



wwPDB EM Map/Model Validation Report ⓘ

Apr 10, 2016 – 01:39 PM BST

PDB ID : 2J37
EMDB ID: : EMD-1264
Title : MODEL OF MAMMALIAN SRP BOUND TO 80S RNCS
Authors : Halic, M.; Blau, M.; Becker, T.; Mielke, T.; Pool, M.R.; Wild, K.; Sinning, I.; Beckmann, R.
Deposited on : 2006-08-18
Resolution : 8.00 Å(reported)

This is a wwPDB EM Map/Model Validation Report for a publicly released PDB/EMDB entry.
For rigid body fitted models, validation errors reported here could stem from errors in the original structure(s) used in the fitting.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
<http://wwpdb.org/validation/2016/EMValidationReportHelp>

MolProbity : 4.02b-467
Mogul : unknown
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : trunk27241

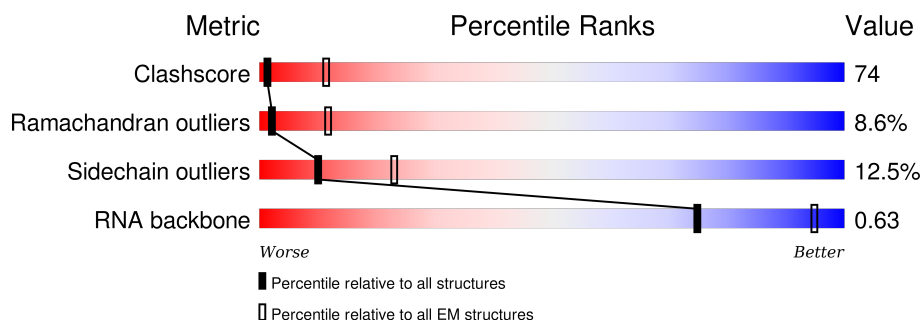
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 8.00 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)	EM structures (#Entries)
Clashscore	114402	924
Ramachandran outliers	111179	726
Sidechain outliers	111093	686
RNA backbone	3027	244

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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 $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	4	152	16% 22% 9% 6% 47%
2	5	124	16% 24% 8% • 48%
3	6	123	22% 27% 9% 8% 34%
4	A	128	37% 51% 13%
5	B	108	40% 52% 6% ••
6	S	17	18% 82%
7	W	504	28% 40% 18% 9% 5%
8	Z	280	45% 43% 10% •

2 Entry composition [i](#)

There are 8 unique types of molecules in this entry. The entry contains 15110 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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 60S RIBOSOMAL PROTEIN L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	4	81	Total	C	N	O	S	0	0
			652	423	108	119	2		

- Molecule 2 is a protein called RIBOSOMAL PROTEIN L35.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	5	64	Total	C	N	O	0	0
			504	314	99	91		

- Molecule 3 is a protein called RIBOSOMAL PROTEIN L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	6	81	Total	C	N	O	S	0	0
			671	416	138	115	2		

- Molecule 4 is a RNA chain called SRP RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	A	128	Total	C	N	O	P	0	0
			2748	1226	511	884	127		

- Molecule 5 is a protein called SIGNAL RECOGNITION PARTICLE 19 KDA PROTEIN (SRP19).

Mol	Chain	Residues	Atoms					AltConf	Trace
5	B	107	Total	C	N	O	S	0	0
			869	549	159	155	6		

- Molecule 6 is a protein called SIGNAL SEQUENCE.

Mol	Chain	Residues	Atoms				AltConf	Trace
6	S	17	Total	C	N	O	0	0
			141	97	22	22		

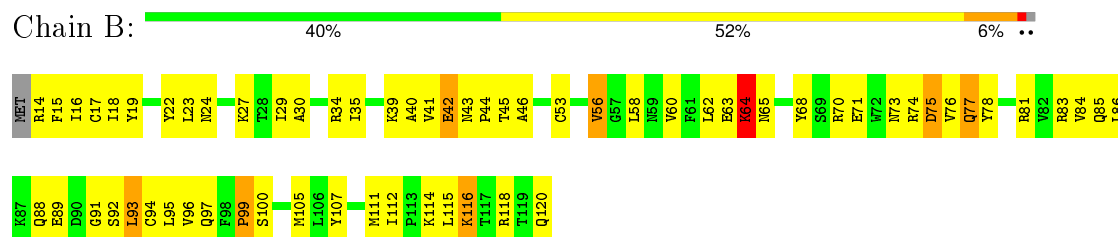
- Molecule 7 is a protein called SIGNAL RECOGNITION PARTICLE 54 KDA PROTEIN (SRP54).

