CIT	C2-C3-C4-C5
5	V	302	CIT	O7-C3-C4-C5
5	V	302	CIT	C6-C3-C4-C5
4	a	301	M6M	O19-C18-C20-C21

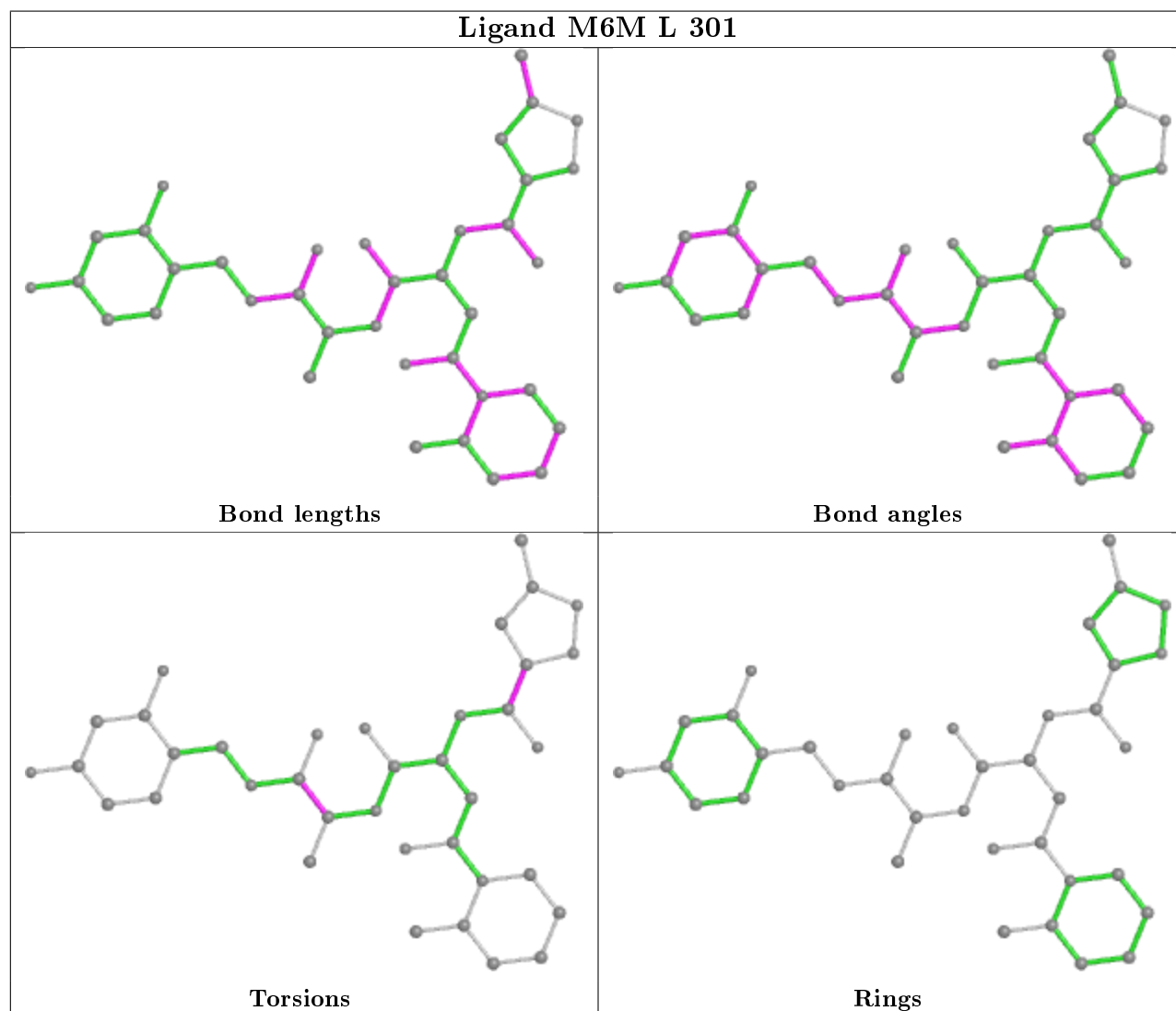
5 of 6 ring outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	W	301	M6M	C11-C12-C13-C14-C15-N10
4	b	301	M6M	C11-C12-C13-C14-C15-N10
4	N	301	M6M	C11-C12-C13-C14-C15-N10
4	Z	301	M6M	C11-C12-C13-C14-C15-N10
4	Y	301	M6M	C11-C12-C13-C14-C15-N10

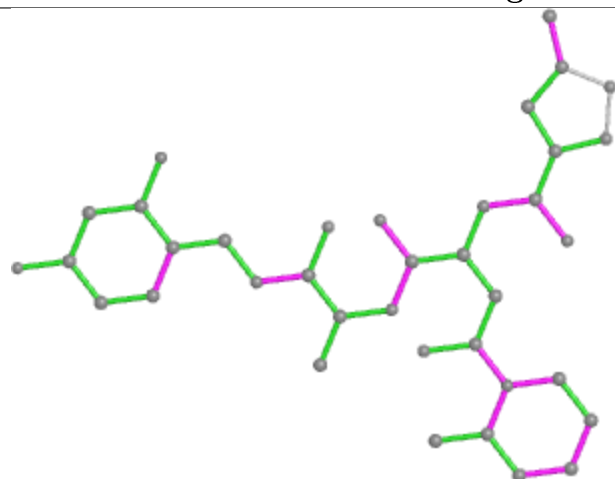
24 monomers are involved in 63 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	Y	302	CIT	5	0
5	V	302	CIT	5	0
4	M	301	M6M	1	0
5	Z	302	CIT	4	0
3	J	303	DMF	1	0
5	L	302	CIT	2	0
3	R	302	DMF	1	0
5	H	302	CIT	1	0
4	H	301	M6M	1	0
5	M	302	CIT	4	0
5	J	302	CIT	3	0
3	E	301	DMF	2	0
3	S	301	DMF	2	0
5	N	302	CIT	2	0
5	I	302	CIT	5	0
3	T	301	DMF	2	0
4	W	301	M6M	1	0
3	C	301	DMF	2	0
3	R	301	DMF	1	0
5	W	302	CIT	2	0
3	Q	301	DMF	2	0
3	O	301	DMF	2	0
5	K	302	CIT	5	0
5	X	302	CIT	7	0

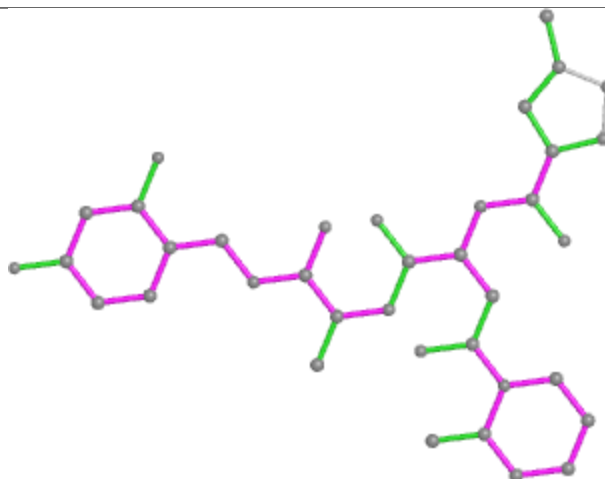
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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



