



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 10, 2026 – 03:06 AM UTC

PDB ID : 4GE9 / pdb_00004ge9
Title : Kynurenine Aminotransferase II Inhibitors
Authors : Pandit, J.
Deposited on : 2012-08-01
Resolution : 2.43 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 : 2022.3.0, CSD as543be (2022)
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 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

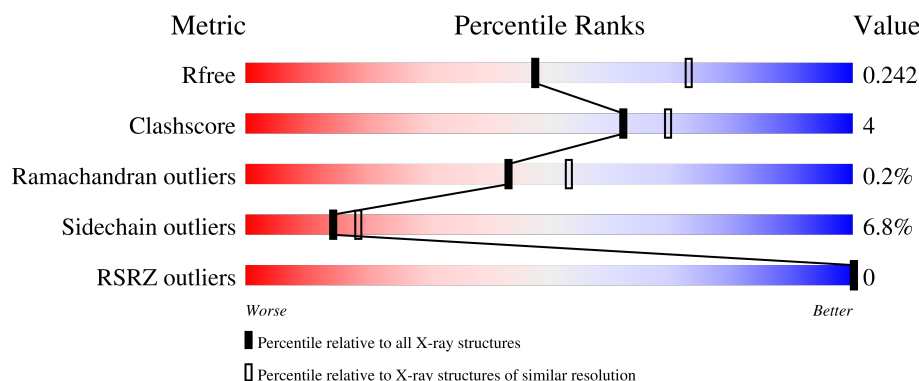
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.43 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	2340 (2.46-2.42)
Clashscore	190562	2400 (2.46-2.42)
Ramachandran outliers	187476	2379 (2.46-2.42)
Sidechain outliers	187428	2379 (2.46-2.42)
RSRZ outliers	180081	2340 (2.46-2.42)

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	439	
1	B	439	
1	C	439	
1	D	439	

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 14269 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 Kynurenine/alpha-aminoadipate aminotransferase, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	428	Total	C	N	O	S	0	0	0
			3344	2145	561	620	18			
1	B	428	Total	C	N	O	S	0	0	0
			3344	2145	561	620	18			
1	C	428	Total	C	N	O	S	0	0	0
			3344	2145	561	620	18			
1	D	428	Total	C	N	O	S	0	0	0
			3344	2145	561	620	18			

There are 64 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	240	SER	LYS	engineered mutation	UNP Q8N5Z0
A	241	GLY	PHE	engineered mutation	UNP Q8N5Z0
A	426	LEU	-	expression tag	UNP Q8N5Z0
A	427	VAL	-	expression tag	UNP Q8N5Z0
A	428	PRO	-	expression tag	UNP Q8N5Z0
A	429	ARG	-	expression tag	UNP Q8N5Z0
A	430	GLY	-	expression tag	UNP Q8N5Z0
A	431	SER	-	expression tag	UNP Q8N5Z0
A	432	LEU	-	expression tag	UNP Q8N5Z0
A	433	GLU	-	expression tag	UNP Q8N5Z0
A	434	HIS	-	expression tag	UNP Q8N5Z0
A	435	HIS	-	expression tag	UNP Q8N5Z0
A	436	HIS	-	expression tag	UNP Q8N5Z0
A	437	HIS	-	expression tag	UNP Q8N5Z0
A	438	HIS	-	expression tag	UNP Q8N5Z0
A	439	HIS	-	expression tag	UNP Q8N5Z0
B	240	SER	LYS	engineered mutation	UNP Q8N5Z0
B	241	GLY	PHE	engineered mutation	UNP Q8N5Z0
B	426	LEU	-	expression tag	UNP Q8N5Z0
B	427	VAL	-	expression tag	UNP Q8N5Z0

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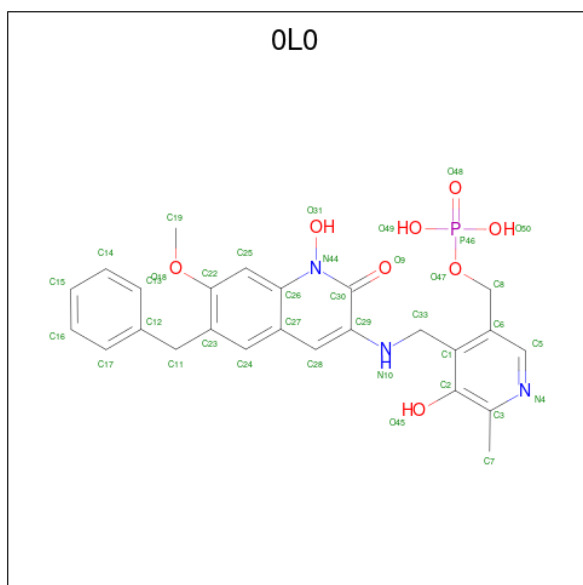
Chain	Residue	Modelled	Actual	Comment	Reference
B	428	PRO	-	expression tag	UNP Q8N5Z0
B	429	ARG	-	expression tag	UNP Q8N5Z0
B	430	GLY	-	expression tag	UNP Q8N5Z0
B	431	SER	-	expression tag	UNP Q8N5Z0
B	432	LEU	-	expression tag	UNP Q8N5Z0
B	433	GLU	-	expression tag	UNP Q8N5Z0
B	434	HIS	-	expression tag	UNP Q8N5Z0
B	435	HIS	-	expression tag	UNP Q8N5Z0
B	436	HIS	-	expression tag	UNP Q8N5Z0
B	437	HIS	-	expression tag	UNP Q8N5Z0
B	438	HIS	-	expression tag	UNP Q8N5Z0
B	439	HIS	-	expression tag	UNP Q8N5Z0
C	240	SER	LYS	engineered mutation	UNP Q8N5Z0
C	241	GLY	PHE	engineered mutation	UNP Q8N5Z0
C	426	LEU	-	expression tag	UNP Q8N5Z0
C	427	VAL	-	expression tag	UNP Q8N5Z0
C	428	PRO	-	expression tag	UNP Q8N5Z0
C	429	ARG	-	expression tag	UNP Q8N5Z0
C	430	GLY	-	expression tag	UNP Q8N5Z0
C	431	SER	-	expression tag	UNP Q8N5Z0
C	432	LEU	-	expression tag	UNP Q8N5Z0
C	433	GLU	-	expression tag	UNP Q8N5Z0
C	434	HIS	-	expression tag	UNP Q8N5Z0
C	435	HIS	-	expression tag	UNP Q8N5Z0
C	436	HIS	-	expression tag	UNP Q8N5Z0
C	437	HIS	-	expression tag	UNP Q8N5Z0
C	438	HIS	-	expression tag	UNP Q8N5Z0
C	439	HIS	-	expression tag	UNP Q8N5Z0
D	240	SER	LYS	engineered mutation	UNP Q8N5Z0
D	241	GLY	PHE	engineered mutation	UNP Q8N5Z0
D	426	LEU	-	expression tag	UNP Q8N5Z0
D	427	VAL	-	expression tag	UNP Q8N5Z0
D	428	PRO	-	expression tag	UNP Q8N5Z0
D	429	ARG	-	expression tag	UNP Q8N5Z0
D	430	GLY	-	expression tag	UNP Q8N5Z0
D	431	SER	-	expression tag	UNP Q8N5Z0
D	432	LEU	-	expression tag	UNP Q8N5Z0
D	433	GLU	-	expression tag	UNP Q8N5Z0
D	434	HIS	-	expression tag	UNP Q8N5Z0
D	435	HIS	-	expression tag	UNP Q8N5Z0
D	436	HIS	-	expression tag	UNP Q8N5Z0
D	437	HIS	-	expression tag	UNP Q8N5Z0

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Chain	Residue	Modelled	Actual	Comment	Reference
D	438	HIS	-	expression tag	UNP Q8N5Z0
D	439	HIS	-	expression tag	UNP Q8N5Z0

- Molecule 2 is (4-{[(6-benzyl-1-hydroxy-7-methoxy-2-oxo-1,2-dihydroquinolin-3-yl)amino]methyl}-5-hydroxy-6-methylpyridin-3-yl)methyl dihydrogen phosphate (CCD ID: 0L0) (formula: C₂₅H₂₆N₃O₈P).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			37	25	3	8	1		
2	B	1	Total	C	N	O	P	0	0
			37	25	3	8	1		
2	C	1	Total	C	N	O	P	0	0
			37	25	3	8	1		
2	D	1	Total	C	N	O	P	0	0
			37	25	3	8	1		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	290	Total	O	0	0
			290	290		
3	B	241	Total	O	0	0
			241	241		
3	C	102	Total	O	0	0
			102	102		

