Full wwPDB X-ray Structure Validation Report ⓘ

Jun 3, 2024 – 09:37 PM JST

PDB ID	:	8XGT
Title	:	Crystal structure of human secretory glutaminyl cyclase in complex with (Z)-3-((1H-benzo[d]imidazol-5-yl)methylene)-4-hydroxyindolin-2-one
Authors	:	Li, G.-B.; Wang, X.-Y.
Deposited on	:	2023-12-15
Resolution	:	2.81 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:

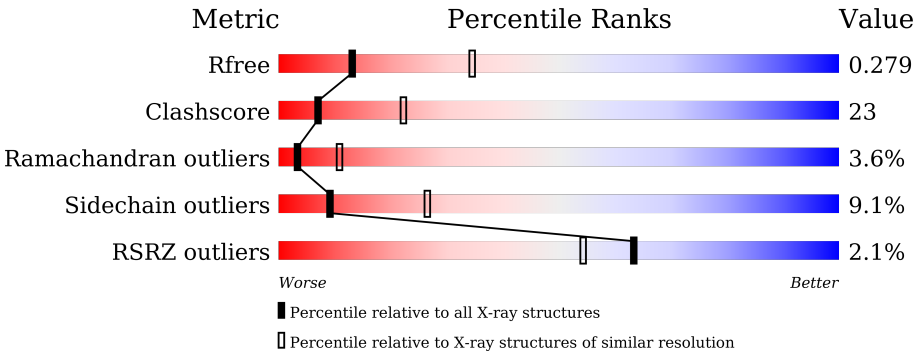
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36.2
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.81 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	3617 (2.84-2.80)
Clashscore	141614	4060 (2.84-2.80)
Ramachandran outliers	138981	3978 (2.84-2.80)
Sidechain outliers	138945	3980 (2.84-2.80)
RSRZ outliers	127900	3552 (2.84-2.80)

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 <=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	329	53% 35% 9%
1	B	329	50% 39% 9%
1	C	329	54% 38% 6%
1	D	329	57% 35% 6%
1	E	329	55% 34% 8%
1	F	329	56% 36% 7%

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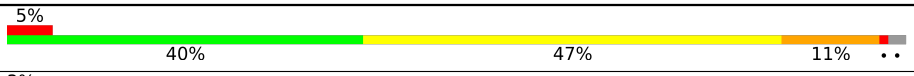
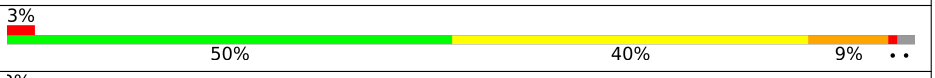
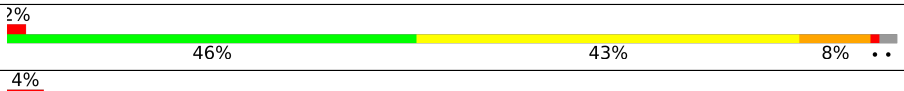
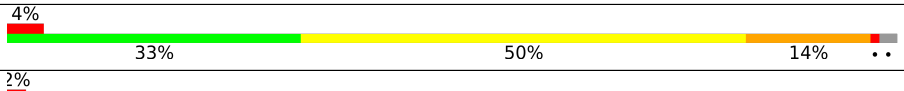
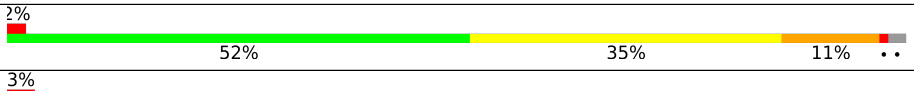
Mol	Chain	Length	Quality of chain
1	G	329	
1	H	329	
1	I	329	
1	J	329	
1	K	329	
1	L	329	

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 31587 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 Glutaminyl-peptide cyclotransferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	B	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			
1	A	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			
1	C	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			
1	D	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			
1	E	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			
1	F	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			
1	G	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			
1	H	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			
1	I	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			
1	J	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			
1	K	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			
1	L	323	Total	C	N	O	S	5	0	0
			2610	1673	450	478	9			

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	B	1	Total	Zn	0	0
			1	1		
2	A	1	Total	Zn	0	0
			1	1		

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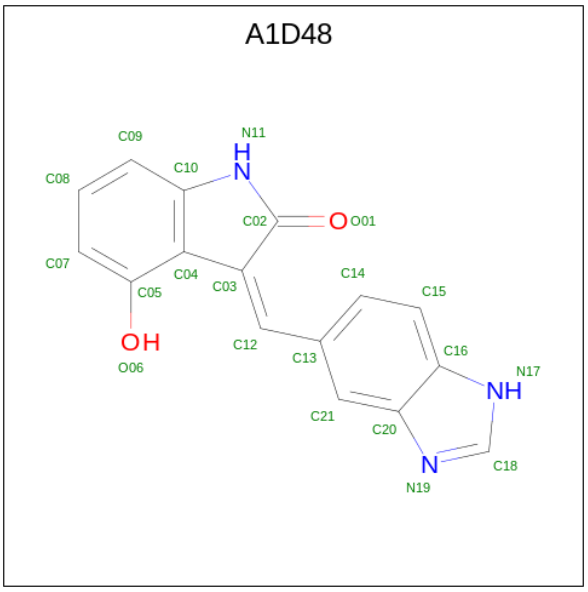
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	C	1	Total Zn 1 1	0	0
2	D	1	Total Zn 1 1	0	0
2	E	1	Total Zn 1 1	0	0
2	F	1	Total Zn 1 1	0	0
2	G	1	Total Zn 1 1	0	0
2	H	1	Total Zn 1 1	0	0
2	I	1	Total Zn 1 1	0	0
2	J	1	Total Zn 1 1	0	0
2	K	1	Total Zn 1 1	0	0
2	L	1	Total Zn 1 1	0	0

- Molecule 3 is (3 {Z})-3-(1 {H}-benzimidazol-5-ylmethylidene)-4-oxidanyl-1 {H}-indol-2-one (three-letter code: A1D48) (formula: $C_{16}H_{11}N_3O_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	B	1	Total	C	N	O	0	0
			21	16	3	2		
3	A	1	Total	C	N	O	0	0
			21	16	3	2		
3	C	1	Total	C	N	O	0	0
			21	16	3	2		
3	D	1	Total	C	N	O	0	0
			21	16	3	2		
3	E	1	Total	C	N	O	0	0
			21	16	3	2		
3	F	1	Total	C	N	O	0	0
			21	16	3	2		
3	G	1	Total	C	N	O	0	0
			21	16	3	2		
3	H	1	Total	C	N	O	0	0
			21	16	3	2		
3	I	1	Total	C	N	O	0	0
			21	16	3	2		
3	J	1	Total	C	N	O	0	0
			21	16	3	2		
3	K	1	Total	C	N	O	0	0
			21	16	3	2		
3	L	1	Total	C	N	O	0	0
			21	16	3	2		

- Molecule 4 is water.

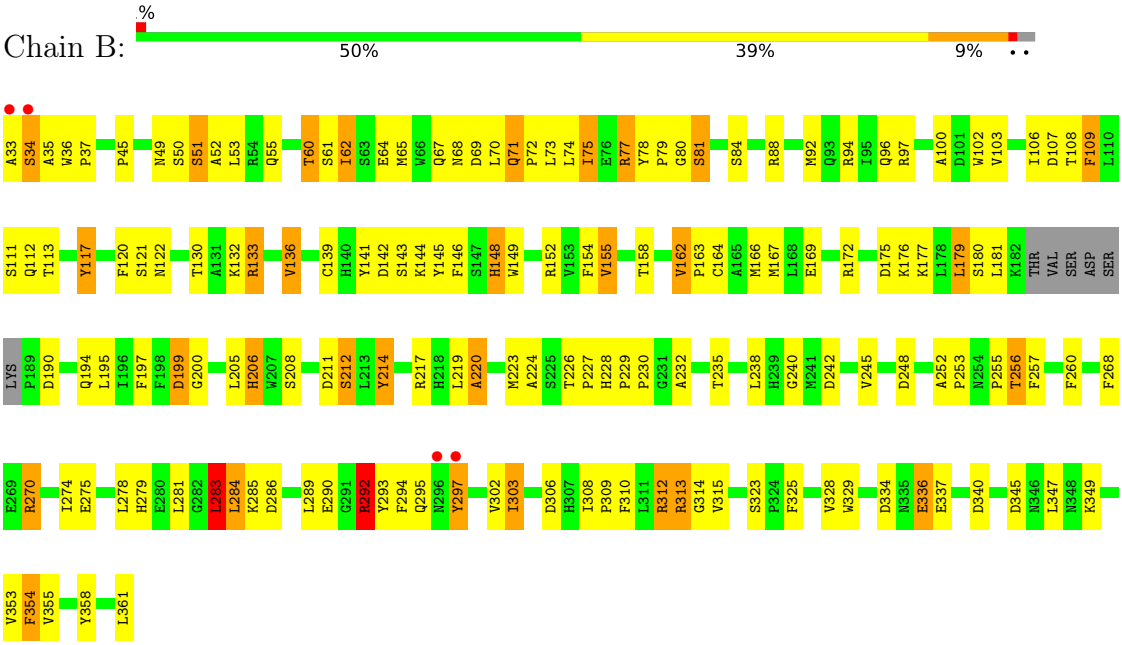
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	C	2	Total	O	0	0
			2	2		
4	J	1	Total	O	0	0
			1	1		

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

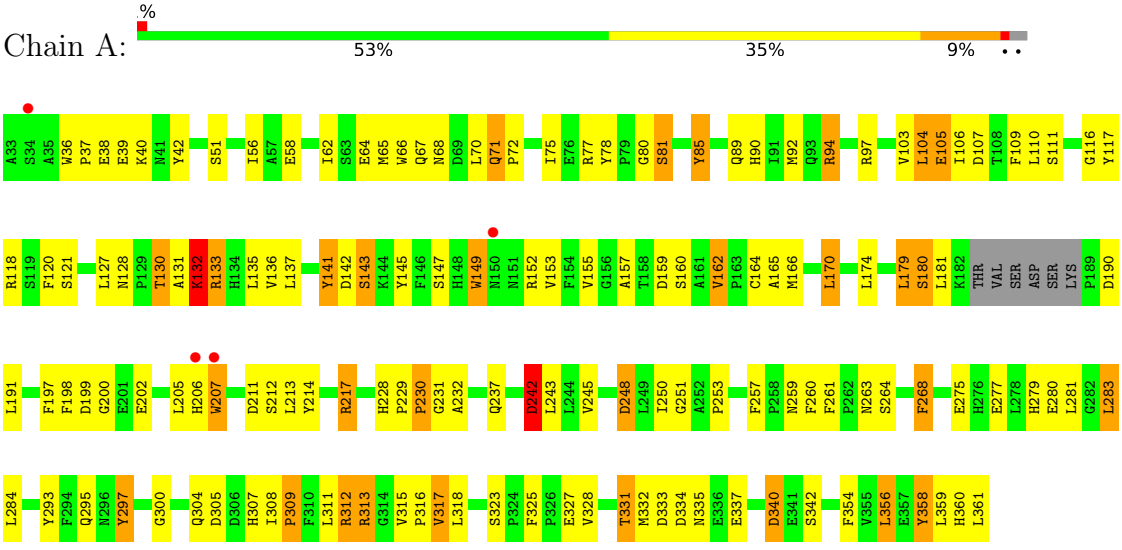
• Molecule 1: Glutaminyl-peptide cyclotransferase

Chain B:



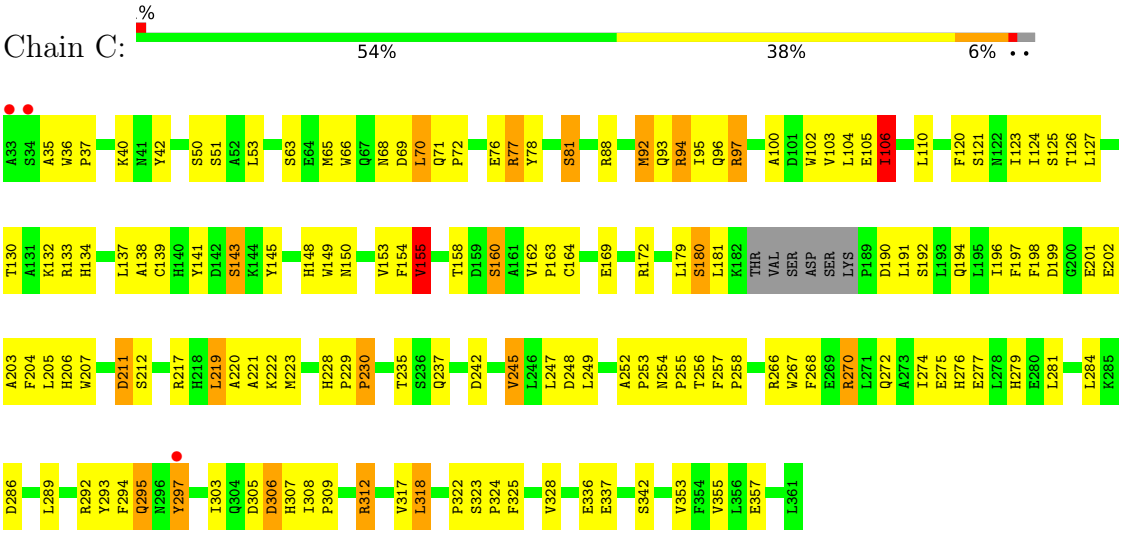
• Molecule 1: Glutaminyl-peptide cyclotransferase

Chain A:



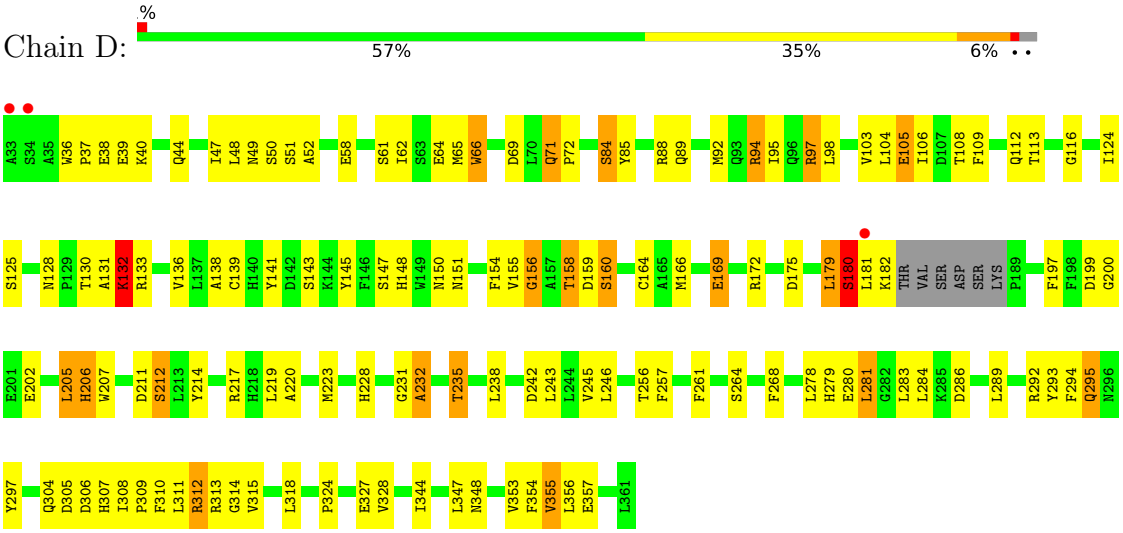
• Molecule 1: Glutaminyl-peptide cyclotransferase

Chain C:



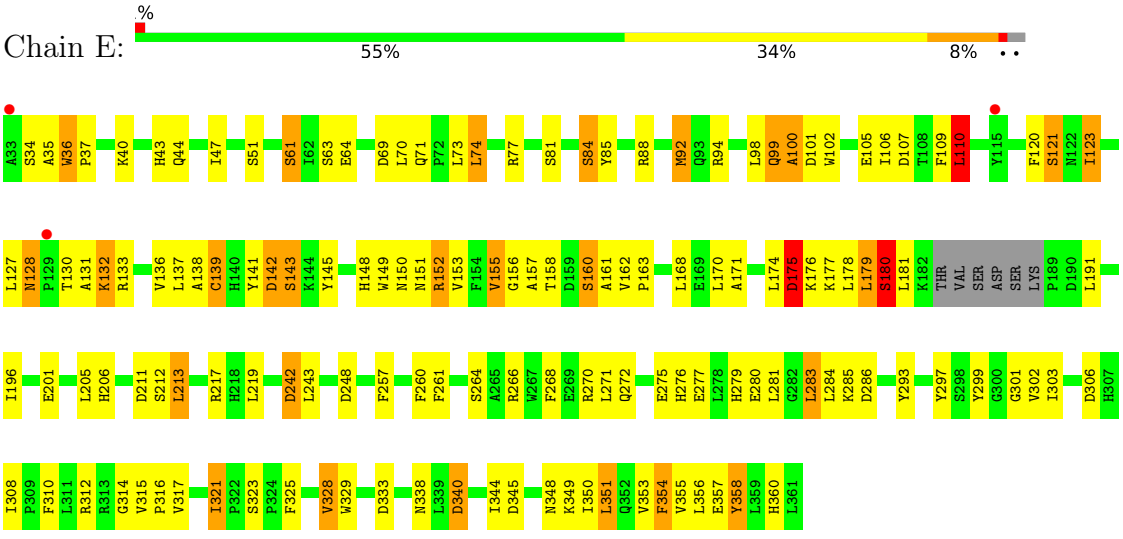
• Molecule 1: Glutaminyl-peptide cyclotransferase

Chain D:



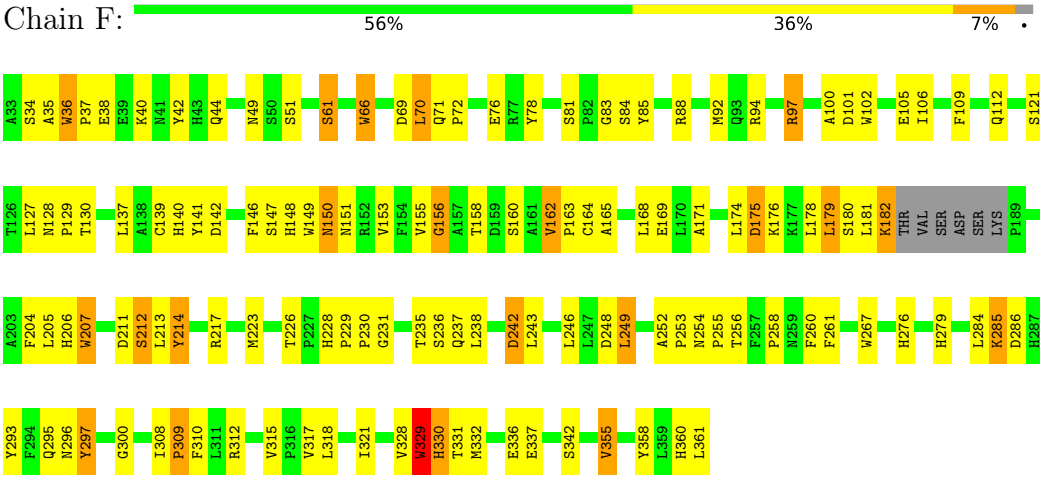
• Molecule 1: Glutaminyl-peptide cyclotransferase

Chain E:



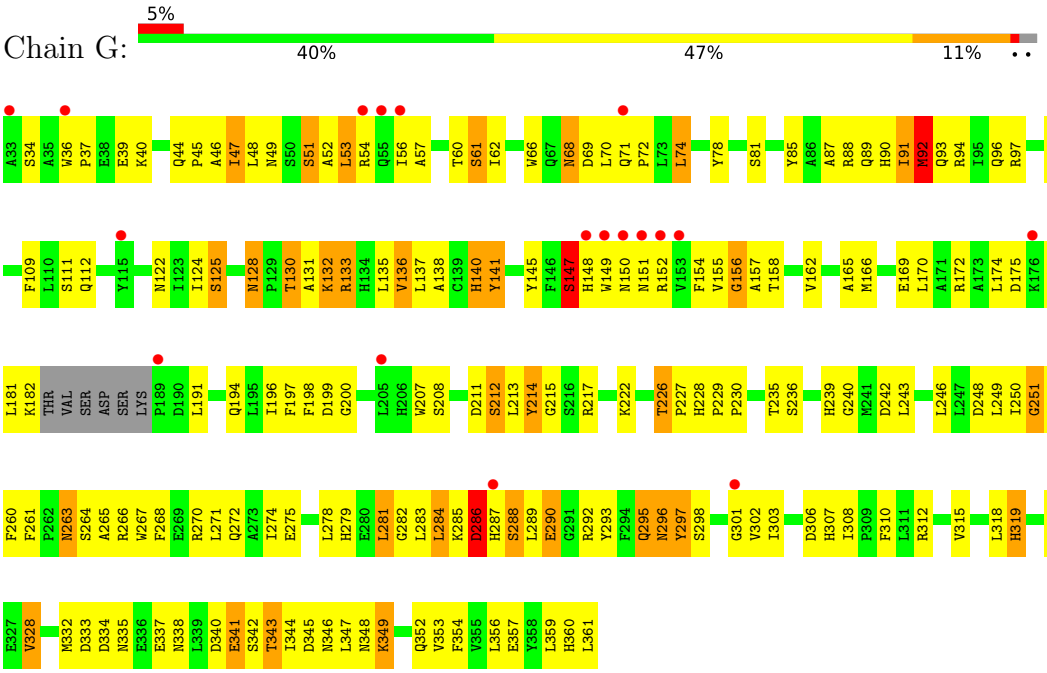
• Molecule 1: Glutaminyl-peptide cyclotransferase

Chain F:



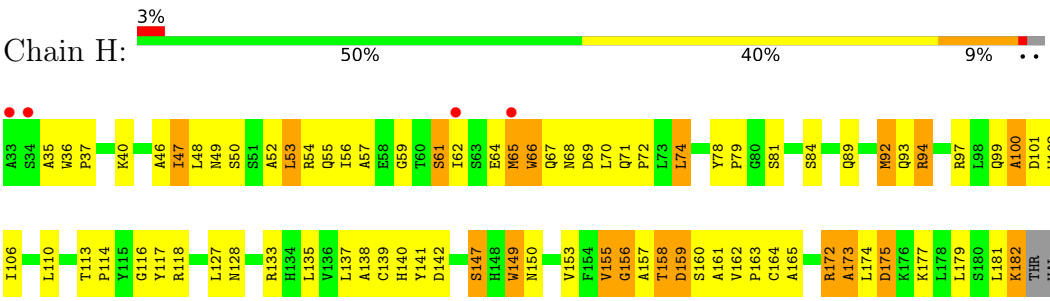
• Molecule 1: Glutaminyl-peptide cyclotransferase

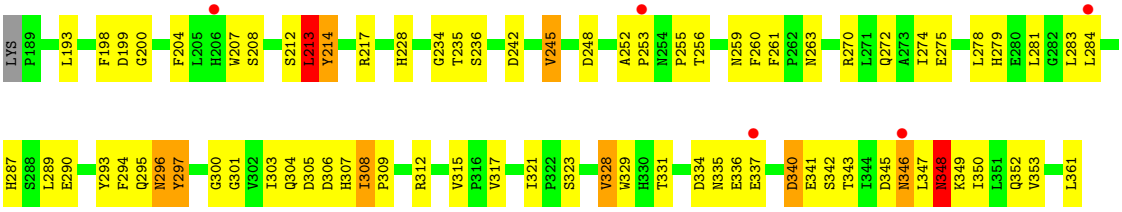
Chain G:



• Molecule 1: Glutaminyl-peptide cyclotransferase

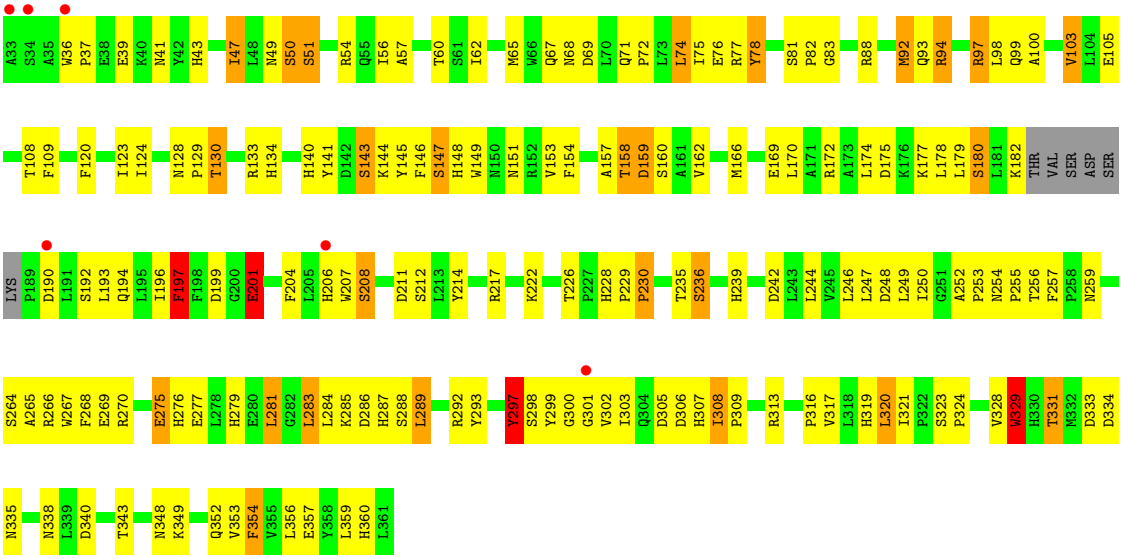
Chain H:





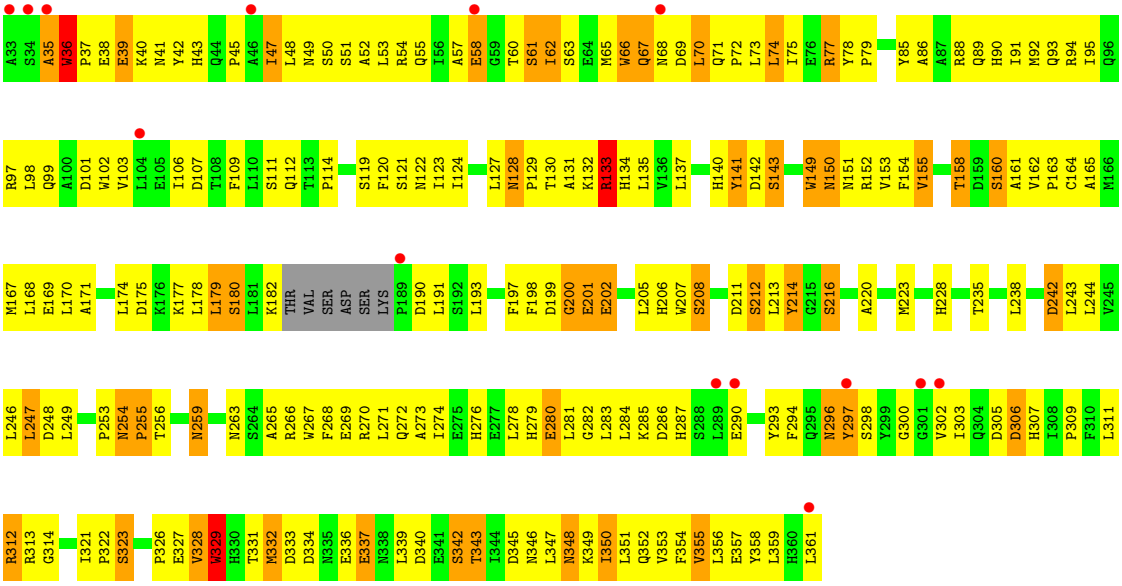
• Molecule 1: Glutaminyl-peptide cyclotransferase

Chain I:



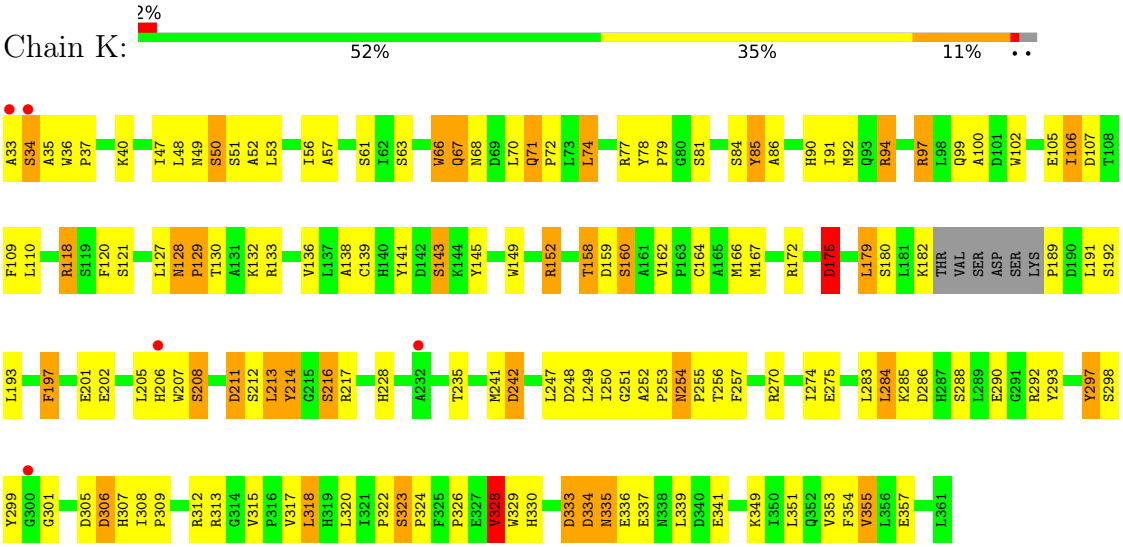
• Molecule 1: Glutaminyl-peptide cyclotransferase

Chain J:



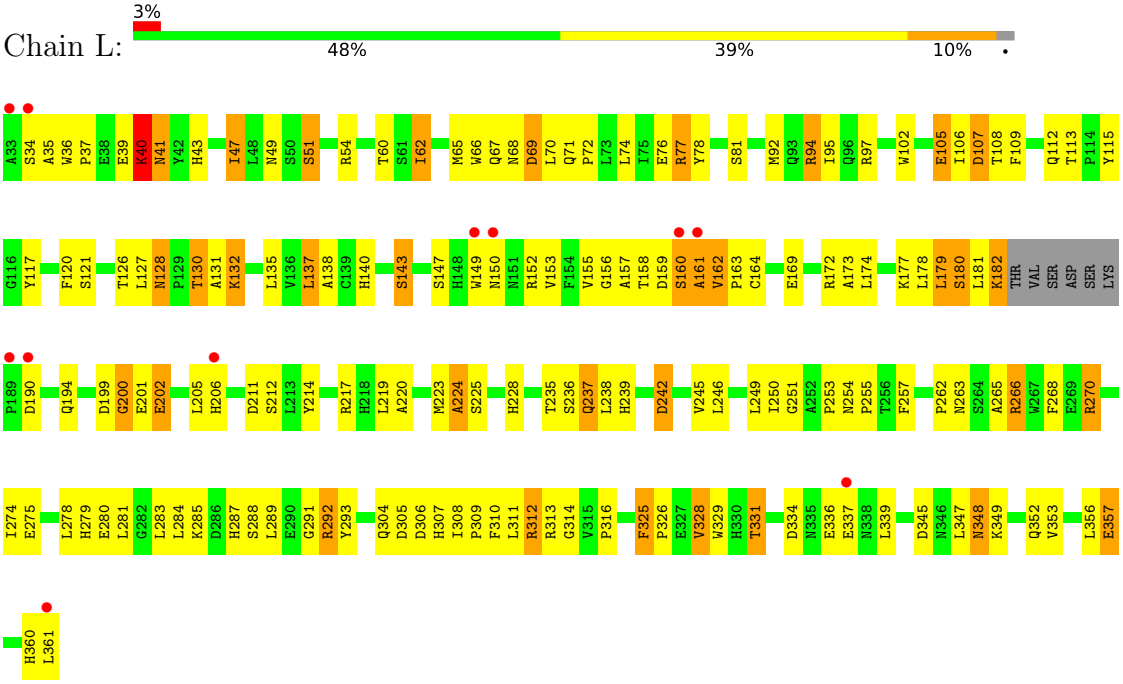
• Molecule 1: Glutaminyl-peptide cyclotransferase

Chain K:



• Molecule 1: Glutaminyl-peptide cyclotransferase

Chain L:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	83.96Å 217.39Å 242.38Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	54.86 – 2.81 54.86 – 2.81	Depositor EDS
% Data completeness (in resolution range)	99.2 (54.86-2.81) 99.2 (54.86-2.81)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.31 (at 2.81Å)	Xtriage
Refinement program	PHENIX (1.10.1_2155: ???)	Depositor
R, R_{free}	0.194 , 0.282 0.200 , 0.279	Depositor DCC
R_{free} test set	1998 reflections (1.86%)	wwPDB-VP
Wilson B-factor (Å^2)	60.7	Xtriage
Anisotropy	0.508	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 63.5	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	31587	wwPDB-VP
Average B, all atoms (Å^2)	58.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.00% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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: ZN, A1D48

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	1.87	66/2687 (2.5%)	1.25	21/3656 (0.6%)
1	B	1.88	67/2687 (2.5%)	1.13	15/3656 (0.4%)
1	C	1.80	49/2687 (1.8%)	1.13	14/3656 (0.4%)
1	D	1.74	46/2687 (1.7%)	1.05	8/3656 (0.2%)
1	E	1.72	46/2687 (1.7%)	1.07	11/3656 (0.3%)
1	F	1.57	32/2687 (1.2%)	1.03	4/3656 (0.1%)
1	G	1.09	7/2687 (0.3%)	0.82	1/3656 (0.0%)
1	H	1.33	23/2687 (0.9%)	0.91	5/3656 (0.1%)
1	I	1.43	26/2687 (1.0%)	1.01	8/3656 (0.2%)
1	J	1.05	8/2687 (0.3%)	0.89	5/3656 (0.1%)
1	K	1.54	26/2687 (1.0%)	1.04	11/3656 (0.3%)
1	L	1.51	23/2687 (0.9%)	1.09	7/3656 (0.2%)
All	All	1.57	419/32244 (1.3%)	1.04	110/43872 (0.3%)

