



Full wwPDB X-ray Structure Validation Report ⓘ

Apr 2, 2025 – 02:08 am BST

PDB ID : 5HYN / pdb_00005hyn
Title : Structure of Human Polycomb Repressive Complex 2 (PRC2) with oncogenic histone H3K27M peptide
Authors : Zhang, Y.; Justin, N.; Wilson, J.R.; Gamblin, S.J.
Deposited on : 2016-02-01
Resolution : 2.95 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.42

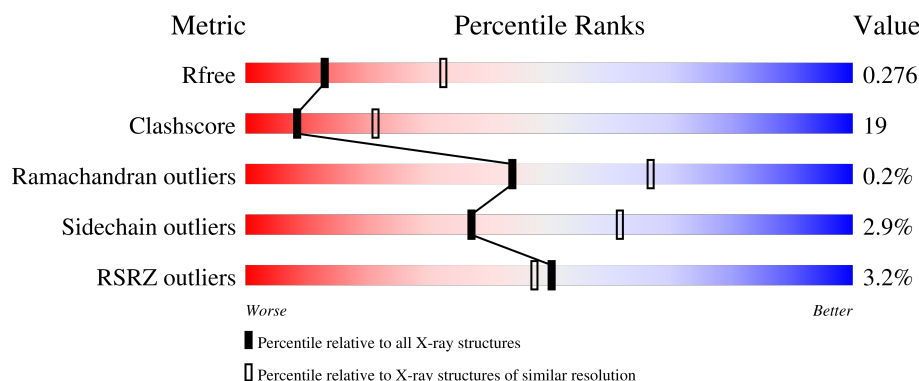
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.95 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}	164625	1044 (2.98-2.94)
Clashscore	180529	1097 (2.98-2.94)
Ramachandran outliers	177936	1049 (2.98-2.94)
Sidechain outliers	177891	1049 (2.98-2.94)
RSRZ outliers	164620	1044 (2.98-2.94)

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	746	
1	F	746	
1	K	746	
1	Q	746	
2	B	367	

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Mol	Chain	Length	Quality of chain
2	G	367	
2	L	367	
2	R	367	
3	C	129	
3	H	129	
3	M	129	
3	S	129	
4	D	13	
4	I	13	
4	O	13	
4	T	13	
5	E	12	
5	J	12	
5	P	12	
5	U	12	

2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 35028 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 Histone-lysine N-methyltransferase EZH2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	581	Total	C	N	O	S	0	0	0
			4673	2932	825	874	42			
1	F	568	Total	C	N	O	S	0	0	0
			4567	2869	804	852	42			
1	K	562	Total	C	N	O	S	0	0	0
			4521	2836	799	844	42			
1	Q	565	Total	C	N	O	S	0	0	0
			4542	2850	801	849	42			

- Molecule 2 is a protein called Polycomb protein EED.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	365	Total	C	N	O	S	0	0	0
			2959	1873	521	543	22			
2	G	365	Total	C	N	O	S	0	0	0
			2959	1873	521	543	22			
2	L	365	Total	C	N	O	S	0	0	0
			2959	1873	521	543	22			
2	R	365	Total	C	N	O	S	0	0	0
			2959	1873	521	543	22			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	75	GLY	-	expression tag	UNP O75530
B	76	SER	-	expression tag	UNP O75530
G	75	GLY	-	expression tag	UNP O75530
G	76	SER	-	expression tag	UNP O75530
L	75	GLY	-	expression tag	UNP O75530
L	76	SER	-	expression tag	UNP O75530
R	75	GLY	-	expression tag	UNP O75530
R	76	SER	-	expression tag	UNP O75530

- Molecule 3 is a protein called Polycomb protein SUZ12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	125	Total	C	N	O	S	0	0	0
			1042	657	180	193	12			
3	H	124	Total	C	N	O	S	0	0	0
			1032	651	177	192	12			
3	M	125	Total	C	N	O	S	0	0	0
			1042	657	180	193	12			
3	S	125	Total	C	N	O	S	0	0	0
			1042	657	180	193	12			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	557	GLY	-	expression tag	UNP Q15022
H	557	GLY	-	expression tag	UNP Q15022
M	557	GLY	-	expression tag	UNP Q15022
S	557	GLY	-	expression tag	UNP Q15022

- Molecule 4 is a protein called H3K27M.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	9	Total	C	N	O	S	0	0	0
			63	38	13	11	1			
4	I	9	Total	C	N	O	S	0	0	0
			63	38	13	11	1			
4	O	9	Total	C	N	O	S	0	0	0
			63	38	13	11	1			
4	T	9	Total	C	N	O	S	0	0	0
			63	38	13	11	1			

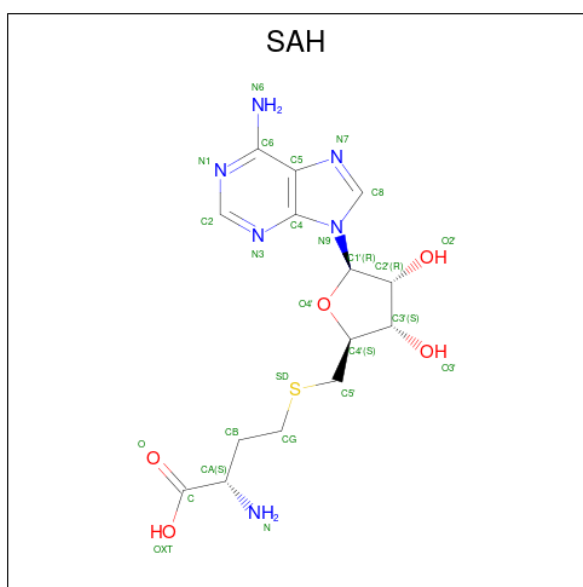
- Molecule 5 is a protein called JARID2 K116me3.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
5	E	11	Total	C	N	O	0	0	0
			96	60	21	15			
5	J	10	Total	C	N	O	0	0	0
			85	54	17	14			
5	P	9	Total	C	N	O	0	0	0
			77	48	16	13			
5	U	10	Total	C	N	O	0	0	0
			85	54	17	14			

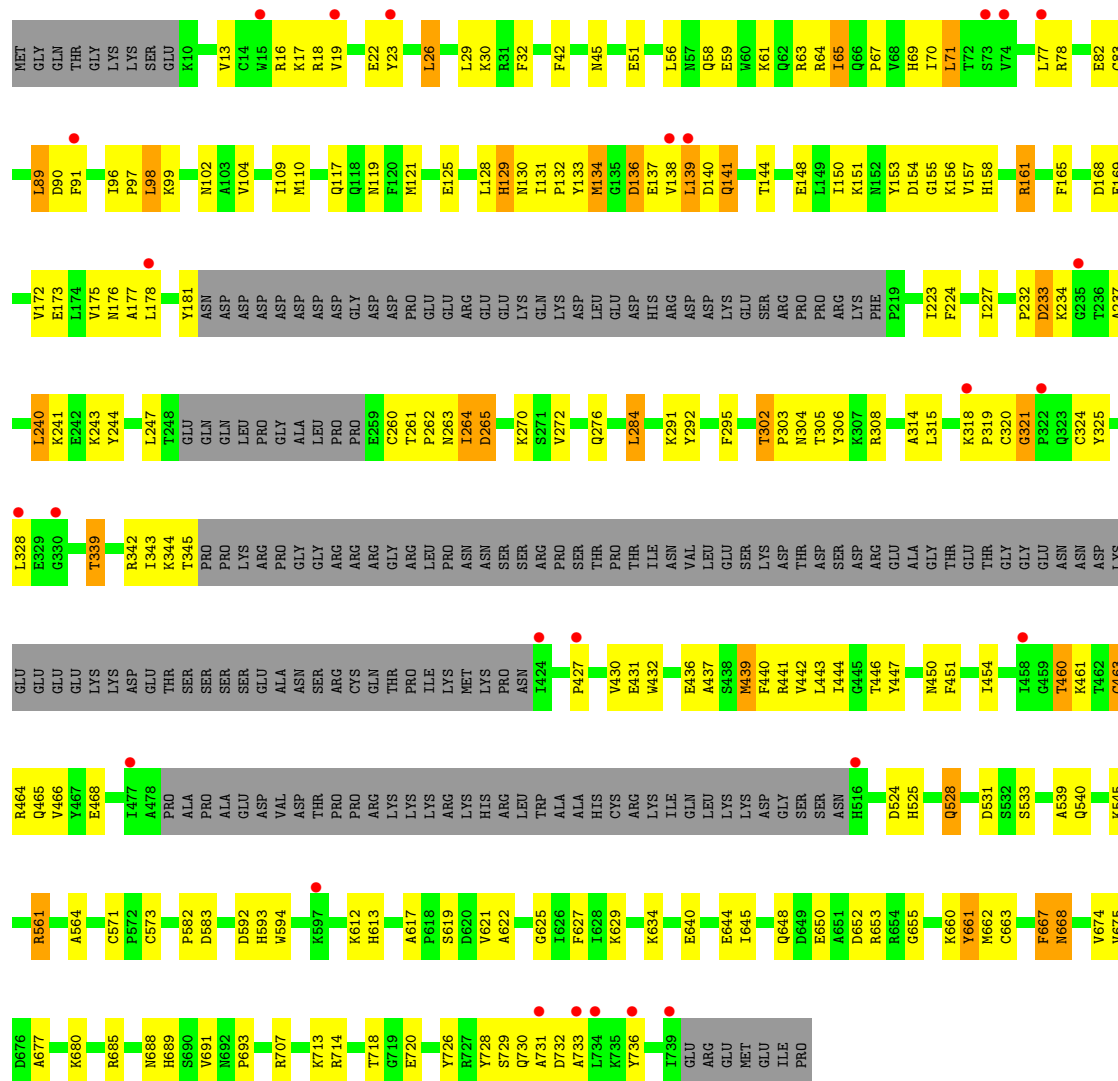
- Molecule 6 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	8	Total	Zn	0	0
			8	8		
6	F	8	Total	Zn	0	0
			8	8		
6	K	8	Total	Zn	0	0
			8	8		
6	Q	8	Total	Zn	0	0
			8	8		

- Molecule 7 is S-ADENOSYL-L-HOMOCYSTEINE (CCD ID: SAH) (formula: C₁₄H₂₀N₆O₅S).



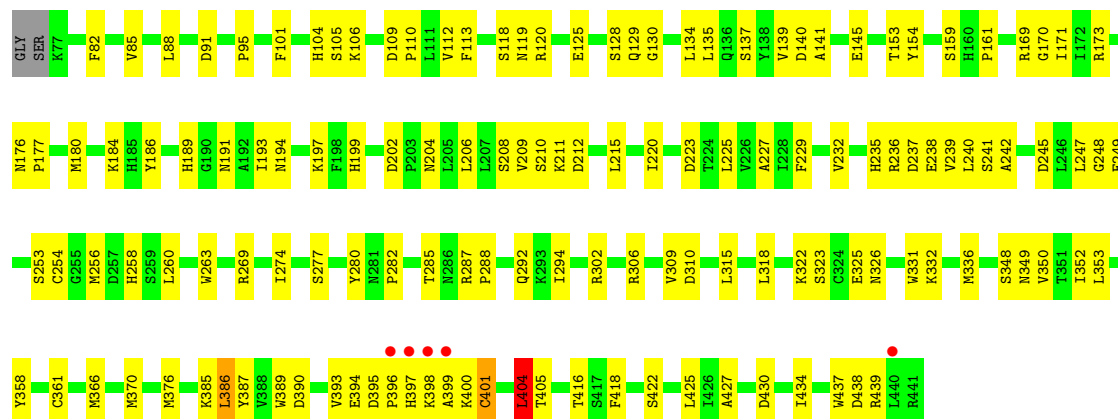
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
7	A	1	Total	C	N	O	S	0	0
			26	14	6	5	1		
7	F	1	Total	C	N	O	S	0	0
			26	14	6	5	1		
7	K	1	Total	C	N	O	S	0	0
			26	14	6	5	1		
7	Q	1	Total	C	N	O	S	0	0
			26	14	6	5	1		



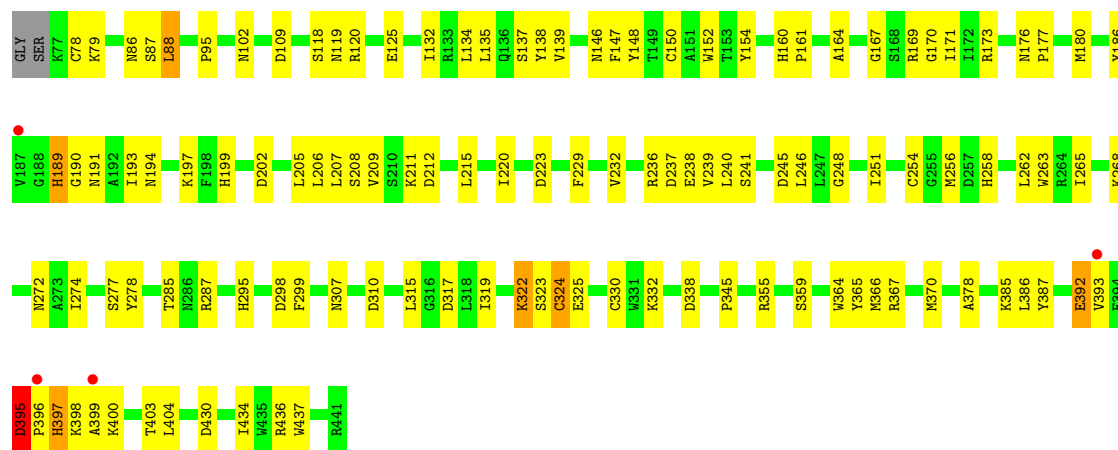




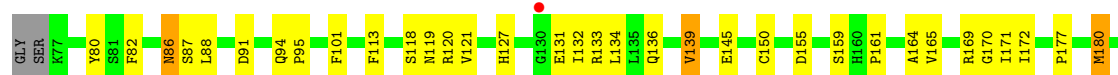
• Molecule 2: Polycomb protein EED

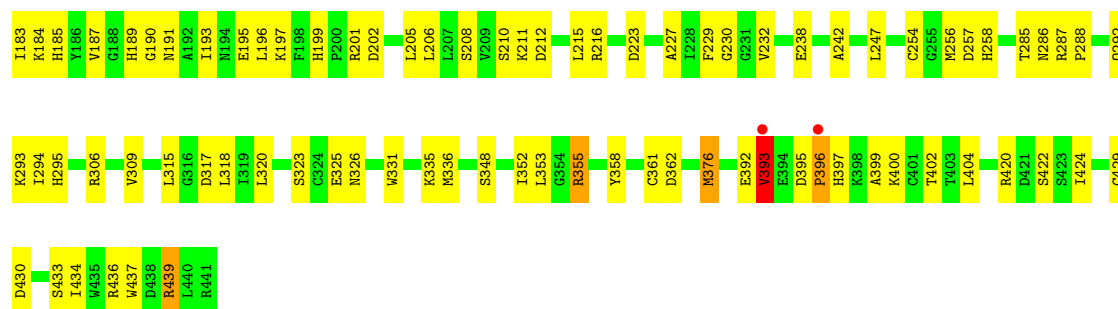


• Molecule 2: Polycomb protein EED

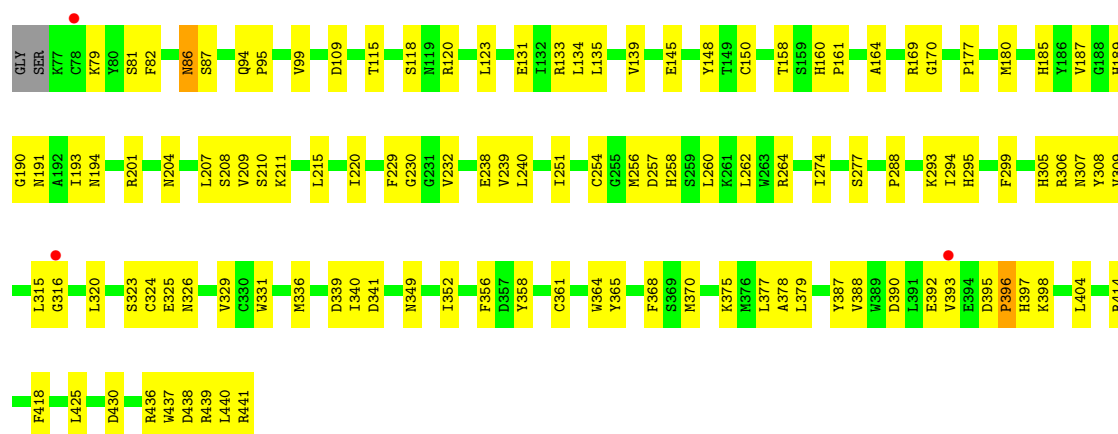


• Molecule 2: Polycomb protein EED

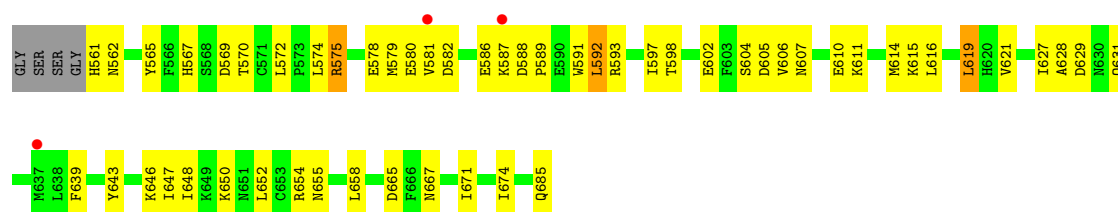




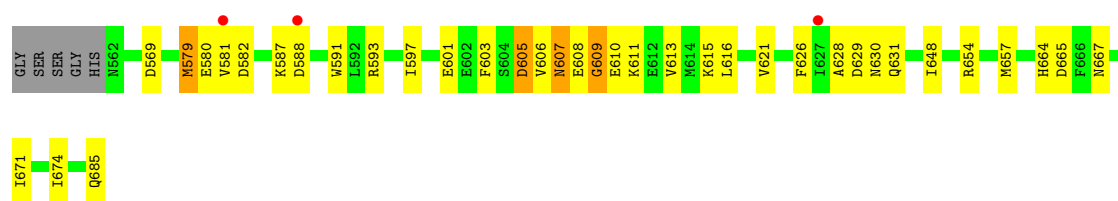
• Molecule 2: Polycomb protein EED



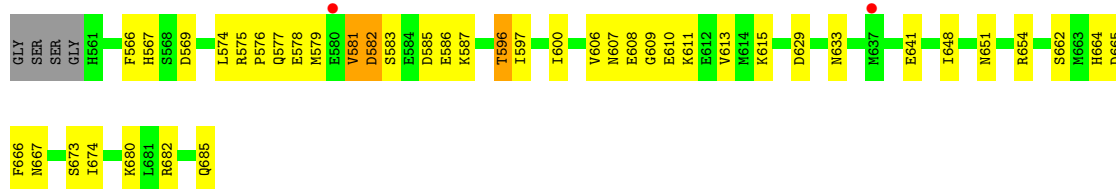
• Molecule 3: Polycomb protein SUZ12



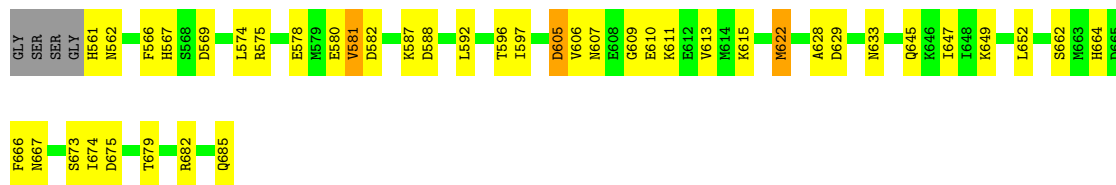
• Molecule 3: Polycomb protein SUZ12



• Molecule 3: Polycomb protein SUZ12



- Molecule 3: Polycomb protein SUZ12



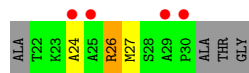
- Molecule 4: H3K27M



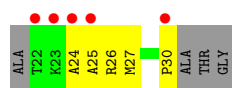
- Molecule 4: H3K27M



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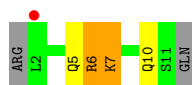


- Molecule 5: JARID2 K116me3

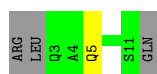




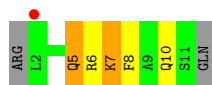
- Molecule 5: JARID2 K116me3



- Molecule 5: JARID2 K116me3



- Molecule 5: JARID2 K116me3



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	131.64Å 171.51Å 274.55Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	95.01 – 2.95 95.01 – 2.95	Depositor EDS
% Data completeness (in resolution range)	99.8 (95.01-2.95) 99.9 (95.01-2.95)	Depositor EDS
R_{merge}	0.17	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.03 (at 2.96Å)	Xtrriage
Refinement program	PHENIX (1.10.1_2155: ???)	Depositor
R, R_{free}	0.219 , 0.273 0.224 , 0.276	Depositor DCC
R_{free} test set	6487 reflections (4.95%)	wwPDB-VP
Wilson B-factor (Å ²)	63.5	Xtrriage
Anisotropy	0.627	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 82.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.27$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	35028	wwPDB-VP
Average B, all atoms (Å ²)	88.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 33.92 % 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 7.4013e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, SAH, M3L

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	0.66	6/4777 (0.1%)	0.80	8/6443 (0.1%)
1	F	0.67	6/4667 (0.1%)	0.86	14/6293 (0.2%)
1	K	0.61	1/4621 (0.0%)	0.84	8/6232 (0.1%)
1	Q	0.72	6/4641 (0.1%)	0.93	13/6258 (0.2%)
2	B	0.50	0/3034	0.75	1/4107 (0.0%)
2	G	0.57	1/3034 (0.0%)	0.84	5/4107 (0.1%)
2	L	0.58	2/3034 (0.1%)	0.81	3/4107 (0.1%)
2	R	0.59	0/3034	0.82	1/4107 (0.0%)
3	C	0.54	0/1063	0.85	2/1427 (0.1%)
3	H	0.58	1/1052 (0.1%)	0.78	1/1412 (0.1%)
3	M	0.68	3/1063 (0.3%)	0.83	2/1427 (0.1%)
3	S	0.51	0/1063	0.74	2/1427 (0.1%)
4	D	0.50	0/63	0.86	0/83
4	I	0.50	0/63	0.72	0/83
4	O	0.57	0/63	1.07	1/83 (1.2%)
4	T	0.50	0/63	0.88	0/83
5	E	0.60	0/84	0.82	0/110
5	J	0.80	0/73	1.43	1/96 (1.0%)
5	P	0.56	0/65	0.62	0/85
5	U	0.95	1/73 (1.4%)	1.05	0/96
All	All	0.62	27/35630 (0.1%)	0.84	62/48066 (0.1%)

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	F	0	1
1	K	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
1	Q	0	4
2	G	0	2
2	L	0	3
2	R	0	1
3	H	0	1
All	All	0	15

