



wwPDB X-ray Structure Validation Summary Report ⓘ

Nov 23, 2023 – 12:08 AM JST

PDB ID : 7X8X
Title : structural insights into Mycobacterium tuberculosis ClpP1P2 inhibition by Cediranib: implications for developing antimicrobial agents targeting Clp protease
Authors : Bao, R.; Luo, Y.F.; Zhu, Y.B.; Yang, Y.; Zhou, Y.Z.
Deposited on : 2022-03-15
Resolution : 3.24 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 : 2.36
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) : 2.36

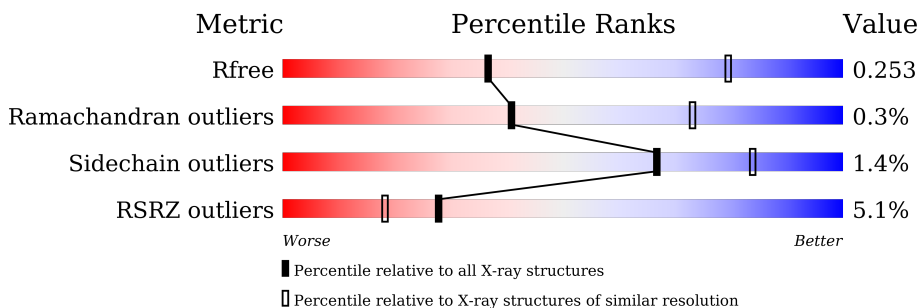
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.24 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	1619 (3.28-3.20)
Ramachandran outliers	138981	1728 (3.28-3.20)
Sidechain outliers	138945	1727 (3.28-3.20)
RSRZ outliers	127900	1567 (3.28-3.20)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	197	 3% 90% 8% .
1	C	197	 4% 88% 11% .
1	E	197	 3% 93% 5% .
1	F	197	 2% 89% 10% ..
1	H	197	 4% 91% 8% .
1	J	197	 6% 94% 5% ..

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Mol	Chain	Length	Quality of chain
1	L	197	5% 92% 6%
1	O	197	5% 93% 6%
1	Q	197	7% 92% 7%
1	S	197	9% 96% ..
1	T	197	7% 96% ..
1	V	197	10% 93% 6%
1	X	197	6% 92% 6%
1	a	197	6% 91% 7%
2	B	177	5% 93% 7%
2	D	177	2% 89% 10%
2	G	177	2% 92% 7%
2	I	177	6% 92% 7%
2	K	177	10% 94% 5%
2	M	177	2% 91% 8%
2	N	177	4% 94% 5%
2	P	177	3% 92% 8%
2	R	177	6% 95% ..
2	U	177	3% 90% 8%
2	W	177	5% 96% ..
2	Y	177	2% 96% ..
2	Z	177	5% 93% 6%
2	b	177	3% 94% 5%
3	0	3	33% 67%
3	1	3	33% 33% 33%
3	2	3	67% 33%

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Mol	Chain	Length	Quality of chain
3	3	3	67% 33%
3	4	3	67% 33%
3	c	3	67% 33%
3	e	3	33% 67% 33%
3	f	3	67% 33%
3	g	3	67% 33%
3	h	3	33% 67% 33%
3	i	3	67% 67% 33%
3	j	3	33% 33% 67%
3	k	3	67% 33%
3	l	3	33% 33% 33% 33%
3	m	3	33% 33% 33%
3	n	3	33% 33% 33% 33%
3	o	3	33% 67% 33%
3	p	3	33% 33% 67%
3	q	3	67% 33%
3	r	3	33% 33% 33% 33%
3	s	3	33% 33% 67%
3	t	3	33% 67% 33%
3	u	3	67% 33%
3	v	3	33% 33% 67%
3	w	3	33% 67% 33%
3	x	3	33% 67%
3	y	3	33% 33% 33%
3	z	3	33% 33% 33% 33%

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
4	AI4	B	201	-	X	-	X
4	AI4	F	301	-	X	-	X
4	AI4	G	201	-	X	-	-
4	AI4	I	201	-	X	-	X
4	AI4	K	201	-	X	-	X
4	AI4	M	201	-	X	-	-
4	AI4	N	301	-	X	-	-
4	AI4	R	201	-	X	-	-
4	AI4	U	201	-	X	-	X
4	AI4	V	301	-	X	-	-
4	AI4	W	201	-	X	-	X
4	AI4	Y	201	-	X	-	-
4	AI4	Z	201	-	X	-	-
4	AI4	b	201	-	X	-	X

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 81239 atoms, of which 40443 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 ATP-dependent Clp protease proteolytic subunit 2.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	H	N	O	S			
1	A	194	2986	936	1495	255	292	8	0	0	0
1	O	194	2986	936	1495	255	292	8	0	0	0
1	C	196	2993	940	1496	256	293	8	0	0	0
1	Q	196	2993	940	1496	256	293	8	0	0	0
1	F	196	2993	940	1496	256	293	8	0	0	0
1	S	196	2993	940	1496	256	293	8	0	0	0
1	H	196	3008	943	1507	257	293	8	0	0	0
1	T	196	3008	943	1507	257	293	8	0	0	0
1	J	195	3011	946	1509	256	292	8	0	0	0
1	V	195	3010	946	1508	256	292	8	0	0	0
1	L	193	2941	925	1467	252	289	8	0	0	0
1	X	193	2941	925	1467	252	289	8	0	0	0
1	E	193	2941	925	1467	252	289	8	0	0	0
1	a	193	2941	925	1467	252	289	8	0	0	0

- Molecule 2 is a protein called ATP-dependent Clp protease proteolytic subunit 1.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
2	B	177	Total	C	H	N	O	S	0	0	0
			2695	855	1344	228	259	9			
2	P	177	Total	C	H	N	O	S	0	0	0
			2695	855	1344	228	259	9			
2	D	175	Total	C	H	N	O	S	0	0	0
			2652	843	1320	223	257	9			
2	R	175	Total	C	H	N	O	S	0	0	0
			2652	843	1320	223	257	9			
2	I	175	Total	C	H	N	O	S	0	0	0
			2644	841	1316	223	255	9			
2	U	175	Total	C	H	N	O	S	0	0	0
			2644	841	1316	223	255	9			
2	K	175	Total	C	H	N	O	S	0	0	0
			2627	838	1305	220	255	9			
2	W	175	Total	C	H	N	O	S	0	0	0
			2627	838	1305	220	255	9			
2	M	176	Total	C	H	N	O	S	0	0	0
			2629	841	1305	218	256	9			
2	Y	176	Total	C	H	N	O	S	0	0	0
			2629	841	1305	218	256	9			
2	N	176	Total	C	H	N	O	S	0	0	0
			2629	841	1305	218	256	9			
2	Z	176	Total	C	H	N	O	S	0	0	0
			2629	841	1305	218	256	9			
2	G	176	Total	C	H	N	O	S	0	0	0
			2646	844	1316	221	256	9			
2	b	176	Total	C	H	N	O	S	0	0	0
			2646	844	1316	221	256	9			

- Molecule 3 is a protein called 4-[[3,5-bis(fluoranyl)phenyl]methyl]-N-[(4-bromophenyl)methyl]piperazine-1-carboxamide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	c	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	e	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	f	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	g	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	h	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			

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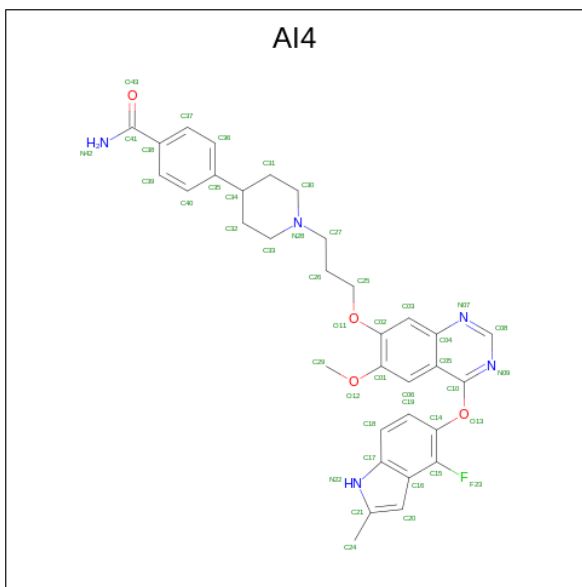
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
3	i	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	j	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	k	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	l	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	m	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	n	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	o	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	p	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	q	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	r	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	s	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	t	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	u	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	v	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	w	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	x	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	y	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	z	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	0	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	1	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	2	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
3	3	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			
3	4	3	Total	C	H	N	O	0	0	0
			52	19	27	2	4			

- Molecule 4 is 4-[1-[3-[4-[(4-fluoranyl-2-methyl-1H-indol-5-yl)oxy]-6-methoxy-quinazolin-7-yl]oxypropyl]piperidin-4-yl]benzamide (three-letter code: AI4) (formula: C₃₃H₃₄FN₅O₄) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
4	B	1	Total	C	F	H	N	O	0	0
			71	33	1	28	5	4		
4	R	1	Total	C	F	H	N	O	0	0
			71	33	1	28	5	4		
4	F	1	Total	C	F	H	N	O	0	0
			71	33	1	28	5	4		
4	I	1	Total	C	F	H	N	O	0	0
			71	33	1	28	5	4		
4	U	1	Total	C	F	H	N	O	0	0
			71	33	1	28	5	4		
4	V	1	Total	C	F	H	N	O	0	0
			71	33	1	28	5	4		
4	K	1	Total	C	F	H	N	O	0	0
			71	33	1	28	5	4		
4	W	1	Total	C	F	H	N	O	0	0
			71	33	1	28	5	4		

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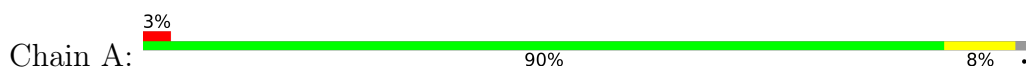
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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
			Total	C	F	H	N			O
4	M	1	Total 71	C 33	F 1	H 28	N 5	O 4	0	0
4	Y	1	Total 71	C 33	F 1	H 28	N 5	O 4	0	0
4	N	1	Total 71	C 33	F 1	H 28	N 5	O 4	0	0
4	Z	1	Total 71	C 33	F 1	H 28	N 5	O 4	0	0
4	G	1	Total 71	C 33	F 1	H 28	N 5	O 4	0	0
4	b	1	Total 71	C 33	F 1	H 28	N 5	O 4	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.

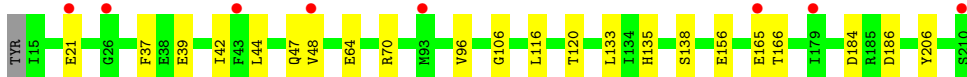
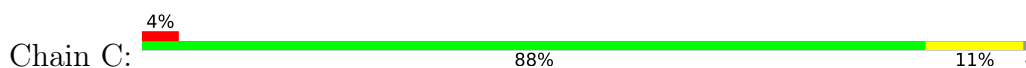
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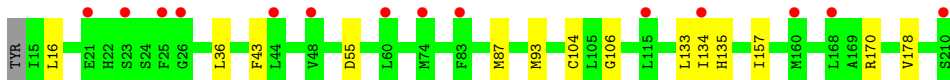
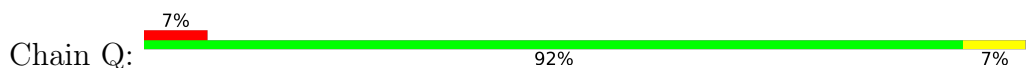
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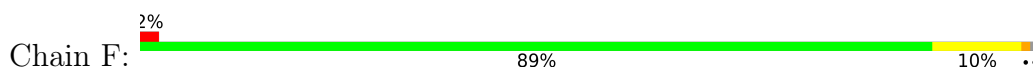
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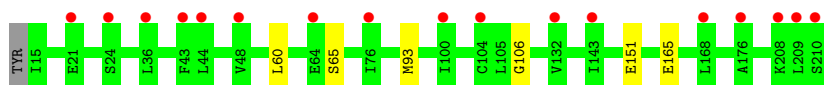
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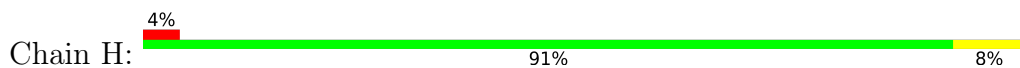
- Molecule 1: ATP-dependent Clp protease proteolytic subunit 2