All (419) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	164	CYS	CB-SG	-12.29	1.61	1.82
1	B	139	CYS	CB-SG	-10.74	1.64	1.82
1	H	245	VAL	CB-CG1	-10.61	1.30	1.52
1	K	66	TRP	CB-CG	-9.97	1.32	1.50
1	B	245	VAL	CB-CG1	-9.77	1.32	1.52
1	E	139	CYS	CB-SG	-9.74	1.65	1.82
1	E	264	SER	CB-OG	-9.52	1.29	1.42
1	A	358	TYR	CD2-CE2	-9.44	1.25	1.39
1	A	103	VAL	CB-CG1	-9.41	1.33	1.52
1	D	328	VAL	CB-CG1	-9.29	1.33	1.52
1	B	358	TYR	CE1-CZ	-9.07	1.26	1.38
1	C	139	CYS	CB-SG	-9.00	1.67	1.82
1	A	214	TYR	CE2-CZ	-8.89	1.26	1.38
1	A	317	VAL	CB-CG2	-8.69	1.34	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	260	PHE	CD2-CE2	-8.50	1.22	1.39
1	D	139	CYS	CB-SG	-8.47	1.67	1.82
1	D	141	TYR	CE2-CZ	-8.44	1.27	1.38
1	H	139	CYS	CB-SG	-8.36	1.68	1.82
1	A	214	TYR	CE1-CZ	-8.35	1.27	1.38
1	F	164	CYS	CB-SG	-8.29	1.68	1.82
1	A	337	GLU	CG-CD	8.29	1.64	1.51
1	I	103	VAL	CB-CG1	-8.27	1.35	1.52
1	E	136	VAL	CB-CG2	-8.23	1.35	1.52
1	H	198	PHE	CD1-CE1	-8.22	1.22	1.39
1	A	141	TYR	CD1-CE1	-8.15	1.27	1.39
1	D	293	TYR	CE1-CZ	-8.13	1.27	1.38
1	A	136	VAL	CB-CG2	-8.12	1.35	1.52
1	B	214	TYR	CE1-CZ	-8.01	1.28	1.38
1	B	120	PHE	CD1-CE1	-8.00	1.23	1.39
1	C	155	VAL	CB-CG2	-7.99	1.36	1.52
1	A	153	VAL	CB-CG2	-7.98	1.36	1.52
1	A	293	TYR	CE2-CZ	-7.96	1.28	1.38
1	D	268	PHE	CD2-CE2	-7.96	1.23	1.39
1	B	121	SER	CB-OG	-7.94	1.31	1.42
1	B	164	CYS	CB-SG	-7.90	1.68	1.82
1	B	329	TRP	CD1-NE1	-7.87	1.24	1.38
1	E	261	PHE	CD1-CE1	-7.83	1.23	1.39
1	I	141	TYR	CD1-CE1	-7.82	1.27	1.39
1	B	214	TYR	CE2-CZ	-7.79	1.28	1.38
1	E	355	VAL	CB-CG2	-7.66	1.36	1.52
1	D	141	TYR	CE1-CZ	-7.62	1.28	1.38
1	D	268	PHE	CD1-CE1	-7.57	1.24	1.39
1	B	257	PHE	CB-CG	-7.56	1.38	1.51
1	K	257	PHE	CD2-CE2	-7.55	1.24	1.39
1	J	141	TYR	CD1-CE1	-7.54	1.28	1.39
1	C	256	THR	CB-CG2	-7.52	1.27	1.52
1	B	315	VAL	CB-CG2	-7.46	1.37	1.52
1	D	315	VAL	CB-CG1	-7.45	1.37	1.52
1	C	198	PHE	CB-CG	-7.43	1.38	1.51
1	L	62	ILE	CB-CG2	-7.41	1.29	1.52
1	E	141	TYR	CD1-CE1	-7.40	1.28	1.39
1	B	120	PHE	CE2-CZ	-7.39	1.23	1.37
1	I	120	PHE	CE1-CZ	-7.36	1.23	1.37
1	E	257	PHE	CD2-CE2	-7.34	1.24	1.39
1	F	36	TRP	CB-CG	-7.33	1.37	1.50
1	D	293	TYR	CD2-CE2	-7.29	1.28	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	214	TYR	CD1-CE1	-7.28	1.28	1.39
1	F	293	TYR	CD2-CE2	-7.25	1.28	1.39
1	L	275	GLU	CG-CD	-7.24	1.41	1.51
1	D	62	ILE	CB-CG2	-7.19	1.30	1.52
1	E	261	PHE	CE1-CZ	-7.13	1.23	1.37
1	E	141	TYR	CD2-CE2	-7.12	1.28	1.39
1	J	329	TRP	CB-CG	-7.11	1.37	1.50
1	A	275	GLU	CD-OE1	-7.08	1.17	1.25
1	K	288	SER	CA-CB	-7.06	1.42	1.52
1	L	164	CYS	CB-SG	-7.05	1.70	1.82
1	E	272	GLN	CB-CG	-7.03	1.33	1.52
1	C	141	TYR	CD1-CE1	-7.00	1.28	1.39
1	A	103	VAL	CB-CG2	-7.00	1.38	1.52
1	A	214	TYR	CG-CD2	-7.00	1.30	1.39
1	G	328	VAL	CB-CG1	-6.98	1.38	1.52
1	C	211	ASP	CA-CB	-6.95	1.38	1.53
1	L	66	TRP	CB-CG	-6.93	1.37	1.50
1	H	308	ILE	C-N	-6.90	1.21	1.34
1	K	214	TYR	CD2-CE2	-6.88	1.29	1.39
1	B	358	TYR	CD1-CE1	-6.88	1.29	1.39
1	D	158	THR	CB-CG2	-6.85	1.29	1.52
1	A	358	TYR	CE2-CZ	-6.80	1.29	1.38
1	I	103	VAL	CB-CG2	-6.79	1.38	1.52
1	E	328	VAL	CB-CG1	-6.76	1.38	1.52
1	H	214	TYR	CE2-CZ	-6.76	1.29	1.38
1	C	325	PHE	CE1-CZ	-6.76	1.24	1.37
1	B	103	VAL	CB-CG1	-6.75	1.38	1.52
1	A	261	PHE	CE1-CZ	-6.75	1.24	1.37
1	J	141	TYR	CD2-CE2	-6.74	1.29	1.39
1	E	325	PHE	CE1-CZ	-6.71	1.24	1.37
1	A	155	VAL	CB-CG2	-6.68	1.38	1.52
1	D	256	THR	CB-CG2	-6.68	1.30	1.52
1	E	123	ILE	CB-CG2	-6.67	1.32	1.52
1	K	315	VAL	CB-CG2	-6.66	1.38	1.52
1	F	309	PRO	CB-CG	-6.65	1.16	1.50
1	A	260	PHE	CG-CD2	-6.63	1.28	1.38
1	A	253	PRO	CG-CD	-6.62	1.28	1.50
1	C	294	PHE	CB-CG	-6.61	1.40	1.51
1	C	336	GLU	CB-CG	-6.60	1.39	1.52
1	E	257	PHE	CE1-CZ	-6.57	1.24	1.37
1	C	257	PHE	CE2-CZ	-6.55	1.25	1.37
1	A	260	PHE	CD1-CE1	-6.54	1.26	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	66	TRP	CB-CG	-6.53	1.38	1.50
1	L	214	TYR	CG-CD1	-6.50	1.30	1.39
1	B	328	VAL	CB-CG1	-6.49	1.39	1.52
1	B	120	PHE	CG-CD1	-6.49	1.29	1.38
1	B	303	ILE	CB-CG2	-6.49	1.32	1.52
1	E	277	GLU	CB-CG	-6.49	1.39	1.52
1	I	214	TYR	CE1-CZ	-6.48	1.30	1.38
1	B	275	GLU	CD-OE2	-6.47	1.18	1.25
1	K	214	TYR	CD1-CE1	-6.47	1.29	1.39
1	K	355	VAL	CB-CG2	-6.46	1.39	1.52
1	B	329	TRP	CD2-CE2	-6.46	1.33	1.41
1	B	294	PHE	CB-CG	-6.45	1.40	1.51
1	K	335	ASN	CB-CG	-6.45	1.36	1.51
1	E	136	VAL	CB-CG1	-6.44	1.39	1.52
1	A	198	PHE	CE2-CZ	-6.43	1.25	1.37
1	I	120	PHE	CD2-CE2	-6.41	1.26	1.39
1	C	267	TRP	CE3-CZ3	-6.40	1.27	1.38
1	B	214	TYR	CG-CD2	-6.38	1.30	1.39
1	K	275	GLU	CB-CG	-6.33	1.40	1.52
1	B	354	PHE	CG-CD2	-6.33	1.29	1.38
1	F	329	TRP	CB-CG	-6.33	1.38	1.50
1	B	102	TRP	CE3-CZ3	-6.31	1.27	1.38
1	K	317	VAL	CB-CG1	-6.30	1.39	1.52
1	F	204	PHE	CB-CG	-6.30	1.40	1.51
1	I	317	VAL	CB-CG2	-6.28	1.39	1.52
1	D	214	TYR	CE1-CZ	-6.27	1.30	1.38
1	F	246	LEU	CG-CD2	-6.27	1.28	1.51
1	J	66	TRP	CB-CG	-6.26	1.39	1.50
1	F	317	VAL	CB-CG1	-6.24	1.39	1.52
1	I	141	TYR	CE2-CZ	-6.23	1.30	1.38
1	C	123	ILE	CB-CG2	-6.22	1.33	1.52
1	E	315	VAL	CB-CG1	-6.22	1.39	1.52
1	I	149	TRP	CB-CG	-6.22	1.39	1.50
1	A	141	TYR	CD2-CE2	-6.22	1.30	1.39
1	B	358	TYR	CD2-CE2	-6.22	1.30	1.39
1	B	336	GLU	CD-OE1	-6.21	1.18	1.25
1	C	257	PHE	CE1-CZ	-6.21	1.25	1.37
1	C	328	VAL	CB-CG1	-6.21	1.39	1.52
1	D	154	PHE	CE2-CZ	-6.21	1.25	1.37
1	H	204	PHE	CE1-CZ	-6.20	1.25	1.37
1	L	214	TYR	CE2-CZ	-6.20	1.30	1.38
1	A	257	PHE	CE2-CZ	-6.18	1.25	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	275	GLU	CD-OE1	-6.17	1.18	1.25
1	A	162	VAL	CB-CG1	-6.16	1.40	1.52
1	L	214	TYR	CE1-CZ	-6.15	1.30	1.38
1	C	145	TYR	CD2-CE2	-6.15	1.30	1.39
1	E	358	TYR	CE1-CZ	-6.13	1.30	1.38
1	K	293	TYR	CD1-CE1	-6.13	1.30	1.39
1	C	293	TYR	CE1-CZ	-6.12	1.30	1.38
1	C	337	GLU	CG-CD	6.12	1.61	1.51
1	E	260	PHE	CE2-CZ	-6.12	1.25	1.37
1	H	317	VAL	CB-CG2	-6.12	1.40	1.52
1	A	268	PHE	CE1-CZ	-6.11	1.25	1.37
1	B	145	TYR	CD1-CE1	-6.11	1.30	1.39
1	D	309	PRO	CB-CG	-6.10	1.19	1.50
1	H	155	VAL	CB-CG1	-6.09	1.40	1.52
1	B	120	PHE	CD2-CE2	-6.07	1.27	1.39
1	B	270	ARG	CG-CD	-6.07	1.36	1.51
1	B	336	GLU	CB-CG	-6.07	1.40	1.52
1	I	354	PHE	CB-CG	-6.06	1.41	1.51
1	C	202	GLU	CD-OE1	-6.06	1.19	1.25
1	E	358	TYR	CD1-CE1	-6.05	1.30	1.39
1	A	316	PRO	CG-CD	-6.05	1.30	1.50
1	K	145	TYR	CD1-CE1	-6.04	1.30	1.39
1	D	354	PHE	CE1-CZ	-6.04	1.25	1.37
1	D	293	TYR	CE2-CZ	-6.04	1.30	1.38
1	E	268	PHE	CD2-CE2	-6.03	1.27	1.39
1	E	315	VAL	CB-CG2	-6.02	1.40	1.52
1	F	315	VAL	CB-CG1	-6.02	1.40	1.52
1	E	280	GLU	CB-CG	6.01	1.63	1.52
1	F	214	TYR	CD2-CE2	-6.00	1.30	1.39
1	B	155	VAL	CB-CG2	-5.99	1.40	1.52
1	B	167	MET	CG-SD	-5.98	1.65	1.81
1	L	155	VAL	CB-CG2	-5.98	1.40	1.52
1	B	155	VAL	CB-CG1	-5.98	1.40	1.52
1	K	214	TYR	CE2-CZ	-5.97	1.30	1.38
1	B	293	TYR	CD1-CE1	-5.95	1.30	1.39
1	A	245	VAL	CB-CG1	-5.95	1.40	1.52
1	L	77	ARG	CZ-NH1	-5.94	1.25	1.33
1	E	153	VAL	CB-CG2	-5.93	1.40	1.52
1	D	327	GLU	CB-CG	-5.89	1.41	1.52
1	H	141	TYR	CD1-CE1	-5.89	1.30	1.39
1	A	325	PHE	CE2-CZ	-5.86	1.26	1.37
1	H	236	SER	CB-OG	-5.86	1.34	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	202	GLU	CD-OE1	-5.86	1.19	1.25
1	K	288	SER	CB-OG	-5.86	1.34	1.42
1	E	293	TYR	CE2-CZ	-5.85	1.30	1.38
1	I	329	TRP	CB-CG	-5.85	1.39	1.50
1	F	139	CYS	CB-SG	-5.85	1.72	1.81
1	A	120	PHE	CG-CD1	-5.84	1.29	1.38
1	H	149	TRP	CB-CG	-5.84	1.39	1.50
1	C	277	GLU	CB-CG	-5.83	1.41	1.52
1	F	141	TYR	CD1-CE1	-5.83	1.30	1.39
1	I	141	TYR	CD2-CE2	-5.83	1.30	1.39
1	F	146	PHE	CE1-CZ	-5.81	1.26	1.37
1	A	217	ARG	CZ-NH2	-5.80	1.25	1.33
1	D	94	ARG	CB-CG	-5.78	1.36	1.52
1	B	109	PHE	CD2-CE2	-5.78	1.27	1.39
1	C	324	PRO	C-O	-5.78	1.11	1.23
1	H	141	TYR	CE1-CZ	-5.77	1.31	1.38
1	F	66	TRP	CD2-CE2	-5.77	1.34	1.41
1	B	162	VAL	C-N	-5.76	1.23	1.34
1	D	355	VAL	CB-CG1	-5.76	1.40	1.52
1	H	66	TRP	CB-CG	-5.75	1.40	1.50
1	D	136	VAL	CB-CG1	-5.75	1.40	1.52
1	G	214	TYR	CE2-CZ	-5.73	1.31	1.38
1	A	214	TYR	CG-CD1	-5.73	1.31	1.39
1	L	77	ARG	CZ-NH2	-5.73	1.25	1.33
1	A	358	TYR	CD1-CE1	-5.72	1.30	1.39
1	F	310	PHE	CG-CD2	-5.71	1.30	1.38
1	E	316	PRO	CG-CD	-5.71	1.31	1.50
1	I	354	PHE	CG-CD1	-5.71	1.30	1.38
1	F	162	VAL	CB-CG1	-5.70	1.40	1.52
1	C	247	LEU	CG-CD2	-5.69	1.30	1.51
1	H	164	CYS	CB-SG	-5.69	1.72	1.81
1	A	261	PHE	CD2-CE2	-5.69	1.27	1.39
1	B	149	TRP	CB-CG	-5.68	1.40	1.50
1	L	202	GLU	CG-CD	5.68	1.60	1.51
1	B	268	PHE	CB-CG	-5.68	1.41	1.51
1	D	169	GLU	CD-OE2	-5.67	1.19	1.25
1	F	66	TRP	CE3-CZ3	-5.67	1.28	1.38
1	C	125	SER	CB-OG	-5.67	1.34	1.42
1	C	42	TYR	CG-CD1	-5.67	1.31	1.39
1	F	315	VAL	CB-CG2	-5.66	1.41	1.52
1	L	268	PHE	CE2-CZ	-5.66	1.26	1.37
1	F	125	SER	CB-OG	-5.63	1.34	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	354	PHE	CD2-CE2	-5.62	1.28	1.39
1	D	202	GLU	CD-OE1	-5.60	1.19	1.25
1	K	214	TYR	CE1-CZ	-5.59	1.31	1.38
1	B	154	PHE	CE2-CZ	-5.59	1.26	1.37
1	A	85	TYR	CE2-CZ	-5.58	1.31	1.38
1	C	322	PRO	CB-CG	-5.57	1.22	1.50
1	D	324	PRO	CG-CD	-5.57	1.32	1.50
1	K	293	TYR	CE2-CZ	-5.57	1.31	1.38
1	D	357	GLU	CG-CD	-5.57	1.43	1.51
1	C	293	TYR	CE2-CZ	-5.57	1.31	1.38
1	F	261	PHE	CB-CG	-5.56	1.41	1.51
1	A	66	TRP	CG-CD1	-5.56	1.28	1.36
1	A	166	MET	CG-SD	-5.55	1.66	1.81
1	A	197	PHE	CG-CD2	-5.55	1.30	1.38
1	A	264	SER	CB-OG	-5.55	1.35	1.42
1	C	155	VAL	CB-CG1	-5.55	1.41	1.52
1	A	243	LEU	CG-CD2	-5.54	1.31	1.51
1	I	197	PHE	CD2-CE2	-5.53	1.28	1.39
1	B	45	PRO	CB-CG	-5.52	1.22	1.50
1	B	166	MET	CG-SD	-5.52	1.66	1.81
1	C	77	ARG	C-N	-5.51	1.21	1.34
1	H	340	ASP	CA-CB	-5.51	1.41	1.53
1	A	160	SER	CA-CB	-5.51	1.44	1.52
1	L	202	GLU	CD-OE1	-5.50	1.19	1.25
1	C	245	VAL	CB-CG1	-5.50	1.41	1.52
1	B	141	TYR	CE1-CZ	-5.50	1.31	1.38
1	A	120	PHE	CE2-CZ	-5.50	1.26	1.37
1	E	317	VAL	CB-CG1	-5.49	1.41	1.52
1	I	308	ILE	CB-CG2	-5.49	1.35	1.52
1	C	164	CYS	CB-SG	-5.49	1.72	1.81
1	F	310	PHE	CE1-CZ	-5.49	1.26	1.37
1	B	117	TYR	CD1-CE1	-5.49	1.31	1.39
1	K	66	TRP	CE3-CZ3	-5.49	1.29	1.38
1	B	347	LEU	CG-CD2	-5.48	1.31	1.51
1	L	293	TYR	CE1-CZ	-5.48	1.31	1.38
1	A	160	SER	CB-OG	-5.48	1.35	1.42
1	B	256	THR	C-N	-5.47	1.21	1.34
1	E	243	LEU	CG-CD2	-5.47	1.31	1.51
1	A	149	TRP	CB-CG	-5.46	1.40	1.50
1	C	266	ARG	CB-CG	-5.46	1.37	1.52
1	B	255	PRO	CG-CD	-5.46	1.32	1.50
1	H	315	VAL	CB-CG2	-5.45	1.41	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	I	120	PHE	CG-CD1	-5.44	1.30	1.38
1	C	270	ARG	CG-CD	-5.43	1.38	1.51
1	F	293	TYR	CG-CD1	-5.43	1.32	1.39
1	I	275	GLU	CG-CD	-5.43	1.43	1.51
1	C	192	SER	CB-OG	-5.43	1.35	1.42
1	B	310	PHE	CB-CG	-5.43	1.42	1.51
1	C	141	TYR	CD2-CE2	-5.43	1.31	1.39
1	L	329	TRP	CB-CG	-5.43	1.40	1.50
1	A	42	TYR	CE1-CZ	-5.42	1.31	1.38
1	E	257	PHE	CG-CD2	-5.41	1.30	1.38
1	F	310	PHE	CG-CD1	-5.41	1.30	1.38
1	H	214	TYR	CD2-CE2	-5.41	1.31	1.39
1	D	133	ARG	CB-CG	-5.41	1.38	1.52
1	D	164	CYS	CB-SG	-5.41	1.73	1.81
1	C	134	HIS	CA-CB	-5.40	1.42	1.53
1	F	202	GLU	CD-OE1	-5.40	1.19	1.25
1	B	158	THR	CB-CG2	-5.38	1.34	1.52
1	E	260	PHE	CD2-CE2	-5.38	1.28	1.39
1	E	260	PHE	CD1-CE1	-5.38	1.28	1.39
1	E	350	ILE	CB-CG2	-5.37	1.36	1.52
1	A	109	PHE	CD1-CE1	-5.37	1.28	1.39
1	B	293	TYR	CE2-CZ	-5.36	1.31	1.38
1	A	280	GLU	CB-CG	5.36	1.62	1.52
1	A	198	PHE	CG-CD2	-5.36	1.30	1.38
1	F	355	VAL	CB-CG2	-5.35	1.41	1.52
1	F	123	ILE	CB-CG2	-5.34	1.36	1.52
1	A	78	TYR	CE1-CZ	-5.34	1.31	1.38
1	K	354	PHE	CB-CG	-5.33	1.42	1.51
1	D	58	GLU	CB-CG	-5.33	1.42	1.52
1	B	260	PHE	CE1-CZ	-5.33	1.27	1.37
1	B	310	PHE	CE2-CZ	-5.32	1.27	1.37
1	B	145	TYR	CE2-CZ	-5.32	1.31	1.38
1	C	275	GLU	CB-CG	-5.32	1.42	1.52
1	A	137	LEU	CG-CD1	-5.32	1.32	1.51
1	A	162	VAL	CB-CG2	-5.32	1.41	1.52
1	A	323	SER	CA-CB	-5.32	1.45	1.52
1	A	260	PHE	CD2-CE2	-5.32	1.28	1.39
1	B	154	PHE	CE1-CZ	-5.31	1.27	1.37
1	C	255	PRO	CB-CG	-5.31	1.23	1.50
1	D	353	VAL	CB-CG1	-5.31	1.41	1.52
1	B	355	VAL	CB-CG1	-5.31	1.41	1.52
1	C	268	PHE	CD1-CE1	-5.31	1.28	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	275	GLU	CD-OE2	-5.31	1.19	1.25
1	G	315	VAL	CB-CG2	-5.30	1.41	1.52
1	K	328	VAL	CB-CG2	-5.30	1.41	1.52
1	D	261	PHE	CB-CG	-5.30	1.42	1.51
1	D	235	THR	CB-CG2	-5.30	1.34	1.52
1	E	36	TRP	CB-CG	-5.30	1.40	1.50
1	I	78	TYR	CE2-CZ	-5.29	1.31	1.38
1	E	261	PHE	CG-CD2	-5.29	1.30	1.38
1	D	264	SER	CB-OG	-5.28	1.35	1.42
1	A	120	PHE	CD2-CE2	-5.28	1.28	1.39
1	G	124	ILE	CB-CG2	-5.28	1.36	1.52
1	K	293	TYR	CG-CD1	-5.28	1.32	1.39
1	D	103	VAL	CB-CG1	-5.27	1.41	1.52
1	K	329	TRP	CD1-NE1	-5.27	1.28	1.38
1	J	214	TYR	CE1-CZ	-5.27	1.31	1.38
1	E	44	GLN	C-N	-5.26	1.24	1.34
1	D	294	PHE	CD1-CE1	-5.26	1.28	1.39
1	B	313	ARG	CG-CD	-5.26	1.38	1.51
1	C	53	LEU	CG-CD2	-5.26	1.32	1.51
1	H	153	VAL	CB-CG1	-5.26	1.41	1.52
1	I	82	PRO	CG-CD	-5.25	1.33	1.50
1	B	70	LEU	CG-CD1	-5.24	1.32	1.51
1	B	142	ASP	CB-CG	-5.24	1.40	1.51
1	K	214	TYR	CG-CD1	-5.24	1.32	1.39
1	D	141	TYR	CG-CD1	-5.24	1.32	1.39
1	C	42	TYR	CE1-CZ	-5.23	1.31	1.38
1	L	115	TYR	CE1-CZ	-5.23	1.31	1.38
1	C	272	GLN	CB-CG	-5.22	1.38	1.52
1	I	75	ILE	CB-CG2	-5.22	1.36	1.52
1	A	309	PRO	CB-CG	-5.22	1.23	1.50
1	A	354	PHE	CB-CG	-5.21	1.42	1.51
1	K	164	CYS	CB-SG	-5.21	1.73	1.81
1	B	62	ILE	CB-CG2	-5.21	1.36	1.52
1	C	355	VAL	CB-CG1	-5.20	1.42	1.52
1	D	354	PHE	CB-CG	-5.20	1.42	1.51
1	F	109	PHE	CD1-CE1	-5.20	1.28	1.39
1	L	268	PHE	CB-CG	-5.20	1.42	1.51
1	H	207	TRP	CB-CG	5.20	1.59	1.50
1	D	38	GLU	CB-CG	-5.20	1.42	1.52
1	J	149	TRP	CB-CG	-5.20	1.40	1.50
1	C	194	GLN	CA-CB	-5.19	1.42	1.53
1	B	337	GLU	CG-CD	5.19	1.59	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	260	PHE	CG-CD2	-5.19	1.30	1.38
1	A	315	VAL	CB-CG2	-5.18	1.42	1.52
1	K	211	ASP	CB-CG	-5.18	1.40	1.51
1	H	260	PHE	CD2-CE2	-5.18	1.28	1.39
1	I	154	PHE	CE2-CZ	-5.18	1.27	1.37
1	B	325	PHE	CE2-CZ	-5.18	1.27	1.37
1	A	120	PHE	CD1-CE1	-5.18	1.28	1.39
1	A	159	ASP	CG-OD1	-5.17	1.13	1.25
1	E	310	PHE	CB-CG	-5.17	1.42	1.51
1	E	323	SER	CB-OG	-5.17	1.35	1.42
1	I	214	TYR	CE2-CZ	-5.17	1.31	1.38
1	L	325	PHE	C-N	-5.17	1.24	1.34
1	A	263	ASN	CB-CG	-5.16	1.39	1.51
1	G	310	PHE	CB-CG	-5.16	1.42	1.51
1	F	66	TRP	CZ3-CH2	-5.15	1.31	1.40
1	A	259	ASN	CB-CG	-5.15	1.39	1.51
1	E	354	PHE	CG-CD2	-5.15	1.31	1.38
1	L	257	PHE	CB-CG	-5.14	1.42	1.51
1	A	198	PHE	CD1-CE1	-5.14	1.28	1.39
1	B	212	SER	CB-OG	-5.14	1.35	1.42
1	E	155	VAL	CB-CG1	-5.14	1.42	1.52
1	B	293	TYR	CE1-CZ	-5.13	1.31	1.38
1	C	258	PRO	CB-CG	-5.13	1.24	1.50
1	C	42	TYR	CD1-CE1	-5.13	1.31	1.39
1	D	66	TRP	CD2-CE2	-5.13	1.35	1.41
1	I	201	GLU	CB-CG	-5.13	1.42	1.52
1	B	309	PRO	CB-CG	-5.13	1.24	1.50
1	C	94	ARG	CB-CG	-5.13	1.38	1.52
1	E	85	TYR	CE2-CZ	-5.13	1.31	1.38
1	L	102	TRP	CB-CG	-5.12	1.41	1.50
1	F	201	GLU	CB-CG	-5.12	1.42	1.52
1	C	120	PHE	CE2-CZ	-5.12	1.27	1.37
1	D	328	VAL	CB-CG2	-5.12	1.42	1.52
1	E	219	LEU	CG-CD1	-5.12	1.32	1.51
1	E	142	ASP	CB-CG	-5.11	1.41	1.51
1	C	318	LEU	C-N	-5.11	1.22	1.34
1	J	133	ARG	CZ-NH2	-5.11	1.26	1.33
1	G	141	TYR	CD1-CE1	-5.10	1.31	1.39
1	K	139	CYS	CB-SG	-5.10	1.73	1.81
1	E	293	TYR	CE1-CZ	-5.09	1.31	1.38
1	L	348	ASN	CB-CG	-5.09	1.39	1.51
1	H	348	ASN	CB-CG	-5.09	1.39	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	331	THR	CB-CG2	-5.08	1.35	1.52
1	A	109	PHE	CD2-CE2	-5.08	1.29	1.39
1	C	154	PHE	CE1-CZ	-5.08	1.27	1.37
1	A	145	TYR	CE2-CZ	-5.07	1.31	1.38
1	B	136	VAL	CB-CG2	-5.07	1.42	1.52
1	B	60	THR	CB-CG2	-5.07	1.35	1.52
1	D	166	MET	CG-SD	-5.07	1.68	1.81
1	L	357	GLU	CB-CG	-5.07	1.42	1.52
1	E	145	TYR	CD1-CE1	-5.07	1.31	1.39
1	I	204	PHE	CB-CG	-5.07	1.42	1.51
1	D	143	SER	CA-CB	-5.06	1.45	1.52
1	I	120	PHE	CG-CD2	-5.05	1.31	1.38
1	F	288	SER	CA-CB	-5.05	1.45	1.52
1	H	198	PHE	CG-CD2	-5.05	1.31	1.38
1	D	145	TYR	CE1-CZ	-5.04	1.31	1.38
1	A	135	LEU	CG-CD1	-5.03	1.33	1.51
1	D	257	PHE	CE1-CZ	-5.02	1.27	1.37
1	K	85	TYR	CD2-CE2	-5.02	1.31	1.39
1	F	261	PHE	CE1-CZ	-5.02	1.27	1.37
1	G	136	VAL	CB-CG2	-5.02	1.42	1.52
1	L	328	VAL	CB-CG1	-5.02	1.42	1.52
1	J	202	GLU	CG-CD	5.02	1.59	1.51
1	F	255	PRO	CG-CD	-5.01	1.34	1.50
1	I	257	PHE	CD2-CE2	-5.00	1.29	1.39
1	D	245	VAL	CB-CG1	-5.00	1.42	1.52
1	D	344	ILE	CB-CG2	-5.00	1.37	1.52
1	H	261	PHE	CD2-CE2	-5.00	1.29	1.39

All (110) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	133	ARG	NE-CZ-NH2	-19.95	110.33	120.30
1	A	159	ASP	CB-CG-OD1	13.87	130.78	118.30
1	J	133	ARG	NE-CZ-NH2	-11.92	114.34	120.30
1	D	159	ASP	CB-CG-OD1	11.21	128.39	118.30
1	J	133	ARG	NE-CZ-NH1	10.24	125.42	120.30
1	B	334	ASP	CB-CG-OD1	10.13	127.42	118.30
1	I	313	ARG	NE-CZ-NH2	-9.13	115.73	120.30
1	L	202	GLU	OE1-CD-OE2	-9.03	112.46	123.30
1	A	133	ARG	NE-CZ-NH1	8.62	124.61	120.30
1	K	334	ASP	CB-CG-OD1	8.17	125.66	118.30
1	A	133	ARG	CG-CD-NE	-8.12	94.75	111.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	202	GLU	OE1-CD-OE2	-8.11	113.56	123.30
1	B	77	ARG	NE-CZ-NH1	8.06	124.33	120.30
1	C	199	ASP	CB-CG-OD1	8.06	125.55	118.30
1	B	306	ASP	CB-CG-OD2	-7.88	111.21	118.30
1	L	77	ARG	NE-CZ-NH1	7.80	124.20	120.30
1	E	340	ASP	CB-CG-OD1	7.77	125.29	118.30
1	A	283	LEU	CB-CG-CD1	-7.72	97.87	111.00
1	C	266	ARG	NE-CZ-NH2	-7.63	116.49	120.30
1	A	94	ARG	NE-CZ-NH2	7.62	124.11	120.30
1	A	356	LEU	CB-CG-CD2	-7.47	98.30	111.00
1	L	69	ASP	CB-CG-OD2	7.40	124.96	118.30
1	E	243	LEU	CB-CG-CD2	-7.37	98.47	111.00
1	K	159	ASP	CB-CG-OD2	-7.31	111.72	118.30
1	A	159	ASP	OD1-CG-OD2	-7.29	109.46	123.30
1	I	313	ARG	NE-CZ-NH1	7.16	123.88	120.30
1	D	312	ARG	NE-CZ-NH1	7.13	123.87	120.30
1	I	199	ASP	CB-CG-OD1	7.12	124.71	118.30
1	A	104	LEU	CB-CG-CD2	-7.11	98.91	111.00
1	C	202	GLU	OE1-CD-OE2	-7.04	114.85	123.30
1	D	159	ASP	OD1-CG-OD2	-7.01	109.97	123.30
1	E	351	LEU	CB-CG-CD2	-6.94	99.21	111.00
1	K	318	LEU	CB-CG-CD2	-6.77	99.49	111.00
1	B	77	ARG	NE-CZ-NH2	-6.62	116.99	120.30
1	C	270	ARG	NE-CZ-NH1	-6.62	116.99	120.30
1	K	159	ASP	CB-CG-OD1	6.62	124.25	118.30
1	E	133	ARG	NE-CZ-NH2	-6.50	117.05	120.30
1	C	318	LEU	CB-CG-CD2	-6.30	100.29	111.00
1	C	247	LEU	CA-CB-CG	6.24	129.65	115.30
1	L	179	LEU	CB-CG-CD2	-6.23	100.40	111.00
1	B	195	LEU	CB-CG-CD1	-6.23	100.41	111.00
1	A	248	ASP	CB-CG-OD2	6.22	123.90	118.30
1	H	110	LEU	CB-CG-CD1	-6.22	100.43	111.00
1	B	283	LEU	CB-CG-CD1	-6.21	100.44	111.00
1	E	340	ASP	CB-CG-OD2	-6.16	112.76	118.30
1	B	345	ASP	CB-CG-OD1	6.13	123.82	118.30
1	J	247	LEU	CB-CG-CD1	-6.11	100.61	111.00
1	B	172	ARG	NE-CZ-NH1	6.09	123.35	120.30
1	I	283	LEU	CB-CG-CD2	6.07	121.32	111.00
1	I	159	ASP	CB-CG-OD2	-6.06	112.84	118.30
1	L	270	ARG	NE-CZ-NH1	6.03	123.31	120.30
1	E	70	LEU	CB-CG-CD2	-5.96	100.88	111.00
1	D	306	ASP	CB-CG-OD1	5.95	123.65	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	199	ASP	CB-CG-OD2	-5.91	112.98	118.30
1	A	340	ASP	CB-CG-OD1	5.84	123.56	118.30
1	C	286	ASP	CB-CG-OD1	5.76	123.48	118.30
1	D	318	LEU	CB-CG-CD2	-5.72	101.27	111.00
1	F	242	ASP	CB-CG-OD1	5.67	123.41	118.30
1	F	243	LEU	CB-CG-CD2	-5.67	101.36	111.00
1	B	292	ARG	NE-CZ-NH1	5.65	123.12	120.30
1	C	106	ILE	CG1-CB-CG2	-5.63	99.01	111.40
1	I	283	LEU	CB-CG-CD1	-5.63	101.43	111.00
1	K	313	ARG	NE-CZ-NH2	-5.61	117.49	120.30
1	K	284	LEU	CA-CB-CG	5.61	128.21	115.30
1	E	110	LEU	CB-CG-CD1	-5.59	101.50	111.00
1	H	159	ASP	CB-CG-OD2	-5.56	113.29	118.30
1	K	152	ARG	NE-CZ-NH2	-5.54	117.53	120.30
1	K	339	LEU	CB-CG-CD2	-5.51	101.64	111.00
1	A	332	MET	CG-SD-CE	-5.46	91.47	100.20
1	E	271	LEU	CB-CG-CD1	-5.45	101.73	111.00
1	C	133	ARG	NE-CZ-NH2	-5.43	117.58	120.30
1	B	74	LEU	CB-CG-CD1	-5.43	101.77	111.00
1	C	323	SER	C-N-CD	-5.42	108.69	120.60
1	E	74	LEU	CB-CG-CD1	5.40	120.18	111.00
1	L	135	LEU	CB-CG-CD2	-5.39	101.83	111.00
1	H	213	LEU	CB-CG-CD1	-5.37	101.88	111.00
1	A	313	ARG	NE-CZ-NH2	-5.36	117.62	120.30
1	E	308	ILE	CG1-CB-CG2	5.36	123.19	111.40
1	A	242	ASP	CB-CG-OD2	5.35	123.11	118.30
1	G	306	ASP	CB-CG-OD1	5.34	123.11	118.30
1	A	283	LEU	CB-CG-CD2	5.33	120.05	111.00
1	C	172	ARG	NE-CZ-NH1	5.29	122.95	120.30
1	B	133	ARG	NE-CZ-NH2	5.28	122.94	120.30
1	B	340	ASP	CB-CG-OD1	5.25	123.03	118.30
1	C	256	THR	OG1-CB-CG2	-5.23	97.97	110.00
1	B	172	ARG	NE-CZ-NH2	-5.21	117.69	120.30
1	D	281	LEU	CA-CB-CG	5.20	127.26	115.30
1	C	281	LEU	CA-CB-CG	5.20	127.26	115.30
1	K	74	LEU	CB-CG-CD1	-5.20	102.17	111.00
1	L	266	ARG	NE-CZ-NH2	5.18	122.89	120.30
1	F	318	LEU	CB-CG-CD2	-5.17	102.21	111.00
1	H	245	VAL	CG1-CB-CG2	-5.17	102.64	110.90
1	K	313	ARG	NE-CZ-NH1	5.15	122.88	120.30
1	A	334	ASP	CB-CG-OD2	5.14	122.93	118.30
1	F	249	LEU	CB-CG-CD2	5.13	119.72	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	K	175	ASP	CB-CG-OD2	5.12	122.91	118.30
1	J	77	ARG	NE-CZ-NH2	-5.11	117.75	120.30
1	A	133	ARG	CA-CB-CG	5.10	124.62	113.40
1	I	62	ILE	CG1-CB-CG2	-5.10	100.18	111.40
1	C	219	LEU	CB-CG-CD2	-5.10	102.33	111.00
1	A	190	ASP	CB-CG-OD2	-5.08	113.72	118.30
1	H	159	ASP	CB-CG-OD1	5.08	122.88	118.30
1	A	170	LEU	CB-CG-CD1	-5.08	102.36	111.00
1	E	152	ARG	NE-CZ-NH1	-5.08	117.76	120.30
1	I	193	LEU	CA-CB-CG	5.08	126.98	115.30
1	A	133	ARG	NH1-CZ-NH2	5.07	124.97	119.40
1	J	246	LEU	CB-CG-CD1	5.02	119.54	111.00
1	B	334	ASP	OD1-CG-OD2	-5.02	113.76	123.30
1	D	313	ARG	NE-CZ-NH2	-5.01	117.79	120.30
1	D	243	LEU	CB-CG-CD2	-5.01	102.48	111.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2610	0	2529	79	0
1	B	2610	0	2529	93	0
1	C	2610	0	2528	75	0
1	D	2610	0	2529	70	0
1	E	2610	0	2529	73	0
1	F	2610	0	2529	86	0
1	G	2610	0	2529	169	0
1	H	2610	0	2529	121	0
1	I	2610	0	2528	135	0
1	J	2610	0	2529	253	0
1	K	2610	0	2529	105	0
1	L	2610	0	2528	165	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
2	G	1	0	0	0	0
2	H	1	0	0	0	0
2	I	1	0	0	0	0
2	J	1	0	0	0	0
2	K	1	0	0	0	0
2	L	1	0	0	0	0
3	A	21	0	0	1	0
3	B	21	0	0	1	0
3	C	21	0	0	0	0
3	D	21	0	0	0	0
3	E	21	0	0	1	0
3	F	21	0	0	0	0
3	G	21	0	0	2	0
3	H	21	0	0	2	0
3	I	21	0	0	3	0
3	J	21	0	0	1	0
3	K	21	0	0	2	0
3	L	21	0	0	2	0
4	C	2	0	0	0	0
4	J	1	0	0	1	0
All	All	31587	0	30345	1413	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 23.

