



Full wwPDB X-ray Structure Validation Report ⓘ

Jul 20, 2026 – 02:54 pm BST

PDB ID : 9RZ9 / pdb_00009rz9
Title : Alpha-Methylacyl-CoA racemase from Mycobacterium tuberculosis in complex with 2-(3-(2-Methylpropoxy)phenylthiol)propanoyl-CoA
Authors : Mojanaga, O.O.; Acharya, K.R.; Lloyd, M.D.
Deposited on : 2025-07-15
Resolution : 2.25 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.015 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.50

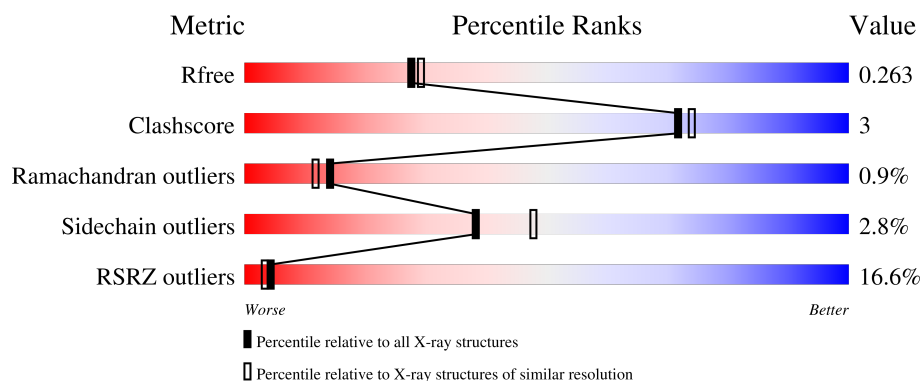
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.25 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.



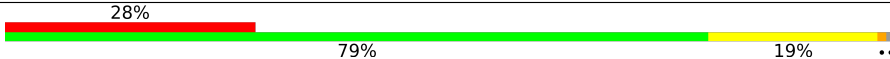
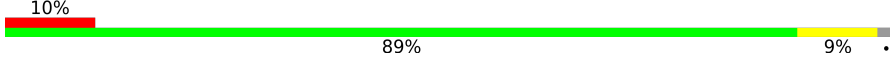
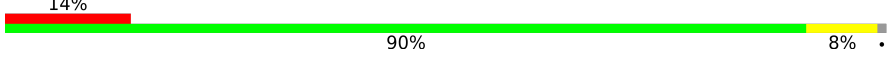
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	1898 (2.26-2.26)
Clashscore	190562	2005 (2.26-2.26)
Ramachandran outliers	187476	1965 (2.26-2.26)
Sidechain outliers	187428	1966 (2.26-2.26)
RSRZ outliers	180081	1898 (2.26-2.26)

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	364	19% 87% 10% ..
1	B	364	12% 86% 11% ..
1	C	364	15% 84% 13% ..
1	D	364	14% 85% 12% ..
1	E	364	16% 88% 10% ..

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Mol	Chain	Length	Quality of chain
1	F	364	
1	G	364	
1	H	364	
1	I	364	
1	J	364	
1	K	364	
1	L	364	

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 34386 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 Alpha-methylacyl-CoA racemase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	359	Total	C	N	O	S	0	2	0
			2718	1704	486	512	16			
1	B	359	Total	C	N	O	S	0	2	0
			2721	1707	487	511	16			
1	C	357	Total	C	N	O	S	0	2	0
			2706	1698	484	508	16			
1	D	359	Total	C	N	O	S	0	1	0
			2715	1703	486	510	16			
1	E	359	Total	C	N	O	S	0	3	0
			2727	1709	488	514	16			
1	F	359	Total	C	N	O	S	0	1	0
			2715	1703	486	510	16			
1	G	359	Total	C	N	O	S	0	2	0
			2718	1704	486	512	16			
1	H	359	Total	C	N	O	S	0	1	0
			2715	1703	486	510	16			
1	I	359	Total	C	N	O	S	0	2	0
			2718	1704	486	512	16			
1	J	357	Total	C	N	O	S	0	2	0
			2706	1698	485	507	16			
1	K	360	Total	C	N	O	S	0	3	0
			2728	1710	488	514	16			
1	L	359	Total	C	N	O	S	0	1	0
			2715	1703	486	510	16			

There are 48 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	361	GLY	-	expression tag	UNP O06543
A	362	SER	-	expression tag	UNP O06543
A	363	GLY	-	expression tag	UNP O06543
A	364	CYS	-	expression tag	UNP O06543
B	361	GLY	-	expression tag	UNP O06543

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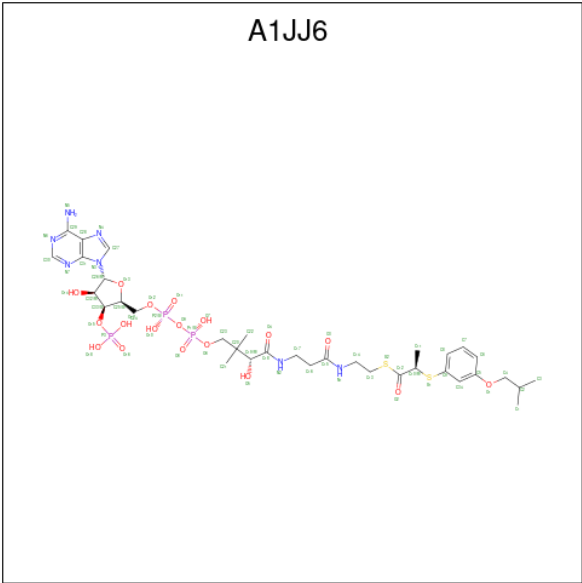
Chain	Residue	Modelled	Actual	Comment	Reference
B	362	SER	-	expression tag	UNP O06543
B	363	GLY	-	expression tag	UNP O06543
B	364	CYS	-	expression tag	UNP O06543
C	361	GLY	-	expression tag	UNP O06543
C	362	SER	-	expression tag	UNP O06543
C	363	GLY	-	expression tag	UNP O06543
C	364	CYS	-	expression tag	UNP O06543
D	361	GLY	-	expression tag	UNP O06543
D	362	SER	-	expression tag	UNP O06543
D	363	GLY	-	expression tag	UNP O06543
D	364	CYS	-	expression tag	UNP O06543
E	361	GLY	-	expression tag	UNP O06543
E	362	SER	-	expression tag	UNP O06543
E	363	GLY	-	expression tag	UNP O06543
E	364	CYS	-	expression tag	UNP O06543
F	361	GLY	-	expression tag	UNP O06543
F	362	SER	-	expression tag	UNP O06543
F	363	GLY	-	expression tag	UNP O06543
F	364	CYS	-	expression tag	UNP O06543
G	361	GLY	-	expression tag	UNP O06543
G	362	SER	-	expression tag	UNP O06543
G	363	GLY	-	expression tag	UNP O06543
G	364	CYS	-	expression tag	UNP O06543
H	361	GLY	-	expression tag	UNP O06543
H	362	SER	-	expression tag	UNP O06543
H	363	GLY	-	expression tag	UNP O06543
H	364	CYS	-	expression tag	UNP O06543
I	361	GLY	-	expression tag	UNP O06543
I	362	SER	-	expression tag	UNP O06543
I	363	GLY	-	expression tag	UNP O06543
I	364	CYS	-	expression tag	UNP O06543
J	361	GLY	-	expression tag	UNP O06543
J	362	SER	-	expression tag	UNP O06543
J	363	GLY	-	expression tag	UNP O06543
J	364	CYS	-	expression tag	UNP O06543
K	361	GLY	-	expression tag	UNP O06543
K	362	SER	-	expression tag	UNP O06543
K	363	GLY	-	expression tag	UNP O06543
K	364	CYS	-	expression tag	UNP O06543
L	361	GLY	-	expression tag	UNP O06543
L	362	SER	-	expression tag	UNP O06543
L	363	GLY	-	expression tag	UNP O06543

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Chain	Residue	Modelled	Actual	Comment	Reference
L	364	CYS	-	expression tag	UNP O06543

- Molecule 2 is 2-(3-(2-Methylpropoxy)phenylthiol)propanoyl-CoA (CCD ID: A1JJ6) (formula: C₃₄H₅₂N₇O₁₈P₃S₂) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		
2	B	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		
2	C	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		
2	D	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		
2	E	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		
2	F	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		
2	G	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		
2	H	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		
2	I	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		
2	J	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		

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Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	K	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		
2	L	1	Total	C	N	O	P	S	0	0
			64	34	7	18	3	2		

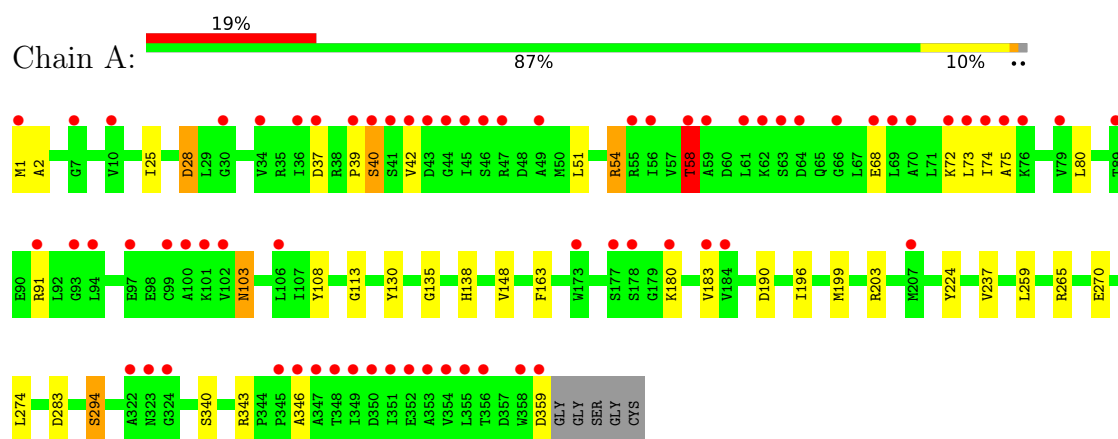
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	85	Total	O	0	0
			85	85		
3	B	89	Total	O	0	0
			89	89		
3	C	96	Total	O	0	0
			96	96		
3	D	92	Total	O	0	0
			92	92		
3	E	86	Total	O	0	0
			86	86		
3	F	69	Total	O	0	0
			69	69		
3	G	81	Total	O	0	0
			81	81		
3	H	78	Total	O	0	0
			78	78		
3	I	88	Total	O	0	0
			88	88		
3	J	91	Total	O	0	0
			91	91		
3	K	85	Total	O	0	0
			85	85		
3	L	76	Total	O	0	0
			76	76		

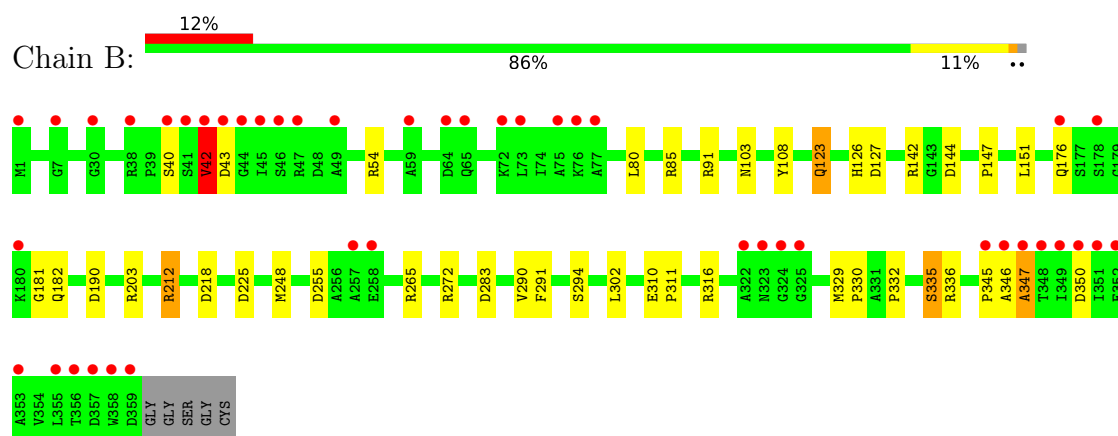
3 Residue-property plots [i](#)

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.

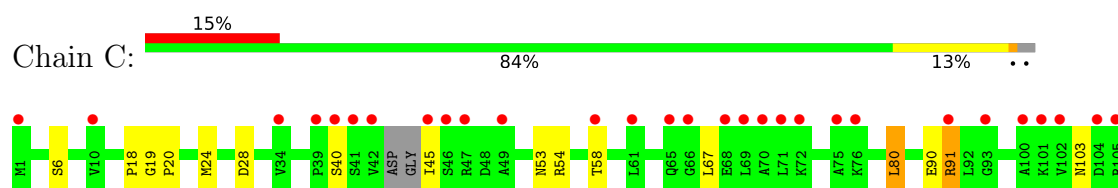
- Molecule 1: Alpha-methylacyl-CoA racemase

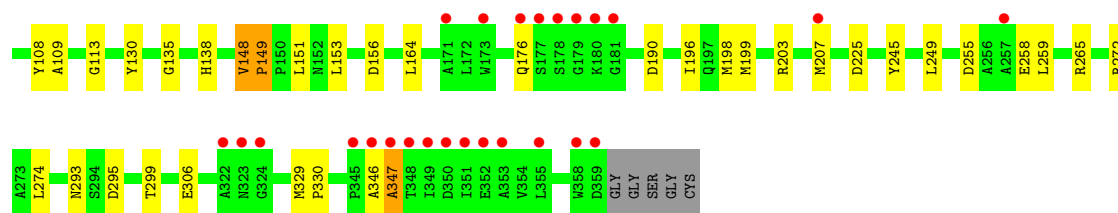


- Molecule 1: Alpha-methylacyl-CoA racemase

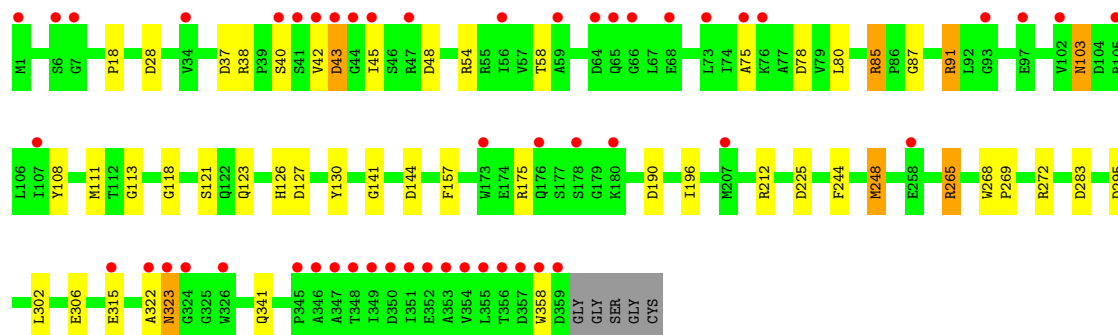
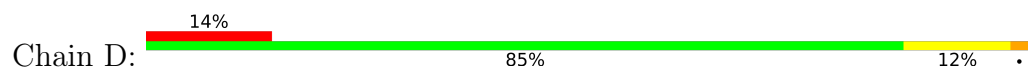


- Molecule 1: Alpha-methylacyl-CoA racemase

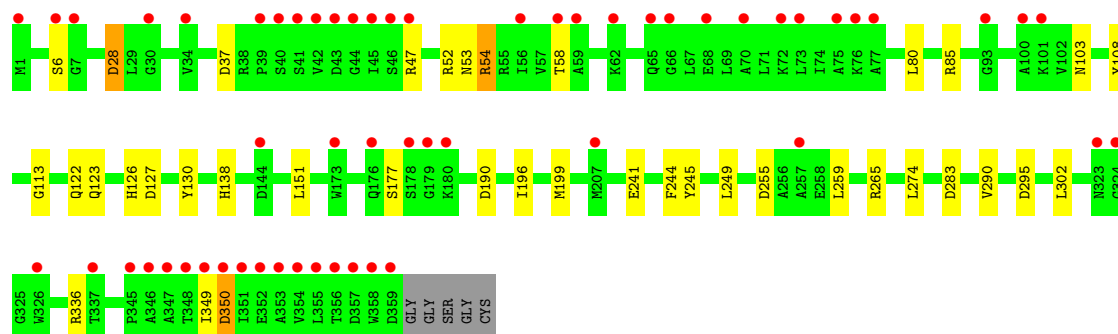
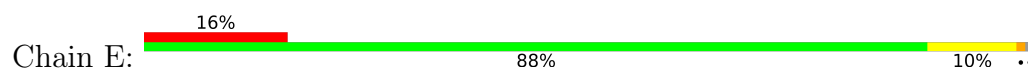




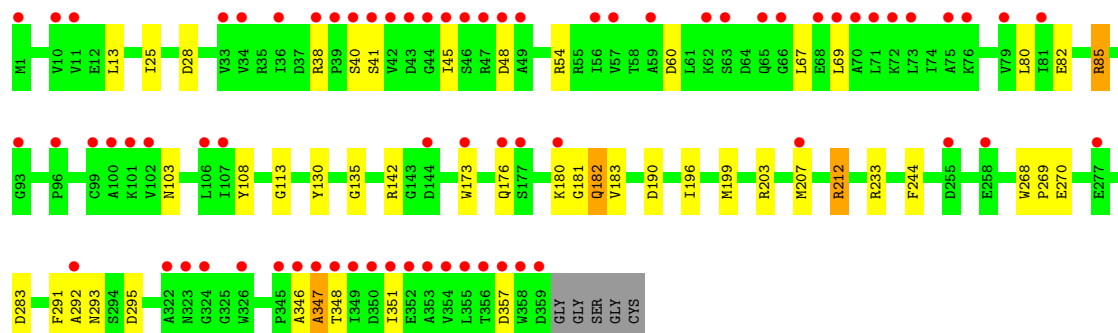
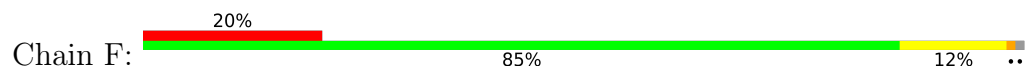
● Molecule 1: Alpha-methylacyl-CoA racemase



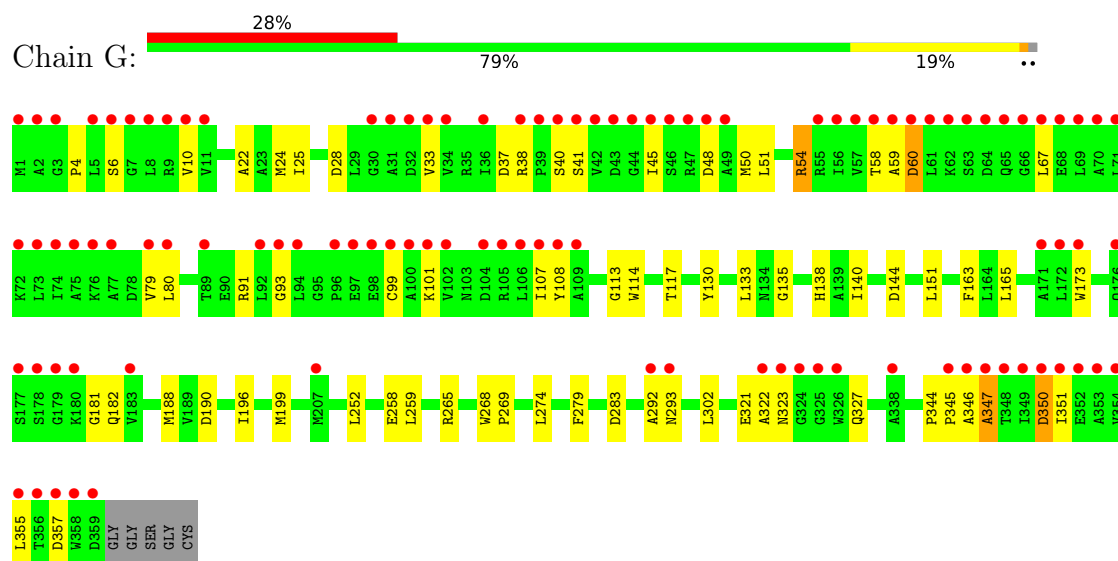
● Molecule 1: Alpha-methylacyl-CoA racemase



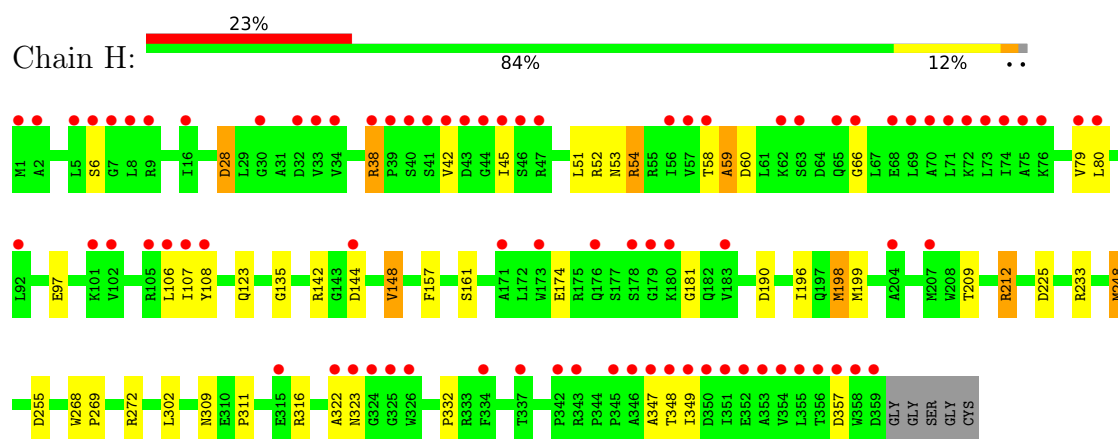
● Molecule 1: Alpha-methylacyl-CoA racemase



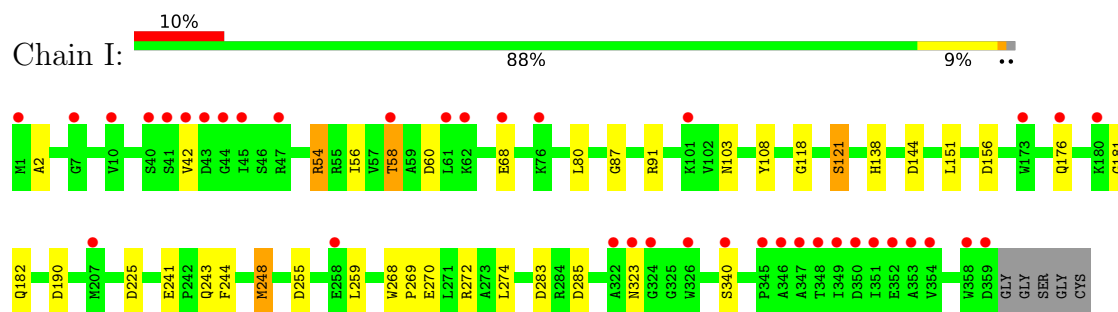
• Molecule 1: Alpha-methylacyl-CoA racemase



