



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 12, 2026 – 03:27 pm BST

PDB ID : 32DY / pdb_000032dy
Title : RAD52 N-terminal domain in complex with compound FORX-12-864
Authors : Bocquet, N.; Powell, A.J.; Barker, I.A.; Gschell, M.; Schneider, F.F.
Deposited on : 2026-07-07
Resolution : 2.30 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4-5-2 with Phenix2.2
Mogul : 1.8.4, CSD as541be (2020)
Xtriage (Phenix) : 2.2
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.015 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.51

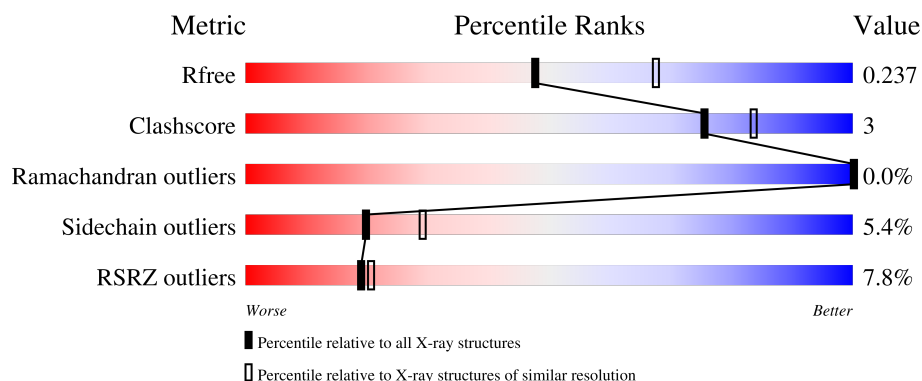
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.30 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	6319 (2.30-2.30)
Clashscore	190562	6919 (2.30-2.30)
Ramachandran outliers	187476	6854 (2.30-2.30)
Sidechain outliers	187428	6854 (2.30-2.30)
RSRZ outliers	180081	6325 (2.30-2.30)

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	215	6% 77% 8% • 13%
1	B	215	7% 77% 9% • 13%
1	C	215	7% 76% 10% • 13%
1	D	215	4% 78% 6% • 15%
1	E	215	5% 80% 7% • 12%

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Mol	Chain	Length	Quality of chain
1	F	215	
1	G	215	
1	H	215	
1	I	215	
1	J	215	
1	K	215	
1	L	215	
1	M	215	
1	N	215	
1	O	215	
1	P	215	
1	Q	215	
1	R	215	
1	S	215	
1	T	215	
1	U	215	
1	V	215	

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 34889 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 DNA repair protein RAD52 homolog.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	187	Total	C	N	O	S	0	1	0
			1477	923	266	280	8			
1	B	188	Total	C	N	O	S	0	1	0
			1485	928	268	281	8			
1	C	188	Total	C	N	O	S	0	0	0
			1467	915	264	279	9			
1	D	183	Total	C	N	O	S	0	0	0
			1433	893	258	273	9			
1	E	190	Total	C	N	O	S	0	0	0
			1486	927	269	281	9			
1	F	190	Total	C	N	O	S	0	0	0
			1480	922	269	281	8			
1	G	189	Total	C	N	O	S	0	0	0
			1478	922	268	280	8			
1	H	190	Total	C	N	O	S	0	0	0
			1483	925	269	281	8			
1	I	189	Total	C	N	O	S	0	0	0
			1466	915	264	279	8			
1	J	188	Total	C	N	O	S	0	1	0
			1484	926	269	281	8			
1	K	188	Total	C	N	O	S	0	1	0
			1480	924	268	280	8			
1	L	188	Total	C	N	O	S	0	1	0
			1468	915	265	280	8			
1	M	188	Total	C	N	O	S	0	0	0
			1463	914	263	278	8			
1	N	189	Total	C	N	O	S	0	0	0
			1478	924	267	279	8			
1	O	188	Total	C	N	O	S	0	0	0
			1476	922	267	279	8			
1	P	188	Total	C	N	O	S	0	0	0
			1473	919	267	279	8			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	Q	188	Total	C	N	O	S	0	1	0
			1484	926	269	281	8			
1	R	187	Total	C	N	O	S	0	1	0
			1461	910	264	279	8			
1	S	183	Total	C	N	O	S	0	0	0
			1430	891	258	273	8			
1	T	189	Total	C	N	O	S	0	1	0
			1483	926	267	282	8			
1	U	189	Total	C	N	O	S	0	0	0
			1472	919	265	280	8			
1	V	188	Total	C	N	O	S	0	0	0
			1470	916	267	279	8			

There are 110 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	GLY	-	expression tag	UNP P43351
A	-1	SER	-	expression tag	UNP P43351
A	0	HIS	-	expression tag	UNP P43351
A	102	ALA	LYS	engineered mutation	UNP P43351
A	133	ALA	LYS	engineered mutation	UNP P43351
B	-2	GLY	-	expression tag	UNP P43351
B	-1	SER	-	expression tag	UNP P43351
B	0	HIS	-	expression tag	UNP P43351
B	102	ALA	LYS	engineered mutation	UNP P43351
B	133	ALA	LYS	engineered mutation	UNP P43351
C	-2	GLY	-	expression tag	UNP P43351
C	-1	SER	-	expression tag	UNP P43351
C	0	HIS	-	expression tag	UNP P43351
C	102	ALA	LYS	engineered mutation	UNP P43351
C	133	ALA	LYS	engineered mutation	UNP P43351
D	-2	GLY	-	expression tag	UNP P43351
D	-1	SER	-	expression tag	UNP P43351
D	0	HIS	-	expression tag	UNP P43351
D	102	ALA	LYS	engineered mutation	UNP P43351
D	133	ALA	LYS	engineered mutation	UNP P43351
E	-2	GLY	-	expression tag	UNP P43351
E	-1	SER	-	expression tag	UNP P43351
E	0	HIS	-	expression tag	UNP P43351
E	102	ALA	LYS	engineered mutation	UNP P43351
E	133	ALA	LYS	engineered mutation	UNP P43351
F	-2	GLY	-	expression tag	UNP P43351
F	-1	SER	-	expression tag	UNP P43351

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Chain	Residue	Modelled	Actual	Comment	Reference
F	0	HIS	-	expression tag	UNP P43351
F	102	ALA	LYS	engineered mutation	UNP P43351
F	133	ALA	LYS	engineered mutation	UNP P43351
G	-2	GLY	-	expression tag	UNP P43351
G	-1	SER	-	expression tag	UNP P43351
G	0	HIS	-	expression tag	UNP P43351
G	102	ALA	LYS	engineered mutation	UNP P43351
G	133	ALA	LYS	engineered mutation	UNP P43351
H	-2	GLY	-	expression tag	UNP P43351
H	-1	SER	-	expression tag	UNP P43351
H	0	HIS	-	expression tag	UNP P43351
H	102	ALA	LYS	engineered mutation	UNP P43351
H	133	ALA	LYS	engineered mutation	UNP P43351
I	-2	GLY	-	expression tag	UNP P43351
I	-1	SER	-	expression tag	UNP P43351
I	0	HIS	-	expression tag	UNP P43351
I	102	ALA	LYS	engineered mutation	UNP P43351
I	133	ALA	LYS	engineered mutation	UNP P43351
J	-2	GLY	-	expression tag	UNP P43351
J	-1	SER	-	expression tag	UNP P43351
J	0	HIS	-	expression tag	UNP P43351
J	102	ALA	LYS	engineered mutation	UNP P43351
J	133	ALA	LYS	engineered mutation	UNP P43351
K	-2	GLY	-	expression tag	UNP P43351
K	-1	SER	-	expression tag	UNP P43351
K	0	HIS	-	expression tag	UNP P43351
K	102	ALA	LYS	engineered mutation	UNP P43351
K	133	ALA	LYS	engineered mutation	UNP P43351
L	-2	GLY	-	expression tag	UNP P43351
L	-1	SER	-	expression tag	UNP P43351
L	0	HIS	-	expression tag	UNP P43351
L	102	ALA	LYS	engineered mutation	UNP P43351
L	133	ALA	LYS	engineered mutation	UNP P43351
M	-2	GLY	-	expression tag	UNP P43351
M	-1	SER	-	expression tag	UNP P43351
M	0	HIS	-	expression tag	UNP P43351
M	102	ALA	LYS	engineered mutation	UNP P43351
M	133	ALA	LYS	engineered mutation	UNP P43351
N	-2	GLY	-	expression tag	UNP P43351
N	-1	SER	-	expression tag	UNP P43351
N	0	HIS	-	expression tag	UNP P43351
N	102	ALA	LYS	engineered mutation	UNP P43351

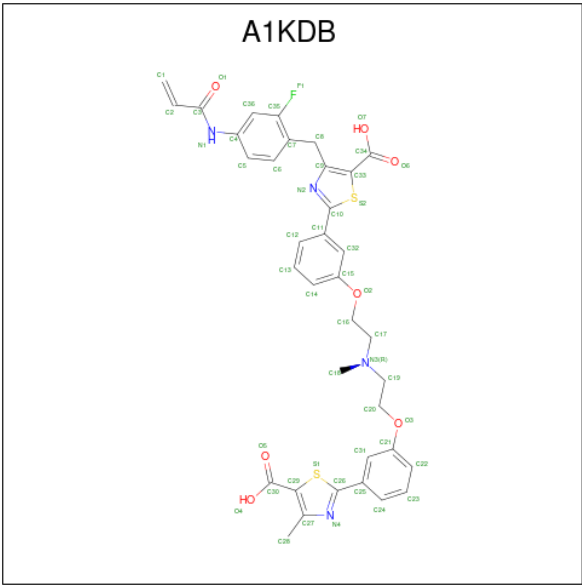
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Chain	Residue	Modelled	Actual	Comment	Reference
N	133	ALA	LYS	engineered mutation	UNP P43351
O	-2	GLY	-	expression tag	UNP P43351
O	-1	SER	-	expression tag	UNP P43351
O	0	HIS	-	expression tag	UNP P43351
O	102	ALA	LYS	engineered mutation	UNP P43351
O	133	ALA	LYS	engineered mutation	UNP P43351
P	-2	GLY	-	expression tag	UNP P43351
P	-1	SER	-	expression tag	UNP P43351
P	0	HIS	-	expression tag	UNP P43351
P	102	ALA	LYS	engineered mutation	UNP P43351
P	133	ALA	LYS	engineered mutation	UNP P43351
Q	-2	GLY	-	expression tag	UNP P43351
Q	-1	SER	-	expression tag	UNP P43351
Q	0	HIS	-	expression tag	UNP P43351
Q	102	ALA	LYS	engineered mutation	UNP P43351
Q	133	ALA	LYS	engineered mutation	UNP P43351
R	-2	GLY	-	expression tag	UNP P43351
R	-1	SER	-	expression tag	UNP P43351
R	0	HIS	-	expression tag	UNP P43351
R	102	ALA	LYS	engineered mutation	UNP P43351
R	133	ALA	LYS	engineered mutation	UNP P43351
S	-2	GLY	-	expression tag	UNP P43351
S	-1	SER	-	expression tag	UNP P43351
S	0	HIS	-	expression tag	UNP P43351
S	102	ALA	LYS	engineered mutation	UNP P43351
S	133	ALA	LYS	engineered mutation	UNP P43351
T	-2	GLY	-	expression tag	UNP P43351
T	-1	SER	-	expression tag	UNP P43351
T	0	HIS	-	expression tag	UNP P43351
T	102	ALA	LYS	engineered mutation	UNP P43351
T	133	ALA	LYS	engineered mutation	UNP P43351
U	-2	GLY	-	expression tag	UNP P43351
U	-1	SER	-	expression tag	UNP P43351
U	0	HIS	-	expression tag	UNP P43351
U	102	ALA	LYS	engineered mutation	UNP P43351
U	133	ALA	LYS	engineered mutation	UNP P43351
V	-2	GLY	-	expression tag	UNP P43351
V	-1	SER	-	expression tag	UNP P43351
V	0	HIS	-	expression tag	UNP P43351
V	102	ALA	LYS	engineered mutation	UNP P43351
V	133	ALA	LYS	engineered mutation	UNP P43351

- Molecule 2 is 2-[3-[2-[2-[3-[5-carboxy-4-[[2-fluoranyl-4-(prop-2-enoylamino)phenyl]methyl]-1,

3-thiazol-2-yl]phenoxy]ethyl-methyl-amino]ethoxy]phenyl]-4-methyl-1,3-thiazole-5-carboxylic acid (CCD ID: A1KDB) (formula: C₃₆H₃₃FN₄O₇S₂) (labeled as "Ligand of Interest" by depositor).



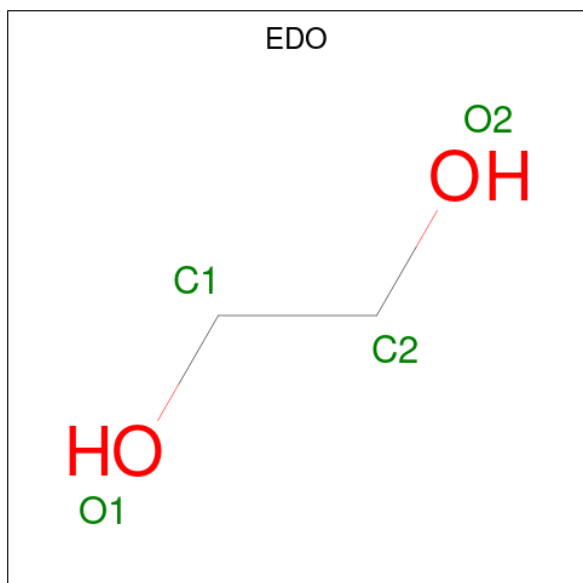
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	B	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	C	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	D	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	E	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	F	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	G	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	H	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	I	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	J	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	K	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	L	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		

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Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	M	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	N	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	O	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	P	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	Q	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	R	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	S	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	T	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	U	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		
2	V	1	Total	C	F	N	O	S	0	0
			50	36	1	4	7	2		

- Molecule 3 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: C₂H₆O₂).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			4	2	2		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total 4	C 2	O 2	0	0
3	A	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	C	1	Total 4	C 2	O 2	0	0
3	D	1	Total 4	C 2	O 2	0	0
3	E	1	Total 4	C 2	O 2	0	0
3	E	1	Total 4	C 2	O 2	0	0
3	F	1	Total 4	C 2	O 2	0	0
3	G	1	Total 4	C 2	O 2	0	0
3	H	1	Total 4	C 2	O 2	0	0
3	I	1	Total 4	C 2	O 2	0	0
3	J	1	Total 4	C 2	O 2	0	0
3	K	1	Total 4	C 2	O 2	0	0
3	L	1	Total 4	C 2	O 2	0	0
3	M	1	Total 4	C 2	O 2	0	0
3	N	1	Total 4	C 2	O 2	0	0
3	O	1	Total 4	C 2	O 2	0	0
3	O	1	Total 4	C 2	O 2	0	0
3	P	1	Total 4	C 2	O 2	0	0
3	Q	1	Total 4	C 2	O 2	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	Q	1	Total C O 4 2 2	0	0
3	Q	1	Total C O 4 2 2	0	0
3	R	1	Total C O 4 2 2	0	0
3	S	1	Total C O 4 2 2	0	0
3	T	1	Total C O 4 2 2	0	0
3	U	1	Total C O 4 2 2	0	0
3	V	1	Total C O 4 2 2	0	0

- Molecule 4 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total Cl 1 1	0	0
4	B	1	Total Cl 1 1	0	0
4	C	1	Total Cl 1 1	0	0
4	D	1	Total Cl 1 1	0	0
4	E	2	Total Cl 2 2	0	0
4	F	1	Total Cl 1 1	0	0
4	G	1	Total Cl 1 1	0	0
4	H	1	Total Cl 1 1	0	0
4	I	1	Total Cl 1 1	0	0
4	J	1	Total Cl 1 1	0	0
4	K	1	Total Cl 1 1	0	0
4	L	1	Total Cl 1 1	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	M	1	Total Cl 1 1	0	0
4	N	1	Total Cl 1 1	0	0
4	O	1	Total Cl 1 1	0	0
4	P	1	Total Cl 1 1	0	0
4	Q	1	Total Cl 1 1	0	0
4	R	1	Total Cl 1 1	0	0
4	S	2	Total Cl 2 2	0	0
4	T	1	Total Cl 1 1	0	0
4	U	1	Total Cl 1 1	0	0
4	V	1	Total Cl 1 1	0	0

- Molecule 5 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	62	Total O 62 62	0	0
5	B	80	Total O 80 80	0	0
5	C	84	Total O 84 84	0	0
5	D	74	Total O 74 74	0	0
5	E	54	Total O 54 54	0	0
5	F	42	Total O 42 42	0	0
5	G	47	Total O 47 47	0	0
5	H	22	Total O 22 22	0	0
5	I	34	Total O 34 34	0	0

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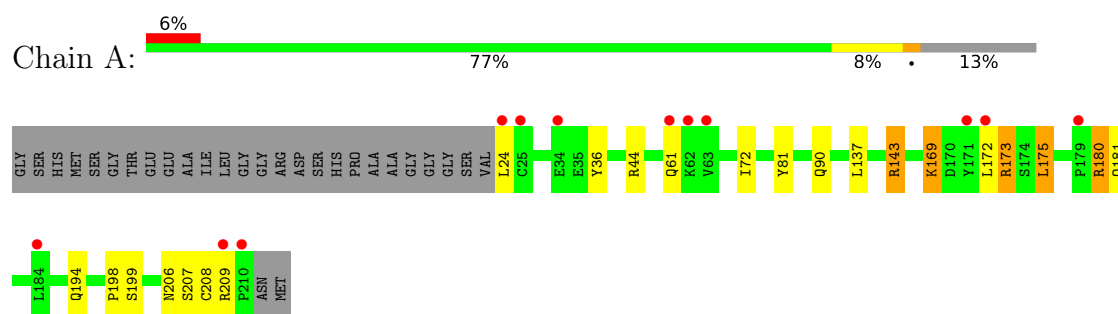
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	J	39	Total 39	O 39	0	0
5	K	40	Total 40	O 40	0	0
5	L	74	Total 74	O 74	0	0
5	M	68	Total 68	O 68	0	0
5	N	67	Total 67	O 67	0	0
5	O	77	Total 77	O 77	0	0
5	P	72	Total 72	O 72	0	0
5	Q	81	Total 81	O 81	0	0
5	R	65	Total 65	O 65	0	0
5	S	40	Total 40	O 40	0	0
5	T	49	Total 49	O 49	0	0
5	U	49	Total 49	O 49	0	0
5	V	52	Total 52	O 52	0	0

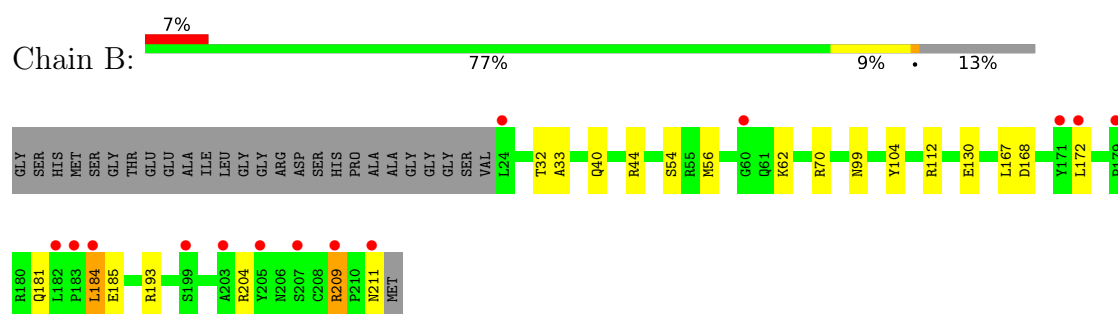
3 Residue-property plots [i](#)

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.

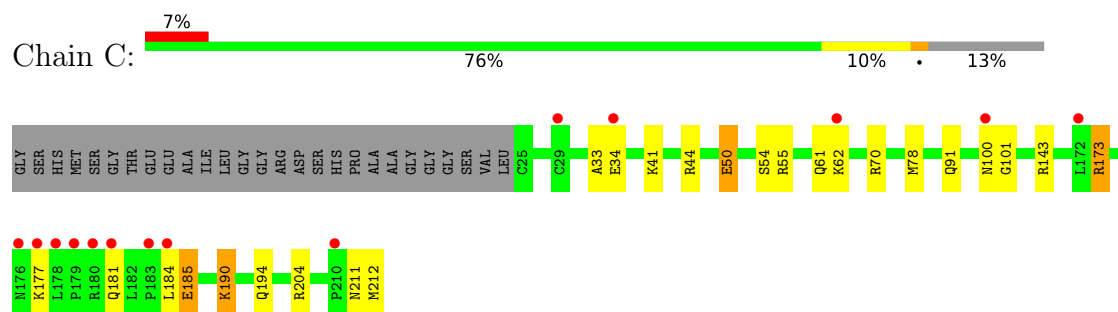
- Molecule 1: DNA repair protein RAD52 homolog



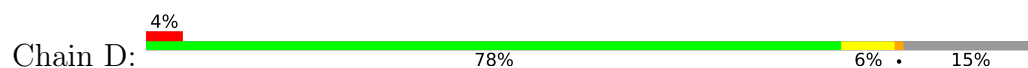
- Molecule 1: DNA repair protein RAD52 homolog

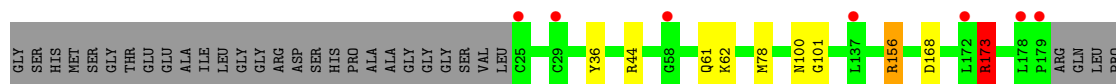


- Molecule 1: DNA repair protein RAD52 homolog

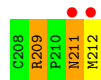
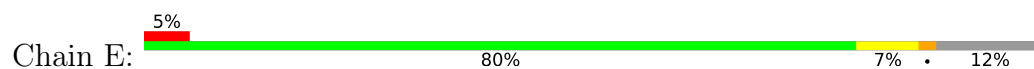


- Molecule 1: DNA repair protein RAD52 homolog

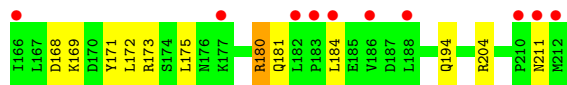
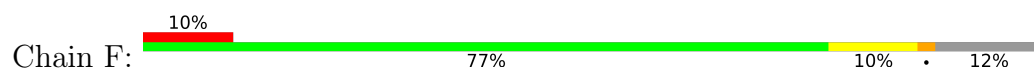




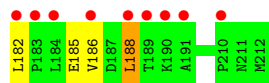
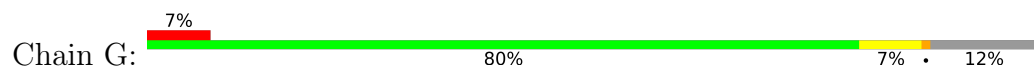
- Molecule 1: DNA repair protein RAD52 homolog



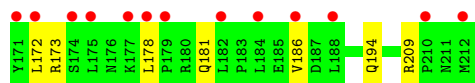
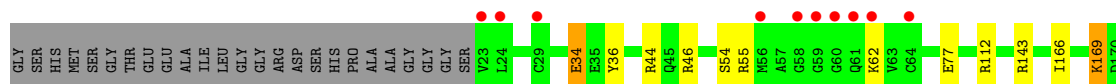
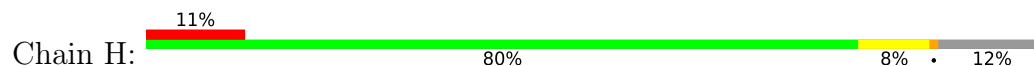
- Molecule 1: DNA repair protein RAD52 homolog



- Molecule 1: DNA repair protein RAD52 homolog



- Molecule 1: DNA repair protein RAD52 homolog



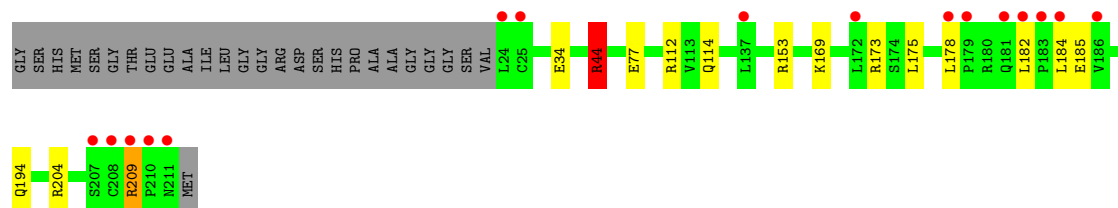
- Molecule 1: DNA repair protein RAD52 homolog

Chain I: 



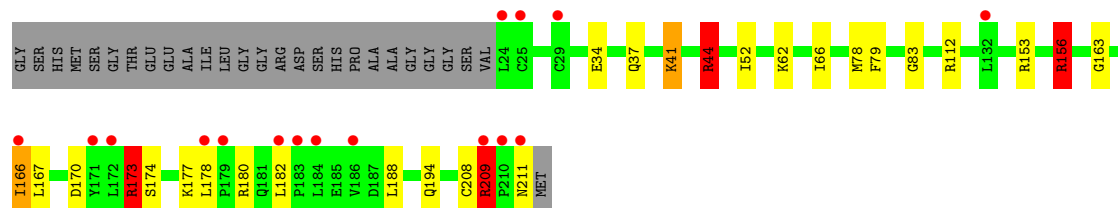
- Molecule 1: DNA repair protein RAD52 homolog

Chain J: 



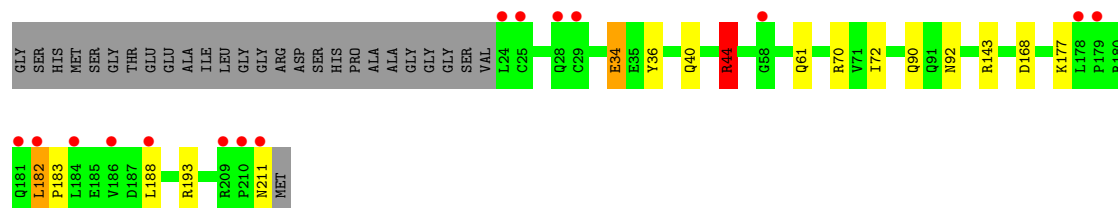
- Molecule 1: DNA repair protein RAD52 homolog

Chain K: 



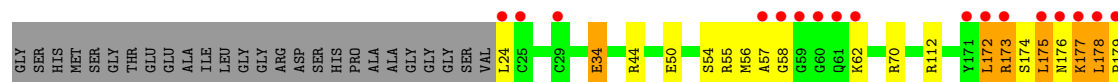
- Molecule 1: DNA repair protein RAD52 homolog

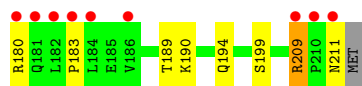
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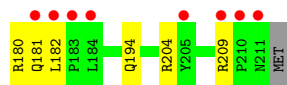
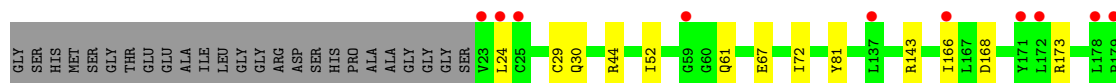
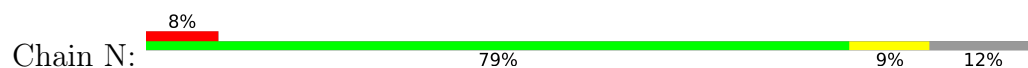
- Molecule 1: DNA repair protein RAD52 homolog

Chain M: 

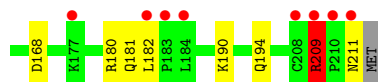
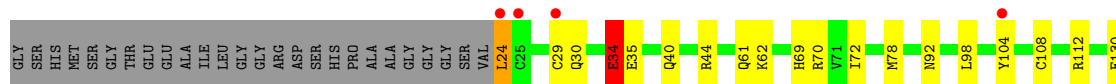
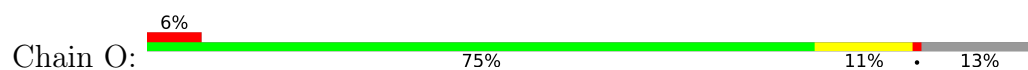




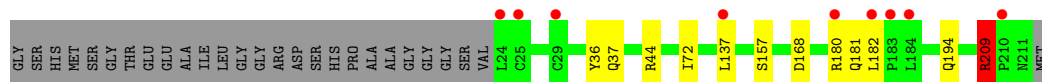
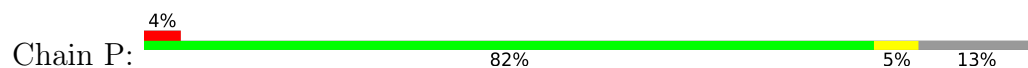
- Molecule 1: DNA repair protein RAD52 homolog



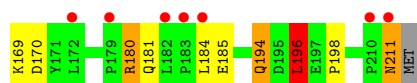
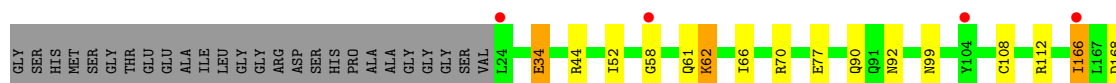
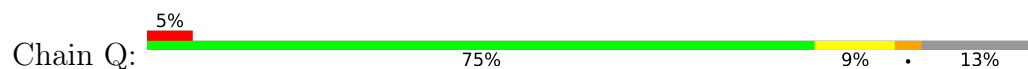
- Molecule 1: DNA repair protein RAD52 homolog



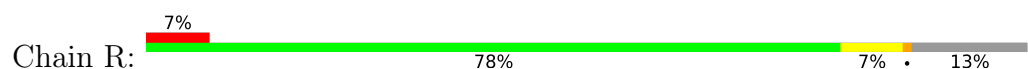
- Molecule 1: DNA repair protein RAD52 homolog

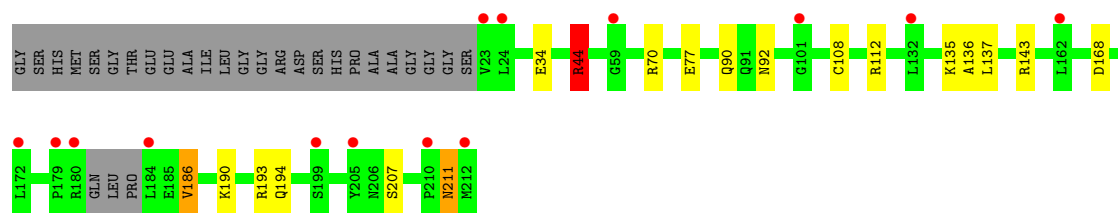


- Molecule 1: DNA repair protein RAD52 homolog

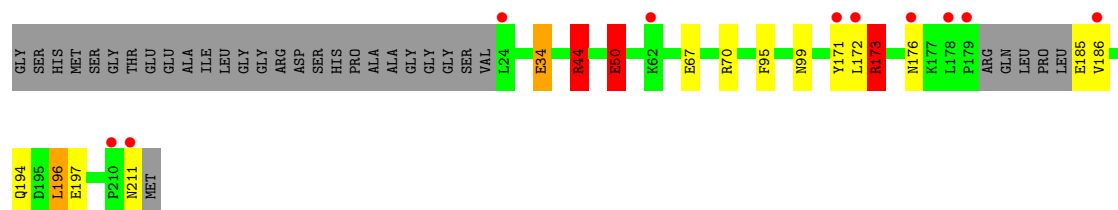
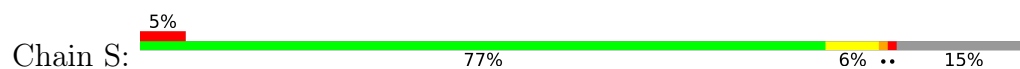


- Molecule 1: DNA repair protein RAD52 homolog

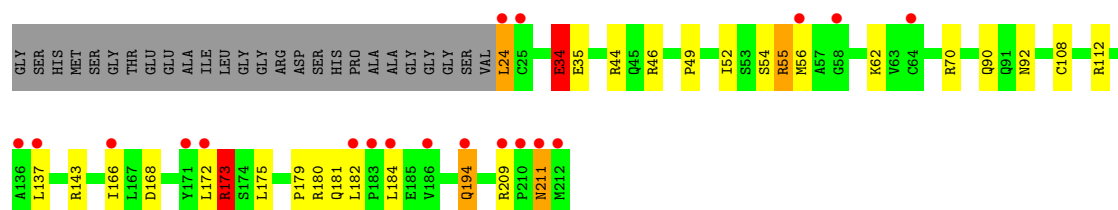
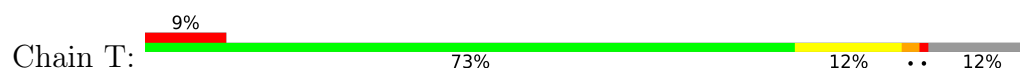




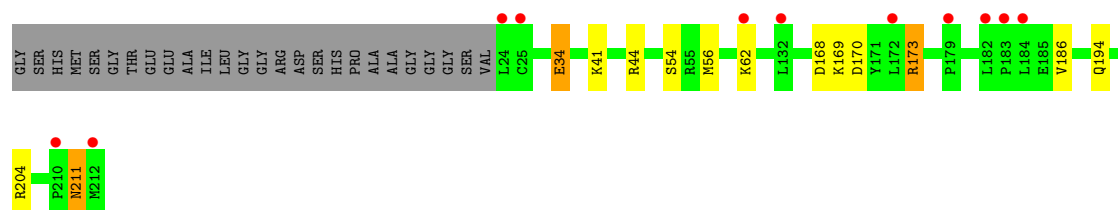
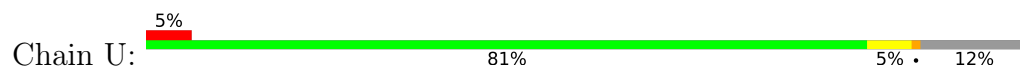
• Molecule 1: DNA repair protein RAD52 homolog



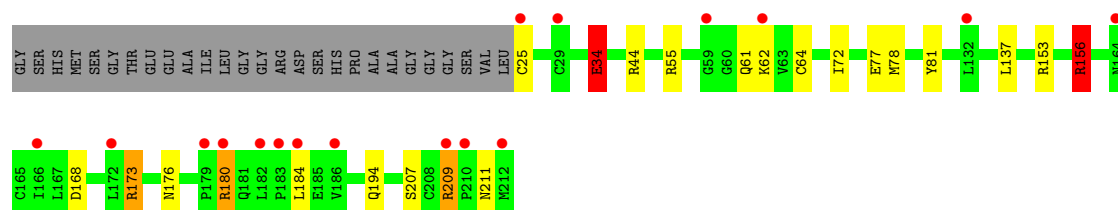
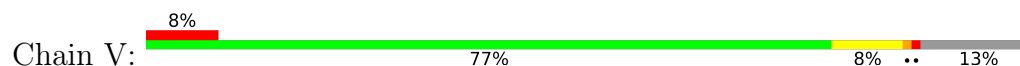
• Molecule 1: DNA repair protein RAD52 homolog



• Molecule 1: DNA repair protein RAD52 homolog



• Molecule 1: DNA repair protein RAD52 homolog



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	143.70Å 146.68Å 252.68Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	73.45 – 2.30 73.45 – 2.30	Depositor EDS
% Data completeness (in resolution range)	100.0 (73.45-2.30) 100.0 (73.45-2.30)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.99 (at 2.07Å)	Xtriage
Refinement program	REFMAC 5.8.0419	Depositor
R, R_{free}	0.203 , 0.234 0.208 , 0.237	Depositor DCC
R_{free} test set	15755 reflections (4.87%)	wwPDB-VP
Wilson B-factor (Å ²)	32.1	Xtriage
Anisotropy	0.087	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 65.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	0.019 for k,h,-l	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	34889	wwPDB-VP
Average B, all atoms (Å ²)	66.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.13% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: A1KDB, EDO, CL

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.64	0/1502	0.98	3/2022 (0.1%)
1	B	0.66	0/1511	1.01	4/2035 (0.2%)
1	C	0.69	0/1492	1.09	5/2009 (0.2%)
1	D	0.61	0/1456	1.10	8/1957 (0.4%)
1	E	0.60	0/1511	0.99	7/2034 (0.3%)
1	F	0.70	0/1505	1.08	4/2027 (0.2%)
1	G	0.62	0/1503	1.01	5/2024 (0.2%)
1	H	0.60	0/1508	0.99	5/2031 (0.2%)
1	I	0.61	0/1491	0.97	3/2009 (0.1%)
1	J	0.64	0/1509	0.97	2/2032 (0.1%)
1	K	0.71	0/1505	1.10	8/2027 (0.4%)
1	L	0.61	0/1493	0.99	4/2012 (0.2%)
1	M	0.65	0/1488	1.04	5/2005 (0.2%)
1	N	0.63	0/1503	1.01	5/2024 (0.2%)
1	O	0.67	0/1501	1.12	9/2021 (0.4%)
1	P	0.61	0/1498	0.99	4/2017 (0.2%)
1	Q	0.70	0/1509	1.09	9/2032 (0.4%)
1	R	0.66	0/1484	1.03	3/1997 (0.2%)
1	S	0.57	0/1453	1.02	4/1954 (0.2%)
1	T	0.65	0/1508	1.16	11/2032 (0.5%)
1	U	0.61	0/1497	1.01	7/2017 (0.3%)
1	V	0.63	0/1495	1.05	9/2013 (0.4%)
All	All	0.64	0/32922	1.04	124/44331 (0.3%)

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	A	0	3

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Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	1
1	C	0	5
1	D	0	1
1	E	0	1
1	F	0	4
1	G	0	1
1	H	0	3
1	I	0	3
1	J	0	4
1	K	0	4
1	L	0	3
1	M	0	3
1	N	0	2
1	O	0	3
1	P	0	1
1	Q	0	3
1	R	0	4
1	S	0	2
1	T	0	4
1	U	0	1
1	V	0	4
All	All	0	60

There are no bond length outliers.