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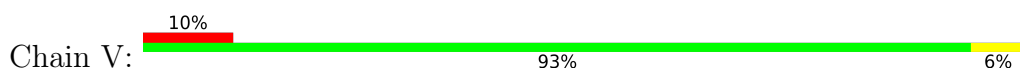
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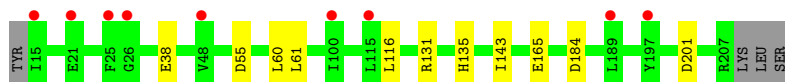
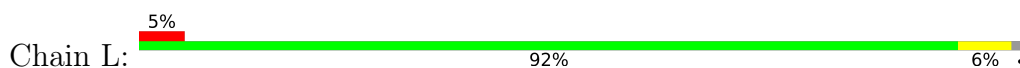
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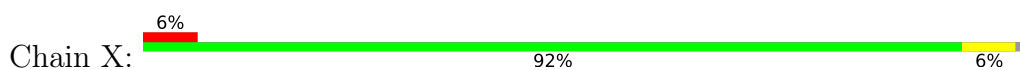
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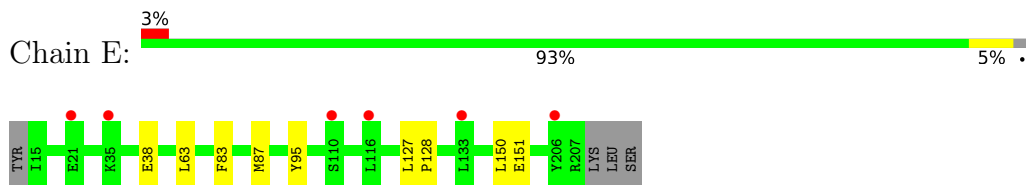
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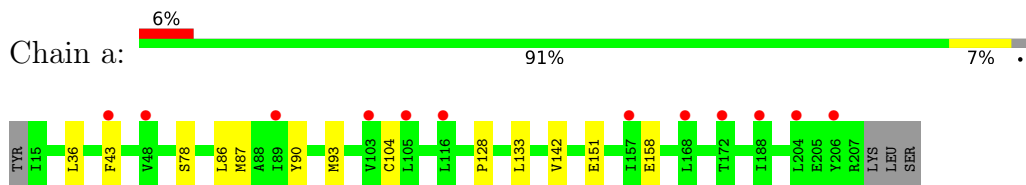
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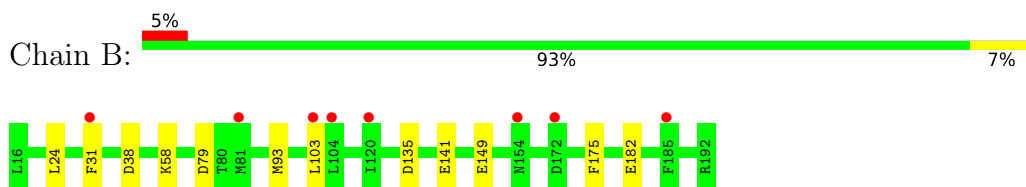
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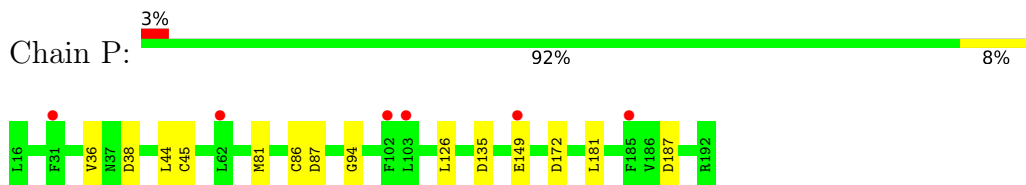
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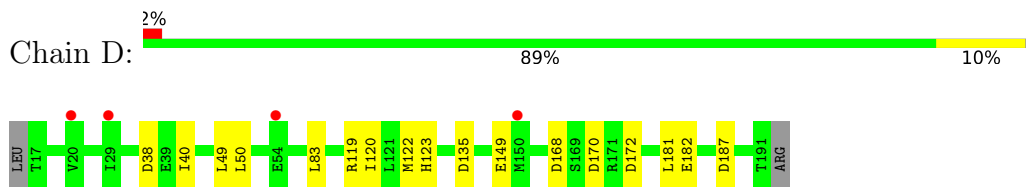
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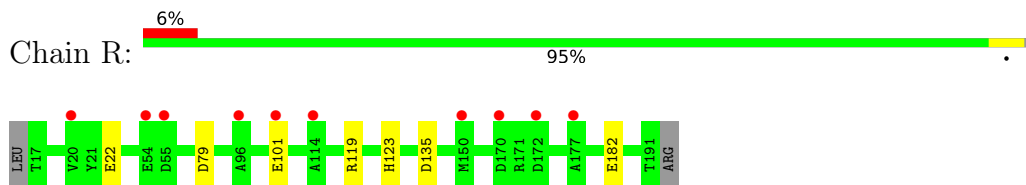
- Molecule 2: ATP-dependent Clp protease proteolytic subunit 1



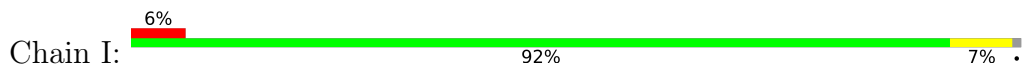
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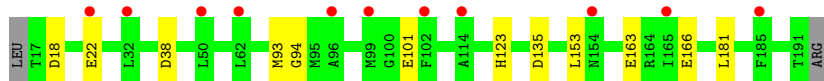


- Molecule 2: ATP-dependent Clp protease proteolytic subunit 1

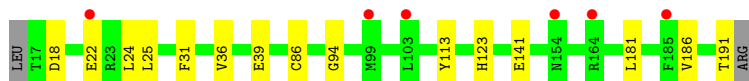
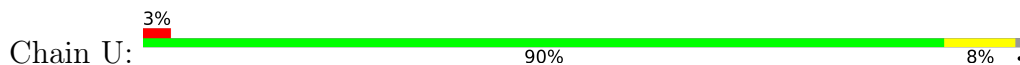


- Molecule 2: ATP-dependent Clp protease proteolytic subunit 1





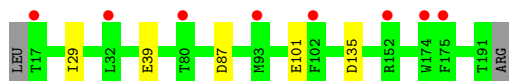
- Molecule 2: ATP-dependent Clp protease proteolytic subunit 1



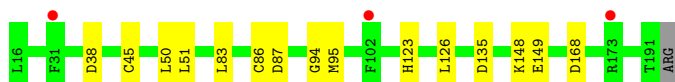
- Molecule 2: ATP-dependent Clp protease proteolytic subunit 1



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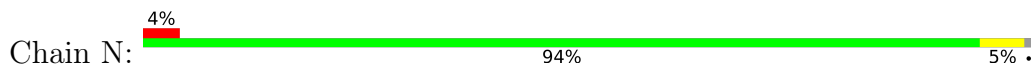
- Molecule 2: ATP-dependent Clp protease proteolytic subunit 1



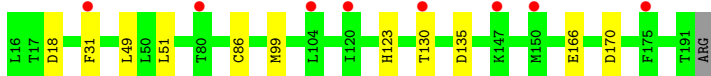
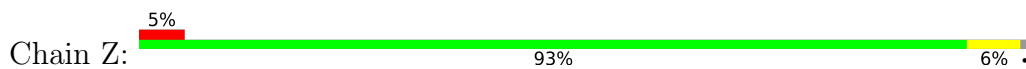
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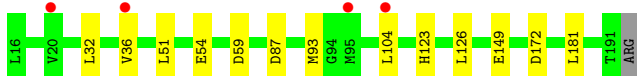
- Molecule 2: ATP-dependent Clp protease proteolytic subunit 1



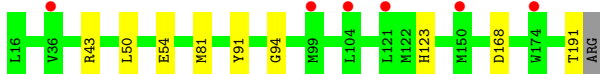
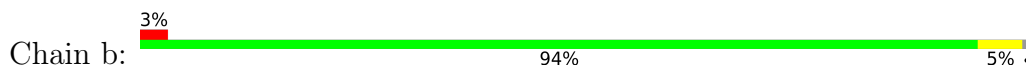
- Molecule 2: ATP-dependent Clp protease proteolytic subunit 1



- Molecule 2: ATP-dependent Clp protease proteolytic subunit 1



- Molecule 2: ATP-dependent Clp protease proteolytic subunit 1



- Molecule 3: 4-[[3,5-bis(fluoranyl)phenyl]methyl]-N-[(4-bromophenyl)methyl]piperazine-1-carboxamide



- Molecule 3: 4-[[3,5-bis(fluoranyl)phenyl]methyl]-N-[(4-bromophenyl)methyl]piperazine-1-carboxamide



- Molecule 3: 4-[[3,5-bis(fluoranyl)phenyl]methyl]-N-[(4-bromophenyl)methyl]piperazine-1-carboxamide



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- Molecule 3: 4-[[3,5-bis(fluoranyl)phenyl]methyl]-N-[(4-bromophenyl)methyl]piperazine-1-carboxamide



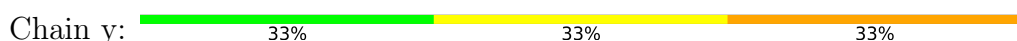
- Molecule 3: 4-[[3,5-bis(fluoranyl)phenyl]methyl]-N-[(4-bromophenyl)methyl]piperazine-1-carboxamide



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- Molecule 3: 4-[[3,5-bis(fluoranyl)phenyl]methyl]-N-[(4-bromophenyl)methyl]piperazine-1-carboxamide



- Molecule 3: 4-[[3,5-bis(fluoranyl)phenyl]methyl]-N-[(4-bromophenyl)methyl]piperazine-1-carboxamide



- Molecule 3: 4-[[3,5-bis(fluoranyl)phenyl]methyl]-N-[(4-bromophenyl)methyl]piperazine-1-carboxamide



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	207.51Å 182.50Å 188.70Å 90.00° 95.02° 90.00°	Depositor
Resolution (Å)	33.31 – 3.24 136.81 – 3.24	Depositor EDS
% Data completeness (in resolution range)	99.7 (33.31-3.24) 99.8 (136.81-3.24)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.11 (at 3.26Å)	Xtrriage
Refinement program	PHENIX 1.19.2_4158, PHENIX 1.19.2_4158	Depositor
R, R_{free}	0.179 , 0.254 0.178 , 0.253	Depositor DCC
R_{free} test set	5566 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å ²)	98.1	Xtrriage
Anisotropy	0.078	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.39 , 58.4	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	0.94	EDS
Total number of atoms	81239	wwPDB-VP
Average B, all atoms (Å ²)	105.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 38.33 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.7473e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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: AI4, BEZ

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	1.07	5/1512 (0.3%)	1.17	11/2045 (0.5%)
1	C	1.18	12/1518 (0.8%)	1.26	10/2055 (0.5%)
1	E	1.03	6/1495 (0.4%)	1.09	3/2025 (0.1%)
1	F	1.20	12/1518 (0.8%)	1.29	12/2055 (0.6%)
1	H	1.16	10/1522 (0.7%)	1.24	10/2059 (0.5%)
1	J	0.94	1/1524 (0.1%)	1.10	7/2062 (0.3%)
1	L	0.94	2/1495 (0.1%)	1.11	8/2025 (0.4%)
1	O	0.93	3/1512 (0.2%)	1.08	7/2045 (0.3%)
1	Q	0.93	2/1518 (0.1%)	1.09	7/2055 (0.3%)
1	S	0.91	2/1518 (0.1%)	1.05	3/2055 (0.1%)
1	T	1.01	5/1522 (0.3%)	1.07	2/2059 (0.1%)
1	V	0.91	2/1524 (0.1%)	1.12	10/2062 (0.5%)
1	X	0.97	5/1495 (0.3%)	1.09	7/2025 (0.3%)
1	a	1.03	7/1495 (0.5%)	1.08	5/2025 (0.2%)
2	B	1.03	5/1373 (0.4%)	1.16	10/1856 (0.5%)
2	D	1.10	3/1354 (0.2%)	1.26	13/1831 (0.7%)
2	G	0.98	4/1352 (0.3%)	1.18	10/1830 (0.5%)
2	I	1.11	7/1350 (0.5%)	1.24	9/1826 (0.5%)
2	K	1.08	6/1344 (0.4%)	1.14	6/1819 (0.3%)
2	M	1.08	5/1346 (0.4%)	1.20	12/1823 (0.7%)
2	N	0.94	0/1346	1.19	7/1823 (0.4%)
2	P	1.01	2/1373 (0.1%)	1.21	10/1856 (0.5%)
2	R	1.04	3/1354 (0.2%)	1.09	3/1831 (0.2%)
2	U	1.05	7/1350 (0.5%)	1.17	6/1826 (0.3%)
2	W	1.02	3/1344 (0.2%)	1.08	3/1819 (0.2%)
2	Y	1.00	2/1346 (0.1%)	1.08	5/1823 (0.3%)
2	Z	0.86	1/1346 (0.1%)	1.10	7/1823 (0.4%)
2	b	0.93	3/1352 (0.2%)	1.10	5/1830 (0.3%)
3	0	2.16	1/16 (6.2%)	2.10	0/19
3	1	1.91	0/16	2.97	3/19 (15.8%)
3	2	2.16	1/16 (6.2%)	1.63	0/19
3	3	1.67	0/16	2.14	1/19 (5.3%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
3	4	2.16	1/16 (6.2%)	2.87	1/19 (5.3%)
3	c	1.79	0/16	2.85	1/19 (5.3%)
3	e	1.91	0/16	1.91	0/19
3	f	1.88	1/16 (6.2%)	2.47	1/19 (5.3%)
3	g	2.30	1/16 (6.2%)	3.01	2/19 (10.5%)
3	h	1.78	0/16	2.96	2/19 (10.5%)
3	i	2.07	1/16 (6.2%)	2.42	0/19
3	j	2.15	1/16 (6.2%)	2.53	1/19 (5.3%)
3	k	2.32	1/16 (6.2%)	2.91	2/19 (10.5%)
3	l	2.18	1/16 (6.2%)	3.05	2/19 (10.5%)
3	m	1.81	1/16 (6.2%)	3.00	2/19 (10.5%)
3	n	1.94	0/16	3.98	3/19 (15.8%)
3	o	2.49	1/16 (6.2%)	3.65	3/19 (15.8%)
3	p	2.13	0/16	3.32	4/19 (21.1%)
3	q	2.62	1/16 (6.2%)	3.50	2/19 (10.5%)
3	r	1.75	0/16	3.57	4/19 (21.1%)
3	s	2.18	1/16 (6.2%)	3.27	3/19 (15.8%)
3	t	2.23	1/16 (6.2%)	2.64	1/19 (5.3%)
3	u	2.43	1/16 (6.2%)	3.37	3/19 (15.8%)
3	v	1.90	1/16 (6.2%)	2.66	1/19 (5.3%)
3	w	2.00	1/16 (6.2%)	2.00	0/19
3	x	2.06	1/16 (6.2%)	2.17	0/19
3	y	1.94	1/16 (6.2%)	3.62	2/19 (10.5%)
3	z	2.04	0/16	3.88	4/19 (21.1%)
All	All	1.04	144/40546 (0.4%)	1.18	256/54800 (0.5%)

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
2	N	0	1
2	Z	0	1
All	All	0	2

The worst 5 of 144 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	Q	104	CYS	CB-SG	-10.57	1.64	1.82
1	F	15	ILE	C-N	9.86	1.56	1.34
1	a	151	GLU	CG-CD	9.12	1.65	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	K	22	GLU	CG-CD	9.10	1.65	1.51
2	P	149	GLU	CG-CD	8.69	1.65	1.51

The worst 5 of 256 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	y	2	LEU	O-C-N	-11.09	104.96	122.70
3	z	3	LEU	CB-CG-CD2	10.51	128.86	111.00
2	K	38	ASP	CB-CG-OD2	-10.39	108.94	118.30
3	o	2	LEU	O-C-N	-10.20	106.38	122.70
3	n	3	LEU	CB-CG-CD2	9.92	127.86	111.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	N	18	ASP	Peptide
2	Z	18	ASP	Peptide