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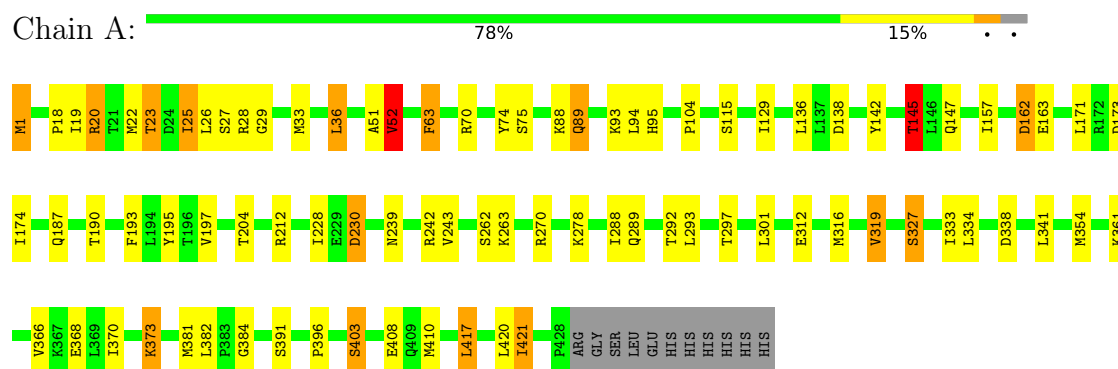
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	D	112	Total	O	0	0
			112	112		

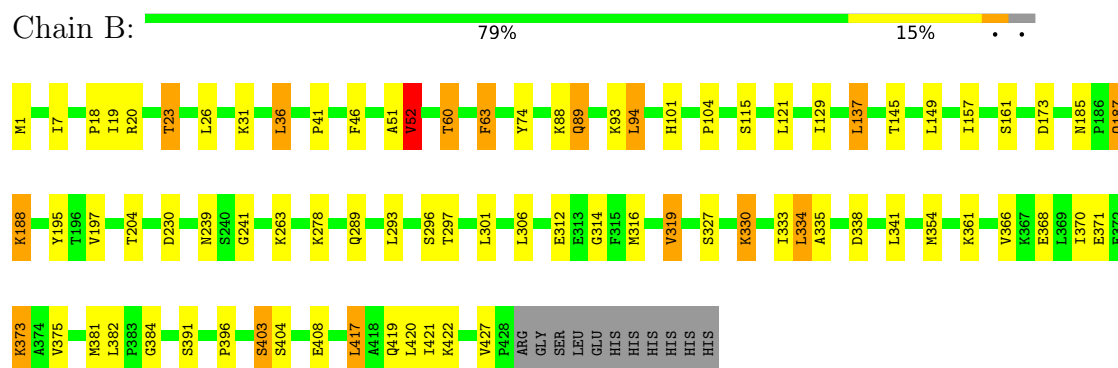
3 Residue-property plots

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.

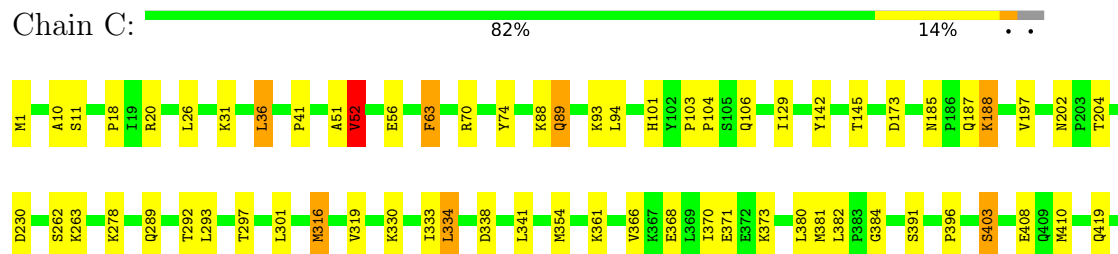
- Molecule 1: Kynurenine/alpha-aminoadipate aminotransferase, mitochondrial

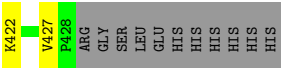


- Molecule 1: Kynurenine/alpha-aminoadipate aminotransferase, mitochondrial

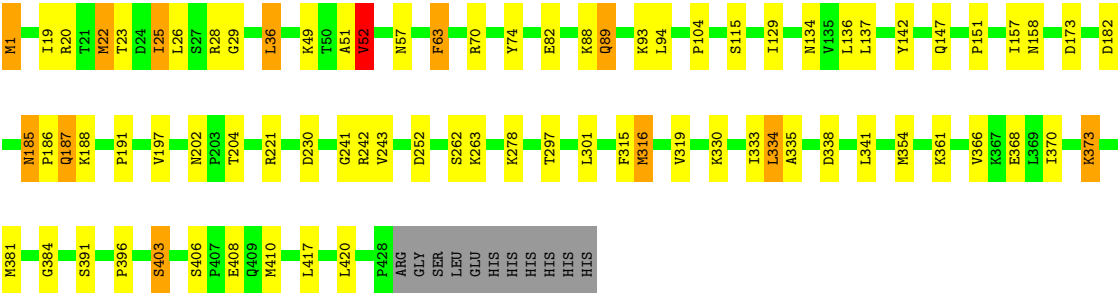
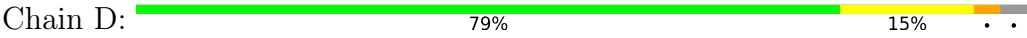


- Molecule 1: Kynurenine/alpha-aminoadipate aminotransferase, mitochondrial





● Molecule 1: Kynurenine/alpha-aminoadipate aminotransferase, mitochondrial



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	69.16Å 107.05Å 116.60Å 90.00° 94.52° 90.00°	Depositor
Resolution (Å)	35.58 – 2.43 35.58 – 2.43	Depositor EDS
% Data completeness (in resolution range)	98.1 (35.58-2.43) 77.5 (35.58-2.43)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.11	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.32 (at 2.42Å)	Xtriage
Refinement program	BUSTER-TNT BUSTER 2.9.3, BUSTER 2.9.3	Depositor
R, R_{free}	0.175 , 0.230 (Not available) , 0.242	Depositor DCC
R_{free} test set	3193 reflections (5.10%)	wwPDB-VP
Wilson B-factor (Å ²)	26.6	Xtriage
Anisotropy	1.032	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 47.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	14269	wwPDB-VP
Average B, all atoms (Å ²)	52.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 44.09 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.6039e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section:
OL0

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	0.96	3/3426 (0.1%)	1.46	36/4653 (0.8%)
1	B	0.93	0/3426	1.45	36/4653 (0.8%)
1	C	0.79	0/3426	1.39	27/4653 (0.6%)
1	D	0.81	1/3426 (0.0%)	1.42	36/4653 (0.8%)
All	All	0.88	4/13704 (0.0%)	1.43	135/18612 (0.7%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1	MET	SD-CE	-6.34	1.63	1.79
1	D	1	MET	SD-CE	-5.66	1.65	1.79
1	A	421	ILE	CA-C	-5.57	1.46	1.52
1	A	75	SER	CA-C	5.44	1.57	1.52