All (124) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	156	ARG	CB-CG-CD	19.70	156.60	111.30
1	T	173	ARG	CD-NE-CZ	15.91	146.67	124.40
1	T	173	ARG	NE-CZ-NH2	13.59	131.43	119.20
1	T	173	ARG	NE-CZ-NH1	-11.56	109.94	121.50
1	O	209	ARG	CG-CD-NE	10.01	134.02	112.00
1	O	35	GLU	CG-CD-OE2	-8.89	97.95	118.40
1	P	209	ARG	CB-CG-CD	8.56	131.00	111.30
1	K	173	ARG	CA-CB-CG	8.56	131.23	114.10
1	O	35	GLU	CG-CD-OE1	8.16	137.17	118.40
1	K	156	ARG	CB-CG-CD	8.03	129.78	111.30
1	C	100	ASN	CB-CA-C	7.94	126.23	110.42
1	Q	62	LYS	CG-CD-CE	7.19	127.83	111.30
1	V	173	ARG	NE-CZ-NH1	-7.16	114.34	121.50
1	O	209	ARG	CB-CG-CD	7.01	127.43	111.30
1	S	50	GLU	CB-CG-CD	7.01	124.53	112.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	V	156	ARG	CB-CG-CD	6.82	126.99	111.30
1	V	156	ARG	NE-CZ-NH1	-6.72	114.78	121.50
1	M	177	LYS	N-CA-C	-6.63	104.23	113.37
1	D	62	LYS	CG-CD-CE	6.54	126.34	111.30
1	N	67	GLU	CG-CD-OE2	-6.45	103.57	118.40
1	D	156	ARG	CD-NE-CZ	6.43	133.40	124.40
1	Q	196	LEU	CB-CG-CD1	6.41	129.93	110.70
1	C	190	LYS	CB-CG-CD	6.34	125.89	111.30
1	K	209	ARG	CA-CB-CG	6.32	126.73	114.10
1	S	50	GLU	CA-CB-CG	6.23	126.56	114.10
1	O	44	ARG	CB-CA-C	-6.21	98.75	110.67
1	D	44	ARG	CB-CA-C	-6.20	98.77	110.67
1	M	44	ARG	CB-CA-C	-6.20	98.78	110.67
1	V	34	GLU	CB-CG-CD	6.16	123.07	112.60
1	L	44	ARG	CB-CA-C	-6.15	98.86	110.67
1	T	35	GLU	CG-CD-OE2	-6.11	104.34	118.40
1	K	209	ARG	CB-CG-CD	6.10	125.33	111.30
1	T	44	ARG	CB-CA-C	-6.06	99.03	110.67
1	U	44	ARG	CB-CA-C	-6.05	99.05	110.67
1	H	44	ARG	CB-CA-C	-6.04	99.06	110.67
1	K	156	ARG	NE-CZ-NH1	-6.03	115.47	121.50
1	G	44	ARG	CB-CA-C	-6.02	99.11	110.67
1	J	44	ARG	CB-CA-C	-6.02	99.11	110.67
1	D	44	ARG	CG-CD-NE	-6.01	98.77	112.00
1	M	34	GLU	CG-CD-OE2	6.01	132.22	118.40
1	V	44	ARG	CB-CA-C	-6.01	99.13	110.67
1	B	44	ARG	CB-CA-C	-6.00	99.16	110.67
1	V	173	ARG	NE-CZ-NH2	6.00	124.59	119.20
1	E	44	ARG	CB-CA-C	-5.94	99.26	110.67
1	R	44	ARG	CB-CA-C	-5.94	99.26	110.67
1	I	44	ARG	CB-CA-C	-5.93	99.27	110.67
1	O	44	ARG	CG-CD-NE	-5.93	98.96	112.00
1	T	194	GLN	CB-CG-CD	5.93	122.68	112.60
1	I	34	GLU	CB-CG-CD	5.91	122.64	112.60
1	S	44	ARG	CB-CA-C	-5.89	99.35	110.67
1	S	34	GLU	CB-CG-CD	5.88	122.60	112.60
1	A	44	ARG	CB-CA-C	-5.88	99.38	110.67
1	N	67	GLU	CG-CD-OE1	5.87	131.90	118.40
1	K	44	ARG	CB-CA-C	-5.84	99.45	110.67
1	G	44	ARG	CG-CD-NE	-5.84	99.15	112.00
1	N	44	ARG	CB-CA-C	-5.84	99.46	110.67
1	Q	170	ASP	CA-CB-CG	5.84	118.44	112.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	P	44	ARG	CB-CA-C	-5.83	99.47	110.67
1	F	44	ARG	CB-CA-C	-5.83	99.47	110.67
1	V	44	ARG	CG-CD-NE	-5.82	99.19	112.00
1	B	168	ASP	CA-CB-CG	5.80	118.40	112.60
1	U	173	ARG	CA-CB-CG	5.80	125.69	114.10
1	L	168	ASP	CA-CB-CG	5.78	118.38	112.60
1	Q	44	ARG	CB-CA-C	-5.78	99.58	110.67
1	T	173	ARG	CG-CD-NE	-5.77	99.31	112.00
1	M	209	ARG	CB-CG-CD	5.76	124.56	111.30
1	T	34	GLU	CB-CG-CD	5.75	122.37	112.60
1	U	34	GLU	CB-CG-CD	5.74	122.35	112.60
1	Q	34	GLU	CG-CD-OE2	5.70	131.51	118.40
1	D	156	ARG	NE-CZ-NH2	-5.69	114.08	119.20
1	C	50	GLU	CB-CG-CD	5.68	122.26	112.60
1	L	177	LYS	CG-CD-CE	5.68	124.37	111.30
1	B	44	ARG	CG-CD-NE	-5.67	99.53	112.00
1	V	168	ASP	CA-CB-CG	5.65	118.25	112.60
1	Q	194	GLN	CA-CB-CG	5.64	125.39	114.10
1	D	173	ARG	CD-NE-CZ	5.63	132.28	124.40
1	O	34	GLU	CB-CG-CD	5.62	122.16	112.60
1	O	168	ASP	CA-CB-CG	5.62	118.22	112.60
1	C	173	ARG	CG-CD-NE	5.60	124.33	112.00
1	K	37	GLN	CG-CD-NE2	-5.58	108.03	116.40
1	H	34	GLU	CB-CG-CD	5.57	122.07	112.60
1	F	44	ARG	CG-CD-NE	-5.56	99.77	112.00
1	R	168	ASP	CA-CB-CG	5.56	118.16	112.60
1	M	44	ARG	CG-CD-NE	-5.55	99.79	112.00
1	J	34	GLU	CG-CD-OE2	5.55	131.16	118.40
1	Q	44	ARG	CG-CD-NE	-5.53	99.84	112.00
1	Q	169	LYS	CG-CD-CE	5.52	123.99	111.30
1	L	34	GLU	CG-CD-OE2	5.50	131.06	118.40
1	T	44	ARG	CG-CD-NE	-5.48	99.94	112.00
1	U	41	LYS	CG-CD-CE	5.48	123.90	111.30
1	U	168	ASP	CA-CB-CG	5.45	118.05	112.60
1	N	44	ARG	CG-CD-NE	-5.43	100.05	112.00
1	G	168	ASP	CA-CB-CG	5.43	118.03	112.60
1	H	44	ARG	CG-CD-NE	-5.41	100.09	112.00
1	D	168	ASP	CA-CB-CG	5.40	118.00	112.60
1	F	168	ASP	CA-CB-CG	5.40	118.00	112.60
1	T	35	GLU	CG-CD-OE1	5.40	130.82	118.40
1	A	44	ARG	CG-CD-NE	-5.38	100.16	112.00
1	G	156	ARG	NE-CZ-NH1	-5.38	116.12	121.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	P	37	GLN	CG-CD-NE2	-5.38	108.34	116.40
1	O	34	GLU	CG-CD-OE2	-5.34	106.12	118.40
1	E	34	GLU	CG-CD-OE2	5.29	130.57	118.40
1	E	209	ARG	CG-CD-NE	5.29	123.63	112.00
1	P	168	ASP	CA-CB-CG	5.27	117.87	112.60
1	E	44	ARG	CG-CD-NE	-5.27	100.41	112.00
1	V	209	ARG	CG-CD-NE	5.22	123.47	112.00
1	U	170	ASP	CA-CB-CG	5.21	117.81	112.60
1	A	143	ARG	NE-CZ-NH1	-5.19	116.31	121.50
1	E	190	LYS	CB-CG-CD	5.18	123.21	111.30
1	T	168	ASP	CA-CB-CG	5.17	117.77	112.60
1	I	168	ASP	CA-CB-CG	5.17	117.77	112.60
1	E	180	ARG	CA-CB-CG	5.15	124.41	114.10
1	U	44	ARG	CG-CD-NE	-5.15	100.66	112.00
1	B	209	ARG	CG-CD-NE	5.15	123.33	112.00
1	N	168	ASP	CA-CB-CG	5.13	117.73	112.60
1	F	34	GLU	CA-CB-CG	5.12	124.35	114.10
1	C	177	LYS	CB-CG-CD	5.12	123.07	111.30
1	G	170	ASP	CA-CB-CG	5.11	117.70	112.60
1	K	34	GLU	CG-CD-OE2	5.09	130.10	118.40
1	H	34	GLU	CG-CD-OE1	5.07	130.05	118.40
1	Q	168	ASP	CA-CB-CG	5.05	117.65	112.60
1	R	34	GLU	CB-CG-CD	5.03	121.15	112.60
1	H	173	ARG	N-CA-C	-5.01	105.71	111.07
1	E	207	SER	CA-CB-OG	5.00	121.10	111.10

There are no chirality outliers.

All (60) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	143	ARG	Sidechain
1	A	173	ARG	Sidechain
1	A	180	ARG	Sidechain
1	B	70	ARG	Sidechain
1	C	143	ARG	Sidechain
1	C	173	ARG	Sidechain
1	C	44	ARG	Sidechain
1	C	55	ARG	Sidechain
1	C	70	ARG	Sidechain
1	D	173	ARG	Sidechain
1	E	173	ARG	Sidechain
1	F	112	ARG	Sidechain

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Mol	Chain	Res	Type	Group
1	F	173	ARG	Sidechain
1	F	180	ARG	Sidechain
1	F	55	ARG	Sidechain
1	G	70	ARG	Sidechain
1	H	143	ARG	Sidechain
1	H	46	ARG	Sidechain
1	H	55	ARG	Sidechain
1	I	153	ARG	Sidechain
1	I	173	ARG	Sidechain
1	I	44	ARG	Sidechain
1	J	153	ARG	Sidechain
1	J	173	ARG	Sidechain
1	J	209	ARG	Sidechain
1	J	44	ARG	Sidechain
1	K	156	ARG	Sidechain
1	K	173	ARG	Sidechain
1	K	209	ARG	Sidechain
1	K	44	ARG	Sidechain
1	L	143	ARG	Sidechain
1	L	44	ARG	Sidechain
1	L	70	ARG	Sidechain
1	M	173	ARG	Sidechain
1	M	55	ARG	Sidechain
1	M	70	ARG	Sidechain
1	N	143	ARG	Sidechain
1	N	173	ARG	Sidechain
1	O	112	ARG	Sidechain
1	O	209	ARG	Sidechain
1	O	70	ARG	Sidechain
1	P	209	ARG	Sidechain
1	Q	112	ARG	Sidechain
1	Q	180	ARG	Sidechain
1	Q	70	ARG	Sidechain
1	R	112	ARG	Sidechain
1	R	143	ARG	Sidechain
1	R	44	ARG	Sidechain
1	R	70	ARG	Sidechain
1	S	173	ARG	Sidechain
1	S	44	ARG	Sidechain
1	T	143	ARG	Sidechain
1	T	173	ARG	Sidechain
1	T	55	ARG	Sidechain

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Mol	Chain	Res	Type	Group
1	T	70	ARG	Sidechain
1	U	173	ARG	Sidechain
1	V	156	ARG	Sidechain
1	V	173	ARG	Sidechain
1	V	180	ARG	Sidechain
1	V	55	ARG	Sidechain

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	1477	0	1452	14	0
1	B	1485	0	1452	16	0
1	C	1467	0	1431	12	0
1	D	1433	0	1400	10	0
1	E	1486	0	1455	8	0
1	F	1480	0	1439	13	0
1	G	1478	0	1446	9	0
1	H	1483	0	1448	10	0
1	I	1466	0	1422	11	0
1	J	1484	0	1458	9	0
1	K	1480	0	1452	19	0
1	L	1468	0	1423	13	0
1	M	1463	0	1427	13	0
1	N	1478	0	1451	10	0
1	O	1476	0	1453	18	0
1	P	1473	0	1444	4	0
1	Q	1484	0	1458	17	0
1	R	1461	0	1415	13	0
1	S	1430	0	1393	12	0
1	T	1483	0	1449	18	0
1	U	1472	0	1435	4	0
1	V	1470	0	1435	11	0
2	A	50	0	0	0	0
2	B	50	0	0	0	0
2	C	50	0	0	0	0
2	D	50	0	0	0	0
2	E	50	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	F	50	0	0	0	0
2	G	50	0	0	0	0
2	H	50	0	0	0	0
2	I	50	0	0	0	0
2	J	50	0	0	0	0
2	K	50	0	0	1	0
2	L	50	0	0	0	0
2	M	50	0	0	0	0
2	N	50	0	0	0	0
2	O	50	0	0	0	0
2	P	50	0	0	0	0
2	Q	50	0	0	0	0
2	R	50	0	0	0	0
2	S	50	0	0	0	0
2	T	50	0	0	0	0
2	U	50	0	0	1	0
2	V	50	0	0	2	0
3	A	12	0	18	0	0
3	B	8	0	12	1	0
3	C	4	0	6	2	0
3	D	4	0	6	0	0
3	E	8	0	12	0	0
3	F	4	0	6	0	0
3	G	4	0	6	0	0
3	H	4	0	6	0	0
3	I	4	0	6	0	0
3	J	4	0	6	0	0
3	K	4	0	6	0	0
3	L	4	0	6	0	0
3	M	4	0	6	0	0
3	N	4	0	6	0	0
3	O	8	0	12	0	0
3	P	4	0	6	0	0
3	Q	12	0	18	0	0
3	R	4	0	6	0	0
3	S	4	0	6	0	0
3	T	4	0	6	0	0
3	U	4	0	6	0	0
3	V	4	0	6	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
4	C	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	D	1	0	0	0	0
4	E	2	0	0	0	0
4	F	1	0	0	0	0
4	G	1	0	0	0	0
4	H	1	0	0	0	0
4	I	1	0	0	0	0
4	J	1	0	0	0	0
4	K	1	0	0	0	0
4	L	1	0	0	0	0
4	M	1	0	0	0	0
4	N	1	0	0	0	0
4	O	1	0	0	0	0
4	P	1	0	0	0	0
4	Q	1	0	0	0	0
4	R	1	0	0	0	0
4	S	2	0	0	0	0
4	T	1	0	0	0	0
4	U	1	0	0	0	0
4	V	1	0	0	0	0
5	A	62	0	0	1	0
5	B	80	0	0	4	0
5	C	84	0	0	0	0
5	D	74	0	0	1	0
5	E	54	0	0	1	0
5	F	42	0	0	2	0
5	G	47	0	0	0	0
5	H	22	0	0	1	0
5	I	34	0	0	1	0
5	J	39	0	0	2	0
5	K	40	0	0	2	0
5	L	74	0	0	2	0
5	M	68	0	0	3	0
5	N	67	0	0	0	0
5	O	77	0	0	1	0
5	P	72	0	0	2	0
5	Q	81	0	0	2	0
5	R	65	0	0	1	0
5	S	40	0	0	1	0
5	T	49	0	0	1	0
5	U	49	0	0	1	0
5	V	52	0	0	2	0
All	All	34889	0	31812	195	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 3.

All (195) 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:R:90:GLN:HE21	1:R:92[B]:ASN:HD21	1.05	0.93
1:L:182:LEU:HD13	1:L:183:PRO:HD2	1.61	0.83
1:K:153:ARG:HA	1:K:156:ARG:HD2	1.65	0.77
1:R:90:GLN:HE21	1:R:92[B]:ASN:ND2	1.80	0.77
1:F:57:ALA:HB3	1:F:61:GLN:HG2	1.67	0.76
1:R:90:GLN:NE2	1:R:92[B]:ASN:HD21	1.84	0.74
1:V:153:ARG:HA	1:V:156:ARG:HD2	1.69	0.73
1:S:196:LEU:HD23	1:S:197:GLU:N	2.03	0.73
1:L:34:GLU:HG2	5:U:409:HOH:O	1.89	0.72
1:F:204:ARG:HD2	1:H:36:TYR:OH	1.90	0.71
1:B:104[A]:TYR:CD1	1:B:130:GLU:HG2	2.25	0.71
1:R:186:VAL:HG11	1:S:171:TYR:HA	1.74	0.70
1:O:69:HIS:HD2	5:O:455:HOH:O	1.75	0.69
1:L:36:TYR:OH	1:U:204:ARG:HD2	1.94	0.67
1:A:36:TYR:OH	1:J:204:ARG:HD2	1.94	0.67
1:N:81:TYR:H	1:O:40:GLN:HE22	1.43	0.66
1:H:77:GLU:OE1	1:I:44:ARG:NH1	2.29	0.66
1:C:185:GLU:HA	1:D:173:ARG:HH12	1.61	0.65
1:T:175:LEU:HD23	1:T:175:LEU:O	1.96	0.65
1:D:211:ASN:HB3	5:F:405:HOH:O	1.96	0.65
1:B:104[A]:TYR:HD1	1:B:130:GLU:HG2	1.62	0.65
1:E:179:PRO:HG2	5:E:421:HOH:O	1.96	0.64
1:T:90:GLN:HE22	1:T:92[B]:ASN:HD21	1.45	0.64
1:B:204:ARG:HD2	1:D:36:TYR:OH	1.98	0.64
1:C:204:ARG:HD2	1:E:36:TYR:OH	1.98	0.63
1:P:72:ILE:HD11	5:Q:405:HOH:O	1.98	0.63
1:A:198:PRO:HD2	5:A:401:HOH:O	1.97	0.63
1:G:112:ARG:HH22	1:G:114:GLN:HE21	1.48	0.62
1:O:72:ILE:CD1	5:P:408:HOH:O	2.46	0.62
1:V:156:ARG:NH1	2:V:301:A1KDB:O6	2.32	0.62
1:H:166:ILE:HA	1:H:172:LEU:HD11	1.82	0.62
1:L:90:GLN:NE2	1:L:92[A]:ASN:OD1	2.28	0.62
1:D:211:ASN:ND2	1:F:34:GLU:HG3	2.14	0.62
1:K:66:ILE:HD11	1:K:166:ILE:HD11	1.82	0.62
1:Q:77:GLU:OE1	1:R:44:ARG:NH1	2.33	0.61
1:A:90:GLN:HA	3:B:303:EDO:H21	1.81	0.61
1:A:81:TYR:H	1:B:40:GLN:HE22	1.48	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:U:204:ARG:NH2	1:V:78:MET:O	2.33	0.61
1:T:49:PRO:HB3	1:T:175:LEU:HD21	1.81	0.61
1:S:185:GLU:HA	1:T:173:ARG:HH12	1.65	0.60
1:N:204:ARG:NH2	1:O:78:MET:O	2.34	0.59
1:T:90:GLN:NE2	1:T:92[B]:ASN:ND2	2.50	0.59
1:B:104[A]:TYR:CE1	1:B:130:GLU:OE2	2.55	0.59
1:H:186:VAL:H	1:I:173:ARG:HH22	1.49	0.59
1:N:204:ARG:HD2	1:P:36:TYR:OH	2.03	0.58
1:B:32:THR:HG22	1:K:209:ARG:HD3	1.85	0.58
1:J:112:ARG:HH12	1:J:114:GLN:HE21	1.50	0.58
1:M:176:ASN:C	1:M:178:LEU:H	2.09	0.58
1:Q:196:LEU:HD13	1:Q:198:PRO:HG3	1.86	0.58
1:A:72:ILE:HD11	5:B:410:HOH:O	2.02	0.58
1:C:101:GLY:H	1:O:98:LEU:HD23	1.68	0.58
1:I:72:ILE:HD11	5:J:413:HOH:O	2.04	0.58
1:N:24:LEU:HB2	1:O:30:GLN:NE2	2.18	0.58
1:C:91:GLN:H	3:C:302:EDO:H22	1.69	0.58
1:E:112:ARG:HH22	1:E:114:GLN:HE21	1.52	0.57
1:T:90:GLN:HE22	1:T:92[B]:ASN:ND2	2.02	0.57
1:K:163:GLY:O	1:K:166:ILE:HG12	2.05	0.57
1:P:72:ILE:CD1	5:Q:405:HOH:O	2.52	0.57
1:L:72:ILE:HD11	5:M:412:HOH:O	2.03	0.57
1:M:211:ASN:HD22	1:O:34:GLU:HG2	1.70	0.57
1:F:104:TYR:HD1	1:F:130:GLU:HG2	1.70	0.57
1:E:211:ASN:CG	1:G:34:GLU:HG3	2.30	0.56
1:I:72:ILE:CD1	5:J:413:HOH:O	2.53	0.56
1:T:90:GLN:NE2	1:T:92[B]:ASN:CG	2.63	0.56
1:M:34:GLU:HG2	5:V:410:HOH:O	2.04	0.56
1:G:188:LEU:HD22	1:H:178:LEU:HD11	1.88	0.56
1:Q:92[A]:ASN:HB2	1:Q:108:CYS:SG	2.46	0.55
1:Q:92[B]:ASN:HB3	1:Q:108:CYS:SG	2.46	0.55
1:S:67:GLU:OE1	1:S:70:ARG:NH1	2.40	0.55
1:T:90:GLN:HE21	1:T:92[B]:ASN:CG	2.15	0.55
2:U:301:A1KDB:O2	2:U:301:A1KDB:C18	2.54	0.54
1:C:212:MET:HE1	1:D:210:PRO:HG3	1.89	0.54
1:R:211:ASN:HB2	1:T:34:GLU:OE1	2.08	0.54
1:O:24:LEU:HD13	1:O:29:CYS:HA	1.90	0.54
1:K:156:ARG:NH1	2:K:301:A1KDB:O7	2.40	0.54
1:J:204:ARG:NH2	1:K:78:MET:O	2.39	0.54
1:I:77:GLU:OE1	1:J:44:ARG:NH1	2.40	0.53
1:M:176:ASN:C	1:M:178:LEU:N	2.65	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:44:ARG:NH1	1:V:77:GLU:OE1	2.42	0.53
1:S:196:LEU:HD23	1:S:197:GLU:H	1.70	0.53
1:I:174:SER:HA	1:I:177:LYS:HE2	1.89	0.53
1:J:185:GLU:HA	1:K:173:ARG:HH22	1.73	0.53
1:D:211:ASN:CG	1:F:34:GLU:HG3	2.34	0.52
1:K:52:ILE:HD12	1:K:166:ILE:HD12	1.91	0.52
1:L:193:ARG:NH1	1:M:50:GLU:OE2	2.41	0.52
5:R:401:HOH:O	1:T:34:GLU:HG2	2.08	0.52
1:A:72:ILE:CD1	5:B:410:HOH:O	2.58	0.52
1:Q:180:ARG:HH11	1:Q:180:ARG:HA	1.75	0.52
1:Q:196:LEU:CD1	1:Q:198:PRO:HG3	2.40	0.52
1:R:77:GLU:OE2	1:S:44:ARG:NH1	2.43	0.51
1:I:173:ARG:HH21	1:I:174:SER:HB2	1.75	0.51
1:Q:90:GLN:NE2	1:Q:92[A]:ASN:OD1	2.32	0.51
1:C:204:ARG:NH2	1:D:78:MET:O	2.38	0.51
1:O:211:ASN:HD22	1:Q:34:GLU:HG2	1.75	0.51
1:S:99:ASN:HB2	5:S:419:HOH:O	2.11	0.51
1:I:23:VAL:N	5:I:402:HOH:O	2.43	0.51
1:B:204:ARG:NH2	1:C:78:MET:O	2.36	0.50
1:F:204:ARG:NH2	1:G:78:MET:O	2.39	0.50
1:A:208:CYS:HB2	1:C:33:ALA:HB2	1.93	0.50
1:E:211:ASN:ND2	1:G:34:GLU:HG3	2.27	0.50
1:T:90:GLN:NE2	1:T:92[B]:ASN:OD1	2.44	0.49
1:T:52:ILE:CD1	1:T:166:ILE:HD11	2.43	0.49
1:J:112:ARG:HH12	1:J:114:GLN:NE2	2.10	0.49
1:L:72:ILE:CD1	5:M:412:HOH:O	2.58	0.49
1:N:52:ILE:CD1	1:N:166:ILE:HD11	2.43	0.48
1:F:169:LYS:HA	1:F:172:LEU:HD12	1.95	0.48
1:T:112:ARG:NE	5:T:401:HOH:O	2.26	0.48
1:N:24:LEU:HD23	1:N:29:CYS:HA	1.94	0.48
1:K:180:ARG:HA	5:K:414:HOH:O	2.13	0.48
1:O:72:ILE:HD13	1:P:157:SER:HA	1.96	0.48
1:H:112:ARG:NE	5:H:401:HOH:O	2.28	0.48
1:L:40:GLN:HE22	1:V:81:TYR:H	1.60	0.48
1:N:81:TYR:HD1	1:O:40:GLN:HE21	1.61	0.48
1:Q:52:ILE:HD12	1:Q:166:ILE:HD11	1.95	0.48
1:O:72:ILE:HD12	5:P:408:HOH:O	2.13	0.47
1:D:209:ARG:NH2	1:F:30:GLN:O	2.47	0.47
1:E:52:ILE:CD1	1:E:166:ILE:HD11	2.44	0.47
1:H:77:GLU:CD	1:I:44:ARG:HH11	2.22	0.47
1:G:61:GLN:HE21	1:G:61:GLN:HB2	1.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:R:92[A]:ASN:HB3	1:R:108:CYS:SG	2.55	0.47
1:A:207:SER:HA	1:K:211:ASN:OD1	2.14	0.47
1:T:92[B]:ASN:HB2	1:T:108:CYS:SG	2.55	0.47
1:R:92[B]:ASN:HB2	1:R:108:CYS:SG	2.55	0.47
1:D:101:GLY:N	5:D:401:HOH:O	2.33	0.46
1:M:24:LEU:HB2	1:N:30:GLN:OE1	2.15	0.46
1:F:204:ARG:CD	1:H:36:TYR:OH	2.62	0.46
1:V:137:LEU:HB3	5:V:434:HOH:O	2.16	0.46
1:S:186:VAL:HG11	1:T:46:ARG:HD2	1.97	0.46
1:S:196:LEU:CD2	1:S:197:GLU:N	2.76	0.46
1:E:112:ARG:HH22	1:E:114:GLN:NE2	2.13	0.46
1:J:77:GLU:OE2	1:K:44:ARG:NH1	2.50	0.45
1:B:33:ALA:HB2	1:K:208:CYS:HB2	1.99	0.45
1:M:172:LEU:HG	1:M:173:ARG:N	2.31	0.45
1:M:179:PRO:O	1:M:180:ARG:C	2.59	0.45
1:R:193:ARG:HG2	1:S:50:GLU:OE2	2.17	0.45
1:B:112:ARG:NE	5:B:401:HOH:O	2.33	0.45
1:Q:66:ILE:HG13	1:Q:166:ILE:HD12	1.99	0.45
1:B:99:ASN:HB3	1:Q:99:ASN:HB3	1.99	0.45
1:N:81:TYR:H	1:O:40:GLN:NE2	2.13	0.44
1:A:81:TYR:HD1	1:B:40:GLN:HE21	1.64	0.44
1:E:186:VAL:HG11	1:F:171:TYR:HA	1.98	0.44
1:G:112:ARG:HH22	1:G:114:GLN:NE2	2.12	0.44
1:B:193:ARG:NH1	1:C:50:GLU:OE1	2.50	0.44
1:O:104:TYR:CD2	1:O:130:GLU:HG2	2.53	0.44
1:I:98:LEU:C	1:I:98:LEU:HD23	2.42	0.44
1:M:189:THR:HG23	1:M:190:LYS:HG3	1.99	0.44
1:B:204:ARG:CD	1:D:36:TYR:OH	2.65	0.44
1:K:41:LYS:HB3	1:K:41:LYS:HE3	1.80	0.44
1:B:184:LEU:HD22	1:B:184:LEU:HA	1.94	0.44
1:G:58:GLY:O	1:G:61:GLN:NE2	2.51	0.44
1:Q:180:ARG:HA	1:Q:180:ARG:HD3	1.63	0.44
1:K:170:ASP:HA	1:K:173:ARG:HG3	2.00	0.43
1:C:101:GLY:N	1:O:98:LEU:HD23	2.33	0.43
1:K:180:ARG:HE	1:K:180:ARG:HB3	1.61	0.43
1:S:173:ARG:HA	1:S:176:ASN:ND2	2.33	0.43
1:C:41:LYS:HB3	1:C:41:LYS:HE3	1.86	0.43
1:Q:77:GLU:CD	1:R:44:ARG:HH11	2.25	0.43
1:H:169:LYS:HE3	1:H:169:LYS:HB2	1.56	0.43
1:I:182:LEU:N	1:I:183:PRO:HD3	2.33	0.43
5:L:435:HOH:O	1:V:72:ILE:HD11	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:112:ARG:NE	5:M:401:HOH:O	2.32	0.43
1:N:81:TYR:N	1:O:40:GLN:HE22	2.13	0.43
1:R:136:ALA:HB2	1:S:95:PHE:HZ	1.83	0.43
1:L:182:LEU:HD22	1:L:182:LEU:HA	1.73	0.43
1:O:211:ASN:HD22	1:Q:34:GLU:CG	2.32	0.43
1:T:211:ASN:OD1	1:V:34:GLU:HG2	2.19	0.43
1:F:204:ARG:CD	1:H:36:TYR:CZ	3.02	0.42
1:M:174:SER:O	1:M:177:LYS:HB2	2.19	0.42
1:F:112:ARG:NE	5:F:404:HOH:O	2.51	0.42
1:A:175:LEU:HD12	1:K:188:LEU:HD13	2.00	0.42
1:K:79:PHE:O	1:K:83:GLY:HA3	2.20	0.42
1:B:104[A]:TYR:HE1	1:B:130:GLU:OE2	2.01	0.42
1:K:112:ARG:NE	5:K:401:HOH:O	2.39	0.42
1:A:72:ILE:HD12	5:B:453:HOH:O	2.19	0.42
1:F:92:ASN:HB3	1:F:108:CYS:SG	2.60	0.42
5:L:435:HOH:O	1:V:72:ILE:CD1	2.68	0.42
1:M:57:ALA:O	1:M:58:GLY:C	2.63	0.42
1:L:90:GLN:HE21	1:L:92[A]:ASN:CG	2.25	0.41
1:T:24:LEU:HD22	1:T:24:LEU:HA	1.75	0.41
1:J:112:ARG:NH1	1:J:114:GLN:HE21	2.15	0.41
1:Q:211:ASN:HD21	1:R:207:SER:HA	1.85	0.41
1:V:64:CYS:HB2	2:V:301:A1KDB:C3	2.49	0.41
1:A:36:TYR:OH	1:J:204:ARG:CD	2.67	0.41
1:C:91:GLN:H	3:C:302:EDO:C2	2.31	0.41
1:A:81:TYR:H	1:B:40:GLN:NE2	2.17	0.41
1:K:174:SER:HA	1:K:177:LYS:HE2	2.01	0.41
1:G:112:ARG:NH2	1:G:114:GLN:HE21	2.15	0.41
1:L:34:GLU:OE2	1:U:211:ASN:HB2	2.21	0.41
1:O:92:ASN:HB3	1:O:108:CYS:SG	2.61	0.41
1:L:188:LEU:HD13	1:M:175:LEU:HD12	2.02	0.40
1:Q:196:LEU:HD13	1:Q:198:PRO:CG	2.51	0.40
1:A:169:LYS:HE2	1:A:169:LYS:HB3	1.47	0.40
1:U:211:ASN:OD1	1:V:207:SER:HA	2.22	0.40
1:Q:58:GLY:O	1:Q:61:GLN:NE2	2.54	0.40
1:T:179:PRO:O	1:T:180:ARG:C	2.63	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	186/215 (86%)	185 (100%)	1 (0%)	0	100	100
1	B	187/215 (87%)	186 (100%)	1 (0%)	0	100	100
1	C	186/215 (86%)	184 (99%)	2 (1%)	0	100	100
1	D	179/215 (83%)	179 (100%)	0	0	100	100
1	E	188/215 (87%)	188 (100%)	0	0	100	100
1	F	188/215 (87%)	188 (100%)	0	0	100	100
1	G	187/215 (87%)	187 (100%)	0	0	100	100
1	H	188/215 (87%)	187 (100%)	1 (0%)	0	100	100
1	I	187/215 (87%)	181 (97%)	6 (3%)	0	100	100
1	J	187/215 (87%)	187 (100%)	0	0	100	100
1	K	187/215 (87%)	186 (100%)	1 (0%)	0	100	100
1	L	187/215 (87%)	186 (100%)	1 (0%)	0	100	100
1	M	186/215 (86%)	181 (97%)	4 (2%)	1 (0%)	24	31
1	N	187/215 (87%)	186 (100%)	1 (0%)	0	100	100
1	O	186/215 (86%)	186 (100%)	0	0	100	100
1	P	186/215 (86%)	186 (100%)	0	0	100	100
1	Q	187/215 (87%)	187 (100%)	0	0	100	100
1	R	184/215 (86%)	183 (100%)	1 (0%)	0	100	100
1	S	179/215 (83%)	179 (100%)	0	0	100	100
1	T	188/215 (87%)	182 (97%)	6 (3%)	0	100	100
1	U	187/215 (87%)	187 (100%)	0	0	100	100
1	V	186/215 (86%)	185 (100%)	1 (0%)	0	100	100
All	All	4093/4730 (86%)	4066 (99%)	26 (1%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	M	183	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	155/172 (90%)	142 (92%)	13 (8%)	10	14
1	B	155/172 (90%)	145 (94%)	10 (6%)	15	22
1	C	153/172 (89%)	143 (94%)	10 (6%)	15	22
1	D	150/172 (87%)	142 (95%)	8 (5%)	20	30
1	E	155/172 (90%)	148 (96%)	7 (4%)	24	37
1	F	153/172 (89%)	144 (94%)	9 (6%)	18	26
1	G	154/172 (90%)	147 (96%)	7 (4%)	24	37
1	H	154/172 (90%)	147 (96%)	7 (4%)	24	37
1	I	151/172 (88%)	145 (96%)	6 (4%)	28	42
1	J	156/172 (91%)	149 (96%)	7 (4%)	24	37
1	K	155/172 (90%)	145 (94%)	10 (6%)	15	22
1	L	152/172 (88%)	149 (98%)	3 (2%)	48	67
1	M	152/172 (88%)	143 (94%)	9 (6%)	18	26
1	N	154/172 (90%)	147 (96%)	7 (4%)	24	37
1	O	155/172 (90%)	145 (94%)	10 (6%)	15	22
1	P	154/172 (90%)	148 (96%)	6 (4%)	28	43
1	Q	156/172 (91%)	148 (95%)	8 (5%)	21	32
1	R	151/172 (88%)	145 (96%)	6 (4%)	28	42
1	S	149/172 (87%)	142 (95%)	7 (5%)	23	35
1	T	155/172 (90%)	141 (91%)	14 (9%)	9	12
1	U	153/172 (89%)	145 (95%)	8 (5%)	21	31
1	V	153/172 (89%)	142 (93%)	11 (7%)	13	18
All	All	3375/3784 (89%)	3192 (95%)	183 (5%)	20	29