Mol	Chain	Residues	Atoms					AltConf	Trace
7	W	479	Total	C	N	O	S	0	0
			3517	2196	614	683	24		

- Molecule 8 is a RNA chain called RIBOSOMAL RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	Z	280	Total	C	N	O	P	0	0
			6008	2681	1115	1932	280		

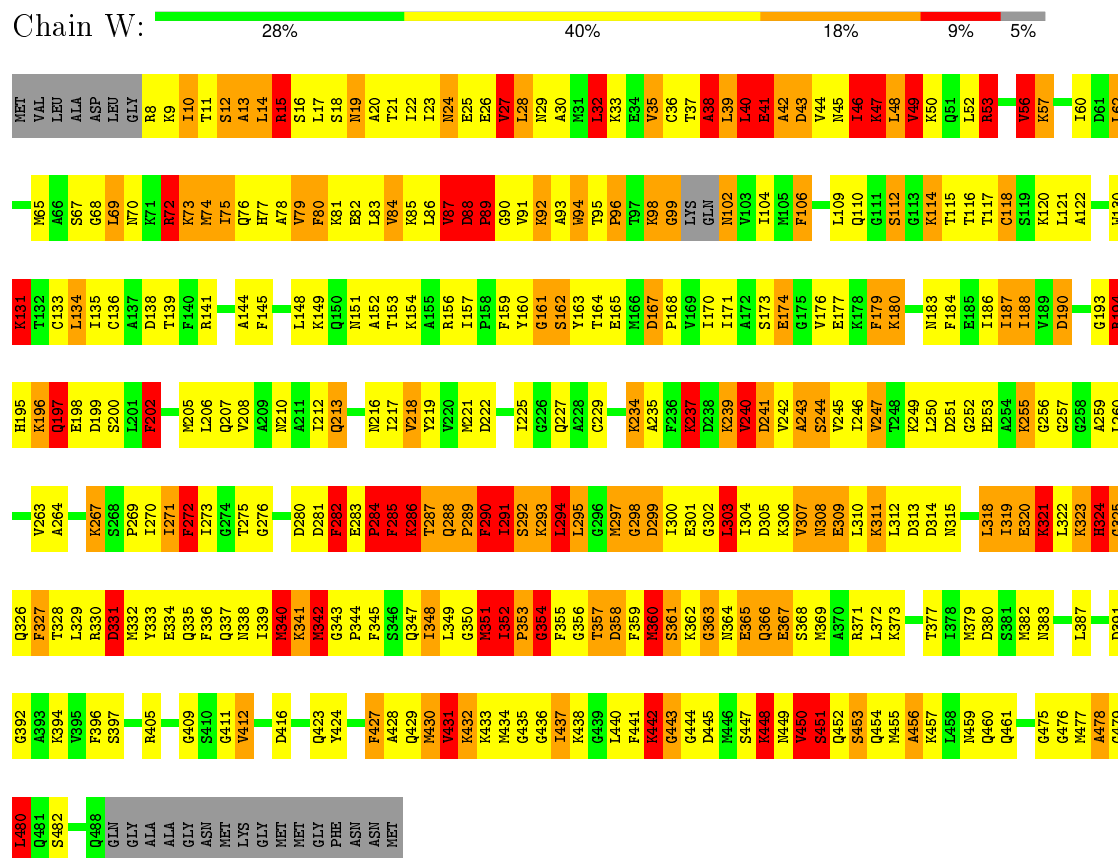
- Molecule 5: SIGNAL RECOGNITION PARTICLE 19 KDA PROTEIN (SRP19)



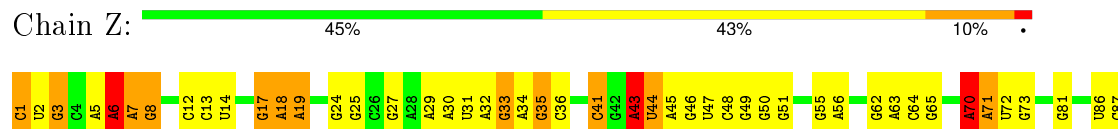
- Molecule 6: SIGNAL SEQUENCE



- Molecule 7: SIGNAL RECOGNITION PARTICLE 54 KDA PROTEIN (SRP54)



- Molecule 8: RIBOSOMAL RNA






4 Experimental information

Property	Value	Source
Reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of images	Not provided	Depositor
Resolution determination method	Not provided	Depositor
CTF correction method	Not provided	Depositor
Microscope	FEI TECNAI F30	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	Not provided	Depositor
Minimum defocus (nm)	Not provided	Depositor
Maximum defocus (nm)	Not provided	Depositor
Magnification	Not provided	Depositor
Image detector	Not provided	Depositor

5 Model quality

5.1 Standard geometry

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 >2	RMSZ	# Z >2
1	4	1.34	7/658 (1.1%)	3.28	37/879 (4.2%)
2	5	1.39	4/506 (0.8%)	2.45	20/673 (3.0%)
3	6	1.35	3/680 (0.4%)	1.95	24/906 (2.6%)
4	A	0.46	0/3077	0.71	0/4800
5	B	0.46	0/883	0.70	0/1188
6	S	0.54	0/145	0.72	0/197
7	W	4.09	89/3545 (2.5%)	3.39	180/4707 (3.8%)
8	Z	0.45	0/6723	0.73	6/10473 (0.1%)
All	All	2.00	103/16217 (0.6%)	1.83	267/23823 (1.1%)