All (135) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	129	ILE	N-CA-C	8.57	120.20	108.89
1	C	129	ILE	N-CA-C	8.15	119.65	108.89
1	D	129	ILE	N-CA-C	8.09	119.57	108.89
1	A	361	LYS	N-CA-C	8.07	120.80	111.11
1	C	361	LYS	N-CA-C	7.79	120.53	111.02
1	B	129	ILE	N-CA-C	7.77	119.15	108.89
1	D	361	LYS	N-CA-C	7.76	120.48	111.02
1	A	333	ILE	CA-C-N	7.49	130.32	120.28
1	A	333	ILE	C-N-CA	7.49	130.32	120.28
1	A	88	LYS	CA-C-N	7.36	130.00	120.44
1	A	88	LYS	C-N-CA	7.36	130.00	120.44
1	B	88	LYS	CA-C-N	7.16	129.75	120.44
1	B	88	LYS	C-N-CA	7.16	129.75	120.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	361	LYS	N-CA-C	7.08	119.66	111.02
1	B	333	ILE	CA-C-N	6.99	129.64	120.28
1	B	333	ILE	C-N-CA	6.99	129.64	120.28
1	B	319	VAL	N-CA-CB	6.86	119.05	110.47
1	C	36	LEU	N-CA-C	-6.80	103.05	112.30
1	B	36	LEU	N-CA-C	-6.78	103.08	112.30
1	A	403	SER	N-CA-C	6.69	118.23	111.07
1	C	88	LYS	CA-C-N	6.66	129.09	120.44
1	C	88	LYS	C-N-CA	6.66	129.09	120.44
1	B	403	SER	N-CA-C	6.61	118.14	111.07
1	D	88	LYS	CA-C-N	6.58	129.00	120.44
1	D	88	LYS	C-N-CA	6.58	129.00	120.44
1	B	314	GLY	CA-C-N	6.55	128.96	120.44
1	B	314	GLY	C-N-CA	6.55	128.96	120.44
1	A	338	ASP	CA-C-N	6.52	128.91	120.44
1	A	338	ASP	C-N-CA	6.52	128.91	120.44
1	B	18	PRO	CA-C-N	6.51	128.89	120.56
1	B	18	PRO	C-N-CA	6.51	128.89	120.56
1	A	36	LEU	N-CA-C	-6.35	103.66	112.30
1	D	36	LEU	N-CA-C	-6.33	103.69	112.30
1	B	241	GLY	N-CA-C	-6.32	104.10	112.82
1	B	338	ASP	CA-C-N	6.30	128.63	120.44
1	B	338	ASP	C-N-CA	6.30	128.63	120.44
1	C	403	SER	N-CA-C	6.29	117.80	111.07
1	A	138	ASP	CA-CB-CG	6.26	118.86	112.60
1	A	52	VAL	N-CA-CB	6.20	120.03	112.10
1	B	63	PHE	CA-CB-CG	6.15	119.95	113.80
1	A	204	THR	N-CA-C	6.10	118.00	111.36
1	C	18	PRO	CA-C-N	6.09	128.36	120.56
1	C	18	PRO	C-N-CA	6.09	128.36	120.56
1	B	52	VAL	N-CA-CB	6.07	119.86	112.10
1	B	327	SER	CA-C-N	6.07	129.01	120.28
1	B	327	SER	C-N-CA	6.07	129.01	120.28
1	D	63	PHE	CA-CB-CG	6.00	119.80	113.80
1	C	333	ILE	CA-C-N	5.93	128.23	120.28
1	C	333	ILE	C-N-CA	5.93	128.23	120.28
1	A	63	PHE	CA-CB-CG	5.92	119.72	113.80
1	A	145	THR	N-CA-CB	5.91	119.40	110.30
1	D	185	ASN	N-CA-C	5.90	117.10	109.72
1	D	333	ILE	CA-C-N	5.89	128.17	120.28
1	D	333	ILE	C-N-CA	5.89	128.17	120.28
1	C	63	PHE	CA-CB-CG	5.84	119.64	113.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	403	SER	N-CA-C	5.80	117.28	111.07
1	A	262	SER	N-CA-C	5.80	118.38	111.71
1	A	319	VAL	N-CA-CB	5.77	117.69	110.47
1	B	373	LYS	N-CA-C	5.77	117.24	111.07
1	A	327	SER	CA-C-N	5.77	128.01	120.28
1	A	327	SER	C-N-CA	5.77	128.01	120.28
1	D	182	ASP	CA-C-N	5.72	128.27	120.54
1	D	182	ASP	C-N-CA	5.72	128.27	120.54
1	C	373	LYS	N-CA-C	5.71	117.19	111.07
1	A	27	SER	CA-C-N	5.70	132.09	123.04
1	A	27	SER	C-N-CA	5.70	132.09	123.04
1	D	52	VAL	N-CA-CB	5.69	119.38	112.10
1	A	373	LYS	N-CA-C	5.68	117.15	111.07
1	A	89	GLN	CA-C-N	5.65	127.79	120.44
1	A	89	GLN	C-N-CA	5.65	127.79	120.44
1	D	373	LYS	N-CA-C	5.64	117.11	111.07
1	D	22	MET	CA-C-N	5.58	127.69	120.44
1	D	22	MET	C-N-CA	5.58	127.69	120.44
1	B	297	THR	CA-C-N	5.57	127.69	120.44
1	B	297	THR	C-N-CA	5.57	127.69	120.44
1	B	60	THR	CB-CA-C	5.53	118.75	109.89
1	B	204	THR	N-CA-C	5.53	117.31	111.28
1	C	338	ASP	CA-C-N	5.50	127.91	120.44
1	C	338	ASP	C-N-CA	5.50	127.91	120.44
1	B	335	ALA	CA-C-N	5.48	127.89	120.44
1	B	335	ALA	C-N-CA	5.48	127.89	120.44
1	C	204	THR	N-CA-C	5.47	117.25	111.28
1	A	18	PRO	CA-C-N	5.45	127.54	120.56
1	A	18	PRO	C-N-CA	5.45	127.54	120.56
1	A	410	MET	CA-C-N	5.42	127.48	120.44
1	A	410	MET	C-N-CA	5.42	127.48	120.44
1	C	384	GLY	CA-C-N	5.41	128.27	120.38
1	C	384	GLY	C-N-CA	5.41	128.27	120.38
1	D	338	ASP	CA-C-N	5.41	127.79	120.44
1	D	338	ASP	C-N-CA	5.41	127.79	120.44
1	A	162	ASP	CA-CB-CG	5.39	117.99	112.60
1	A	297	THR	CA-C-N	5.38	127.44	120.44
1	A	297	THR	C-N-CA	5.38	127.44	120.44
1	C	89	GLN	CA-C-N	5.38	127.43	120.44
1	C	89	GLN	C-N-CA	5.38	127.43	120.44
1	C	52	VAL	N-CA-CB	5.35	118.95	112.10
1	D	52	VAL	CB-CA-C	5.32	117.06	110.73

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	297	THR	CA-C-N	5.32	127.36	120.44
1	C	297	THR	C-N-CA	5.32	127.36	120.44
1	D	241	GLY	CA-C-N	5.31	131.68	121.54
1	D	241	GLY	C-N-CA	5.31	131.68	121.54
1	D	410	MET	CA-C-N	5.30	127.33	120.44
1	D	410	MET	C-N-CA	5.30	127.33	120.44
1	C	262	SER	N-CA-C	5.28	117.79	111.71
1	A	230	ASP	CA-CB-CG	5.27	117.87	112.60
1	B	239	ASN	CA-CB-CG	5.27	117.87	112.60
1	D	262	SER	N-CA-C	5.26	117.76	111.71
1	B	384	GLY	CA-C-N	5.24	128.02	120.38
1	B	384	GLY	C-N-CA	5.24	128.02	120.38
1	C	52	VAL	CB-CA-C	5.23	116.96	110.73
1	D	28	ARG	N-CA-C	5.21	119.15	109.56
1	B	101	HIS	N-CA-C	5.21	118.94	112.59
1	A	384	GLY	CA-C-N	5.20	127.97	120.38
1	A	384	GLY	C-N-CA	5.20	127.97	120.38
1	D	315	PHE	N-CA-C	-5.20	105.79	111.82
1	D	158	ASN	CA-CB-CG	5.20	117.80	112.60
1	C	410	MET	CA-C-N	5.19	127.19	120.44
1	C	410	MET	C-N-CA	5.19	127.19	120.44
1	D	204	THR	N-CA-C	5.19	116.93	111.28
1	D	89	GLN	CA-C-N	5.18	127.48	120.44
1	D	89	GLN	C-N-CA	5.18	127.48	120.44
1	A	338	ASP	CA-CB-CG	5.15	117.75	112.60
1	D	297	THR	CA-C-N	5.14	127.12	120.44
1	D	297	THR	C-N-CA	5.14	127.12	120.44
1	A	312	GLU	CB-CG-CD	5.12	121.30	112.60
1	B	52	VAL	CB-CA-C	5.08	116.78	110.73
1	D	384	GLY	CA-C-N	5.07	127.77	120.38
1	D	384	GLY	C-N-CA	5.07	127.77	120.38
1	B	121	LEU	CA-C-N	5.04	126.99	120.44
1	B	121	LEU	C-N-CA	5.04	126.99	120.44
1	C	101	HIS	N-CA-C	5.04	118.73	112.59
1	D	335	ALA	CA-C-N	5.03	126.97	120.44
1	D	335	ALA	C-N-CA	5.03	126.97	120.44
1	B	89	GLN	CA-C-N	5.02	127.27	120.44
1	B	89	GLN	C-N-CA	5.02	127.27	120.44

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3344	0	3366	37	0
1	B	3344	0	3366	36	0
1	C	3344	0	3366	29	0
1	D	3344	0	3366	34	0
2	A	37	0	24	2	0
2	B	37	0	24	2	0
2	C	37	0	24	2	0
2	D	37	0	24	1	0
3	A	290	0	0	4	0
3	B	241	0	0	1	0
3	C	102	0	0	0	0
3	D	112	0	0	1	0
All	All	14269	0	13560	112	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 4.

