



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 08:54 AM UTC

PDB ID : 3SWD / pdb_00003swd
Title : E. coli MurA in complex with UDP-N-acetylmuramic acid and covalent adduct of PEP with Cys115
Authors : Zhu, J.-Y.; Schonbrunn, E.
Deposited on : 2011-07-13
Resolution : 2.50 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

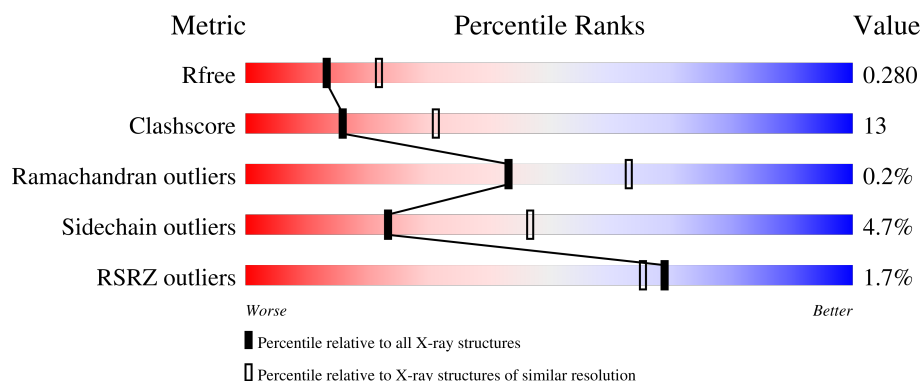
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 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.



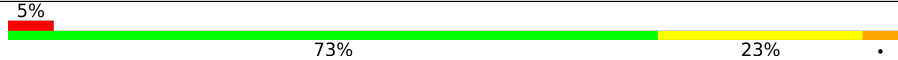
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	5829 (2.50-2.50)
Clashscore	190562	6492 (2.50-2.50)
Ramachandran outliers	187476	6378 (2.50-2.50)
Sidechain outliers	187428	6380 (2.50-2.50)
RSRZ outliers	180081	5833 (2.50-2.50)

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	418	% 73% 23% .
1	B	418	2% 73% 23% .
1	C	418	74% 22% .
1	D	418	74% 23% .
1	E	418	% 74% 23% .

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Mol	Chain	Length	Quality of chain
1	F	418	
1	G	418	
1	H	418	
1	I	418	
1	J	418	
1	K	418	
1	L	418	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
1	IAS	I	67	-	-	X	-
1	IAS	K	67	-	-	X	-

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 39035 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 UDP-N-acetylglucosamine 1-carboxyvinyltransferase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			
1	B	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			
1	C	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			
1	D	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			
1	E	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			
1	F	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			
1	G	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			
1	H	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			
1	I	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			
1	J	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			
1	K	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			
1	L	418	Total	C	N	O	P	S	0	0	0
			3143	1970	556	600	1	16			

There are 12 discrepancies between the modelled and reference sequences:

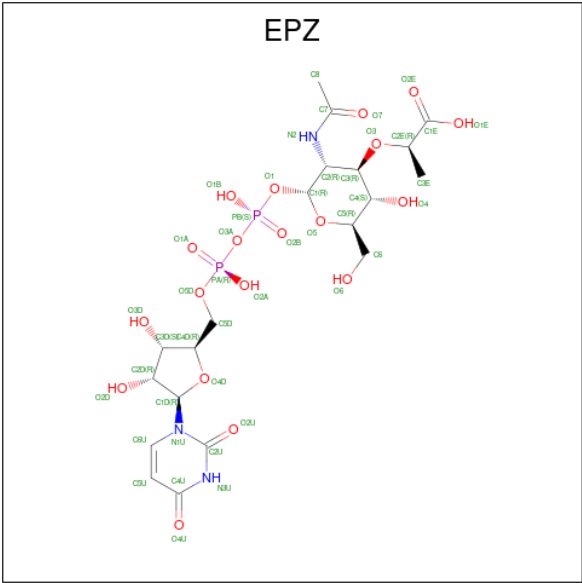
Chain	Residue	Modelled	Actual	Comment	Reference
A	67	IAS	ASN	engineered mutation	UNP P0A749
B	67	IAS	ASN	engineered mutation	UNP P0A749
C	67	IAS	ASN	engineered mutation	UNP P0A749
D	67	IAS	ASN	engineered mutation	UNP P0A749
E	67	IAS	ASN	engineered mutation	UNP P0A749

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Chain	Residue	Modelled	Actual	Comment	Reference
F	67	IAS	ASN	engineered mutation	UNP P0A749
G	67	IAS	ASN	engineered mutation	UNP P0A749
H	67	IAS	ASN	engineered mutation	UNP P0A749
I	67	IAS	ASN	engineered mutation	UNP P0A749
J	67	IAS	ASN	engineered mutation	UNP P0A749
K	67	IAS	ASN	engineered mutation	UNP P0A749
L	67	IAS	ASN	engineered mutation	UNP P0A749

- Molecule 2 is (2R)-2-{{[(2R,3R,4R,5S,6R)-3-(acetylamino)-2-{{[(S)-{{[(R)-{{[(2R,3S,4R,5R)-5-(2,4-dioxo-3,4-dihydropyrimidin-1(2H)-yl)-3,4-dihydroxytetrahydrofuran-2-yl]methoxy}(hydroxy)phosphoryl]oxy}(hydroxy)phosphoryl]oxy}-5-hydroxy-6-(hydroxymethyl)tetrahydro-2H-pyran-4-yl]oxy}propanoic acid (CCD ID: EPZ) (formula: C₂₀H₃₁N₃O₁₉P₂).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			44	20	3	19	2		
2	B	1	Total	C	N	O	P	0	0
			44	20	3	19	2		
2	C	1	Total	C	N	O	P	0	0
			44	20	3	19	2		
2	D	1	Total	C	N	O	P	0	0
			44	20	3	19	2		
2	E	1	Total	C	N	O	P	0	0
			44	20	3	19	2		
2	F	1	Total	C	N	O	P	0	0
			44	20	3	19	2		

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	G	1	Total	C	N	O	P	0	0
			44	20	3	19	2		
2	H	1	Total	C	N	O	P	0	0
			44	20	3	19	2		
2	I	1	Total	C	N	O	P	0	0
			44	20	3	19	2		
2	J	1	Total	C	N	O	P	0	0
			44	20	3	19	2		
2	K	1	Total	C	N	O	P	0	0
			44	20	3	19	2		
2	L	1	Total	C	N	O	P	0	0
			44	20	3	19	2		

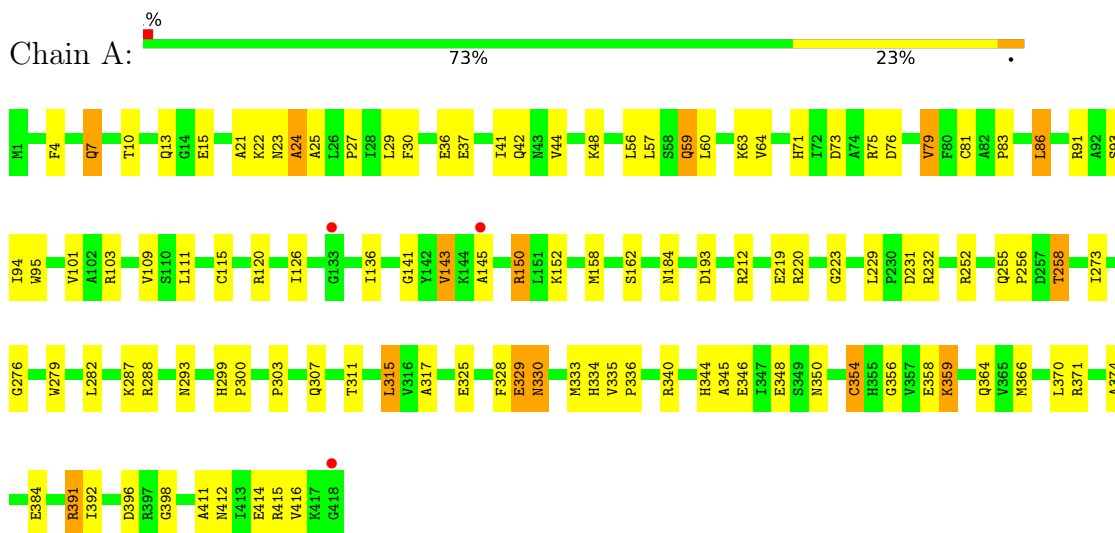
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	76	Total	O	0	0
			76	76		
3	B	58	Total	O	0	0
			58	58		
3	C	105	Total	O	0	0
			105	105		
3	D	104	Total	O	0	0
			104	104		
3	E	86	Total	O	0	0
			86	86		
3	F	63	Total	O	0	0
			63	63		
3	G	47	Total	O	0	0
			47	47		
3	H	73	Total	O	0	0
			73	73		
3	I	42	Total	O	0	0
			42	42		
3	J	45	Total	O	0	0
			45	45		
3	K	60	Total	O	0	0
			60	60		
3	L	32	Total	O	0	0
			32	32		

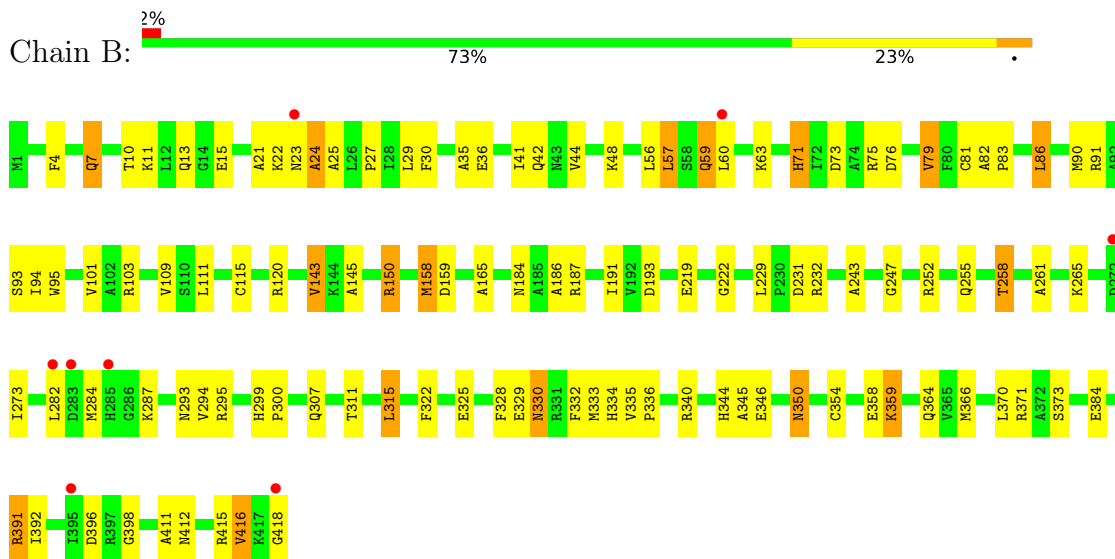
3 Residue-property plots

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.

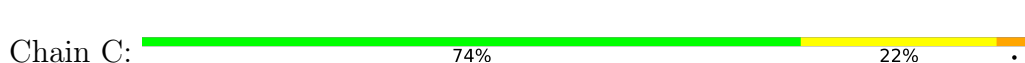
- Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase

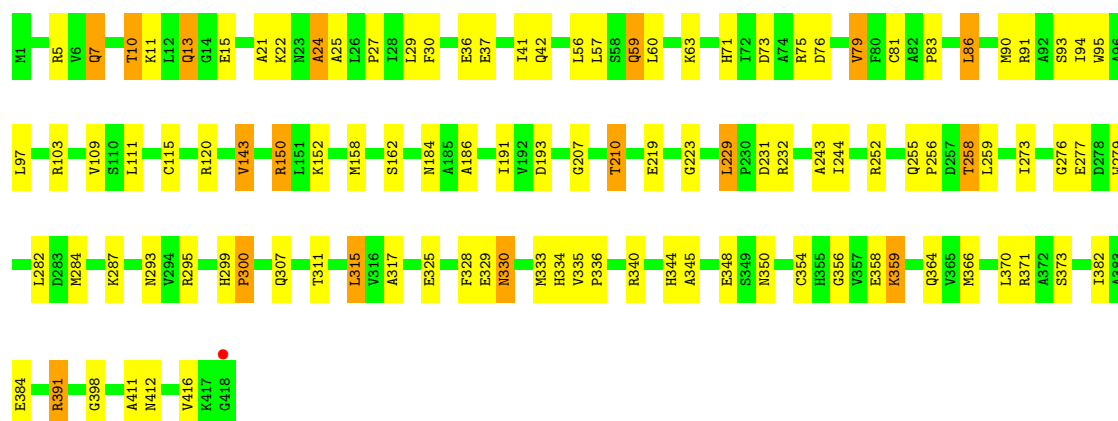


- Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase



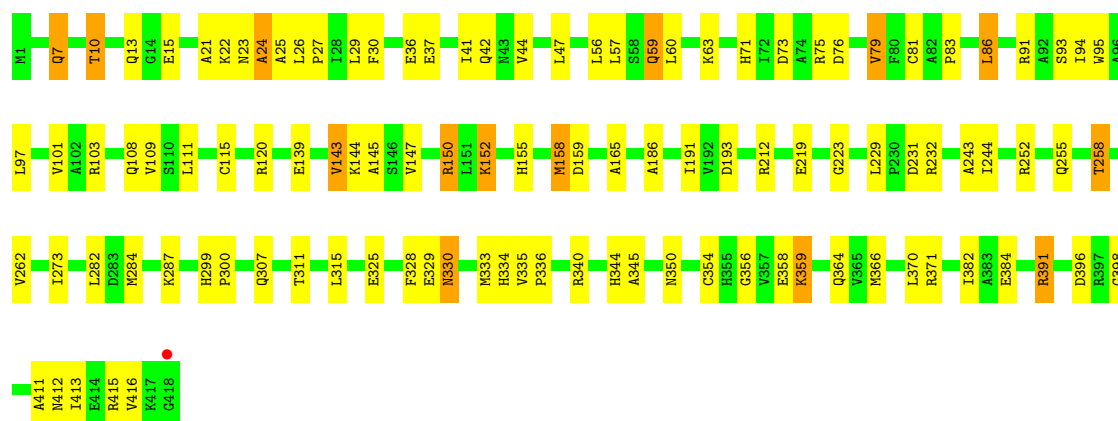
- Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase





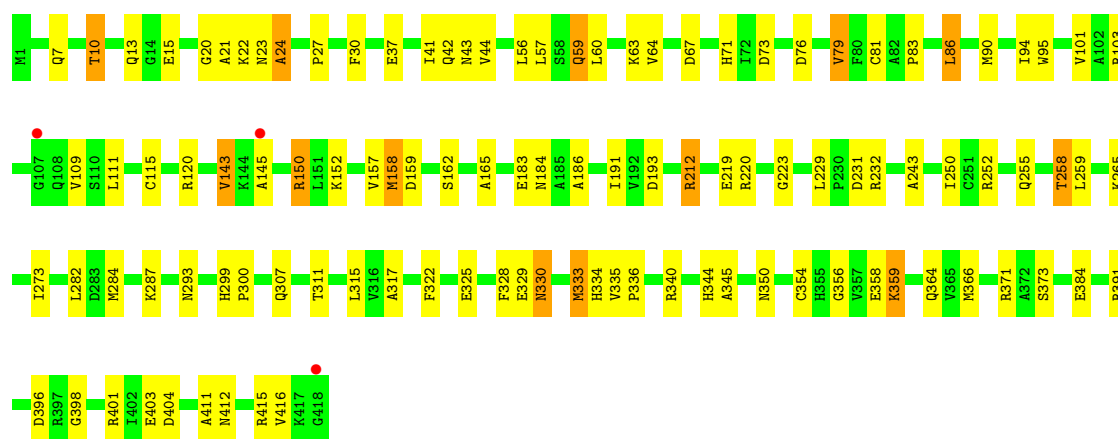
• Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase

Chain D: 74% 23% .



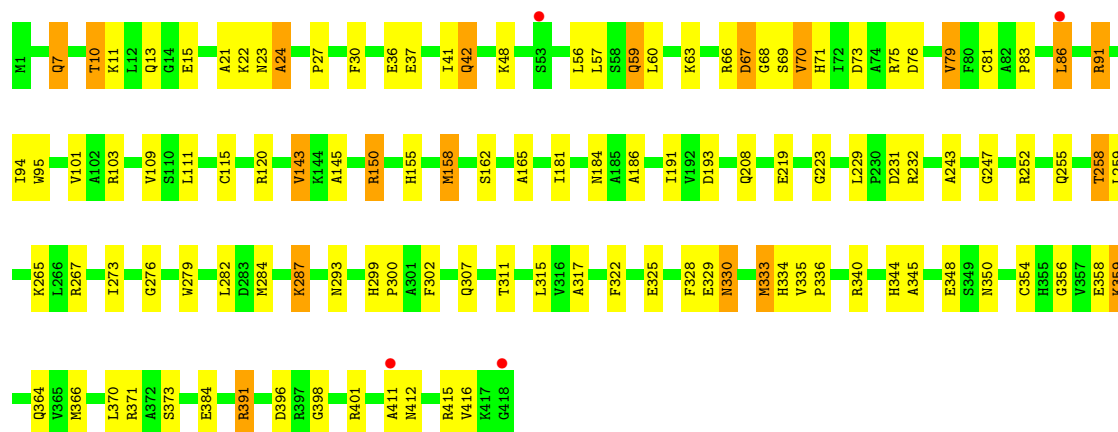
• Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase

Chain E: 74% 23% .

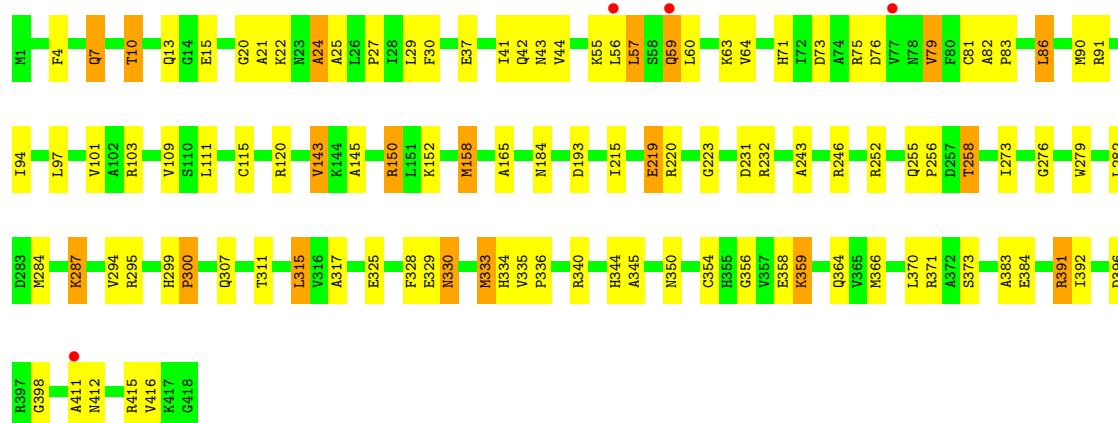
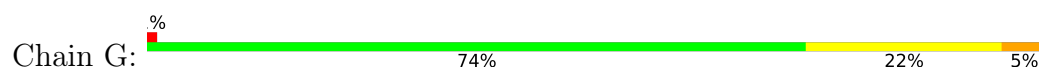


• Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase

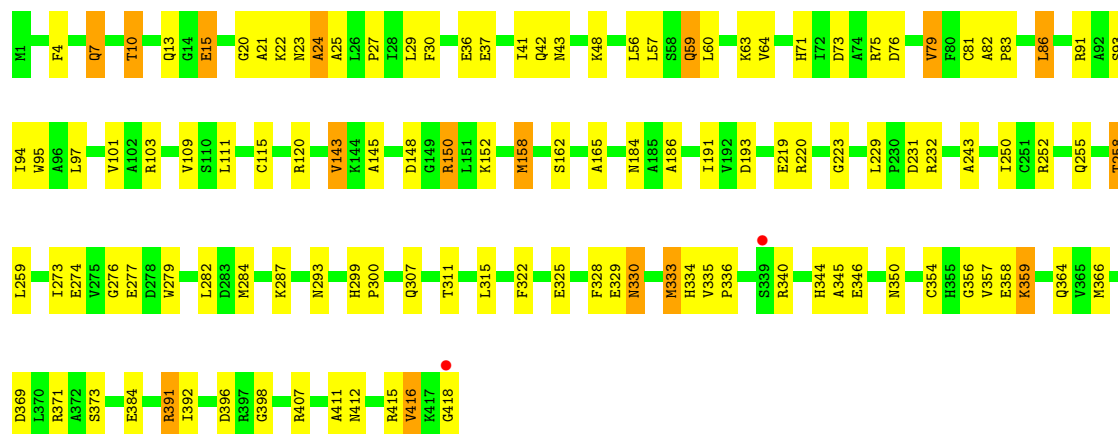
Chain F: 72% 23% 5%



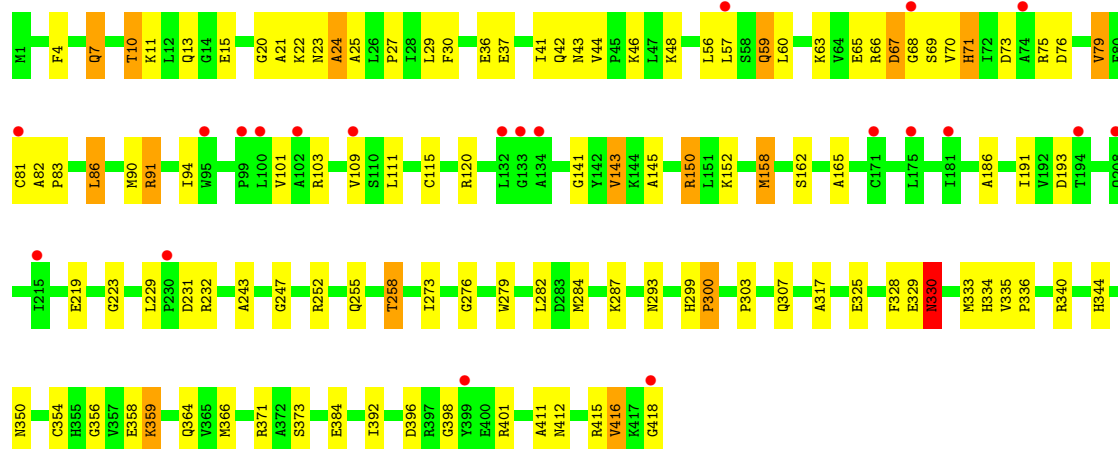
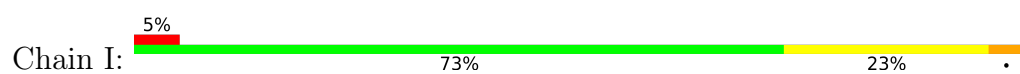
• Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase



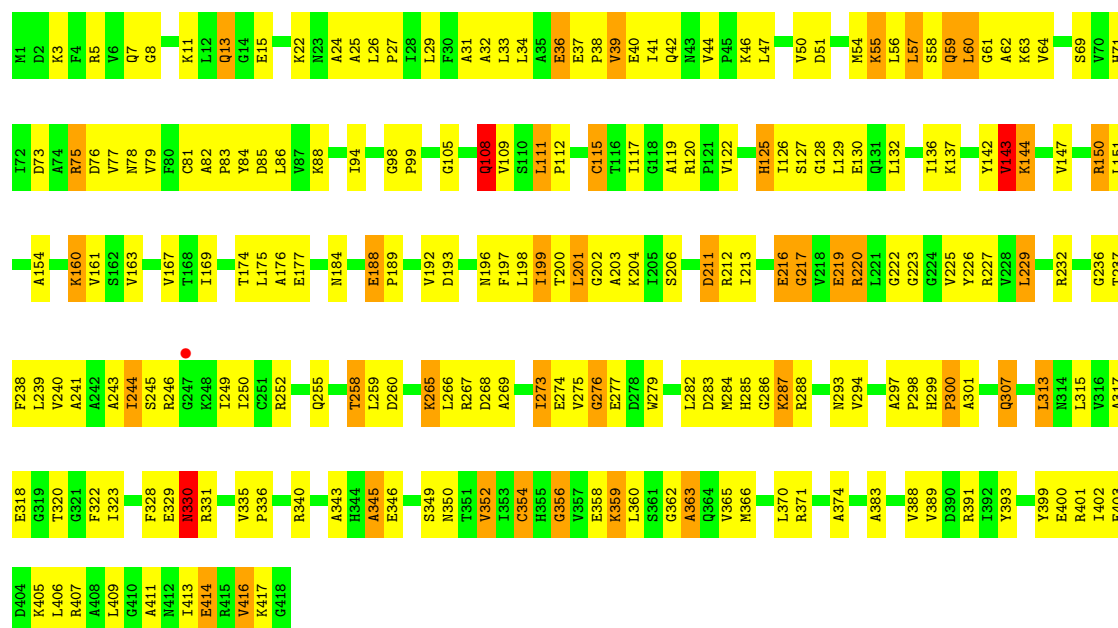
• Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase



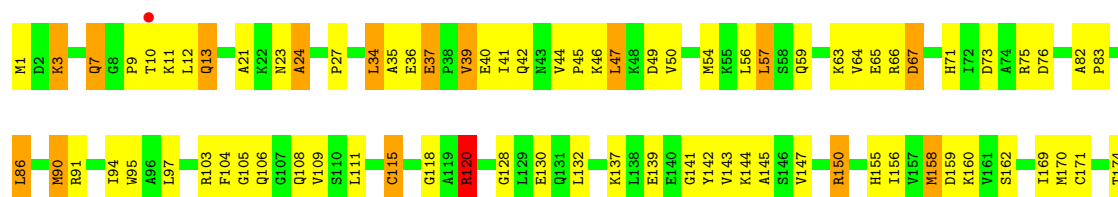
• Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase



• Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase

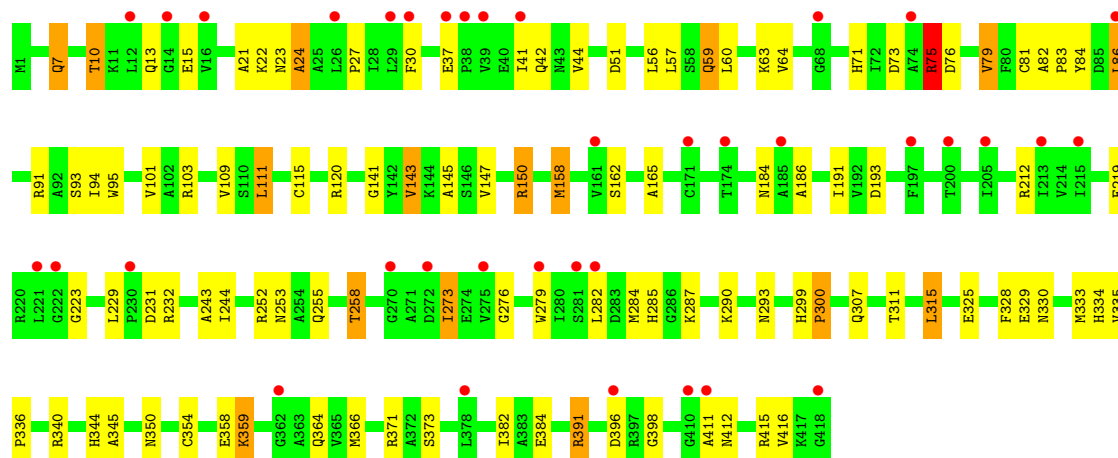
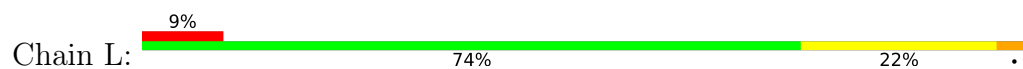


• Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase





• Molecule 1: UDP-N-acetylglucosamine 1-carboxyvinyltransferase



4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	84.51Å 120.91Å 139.73Å 111.52° 104.44° 90.19°	Depositor
Resolution (Å)	47.48 – 2.50 47.48 – 2.50	Depositor EDS
% Data completeness (in resolution range)	97.5 (47.48-2.50) 97.6 (47.48-2.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.49 (at 2.51Å)	Xtriage
Refinement program	CNS 1.3	Depositor
R, R_{free}	0.226 , 0.280 0.226 , 0.280	Depositor DCC
R_{free} test set	8367 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	46.9	Xtriage
Anisotropy	0.141	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 48.7	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	0.94	EDS
Total number of atoms	39035	wwPDB-VP
Average B, all atoms (Å ²)	57.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 9.08% 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: QPA, IAS, EPZ

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	0.75	10/3161 (0.3%)	1.32	33/4278 (0.8%)
1	B	0.74	11/3161 (0.3%)	1.29	30/4278 (0.7%)
1	C	0.82	11/3161 (0.3%)	1.31	30/4278 (0.7%)
1	D	0.83	10/3161 (0.3%)	1.37	37/4278 (0.9%)
1	E	0.77	7/3161 (0.2%)	1.30	30/4278 (0.7%)
1	F	0.78	11/3161 (0.3%)	1.30	31/4278 (0.7%)
1	G	0.74	9/3161 (0.3%)	1.30	35/4278 (0.8%)
1	H	0.78	10/3161 (0.3%)	1.31	32/4278 (0.7%)
1	I	0.73	10/3161 (0.3%)	1.30	28/4278 (0.7%)
1	J	0.91	12/3161 (0.4%)	1.49	52/4278 (1.2%)
1	K	0.97	10/3161 (0.3%)	1.48	53/4278 (1.2%)
1	L	0.68	12/3161 (0.4%)	1.34	35/4278 (0.8%)
All	All	0.80	123/37932 (0.3%)	1.34	426/51336 (0.8%)