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	4	2	7
2	5	0	4
3	6	0	11
4	A	0	3
7	W	3	38
8	Z	0	6
All	All	5	69

All (103) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	W	284	PRO	N-CD	139.54	3.43	1.47
7	W	92	LYS	CB-CG	66.27	3.31	1.52
7	W	294	LEU	CB-CG	61.58	3.31	1.52
7	W	331	ASP	CB-CG	57.69	2.72	1.51
7	W	286	LYS	CB-CG	55.40	3.02	1.52
7	W	340	MET	CB-CG	48.81	3.07	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	W	342	MET	CB-CG	45.13	2.95	1.51
7	W	285	PHE	CB-CG	44.49	2.27	1.51
7	W	430	MET	CB-CG	44.00	2.92	1.51
7	W	431	VAL	CB-CG1	39.90	2.36	1.52
7	W	321	LYS	C-N	-33.57	0.56	1.34
7	W	292	SER	CB-OG	27.86	1.78	1.42
7	W	239	LYS	CA-CB	-27.78	0.92	1.53
7	W	293	LYS	CB-CG	24.62	2.19	1.52
7	W	202	PHE	CE1-CZ	-19.63	1.00	1.37
7	W	365	GLU	C-N	19.36	1.78	1.34
7	W	366	GLN	N-CA	-19.02	1.08	1.46
7	W	239	LYS	CB-CG	18.78	2.03	1.52
7	W	289	PRO	N-CD	18.58	1.73	1.47
7	W	351	MET	C-N	-18.39	0.91	1.34
7	W	354	GLY	C-N	-18.11	0.92	1.34
7	W	360	MET	C-N	-17.82	0.93	1.34
7	W	298	GLY	C-N	17.15	1.73	1.34
7	W	202	PHE	CE2-CZ	16.55	1.68	1.37
7	W	357	THR	C-N	-15.85	0.97	1.34
7	W	432	LYS	CB-CG	15.46	1.94	1.52
7	W	341	LYS	CB-CG	-15.40	1.10	1.52
7	W	40	LEU	C-N	14.14	1.66	1.34
2	5	39	ALA	C-N	-14.08	1.01	1.34
7	W	287	THR	CB-CG2	-13.52	1.07	1.52
7	W	363	GLY	C-N	-12.98	1.04	1.34
7	W	41	GLU	N-CA	12.96	1.72	1.46
7	W	40	LEU	CA-C	-12.68	1.20	1.52
7	W	297	MET	CB-CG	12.31	1.90	1.51
7	W	289	PRO	CG-CD	-12.27	1.10	1.50
7	W	303	LEU	C-N	12.11	1.61	1.34
7	W	431	VAL	CB-CG2	-11.93	1.27	1.52
7	W	112	SER	CB-OG	-11.79	1.26	1.42
7	W	243	ALA	C-N	-11.51	1.07	1.34
7	W	40	LEU	CA-CB	11.23	1.79	1.53
7	W	448	LYS	C-N	-11.12	1.08	1.34
7	W	161	GLY	C-N	10.80	1.58	1.34
7	W	318	LEU	C-N	10.41	1.57	1.34
7	W	282	PHE	CD2-CE2	-10.00	1.19	1.39
7	W	240	VAL	C-N	-9.92	1.11	1.34
2	5	35	ILE	C-N	9.74	1.56	1.34
7	W	40	LEU	CB-CG	9.52	1.80	1.52
7	W	348	ILE	C-N	-9.41	1.12	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	W	202	PHE	CD2-CE2	-9.35	1.20	1.39
7	W	99	GLY	CA-C	-9.24	1.37	1.51
7	W	202	PHE	CB-CG	-9.17	1.35	1.51
1	4	125	ARG	CZ-NH2	9.02	1.44	1.33
7	W	239	LYS	CG-CD	8.98	1.82	1.52
7	W	299	ASP	C-N	8.94	1.54	1.34
7	W	41	GLU	CA-CB	8.87	1.73	1.53
7	W	272	PHE	CA-CB	-8.30	1.35	1.53
1	4	131	LYS	CD-CE	8.06	1.71	1.51
1	4	140	TYR	CE2-CZ	-7.89	1.28	1.38
7	W	188	ILE	CB-CG2	-7.80	1.28	1.52
7	W	42	ALA	CA-C	-7.80	1.32	1.52
7	W	442	LYS	C-N	-7.78	1.19	1.33
7	W	237	LYS	CE-NZ	-7.68	1.29	1.49
7	W	480	LEU	C-N	7.65	1.51	1.34
7	W	41	GLU	CB-CG	7.32	1.66	1.52
7	W	197	GLN	C-O	-7.17	1.09	1.23
7	W	291	ILE	CB-CG2	7.09	1.74	1.52
7	W	40	LEU	N-CA	7.03	1.60	1.46
7	W	131	LYS	C-N	6.95	1.50	1.34
1	4	135	LYS	CD-CE	6.86	1.68	1.51
7	W	354	GLY	N-CA	6.69	1.56	1.46
7	W	437	ILE	C-N	-6.64	1.18	1.34
7	W	106	PHE	CE1-CZ	-6.63	1.24	1.37
7	W	40	LEU	C-O	6.51	1.35	1.23
7	W	272	PHE	CG-CD2	6.42	1.48	1.38
7	W	272	PHE	CG-CD1	6.41	1.48	1.38
7	W	106	PHE	CD1-CE1	-6.34	1.26	1.39
7	W	451	SER	C-N	-6.33	1.19	1.34
7	W	282	PHE	CD1-CE1	-6.29	1.26	1.39
2	5	42	GLY	C-N	6.25	1.48	1.34
7	W	287	THR	CB-OG1	6.24	1.55	1.43
7	W	284	PRO	CB-CG	6.22	1.81	1.50
7	W	244	SER	N-CA	-6.08	1.34	1.46
2	5	34	ARG	CZ-NH2	6.01	1.40	1.33
7	W	174	GLU	CA-CB	-5.93	1.40	1.53
7	W	367	GLU	N-CA	5.90	1.58	1.46
7	W	194	ARG	CZ-NH2	-5.78	1.25	1.33
1	4	131	LYS	CE-NZ	5.78	1.63	1.49
7	W	218	VAL	CB-CG2	-5.73	1.40	1.52
7	W	102	ASN	N-CA	-5.65	1.35	1.46
3	6	85	ARG	CZ-NH1	5.62	1.40	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	4	135	LYS	CE-NZ	5.59	1.63	1.49
7	W	352	ILE	N-CA	-5.58	1.35	1.46
7	W	118	CYS	CA-CB	-5.50	1.41	1.53
7	W	324	HIS	C-N	-5.44	1.23	1.33
3	6	58	ARG	CZ-NH2	5.40	1.40	1.33
3	6	27	ARG	CZ-NH1	5.36	1.40	1.33
1	4	125	ARG	CD-NE	-5.31	1.37	1.46
7	W	289	PRO	CB-CG	5.28	1.76	1.50
7	W	94	TRP	CE2-CZ2	-5.26	1.30	1.39
7	W	247	VAL	CB-CG1	-5.25	1.41	1.52
7	W	96	PRO	N-CD	5.21	1.55	1.47
7	W	106	PHE	CD2-CE2	-5.17	1.28	1.39
7	W	84	VAL	C-N	5.07	1.45	1.34