All (112) 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:A:366:VAL:HG12	1:A:370:ILE:HG12	1.78	0.66
1:C:380:LEU:HD21	1:D:25:ILE:HD11	1.76	0.66
1:B:366:VAL:HG12	1:B:370:ILE:HG12	1.77	0.65
1:D:366:VAL:HG12	1:D:370:ILE:HG12	1.78	0.64
1:B:185:ASN:HD22	1:B:188:LYS:HG2	1.63	0.63
1:C:366:VAL:HG12	1:C:370:ILE:HG12	1.81	0.63
2:C:4000:OL0:H10	1:D:23:THR:HG21	1.80	0.63
1:A:36:LEU:HD12	1:B:381:MET:HE2	1.81	0.61
1:C:371:GLU:HG2	1:D:22:MET:HE1	1.83	0.60
1:C:185:ASN:HD22	1:C:188:LYS:HG2	1.67	0.59
1:A:19:ILE:HG23	1:B:382:LEU:HD11	1.84	0.59
1:D:221:ARG:HG2	1:D:252:ASP:OD2	2.03	0.59
1:A:23:THR:HG21	2:B:4000:OL0:H10	1.84	0.59
1:A:163:GLU:HG2	3:A:4129:HOH:O	2.02	0.58
2:A:4000:OL0:H10	1:B:23:THR:HG21	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:36:LEU:HD12	1:D:381:MET:HE2	1.85	0.58
1:B:41:PRO:HG2	1:B:46:PHE:HZ	1.69	0.58
1:A:25:ILE:CD1	1:B:375:VAL:HG13	2.34	0.58
1:D:185:ASN:HD21	1:D:187:GLN:HG2	1.68	0.58
1:A:22:MET:HE1	1:B:371:GLU:HG2	1.86	0.57
1:C:381:MET:HE2	1:D:36:LEU:HD12	1.85	0.57
1:B:145:THR:HG21	1:B:195:TYR:CZ	2.40	0.57
1:B:417:LEU:O	1:B:421:ILE:HG13	2.06	0.56
1:A:25:ILE:HD11	1:A:33:MET:HE1	1.87	0.56
2:C:4000:OL0:H16	1:D:74:TYR:CG	2.40	0.56
1:C:52:VAL:HG13	1:D:52:VAL:HG13	1.86	0.56
1:D:185:ASN:ND2	1:D:187:GLN:HG2	2.20	0.56
1:B:187:GLN:NE2	1:D:57:ASN:HB3	2.20	0.56
1:A:142:TYR:HD1	1:A:145:THR:HG23	1.71	0.55
1:A:95:HIS:HE1	3:A:4107:HOH:O	1.88	0.55
1:B:145:THR:O	1:B:149:LEU:HG	2.08	0.54
1:B:373:LYS:HB3	1:B:420:LEU:HD22	1.91	0.53
1:A:382:LEU:HD13	1:B:19:ILE:HD12	1.91	0.53
1:B:316:MET:HA	1:B:319:VAL:HG22	1.91	0.52
1:A:373:LYS:HB3	1:A:420:LEU:HD22	1.92	0.51
1:B:137:LEU:HD23	1:B:137:LEU:C	2.35	0.51
1:A:74:TYR:CG	2:B:4000:OL0:H16	2.44	0.51
1:A:381:MET:HE2	1:B:36:LEU:HD12	1.92	0.51
1:B:263:LYS:HG2	1:B:354:MET:HE3	1.93	0.51
1:C:382:LEU:HD11	1:D:19:ILE:HG23	1.93	0.50
1:A:354:MET:SD	1:A:403:SER:HB3	2.52	0.50
1:B:185:ASN:HD22	1:B:188:LYS:CG	2.25	0.49
1:A:104:PRO:HB3	1:A:278:LYS:HD3	1.94	0.49
1:A:157:ILE:HG21	1:A:174:ILE:HG21	1.95	0.49
1:A:382:LEU:HD11	1:B:19:ILE:HG23	1.95	0.49
1:C:330:LYS:HG2	1:C:334:LEU:HD22	1.95	0.49
1:D:104:PRO:HB3	1:D:278:LYS:HD3	1.93	0.49
1:D:185:ASN:HD22	1:D:188:LYS:HG2	1.77	0.49
1:C:316:MET:HA	1:C:319:VAL:HG22	1.95	0.49
1:C:354:MET:SD	1:C:403:SER:HB3	2.53	0.49
1:B:104:PRO:HB3	1:B:278:LYS:HD3	1.94	0.49
1:C:104:PRO:HB3	1:C:278:LYS:HD3	1.94	0.48
1:C:382:LEU:HD13	1:D:19:ILE:HD12	1.95	0.48
1:D:316:MET:HA	1:D:319:VAL:HG22	1.94	0.48
1:A:263:LYS:HG2	1:A:354:MET:HE3	1.95	0.48
1:A:136:LEU:HD13	1:A:171:LEU:HD11	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:354:MET:SD	1:B:403:SER:HB3	2.54	0.48
1:A:292:THR:HG22	1:B:115:SER:HB2	1.95	0.47
1:C:74:TYR:CG	2:D:4000:OL0:H16	2.49	0.47
1:C:419:GLN:HA	1:C:422:LYS:HE3	1.96	0.47
1:A:145:THR:HG21	1:A:195:TYR:CZ	2.50	0.47
1:C:142:TYR:CD1	1:C:145:THR:HG23	2.49	0.47
1:D:366:VAL:HG23	1:D:396:PRO:HA	1.96	0.47
1:D:406:SER:HB2	3:D:4191:HOH:O	2.15	0.46
1:D:263:LYS:HG2	1:D:354:MET:HE3	1.98	0.46
1:D:373:LYS:HB3	1:D:420:LEU:HD22	1.96	0.46
1:A:25:ILE:HD13	1:B:375:VAL:HG13	1.96	0.46
2:A:4000:OL0:H16	1:B:74:TYR:CG	2.51	0.46
1:B:366:VAL:HG23	1:B:396:PRO:HA	1.97	0.46
1:C:56:GLU:CD	1:D:49:LYS:HE3	2.41	0.46
1:B:419:GLN:HA	1:B:422:LYS:HE3	1.98	0.46
1:D:354:MET:SD	1:D:403:SER:HB3	2.56	0.46
1:C:142:TYR:HD1	1:C:145:THR:HG23	1.81	0.45
1:A:162:ASP:OD1	1:A:212:ARG:NH1	2.49	0.45
1:A:20:ARG:NH2	3:A:4194:HOH:O	2.49	0.45
1:C:263:LYS:HG2	1:C:354:MET:HE3	1.98	0.44
1:A:288:ILE:HG21	3:A:4342:HOH:O	2.17	0.44
1:A:366:VAL:HG23	1:A:396:PRO:HA	1.97	0.44
1:A:142:TYR:CD1	1:A:145:THR:HG23	2.51	0.43
1:A:25:ILE:HD11	1:B:375:VAL:HG13	1.99	0.43
1:A:417:LEU:O	1:A:421:ILE:HG13	2.19	0.43
1:C:366:VAL:HG23	1:C:396:PRO:HA	1.99	0.43
1:D:185:ASN:HD22	1:D:188:LYS:CG	2.32	0.43
1:A:52:VAL:HG13	1:B:52:VAL:HG13	2.01	0.43
1:B:289:GLN:O	1:B:293:LEU:HD23	2.19	0.43
1:B:330:LYS:HG2	1:B:334:LEU:HD22	2.01	0.42
1:C:41:PRO:HB3	1:D:263:LYS:HG3	2.01	0.42
1:C:51:ALA:HB3	1:C:63:PHE:HB2	2.01	0.42
1:C:185:ASN:HD22	1:C:188:LYS:CG	2.32	0.42
1:A:19:ILE:HD12	1:B:382:LEU:HD13	2.01	0.42
1:D:51:ALA:HB3	1:D:63:PHE:HB2	2.01	0.42
1:A:197:VAL:HA	1:A:230:ASP:O	2.20	0.42
1:A:115:SER:HA	1:A:270:ARG:O	2.20	0.42
1:C:197:VAL:HA	1:C:230:ASP:O	2.20	0.42
1:B:94:LEU:HD11	1:B:316:MET:HE2	2.02	0.41
1:D:185:ASN:HA	1:D:186:PRO:HD3	1.96	0.41
1:A:289:GLN:O	1:A:293:LEU:HD23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:134:ASN:O	1:D:191:PRO:HA	2.20	0.41
1:D:142:TYR:HB2	1:D:202:ASN:HB3	2.03	0.41
1:A:193:PHE:CD2	1:A:228:ILE:HD12	2.55	0.41
1:C:292:THR:HG22	1:D:115:SER:HB2	2.01	0.41
1:B:197:VAL:HA	1:B:230:ASP:O	2.20	0.41
1:C:10:ALA:O	1:D:151:PRO:HB3	2.21	0.41
1:D:330:LYS:HG2	1:D:334:LEU:HD22	2.01	0.41
1:C:142:TYR:HB2	1:C:202:ASN:HB3	2.03	0.41
1:D:136:LEU:HD23	1:D:157:ILE:HB	2.03	0.41
1:B:51:ALA:HB3	1:B:63:PHE:HB2	2.02	0.41
1:D:197:VAL:HA	1:D:230:ASP:O	2.21	0.41
1:C:103:PRO:HD2	1:C:106:GLN:HB2	2.03	0.40
1:C:289:GLN:O	1:C:293:LEU:HD23	2.21	0.40
1:A:51:ALA:HB3	1:A:63:PHE:HB2	2.04	0.40
1:B:296:SER:HB3	3:B:4336:HOH:O	2.22	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	426/439 (97%)	410 (96%)	14 (3%)	2 (0%)	24	29
1	B	426/439 (97%)	415 (97%)	11 (3%)	0	100	100
1	C	426/439 (97%)	414 (97%)	12 (3%)	0	100	100
1	D	426/439 (97%)	408 (96%)	16 (4%)	2 (0%)	24	29
All	All	1704/1756 (97%)	1647 (97%)	53 (3%)	4 (0%)	43	53

