



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 01:04 AM UTC

PDB ID : 6Q2A / pdb_00006q2a
Title : Trypanosoma brucei CLK1 kinase domain in complex with a covalent aminobenzimidazole inhibitor AB1
Authors : Ma, X.; Ornelas, E.
Deposited on : 2019-08-07
Resolution : 2.60 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

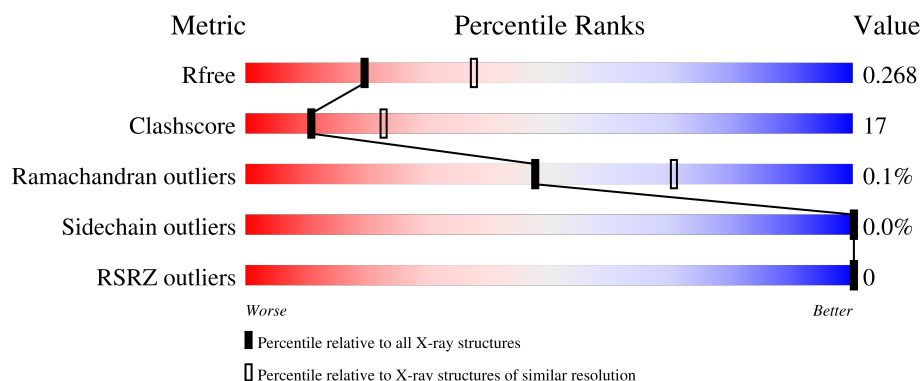
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.60 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	4008 (2.60-2.60)
Clashscore	190562	4347 (2.60-2.60)
Ramachandran outliers	187476	4277 (2.60-2.60)
Sidechain outliers	187428	4277 (2.60-2.60)
RSRZ outliers	180081	4008 (2.60-2.60)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	354	 62% 31% . .
1	B	354	 70% 22% . . .
1	C	354	 65% 27% . . .
1	D	354	 70% 25% . .
1	E	354	 73% 21% . .

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Mol	Chain	Length	Quality of chain
1	F	354	
1	G	354	
1	H	354	
1	I	354	
1	J	354	
1	K	354	
1	L	354	
1	M	354	
1	N	354	
1	O	354	
1	P	354	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	SO4	E	501	-	-	X	-

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 45588 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 Protein kinase, putative.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	B	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	C	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	D	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	E	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	F	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	G	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	H	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	I	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	J	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	K	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	L	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	M	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	N	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	O	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			
1	P	339	Total	C	N	O	S	0	0	0
			2772	1755	508	483	26			

There are 80 discrepancies between the modelled and reference sequences:

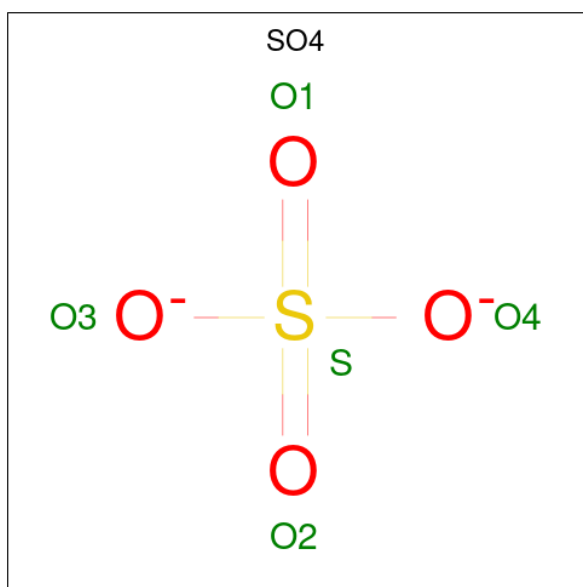
Chain	Residue	Modelled	Actual	Comment	Reference
A	112	GLY	-	expression tag	UNP Q382U0
A	113	PRO	-	expression tag	UNP Q382U0
A	114	SER	-	expression tag	UNP Q382U0
A	115	MET	-	expression tag	UNP Q382U0
A	116	HIS	-	expression tag	UNP Q382U0
B	112	GLY	-	expression tag	UNP Q382U0
B	113	PRO	-	expression tag	UNP Q382U0
B	114	SER	-	expression tag	UNP Q382U0
B	115	MET	-	expression tag	UNP Q382U0
B	116	HIS	-	expression tag	UNP Q382U0
C	112	GLY	-	expression tag	UNP Q382U0
C	113	PRO	-	expression tag	UNP Q382U0
C	114	SER	-	expression tag	UNP Q382U0
C	115	MET	-	expression tag	UNP Q382U0
C	116	HIS	-	expression tag	UNP Q382U0
D	112	GLY	-	expression tag	UNP Q382U0
D	113	PRO	-	expression tag	UNP Q382U0
D	114	SER	-	expression tag	UNP Q382U0
D	115	MET	-	expression tag	UNP Q382U0
D	116	HIS	-	expression tag	UNP Q382U0
E	112	GLY	-	expression tag	UNP Q382U0
E	113	PRO	-	expression tag	UNP Q382U0
E	114	SER	-	expression tag	UNP Q382U0
E	115	MET	-	expression tag	UNP Q382U0
E	116	HIS	-	expression tag	UNP Q382U0
F	112	GLY	-	expression tag	UNP Q382U0
F	113	PRO	-	expression tag	UNP Q382U0
F	114	SER	-	expression tag	UNP Q382U0
F	115	MET	-	expression tag	UNP Q382U0
F	116	HIS	-	expression tag	UNP Q382U0
G	112	GLY	-	expression tag	UNP Q382U0
G	113	PRO	-	expression tag	UNP Q382U0
G	114	SER	-	expression tag	UNP Q382U0
G	115	MET	-	expression tag	UNP Q382U0
G	116	HIS	-	expression tag	UNP Q382U0
H	112	GLY	-	expression tag	UNP Q382U0
H	113	PRO	-	expression tag	UNP Q382U0
H	114	SER	-	expression tag	UNP Q382U0
H	115	MET	-	expression tag	UNP Q382U0
H	116	HIS	-	expression tag	UNP Q382U0
I	112	GLY	-	expression tag	UNP Q382U0
I	113	PRO	-	expression tag	UNP Q382U0

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Chain	Residue	Modelled	Actual	Comment	Reference
I	114	SER	-	expression tag	UNP Q382U0
I	115	MET	-	expression tag	UNP Q382U0
I	116	HIS	-	expression tag	UNP Q382U0
J	112	GLY	-	expression tag	UNP Q382U0
J	113	PRO	-	expression tag	UNP Q382U0
J	114	SER	-	expression tag	UNP Q382U0
J	115	MET	-	expression tag	UNP Q382U0
J	116	HIS	-	expression tag	UNP Q382U0
K	112	GLY	-	expression tag	UNP Q382U0
K	113	PRO	-	expression tag	UNP Q382U0
K	114	SER	-	expression tag	UNP Q382U0
K	115	MET	-	expression tag	UNP Q382U0
K	116	HIS	-	expression tag	UNP Q382U0
L	112	GLY	-	expression tag	UNP Q382U0
L	113	PRO	-	expression tag	UNP Q382U0
L	114	SER	-	expression tag	UNP Q382U0
L	115	MET	-	expression tag	UNP Q382U0
L	116	HIS	-	expression tag	UNP Q382U0
M	112	GLY	-	expression tag	UNP Q382U0
M	113	PRO	-	expression tag	UNP Q382U0
M	114	SER	-	expression tag	UNP Q382U0
M	115	MET	-	expression tag	UNP Q382U0
M	116	HIS	-	expression tag	UNP Q382U0
N	112	GLY	-	expression tag	UNP Q382U0
N	113	PRO	-	expression tag	UNP Q382U0
N	114	SER	-	expression tag	UNP Q382U0
N	115	MET	-	expression tag	UNP Q382U0
N	116	HIS	-	expression tag	UNP Q382U0
O	112	GLY	-	expression tag	UNP Q382U0
O	113	PRO	-	expression tag	UNP Q382U0
O	114	SER	-	expression tag	UNP Q382U0
O	115	MET	-	expression tag	UNP Q382U0
O	116	HIS	-	expression tag	UNP Q382U0
P	112	GLY	-	expression tag	UNP Q382U0
P	113	PRO	-	expression tag	UNP Q382U0
P	114	SER	-	expression tag	UNP Q382U0
P	115	MET	-	expression tag	UNP Q382U0
P	116	HIS	-	expression tag	UNP Q382U0

- Molecule 2 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



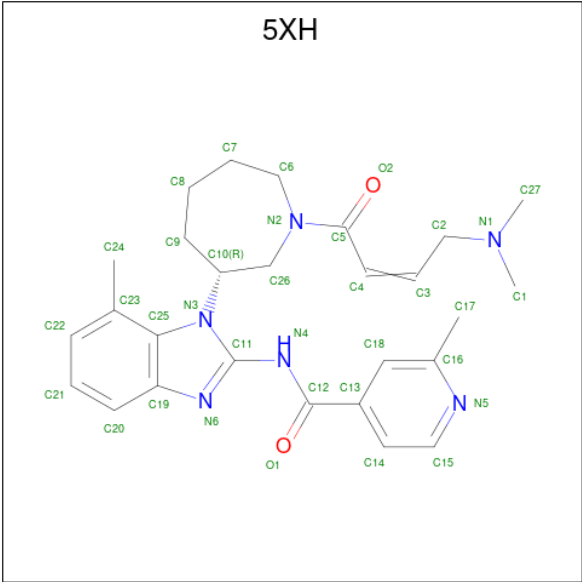
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	O	S	0	0
			5	4	1		
2	B	1	Total	O	S	0	0
			5	4	1		
2	B	1	Total	O	S	0	0
			5	4	1		
2	B	1	Total	O	S	0	0
			5	4	1		
2	C	1	Total	O	S	0	0
			5	4	1		
2	C	1	Total	O	S	0	0
			5	4	1		
2	C	1	Total	O	S	0	0
			5	4	1		
2	D	1	Total	O	S	0	0
			5	4	1		
2	E	1	Total	O	S	0	0
			5	4	1		
2	E	1	Total	O	S	0	0
			5	4	1		
2	E	1	Total	O	S	0	0
			5	4	1		
2	F	1	Total	O	S	0	0
			5	4	1		
2	F	1	Total	O	S	0	0
			5	4	1		
2	F	1	Total	O	S	0	0
			5	4	1		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	G	1	Total	O	S	0	0
			5	4	1		
2	H	1	Total	O	S	0	0
			5	4	1		
2	H	1	Total	O	S	0	0
			5	4	1		
2	I	1	Total	O	S	0	0
			5	4	1		
2	I	1	Total	O	S	0	0
			5	4	1		
2	I	1	Total	O	S	0	0
			5	4	1		
2	J	1	Total	O	S	0	0
			5	4	1		
2	J	1	Total	O	S	0	0
			5	4	1		
2	J	1	Total	O	S	0	0
			5	4	1		
2	K	1	Total	O	S	0	0
			5	4	1		
2	K	1	Total	O	S	0	0
			5	4	1		
2	L	1	Total	O	S	0	0
			5	4	1		
2	L	1	Total	O	S	0	0
			5	4	1		
2	M	1	Total	O	S	0	0
			5	4	1		
2	N	1	Total	O	S	0	0
			5	4	1		
2	O	1	Total	O	S	0	0
			5	4	1		
2	O	1	Total	O	S	0	0
			5	4	1		
2	P	1	Total	O	S	0	0
			5	4	1		
2	P	1	Total	O	S	0	0
			5	4	1		

- Molecule 3 is {N}-[1-[(3 {R})-1-[4-(dimethylamino)but-2-enoyl]azepan-3-yl]-7-methyl-benzimidazol-2-yl]-2-methyl-pyridine-4-carboxamide (CCD ID: 5XH) (formula: C₂₇H₃₄N₆O₂) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			35	27	6	2		
3	B	1	Total	C	N	O	0	0
			35	27	6	2		
3	C	1	Total	C	N	O	0	0
			35	27	6	2		
3	D	1	Total	C	N	O	0	0
			35	27	6	2		
3	E	1	Total	C	N	O	0	0
			35	27	6	2		
3	F	1	Total	C	N	O	0	0
			35	27	6	2		
3	G	1	Total	C	N	O	0	0
			35	27	6	2		
3	H	1	Total	C	N	O	0	0
			35	27	6	2		
3	I	1	Total	C	N	O	0	0
			35	27	6	2		
3	J	1	Total	C	N	O	0	0
			35	27	6	2		
3	K	1	Total	C	N	O	0	0
			35	27	6	2		
3	L	1	Total	C	N	O	0	0
			35	27	6	2		
3	M	1	Total	C	N	O	0	0
			35	27	6	2		
3	N	1	Total	C	N	O	0	0
			35	27	6	2		

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	O	1	Total	C	N	O	0	0
			35	27	6	2		
3	P	1	Total	C	N	O	0	0
			35	27	6	2		

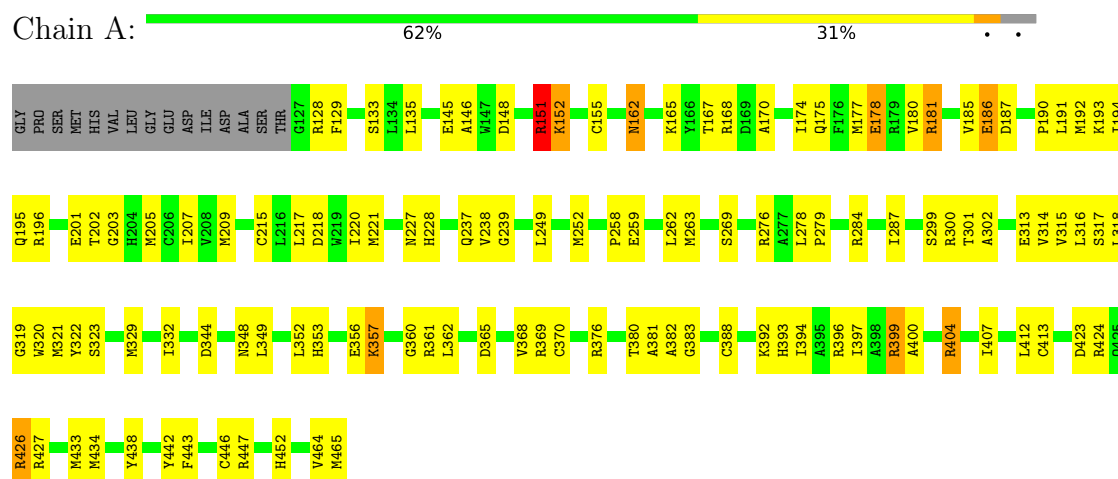
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	33	Total	O	0	0
			33	33		
4	B	27	Total	O	0	0
			27	27		
4	C	37	Total	O	0	0
			37	37		
4	D	32	Total	O	0	0
			32	32		
4	E	39	Total	O	0	0
			39	39		
4	F	37	Total	O	0	0
			37	37		
4	G	31	Total	O	0	0
			31	31		
4	H	22	Total	O	0	0
			22	22		
4	I	34	Total	O	0	0
			34	34		
4	J	29	Total	O	0	0
			29	29		
4	K	29	Total	O	0	0
			29	29		
4	L	34	Total	O	0	0
			34	34		
4	M	43	Total	O	0	0
			43	43		
4	N	26	Total	O	0	0
			26	26		
4	O	28	Total	O	0	0
			28	28		
4	P	30	Total	O	0	0
			30	30		

3 Residue-property plots

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

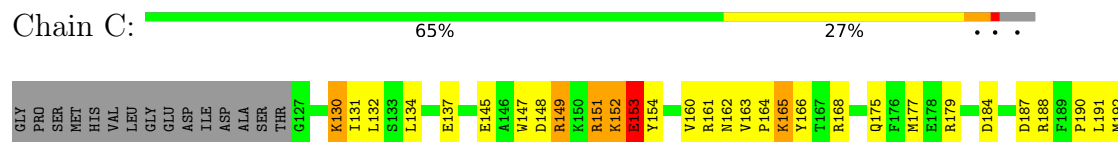
- Molecule 1: Protein kinase, putative

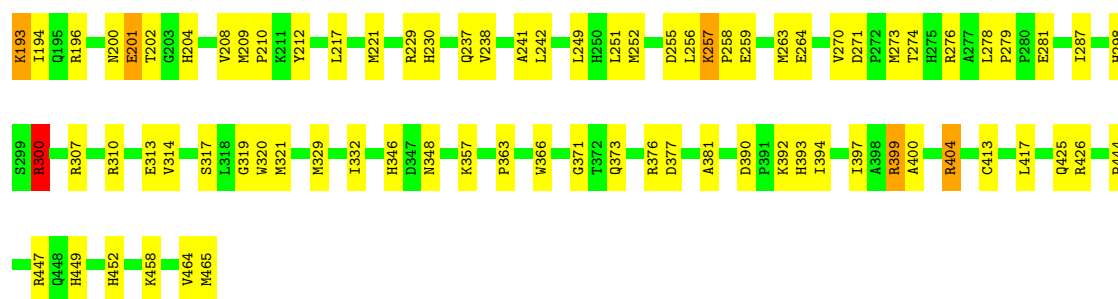


- Molecule 1: Protein kinase, putative



- Molecule 1: Protein kinase, putative





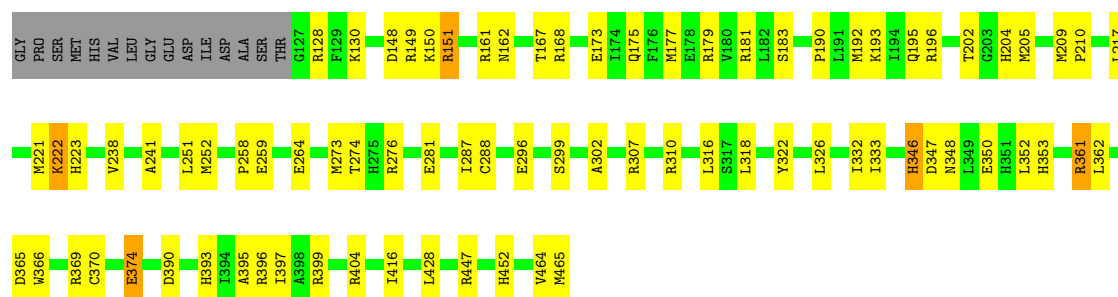
- Molecule 1: Protein kinase, putative

Chain D: 70% 25%



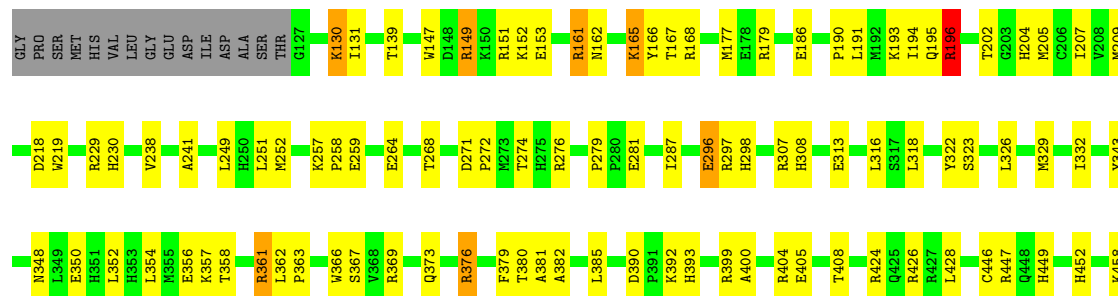
- Molecule 1: Protein kinase, putative

Chain E: 73% 21%



- Molecule 1: Protein kinase, putative

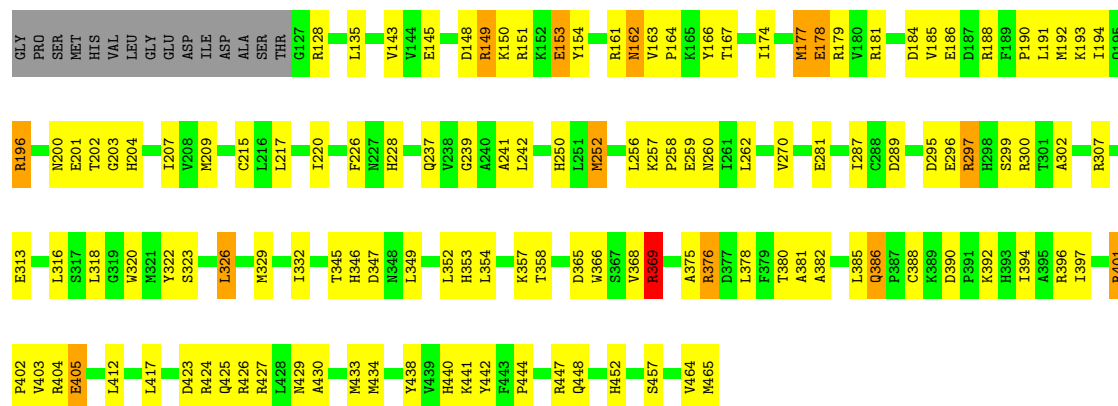
Chain F: 67% 26%



V464
M465

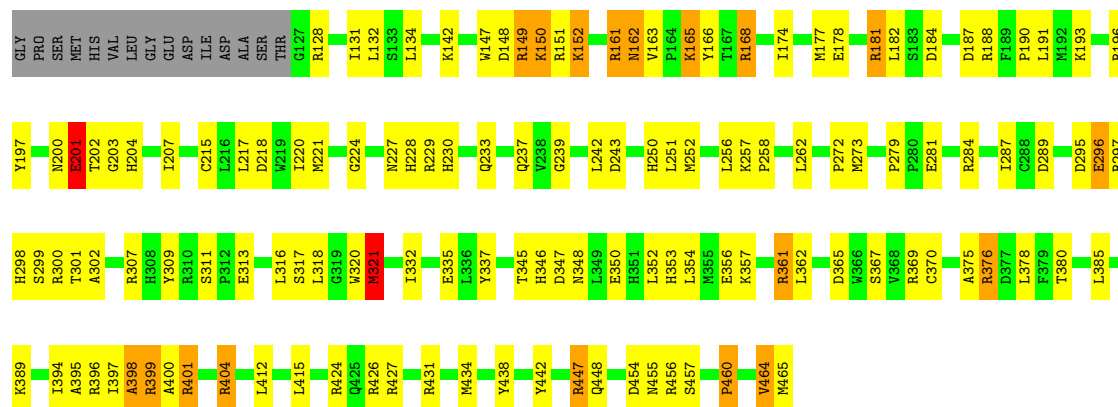
- Molecule 1: Protein kinase, putative

Chain G:  59% 32%



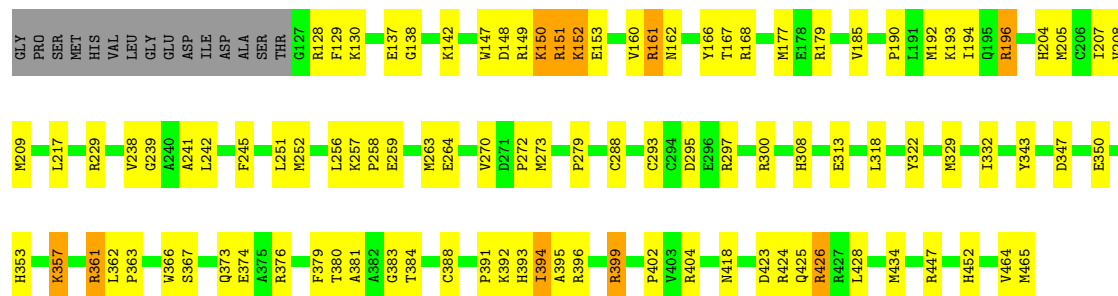
- Molecule 1: Protein kinase, putative

Chain H:  58% 32% 5%



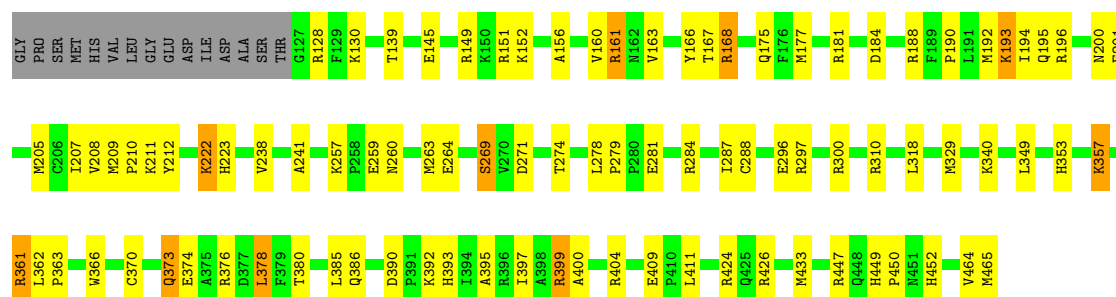
- Molecule 1: Protein kinase, putative

Chain I:  67% 26%

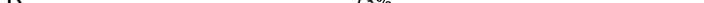


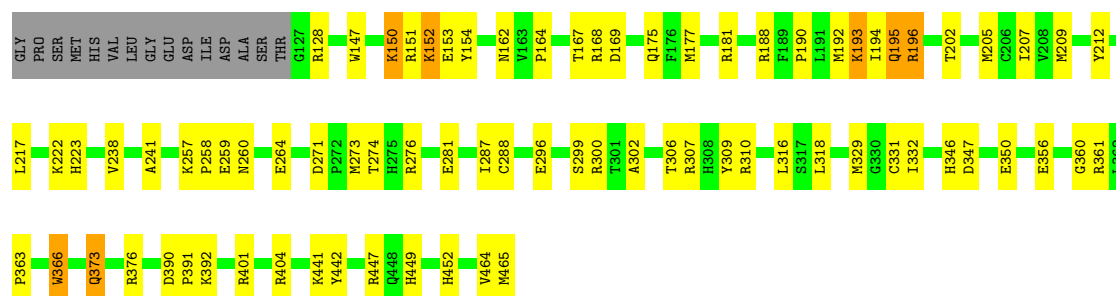
- Molecule 1: Protein kinase, putative

Chain J:  69% 23% . .

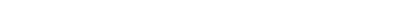


- Molecule 1: Protein kinase, putative

Chain K:  73% 20% .



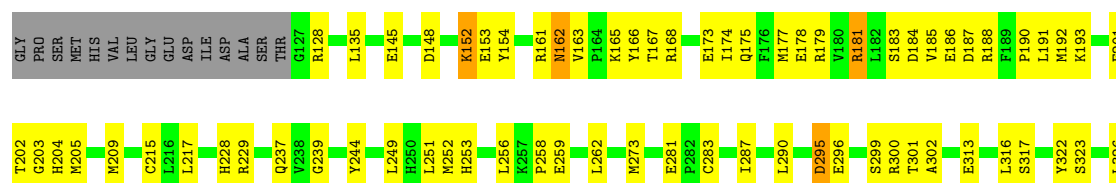
- Molecule 1: Protein kinase, putative

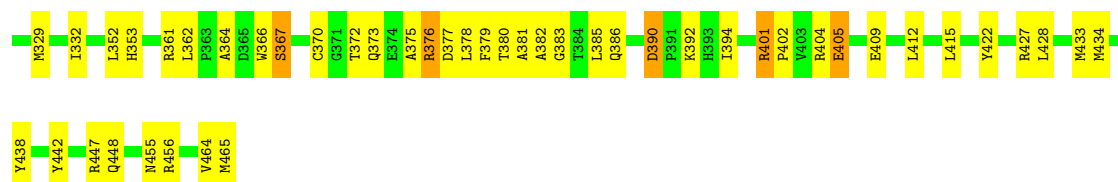
Chain L:  73% 22%



- Molecule 1: Protein kinase, putative

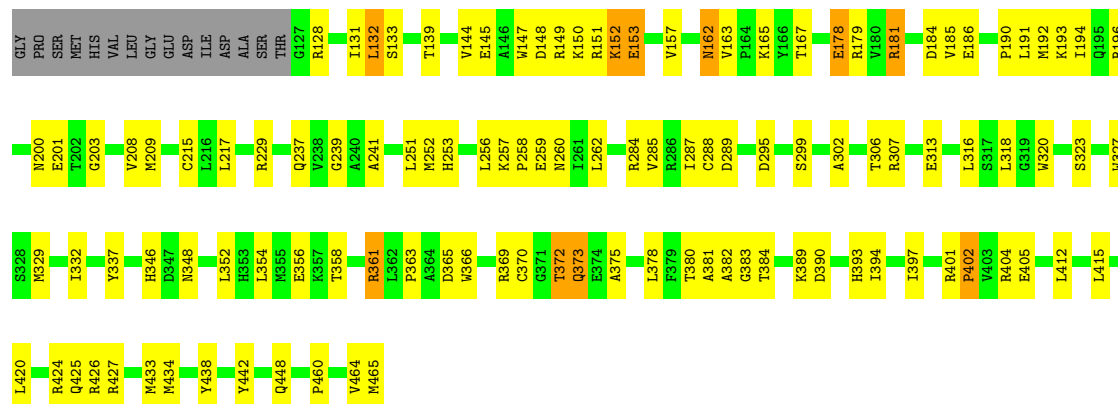
Chain M: 63% 30% 7%





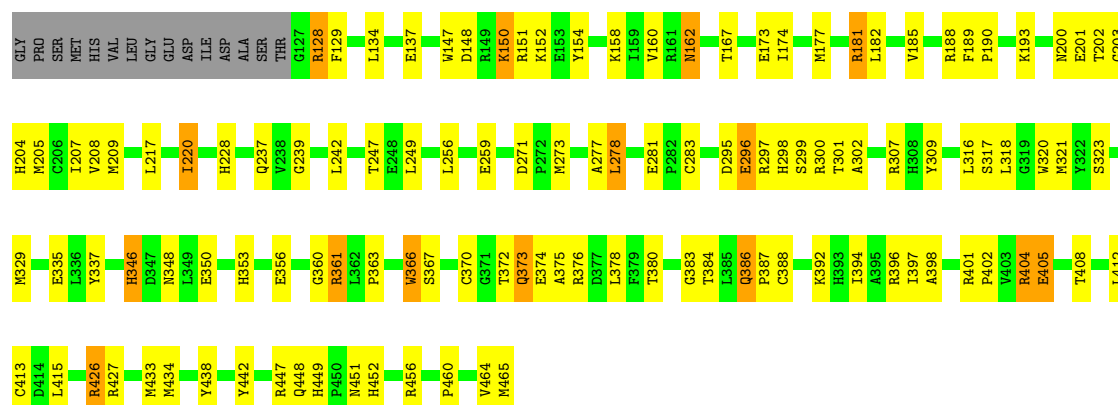
- Molecule 1: Protein kinase, putative

Chain N: 63% 30%



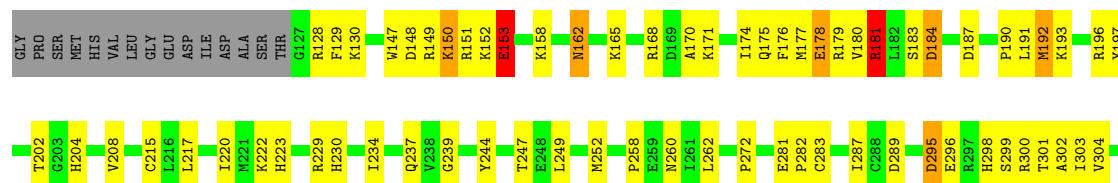
- Molecule 1: Protein kinase, putative

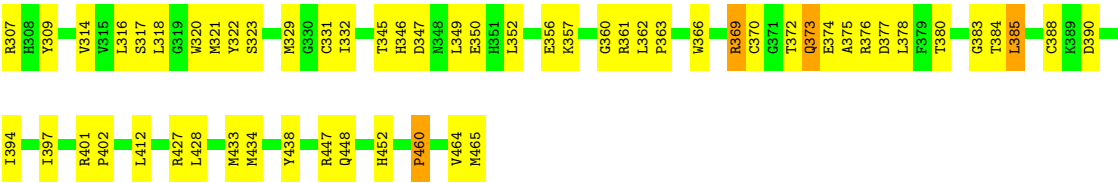
Chain O: 62% 29%



- Molecule 1: Protein kinase, putative

Chain P: 60% 32%





4 Data and refinement statistics

Property	Value	Source
Space group	P 31	Depositor
Cell constants a, b, c, α , β , γ	147.15Å 147.15Å 264.80Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	47.39 – 2.60 47.39 – 2.60	Depositor EDS
% Data completeness (in resolution range)	98.6 (47.39-2.60) 98.7 (47.39-2.60)	Depositor EDS
R_{merge}	0.24	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.70 (at 2.61Å)	Xtriage
Refinement program	PHENIX 1.15.2_3472	Depositor
R, R_{free}	0.266 , 0.313 0.265 , 0.268	Depositor DCC
R_{free} test set	9696 reflections (4.92%)	wwPDB-VP
Wilson B-factor (Å ²)	38.2	Xtriage
Anisotropy	0.067	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 20.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	0.448 for -h,-k,l 0.449 for h,-h-k,-l 0.449 for -k,-h,-l	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	45588	wwPDB-VP
Average B, all atoms (Å ²)	53.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 31.39 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.1155e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 5XH, SO4

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.45	0/2844	0.95	24/3847 (0.6%)
1	B	0.46	3/2844 (0.1%)	0.87	25/3847 (0.6%)
1	C	0.57	4/2844 (0.1%)	1.12	32/3847 (0.8%)
1	D	0.38	0/2844	0.78	13/3847 (0.3%)
1	E	0.41	1/2844 (0.0%)	0.81	15/3847 (0.4%)
1	F	0.42	2/2844 (0.1%)	1.01	28/3847 (0.7%)
1	G	0.54	1/2844 (0.0%)	1.07	38/3847 (1.0%)
1	H	0.53	1/2844 (0.0%)	1.15	41/3847 (1.1%)
1	I	0.40	0/2844	0.78	14/3847 (0.4%)
1	J	0.55	3/2844 (0.1%)	1.01	31/3847 (0.8%)
1	K	0.44	0/2844	0.84	18/3847 (0.5%)
1	L	0.45	1/2844 (0.0%)	0.85	20/3847 (0.5%)
1	M	0.47	3/2844 (0.1%)	0.89	17/3847 (0.4%)
1	N	0.52	2/2844 (0.1%)	0.96	22/3847 (0.6%)
1	O	0.56	5/2844 (0.2%)	0.98	24/3847 (0.6%)
1	P	0.53	4/2844 (0.1%)	0.89	18/3847 (0.5%)
All	All	0.48	30/45504 (0.1%)	0.94	380/61552 (0.6%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	2
1	B	0	2
1	C	0	1
1	D	0	1
1	E	0	2
1	F	0	1
1	G	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
1	H	0	3
1	I	0	1
1	K	0	1
1	L	0	1
1	M	0	1
1	N	0	1
1	O	0	2
1	P	0	3
All	All	0	23

All (30) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	O	150	LYS	CD-CE	-9.16	1.25	1.52
1	O	128	ARG	NE-CZ	-8.64	1.23	1.33
1	N	132	LEU	CA-C	8.25	1.56	1.52
1	E	361	ARG	NE-CZ	8.05	1.42	1.33
1	N	402	PRO	N-CD	-7.96	1.36	1.47
1	J	404	ARG	CB-CG	-7.92	1.28	1.52
1	J	361	ARG	CB-CG	-7.77	1.29	1.52
1	J	208	VAL	C-N	7.19	1.41	1.33
1	P	150	LYS	CG-CD	-7.18	1.30	1.52
1	M	376	ARG	CD-NE	-6.69	1.36	1.46
1	M	152	LYS	CG-CD	-6.60	1.32	1.52
1	F	196	ARG	CB-CG	6.46	1.71	1.52
1	O	361	ARG	CZ-NH1	6.36	1.41	1.32
1	L	193	LYS	CE-NZ	6.35	1.68	1.49
1	C	300	ARG	CD-NE	-6.18	1.37	1.46
1	B	458	LYS	CD-CE	6.17	1.71	1.52
1	P	184	ASP	CA-CB	-6.10	1.45	1.52
1	P	181	ARG	CG-CD	6.04	1.70	1.52
1	O	404	ARG	CB-CG	-5.88	1.34	1.52
1	H	460	PRO	CA-C	-5.86	1.48	1.51
1	O	128	ARG	CD-NE	-5.85	1.38	1.46
1	C	394	ILE	CG1-CD1	5.68	1.73	1.51
1	G	297	ARG	CB-CG	5.62	1.69	1.52
1	B	357	LYS	CD-CE	5.17	1.68	1.52
1	B	151	ARG	CZ-NH1	5.15	1.40	1.32
1	P	460	PRO	CA-C	5.13	1.54	1.51
1	M	367	SER	CB-OG	5.11	1.52	1.42
1	F	196	ARG	CG-CD	5.11	1.67	1.52
1	C	257	LYS	CB-CG	-5.11	1.37	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	196	ARG	CG-CD	5.07	1.67	1.52