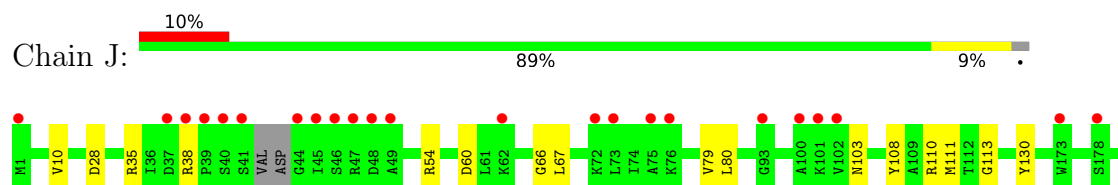
• Molecule 1: Alpha-methylacyl-CoA racemase



• Molecule 1: Alpha-methylacyl-CoA racemase

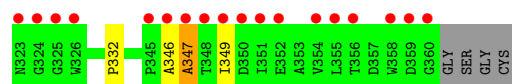
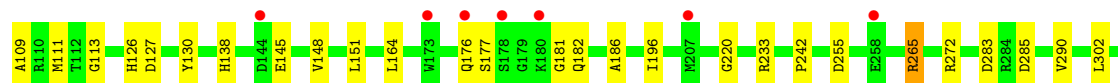
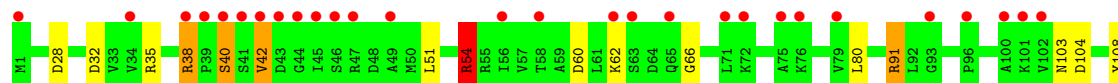
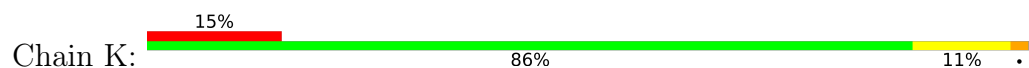


• Molecule 1: Alpha-methylacyl-CoA racemase

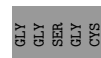
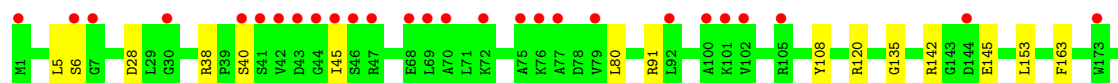
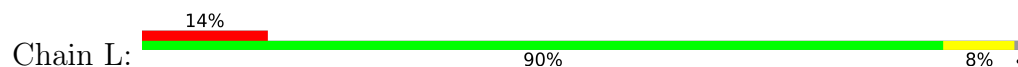




• Molecule 1: Alpha-methylacyl-CoA racemase



• Molecule 1: Alpha-methylacyl-CoA racemase



4 Data and refinement statistics

Property	Value	Source
Space group	I 4 2 2	Depositor
Cell constants a, b, c, α , β , γ	277.27 Å 277.27 Å 388.97 Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	195.24 – 2.25 195.24 – 2.25	Depositor EDS
% Data completeness (in resolution range)	100.0 (195.24-2.25) 99.9 (195.24-2.25)	Depositor EDS
R_{merge}	0.32	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.85 (at 2.25 Å)	Xtriage
Refinement program	REFMAC 5.8.0430 (refmacat 0.4.88)	Depositor
R, R_{free}	0.219 , 0.254 0.230 , 0.263	Depositor DCC
R_{free} test set	17549 reflections (4.98%)	wwPDB-VP
Wilson B-factor (Å ²)	39.5	Xtriage
Anisotropy	0.110	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 27.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.52$, $\langle L^2 \rangle = 0.36$	Xtriage
Estimated twinning fraction	0.000 for -1/2*h+1/2*k-1/2*l, 1/2*h-1/2*k-1/2*l, -h-k 0.000 for -1/2*h-1/2*k+1/2*l, -1/2*h-1/2*k-1/2*l, h-k	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	34386	wwPDB-VP
Average B, all atoms (Å ²)	46.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.53% 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: A1JJ6

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	0.63	0/2791	1.14	7/3797 (0.2%)
1	B	0.64	0/2791	1.13	12/3797 (0.3%)
1	C	0.63	0/2778	1.13	7/3778 (0.2%)
1	D	0.63	0/2782	1.17	14/3785 (0.4%)
1	E	0.62	0/2800	1.12	9/3809 (0.2%)
1	F	0.63	0/2782	1.12	6/3785 (0.2%)
1	G	0.61	0/2791	1.16	10/3797 (0.3%)
1	H	0.61	0/2782	1.15	12/3785 (0.3%)
1	I	0.62	0/2791	1.14	12/3797 (0.3%)
1	J	0.62	0/2775	1.13	6/3773 (0.2%)
1	K	0.63	0/2804	1.12	6/3814 (0.2%)
1	L	0.63	0/2782	1.13	9/3785 (0.2%)
All	All	0.63	0/33449	1.14	110/45502 (0.2%)

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
1	B	0	3
1	D	0	3
1	E	0	3
1	F	0	3
1	G	0	1
1	H	0	5
1	J	0	5
1	K	0	5
1	L	0	3
All	All	0	34

There are no bond length outliers.

All (110) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	L	38	ARG	N-CA-CB	-10.39	95.48	110.14
1	B	203	ARG	CB-CA-C	-8.65	94.05	110.67
1	E	123	GLN	CB-CA-C	-8.63	95.39	109.72
1	E	255	ASP	CB-CA-C	8.39	123.78	110.19
1	D	91	ARG	CB-CA-C	-8.36	95.17	110.63
1	B	203	ARG	N-CA-CB	8.26	123.08	110.28
1	C	203	ARG	CB-CA-C	-8.23	95.63	110.70
1	I	255	ASP	CB-CA-C	7.92	123.28	110.29
1	G	283	ASP	CA-CB-CG	7.84	120.44	112.60
1	D	248	MET	CG-SD-CE	7.53	117.46	100.90
1	J	190	ASP	CA-CB-CG	7.46	120.06	112.60
1	E	123	GLN	N-CA-CB	7.21	120.72	109.83
1	B	255	ASP	CB-CA-C	7.12	122.10	110.22
1	I	190	ASP	CA-CB-CG	7.07	119.67	112.60
1	F	190	ASP	CA-CB-CG	7.01	119.61	112.60
1	B	190	ASP	CA-CB-CG	6.92	119.52	112.60
1	I	54	ARG	N-CA-CB	-6.85	98.80	111.53
1	G	99	CYS	CB-CA-C	6.84	121.67	110.24
1	G	190	ASP	CA-CB-CG	6.78	119.38	112.60
1	L	198	MET	CG-SD-CE	-6.76	86.02	100.90
1	J	38	ARG	CB-CA-C	6.72	118.54	108.86
1	I	248	MET	CG-SD-CE	6.68	115.60	100.90
1	L	38	ARG	CB-CA-C	6.65	119.03	109.26
1	B	144	ASP	CA-CB-CG	6.56	119.16	112.60
1	E	283	ASP	CA-CB-CG	6.45	119.05	112.60
1	L	283	ASP	CA-CB-CG	6.39	118.99	112.60
1	H	28	ASP	CA-CB-CG	6.26	118.86	112.60
1	B	283	ASP	CA-CB-CG	6.25	118.86	112.60
1	B	43	ASP	CA-CB-CG	6.25	118.85	112.60
1	C	190	ASP	CA-CB-CG	6.24	118.84	112.60
1	H	190	ASP	CA-CB-CG	6.20	118.80	112.60
1	A	58	THR	CA-CB-OG1	-6.14	100.39	109.60
1	H	144	ASP	CA-CB-CG	6.10	118.70	112.60
1	A	190	ASP	CA-CB-CG	6.09	118.69	112.60
1	C	306	GLU	CB-CA-C	-6.08	99.06	109.65
1	K	285	ASP	CB-CA-C	6.08	120.88	110.79
1	A	28	ASP	CA-CB-CG	6.07	118.67	112.60
1	F	48	ASP	CA-CB-CG	6.03	118.63	112.60
1	L	28	ASP	CA-CB-CG	5.99	118.58	112.60
1	D	341	GLN	CB-CA-C	5.98	118.65	109.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	283	ASP	CA-CB-CG	5.97	118.57	112.60
1	J	54	ARG	CB-CA-C	-5.93	97.70	110.45
1	C	203	ARG	N-CA-CB	5.92	119.03	110.20
1	K	255	ASP	CA-CB-CG	5.89	118.49	112.60
1	E	190	ASP	CA-CB-CG	5.87	118.47	112.60
1	D	91	ARG	N-CA-CB	5.83	119.20	110.22
1	H	148	VAL	CB-CA-C	5.83	115.79	110.13
1	H	255	ASP	CB-CA-C	5.77	119.73	110.16
1	I	176	GLN	N-CA-CB	5.76	118.37	110.01
1	L	283	ASP	CB-CA-C	5.76	122.32	110.40
1	D	306	GLU	CB-CA-C	-5.74	100.50	110.09
1	E	28	ASP	CA-CB-CG	5.71	118.31	112.60
1	B	123	GLN	N-CA-CB	-5.70	101.12	109.95
1	J	357	ASP	CA-CB-CG	5.70	118.30	112.60
1	I	58	THR	CA-CB-OG1	-5.69	101.06	109.60
1	D	265	ARG	NE-CZ-NH2	5.68	124.31	119.20
1	F	60	ASP	CA-CB-CG	5.67	118.27	112.60
1	E	255	ASP	CA-CB-CG	5.67	118.27	112.60
1	G	60	ASP	CA-CB-CG	5.58	118.19	112.60
1	J	185	ASP	CA-CB-CG	5.57	118.17	112.60
1	C	255	ASP	CB-CA-C	5.55	119.19	110.19
1	C	149	PRO	CB-CA-C	5.49	117.62	110.92
1	A	283	ASP	CB-CA-C	5.48	120.87	110.51
1	A	37	ASP	CA-CB-CG	5.47	118.07	112.60
1	H	123	GLN	CB-CA-C	5.45	118.73	109.84
1	D	144	ASP	CA-CB-CG	5.44	118.04	112.60
1	D	38	ARG	CB-CA-C	5.42	117.24	109.11
1	I	144	ASP	CA-CB-CG	5.41	118.01	112.60
1	H	198	MET	CG-SD-CE	-5.40	89.03	100.90
1	D	157	PHE	CB-CA-C	5.39	119.41	111.65
1	K	28	ASP	CA-CB-CG	5.38	117.97	112.60
1	H	309	ASN	CB-CA-C	-5.37	102.08	110.94
1	L	190	ASP	CA-CB-CG	5.36	117.96	112.60
1	F	283	ASP	CA-CB-CG	5.35	117.95	112.60
1	B	147	PRO	CA-C-N	-5.33	118.70	123.33
1	B	147	PRO	C-N-CA	-5.33	118.70	123.33
1	I	255	ASP	CA-CB-CG	5.31	117.91	112.60
1	B	42	VAL	N-CA-CB	5.31	119.99	111.23
1	D	48	ASP	CA-CB-CG	5.29	117.89	112.60
1	H	148	VAL	CA-C-O	5.29	122.79	119.51
1	I	283	ASP	CB-CA-C	5.28	120.49	110.51
1	E	283	ASP	CB-CA-C	5.28	120.49	110.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	144	ASP	CA-CB-CG	5.27	117.87	112.60
1	J	28	ASP	CA-CB-CG	5.27	117.87	112.60
1	B	218	ASP	CA-CB-CG	5.26	117.86	112.60
1	E	37	ASP	CA-CB-CG	5.25	117.85	112.60
1	H	357	ASP	CA-CB-CG	5.24	117.84	112.60
1	G	357	ASP	CA-CB-CG	5.24	117.84	112.60
1	K	32	ASP	CA-CB-CG	5.21	117.81	112.60
1	D	190	ASP	CA-CB-CG	5.21	117.81	112.60
1	A	148	VAL	CA-C-O	5.20	122.73	119.51
1	I	285	ASP	CB-CA-C	5.20	120.24	110.63
1	K	104	ASP	CA-CB-CG	5.18	117.78	112.60
1	I	156	ASP	CA-CB-CG	5.18	117.78	112.60
1	C	265	ARG	CD-NE-CZ	5.17	131.64	124.40
1	H	248	MET	CG-SD-CE	5.16	112.25	100.90
1	G	350	ASP	CA-CB-CG	5.15	117.75	112.60
1	H	97	GLU	CB-CA-C	5.15	119.60	110.85
1	F	207	MET	CG-SD-CE	5.12	112.17	100.90
1	L	264	ASP	CA-CB-CG	5.11	117.71	112.60
1	D	28	ASP	CA-CB-CG	5.09	117.69	112.60
1	G	48	ASP	CA-CB-CG	5.08	117.68	112.60
1	D	54	ARG	CB-CA-C	-5.08	98.29	109.56
1	F	283	ASP	CB-CA-C	5.08	120.10	110.51
1	I	60	ASP	CA-CB-CG	5.07	117.67	112.60
1	K	283	ASP	CA-CB-CG	5.05	117.65	112.60
1	L	255	ASP	CA-CB-CG	5.05	117.65	112.60
1	G	327	GLN	CB-CA-C	-5.01	100.64	108.91
1	D	283	ASP	CA-CB-CG	5.01	117.61	112.60
1	G	37	ASP	CA-CB-CG	5.00	117.60	112.60

There are no chirality outliers.

All (34) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	203	ARG	Sidechain
1	A	265	ARG	Sidechain
1	A	91	ARG	Sidechain
1	B	212	ARG	Sidechain
1	B	54	ARG	Peptide
1	B	91	ARG	Sidechain
1	D	212	ARG	Sidechain
1	D	265	ARG	Sidechain
1	D	358	TRP	Peptide

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Mol	Chain	Res	Type	Group
1	E	265	ARG	Sidechain
1	E	350	ASP	Peptide
1	E	54	ARG	Peptide
1	F	203	ARG	Sidechain
1	F	212	ARG	Sidechain
1	F	233	ARG	Sidechain
1	G	265	ARG	Sidechain
1	H	212	ARG	Sidechain
1	H	233	ARG	Sidechain
1	H	322	ALA	Peptide
1	H	38	ARG	Sidechain
1	H	54	ARG	Peptide
1	J	110	ARG	Sidechain
1	J	212	ARG	Sidechain
1	J	233	ARG	Sidechain
1	J	265	ARG	Sidechain
1	J	35	ARG	Sidechain
1	K	233	ARG	Sidechain
1	K	265	ARG	Sidechain
1	K	35	ARG	Sidechain
1	K	38	ARG	Sidechain
1	K	54	ARG	Peptide
1	L	212	ARG	Sidechain
1	L	265	ARG	Sidechain
1	L	91	ARG	Sidechain