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	242	ARG
1	A	242	ARG
1	A	29	GLY
1	D	29	GLY

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	372/382 (97%)	344 (92%)	28 (8%)	12	15
1	B	372/382 (97%)	343 (92%)	29 (8%)	11	13
1	C	372/382 (97%)	351 (94%)	21 (6%)	19	25
1	D	372/382 (97%)	349 (94%)	23 (6%)	16	22
All	All	1488/1528 (97%)	1387 (93%)	101 (7%)	14	18

All (101) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MET
1	A	20	ARG
1	A	23	THR
1	A	25	ILE
1	A	26	LEU
1	A	28	ARG
1	A	52	VAL
1	A	70	ARG
1	A	89	GLN
1	A	93	LYS
1	A	94	LEU
1	A	145	THR
1	A	147	GLN
1	A	173	ASP
1	A	187	GLN
1	A	190	THR
1	A	239	ASN
1	A	243	VAL

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Mol	Chain	Res	Type
1	A	301	LEU
1	A	316	MET
1	A	319	VAL
1	A	327	SER
1	A	334	LEU
1	A	341	LEU
1	A	368	GLU
1	A	391	SER
1	A	408	GLU
1	A	417	LEU
1	B	1	MET
1	B	7	ILE
1	B	20	ARG
1	B	23	THR
1	B	26	LEU
1	B	31	LYS
1	B	52	VAL
1	B	60	THR
1	B	89	GLN
1	B	93	LYS
1	B	94	LEU
1	B	137	LEU
1	B	157	ILE
1	B	161	SER
1	B	173	ASP
1	B	187	GLN
1	B	188	LYS
1	B	301	LEU
1	B	306	LEU
1	B	312	GLU
1	B	330	LYS
1	B	334	LEU
1	B	341	LEU
1	B	368	GLU
1	B	391	SER
1	B	404	SER
1	B	408	GLU
1	B	417	LEU
1	B	427	VAL
1	C	1	MET
1	C	11	SER
1	C	20	ARG

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Mol	Chain	Res	Type
1	C	26	LEU
1	C	31	LYS
1	C	52	VAL
1	C	70	ARG
1	C	89	GLN
1	C	93	LYS
1	C	94	LEU
1	C	173	ASP
1	C	187	GLN
1	C	188	LYS
1	C	301	LEU
1	C	316	MET
1	C	334	LEU
1	C	341	LEU
1	C	368	GLU
1	C	391	SER
1	C	408	GLU
1	C	427	VAL
1	D	1	MET
1	D	20	ARG
1	D	25	ILE
1	D	26	LEU
1	D	52	VAL
1	D	70	ARG
1	D	82	GLU
1	D	89	GLN
1	D	93	LYS
1	D	94	LEU
1	D	137	LEU
1	D	147	GLN
1	D	173	ASP
1	D	187	GLN
1	D	243	VAL
1	D	301	LEU
1	D	316	MET
1	D	334	LEU
1	D	341	LEU
1	D	368	GLU
1	D	391	SER
1	D	408	GLU
1	D	417	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (31)

such sidechains are listed below:

Mol	Chain	Res	Type
1	A	62	GLN
1	A	91	GLN
1	A	95	HIS
1	A	147	GLN
1	A	187	GLN
1	A	237	GLN
1	B	2	ASN
1	B	62	GLN
1	B	91	GLN
1	B	95	HIS
1	B	134	ASN
1	B	185	ASN
1	B	187	GLN
1	B	189	ASN
1	B	206	ASN
1	B	328	ASN
1	C	2	ASN
1	C	62	GLN
1	C	91	GLN
1	C	134	ASN
1	C	185	ASN
1	C	187	GLN
1	C	206	ASN
1	C	237	GLN
1	D	57	ASN
1	D	62	GLN
1	D	91	GLN
1	D	147	GLN
1	D	185	ASN
1	D	206	ASN
1	D	328	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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](#)

4 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	OL0	A	4000	-	40,40,40	1.37	4 (10%)	54,58,58	1.82	9 (16%)
2	OL0	B	4000	-	40,40,40	1.16	2 (5%)	54,58,58	1.77	8 (14%)
2	OL0	D	4000	-	40,40,40	1.12	3 (7%)	54,58,58	1.78	11 (20%)
2	OL0	C	4000	-	40,40,40	1.10	2 (5%)	54,58,58	1.67	11 (20%)

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	OL0	A	4000	-	-	9/17/17/17	0/4/4/4
2	OL0	B	4000	-	-	9/17/17/17	0/4/4/4
2	OL0	D	4000	-	-	9/17/17/17	0/4/4/4
2	OL0	C	4000	-	-	9/17/17/17	0/4/4/4

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	4000	OL0	C28-C29	4.97	1.38	1.35
2	B	4000	OL0	C29-N10	4.09	1.41	1.34
2	A	4000	OL0	C29-N10	4.05	1.41	1.34
2	C	4000	OL0	C29-N10	3.80	1.40	1.34
2	D	4000	OL0	C29-N10	3.58	1.40	1.34
2	D	4000	OL0	C28-C29	3.28	1.37	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	4000	OL0	C28-C29	3.02	1.37	1.35
2	B	4000	OL0	C30-N44	-2.38	1.34	1.38
2	A	4000	OL0	C27-C28	2.18	1.48	1.43
2	D	4000	OL0	O31-N44	2.14	1.42	1.39
2	A	4000	OL0	C30-N44	-2.02	1.35	1.38