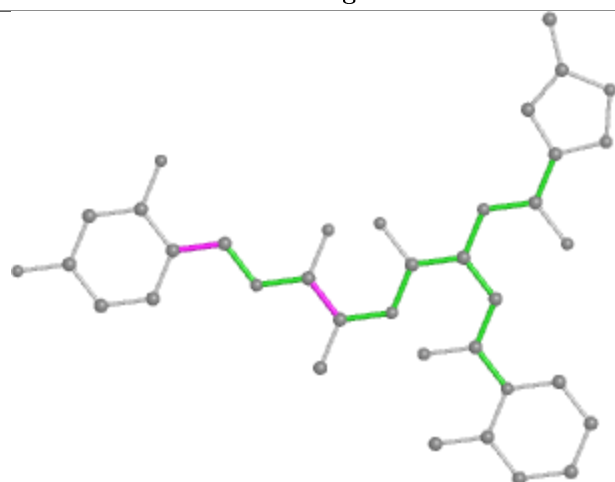
Ligand M6M M 301



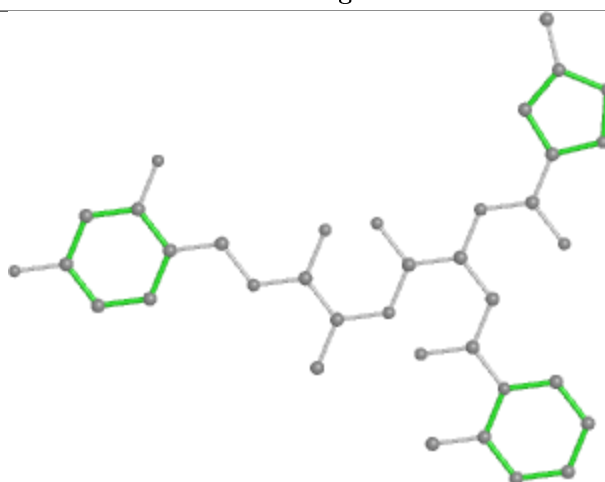
Bond lengths



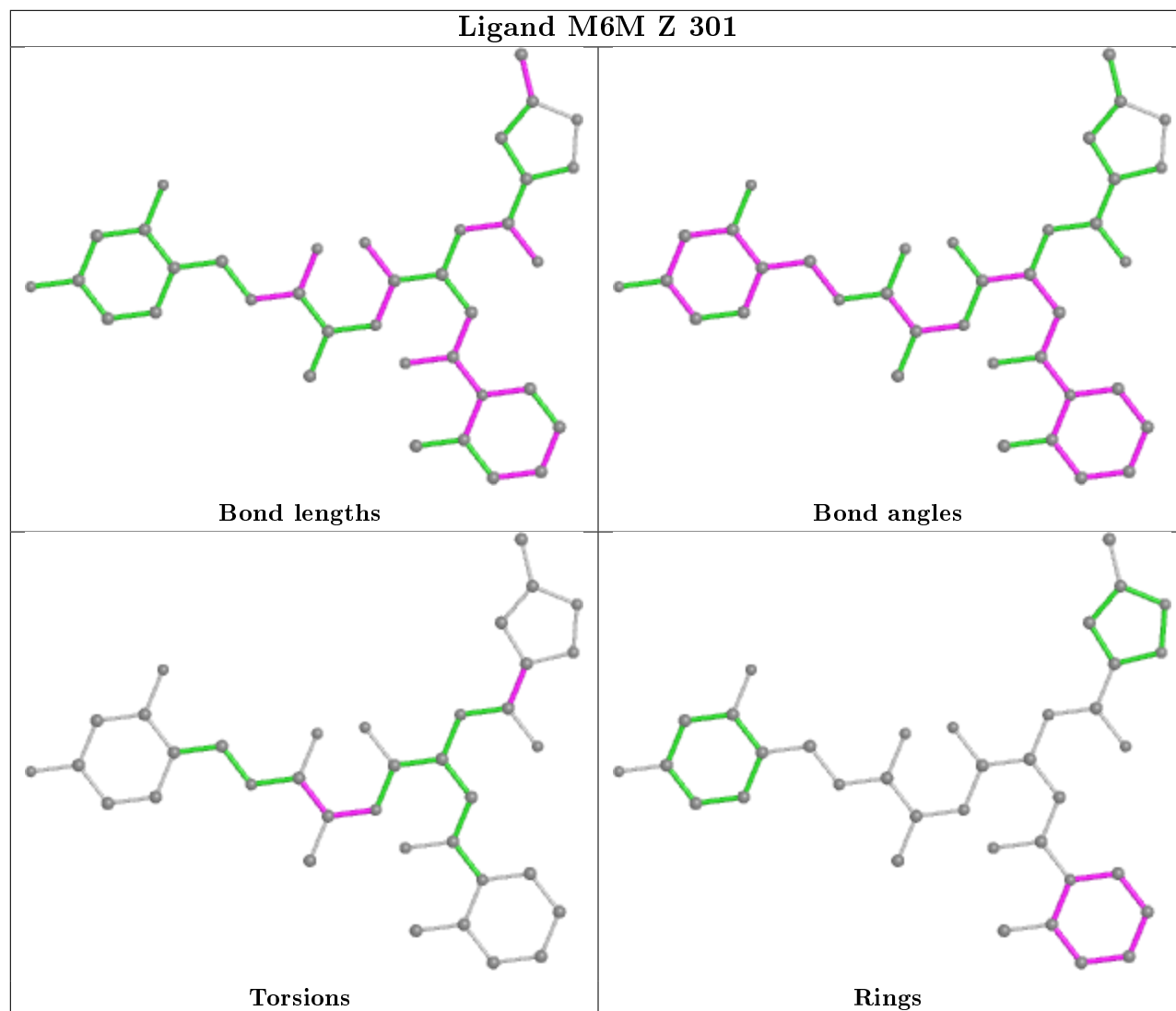
Bond angles

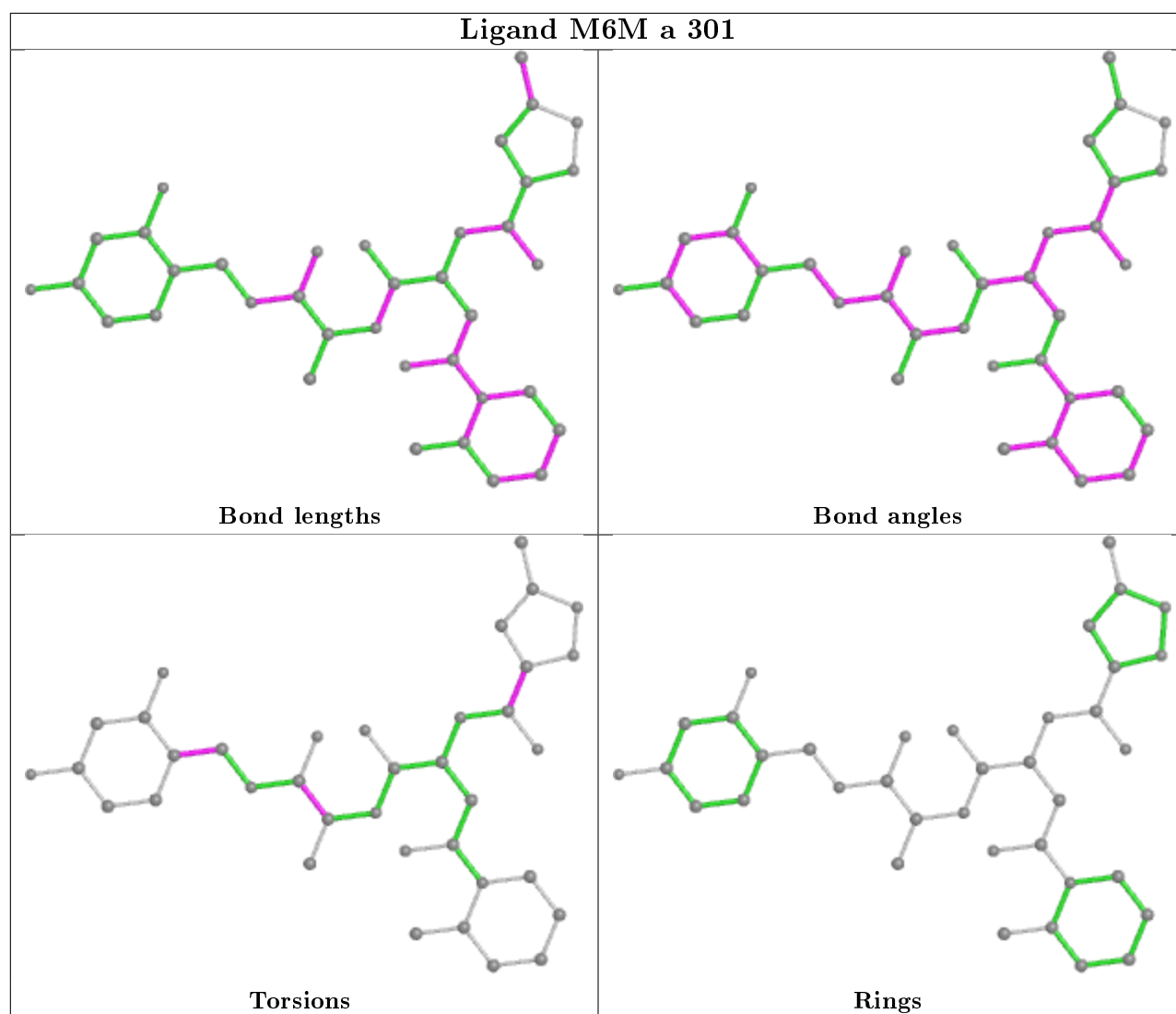


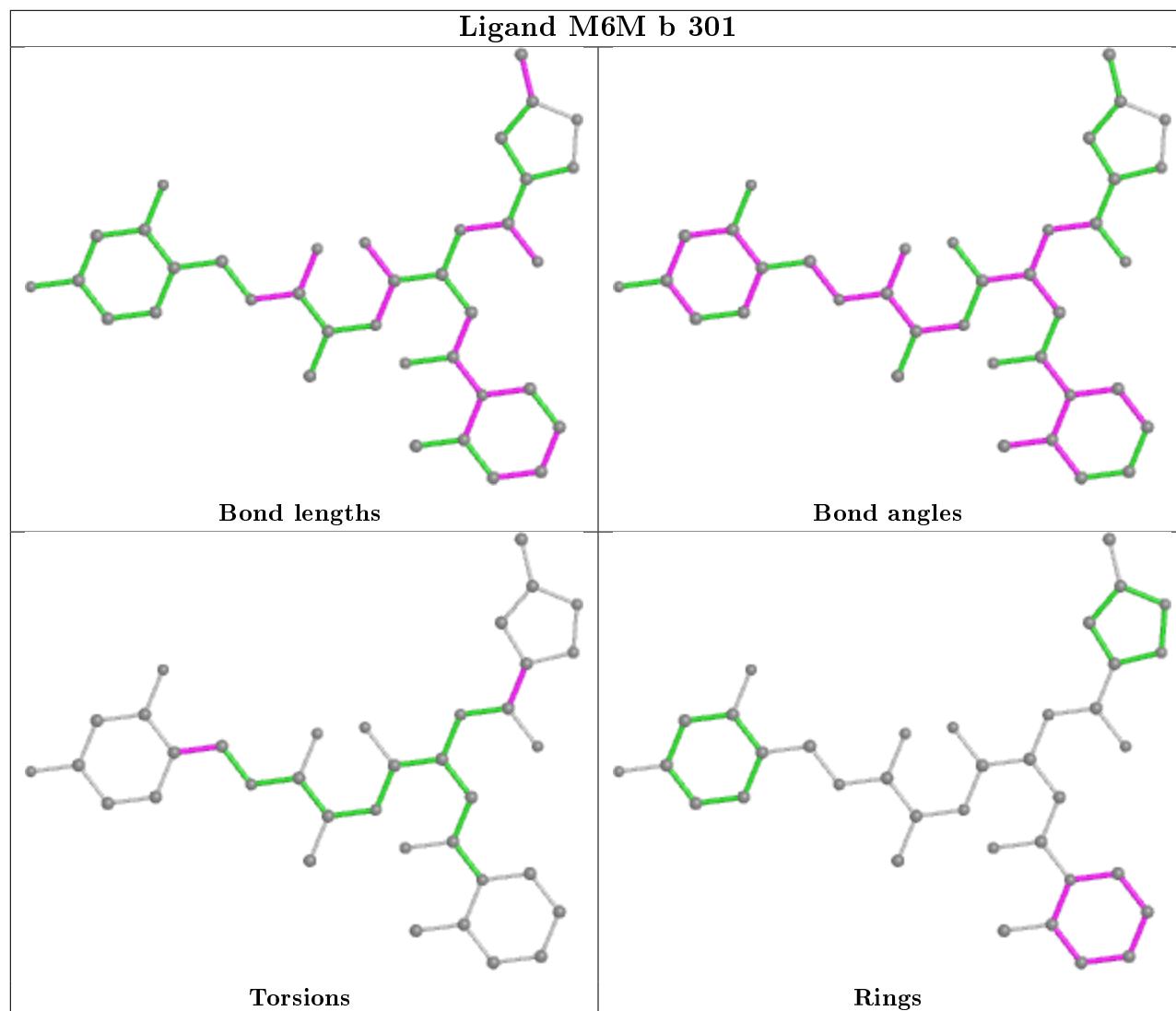
Torsions

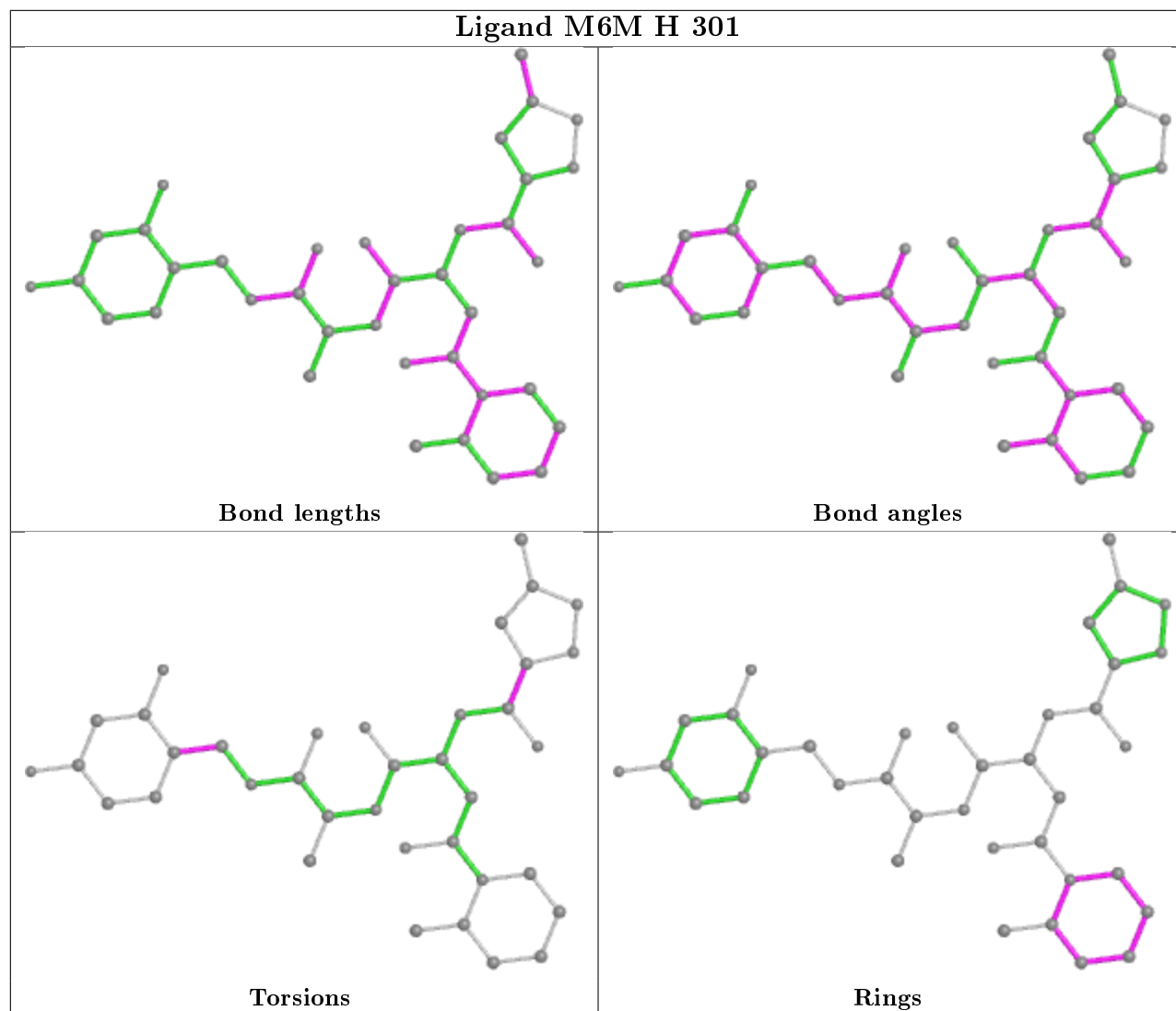


Rings

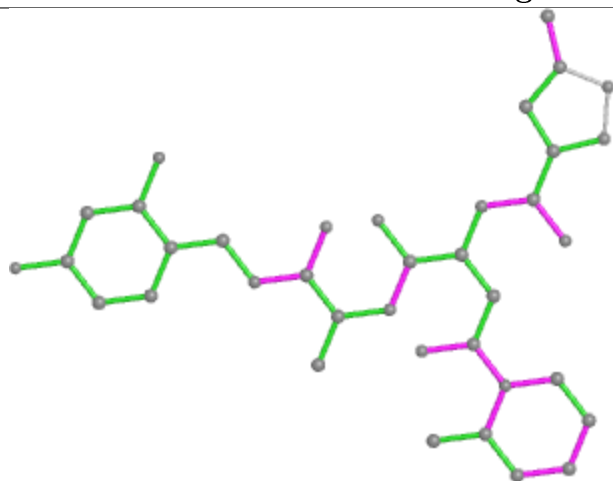




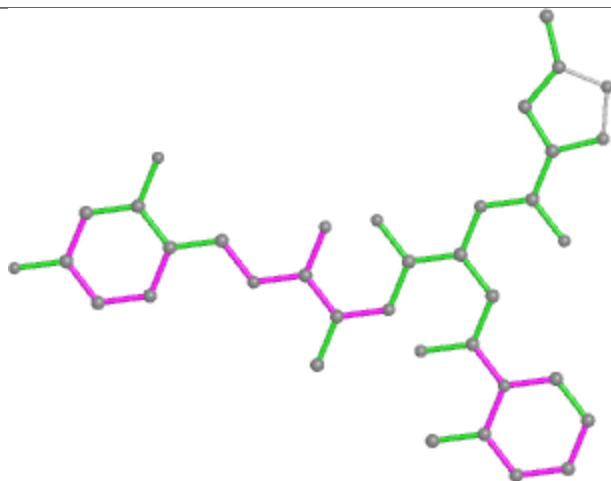




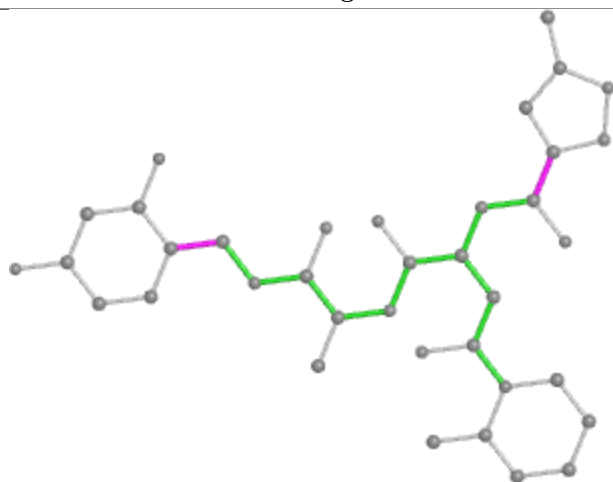
Ligand M6M I 301



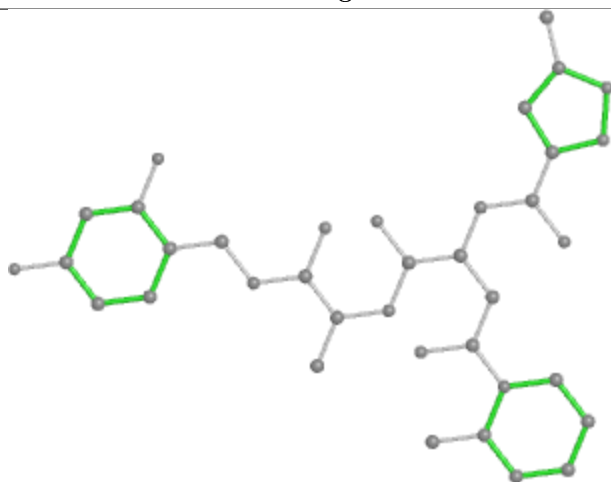
Bond lengths



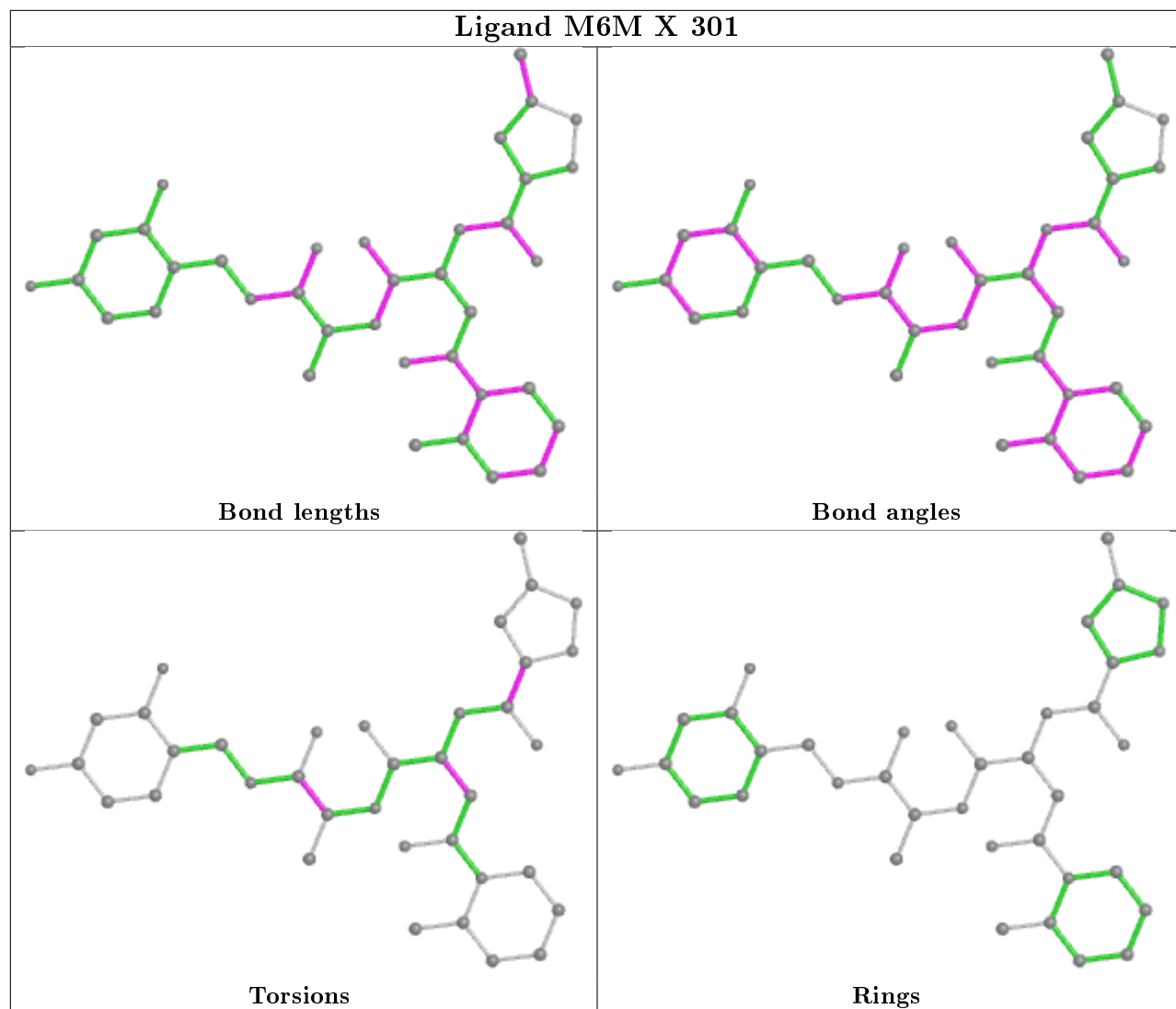
Bond angles

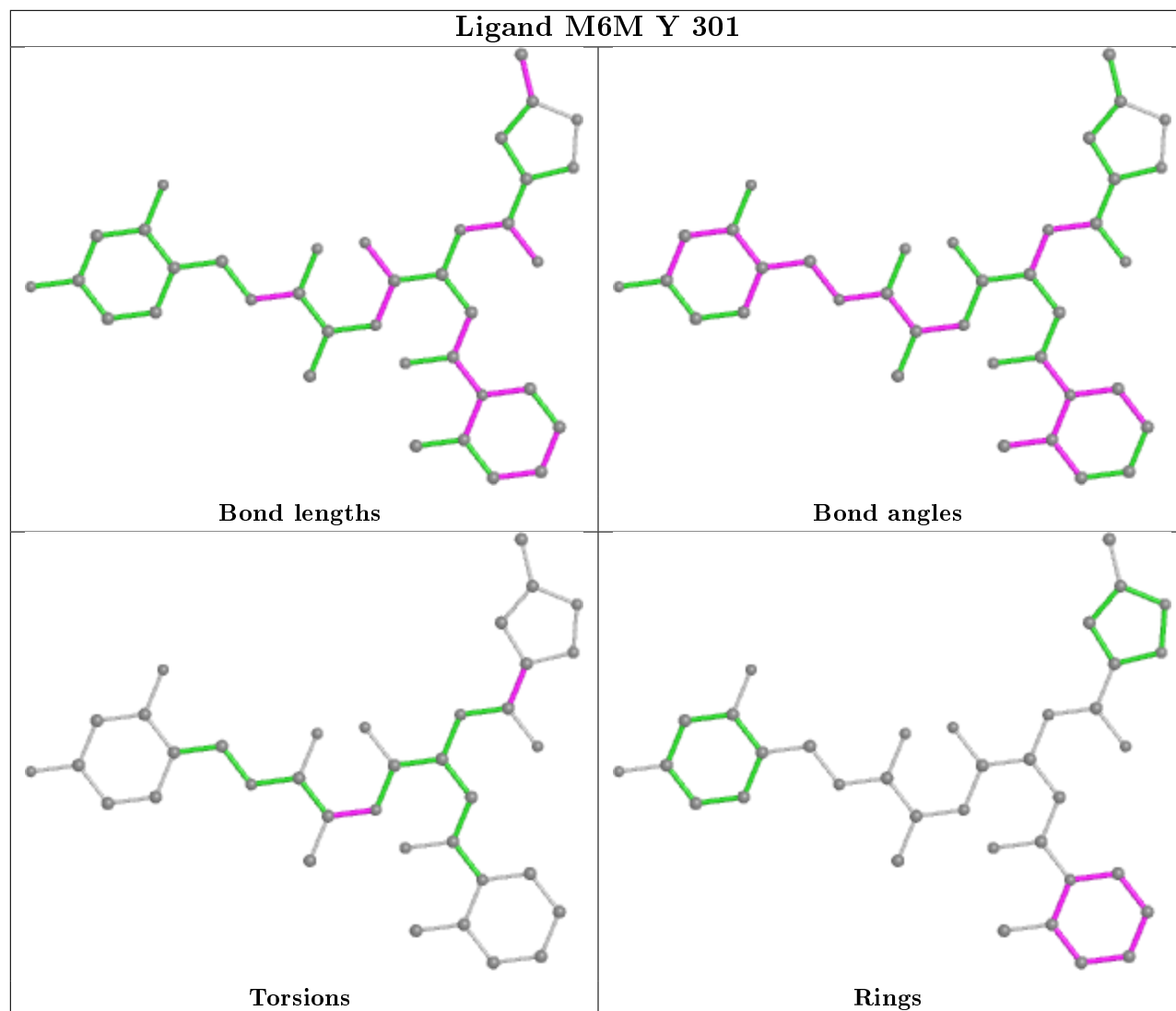


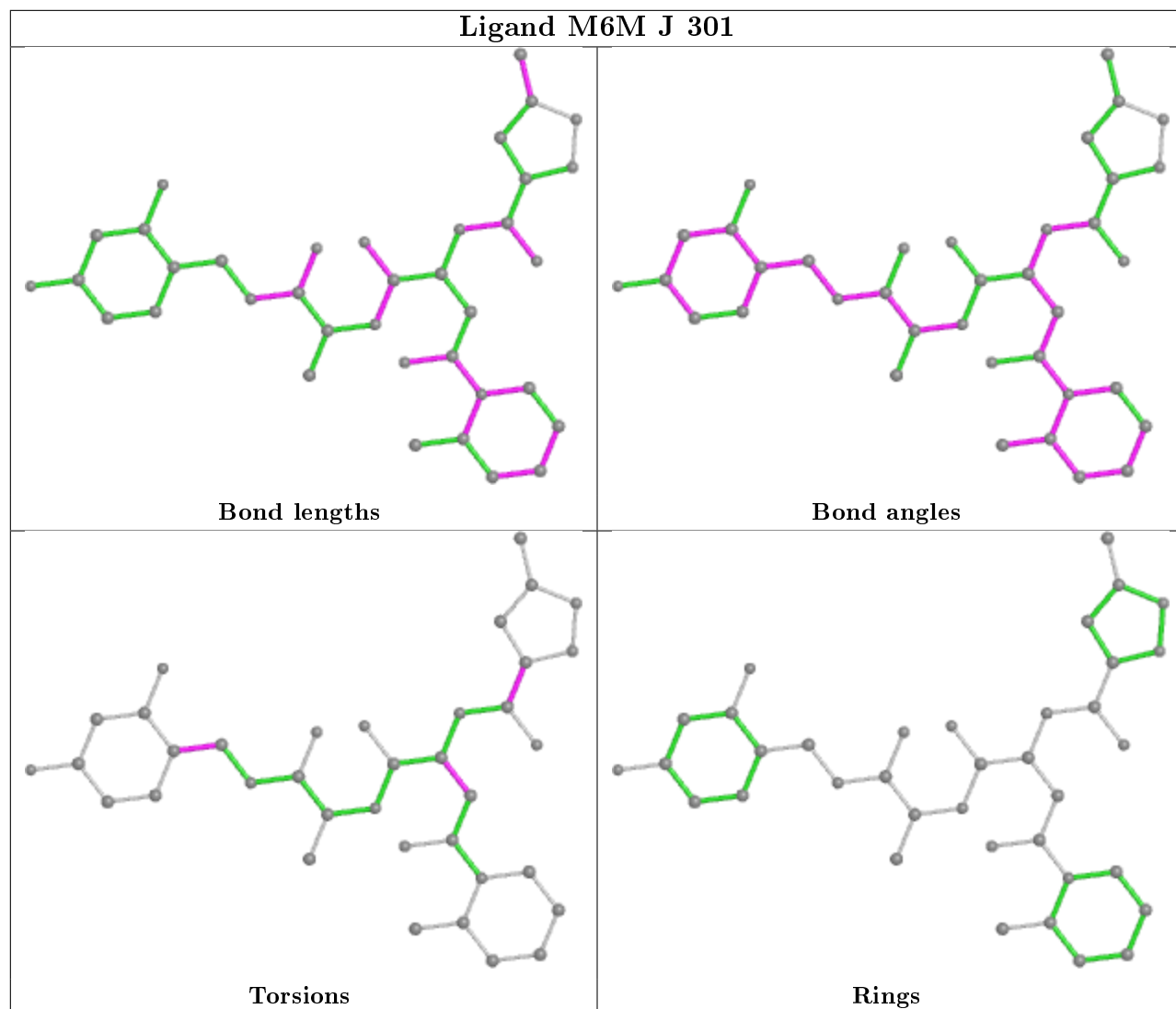
Torsions