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	K	0	2

All (123) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	J	330	ASN	CG-OD1	6.37	1.35	1.23
1	C	350	ASN	CG-OD1	6.17	1.35	1.23
1	H	293	ASN	CG-ND2	-6.11	1.20	1.33
1	F	184	ASN	CG-OD1	6.04	1.35	1.23
1	F	42	GLN	CD-OE1	6.01	1.34	1.23
1	G	350	ASN	CG-OD1	5.91	1.34	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	13	GLN	CD-OE1	5.91	1.34	1.23
1	I	350	ASN	CG-OD1	5.88	1.34	1.23
1	A	7	GLN	CD-OE1	5.79	1.34	1.23
1	E	293	ASN	CG-ND2	-5.79	1.21	1.33
1	K	42	GLN	CD-OE1	5.75	1.34	1.23
1	F	293	ASN	CG-ND2	-5.74	1.21	1.33
1	I	7	GLN	CD-OE1	5.71	1.34	1.23
1	J	108	GLN	CD-OE1	5.71	1.34	1.23
1	J	143	VAL	CA-CB	5.71	1.60	1.53
1	E	13	GLN	CD-OE1	5.70	1.34	1.23
1	D	42	GLN	CD-OE1	5.67	1.34	1.23
1	J	184	ASN	CG-OD1	5.65	1.34	1.23
1	G	7	GLN	CD-OE1	5.64	1.34	1.23
1	I	59	GLN	CD-OE1	5.64	1.34	1.23
1	J	7	GLN	CD-OE1	5.63	1.34	1.23
1	K	7	GLN	CD-OE1	5.62	1.34	1.23
1	H	13	GLN	CD-OE1	5.62	1.34	1.23
1	L	13	GLN	CD-OE1	5.61	1.34	1.23
1	H	59	GLN	CD-OE1	5.61	1.34	1.23
1	I	13	GLN	CD-OE1	5.61	1.34	1.23
1	A	71	HIS	ND1-CE1	5.60	1.38	1.32
1	A	13	GLN	CD-OE1	5.58	1.34	1.23
1	A	42	GLN	CD-OE1	5.57	1.34	1.23
1	K	106	GLN	CD-OE1	5.56	1.34	1.23
1	G	184	ASN	CG-OD1	5.56	1.34	1.23
1	L	42	GLN	CD-OE1	5.56	1.34	1.23
1	L	334	HIS	ND1-CE1	5.56	1.38	1.32
1	A	293	ASN	CG-ND2	-5.54	1.21	1.33
1	I	42	GLN	CD-OE1	5.52	1.34	1.23
1	H	42	GLN	CD-OE1	5.51	1.34	1.23
1	E	71	HIS	ND1-CE1	5.50	1.38	1.32
1	H	7	GLN	CD-OE1	5.50	1.33	1.23
1	K	350	ASN	CG-OD1	5.50	1.33	1.23
1	J	13	GLN	CD-OE1	5.47	1.33	1.23
1	I	330	ASN	CG-OD1	5.47	1.33	1.23
1	D	334	HIS	ND1-CE1	5.46	1.38	1.32
1	H	334	HIS	ND1-CE1	5.46	1.38	1.32
1	F	13	GLN	CD-OE1	5.45	1.33	1.23
1	F	334	HIS	ND1-CE1	5.44	1.38	1.32
1	A	350	ASN	CG-OD1	5.44	1.33	1.23
1	F	59	GLN	CD-OE1	5.44	1.33	1.23
1	I	71	HIS	ND1-CE1	5.44	1.38	1.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	L	344	HIS	ND1-CE1	5.43	1.38	1.32
1	B	13	GLN	CD-OE1	5.43	1.33	1.23
1	K	13	GLN	CD-OE1	5.43	1.33	1.23
1	D	155	HIS	ND1-CE1	5.42	1.38	1.32
1	D	7	GLN	CD-OE1	5.42	1.33	1.23
1	C	71	HIS	ND1-CE1	5.41	1.38	1.32
1	G	71	HIS	ND1-CE1	5.41	1.38	1.32
1	B	184	ASN	CG-OD1	5.41	1.33	1.23
1	D	344	HIS	ND1-CE1	5.39	1.38	1.32
1	L	71	HIS	ND1-CE1	5.38	1.38	1.32
1	H	184	ASN	CG-OD1	5.37	1.33	1.23
1	B	59	GLN	CD-OE1	5.37	1.33	1.23
1	A	59	GLN	CD-OE1	5.36	1.33	1.23
1	K	344	HIS	ND1-CE1	5.36	1.38	1.32
1	A	184	ASN	CG-OD1	5.35	1.33	1.23
1	K	71	HIS	ND1-CE1	5.35	1.37	1.32
1	E	350	ASN	CG-OD1	5.33	1.33	1.23
1	J	71	HIS	ND1-CE1	5.33	1.37	1.32
1	L	75	ARG	CD-NE	-5.33	1.38	1.46
1	B	71	HIS	ND1-CE1	5.33	1.37	1.32
1	C	344	HIS	ND1-CE1	5.32	1.37	1.32
1	H	344	HIS	ND1-CE1	5.31	1.37	1.32
1	D	13	GLN	CD-OE1	5.31	1.33	1.23
1	D	59	GLN	CD-OE1	5.31	1.33	1.23
1	L	184	ASN	CG-OD1	5.30	1.33	1.23
1	C	42	GLN	CD-NE2	-5.29	1.22	1.33
1	E	59	GLN	CD-OE1	5.28	1.33	1.23
1	J	350	ASN	CG-OD1	5.28	1.33	1.23
1	H	71	HIS	ND1-CE1	5.28	1.37	1.32
1	F	7	GLN	CD-OE1	5.28	1.33	1.23
1	L	59	GLN	CD-OE1	5.28	1.33	1.23
1	B	7	GLN	CD-OE1	5.28	1.33	1.23
1	J	293	ASN	CG-OD1	5.28	1.33	1.23
1	C	7	GLN	CD-OE1	5.27	1.33	1.23
1	F	71	HIS	ND1-CE1	5.27	1.37	1.32
1	G	59	GLN	CD-OE1	5.27	1.33	1.23
1	B	334	HIS	ND1-CE1	5.27	1.37	1.32
1	F	350	ASN	CG-OD1	5.27	1.33	1.23
1	D	71	HIS	ND1-CE1	5.26	1.37	1.32
1	I	344	HIS	ND1-CE1	5.25	1.37	1.32
1	I	334	HIS	ND1-CE1	5.25	1.37	1.32
1	B	344	HIS	ND1-CE1	5.25	1.37	1.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	K	293	ASN	CG-OD1	5.25	1.33	1.23
1	L	293	ASN	CG-OD1	5.24	1.33	1.23
1	F	293	ASN	CG-OD1	5.23	1.33	1.23
1	J	59	GLN	CD-OE1	5.23	1.33	1.23
1	L	350	ASN	CG-OD1	5.22	1.33	1.23
1	B	350	ASN	CG-OD1	5.22	1.33	1.23
1	K	285	HIS	ND1-CE1	5.20	1.37	1.32
1	D	350	ASN	CG-ND2	-5.19	1.22	1.33
1	A	334	HIS	ND1-CE1	5.19	1.37	1.32
1	J	78	ASN	CG-OD1	5.18	1.33	1.23
1	I	293	ASN	CG-OD1	5.17	1.33	1.23
1	H	350	ASN	CG-OD1	5.16	1.33	1.23
1	G	42	GLN	CD-OE1	5.16	1.33	1.23
1	C	184	ASN	CG-OD1	5.16	1.33	1.23
1	E	42	GLN	CD-OE1	5.15	1.33	1.23
1	C	59	GLN	CD-OE1	5.13	1.33	1.23
1	K	106	GLN	CD-NE2	-5.13	1.22	1.33
1	L	293	ASN	CG-ND2	-5.12	1.22	1.33
1	B	42	GLN	CD-NE2	-5.12	1.22	1.33
1	G	42	GLN	CD-NE2	-5.12	1.22	1.33
1	L	7	GLN	CD-OE1	5.10	1.33	1.23
1	B	42	GLN	CD-OE1	5.10	1.33	1.23
1	D	120	ARG	CD-NE	-5.09	1.39	1.46
1	C	293	ASN	CG-ND2	-5.08	1.22	1.33
1	A	293	ASN	CG-OD1	5.08	1.33	1.23
1	C	184	ASN	CG-ND2	-5.07	1.22	1.33
1	E	184	ASN	CG-OD1	5.07	1.33	1.23
1	F	344	HIS	ND1-CE1	5.04	1.37	1.32
1	B	293	ASN	CG-OD1	5.03	1.33	1.23
1	J	125	HIS	ND1-CE1	5.03	1.37	1.32
1	G	334	HIS	ND1-CE1	5.02	1.37	1.32
1	C	334	HIS	ND1-CE1	5.02	1.37	1.32
1	G	13	GLN	CD-OE1	5.01	1.33	1.23

All (426) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	L	75	ARG	NE-CZ-NH2	11.97	129.97	119.20
1	L	212	ARG	NE-CZ-NH2	11.63	129.67	119.20
1	L	75	ARG	NE-CZ-NH1	-11.39	110.11	121.50
1	D	212	ARG	NE-CZ-NH2	11.38	129.44	119.20
1	D	120	ARG	NE-CZ-NH1	-11.27	110.23	121.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	120	ARG	NE-CZ-NH2	11.26	129.33	119.20
1	A	212	ARG	NE-CZ-NH2	11.16	129.25	119.20
1	D	212	ARG	NE-CZ-NH1	-11.14	110.36	121.50
1	K	417	LYS	N-CA-C	10.94	125.14	111.69
1	L	212	ARG	NE-CZ-NH1	-10.77	110.73	121.50
1	A	212	ARG	NE-CZ-NH1	-10.41	111.09	121.50
1	K	158	MET	N-CA-C	9.91	124.49	108.63
1	K	82	ALA	CA-C-N	9.31	129.37	119.78
1	K	82	ALA	C-N-CA	9.31	129.37	119.78
1	C	158	MET	N-CA-C	9.27	123.43	109.25
1	J	359	LYS	N-CA-C	9.19	123.41	108.99
1	L	212	ARG	CD-NE-CZ	9.06	137.08	124.40
1	I	158	MET	N-CA-C	8.94	122.93	109.25
1	J	75	ARG	N-CA-C	8.94	121.99	111.71
1	A	212	ARG	CD-NE-CZ	8.80	136.73	124.40
1	J	330	ASN	N-CA-C	8.80	122.30	112.97
1	D	212	ARG	CD-NE-CZ	8.66	136.53	124.40
1	A	158	MET	N-CA-C	8.60	122.41	109.25
1	L	158	MET	N-CA-C	8.56	122.34	109.25
1	F	158	MET	N-CA-C	8.55	122.33	109.25
1	E	158	MET	N-CA-C	8.48	122.23	109.25
1	H	307	GLN	N-CA-C	8.40	120.06	111.07
1	B	158	MET	N-CA-C	8.38	122.08	109.25
1	G	158	MET	N-CA-C	8.36	122.04	109.25
1	D	158	MET	N-CA-C	8.30	121.96	109.25
1	E	24	ALA	N-CA-C	-8.07	103.38	113.55
1	J	219	GLU	N-CA-C	8.00	122.14	112.38
1	G	24	ALA	N-CA-C	-7.97	103.51	113.55
1	H	273	ILE	N-CA-C	7.95	119.30	108.17
1	F	24	ALA	N-CA-C	-7.94	103.54	113.55
1	J	366	MET	N-CA-C	7.83	121.28	108.52
1	H	81	CYS	N-CA-C	7.82	121.17	108.34
1	H	158	MET	N-CA-C	7.80	121.18	109.25
1	G	150	ARG	N-CA-C	7.76	122.17	110.14
1	A	15	GLU	N-CA-C	7.76	121.54	109.52
1	D	307	GLN	N-CA-C	7.68	119.29	111.07
1	H	150	ARG	N-CA-C	7.66	122.02	110.14
1	A	150	ARG	N-CA-C	7.62	121.95	110.14
1	E	307	GLN	N-CA-C	7.62	120.26	111.11
1	L	150	ARG	N-CA-C	7.62	121.95	110.14
1	G	307	GLN	N-CA-C	7.53	120.14	111.11
1	C	81	CYS	N-CA-C	7.51	120.66	108.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	15	GLU	N-CA-C	7.50	121.14	109.52
1	A	24	ALA	N-CA-C	-7.49	104.11	113.55
1	K	150	ARG	N-CA-C	7.47	120.21	110.43
1	I	307	GLN	N-CA-C	7.45	120.05	111.11
1	L	24	ALA	N-CA-C	-7.43	104.18	113.55
1	J	15	GLU	N-CA-C	7.41	119.71	109.18
1	L	75	ARG	CD-NE-CZ	7.34	134.67	124.40
1	L	81	CYS	N-CA-C	7.33	120.36	108.34
1	B	150	ARG	N-CA-C	7.29	121.44	110.14
1	B	273	ILE	N-CA-C	7.28	118.30	108.11
1	H	24	ALA	N-CA-C	-7.28	104.38	113.55
1	B	81	CYS	N-CA-C	7.26	120.25	108.34
1	C	307	GLN	N-CA-C	7.25	119.82	111.11
1	B	24	ALA	N-CA-C	-7.25	104.41	113.55
1	D	359	LYS	N-CA-C	7.25	120.38	108.99
1	E	273	ILE	N-CA-C	7.25	118.27	108.11
1	E	15	GLU	N-CA-C	7.25	120.76	109.52
1	F	81	CYS	N-CA-C	7.25	120.23	108.34
1	L	307	GLN	N-CA-C	7.21	119.77	111.11
1	E	81	CYS	N-CA-C	7.20	120.14	108.34
1	K	232	ARG	N-CA-C	7.19	119.12	111.28
1	B	307	GLN	N-CA-C	7.18	119.72	111.11
1	C	24	ALA	N-CA-C	-7.15	104.54	113.55
1	A	307	GLN	N-CA-C	7.12	119.66	111.11
1	C	366	MET	N-CA-C	7.12	120.01	108.41
1	L	359	LYS	N-CA-C	7.12	120.16	108.99
1	D	24	ALA	N-CA-C	-7.11	104.59	113.55
1	H	359	LYS	N-CA-C	7.08	120.10	108.99
1	J	201	LEU	N-CA-C	-7.07	104.54	113.02
1	E	354	CYS	N-CA-C	7.05	120.73	109.24
1	K	90	MET	N-CA-C	7.04	119.87	107.61
1	D	120	ARG	CD-NE-CZ	7.04	134.26	124.40
1	G	81	CYS	N-CA-C	7.02	119.86	108.34
1	B	15	GLU	N-CA-C	7.01	120.39	109.52
1	I	15	GLU	N-CA-C	7.01	120.39	109.52
1	E	150	ARG	N-CA-C	7.00	121.00	110.14
1	I	366	MET	N-CA-C	7.00	119.83	108.41
1	F	15	GLU	N-CA-C	7.00	120.38	109.52
1	I	150	ARG	N-CA-C	6.99	120.98	110.14
1	F	150	ARG	N-CA-C	6.99	120.98	110.14
1	B	366	MET	N-CA-C	6.98	119.79	108.41
1	I	81	CYS	N-CA-C	6.98	119.78	108.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	307	GLN	N-CA-C	6.97	119.53	111.02
1	I	24	ALA	N-CA-C	-6.96	104.78	113.55
1	A	76	ASP	N-CA-C	6.95	120.34	112.97
1	C	150	ARG	N-CA-C	6.94	120.90	110.14
1	E	359	LYS	N-CA-C	6.92	119.86	108.99
1	J	13	GLN	N-CA-C	6.91	119.05	108.42
1	J	150	ARG	N-CA-C	6.89	120.91	109.95
1	G	15	GLU	N-CA-C	6.89	120.20	109.52
1	A	81	CYS	N-CA-C	6.89	119.63	108.34
1	J	144	LYS	N-CA-C	6.88	120.17	107.99
1	G	366	MET	N-CA-C	6.86	119.59	108.41
1	B	354	CYS	N-CA-C	6.84	120.40	109.24
1	D	150	ARG	N-CA-C	6.82	120.70	110.14
1	K	44	VAL	CA-C-N	-6.81	113.64	120.31
1	K	44	VAL	C-N-CA	-6.81	113.64	120.31
1	K	385	GLY	N-CA-C	6.80	119.18	110.20
1	L	15	GLU	N-CA-C	6.79	120.05	109.52
1	I	273	ILE	N-CA-C	6.77	118.22	108.48
1	K	285	HIS	CB-CG-CD2	-6.76	122.41	131.20
1	J	287	LYS	N-CA-C	6.76	120.52	110.52
1	J	417	LYS	N-CA-C	6.75	121.90	112.72
1	A	366	MET	N-CA-C	6.75	119.41	108.41
1	C	15	GLU	N-CA-C	6.71	119.93	109.52
1	G	359	LYS	N-CA-C	6.71	119.36	108.76
1	J	81	CYS	N-CA-C	6.70	120.09	108.76
1	G	273	ILE	N-CA-C	6.70	118.24	108.53
1	I	344	HIS	CB-CG-CD2	-6.69	122.51	131.20
1	J	245	SER	N-CA-C	6.68	122.40	113.72
1	J	125	HIS	CB-CG-CD2	-6.66	122.55	131.20
1	K	311	THR	N-CA-C	-6.65	104.03	111.28
1	A	344	HIS	CB-CG-CD2	-6.64	122.56	131.20
1	C	71	HIS	CB-CG-CD2	-6.64	122.56	131.20
1	E	334	HIS	CB-CG-CD2	-6.64	122.57	131.20
1	I	334	HIS	CB-CG-CD2	-6.62	122.59	131.20
1	D	155	HIS	CB-CG-CD2	-6.62	122.60	131.20
1	K	24	ALA	N-CA-C	-6.62	104.85	113.12
1	L	334	HIS	CB-CG-CD2	-6.60	122.62	131.20
1	L	354	CYS	N-CA-C	6.59	119.99	109.24
1	C	334	HIS	CB-CG-CD2	-6.59	122.63	131.20
1	H	344	HIS	CB-CG-CD2	-6.58	122.65	131.20
1	A	273	ILE	N-CA-C	6.57	117.31	108.11
1	I	359	LYS	N-CA-C	6.57	119.31	108.99

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	J	362	GLY	N-CA-C	6.57	121.95	111.64
1	D	273	ILE	N-CA-C	6.57	117.94	108.48
1	B	334	HIS	CB-CG-CD2	-6.56	122.67	131.20
1	F	71	HIS	CB-CG-CD2	-6.54	122.70	131.20
1	H	71	HIS	CB-CG-CD2	-6.54	122.70	131.20
1	A	71	HIS	CB-CG-CD2	-6.53	122.71	131.20
1	J	71	HIS	CB-CG-CD2	-6.53	122.71	131.20
1	D	334	HIS	CB-CG-CD2	-6.53	122.72	131.20
1	F	359	LYS	N-CA-C	6.52	119.22	108.99
1	I	354	CYS	N-CA-C	6.52	119.87	109.24
1	L	71	HIS	CB-CG-CD2	-6.50	122.74	131.20
1	G	344	HIS	CB-CG-CD2	-6.50	122.75	131.20
1	L	273	ILE	N-CA-C	6.50	117.84	108.48
1	H	334	HIS	CB-CG-CD2	-6.49	122.76	131.20
1	C	354	CYS	N-CA-C	6.48	119.81	109.24
1	K	71	HIS	CB-CG-CD2	-6.48	122.77	131.20
1	D	354	CYS	N-CA-C	6.47	119.79	109.24
1	G	334	HIS	CB-CG-CD2	-6.47	122.78	131.20
1	J	154	ALA	N-CA-C	6.46	118.36	109.18
1	F	334	HIS	CB-CG-CD2	-6.46	122.81	131.20
1	J	192	VAL	N-CA-C	-6.46	104.22	110.42
1	D	71	HIS	CB-CG-CD2	-6.45	122.81	131.20
1	F	344	HIS	CB-CG-CD2	-6.45	122.81	131.20
1	I	71	HIS	CB-CG-CD2	-6.45	122.81	131.20
1	E	71	HIS	CB-CG-CD2	-6.44	122.83	131.20
1	J	322	PHE	N-CA-C	6.43	120.02	109.85
1	B	359	LYS	N-CA-C	6.42	119.07	108.99
1	B	71	HIS	CB-CG-CD2	-6.42	122.86	131.20
1	G	71	HIS	CB-CG-CD2	-6.42	122.86	131.20
1	C	344	HIS	CB-CG-CD2	-6.42	122.86	131.20
1	K	344	HIS	CB-CG-CD2	-6.41	122.87	131.20
1	L	366	MET	N-CA-C	6.40	118.84	108.41
1	A	334	HIS	CB-CG-CD2	-6.39	122.89	131.20
1	E	344	HIS	CB-CG-CD2	-6.36	122.93	131.20
1	H	366	MET	N-CA-C	6.36	118.78	108.41
1	J	374	ALA	N-CA-C	-6.35	104.40	111.71
1	A	359	LYS	N-CA-C	6.35	118.96	108.99
1	E	311	THR	N-CA-C	-6.33	104.46	111.36
1	B	344	HIS	CB-CG-CD2	-6.33	122.98	131.20
1	E	366	MET	N-CA-C	6.33	119.21	108.90
1	D	81	CYS	N-CA-C	6.32	119.45	108.76
1	D	287	LYS	N-CA-C	6.32	119.83	110.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	J	199	ILE	N-CA-C	-6.32	104.59	110.53
1	A	287	LYS	N-CA-C	6.28	119.77	110.48
1	D	366	MET	N-CA-C	6.28	118.65	108.41
1	I	76	ASP	N-CA-C	6.26	119.61	112.97
1	L	344	HIS	CB-CG-CD2	-6.26	123.06	131.20
1	H	287	LYS	N-CA-C	6.25	119.31	110.50
1	C	273	ILE	N-CA-C	6.25	117.48	108.48
1	D	344	HIS	CB-CG-CD2	-6.24	123.08	131.20
1	K	414	GLU	N-CA-C	6.23	119.72	108.69
1	C	359	LYS	N-CA-C	6.23	118.77	108.99
1	K	76	ASP	N-CA-C	6.19	120.44	112.26
1	L	76	ASP	N-CA-C	6.19	119.53	112.97
1	H	354	CYS	N-CA-C	6.19	119.33	109.24
1	D	356	GLY	N-CA-C	6.19	118.60	111.36
1	K	83	PRO	N-CA-C	6.19	121.05	111.21
1	D	391	ARG	N-CA-C	6.18	120.08	111.74
1	K	377	VAL	N-CA-C	-6.17	104.32	110.62
1	C	76	ASP	N-CA-C	6.15	119.48	112.97
1	D	76	ASP	N-CA-C	6.15	119.48	112.97
1	F	366	MET	N-CA-C	6.12	118.88	108.90
1	K	162	SER	N-CA-C	6.12	118.92	108.02
1	G	311	THR	N-CA-C	-6.10	104.71	111.36
1	K	403	GLU	N-CA-C	6.10	118.71	111.33
1	F	354	CYS	N-CA-C	6.10	119.76	109.76
1	G	76	ASP	N-CA-C	6.09	119.43	112.97
1	G	333	MET	N-CA-C	6.09	118.70	111.33
1	G	373	SER	N-CA-C	6.08	119.80	112.38
1	K	65	GLU	N-CA-C	6.04	118.23	108.32
1	F	273	ILE	N-CA-C	6.03	117.17	108.48
1	A	354	CYS	N-CA-C	6.01	119.04	109.24
1	H	76	ASP	N-CA-C	6.00	119.33	112.97
1	G	315	LEU	N-CA-C	5.99	118.59	111.71
1	G	354	CYS	N-CA-C	5.96	119.54	109.76
1	K	130	GLU	N-CA-C	-5.95	104.71	111.07
1	H	97	LEU	N-CA-C	5.93	118.26	111.02
1	E	76	ASP	N-CA-C	5.93	119.25	112.97
1	K	217	GLY	N-CA-C	5.92	118.73	111.93
1	C	391	ARG	N-CA-C	5.90	119.71	111.74
1	E	287	LYS	N-CA-C	5.90	118.82	110.50
1	C	97	LEU	N-CA-C	5.89	118.21	111.02
1	J	345	ALA	N-CA-C	5.89	119.08	109.06
1	L	391	ARG	N-CA-C	5.88	119.51	111.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	356	GLY	N-CA-C	5.88	118.24	111.36
1	K	391	ARG	N-CA-C	5.88	123.32	110.80
1	K	413	ILE	N-CA-C	5.88	117.05	108.53
1	L	287	LYS	N-CA-C	5.88	119.18	110.48
1	K	255	GLN	CA-C-N	5.88	127.18	119.84
1	K	255	GLN	C-N-CA	5.88	127.18	119.84
1	G	90	MET	N-CA-C	5.87	117.55	107.28
1	A	391	ARG	N-CA-C	5.86	119.65	111.74
1	K	13	GLN	N-CA-C	5.85	119.01	109.06
1	K	285	HIS	CB-CG-ND1	5.83	131.45	122.70
1	B	103	ARG	N-CA-C	5.83	120.55	112.45
1	J	363	ALA	N-CA-C	5.82	116.23	108.38
1	D	97	LEU	N-CA-C	5.81	118.11	111.02
1	J	354	CYS	N-CA-C	5.81	119.29	109.76
1	K	273	ILE	N-CA-C	5.80	116.29	108.17
1	J	243	ALA	N-CA-C	5.79	117.59	111.28
1	B	76	ASP	N-CA-C	5.79	119.10	112.97
1	D	155	HIS	CB-CG-ND1	5.78	131.37	122.70
1	J	125	HIS	CB-CG-ND1	5.77	131.35	122.70
1	J	217	GLY	N-CA-C	5.77	119.10	111.03
1	I	90	MET	N-CA-C	5.76	117.37	107.28
1	F	333	MET	N-CA-C	5.76	119.12	111.75
1	D	311	THR	N-CA-C	-5.75	105.09	111.36
1	C	71	HIS	CB-CG-ND1	5.74	131.31	122.70
1	C	287	LYS	N-CA-C	5.72	118.94	110.48
1	G	91	ARG	N-CA-C	5.72	119.77	112.34
1	A	329	GLU	N-CA-C	5.70	122.95	110.80
1	G	97	LEU	N-CA-C	5.69	117.97	111.02
1	G	391	ARG	N-CA-C	5.69	119.42	111.74
1	J	307	GLN	N-CA-C	5.68	120.69	111.37
1	A	71	HIS	CB-CG-ND1	5.68	131.22	122.70
1	K	71	HIS	CB-CG-ND1	5.68	131.22	122.70
1	F	71	HIS	CB-CG-ND1	5.66	131.20	122.70
1	G	83	PRO	N-CA-C	5.66	120.22	111.21
1	K	40	GLU	N-CA-C	5.66	117.93	108.02
1	C	344	HIS	CB-CG-ND1	5.66	131.19	122.70
1	E	373	SER	N-CA-C	5.65	119.27	112.38
1	G	344	HIS	CB-CG-ND1	5.65	131.18	122.70
1	B	315	LEU	N-CA-C	5.65	118.20	111.71
1	H	71	HIS	CB-CG-ND1	5.64	131.17	122.70
1	L	71	HIS	CB-CG-ND1	5.64	131.16	122.70
1	I	334	HIS	CB-CG-ND1	5.64	131.16	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	I	344	HIS	CB-CG-ND1	5.63	131.15	122.70
1	C	103	ARG	N-CA-C	5.63	120.15	112.04
1	D	71	HIS	CB-CG-ND1	5.63	131.14	122.70
1	J	71	HIS	CB-CG-ND1	5.63	131.14	122.70
1	E	103	ARG	N-CA-C	5.62	120.14	113.12
1	F	311	THR	N-CA-C	-5.61	105.16	111.28
1	B	83	PRO	N-CA-C	5.61	120.13	111.21
1	B	71	HIS	CB-CG-ND1	5.61	131.11	122.70
1	I	71	HIS	CB-CG-ND1	5.61	131.11	122.70
1	F	83	PRO	N-CA-C	5.60	120.03	111.34
1	I	287	LYS	N-CA-C	5.60	118.77	110.48
1	K	315	LEU	N-CA-C	5.60	119.22	112.38
1	A	64	VAL	N-CA-C	5.60	116.55	108.48
1	E	71	HIS	CB-CG-ND1	5.60	131.10	122.70
1	H	103	ARG	N-CA-C	5.60	120.12	113.12
1	L	334	HIS	CB-CG-ND1	5.60	131.10	122.70
1	B	391	ARG	N-CA-C	5.59	119.15	111.54
1	K	345	ALA	N-CA-C	5.59	117.69	109.24
1	G	71	HIS	CB-CG-ND1	5.59	131.08	122.70
1	D	83	PRO	N-CA-C	5.58	120.09	111.21
1	E	334	HIS	CB-CG-ND1	5.58	131.07	122.70
1	K	287	LYS	N-CA-C	5.58	119.34	109.96
1	F	344	HIS	CB-CG-ND1	5.57	131.06	122.70
1	A	344	HIS	CB-CG-ND1	5.57	131.06	122.70
1	H	391	ARG	N-CA-C	5.57	119.08	111.39
1	C	373	SER	N-CA-C	5.57	119.17	112.38
1	I	373	SER	N-CA-C	5.57	119.17	112.38
1	H	344	HIS	CB-CG-ND1	5.56	131.04	122.70
1	L	83	PRO	N-CA-C	5.56	120.05	111.21
1	I	83	PRO	N-CA-C	5.56	120.04	111.21
1	I	48	LYS	N-CA-C	5.55	118.05	111.33
1	F	287	LYS	N-CA-C	5.55	118.70	110.48
1	J	36	GLU	N-CA-C	-5.55	106.58	113.19
1	J	129	LEU	N-CA-C	5.55	117.01	111.07
1	B	334	HIS	CB-CG-ND1	5.55	131.02	122.70
1	K	359	LYS	N-CA-C	5.54	117.69	108.99
1	F	334	HIS	CB-CG-ND1	5.54	131.01	122.70
1	H	311	THR	N-CA-C	-5.54	105.33	111.36
1	E	162	SER	N-CA-C	5.53	117.37	107.80
1	C	334	HIS	CB-CG-ND1	5.53	131.00	122.70
1	F	373	SER	N-CA-C	5.52	119.11	112.38
1	J	31	ALA	N-CA-C	-5.52	105.42	111.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	329	GLU	N-CA-C	5.51	122.55	110.80
1	E	64	VAL	N-CA-C	5.51	116.41	108.48
1	K	344	HIS	CB-CG-ND1	5.51	130.96	122.70
1	E	344	HIS	CB-CG-ND1	5.50	130.96	122.70
1	J	229	LEU	N-CA-C	5.50	118.12	110.20
1	L	103	ARG	N-CA-C	5.50	120.00	113.12
1	I	329	GLU	N-CA-C	5.50	122.51	110.80
1	J	237	THR	N-CA-C	-5.50	105.37	111.36
1	F	391	ARG	N-CA-C	5.50	118.97	111.39
1	J	273	ILE	N-CA-C	5.50	117.31	108.85
1	F	76	ASP	N-CA-C	5.49	118.79	112.97
1	C	329	GLU	N-CA-C	5.49	122.48	110.80
1	F	162	SER	N-CA-C	5.48	117.29	107.80
1	J	329	GLU	N-CA-C	5.48	120.42	111.37
1	K	307	GLN	N-CA-C	5.48	120.42	111.37
1	B	311	THR	N-CA-C	-5.48	105.39	111.36
1	L	344	HIS	CB-CG-ND1	5.47	130.91	122.70
1	J	297	ALA	CA-C-N	-5.47	114.07	119.92
1	J	297	ALA	C-N-CA	-5.47	114.07	119.92
1	B	373	SER	N-CA-C	5.46	119.05	112.38
1	K	276	GLY	N-CA-C	-5.46	104.81	112.13
1	D	344	HIS	CB-CG-ND1	5.46	130.88	122.70
1	H	83	PRO	N-CA-C	5.45	120.05	111.38
1	B	344	HIS	CB-CG-ND1	5.45	130.87	122.70
1	D	334	HIS	CB-CG-ND1	5.45	130.87	122.70
1	G	287	LYS	N-CA-C	5.45	118.54	110.48
1	J	82	ALA	N-CA-C	-5.45	98.88	108.69
1	H	334	HIS	CB-CG-ND1	5.44	130.87	122.70
1	J	130	GLU	N-CA-C	-5.43	105.36	111.28
1	H	64	VAL	N-CA-C	5.41	116.53	108.46
1	G	220	ARG	N-CA-C	5.41	117.07	108.79
1	C	90	MET	N-CA-C	5.41	116.74	107.28
1	G	103	ARG	N-CA-C	5.40	119.82	112.04
1	B	287	LYS	N-CA-C	5.39	118.46	110.48
1	G	370	LEU	N-CA-C	5.38	119.34	112.34
1	F	329	GLU	N-CA-C	5.38	122.26	110.80
1	K	373	SER	N-CA-C	5.38	118.94	112.38
1	A	311	THR	N-CA-C	-5.38	105.50	111.36
1	A	334	HIS	CB-CG-ND1	5.38	130.76	122.70
1	J	83	PRO	N-CA-C	5.37	119.92	111.38
1	E	333	MET	N-CA-C	5.37	118.62	111.75
1	G	82	ALA	CA-C-N	5.37	125.31	119.78