All (39) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	4000	OL0	C26-N44-C30	-7.20	120.83	126.68
2	A	4000	OL0	C26-N44-C30	-7.02	120.98	126.68
2	B	4000	OL0	C26-N44-C30	-6.85	121.11	126.68
2	C	4000	OL0	C26-N44-C30	-6.57	121.34	126.68
2	A	4000	OL0	C29-C30-N44	4.63	121.52	115.93
2	B	4000	OL0	C29-C30-N44	4.45	121.29	115.93
2	D	4000	OL0	C29-C30-N44	4.35	121.17	115.93
2	D	4000	OL0	C30-C29-N10	4.32	119.33	112.81
2	B	4000	OL0	C30-C29-N10	4.21	119.18	112.81
2	C	4000	OL0	C30-C29-N10	4.06	118.95	112.81
2	A	4000	OL0	C30-C29-N10	4.05	118.93	112.81
2	C	4000	OL0	C29-C30-N44	4.02	120.78	115.93
2	B	4000	OL0	O18-C22-C23	3.97	121.87	115.96
2	A	4000	OL0	C27-C28-C29	-3.93	118.15	120.23
2	B	4000	OL0	O18-C22-C25	-3.06	118.80	124.08
2	A	4000	OL0	O18-C22-C23	2.91	120.29	115.96
2	D	4000	OL0	O18-C22-C23	2.85	120.21	115.96
2	C	4000	OL0	O18-C22-C23	2.75	120.05	115.96
2	A	4000	OL0	O18-C22-C25	-2.69	119.44	124.08
2	C	4000	OL0	O9-C30-C29	-2.68	118.66	122.00
2	D	4000	OL0	C27-C28-C29	-2.61	118.85	120.23
2	B	4000	OL0	C27-C28-C29	-2.59	118.86	120.23
2	D	4000	OL0	C28-C29-N10	-2.37	121.11	124.89
2	A	4000	OL0	C24-C23-C22	2.36	120.84	118.26
2	D	4000	OL0	C27-C26-N44	2.34	120.17	117.83
2	D	4000	OL0	O18-C22-C25	-2.33	120.07	124.08
2	C	4000	OL0	O18-C22-C25	-2.26	120.18	124.08
2	D	4000	OL0	C5-N4-C3	2.19	123.17	119.20
2	A	4000	OL0	C27-C26-N44	2.19	120.03	117.83
2	B	4000	OL0	C28-C29-N10	-2.15	121.46	124.89
2	C	4000	OL0	O49-P46-O47	2.14	112.26	106.67
2	C	4000	OL0	C27-C28-C29	-2.13	119.10	120.23
2	A	4000	OL0	C28-C29-N10	-2.13	121.50	124.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	4000	OL0	O9-C30-C29	-2.12	119.36	122.00
2	C	4000	OL0	C27-C26-N44	2.11	119.95	117.83
2	C	4000	OL0	C28-C29-N10	-2.10	121.54	124.89
2	C	4000	OL0	C5-N4-C3	2.08	122.97	119.20
2	D	4000	OL0	C24-C23-C22	2.05	120.51	118.26
2	B	4000	OL0	C27-C26-N44	2.01	119.84	117.83

There are no chirality outliers.

All (36) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	4000	OL0	C8-O47-P46-O48
2	A	4000	OL0	C8-O47-P46-O49
2	A	4000	OL0	C8-O47-P46-O50
2	B	4000	OL0	C8-O47-P46-O48
2	B	4000	OL0	C8-O47-P46-O49
2	B	4000	OL0	C8-O47-P46-O50
2	C	4000	OL0	C8-O47-P46-O48
2	C	4000	OL0	C8-O47-P46-O49
2	C	4000	OL0	C8-O47-P46-O50
2	D	4000	OL0	C8-O47-P46-O48
2	D	4000	OL0	C8-O47-P46-O49
2	D	4000	OL0	C8-O47-P46-O50
2	A	4000	OL0	C6-C1-C33-N10
2	B	4000	OL0	C6-C1-C33-N10
2	C	4000	OL0	C6-C1-C33-N10
2	D	4000	OL0	C6-C1-C33-N10
2	B	4000	OL0	C25-C22-O18-C19
2	A	4000	OL0	C2-C1-C33-N10
2	B	4000	OL0	C2-C1-C33-N10
2	C	4000	OL0	C2-C1-C33-N10
2	D	4000	OL0	C2-C1-C33-N10
2	A	4000	OL0	C25-C22-O18-C19
2	C	4000	OL0	C25-C22-O18-C19
2	C	4000	OL0	C23-C22-O18-C19
2	D	4000	OL0	C25-C22-O18-C19
2	B	4000	OL0	C23-C22-O18-C19
2	A	4000	OL0	C23-C22-O18-C19
2	D	4000	OL0	C23-C22-O18-C19
2	B	4000	OL0	C23-C11-C12-C13
2	D	4000	OL0	C23-C11-C12-C13
2	C	4000	OL0	C23-C11-C12-C13

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Mol	Chain	Res	Type	Atoms
2	A	4000	OL0	C23-C11-C12-C17
2	A	4000	OL0	C23-C11-C12-C13
2	C	4000	OL0	C23-C11-C12-C17
2	D	4000	OL0	C23-C11-C12-C17
2	B	4000	OL0	C23-C11-C12-C17

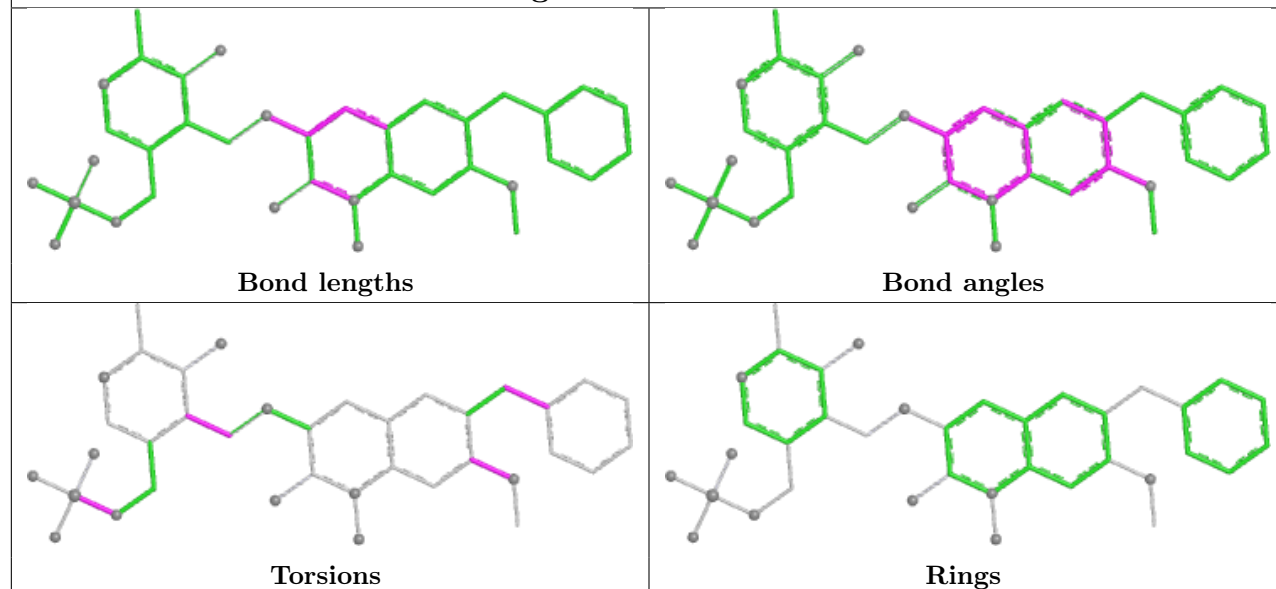
There are no ring outliers.

4 monomers are involved in 7 short contacts:

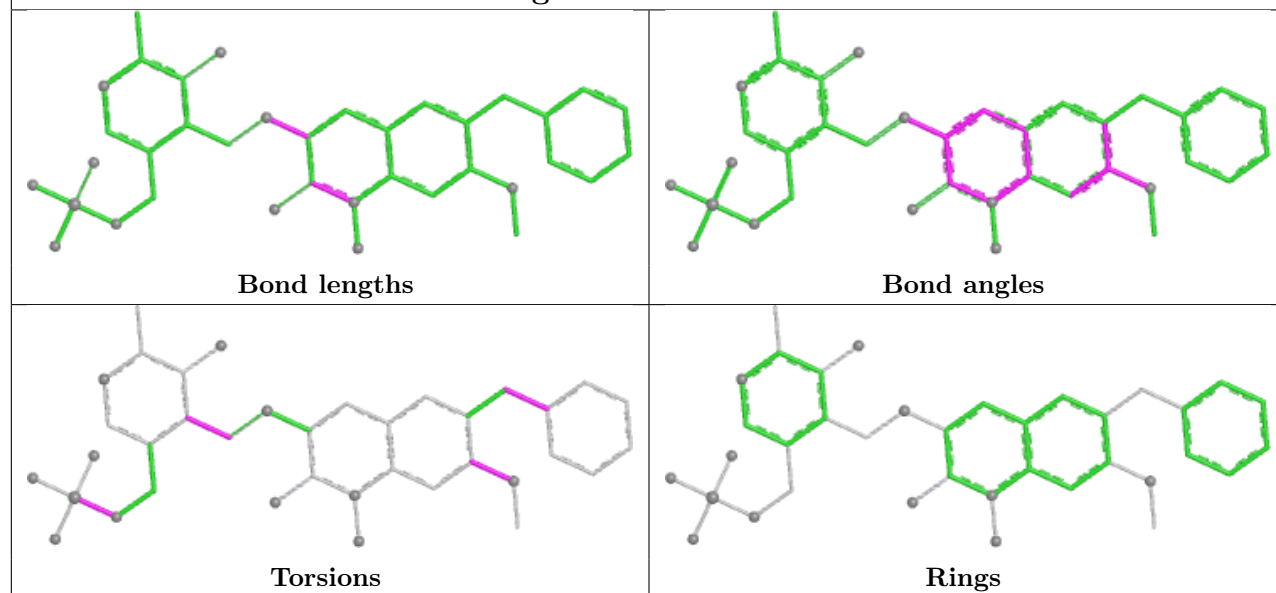
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	4000	OL0	2	0
2	B	4000	OL0	2	0
2	D	4000	OL0	1	0
2	C	4000	OL0	2	0

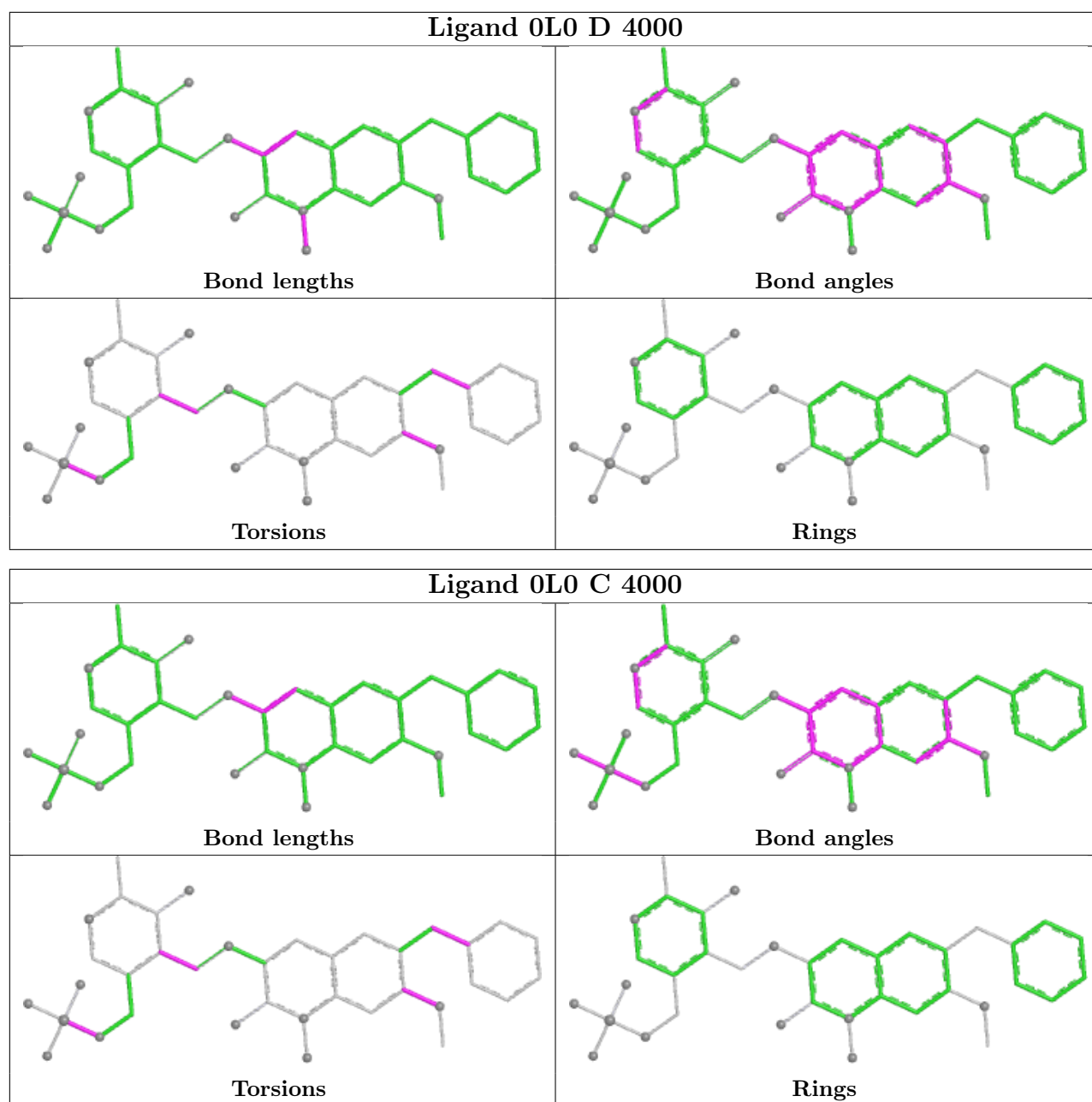
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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 0L0 A 4000



Ligand 0L0 B 4000





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	428/439 (97%)	-1.40	0 100 100	6, 30, 63, 114	0
1	B	428/439 (97%)	-1.35	0 100 100	15, 35, 71, 125	0
1	C	428/439 (97%)	-0.86	0 100 100	43, 70, 109, 146	0
1	D	428/439 (97%)	-0.97	0 100 100	39, 63, 97, 149	0
All	All	1712/1756 (97%)	-1.15	0 100 100	6, 53, 95, 149	0

There are no RSRZ outliers to report.

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](#)

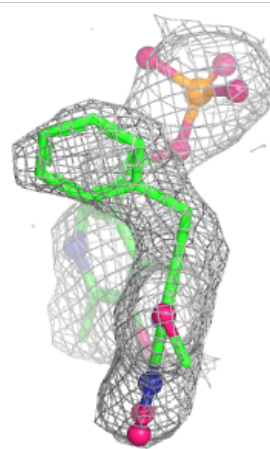
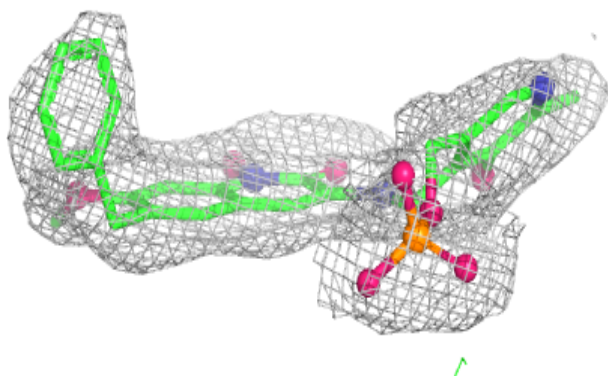
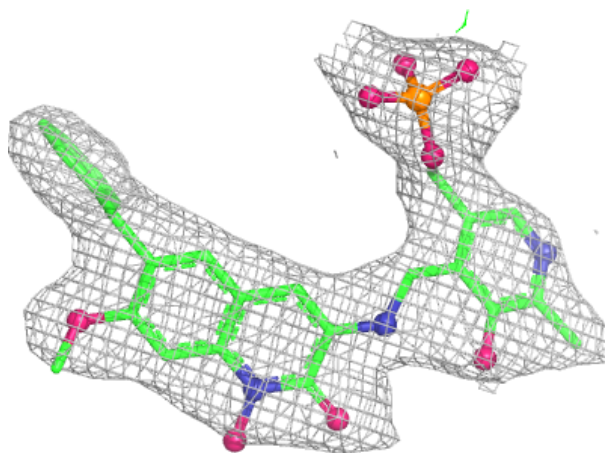
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled ‘Q< 0.9’ lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	OL0	C	4000	37/37	0.98	0.04	47,56,59,63	0
2	OL0	D	4000	37/37	0.98	0.04	41,51,61,65	0
2	OL0	A	4000	37/37	0.99	0.03	9,20,30,33	0
2	OL0	B	4000	37/37	1.00	0.02	12,21,31,33	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.