All (27) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	33	ARG	NE-CZ	-12.29	1.17	1.33
1	F	181	TYR	CB-CG	-10.42	1.36	1.51
1	A	32	PHE	CE1-CZ	8.05	1.52	1.37
1	A	249	GLU	CD-OE1	7.87	1.34	1.25
2	G	396	PRO	N-CD	7.52	1.58	1.47
1	F	320	CYS	CB-SG	-7.50	1.69	1.82
1	A	249	GLU	CG-CD	7.36	1.62	1.51
1	Q	224	PHE	CB-CG	-7.34	1.38	1.51
3	M	583	SER	CB-OG	6.86	1.51	1.42
1	Q	661	TYR	CE2-CZ	6.59	1.47	1.38
1	F	181	TYR	CD1-CE1	-6.49	1.29	1.39
3	M	581	VAL	CB-CG2	6.47	1.66	1.52
1	K	11	GLY	CA-C	-6.21	1.42	1.51
1	F	463	CYS	CB-SG	-5.98	1.72	1.81
1	Q	91	PHE	CE1-CZ	5.95	1.48	1.37
3	H	588	ASP	CB-CG	5.80	1.64	1.51
1	Q	461	LYS	CE-NZ	-5.76	1.34	1.49
1	A	463	CYS	CB-SG	-5.65	1.72	1.81
2	L	139	VAL	CB-CG2	-5.56	1.41	1.52
2	L	393	VAL	CA-CB	5.43	1.66	1.54
1	F	661	TYR	CD2-CE2	5.36	1.47	1.39
1	Q	661	TYR	CG-CD2	5.31	1.46	1.39
1	F	181	TYR	CD2-CE2	-5.15	1.31	1.39
1	A	249	GLU	CD-OE2	5.11	1.31	1.25
5	U	5	GLN	CB-CG	-5.10	1.38	1.52
1	Q	91	PHE	CG-CD2	5.03	1.46	1.38
3	M	574	LEU	CG-CD1	5.00	1.70	1.51

All (62) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	Q	443	LEU	CB-CG-CD1	-13.41	88.20	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	Q	33	ARG	NE-CZ-NH2	-11.52	114.54	120.30
1	Q	70	ILE	CG1-CB-CG2	-10.19	88.99	111.40
5	J	6	ARG	NE-CZ-NH2	-9.21	115.69	120.30
2	G	324	CYS	CA-CB-SG	-8.72	98.31	114.00
1	F	161	ARG	NE-CZ-NH2	-8.36	116.12	120.30
2	R	324	CYS	CA-CB-SG	-7.88	99.82	114.00
1	F	181	TYR	CA-CB-CG	-7.79	98.60	113.40
1	F	71	LEU	CA-CB-CG	7.01	131.42	115.30
1	K	321	GLY	N-CA-C	-6.96	95.69	113.10
2	L	180	MET	CB-CG-SD	-6.84	91.88	112.40
1	Q	134	MET	CA-CB-CG	-6.76	101.81	113.30
4	O	26	ARG	NE-CZ-NH1	-6.67	116.97	120.30
3	C	575	ARG	NE-CZ-NH1	-6.63	116.98	120.30
1	K	68	VAL	CG1-CB-CG2	-6.44	100.59	110.90
1	A	315	LEU	CA-CB-CG	6.42	130.06	115.30
1	K	222	LYS	CD-CE-NZ	-6.35	97.10	111.70
1	Q	134	MET	N-CA-C	6.34	128.13	111.00
1	F	98	LEU	CB-CG-CD2	-6.17	100.51	111.00
1	Q	135	GLY	N-CA-C	-6.14	97.75	113.10
2	G	212	ASP	CB-CG-OD2	6.11	123.79	118.30
3	M	582	ASP	CB-CG-OD2	-6.07	112.83	118.30
1	F	240	LEU	CB-CG-CD2	-6.02	100.77	111.00
3	M	582	ASP	CB-CG-OD1	6.01	123.71	118.30
1	A	33	ARG	CA-CB-CG	-6.00	100.19	113.40
1	Q	90	ASP	CB-CG-OD1	5.91	123.62	118.30
1	K	71	LEU	CA-CB-CG	5.85	128.76	115.30
3	S	622	MET	CG-SD-CE	-5.81	90.90	100.20
3	H	616	LEU	CB-CG-CD2	-5.80	101.13	111.00
1	Q	71	LEU	CA-CB-CG	5.79	128.60	115.30
1	A	161	ARG	NE-CZ-NH2	-5.74	117.43	120.30
2	G	245	ASP	CB-CG-OD1	5.74	123.47	118.30
1	A	77	LEU	CA-CB-CG	5.73	128.48	115.30
1	Q	458	ILE	CG1-CB-CG2	-5.72	98.82	111.40
1	F	284	LEU	CB-CG-CD2	-5.61	101.47	111.00
1	A	33	ARG	NE-CZ-NH2	-5.59	117.51	120.30
1	F	302	THR	N-CA-C	5.56	126.01	111.00
3	S	581	VAL	C-N-CA	5.54	135.55	121.70
2	B	404	LEU	CB-CG-CD1	-5.53	101.61	111.00
2	L	439	ARG	NE-CZ-NH1	-5.52	117.54	120.30
1	A	566	CYS	CA-CB-SG	5.51	123.92	114.00
2	G	212	ASP	CB-CG-OD1	-5.48	113.37	118.30
1	A	284	LEU	CB-CG-CD2	-5.43	101.77	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L	376	MET	CG-SD-CE	-5.39	91.57	100.20
2	G	322	LYS	CD-CE-NZ	-5.38	99.33	111.70
1	K	68	VAL	N-CA-C	-5.36	96.52	111.00
1	F	328	LEU	CB-CG-CD1	-5.34	101.92	111.00
1	K	140	ASP	N-CA-C	5.34	125.42	111.00
1	F	321	GLY	N-CA-C	5.33	126.42	113.10
1	Q	728	TYR	CA-CB-CG	5.32	123.51	113.40
1	Q	457	LEU	CB-CG-CD1	-5.17	102.22	111.00
1	K	542	PHE	CB-CG-CD1	-5.16	117.19	120.80
1	Q	661	TYR	CB-CG-CD1	-5.16	117.91	121.00
1	A	558	PRO	C-N-CA	-5.14	111.50	122.30
1	F	181	TYR	CB-CG-CD1	-5.14	117.92	121.00
1	F	65	ILE	CA-CB-CG1	-5.12	101.28	111.00
1	K	67	PRO	C-N-CA	5.09	134.42	121.70
3	C	619	LEU	CB-CG-CD2	-5.07	102.38	111.00
1	F	561	ARG	NE-CZ-NH1	-5.05	117.77	120.30
1	F	136	ASP	CB-CG-OD2	-5.04	113.76	118.30
1	F	29	LEU	CA-CB-CG	5.01	126.83	115.30
1	Q	264	ILE	C-N-CA	5.01	134.22	121.70

There are no chirality outliers.

All (15) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	102	ASN	Peptide
1	A	134	MET	Peptide
1	F	564	ALA	Peptide
2	G	392	GLU	Peptide
2	G	395	ASP	Peptide
3	H	608	GLU	Peptide
1	K	730	GLN	Peptide
2	L	355	ARG	Mainchain
2	L	393	VAL	Peptide
2	L	396	PRO	Peptide
1	Q	102	ASN	Peptide
1	Q	311	THR	Peptide
1	Q	327	HIS	Peptide
1	Q	76	SER	Peptide
2	R	396	PRO	Peptide

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	4673	0	4524	247	1
1	F	4567	0	4427	192	1
1	K	4521	0	4373	180	1
1	Q	4542	0	4400	233	1
2	B	2959	0	2881	148	0
2	G	2959	0	2881	98	0
2	L	2959	0	2881	94	0
2	R	2959	0	2881	98	0
3	C	1042	0	1021	56	0
3	H	1032	0	1014	37	0
3	M	1042	0	1021	49	0
3	S	1042	0	1021	35	0
4	D	63	0	68	3	0
4	I	63	0	68	4	0
4	O	63	0	68	4	0
4	T	63	0	68	12	0
5	E	96	0	106	3	0
5	J	85	0	90	5	0
5	P	77	0	79	1	0
5	U	85	0	90	8	0
6	A	8	0	0	0	0
6	F	8	0	0	0	0
6	K	8	0	0	0	0
6	Q	8	0	0	0	0
7	A	26	0	19	6	0
7	F	26	0	19	2	0
7	K	26	0	19	1	0
7	Q	26	0	19	1	0
All	All	35028	0	34038	1288	2

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 19.