All (1413) 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:L:160:SER:HB2	1:L:163:PRO:CD	1.37	1.49
1:L:160:SER:CB	1:L:163:PRO:HD2	1.50	1.41
1:L:160:SER:CB	1:L:163:PRO:HG2	1.49	1.39
1:L:160:SER:CB	1:L:163:PRO:CD	2.02	1.38
1:L:160:SER:HB2	1:L:163:PRO:CG	1.55	1.36
1:L:160:SER:CB	1:L:163:PRO:CG	2.06	1.32
1:L:157:ALA:CA	1:L:161:ALA:HB3	1.64	1.27
1:L:157:ALA:HA	1:L:161:ALA:CB	1.68	1.22
1:I:328:VAL:O	1:I:331:THR:OG1	1.55	1.21

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:158:THR:OG1	1:I:334:ASP:OD1	1.60	1.19
1:L:160:SER:O	1:L:162:VAL:N	1.76	1.18
1:L:130:THR:O	1:L:132:LYS:N	1.85	1.08
1:G:147:SER:OG	1:J:38:GLU:OE1	1.72	1.08
1:L:159:ASP:N	1:L:160:SER:HA	1.69	1.08
1:F:34:SER:OG	1:L:280:GLU:OE1	1.71	1.07
1:J:328:VAL:O	1:J:331:THR:OG1	1.72	1.06
1:K:133:ARG:NH2	1:K:242:ASP:OD2	1.87	1.06
1:G:212:SER:O	1:G:217:ARG:NH1	1.90	1.05
1:J:66:TRP:NE1	1:J:336:GLU:OE2	1.91	1.03
1:L:328:VAL:O	1:L:331:THR:OG1	1.78	1.02
1:L:158:THR:O	1:L:249:LEU:HA	1.59	1.02
1:D:130:THR:O	1:D:132:LYS:N	1.93	1.02
1:L:160:SER:C	1:L:162:VAL:H	1.56	1.01
1:L:160:SER:O	1:L:163:PRO:HD2	1.60	1.00
1:B:212:SER:O	1:B:217:ARG:NH1	1.94	0.99
1:J:69:ASP:OD1	1:J:94:ARG:NH1	1.96	0.98
1:E:130:THR:O	1:E:132:LYS:N	1.97	0.98
1:J:130:THR:O	1:J:132:LYS:N	1.98	0.97
1:L:160:SER:HB3	1:L:163:PRO:CG	1.95	0.97
1:L:156:GLY:O	1:L:161:ALA:HB2	1.64	0.95
1:J:228:HIS:O	1:J:235:THR:OG1	1.85	0.95
1:K:158:THR:OG1	1:K:334:ASP:OD1	1.84	0.94
1:J:36:TRP:O	1:J:133:ARG:NH1	2.00	0.94
1:L:70:LEU:CD1	1:L:161:ALA:O	2.16	0.94
1:L:212:SER:O	1:L:217:ARG:NH1	2.01	0.93
1:L:160:SER:HB3	1:L:163:PRO:CD	1.98	0.93
1:L:160:SER:CA	1:L:163:PRO:HD2	1.98	0.93
1:L:160:SER:HB3	1:L:163:PRO:HG2	1.47	0.93
1:G:68:ASN:O	1:G:94:ARG:NH1	2.01	0.92
1:L:69:ASP:OD1	1:L:94:ARG:NH1	2.02	0.92
1:F:329:TRP:O	1:F:331:THR:N	2.03	0.91
1:G:140:HIS:O	1:G:140:HIS:ND1	2.05	0.90
1:L:160:SER:C	1:L:163:PRO:HD2	1.92	0.89
1:H:133:ARG:NH2	1:H:242:ASP:OD2	2.04	0.89
1:A:212:SER:O	1:A:217:ARG:NH1	2.06	0.88
1:I:159:ASP:HB2	1:I:249:LEU:CD2	2.04	0.88
1:L:157:ALA:HB1	1:L:339:LEU:HD21	1.56	0.88
1:L:236:SER:O	1:L:238:LEU:N	2.07	0.87
1:E:179:LEU:O	1:E:181:LEU:N	2.08	0.86
1:I:159:ASP:HB2	1:I:249:LEU:HD23	1.57	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:70:LEU:HD11	1:L:161:ALA:O	1.73	0.86
1:B:285:LYS:NZ	1:B:286:ASP:OD1	2.07	0.86
1:A:133:ARG:HH22	1:A:242:ASP:CG	1.77	0.86
1:G:69:ASP:OD1	1:G:94:ARG:NH1	2.08	0.86
1:B:228:HIS:O	1:B:235:THR:OG1	1.92	0.86
1:H:158:THR:OG1	1:H:334:ASP:OD2	1.92	0.86
1:G:335:ASN:ND2	1:G:337:GLU:OE2	2.08	0.85
1:H:295:GLN:O	1:H:297:TYR:N	2.10	0.85
1:D:205:LEU:O	1:D:206:HIS:ND1	2.09	0.85
1:L:160:SER:OG	1:L:163:PRO:HG2	1.75	0.84
1:K:128:ASN:O	1:K:130:THR:N	2.10	0.84
1:I:158:THR:OG1	1:I:334:ASP:CG	2.16	0.84
1:J:216:SER:OG	1:J:306:ASP:OD1	1.95	0.84
1:L:177:LYS:O	1:L:180:SER:OG	1.96	0.84
1:L:160:SER:HB2	1:L:163:PRO:HD2	0.98	0.83
1:G:340:ASP:O	1:G:342:SER:N	2.11	0.83
1:J:265:ALA:O	1:J:268:PHE:N	2.11	0.83
1:G:199:ASP:OD1	1:G:200:GLY:N	2.12	0.82
1:H:328:VAL:O	1:H:331:THR:OG1	1.96	0.82
1:G:130:THR:O	1:G:132:LYS:N	2.13	0.81
1:L:158:THR:C	1:L:160:SER:HA	2.00	0.81
1:L:236:SER:O	1:L:239:HIS:N	2.13	0.81
1:L:205:LEU:O	1:L:206:HIS:ND1	2.14	0.81
1:A:130:THR:O	1:A:132:LYS:N	2.14	0.80
1:H:228:HIS:O	1:H:235:THR:OG1	1.99	0.80
1:C:40:LYS:HB3	1:C:242:ASP:OD1	1.82	0.79
1:G:49:ASN:OD1	1:G:52:ALA:N	2.15	0.79
1:G:328:VAL:HG11	1:G:334:ASP:N	1.98	0.79
1:J:40:LYS:N	1:J:133:ARG:HH22	1.81	0.79
1:J:279:HIS:NE2	1:J:287:HIS:O	2.16	0.79
1:E:175:ASP:O	1:E:178:LEU:N	2.17	0.78
1:L:47:ILE:HD11	1:L:270:ARG:CZ	2.14	0.78
1:L:160:SER:O	1:L:163:PRO:CD	2.30	0.78
1:G:122:ASN:ND2	1:G:215:GLY:O	2.14	0.78
1:I:279:HIS:CG	1:I:289:LEU:HD21	2.19	0.78
1:K:212:SER:O	1:K:217:ARG:NH1	2.17	0.78
1:J:279:HIS:O	1:J:282:GLY:N	2.12	0.77
1:J:248:ASP:OD2	3:J:402:A1D48:N17	2.17	0.77
1:L:156:GLY:O	1:L:161:ALA:CB	2.32	0.77
1:G:228:HIS:O	1:G:235:THR:OG1	2.02	0.77
1:E:69:ASP:OD1	1:E:94:ARG:NH1	2.18	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:158:THR:OG1	1:H:334:ASP:CG	2.22	0.76
1:J:88:ARG:HG3	1:J:123:ILE:HD11	1.68	0.76
1:I:212:SER:O	1:I:217:ARG:NH1	2.18	0.75
1:H:117:TYR:O	1:H:118:ARG:HG2	1.87	0.75
1:J:249:LEU:HD12	1:J:321:ILE:HD11	1.67	0.75
1:B:205:LEU:O	1:B:206:HIS:ND1	2.20	0.75
1:J:61:SER:OG	1:J:61:SER:O	1.93	0.74
1:A:133:ARG:NH2	1:A:242:ASP:OD1	2.20	0.74
1:C:212:SER:O	1:C:217:ARG:NH1	2.19	0.74
1:B:36:TRP:CG	1:B:37:PRO:HD3	2.23	0.74
1:C:132:LYS:NZ	1:C:190:ASP:OD2	2.19	0.74
1:K:337:GLU:N	1:K:337:GLU:OE1	2.20	0.74
1:B:281:LEU:HB2	1:B:283:LEU:HD11	1.68	0.74
1:A:68:ASN:HB3	1:A:94:ARG:NH1	2.03	0.74
1:L:159:ASP:N	1:L:160:SER:CA	2.49	0.74
1:L:92:MET:HE2	1:L:106:ILE:HD11	1.68	0.73
1:B:36:TRP:N	1:B:37:PRO:HD2	2.03	0.73
1:L:160:SER:C	1:L:162:VAL:N	2.30	0.73
1:J:311:LEU:O	1:J:314:GLY:N	2.18	0.73
1:A:248:ASP:OD2	3:A:402:A1D48:N17	2.21	0.73
1:B:49:ASN:OD1	1:B:52:ALA:N	2.20	0.73
1:I:228:HIS:O	1:I:235:THR:OG1	2.07	0.73
1:I:284:LEU:HD23	1:I:287:HIS:ND1	2.04	0.72
1:F:100:ALA:HA	1:F:179:LEU:HD12	1.70	0.72
1:A:133:ARG:HH22	1:A:242:ASP:CB	2.03	0.72
1:I:169:GLU:OE2	1:I:172:ARG:NH2	2.20	0.72
1:F:69:ASP:OD1	1:F:94:ARG:NH1	2.23	0.72
1:I:177:LYS:O	1:I:180:SER:OG	2.08	0.72
1:C:78:TYR:O	1:C:81:SER:OG	2.08	0.72
1:L:228:HIS:O	1:L:235:THR:OG1	2.06	0.71
1:G:285:LYS:NZ	1:G:286:ASP:OD1	2.19	0.71
1:G:328:VAL:HG11	1:G:334:ASP:CA	2.21	0.71
1:F:228:HIS:O	1:F:235:THR:OG1	2.09	0.71
1:H:172:ARG:O	1:H:174:LEU:N	2.24	0.71
1:H:177:LYS:NZ	1:H:361:LEU:O	2.22	0.71
1:H:61:SER:O	1:H:61:SER:OG	2.07	0.70
1:J:70:LEU:HD11	1:J:74:LEU:HD11	1.73	0.70
1:I:222:LYS:O	1:I:226:THR:OG1	2.10	0.70
1:J:328:VAL:HG12	1:J:331:THR:OG1	1.91	0.70
1:G:259:ASN:OD1	1:G:268:PHE:CG	2.45	0.70
1:H:347:LEU:O	1:H:349:LYS:N	2.25	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:57:ALA:HA	1:G:349:LYS:CE	2.22	0.69
1:B:33:ALA:O	1:B:34:SER:O	2.11	0.69
1:J:158:THR:OG1	1:J:334:ASP:OD2	2.09	0.69
1:L:305:ASP:O	1:L:307:HIS:N	2.24	0.69
1:C:92:MET:CE	1:C:106:ILE:HD11	2.23	0.69
1:C:228:HIS:O	1:C:235:THR:OG1	2.10	0.69
1:B:36:TRP:CD2	1:B:37:PRO:HD3	2.28	0.68
1:G:169:GLU:O	1:G:172:ARG:N	2.26	0.68
1:H:162:VAL:HB	1:H:163:PRO:HD3	1.75	0.68
1:L:92:MET:CE	1:L:106:ILE:HD11	2.22	0.68
1:I:77:ARG:HG3	1:I:143:SER:HB3	1.75	0.68
1:G:56:ILE:O	1:G:349:LYS:NZ	2.26	0.68
1:C:105:GLU:C	1:C:106:ILE:HD13	2.13	0.68
1:F:175:ASP:O	1:F:178:LEU:N	2.23	0.68
1:D:212:SER:O	1:D:217:ARG:NH1	2.27	0.67
1:H:92:MET:CE	1:H:106:ILE:HD11	2.24	0.67
1:J:50:SER:O	1:J:53:LEU:N	2.27	0.67
1:I:47:ILE:HD12	1:I:270:ARG:HH22	1.60	0.67
1:K:216:SER:OG	1:K:306:ASP:OD1	2.12	0.67
1:H:160:SER:OG	1:H:163:PRO:HG2	1.94	0.67
1:J:40:LYS:N	1:J:133:ARG:NH2	2.43	0.67
1:C:92:MET:HE1	1:C:106:ILE:HD11	1.75	0.66
1:J:124:ILE:N	1:J:124:ILE:HD12	2.10	0.66
1:C:106:ILE:HD13	1:C:106:ILE:N	2.08	0.66
1:A:133:ARG:NH2	1:A:242:ASP:CG	2.49	0.66
1:F:34:SER:OG	1:L:280:GLU:CD	2.33	0.66
1:F:40:LYS:HB3	1:F:242:ASP:OD1	1.96	0.66
1:B:36:TRP:CD1	1:B:37:PRO:HD3	2.30	0.66
1:L:74:LEU:CD2	1:L:161:ALA:HB1	2.26	0.66
1:G:279:HIS:O	1:G:282:GLY:N	2.23	0.66
1:G:157:ALA:N	1:G:334:ASP:OD1	2.28	0.66
1:E:73:LEU:O	1:E:77:ARG:NH1	2.29	0.65
1:H:155:VAL:O	1:H:156:GLY:C	2.34	0.65
1:L:106:ILE:HD13	1:L:106:ILE:N	2.09	0.65
1:L:157:ALA:O	1:L:161:ALA:N	2.30	0.65
1:L:158:THR:HG22	1:L:250:ILE:O	1.97	0.65
1:L:236:SER:O	1:L:237:GLN:C	2.33	0.65
1:K:349:LYS:O	1:K:353:VAL:HG23	1.97	0.65
1:H:157:ALA:O	1:H:162:VAL:HG23	1.97	0.65
1:J:133:ARG:O	1:J:134:HIS:ND1	2.30	0.65
1:J:337:GLU:OE2	1:J:337:GLU:N	2.24	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:261:PHE:O	1:G:264:SER:OG	2.14	0.65
1:H:158:THR:OG1	1:H:334:ASP:OD1	2.13	0.65
1:J:350:ILE:HD12	1:J:351:LEU:N	2.12	0.65
1:L:278:LEU:HB3	1:L:284:LEU:HD13	1.79	0.65
1:A:205:LEU:O	1:A:206:HIS:ND1	2.29	0.65
1:G:279:HIS:CE1	1:G:289:LEU:HG	2.32	0.65
1:J:62:ILE:HB	1:J:345:ASP:OD2	1.98	0.65
1:C:308:ILE:O	1:C:312:ARG:HG3	1.97	0.64
1:E:92:MET:CE	1:E:106:ILE:HD11	2.27	0.64
1:J:49:ASN:O	1:J:53:LEU:HG	1.97	0.64
1:J:329:TRP:O	1:J:331:THR:HG23	1.97	0.64
1:G:57:ALA:HA	1:G:349:LYS:HD2	1.78	0.64
1:B:314:GLY:HA3	1:K:206:HIS:HB3	1.79	0.64
1:A:149:TRP:O	1:A:152:ARG:N	2.28	0.64
1:L:157:ALA:CB	1:L:339:LEU:HD21	2.26	0.64
1:D:279:HIS:O	1:D:281:LEU:N	2.31	0.64
1:K:36:TRP:CG	1:K:37:PRO:HD3	2.32	0.64
1:A:133:ARG:HB3	1:A:133:ARG:CZ	2.26	0.63
1:G:169:GLU:OE2	1:G:172:ARG:NH2	2.31	0.63
1:H:281:LEU:HB3	1:H:283:LEU:HD11	1.80	0.63
1:L:157:ALA:HA	1:L:161:ALA:HB3	0.76	0.63
1:J:66:TRP:CE2	1:J:336:GLU:OE2	2.51	0.63
1:J:347:LEU:HA	1:J:350:ILE:HD11	1.80	0.63
1:G:328:VAL:HG12	1:G:328:VAL:O	1.97	0.63
1:J:71:GLN:HA	1:J:74:LEU:HD12	1.79	0.63
1:J:340:ASP:OD2	1:J:343:THR:OG1	2.16	0.63
1:A:40:LYS:HB2	1:A:242:ASP:OD1	1.98	0.63
1:I:68:ASN:HB3	1:I:94:ARG:HH12	1.61	0.63
1:L:69:ASP:OD1	1:L:94:ARG:HD3	1.98	0.63
1:J:65:MET:HG3	1:J:169:GLU:HB2	1.80	0.63
1:J:102:TRP:CZ3	1:J:127:LEU:HB2	2.34	0.63
1:J:36:TRP:CZ3	1:J:132:LYS:HB3	2.33	0.63
1:J:40:LYS:CB	1:J:242:ASP:OD1	2.47	0.63
1:A:133:ARG:HH12	1:A:242:ASP:CG	2.02	0.62
1:K:47:ILE:HG13	1:K:357:GLU:OE2	1.99	0.62
1:A:77:ARG:HG2	1:A:143:SER:HB3	1.80	0.62
1:D:71:GLN:N	1:D:72:PRO:CD	2.62	0.62
1:G:157:ALA:O	1:G:162:VAL:HG23	1.99	0.62
1:K:78:TYR:O	1:K:84:SER:HB2	2.00	0.62
1:G:328:VAL:CG1	1:G:334:ASP:N	2.61	0.62
1:F:355:VAL:O	1:F:358:TYR:N	2.30	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:43:HIS:O	1:L:266:ARG:NH2	2.27	0.62
1:L:74:LEU:HD23	1:L:161:ALA:HB1	1.80	0.62
1:I:123:ILE:C	1:I:124:ILE:HD12	2.19	0.62
1:J:199:ASP:OD1	1:J:200:GLY:N	2.31	0.62
1:A:133:ARG:HH22	1:A:242:ASP:CA	2.13	0.62
1:J:355:VAL:O	1:J:358:TYR:N	2.30	0.62
1:B:34:SER:OG	1:B:35:ALA:N	2.29	0.62
1:H:56:ILE:O	1:H:59:GLY:N	2.33	0.62
1:H:283:LEU:HD12	1:H:283:LEU:H	1.65	0.62
1:K:252:ALA:HB1	1:K:253:PRO:HD2	1.81	0.62
1:E:212:SER:O	1:E:217:ARG:NH1	2.33	0.61
1:G:353:VAL:O	1:G:356:LEU:N	2.33	0.61
1:J:73:LEU:O	1:J:75:ILE:N	2.33	0.61
1:J:158:THR:O	1:J:249:LEU:HA	2.00	0.61
1:L:311:LEU:O	1:L:314:GLY:N	2.32	0.61
1:J:43:HIS:NE2	1:J:358:TYR:O	2.30	0.61
1:B:206:HIS:CG	1:E:314:GLY:HA3	2.36	0.61
1:E:34:SER:OG	1:E:35:ALA:N	2.33	0.61
1:G:268:PHE:O	1:G:271:LEU:N	2.28	0.61
1:G:333:ASP:O	1:G:335:ASN:N	2.32	0.61
1:H:53:LEU:HD12	1:H:278:LEU:HD21	1.82	0.61
1:J:61:SER:O	1:J:63:SER:N	2.34	0.61
1:I:158:THR:OG1	1:I:334:ASP:OD2	2.18	0.61
1:K:133:ARG:NE	1:K:242:ASP:OD1	2.33	0.61
1:G:281:LEU:HB3	1:G:283:LEU:HD11	1.82	0.60
1:J:133:ARG:HG2	1:J:242:ASP:OD2	2.01	0.60
1:D:61:SER:HB3	1:D:64:GLU:HG3	1.82	0.60
1:L:121:SER:O	1:L:199:ASP:HB2	2.00	0.60
1:B:65:MET:HG3	1:B:169:GLU:HB2	1.84	0.60
1:E:212:SER:O	1:E:213:LEU:HB2	2.01	0.60
1:H:133:ARG:HH21	1:H:242:ASP:CG	2.05	0.60
1:I:57:ALA:HB1	1:I:349:LYS:HE2	1.84	0.60
1:I:252:ALA:HB1	1:I:253:PRO:HD2	1.83	0.60
1:A:38:GLU:O	1:A:40:LYS:N	2.34	0.60
1:A:228:HIS:HB2	1:A:237:GLN:HG2	1.84	0.60
1:B:211:ASP:O	1:B:212:SER:HB3	2.00	0.60
1:B:229:PRO:HB2	1:B:230:PRO:HD2	1.83	0.60
1:E:179:LEU:C	1:E:181:LEU:H	2.05	0.60
1:K:109:PHE:CZ	1:K:120:PHE:HB2	2.36	0.60
1:K:201:GLU:OE1	1:K:202:GLU:HG2	2.02	0.60
1:F:61:SER:O	1:F:61:SER:OG	2.14	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:99:GLN:O	1:J:179:LEU:HD11	2.00	0.60
1:E:285:LYS:NZ	1:E:286:ASP:OD1	2.26	0.60
1:F:36:TRP:CG	1:F:37:PRO:HD3	2.36	0.60
1:G:39:GLU:C	1:G:133:ARG:HH21	2.05	0.60
1:K:172:ARG:HH11	1:K:172:ARG:HG2	1.66	0.60
1:B:144:LYS:HD3	1:B:146:PHE:CE2	2.36	0.60
1:G:208:SER:O	1:G:212:SER:OG	2.18	0.59
1:J:102:TRP:CE3	1:J:127:LEU:HD12	2.37	0.59
1:D:179:LEU:O	1:D:181:LEU:N	2.36	0.59
1:G:166:MET:SD	1:G:250:ILE:HG21	2.43	0.59
1:J:106:ILE:HG22	1:J:107:ASP:N	2.18	0.59
1:J:285:LYS:NZ	1:J:286:ASP:OD1	2.32	0.59
1:B:78:TYR:CE1	1:B:81:SER:HB3	2.36	0.59
1:G:56:ILE:C	1:G:349:LYS:HZ1	2.05	0.59
1:J:205:LEU:O	1:J:206:HIS:ND1	2.36	0.59
1:K:34:SER:OG	1:K:35:ALA:N	2.34	0.59
1:J:39:GLU:CG	1:J:133:ARG:NH2	2.65	0.59
1:A:80:GLY:O	1:A:81:SER:O	2.20	0.59
1:I:279:HIS:CD2	1:I:289:LEU:CD2	2.86	0.59
1:I:323:SER:N	1:I:324:PRO:O	2.35	0.59
1:L:308:ILE:HB	1:L:309:PRO:HD3	1.85	0.59
1:G:91:ILE:O	1:G:94:ARG:N	2.36	0.59
1:G:177:LYS:O	1:G:180:SER:OG	2.18	0.59
1:L:160:SER:HB2	1:L:163:PRO:CB	2.28	0.59
1:B:36:TRP:CG	1:B:37:PRO:CD	2.85	0.59
1:B:285:LYS:O	1:B:286:ASP:C	2.41	0.59
1:G:275:GLU:OE2	1:G:293:TYR:N	2.33	0.59
1:I:133:ARG:NH2	1:I:242:ASP:OD2	2.24	0.59
1:C:305:ASP:O	1:C:307:HIS:N	2.36	0.58
1:G:49:ASN:OD1	1:G:51:SER:N	2.37	0.58
1:H:69:ASP:OD1	1:H:94:ARG:NH1	2.36	0.58
1:A:211:ASP:O	1:A:212:SER:HB3	2.03	0.58
1:G:264:SER:O	1:G:267:TRP:N	2.33	0.58
1:H:158:THR:O	1:H:160:SER:HA	2.04	0.58
1:J:336:GLU:O	1:J:337:GLU:C	2.41	0.58
1:B:36:TRP:N	1:B:37:PRO:CD	2.67	0.58
1:H:212:SER:O	1:H:214:TYR:N	2.35	0.58
1:I:281:LEU:HB3	1:I:283:LEU:HD11	1.84	0.58
1:K:33:ALA:O	1:K:34:SER:HB3	2.03	0.58
1:I:36:TRP:CG	1:I:37:PRO:HD3	2.38	0.58
1:J:70:LEU:HD12	1:J:70:LEU:O	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:308:ILE:O	1:F:312:ARG:HG2	2.04	0.58
1:K:100:ALA:HA	1:K:179:LEU:HD12	1.84	0.58
1:J:77:ARG:HG3	1:J:143:SER:HB3	1.86	0.58
1:J:293:TYR:OH	1:J:343:THR:HG23	2.03	0.58
1:K:35:ALA:C	1:K:37:PRO:HD2	2.23	0.58
1:E:155:VAL:HG23	1:E:155:VAL:O	2.02	0.58
1:F:34:SER:HB2	1:L:280:GLU:HA	1.86	0.58
1:J:85:TYR:O	1:J:88:ARG:N	2.37	0.57
1:D:132:LYS:HA	1:D:228:HIS:NE2	2.19	0.57
1:E:175:ASP:O	1:E:176:LYS:C	2.43	0.57
1:I:43:HIS:O	1:I:266:ARG:NH1	2.32	0.57
1:J:39:GLU:C	1:J:133:ARG:HH22	2.06	0.57
1:J:296:ASN:O	1:J:298:SER:N	2.37	0.57
1:B:112:GLN:OE1	1:B:117:TYR:CE1	2.57	0.57
1:E:333:ASP:O	1:E:338:ASN:ND2	2.37	0.57
1:L:288:SER:O	1:L:291:GLY:N	2.37	0.57
1:G:328:VAL:HG11	1:G:334:ASP:HA	1.85	0.57
1:G:284:LEU:HD23	1:G:287:HIS:ND1	2.19	0.57
1:E:92:MET:HE2	1:E:106:ILE:HD11	1.85	0.57
1:F:35:ALA:O	1:F:38:GLU:N	2.37	0.57
1:F:66:TRP:NE1	1:F:336:GLU:OE2	2.36	0.57
1:J:305:ASP:O	1:J:307:HIS:N	2.38	0.57
1:G:272:GLN:NE2	1:G:296:ASN:OD1	2.29	0.57
1:J:70:LEU:HD12	1:J:70:LEU:C	2.25	0.57
1:L:140:HIS:NE2	1:L:159:ASP:OD1	2.32	0.57
1:B:36:TRP:CE2	1:B:37:PRO:HD3	2.39	0.57
1:J:55:GLN:O	1:J:58:GLU:N	2.38	0.57
1:L:201:GLU:OE1	1:L:202:GLU:HG2	2.05	0.57
1:G:328:VAL:HG11	1:G:333:ASP:C	2.26	0.56
1:L:94:ARG:HH21	1:L:97:ARG:NH1	2.02	0.56
1:C:205:LEU:O	1:C:206:HIS:ND1	2.38	0.56
1:H:272:GLN:CD	1:H:296:ASN:OD1	2.44	0.56
1:L:36:TRP:CD2	1:L:37:PRO:HD3	2.40	0.56
1:A:133:ARG:NH1	1:A:242:ASP:OD2	2.29	0.56
1:F:158:THR:O	1:F:249:LEU:HA	2.05	0.56
1:H:89:GLN:O	1:H:93:GLN:HG3	2.05	0.56
1:I:279:HIS:CD2	1:I:289:LEU:HD21	2.40	0.56
1:J:95:ILE:HG23	1:J:102:TRP:CD1	2.40	0.56
1:J:347:LEU:O	1:J:349:LYS:N	2.38	0.56
1:B:248:ASP:OD2	3:B:402:A1D48:N17	2.38	0.56
1:A:65:MET:O	1:A:65:MET:HG2	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:170:LEU:HG	1:I:352:GLN:HG2	1.88	0.56
1:A:333:ASP:O	1:A:335:ASN:N	2.37	0.56
1:I:92:MET:O	1:I:93:GLN:C	2.44	0.56
1:A:68:ASN:CB	1:A:94:ARG:NH1	2.69	0.56
1:E:120:PHE:O	1:E:121:SER:OG	2.23	0.56
1:G:53:LEU:N	1:G:53:LEU:HD23	2.20	0.56
1:G:57:ALA:HA	1:G:349:LYS:CD	2.34	0.56
1:I:319:HIS:O	1:I:321:ILE:N	2.36	0.56
1:J:323:SER:O	1:J:323:SER:OG	2.19	0.56
1:K:133:ARG:HH21	1:K:242:ASP:CG	2.09	0.56
1:H:140:HIS:ND1	1:H:142:ASP:OD1	2.37	0.56
1:H:182:LYS:HD3	1:H:182:LYS:N	2.21	0.56
1:J:331:THR:O	1:J:333:ASP:N	2.39	0.56
1:B:132:LYS:HA	1:B:228:HIS:NE2	2.21	0.56
1:F:36:TRP:CD2	1:F:37:PRO:HD3	2.41	0.56
1:I:248:ASP:OD2	3:I:402:A1D48:N17	2.39	0.56
1:L:140:HIS:CE1	1:L:159:ASP:O	2.58	0.56
1:H:128:ASN:ND2	1:H:181:LEU:O	2.36	0.55
1:K:36:TRP:N	1:K:37:PRO:CD	2.68	0.55
1:L:77:ARG:HG3	1:L:143:SER:HB3	1.87	0.55
1:J:212:SER:O	1:J:212:SER:OG	2.24	0.55
1:F:127:LEU:O	1:F:128:ASN:HB2	2.06	0.55
1:G:91:ILE:HG22	1:G:92:MET:N	2.20	0.55
3:G:402:A1D48:C21	3:G:402:A1D48:O01	2.55	0.55
1:H:62:ILE:HB	1:H:345:ASP:CG	2.27	0.55
1:J:348:ASN:O	1:J:352:GLN:HG3	2.07	0.55
1:L:158:THR:HG22	1:L:251:GLY:HA3	1.88	0.55
1:E:281:LEU:HB2	1:E:283:LEU:HD12	1.87	0.55
1:E:351:LEU:O	1:E:354:PHE:N	2.39	0.55
1:F:168:LEU:O	1:F:171:ALA:N	2.40	0.55
1:F:248:ASP:O	1:F:249:LEU:HB2	2.06	0.55
1:G:60:THR:HG22	1:G:349:LYS:HZ3	1.71	0.55
1:J:133:ARG:O	1:J:134:HIS:CG	2.60	0.55
1:K:133:ARG:CZ	1:K:242:ASP:OD2	2.51	0.55
1:L:37:PRO:O	1:L:40:LYS:HE3	2.06	0.55
1:E:142:ASP:OD1	1:E:142:ASP:N	2.33	0.55
1:D:61:SER:CB	1:D:64:GLU:HG3	2.36	0.55
1:I:49:ASN:OD1	1:I:49:ASN:O	2.25	0.55
1:I:88:ARG:O	1:I:92:MET:HG3	2.07	0.55
1:K:36:TRP:N	1:K:37:PRO:HD2	2.22	0.55
1:L:47:ILE:HD11	1:L:270:ARG:NH1	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:65:MET:HG3	1:L:169:GLU:HB2	1.87	0.55
1:L:325:PHE:O	1:L:326:PRO:C	2.41	0.55
1:E:77:ARG:HG2	1:E:143:SER:HB3	1.89	0.55
1:F:92:MET:CE	1:F:106:ILE:HD11	2.36	0.55
1:J:141:TYR:HD2	1:J:197:PHE:O	1.89	0.55
1:J:331:THR:O	1:J:334:ASP:N	2.38	0.55
1:J:216:SER:HB2	1:J:309:PRO:HG2	1.88	0.55
1:J:199:ASP:O	1:J:200:GLY:C	2.45	0.55
1:K:52:ALA:O	1:K:56:ILE:HG12	2.07	0.55
1:B:283:LEU:HD12	1:B:283:LEU:H	1.72	0.55
1:G:40:LYS:N	1:G:133:ARG:HH21	2.04	0.55
1:K:106:ILE:O	1:K:106:ILE:HG22	2.08	0.54
1:L:51:SER:O	1:L:54:ARG:N	2.38	0.54
1:L:78:TYR:CE1	1:L:81:SER:HB3	2.42	0.54
1:G:46:ALA:HB3	1:G:360:HIS:HA	1.89	0.54
1:K:205:LEU:O	1:K:206:HIS:ND1	2.40	0.54
1:L:137:LEU:HD12	1:L:245:VAL:HB	1.89	0.54
1:D:40:LYS:HB3	1:D:242:ASP:OD1	2.07	0.54
1:G:158:THR:N	1:G:334:ASP:OD1	2.34	0.54
1:H:348:ASN:O	1:H:352:GLN:HG3	2.06	0.54
1:I:124:ILE:HD12	1:I:124:ILE:N	2.22	0.54
1:A:133:ARG:CZ	1:A:242:ASP:OD1	2.56	0.54
1:H:272:GLN:NE2	1:H:296:ASN:OD1	2.40	0.54
1:J:57:ALA:HA	1:J:349:LYS:HD3	1.89	0.54
1:E:158:THR:O	1:E:160:SER:HA	2.07	0.54
1:H:321:ILE:HG23	1:H:321:ILE:O	2.07	0.54
1:J:253:PRO:O	1:J:254:ASN:O	2.26	0.54
1:E:40:LYS:HB3	1:E:242:ASP:OD1	2.07	0.54
1:F:124:ILE:N	1:F:124:ILE:HD12	2.23	0.54
1:G:68:ASN:OD1	1:G:68:ASN:N	2.40	0.54
1:G:263:ASN:HD22	1:G:263:ASN:H	1.54	0.54
1:H:281:LEU:HB3	1:H:283:LEU:CD1	2.36	0.54
1:I:99:GLN:N	1:I:175:ASP:OD2	2.41	0.54
1:J:283:LEU:HD12	1:J:283:LEU:H	1.73	0.54
1:C:229:PRO:O	1:C:230:PRO:O	2.26	0.54
1:G:47:ILE:HG13	1:G:48:LEU:N	2.23	0.54
1:H:78:TYR:CE1	1:H:81:SER:HB3	2.43	0.54
1:L:68:ASN:HB3	1:L:94:ARG:NH1	2.23	0.54
1:F:229:PRO:O	1:F:230:PRO:C	2.43	0.54
1:J:65:MET:O	1:J:65:MET:HG2	2.08	0.54
1:B:52:ALA:O	1:B:55:GLN:N	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:94:ARG:HH21	1:F:97:ARG:CZ	2.19	0.54
1:G:248:ASP:OD2	3:G:402:A1D48:N17	2.41	0.54
1:H:235:THR:OG1	1:H:235:THR:O	2.26	0.54
1:K:128:ASN:O	1:K:129:PRO:C	2.46	0.54
1:D:211:ASP:O	1:D:212:SER:HB3	2.07	0.54
1:E:61:SER:HG	1:E:64:GLU:H	1.57	0.54
1:F:102:TRP:CE3	1:F:127:LEU:HG	2.43	0.54
1:J:68:ASN:HB3	1:J:94:ARG:NH1	2.23	0.54
1:H:57:ALA:HB3	1:H:283:LEU:HD23	1.90	0.53
1:J:274:ILE:O	1:J:278:LEU:HD12	2.09	0.53
1:K:66:TRP:NE1	1:K:336:GLU:OE2	2.29	0.53
1:B:281:LEU:CB	1:B:283:LEU:HD11	2.38	0.53
1:C:229:PRO:O	1:C:230:PRO:C	2.47	0.53
1:I:98:LEU:HB3	1:I:175:ASP:OD2	2.07	0.53
1:I:128:ASN:O	1:I:130:THR:N	2.41	0.53
1:I:211:ASP:O	1:I:212:SER:HB3	2.08	0.53
1:E:170:LEU:HD23	1:E:170:LEU:C	2.28	0.53
1:F:256:THR:O	1:F:256:THR:OG1	2.26	0.53
1:F:328:VAL:O	1:F:331:THR:OG1	2.26	0.53
1:H:160:SER:O	1:H:163:PRO:HD2	2.09	0.53
1:L:348:ASN:O	1:L:352:GLN:HG3	2.08	0.53
1:B:229:PRO:HB2	1:B:230:PRO:CD	2.38	0.53
1:A:36:TRP:N	1:A:37:PRO:CD	2.71	0.53
1:G:253:PRO:HB3	1:G:340:ASP:OD2	2.08	0.53
1:A:92:MET:CE	1:A:106:ILE:HD11	2.38	0.53
1:E:43:HIS:O	1:E:266:ARG:NH1	2.35	0.53
1:B:224:ALA:HA	1:B:238:LEU:HG	1.90	0.53
1:A:340:ASP:OD1	1:K:286:ASP:OD2	2.27	0.53
1:I:259:ASN:HD21	1:I:265:ALA:HA	1.73	0.53
1:J:49:ASN:OD1	1:J:52:ALA:N	2.29	0.53
1:J:191:LEU:CD1	1:J:242:ASP:OD2	2.56	0.53
1:A:181:LEU:HD21	1:A:361:LEU:HD21	1.90	0.53
1:F:78:TYR:CE1	1:F:81:SER:HB3	2.44	0.53
1:J:213:LEU:O	1:J:214:TYR:C	2.45	0.53
1:F:155:VAL:O	1:F:156:GLY:C	2.46	0.53
1:F:329:TRP:O	1:F:330:HIS:C	2.46	0.53
1:B:49:ASN:OD1	1:B:51:SER:N	2.42	0.52
1:J:92:MET:O	1:J:95:ILE:N	2.38	0.52
1:J:279:HIS:O	1:J:281:LEU:N	2.42	0.52
1:J:328:VAL:HG11	1:J:333:ASP:O	2.09	0.52
1:B:49:ASN:OD1	1:B:49:ASN:C	2.48	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:281:LEU:HB2	1:B:283:LEU:CD1	2.38	0.52
1:F:212:SER:O	1:F:217:ARG:NH1	2.39	0.52
1:H:256:THR:OG1	1:H:323:SER:O	2.27	0.52
1:J:347:LEU:HA	1:J:350:ILE:CG1	2.39	0.52
1:L:174:LEU:HD22	1:L:356:LEU:HD11	1.91	0.52
1:B:34:SER:HB3	1:B:36:TRP:HD1	1.73	0.52
1:B:295:GLN:O	1:B:297:TYR:N	2.42	0.52
1:G:56:ILE:C	1:G:349:LYS:NZ	2.61	0.52
1:G:138:ALA:O	1:G:246:LEU:HD12	2.09	0.52
1:I:197:PHE:N	1:I:197:PHE:CD1	2.73	0.52
1:C:289:LEU:O	1:C:292:ARG:HG3	2.10	0.52
1:F:181:LEU:O	1:F:182:LYS:CB	2.57	0.52
1:G:57:ALA:HA	1:G:349:LYS:HZ3	1.74	0.52
1:G:252:ALA:HB1	1:G:253:PRO:HD2	1.91	0.52