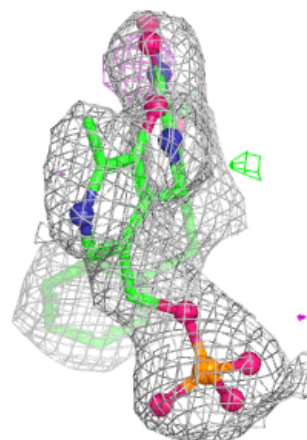
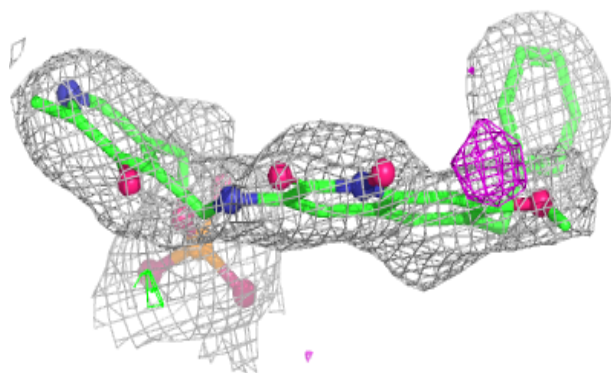
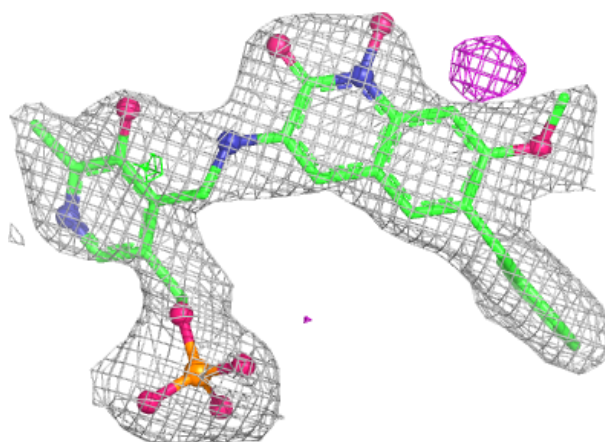
Electron density around 0L0 C 4000:

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



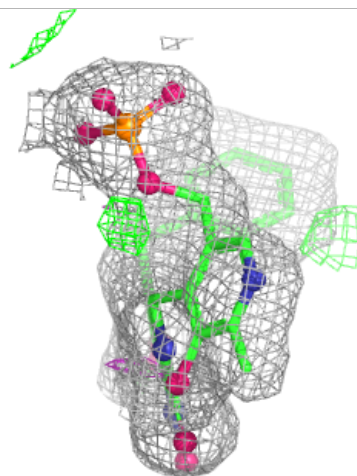
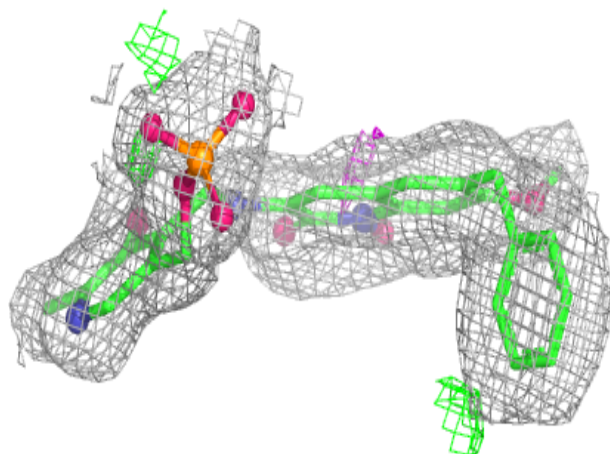
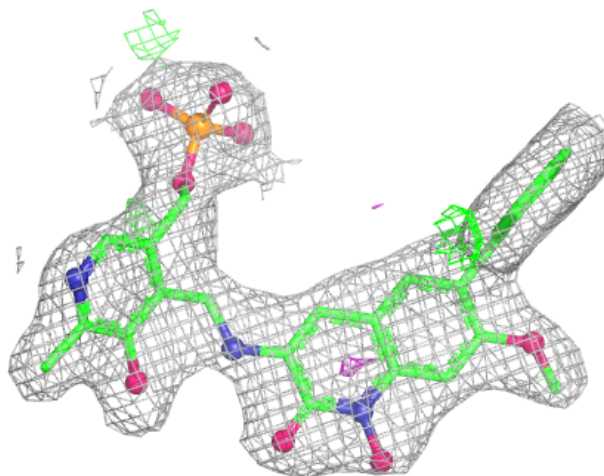
Electron density around 0L0 D 4000:

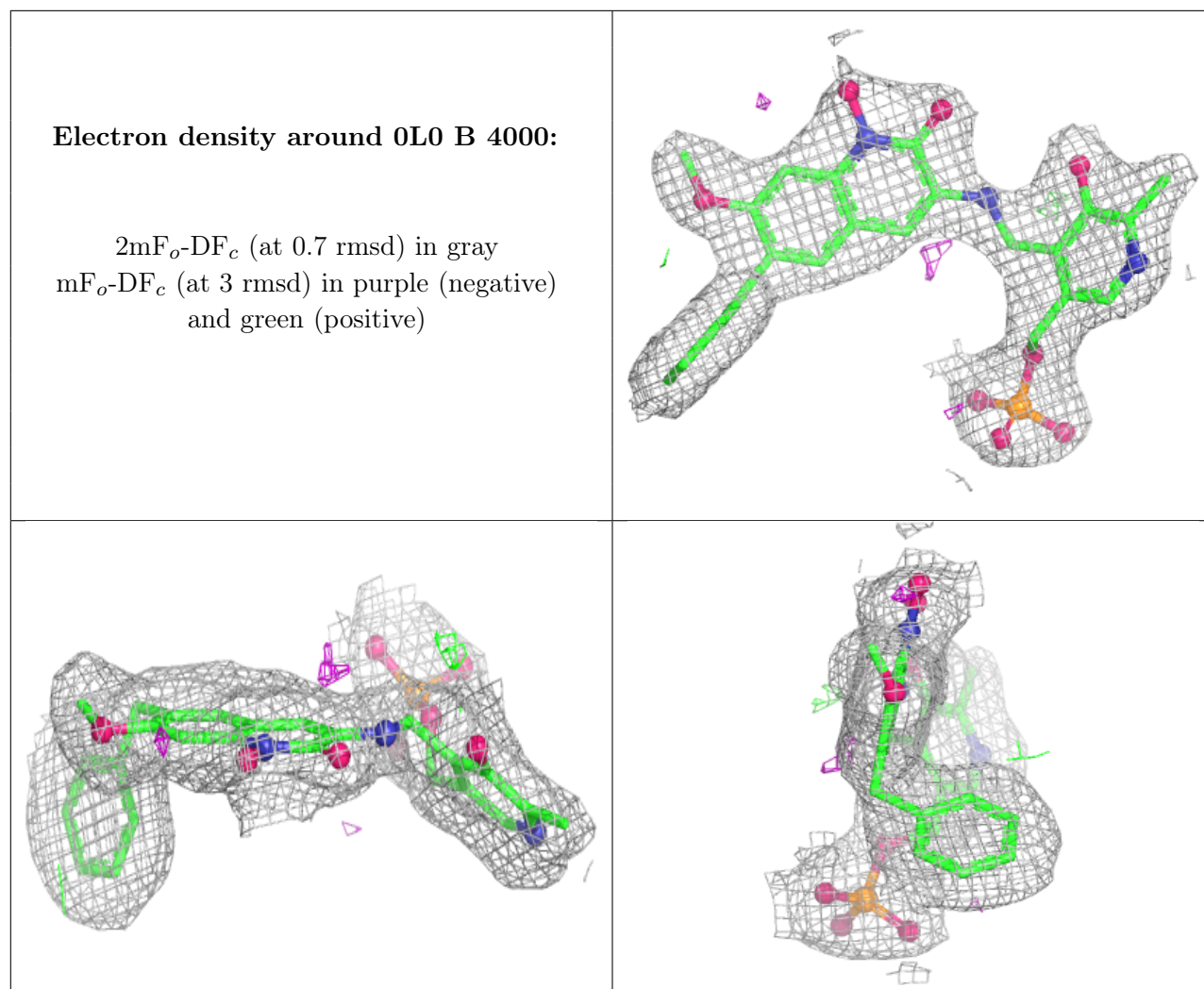
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around 0L0 A 4000:

$2mF_o-DF_c$ (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.