All (380) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	300	ARG	CG-CD-NE	-18.47	71.36	112.00
1	F	297	ARG	CB-CG-CD	-15.07	76.64	111.30
1	O	392	LYS	CB-CG-CD	-14.83	77.19	111.30
1	M	405	GLU	CA-CB-CG	-13.81	86.47	114.10
1	F	296	GLU	CA-C-N	-13.56	102.36	123.24
1	F	296	GLU	C-N-CA	-13.56	102.36	123.24
1	C	300	ARG	CA-CB-CG	-12.78	88.53	114.10
1	L	404	ARG	NE-CZ-NH2	-12.65	107.82	119.20
1	A	181	ARG	CA-CB-CG	-12.32	89.46	114.10
1	H	404	ARG	CB-CG-CD	11.87	138.60	111.30
1	F	130	LYS	CA-CB-CG	-11.79	90.52	114.10
1	C	165	LYS	CB-CG-CD	-11.78	84.21	111.30
1	J	426	ARG	CA-CB-CG	-11.67	90.77	114.10
1	N	426	ARG	CA-CB-CG	-11.66	90.77	114.10
1	G	376	ARG	CB-CG-CD	-11.61	84.60	111.30
1	J	426	ARG	CG-CD-NE	-11.56	86.56	112.00
1	H	161	ARG	CA-CB-CG	-11.35	91.41	114.10
1	M	181	ARG	CA-CB-CG	-11.27	91.56	114.10
1	D	181	ARG	CA-CB-CG	-11.26	91.59	114.10
1	J	404	ARG	CG-CD-NE	-11.23	87.28	112.00
1	A	168	ARG	CG-CD-NE	-11.19	87.38	112.00
1	F	161	ARG	CA-CB-CG	-11.17	91.77	114.10
1	C	257	LYS	CG-CD-CE	-11.08	85.82	111.30
1	J	161	ARG	CB-CG-CD	10.89	136.35	111.30
1	C	300	ARG	NE-CZ-NH1	10.86	132.36	121.50
1	N	153	GLU	CA-CB-CG	-10.84	92.41	114.10
1	F	196	ARG	NE-CZ-NH2	-10.84	109.45	119.20
1	J	168	ARG	CA-CB-CG	-10.72	92.66	114.10
1	O	386	GLN	CA-CB-CG	-10.72	92.66	114.10
1	C	426	ARG	CG-CD-NE	-10.55	88.79	112.00
1	F	196	ARG	CD-NE-CZ	10.55	139.16	124.40
1	C	152	LYS	CB-CG-CD	-10.54	87.06	111.30
1	N	426	ARG	CG-CD-NE	-10.52	88.85	112.00
1	H	426	ARG	CB-CG-CD	-10.49	87.17	111.30
1	O	181	ARG	CA-CB-CG	-10.47	93.15	114.10
1	F	399	ARG	CB-CG-CD	-10.42	87.33	111.30
1	C	151	ARG	CG-CD-NE	-10.29	89.36	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	404	ARG	CB-CG-CD	-10.21	87.81	111.30
1	C	196	ARG	CG-CD-NE	10.15	134.34	112.00
1	H	201	GLU	CA-CB-CG	-10.08	93.94	114.10
1	K	373	GLN	CA-CB-CG	-10.04	94.01	114.10
1	C	300	ARG	CD-NE-CZ	9.96	138.34	124.40
1	E	193	LYS	CB-CG-CD	-9.89	88.54	111.30
1	G	401	ARG	CB-CG-CD	-9.88	88.58	111.30
1	J	300	ARG	CB-CG-CD	-9.84	88.66	111.30
1	H	376	ARG	CA-CB-CG	-9.80	94.50	114.10
1	O	366	TRP	CA-C-N	-9.69	106.56	122.54
1	O	366	TRP	C-N-CA	-9.69	106.56	122.54
1	B	399	ARG	NE-CZ-NH2	-9.68	110.49	119.20
1	L	404	ARG	CD-NE-CZ	9.67	137.94	124.40
1	E	168	ARG	CA-CB-CG	-9.67	94.77	114.10
1	L	399	ARG	CD-NE-CZ	-9.52	111.08	124.40
1	C	153	GLU	CA-CB-CG	9.46	133.01	114.10
1	I	196	ARG	CG-CD-NE	9.44	132.76	112.00
1	J	404	ARG	NE-CZ-NH2	-9.37	110.77	119.20
1	J	373	GLN	CA-CB-CG	-9.36	95.39	114.10
1	K	193	LYS	CA-CB-CG	9.32	132.74	114.10
1	L	399	ARG	CA-CB-CG	-9.26	95.57	114.10
1	P	153	GLU	CB-CA-C	-9.20	93.16	109.71
1	G	300	ARG	CG-CD-NE	-9.16	91.84	112.00
1	M	181	ARG	CG-CD-NE	-9.15	91.88	112.00
1	C	426	ARG	CA-CB-CG	-9.07	95.95	114.10
1	K	300	ARG	CG-CD-NE	9.07	131.95	112.00
1	I	152	LYS	CG-CD-CE	9.04	132.09	111.30
1	A	165	LYS	CG-CD-CE	-8.94	90.74	111.30
1	B	259	GLU	CA-CB-CG	8.73	131.56	114.10
1	A	201	GLU	CA-CB-CG	-8.70	96.70	114.10
1	K	376	ARG	CG-CD-NE	8.68	131.10	112.00
1	C	149	ARG	CA-CB-CG	-8.62	96.85	114.10
1	L	193	LYS	CA-CB-CG	-8.59	96.92	114.10
1	B	193	LYS	CB-CG-CD	-8.58	91.57	111.30
1	G	196	ARG	CA-CB-CG	8.47	131.03	114.10
1	H	300	ARG	CG-CD-NE	8.44	130.56	112.00
1	E	346	HIS	CB-CA-C	-8.43	96.47	110.72
1	P	385	LEU	CB-CG-CD2	-8.42	85.44	110.70
1	J	361	ARG	CG-CD-NE	-8.41	93.49	112.00
1	G	161	ARG	CA-C-N	-8.41	110.34	123.12
1	G	161	ARG	C-N-CA	-8.41	110.34	123.12
1	H	297	ARG	CG-CD-NE	-8.38	93.56	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	399	ARG	NE-CZ-NH2	8.36	126.73	119.20
1	H	361	ARG	NE-CZ-NH1	-8.36	113.14	121.50
1	H	149	ARG	CB-CG-CD	-8.29	92.23	111.30
1	F	149	ARG	CB-CG-CD	-8.27	92.28	111.30
1	O	150	LYS	CG-CD-CE	8.27	130.32	111.30
1	P	373	GLN	CA-CB-CG	-8.14	97.81	114.10
1	B	357	LYS	CG-CD-CE	8.13	130.00	111.30
1	M	401	ARG	CB-CG-CD	-8.12	92.62	111.30
1	C	399	ARG	CG-CD-NE	8.10	129.82	112.00
1	G	369	ARG	CD-NE-CZ	8.07	135.71	124.40
1	H	376	ARG	CB-CG-CD	8.02	129.75	111.30
1	A	186	GLU	CA-CB-CG	-8.00	98.10	114.10
1	A	404	ARG	NE-CZ-NH1	-7.95	113.55	121.50
1	P	192	MET	CB-CG-SD	-7.94	88.88	112.70
1	F	193	LYS	CB-CG-CD	-7.94	93.04	111.30
1	D	153	GLU	CB-CG-CD	-7.90	99.18	112.60
1	I	394	ILE	CA-CB-CG1	-7.89	96.99	110.40
1	C	300	ARG	CB-CG-CD	7.88	129.42	111.30
1	H	361	ARG	NE-CZ-NH2	7.86	126.27	119.20
1	K	193	LYS	CB-CG-CD	7.84	129.34	111.30
1	P	181	ARG	CG-CD-NE	-7.84	94.75	112.00
1	M	165	LYS	CB-CA-C	-7.84	95.62	110.67
1	H	300	ARG	CA-CB-CG	7.81	129.72	114.10
1	H	404	ARG	CA-CB-CG	7.81	129.72	114.10
1	G	201	GLU	CA-CB-CG	-7.76	98.57	114.10
1	B	259	GLU	CB-CG-CD	-7.74	99.44	112.60
1	I	161	ARG	CD-NE-CZ	7.69	135.16	124.40
1	G	153	GLU	CA-CB-CG	-7.68	98.74	114.10
1	H	178	GLU	CA-CB-CG	7.66	129.43	114.10
1	D	181	ARG	CD-NE-CZ	-7.65	113.69	124.40
1	N	373	GLN	CB-CG-CD	-7.65	99.60	112.60
1	A	181	ARG	CD-NE-CZ	-7.57	113.80	124.40
1	B	365	ASP	CB-CA-C	-7.51	94.30	109.99
1	O	278	LEU	CB-CG-CD1	-7.48	88.27	110.70
1	F	130	LYS	CD-CE-NZ	-7.47	87.99	111.90
1	I	399	ARG	CB-CG-CD	-7.45	94.16	111.30
1	P	181	ARG	CD-NE-CZ	7.45	134.84	124.40
1	P	153	GLU	N-CA-CB	7.45	122.32	110.85
1	C	300	ARG	NH1-CZ-NH2	-7.44	109.62	119.30
1	A	357	LYS	CG-CD-CE	-7.42	94.23	111.30
1	E	374	GLU	CB-CA-C	-7.42	98.43	110.74
1	A	178	GLU	CA-CB-CG	-7.38	99.34	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	196	ARG	CB-CG-CD	-7.37	94.35	111.30
1	B	373	GLN	CA-CB-CG	-7.36	99.38	114.10
1	M	296	GLU	CA-C-N	-7.34	112.31	122.87
1	M	296	GLU	C-N-CA	-7.34	112.31	122.87
1	H	296	GLU	CA-C-N	-7.31	110.70	122.62
1	H	296	GLU	C-N-CA	-7.31	110.70	122.62
1	G	405	GLU	N-CA-CB	-7.29	99.39	110.33
1	C	399	ARG	NE-CZ-NH1	-7.29	114.21	121.50
1	F	152	LYS	CG-CD-CE	-7.28	94.57	111.30
1	E	221	MET	CA-C-N	7.26	132.65	120.88
1	E	221	MET	C-N-CA	7.26	132.65	120.88
1	I	150	LYS	CA-CB-CG	7.26	128.62	114.10
1	K	193	LYS	N-CA-CB	7.26	121.98	110.65
1	L	399	ARG	NE-CZ-NH1	-7.25	114.25	121.50
1	J	361	ARG	CA-CB-CG	-7.25	99.61	114.10
1	N	196	ARG	CB-CG-CD	-7.23	94.67	111.30
1	K	376	ARG	CB-CA-C	-7.22	98.80	110.79
1	B	152	LYS	CG-CD-CE	7.20	127.86	111.30
1	B	458	LYS	CG-CD-CE	-7.18	94.79	111.30
1	L	399	ARG	NE-CZ-NH2	7.16	125.64	119.20
1	G	185	VAL	CA-C-N	-7.14	112.53	123.17
1	G	185	VAL	C-N-CA	-7.14	112.53	123.17
1	G	326	LEU	CD1-CG-CD2	-7.12	95.15	110.80
1	G	376	ARG	CG-CD-NE	7.09	127.59	112.00
1	C	399	ARG	CD-NE-CZ	-7.07	114.50	124.40
1	B	222	LYS	CD-CE-NZ	-7.05	89.33	111.90
1	H	178	GLU	CB-CA-C	-7.03	97.18	110.67
1	C	201	GLU	CB-CA-C	-7.02	95.85	110.17
1	I	361	ARG	CG-CD-NE	-6.98	96.65	112.00
1	N	181	ARG	CG-CD-NE	6.97	127.34	112.00
1	B	150	LYS	CG-CD-CE	-6.97	95.28	111.30
1	B	399	ARG	CD-NE-CZ	6.96	134.14	124.40
1	N	181	ARG	CD-NE-CZ	-6.94	114.68	124.40
1	N	361	ARG	CG-CD-NE	6.91	127.21	112.00
1	F	399	ARG	CA-CB-CG	6.89	127.88	114.10
1	H	361	ARG	CG-CD-NE	-6.88	96.86	112.00
1	H	398	ALA	CA-C-N	6.87	132.32	120.58
1	H	398	ALA	C-N-CA	6.87	132.32	120.58
1	K	193	LYS	CD-CE-NZ	-6.86	89.95	111.90
1	J	168	ARG	CD-NE-CZ	-6.86	114.80	124.40
1	J	222	LYS	CA-CB-CG	6.85	127.80	114.10
1	L	188	ARG	CG-CD-NE	-6.84	96.95	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	192	MET	CA-C-N	-6.79	113.19	122.77
1	B	192	MET	C-N-CA	-6.79	113.19	122.77
1	A	426	ARG	CD-NE-CZ	-6.76	114.94	124.40
1	I	357	LYS	CA-CB-CG	-6.75	100.60	114.10
1	E	390	ASP	N-CA-CB	-6.70	100.41	110.32
1	L	399	ARG	CB-CG-CD	6.70	126.71	111.30
1	C	399	ARG	CA-CB-CG	-6.69	100.71	114.10
1	A	165	LYS	CD-CE-NZ	6.69	133.30	111.90
1	J	168	ARG	CG-CD-NE	6.69	126.71	112.00
1	H	399	ARG	CB-CG-CD	6.67	126.64	111.30
1	E	222	LYS	CA-CB-CG	6.67	127.44	114.10
1	G	375	ALA	CA-C-N	-6.66	109.61	120.72
1	G	375	ALA	C-N-CA	-6.66	109.61	120.72
1	M	295	ASP	N-CA-CB	-6.60	100.92	111.62
1	J	357	LYS	CA-CB-CG	6.60	127.29	114.10
1	G	326	LEU	CB-CG-CD2	-6.54	91.07	110.70
1	J	404	ARG	NE-CZ-NH1	6.54	128.03	121.50
1	M	390	ASP	N-CA-CB	-6.53	98.75	110.37
1	J	269	SER	CB-CA-C	-6.50	99.06	111.48
1	L	361	ARG	CA-CB-CG	6.48	127.07	114.10
1	O	426	ARG	CA-CB-CG	-6.47	101.15	114.10
1	F	130	LYS	CB-CG-CD	6.47	126.19	111.30
1	I	357	LYS	CD-CE-NZ	-6.47	91.19	111.90
1	N	150	LYS	CB-CA-C	6.47	120.25	109.38
1	K	152	LYS	CD-CE-NZ	-6.47	91.21	111.90
1	F	139	THR	OG1-CB-CG2	6.46	122.22	109.30
1	P	178	GLU	CA-CB-CG	-6.45	101.21	114.10
1	N	404	ARG	CA-CB-CG	6.44	126.98	114.10
1	O	150	LYS	CB-CG-CD	6.44	126.11	111.30
1	O	392	LYS	CA-CB-CG	6.42	126.94	114.10
1	F	161	ARG	CB-CG-CD	6.40	126.03	111.30
1	C	193	LYS	CA-CB-CG	-6.40	101.30	114.10
1	A	165	LYS	CB-CG-CD	6.38	125.98	111.30
1	A	151	ARG	CD-NE-CZ	6.37	133.31	124.40
1	L	193	LYS	CD-CE-NZ	-6.36	91.56	111.90
1	O	185	VAL	CA-C-N	-6.34	113.72	123.17
1	O	185	VAL	C-N-CA	-6.34	113.72	123.17
1	J	399	ARG	CB-CG-CD	6.31	125.81	111.30
1	K	376	ARG	CD-NE-CZ	6.31	133.23	124.40
1	I	426	ARG	CA-CB-CG	6.30	126.71	114.10
1	A	152	LYS	N-CA-CB	-6.30	102.57	112.46
1	J	404	ARG	CD-NE-CZ	6.28	133.19	124.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	178	GLU	N-CA-CB	6.27	120.80	110.39
1	A	357	LYS	CB-CG-CD	6.26	125.71	111.30
1	L	168	ARG	CB-CG-CD	6.26	125.70	111.30
1	H	404	ARG	CB-CA-C	-6.24	100.07	110.68
1	J	376	ARG	CA-CB-CG	6.24	126.57	114.10
1	G	426	ARG	CA-CB-CG	6.20	126.50	114.10
1	L	150	LYS	CA-CB-CG	6.20	126.49	114.10
1	C	151	ARG	CB-CG-CD	-6.17	97.11	111.30
1	I	185	VAL	CA-C-N	-6.16	113.99	123.17
1	I	185	VAL	C-N-CA	-6.16	113.99	123.17
1	C	458	LYS	CG-CD-CE	-6.16	97.14	111.30
1	N	181	ARG	CA-CB-CG	-6.14	101.83	114.10
1	C	153	GLU	CG-CD-OE1	-6.13	104.29	118.40
1	P	390	ASP	N-CA-C	-6.11	101.95	109.65
1	H	152	LYS	CB-CG-CD	6.07	125.26	111.30
1	M	152	LYS	CD-CE-NZ	6.06	131.29	111.90
1	N	196	ARG	N-CA-CB	6.06	121.13	111.56
1	O	181	ARG	CD-NE-CZ	-6.05	115.93	124.40
1	F	361	ARG	NE-CZ-NH1	-6.05	115.45	121.50
1	L	168	ARG	CA-CB-CG	-6.02	102.06	114.10
1	L	139	THR	OG1-CB-CG2	6.00	121.31	109.30
1	E	193	LYS	CD-CE-NZ	-5.98	92.75	111.90
1	F	399	ARG	CD-NE-CZ	5.98	132.78	124.40
1	M	405	GLU	CB-CA-C	5.98	120.06	109.65
1	M	161	ARG	CA-CB-CG	-5.98	102.14	114.10
1	O	426	ARG	CD-NE-CZ	5.98	132.77	124.40
1	P	373	GLN	CB-CG-CD	-5.95	102.49	112.60
1	H	297	ARG	NE-CZ-NH1	-5.94	115.56	121.50
1	L	356	GLU	CB-CG-CD	-5.93	102.53	112.60
1	B	161	ARG	CA-CB-CG	5.92	125.94	114.10
1	A	399	ARG	N-CA-CB	-5.92	101.20	110.44
1	A	404	ARG	CG-CD-NE	-5.91	98.99	112.00
1	J	378	LEU	CB-CG-CD1	5.91	128.44	110.70
1	B	222	LYS	CG-CD-CE	5.91	124.90	111.30
1	F	376	ARG	CA-CB-CG	-5.90	102.30	114.10
1	H	321	MET	CG-SD-CE	-5.88	87.95	100.90
1	C	399	ARG	CB-CG-CD	5.86	124.77	111.30
1	F	161	ARG	CD-NE-CZ	-5.85	116.21	124.40
1	G	369	ARG	NE-CZ-NH2	-5.84	113.94	119.20
1	E	168	ARG	CB-CG-CD	5.80	124.65	111.30
1	J	340	LYS	N-CA-CB	-5.80	100.51	111.00
1	K	361	ARG	N-CA-CB	-5.77	101.12	109.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	130	LYS	CG-CD-CE	-5.76	98.05	111.30
1	K	361	ARG	CG-CD-NE	5.76	124.67	112.00
1	B	150	LYS	CA-C-N	-5.75	110.55	121.54
1	B	150	LYS	C-N-CA	-5.75	110.55	121.54
1	G	186	GLU	CB-CG-CD	-5.73	102.86	112.60
1	H	464	VAL	CG1-CB-CG2	-5.73	98.20	110.80
1	D	181	ARG	NE-CZ-NH1	-5.73	115.77	121.50
1	J	130	LYS	CG-CD-CE	-5.72	98.15	111.30
1	D	181	ARG	NE-CZ-NH2	5.71	124.34	119.20
1	M	376	ARG	CG-CD-NE	-5.71	99.44	112.00
1	K	300	ARG	CA-CB-CG	5.70	125.49	114.10
1	F	376	ARG	CB-CG-CD	5.69	124.39	111.30
1	P	303	ILE	CG1-CB-CG2	-5.69	93.64	110.70
1	G	385	LEU	CB-CG-CD2	-5.69	93.64	110.70
1	G	150	LYS	CB-CA-C	-5.67	98.04	109.55
1	C	130	LYS	CA-CB-CG	-5.64	102.82	114.10
1	H	300	ARG	CB-CG-CD	-5.64	98.33	111.30
1	H	404	ARG	CD-NE-CZ	5.62	132.27	124.40
1	B	389	LYS	CB-CA-C	-5.60	100.24	109.99
1	E	404	ARG	CA-CB-CG	5.58	125.27	114.10
1	K	366	TRP	CA-C-N	-5.58	111.40	120.72
1	K	366	TRP	C-N-CA	-5.58	111.40	120.72
1	B	151	ARG	CG-CD-NE	-5.58	99.72	112.00
1	M	165	LYS	N-CA-CB	5.57	118.91	110.28
1	F	408	THR	OG1-CB-CG2	5.56	120.43	109.30
1	P	162	ASN	CB-CA-C	5.55	118.66	111.50
1	K	196	ARG	N-CA-CB	5.55	119.62	110.97
1	C	177	MET	CB-CG-SD	5.54	129.31	112.70
1	L	399	ARG	CG-CD-NE	5.54	124.18	112.00
1	D	139	THR	OG1-CB-CG2	5.53	120.36	109.30
1	M	376	ARG	CB-CG-CD	-5.53	98.59	111.30
1	F	161	ARG	NE-CZ-NH1	-5.51	115.99	121.50
1	L	361	ARG	CG-CD-NE	-5.50	99.90	112.00
1	B	161	ARG	CB-CG-CD	5.50	123.94	111.30
1	H	168	ARG	CD-NE-CZ	-5.50	116.70	124.40
1	M	201	GLU	CB-CG-CD	-5.49	103.26	112.60
1	O	386	GLN	CG-CD-OE1	-5.49	109.81	120.80
1	O	386	GLN	CG-CD-NE2	5.49	124.63	116.40
1	L	356	GLU	CB-CA-C	-5.48	101.70	110.79
1	H	376	ARG	CD-NE-CZ	-5.47	116.74	124.40
1	A	181	ARG	NE-CZ-NH1	-5.47	116.03	121.50
1	E	151	ARG	CD-NE-CZ	5.47	132.06	124.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	K	150	LYS	CB-CA-C	-5.41	100.28	110.67
1	N	404	ARG	CB-CG-CD	5.40	123.73	111.30
1	H	181	ARG	CD-NE-CZ	5.40	131.96	124.40
1	F	297	ARG	N-CA-CB	5.40	120.83	110.90
1	E	374	GLU	CA-CB-CG	5.40	124.89	114.10
1	J	300	ARG	CD-NE-CZ	5.39	131.95	124.40
1	G	177	MET	CA-C-N	-5.38	111.74	120.72
1	G	177	MET	C-N-CA	-5.38	111.74	120.72
1	P	295	ASP	CB-CA-C	-5.38	99.72	110.42
1	H	297	ARG	CB-CG-CD	-5.38	98.94	111.30
1	A	180	VAL	CG1-CB-CG2	-5.37	98.98	110.80
1	E	390	ASP	CB-CA-C	5.36	117.06	109.08
1	P	162	ASN	N-CA-CB	-5.36	102.21	110.25
1	A	180	VAL	CA-C-N	-5.33	113.19	120.44
1	A	180	VAL	C-N-CA	-5.33	113.19	120.44
1	D	181	ARG	CG-CD-NE	5.33	123.73	112.00
1	O	426	ARG	CB-CA-C	5.33	120.38	109.55
1	J	399	ARG	CG-CD-NE	5.33	123.73	112.00
1	J	168	ARG	CB-CA-C	5.33	120.38	109.67
1	B	153	GLU	CA-CB-CG	-5.33	103.45	114.10
1	M	367	SER	CB-CA-C	5.33	120.55	109.95
1	F	297	ARG	CA-CB-CG	5.32	124.75	114.10
1	A	404	ARG	CA-CB-CG	5.32	124.74	114.10
1	E	361	ARG	NE-CZ-NH1	-5.32	116.18	121.50
1	H	399	ARG	CA-CB-CG	5.31	124.72	114.10
1	L	188	ARG	NE-CZ-NH1	-5.31	116.19	121.50
1	G	405	GLU	CB-CA-C	5.30	120.33	109.67
1	K	376	ARG	N-CA-CB	5.30	117.91	110.12
1	G	386	GLN	CA-CB-CG	5.30	124.69	114.10
1	H	165	LYS	CA-C-N	-5.29	112.26	120.31
1	H	165	LYS	C-N-CA	-5.29	112.26	120.31
1	P	372	THR	CA-C-N	-5.29	112.78	120.29
1	P	372	THR	C-N-CA	-5.29	112.78	120.29
1	J	376	ARG	CB-CG-CD	-5.26	99.20	111.30
1	F	165	LYS	N-CA-CB	-5.26	102.20	110.30
1	D	152	LYS	CA-C-N	-5.26	112.66	121.75
1	D	152	LYS	C-N-CA	-5.26	112.66	121.75
1	N	196	ARG	CG-CD-NE	5.25	123.55	112.00
1	N	196	ARG	CB-CA-C	-5.25	99.18	111.09
1	G	404	ARG	CA-C-N	5.24	131.16	121.52
1	G	404	ARG	C-N-CA	5.24	131.16	121.52
1	G	162	ASN	CA-C-N	5.22	131.79	122.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	162	ASN	C-N-CA	5.22	131.79	122.13
1	G	149	ARG	CD-NE-CZ	5.22	131.71	124.40
1	P	165	LYS	CG-CD-CE	-5.21	99.31	111.30
1	B	257	LYS	CA-CB-CG	5.21	124.52	114.10
1	I	150	LYS	CG-CD-CE	5.21	123.28	111.30
1	B	165	LYS	CB-CA-C	-5.20	100.68	110.67
1	G	385	LEU	CD1-CG-CD2	-5.20	99.35	110.80
1	H	401	ARG	NE-CZ-NH1	-5.20	116.30	121.50
1	J	161	ARG	CA-CB-CG	-5.20	103.70	114.10
1	O	296	GLU	CA-C-N	-5.20	115.38	122.87
1	O	296	GLU	C-N-CA	-5.20	115.38	122.87
1	N	178	GLU	CA-CB-CG	-5.20	103.71	114.10
1	B	165	LYS	CB-CG-CD	-5.19	99.35	111.30
1	O	220	ILE	CG1-CB-CG2	5.19	126.26	110.70
1	A	426	ARG	NE-CZ-NH2	5.18	123.87	119.20
1	H	131	ILE	CA-CB-CG1	-5.18	101.60	110.40
1	H	202	THR	OG1-CB-CG2	5.17	119.65	109.30
1	O	373	GLN	CA-C-N	5.17	127.47	120.38
1	O	373	GLN	C-N-CA	5.17	127.47	120.38
1	C	404	ARG	CA-CB-CG	5.17	124.43	114.10
1	G	252	MET	CA-CB-CG	5.17	124.43	114.10
1	C	399	ARG	N-CA-CB	5.16	118.48	110.44
1	C	193	LYS	CB-CG-CD	-5.14	99.47	111.30
1	O	278	LEU	CD1-CG-CD2	-5.13	99.52	110.80
1	J	373	GLN	CB-CG-CD	5.12	121.30	112.60
1	N	165	LYS	CD-CE-NZ	-5.11	95.56	111.90
1	O	405	GLU	N-CA-CB	-5.10	102.45	110.30
1	G	150	LYS	CD-CE-NZ	5.10	128.21	111.90
1	H	150	LYS	CA-CB-CG	-5.09	103.92	114.10
1	I	161	ARG	CB-CG-CD	5.09	123.00	111.30
1	J	357	LYS	CB-CG-CD	-5.09	99.60	111.30
1	P	150	LYS	CA-CB-CG	5.08	124.27	114.10
1	J	193	LYS	CA-C-N	5.08	127.31	120.50
1	J	193	LYS	C-N-CA	5.08	127.31	120.50
1	N	372	THR	CA-C-N	-5.08	112.25	121.14
1	N	372	THR	C-N-CA	-5.08	112.25	121.14
1	G	426	ARG	CG-CD-NE	5.07	123.15	112.00
1	D	165	LYS	CB-CA-C	-5.07	99.40	109.99
1	D	399	ARG	CB-CG-CD	-5.06	99.66	111.30
1	G	396	ARG	CB-CG-CD	-5.06	99.66	111.30
1	N	152	LYS	CA-C-N	-5.05	114.74	122.62
1	N	152	LYS	C-N-CA	-5.05	114.74	122.62

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	N	139	THR	OG1-CB-CG2	5.04	119.39	109.30
1	D	150	LYS	N-CA-CB	-5.04	103.12	110.53
1	D	347	ASP	CB-CA-C	5.03	118.45	109.65
1	F	161	ARG	NE-CZ-NH2	5.02	123.72	119.20
1	H	447	ARG	CD-NE-CZ	-5.00	117.39	124.40
1	F	361	ARG	CB-CG-CD	5.00	122.81	111.30
1	H	150	LYS	CB-CG-CD	5.00	122.81	111.30

There are no chirality outliers.

All (23) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	151	ARG	Peptide
1	A	162	ASN	Sidechain
1	B	373	GLN	Sidechain
1	B	399	ARG	Sidechain
1	C	300	ARG	Sidechain
1	D	162	ASN	Sidechain
1	E	150	LYS	Peptide
1	E	374	GLU	Sidechain
1	F	196	ARG	Sidechain
1	G	369	ARG	Sidechain
1	H	162	ASN	Sidechain
1	H	201	GLU	Sidechain
1	H	250	HIS	Sidechain
1	I	151	ARG	Mainchain
1	K	195	GLN	Peptide
1	L	404	ARG	Sidechain
1	M	162	ASN	Sidechain
1	N	162	ASN	Sidechain
1	O	162	ASN	Sidechain
1	O	346	HIS	Sidechain
1	P	153	GLU	Peptide
1	P	162	ASN	Sidechain
1	P	181	ARG	Sidechain

5.2 Too-close contacts

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

the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2772	0	2765	109	4
1	B	2772	0	2767	78	0
1	C	2772	0	2767	110	4
1	D	2772	0	2767	69	0
1	E	2772	0	2767	67	0
1	F	2772	0	2767	86	0
1	G	2772	0	2767	101	0
1	H	2772	0	2767	128	0
1	I	2772	0	2767	93	0
1	J	2772	0	2766	75	3
1	K	2772	0	2767	91	1
1	L	2772	0	2767	69	0
1	M	2772	0	2767	95	1
1	N	2772	0	2765	116	0
1	O	2772	0	2767	127	3
1	P	2772	0	2767	138	0
2	A	5	0	0	0	0
2	B	15	0	0	1	0
2	C	15	0	0	1	0
2	D	5	0	0	0	0
2	E	15	0	0	3	0
2	F	15	0	0	1	0
2	G	5	0	0	1	0
2	H	10	0	0	2	0
2	I	15	0	0	0	0
2	J	15	0	0	0	0
2	K	10	0	0	1	0
2	L	10	0	0	1	0
2	M	5	0	0	1	0
2	N	5	0	0	0	0
2	O	10	0	0	1	0
2	P	10	0	0	0	0
3	A	35	0	0	1	0
3	B	35	0	0	0	0
3	C	35	0	0	0	0
3	D	35	0	0	1	0
3	E	35	0	0	0	0
3	F	35	0	0	0	0
3	G	35	0	0	0	0
3	H	35	0	0	1	0
3	I	35	0	0	0	0
3	J	35	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	K	35	0	0	0	0
3	L	35	0	0	0	0
3	M	35	0	0	0	0
3	N	35	0	0	0	0
3	O	35	0	0	0	0
3	P	35	0	0	0	0
4	A	33	0	0	7	0
4	B	27	0	0	0	0
4	C	37	0	0	7	0
4	D	32	0	0	2	0
4	E	39	0	0	5	0
4	F	37	0	0	5	0
4	G	31	0	0	2	0
4	H	22	0	0	6	0
4	I	34	0	0	5	0
4	J	29	0	0	3	0
4	K	29	0	0	3	0
4	L	34	0	0	8	0
4	M	43	0	0	8	0
4	N	26	0	0	3	0
4	O	28	0	0	4	0
4	P	30	0	0	10	0
All	All	45588	0	44267	1484	8

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 17.