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	82	ALA	C-N-CA	5.37	125.31	119.78
1	G	334	HIS	CB-CG-ND1	5.36	130.75	122.70
1	I	91	ARG	N-CA-C	5.35	119.30	112.34
1	G	64	VAL	N-CA-C	5.35	116.18	108.48
1	L	311	THR	N-CA-C	-5.35	105.53	111.36
1	D	413	ILE	N-CA-C	5.35	116.42	108.46
1	D	329	GLU	N-CA-C	5.33	122.16	110.80
1	L	162	SER	N-CA-C	5.33	117.02	107.80
1	K	270	GLY	N-CA-C	5.32	122.09	114.64
1	L	64	VAL	N-CA-C	5.32	116.14	108.48
1	B	91	ARG	N-CA-C	5.32	119.26	112.34
1	L	82	ALA	CA-C-N	5.32	125.25	119.78
1	L	82	ALA	C-N-CA	5.32	125.25	119.78
1	K	288	ARG	N-CA-C	-5.31	103.35	109.93
1	F	91	ARG	N-CA-C	5.30	119.23	112.34
1	A	103	ARG	N-CA-C	5.30	119.72	112.68
1	K	91	ARG	N-CA-C	5.29	117.73	111.33
1	G	219	GLU	N-CA-C	5.28	117.95	111.82
1	I	162	SER	N-CA-C	5.28	116.93	107.80
1	J	212	ARG	N-CA-C	5.28	117.33	107.99
1	C	311	THR	N-CA-C	-5.27	105.61	111.36
1	D	103	ARG	N-CA-C	5.27	119.71	113.12
1	D	370	LEU	N-CA-C	5.27	119.19	112.34
1	F	370	LEU	N-CA-C	5.25	118.47	111.75
1	K	347	ILE	N-CA-C	5.25	114.35	106.42
1	C	315	LEU	N-CA-C	5.25	118.78	112.38
1	K	23	ASN	N-CA-C	5.25	119.17	112.87
1	H	329	GLU	N-CA-C	5.24	121.96	110.80
1	I	103	ARG	N-CA-C	5.24	119.67	113.12
1	B	329	GLU	N-CA-C	5.24	121.95	110.80
1	L	329	GLU	N-CA-C	5.24	121.95	110.80
1	K	156	ILE	N-CA-C	5.23	115.38	107.80
1	E	23	ASN	N-CA-C	5.23	119.41	113.19
1	J	127	SER	N-CA-C	5.22	116.65	111.07
1	J	227	ARG	N-CA-C	5.21	117.23	109.25
1	K	272	ASP	CB-CA-C	5.21	119.29	110.79
1	K	369	ASP	CA-C-N	5.21	127.26	120.28
1	K	369	ASP	C-N-CA	5.21	127.26	120.28
1	E	329	GLU	N-CA-C	5.20	121.86	110.80
1	L	373	SER	N-CA-C	5.20	118.72	112.38
1	H	220	ARG	N-CA-C	5.19	116.73	108.79
1	H	373	SER	N-CA-C	5.19	118.71	112.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	48	LYS	N-CA-C	5.19	117.61	111.33
1	J	346	GLU	CB-CA-C	5.18	119.26	109.37
1	F	103	ARG	N-CA-C	5.18	119.57	112.68
1	B	82	ALA	CA-C-N	5.17	125.11	119.78
1	B	82	ALA	C-N-CA	5.17	125.11	119.78
1	B	90	MET	N-CA-C	5.16	116.30	107.28
1	J	356	GLY	N-CA-C	5.16	118.55	111.54
1	B	48	LYS	N-CA-C	5.15	117.56	111.33
1	C	91	ARG	N-CA-C	5.15	119.04	112.34
1	L	315	LEU	N-CA-C	5.14	118.66	112.38
1	C	83	PRO	N-CA-C	5.14	119.55	111.38
1	D	139	GLU	N-CA-C	5.12	117.76	108.69
1	J	220	ARG	N-CA-C	5.12	116.19	108.46
1	H	162	SER	N-CA-C	5.11	116.64	107.80
1	F	48	LYS	N-CA-C	5.11	117.51	111.33
1	H	48	LYS	N-CA-C	5.11	117.51	111.33
1	J	276	GLY	N-CA-C	-5.10	101.10	113.18
1	J	259	LEU	N-CA-C	5.10	118.59	111.30
1	E	90	MET	N-CA-C	5.09	116.19	107.28
1	J	60	LEU	N-CA-C	5.09	119.56	112.90
1	E	83	PRO	N-CA-C	5.09	119.47	111.38
1	K	171	CYS	N-CA-C	5.09	116.51	111.07
1	D	26	LEU	N-CA-C	5.08	119.86	113.25
1	I	82	ALA	CA-C-N	5.08	125.01	119.78
1	I	82	ALA	C-N-CA	5.08	125.01	119.78
1	K	223	GLY	N-CA-C	-5.08	101.15	113.18
1	C	162	SER	N-CA-C	5.07	116.58	107.80
1	A	370	LEU	N-CA-C	5.06	118.92	112.34
1	E	212	ARG	N-CA-C	5.06	116.87	108.02
1	E	220	ARG	N-CA-C	5.06	116.53	108.79
1	C	370	LEU	N-CA-C	5.06	118.92	112.34
1	A	83	PRO	N-CA-C	5.06	119.42	111.38
1	A	315	LEU	N-CA-C	5.05	118.54	112.38
1	J	206	SER	N-CA-C	5.05	117.38	108.75
1	H	82	ALA	CA-C-N	5.05	124.95	119.85
1	H	82	ALA	C-N-CA	5.05	124.95	119.85
1	H	333	MET	N-CA-C	5.04	118.20	111.75
1	A	152	LYS	N-CA-C	5.03	116.90	107.99
1	F	302	PHE	CA-C-N	5.03	125.42	119.99
1	F	302	PHE	C-N-CA	5.03	125.42	119.99
1	A	162	SER	N-CA-C	5.02	116.48	107.80
1	A	374	ALA	N-CA-C	-5.00	106.27	112.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	K	120	ARG	N-CA-C	5.00	118.49	110.73

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	K	187	ARG	Sidechain
1	K	340	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	3143	0	3210	69	1
1	B	3143	0	3211	76	0
1	C	3143	0	3210	66	0
1	D	3143	0	3210	63	0
1	E	3143	0	3211	77	0
1	F	3143	0	3211	82	0
1	G	3143	0	3211	69	0
1	H	3143	0	3210	75	0
1	I	3143	0	3212	78	1
1	J	3143	0	3211	183	0
1	K	3143	0	3211	156	0
1	L	3143	0	3210	67	0
2	A	44	0	28	0	0
2	B	44	0	28	2	0
2	C	44	0	28	1	0
2	D	44	0	28	0	0
2	E	44	0	28	0	0
2	F	44	0	28	0	0
2	G	44	0	28	1	0
2	H	44	0	28	0	0
2	I	44	0	28	2	0
2	J	44	0	28	2	0
2	K	44	0	28	3	0
2	L	44	0	28	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	A	76	0	0	4	0
3	B	58	0	0	6	0
3	C	105	0	0	4	0
3	D	104	0	0	7	0
3	E	86	0	0	5	0
3	F	63	0	0	4	0
3	G	47	0	0	5	0
3	H	73	0	0	5	0
3	I	42	0	0	4	0
3	J	45	0	0	10	0
3	K	60	0	0	5	0
3	L	32	0	0	5	0
All	All	39035	0	38864	1017	1

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 13.