All (183) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	24	LEU
1	A	61	GLN
1	A	137	LEU
1	A	169	LYS
1	A	172	LEU
1	A	173	ARG
1	A	175	LEU
1	A	180	ARG
1	A	181	GLN
1	A	194	GLN
1	A	199	SER
1	A	206	ASN
1	A	209	ARG
1	B	54	SER
1	B	56	MET
1	B	62	LYS
1	B	167	LEU
1	B	172	LEU
1	B	181	GLN
1	B	184	LEU
1	B	185	GLU
1	B	209	ARG
1	B	211	ASN
1	C	34	GLU
1	C	54	SER
1	C	61	GLN
1	C	62	LYS
1	C	181	GLN
1	C	184	LEU
1	C	185	GLU
1	C	190	LYS
1	C	194	GLN
1	C	211	ASN
1	D	61	GLN
1	D	100	ASN
1	D	156	ARG
1	D	185	GLU
1	D	196	LEU
1	D	199	SER
1	D	209	ARG
1	D	211	ASN
1	E	180	ARG

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Mol	Chain	Res	Type
1	E	181	GLN
1	E	186	VAL
1	E	194	GLN
1	E	209	ARG
1	E	211	ASN
1	E	212	MET
1	F	41	LYS
1	F	61	GLN
1	F	62	LYS
1	F	175	LEU
1	F	180	ARG
1	F	181	GLN
1	F	184	LEU
1	F	194	GLN
1	F	211	ASN
1	G	61	GLN
1	G	62	LYS
1	G	180	ARG
1	G	182	LEU
1	G	185	GLU
1	G	186	VAL
1	G	188	LEU
1	H	34	GLU
1	H	54	SER
1	H	62	LYS
1	H	169	LYS
1	H	181	GLN
1	H	194	GLN
1	H	209	ARG
1	I	34	GLU
1	I	173	ARG
1	I	175	LEU
1	I	181	GLN
1	I	186	VAL
1	I	194	GLN
1	J	169	LYS
1	J	175	LEU
1	J	178	LEU
1	J	182	LEU
1	J	184	LEU
1	J	194	GLN
1	J	209	ARG

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Mol	Chain	Res	Type
1	K	41	LYS
1	K	62	LYS
1	K	156	ARG
1	K	166	ILE
1	K	167	LEU
1	K	173	ARG
1	K	178	LEU
1	K	182	LEU
1	K	194	GLN
1	K	209	ARG
1	L	61	GLN
1	L	182	LEU
1	L	211	ASN
1	M	54	SER
1	M	56	MET
1	M	62	LYS
1	M	172	LEU
1	M	175	LEU
1	M	178	LEU
1	M	194	GLN
1	M	199	SER
1	M	209	ARG
1	N	61	GLN
1	N	72	ILE
1	N	180	ARG
1	N	181	GLN
1	N	182	LEU
1	N	194	GLN
1	N	209	ARG
1	O	24	LEU
1	O	34	GLU
1	O	61	GLN
1	O	62	LYS
1	O	180	ARG
1	O	181	GLN
1	O	182	LEU
1	O	190	LYS
1	O	194	GLN
1	O	209	ARG
1	P	137	LEU
1	P	180	ARG
1	P	181	GLN

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Mol	Chain	Res	Type
1	P	182	LEU
1	P	194	GLN
1	P	209	ARG
1	Q	62	LYS
1	Q	166	ILE
1	Q	181	GLN
1	Q	184	LEU
1	Q	185	GLU
1	Q	194	GLN
1	Q	196	LEU
1	Q	211	ASN
1	R	135	LYS
1	R	137	LEU
1	R	186	VAL
1	R	190	LYS
1	R	194	GLN
1	R	211	ASN
1	S	34	GLU
1	S	50	GLU
1	S	172	LEU
1	S	173	ARG
1	S	194	GLN
1	S	196	LEU
1	S	211	ASN
1	T	24	LEU
1	T	34	GLU
1	T	54	SER
1	T	55	ARG
1	T	56	MET
1	T	62	LYS
1	T	137	LEU
1	T	172	LEU
1	T	181	GLN
1	T	182	LEU
1	T	184	LEU
1	T	194	GLN
1	T	209	ARG
1	T	211	ASN
1	U	34	GLU
1	U	54	SER
1	U	56	MET
1	U	62	LYS

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Mol	Chain	Res	Type
1	U	169	LYS
1	U	186	VAL
1	U	194	GLN
1	U	211	ASN
1	V	25	CYS
1	V	34	GLU
1	V	61	GLN
1	V	62	LYS
1	V	156	ARG
1	V	176	ASN
1	V	180	ARG
1	V	184	LEU
1	V	194	GLN
1	V	209	ARG
1	V	211	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (58) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	30	GLN
1	A	37	GLN
1	A	45	GLN
1	A	90	GLN
1	B	40	GLN
1	B	69	HIS
1	B	92	ASN
1	C	37	GLN
1	C	61	GLN
1	C	181	GLN
1	D	37	GLN
1	D	92	ASN
1	D	211	ASN
1	E	92	ASN
1	E	114	GLN
1	E	206	ASN
1	E	211	ASN
1	F	37	GLN
1	F	45	GLN
1	F	92	ASN
1	F	176	ASN
1	G	30	GLN
1	G	61	GLN

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Mol	Chain	Res	Type
1	G	114	GLN
1	H	92	ASN
1	I	45	GLN
1	I	100	ASN
1	J	114	GLN
1	K	206	ASN
1	L	28	GLN
1	L	30	GLN
1	L	37	GLN
1	L	40	GLN
1	L	45	GLN
1	L	61	GLN
1	L	90	GLN
1	L	206	ASN
1	M	30	GLN
1	M	45	GLN
1	M	92	ASN
1	N	69	HIS
1	O	30	GLN
1	O	40	GLN
1	O	69	HIS
1	O	211	ASN
1	Q	61	GLN
1	Q	69	HIS
1	Q	90	GLN
1	R	45	GLN
1	R	69	HIS
1	R	90	GLN
1	S	45	GLN
1	T	90	GLN
1	T	194	GLN
1	U	69	HIS
1	V	100	ASN
1	V	181	GLN
1	V	206	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 75 ligands modelled in this entry, 24 are monoatomic - leaving 51 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
2	A1KDB	A	301	1	54,54,54	0.73	0	69,75,75	1.53	9 (13%)
2	A1KDB	B	301	1	54,54,54	0.79	2 (3%)	69,75,75	1.36	5 (7%)
2	A1KDB	G	301	1	54,54,54	0.65	0	69,75,75	1.16	6 (8%)
2	A1KDB	D	301	1	54,54,54	0.88	4 (7%)	69,75,75	1.59	8 (11%)
3	EDO	L	302	-	3,3,3	0.30	0	2,2,2	0.17	0
2	A1KDB	E	301	1	54,54,54	0.58	0	69,75,75	1.37	7 (10%)
2	A1KDB	N	301	1	54,54,54	0.69	1 (1%)	69,75,75	1.47	8 (11%)
2	A1KDB	R	301	1	54,54,54	0.68	0	69,75,75	1.17	7 (10%)
2	A1KDB	H	301	1	54,54,54	0.80	2 (3%)	69,75,75	1.67	10 (14%)
3	EDO	E	303	-	3,3,3	0.21	0	2,2,2	0.39	0
3	EDO	M	302	-	3,3,3	0.30	0	2,2,2	0.50	0
2	A1KDB	S	301	1	54,54,54	0.69	1 (1%)	69,75,75	1.13	7 (10%)
3	EDO	D	302	-	3,3,3	0.45	0	2,2,2	0.40	0
3	EDO	G	302	-	3,3,3	0.28	0	2,2,2	0.33	0
3	EDO	E	302	-	3,3,3	0.68	0	2,2,2	0.68	0
2	A1KDB	M	301	1	54,54,54	0.75	1 (1%)	69,75,75	1.22	7 (10%)
2	A1KDB	V	301	1	54,54,54	0.79	2 (3%)	69,75,75	1.92	10 (14%)
3	EDO	T	302	-	3,3,3	0.16	0	2,2,2	0.02	0
3	EDO	Q	304	-	3,3,3	0.14	0	2,2,2	0.53	0
3	EDO	S	302	-	3,3,3	0.13	0	2,2,2	0.07	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	EDO	C	302	-	3,3,3	0.41	0	2,2,2	0.46	0
2	A1KDB	L	301	1	54,54,54	0.58	1 (1%)	69,75,75	1.51	7 (10%)
2	A1KDB	C	301	1	54,54,54	0.75	2 (3%)	69,75,75	1.84	12 (17%)
2	A1KDB	K	301	1	54,54,54	0.69	1 (1%)	69,75,75	1.65	10 (14%)
3	EDO	F	302	-	3,3,3	0.15	0	2,2,2	0.13	0
3	EDO	O	303	-	3,3,3	0.12	0	2,2,2	0.30	0
3	EDO	P	302	-	3,3,3	0.45	0	2,2,2	0.60	0
2	A1KDB	O	301	1	54,54,54	0.98	3 (5%)	69,75,75	1.57	9 (13%)
3	EDO	Q	303	-	3,3,3	0.19	0	2,2,2	0.19	0
2	A1KDB	J	301	1	54,54,54	0.71	0	69,75,75	1.29	6 (8%)
3	EDO	B	302	-	3,3,3	0.22	0	2,2,2	0.39	0
3	EDO	A	303	-	3,3,3	0.20	0	2,2,2	0.45	0
3	EDO	U	302	-	3,3,3	0.18	0	2,2,2	0.27	0
2	A1KDB	T	301	1	54,54,54	0.66	1 (1%)	69,75,75	1.39	7 (10%)
3	EDO	A	302	-	3,3,3	0.24	0	2,2,2	0.31	0
3	EDO	R	302	-	3,3,3	0.15	0	2,2,2	0.22	0
3	EDO	N	302	-	3,3,3	0.40	0	2,2,2	0.64	0
3	EDO	H	302	-	3,3,3	0.21	0	2,2,2	0.36	0
2	A1KDB	F	301	1	54,54,54	0.76	1 (1%)	69,75,75	1.39	9 (13%)
3	EDO	B	303	-	3,3,3	0.29	0	2,2,2	0.69	0
3	EDO	I	302	-	3,3,3	0.14	0	2,2,2	0.14	0
3	EDO	J	302	-	3,3,3	0.24	0	2,2,2	0.29	0
3	EDO	A	304	-	3,3,3	0.84	0	2,2,2	0.79	0
2	A1KDB	I	301	1	54,54,54	0.76	2 (3%)	69,75,75	1.56	8 (11%)
2	A1KDB	P	301	1	54,54,54	0.69	0	69,75,75	1.21	5 (7%)
3	EDO	V	302	-	3,3,3	0.21	0	2,2,2	0.04	0
2	A1KDB	Q	301	1	54,54,54	0.81	1 (1%)	69,75,75	1.36	6 (8%)
3	EDO	O	302	-	3,3,3	0.22	0	2,2,2	0.30	0
3	EDO	Q	302	-	3,3,3	0.93	0	2,2,2	1.19	0
2	A1KDB	U	301	1	54,54,54	0.58	1 (1%)	69,75,75	1.41	9 (13%)
3	EDO	K	302	-	3,3,3	0.22	0	2,2,2	0.12	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	A1KDB	A	301	1	-	9/38/38/38	0/5/5/5
2	A1KDB	B	301	1	-	3/38/38/38	0/5/5/5

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	A1KDB	G	301	1	-	9/38/38/38	0/5/5/5
2	A1KDB	D	301	1	-	9/38/38/38	0/5/5/5
3	EDO	L	302	-	-	1/1/1/1	-
2	A1KDB	E	301	1	-	10/38/38/38	0/5/5/5
2	A1KDB	N	301	1	-	13/38/38/38	0/5/5/5
2	A1KDB	R	301	1	-	8/38/38/38	0/5/5/5
2	A1KDB	H	301	1	-	5/38/38/38	0/5/5/5
3	EDO	E	303	-	-	1/1/1/1	-
3	EDO	M	302	-	-	1/1/1/1	-
2	A1KDB	S	301	1	-	8/38/38/38	0/5/5/5
3	EDO	D	302	-	-	1/1/1/1	-
3	EDO	G	302	-	-	1/1/1/1	-
3	EDO	E	302	-	-	1/1/1/1	-
2	A1KDB	M	301	1	-	6/38/38/38	0/5/5/5
2	A1KDB	V	301	1	-	6/38/38/38	0/5/5/5
3	EDO	T	302	-	-	1/1/1/1	-
3	EDO	Q	304	-	-	0/1/1/1	-
3	EDO	S	302	-	-	1/1/1/1	-
3	EDO	C	302	-	-	1/1/1/1	-
2	A1KDB	L	301	1	-	9/38/38/38	0/5/5/5
2	A1KDB	C	301	1	-	10/38/38/38	0/5/5/5
2	A1KDB	K	301	1	-	5/38/38/38	0/5/5/5
3	EDO	F	302	-	-	1/1/1/1	-
3	EDO	O	303	-	-	1/1/1/1	-
3	EDO	P	302	-	-	0/1/1/1	-
2	A1KDB	O	301	1	-	15/38/38/38	0/5/5/5
3	EDO	Q	303	-	-	1/1/1/1	-
2	A1KDB	J	301	1	-	8/38/38/38	0/5/5/5
3	EDO	B	302	-	-	0/1/1/1	-
3	EDO	A	303	-	-	1/1/1/1	-
3	EDO	U	302	-	-	1/1/1/1	-
2	A1KDB	T	301	1	-	9/38/38/38	0/5/5/5
3	EDO	A	302	-	-	0/1/1/1	-
3	EDO	R	302	-	-	0/1/1/1	-
3	EDO	N	302	-	-	1/1/1/1	-
3	EDO	H	302	-	-	1/1/1/1	-
2	A1KDB	F	301	1	-	11/38/38/38	0/5/5/5
3	EDO	B	303	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	EDO	I	302	-	-	1/1/1/1	-
3	EDO	J	302	-	-	1/1/1/1	-
3	EDO	A	304	-	-	1/1/1/1	-
2	A1KDB	I	301	1	-	8/38/38/38	0/5/5/5
2	A1KDB	P	301	1	-	7/38/38/38	0/5/5/5
3	EDO	V	302	-	-	1/1/1/1	-
2	A1KDB	Q	301	1	-	6/38/38/38	0/5/5/5
3	EDO	O	302	-	-	1/1/1/1	-
3	EDO	Q	302	-	-	0/1/1/1	-
2	A1KDB	U	301	1	-	11/38/38/38	0/5/5/5
3	EDO	K	302	-	-	1/1/1/1	-

All (26) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	O	301	A1KDB	C8-C9	-4.44	1.46	1.50
2	I	301	A1KDB	C8-C9	-3.35	1.47	1.50
2	M	301	A1KDB	O7-C34	-2.82	1.22	1.30
2	D	301	A1KDB	O5-C30	2.55	1.29	1.22
2	O	301	A1KDB	C29-C27	-2.55	1.33	1.37
2	D	301	A1KDB	C30-C29	2.53	1.53	1.48
2	S	301	A1KDB	C8-C9	-2.48	1.48	1.50
2	K	301	A1KDB	O7-C34	-2.37	1.23	1.30
2	V	301	A1KDB	C30-C29	2.33	1.52	1.48
2	T	301	A1KDB	C33-C9	2.32	1.43	1.38
2	D	301	A1KDB	O7-C34	-2.29	1.23	1.30
2	O	301	A1KDB	O4-C30	-2.29	1.23	1.30
2	F	301	A1KDB	C8-C9	-2.24	1.48	1.50
2	B	301	A1KDB	O7-C34	-2.21	1.24	1.30
2	Q	301	A1KDB	O7-C34	-2.19	1.24	1.30
2	H	301	A1KDB	C10-S2	-2.17	1.69	1.74
2	C	301	A1KDB	O7-C34	-2.15	1.24	1.30
2	B	301	A1KDB	C29-C27	-2.14	1.34	1.37
2	C	301	A1KDB	C33-S2	-2.12	1.69	1.74
2	D	301	A1KDB	C33-C9	2.10	1.42	1.38
2	H	301	A1KDB	O7-C34	-2.09	1.24	1.30
2	V	301	A1KDB	C29-C27	-2.08	1.34	1.37
2	L	301	A1KDB	O7-C34	-2.06	1.24	1.30
2	N	301	A1KDB	O7-C34	-2.06	1.24	1.30
2	I	301	A1KDB	C29-C27	-2.04	1.34	1.37
2	U	301	A1KDB	C29-C27	-2.00	1.34	1.37

All (172) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	301	A1KDB	C26-N4-C27	8.12	115.18	111.22
2	V	301	A1KDB	C26-N4-C27	8.02	115.13	111.22
2	L	301	A1KDB	C26-N4-C27	7.92	115.08	111.22
2	K	301	A1KDB	C26-N4-C27	7.47	114.86	111.22
2	O	301	A1KDB	C26-N4-C27	7.19	114.72	111.22
2	E	301	A1KDB	C26-N4-C27	6.80	114.53	111.22
2	H	301	A1KDB	C33-S2-C10	6.73	94.56	89.68
2	B	301	A1KDB	C2-C3-N1	6.23	117.94	113.84
2	J	301	A1KDB	C26-N4-C27	6.13	114.20	111.22
2	C	301	A1KDB	C2-C3-N1	6.00	117.79	113.84
2	A	301	A1KDB	C26-N4-C27	5.98	114.13	111.22
2	V	301	A1KDB	C27-C29-S1	-5.79	106.10	109.92
2	V	301	A1KDB	C29-S1-C26	5.67	93.79	89.68
2	K	301	A1KDB	C10-N2-C9	5.66	116.46	110.84
2	A	301	A1KDB	C33-S2-C10	5.50	93.67	89.68
2	Q	301	A1KDB	C26-N4-C27	5.45	113.88	111.22
2	B	301	A1KDB	C26-N4-C27	5.39	113.84	111.22
2	H	301	A1KDB	C10-N2-C9	5.35	116.14	110.84
2	N	301	A1KDB	C16-C17-N3	-5.33	100.33	113.31
2	P	301	A1KDB	C26-N4-C27	5.26	113.78	111.22
2	D	301	A1KDB	C27-C29-S1	-5.11	106.55	109.92
2	U	301	A1KDB	C26-N4-C27	5.08	113.69	111.22
2	I	301	A1KDB	C2-C3-N1	5.01	117.14	113.84
2	H	301	A1KDB	C26-N4-C27	4.99	113.65	111.22
2	I	301	A1KDB	C26-N4-C27	4.84	113.58	111.22
2	D	301	A1KDB	C2-C3-N1	4.78	116.99	113.84
2	N	301	A1KDB	C33-S2-C10	4.72	93.10	89.68
2	F	301	A1KDB	C26-N4-C27	4.66	113.49	111.22
2	V	301	A1KDB	C33-S2-C10	4.60	93.01	89.68
2	T	301	A1KDB	C26-N4-C27	4.55	113.43	111.22
2	U	301	A1KDB	C2-C3-N1	4.53	116.83	113.84
2	O	301	A1KDB	C2-C3-N1	4.46	116.78	113.84
2	I	301	A1KDB	C29-C27-N4	-4.44	111.68	114.97
2	N	301	A1KDB	C10-N2-C9	4.42	115.22	110.84
2	Q	301	A1KDB	C29-C27-N4	-4.37	111.73	114.97
2	D	301	A1KDB	C29-S1-C26	4.32	92.81	89.68
2	D	301	A1KDB	C26-N4-C27	4.27	113.30	111.22
2	U	301	A1KDB	C10-N2-C9	4.17	114.97	110.84
2	F	301	A1KDB	C33-S2-C10	4.11	92.66	89.68
2	C	301	A1KDB	C16-C17-N3	-4.06	103.41	113.31
2	G	301	A1KDB	C26-N4-C27	4.06	113.20	111.22
2	T	301	A1KDB	C29-S1-C26	4.00	92.58	89.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	V	301	A1KDB	C10-N2-C9	4.00	114.80	110.84
2	F	301	A1KDB	C29-C27-N4	-4.00	112.01	114.97
2	Q	301	A1KDB	C2-C3-N1	3.93	116.42	113.84
2	V	301	A1KDB	S1-C26-N4	-3.91	108.79	114.85
2	T	301	A1KDB	C27-C29-S1	-3.86	107.37	109.92
2	M	301	A1KDB	C20-C19-N3	-3.82	104.00	113.31
2	C	301	A1KDB	C29-C27-N4	-3.79	112.16	114.97
2	D	301	A1KDB	C20-C19-N3	-3.73	104.23	113.31
2	H	301	A1KDB	S2-C10-N2	-3.73	109.08	114.85
2	M	301	A1KDB	C33-S2-C10	3.67	92.34	89.68
2	G	301	A1KDB	C2-C3-N1	3.62	116.22	113.84
2	I	301	A1KDB	C27-C29-S1	3.55	112.27	109.92
2	H	301	A1KDB	C2-C3-N1	3.54	116.17	113.84
2	I	301	A1KDB	C20-C19-N3	-3.49	104.80	113.31
2	D	301	A1KDB	C16-C17-N3	-3.47	104.85	113.31
2	Q	301	A1KDB	C33-C9-N2	-3.46	111.36	115.73
2	M	301	A1KDB	C10-N2-C9	3.41	114.22	110.84
2	T	301	A1KDB	C2-C3-N1	3.40	116.08	113.84
2	G	301	A1KDB	C16-C17-N3	-3.40	105.03	113.31
2	R	301	A1KDB	C16-C17-N3	-3.26	105.36	113.31
2	L	301	A1KDB	S1-C26-N4	-3.26	109.80	114.85
2	B	301	A1KDB	C33-S2-C10	3.25	92.03	89.68
2	T	301	A1KDB	C33-C9-N2	-3.19	111.70	115.73
2	E	301	A1KDB	C20-C19-N3	-3.17	105.59	113.31
2	I	301	A1KDB	C16-C17-N3	-3.11	105.73	113.31
2	S	301	A1KDB	C10-N2-C9	3.11	113.92	110.84
2	O	301	A1KDB	S1-C26-N4	-3.10	110.05	114.85
2	L	301	A1KDB	C2-C3-N1	3.08	115.87	113.84
2	S	301	A1KDB	C26-N4-C27	3.06	112.71	111.22
2	K	301	A1KDB	C2-C3-N1	3.06	115.85	113.84
2	K	301	A1KDB	C33-C9-N2	-3.04	111.89	115.73
2	F	301	A1KDB	C2-C3-N1	3.03	115.84	113.84
2	L	301	A1KDB	C20-C19-N3	-3.03	105.93	113.31
2	F	301	A1KDB	C4-N1-C3	-3.01	123.72	128.26
2	L	301	A1KDB	C29-S1-C26	3.00	91.86	89.68
2	O	301	A1KDB	C16-C17-N3	-2.99	106.03	113.31
2	N	301	A1KDB	S2-C10-N2	-2.98	110.23	114.85
2	O	301	A1KDB	C33-S2-C10	2.98	91.84	89.68
2	S	301	A1KDB	C29-S1-C26	-2.97	87.53	89.68
2	A	301	A1KDB	C10-N2-C9	2.95	113.77	110.84
2	O	301	A1KDB	C29-S1-C26	2.94	91.81	89.68
2	J	301	A1KDB	C29-C27-N4	-2.93	112.79	114.97

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	301	A1KDB	C4-N1-C3	-2.93	123.83	128.26
2	T	301	A1KDB	S1-C26-N4	-2.92	110.33	114.85
2	M	301	A1KDB	C26-N4-C27	2.85	112.61	111.22
2	D	301	A1KDB	S1-C26-N4	-2.84	110.45	114.85
2	A	301	A1KDB	O1-C3-N1	-2.83	119.81	123.05
2	U	301	A1KDB	C33-C9-N2	-2.82	112.17	115.73
2	E	301	A1KDB	C10-N2-C9	2.79	113.61	110.84
2	R	301	A1KDB	C26-N4-C27	2.75	112.56	111.22
2	R	301	A1KDB	C29-S1-C26	2.74	91.67	89.68
2	L	301	A1KDB	C10-N2-C9	2.73	113.55	110.84
2	H	301	A1KDB	C20-O3-C21	2.73	125.06	117.93
2	C	301	A1KDB	C20-C19-N3	-2.72	106.68	113.31
2	Q	301	A1KDB	C20-C19-N3	-2.71	106.70	113.31
2	V	301	A1KDB	C2-C3-N1	2.70	115.62	113.84
2	I	301	A1KDB	C10-N2-C9	2.69	113.51	110.84
2	J	301	A1KDB	C33-C9-N2	-2.69	112.34	115.73
2	V	301	A1KDB	C30-C29-S1	2.66	125.28	114.92
2	O	301	A1KDB	C29-C27-N4	-2.65	113.01	114.97
2	P	301	A1KDB	C29-C27-N4	-2.62	113.02	114.97
2	O	301	A1KDB	C4-N1-C3	-2.61	124.31	128.26
2	V	301	A1KDB	S2-C10-N2	-2.61	110.81	114.85
2	C	301	A1KDB	C4-N1-C3	-2.60	124.33	128.26
2	C	301	A1KDB	S1-C26-N4	-2.59	110.83	114.85
2	R	301	A1KDB	S1-C26-N4	-2.59	110.84	114.85
2	N	301	A1KDB	O1-C3-N1	-2.58	120.09	123.05
2	C	301	A1KDB	C10-N2-C9	2.58	113.40	110.84
2	A	301	A1KDB	S2-C10-N2	-2.57	110.87	114.85
2	K	301	A1KDB	C33-S2-C10	2.57	91.54	89.68
2	R	301	A1KDB	C33-C9-N2	-2.57	112.49	115.73
2	J	301	A1KDB	F1-C35-C7	2.56	122.14	117.96
2	E	301	A1KDB	S1-C26-N4	-2.55	110.90	114.85
2	N	301	A1KDB	C4-N1-C3	-2.54	124.41	128.26
2	C	301	A1KDB	C16-O2-C15	2.54	124.56	117.93
2	F	301	A1KDB	C27-C29-S1	2.53	111.60	109.92
2	K	301	A1KDB	S1-C26-N4	-2.52	110.95	114.85
2	K	301	A1KDB	S2-C10-N2	-2.47	111.03	114.85
2	D	301	A1KDB	C4-N1-C3	-2.46	124.53	128.26
2	S	301	A1KDB	C33-S2-C10	2.44	91.45	89.68
2	A	301	A1KDB	C27-C29-S1	2.42	111.53	109.92
2	P	301	A1KDB	C33-S2-C10	2.42	91.44	89.68
2	A	301	A1KDB	C4-N1-C3	-2.42	124.60	128.26
2	R	301	A1KDB	C27-C29-S1	-2.41	108.33	109.92

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	301	A1KDB	C11-C10-S2	2.41	127.39	122.29
2	G	301	A1KDB	C20-C19-N3	-2.41	107.45	113.31
2	U	301	A1KDB	C34-C33-S2	2.40	124.28	114.92
2	P	301	A1KDB	O6-C34-C33	-2.39	113.66	121.06
2	F	301	A1KDB	C10-N2-C9	2.37	113.19	110.84
2	C	301	A1KDB	C33-S2-C10	2.36	91.39	89.68
2	E	301	A1KDB	C33-C9-N2	-2.36	112.75	115.73
2	R	301	A1KDB	C2-C3-N1	2.35	115.38	113.84
2	O	301	A1KDB	C20-C19-N3	-2.33	107.62	113.31
2	U	301	A1KDB	C4-N1-C3	-2.33	124.74	128.26
2	J	301	A1KDB	O1-C3-N1	-2.33	120.39	123.05
2	C	301	A1KDB	C11-C10-S2	2.32	127.19	122.29
2	S	301	A1KDB	C29-C27-N4	-2.31	113.26	114.97
2	S	301	A1KDB	C27-C29-S1	2.31	111.45	109.92
2	C	301	A1KDB	S2-C10-N2	-2.27	111.33	114.85
2	T	301	A1KDB	C10-N2-C9	2.26	113.08	110.84
2	E	301	A1KDB	C2-C3-N1	2.24	115.31	113.84
2	Q	301	A1KDB	C10-N2-C9	2.22	113.05	110.84
2	M	301	A1KDB	O3-C20-C19	-2.20	102.25	107.68
2	K	301	A1KDB	C34-C33-S2	2.20	123.49	114.92
2	G	301	A1KDB	S1-C26-N4	-2.20	111.45	114.85
2	K	301	A1KDB	C4-N1-C3	-2.18	124.97	128.26
2	F	301	A1KDB	S2-C10-N2	-2.17	111.48	114.85
2	A	301	A1KDB	S1-C26-N4	-2.14	111.53	114.85
2	H	301	A1KDB	C29-C27-N4	-2.14	113.38	114.97
2	S	301	A1KDB	S2-C10-N2	-2.14	111.54	114.85
2	H	301	A1KDB	C34-C33-S2	2.14	123.24	114.92
2	I	301	A1KDB	C4-N1-C3	-2.12	125.05	128.26
2	N	301	A1KDB	C11-C10-S2	2.12	126.79	122.29
2	A	301	A1KDB	C29-C27-N4	-2.12	113.40	114.97
2	J	301	A1KDB	C33-S2-C10	-2.11	88.15	89.68
2	G	301	A1KDB	C29-S1-C26	2.11	91.21	89.68
2	U	301	A1KDB	C11-C10-S2	2.11	126.75	122.29
2	B	301	A1KDB	O1-C3-C2	-2.10	119.36	122.72
2	H	301	A1KDB	C20-C19-N3	-2.10	108.20	113.31
2	E	301	A1KDB	F1-C35-C7	2.07	121.34	117.96
2	B	301	A1KDB	S1-C26-N4	-2.07	111.65	114.85
2	P	301	A1KDB	C4-N1-C3	-2.07	125.14	128.26
2	M	301	A1KDB	C29-C27-N4	-2.06	113.44	114.97
2	U	301	A1KDB	C30-C29-S1	2.04	122.88	114.92
2	V	301	A1KDB	C20-C19-N3	-2.04	108.35	113.31
2	N	301	A1KDB	C2-C3-N1	2.03	115.18	113.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	U	301	A1KDB	S2-C10-N2	-2.03	111.70	114.85
2	M	301	A1KDB	S2-C10-N2	-2.03	111.71	114.85
2	L	301	A1KDB	C33-C9-N2	-2.03	113.17	115.73
2	K	301	A1KDB	C1-C2-C3	-2.01	119.97	122.27

There are no chirality outliers.