All (1288) 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:Q:432:TRP:CH2	1:Q:461:LYS:HG3	1.65	1.32
1:Q:318:LYS:NZ	1:Q:324:CYS:SG	2.26	1.08
1:Q:432:TRP:HD1	1:Q:469:PHE:CD1	1.75	1.05
1:Q:432:TRP:HH2	1:Q:461:LYS:CG	1.70	1.04
1:A:430:VAL:HG21	1:A:465:GLN:HE21	1.19	1.03
1:Q:652:ASP:OD1	4:T:26:ARG:NH2	1.93	1.00
2:L:120:ARG:HG2	2:L:139:VAL:HG22	1.42	1.00
1:Q:71:LEU:HB3	1:Q:72:THR:HA	1.45	0.99
1:A:691:VAL:H	1:A:737:VAL:HG21	1.32	0.95
1:F:45:ASN:HD21	2:G:317:ASP:H	1.03	0.93
1:F:23:TYR:OH	1:F:165:PHE:O	1.87	0.93
1:K:117:GLN:HA	1:K:117:GLN:HE21	1.33	0.92
1:F:42:PHE:HB3	2:G:393:VAL:HB	1.52	0.90
1:K:320:CYS:O	1:K:324:CYS:HB2	1.72	0.90
1:A:330:GLY:HA2	1:A:334:PHE:H	1.35	0.89
2:R:305:HIS:ND1	2:R:325:GLU:OE1	2.05	0.89
1:K:427:PRO:HA	1:K:464:ARG:HH22	1.37	0.89
2:L:131:GLU:OE2	2:L:133:ARG:NH2	2.05	0.88
1:Q:128:LEU:HD21	1:Q:157:VAL:HG12	1.55	0.87
1:F:436:GLU:OE2	1:F:460:THR:OG1	1.92	0.87
1:A:10:LYS:HG3	1:A:15:TRP:HE1	1.37	0.87
1:A:68:VAL:HG21	2:B:110:PRO:HG2	1.56	0.87
1:Q:432:TRP:HA	1:Q:432:TRP:CE3	2.09	0.87
3:H:580:GLU:HB3	3:H:581:VAL:HA	1.54	0.87
1:F:688:ASN:OD1	7:F:1009:SAH:N	2.07	0.87
1:F:161:ARG:NH2	1:F:233:ASP:OD2	2.07	0.86
1:F:175:VAL:HG21	1:F:244:TYR:CE2	2.11	0.85
1:Q:432:TRP:CD1	1:Q:469:PHE:CD1	2.62	0.85
1:Q:727:ARG:HH21	4:T:30:PRO:HG3	1.41	0.85
1:K:72:THR:HA	1:K:73:SER:HB3	1.59	0.85
3:S:645:GLN:HE21	3:S:649:LYS:HE2	1.41	0.84
1:A:263:ASN:HD21	3:C:655:ASN:HD21	1.24	0.84
1:K:83:CYS:HB2	1:K:98:LEU:HD13	1.61	0.83
1:K:65:ILE:HB	1:K:67:PRO:HD3	1.57	0.83
1:Q:260:CYS:HB3	1:Q:261:THR:HA	1.61	0.82
1:K:729:SER:N	1:K:730:GLN:HB2	1.94	0.82
1:F:175:VAL:HG21	1:F:244:TYR:HE2	1.45	0.82
1:K:655:GLY:HA3	4:O:24:ALA:HB2	1.61	0.82
1:K:437:ALA:HB1	1:K:441:ARG:HH12	1.45	0.81
1:F:150:ILE:HG22	1:F:155:GLY:HA2	1.61	0.81
1:K:611:LYS:NZ	3:M:586:GLU:OE2	2.13	0.81
1:Q:136:ASP:OD2	5:U:7:M3L:N	2.13	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Q:460:THR:O	1:Q:461:LYS:HE3	1.81	0.81
1:Q:23:TYR:OH	1:Q:165:PHE:O	1.99	0.80
1:F:655:GLY:HA3	4:I:24:ALA:HB1	1.61	0.80
1:F:237:ALA:HA	1:F:240:LEU:HD12	1.64	0.79
1:Q:323:GLN:HG2	1:Q:462:THR:HB	1.64	0.79
1:A:161:ARG:HH11	1:A:164:GLY:N	1.82	0.77
1:F:234:LYS:HB3	1:F:240:LEU:HD21	1.65	0.77
2:B:197:LYS:NZ	2:B:242:ALA:O	2.17	0.77
2:G:324:CYS:SG	5:J:5:GLN:NE2	2.57	0.77
1:F:525:HIS:HB2	1:F:528:GLN:HG2	1.65	0.77
1:Q:440:PHE:CE2	1:Q:444:ILE:HD13	2.20	0.77
1:Q:655:GLY:HA3	4:T:24:ALA:CB	2.15	0.77
1:K:45:ASN:HD21	2:L:317:ASP:H	1.32	0.76
1:A:135:GLY:HA2	1:A:138:VAL:HB	1.66	0.76
1:F:430:VAL:HG21	1:F:465:GLN:HE21	1.50	0.76
1:F:655:GLY:HA3	4:I:24:ALA:CB	2.14	0.76
2:B:282:PRO:HB3	3:C:575:ARG:HH12	1.51	0.75
1:Q:175:VAL:HG21	1:Q:244:TYR:CE1	2.21	0.75
2:G:322:LYS:HE2	2:G:366:MET:O	1.87	0.75
1:Q:624:TRP:O	7:Q:1009:SAH:N	2.18	0.75
2:B:125:GLU:HB2	2:B:135:LEU:HD11	1.68	0.75
1:F:451:PHE:HD2	1:F:466:VAL:HG12	1.52	0.75
2:G:79:LYS:NZ	2:G:392:GLU:OE2	2.16	0.74
1:A:150:ILE:HG22	1:A:155:GLY:HA2	1.67	0.74
1:F:315:LEU:HD21	1:F:450:ASN:HB2	1.67	0.74
1:K:236:THR:O	1:K:240:LEU:HD22	1.87	0.74
1:A:130:ASN:ND2	2:B:237:ASP:OD2	2.20	0.74
1:F:714:ARG:NH2	1:F:720:GLU:OE1	2.20	0.74
1:A:476:ILE:HD13	1:Q:55:ILE:HG23	1.69	0.74
1:K:689:HIS:HD2	1:K:726:TYR:H	1.34	0.74
2:G:274:ILE:O	2:G:277:SER:OG	2.06	0.74
2:L:362:ASP:O	5:P:5:GLN:NE2	2.20	0.74
1:K:279:HIS:O	1:K:283:THR:HG22	1.88	0.74
1:Q:150:ILE:HG22	1:Q:155:GLY:HA2	1.69	0.73
2:R:396:PRO:HD2	2:R:397:HIS:HD2	1.51	0.73
1:Q:328:LEU:HG	1:Q:425:GLU:HG2	1.70	0.73
2:G:404:LEU:HB3	2:G:437:TRP:CZ3	2.23	0.73
1:F:731:ALA:C	1:F:733:ALA:HA	2.08	0.73
2:L:396:PRO:HD2	2:L:397:HIS:HD2	1.54	0.73
1:A:729:SER:N	1:A:730:GLN:HB2	2.04	0.73
1:A:284:LEU:HD21	1:A:293:ASP:HB2	1.70	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:S:567:HIS:CE1	3:S:574:LEU:HD12	2.25	0.72
2:B:120:ARG:HB3	2:B:139:VAL:HG22	1.72	0.72
1:F:133:TYR:OH	1:F:136:ASP:HB2	1.87	0.72
1:K:15:TRP:HZ3	1:K:223:ILE:HG22	1.55	0.72
3:M:586:GLU:HB2	3:M:587:LYS:HB3	1.69	0.72
2:B:396:PRO:HB2	2:B:398:LYS:HG2	1.70	0.72
1:K:67:PRO:HB2	1:K:68:VAL:HG23	1.72	0.72
2:B:225:LEU:HD23	3:C:570:THR:HG23	1.71	0.72
1:A:597:LYS:HD3	1:A:608:ARG:HB3	1.72	0.72
1:F:153:TYR:O	1:F:156:LYS:HG2	1.88	0.71
1:F:233:ASP:OD1	1:F:233:ASP:N	2.22	0.71
1:A:233:ASP:OD1	1:A:233:ASP:N	2.23	0.71
2:G:125:GLU:HB2	2:G:135:LEU:HD11	1.72	0.71
1:A:167:ASN:ND2	2:B:350:VAL:O	2.24	0.71
2:L:358:TYR:CE1	2:L:361:CYS:HB3	2.25	0.71
1:Q:30:LYS:HE2	1:Q:34:ARG:HE	1.56	0.71
1:K:127:VAL:HG12	1:K:156:LYS:HB3	1.71	0.71
2:R:256:MET:O	2:R:258:HIS:HD2	1.74	0.71
1:A:302:THR:HG22	1:A:305:THR:HG22	1.72	0.71
1:A:691:VAL:HG23	1:A:737:VAL:HG11	1.71	0.70
3:S:561:HIS:N	3:S:562:ASN:HA	2.04	0.70
1:A:263:ASN:ND2	3:C:655:ASN:HD21	1.89	0.70
1:F:732:ASP:N	1:F:733:ALA:HA	2.06	0.70
1:K:135:GLY:O	1:K:141:GLN:HG3	1.91	0.70
1:F:652:ASP:OD1	4:I:26:ARG:NH2	2.23	0.70
1:Q:563:LYS:HB3	1:Q:587:THR:HG22	1.72	0.70
1:F:82:GLU:HG2	1:F:97:PRO:HA	1.72	0.70
1:F:321:GLY:HA2	1:F:324:CYS:HB2	1.73	0.70
1:A:328:LEU:HD23	1:A:424:ILE:HG23	1.73	0.70
1:Q:457:LEU:HD12	1:Q:458:ILE:N	2.06	0.70
1:K:263:ASN:CA	3:M:607:ASN:HD21	2.03	0.69
1:K:265:ASP:OD1	3:M:654:ARG:NH1	2.25	0.69
1:Q:45:ASN:ND2	2:R:316:GLY:O	2.25	0.69
1:Q:134:MET:N	1:Q:135:GLY:HA3	2.05	0.69
1:Q:334:PHE:HD2	1:Q:467:TYR:OH	1.76	0.69
2:R:307:ASN:HD21	5:U:5:GLN:HG3	1.58	0.69
2:L:191:ASN:HB3	2:L:211:LYS:HB3	1.73	0.69
1:Q:432:TRP:HA	1:Q:432:TRP:HE3	1.58	0.69
1:Q:441:ARG:NH2	1:Q:473:GLU:OE1	2.26	0.69
2:R:254:CYS:HB3	2:R:260:LEU:HD23	1.75	0.69
1:A:306:TYR:O	3:C:665:ASP:HB3	1.93	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:330:GLY:HA2	1:A:334:PHE:N	2.06	0.69
1:K:308:ARG:HD2	3:M:664:HIS:CE1	2.26	0.69
1:K:451:PHE:HE2	1:K:467:TYR:HD1	1.40	0.69
2:L:355:ARG:O	2:L:397:HIS:HB2	1.94	0.68
1:Q:650:GLU:OE1	1:Q:653:ARG:NH1	2.26	0.68
3:H:587:LYS:HE2	3:H:593:ARG:HH12	1.58	0.68
1:K:77:LEU:HD12	1:K:77:LEU:H	1.59	0.68
1:Q:320:CYS:HB3	1:Q:321:GLY:HA2	1.75	0.68
1:A:68:VAL:HG23	2:B:112:VAL:HG22	1.76	0.68
1:K:22:GLU:OE2	1:K:181:TYR:OH	2.10	0.68
1:Q:142:ASP:OD1	1:Q:144:THR:OG1	2.12	0.68
1:Q:472:LYS:O	1:Q:476:ILE:HG12	1.94	0.68
1:K:91:PHE:N	1:K:92:PRO:HA	2.08	0.67
1:Q:71:LEU:CB	1:Q:72:THR:HA	2.23	0.67
1:A:615:LEU:HD21	3:C:581:VAL:HG11	1.75	0.67
1:F:61:LYS:O	1:F:64:ARG:NH1	2.24	0.67
3:H:601:GLU:HA	3:H:611:LYS:HD3	1.74	0.67
1:Q:691:VAL:O	1:Q:693:PRO:HD3	1.94	0.67
3:C:570:THR:HG22	3:C:572:LEU:HD13	1.77	0.67
1:A:234:LYS:HB3	1:A:240:LEU:HD21	1.76	0.67
2:B:269:ARG:NE	2:B:292:GLN:OE1	2.21	0.67
1:K:284:LEU:HD11	3:M:606:VAL:HG11	1.77	0.67
2:B:232:VAL:HG21	3:C:591:TRP:CE3	2.30	0.67
1:Q:140:ASP:N	1:Q:141:GLN:HA	2.08	0.67
1:A:19:VAL:HG11	1:A:227:ILE:HG22	1.77	0.67
2:B:88:LEU:HD11	2:B:434:ILE:HD12	1.75	0.67
1:Q:104:VAL:O	2:R:169:ARG:NH2	2.28	0.67
1:Q:432:TRP:HD1	1:Q:469:PHE:CE1	2.13	0.67
2:B:256:MET:O	2:B:258:HIS:HD2	1.78	0.67
1:Q:334:PHE:HD2	1:Q:467:TYR:HH	1.43	0.67
1:Q:655:GLY:HA3	4:T:24:ALA:HB2	1.76	0.67
2:B:399:ALA:HB1	2:B:400:LYS:HB2	1.77	0.66
1:A:212:SER:HB2	1:A:213:ARG:HG2	1.75	0.66
1:A:216:ARG:HH12	1:A:245:LYS:HE2	1.61	0.66
2:G:256:MET:O	2:G:258:HIS:HD2	1.78	0.66
2:L:396:PRO:HD2	2:L:397:HIS:CD2	2.30	0.66
2:R:315:LEU:HD13	2:R:370:MET:HE1	1.77	0.66
1:F:464:ARG:NH1	1:F:468:GLU:OE1	2.28	0.66
2:G:199:HIS:CE1	2:G:248:GLY:HA3	2.30	0.66
1:A:621:VAL:HG13	1:A:736:TYR:HD1	1.60	0.66
2:B:285:THR:OG1	2:B:287:ARG:HG2	1.96	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:96:ILE:HG13	2:B:134:LEU:HG	1.76	0.66
3:H:628:ALA:HB3	3:H:631:GLN:HG3	1.77	0.66
2:L:127:HIS:HB2	2:L:131:GLU:HG3	1.78	0.66
3:S:581:VAL:HA	3:S:582:ASP:HB2	1.78	0.65
1:A:67:PRO:HG3	2:B:105:SER:CB	2.27	0.65
1:A:691:VAL:N	1:A:737:VAL:HG21	2.09	0.65
1:Q:129:HIS:CD2	1:Q:129:HIS:H	2.14	0.65
1:F:729:SER:N	1:F:730:GLN:HB2	2.11	0.65
1:Q:71:LEU:HD13	2:R:180:MET:SD	2.37	0.65
1:Q:462:THR:N	1:Q:465:GLN:OE1	2.28	0.65
1:K:324:CYS:SG	1:K:325:TYR:N	2.70	0.65
1:K:688:ASN:OD1	7:K:1009:SAH:N	2.29	0.65
1:A:655:GLY:HA3	4:D:24:ALA:CB	2.27	0.65
2:G:268:LYS:O	2:G:272:ASN:ND2	2.29	0.65
1:K:117:GLN:HA	1:K:117:GLN:NE2	2.09	0.65
1:K:328:LEU:HG	1:K:331:ALA:HB2	1.77	0.65
2:B:394:GLU:OE1	2:B:394:GLU:N	2.26	0.65
1:A:28:GLN:HB3	1:A:32:PHE:HE2	1.60	0.65
1:K:314:ALA:HB1	1:K:315:LEU:HB2	1.79	0.65
1:A:734:LEU:HA	1:A:735:LYS:HB3	1.80	0.64
1:K:42:PHE:CZ	2:L:396:PRO:HG3	2.31	0.64
1:K:265:ASP:OD2	3:M:654:ARG:N	2.24	0.64
1:Q:432:TRP:CD1	1:Q:469:PHE:CG	2.85	0.64
1:A:174:LEU:O	1:A:178:LEU:HG	1.98	0.64
1:A:303:PRO:HB2	1:A:306:TYR:CZ	2.32	0.64
2:B:125:GLU:HB2	2:B:135:LEU:HD21	1.78	0.64
3:C:598:THR:O	3:C:602:GLU:HG2	1.97	0.64
2:L:422:SER:HB2	2:L:439:ARG:NH1	2.13	0.64
1:K:303:PRO:HB2	1:K:306:TYR:CZ	2.32	0.64
1:A:220:SER:HB2	1:A:223:ILE:HG23	1.78	0.64
1:A:730:GLN:HG3	1:A:732:ASP:H	1.63	0.64
2:B:254:CYS:HB3	2:B:260:LEU:HD23	1.80	0.64
1:F:528:GLN:N	1:F:528:GLN:OE1	2.31	0.64
3:M:682:ARG:HA	3:M:685:GLN:HG3	1.79	0.64
1:K:71:LEU:HD11	1:K:97:PRO:HG2	1.79	0.63
1:Q:655:GLY:HA3	4:T:24:ALA:HB1	1.80	0.63
1:K:582:PRO:HB2	1:K:594:TRP:HH2	1.64	0.63
1:K:618:PRO:HD3	3:M:566:PHE:CE1	2.33	0.63
1:A:425:GLU:CD	1:A:426:PRO:HD2	2.18	0.63
1:A:731:ALA:C	1:A:733:ALA:HA	2.18	0.63
1:F:154:ASP:HB3	1:F:156:LYS:HE2	1.79	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:118:SER:OG	2:G:119:ASN:N	2.31	0.63
1:A:324:CYS:SG	1:A:325:TYR:N	2.72	0.63
2:G:189:HIS:NE2	2:G:208:SER:OG	2.27	0.63
2:G:211:LYS:HG3	2:G:238:GLU:HG2	1.81	0.63
2:B:189:HIS:HD2	2:B:212:ASP:OD2	1.81	0.62
1:K:10:LYS:HG2	1:K:11:GLY:H	1.64	0.62
1:Q:456:ARG:NH2	3:S:679:THR:OG1	2.32	0.62
2:B:88:LEU:CD1	2:B:434:ILE:HD12	2.29	0.62
1:F:19:VAL:HG22	1:F:178:LEU:HD21	1.80	0.62
1:A:339:THR:OG1	1:A:449:ASP:OD2	2.17	0.62
1:F:128:LEU:HD21	1:F:157:VAL:HG12	1.80	0.62
1:K:104:VAL:O	2:L:169:ARG:NH2	2.32	0.62
1:Q:23:TYR:CZ	1:Q:27:ARG:HD2	2.34	0.62
1:Q:432:TRP:HH2	1:Q:461:LYS:HG3	0.74	0.62
2:B:104:HIS:NE2	2:B:153:THR:HA	2.14	0.62
1:K:436:GLU:OE2	1:K:460:THR:OG1	2.17	0.62
1:Q:726:TYR:CD1	4:T:27:MET:HG2	2.35	0.62
1:A:430:VAL:HG21	1:A:465:GLN:NE2	2.04	0.62
1:K:515:ASN:HA	1:K:671:ASN:HD21	1.65	0.62
2:R:189:HIS:NE2	2:R:208:SER:OG	2.33	0.62
1:A:318:LYS:NZ	1:A:325:TYR:O	2.25	0.62
1:F:430:VAL:HG21	1:F:465:GLN:NE2	2.14	0.62
2:R:86:ASN:HD22	2:R:87:SER:H	1.46	0.62
1:A:136:ASP:OD2	5:E:7:M3L:N	2.32	0.62
3:C:616:LEU:HD22	3:C:643:TYR:HD2	1.64	0.62
1:Q:150:ILE:CG2	1:Q:155:GLY:HA2	2.30	0.62
2:R:264:ARG:NH2	2:R:340:ILE:O	2.31	0.62
1:Q:139:LEU:HG	1:Q:140:ASP:HA	1.81	0.61
1:K:597:LYS:HD3	1:K:608:ARG:HB3	1.82	0.61
2:R:207:LEU:HD22	2:R:251:ILE:HD13	1.82	0.61
2:G:232:VAL:HG22	2:G:295:HIS:HB3	1.83	0.61
2:L:170:GLY:HA2	2:L:193:ILE:HG13	1.83	0.61
1:Q:128:LEU:H	1:Q:128:LEU:HD23	1.65	0.61
2:R:209:VAL:HG13	2:R:239:VAL:HB	1.81	0.61
3:H:607:ASN:O	3:H:611:LYS:N	2.28	0.61
1:A:291:LYS:HG2	3:C:621:VAL:HG21	1.81	0.61
2:G:118:SER:O	2:G:146:ASN:HA	2.01	0.61
1:K:20:LYS:HG2	1:K:24:MET:HE2	1.83	0.61
1:K:427:PRO:HA	1:K:464:ARG:NH2	2.14	0.61
1:Q:640:GLU:OE1	1:Q:707:ARG:HD3	2.01	0.61
1:F:16:ARG:HG3	1:F:17:LYS:N	2.14	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:730:GLN:HE21	1:F:731:ALA:H	1.46	0.61
1:K:220:SER:O	1:K:223:ILE:HG13	2.00	0.61
1:K:308:ARG:HG2	1:K:309:LYS:H	1.65	0.61
1:K:96:ILE:HG13	2:L:134:LEU:HG	1.83	0.61
1:Q:137:GLU:N	1:Q:139:LEU:HD13	2.16	0.61
2:G:207:LEU:HD22	2:G:251:ILE:HD13	1.83	0.61
1:K:161:ARG:HH21	1:K:233:ASP:CG	2.04	0.61
2:L:232:VAL:HG12	2:L:295:HIS:HB3	1.82	0.61
2:R:150:CYS:HA	2:R:164:ALA:O	2.01	0.61
3:S:580:GLU:OE1	3:S:580:GLU:N	2.34	0.61
3:C:579:MET:HG3	3:C:581:VAL:HG12	1.83	0.60
2:L:189:HIS:CE1	2:L:216:ARG:HG3	2.35	0.60
2:R:215:LEU:HB2	2:R:229:PHE:HB2	1.82	0.60
2:R:288:PRO:HB3	3:S:578:GLU:OE2	2.00	0.60
3:C:604:SER:O	3:C:605:ASP:OD1	2.19	0.60
1:K:308:ARG:HG3	3:M:667:ASN:ND2	2.16	0.60
1:K:437:ALA:HB1	1:K:441:ARG:NH1	2.17	0.60
1:A:330:GLY:CA	1:A:334:PHE:HB2	2.32	0.60
1:F:318:LYS:HG2	1:F:319:PRO:HA	1.84	0.60
1:Q:432:TRP:CH2	1:Q:461:LYS:CG	2.59	0.60
1:Q:515:ASN:HA	1:Q:671:ASN:HD21	1.67	0.60
1:A:330:GLY:HA2	1:A:334:PHE:HB2	1.83	0.60
1:Q:328:LEU:HD22	1:Q:330:GLY:H	1.66	0.60
1:A:23:TYR:OH	1:A:165:PHE:O	2.13	0.60
1:A:37:GLU:CD	2:B:336:MET:HG2	2.22	0.60
1:A:128:LEU:HD21	1:A:157:VAL:HG22	1.82	0.60
2:B:215:LEU:HB2	2:B:229:PHE:HB2	1.83	0.60
1:F:306:TYR:O	3:H:665:ASP:HB3	2.01	0.60
2:L:358:TYR:HE1	2:L:361:CYS:HB3	1.66	0.60
2:R:215:LEU:HD11	2:R:239:VAL:HG11	1.83	0.60
1:K:515:ASN:HA	1:K:671:ASN:ND2	2.17	0.60
2:R:161:PRO:O	2:R:177:PRO:HD2	2.01	0.60
1:A:161:ARG:NH2	1:A:231:PHE:CE2	2.70	0.59
2:B:386:LEU:HD11	2:B:427:ALA:HB2	1.84	0.59
2:L:306:ARG:N	2:L:325:GLU:OE2	2.33	0.59
2:B:125:GLU:CB	2:B:135:LEU:HD21	2.32	0.59
1:Q:270:LYS:O	1:Q:272:VAL:HG23	2.02	0.59
1:A:168:ASP:O	1:A:172:VAL:HG23	2.02	0.59
2:G:395:ASP:OD1	2:G:398:LYS:HG3	2.02	0.59
1:K:11:GLY:N	1:K:12:PRO:HD2	2.17	0.59
2:L:197:LYS:NZ	2:L:242:ALA:O	2.33	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Q:426:PRO:O	1:Q:464:ARG:NH2	2.35	0.59
1:Q:440:PHE:CZ	1:Q:444:ILE:HG21	2.38	0.59
1:Q:662:MET:HE3	1:Q:732:ASP:HB2	1.83	0.59
1:A:655:GLY:HA3	4:D:24:ALA:HB1	1.83	0.59
1:F:130:ASN:ND2	2:G:237:ASP:OD2	2.34	0.59
2:G:232:VAL:HG11	3:H:591:TRP:CE3	2.37	0.59
1:Q:728:TYR:HB3	1:Q:730:GLN:HB2	1.83	0.59
1:A:101:LEU:N	2:B:139:VAL:O	2.24	0.59
2:B:322:LYS:HD3	2:B:366:MET:O	2.02	0.59
1:Q:614:LEU:HB3	1:Q:626:ILE:HD11	1.84	0.59
3:C:628:ALA:HB3	3:C:631:GLN:HG3	1.84	0.59
1:F:140:ASP:N	1:F:141:GLN:HA	2.18	0.59
1:A:263:ASN:ND2	1:A:265:ASP:H	2.01	0.59
1:A:284:LEU:O	1:A:284:LEU:HD23	2.03	0.59
1:Q:236:THR:OG1	1:Q:239:GLU:HB3	2.02	0.59
1:K:67:PRO:HB3	2:L:161:PRO:HG2	1.85	0.59
1:Q:161:ARG:NH2	1:Q:233:ASP:OD2	2.35	0.59
1:Q:432:TRP:HZ3	1:Q:461:LYS:HZ3	1.50	0.59
2:B:400:LYS:HD2	2:B:401:CYS:H	1.68	0.59
3:C:588:ASP:OD2	3:C:593:ARG:NH1	2.35	0.59
1:Q:22:GLU:HG3	1:Q:178:LEU:HD23	1.85	0.59
1:A:33:ARG:HG2	1:A:33:ARG:O	2.03	0.59
2:B:170:GLY:HA2	2:B:193:ILE:HD12	1.85	0.59
1:Q:172:VAL:O	1:Q:175:VAL:HG22	2.03	0.59
1:K:67:PRO:CB	1:K:68:VAL:HG23	2.32	0.58
1:K:171:PHE:O	1:K:175:VAL:HG22	2.03	0.58
3:M:607:ASN:O	3:M:611:LYS:HG3	2.02	0.58
1:Q:590:ALA:O	1:Q:608:ARG:NH2	2.35	0.58
1:Q:701:MET:HE2	1:Q:706:HIS:CE1	2.38	0.58
1:A:272:VAL:HG12	1:A:276:GLN:HB2	1.85	0.58
1:F:22:GLU:OE2	1:F:177:ALA:HB1	2.03	0.58
1:F:629:LYS:O	1:F:718:THR:HG23	2.03	0.58
1:K:68:VAL:HG12	1:K:69:HIS:N	2.17	0.58
1:Q:563:LYS:HA	1:Q:588:CYS:HA	1.84	0.58
1:K:728:TYR:HB3	1:K:730:GLN:CB	2.34	0.58
2:R:396:PRO:HD2	2:R:397:HIS:CD2	2.36	0.58
1:F:128:LEU:CD2	1:F:157:VAL:HG12	2.33	0.58
1:F:144:THR:HG22	1:F:148:GLU:HG3	1.85	0.58
1:F:617:ALA:HB3	1:F:627:PHE:CE1	2.38	0.58
2:L:86:ASN:HD22	2:L:87:SER:H	1.50	0.58
1:Q:75:SER:OG	1:Q:76:SER:N	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:390:ASP:HB3	2:B:393:VAL:HG23	1.84	0.58
1:F:109:ILE:HD12	1:F:109:ILE:H	1.68	0.58
1:F:150:ILE:CG2	1:F:155:GLY:HA2	2.33	0.58
3:H:605:ASP:OD1	3:H:605:ASP:N	2.36	0.58
1:Q:665:PHE:HD2	1:Q:678:THR:HG22	1.67	0.58
1:A:68:VAL:HG23	2:B:112:VAL:CG2	2.34	0.58
1:A:101:LEU:HB2	2:B:140:ASP:HA	1.85	0.58
3:M:579:MET:O	3:M:581:VAL:HG12	2.03	0.58
1:Q:264:ILE:O	1:Q:435:ALA:HB2	2.03	0.58
1:F:265:ASP:OD1	3:H:654:ARG:HB2	2.03	0.58
1:K:13:VAL:O	1:K:17:LYS:HG2	2.04	0.58
1:A:63:ARG:NE	2:B:154:TYR:OH	2.32	0.58
1:A:91:PHE:CD1	1:A:92:PRO:HD2	2.39	0.58
1:A:320:CYS:HB3	1:A:321:GLY:HA2	1.85	0.58
1:F:77:LEU:O	1:F:78:ARG:HB3	2.03	0.58
3:M:577:GLN:OE1	3:M:577:GLN:N	2.27	0.58
2:B:199:HIS:CE1	2:B:248:GLY:HA3	2.39	0.57
1:F:302:THR:HG1	1:F:305:THR:H	1.52	0.57
2:B:145:GLU:OE2	2:B:169:ARG:HB2	2.04	0.57
3:C:561:HIS:HB2	3:C:562:ASN:HA	1.86	0.57
1:F:677:ALA:O	1:F:685:ARG:NH2	2.38	0.57
2:G:237:ASP:HB3	2:G:256:MET:HB2	1.86	0.57
2:B:318:LEU:HD13	2:B:353:LEU:HD12	1.86	0.57
1:F:42:PHE:HB3	2:G:393:VAL:CB	2.31	0.57
1:F:304:ASN:HB2	1:F:524:ASP:OD2	2.04	0.57
1:F:324:CYS:HA	1:F:463:CYS:HB3	1.85	0.57
2:L:136:GLN:NE2	2:L:180:MET:HG2	2.20	0.57
3:S:575:ARG:N	3:S:578:GLU:OE1	2.35	0.57
3:S:596:THR:HG21	3:S:622:MET:HE1	1.86	0.57
2:R:260:LEU:HD21	2:R:309:VAL:HG11	1.86	0.57
1:A:23:TYR:CZ	1:A:27:ARG:HD2	2.40	0.57
1:A:734:LEU:HB3	7:A:1009:SAH:N1	2.20	0.57
1:F:324:CYS:SG	1:F:325:TYR:N	2.78	0.57
2:L:288:PRO:HG3	3:M:567:HIS:HE1	1.69	0.57
1:Q:339:THR:O	1:Q:343:ILE:HG13	2.05	0.57
2:G:285:THR:OG1	2:G:287:ARG:HG2	2.03	0.57
1:F:128:LEU:HB3	1:F:153:TYR:CE2	2.39	0.57
1:A:65:ILE:HG22	2:B:161:PRO:HG3	1.87	0.57
1:A:732:ASP:N	1:A:733:ALA:HA	2.20	0.57
1:K:168:ASP:O	1:K:172:VAL:HG23	2.05	0.57
1:K:645:ILE:HG22	1:K:675:VAL:HG22	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:194:ASN:ND2	2:B:240:LEU:HD23	2.19	0.57
1:Q:629:LYS:O	1:Q:718:THR:HG23	2.05	0.57
1:A:629:LYS:O	1:A:718:THR:HG23	2.05	0.56
2:B:118:SER:OG	2:B:119:ASN:N	2.37	0.56
1:F:284:LEU:CD2	1:F:292:TYR:HB3	2.35	0.56
2:G:194:ASN:ND2	2:G:240:LEU:HD23	2.19	0.56
1:K:317:ASN:ND2	1:K:332:LYS:HD2	2.20	0.56
1:Q:728:TYR:CE1	4:T:25:ALA:HB1	2.39	0.56
3:S:645:GLN:NE2	3:S:649:LYS:HE2	2.16	0.56
1:A:161:ARG:HH11	1:A:164:GLY:C	2.08	0.56
2:L:80:TYR:O	2:L:402:THR:HG21	2.05	0.56
1:A:85:VAL:HG23	2:B:134:LEU:HD22	1.86	0.56
1:K:20:LYS:O	1:K:24:MET:HG2	2.05	0.56
3:M:585:ASP:CB	3:M:586:GLU:HB3	2.35	0.56
1:Q:303:PRO:HB2	1:Q:306:TYR:CZ	2.39	0.56
1:A:320:CYS:HB3	1:A:324:CYS:HB2	1.86	0.56
1:A:650:GLU:OE1	1:A:653:ARG:NH1	2.39	0.56
1:Q:582:PRO:CB	1:Q:594:TRP:HH2	2.18	0.56
3:H:580:GLU:CB	3:H:581:VAL:HA	2.31	0.56
1:K:319:PRO:HA	1:K:320:CYS:HB3	1.87	0.56
1:Q:279:HIS:O	1:Q:283:THR:HG22	2.05	0.56
1:Q:146:ILE:O	1:Q:150:ILE:HG12	2.06	0.56
2:R:230:GLY:O	2:R:293:LYS:HE2	2.05	0.56
1:F:98:LEU:HB3	2:G:139:VAL:CG2	2.36	0.56
1:F:104:VAL:O	2:G:169:ARG:NH2	2.37	0.56
1:F:125:GLU:HG2	1:F:650:GLU:OE2	2.05	0.56
1:F:339:THR:O	1:F:343:ILE:HG12	2.05	0.56
2:R:404:LEU:HB3	2:R:437:TRP:CZ3	2.41	0.56
1:K:26:LEU:HD22	1:K:173:GLU:OE2	2.06	0.56
1:K:263:ASN:HB3	3:M:607:ASN:HD21	1.70	0.56
1:Q:324:CYS:SG	1:Q:325:TYR:N	2.79	0.56
1:Q:545:LYS:HD3	1:Q:581:ASP:OD2	2.06	0.56
1:A:263:ASN:HD21	3:C:655:ASN:ND2	2.00	0.56
1:A:621:VAL:HG13	1:A:736:TYR:CD1	2.40	0.56
1:A:91:PHE:CG	1:A:92:PRO:HD2	2.41	0.55
2:B:331:TRP:HB3	2:B:352:ILE:HD13	1.87	0.55
2:L:95:PRO:HB3	2:L:430:ASP:HA	1.88	0.55
1:Q:219:PRO:HD2	1:Q:244:TYR:HE2	1.71	0.55
1:Q:665:PHE:HB2	1:Q:678:THR:HG23	1.89	0.55
1:A:579:GLU:HG3	1:A:702:VAL:HG22	1.87	0.55
1:A:689:HIS:HD2	1:A:726:TYR:H	1.55	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:10:LYS:C	1:K:12:PRO:HD2	2.26	0.55
1:K:312:GLU:N	1:K:312:GLU:OE1	2.38	0.55
2:R:260:LEU:HD13	2:R:331:TRP:CZ2	2.41	0.55
1:K:640:GLU:OE1	1:K:707:ARG:HD3	2.07	0.55
1:A:129:HIS:H	1:A:129:HIS:CD2	2.24	0.55
1:K:464:ARG:NH1	1:K:468:GLU:HB2	2.22	0.55
2:L:215:LEU:HB2	2:L:229:PHE:HB2	1.86	0.55
2:L:287:ARG:O	2:L:287:ARG:HG3	2.07	0.55
1:Q:316:ASP:HB3	1:Q:332:LYS:HE2	1.88	0.55
2:R:307:ASN:HD21	5:U:5:GLN:CG	2.19	0.55
1:A:104:VAL:HG11	2:B:171:ILE:HG21	1.89	0.55
1:A:624:TRP:N	7:A:1009:SAH:OXT	2.40	0.55
1:F:728:TYR:HB3	1:F:730:GLN:CB	2.36	0.55
1:Q:270:LYS:C	1:Q:272:VAL:HG23	2.26	0.55
1:Q:730:GLN:NE2	1:Q:732:ASP:H	2.05	0.55
3:S:597:ILE:HG23	3:S:615:LYS:HD2	1.89	0.55