All (1484) 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:193:LYS:CE	1:L:193:LYS:NZ	1.68	1.52
1:N:307:ARG:NH2	1:N:346:HIS:CD2	2.08	1.22
1:B:151:ARG:HG2	1:B:153:GLU:OE1	1.40	1.21
1:N:402:PRO:HD2	1:N:405:GLU:CD	1.65	1.19
1:K:151:ARG:HB2	1:K:153:GLU:OE2	1.43	1.18
1:P:181:ARG:NH1	1:P:187:ASP:HA	1.63	1.13
1:N:356:GLU:OE2	1:N:361:ARG:HD2	1.47	1.12
1:B:357:LYS:HE2	1:D:361:ARG:HH12	1.13	1.10
1:O:402:PRO:HB2	1:O:405:GLU:HG3	1.32	1.09
1:J:373:GLN:HG2	1:J:374:GLU:N	1.56	1.08
1:O:353:HIS:HB3	1:O:397:ILE:HD13	1.35	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:402:PRO:HD2	1:N:405:GLU:OE1	1.55	1.06
1:I:361:ARG:HH21	1:P:361:ARG:HD2	1.15	1.06
1:H:161:ARG:HG3	1:H:162:ASN:H	0.98	1.05
1:H:307:ARG:NH2	2:H:501:SO4:O4	1.90	1.03
1:O:350:GLU:OE2	1:O:396:ARG:NH1	1.92	1.03
1:J:373:GLN:HG2	1:J:374:GLU:H	1.03	1.02
1:F:161:ARG:HG3	1:F:162:ASN:N	1.69	1.02
1:D:148:ASP:OD2	1:D:151:ARG:HB2	1.59	1.02
1:O:181:ARG:HH11	1:O:193:LYS:HB3	1.23	1.01
1:P:181:ARG:NH1	1:P:193:LYS:HE3	1.76	1.01
1:A:396:ARG:HG3	1:A:399:ARG:HH21	1.22	1.00
1:A:396:ARG:HG3	1:A:399:ARG:NH2	1.77	0.99
1:I:128:ARG:NE	1:I:150:LYS:HB3	1.75	0.99
1:O:162:ASN:OD1	1:O:203:GLY:C	2.04	0.99
1:A:192:MET:HE2	1:A:209:MET:SD	2.01	0.99
1:A:181:ARG:NH2	1:A:185:VAL:O	1.96	0.98
1:O:128:ARG:HG3	1:O:150:LYS:HG3	1.42	0.97
1:C:298:HIS:HE1	1:C:300:ARG:NH1	1.62	0.97
1:P:373:GLN:CD	1:P:376:ARG:HD2	1.90	0.96
1:H:161:ARG:HG3	1:H:162:ASN:N	1.56	0.96
1:H:353:HIS:HB3	1:H:397:ILE:HD13	1.46	0.96
1:C:152:LYS:O	1:C:153:GLU:HB3	1.61	0.95
1:L:193:LYS:NZ	1:L:193:LYS:CD	2.29	0.95
1:C:257:LYS:HB2	1:C:259:GLU:OE2	1.64	0.95
1:O:300:ARG:NH2	1:O:320:TRP:O	2.00	0.94
1:H:289:ASP:OD2	4:H:601:HOH:O	1.83	0.94
1:K:151:ARG:CB	1:K:153:GLU:OE2	2.16	0.93
1:P:380:THR:HG23	1:P:383:GLY:H	1.31	0.93
1:H:181:ARG:NE	1:H:184:ASP:O	2.01	0.92
1:M:181:ARG:HH21	1:M:185:VAL:HA	1.32	0.92
1:A:174:ILE:HG22	1:A:178:GLU:OE2	1.70	0.92
1:J:373:GLN:CG	1:J:374:GLU:N	2.32	0.92
1:H:147:TRP:HE1	1:H:149:ARG:HH11	1.07	0.92
1:N:307:ARG:HH22	1:N:346:HIS:HD2	1.12	0.92
1:B:357:LYS:HE2	1:D:361:ARG:NH1	1.85	0.92
1:F:272:PRO:HB2	1:O:273:MET:HE1	1.53	0.91
1:P:181:ARG:HH12	1:P:187:ASP:HA	1.33	0.90
1:P:300:ARG:NH2	1:P:320:TRP:O	2.04	0.90
1:D:186:GLU:OE1	1:K:188:ARG:NH2	2.05	0.89
1:O:301:THR:HG22	1:O:317:SER:HB3	1.53	0.89
1:O:386:GLN:HG2	1:O:387:PRO:HD2	1.54	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:181:ARG:NH2	1:A:185:VAL:C	2.31	0.89
1:H:404:ARG:HH21	1:K:404:ARG:CD	1.85	0.88
1:L:390:ASP:O	1:L:394:ILE:HD12	1.74	0.88
1:C:300:ARG:HE	1:C:319:GLY:HA2	1.39	0.87
1:E:151:ARG:NH2	1:E:196:ARG:HH12	1.71	0.87
1:C:300:ARG:NH1	1:C:320:TRP:O	2.07	0.87
1:C:298:HIS:CE1	1:C:300:ARG:NH1	2.43	0.87
1:B:187:ASP:OD1	1:B:193:LYS:HE2	1.75	0.86
1:P:148:ASP:HB3	1:P:153:GLU:HG2	1.56	0.86
1:N:356:GLU:OE2	1:N:361:ARG:CD	2.23	0.86
1:N:152:LYS:C	1:N:153:GLU:HG2	2.01	0.86
1:K:347:ASP:HB3	1:K:350:GLU:HG2	1.57	0.86
1:K:177:MET:HE2	1:K:194:ILE:HB	1.56	0.86
1:O:181:ARG:NH1	1:O:193:LYS:HB3	1.90	0.86
1:P:318:LEU:HD12	1:P:369:ARG:NH2	1.90	0.86
1:F:219:TRP:CZ3	1:F:268:THR:HG21	2.10	0.85
1:I:153:GLU:O	4:I:601:HOH:O	1.94	0.85
1:F:130:LYS:HG2	1:F:131:ILE:N	1.90	0.84
1:G:354:LEU:HD21	1:G:397:ILE:HA	1.58	0.84
1:C:300:ARG:NE	1:C:319:GLY:HA2	1.92	0.84
1:K:193:LYS:HG3	1:K:195:GLN:HE22	1.44	0.83
1:G:148:ASP:OD2	1:G:151:ARG:HD2	1.76	0.83
1:A:181:ARG:HH22	1:A:185:VAL:C	1.87	0.83
1:D:349:LEU:HG	1:D:378:LEU:HD22	1.61	0.82
1:M:249:LEU:O	4:M:601:HOH:O	1.97	0.82
1:M:380:THR:HG22	1:M:382:ALA:H	1.44	0.82
1:A:276:ARG:HH21	1:B:130:LYS:HZ1	1.27	0.82
1:K:257:LYS:NZ	1:K:259:GLU:HB2	1.95	0.82
1:L:380:THR:HG22	1:L:382:ALA:H	1.44	0.82
1:G:380:THR:HG22	1:G:382:ALA:H	1.45	0.82
1:H:181:ARG:HB2	1:H:193:LYS:HD2	1.60	0.82
1:P:300:ARG:HH21	1:P:320:TRP:H	1.28	0.82
1:A:300:ARG:NH2	4:A:602:HOH:O	2.13	0.81
1:D:147:TRP:HD1	1:D:149:ARG:HD3	1.44	0.81
1:H:376:ARG:O	1:H:376:ARG:HG2	1.63	0.81
1:N:313:GLU:OE1	1:N:427:ARG:NH2	2.13	0.81
1:I:128:ARG:NH1	1:I:150:LYS:HG3	1.95	0.81
1:E:151:ARG:HH21	1:E:196:ARG:HH22	1.29	0.81
1:C:314:VAL:HG22	1:C:320:TRP:CD1	2.16	0.81
1:F:219:TRP:HZ3	1:F:268:THR:HG21	1.44	0.81
1:K:147:TRP:HZ2	1:K:152:LYS:HD3	1.45	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:376:ARG:NH2	1:H:380:THR:O	2.13	0.81
1:P:374:GLU:O	4:P:601:HOH:O	1.99	0.81
1:A:407:ILE:O	4:A:601:HOH:O	1.98	0.81
1:N:152:LYS:O	1:N:153:GLU:HG2	1.81	0.81
1:E:365:ASP:OD2	1:E:369:ARG:NH2	2.13	0.80
1:H:353:HIS:HB3	1:H:397:ILE:CD1	2.10	0.80
1:P:130:LYS:HD2	1:P:149:ARG:HH21	1.44	0.80
1:G:202:THR:HG23	1:G:204:HIS:HD1	1.47	0.80
1:I:361:ARG:NH2	1:P:361:ARG:HD2	1.96	0.80
1:C:165:LYS:HD2	1:C:168:ARG:HH21	1.47	0.80
1:N:148:ASP:OD2	1:N:151:ARG:HG3	1.82	0.80
1:P:181:ARG:NH1	1:P:193:LYS:CE	2.44	0.80
1:C:298:HIS:CE1	1:C:300:ARG:HH12	2.00	0.80
1:M:373:GLN:OE1	1:M:376:ARG:NH1	2.15	0.80
1:K:151:ARG:NH1	1:K:153:GLU:OE2	2.14	0.80
1:P:380:THR:CG2	1:P:383:GLY:H	1.95	0.80
1:C:273:MET:HE1	1:H:272:PRO:HB2	1.62	0.79
1:P:174:ILE:HG22	1:P:178:GLU:OE2	1.82	0.79
1:O:299:SER:HB3	1:O:302:ALA:HB2	1.63	0.79
1:A:181:ARG:O	1:A:181:ARG:HG3	1.74	0.79
1:M:162:ASN:O	1:M:162:ASN:ND2	2.14	0.79
1:P:345:THR:HG22	1:P:347:ASP:H	1.48	0.79
1:H:404:ARG:NH2	1:K:404:ARG:HG2	1.98	0.79
1:F:268:THR:HG22	1:F:279:PRO:HA	1.64	0.79
1:I:388:CYS:O	1:I:394:ILE:HD11	1.83	0.78
1:P:181:ARG:NH1	1:P:187:ASP:CA	2.43	0.78
1:L:426:ARG:NH2	4:L:603:HOH:O	2.15	0.78
1:N:372:THR:HG23	1:N:375:ALA:H	1.49	0.78
1:M:153:GLU:HG3	1:M:154:TYR:H	1.47	0.78
1:M:404:ARG:C	1:M:405:GLU:HG2	2.03	0.77
1:H:301:THR:HG22	1:H:317:SER:HB3	1.66	0.77
1:N:237:GLN:HE22	1:N:284:ARG:HA	1.47	0.77
1:D:346:HIS:O	1:D:346:HIS:ND1	2.17	0.77
1:B:357:LYS:CE	1:D:361:ARG:HH12	1.94	0.77
1:F:177:MET:HE2	1:F:194:ILE:HB	1.67	0.77
1:K:151:ARG:HH11	1:K:153:GLU:CD	1.92	0.76
1:I:137:GLU:HG3	1:I:142:LYS:HG2	1.67	0.76
1:C:300:ARG:CZ	1:C:320:TRP:H	1.99	0.76
1:C:165:LYS:NZ	1:L:373:GLN:HG3	2.01	0.76
1:C:397:ILE:O	4:C:601:HOH:O	2.03	0.76
1:P:181:ARG:CZ	1:P:193:LYS:NZ	2.49	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:252:MET:HE3	1:G:320:TRP:HZ3	1.51	0.76
1:P:373:GLN:O	1:P:373:GLN:HG3	1.82	0.75
1:A:185:VAL:HG23	1:A:186:GLU:HG3	1.68	0.75
1:N:402:PRO:HD2	1:N:405:GLU:CG	2.17	0.75
1:C:400:ALA:N	4:C:601:HOH:O	2.19	0.74
1:N:402:PRO:CD	1:N:405:GLU:CD	2.56	0.74
1:M:252:MET:HG2	1:M:322:TYR:HA	1.69	0.74
1:M:181:ARG:NH2	1:M:185:VAL:HA	2.02	0.74
1:O:353:HIS:CB	1:O:397:ILE:HD13	2.14	0.74
1:P:181:ARG:HD2	1:P:193:LYS:HD3	1.68	0.74
1:F:390:ASP:OD2	1:F:392:LYS:HB2	1.88	0.74
1:P:318:LEU:HD12	1:P:369:ARG:CZ	2.18	0.74
1:M:179:ARG:HE	1:M:249:LEU:HD22	1.52	0.73
1:O:128:ARG:CG	1:O:150:LYS:HG3	2.17	0.73
1:G:162:ASN:HB2	1:G:204:HIS:HA	1.70	0.73
1:A:162:ASN:O	1:A:162:ASN:ND2	2.21	0.73
1:F:376:ARG:HG3	1:F:376:ARG:HH11	1.53	0.73
1:I:148:ASP:OD2	1:I:151:ARG:HB2	1.88	0.73
1:M:323:SER:HB2	4:M:603:HOH:O	1.87	0.73
1:P:181:ARG:HH11	1:P:187:ASP:HA	1.51	0.73
1:P:181:ARG:CZ	1:P:193:LYS:HZ2	2.02	0.73
1:C:192:MET:C	1:C:193:LYS:HG2	2.13	0.73
1:G:316:LEU:HB2	1:G:318:LEU:HD23	1.69	0.73
1:K:212:TYR:OH	4:K:601:HOH:O	2.07	0.73
1:N:285:VAL:O	4:N:601:HOH:O	2.05	0.72
1:P:299:SER:HB3	1:P:302:ALA:HB2	1.69	0.72
1:F:161:ARG:HG3	1:F:162:ASN:H	1.52	0.72
1:N:307:ARG:NH2	1:N:346:HIS:HD2	1.65	0.72
1:K:151:ARG:HD3	1:K:153:GLU:OE2	1.89	0.72
1:L:276:ARG:NH2	4:L:605:HOH:O	2.22	0.72
1:H:361:ARG:H	1:H:361:ARG:HD3	1.55	0.72
1:K:193:LYS:HG3	1:K:195:GLN:NE2	2.05	0.72
1:P:380:THR:CG2	1:P:384:THR:H	2.02	0.72
1:A:370:CYS:O	1:A:376:ARG:NH2	2.23	0.72
1:K:181:ARG:NH1	1:K:193:LYS:HD2	2.05	0.72
1:P:170:ALA:O	1:P:174:ILE:HG13	1.90	0.72
1:K:257:LYS:HG3	1:K:259:GLU:H	1.54	0.71
1:F:379:PHE:HA	1:F:385:LEU:HA	1.72	0.71
1:G:153:GLU:HG3	1:G:154:TYR:H	1.55	0.71
1:H:190:PRO:HG3	1:H:237:GLN:HB3	1.72	0.71
1:A:177:MET:HE2	1:A:194:ILE:HB	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:192:MET:HG2	1:C:193:LYS:H	1.55	0.71
1:N:307:ARG:NH1	1:N:346:HIS:HA	2.05	0.71
1:O:386:GLN:HG2	1:O:387:PRO:CD	2.19	0.71
1:G:346:HIS:O	1:G:346:HIS:ND1	2.22	0.71
1:F:202:THR:OG1	1:F:204:HIS:ND1	2.22	0.71
1:G:349:LEU:HD13	1:G:378:LEU:HD22	1.73	0.71
1:A:185:VAL:C	1:A:186:GLU:HG3	2.11	0.71
1:H:181:ARG:HH22	1:H:193:LYS:NZ	1.89	0.71
1:D:147:TRP:CD1	1:D:149:ARG:HD3	2.24	0.70
1:J:195:GLN:HE22	1:J:210:PRO:HD3	1.56	0.70
1:A:316:LEU:HB2	1:A:318:LEU:HD21	1.70	0.70
1:C:165:LYS:HZ2	1:C:168:ARG:HH21	1.36	0.70
1:I:177:MET:HE2	1:I:194:ILE:HB	1.72	0.70
1:G:349:LEU:HD21	1:G:386:GLN:HB2	1.71	0.70
1:J:395:ALA:O	1:J:399:ARG:HG3	1.91	0.70
1:E:151:ARG:NH2	1:E:196:ARG:NH1	2.39	0.70
1:I:167:THR:HG23	1:I:205:MET:HG2	1.73	0.70
1:J:195:GLN:OE1	1:J:209:MET:HA	1.92	0.70
1:G:177:MET:HE1	1:G:207:ILE:HG21	1.74	0.70
1:H:200:ASN:OD1	1:H:201:GLU:N	2.25	0.70
1:A:396:ARG:CG	1:A:399:ARG:HH21	2.01	0.70
1:B:151:ARG:CG	1:B:153:GLU:OE1	2.30	0.70
1:F:271:ASP:OD2	1:F:274:THR:OG1	2.02	0.70
1:H:162:ASN:OD1	1:H:203:GLY:C	2.35	0.70
1:K:276:ARG:NH2	4:K:602:HOH:O	2.23	0.70
1:G:252:MET:HE3	1:G:320:TRP:CZ3	2.26	0.70
1:J:177:MET:HE2	1:J:194:ILE:HB	1.73	0.70
1:P:181:ARG:NH2	1:P:184:ASP:O	2.25	0.70
1:I:423:ASP:HB3	1:I:426:ARG:HG3	1.73	0.70
1:H:177:MET:HE1	1:H:207:ILE:HD13	1.74	0.69
1:G:153:GLU:HG3	1:G:154:TYR:N	2.07	0.69
1:D:380:THR:HB	1:D:383:GLY:H	1.57	0.69
1:G:376:ARG:HD3	1:G:376:ARG:O	1.93	0.69
1:O:300:ARG:HH21	1:O:320:TRP:H	1.40	0.69
1:G:192:MET:HG3	1:G:209:MET:HE1	1.72	0.69
1:D:163:VAL:HB	1:D:166:TYR:HD2	1.57	0.69
1:M:378:LEU:C	1:M:386:GLN:HG3	2.18	0.69
1:P:181:ARG:HD2	1:P:193:LYS:CG	2.22	0.69
1:P:349:LEU:HB2	1:P:378:LEU:HD22	1.73	0.69
1:M:128:ARG:NE	1:M:148:ASP:OD1	2.19	0.69
1:M:364:ALA:O	4:M:602:HOH:O	2.10	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:353:HIS:NE2	1:O:386:GLN:O	2.18	0.69
1:E:310:ARG:NH1	4:E:603:HOH:O	2.26	0.69
1:H:299:SER:HB3	1:H:302:ALA:HB2	1.75	0.69
1:D:132:LEU:HD11	1:D:147:TRP:HB2	1.74	0.69
1:H:161:ARG:CG	1:H:162:ASN:N	2.47	0.69
1:A:167:THR:HG23	1:A:205:MET:HG2	1.74	0.68
1:F:361:ARG:NH1	1:M:361:ARG:HB2	2.07	0.68
1:F:147:TRP:HE1	1:F:149:ARG:HH11	1.42	0.68
1:C:200:ASN:OD1	4:C:602:HOH:O	2.11	0.68
1:F:380:THR:HG22	1:F:382:ALA:H	1.58	0.68
1:H:389:LYS:HA	1:H:394:ILE:HD11	1.74	0.68
1:M:181:ARG:O	1:M:181:ARG:HG3	1.85	0.68
1:L:252:MET:HG2	1:L:322:TYR:HA	1.76	0.68
1:I:130:LYS:HE2	1:I:149:ARG:HH21	1.59	0.68
1:P:323:SER:HB2	4:P:602:HOH:O	1.93	0.68
1:K:441:LYS:HG2	1:K:442:TYR:CE2	2.29	0.68
1:P:181:ARG:HB2	1:P:193:LYS:HG2	1.75	0.67
1:P:196:ARG:HG3	1:P:197:TYR:N	2.08	0.67
1:E:347:ASP:OD2	4:E:601:HOH:O	2.13	0.67
1:F:405:GLU:O	1:F:405:GLU:HG3	1.92	0.67
1:C:134:LEU:HD11	1:C:137:GLU:HG2	1.75	0.67
1:E:151:ARG:HH21	1:E:196:ARG:NH2	1.91	0.67
1:G:313:GLU:HA	1:G:318:LEU:HB2	1.77	0.67
1:L:192:MET:C	1:L:193:LYS:HG2	2.18	0.67
1:O:128:ARG:NE	1:O:148:ASP:OD1	2.26	0.67
1:C:187:ASP:OD1	1:C:193:LYS:HE3	1.95	0.67
1:K:310:ARG:NH1	4:K:606:HOH:O	2.27	0.67
1:P:300:ARG:NH2	1:P:320:TRP:H	1.92	0.67
1:O:278:LEU:N	1:O:278:LEU:HD12	2.08	0.67
1:E:162:ASN:ND2	1:E:202:THR:O	2.28	0.67
1:H:147:TRP:NE1	1:H:149:ARG:HH11	1.88	0.67
1:M:153:GLU:HG3	1:M:154:TYR:N	2.09	0.67
1:N:307:ARG:HH22	1:N:346:HIS:CD2	1.88	0.67
1:L:183:SER:O	4:L:601:HOH:O	2.12	0.67
1:N:348:ASN:HB3	1:N:378:LEU:HD21	1.77	0.67
1:C:264:GLU:HG2	1:H:448:GLN:HG2	1.78	0.66
1:F:230:HIS:HE1	1:F:281:GLU:OE2	1.78	0.66
1:M:401:ARG:HD2	1:M:402:PRO:CD	2.25	0.66
1:G:162:ASN:ND2	1:G:203:GLY:O	2.28	0.66
1:G:135:LEU:HD21	1:G:145:GLU:HB2	1.78	0.66
1:B:393:HIS:O	1:B:397:ILE:HG13	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:393:HIS:O	1:J:397:ILE:HG13	1.95	0.66
1:M:251:LEU:HG	4:M:601:HOH:O	1.95	0.66
1:E:393:HIS:O	1:E:397:ILE:HG13	1.95	0.66
1:H:454:ASP:OD2	4:H:602:HOH:O	2.13	0.66
1:H:404:ARG:NH2	1:K:404:ARG:CG	2.59	0.66
1:I:264:GLU:HG2	1:M:448:GLN:HG2	1.78	0.66
1:P:301:THR:HG22	1:P:317:SER:HB3	1.78	0.66
1:M:428:LEU:O	4:M:603:HOH:O	2.13	0.65
1:N:337:TYR:O	4:N:602:HOH:O	2.15	0.65
1:A:348:ASN:OD1	4:A:603:HOH:O	2.14	0.65
1:F:252:MET:HG2	1:F:322:TYR:HA	1.77	0.65
1:C:271:ASP:HB2	1:C:278:LEU:HD13	1.78	0.65
1:P:181:ARG:HH22	1:P:184:ASP:CG	2.05	0.65
1:J:257:LYS:HD3	1:J:259:GLU:HG2	1.77	0.65
1:O:386:GLN:CG	1:O:387:PRO:HD2	2.23	0.65
1:G:226:PHE:O	4:G:601:HOH:O	2.14	0.65
1:N:316:LEU:HB2	1:N:318:LEU:HD23	1.79	0.65
1:A:192:MET:CE	1:A:209:MET:SD	2.83	0.65
1:M:167:THR:HG23	1:M:205:MET:HG2	1.79	0.65
1:A:181:ARG:CD	1:A:193:LYS:HD2	2.26	0.65
1:M:299:SER:OG	1:M:302:ALA:HB2	1.95	0.65
1:A:276:ARG:HH21	1:B:130:LYS:NZ	1.94	0.64
1:A:388:CYS:O	1:A:394:ILE:HD11	1.97	0.64
1:H:311:SER:HB2	1:H:313:GLU:OE1	1.96	0.64
1:K:222:LYS:HD3	1:K:223:HIS:NE2	2.11	0.64
1:E:167:THR:HG23	1:E:205:MET:HG2	1.79	0.64
1:H:361:ARG:HD3	1:H:361:ARG:N	2.11	0.64
1:D:187:ASP:OD2	1:D:193:LYS:HD2	1.98	0.64
1:J:193:LYS:O	1:J:195:GLN:NE2	2.30	0.64
1:P:181:ARG:HD2	1:P:193:LYS:HG2	1.79	0.64
1:P:181:ARG:HH22	1:P:184:ASP:CB	2.11	0.64
1:G:401:ARG:HD2	1:G:402:PRO:CD	2.27	0.64
1:I:128:ARG:CZ	1:I:150:LYS:HG3	2.27	0.64
1:N:380:THR:HB	1:N:383:GLY:H	1.63	0.64
1:H:307:ARG:HH21	1:H:346:HIS:HA	1.63	0.64
1:I:392:LYS:H	1:I:392:LYS:HE2	1.63	0.64
1:O:316:LEU:CB	1:O:318:LEU:HD13	2.28	0.64
1:C:200:ASN:OD1	1:C:201:GLU:N	2.29	0.64
1:P:158:LYS:HD2	4:P:625:HOH:O	1.96	0.64
1:A:170:ALA:O	1:A:174:ILE:HG13	1.98	0.64
1:B:151:ARG:NH1	1:B:153:GLU:OE1	2.31	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:257:LYS:HG2	1:B:260:ASN:CG	2.22	0.64
1:H:161:ARG:CG	1:H:162:ASN:H	1.91	0.64
1:K:257:LYS:HG3	1:K:259:GLU:OE2	1.97	0.64
1:G:299:SER:OG	1:G:302:ALA:HB2	1.98	0.64
1:K:147:TRP:CZ2	1:K:152:LYS:HD3	2.30	0.64
1:O:316:LEU:HB3	1:O:318:LEU:CD1	2.27	0.64
1:A:181:ARG:CZ	1:A:185:VAL:C	2.71	0.64
1:C:147:TRP:CD1	1:C:149:ARG:HG2	2.32	0.63
1:C:258:PRO:HD3	1:C:332:ILE:HG12	1.80	0.63
1:J:264:GLU:HG2	1:N:448:GLN:HG2	1.80	0.63
1:N:147:TRP:CZ2	1:N:152:LYS:HG3	2.33	0.63
1:K:151:ARG:NH1	1:K:153:GLU:CD	2.55	0.63
1:I:423:ASP:CB	1:I:426:ARG:HG3	2.28	0.63
1:J:139:THR:OG1	4:J:601:HOH:O	2.15	0.63
1:L:402:PRO:HB3	1:L:404:ARG:NH1	2.13	0.63
1:P:380:THR:HG22	1:P:384:THR:H	1.63	0.63
1:B:147:TRP:HZ2	1:B:152:LYS:HD3	1.62	0.63
1:O:372:THR:HB	1:O:374:GLU:OE1	1.98	0.63
1:K:257:LYS:NZ	1:K:259:GLU:CB	2.61	0.63
1:P:148:ASP:CB	1:P:153:GLU:HG2	2.29	0.63
1:A:133:SER:HB3	1:A:145:GLU:HB3	1.80	0.63
1:A:175:GLN:HA	1:A:178:GLU:OE1	1.98	0.63
1:B:162:ASN:HB2	1:B:204:HIS:CD2	2.34	0.63
1:P:181:ARG:HD2	1:P:193:LYS:CD	2.27	0.63
1:D:297:ARG:NH1	1:N:299:SER:H	1.97	0.63
1:H:396:ARG:HH11	1:H:396:ARG:HG3	1.63	0.63
1:I:148:ASP:CG	1:I:151:ARG:HB2	2.23	0.63
1:A:396:ARG:HA	1:A:399:ARG:HE	1.64	0.62
1:O:188:ARG:HD3	1:O:189:PHE:CZ	2.34	0.62
1:O:404:ARG:HA	1:O:413:CYS:SG	2.38	0.62
1:A:181:ARG:HD3	1:A:193:LYS:HD2	1.81	0.62
1:H:251:LEU:HD23	1:H:295:ASP:OD1	1.98	0.62
1:K:373:GLN:HG3	1:K:373:GLN:O	1.98	0.62
1:A:353:HIS:HB3	1:A:397:ILE:HD13	1.82	0.62
1:C:192:MET:HG2	1:C:193:LYS:N	2.14	0.62
1:C:252:MET:HE2	1:C:320:TRP:HZ3	1.62	0.62
1:D:390:ASP:OD2	1:D:392:LYS:HB2	1.99	0.62
1:F:165:LYS:HD2	1:F:168:ARG:HH21	1.63	0.62
1:C:165:LYS:CD	1:C:168:ARG:HH21	2.13	0.62
1:H:313:GLU:CD	1:H:427:ARG:HH22	2.08	0.62
1:J:373:GLN:CG	1:J:374:GLU:H	1.92	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:313:GLU:HA	1:I:318:LEU:HD12	1.81	0.62
1:H:398:ALA:O	1:H:401:ARG:NH1	2.32	0.62
1:L:149:ARG:O	1:L:152:LYS:NZ	2.27	0.62
1:P:190:PRO:HG3	1:P:237:GLN:HB3	1.82	0.62
1:D:177:MET:HE1	1:D:207:ILE:HG21	1.82	0.62
1:H:296:GLU:O	1:H:321:MET:HE1	2.00	0.62
1:O:162:ASN:OD1	1:O:203:GLY:O	2.18	0.62
1:P:181:ARG:CZ	1:P:184:ASP:O	2.47	0.62
1:A:162:ASN:OD1	1:A:203:GLY:C	2.43	0.62
1:A:380:THR:HB	1:A:383:GLY:H	1.64	0.62
1:B:147:TRP:HE1	1:B:149:ARG:HD3	1.65	0.62
1:O:373:GLN:HA	1:O:376:ARG:NE	2.15	0.62
1:L:362:LEU:HB3	1:L:366:TRP:CE3	2.35	0.61
1:N:147:TRP:HD1	1:N:149:ARG:HD3	1.64	0.61
1:O:350:GLU:CD	1:O:396:ARG:HH11	2.04	0.61
1:H:345:THR:HG22	1:H:347:ASP:H	1.64	0.61
1:J:181:ARG:HD2	1:J:193:LYS:HD3	1.81	0.61
1:P:196:ARG:HG3	1:P:197:TYR:H	1.63	0.61
1:A:300:ARG:O	1:A:300:ARG:HG2	1.95	0.61
1:E:151:ARG:HH21	1:E:196:ARG:HH12	1.48	0.61
1:J:128:ARG:O	1:J:149:ARG:HG3	2.00	0.61
1:E:222:LYS:HG3	1:E:223:HIS:NE2	2.16	0.61
1:H:181:ARG:HH22	1:H:187:ASP:HA	1.65	0.61
1:P:230:HIS:O	1:P:234:ILE:HG13	2.00	0.61
1:F:257:LYS:HE3	1:F:259:GLU:HG3	1.83	0.61
1:N:157:VAL:HG22	1:N:208:VAL:HG22	1.81	0.61
1:C:175:GLN:HE22	1:F:296:GLU:CD	2.07	0.61
1:K:167:THR:HG23	1:K:205:MET:HG2	1.82	0.61
1:P:401:ARG:HG3	1:P:402:PRO:HD2	1.83	0.61
1:E:365:ASP:OD2	1:E:369:ARG:NE	2.34	0.61
1:H:307:ARG:NH2	1:H:346:HIS:HA	2.15	0.61
1:L:184:ASP:O	1:L:193:LYS:NZ	2.33	0.61
1:L:258:PRO:HD3	1:L:332:ILE:HG12	1.81	0.60
1:B:353:HIS:O	1:B:357:LYS:HB2	2.01	0.60
1:H:365:ASP:OD2	1:H:369:ARG:NH2	2.33	0.60
1:O:177:MET:HE1	1:O:207:ILE:HD13	1.82	0.60
1:O:402:PRO:CB	1:O:405:GLU:HG3	2.20	0.60
1:F:274:THR:HB	1:F:276:ARG:NE	2.16	0.60
1:J:200:ASN:OD1	1:J:201:GLU:N	2.28	0.60
1:E:252:MET:HG2	1:E:322:TYR:HA	1.84	0.60
1:H:163:VAL:CG2	1:H:166:TYR:HD2	2.14	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:167:THR:HG23	1:L:205:MET:HG2	1.84	0.60
1:M:415:LEU:HD12	1:M:438:TYR:HB3	1.83	0.60
1:C:300:ARG:NH2	1:C:320:TRP:CD1	2.69	0.60
1:M:353:HIS:HE1	1:M:386:GLN:O	1.84	0.60
1:I:128:ARG:HE	1:I:150:LYS:HB3	1.66	0.60
1:O:316:LEU:HB3	1:O:318:LEU:HD11	1.83	0.60
1:A:151:ARG:O	1:A:151:ARG:HG2	2.00	0.60
1:H:396:ARG:O	1:H:399:ARG:HB2	2.01	0.60
1:N:401:ARG:HB3	1:N:405:GLU:OE1	1.99	0.60
1:J:195:GLN:OE1	1:J:195:GLN:N	2.34	0.60
1:K:128:ARG:HH22	1:K:196:ARG:NH2	2.00	0.60
1:L:187:ASP:CG	1:L:193:LYS:HE3	2.26	0.60
1:N:307:ARG:CZ	1:N:346:HIS:HA	2.31	0.60
1:O:277:ALA:C	1:O:278:LEU:HD12	2.26	0.60
1:P:151:ARG:NE	1:P:153:GLU:OE1	2.29	0.60
1:G:190:PRO:HG3	1:G:237:GLN:HB3	1.83	0.60
1:G:326:LEU:HD21	1:G:430:ALA:N	2.16	0.60
1:L:390:ASP:O	1:L:394:ILE:CD1	2.50	0.60
1:K:257:LYS:HZ3	1:K:259:GLU:HB2	1.64	0.60
1:A:190:PRO:HG3	1:A:237:GLN:HB3	1.82	0.59
1:A:316:LEU:HB2	1:A:318:LEU:CD2	2.32	0.59
1:B:252:MET:HG2	1:B:322:TYR:HA	1.84	0.59
1:H:404:ARG:HH21	1:K:404:ARG:CG	2.14	0.59
1:J:177:MET:HE3	1:J:192:MET:SD	2.42	0.59
1:N:190:PRO:HG3	1:N:237:GLN:HB3	1.84	0.59
1:H:404:ARG:HH21	1:K:404:ARG:HD3	1.67	0.59
1:I:380:THR:HG23	1:I:383:GLY:H	1.66	0.59
1:K:259:GLU:OE2	1:K:259:GLU:N	2.34	0.59
1:O:426:ARG:NH1	4:O:605:HOH:O	2.34	0.59
1:G:153:GLU:CG	1:G:154:TYR:N	2.64	0.59
1:B:222:LYS:HD2	1:B:223:HIS:NE2	2.18	0.59
1:F:356:GLU:OE2	1:F:361:ARG:HB3	2.03	0.59
1:G:128:ARG:NH2	1:G:196:ARG:HD3	2.17	0.59
1:H:134:LEU:HD13	1:H:142:LYS:HE3	1.83	0.59
1:A:380:THR:HG22	1:A:382:ALA:H	1.67	0.59
1:N:402:PRO:CB	1:N:405:GLU:HG3	2.33	0.59
1:O:367:SER:HA	1:O:370:CYS:SG	2.43	0.59
1:P:357:LYS:HE3	1:P:397:ILE:O	2.03	0.59
1:B:202:THR:HG23	1:B:204:HIS:ND1	2.17	0.59
1:C:230:HIS:HE1	1:C:281:GLU:OE2	1.85	0.59
1:F:258:PRO:HD3	1:F:332:ILE:HG12	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:195:GLN:NE2	1:J:210:PRO:HD3	2.18	0.59
1:O:337:TYR:OH	4:O:601:HOH:O	2.12	0.59
1:M:362:LEU:HD22	1:M:366:TRP:CZ3	2.38	0.59
1:A:177:MET:HE1	1:A:207:ILE:HG21	1.85	0.59
1:F:376:ARG:HG3	1:F:376:ARG:O	2.01	0.59
1:H:163:VAL:HG21	1:H:166:TYR:HD2	1.68	0.59
1:J:257:LYS:HD3	1:J:259:GLU:CG	2.32	0.59
1:H:350:GLU:OE2	1:H:396:ARG:HD2	2.02	0.58
1:N:402:PRO:HB2	1:N:405:GLU:HG3	1.84	0.58
1:B:167:THR:HG23	1:B:205:MET:HG2	1.86	0.58
1:G:297:ARG:HB3	1:P:295:ASP:OD2	2.03	0.58
1:O:316:LEU:HD12	1:O:375:ALA:HB1	1.83	0.58
1:P:318:LEU:CD1	1:P:369:ARG:CZ	2.81	0.58
1:H:181:ARG:NH2	1:H:193:LYS:NZ	2.51	0.58
1:O:158:LYS:HD3	1:O:207:ILE:HD12	1.84	0.58
1:B:151:ARG:CZ	1:B:153:GLU:OE1	2.51	0.58
1:C:151:ARG:O	1:C:152:LYS:HB2	2.01	0.58
1:F:356:GLU:HG2	1:F:361:ARG:HA	1.85	0.58
1:B:194:ILE:HA	1:B:209:MET:HG2	1.85	0.58
1:F:186:GLU:O	1:F:186:GLU:HG3	2.03	0.58
1:G:444:PRO:O	1:G:447:ARG:HD2	2.04	0.58
1:M:192:MET:CE	1:M:290:LEU:HG	2.33	0.58
1:N:299:SER:HB3	1:N:302:ALA:HB2	1.84	0.58
1:G:366:TRP:CD1	1:G:369:ARG:HH21	2.21	0.58
1:H:237:GLN:HE22	1:H:284:ARG:HA	1.68	0.58
1:J:464:VAL:O	1:J:465:MET:HG2	2.03	0.58
1:O:128:ARG:HG3	1:O:150:LYS:CG	2.27	0.58
1:A:269:SER:OG	1:A:278:LEU:HB2	2.04	0.58
1:B:373:GLN:O	1:B:373:GLN:HG3	2.02	0.58
1:C:192:MET:CG	1:C:193:LYS:N	2.66	0.58
1:H:147:TRP:CD1	1:H:149:ARG:HD3	2.39	0.58
1:K:257:LYS:HZ2	1:K:259:GLU:CB	2.16	0.58
1:L:217:LEU:HD22	1:L:259:GLU:HG3	1.86	0.58
1:A:181:ARG:HH22	1:A:186:GLU:N	2.01	0.58
1:D:167:THR:HG22	1:D:205:MET:HG2	1.85	0.58
1:L:310:ARG:NH1	4:L:610:HOH:O	2.30	0.58
1:P:181:ARG:NH2	1:P:184:ASP:CB	2.66	0.58
1:J:167:THR:HG23	1:J:205:MET:HG2	1.85	0.57
1:M:323:SER:HA	1:M:326:LEU:HD23	1.85	0.57
1:A:313:GLU:HA	1:A:318:LEU:HD23	1.86	0.57
1:F:161:ARG:HD2	1:F:162:ASN:H	1.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:177:MET:HE1	1:J:207:ILE:HG21	1.86	0.57
1:D:239:GLY:HA3	1:D:434:MET:HB3	1.86	0.57
1:K:151:ARG:HB2	1:K:153:GLU:CD	2.25	0.57
1:O:323:SER:OG	1:O:427:ARG:HD2	2.04	0.57
1:P:183:SER:OG	1:P:244:TYR:OH	2.19	0.57
1:P:380:THR:HG22	1:P:384:THR:N	2.18	0.57
1:E:181:ARG:NH2	4:E:608:HOH:O	2.37	0.57
1:H:298:HIS:NE2	1:H:321:MET:HE2	2.19	0.57
1:O:134:LEU:HD21	1:O:137:GLU:OE2	2.04	0.57
1:D:390:ASP:OD1	1:D:391:PRO:HD2	2.05	0.57
1:N:415:LEU:HD12	1:N:438:TYR:HB3	1.87	0.57
1:O:217:LEU:HD12	1:O:220:ILE:HD11	1.86	0.57
1:P:181:ARG:HH22	1:P:184:ASP:HB3	1.67	0.57
1:F:323:SER:HB2	4:F:613:HOH:O	2.03	0.57
1:I:153:GLU:N	4:I:601:HOH:O	2.23	0.57
1:N:163:VAL:O	1:N:167:THR:HG22	2.05	0.57
1:D:190:PRO:HG3	1:D:237:GLN:HB3	1.87	0.57
1:L:190:PRO:HG2	1:L:241:ALA:HB2	1.87	0.57
1:I:128:ARG:CZ	1:I:150:LYS:CG	2.83	0.56
1:I:147:TRP:CZ2	1:I:152:LYS:HD3	2.40	0.56
1:L:151:ARG:HB3	1:L:153:GLU:OE1	2.05	0.56
1:O:348:ASN:HB3	1:O:378:LEU:HD21	1.87	0.56
1:P:181:ARG:HH12	1:P:193:LYS:HE3	1.64	0.56
1:A:369:ARG:HH11	1:A:369:ARG:HG3	1.70	0.56
1:F:390:ASP:OD2	1:F:392:LYS:HD3	2.05	0.56
1:P:239:GLY:HA3	1:P:434:MET:HB3	1.87	0.56
1:C:192:MET:HE1	1:C:209:MET:SD	2.45	0.56
1:H:337:TYR:OH	4:H:603:HOH:O	2.14	0.56
1:I:217:LEU:HD22	1:I:259:GLU:HG3	1.88	0.56
1:I:425:GLN:HG2	1:I:465:MET:HB3	1.86	0.56
1:J:188:ARG:HH22	1:N:186:GLU:CD	2.14	0.56
1:L:383:GLY:O	4:L:604:HOH:O	2.17	0.56
1:B:264:GLU:HG2	1:G:448:GLN:HG2	1.87	0.56
1:D:380:THR:HG22	1:D:382:ALA:H	1.70	0.56
1:G:128:ARG:O	1:G:149:ARG:HB2	2.06	0.56
1:G:250:HIS:CD2	1:P:179:ARG:NH1	2.74	0.56
1:H:162:ASN:O	1:H:162:ASN:ND2	2.38	0.56
1:J:175:GLN:HE22	1:K:296:GLU:CD	2.13	0.56
1:O:173:GLU:HG2	1:O:177:MET:HE2	1.86	0.56
1:D:182:LEU:HD13	1:N:460:PRO:HA	1.87	0.56
1:H:316:LEU:HB2	1:H:318:LEU:HD13	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:390:ASP:OD2	1:L:392:LYS:HB2	2.06	0.56
1:I:147:TRP:HZ2	1:I:152:LYS:CD	2.18	0.56
1:P:181:ARG:HH11	1:P:187:ASP:CA	2.16	0.56
1:P:362:LEU:CD1	1:P:385:LEU:HD11	2.36	0.56
1:P:428:LEU:O	4:P:602:HOH:O	2.18	0.56
1:H:357:LYS:NZ	1:H:397:ILE:O	2.39	0.56
1:P:323:SER:OG	1:P:427:ARG:NH1	2.39	0.56
1:A:299:SER:HB3	1:A:302:ALA:HB2	1.88	0.56
1:C:165:LYS:HZ1	1:L:373:GLN:HG3	1.70	0.56
1:H:415:LEU:HD12	1:H:438:TYR:HB3	1.88	0.56
1:B:357:LYS:HG2	1:B:397:ILE:HG22	1.88	0.55
1:C:165:LYS:NZ	1:C:168:ARG:HH21	2.03	0.55
1:L:137:GLU:HG2	1:L:138:GLY:N	2.20	0.55
1:P:388:CYS:O	1:P:394:ILE:HD11	2.05	0.55
1:H:313:GLU:HG2	1:H:424:ARG:HD2	1.88	0.55
1:L:187:ASP:OD1	1:L:193:LYS:HE3	2.06	0.55
1:B:390:ASP:OD2	1:B:392:LYS:HE2	2.05	0.55
1:C:270:VAL:HG11	1:D:154:TYR:OH	2.07	0.55
1:C:310:ARG:NH1	4:C:609:HOH:O	2.36	0.55
1:F:264:GLU:HG2	1:O:448:GLN:HG2	1.87	0.55
1:G:163:VAL:CG1	1:G:166:TYR:HB2	2.37	0.55
1:F:161:ARG:CG	1:F:162:ASN:N	2.55	0.55
1:H:404:ARG:NH2	1:K:404:ARG:CD	2.64	0.55
1:J:177:MET:HG2	1:J:192:MET:HE1	1.89	0.55
1:L:464:VAL:O	1:L:465:MET:HG2	2.06	0.55
1:M:162:ASN:ND2	1:M:162:ASN:C	2.64	0.55
1:N:365:ASP:OD2	1:N:369:ARG:NH2	2.39	0.55
1:C:202:THR:HG23	1:C:204:HIS:ND1	2.21	0.55
1:D:464:VAL:HG13	1:D:464:VAL:O	2.05	0.55
1:H:162:ASN:OD1	1:H:204:HIS:N	2.39	0.55
1:K:217:LEU:HD22	1:K:259:GLU:HG3	1.88	0.55
1:N:313:GLU:CD	1:N:424:ARG:HG2	2.31	0.55
1:P:181:ARG:NH2	1:P:184:ASP:HB3	2.20	0.55
1:G:316:LEU:CB	1:G:318:LEU:HD23	2.34	0.55
1:A:423:ASP:OD2	4:A:604:HOH:O	2.18	0.55
1:C:376:ARG:HD2	1:C:376:ARG:O	2.07	0.55
1:G:184:ASP:OD2	1:G:193:LYS:NZ	2.32	0.55
1:O:129:PHE:CZ	1:O:208:VAL:HG21	2.42	0.55
1:E:222:LYS:HG3	1:E:223:HIS:CD2	2.42	0.55
1:E:464:VAL:O	1:E:465:MET:HG2	2.07	0.55
1:P:373:GLN:HA	1:P:376:ARG:HD2	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:179:ARG:NH2	1:E:251:LEU:HD21	2.22	0.54
1:E:195:GLN:OE1	1:E:210:PRO:HD3	2.07	0.54
1:E:222:LYS:CG	1:E:223:HIS:CE1	2.89	0.54
1:E:365:ASP:OD2	1:E:369:ARG:CZ	2.54	0.54
1:A:181:ARG:HH22	1:A:186:GLU:CA	2.19	0.54
1:B:162:ASN:HB2	1:B:204:HIS:NE2	2.22	0.54
1:D:162:ASN:OD1	1:D:202:THR:O	2.25	0.54
1:H:404:ARG:HH21	1:K:404:ARG:HD2	1.71	0.54
1:I:192:MET:HG2	1:I:193:LYS:N	2.21	0.54
1:P:168:ARG:NH1	1:P:171:LYS:HB2	2.22	0.54
1:F:350:GLU:HG3	1:F:393:HIS:HB3	1.90	0.54
1:I:179:ARG:NH1	1:I:251:LEU:HD21	2.23	0.54
1:C:165:LYS:HZ2	1:C:168:ARG:NH2	2.05	0.54
1:C:300:ARG:O	1:C:300:ARG:HG2	2.05	0.54
1:I:128:ARG:CD	1:I:150:LYS:HB3	2.38	0.54
1:K:257:LYS:HZ2	1:K:259:GLU:HB2	1.68	0.54
1:K:464:VAL:O	1:K:465:MET:HG2	2.07	0.54
1:O:200:ASN:OD1	1:O:201:GLU:N	2.40	0.54
1:P:175:GLN:HA	1:P:178:GLU:OE1	2.07	0.54
1:I:148:ASP:O	1:I:152:LYS:N	2.36	0.54
1:J:222:LYS:HG3	1:J:223:HIS:CE1	2.42	0.54
1:L:193:LYS:CD	1:L:193:LYS:HZ3	2.19	0.54
1:M:316:LEU:HD21	1:M:352:LEU:HD21	1.90	0.54
1:B:147:TRP:NE1	1:B:149:ARG:HD3	2.22	0.54
1:C:161:ARG:HG3	1:C:162:ASN:H	1.72	0.54
1:G:349:LEU:HD21	1:G:386:GLN:CB	2.37	0.54
1:N:132:LEU:HD11	1:N:147:TRP:HB2	1.90	0.54
1:P:252:MET:HG2	1:P:322:TYR:HA	1.90	0.54
1:C:165:LYS:HD2	1:C:168:ARG:NH2	2.21	0.54
1:G:196:ARG:HH21	1:G:196:ARG:HG3	1.73	0.54
1:H:258:PRO:HD3	1:H:332:ILE:HG12	1.89	0.54
1:P:373:GLN:NE2	1:P:376:ARG:HD2	2.22	0.54
1:D:448:GLN:HG2	1:K:264:GLU:HG2	1.89	0.54
1:H:215:CYS:HA	1:H:262:LEU:HA	1.90	0.54
1:J:152:LYS:O	1:J:152:LYS:HG3	2.07	0.54
1:P:128:ARG:NH1	1:P:151:ARG:HD3	2.22	0.54
1:A:369:ARG:O	1:A:369:ARG:HG2	2.08	0.54
1:B:464:VAL:O	1:B:465:MET:HG2	2.08	0.54
1:C:192:MET:HG3	1:C:212:TYR:HE2	1.73	0.54
1:D:215:CYS:HA	1:D:262:LEU:HA	1.90	0.54
1:H:217:LEU:O	1:H:221:MET:HG2	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:148:ASP:OD2	1:G:151:ARG:CD	2.53	0.53
1:A:181:ARG:HD2	1:A:193:LYS:HD2	1.90	0.53
1:F:179:ARG:NH1	1:F:251:LEU:HD11	2.22	0.53
1:J:284:ARG:O	4:J:603:HOH:O	2.19	0.53
1:C:249:LEU:HB3	1:C:251:LEU:HD13	1.90	0.53
1:E:222:LYS:HG3	1:E:223:HIS:CE1	2.43	0.53
1:E:274:THR:HB	1:E:276:ARG:CZ	2.38	0.53
1:N:185:VAL:HG23	1:N:186:GLU:HG3	1.90	0.53
1:N:200:ASN:OD1	1:N:201:GLU:N	2.40	0.53
1:N:307:ARG:HH21	1:N:346:HIS:CD2	2.15	0.53
1:C:271:ASP:HB2	1:C:278:LEU:CD1	2.38	0.53
1:H:229:ARG:NH1	4:H:604:HOH:O	2.22	0.53
1:H:400:ALA:O	1:H:401:ARG:HD3	2.08	0.53
1:J:190:PRO:HG2	1:J:241:ALA:HB2	1.90	0.53
1:J:390:ASP:OD2	1:J:392:LYS:HD2	2.09	0.53
1:N:181:ARG:O	1:N:181:ARG:HG3	2.06	0.53
1:E:151:ARG:HH21	1:E:196:ARG:NH1	2.04	0.53
1:H:456:ARG:NH1	4:H:607:HOH:O	2.42	0.53
1:O:128:ARG:HG3	1:O:150:LYS:HZ2	1.74	0.53
1:P:128:ARG:NH1	1:P:148:ASP:OD1	2.39	0.53
1:I:447:ARG:HA	1:I:452:HIS:CD2	2.43	0.53
1:L:187:ASP:OD1	1:L:193:LYS:CE	2.57	0.53
1:N:402:PRO:CD	1:N:405:GLU:HG3	2.39	0.53
1:O:316:LEU:CB	1:O:318:LEU:CD1	2.86	0.53
1:E:192:MET:HG2	1:E:288:CYS:HA	1.90	0.53
1:H:181:ARG:NH2	1:H:187:ASP:HA	2.23	0.53
1:H:320:TRP:O	1:H:321:MET:HG2	2.09	0.53
1:L:179:ARG:NH1	1:L:251:LEU:HD21	2.24	0.53
1:K:177:MET:HE3	1:K:192:MET:SD	2.49	0.53
1:L:162:ASN:HB2	1:L:204:HIS:CD2	2.44	0.53
1:M:191:LEU:HD23	1:M:287:ILE:HB	1.89	0.53
1:P:222:LYS:HD3	1:P:223:HIS:NE2	2.23	0.53
1:C:242:LEU:HD21	1:C:256:LEU:HD11	1.91	0.53
1:J:160:VAL:HG12	1:J:166:TYR:HB3	1.91	0.53
1:N:442:TYR:O	4:N:604:HOH:O	2.19	0.53
1:B:307:ARG:NH1	1:B:348:ASN:OD1	2.41	0.53
1:F:165:LYS:HD2	1:F:168:ARG:NH2	2.23	0.53
1:G:239:GLY:HA3	1:G:434:MET:HB3	1.89	0.53
1:I:258:PRO:HD3	1:I:332:ILE:HG12	1.90	0.53
1:J:175:GLN:NE2	1:K:296:GLU:OE2	2.37	0.53
1:O:128:ARG:HD3	1:O:129:PHE:CE2	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:238:VAL:HG13	1:J:287:ILE:HD11	1.91	0.52
1:L:259:GLU:N	1:L:259:GLU:OE1	2.39	0.52
1:M:316:LEU:HD12	1:M:375:ALA:HB1	1.90	0.52
1:A:464:VAL:O	1:A:465:MET:HG2	2.09	0.52
1:H:242:LEU:HD21	1:H:256:LEU:HD11	1.91	0.52
1:A:357:LYS:NZ	1:A:400:ALA:O	2.41	0.52
1:C:255:ASP:CG	1:C:257:LYS:HZ1	2.17	0.52
1:G:215:CYS:HA	1:G:262:LEU:HA	1.92	0.52
1:K:392:LYS:H	1:K:392:LYS:CD	2.22	0.52
1:N:152:LYS:C	1:N:153:GLU:CG	2.79	0.52
1:N:390:ASP:O	1:N:394:ILE:HD12	2.10	0.52
1:D:307:ARG:HD2	1:D:346:HIS:HA	1.91	0.52
1:F:190:PRO:HG2	1:F:241:ALA:HB2	1.92	0.52
1:I:270:VAL:HG11	1:O:154:TYR:OH	2.10	0.52
1:J:161:ARG:NH1	1:J:163:VAL:HG13	2.24	0.52
1:P:129:PHE:CZ	1:P:208:VAL:HG21	2.44	0.52
1:A:185:VAL:HG23	1:A:186:GLU:CG	2.37	0.52
1:F:249:LEU:HB3	1:F:251:LEU:HD13	1.91	0.52
1:M:367:SER:HB3	1:M:379:PHE:CG	2.45	0.52
1:N:147:TRP:CD1	1:N:149:ARG:HD3	2.44	0.52
1:O:300:ARG:NH2	1:O:320:TRP:H	2.05	0.52
1:A:424:ARG:NH2	1:A:465:MET:HG3	2.24	0.52
1:H:196:ARG:HG2	1:H:197:TYR:H	1.74	0.52
1:I:147:TRP:CZ2	1:I:152:LYS:CD	2.93	0.52
1:L:183:SER:HB3	1:L:244:TYR:OH	2.09	0.52
1:C:444:PRO:O	1:C:447:ARG:HD2	2.09	0.52
1:E:238:VAL:HG13	1:E:287:ILE:HD11	1.92	0.52
1:I:177:MET:HE1	1:I:207:ILE:HG21	1.91	0.52
1:M:163:VAL:HG23	1:M:166:TYR:HB2	1.91	0.52
1:N:215:CYS:HA	1:N:262:LEU:HA	1.91	0.52
1:B:175:GLN:HE22	1:E:296:GLU:CD	2.17	0.52
1:D:393:HIS:O	1:D:397:ILE:HD12	2.09	0.52
1:G:135:LEU:HD12	1:G:143:VAL:HG12	1.92	0.52
1:H:147:TRP:HE1	1:H:149:ARG:NH1	1.90	0.52
1:H:257:LYS:NZ	4:H:605:HOH:O	2.29	0.52
1:I:130:LYS:HE2	1:I:149:ARG:NH2	2.24	0.52
1:K:151:ARG:NH1	1:K:153:GLU:OE1	2.43	0.52
1:M:404:ARG:HG3	1:M:405:GLU:HG2	1.92	0.52
1:F:464:VAL:O	1:F:465:MET:HG2	2.09	0.52
1:I:252:MET:HG2	1:I:322:TYR:HA	1.91	0.52
1:C:252:MET:HE3	1:C:321:MET:HA	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:161:ARG:CG	1:F:162:ASN:H	2.19	0.52
1:I:257:LYS:HE3	1:I:259:GLU:HB2	1.92	0.52
1:M:190:PRO:HG3	1:M:237:GLN:HB3	1.92	0.52
1:O:128:ARG:HE	1:O:150:LYS:HB2	1.75	0.52
1:B:404:ARG:HH21	1:D:404:ARG:HD3	1.75	0.51
1:O:167:THR:HG22	1:O:205:MET:HG2	1.92	0.51
1:C:164:PRO:HG2	1:L:377:ASP:HB3	1.92	0.51
1:C:300:ARG:HH22	1:C:320:TRP:CD1	2.27	0.51
1:E:395:ALA:O	1:E:399:ARG:HG3	2.10	0.51
1:F:147:TRP:NE1	1:F:149:ARG:HH11	2.09	0.51
1:G:440:HIS:HB3	1:G:447:ARG:HH21	1.75	0.51
1:H:412:LEU:HD13	1:H:438:TYR:CZ	2.46	0.51
1:I:423:ASP:HB3	1:I:426:ARG:HB2	1.92	0.51
1:J:310:ARG:NH1	4:J:607:HOH:O	2.33	0.51
1:L:193:LYS:NZ	1:L:193:LYS:HD3	2.22	0.51
1:A:393:HIS:O	1:A:397:ILE:HG13	2.10	0.51
1:B:365:ASP:N	1:B:365:ASP:OD1	2.44	0.51
1:E:202:THR:HB	1:E:204:HIS:ND1	2.26	0.51
1:F:362:LEU:HB3	1:F:366:TRP:CE3	2.45	0.51
1:G:181:ARG:HD3	1:G:194:ILE:O	2.10	0.51
1:I:464:VAL:O	1:I:465:MET:HG2	2.10	0.51
1:J:156:ALA:O	1:J:209:MET:N	2.40	0.51
1:J:263:MET:HE1	1:J:279:PRO:HB3	1.92	0.51
1:K:238:VAL:HG13	1:K:287:ILE:HD11	1.91	0.51
1:L:140:PHE:CD2	1:L:158:LYS:HD2	2.45	0.51
1:P:128:ARG:NE	1:P:148:ASP:OD1	2.38	0.51
1:P:237:GLN:NE2	1:P:283:CYS:O	2.37	0.51
1:A:392:LYS:N	1:A:392:LYS:HD3	2.24	0.51
1:C:179:ARG:NH1	1:C:251:LEU:HD11	2.25	0.51
1:D:412:LEU:HD13	1:D:438:TYR:CZ	2.45	0.51
1:F:161:ARG:CD	1:F:162:ASN:H	2.22	0.51
1:F:161:ARG:HB3	1:F:166:TYR:HD2	1.76	0.51
1:F:357:LYS:NZ	1:F:400:ALA:O	2.43	0.51
1:F:447:ARG:HA	1:F:452:HIS:CD2	2.45	0.51
1:I:380:THR:HG22	1:I:384:THR:O	2.10	0.51
1:O:415:LEU:HD12	1:O:438:TYR:HB3	1.93	0.51
1:P:316:LEU:CB	1:P:318:LEU:HD23	2.41	0.51
1:A:151:ARG:O	1:A:152:LYS:HG2	2.11	0.51
1:E:264:GLU:HG2	1:P:448:GLN:HG2	1.92	0.51
1:F:130:LYS:HG2	1:F:131:ILE:H	1.73	0.51
1:H:191:LEU:HD23	1:H:287:ILE:HB	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:192:MET:HE2	1:M:290:LEU:HG	1.90	0.51
1:A:258:PRO:HD3	1:A:332:ILE:HG12	1.92	0.51
1:B:258:PRO:HD3	1:B:332:ILE:HG12	1.91	0.51
1:G:376:ARG:HD3	1:G:376:ARG:C	2.35	0.51
1:N:358:THR:HA	1:N:402:PRO:HA	1.91	0.51
1:P:329:MET:HG3	1:P:433:MET:HE1	1.92	0.51
1:P:374:GLU:HA	4:P:607:HOH:O	2.11	0.51
1:A:412:LEU:HD13	1:A:438:TYR:CZ	2.45	0.51
1:B:353:HIS:HB3	1:B:397:ILE:HD13	1.92	0.51
1:D:464:VAL:O	1:D:465:MET:HG2	2.11	0.51
1:E:130:LYS:HE2	4:E:637:HOH:O	2.11	0.51
1:G:326:LEU:HD23	1:G:429:ASN:HA	1.93	0.51
1:I:149:ARG:O	1:I:152:LYS:HE2	2.11	0.51
1:J:447:ARG:HA	1:J:452:HIS:CD2	2.45	0.51
1:N:148:ASP:OD2	1:N:151:ARG:CG	2.56	0.51
1:O:147:TRP:CZ2	1:O:152:LYS:HA	2.45	0.51
1:B:357:LYS:CE	1:D:361:ARG:NH1	2.65	0.51
1:H:181:ARG:HH22	1:H:193:LYS:HZ1	1.59	0.51
1:G:258:PRO:HD3	1:G:332:ILE:HG12	1.92	0.51
1:G:424:ARG:NH2	1:G:465:MET:HG3	2.25	0.51
1:L:193:LYS:HZ3	1:L:193:LYS:HD3	1.76	0.51
1:N:133:SER:OG	1:N:145:GLU:HB3	2.11	0.51
1:G:174:ILE:O	1:G:178:GLU:OE1	2.29	0.51
1:N:402:PRO:HD2	1:N:405:GLU:HG3	1.92	0.51
1:O:249:LEU:O	4:O:602:HOH:O	2.19	0.51
1:O:363:PRO:HD2	1:O:366:TRP:CD2	2.45	0.51
1:O:447:ARG:HA	1:O:452:HIS:CD2	2.46	0.51
1:F:361:ARG:HH12	1:M:361:ARG:HB2	1.75	0.50
1:H:460:PRO:HB3	1:O:182:LEU:HD13	1.93	0.50
1:P:298:HIS:CE1	1:P:300:ARG:NH2	2.79	0.50
1:G:217:LEU:HD12	1:G:220:ILE:HD11	1.92	0.50
1:O:190:PRO:HG3	1:O:237:GLN:HB3	1.93	0.50
1:H:174:ILE:HA	1:H:177:MET:HE2	1.93	0.50