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2718	0	2658	23	0
1	B	2721	0	2668	16	0
1	C	2706	0	2650	27	0
1	D	2715	0	2660	23	0
1	E	2727	0	2665	14	0
1	F	2715	0	2660	26	0
1	G	2718	0	2658	31	0
1	H	2715	0	2660	21	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	I	2718	0	2658	15	0
1	J	2706	0	2654	10	0
1	K	2728	0	2669	21	0
1	L	2715	0	2660	12	0
2	A	64	0	0	0	0
2	B	64	0	0	0	0
2	C	64	0	0	0	0
2	D	64	0	0	3	0
2	E	64	0	0	1	0
2	F	64	0	0	5	0
2	G	64	0	0	3	0
2	H	64	0	0	1	0
2	I	64	0	0	0	0
2	J	64	0	0	0	0
2	K	64	0	0	1	0
2	L	64	0	0	0	0
3	A	85	0	0	3	0
3	B	89	0	0	1	0
3	C	96	0	0	1	0
3	D	92	0	0	0	0
3	E	86	0	0	1	0
3	F	69	0	0	1	0
3	G	81	0	0	2	0
3	H	78	0	0	0	0
3	I	88	0	0	3	0
3	J	91	0	0	0	0
3	K	85	0	0	2	0
3	L	76	0	0	1	0
All	All	34386	0	31920	218	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 (218) 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:G:259:LEU:HD22	1:G:274:LEU:HD13	1.66	0.78
1:C:80:LEU:HD22	1:C:108:TYR:CE2	2.23	0.73
1:C:198:MET:HE1	2:D:401:A1JJ6:C34	2.20	0.71
1:A:80:LEU:HD23	1:A:108:TYR:CE2	2.26	0.70
1:D:80:LEU:HD23	1:D:108:TYR:CE2	2.29	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:40:SER:OG	3:K:501:HOH:O	2.12	0.67
1:I:118:GLY:O	1:I:121:SER:OG	2.12	0.67
1:A:270:GLU:HG3	3:A:555:HOH:O	1.96	0.65
1:I:80:LEU:HD23	1:I:108:TYR:CE2	2.33	0.64
1:H:79:VAL:HG22	1:H:107:ILE:HB	1.79	0.64
1:A:39:PRO:HB3	1:A:58:THR:HG23	1.81	0.63
1:E:80:LEU:HD23	1:E:108:TYR:CE2	2.33	0.63
1:G:91:ARG:NH2	2:G:401:A1JJ6:O18	2.33	0.62
1:J:80:LEU:HD23	1:J:108:TYR:CE2	2.35	0.62
1:A:259:LEU:HD22	1:A:274:LEU:HD13	1.82	0.62
1:G:80:LEU:HD23	1:G:108:TYR:CE1	2.35	0.61
1:I:259:LEU:HD22	1:I:274:LEU:HD13	1.83	0.61
1:F:85:ARG:CD	2:F:401:A1JJ6:O10	2.50	0.60
1:G:79:VAL:HG22	1:G:107:ILE:HB	1.83	0.60
1:B:80:LEU:HD23	1:B:108:TYR:CE2	2.37	0.59
1:C:138:HIS:HD2	3:C:558:HOH:O	1.83	0.59
1:K:196:ILE:HG13	1:L:153:LEU:HD21	1.85	0.59
1:K:346:ALA:O	1:K:347:ALA:O	2.20	0.59
1:K:138:HIS:HD2	3:K:536:HOH:O	1.85	0.59
1:K:145:GLU:OE1	1:L:145:GLU:OE1	2.21	0.58
1:L:80:LEU:HD23	1:L:108:TYR:CE1	2.39	0.58
1:F:80:LEU:CD2	1:F:108:TYR:CE2	2.86	0.58
1:D:80:LEU:CD2	1:D:108:TYR:CE2	2.88	0.57
1:I:2:ALA:HB3	1:I:340:SER:OG	2.05	0.56
1:F:85:ARG:HD3	2:F:401:A1JJ6:O10	2.04	0.56
1:H:225:ASP:OD2	1:H:272:ARG:NH1	2.38	0.56
1:K:332:PRO:HG3	1:L:163:PHE:O	2.06	0.56
1:G:302:LEU:O	1:H:135:GLY:HA2	2.06	0.56
1:I:272:ARG:NH1	3:I:503:HOH:O	2.35	0.56
1:F:80:LEU:HD22	1:F:108:TYR:CE2	2.41	0.55
1:F:291:PHE:O	1:F:293:ASN:N	2.40	0.55
1:C:346:ALA:O	1:C:347:ALA:O	2.23	0.55
1:F:69:LEU:HD13	1:F:351:ILE:HG23	1.88	0.55
1:D:91:ARG:NH1	2:D:401:A1JJ6:O18	2.37	0.54
1:G:80:LEU:CD2	1:G:108:TYR:CE1	2.91	0.54
1:D:85:ARG:HD2	2:D:401:A1JJ6:O11	2.08	0.54
1:G:351:ILE:O	1:G:355:LEU:HD12	2.08	0.54
1:B:345:PRO:HA	3:B:553:HOH:O	2.07	0.53
1:F:181:GLY:O	1:F:182:GLN:HB3	2.08	0.53
2:G:401:A1JJ6:C34	1:H:198:MET:HE1	2.38	0.53
1:G:181:GLY:O	1:G:182:GLN:HB3	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:113:GLY:HA2	1:G:188:MET:HB2	1.90	0.52
1:F:196:ILE:HG12	1:F:199:MET:HB2	1.90	0.52
1:E:245:TYR:CE2	1:E:249:LEU:HD11	2.44	0.52
1:H:28:ASP:CG	1:H:52:ARG:HH21	2.16	0.52
1:K:91:ARG:NH2	2:K:401:A1JJ6:O17	2.29	0.52
1:E:259:LEU:HD22	1:E:274:LEU:HD13	1.91	0.52
1:E:28:ASP:HA	1:E:53:ASN:ND2	2.25	0.52
1:C:293:ASN:H	1:D:123:GLN:HE21	1.59	0.51
1:D:118:GLY:O	1:D:121:SER:OG	2.22	0.51
1:A:80:LEU:CD2	1:A:108:TYR:CE2	2.94	0.51
1:F:108:TYR:HB3	1:F:183:VAL:HG22	1.92	0.51
1:J:113:GLY:HA3	1:J:130:TYR:CE1	2.45	0.51
1:G:51:LEU:HA	1:G:54:ARG:NH1	2.26	0.50
2:F:401:A1JJ6:C21	2:F:401:A1JJ6:O4	2.59	0.50
1:K:111:MET:HE3	1:K:186:ALA:O	2.12	0.50
1:E:85:ARG:NH1	1:E:122:GLN:O	2.41	0.50
1:I:225:ASP:OD2	1:I:272:ARG:NH1	2.45	0.50
1:A:138:HIS:HD2	3:A:506:HOH:O	1.93	0.50
1:L:196:ILE:HG12	1:L:199:MET:HB2	1.92	0.50
1:E:138:HIS:HD2	3:E:557:HOH:O	1.95	0.50
1:I:138:HIS:HD2	3:I:532:HOH:O	1.95	0.50
1:F:85:ARG:NH1	2:F:401:A1JJ6:O8	2.45	0.49
1:G:196:ILE:HG12	1:G:199:MET:HB2	1.93	0.49
1:K:220:GLY:O	1:K:272:ARG:NH2	2.45	0.49
1:D:42:VAL:O	1:D:43:ASP:HB2	2.12	0.49
1:A:183:VAL:HB	1:B:335:SER:OG	2.13	0.49
1:F:85:ARG:HD2	2:F:401:A1JJ6:O10	2.13	0.49
1:F:270:GLU:HG3	3:F:509:HOH:O	2.13	0.49
1:H:60:ASP:O	1:H:66:GLY:HA3	2.12	0.48
1:A:113:GLY:HA3	1:A:130:TYR:CE1	2.49	0.48
1:C:135:GLY:HA2	1:D:302:LEU:O	2.12	0.48
1:F:113:GLY:HA3	1:F:130:TYR:CE1	2.48	0.48
1:D:37:ASP:O	1:D:58:THR:HA	2.13	0.48
1:E:241:GLU:HB2	1:E:244:PHE:CD2	2.48	0.48
1:D:45:ILE:HD12	1:D:45:ILE:H	1.77	0.48
1:B:346:ALA:O	1:B:347:ALA:O	2.32	0.48
1:D:78:ASP:OD1	1:D:175:ARG:NH2	2.42	0.48
1:J:111:MET:HE3	1:J:186:ALA:O	2.14	0.48
1:A:135:GLY:HA2	1:B:302:LEU:O	2.14	0.48
1:D:18:PRO:HB2	1:D:111:MET:HG2	1.95	0.48
1:J:10:VAL:HG22	1:J:79:VAL:HB	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:73:LEU:O	1:A:74:ILE:C	2.56	0.47
1:I:91:ARG:HD2	1:K:242:PRO:HB3	1.94	0.47
1:A:196:ILE:HG12	1:A:199:MET:HB2	1.95	0.47
1:C:28:ASP:HA	1:C:53:ASN:ND2	2.30	0.47
1:C:295:ASP:CG	1:D:85:ARG:HH22	2.22	0.47
1:L:142:ARG:O	1:L:212:ARG:HD2	2.15	0.47
1:C:18:PRO:HB3	1:C:156:ASP:O	2.14	0.47
1:C:113:GLY:HA3	1:C:130:TYR:CZ	2.50	0.47
1:H:28:ASP:HA	1:H:53:ASN:ND2	2.30	0.47
1:I:80:LEU:CD2	1:I:108:TYR:CE2	2.98	0.47
1:C:91:ARG:HD2	1:L:242:PRO:HB3	1.97	0.47
1:C:113:GLY:HA3	1:C:130:TYR:CE1	2.50	0.47
1:F:54:ARG:O	1:F:346:ALA:HB3	2.15	0.47
1:F:346:ALA:O	1:F:347:ALA:O	2.33	0.47
1:D:244:PHE:HB3	1:D:295:ASP:O	2.15	0.47
1:C:259:LEU:HD22	1:C:274:LEU:HD13	1.97	0.46
1:C:19:GLY:N	1:C:20:PRO:CD	2.79	0.46
1:G:117:THR:O	1:H:316:ARG:HD2	2.16	0.46
1:I:268:TRP:N	1:I:269:PRO:CD	2.78	0.46
1:J:220:GLY:O	1:J:272:ARG:NH2	2.49	0.46
1:C:196:ILE:HG12	1:C:199:MET:HB2	1.98	0.45
1:L:329:MET:HE3	1:L:330:PRO:HD2	1.96	0.45
1:E:302:LEU:O	1:F:135:GLY:HA2	2.16	0.45
1:K:196:ILE:HG23	1:K:196:ILE:O	2.15	0.45
1:A:39:PRO:HB3	1:A:58:THR:CG2	2.47	0.45
1:K:80:LEU:HD23	1:K:108:TYR:CE2	2.52	0.45
1:G:67:LEU:O	1:G:67:LEU:HD12	2.16	0.45
1:G:138:HIS:HD2	3:G:514:HOH:O	1.99	0.45
1:H:268:TRP:N	1:H:269:PRO:CD	2.80	0.45
1:K:346:ALA:O	1:K:347:ALA:C	2.60	0.45
1:E:244:PHE:HB3	1:E:295:ASP:O	2.17	0.45
1:K:51:LEU:HA	1:K:54:ARG:NH1	2.32	0.45
1:G:50:MET:HE1	1:H:198:MET:HB2	1.99	0.44
1:I:87:GLY:O	1:I:91:ARG:HG3	2.17	0.44
1:J:196:ILE:HG12	1:J:199:MET:HB2	1.99	0.44
1:A:51:LEU:HA	1:A:54:ARG:NH1	2.32	0.44
1:J:252:LEU:HD21	1:J:279:PHE:CE1	2.52	0.44
1:K:109:ALA:HB1	1:K:164:LEU:HD11	1.98	0.44
1:C:329:MET:HE3	1:C:330:PRO:HD2	1.99	0.44
1:D:268:TRP:N	1:D:269:PRO:CD	2.80	0.44
1:G:113:GLY:HA3	1:G:130:TYR:CZ	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:268:TRP:N	1:F:269:PRO:CD	2.81	0.44
1:G:10:VAL:HG22	1:G:79:VAL:HB	1.98	0.44
1:A:294:SER:O	1:B:123:GLN:HG3	2.18	0.44
1:I:181:GLY:O	1:I:182:GLN:HB3	2.18	0.44
1:C:245:TYR:CE2	1:C:249:LEU:HD11	2.53	0.44
2:H:401:A1JJ6:C21	2:H:401:A1JJ6:O4	2.65	0.44
1:D:322:ALA:O	1:D:323:ASN:HB3	2.16	0.44
1:G:135:GLY:HA2	1:H:302:LEU:O	2.17	0.44
1:L:225:ASP:OD2	1:L:272:ARG:NH1	2.51	0.44
1:G:22:ALA:O	1:G:165:LEU:HD21	2.18	0.44
1:K:302:LEU:O	1:L:135:GLY:HA2	2.18	0.44
1:B:142:ARG:O	1:B:212:ARG:HD2	2.18	0.43
1:G:344:PRO:CB	1:G:345:PRO:HD2	2.48	0.43
1:L:120:ARG:HD3	3:L:501:HOH:O	2.18	0.43
1:F:13:LEU:HD12	1:F:82:GLU:HB3	2.01	0.43
1:B:291:PHE:O	1:B:294:SER:HB3	2.17	0.43
1:A:346:ALA:HB3	3:A:511:HOH:O	2.19	0.43
1:A:180:LYS:O	1:B:336:ARG:NH2	2.51	0.43
1:H:106:LEU:O	1:H:181:GLY:HA3	2.18	0.43
2:E:401:A1JJ6:O4	2:E:401:A1JJ6:C21	2.67	0.43
1:A:25:ILE:O	1:A:28:ASP:HB2	2.19	0.43
1:C:80:LEU:CD2	1:C:108:TYR:CE2	2.98	0.43
1:J:60:ASP:O	1:J:66:GLY:HA3	2.19	0.43
1:E:113:GLY:HA3	1:E:130:TYR:CZ	2.54	0.42
1:I:270:GLU:HG3	3:I:570:HOH:O	2.19	0.42
1:K:113:GLY:HA3	1:K:130:TYR:CZ	2.54	0.42
1:A:224:TYR:HA	1:A:237:VAL:O	2.20	0.42
1:G:346:ALA:O	1:G:347:ALA:O	2.37	0.42
1:F:142:ARG:O	1:F:212:ARG:HD2	2.20	0.42
1:C:148:VAL:HG21	1:D:141:GLY:HA2	2.02	0.42
1:C:148:VAL:HG23	1:C:149:PRO:HD2	2.02	0.42
1:G:322:ALA:HB1	1:G:323:ASN:HD22	1.82	0.42
1:H:157:PHE:HA	1:H:161:SER:OG	2.19	0.42
1:D:87:GLY:O	1:D:91:ARG:HG3	2.20	0.42
1:F:113:GLY:HA3	1:F:130:TYR:CZ	2.55	0.42
1:G:252:LEU:HD21	1:G:279:PHE:CE1	2.54	0.42
1:I:241:GLU:HB2	1:I:244:PHE:CD2	2.55	0.42
1:A:103:ASN:OD1	1:A:103:ASN:C	2.63	0.42
1:E:28:ASP:CG	1:E:52:ARG:HH21	2.27	0.42
1:F:67:LEU:HD12	1:F:67:LEU:O	2.19	0.42
1:K:60:ASP:O	1:K:66:GLY:HA3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:126:HIS:O	1:B:127:ASP:C	2.63	0.42
1:C:90:GLU:OE1	1:C:90:GLU:N	2.48	0.42
1:G:114:TRP:CZ3	1:G:133:LEU:HD22	2.54	0.42
1:H:51:LEU:HA	1:H:54:ARG:NH1	2.35	0.42
1:B:329:MET:HE3	1:B:330:PRO:HD2	2.00	0.42
1:G:268:TRP:N	1:G:269:PRO:CD	2.82	0.42
1:C:67:LEU:HD12	1:C:67:LEU:O	2.20	0.42
1:C:225:ASP:OD2	1:C:272:ARG:NH1	2.53	0.42
1:E:126:HIS:O	1:E:127:ASP:C	2.63	0.41
1:E:336:ARG:NH2	1:F:180:LYS:HB2	2.35	0.41
1:F:25:ILE:O	1:F:28:ASP:HB2	2.20	0.41
1:F:69:LEU:HD13	1:F:351:ILE:CG2	2.48	0.41
1:F:346:ALA:O	1:F:347:ALA:C	2.63	0.41
1:H:58:THR:O	1:H:59:ALA:HB2	2.19	0.41
1:K:126:HIS:O	1:K:127:ASP:C	2.63	0.41
1:D:126:HIS:O	1:D:127:ASP:C	2.62	0.41
1:E:196:ILE:HG12	1:E:199:MET:HB2	2.01	0.41
1:G:38:ARG:HB3	2:G:401:A1JJ6:C29	2.49	0.41
1:J:316:ARG:O	1:J:317:ASN:C	2.63	0.41
1:B:316:ARG:HB3	1:B:316:ARG:NH1	2.34	0.41
1:A:1:MET:HE2	1:A:343:ARG:NH2	2.36	0.41
1:G:25:ILE:O	1:G:28:ASP:HB2	2.20	0.41
1:H:80:LEU:CD2	1:H:108:TYR:CE2	3.03	0.41
1:A:2:ALA:HB3	1:A:340:SER:OG	2.20	0.41
1:C:198:MET:HG2	1:C:199:MET:HE3	2.03	0.41
1:D:225:ASP:OD2	1:D:272:ARG:NH1	2.53	0.41
1:B:225:ASP:OD2	1:B:272:ARG:NH1	2.53	0.41
1:H:196:ILE:HG12	1:H:199:MET:HB2	2.02	0.41
1:G:4:PRO:O	1:H:174:GLU:HB2	2.20	0.41
1:C:153:LEU:HD21	1:D:196:ILE:HG13	2.02	0.41
1:D:75:ALA:HA	1:D:103:ASN:HB2	2.02	0.41
1:J:67:LEU:HD12	1:J:67:LEU:O	2.20	0.41
1:A:72:LYS:O	1:A:75:ALA:HB3	2.21	0.41
1:A:163:PHE:O	1:B:332:PRO:HG3	2.21	0.41
1:H:80:LEU:HD23	1:H:108:TYR:CE2	2.56	0.41
1:K:60:ASP:OD1	1:K:62:LYS:HB2	2.21	0.41
1:K:181:GLY:O	1:K:182:GLN:HB3	2.20	0.41
1:C:109:ALA:HB1	1:C:164:LEU:HD11	2.03	0.41
1:G:93:GLY:C	3:G:537:HOH:O	2.64	0.40
1:B:310:GLU:O	1:B:311:PRO:C	2.64	0.40
1:L:5:LEU:O	1:L:6:SER:C	2.64	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:113:GLY:HA3	1:D:130:TYR:CZ	2.56	0.40
1:F:244:PHE:HB3	1:F:295:ASP:O	2.22	0.40
1:B:181:GLY:O	1:B:182:GLN:HB3	2.21	0.40
1:G:163:PHE:O	1:H:332:PRO:HG3	2.21	0.40
1:C:24:MET:HE2	1:C:24:MET:HB3	1.92	0.40
1:G:24:MET:HB3	1:G:24:MET:HE2	1.85	0.40
1:H:142:ARG:O	1:H:212:ARG:HD2	2.22	0.40
1:I:80:LEU:HD23	1:I:108:TYR:CD2	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	359/364 (99%)	335 (93%)	21 (6%)	3 (1%)	16	14
1	B	359/364 (99%)	341 (95%)	14 (4%)	4 (1%)	11	8
1	C	355/364 (98%)	341 (96%)	11 (3%)	3 (1%)	16	14
1	D	358/364 (98%)	335 (94%)	20 (6%)	3 (1%)	16	14
1	E	360/364 (99%)	343 (95%)	15 (4%)	2 (1%)	21	21
1	F	358/364 (98%)	328 (92%)	24 (7%)	6 (2%)	7	3
1	G	359/364 (99%)	329 (92%)	23 (6%)	7 (2%)	6	3
1	H	358/364 (98%)	331 (92%)	23 (6%)	4 (1%)	11	8
1	I	359/364 (99%)	343 (96%)	14 (4%)	2 (1%)	21	21
1	J	355/364 (98%)	341 (96%)	13 (4%)	1 (0%)	36	40
1	K	361/364 (99%)	338 (94%)	19 (5%)	4 (1%)	11	8
1	L	358/364 (98%)	340 (95%)	18 (5%)	0	100	100
All	All	4299/4368 (98%)	4045 (94%)	215 (5%)	39 (1%)	14	12

All (39) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	103	ASN
1	B	347	ALA
1	C	347	ALA
1	F	103	ASN
1	F	347	ALA
1	G	292	ALA
1	G	347	ALA
1	K	103	ASN
1	K	347	ALA
1	A	42	VAL
1	B	103	ASN
1	D	43	ASP
1	D	323	ASN
1	F	41	SER
1	H	347	ALA
1	H	348	THR
1	J	103	ASN
1	K	42	VAL
1	A	40	SER
1	D	103	ASN
1	G	41	SER
1	G	59	ALA
1	G	101	LYS
1	H	59	ALA
1	C	103	ASN
1	C	151	LEU
1	E	103	ASN
1	B	42	VAL
1	B	151	LEU
1	E	151	LEU
1	F	182	GLN
1	F	292	ALA
1	F	348	THR
1	I	103	ASN
1	K	151	LEU
1	G	60	ASP
1	G	151	LEU
1	I	151	LEU
1	H	42	VAL

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	277/277 (100%)	271 (98%)	6 (2%)	45	56
1	B	277/277 (100%)	268 (97%)	9 (3%)	34	43
1	C	276/277 (100%)	264 (96%)	12 (4%)	26	31
1	D	276/277 (100%)	272 (99%)	4 (1%)	59	70
1	E	278/277 (100%)	270 (97%)	8 (3%)	37	47
1	F	276/277 (100%)	269 (98%)	7 (2%)	42	52
1	G	277/277 (100%)	265 (96%)	12 (4%)	26	31
1	H	276/277 (100%)	267 (97%)	9 (3%)	33	42
1	I	277/277 (100%)	268 (97%)	9 (3%)	34	43
1	J	275/277 (99%)	272 (99%)	3 (1%)	65	75
1	K	278/277 (100%)	267 (96%)	11 (4%)	28	34
1	L	276/277 (100%)	273 (99%)	3 (1%)	65	75
All	All	3319/3324 (100%)	3226 (97%)	93 (3%)	38	48

All (93) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	40	SER
1	A	54	ARG
1	A	58	THR
1	A	68	GLU
1	A	294	SER
1	A	359	ASP
1	B	40	SER
1	B	42	VAL
1	B	85	ARG
1	B	176	GLN
1	B	248	MET
1	B	265	ARG
1	B	290	VAL
1	B	335	SER

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Mol	Chain	Res	Type
1	B	350	ASP
1	C	6	SER
1	C	40	SER
1	C	45	ILE
1	C	54	ARG
1	C	58	THR
1	C	80	LEU
1	C	91	ARG
1	C	148	VAL
1	C	176	GLN
1	C	207	MET
1	C	258	GLU
1	C	299	THR
1	D	40	SER
1	D	85	ARG
1	D	248	MET
1	D	315	GLU
1	E	6	SER
1	E	47	ARG
1	E	54	ARG
1	E	58	THR
1	E	177	SER
1	E	290	VAL
1	E	349	ILE
1	E	350	ASP
1	F	38	ARG
1	F	40	SER
1	F	45	ILE
1	F	85	ARG
1	F	173	TRP
1	F	176	GLN
1	F	357	ASP
1	G	6	SER
1	G	33	VAL
1	G	40	SER
1	G	45	ILE
1	G	54	ARG
1	G	58	THR
1	G	140	ILE
1	G	173	TRP
1	G	258	GLU
1	G	293	ASN

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Mol	Chain	Res	Type
1	G	321	GLU
1	G	350	ASP
1	H	6	SER
1	H	38	ARG
1	H	45	ILE
1	H	148	VAL
1	H	209	THR
1	H	248	MET
1	H	311	PRO
1	H	323	ASN
1	H	349	ILE
1	I	42	VAL
1	I	54	ARG
1	I	56	ILE
1	I	58	THR
1	I	68	GLU
1	I	121	SER
1	I	243	GLN
1	I	248	MET
1	I	323	ASN
1	J	209	THR
1	J	299	THR
1	J	351	ILE
1	K	38	ARG
1	K	40	SER
1	K	42	VAL
1	K	54	ARG
1	K	91	ARG
1	K	148	VAL
1	K	176	GLN
1	K	177	SER
1	K	265	ARG
1	K	290	VAL
1	K	349	ILE
1	L	40	SER
1	L	45	ILE
1	L	294	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (63) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	116	GLN

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Mol	Chain	Res	Type
1	A	138	HIS
1	A	286	HIS
1	A	323	ASN
1	A	327	GLN
1	B	116	GLN
1	B	134	ASN
1	B	176	GLN
1	B	286	HIS
1	B	293	ASN
1	B	323	ASN
1	C	138	HIS
1	C	176	GLN
1	C	243	GLN
1	C	263	ASN
1	C	327	GLN
1	D	116	GLN
1	D	123	GLN
1	D	323	ASN
1	E	134	ASN
1	E	138	HIS
1	E	176	GLN
1	E	263	ASN
1	E	293	ASN
1	E	308	HIS
1	F	116	GLN
1	F	176	GLN
1	F	286	HIS
1	F	293	ASN
1	G	116	GLN
1	G	138	HIS
1	G	176	GLN
1	G	182	GLN
1	G	263	ASN
1	G	282	HIS
1	G	286	HIS
1	G	308	HIS
1	G	323	ASN
1	G	327	GLN
1	H	116	GLN
1	H	286	HIS
1	H	309	ASN
1	H	323	ASN

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Mol	Chain	Res	Type
1	H	327	GLN
1	I	138	HIS
1	I	176	GLN
1	I	263	ASN
1	I	308	HIS
1	I	309	ASN
1	I	327	GLN
1	J	122	GLN
1	J	134	ASN
1	J	176	GLN
1	J	286	HIS
1	J	308	HIS
1	K	138	HIS
1	K	176	GLN
1	K	282	HIS
1	K	327	GLN
1	L	122	GLN
1	L	176	GLN
1	L	286	HIS
1	L	323	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

12 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond

length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	A1JJ6	B	401	-	61,67,67	0.74	2 (3%)	83,98,98	1.10	9 (10%)
2	A1JJ6	H	401	-	61,67,67	0.91	3 (4%)	83,98,98	0.97	7 (8%)
2	A1JJ6	D	401	-	61,67,67	0.74	2 (3%)	83,98,98	1.13	6 (7%)
2	A1JJ6	K	401	-	61,67,67	0.62	1 (1%)	83,98,98	1.11	6 (7%)
2	A1JJ6	L	401	-	61,67,67	0.68	2 (3%)	83,98,98	1.11	4 (4%)
2	A1JJ6	F	401	-	61,67,67	0.74	3 (4%)	83,98,98	1.17	8 (9%)
2	A1JJ6	E	401	-	61,67,67	0.79	3 (4%)	83,98,98	1.23	9 (10%)
2	A1JJ6	C	401	-	61,67,67	0.61	0	83,98,98	1.02	7 (8%)
2	A1JJ6	G	401	-	61,67,67	0.73	2 (3%)	83,98,98	1.26	10 (12%)
2	A1JJ6	A	401	-	61,67,67	0.67	2 (3%)	83,98,98	1.16	8 (9%)
2	A1JJ6	I	401	-	61,67,67	0.76	1 (1%)	83,98,98	1.21	8 (9%)
2	A1JJ6	J	401	-	61,67,67	0.64	1 (1%)	83,98,98	1.14	7 (8%)

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	A1JJ6	B	401	-	-	13/63/80/80	0/4/4/4
2	A1JJ6	H	401	-	-	16/63/80/80	0/4/4/4
2	A1JJ6	D	401	-	-	10/63/80/80	0/4/4/4
2	A1JJ6	K	401	-	-	15/63/80/80	0/4/4/4
2	A1JJ6	L	401	-	-	13/63/80/80	0/4/4/4
2	A1JJ6	F	401	-	-	20/63/80/80	0/4/4/4
2	A1JJ6	E	401	-	-	27/63/80/80	0/4/4/4
2	A1JJ6	C	401	-	-	17/63/80/80	0/4/4/4
2	A1JJ6	G	401	-	-	14/63/80/80	0/4/4/4
2	A1JJ6	A	401	-	-	9/63/80/80	0/4/4/4
2	A1JJ6	I	401	-	-	9/63/80/80	0/4/4/4
2	A1JJ6	J	401	-	-	13/63/80/80	0/4/4/4

All (22) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	401	A1JJ6	O2-C12	3.74	1.26	1.20
2	E	401	A1JJ6	C10-S1	3.58	1.89	1.83
2	H	401	A1JJ6	C10-S1	3.51	1.89	1.83
2	I	401	A1JJ6	O2-C12	3.41	1.25	1.20
2	L	401	A1JJ6	P3-O15	3.20	1.65	1.59
2	D	401	A1JJ6	P3-O15	3.04	1.65	1.59
2	F	401	A1JJ6	P3-O15	2.83	1.64	1.59
2	A	401	A1JJ6	P3-O15	2.72	1.64	1.59
2	H	401	A1JJ6	C12-S2	2.69	1.83	1.75
2	G	401	A1JJ6	P3-O15	2.67	1.64	1.59
2	G	401	A1JJ6	O2-C12	2.67	1.24	1.20
2	B	401	A1JJ6	O2-C12	2.57	1.24	1.20
2	L	401	A1JJ6	O2-C12	2.54	1.24	1.20
2	E	401	A1JJ6	P3-O15	2.53	1.64	1.59
2	A	401	A1JJ6	O2-C12	2.44	1.24	1.20
2	J	401	A1JJ6	P3-O15	2.39	1.63	1.59
2	B	401	A1JJ6	P3-O15	2.38	1.63	1.59
2	F	401	A1JJ6	O3-C15	2.37	1.28	1.23
2	K	401	A1JJ6	O2-C12	2.30	1.24	1.20
2	F	401	A1JJ6	O2-C12	2.29	1.24	1.20
2	E	401	A1JJ6	O2-C12	2.23	1.24	1.20
2	D	401	A1JJ6	O2-C12	2.16	1.24	1.20