1:Q:325:TYR:HE1	1:Q:463:CYS:SG	2.29	0.55
1:A:28:GLN:HB3	1:A:32:PHE:CE2	2.41	0.55
1:A:167:ASN:HD21	2:B:350:VAL:H	1.53	0.55
1:K:460:THR:O	1:K:461:LYS:HD2	2.07	0.55
3:M:651:ASN:O	3:M:651:ASN:ND2	2.40	0.55
1:Q:139:LEU:CD1	1:Q:140:ASP:HA	2.35	0.55
1:Q:168:ASP:HB2	2:R:349:ASN:ND2	2.21	0.55
1:Q:323:GLN:HG2	1:Q:462:THR:CB	2.37	0.55
2:B:280:TYR:OH	3:C:575:ARG:NH2	2.40	0.55
1:Q:606:ILE:CG2	1:Q:707:ARG:HD2	2.37	0.55
1:A:85:VAL:HG11	2:B:88:LEU:HD13	1.88	0.55
2:B:82:PHE:HA	2:B:438:ASP:O	2.06	0.55
1:F:82:GLU:HG2	1:F:97:PRO:CA	2.37	0.55
1:Q:339:THR:HG21	1:Q:449:ASP:OD2	2.06	0.55
1:A:728:TYR:HB3	1:A:730:GLN:CB	2.36	0.55
3:C:646:LYS:O	3:C:650:LYS:HG3	2.07	0.55
2:G:132:ILE:HD11	2:G:436:ARG:HB2	1.88	0.55
1:K:175:VAL:HG21	1:K:244:TYR:CD2	2.42	0.55
1:Q:130:ASN:OD1	2:R:257:ASP:HA	2.07	0.55
1:K:648:GLN:HE22	4:O:26:ARG:NH1	2.05	0.54
1:K:655:GLY:HA3	4:O:24:ALA:CB	2.36	0.54
1:Q:730:GLN:HG3	1:Q:731:ALA:N	2.22	0.54
2:R:148:TYR:HB3	2:R:365:TYR:OH	2.07	0.54
2:R:307:ASN:ND2	2:R:308:TYR:H	2.05	0.54
2:L:331:TRP:HB3	2:L:352:ILE:HD13	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:395:ASP:OD2	2:L:399:ALA:N	2.40	0.54
2:R:397:HIS:ND1	2:R:398:LYS:HG3	2.22	0.54
1:A:641:TYR:HB3	1:A:708:ILE:HB	1.90	0.54
2:G:125:GLU:HB2	2:G:135:LEU:HD21	1.89	0.54
1:Q:67:PRO:HG3	2:R:109:ASP:CG	2.28	0.54
1:A:263:ASN:HD22	1:A:264:ILE:N	2.06	0.54
2:G:186:TYR:HE2	2:G:220:ILE:HG22	1.71	0.54
1:K:548:GLN:OE1	1:K:548:GLN:HA	2.06	0.54
1:A:39:LYS:HE3	2:B:394:GLU:HB3	1.89	0.54
1:K:302:THR:N	1:K:303:PRO:HA	2.23	0.54
1:A:326:GLN:HB2	1:A:327:HIS:HB3	1.88	0.54
2:B:396:PRO:HA	2:B:397:HIS:CG	2.42	0.54
3:C:569:ASP:OD1	3:C:569:ASP:N	2.40	0.54
1:F:439:MET:HE1	3:H:657:MET:HB3	1.90	0.54
1:Q:431:GLU:O	1:Q:432:TRP:HE3	1.91	0.54
1:Q:728:TYR:HE1	4:T:25:ALA:HB1	1.72	0.54
2:R:274:ILE:O	2:R:277:SER:OG	2.25	0.54
3:S:596:THR:HG21	3:S:622:MET:CE	2.38	0.54
2:G:88:LEU:HD12	2:G:434:ILE:HB	1.88	0.54
1:Q:224:PHE:HZ	1:Q:244:TYR:CB	2.21	0.54
1:A:272:VAL:CG1	1:A:276:GLN:HB2	2.38	0.54
1:Q:582:PRO:HB3	1:Q:594:TRP:HH2	1.73	0.54
1:A:68:VAL:HG21	2:B:110:PRO:CG	2.35	0.53
1:A:101:LEU:O	2:B:141:ALA:N	2.41	0.53
1:F:67:PRO:HB3	2:G:109:ASP:OD2	2.07	0.53
2:L:230:GLY:O	2:L:293:LYS:HE2	2.08	0.53
2:L:326:ASN:HA	2:L:358:TYR:CE1	2.43	0.53
2:B:422:SER:HB2	2:B:439:ARG:HH11	1.74	0.53
1:A:131:ILE:HG21	5:E:4:ALA:HB2	1.90	0.53
1:A:427:PRO:HA	1:A:464:ARG:HH12	1.74	0.53
1:A:694:ASN:HB3	1:A:714:ARG:HH21	1.72	0.53
1:F:63:ARG:HD3	2:G:154:TYR:CZ	2.43	0.53
2:G:310:ASP:OD2	2:G:322:LYS:NZ	2.36	0.53
2:G:395:ASP:OD2	2:G:398:LYS:N	2.42	0.53
1:K:169:GLU:OE2	2:L:335:LYS:HG2	2.09	0.53
1:K:308:ARG:HG3	3:M:667:ASN:HD21	1.73	0.53
1:Q:119:ASN:HB3	1:Q:645:ILE:HG13	1.90	0.53
1:A:29:LEU:HA	1:A:32:PHE:HD2	1.73	0.53
2:B:140:ASP:OD2	2:B:173:ARG:NE	2.42	0.53
1:F:531:ASP:OD1	1:F:533:SER:N	2.37	0.53
1:K:263:ASN:CB	3:M:607:ASN:HD21	2.21	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:52:ARG:HD3	2:B:247:LEU:HG	1.91	0.53
2:B:211:LYS:HG3	2:B:238:GLU:HG2	1.91	0.53
1:K:96:ILE:HG22	1:K:97:PRO:O	2.08	0.53
1:K:580:CYS:O	1:K:607:GLN:NE2	2.41	0.53
1:K:689:HIS:CD2	1:K:726:TYR:H	2.20	0.53
1:Q:161:ARG:HG3	2:R:306:ARG:HH11	1.74	0.53
2:B:184:LYS:NZ	2:B:220:ILE:O	2.36	0.53
1:Q:728:TYR:CB	1:Q:730:GLN:HB2	2.39	0.53
1:A:562:CYS:SG	1:A:566:CYS:HB3	2.49	0.53
1:A:728:TYR:HB3	1:A:730:GLN:HB2	1.90	0.53
2:B:358:TYR:HE1	2:B:361:CYS:HB3	1.73	0.53
1:F:102:ASN:O	2:G:173:ARG:NH2	2.36	0.53
1:Q:515:ASN:HA	1:Q:671:ASN:ND2	2.22	0.53
2:R:339:ASP:OD1	2:R:341:ASP:N	2.42	0.53
1:K:338:LEU:O	1:K:342:ARG:HB2	2.09	0.53
1:Q:129:HIS:H	1:Q:129:HIS:HD2	1.55	0.53
1:Q:726:TYR:HD1	4:T:27:MET:HG2	1.74	0.53
1:A:460:THR:O	1:A:461:LYS:HD2	2.09	0.53
1:A:582:PRO:HB2	3:C:628:ALA:HB2	1.90	0.53
1:Q:161:ARG:HG3	2:R:306:ARG:NH1	2.24	0.53
1:Q:171:PHE:O	1:Q:175:VAL:HG13	2.08	0.53
1:F:728:TYR:HB3	1:F:730:GLN:HB2	1.91	0.53
1:K:728:TYR:HB3	1:K:730:GLN:HB2	1.91	0.53
1:A:35:ALA:HA	1:A:38:VAL:HG22	1.91	0.52
2:G:385:LYS:HE2	2:G:403:THR:HB	1.90	0.52
1:K:542:PHE:HB3	1:K:555:ASN:O	2.10	0.52
2:B:389:TRP:CD1	2:B:401:CYS:HB2	2.44	0.52
1:F:175:VAL:CG2	1:F:244:TYR:HE2	2.21	0.52
1:F:303:PRO:HB2	1:F:306:TYR:CZ	2.44	0.52
1:Q:98:LEU:HD22	2:R:139:VAL:HG23	1.91	0.52
1:Q:171:PHE:HZ	1:Q:224:PHE:HE2	1.57	0.52
1:Q:451:PHE:HD2	1:Q:466:VAL:HG12	1.74	0.52
1:A:688:ASN:OD1	7:A:1009:SAH:N	2.39	0.52
1:Q:67:PRO:HG3	2:R:109:ASP:OD2	2.09	0.52
1:A:304:ASN:HB2	1:A:524:ASP:OD2	2.09	0.52
1:A:617:ALA:HB3	1:A:627:PHE:CE1	2.45	0.52
2:G:148:TYR:HB3	2:G:365:TYR:OH	2.09	0.52
1:K:89:LEU:HD12	1:K:91:PHE:N	2.24	0.52
1:K:342:ARG:HD2	1:K:470:ARG:HH22	1.74	0.52
2:L:404:LEU:HB3	2:L:437:TRP:CZ3	2.43	0.52
2:R:191:ASN:HB3	2:R:211:LYS:HB3	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:730:GLN:HG3	1:F:731:ALA:N	2.25	0.52
1:Q:74:VAL:HB	1:Q:75:SER:O	2.10	0.52
2:R:145:GLU:OE1	2:R:169:ARG:HB2	2.09	0.52
2:R:204:ASN:O	2:R:220:ILE:HG12	2.10	0.52
2:B:197:LYS:O	2:B:206:LEU:HD12	2.09	0.52
3:M:585:ASP:HB3	3:M:586:GLU:HB3	1.92	0.52
2:R:94:GLN:HB2	2:R:118:SER:HB2	1.91	0.52
1:K:150:ILE:HG22	1:K:155:GLY:HA2	1.92	0.52
1:K:582:PRO:CB	1:K:594:TRP:HH2	2.22	0.52
2:R:414:ARG:NH1	5:U:8:PHE:CD1	2.78	0.52
1:A:231:PHE:HB3	1:A:234:LYS:HG2	1.92	0.51
1:A:322:PRO:HB2	1:F:58:GLN:HB3	1.91	0.51
1:K:175:VAL:HG21	1:K:244:TYR:HD2	1.75	0.51
2:L:88:LEU:O	2:L:434:ILE:N	2.39	0.51
1:Q:128:LEU:HD23	1:Q:128:LEU:N	2.22	0.51
1:F:531:ASP:OD1	1:F:531:ASP:C	2.49	0.51
1:K:119:ASN:HB3	1:K:645:ILE:HG23	1.93	0.51
2:B:106:LYS:O	2:B:109:ASP:HB2	2.09	0.51
2:B:211:LYS:HG3	2:B:238:GLU:CD	2.30	0.51
2:B:389:TRP:NE1	2:B:401:CYS:HB2	2.26	0.51
3:C:586:GLU:HB3	3:C:587:LYS:HB2	1.93	0.51
1:Q:462:THR:O	1:Q:466:VAL:HG23	2.10	0.51
5:U:6:ARG:HH11	5:U:10:GLN:NE2	2.07	0.51
1:F:629:LYS:NZ	3:H:581:VAL:O	2.43	0.51
2:G:262:LEU:HB3	2:G:299:PHE:HB3	1.92	0.51
1:K:306:TYR:O	3:M:665:ASP:HB3	2.10	0.51
1:Q:539:ALA:O	1:Q:540:GLN:HB2	2.09	0.51
3:C:570:THR:CG2	3:C:572:LEU:HD13	2.39	0.51
2:G:194:ASN:HD22	2:G:240:LEU:HA	1.74	0.51
1:Q:70:ILE:CG2	2:R:135:LEU:HD22	2.40	0.51
2:B:237:ASP:HB3	2:B:256:MET:HB2	1.92	0.51
1:F:67:PRO:HG2	1:F:69:HIS:CE1	2.46	0.51
1:F:117:GLN:HA	1:F:117:GLN:NE2	2.26	0.51
2:G:238:GLU:HB2	2:G:256:MET:HG3	1.92	0.51
1:Q:134:MET:H	1:Q:135:GLY:HA3	1.75	0.51
2:G:199:HIS:HB2	2:G:205:LEU:HB2	1.92	0.51
2:B:225:LEU:HD23	3:C:570:THR:CG2	2.39	0.51
2:B:323:SER:C	2:B:325:GLU:H	2.14	0.51
1:F:175:VAL:HG21	1:F:244:TYR:CD2	2.46	0.51
2:G:102:ASN:HB2	2:G:152:TRP:CE2	2.46	0.51
1:K:67:PRO:HB3	2:L:161:PRO:CG	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:691:VAL:O	1:K:693:PRO:HD3	2.11	0.51
1:A:528:GLN:OE1	1:A:528:GLN:N	2.38	0.51
1:K:71:LEU:HD12	1:K:73:SER:HB2	1.93	0.51
3:M:607:ASN:OD1	3:M:608:GLU:N	2.43	0.51
1:A:230:MET:HB2	1:A:231:PHE:CD1	2.46	0.51
1:A:615:LEU:HD21	3:C:581:VAL:CG1	2.42	0.51
1:F:129:HIS:HA	1:F:158:HIS:HB3	1.93	0.51
1:F:302:THR:HG1	1:F:305:THR:N	2.07	0.51
1:K:127:VAL:HG12	1:K:156:LYS:CB	2.41	0.51
1:Q:49:ILE:HG12	2:R:316:GLY:HA3	1.93	0.51
1:Q:469:PHE:CE1	1:Q:473:GLU:OE2	2.64	0.51
1:A:41:MET:HG3	2:B:336:MET:CE	2.41	0.50
1:A:264:ILE:HD12	3:C:658:LEU:HD11	1.92	0.50
1:A:340:ALA:O	1:A:343:ILE:HG22	2.12	0.50
1:F:125:GLU:OE1	2:G:236:ARG:NH2	2.44	0.50
2:G:186:TYR:CE2	2:G:220:ILE:HG22	2.46	0.50
1:K:130:ASN:OD1	2:L:257:ASP:HA	2.11	0.50
1:K:462:THR:OG1	1:K:465:GLN:OE1	2.11	0.50
3:M:576:PRO:HG2	3:M:577:GLN:OE1	2.12	0.50
1:Q:242:GLU:O	1:Q:246:GLU:HG3	2.10	0.50
1:A:241:LYS:O	1:A:245:LYS:HG3	2.11	0.50
1:A:694:ASN:HB3	1:A:714:ARG:NH2	2.25	0.50
1:K:618:PRO:HD3	3:M:566:PHE:HE1	1.74	0.50
1:Q:565:GLN:HG3	1:Q:567:ASN:OD1	2.10	0.50
1:Q:580:CYS:O	1:Q:607:GLN:NE2	2.44	0.50
2:R:145:GLU:HB2	2:R:169:ARG:HD3	1.93	0.50
1:A:161:ARG:NH1	1:A:165:PHE:N	2.59	0.50
1:A:665:PHE:HB3	1:A:677:ALA:HB3	1.94	0.50
1:K:129:HIS:H	1:K:129:HIS:CD2	2.29	0.50
2:L:127:HIS:HB2	2:L:131:GLU:CG	2.42	0.50
1:Q:224:PHE:CZ	1:Q:244:TYR:CB	2.94	0.50
1:Q:579:GLU:HG3	1:Q:702:VAL:HG22	1.93	0.50
1:Q:621:VAL:HG21	1:Q:737:VAL:HG22	1.94	0.50
1:Q:736:TYR:OH	1:Q:739:ILE:O	2.26	0.50
1:A:464:ARG:NH1	1:A:468:GLU:OE2	2.44	0.50
2:B:404:LEU:HB2	2:B:437:TRP:CZ3	2.46	0.50
1:F:302:THR:N	1:F:303:PRO:HA	2.26	0.50
1:K:121:MET:HA	1:K:645:ILE:HG13	1.93	0.50
1:K:138:VAL:HB	1:K:141:GLN:HG2	1.94	0.50
1:K:552:GLU:O	1:K:552:GLU:HG3	2.11	0.50
1:Q:20:LYS:O	1:Q:24:MET:HG2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Q:219:PRO:HD2	1:Q:244:TYR:CE2	2.46	0.50
1:Q:284:LEU:HD11	3:S:606:VAL:HG21	1.93	0.50
2:R:86:ASN:HD22	2:R:87:SER:N	2.09	0.50
2:R:288:PRO:HD3	3:S:578:GLU:HG2	1.93	0.50
3:C:607:ASN:O	3:C:611:LYS:HG3	2.12	0.50
1:K:449:ASP:HA	1:K:451:PHE:CE1	2.46	0.50
3:M:569:ASP:OD1	3:M:569:ASP:N	2.45	0.50
3:M:607:ASN:HB3	3:M:610:GLU:HB2	1.94	0.50
2:G:211:LYS:HD2	2:G:238:GLU:CD	2.32	0.50
2:B:95:PRO:HB3	2:B:430:ASP:HA	1.92	0.50
1:F:303:PRO:HB2	1:F:306:TYR:CE2	2.46	0.50
1:F:592:ASP:HB3	1:F:593:HIS:ND1	2.26	0.50
1:F:691:VAL:O	1:F:693:PRO:HD3	2.12	0.50
2:G:120:ARG:HE	2:G:139:VAL:HG13	1.77	0.50
1:K:726:TYR:O	4:O:27:MET:HA	2.12	0.50
1:A:19:VAL:HG22	1:A:178:LEU:CD2	2.42	0.50
1:A:161:ARG:HH11	1:A:164:GLY:CA	2.23	0.50
1:F:640:GLU:OE1	1:F:707:ARG:HD2	2.11	0.50
2:G:120:ARG:HG2	2:G:139:VAL:HG13	1.93	0.50
2:G:229:PHE:HD2	2:G:263:TRP:CE3	2.30	0.50
3:H:621:VAL:HG12	3:H:626:PHE:HD2	1.76	0.50
1:A:70:ILE:HG13	2:B:135:LEU:HB3	1.93	0.50
1:A:212:SER:HB2	1:A:213:ARG:CG	2.42	0.50
1:F:314:ALA:H	1:F:315:LEU:HD12	1.77	0.50
2:L:94:GLN:HB2	2:L:118:SER:HB2	1.94	0.50
2:R:262:LEU:HB3	2:R:299:PHE:HB3	1.92	0.50
1:A:308:ARG:NH1	3:C:667:ASN:HA	2.27	0.49
1:A:652:ASP:OD1	4:D:26:ARG:NH2	2.45	0.49
1:F:89:LEU:HD11	1:F:91:PHE:CD1	2.47	0.49
2:G:150:CYS:HA	2:G:164:ALA:O	2.12	0.49
2:G:364:TRP:CE3	2:G:365:TYR:HB2	2.47	0.49
1:Q:12:PRO:O	1:Q:15:TRP:N	2.43	0.49
1:Q:23:TYR:CE1	1:Q:27:ARG:HD2	2.47	0.49
2:R:81:SER:HB2	2:R:440:LEU:HD11	1.93	0.49
1:A:11:GLY:HA3	1:A:14:CYS:SG	2.52	0.49
1:A:71:LEU:HD13	2:B:180:MET:HE3	1.94	0.49
1:A:428:GLU:N	1:A:468:GLU:OE2	2.36	0.49
3:C:586:GLU:CB	3:C:587:LYS:HB2	2.42	0.49
3:C:607:ASN:HB3	3:C:610:GLU:CG	2.41	0.49
1:F:432:TRP:CH2	1:F:461:LYS:HG2	2.47	0.49
3:H:603:PHE:O	3:H:611:LYS:NZ	2.39	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:168:ASP:OD2	2:B:348:SER:HB3	2.11	0.49
1:F:161:ARG:HB3	1:F:232:PRO:HD2	1.93	0.49
1:Q:34:ARG:O	1:Q:37:GLU:N	2.44	0.49
1:Q:303:PRO:HB2	1:Q:306:TYR:OH	2.12	0.49
2:R:158:THR:HB	2:R:160:HIS:CE1	2.47	0.49
2:R:257:ASP:OD1	2:R:257:ASP:N	2.44	0.49
3:S:605:ASP:OD1	3:S:605:ASP:N	2.36	0.49
1:A:148:GLU:HG3	1:A:656:LYS:HE2	1.94	0.49
3:C:627:ILE:H	3:C:631:GLN:NE2	2.10	0.49
1:F:319:PRO:HB2	1:F:321:GLY:HA3	1.94	0.49
1:Q:139:LEU:CG	1:Q:140:ASP:HA	2.41	0.49
1:Q:730:GLN:CG	1:Q:731:ALA:N	2.74	0.49
1:A:226:ALA:O	1:A:229:SER:OG	2.27	0.49
1:F:427:PRO:HA	1:F:464:ARG:HH22	1.77	0.49
5:J:6:ARG:HH11	5:J:10:GLN:NE2	2.10	0.49
2:L:121:VAL:HG21	2:L:165:VAL:HG11	1.94	0.49
2:L:256:MET:O	2:L:258:HIS:HD2	1.95	0.49
2:B:358:TYR:CE1	2:B:361:CYS:HB3	2.47	0.49
3:C:597:ILE:HG23	3:C:615:LYS:HD2	1.95	0.49
1:K:729:SER:H	1:K:730:GLN:HB2	1.71	0.49
1:Q:689:HIS:HD2	1:Q:726:TYR:H	1.60	0.49
1:A:135:GLY:O	1:A:139:LEU:N	2.45	0.49
2:G:355:ARG:O	2:G:397:HIS:HB2	2.11	0.49
2:L:199:HIS:HB3	2:L:202:ASP:O	2.13	0.49
1:A:528:GLN:HG3	1:K:81:ARG:HE	1.77	0.49
2:B:326:ASN:HA	2:B:358:TYR:CE1	2.47	0.49
1:F:137:GLU:N	1:F:138:VAL:HA	2.27	0.49
1:F:318:LYS:CG	1:F:319:PRO:HA	2.42	0.49
1:F:446:THR:HG23	1:F:447:TYR:CD1	2.47	0.49
2:R:120:ARG:HB3	2:R:139:VAL:HG22	1.95	0.49
2:R:329:VAL:HG11	2:R:352:ILE:HD12	1.95	0.49
3:S:569:ASP:N	3:S:569:ASP:OD1	2.44	0.49
1:A:677:ALA:O	1:A:685:ARG:NH2	2.42	0.49
1:F:224:PHE:CE1	1:F:241:LYS:HA	2.47	0.49
2:G:397:HIS:CD2	2:G:398:LYS:HG2	2.47	0.49
3:H:671:ILE:HA	3:H:674:ILE:HD12	1.95	0.49
1:K:634:LYS:HG2	1:K:635:ASN:ND2	2.27	0.49
1:Q:74:VAL:N	1:Q:75:SER:HA	2.28	0.49
1:A:67:PRO:HG3	2:B:105:SER:HA	1.95	0.49
1:A:125:GLU:OE1	2:B:236:ARG:NH2	2.46	0.49
1:A:730:GLN:HG3	1:A:732:ASP:N	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:733:ALA:H	1:A:734:LEU:HD13	1.76	0.49
2:B:104:HIS:HE2	2:B:153:THR:HA	1.78	0.49
2:B:186:TYR:HE2	2:B:220:ILE:HG22	1.76	0.49
2:B:386:LEU:HD21	2:B:416:THR:HG21	1.95	0.49
1:F:30:LYS:HE3	1:F:173:GLU:OE1	2.12	0.49
1:K:136:ASP:N	1:K:136:ASP:OD1	2.41	0.49
1:Q:234:LYS:HD2	1:Q:234:LYS:N	2.28	0.49
3:M:586:GLU:HB2	3:M:587:LYS:CB	2.41	0.48
1:Q:224:PHE:CZ	1:Q:244:TYR:HB3	2.49	0.48
1:A:133:TYR:CE1	1:A:136:ASP:HB2	2.48	0.48
1:F:594:TRP:HZ2	3:H:630:ASN:HD21	1.60	0.48
1:F:661:TYR:O	1:F:662:MET:HB2	2.13	0.48
1:K:236:THR:HG22	1:K:237:ALA:N	2.28	0.48
1:K:627:PHE:CE2	1:K:721:GLU:HB2	2.47	0.48
2:L:82:PHE:HZ	2:L:376:MET:HE1	1.77	0.48
1:Q:117:GLN:HA	1:Q:117:GLN:OE1	2.13	0.48
1:A:427:PRO:HA	1:A:464:ARG:HH22	1.79	0.48
1:K:317:ASN:HD21	1:K:332:LYS:HD2	1.78	0.48
1:A:322:PRO:HG3	1:F:59:GLU:HG2	1.95	0.48
2:G:332:LYS:NZ	2:G:338:ASP:O	2.26	0.48
1:Q:432:TRP:CE3	1:Q:432:TRP:CA	2.90	0.48
1:A:45:ASN:O	1:A:49:ILE:HG13	2.14	0.48
1:A:67:PRO:O	1:A:68:VAL:HG12	2.14	0.48
1:F:613:HIS:NE2	3:H:581:VAL:HB	2.29	0.48
1:K:451:PHE:CE2	1:K:467:TYR:HD1	2.28	0.48
3:M:664:HIS:HB2	3:M:674:ILE:HD11	1.94	0.48
1:Q:123:GLU:OE1	1:Q:123:GLU:N	2.32	0.48
2:B:282:PRO:HB3	3:C:575:ARG:NH1	2.23	0.48
2:G:241:SER:HB3	2:G:254:CYS:SG	2.54	0.48
2:G:319:ILE:O	2:G:330:CYS:HA	2.14	0.48
2:B:400:LYS:HE3	2:B:401:CYS:O	2.14	0.48
2:G:180:MET:HG3	2:G:180:MET:O	2.13	0.48
3:M:575:ARG:O	3:M:578:GLU:HG2	2.14	0.48
2:R:364:TRP:HD1	5:U:5:GLN:HB3	1.78	0.48
1:F:302:THR:OG1	1:F:305:THR:N	2.39	0.48
2:B:322:LYS:HE2	2:B:358:TYR:OH	2.13	0.48
1:F:83:CYS:HB2	1:F:98:LEU:HD21	1.95	0.48
1:K:71:LEU:HB2	2:L:180:MET:SD	2.54	0.48
1:K:236:THR:HG22	1:K:238:GLU:H	1.78	0.48
2:B:418:PHE:CE1	2:B:425:LEU:HD13	2.49	0.48
3:C:579:MET:HA	3:C:580:GLU:C	2.35	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:689:HIS:HD2	1:F:726:TYR:H	1.61	0.48
1:K:91:PHE:HE2	2:L:131:GLU:HB2	1.78	0.48
1:K:606:ILE:CG2	1:K:707:ARG:HD2	2.43	0.48
1:A:89:LEU:O	1:A:90:ASP:HB3	2.14	0.47
1:A:165:PHE:HE1	1:A:170:ILE:HD13	1.79	0.47
1:F:272:VAL:CG1	1:F:276:GLN:HB2	2.44	0.47
1:F:446:THR:HG23	1:F:447:TYR:HD1	1.79	0.47
1:Q:96:ILE:HG13	2:R:134:LEU:HG	1.95	0.47
1:A:330:GLY:H	1:A:333:GLU:HB2	1.78	0.47
1:A:594:TRP:O	1:A:597:LYS:HG2	2.14	0.47
1:K:10:LYS:HB3	1:K:12:PRO:HD2	1.96	0.47
1:Q:534:CYS:HB3	1:Q:537:VAL:HG22	1.96	0.47
2:R:95:PRO:HB3	2:R:430:ASP:HA	1.96	0.47
2:B:288:PRO:HB3	3:C:578:GLU:OE2	2.14	0.47
1:F:730:GLN:HG3	1:F:732:ASP:N	2.30	0.47
2:R:170:GLY:HA2	2:R:193:ILE:HG13	1.95	0.47
3:S:645:GLN:O	3:S:649:LYS:HD3	2.14	0.47
1:A:70:ILE:CD1	2:B:135:LEU:HD22	2.44	0.47
1:F:243:LYS:O	1:F:247:LEU:HG	2.14	0.47
1:F:619:SER:HB2	1:F:625:GLY:CA	2.45	0.47
2:G:148:TYR:CZ	5:J:7:M3L:HM11	2.49	0.47
3:H:597:ILE:HG23	3:H:615:LYS:HD2	1.96	0.47
3:H:606:VAL:O	3:H:611:LYS:HE3	2.14	0.47
2:R:210:SER:OG	2:R:211:LYS:N	2.47	0.47
1:F:99:LYS:NZ	2:G:180:MET:O	2.47	0.47
1:F:619:SER:HB2	1:F:625:GLY:HA3	1.96	0.47
1:K:106:SER:HB2	2:L:169:ARG:NH1	2.30	0.47
1:K:263:ASN:HA	3:M:607:ASN:HD21	1.76	0.47
3:M:633:ASN:ND2	3:M:673:SER:OG	2.48	0.47
1:Q:440:PHE:CD2	1:Q:469:PHE:HE2	2.33	0.47
1:A:302:THR:HG23	1:A:304:ASN:N	2.30	0.47
2:B:191:ASN:HD21	2:B:211:LYS:HE2	1.79	0.47
1:F:139:LEU:HB3	1:F:141:GLN:HA	1.97	0.47
2:G:161:PRO:O	2:G:177:PRO:HD2	2.14	0.47
2:G:232:VAL:HG11	3:H:591:TRP:CZ3	2.49	0.47
1:Q:456:ARG:NE	3:S:675:ASP:OD1	2.32	0.47
2:R:79:LYS:HE3	2:R:390:ASP:OD2	2.15	0.47
2:R:356:PHE:CZ	2:R:397:HIS:HB3	2.50	0.47
1:A:19:VAL:HG22	1:A:178:LEU:HD21	1.97	0.47
1:A:129:HIS:HB3	2:B:302:ARG:HH21	1.78	0.47
1:F:121:MET:SD	1:F:645:ILE:HD11	2.54	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:19:VAL:HG22	1:K:178:LEU:HD22	1.97	0.47
1:K:22:GLU:OE2	1:K:181:TYR:CZ	2.67	0.47
2:L:101:PHE:CD1	2:L:113:PHE:HB3	2.49	0.47
2:L:201:ARG:NH1	2:L:247:LEU:HD22	2.30	0.47
2:L:286:ASN:O	3:M:578:GLU:HB3	2.14	0.47
1:Q:68:VAL:HG11	2:R:123:LEU:HD23	1.96	0.47
3:S:606:VAL:O	3:S:611:LYS:HE3	2.15	0.47
1:A:322:PRO:HG3	1:F:59:GLU:CG	2.44	0.47
3:C:650:LYS:HB2	3:C:652:LEU:HG	1.96	0.47
1:K:162:GLU:OE1	1:K:162:GLU:N	2.48	0.47
1:Q:30:LYS:CE	1:Q:34:ARG:HH21	2.28	0.47
1:A:70:ILE:HD11	2:B:135:LEU:HD13	1.95	0.47
1:A:70:ILE:HD11	2:B:135:LEU:HD22	1.95	0.47
2:B:399:ALA:HA	2:B:400:LYS:HA	1.71	0.47
1:F:447:TYR:CB	1:F:454:ILE:HD11	2.45	0.47
1:F:730:GLN:HG3	1:F:732:ASP:H	1.80	0.47
3:H:581:VAL:HG12	3:H:582:ASP:OD1	2.15	0.47
1:K:324:CYS:HA	1:K:463:CYS:HB3	1.96	0.47
2:R:331:TRP:HB3	2:R:352:ILE:HD13	1.96	0.47
2:B:180:MET:HB3	2:B:180:MET:HE2	1.62	0.46
1:F:583:ASP:OD1	3:H:629:ASP:HB2	2.15	0.46
2:G:209:VAL:HG13	2:G:239:VAL:HB	1.97	0.46
1:K:150:ILE:CG2	1:K:155:GLY:HA2	2.45	0.46
2:L:189:HIS:NE2	2:L:208:SER:OG	2.38	0.46
1:Q:274:ARG:HG3	1:Q:442:VAL:HA	1.96	0.46
3:S:682:ARG:HA	3:S:685:GLN:HG3	1.97	0.46
1:A:145:PHE:CE2	1:A:660:LYS:HG2	2.51	0.46
1:F:96:ILE:HG22	1:F:97:PRO:HD2	1.95	0.46
3:H:569:ASP:OD1	3:H:569:ASP:N	2.49	0.46
1:K:65:ILE:O	1:K:66:GLN:HB3	2.15	0.46
1:A:161:ARG:NH1	1:A:164:GLY:C	2.68	0.46
2:B:189:HIS:HE1	2:B:208:SER:OG	1.98	0.46
3:H:587:LYS:HE2	3:H:593:ARG:NH1	2.28	0.46
1:K:265:ASP:HB3	3:M:651:ASN:O	2.15	0.46
1:F:129:HIS:H	1:F:129:HIS:CD2	2.34	0.46
1:F:291:LYS:HG2	3:H:621:VAL:HG21	1.98	0.46
3:H:648:ILE:HD13	3:H:685:GLN:HG2	1.97	0.46
2:G:86:ASN:ND2	2:G:87:SER:H	2.13	0.46
1:Q:528:GLN:CG	1:Q:529:PRO:HD2	2.45	0.46
1:A:566:CYS:HB2	1:A:571:CYS:HB2	1.96	0.46
2:B:274:ILE:O	2:B:277:SER:OG	2.20	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:539:ALA:O	1:F:540:GLN:HB2	2.15	0.46
3:H:664:HIS:HB2	3:H:674:ILE:HD11	1.98	0.46
1:A:734:LEU:HD13	1:A:734:LEU:N	2.31	0.46
1:F:308:ARG:HG3	3:H:667:ASN:OD1	2.15	0.46
1:Q:104:VAL:HG12	2:R:185:HIS:CG	2.50	0.46
1:Q:161:ARG:HD3	1:Q:233:ASP:OD2	2.16	0.46
1:Q:234:LYS:HD2	1:Q:234:LYS:H	1.81	0.46
1:Q:666:LEU:O	4:T:27:MET:HG3	2.14	0.46
2:R:256:MET:O	2:R:258:HIS:CD2	2.63	0.46
2:B:91:ASP:OD1	2:B:91:ASP:N	2.35	0.46
3:C:565:TYR:HB2	3:C:574:LEU:HD23	1.98	0.46
3:C:589:PRO:HG2	3:C:592:LEU:HB2	1.97	0.46
1:F:45:ASN:ND2	2:G:317:ASP:H	1.88	0.46
1:F:65:ILE:HG22	2:G:161:PRO:HG3	1.97	0.46
1:F:234:LYS:CB	1:F:240:LEU:HD21	2.42	0.46
1:F:440:PHE:O	1:F:444:ILE:HG23	2.15	0.46
1:K:180:GLN:HG2	1:K:181:TYR:HD2	1.80	0.46
2:L:171:ILE:HG23	2:L:187:VAL:HG22	1.98	0.46
3:M:608:GLU:HG3	3:M:609:GLY:N	2.31	0.46
1:Q:98:LEU:HD13	2:R:139:VAL:HG21	1.98	0.46
1:Q:168:ASP:O	1:Q:172:VAL:HG23	2.16	0.46
2:R:99:VAL:HG23	2:R:115:THR:HG22	1.97	0.46
1:A:64:ARG:O	2:B:159:SER:HB3	2.16	0.46
1:A:137:GLU:N	1:A:137:GLU:OE1	2.49	0.46
1:A:734:LEU:HD12	7:A:1009:SAH:C4	2.46	0.46
2:B:189:HIS:CD2	2:B:210:SER:CB	2.99	0.46
1:F:98:LEU:HB3	2:G:139:VAL:HG23	1.98	0.46
2:G:215:LEU:HB2	2:G:229:PHE:HB2	1.98	0.46
3:H:580:GLU:HB3	3:H:581:VAL:CA	2.35	0.46
2:B:176:ASN:HD22	2:B:177:PRO:HD2	1.81	0.46
2:B:229:PHE:HD2	2:B:263:TRP:CE3	2.34	0.46
2:B:260:LEU:HD13	2:B:331:TRP:CZ2	2.51	0.46
1:F:648:GLN:HE22	1:F:668:ASN:HD21	1.64	0.46
3:H:665:ASP:O	3:H:667:ASN:N	2.49	0.46
1:K:303:PRO:HB2	1:K:306:TYR:OH	2.16	0.46
2:R:392:GLU:HB3	2:R:393:VAL:HG22	1.97	0.46