1:L:373:GLN:HG2	1:L:374:GLU:N	2.25	0.50
1:M:464:VAL:O	1:M:465:MET:HG2	2.12	0.50
1:F:177:MET:HE1	1:F:207:ILE:HG21	1.94	0.50
1:M:187:ASP:OD1	1:M:193:LYS:NZ	2.44	0.50
1:N:380:THR:HG22	1:N:382:ALA:H	1.75	0.50
1:P:181:ARG:CZ	1:P:193:LYS:CE	2.90	0.50
1:D:185:VAL:HG23	1:D:186:GLU:CG	2.41	0.50
1:E:183:SER:O	4:E:602:HOH:O	2.18	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:464:VAL:O	1:O:465:MET:HG2	2.11	0.50
1:G:257:LYS:HD2	1:G:259:GLU:OE2	2.12	0.50
1:I:395:ALA:O	1:I:399:ARG:HG3	2.12	0.50
1:K:441:LYS:HG2	1:K:442:TYR:CD2	2.46	0.50
1:M:362:LEU:HD12	1:M:385:LEU:HD11	1.93	0.50
1:N:251:LEU:HD23	1:N:295:ASP:HB3	1.94	0.50
1:P:196:ARG:CG	1:P:197:TYR:N	2.74	0.50
1:E:259:GLU:N	1:E:259:GLU:OE1	2.43	0.50
1:I:161:ARG:HG3	1:I:162:ASN:N	2.27	0.50
1:A:128:ARG:HE	1:A:148:ASP:CG	2.20	0.50
1:A:187:ASP:OD2	1:A:193:LYS:HG3	2.12	0.50
1:E:307:ARG:NE	2:E:501:SO4:O2	2.29	0.50
1:G:200:ASN:OD1	1:G:202:THR:HG22	2.12	0.50
1:G:357:LYS:HE2	1:G:401:ARG:HH11	1.76	0.50
1:I:423:ASP:CG	1:I:426:ARG:HG3	2.37	0.50
1:J:296:GLU:CD	1:K:175:GLN:HE22	2.20	0.50
1:M:183:SER:OG	1:M:244:TYR:OH	2.21	0.50
1:O:412:LEU:HD13	1:O:438:TYR:CZ	2.47	0.50
1:E:217:LEU:HD22	1:E:259:GLU:HG3	1.94	0.49
1:G:192:MET:CG	1:G:209:MET:HE1	2.42	0.49
1:I:350:GLU:OE2	1:I:396:ARG:HD2	2.11	0.49
1:I:362:LEU:HB3	1:I:366:TRP:CE3	2.47	0.49
1:P:377:ASP:N	4:P:601:HOH:O	2.44	0.49
1:M:217:LEU:HD22	1:M:259:GLU:HG3	1.94	0.49
1:O:128:ARG:HG3	1:O:150:LYS:NZ	2.27	0.49
1:O:128:ARG:CZ	1:O:148:ASP:OD1	2.60	0.49
1:B:128:ARG:HH12	1:B:196:ARG:NH2	2.10	0.49
1:B:274:THR:HB	1:B:276:ARG:CZ	2.42	0.49
1:B:390:ASP:CG	1:B:392:LYS:HE2	2.36	0.49
1:B:440:HIS:CD2	1:B:447:ARG:NE	2.80	0.49
1:E:366:TRP:CD1	1:E:369:ARG:NH2	2.80	0.49
1:I:162:ASN:HB2	1:I:204:HIS:CE1	2.47	0.49
1:I:192:MET:HG2	1:I:193:LYS:H	1.77	0.49
1:J:357:LYS:NZ	1:J:400:ALA:O	2.28	0.49
1:N:131:ILE:HG23	1:N:144:VAL:HG21	1.95	0.49
1:P:296:GLU:O	1:P:321:MET:HE1	2.12	0.49
1:P:362:LEU:HD11	1:P:385:LEU:HD11	1.93	0.49
1:B:418:ASN:HB3	1:B:428:LEU:HG	1.93	0.49
1:E:190:PRO:HG2	1:E:241:ALA:HB2	1.94	0.49
1:I:273:MET:HG3	1:M:273:MET:HG2	1.94	0.49
1:N:162:ASN:OD1	1:N:203:GLY:C	2.55	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:327:TRP:CD2	1:N:420:LEU:HD23	2.47	0.49
1:O:316:LEU:HB2	1:O:318:LEU:HD13	1.95	0.49
1:P:464:VAL:O	1:P:465:MET:HG2	2.12	0.49
1:A:215:CYS:HA	1:A:262:LEU:HA	1.94	0.49
1:C:148:ASP:OD2	1:C:151:ARG:HB2	2.12	0.49
1:L:390:ASP:C	1:L:394:ILE:CD1	2.85	0.49
1:O:370:CYS:HB3	1:O:375:ALA:HB3	1.93	0.49
1:B:238:VAL:HG13	1:B:287:ILE:HD11	1.94	0.49
1:B:428:LEU:HD22	1:B:432:GLN:HB3	1.94	0.49
1:E:258:PRO:HD3	1:E:332:ILE:HG12	1.94	0.49
1:F:167:THR:HG23	1:F:205:MET:HG2	1.93	0.49
1:N:380:THR:N	1:N:384:THR:O	2.34	0.49
1:P:380:THR:HG23	1:P:383:GLY:N	2.14	0.49
1:E:151:ARG:HE	1:E:196:ARG:NH2	2.10	0.49
1:J:271:ASP:OD2	1:J:274:THR:HG23	2.12	0.49
1:J:380:THR:HG22	1:J:386:GLN:OE1	2.12	0.49
1:A:238:VAL:HG13	1:A:287:ILE:HD11	1.93	0.49
1:B:391:PRO:HD2	1:B:392:LYS:NZ	2.28	0.49
1:F:151:ARG:O	1:F:153:GLU:HG2	2.13	0.49
1:G:270:VAL:HG11	1:K:154:TYR:OH	2.12	0.49
1:H:233:GLN:O	1:H:237:GLN:HG3	2.13	0.49
1:O:148:ASP:OD2	1:O:151:ARG:HB2	2.12	0.49
1:A:323:SER:OG	1:A:427:ARG:HD2	2.13	0.49
1:G:365:ASP:O	1:G:368:VAL:HG22	2.12	0.49
1:K:151:ARG:CD	1:K:153:GLU:OE2	2.57	0.49
1:N:162:ASN:C	1:N:162:ASN:ND2	2.71	0.49
1:O:217:LEU:HD22	1:O:259:GLU:HG3	1.93	0.49
1:O:323:SER:OG	1:O:427:ARG:NH1	2.46	0.49
1:D:307:ARG:CD	1:D:346:HIS:HA	2.43	0.49
1:G:388:CYS:O	1:G:394:ILE:HD11	2.12	0.49
1:B:379:PHE:CE2	1:B:385:LEU:HD13	2.48	0.48
1:C:298:HIS:HE1	1:C:300:ARG:CZ	2.22	0.48
1:G:164:PRO:HA	1:G:167:THR:OG1	2.13	0.48
1:G:464:VAL:O	1:G:465:MET:HG2	2.12	0.48
1:P:260:ASN:HB3	1:P:289:ASP:OD2	2.13	0.48
1:D:356:GLU:HA	1:D:360:GLY:O	2.13	0.48
1:G:313:GLU:CD	1:G:427:ARG:HH22	2.22	0.48
1:H:181:ARG:CZ	1:H:193:LYS:HD2	2.43	0.48
1:L:363:PRO:HD2	1:L:366:TRP:CE2	2.48	0.48
1:O:380:THR:OG1	1:O:384:THR:O	2.20	0.48
1:B:356:GLU:HA	1:B:360:GLY:O	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:161:ARG:HG3	1:C:162:ASN:N	2.28	0.48
1:C:194:ILE:HA	1:C:209:MET:HG2	1.94	0.48
1:C:464:VAL:O	1:C:465:MET:HG2	2.13	0.48
1:F:313:GLU:HA	1:F:318:LEU:HD12	1.95	0.48
1:H:147:TRP:HD1	1:H:149:ARG:HD3	1.78	0.48
1:M:372:THR:HG23	1:M:375:ALA:H	1.78	0.48
1:P:181:ARG:NH2	1:P:184:ASP:C	2.70	0.48
1:G:177:MET:HE3	1:G:194:ILE:HB	1.96	0.48
1:I:190:PRO:HG2	1:I:241:ALA:HB2	1.95	0.48
1:K:258:PRO:HD3	1:K:332:ILE:HG12	1.94	0.48
1:M:215:CYS:HA	1:M:262:LEU:HA	1.95	0.48
1:M:258:PRO:HD3	1:M:332:ILE:HG12	1.94	0.48
1:C:160:VAL:HG12	1:C:166:TYR:HB3	1.94	0.48
1:E:366:TRP:HD1	1:E:369:ARG:NH2	2.11	0.48
1:I:353:HIS:O	1:I:357:LYS:HG2	2.13	0.48
1:K:162:ASN:ND2	1:K:202:THR:O	2.45	0.48
1:K:190:PRO:HG2	1:K:241:ALA:HB2	1.95	0.48
1:O:353:HIS:CB	1:O:397:ILE:CD1	2.90	0.48
1:C:255:ASP:CG	1:C:257:LYS:NZ	2.71	0.48
1:C:357:LYS:NZ	1:C:400:ALA:O	2.47	0.48
1:G:260:ASN:HB2	1:G:289:ASP:HB2	1.95	0.48
1:J:188:ARG:NH2	1:N:186:GLU:CD	2.70	0.48
1:M:175:GLN:HA	1:M:178:GLU:OE1	2.12	0.48
1:C:252:MET:HE2	1:C:320:TRP:CZ3	2.45	0.48
1:C:263:MET:HE1	1:C:279:PRO:HB3	1.95	0.48
1:C:274:THR:HB	1:C:276:ARG:NE	2.29	0.48
1:C:317:SER:O	1:C:371:GLY:HA3	2.13	0.48
1:H:298:HIS:CD2	1:H:321:MET:HE2	2.49	0.48
1:I:257:LYS:HB2	1:I:259:GLU:OE1	2.14	0.48
1:I:347:ASP:HB3	1:I:350:GLU:HB3	1.95	0.48
1:K:390:ASP:OD2	1:K:392:LYS:HD3	2.13	0.48
1:N:464:VAL:O	1:N:465:MET:HG2	2.14	0.48
1:O:307:ARG:HD2	1:O:346:HIS:HA	1.96	0.48
1:P:249:LEU:HA	4:P:606:HOH:O	2.13	0.48
1:N:147:TRP:HZ2	1:N:152:LYS:HG3	1.77	0.48
1:N:239:GLY:HA3	1:N:434:MET:HB3	1.95	0.48
1:C:271:ASP:OD2	1:C:274:THR:HG23	2.14	0.48
1:E:192:MET:HE1	1:E:209:MET:HG2	1.95	0.48
1:E:353:HIS:HB3	1:E:397:ILE:HD13	1.95	0.48
1:J:184:ASP:O	1:J:193:LYS:NZ	2.47	0.48
1:J:362:LEU:HB3	1:J:366:TRP:CE3	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:192:MET:HB2	1:K:288:CYS:SG	2.54	0.48
1:C:314:VAL:HG22	1:C:320:TRP:CG	2.48	0.48
1:G:402:PRO:HB2	1:G:405:GLU:HB2	1.95	0.48
1:M:173:GLU:HG2	1:M:177:MET:HE3	1.96	0.48
1:O:380:THR:HB	1:O:383:GLY:H	1.79	0.48
1:C:161:ARG:HG2	1:C:163:VAL:HG23	1.96	0.47
1:D:162:ASN:HB2	1:D:204:HIS:CD2	2.48	0.47
1:F:179:ARG:CZ	1:F:251:LEU:HD11	2.44	0.47
1:H:181:ARG:NH2	1:H:193:LYS:CE	2.77	0.47
1:K:150:LYS:O	1:K:150:LYS:HG2	2.12	0.47
1:P:318:LEU:HD12	1:P:369:ARG:HH22	1.74	0.47
1:C:130:LYS:HE3	1:C:131:ILE:O	2.14	0.47
1:L:263:MET:HE1	1:L:279:PRO:HB3	1.95	0.47
1:O:181:ARG:NH1	1:O:193:LYS:CB	2.71	0.47
1:P:176:PHE:O	1:P:180:VAL:HG23	2.14	0.47
1:P:307:ARG:HD2	1:P:346:HIS:HA	1.96	0.47
1:F:238:VAL:HG11	1:F:329:MET:SD	2.54	0.47
1:I:137:GLU:HG2	1:I:138:GLY:N	2.30	0.47
1:J:145:GLU:OE2	1:J:211:LYS:HE3	2.14	0.47
1:P:298:HIS:HE1	1:P:300:ARG:NH2	2.12	0.47
1:C:190:PRO:HG2	1:C:241:ALA:HB2	1.95	0.47
1:C:193:LYS:O	1:C:210:PRO:HD3	2.15	0.47
1:F:195:GLN:C	1:F:196:ARG:HG3	2.39	0.47
1:F:257:LYS:HD2	1:F:259:GLU:CD	2.40	0.47
1:F:367:SER:O	1:F:376:ARG:HD2	2.14	0.47
1:I:363:PRO:HD2	1:I:366:TRP:CE2	2.50	0.47
1:I:376:ARG:HH22	1:I:381:ALA:HA	1.79	0.47
1:P:184:ASP:O	1:P:184:ASP:CG	2.56	0.47
1:A:218:ASP:OD1	3:A:501:5XH:N1	2.47	0.47
1:B:362:LEU:HD22	1:B:366:TRP:CZ3	2.49	0.47
1:B:447:ARG:HA	1:B:452:HIS:CD2	2.49	0.47
1:G:326:LEU:HD23	4:G:603:HOH:O	2.15	0.47
1:I:308:HIS:ND1	1:I:343:TYR:O	2.47	0.47
1:M:323:SER:OG	1:M:427:ARG:NH1	2.47	0.47
1:N:425:GLN:OE1	1:N:464:VAL:HG13	2.14	0.47
1:O:162:ASN:OD1	1:O:204:HIS:N	2.47	0.47
1:O:380:THR:HG1	1:O:384:THR:C	2.16	0.47
1:K:306:THR:HG23	1:K:309:TYR:HD2	1.80	0.47
1:M:362:LEU:CD1	1:M:385:LEU:HD11	2.45	0.47
1:A:249:LEU:O	4:A:605:HOH:O	2.20	0.47
1:B:160:VAL:HG12	1:B:166:TYR:HB3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:373:GLN:HG3	4:C:623:HOH:O	2.15	0.47
1:C:413:CYS:SG	1:C:417:LEU:HD12	2.55	0.47
1:D:173:GLU:HG3	1:D:291:GLY:N	2.29	0.47
1:D:328:SER:O	1:D:332:ILE:HG13	2.15	0.47
1:E:222:LYS:HG2	1:E:223:HIS:CE1	2.48	0.47
1:E:316:LEU:HB3	1:E:370:CYS:SG	2.54	0.47
1:G:191:LEU:HD23	1:G:287:ILE:HB	1.97	0.47
1:H:353:HIS:CB	1:H:397:ILE:CD1	2.90	0.47
1:N:361:ARG:HA	1:N:361:ARG:HD3	1.30	0.47
1:O:160:VAL:CG1	1:O:205:MET:HB2	2.45	0.47
1:O:298:HIS:CE1	1:O:300:ARG:NH2	2.82	0.47
1:P:295:ASP:C	1:P:295:ASP:OD1	2.58	0.47
1:P:366:TRP:CD1	1:P:369:ARG:HH21	2.33	0.47
1:I:242:LEU:HD21	1:I:256:LEU:HD11	1.95	0.47
1:M:188:ARG:NH2	2:M:500:SO4:O2	2.45	0.47
1:M:361:ARG:HG3	1:M:362:LEU:O	2.13	0.47
1:D:297:ARG:HH11	1:N:299:SER:HB2	1.80	0.47
1:E:151:ARG:HH21	1:E:196:ARG:CZ	2.28	0.47
1:F:376:ARG:HG3	1:F:376:ARG:NH1	2.24	0.47
1:I:263:MET:HE1	1:I:279:PRO:HB3	1.97	0.47
1:J:192:MET:HE3	1:J:192:MET:HB3	1.64	0.47
1:O:174:ILE:HA	1:O:177:MET:HE3	1.97	0.47
1:O:181:ARG:HG3	1:O:193:LYS:HD2	1.97	0.47
1:C:217:LEU:HD22	1:C:259:GLU:HG3	1.95	0.47
1:E:316:LEU:HD21	1:E:352:LEU:HD11	1.97	0.47
1:M:300:ARG:HD3	1:M:300:ARG:C	2.41	0.47
1:A:353:HIS:CB	1:A:397:ILE:HD13	2.45	0.46
1:D:273:MET:HA	1:K:273:MET:SD	2.56	0.46
1:H:239:GLY:HA3	1:H:434:MET:HB3	1.97	0.46
1:I:272:PRO:HB2	1:M:273:MET:SD	2.56	0.46
1:N:425:GLN:HG3	1:N:465:MET:HE2	1.97	0.46
1:A:191:LEU:HD23	1:A:287:ILE:HB	1.97	0.46
1:B:392:LYS:HD3	1:B:392:LYS:N	2.30	0.46
1:D:200:ASN:ND2	1:D:202:THR:HG22	2.31	0.46
1:H:243:ASP:OD2	1:H:431:ARG:HB2	2.14	0.46
1:J:385:LEU:HD23	1:J:385:LEU:HA	1.74	0.46
1:L:318:LEU:HD23	1:L:370:CYS:HA	1.96	0.46
1:M:390:ASP:O	1:M:394:ILE:HD12	2.14	0.46
1:M:412:LEU:HD13	1:M:438:TYR:CZ	2.50	0.46
1:N:329:MET:HG3	1:N:433:MET:HE1	1.98	0.46
1:O:309:TYR:OH	1:O:335:GLU:OE1	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:P:202:THR:HG23	1:P:204:HIS:ND1	2.30	0.46
1:E:350:GLU:OE2	1:E:396:ARG:HD2	2.15	0.46
1:G:209:MET:HB3	1:G:209:MET:HE2	1.34	0.46
1:H:147:TRP:CH2	1:H:152:LYS:HG3	2.50	0.46
1:H:148:ASP:OD2	1:H:151:ARG:HG3	2.15	0.46
1:N:162:ASN:C	1:N:162:ASN:HD22	2.22	0.46
1:F:369:ARG:NH1	4:F:606:HOH:O	2.39	0.46
1:G:390:ASP:OD1	1:G:392:LYS:HB2	2.14	0.46
1:H:348:ASN:HB3	1:H:378:LEU:HD21	1.96	0.46
1:K:447:ARG:HA	1:K:452:HIS:CD2	2.49	0.46
1:C:191:LEU:HD23	1:C:287:ILE:HB	1.98	0.46
1:C:307:ARG:NH1	1:C:348:ASN:OD1	2.47	0.46
1:D:185:VAL:HG23	1:D:186:GLU:HG3	1.97	0.46
1:L:195:GLN:HG2	1:L:209:MET:HA	1.97	0.46
1:N:191:LEU:HD23	1:N:287:ILE:HB	1.97	0.46
1:O:128:ARG:HD2	1:O:150:LYS:HZ3	1.80	0.46
1:P:412:LEU:HD13	1:P:438:TYR:CZ	2.51	0.46
1:B:151:ARG:HG2	1:B:153:GLU:CD	2.29	0.46
1:C:425:GLN:HG2	1:C:465:MET:HB3	1.98	0.46
1:E:173:GLU:HG2	1:E:177:MET:HE3	1.98	0.46
1:E:346:HIS:NE2	2:E:501:SO4:S	2.89	0.46
1:H:187:ASP:OD1	1:H:193:LYS:NZ	2.49	0.46
1:K:147:TRP:HE3	1:K:154:TYR:CD1	2.34	0.46
1:K:257:LYS:HG3	1:K:259:GLU:N	2.26	0.46
1:N:217:LEU:HD22	1:N:259:GLU:HG3	1.98	0.46
1:O:356:GLU:HA	1:O:360:GLY:O	2.15	0.46
1:P:128:ARG:HG3	1:P:150:LYS:HG2	1.98	0.46
1:A:313:GLU:OE2	1:A:427:ARG:NH1	2.46	0.46
1:C:300:ARG:NH1	1:C:320:TRP:H	2.12	0.46
1:I:238:VAL:HG11	1:I:329:MET:SD	2.56	0.46
1:L:137:GLU:HG3	1:L:142:LYS:CG	2.45	0.46
1:L:137:GLU:HG3	1:L:142:LYS:HG2	1.96	0.46
1:M:273:MET:HE3	1:M:273:MET:HB3	1.73	0.46
1:M:362:LEU:HD23	1:M:422:TYR:CZ	2.51	0.46
1:P:373:GLN:HA	1:P:376:ARG:CD	2.45	0.46
1:P:447:ARG:HA	1:P:452:HIS:CD2	2.50	0.46
1:A:128:ARG:HD3	1:A:129:PHE:CE2	2.51	0.46
1:A:174:ILE:CG2	1:A:178:GLU:OE2	2.52	0.46
1:A:227:ASN:HB2	4:A:624:HOH:O	2.15	0.46
1:A:369:ARG:HG2	4:A:602:HOH:O	2.15	0.46
1:E:333:ILE:HG22	1:E:416:ILE:HD11	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:404:ARG:HA	1:A:413:CYS:SG	2.56	0.46
1:H:132:LEU:HD11	1:H:147:TRP:HB2	1.97	0.46
1:J:409:GLU:OE2	1:J:411:LEU:N	2.49	0.46
1:L:153:GLU:N	1:L:153:GLU:OE2	2.49	0.46
1:L:464:VAL:N	4:L:616:HOH:O	2.45	0.46
1:M:456:ARG:NH1	4:M:613:HOH:O	2.48	0.46
1:P:181:ARG:CD	1:P:193:LYS:HD3	2.43	0.46
1:B:222:LYS:HD2	1:B:223:HIS:CE1	2.51	0.46
1:B:363:PRO:HB2	1:B:365:ASP:OD1	2.16	0.46
1:C:175:GLN:NE2	1:F:296:GLU:OE2	2.43	0.46
1:C:313:GLU:HG3	1:C:320:TRP:HB3	1.98	0.46
1:H:464:VAL:O	1:H:465:MET:HG2	2.16	0.46
1:J:424:ARG:NH2	1:J:465:MET:HG3	2.31	0.46
1:K:192:MET:HE3	1:K:192:MET:HB3	1.65	0.46
1:M:135:LEU:HD11	1:M:145:GLU:HB2	1.97	0.46
1:N:192:MET:HE2	1:N:288:CYS:HA	1.98	0.46
1:O:396:ARG:HB2	1:O:396:ARG:CZ	2.46	0.46
1:B:395:ALA:O	1:B:399:ARG:HG2	2.16	0.45
1:C:184:ASP:O	1:C:193:LYS:NZ	2.49	0.45
1:G:354:LEU:HA	1:G:354:LEU:HD23	1.47	0.45
1:I:147:TRP:HZ2	1:I:152:LYS:HD2	1.81	0.45
1:I:208:VAL:C	1:I:209:MET:HG3	2.40	0.45
1:C:192:MET:HG3	1:C:212:TYR:CE2	2.51	0.45
1:G:163:VAL:HG13	1:G:166:TYR:HB2	1.98	0.45
1:I:128:ARG:CZ	1:I:150:LYS:HB3	2.44	0.45
1:K:257:LYS:HG2	1:K:260:ASN:H	1.80	0.45
1:O:239:GLY:HA3	1:O:434:MET:HB3	1.98	0.45
1:O:316:LEU:C	1:O:318:LEU:HD13	2.41	0.45
1:B:190:PRO:HG2	1:B:241:ALA:HB2	1.96	0.45
1:B:257:LYS:HD2	1:B:259:GLU:OE2	2.16	0.45
1:G:188:ARG:NH2	2:G:500:SO4:O4	2.44	0.45
1:J:192:MET:HB2	1:J:288:CYS:SG	2.56	0.45
1:C:363:PRO:HD2	1:C:366:TRP:CD2	2.51	0.45
1:H:182:LEU:HD13	1:O:460:PRO:HA	1.99	0.45
1:I:168:ARG:HG3	4:I:615:HOH:O	2.15	0.45
1:J:195:GLN:N	1:J:195:GLN:CD	2.74	0.45
1:M:401:ARG:HD2	1:M:402:PRO:HD3	1.99	0.45
1:N:181:ARG:NE	1:N:193:LYS:HB3	2.32	0.45
1:N:191:LEU:HG	1:N:241:ALA:HB1	1.98	0.45
1:A:228:HIS:HB3	1:A:442:TYR:CG	2.51	0.45
1:B:399:ARG:HD2	1:B:399:ARG:HA	1.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:190:PRO:HG3	1:C:237:GLN:HB3	1.99	0.45
1:C:447:ARG:HA	1:C:452:HIS:CD2	2.51	0.45
1:D:181:ARG:HH11	1:D:181:ARG:HD2	1.32	0.45
1:F:316:LEU:HD21	1:F:352:LEU:HD11	1.97	0.45
1:G:181:ARG:HA	1:G:193:LYS:HE2	1.97	0.45
1:H:168:ARG:HH11	1:H:168:ARG:HD3	1.47	0.45
1:J:329:MET:HG3	1:J:433:MET:HE1	1.99	0.45
1:L:242:LEU:HD21	1:L:256:LEU:HD11	1.99	0.45
1:M:409:GLU:OE1	1:M:442:TYR:OH	2.33	0.45
1:O:404:ARG:HB3	1:O:404:ARG:CZ	2.45	0.45
1:A:181:ARG:NH1	1:A:185:VAL:C	2.75	0.45
1:D:242:LEU:HD21	1:D:256:LEU:HD11	1.99	0.45
1:E:353:HIS:CB	1:E:397:ILE:HD13	2.47	0.45
1:G:177:MET:HE1	1:G:207:ILE:CG2	2.45	0.45
1:G:358:THR:HB	1:G:403:VAL:HG23	1.98	0.45
1:I:367:SER:HB3	1:I:379:PHE:CD2	2.52	0.45
1:J:257:LYS:HG3	1:J:260:ASN:CG	2.42	0.45
1:O:128:ARG:NE	1:O:150:LYS:HB2	2.32	0.45
1:A:329:MET:HG3	1:A:433:MET:HE1	1.99	0.45
1:C:192:MET:SD	1:C:193:LYS:N	2.90	0.45
1:F:166:TYR:N	1:F:166:TYR:CD1	2.85	0.45
1:G:403:VAL:HB	1:G:417:LEU:HD21	1.99	0.45
1:G:423:ASP:OD1	1:G:425:GLN:N	2.50	0.45
1:M:152:LYS:HB3	1:M:152:LYS:HE3	1.64	0.45
1:P:181:ARG:NH1	1:P:187:ASP:N	2.65	0.45
1:A:217:LEU:HD12	1:A:220:ILE:HD11	1.98	0.45
1:B:296:GLU:OE2	1:E:175:GLN:NE2	2.48	0.45
1:B:376:ARG:O	1:B:376:ARG:HD3	2.17	0.45
1:F:229:ARG:NH2	1:O:281:GLU:O	2.49	0.45
1:F:257:LYS:HB2	1:F:259:GLU:OE1	2.16	0.45
1:K:177:MET:HE1	1:K:207:ILE:HG21	1.99	0.45
1:N:389:LYS:HA	1:N:394:ILE:HD11	1.99	0.45
1:O:372:THR:O	1:O:376:ARG:HD3	2.17	0.45
1:O:398:ALA:O	1:O:401:ARG:NH2	2.50	0.45
1:D:202:THR:HG23	1:D:204:HIS:ND1	2.32	0.45
1:G:178:GLU:OE1	1:G:178:GLU:N	2.47	0.45
1:H:162:ASN:HB2	1:H:204:HIS:CD2	2.51	0.45
1:H:447:ARG:O	1:H:455:ASN:ND2	2.50	0.45
1:I:464:VAL:N	4:I:610:HOH:O	2.48	0.45
1:M:184:ASP:C	1:M:186:GLU:H	2.25	0.45
1:M:316:LEU:HB3	1:M:370:CYS:SG	2.56	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:178:GLU:HG2	1:N:194:ILE:HG21	1.98	0.45
1:O:209:MET:HE3	1:O:209:MET:HB2	1.85	0.45
1:O:295:ASP:OD1	1:O:295:ASP:C	2.60	0.45
1:O:402:PRO:O	1:O:405:GLU:HB2	2.17	0.45
1:P:318:LEU:O	4:P:603:HOH:O	2.21	0.45
1:A:301:THR:HG22	1:A:317:SER:HB3	1.98	0.45
1:A:447:ARG:HA	1:A:452:HIS:CD2	2.52	0.45
1:L:408:THR:OG1	4:L:602:HOH:O	2.14	0.45
1:N:373:GLN:O	1:N:373:GLN:HG3	2.15	0.45
1:N:412:LEU:HD13	1:N:438:TYR:CZ	2.52	0.45
1:O:271:ASP:HB2	1:O:278:LEU:HD11	1.99	0.45
1:O:404:ARG:HH11	1:O:404:ARG:HB2	1.81	0.45
1:D:229:ARG:NH2	1:K:281:GLU:O	2.50	0.44
1:F:380:THR:HG22	1:F:381:ALA:N	2.32	0.44
1:H:252:MET:HE1	1:H:298:HIS:HD2	1.82	0.44
1:J:362:LEU:HD22	1:J:366:TRP:CZ3	2.53	0.44
1:O:160:VAL:HG12	1:O:205:MET:HB2	1.99	0.44
1:O:237:GLN:NE2	1:O:283:CYS:O	2.39	0.44
1:O:297:ARG:HE	1:O:297:ARG:HB2	1.21	0.44
1:C:188:ARG:HE	1:C:188:ARG:HB3	1.34	0.44
1:D:363:PRO:HD2	1:D:366:TRP:CD2	2.52	0.44
1:F:252:MET:HE1	1:F:298:HIS:HD2	1.82	0.44
1:G:368:VAL:HG23	1:G:369:ARG:HG3	1.98	0.44
1:H:395:ALA:O	1:H:399:ARG:HG2	2.17	0.44
1:J:353:HIS:HB3	1:J:397:ILE:HD13	1.99	0.44
1:M:162:ASN:OD1	1:M:203:GLY:C	2.60	0.44
1:M:168:ARG:HD2	1:M:168:ARG:HA	1.55	0.44
1:N:390:ASP:HB3	1:N:393:HIS:H	1.82	0.44
1:P:151:ARG:HB2	1:P:153:GLU:OE1	2.17	0.44
1:P:281:GLU:OE2	1:P:282:PRO:HA	2.16	0.44
1:A:195:GLN:O	1:A:196:ARG:HG3	2.17	0.44
1:E:346:HIS:NE2	2:E:501:SO4:O3	2.49	0.44
1:F:307:ARG:NH1	1:F:348:ASN:OD1	2.51	0.44
1:F:354:LEU:O	1:F:358:THR:HG23	2.17	0.44
1:H:181:ARG:HB2	1:H:193:LYS:CD	2.40	0.44
1:L:313:GLU:HA	1:L:318:LEU:HD12	1.99	0.44
1:B:162:ASN:OD1	1:B:202:THR:O	2.34	0.44
1:C:376:ARG:HH22	1:C:381:ALA:HA	1.83	0.44
1:G:192:MET:HE2	1:G:192:MET:HB3	1.64	0.44
1:H:258:PRO:HG3	1:H:332:ILE:HG23	2.00	0.44
1:I:192:MET:HB2	1:I:288:CYS:SG	2.58	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:252:MET:HE2	1:N:252:MET:HB2	1.91	0.44
1:N:316:LEU:CB	1:N:318:LEU:HD23	2.47	0.44
1:A:217:LEU:HG	1:A:221:MET:HE2	1.99	0.44
1:B:345:THR:O	1:B:346:HIS:HD2	2.00	0.44
1:I:179:ARG:HH12	1:I:251:LEU:HD21	1.81	0.44
1:K:147:TRP:CE3	1:K:154:TYR:CE1	3.06	0.44
1:M:329:MET:HG3	1:M:433:MET:HE1	2.00	0.44
1:N:258:PRO:HD3	1:N:332:ILE:HG12	1.99	0.44
1:O:456:ARG:NH1	4:O:608:HOH:O	2.51	0.44
1:E:161:ARG:HG3	1:E:162:ASN:N	2.31	0.44
1:G:196:ARG:HG3	1:G:196:ARG:NH2	2.33	0.44
1:G:447:ARG:HA	1:G:452:HIS:CD2	2.53	0.44
1:M:239:GLY:HA3	1:M:434:MET:HB3	1.99	0.44
1:M:295:ASP:C	1:M:295:ASP:OD1	2.60	0.44
1:N:352:LEU:CD1	1:N:378:LEU:HD23	2.48	0.44
1:P:151:ARG:O	1:P:152:LYS:HB2	2.17	0.44
1:P:357:LYS:HA	4:P:608:HOH:O	2.16	0.44
1:A:315:VAL:HG12	1:A:316:LEU:HD13	2.00	0.44
1:F:404:ARG:H	1:F:404:ARG:HG3	1.60	0.44
1:G:252:MET:CG	1:G:322:TYR:HA	2.48	0.44
1:G:345:THR:HG22	1:G:347:ASP:H	1.82	0.44
1:M:179:ARG:HH11	1:M:179:ARG:HD2	1.68	0.44
1:N:346:HIS:CG	1:N:346:HIS:O	2.70	0.44
1:I:239:GLY:HA3	1:I:434:MET:HB3	1.98	0.44
1:K:391:PRO:HD2	1:K:392:LYS:NZ	2.33	0.44
1:L:449:HIS:NE2	2:L:501:SO4:O2	2.51	0.44
1:M:179:ARG:CZ	4:M:601:HOH:O	2.66	0.44
1:N:260:ASN:HB2	1:N:289:ASP:HB2	1.99	0.44
1:P:191:LEU:HD23	1:P:287:ILE:HB	2.00	0.44
1:P:373:GLN:O	1:P:376:ARG:HG2	2.18	0.44
1:A:361:ARG:H	1:A:361:ARG:NE	2.16	0.44
1:B:345:THR:C	1:B:346:HIS:HD2	2.26	0.44
1:F:257:LYS:HD2	1:F:259:GLU:OE1	2.17	0.44
1:G:323:SER:OG	1:G:465:MET:O	2.31	0.44
1:H:163:VAL:CG2	1:H:166:TYR:CD2	2.99	0.44
1:I:128:ARG:HH12	1:I:196:ARG:CZ	2.31	0.44
1:I:391:PRO:HD2	1:I:392:LYS:NZ	2.33	0.44
1:J:374:GLU:O	1:J:378:LEU:HD12	2.18	0.44
1:A:356:GLU:HA	1:A:360:GLY:O	2.18	0.43
1:D:218:ASP:OD1	3:D:501:5XH:N1	2.51	0.43
1:E:361:ARG:HE	1:E:361:ARG:HB3	1.39	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:458:LYS:HD3	1:F:458:LYS:HA	1.64	0.43
1:I:192:MET:CG	1:I:193:LYS:N	2.81	0.43
1:J:151:ARG:O	1:J:152:LYS:HG2	2.17	0.43
1:L:164:PRO:O	1:L:168:ARG:HG3	2.18	0.43
1:M:404:ARG:HG3	1:M:405:GLU:CG	2.47	0.43
1:B:316:LEU:HB2	1:B:318:LEU:HG	2.00	0.43
1:C:307:ARG:HD2	1:C:346:HIS:HA	2.00	0.43
1:E:362:LEU:HD22	1:E:366:TRP:CZ3	2.53	0.43
1:F:326:LEU:HG	1:F:428:LEU:O	2.18	0.43
1:G:163:VAL:HG12	1:G:166:TYR:HB2	1.99	0.43
1:M:316:LEU:HA	1:M:375:ALA:HB1	2.00	0.43
1:N:191:LEU:O	1:N:193:LYS:HG3	2.17	0.43
1:P:345:THR:CG2	1:P:347:ASP:H	2.25	0.43
1:A:319:GLY:O	1:A:424:ARG:NH1	2.51	0.43
1:G:412:LEU:HD13	1:G:438:TYR:CZ	2.53	0.43
1:L:307:ARG:HD2	1:L:346:HIS:HA	1.99	0.43
1:N:313:GLU:HG2	1:N:424:ARG:HD2	2.01	0.43
1:O:188:ARG:HD3	1:O:189:PHE:CE2	2.52	0.43
1:O:388:CYS:O	1:O:394:ILE:HD11	2.18	0.43
1:C:165:LYS:NZ	1:L:373:GLN:CG	2.79	0.43
1:G:128:ARG:HH22	1:G:196:ARG:NH2	2.16	0.43
1:I:423:ASP:HB3	1:I:426:ARG:CG	2.47	0.43
1:B:229:ARG:NH2	1:G:281:GLU:O	2.51	0.43
1:G:316:LEU:HD21	1:G:352:LEU:HD11	2.01	0.43
1:M:253:HIS:ND1	1:M:256:LEU:HG	2.33	0.43
1:O:188:ARG:NH2	2:O:502:SO4:O4	2.51	0.43
1:O:228:HIS:HB3	1:O:442:TYR:CG	2.53	0.43
1:P:177:MET:HE2	1:P:192:MET:SD	2.58	0.43
1:P:356:GLU:HA	1:P:360:GLY:O	2.18	0.43
1:C:202:THR:HG22	4:C:602:HOH:O	2.19	0.43
1:C:300:ARG:CD	1:C:319:GLY:HA2	2.46	0.43
1:E:316:LEU:HB2	1:E:318:LEU:HG	2.01	0.43
1:G:401:ARG:HD2	1:G:402:PRO:HD3	1.99	0.43
1:N:257:LYS:HG2	1:N:260:ASN:ND2	2.34	0.43
1:O:202:THR:HG23	1:O:204:HIS:ND1	2.34	0.43
1:O:373:GLN:HG3	1:O:374:GLU:OE1	2.19	0.43
1:A:263:MET:HE1	1:A:279:PRO:HB3	2.00	0.43
1:C:377:ASP:HB3	1:L:164:PRO:HG2	2.00	0.43
1:E:447:ARG:HA	1:E:452:HIS:CD2	2.52	0.43
1:H:309:TYR:OH	1:H:335:GLU:OE1	2.26	0.43
1:K:128:ARG:HH22	1:K:196:ARG:HH21	1.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:181:ARG:HH12	1:K:193:LYS:HD2	1.79	0.43
1:N:390:ASP:C	1:N:394:ILE:HD12	2.43	0.43
1:P:217:LEU:HD12	1:P:220:ILE:HD11	1.99	0.43
1:B:134:LEU:HD21	1:B:137:GLU:CD	2.44	0.43
1:B:192:MET:HE2	1:B:288:CYS:HA	2.01	0.43
1:D:179:ARG:HH22	1:N:179:ARG:NH2	2.16	0.43
1:F:426:ARG:HD2	1:F:426:ARG:HA	1.72	0.43
1:O:151:ARG:O	1:O:152:LYS:HB2	2.19	0.43
1:D:228:HIS:HB3	1:D:442:TYR:CG	2.54	0.43
1:E:326:LEU:HG	1:E:428:LEU:O	2.19	0.43
1:F:191:LEU:HD23	1:F:287:ILE:HB	2.01	0.43
1:H:367:SER:HA	1:H:370:CYS:SG	2.58	0.43
1:I:380:THR:OG1	1:I:381:ALA:N	2.52	0.43
1:K:307:ARG:HD2	1:K:346:HIS:HA	2.01	0.43
1:M:401:ARG:HD2	1:M:402:PRO:HD2	1.99	0.43
1:N:370:CYS:HB3	1:N:375:ALA:HB3	2.00	0.43
1:P:373:GLN:OE1	1:P:376:ARG:HD2	2.11	0.43
1:B:147:TRP:CD1	1:B:149:ARG:HD3	2.53	0.43
1:D:128:ARG:HH22	1:D:196:ARG:NH2	2.17	0.43
1:F:424:ARG:NH2	1:F:465:MET:HG3	2.34	0.43
1:G:329:MET:HG3	1:G:433:MET:HE1	2.00	0.43
1:I:402:PRO:HB3	1:I:404:ARG:HE	1.83	0.43
1:K:164:PRO:O	1:K:168:ARG:HB2	2.19	0.43
1:K:390:ASP:CG	1:K:392:LYS:HD3	2.43	0.43
1:A:174:ILE:HD13	1:A:174:ILE:HG21	1.84	0.42
1:A:217:LEU:O	1:A:220:ILE:HG13	2.18	0.42
1:A:239:GLY:HA3	1:A:434:MET:HB3	2.01	0.42
1:C:363:PRO:HD2	1:C:366:TRP:CE2	2.54	0.42
1:D:227:ASN:HB2	4:D:610:HOH:O	2.18	0.42
1:M:229:ARG:NH1	4:M:606:HOH:O	2.28	0.42
1:A:162:ASN:ND2	1:A:162:ASN:C	2.78	0.42
1:A:316:LEU:HD21	1:A:352:LEU:HD21	2.00	0.42
1:A:356:GLU:CG	1:A:362:LEU:HG	2.49	0.42
1:D:173:GLU:HG3	1:D:291:GLY:CA	2.49	0.42
1:D:179:ARG:NH2	1:N:179:ARG:NH2	2.67	0.42
1:D:257:LYS:HD2	1:D:259:GLU:OE2	2.18	0.42
1:F:149:ARG:HA	1:F:149:ARG:HD2	1.83	0.42
1:L:390:ASP:N	4:L:617:HOH:O	2.51	0.42
1:M:316:LEU:HA	1:M:375:ALA:CB	2.49	0.42
1:M:367:SER:HB3	1:M:379:PHE:CD2	2.54	0.42
1:N:184:ASP:OD2	1:N:193:LYS:HE3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:380:THR:OG1	1:N:384:THR:O	2.29	0.42
1:O:402:PRO:HD2	1:O:405:GLU:OE1	2.19	0.42
1:P:192:MET:HE3	1:P:192:MET:HB2	1.82	0.42
1:P:215:CYS:HA	1:P:262:LEU:HA	2.01	0.42
1:B:449:HIS:NE2	2:B:502:SO4:O4	2.53	0.42
1:H:181:ARG:HH22	1:H:193:LYS:HZ3	1.64	0.42
1:H:362:LEU:HD11	1:H:385:LEU:HD21	2.01	0.42
1:L:238:VAL:HG13	1:L:287:ILE:HD11	2.02	0.42
1:M:237:GLN:NE2	1:M:283:CYS:O	2.37	0.42
1:N:253:HIS:ND1	1:N:256:LEU:HG	2.35	0.42
1:P:258:PRO:HD3	1:P:332:ILE:HG12	2.00	0.42
1:A:217:LEU:HD22	1:A:259:GLU:HG3	2.02	0.42
1:D:329:MET:HG3	1:D:433:MET:HE1	2.01	0.42
1:D:369:ARG:O	1:D:369:ARG:HG2	2.20	0.42
1:E:148:ASP:OD2	1:E:151:ARG:HG3	2.19	0.42
1:J:281:GLU:O	1:N:229:ARG:NH2	2.52	0.42
1:K:152:LYS:C	1:K:153:GLU:HG2	2.44	0.42
1:K:401:ARG:HA	1:K:401:ARG:HD2	1.66	0.42
1:A:365:ASP:O	1:A:368:VAL:HG22	2.20	0.42
1:B:391:PRO:HD2	1:B:392:LYS:HZ3	1.83	0.42
1:D:404:ARG:HA	1:D:413:CYS:SG	2.60	0.42
1:F:363:PRO:HD2	1:F:366:TRP:CE2	2.54	0.42
1:H:230:HIS:CE1	1:H:279:PRO:HG2	2.55	0.42
1:J:168:ARG:HH11	1:J:168:ARG:HD3	1.32	0.42
1:J:363:PRO:HD2	1:J:366:TRP:CD2	2.54	0.42
1:P:370:CYS:HB3	1:P:375:ALA:HB3	2.00	0.42
1:D:380:THR:HG22	1:D:381:ALA:N	2.34	0.42
1:D:386:GLN:HG3	1:D:387:PRO:HD2	2.00	0.42
1:E:273:MET:HE2	1:E:273:MET:HB3	1.85	0.42
1:I:350:GLU:HG3	1:I:393:HIS:HB3	2.02	0.42
1:K:316:LEU:HB2	1:K:318:LEU:HG	2.01	0.42
1:M:313:GLU:OE2	1:M:427:ARG:NH1	2.50	0.42
1:N:402:PRO:CD	1:N:405:GLU:CG	2.91	0.42
1:O:329:MET:HG3	1:O:433:MET:HE1	2.02	0.42
1:P:349:LEU:HD12	1:P:349:LEU:HA	1.78	0.42
1:P:363:PRO:HD2	1:P:366:TRP:CD2	2.54	0.42
1:A:380:THR:HG22	1:A:381:ALA:N	2.35	0.42
1:B:378:LEU:O	1:B:385:LEU:HD12	2.20	0.42
1:C:154:TYR:OH	1:D:270:VAL:HG11	2.19	0.42
1:G:380:THR:HG22	1:G:381:ALA:N	2.35	0.42
1:H:188:ARG:NH2	2:H:502:SO4:O4	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:218:ASP:OD1	3:H:503:5XH:N1	2.53	0.42
1:I:357:LYS:HA	1:I:357:LYS:HD2	1.77	0.42
1:L:356:GLU:HA	1:L:360:GLY:O	2.19	0.42
1:N:128:ARG:O	1:N:149:ARG:HG2	2.20	0.42
1:N:323:SER:HB3	1:N:427:ARG:NH1	2.35	0.42
1:N:402:PRO:CD	1:N:405:GLU:OE1	2.45	0.42
1:P:151:ARG:HE	1:P:153:GLU:CD	2.24	0.42
1:A:426:ARG:HH11	1:A:426:ARG:HD2	1.39	0.42
1:I:150:LYS:HD2	1:I:150:LYS:O	2.19	0.42
1:I:177:MET:HE3	1:I:192:MET:HE1	2.02	0.42
1:I:295:ASP:OD2	1:I:297:ARG:NH1	2.53	0.42
1:J:353:HIS:CB	1:J:397:ILE:HD13	2.49	0.42
1:K:271:ASP:OD2	1:K:274:THR:HG23	2.19	0.42
1:L:192:MET:HG2	1:L:193:LYS:N	2.34	0.42
1:O:247:THR:HB	1:O:460:PRO:HG2	2.02	0.42
1:P:345:THR:HG23	1:P:350:GLU:OE1	2.20	0.42
1:B:385:LEU:HD12	1:B:385:LEU:HA	1.74	0.42
1:C:273:MET:CE	1:H:272:PRO:HB2	2.43	0.42
1:N:313:GLU:HA	1:N:318:LEU:HB2	2.01	0.42
1:P:373:GLN:HA	1:P:376:ARG:NE	2.35	0.42
1:B:195:GLN:HG2	1:B:209:MET:HA	2.02	0.42
1:D:185:VAL:N	4:D:604:HOH:O	2.34	0.42
1:G:242:LEU:HD21	1:G:256:LEU:HD11	2.01	0.42
1:G:326:LEU:CD2	1:G:429:ASN:HA	2.49	0.42
1:H:165:LYS:HE3	1:H:168:ARG:NH2	2.35	0.42
1:H:354:LEU:HD23	1:H:354:LEU:HA	1.87	0.42
1:J:160:VAL:CG1	1:J:166:TYR:HB3	2.50	0.42
1:J:193:LYS:O	1:J:210:PRO:HD3	2.20	0.42
1:J:349:LEU:HB2	1:J:378:LEU:HD23	2.02	0.42
1:L:367:SER:HB2	1:L:379:PHE:CD2	2.55	0.42
1:O:181:ARG:HD2	1:O:193:LYS:HB3	2.02	0.42
1:A:187:ASP:HA	1:A:193:LYS:HZ3	1.84	0.41
1:A:323:SER:O	1:A:427:ARG:NH1	2.47	0.41
1:D:217:LEU:HD23	1:D:259:GLU:HG3	2.03	0.41
1:E:151:ARG:NH2	1:E:196:ARG:HH22	2.07	0.41
1:H:163:VAL:HG21	1:H:166:TYR:CD2	2.50	0.41
1:H:376:ARG:HG2	1:H:376:ARG:HH11	1.85	0.41
1:I:160:VAL:HG12	1:I:166:TYR:HB3	2.02	0.41
1:M:228:HIS:HB3	1:M:442:TYR:CG	2.55	0.41
1:M:380:THR:HG22	1:M:381:ALA:N	2.35	0.41
1:M:392:LYS:HD2	1:M:392:LYS:HA	1.71	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:386:GLN:HG2	1:O:387:PRO:N	2.35	0.41
1:A:146:ALA:HB3	1:A:155:CYS:SG	2.60	0.41
1:H:252:MET:HE1	1:H:298:HIS:CD2	2.55	0.41
1:H:316:LEU:HD21	1:H:352:LEU:HD11	2.02	0.41
1:I:424:ARG:NH2	1:I:465:MET:HG3	2.34	0.41
1:M:447:ARG:O	1:M:455:ASN:ND2	2.51	0.41
1:O:148:ASP:OD2	1:O:151:ARG:CB	2.69	0.41
1:P:309:TYR:HD1	1:P:331:CYS:HB2	1.85	0.41
1:B:134:LEU:HD11	1:B:137:GLU:HG2	2.01	0.41
1:C:132:LEU:HD12	1:C:145:GLU:HG2	2.01	0.41
1:C:229:ARG:NH2	1:H:281:GLU:HB3	2.35	0.41
1:C:393:HIS:HD2	4:C:620:HOH:O	2.03	0.41
1:E:307:ARG:NH1	1:E:348:ASN:OD1	2.53	0.41
1:G:353:HIS:NE2	1:G:386:GLN:O	2.35	0.41
1:J:449:HIS:CG	1:J:450:PRO:HD2	2.55	0.41
1:K:181:ARG:NH1	1:K:193:LYS:CG	2.83	0.41
1:K:309:TYR:HD1	1:K:331:CYS:HB2	1.86	0.41
1:M:380:THR:HB	1:M:383:GLY:H	1.86	0.41
1:N:380:THR:HG22	1:N:381:ALA:N	2.35	0.41
1:O:373:GLN:HG3	1:O:374:GLU:N	2.36	0.41
1:B:192:MET:HE2	1:B:192:MET:HB3	1.57	0.41
1:C:217:LEU:O	1:C:221:MET:HG3	2.20	0.41
1:C:238:VAL:HG11	1:C:329:MET:SD	2.60	0.41
1:F:218:ASP:OD2	4:F:601:HOH:O	2.21	0.41
1:F:449:HIS:NE2	2:F:502:SO4:O4	2.52	0.41
1:G:191:LEU:HG	1:G:241:ALA:HB1	2.02	0.41
1:H:228:HIS:HB3	1:H:442:TYR:CG	2.55	0.41
1:J:210:PRO:HG2	1:J:212:TYR:OH	2.19	0.41
1:L:238:VAL:HG11	1:L:329:MET:SD	2.60	0.41
1:M:192:MET:HE3	1:M:290:LEU:HG	2.01	0.41
1:M:301:THR:HB	1:M:317:SER:HB3	2.03	0.41
1:N:147:TRP:CH2	1:N:152:LYS:HG3	2.55	0.41
1:N:209:MET:HE3	1:N:209:MET:HB2	1.94	0.41
1:O:128:ARG:HD2	1:O:128:ARG:HH21	1.54	0.41
1:P:304:VAL:H	1:P:314:VAL:HG11	1.85	0.41
1:A:443:PHE:O	1:A:446:CYS:HB3	2.21	0.41
1:F:209:MET:HE3	1:F:209:MET:HB2	1.93	0.41
1:H:273:MET:HE3	1:H:273:MET:HB3	1.74	0.41
1:J:222:LYS:CG	1:J:223:HIS:CE1	3.03	0.41
1:N:181:ARG:HD3	1:N:181:ARG:HA	1.78	0.41
1:N:257:LYS:NZ	1:N:306:THR:OG1	2.29	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:181:ARG:HH11	1:O:181:ARG:HD2	1.52	0.41
1:O:373:GLN:HG3	1:O:374:GLU:CD	2.46	0.41
1:P:181:ARG:NH1	1:P:187:ASP:H	2.19	0.41
1:P:316:LEU:HD21	1:P:352:LEU:HD21	2.01	0.41
1:P:380:THR:HG21	1:P:384:THR:H	1.84	0.41
1:A:313:GLU:CD	1:A:427:ARG:HH22	2.29	0.41
1:A:349:LEU:HD23	1:A:349:LEU:O	2.21	0.41
1:G:441:LYS:HD3	1:G:442:TYR:CZ	2.56	0.41
1:H:128:ARG:HG3	1:H:150:LYS:HG3	2.02	0.41
1:I:128:ARG:HG2	1:I:129:PHE:CE2	2.56	0.41
1:I:152:LYS:HD3	1:I:152:LYS:HA	1.89	0.41
1:J:128:ARG:HH22	1:J:196:ARG:NH2	2.19	0.41
1:K:169:ASP:OD1	1:K:169:ASP:N	2.54	0.41
1:L:447:ARG:HA	1:L:452:HIS:CD2	2.55	0.41
1:P:147:TRP:CZ2	1:P:152:LYS:HA	2.55	0.41
1:C:217:LEU:HG	1:C:221:MET:SD	2.61	0.41
1:E:128:ARG:HA	1:E:149:ARG:HD2	2.01	0.41
1:E:273:MET:SD	1:P:272:PRO:HB2	2.60	0.41
1:H:376:ARG:O	1:H:376:ARG:NH1	2.54	0.41
1:I:245:PHE:HZ	1:I:293:CYS:SG	2.43	0.41
1:I:373:GLN:HG2	1:I:374:GLU:N	2.34	0.41
1:K:209:MET:HE3	1:K:209:MET:HB2	2.00	0.41
1:K:257:LYS:HG3	1:K:259:GLU:HB2	2.02	0.41
1:K:356:GLU:HA	1:K:360:GLY:O	2.21	0.41
1:K:392:LYS:CD	1:K:392:LYS:N	2.84	0.41
1:M:174:ILE:O	1:M:178:GLU:HG3	2.21	0.41
1:N:363:PRO:HD2	1:N:366:TRP:CD2	2.56	0.41
1:O:278:LEU:N	1:O:278:LEU:CD1	2.79	0.41
1:O:296:GLU:O	1:O:321:MET:HE1	2.19	0.41
1:A:202:THR:O	1:A:202:THR:OG1	2.39	0.41
1:H:361:ARG:N	1:H:361:ARG:CD	2.82	0.41
1:P:316:LEU:HD12	1:P:375:ALA:HB1	2.03	0.41
1:A:252:MET:HE2	1:A:252:MET:HB2	1.75	0.41
1:A:314:VAL:HG22	1:A:320:TRP:CD1	2.56	0.41
1:B:318:LEU:HD23	1:B:370:CYS:HA	2.02	0.41
1:G:295:ASP:OD1	1:G:296:GLU:N	2.52	0.41
1:G:401:ARG:HD2	1:G:402:PRO:HD2	2.01	0.41
1:H:356:GLU:OE2	1:H:361:ARG:HB3	2.21	0.41
1:H:396:ARG:HG3	1:H:396:ARG:NH1	2.29	0.41
1:I:161:ARG:HG3	1:I:162:ASN:H	1.86	0.41
1:J:297:ARG:HE	1:J:297:ARG:HB2	1.57	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:349:LEU:HD11	1:J:386:GLN:O	2.20	0.41
1:K:392:LYS:H	1:K:392:LYS:HD2	1.86	0.41
1:M:192:MET:SD	1:M:209:MET:HE1	2.60	0.41
1:M:313:GLU:CD	1:M:427:ARG:HH22	2.28	0.41
1:P:181:ARG:CD	1:P:193:LYS:HG2	2.50	0.41
1:A:135:LEU:HD11	1:A:145:GLU:HB2	2.03	0.41
1:A:344:ASP:O	1:A:396:ARG:NH1	2.54	0.41
1:C:208:VAL:C	1:C:209:MET:HG3	2.46	0.41
1:D:412:LEU:HB2	1:D:438:TYR:CE1	2.56	0.41
1:E:281:GLU:O	1:P:229:ARG:NH2	2.54	0.41
1:E:299:SER:HB3	1:E:302:ALA:HB2	2.01	0.41
1:H:220:ILE:HA	1:H:224:GLY:O	2.21	0.41
1:H:227:ASN:HD21	1:H:230:HIS:CD2	2.39	0.41
1:I:229:ARG:NH2	1:M:281:GLU:O	2.53	0.41
1:I:362:LEU:N	1:I:362:LEU:HD23	2.35	0.41
1:J:139:THR:HG22	1:J:166:TYR:OH	2.20	0.41
1:K:147:TRP:HE3	1:K:154:TYR:CE1	2.38	0.41
1:L:295:ASP:OD2	1:L:297:ARG:NH1	2.54	0.41
1:L:316:LEU:HD21	1:L:352:LEU:HD11	2.02	0.41
1:L:394:ILE:HD12	1:L:394:ILE:H	1.86	0.41
1:M:215:CYS:HB2	1:M:258:PRO:O	2.20	0.41
1:P:247:THR:HB	1:P:460:PRO:HG2	2.03	0.41
1:P:373:GLN:HE21	1:P:373:GLN:HB2	1.38	0.41
1:A:321:MET:HB3	1:A:322:TYR:H	1.56	0.40
1:B:200:ASN:OD1	1:B:201:GLU:N	2.54	0.40
1:B:238:VAL:HG11	1:B:329:MET:SD	2.61	0.40
1:C:134:LEU:HD21	1:C:137:GLU:CG	2.51	0.40
1:C:252:MET:HE1	1:C:298:HIS:CD2	2.56	0.40
1:C:390:ASP:OD2	1:C:392:LYS:HB2	2.21	0.40
1:G:179:ARG:HE	1:G:179:ARG:HB2	1.69	0.40
1:L:192:MET:HB3	1:L:192:MET:HE3	1.67	0.40
1:L:376:ARG:HD3	1:L:376:ARG:O	2.20	0.40
1:O:242:LEU:HD21	1:O:256:LEU:HD11	2.02	0.40
1:A:181:ARG:NH1	1:A:185:VAL:CA	2.84	0.40
1:A:237:GLN:OE1	1:A:284:ARG:HA	2.21	0.40
1:C:449:HIS:NE2	2:C:502:SO4:O4	2.52	0.40
1:F:313:GLU:OE2	4:F:603:HOH:O	2.22	0.40
1:F:373:GLN:OE1	4:F:602:HOH:O	2.22	0.40
1:H:400:ALA:C	1:H:401:ARG:HD3	2.46	0.40
1:I:418:ASN:HB3	1:I:428:LEU:HG	2.04	0.40
1:N:162:ASN:ND2	1:N:162:ASN:O	2.48	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:313:GLU:OE1	1:N:427:ARG:NH1	2.55	0.40
1:O:298:HIS:HE1	1:O:300:ARG:NH2	2.19	0.40
1:O:316:LEU:CD1	1:O:375:ALA:HB1	2.51	0.40
1:O:374:GLU:O	1:O:378:LEU:HD12	2.21	0.40
1:O:412:LEU:HB2	1:O:438:TYR:CE1	2.57	0.40
1:B:409:GLU:OE2	1:B:411:LEU:N	2.55	0.40
1:D:380:THR:OG1	1:D:384:THR:O	2.32	0.40
1:F:272:PRO:CB	1:O:273:MET:HE1	2.37	0.40
1:G:307:ARG:HD2	1:G:346:HIS:HA	2.04	0.40
1:K:238:VAL:HG11	1:K:329:MET:SD	2.62	0.40
1:M:202:THR:HG23	1:M:204:HIS:ND1	2.36	0.40
1:D:176:PHE:O	1:D:180:VAL:HG23	2.22	0.40
1:D:258:PRO:HG3	1:D:332:ILE:HG23	2.03	0.40
1:F:308:HIS:ND1	1:F:343:TYR:O	2.53	0.40
1:F:446:CYS:O	1:F:452:HIS:HB2	2.21	0.40
1:H:375:ALA:HA	1:H:378:LEU:HD13	2.02	0.40
1:K:299:SER:HB2	1:K:302:ALA:HB2	2.02	0.40
1:N:215:CYS:HB2	1:N:258:PRO:O	2.22	0.40
1:N:252:MET:HE3	1:N:320:TRP:CZ3	2.57	0.40
1:O:449:HIS:ND1	1:O:451:ASN:HB2	2.37	0.40
1:B:390:ASP:O	1:B:394:ILE:HG12	2.21	0.40
1:C:399:ARG:HH11	1:C:399:ARG:HD2	1.53	0.40
1:D:357:LYS:NZ	1:D:397:ILE:O	2.54	0.40
1:F:313:GLU:HA	1:F:318:LEU:HB2	2.02	0.40
1:G:228:HIS:HB3	1:G:442:TYR:CG	2.56	0.40
1:G:390:ASP:OD1	1:G:390:ASP:C	2.64	0.40
1:H:227:ASN:OD1	1:H:230:HIS:HD2	2.03	0.40
1:I:300:ARG:NH1	4:I:602:HOH:O	2.18	0.40
1:J:269:SER:HB2	1:J:278:LEU:HB2	2.03	0.40
1:J:318:LEU:HD23	1:J:370:CYS:HA	2.04	0.40
1:K:222:LYS:HD3	1:K:223:HIS:CD2	2.56	0.40
1:K:363:PRO:HD2	1:K:366:TRP:CE2	2.56	0.40
1:K:449:HIS:NE2	2:K:501:SO4:O2	2.52	0.40
1:L:404:ARG:HG3	1:L:404:ARG:HH11	1.86	0.40
1:N:192:MET:C	1:N:193:LYS:HG3	2.47	0.40
1:N:313:GLU:OE1	1:N:427:ARG:CZ	2.69	0.40
1:N:354:LEU:HD21	1:N:397:ILE:HA	2.03	0.40
1:P:378:LEU:N	4:P:601:HOH:O	2.53	0.40