1:I:328:VAL:C	1:I:331:THR:OG1	2.41	0.52
1:J:98:LEU:HB3	1:J:175:ASP:OD2	2.09	0.52
1:J:140:HIS:ND1	1:J:142:ASP:OD1	2.39	0.52
1:E:88:ARG:HG3	1:E:123:ILE:HD11	1.91	0.52
1:E:281:LEU:CB	1:E:283:LEU:HD12	2.39	0.52
1:H:65:MET:HA	1:H:69:ASP:OD2	2.10	0.52
1:H:161:ALA:O	1:H:162:VAL:C	2.46	0.52
1:H:300:GLY:HA3	1:I:300:GLY:HA3	1.91	0.52
1:I:157:ALA:O	1:I:162:VAL:HG23	2.10	0.52
1:E:127:LEU:O	1:E:128:ASN:HB2	2.08	0.52
1:G:88:ARG:O	1:G:92:MET:HG3	2.09	0.52
1:G:158:THR:O	1:G:249:LEU:HA	2.09	0.52
1:G:307:HIS:O	1:G:308:ILE:C	2.48	0.52
1:G:70:LEU:O	1:G:74:LEU:HD12	2.09	0.52
1:I:49:ASN:OD1	1:I:51:SER:N	2.43	0.52
1:J:153:VAL:O	1:J:155:VAL:HG13	2.09	0.52
1:C:92:MET:O	1:C:93:GLN:C	2.48	0.52
1:G:295:GLN:O	1:G:297:TYR:N	2.43	0.52
1:J:40:LYS:HB2	1:J:242:ASP:OD1	2.09	0.52
1:J:128:ASN:H	1:J:129:PRO:CD	2.23	0.52
1:L:47:ILE:HD11	1:L:270:ARG:NH2	2.25	0.52
1:D:112:GLN:HG3	1:D:113:THR:N	2.25	0.52
1:F:181:LEU:O	1:F:182:LYS:CG	2.58	0.52
1:B:169:GLU:HA	1:B:169:GLU:OE1	2.10	0.52
1:B:199:ASP:OD1	1:B:200:GLY:N	2.42	0.52
1:H:71:GLN:N	1:H:72:PRO:CD	2.73	0.52
1:H:283:LEU:HD12	1:H:283:LEU:N	2.24	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:354:PHE:C	1:I:354:PHE:CD1	2.83	0.52
1:J:102:TRP:CE3	1:J:127:LEU:HG	2.44	0.52
1:K:249:LEU:HB2	1:K:322:PRO:HD2	1.91	0.52
1:L:132:LYS:HG3	1:L:190:ASP:OD2	2.10	0.52
1:B:256:THR:OG1	1:B:323:SER:O	2.28	0.51
1:K:248:ASP:OD2	3:K:402:A1D48:N17	2.42	0.51
1:D:347:LEU:O	1:D:348:ASN:C	2.47	0.51
1:G:140:HIS:O	1:G:140:HIS:CG	2.61	0.51
1:G:227:PRO:HA	1:G:235:THR:O	2.10	0.51
1:I:247:LEU:CD2	1:I:320:LEU:HD12	2.41	0.51
1:K:77:ARG:O	1:K:77:ARG:HG3	2.10	0.51
1:D:47:ILE:HG12	1:D:48:LEU:N	2.24	0.51
1:J:102:TRP:CZ3	1:J:127:LEU:HD12	2.46	0.51
1:D:95:ILE:O	1:D:97:ARG:N	2.44	0.51
1:J:342:SER:O	1:J:346:ASN:HB2	2.10	0.51
1:G:47:ILE:HB	1:G:357:GLU:OE2	2.10	0.51
1:G:57:ALA:N	1:G:349:LYS:HE2	2.26	0.51
1:H:212:SER:O	1:H:217:ARG:NH1	2.44	0.51
1:J:62:ILE:O	1:J:66:TRP:HB2	2.10	0.51
1:J:223:MET:HB2	1:J:238:LEU:HD21	1.93	0.51
1:J:255:PRO:HD2	1:J:293:TYR:CD1	2.45	0.51
1:I:359:LEU:O	1:I:360:HIS:HB2	2.09	0.51
1:J:109:PHE:CE1	1:J:120:PHE:HB2	2.46	0.51
1:L:253:PRO:O	1:L:254:ASN:HB2	2.10	0.51
1:H:36:TRP:CG	1:H:37:PRO:HD3	2.46	0.51
1:B:68:ASN:HB2	1:B:94:ARG:NH1	2.26	0.51
1:E:328:VAL:O	1:E:329:TRP:C	2.47	0.51
1:J:36:TRP:HH2	1:J:132:LYS:O	1.94	0.51
1:J:48:LEU:HD13	1:J:52:ALA:HB1	1.93	0.51
1:A:68:ASN:CB	1:A:94:ARG:HH12	2.24	0.51
1:I:276:HIS:O	1:I:279:HIS:N	2.44	0.51
1:J:69:ASP:OD2	1:J:168:LEU:HB3	2.10	0.51
1:L:181:LEU:HD23	1:L:181:LEU:N	2.25	0.51
1:G:57:ALA:HA	1:G:349:LYS:NZ	2.26	0.50
1:H:94:ARG:HH21	1:H:97:ARG:NH1	2.09	0.50
1:I:170:LEU:HD21	1:I:174:LEU:HD12	1.93	0.50
1:K:149:TRP:O	1:K:152:ARG:N	2.32	0.50
1:L:157:ALA:C	1:L:161:ALA:HB3	2.29	0.50
1:L:236:SER:C	1:L:238:LEU:N	2.64	0.50
1:F:70:LEU:HG	1:F:70:LEU:O	2.11	0.50
1:H:92:MET:HE1	1:H:106:ILE:HD11	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:201:GLU:HG3	1:K:306:ASP:OD2	2.11	0.50
1:C:93:GLN:O	1:C:96:GLN:N	2.44	0.50
1:D:304:GLN:O	1:D:305:ASP:HB2	2.10	0.50
1:F:40:LYS:CB	1:F:242:ASP:OD1	2.58	0.50
1:F:328:VAL:O	1:F:329:TRP:O	2.29	0.50
1:G:348:ASN:O	1:G:352:GLN:HG3	2.10	0.50
1:C:353:VAL:O	1:C:357:GLU:HG3	2.12	0.50
1:G:229:PRO:HB2	1:G:230:PRO:HD2	1.94	0.50
1:I:36:TRP:CD1	1:I:37:PRO:HD3	2.46	0.50
1:J:132:LYS:NZ	1:J:190:ASP:HB3	2.27	0.50
1:F:76:GLU:O	1:F:83:GLY:HA3	2.12	0.50
1:G:141:TYR:O	1:G:141:TYR:CD1	2.65	0.50
1:H:35:ALA:C	1:H:37:PRO:HD2	2.32	0.50
1:J:70:LEU:C	1:J:72:PRO:CD	2.80	0.50
1:J:349:LYS:O	1:J:350:ILE:C	2.49	0.50
1:A:117:TYR:C	1:A:118:ARG:HG2	2.31	0.50
1:C:155:VAL:O	1:C:155:VAL:HG23	2.10	0.50
1:D:295:GLN:O	1:D:297:TYR:N	2.40	0.50
1:G:140:HIS:ND1	1:G:140:HIS:C	2.64	0.50
1:I:328:VAL:O	1:I:329:TRP:C	2.50	0.50
1:I:348:ASN:O	1:I:352:GLN:HG3	2.11	0.50
1:J:41:ASN:O	1:J:42:TYR:CD1	2.64	0.50
1:J:127:LEU:O	1:J:128:ASN:HB2	2.12	0.50
1:J:268:PHE:O	1:J:271:LEU:N	2.37	0.50
1:K:254:ASN:N	1:K:255:PRO:CD	2.75	0.50
1:B:80:GLY:O	1:B:81:SER:O	2.30	0.50
1:B:278:LEU:O	1:B:283:LEU:HD12	2.12	0.50
1:G:263:ASN:H	1:G:263:ASN:ND2	2.09	0.50
1:J:160:SER:O	1:J:163:PRO:HD2	2.11	0.50
1:L:328:VAL:C	1:L:331:THR:OG1	2.47	0.50
1:C:40:LYS:CB	1:C:242:ASP:OD1	2.55	0.50
1:E:299:TYR:CD2	1:E:301:GLY:O	2.64	0.50
1:G:128:ASN:OD1	1:G:128:ASN:N	2.45	0.50
1:I:331:THR:HB	1:I:333:ASP:H	1.77	0.50
1:K:212:SER:O	1:K:214:TYR:N	2.45	0.50
1:L:140:HIS:CG	1:L:140:HIS:O	2.65	0.50
1:B:78:TYR:HB2	1:B:79:PRO:CD	2.42	0.50
1:B:112:GLN:HG3	1:B:113:THR:N	2.27	0.50
1:C:295:GLN:O	1:C:297:TYR:N	2.45	0.50
1:F:85:TYR:HD1	1:F:88:ARG:HH12	1.59	0.50
1:H:212:SER:O	1:H:213:LEU:C	2.50	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:274:ILE:HG22	1:J:350:ILE:HG22	1.93	0.50
1:K:133:ARG:HE	1:K:242:ASP:CG	2.15	0.50
1:D:47:ILE:CG1	1:D:48:LEU:N	2.74	0.49
1:F:252:ALA:HB1	1:F:253:PRO:HD2	1.94	0.49
1:K:90:HIS:CE1	1:K:94:ARG:HG3	2.47	0.49
1:C:169:GLU:HG3	1:C:169:GLU:O	2.13	0.49
1:D:278:LEU:HB3	1:D:284:LEU:HD13	1.92	0.49
1:H:252:ALA:HB1	1:H:253:PRO:HD2	1.95	0.49
1:I:65:MET:O	1:I:65:MET:HG2	2.11	0.49
1:K:71:GLN:HA	1:K:74:LEU:HD13	1.94	0.49
1:A:199:ASP:OD1	1:A:200:GLY:N	2.45	0.49
1:J:158:THR:OG1	1:J:334:ASP:CG	2.51	0.49
1:L:47:ILE:CD1	1:L:270:ARG:CZ	2.88	0.49
1:F:71:GLN:N	1:F:72:PRO:CD	2.76	0.49
1:H:92:MET:HE3	1:H:106:ILE:HD11	1.95	0.49
1:J:135:LEU:HD23	1:J:359:LEU:HD21	1.95	0.49
1:J:152:ARG:O	1:J:332:MET:HE1	2.12	0.49
1:J:347:LEU:CA	1:J:350:ILE:HD11	2.43	0.49
1:L:71:GLN:N	1:L:72:PRO:HD2	2.28	0.49
1:L:159:ASP:OD1	3:L:402:A1D48:C18	2.61	0.49
1:A:309:PRO:O	1:A:313:ARG:HD2	2.12	0.49
1:C:71:GLN:N	1:C:72:PRO:HD2	2.28	0.49
1:E:175:ASP:O	1:E:177:LYS:N	2.46	0.49
1:F:140:HIS:CE1	1:F:142:ASP:O	2.65	0.49
1:F:181:LEU:O	1:F:182:LYS:HG2	2.13	0.49
1:H:49:ASN:OD1	1:H:52:ALA:N	2.41	0.49
1:H:162:VAL:O	1:H:165:ALA:HB3	2.13	0.49
1:I:228:HIS:HB3	1:I:236:SER:O	2.13	0.49
1:I:335:ASN:C	1:I:335:ASN:OD1	2.50	0.49
1:K:57:ALA:CB	1:K:283:LEU:HD22	2.43	0.49
1:K:192:SER:OG	1:K:193:LEU:N	2.46	0.49
1:E:99:GLN:HB3	1:E:179:LEU:HD11	1.95	0.49
1:E:149:TRP:O	1:E:152:ARG:N	2.30	0.49
1:J:72:PRO:HG2	1:J:90:HIS:CE1	2.48	0.49
1:K:36:TRP:CD1	1:K:37:PRO:HD3	2.47	0.49
1:B:68:ASN:CB	1:B:94:ARG:NH1	2.75	0.49
1:A:71:GLN:N	1:A:72:PRO:CD	2.75	0.49
1:A:174:LEU:HD22	1:A:356:LEU:HD11	1.94	0.49
1:E:92:MET:HE1	1:E:106:ILE:HD11	1.94	0.49
1:E:106:ILE:HG22	1:E:107:ASP:N	2.28	0.49
1:G:328:VAL:HG13	1:G:333:ASP:HB2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:49:ASN:OD1	1:J:49:ASN:C	2.50	0.49
1:L:36:TRP:CG	1:L:37:PRO:HD3	2.48	0.49
1:L:126:THR:HG23	1:L:194:GLN:HB2	1.95	0.49
1:B:283:LEU:HD12	1:B:283:LEU:N	2.28	0.49
1:J:321:ILE:HG13	1:J:322:PRO:HD2	1.95	0.49
1:C:36:TRP:CD1	1:C:37:PRO:HD3	2.47	0.49
1:F:308:ILE:HB	1:F:309:PRO:HD3	1.94	0.49
1:G:36:TRP:CG	1:G:37:PRO:HD3	2.48	0.49
1:G:71:GLN:N	1:G:72:PRO:CD	2.75	0.49
1:H:347:LEU:O	1:H:348:ASN:C	2.47	0.49
1:B:100:ALA:HA	1:B:179:LEU:HD12	1.95	0.48
1:A:90:HIS:CE1	1:A:94:ARG:HG3	2.48	0.48
1:A:268:PHE:O	1:A:268:PHE:CD1	2.66	0.48
1:C:203:ALA:HA	1:C:211:ASP:O	2.13	0.48
1:B:148:HIS:ND1	1:B:148:HIS:N	2.60	0.48
1:D:112:GLN:OE1	1:D:116:GLY:HA2	2.13	0.48
1:D:286:ASP:OD2	1:E:340:ASP:OD1	2.31	0.48
1:E:302:VAL:HG22	1:E:303:ILE:O	2.13	0.48
1:G:236:SER:O	1:G:239:HIS:N	2.44	0.48
1:G:325:PHE:O	1:G:326:PRO:O	2.30	0.48
1:I:144:LYS:HG2	1:I:146:PHE:CE2	2.48	0.48
1:J:39:GLU:HG2	1:J:133:ARG:NH2	2.28	0.48
1:J:71:GLN:N	1:J:72:PRO:CD	2.75	0.48
1:J:274:ILE:HD11	1:J:357:GLU:OE1	2.13	0.48
1:K:353:VAL:O	1:K:357:GLU:HG3	2.12	0.48
1:G:91:ILE:O	1:G:92:MET:C	2.51	0.48
1:G:354:PHE:CD1	1:G:354:PHE:C	2.86	0.48
1:I:246:LEU:HD21	1:I:305:ASP:OD2	2.13	0.48
1:J:272:GLN:HG2	1:J:294:PHE:O	2.13	0.48
1:L:160:SER:O	1:L:163:PRO:N	2.45	0.48
1:B:176:LYS:HA	1:B:179:LEU:HD22	1.94	0.48
1:G:78:TYR:CE1	1:G:81:SER:HB3	2.47	0.48
1:G:136:VAL:HG22	1:G:194:GLN:HB3	1.95	0.48
1:G:178:LEU:O	1:G:181:LEU:HG	2.13	0.48
1:H:347:LEU:C	1:H:349:LYS:N	2.66	0.48
1:J:154:PHE:O	1:J:155:VAL:CG1	2.61	0.48
1:K:85:TYR:O	1:K:86:ALA:C	2.50	0.48
1:A:283:LEU:N	1:A:283:LEU:HD12	2.28	0.48
1:G:265:ALA:O	1:G:268:PHE:N	2.47	0.48
1:L:149:TRP:CE3	1:L:150:ASN:HB2	2.48	0.48
1:D:231:GLY:O	1:D:232:ALA:O	2.31	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:102:TRP:CE3	1:G:125:SER:OG	2.65	0.48
1:G:155:VAL:O	1:G:156:GLY:O	2.32	0.48
1:H:149:TRP:O	1:H:150:ASN:C	2.52	0.48
1:I:259:ASN:ND2	1:I:268:PHE:HB3	2.29	0.48
1:D:84:SER:O	1:D:88:ARG:HB2	2.13	0.48
1:D:124:ILE:N	1:D:124:ILE:HD12	2.28	0.48
1:F:285:LYS:O	1:F:286:ASP:HB2	2.14	0.48
1:G:157:ALA:HB2	1:G:334:ASP:O	2.14	0.48
1:H:103:VAL:HG12	1:H:103:VAL:O	2.13	0.48
1:J:174:LEU:O	1:J:175:ASP:C	2.51	0.48
1:A:62:ILE:O	1:A:62:ILE:HG13	2.12	0.48
1:H:53:LEU:HD12	1:H:278:LEU:CD2	2.42	0.48
1:I:229:PRO:O	1:I:230:PRO:C	2.51	0.48
1:L:219:LEU:O	1:L:220:ALA:C	2.52	0.48
1:B:197:PHE:N	1:B:197:PHE:CD1	2.81	0.48
1:A:64:GLU:O	1:A:67:GLN:N	2.47	0.48
1:C:88:ARG:O	1:C:92:MET:HG3	2.14	0.48
1:F:76:GLU:HG3	1:F:153:VAL:CG1	2.43	0.48
1:I:94:ARG:HH21	1:I:97:ARG:NH1	2.12	0.48
1:J:65:MET:SD	1:J:348:ASN:ND2	2.87	0.48
1:J:152:ARG:HB2	1:J:332:MET:HE3	1.95	0.48
1:L:39:GLU:O	1:L:41:ASN:N	2.47	0.48
1:D:36:TRP:CG	1:D:37:PRO:HD3	2.49	0.47
1:D:279:HIS:C	1:D:281:LEU:H	2.16	0.47
1:G:54:ARG:HH21	1:G:281:LEU:HD21	1.79	0.47
1:G:152:ARG:O	1:G:332:MET:HE3	2.14	0.47
1:H:46:ALA:O	1:H:47:ILE:O	2.31	0.47
1:H:49:ASN:O	1:H:52:ALA:N	2.46	0.47
1:H:99:GLN:O	1:H:100:ALA:O	2.32	0.47
1:I:292:ARG:HG3	1:I:292:ARG:HH11	1.79	0.47
1:J:168:LEU:O	1:J:171:ALA:HB3	2.14	0.47
1:J:279:HIS:CD2	1:J:287:HIS:O	2.65	0.47
1:J:347:LEU:HA	1:J:350:ILE:CD1	2.44	0.47
1:B:133:ARG:HB2	1:B:190:ASP:O	2.13	0.47
1:G:265:ALA:O	1:G:266:ARG:C	2.50	0.47
1:J:39:GLU:CB	1:J:133:ARG:NH2	2.77	0.47
1:J:170:LEU:HD11	1:J:355:VAL:HG21	1.96	0.47
1:J:248:ASP:O	1:J:249:LEU:HB2	2.14	0.47
1:J:347:LEU:C	1:J:349:LYS:N	2.64	0.47
1:K:77:ARG:HG2	1:K:143:SER:HB3	1.96	0.47
1:K:128:ASN:C	1:K:130:THR:H	2.17	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:281:LEU:HB2	1:L:283:LEU:HD11	1.95	0.47
1:A:133:ARG:NH1	1:A:242:ASP:CG	2.66	0.47
1:G:60:THR:HG22	1:G:349:LYS:NZ	2.29	0.47
1:G:71:GLN:N	1:G:72:PRO:HD2	2.30	0.47
1:H:92:MET:HB3	1:H:104:LEU:HD13	1.96	0.47
1:I:201:GLU:HG3	1:I:306:ASP:OD2	2.14	0.47
1:B:169:GLU:OE1	1:B:169:GLU:CA	2.63	0.47
1:B:353:VAL:O	1:B:354:PHE:C	2.52	0.47
1:I:51:SER:O	1:I:54:ARG:N	2.46	0.47
1:J:47:ILE:HA	1:J:357:GLU:OE2	2.14	0.47
1:B:68:ASN:HB2	1:B:94:ARG:HH12	1.79	0.47
1:D:36:TRP:CD1	1:D:37:PRO:HD3	2.50	0.47
1:E:102:TRP:CZ3	1:E:127:LEU:HG	2.49	0.47
1:F:35:ALA:O	1:F:36:TRP:C	2.51	0.47
1:H:50:SER:HB2	1:H:281:LEU:HD11	1.97	0.47
1:H:71:GLN:N	1:H:72:PRO:HD2	2.29	0.47
1:I:103:VAL:O	1:I:103:VAL:HG12	2.15	0.47
1:J:141:TYR:CD2	1:J:197:PHE:O	2.66	0.47
1:L:74:LEU:HD21	1:L:161:ALA:HB1	1.95	0.47
1:L:132:LYS:HA	1:L:228:HIS:NE2	2.30	0.47
1:L:360:HIS:O	1:L:361:LEU:HD23	2.14	0.47
1:B:211:ASP:OD1	1:B:214:TYR:OH	2.25	0.47
1:A:231:GLY:O	1:A:232:ALA:C	2.53	0.47
1:C:158:THR:O	1:C:160:SER:HA	2.15	0.47
1:F:71:GLN:NE2	1:F:336:GLU:OE2	2.47	0.47
1:F:128:ASN:N	1:F:129:PRO:CD	2.77	0.47
1:L:160:SER:HG	1:L:163:PRO:HG2	1.79	0.47
1:B:60:THR:HG23	1:B:60:THR:O	2.14	0.47
1:B:77:ARG:HG3	1:B:143:SER:HB3	1.96	0.47
1:A:77:ARG:CG	1:A:143:SER:HB3	2.45	0.47
1:A:311:LEU:O	1:A:313:ARG:N	2.48	0.47
1:D:108:THR:HG22	1:D:109:PHE:N	2.29	0.47
1:D:112:GLN:HG3	1:D:113:THR:H	1.79	0.47
1:D:228:HIS:O	1:D:235:THR:OG1	2.31	0.47
1:D:289:LEU:O	1:D:292:ARG:HG3	2.15	0.47
1:E:160:SER:O	1:E:163:PRO:HD2	2.15	0.47
1:E:276:HIS:O	1:E:279:HIS:HB3	2.15	0.47
1:G:340:ASP:O	1:G:341:GLU:C	2.53	0.47
1:H:62:ILE:HB	1:H:345:ASP:CB	2.45	0.47
1:H:345:ASP:O	1:H:348:ASN:HB2	2.14	0.47
1:I:148:HIS:NE2	1:I:153:VAL:HG22	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:323:SER:CA	1:I:324:PRO:O	2.63	0.47
1:J:35:ALA:O	1:J:37:PRO:N	2.47	0.47
1:J:39:GLU:CA	1:J:133:ARG:HH22	2.28	0.47
1:J:331:THR:C	1:J:333:ASP:N	2.67	0.47
1:D:180:SER:O	1:D:181:LEU:HD23	2.14	0.47
1:F:206:HIS:O	1:F:207:TRP:C	2.53	0.47
1:G:92:MET:O	1:G:93:GLN:C	2.51	0.47
1:G:111:SER:OG	1:G:112:GLN:N	2.46	0.47
1:H:54:ARG:HA	1:H:283:LEU:CD2	2.45	0.47
1:H:278:LEU:HB3	1:H:284:LEU:HD13	1.97	0.47
1:I:134:HIS:HA	1:I:192:SER:O	2.14	0.47
1:I:275:GLU:OE2	1:I:293:TYR:N	2.33	0.47
1:K:162:VAL:O	1:K:166:MET:HG3	2.14	0.47
1:K:205:LEU:O	1:K:206:HIS:CG	2.68	0.47
1:E:205:LEU:HG	1:E:206:HIS:HB2	1.97	0.47
1:I:284:LEU:HD23	1:I:287:HIS:CE1	2.49	0.47
1:J:265:ALA:O	1:J:267:TRP:N	2.48	0.47
1:K:127:LEU:O	1:K:128:ASN:HB2	2.15	0.47
1:K:308:ILE:HB	1:K:309:PRO:HD3	1.95	0.47
1:A:229:PRO:O	1:A:230:PRO:C	2.52	0.47
1:C:100:ALA:HA	1:C:179:LEU:CD1	2.45	0.47
1:D:231:GLY:O	1:D:232:ALA:C	2.53	0.47
1:G:140:HIS:C	1:G:140:HIS:HD1	2.16	0.47
1:G:283:LEU:HD12	1:G:283:LEU:H	1.80	0.47
1:J:280:GLU:O	1:J:280:GLU:HG3	2.15	0.47
1:J:345:ASP:O	1:J:349:LYS:HG3	2.15	0.47
1:K:211:ASP:O	1:K:212:SER:HB3	2.13	0.47
1:F:38:GLU:OE2	1:H:147:SER:OG	2.33	0.46
1:J:48:LEU:HD13	1:J:52:ALA:CB	2.45	0.46
1:G:181:LEU:HD23	1:G:181:LEU:N	2.29	0.46
1:H:305:ASP:CG	1:H:306:ASP:H	2.19	0.46
1:I:178:LEU:O	1:I:180:SER:N	2.49	0.46
1:I:308:ILE:O	1:I:309:PRO:C	2.53	0.46
1:J:106:ILE:CG2	1:J:107:ASP:N	2.77	0.46
1:J:201:GLU:OE1	1:J:202:GLU:HG2	2.15	0.46
1:K:128:ASN:H	1:K:129:PRO:HD3	1.80	0.46
1:L:71:GLN:N	1:L:72:PRO:CD	2.77	0.46
1:L:278:LEU:HB3	1:L:284:LEU:CD1	2.44	0.46
1:D:169:GLU:OE2	1:D:172:ARG:NH2	2.46	0.46
1:F:36:TRP:CD1	1:F:37:PRO:HD3	2.51	0.46
1:L:199:ASP:OD1	1:L:200:GLY:N	2.41	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:191:LEU:HD13	1:C:242:ASP:OD2	2.15	0.46
1:D:199:ASP:OD1	1:D:200:GLY:N	2.49	0.46
1:G:66:TRP:O	1:G:71:GLN:HG3	2.16	0.46
1:H:70:LEU:O	1:H:74:LEU:HD12	2.15	0.46
1:H:78:TYR:HB2	1:H:79:PRO:CD	2.46	0.46
1:I:146:PHE:C	1:I:147:SER:O	2.53	0.46
1:I:256:THR:OG1	1:I:323:SER:O	2.24	0.46
1:J:37:PRO:O	1:J:133:ARG:NH1	2.48	0.46
1:K:67:GLN:HG2	1:K:68:ASN:OD1	2.16	0.46
1:L:281:LEU:CB	1:L:283:LEU:HD11	2.45	0.46
1:B:211:ASP:HA	1:B:214:TYR:OH	2.15	0.46
1:B:252:ALA:HB1	1:B:253:PRO:HD2	1.97	0.46
1:B:270:ARG:O	1:B:274:ILE:HG13	2.15	0.46
1:D:182:LYS:HD3	1:D:182:LYS:N	2.30	0.46
1:J:40:LYS:HB3	1:J:242:ASP:OD1	2.16	0.46
1:L:149:TRP:O	1:L:152:ARG:HG3	2.16	0.46
1:L:291:GLY:O	1:L:292:ARG:C	2.54	0.46
1:A:250:ILE:HG22	1:A:251:GLY:N	2.30	0.46
1:D:223:MET:HB3	1:D:238:LEU:HD23	1.97	0.46
1:F:36:TRP:HD1	1:L:280:GLU:HG3	1.80	0.46
1:G:281:LEU:CB	1:G:283:LEU:HD11	2.44	0.46
1:J:284:LEU:HG	1:J:346:ASN:OD1	2.15	0.46
1:K:127:LEU:O	1:K:128:ASN:CB	2.63	0.46
1:L:274:ILE:HD13	1:L:353:VAL:HG12	1.98	0.46
1:A:328:VAL:O	1:A:331:THR:OG1	2.26	0.46
1:F:249:LEU:HD12	1:F:321:ILE:HD11	1.97	0.46
1:G:85:TYR:O	1:G:89:GLN:HB2	2.15	0.46
1:G:149:TRP:HZ3	1:G:152:ARG:CD	2.28	0.46
1:G:191:LEU:HD13	1:G:242:ASP:OD2	2.15	0.46
1:I:248:ASP:OD1	1:I:249:LEU:N	2.49	0.46
1:I:277:GLU:O	1:I:277:GLU:HG3	2.15	0.46
1:J:70:LEU:HB2	1:J:165:ALA:HB2	1.96	0.46
1:J:92:MET:O	1:J:93:GLN:C	2.53	0.46
1:K:78:TYR:HB2	1:K:79:PRO:CD	2.46	0.46
1:L:68:ASN:HB3	1:L:94:ARG:HH12	1.80	0.46
1:H:62:ILE:HB	1:H:345:ASP:HB2	1.97	0.46
1:I:71:GLN:HA	1:I:74:LEU:HD12	1.98	0.46
1:J:177:LYS:O	1:J:361:LEU:HD13	2.16	0.46
1:J:268:PHE:O	1:J:269:GLU:C	2.54	0.46
1:F:85:TYR:HD1	1:F:88:ARG:NH1	2.14	0.46
1:G:48:LEU:HB2	1:G:53:LEU:CD2	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:162:VAL:HB	1:H:163:PRO:CD	2.43	0.46
1:H:174:LEU:O	1:H:175:ASP:C	2.52	0.46
1:I:108:THR:HG22	1:I:109:PHE:N	2.31	0.46
1:I:159:ASP:HA	1:I:160:SER:OG	2.16	0.46
1:I:162:VAL:O	1:I:166:MET:HG3	2.16	0.46
1:J:163:PRO:HB3	1:J:247:LEU:HB2	1.97	0.46
1:C:137:LEU:HD12	1:C:245:VAL:HB	1.98	0.46
1:H:102:TRP:CE3	1:H:127:LEU:HG	2.51	0.46
1:H:172:ARG:O	1:H:173:ALA:C	2.54	0.46
1:H:304:GLN:HA	1:H:304:GLN:OE1	2.16	0.46
1:I:49:ASN:OD1	1:I:49:ASN:C	2.53	0.46
1:I:302:VAL:HG22	1:I:303:ILE:N	2.31	0.46
1:J:283:LEU:O	1:J:349:LYS:NZ	2.49	0.46
1:J:336:GLU:HA	1:J:339:LEU:CD1	2.46	0.46
1:K:49:ASN:O	1:K:50:SER:C	2.55	0.46
1:K:172:ARG:HG2	1:K:172:ARG:NH1	2.31	0.46
1:A:127:LEU:O	1:A:128:ASN:HB2	2.16	0.45
1:D:49:ASN:O	1:D:52:ALA:N	2.45	0.45
1:E:149:TRP:O	1:E:151:ASN:N	2.49	0.45
1:G:94:ARG:HH21	1:G:97:ARG:NH1	2.14	0.45
1:G:149:TRP:O	1:G:152:ARG:N	2.40	0.45
1:H:66:TRP:O	1:H:66:TRP:CD1	2.70	0.45
1:K:299:TYR:HD2	1:K:301:GLY:O	1.99	0.45
1:L:304:GLN:O	1:L:305:ASP:HB2	2.15	0.45
1:C:219:LEU:O	1:C:220:ALA:C	2.53	0.45
1:E:157:ALA:O	1:E:162:VAL:HG23	2.17	0.45
1:F:223:MET:HG2	1:F:237:GLN:OE1	2.15	0.45
1:F:337:GLU:CD	1:F:337:GLU:H	2.18	0.45
1:H:272:GLN:O	1:H:275:GLU:N	2.49	0.45
1:H:303:ILE:O	1:H:307:HIS:HE1	1.99	0.45
1:I:254:ASN:N	1:I:255:PRO:HD3	2.32	0.45
1:J:101:ASP:O	1:J:127:LEU:CD2	2.63	0.45
1:L:105:GLU:C	1:L:106:ILE:HD13	2.37	0.45
1:B:279:HIS:CD2	1:B:289:LEU:HG	2.52	0.45
1:G:92:MET:O	1:G:96:GLN:N	2.47	0.45
1:G:109:PHE:HZ	1:G:215:GLY:HA2	1.81	0.45
1:G:166:MET:HG2	1:G:348:ASN:OD1	2.17	0.45
1:H:36:TRP:N	1:H:37:PRO:CD	2.79	0.45
1:G:259:ASN:OD1	1:G:268:PHE:CB	2.65	0.45
1:G:359:LEU:O	1:G:361:LEU:HG	2.17	0.45
1:H:138:ALA:N	1:H:245:VAL:O	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:201:GLU:HG3	1:J:306:ASP:OD2	2.17	0.45
1:K:158:THR:O	1:K:160:SER:HA	2.15	0.45
1:L:40:LYS:HB3	1:L:242:ASP:OD1	2.16	0.45
1:L:68:ASN:CB	1:L:94:ARG:HH12	2.29	0.45
1:L:149:TRP:O	1:L:152:ARG:HB2	2.17	0.45
1:L:254:ASN:N	1:L:255:PRO:CD	2.80	0.45
1:L:305:ASP:C	1:L:307:HIS:H	2.17	0.45
1:B:36:TRP:H	1:B:37:PRO:HD2	1.81	0.45
1:C:35:ALA:C	1:C:37:PRO:CD	2.85	0.45
1:F:66:TRP:O	1:F:71:GLN:HB2	2.16	0.45
1:F:105:GLU:O	1:F:106:ILE:HD13	2.17	0.45
1:G:174:LEU:O	1:G:175:ASP:C	2.54	0.45
1:I:76:GLU:O	1:I:83:GLY:HA3	2.17	0.45
1:I:249:LEU:HD12	1:I:321:ILE:HD11	1.97	0.45
1:L:178:LEU:O	1:L:180:SER:N	2.50	0.45
1:L:263:ASN:OD1	1:L:263:ASN:N	2.50	0.45
1:B:71:GLN:NE2	1:B:336:GLU:OE2	2.49	0.45
1:B:302:VAL:HG22	1:B:303:ILE:O	2.17	0.45
1:A:307:HIS:HB2	1:A:317:VAL:HG11	1.99	0.45
1:C:92:MET:O	1:C:96:GLN:N	2.37	0.45
1:C:221:ALA:O	1:C:222:LYS:C	2.55	0.45
1:E:162:VAL:HB	1:E:163:PRO:HD3	1.98	0.45
1:E:174:LEU:HD22	1:E:356:LEU:HD11	1.97	0.45
1:G:152:ARG:O	1:G:332:MET:CE	2.65	0.45
1:I:71:GLN:N	1:I:72:PRO:HD2	2.32	0.45
1:J:85:TYR:O	1:J:86:ALA:C	2.54	0.45
1:J:279:HIS:HA	4:J:501:HOH:O	2.16	0.45
1:J:355:VAL:HG12	1:J:356:LEU:N	2.31	0.45
1:L:211:ASP:O	1:L:212:SER:HB3	2.14	0.45
1:C:292:ARG:O	1:C:295:GLN:NE2	2.46	0.45
1:G:78:TYR:CE2	1:G:145:TYR:HD1	2.35	0.45
1:J:149:TRP:CE3	1:J:150:ASN:HB2	2.52	0.45
1:J:212:SER:O	1:J:213:LEU:HB2	2.17	0.45
1:B:36:TRP:HZ3	1:B:240:GLY:HA2	1.81	0.45
1:A:92:MET:SD	1:A:106:ILE:HD11	2.57	0.45
1:G:36:TRP:CD1	1:G:37:PRO:HD3	2.51	0.45
1:I:78:TYR:CE1	1:I:81:SER:HB3	2.51	0.45
1:I:259:ASN:ND2	1:I:268:PHE:CB	2.80	0.45
1:J:69:ASP:OD2	1:J:168:LEU:CB	2.64	0.45
1:J:114:PRO:HG2	1:J:211:ASP:OD2	2.17	0.45
1:J:127:LEU:O	1:J:128:ASN:CB	2.64	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:191:LEU:HD12	1:J:242:ASP:OD2	2.17	0.45
1:J:349:LYS:O	1:J:351:LEU:N	2.50	0.45
1:J:355:VAL:O	1:J:357:GLU:N	2.50	0.45
1:C:35:ALA:C	1:C:37:PRO:HD2	2.37	0.45
1:D:71:GLN:N	1:D:72:PRO:HD2	2.32	0.45
1:E:211:ASP:O	1:E:212:SER:HB3	2.17	0.45
1:J:50:SER:O	1:J:51:SER:C	2.54	0.45
1:J:134:HIS:O	1:J:242:ASP:HB2	2.16	0.45
1:L:307:HIS:O	1:L:310:PHE:N	2.42	0.45
1:A:308:ILE:O	1:A:312:ARG:HG3	2.17	0.45
1:C:276:HIS:O	1:C:279:HIS:HB3	2.17	0.45
1:F:70:LEU:HB2	1:F:165:ALA:CB	2.47	0.45
1:H:135:LEU:HD23	1:H:193:LEU:CD1	2.47	0.45
1:I:305:ASP:O	1:I:307:HIS:N	2.49	0.45
1:J:102:TRP:CE3	1:J:127:LEU:CG	3.00	0.45
1:J:296:ASN:OD1	1:J:296:ASN:N	2.49	0.45
1:K:189:PRO:O	1:K:191:LEU:N	2.49	0.45
1:B:223:MET:HB2	1:B:238:LEU:HD21	1.99	0.44
1:B:308:ILE:O	1:B:312:ARG:HG3	2.17	0.44
1:B:349:LYS:O	1:B:353:VAL:HG23	2.17	0.44
1:A:179:LEU:O	1:A:181:LEU:N	2.50	0.44
1:F:128:ASN:O	1:F:130:THR:N	2.49	0.44
1:I:36:TRP:HA	1:I:39:GLU:HG3	2.00	0.44
1:J:297:TYR:CG	1:J:297:TYR:O	2.69	0.44
1:J:349:LYS:O	1:J:352:GLN:N	2.50	0.44
1:A:304:GLN:O	1:A:305:ASP:HB2	2.16	0.44
1:C:149:TRP:CE3	1:C:150:ASN:HB2	2.53	0.44
1:C:308:ILE:N	1:C:309:PRO:CD	2.80	0.44
1:D:158:THR:O	1:D:160:SER:HA	2.17	0.44
1:D:310:PHE:O	1:D:311:LEU:C	2.53	0.44
1:G:39:GLU:C	1:G:133:ARG:NH2	2.70	0.44
1:G:169:GLU:O	1:G:170:LEU:C	2.56	0.44
1:G:281:LEU:HB3	1:G:283:LEU:CD1	2.47	0.44
1:I:68:ASN:HB3	1:I:94:ARG:NH1	2.30	0.44
1:I:77:ARG:CG	1:I:143:SER:HB3	2.45	0.44
1:I:249:LEU:CD1	1:I:321:ILE:HD11	2.48	0.44
1:I:289:LEU:CD2	1:I:289:LEU:N	2.80	0.44
1:I:349:LYS:O	1:I:353:VAL:HG23	2.18	0.44
1:J:154:PHE:C	1:J:155:VAL:HG13	2.38	0.44
1:J:278:LEU:HB3	1:J:284:LEU:HD13	1.98	0.44