1:A:531:ASP:OD1	1:K:81:ARG:NH2	2.48	0.45
3:H:579:MET:HA	3:H:580:GLU:HB2	1.97	0.45
1:K:263:ASN:N	3:M:607:ASN:HD21	2.14	0.45
3:M:641:GLU:OE2	3:M:680:LYS:NZ	2.49	0.45
1:Q:541:ASN:HD21	1:Q:701:MET:HE3	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:358:TYR:CE1	2:R:361:CYS:HB3	2.51	0.45
3:S:607:ASN:O	3:S:611:LYS:HG3	2.16	0.45
1:A:158:HIS:HA	1:A:159:GLY:HA2	1.56	0.45
2:B:128:SER:HA	2:B:129:GLN:HA	1.63	0.45
1:F:138:VAL:O	1:F:139:LEU:HB2	2.16	0.45
1:K:41:MET:HG3	2:L:336:MET:CE	2.46	0.45
5:E:3:GLN:HG2	5:E:4:ALA:H	1.82	0.45
1:F:70:ILE:HD13	1:F:70:ILE:HG21	1.74	0.45
1:K:34:ARG:O	1:K:37:GLU:N	2.49	0.45
1:Q:134:MET:CG	1:Q:661:TYR:HE1	2.29	0.45
1:Q:528:GLN:HG3	1:Q:529:PRO:HD2	1.98	0.45
1:A:263:ASN:CG	3:C:607:ASN:HD21	2.19	0.45
1:A:531:ASP:OD2	1:K:81:ARG:NH2	2.49	0.45
1:K:515:ASN:N	1:K:515:ASN:OD1	2.49	0.45
1:Q:109:ILE:HA	2:R:190:GLY:O	2.16	0.45
2:R:315:LEU:HD22	2:R:320:LEU:HD11	1.99	0.45
1:A:160:ASP:O	1:A:232:PRO:HD2	2.16	0.45
1:F:96:ILE:CG2	1:F:97:PRO:HD2	2.47	0.45
1:F:96:ILE:HD11	2:G:134:LEU:HG	1.98	0.45
1:F:104:VAL:HG21	2:G:171:ILE:HG21	1.99	0.45
2:G:170:GLY:HA2	2:G:193:ILE:HD12	1.99	0.45
1:K:235:GLY:O	1:K:239:GLU:HB2	2.16	0.45
3:M:597:ILE:HG23	3:M:615:LYS:HD2	1.97	0.45
2:R:326:ASN:HA	2:R:358:TYR:CE1	2.51	0.45
2:R:436:ARG:NE	2:R:438:ASP:OD1	2.48	0.45
3:S:647:ILE:HG23	3:S:652:LEU:HB2	1.99	0.45
1:A:59:GLU:O	1:A:63:ARG:HG3	2.17	0.45
1:K:531:ASP:O	1:K:537:VAL:HG21	2.16	0.45
2:L:288:PRO:HG3	3:M:567:HIS:CE1	2.51	0.45
1:Q:238:GLU:H	1:Q:238:GLU:HG3	1.31	0.45
1:Q:294:CYS:SG	1:Q:297:HIS:HB2	2.56	0.45
1:A:138:VAL:HG12	1:A:141:GLN:H	1.81	0.45
1:A:447:TYR:HB2	1:A:454:ILE:HD11	1.98	0.45
1:F:132:PRO:HB2	1:F:134:MET:HE1	1.99	0.45
1:F:619:SER:HB3	1:F:622:ALA:O	2.17	0.45
1:Q:175:VAL:HG21	1:Q:244:TYR:HE1	1.78	0.45
1:Q:334:PHE:CD2	1:Q:467:TYR:OH	2.60	0.45
1:A:128:LEU:HB3	1:A:153:TYR:CE2	2.52	0.45
1:K:87:SER:HG	2:L:86:ASN:HD21	1.64	0.45
1:K:698:LYS:HB2	1:K:711:PHE:HE2	1.81	0.45
2:L:150:CYS:HA	2:L:164:ALA:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Q:104:VAL:O	1:Q:104:VAL:HG23	2.16	0.45
1:Q:302:THR:HG1	1:Q:305:THR:H	1.65	0.45
1:Q:662:MET:CE	1:Q:732:ASP:HB2	2.46	0.45
2:B:306:ARG:N	2:B:325:GLU:OE2	2.48	0.45
1:F:98:LEU:HD21	2:G:137:SER:HB3	1.97	0.45
1:F:154:ASP:CB	1:F:156:LYS:HE2	2.46	0.45
1:K:57:ASN:HA	2:L:420:ARG:HH22	1.82	0.45
2:L:238:GLU:HB2	2:L:256:MET:HG3	1.98	0.45
2:L:315:LEU:HD22	2:L:320:LEU:HD11	1.99	0.45
1:A:245:LYS:O	1:A:248:THR:HG22	2.17	0.45
1:F:89:LEU:O	1:F:90:ASP:HB3	2.17	0.45
1:F:264:ILE:HG12	1:F:265:ASP:OD1	2.17	0.45
1:F:667:PHE:O	1:F:674:VAL:HG13	2.17	0.45
1:K:14:CYS:SG	1:K:15:TRP:HD1	2.40	0.45
1:Q:583:ASP:OD1	3:S:629:ASP:HB2	2.18	0.45
1:A:182:ASN:O	1:A:182:ASN:ND2	2.51	0.44
1:A:230:MET:HB2	1:A:231:PHE:HD1	1.82	0.44
3:M:648:ILE:CD1	3:M:685:GLN:HG2	2.46	0.44
1:Q:264:ILE:N	1:Q:265:ASP:HB2	2.31	0.44
1:Q:302:THR:N	1:Q:303:PRO:HA	2.32	0.44
2:R:232:VAL:HG22	2:R:295:HIS:HB3	1.99	0.44
2:B:211:LYS:HG3	2:B:238:GLU:CG	2.47	0.44
3:C:567:HIS:HB2	3:C:570:THR:O	2.17	0.44
1:K:19:VAL:HG11	1:K:227:ILE:HG22	2.00	0.44
3:M:596:THR:O	3:M:600:ILE:HG12	2.17	0.44
3:M:610:GLU:HA	3:M:613:VAL:HG12	2.00	0.44
1:Q:70:ILE:HG13	1:Q:70:ILE:O	2.16	0.44
2:R:131:GLU:OE1	2:R:133:ARG:NH2	2.39	0.44
2:R:418:PHE:CE1	2:R:425:LEU:HD13	2.52	0.44
1:A:330:GLY:CA	1:A:334:PHE:H	2.20	0.44
1:A:560:CYS:HB2	1:A:572:PRO:HD2	2.00	0.44
3:C:616:LEU:HD22	3:C:643:TYR:CD2	2.49	0.44
1:F:148:GLU:HA	1:F:151:LYS:HD2	1.97	0.44
1:Q:13:VAL:HA	1:Q:16:ARG:HG2	1.99	0.44
1:Q:15:TRP:O	1:Q:19:VAL:HG23	2.18	0.44
2:R:293:LYS:HG3	2:R:295:HIS:NE2	2.32	0.44
1:A:89:LEU:HD23	1:A:89:LEU:HA	1.78	0.44
1:A:220:SER:O	1:A:223:ILE:HG13	2.17	0.44
1:A:668:ASN:HA	1:A:674:VAL:HG13	1.98	0.44
2:B:189:HIS:CD2	2:B:210:SER:HB2	2.53	0.44
2:B:396:PRO:HA	2:B:397:HIS:ND1	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:65:ILE:HG22	2:L:161:PRO:HG3	1.98	0.44
1:K:70:ILE:HD13	1:K:70:ILE:HG21	1.74	0.44
2:L:199:HIS:HB2	2:L:205:LEU:HB2	1.99	0.44
3:S:645:GLN:HG3	3:S:649:LYS:HE2	1.99	0.44
1:A:68:VAL:HG11	2:B:110:PRO:CG	2.48	0.44
1:F:99:LYS:O	2:G:138:TYR:HA	2.17	0.44
1:K:730:GLN:HG3	1:K:731:ALA:N	2.33	0.44
2:L:254:CYS:HB2	2:L:309:VAL:HB	1.99	0.44
2:L:395:ASP:HB3	2:L:396:PRO:C	2.37	0.44
1:Q:144:THR:O	1:Q:148:GLU:HG3	2.16	0.44
1:Q:697:ALA:O	4:T:30:PRO:HD2	2.17	0.44
1:Q:728:TYR:CD2	1:Q:734:LEU:HD21	2.51	0.44
2:R:441:ARG:CZ	2:R:441:ARG:HB2	2.46	0.44
1:A:158:HIS:O	2:B:258:HIS:CE1	2.70	0.44
2:B:325:GLU:O	2:B:326:ASN:HB2	2.18	0.44
3:C:639:PHE:CE2	3:C:647:ILE:HD11	2.52	0.44
1:K:129:HIS:H	1:K:129:HIS:HD2	1.66	0.44
1:Q:457:LEU:HD12	1:Q:458:ILE:H	1.78	0.44
1:A:83:CYS:HB2	1:A:98:LEU:HD13	2.00	0.44
1:A:231:PHE:CD1	1:A:231:PHE:N	2.85	0.44
1:A:443:LEU:HB3	1:A:454:ILE:HG13	2.00	0.44
2:B:227:ALA:HA	2:B:292:GLN:O	2.17	0.44
1:F:110:MET:O	2:G:190:GLY:HA3	2.18	0.44
1:F:437:ALA:O	1:F:441:ARG:HG3	2.18	0.44
1:K:11:GLY:N	1:K:12:PRO:CD	2.80	0.44
2:L:210:SER:HB3	2:L:212:ASP:OD1	2.16	0.44
2:L:392:GLU:HA	2:L:393:VAL:HA	1.70	0.44
3:M:577:GLN:H	3:M:577:GLN:CD	2.14	0.44
3:M:662:SER:O	3:M:666:PHE:HD1	2.01	0.44
1:Q:264:ILE:HB	1:Q:265:ASP:HB2	1.99	0.44
1:Q:443:LEU:HD13	1:Q:457:LEU:HD11	2.00	0.44
1:Q:662:MET:HE3	1:Q:733:ALA:HB2	1.99	0.44
2:R:194:ASN:ND2	2:R:240:LEU:HD23	2.31	0.44
1:A:223:ILE:O	1:A:226:ALA:N	2.51	0.44
1:A:318:LYS:HZ3	1:A:326:GLN:HB3	1.82	0.44
1:A:583:ASP:OD1	3:C:629:ASP:HB2	2.18	0.44
1:F:98:LEU:CD2	2:G:137:SER:HB3	2.48	0.44
2:L:145:GLU:OE1	2:L:169:ARG:HB2	2.18	0.44
2:L:210:SER:OG	2:L:211:LYS:N	2.50	0.44
1:Q:436:GLU:OE2	1:Q:461:LYS:NZ	2.51	0.44
1:A:10:LYS:HE3	1:A:222:LYS:HE3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:303:PRO:HB2	1:A:306:TYR:OH	2.18	0.44
2:B:253:SER:O	2:B:260:LEU:HA	2.18	0.44
2:B:361:CYS:SG	2:B:366:MET:HG3	2.58	0.44
1:Q:89:LEU:O	1:Q:90:ASP:HB3	2.17	0.44
1:Q:168:ASP:N	1:Q:168:ASP:OD1	2.51	0.44
2:R:395:ASP:N	2:R:396:PRO:HA	2.32	0.44
1:A:263:ASN:HD22	1:A:265:ASP:H	1.66	0.43
2:B:294:ILE:HD12	2:B:294:ILE:N	2.32	0.43
3:C:581:VAL:HA	3:C:582:ASP:HA	1.60	0.43
1:F:125:GLU:O	1:F:125:GLU:HG3	2.18	0.43
1:F:172:VAL:O	1:F:175:VAL:HG22	2.17	0.43
2:L:227:ALA:HA	2:L:292:GLN:O	2.17	0.43
1:Q:171:PHE:CZ	1:Q:224:PHE:HE2	2.35	0.43
1:Q:607:GLN:HG2	1:Q:702:VAL:CG1	2.48	0.43
2:R:323:SER:HB3	2:R:325:GLU:HG3	1.99	0.43
3:C:561:HIS:N	3:C:562:ASN:HB3	2.33	0.43
1:F:98:LEU:HD23	1:F:98:LEU:HA	1.43	0.43
1:F:175:VAL:HG23	1:F:176:ASN:N	2.32	0.43
1:F:223:ILE:HG13	1:F:224:PHE:N	2.34	0.43
1:F:650:GLU:HA	1:F:653:ARG:NH1	2.33	0.43
2:L:86:ASN:HD22	2:L:87:SER:N	2.16	0.43
1:A:41:MET:HG3	2:B:336:MET:HE1	1.99	0.43
1:A:67:PRO:HG3	2:B:105:SER:HB3	1.97	0.43
1:F:660:LYS:HD2	1:F:660:LYS:HA	1.83	0.43
1:K:19:VAL:HG22	1:K:178:LEU:CD2	2.48	0.43
1:A:566:CYS:HB2	1:A:571:CYS:CB	2.49	0.43
2:L:82:PHE:HZ	2:L:376:MET:CE	2.30	0.43
2:G:378:ALA:HA	2:G:387:TYR:O	2.18	0.43
1:K:72:THR:HG22	1:K:74:VAL:N	2.34	0.43
2:L:323:SER:C	2:L:325:GLU:H	2.21	0.43
1:Q:169:GLU:O	1:Q:173:GLU:HG2	2.18	0.43
1:Q:654:ARG:O	1:Q:657:VAL:HG12	2.19	0.43
1:A:128:LEU:CD2	1:A:157:VAL:HG22	2.47	0.43
1:A:141:GLN:HA	1:A:142:ASP:HA	1.67	0.43
1:A:428:GLU:OE2	1:F:51:GLU:OE2	2.35	0.43
2:B:397:HIS:HA	2:B:398:LYS:C	2.39	0.43
2:G:160:HIS:HB3	2:G:176:ASN:HD21	1.83	0.43
1:Q:129:HIS:HA	1:Q:158:HIS:HB2	2.00	0.43
2:R:258:HIS:CE1	2:R:307:ASN:HA	2.53	0.43
3:S:664:HIS:HB2	3:S:674:ILE:HD11	2.01	0.43
1:F:244:TYR:CD1	1:F:244:TYR:C	2.92	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:22:GLU:OE1	1:K:178:LEU:HD23	2.18	0.43
1:K:304:ASN:HA	1:K:307:LYS:HD3	2.00	0.43
1:K:326:GLN:HB2	1:K:327:HIS:HB2	2.00	0.43
1:K:425:GLU:OE2	1:K:426:PRO:HD2	2.19	0.43
1:K:472:LYS:O	1:K:476:ILE:HG12	2.18	0.43
1:Q:139:LEU:HD12	1:Q:140:ASP:HA	2.00	0.43
1:Q:440:PHE:CD2	1:Q:469:PHE:CE2	3.07	0.43
1:A:257:PRO:N	1:A:258:PRO:HD3	2.34	0.43
1:A:337:ALA:O	1:A:341:GLU:HG3	2.19	0.43
1:Q:96:ILE:HG22	1:Q:97:PRO:O	2.18	0.43
1:Q:557:PHE:CG	1:Q:558:PRO:HD2	2.54	0.43
1:Q:563:LYS:CB	1:Q:587:THR:HG22	2.45	0.43
2:R:414:ARG:HA	2:R:414:ARG:HD3	1.81	0.43
2:B:101:PHE:CD1	2:B:113:PHE:HB3	2.54	0.43
1:F:168:ASP:O	1:F:172:VAL:HG23	2.19	0.43
1:F:261:THR:HG22	1:F:262:PRO:O	2.19	0.43
1:F:263:ASN:N	3:H:607:ASN:OD1	2.52	0.43
1:F:644:GLU:O	1:F:675:VAL:HA	2.18	0.43
2:G:322:LYS:HB3	2:G:322:LYS:HE3	1.42	0.43
1:K:224:PHE:CE1	1:K:241:LYS:HA	2.54	0.43
1:K:714:ARG:HG3	1:K:715:ALA:O	2.19	0.43
2:R:414:ARG:NH1	5:U:8:PHE:HD1	2.17	0.43
2:B:186:TYR:CE2	2:B:220:ILE:HG22	2.53	0.43
2:B:199:HIS:HB3	2:B:202:ASP:O	2.19	0.43
2:B:204:ASN:O	2:B:220:ILE:HG12	2.19	0.43
1:F:131:ILE:HD13	1:F:131:ILE:HG21	1.80	0.43
1:F:272:VAL:HG12	1:F:276:GLN:HB2	1.99	0.43
2:G:397:HIS:NE2	2:G:398:LYS:HG2	2.34	0.43
3:H:610:GLU:HA	3:H:613:VAL:HG12	2.01	0.43
3:M:666:PHE:O	3:M:667:ASN:HB2	2.19	0.43
1:Q:263:ASN:OD1	3:S:609:GLY:HA3	2.19	0.43
1:Q:270:LYS:HE3	1:Q:270:LYS:HB3	1.75	0.43
1:Q:461:LYS:HA	1:Q:461:LYS:HD3	1.69	0.43
1:Q:665:PHE:CD2	1:Q:678:THR:HG22	2.49	0.43
1:A:245:LYS:HA	1:A:248:THR:HG22	2.00	0.42
1:A:438:SER:O	1:A:442:VAL:HG23	2.18	0.42
1:A:516:HIS:HB3	1:A:671:ASN:ND2	2.34	0.42
2:B:241:SER:HB3	2:B:254:CYS:SG	2.59	0.42
1:F:22:GLU:O	1:F:26:LEU:HD12	2.18	0.42
1:F:612:LYS:HA	1:F:612:LYS:HD3	1.84	0.42
1:K:243:LYS:HE3	1:K:243:LYS:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:591:ALA:O	1:K:594:TRP:CZ2	2.72	0.42
1:Q:460:THR:O	1:Q:461:LYS:CE	2.61	0.42
1:Q:541:ASN:HD21	1:Q:701:MET:CE	2.32	0.42
3:S:633:ASN:ND2	3:S:673:SER:OG	2.51	0.42
1:A:533:SER:HB3	1:K:81:ARG:HB3	2.00	0.42
1:F:45:ASN:HD21	2:G:317:ASP:N	1.88	0.42
1:F:141:GLN:H	1:F:141:GLN:CD	2.21	0.42
1:F:141:GLN:H	1:F:141:GLN:NE2	2.16	0.42
2:G:197:LYS:O	2:G:206:LEU:HD12	2.18	0.42
1:K:238:GLU:H	1:K:238:GLU:HG3	1.63	0.42
1:K:242:GLU:O	1:K:246:GLU:HG3	2.19	0.42
2:L:88:LEU:HD11	2:L:132:ILE:HG21	2.01	0.42
2:L:161:PRO:O	2:L:177:PRO:HD2	2.19	0.42
1:Q:41:MET:HG3	2:R:336:MET:CE	2.49	0.42
1:Q:138:VAL:HB	1:Q:139:LEU:HA	2.01	0.42
2:R:211:LYS:HG3	2:R:238:GLU:CD	2.39	0.42
1:A:68:VAL:O	1:A:68:VAL:HG13	2.19	0.42
1:A:68:VAL:CG2	2:B:110:PRO:HG2	2.37	0.42
2:B:254:CYS:HB3	2:B:260:LEU:CD2	2.47	0.42
1:F:96:ILE:CD1	2:G:134:LEU:HG	2.48	0.42
1:F:634:LYS:HG3	1:F:713:LYS:O	2.19	0.42
2:G:307:ASN:OD1	5:J:5:GLN:HG3	2.18	0.42
1:K:451:PHE:HE2	1:K:467:TYR:CD1	2.29	0.42
3:M:579:MET:O	3:M:581:VAL:N	2.53	0.42
1:Q:582:PRO:HB2	3:S:628:ALA:HB2	2.00	0.42
2:R:294:ILE:N	2:R:294:ILE:HD12	2.34	0.42
2:R:375:LYS:HG2	2:R:392:GLU:OE1	2.19	0.42
1:A:516:HIS:HB3	1:A:671:ASN:HD21	1.84	0.42
2:B:332:LYS:HD3	2:B:336:MET:HE3	2.02	0.42
2:G:399:ALA:HB1	2:G:400:LYS:HB2	2.01	0.42
1:K:168:ASP:OD2	2:L:348:SER:HB3	2.20	0.42
1:Q:168:ASP:O	1:Q:171:PHE:HB3	2.20	0.42
2:R:308:TYR:CE2	5:U:5:GLN:HB2	2.54	0.42
1:A:66:GLN:O	1:A:66:GLN:HG3	2.20	0.42
1:A:67:PRO:HG3	2:B:105:SER:CA	2.49	0.42
1:A:129:HIS:CE1	2:B:236:ARG:HG3	2.54	0.42
1:A:241:LYS:HG2	1:A:245:LYS:HE3	2.00	0.42
3:C:570:THR:O	3:C:572:LEU:N	2.53	0.42
1:F:431:GLU:H	1:F:431:GLU:HG3	1.64	0.42
2:G:191:ASN:HD22	2:G:211:LYS:HG2	1.84	0.42
2:G:323:SER:C	2:G:325:GLU:H	2.23	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:159:GLY:HA2	1:A:233:ASP:OD2	2.19	0.42
2:G:248:GLY:O	2:G:265:ILE:HD11	2.20	0.42
1:K:145:PHE:CE1	1:K:660:LYS:HD3	2.55	0.42
1:K:726:TYR:O	1:K:727:ARG:HB2	2.20	0.42
1:Q:128:LEU:HD22	1:Q:153:TYR:CG	2.54	0.42
1:A:129:HIS:CB	2:B:302:ARG:HH21	2.33	0.42
1:A:737:VAL:HA	1:A:738:GLY:HA2	1.58	0.42
2:L:155:ASP:O	2:L:159:SER:N	2.49	0.42
2:L:399:ALA:HA	2:L:400:LYS:HA	1.77	0.42
1:Q:328:LEU:CG	1:Q:425:GLU:HG2	2.44	0.42
1:Q:638:ILE:HD13	1:Q:638:ILE:HG21	1.84	0.42
3:S:587:LYS:HB2	3:S:588:ASP:HA	2.02	0.42
1:A:557:PHE:CD2	1:A:558:PRO:O	2.72	0.42
1:A:599:VAL:HG22	1:A:600:SER:N	2.35	0.42
2:B:210:SER:OG	2:B:211:LYS:N	2.53	0.42
1:F:129:HIS:HE1	2:G:236:ARG:HG3	1.84	0.42
1:K:158:HIS:O	2:L:258:HIS:CE1	2.72	0.42
1:K:263:ASN:HB3	3:M:607:ASN:ND2	2.34	0.42
1:Q:727:ARG:NH2	4:T:30:PRO:HG3	2.22	0.42
1:A:169:GLU:O	1:A:173:GLU:HG3	2.20	0.42
1:A:599:VAL:HG22	1:A:600:SER:H	1.85	0.42
1:A:731:ALA:O	1:A:733:ALA:HA	2.20	0.42
2:G:95:PRO:HB3	2:G:430:ASP:HA	2.01	0.42
1:K:302:THR:HB	1:K:524:ASP:OD2	2.19	0.42
2:L:183:ILE:HG13	2:L:184:LYS:HG3	2.02	0.42
2:R:187:VAL:HG12	2:R:187:VAL:O	2.19	0.42
1:A:726:TYR:O	1:A:727:ARG:HB2	2.20	0.42
2:B:385:LYS:HG3	2:B:405:THR:HG22	2.01	0.42
1:F:121:MET:HB2	1:F:295:PHE:O	2.20	0.42
1:F:571:CYS:SG	1:F:573:CYS:HB2	2.59	0.42
2:G:319:ILE:HG23	2:G:319:ILE:HD12	1.78	0.42
2:L:118:SER:OG	2:L:119:ASN:N	2.53	0.42
1:Q:714:ARG:HG3	1:Q:715:ALA:O	2.20	0.42
2:R:392:GLU:HB3	2:R:393:VAL:CG2	2.50	0.42
1:F:18:ARG:NH1	1:F:18:ARG:HG3	2.35	0.41
1:F:227:ILE:CD1	1:F:240:LEU:HD13	2.50	0.41
3:H:597:ILE:HA	3:H:615:LYS:HD2	2.02	0.41
1:K:308:ARG:HG2	1:K:309:LYS:N	2.31	0.41
2:L:429:CYS:HB2	2:L:433:SER:OG	2.20	0.41
1:Q:31:ARG:HE	1:Q:31:ARG:HB2	1.67	0.41
1:Q:311:THR:OG1	1:Q:313:THR:HG23	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Q:582:PRO:HB2	1:Q:594:TRP:HH2	1.84	0.41
1:A:70:ILE:HG12	2:B:135:LEU:HD22	2.01	0.41
2:B:254:CYS:HB2	2:B:309:VAL:HB	2.02	0.41
2:B:404:LEU:HD22	2:B:437:TRP:CE3	2.55	0.41
3:C:610:GLU:O	3:C:614:MET:HG3	2.20	0.41
1:F:99:LYS:NZ	2:G:180:MET:HG3	2.35	0.41
1:F:443:LEU:HA	1:F:446:THR:HG22	2.01	0.41
3:H:609:GLY:O	3:H:613:VAL:HG12	2.19	0.41
2:R:86:ASN:ND2	2:R:87:SER:H	2.15	0.41
1:A:320:CYS:HB2	1:A:324:CYS:SG	2.60	0.41
1:F:13:VAL:O	1:F:17:LYS:HG2	2.20	0.41
1:F:302:THR:HB	1:F:524:ASP:OD2	2.20	0.41
2:G:298:ASP:HA	2:G:345:PRO:HG3	2.03	0.41
1:K:180:GLN:CG	1:K:181:TYR:HD2	2.34	0.41
2:L:195:GLU:HG3	2:L:196:LEU:N	2.36	0.41
3:S:662:SER:O	3:S:666:PHE:HD2	2.03	0.41
1:A:38:VAL:HG12	2:B:353:LEU:HD22	2.02	0.41
1:A:340:ALA:O	1:A:344:LYS:HG3	2.21	0.41
1:A:613:HIS:CE1	3:C:582:ASP:HB3	2.56	0.41
2:B:235:HIS:CD2	2:B:239:VAL:HG22	2.55	0.41
2:B:396:PRO:C	2:B:398:LYS:HB2	2.40	0.41
3:C:606:VAL:HG12	3:C:611:LYS:HG3	2.01	0.41
2:G:258:HIS:CE1	2:G:307:ASN:HA	2.55	0.41
2:L:132:ILE:HD11	2:L:436:ARG:HB2	2.02	0.41
1:Q:341:GLU:O	1:Q:344:LYS:HB2	2.20	0.41
2:R:378:ALA:HA	2:R:387:TYR:O	2.20	0.41
1:A:117:GLN:OE1	1:A:117:GLN:HA	2.20	0.41
1:A:258:PRO:HA	1:A:259:GLU:HA	1.79	0.41
2:B:315:LEU:HD13	2:B:370:MET:HE1	2.02	0.41
3:C:579:MET:HG3	3:C:581:VAL:CG1	2.48	0.41
1:K:180:GLN:HG2	1:K:181:TYR:CD2	2.56	0.41
1:K:270:LYS:HE3	1:K:270:LYS:HB3	1.88	0.41
2:L:180:MET:HE2	2:L:180:MET:HB3	1.78	0.41
2:R:258:HIS:CD2	2:R:258:HIS:N	2.89	0.41
2:B:376:MET:HG3	2:B:418:PHE:CZ	2.54	0.41
3:C:593:ARG:HD2	3:C:619:LEU:CD2	2.50	0.41
1:K:30:LYS:HA	1:K:30:LYS:HD2	1.85	0.41
1:K:515:ASN:CA	1:K:671:ASN:HD21	2.31	0.41
2:L:196:LEU:HD22	2:L:206:LEU:HD11	2.01	0.41
2:L:285:THR:OG1	2:L:287:ARG:HG2	2.21	0.41
3:S:607:ASN:OD1	3:S:610:GLU:N	2.40	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:98:LEU:HD12	2:B:137:SER:O	2.20	0.41
1:A:730:GLN:HG3	1:A:731:ALA:N	2.36	0.41
3:C:671:ILE:HA	3:C:674:ILE:HD12	2.01	0.41
1:F:265:ASP:HA	3:H:654:ARG:NH1	2.36	0.41
1:F:582:PRO:HB2	1:F:594:TRP:HH2	1.85	0.41
2:L:294:ILE:N	2:L:294:ILE:HD12	2.36	0.41
1:Q:161:ARG:HE	2:R:306:ARG:HD2	1.85	0.41
1:A:166:ILE:HG21	1:A:234:LYS:HE3	2.01	0.41
1:A:691:VAL:O	1:A:693:PRO:HD3	2.21	0.41
2:B:422:SER:HB2	2:B:439:ARG:NH1	2.36	0.41
1:F:344:LYS:O	1:F:345:THR:HB	2.21	0.41
2:G:202:ASP:OD2	2:G:278:TYR:OH	2.32	0.41
1:K:68:VAL:CG1	1:K:69:HIS:N	2.83	0.41
1:K:71:LEU:HD11	1:K:97:PRO:CG	2.47	0.41
1:K:605:SER:HB3	1:K:637:PHE:CD2	2.56	0.41
2:R:82:PHE:CE2	2:R:439:ARG:HB2	2.56	0.41
2:R:377:LEU:O	2:R:388:VAL:HA	2.21	0.41
1:A:320:CYS:CB	1:A:324:CYS:HB2	2.50	0.41
1:A:475:SER:O	2:R:201:ARG:NH2	2.53	0.41
2:B:85:VAL:CG2	2:B:130:GLY:HA2	2.51	0.41
2:B:395:ASP:O	2:B:397:HIS:ND1	2.53	0.41
1:F:132:PRO:HB2	1:F:134:MET:CE	2.51	0.41
1:F:454:ILE:HD12	1:F:454:ILE:N	2.36	0.41
1:F:545:LYS:NZ	1:F:583:ASP:OD2	2.50	0.41
1:F:594:TRP:CH2	3:H:628:ALA:HB2	2.55	0.41
1:F:621:VAL:HG13	1:F:736:TYR:HB3	2.02	0.41
2:G:148:TYR:CE2	5:J:7:M3L:HM11	2.55	0.41
1:K:41:MET:HG3	2:L:336:MET:HE2	2.03	0.41
2:L:86:ASN:ND2	2:L:87:SER:H	2.16	0.41
2:L:136:GLN:HE22	2:L:180:MET:HG2	1.86	0.41
3:M:585:ASP:CG	3:M:586:GLU:HB3	2.41	0.41
1:Q:12:PRO:HD2	1:Q:15:TRP:HD1	1.85	0.41
1:Q:30:LYS:HE2	1:Q:34:ARG:NE	2.30	0.41
1:Q:227:ILE:HG13	1:Q:240:LEU:HD13	2.02	0.41
1:Q:455:ALA:HB2	1:Q:466:VAL:HG21	2.02	0.41
1:Q:460:THR:C	1:Q:461:LYS:HG2	2.41	0.41
1:Q:618:PRO:HD3	3:S:566:PHE:CE1	2.56	0.41
1:Q:732:ASP:HA	1:Q:733:ALA:HA	1.53	0.41
3:S:592:LEU:HD12	3:S:592:LEU:HA	1.89	0.41
1:A:71:LEU:HB3	2:B:180:MET:HE1	2.03	0.41
1:A:265:ASP:OD1	3:C:654:ARG:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:245:ASP:OD1	2:B:249:GLU:N	2.54	0.41
1:F:442:VAL:O	1:F:446:THR:HG22	2.21	0.41
2:G:315:LEU:HD13	2:G:370:MET:HE1	2.03	0.41
1:A:161:ARG:NH1	1:A:164:GLY:N	2.61	0.40
1:A:565:GLN:H	1:A:565:GLN:HG2	1.38	0.40
1:A:689:HIS:CD2	1:A:726:TYR:H	2.37	0.40
1:A:714:ARG:HG2	1:A:715:ALA:O	2.21	0.40
2:G:211:LYS:HG3	2:G:238:GLU:CG	2.50	0.40
3:M:586:GLU:CB	3:M:587:LYS:HB3	2.46	0.40
1:Q:133:TYR:CE2	1:Q:136:ASP:HB2	2.55	0.40
2:R:368:PHE:HB3	2:R:379:LEU:HB2	2.03	0.40
1:A:89:LEU:HD21	2:B:85:VAL:O	2.21	0.40
1:A:129:HIS:HE1	2:B:236:ARG:HG3	1.86	0.40
1:A:168:ASP:HB2	2:B:349:ASN:ND2	2.36	0.40
1:A:224:PHE:HB3	1:A:237:ALA:HB1	2.02	0.40
1:A:436:GLU:OE2	1:A:460:THR:HG23	2.21	0.40
2:B:397:HIS:O	2:B:397:HIS:CD2	2.74	0.40
7:F:1009:SAH:O4'	7:F:1009:SAH:HA	2.21	0.40
2:G:147:PHE:HA	2:G:167:GLY:HA3	2.04	0.40
1:Q:432:TRP:CD1	1:Q:469:PHE:CE1	2.99	0.40
1:Q:447:TYR:HB3	1:Q:454:ILE:HD11	2.03	0.40
3:S:610:GLU:HA	3:S:613:VAL:HG12	2.02	0.40
1:A:302:THR:HG22	1:A:305:THR:CG2	2.46	0.40
1:A:302:THR:N	1:A:303:PRO:HA	2.36	0.40
3:C:607:ASN:HB3	3:C:610:GLU:H	1.86	0.40
3:C:648:ILE:HD13	3:C:685:GLN:HG2	2.03	0.40
1:F:56:LEU:HD11	2:G:246:LEU:O	2.22	0.40
1:F:314:ALA:N	1:F:315:LEU:HD12	2.36	0.40
1:F:454:ILE:HD12	1:F:454:ILE:H	1.87	0.40
1:F:644:GLU:HG3	1:F:680:LYS:HG2	2.03	0.40
4:I:22:THR:HA	4:I:23:LYS:HA	1.65	0.40
1:K:110:MET:O	2:L:190:GLY:HA3	2.20	0.40
2:L:286:ASN:ND2	3:M:577:GLN:HB2	2.36	0.40
2:L:424:ILE:HD13	2:L:424:ILE:HG21	1.91	0.40
1:Q:578:ARG:HE	1:Q:578:ARG:HB3	1.55	0.40
1:Q:605:SER:HB3	1:Q:637:PHE:CD2	2.56	0.40
1:A:15:TRP:O	1:A:19:VAL:HG23	2.21	0.40
1:A:270:LYS:O	1:A:272:VAL:HG23	2.20	0.40
1:A:734:LEU:HB3	7:A:1009:SAH:C6	2.51	0.40
7:A:1009:SAH:H5'2	7:A:1009:SAH:H8	2.03	0.40
2:B:282:PRO:CB	3:C:575:ARG:HH12	2.26	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:387:TYR:HD2	2:B:401:CYS:SG	2.45	0.40
1:F:22:GLU:OE2	1:F:177:ALA:CB	2.68	0.40
1:F:119:ASN:HB3	1:F:645:ILE:HG23	2.04	0.40
2:G:285:THR:HG21	2:G:287:ARG:HE	1.86	0.40
1:K:427:PRO:HB3	1:K:468:GLU:HG3	2.03	0.40
1:K:606:ILE:HG21	1:K:707:ARG:HD2	2.04	0.40
2:L:91:ASP:CG	2:L:120:ARG:HH12	2.24	0.40
2:L:318:LEU:HD13	2:L:353:LEU:HD12	2.03	0.40
1:Q:426:PRO:HA	1:Q:427:PRO:HD3	1.97	0.40
1:Q:677:ALA:HA	1:Q:680:LYS:O	2.21	0.40
3:S:666:PHE:O	3:S:667:ASN:HB2	2.21	0.40
1:A:145:PHE:CZ	1:A:660:LYS:HG2	2.56	0.40
2:L:172:ILE:O	2:L:185:HIS:HA	2.22	0.40
1:Q:224:PHE:HZ	1:Q:244:TYR:CG	2.40	0.40
1:Q:440:PHE:CD2	1:Q:440:PHE:C	2.95	0.40
1:Q:606:ILE:HG22	1:Q:707:ARG:HD2	2.03	0.40