All (8) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:361:ARG:NH1	1:O:361:ARG:NH1[1_455]	1.32	0.88
1:A:404:ARG:NH1	1:C:404:ARG:NE[1_445]	1.80	0.40
1:A:404:ARG:NE	1:C:404:ARG:NH2[1_445]	1.98	0.22
1:A:404:ARG:NH1	1:C:404:ARG:NH2[1_445]	2.05	0.15
1:K:168:ARG:NH2	1:M:377:ASP:OD2[2_445]	2.06	0.14
1:J:361:ARG:NH1	1:O:361:ARG:CZ[1_455]	2.10	0.10
1:A:404:ARG:NH1	1:C:404:ARG:CZ[1_445]	2.15	0.05
1:J:361:ARG:CZ	1:O:361:ARG:CZ[1_455]	2.19	0.01

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	337/354 (95%)	330 (98%)	7 (2%)	0	100	100
1	B	337/354 (95%)	326 (97%)	11 (3%)	0	100	100
1	C	337/354 (95%)	326 (97%)	10 (3%)	1 (0%)	36	58
1	D	337/354 (95%)	328 (97%)	9 (3%)	0	100	100
1	E	337/354 (95%)	325 (96%)	12 (4%)	0	100	100
1	F	337/354 (95%)	328 (97%)	9 (3%)	0	100	100
1	G	337/354 (95%)	324 (96%)	12 (4%)	1 (0%)	36	58
1	H	337/354 (95%)	324 (96%)	11 (3%)	2 (1%)	21	42
1	I	337/354 (95%)	328 (97%)	9 (3%)	0	100	100
1	J	337/354 (95%)	326 (97%)	11 (3%)	0	100	100
1	K	337/354 (95%)	327 (97%)	10 (3%)	0	100	100
1	L	337/354 (95%)	326 (97%)	11 (3%)	0	100	100
1	M	337/354 (95%)	328 (97%)	9 (3%)	0	100	100
1	N	337/354 (95%)	326 (97%)	11 (3%)	0	100	100
1	O	337/354 (95%)	326 (97%)	11 (3%)	0	100	100
1	P	337/354 (95%)	325 (96%)	12 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	5392/5664 (95%)	5223 (97%)	165 (3%)	4 (0%)	48 70