5.2 Too-close contacts [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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	192/197 (98%)	183 (95%)	8 (4%)	1 (0%)	29 64
1	C	194/197 (98%)	186 (96%)	7 (4%)	1 (0%)	29 64
1	E	191/197 (97%)	180 (94%)	11 (6%)	0	100 100
1	F	194/197 (98%)	185 (95%)	7 (4%)	2 (1%)	15 50

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	H	194/197 (98%)	184 (95%)	10 (5%)	0	100	100
1	J	193/197 (98%)	182 (94%)	11 (6%)	0	100	100
1	L	191/197 (97%)	183 (96%)	8 (4%)	0	100	100
1	O	192/197 (98%)	181 (94%)	10 (5%)	1 (0%)	29	64
1	Q	194/197 (98%)	186 (96%)	7 (4%)	1 (0%)	29	64
1	S	194/197 (98%)	183 (94%)	10 (5%)	1 (0%)	29	64
1	T	194/197 (98%)	188 (97%)	6 (3%)	0	100	100
1	V	193/197 (98%)	182 (94%)	10 (5%)	1 (0%)	29	64
1	X	191/197 (97%)	181 (95%)	9 (5%)	1 (0%)	29	64
1	a	191/197 (97%)	182 (95%)	9 (5%)	0	100	100
2	B	175/177 (99%)	168 (96%)	7 (4%)	0	100	100
2	D	173/177 (98%)	168 (97%)	5 (3%)	0	100	100
2	G	174/177 (98%)	169 (97%)	5 (3%)	0	100	100
2	I	173/177 (98%)	170 (98%)	2 (1%)	1 (1%)	25	61
2	K	173/177 (98%)	166 (96%)	7 (4%)	0	100	100
2	M	174/177 (98%)	169 (97%)	4 (2%)	1 (1%)	25	61
2	N	174/177 (98%)	169 (97%)	5 (3%)	0	100	100
2	P	175/177 (99%)	169 (97%)	5 (3%)	1 (1%)	25	61
2	R	173/177 (98%)	168 (97%)	5 (3%)	0	100	100
2	U	173/177 (98%)	169 (98%)	3 (2%)	1 (1%)	25	61
2	W	173/177 (98%)	167 (96%)	6 (4%)	0	100	100
2	Y	174/177 (98%)	169 (97%)	5 (3%)	0	100	100
2	Z	174/177 (98%)	167 (96%)	7 (4%)	0	100	100
2	b	174/177 (98%)	168 (97%)	5 (3%)	1 (1%)	25	61
3	0	1/3 (33%)	1 (100%)	0	0	100	100
3	1	1/3 (33%)	1 (100%)	0	0	100	100
3	2	1/3 (33%)	1 (100%)	0	0	100	100
3	3	1/3 (33%)	1 (100%)	0	0	100	100
3	4	1/3 (33%)	1 (100%)	0	0	100	100
3	c	1/3 (33%)	1 (100%)	0	0	100	100
3	e	1/3 (33%)	1 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	f	1/3 (33%)	1 (100%)	0	0	100	100
3	g	1/3 (33%)	1 (100%)	0	0	100	100
3	h	1/3 (33%)	1 (100%)	0	0	100	100
3	i	1/3 (33%)	0	1 (100%)	0	100	100
3	j	1/3 (33%)	1 (100%)	0	0	100	100
3	k	1/3 (33%)	1 (100%)	0	0	100	100
3	l	1/3 (33%)	1 (100%)	0	0	100	100
3	m	1/3 (33%)	0	0	1 (100%)	0	0
3	n	1/3 (33%)	1 (100%)	0	0	100	100
3	o	1/3 (33%)	1 (100%)	0	0	100	100
3	p	1/3 (33%)	1 (100%)	0	0	100	100
3	q	1/3 (33%)	0	1 (100%)	0	100	100
3	r	1/3 (33%)	1 (100%)	0	0	100	100
3	s	1/3 (33%)	0	1 (100%)	0	100	100
3	t	1/3 (33%)	1 (100%)	0	0	100	100
3	u	1/3 (33%)	1 (100%)	0	0	100	100
3	v	1/3 (33%)	1 (100%)	0	0	100	100
3	w	1/3 (33%)	1 (100%)	0	0	100	100
3	x	1/3 (33%)	1 (100%)	0	0	100	100
3	y	1/3 (33%)	1 (100%)	0	0	100	100
3	z	1/3 (33%)	1 (100%)	0	0	100	100
All	All	5158/5320 (97%)	4946 (96%)	197 (4%)	15 (0%)	41	73

5 of 15 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	P	94	GLY
2	U	94	GLY
1	V	106	GLY
2	b	94	GLY
3	m	2	LEU

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	160/164 (98%)	159 (99%)	1 (1%)	86	93
1	C	160/164 (98%)	158 (99%)	2 (1%)	69	85
1	E	157/164 (96%)	155 (99%)	2 (1%)	69	85
1	F	160/164 (98%)	159 (99%)	1 (1%)	86	93
1	H	161/164 (98%)	161 (100%)	0	100	100
1	J	161/164 (98%)	158 (98%)	3 (2%)	57	79
1	L	157/164 (96%)	155 (99%)	2 (1%)	69	85
1	O	160/164 (98%)	160 (100%)	0	100	100
1	Q	160/164 (98%)	157 (98%)	3 (2%)	57	79
1	S	160/164 (98%)	159 (99%)	1 (1%)	86	93
1	T	161/164 (98%)	161 (100%)	0	100	100
1	V	161/164 (98%)	160 (99%)	1 (1%)	86	93
1	X	157/164 (96%)	157 (100%)	0	100	100
1	a	157/164 (96%)	153 (98%)	4 (2%)	47	74
2	B	138/138 (100%)	138 (100%)	0	100	100
2	D	136/138 (99%)	134 (98%)	2 (2%)	65	83
2	G	135/138 (98%)	134 (99%)	1 (1%)	84	92
2	I	135/138 (98%)	134 (99%)	1 (1%)	84	92
2	K	134/138 (97%)	134 (100%)	0	100	100
2	M	134/138 (97%)	132 (98%)	2 (2%)	65	83
2	N	134/138 (97%)	132 (98%)	2 (2%)	65	83
2	P	138/138 (100%)	137 (99%)	1 (1%)	84	92
2	R	136/138 (99%)	134 (98%)	2 (2%)	65	83
2	U	135/138 (98%)	134 (99%)	1 (1%)	84	92
2	W	134/138 (97%)	134 (100%)	0	100	100
2	Y	134/138 (97%)	133 (99%)	1 (1%)	84	92

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	Z	134/138 (97%)	132 (98%)	2 (2%)	65	83
2	b	135/138 (98%)	134 (99%)	1 (1%)	84	92
3	0	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	1	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	2	2/2 (100%)	2 (100%)	0	100	100
3	3	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	4	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	c	2/2 (100%)	2 (100%)	0	100	100
3	e	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	f	2/2 (100%)	2 (100%)	0	100	100
3	g	2/2 (100%)	2 (100%)	0	100	100
3	h	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	i	2/2 (100%)	2 (100%)	0	100	100
3	j	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	k	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	l	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	m	2/2 (100%)	0	2 (100%)	0	0
3	n	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	o	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	p	2/2 (100%)	0	2 (100%)	0	0
3	q	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	r	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	s	2/2 (100%)	2 (100%)	0	100	100
3	t	2/2 (100%)	2 (100%)	0	100	100
3	u	2/2 (100%)	2 (100%)	0	100	100
3	v	2/2 (100%)	0	2 (100%)	0	0
3	w	2/2 (100%)	2 (100%)	0	100	100
3	x	2/2 (100%)	1 (50%)	1 (50%)	0	0
3	y	2/2 (100%)	0	2 (100%)	0	0
3	z	2/2 (100%)	0	2 (100%)	0	0
All	All	4180/4284 (98%)	4120 (99%)	60 (1%)	67	84

5 of 60 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	87	MET
3	z	3	LEU
2	b	123	HIS
3	z	2	LEU
3	4	2	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 7 such sidechains are listed below:

Mol	Chain	Res	Type
1	H	94	GLN
1	L	94	GLN
2	G	47	GLN
1	L	135	HIS
1	Q	135	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no 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
4	AI4	K	201	-	45,48,48	5.54	24 (53%)	62,68,68	4.95	32 (51%)
4	AI4	Y	201	-	45,48,48	5.64	24 (53%)	62,68,68	5.17	32 (51%)
4	AI4	U	201	-	45,48,48	5.46	26 (57%)	62,68,68	5.10	33 (53%)
4	AI4	I	201	-	45,48,48	5.56	27 (60%)	62,68,68	5.05	33 (53%)
4	AI4	Z	201	-	45,48,48	5.68	26 (57%)	62,68,68	5.13	32 (51%)
4	AI4	W	201	-	45,48,48	5.61	28 (62%)	62,68,68	4.39	32 (51%)
4	AI4	G	201	-	45,48,48	5.60	27 (60%)	62,68,68	5.07	37 (59%)
4	AI4	F	301	-	45,48,48	5.62	26 (57%)	62,68,68	4.81	31 (50%)
4	AI4	N	301	-	45,48,48	5.62	21 (46%)	62,68,68	8.67	39 (62%)
4	AI4	B	201	-	45,48,48	5.47	24 (53%)	62,68,68	5.51	38 (61%)
4	AI4	b	201	-	45,48,48	5.60	24 (53%)	62,68,68	5.15	37 (59%)
4	AI4	V	301	-	45,48,48	5.60	26 (57%)	62,68,68	4.89	33 (53%)
4	AI4	M	201	-	45,48,48	5.59	25 (55%)	62,68,68	4.79	35 (56%)
4	AI4	R	201	-	45,48,48	5.52	22 (48%)	62,68,68	4.76	34 (54%)

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. '2' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	AI4	K	201	-	-	10/21/31/31	0/6/6/6
4	AI4	Y	201	-	-	11/21/31/31	0/6/6/6
4	AI4	U	201	-	-	12/21/31/31	0/6/6/6
4	AI4	I	201	-	-	10/21/31/31	0/6/6/6
4	AI4	Z	201	-	-	11/21/31/31	0/6/6/6
4	AI4	W	201	-	-	9/21/31/31	0/6/6/6
4	AI4	G	201	-	-	11/21/31/31	0/6/6/6
4	AI4	F	301	-	-	9/21/31/31	0/6/6/6
4	AI4	N	301	-	-	10/21/31/31	0/6/6/6
4	AI4	B	201	-	-	10/21/31/31	0/6/6/6
4	AI4	b	201	-	-	10/21/31/31	0/6/6/6
4	AI4	V	301	-	-	10/21/31/31	0/6/6/6
4	AI4	M	201	-	-	13/21/31/31	0/6/6/6
4	AI4	R	201	-	-	11/21/31/31	0/6/6/6

The worst 5 of 350 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	F	301	AI4	C36-C35	-16.96	1.11	1.39
4	I	201	AI4	C40-C35	-16.94	1.11	1.39
4	b	201	AI4	C40-C35	-16.94	1.11	1.39
4	R	201	AI4	C40-C35	-16.85	1.11	1.39
4	N	301	AI4	C36-C35	-16.67	1.12	1.39

The worst 5 of 478 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	N	301	AI4	O43-C41-N42	-41.95	62.98	122.58
4	N	301	AI4	O43-C41-C38	-36.76	75.64	119.63
4	Y	201	AI4	C38-C41-N42	18.11	139.48	117.75
4	N	301	AI4	C38-C41-N42	17.39	138.62	117.75
4	B	201	AI4	O43-C41-N42	-16.43	99.24	122.58

There are no chirality outliers.

