



wwPDB X-ray Structure Validation Summary Report ⓘ

Sep 23, 2023 – 05:40 PM EDT

PDB ID : 5TRG
Title : Structure of Mycobacterium tuberculosis proteasome in complex with N,C-capped dipeptide DPLG-2
Authors : Hsu, H.-C.; Fan, H.; Singh, R.K.; Wang, R.; Sukenick, G.; Nathan, C.; Lin, G.; Li, H.
Deposited on : 2016-10-26
Resolution : 2.80 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 types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.35.1
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.35.1

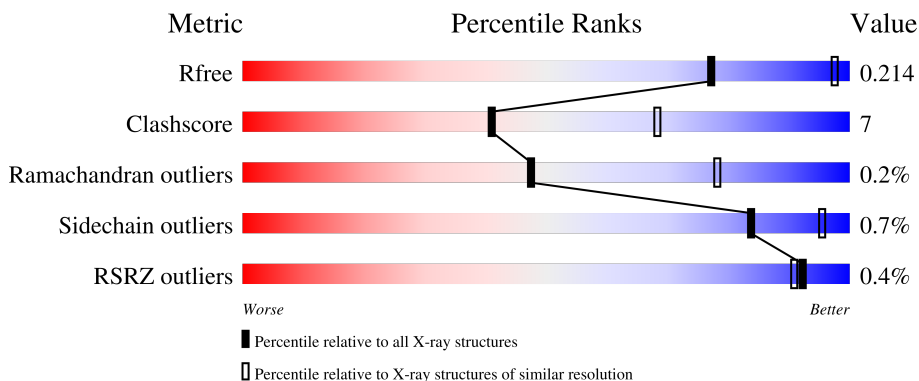
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 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.












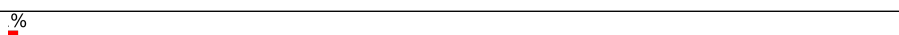


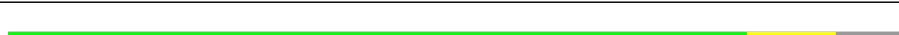
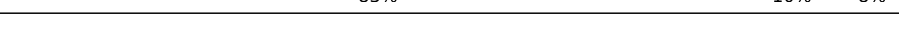


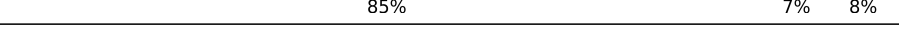
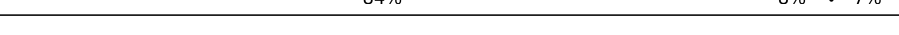





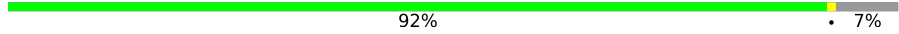
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	3140 (2.80-2.80)
Clashscore	141614	3569 (2.80-2.80)
Ramachandran outliers	138981	3498 (2.80-2.80)
Sidechain outliers	138945	3500 (2.80-2.80)
RSRZ outliers	127900	3078 (2.80-2.80)

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	240	
1	B	240	
1	C	240	
1	D	240	

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Mol	Chain	Length	Quality of chain
1	E	240	 84% 7% 9%
1	F	240	 65% 23% 10%
1	G	240	 71% 19% 10%
1	O	240	 72% 18% 9%
1	P	240	 69% 22% 9%
1	Q	240	 72% 18% 10%
1	R	240	 75% 15% 10%
1	S	240	 79% 11% 9%
1	T	240	 75% 15% 10%
1	U	240	 68% 21% 10%
2	H	240	 79% 13% 8%
2	I	240	 85% 8% 8%
2	J	240	 83% 10% 8%
2	K	240	 82% 11% 7%
2	L	240	 84% 9% 7%
2	M	240	 85% 7% 8%
2	N	240	 84% 8% 7%
2	V	240	 85% 8% 7%
2	W	240	 79% 13% 7%
2	X	240	 83% 9% 8%
2	Y	240	 84% 9% 7%
2	Z	240	 81% 11% 8%
2	a	240	 92% 7% 7%
2	b	240	 92% 7% 7%

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 47357 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.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	218	Total 1677	C 1050	N 306	O 317	S 4	0	0	0
1	B	215	Total 1660	C 1041	N 303	O 312	S 4	0	0	0
1	C	216	Total 1664	C 1043	N 304	O 313	S 4	0	0	0
1	D	223	Total 1716	C 1070	N 313	O 329	S 4	0	0	0
1	E	218	Total 1677	C 1050	N 306	O 317	S 4	0	0	0
1	F	215	Total 1655	C 1035	N 303	O 313	S 4	0	0	0
1	G	216	Total 1662	C 1040	N 304	O 314	S 4	0	0	0
1	O	218	Total 1677	C 1050	N 306	O 317	S 4	0	0	0
1	P	219	Total 1685	C 1054	N 307	O 320	S 4	0	0	0
1	Q	217	Total 1677	C 1050	N 306	O 317	S 4	0	0	0
1	R	215	Total 1657	C 1038	N 303	O 312	S 4	0	0	0
1	S	218	Total 1678	C 1050	N 306	O 318	S 4	0	0	0
1	T	217	Total 1671	C 1047	N 305	O 315	S 4	0	0	0
1	U	216	Total 1664	C 1043	N 304	O 313	S 4	0	0	0

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	9	MET	-	initiating methionine	UNP A5U4D5

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Chain	Residue	Modelled	Actual	Comment	Reference
B	9	MET	-	initiating methionine	UNP A5U4D5
C	9	MET	-	initiating methionine	UNP A5U4D5
D	9	MET	-	initiating methionine	UNP A5U4D5
E	9	MET	-	initiating methionine	UNP A5U4D5
F	9	MET	-	initiating methionine	UNP A5U4D5
G	9	MET	-	initiating methionine	UNP A5U4D5
O	9	MET	-	initiating methionine	UNP A5U4D5
P	9	MET	-	initiating methionine	UNP A5U4D5
Q	9	MET	-	initiating methionine	UNP A5U4D5
R	9	MET	-	initiating methionine	UNP A5U4D5
S	9	MET	-	initiating methionine	UNP A5U4D5
T	9	MET	-	initiating methionine	UNP A5U4D5
U	9	MET	-	initiating methionine	UNP A5U4D5

- Molecule 2 is a protein called Proteasome subunit beta.

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

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	b	223	1642	1029	283	325	5	0	0	0

There are 84 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
H	235	HIS	-	expression tag	UNP A5U4D6
H	236	HIS	-	expression tag	UNP A5U4D6
H	237	HIS	-	expression tag	UNP A5U4D6
H	238	HIS	-	expression tag	UNP A5U4D6
H	239	HIS	-	expression tag	UNP A5U4D6
H	240	HIS	-	expression tag	UNP A5U4D6
I	235	HIS	-	expression tag	UNP A5U4D6
I	236	HIS	-	expression tag	UNP A5U4D6
I	237	HIS	-	expression tag	UNP A5U4D6
I	238	HIS	-	expression tag	UNP A5U4D6
I	239	HIS	-	expression tag	UNP A5U4D6
I	240	HIS	-	expression tag	UNP A5U4D6
J	235	HIS	-	expression tag	UNP A5U4D6
J	236	HIS	-	expression tag	UNP A5U4D6
J	237	HIS	-	expression tag	UNP A5U4D6
J	238	HIS	-	expression tag	UNP A5U4D6
J	239	HIS	-	expression tag	UNP A5U4D6
J	240	HIS	-	expression tag	UNP A5U4D6
K	235	HIS	-	expression tag	UNP A5U4D6
K	236	HIS	-	expression tag	UNP A5U4D6
K	237	HIS	-	expression tag	UNP A5U4D6
K	238	HIS	-	expression tag	UNP A5U4D6
K	239	HIS	-	expression tag	UNP A5U4D6
K	240	HIS	-	expression tag	UNP A5U4D6
L	235	HIS	-	expression tag	UNP A5U4D6
L	236	HIS	-	expression tag	UNP A5U4D6
L	237	HIS	-	expression tag	UNP A5U4D6
L	238	HIS	-	expression tag	UNP A5U4D6
L	239	HIS	-	expression tag	UNP A5U4D6
L	240	HIS	-	expression tag	UNP A5U4D6
M	235	HIS	-	expression tag	UNP A5U4D6
M	236	HIS	-	expression tag	UNP A5U4D6
M	237	HIS	-	expression tag	UNP A5U4D6
M	238	HIS	-	expression tag	UNP A5U4D6
M	239	HIS	-	expression tag	UNP A5U4D6
M	240	HIS	-	expression tag	UNP A5U4D6

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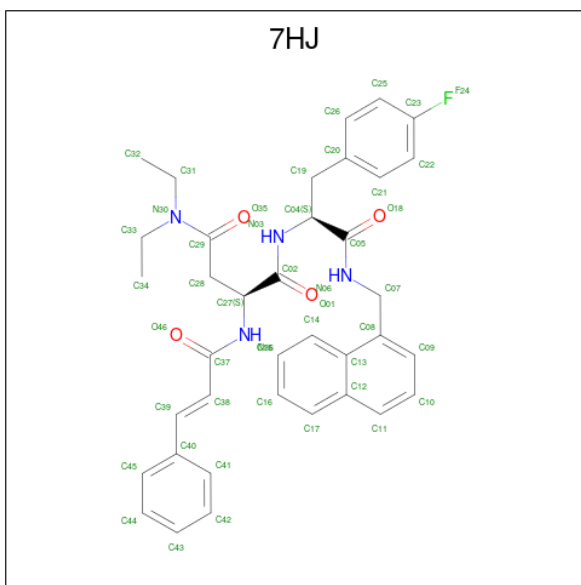
Chain	Residue	Modelled	Actual	Comment	Reference
N	235	HIS	-	expression tag	UNP A5U4D6
N	236	HIS	-	expression tag	UNP A5U4D6
N	237	HIS	-	expression tag	UNP A5U4D6
N	238	HIS	-	expression tag	UNP A5U4D6
N	239	HIS	-	expression tag	UNP A5U4D6
N	240	HIS	-	expression tag	UNP A5U4D6
V	235	HIS	-	expression tag	UNP A5U4D6
V	236	HIS	-	expression tag	UNP A5U4D6
V	237	HIS	-	expression tag	UNP A5U4D6
V	238	HIS	-	expression tag	UNP A5U4D6
V	239	HIS	-	expression tag	UNP A5U4D6
V	240	HIS	-	expression tag	UNP A5U4D6
W	235	HIS	-	expression tag	UNP A5U4D6
W	236	HIS	-	expression tag	UNP A5U4D6
W	237	HIS	-	expression tag	UNP A5U4D6
W	238	HIS	-	expression tag	UNP A5U4D6
W	239	HIS	-	expression tag	UNP A5U4D6
W	240	HIS	-	expression tag	UNP A5U4D6
X	235	HIS	-	expression tag	UNP A5U4D6
X	236	HIS	-	expression tag	UNP A5U4D6
X	237	HIS	-	expression tag	UNP A5U4D6
X	238	HIS	-	expression tag	UNP A5U4D6
X	239	HIS	-	expression tag	UNP A5U4D6
X	240	HIS	-	expression tag	UNP A5U4D6
Y	235	HIS	-	expression tag	UNP A5U4D6
Y	236	HIS	-	expression tag	UNP A5U4D6
Y	237	HIS	-	expression tag	UNP A5U4D6
Y	238	HIS	-	expression tag	UNP A5U4D6
Y	239	HIS	-	expression tag	UNP A5U4D6
Y	240	HIS	-	expression tag	UNP A5U4D6
Z	235	HIS	-	expression tag	UNP A5U4D6
Z	236	HIS	-	expression tag	UNP A5U4D6
Z	237	HIS	-	expression tag	UNP A5U4D6
Z	238	HIS	-	expression tag	UNP A5U4D6
Z	239	HIS	-	expression tag	UNP A5U4D6
Z	240	HIS	-	expression tag	UNP A5U4D6
a	235	HIS	-	expression tag	UNP A5U4D6
a	236	HIS	-	expression tag	UNP A5U4D6
a	237	HIS	-	expression tag	UNP A5U4D6
a	238	HIS	-	expression tag	UNP A5U4D6
a	239	HIS	-	expression tag	UNP A5U4D6
a	240	HIS	-	expression tag	UNP A5U4D6

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Chain	Residue	Modelled	Actual	Comment	Reference
b	235	HIS	-	expression tag	UNP A5U4D6
b	236	HIS	-	expression tag	UNP A5U4D6
b	237	HIS	-	expression tag	UNP A5U4D6
b	238	HIS	-	expression tag	UNP A5U4D6
b	239	HIS	-	expression tag	UNP A5U4D6
b	240	HIS	-	expression tag	UNP A5U4D6

- Molecule 3 is N,N-diethyl-N 2 -[(2E)-3-phenylprop-2-enoyl]-L-asparaginyl-4-fluoro-N-[(naphthalen-1-yl)methyl]-L-phenylalaninamide (three-letter code: 7HJ) (formula: C₃₇H₃₉FN₄O₄).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
			Total	C	F	N			O
3	H	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	I	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	J	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	K	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	L	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	M	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	N	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	V	1	Total	C	F	N	O	0	0
			46	37	1	4	4		

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
3	W	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	X	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	Y	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	Z	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	a	1	Total	C	F	N	O	0	0
			46	37	1	4	4		
3	b	1	Total	C	F	N	O	0	0
			46	37	1	4	4		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	10	Total	O	0	0
			10	10		
4	B	1	Total	O	0	0
			1	1		
4	C	4	Total	O	0	0
			4	4		
4	D	7	Total	O	0	0
			7	7		
4	E	16	Total	O	0	0
			16	16		
4	F	5	Total	O	0	0
			5	5		
4	G	14	Total	O	0	0
			14	14		
4	H	11	Total	O	0	0
			11	11		
4	I	19	Total	O	0	0
			19	19		
4	J	14	Total	O	0	0
			14	14		
4	K	14	Total	O	0	0
			14	14		
4	L	16	Total	O	0	0
			16	16		
4	M	14	Total	O	0	0
			14	14		

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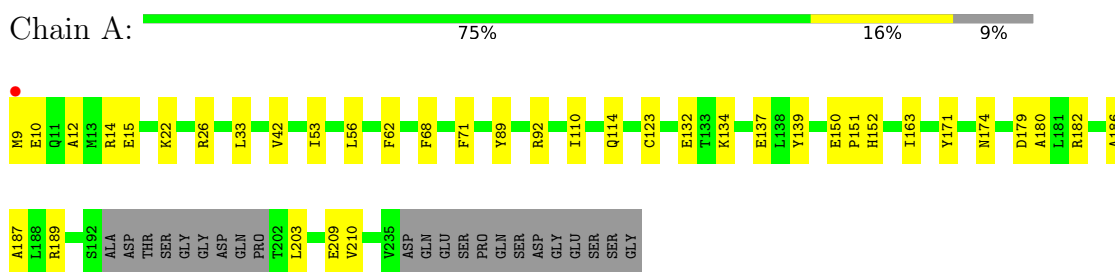
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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	N	9	Total O 9 9	0	0
4	O	8	Total O 8 8	0	0
4	P	9	Total O 9 9	0	0
4	Q	8	Total O 8 8	0	0
4	R	9	Total O 9 9	0	0
4	S	15	Total O 15 15	0	0
4	T	11	Total O 11 11	0	0
4	U	13	Total O 13 13	0	0
4	V	14	Total O 14 14	0	0
4	W	17	Total O 17 17	0	0
4	X	15	Total O 15 15	0	0
4	Y	15	Total O 15 15	0	0
4	Z	16	Total O 16 16	0	0
4	a	7	Total O 7 7	0	0
4	b	18	Total O 18 18	0	0

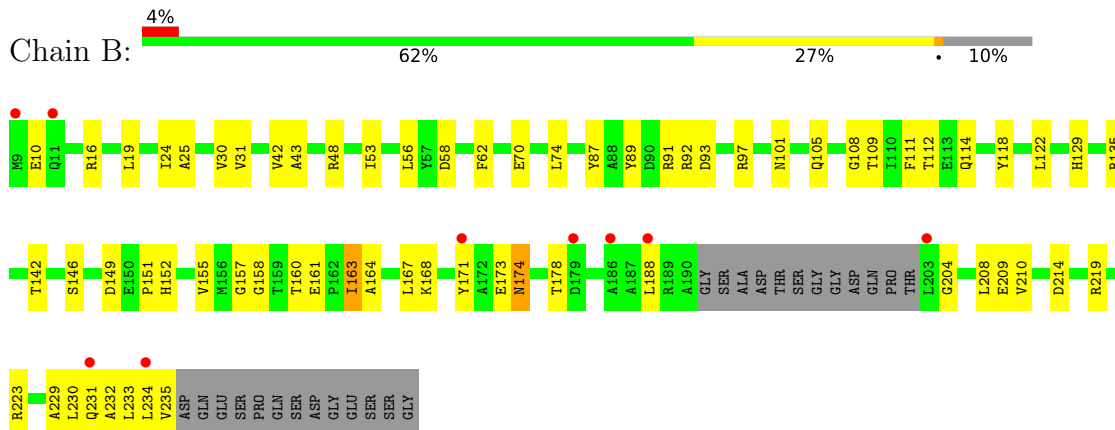
3 Residue-property plots [i](#)

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.