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	G	457	SER
1	C	153	GLU
1	H	457	SER
1	H	321	MET

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	305/317 (96%)	305 (100%)	0	100 100
1	B	305/317 (96%)	305 (100%)	0	100 100
1	C	305/317 (96%)	305 (100%)	0	100 100
1	D	305/317 (96%)	305 (100%)	0	100 100
1	E	305/317 (96%)	305 (100%)	0	100 100
1	F	305/317 (96%)	305 (100%)	0	100 100
1	G	305/317 (96%)	305 (100%)	0	100 100
1	H	305/317 (96%)	305 (100%)	0	100 100
1	I	305/317 (96%)	305 (100%)	0	100 100
1	J	305/317 (96%)	305 (100%)	0	100 100
1	K	305/317 (96%)	305 (100%)	0	100 100
1	L	305/317 (96%)	305 (100%)	0	100 100
1	M	305/317 (96%)	305 (100%)	0	100 100
1	N	305/317 (96%)	305 (100%)	0	100 100
1	O	305/317 (96%)	304 (100%)	1 (0%)	86 94
1	P	305/317 (96%)	304 (100%)	1 (0%)	86 94

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
All	All	4880/5072 (96%)	4878 (100%)	2 (0%)	100	100

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	O	408	THR
1	P	369	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (49) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	250	HIS
1	A	346	HIS
1	A	425	GLN
1	B	162	ASN
1	B	195	GLN
1	B	346	HIS
1	C	195	GLN
1	C	230	HIS
1	C	298	HIS
1	C	455	ASN
1	D	175	GLN
1	D	250	HIS
1	F	195	GLN
1	F	230	HIS
1	F	418	ASN
1	F	448	GLN
1	G	162	ASN
1	G	230	HIS
1	G	250	HIS
1	G	275	HIS
1	H	195	GLN
1	H	230	HIS
1	H	237	GLN
1	H	418	ASN
1	I	162	ASN
1	I	195	GLN
1	K	162	ASN
1	K	195	GLN
1	K	230	HIS
1	K	275	HIS

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Mol	Chain	Res	Type
1	K	373	GLN
1	K	455	ASN
1	L	386	GLN
1	L	393	HIS
1	L	425	GLN
1	L	455	ASN
1	M	230	HIS
1	M	353	HIS
1	N	230	HIS
1	N	237	GLN
1	N	250	HIS
1	N	346	HIS
1	N	373	GLN
1	N	386	GLN
1	N	393	HIS
1	O	250	HIS
1	O	373	GLN
1	O	425	GLN
1	P	373	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

49 ligands are modelled in this entry.

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
3	5XH	K	503	1	37,38,38	1.30	2 (5%)	46,53,53	1.55	3 (6%)
2	SO4	O	502	-	4,4,4	0.25	0	6,6,6	0.10	0
2	SO4	E	502	-	4,4,4	0.25	0	6,6,6	0.21	0
2	SO4	L	501	-	4,4,4	0.24	0	6,6,6	0.15	0
2	SO4	O	501	-	4,4,4	0.26	0	6,6,6	0.12	0
2	SO4	M	500	-	4,4,4	0.23	0	6,6,6	0.08	0
2	SO4	F	502	-	4,4,4	0.26	0	6,6,6	0.19	0
2	SO4	I	503	-	4,4,4	0.25	0	6,6,6	0.08	0
2	SO4	L	502	-	4,4,4	0.25	0	6,6,6	0.08	0
3	5XH	E	504	1	37,38,38	1.32	2 (5%)	46,53,53	1.53	3 (6%)
2	SO4	H	502	-	4,4,4	0.25	0	6,6,6	0.10	0
3	5XH	A	501	1	37,38,38	1.31	2 (5%)	46,53,53	1.53	3 (6%)
2	SO4	B	502	-	4,4,4	0.26	0	6,6,6	0.17	0
2	SO4	B	501	-	4,4,4	0.23	0	6,6,6	0.11	0
2	SO4	I	502	-	4,4,4	0.24	0	6,6,6	0.14	0
3	5XH	M	501	1	37,38,38	1.31	2 (5%)	46,53,53	1.54	3 (6%)
2	SO4	F	503	-	4,4,4	0.22	0	6,6,6	0.07	0
2	SO4	K	501	-	4,4,4	0.25	0	6,6,6	0.16	0
2	SO4	E	501	-	4,4,4	0.32	0	6,6,6	0.33	0
3	5XH	H	503	1	37,38,38	1.30	2 (5%)	46,53,53	1.53	3 (6%)
2	SO4	P	502	-	4,4,4	0.24	0	6,6,6	0.09	0
2	SO4	G	500	-	4,4,4	0.25	0	6,6,6	0.09	0
2	SO4	C	503	-	4,4,4	0.21	0	6,6,6	0.10	0
2	SO4	C	501	-	4,4,4	0.24	0	6,6,6	0.08	0
3	5XH	I	504	1	37,38,38	1.32	2 (5%)	46,53,53	1.55	3 (6%)
2	SO4	A	500	-	4,4,4	0.23	0	6,6,6	0.09	0
2	SO4	C	502	-	4,4,4	0.26	0	6,6,6	0.18	0
3	5XH	D	501	1	37,38,38	1.30	2 (5%)	46,53,53	1.52	3 (6%)
3	5XH	N	501	1	37,38,38	1.31	2 (5%)	46,53,53	1.52	3 (6%)
3	5XH	B	504	1	37,38,38	1.31	2 (5%)	46,53,53	1.53	3 (6%)
3	5XH	F	504	1	37,38,38	1.31	2 (5%)	46,53,53	1.54	3 (6%)
3	5XH	G	501	1	37,38,38	1.31	2 (5%)	46,53,53	1.55	3 (6%)
2	SO4	B	503	-	4,4,4	0.23	0	6,6,6	0.12	0
3	5XH	L	503	1	37,38,38	1.29	2 (5%)	46,53,53	1.51	3 (6%)
2	SO4	J	503	-	4,4,4	0.25	0	6,6,6	0.11	0
3	5XH	O	503	1	37,38,38	1.31	2 (5%)	46,53,53	1.52	3 (6%)
2	SO4	I	501	-	4,4,4	0.26	0	6,6,6	0.07	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	SO4	J	501	-	4,4,4	0.26	0	6,6,6	0.10	0
2	SO4	P	501	-	4,4,4	0.47	0	6,6,6	0.27	0
2	SO4	H	501	-	4,4,4	0.40	0	6,6,6	1.49	1 (16%)
3	5XH	P	503	1	37,38,38	1.31	2 (5%)	46,53,53	1.55	3 (6%)
2	SO4	D	500	-	4,4,4	0.22	0	6,6,6	0.10	0
3	5XH	J	504	1	37,38,38	1.32	2 (5%)	46,53,53	1.54	3 (6%)
2	SO4	J	502	-	4,4,4	0.25	0	6,6,6	0.07	0
2	SO4	K	502	-	4,4,4	0.27	0	6,6,6	0.09	0
2	SO4	N	500	-	4,4,4	0.23	0	6,6,6	0.09	0
3	5XH	C	504	1	37,38,38	1.31	2 (5%)	46,53,53	1.73	3 (6%)
2	SO4	E	503	-	4,4,4	0.23	0	6,6,6	0.08	0
2	SO4	F	501	-	4,4,4	0.25	0	6,6,6	0.18	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	5XH	G	501	1	-	1/20/33/33	0/4/4/4
3	5XH	L	503	1	-	2/20/33/33	0/4/4/4
3	5XH	E	504	1	-	1/20/33/33	0/4/4/4
3	5XH	K	503	1	-	1/20/33/33	0/4/4/4
3	5XH	I	504	1	-	2/20/33/33	0/4/4/4
3	5XH	O	503	1	-	2/20/33/33	0/4/4/4
3	5XH	A	501	1	-	2/20/33/33	0/4/4/4
3	5XH	P	503	1	-	2/20/33/33	0/4/4/4
3	5XH	D	501	1	-	2/20/33/33	0/4/4/4
3	5XH	J	504	1	-	1/20/33/33	0/4/4/4
3	5XH	M	501	1	-	2/20/33/33	0/4/4/4
3	5XH	N	501	1	-	2/20/33/33	0/4/4/4
3	5XH	B	504	1	-	1/20/33/33	0/4/4/4
3	5XH	H	503	1	-	2/20/33/33	0/4/4/4
3	5XH	C	504	1	-	1/20/33/33	0/4/4/4
3	5XH	F	504	1	-	1/20/33/33	0/4/4/4

All (32) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	504	5XH	C4-C3	7.52	1.52	1.32
3	J	504	5XH	C4-C3	7.51	1.52	1.32
3	P	503	5XH	C4-C3	7.49	1.52	1.32
3	I	504	5XH	C4-C3	7.48	1.52	1.32
3	A	501	5XH	C4-C3	7.48	1.52	1.32
3	F	504	5XH	C4-C3	7.47	1.52	1.32
3	G	501	5XH	C4-C3	7.47	1.52	1.32
3	O	503	5XH	C4-C3	7.47	1.52	1.32
3	M	501	5XH	C4-C3	7.46	1.52	1.32
3	N	501	5XH	C4-C3	7.46	1.52	1.32
3	D	501	5XH	C4-C3	7.44	1.52	1.32
3	B	504	5XH	C4-C3	7.43	1.52	1.32
3	H	503	5XH	C4-C3	7.43	1.52	1.32
3	C	504	5XH	C4-C3	7.41	1.52	1.32
3	K	503	5XH	C4-C3	7.40	1.52	1.32
3	L	503	5XH	C4-C3	7.35	1.52	1.32
3	N	501	5XH	C4-C5	2.28	1.51	1.48
3	I	504	5XH	C4-C5	2.27	1.51	1.48
3	O	503	5XH	C4-C5	2.26	1.51	1.48
3	J	504	5XH	C4-C5	2.24	1.51	1.48
3	E	504	5XH	C4-C5	2.23	1.51	1.48
3	A	501	5XH	C4-C5	2.23	1.51	1.48
3	F	504	5XH	C4-C5	2.22	1.51	1.48
3	L	503	5XH	C4-C5	2.22	1.51	1.48
3	B	504	5XH	C4-C5	2.21	1.51	1.48
3	C	504	5XH	C4-C5	2.21	1.51	1.48
3	D	501	5XH	C4-C5	2.20	1.51	1.48
3	P	503	5XH	C4-C5	2.20	1.51	1.48
3	K	503	5XH	C4-C5	2.19	1.51	1.48
3	H	503	5XH	C4-C5	2.18	1.51	1.48
3	G	501	5XH	C4-C5	2.18	1.51	1.48
3	M	501	5XH	C4-C5	2.17	1.51	1.48

All (49) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	504	5XH	C2-C3-C4	-9.60	109.94	124.82
3	G	501	5XH	C2-C3-C4	-8.09	112.28	124.82
3	I	504	5XH	C2-C3-C4	-7.99	112.43	124.82
3	K	503	5XH	C2-C3-C4	-7.99	112.44	124.82
3	J	504	5XH	C2-C3-C4	-7.98	112.45	124.82
3	H	503	5XH	C2-C3-C4	-7.95	112.50	124.82
3	B	504	5XH	C2-C3-C4	-7.93	112.52	124.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	E	504	5XH	C2-C3-C4	-7.93	112.53	124.82
3	P	503	5XH	C2-C3-C4	-7.93	112.53	124.82
3	F	504	5XH	C2-C3-C4	-7.92	112.54	124.82
3	M	501	5XH	C2-C3-C4	-7.88	112.61	124.82
3	N	501	5XH	C2-C3-C4	-7.81	112.72	124.82
3	A	501	5XH	C2-C3-C4	-7.80	112.73	124.82
3	O	503	5XH	C2-C3-C4	-7.80	112.73	124.82
3	D	501	5XH	C2-C3-C4	-7.78	112.77	124.82
3	L	503	5XH	C2-C3-C4	-7.65	112.96	124.82
3	I	504	5XH	C23-C25-N3	4.33	133.75	128.50
3	L	503	5XH	C23-C25-N3	4.30	133.73	128.50
3	B	504	5XH	C23-C25-N3	4.28	133.70	128.50
3	K	503	5XH	C23-C25-N3	4.27	133.69	128.50
3	C	504	5XH	C23-C25-N3	4.27	133.68	128.50
3	J	504	5XH	C23-C25-N3	4.26	133.67	128.50
3	F	504	5XH	C23-C25-N3	4.24	133.65	128.50
3	K	503	5XH	C3-C4-C5	-4.23	112.19	122.94
3	P	503	5XH	C3-C4-C5	-4.23	112.19	122.94
3	M	501	5XH	C3-C4-C5	-4.22	112.20	122.94
3	E	504	5XH	C23-C25-N3	4.22	133.62	128.50
3	N	501	5XH	C23-C25-N3	4.20	133.60	128.50
3	A	501	5XH	C3-C4-C5	-4.19	112.28	122.94
3	D	501	5XH	C23-C25-N3	4.18	133.58	128.50
3	P	503	5XH	C23-C25-N3	4.16	133.55	128.50
3	M	501	5XH	C23-C25-N3	4.15	133.53	128.50
3	F	504	5XH	C3-C4-C5	-4.13	112.43	122.94
3	G	501	5XH	C23-C25-N3	4.13	133.52	128.50
3	O	503	5XH	C3-C4-C5	-4.13	112.43	122.94
3	H	503	5XH	C3-C4-C5	-4.12	112.47	122.94
3	O	503	5XH	C23-C25-N3	4.11	133.49	128.50
3	D	501	5XH	C3-C4-C5	-4.11	112.50	122.94
3	H	503	5XH	C23-C25-N3	4.11	133.49	128.50
3	A	501	5XH	C23-C25-N3	4.09	133.47	128.50
3	I	504	5XH	C3-C4-C5	-4.08	112.57	122.94
3	N	501	5XH	C3-C4-C5	-4.06	112.62	122.94
3	L	503	5XH	C3-C4-C5	-4.04	112.66	122.94
3	J	504	5XH	C3-C4-C5	-4.04	112.67	122.94
3	E	504	5XH	C3-C4-C5	-4.03	112.68	122.94
3	G	501	5XH	C3-C4-C5	-4.01	112.74	122.94
3	C	504	5XH	C3-C4-C5	-3.95	112.90	122.94
3	B	504	5XH	C3-C4-C5	-3.88	113.06	122.94
2	H	501	SO4	O4-S-O1	-3.07	93.50	109.56

There are no chirality outliers.

All (25) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	501	5XH	C2-C3-C4-C5
3	A	501	5XH	N6-C11-N4-C12
3	B	504	5XH	C2-C3-C4-C5
3	C	504	5XH	C2-C3-C4-C5
3	D	501	5XH	C2-C3-C4-C5
3	E	504	5XH	C2-C3-C4-C5
3	F	504	5XH	C2-C3-C4-C5
3	G	501	5XH	C2-C3-C4-C5
3	H	503	5XH	C2-C3-C4-C5
3	H	503	5XH	N6-C11-N4-C12
3	I	504	5XH	C2-C3-C4-C5
3	I	504	5XH	N6-C11-N4-C12
3	J	504	5XH	C2-C3-C4-C5
3	K	503	5XH	C2-C3-C4-C5
3	L	503	5XH	C2-C3-C4-C5
3	L	503	5XH	N6-C11-N4-C12
3	M	501	5XH	C2-C3-C4-C5
3	M	501	5XH	N6-C11-N4-C12
3	N	501	5XH	C2-C3-C4-C5
3	O	503	5XH	C2-C3-C4-C5
3	O	503	5XH	N6-C11-N4-C12
3	P	503	5XH	C2-C3-C4-C5
3	N	501	5XH	N6-C11-N4-C12
3	D	501	5XH	N6-C11-N4-C12
3	P	503	5XH	N6-C11-N4-C12

There are no ring outliers.

14 monomers are involved in 16 short contacts:

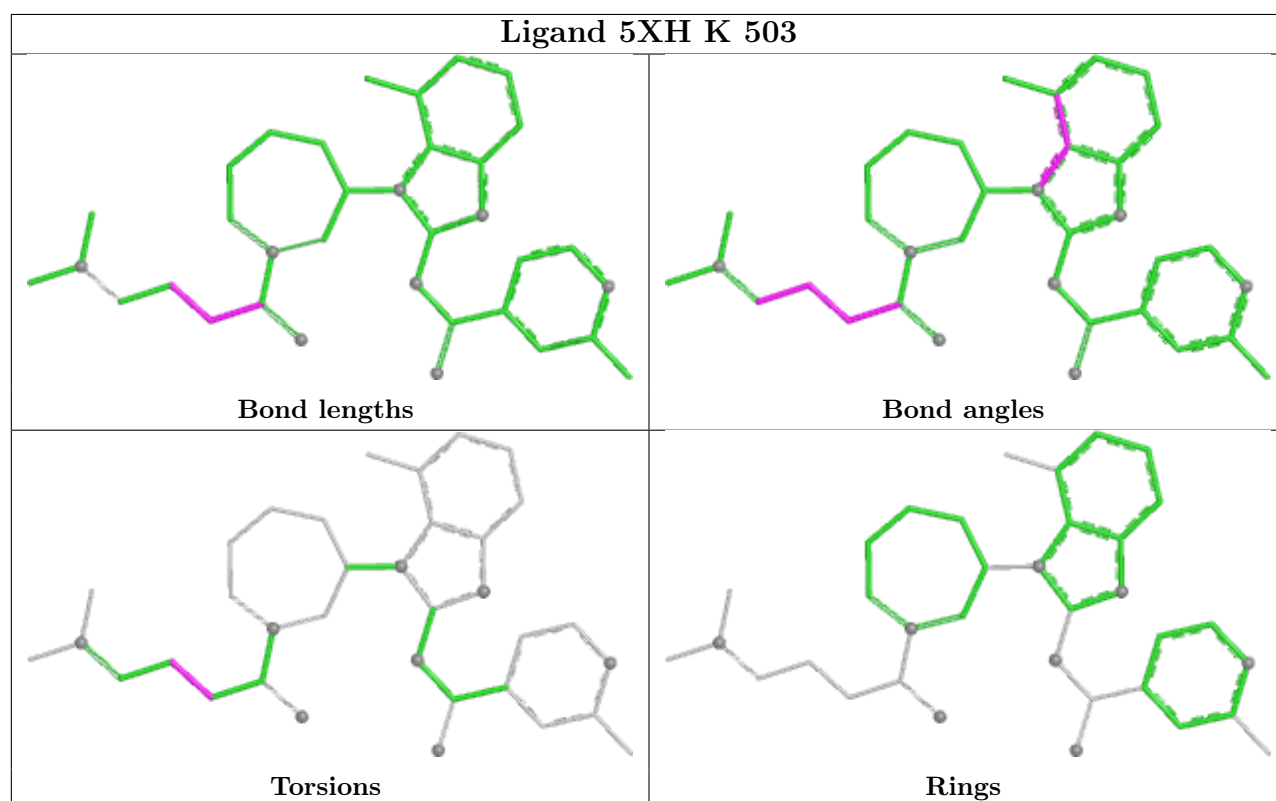
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	O	502	SO4	1	0
2	L	501	SO4	1	0
2	M	500	SO4	1	0
2	F	502	SO4	1	0
2	H	502	SO4	1	0
3	A	501	5XH	1	0
2	B	502	SO4	1	0
2	K	501	SO4	1	0
2	E	501	SO4	3	0
3	H	503	5XH	1	0

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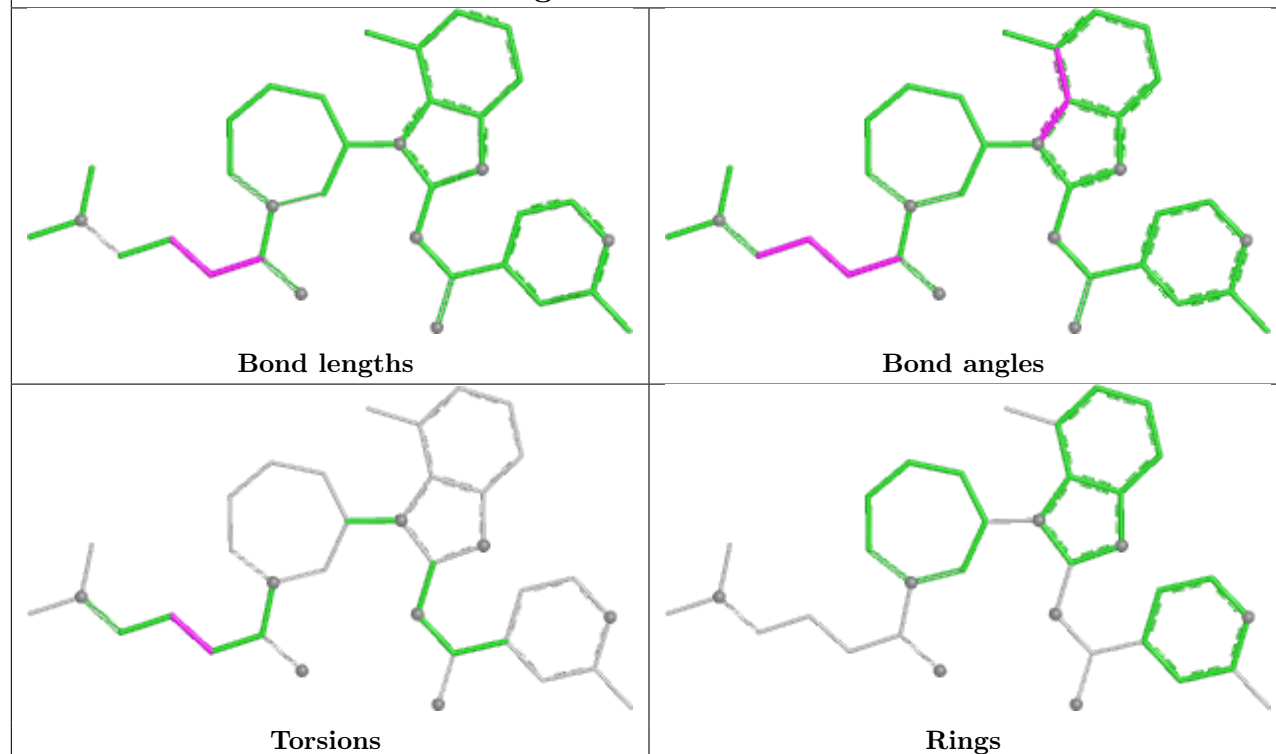
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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	G	500	SO4	1	0
2	C	502	SO4	1	0
3	D	501	5XH	1	0
2	H	501	SO4	1	0

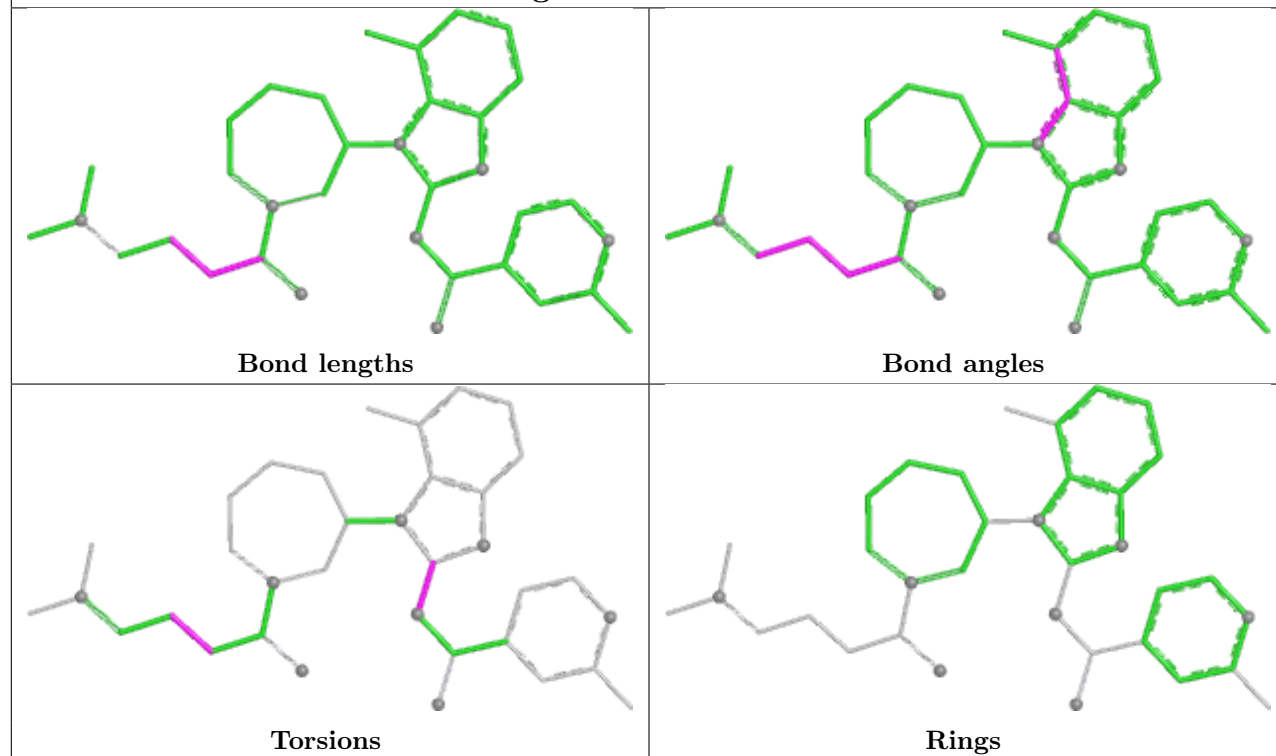
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