All (267) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	W	285	PHE	CB-CG-CD1	-73.05	69.66	120.80
1	4	125	ARG	NE-CZ-NH2	-72.81	83.89	120.30
7	W	285	PHE	CB-CG-CD2	66.74	167.52	120.80
7	W	352	ILE	C-N-CD	-49.65	11.38	120.60
7	W	284	PRO	CA-N-CD	-43.64	50.41	111.50
7	W	331	ASP	CB-CG-OD1	-38.10	84.00	118.30
7	W	298	GLY	O-C-N	-36.68	64.01	122.70
7	W	430	MET	CA-CB-CG	-34.60	54.48	113.30
7	W	340	MET	CA-CB-CG	-34.59	54.50	113.30
7	W	480	LEU	O-C-N	-34.09	68.15	122.70
7	W	321	LYS	O-C-N	-33.85	68.54	122.70
7	W	40	LEU	CB-CA-C	-32.71	48.04	110.20
7	W	342	MET	CA-CB-CG	-31.50	59.75	113.30
2	5	35	ILE	O-C-N	-29.92	74.83	122.70
7	W	331	ASP	CB-CG-OD2	28.38	143.84	118.30
7	W	40	LEU	O-C-N	25.74	163.89	122.70
7	W	285	PHE	CB-CA-C	25.57	161.53	110.40
7	W	321	LYS	CA-C-N	25.23	172.69	117.20
7	W	303	LEU	CB-CG-CD2	-24.83	68.79	111.00
7	W	202	PHE	CD1-CE1-CZ	-24.73	90.43	120.10
7	W	432	LYS	CA-CB-CG	-23.30	62.15	113.40
7	W	442	LYS	O-C-N	-22.92	84.23	123.20
7	W	437	ILE	CA-C-N	-22.05	68.70	117.20
7	W	303	LEU	CB-CG-CD1	21.66	147.81	111.00
7	W	285	PHE	CG-CD2-CE2	-21.33	97.34	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	W	294	LEU	CA-CB-CG	-21.06	66.87	115.30
7	W	287	THR	CA-CB-CG2	20.59	141.23	112.40
1	4	125	ARG	NE-CZ-NH1	20.51	130.55	120.30
7	W	99	GLY	CA-C-O	20.50	157.50	120.60
7	W	293	LYS	CA-CB-CG	-20.42	68.47	113.40
7	W	286	LYS	CB-CG-CD	-20.37	58.63	111.60
2	5	34	ARG	NE-CZ-NH1	-20.27	110.16	120.30
7	W	40	LEU	CA-C-O	-20.15	77.79	120.10
7	W	285	PHE	CA-CB-CG	-20.09	65.70	113.90
7	W	431	VAL	CA-CB-CG1	-19.98	80.94	110.90
7	W	294	LEU	CB-CG-CD1	-19.96	77.06	111.00
7	W	431	VAL	CG1-CB-CG2	-18.78	80.85	110.90
7	W	303	LEU	O-C-N	-18.37	93.31	122.70
7	W	340	MET	O-C-N	-18.35	93.34	122.70
7	W	106	PHE	CD1-CE1-CZ	18.26	142.01	120.10
7	W	92	LYS	CA-CB-CG	-17.91	74.00	113.40
7	W	84	VAL	O-C-N	17.59	150.84	122.70
2	5	42	GLY	O-C-N	17.58	150.82	122.70
7	W	324	HIS	O-C-N	-16.58	95.01	123.20
7	W	290	PHE	CB-CG-CD2	-16.50	109.25	120.80
2	5	39	ALA	C-N-CA	16.20	162.21	121.70
7	W	27	VAL	CG1-CB-CG2	-16.19	85.00	110.90
7	W	240	VAL	O-C-N	-15.73	97.53	122.70
7	W	363	GLY	O-C-N	-15.36	98.13	122.70
7	W	331	ASP	CA-CB-CG	-15.18	80.00	113.40
7	W	363	GLY	C-N-CA	14.96	159.11	121.70
7	W	365	GLU	CA-C-N	-14.72	84.81	117.20
7	W	294	LEU	CB-CG-CD2	14.68	135.95	111.00
3	6	18	ARG	NE-CZ-NH2	-14.67	112.96	120.30
7	W	357	THR	C-N-CA	-14.49	85.47	121.70
2	5	39	ALA	O-C-N	-14.39	99.67	122.70
7	W	285	PHE	CZ-CE2-CD2	14.23	137.18	120.10
7	W	285	PHE	N-CA-CB	-14.20	85.04	110.60
7	W	284	PRO	CB-CG-CD	-14.12	51.44	106.50
7	W	286	LYS	CA-CB-CG	-13.68	83.30	113.40
7	W	40	LEU	N-CA-C	-13.65	74.16	111.00
2	5	43	SER	N-CA-CB	-13.21	90.69	110.50
7	W	348	ILE	O-C-N	13.06	143.59	122.70
7	W	88	ASP	C-N-CD	-13.05	91.90	120.60
3	6	18	ARG	NE-CZ-NH1	12.94	126.77	120.30