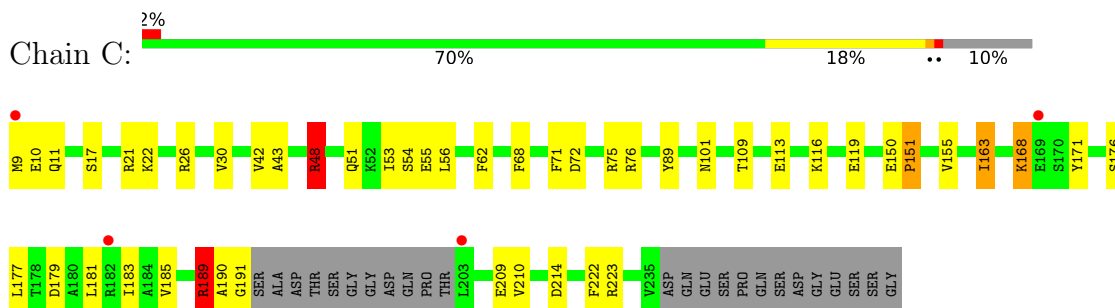
- Molecule 1: Proteasome subunit alpha



- Molecule 1: Proteasome subunit alpha

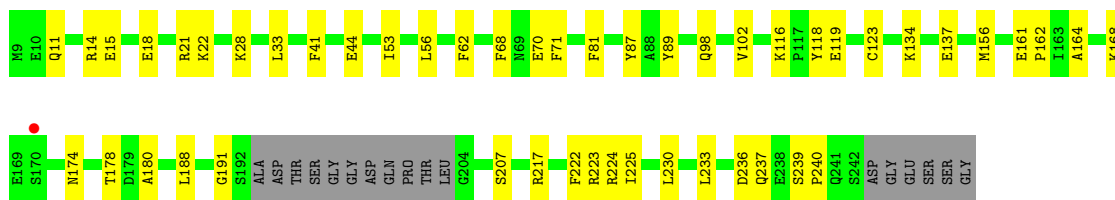


- Molecule 1: Proteasome subunit alpha




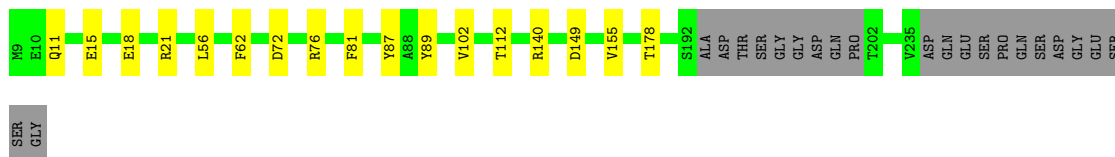
- Molecule 1: Proteasome subunit alpha

Chain D:  72% 20% 7%



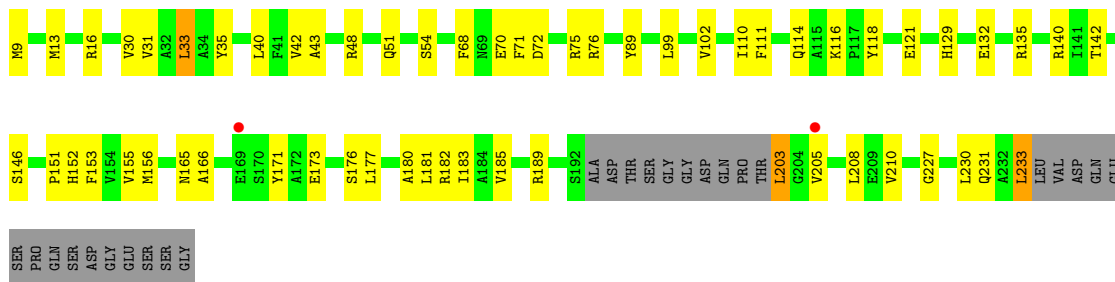
• Molecule 1: Proteasome subunit alpha

Chain E:  84% 7% 9%



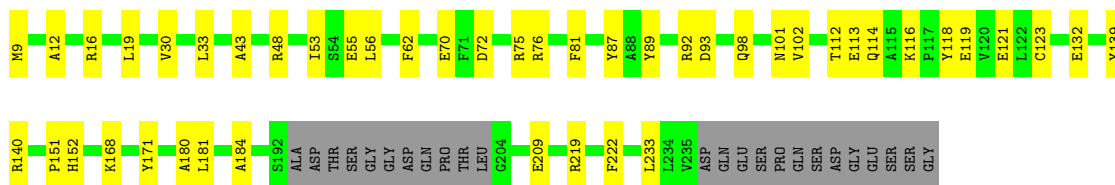
• Molecule 1: Proteasome subunit alpha

Chain F:  65% 23% 10%



• Molecule 1: Proteasome subunit alpha

Chain G:  71% 19% 10%



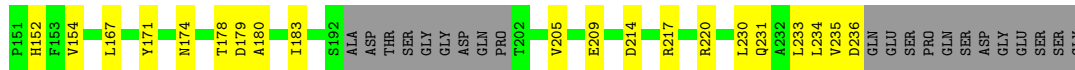
• Molecule 1: Proteasome subunit alpha

Chain O:  72% 18% 9%

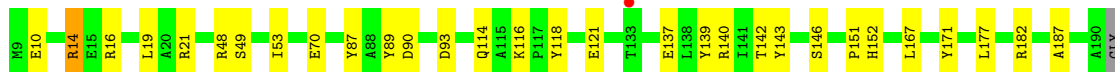




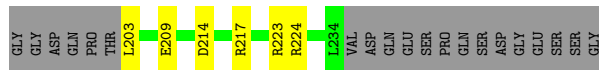
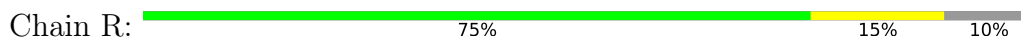
• Molecule 1: Proteasome subunit alpha



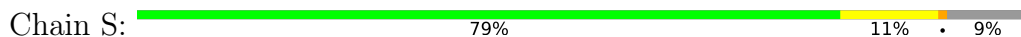
• Molecule 1: Proteasome subunit alpha



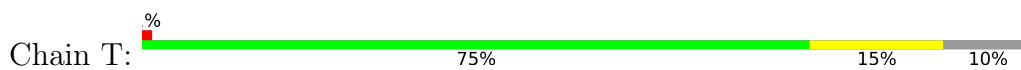
• Molecule 1: Proteasome subunit alpha

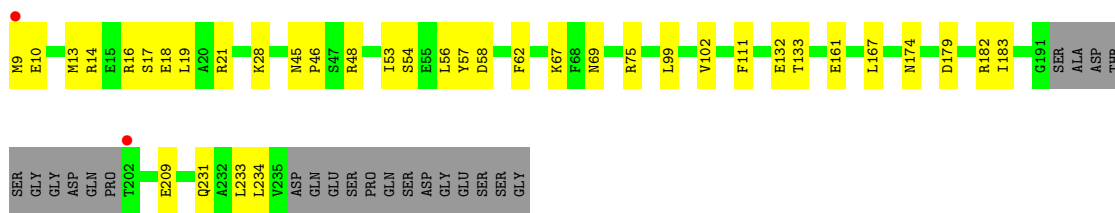


• Molecule 1: Proteasome subunit alpha

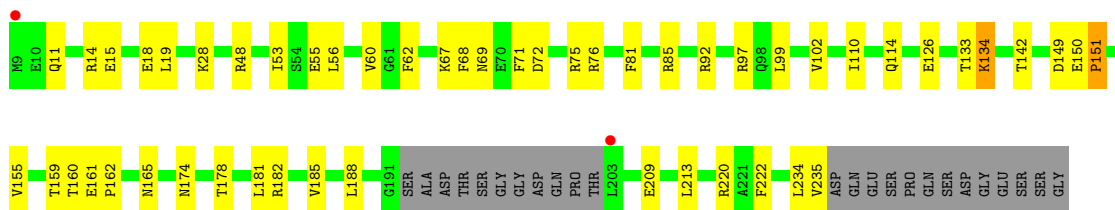


• Molecule 1: Proteasome subunit alpha

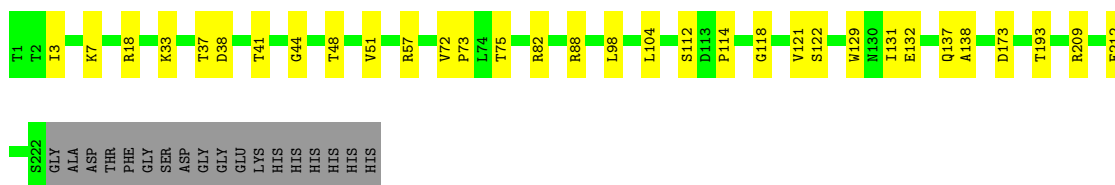
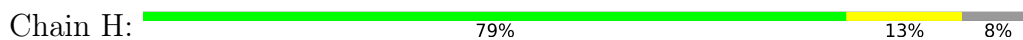




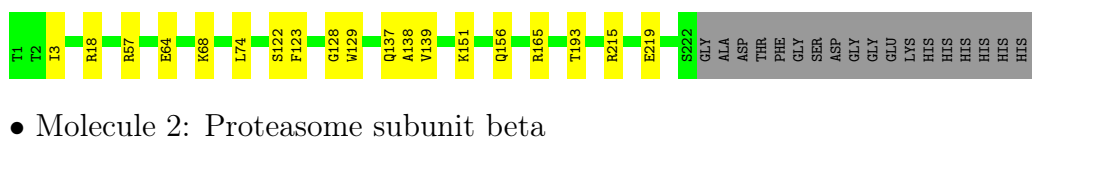
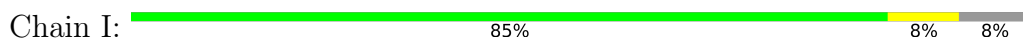
● Molecule 1: Proteasome subunit alpha



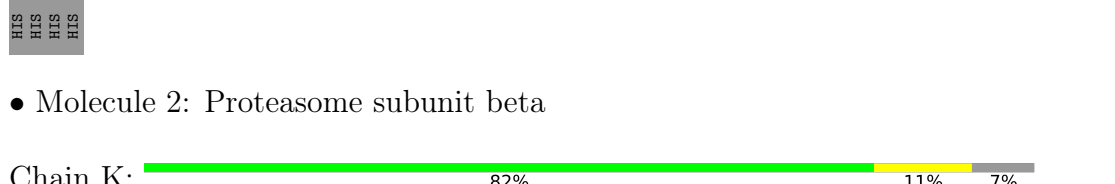
● Molecule 2: Proteasome subunit beta



● Molecule 2: Proteasome subunit beta



● Molecule 2: Proteasome subunit beta



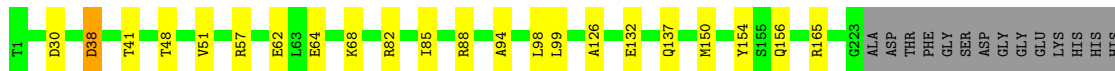
● Molecule 2: Proteasome subunit beta



ASP
GLY
GLY
GLY
LYS
HIS
HIS
HIS
HIS
HIS

• Molecule 2: Proteasome subunit beta

Chain L: 84% 9% 7%



HIS
HIS
HIS

• Molecule 2: Proteasome subunit beta

Chain M: 85% 7% 8%



• Molecule 2: Proteasome subunit beta

Chain N: 84% 8% 7%



HIS

• Molecule 2: Proteasome subunit beta

Chain V: 85% 8% 7%



• Molecule 2: Proteasome subunit beta

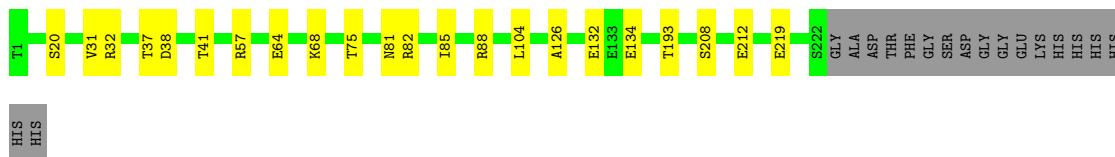
Chain W: 79% 13% 7%



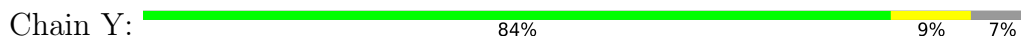
R215
E219
G223
ALA
ASP
THR
PHE
GLY
SER
ASP
GLY
GLY
LYS
HIS
HIS
HIS
HIS
HIS

• Molecule 2: Proteasome subunit beta

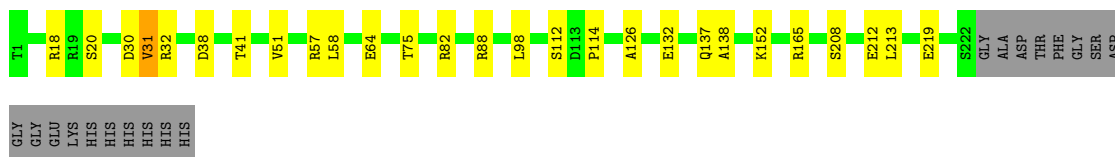
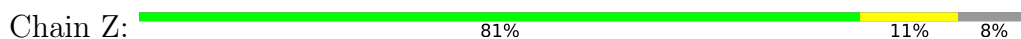
Chain X: 83% 9% 8%



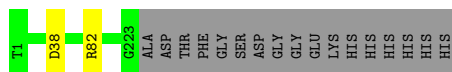
● Molecule 2: Proteasome subunit beta



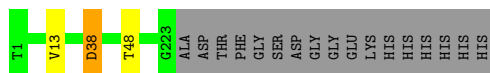
● Molecule 2: Proteasome subunit beta



● 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	120.05Å 219.09Å 137.89Å 90.00° 104.87° 90.00°	Depositor
Resolution (Å)	49.53 – 2.80 49.53 – 2.80	Depositor EDS
% Data completeness (in resolution range)	99.4 (49.53-2.80) 99.4 (49.53-2.80)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.20 (at 2.81Å)	Xtrriage
Refinement program	PHENIX (1.10.1_2155: ???)	Depositor
R, R_{free}	0.160 , 0.216 0.160 , 0.214	Depositor DCC
R_{free} test set	8302 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å ²)	48.5	Xtrriage
Anisotropy	0.046	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 48.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	47357	wwPDB-VP
Average B, all atoms (Å ²)	41.0	wwPDB-VP

Xtrriage'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 i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: 7HJ

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	0.66	0/1701	0.76	0/2297
1	B	0.64	0/1684	0.80	1/2274 (0.0%)
1	C	0.66	0/1688	0.78	4/2279 (0.2%)
1	D	0.64	0/1741	0.74	0/2351
1	E	0.67	0/1701	0.75	0/2297
1	F	0.65	0/1679	0.81	3/2266 (0.1%)
1	G	0.67	0/1686	0.73	0/2276
1	O	0.66	0/1701	0.77	2/2297 (0.1%)
1	P	0.65	0/1709	0.76	2/2308 (0.1%)
1	Q	0.65	0/1701	0.75	2/2297 (0.1%)
1	R	0.70	1/1681 (0.1%)	0.75	0/2269
1	S	0.67	0/1702	0.73	0/2298
1	T	0.72	0/1695	0.78	0/2289
1	U	0.76	1/1688 (0.1%)	0.81	1/2279 (0.0%)
2	H	0.63	0/1662	0.76	1/2254 (0.0%)
2	I	0.63	0/1662	0.74	0/2254
2	J	0.60	0/1662	0.71	0/2254
2	K	0.65	0/1666	0.79	2/2259 (0.1%)
2	L	0.65	0/1666	0.77	1/2259 (0.0%)
2	M	0.64	0/1662	0.78	1/2254 (0.0%)
2	N	0.58	0/1666	0.74	1/2259 (0.0%)
2	V	0.66	0/1666	0.79	1/2259 (0.0%)
2	W	0.64	0/1666	0.75	1/2259 (0.0%)
2	X	0.66	2/1662 (0.1%)	0.74	0/2254
2	Y	0.64	0/1666	0.75	0/2259
2	Z	0.67	1/1662 (0.1%)	0.76	1/2254 (0.0%)
2	a	0.66	0/1666	0.79	2/2259 (0.1%)
2	b	0.63	0/1666	0.71	1/2259 (0.0%)
All	All	0.66	5/47057 (0.0%)	0.76	27/63673 (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
1	U	0	1