1:J:328:VAL:HG11	1:J:333:ASP:C	2.38	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:49:ASN:O	1:K:49:ASN:OD1	2.34	0.44
1:L:280:GLU:OE1	1:L:280:GLU:HA	2.17	0.44
1:L:345:ASP:O	1:L:349:LYS:HG3	2.17	0.44
1:A:38:GLU:C	1:A:40:LYS:H	2.21	0.44
1:C:95:ILE:CG2	1:C:104:LEU:HD21	2.47	0.44
1:E:77:ARG:CG	1:E:143:SER:HB3	2.47	0.44
1:G:301:GLY:H	1:J:300:GLY:HA3	1.82	0.44
1:I:123:ILE:HG22	1:I:124:ILE:N	2.31	0.44
1:I:159:ASP:HB2	1:I:249:LEU:HD22	1.93	0.44
1:I:255:PRO:HD2	1:I:293:TYR:CD1	2.51	0.44
1:J:35:ALA:O	1:J:37:PRO:CD	2.66	0.44
1:J:135:LEU:HD22	1:J:358:TYR:CG	2.53	0.44
1:K:102:TRP:CE2	1:K:127:LEU:HD21	2.52	0.44
1:K:207:TRP:CZ3	1:K:212:SER:HB2	2.53	0.44
1:K:253:PRO:O	1:K:254:ASN:HB2	2.16	0.44
1:L:265:ALA:O	1:L:266:ARG:C	2.54	0.44
1:A:107:ASP:O	1:A:121:SER:HA	2.17	0.44
1:A:212:SER:O	1:A:213:LEU:C	2.55	0.44
1:D:179:LEU:C	1:D:181:LEU:H	2.21	0.44
1:E:348:ASN:O	1:E:349:LYS:C	2.56	0.44
1:G:36:TRP:N	1:G:37:PRO:CD	2.80	0.44
1:I:308:ILE:HB	1:I:309:PRO:HD3	1.98	0.44
1:K:102:TRP:CD2	1:K:127:LEU:HD21	2.51	0.44
1:B:108:THR:HG22	1:B:109:PHE:N	2.32	0.44
1:B:162:VAL:HB	1:B:163:PRO:HD3	1.98	0.44
1:A:141:TYR:CE2	1:A:199:ASP:HB2	2.52	0.44
1:C:100:ALA:HA	1:C:179:LEU:HD12	1.98	0.44
1:C:223:MET:HG2	1:C:237:GLN:OE1	2.17	0.44
1:E:36:TRP:CD1	1:E:37:PRO:HD3	2.52	0.44
1:G:285:LYS:C	1:G:287:HIS:N	2.70	0.44
1:H:160:SER:C	1:H:163:PRO:HD2	2.38	0.44
1:H:340:ASP:O	1:H:342:SER:N	2.50	0.44
1:I:207:TRP:CD1	1:I:208:SER:N	2.85	0.44
1:J:69:ASP:OD2	1:J:169:GLU:N	2.51	0.44
1:J:137:LEU:HD13	1:J:193:LEU:HD11	2.00	0.44
1:J:151:ASN:OD1	1:J:151:ASN:O	2.35	0.44
1:J:267:TRP:HB3	1:J:354:PHE:CZ	2.53	0.44
1:C:36:TRP:N	1:C:37:PRO:CD	2.81	0.44
1:E:344:ILE:O	1:E:345:ASP:C	2.54	0.44
1:G:62:ILE:HB	1:G:345:ASP:OD1	2.18	0.44
1:G:260:PHE:CD2	1:G:319:HIS:HB3	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:302:VAL:HG22	1:G:303:ILE:O	2.17	0.44
1:H:308:ILE:O	1:H:309:PRO:C	2.54	0.44
1:I:252:ALA:HB1	1:I:253:PRO:CD	2.48	0.44
1:J:137:LEU:O	1:J:167:MET:CE	2.65	0.44
1:K:197:PHE:N	1:K:197:PHE:CD1	2.85	0.44
1:A:142:ASP:OD1	1:A:142:ASP:N	2.38	0.44
1:A:157:ALA:O	1:A:162:VAL:HG23	2.18	0.44
1:F:78:TYR:O	1:F:81:SER:OG	2.20	0.44
1:G:61:SER:O	1:G:61:SER:OG	2.33	0.44
1:H:135:LEU:HD23	1:H:193:LEU:HD13	1.99	0.44
1:H:346:ASN:O	1:H:347:LEU:C	2.56	0.44
1:I:71:GLN:N	1:I:72:PRO:CD	2.80	0.44
1:K:138:ALA:HA	1:K:167:MET:HE1	1.99	0.44
1:K:335:ASN:C	1:K:335:ASN:OD1	2.55	0.44
1:B:52:ALA:O	1:B:53:LEU:C	2.55	0.44
1:B:71:GLN:N	1:B:72:PRO:HD2	2.33	0.44
1:A:106:ILE:O	1:A:106:ILE:HG22	2.18	0.44
1:E:353:VAL:O	1:E:357:GLU:HG3	2.17	0.44
1:F:295:GLN:O	1:F:297:TYR:N	2.48	0.44
1:G:222:LYS:O	1:G:226:THR:OG1	2.34	0.44
1:H:172:ARG:O	1:H:175:ASP:N	2.44	0.44
1:I:39:GLU:O	1:I:41:ASN:N	2.51	0.44
1:L:181:LEU:O	1:L:182:LYS:C	2.56	0.44
1:J:228:HIS:N	1:J:235:THR:O	2.41	0.44
1:K:136:VAL:HG21	1:K:241:MET:HG2	1.99	0.44
1:K:297:TYR:CD1	1:K:298:SER:O	2.71	0.44
1:A:359:LEU:O	1:A:360:HIS:HB2	2.18	0.43
1:E:81:SER:O	1:E:84:SER:HB2	2.18	0.43
1:F:49:ASN:OD1	1:F:49:ASN:C	2.57	0.43
1:F:231:GLY:HA2	1:L:54:ARG:CZ	2.48	0.43
1:J:66:TRP:CZ2	1:J:336:GLU:OE2	2.71	0.43
1:J:350:ILE:HD12	1:J:351:LEU:H	1.82	0.43
1:L:127:LEU:O	1:L:128:ASN:C	2.56	0.43
1:B:226:THR:O	1:B:227:PRO:C	2.56	0.43
1:F:360:HIS:O	1:F:361:LEU:HD23	2.18	0.43
1:G:94:ARG:O	1:G:97:ARG:HG2	2.18	0.43
1:G:328:VAL:CG1	1:G:334:ASP:CA	2.95	0.43
1:J:158:THR:O	1:J:249:LEU:CA	2.66	0.43
1:J:279:HIS:C	1:J:281:LEU:N	2.71	0.43
1:K:33:ALA:HA	1:K:235:THR:CG2	2.48	0.43
1:L:157:ALA:O	1:L:161:ALA:C	2.56	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:331:THR:H	1:L:331:THR:HG1	1.65	0.43
1:A:110:LEU:HD23	1:A:117:TYR:CD1	2.53	0.43
1:C:124:ILE:N	1:C:124:ILE:HD12	2.33	0.43
1:D:36:TRP:N	1:D:37:PRO:CD	2.81	0.43
1:G:147:SER:O	1:G:148:HIS:ND1	2.52	0.43
1:H:340:ASP:O	1:H:340:ASP:OD1	2.37	0.43
1:I:170:LEU:CD2	1:I:174:LEU:HD12	2.48	0.43
1:I:244:LEU:N	1:I:316:PRO:O	2.50	0.43
1:L:128:ASN:OD1	1:L:128:ASN:N	2.49	0.43
1:B:34:SER:HB3	1:B:36:TRP:CD1	2.53	0.43
1:C:71:GLN:N	1:C:72:PRO:CD	2.81	0.43
1:E:36:TRP:N	1:E:37:PRO:CD	2.81	0.43
1:F:169:GLU:O	1:F:169:GLU:HG3	2.18	0.43
1:J:347:LEU:O	1:J:348:ASN:C	2.57	0.43
1:K:68:ASN:HB3	1:K:94:ARG:NH1	2.32	0.43
1:B:62:ILE:O	1:B:62:ILE:HG13	2.19	0.43
1:C:248:ASP:O	1:C:249:LEU:HB2	2.18	0.43
1:H:335:ASN:N	1:H:335:ASN:OD1	2.48	0.43
1:J:39:GLU:CB	1:J:133:ARG:HH22	2.32	0.43
1:J:331:THR:C	1:J:333:ASP:H	2.21	0.43
1:K:212:SER:O	1:K:213:LEU:C	2.56	0.43
1:L:112:GLN:NE2	1:L:117:TYR:CZ	2.86	0.43
1:L:150:ASN:CB	1:L:152:ARG:HG3	2.48	0.43
1:B:67:GLN:HG3	1:B:68:ASN:OD1	2.19	0.43
1:E:120:PHE:CD1	1:E:120:PHE:N	2.87	0.43
1:G:283:LEU:C	1:G:284:LEU:HD13	2.39	0.43
1:H:263:ASN:OD1	3:I:402:A1D48:C08	2.66	0.43
1:I:49:ASN:O	1:I:51:SER:N	2.52	0.43
1:J:305:ASP:C	1:J:307:HIS:H	2.22	0.43
1:J:347:LEU:O	1:J:350:ILE:CD1	2.67	0.43
1:K:47:ILE:HG12	1:K:48:LEU:N	2.33	0.43
1:K:128:ASN:N	1:K:129:PRO:HD3	2.34	0.43
1:L:109:PHE:CZ	1:L:120:PHE:HB2	2.53	0.43
1:L:311:LEU:O	1:L:313:ARG:N	2.51	0.43
1:C:70:LEU:O	1:C:70:LEU:HG	2.19	0.43
1:G:56:ILE:HG22	1:G:349:LYS:HZ1	1.84	0.43
1:G:303:ILE:O	1:G:307:HIS:HE1	2.01	0.43
1:H:304:GLN:O	1:H:305:ASP:HB2	2.19	0.43
1:J:101:ASP:O	1:J:127:LEU:HD21	2.19	0.43
1:J:128:ASN:N	1:J:129:PRO:CD	2.82	0.43
1:J:293:TYR:CZ	1:J:343:THR:CG2	3.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:302:VAL:HG22	1:J:303:ILE:O	2.19	0.43
1:C:65:MET:HG3	1:C:169:GLU:HB2	2.00	0.43
1:D:155:VAL:O	1:D:156:GLY:C	2.53	0.43
1:G:44:GLN:HB3	1:G:45:PRO:HD2	2.01	0.43
1:G:278:LEU:O	1:G:283:LEU:HD12	2.18	0.43
1:H:156:GLY:HA3	1:H:159:ASP:O	2.18	0.43
1:I:247:LEU:O	1:I:248:ASP:HB2	2.18	0.43
1:J:61:SER:O	1:J:62:ILE:C	2.56	0.43
1:J:285:LYS:N	1:J:346:ASN:HD21	2.16	0.43
1:L:172:ARG:O	1:L:173:ALA:C	2.54	0.43
1:A:318:LEU:HD12	1:A:318:LEU:HA	1.83	0.43
1:C:65:MET:O	1:C:69:ASP:HB2	2.19	0.43
1:C:201:GLU:HG3	1:C:306:ASP:OD2	2.19	0.43
1:D:138:ALA:O	1:D:246:LEU:HD12	2.18	0.43
1:E:138:ALA:HA	1:E:196:ILE:O	2.19	0.43
1:G:45:PRO:HB2	1:G:357:GLU:HB3	2.00	0.43
1:G:284:LEU:O	1:G:285:LYS:HB2	2.18	0.43
1:H:255:PRO:HD2	1:H:293:TYR:CD1	2.53	0.43
1:J:35:ALA:C	1:J:37:PRO:CD	2.87	0.43
1:J:70:LEU:O	1:J:71:GLN:C	2.57	0.43
1:J:270:ARG:O	1:J:274:ILE:HD12	2.19	0.43
1:J:278:LEU:HD12	1:J:350:ILE:HG22	2.00	0.43
1:K:270:ARG:O	1:K:274:ILE:HG13	2.18	0.43
1:L:178:LEU:C	1:L:180:SER:N	2.72	0.43
1:B:92:MET:O	1:B:96:GLN:N	2.44	0.43
1:C:68:ASN:HB2	1:C:94:ARG:HH12	1.83	0.43
1:G:340:ASP:C	1:G:342:SER:N	2.72	0.43
1:I:88:ARG:HG3	1:I:123:ILE:HD11	2.01	0.43
1:I:170:LEU:C	1:I:170:LEU:HD23	2.38	0.43
1:I:297:TYR:O	1:I:297:TYR:CG	2.71	0.43
1:L:263:ASN:HD22	1:L:316:PRO:HB3	1.84	0.43
1:L:347:LEU:HD23	1:L:347:LEU:HA	1.77	0.43
1:F:42:TYR:O	1:F:44:GLN:HG2	2.19	0.42
1:H:133:ARG:CZ	1:H:242:ASP:OD2	2.64	0.42
1:I:201:GLU:HG2	1:I:306:ASP:OD1	2.19	0.42
1:K:49:ASN:OD1	1:K:49:ASN:C	2.56	0.42
1:K:132:LYS:HA	1:K:228:HIS:NE2	2.34	0.42
1:K:328:VAL:HG12	1:K:333:ASP:HB2	2.02	0.42
1:A:277:GLU:C	1:A:279:HIS:N	2.71	0.42
1:D:94:ARG:NH2	1:D:97:ARG:CZ	2.82	0.42
1:D:205:LEU:O	1:D:205:LEU:HD12	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:149:TRP:CE3	1:F:150:ASN:HB2	2.54	0.42
1:F:174:LEU:O	1:F:178:LEU:HG	2.19	0.42
1:G:359:LEU:O	1:G:360:HIS:C	2.57	0.42
1:H:336:GLU:O	1:H:337:GLU:C	2.58	0.42
1:J:36:TRP:CD1	1:J:37:PRO:HD3	2.54	0.42
1:J:161:ALA:O	1:J:162:VAL:C	2.55	0.42
1:J:273:ALA:O	1:J:276:HIS:N	2.48	0.42
1:K:78:TYR:CE1	1:K:81:SER:HB3	2.54	0.42
1:B:77:ARG:NH1	1:B:155:VAL:O	2.50	0.42
1:A:70:LEU:HB2	1:A:165:ALA:CB	2.49	0.42
1:C:92:MET:HB3	1:C:104:LEU:HD13	2.01	0.42
1:D:104:LEU:HD23	1:D:125:SER:HB2	2.00	0.42
1:E:174:LEU:O	1:E:178:LEU:HG	2.19	0.42
1:F:101:ASP:O	1:F:127:LEU:HD23	2.19	0.42
1:G:92:MET:SD	1:G:104:LEU:HD13	2.59	0.42
1:I:279:HIS:ND1	1:I:289:LEU:HD21	2.34	0.42
1:I:305:ASP:C	1:I:307:HIS:H	2.22	0.42
1:J:259:ASN:OD1	1:J:265:ALA:HA	2.19	0.42
1:J:328:VAL:CG1	1:J:333:ASP:HB2	2.49	0.42
1:A:116:GLY:HA2	1:H:114:PRO:O	2.19	0.42
1:I:47:ILE:HA	1:I:357:GLU:OE2	2.19	0.42
1:J:109:PHE:CZ	1:J:120:PHE:HB2	2.53	0.42
1:J:211:ASP:O	1:J:212:SER:HB3	2.20	0.42
1:J:235:THR:OG1	1:J:235:THR:O	2.37	0.42
1:K:94:ARG:NH2	1:K:97:ARG:NH1	2.67	0.42
1:K:110:LEU:HD12	1:K:118:ARG:O	2.19	0.42
1:K:299:TYR:CD2	1:K:301:GLY:O	2.73	0.42
1:L:71:GLN:HA	1:L:74:LEU:HD12	2.01	0.42
1:L:76:GLU:HB2	1:L:153:VAL:CG1	2.49	0.42
1:L:150:ASN:HB3	1:L:152:ARG:HG3	2.01	0.42
1:A:268:PHE:CD1	1:A:268:PHE:C	2.92	0.42
1:C:76:GLU:HB2	1:C:153:VAL:HG11	2.02	0.42
1:C:158:THR:C	1:C:160:SER:HA	2.39	0.42
1:C:179:LEU:O	1:C:181:LEU:N	2.52	0.42
1:D:105:GLU:O	1:D:106:ILE:HD13	2.20	0.42
1:E:77:ARG:NH2	1:E:161:ALA:HB2	2.34	0.42
1:G:288:SER:OG	1:G:290:GLU:N	2.52	0.42
1:J:78:TYR:O	1:J:79:PRO:C	2.58	0.42
1:J:102:TRP:CD2	1:J:127:LEU:HD12	2.54	0.42
1:J:103:VAL:O	1:J:103:VAL:HG12	2.18	0.42
1:A:56:ILE:C	1:A:58:GLU:N	2.72	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:92:MET:HE2	1:C:106:ILE:HD11	1.97	0.42
1:C:229:PRO:C	1:C:230:PRO:O	2.58	0.42
1:C:317:VAL:CG1	1:C:318:LEU:N	2.82	0.42
1:E:61:SER:OG	1:E:64:GLU:N	2.42	0.42
1:H:279:HIS:NE2	1:H:287:HIS:O	2.53	0.42
1:H:347:LEU:O	1:H:350:ILE:N	2.51	0.42
1:J:36:TRP:CD1	1:J:37:PRO:CD	3.01	0.42
1:J:168:LEU:O	1:J:171:ALA:N	2.49	0.42
1:K:71:GLN:N	1:K:72:PRO:CD	2.82	0.42
1:K:305:ASP:O	1:K:307:HIS:N	2.53	0.42
1:B:69:ASP:OD1	1:B:94:ARG:NH1	2.52	0.42
1:B:228:HIS:HA	1:B:229:PRO:C	2.40	0.42
1:E:99:GLN:O	1:E:100:ALA:O	2.38	0.42
1:G:211:ASP:O	1:G:212:SER:HB3	2.19	0.42
1:I:178:LEU:C	1:I:180:SER:H	2.23	0.42
1:L:34:SER:OG	1:L:35:ALA:N	2.52	0.42
1:B:278:LEU:HB3	1:B:284:LEU:HD13	2.00	0.42
1:C:317:VAL:HG12	1:C:318:LEU:N	2.33	0.42
1:D:205:LEU:HD12	1:D:205:LEU:C	2.40	0.42
1:E:43:HIS:CD2	1:E:358:TYR:CE1	3.08	0.42
1:F:226:THR:O	1:F:236:SER:HA	2.19	0.42
1:F:253:PRO:O	1:F:254:ASN:C	2.58	0.42
1:G:259:ASN:HD21	1:G:265:ALA:CB	2.32	0.42
1:H:64:GLU:O	1:H:68:ASN:HB2	2.19	0.42
1:H:293:TYR:O	1:H:295:GLN:N	2.53	0.42
1:I:178:LEU:C	1:I:180:SER:N	2.73	0.42
1:I:285:LYS:O	1:I:286:ASP:HB2	2.18	0.42
1:J:71:GLN:N	1:J:72:PRO:HD3	2.35	0.42
1:J:101:ASP:C	1:J:127:LEU:HD21	2.40	0.42
1:K:247:LEU:CD2	1:K:320:LEU:HD12	2.50	0.42
1:K:250:ILE:HG22	1:K:251:GLY:N	2.34	0.42
1:K:252:ALA:O	1:K:255:PRO:HD3	2.19	0.42
1:B:107:ASP:HB3	1:B:122:ASN:HB2	2.02	0.42
1:B:219:LEU:O	1:B:220:ALA:C	2.57	0.42
1:D:219:LEU:O	1:D:220:ALA:C	2.54	0.42
1:E:180:SER:O	1:E:181:LEU:HD23	2.20	0.42
1:E:248:ASP:HB3	1:E:321:ILE:HG13	2.01	0.42
1:G:213:LEU:HB2	1:G:217:ARG:HD3	2.00	0.42
1:I:144:LYS:HG3	1:I:145:TYR:N	2.34	0.42
1:J:328:VAL:O	1:J:329:TRP:C	2.57	0.42
1:L:157:ALA:O	1:L:161:ALA:CA	2.68	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:279:HIS:HE1	1:L:287:HIS:O	2.03	0.42
1:B:181:LEU:HD21	1:B:361:LEU:HD21	2.02	0.42
1:C:77:ARG:HG2	1:C:143:SER:HB3	2.02	0.42
1:C:102:TRP:CE3	1:C:127:LEU:HG	2.54	0.42
1:C:252:ALA:HB1	1:C:253:PRO:HD2	2.02	0.42
1:D:104:LEU:CD2	1:D:125:SER:HB2	2.50	0.42
1:E:106:ILE:CG2	1:E:107:ASP:N	2.81	0.42
1:G:92:MET:O	1:G:96:GLN:HB2	2.20	0.42
1:J:89:GLN:O	1:J:90:HIS:C	2.58	0.42
1:J:102:TRP:CE3	1:J:127:LEU:CD1	3.03	0.42
1:J:164:CYS:O	1:J:165:ALA:C	2.57	0.42
1:J:359:LEU:HB2	1:J:361:LEU:HG	2.01	0.42
1:K:74:LEU:N	1:K:74:LEU:HD12	2.35	0.42
1:K:105:GLU:O	1:K:106:ILE:HG12	2.19	0.42
1:A:281:LEU:CB	1:A:283:LEU:HD11	2.50	0.41
1:C:105:GLU:O	1:C:106:ILE:HD13	2.20	0.41
1:C:197:PHE:CD1	1:C:197:PHE:N	2.88	0.41
1:E:168:LEU:O	1:E:171:ALA:HB3	2.20	0.41
1:G:208:SER:OG	1:G:211:ASP:HB3	2.19	0.41
1:G:301:GLY:H	1:J:300:GLY:CA	2.32	0.41
1:H:321:ILE:O	1:H:321:ILE:CG2	2.67	0.41
1:I:248:ASP:OD1	1:I:249:LEU:HG	2.20	0.41
1:J:70:LEU:C	1:J:72:PRO:HD2	2.41	0.41
1:J:91:ILE:O	1:J:95:ILE:HG13	2.19	0.41
1:J:158:THR:OG1	1:J:334:ASP:OD1	2.37	0.41
1:J:243:LEU:HG	1:J:244:LEU:N	2.35	0.41
1:J:279:HIS:C	1:J:281:LEU:H	2.24	0.41
1:K:92:MET:CE	1:K:106:ILE:HD11	2.50	0.41
1:K:323:SER:HA	1:K:324:PRO:O	2.20	0.41
1:L:49:ASN:OD1	1:L:49:ASN:C	2.58	0.41
1:L:199:ASP:O	1:L:200:GLY:C	2.57	0.41
1:L:281:LEU:HB2	1:L:283:LEU:CD1	2.50	0.41
3:L:402:A1D48:O01	3:L:402:A1D48:C21	2.68	0.41
1:A:128:ASN:O	1:A:130:THR:N	2.53	0.41
1:C:103:VAL:N	1:C:126:THR:O	2.43	0.41
1:D:49:ASN:O	1:D:50:SER:C	2.57	0.41
1:D:197:PHE:CD1	1:D:197:PHE:N	2.89	0.41
1:D:305:ASP:HB3	1:D:307:HIS:ND1	2.36	0.41
1:D:355:VAL:HG12	1:D:356:LEU:N	2.35	0.41
1:G:154:PHE:N	1:G:332:MET:SD	2.93	0.41
1:G:343:THR:O	1:G:347:LEU:HD12	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:272:GLN:OE1	1:H:296:ASN:OD1	2.38	0.41
1:I:194:GLN:OE1	1:I:196:ILE:HD11	2.20	0.41
1:L:71:GLN:H	1:L:72:PRO:HD2	1.84	0.41
1:L:107:ASP:OD1	1:L:107:ASP:C	2.56	0.41
1:B:292:ARG:HG3	1:B:292:ARG:HH11	1.85	0.41
1:B:292:ARG:HG3	1:B:292:ARG:NH1	2.35	0.41
1:D:69:ASP:OD1	1:D:94:ARG:NH1	2.41	0.41
1:D:128:ASN:OD1	1:D:128:ASN:N	2.52	0.41
1:E:77:ARG:HG3	1:E:77:ARG:O	2.20	0.41
1:G:346:ASN:O	1:G:349:LYS:HB2	2.21	0.41
1:I:201:GLU:HG3	1:I:306:ASP:CG	2.41	0.41
1:I:248:ASP:O	1:I:250:ILE:HG13	2.20	0.41
1:J:54:ARG:O	1:J:55:GLN:C	2.57	0.41
1:J:160:SER:O	1:J:163:PRO:CD	2.69	0.41
1:J:220:ALA:HB2	1:J:309:PRO:HB2	2.02	0.41
1:J:297:TYR:O	1:J:297:TYR:CD2	2.73	0.41
1:K:48:LEU:HD12	1:K:53:LEU:HD23	2.02	0.41
1:A:242:ASP:OD2	1:A:358:TYR:OH	2.37	0.41
1:C:162:VAL:HB	1:C:163:PRO:HD3	2.03	0.41
1:E:212:SER:O	1:E:213:LEU:CB	2.68	0.41
1:G:135:LEU:HG	1:G:136:VAL:N	2.35	0.41
1:G:211:ASP:O	1:G:212:SER:CB	2.68	0.41
1:G:213:LEU:O	1:G:214:TYR:C	2.55	0.41
1:J:178:LEU:O	1:J:180:SER:N	2.53	0.41
1:C:138:ALA:HA	1:C:196:ILE:O	2.20	0.41
1:C:205:LEU:HG	1:C:206:HIS:CG	2.56	0.41
1:C:305:ASP:C	1:C:307:HIS:H	2.23	0.41
1:I:264:SER:O	1:I:267:TRP:N	2.54	0.41
1:J:191:LEU:HD11	1:J:242:ASP:OD2	2.21	0.41
1:L:283:LEU:H	1:L:283:LEU:HD12	1.85	0.41
1:A:117:TYR:O	1:A:118:ARG:HG2	2.21	0.41
1:A:133:ARG:CZ	1:A:242:ASP:CG	2.89	0.41
1:C:35:ALA:O	1:C:36:TRP:C	2.57	0.41
1:D:48:LEU:N	1:D:48:LEU:HD23	2.35	0.41
1:E:120:PHE:C	1:E:121:SER:OG	2.57	0.41
1:E:174:LEU:CD2	1:E:356:LEU:HD11	2.51	0.41
1:F:223:MET:HB3	1:F:238:LEU:HD23	2.02	0.41
1:F:267:TRP:CZ2	1:F:358:TYR:CE2	3.08	0.41
1:H:113:THR:OG1	1:H:116:GLY:O	2.27	0.41
1:I:51:SER:HA	1:I:54:ARG:NH1	2.36	0.41
1:J:45:PRO:HA	1:J:357:GLU:O	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:178:LEU:O	1:J:179:LEU:C	2.59	0.41
1:L:219:LEU:O	1:L:220:ALA:O	2.38	0.41
1:B:177:LYS:O	1:B:361:LEU:HD13	2.20	0.41
1:A:85:TYR:O	1:A:89:GLN:HB2	2.20	0.41
1:A:105:GLU:C	1:A:106:ILE:HG12	2.40	0.41
1:C:94:ARG:HH21	1:C:97:ARG:NH1	2.17	0.41
1:E:74:LEU:HD23	1:E:74:LEU:HA	1.91	0.41
1:F:128:ASN:O	1:F:129:PRO:C	2.58	0.41
1:F:285:LYS:O	1:F:285:LYS:CG	2.68	0.41
1:J:35:ALA:O	1:J:37:PRO:HD2	2.21	0.41
1:K:323:SER:HA	1:K:324:PRO:C	2.41	0.41
1:L:334:ASP:C	1:L:334:ASP:OD1	2.57	0.41
1:D:92:MET:CE	1:D:106:ILE:HD11	2.50	0.41
1:E:98:LEU:HB3	1:E:175:ASP:OD2	2.21	0.41
3:E:402:A1D48:C21	3:E:402:A1D48:O01	2.69	0.41
1:H:92:MET:O	1:H:93:GLN:C	2.58	0.41
1:H:199:ASP:OD1	1:H:200:GLY:N	2.48	0.41
1:I:49:ASN:O	1:I:50:SER:C	2.59	0.41
1:I:285:LYS:HE3	1:I:286:ASP:OD2	2.20	0.41
1:I:299:TYR:CD2	1:I:301:GLY:O	2.74	0.41
1:J:36:TRP:CD1	1:J:37:PRO:HG3	2.55	0.41
1:K:90:HIS:O	1:K:91:ILE:C	2.58	0.41
1:K:94:ARG:HH21	1:K:97:ARG:NH1	2.18	0.41
1:K:99:GLN:N	1:K:175:ASP:OD2	2.46	0.41
1:K:247:LEU:N	1:K:247:LEU:HD23	2.36	0.41
1:L:223:MET:C	1:L:225:SER:H	2.24	0.41
1:B:73:LEU:O	1:B:75:ILE:N	2.51	0.41
1:A:133:ARG:NH1	1:A:242:ASP:OD1	2.54	0.41
1:D:95:ILE:C	1:D:97:ARG:N	2.72	0.41
1:D:150:ASN:O	1:D:151:ASN:HB2	2.21	0.41
1:D:205:LEU:O	1:D:206:HIS:CG	2.72	0.41
1:D:308:ILE:O	1:D:312:ARG:HG2	2.21	0.41
1:E:299:TYR:HD2	1:E:301:GLY:O	2.02	0.41
1:F:258:PRO:HG2	1:F:260:PHE:CZ	2.56	0.41
1:F:276:HIS:O	1:F:279:HIS:HB3	2.21	0.41
1:G:87:ALA:O	1:G:90:HIS:N	2.54	0.41
1:G:165:ALA:O	1:G:166:MET:C	2.60	0.41
1:G:229:PRO:O	1:G:230:PRO:C	2.57	0.41
1:H:48:LEU:HD12	1:H:353:VAL:HG13	2.03	0.41
1:H:279:HIS:CE1	1:H:289:LEU:HG	2.56	0.41
1:I:56:ILE:HD12	1:I:356:LEU:CD1	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:78:TYR:CD1	1:I:81:SER:HB3	2.56	0.41
1:J:67:GLN:HG2	1:J:68:ASN:OD1	2.21	0.41
1:J:88:ARG:O	1:J:92:MET:HG3	2.20	0.41
1:J:111:SER:OG	1:J:112:GLN:N	2.53	0.41
1:J:151:ASN:O	1:J:151:ASN:CG	2.56	0.41
1:J:249:LEU:HA	1:J:249:LEU:HD23	1.87	0.41
1:J:350:ILE:H	1:J:350:ILE:HG13	1.76	0.41
1:L:223:MET:O	1:L:225:SER:N	2.54	0.41
1:L:336:GLU:O	1:L:337:GLU:C	2.59	0.41
1:G:90:HIS:O	1:G:91:ILE:C	2.58	0.41
1:G:197:PHE:CD1	1:G:197:PHE:N	2.88	0.41
1:H:349:LYS:O	1:H:353:VAL:HG23	2.20	0.41
1:I:236:SER:N	1:I:239:HIS:ND1	2.69	0.41
3:I:402:A1D48:O01	3:I:402:A1D48:C21	2.69	0.41
1:J:149:TRP:O	1:J:152:ARG:N	2.49	0.41
1:K:81:SER:O	1:K:84:SER:HB3	2.21	0.41
1:L:47:ILE:HA	1:L:357:GLU:HG2	2.02	0.41
1:A:295:GLN:O	1:A:297:TYR:N	2.52	0.40
1:F:162:VAL:HB	1:F:163:PRO:HD3	2.04	0.40
1:G:196:ILE:HG21	1:G:198:PHE:CE1	2.56	0.40
1:H:78:TYR:CD1	1:H:78:TYR:C	2.95	0.40
1:H:308:ILE:HB	1:H:309:PRO:HD3	2.02	0.40
1:H:343:THR:O	1:H:346:ASN:HB2	2.21	0.40
1:I:140:HIS:NE2	1:I:159:ASP:OD1	2.54	0.40
1:J:160:SER:C	1:J:163:PRO:HD2	2.41	0.40
1:K:318:LEU:HD12	1:K:318:LEU:HA	1.93	0.40
1:L:205:LEU:O	1:L:205:LEU:HD12	2.21	0.40
1:L:325:PHE:O	1:L:326:PRO:O	2.39	0.40
1:A:68:ASN:HB3	1:A:94:ARG:HH12	1.81	0.40
1:A:206:HIS:HB3	1:D:314:GLY:HA3	2.03	0.40
1:D:85:TYR:CZ	1:D:89:GLN:HG3	2.56	0.40
1:D:98:LEU:HB3	1:D:175:ASP:OD2	2.20	0.40
1:D:223:MET:HB3	1:D:238:LEU:CD2	2.51	0.40
1:E:109:PHE:CD2	1:E:110:LEU:N	2.89	0.40
1:F:175:ASP:O	1:F:176:LYS:C	2.60	0.40
1:F:178:LEU:O	1:F:181:LEU:HG	2.21	0.40
1:F:196:ILE:HD13	1:F:196:ILE:HG21	1.89	0.40
1:F:300:GLY:CA	1:H:301:GLY:H	2.34	0.40
1:G:57:ALA:CA	1:G:349:LYS:CE	2.97	0.40
1:G:265:ALA:C	1:G:267:TRP:N	2.74	0.40
1:H:248:ASP:OD2	3:H:402:A1D48:N17	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:270:ARG:O	1:H:274:ILE:HD12	2.20	0.40
1:I:207:TRP:CD1	1:I:207:TRP:C	2.94	0.40
1:J:137:LEU:O	1:J:167:MET:HE1	2.21	0.40
1:K:351:LEU:O	1:K:355:VAL:HG23	2.21	0.40
3:K:402:A1D48:O01	3:K:402:A1D48:C21	2.69	0.40
1:L:224:ALA:N	1:L:238:LEU:HG	2.37	0.40
1:L:289:LEU:O	1:L:292:ARG:HG3	2.21	0.40
1:B:136:VAL:HA	1:B:194:GLN:O	2.21	0.40
1:B:175:ASP:O	1:B:176:LYS:C	2.57	0.40
1:A:170:LEU:C	1:A:170:LEU:HD23	2.41	0.40
1:C:148:HIS:CD2	1:C:153:VAL:HG22	2.57	0.40
1:D:36:TRP:HA	1:D:39:GLU:HG3	2.04	0.40
1:D:65:MET:O	1:D:66:TRP:C	2.59	0.40
1:G:157:ALA:CB	1:G:334:ASP:O	2.68	0.40
1:G:251:GLY:HA2	1:G:344:ILE:HD11	2.03	0.40
1:G:261:PHE:HB2	1:G:264:SER:OG	2.21	0.40
1:G:270:ARG:O	1:G:274:ILE:HD12	2.21	0.40
3:H:402:A1D48:C21	3:H:402:A1D48:O01	2.69	0.40
1:I:340:ASP:OD2	1:I:343:THR:OG1	2.33	0.40
1:J:41:ASN:OD1	1:J:41:ASN:N	2.54	0.40
1:J:88:ARG:CG	1:J:123:ILE:HD11	2.44	0.40
1:J:168:LEU:O	1:J:169:GLU:C	2.59	0.40
1:J:169:GLU:O	1:J:170:LEU:C	2.57	0.40
1:J:312:ARG:NH1	1:J:313:ARG:NH1	2.70	0.40
1:K:40:LYS:HB3	1:K:242:ASP:CG	2.42	0.40
1:L:95:ILE:O	1:L:95:ILE:HG22	2.20	0.40
1:B:84:SER:O	1:B:88:ARG:HB2	2.22	0.40
1:C:270:ARG:O	1:C:274:ILE:HG13	2.21	0.40
1:F:100:ALA:HA	1:F:179:LEU:CD1	2.47	0.40
1:H:69:ASP:O	1:H:72:PRO:HD2	2.21	0.40
1:H:279:HIS:CD2	1:H:287:HIS:O	2.75	0.40
1:I:36:TRP:CE2	1:I:37:PRO:HG3	2.56	0.40
1:J:36:TRP:CH2	1:J:132:LYS:O	2.74	0.40
1:J:197:PHE:CD1	1:J:197:PHE:N	2.89	0.40
1:J:353:VAL:O	1:J:354:PHE:C	2.60	0.40
1:K:74:LEU:CD2	1:K:336:GLU:HB2	2.51	0.40
1:K:250:ILE:CG2	1:K:251:GLY:N	2.84	0.40
1:L:62:ILE:O	1:L:62:ILE:HG13	2.20	0.40
1:B:61:SER:OG	1:B:64:GLU:HG2	2.22	0.40
1:B:106:ILE:HG22	1:B:107:ASP:N	2.36	0.40
1:C:158:THR:O	1:C:249:LEU:HA	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:169:GLU:O	1:C:169:GLU:CG	2.70	0.40
1:F:211:ASP:HA	1:F:214:TYR:OH	2.21	0.40
1:F:328:VAL:C	1:F:329:TRP:O	2.59	0.40
1:G:70:LEU:O	1:G:70:LEU:HD12	2.22	0.40
1:I:100:ALA:HB2	1:I:175:ASP:OD1	2.21	0.40
1:I:201:GLU:CG	1:I:306:ASP:OD1	2.69	0.40
1:L:92:MET:HE1	1:L:106:ILE:HD11	2.01	0.40
1:L:138:ALA:O	1:L:246:LEU:HD12	2.21	0.40
1:L:149:TRP:O	1:L:152:ARG:CB	2.69	0.40
1:L:174:LEU:CD2	1:L:356:LEU:HD11	2.51	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	319/329 (97%)	276 (86%)	33 (10%)	10 (3%)	4 13
1	B	319/329 (97%)	288 (90%)	27 (8%)	4 (1%)	12 34
1	C	319/329 (97%)	283 (89%)	30 (9%)	6 (2%)	8 24
1	D	319/329 (97%)	285 (89%)	26 (8%)	8 (2%)	5 18
1	E	319/329 (97%)	271 (85%)	36 (11%)	12 (4%)	3 10
1	F	319/329 (97%)	282 (88%)	28 (9%)	9 (3%)	5 15
1	G	319/329 (97%)	253 (79%)	50 (16%)	16 (5%)	2 6
1	H	319/329 (97%)	269 (84%)	37 (12%)	13 (4%)	3 8
1	I	319/329 (97%)	268 (84%)	43 (14%)	8 (2%)	5 18
1	J	319/329 (97%)	236 (74%)	56 (18%)	27 (8%)	1 1
1	K	319/329 (97%)	275 (86%)	32 (10%)	12 (4%)	3 10
1	L	319/329 (97%)	262 (82%)	44 (14%)	13 (4%)	3 8