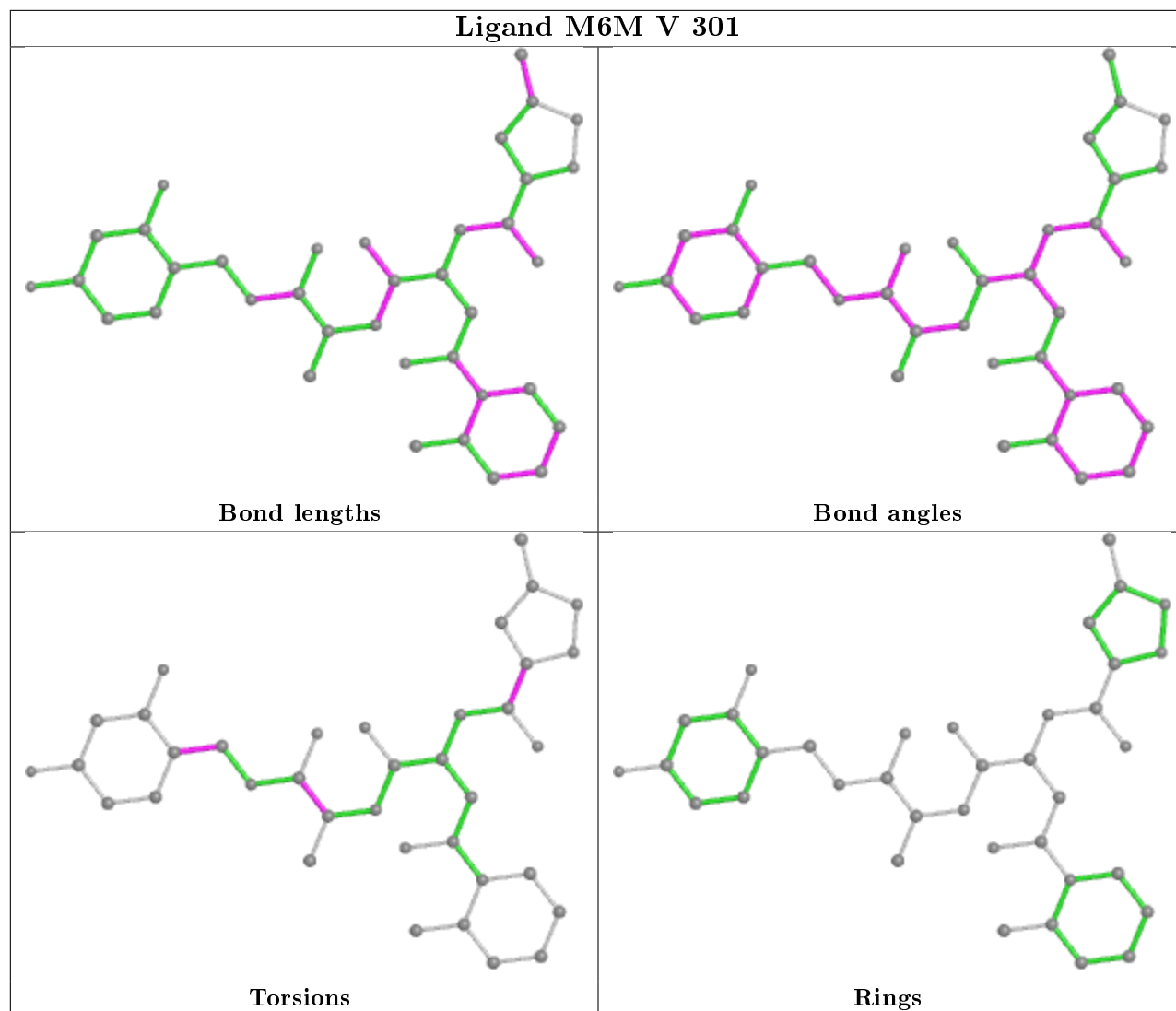


Rings

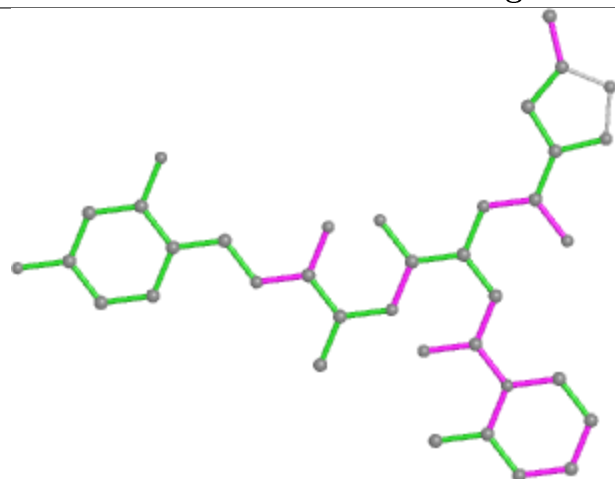




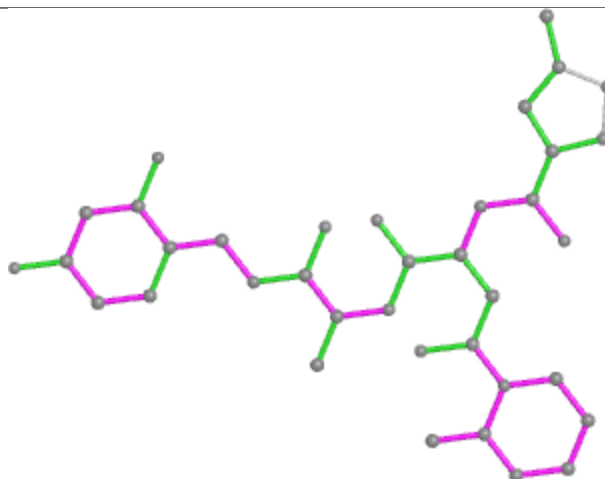




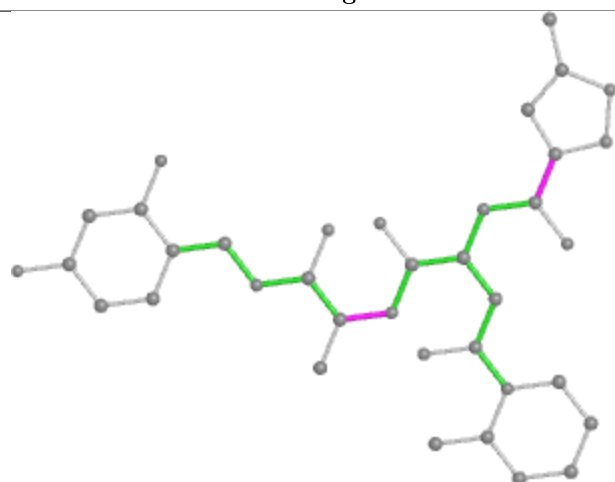
Ligand M6M W 301



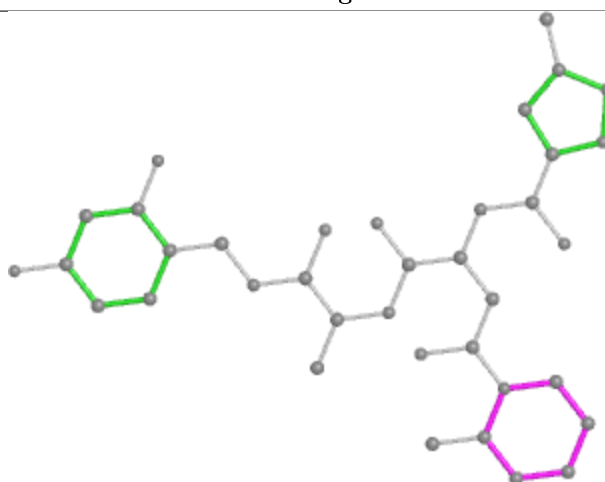
Bond lengths



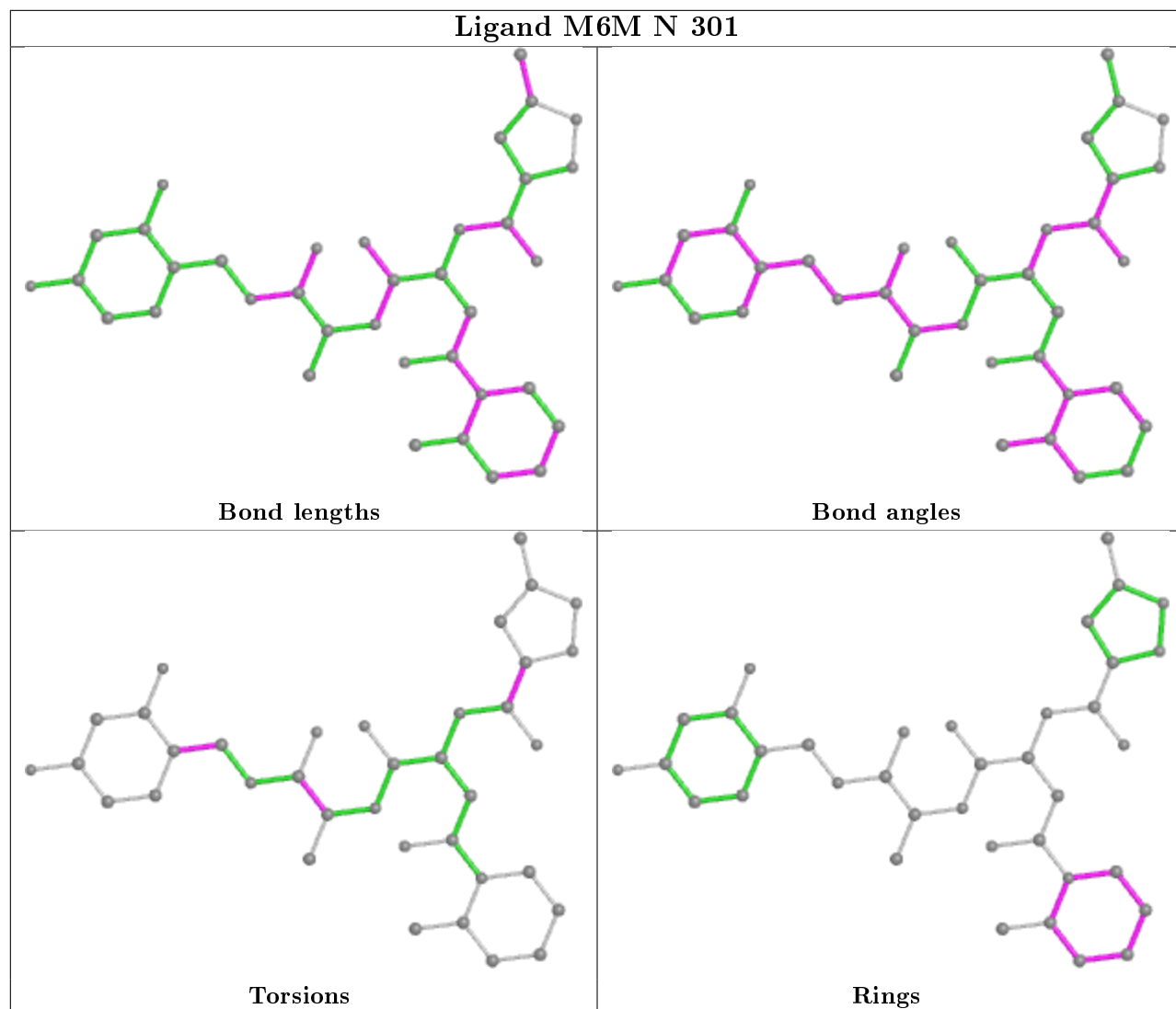
Bond angles

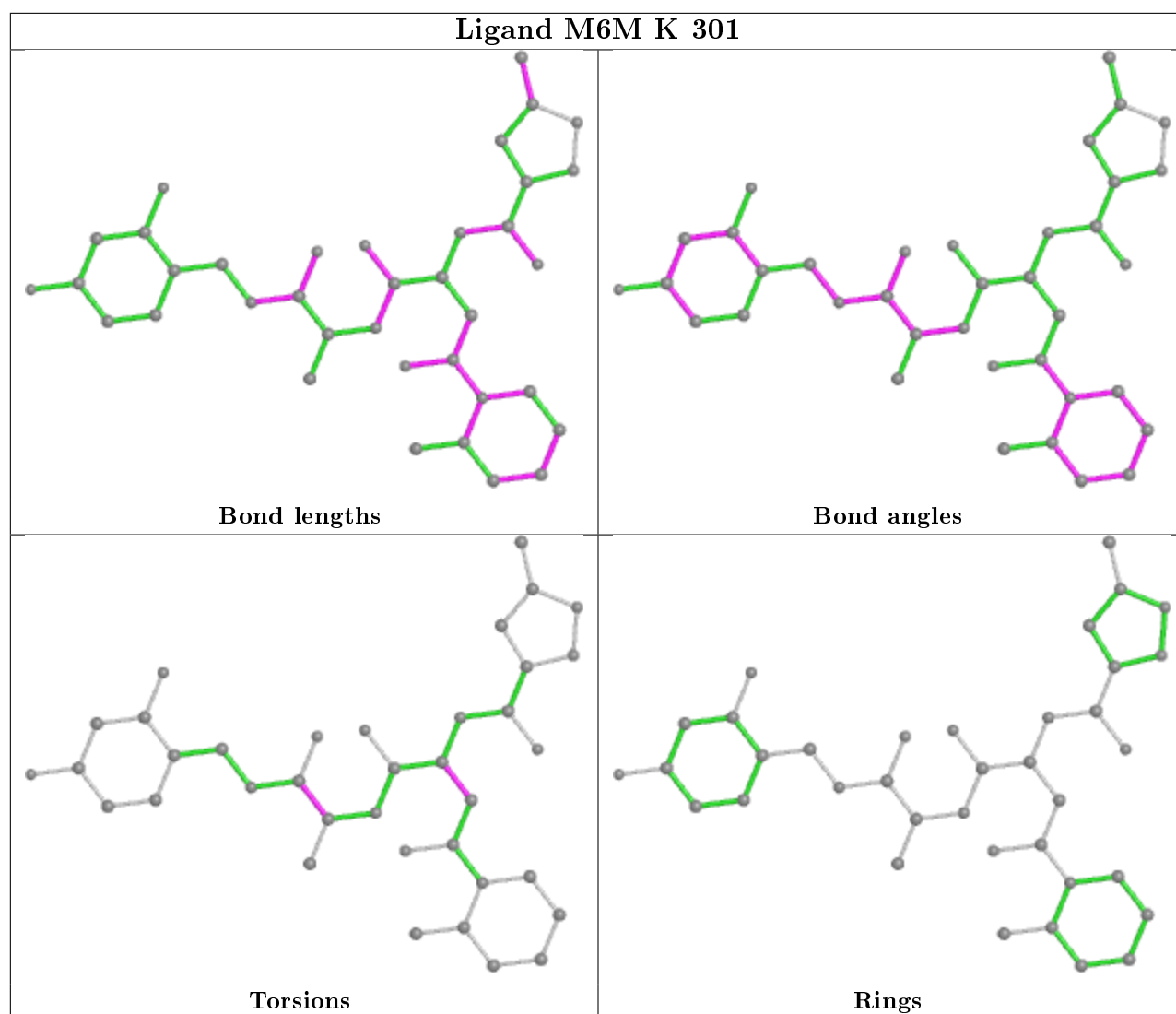


Torsions



Rings





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	218/240 (90%)	-0.41	3 (1%) 75 71	17, 31, 54, 76	0
1	B	215/240 (89%)	0.06	17 (7%) 12 9	20, 43, 75, 83	0
1	C	216/240 (90%)	-0.21	8 (3%) 41 34	19, 36, 64, 74	0
1	D	215/240 (89%)	-0.09	6 (2%) 53 46	18, 38, 66, 80	0
1	E	216/240 (90%)	-0.12	7 (3%) 47 40	19, 39, 66, 78	0