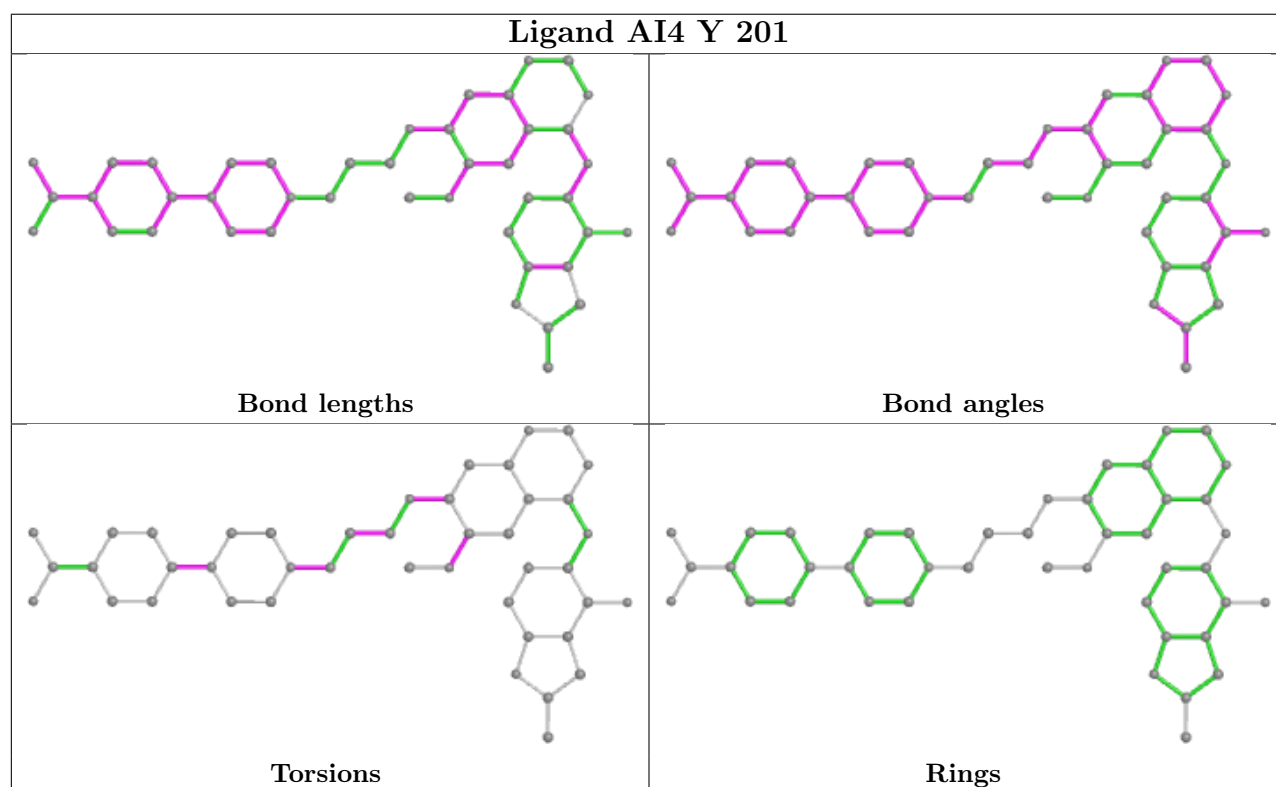
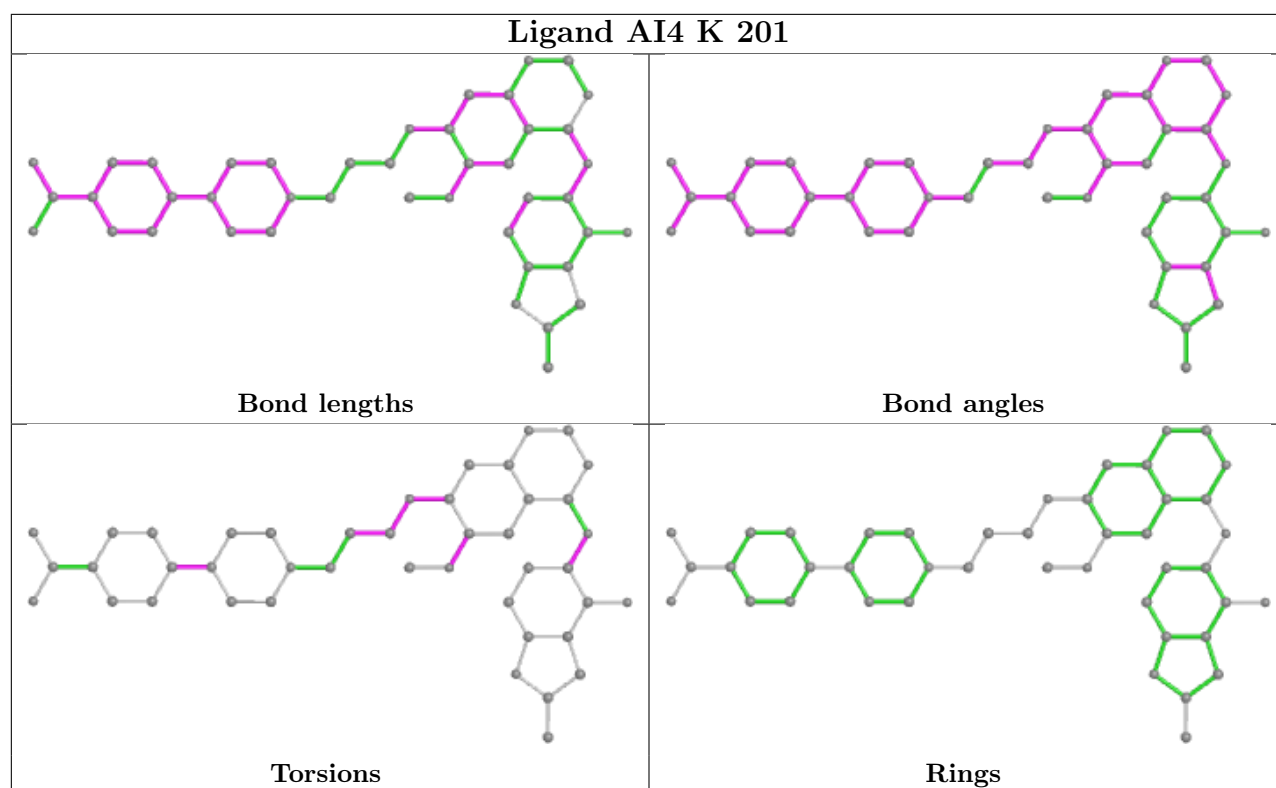
5 of 147 torsion outliers are listed below:

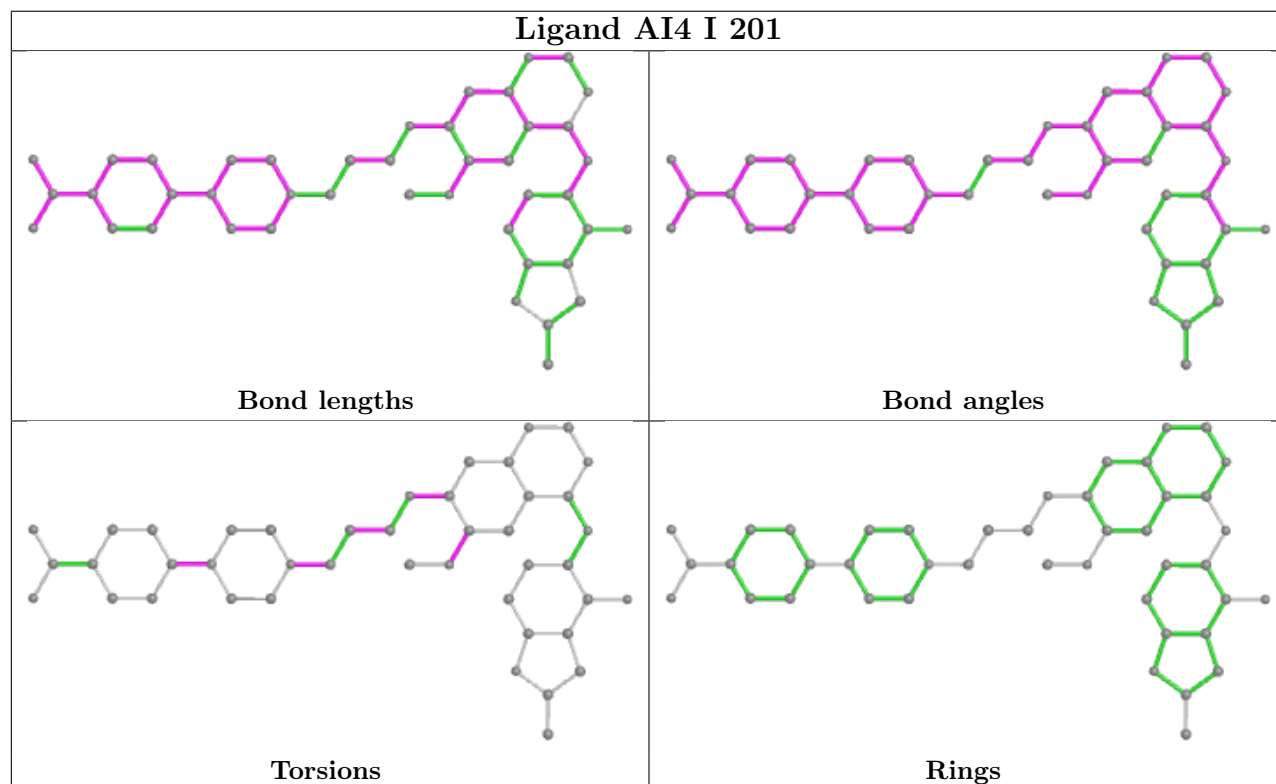
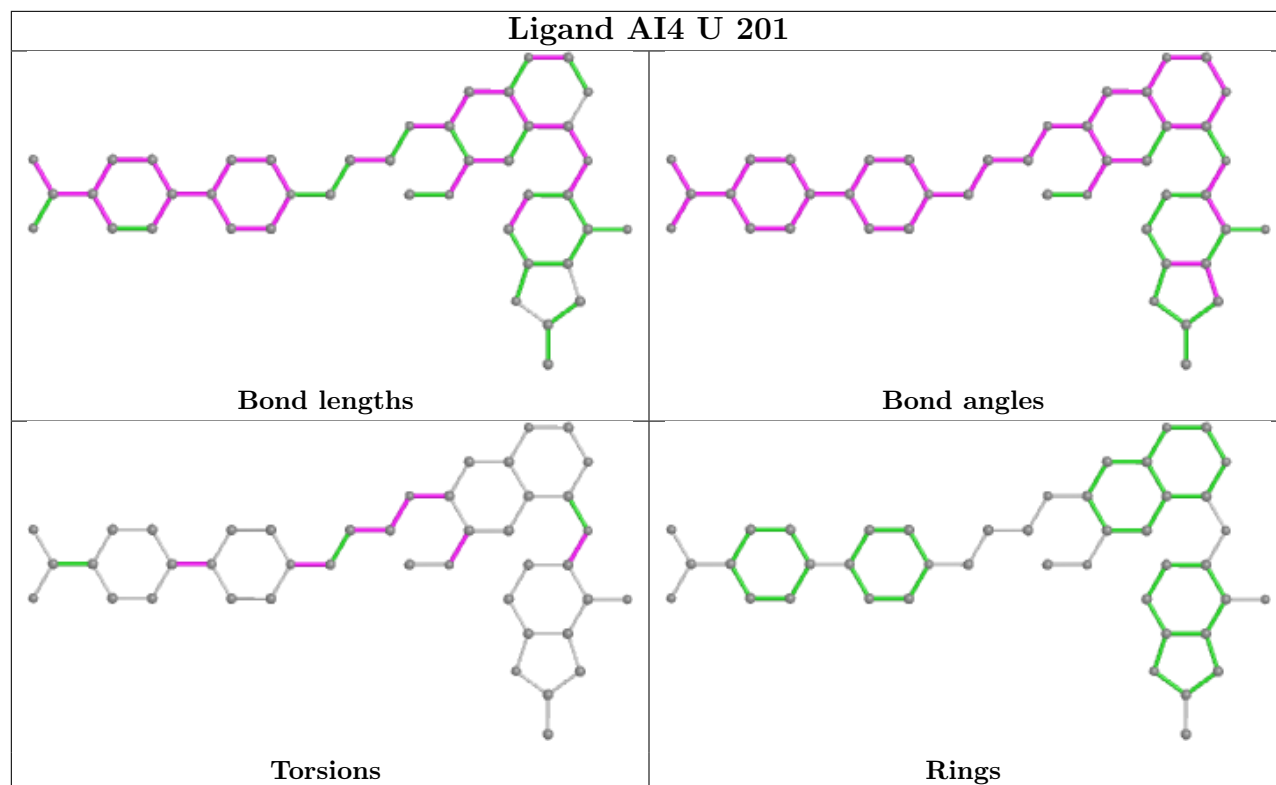
Mol	Chain	Res	Type	Atoms
4	U	201	AI4	C15-C14-O13-C10
4	K	201	AI4	C15-C14-O13-C10
4	M	201	AI4	C15-C14-O13-C10
4	b	201	AI4	C15-C14-O13-C10
4	W	201	AI4	C26-C27-N28-C30

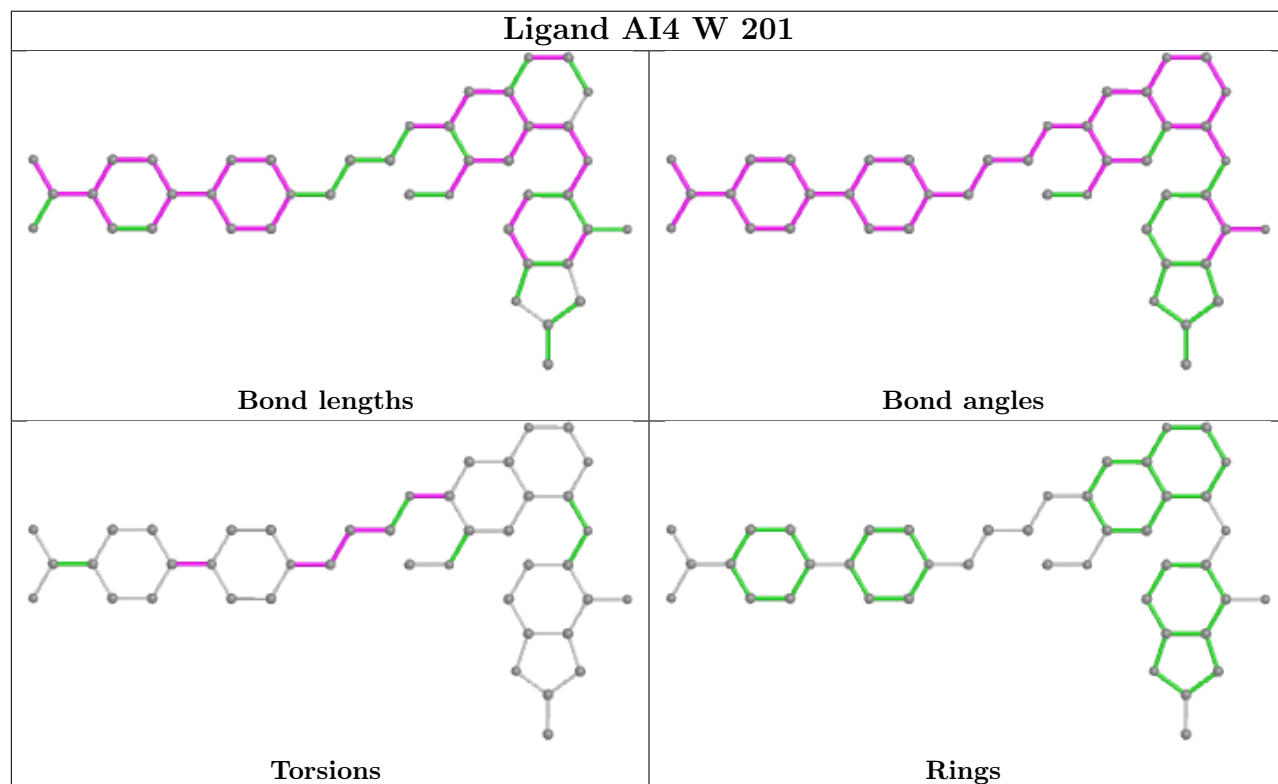
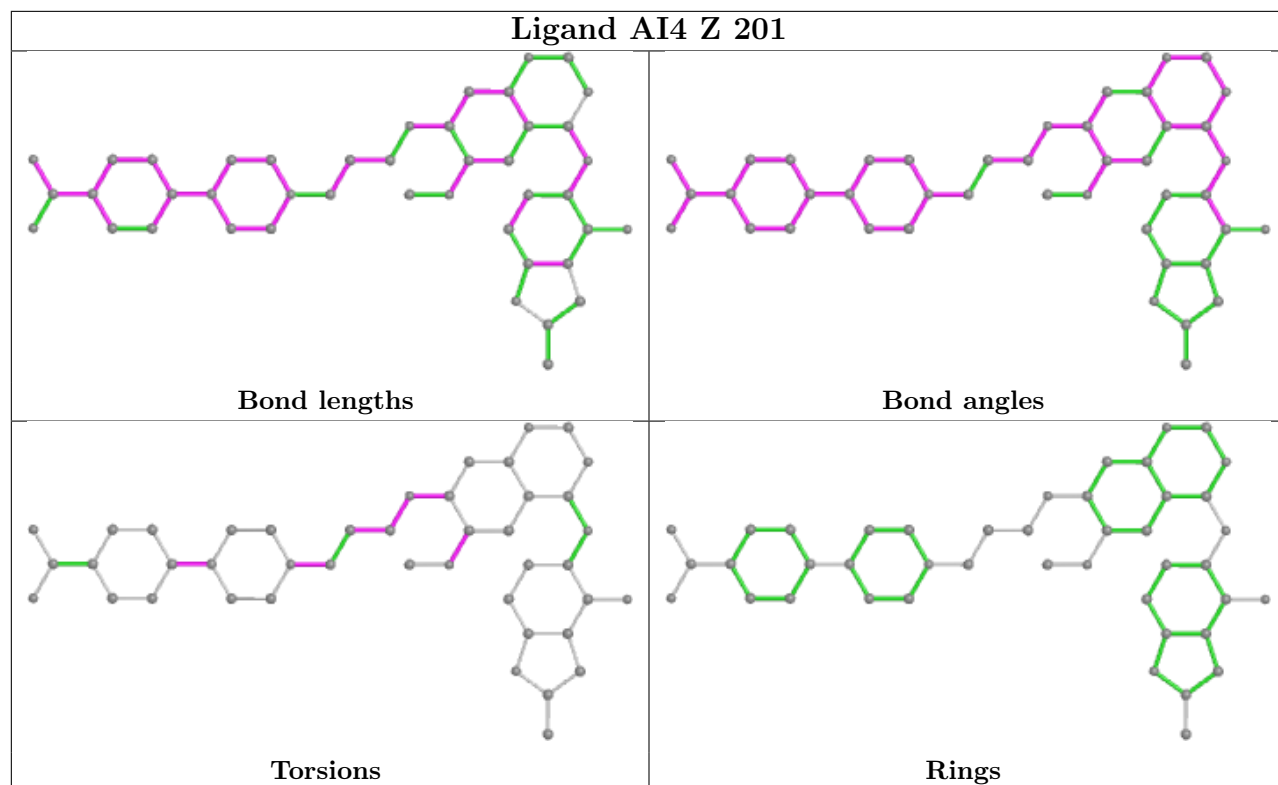
There are no ring outliers.