All (89) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	401	A1JJ6	C32-C33-C25	-5.36	93.72	103.22
2	L	401	A1JJ6	C32-C33-C25	-5.17	94.07	103.22
2	F	401	A1JJ6	C32-C33-C25	-4.73	94.84	103.22
2	J	401	A1JJ6	C32-C33-C25	-4.61	95.04	103.22
2	E	401	A1JJ6	C32-C33-C25	-4.54	95.17	103.22
2	G	401	A1JJ6	C32-C33-C25	-4.29	95.61	103.22
2	I	401	A1JJ6	C32-C33-C25	-4.26	95.68	103.22
2	G	401	A1JJ6	O7-P1-O8	4.14	132.69	112.24
2	K	401	A1JJ6	C32-C33-C25	-4.13	95.90	103.22
2	C	401	A1JJ6	C32-C33-C25	-3.88	96.34	103.22
2	E	401	A1JJ6	O14-C32-C33	3.81	121.98	111.17
2	E	401	A1JJ6	C13-S2-C12	3.67	112.79	101.75
2	L	401	A1JJ6	C25-O13-C26	-3.61	101.50	109.47
2	C	401	A1JJ6	C21-C20-C23	-3.57	102.40	108.23
2	A	401	A1JJ6	C32-C33-C25	-3.55	96.92	103.22
2	A	401	A1JJ6	O7-P1-O8	3.54	129.72	112.24
2	B	401	A1JJ6	C32-C33-C25	-3.48	97.06	103.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L	401	A1JJ6	O7-P1-O8	3.36	128.86	112.24
2	G	401	A1JJ6	O14-C32-C33	3.32	120.60	111.17
2	I	401	A1JJ6	O6-P1-O8	-3.32	96.11	109.07
2	K	401	A1JJ6	C21-C20-C23	-3.30	102.85	108.23
2	H	401	A1JJ6	C32-C33-C25	-3.25	97.46	103.22
2	I	401	A1JJ6	O7-P1-O8	3.23	128.19	112.24
2	L	401	A1JJ6	O6-P1-O8	-3.14	96.79	109.07
2	B	401	A1JJ6	O18-P3-O17	-3.13	95.67	107.64
2	B	401	A1JJ6	O15-P3-O16	-3.12	97.36	109.39
2	I	401	A1JJ6	O14-C32-C26	3.11	120.43	110.02
2	K	401	A1JJ6	O7-P1-O8	3.06	127.37	112.24
2	A	401	A1JJ6	P2-O9-P1	-3.03	122.44	132.83
2	F	401	A1JJ6	C21-C20-C23	-3.02	103.31	108.23
2	I	401	A1JJ6	C25-O13-C26	-3.00	102.86	109.47
2	E	401	A1JJ6	O2-C12-S2	-2.94	119.84	123.80
2	D	401	A1JJ6	C25-O13-C26	-2.92	103.04	109.47
2	A	401	A1JJ6	O7-P1-O6	-2.90	94.27	107.75
2	I	401	A1JJ6	C21-C20-C23	2.85	112.89	108.23
2	J	401	A1JJ6	C21-C20-C19	2.85	113.77	108.82
2	F	401	A1JJ6	O7-P1-O8	2.81	126.11	112.24
2	G	401	A1JJ6	O18-P3-O17	2.79	118.31	107.64
2	K	401	A1JJ6	C25-O13-C26	-2.78	103.34	109.47
2	F	401	A1JJ6	C25-O13-C26	-2.77	103.36	109.47
2	D	401	A1JJ6	O7-P1-O8	2.77	125.94	112.24
2	J	401	A1JJ6	O7-P1-O8	2.77	125.92	112.24
2	J	401	A1JJ6	C25-O13-C26	-2.75	103.41	109.47
2	B	401	A1JJ6	O18-P3-O15	2.70	118.08	105.99
2	D	401	A1JJ6	O6-P1-O8	-2.70	98.53	109.07
2	G	401	A1JJ6	C21-C20-C19	2.69	113.48	108.82
2	A	401	A1JJ6	C22-C20-C23	-2.67	103.88	108.23
2	J	401	A1JJ6	O18-P3-O17	2.65	117.77	107.64
2	F	401	A1JJ6	O17-P3-O15	2.55	117.43	105.99
2	I	401	A1JJ6	C14-N1-C15	-2.52	118.16	122.84
2	F	401	A1JJ6	C22-C20-C23	2.50	112.32	108.23
2	G	401	A1JJ6	O18-P3-O16	-2.50	100.89	110.68
2	D	401	A1JJ6	C5-C34-C9	2.48	121.55	119.44
2	C	401	A1JJ6	O7-P1-O8	2.45	124.35	112.24
2	H	401	A1JJ6	O15-P3-O16	-2.42	100.04	109.39
2	B	401	A1JJ6	O17-P3-O16	2.41	120.10	110.68
2	G	401	A1JJ6	O14-C32-C26	-2.38	102.05	110.02
2	F	401	A1JJ6	O14-C32-C33	2.37	117.91	111.17
2	E	401	A1JJ6	C14-N1-C15	2.37	127.24	122.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	401	A1JJ6	O6-C23-C20	2.37	114.36	110.55
2	C	401	A1JJ6	C21-C20-C19	2.36	112.91	108.82
2	K	401	A1JJ6	O15-P3-O16	-2.35	100.32	109.39
2	G	401	A1JJ6	O7-P1-O6	-2.35	96.83	107.75
2	H	401	A1JJ6	C21-C20-C19	2.35	112.89	108.82
2	K	401	A1JJ6	O17-P3-O16	2.33	119.82	110.68
2	B	401	A1JJ6	O2-C12-S2	-2.33	120.66	123.80
2	D	401	A1JJ6	O2-C12-S2	-2.30	120.70	123.80
2	B	401	A1JJ6	C32-C26-N3	-2.24	107.62	113.30
2	J	401	A1JJ6	O18-P3-O16	-2.23	101.96	110.68
2	E	401	A1JJ6	C21-C20-C23	-2.23	104.60	108.23
2	G	401	A1JJ6	C24-C25-C33	2.21	121.71	114.40
2	I	401	A1JJ6	O15-P3-O16	-2.19	100.95	109.39
2	B	401	A1JJ6	O18-P3-O16	2.17	119.18	110.68
2	E	401	A1JJ6	C25-O13-C26	-2.14	104.74	109.47
2	C	401	A1JJ6	C22-C20-C23	2.13	111.71	108.23
2	J	401	A1JJ6	O14-C32-C26	2.13	117.15	110.02
2	C	401	A1JJ6	O18-P3-O17	2.13	115.76	107.64
2	H	401	A1JJ6	C21-C20-C23	-2.12	104.77	108.23
2	A	401	A1JJ6	C21-C20-C23	2.12	111.69	108.23
2	C	401	A1JJ6	C25-O13-C26	-2.10	104.83	109.47
2	H	401	A1JJ6	C22-C20-C23	2.08	111.62	108.23
2	E	401	A1JJ6	C32-C26-N3	-2.08	108.04	113.30
2	H	401	A1JJ6	O7-P1-O8	2.08	122.50	112.24
2	E	401	A1JJ6	O18-P3-O17	2.05	115.49	107.64
2	B	401	A1JJ6	O15-C33-C25	2.04	117.46	110.08
2	G	401	A1JJ6	C25-O13-C26	-2.04	104.98	109.47
2	A	401	A1JJ6	O5-C19-C20	-2.03	105.46	110.25
2	A	401	A1JJ6	C24-C25-C33	2.02	121.11	114.40
2	H	401	A1JJ6	O17-P3-O15	2.02	115.06	105.99

There are no chirality outliers.

All (176) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	401	A1JJ6	C15-C16-C17-N2
2	A	401	A1JJ6	C24-O12-P2-O9
2	B	401	A1JJ6	C23-O6-P1-O7
2	B	401	A1JJ6	C33-O15-P3-O16
2	C	401	A1JJ6	C18-C19-C20-C23
2	C	401	A1JJ6	C23-O6-P1-O7
2	C	401	A1JJ6	C23-O6-P1-O9

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Mol	Chain	Res	Type	Atoms
2	C	401	A1JJ6	C24-O12-P2-O9
2	D	401	A1JJ6	C24-O12-P2-O9
2	D	401	A1JJ6	C24-O12-P2-O10
2	D	401	A1JJ6	C24-O12-P2-O11
2	E	401	A1JJ6	C13-C14-N1-C15
2	E	401	A1JJ6	C10-C12-S2-C13
2	E	401	A1JJ6	O2-C12-S2-C13
2	E	401	A1JJ6	C14-C13-S2-C12
2	E	401	A1JJ6	C18-C19-C20-C23
2	E	401	A1JJ6	C23-O6-P1-O7
2	E	401	A1JJ6	C23-O6-P1-O9
2	E	401	A1JJ6	C24-O12-P2-O9
2	E	401	A1JJ6	C24-O12-P2-O10
2	E	401	A1JJ6	C24-O12-P2-O11
2	F	401	A1JJ6	C18-C19-C20-C21
2	F	401	A1JJ6	C18-C19-C20-C23
2	F	401	A1JJ6	C23-O6-P1-O8
2	F	401	A1JJ6	C24-O12-P2-O9
2	F	401	A1JJ6	C33-O15-P3-O16
2	G	401	A1JJ6	C24-O12-P2-O9
2	G	401	A1JJ6	C24-O12-P2-O10
2	H	401	A1JJ6	C18-C19-C20-C23
2	H	401	A1JJ6	C23-O6-P1-O7
2	H	401	A1JJ6	C23-O6-P1-O9
2	H	401	A1JJ6	C24-O12-P2-O9
2	I	401	A1JJ6	C15-C16-C17-N2
2	I	401	A1JJ6	C24-O12-P2-O9
2	J	401	A1JJ6	C24-O12-P2-O9
2	K	401	A1JJ6	C19-C20-C23-O6
2	K	401	A1JJ6	C21-C20-C23-O6
2	K	401	A1JJ6	C24-O12-P2-O9
2	K	401	A1JJ6	C24-O12-P2-O10
2	K	401	A1JJ6	C24-O12-P2-O11
2	K	401	A1JJ6	C33-O15-P3-O16
2	L	401	A1JJ6	C24-O12-P2-O9
2	L	401	A1JJ6	C33-O15-P3-O16
2	G	401	A1JJ6	C3-C2-C4-O1
2	G	401	A1JJ6	C1-C2-C4-O1
2	D	401	A1JJ6	C34-C5-O1-C4
2	D	401	A1JJ6	C6-C5-O1-C4
2	C	401	A1JJ6	C34-C5-O1-C4
2	F	401	A1JJ6	C6-C5-O1-C4

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Mol	Chain	Res	Type	Atoms
2	L	401	A1JJ6	C34-C5-O1-C4
2	C	401	A1JJ6	C6-C5-O1-C4
2	F	401	A1JJ6	C34-C5-O1-C4
2	L	401	A1JJ6	C6-C5-O1-C4
2	H	401	A1JJ6	C6-C5-O1-C4
2	G	401	A1JJ6	C34-C5-O1-C4
2	H	401	A1JJ6	C34-C5-O1-C4
2	B	401	A1JJ6	C6-C5-O1-C4
2	B	401	A1JJ6	C34-C5-O1-C4
2	K	401	A1JJ6	C22-C20-C23-O6
2	G	401	A1JJ6	C6-C5-O1-C4
2	K	401	A1JJ6	C34-C5-O1-C4
2	K	401	A1JJ6	C6-C5-O1-C4
2	B	401	A1JJ6	C3-C2-C4-O1
2	D	401	A1JJ6	C15-C16-C17-N2
2	F	401	A1JJ6	C15-C16-C17-N2
2	G	401	A1JJ6	C15-C16-C17-N2
2	J	401	A1JJ6	C15-C16-C17-N2
2	K	401	A1JJ6	C2-C4-O1-C5
2	E	401	A1JJ6	C2-C4-O1-C5
2	F	401	A1JJ6	O5-C19-C20-C21
2	F	401	A1JJ6	O5-C19-C20-C22
2	A	401	A1JJ6	C2-C4-O1-C5
2	E	401	A1JJ6	C3-C2-C4-O1
2	L	401	A1JJ6	C2-C4-O1-C5
2	E	401	A1JJ6	C6-C5-O1-C4
2	E	401	A1JJ6	C34-C5-O1-C4
2	B	401	A1JJ6	C15-C16-C17-N2
2	L	401	A1JJ6	C15-C16-C17-N2
2	A	401	A1JJ6	S1-C10-C12-O2
2	B	401	A1JJ6	S1-C10-C12-O2
2	C	401	A1JJ6	S1-C10-C12-O2
2	D	401	A1JJ6	S1-C10-C12-O2
2	E	401	A1JJ6	S1-C10-C12-O2
2	F	401	A1JJ6	S1-C10-C12-O2
2	G	401	A1JJ6	S1-C10-C12-O2
2	H	401	A1JJ6	S1-C10-C12-O2
2	I	401	A1JJ6	S1-C10-C12-O2
2	J	401	A1JJ6	S1-C10-C12-O2
2	K	401	A1JJ6	S1-C10-C12-O2
2	L	401	A1JJ6	S1-C10-C12-O2
2	C	401	A1JJ6	C18-C19-C20-C21

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Mol	Chain	Res	Type	Atoms
2	E	401	A1JJ6	C18-C19-C20-C21
2	F	401	A1JJ6	C18-C19-C20-C22
2	H	401	A1JJ6	C18-C19-C20-C21
2	H	401	A1JJ6	C33-O15-P3-O18
2	L	401	A1JJ6	C33-O15-P3-O17
2	A	401	A1JJ6	C24-O12-P2-O10
2	A	401	A1JJ6	C24-O12-P2-O11
2	B	401	A1JJ6	C23-O6-P1-O8
2	C	401	A1JJ6	C24-O12-P2-O10
2	C	401	A1JJ6	C24-O12-P2-O11
2	F	401	A1JJ6	C23-O6-P1-O7
2	F	401	A1JJ6	C24-O12-P2-O10
2	F	401	A1JJ6	C24-O12-P2-O11
2	G	401	A1JJ6	C24-O12-P2-O11
2	H	401	A1JJ6	C24-O12-P2-O10
2	H	401	A1JJ6	C24-O12-P2-O11
2	I	401	A1JJ6	C24-O12-P2-O10
2	I	401	A1JJ6	C24-O12-P2-O11
2	J	401	A1JJ6	C24-O12-P2-O10
2	J	401	A1JJ6	C24-O12-P2-O11
2	K	401	A1JJ6	C23-O6-P1-O7
2	L	401	A1JJ6	C24-O12-P2-O10
2	L	401	A1JJ6	C24-O12-P2-O11
2	I	401	A1JJ6	C3-C2-C4-O1
2	C	401	A1JJ6	O5-C19-C20-C23
2	E	401	A1JJ6	O5-C19-C20-C23
2	F	401	A1JJ6	O5-C19-C20-C23
2	H	401	A1JJ6	O5-C19-C20-C23
2	H	401	A1JJ6	C22-C20-C23-O6
2	J	401	A1JJ6	C2-C4-O1-C5
2	B	401	A1JJ6	C1-C2-C4-O1
2	H	401	A1JJ6	C16-C17-N2-C18
2	E	401	A1JJ6	O5-C19-C20-C22
2	A	401	A1JJ6	P1-O9-P2-O10
2	I	401	A1JJ6	P1-O9-P2-O10
2	E	401	A1JJ6	C1-C2-C4-O1
2	I	401	A1JJ6	O12-C24-C25-O13
2	J	401	A1JJ6	O12-C24-C25-O13
2	F	401	A1JJ6	C10-C12-S2-C13
2	G	401	A1JJ6	C2-C4-O1-C5
2	C	401	A1JJ6	C22-C20-C23-O6
2	J	401	A1JJ6	C34-C5-O1-C4

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Mol	Chain	Res	Type	Atoms
2	D	401	A1JJ6	O12-C24-C25-O13
2	E	401	A1JJ6	C16-C15-N1-C14
2	C	401	A1JJ6	P1-O9-P2-O10
2	C	401	A1JJ6	P1-O9-P2-O11
2	H	401	A1JJ6	O12-C24-C25-O13
2	L	401	A1JJ6	O12-C24-C25-O13
2	J	401	A1JJ6	C6-C5-O1-C4
2	G	401	A1JJ6	C33-O15-P3-O16
2	E	401	A1JJ6	C22-C20-C23-O6
2	E	401	A1JJ6	O3-C15-N1-C14
2	C	401	A1JJ6	C15-C16-C17-N2
2	E	401	A1JJ6	O12-C24-C25-O13
2	E	401	A1JJ6	C18-C19-C20-C22
2	B	401	A1JJ6	C23-O6-P1-O9
2	D	401	A1JJ6	C33-O15-P3-O17
2	E	401	A1JJ6	C33-O15-P3-O17
2	E	401	A1JJ6	C33-O15-P3-O18
2	F	401	A1JJ6	C23-O6-P1-O9
2	G	401	A1JJ6	C33-O15-P3-O17
2	J	401	A1JJ6	C33-O15-P3-O17
2	J	401	A1JJ6	C33-O15-P3-O18
2	K	401	A1JJ6	C23-O6-P1-O9
2	A	401	A1JJ6	O12-C24-C25-O13
2	F	401	A1JJ6	O12-C24-C25-O13
2	G	401	A1JJ6	O12-C24-C25-O13
2	B	401	A1JJ6	P1-O9-P2-O11
2	J	401	A1JJ6	P1-O9-P2-O11
2	L	401	A1JJ6	P1-O9-P2-O11
2	B	401	A1JJ6	O12-C24-C25-O13
2	C	401	A1JJ6	O12-C24-C25-O13
2	K	401	A1JJ6	O12-C24-C25-O13
2	A	401	A1JJ6	C11-C10-S1-C9
2	B	401	A1JJ6	C11-C10-S1-C9
2	C	401	A1JJ6	C11-C10-S1-C9
2	D	401	A1JJ6	C11-C10-S1-C9
2	E	401	A1JJ6	C11-C10-S1-C9
2	F	401	A1JJ6	C11-C10-S1-C9
2	G	401	A1JJ6	C11-C10-S1-C9
2	H	401	A1JJ6	C11-C10-S1-C9
2	I	401	A1JJ6	C11-C10-S1-C9
2	J	401	A1JJ6	C11-C10-S1-C9
2	K	401	A1JJ6	C11-C10-S1-C9

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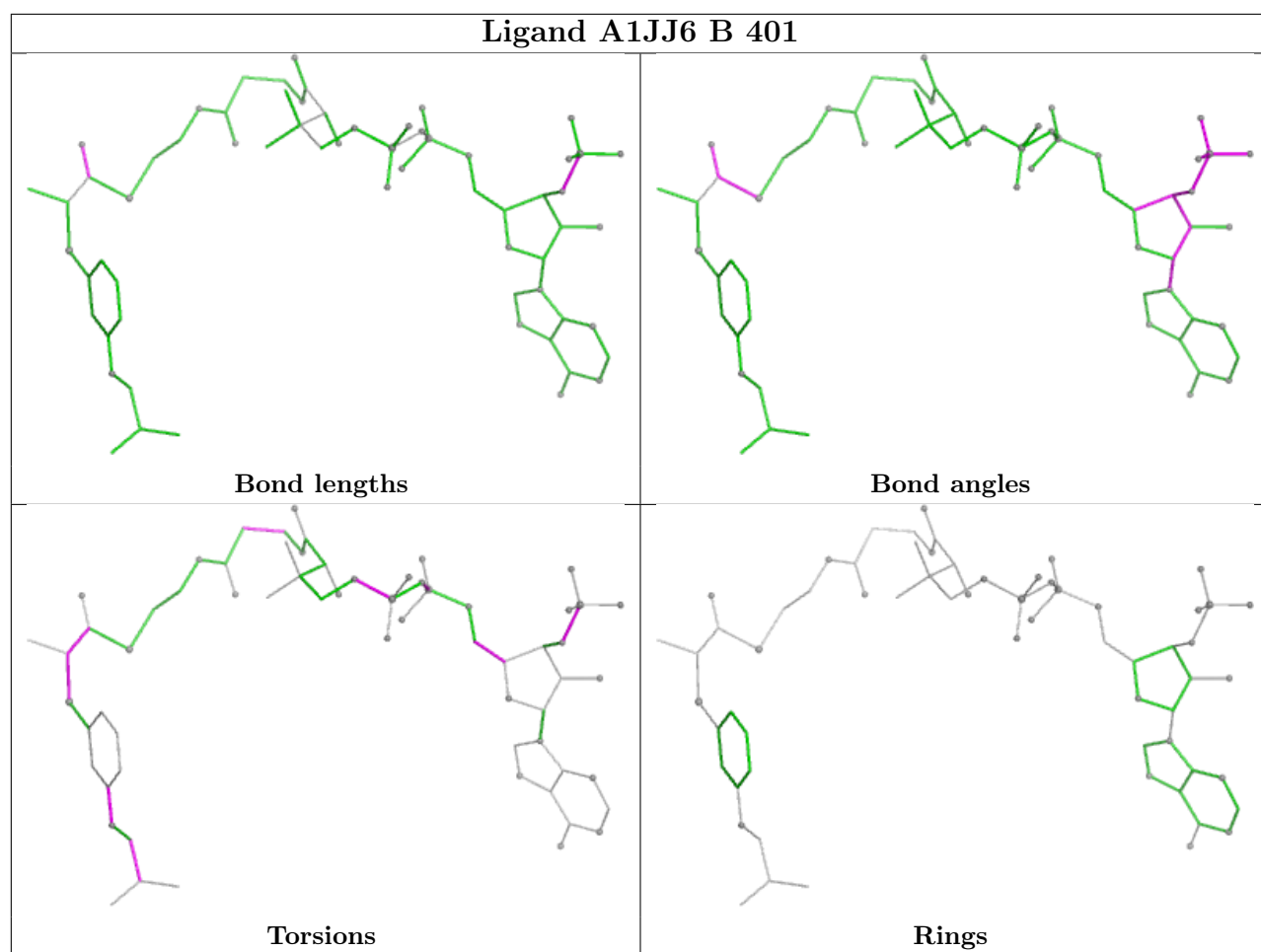
Mol	Chain	Res	Type	Atoms
2	L	401	A1JJ6	C11-C10-S1-C9

There are no ring outliers.