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	3828/3948 (97%)	3248 (85%)	442 (12%)	138 (4%)	3 11

All (138) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	34	SER
1	A	81	SER
1	A	131	ALA
1	A	132	LYS
1	A	147	SER
1	A	180	SER
1	D	131	ALA
1	D	132	LYS
1	D	180	SER
1	D	207	TRP
1	D	212	SER
1	D	232	ALA
1	E	100	ALA
1	E	131	ALA
1	E	180	SER
1	F	329	TRP
1	F	330	HIS
1	G	91	ILE
1	G	131	ALA
1	G	147	SER
1	G	150	ASN
1	G	207	TRP
1	G	212	SER
1	G	326	PRO
1	G	341	GLU
1	H	100	ALA
1	H	213	LEU
1	H	296	ASN
1	H	341	GLU
1	I	297	TYR
1	I	298	SER
1	J	35	ALA
1	J	128	ASN
1	J	131	ALA
1	J	179	LEU
1	J	297	TYR
1	J	355	VAL

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Mol	Chain	Res	Type
1	K	34	SER
1	K	213	LEU
1	L	131	ALA
1	L	132	LYS
1	L	161	ALA
1	L	237	GLN
1	C	180	SER
1	C	306	ASP
1	D	156	GLY
1	D	280	GLU
1	E	150	ASN
1	E	175	ASP
1	F	156	GLY
1	F	179	LEU
1	F	212	SER
1	G	92	MET
1	G	132	LYS
1	G	156	GLY
1	G	296	ASN
1	H	47	ILE
1	H	156	GLY
1	H	173	ALA
1	H	294	PHE
1	H	348	ASN
1	I	50	SER
1	I	179	LEU
1	I	320	LEU
1	J	74	LEU
1	J	155	VAL
1	J	198	PHE
1	J	212	SER
1	J	332	MET
1	J	348	ASN
1	K	179	LEU
1	K	292	ARG
1	L	40	LYS
1	L	162	VAL
1	L	200	GLY
1	L	224	ALA
1	L	292	ARG
1	A	39	GLU
1	A	242	ASP

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Mol	Chain	Res	Type
1	C	230	PRO
1	C	254	ASN
1	E	213	LEU
1	E	306	ASP
1	F	207	TRP
1	H	172	ARG
1	H	234	GLY
1	H	329	TRP
1	J	122	ASN
1	J	200	GLY
1	J	255	PRO
1	J	280	GLU
1	J	306	ASP
1	J	329	TRP
1	K	106	ILE
1	K	128	ASN
1	K	254	ASN
1	L	306	ASP
1	L	312	ARG
1	B	81	SER
1	B	220	ALA
1	A	207	TRP
1	A	300	GLY
1	C	81	SER
1	E	99	GLN
1	E	128	ASN
1	E	132	LYS
1	E	156	GLY
1	F	332	MET
1	G	286	ASP
1	H	346	ASN
1	I	236	SER
1	J	36	TRP
1	J	337	GLU
1	K	129	PRO
1	K	306	ASP
1	B	232	ALA
1	C	207	TRP
1	E	360	HIS
1	F	175	ASP
1	G	343	THR
1	I	230	PRO

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Mol	Chain	Res	Type
1	I	329	TRP
1	J	208	SER
1	J	254	ASN
1	J	266	ARG
1	K	330	HIS
1	K	333	ASP
1	L	179	LEU
1	F	213	LEU
1	J	207	TRP
1	L	262	PRO
1	A	230	PRO
1	G	240	GLY
1	J	62	ILE
1	G	251	GLY
1	J	326	PRO
1	K	208	SER
1	J	350	ILE

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	284/290 (98%)	264 (93%)	20 (7%)	15 39
1	B	284/290 (98%)	263 (93%)	21 (7%)	13 36
1	C	284/290 (98%)	263 (93%)	21 (7%)	13 36
1	D	284/290 (98%)	268 (94%)	16 (6%)	21 49
1	E	284/290 (98%)	256 (90%)	28 (10%)	8 22
1	F	284/290 (98%)	261 (92%)	23 (8%)	11 32
1	G	284/290 (98%)	246 (87%)	38 (13%)	4 11
1	H	284/290 (98%)	260 (92%)	24 (8%)	10 30
1	I	284/290 (98%)	254 (89%)	30 (11%)	6 19
1	J	284/290 (98%)	251 (88%)	33 (12%)	5 16
1	K	284/290 (98%)	251 (88%)	33 (12%)	5 16

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	L	284/290 (98%)	261 (92%)	23 (8%)	11 32
All	All	3408/3480 (98%)	3098 (91%)	310 (9%)	9 26

All (310) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	50	SER
1	B	51	SER
1	B	71	GLN
1	B	75	ILE
1	B	97	ARG
1	B	111	SER
1	B	130	THR
1	B	148	HIS
1	B	152	ARG
1	B	179	LEU
1	B	180	SER
1	B	206	HIS
1	B	208	SER
1	B	242	ASP
1	B	283	LEU
1	B	284	LEU
1	B	290	GLU
1	B	292	ARG
1	B	297	TYR
1	B	312	ARG
1	B	313	ARG
1	A	51	SER
1	A	71	GLN
1	A	75	ILE
1	A	97	ARG
1	A	104	LEU
1	A	105	GLU
1	A	111	SER
1	A	130	THR
1	A	132	LYS
1	A	143	SER
1	A	179	LEU
1	A	180	SER
1	A	191	LEU
1	A	207	TRP
1	A	242	ASP

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Mol	Chain	Res	Type
1	A	284	LEU
1	A	297	TYR
1	A	312	ARG
1	A	327	GLU
1	A	342	SER
1	C	50	SER
1	C	51	SER
1	C	63	SER
1	C	70	LEU
1	C	92	MET
1	C	97	ARG
1	C	106	ILE
1	C	110	LEU
1	C	121	SER
1	C	130	THR
1	C	143	SER
1	C	155	VAL
1	C	160	SER
1	C	180	SER
1	C	204	PHE
1	C	284	LEU
1	C	295	GLN
1	C	297	TYR
1	C	303	ILE
1	C	312	ARG
1	C	342	SER
1	D	44	GLN
1	D	51	SER
1	D	71	GLN
1	D	84	SER
1	D	97	ARG
1	D	105	GLU
1	D	132	LYS
1	D	147	SER
1	D	148	HIS
1	D	160	SER
1	D	179	LEU
1	D	180	SER
1	D	205	LEU
1	D	206	HIS
1	D	283	LEU
1	D	295	GLN

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Mol	Chain	Res	Type
1	E	47	ILE
1	E	51	SER
1	E	61	SER
1	E	63	SER
1	E	71	GLN
1	E	84	SER
1	E	92	MET
1	E	101	ASP
1	E	105	GLU
1	E	110	LEU
1	E	121	SER
1	E	137	LEU
1	E	139	CYS
1	E	143	SER
1	E	148	HIS
1	E	160	SER
1	E	175	ASP
1	E	179	LEU
1	E	180	SER
1	E	191	LEU
1	E	201	GLU
1	E	242	ASP
1	E	270	ARG
1	E	283	LEU
1	E	284	LEU
1	E	297	TYR
1	E	312	ARG
1	E	321	ILE
1	F	51	SER
1	F	61	SER
1	F	70	LEU
1	F	84	SER
1	F	97	ARG
1	F	112	GLN
1	F	121	SER
1	F	137	LEU
1	F	147	SER
1	F	148	HIS
1	F	150	ASN
1	F	151	ASN
1	F	160	SER
1	F	180	SER

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Mol	Chain	Res	Type
1	F	182	LYS
1	F	205	LEU
1	F	284	LEU
1	F	285	LYS
1	F	288	SER
1	F	290	GLU
1	F	296	ASN
1	F	297	TYR
1	F	342	SER
1	G	34	SER
1	G	47	ILE
1	G	51	SER
1	G	53	LEU
1	G	61	SER
1	G	68	ASN
1	G	74	LEU
1	G	92	MET
1	G	105	GLU
1	G	125	SER
1	G	128	ASN
1	G	130	THR
1	G	133	ARG
1	G	137	LEU
1	G	140	HIS
1	G	147	SER
1	G	151	ASN
1	G	179	LEU
1	G	180	SER
1	G	182	LYS
1	G	226	THR
1	G	243	LEU
1	G	263	ASN
1	G	281	LEU
1	G	284	LEU
1	G	286	ASP
1	G	288	SER
1	G	290	GLU
1	G	292	ARG
1	G	295	GLN
1	G	297	TYR
1	G	298	SER
1	G	312	ARG

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Mol	Chain	Res	Type
1	G	318	LEU
1	G	319	HIS
1	G	323	SER
1	G	338	ASN
1	G	349	LYS
1	H	40	LYS
1	H	53	LEU
1	H	55	GLN
1	H	61	SER
1	H	65	MET
1	H	67	GLN
1	H	74	LEU
1	H	84	SER
1	H	92	MET
1	H	94	ARG
1	H	101	ASP
1	H	104	LEU
1	H	137	LEU
1	H	147	SER
1	H	158	THR
1	H	175	ASP
1	H	179	LEU
1	H	182	LYS
1	H	208	SER
1	H	259	ASN
1	H	290	GLU
1	H	297	TYR
1	H	312	ARG
1	H	328	VAL
1	I	47	ILE
1	I	51	SER
1	I	60	THR
1	I	67	GLN
1	I	69	ASP
1	I	74	LEU
1	I	92	MET
1	I	94	ARG
1	I	97	ARG
1	I	105	GLU
1	I	129	PRO
1	I	130	THR
1	I	143	SER

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Mol	Chain	Res	Type
1	I	147	SER
1	I	151	ASN
1	I	158	THR
1	I	180	SER
1	I	182	LYS
1	I	190	ASP
1	I	197	PHE
1	I	201	GLU
1	I	206	HIS
1	I	208	SER
1	I	269	GLU
1	I	281	LEU
1	I	288	SER
1	I	289	LEU
1	I	297	TYR
1	I	331	THR
1	I	338	ASN
1	J	36	TRP
1	J	39	GLU
1	J	47	ILE
1	J	58	GLU
1	J	60	THR
1	J	61	SER
1	J	67	GLN
1	J	70	LEU
1	J	97	ARG
1	J	119	SER
1	J	121	SER
1	J	133	ARG
1	J	143	SER
1	J	150	ASN
1	J	158	THR
1	J	160	SER
1	J	180	SER
1	J	182	LYS
1	J	201	GLU
1	J	208	SER
1	J	216	SER
1	J	242	ASP
1	J	256	THR
1	J	259	ASN
1	J	263	ASN

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Mol	Chain	Res	Type
1	J	290	GLU
1	J	296	ASN
1	J	312	ARG
1	J	323	SER
1	J	327	GLU
1	J	328	VAL
1	J	342	SER
1	J	343	THR
1	K	50	SER
1	K	51	SER
1	K	61	SER
1	K	63	SER
1	K	67	GLN
1	K	70	LEU
1	K	71	GLN
1	K	94	ARG
1	K	97	ARG
1	K	107	ASP
1	K	118	ARG
1	K	121	SER
1	K	141	TYR
1	K	143	SER
1	K	158	THR
1	K	160	SER
1	K	175	ASP
1	K	180	SER
1	K	182	LYS
1	K	197	PHE
1	K	208	SER
1	K	216	SER
1	K	242	ASP
1	K	256	THR
1	K	284	LEU
1	K	285	LYS
1	K	290	GLU
1	K	297	TYR
1	K	312	ARG
1	K	323	SER
1	K	326	PRO
1	K	328	VAL
1	K	341	GLU
1	L	40	LYS

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Mol	Chain	Res	Type
1	L	41	ASN
1	L	47	ILE
1	L	51	SER
1	L	60	THR
1	L	67	GLN
1	L	94	ARG
1	L	105	GLU
1	L	107	ASP
1	L	108	THR
1	L	113	THR
1	L	128	ASN
1	L	130	THR
1	L	137	LEU
1	L	143	SER
1	L	147	SER
1	L	160	SER
1	L	180	SER
1	L	182	LYS
1	L	242	ASP
1	L	285	LYS
1	L	312	ARG
1	L	331	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	218	HIS
1	F	112	GLN
1	I	259	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 24 ligands modelled in this entry, 12 are monoatomic - leaving 12 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
3	A1D48	D	402	2	22,24,24	2.54	10 (45%)	27,35,35	2.39	6 (22%)
3	A1D48	H	402	2	22,24,24	2.63	8 (36%)	27,35,35	1.89	8 (29%)
3	A1D48	I	402	2	22,24,24	2.71	7 (31%)	27,35,35	1.93	3 (11%)
3	A1D48	K	402	2	22,24,24	2.55	8 (36%)	27,35,35	2.04	6 (22%)
3	A1D48	B	402	2	22,24,24	2.49	7 (31%)	27,35,35	2.00	6 (22%)
3	A1D48	J	402	2	22,24,24	2.61	7 (31%)	27,35,35	2.21	9 (33%)
3	A1D48	C	402	2	22,24,24	2.66	8 (36%)	27,35,35	1.79	5 (18%)
3	A1D48	F	402	2	22,24,24	2.69	9 (40%)	27,35,35	2.21	7 (25%)
3	A1D48	A	402	2	22,24,24	2.56	7 (31%)	27,35,35	2.38	6 (22%)
3	A1D48	L	402	2	22,24,24	2.45	9 (40%)	27,35,35	1.85	5 (18%)
3	A1D48	E	402	2	22,24,24	2.66	8 (36%)	27,35,35	2.03	7 (25%)
3	A1D48	G	402	2	22,24,24	2.89	10 (45%)	27,35,35	2.08	4 (14%)

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
3	A1D48	D	402	2	-	2/4/16/16	0/4/4/4
3	A1D48	H	402	2	-	2/4/16/16	0/4/4/4
3	A1D48	I	402	2	-	2/4/16/16	0/4/4/4
3	A1D48	K	402	2	-	2/4/16/16	0/4/4/4

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	A1D48	B	402	2	-	1/4/16/16	0/4/4/4
3	A1D48	J	402	2	-	0/4/16/16	0/4/4/4
3	A1D48	C	402	2	-	2/4/16/16	0/4/4/4
3	A1D48	F	402	2	-	2/4/16/16	0/4/4/4
3	A1D48	A	402	2	-	2/4/16/16	0/4/4/4
3	A1D48	L	402	2	-	2/4/16/16	0/4/4/4
3	A1D48	E	402	2	-	2/4/16/16	0/4/4/4
3	A1D48	G	402	2	-	0/4/16/16	0/4/4/4

All (98) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	G	402	A1D48	C02-N11	7.88	1.44	1.36
3	J	402	A1D48	C02-N11	7.75	1.44	1.36
3	E	402	A1D48	C02-N11	7.25	1.43	1.36
3	G	402	A1D48	C10-N11	7.19	1.51	1.38
3	F	402	A1D48	C02-N11	7.10	1.43	1.36
3	I	402	A1D48	C02-N11	6.83	1.43	1.36
3	H	402	A1D48	C02-N11	6.79	1.43	1.36
3	F	402	A1D48	C10-N11	6.58	1.50	1.38
3	J	402	A1D48	C10-N11	6.47	1.50	1.38
3	K	402	A1D48	C10-N11	6.39	1.50	1.38
3	A	402	A1D48	C02-N11	6.38	1.43	1.36
3	A	402	A1D48	C10-N11	6.36	1.50	1.38
3	H	402	A1D48	C10-N11	6.29	1.50	1.38
3	L	402	A1D48	C02-N11	6.25	1.42	1.36
3	C	402	A1D48	C10-N11	6.23	1.50	1.38
3	C	402	A1D48	C02-N11	6.17	1.42	1.36
3	I	402	A1D48	C10-N11	6.07	1.49	1.38
3	E	402	A1D48	C10-N11	6.01	1.49	1.38
3	B	402	A1D48	C02-N11	5.84	1.42	1.36
3	L	402	A1D48	C10-N11	5.73	1.49	1.38
3	K	402	A1D48	C02-N11	5.68	1.42	1.36
3	D	402	A1D48	C10-N11	5.66	1.49	1.38
3	B	402	A1D48	C10-N11	5.48	1.48	1.38
3	D	402	A1D48	C02-N11	4.63	1.41	1.36
3	C	402	A1D48	C03-C02	-4.40	1.44	1.50
3	B	402	A1D48	O01-C02	-4.13	1.15	1.23
3	A	402	A1D48	O01-C02	-4.09	1.15	1.23
3	E	402	A1D48	O01-C02	-4.07	1.15	1.23
3	D	402	A1D48	C21-C20	-3.97	1.35	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	I	402	A1D48	O01-C02	-3.93	1.16	1.23
3	C	402	A1D48	O01-C02	-3.90	1.16	1.23
3	K	402	A1D48	O01-C02	-3.77	1.16	1.23
3	I	402	A1D48	C13-C12	3.70	1.54	1.46
3	H	402	A1D48	O01-C02	-3.58	1.16	1.23
3	D	402	A1D48	O01-C02	-3.51	1.16	1.23
3	I	402	A1D48	C03-C02	-3.48	1.45	1.50
3	B	402	A1D48	C03-C02	-3.44	1.45	1.50
3	D	402	A1D48	C13-C12	3.42	1.53	1.46
3	G	402	A1D48	C03-C02	-3.36	1.45	1.50
3	L	402	A1D48	O01-C02	-3.29	1.17	1.23
3	K	402	A1D48	C16-C20	-3.27	1.31	1.42
3	I	402	A1D48	C04-C03	3.21	1.52	1.45
3	G	402	A1D48	C12-C03	-3.21	1.29	1.34
3	F	402	A1D48	C12-C03	-3.20	1.29	1.34
3	L	402	A1D48	C16-C20	-3.14	1.32	1.42
3	K	402	A1D48	C03-C02	-3.11	1.46	1.50
3	D	402	A1D48	C16-N17	-3.10	1.29	1.38
3	F	402	A1D48	O01-C02	-3.09	1.17	1.23
3	E	402	A1D48	C03-C02	-3.08	1.46	1.50
3	G	402	A1D48	C16-C20	-3.03	1.32	1.42
3	H	402	A1D48	C16-C20	-2.99	1.32	1.42
3	E	402	A1D48	C16-C20	-2.98	1.32	1.42
3	L	402	A1D48	C13-C12	2.96	1.52	1.46
3	B	402	A1D48	C04-C05	-2.96	1.36	1.41
3	C	402	A1D48	C12-C03	-2.95	1.30	1.34
3	B	402	A1D48	C16-C20	-2.94	1.32	1.42
3	C	402	A1D48	C16-C20	-2.94	1.32	1.42
3	F	402	A1D48	C16-C20	-2.88	1.32	1.42
3	I	402	A1D48	C16-C20	-2.88	1.32	1.42
3	A	402	A1D48	C03-C02	-2.88	1.46	1.50
3	F	402	A1D48	C04-C05	-2.87	1.36	1.41
3	J	402	A1D48	O01-C02	-2.85	1.18	1.23
3	D	402	A1D48	C09-C10	-2.81	1.35	1.39
3	A	402	A1D48	C16-C20	-2.76	1.33	1.42
3	K	402	A1D48	C12-C03	-2.76	1.30	1.34
3	H	402	A1D48	C20-N19	-2.73	1.30	1.38
3	G	402	A1D48	O01-C02	-2.67	1.18	1.23
3	E	402	A1D48	C04-C05	-2.63	1.37	1.41
3	H	402	A1D48	C03-C02	-2.51	1.46	1.50
3	G	402	A1D48	C16-N17	-2.49	1.30	1.38
3	B	402	A1D48	C13-C12	2.48	1.51	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	402	A1D48	C12-C03	-2.47	1.30	1.34
3	F	402	A1D48	C03-C02	-2.47	1.47	1.50
3	L	402	A1D48	C03-C02	-2.45	1.47	1.50
3	D	402	A1D48	C04-C05	-2.43	1.37	1.41
3	G	402	A1D48	C13-C12	2.40	1.51	1.46
3	J	402	A1D48	C12-C03	-2.39	1.31	1.34
3	C	402	A1D48	C04-C03	2.38	1.50	1.45
3	D	402	A1D48	C16-C20	-2.32	1.34	1.42
3	K	402	A1D48	C13-C12	2.30	1.51	1.46
3	A	402	A1D48	C12-C03	-2.30	1.31	1.34
3	J	402	A1D48	C16-C20	-2.29	1.34	1.42
3	C	402	A1D48	C13-C12	2.24	1.51	1.46
3	G	402	A1D48	C21-C20	-2.22	1.38	1.41
3	K	402	A1D48	C04-C03	2.19	1.50	1.45
3	J	402	A1D48	C04-C03	2.18	1.50	1.45
3	A	402	A1D48	C20-N19	-2.17	1.31	1.38
3	F	402	A1D48	C20-N19	-2.16	1.32	1.38
3	L	402	A1D48	C12-C03	-2.13	1.31	1.34
3	H	402	A1D48	C12-C03	-2.11	1.31	1.34
3	G	402	A1D48	C04-C03	2.11	1.49	1.45
3	L	402	A1D48	C04-C03	2.11	1.49	1.45
3	L	402	A1D48	O06-C05	2.10	1.40	1.36
3	H	402	A1D48	C13-C12	2.10	1.50	1.46
3	F	402	A1D48	C16-N17	-2.07	1.32	1.38
3	J	402	A1D48	O06-C05	2.06	1.40	1.36
3	D	402	A1D48	C04-C10	-2.04	1.38	1.41
3	E	402	A1D48	C13-C12	2.04	1.50	1.46

All (72) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	D	402	A1D48	C10-N11-C02	-8.00	106.36	111.38
3	A	402	A1D48	C10-N11-C02	-7.78	106.50	111.38
3	K	402	A1D48	C10-N11-C02	-6.79	107.11	111.38
3	I	402	A1D48	C10-N11-C02	-6.74	107.14	111.38
3	G	402	A1D48	C04-C03-C02	6.67	109.10	105.31
3	F	402	A1D48	C10-N11-C02	-6.52	107.29	111.38
3	E	402	A1D48	C10-N11-C02	-6.33	107.40	111.38
3	L	402	A1D48	C10-N11-C02	-6.28	107.43	111.38
3	J	402	A1D48	C10-N11-C02	-6.10	107.55	111.38
3	B	402	A1D48	C10-N11-C02	-6.03	107.59	111.38
3	H	402	A1D48	C10-N11-C02	-5.77	107.76	111.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	402	A1D48	C10-N11-C02	-5.27	108.07	111.38
3	I	402	A1D48	C03-C02-N11	5.18	109.78	106.88
3	G	402	A1D48	C10-N11-C02	-5.02	108.22	111.38
3	D	402	A1D48	O01-C02-N11	-4.94	118.52	126.36
3	F	402	A1D48	C04-C03-C02	4.93	108.11	105.31
3	A	402	A1D48	C10-C04-C05	4.82	122.34	117.82
3	K	402	A1D48	C04-C03-C02	4.75	108.01	105.31
3	C	402	A1D48	C04-C03-C02	4.74	108.00	105.31
3	J	402	A1D48	C04-C03-C02	4.70	107.98	105.31
3	F	402	A1D48	C10-C04-C05	4.41	121.95	117.82
3	B	402	A1D48	C03-C02-N11	4.41	109.35	106.88
3	J	402	A1D48	C10-C04-C05	4.23	121.79	117.82
3	A	402	A1D48	C03-C02-N11	4.22	109.25	106.88
3	E	402	A1D48	C03-C02-N11	3.83	109.03	106.88
3	D	402	A1D48	C03-C02-N11	3.80	109.01	106.88
3	B	402	A1D48	C10-C04-C05	3.66	121.25	117.82
3	D	402	A1D48	O01-C02-C03	3.61	132.45	127.71
3	A	402	A1D48	C12-C03-C02	3.57	134.32	119.96
3	L	402	A1D48	C03-C02-N11	3.54	108.86	106.88
3	E	402	A1D48	C10-C04-C05	3.50	121.10	117.82
3	F	402	A1D48	C12-C03-C02	3.42	133.70	119.96
3	H	402	A1D48	C10-C04-C05	3.37	120.98	117.82
3	D	402	A1D48	C12-C03-C02	3.29	133.18	119.96
3	G	402	A1D48	C13-C12-C03	-3.23	123.15	129.63
3	E	402	A1D48	C12-C03-C02	3.21	132.87	119.96
3	H	402	A1D48	C04-C03-C02	3.15	107.09	105.31
3	J	402	A1D48	C12-C03-C02	3.09	132.37	119.96
3	B	402	A1D48	C05-C04-C03	-3.06	128.88	136.07
3	B	402	A1D48	C12-C03-C02	3.06	132.25	119.96
3	J	402	A1D48	C14-C13-C21	3.04	122.62	118.58
3	A	402	A1D48	C05-C04-C03	-2.97	129.11	136.07
3	H	402	A1D48	C13-C12-C03	-2.93	123.74	129.63
3	E	402	A1D48	C05-C04-C03	-2.93	129.20	136.07
3	J	402	A1D48	C15-C14-C13	-2.92	116.81	120.90
3	I	402	A1D48	C21-C13-C12	2.91	126.90	118.94
3	L	402	A1D48	O01-C02-N11	-2.89	121.77	126.36
3	K	402	A1D48	C03-C02-N11	2.88	108.50	106.88
3	F	402	A1D48	C05-C04-C03	-2.85	129.38	136.07
3	H	402	A1D48	C12-C03-C02	2.85	131.40	119.96
3	C	402	A1D48	C03-C02-N11	2.68	108.38	106.88
3	A	402	A1D48	C04-C03-C02	2.67	106.82	105.31
3	L	402	A1D48	C12-C03-C02	2.57	130.29	119.96

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	G	402	A1D48	C10-C04-C05	2.57	120.23	117.82
3	L	402	A1D48	C04-C03-C02	2.52	106.74	105.31
3	H	402	A1D48	C03-C02-N11	2.47	108.26	106.88
3	E	402	A1D48	C13-C12-C03	-2.43	124.75	129.63
3	K	402	A1D48	C13-C12-C03	-2.42	124.78	129.63
3	H	402	A1D48	C05-C04-C03	-2.37	130.50	136.07
3	K	402	A1D48	C12-C03-C02	2.35	129.43	119.96
3	F	402	A1D48	C14-C13-C21	2.35	121.70	118.58
3	D	402	A1D48	C14-C15-C16	-2.32	117.92	120.84
3	C	402	A1D48	C10-C04-C05	2.30	119.98	117.82
3	K	402	A1D48	C10-C04-C05	2.29	119.96	117.82
3	J	402	A1D48	C13-C12-C03	-2.27	125.08	129.63
3	J	402	A1D48	C05-C04-C03	-2.18	130.95	136.07
3	J	402	A1D48	O01-C02-N11	-2.11	123.02	126.36
3	C	402	A1D48	O01-C02-C03	-2.10	124.95	127.71
3	H	402	A1D48	O01-C02-N11	-2.08	123.07	126.36
3	B	402	A1D48	C10-C04-C03	2.03	109.87	106.61
3	F	402	A1D48	C13-C12-C03	-2.02	125.57	129.63
3	E	402	A1D48	O01-C02-N11	-2.00	123.19	126.36

There are no chirality outliers.