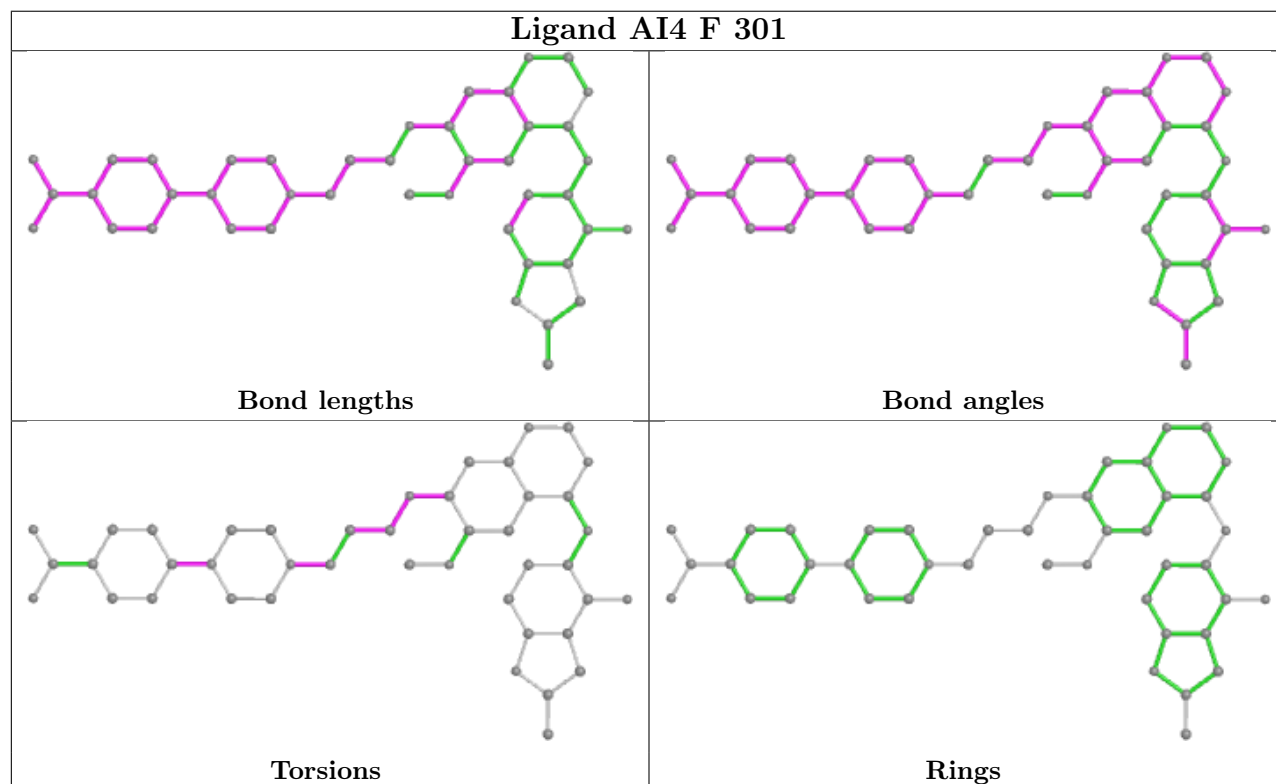
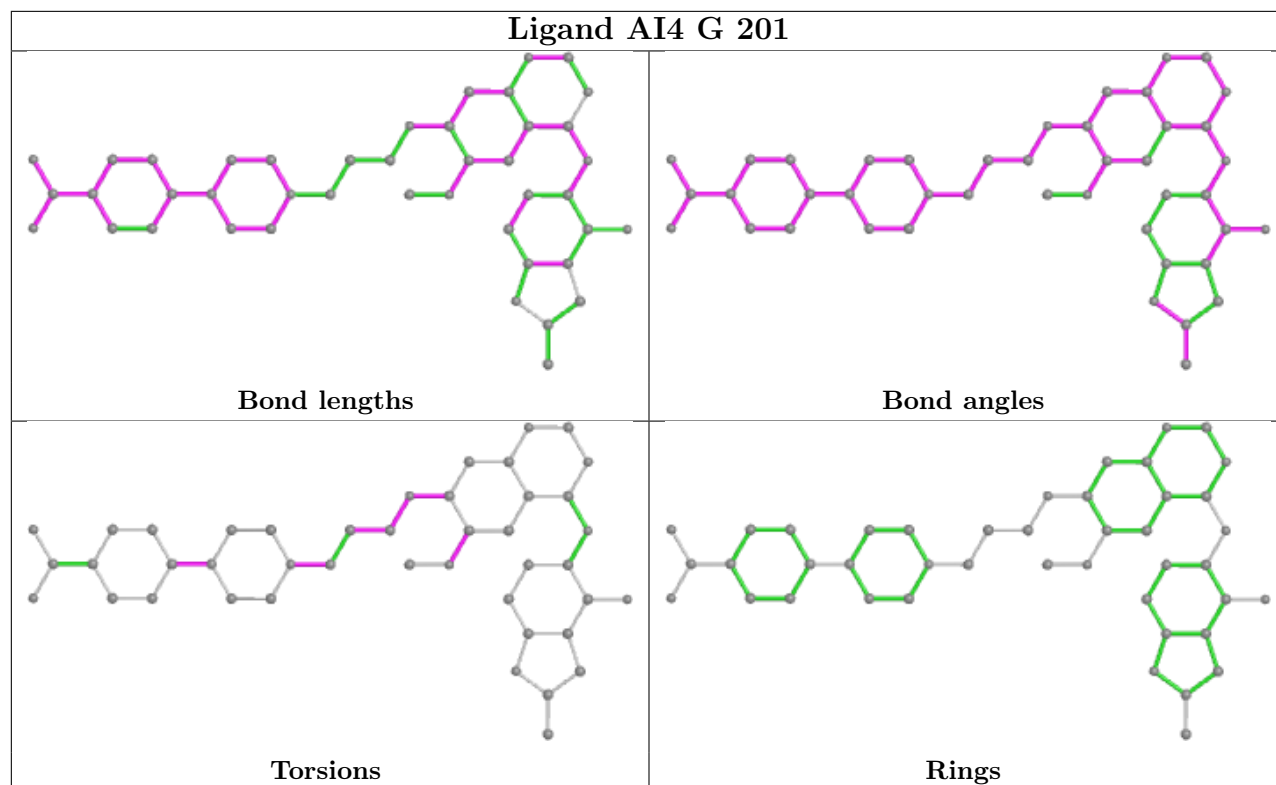
No monomer is involved in short contacts.

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.