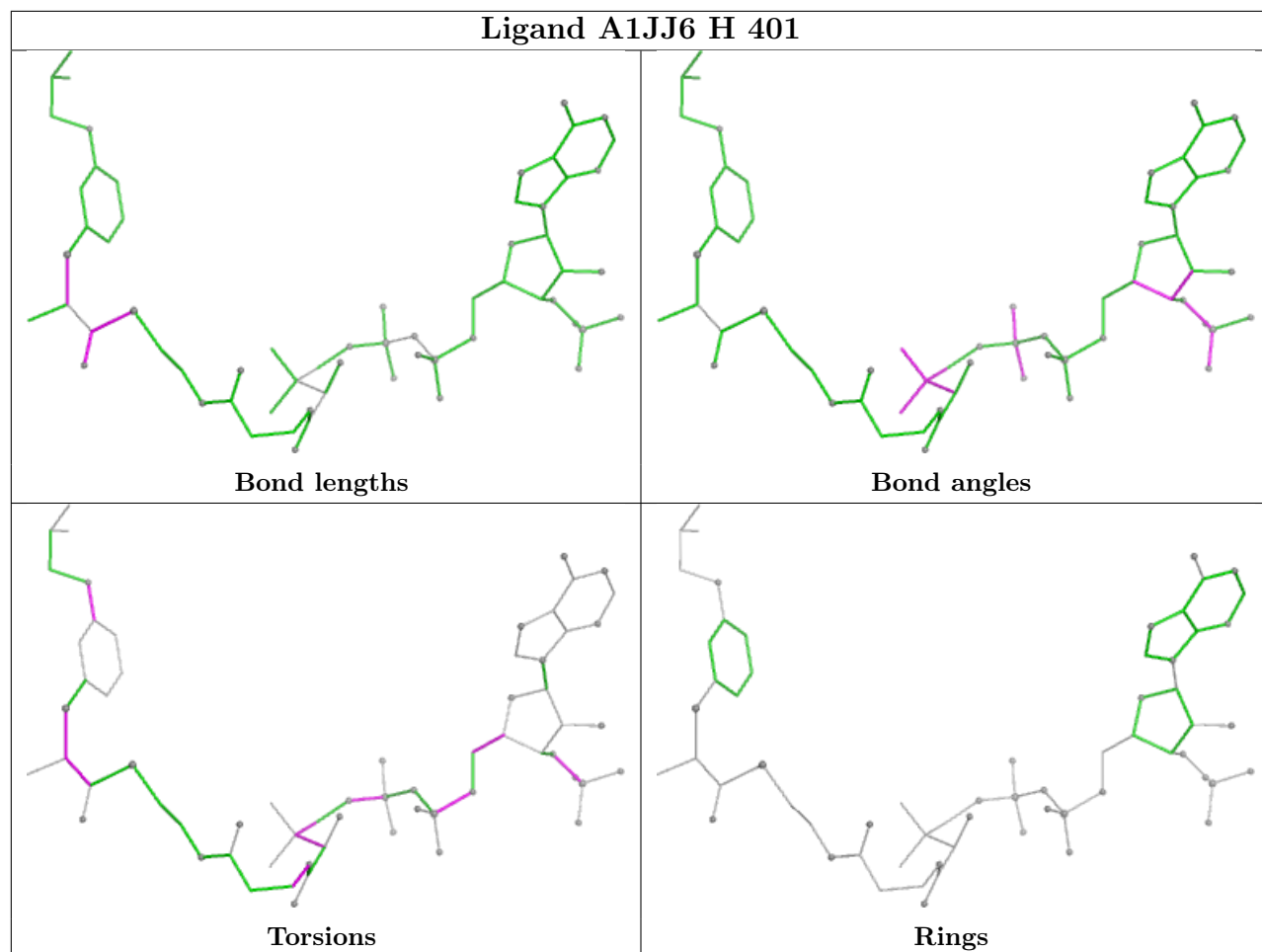
6 monomers are involved in 14 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	H	401	A1JJ6	1	0
2	D	401	A1JJ6	3	0
2	K	401	A1JJ6	1	0
2	F	401	A1JJ6	5	0
2	E	401	A1JJ6	1	0
2	G	401	A1JJ6	3	0

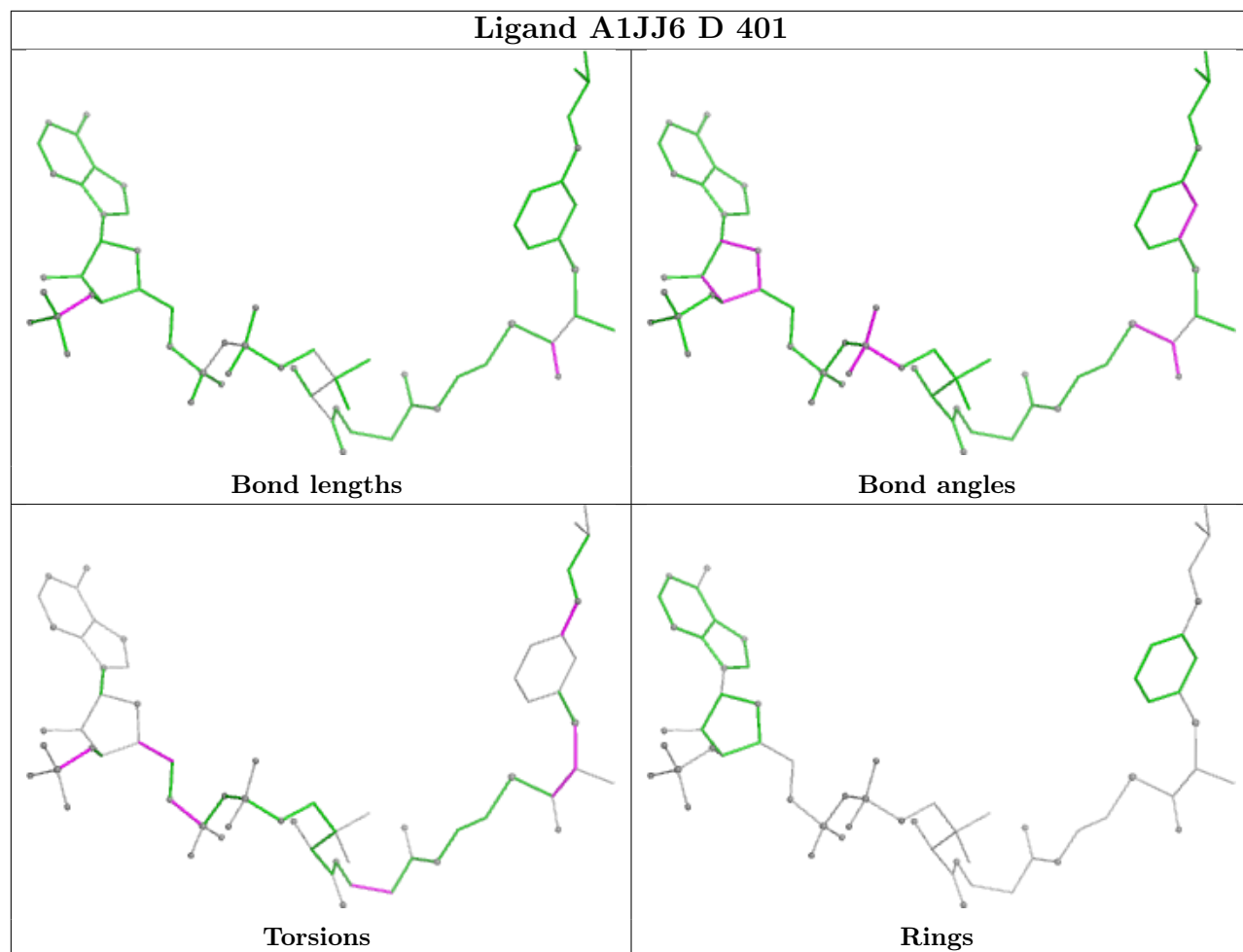
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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