All (19) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	402	A1D48	C02-C03-C12-C13
3	C	402	A1D48	C02-C03-C12-C13
3	E	402	A1D48	C02-C03-C12-C13
3	F	402	A1D48	C02-C03-C12-C13
3	H	402	A1D48	C02-C03-C12-C13
3	I	402	A1D48	C02-C03-C12-C13
3	K	402	A1D48	C02-C03-C12-C13
3	C	402	A1D48	C04-C03-C12-C13
3	F	402	A1D48	C04-C03-C12-C13
3	K	402	A1D48	C04-C03-C12-C13
3	B	402	A1D48	C02-C03-C12-C13
3	D	402	A1D48	C02-C03-C12-C13
3	L	402	A1D48	C02-C03-C12-C13
3	A	402	A1D48	C04-C03-C12-C13
3	H	402	A1D48	C04-C03-C12-C13
3	D	402	A1D48	C04-C03-C12-C13
3	E	402	A1D48	C04-C03-C12-C13
3	I	402	A1D48	C04-C03-C12-C13

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Mol	Chain	Res	Type	Atoms
3	L	402	A1D48	C04-C03-C12-C13

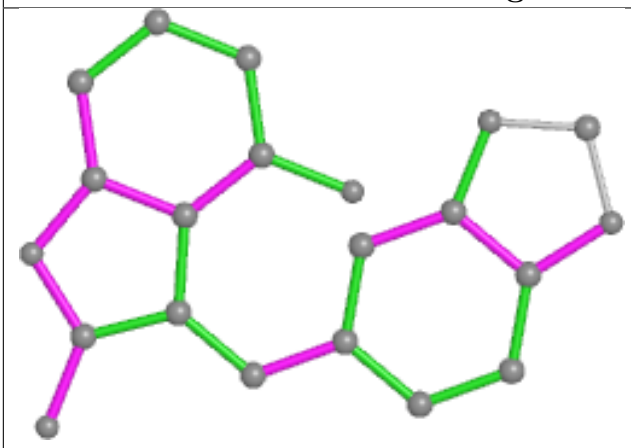
There are no ring outliers.

9 monomers are involved in 15 short contacts:

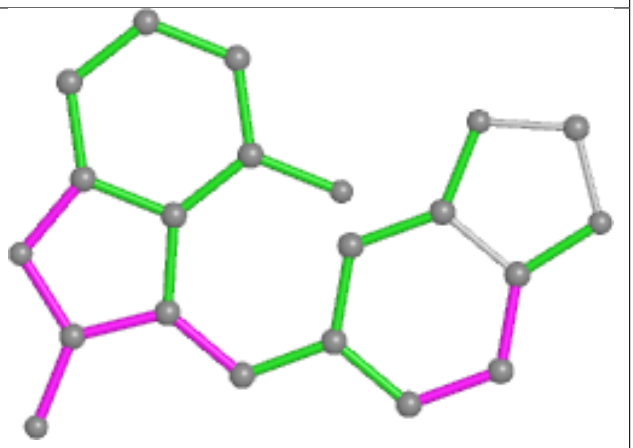
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	H	402	A1D48	2	0
3	I	402	A1D48	3	0
3	K	402	A1D48	2	0
3	B	402	A1D48	1	0
3	J	402	A1D48	1	0
3	A	402	A1D48	1	0
3	L	402	A1D48	2	0
3	E	402	A1D48	1	0
3	G	402	A1D48	2	0

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 then 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.

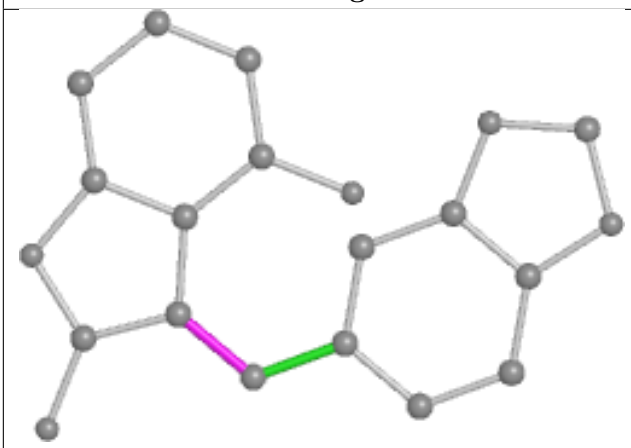
Ligand A1D48 D 402



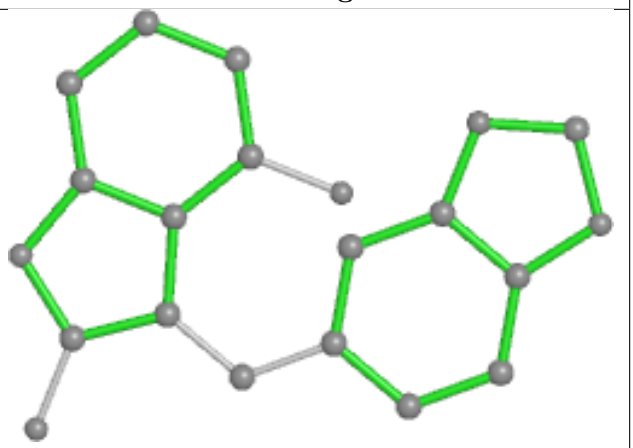
Bond lengths



Bond angles

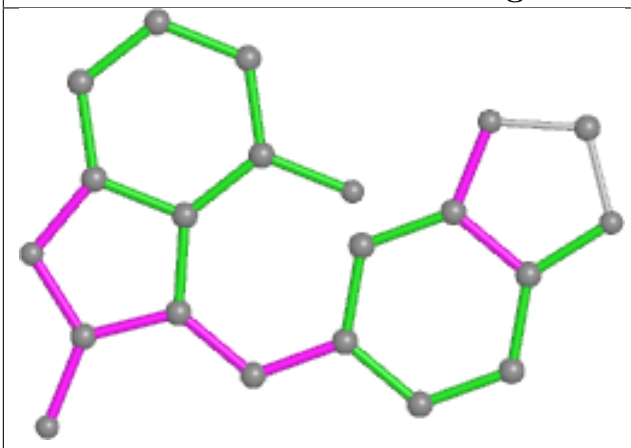


Torsions

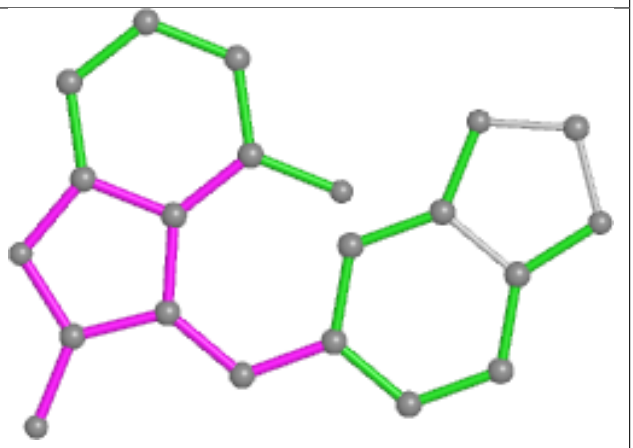


Rings

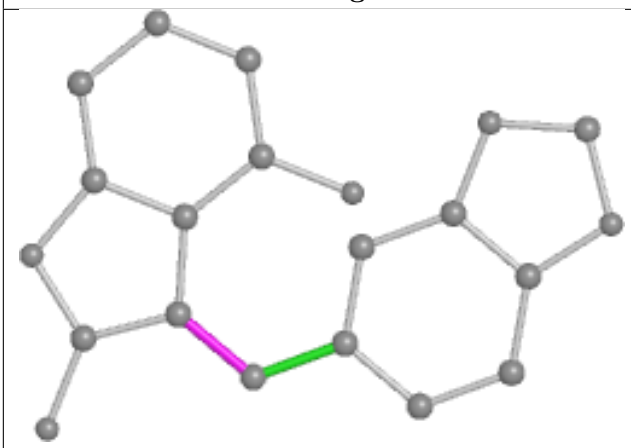
Ligand A1D48 H 402



Bond lengths



Bond angles



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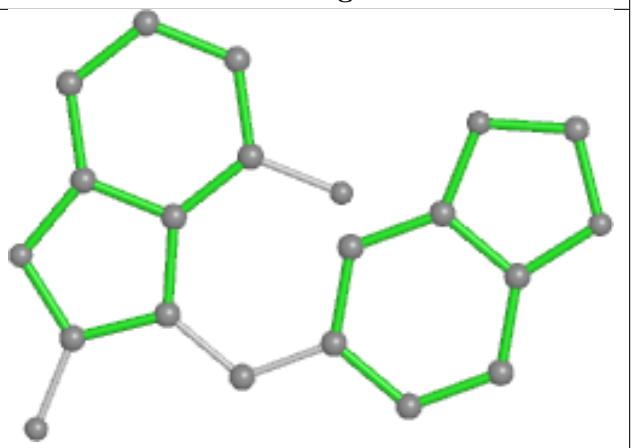
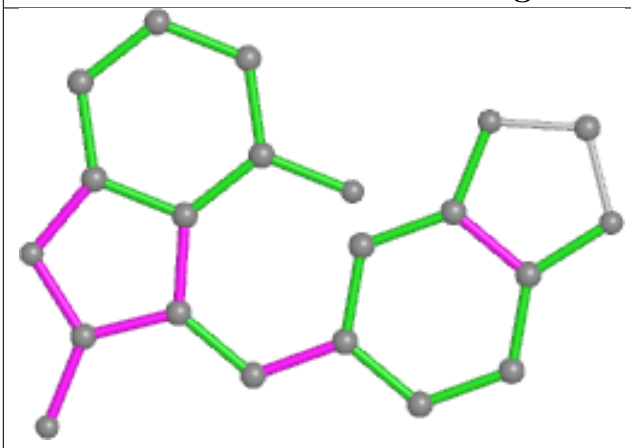
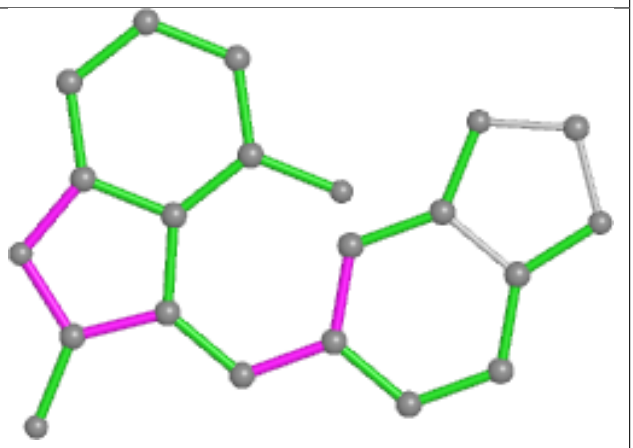


Rings

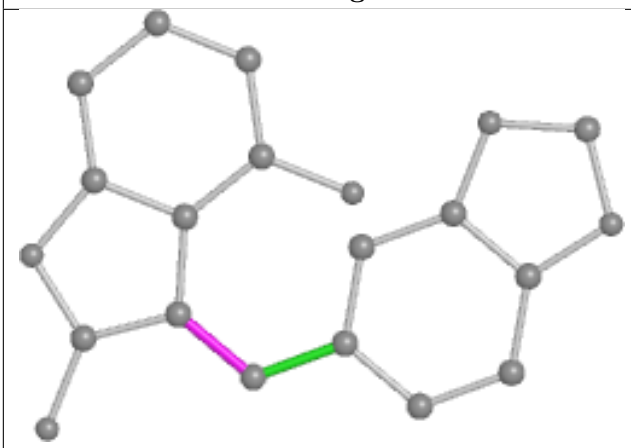
Ligand A1D48 I 402



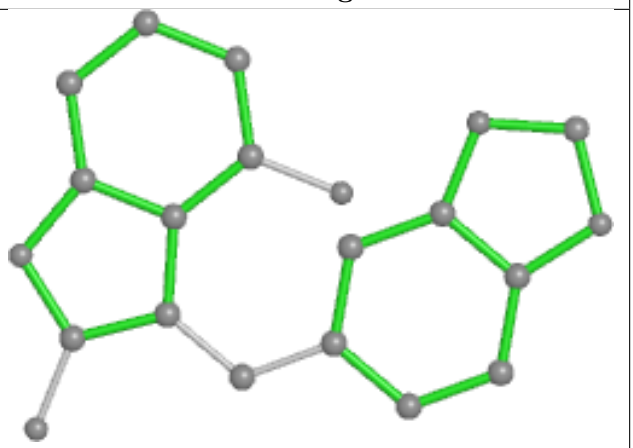
Bond lengths



Bond angles

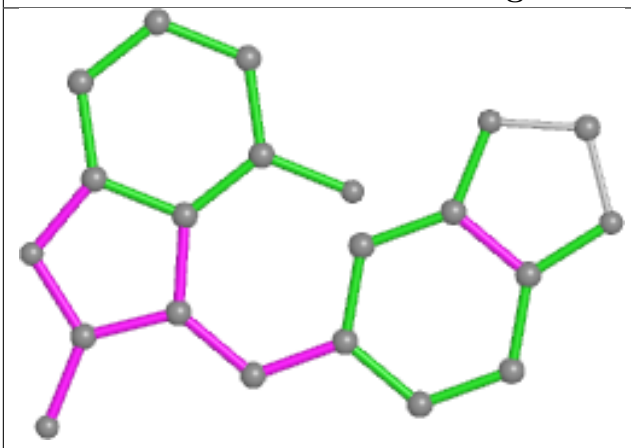


Torsions

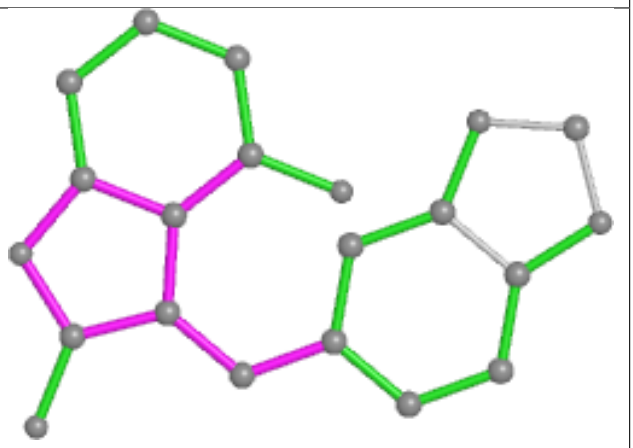


Rings

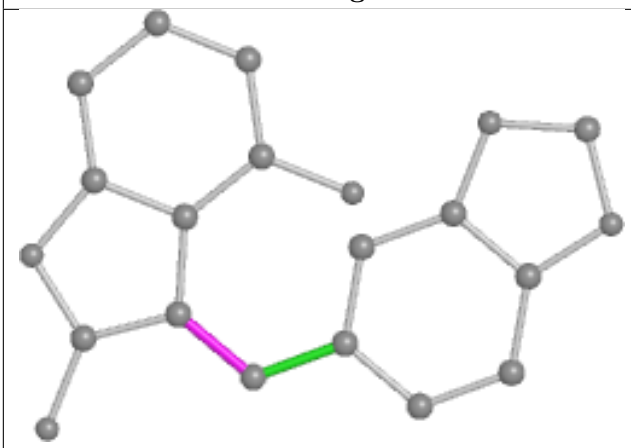
Ligand A1D48 K 402



Bond lengths



Bond angles



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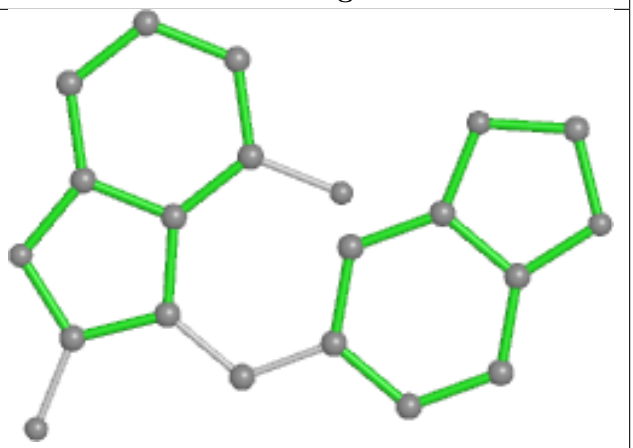
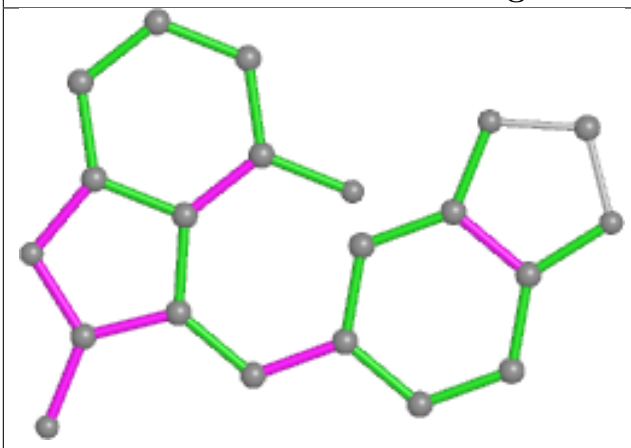


Rings

Ligand A1D48 B 402



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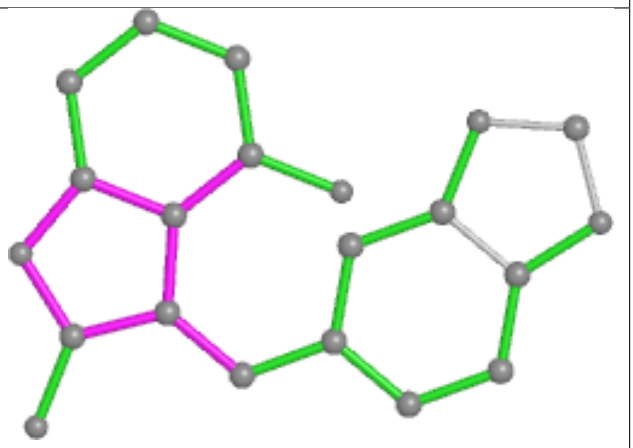
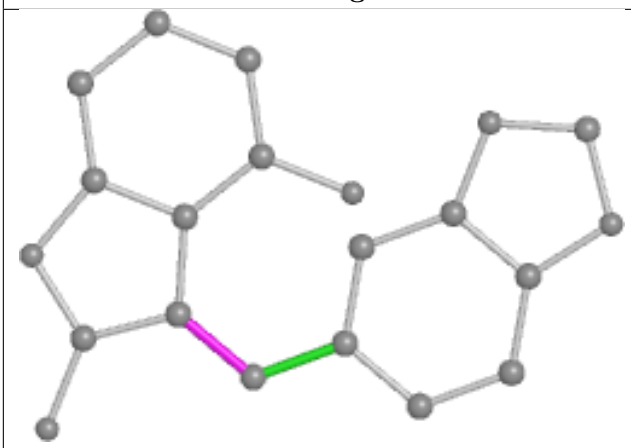


Bond angles



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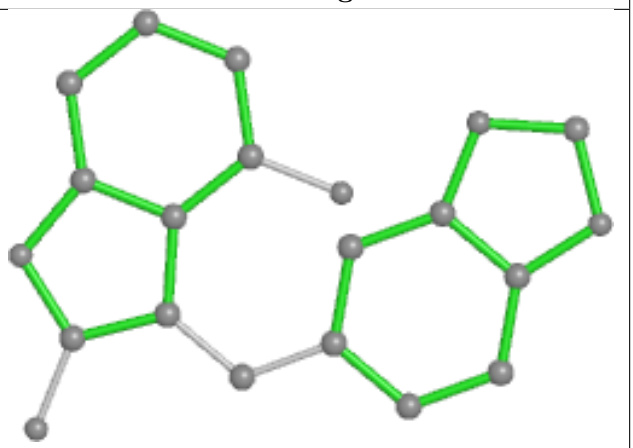
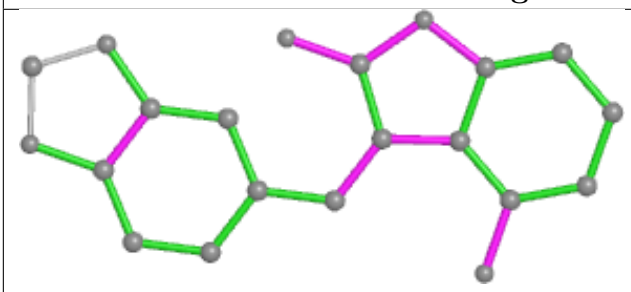


Rings

Ligand A1D48 J 402



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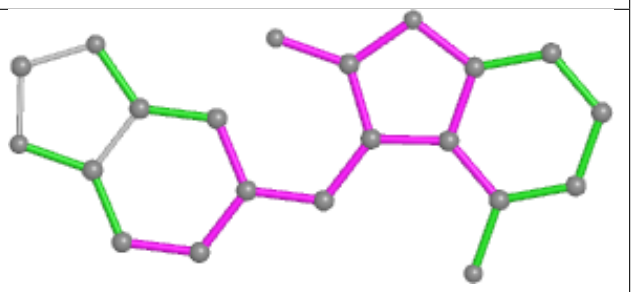
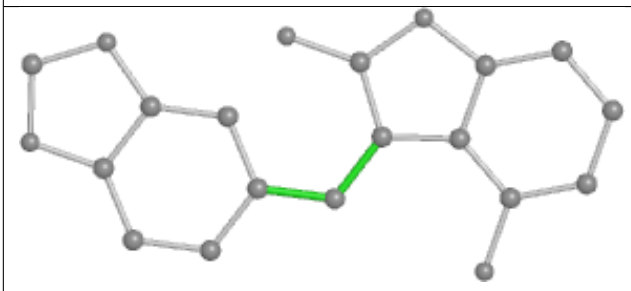


Bond angles



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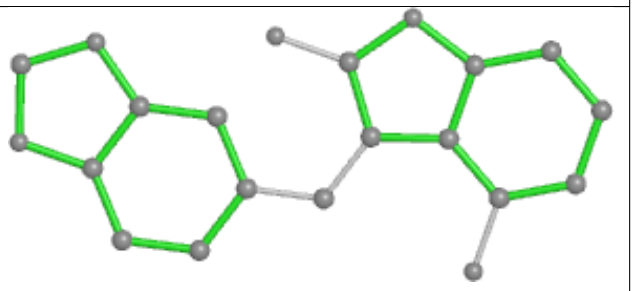
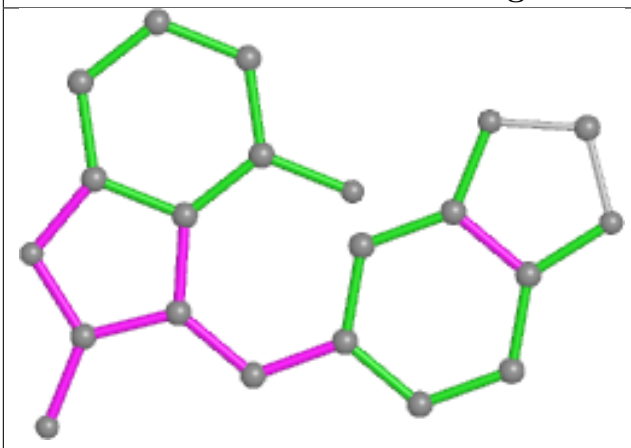


Rings

Ligand A1D48 C 402



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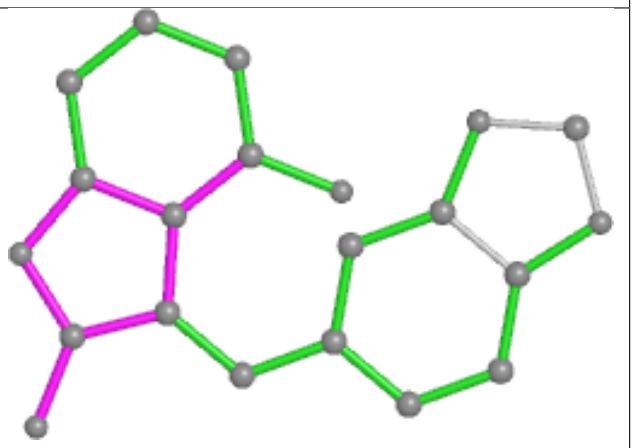
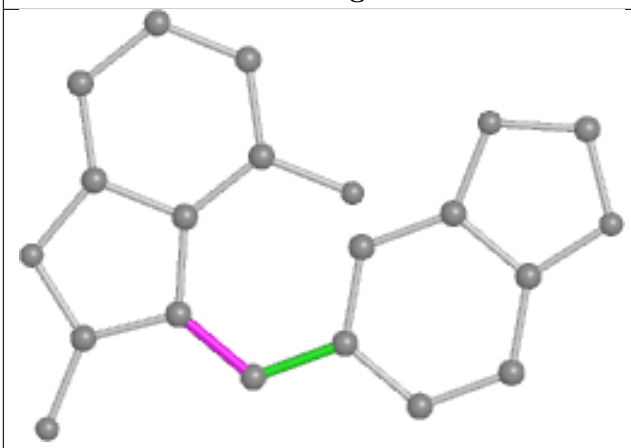


Bond angles



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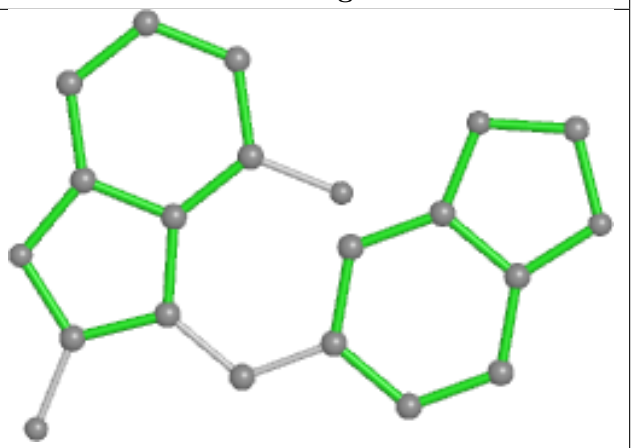
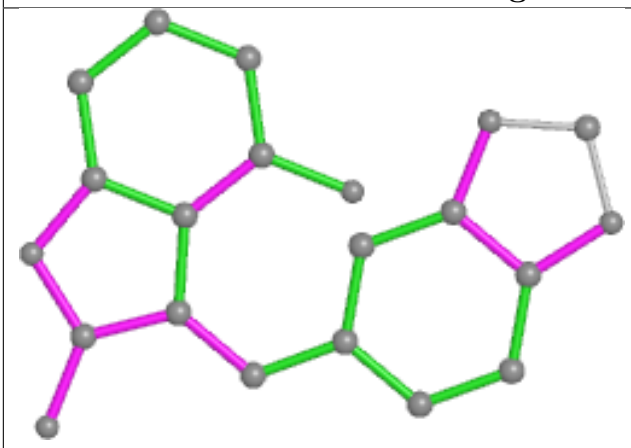


Rings

Ligand A1D48 F 402



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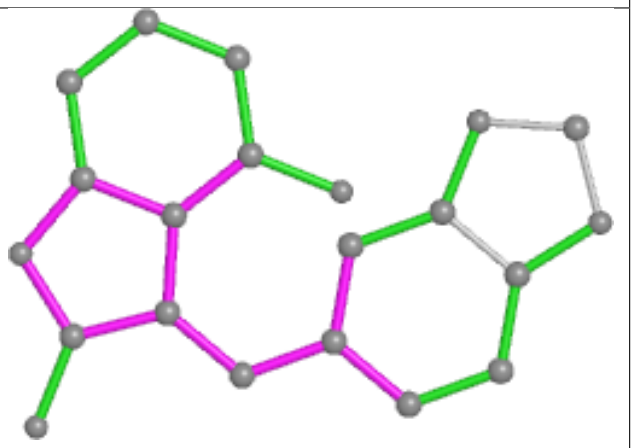

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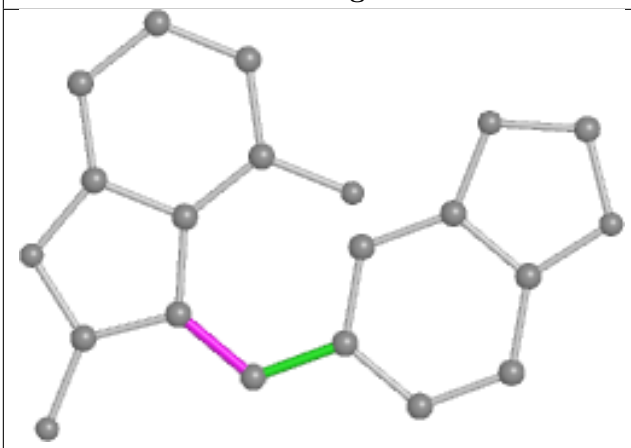

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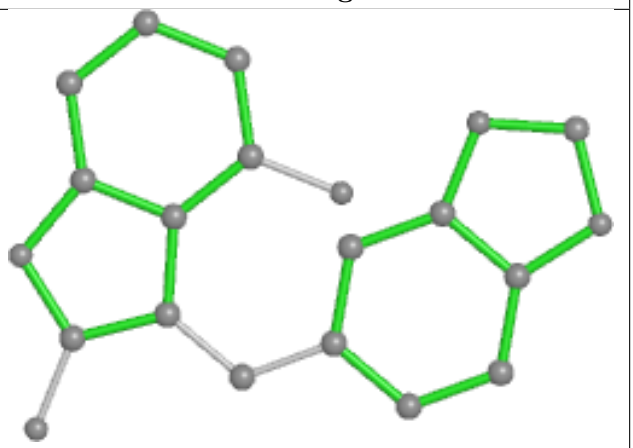
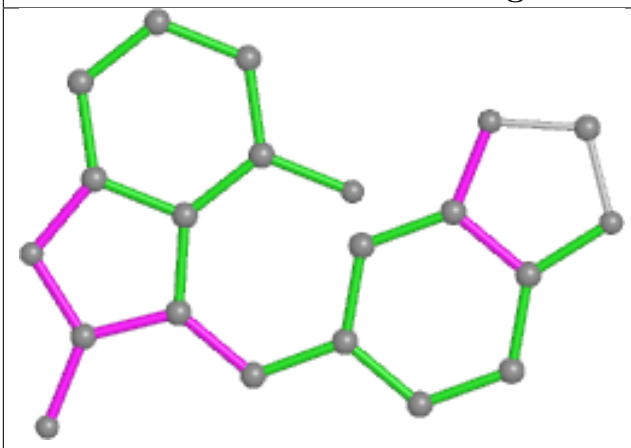


Rings

Ligand A1D48 A 402



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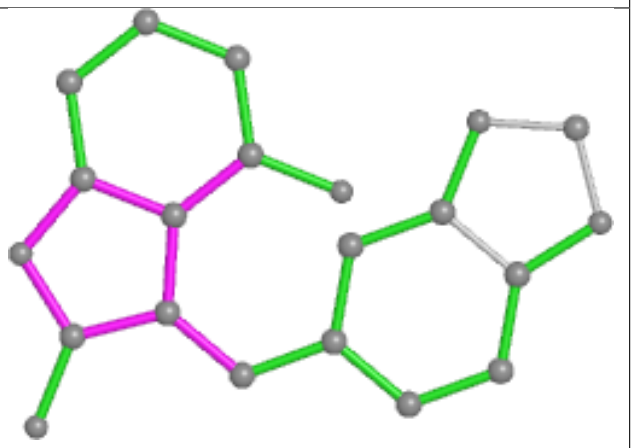
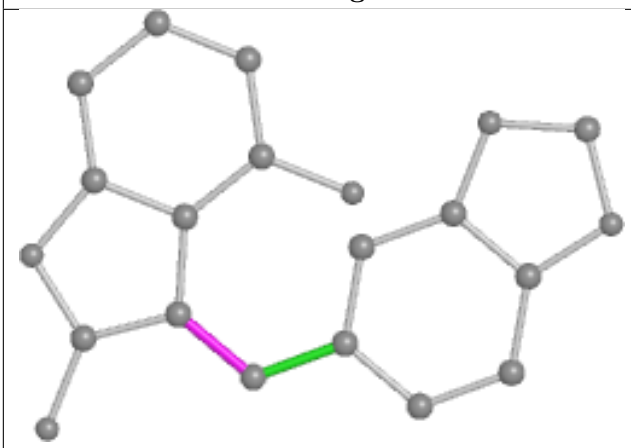
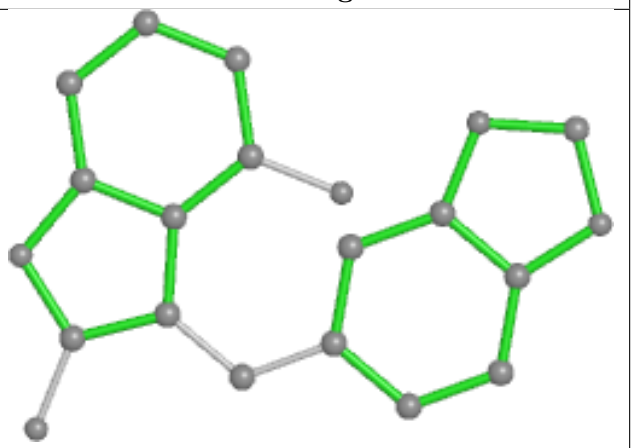