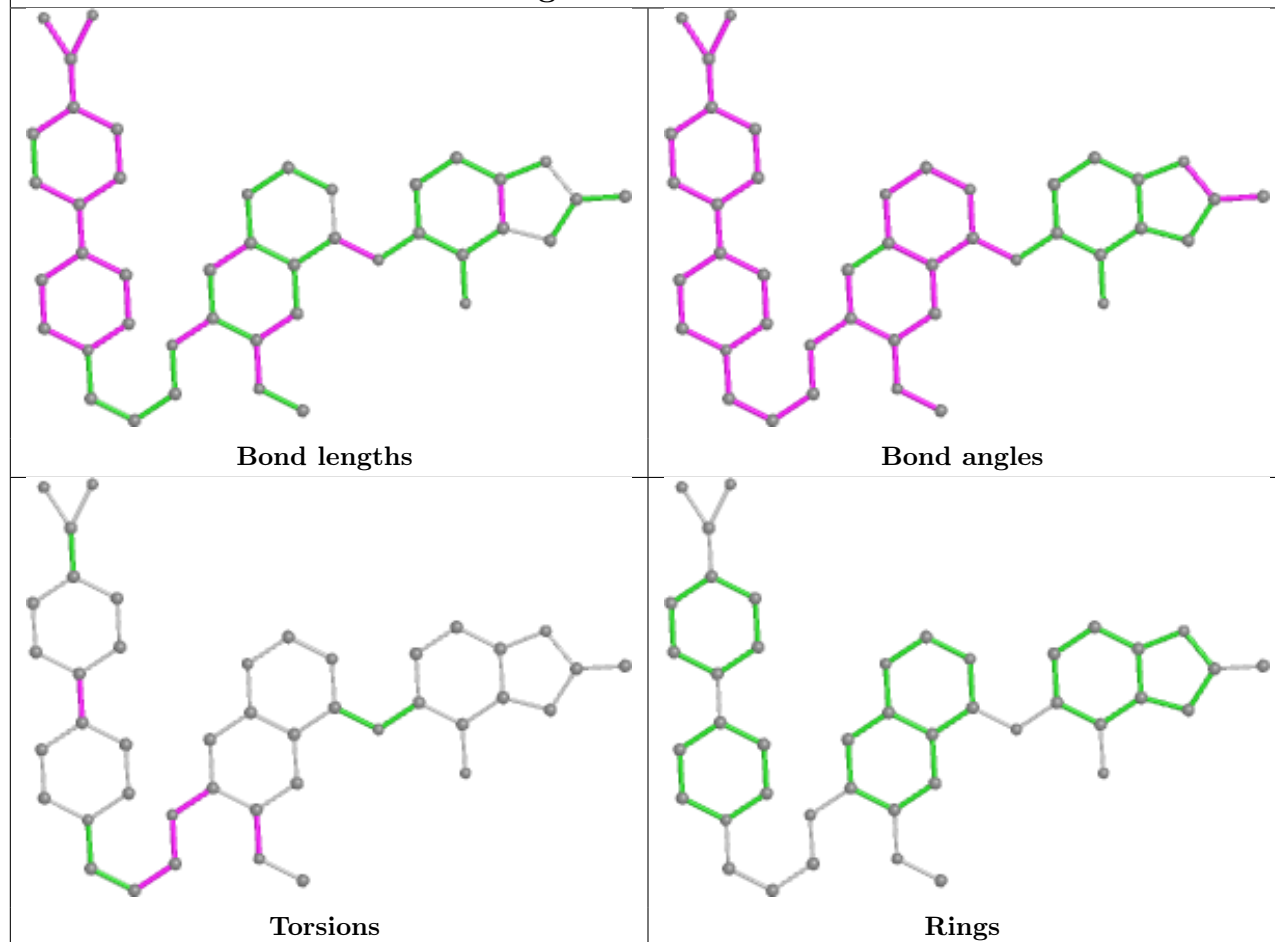




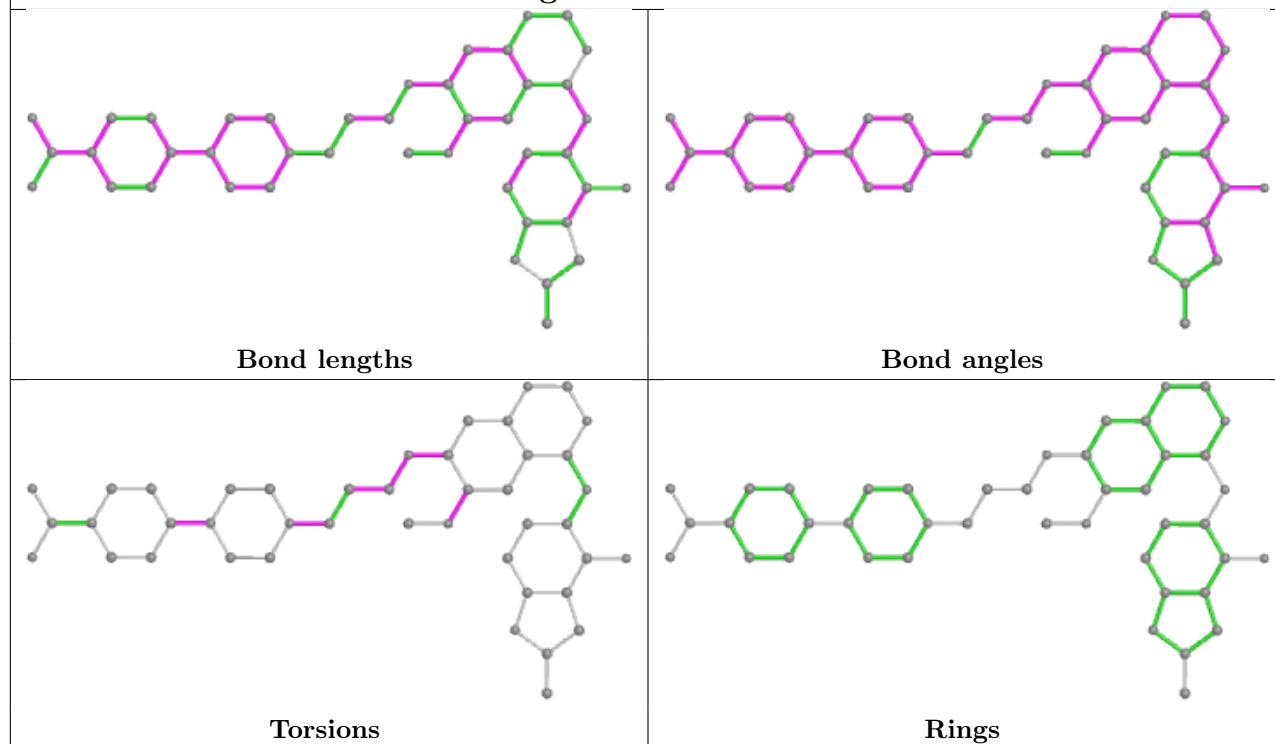


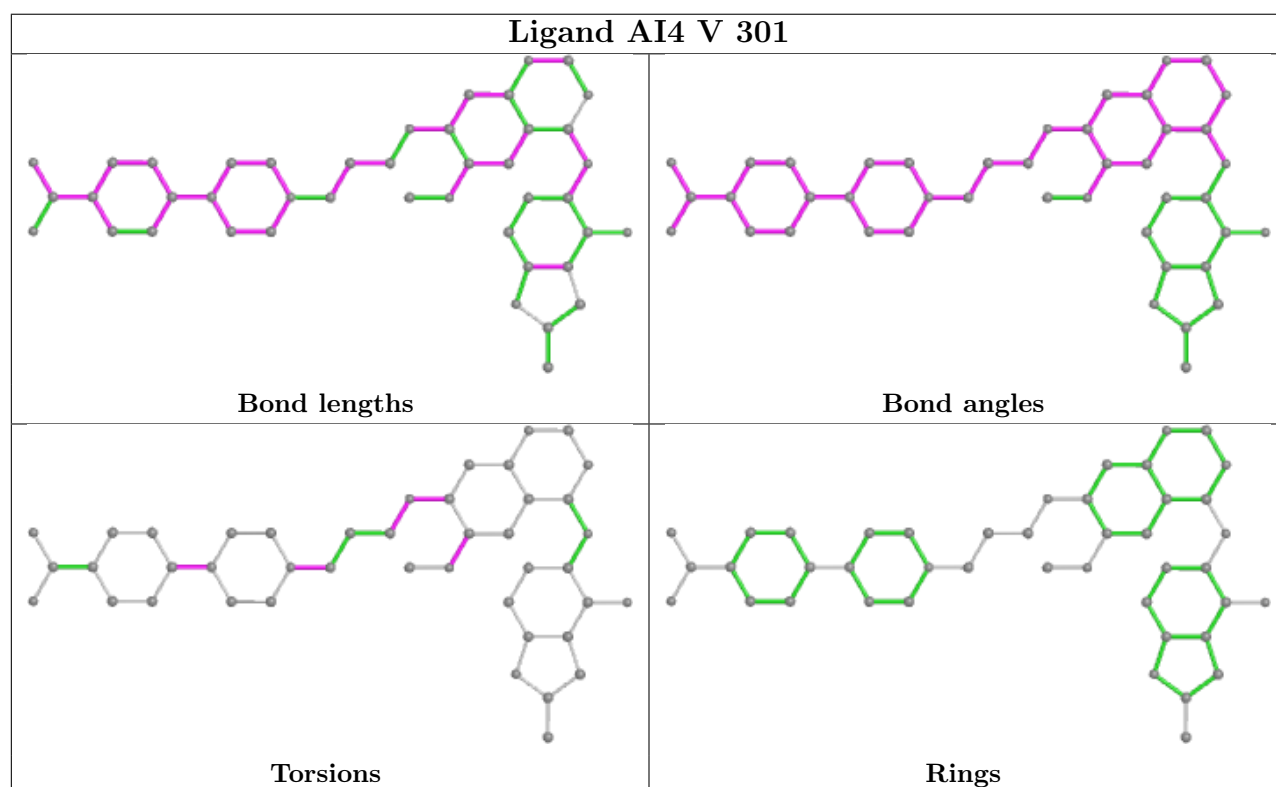
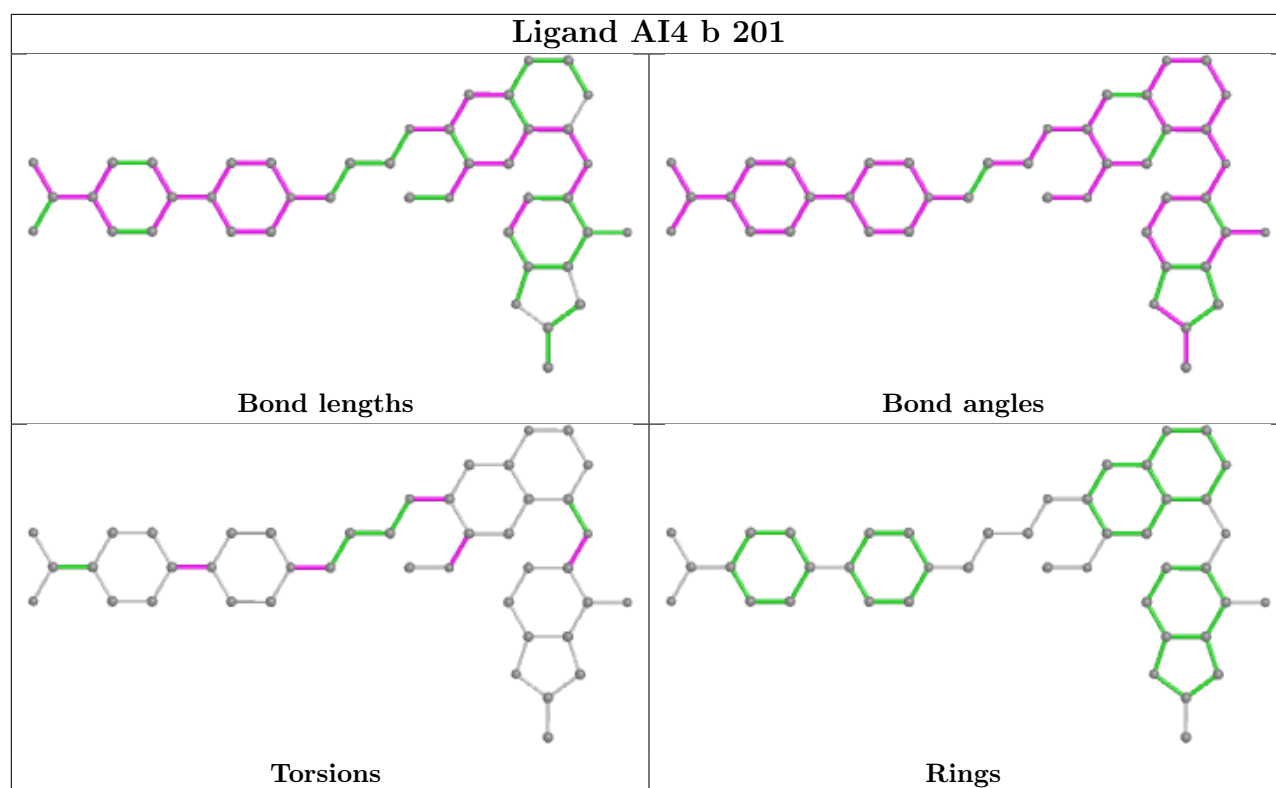