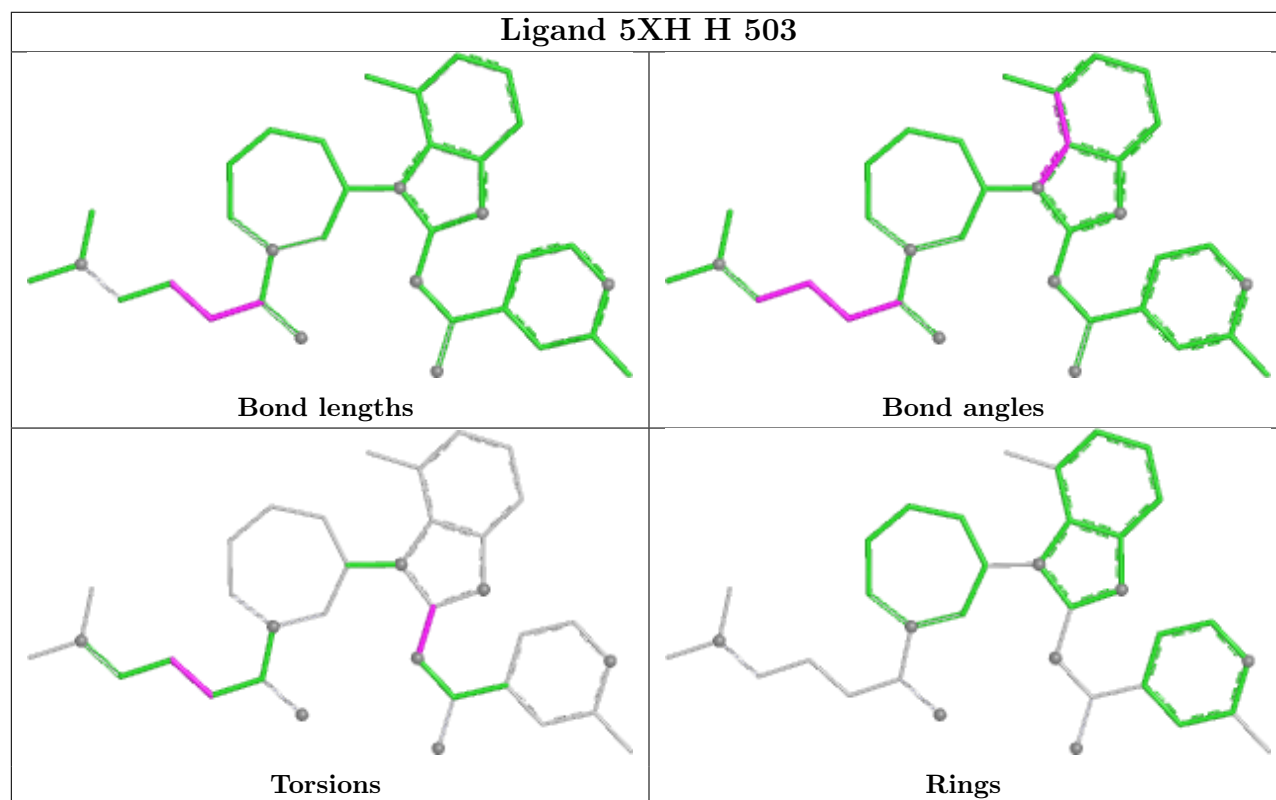
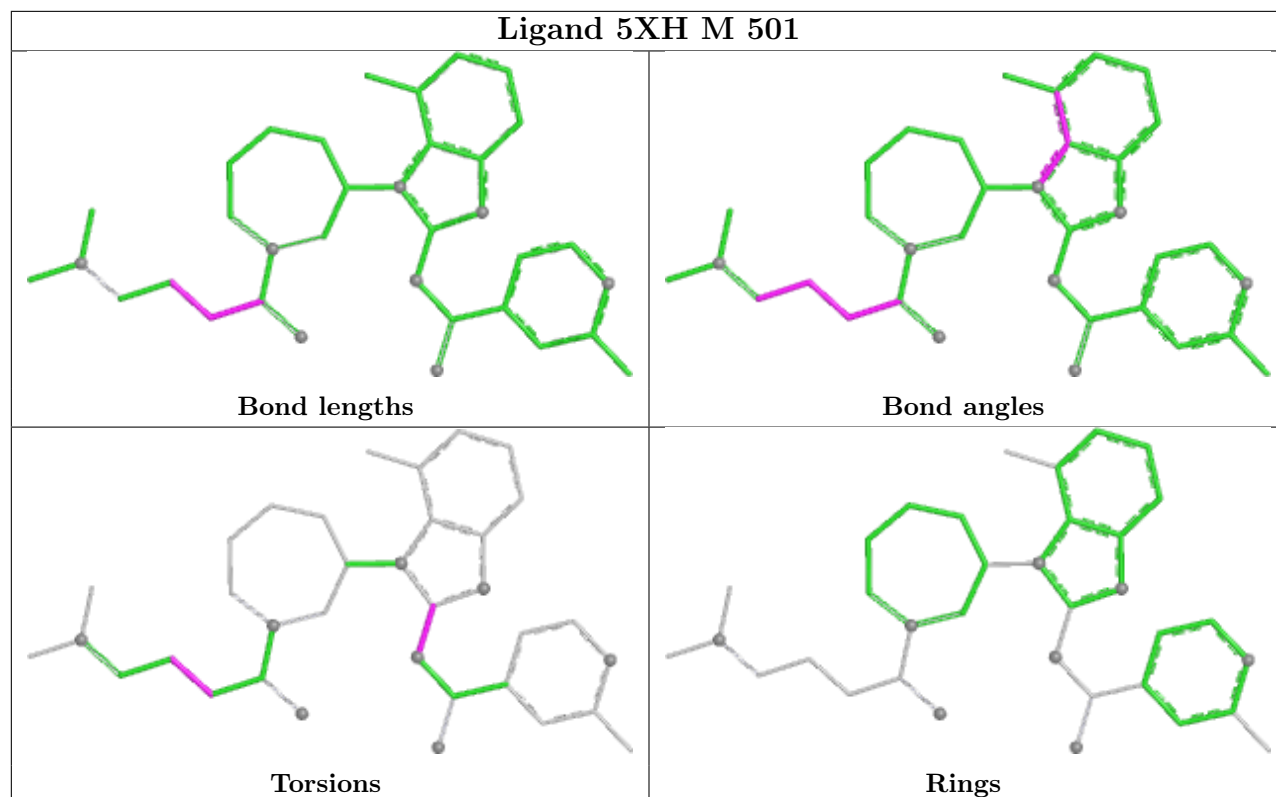


Ligand 5XH E 504

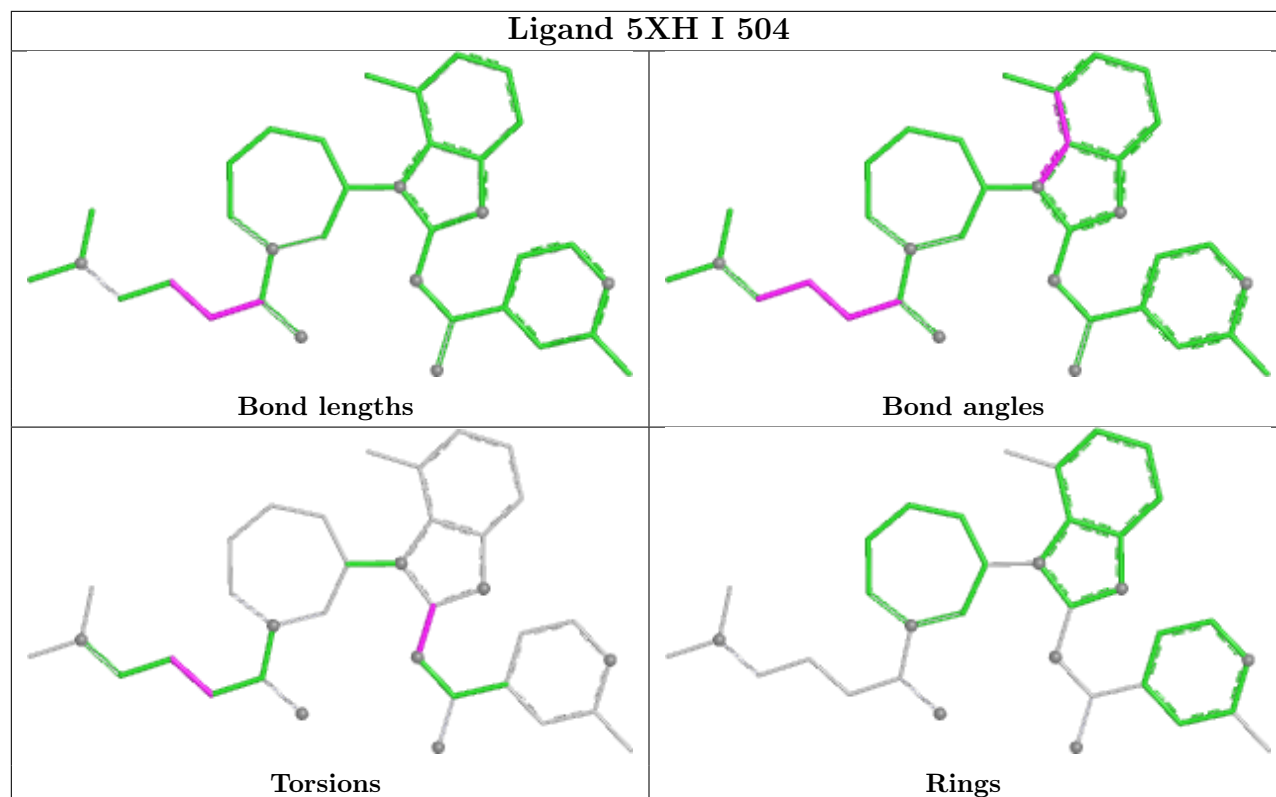


Ligand 5XH A 501

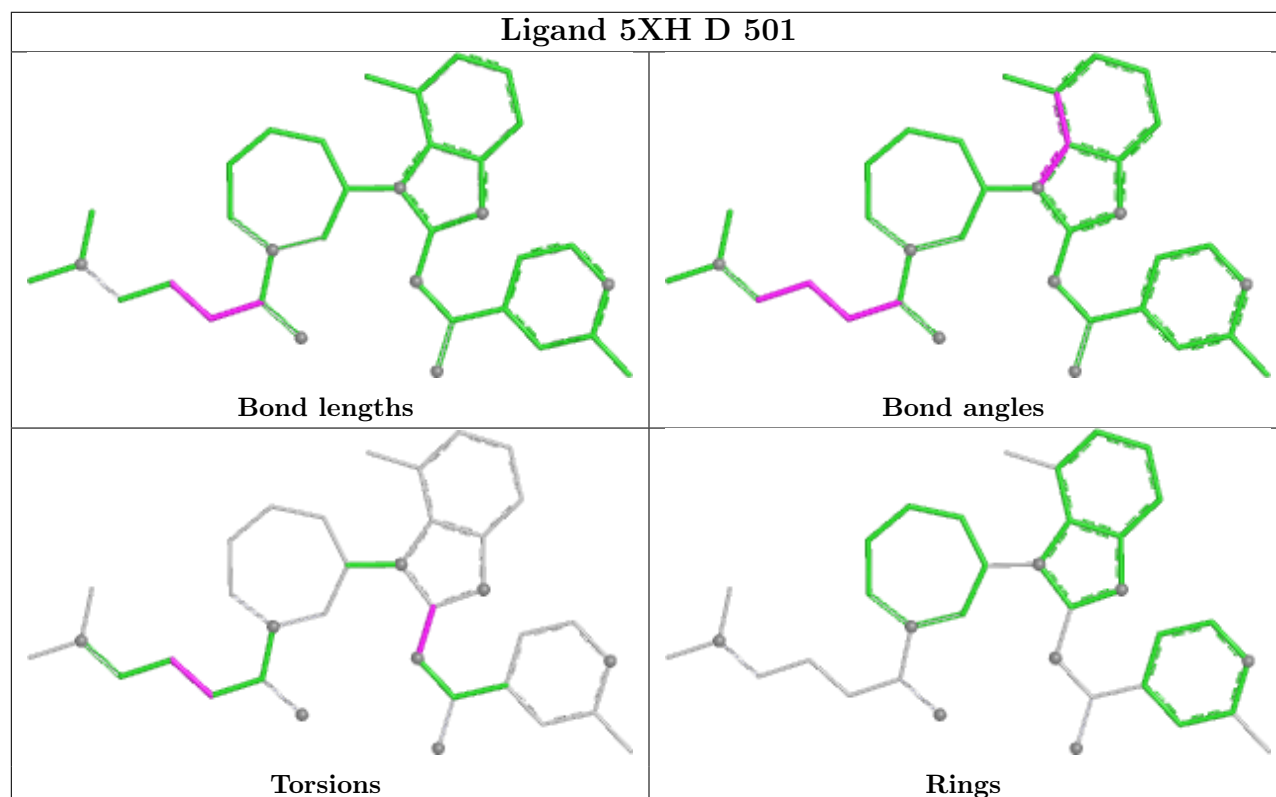




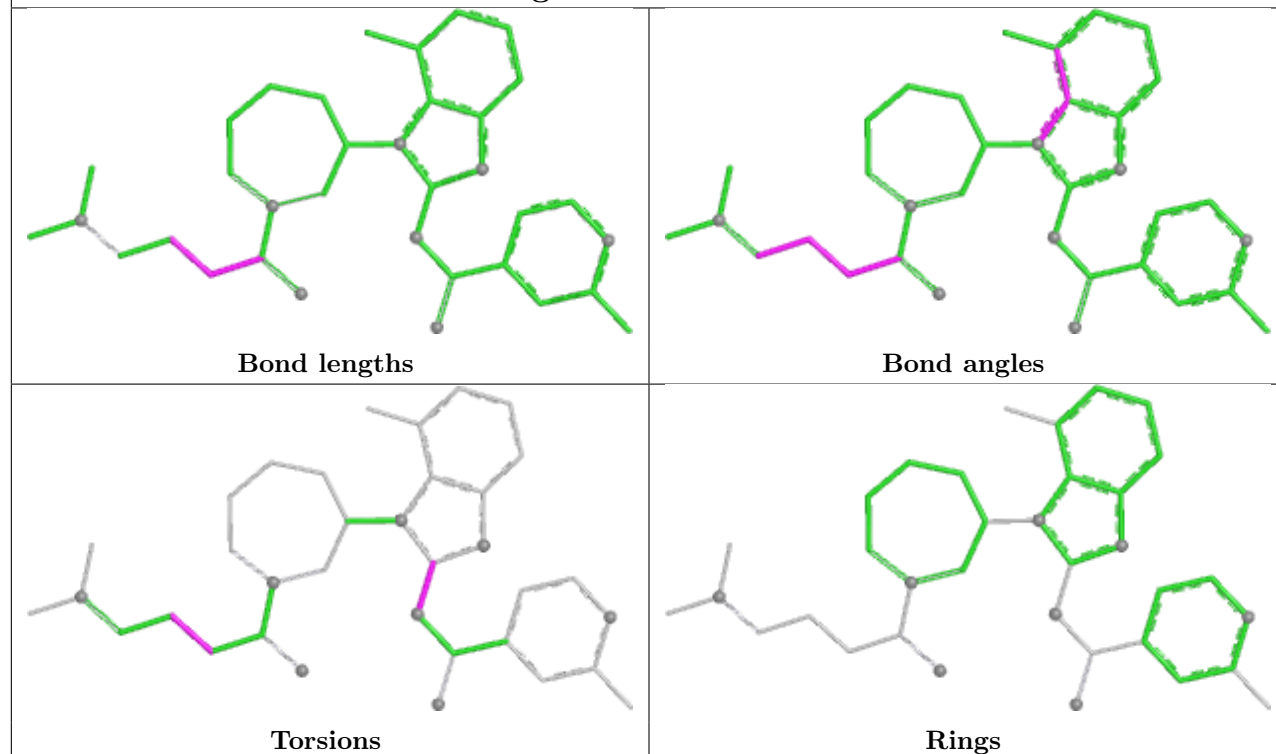
Ligand 5XH I 504



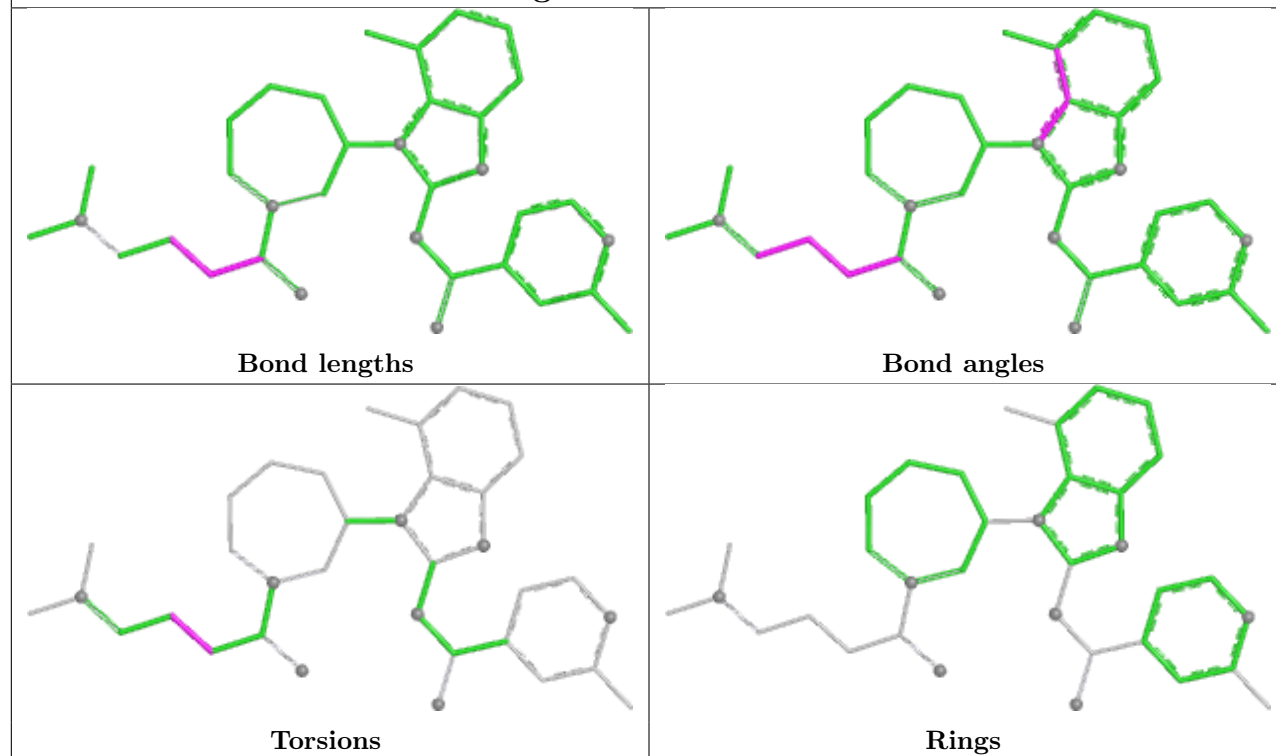
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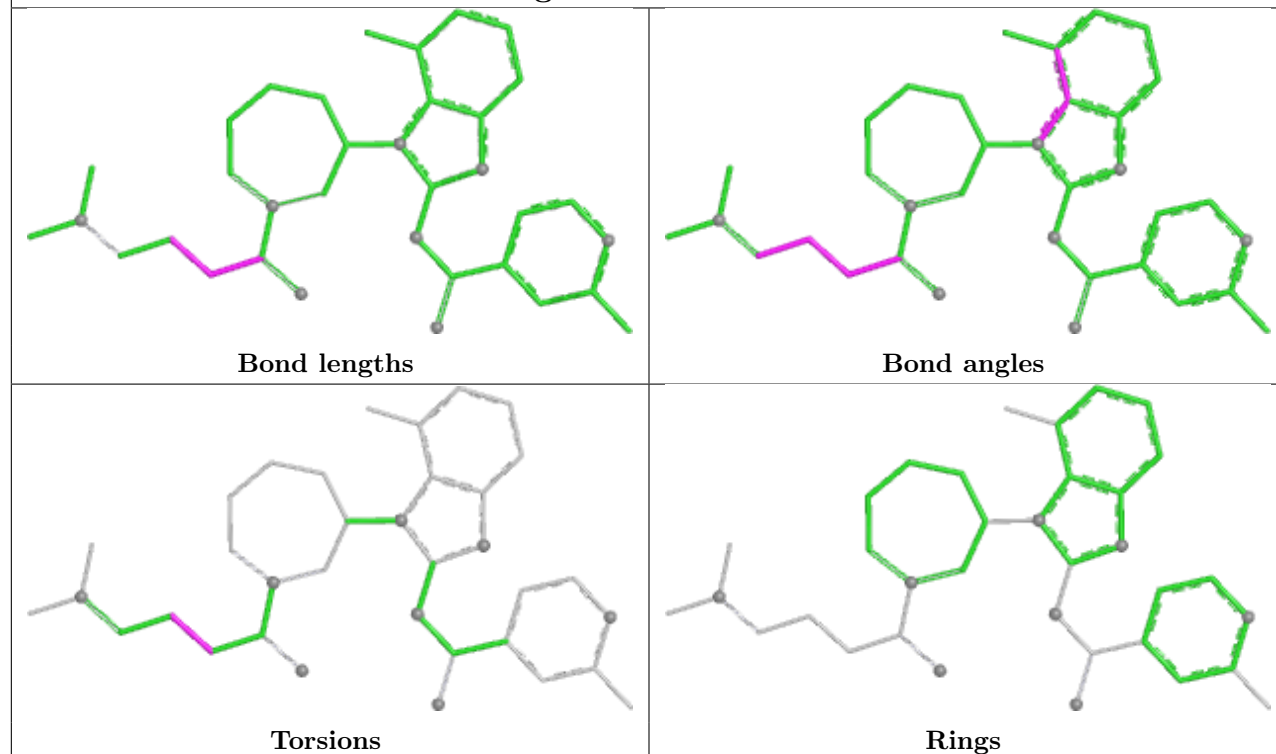
Ligand 5XH N 501



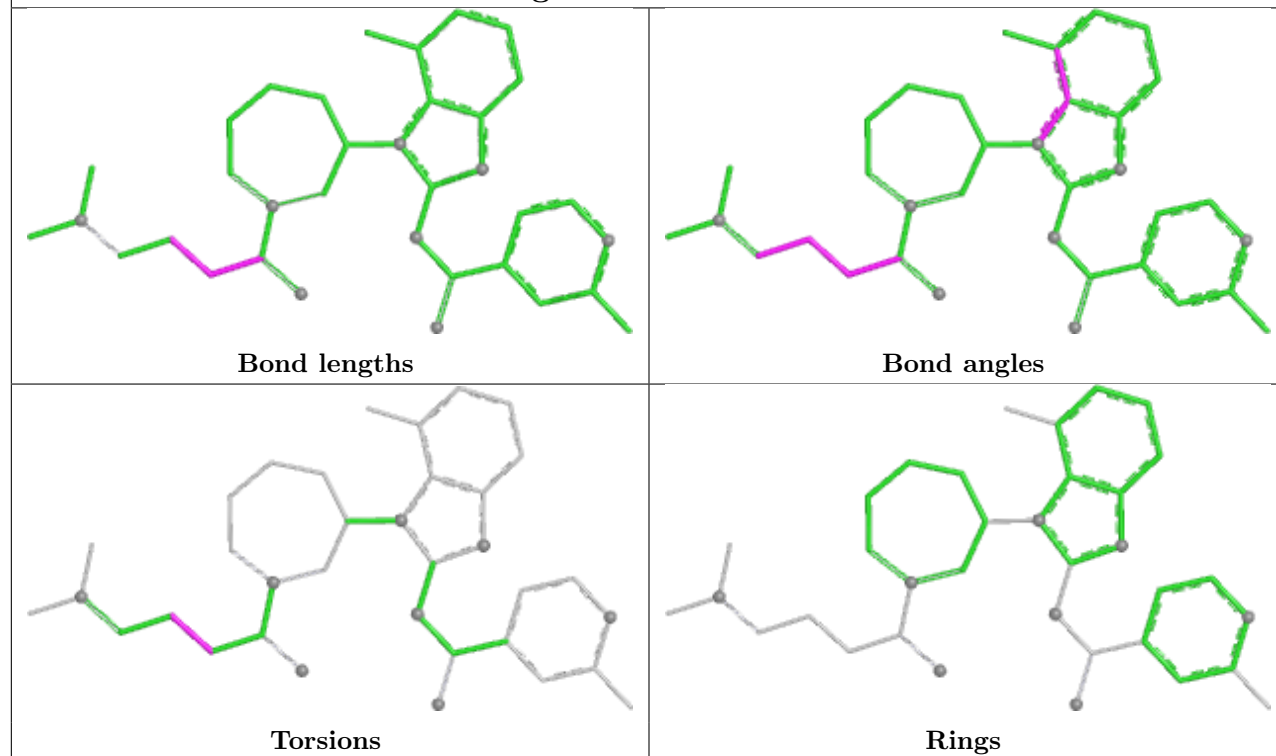
Ligand 5XH B 504



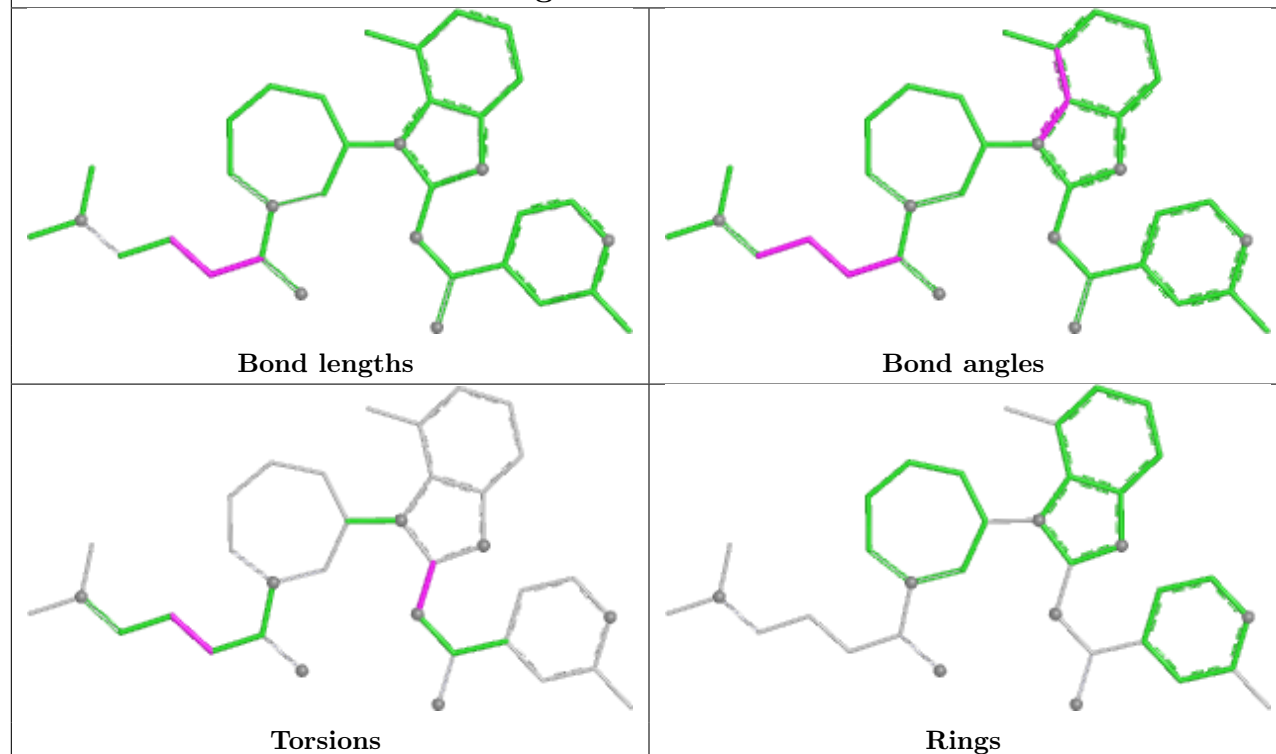
Ligand 5XH F 504



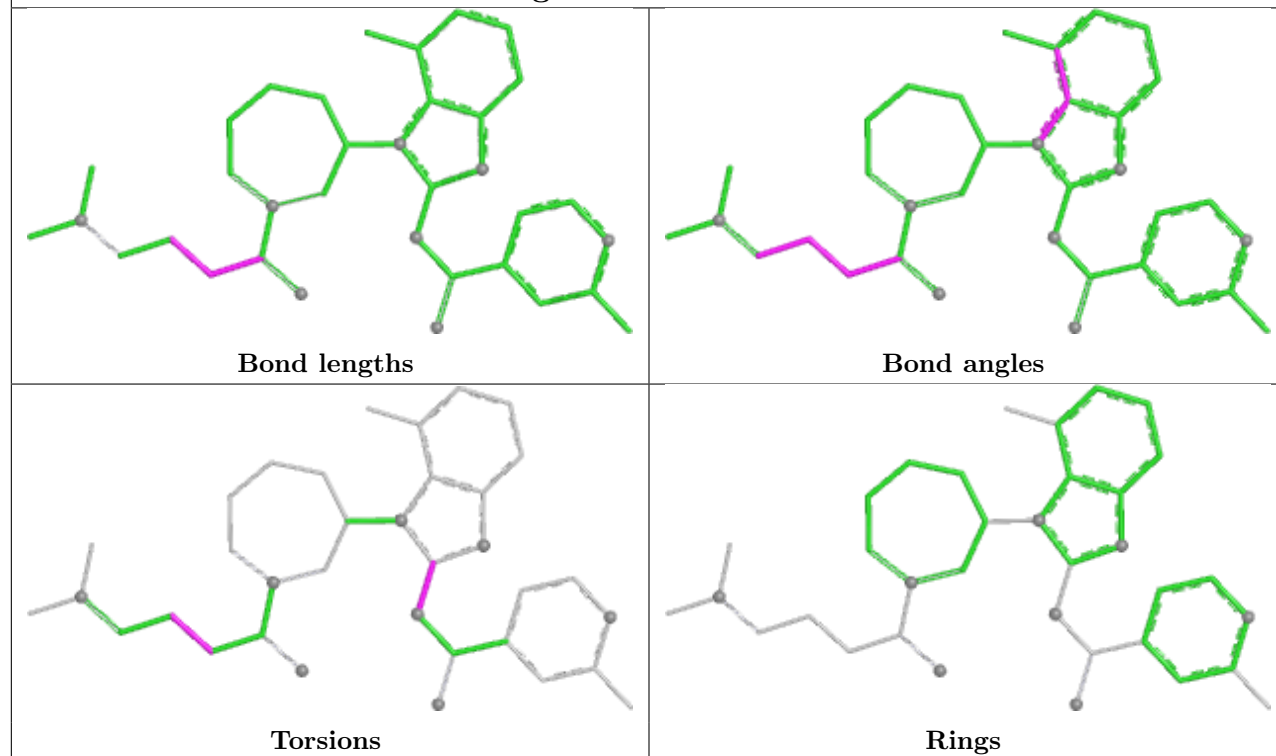
Ligand 5XH G 501



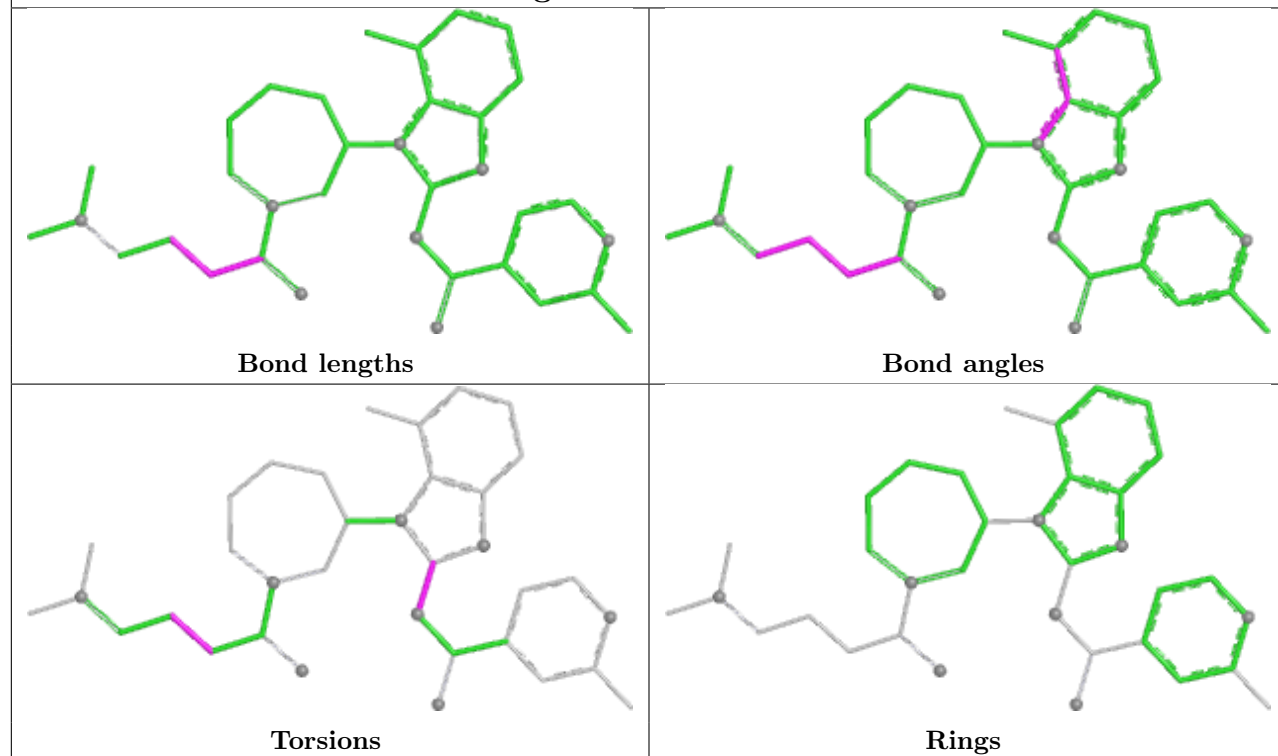
Ligand 5XH L 503



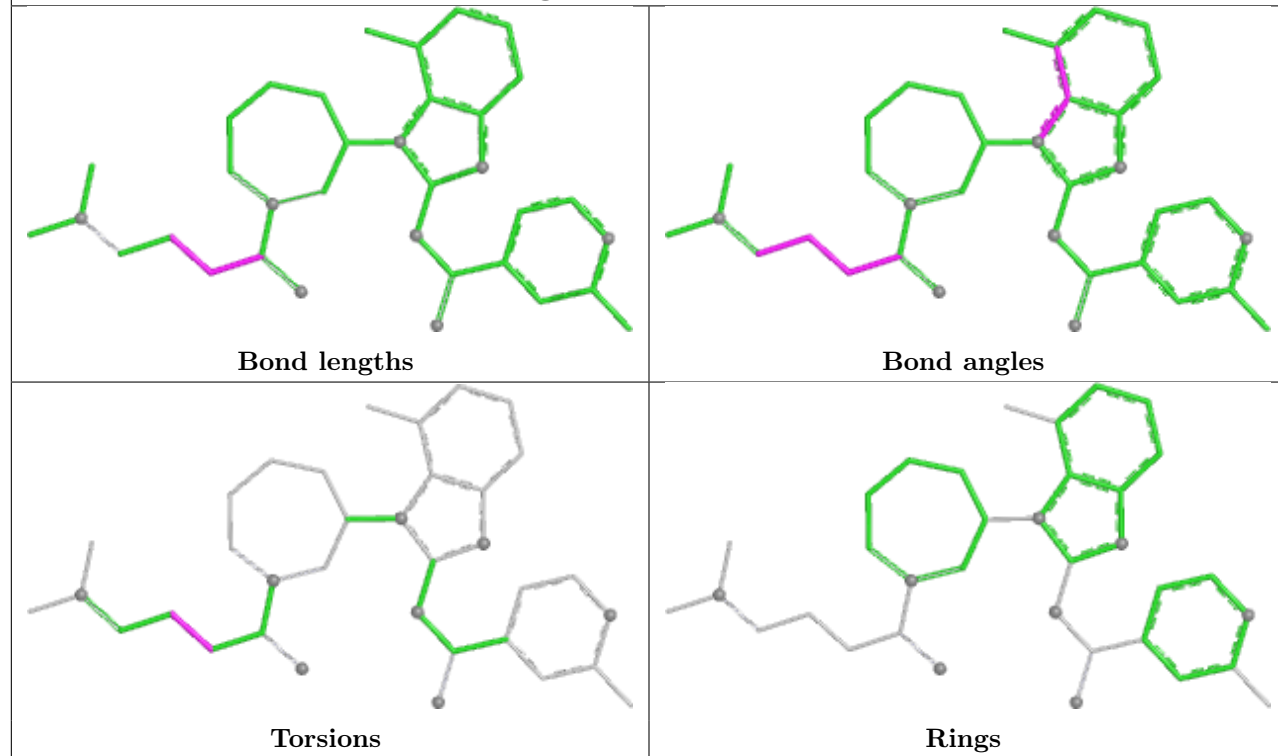
Ligand 5XH O 503

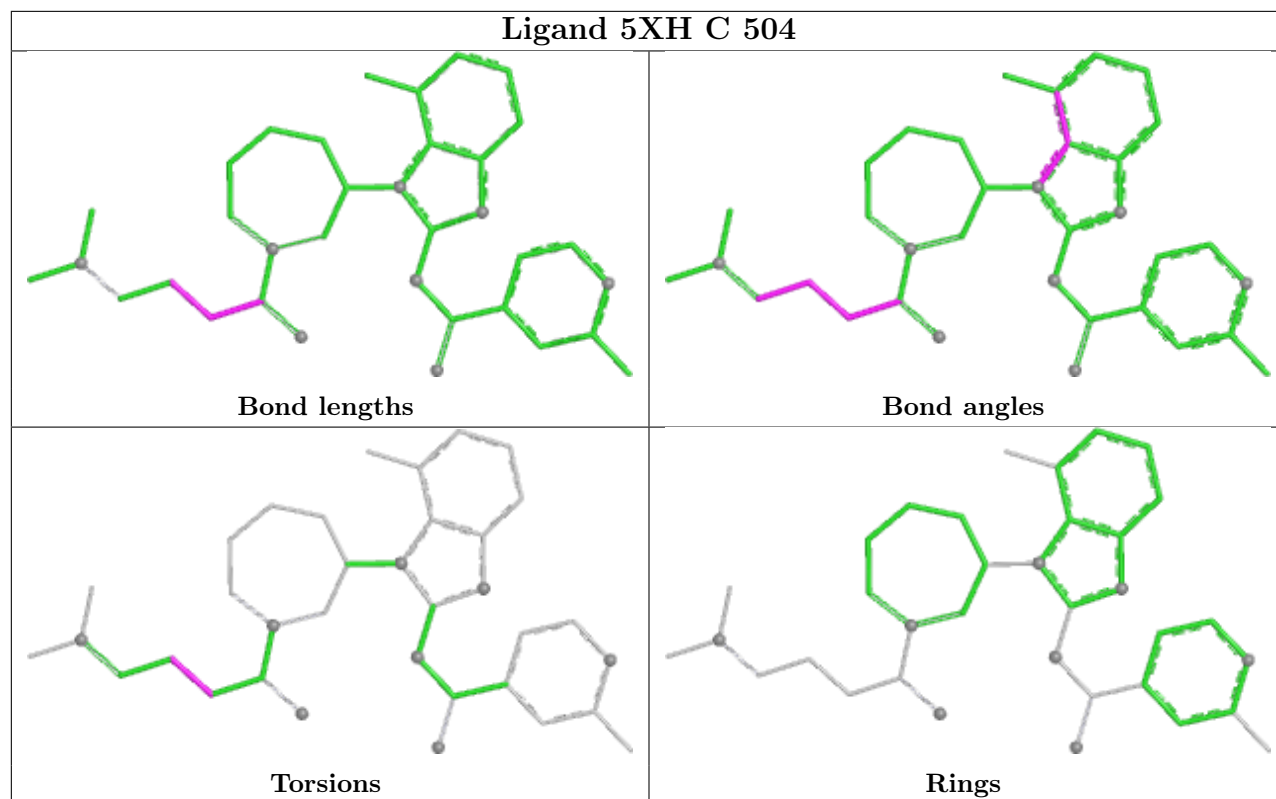


Ligand 5XH P 503



Ligand 5XH J 504





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

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

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

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	339/354 (95%)	-1.24	0 100 100	26, 53, 92, 116	0
1	B	339/354 (95%)	-1.32	0 100 100	26, 45, 82, 114	0
1	C	339/354 (95%)	-1.28	0 100 100	25, 46, 89, 118	0
1	D	339/354 (95%)	-1.21	0 100 100	25, 55, 97, 117	0
1	E	339/354 (95%)	-1.32	0 100 100	25, 45, 82, 106	0
1	F	339/354 (95%)	-1.28	0 100 100	25, 46, 87, 107	0
1	G	339/354 (95%)	-1.23	0 100 100	26, 52, 93, 115	0
1	H	339/354 (95%)	-1.15	0 100 100	29, 55, 102, 128	0
1	I	339/354 (95%)	-1.31	0 100 100	23, 45, 84, 111	0
1	J	339/354 (95%)	-1.31	0 100 100	27, 46, 81, 103	0
1	K	339/354 (95%)	-1.31	0 100 100	26, 45, 78, 101	0
1	L	339/354 (95%)	-1.32	0 100 100	23, 45, 84, 111	0
1	M	339/354 (95%)	-1.22	0 100 100	28, 53, 93, 109	0
1	N	339/354 (95%)	-1.18	0 100 100	29, 55, 96, 121	0
1	O	339/354 (95%)	-1.19	0 100 100	30, 54, 96, 142	0
1	P	339/354 (95%)	-1.21	0 100 100	27, 52, 90, 116	0
All	All	5424/5664 (95%)	-1.25	0 100 100	23, 49, 91, 142	0

There are no RSRZ outliers to report.