Bond angles

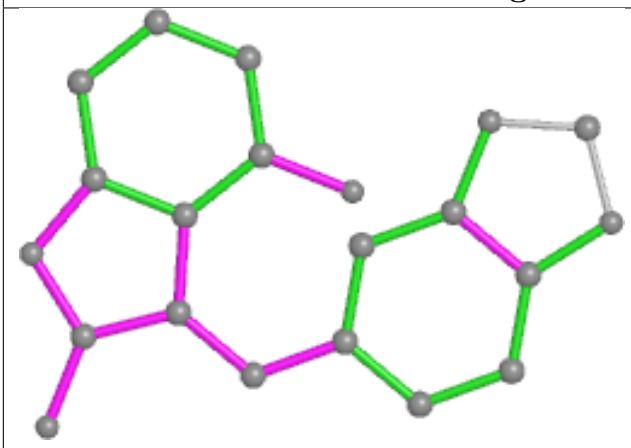


Torsions

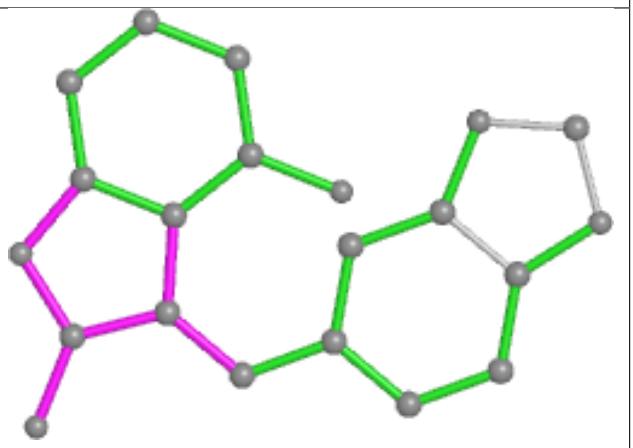


Rings

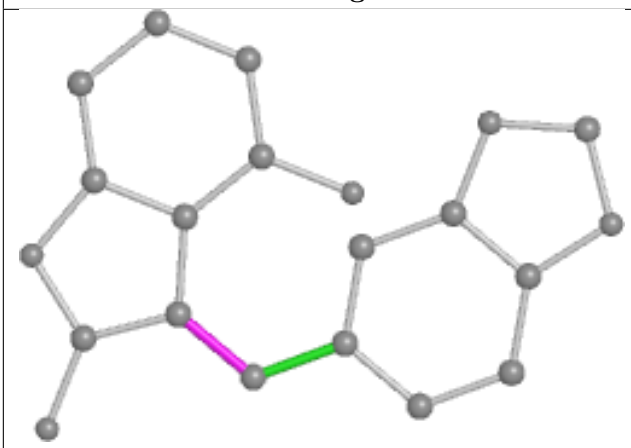
Ligand A1D48 L 402



Bond lengths



Bond angles



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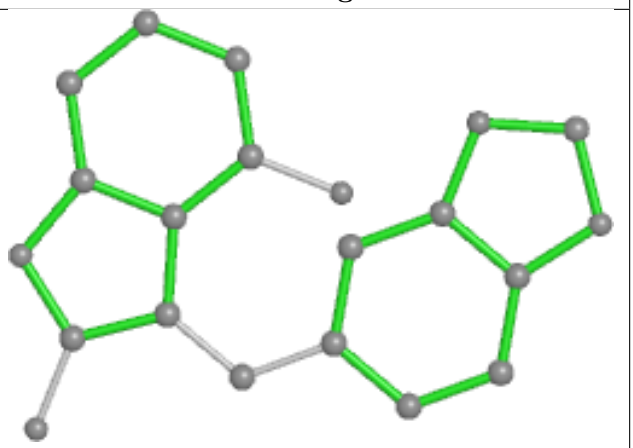
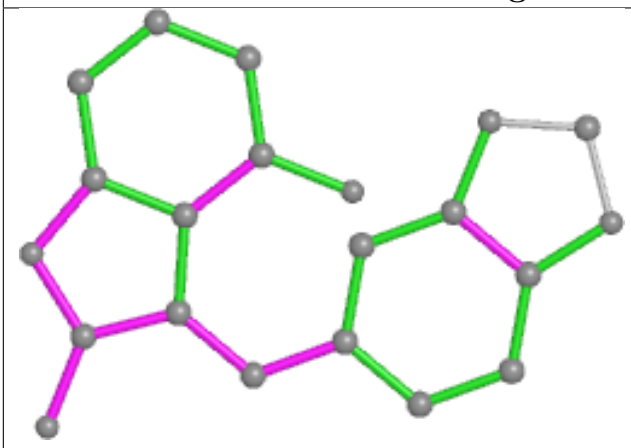
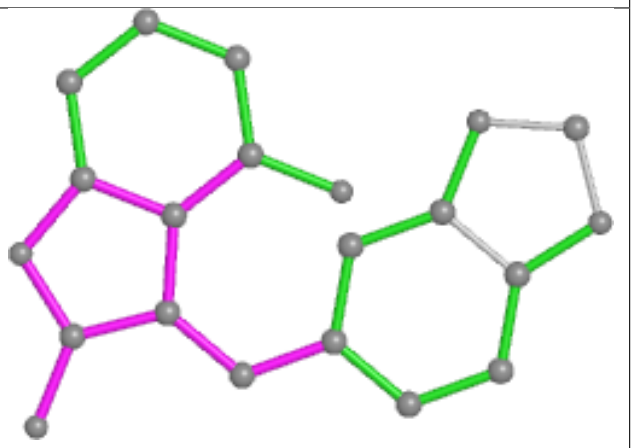


Rings

Ligand A1D48 E 402



Bond lengths



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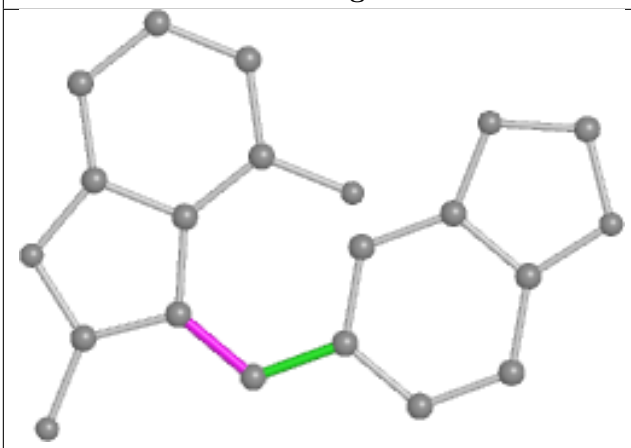

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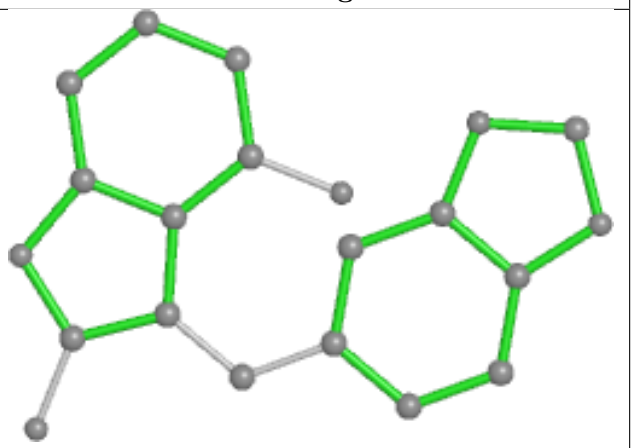
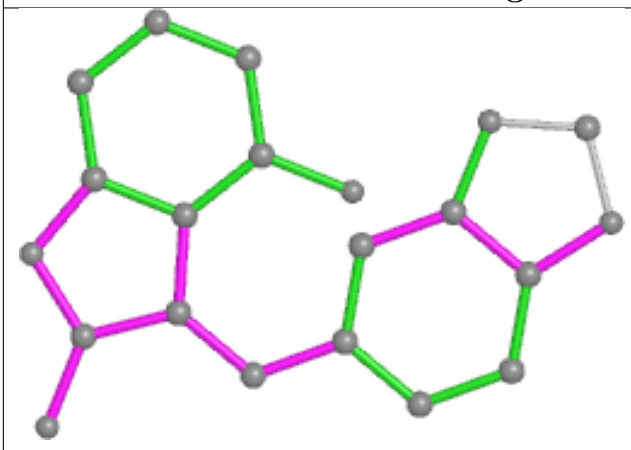
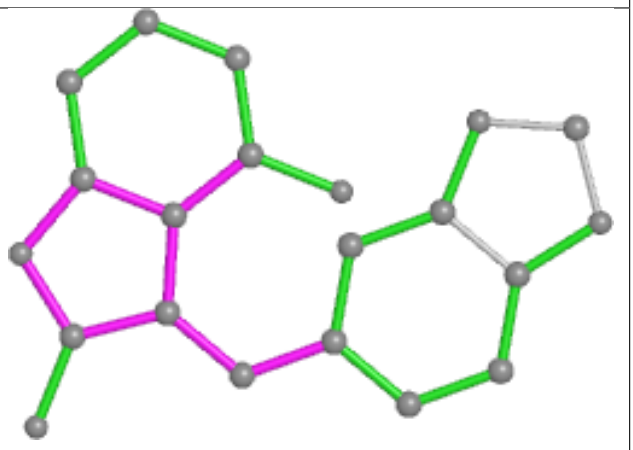


Rings

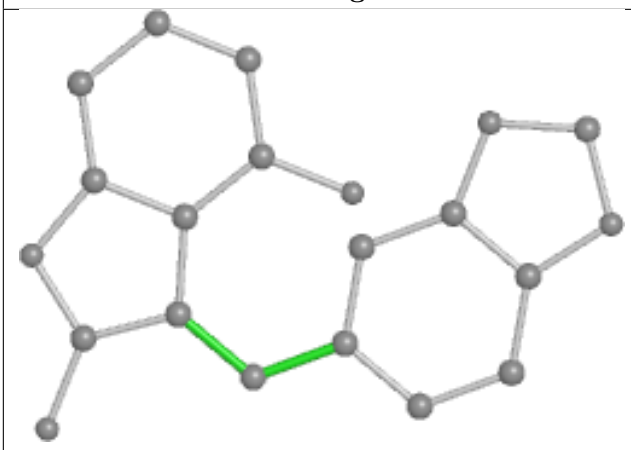
Ligand A1D48 G 402



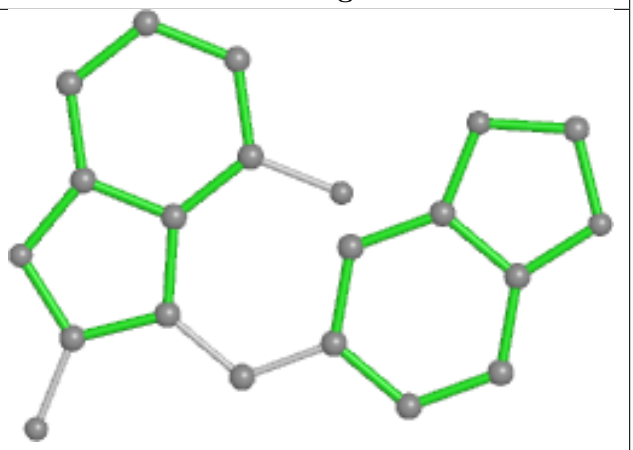
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

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, 95^{th} 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	322/329 (97%)	-0.38	4 (1%)	79	73	19, 39, 76, 105	0
1	B	322/329 (97%)	-0.41	4 (1%)	79	73	16, 40, 71, 109	0
1	C	322/329 (97%)	-0.43	3 (0%)	84	80	14, 41, 77, 139	0
1	D	322/329 (97%)	-0.33	3 (0%)	84	80	23, 42, 76, 119	0
1	E	322/329 (97%)	-0.34	3 (0%)	84	80	20, 44, 80, 114	0
1	F	322/329 (97%)	-0.27	0	100	100	30, 49, 82, 111	0
1	G	322/329 (97%)	0.38	18 (5%)	24	16	45, 83, 115, 143	0
1	H	322/329 (97%)	0.10	9 (2%)	53	43	41, 71, 100, 126	0
1	I	322/329 (97%)	-0.08	6 (1%)	66	59	28, 57, 92, 122	0
1	J	322/329 (97%)	0.28	14 (4%)	35	25	54, 93, 122, 148	0
1	K	322/329 (97%)	-0.14	5 (1%)	72	65	24, 51, 81, 123	0
1	L	322/329 (97%)	-0.13	11 (3%)	45	35	28, 50, 89, 133	0
All	All	3864/3948 (97%)	-0.15	80 (2%)	63	54	14, 53, 104, 148	0

All (80) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	K	33	ALA	10.5
1	L	161	ALA	6.9
1	B	33	ALA	5.9
1	K	34	SER	5.3
1	H	33	ALA	5.0
1	E	33	ALA	4.8
1	C	33	ALA	4.8
1	D	34	SER	4.6
1	C	34	SER	4.5
1	D	33	ALA	4.1
1	G	151	ASN	4.1

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Mol	Chain	Res	Type	RSRZ
1	I	33	ALA	4.1
1	G	301	GLY	3.5
1	B	34	SER	3.5
1	J	46	ALA	3.5
1	L	190	ASP	3.5
1	I	34	SER	3.4
1	I	36	TRP	3.4
1	I	190	ASP	3.3
1	G	189	PRO	3.2
1	L	189	PRO	3.2
1	J	35	ALA	3.2
1	J	189	PRO	3.1
1	J	301	GLY	3.1
1	E	129	PRO	3.1
1	J	297	TYR	3.1
1	H	34	SER	3.1
1	G	176	LYS	2.9
1	L	361	LEU	2.9
1	J	302	VAL	2.8
1	G	54	ARG	2.8
1	G	152	ARG	2.8
1	L	160	SER	2.6
1	G	153	VAL	2.6
1	J	33	ALA	2.6
1	H	206	HIS	2.6
1	I	206	HIS	2.6
1	G	56	ILE	2.5
1	L	337	GLU	2.5
1	H	65	MET	2.5
1	J	58	GLU	2.5
1	G	149	TRP	2.5
1	G	205	LEU	2.4
1	G	115	TYR	2.4
1	L	149	TRP	2.4
1	H	253	PRO	2.4
1	L	206	HIS	2.4
1	B	296	ASN	2.4
1	J	289	LEU	2.4
1	G	36	TRP	2.4
1	L	33	ALA	2.3
1	L	150	ASN	2.3
1	B	297	TYR	2.3

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Mol	Chain	Res	Type	RSRZ
1	D	181	LEU	2.3
1	A	206	HIS	2.3
1	A	207	TRP	2.3
1	J	361	LEU	2.2
1	H	284	LEU	2.2
1	L	34	SER	2.2
1	J	34	SER	2.2
1	J	290	GLU	2.2
1	G	148	HIS	2.1
1	G	33	ALA	2.1
1	H	346	ASN	2.1
1	A	150	ASN	2.1
1	G	287	HIS	2.1
1	K	300	GLY	2.1
1	H	337	GLU	2.1
1	G	150	ASN	2.1
1	A	34	SER	2.1
1	E	115	TYR	2.1
1	G	71	GLN	2.1
1	K	206	HIS	2.1
1	H	62	ILE	2.0
1	J	68	ASN	2.0
1	I	301	GLY	2.0
1	K	232	ALA	2.0
1	C	297	TYR	2.0
1	G	55	GLN	2.0
1	J	104	LEU	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

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

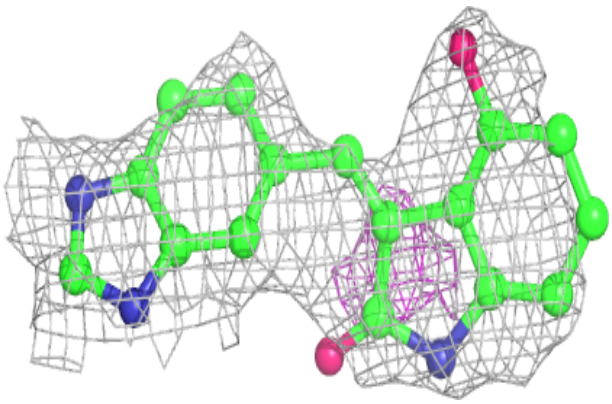
median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

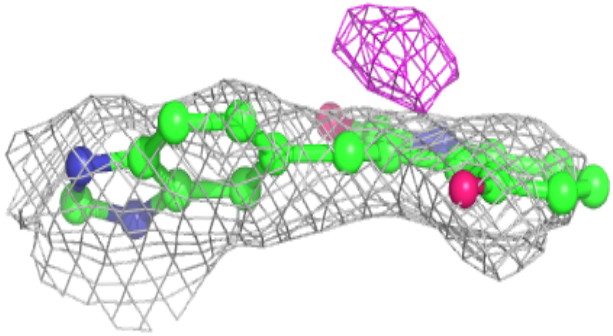
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	A1D48	J	402	21/21	0.89	0.27	64,78,87,90	0
2	ZN	A	401	1/1	0.94	0.07	21,21,21,21	0
3	A1D48	E	402	21/21	0.94	0.18	36,48,65,66	0
3	A1D48	I	402	21/21	0.94	0.20	44,57,74,75	0
2	ZN	B	401	1/1	0.94	0.08	25,25,25,25	0
3	A1D48	H	402	21/21	0.95	0.19	58,69,83,87	0
3	A1D48	A	402	21/21	0.95	0.22	30,57,84,91	0
3	A1D48	B	402	21/21	0.95	0.15	35,39,51,68	0
3	A1D48	G	402	21/21	0.96	0.20	59,81,97,105	0
3	A1D48	C	402	21/21	0.96	0.20	30,50,67,76	0
2	ZN	F	401	1/1	0.96	0.09	35,35,35,35	0
3	A1D48	F	402	21/21	0.96	0.21	39,60,73,76	0
3	A1D48	K	402	21/21	0.96	0.18	39,49,59,70	0
3	A1D48	L	402	21/21	0.96	0.20	43,67,100,103	0
2	ZN	E	401	1/1	0.97	0.09	30,30,30,30	0
2	ZN	G	401	1/1	0.98	0.06	55,55,55,55	0
2	ZN	J	401	1/1	0.98	0.09	54,54,54,54	0
2	ZN	K	401	1/1	0.98	0.11	32,32,32,32	0
3	A1D48	D	402	21/21	0.98	0.16	33,42,52,60	0
2	ZN	D	401	1/1	0.99	0.07	28,28,28,28	0
2	ZN	C	401	1/1	0.99	0.11	31,31,31,31	0
2	ZN	L	401	1/1	0.99	0.06	31,31,31,31	0
2	ZN	H	401	1/1	0.99	0.12	49,49,49,49	0
2	ZN	I	401	1/1	0.99	0.07	34,34,34,34	0

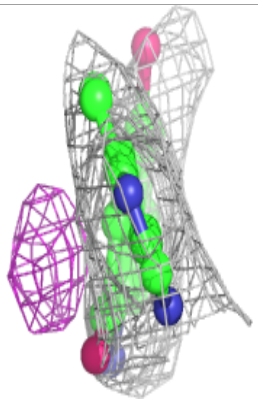
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around A1D48 J 402:

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

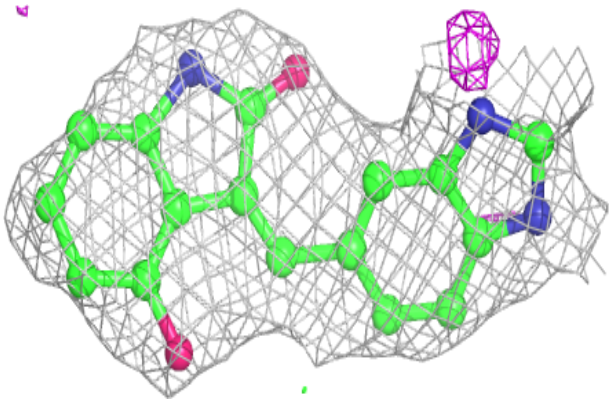


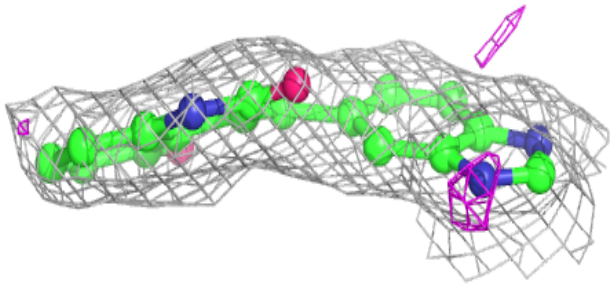


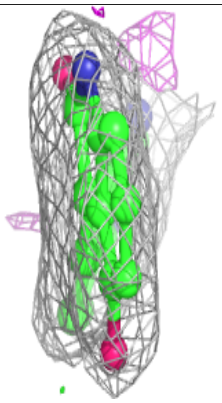


Electron density around A1D48 E 402:

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

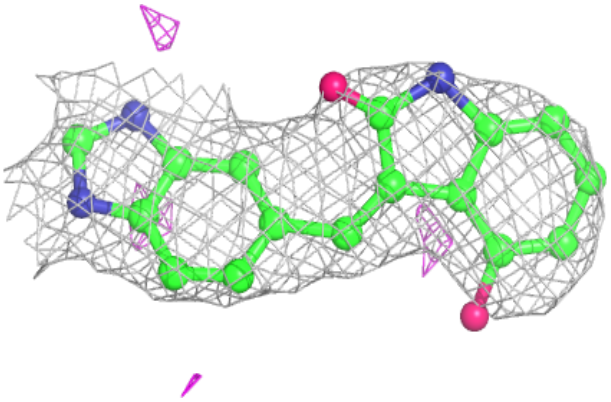


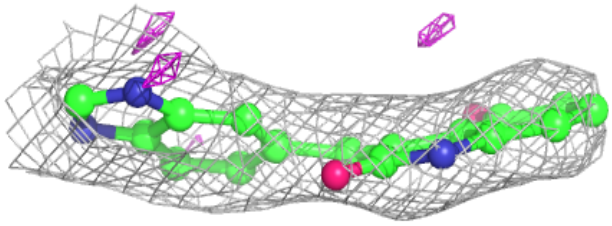


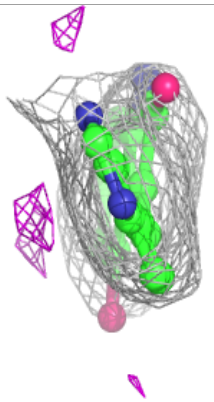


Electron density around A1D48 I 402:

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

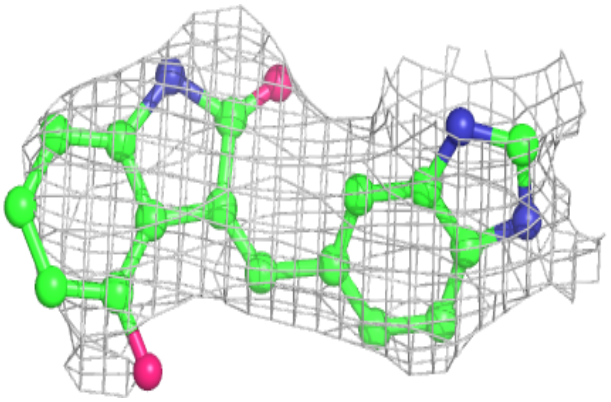


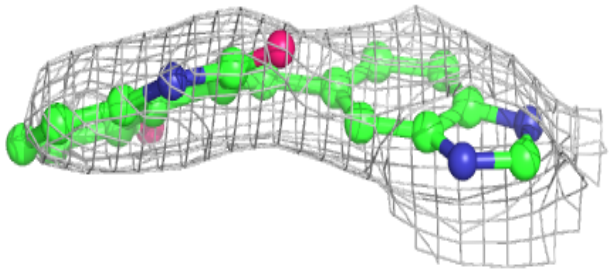


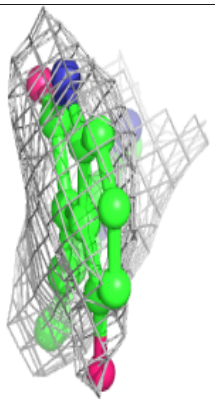


Electron density around A1D48 H 402:

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

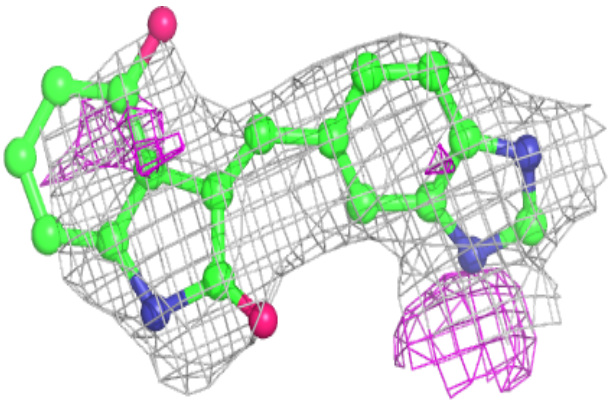


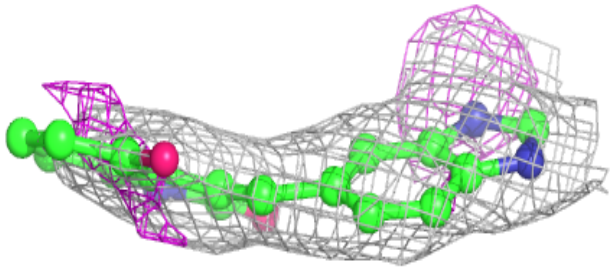


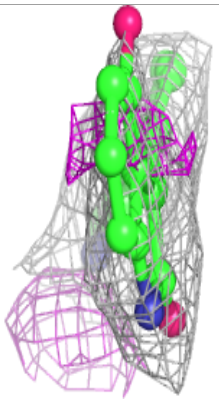


Electron density around A1D48 A 402:

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

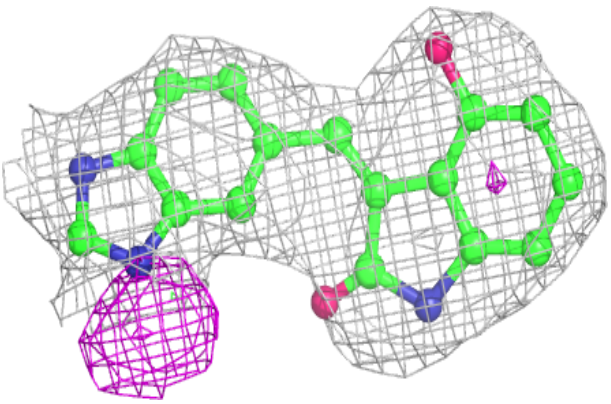


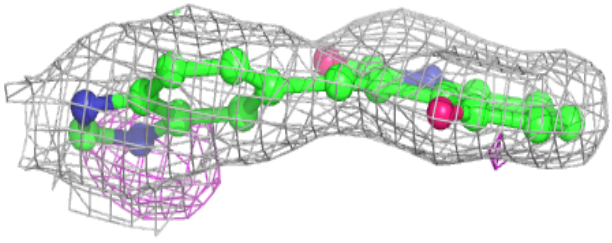


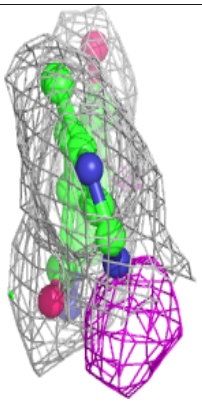


Electron density around A1D48 B 402:

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

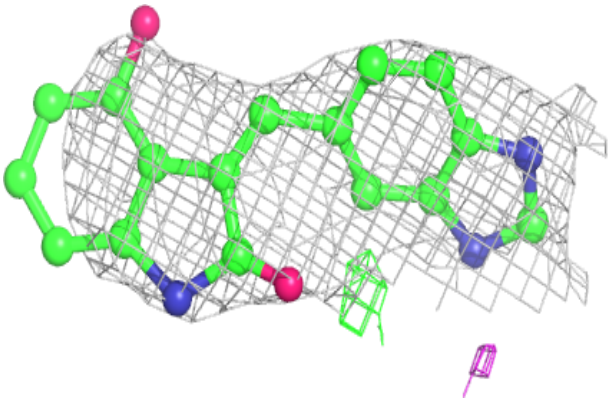


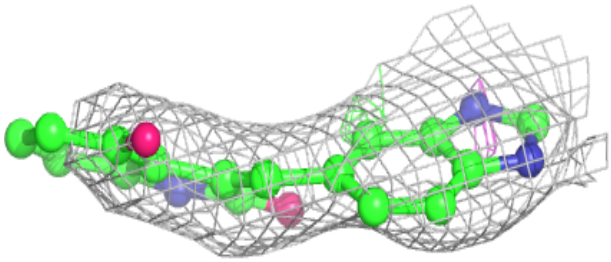


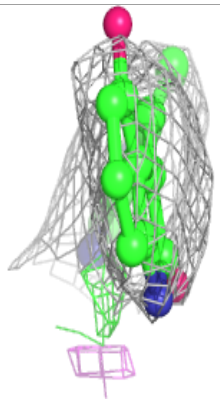


Electron density around A1D48 G 402:

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

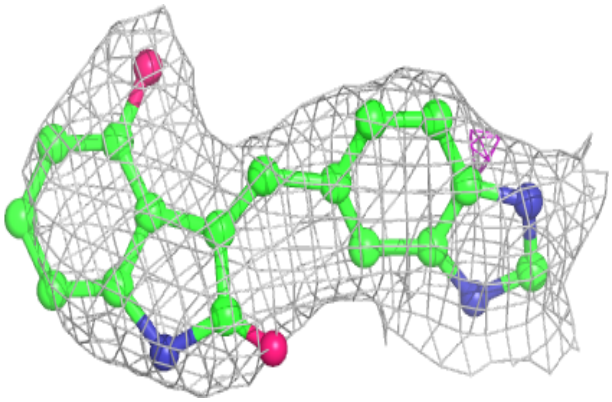


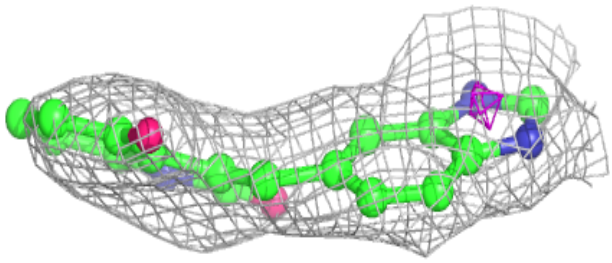


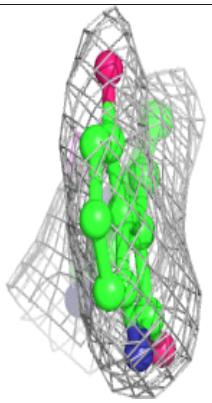


Electron density around A1D48 C 402:

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

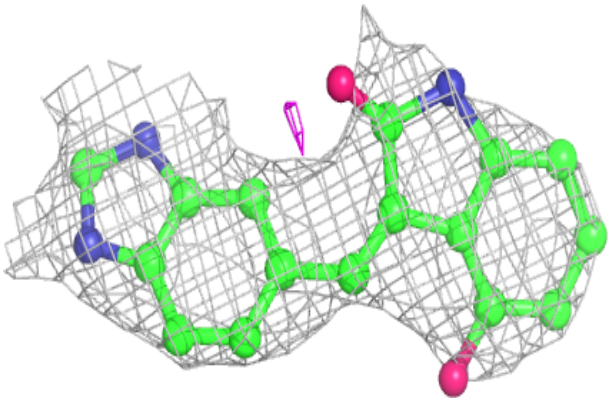


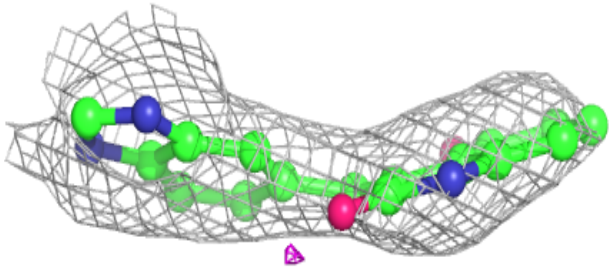


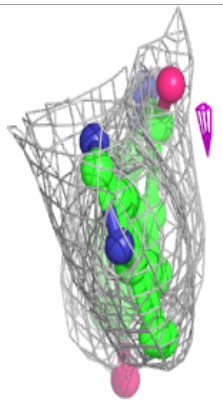


Electron density around A1D48 F 402:

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

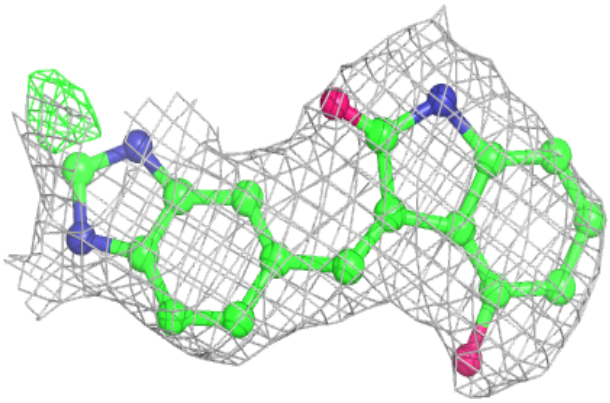


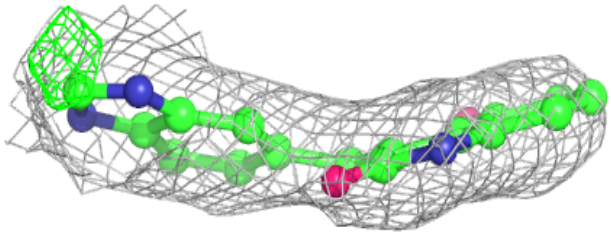


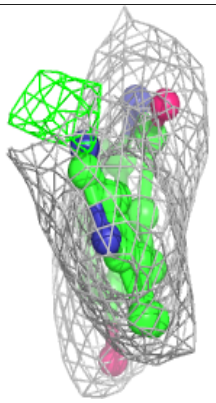


Electron density around A1D48 K 402:

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

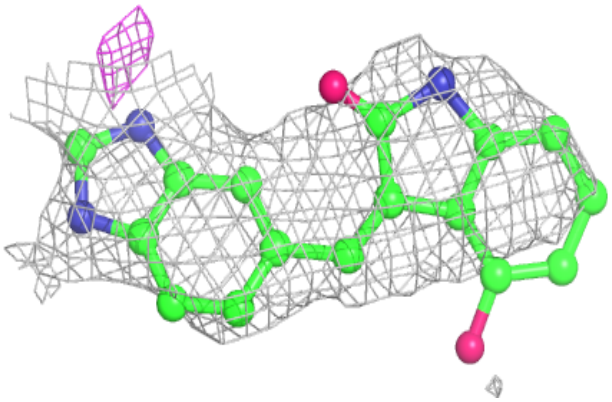


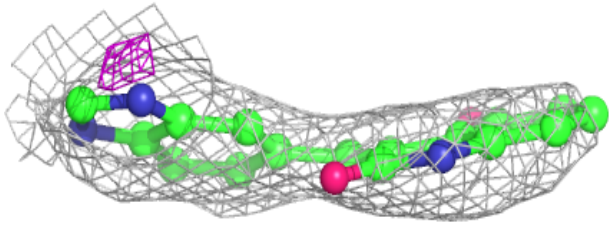


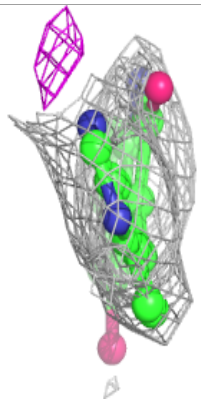


Electron density around A1D48 L 402:

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

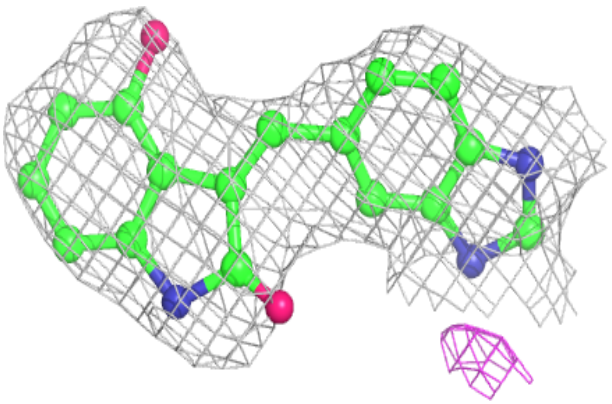


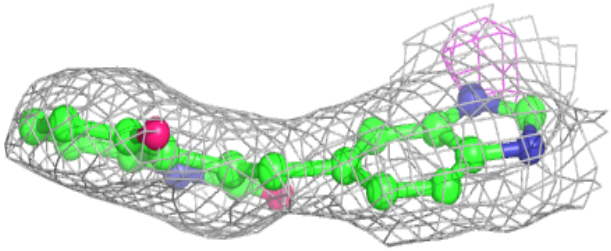


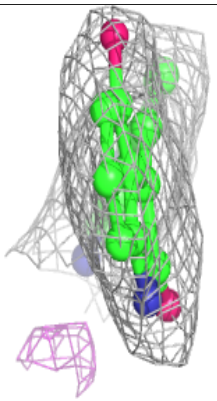


Electron density around A1D48 D 402:

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







6.5 Other polymers (i)

There are no such residues in this entry.