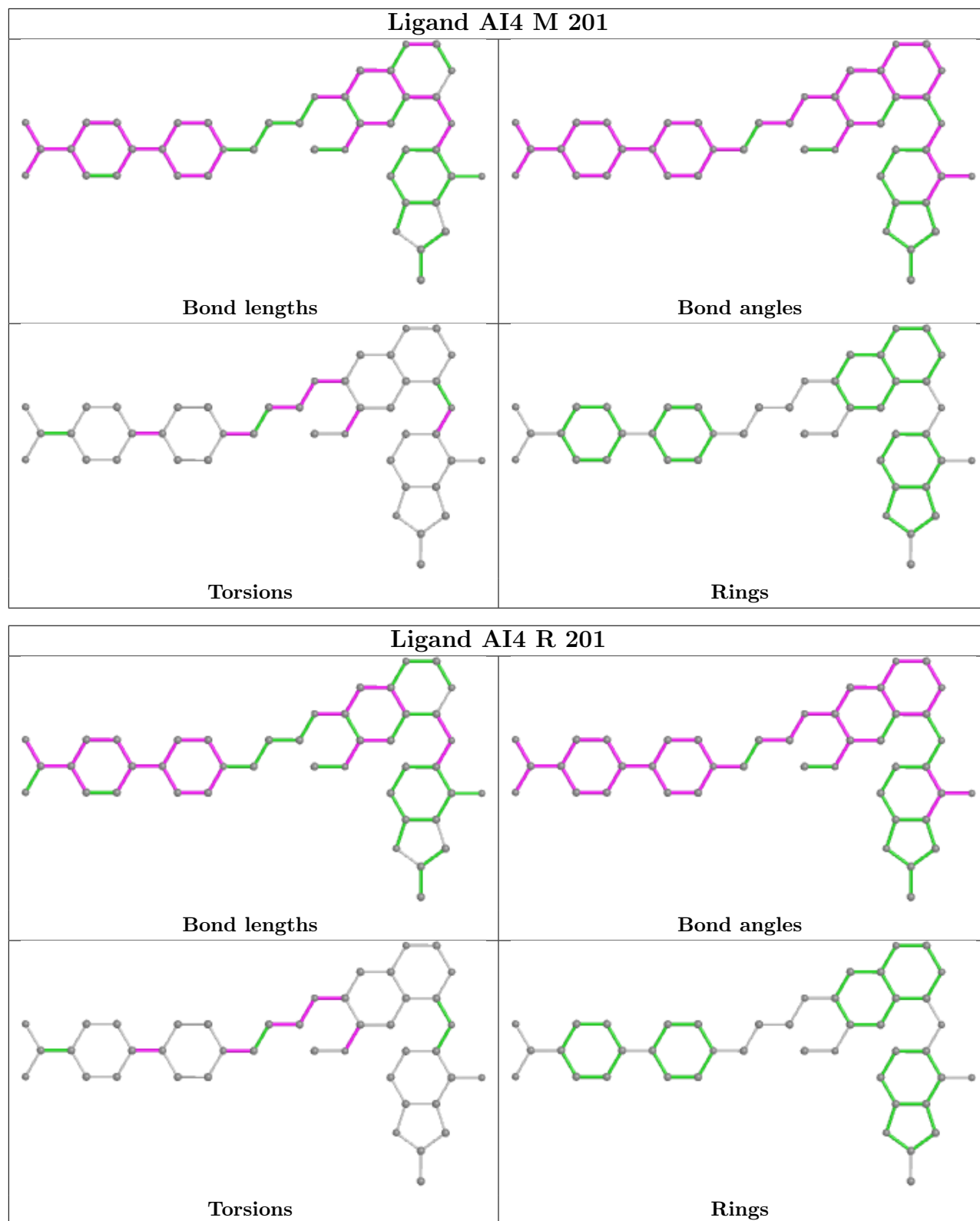
Ligand AI4 N 301



Ligand AI4 B 201







5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

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	194/197 (98%)	0.58	5 (2%) 56 44	64, 87, 119, 144	0
1	C	196/197 (99%)	0.64	8 (4%) 37 27	57, 82, 115, 155	0
1	E	193/197 (97%)	0.59	6 (3%) 49 37	69, 90, 121, 137	0
1	F	196/197 (99%)	0.61	3 (1%) 73 64	65, 83, 113, 175	0
1	H	196/197 (99%)	0.61	8 (4%) 37 27	63, 81, 125, 174	0
1	J	195/197 (98%)	0.63	11 (5%) 24 15	75, 96, 125, 154	0
1	L	193/197 (97%)	0.68	9 (4%) 31 21	75, 97, 121, 142	0
1	O	194/197 (98%)	0.63	10 (5%) 27 17	79, 97, 134, 154	0
1	Q	196/197 (99%)	0.69	14 (7%) 16 11	77, 102, 133, 157	0
1	S	196/197 (99%)	0.75	17 (8%) 10 7	76, 105, 139, 173	0
1	T	196/197 (99%)	0.72	13 (6%) 18 12	77, 97, 132, 190	0
1	V	195/197 (98%)	0.74	19 (9%) 7 6	78, 100, 135, 166	0
1	X	193/197 (97%)	0.75	12 (6%) 20 13	79, 102, 130, 147	0
1	a	193/197 (97%)	0.66	12 (6%) 20 13	74, 97, 126, 142	0
2	B	177/177 (100%)	0.62	8 (4%) 33 23	65, 87, 123, 149	0
2	D	175/177 (98%)	0.55	4 (2%) 60 50	64, 83, 116, 139	0
2	G	176/177 (99%)	0.58	4 (2%) 60 50	66, 87, 119, 145	0
2	I	175/177 (98%)	0.61	11 (6%) 20 13	66, 81, 111, 143	0
2	K	175/177 (98%)	0.70	17 (9%) 7 6	71, 93, 122, 148	0
2	M	176/177 (99%)	0.59	3 (1%) 70 60	64, 82, 109, 132	0
2	N	176/177 (99%)	0.64	7 (3%) 38 28	67, 90, 125, 156	0
2	P	177/177 (100%)	0.58	6 (3%) 45 33	68, 89, 117, 142	0
2	R	175/177 (98%)	0.66	10 (5%) 23 15	71, 90, 120, 148	0
2	U	175/177 (98%)	0.59	6 (3%) 45 33	72, 87, 112, 132	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
2	W	175/177 (98%)	0.66	8 (4%) 32 22	73, 92, 124, 142	0
2	Y	176/177 (99%)	0.60	4 (2%) 60 50	69, 88, 115, 146	0
2	Z	176/177 (99%)	0.68	8 (4%) 33 23	72, 95, 125, 157	0
2	b	176/177 (99%)	0.60	6 (3%) 45 33	73, 91, 117, 145	0
3	0	2/3 (66%)	1.68	1 (50%) 0 0	123, 123, 123, 128	0
3	1	2/3 (66%)	1.34	0 100 100	103, 103, 103, 111	0
3	2	2/3 (66%)	0.82	0 100 100	125, 125, 125, 125	0
3	3	2/3 (66%)	1.51	0 100 100	104, 104, 104, 106	0
3	4	2/3 (66%)	0.48	0 100 100	126, 126, 126, 132	0
3	c	2/3 (66%)	1.70	0 100 100	104, 104, 104, 106	0
3	e	2/3 (66%)	1.65	1 (50%) 0 0	115, 115, 115, 125	0
3	f	2/3 (66%)	1.43	0 100 100	97, 97, 97, 97	0
3	g	2/3 (66%)	1.26	0 100 100	123, 123, 123, 133	0
3	h	2/3 (66%)	2.07	1 (50%) 0 0	92, 92, 92, 103	0
3	i	2/3 (66%)	2.65	2 (100%) 0 0	113, 113, 113, 119	0
3	j	2/3 (66%)	2.74	1 (50%) 0 0	90, 90, 90, 100	0
3	k	2/3 (66%)	1.16	0 100 100	115, 115, 115, 126	0
3	l	2/3 (66%)	2.81	1 (50%) 0 0	94, 94, 94, 110	0
3	m	2/3 (66%)	0.81	0 100 100	116, 116, 116, 120	0
3	n	2/3 (66%)	1.79	1 (50%) 0 0	100, 100, 100, 104	0
3	o	2/3 (66%)	2.66	1 (50%) 0 0	120, 120, 120, 121	0
3	p	2/3 (66%)	3.17	1 (50%) 0 0	94, 94, 94, 105	0
3	q	2/3 (66%)	0.66	0 100 100	127, 127, 127, 130	0
3	r	2/3 (66%)	1.55	1 (50%) 0 0	97, 97, 97, 100	0
3	s	2/3 (66%)	2.44	1 (50%) 0 0	119, 119, 119, 126	0
3	t	2/3 (66%)	2.11	1 (50%) 0 0	99, 99, 99, 107	0
3	u	2/3 (66%)	1.36	0 100 100	119, 119, 119, 128	0
3	v	2/3 (66%)	2.39	1 (50%) 0 0	96, 96, 96, 105	0
3	w	2/3 (66%)	1.39	1 (50%) 0 0	121, 121, 121, 126	0
3	x	2/3 (66%)	1.71	0 100 100	103, 103, 103, 107	0
3	y	2/3 (66%)	0.71	0 100 100	128, 128, 128, 137	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
3	z	2/3 (66%)	1.50	1 (50%) 0 0	99, 99, 99, 101	0
All	All	5242/5320 (98%)	0.65	265 (5%) 28 18	57, 92, 125, 190	0

The worst 5 of 265 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	T	210	SER	8.8
1	S	210	SER	6.2
1	T	209	LEU	6.1
3	p	3	LEU	4.9
3	s	3	LEU	4.9

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.

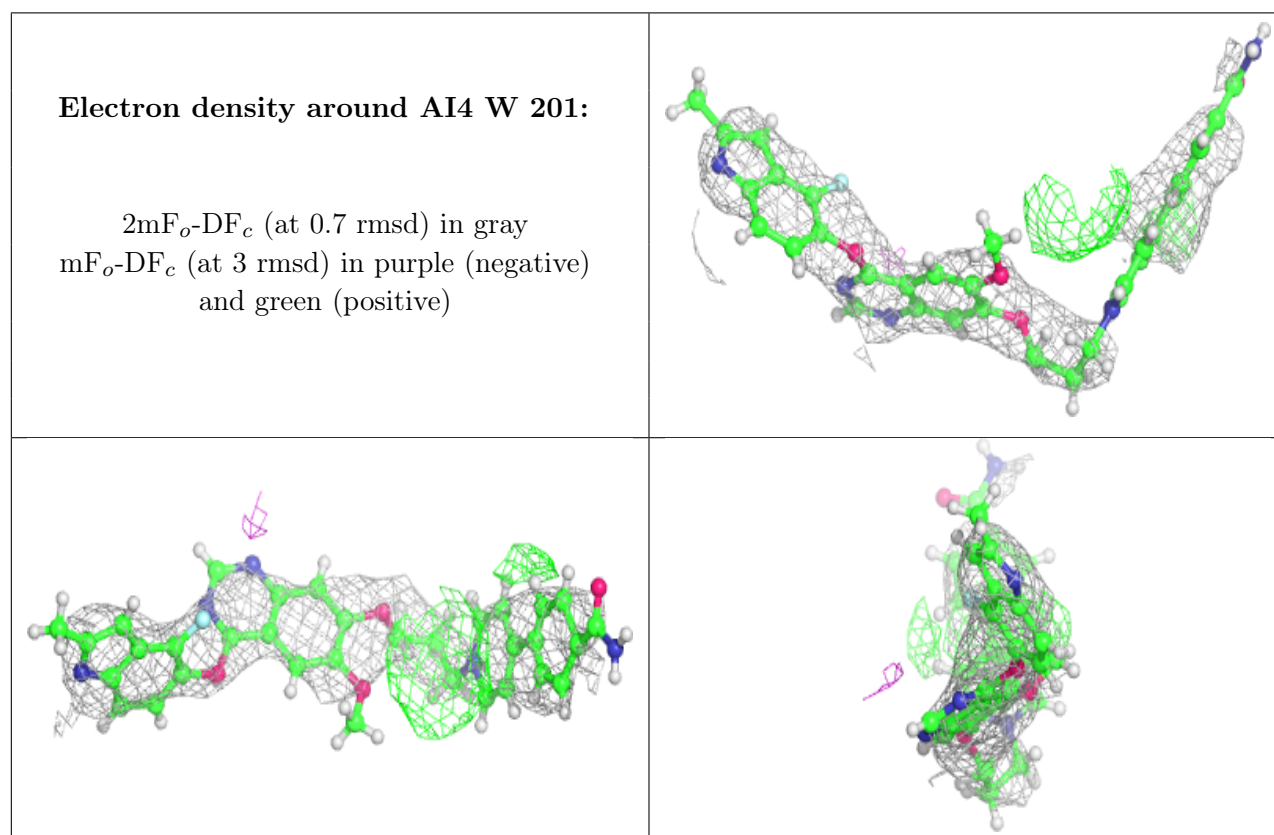
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
4	AI4	W	201	43/43	0.64	0.56	111,157,195,219	0
4	AI4	U	201	43/43	0.70	0.55	103,148,191,204	0
4	AI4	K	201	43/43	0.77	0.49	114,146,188,204	0
4	AI4	B	201	43/43	0.77	0.52	105,138,204,223	0
4	AI4	b	201	43/43	0.77	0.47	107,140,184,201	0
4	AI4	I	201	43/43	0.78	0.44	104,137,196,215	0
4	AI4	F	301	43/43	0.79	0.47	96,133,190,200	0
4	AI4	G	201	43/43	0.80	0.58	100,137,201,215	0
4	AI4	V	301	43/43	0.81	0.45	101,135,192,215	0
4	AI4	Z	201	43/43	0.84	0.51	99,149,213,226	0
4	AI4	M	201	43/43	0.84	0.42	99,135,199,215	0

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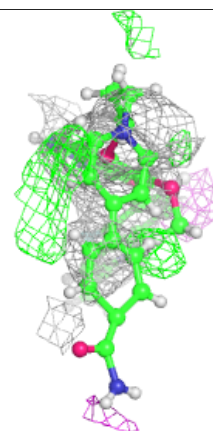
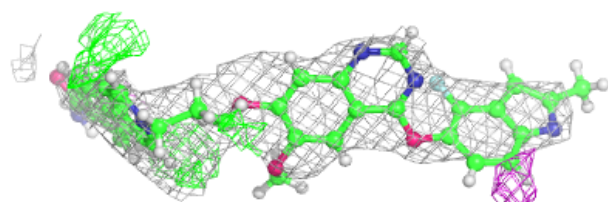
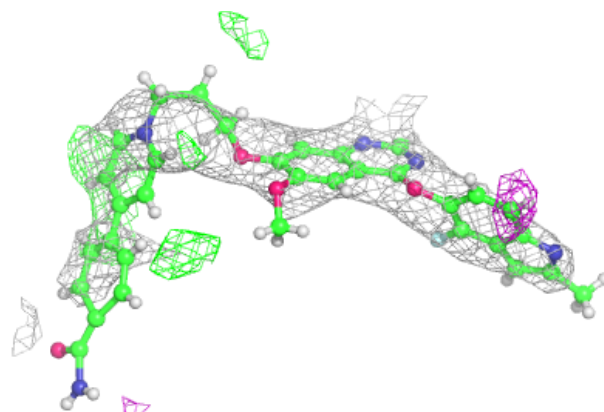
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
4	AI4	Y	201	43/43	0.84	0.58	102,136,195,209	0
4	AI4	R	201	43/43	0.85	0.48	94,136,203,221	0
4	AI4	N	301	43/43	0.86	0.42	90,134,190,200	0

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.

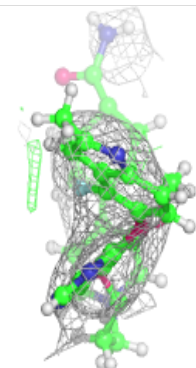
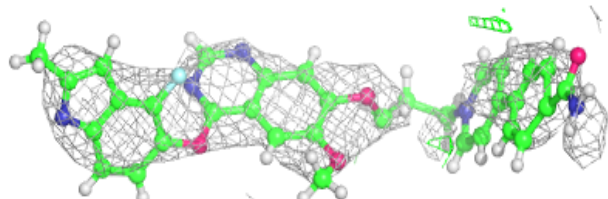
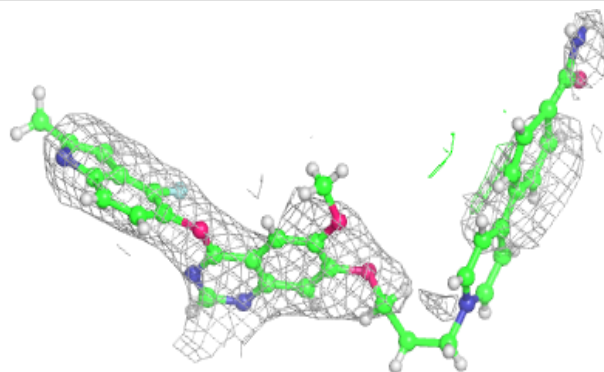


Electron density around AI4 U 201:

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

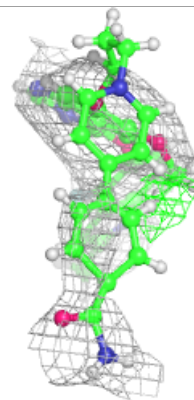
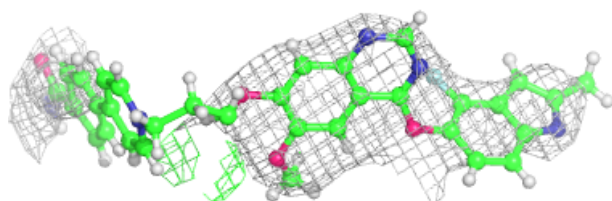
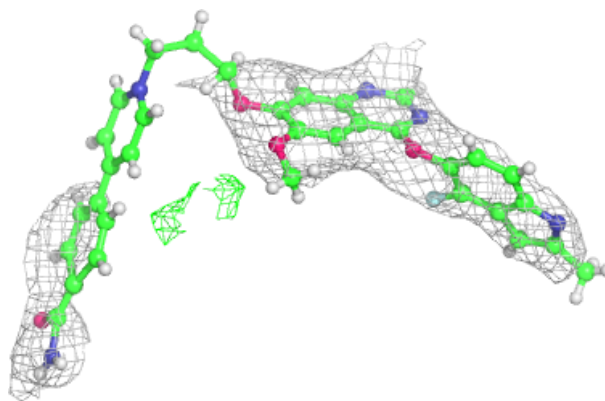
**Electron density around AI4 K 201:**

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

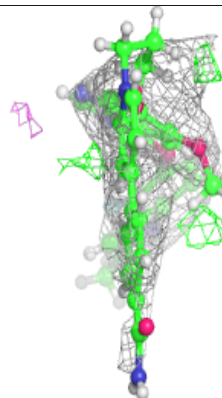
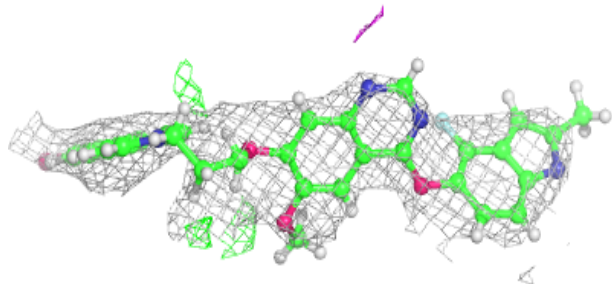
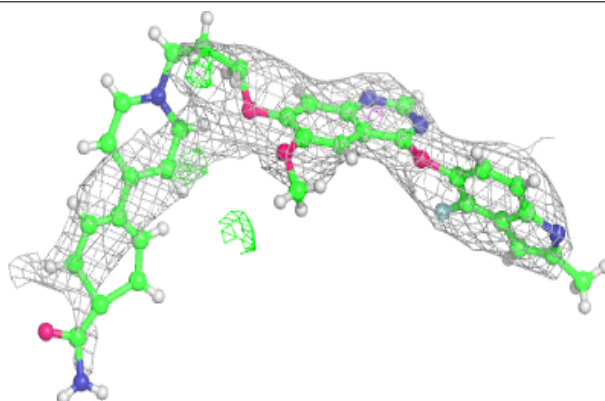


Electron density around AI4 B 201:

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

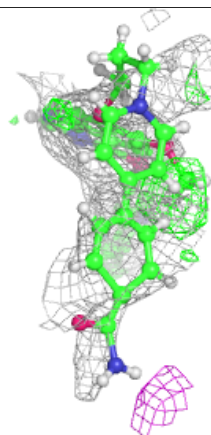
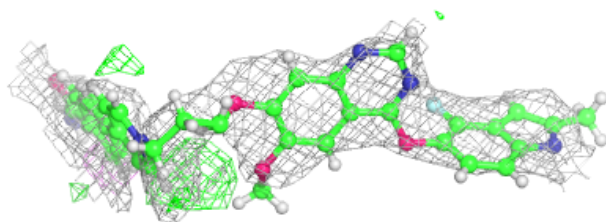
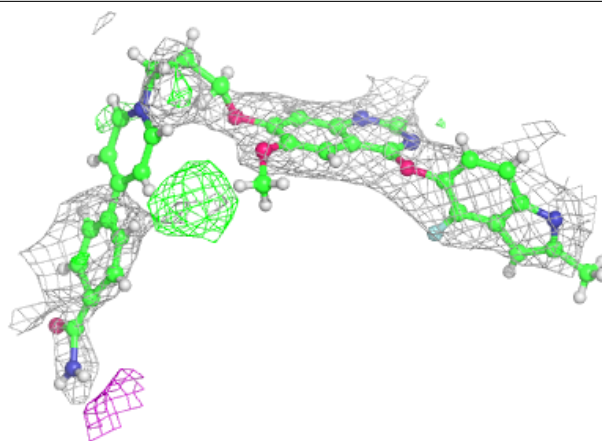
**Electron density around AI4 b 201:**

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



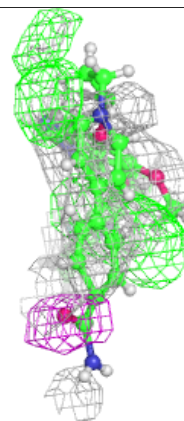
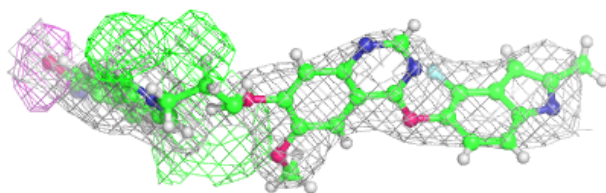
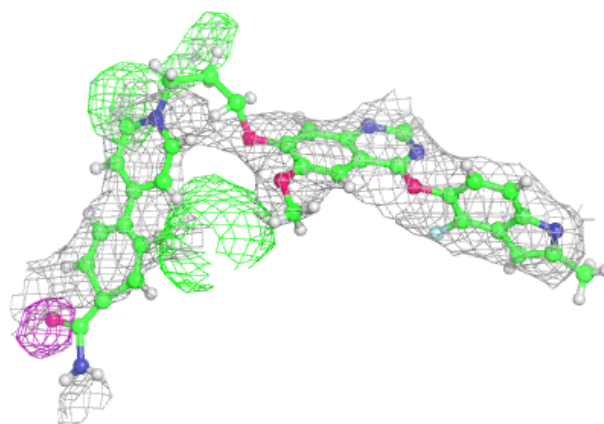
Electron density around AI4 I 201:

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

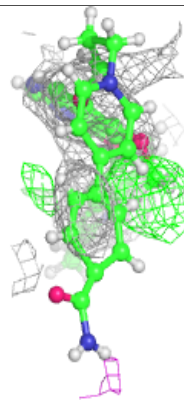
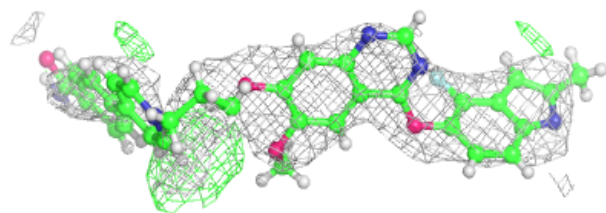
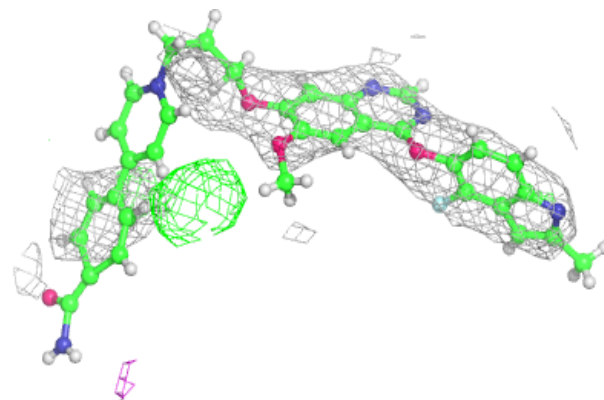


Electron density around AI4 F 301:

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

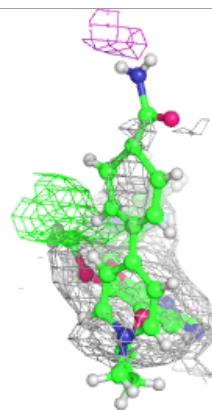
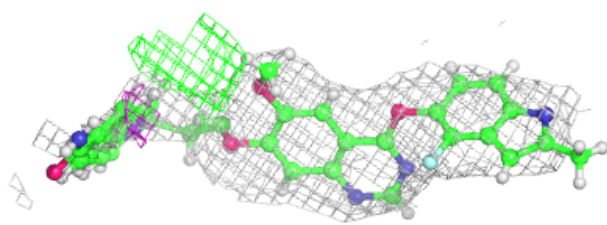
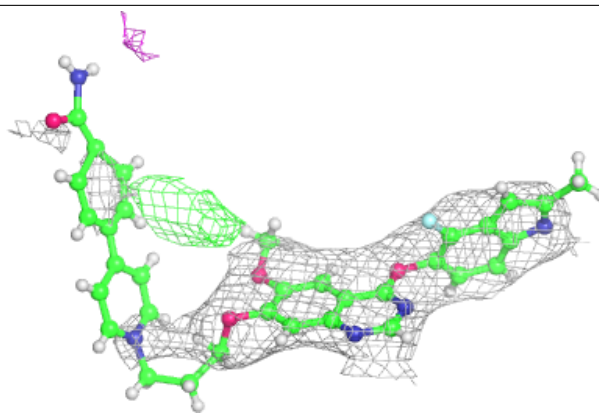
**Electron density around AI4 G 201:**

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

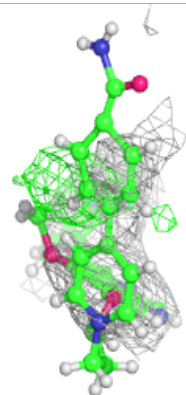
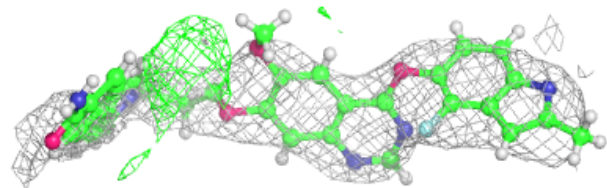
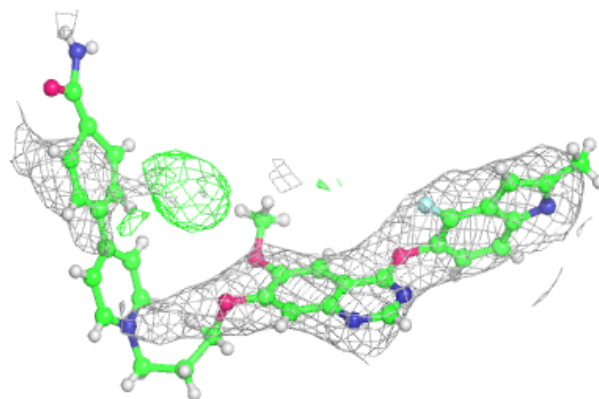


Electron density around AI4 V 301:

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

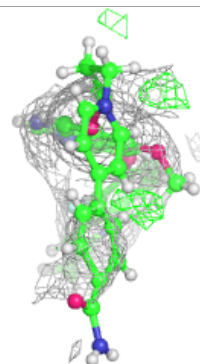
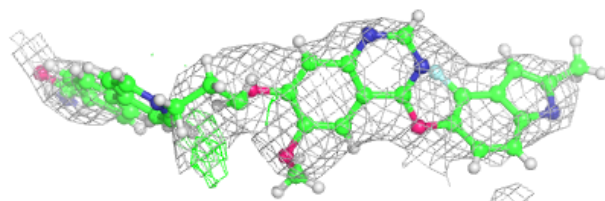
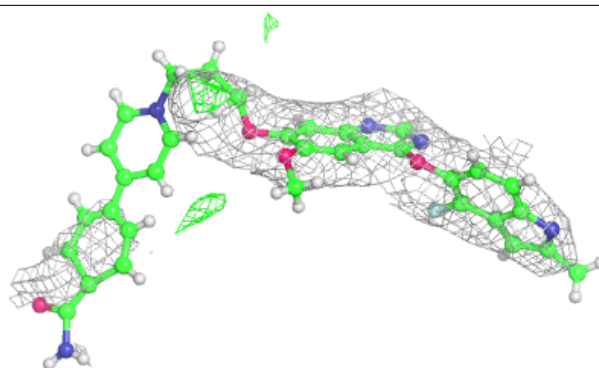
**Electron density around AI4 Z 201:**

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

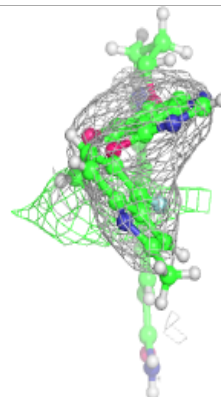
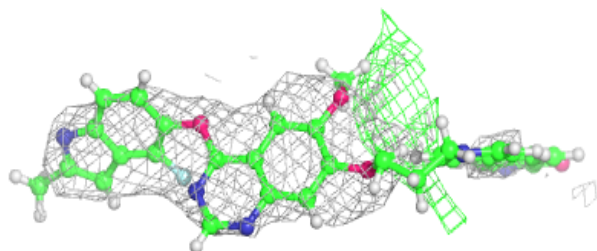
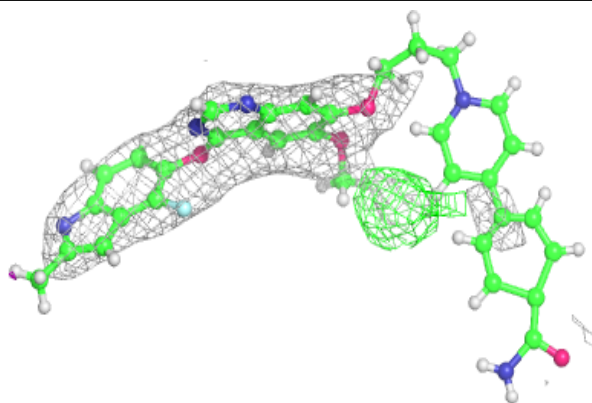


Electron density around AI4 M 201:

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

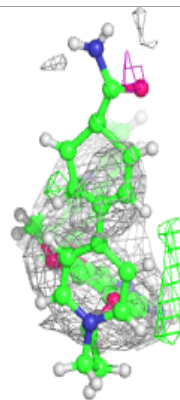
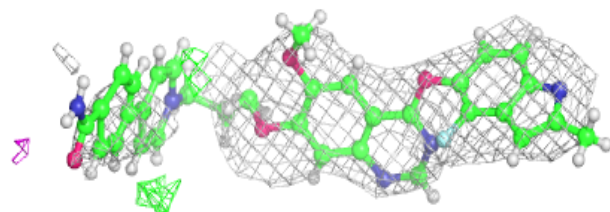
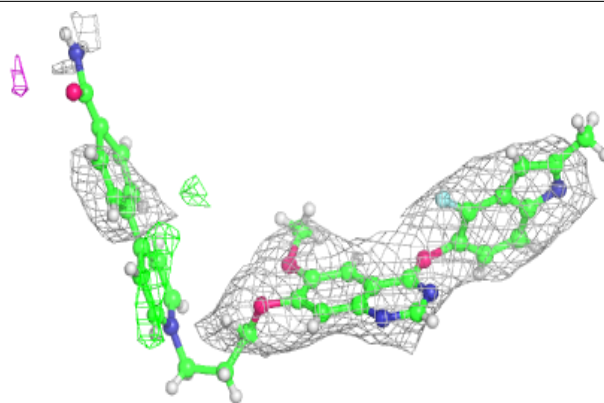
**Electron density around AI4 Y 201:**

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

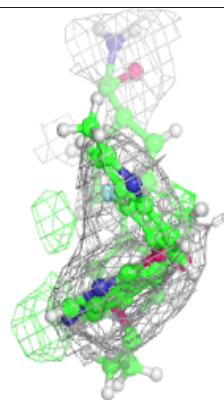
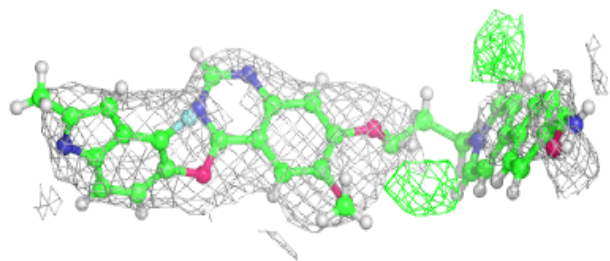
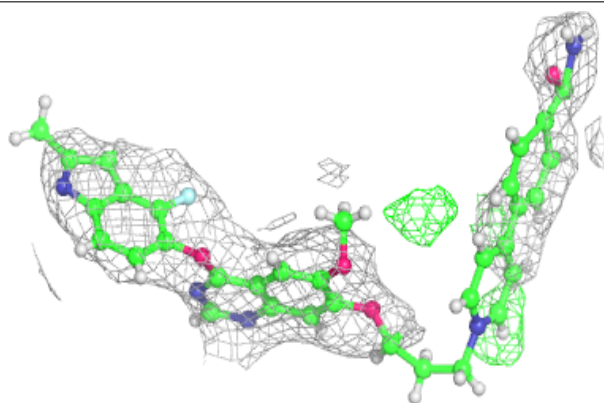


Electron density around AI4 R 201:

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

**Electron density around AI4 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)



6.5 Other polymers [i](#)

There are no such residues in this entry.