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	X	219	GLU	CD-OE1	-7.73	1.17	1.25
2	Z	31	VAL	CB-CG1	-7.60	1.36	1.52
2	X	219	GLU	CD-OE2	-6.91	1.18	1.25
1	R	120	VAL	CB-CG1	-5.45	1.41	1.52
1	U	134	LYS	CB-CG	5.17	1.66	1.52

The worst 5 of 27 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	a	82	ARG	NE-CZ-NH2	7.94	124.27	120.30
1	Q	48	ARG	NE-CZ-NH2	7.48	124.04	120.30
1	F	208	LEU	CA-CB-CG	7.19	131.84	115.30
2	M	82	ARG	NE-CZ-NH2	7.09	123.85	120.30
2	L	38	ASP	CB-CG-OD1	6.70	124.33	118.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	U	133	THR	Peptide

5.2 Too-close contacts [\(i\)](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1677	0	1680	29	0
1	B	1660	0	1665	63	0
1	C	1664	0	1668	45	0
1	D	1716	0	1705	38	2

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	E	1677	0	1680	11	0
1	F	1655	0	1653	56	0
1	G	1662	0	1662	33	0
1	O	1677	0	1680	41	0
1	P	1685	0	1684	39	0
1	Q	1677	0	1677	28	0
1	R	1657	0	1659	29	0
1	S	1678	0	1677	21	0
1	T	1671	0	1675	30	0
1	U	1664	0	1668	33	0
2	H	1638	0	1633	22	0
2	I	1638	0	1633	14	0
2	J	1638	0	1633	18	0
2	K	1642	0	1636	16	0
2	L	1642	0	1636	15	0
2	M	1638	0	1633	14	0
2	N	1642	0	1636	19	0
2	V	1642	0	1636	14	0
2	W	1642	0	1636	20	0
2	X	1638	0	1633	16	0
2	Y	1642	0	1636	14	0
2	Z	1638	0	1633	18	2
2	a	1642	0	1636	0	0
2	b	1642	0	1636	0	0
3	H	46	0	0	1	0
3	I	46	0	0	0	0
3	J	46	0	0	2	0
3	K	46	0	0	0	0
3	L	46	0	0	1	0
3	M	46	0	0	1	0
3	N	46	0	0	3	0
3	V	46	0	0	1	0
3	W	46	0	0	1	0
3	X	46	0	0	0	0
3	Y	46	0	0	0	0
3	Z	46	0	0	1	0
3	a	46	0	0	0	0
3	b	46	0	0	0	0
4	A	10	0	0	0	0
4	B	1	0	0	0	0
4	C	4	0	0	0	0
4	D	7	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	E	16	0	0	0	0
4	F	5	0	0	0	0
4	G	14	0	0	0	0
4	H	11	0	0	0	0
4	I	19	0	0	0	0
4	J	14	0	0	2	0
4	K	14	0	0	0	0
4	L	16	0	0	0	0
4	M	14	0	0	0	0
4	N	9	0	0	0	0
4	O	8	0	0	0	0
4	P	9	0	0	0	0
4	Q	8	0	0	0	0
4	R	9	0	0	0	0
4	S	15	0	0	1	0
4	T	11	0	0	0	0
4	U	13	0	0	2	0
4	V	14	0	0	0	0
4	W	17	0	0	1	0
4	X	15	0	0	0	0
4	Y	15	0	0	0	0
4	Z	16	0	0	0	0
4	a	7	0	0	0	0
4	b	18	0	0	0	0
All	All	47357	0	46319	618	2

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

The worst 5 of 618 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:T:10:GLU:O	1:T:14:ARG:HG3	1.45	1.15
1:S:92:ARG:NH1	1:S:132:GLU:OE2	1.82	1.12
1:T:182:ARG:NH2	1:T:233:LEU:O	1.91	1.02
1:R:58:ASP:OD1	1:R:91:ARG:NH1	1.95	0.99
1:O:182:ARG:HH22	1:O:234:LEU:HA	1.25	0.99

All (2) 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:D:22:LYS:CE	2:Z:219:GLU:OE1[2_555]	1.89	0.31
1:D:22:LYS:NZ	2:Z:219:GLU:OE1[2_555]	2.19	0.01

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	214/240 (89%)	209 (98%)	4 (2%)	1 (0%)	29	61
1	B	211/240 (88%)	204 (97%)	6 (3%)	1 (0%)	29	61
1	C	212/240 (88%)	206 (97%)	5 (2%)	1 (0%)	29	61
1	D	219/240 (91%)	210 (96%)	8 (4%)	1 (0%)	29	61
1	E	214/240 (89%)	208 (97%)	6 (3%)	0	100	100
1	F	211/240 (88%)	204 (97%)	7 (3%)	0	100	100
1	G	212/240 (88%)	208 (98%)	4 (2%)	0	100	100
1	O	214/240 (89%)	206 (96%)	6 (3%)	2 (1%)	17	46
1	P	215/240 (90%)	210 (98%)	5 (2%)	0	100	100
1	Q	213/240 (89%)	210 (99%)	2 (1%)	1 (0%)	29	61
1	R	211/240 (88%)	203 (96%)	6 (3%)	2 (1%)	17	46
1	S	214/240 (89%)	208 (97%)	6 (3%)	0	100	100
1	T	213/240 (89%)	207 (97%)	5 (2%)	1 (0%)	29	61
1	U	212/240 (88%)	204 (96%)	6 (3%)	2 (1%)	17	46
2	H	220/240 (92%)	216 (98%)	4 (2%)	0	100	100
2	I	220/240 (92%)	216 (98%)	4 (2%)	0	100	100
2	J	220/240 (92%)	217 (99%)	3 (1%)	0	100	100
2	K	221/240 (92%)	218 (99%)	3 (1%)	0	100	100
2	L	221/240 (92%)	217 (98%)	4 (2%)	0	100	100
2	M	220/240 (92%)	217 (99%)	3 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	N	221/240 (92%)	218 (99%)	3 (1%)	0	100	100
2	V	221/240 (92%)	218 (99%)	3 (1%)	0	100	100
2	W	221/240 (92%)	218 (99%)	3 (1%)	0	100	100
2	X	220/240 (92%)	217 (99%)	3 (1%)	0	100	100
2	Y	221/240 (92%)	218 (99%)	3 (1%)	0	100	100
2	Z	220/240 (92%)	217 (99%)	3 (1%)	0	100	100
2	a	221/240 (92%)	218 (99%)	3 (1%)	0	100	100
2	b	221/240 (92%)	217 (98%)	4 (2%)	0	100	100
All	All	6073/6720 (90%)	5939 (98%)	122 (2%)	12 (0%)	47	78

5 of 12 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	174	ASN
1	T	174	ASN
1	U	174	ASN
1	R	174	ASN
1	A	174	ASN

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	167/184 (91%)	167 (100%)	0	100	100
1	B	165/184 (90%)	162 (98%)	3 (2%)	59	86
1	C	165/184 (90%)	160 (97%)	5 (3%)	41	75
1	D	172/184 (94%)	172 (100%)	0	100	100
1	E	167/184 (91%)	166 (99%)	1 (1%)	86	96
1	F	164/184 (89%)	162 (99%)	2 (1%)	71	92
1	G	165/184 (90%)	164 (99%)	1 (1%)	86	96
1	O	167/184 (91%)	162 (97%)	5 (3%)	41	75

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	P	168/184 (91%)	167 (99%)	1 (1%)	86	96
1	Q	167/184 (91%)	167 (100%)	0	100	100
1	R	164/184 (89%)	162 (99%)	2 (1%)	71	92
1	S	167/184 (91%)	165 (99%)	2 (1%)	71	92
1	T	166/184 (90%)	166 (100%)	0	100	100
1	U	165/184 (90%)	164 (99%)	1 (1%)	86	96
2	H	165/178 (93%)	165 (100%)	0	100	100
2	I	165/178 (93%)	165 (100%)	0	100	100
2	J	165/178 (93%)	165 (100%)	0	100	100
2	K	165/178 (93%)	165 (100%)	0	100	100
2	L	165/178 (93%)	165 (100%)	0	100	100
2	M	165/178 (93%)	165 (100%)	0	100	100
2	N	165/178 (93%)	164 (99%)	1 (1%)	86	96
2	V	165/178 (93%)	165 (100%)	0	100	100
2	W	165/178 (93%)	162 (98%)	3 (2%)	59	86
2	X	165/178 (93%)	165 (100%)	0	100	100
2	Y	165/178 (93%)	163 (99%)	2 (1%)	71	92
2	Z	165/178 (93%)	165 (100%)	0	100	100
2	a	165/178 (93%)	165 (100%)	0	100	100
2	b	165/178 (93%)	162 (98%)	3 (2%)	59	86
All	All	4639/5068 (92%)	4607 (99%)	32 (1%)	84	95

5 of 32 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	Y	208	SER
2	b	13	VAL
2	N	57	ARG
1	G	101	ASN
2	b	38	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 12 such sidechains are listed below:

Mol	Chain	Res	Type
2	L	96	GLN
2	N	137	GLN
1	P	174	ASN
1	P	73	ASN
1	E	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

14 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
3	7HJ	a	301	-	49,49,49	1.70	3 (6%)	64,65,65	1.53	11 (17%)
3	7HJ	Y	301	-	49,49,49	1.68	4 (8%)	64,65,65	1.28	6 (9%)
3	7HJ	L	301	-	49,49,49	1.69	4 (8%)	64,65,65	1.42	6 (9%)
3	7HJ	N	301	-	49,49,49	1.54	6 (12%)	64,65,65	1.45	8 (12%)
3	7HJ	J	301	-	49,49,49	1.85	9 (18%)	64,65,65	1.34	7 (10%)
3	7HJ	V	301	-	49,49,49	1.60	3 (6%)	64,65,65	1.62	8 (12%)
3	7HJ	Z	301	-	49,49,49	1.71	8 (16%)	64,65,65	1.37	5 (7%)
3	7HJ	M	301	-	49,49,49	1.90	7 (14%)	64,65,65	1.31	9 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	7HJ	X	301	-	49,49,49	1.88	5 (10%)	64,65,65	1.40	7 (10%)
3	7HJ	K	301	-	49,49,49	1.44	5 (10%)	64,65,65	1.35	6 (9%)
3	7HJ	H	301	-	49,49,49	1.72	7 (14%)	64,65,65	1.42	8 (12%)
3	7HJ	b	301	-	49,49,49	1.78	7 (14%)	64,65,65	1.44	6 (9%)
3	7HJ	I	301	-	49,49,49	1.78	3 (6%)	64,65,65	1.32	7 (10%)
3	7HJ	W	301	-	49,49,49	1.56	6 (12%)	64,65,65	1.53	9 (14%)

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
3	7HJ	a	301	-	-	6/42/42/42	0/4/4/4
3	7HJ	Y	301	-	-	6/42/42/42	0/4/4/4
3	7HJ	L	301	-	-	5/42/42/42	0/4/4/4
3	7HJ	N	301	-	-	8/42/42/42	0/4/4/4
3	7HJ	J	301	-	-	7/42/42/42	0/4/4/4
3	7HJ	V	301	-	-	8/42/42/42	0/4/4/4
3	7HJ	Z	301	-	-	5/42/42/42	0/4/4/4
3	7HJ	M	301	-	-	6/42/42/42	0/4/4/4
3	7HJ	X	301	-	-	4/42/42/42	0/4/4/4
3	7HJ	K	301	-	-	6/42/42/42	0/4/4/4
3	7HJ	H	301	-	-	4/42/42/42	0/4/4/4
3	7HJ	b	301	-	-	4/42/42/42	0/4/4/4
3	7HJ	I	301	-	-	6/42/42/42	0/4/4/4
3	7HJ	W	301	-	-	7/42/42/42	0/4/4/4

The worst 5 of 77 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	I	301	7HJ	C38-C39	9.04	1.56	1.33
3	J	301	7HJ	C38-C39	8.85	1.56	1.33
3	X	301	7HJ	C38-C39	8.60	1.55	1.33
3	M	301	7HJ	C38-C39	8.33	1.54	1.33
3	V	301	7HJ	C38-C39	8.01	1.53	1.33

The worst 5 of 103 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L	301	7HJ	C40-C39-C38	-6.17	112.78	126.91
3	X	301	7HJ	C40-C39-C38	-5.83	113.56	126.91
3	b	301	7HJ	C40-C39-C38	-5.74	113.78	126.91
3	Z	301	7HJ	C40-C39-C38	-5.72	113.82	126.91
3	W	301	7HJ	C07-N06-C05	5.51	130.27	122.34

There are no chirality outliers.

5 of 82 torsion outliers are listed below:

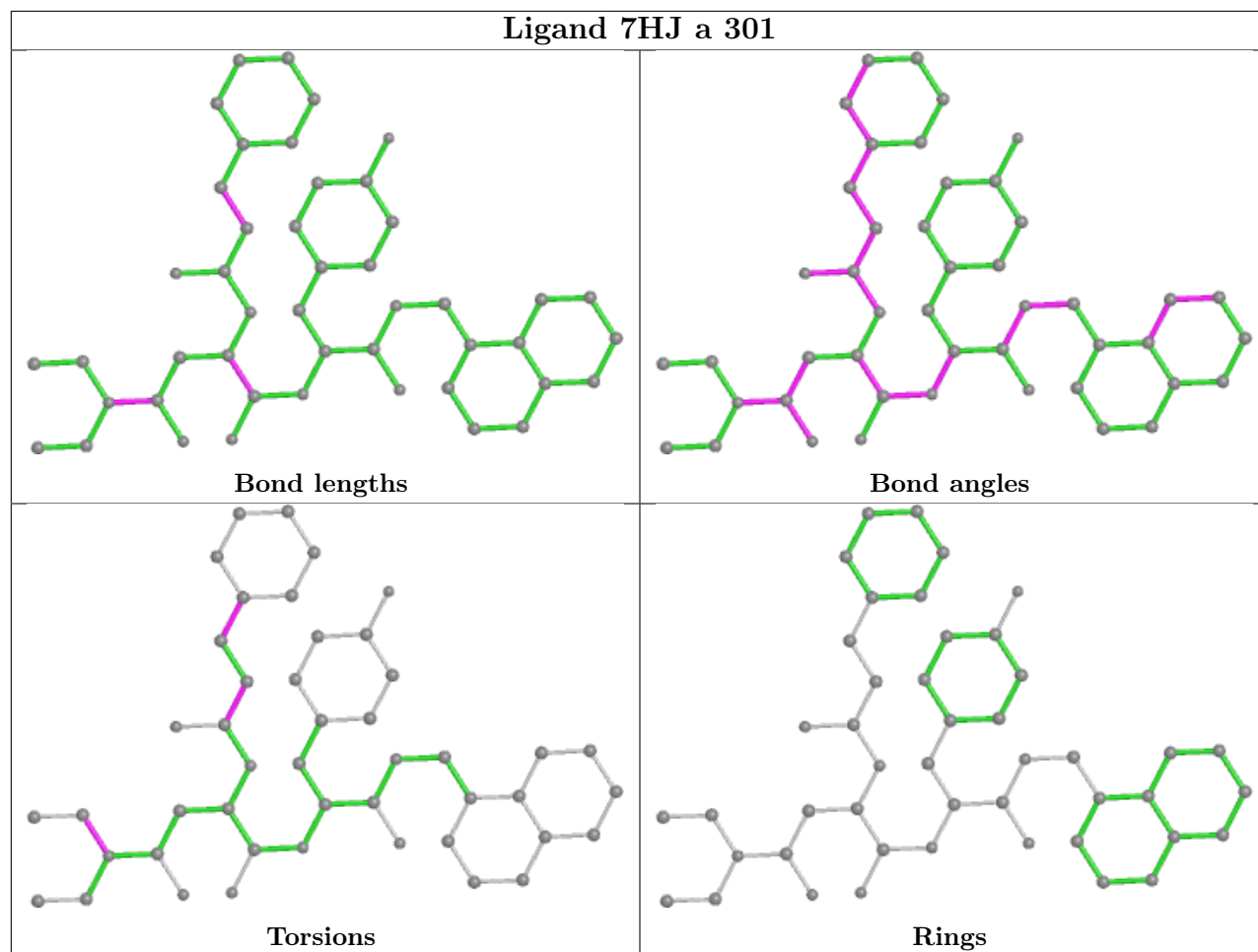
Mol	Chain	Res	Type	Atoms
3	Y	301	7HJ	C34-C33-N30-C29
3	W	301	7HJ	C32-C31-N30-C29
3	W	301	7HJ	C32-C31-N30-C33
3	H	301	7HJ	O46-C37-C38-C39
3	Y	301	7HJ	O46-C37-C38-C39