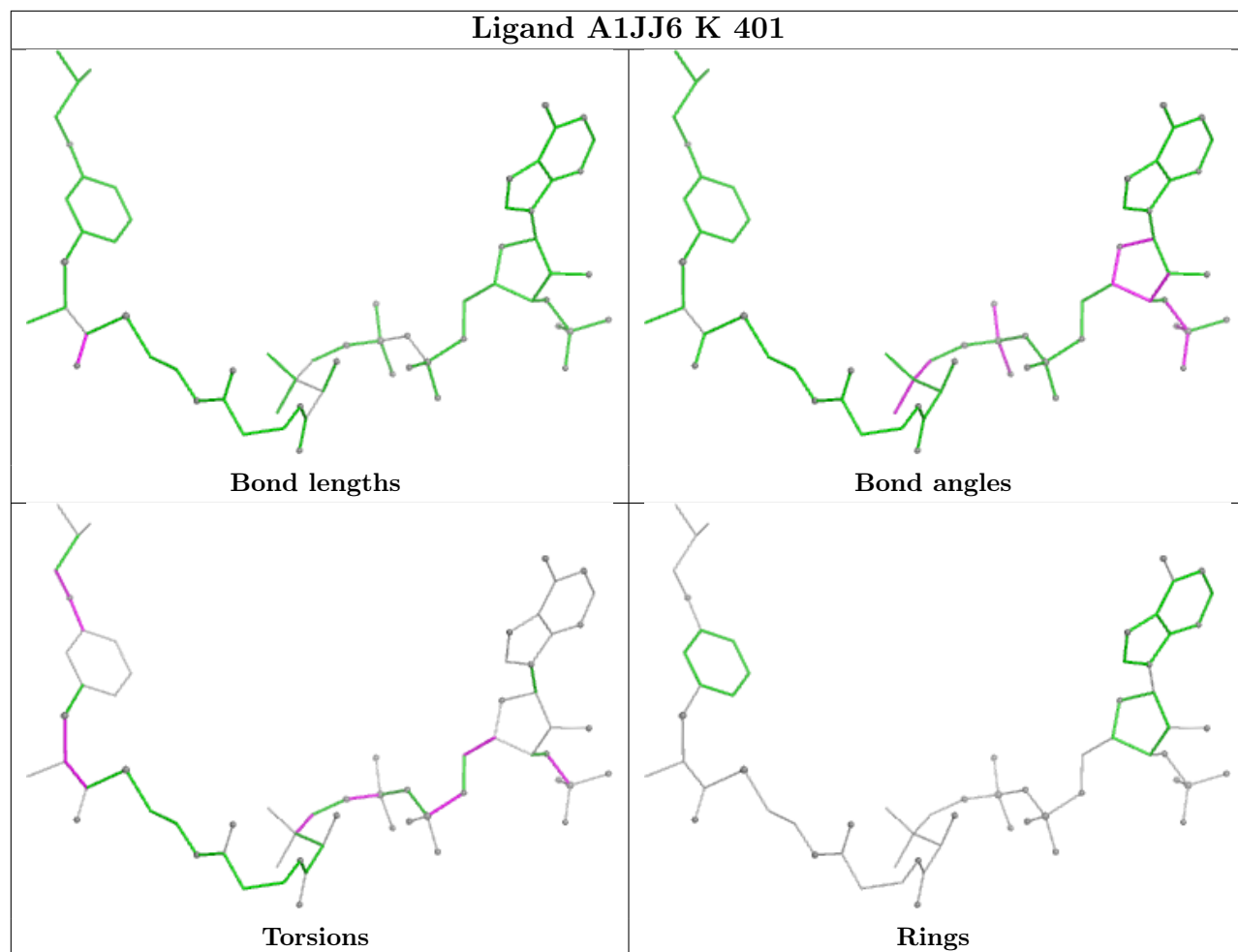
Ligand A1JJ6 H 401

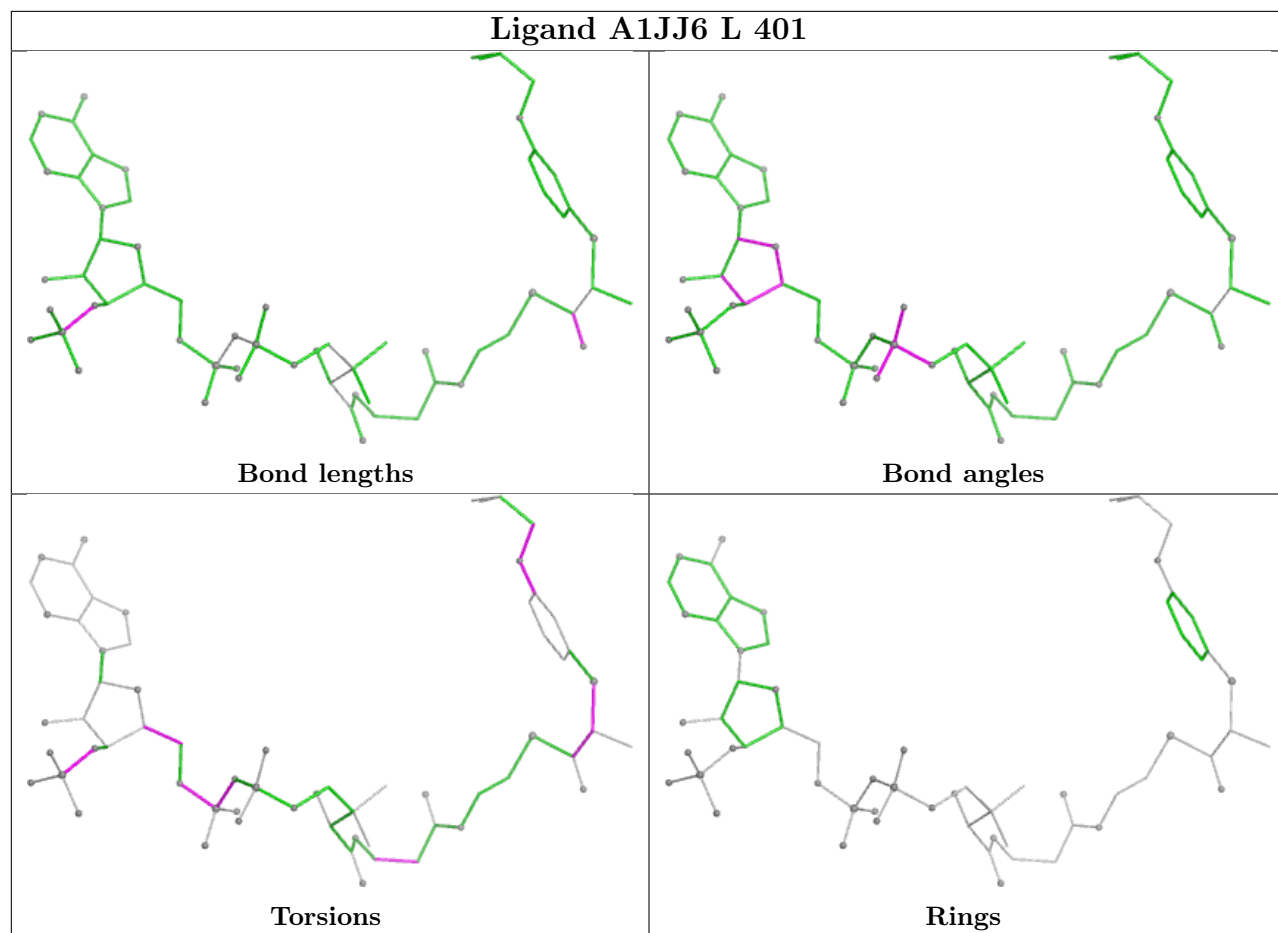


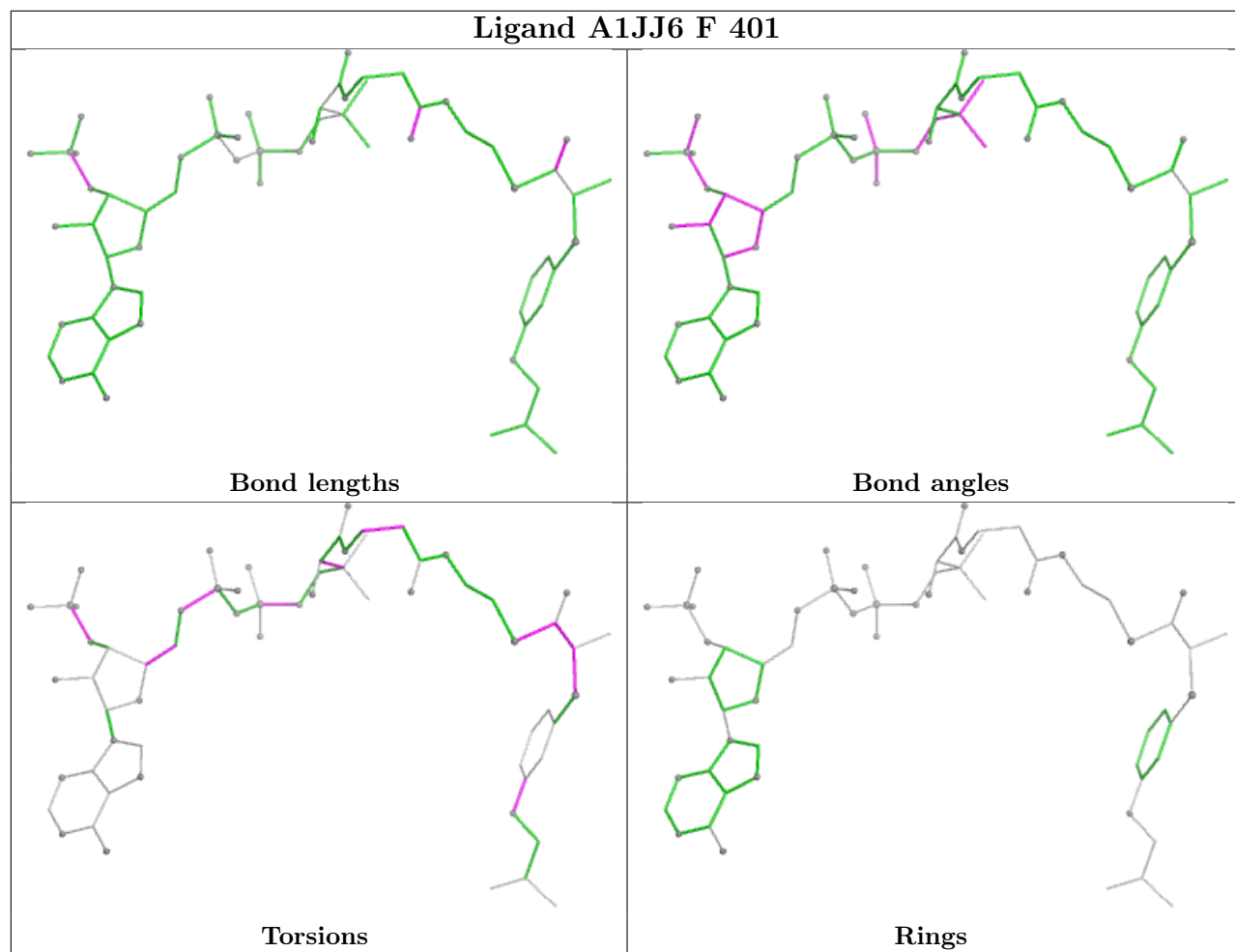
Ligand A1JJ6 D 401

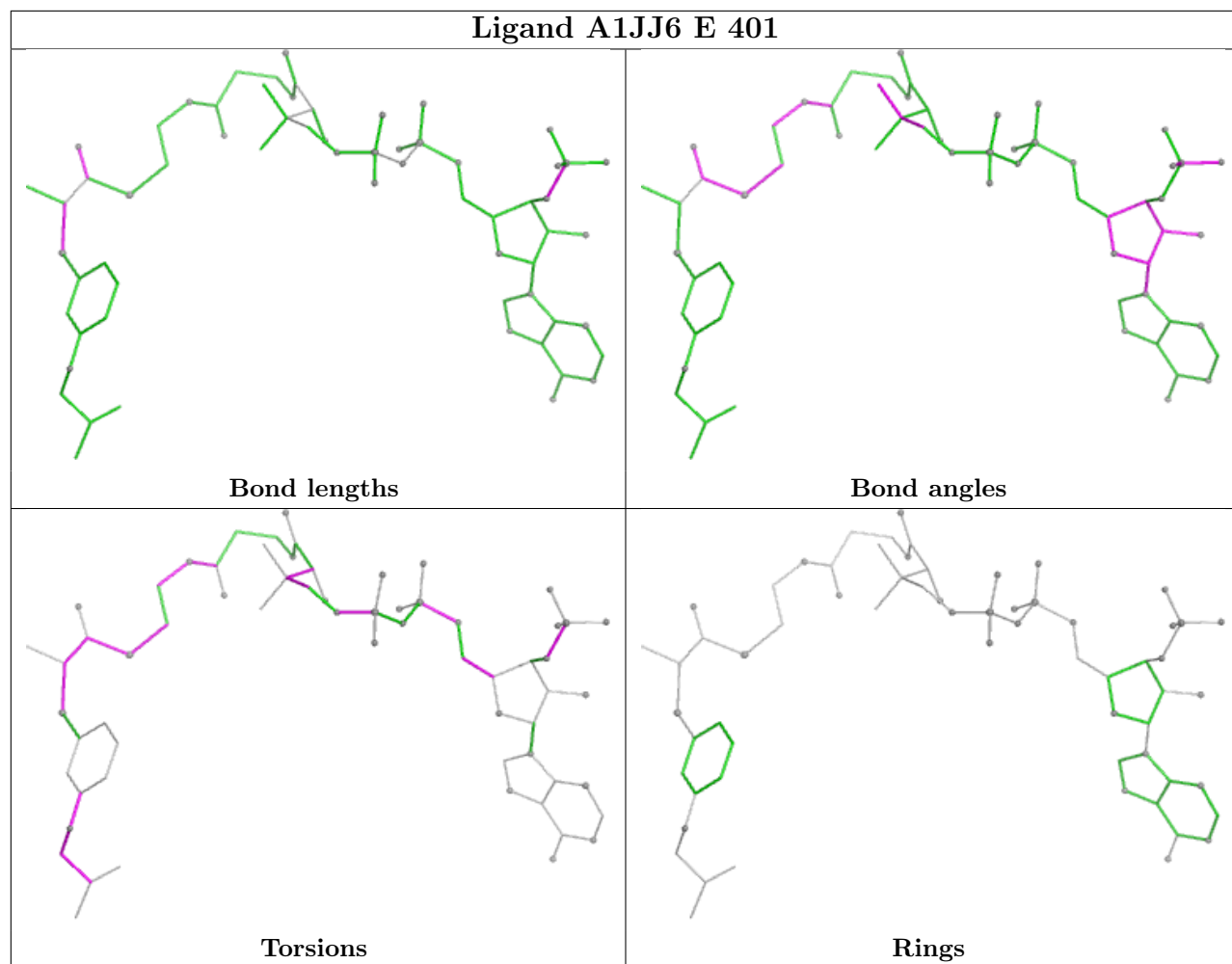


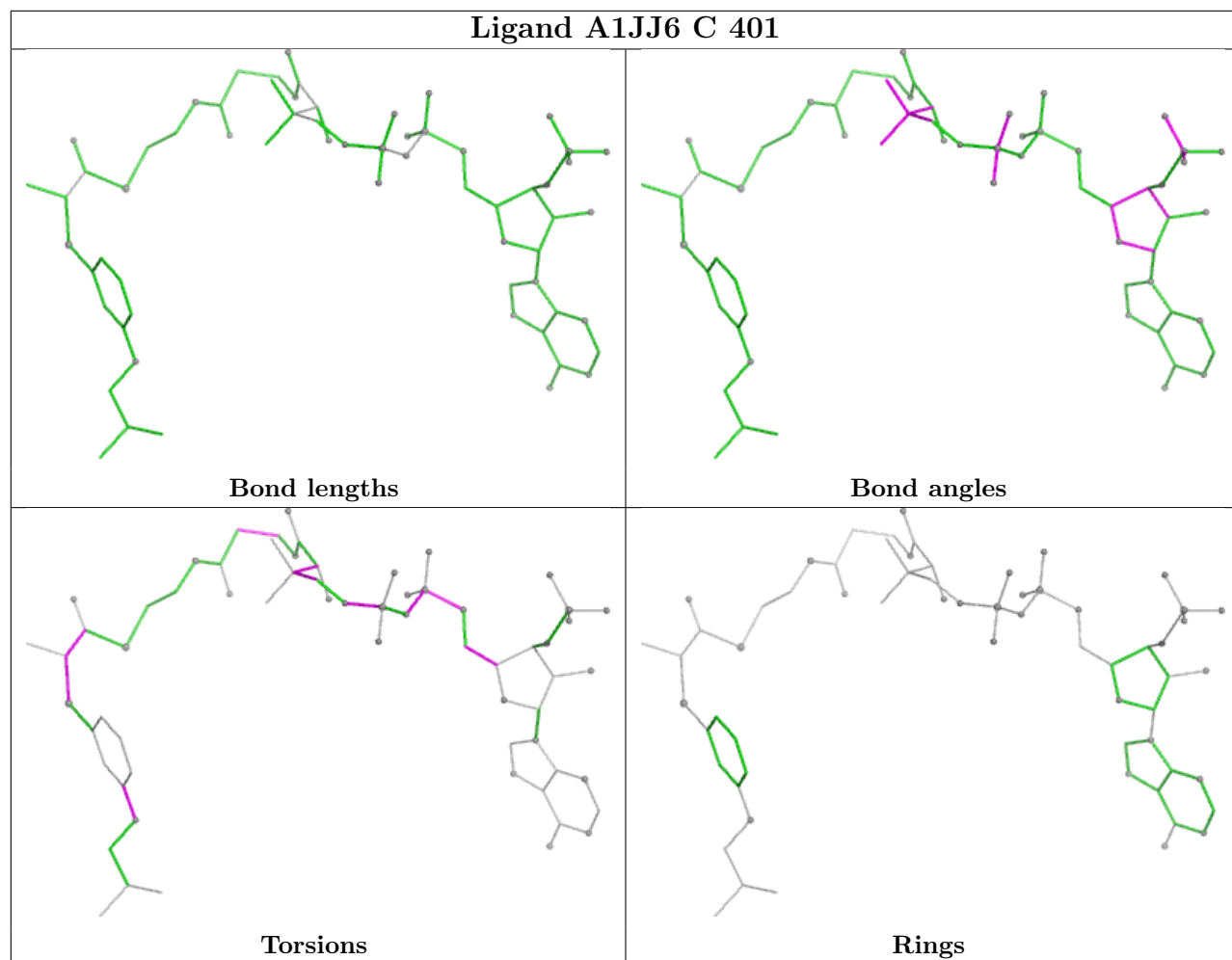
Ligand A1JJ6 K 401



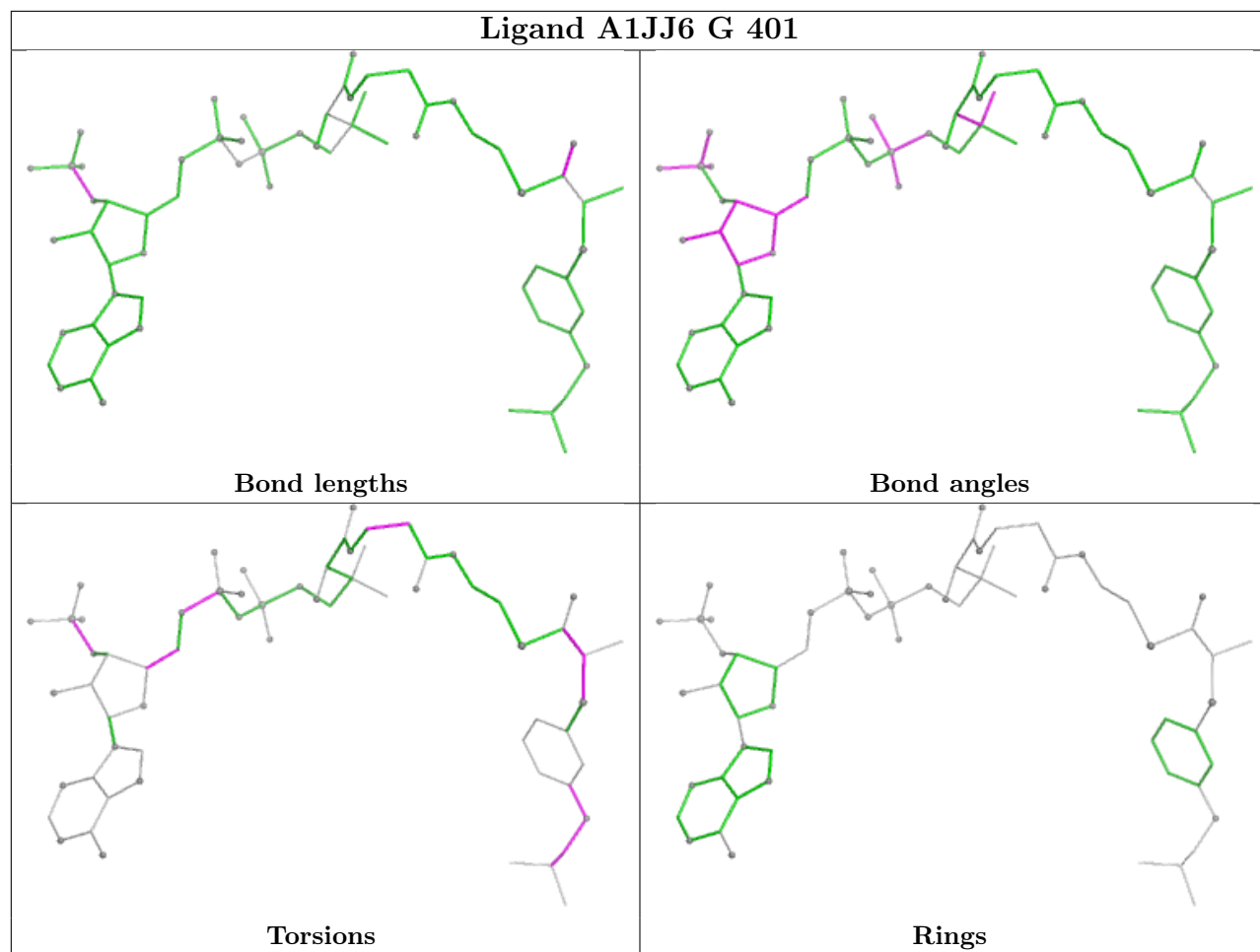




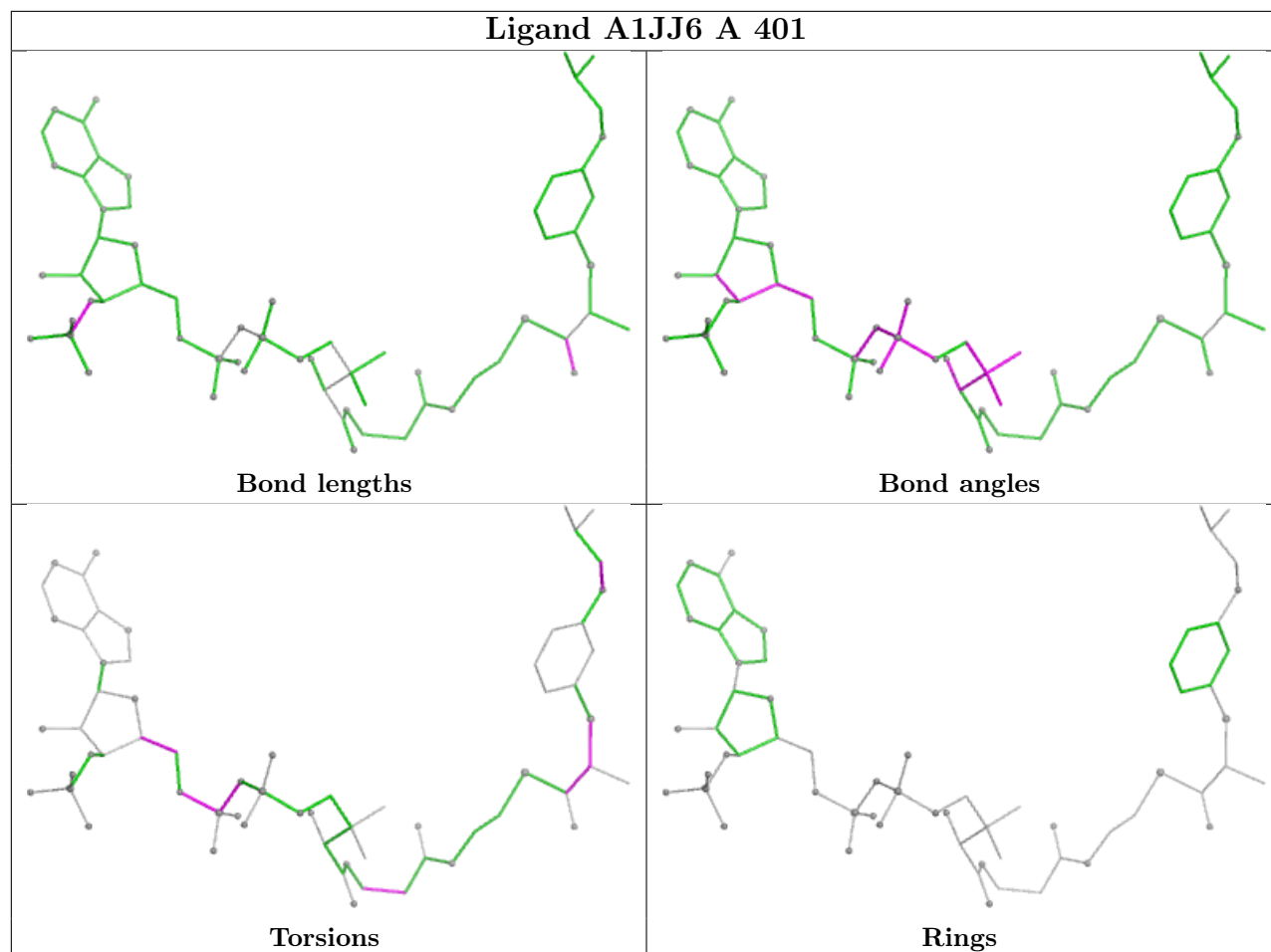


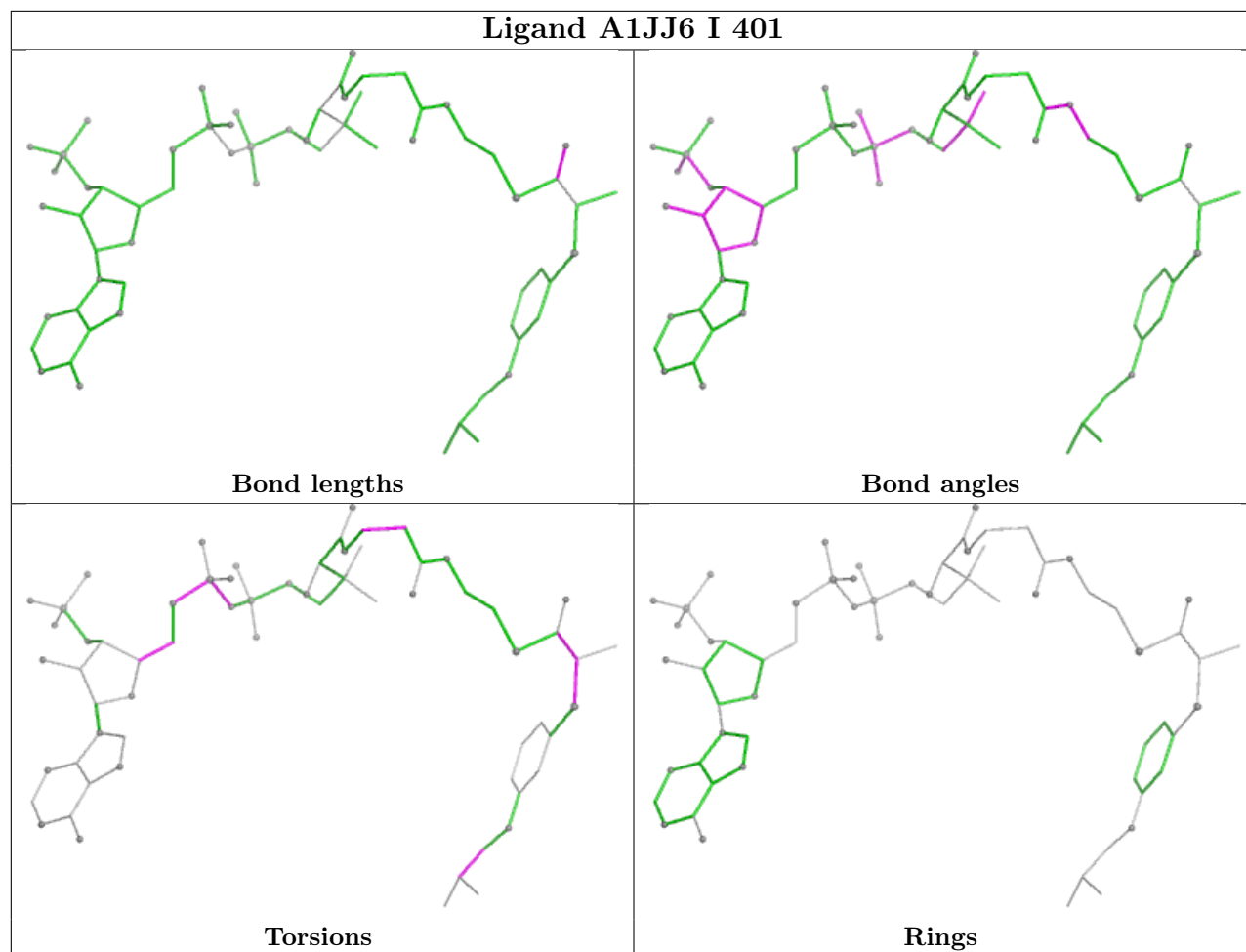


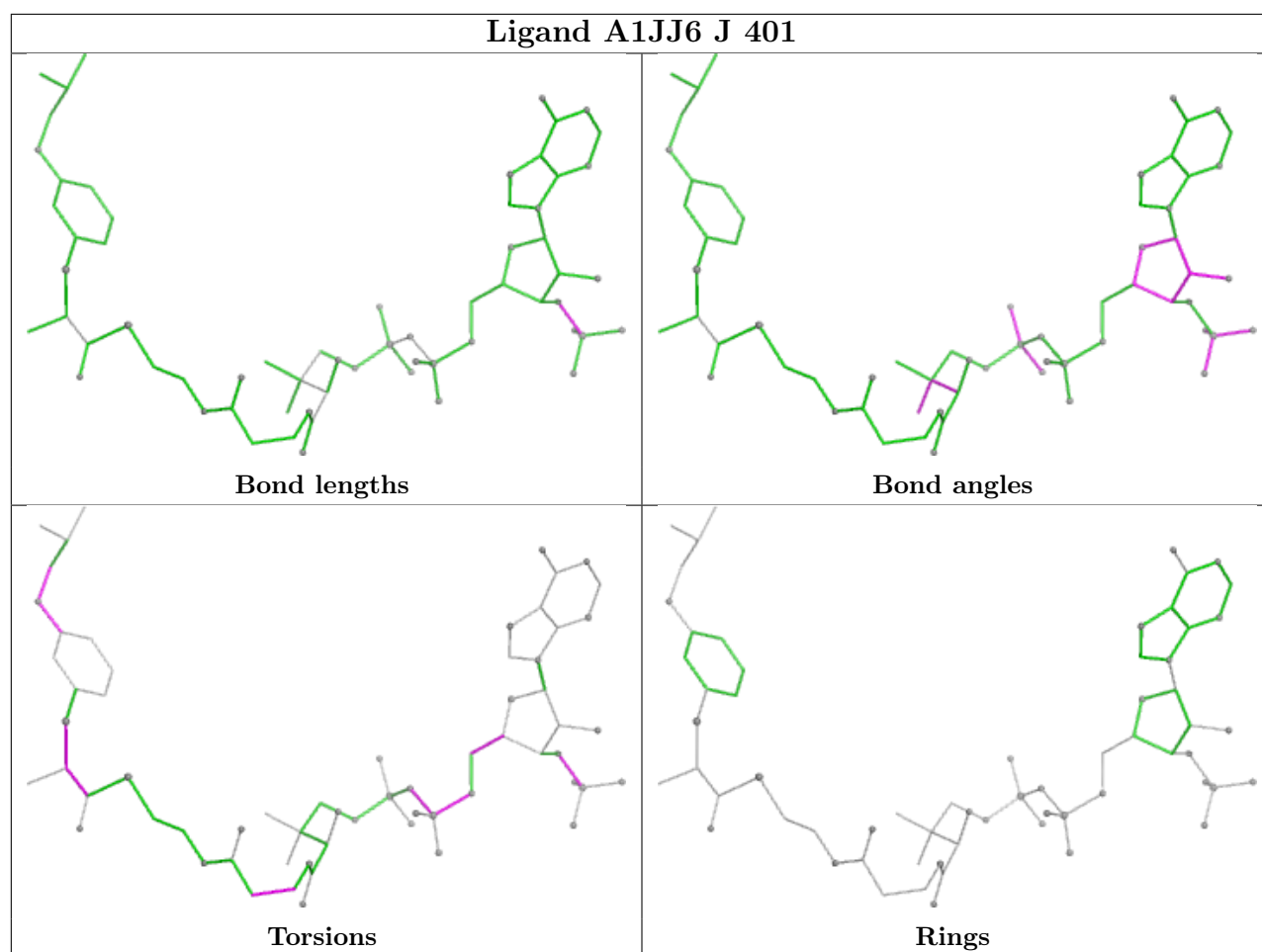
Ligand A1JJ6 G 401



Ligand A1JJ6 A 401







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	359/364 (98%)	0.80	69 (19%) 3 2	24, 40, 86, 118	2 (0%)
1	B	359/364 (98%)	0.64	44 (12%) 8 7	23, 39, 84, 126	2 (0%)
1	C	357/364 (98%)	0.72	54 (15%) 5 5	22, 40, 82, 119	2 (0%)
1	D	359/364 (98%)	0.73	51 (14%) 6 5	24, 41, 83, 126	1 (0%)
1	E	359/364 (98%)	0.75	57 (15%) 5 4	16, 42, 92, 117	3 (0%)
1	F	359/364 (98%)	0.90	72 (20%) 3 2	24, 44, 90, 127	1 (0%)
1	G	359/364 (98%)	1.21	103 (28%) 1 1	24, 45, 98, 134	2 (0%)
1	H	359/364 (98%)	0.95	82 (22%) 2 1	24, 44, 95, 134	1 (0%)
1	I	359/364 (98%)	0.58	38 (10%) 11 11	25, 40, 78, 104	2 (0%)
1	J	357/364 (98%)	0.54	38 (10%) 11 11	19, 39, 75, 111	2 (0%)
1	K	360/364 (98%)	0.69	53 (14%) 6 5	19, 41, 87, 135	3 (0%)
1	L	359/364 (98%)	0.70	52 (14%) 6 5	25, 41, 82, 123	1 (0%)
All	All	4305/4368 (98%)	0.77	713 (16%) 4 3	16, 41, 87, 135	22 (0%)

All (713) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	42	VAL	10.9
1	C	45	ILE	10.1
1	H	45	ILE	8.0
1	K	346	ALA	8.0
1	E	346	ALA	7.9
1	J	346	ALA	7.9
1	C	346	ALA	7.7
1	C	42	VAL	7.7
1	G	45	ILE	7.6
1	A	346	ALA	7.5
1	F	45	ILE	7.2

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Mol	Chain	Res	Type	RSRZ
1	L	45	ILE	7.2
1	G	42	VAL	7.0
1	B	42	VAL	7.0
1	F	42	VAL	7.0
1	K	42	VAL	6.9
1	D	45	ILE	6.8
1	D	346	ALA	6.7
1	E	349	ILE	6.6
1	G	346	ALA	6.6
1	J	45	ILE	6.5
1	I	45	ILE	6.3
1	K	360	GLY	6.3
1	K	45	ILE	6.2
1	A	324	GLY	6.0
1	G	347	ALA	6.0
1	H	346	ALA	6.0
1	F	346	ALA	5.9
1	J	347	ALA	5.8
1	B	45	ILE	5.7
1	G	324	GLY	5.7
1	C	323	ASN	5.6
1	G	101	LYS	5.6
1	I	346	ALA	5.6
1	J	324	GLY	5.5
1	L	323	ASN	5.5
1	B	346	ALA	5.4
1	F	347	ALA	5.3
1	K	349	ILE	5.2
1	J	323	ASN	5.1
1	E	45	ILE	5.1
1	K	347	ALA	5.0
1	G	46	SER	5.0
1	K	324	GLY	5.0
1	H	42	VAL	5.0
1	G	351	ILE	5.0
1	A	44	GLY	4.9
1	A	45	ILE	4.9
1	B	76	LYS	4.9
1	H	44	GLY	4.9
1	E	42	VAL	4.9
1	C	347	ALA	4.8
1	L	346	ALA	4.8

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Mol	Chain	Res	Type	RSRZ
1	G	34	VAL	4.8
1	C	176	GLN	4.8
1	K	345	PRO	4.8
1	G	102	VAL	4.7
1	G	345	PRO	4.7
1	G	11	VAL	4.7
1	J	44	GLY	4.7
1	G	354	VAL	4.6
1	G	72	LYS	4.6
1	I	47	ARG	4.6
1	L	324	GLY	4.6
1	G	178	SER	4.6
1	A	349	ILE	4.6
1	D	348	THR	4.5
1	G	33	VAL	4.4
1	G	100	ALA	4.4
1	H	347	ALA	4.4
1	C	345	PRO	4.4
1	C	47	ARG	4.4
1	H	178	SER	4.4
1	F	345	PRO	4.3
1	G	348	THR	4.3
1	G	358	TRP	4.3
1	D	347	ALA	4.3
1	G	76	LYS	4.3
1	G	10	VAL	4.3
1	A	41	SER	4.3
1	G	104	ASP	4.3
1	B	345	PRO	4.3
1	E	351	ILE	4.3
1	B	41	SER	4.3
1	B	47	ARG	4.3
1	H	355	LEU	4.3
1	A	180	LYS	4.2
1	H	46	SER	4.2
1	B	359	ASP	4.2
1	I	323	ASN	4.2
1	H	324	GLY	4.2
1	H	34	VAL	4.2
1	G	73	LEU	4.2
1	B	44	GLY	4.2
1	B	40	SER	4.2

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Mol	Chain	Res	Type	RSRZ
1	E	323	ASN	4.2
1	H	345	PRO	4.2
1	L	359	ASP	4.2
1	G	1	MET	4.1
1	A	69	LEU	4.1
1	B	351	ILE	4.1
1	D	351	ILE	4.1
1	F	349	ILE	4.1
1	E	347	ALA	4.1
1	A	42	VAL	4.1
1	A	76	LYS	4.1
1	L	348	THR	4.0
1	D	41	SER	4.0
1	G	63	SER	4.0
1	H	358	TRP	4.0
1	L	322	ALA	4.0
1	D	345	PRO	4.0
1	F	49	ALA	4.0
1	B	356	THR	4.0
1	F	324	GLY	4.0
1	A	351	ILE	4.0
1	F	351	ILE	4.0
1	J	351	ILE	4.0
1	G	96	PRO	4.0
1	H	57	VAL	4.0
1	A	47	ARG	4.0
1	I	349	ILE	4.0
1	H	47	ARG	3.9
1	E	1	MET	3.9
1	B	347	ALA	3.9
1	G	107	ILE	3.9
1	L	349	ILE	3.9
1	F	76	LYS	3.9
1	A	345	PRO	3.9
1	I	1	MET	3.9
1	G	58	THR	3.9
1	H	2	ALA	3.9
1	F	350	ASP	3.9
1	G	180	LYS	3.9
1	H	179	GLY	3.9
1	D	43	ASP	3.8
1	F	41	SER	3.8