All (208) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	301	A1KDB	S1-C29-C30-O4
2	A	301	A1KDB	S1-C29-C30-O5
2	C	301	A1KDB	C27-C29-C30-O4
2	C	301	A1KDB	S1-C29-C30-O4
2	C	301	A1KDB	S1-C29-C30-O5
2	E	301	A1KDB	C27-C29-C30-O4
2	E	301	A1KDB	C27-C29-C30-O5
2	E	301	A1KDB	S1-C29-C30-O5
2	G	301	A1KDB	C16-C17-N3-C18
2	I	301	A1KDB	S1-C29-C30-O4
2	L	301	A1KDB	C27-C29-C30-O4
2	L	301	A1KDB	S1-C29-C30-O4
2	L	301	A1KDB	S1-C29-C30-O5
2	O	301	A1KDB	S1-C29-C30-O4
2	O	301	A1KDB	S1-C29-C30-O5
2	V	301	A1KDB	C16-C17-N3-C18
2	G	301	A1KDB	N3-C19-C20-O3
2	H	301	A1KDB	N3-C19-C20-O3
2	N	301	A1KDB	N3-C19-C20-O3
2	Q	301	A1KDB	C36-C4-N1-C3
2	N	301	A1KDB	O2-C16-C17-N3
2	F	301	A1KDB	O2-C16-C17-N3
2	N	301	A1KDB	C32-C15-O2-C16
2	A	301	A1KDB	N3-C19-C20-O3
2	N	301	A1KDB	C14-C15-O2-C16
2	R	301	A1KDB	C36-C4-N1-C3
2	U	301	A1KDB	N3-C19-C20-O3
2	A	301	A1KDB	C36-C4-N1-C3
2	V	301	A1KDB	C36-C4-N1-C3
2	Q	301	A1KDB	C5-C4-N1-C3
2	O	301	A1KDB	C17-C16-O2-C15
2	T	301	A1KDB	C14-C15-O2-C16
2	L	301	A1KDB	C17-C16-O2-C15

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Mol	Chain	Res	Type	Atoms
2	U	301	A1KDB	C32-C15-O2-C16
2	T	301	A1KDB	C32-C15-O2-C16
2	H	301	A1KDB	C17-C16-O2-C15
2	T	301	A1KDB	C36-C4-N1-C3
2	H	301	A1KDB	C36-C4-N1-C3
2	I	301	A1KDB	S1-C29-C30-O5
2	R	301	A1KDB	C5-C4-N1-C3
2	F	301	A1KDB	C19-C20-O3-C21
2	B	301	A1KDB	C36-C4-N1-C3
2	O	301	A1KDB	N3-C19-C20-O3
3	B	303	EDO	O1-C1-C2-O2
3	C	302	EDO	O1-C1-C2-O2
3	E	302	EDO	O1-C1-C2-O2
3	H	302	EDO	O1-C1-C2-O2
3	J	302	EDO	O1-C1-C2-O2
3	O	302	EDO	O1-C1-C2-O2
3	Q	303	EDO	O1-C1-C2-O2
3	U	302	EDO	O1-C1-C2-O2
2	V	301	A1KDB	C5-C4-N1-C3
2	A	301	A1KDB	C19-C20-O3-C21
2	I	301	A1KDB	C36-C4-N1-C3
2	U	301	A1KDB	C14-C15-O2-C16
2	D	301	A1KDB	C17-C16-O2-C15
2	E	301	A1KDB	C17-C16-O2-C15
2	G	301	A1KDB	C17-C16-O2-C15
2	I	301	A1KDB	C17-C16-O2-C15
2	Q	301	A1KDB	C17-C16-O2-C15
2	C	301	A1KDB	C36-C4-N1-C3
2	N	301	A1KDB	C17-C16-O2-C15
2	T	301	A1KDB	N3-C19-C20-O3
2	C	301	A1KDB	C17-C16-O2-C15
2	R	301	A1KDB	C17-C16-O2-C15
2	M	301	A1KDB	C36-C4-N1-C3
2	F	301	A1KDB	C36-C4-N1-C3
2	H	301	A1KDB	C19-C20-O3-C21
2	O	301	A1KDB	C16-C17-N3-C18
2	T	301	A1KDB	C16-C17-N3-C18
2	U	301	A1KDB	C20-C19-N3-C18
2	V	301	A1KDB	C20-C19-N3-C18
2	I	301	A1KDB	N3-C19-C20-O3
2	R	301	A1KDB	N3-C19-C20-O3
2	F	301	A1KDB	C17-C16-O2-C15

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Mol	Chain	Res	Type	Atoms
2	G	301	A1KDB	C16-C17-N3-C19
2	T	301	A1KDB	C16-C17-N3-C19
2	V	301	A1KDB	C16-C17-N3-C19
2	A	301	A1KDB	C5-C4-N1-C3
2	F	301	A1KDB	C14-C15-O2-C16
2	F	301	A1KDB	C32-C15-O2-C16
2	A	301	A1KDB	C17-C16-O2-C15
2	L	301	A1KDB	N3-C19-C20-O3
3	G	302	EDO	O1-C1-C2-O2
3	K	302	EDO	O1-C1-C2-O2
3	M	302	EDO	O1-C1-C2-O2
2	G	301	A1KDB	C36-C4-N1-C3
2	U	301	A1KDB	C36-C4-N1-C3
2	D	301	A1KDB	C36-C4-N1-C3
2	M	301	A1KDB	C19-C20-O3-C21
2	N	301	A1KDB	C19-C20-O3-C21
2	H	301	A1KDB	C5-C4-N1-C3
2	T	301	A1KDB	C5-C4-N1-C3
2	D	301	A1KDB	S1-C29-C30-O5
2	E	301	A1KDB	S1-C29-C30-O4
2	F	301	A1KDB	S1-C29-C30-O5
2	P	301	A1KDB	S1-C29-C30-O4
2	P	301	A1KDB	S1-C29-C30-O5
2	R	301	A1KDB	S1-C29-C30-O4
2	R	301	A1KDB	S1-C29-C30-O5
2	S	301	A1KDB	S1-C29-C30-O5
2	T	301	A1KDB	S1-C29-C30-O4
2	U	301	A1KDB	S1-C29-C30-O4
2	U	301	A1KDB	S1-C29-C30-O5
2	D	301	A1KDB	N3-C19-C20-O3
2	J	301	A1KDB	C36-C4-N1-C3
2	B	301	A1KDB	C5-C4-N1-C3
2	G	301	A1KDB	C14-C15-O2-C16
2	G	301	A1KDB	C5-C4-N1-C3
2	L	301	A1KDB	C36-C4-N1-C3
2	G	301	A1KDB	C32-C15-O2-C16
3	E	303	EDO	O1-C1-C2-O2
3	I	302	EDO	O1-C1-C2-O2
3	S	302	EDO	O1-C1-C2-O2
3	T	302	EDO	O1-C1-C2-O2
2	K	301	A1KDB	C36-C4-N1-C3
2	N	301	A1KDB	C36-C4-N1-C3

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Mol	Chain	Res	Type	Atoms
2	O	301	A1KDB	C36-C4-N1-C3
2	E	301	A1KDB	C36-C4-N1-C3
2	I	301	A1KDB	C5-C4-N1-C3
2	F	301	A1KDB	N3-C19-C20-O3
2	O	301	A1KDB	O2-C16-C17-N3
2	Q	301	A1KDB	N3-C19-C20-O3
2	M	301	A1KDB	N3-C19-C20-O3
2	M	301	A1KDB	C5-C4-N1-C3
2	E	301	A1KDB	N3-C19-C20-O3
2	J	301	A1KDB	C17-C16-O2-C15
3	D	302	EDO	O1-C1-C2-O2
3	V	302	EDO	O1-C1-C2-O2
2	J	301	A1KDB	N3-C19-C20-O3
2	P	301	A1KDB	C36-C4-N1-C3
2	U	301	A1KDB	C5-C4-N1-C3
2	C	301	A1KDB	C5-C4-N1-C3
2	E	301	A1KDB	C19-C20-O3-C21
2	T	301	A1KDB	C17-C16-O2-C15
2	J	301	A1KDB	C5-C4-N1-C3
2	M	301	A1KDB	C20-C19-N3-C18
2	N	301	A1KDB	C20-C19-N3-C18
2	R	301	A1KDB	C16-C17-N3-C18
2	D	301	A1KDB	S1-C29-C30-O4
2	N	301	A1KDB	S1-C29-C30-O4
2	S	301	A1KDB	S1-C29-C30-O4
2	O	301	A1KDB	C14-C15-O2-C16
2	D	301	A1KDB	C16-C17-N3-C19
2	R	301	A1KDB	C16-C17-N3-C19
2	A	301	A1KDB	C27-C29-C30-O4
2	C	301	A1KDB	C27-C29-C30-O5
2	J	301	A1KDB	C27-C29-C30-O5
2	L	301	A1KDB	C27-C29-C30-O5
2	N	301	A1KDB	C27-C29-C30-O4
2	O	301	A1KDB	C27-C29-C30-O4
2	O	301	A1KDB	C27-C29-C30-O5
2	P	301	A1KDB	C27-C29-C30-O4
2	S	301	A1KDB	C27-C29-C30-O5
2	U	301	A1KDB	C27-C29-C30-O4
2	U	301	A1KDB	C27-C29-C30-O5
2	E	301	A1KDB	C5-C4-N1-C3
2	O	301	A1KDB	C32-C15-O2-C16
3	A	303	EDO	O1-C1-C2-O2

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Mol	Chain	Res	Type	Atoms
3	N	302	EDO	O1-C1-C2-O2
3	O	303	EDO	O1-C1-C2-O2
2	D	301	A1KDB	C5-C4-N1-C3
2	L	301	A1KDB	C5-C4-N1-C3
2	O	301	A1KDB	C31-C21-O3-C20
2	F	301	A1KDB	C5-C4-N1-C3
2	K	301	A1KDB	C5-C4-N1-C3
2	K	301	A1KDB	N3-C19-C20-O3
2	S	301	A1KDB	C36-C4-N1-C3
2	J	301	A1KDB	O2-C16-C17-N3
2	K	301	A1KDB	C17-C16-O2-C15
2	P	301	A1KDB	C17-C16-O2-C15
2	B	301	A1KDB	C17-C16-O2-C15
2	P	301	A1KDB	C5-C4-N1-C3
2	S	301	A1KDB	C17-C16-O2-C15
2	O	301	A1KDB	C22-C21-O3-C20
2	N	301	A1KDB	C5-C4-N1-C3
2	C	301	A1KDB	C16-C17-N3-C19
2	C	301	A1KDB	C20-C19-N3-C17
2	L	301	A1KDB	C20-C19-N3-C17
2	M	301	A1KDB	C20-C19-N3-C17
2	N	301	A1KDB	C20-C19-N3-C17
2	A	301	A1KDB	C27-C29-C30-O5
2	D	301	A1KDB	C27-C29-C30-O4
2	D	301	A1KDB	C27-C29-C30-O5
2	I	301	A1KDB	C27-C29-C30-O5
2	J	301	A1KDB	C27-C29-C30-O4
2	N	301	A1KDB	C27-C29-C30-O5
2	P	301	A1KDB	C27-C29-C30-O5
2	S	301	A1KDB	C27-C29-C30-O4
2	S	301	A1KDB	N3-C19-C20-O3
2	G	301	A1KDB	C19-C20-O3-C21
3	A	304	EDO	O1-C1-C2-O2
3	F	302	EDO	O1-C1-C2-O2
2	E	301	A1KDB	C31-C21-O3-C20
2	O	301	A1KDB	C19-C20-O3-C21
2	Q	301	A1KDB	C19-C20-O3-C21
2	F	301	A1KDB	S1-C29-C30-O4
2	S	301	A1KDB	C5-C4-N1-C3
2	V	301	A1KDB	C17-C16-O2-C15
2	O	301	A1KDB	C5-C4-N1-C3
3	L	302	EDO	O1-C1-C2-O2

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Mol	Chain	Res	Type	Atoms
2	F	301	A1KDB	C6-C7-C8-C9
2	I	301	A1KDB	C6-C7-C8-C9
2	J	301	A1KDB	C6-C7-C8-C9
2	K	301	A1KDB	C6-C7-C8-C9
2	Q	301	A1KDB	C6-C7-C8-C9
2	U	301	A1KDB	C6-C7-C8-C9
2	C	301	A1KDB	C31-C21-O3-C20

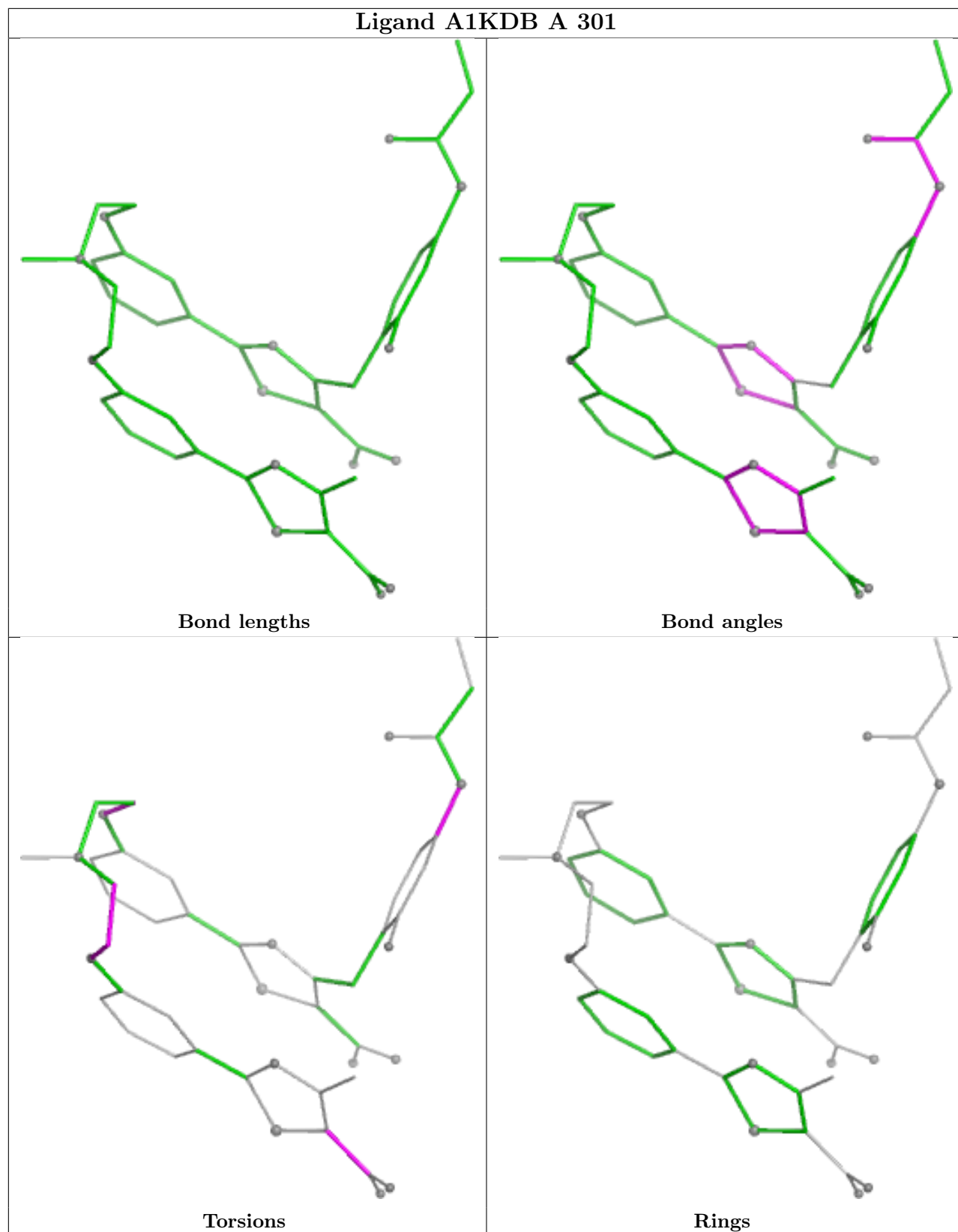
There are no ring outliers.

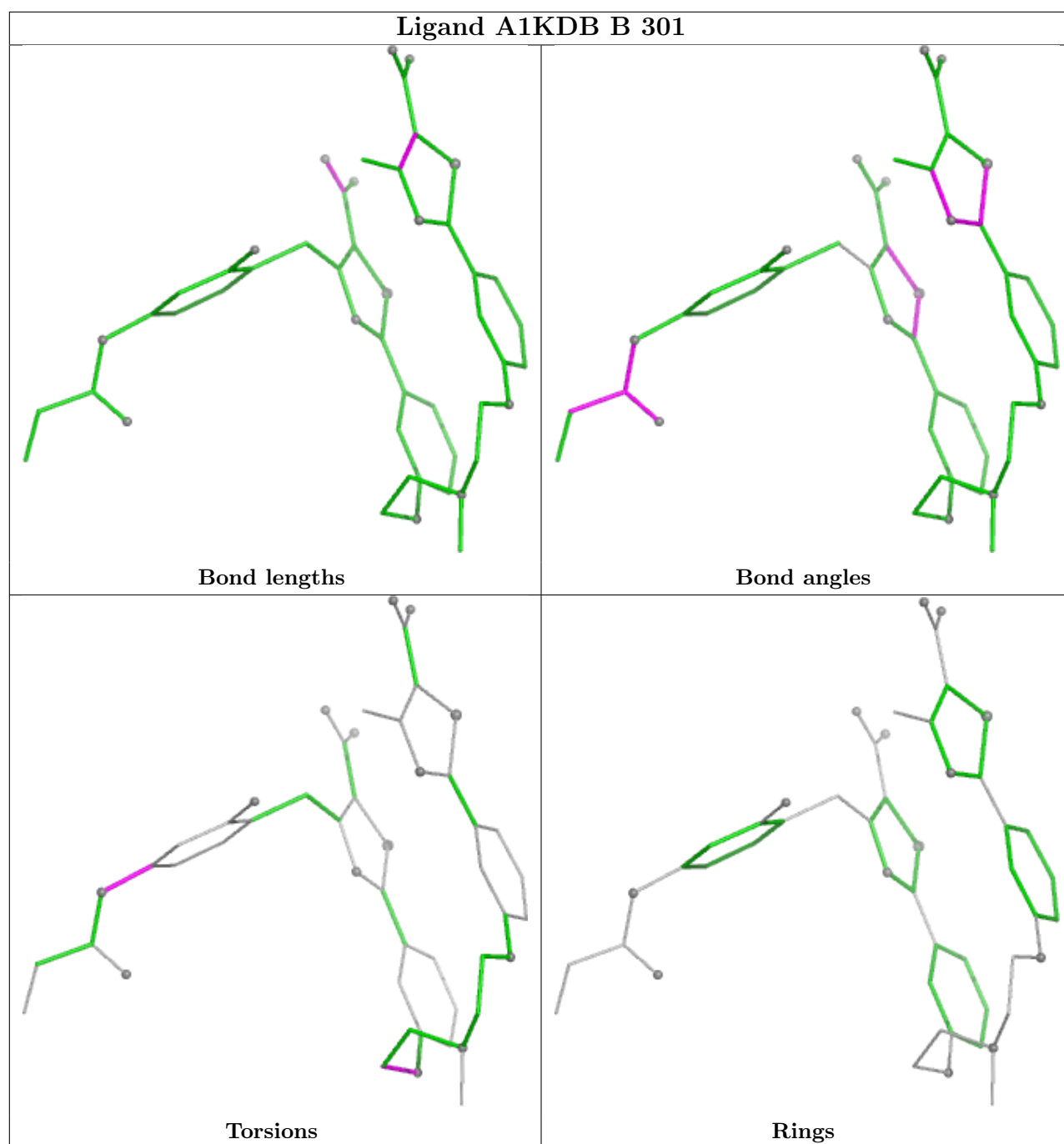
5 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	V	301	A1KDB	2	0
3	C	302	EDO	2	0
2	K	301	A1KDB	1	0
3	B	303	EDO	1	0
2	U	301	A1KDB	1	0

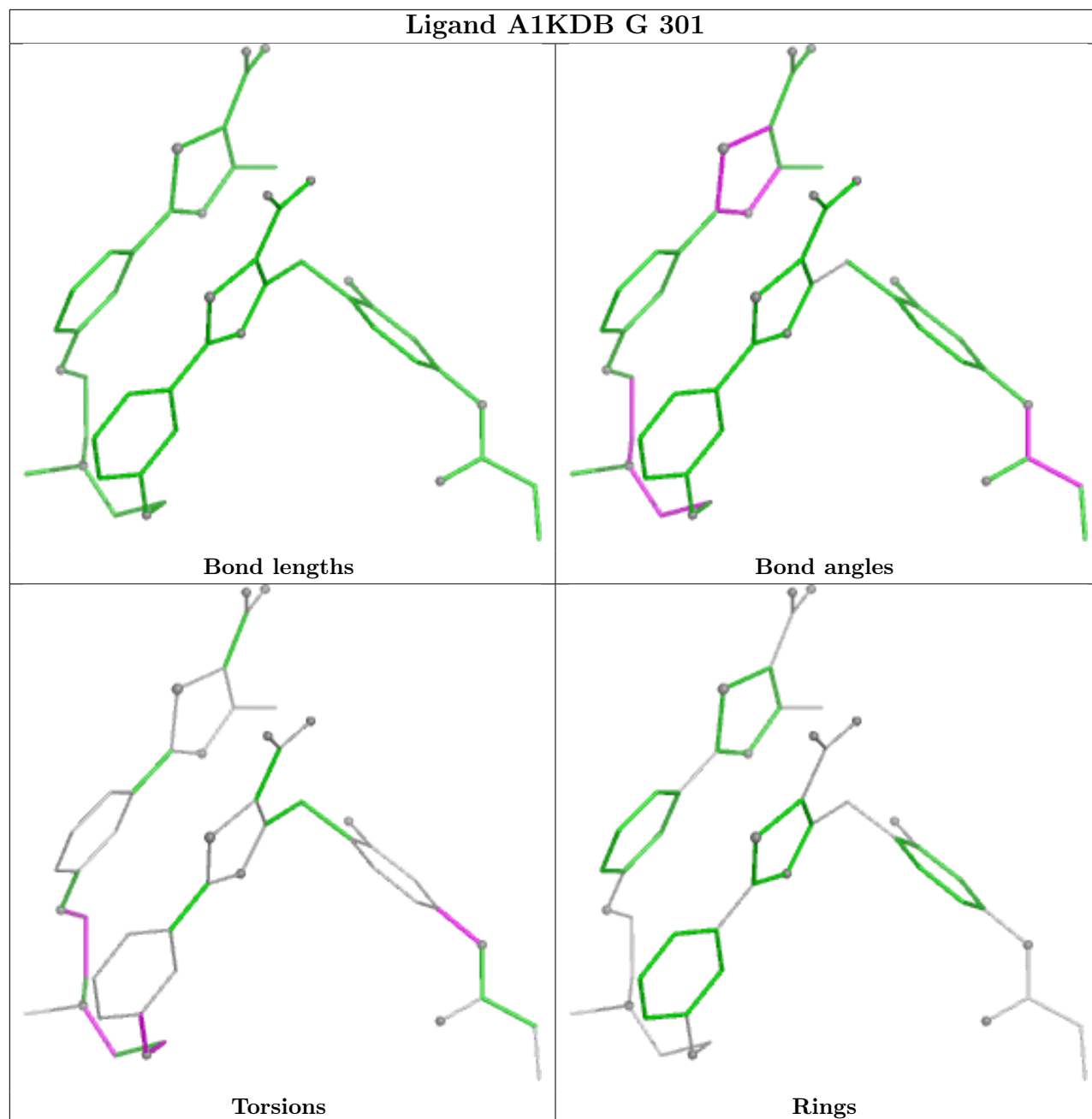
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