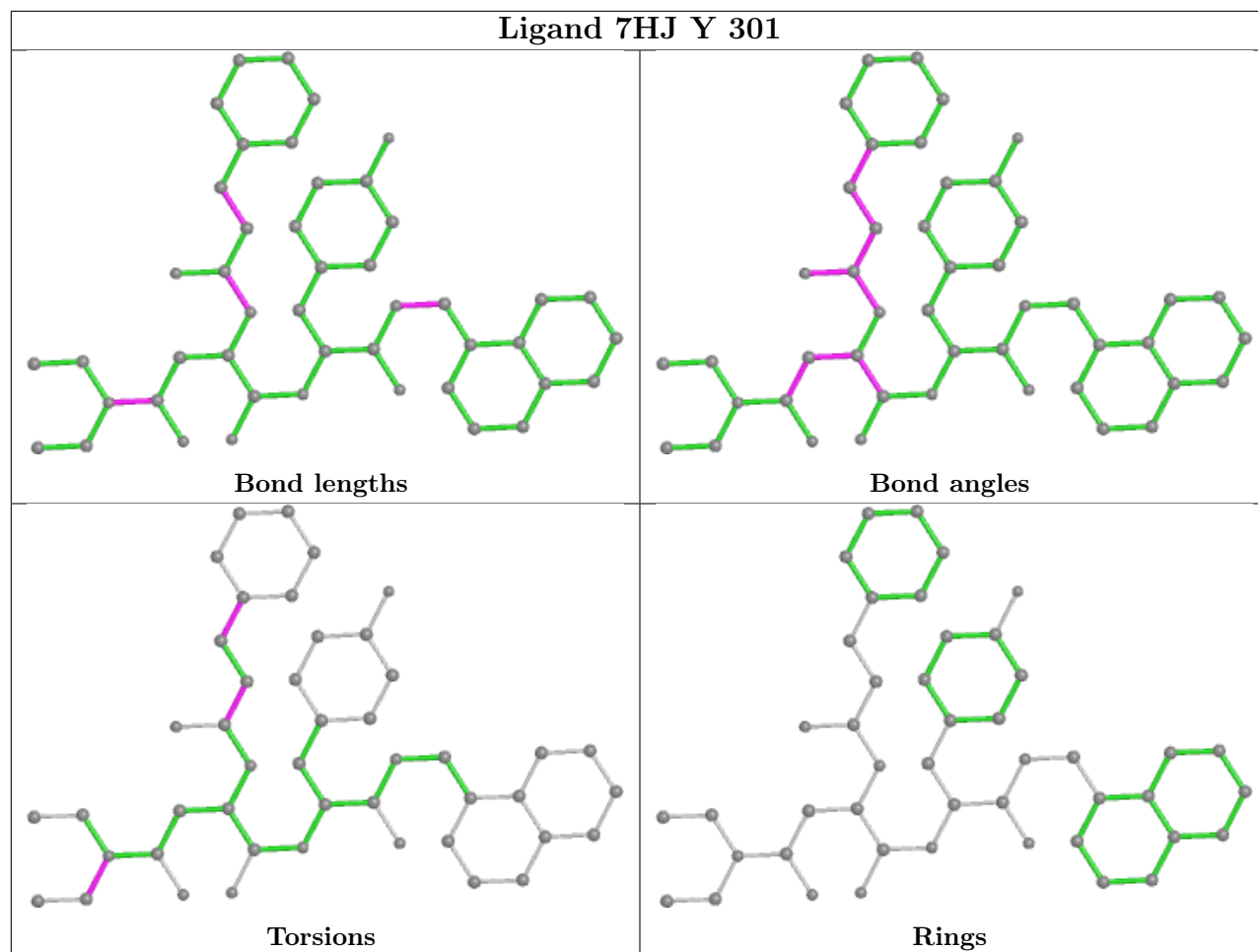
There are no ring outliers.

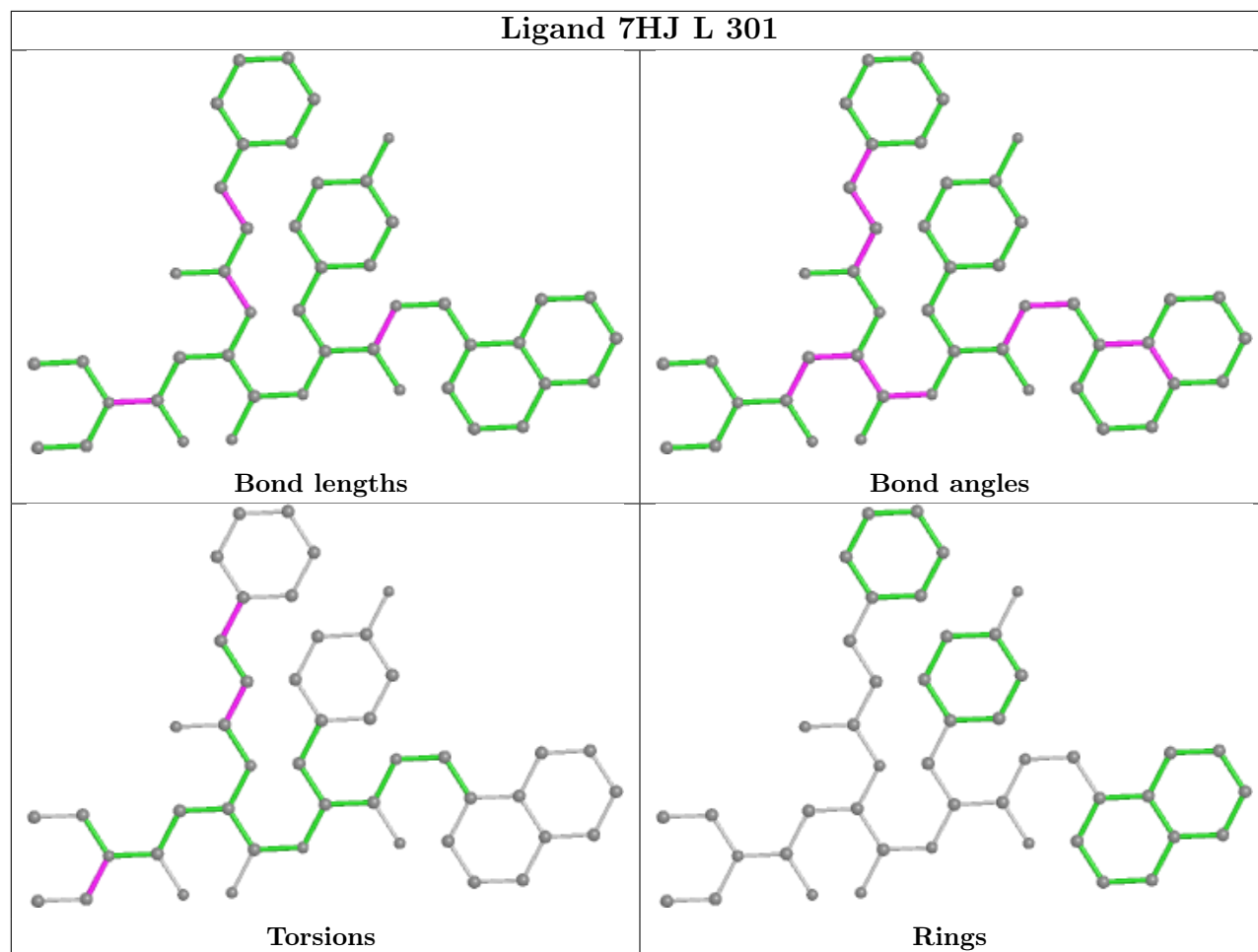
8 monomers are involved in 11 short contacts:

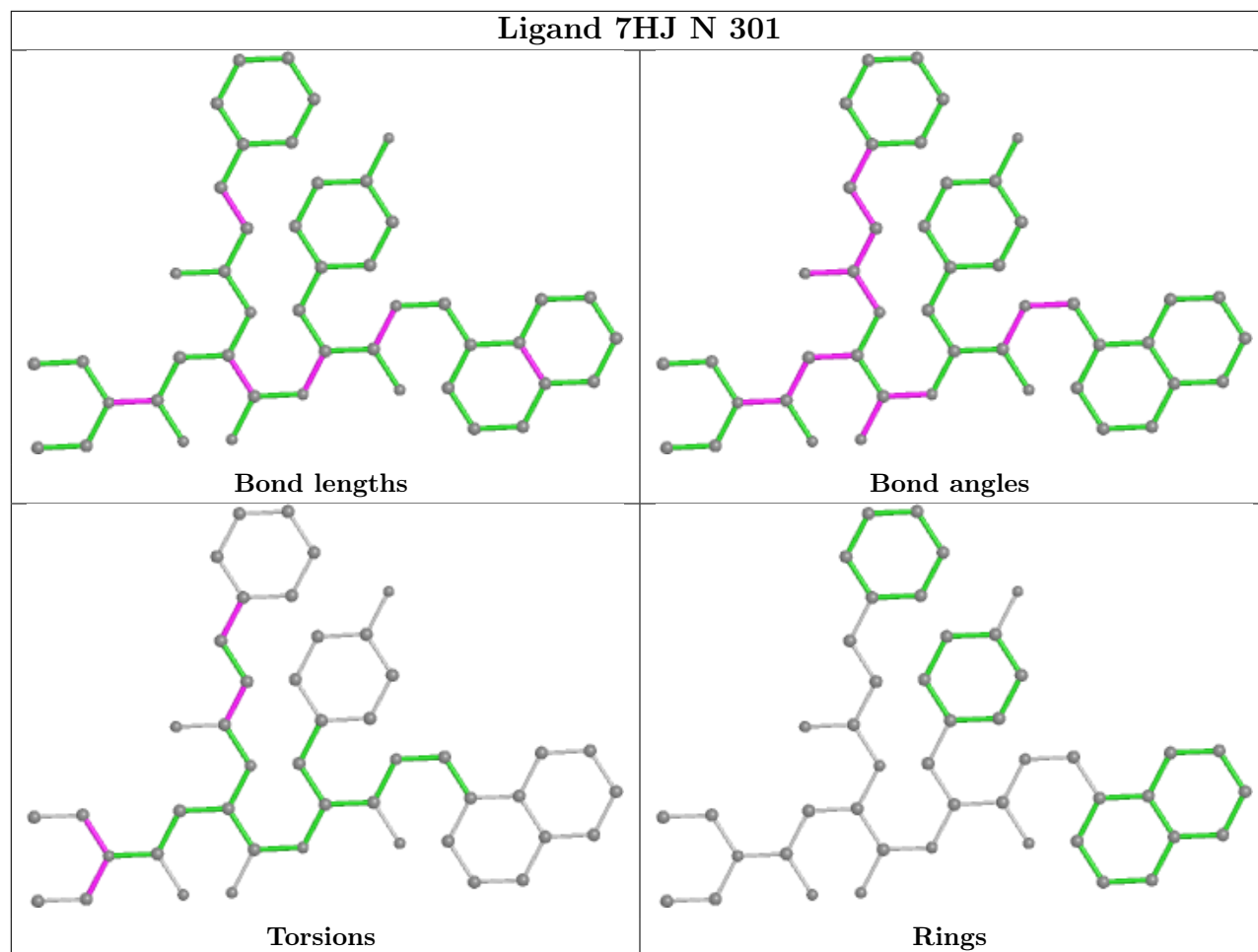
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	L	301	7HJ	1	0
3	N	301	7HJ	3	0
3	J	301	7HJ	2	0
3	V	301	7HJ	1	0
3	Z	301	7HJ	1	0
3	M	301	7HJ	1	0
3	H	301	7HJ	1	0
3	W	301	7HJ	1	0

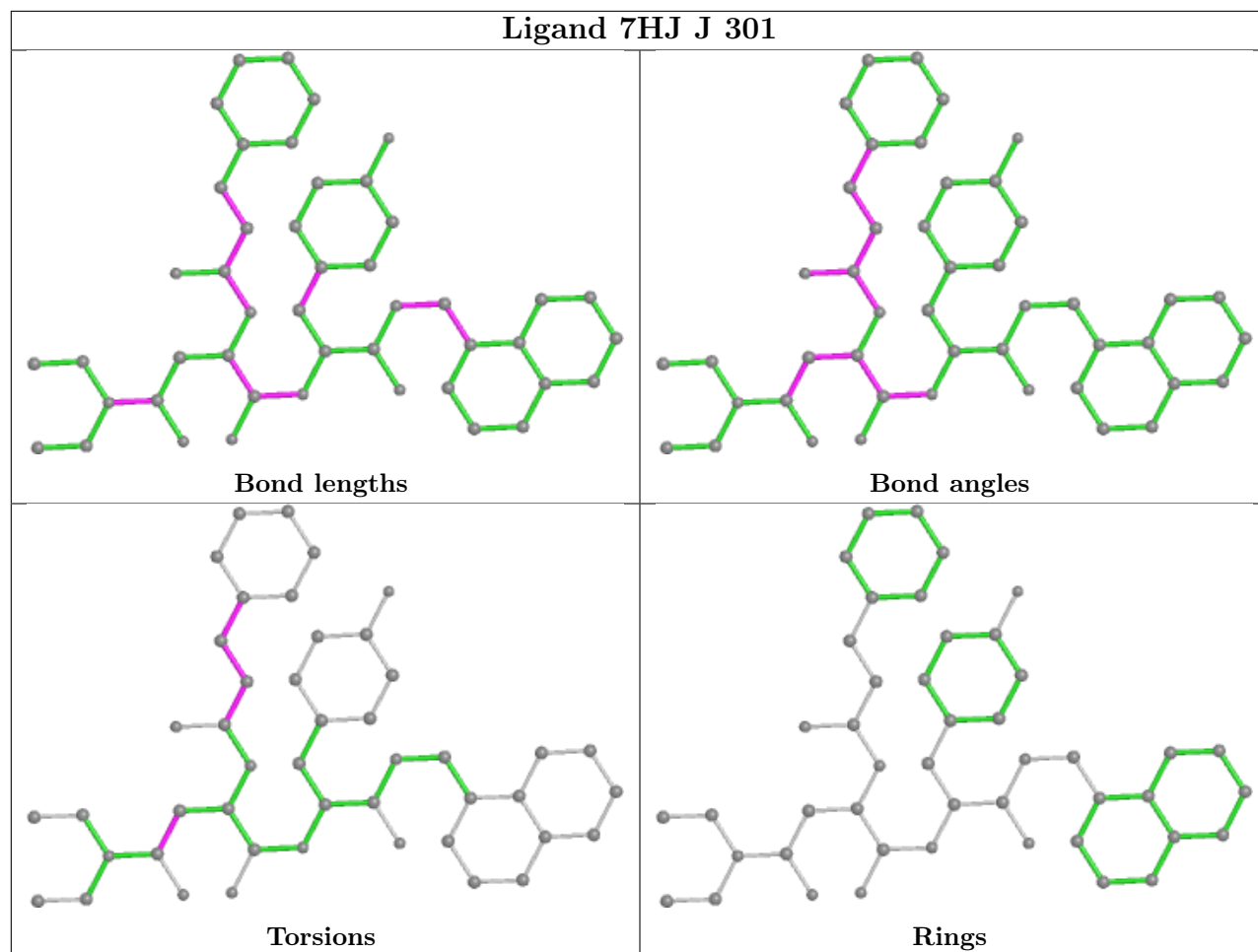
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