All (1017) 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:C:11:LYS:NZ	1:C:13:GLN:OE1	1.75	1.18
1:J:405:LYS:O	1:J:409:LEU:HD12	1.46	1.13
1:E:403:GLU:HG3	3:E:660:HOH:O	1.46	1.13
1:K:66:ARG:HG3	1:K:67:IAS:OXT	1.51	1.09
1:K:370:LEU:HD11	1:K:397:ARG:HB2	1.39	1.04
1:K:233:ILE:HA	1:K:306:MET:HE2	1.43	1.00
1:K:45:PRO:HG2	1:K:47:LEU:HD11	1.51	0.92
1:I:60:LEU:HA	1:I:79:VAL:HG13	1.52	0.91
1:D:60:LEU:HA	1:D:79:VAL:HG13	1.53	0.91
1:F:60:LEU:HA	1:F:79:VAL:HG13	1.50	0.91
1:K:174:THR:HG21	1:K:198:LEU:HD13	1.53	0.90
1:L:60:LEU:HA	1:L:79:VAL:HG13	1.51	0.90
1:B:150:ARG:HH12	1:B:219:GLU:HA	1.35	0.90
1:K:3:LYS:NZ	1:K:418:GLY:C	2.30	0.90
1:C:150:ARG:HH12	1:C:219:GLU:HA	1.36	0.90
1:C:60:LEU:HA	1:C:79:VAL:HG13	1.53	0.90
1:G:60:LEU:HA	1:G:79:VAL:HG13	1.53	0.90
1:H:60:LEU:HA	1:H:79:VAL:HG13	1.53	0.90
1:E:60:LEU:HA	1:E:79:VAL:HG13	1.52	0.90
1:B:60:LEU:HA	1:B:79:VAL:HG13	1.52	0.89
1:J:294:VAL:HB	1:J:323:ILE:HD13	1.52	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:60:LEU:HA	1:J:79:VAL:CG1	2.03	0.89
1:L:150:ARG:HH12	1:L:219:GLU:HA	1.36	0.89
1:E:150:ARG:HH12	1:E:219:GLU:HA	1.37	0.88
1:I:150:ARG:HH12	1:I:219:GLU:HA	1.38	0.88
1:A:150:ARG:HH12	1:A:219:GLU:HA	1.39	0.88
1:A:60:LEU:HA	1:A:79:VAL:HG13	1.54	0.88
1:F:150:ARG:HH12	1:F:219:GLU:HA	1.38	0.87
1:D:150:ARG:HH12	1:D:219:GLU:HA	1.39	0.87
1:H:150:ARG:HH12	1:H:219:GLU:HA	1.41	0.86
1:J:405:LYS:O	1:J:409:LEU:CD1	2.22	0.86
1:H:219:GLU:HG2	3:H:663:HOH:O	1.74	0.86
1:G:150:ARG:HH12	1:G:219:GLU:HA	1.43	0.83
1:K:183:GLU:OE1	1:K:212:ARG:HB2	1.79	0.83
1:K:255:GLN:O	1:K:258:THR:HG22	1.79	0.82
1:J:41:ILE:O	1:J:69:SER:HB2	1.79	0.82
1:K:46:LYS:HG2	1:K:66:ARG:NH2	1.95	0.81
1:J:47:LEU:HD21	1:J:400:GLU:N	1.96	0.81
1:L:273:ILE:HB	3:L:622:HOH:O	1.79	0.80
1:H:15:GLU:OE2	1:H:252:ARG:NH1	2.15	0.80
1:E:401:ARG:HG2	1:J:277:GLU:CD	2.06	0.79
1:J:59:GLN:O	1:J:79:VAL:HG11	1.80	0.79
1:A:303:PRO:HA	3:A:625:HOH:O	1.82	0.79
1:K:407:ARG:HA	1:K:411:ALA:HB3	1.65	0.78
1:E:404:ASP:OD1	1:J:277:GLU:HB3	1.84	0.78
1:H:274:GLU:HG2	3:H:665:HOH:O	1.84	0.77
1:K:295:ARG:HH11	1:K:295:ARG:HG3	1.50	0.77
1:K:108:GLN:HG2	1:K:144:LYS:NZ	2.00	0.77
1:C:207:GLY:O	1:C:210:THR:HG23	1.85	0.76
1:D:232:ARG:HB3	1:D:258:THR:CG2	2.15	0.76
1:F:66:ARG:HB3	1:F:70:VAL:HG22	1.65	0.76
1:I:232:ARG:HB3	1:I:258:THR:HG21	1.67	0.76
1:J:11:LYS:HE3	1:J:13:GLN:OE1	1.85	0.76
1:J:315:LEU:HD22	1:J:343:ALA:HB1	1.68	0.75
1:L:232:ARG:HB3	1:L:258:THR:HG21	1.68	0.75
1:H:232:ARG:HB3	1:H:258:THR:CG2	2.16	0.75
1:D:232:ARG:HB3	1:D:258:THR:HG21	1.69	0.75
1:I:120:ARG:HD2	3:I:621:HOH:O	1.85	0.75
1:K:233:ILE:HA	1:K:306:MET:CE	2.16	0.75
1:K:36:GLU:HB2	1:K:220:ARG:NH2	2.02	0.75
1:I:232:ARG:HB3	1:I:258:THR:CG2	2.16	0.75
1:K:39:VAL:HG23	1:K:224:GLY:H	1.51	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:56:LEU:HD12	1:K:86:LEU:HD23	1.68	0.75
1:K:109:VAL:O	1:K:143:VAL:HG12	1.85	0.75
1:A:232:ARG:HB3	1:A:258:THR:CG2	2.18	0.74
1:J:24:ALA:O	1:J:27:PRO:HD2	1.87	0.74
1:L:232:ARG:HB3	1:L:258:THR:CG2	2.17	0.74
1:G:232:ARG:HB3	1:G:258:THR:CG2	2.18	0.74
1:J:8:GLY:HA3	1:J:383:ALA:O	1.87	0.74
1:C:232:ARG:HB3	1:C:258:THR:HG21	1.70	0.74
1:A:232:ARG:HB3	1:A:258:THR:HG21	1.68	0.73
1:B:232:ARG:HB3	1:B:258:THR:CG2	2.19	0.73
1:G:232:ARG:HB3	1:G:258:THR:HG21	1.71	0.73
1:J:22:LYS:HD3	1:J:371:ARG:HH21	1.54	0.73
1:J:199:ILE:O	1:J:202:GLY:N	2.22	0.73
1:F:330:ASN:HB3	1:G:330:ASN:ND2	2.04	0.73
1:F:66:ARG:HB3	1:F:70:VAL:CG2	2.19	0.72
1:K:39:VAL:HG23	1:K:224:GLY:N	2.05	0.72
1:K:187:ARG:NH1	1:K:300:PRO:HD3	2.03	0.72
1:J:335:VAL:HB	1:J:336:PRO:HD3	1.69	0.72
2:L:501:EPZ:H5DA	2:L:501:EPZ:H6U	1.69	0.72
1:H:232:ARG:HB3	1:H:258:THR:HG21	1.70	0.72
1:F:401:ARG:HG2	3:F:649:HOH:O	1.89	0.72
1:D:159:ASP:OD1	1:F:265:LYS:HE2	1.88	0.72
1:C:232:ARG:HB3	1:C:258:THR:CG2	2.20	0.71
1:D:252:ARG:HD2	3:D:640:HOH:O	1.90	0.71
1:B:232:ARG:HB3	1:B:258:THR:HG21	1.71	0.71
1:F:232:ARG:HB3	1:F:258:THR:HG21	1.71	0.71
1:J:117:ILE:HG22	1:J:331:ARG:HG3	1.72	0.71
1:F:232:ARG:HB3	1:F:258:THR:CG2	2.20	0.71
1:B:333:MET:O	1:B:336:PRO:HD2	1.90	0.71
1:G:333:MET:O	1:G:336:PRO:HD2	1.90	0.71
1:J:34:LEU:HD22	1:J:175:LEU:HD12	1.72	0.70
1:K:330:ASN:HB3	3:L:632:HOH:O	1.90	0.70
1:J:60:LEU:HD23	1:J:79:VAL:HG13	1.71	0.70
1:C:11:LYS:HE2	3:C:676:HOH:O	1.91	0.70
1:I:67:IAS:OD1	1:I:69:SER:N	2.24	0.70
1:J:109:VAL:O	1:J:143:VAL:HG13	1.91	0.70
1:K:115:QPA:H9	1:K:115:QPA:O13	1.91	0.69
1:K:57:LEU:HB3	1:K:64:VAL:HG21	1.73	0.69
1:J:161:VAL:HA	3:J:621:HOH:O	1.92	0.69
1:B:322:PHE:CE1	1:H:346:GLU:HG3	2.27	0.69
1:J:174:THR:HG21	1:J:198:LEU:HD13	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:238:PHE:O	1:J:241:ALA:HB3	1.92	0.69
1:H:369:ASP:HB2	3:H:629:HOH:O	1.93	0.68
1:C:333:MET:O	1:C:336:PRO:HD2	1.93	0.68
1:E:232:ARG:HB3	1:E:258:THR:CG2	2.23	0.68
1:B:265:LYS:HE2	1:E:159:ASP:OD1	1.94	0.68
1:E:232:ARG:HB3	1:E:258:THR:HG21	1.73	0.68
1:G:24:ALA:O	1:G:27:PRO:HD2	1.94	0.68
1:A:24:ALA:O	1:A:27:PRO:HD2	1.94	0.68
1:D:59:GLN:O	1:D:79:VAL:HG11	1.94	0.67
1:I:333:MET:O	1:I:336:PRO:HD2	1.93	0.67
1:A:120:ARG:HD2	3:A:662:HOH:O	1.95	0.67
1:K:10:THR:HG22	1:K:381:CYS:O	1.93	0.67
1:K:66:ARG:CG	1:K:67:IAS:OXT	2.36	0.67
1:K:233:ILE:O	1:K:306:MET:HE1	1.95	0.67
1:B:59:GLN:O	1:B:79:VAL:HG11	1.95	0.67
1:H:120:ARG:HD3	1:H:328:PHE:CE1	2.29	0.67
1:J:47:LEU:HD21	1:J:399:TYR:C	2.20	0.67
1:J:299:HIS:ND1	1:J:300:PRO:HA	2.11	0.66
1:K:3:LYS:HZ3	1:K:418:GLY:C	2.00	0.66
1:C:340:ARG:NH1	1:C:364:GLN:O	2.28	0.66
1:K:67:IAS:C	1:K:67:IAS:OD1	2.40	0.66
1:L:24:ALA:O	1:L:27:PRO:HD2	1.96	0.66
1:J:22:LYS:HB3	1:J:371:ARG:NH2	2.10	0.66
1:D:333:MET:O	1:D:336:PRO:HD2	1.96	0.66
1:E:59:GLN:O	1:E:79:VAL:HG11	1.96	0.66
1:H:15:GLU:HG3	1:H:250:ILE:HB	1.78	0.66
1:F:67:IAS:OD1	1:F:69:SER:N	2.29	0.66
1:G:59:GLN:O	1:G:79:VAL:HG11	1.96	0.66
1:H:59:GLN:O	1:H:79:VAL:HG11	1.96	0.65
1:J:38:PRO:HD3	1:J:75:ARG:HH21	1.60	0.65
1:C:59:GLN:O	1:C:79:VAL:HG11	1.96	0.65
1:K:50:VAL:O	1:K:54:MET:HG3	1.95	0.65
1:F:59:GLN:O	1:F:79:VAL:HG11	1.96	0.65
1:K:250:ILE:HD13	1:K:281:SER:HB2	1.79	0.65
1:G:340:ARG:NH1	1:G:364:GLN:O	2.30	0.65
1:A:120:ARG:HD3	1:A:328:PHE:CE1	2.31	0.65
1:L:59:GLN:O	1:L:79:VAL:HG11	1.96	0.64
1:J:55:LYS:NZ	3:J:625:HOH:O	2.30	0.64
1:B:120:ARG:HD3	1:B:328:PHE:CE1	2.32	0.64
1:B:187:ARG:HD3	3:B:619:HOH:O	1.97	0.64
1:F:255:GLN:O	1:F:258:THR:HB	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:120:ARG:HD3	1:G:328:PHE:CE1	2.33	0.64
1:J:111:LEU:HD23	1:J:112:PRO:HD2	1.77	0.64
1:K:139:GLU:HG3	1:K:144:LYS:HD2	1.78	0.64
1:L:333:MET:O	1:L:336:PRO:HD2	1.98	0.64
1:D:47:LEU:HA	3:D:671:HOH:O	1.96	0.64
1:K:250:ILE:HD13	1:K:281:SER:CB	2.28	0.64
1:L:255:GLN:O	1:L:258:THR:HB	1.98	0.64
1:J:117:ILE:CG2	1:J:331:ARG:HG3	2.27	0.64
1:K:340:ARG:NH1	1:L:84:TYR:CE1	2.65	0.64
1:D:24:ALA:O	1:D:27:PRO:HD2	1.98	0.64
1:J:402:ILE:O	1:J:406:LEU:HB2	1.98	0.64
1:K:128:GLY:HA3	1:K:169:ILE:HD11	1.79	0.64
1:K:299:HIS:CG	1:K:300:PRO:HA	2.32	0.64
1:E:330:ASN:ND2	1:H:330:ASN:HB3	2.12	0.64
1:L:120:ARG:HD3	1:L:328:PHE:CE1	2.33	0.64
1:L:335:VAL:HB	1:L:336:PRO:HD3	1.80	0.64
1:B:24:ALA:O	1:B:27:PRO:HD2	1.98	0.64
1:E:330:ASN:HB3	1:H:330:ASN:ND2	2.13	0.64
1:J:120:ARG:HD2	3:J:637:HOH:O	1.97	0.64
1:C:255:GLN:O	1:C:258:THR:HB	1.98	0.64
1:E:120:ARG:HD3	1:E:328:PHE:CE1	2.32	0.63
1:H:333:MET:O	1:H:336:PRO:HD2	1.98	0.63
1:K:97:LEU:HB2	1:K:109:VAL:HG21	1.80	0.63
1:E:401:ARG:HG2	1:J:277:GLU:OE2	1.98	0.63
1:J:287:LYS:HE2	1:J:287:LYS:HA	1.79	0.63
1:K:150:ARG:NH2	1:K:177:GLU:HG2	2.13	0.63
1:I:59:GLN:O	1:I:79:VAL:HG11	1.98	0.63
1:K:3:LYS:HB2	1:K:416:VAL:HG22	1.79	0.63
1:A:255:GLN:O	1:A:258:THR:HB	1.99	0.63
1:D:262:VAL:HG23	3:D:610:HOH:O	1.97	0.63
1:J:232:ARG:HB3	1:J:258:THR:HG23	1.79	0.63
1:F:333:MET:O	1:F:336:PRO:HD2	1.99	0.63
1:B:346:GLU:HG3	1:H:322:PHE:CE1	2.35	0.62
1:C:11:LYS:NZ	1:C:13:GLN:CD	2.56	0.62
1:E:250:ILE:HG12	3:E:620:HOH:O	2.00	0.62
1:J:60:LEU:HA	1:J:79:VAL:HG13	1.81	0.62
1:D:152:LYS:HD2	3:D:650:HOH:O	1.98	0.62
1:D:255:GLN:O	1:D:258:THR:HB	1.98	0.62
1:J:211:ASP:OD2	1:K:187:ARG:NH1	2.31	0.62
1:K:12:LEU:HD12	1:K:241:ALA:HB1	1.80	0.62
1:D:10:THR:HG21	1:D:411:ALA:HA	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:335:VAL:HB	1:D:336:PRO:HD3	1.81	0.62
1:F:267:ARG:NH1	3:F:617:HOH:O	2.31	0.62
1:J:288:ARG:NH1	1:J:318:GLU:HB2	2.15	0.62
1:A:59:GLN:O	1:A:79:VAL:HG11	1.99	0.62
1:J:25:ALA:O	1:J:29:LEU:HD13	2.00	0.62
1:K:232:ARG:HB2	1:K:259:LEU:HD21	1.81	0.62
1:J:41:ILE:N	1:J:41:ILE:HD12	2.15	0.62
1:J:42:GLN:HA	1:J:69:SER:HB3	1.82	0.62
1:B:159:ASP:OD1	1:E:265:LYS:HE2	1.99	0.62
1:C:120:ARG:HD3	1:C:328:PHE:CE1	2.35	0.62
1:I:303:PRO:HB3	3:I:636:HOH:O	2.00	0.62
1:J:150:ARG:NH2	1:J:177:GLU:HB3	2.15	0.62
1:A:333:MET:O	1:A:336:PRO:HD2	1.99	0.61
2:B:501:EPZ:H5DA	2:B:501:EPZ:H6U	1.81	0.61
1:F:66:ARG:HB2	1:F:70:VAL:HG23	1.81	0.61
1:F:330:ASN:CG	1:G:330:ASN:CG	2.68	0.61
1:J:323:ILE:HB	1:J:352:VAL:CG1	2.29	0.61
1:K:118:GLY:HA3	3:K:629:HOH:O	2.00	0.61
1:A:330:ASN:HB3	1:B:330:ASN:ND2	2.15	0.61
1:E:24:ALA:O	1:E:27:PRO:HD2	2.00	0.61
1:B:255:GLN:O	1:B:258:THR:HB	2.00	0.61
1:C:359:LYS:HE2	1:C:384:GLU:HB2	1.82	0.61
1:F:340:ARG:NH1	1:F:364:GLN:O	2.33	0.61
1:G:55:LYS:NZ	3:G:614:HOH:O	2.33	0.61
1:C:335:VAL:HB	1:C:336:PRO:HD3	1.83	0.61
1:G:359:LYS:HE2	1:G:384:GLU:HB2	1.83	0.61
1:K:137:LYS:HE2	1:K:139:GLU:OE1	2.01	0.61
1:D:359:LYS:HE2	1:D:384:GLU:HB2	1.83	0.61
1:F:330:ASN:ND2	1:G:330:ASN:HB3	2.16	0.61
1:K:12:LEU:CD1	1:K:241:ALA:HB1	2.30	0.61
1:A:10:THR:HG21	1:A:411:ALA:HA	1.82	0.61
1:C:120:ARG:HD2	3:C:694:HOH:O	2.00	0.61
1:K:105:GLY:HA2	1:K:147:VAL:HG12	1.83	0.61
1:E:359:LYS:HE2	1:E:384:GLU:HB2	1.82	0.61
1:G:150:ARG:NH2	3:G:635:HOH:O	2.34	0.61
1:F:42:GLN:HG2	1:F:69:SER:OG	2.01	0.60
1:A:56:LEU:HB2	1:A:86:LEU:HD22	1.83	0.60
1:F:120:ARG:HD3	1:F:328:PHE:CE1	2.35	0.60
2:K:501:EPZ:H5DA	2:K:501:EPZ:H6U	1.82	0.60
1:E:404:ASP:OD2	1:J:277:GLU:HG2	2.02	0.60
1:E:333:MET:O	1:E:336:PRO:HD2	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:255:GLN:O	1:H:258:THR:HB	2.02	0.60
1:C:10:THR:HG21	1:C:411:ALA:HA	1.82	0.60
1:K:3:LYS:HZ1	1:K:418:GLY:C	2.10	0.60
1:H:340:ARG:NH1	1:H:364:GLN:O	2.34	0.60
1:J:204:LYS:CB	1:J:216:GLU:HB3	2.32	0.60
1:J:276:GLY:HA3	1:J:279:TRP:NE1	2.17	0.60
1:K:258:THR:HG21	3:K:625:HOH:O	2.02	0.60
1:J:3:LYS:HD3	1:J:388:VAL:CG1	2.32	0.60
1:J:126:ILE:HG23	1:J:136:ILE:HD12	1.83	0.60
1:B:359:LYS:HE2	1:B:384:GLU:HB2	1.83	0.60
1:I:120:ARG:HD3	1:I:328:PHE:CE1	2.37	0.60
1:B:10:THR:HG21	1:B:411:ALA:HA	1.84	0.59
1:G:255:GLN:O	1:G:258:THR:HB	2.02	0.59
1:K:370:LEU:CD1	1:K:397:ARG:HB2	2.24	0.59
1:B:322:PHE:HE1	1:H:346:GLU:HG3	1.67	0.59
1:I:335:VAL:HB	1:I:336:PRO:HD3	1.85	0.59
1:J:406:LEU:O	1:J:411:ALA:HB3	2.01	0.59
1:I:359:LYS:HE2	1:I:384:GLU:HB2	1.85	0.59
1:C:60:LEU:HA	1:C:79:VAL:CG1	2.31	0.59
1:F:24:ALA:O	1:F:27:PRO:HD2	2.03	0.59
1:I:255:GLN:O	1:I:258:THR:HB	2.02	0.59
1:K:220:ARG:HG3	1:K:220:ARG:HH11	1.66	0.59
2:I:501:EPZ:H5DA	2:I:501:EPZ:H6U	1.85	0.59
1:F:66:ARG:CB	1:F:70:VAL:CG2	2.80	0.59
1:F:335:VAL:HB	1:F:336:PRO:HD3	1.85	0.59
1:K:402:ILE:HG23	1:K:403:GLU:N	2.18	0.59
1:J:236:GLY:O	1:J:240:VAL:HG23	2.03	0.58
1:L:10:THR:HG21	1:L:411:ALA:HA	1.83	0.58
1:L:37:GLU:HB2	1:L:223:GLY:N	2.17	0.58
1:I:340:ARG:NH1	1:I:364:GLN:O	2.36	0.58
1:J:255:GLN:O	1:J:258:THR:HB	2.03	0.58
2:J:501:EPZ:H5DA	2:J:501:EPZ:H6U	1.85	0.58
1:K:94:ILE:HA	1:K:109:VAL:HG11	1.84	0.58
1:G:56:LEU:HB2	1:G:86:LEU:HD22	1.86	0.58
1:H:24:ALA:O	1:H:27:PRO:HD2	2.03	0.58
1:D:109:VAL:O	1:D:143:VAL:HG13	2.02	0.58
1:G:383:ALA:HB3	3:G:623:HOH:O	2.02	0.58
1:K:340:ARG:HH21	1:L:141:GLY:HA3	1.68	0.58
1:F:10:THR:HG21	1:F:411:ALA:HA	1.85	0.58
1:A:109:VAL:O	1:A:143:VAL:HG13	2.04	0.58
1:K:333:MET:O	1:K:336:PRO:HD2	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:330:ASN:CG	1:B:330:ASN:CG	2.72	0.58
1:E:330:ASN:CG	1:H:330:ASN:CG	2.72	0.58
1:J:22:LYS:HB3	1:J:371:ARG:HH21	1.67	0.58
1:L:73:ASP:OD1	1:L:75:ARG:HD3	2.03	0.58
1:E:255:GLN:O	1:E:258:THR:HB	2.04	0.57
1:H:120:ARG:HD3	1:H:328:PHE:HE1	1.69	0.57
1:J:267:ARG:NH1	3:J:639:HOH:O	2.36	0.57
1:K:340:ARG:HG2	1:L:111:LEU:HB3	1.85	0.57
1:L:359:LYS:HE2	1:L:384:GLU:HB2	1.85	0.57
1:A:359:LYS:HE2	1:A:384:GLU:HB2	1.86	0.57
1:F:66:ARG:CB	1:F:70:VAL:HG23	2.34	0.57
1:F:359:LYS:HE2	1:F:384:GLU:HB2	1.85	0.57
1:I:24:ALA:O	1:I:27:PRO:HD2	2.05	0.57
1:I:66:ARG:O	1:I:67:IAS:C	2.52	0.57
1:H:359:LYS:HE2	1:H:384:GLU:HB2	1.85	0.57
1:C:325:GLU:HG2	1:C:328:PHE:O	2.03	0.57
1:J:204:LYS:HB2	1:J:216:GLU:HB3	1.84	0.57
1:L:109:VAL:O	1:L:143:VAL:HG13	2.05	0.57
1:E:109:VAL:O	1:E:143:VAL:HG13	2.04	0.57
1:H:325:GLU:HG2	1:H:328:PHE:O	2.04	0.57
1:J:232:ARG:HB3	1:J:258:THR:CG2	2.35	0.57
1:J:252:ARG:HG3	1:J:252:ARG:HH11	1.69	0.57
1:A:335:VAL:HB	1:A:336:PRO:HD3	1.85	0.56
1:B:71:HIS:HD2	3:B:644:HOH:O	1.86	0.56
1:J:22:LYS:HD3	1:J:371:ARG:NH2	2.19	0.56
1:K:266:LEU:O	1:K:269:ALA:N	2.38	0.56
1:K:340:ARG:NH1	1:K:364:GLN:O	2.38	0.56
1:B:335:VAL:HB	1:B:336:PRO:HD3	1.87	0.56
1:J:266:LEU:O	1:J:269:ALA:HB3	2.05	0.56
1:B:71:HIS:CD2	3:B:644:HOH:O	2.58	0.56
1:G:325:GLU:HG2	1:G:328:PHE:O	2.04	0.56
1:J:73:ASP:CG	1:J:75:ARG:HG2	2.31	0.56
1:J:240:VAL:O	1:J:244:ILE:HG12	2.06	0.56
1:J:391:ARG:HD2	1:J:393:TYR:HE2	1.69	0.56
1:B:56:LEU:HB2	1:B:86:LEU:HD22	1.87	0.56
1:G:10:THR:HG21	1:G:411:ALA:HA	1.86	0.56
1:H:282:LEU:C	1:H:282:LEU:HD23	2.30	0.56
1:J:267:ARG:HD2	3:J:639:HOH:O	2.05	0.56
1:K:276:GLY:HA3	1:K:279:TRP:CE2	2.41	0.56
1:L:325:GLU:HG2	1:L:328:PHE:O	2.06	0.56
1:F:359:LYS:NZ	1:F:384:GLU:OE1	2.36	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:10:THR:HG21	1:H:411:ALA:HA	1.87	0.56
1:J:406:LEU:O	1:J:411:ALA:CB	2.53	0.55
1:K:254:ALA:O	1:K:278:ASP:HA	2.06	0.55
1:K:47:LEU:CD1	1:K:50:VAL:HG23	2.36	0.55
1:I:109:VAL:O	1:I:143:VAL:HG13	2.06	0.55
1:J:246:ARG:NH2	1:J:288:ARG:HD2	2.20	0.55
1:L:290:LYS:HB3	3:L:626:HOH:O	2.05	0.55
1:C:24:ALA:O	1:C:27:PRO:HD2	2.05	0.55
1:H:109:VAL:O	1:H:143:VAL:HG13	2.07	0.55
1:K:325:GLU:HG2	1:K:328:PHE:O	2.07	0.55
1:C:282:LEU:C	1:C:282:LEU:HD23	2.32	0.55
1:E:56:LEU:HB2	1:E:86:LEU:HD22	1.88	0.55
1:J:85:ASP:HA	1:J:88:LYS:HE2	1.88	0.55
1:J:3:LYS:HD3	1:J:388:VAL:HG12	1.89	0.55
1:J:98:GLY:O	1:J:99:PRO:C	2.49	0.55
1:K:340:ARG:NH2	1:L:141:GLY:HA3	2.22	0.55
1:K:407:ARG:CA	1:K:411:ALA:HB3	2.36	0.55
1:I:330:ASN:HB3	1:J:330:ASN:OD1	2.07	0.55
1:L:340:ARG:NH1	1:L:364:GLN:O	2.40	0.55
1:D:56:LEU:HB2	1:D:86:LEU:HD22	1.88	0.55
1:E:10:THR:HG21	1:E:411:ALA:HA	1.88	0.55
1:E:335:VAL:HB	1:E:336:PRO:HD3	1.88	0.55
1:I:10:THR:HG21	1:I:411:ALA:HA	1.89	0.55
1:K:143:VAL:O	1:K:143:VAL:HG13	2.06	0.55
1:L:299:HIS:CG	1:L:300:PRO:HA	2.42	0.55
1:A:325:GLU:HG2	1:A:328:PHE:O	2.08	0.54
1:D:37:GLU:HB2	1:D:223:GLY:N	2.22	0.54
1:B:340:ARG:NH1	1:B:364:GLN:O	2.40	0.54
1:G:299:HIS:ND1	1:G:300:PRO:HA	2.23	0.54
1:I:282:LEU:HD23	1:I:282:LEU:C	2.33	0.54
1:G:109:VAL:O	1:G:143:VAL:HG13	2.07	0.54
1:I:66:ARG:C	1:I:67:IAS:OXT	2.45	0.54
1:J:5:ARG:HD2	1:J:414:GLU:OE1	2.08	0.54
1:K:11:LYS:HD2	1:K:13:GLN:OE1	2.07	0.54
1:B:299:HIS:CG	1:B:300:PRO:HA	2.43	0.54
1:E:37:GLU:HB2	1:E:223:GLY:N	2.23	0.54
1:E:150:ARG:NH1	1:E:219:GLU:HA	2.17	0.54
1:E:330:ASN:OD1	1:H:330:ASN:OD1	2.26	0.54
1:A:252:ARG:HG3	1:A:252:ARG:HH11	1.73	0.54
1:H:335:VAL:HB	1:H:336:PRO:HD3	1.89	0.54
1:I:67:IAS:OD1	1:I:68:GLY:C	2.51	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:299:HIS:CG	1:J:300:PRO:HA	2.43	0.54
1:K:24:ALA:C	1:K:27:PRO:HD2	2.33	0.54
1:C:150:ARG:NH1	1:C:219:GLU:HA	2.16	0.54
1:F:299:HIS:CG	1:F:300:PRO:HA	2.43	0.54
1:J:128:GLY:HA3	1:J:169:ILE:CD1	2.38	0.54
1:K:27:PRO:HG3	1:K:95:TRP:CZ3	2.42	0.54
1:L:56:LEU:HB2	1:L:86:LEU:HD22	1.90	0.54
1:L:252:ARG:HG3	1:L:252:ARG:HH11	1.73	0.54
1:A:282:LEU:C	1:A:282:LEU:HD23	2.32	0.53
1:J:37:GLU:HB2	1:J:222:GLY:C	2.33	0.53
1:C:37:GLU:HB2	1:C:223:GLY:N	2.23	0.53
1:G:120:ARG:HD3	1:G:328:PHE:HE1	1.72	0.53
1:G:335:VAL:HB	1:G:336:PRO:HD3	1.89	0.53
1:A:37:GLU:HB2	1:A:223:GLY:N	2.24	0.53
1:K:235:THR:O	1:K:239:LEU:HG	2.07	0.53
1:D:325:GLU:HG2	1:D:328:PHE:O	2.07	0.53
1:K:36:GLU:O	1:K:37:GLU:HG2	2.08	0.53
1:I:65:GLU:HG3	1:I:71:HIS:HB2	1.90	0.53
1:B:60:LEU:HA	1:B:79:VAL:CG1	2.32	0.53
1:G:37:GLU:HB2	1:G:223:GLY:N	2.23	0.53
1:G:60:LEU:HA	1:G:79:VAL:CG1	2.35	0.53
2:G:501:EPZ:H6U	2:G:501:EPZ:H5DA	1.89	0.53
1:E:252:ARG:HH11	1:E:252:ARG:HG3	1.72	0.53
1:I:67:IAS:CG	1:I:69:SER:N	2.72	0.53
1:J:282:LEU:HD23	1:J:283:ASP:N	2.23	0.53
1:K:158:MET:O	1:K:159:ASP:C	2.52	0.53
1:A:56:LEU:HB2	1:A:86:LEU:CD2	2.39	0.53
1:A:371:ARG:NH2	3:A:608:HOH:O	2.40	0.53
1:B:261:ALA:HB3	3:B:604:HOH:O	2.09	0.53
1:L:150:ARG:NH1	1:L:219:GLU:HA	2.16	0.53
1:D:299:HIS:CG	1:D:300:PRO:HA	2.44	0.53
1:I:37:GLU:HB2	1:I:223:GLY:N	2.23	0.53
1:J:50:VAL:HG12	1:J:54:MET:HE2	1.91	0.53
1:K:183:GLU:OE2	1:K:212:ARG:HD2	2.08	0.53
1:B:299:HIS:ND1	1:B:300:PRO:HA	2.24	0.53
1:E:219:GLU:HG2	3:E:661:HOH:O	2.08	0.53
1:E:359:LYS:NZ	1:E:384:GLU:OE1	2.33	0.53
1:K:120:ARG:HD3	1:K:328:PHE:CE1	2.44	0.53
1:L:371:ARG:NH1	1:L:398:GLY:O	2.42	0.53
2:C:501:EPZ:H5DA	2:C:501:EPZ:H6U	1.91	0.52
1:D:63:LYS:HB2	1:D:73:ASP:HB3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:325:GLU:HG2	1:E:328:PHE:O	2.09	0.52
1:J:46:LYS:HB2	1:J:400:GLU:HG3	1.90	0.52
1:C:109:VAL:O	1:C:143:VAL:HG13	2.09	0.52
1:F:252:ARG:HG3	1:F:252:ARG:HH11	1.74	0.52
1:K:24:ALA:O	1:K:27:PRO:HD2	2.10	0.52
1:K:150:ARG:HH21	1:K:177:GLU:HG2	1.72	0.52
1:E:340:ARG:NH1	1:E:364:GLN:O	2.42	0.52
1:H:252:ARG:HG3	1:H:252:ARG:HH11	1.75	0.52
1:K:36:GLU:C	1:K:37:GLU:HG2	2.34	0.52
1:A:340:ARG:NH1	1:A:364:GLN:O	2.42	0.52
1:B:265:LYS:CE	1:E:159:ASP:OD1	2.58	0.52
1:I:46:LYS:HG2	1:I:66:ARG:NH2	2.25	0.52
1:J:176:ALA:O	1:J:217:GLY:HA3	2.10	0.52
1:J:196:ASN:HB2	1:J:226:TYR:OH	2.10	0.52
1:C:5:ARG:NH1	3:C:614:HOH:O	2.29	0.52
1:J:42:GLN:OE1	1:J:225:VAL:HG11	2.09	0.52
1:K:187:ARG:NH1	1:K:300:PRO:CD	2.72	0.52
1:C:348:GLU:CD	1:F:322:PHE:CE2	2.88	0.52
1:J:128:GLY:HA3	1:J:169:ILE:HD11	1.91	0.52
1:B:282:LEU:C	1:B:282:LEU:HD23	2.35	0.52
1:E:120:ARG:HD3	1:E:328:PHE:HE1	1.71	0.52
1:E:299:HIS:ND1	1:E:300:PRO:HA	2.24	0.52
1:K:108:GLN:HG2	1:K:144:LYS:CE	2.40	0.52
1:A:330:ASN:ND2	1:B:330:ASN:HB3	2.24	0.52
1:H:56:LEU:HB2	1:H:86:LEU:HD22	1.91	0.52
1:I:325:GLU:HG2	1:I:328:PHE:O	2.10	0.52
1:F:60:LEU:HA	1:F:79:VAL:CG1	2.32	0.51
1:H:37:GLU:HB2	1:H:223:GLY:N	2.26	0.51
1:K:1:MET:CE	1:K:391:ARG:HB3	2.39	0.51
1:K:183:GLU:O	1:K:184:ASN:CB	2.58	0.51
1:E:60:LEU:HA	1:E:79:VAL:CG1	2.34	0.51
1:J:163:VAL:O	1:J:167:VAL:HG23	2.09	0.51
1:J:315:LEU:HD21	1:J:345:ALA:HB2	1.92	0.51
1:K:338:LEU:HD21	1:K:376:LEU:HD23	1.92	0.51
1:C:330:ASN:CG	1:D:330:ASN:CG	2.78	0.51
1:E:21:ALA:HA	1:E:231:ASP:HB2	1.92	0.51
1:I:60:LEU:HA	1:I:79:VAL:CG1	2.33	0.51
1:J:401:ARG:O	1:J:405:LYS:HG3	2.11	0.51
1:K:254:ALA:O	1:K:256:PRO:HD3	2.11	0.51
1:K:353:ILE:HD12	1:K:353:ILE:N	2.25	0.51
1:L:282:LEU:C	1:L:282:LEU:HD23	2.35	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:22:LYS:NZ	1:A:23:ASN:OD1	2.44	0.51
1:B:150:ARG:NH1	1:B:219:GLU:HA	2.16	0.51
1:C:56:LEU:HB2	1:C:86:LEU:HD22	1.91	0.51
1:J:122:VAL:HG23	1:J:122:VAL:O	2.10	0.51
1:L:120:ARG:HD3	1:L:328:PHE:HE1	1.74	0.51
1:F:150:ARG:NH1	1:F:219:GLU:HA	2.18	0.51
1:K:407:ARG:HG3	1:K:411:ALA:O	2.10	0.51
1:B:120:ARG:HD3	1:B:328:PHE:HE1	1.74	0.51
1:D:282:LEU:HD23	1:D:282:LEU:C	2.36	0.51
1:G:359:LYS:NZ	1:G:384:GLU:OE1	2.40	0.51
1:J:136:ILE:HG22	1:J:137:LYS:N	2.25	0.51
1:J:213:ILE:HD11	3:J:618:HOH:O	2.09	0.51
1:A:396:ASP:OD2	1:A:415:ARG:NH2	2.44	0.51
1:B:21:ALA:HA	1:B:231:ASP:HB2	1.91	0.51
1:H:359:LYS:NZ	1:H:384:GLU:OE1	2.37	0.51
1:J:391:ARG:HD2	1:J:393:TYR:CE2	2.46	0.51
1:A:346:GLU:HG3	1:E:322:PHE:HE1	1.76	0.51
1:C:252:ARG:HG3	1:C:252:ARG:HH11	1.76	0.51
1:A:288:ARG:HB2	3:D:690:HOH:O	2.11	0.51
1:B:36:GLU:O	1:B:75:ARG:HG2	2.11	0.51
1:J:22:LYS:HE3	1:J:370:LEU:HD12	1.92	0.51
1:L:285:HIS:CD2	3:L:623:HOH:O	2.62	0.51
1:I:41:ILE:N	1:I:41:ILE:HD12	2.26	0.51
1:J:197:PHE:O	1:J:200:THR:HB	2.10	0.51
1:J:299:HIS:CE1	1:J:300:PRO:HA	2.46	0.51
1:K:195:ALA:O	1:K:199:ILE:HG13	2.10	0.51
1:C:299:HIS:CG	1:C:300:PRO:HA	2.46	0.50
1:D:21:ALA:HA	1:D:231:ASP:HB2	1.93	0.50
1:F:109:VAL:O	1:F:143:VAL:HG13	2.11	0.50
1:G:63:LYS:HB2	1:G:73:ASP:HB3	1.93	0.50
1:E:299:HIS:CG	1:E:300:PRO:HA	2.46	0.50
1:F:21:ALA:HA	1:F:231:ASP:HB2	1.93	0.50
1:H:299:HIS:CG	1:H:300:PRO:HA	2.46	0.50
1:J:94:ILE:HA	1:J:109:VAL:HG11	1.92	0.50
1:J:313:LEU:C	1:J:313:LEU:HD23	2.36	0.50
1:K:295:ARG:HG3	1:K:295:ARG:NH1	2.24	0.50
1:L:150:ARG:HH12	1:L:219:GLU:CA	2.17	0.50
1:A:41:ILE:HD12	1:A:41:ILE:N	2.25	0.50
1:A:120:ARG:HD3	1:A:328:PHE:HE1	1.73	0.50
1:B:30:PHE:HE1	1:B:56:LEU:HD23	1.77	0.50
1:G:282:LEU:C	1:G:282:LEU:HD23	2.36	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:67:IAS:OD1	1:I:69:SER:O	2.29	0.50
1:J:406:LEU:C	1:J:411:ALA:HB3	2.36	0.50
1:K:66:ARG:HG3	1:K:67:IAS:N	2.25	0.50
1:K:103:ARG:HD3	1:K:104:PHE:CZ	2.46	0.50
1:K:297:ALA:HB1	1:K:298:PRO:HD2	1.94	0.50
1:F:56:LEU:HB2	1:F:86:LEU:HD22	1.92	0.50
1:G:21:ALA:HA	1:G:231:ASP:HB2	1.92	0.50
1:J:119:ALA:O	1:J:120:ARG:HG2	2.11	0.50
1:K:75:ARG:HG2	3:K:603:HOH:O	2.11	0.50
1:C:295:ARG:NH2	1:F:348:GLU:OE1	2.41	0.50
1:F:67:IAS:OD1	1:F:68:GLY:C	2.54	0.50
1:F:330:ASN:OD1	1:G:330:ASN:OD1	2.29	0.50
1:G:56:LEU:HB2	1:G:86:LEU:CD2	2.41	0.50
1:J:60:LEU:HD22	1:J:79:VAL:O	2.11	0.50
1:G:396:ASP:OD2	1:G:415:ARG:NH2	2.45	0.50
1:K:340:ARG:NH1	1:L:84:TYR:HE1	2.08	0.50
1:E:56:LEU:HB2	1:E:86:LEU:CD2	2.42	0.50
1:F:67:IAS:OD1	1:F:69:SER:O	2.30	0.50
1:F:282:LEU:C	1:F:282:LEU:HD23	2.36	0.50
1:I:56:LEU:HB2	1:I:86:LEU:HD22	1.92	0.50
1:K:271:ALA:HB1	1:K:282:LEU:HG	1.94	0.50
1:A:63:LYS:HB2	1:A:73:ASP:HB3	1.93	0.50
1:H:41:ILE:HD12	1:H:41:ILE:N	2.26	0.50
1:I:401:ARG:HA	3:I:619:HOH:O	2.11	0.50
1:J:111:LEU:HD23	1:J:112:PRO:CD	2.41	0.50
1:K:407:ARG:C	1:K:409:LEU:H	2.20	0.50
1:L:299:HIS:ND1	1:L:300:PRO:HA	2.27	0.50
1:F:37:GLU:HB2	1:F:223:GLY:N	2.27	0.50
1:F:325:GLU:HG2	1:F:328:PHE:O	2.11	0.50
1:I:299:HIS:CG	1:I:300:PRO:HA	2.46	0.50
1:J:5:ARG:NH1	1:J:416:VAL:HG11	2.27	0.50
1:K:233:ILE:HD12	1:K:305:ASP:HB2	1.93	0.50
1:G:252:ARG:HG3	1:G:252:ARG:HH11	1.76	0.49
1:G:299:HIS:CG	1:G:300:PRO:HA	2.47	0.49
1:F:299:HIS:ND1	1:F:300:PRO:HA	2.26	0.49
1:F:371:ARG:NH1	1:F:398:GLY:O	2.45	0.49
1:J:5:ARG:NH1	1:J:5:ARG:HB2	2.27	0.49
1:C:120:ARG:HD3	1:C:328:PHE:HE1	1.76	0.49
1:C:348:GLU:HG3	1:F:322:PHE:CE2	2.47	0.49
1:E:404:ASP:OD2	1:J:277:GLU:CG	2.60	0.49
1:G:7:GLN:HB2	1:G:412:ASN:HB3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:66:ARG:NE	1:K:67:IAS:OXT	2.44	0.49
1:K:297:ALA:HB1	1:K:298:PRO:CD	2.42	0.49
1:A:22:LYS:HD2	1:A:398:GLY:HA2	1.95	0.49
1:C:330:ASN:ND2	1:D:330:ASN:HB3	2.27	0.49
1:E:404:ASP:OD2	1:J:277:GLU:OE1	2.31	0.49
1:J:407:ARG:HA	1:J:411:ALA:HB3	1.94	0.49
1:K:27:PRO:HG3	1:K:95:TRP:CH2	2.48	0.49
1:K:97:LEU:HB2	1:K:109:VAL:CG2	2.42	0.49
1:B:94:ILE:HA	1:B:109:VAL:HG11	1.94	0.49
1:C:7:GLN:HB2	1:C:412:ASN:HB3	1.93	0.49
1:J:5:ARG:HH12	1:J:416:VAL:HG11	1.77	0.49
1:J:307:GLN:HG2	1:J:323:ILE:HG21	1.95	0.49
1:D:56:LEU:HB2	1:D:86:LEU:CD2	2.43	0.49
1:I:66:ARG:O	1:I:67:IAS:OXT	2.30	0.49
1:J:108:GLN:HG2	1:J:144:LYS:HE2	1.95	0.49
1:A:359:LYS:NZ	1:A:384:GLU:OE1	2.39	0.49
1:K:21:ALA:HA	1:K:231:ASP:HB2	1.93	0.49
1:L:24:ALA:C	1:L:27:PRO:HD2	2.37	0.49
1:B:325:GLU:HG2	1:B:328:PHE:O	2.11	0.49
1:D:94:ILE:HA	1:D:109:VAL:HG11	1.95	0.49
1:H:63:LYS:HB2	1:H:73:ASP:HB3	1.95	0.49
1:L:51:ASP:HB3	3:L:628:HOH:O	2.13	0.49
1:G:22:LYS:HD2	1:G:398:GLY:HA2	1.95	0.49
1:G:24:ALA:C	1:G:27:PRO:HD2	2.38	0.49
1:H:299:HIS:ND1	1:H:300:PRO:HA	2.28	0.49
1:I:63:LYS:HB2	1:I:73:ASP:HB3	1.95	0.49
1:B:350:ASN:OD1	3:B:618:HOH:O	2.20	0.48
1:C:330:ASN:HB3	1:D:330:ASN:ND2	2.27	0.48
1:D:299:HIS:ND1	1:D:300:PRO:HA	2.28	0.48
1:F:120:ARG:HD3	1:F:328:PHE:HE1	1.78	0.48
1:J:29:LEU:O	1:J:32:ALA:HB3	2.12	0.48
1:L:63:LYS:HB2	1:L:73:ASP:HB3	1.95	0.48
1:D:396:ASP:OD2	1:D:415:ARG:NH2	2.45	0.48
1:F:186:ALA:HB3	1:F:191:ILE:CD1	2.44	0.48
1:F:396:ASP:OD2	1:F:415:ARG:NH2	2.44	0.48
1:I:299:HIS:ND1	1:I:300:PRO:HA	2.28	0.48
1:J:24:ALA:C	1:J:27:PRO:HD2	2.37	0.48
1:J:201:LEU:HD22	1:J:223:GLY:HA2	1.96	0.48
1:L:21:ALA:HA	1:L:231:ASP:HB2	1.95	0.48
1:L:396:ASP:OD2	1:L:415:ARG:NH2	2.44	0.48
1:C:56:LEU:HB2	1:C:86:LEU:CD2	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:94:ILE:HA	1:E:109:VAL:HG11	1.96	0.48
1:E:282:LEU:C	1:E:282:LEU:HD23	2.37	0.48
1:H:56:LEU:HB2	1:H:86:LEU:CD2	2.44	0.48
1:K:7:GLN:HB2	1:K:412:ASN:CG	2.38	0.48
1:B:24:ALA:C	1:B:27:PRO:HD2	2.38	0.48
1:B:35:ALA:HB1	1:B:222:GLY:O	2.13	0.48
1:D:150:ARG:NH1	1:D:219:GLU:HA	2.19	0.48
1:I:252:ARG:HG3	1:I:252:ARG:HH11	1.78	0.48
1:J:150:ARG:CZ	1:J:177:GLU:HB3	2.43	0.48
1:J:340:ARG:HH12	1:J:363:ALA:HB1	1.79	0.48
1:A:299:HIS:CG	1:A:300:PRO:HA	2.49	0.48
1:B:109:VAL:O	1:B:143:VAL:HG13	2.13	0.48
1:K:155:HIS:CE1	3:K:653:HOH:O	2.67	0.48
1:A:94:ILE:HA	1:A:109:VAL:HG11	1.94	0.48
1:D:232:ARG:CB	1:D:258:THR:CG2	2.91	0.48
1:E:7:GLN:HB2	1:E:412:ASN:HB3	1.96	0.48
1:H:21:ALA:HA	1:H:231:ASP:HB2	1.94	0.48
1:L:22:LYS:NZ	1:L:23:ASN:OD1	2.47	0.48
1:B:396:ASP:OD2	1:B:415:ARG:NH2	2.46	0.48
1:D:340:ARG:NH1	1:D:364:GLN:O	2.46	0.48
1:F:7:GLN:HB2	1:F:412:ASN:HB3	1.96	0.48
1:F:36:GLU:O	1:F:75:ARG:HG2	2.14	0.48
1:F:94:ILE:HA	1:F:109:VAL:HG11	1.95	0.48
1:H:94:ILE:HA	1:H:109:VAL:HG11	1.94	0.48
1:H:232:ARG:CB	1:H:258:THR:CG2	2.90	0.48
1:L:30:PHE:HE1	1:L:56:LEU:HD23	1.79	0.48
1:L:56:LEU:HB2	1:L:86:LEU:CD2	2.42	0.48
1:L:22:LYS:HD2	1:L:398:GLY:HA2	1.96	0.48
1:E:30:PHE:HE1	1:E:56:LEU:HD23	1.78	0.47
1:G:287:LYS:HE2	3:G:646:HOH:O	2.13	0.47
1:J:58:SER:C	1:J:60:LEU:N	2.71	0.47
1:L:60:LEU:HA	1:L:79:VAL:CG1	2.33	0.47
1:A:150:ARG:NH1	1:A:219:GLU:HA	2.19	0.47
1:A:346:GLU:HG3	1:E:322:PHE:CE1	2.49	0.47
1:F:24:ALA:C	1:F:27:PRO:HD2	2.40	0.47
1:G:94:ILE:HA	1:G:109:VAL:HG11	1.94	0.47
1:J:62:ALA:O	1:J:64:VAL:HG23	2.13	0.47
1:L:315:LEU:HD21	1:L:345:ALA:HB2	1.97	0.47
1:B:63:LYS:HB2	1:B:73:ASP:HB3	1.95	0.47
1:D:371:ARG:NH1	1:D:398:GLY:O	2.46	0.47
1:J:143:VAL:HG22	1:J:143:VAL:O	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:403:GLU:CB	1:J:413:ILE:HD13	2.44	0.47
1:D:22:LYS:NZ	1:D:23:ASN:OD1	2.47	0.47
1:I:150:ARG:NH1	1:I:219:GLU:HA	2.18	0.47
1:J:33:LEU:HD21	1:J:57:LEU:HD12	1.97	0.47
1:J:198:LEU:O	1:J:203:ALA:CB	2.62	0.47
1:K:35:ALA:HB1	1:K:222:GLY:O	2.15	0.47
1:B:56:LEU:HB2	1:B:86:LEU:CD2	2.45	0.47
1:H:24:ALA:C	1:H:27:PRO:HD2	2.39	0.47
1:J:265:LYS:HE2	1:J:268:ASP:OD2	2.15	0.47
1:J:365:VAL:CG2	1:J:389:VAL:HG22	2.44	0.47
1:K:402:ILE:CG2	1:K:403:GLU:N	2.78	0.47
1:C:63:LYS:HB2	1:C:73:ASP:HB3	1.95	0.47
1:I:359:LYS:NZ	1:I:384:GLU:OE1	2.41	0.47
1:E:22:LYS:HD2	1:E:398:GLY:HA2	1.96	0.47
1:G:41:ILE:N	1:G:41:ILE:HD12	2.30	0.47
1:J:136:ILE:CG2	1:J:137:LYS:N	2.78	0.47
1:J:142:TYR:CB	1:J:144:LYS:HE3	2.45	0.47
1:K:47:LEU:HD12	1:K:50:VAL:HG23	1.97	0.47
1:K:315:LEU:HD23	1:K:354:CYS:HB3	1.97	0.47
1:E:63:LYS:HB2	1:E:73:ASP:HB3	1.97	0.47
3:E:681:HOH:O	1:J:277:GLU:HB2	2.15	0.47
1:K:169:ILE:O	1:K:170:MET:C	2.57	0.47
1:G:150:ARG:NH1	1:G:219:GLU:HA	2.22	0.47
1:G:371:ARG:NH1	1:G:398:GLY:O	2.48	0.47
1:J:58:SER:C	1:J:60:LEU:H	2.23	0.47
1:J:60:LEU:CD2	1:J:79:VAL:HG13	2.44	0.47
1:D:186:ALA:HB3	1:D:191:ILE:CD1	2.45	0.47
1:H:36:GLU:O	1:H:75:ARG:HG2	2.15	0.47
1:I:396:ASP:OD2	1:I:415:ARG:NH2	2.48	0.47
1:K:137:LYS:HE2	1:K:139:GLU:CD	2.40	0.47
1:A:24:ALA:C	1:A:27:PRO:HD2	2.39	0.46
1:E:317:ALA:O	1:E:356:GLY:HA3	2.15	0.46
1:K:108:GLN:HG2	1:K:144:LYS:HZ2	1.80	0.46
1:L:94:ILE:HA	1:L:109:VAL:HG11	1.97	0.46
1:C:24:ALA:C	1:C:27:PRO:HD2	2.40	0.46
1:D:24:ALA:C	1:D:27:PRO:HD2	2.41	0.46
1:F:63:LYS:HB2	1:F:73:ASP:HB3	1.96	0.46
1:I:22:LYS:HD2	1:I:398:GLY:HA2	1.97	0.46
1:I:56:LEU:HB2	1:I:86:LEU:CD2	2.45	0.46
1:K:139:GLU:HG3	1:K:144:LYS:CD	2.44	0.46
1:A:36:GLU:O	1:A:75:ARG:HG2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:22:LYS:HD2	1:B:398:GLY:HA2	1.97	0.46
1:C:232:ARG:CB	1:C:258:THR:CG2	2.92	0.46
1:F:56:LEU:HB2	1:F:86:LEU:CD2	2.45	0.46
1:J:147:VAL:HG13	1:J:147:VAL:O	2.15	0.46
1:C:94:ILE:HA	1:C:109:VAL:HG11	1.98	0.46
1:C:371:ARG:NH1	1:C:398:GLY:O	2.48	0.46
1:G:232:ARG:CB	1:G:258:THR:CG2	2.93	0.46
1:G:243:ALA:HA	1:G:284:MET:HG3	1.98	0.46
1:H:60:LEU:HA	1:H:79:VAL:CG1	2.35	0.46
1:J:22:LYS:O	1:J:26:LEU:HD13	2.15	0.46
1:J:147:VAL:HG21	1:J:151:LEU:HD23	1.97	0.46
1:K:105:GLY:HA2	1:K:147:VAL:CG1	2.45	0.46
1:L:143:VAL:HG22	1:L:143:VAL:O	2.14	0.46
1:L:232:ARG:CB	1:L:258:THR:CG2	2.91	0.46
1:H:371:ARG:NH1	1:H:398:GLY:O	2.48	0.46
1:I:22:LYS:NZ	1:I:23:ASN:OD1	2.48	0.46
1:K:56:LEU:HB2	1:K:86:LEU:HD23	1.97	0.46
1:A:60:LEU:HA	1:A:79:VAL:CG1	2.36	0.46
1:D:143:VAL:O	1:D:143:VAL:HG22	2.16	0.46
1:E:371:ARG:NH1	1:E:398:GLY:O	2.48	0.46
1:F:22:LYS:HD2	1:F:398:GLY:HA2	1.97	0.46
1:H:4:PHE:CD2	1:H:392:ILE:HG21	2.51	0.46
1:C:36:GLU:O	1:C:75:ARG:HG2	2.16	0.46
1:E:41:ILE:N	1:E:41:ILE:HD12	2.31	0.46
1:K:197:PHE:CZ	1:K:201:LEU:HD11	2.51	0.46
1:K:276:GLY:HA3	1:K:279:TRP:NE1	2.31	0.46
1:A:371:ARG:NH1	1:A:398:GLY:O	2.48	0.46
1:D:359:LYS:NZ	1:D:384:GLU:OE1	2.46	0.46
1:E:24:ALA:C	1:E:27:PRO:HD2	2.41	0.46
1:J:204:LYS:HB3	1:J:216:GLU:HB3	1.97	0.46
1:B:370:LEU:HD21	2:B:501:EPZ:O2E	2.15	0.46
1:E:359:LYS:CE	1:E:384:GLU:HB2	2.46	0.46
1:H:416:VAL:HG23	1:H:418:GLY:H	1.81	0.46
1:J:120:ARG:HD3	1:J:328:PHE:CE1	2.51	0.46
1:B:186:ALA:HB3	1:B:191:ILE:CD1	2.46	0.45
1:G:41:ILE:HG22	1:G:44:VAL:CG2	2.46	0.45
1:I:330:ASN:CG	1:J:330:ASN:CG	2.83	0.45
1:I:371:ARG:NH1	1:I:398:GLY:O	2.49	0.45
1:J:125:HIS:HE1	3:J:626:HOH:O	1.98	0.45
1:J:358:GLU:OE1	1:J:359:LYS:HG2	2.15	0.45
1:A:317:ALA:O	1:A:356:GLY:HA3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:41:ILE:N	1:B:41:ILE:HD12	2.31	0.45
1:C:244:ILE:HD12	1:C:382:ILE:HD13	1.99	0.45
1:I:94:ILE:HA	1:I:109:VAL:HG11	1.97	0.45
1:J:188:GLU:OE1	3:J:619:HOH:O	2.21	0.45
1:J:283:ASP:OD2	1:J:285:HIS:CE1	2.69	0.45
1:L:158:MET:HE1	1:L:165:ALA:HB1	1.99	0.45
1:E:330:ASN:CG	1:H:330:ASN:HB3	2.41	0.45
1:I:67:IAS:CG	1:I:69:SER:H	2.29	0.45
1:J:56:LEU:O	1:J:60:LEU:HG	2.17	0.45
1:J:199:ILE:HA	1:J:203:ALA:H	1.82	0.45
1:J:284:MET:C	1:J:286:GLY:H	2.25	0.45
1:B:232:ARG:CB	1:B:258:THR:CG2	2.92	0.45
1:H:232:ARG:HD3	1:H:258:THR:HG23	1.99	0.45
1:K:317:ALA:O	1:K:356:GLY:HA3	2.16	0.45
1:D:315:LEU:HD21	1:D:345:ALA:HB2	1.97	0.45
1:F:41:ILE:HD12	1:F:41:ILE:N	2.32	0.45
1:J:76:ASP:O	1:J:77:VAL:C	2.59	0.45
1:K:359:LYS:HD3	1:K:384:GLU:HB2	1.99	0.45
1:A:30:PHE:HE1	1:A:56:LEU:HD23	1.81	0.45
1:C:276:GLY:HA3	1:C:279:TRP:NE1	2.31	0.45
1:F:22:LYS:NZ	1:F:23:ASN:OD1	2.50	0.45
1:H:143:VAL:HG22	1:H:143:VAL:O	2.16	0.45
1:I:141:GLY:HA3	1:J:340:ARG:NH2	2.32	0.45
1:I:232:ARG:CB	1:I:258:THR:CG2	2.90	0.45
1:J:391:ARG:C	1:J:393:TYR:H	2.25	0.45
1:D:371:ARG:NH2	3:D:644:HOH:O	2.50	0.45
1:I:24:ALA:C	1:I:27:PRO:HD2	2.42	0.45
1:I:143:VAL:O	1:I:143:VAL:HG22	2.16	0.45
1:J:201:LEU:CD2	1:J:223:GLY:HA2	2.47	0.45
1:J:249:ILE:HG12	1:J:250:ILE:N	2.32	0.45
1:A:276:GLY:HA3	1:A:279:TRP:NE1	2.32	0.45
1:D:7:GLN:HB2	1:D:412:ASN:HB3	1.99	0.45
1:K:1:MET:O	1:K:3:LYS:HE3	2.16	0.45
1:K:220:ARG:HG3	1:K:220:ARG:NH1	2.31	0.45
1:C:348:GLU:CG	1:F:322:PHE:CE2	3.00	0.45
1:G:359:LYS:CE	1:G:384:GLU:HB2	2.47	0.45
1:K:335:VAL:HB	1:K:336:PRO:HD3	1.99	0.45
1:A:21:ALA:HA	1:A:231:ASP:HB2	1.98	0.44
1:B:243:ALA:HA	1:B:284:MET:HG3	1.99	0.44
1:B:371:ARG:NH1	1:B:398:GLY:O	2.49	0.44
1:D:244:ILE:HD12	1:D:382:ILE:HD13	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:396:ASP:OD2	1:H:415:ARG:NH2	2.48	0.44
1:J:36:GLU:OE2	1:J:220:ARG:NE	2.50	0.44
1:J:84:TYR:C	1:J:86:LEU:H	2.25	0.44
1:K:396:ASP:OD2	1:K:415:ARG:NH2	2.48	0.44
1:L:41:ILE:N	1:L:41:ILE:HD12	2.32	0.44
1:D:41:ILE:HG22	1:D:44:VAL:CG2	2.47	0.44
1:E:315:LEU:HD21	1:E:345:ALA:HB2	1.99	0.44
1:K:90:MET:HB2	1:K:397:ARG:NH2	2.32	0.44
1:K:271:ALA:HB2	1:K:284:MET:SD	2.56	0.44
1:F:276:GLY:HA3	1:F:279:TRP:NE1	2.31	0.44
1:K:370:LEU:HD12	1:K:370:LEU:HA	1.51	0.44
1:D:22:LYS:HD2	1:D:398:GLY:HA2	1.99	0.44
1:F:158:MET:HE1	1:F:165:ALA:HB1	1.99	0.44
1:K:63:LYS:HB2	1:K:73:ASP:HB3	2.00	0.44
1:B:7:GLN:HB2	1:B:412:ASN:HB3	1.99	0.44
1:E:150:ARG:HH12	1:E:219:GLU:CA	2.20	0.44
1:F:243:ALA:HA	1:F:284:MET:HG3	1.98	0.44
1:I:186:ALA:HB3	1:I:191:ILE:CD1	2.48	0.44
1:A:7:GLN:HB2	1:A:412:ASN:HB3	2.00	0.44
1:A:330:ASN:OD1	1:B:330:ASN:OD1	2.35	0.44
1:B:252:ARG:HG3	1:B:252:ARG:HH11	1.81	0.44
1:C:59:GLN:O	1:C:79:VAL:CG1	2.66	0.44
1:C:299:HIS:ND1	1:C:300:PRO:HA	2.33	0.44
1:H:30:PHE:HE1	1:H:56:LEU:HD23	1.83	0.44
1:I:25:ALA:O	1:I:29:LEU:HD13	2.17	0.44
1:C:27:PRO:HG3	1:C:95:TRP:CH2	2.52	0.44
1:B:332:PHE:N	3:B:609:HOH:O	2.51	0.44
1:C:256:PRO:C	1:C:258:THR:H	2.26	0.44
1:D:159:ASP:OD1	1:F:265:LYS:CE	2.63	0.44
1:D:243:ALA:HA	1:D:284:MET:HG3	1.98	0.44
1:J:61:GLY:HA3	1:J:77:VAL:HA	2.00	0.44
1:L:27:PRO:HG3	1:L:95:TRP:CH2	2.52	0.44
1:L:276:GLY:HA3	1:L:279:TRP:NE1	2.33	0.44
1:A:354:CYS:HB2	3:A:626:HOH:O	2.18	0.44
1:C:21:ALA:HA	1:C:231:ASP:HB2	1.98	0.44
1:C:243:ALA:HA	1:C:284:MET:HG3	2.00	0.44
1:D:41:ILE:HD12	1:D:41:ILE:N	2.33	0.44
1:D:252:ARG:HG3	1:D:252:ARG:HH11	1.82	0.44
1:G:30:PHE:HE1	1:G:56:LEU:HD23	1.83	0.44
1:I:276:GLY:HA3	1:I:279:TRP:NE1	2.33	0.44
1:K:49:ASP:OD2	1:K:370:LEU:HD21	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:108:GLN:HG2	1:K:144:LYS:HZ1	1.79	0.44
1:A:25:ALA:O	1:A:29:LEU:HD13	2.18	0.43
1:D:59:GLN:O	1:D:79:VAL:CG1	2.63	0.43
1:I:36:GLU:O	1:I:75:ARG:HG2	2.18	0.43
1:J:317:ALA:O	1:J:356:GLY:HA3	2.18	0.43
1:A:299:HIS:ND1	1:A:300:PRO:HA	2.33	0.43
1:B:158:MET:HE1	1:B:165:ALA:HB1	2.00	0.43
1:H:186:ALA:HB3	1:H:191:ILE:CD1	2.47	0.43
1:I:101:VAL:HG21	1:I:145:ALA:HB3	2.00	0.43
1:J:115:QPA:H9	1:J:115:QPA:O13	2.18	0.43
1:J:244:ILE:CG2	1:J:313:LEU:HA	2.47	0.43
1:K:265:LYS:HE2	1:K:293:ASN:O	2.18	0.43
1:L:359:LYS:NZ	1:L:384:GLU:OE1	2.42	0.43
1:A:4:PHE:CD2	1:A:392:ILE:HG21	2.53	0.43
1:D:108:GLN:HG3	1:D:144:LYS:HG2	2.00	0.43
1:E:59:GLN:O	1:E:79:VAL:CG1	2.65	0.43
1:E:396:ASP:OD2	1:E:415:ARG:NH2	2.51	0.43
1:H:20:GLY:HA3	1:H:43:ASN:O	2.18	0.43
1:I:30:PHE:HE1	1:I:56:LEU:HD23	1.82	0.43
1:J:60:LEU:O	1:J:79:VAL:HG12	2.19	0.43
1:J:84:TYR:C	1:J:84:TYR:CD2	2.96	0.43
1:K:267:ARG:HG3	1:K:273:ILE:HD12	2.00	0.43
1:K:370:LEU:HD23	2:K:501:EPZ:O2E	2.18	0.43
1:A:315:LEU:HD21	1:A:345:ALA:HB2	2.00	0.43
1:D:60:LEU:HA	1:D:79:VAL:CG1	2.35	0.43
1:K:187:ARG:HH12	1:K:300:PRO:CD	2.30	0.43
1:L:7:GLN:HB2	1:L:412:ASN:HB3	2.00	0.43
1:L:60:LEU:CA	1:L:79:VAL:HG13	2.37	0.43
1:L:93:SER:C	1:L:95:TRP:N	2.74	0.43
1:C:22:LYS:HD2	1:C:398:GLY:HA2	1.99	0.43
1:J:41:ILE:HG22	1:J:44:VAL:CG2	2.49	0.43
1:B:22:LYS:NZ	1:B:23:ASN:OD1	2.48	0.43
1:C:41:ILE:N	1:C:41:ILE:HD12	2.34	0.43
1:E:186:ALA:HB3	1:E:191:ILE:CD1	2.48	0.43
1:F:232:ARG:CB	1:F:258:THR:CG2	2.93	0.43
1:I:41:ILE:O	1:I:69:SER:HA	2.17	0.43
1:J:5:ARG:CB	1:J:5:ARG:HH11	2.31	0.43
1:J:142:TYR:HB2	1:J:144:LYS:HE3	1.99	0.43
1:A:232:ARG:CB	1:A:258:THR:CG2	2.92	0.43
1:G:4:PHE:CD2	1:G:392:ILE:HG21	2.53	0.43
1:H:22:LYS:NZ	1:H:23:ASN:OD1	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:330:ASN:HB3	1:J:330:ASN:CG	2.44	0.43
1:J:41:ILE:HD12	1:J:41:ILE:H	1.83	0.43
1:J:57:LEU:HB3	1:J:64:VAL:HG21	2.01	0.43
1:J:276:GLY:HA3	1:J:279:TRP:CE2	2.54	0.43
1:K:198:LEU:O	1:K:203:ALA:HB3	2.18	0.43
1:K:207:GLY:O	1:K:208:GLN:C	2.61	0.43
1:D:30:PHE:HE1	1:D:56:LEU:HD23	1.84	0.43
1:E:232:ARG:CB	1:E:258:THR:CG2	2.96	0.43
1:F:27:PRO:HG3	1:F:95:TRP:CH2	2.54	0.43
1:G:101:VAL:HG21	1:G:145:ALA:CB	2.49	0.43
1:H:357:VAL:HG13	3:H:602:HOH:O	2.17	0.43
1:K:183:GLU:O	1:K:184:ASN:HB3	2.19	0.43
1:A:143:VAL:O	1:A:143:VAL:HG22	2.19	0.43
1:G:412:ASN:HA	3:G:608:HOH:O	2.18	0.43
1:H:158:MET:HE1	1:H:165:ALA:HB1	2.01	0.43
1:I:7:GLN:HB2	1:I:412:ASN:HB3	2.01	0.43
1:I:21:ALA:HA	1:I:231:ASP:HB2	2.01	0.43
1:J:46:LYS:N	1:J:400:GLU:OE1	2.34	0.43
1:B:4:PHE:CD2	1:B:392:ILE:HG21	2.54	0.43
1:F:359:LYS:CE	1:F:384:GLU:HB2	2.49	0.43
1:H:7:GLN:HB2	1:H:412:ASN:HB3	2.00	0.43
1:K:34:LEU:HD22	1:K:175:LEU:HD12	2.00	0.43
1:K:94:ILE:HD12	1:K:109:VAL:HG11	2.01	0.43
1:L:59:GLN:O	1:L:79:VAL:CG1	2.65	0.43
1:B:232:ARG:HD3	1:B:258:THR:HG23	2.01	0.42
1:F:317:ALA:O	1:F:356:GLY:HA3	2.19	0.42
1:H:150:ARG:HH12	1:H:219:GLU:CA	2.22	0.42
1:D:232:ARG:HD3	1:D:258:THR:HG23	2.00	0.42
1:G:20:GLY:HA3	1:G:43:ASN:O	2.19	0.42
1:G:276:GLY:HA3	1:G:279:TRP:NE1	2.34	0.42
1:I:158:MET:HE1	1:I:165:ALA:HB1	2.01	0.42
1:I:330:ASN:OD1	1:J:330:ASN:CB	2.67	0.42
1:J:41:ILE:HG22	1:J:44:VAL:HG23	2.01	0.42
1:J:120:ARG:CD	3:J:637:HOH:O	2.60	0.42
2:J:501:EPZ:H5DA	2:J:501:EPZ:C6U	2.48	0.42
1:D:36:GLU:O	1:D:75:ARG:HG2	2.19	0.42
1:G:294:VAL:HG12	1:G:295:ARG:N	2.34	0.42
1:I:59:GLN:O	1:I:79:VAL:CG1	2.66	0.42
1:J:3:LYS:HB2	1:J:389:VAL:O	2.19	0.42
2:K:501:EPZ:H5DA	2:K:501:EPZ:C6U	2.48	0.42
1:L:101:VAL:HG21	1:L:145:ALA:HB3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:101:VAL:HG21	1:B:145:ALA:CB	2.50	0.42
1:C:186:ALA:HB3	1:C:191:ILE:CD1	2.49	0.42
1:C:258:THR:HG22	1:C:259:LEU:HG	2.00	0.42
1:D:147:VAL:O	1:D:147:VAL:HG13	2.18	0.42
1:G:25:ALA:O	1:G:29:LEU:HD13	2.19	0.42
1:I:20:GLY:HA3	1:I:43:ASN:O	2.19	0.42
1:K:188:GLU:HA	1:K:189:PRO:HD3	1.88	0.42
1:L:186:ALA:HB3	1:L:191:ILE:CD1	2.49	0.42
1:A:141:GLY:HA3	1:B:340:ARG:NH2	2.34	0.42
1:F:59:GLN:O	1:F:79:VAL:CG1	2.64	0.42
1:G:59:GLN:O	1:G:79:VAL:CG1	2.65	0.42
2:I:501:EPZ:H5DA	2:I:501:EPZ:C6U	2.50	0.42
1:J:220:ARG:HG3	1:J:220:ARG:HH11	1.83	0.42
1:K:315:LEU:HD23	1:K:315:LEU:HA	1.86	0.42
1:A:101:VAL:HG21	1:A:145:ALA:HB3	2.01	0.42
1:E:20:GLY:HA3	1:E:43:ASN:O	2.19	0.42
1:F:11:LYS:HE2	1:F:247:GLY:HA2	2.02	0.42
1:F:258:THR:HG22	1:F:259:LEU:HG	2.01	0.42
1:G:57:LEU:HD12	1:G:57:LEU:HA	1.88	0.42
1:G:158:MET:HE1	1:G:165:ALA:HB1	2.02	0.42
1:G:246:ARG:HG2	1:G:287:LYS:O	2.20	0.42
1:H:59:GLN:O	1:H:79:VAL:CG1	2.65	0.42
1:J:198:LEU:HD23	1:J:198:LEU:HA	1.84	0.42
1:K:352:VAL:HG13	1:K:352:VAL:O	2.19	0.42
1:A:396:ASP:CG	1:A:415:ARG:HH22	2.26	0.42
1:E:183:GLU:OE2	1:E:212:ARG:NH1	2.53	0.42
1:F:150:ARG:HH12	1:F:219:GLU:CA	2.21	0.42
1:I:416:VAL:HG23	1:I:418:GLY:H	1.84	0.42
1:J:5:ARG:NH1	1:J:5:ARG:CB	2.83	0.42
1:K:1:MET:HE1	1:K:393:TYR:CE2	2.54	0.42
1:B:261:ALA:HA	1:E:157:VAL:HG11	2.02	0.42
1:C:150:ARG:HH12	1:C:219:GLU:CA	2.20	0.42
1:E:158:MET:HE1	1:E:165:ALA:HB1	2.01	0.42
1:F:208:GLN:OE1	1:F:208:GLN:N	2.47	0.42
1:G:317:ALA:O	1:G:356:GLY:HA3	2.20	0.42
1:H:243:ALA:HA	1:H:284:MET:HG3	2.02	0.42
1:A:220:ARG:HH11	1:A:220:ARG:HG3	1.85	0.42
1:B:359:LYS:CE	1:B:384:GLU:HB2	2.50	0.42
1:C:93:SER:C	1:C:95:TRP:N	2.77	0.42
1:C:315:LEU:HD21	1:C:345:ALA:HB2	2.02	0.42
1:H:101:VAL:HG21	1:H:145:ALA:HB3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:150:ARG:NH1	1:H:219:GLU:HA	2.21	0.42
1:J:51:ASP:HA	1:J:54:MET:HE3	2.02	0.42
1:J:189:PRO:HD3	1:J:299:HIS:CD2	2.55	0.42
1:L:243:ALA:HA	1:L:284:MET:HG3	2.01	0.42
1:D:25:ALA:O	1:D:29:LEU:HD13	2.20	0.42
1:I:11:LYS:HE2	1:I:247:GLY:HA2	2.02	0.42
1:J:105:GLY:HA2	1:J:147:VAL:CG1	2.49	0.42
1:J:273:ILE:HG22	1:J:274:GLU:N	2.35	0.42
1:K:254:ALA:C	1:K:256:PRO:HD3	2.45	0.42
1:K:259:LEU:HD23	3:K:606:HOH:O	2.20	0.42
1:B:41:ILE:HG22	1:B:44:VAL:CG2	2.50	0.41
1:F:101:VAL:HG21	1:F:145:ALA:CB	2.50	0.41
1:J:160:LYS:HD3	1:K:295:ARG:HE	1.84	0.41
1:G:256:PRO:C	1:G:258:THR:H	2.28	0.41
1:H:93:SER:C	1:H:95:TRP:N	2.77	0.41
1:H:232:ARG:CD	1:H:258:THR:HG23	2.50	0.41
1:H:315:LEU:HD21	1:H:345:ALA:HB2	2.02	0.41
1:I:243:ALA:HA	1:I:284:MET:HG3	2.02	0.41
1:J:39:VAL:CG2	1:J:40:GLU:N	2.83	0.41
1:J:108:GLN:CG	1:J:144:LYS:HE2	2.51	0.41
1:J:402:ILE:HG12	1:J:406:LEU:CD1	2.51	0.41
1:K:406:LEU:C	1:K:411:ALA:HB3	2.45	0.41
1:L:396:ASP:CG	1:L:415:ARG:HH22	2.28	0.41
1:B:101:VAL:HG21	1:B:145:ALA:HB3	2.02	0.41
1:F:287:LYS:HA	1:H:148:ASP:OD2	2.20	0.41
1:G:396:ASP:CG	1:G:415:ARG:HH22	2.28	0.41
1:K:407:ARG:C	1:K:409:LEU:N	2.78	0.41
1:D:158:MET:HE1	1:D:165:ALA:HB1	2.03	0.41
1:F:150:ARG:HB2	3:F:632:HOH:O	2.20	0.41
1:H:276:GLY:HA3	1:H:279:TRP:NE1	2.35	0.41
1:H:407:ARG:HG3	3:H:643:HOH:O	2.19	0.41
1:I:317:ALA:O	1:I:356:GLY:HA3	2.20	0.41
1:J:73:ASP:C	1:J:75:ARG:H	2.28	0.41
1:C:25:ALA:O	1:C:29:LEU:HD13	2.21	0.41
1:C:317:ALA:O	1:C:356:GLY:HA3	2.20	0.41
1:G:101:VAL:HG21	1:G:145:ALA:HB3	2.02	0.41
1:I:41:ILE:HG22	1:I:44:VAL:CG2	2.51	0.41
1:C:30:PHE:HE1	1:C:56:LEU:HD23	1.85	0.41
1:C:359:LYS:NZ	1:C:384:GLU:OE1	2.43	0.41
1:F:371:ARG:NH2	3:F:612:HOH:O	2.54	0.41
1:G:315:LEU:HD21	1:G:345:ALA:HB2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:4:PHE:CD2	1:I:392:ILE:HG21	2.55	0.41
1:J:239:LEU:HB3	1:J:282:LEU:HD12	2.02	0.41
1:K:265:LYS:HE2	1:K:294:VAL:HG22	2.01	0.41
1:L:101:VAL:HG21	1:L:145:ALA:CB	2.50	0.41
1:L:147:VAL:O	1:L:147:VAL:HG13	2.19	0.41
1:L:232:ARG:HD3	1:L:258:THR:HG23	2.03	0.41
1:A:256:PRO:C	1:A:258:THR:H	2.28	0.41
1:C:229:LEU:HA	3:C:666:HOH:O	2.20	0.41
1:I:44:VAL:HG12	1:I:66:ARG:HH12	1.86	0.41
1:I:120:ARG:HD3	1:I:328:PHE:HE1	1.81	0.41
1:J:60:LEU:HA	1:J:79:VAL:HG12	1.95	0.41
1:J:125:HIS:O	1:J:126:ILE:C	2.63	0.41
1:K:233:ILE:CD1	1:K:305:ASP:HB2	2.49	0.41
1:A:232:ARG:HD3	1:A:258:THR:HG23	2.03	0.41
1:B:11:LYS:HE2	1:B:247:GLY:HA2	2.02	0.41
1:D:93:SER:C	1:D:95:TRP:N	2.78	0.41
1:D:252:ARG:NH2	3:D:616:HOH:O	2.52	0.41
1:E:258:THR:HG22	1:E:259:LEU:HG	2.02	0.41
1:F:30:PHE:HE1	1:F:56:LEU:HD23	1.84	0.41
1:G:215:ILE:N	1:G:215:ILE:HD12	2.36	0.41
1:H:101:VAL:HG21	1:H:145:ALA:CB	2.51	0.41
1:I:330:ASN:OD1	1:J:330:ASN:HB3	2.20	0.41
1:J:22:LYS:N	3:J:607:HOH:O	2.53	0.41
1:J:32:ALA:C	1:J:34:LEU:N	2.79	0.41
1:J:402:ILE:HG12	1:J:406:LEU:HD12	2.01	0.41
1:A:93:SER:C	1:A:95:TRP:N	2.77	0.41
1:A:101:VAL:HG21	1:A:145:ALA:CB	2.51	0.41
1:B:294:VAL:HG12	1:B:295:ARG:N	2.36	0.41
1:B:416:VAL:HG23	1:B:418:GLY:H	1.85	0.41
1:C:243:ALA:HA	1:C:284:MET:CG	2.51	0.41
1:E:243:ALA:HA	1:E:284:MET:CG	2.51	0.41
1:F:66:ARG:CB	1:F:70:VAL:HG22	2.43	0.41
1:H:22:LYS:HD2	1:H:398:GLY:HA2	2.02	0.41
1:J:132:LEU:HD23	1:J:132:LEU:HA	1.88	0.41
1:K:34:LEU:HD22	1:K:175:LEU:CD1	2.50	0.41
1:K:41:ILE:N	1:K:41:ILE:HD12	2.36	0.41
1:K:183:GLU:CD	1:K:212:ARG:HD2	2.45	0.41
1:K:232:ARG:HB2	1:K:259:LEU:CD2	2.49	0.41
1:K:295:ARG:NH1	1:K:295:ARG:CG	2.84	0.41
1:K:320:THR:HG23	1:K:354:CYS:O	2.21	0.41
1:L:41:ILE:HG22	1:L:44:VAL:CG2	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:244:ILE:HD12	1:L:382:ILE:HD13	2.02	0.41
1:B:315:LEU:HD21	1:B:345:ALA:HB2	2.03	0.41
1:E:150:ARG:HB2	3:E:676:HOH:O	2.20	0.41
1:E:232:ARG:HD3	1:E:258:THR:HG23	2.03	0.41
1:I:66:ARG:HD2	1:I:70:VAL:HG22	2.03	0.41
1:J:188:GLU:OE2	1:J:299:HIS:HB2	2.21	0.41
1:K:141:GLY:C	1:K:142:TYR:HD2	2.29	0.41
1:K:176:ALA:O	1:K:217:GLY:HA3	2.21	0.41
1:A:41:ILE:HG22	1:A:44:VAL:CG2	2.51	0.40
1:A:348:GLU:HG3	1:E:322:PHE:CE2	2.56	0.40
1:E:101:VAL:HG21	1:E:145:ALA:HB3	2.03	0.40
1:F:315:LEU:HD21	1:F:345:ALA:HB2	2.02	0.40
1:G:294:VAL:CG1	1:G:295:ARG:N	2.84	0.40
1:H:258:THR:HG22	1:H:259:LEU:HG	2.03	0.40
1:H:359:LYS:CE	1:H:384:GLU:HB2	2.49	0.40
1:I:101:VAL:HG21	1:I:145:ALA:CB	2.50	0.40
1:B:25:ALA:O	1:B:29:LEU:HD13	2.21	0.40
1:B:27:PRO:HG3	1:B:95:TRP:CH2	2.57	0.40
1:B:93:SER:C	1:B:95:TRP:N	2.79	0.40
1:E:41:ILE:HG22	1:E:44:VAL:CG2	2.50	0.40
1:F:101:VAL:HG21	1:F:145:ALA:HB3	2.02	0.40
1:F:143:VAL:O	1:F:143:VAL:HG22	2.21	0.40
1:H:25:ALA:O	1:H:29:LEU:HD13	2.21	0.40
1:J:391:ARG:C	1:J:393:TYR:N	2.79	0.40
1:K:9:PRO:HD3	1:K:384:GLU:HA	2.02	0.40
1:K:132:LEU:HD11	1:K:169:ILE:HG23	2.02	0.40
1:A:27:PRO:HG3	1:A:95:TRP:CH2	2.56	0.40
1:A:359:LYS:CE	1:A:384:GLU:HB2	2.51	0.40
1:B:57:LEU:HD12	1:B:57:LEU:HA	1.88	0.40
1:C:277:GLU:O	1:C:277:GLU:HG2	2.22	0.40
1:E:27:PRO:HG3	1:E:95:TRP:CH2	2.56	0.40
1:F:243:ALA:HA	1:F:284:MET:CG	2.52	0.40
1:G:232:ARG:HD3	1:G:258:THR:HG23	2.04	0.40
1:J:84:TYR:C	1:J:86:LEU:N	2.77	0.40
1:J:298:PRO:O	1:J:301:ALA:HB3	2.21	0.40
1:K:249:ILE:HG12	1:K:250:ILE:N	2.36	0.40
1:K:263:LEU:HD23	1:K:263:LEU:HA	1.98	0.40
1:A:126:ILE:HG23	1:A:136:ILE:HD12	2.04	0.40
1:B:59:GLN:O	1:B:79:VAL:CG1	2.66	0.40
1:B:159:ASP:OD1	1:E:265:LYS:CE	2.69	0.40
1:D:396:ASP:CG	1:D:415:ARG:HH22	2.28	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:27:PRO:HG3	1:E:95:TRP:CZ3	2.56	0.40
1:E:30:PHE:CE1	1:E:56:LEU:HD23	2.56	0.40
1:G:143:VAL:O	1:G:143:VAL:HG22	2.20	0.40
1:G:243:ALA:HA	1:G:284:MET:CG	2.50	0.40
1:H:277:GLU:O	1:H:277:GLU:HG2	2.21	0.40
1:I:371:ARG:NH2	3:I:626:HOH:O	2.54	0.40
1:D:101:VAL:HG21	1:D:145:ALA:HB3	2.03	0.40
1:F:155:HIS:HD2	1:F:181:ILE:HB	1.86	0.40
1:I:243:ALA:HA	1:I:284:MET:CG	2.52	0.40
1:K:97:LEU:HD11	1:K:145:ALA:HB3	2.04	0.40
1:K:236:GLY:HA3	1:K:306:MET:CE	2.52	0.40
1:L:252:ARG:O	1:L:253:ASN:HB2	2.21	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:414:GLU:OE1	1:I:46:LYS:NZ[1_666]	2.06	0.14