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:568:THR:OG1	1:Q:561:ARG:NH1[3_644]	2.11	0.09
1:F:561:ARG:NH1	1:K:568:THR:OG1[2_545]	2.16	0.04

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	569/746 (76%)	534 (94%)	34 (6%)	1 (0%)	44 67
1	F	558/746 (75%)	526 (94%)	31 (6%)	1 (0%)	44 67
1	K	552/746 (74%)	527 (96%)	23 (4%)	2 (0%)	30 54

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	Q	555/746 (74%)	527 (95%)	27 (5%)	1 (0%)	44	67
2	B	363/367 (99%)	348 (96%)	15 (4%)	0	100	100
2	G	363/367 (99%)	355 (98%)	8 (2%)	0	100	100
2	L	363/367 (99%)	354 (98%)	9 (2%)	0	100	100
2	R	363/367 (99%)	352 (97%)	11 (3%)	0	100	100
3	C	123/129 (95%)	120 (98%)	3 (2%)	0	100	100
3	H	122/129 (95%)	119 (98%)	2 (2%)	1 (1%)	16	39
3	M	123/129 (95%)	118 (96%)	4 (3%)	1 (1%)	16	39
3	S	123/129 (95%)	121 (98%)	2 (2%)	0	100	100
4	D	7/13 (54%)	7 (100%)	0	0	100	100
4	I	7/13 (54%)	7 (100%)	0	0	100	100
4	O	7/13 (54%)	7 (100%)	0	0	100	100
4	T	7/13 (54%)	7 (100%)	0	0	100	100
5	E	8/12 (67%)	8 (100%)	0	0	100	100
5	J	7/12 (58%)	7 (100%)	0	0	100	100
5	P	6/12 (50%)	6 (100%)	0	0	100	100
5	U	7/12 (58%)	6 (86%)	1 (14%)	0	100	100
All	All	4233/5068 (84%)	4056 (96%)	170 (4%)	7 (0%)	44	67

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	68	VAL
1	K	66	GLN
1	F	139	LEU
3	M	582	ASP
1	K	265	ASP
1	Q	104	VAL
3	H	609	GLY