7	W	342	MET	CB-CG-SD	12.90	151.09	112.40
7	W	24	ASN	CB-CA-C	-12.83	84.75	110.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	W	243	ALA	O-C-N	-12.80	102.22	122.70
7	W	197	GLN	O-C-N	-12.52	102.66	122.70
1	4	125	ARG	NH1-CZ-NH2	12.50	133.15	119.40
7	W	437	ILE	C-N-CA	-12.49	90.47	121.70
7	W	239	LYS	CD-CE-NZ	12.40	140.23	111.70
7	W	480	LEU	CA-C-N	-11.92	90.97	117.20
2	5	35	ILE	CA-C-N	11.89	143.36	117.20
7	W	321	LYS	C-N-CA	11.84	151.29	121.70
7	W	92	LYS	CB-CG-CD	-11.82	80.86	111.60
7	W	293	LYS	CB-CG-CD	-11.55	81.57	111.60
7	W	202	PHE	CZ-CE2-CD2	-11.53	106.26	120.10
7	W	40	LEU	C-N-CA	11.53	150.53	121.70
7	W	351	MET	C-N-CA	11.51	150.48	121.70
2	5	42	GLY	CA-C-N	-11.45	92.01	117.20
1	4	90	ASN	CB-CG-OD1	-11.35	98.89	121.60
7	W	289	PRO	CA-N-CD	-11.27	95.72	111.50
7	W	202	PHE	CB-CG-CD2	-11.23	112.94	120.80
7	W	84	VAL	CA-C-N	-11.22	92.51	117.20
7	W	72	ARG	NE-CZ-NH1	11.22	125.91	120.30
7	W	285	PHE	CE1-CZ-CE2	-11.20	99.83	120.00
1	4	141	ASP	C-N-CA	11.16	149.60	121.70
7	W	348	ILE	CA-C-N	-11.03	92.93	117.20
7	W	49	VAL	CA-CB-CG2	-10.94	94.48	110.90
2	5	43	SER	N-CA-C	10.90	140.44	111.00
7	W	348	ILE	C-N-CA	-10.89	94.47	121.70
7	W	340	MET	CB-CG-SD	-10.86	79.81	112.40
7	W	40	LEU	CA-C-N	-10.58	93.92	117.20
7	W	366	GLN	N-CA-C	10.47	139.26	111.00
7	W	106	PHE	CG-CD1-CE1	-10.43	109.33	120.80
7	W	324	HIS	C-N-CA	10.31	143.96	122.30
7	W	366	GLN	CB-CA-C	-10.12	90.15	110.40
3	6	52	MET	CG-SD-CE	-10.06	84.10	100.20
7	W	357	THR	CA-C-N	-9.93	95.36	117.20
2	5	43	SER	C-N-CA	9.85	146.31	121.70
1	4	131	LYS	CD-CE-NZ	9.66	133.93	111.70
2	5	17	ASP	CB-CG-OD2	9.59	126.94	118.30
1	4	142	ALA	CB-CA-C	-9.59	95.72	110.10
7	W	290	PHE	CB-CG-CD1	9.56	127.49	120.80
1	4	101	ASP	C-N-CA	9.47	145.37	121.70
7	W	282	PHE	CD1-CE1-CZ	-9.37	108.86	120.10
1	4	115	ILE	CA-CB-CG1	9.31	128.69	111.00
7	W	363	GLY	CA-C-N	9.24	137.53	117.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	W	480	LEU	C-N-CA	9.15	144.58	121.70
7	W	87	VAL	C-N-CA	9.09	144.42	121.70
2	5	39	ALA	CA-C-N	8.98	136.96	117.20
7	W	324	HIS	CA-C-N	8.98	134.15	116.20
2	5	57	ARG	NE-CZ-NH1	-8.93	115.83	120.30
1	4	101	ASP	N-CA-C	8.87	134.96	111.00
3	6	57	VAL	CB-CA-C	8.61	127.77	111.40
7	W	41	GLU	CB-CA-C	-8.59	93.23	110.40
7	W	303	LEU	CA-C-N	-8.51	98.48	117.20
7	W	341	LYS	CB-CG-CD	-8.51	89.49	111.60
1	4	145	VAL	CA-CB-CG2	-8.48	98.17	110.90
7	W	190	ASP	CB-CG-OD1	-8.47	110.68	118.30
7	W	56	VAL	CG1-CB-CG2	-8.38	97.50	110.90
8	Z	1	C	C2'-C3'-O3'	8.35	127.86	109.50
7	W	106	PHE	CE1-CZ-CE2	-8.33	105.01	120.00
7	W	327	PHE	O-C-N	8.33	136.02	122.70
7	W	239	LYS	CA-CB-CG	8.32	131.71	113.40
1	4	115	ILE	CA-CB-CG2	-8.20	94.51	110.90
1	4	140	TYR	CG-CD1-CE1	-8.19	114.75	121.30
8	Z	70	A	C2'-C3'-O3'	8.17	127.47	109.50
1	4	135	LYS	CA-CB-CG	8.11	131.25	113.40
7	W	41	GLU	CA-CB-CG	8.08	131.18	113.40