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	413/418 (99%)	396 (96%)	15 (4%)	2 (0%)	24	43
1	B	413/418 (99%)	400 (97%)	13 (3%)	0	100	100
1	C	413/418 (99%)	398 (96%)	15 (4%)	0	100	100
1	D	413/418 (99%)	397 (96%)	15 (4%)	1 (0%)	43	63
1	E	413/418 (99%)	396 (96%)	17 (4%)	0	100	100
1	F	413/418 (99%)	396 (96%)	16 (4%)	1 (0%)	43	63
1	G	413/418 (99%)	397 (96%)	16 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	H	413/418 (99%)	397 (96%)	15 (4%)	1 (0%)	43	63
1	I	413/418 (99%)	394 (95%)	18 (4%)	1 (0%)	43	63
1	J	413/418 (99%)	368 (89%)	43 (10%)	2 (0%)	24	43
1	K	413/418 (99%)	378 (92%)	33 (8%)	2 (0%)	24	43
1	L	413/418 (99%)	397 (96%)	15 (4%)	1 (0%)	43	63
All	All	4956/5016 (99%)	4714 (95%)	231 (5%)	11 (0%)	43	63

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	L	91	ARG
1	A	91	ARG
1	D	91	ARG
1	H	91	ARG
1	K	329	GLU
1	F	91	ARG
1	I	91	ARG
1	J	260	ASP
1	J	313	LEU
1	A	329	GLU
1	K	333	MET

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	329/329 (100%)	317 (96%)	12 (4%)	31	58
1	B	329/329 (100%)	317 (96%)	12 (4%)	31	58
1	C	329/329 (100%)	313 (95%)	16 (5%)	22	45
1	D	329/329 (100%)	315 (96%)	14 (4%)	26	51
1	E	329/329 (100%)	315 (96%)	14 (4%)	26	51
1	F	329/329 (100%)	315 (96%)	14 (4%)	26	51

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	G	329/329 (100%)	314 (95%)	15 (5%)	24	48
1	H	329/329 (100%)	314 (95%)	15 (5%)	24	48
1	I	329/329 (100%)	315 (96%)	14 (4%)	26	51
1	J	329/329 (100%)	302 (92%)	27 (8%)	10	23
1	K	329/329 (100%)	310 (94%)	19 (6%)	18	38
1	L	329/329 (100%)	314 (95%)	15 (5%)	24	48
All	All	3948/3948 (100%)	3761 (95%)	187 (5%)	23	47

All (187) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	57	LEU
1	A	79	VAL
1	A	86	LEU
1	A	111	LEU
1	A	143	VAL
1	A	193	ASP
1	A	229	LEU
1	A	258	THR
1	A	330	ASN
1	A	358	GLU
1	A	391	ARG
1	A	416	VAL
1	B	57	LEU
1	B	79	VAL
1	B	86	LEU
1	B	111	LEU
1	B	143	VAL
1	B	193	ASP
1	B	229	LEU
1	B	258	THR
1	B	330	ASN
1	B	358	GLU
1	B	391	ARG
1	B	416	VAL
1	C	10	THR
1	C	57	LEU
1	C	79	VAL
1	C	86	LEU
1	C	111	LEU