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	520/667 (78%)	496 (95%)	24 (5%)	23	47
1	F	507/667 (76%)	486 (96%)	21 (4%)	26	51
1	K	503/667 (75%)	481 (96%)	22 (4%)	24	49
1	Q	505/667 (76%)	485 (96%)	20 (4%)	27	51
2	B	328/329 (100%)	322 (98%)	6 (2%)	54	75
2	G	328/329 (100%)	319 (97%)	9 (3%)	40	64
2	L	328/329 (100%)	326 (99%)	2 (1%)	84	91
2	R	328/329 (100%)	327 (100%)	1 (0%)	91	96
3	C	119/121 (98%)	118 (99%)	1 (1%)	79	88
3	H	118/121 (98%)	115 (98%)	3 (2%)	42	66
3	M	119/121 (98%)	117 (98%)	2 (2%)	56	76
3	S	119/121 (98%)	118 (99%)	1 (1%)	79	88
4	D	6/7 (86%)	6 (100%)	0	100	100
4	I	6/7 (86%)	6 (100%)	0	100	100
4	O	6/7 (86%)	6 (100%)	0	100	100
4	T	6/7 (86%)	6 (100%)	0	100	100
5	E	8/9 (89%)	6 (75%)	2 (25%)	0	0
5	J	7/9 (78%)	7 (100%)	0	100	100
5	P	6/9 (67%)	6 (100%)	0	100	100
5	U	7/9 (78%)	7 (100%)	0	100	100
All	All	3874/4532 (86%)	3760 (97%)	114 (3%)	37	61

All (114) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	22	GLU
1	A	77	LEU
1	A	98	LEU
1	A	129	HIS
1	A	134	MET
1	A	137	GLU
1	A	161	ARG
1	A	231	PHE

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Mol	Chain	Res	Type
1	A	233	ASP
1	A	263	ASN
1	A	284	LEU
1	A	311	THR
1	A	312	GLU
1	A	424	ILE
1	A	527	ARG
1	A	565	GLN
1	A	587	THR
1	A	593	HIS
1	A	626	ILE
1	A	663	CYS
1	A	667	PHE
1	A	708	ILE
1	A	714	ARG
1	A	734	LEU
2	B	209	VAL
2	B	223	ASP
2	B	310	ASP
2	B	386	LEU
2	B	401	CYS
2	B	404	LEU
3	C	592	LEU
5	E	6	ARG
5	E	11	SER
1	F	26	LEU
1	F	32	PHE
1	F	71	LEU
1	F	89	LEU
1	F	129	HIS
1	F	134	MET
1	F	141	GLN
1	F	169	GLU
1	F	233	ASP
1	F	260	CYS
1	F	264	ILE
1	F	265	ASP
1	F	270	LYS
1	F	339	THR
1	F	342	ARG
1	F	439	MET
1	F	460	THR

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Mol	Chain	Res	Type
1	F	528	GLN
1	F	663	CYS
1	F	667	PHE
1	F	668	ASN
2	G	78	CYS
2	G	88	LEU
2	G	189	HIS
2	G	223	ASP
2	G	359	SER
2	G	367	ARG
2	G	386	LEU
2	G	395	ASP
2	G	397	HIS
3	H	579	MET
3	H	605	ASP
3	H	607	ASN
1	K	32	PHE
1	K	72	THR
1	K	77	LEU
1	K	117	GLN
1	K	118	GLN
1	K	129	HIS
1	K	139	LEU
1	K	149	LEU
1	K	227	ILE
1	K	233	ASP
1	K	240	LEU
1	K	243	LYS
1	K	247	LEU
1	K	307	LYS
1	K	311	THR
1	K	328	LEU
1	K	329	GLU
1	K	439	MET
1	K	515	ASN
1	K	525	HIS
1	K	565	GLN
1	K	667	PHE
2	L	86	ASN
2	L	223	ASP
3	M	596	THR
3	M	629	ASP

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Mol	Chain	Res	Type
1	Q	32	PHE
1	Q	66	GLN
1	Q	67	PRO
1	Q	75	SER
1	Q	126	THR
1	Q	129	HIS
1	Q	234	LYS
1	Q	238	GLU
1	Q	239	GLU
1	Q	242	GLU
1	Q	429	ASN
1	Q	432	TRP
1	Q	439	MET
1	Q	525	HIS
1	Q	563	LYS
1	Q	565	GLN
1	Q	667	PHE
1	Q	732	ASP
1	Q	734	LEU
1	Q	735	LYS
2	R	86	ASN
3	S	605	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (102) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	66	GLN
1	A	69	HIS
1	A	129	HIS
1	A	182	ASN
1	A	263	ASN
1	A	282	HIS
1	A	429	ASN
1	A	689	HIS
2	B	94	GLN
2	B	136	GLN
2	B	160	HIS
2	B	176	ASN
2	B	189	HIS
2	B	258	HIS
2	B	286	ASN
2	B	349	ASN

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Mol	Chain	Res	Type
3	C	562	ASN
3	C	599	GLN
3	C	607	ASN
3	C	631	GLN
3	C	633	ASN
3	C	642	ASN
3	C	667	ASN
1	F	45	ASN
1	F	69	HIS
1	F	117	GLN
1	F	129	HIS
1	F	141	GLN
1	F	176	ASN
1	F	180	GLN
1	F	263	ASN
1	F	268	ASN
1	F	297	HIS
1	F	326	GLN
1	F	429	ASN
1	F	570	GLN
1	F	598	ASN
1	F	668	ASN
1	F	730	GLN
2	G	86	ASN
2	G	136	GLN
2	G	160	HIS
2	G	176	ASN
2	G	191	ASN
2	G	194	ASN
2	G	258	HIS
2	G	286	ASN
2	G	349	ASN
3	H	633	ASN
3	H	642	ASN
5	J	5	GLN
5	J	10	GLN
1	K	45	ASN
1	K	117	GLN
1	K	129	HIS
1	K	273	GLN
1	K	317	ASN
1	K	326	GLN

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Mol	Chain	Res	Type
1	K	429	ASN
1	K	515	ASN
1	K	648	GLN
1	K	668	ASN
1	K	671	ASN
1	K	689	HIS
1	K	730	GLN
2	L	86	ASN
2	L	185	HIS
2	L	213	HIS
2	L	258	HIS
2	L	286	ASN
2	L	349	ASN
2	L	397	HIS
3	M	567	HIS
3	M	599	GLN
3	M	631	GLN
3	M	633	ASN
3	M	645	GLN
3	M	651	ASN
3	M	655	ASN
3	M	667	ASN
5	P	5	GLN
1	Q	129	HIS
1	Q	152	ASN
1	Q	158	HIS
1	Q	268	ASN
1	Q	521	GLN
1	Q	525	HIS
1	Q	671	ASN
1	Q	689	HIS
1	Q	706	HIS
2	R	86	ASN
2	R	94	GLN
2	R	213	HIS
2	R	258	HIS
2	R	286	ASN
2	R	307	ASN
2	R	349	ASN
3	S	631	GLN
3	S	633	ASN
3	S	642	ASN

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Mol	Chain	Res	Type
3	S	645	GLN
5	U	10	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

4 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	M3L	U	7	5	10,11,12	0.58	0	9,14,16	1.69	1 (11%)
5	M3L	J	7	5	10,11,12	0.57	0	9,14,16	1.36	1 (11%)
5	M3L	P	7	5	10,11,12	0.49	0	9,14,16	0.94	0
5	M3L	E	7	5	10,11,12	0.52	0	9,14,16	1.50	2 (22%)

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
5	M3L	U	7	5	-	4/9/10/12	-
5	M3L	J	7	5	-	2/9/10/12	-
5	M3L	P	7	5	-	3/9/10/12	-
5	M3L	E	7	5	-	4/9/10/12	-

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	U	7	M3L	CM3-NZ-CM1	-3.38	100.27	108.97
5	E	7	M3L	CM3-NZ-CM1	-3.30	100.49	108.97
5	J	7	M3L	CM2-NZ-CM1	-3.27	100.56	108.97
5	E	7	M3L	CM2-NZ-CM1	2.01	114.14	108.97

There are no chirality outliers.

All (13) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	E	7	M3L	N-CA-CB-CG
5	E	7	M3L	CD-CE-NZ-CM2
5	U	7	M3L	CD-CE-NZ-CM2
5	E	7	M3L	CD-CE-NZ-CM3
5	P	7	M3L	CD-CE-NZ-CM2
5	U	7	M3L	CD-CE-NZ-CM3
5	J	7	M3L	N-CA-CB-CG
5	P	7	M3L	N-CA-CB-CG
5	U	7	M3L	N-CA-CB-CG
5	E	7	M3L	CD-CE-NZ-CM1
5	U	7	M3L	CD-CE-NZ-CM1
5	P	7	M3L	CD-CE-NZ-CM3
5	J	7	M3L	CD-CE-NZ-CM1

There are no ring outliers.

3 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	U	7	M3L	1	0
5	J	7	M3L	2	0
5	E	7	M3L	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 36 ligands modelled in this entry, 32 are monoatomic - leaving 4 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
7	SAH	A	1009	-	24,28,28	1.19	3 (12%)	25,40,40	1.59	4 (16%)
7	SAH	K	1009	-	24,28,28	1.19	3 (12%)	25,40,40	1.73	3 (12%)
7	SAH	F	1009	-	24,28,28	1.23	2 (8%)	25,40,40	1.82	7 (28%)
7	SAH	Q	1009	-	24,28,28	1.18	2 (8%)	25,40,40	1.71	4 (16%)

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
7	SAH	A	1009	-	-	3/11/31/31	0/3/3/3
7	SAH	K	1009	-	-	4/11/31/31	0/3/3/3
7	SAH	F	1009	-	-	4/11/31/31	0/3/3/3
7	SAH	Q	1009	-	-	8/11/31/31	0/3/3/3

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	K	1009	SAH	C2-N3	4.22	1.38	1.32
7	Q	1009	SAH	C2-N3	3.68	1.38	1.32
7	F	1009	SAH	C2-N3	3.58	1.37	1.32
7	A	1009	SAH	C2-N3	3.57	1.37	1.32
7	F	1009	SAH	C2-N1	2.76	1.39	1.33
7	A	1009	SAH	OXT-C	-2.41	1.22	1.30
7	K	1009	SAH	C2-N1	2.30	1.38	1.33
7	Q	1009	SAH	C2-N1	2.23	1.38	1.33
7	A	1009	SAH	C2-N1	2.17	1.38	1.33
7	K	1009	SAH	OXT-C	-2.01	1.24	1.30

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	K	1009	SAH	C5'-SD-CG	-5.62	85.42	102.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	A	1009	SAH	N3-C2-N1	-5.19	120.56	128.68
7	K	1009	SAH	N3-C2-N1	-5.19	120.57	128.68
7	Q	1009	SAH	C5'-SD-CG	-5.09	86.98	102.27
7	F	1009	SAH	C5'-SD-CG	-4.96	87.40	102.27
7	Q	1009	SAH	N3-C2-N1	-4.67	121.38	128.68
7	F	1009	SAH	N3-C2-N1	-4.48	121.67	128.68
7	A	1009	SAH	C3'-C2'-C1'	3.06	105.59	100.98
7	F	1009	SAH	OXT-C-CA	3.02	123.68	113.38
7	A	1009	SAH	C5'-SD-CG	-2.51	94.73	102.27
7	Q	1009	SAH	OXT-C-O	-2.43	118.58	124.09
7	Q	1009	SAH	CB-CA-C	2.42	116.07	110.30
7	A	1009	SAH	OXT-C-O	-2.26	118.96	124.09
7	K	1009	SAH	C3'-C2'-C1'	2.17	104.25	100.98
7	F	1009	SAH	N6-C6-N1	2.14	123.02	118.57
7	F	1009	SAH	OXT-C-O	-2.13	119.24	124.09
7	F	1009	SAH	C3'-C2'-C1'	2.04	104.05	100.98
7	F	1009	SAH	CB-CA-C	2.03	115.14	110.30

There are no chirality outliers.

All (19) torsion outliers are listed below:

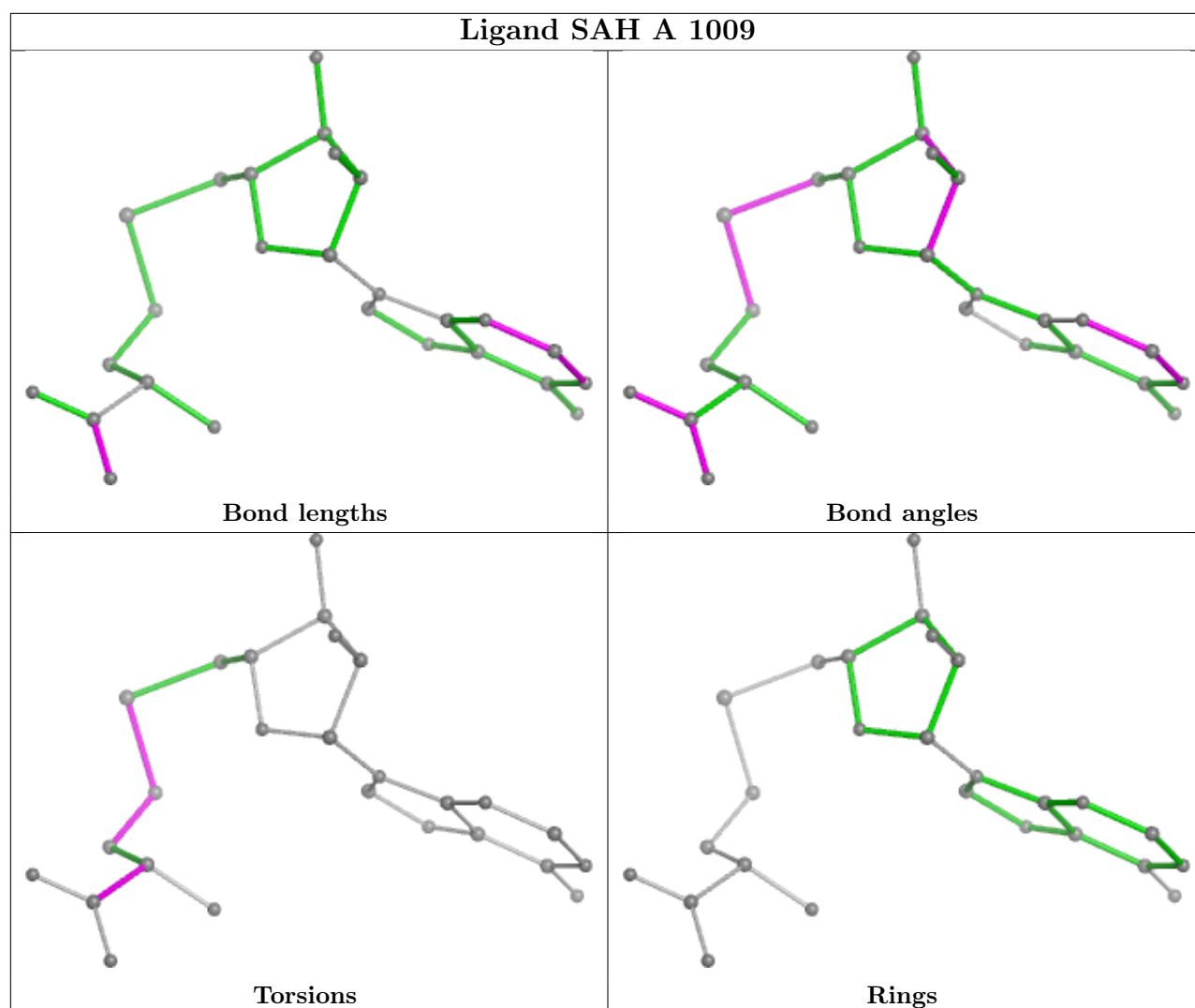
Mol	Chain	Res	Type	Atoms
7	K	1009	SAH	O4'-C4'-C5'-SD
7	K	1009	SAH	C3'-C4'-C5'-SD
7	Q	1009	SAH	O-C-CA-N
7	Q	1009	SAH	CA-CB-CG-SD
7	F	1009	SAH	CA-CB-CG-SD
7	Q	1009	SAH	OXT-C-CA-N
7	A	1009	SAH	CA-CB-CG-SD
7	K	1009	SAH	CB-CG-SD-C5'
7	Q	1009	SAH	C3'-C4'-C5'-SD
7	Q	1009	SAH	CB-CG-SD-C5'
7	Q	1009	SAH	O-C-CA-CB
7	F	1009	SAH	CB-CG-SD-C5'
7	Q	1009	SAH	C-CA-CB-CG
7	A	1009	SAH	O-C-CA-N
7	F	1009	SAH	OXT-C-CA-CB
7	A	1009	SAH	CB-CG-SD-C5'
7	K	1009	SAH	OXT-C-CA-CB
7	F	1009	SAH	O-C-CA-CB
7	Q	1009	SAH	OXT-C-CA-CB

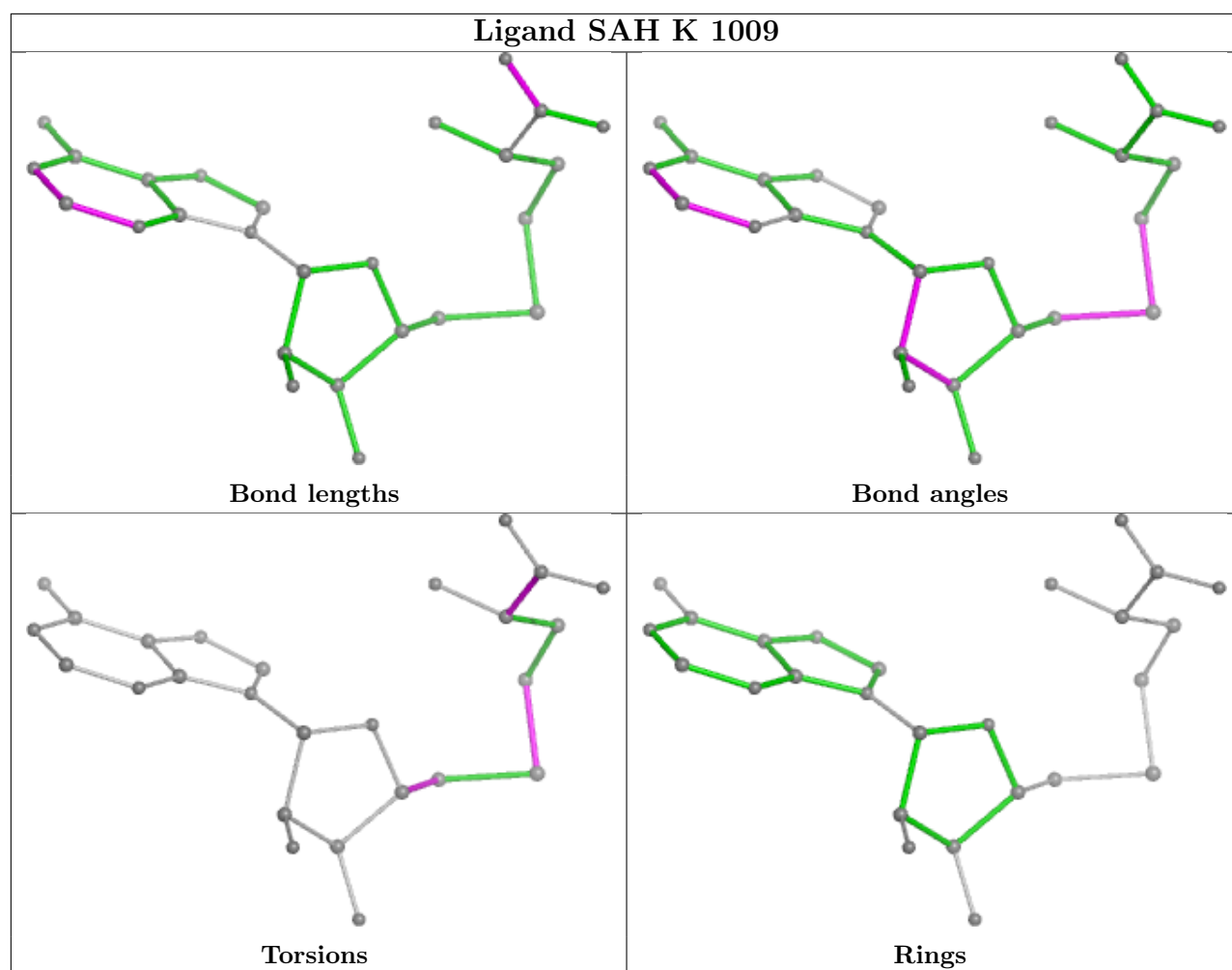
There are no ring outliers.

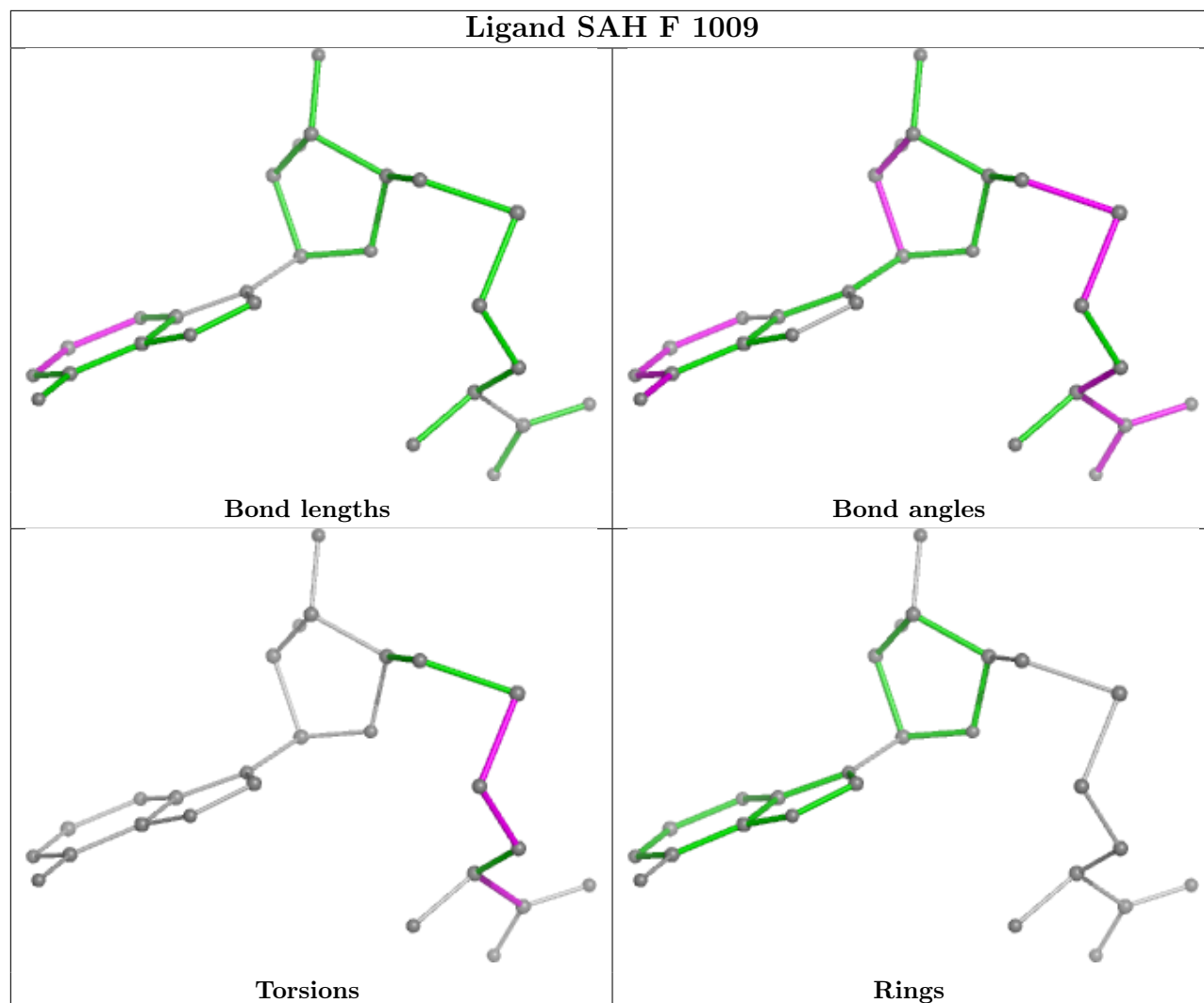
4 monomers are involved in 10 short contacts:

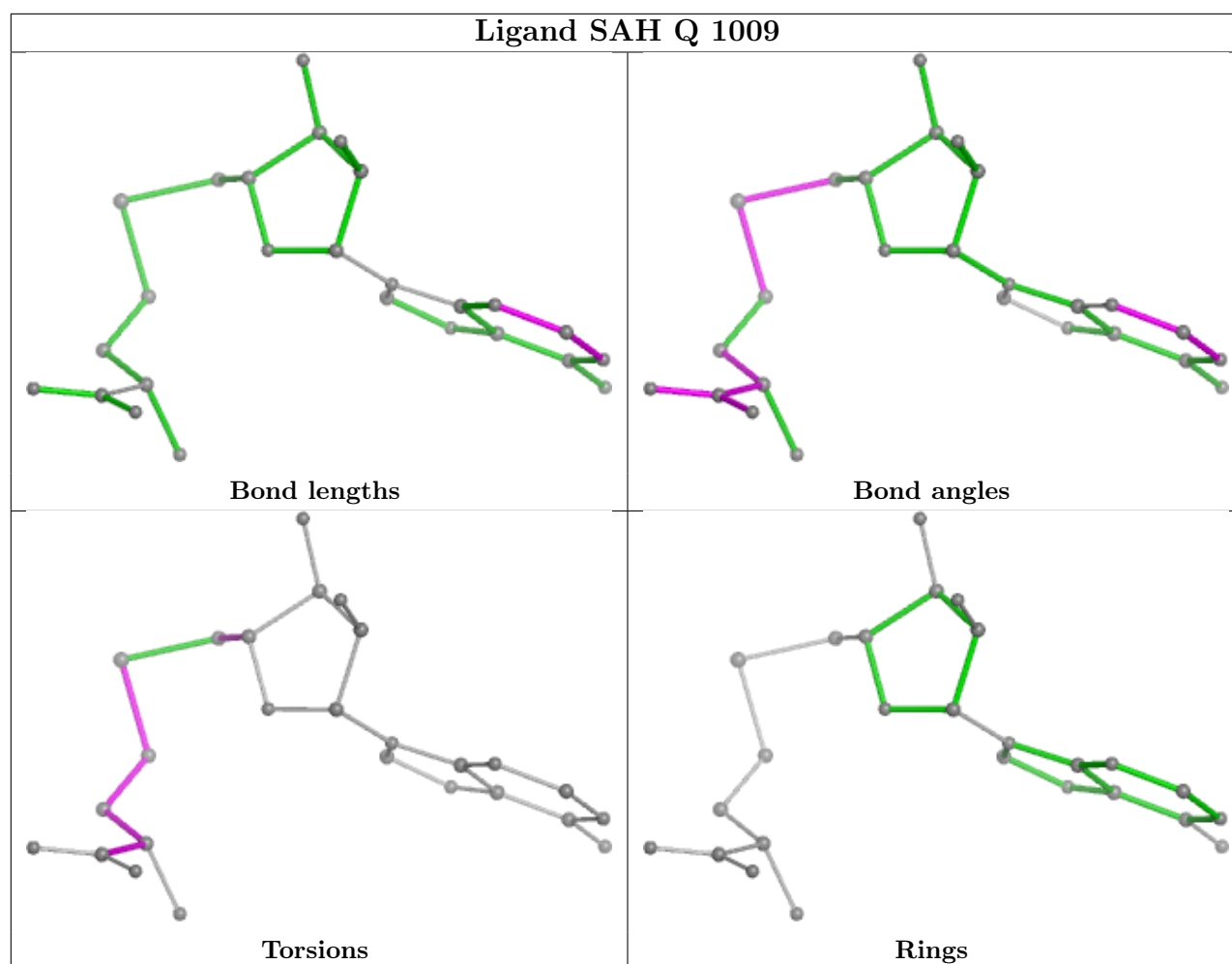
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	A	1009	SAH	6	0
7	K	1009	SAH	1	0
7	F	1009	SAH	2	0
7	Q	1009	SAH	1	0

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.









5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	581/746 (77%)	0.21	27 (4%) 38 35	38, 84, 159, 196	0
1	F	568/746 (76%)	0.27	26 (4%) 38 35	40, 92, 162, 224	0
1	K	562/746 (75%)	0.24	18 (3%) 50 47	43, 92, 165, 189	0
1	Q	565/746 (75%)	0.35	31 (5%) 32 29	45, 86, 165, 202	0
2	B	365/367 (99%)	0.02	5 (1%) 73 71	51, 79, 121, 171	0
2	G	365/367 (99%)	-0.05	4 (1%) 77 76	49, 75, 115, 177	0
2	L	365/367 (99%)	-0.16	3 (0%) 82 81	40, 65, 103, 140	0
2	R	365/367 (99%)	-0.21	3 (0%) 82 81	35, 61, 92, 147	0
3	C	125/129 (96%)	-0.05	3 (2%) 59 57	47, 72, 148, 172	0
3	H	124/129 (96%)	0.20	3 (2%) 59 57	58, 89, 143, 187	0
3	M	125/129 (96%)	0.22	2 (1%) 70 68	56, 92, 135, 158	0
3	S	125/129 (96%)	-0.06	0 100 100	54, 89, 139, 159	0
4	D	9/13 (69%)	0.21	0 100 100	67, 86, 111, 118	0
4	I	9/13 (69%)	0.71	0 100 100	60, 81, 103, 113	0
4	O	9/13 (69%)	2.05	4 (44%) 1 1	47, 55, 59, 73	9 (100%)
4	T	9/13 (69%)	1.98	5 (55%) 0 0	48, 53, 61, 63	9 (100%)
5	E	10/12 (83%)	0.70	0 100 100	67, 89, 139, 140	0
5	J	9/12 (75%)	0.64	1 (11%) 12 14	62, 82, 127, 133	0
5	P	8/12 (66%)	0.36	0 100 100	69, 84, 117, 140	0
5	U	9/12 (75%)	1.22	1 (11%) 12 14	71, 95, 133, 134	0
All	All	4307/5068 (84%)	0.13	136 (3%) 50 47	35, 79, 155, 224	18 (0%)

All (136) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
4	O	25	ALA	5.3
1	Q	739	ILE	4.3
1	F	138	VAL	4.3
3	H	581	VAL	4.3
1	Q	737	VAL	4.2
1	K	446	THR	4.2
5	U	2	LEU	4.2
1	A	330	GLY	4.0
1	Q	736	TYR	4.0
1	F	424	ILE	4.0
2	G	393	VAL	3.9
1	Q	235	GLY	3.8
2	G	396	PRO	3.7
1	Q	732	ASP	3.6
1	K	219	PRO	3.6
1	K	311	THR	3.4
1	K	73	SER	3.3
1	K	78	ARG	3.3
1	F	74	VAL	3.3
1	Q	264	ILE	3.3
1	Q	314	ALA	3.3
4	T	25	ALA	3.2
1	Q	72	THR	3.2
1	F	235	GLY	3.2
1	F	739	ILE	3.2
1	K	77	LEU	3.2
1	A	103	ALA	3.1
1	K	72	THR	3.1
4	T	22	THR	3.1
1	Q	430	VAL	3.1
1	A	74	VAL	3.1
2	L	393	VAL	3.0
1	Q	733	ALA	3.0
1	A	46	ARG	3.0
2	L	130	GLY	2.9
1	F	736	TYR	2.9
1	Q	313	THR	2.9
1	A	734	LEU	2.9
1	A	77	LEU	2.9
1	Q	234	LYS	2.9
1	F	731	ALA	2.8
1	F	23	TYR	2.8
1	K	731	ALA	2.7

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Mol	Chain	Res	Type	RSRZ
1	K	305	THR	2.7
1	Q	477	ILE	2.7
1	Q	134	MET	2.7
1	K	138	VAL	2.7
1	A	91	PHE	2.7
1	F	477	ILE	2.7
1	F	322	PRO	2.7
4	T	23	LYS	2.7
1	Q	261	THR	2.7
1	Q	661	TYR	2.7
3	H	588	ASP	2.7
1	A	67	PRO	2.6
1	A	139	LEU	2.6
4	O	30	PRO	2.6
1	Q	734	LEU	2.6
2	B	396	PRO	2.5
2	B	398	LYS	2.5
1	Q	232	PRO	2.5
1	A	71	LEU	2.5
1	K	74	VAL	2.5
1	F	733	ALA	2.5
1	K	91	PHE	2.5
1	A	138	VAL	2.5
2	R	393	VAL	2.5
1	A	331	ALA	2.5
2	B	440	LEU	2.5
1	A	737	VAL	2.5
1	F	458	ILE	2.5
1	Q	735	LYS	2.4
1	F	516	HIS	2.4
1	Q	135	GLY	2.4
1	F	178	LEU	2.4
1	Q	138	VAL	2.4
2	B	399	ALA	2.4
1	K	66	GLN	2.4
1	F	427	PRO	2.4
1	F	328	LEU	2.4
2	G	187	VAL	2.4
1	Q	564	ALA	2.4
1	A	15	TRP	2.4
1	Q	77	LEU	2.4
2	G	399	ALA	2.4

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Mol	Chain	Res	Type	RSRZ
1	K	139	LEU	2.4
1	Q	328	LEU	2.4
1	F	330	GLY	2.4
1	A	101	LEU	2.3
1	Q	649	ASP	2.3
3	C	637	MET	2.3
1	A	257	PRO	2.3
1	A	79	GLY	2.3
1	Q	731	ALA	2.3
2	R	316	GLY	2.3
1	A	733	ALA	2.3
2	R	78	CYS	2.2
3	M	580	GLU	2.2
4	T	24	ALA	2.2
3	M	637	MET	2.2
1	K	732	ASP	2.2
3	C	581	VAL	2.2
1	A	72	THR	2.2
3	H	627	ILE	2.2
1	F	91	PHE	2.2
4	T	30	PRO	2.2
1	F	318	LYS	2.1
1	A	126	THR	2.1
1	Q	231	PHE	2.1
1	A	731	ALA	2.1
5	J	2	LEU	2.1
1	A	140	ASP	2.1
1	F	73	SER	2.1
1	Q	277	SER	2.1
1	Q	729	SER	2.1
4	O	29	ALA	2.1
1	A	317	ASN	2.1
1	Q	136	ASP	2.1
1	A	328	LEU	2.1
1	F	77	LEU	2.1
1	K	478	ALA	2.1
4	O	24	ALA	2.1
1	F	15	TRP	2.1
1	A	327	HIS	2.1
1	F	139	LEU	2.0
1	F	734	LEU	2.0
1	A	736	TYR	2.0

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Mol	Chain	Res	Type	RSRZ
1	F	19	VAL	2.0
1	F	597	LYS	2.0
1	Q	17	LYS	2.0
1	A	231	PHE	2.0
2	L	396	PRO	2.0
3	C	587	LYS	2.0
1	K	278	LEU	2.0
1	K	328	LEU	2.0
2	B	397	HIS	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [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
5	M3L	J	7	12/13	0.95	0.09	41,52,63,65	0
5	M3L	E	7	12/13	0.96	0.13	40,58,78,90	0
5	M3L	P	7	12/13	0.96	0.11	39,57,65,71	0
5	M3L	U	7	12/13	0.97	0.09	34,59,68,68	0

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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
7	SAH	K	1009	26/26	0.89	0.14	60,74,184,324	0
7	SAH	Q	1009	26/26	0.89	0.15	55,77,177,321	0
7	SAH	F	1009	26/26	0.90	0.11	40,75,86,146	0
7	SAH	A	1009	26/26	0.93	0.08	58,77,90,93	0
6	ZN	K	1002	1/1	0.97	0.05	122,122,122,122	0

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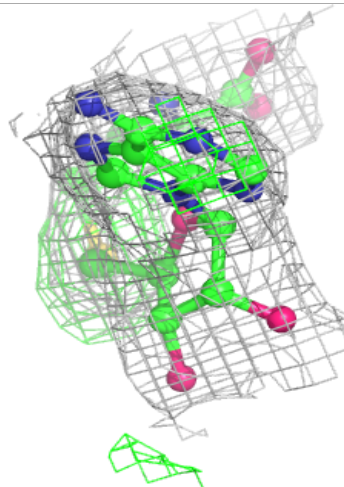
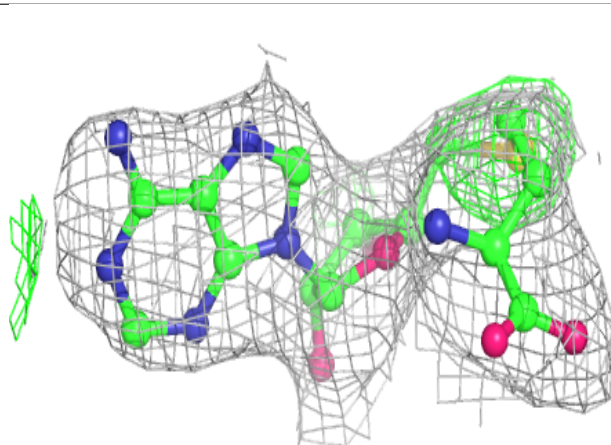
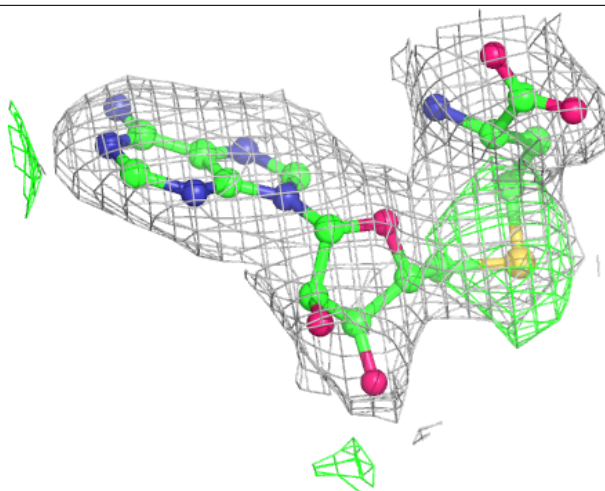
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
6	ZN	F	1003	1/1	0.99	0.03	65,65,65,65	0
6	ZN	F	1004	1/1	0.99	0.03	65,65,65,65	0
6	ZN	F	1008	1/1	0.99	0.03	54,54,54,54	0
6	ZN	K	1001	1/1	0.99	0.05	69,69,69,69	0
6	ZN	A	1002	1/1	0.99	0.03	64,64,64,64	0
6	ZN	K	1004	1/1	0.99	0.04	70,70,70,70	0
6	ZN	K	1007	1/1	0.99	0.03	54,54,54,54	0
6	ZN	Q	1001	1/1	0.99	0.04	60,60,60,60	0
6	ZN	Q	1002	1/1	0.99	0.04	128,128,128,128	0
6	ZN	Q	1003	1/1	0.99	0.02	69,69,69,69	0
6	ZN	Q	1004	1/1	0.99	0.03	77,77,77,77	0
6	ZN	Q	1005	1/1	0.99	0.02	72,72,72,72	0
6	ZN	Q	1006	1/1	0.99	0.04	66,66,66,66	0
6	ZN	Q	1007	1/1	0.99	0.05	54,54,54,54	0
6	ZN	A	1003	1/1	0.99	0.04	51,51,51,51	0
6	ZN	A	1004	1/1	0.99	0.06	63,63,63,63	0
6	ZN	A	1005	1/1	0.99	0.02	56,56,56,56	0
6	ZN	F	1002	1/1	0.99	0.03	110,110,110,110	0
6	ZN	K	1008	1/1	1.00	0.04	59,59,59,59	0
6	ZN	F	1005	1/1	1.00	0.02	67,67,67,67	0
6	ZN	F	1006	1/1	1.00	0.04	60,60,60,60	0
6	ZN	F	1007	1/1	1.00	0.03	54,54,54,54	0
6	ZN	A	1008	1/1	1.00	0.03	58,58,58,58	0
6	ZN	F	1001	1/1	1.00	0.02	63,63,63,63	0
6	ZN	A	1001	1/1	1.00	0.02	54,54,54,54	0
6	ZN	K	1003	1/1	1.00	0.03	66,66,66,66	0
6	ZN	Q	1008	1/1	1.00	0.03	50,50,50,50	0
6	ZN	A	1006	1/1	1.00	0.03	58,58,58,58	0
6	ZN	K	1005	1/1	1.00	0.02	74,74,74,74	0
6	ZN	K	1006	1/1	1.00	0.03	63,63,63,63	0
6	ZN	A	1007	1/1	1.00	0.04	52,52,52,52	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.

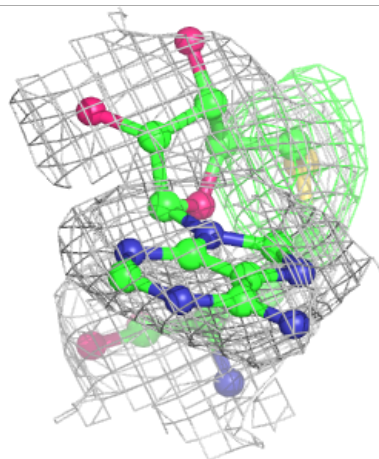
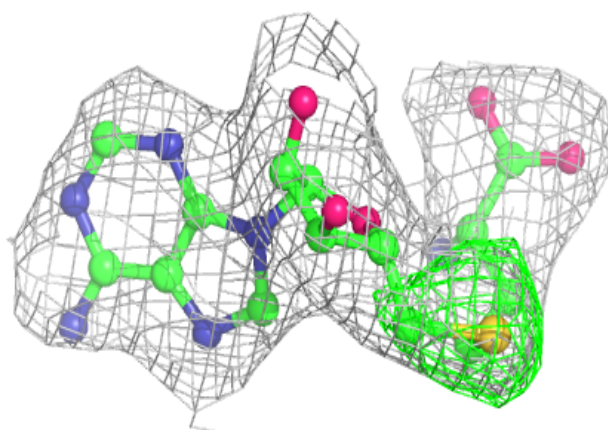
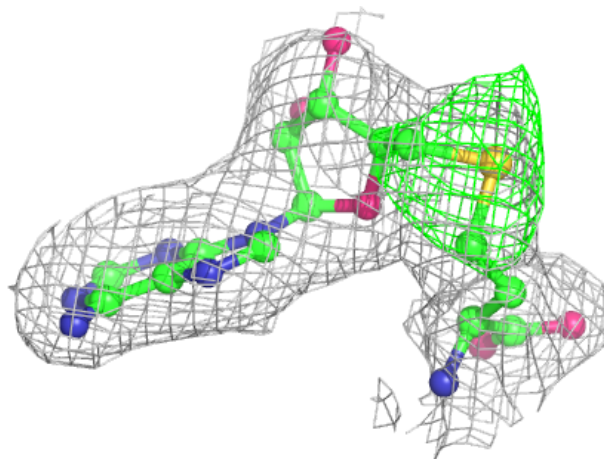
Electron density around SAH K 1009:

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



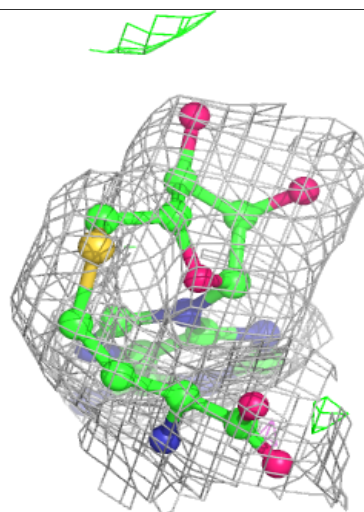
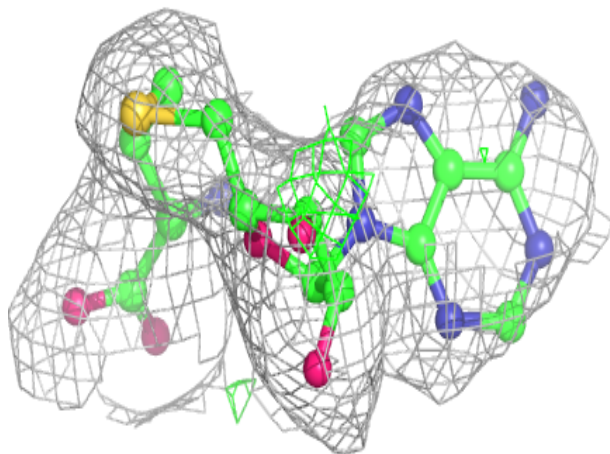
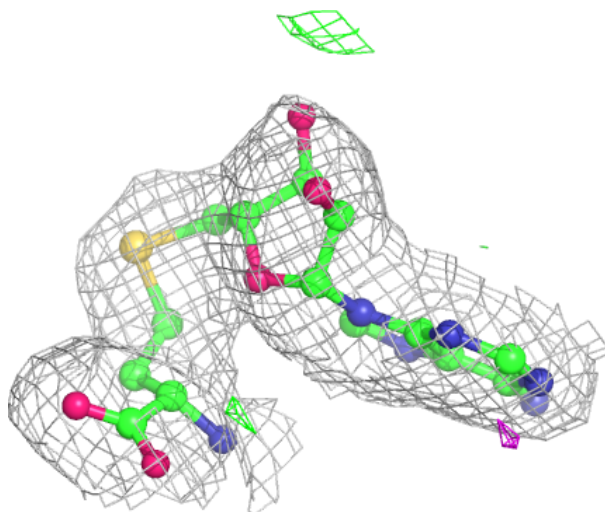
Electron density around SAH Q 1009:

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



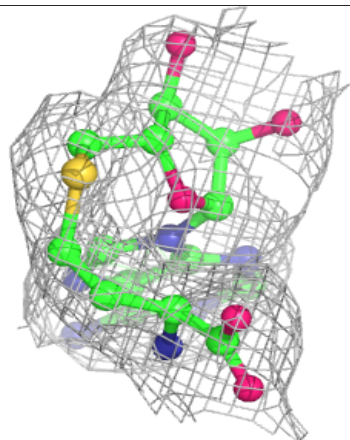
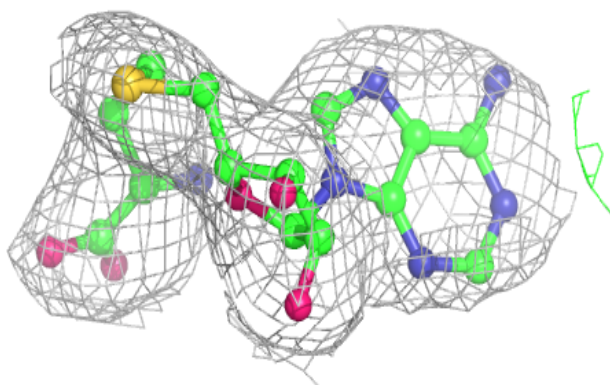
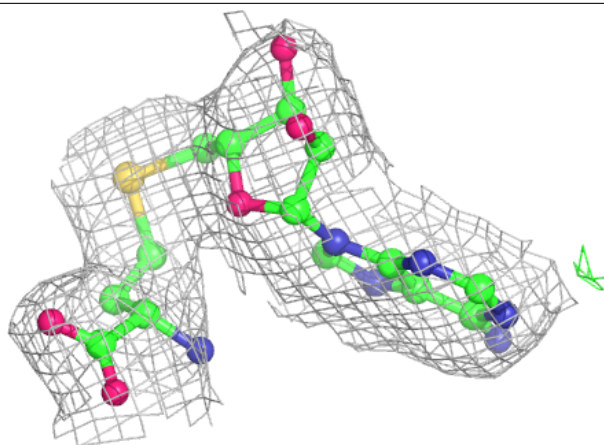
Electron density around SAH F 1009:

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



Electron density around SAH A 1009:

$2mF_o-DF_c$ (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.