2	5	44	LYS	N-CA-CB	8.05	125.09	110.60
7	W	80	PHE	O-C-N	8.04	135.56	122.70
7	W	289	PRO	N-CA-CB	8.03	112.93	103.30
3	6	58	ARG	NE-CZ-NH2	-8.02	116.29	120.30
7	W	41	GLU	N-CA-C	8.01	132.63	111.00
1	4	131	LYS	CG-CD-CE	8.00	135.88	111.90
7	W	212	ILE	O-C-N	-7.98	109.93	122.70
7	W	46	ILE	O-C-N	-7.96	109.95	122.70
7	W	49	VAL	CG1-CB-CG2	-7.93	98.22	110.90
3	6	90	GLU	CA-CB-CG	7.87	130.72	113.40
1	4	90	ASN	CB-CG-ND2	7.87	135.58	116.70
7	W	448	LYS	O-C-N	-7.76	110.29	122.70
7	W	430	MET	CB-CG-SD	-7.70	89.31	112.40
7	W	354	GLY	C-N-CA	7.68	140.89	121.70
7	W	291	ILE	CG1-CB-CG2	-7.64	94.59	111.40
7	W	46	ILE	N-CA-C	-7.62	90.44	111.00
7	W	365	GLU	O-C-N	-7.61	110.52	122.70
7	W	42	ALA	N-CA-CB	7.57	120.69	110.10
7	W	318	LEU	O-C-N	7.52	134.73	122.70
8	Z	170	U	C2'-C3'-O3'	7.47	125.94	109.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	W	289	PRO	CA-CB-CG	-7.45	89.84	104.00
3	6	28	LEU	CB-CA-C	-7.42	96.11	110.20
7	W	167	ASP	O-C-N	-7.38	107.08	121.10
1	4	135	LYS	CD-CE-NZ	7.33	128.56	111.70
7	W	49	VAL	CA-CB-CG1	7.31	121.86	110.90
7	W	295	LEU	CB-CG-CD2	-7.30	98.59	111.00
1	4	101	ASP	CA-C-N	-7.29	101.17	117.20
7	W	292	SER	CA-CB-OG	-7.28	91.55	111.20
7	W	202	PHE	CG-CD2-CE2	-7.27	112.81	120.80
7	W	291	ILE	CA-CB-CG1	-7.26	97.21	111.00
7	W	202	PHE	CE1-CZ-CE2	7.25	133.06	120.00
1	4	135	LYS	CB-CG-CD	7.22	130.37	111.60
7	W	456	ALA	O-C-N	7.11	134.08	122.70
2	5	43	SER	O-C-N	7.10	134.06	122.70
1	4	101	ASP	CB-CG-OD2	-7.07	111.94	118.30
1	4	119	LYS	CD-CE-NZ	7.07	127.95	111.70
3	6	52	MET	CA-CB-CG	7.03	125.24	113.30
3	6	85	ARG	CB-CA-C	-7.02	96.36	110.40
7	W	239	LYS	CB-CG-CD	6.97	129.73	111.60
7	W	282	PHE	CE1-CZ-CE2	6.95	132.51	120.00
2	5	34	ARG	NH1-CZ-NH2	6.94	127.03	119.40
8	Z	43	A	C2'-C3'-O3'	6.93	124.80	113.70
7	W	41	GLU	N-CA-CB	6.93	123.08	110.60
7	W	327	PHE	CA-C-N	-6.89	102.03	117.20
3	6	85	ARG	N-CA-CB	6.89	123.01	110.60
7	W	53	ARG	NE-CZ-NH2	6.89	123.74	120.30
3	6	23	ASN	N-CA-C	-6.84	92.54	111.00
7	W	99	GLY	N-CA-C	-6.83	96.02	113.10
3	6	27	ARG	NE-CZ-NH1	-6.80	116.90	120.30
7	W	303	LEU	CA-CB-CG	6.74	130.80	115.30
3	6	85	ARG	NE-CZ-NH1	-6.71	116.95	120.30
7	W	243	ALA	CA-C-O	6.66	134.09	120.10
7	W	431	VAL	CA-CB-CG2	-6.64	100.94	110.90
7	W	84	VAL	C-N-CA	-6.63	105.13	121.70
7	W	167	ASP	CA-C-N	6.62	135.62	117.10
1	4	141	ASP	N-CA-C	6.58	128.75	111.00
7	W	102	ASN	N-CA-C	-6.55	93.30	111.00
1	4	70	TYR	CB-CG-CD1	6.51	124.91	121.00
7	W	42	ALA	CB-CA-C	-6.48	100.38	110.10
1	4	141	ASP	CA-C-N	-6.46	102.98	117.20
7	W	89	PRO	CB-CA-C	6.44	128.09	112.00
7	W	53	ARG	NE-CZ-NH1	-6.41	117.10	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	W	46	ILE	CA-C-N	6.39	131.27	117.20
3	6	80	ARG	N-CA-C	-6.32	93.94	111.00
1	4	115	ILE	CB-CA-C	-6.30	98.99	111.60
7	W	38	ALA	CB-CA-C	-6.29	100.66	110.10
7	W	42	ALA	O-C-N	6.25	132.70	122.70
3	6	90	GLU	N-CA-CB	6.23	121.82	110.60