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Mol	Chain	Res	Type
1	C	143	VAL
1	C	152	LYS
1	C	193	ASP
1	C	210	THR
1	C	229	LEU
1	C	258	THR
1	C	300	PRO
1	C	330	ASN
1	C	358	GLU
1	C	391	ARG
1	C	416	VAL
1	D	10	THR
1	D	57	LEU
1	D	79	VAL
1	D	86	LEU
1	D	111	LEU
1	D	143	VAL
1	D	152	LYS
1	D	193	ASP
1	D	229	LEU
1	D	258	THR
1	D	330	ASN
1	D	358	GLU
1	D	391	ARG
1	D	416	VAL
1	E	10	THR
1	E	57	LEU
1	E	79	VAL
1	E	86	LEU
1	E	111	LEU
1	E	143	VAL
1	E	152	LYS
1	E	193	ASP
1	E	229	LEU
1	E	258	THR
1	E	330	ASN
1	E	358	GLU
1	E	391	ARG
1	E	416	VAL
1	F	10	THR
1	F	57	LEU
1	F	70	VAL

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Mol	Chain	Res	Type
1	F	79	VAL
1	F	86	LEU
1	F	111	LEU
1	F	143	VAL
1	F	193	ASP
1	F	229	LEU
1	F	258	THR
1	F	330	ASN
1	F	358	GLU
1	F	391	ARG
1	F	416	VAL
1	G	10	THR
1	G	57	LEU
1	G	75	ARG
1	G	79	VAL
1	G	86	LEU
1	G	111	LEU
1	G	143	VAL
1	G	152	LYS
1	G	193	ASP
1	G	258	THR
1	G	300	PRO
1	G	330	ASN
1	G	358	GLU
1	G	391	ARG
1	G	416	VAL
1	H	10	THR
1	H	15	GLU
1	H	57	LEU
1	H	79	VAL
1	H	86	LEU
1	H	111	LEU
1	H	143	VAL
1	H	152	LYS
1	H	193	ASP
1	H	229	LEU
1	H	258	THR
1	H	330	ASN
1	H	358	GLU
1	H	391	ARG
1	H	416	VAL
1	I	10	THR

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Mol	Chain	Res	Type
1	I	57	LEU
1	I	79	VAL
1	I	86	LEU
1	I	111	LEU
1	I	143	VAL
1	I	152	LYS
1	I	193	ASP
1	I	229	LEU
1	I	258	THR
1	I	300	PRO
1	I	330	ASN
1	I	358	GLU
1	I	416	VAL
1	J	39	VAL
1	J	55	LYS
1	J	57	LEU
1	J	63	LYS
1	J	108	GLN
1	J	111	LEU
1	J	143	VAL
1	J	160	LYS
1	J	188	GLU
1	J	193	ASP
1	J	211	ASP
1	J	216	GLU
1	J	219	GLU
1	J	229	LEU
1	J	244	ILE
1	J	258	THR
1	J	265	LYS
1	J	275	VAL
1	J	300	PRO
1	J	320	THR
1	J	330	ASN
1	J	349	SER
1	J	352	VAL
1	J	354	CYS
1	J	360	LEU
1	J	414	GLU
1	J	416	VAL
1	K	3	LYS
1	K	34	LEU

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Mol	Chain	Res	Type
1	K	37	GLU
1	K	39	VAL
1	K	47	LEU
1	K	57	LEU
1	K	59	GLN
1	K	86	LEU
1	K	111	LEU
1	K	120	ARG
1	K	160	LYS
1	K	211	ASP
1	K	219	GLU
1	K	229	LEU
1	K	248	LYS
1	K	323	ILE
1	K	353	ILE
1	K	359	LYS
1	K	416	VAL
1	L	10	THR
1	L	57	LEU
1	L	75	ARG
1	L	79	VAL
1	L	86	LEU
1	L	111	LEU
1	L	143	VAL
1	L	193	ASP
1	L	229	LEU
1	L	258	THR
1	L	300	PRO
1	L	330	ASN
1	L	358	GLU
1	L	391	ARG
1	L	416	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (30) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	155	HIS
1	A	255	GLN
1	B	253	ASN
1	B	255	GLN
1	C	155	HIS
1	C	253	ASN

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Mol	Chain	Res	Type
1	C	255	GLN
1	C	394	HIS
1	D	255	GLN
1	E	108	GLN
1	E	255	GLN
1	E	299	HIS
1	F	255	GLN
1	F	285	HIS
1	G	108	GLN
1	G	255	GLN
1	G	299	HIS
1	H	253	ASN
1	H	255	GLN
1	H	299	HIS
1	H	394	HIS
1	I	155	HIS
1	J	106	GLN
1	J	108	GLN
1	J	299	HIS
1	J	334	HIS
1	K	78	ASN
1	K	364	GLN
1	L	255	GLN
1	L	299	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

24 non-standard protein/DNA/RNA residues 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
1	QPA	I	115	1	10,15,16	4.33	4 (40%)	11,22,24	1.31	1 (9%)
1	IAS	G	67	1	6,7,8	0.92	0	3,8,10	1.11	0
1	IAS	J	67	1	6,7,8	1.01	0	3,8,10	1.17	0
1	IAS	H	67	1	6,7,8	0.98	0	3,8,10	1.14	0
1	QPA	L	115	1	10,15,16	3.79	4 (40%)	11,22,24	1.35	1 (9%)
1	QPA	D	115	1	10,15,16	3.94	4 (40%)	11,22,24	1.48	1 (9%)
1	IAS	E	67	1	6,7,8	1.60	2 (33%)	3,8,10	4.27	1 (33%)
1	IAS	D	67	1	6,7,8	1.03	0	3,8,10	0.98	0
1	QPA	G	115	1	10,15,16	3.76	5 (50%)	11,22,24	1.43	1 (9%)
1	QPA	K	115	1	10,15,16	4.06	5 (50%)	11,22,24	1.53	1 (9%)
1	IAS	I	67	1	6,7,8	1.38	1 (16%)	3,8,10	4.61	1 (33%)
1	QPA	J	115	1	10,15,16	3.93	4 (40%)	11,22,24	1.58	2 (18%)
1	IAS	A	67	1	6,7,8	0.92	0	3,8,10	1.18	0
1	QPA	C	115	1	10,15,16	3.70	4 (40%)	11,22,24	1.34	1 (9%)
1	QPA	F	115	1	10,15,16	4.04	4 (40%)	11,22,24	1.45	1 (9%)
1	IAS	C	67	1	6,7,8	0.93	0	3,8,10	1.14	0
1	QPA	H	115	1	10,15,16	3.82	4 (40%)	11,22,24	1.35	1 (9%)
1	QPA	E	115	1	10,15,16	4.11	4 (40%)	11,22,24	1.32	1 (9%)
1	IAS	B	67	1	6,7,8	0.85	0	3,8,10	1.07	0
1	IAS	K	67	1	6,7,8	1.63	2 (33%)	3,8,10	4.58	2 (66%)
1	QPA	B	115	1	10,15,16	3.98	4 (40%)	11,22,24	1.35	1 (9%)
1	IAS	L	67	1	6,7,8	0.84	0	3,8,10	1.12	0
1	QPA	A	115	1	10,15,16	4.19	4 (40%)	11,22,24	1.47	1 (9%)
1	IAS	F	67	1	6,7,8	1.34	1 (16%)	3,8,10	4.20	1 (33%)

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
1	QPA	I	115	1	-	1/9/20/22	-
1	IAS	G	67	1	-	2/7/7/8	-
1	IAS	J	67	1	-	4/7/7/8	-
1	IAS	H	67	1	-	1/7/7/8	-
1	QPA	L	115	1	-	0/9/20/22	-
1	QPA	D	115	1	-	1/9/20/22	-
1	IAS	E	67	1	-	3/7/7/8	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	IAS	D	67	1	-	2/7/7/8	-
1	QPA	G	115	1	-	0/9/20/22	-
1	QPA	K	115	1	-	0/9/20/22	-
1	IAS	I	67	1	-	3/7/7/8	-
1	QPA	J	115	1	-	1/9/20/22	-
1	IAS	A	67	1	-	2/7/7/8	-
1	QPA	C	115	1	-	1/9/20/22	-
1	QPA	F	115	1	-	0/9/20/22	-
1	IAS	C	67	1	-	2/7/7/8	-
1	QPA	H	115	1	-	0/9/20/22	-
1	QPA	E	115	1	-	1/9/20/22	-
1	IAS	B	67	1	-	2/7/7/8	-
1	IAS	K	67	1	-	2/7/7/8	-
1	QPA	B	115	1	-	0/9/20/22	-
1	IAS	L	67	1	-	2/7/7/8	-
1	QPA	A	115	1	-	1/9/20/22	-
1	IAS	F	67	1	-	4/7/7/8	-

All (56) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	I	115	QPA	P2-O14	10.38	1.77	1.59
1	A	115	QPA	P2-O14	10.17	1.77	1.59
1	E	115	QPA	P2-O14	9.35	1.75	1.59
1	J	115	QPA	P2-O14	9.22	1.75	1.59
1	F	115	QPA	P2-O14	9.14	1.75	1.59
1	K	115	QPA	P2-O14	9.10	1.75	1.59
1	D	115	QPA	P2-O14	9.08	1.75	1.59
1	B	115	QPA	P2-O14	8.88	1.75	1.59
1	L	115	QPA	P2-O14	8.69	1.74	1.59
1	G	115	QPA	P2-O14	8.12	1.73	1.59
1	C	115	QPA	P2-O14	8.10	1.73	1.59
1	H	115	QPA	P2-O14	8.03	1.73	1.59
1	D	115	QPA	P2-O13	6.09	1.69	1.50
1	F	115	QPA	P2-O13	6.00	1.69	1.50
1	E	115	QPA	O9-C10	5.89	1.40	1.22
1	I	115	QPA	P2-O13	5.85	1.68	1.50
1	H	115	QPA	P2-O13	5.82	1.68	1.50
1	B	115	QPA	P2-O13	5.79	1.68	1.50
1	G	115	QPA	P2-O13	5.66	1.68	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	115	QPA	P2-O13	5.61	1.67	1.50
1	K	115	QPA	O9-C10	5.57	1.39	1.22
1	B	115	QPA	O9-C10	5.53	1.39	1.22
1	C	115	QPA	P2-O13	5.52	1.67	1.50
1	A	115	QPA	P2-O13	5.51	1.67	1.50
1	H	115	QPA	O9-C10	5.51	1.39	1.22
1	K	115	QPA	P2-O13	5.50	1.67	1.50
1	I	115	QPA	O9-C10	5.41	1.39	1.22
1	J	115	QPA	P2-O13	5.39	1.67	1.50
1	F	115	QPA	O9-C10	5.33	1.38	1.22
1	L	115	QPA	O9-C10	5.31	1.38	1.22
1	A	115	QPA	O9-C10	5.29	1.38	1.22
1	G	115	QPA	O9-C10	5.19	1.38	1.22
1	L	115	QPA	P2-O13	5.17	1.66	1.50
1	C	115	QPA	O9-C10	5.08	1.38	1.22
1	J	115	QPA	O9-C10	4.96	1.37	1.22
1	D	115	QPA	O9-C10	4.39	1.35	1.22
1	H	115	QPA	P2-O11	3.58	1.68	1.54
1	K	115	QPA	P2-O11	3.27	1.66	1.54
1	J	115	QPA	P2-O11	3.27	1.66	1.54
1	E	115	QPA	P2-O11	3.26	1.66	1.54
1	F	115	QPA	P2-O11	3.14	1.66	1.54
1	B	115	QPA	P2-O11	3.11	1.66	1.54
1	A	115	QPA	P2-O11	3.06	1.66	1.54
1	D	115	QPA	P2-O11	3.05	1.66	1.54
1	L	115	QPA	P2-O11	2.88	1.65	1.54
1	K	67	IAS	CB-CA	-2.85	1.45	1.54
1	C	115	QPA	P2-O11	2.79	1.65	1.54
1	I	115	QPA	P2-O11	2.73	1.64	1.54
1	E	67	IAS	CB-CA	-2.61	1.46	1.54
1	G	115	QPA	P2-O11	2.58	1.64	1.54
1	I	67	IAS	CB-CA	-2.48	1.46	1.54
1	G	115	QPA	CB-CA	2.25	1.59	1.53
1	E	67	IAS	OXT-C	-2.23	1.23	1.30
1	F	67	IAS	CB-CA	-2.21	1.47	1.54
1	K	67	IAS	OXT-C	-2.17	1.23	1.30
1	K	115	QPA	CB-CA	2.13	1.58	1.53

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	I	67	IAS	OXT-C-O	7.78	141.73	124.08

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	K	67	IAS	OXT-C-O	7.40	140.87	124.08
1	F	67	IAS	OXT-C-O	7.24	140.50	124.08
1	E	67	IAS	OXT-C-O	6.99	139.94	124.08
1	K	115	QPA	CB-SG-C8	4.37	112.98	103.27
1	A	115	QPA	CB-SG-C8	4.16	112.50	103.27
1	J	115	QPA	CB-SG-C8	4.10	112.38	103.27
1	D	115	QPA	CB-SG-C8	4.08	112.32	103.27
1	F	115	QPA	CB-SG-C8	4.07	112.30	103.27
1	G	115	QPA	CB-SG-C8	3.98	112.10	103.27
1	H	115	QPA	CB-SG-C8	3.82	111.76	103.27
1	B	115	QPA	CB-SG-C8	3.70	111.49	103.27
1	L	115	QPA	CB-SG-C8	3.68	111.44	103.27
1	E	115	QPA	CB-SG-C8	3.66	111.40	103.27
1	I	115	QPA	CB-SG-C8	3.66	111.39	103.27
1	C	115	QPA	CB-SG-C8	3.51	111.06	103.27
1	K	67	IAS	CA-CB-CG	-2.13	105.81	114.66
1	J	115	QPA	O11-P2-O14	2.04	113.79	105.85

There are no chirality outliers.

All (35) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	E	67	IAS	N-CA-CB-CG
1	I	67	IAS	C-CA-CB-CG
1	J	67	IAS	OXT-C-CA-N
1	F	67	IAS	OXT-C-CA-CB
1	J	67	IAS	O-C-CA-CB
1	I	67	IAS	CA-CB-CG-OD1
1	K	67	IAS	CA-CB-CG-OD1
1	J	67	IAS	OXT-C-CA-CB
1	F	67	IAS	O-C-CA-CB
1	G	67	IAS	O-C-CA-CB
1	G	67	IAS	OXT-C-CA-CB
1	A	67	IAS	O-C-CA-CB
1	B	67	IAS	O-C-CA-CB
1	C	67	IAS	O-C-CA-CB
1	E	67	IAS	O-C-CA-CB
1	L	67	IAS	O-C-CA-CB
1	A	115	QPA	C8-O14-P2-O11
1	C	115	QPA	C8-O14-P2-O11
1	E	115	QPA	C8-O14-P2-O11
1	I	115	QPA	C8-O14-P2-O11

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Mol	Chain	Res	Type	Atoms
1	F	67	IAS	CA-CB-CG-OD1
1	A	67	IAS	OXT-C-CA-CB
1	B	67	IAS	OXT-C-CA-CB
1	D	115	QPA	C8-O14-P2-O11
1	J	115	QPA	C8-O14-P2-O11
1	D	67	IAS	OXT-C-CA-CB
1	E	67	IAS	OXT-C-CA-CB
1	L	67	IAS	OXT-C-CA-CB
1	C	67	IAS	OXT-C-CA-CB
1	D	67	IAS	O-C-CA-CB
1	H	67	IAS	O-C-CA-CB
1	K	67	IAS	O-C-CA-CB
1	I	67	IAS	O-C-CA-N
1	J	67	IAS	O-C-CA-N
1	F	67	IAS	OXT-C-CA-N

There are no ring outliers.

5 monomers are involved in 18 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	K	115	QPA	1	0
1	I	67	IAS	8	0
1	J	115	QPA	1	0
1	K	67	IAS	5	0
1	F	67	IAS	3	0

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	EPZ	B	501	-	45,46,46	1.40	7 (15%)	62,69,69	1.70	9 (14%)
2	EPZ	H	501	-	45,46,46	1.41	6 (13%)	62,69,69	1.61	10 (16%)
2	EPZ	C	501	-	45,46,46	1.58	9 (20%)	62,69,69	1.71	9 (14%)
2	EPZ	L	501	-	45,46,46	1.58	6 (13%)	62,69,69	1.67	10 (16%)
2	EPZ	A	501	-	45,46,46	1.44	9 (20%)	62,69,69	1.61	8 (12%)
2	EPZ	F	501	-	45,46,46	1.74	10 (22%)	62,69,69	1.67	11 (17%)
2	EPZ	J	501	-	45,46,46	1.33	7 (15%)	62,69,69	1.69	9 (14%)
2	EPZ	G	501	-	45,46,46	1.38	8 (17%)	62,69,69	1.70	11 (17%)
2	EPZ	K	501	-	45,46,46	1.64	11 (24%)	62,69,69	1.72	7 (11%)
2	EPZ	I	501	-	45,46,46	1.46	8 (17%)	62,69,69	1.55	7 (11%)
2	EPZ	D	501	-	45,46,46	1.46	10 (22%)	62,69,69	1.71	11 (17%)
2	EPZ	E	501	-	45,46,46	1.89	8 (17%)	62,69,69	1.66	13 (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	EPZ	B	501	-	-	7/34/71/71	0/3/3/3
2	EPZ	H	501	-	-	7/34/71/71	0/3/3/3
2	EPZ	C	501	-	-	4/34/71/71	0/3/3/3
2	EPZ	L	501	-	-	5/34/71/71	0/3/3/3
2	EPZ	A	501	-	-	5/34/71/71	0/3/3/3
2	EPZ	F	501	-	-	6/34/71/71	0/3/3/3
2	EPZ	J	501	-	-	5/34/71/71	0/3/3/3
2	EPZ	G	501	-	-	6/34/71/71	0/3/3/3
2	EPZ	K	501	-	-	5/34/71/71	0/3/3/3
2	EPZ	I	501	-	-	6/34/71/71	0/3/3/3
2	EPZ	D	501	-	-	5/34/71/71	0/3/3/3
2	EPZ	E	501	-	-	4/34/71/71	0/3/3/3

All (99) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	501	EPZ	PB-O3A	-6.63	1.52	1.59
2	E	501	EPZ	PA-O3A	-6.04	1.53	1.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L	501	EPZ	PB-O3A	-5.03	1.54	1.59
2	K	501	EPZ	PA-O3A	-4.70	1.54	1.59
2	K	501	EPZ	C2U-N1U	4.59	1.45	1.38
2	B	501	EPZ	C2U-N1U	4.41	1.45	1.38
2	F	501	EPZ	C2U-N1U	4.22	1.45	1.38
2	F	501	EPZ	PB-O3A	-4.15	1.55	1.59
2	H	501	EPZ	C2U-N1U	3.94	1.44	1.38
2	C	501	EPZ	PB-O3A	-3.60	1.55	1.59
2	K	501	EPZ	PB-O3A	-3.59	1.55	1.59
2	A	501	EPZ	C2U-N1U	3.57	1.44	1.38
2	I	501	EPZ	PB-O3A	-3.54	1.55	1.59
2	L	501	EPZ	PA-O3A	-3.43	1.55	1.59
2	I	501	EPZ	PA-O3A	-3.41	1.55	1.59
2	L	501	EPZ	C2U-N1U	3.40	1.43	1.38
2	C	501	EPZ	C6U-C5U	3.23	1.42	1.35
2	D	501	EPZ	PB-O1B	-3.18	1.40	1.55
2	F	501	EPZ	PB-O1B	-3.18	1.40	1.55
2	C	501	EPZ	C2U-N1U	3.17	1.43	1.38
2	E	501	EPZ	C6U-C5U	3.15	1.42	1.35
2	L	501	EPZ	PB-O1B	-3.08	1.41	1.55
2	G	501	EPZ	PB-O3A	-3.02	1.56	1.59
2	F	501	EPZ	PB-O2B	-3.00	1.40	1.50
2	H	501	EPZ	PB-O1B	-2.98	1.41	1.55
2	C	501	EPZ	O5D-C5D	-2.94	1.33	1.44
2	G	501	EPZ	PB-O1B	-2.93	1.41	1.55
2	G	501	EPZ	C6U-C5U	2.92	1.41	1.35
2	H	501	EPZ	C3-C2	2.83	1.57	1.53
2	A	501	EPZ	C2E-C1E	2.83	1.57	1.52
2	D	501	EPZ	C2U-N1U	2.80	1.42	1.38
2	A	501	EPZ	PB-O1B	-2.79	1.42	1.55
2	D	501	EPZ	PA-O1A	-2.79	1.41	1.50
2	J	501	EPZ	C2U-N1U	2.76	1.42	1.38
2	F	501	EPZ	PA-O2A	-2.74	1.42	1.55
2	E	501	EPZ	PB-O1B	-2.73	1.42	1.55
2	D	501	EPZ	C3-C2	2.68	1.57	1.53
2	C	501	EPZ	PB-O1B	-2.67	1.43	1.55
2	A	501	EPZ	C6U-C5U	2.66	1.41	1.35
2	F	501	EPZ	C3-C2	2.65	1.57	1.53
2	F	501	EPZ	C6U-C5U	2.64	1.41	1.35
2	J	501	EPZ	PB-O1B	-2.64	1.43	1.55
2	I	501	EPZ	PB-O1B	-2.63	1.43	1.55
2	D	501	EPZ	PB-O2B	-2.62	1.41	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	501	EPZ	PB-O1B	-2.61	1.43	1.55
2	C	501	EPZ	PA-O2A	-2.61	1.43	1.55
2	B	501	EPZ	C6U-C5U	2.61	1.41	1.35
2	G	501	EPZ	O5D-C5D	-2.57	1.34	1.44
2	K	501	EPZ	PB-O1B	-2.56	1.43	1.55
2	F	501	EPZ	PA-O3A	-2.50	1.56	1.59
2	K	501	EPZ	PA-O2A	-2.48	1.43	1.55
2	J	501	EPZ	O5D-C5D	-2.48	1.35	1.44
2	D	501	EPZ	PA-O2A	-2.45	1.44	1.55
2	B	501	EPZ	PA-O3A	-2.45	1.56	1.59
2	C	501	EPZ	O4U-C4U	-2.44	1.19	1.24
2	C	501	EPZ	PB-O2B	-2.42	1.42	1.50
2	F	501	EPZ	O3-C3	-2.41	1.37	1.43
2	J	501	EPZ	O1E-C1E	-2.40	1.23	1.30
2	B	501	EPZ	O3-C3	-2.39	1.37	1.43
2	D	501	EPZ	O3-C3	-2.37	1.37	1.43
2	I	501	EPZ	O3-C3	-2.37	1.37	1.43
2	D	501	EPZ	C6U-C5U	2.34	1.40	1.35
2	G	501	EPZ	PB-O2B	-2.34	1.42	1.50
2	K	501	EPZ	C3-C2	2.31	1.56	1.53
2	E	501	EPZ	O3-C3	-2.31	1.38	1.43
2	L	501	EPZ	PA-O2A	-2.30	1.44	1.55
2	K	501	EPZ	C6U-C5U	2.29	1.40	1.35
2	B	501	EPZ	O5D-C5D	-2.27	1.36	1.44
2	I	501	EPZ	PA-O2A	-2.27	1.44	1.55
2	A	501	EPZ	PA-O2A	-2.27	1.44	1.55
2	I	501	EPZ	O1E-C1E	-2.27	1.23	1.30
2	E	501	EPZ	PA-O2A	-2.25	1.44	1.55
2	D	501	EPZ	O5D-C5D	-2.24	1.36	1.44
2	J	501	EPZ	O4-C4	-2.23	1.37	1.43
2	C	501	EPZ	C3-C2	2.23	1.56	1.53
2	B	501	EPZ	PA-O2A	-2.23	1.45	1.55
2	K	501	EPZ	PA-O1A	-2.22	1.43	1.50
2	I	501	EPZ	C2U-N1U	2.21	1.41	1.38
2	J	501	EPZ	PA-O2A	-2.20	1.45	1.55
2	A	501	EPZ	PB-O2B	-2.19	1.43	1.50
2	F	501	EPZ	O2D-C2D	-2.17	1.37	1.43
2	E	501	EPZ	C2U-N1U	2.17	1.41	1.38
2	G	501	EPZ	C2U-N1U	2.14	1.41	1.38
2	H	501	EPZ	O5D-C5D	-2.13	1.36	1.44
2	D	501	EPZ	O1E-C1E	-2.12	1.23	1.30
2	H	501	EPZ	C6U-C5U	2.10	1.40	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	K	501	EPZ	O5D-C5D	-2.10	1.36	1.44
2	A	501	EPZ	O3-C3	-2.09	1.38	1.43
2	E	501	EPZ	O4U-C4U	-2.06	1.20	1.24
2	G	501	EPZ	O4U-C4U	-2.05	1.20	1.24
2	J	501	EPZ	PA-O3A	-2.03	1.57	1.59
2	A	501	EPZ	O1E-C1E	-2.03	1.24	1.30
2	A	501	EPZ	PA-O3A	-2.03	1.57	1.59
2	L	501	EPZ	C3D-C2D	-2.03	1.47	1.53
2	H	501	EPZ	PA-O2A	-2.03	1.46	1.55
2	K	501	EPZ	PB-O2B	-2.02	1.43	1.50
2	I	501	EPZ	C6U-C5U	2.01	1.39	1.35
2	G	501	EPZ	PA-O2A	-2.01	1.46	1.55
2	K	501	EPZ	C1-C2	2.00	1.56	1.53

All (115) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L	501	EPZ	C4U-N3U-C2U	-5.70	119.53	126.61
2	B	501	EPZ	C4U-N3U-C2U	-5.44	119.86	126.61
2	K	501	EPZ	C4U-N3U-C2U	-5.41	119.90	126.61
2	F	501	EPZ	C4U-N3U-C2U	-5.40	119.91	126.61
2	G	501	EPZ	C4U-N3U-C2U	-5.40	119.91	126.61
2	D	501	EPZ	C4U-N3U-C2U	-5.24	120.11	126.61
2	I	501	EPZ	C4U-N3U-C2U	-5.24	120.11	126.61
2	J	501	EPZ	C4U-N3U-C2U	-5.21	120.14	126.61
2	C	501	EPZ	C4U-N3U-C2U	-5.06	120.33	126.61
2	A	501	EPZ	C4U-N3U-C2U	-4.82	120.63	126.61
2	H	501	EPZ	C4U-N3U-C2U	-4.76	120.70	126.61
2	E	501	EPZ	N3U-C2U-N1U	4.75	121.08	114.89
2	C	501	EPZ	C5U-C4U-N3U	4.73	121.43	114.80
2	G	501	EPZ	N3U-C2U-N1U	4.71	121.03	114.89
2	E	501	EPZ	C4U-N3U-C2U	-4.67	120.82	126.61
2	D	501	EPZ	N3U-C2U-N1U	4.65	120.95	114.89
2	L	501	EPZ	C5U-C4U-N3U	4.61	121.25	114.80
2	B	501	EPZ	C5U-C4U-N3U	4.59	121.23	114.80
2	C	501	EPZ	N3U-C2U-N1U	4.58	120.86	114.89
2	H	501	EPZ	C5U-C4U-N3U	4.57	121.20	114.80
2	I	501	EPZ	C5U-C4U-N3U	4.46	121.05	114.80
2	F	501	EPZ	N3U-C2U-N1U	4.45	120.68	114.89
2	B	501	EPZ	N3U-C2U-N1U	4.38	120.60	114.89
2	E	501	EPZ	C5U-C4U-N3U	4.37	120.93	114.80
2	J	501	EPZ	C5U-C4U-N3U	4.37	120.92	114.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	G	501	EPZ	C5U-C4U-N3U	4.32	120.86	114.80
2	K	501	EPZ	O4D-C4D-C5D	-4.30	95.57	109.33
2	J	501	EPZ	N3U-C2U-N1U	4.30	120.48	114.89
2	K	501	EPZ	N3U-C2U-N1U	4.27	120.44	114.89
2	I	501	EPZ	N3U-C2U-N1U	4.24	120.42	114.89
2	K	501	EPZ	C5U-C4U-N3U	4.20	120.68	114.80
2	C	501	EPZ	O4D-C4D-C5D	-4.14	96.08	109.33
2	D	501	EPZ	C5U-C4U-N3U	4.11	120.55	114.80
2	A	501	EPZ	N3U-C2U-N1U	4.05	120.17	114.89
2	H	501	EPZ	N3U-C2U-N1U	4.04	120.15	114.89
2	L	501	EPZ	N3U-C2U-N1U	4.03	120.14	114.89
2	J	501	EPZ	O4D-C4D-C5D	-3.93	96.75	109.33
2	F	501	EPZ	C5U-C4U-N3U	3.92	120.28	114.80
2	A	501	EPZ	C5U-C4U-N3U	3.87	120.23	114.80
2	H	501	EPZ	O4D-C4D-C5D	-3.74	97.34	109.33
2	D	501	EPZ	O4D-C4D-C5D	-3.63	97.69	109.33
2	A	501	EPZ	O4D-C4D-C5D	-3.63	97.70	109.33
2	J	501	EPZ	O5D-C5D-C4D	3.60	121.23	108.99
2	G	501	EPZ	O4D-C4D-C5D	-3.58	97.87	109.33
2	B	501	EPZ	O5D-C5D-C4D	3.48	120.85	108.99
2	K	501	EPZ	O5D-C5D-C4D	3.43	120.66	108.99
2	F	501	EPZ	O4D-C4D-C5D	-3.41	98.43	109.33
2	B	501	EPZ	O4D-C4D-C5D	-3.30	98.77	109.33
2	L	501	EPZ	O4D-C1D-N1U	3.25	115.73	108.36
2	F	501	EPZ	O4U-C4U-C5U	-3.22	119.61	125.16
2	A	501	EPZ	O5D-C5D-C4D	3.15	119.73	108.99
2	E	501	EPZ	O4D-C4D-C5D	-3.12	99.35	109.33
2	D	501	EPZ	O5D-C5D-C4D	3.03	119.30	108.99
2	D	501	EPZ	O1B-PB-O3A	3.00	115.39	107.27
2	B	501	EPZ	O4U-C4U-C5U	-2.93	120.12	125.16
2	E	501	EPZ	O2U-C2U-N1U	-2.91	119.01	122.80
2	L	501	EPZ	O4U-C4U-C5U	-2.90	120.17	125.16
2	D	501	EPZ	O5-C1-O1	-2.88	107.60	111.36
2	L	501	EPZ	O4D-C4D-C5D	-2.88	100.12	109.33
2	K	501	EPZ	O4U-C4U-C5U	-2.84	120.26	125.16
2	I	501	EPZ	O4U-C4U-C5U	-2.84	120.26	125.16
2	G	501	EPZ	O2U-C2U-N1U	-2.82	119.12	122.80
2	G	501	EPZ	O5D-C5D-C4D	2.81	118.54	108.99
2	A	501	EPZ	O1E-C1E-O2E	-2.77	117.79	124.08
2	J	501	EPZ	O4U-C4U-C5U	-2.74	120.43	125.16
2	J	501	EPZ	O1E-C1E-O2E	-2.73	117.88	124.08
2	I	501	EPZ	O4D-C4D-C5D	-2.71	100.67	109.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	501	EPZ	O5D-C5D-C4D	2.70	118.20	108.99
2	J	501	EPZ	O1B-PB-O3A	2.69	114.53	107.27
2	B	501	EPZ	C6U-N1U-C2U	-2.63	117.80	121.00
2	D	501	EPZ	O2U-C2U-N1U	-2.58	119.44	122.80
2	F	501	EPZ	C6U-N1U-C2U	-2.56	117.89	121.00
2	C	501	EPZ	O1-PB-O2B	-2.54	101.67	109.81
2	L	501	EPZ	O5D-C5D-C4D	2.54	117.64	108.99
2	I	501	EPZ	O5D-C5D-C4D	2.53	117.62	108.99
2	C	501	EPZ	O5D-C5D-C4D	2.53	117.59	108.99
2	A	501	EPZ	O4U-C4U-C5U	-2.51	120.84	125.16
2	H	501	EPZ	O4U-C4U-C5U	-2.46	120.92	125.16
2	F	501	EPZ	O1-PB-O2B	-2.45	101.98	109.81
2	F	501	EPZ	O1B-PB-O3A	2.44	113.86	107.27
2	F	501	EPZ	O1E-C1E-O2E	-2.41	118.62	124.08
2	D	501	EPZ	O4U-C4U-C5U	-2.40	121.02	125.16
2	C	501	EPZ	O4U-C4U-C5U	-2.39	121.04	125.16
2	C	501	EPZ	O1E-C1E-O2E	-2.38	118.68	124.08
2	E	501	EPZ	O4U-C4U-C5U	-2.37	121.07	125.16
2	H	501	EPZ	O5D-C5D-C4D	2.37	117.06	108.99
2	H	501	EPZ	O1E-C1E-O2E	-2.37	118.70	124.08
2	G	501	EPZ	O1E-C1E-O2E	-2.28	118.90	124.08
2	D	501	EPZ	O1-PB-O2B	-2.28	102.53	109.81
2	E	501	EPZ	C1D-N1U-C6U	2.28	125.64	120.78
2	G	501	EPZ	O4U-C4U-C5U	-2.28	121.24	125.16
2	E	501	EPZ	O1E-C1E-O2E	-2.21	119.07	124.08
2	A	501	EPZ	C6U-N1U-C2U	-2.19	118.33	121.00
2	L	501	EPZ	O1-PB-O2B	-2.17	102.88	109.81
2	E	501	EPZ	O1B-PB-O3A	2.17	113.12	107.27
2	G	501	EPZ	O1-PB-O2B	-2.15	102.93	109.81
2	H	501	EPZ	C6U-N1U-C2U	-2.15	118.39	121.00
2	L	501	EPZ	O5-C1-O1	-2.14	108.56	111.36
2	G	501	EPZ	C1D-N1U-C6U	2.12	125.32	120.78
2	H	501	EPZ	O1B-PB-O3A	2.12	113.00	107.27
2	E	501	EPZ	O3D-C3D-C2D	-2.10	105.08	111.82
2	G	501	EPZ	O1B-PB-O3A	2.09	112.93	107.27
2	E	501	EPZ	C6U-N1U-C2U	-2.08	118.47	121.00
2	B	501	EPZ	O1B-PB-O3A	2.06	112.83	107.27
2	L	501	EPZ	O1E-C1E-O2E	-2.05	119.42	124.08
2	I	501	EPZ	O1E-C1E-O2E	-2.05	119.44	124.08
2	F	501	EPZ	O5D-C5D-C4D	2.05	115.96	108.99
2	H	501	EPZ	C2-N2-C7	-2.04	118.32	123.11
2	B	501	EPZ	O2A-PA-O3A	2.03	112.76	107.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	501	EPZ	O5-C5-C6	2.03	111.47	106.44
2	J	501	EPZ	C6U-N1U-C2U	-2.03	118.53	121.00
2	D	501	EPZ	O1E-C1E-O2E	-2.02	119.50	124.08
2	F	501	EPZ	O2A-PA-O3A	2.01	112.71	107.27
2	K	501	EPZ	O1B-PB-O3A	2.01	112.70	107.27
2	C	501	EPZ	C6U-N1U-C2U	-2.01	118.55	121.00

There are no chirality outliers.