Ligand A1KDB A 301

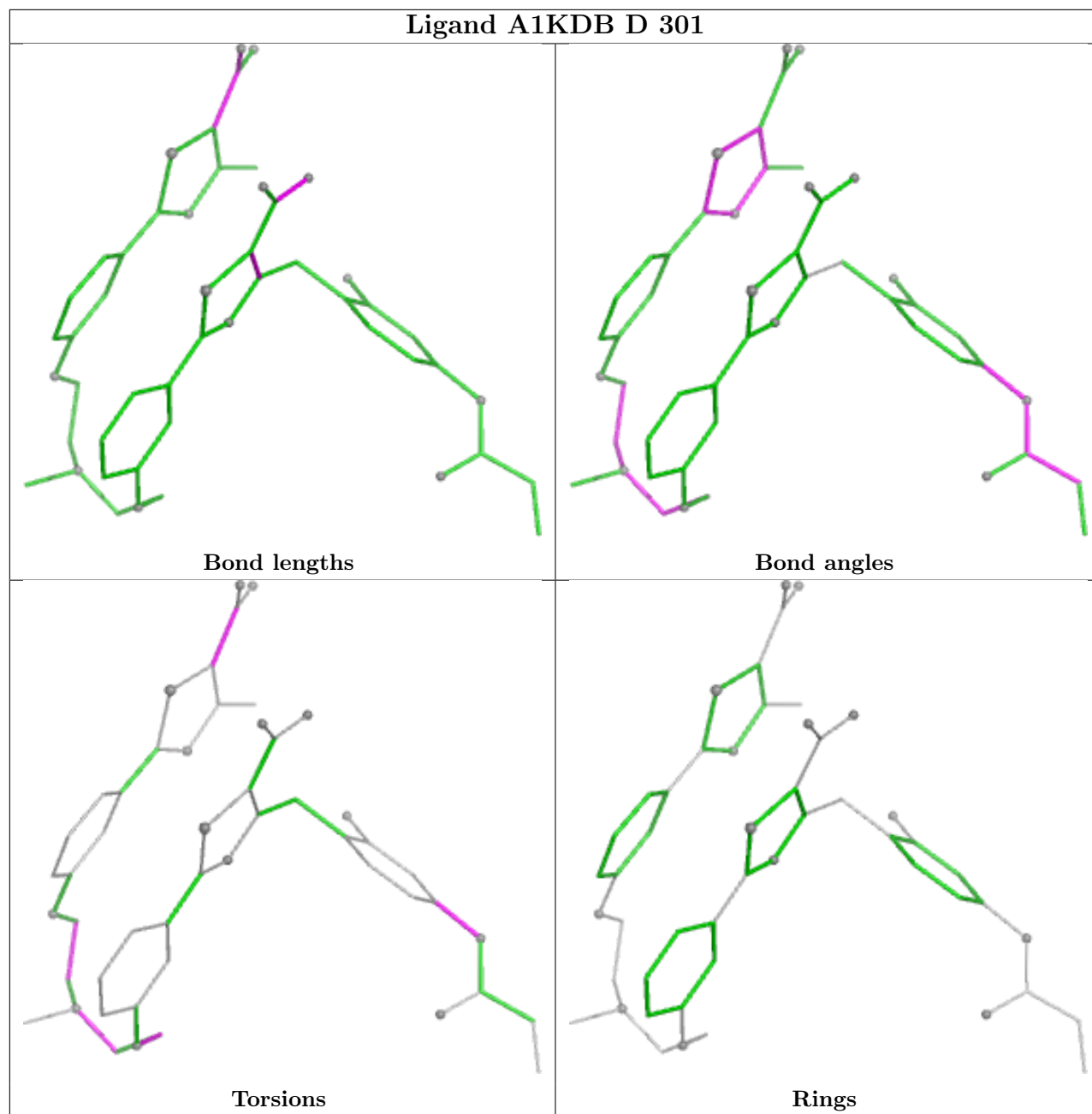




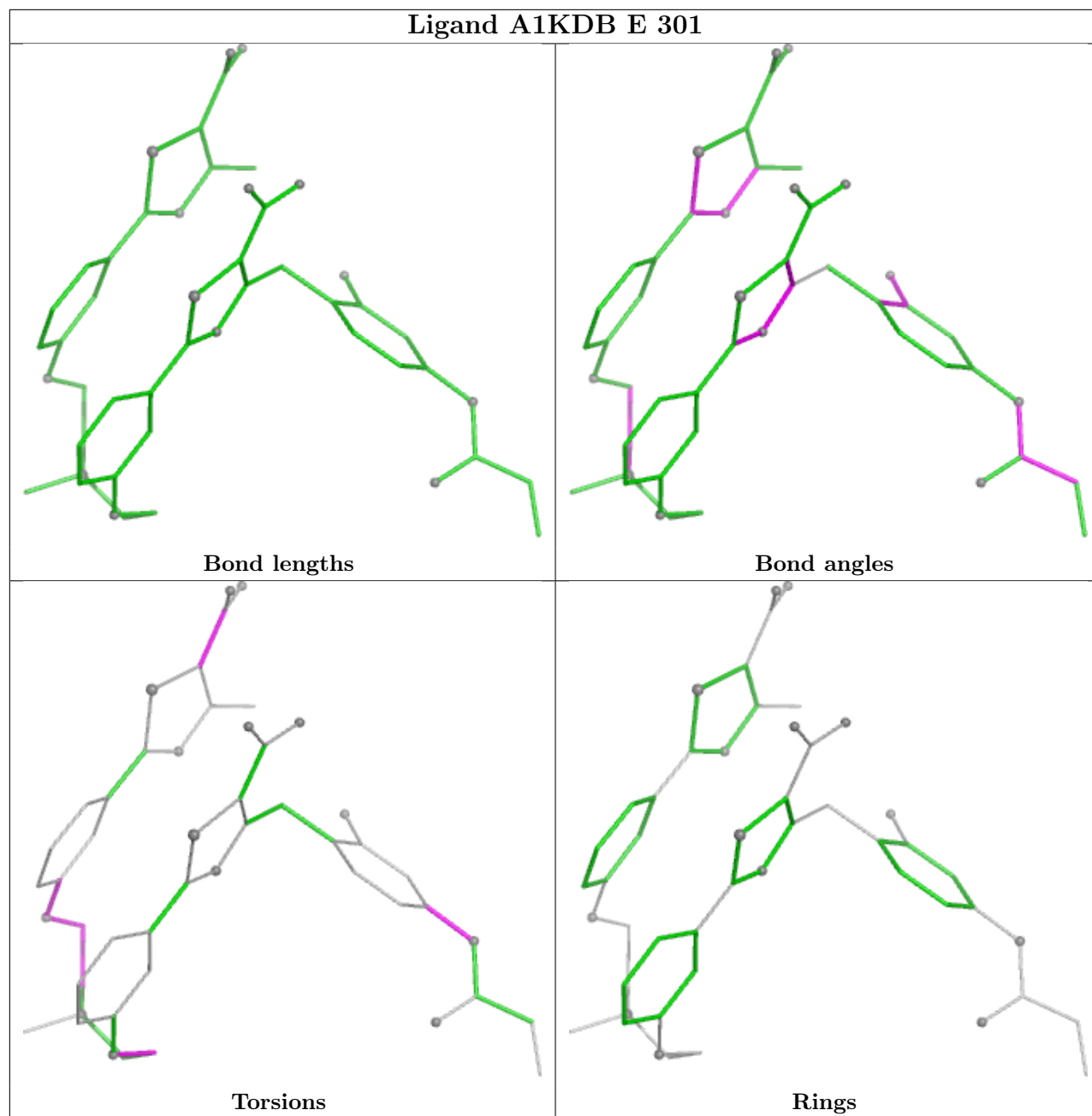
Ligand A1KDB G 301



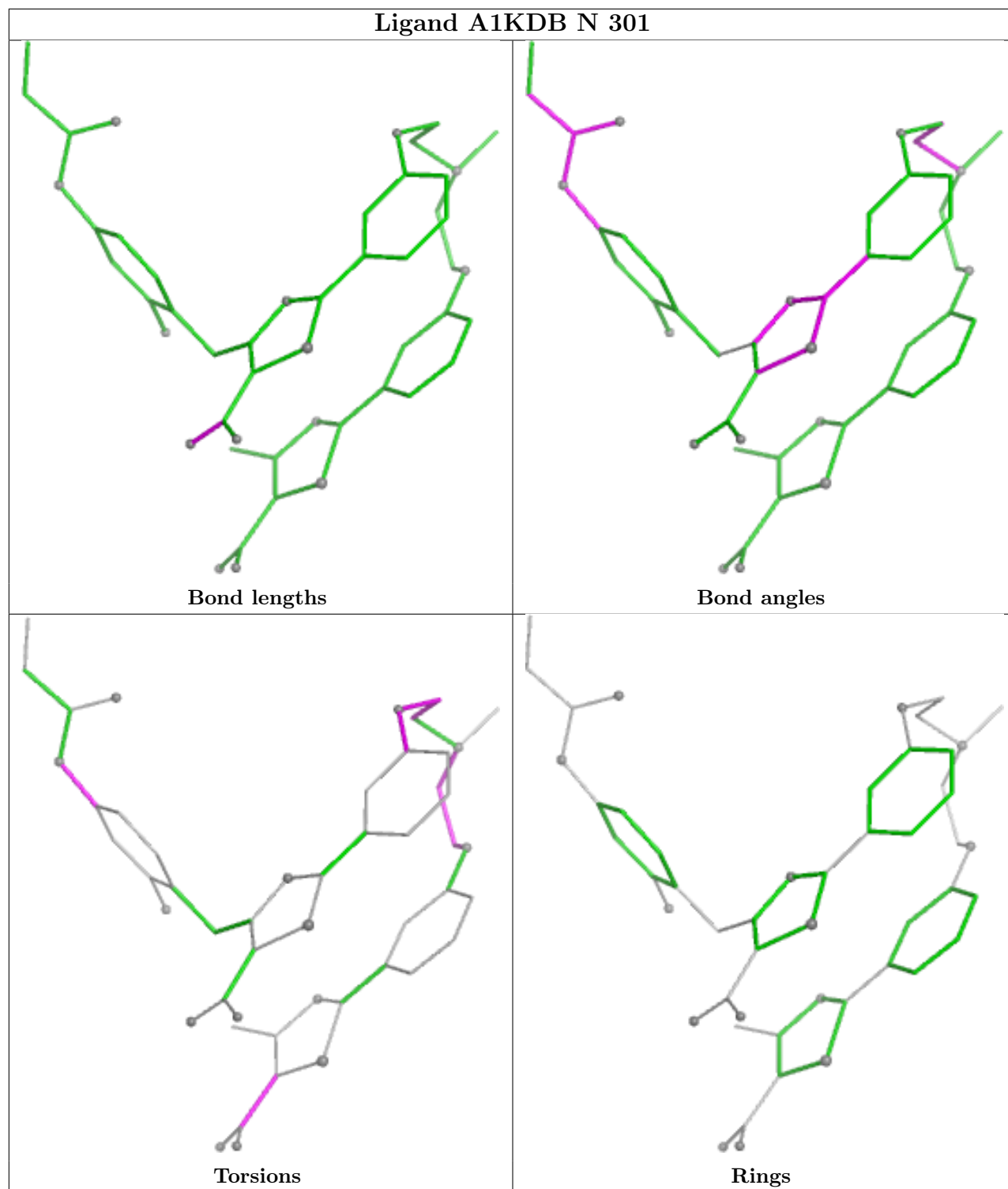
Ligand A1KDB D 301

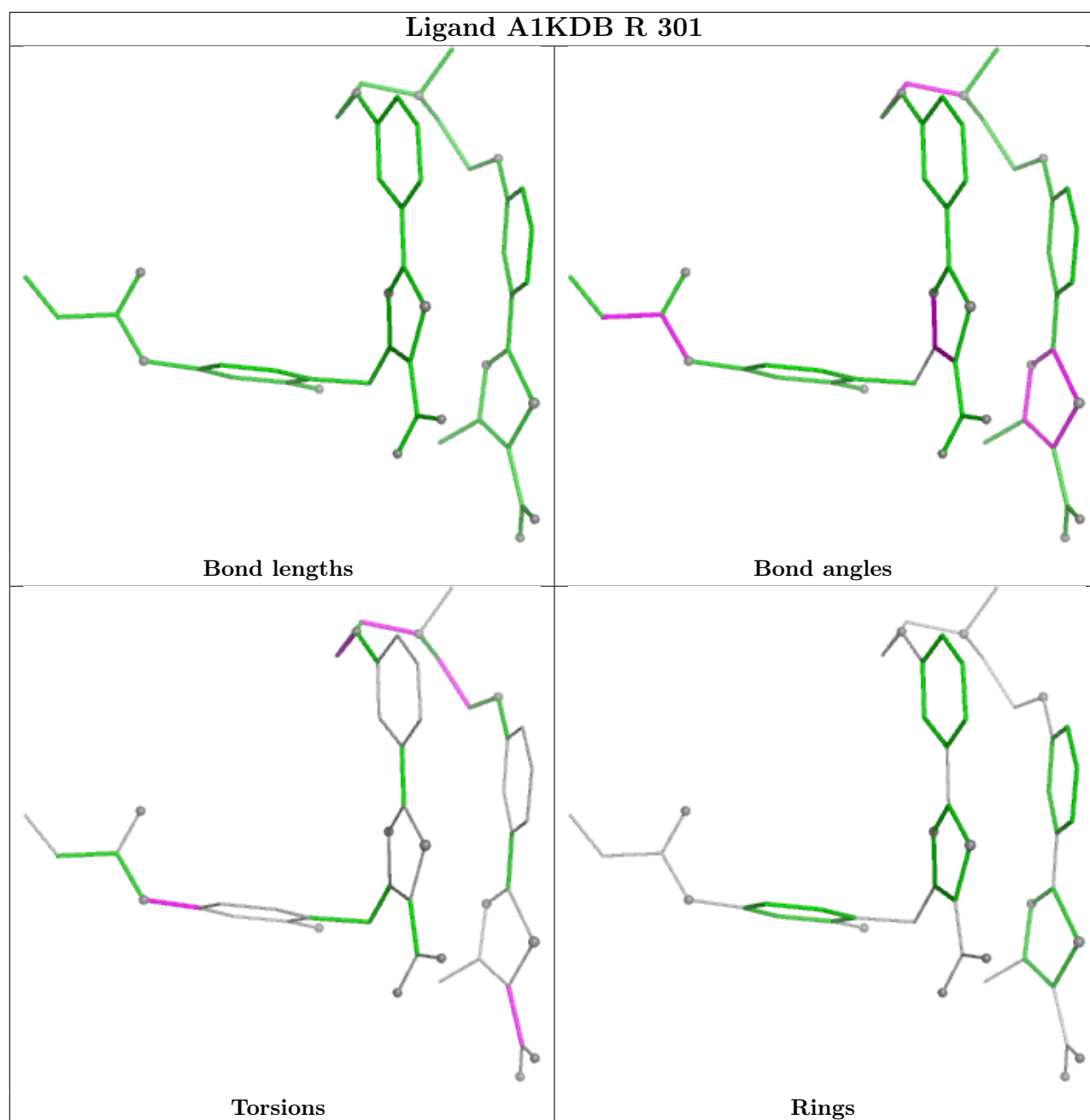


Ligand A1KDB E 301

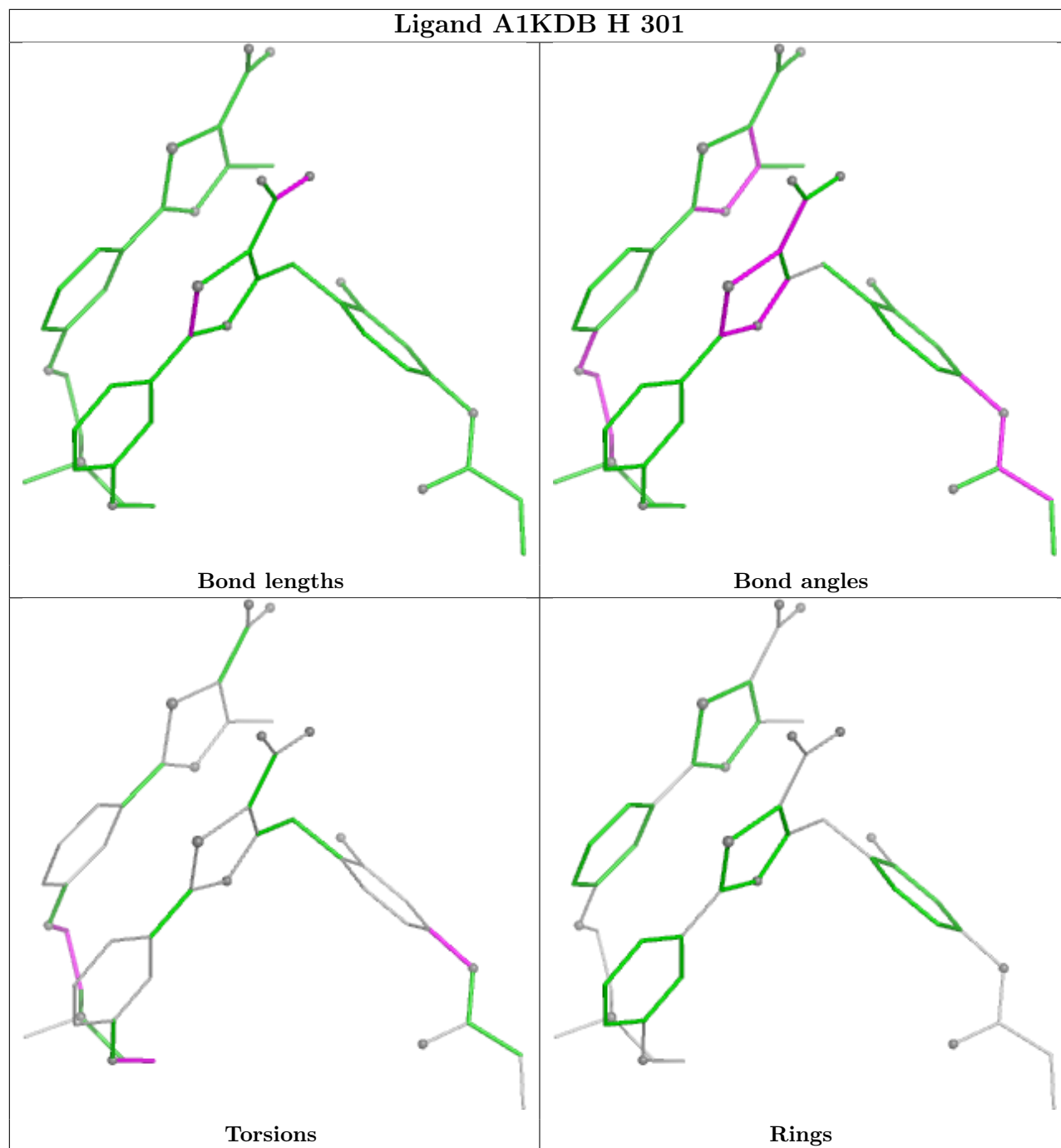


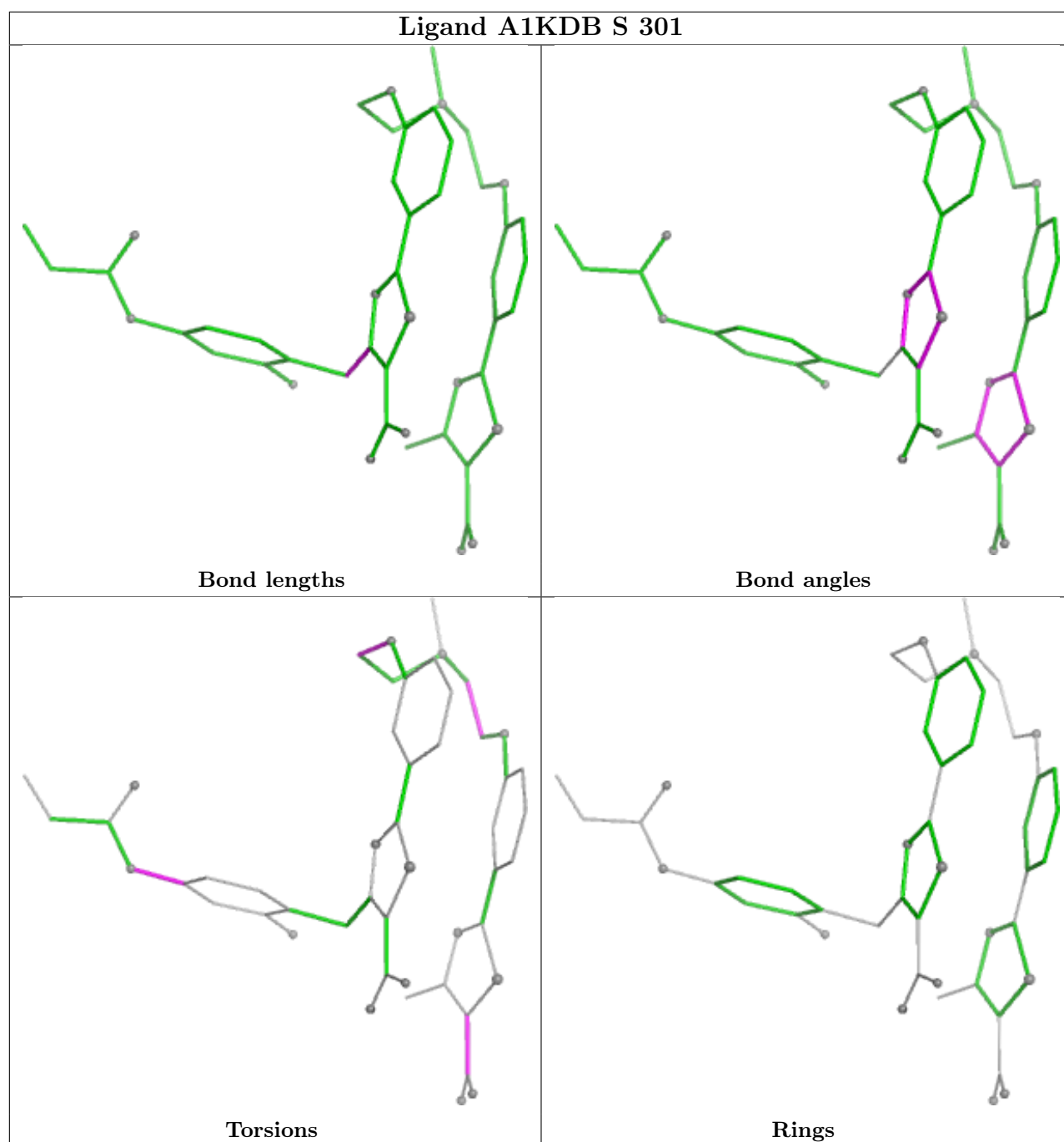
Ligand A1KDB N 301



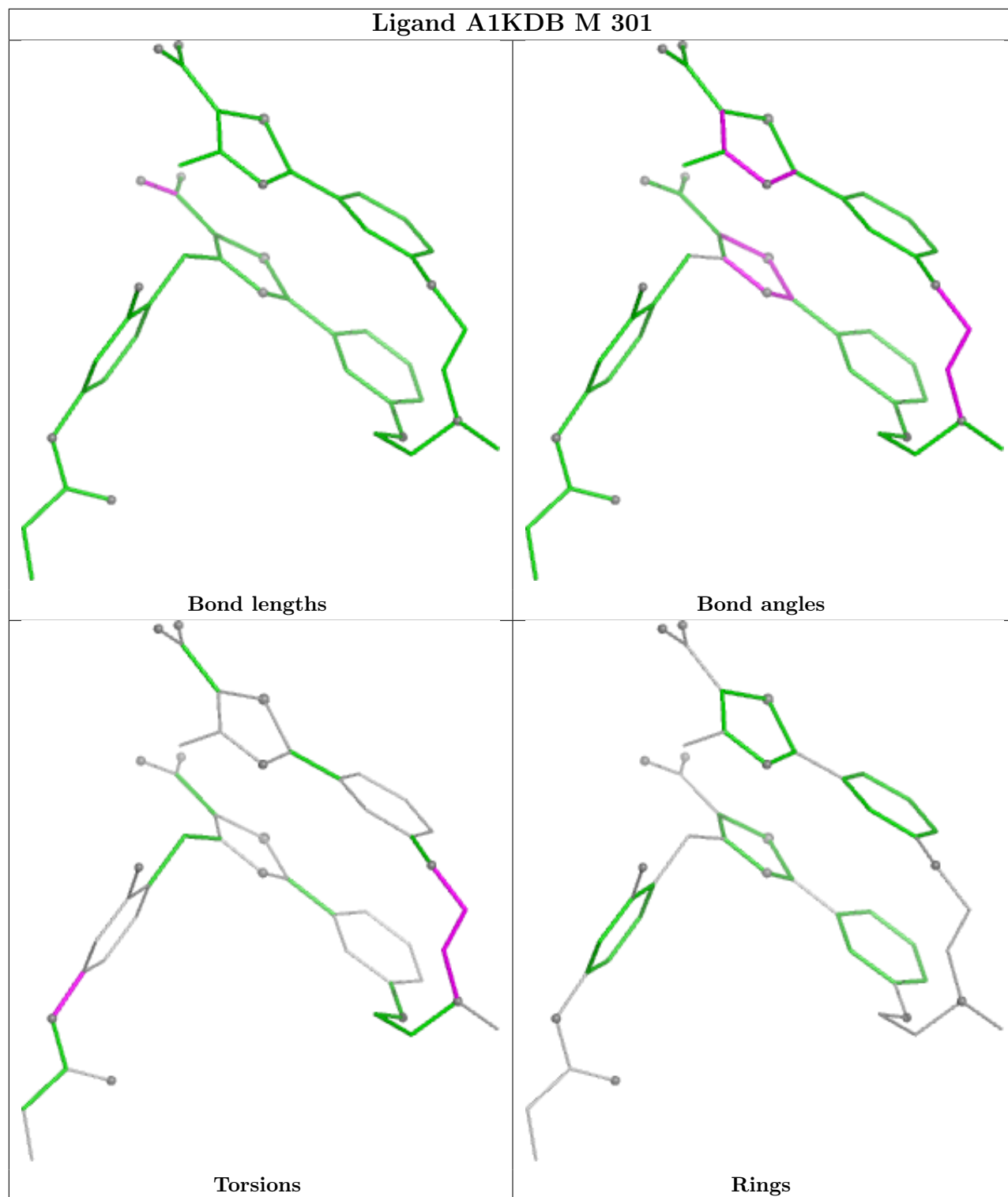


Ligand A1KDB H 301

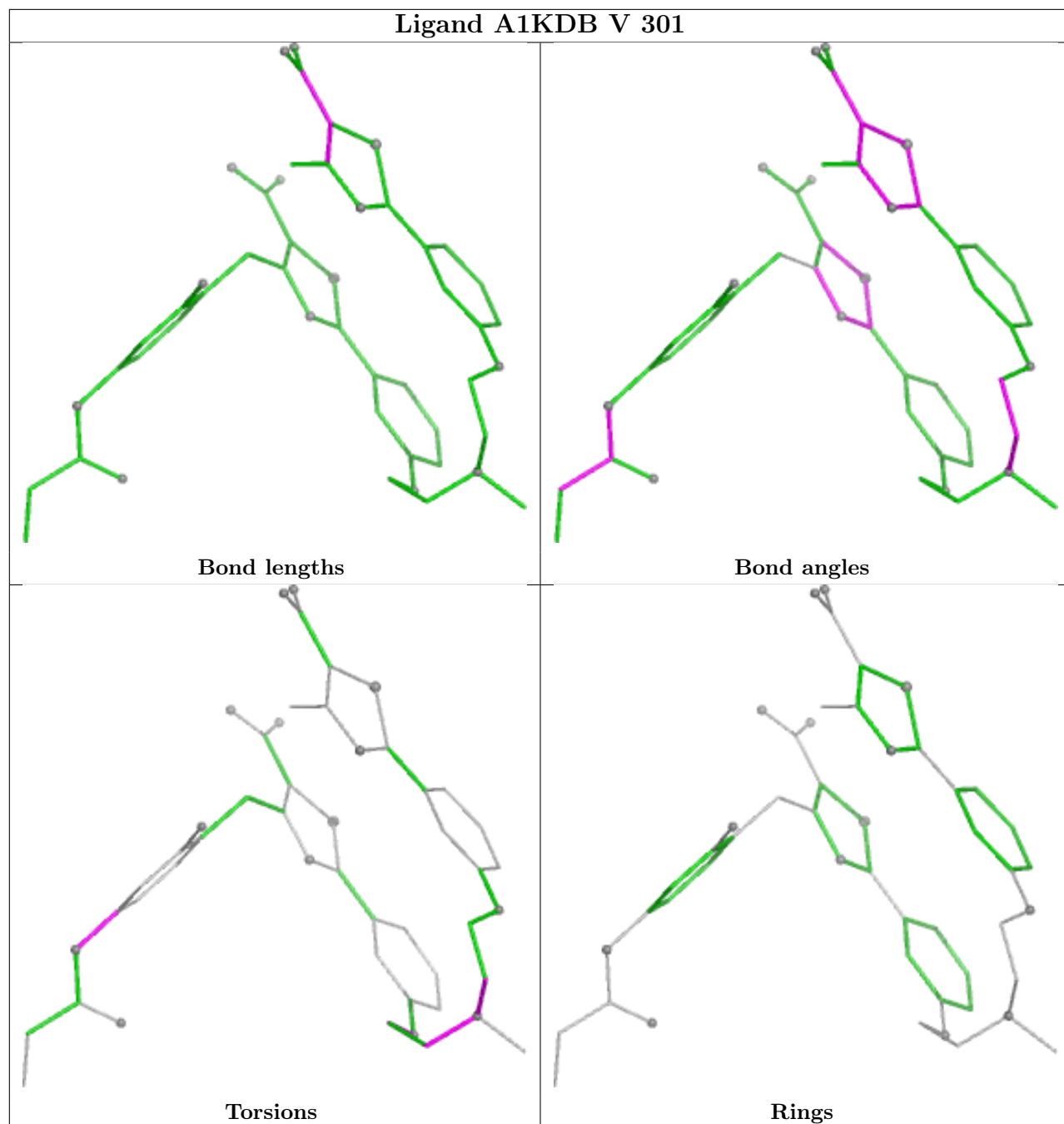


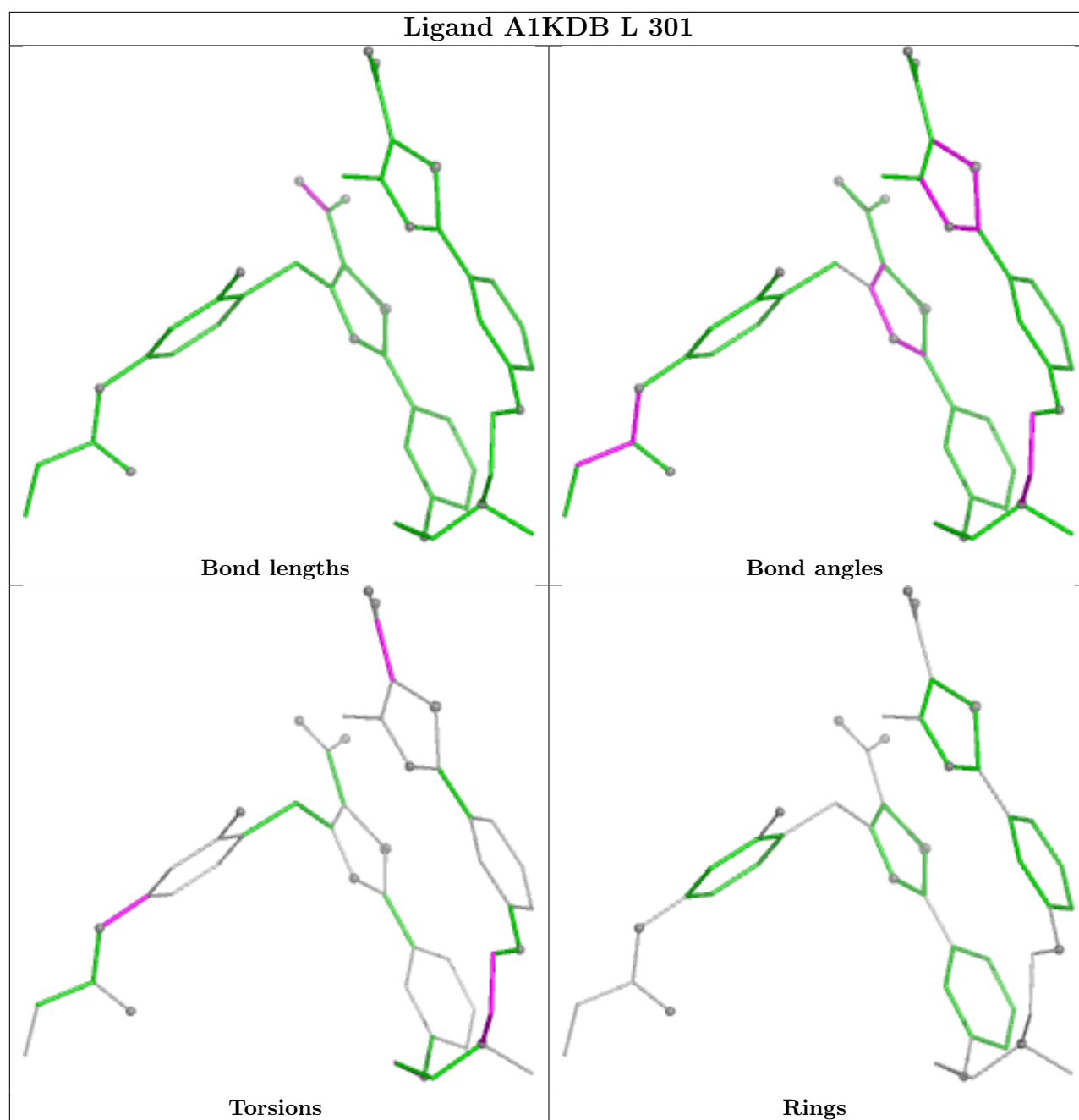


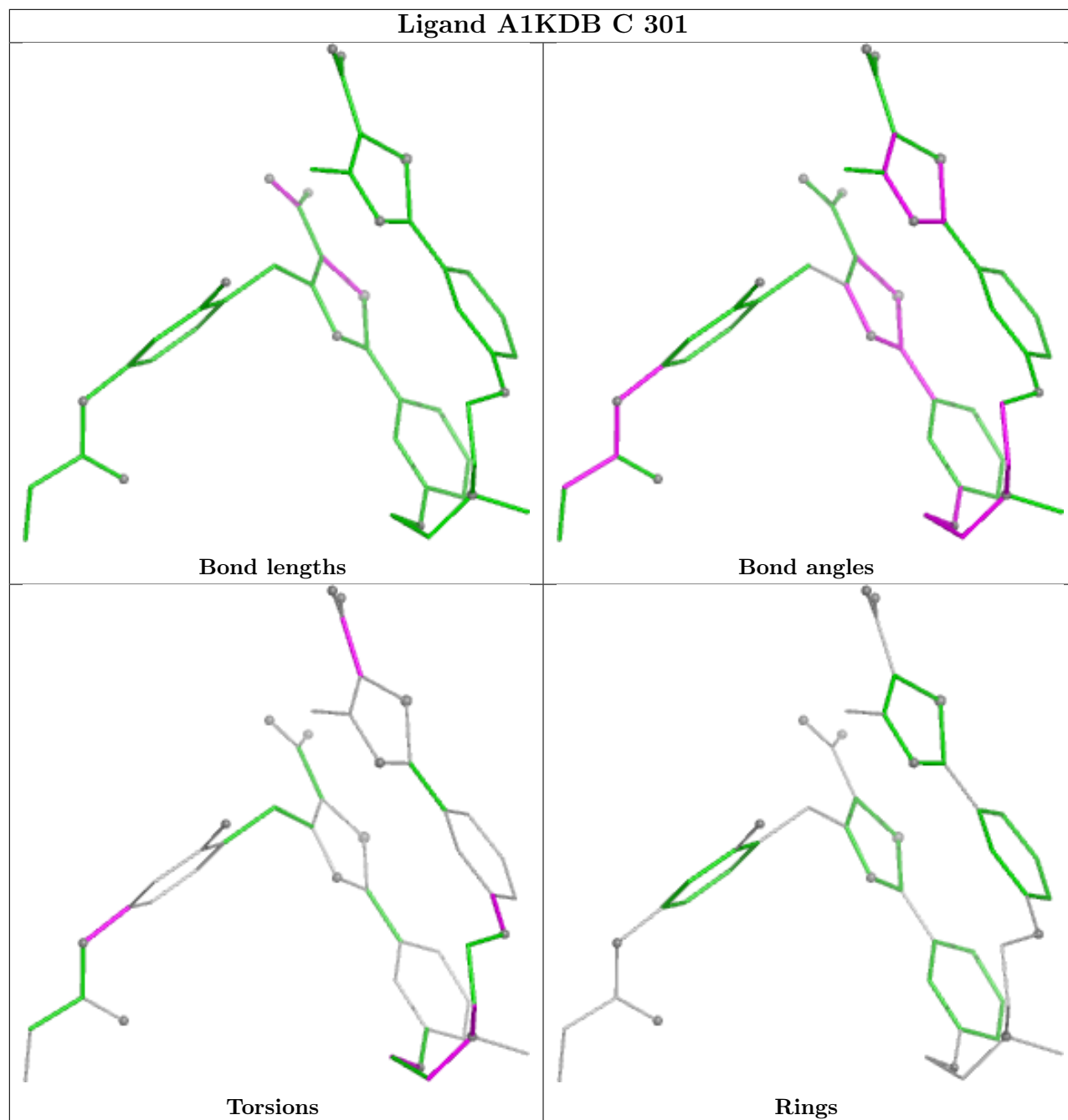
Ligand A1KDB M 301

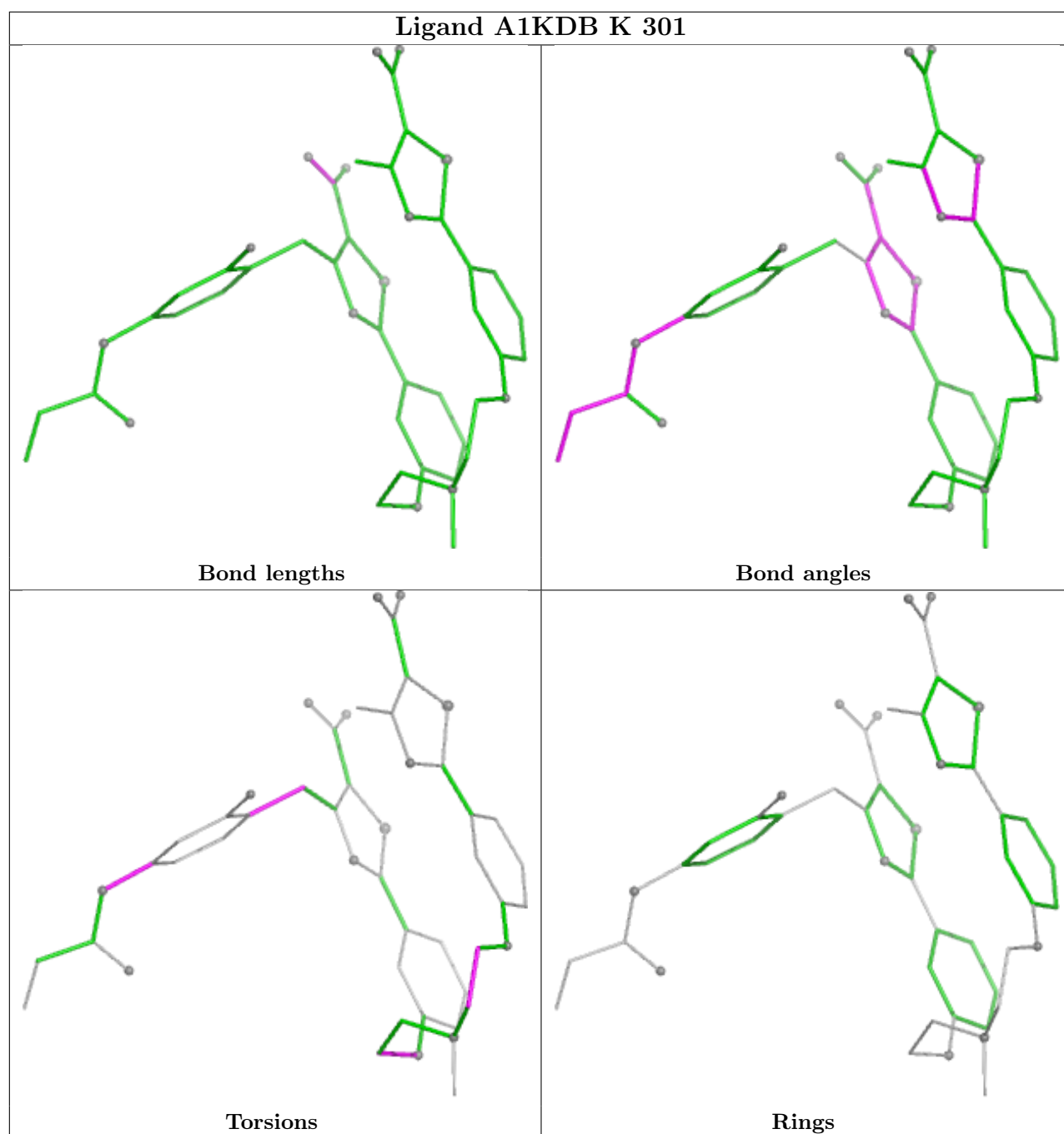


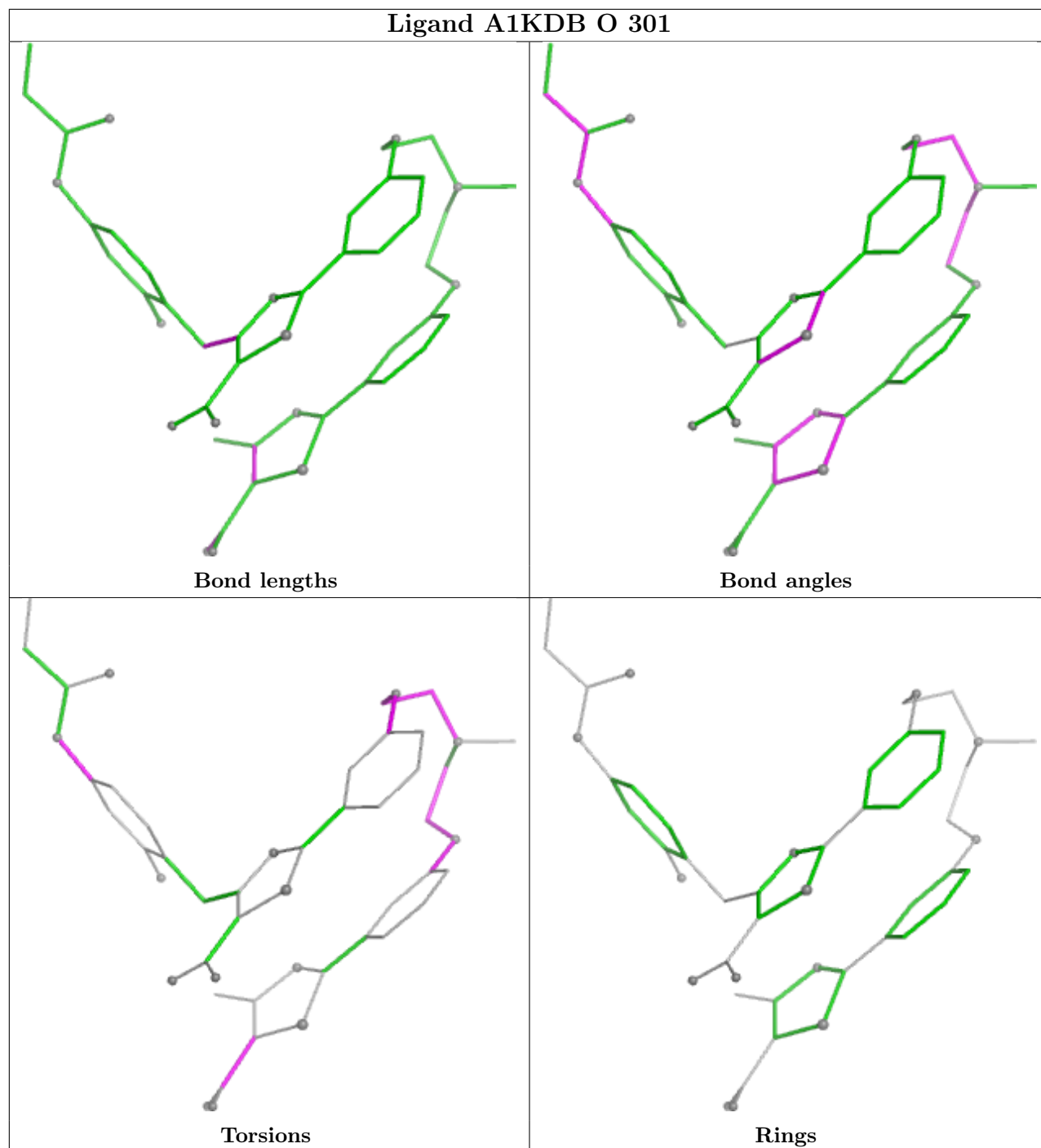
Ligand A1KDB V 301

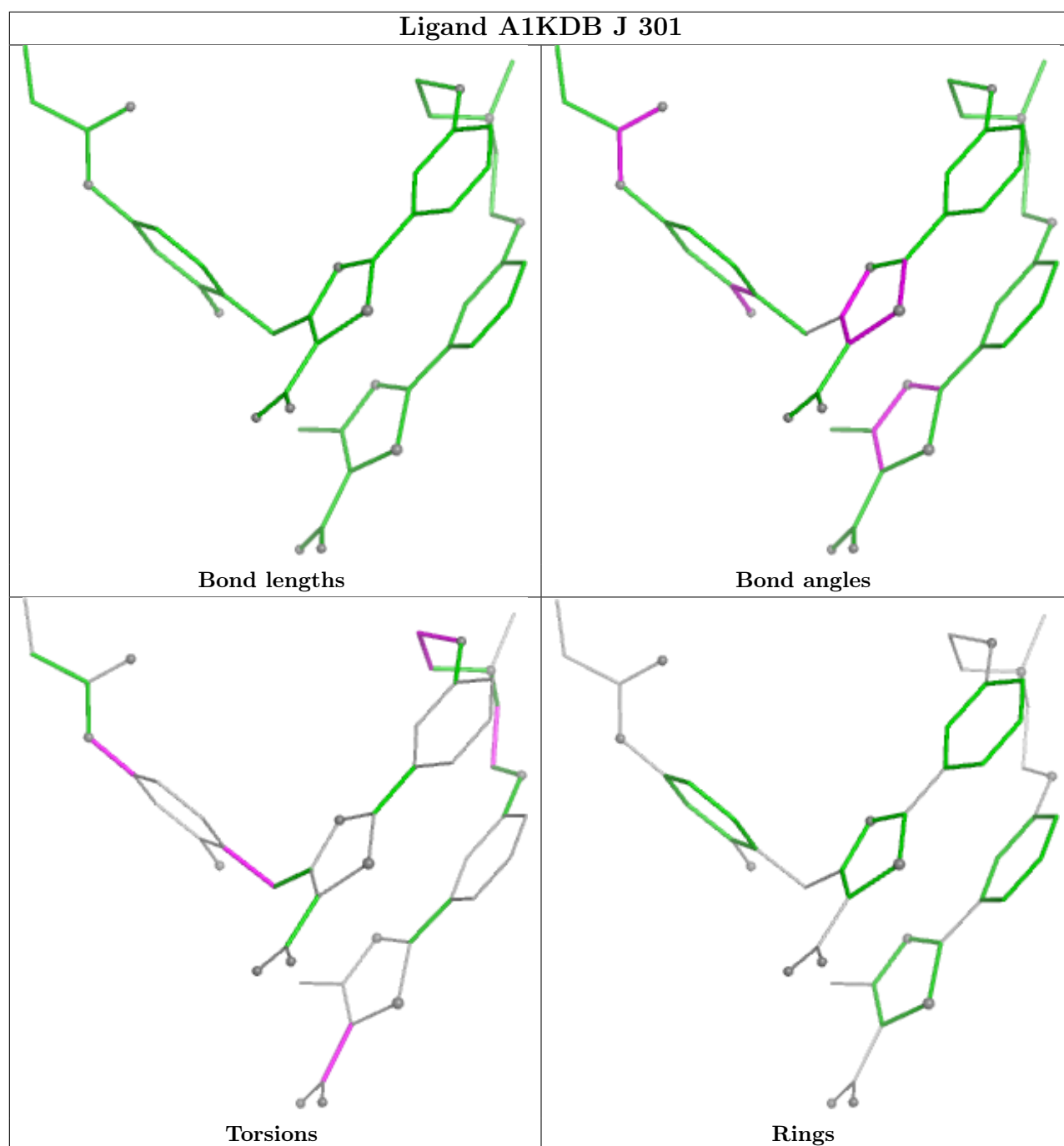




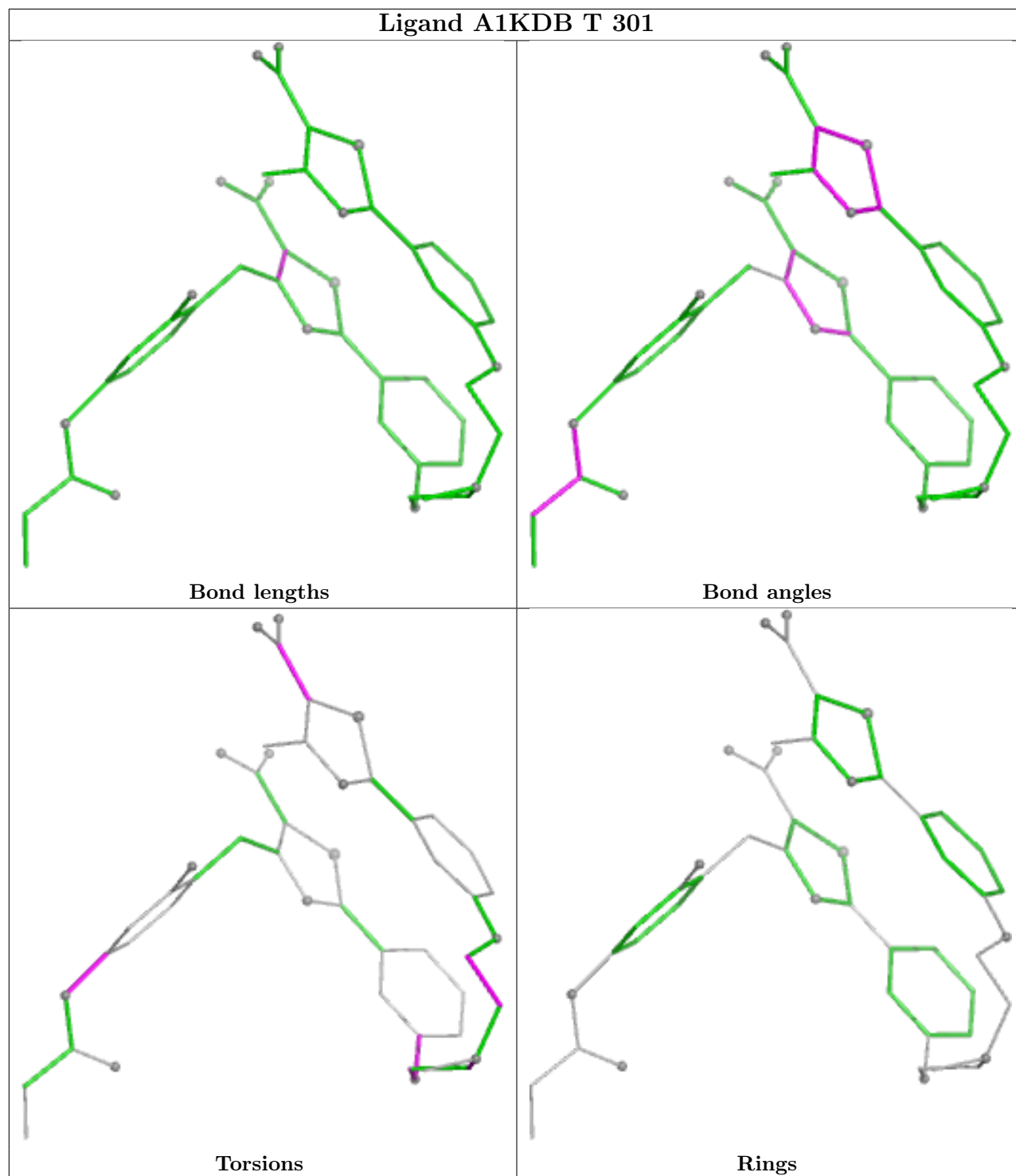


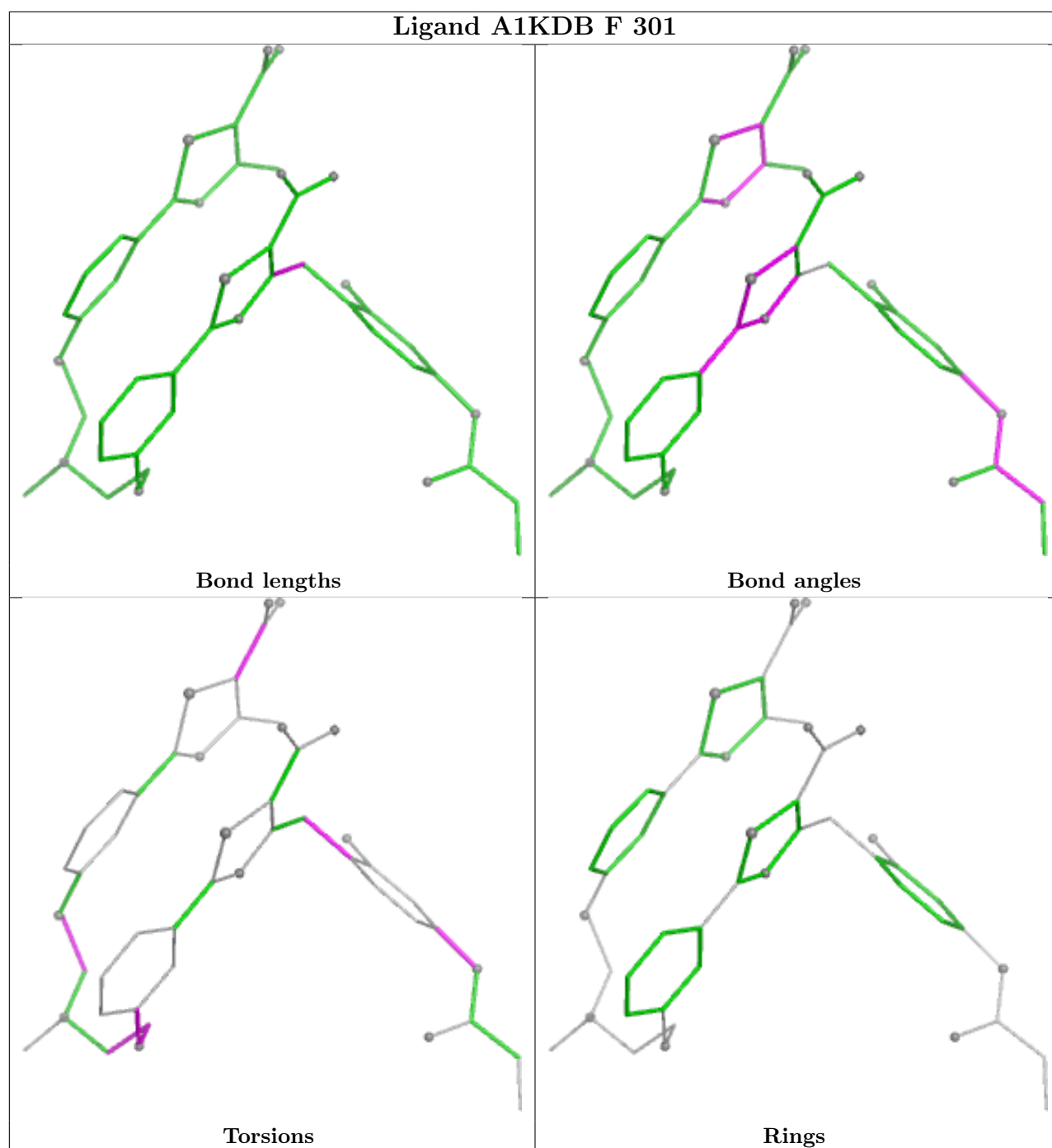




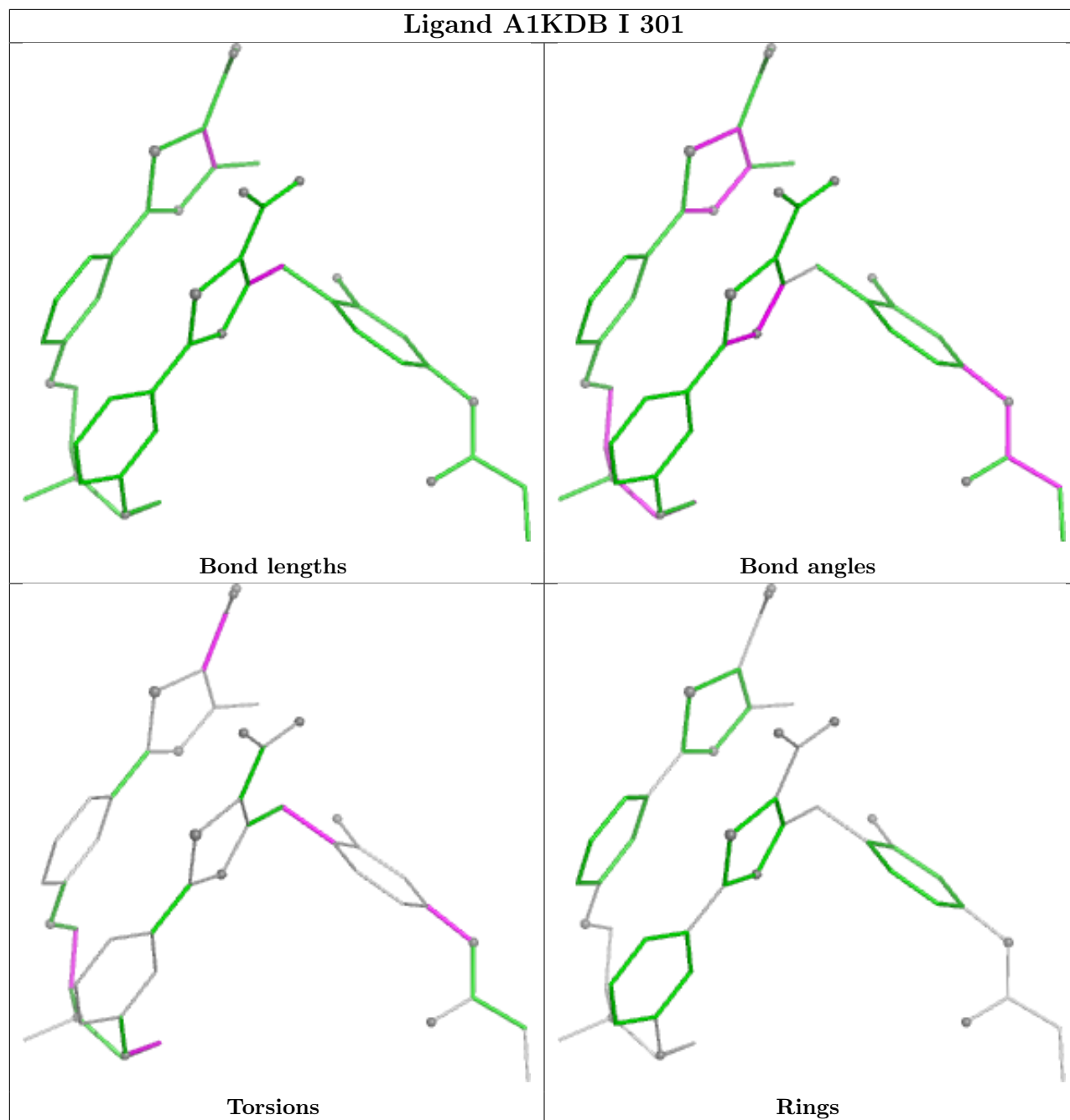


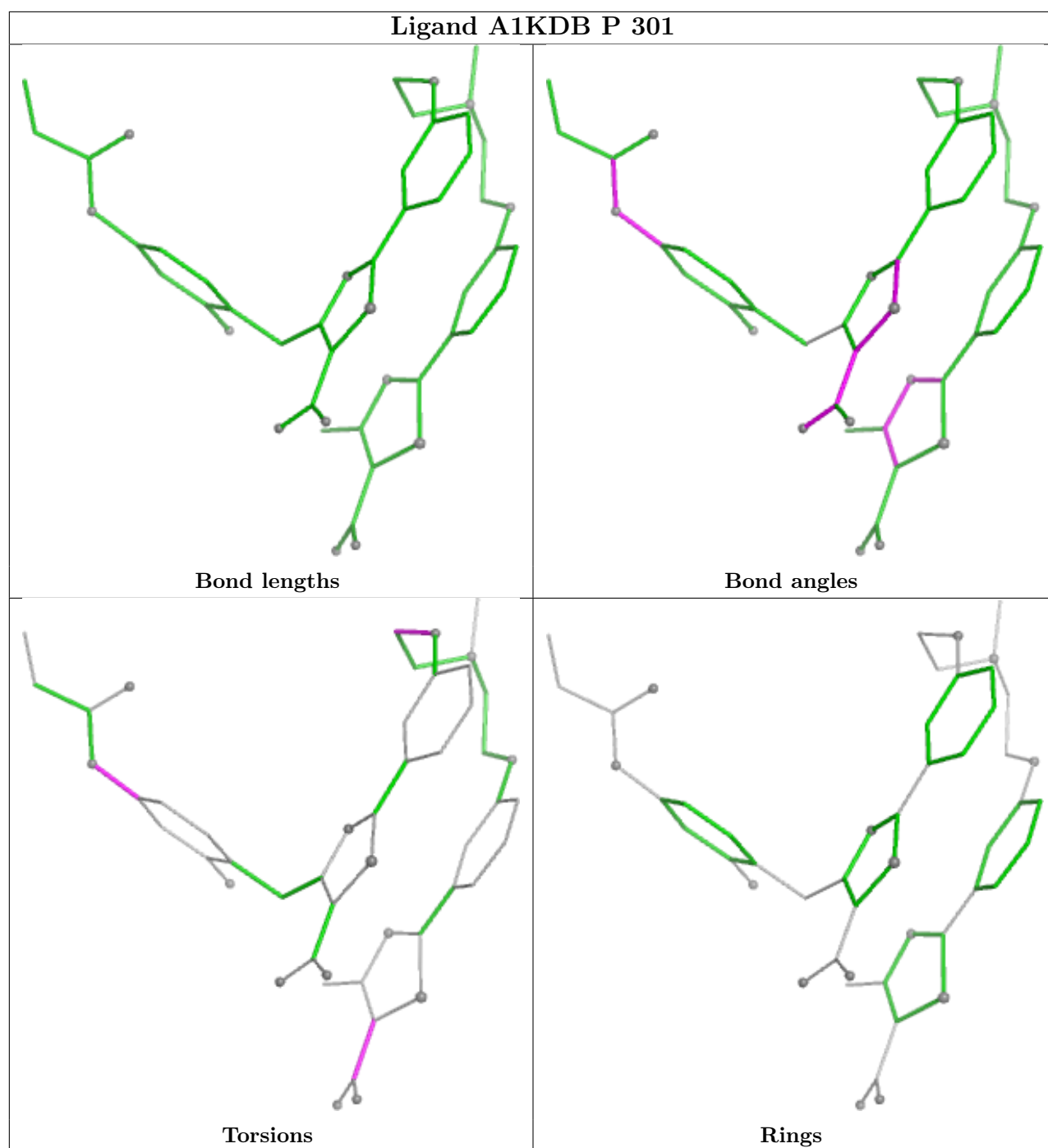
Ligand A1KDB T 301

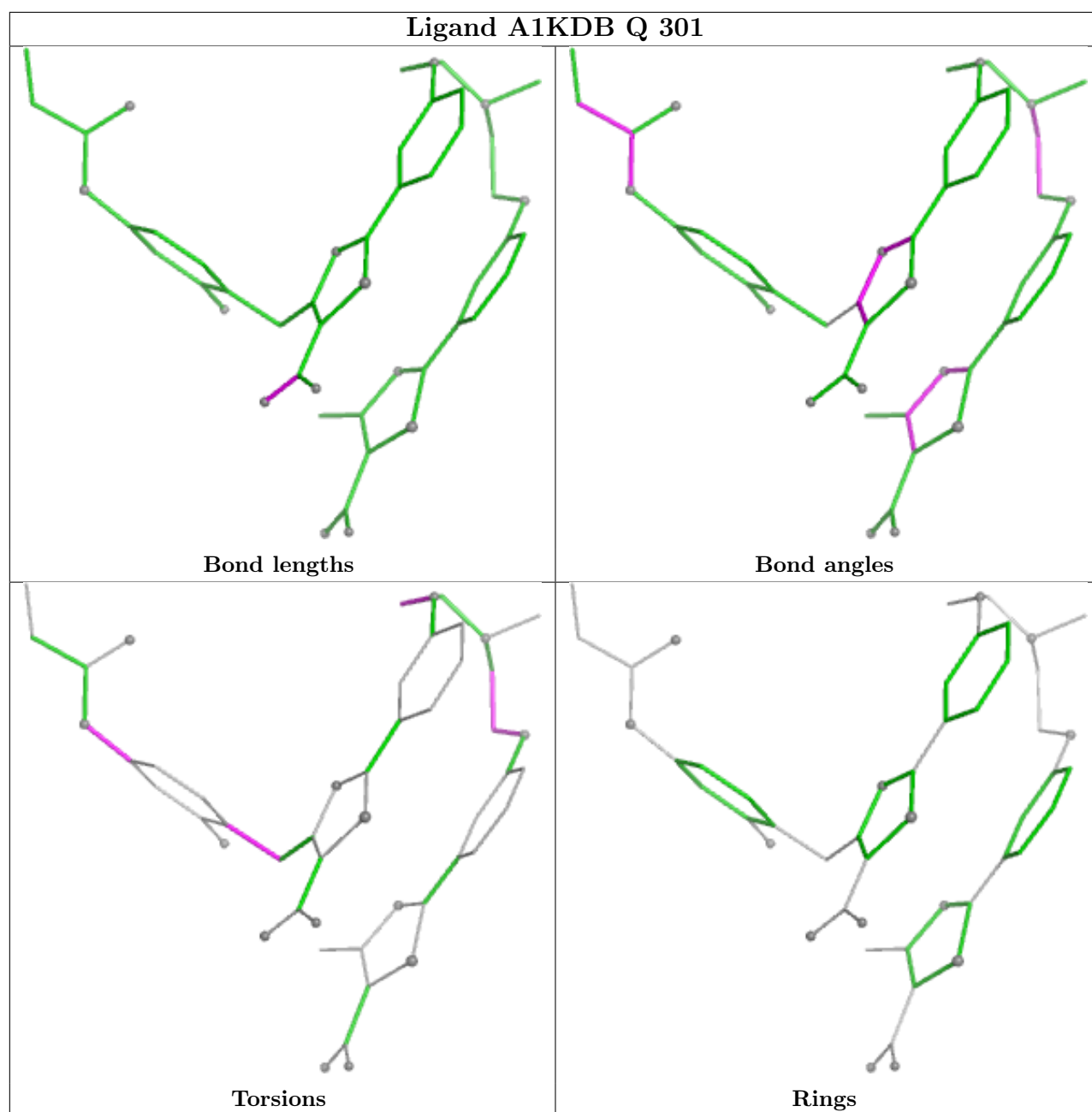


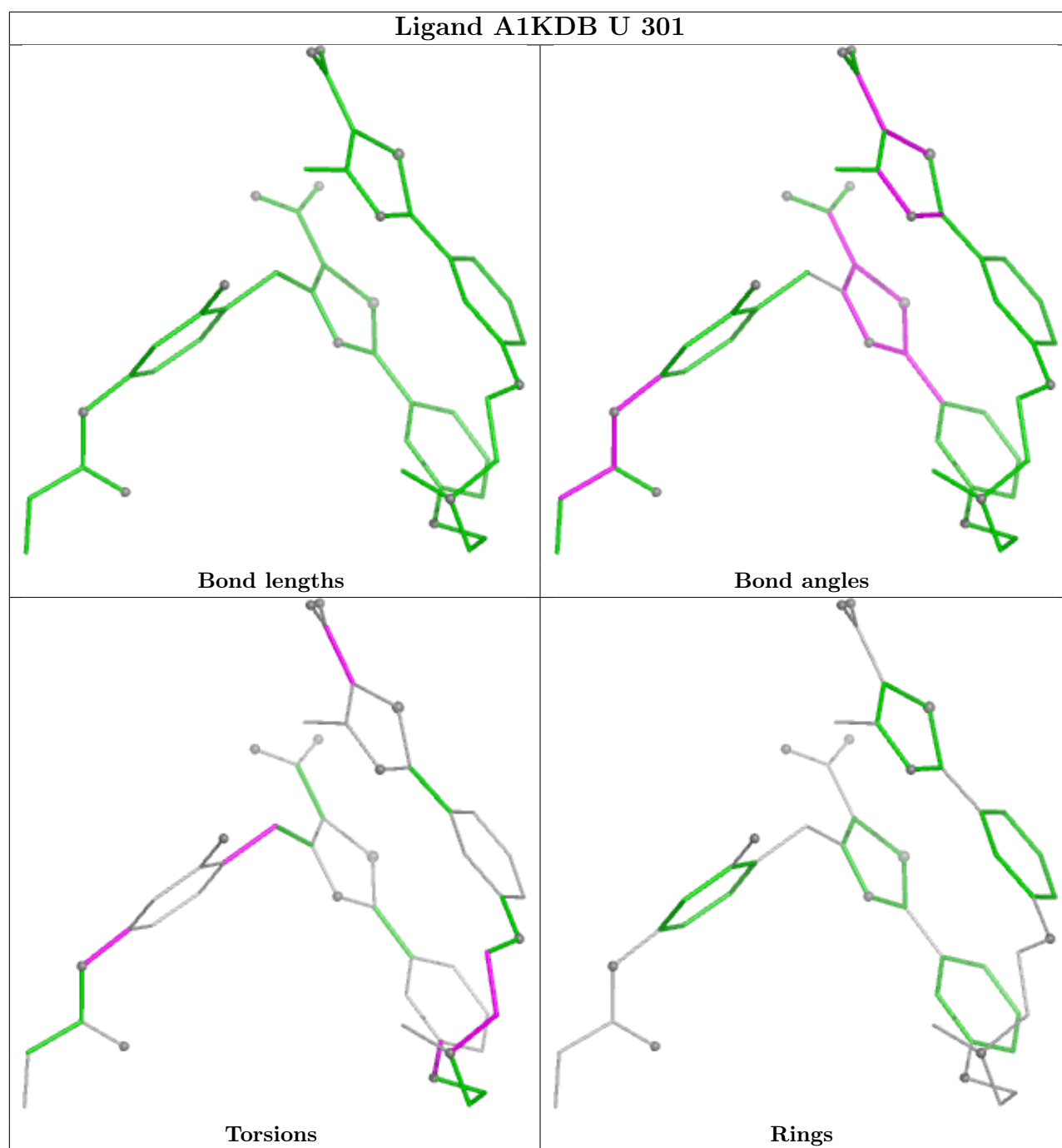


Ligand A1KDB I 301









5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	187/215 (86%)	0.23	12 (6%) 25 27	36, 52, 121, 183	1 (0%)
1	B	188/215 (87%)	0.24	14 (7%) 20 22	23, 49, 116, 147	1 (0%)
1	C	188/215 (87%)	0.30	14 (7%) 20 22	35, 50, 130, 199	0
1	D	183/215 (85%)	0.11	8 (4%) 39 41	35, 53, 112, 155	0
1	E	190/215 (88%)	0.31	10 (5%) 32 34	35, 54, 120, 162	0
1	F	190/215 (88%)	0.52	21 (11%) 10 11	37, 56, 123, 208	0
1	G	189/215 (87%)	0.42	14 (7%) 20 22	37, 58, 145, 204	0
1	H	190/215 (88%)	0.57	23 (12%) 8 9	40, 61, 133, 163	0
1	I	189/215 (87%)	0.45	12 (6%) 26 28	41, 65, 132, 191	0
1	J	188/215 (87%)	0.45	16 (8%) 16 18	31, 63, 140, 205	1 (0%)
1	K	188/215 (87%)	0.46	16 (8%) 16 18	24, 58, 133, 205	1 (0%)
1	L	188/215 (87%)	0.29	15 (7%) 18 20	23, 53, 139, 188	1 (0%)
1	M	188/215 (87%)	0.45	26 (13%) 6 7	37, 53, 140, 185	0
1	N	189/215 (87%)	0.41	18 (9%) 14 15	35, 56, 129, 182	0
1	O	188/215 (87%)	0.31	12 (6%) 25 27	36, 54, 127, 159	0