2	5	17	ASP	CB-CG-OD1	-6.21	112.71	118.30
7	W	80	PHE	CA-C-N	-6.17	103.63	117.20
7	W	432	LYS	CB-CG-CD	-6.07	95.82	111.60
7	W	43	ASP	CB-CG-OD2	-6.03	112.87	118.30
2	5	43	SER	CA-C-N	-6.02	103.95	117.20
7	W	197	GLN	OE1-CD-NE2	-6.00	108.09	121.90
1	4	140	TYR	CG-CD2-CE2	-5.99	116.51	121.30
1	4	141	ASP	O-C-N	5.97	132.26	122.70
7	W	318	LEU	CA-C-N	-5.93	104.14	117.20
7	W	367	GLU	N-CA-CB	-5.90	99.98	110.60
7	W	450	VAL	CA-C-N	-5.88	104.28	117.20
7	W	40	LEU	N-CA-CB	5.85	122.11	110.40
1	4	89	ASN	CB-CG-OD1	5.80	133.20	121.60
7	W	179	PHE	CD1-CE1-CZ	5.79	127.05	120.10
7	W	442	LYS	CA-C-N	5.76	127.72	116.20
3	6	94	LYS	N-CA-CB	5.73	120.92	110.60
7	W	24	ASN	CB-CG-OD1	-5.72	110.15	121.60
1	4	125	ARG	CB-CA-C	5.71	121.83	110.40
2	5	41	SER	CB-CA-C	5.71	120.96	110.10
1	4	102	LYS	CB-CA-C	-5.70	99.00	110.40
7	W	40	LEU	CB-CG-CD1	5.69	120.67	111.00
8	Z	112	A	C2'-C3'-O3'	5.67	122.78	113.70
2	5	57	ARG	NE-CZ-NH2	5.66	123.13	120.30
3	6	85	ARG	NE-CZ-NH2	5.66	123.13	120.30
7	W	32	LEU	CB-CG-CD1	5.61	120.53	111.00
7	W	24	ASN	CA-CB-CG	5.59	125.71	113.40
7	W	39	LEU	C-N-CA	5.59	135.68	121.70
1	4	125	ARG	N-CA-CB	5.54	120.57	110.60
7	W	35	VAL	CA-CB-CG1	5.53	119.20	110.90
3	6	58	ARG	NE-CZ-NH1	5.51	123.05	120.30
3	6	96	GLU	N-CA-C	-5.50	96.15	111.00
1	4	124	ILE	N-CA-C	-5.49	96.17	111.00
1	4	140	TYR	CE1-CZ-OH	5.49	134.92	120.10
3	6	82	ARG	N-CA-C	-5.46	96.26	111.00
7	W	15	ARG	NE-CZ-NH2	5.44	123.02	120.30
3	6	88	ASN	N-CA-C	-5.43	96.35	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	W	288	GLN	C-N-CD	-5.42	108.67	120.60
7	W	282	PHE	CG-CD2-CE2	-5.42	114.84	120.80
7	W	450	VAL	O-C-N	5.41	131.36	122.70
1	4	123	LEU	CB-CG-CD1	5.39	120.17	111.00
7	W	13	ALA	N-CA-CB	5.39	117.64	110.10
7	W	320	GLU	O-C-N	5.39	131.32	122.70
7	W	24	ASN	O-C-N	-5.36	114.12	122.70
1	4	124	ILE	O-C-N	-5.36	114.13	122.70
7	W	243	ALA	CA-C-N	-5.32	105.49	117.20
7	W	272	PHE	CB-CG-CD1	-5.32	117.08	120.80
7	W	456	ALA	CA-C-N	-5.32	105.51	117.20
7	W	134	LEU	CB-CG-CD1	-5.31	101.97	111.00
3	6	19	GLU	N-CA-C	-5.29	96.70	111.00
7	W	20	ALA	O-C-N	-5.29	114.24	122.70
1	4	101	ASP	N-CA-CB	5.26	120.07	110.60
3	6	52	MET	N-CA-C	-5.26	96.81	111.00
7	W	323	LYS	CB-CA-C	5.25	120.90	110.40
7	W	284	PRO	N-CA-CB	5.25	109.59	103.30
7	W	187	ILE	CB-CG1-CD1	5.24	128.57	113.90
7	W	311	LYS	N-CA-C	-5.20	96.95	111.00
7	W	24	ASN	N-CA-C	5.18	124.98	111.00
7	W	194	ARG	NE-CZ-NH1	5.17	122.89	120.30
7	W	194	ARG	NE-CZ-NH2	5.17	122.89	120.30
7	W	197	GLN	CA-C-N	5.17	128.57	117.20
1	4	119	LYS	CG-CD-CE	5.14	127.31	111.90
8	Z	255	A	C5'-C4'-C3'	5.14	124.22	116.00
7	W	47	LYS	N-CA-C	-5.11	97.20	111.00
7	W	290	PHE	N-CA-CB	-5.11	101.41	110.60
7	W	287	THR	CA-CB-OG1	-5.09	98.30	109.00
3	6	85	ARG	CD-NE-CZ	-5.09	116.48	123.60
7	W	72	ARG	NH1-CZ-NH2	-5.07	113.82	119.40
7	W	453	SER	O-C-N	5.01	130.71	122.70