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Mol	Chain	Res	Type	RSRZ
1	C	349	ILE	3.8
1	G	176	GLN	3.8
1	G	44	GLY	3.8
1	D	359	ASP	3.8
1	E	72	LYS	3.8
1	F	323	ASN	3.8
1	H	176	GLN	3.8
1	L	345	PRO	3.8
1	C	76	LYS	3.8
1	I	180	LYS	3.8
1	E	47	ARG	3.8
1	B	46	SER	3.8
1	E	358	TRP	3.8
1	H	349	ILE	3.8
1	F	44	GLY	3.8
1	H	322	ALA	3.7
1	H	359	ASP	3.7
1	C	180	LYS	3.7
1	G	349	ILE	3.7
1	G	179	GLY	3.7
1	F	359	ASP	3.7
1	H	323	ASN	3.7
1	F	46	SER	3.7
1	D	349	ILE	3.7
1	L	173	TRP	3.7
1	G	7	GLY	3.7
1	K	44	GLY	3.7
1	H	1	MET	3.7
1	I	359	ASP	3.7
1	F	348	THR	3.7
1	F	47	ARG	3.7
1	D	322	ALA	3.7
1	F	101	LYS	3.7
1	A	354	VAL	3.6
1	B	257	ALA	3.6
1	B	65	GLN	3.6
1	F	1	MET	3.6
1	G	56	ILE	3.6
1	G	66	GLY	3.6
1	D	323	ASN	3.6
1	G	99	CYS	3.6
1	K	102	VAL	3.6

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Mol	Chain	Res	Type	RSRZ
1	G	70	ALA	3.6
1	G	97	GLU	3.6
1	H	40	SER	3.6
1	H	352	GLU	3.6
1	H	105	ARG	3.6
1	I	351	ILE	3.6
1	C	66	GLY	3.6
1	D	44	GLY	3.6
1	B	348	THR	3.6
1	G	57	VAL	3.6
1	G	79	VAL	3.6
1	H	173	TRP	3.6
1	A	178	SER	3.5
1	D	324	GLY	3.5
1	F	106	LEU	3.5
1	G	292	ALA	3.5
1	K	1	MET	3.5
1	K	180	LYS	3.5
1	G	352	GLU	3.5
1	K	348	THR	3.5
1	G	65	GLN	3.5
1	E	40	SER	3.5
1	D	180	LYS	3.5
1	E	324	GLY	3.5
1	F	93	GLY	3.5
1	F	355	LEU	3.5
1	D	47	ARG	3.5
1	B	358	TRP	3.5
1	F	66	GLY	3.5
1	G	47	ARG	3.5
1	H	348	THR	3.4
1	A	34	VAL	3.4
1	G	41	SER	3.4
1	C	324	GLY	3.4
1	H	66	GLY	3.4
1	H	76	LYS	3.4
1	J	345	PRO	3.4
1	G	322	ALA	3.4
1	C	65	GLN	3.4
1	G	359	ASP	3.4
1	H	8	LEU	3.4
1	H	351	ILE	3.4

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Mol	Chain	Res	Type	RSRZ
1	K	58	THR	3.4
1	J	40	SER	3.4
1	K	76	LYS	3.4
1	A	348	THR	3.4
1	H	6	SER	3.4
1	I	41	SER	3.4
1	I	68	GLU	3.4
1	H	350	ASP	3.4
1	A	355	LEU	3.3
1	F	180	LYS	3.3
1	B	323	ASN	3.3
1	C	350	ASP	3.3
1	F	144	ASP	3.3
1	G	43	ASP	3.3
1	B	1	MET	3.3
1	G	355	LEU	3.3
1	A	40	SER	3.3
1	L	44	GLY	3.3
1	A	323	ASN	3.3
1	C	358	TRP	3.3
1	G	173	TRP	3.3
1	L	350	ASP	3.3
1	G	69	LEU	3.3
1	E	348	THR	3.3
1	C	41	SER	3.3
1	G	353	ALA	3.2
1	E	207	MET	3.2
1	I	207	MET	3.2
1	H	7	GLY	3.2
1	K	350	ASP	3.2
1	K	359	ASP	3.2
1	A	72	LYS	3.2
1	E	345	PRO	3.2
1	I	176	GLN	3.2
1	H	326	TRP	3.2
1	B	7	GLY	3.2
1	L	7	GLY	3.2
1	L	325	GLY	3.2
1	G	62	LYS	3.2
1	F	176	GLN	3.2
1	H	41	SER	3.2
1	A	62	LYS	3.2

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Mol	Chain	Res	Type	RSRZ
1	A	173	TRP	3.2
1	D	76	LYS	3.2
1	D	173	TRP	3.2
1	E	176	GLN	3.2
1	J	41	SER	3.2
1	L	40	SER	3.2
1	I	44	GLY	3.2
1	K	176	GLN	3.2
1	K	351	ILE	3.2
1	A	58	THR	3.2
1	K	207	MET	3.2
1	L	1	MET	3.2
1	F	62	LYS	3.1
1	H	72	LYS	3.1
1	K	72	LYS	3.1
1	H	353	ALA	3.1
1	L	47	ARG	3.1
1	A	101	LYS	3.1
1	H	73	LEU	3.1
1	G	105	ARG	3.1
1	H	56	ILE	3.1
1	K	101	LYS	3.1
1	E	178	SER	3.1
1	B	324	GLY	3.1
1	G	357	ASP	3.1
1	D	102	VAL	3.1
1	G	183	VAL	3.1
1	A	68	GLU	3.1
1	F	68	GLU	3.1
1	I	350	ASP	3.1
1	K	47	ARG	3.1
1	G	61	LEU	3.1
1	H	69	LEU	3.1
1	C	348	THR	3.0
1	H	337	THR	3.0
1	A	358	TRP	3.0
1	I	324	GLY	3.0
1	K	325	GLY	3.0
1	H	180	LYS	3.0
1	L	347	ALA	3.0
1	I	42	VAL	3.0
1	D	354	VAL	3.0

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Mol	Chain	Res	Type	RSRZ
1	G	68	GLU	3.0
1	C	351	ILE	3.0
1	F	173	TRP	3.0
1	J	359	ASP	3.0
1	L	43	ASP	3.0
1	D	1	MET	3.0
1	A	322	ALA	3.0
1	G	59	ALA	3.0
1	L	76	LYS	3.0
1	G	323	ASN	3.0
1	A	1	MET	3.0
1	F	59	ALA	2.9
1	F	70	ALA	2.9
1	B	72	LYS	2.9
1	J	349	ILE	2.9
1	A	356	THR	2.9
1	K	46	SER	2.9
1	E	355	LEU	2.9
1	F	72	LYS	2.9
1	G	36	ILE	2.9
1	I	58	THR	2.9
1	C	207	MET	2.9
1	A	66	GLY	2.9
1	C	359	ASP	2.9
1	E	44	GLY	2.9
1	E	359	ASP	2.9
1	G	40	SER	2.9
1	G	293	ASN	2.9
1	L	177	SER	2.9
1	E	62	LYS	2.9
1	A	347	ALA	2.9
1	B	77	ALA	2.9
1	F	354	VAL	2.9
1	D	56	ILE	2.9
1	E	7	GLY	2.9
1	E	144	ASP	2.9
1	K	323	ASN	2.9
1	G	67	LEU	2.9
1	G	75	ALA	2.9
1	G	94	LEU	2.9
1	D	207	MET	2.9
1	E	356	THR	2.9

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Mol	Chain	Res	Type	RSRZ
1	G	356	THR	2.9
1	K	356	THR	2.9
1	L	351	ILE	2.9
1	H	357	ASP	2.9
1	K	41	SER	2.8
1	F	57	VAL	2.8
1	H	102	VAL	2.8
1	D	358	TRP	2.8
1	F	207	MET	2.8
1	E	58	THR	2.8
1	I	76	LYS	2.8
1	F	255	ASP	2.8
1	J	350	ASP	2.8
1	C	91	ARG	2.8
1	G	177	SER	2.8
1	J	47	ARG	2.8
1	F	73	LEU	2.8
1	E	70	ALA	2.8
1	G	77	ALA	2.8
1	L	75	ALA	2.8
1	J	207	MET	2.8
1	B	180	LYS	2.8
1	I	173	TRP	2.8
1	C	58	THR	2.8
1	B	43	ASP	2.8
1	F	43	ASP	2.8
1	F	40	SER	2.8
1	G	30	GLY	2.8
1	I	7	GLY	2.8
1	H	354	VAL	2.8
1	A	56	ILE	2.8
1	G	325	GLY	2.8
1	F	39	PRO	2.8
1	H	39	PRO	2.8
1	A	70	ALA	2.8
1	C	322	ALA	2.8
1	G	49	ALA	2.8
1	H	58	THR	2.7
1	D	350	ASP	2.7
1	G	32	ASP	2.7
1	H	107	ILE	2.7
1	H	144	ASP	2.7

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Mol	Chain	Res	Type	RSRZ
1	E	352	GLU	2.7
1	E	350	ASP	2.7
1	L	357	ASP	2.7
1	A	93	GLY	2.7
1	D	178	SER	2.7
1	K	178	SER	2.7
1	L	180	LYS	2.7
1	L	353	ALA	2.7
1	K	34	VAL	2.7
1	G	64	ASP	2.7
1	E	179	GLY	2.7
1	G	93	GLY	2.7
1	L	258	GLU	2.7
1	K	358	TRP	2.7
1	H	80	LEU	2.7
1	B	353	ALA	2.7
1	E	353	ALA	2.7
1	F	322	ALA	2.7
1	K	100	ALA	2.7
1	E	65	GLN	2.7
1	B	350	ASP	2.7
1	F	11	VAL	2.7
1	A	177	SER	2.7
1	K	38	ARG	2.7
1	C	173	TRP	2.7
1	E	173	TRP	2.7
1	G	8	LEU	2.7
1	G	80	LEU	2.7
1	I	358	TRP	2.7
1	D	176	GLN	2.6
1	J	322	ALA	2.6
1	I	101	LYS	2.6
1	G	9	ARG	2.6
1	H	342	PRO	2.6
1	K	39	PRO	2.6
1	C	1	MET	2.6
1	H	106	LEU	2.6
1	K	355	LEU	2.6
1	H	65	GLN	2.6
1	B	322	ALA	2.6
1	C	352	GLU	2.6
1	E	66	GLY	2.6

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Mol	Chain	Res	Type	RSRZ
1	D	40	SER	2.6
1	D	65	GLN	2.6
1	D	59	ALA	2.6
1	H	75	ALA	2.6
1	D	64	ASP	2.6
1	A	10	VAL	2.6
1	I	348	THR	2.6
1	A	36	ILE	2.6
1	F	107	ILE	2.6
1	H	70	ALA	2.6
1	H	171	ALA	2.6
1	F	358	TRP	2.6
1	D	357	ASP	2.6
1	F	357	ASP	2.6
1	L	144	ASP	2.6
1	A	63	SER	2.6
1	B	349	ILE	2.6
1	C	40	SER	2.6
1	D	107	ILE	2.6
1	H	16	ILE	2.6
1	L	46	SER	2.6
1	G	55	ARG	2.5
1	G	2	ALA	2.5
1	K	43	ASP	2.5
1	C	46	SER	2.5
1	L	72	LYS	2.5
1	A	352	GLU	2.5
1	F	258	GLU	2.5
1	E	73	LEU	2.5
1	G	92	LEU	2.5
1	C	75	ALA	2.5
1	A	39	PRO	2.5
1	L	30	GLY	2.5
1	F	56	ILE	2.5
1	C	355	LEU	2.5
1	A	75	ALA	2.5
1	I	322	ALA	2.5
1	D	66	GLY	2.5
1	E	39	PRO	2.5
1	L	176	GLN	2.5
1	C	105	ARG	2.5
1	D	97	GLU	2.5

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Mol	Chain	Res	Type	RSRZ
1	A	94	LEU	2.5
1	B	73	LEU	2.5
1	G	5	LEU	2.5
1	H	5	LEU	2.5
1	C	101	LYS	2.5
1	E	101	LYS	2.5
1	G	350	ASP	2.5
1	H	43	ASP	2.5
1	I	347	ALA	2.5
1	C	34	VAL	2.4
1	E	34	VAL	2.4
1	F	102	VAL	2.4
1	I	61	LEU	2.4
1	K	71	LEU	2.4
1	J	1	MET	2.4
1	F	48	ASP	2.4
1	B	352	GLU	2.4
1	D	352	GLU	2.4
1	F	96	PRO	2.4
1	F	292	ALA	2.4
1	I	353	ALA	2.4
1	I	258	GLU	2.4
1	J	38	ARG	2.4
1	J	353	ALA	2.4
1	K	49	ALA	2.4
1	I	40	SER	2.4
1	K	354	VAL	2.4
1	E	76	LYS	2.4
1	G	326	TRP	2.4
1	D	355	LEU	2.4
1	A	64	ASP	2.4
1	F	65	GLN	2.4
1	J	37	ASP	2.4
1	J	352	GLU	2.4
1	A	30	GLY	2.4
1	B	355	LEU	2.4
1	G	60	ASP	2.4
1	C	353	ALA	2.4
1	E	93	GLY	2.4
1	E	257	ALA	2.4
1	L	181	GLY	2.4
1	L	257	ALA	2.4

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Mol	Chain	Res	Type	RSRZ
1	L	101	LYS	2.4
1	A	74	ILE	2.4
1	I	354	VAL	2.4
1	L	207	MET	2.4
1	G	106	LEU	2.4
1	A	91	ARG	2.4
1	A	37	ASP	2.3
1	B	357	ASP	2.3
1	C	49	ALA	2.3
1	C	171	ALA	2.3
1	J	49	ALA	2.3
1	J	62	LYS	2.3
1	D	356	THR	2.3
1	H	63	SER	2.3
1	J	46	SER	2.3
1	D	315	GLU	2.3
1	E	68	GLU	2.3
1	G	48	ASP	2.3
1	E	180	LYS	2.3
1	F	326	TRP	2.3
1	B	30	GLY	2.3
1	G	3	GLY	2.3
1	J	93	GLY	2.3
1	K	40	SER	2.3
1	D	105	ARG	2.3
1	H	9	ARG	2.3
1	H	68	GLU	2.3
1	C	69	LEU	2.3
1	H	62	LYS	2.3
1	J	72	LYS	2.3
1	G	108	TYR	2.3
1	K	173	TRP	2.3
1	A	207	MET	2.3
1	L	77	ALA	2.3
1	L	356	THR	2.3
1	A	46	SER	2.3
1	A	55	ARG	2.3
1	F	38	ARG	2.3
1	J	178	SER	2.3
1	C	68	GLU	2.3
1	H	315	GLU	2.3
1	H	79	VAL	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	61	LEU	2.3
1	L	69	LEU	2.3
1	I	345	PRO	2.3
1	C	179	GLY	2.3
1	H	30	GLY	2.3
1	G	171	ALA	2.3
1	E	337	THR	2.3
1	H	33	VAL	2.3
1	H	334	PHE	2.2
1	E	43	ASP	2.2
1	A	59	ALA	2.2
1	B	49	ALA	2.2
1	B	59	ALA	2.2
1	E	77	ALA	2.2
1	F	352	GLU	2.2
1	K	352	GLU	2.2
1	L	315	GLU	2.2
1	D	326	TRP	2.2
1	I	326	TRP	2.2
1	K	62	LYS	2.2
1	G	74	ILE	2.2
1	C	102	VAL	2.2
1	F	69	LEU	2.2
1	A	43	ASP	2.2
1	A	350	ASP	2.2
1	C	104	ASP	2.2
1	A	99	CYS	2.2
1	H	207	MET	2.2
1	A	97	GLU	2.2
1	D	258	GLU	2.2
1	B	176	GLN	2.2
1	A	353	ALA	2.2
1	D	353	ALA	2.2
1	E	75	ALA	2.2
1	F	75	ALA	2.2
1	K	75	ALA	2.2
1	H	74	ILE	2.2
1	A	73	LEU	2.2
1	H	92	LEU	2.2
1	A	79	VAL	2.2
1	F	34	VAL	2.2
1	I	10	VAL	2.2

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Mol	Chain	Res	Type	RSRZ
1	L	42	VAL	2.2
1	G	38	ARG	2.2
1	J	48	ASP	2.2
1	G	207	MET	2.2
1	K	93	GLY	2.2
1	K	258	GLU	2.2
1	I	62	LYS	2.2
1	J	101	LYS	2.2
1	F	100	ALA	2.2
1	H	356	THR	2.2
1	J	75	ALA	2.2
1	E	6	SER	2.2
1	F	63	SER	2.2
1	L	41	SER	2.2
1	F	81	ILE	2.2
1	G	172	LEU	2.2
1	K	96	PRO	2.2
1	H	101	LYS	2.2
1	D	7	GLY	2.2
1	D	93	GLY	2.2
1	A	89	THR	2.2
1	B	178	SER	2.2
1	F	353	ALA	2.2
1	G	31	ALA	2.2
1	H	38	ARG	2.1
1	E	56	ILE	2.1
1	G	71	LEU	2.1
1	J	173	TRP	2.1
1	E	357	ASP	2.1
1	H	32	ASP	2.1
1	J	102	VAL	2.1
1	L	102	VAL	2.1
1	D	68	GLU	2.1
1	C	93	GLY	2.1
1	C	181	GLY	2.1
1	E	30	GLY	2.1
1	A	49	ALA	2.1
1	C	100	ALA	2.1
1	A	61	LEU	2.1
1	C	71	LEU	2.1
1	F	71	LEU	2.1
1	J	73	LEU	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	64	ASP	2.1
1	C	10	VAL	2.1
1	D	34	VAL	2.1
1	F	10	VAL	2.1
1	A	7	GLY	2.1
1	H	325	GLY	2.1
1	H	343	ARG	2.1
1	C	178	SER	2.1
1	D	6	SER	2.1
1	E	41	SER	2.1
1	F	177	SER	2.1
1	J	348	THR	2.1
1	G	109	ALA	2.1
1	L	352	GLU	2.1
1	L	355	LEU	2.1
1	I	43	ASP	2.1
1	K	144	ASP	2.1
1	A	183	VAL	2.1
1	A	184	VAL	2.1
1	C	39	PRO	2.1
1	F	79	VAL	2.1
1	L	79	VAL	2.1
1	K	326	TRP	2.1
1	E	46	SER	2.1
1	F	356	THR	2.1
1	G	89	THR	2.1
1	I	340	SER	2.1
1	L	6	SER	2.1
1	A	100	ALA	2.1
1	B	75	ALA	2.1
1	D	75	ALA	2.1
1	L	70	ALA	2.1
1	F	277	GLU	2.1
1	I	352	GLU	2.1
1	D	73	LEU	2.1
1	H	71	LEU	2.1
1	K	65	GLN	2.1
1	L	92	LEU	2.1
1	A	359	ASP	2.1
1	F	36	ILE	2.1
1	J	39	PRO	2.1
1	A	102	VAL	2.1

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Mol	Chain	Res	Type	RSRZ
1	E	354	VAL	2.1
1	K	79	VAL	2.1
1	B	38	ARG	2.1
1	J	326	TRP	2.1
1	C	72	LYS	2.0
1	B	258	GLU	2.0
1	C	70	ALA	2.0
1	E	59	ALA	2.0
1	E	100	ALA	2.0
1	F	99	CYS	2.0
1	J	100	ALA	2.0
1	L	100	ALA	2.0
1	A	106	LEU	2.0
1	K	56	ILE	2.0
1	H	108	TYR	2.0
1	F	33	VAL	2.0
1	H	183	VAL	2.0
1	L	105	ARG	2.0
1	B	325	GLY	2.0
1	E	326	TRP	2.0
1	C	177	SER	2.0
1	G	6	SER	2.0
1	G	98	GLU	2.0
1	K	63	SER	2.0
1	L	68	GLU	2.0
1	C	257	ALA	2.0
1	G	338	ALA	2.0
1	H	204	ALA	2.0
1	G	39	PRO	2.0
1	J	76	LYS	2.0

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

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

6.3 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

6.4 Ligands

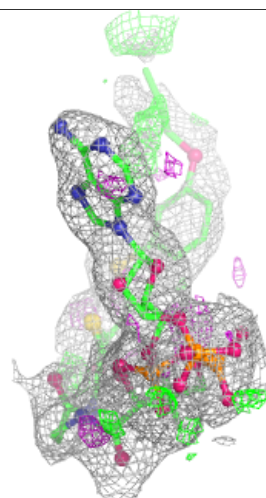
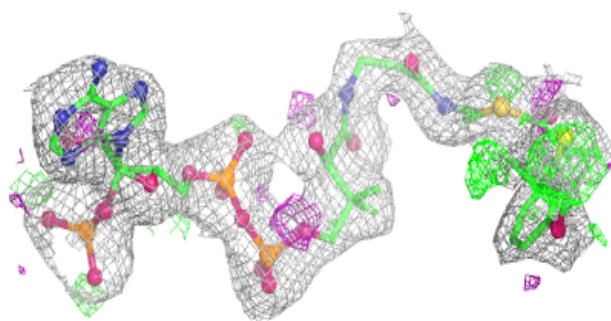
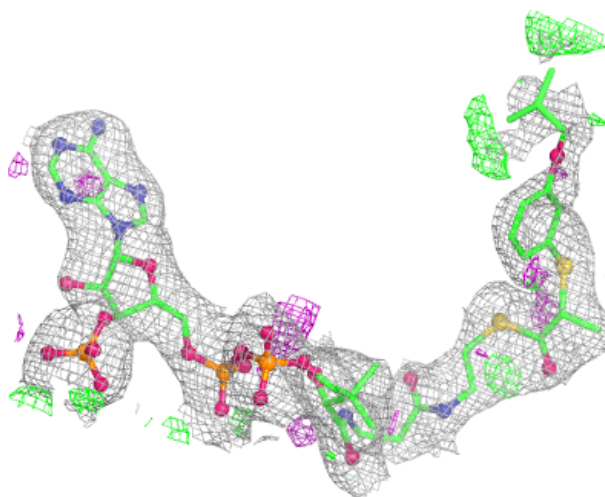
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	A1JJ6	E	401	64/64	0.88	0.17	38,61,111,127	0
2	A1JJ6	H	401	64/64	0.88	0.17	47,67,112,133	0
2	A1JJ6	F	401	64/64	0.92	0.14	27,51,101,116	0
2	A1JJ6	A	401	64/64	0.92	0.15	31,50,103,117	0
2	A1JJ6	G	401	64/64	0.93	0.15	30,51,97,120	0
2	A1JJ6	C	401	64/64	0.93	0.14	28,50,113,130	0
2	A1JJ6	B	401	64/64	0.94	0.14	29,48,116,138	0
2	A1JJ6	D	401	64/64	0.95	0.11	27,49,92,101	0
2	A1JJ6	I	401	64/64	0.95	0.12	25,44,107,121	0
2	A1JJ6	J	401	64/64	0.95	0.13	26,45,96,107	0
2	A1JJ6	K	401	64/64	0.95	0.12	27,47,109,125	0
2	A1JJ6	L	401	64/64	0.95	0.12	28,45,122,131	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.