1	P	188/215 (87%)	0.21	9 (4%) 35 37	34, 49, 106, 133	0
1	Q	188/215 (87%)	0.36	11 (5%) 28 30	21, 52, 116, 165	1 (0%)
1	R	187/215 (86%)	0.47	14 (7%) 20 22	25, 60, 125, 159	1 (0%)
1	S	183/215 (85%)	0.45	10 (5%) 30 32	43, 67, 124, 156	0
1	T	189/215 (87%)	0.54	19 (10%) 12 14	26, 64, 145, 207	1 (0%)
1	U	189/215 (87%)	0.43	11 (5%) 29 31	41, 61, 133, 177	0
1	V	188/215 (87%)	0.44	17 (9%) 15 16	38, 55, 116, 179	0
All	All	4135/4730 (87%)	0.38	322 (7%) 19 21	21, 57, 130, 208	8 (0%)

All (322) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	J	211	ASN	6.4
1	V	25	CYS	6.1
1	M	172	LEU	5.0
1	H	23	VAL	4.9
1	P	24	LEU	4.8
1	M	184	LEU	4.7
1	C	184	LEU	4.6
1	L	210	PRO	4.6
1	H	184	LEU	4.6
1	V	172	LEU	4.5
1	E	23	VAL	4.4
1	F	23	VAL	4.3
1	K	184	LEU	4.2
1	L	24	LEU	4.2
1	P	182	LEU	4.2
1	A	25	CYS	4.2
1	H	186	VAL	4.1
1	J	184	LEU	4.1
1	S	24	LEU	4.1
1	N	23	VAL	4.1
1	K	29	CYS	4.1
1	N	184	LEU	4.0
1	G	186	VAL	4.0
1	N	210	PRO	4.0
1	U	24	LEU	3.9
1	N	179	PRO	3.8
1	F	24	LEU	3.8
1	B	24	LEU	3.8
1	K	24	LEU	3.8
1	B	184	LEU	3.8
1	L	188	LEU	3.8
1	M	60	GLY	3.8
1	G	188	LEU	3.7
1	U	184	LEU	3.7
1	V	29	CYS	3.7
1	J	179	PRO	3.7
1	B	183	PRO	3.7
1	O	210	PRO	3.7
1	L	25	CYS	3.6
1	F	59	GLY	3.6
1	H	178	LEU	3.6
1	T	184	LEU	3.6
1	R	212	MET	3.6

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Mol	Chain	Res	Type	RSRZ
1	E	184	LEU	3.6
1	M	178	LEU	3.6
1	F	61	GLN	3.6
1	M	180	ARG	3.6
1	A	184	LEU	3.5
1	U	212	MET	3.5
1	K	182	LEU	3.5
1	M	24	LEU	3.5
1	B	182	LEU	3.5
1	N	24	LEU	3.5
1	O	24	LEU	3.5
1	O	184	LEU	3.5
1	P	137	LEU	3.5
1	G	183	PRO	3.4
1	U	210	PRO	3.4
1	F	177	LYS	3.4
1	S	210	PRO	3.4
1	M	29	CYS	3.4
1	M	58	GLY	3.4
1	Q	24	LEU	3.3
1	Q	184	LEU	3.3
1	R	180	ARG	3.3
1	J	24	LEU	3.3
1	A	172	LEU	3.3
1	L	182	LEU	3.3
1	G	210	PRO	3.3
1	N	182	LEU	3.2
1	A	179	PRO	3.2
1	A	210	PRO	3.2
1	L	179	PRO	3.2
1	O	209	ARG	3.2
1	F	182	LEU	3.2
1	I	172	LEU	3.2
1	O	208	CYS	3.2
1	H	56	MET	3.2
1	S	211	ASN	3.2
1	K	183	PRO	3.2
1	N	178	LEU	3.2
1	T	172	LEU	3.2
1	K	211	ASN	3.1
1	R	172	LEU	3.1
1	V	210	PRO	3.1