1	F	214/240 (89%)	-0.09	5 (2%) 60 54	19, 41, 66, 75	0
1	G	216/240 (90%)	-0.38	4 (1%) 66 62	16, 32, 56, 67	0
1	O	215/240 (89%)	-0.06	10 (4%) 31 25	20, 43, 70, 88	0
1	P	216/240 (90%)	-0.24	4 (1%) 66 62	16, 35, 62, 79	0
1	Q	215/240 (89%)	-0.24	7 (3%) 46 39	17, 35, 60, 72	0
1	R	215/240 (89%)	-0.18	4 (1%) 66 62	17, 34, 58, 71	0
1	S	218/240 (90%)	-0.36	4 (1%) 68 64	16, 30, 57, 75	0
1	T	217/240 (90%)	-0.00	10 (4%) 32 26	19, 39, 67, 78	0
1	U	216/240 (90%)	-0.18	11 (5%) 28 22	16, 33, 60, 81	0
2	H	222/234 (94%)	-0.55	0 100 100	16, 23, 41, 74	0
2	I	222/234 (94%)	-0.70	0 100 100	13, 21, 38, 66	0
2	J	222/234 (94%)	-0.60	2 (0%) 84 82	16, 23, 39, 81	0
2	K	223/234 (95%)	-0.68	0 100 100	15, 22, 40, 53	0
2	L	223/234 (95%)	-0.67	1 (0%) 92 91	15, 22, 37, 71	0
2	M	222/234 (94%)	-0.59	1 (0%) 91 89	16, 24, 41, 72	0
2	N	223/234 (95%)	-0.60	2 (0%) 84 82	16, 24, 43, 67	0
2	V	223/234 (95%)	-0.70	0 100 100	14, 22, 40, 54	0
2	W	223/234 (95%)	-0.64	2 (0%) 84 82	17, 23, 40, 61	0
2	X	222/234 (94%)	-0.64	2 (0%) 84 82	16, 23, 37, 68	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
2	Y	223/234 (95%)	-0.70	1 (0%) 92 91	14, 22, 37, 77	0
2	Z	222/234 (94%)	-0.67	2 (0%) 84 82	15, 22, 41, 71	0
2	a	223/234 (95%)	-0.60	1 (0%) 92 91	17, 25, 43, 63	0
2	b	222/234 (94%)	-0.57	1 (0%) 91 89	16, 24, 41, 75	0
All	All	6137/6636 (92%)	-0.41	115 (1%) 66 62	13, 28, 60, 88	0