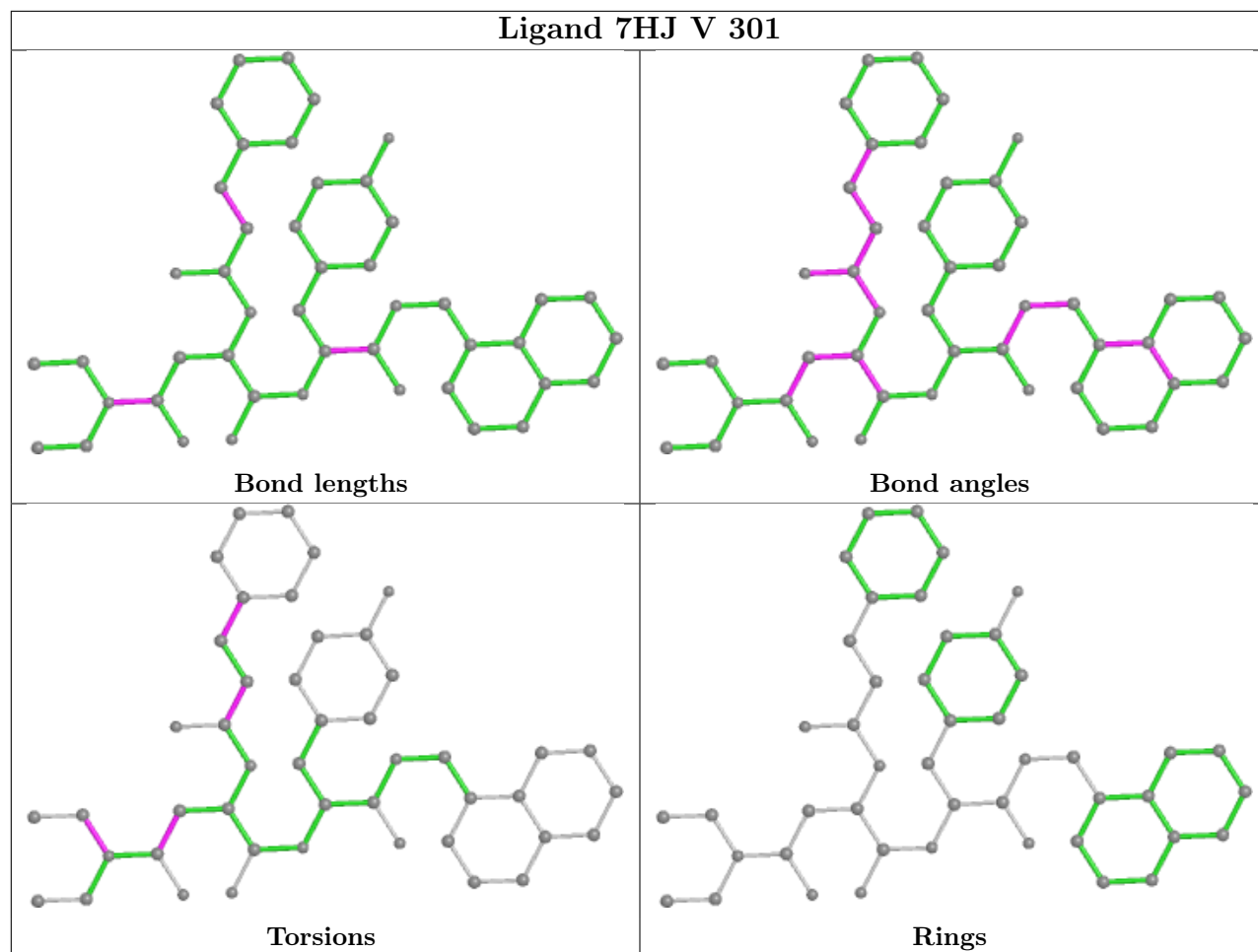


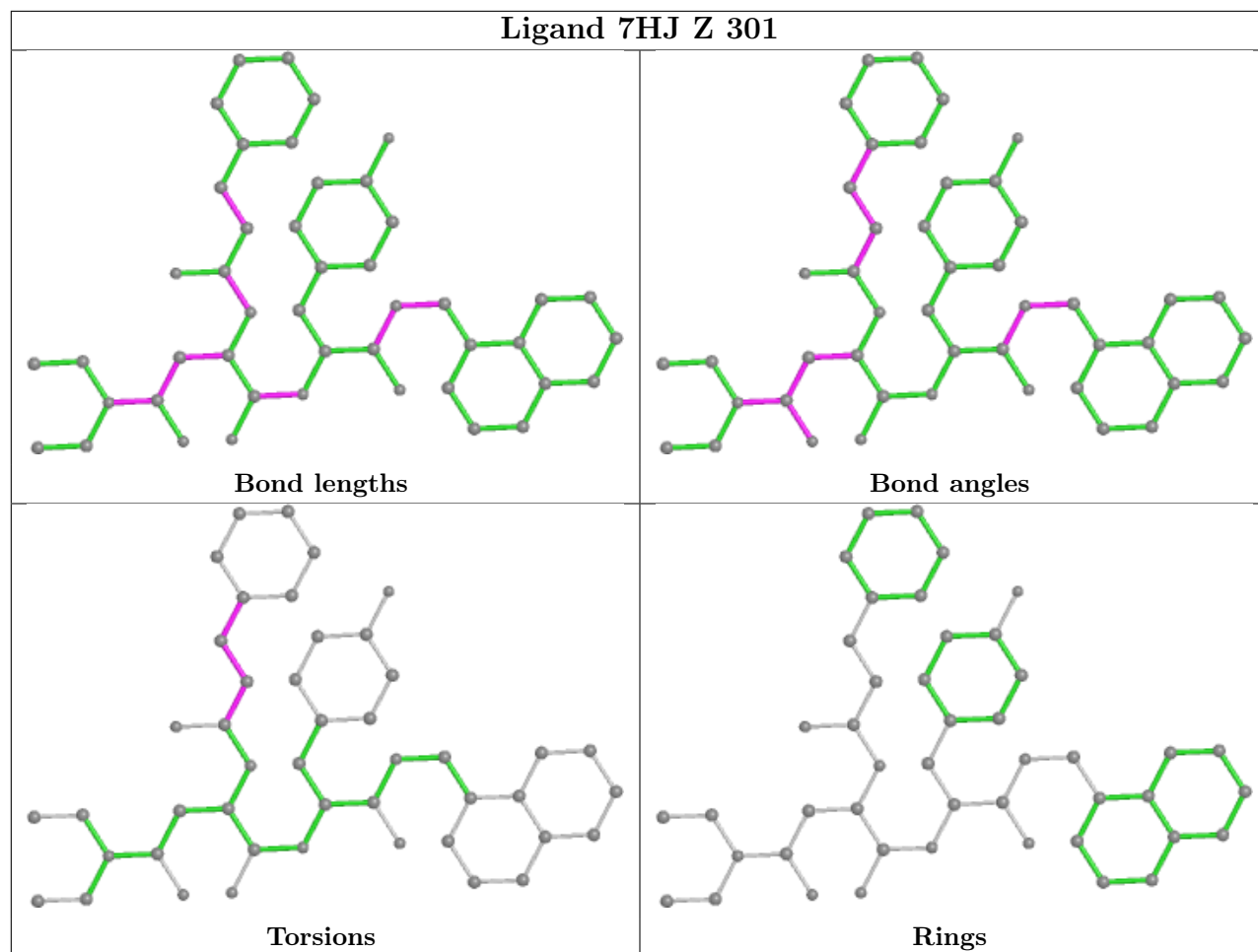


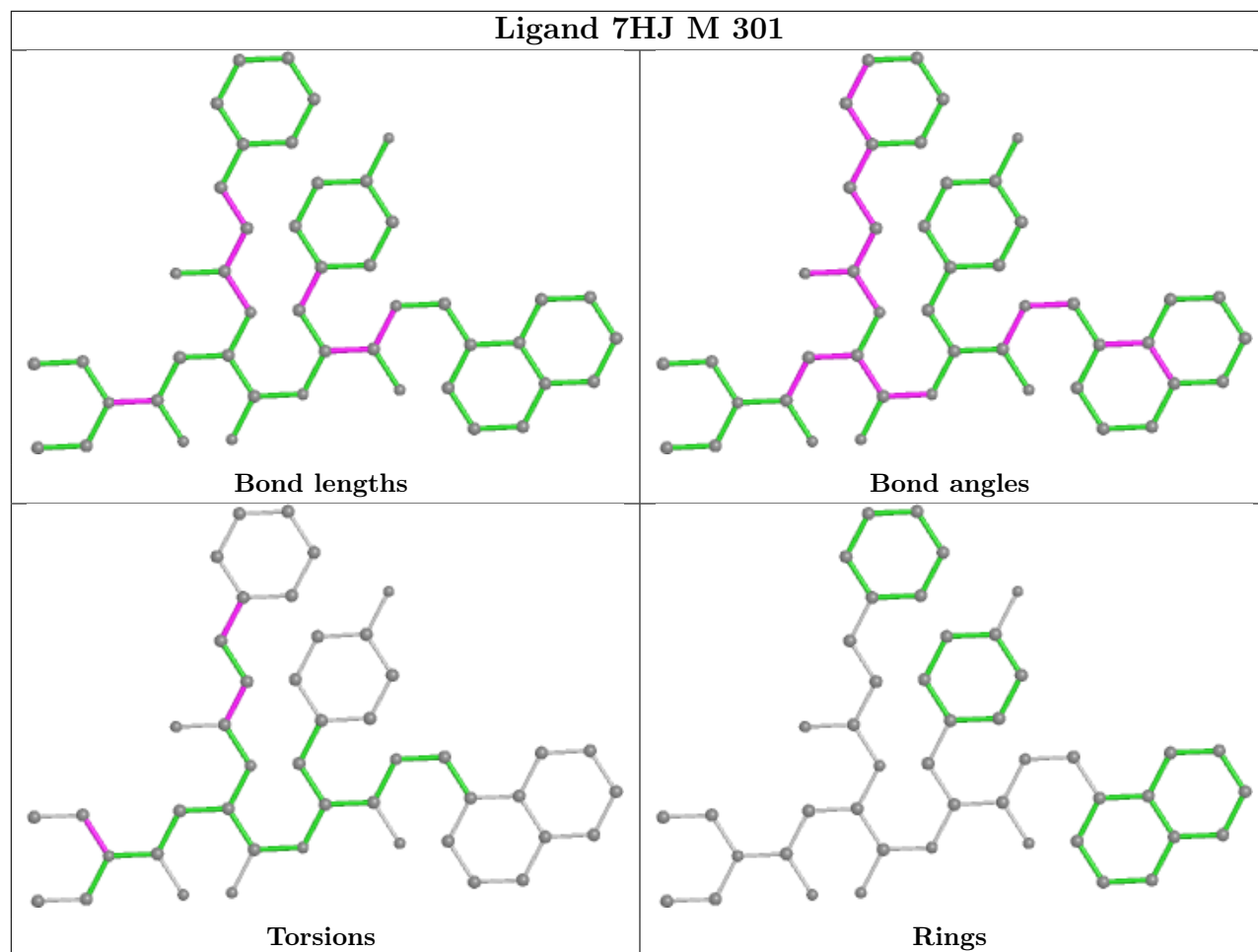


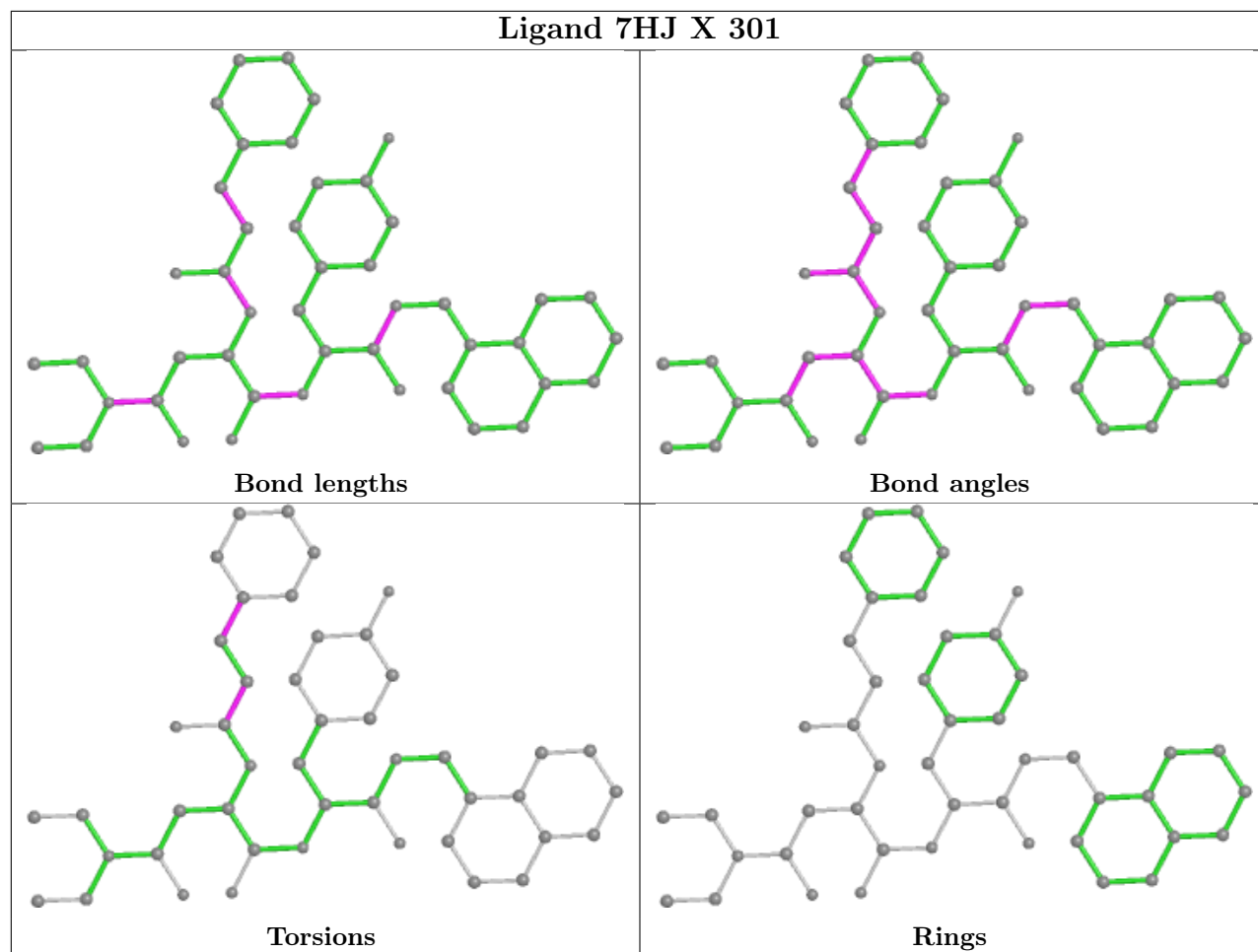


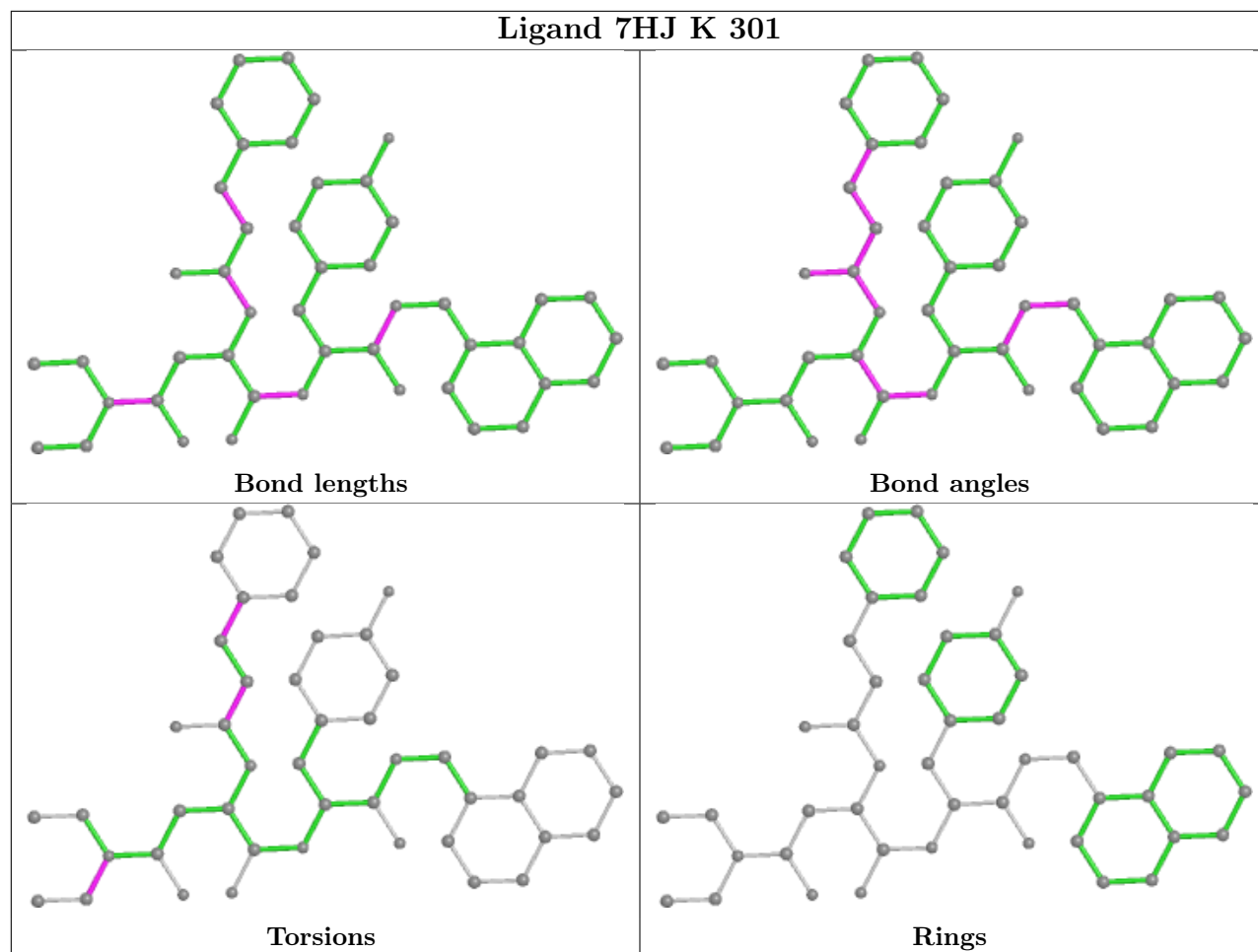


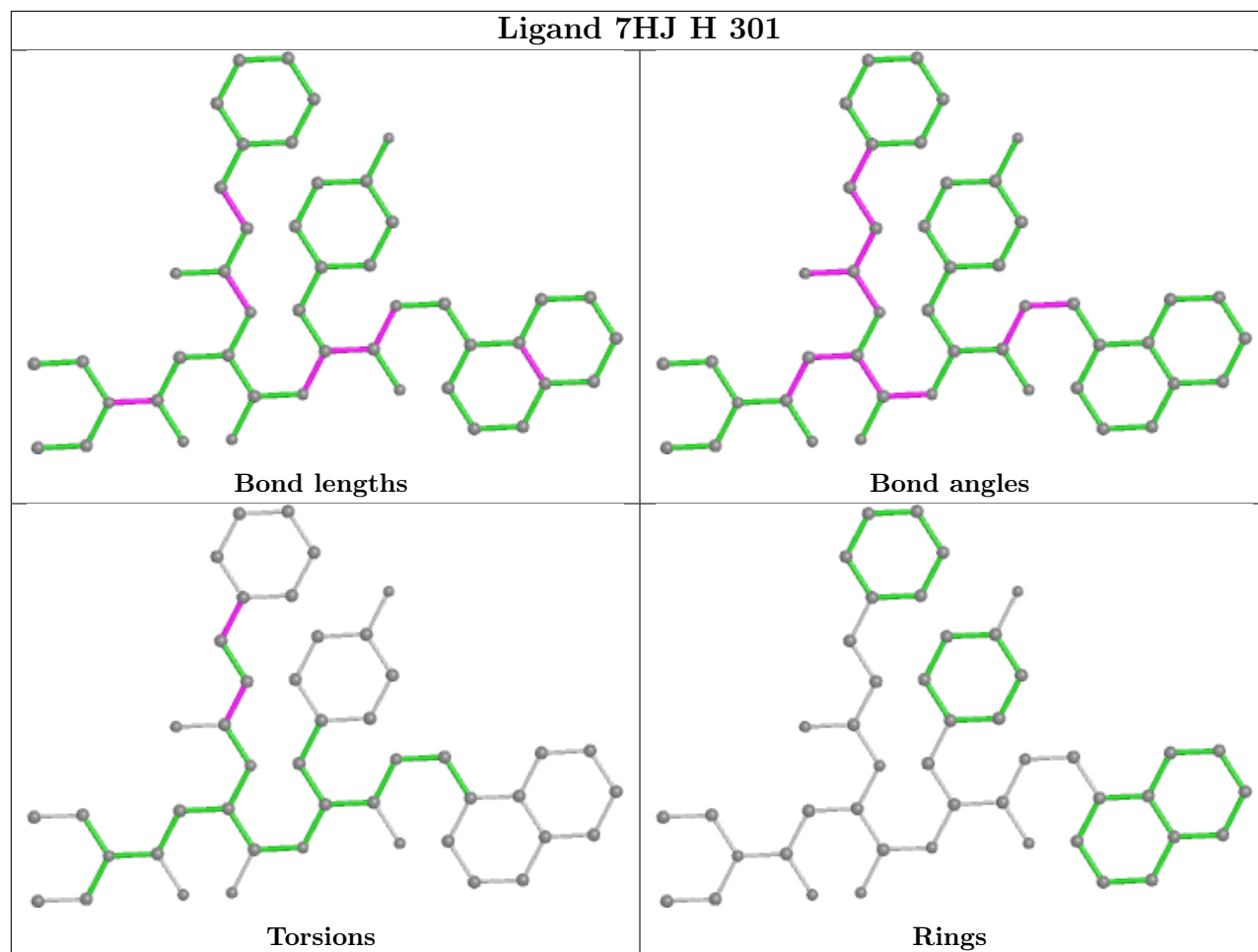


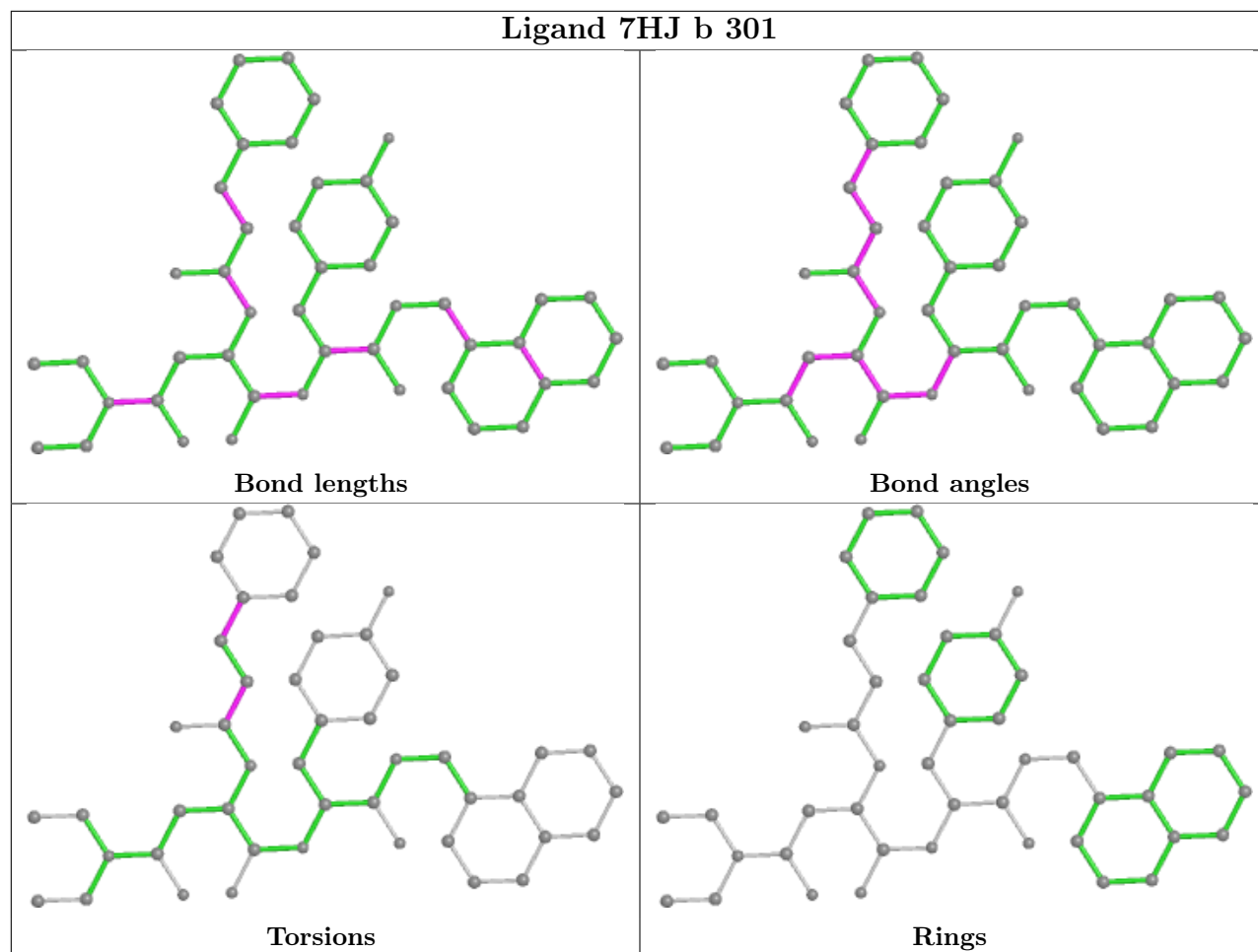


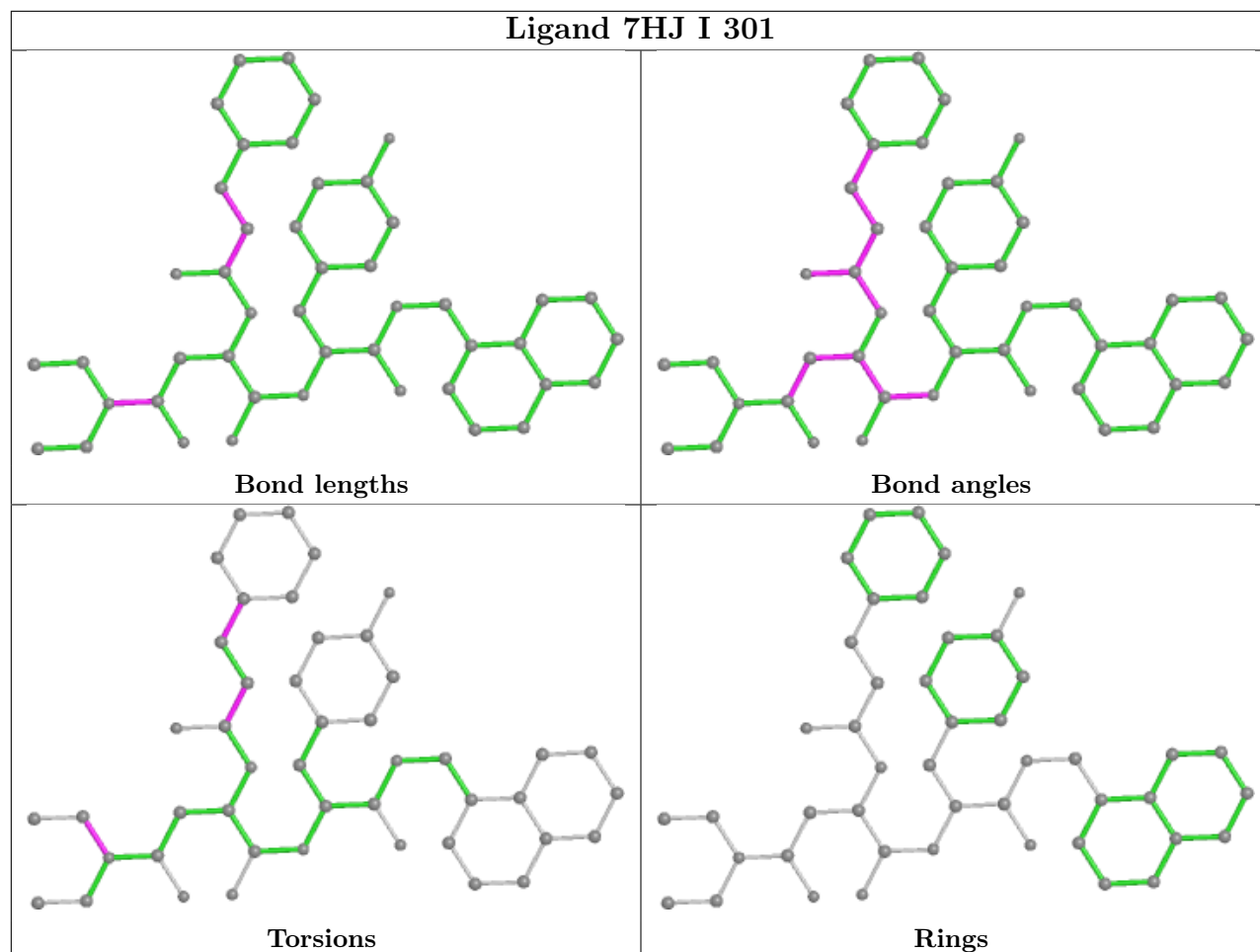


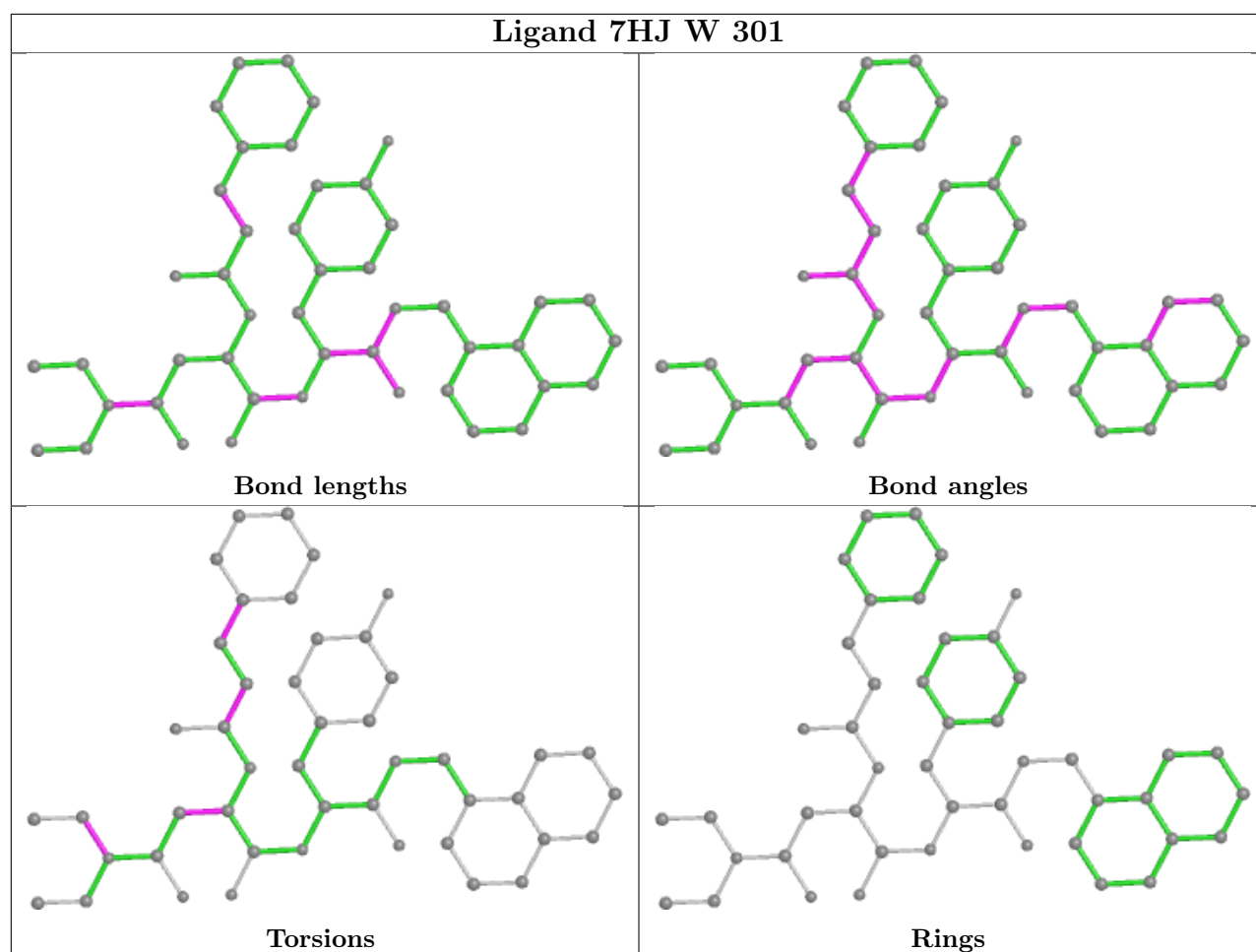












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data i

6.1 Protein, DNA and RNA chains i

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	218/240 (90%)	-0.55	1 (0%) 91 88	25, 39, 65, 98	0
1	B	215/240 (89%)	-0.04	9 (4%) 36 26	30, 58, 99, 159	0
1	C	216/240 (90%)	-0.19	4 (1%) 66 59	27, 54, 93, 111	0
1	D	223/240 (92%)	-0.41	1 (0%) 92 91	25, 45, 82, 117	0
1	E	218/240 (90%)	-0.60	0 100 100	24, 38, 68, 103	0
1	F	215/240 (89%)	-0.18	2 (0%) 84 80	27, 57, 117, 144	0
1	G	216/240 (90%)	-0.45	0 100 100	23, 42, 76, 91	0
1	O	218/240 (90%)	-0.43	1 (0%) 91 88	22, 44, 83, 117	0
1	P	219/240 (91%)	-0.49	1 (0%) 91 88	25, 43, 79, 106	0
1	Q	217/240 (90%)	-0.38	1 (0%) 91 88	25, 48, 87, 114	0