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Mol	Chain	Res	Type	RSRZ
1	T	210	PRO	3.1
1	U	172	LEU	3.1
1	V	184	LEU	3.1
1	D	25	CYS	3.1
1	L	29	CYS	3.1
1	P	183	PRO	3.1
1	G	24	LEU	3.1
1	T	24	LEU	3.1
1	T	25	CYS	3.0
1	J	210	PRO	3.0
1	B	179	PRO	3.0
1	H	210	PRO	3.0
1	N	137	LEU	3.0
1	Q	172	LEU	3.0
1	J	182	LEU	2.9
1	M	59	GLY	2.9
1	N	25	CYS	2.9
1	T	166	ILE	2.9
1	S	171	TYR	2.9
1	D	29	CYS	2.9
1	I	211	ASN	2.9
1	T	171	TYR	2.9
1	H	179	PRO	2.9
1	M	183	PRO	2.9
1	D	172	LEU	2.9
1	I	182	LEU	2.9
1	K	178	LEU	2.9
1	I	23	VAL	2.9
1	L	186	VAL	2.9
1	C	29	CYS	2.9
1	H	29	CYS	2.9
1	K	25	CYS	2.9
1	A	209	ARG	2.8
1	P	184	LEU	2.8
1	H	212	MET	2.8
1	M	176	ASN	2.8
1	G	172	LEU	2.8
1	R	23	VAL	2.8
1	G	190	LYS	2.8
1	H	60	GLY	2.8
1	M	179	PRO	2.8
1	I	171	TYR	2.8

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Mol	Chain	Res	Type	RSRZ
1	B	172	LEU	2.8
1	G	137	LEU	2.8
1	S	172	LEU	2.8
1	F	210	PRO	2.8
1	Q	210	PRO	2.8
1	S	179	PRO	2.8
1	M	173	ARG	2.8
1	S	176	ASN	2.7
1	A	24	LEU	2.7
1	F	184	LEU	2.7
1	F	212	MET	2.7
1	G	184	LEU	2.7
1	I	24	LEU	2.7
1	T	182	LEU	2.7
1	O	104	TYR	2.7
1	M	61	GLN	2.7
1	R	179	PRO	2.7
1	H	177	LYS	2.7
1	C	172	LEU	2.7
1	J	209	ARG	2.7
1	R	162	LEU	2.7
1	H	171	TYR	2.7
1	O	211	ASN	2.7
1	M	210	PRO	2.7
1	C	180	ARG	2.7
1	H	175	LEU	2.7
1	K	172	LEU	2.7
1	Q	182	LEU	2.7
1	E	211	ASN	2.6
1	K	186	VAL	2.6
1	V	59	GLY	2.6
1	Q	179	PRO	2.6
1	P	29	CYS	2.6
1	B	211	ASN	2.6
1	H	59	GLY	2.6
1	E	183	PRO	2.6
1	H	61	GLN	2.6
1	L	178	LEU	2.6
1	M	182	LEU	2.6
1	N	171	TYR	2.6
1	N	183	PRO	2.6
1	F	62	LYS	2.6

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Mol	Chain	Res	Type	RSRZ
1	E	172	LEU	2.6
1	J	172	LEU	2.6
1	L	184	LEU	2.6
1	R	184	LEU	2.6
1	F	211	ASN	2.6
1	U	179	PRO	2.6
1	O	182	LEU	2.5
1	F	58	GLY	2.5
1	G	189	THR	2.5
1	I	210	PRO	2.5
1	K	132	LEU	2.5
1	S	178	LEU	2.5
1	U	132	LEU	2.5
1	H	62	LYS	2.5
1	M	62	LYS	2.5
1	V	180	ARG	2.5
1	G	29	CYS	2.5
1	L	209	ARG	2.5
1	M	209	ARG	2.5
1	C	178	LEU	2.5
1	G	182	LEU	2.5
1	H	172	LEU	2.5
1	N	172	LEU	2.5
1	O	177	LYS	2.5
1	U	62	LYS	2.5
1	B	203	ALA	2.5
1	C	210	PRO	2.5
1	H	58	GLY	2.5
1	K	179	PRO	2.5
1	M	181	GLN	2.5
1	I	205	TYR	2.4
1	F	183	PRO	2.4
1	P	180	ARG	2.4
1	E	166	ILE	2.4
1	M	171	TYR	2.4
1	Q	104	TYR	2.4
1	N	181	GLN	2.4
1	T	211	ASN	2.4
1	V	209	ARG	2.4
1	Q	183	PRO	2.4
1	F	25	CYS	2.4
1	M	177	LYS	2.4

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Mol	Chain	Res	Type	RSRZ
1	U	25	CYS	2.4
1	D	186	VAL	2.4
1	F	186	VAL	2.4
1	D	137	LEU	2.4
1	F	132	LEU	2.4
1	F	188	LEU	2.4
1	N	205	TYR	2.4
1	C	179	PRO	2.4
1	D	179	PRO	2.4
1	S	62	LYS	2.4
1	J	208	CYS	2.4
1	N	166	ILE	2.4
1	I	209	ARG	2.4
1	C	100	ASN	2.3
1	K	210	PRO	2.3
1	O	29	CYS	2.3
1	T	186	VAL	2.3
1	C	181	GLN	2.3
1	J	181	GLN	2.3
1	L	211	ASN	2.3
1	K	171	TYR	2.3
1	P	210	PRO	2.3
1	K	209	ARG	2.3
1	K	166	ILE	2.3
1	O	25	CYS	2.3
1	C	176	ASN	2.3
1	C	183	PRO	2.3
1	F	101	GLY	2.3
1	T	212	MET	2.3
1	S	186	VAL	2.3
1	V	186	VAL	2.3
1	N	211	ASN	2.3
1	J	183	PRO	2.3
1	V	183	PRO	2.3
1	V	212	MET	2.3
1	G	136	ALA	2.3
1	G	191	ALA	2.3
1	E	182	LEU	2.2
1	O	183	PRO	2.2
1	R	210	PRO	2.2
1	B	60	GLY	2.2
1	C	62	LYS	2.2

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Mol	Chain	Res	Type	RSRZ
1	T	137	LEU	2.2
1	T	56	MET	2.2
1	R	101	GLY	2.2
1	T	58	GLY	2.2
1	F	104	TYR	2.2
1	J	207	SER	2.2
1	R	205	TYR	2.2
1	V	182	LEU	2.2
1	J	186	VAL	2.2
1	B	209	ARG	2.2
1	I	179	PRO	2.2
1	V	179	PRO	2.2
1	H	64	CYS	2.2
1	B	199	SER	2.2
1	A	171	TYR	2.2
1	B	171	TYR	2.2
1	J	178	LEU	2.2
1	Q	166	ILE	2.2
1	U	182	LEU	2.2
1	A	63	VAL	2.2
1	F	56	MET	2.2
1	I	183	PRO	2.2
1	C	34	GLU	2.2
1	C	177	LYS	2.2
1	M	57	ALA	2.2
1	N	209	ARG	2.1
1	H	188	LEU	2.1
1	J	137	LEU	2.1
1	M	175	LEU	2.1
1	A	62	LYS	2.1
1	A	61	GLN	2.1
1	L	58	GLY	2.1
1	B	205	TYR	2.1
1	D	178	LEU	2.1
1	R	132	LEU	2.1
1	L	28	GLN	2.1
1	T	194	GLN	2.1
1	J	25	CYS	2.1
1	B	207	SER	2.1
1	H	174	SER	2.1
1	I	133	ALA	2.1
1	R	199	SER	2.1

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Mol	Chain	Res	Type	RSRZ
1	H	24	LEU	2.1
1	M	211	ASN	2.1
1	Q	211	ASN	2.1
1	V	164	ASN	2.1
1	M	186	VAL	2.1
1	T	183	PRO	2.1
1	D	58	GLY	2.1
1	Q	58	GLY	2.1
1	R	59	GLY	2.1
1	M	25	CYS	2.1
1	P	25	CYS	2.1
1	T	64	CYS	2.1
1	T	136	ALA	2.1
1	V	62	LYS	2.1
1	E	212	MET	2.1
1	H	182	LEU	2.1
1	F	166	ILE	2.1
1	E	179	PRO	2.1
1	U	183	PRO	2.1
1	N	59	GLY	2.1
1	L	181	GLN	2.0
1	E	137	LEU	2.0
1	R	24	LEU	2.0
1	A	34[A]	GLU	2.0
1	V	132	LEU	2.0
1	T	209	ARG	2.0
1	V	166	ILE	2.0

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

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

median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	EDO	A	304	4/4	0.68	0.23	57,70,78,81	0
4	CL	V	303	1/1	0.82	0.17	91,91,91,91	0
3	EDO	T	302	4/4	0.83	0.15	66,70,70,75	0
3	EDO	Q	302	4/4	0.83	0.19	48,52,53,67	0
4	CL	M	303	1/1	0.84	0.11	93,93,93,93	0
3	EDO	C	302	4/4	0.85	0.17	63,66,72,80	0
3	EDO	N	302	4/4	0.86	0.18	56,62,72,86	0
4	CL	S	304	1/1	0.86	0.18	94,94,94,94	0
4	CL	J	303	1/1	0.86	0.13	97,97,97,97	0
4	CL	I	303	1/1	0.87	0.11	89,89,89,89	0
3	EDO	A	302	4/4	0.87	0.15	58,72,75,77	0
3	EDO	Q	303	4/4	0.87	0.21	61,62,70,82	0
4	CL	S	303	1/1	0.87	0.13	85,85,85,85	0
3	EDO	O	302	4/4	0.87	0.17	48,58,62,72	0
4	CL	H	303	1/1	0.87	0.12	100,100,100,100	0
3	EDO	D	302	4/4	0.88	0.14	53,54,55,69	0
3	EDO	O	303	4/4	0.88	0.14	71,74,75,76	0
3	EDO	E	303	4/4	0.88	0.18	75,76,82,82	0
3	EDO	B	303	4/4	0.88	0.16	55,57,66,67	0
3	EDO	E	302	4/4	0.89	0.12	52,53,57,67	0
4	CL	L	303	1/1	0.89	0.17	87,87,87,87	0
4	CL	C	303	1/1	0.89	0.19	87,87,87,87	0
4	CL	E	305	1/1	0.89	0.17	86,86,86,86	0
3	EDO	P	302	4/4	0.89	0.13	57,57,66,66	0
3	EDO	Q	304	4/4	0.89	0.19	65,71,71,73	0
4	CL	N	303	1/1	0.90	0.20	94,94,94,94	0
3	EDO	B	302	4/4	0.90	0.15	59,63,70,72	0
4	CL	B	304	1/1	0.91	0.17	94,94,94,94	0
3	EDO	A	303	4/4	0.91	0.18	70,77,86,87	0
3	EDO	G	302	4/4	0.91	0.20	60,61,63,83	0
4	CL	T	303	1/1	0.91	0.17	91,91,91,91	0
3	EDO	U	302	4/4	0.91	0.17	65,68,73,78	0
3	EDO	I	302	4/4	0.92	0.14	67,68,68,72	0
4	CL	Q	305	1/1	0.92	0.19	81,81,81,81	0
4	CL	R	303	1/1	0.92	0.13	86,86,86,86	0
4	CL	E	304	1/1	0.92	0.13	85,85,85,85	0
4	CL	K	303	1/1	0.92	0.14	90,90,90,90	0
4	CL	A	305	1/1	0.92	0.17	83,83,83,83	0
3	EDO	K	302	4/4	0.92	0.14	61,63,64,68	0
4	CL	G	303	1/1	0.93	0.17	85,85,85,85	0
4	CL	O	304	1/1	0.93	0.09	83,83,83,83	0

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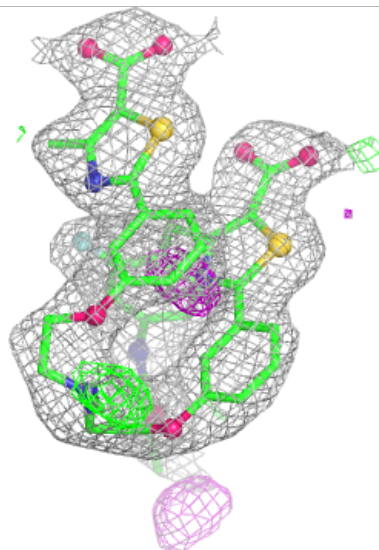
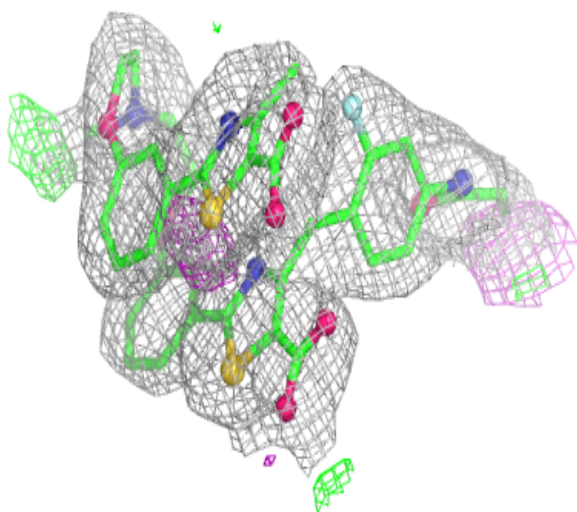
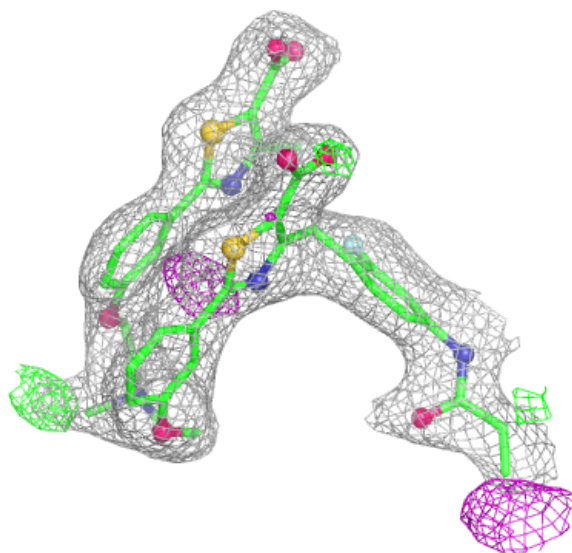
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	EDO	V	302	4/4	0.93	0.17	66,66,67,70	0
3	EDO	H	302	4/4	0.93	0.12	68,73,74,78	0
3	EDO	R	302	4/4	0.93	0.15	66,68,73,80	0
3	EDO	S	302	4/4	0.93	0.12	60,70,71,76	0
2	A1KDB	H	301	50/50	0.93	0.09	48,58,76,84	0
2	A1KDB	I	301	50/50	0.93	0.09	51,59,77,85	0
2	A1KDB	A	301	50/50	0.94	0.08	51,57,70,79	0
3	EDO	J	302	4/4	0.94	0.10	51,59,67,74	0
2	A1KDB	C	301	50/50	0.94	0.07	40,47,59,64	0
3	EDO	L	302	4/4	0.94	0.11	64,71,74,78	0
3	EDO	M	302	4/4	0.94	0.11	52,55,55,58	0
2	A1KDB	J	301	50/50	0.94	0.08	53,65,87,92	0
2	A1KDB	K	301	50/50	0.94	0.08	55,60,77,81	0
2	A1KDB	O	301	50/50	0.94	0.09	49,57,78,83	0
2	A1KDB	T	301	50/50	0.94	0.10	53,66,89,110	0
2	A1KDB	V	301	50/50	0.94	0.10	53,61,85,97	0
4	CL	F	303	1/1	0.94	0.19	85,85,85,85	0
2	A1KDB	F	301	50/50	0.94	0.08	45,57,70,81	0
4	CL	U	303	1/1	0.94	0.14	87,87,87,87	0
2	A1KDB	G	301	50/50	0.94	0.09	46,56,68,70	0
2	A1KDB	Q	301	50/50	0.95	0.08	40,52,72,75	0
2	A1KDB	R	301	50/50	0.95	0.08	47,56,74,79	0
2	A1KDB	L	301	50/50	0.95	0.07	48,55,74,83	0
2	A1KDB	U	301	50/50	0.95	0.08	54,63,82,93	0
2	A1KDB	M	301	50/50	0.95	0.08	44,51,74,79	0
2	A1KDB	D	301	50/50	0.95	0.07	43,52,65,71	0
4	CL	P	303	1/1	0.95	0.15	73,73,73,73	0
2	A1KDB	E	301	50/50	0.96	0.07	44,53,67,78	0
2	A1KDB	N	301	50/50	0.96	0.07	45,52,66,71	0
2	A1KDB	S	301	50/50	0.96	0.07	51,64,72,85	0
2	A1KDB	B	301	50/50	0.96	0.07	44,54,66,71	0
2	A1KDB	P	301	50/50	0.96	0.06	41,48,55,59	0
3	EDO	F	302	4/4	0.96	0.10	69,72,73,74	0
4	CL	D	303	1/1	0.97	0.10	80,80,80,80	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.

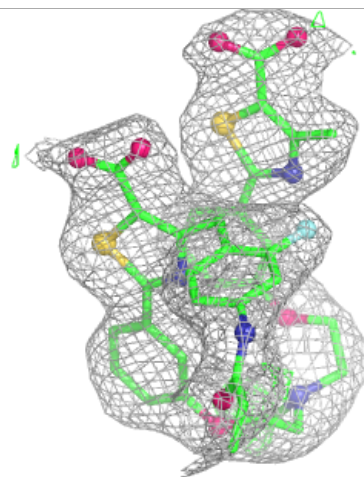
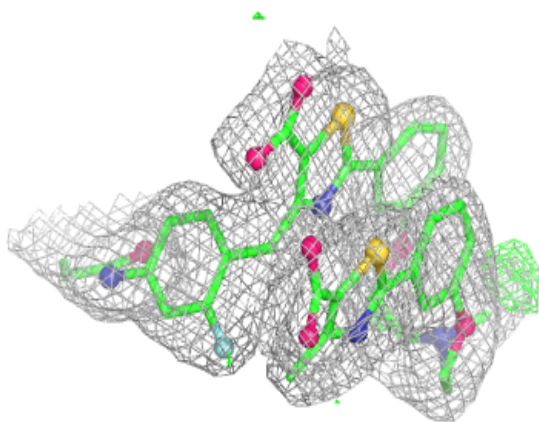
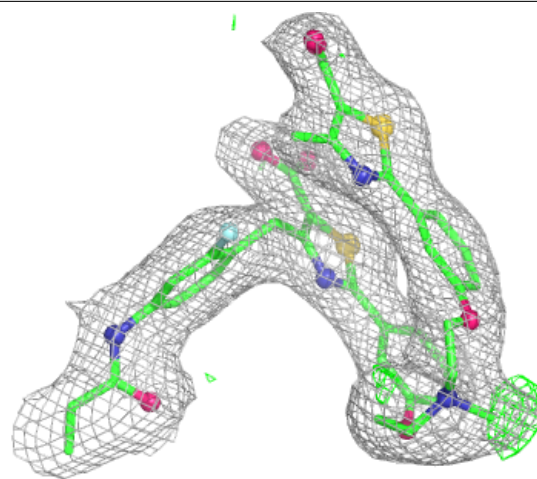
Electron density around A1KDB H 301:

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



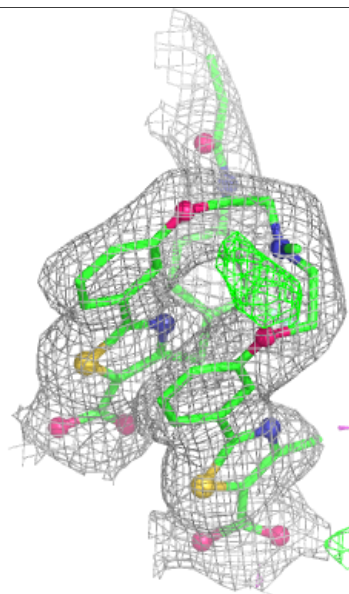
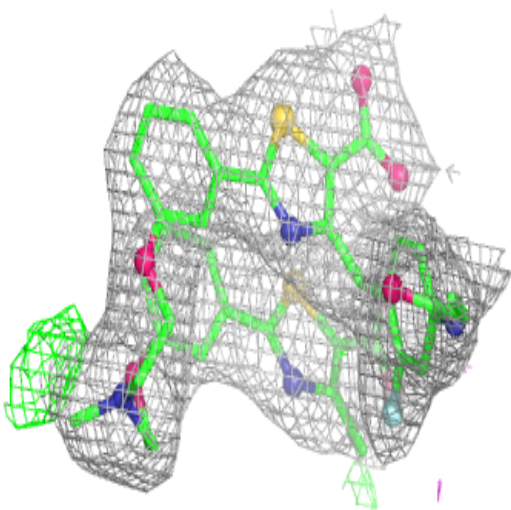
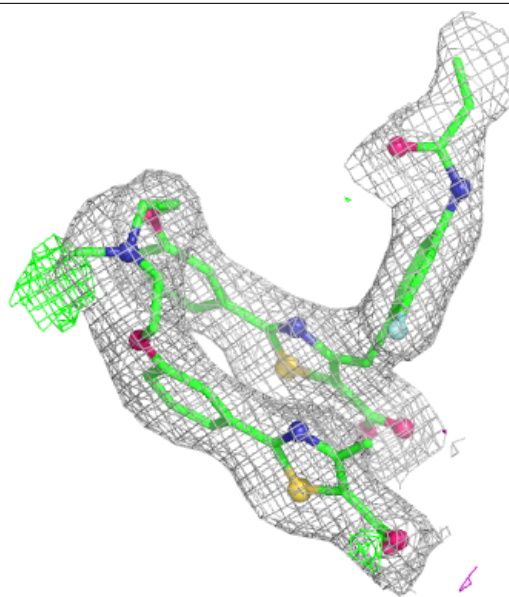
Electron density around A1KDB I 301:

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



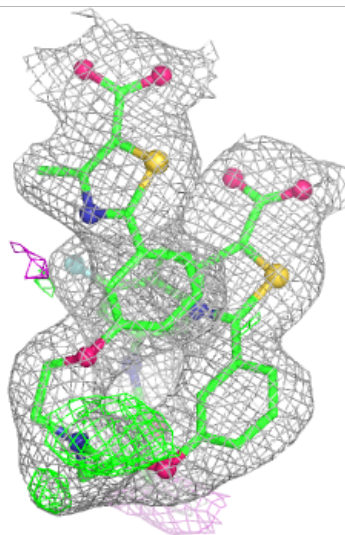
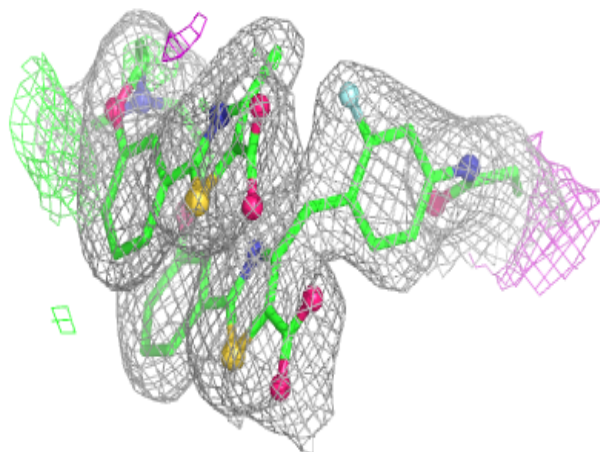
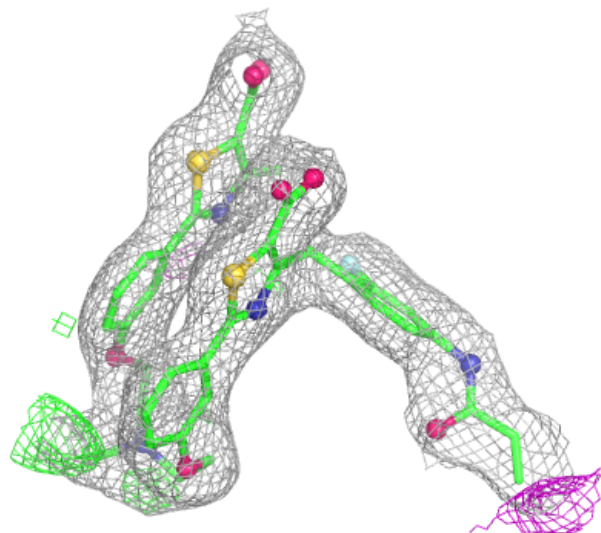
Electron density around A1KDB A 301:

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



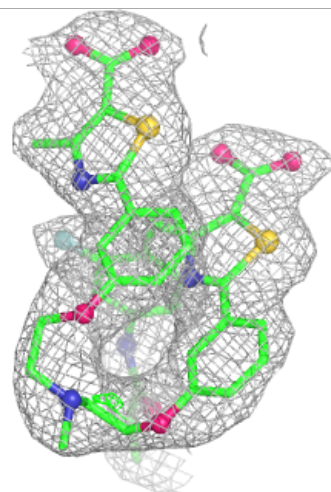
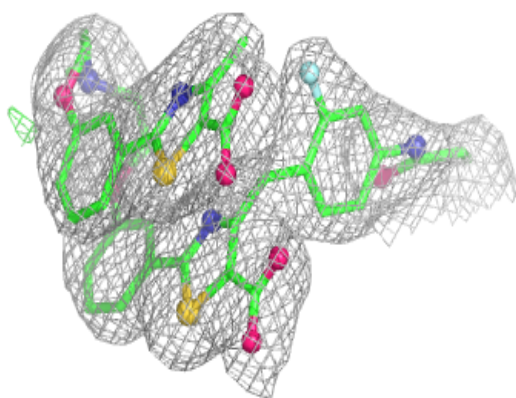
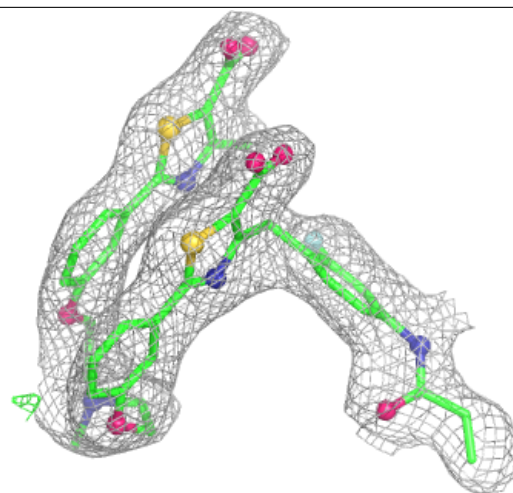
Electron density around A1KDB C 301:

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



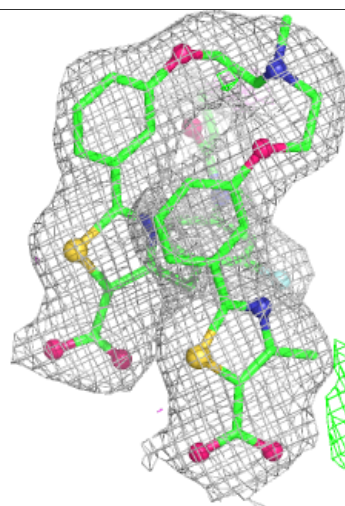
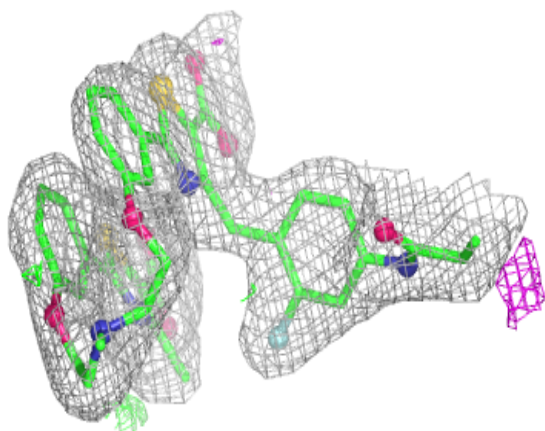
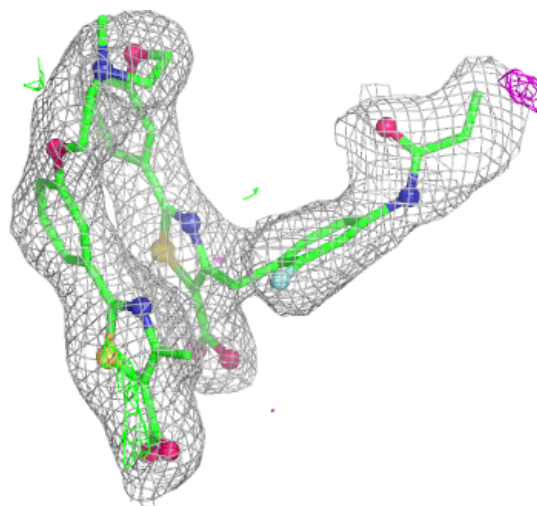
Electron density around A1KDB J 301:

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



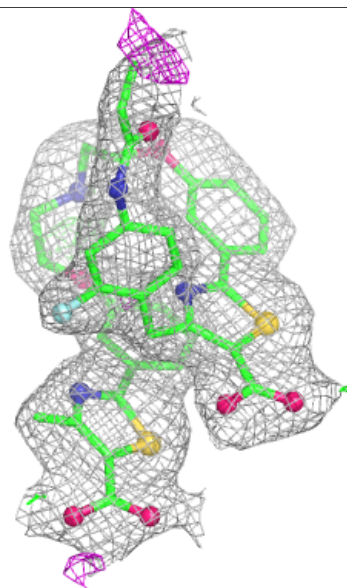
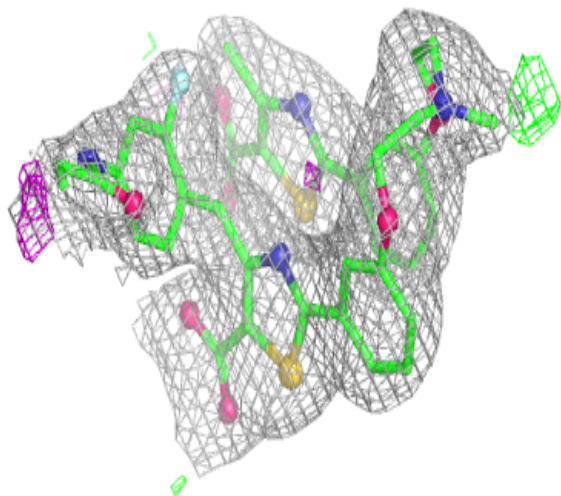
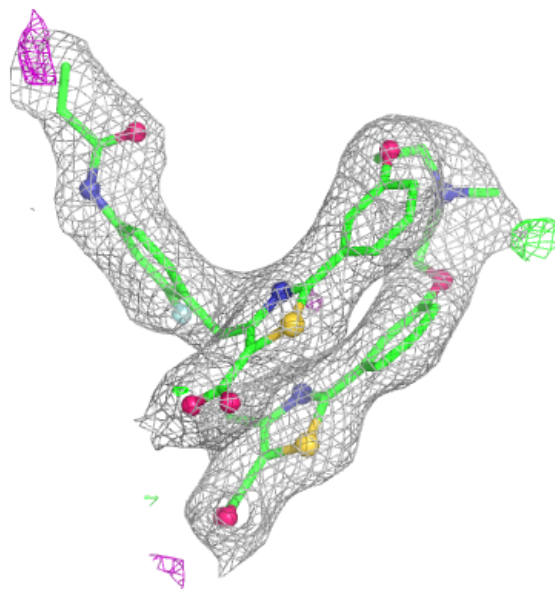
Electron density around A1KDB K 301:

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



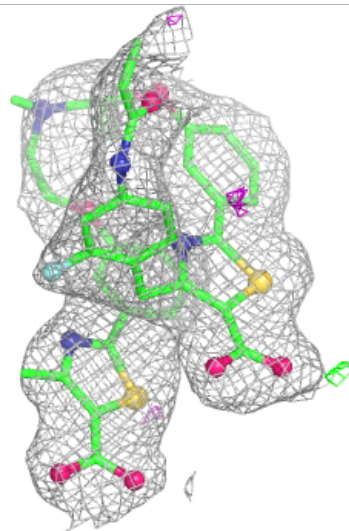
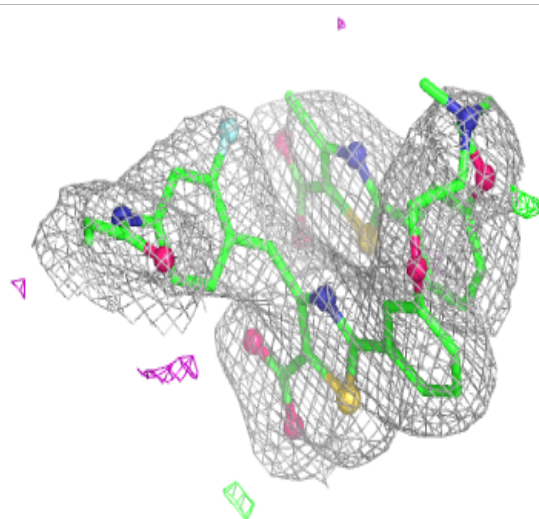
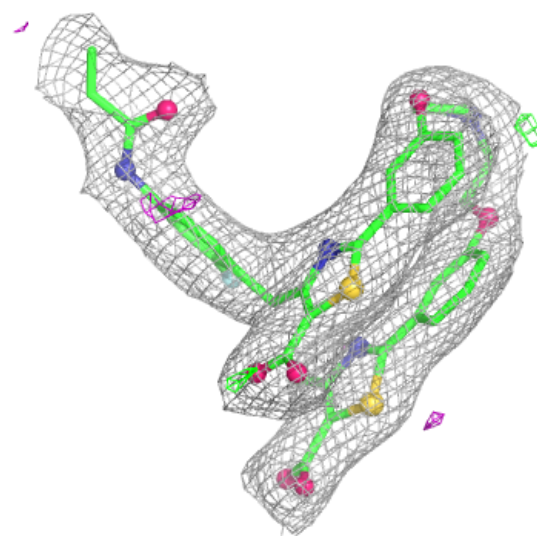
Electron density around A1KDB O 301:

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



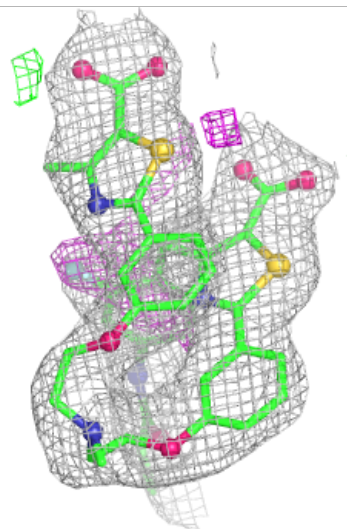
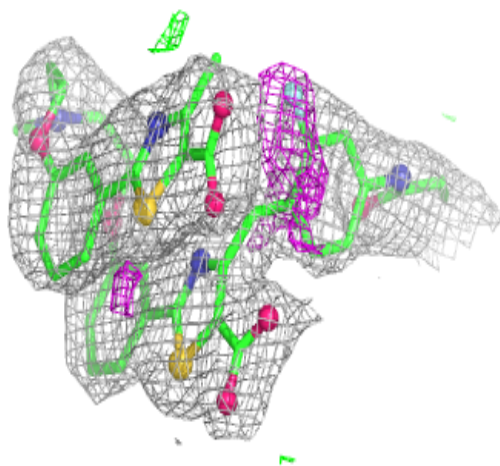
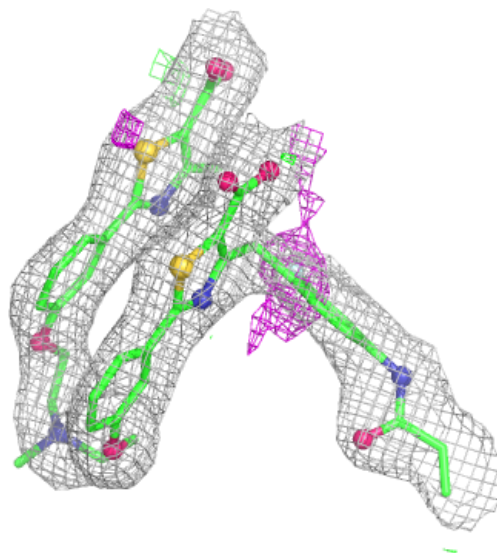
Electron density around A1KDB T 301:

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



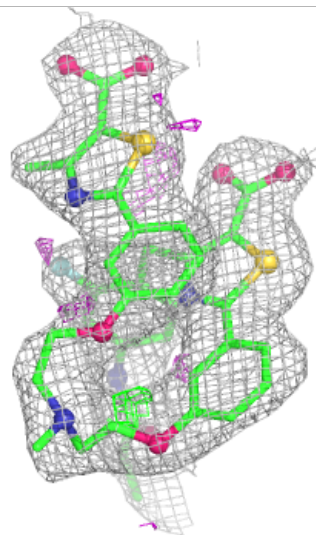
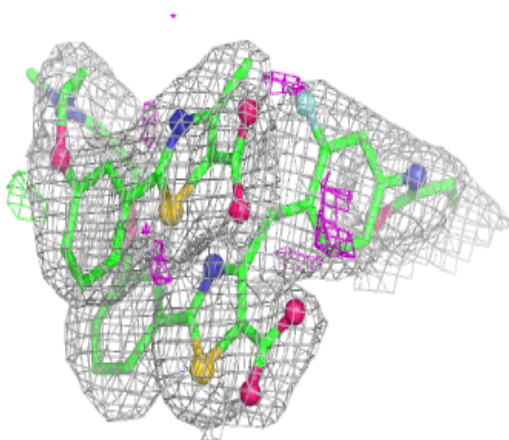
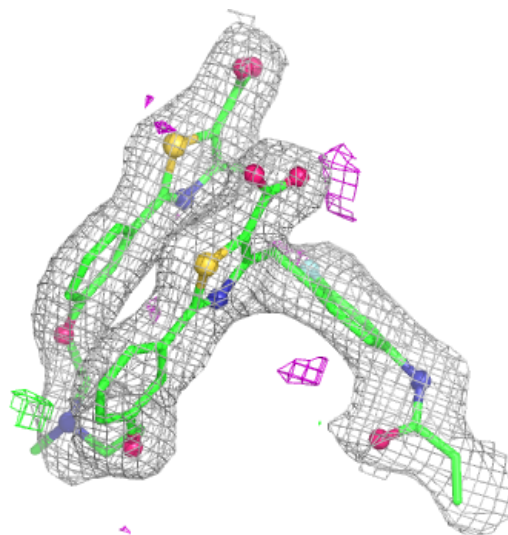
Electron density around A1KDB V 301:

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



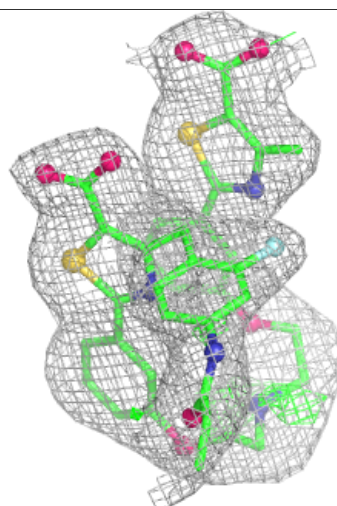
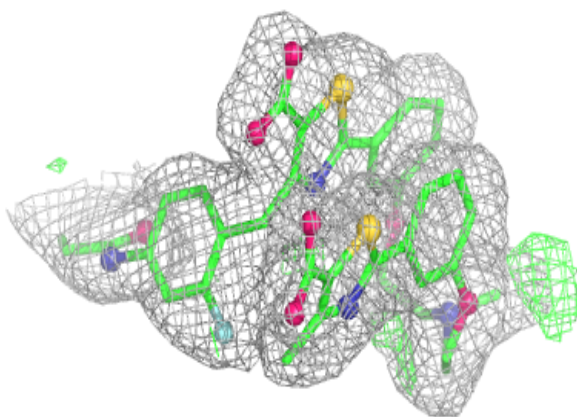
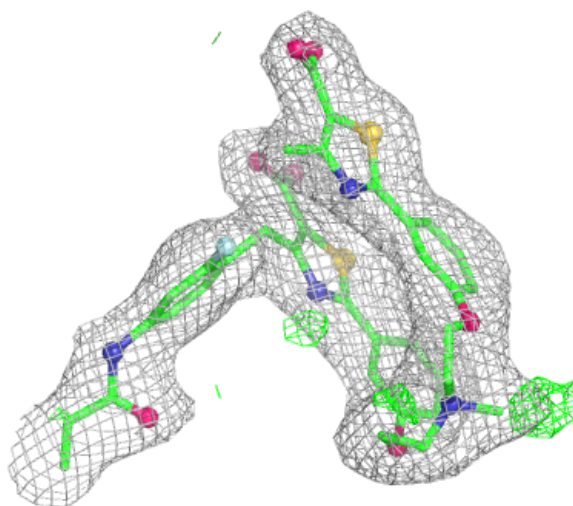
Electron density around A1KDB F 301:

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



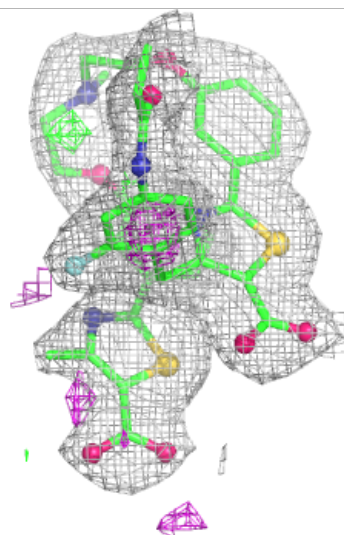
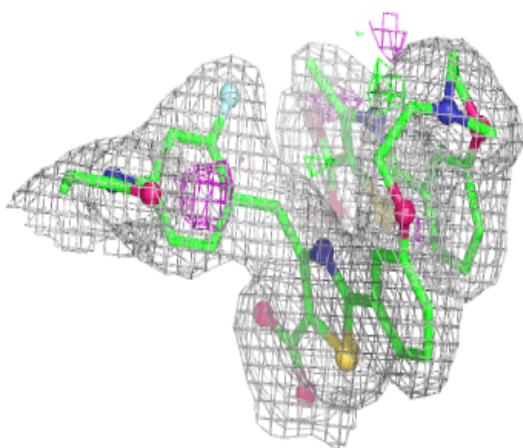
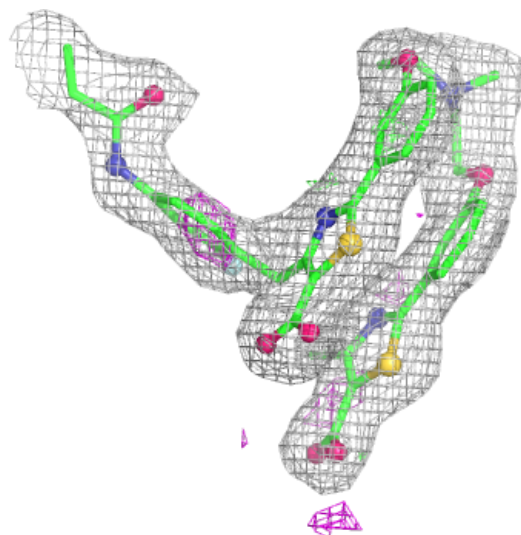
Electron density around A1KDB G 301:

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



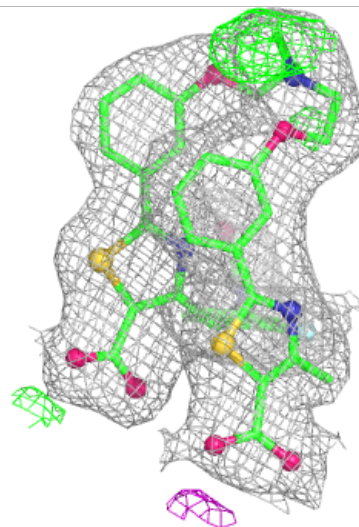
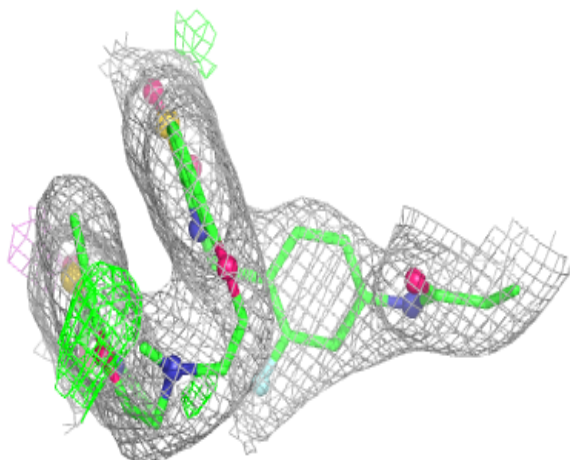
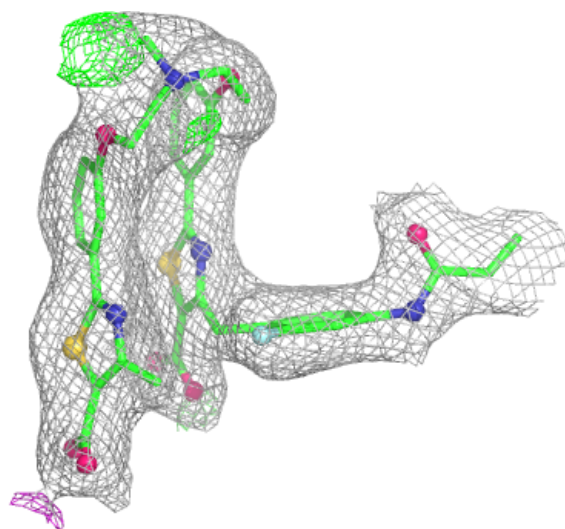
Electron density around A1KDB Q 301:

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



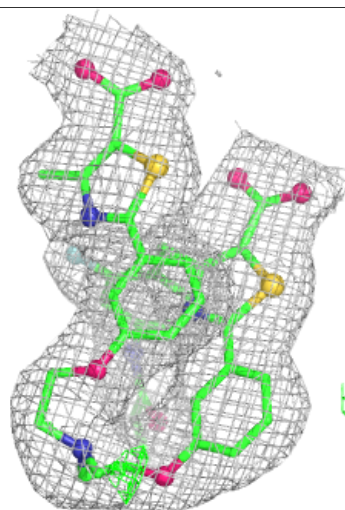
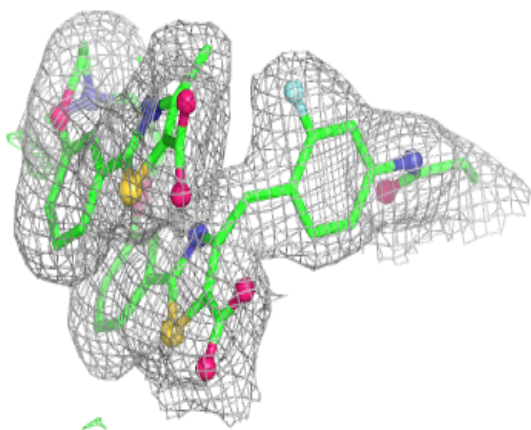
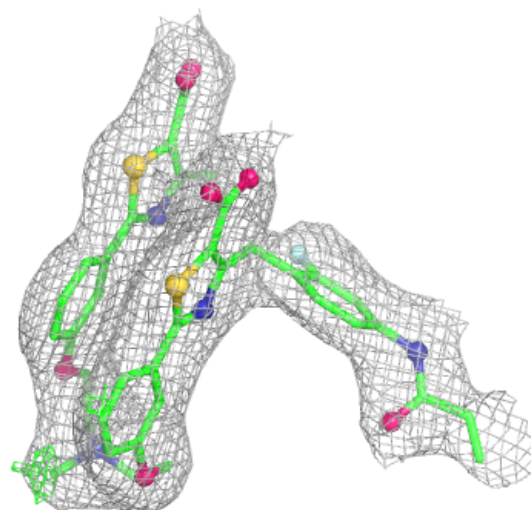
Electron density around A1KDB R 301:

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



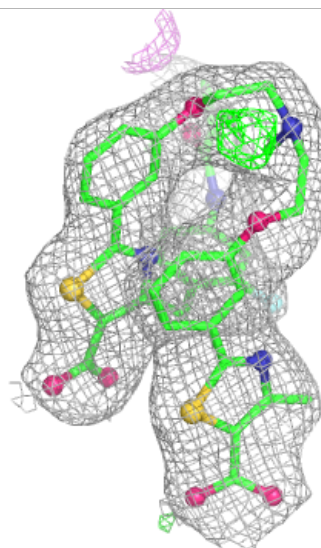
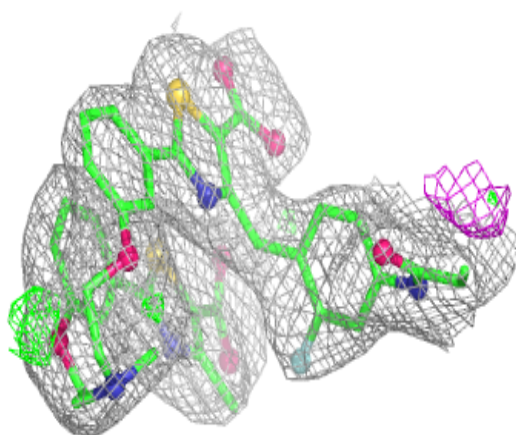
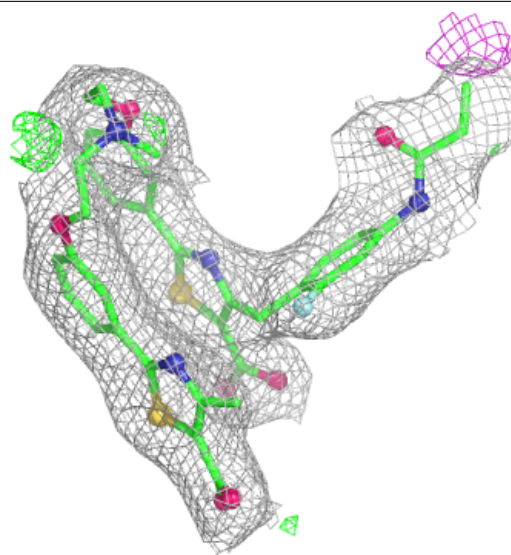
Electron density around A1KDB L 301:

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



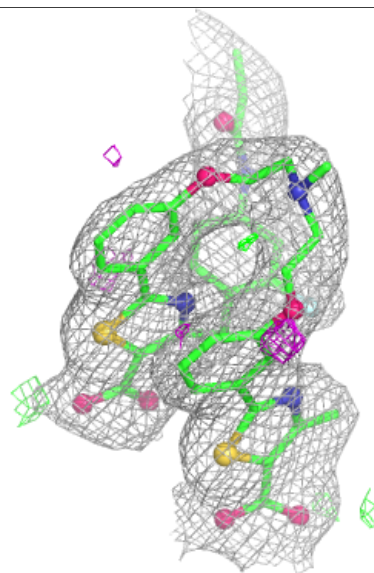
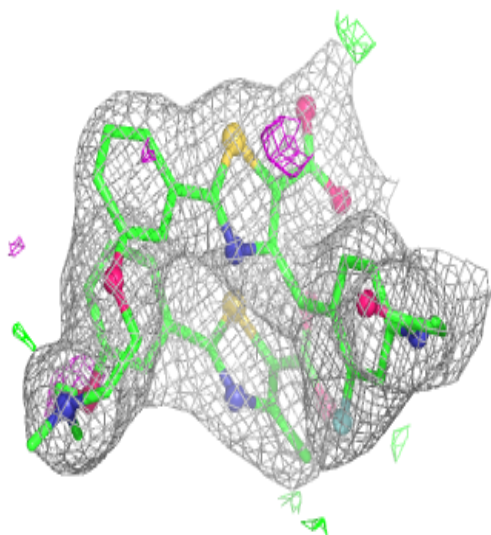
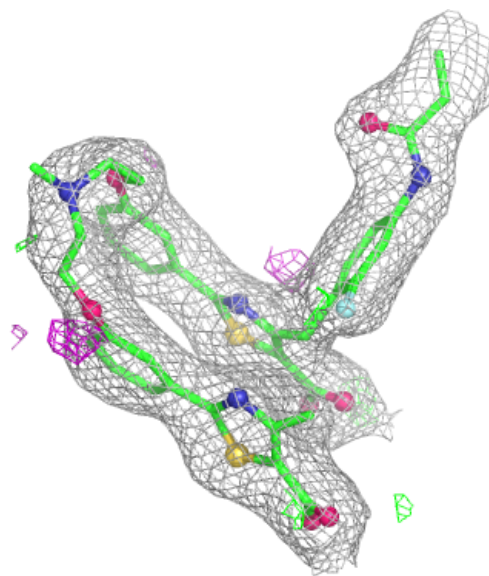
Electron density around A1KDB U 301:

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



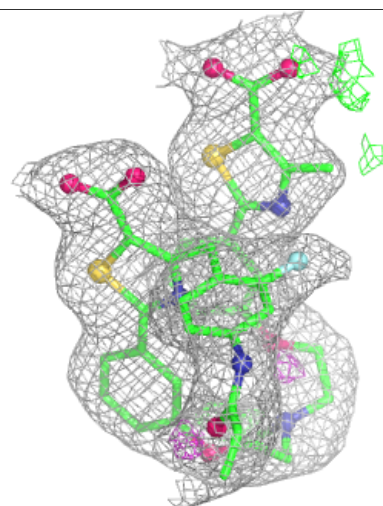
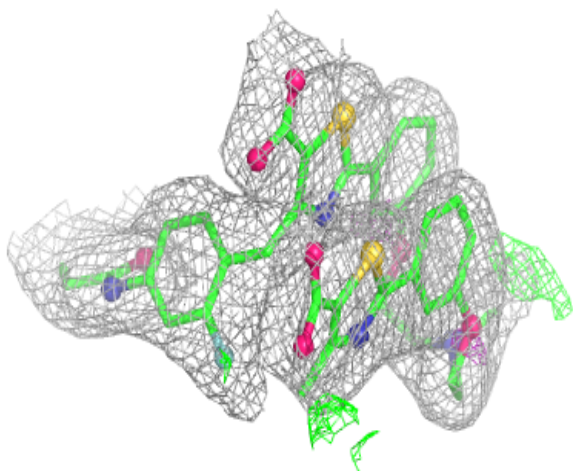
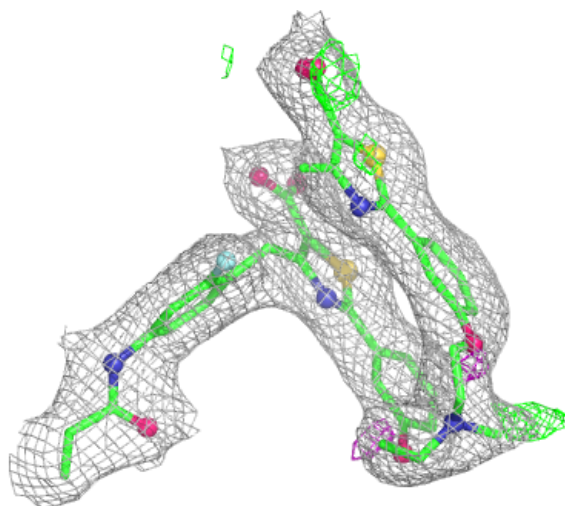
Electron density around A1KDB M 301:

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



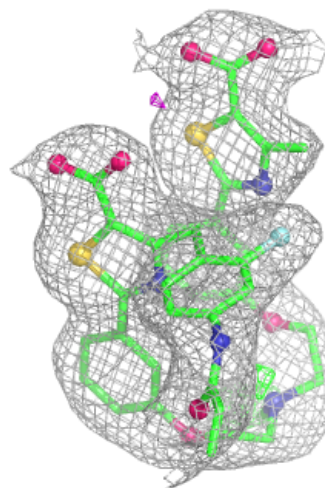
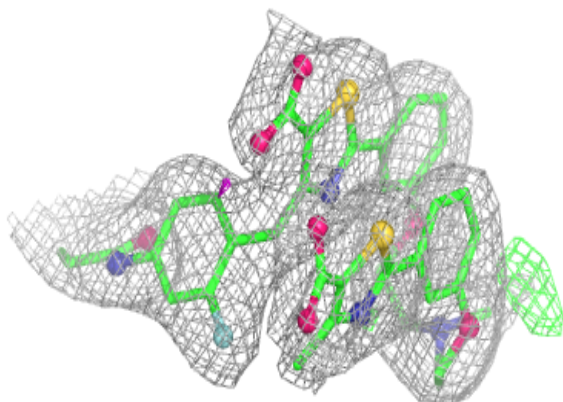
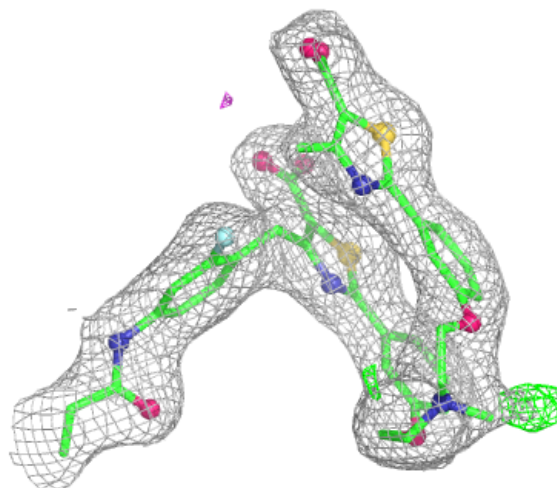
Electron density around A1KDB D 301:

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



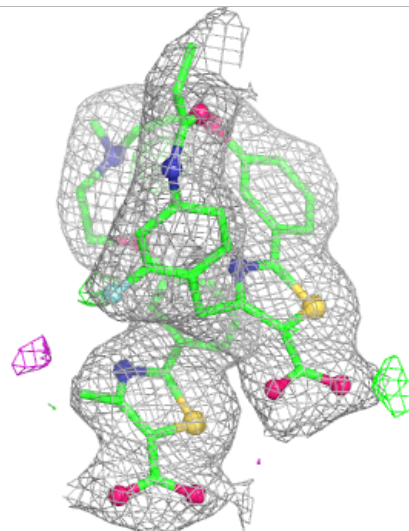
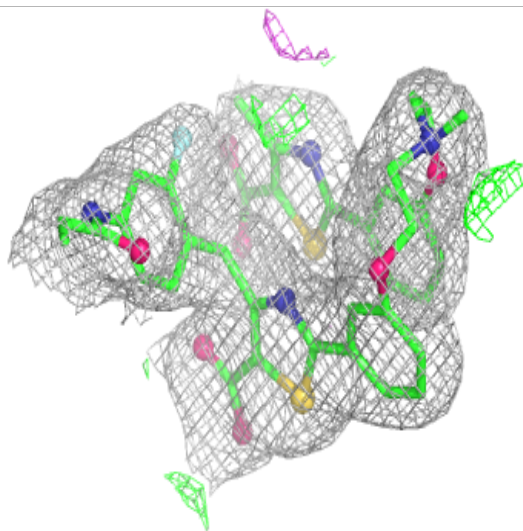
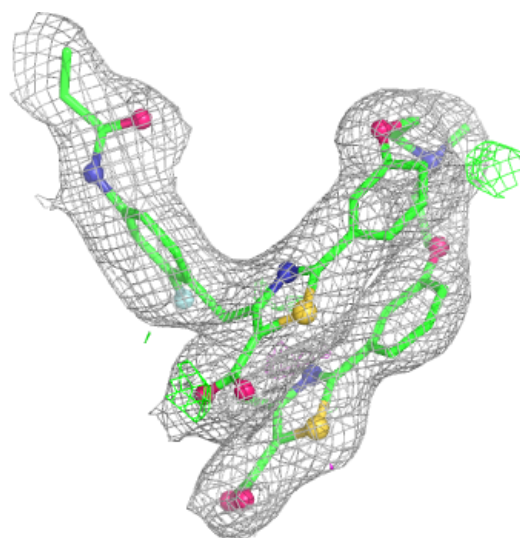
Electron density around A1KDB E 301:

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



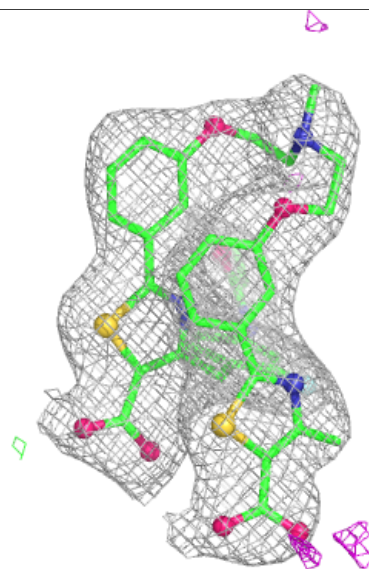
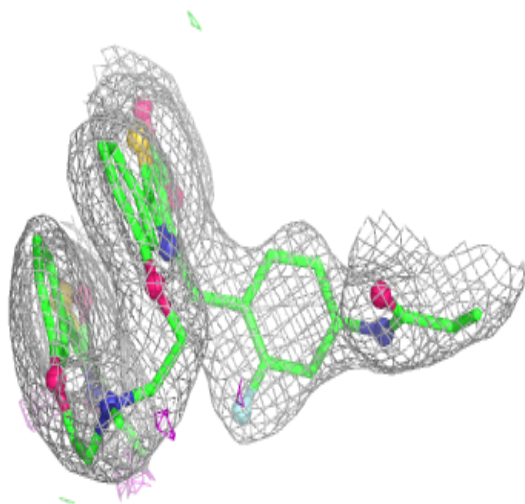
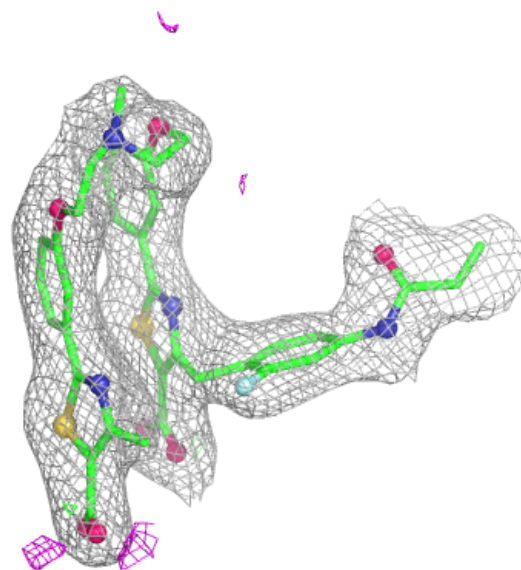
Electron density around A1KDB N 301:

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



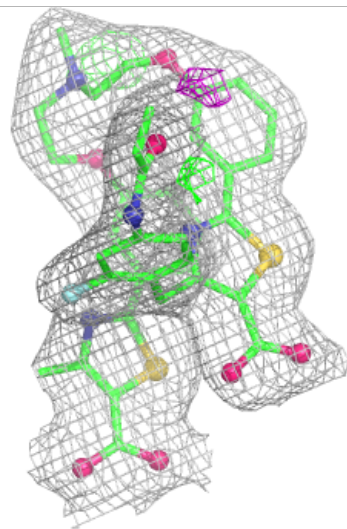
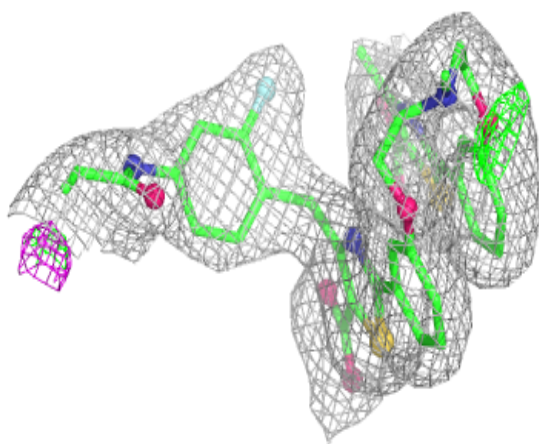
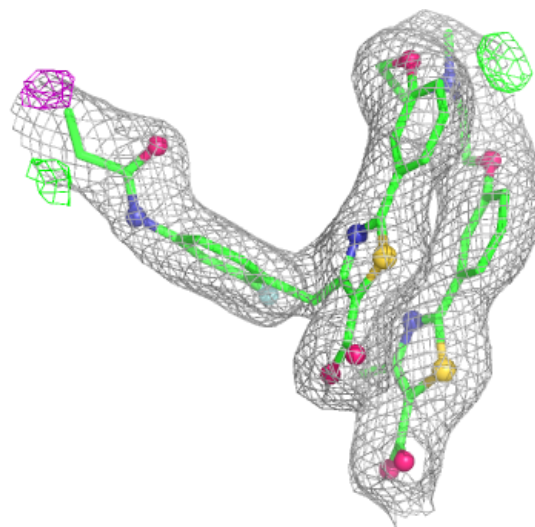
Electron density around A1KDB S 301:

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



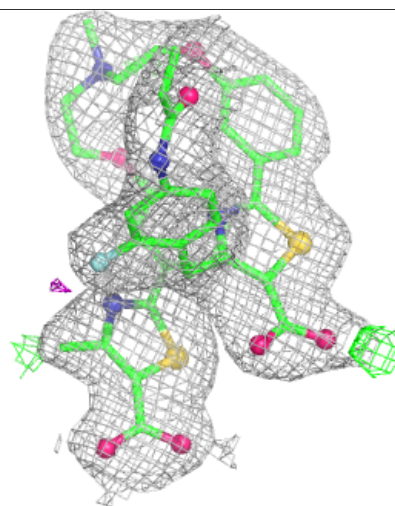
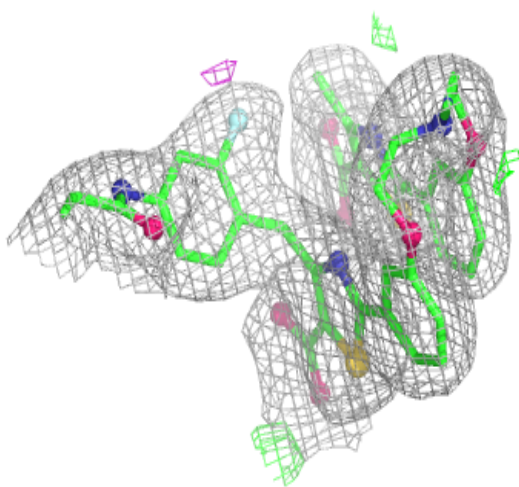
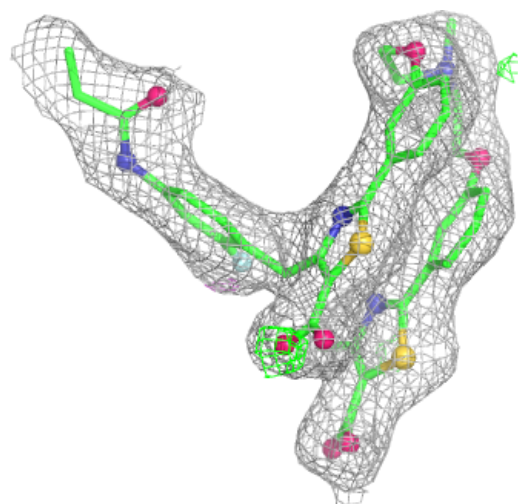
Electron density around A1KDB B 301:

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



Electron density around A1KDB P 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 ⓘ

There are no such residues in this entry.