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	SO4	J	502	5/5	0.96	0.07	85,87,89,89	0
2	SO4	K	501	5/5	0.96	0.07	100,102,103,104	0
2	SO4	B	502	5/5	0.97	0.06	95,97,99,100	0
2	SO4	L	501	5/5	0.97	0.07	99,100,101,101	0
2	SO4	E	502	5/5	0.98	0.07	93,96,99,100	0
2	SO4	F	502	5/5	0.98	0.05	96,98,99,100	0
2	SO4	I	501	5/5	0.98	0.07	81,82,86,89	0
2	SO4	I	502	5/5	0.98	0.06	85,86,88,88	0
2	SO4	J	501	5/5	0.98	0.08	91,92,93,96	0
2	SO4	B	501	5/5	0.98	0.08	74,77,81,84	0
2	SO4	C	501	5/5	0.98	0.06	75,76,76,77	0
2	SO4	E	501	5/5	0.98	0.11	91,94,97,101	0
2	SO4	O	501	5/5	0.98	0.05	95,98,102,103	0
2	SO4	F	503	5/5	0.99	0.04	76,78,79,83	0
2	SO4	G	500	5/5	0.99	0.06	76,76,80,81	0
2	SO4	H	501	5/5	0.99	0.04	92,97,102,104	0
2	SO4	H	502	5/5	0.99	0.07	77,77,78,84	0
2	SO4	C	503	5/5	0.99	0.05	78,81,83,84	0
2	SO4	D	500	5/5	0.99	0.10	79,83,86,86	0
2	SO4	I	503	5/5	0.99	0.05	73,74,75,79	0
2	SO4	B	503	5/5	0.99	0.04	68,71,75,78	0
2	SO4	A	500	5/5	0.99	0.08	81,82,86,87	0
2	SO4	J	503	5/5	0.99	0.04	72,74,78,79	0
2	SO4	E	503	5/5	0.99	0.04	70,71,72,79	0
2	SO4	K	502	5/5	0.99	0.04	71,71,77,78	0
2	SO4	F	501	5/5	0.99	0.11	75,76,80,84	0
2	SO4	L	502	5/5	0.99	0.05	75,77,82,86	0
2	SO4	M	500	5/5	0.99	0.09	72,73,73,77	0
2	SO4	N	500	5/5	0.99	0.08	80,81,87,87	0
2	SO4	C	502	5/5	0.99	0.06	92,94,95,96	0
2	SO4	O	502	5/5	0.99	0.05	79,82,84,85	0
2	SO4	P	501	5/5	0.99	0.04	98,102,105,106	0

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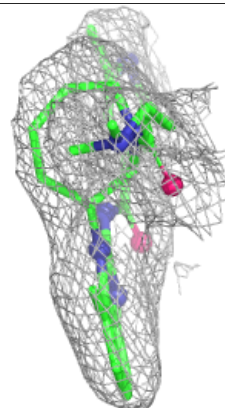
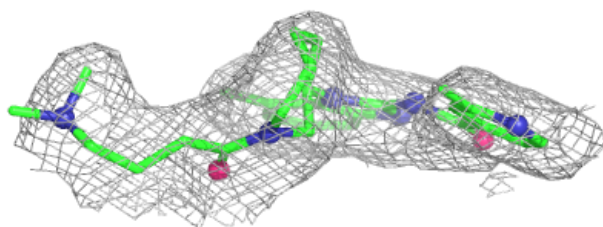
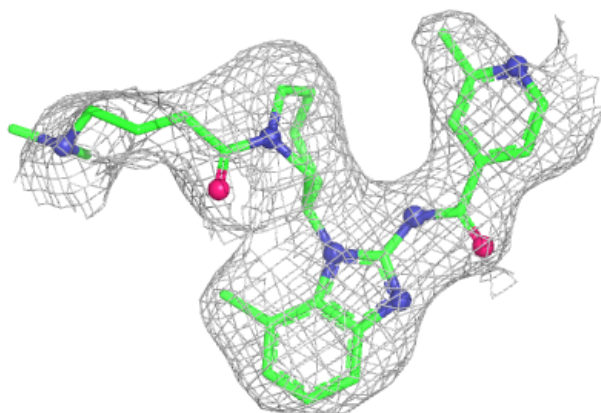
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	SO4	P	502	5/5	0.99	0.07	76,78,83,83	0
3	5XH	A	501	35/35	0.99	0.04	22,33,57,58	0
3	5XH	B	504	35/35	0.99	0.04	11,27,49,50	0
3	5XH	C	504	35/35	0.99	0.04	14,31,53,53	0
3	5XH	D	501	35/35	0.99	0.04	24,37,51,53	0
3	5XH	E	504	35/35	0.99	0.04	20,31,54,57	0
3	5XH	F	504	35/35	0.99	0.04	17,30,56,57	0
3	5XH	G	501	35/35	0.99	0.04	21,34,56,58	0
3	5XH	H	503	35/35	0.99	0.03	26,35,51,57	0
3	5XH	I	504	35/35	0.99	0.04	18,35,61,62	0
3	5XH	J	504	35/35	0.99	0.05	17,35,52,62	0
3	5XH	K	503	35/35	0.99	0.04	18,33,49,53	0
3	5XH	L	503	35/35	0.99	0.04	22,35,51,53	0
3	5XH	M	501	35/35	0.99	0.04	21,36,51,54	0
3	5XH	N	501	35/35	0.99	0.04	18,35,50,53	0
3	5XH	O	503	35/35	0.99	0.04	25,36,55,60	0
3	5XH	P	503	35/35	0.99	0.04	22,30,52,59	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.

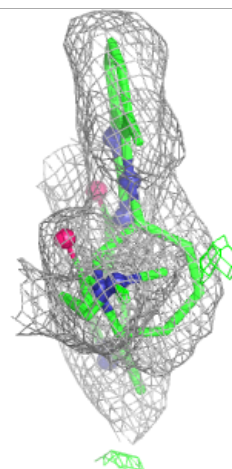
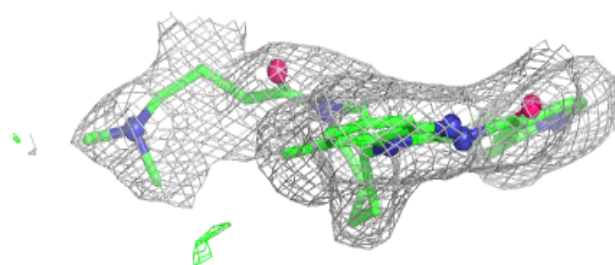
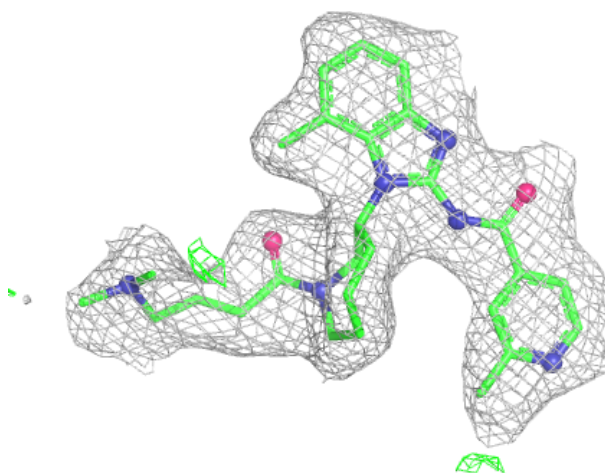
Electron density around 5XH A 501:

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and green (positive)



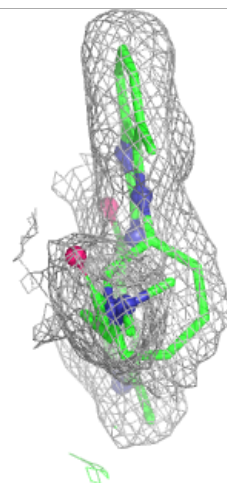
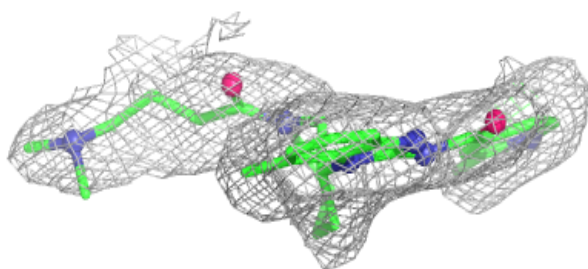
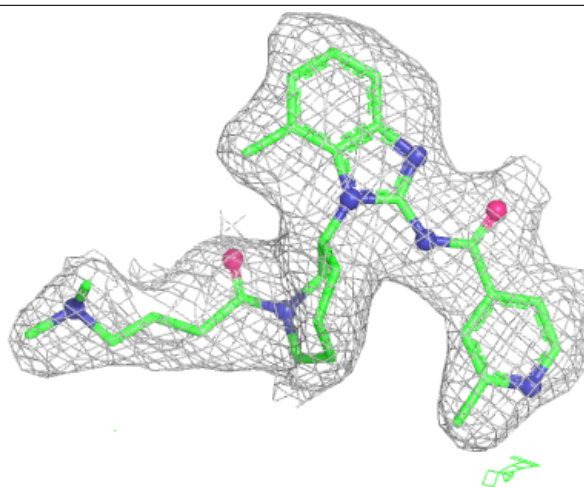
Electron density around 5XH B 504:

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and green (positive)



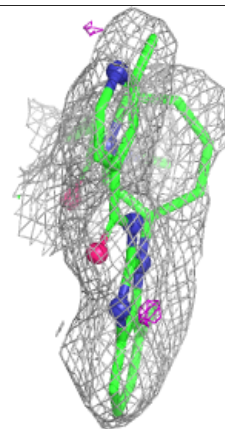
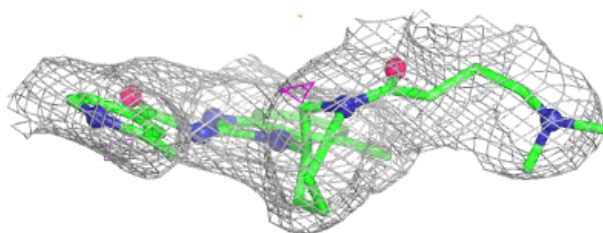
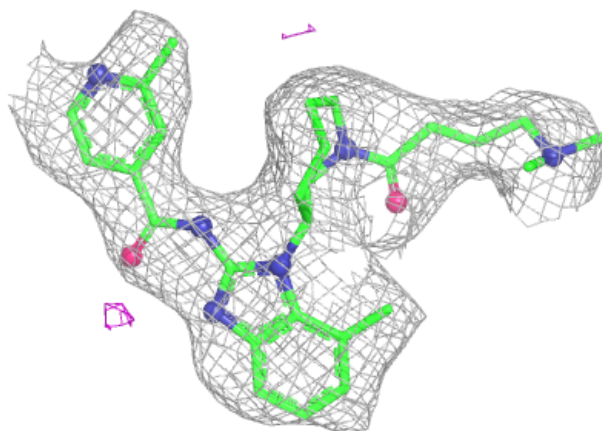
Electron density around 5XH C 504:

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and green (positive)



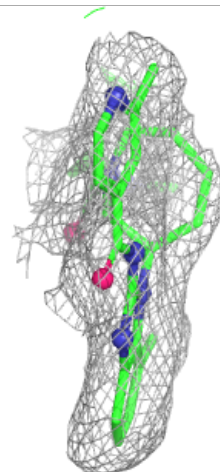
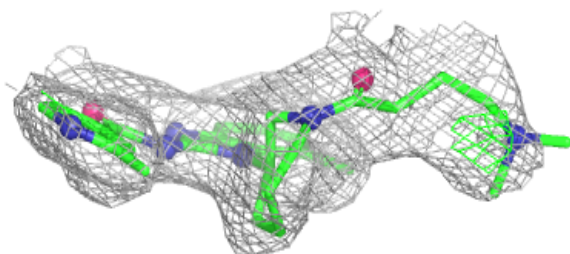
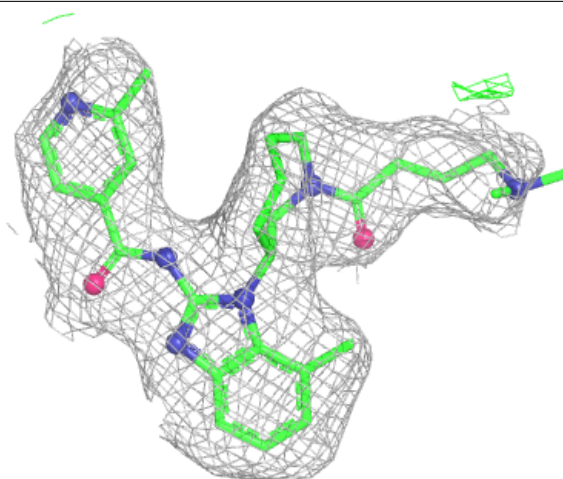
Electron density around 5XH D 501:

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and green (positive)



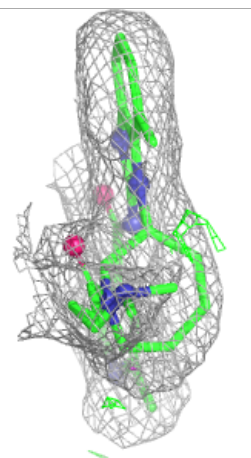
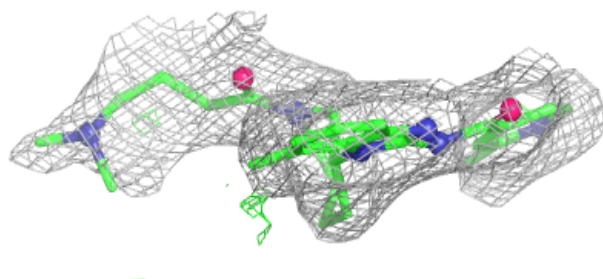
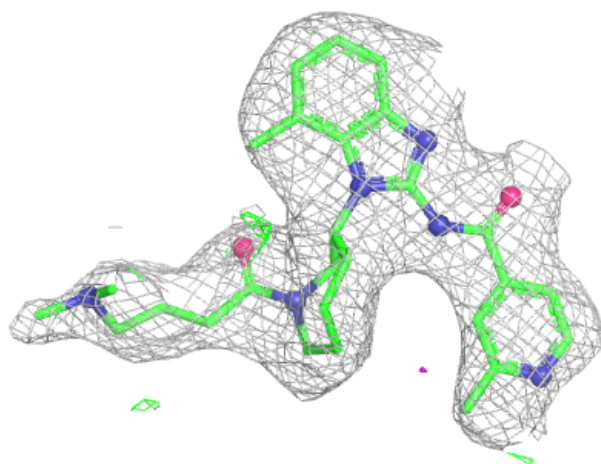
Electron density around 5XH E 504:

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



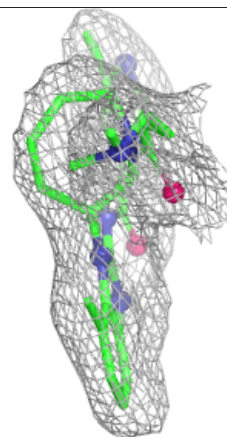
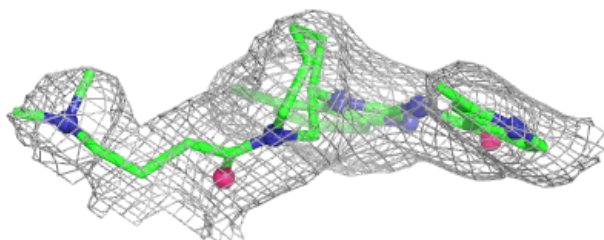
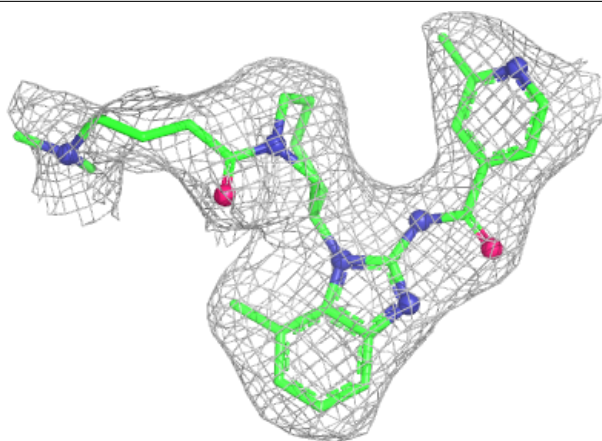
Electron density around 5XH F 504:

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and green (positive)



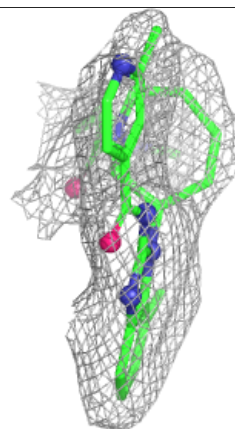
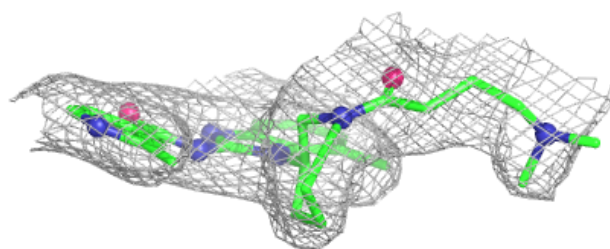
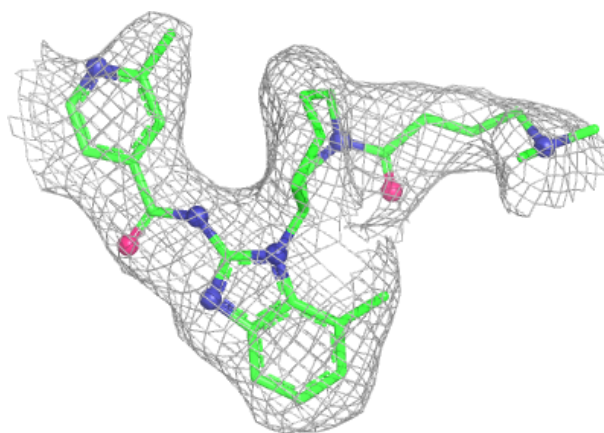
Electron density around 5XH G 501:

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and green (positive)



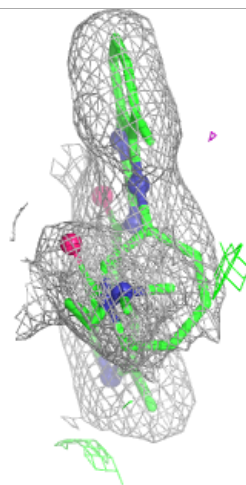
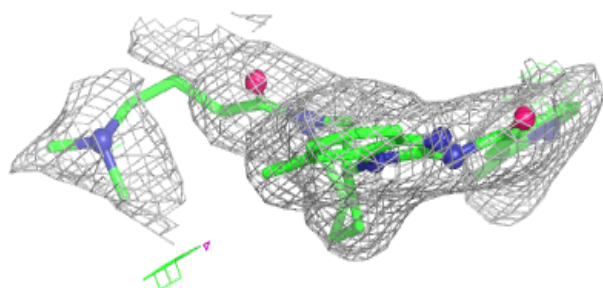
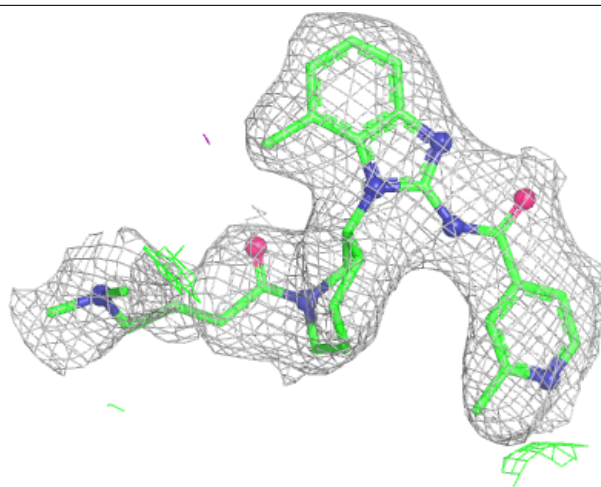
Electron density around 5XH H 503:

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and green (positive)



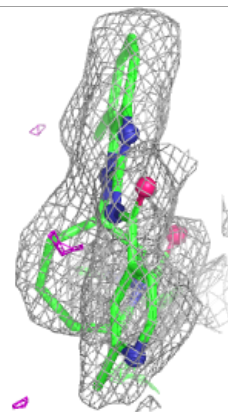
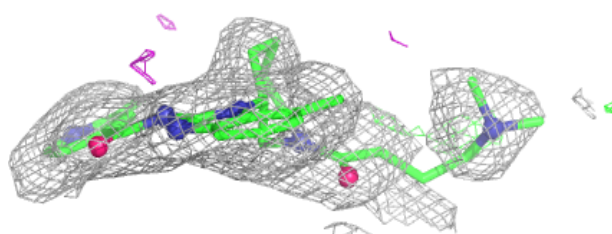
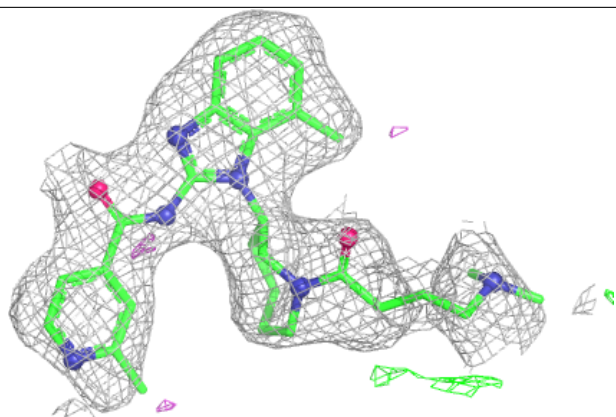
Electron density around 5XH I 504:

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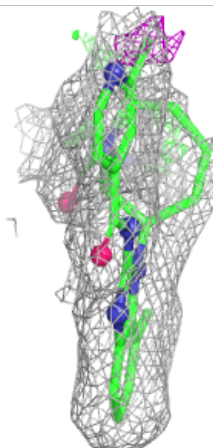
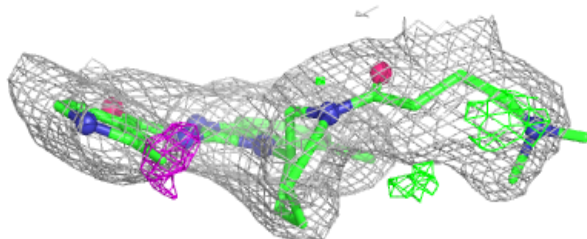
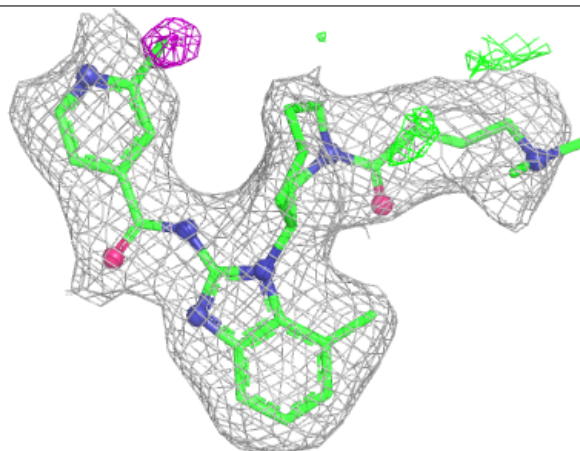


Electron density around 5XH J 504:

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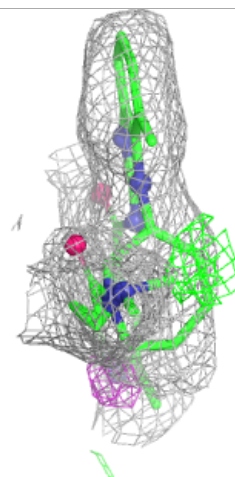
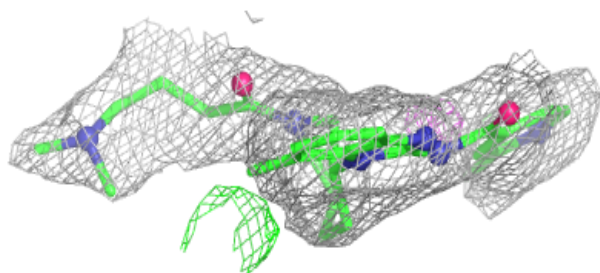
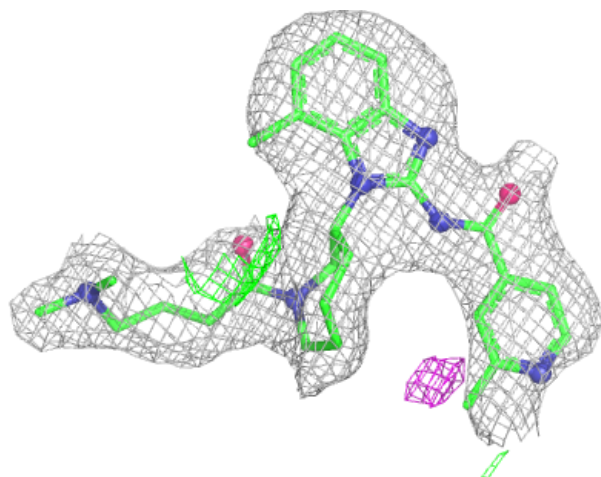
**Electron density around 5XH K 503:**

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and green (positive)



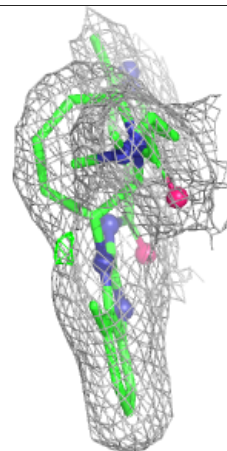
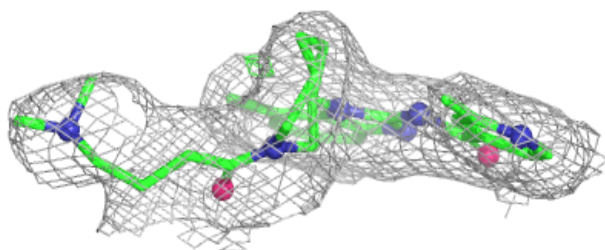
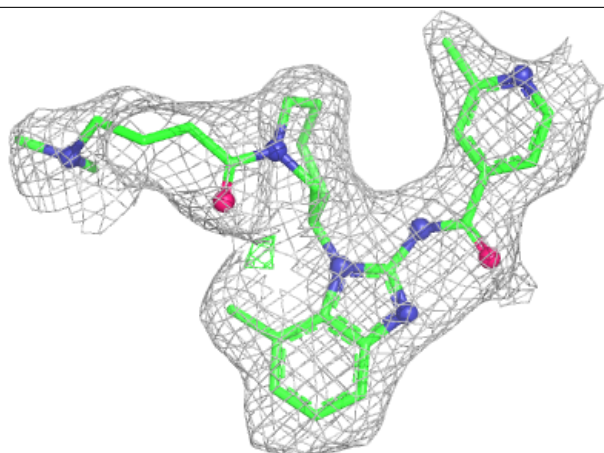
Electron density around 5XH L 503:

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



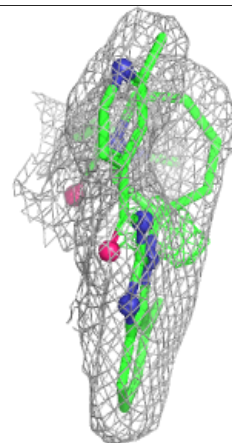
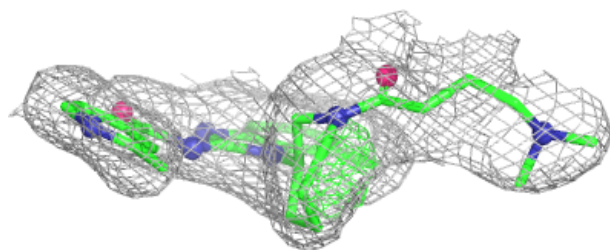
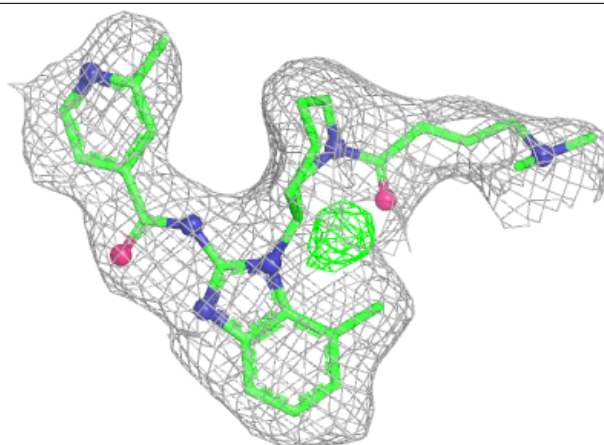
Electron density around 5XH M 501:

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and green (positive)



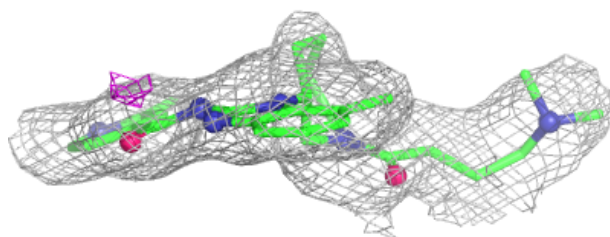
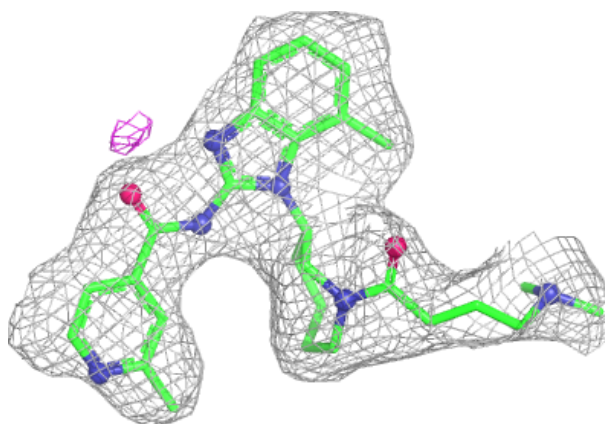
Electron density around 5XH N 501:

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and green (positive)



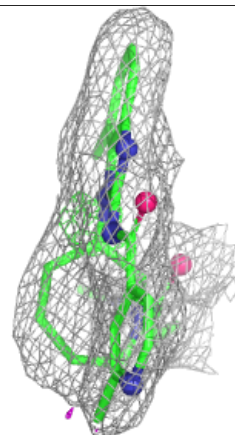
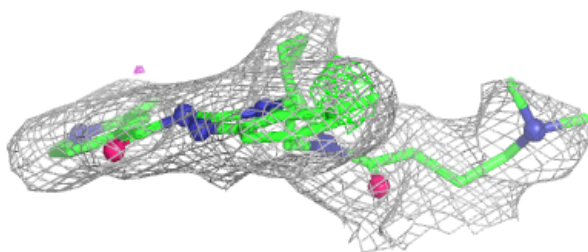
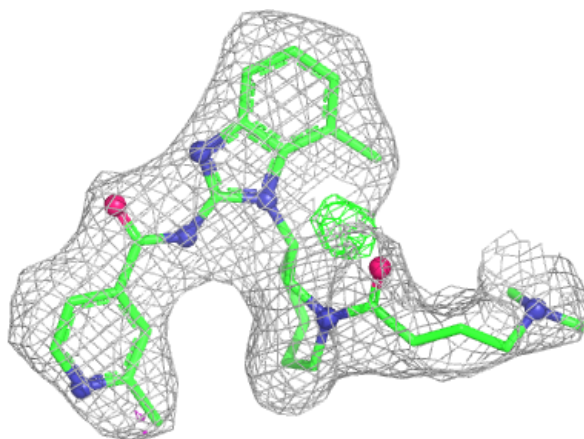
Electron density around 5XH O 503:

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



Electron density around 5XH P 503:

$2mF_o-DF_c$ (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.