1	R	215/240 (89%)	-0.50	0 100 100	24, 41, 72, 88	0
1	S	218/240 (90%)	-0.60	0 100 100	22, 36, 66, 107	0
1	T	217/240 (90%)	-0.48	2 (0%) 84 80	23, 35, 70, 134	0
1	U	216/240 (90%)	-0.44	2 (0%) 84 80	23, 38, 73, 91	0
2	H	222/240 (92%)	-0.48	0 100 100	23, 33, 56, 78	0
2	I	222/240 (92%)	-0.60	0 100 100	23, 33, 52, 72	0
2	J	222/240 (92%)	-0.64	0 100 100	25, 35, 55, 74	0
2	K	223/240 (92%)	-0.69	0 100 100	22, 32, 52, 66	0
2	L	223/240 (92%)	-0.66	0 100 100	20, 30, 50, 74	0
2	M	222/240 (92%)	-0.62	0 100 100	22, 32, 53, 82	0
2	N	223/240 (92%)	-0.60	0 100 100	24, 35, 62, 84	0
2	V	223/240 (92%)	-0.63	0 100 100	21, 29, 48, 69	0
2	W	223/240 (92%)	-0.66	0 100 100	23, 32, 56, 68	0
2	X	222/240 (92%)	-0.65	0 100 100	24, 33, 54, 76	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
2	Y	223/240 (92%)	-0.65	0 100 100	20, 32, 53, 85	0
2	Z	222/240 (92%)	-0.65	0 100 100	22, 34, 55, 70	0
2	a	223/240 (92%)	-0.68	0 100 100	22, 31, 53, 68	0
2	b	223/240 (92%)	-0.60	0 100 100	21, 30, 52, 77	0
All	All	6157/6720 (91%)	-0.52	24 (0%) 92 91	20, 36, 76, 159	0