The worst 5 of 115 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	J	115	GLN	5.2
1	U	235	VAL	4.9
2	Y	115	GLN	4.3
1	O	202	THR	4.2
1	D	189	ARG	4.2

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 carbohydrates 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
5	CIT	W	302	13/13	0.84	0.23	32,48,71,85	0
5	CIT	Z	302	13/13	0.86	0.19	28,39,49,59	0
5	CIT	N	302	13/13	0.88	0.20	27,39,69,83	0
5	CIT	M	302	13/13	0.88	0.22	32,40,48,56	0
5	CIT	b	302	13/13	0.88	0.19	28,42,64,77	0
5	CIT	V	302	13/13	0.89	0.18	34,45,52,59	0
5	CIT	I	302	13/13	0.89	0.20	29,41,58,70	0

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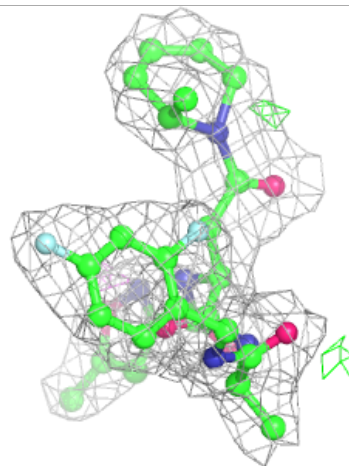
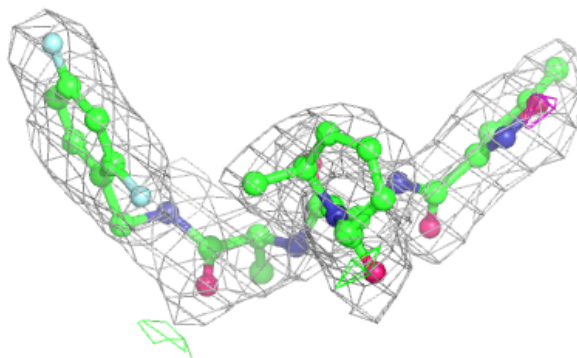
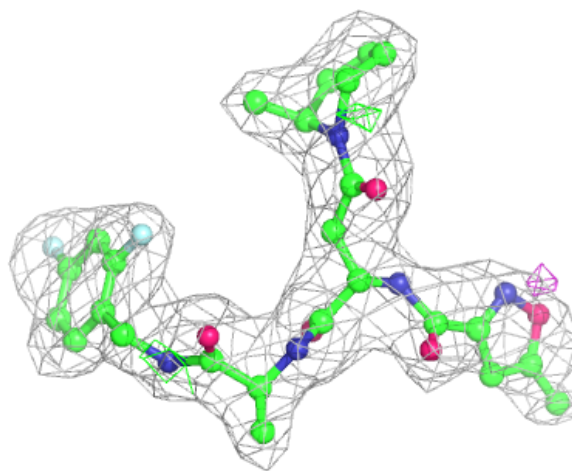
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
5	CIT	a	302	13/13	0.90	0.14	24,39,57,68	0
5	CIT	Y	302	13/13	0.91	0.20	28,37,48,58	0
3	DMF	P	301	5/5	0.91	0.15	25,38,51,52	0
3	DMF	T	301	5/5	0.91	0.18	34,41,45,45	0
5	CIT	L	302	13/13	0.91	0.18	24,40,52,62	0
3	DMF	E	301	5/5	0.91	0.19	19,29,41,41	0
5	CIT	K	302	13/13	0.91	0.19	23,34,45,45	0
5	CIT	J	302	13/13	0.92	0.18	29,36,49,59	0
5	CIT	X	302	13/13	0.92	0.17	32,39,57,68	0
3	DMF	F	301	5/5	0.93	0.18	19,30,36,40	0
3	DMF	a	303	5/5	0.93	0.25	27,35,50,50	0
5	CIT	H	302	13/13	0.93	0.14	28,33,38,38	0
3	DMF	Q	301	5/5	0.93	0.17	24,35,49,51	0
3	DMF	R	302	5/5	0.94	0.21	31,38,49,49	0
3	DMF	O	301	5/5	0.94	0.21	25,30,41,43	0
3	DMF	J	303	5/5	0.94	0.25	19,33,46,46	0
3	DMF	S	301	5/5	0.94	0.24	26,34,40,40	0
3	DMF	R	301	5/5	0.95	0.21	28,37,37,40	0
4	M6M	J	301	37/37	0.95	0.15	13,20,31,37	0
4	M6M	b	301	37/37	0.95	0.15	15,20,34,41	0
4	M6M	I	301	37/37	0.95	0.15	14,20,28,41	0
4	M6M	W	301	37/37	0.96	0.14	14,19,35,40	0
4	M6M	L	301	37/37	0.96	0.15	12,18,40,46	0
4	M6M	N	301	37/37	0.96	0.15	13,19,34,38	0
4	M6M	a	301	37/37	0.96	0.15	15,22,34,36	0
4	M6M	Z	301	37/37	0.96	0.14	14,20,34,39	0
4	M6M	V	301	37/37	0.96	0.14	13,20,31,35	0
3	DMF	A	301	5/5	0.96	0.14	20,33,38,39	0
4	M6M	M	301	37/37	0.96	0.14	14,21,39,47	0
3	DMF	D	301	5/5	0.96	0.15	30,36,42,42	0
4	M6M	Y	301	37/37	0.96	0.14	13,19,31,40	0
3	DMF	U	301	5/5	0.96	0.21	24,31,44,44	0
4	M6M	K	301	37/37	0.96	0.14	14,20,39,42	0
3	DMF	C	301	5/5	0.97	0.12	26,31,39,47	0
4	M6M	X	301	37/37	0.97	0.14	19,23,34,37	0
4	M6M	H	301	37/37	0.97	0.14	12,21,38,45	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.

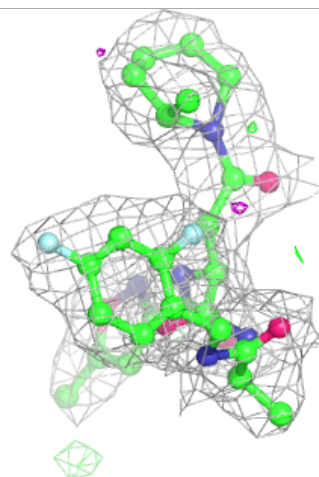
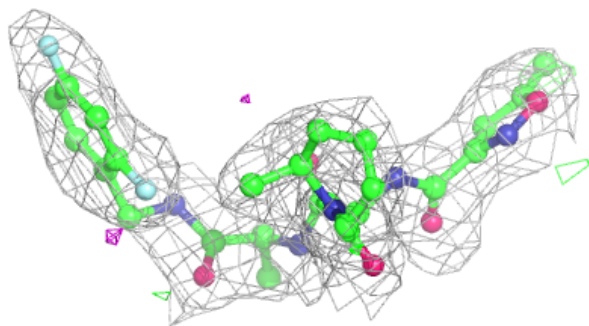
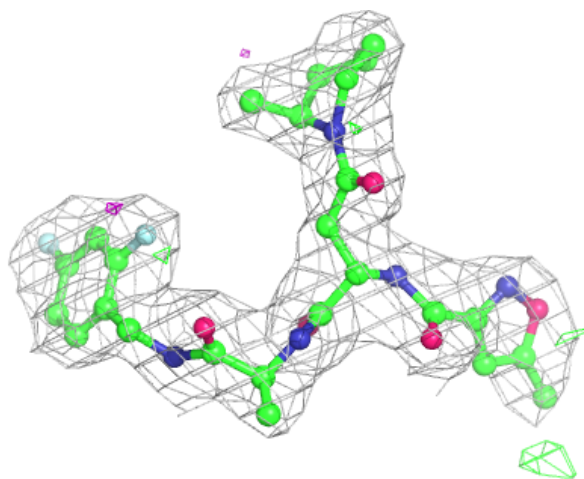
Electron density around M6M J 301:

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



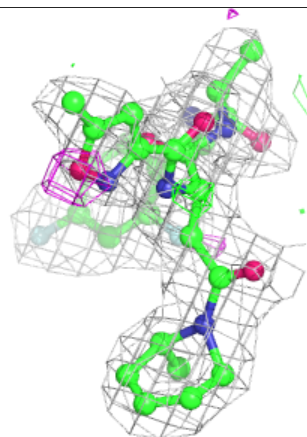
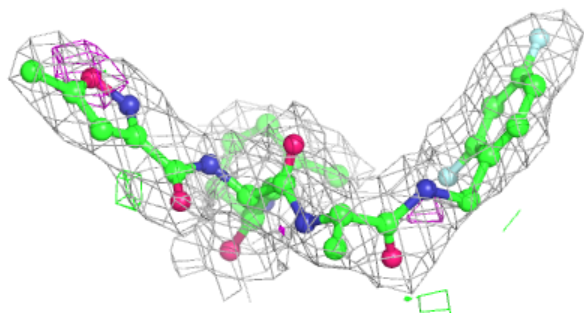
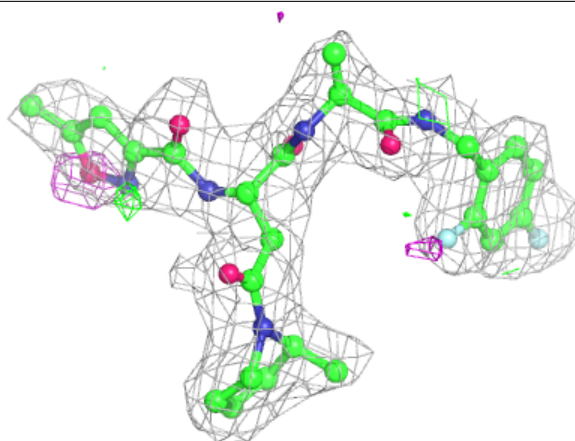
Electron density around M6M b 301:

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



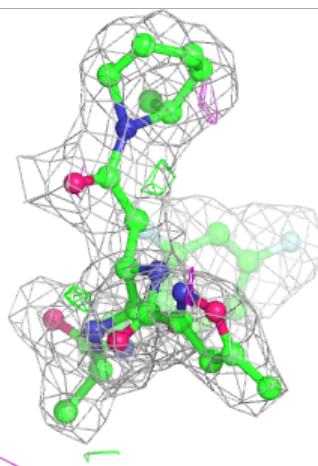
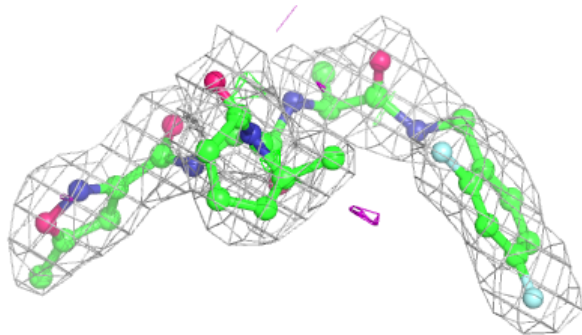
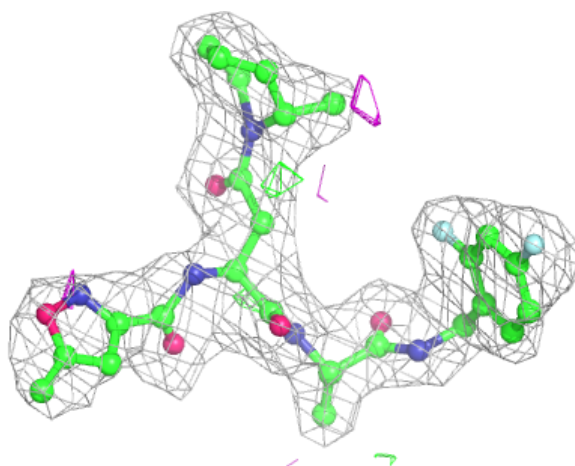
Electron density around M6M I 301:

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



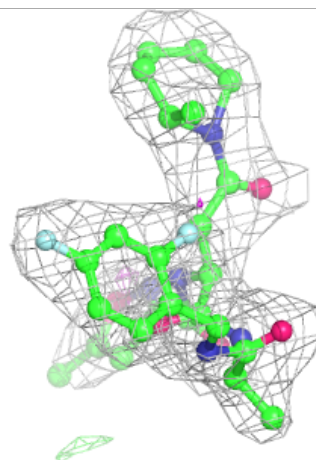
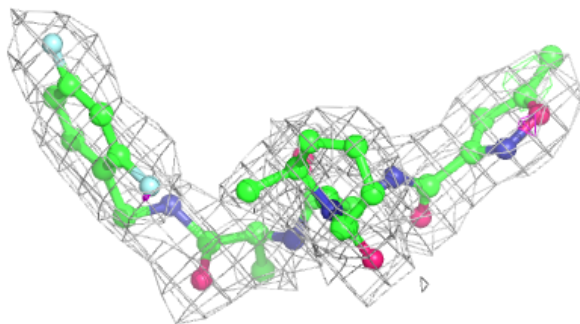
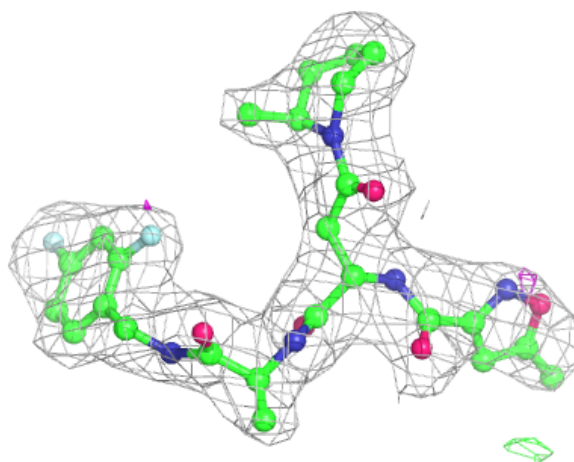
Electron density around M6M W 301:

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



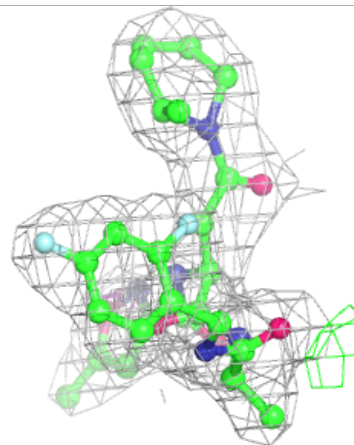
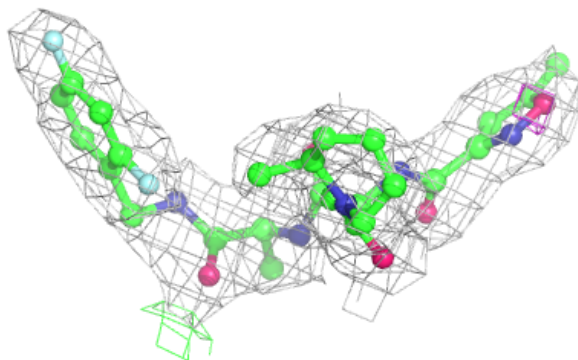
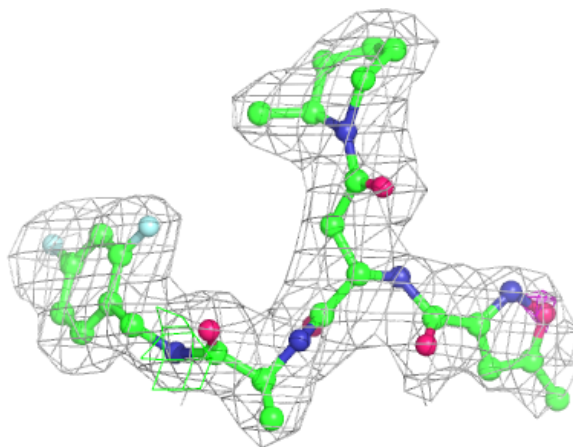
Electron density around M6M L 301:

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



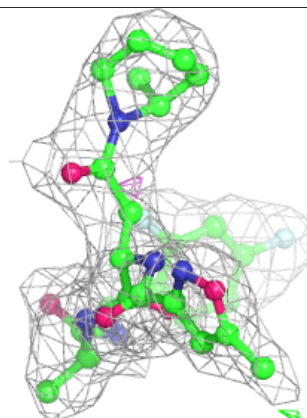
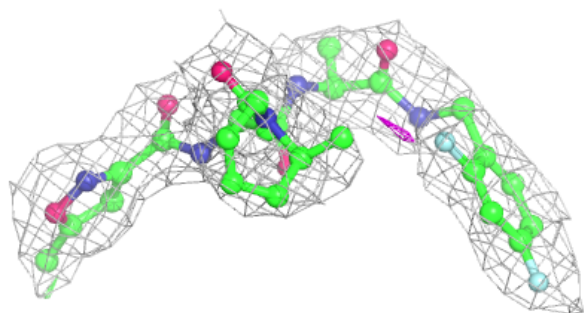
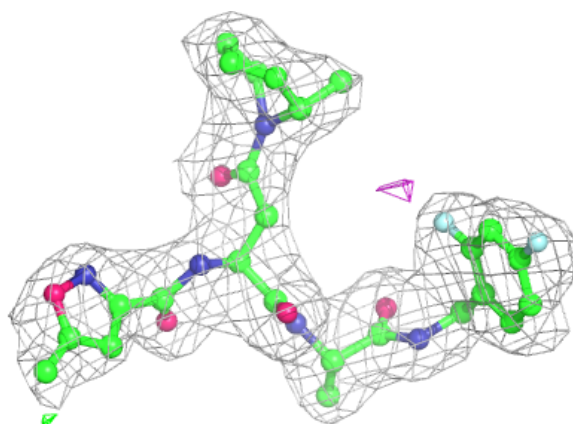
Electron density around M6M N 301:

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



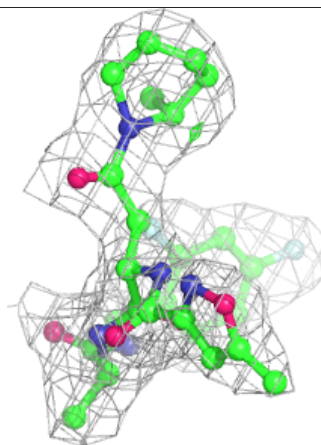
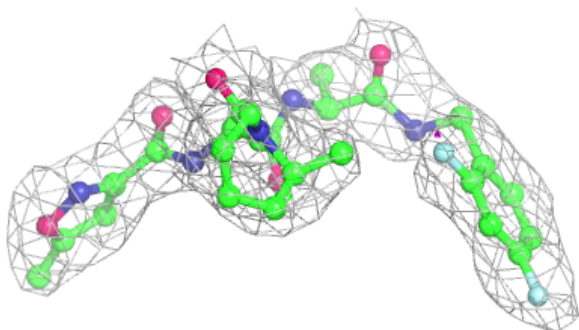
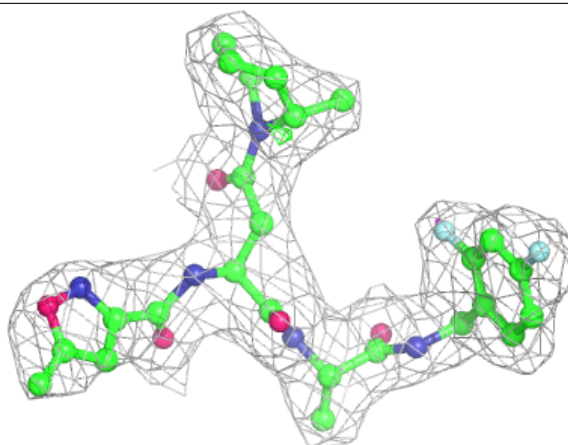
Electron density around M6M a 301:

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



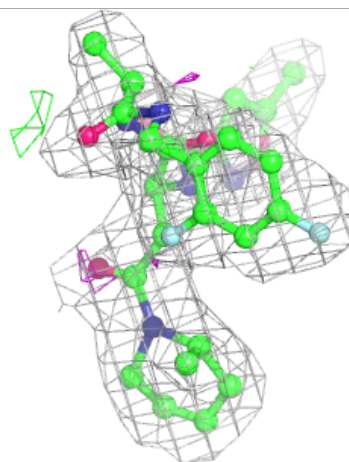
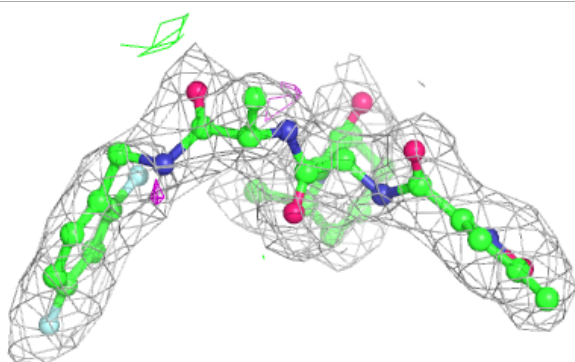
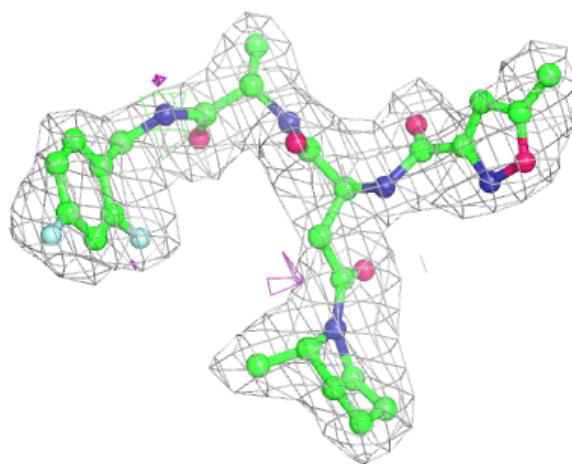
Electron density around M6M Z 301:

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



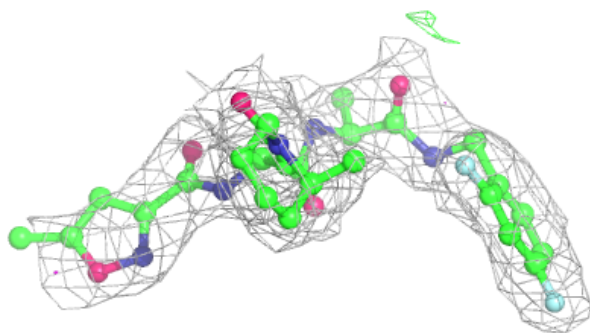
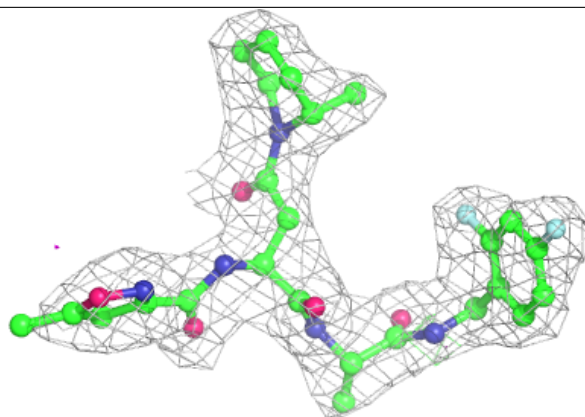
Electron density around M6M V 301:

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

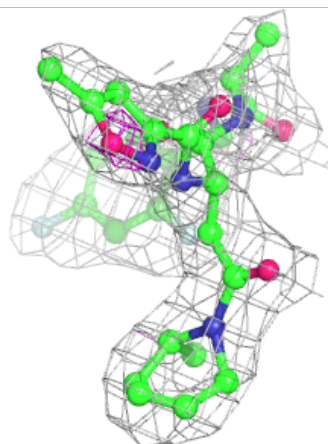
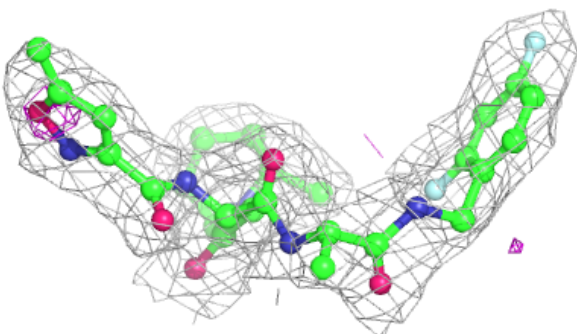
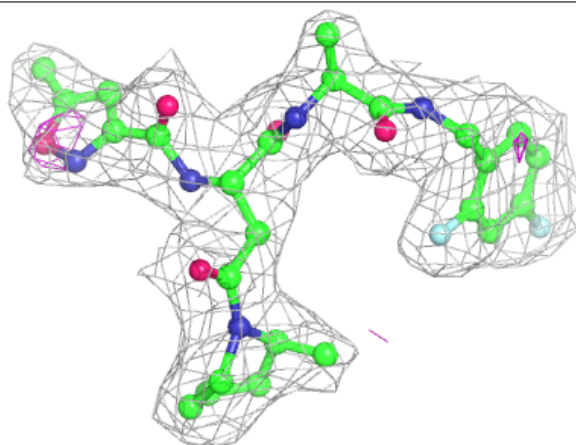


Electron density around M6M M 301:

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

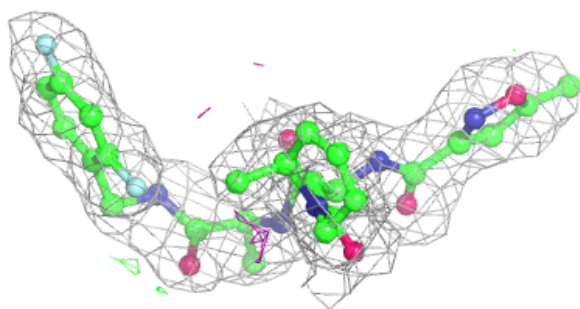
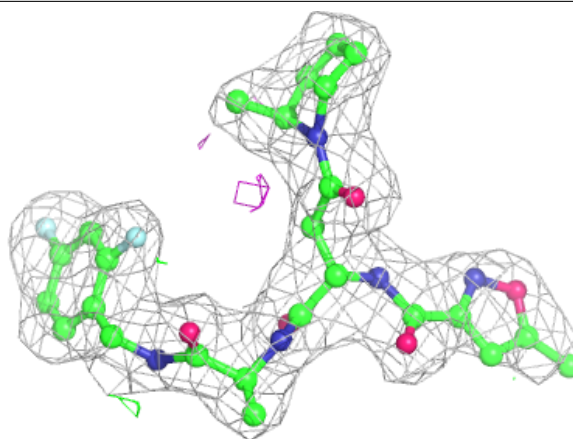
**Electron density around M6M Y 301:**

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



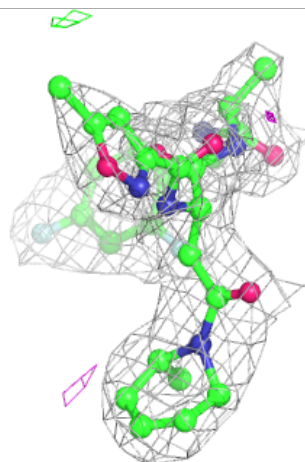
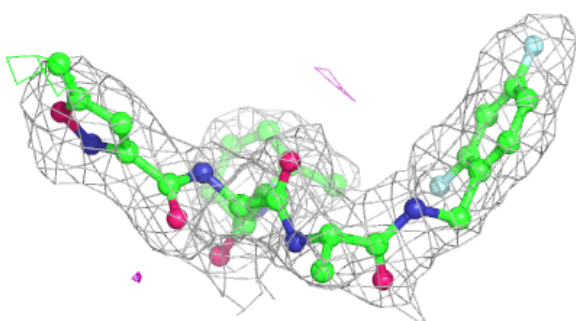
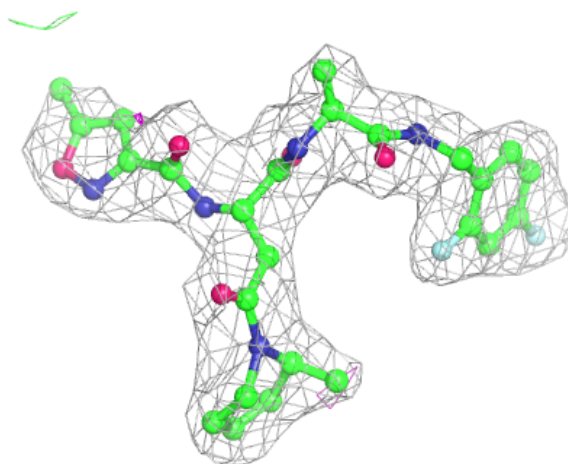
Electron density around M6M K 301:

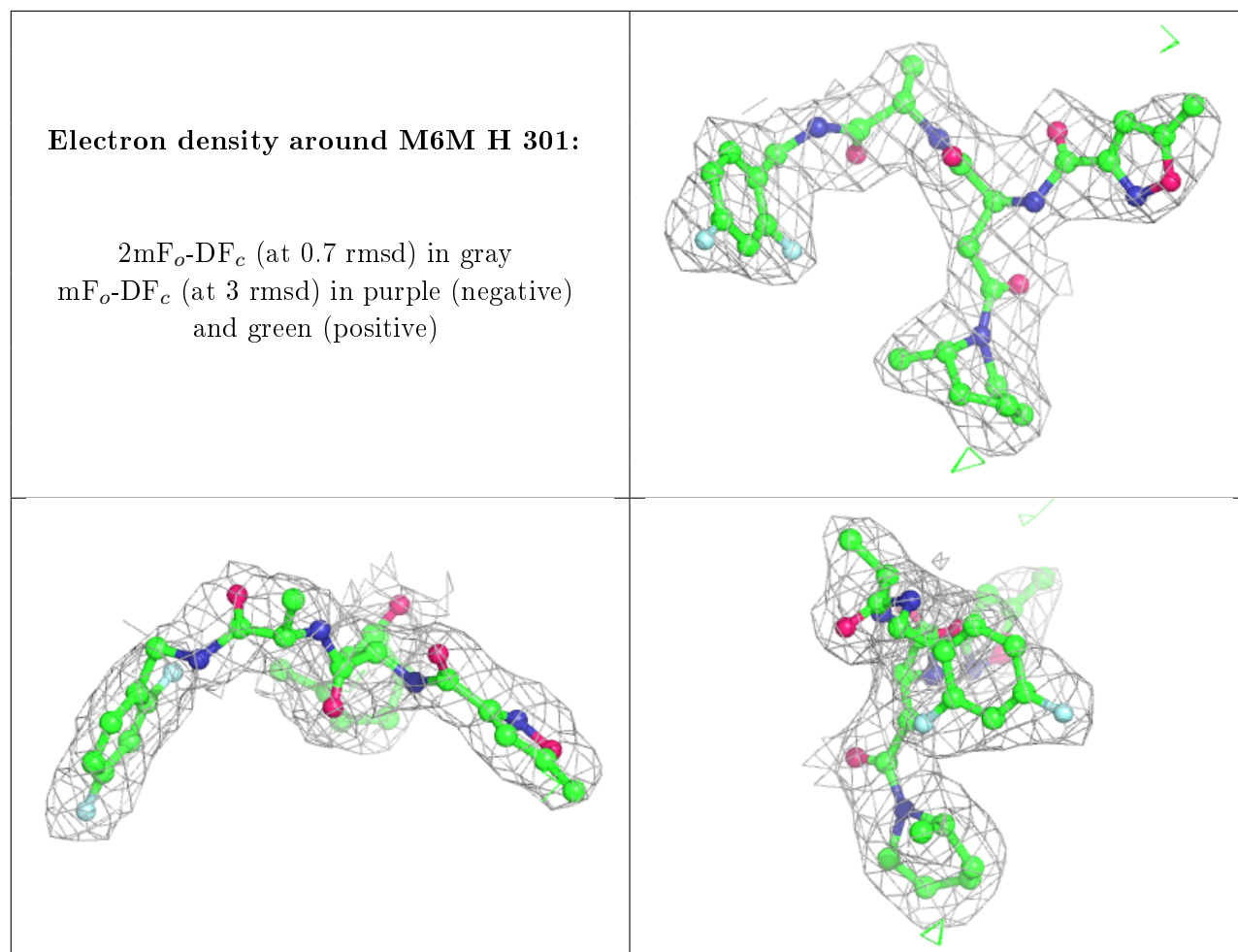
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around M6M X 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.