All (65) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	501	EPZ	O1E-C1E-C2E-O3
2	A	501	EPZ	O2E-C1E-C2E-O3
2	F	501	EPZ	O4D-C4D-C5D-O5D
2	H	501	EPZ	C3E-C2E-O3-C3
2	L	501	EPZ	O1E-C1E-C2E-O3
2	L	501	EPZ	O2E-C1E-C2E-O3
2	D	501	EPZ	O4D-C4D-C5D-O5D
2	E	501	EPZ	O4D-C4D-C5D-O5D
2	G	501	EPZ	O4D-C4D-C5D-O5D
2	H	501	EPZ	O4D-C4D-C5D-O5D
2	A	501	EPZ	O4D-C4D-C5D-O5D
2	B	501	EPZ	O4D-C4D-C5D-O5D
2	C	501	EPZ	O4D-C4D-C5D-O5D
2	F	501	EPZ	C3D-C4D-C5D-O5D
2	I	501	EPZ	O4D-C4D-C5D-O5D
2	J	501	EPZ	O4D-C4D-C5D-O5D
2	K	501	EPZ	O4D-C4D-C5D-O5D
2	L	501	EPZ	O4D-C4D-C5D-O5D
2	D	501	EPZ	C3D-C4D-C5D-O5D
2	I	501	EPZ	C4-C5-C6-O6
2	I	501	EPZ	O5-C5-C6-O6
2	H	501	EPZ	C3D-C4D-C5D-O5D
2	H	501	EPZ	C4-C5-C6-O6
2	B	501	EPZ	C3E-C2E-O3-C3
2	C	501	EPZ	C3E-C2E-O3-C3
2	D	501	EPZ	C3E-C2E-O3-C3
2	F	501	EPZ	C3E-C2E-O3-C3
2	G	501	EPZ	C3E-C2E-O3-C3
2	J	501	EPZ	O2E-C1E-C2E-O3
2	E	501	EPZ	C3D-C4D-C5D-O5D
2	G	501	EPZ	C3D-C4D-C5D-O5D

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Mol	Chain	Res	Type	Atoms
2	C	501	EPZ	C3D-C4D-C5D-O5D
2	A	501	EPZ	C3D-C4D-C5D-O5D
2	K	501	EPZ	C3D-C4D-C5D-O5D
2	B	501	EPZ	PB-O3A-PA-O1A
2	J	501	EPZ	PB-O3A-PA-O1A
2	H	501	EPZ	O5-C5-C6-O6
2	B	501	EPZ	C1E-C2E-O3-C3
2	H	501	EPZ	C1E-C2E-O3-C3
2	A	501	EPZ	C5D-O5D-PA-O1A
2	B	501	EPZ	C5D-O5D-PA-O1A
2	C	501	EPZ	C5D-O5D-PA-O1A
2	D	501	EPZ	C5D-O5D-PA-O1A
2	E	501	EPZ	C5D-O5D-PA-O1A
2	F	501	EPZ	C5D-O5D-PA-O1A
2	G	501	EPZ	C5D-O5D-PA-O1A
2	H	501	EPZ	C5D-O5D-PA-O1A
2	I	501	EPZ	C5D-O5D-PA-O1A
2	J	501	EPZ	C5D-O5D-PA-O1A
2	K	501	EPZ	C5D-O5D-PA-O1A
2	L	501	EPZ	C5D-O5D-PA-O1A
2	K	501	EPZ	O1E-C1E-C2E-C3E
2	I	501	EPZ	C3E-C2E-O3-C3
2	J	501	EPZ	O1E-C1E-C2E-O3
2	B	501	EPZ	C3D-C4D-C5D-O5D
2	B	501	EPZ	PB-O3A-PA-O2A
2	E	501	EPZ	PA-O3A-PB-O2B
2	F	501	EPZ	PA-O3A-PB-O2B
2	L	501	EPZ	C3D-C4D-C5D-O5D
2	F	501	EPZ	O2E-C1E-C2E-O3
2	G	501	EPZ	O2E-C1E-C2E-O3
2	K	501	EPZ	O1E-C1E-C2E-O3
2	D	501	EPZ	C1E-C2E-O3-C3
2	G	501	EPZ	C1E-C2E-O3-C3
2	I	501	EPZ	PB-O3A-PA-O2A

There are no ring outliers.

7 monomers are involved in 12 short contacts:

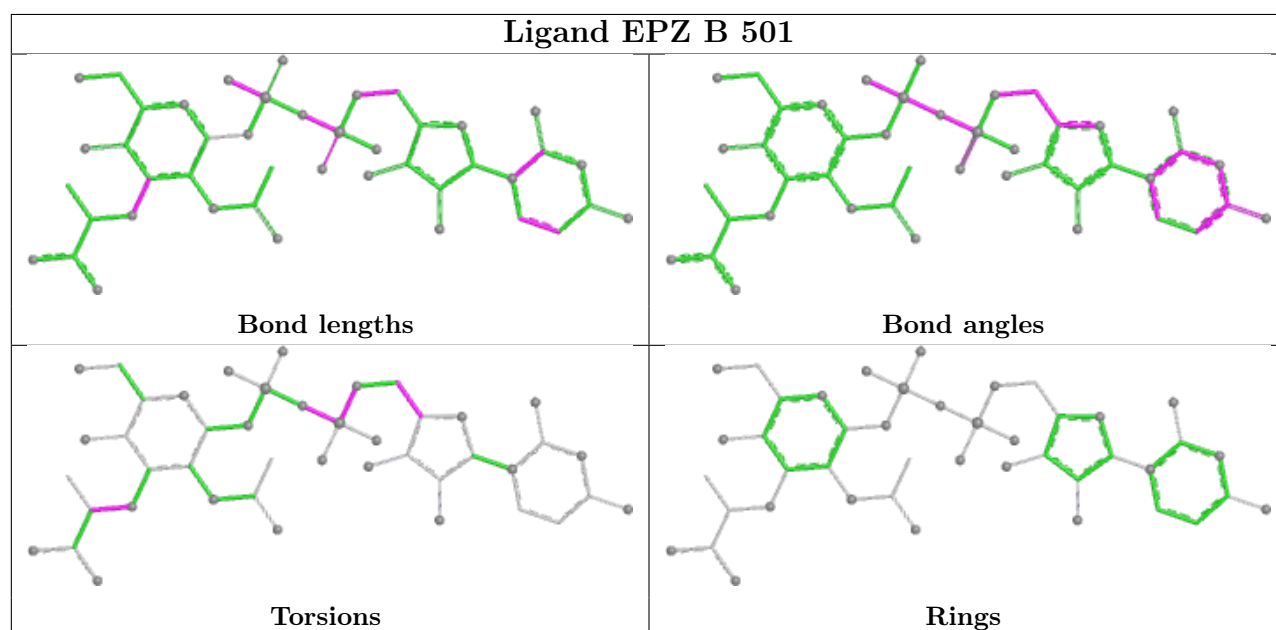
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	501	EPZ	2	0
2	C	501	EPZ	1	0
2	L	501	EPZ	1	0

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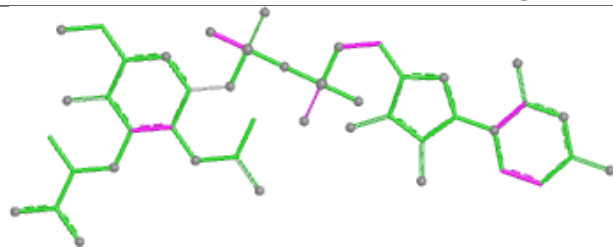
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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	J	501	EPZ	2	0
2	G	501	EPZ	1	0
2	K	501	EPZ	3	0
2	I	501	EPZ	2	0

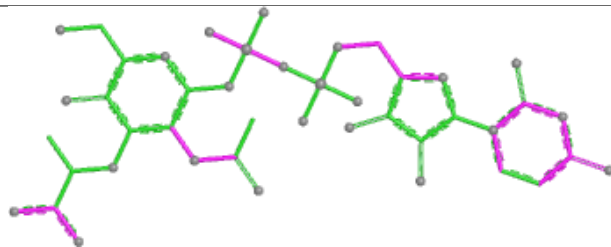
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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



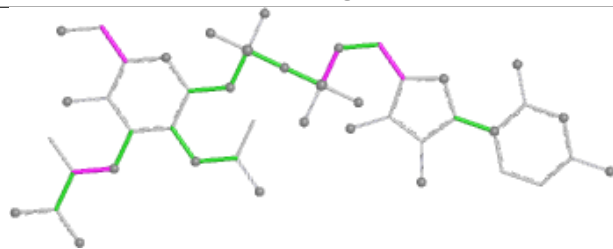
Ligand EPZ H 501



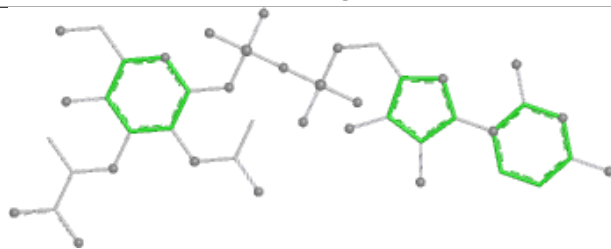
Bond lengths



Bond angles

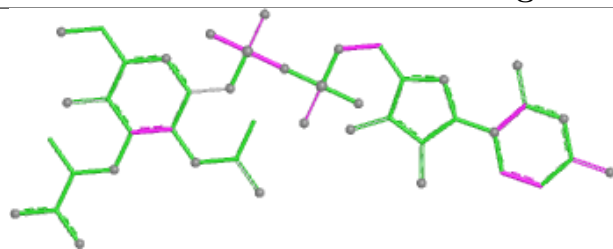


Torsions

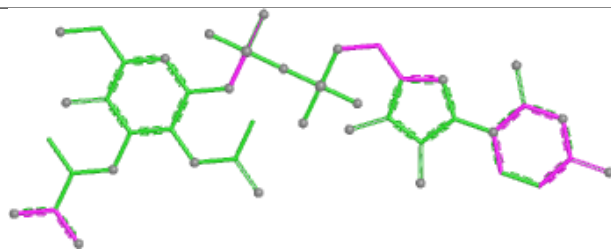


Rings

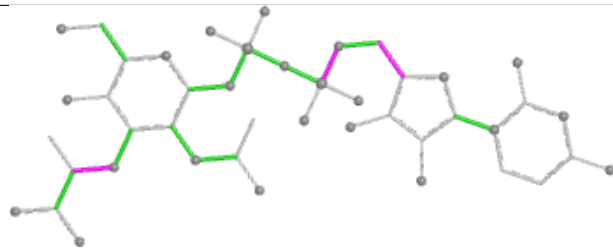
Ligand EPZ C 501



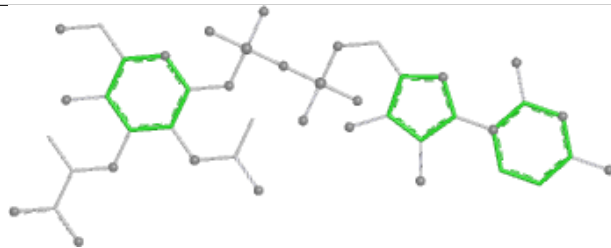
Bond lengths



Bond angles

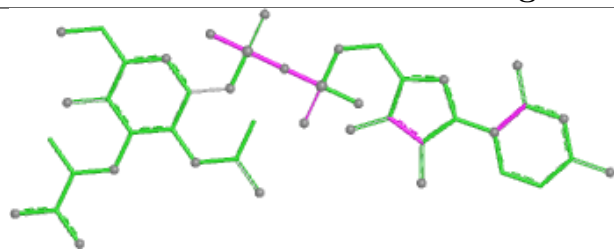


Torsions

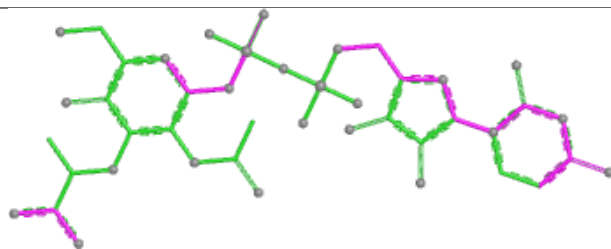


Rings

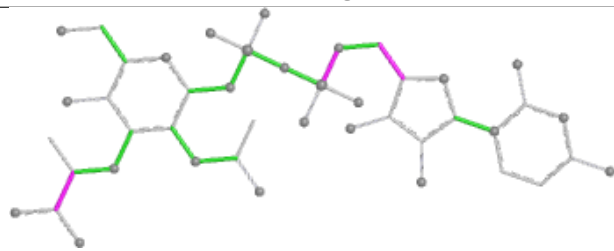
Ligand EPZ L 501



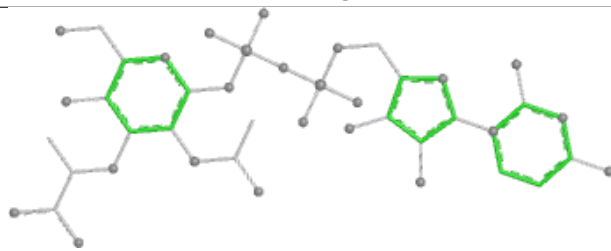
Bond lengths



Bond angles

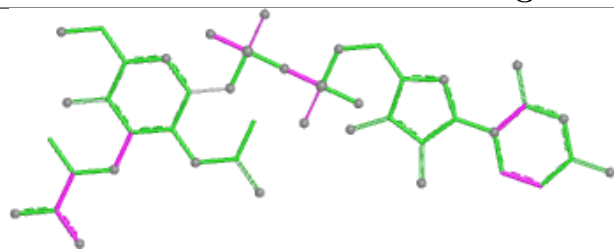


Torsions

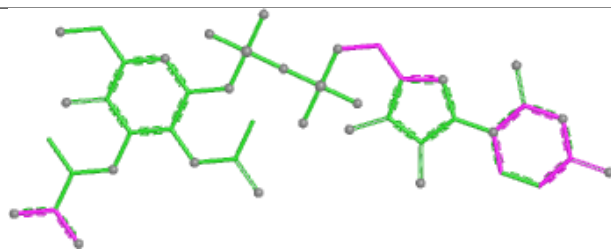


Rings

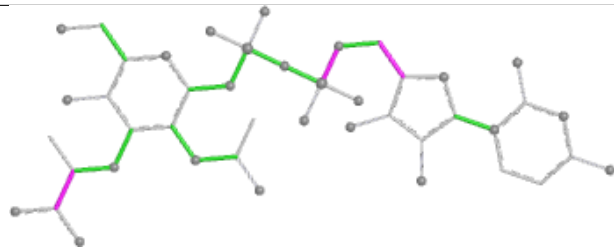
Ligand EPZ A 501



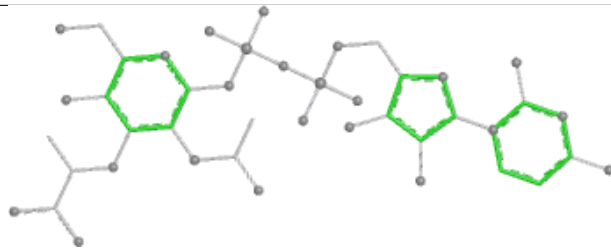
Bond lengths



Bond angles

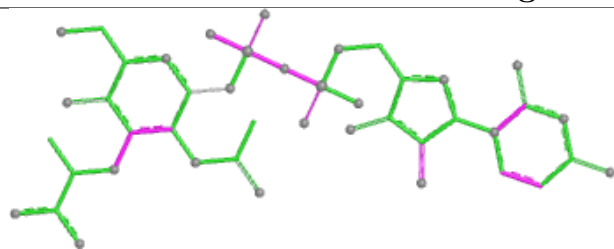


Torsions

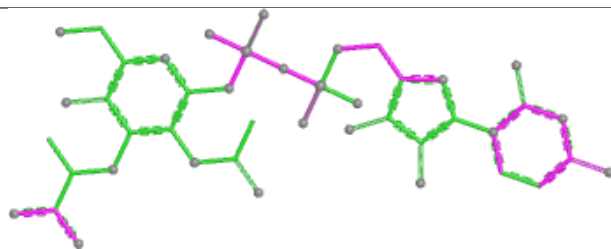


Rings

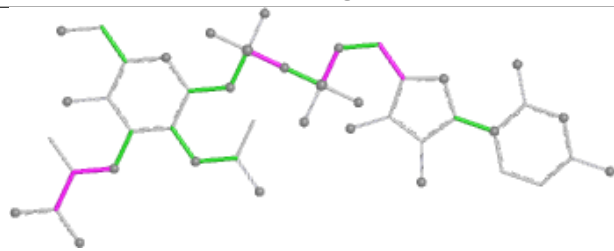
Ligand EPZ F 501



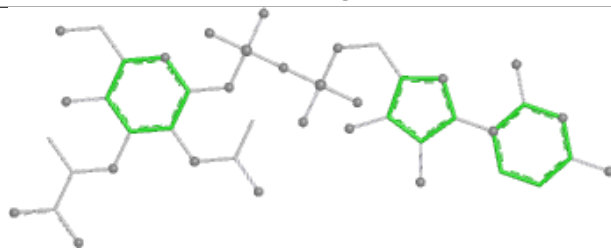
Bond lengths



Bond angles

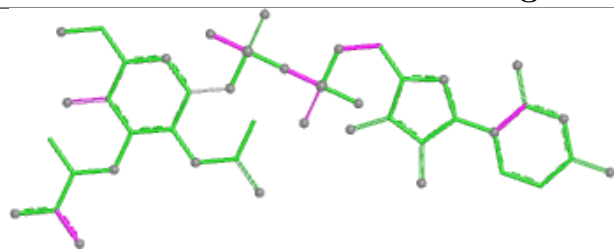


Torsions

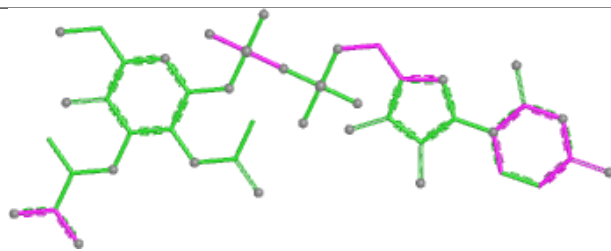


Rings

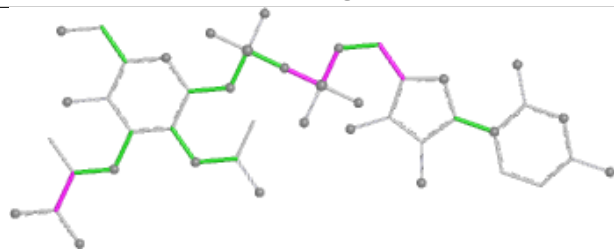
Ligand EPZ J 501



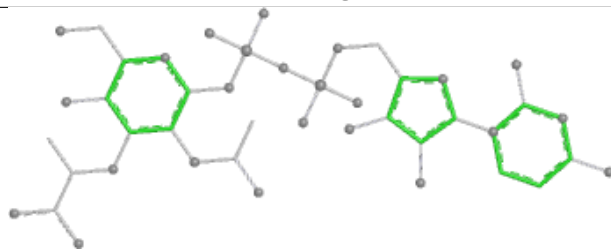
Bond lengths



Bond angles

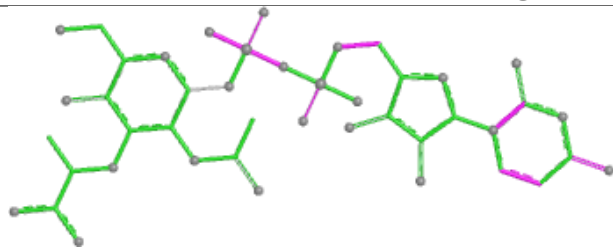


Torsions

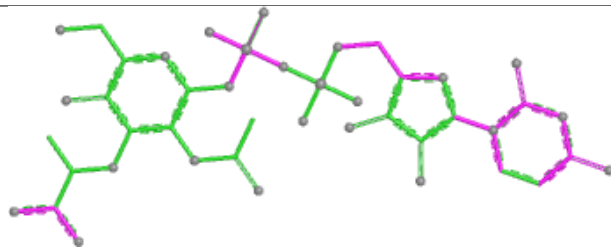


Rings

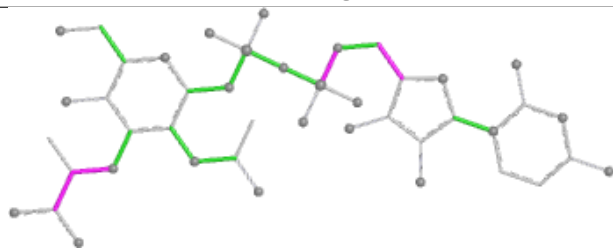
Ligand EPZ G 501



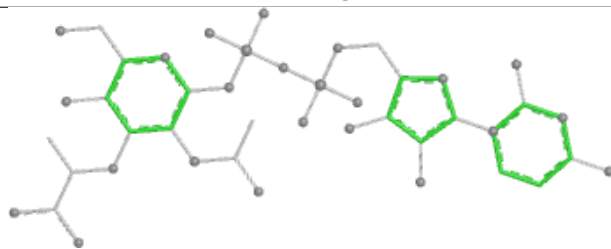
Bond lengths



Bond angles

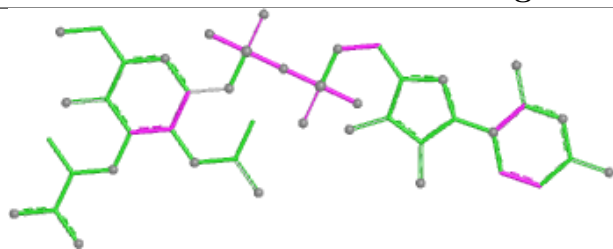


Torsions

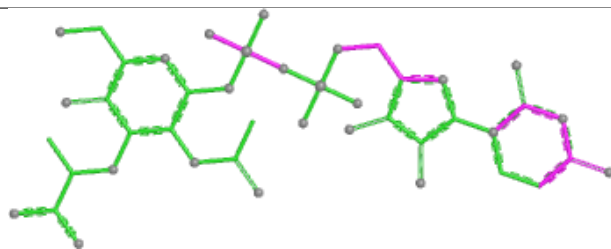


Rings

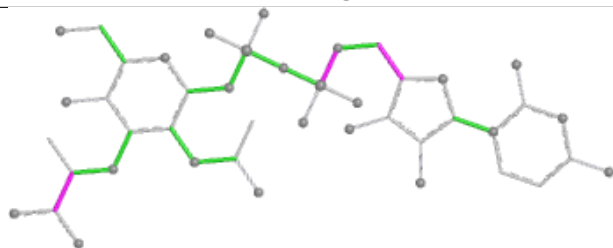
Ligand EPZ K 501



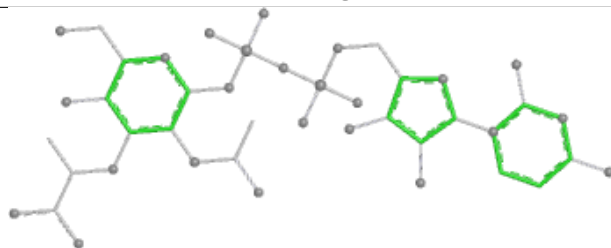
Bond lengths



Bond angles

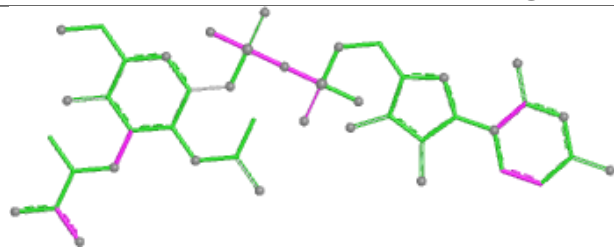


Torsions

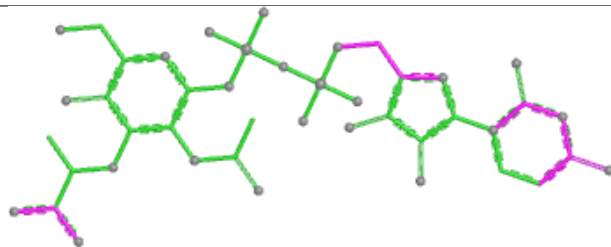


Rings

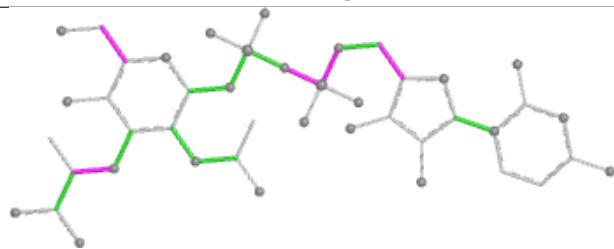
Ligand EPZ I 501



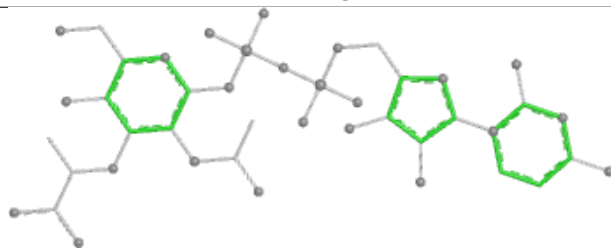
Bond lengths



Bond angles

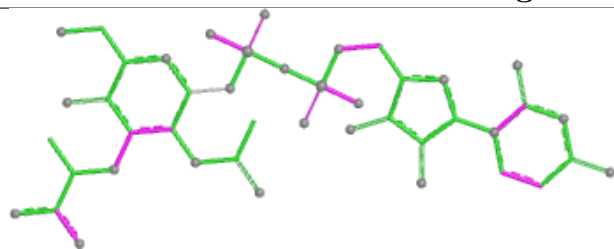


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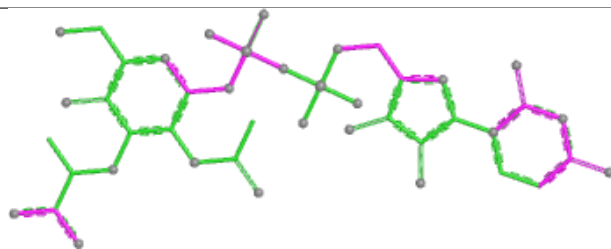


Rings

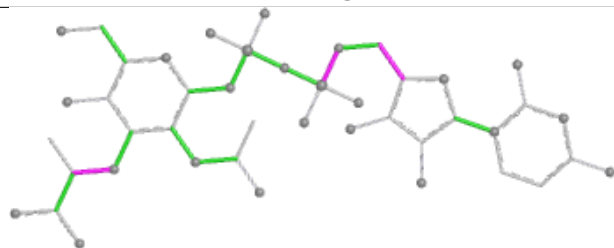
Ligand EPZ D 501



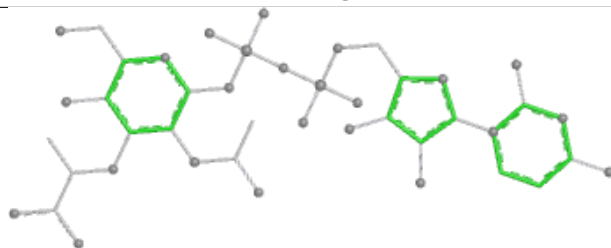
Bond lengths



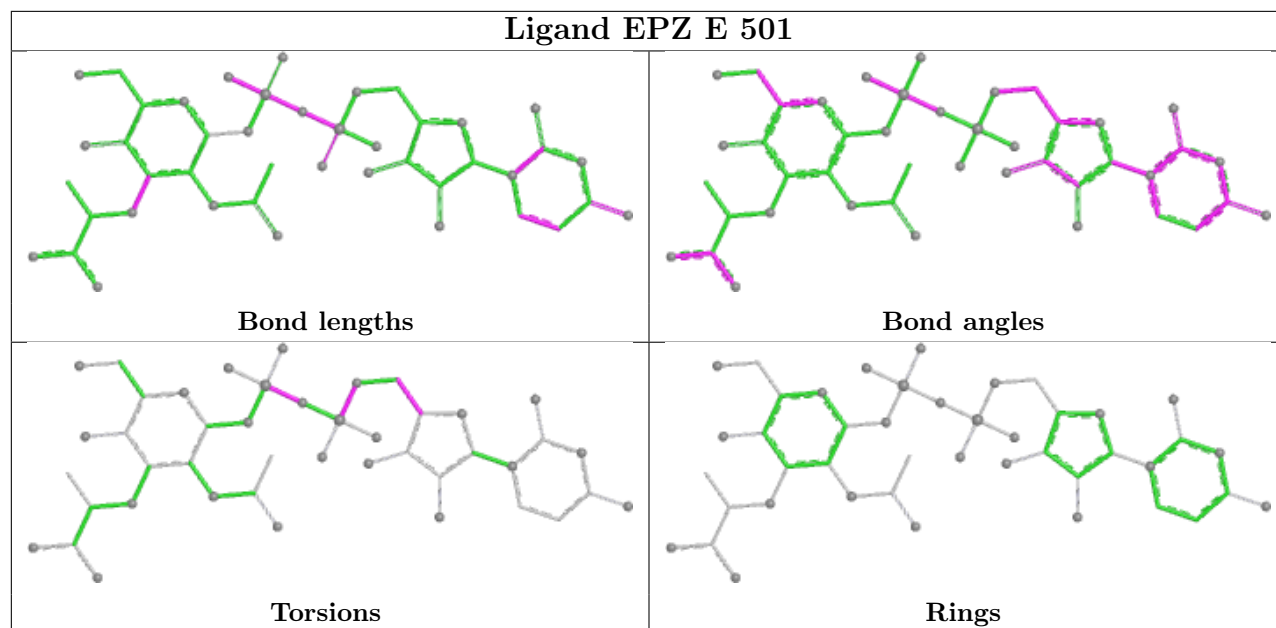
Bond angles



Torsions



Rings



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	416/418 (99%)	0.08	3 (0%) 84 81	36, 54, 76, 97	0
1	B	416/418 (99%)	0.46	8 (1%) 66 62	37, 61, 83, 100	0
1	C	416/418 (99%)	0.00	1 (0%) 91 89	30, 47, 69, 95	0
1	D	416/418 (99%)	-0.04	1 (0%) 91 89	25, 47, 68, 95	0
1	E	416/418 (99%)	0.07	3 (0%) 84 81	30, 50, 72, 102	0
1	F	416/418 (99%)	0.20	4 (0%) 79 76	29, 53, 77, 100	0
1	G	416/418 (99%)	0.31	4 (0%) 79 76	33, 60, 83, 104	0
1	H	416/418 (99%)	-0.00	2 (0%) 87 85	34, 50, 70, 95	0
1	I	416/418 (99%)	0.68	21 (5%) 34 30	39, 67, 93, 110	0
1	J	416/418 (99%)	0.07	1 (0%) 91 89	37, 58, 79, 100	0
1	K	416/418 (99%)	-0.11	1 (0%) 91 89	29, 50, 73, 88	0
1	L	416/418 (99%)	0.90	37 (8%) 15 13	43, 72, 94, 120	0
All	All	4992/5016 (99%)	0.22	86 (1%) 69 65	25, 55, 83, 120	0