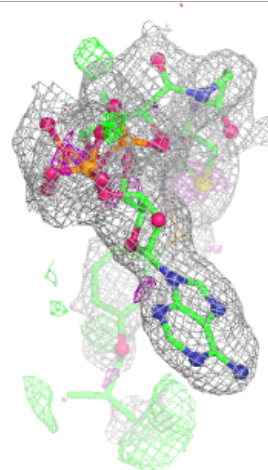
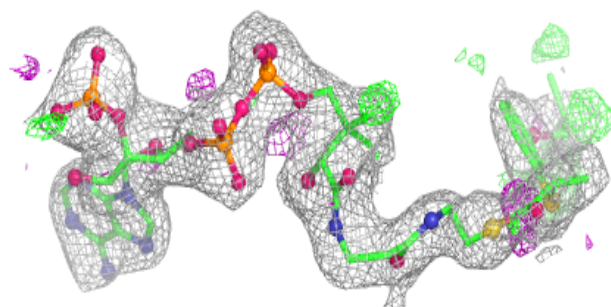
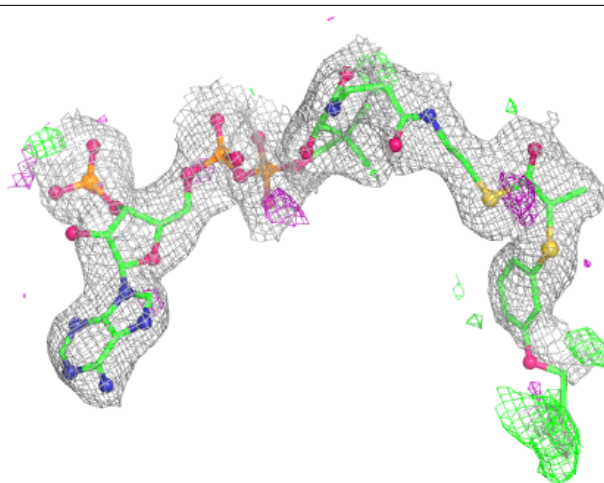
Electron density around A1JJ6 E 401:

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



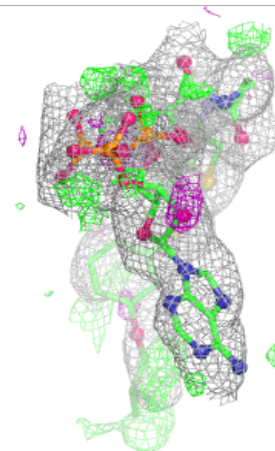
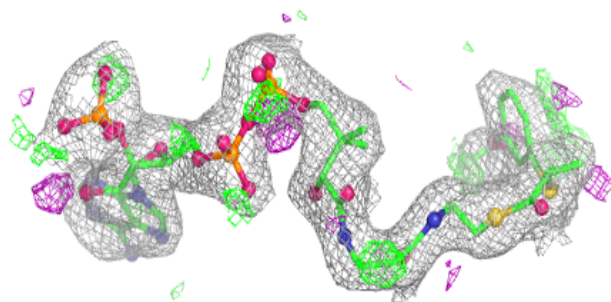
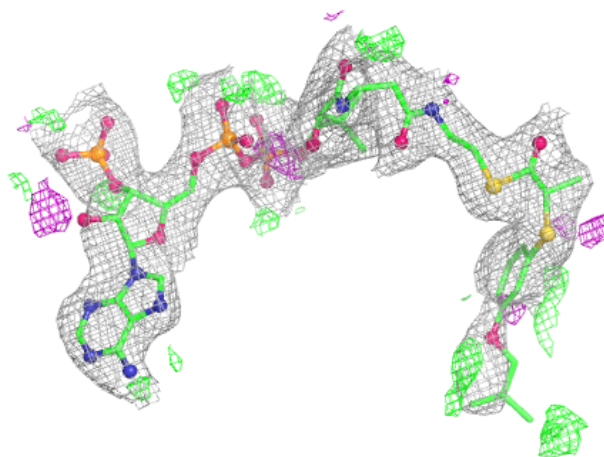
Electron density around A1JJ6 H 401:

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



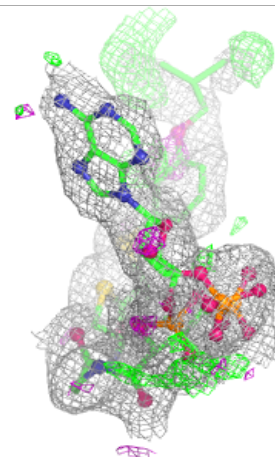
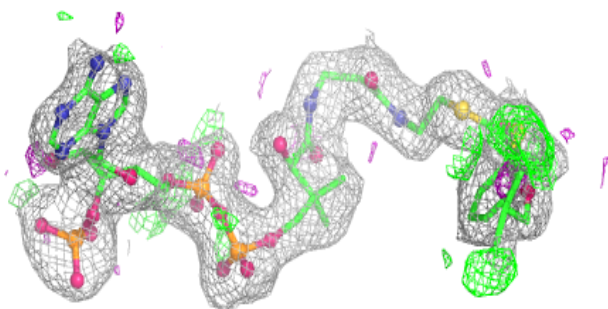
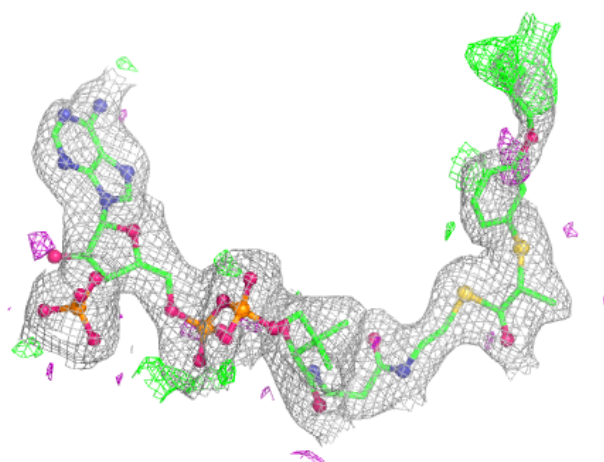
Electron density around A1JJ6 F 401:

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



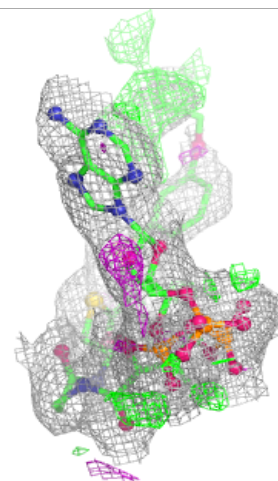
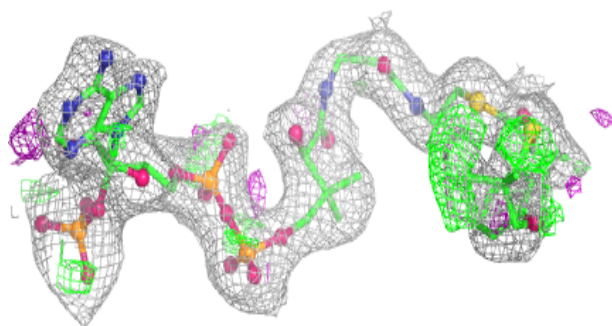
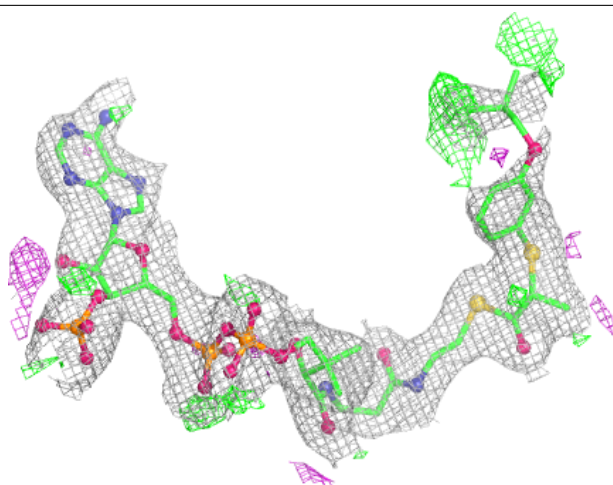
Electron density around A1JJ6 A 401:

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



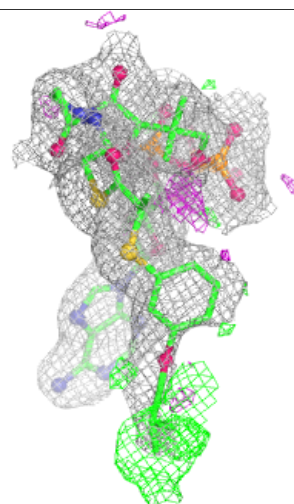
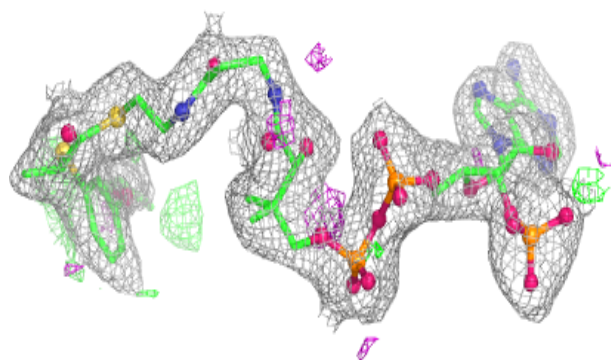
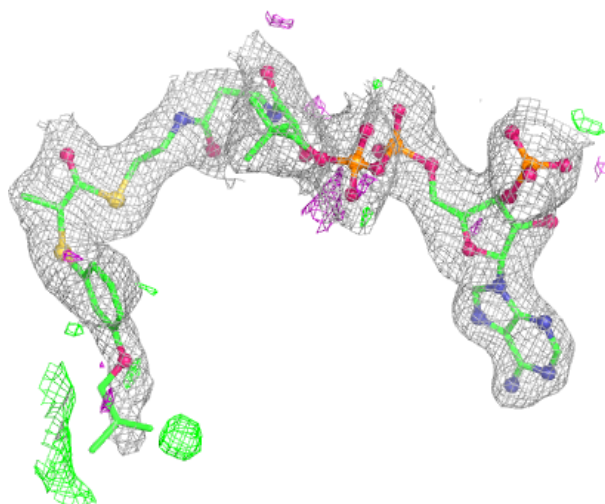
Electron density around A1JJ6 G 401:

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



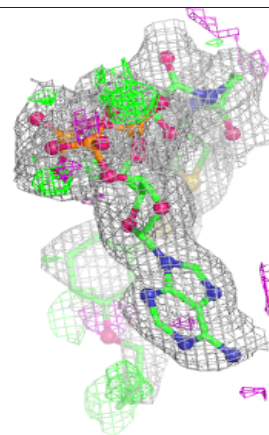
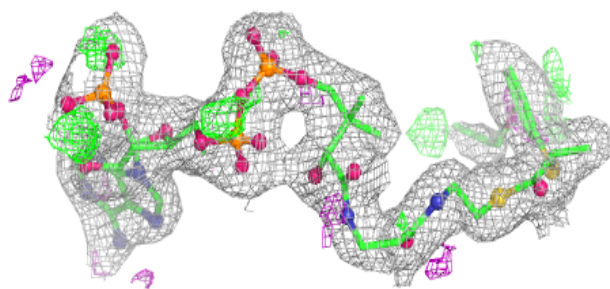
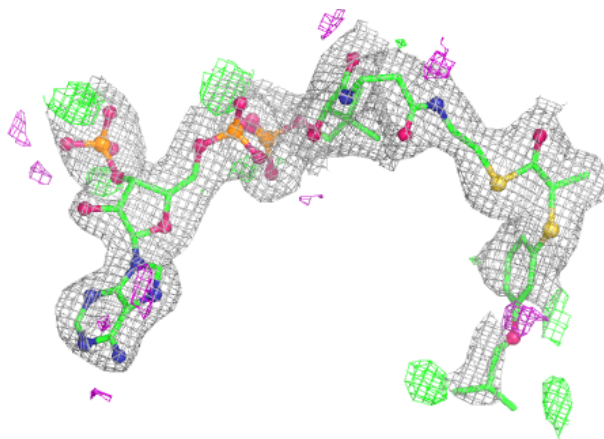
Electron density around A1JJ6 C 401:

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



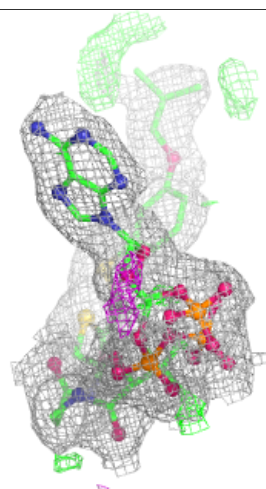
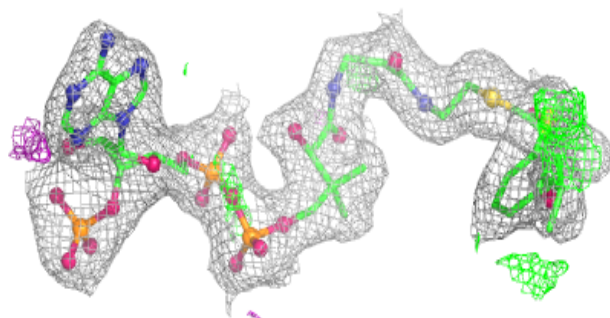
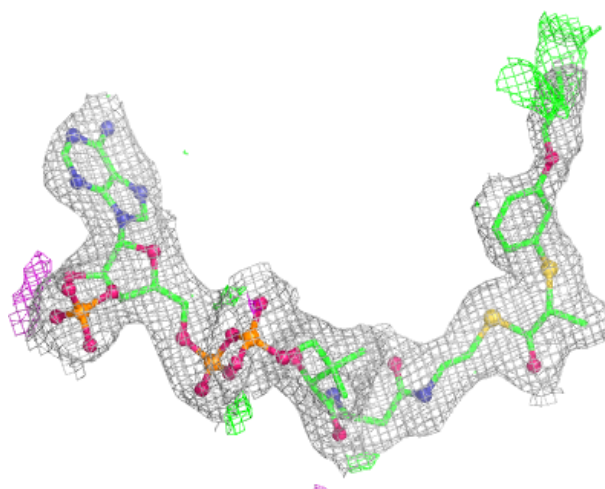
Electron density around A1JJ6 B 401:

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



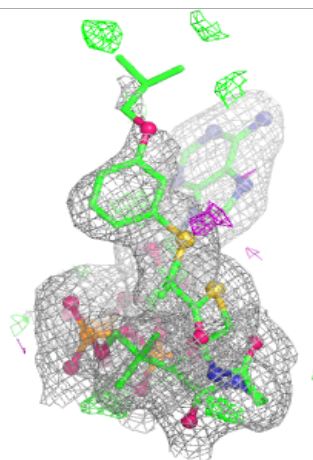
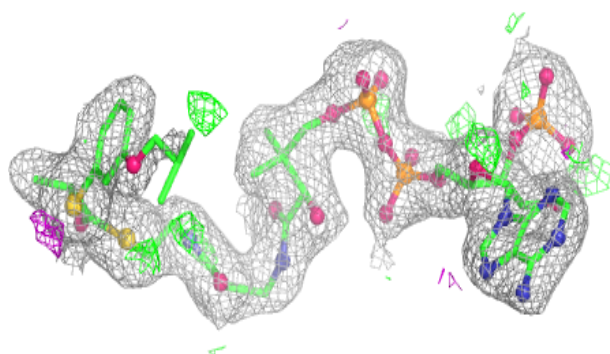
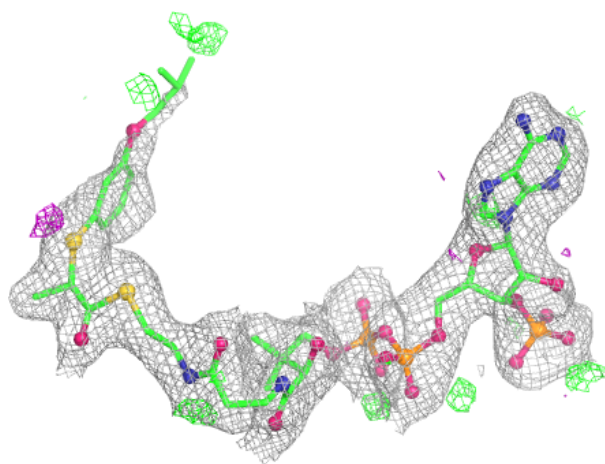
Electron density around A1JJ6 D 401:

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



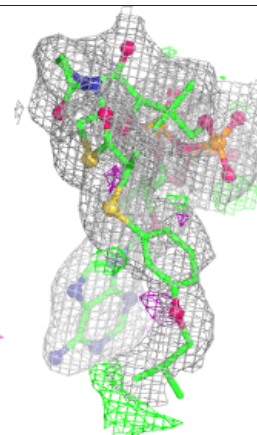
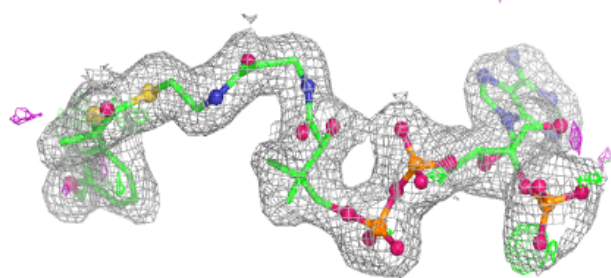
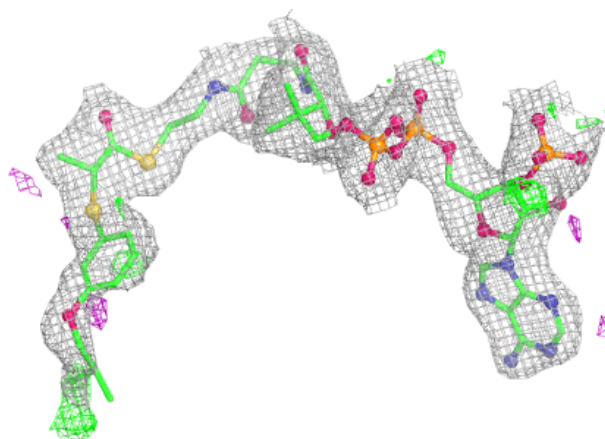
Electron density around A1JJ6 I 401:

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



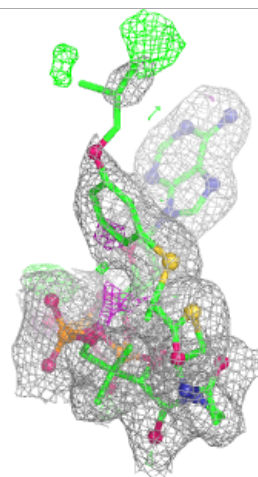
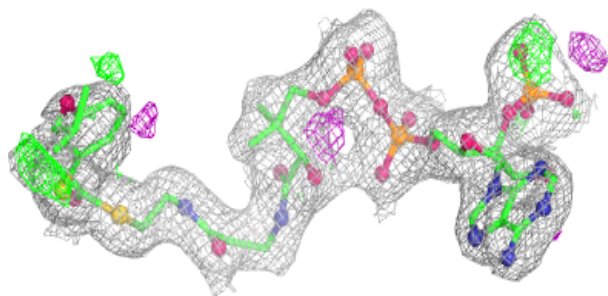
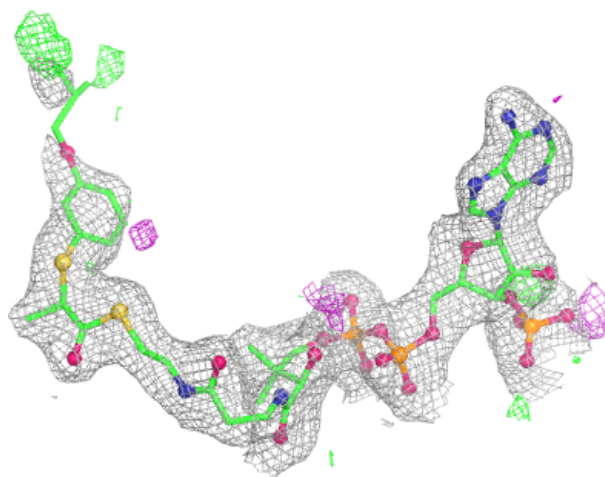
Electron density around A1JJ6 J 401:

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



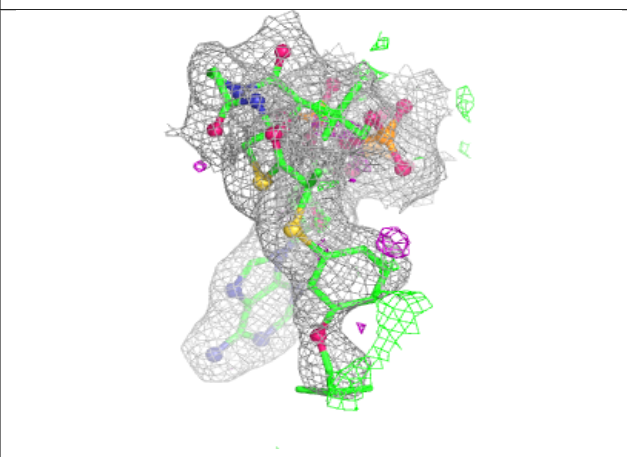
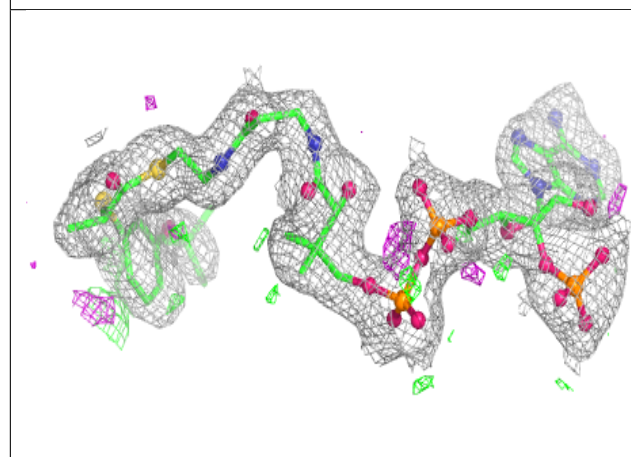
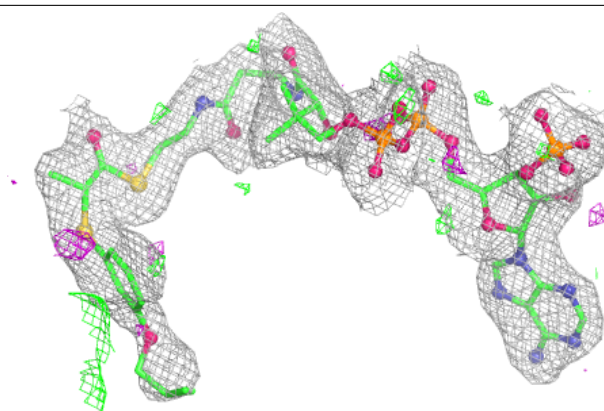
Electron density around A1JJ6 K 401:

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



Electron density around A1JJ6 L 401:

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



6.5 Other polymers [i](#)

There are no such residues in this entry.