The worst 5 of 24 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	O	9	MET	4.0
1	F	205	VAL	3.8
1	F	169	GLU	3.8
1	B	234	LEU	3.7
1	T	9	MET	3.6

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

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

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

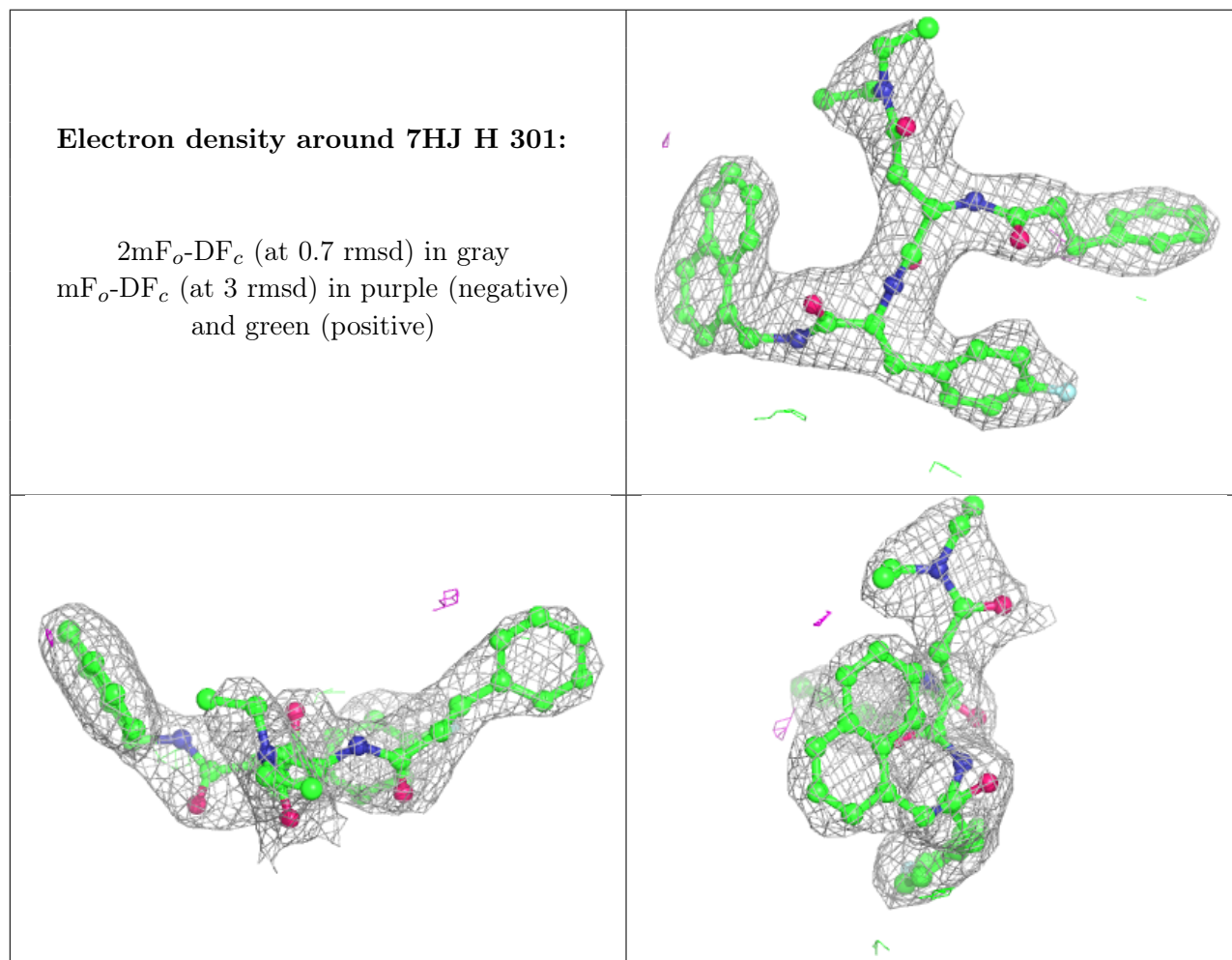
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	7HJ	H	301	46/46	0.95	0.17	22,41,53,62	0
3	7HJ	I	301	46/46	0.95	0.15	29,39,50,65	0
3	7HJ	L	301	46/46	0.95	0.17	24,40,54,57	0
3	7HJ	M	301	46/46	0.95	0.17	25,39,55,68	0
3	7HJ	W	301	46/46	0.95	0.16	20,33,49,51	0
3	7HJ	X	301	46/46	0.95	0.15	29,43,61,64	0
3	7HJ	Y	301	46/46	0.95	0.15	20,36,49,57	0

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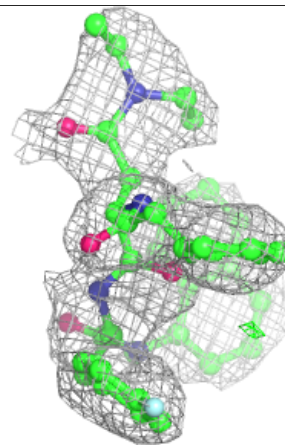
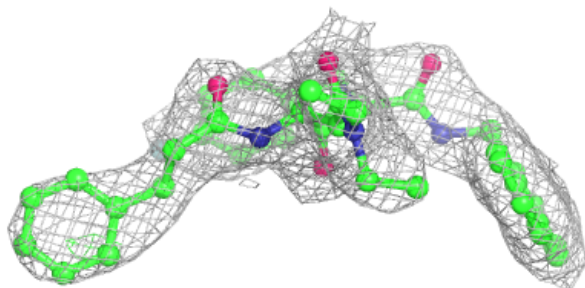
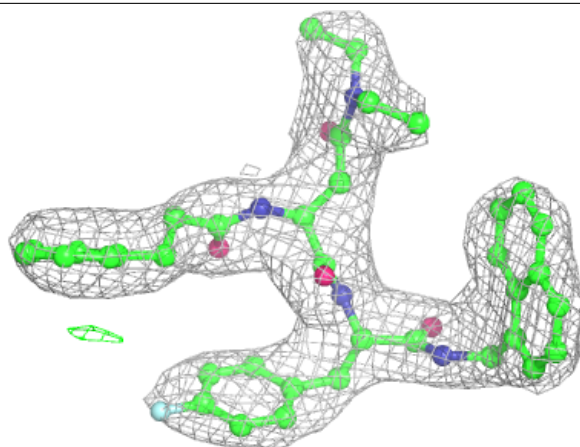
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	7HJ	Z	301	46/46	0.95	0.17	21,34,44,49	0
3	7HJ	K	301	46/46	0.96	0.15	24,33,47,53	0
3	7HJ	N	301	46/46	0.96	0.15	21,34,45,49	0
3	7HJ	J	301	46/46	0.96	0.17	23,36,45,55	0
3	7HJ	a	301	46/46	0.96	0.15	21,34,44,51	0
3	7HJ	b	301	46/46	0.96	0.15	22,34,42,53	0
3	7HJ	V	301	46/46	0.97	0.14	19,31,46,53	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.



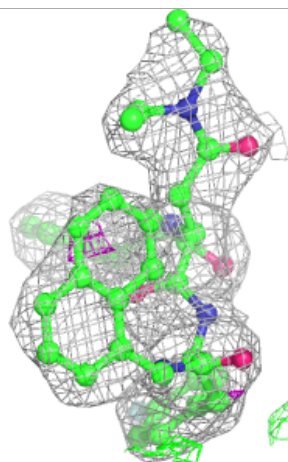
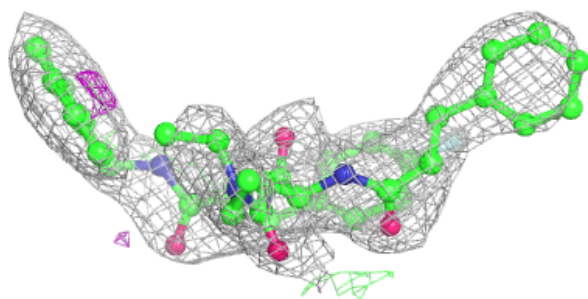
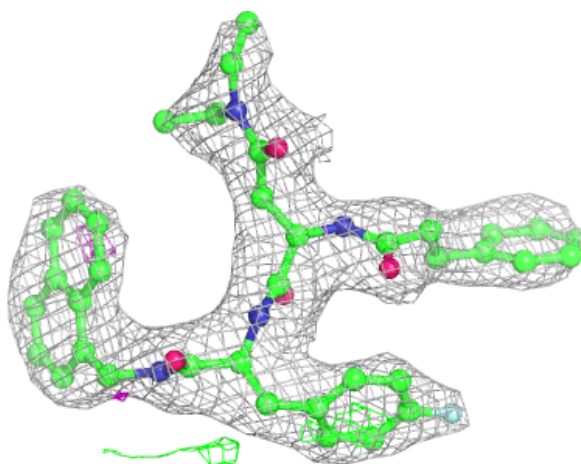
Electron density around 7HJ I 301:

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



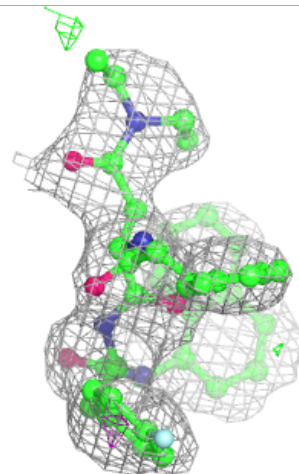
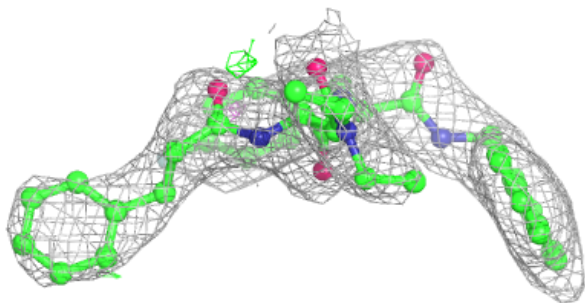
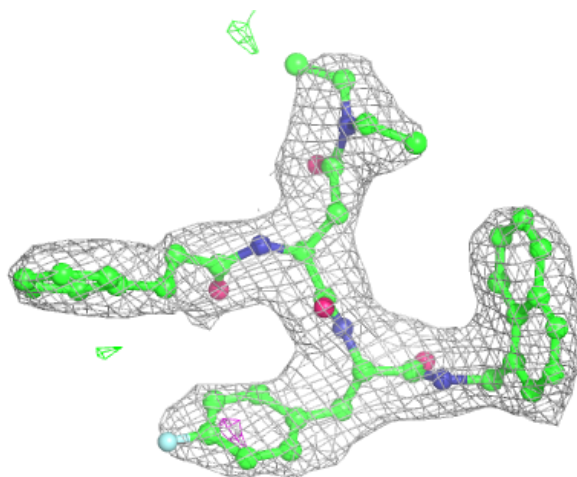
Electron density around 7HJ L 301:

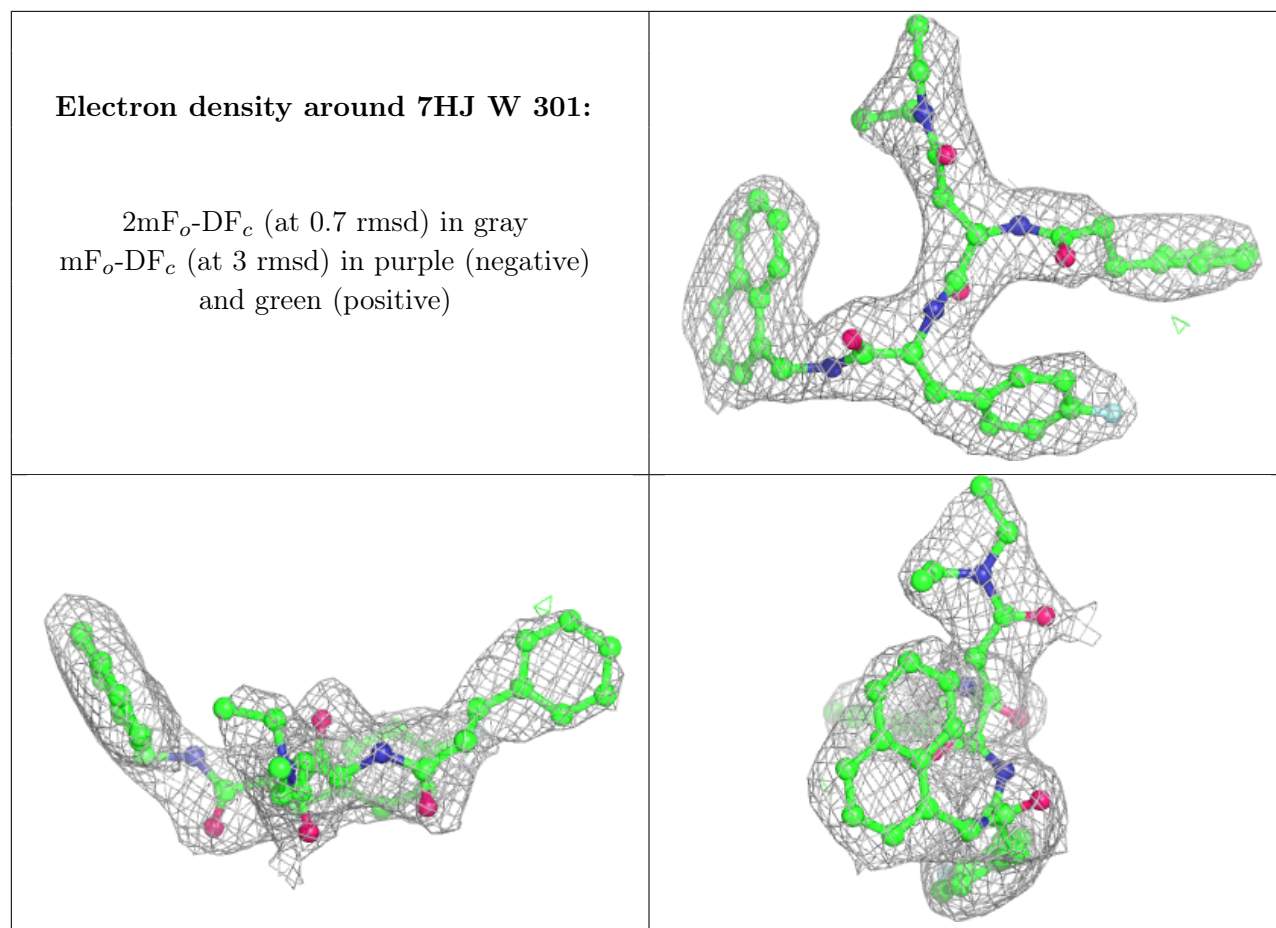
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around 7HJ M 301:

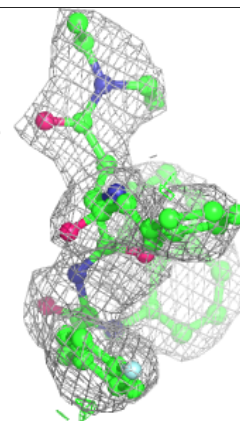
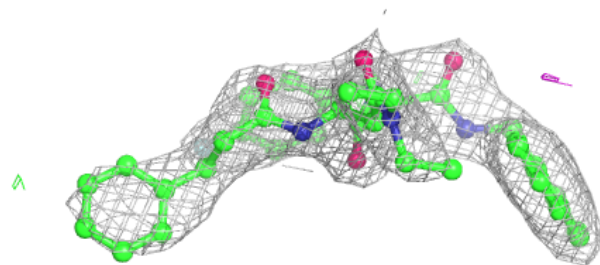
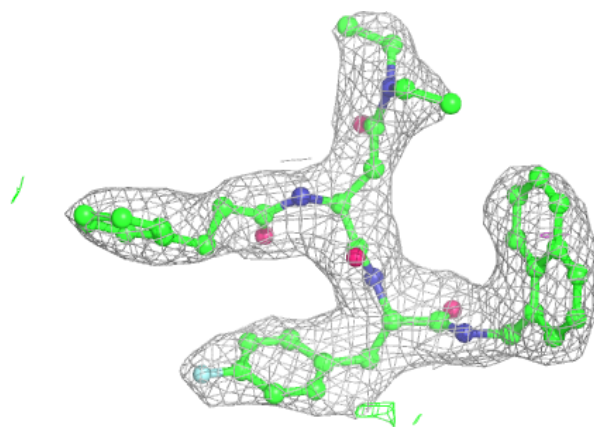
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





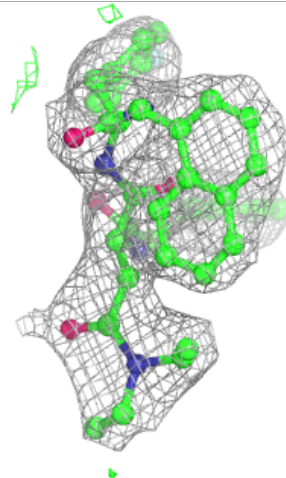
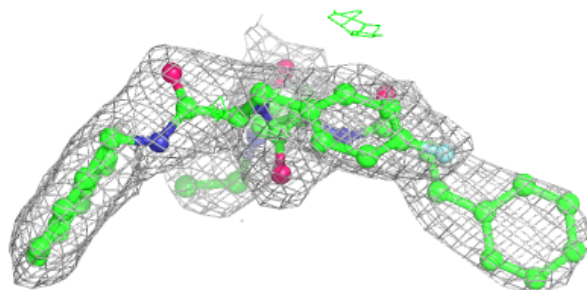
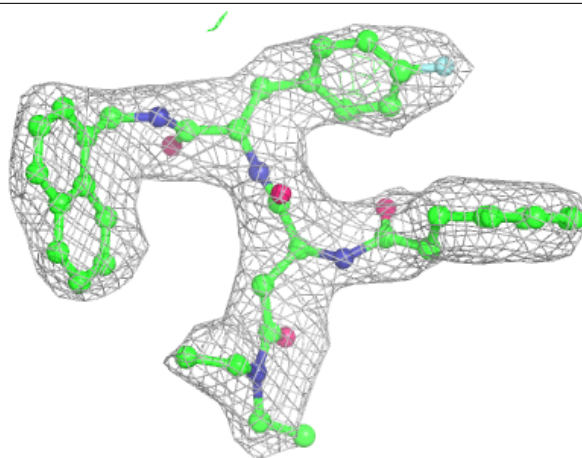
Electron density around 7HJ X 301:

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



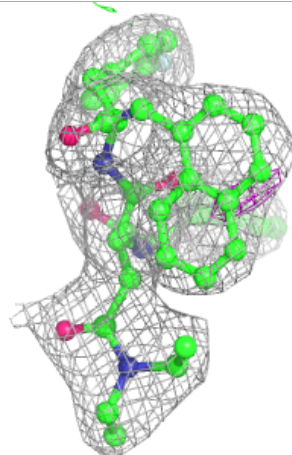
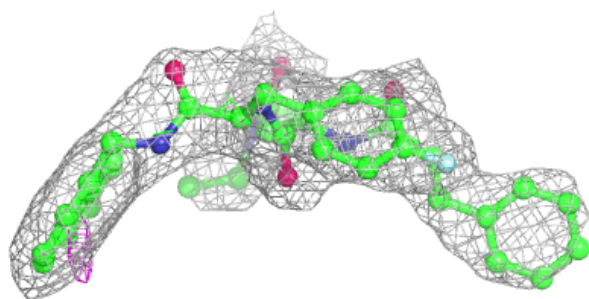
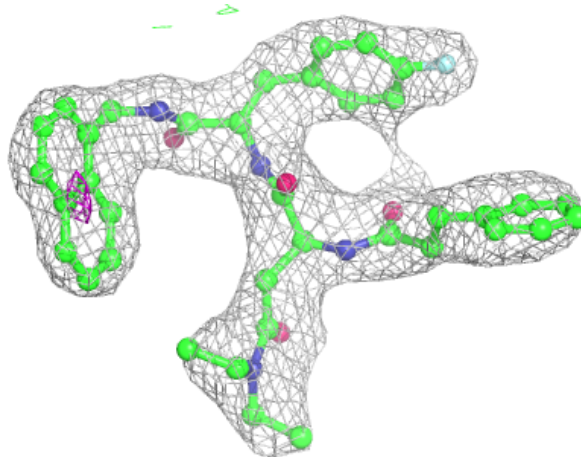
Electron density around 7HJ Y 301:

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



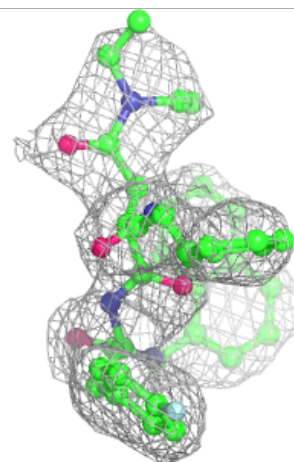
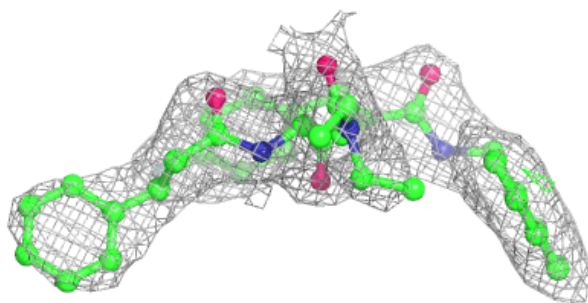
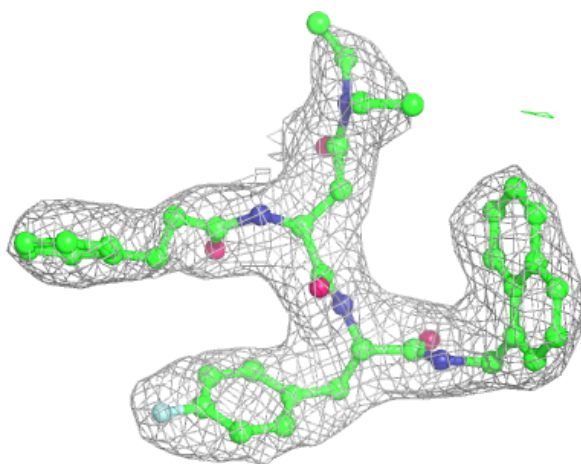
Electron density around 7HJ Z 301:

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and green (positive)



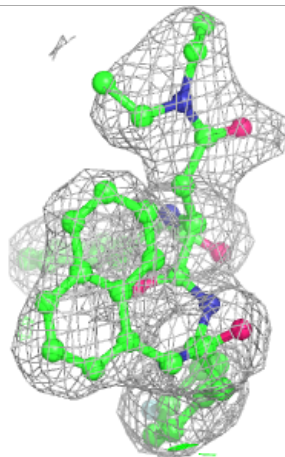
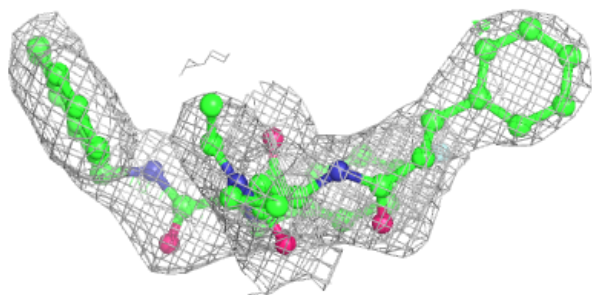
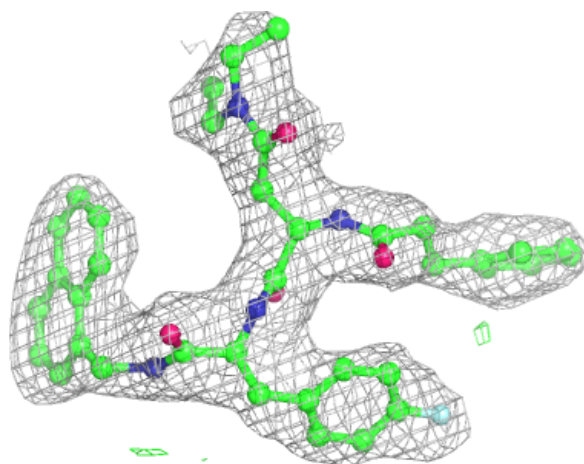
Electron density around 7HJ K 301:

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



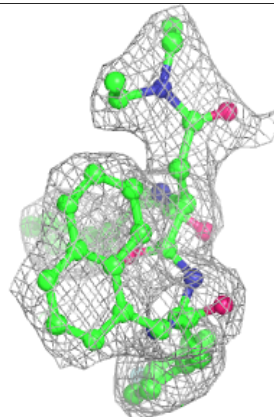
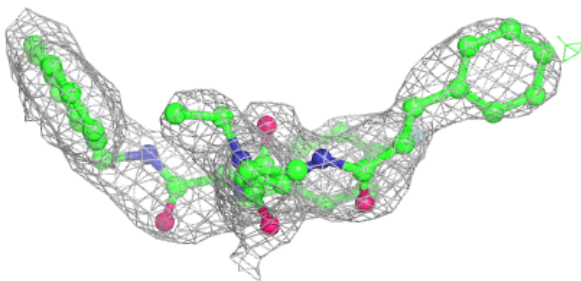
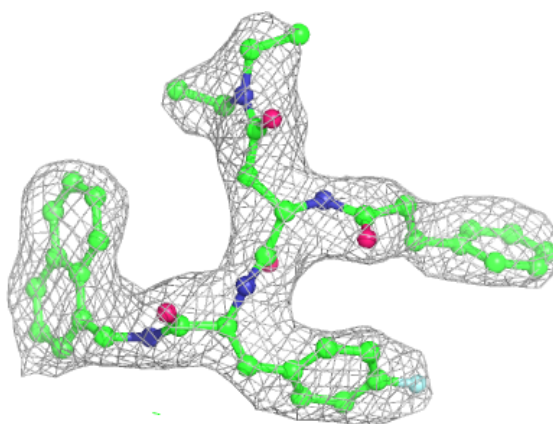
Electron density around 7HJ N 301:

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



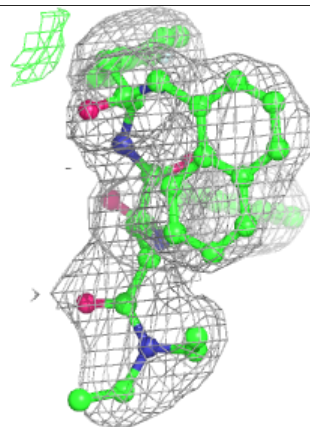
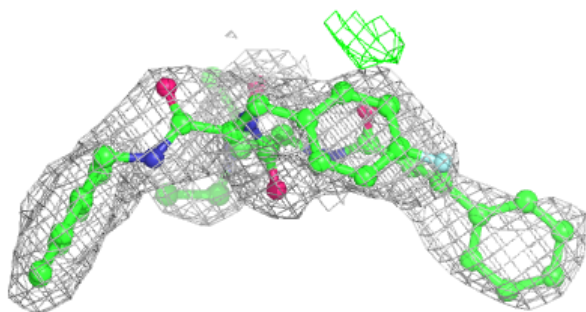
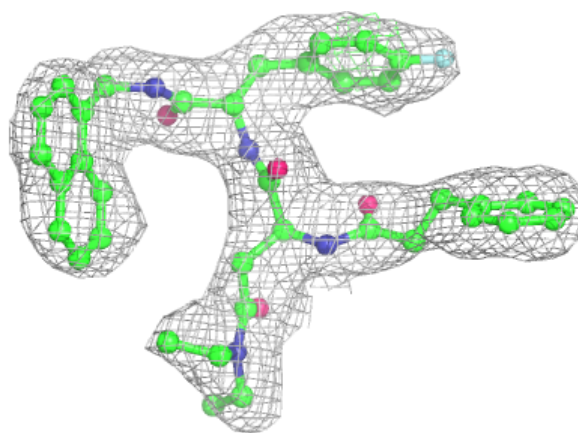
Electron density around 7HJ J 301:

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



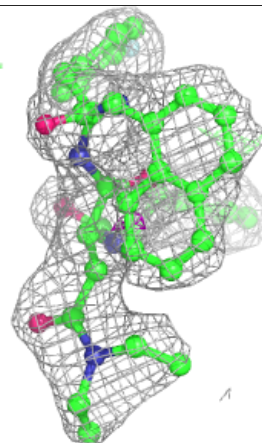
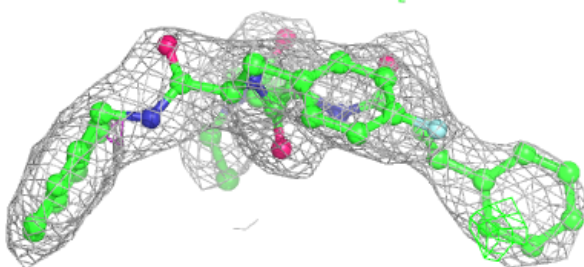
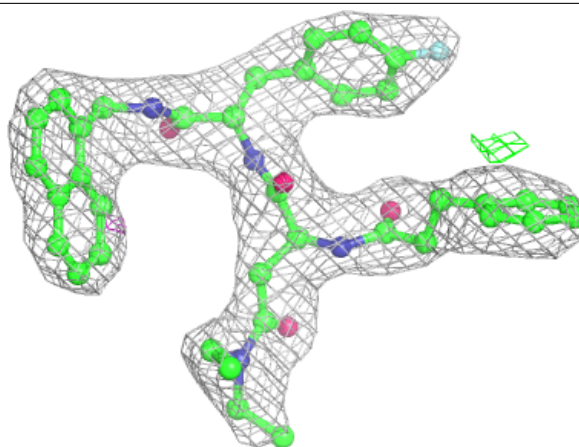
Electron density around 7HJ a 301:

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

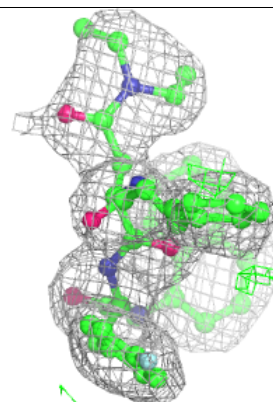
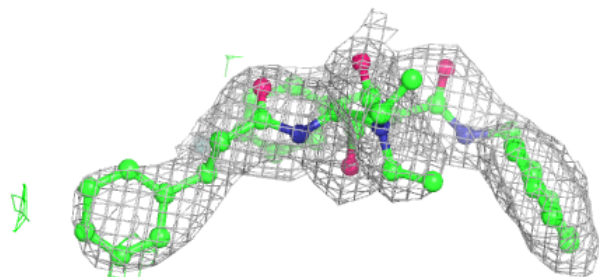
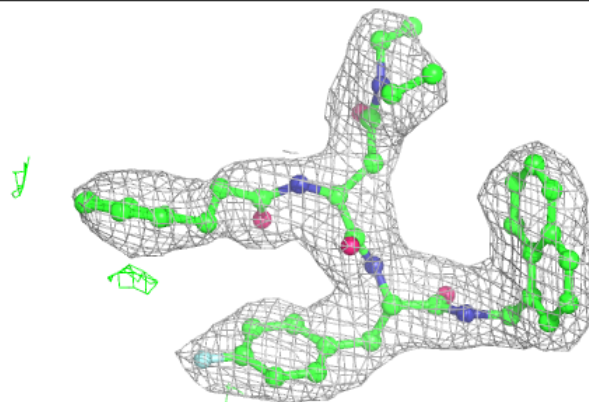


Electron density around 7HJ b 301:

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

**Electron density around 7HJ 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.