All (86) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	23	ASN	4.0
1	B	395	ILE	4.0
1	A	418	GLY	4.0
1	L	213	ILE	3.7
1	L	270	GLY	3.7
1	L	221	LEU	3.6
1	D	418	GLY	3.5
1	I	99	PRO	3.5
1	L	222	GLY	3.5
1	H	418	GLY	3.4
1	I	68	GLY	3.3

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Mol	Chain	Res	Type	RSRZ
1	L	30	PHE	3.2
1	I	418	GLY	3.2
1	L	39	VAL	3.2
1	B	272	ASP	3.1
1	I	81	CYS	3.1
1	L	14	GLY	3.1
1	L	410	GLY	3.1
1	I	230	PRO	3.0
1	I	171	CYS	3.0
1	B	60	LEU	2.9
1	L	282	LEU	2.9
1	A	133	GLY	2.9
1	L	12	LEU	2.9
1	L	26	LEU	2.8
1	B	418	GLY	2.8
1	E	418	GLY	2.8
1	L	418	GLY	2.8
1	L	38	PRO	2.8
1	F	418	GLY	2.7
1	I	133	GLY	2.7
1	I	95	TRP	2.7
1	C	418	GLY	2.7
1	L	215	ILE	2.7
1	L	362	GLY	2.6
1	L	396	ASP	2.6
1	L	74	ALA	2.6
1	E	107	GLY	2.6
1	L	279	TRP	2.5
1	J	247	GLY	2.5
1	H	339	SER	2.5
1	B	285	HIS	2.5
1	L	205	ILE	2.4
1	B	283	ASP	2.4
1	L	41	ILE	2.4
1	L	411	ALA	2.4
1	L	200	THR	2.3
1	F	53	SER	2.3
1	I	102	ALA	2.3
1	G	56	LEU	2.3
1	K	10	THR	2.3
1	B	282	LEU	2.3
1	L	171	CYS	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	145	ALA	2.2
1	G	411	ALA	2.2
1	G	59	GLN	2.2
1	I	109	VAL	2.2
1	L	16	VAL	2.2
1	L	68	GLY	2.2
1	L	37	GLU	2.2
1	L	161	VAL	2.2
1	I	74	ALA	2.2
1	I	194	THR	2.2
1	L	29	LEU	2.2
1	L	378	LEU	2.2
1	I	57	LEU	2.2
1	I	175	LEU	2.2
1	L	275	VAL	2.1
1	I	399	TYR	2.1
1	G	77	VAL	2.1
1	E	145	ALA	2.1
1	F	86	LEU	2.1
1	I	215	ILE	2.1
1	I	134	ALA	2.1
1	I	132	LEU	2.1
1	I	181	ILE	2.1
1	L	272	ASP	2.1
1	L	281	SER	2.1
1	I	208	GLN	2.0
1	L	185	ALA	2.0
1	L	86	LEU	2.0
1	L	174	THR	2.0
1	L	197	PHE	2.0
1	F	411	ALA	2.0
1	I	100	LEU	2.0
1	L	230	PRO	2.0

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

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
1	IAS	I	67	8/9	0.54	0.18	79,89,111,120	0
1	IAS	L	67	8/9	0.73	0.16	81,89,99,102	0
1	IAS	B	67	8/9	0.78	0.12	66,72,84,90	0
1	IAS	C	67	8/9	0.82	0.11	61,69,72,72	0
1	IAS	D	67	8/9	0.83	0.10	42,54,62,62	0
1	IAS	G	67	8/9	0.84	0.10	64,67,75,77	0
1	IAS	F	67	8/9	0.85	0.10	52,64,76,80	0
1	QPA	F	115	16/17	0.86	0.10	41,60,80,86	0
1	IAS	H	67	8/9	0.86	0.11	53,66,80,88	0
1	QPA	B	115	16/17	0.87	0.11	46,64,92,95	0
1	QPA	A	115	16/17	0.87	0.11	49,62,92,92	0
1	IAS	J	67	8/9	0.88	0.07	53,75,79,84	0
1	IAS	A	67	8/9	0.88	0.10	50,56,66,69	0
1	QPA	I	115	16/17	0.89	0.12	46,65,92,92	0
1	QPA	K	115	16/17	0.90	0.10	36,57,80,80	0
1	QPA	L	115	16/17	0.90	0.11	50,65,81,85	0
1	QPA	C	115	16/17	0.91	0.10	38,62,79,83	0
1	QPA	H	115	16/17	0.92	0.08	40,63,76,77	0
1	QPA	D	115	16/17	0.92	0.09	30,51,68,68	0
1	IAS	K	67	8/9	0.92	0.08	59,61,65,71	0
1	IAS	E	67	8/9	0.92	0.07	41,53,62,78	0
1	QPA	E	115	16/17	0.93	0.08	42,62,77,80	0
1	QPA	G	115	16/17	0.93	0.09	41,58,76,79	0
1	QPA	J	115	16/17	0.95	0.08	37,55,84,103	0

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($\text{\AA}^2$)	Q<0.9
2	EPZ	I	501	44/44	0.90	0.10	38,58,68,84	0
2	EPZ	L	501	44/44	0.93	0.10	25,60,76,99	0
2	EPZ	B	501	44/44	0.95	0.07	27,51,73,82	0
2	EPZ	E	501	44/44	0.95	0.07	31,44,60,82	0
2	EPZ	A	501	44/44	0.96	0.07	28,46,60,63	0

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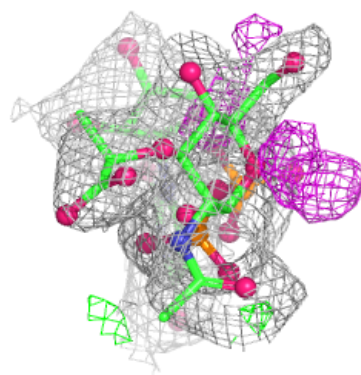
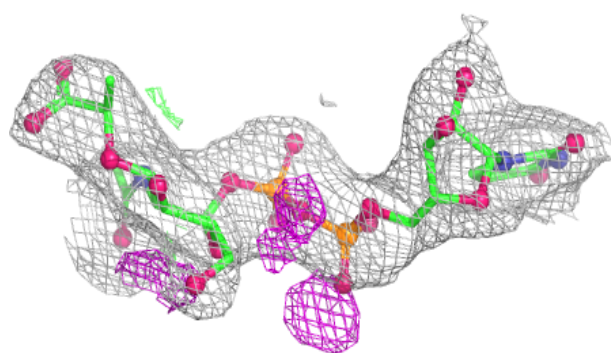
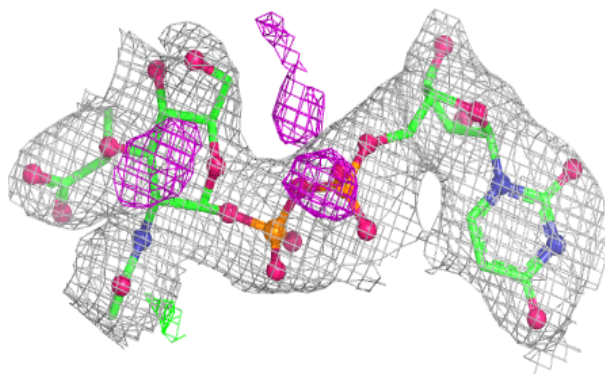
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	EPZ	F	501	44/44	0.96	0.07	20,38,59,78	0
2	EPZ	G	501	44/44	0.96	0.07	31,48,65,67	0
2	EPZ	H	501	44/44	0.96	0.06	27,44,58,66	0
2	EPZ	C	501	44/44	0.96	0.07	28,40,57,66	0
2	EPZ	J	501	44/44	0.96	0.07	30,45,64,70	0
2	EPZ	K	501	44/44	0.96	0.06	27,43,60,66	0
2	EPZ	D	501	44/44	0.96	0.07	25,43,58,70	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.

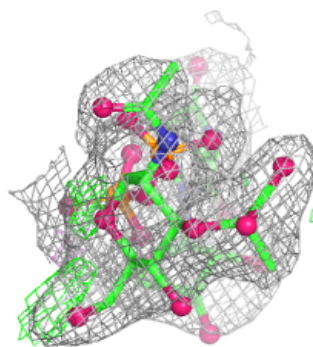
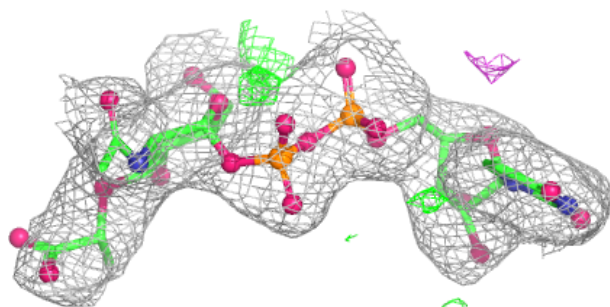
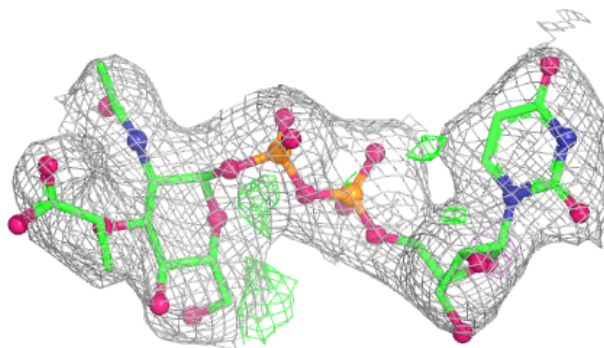
Electron density around EPZ I 501:

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

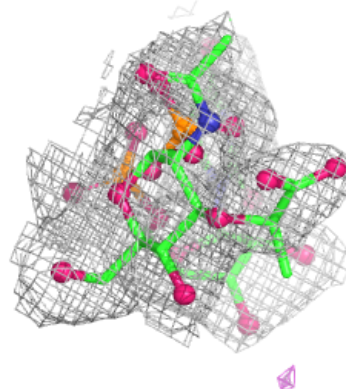
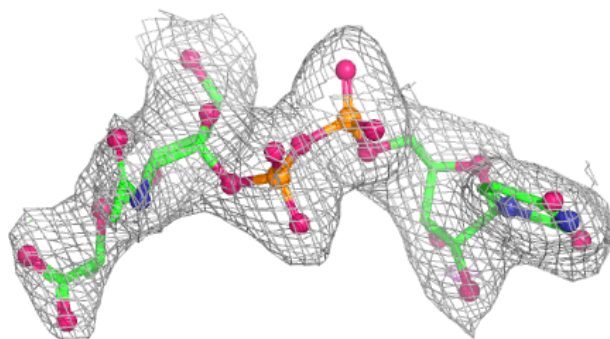
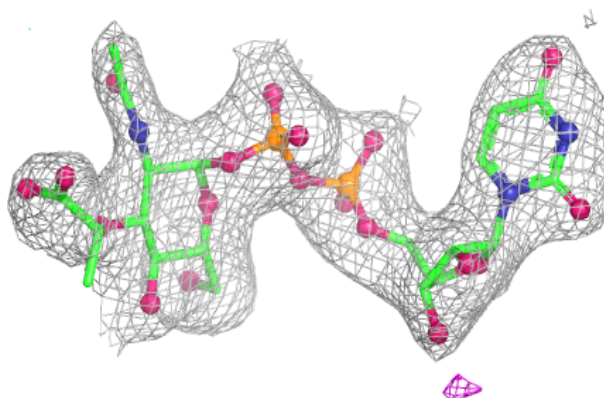


Electron density around EPZ L 501:

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

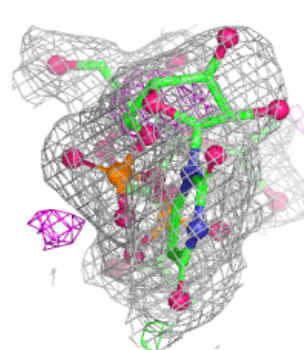
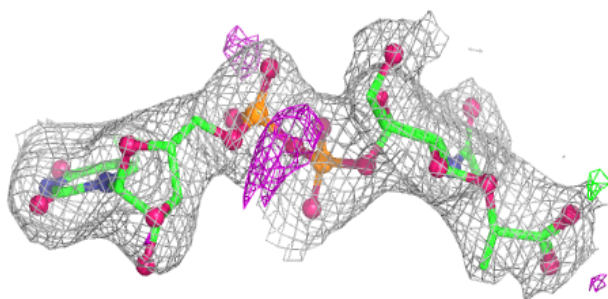
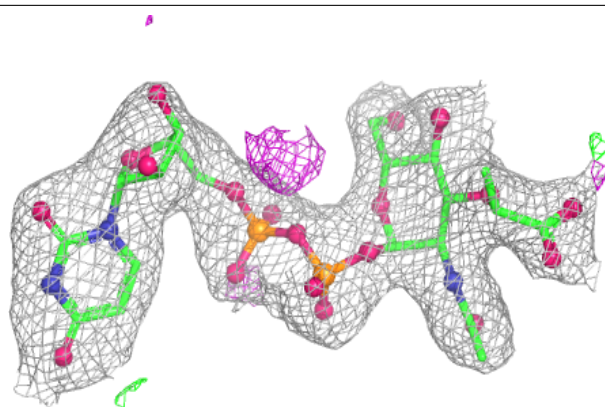
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and green (positive)

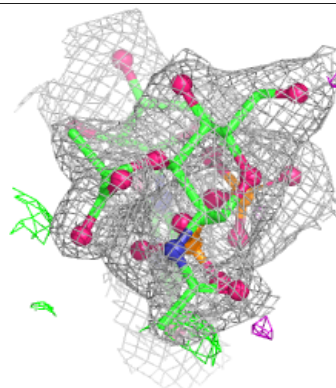
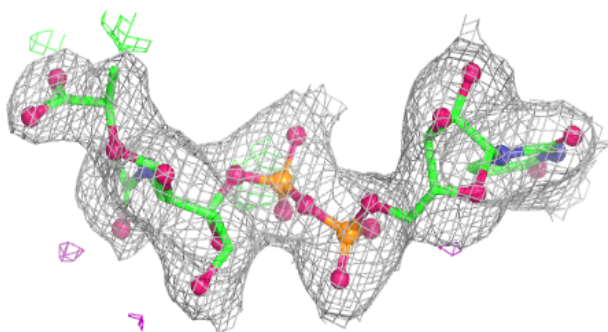
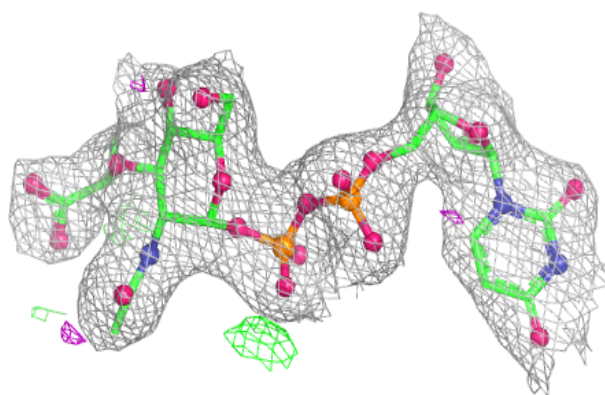


Electron density around EPZ E 501:

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and green (positive)

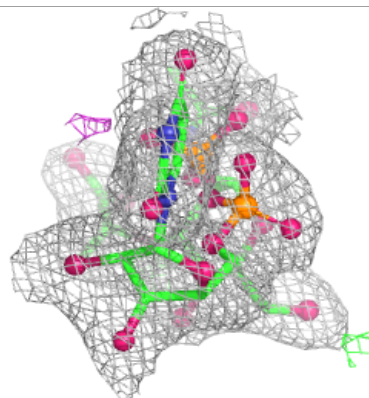
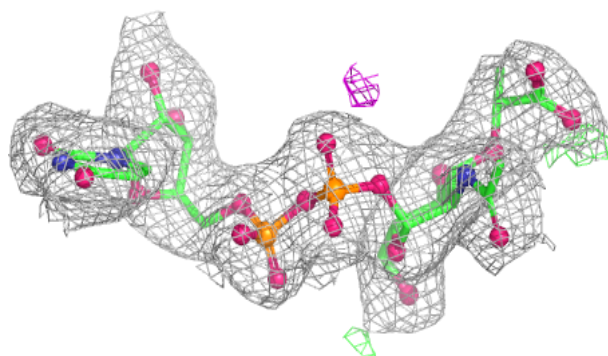
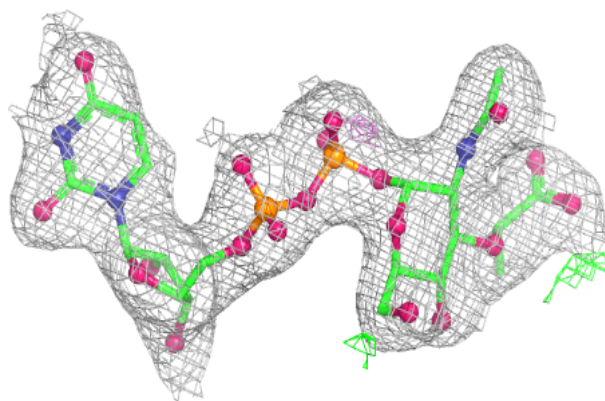
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and green (positive)

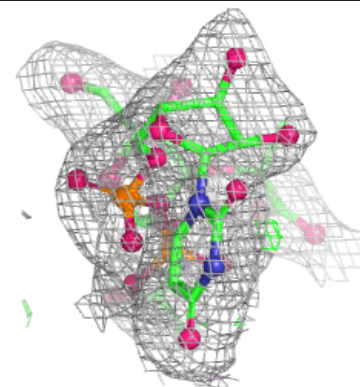
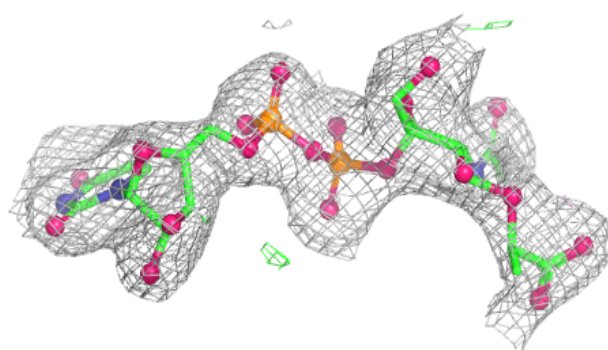
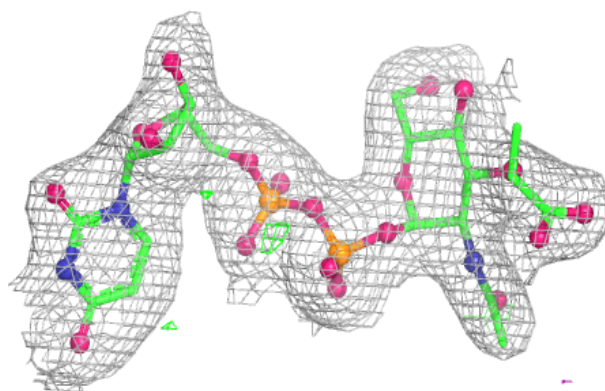


Electron density around EPZ F 501:

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and green (positive)

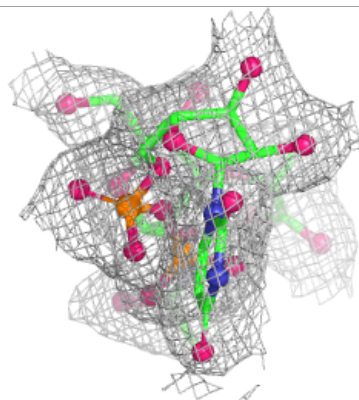
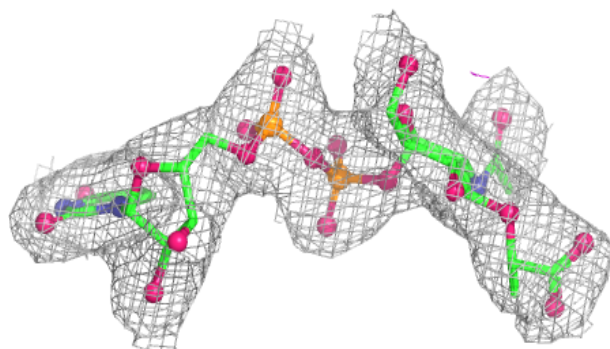
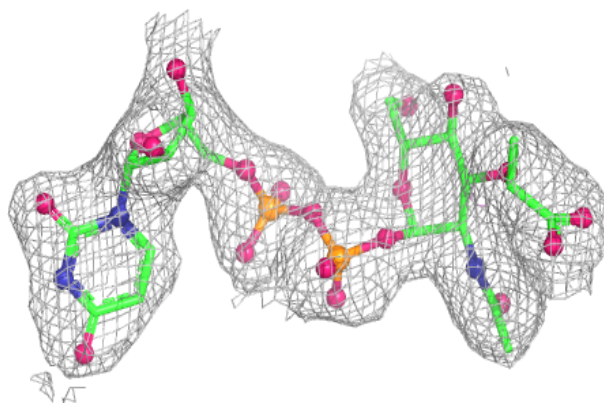
**Electron density around EPZ G 501:**

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
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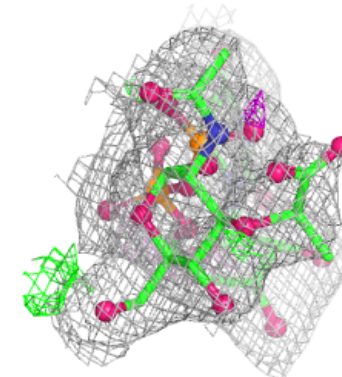
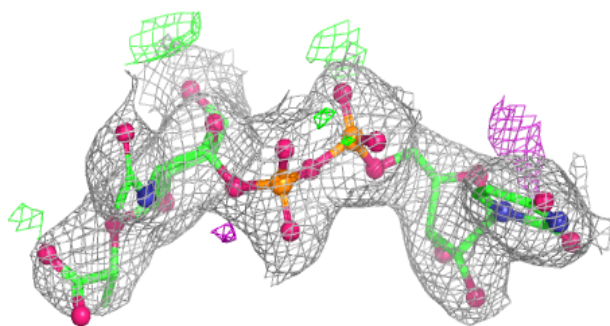
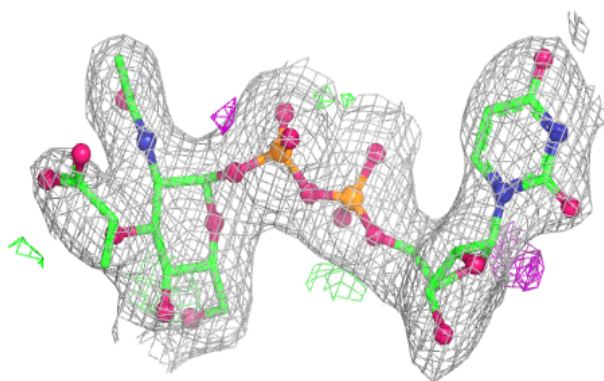


Electron density around EPZ H 501:

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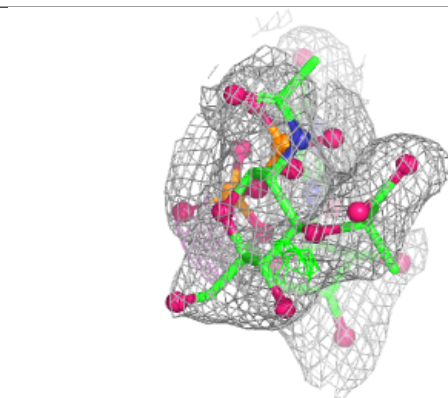
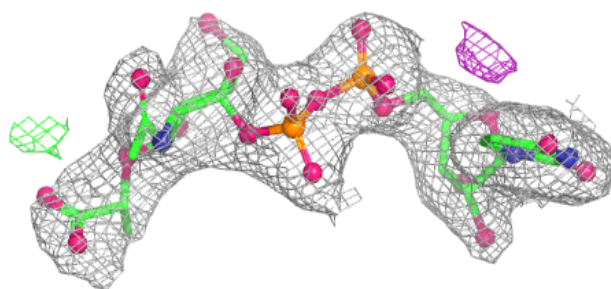
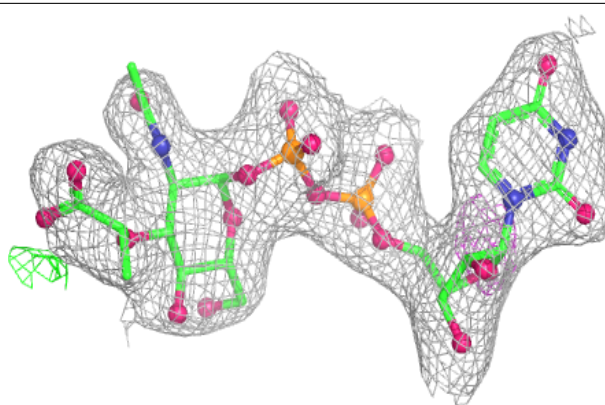
**Electron density around EPZ C 501:**

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and green (positive)

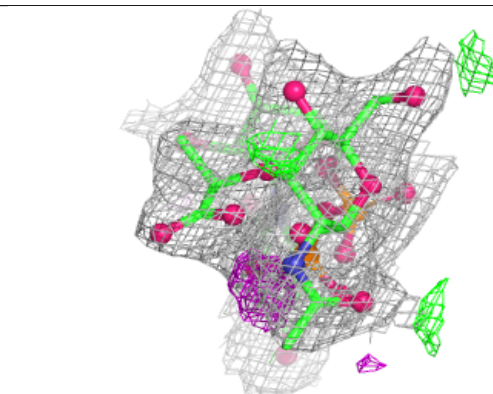
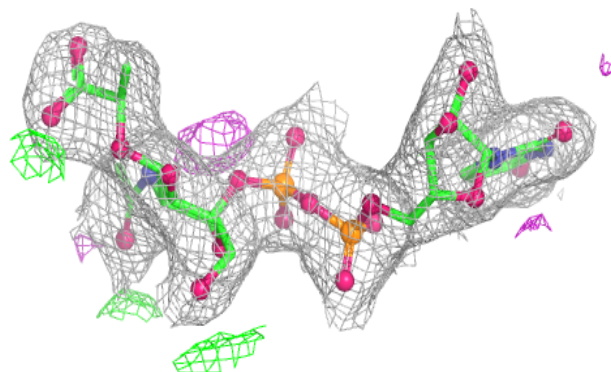
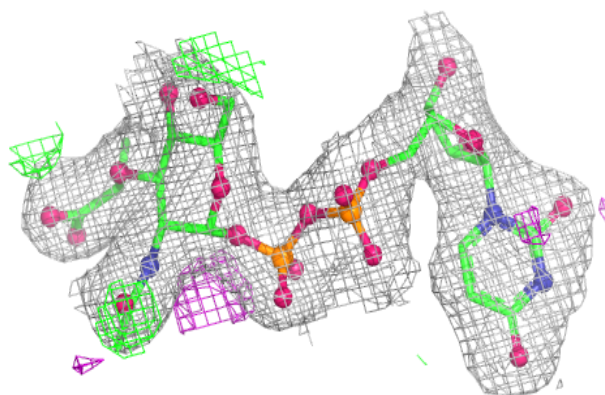


Electron density around EPZ J 501:

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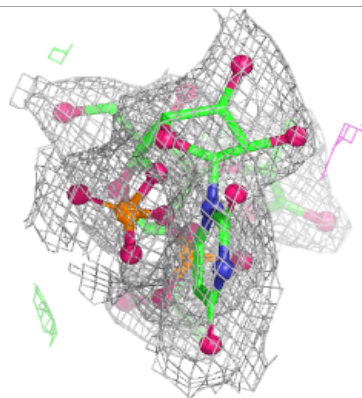
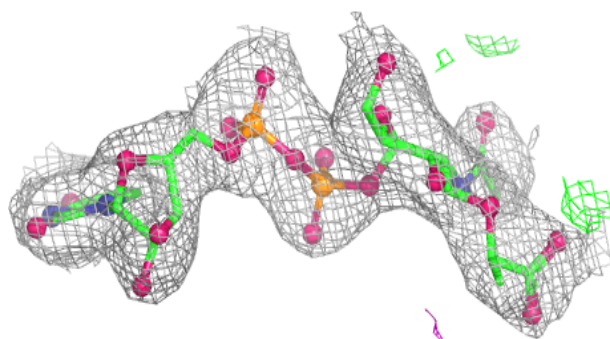
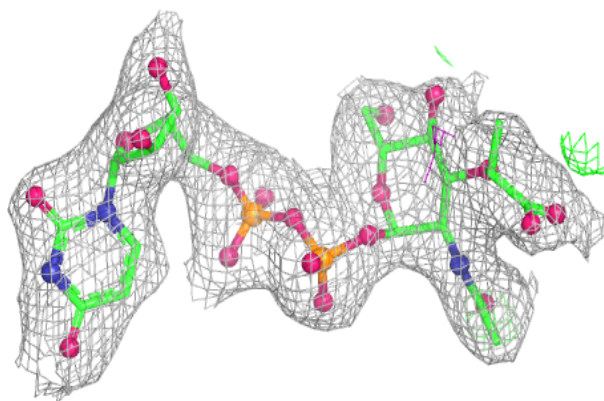
**Electron density around EPZ K 501:**

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and green (positive)



Electron density around EPZ D 501:

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and green (positive)



6.5 Other polymers [i](#)

There are no such residues in this entry.