All (5) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	4	125	ARG	CA
1	4	141	ASP	CA
7	W	40	LEU	CA
7	W	285	PHE	CA
7	W	287	THR	CB

All (69) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	4	101	ASP	Mainchain,Peptide
1	4	124	ILE	Peptide
1	4	125	ARG	Sidechain
1	4	140	TYR	Sidechain
1	4	141	ASP	Peptide
1	4	89	ASN	Peptide
2	5	35	ILE	Mainchain
2	5	39	ALA	Mainchain,Peptide
2	5	43	SER	Peptide
3	6	18	ARG	Sidechain
3	6	27	ARG	Sidechain
3	6	47	PHE	Sidechain
3	6	50	LYS	Peptide
3	6	51	ALA	Peptide
3	6	58	ARG	Sidechain
3	6	77	ARG	Sidechain
3	6	80	ARG	Sidechain
3	6	86	LYS	Peptide
3	6	87	ARG	Sidechain,Peptide
4	A	197	G	Sidechain
4	A	201	A	Sidechain
4	A	208	A	Sidechain
7	W	15	ARG	Sidechain
7	W	161	GLY	Mainchain
7	W	167	ASP	Peptide
7	W	202	PHE	Sidechain
7	W	240	VAL	Mainchain
7	W	243	ALA	Mainchain
7	W	272	PHE	Sidechain
7	W	282	PHE	Sidechain
7	W	285	PHE	Sidechain
7	W	290	PHE	Sidechain
7	W	303	LEU	Mainchain,Peptide
7	W	321	LYS	Mainchain
7	W	324	HIS	Mainchain
7	W	331	ASP	Sidechain
7	W	340	MET	Mainchain,Peptide
7	W	351	MET	Mainchain,Peptide
7	W	352	ILE	Mainchain
7	W	354	GLY	Peptide
7	W	357	THR	Mainchain
7	W	360	MET	Mainchain,Peptide

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Mol	Chain	Res	Type	Group
7	W	363	GLY	Mainchain,Peptide
7	W	437	ILE	Mainchain,Peptide
7	W	442	LYS	Mainchain
7	W	448	LYS	Mainchain,Peptide
7	W	450	VAL	Mainchain
7	W	451	SER	Mainchain,Peptide
7	W	46	ILE	Peptide
7	W	480	LEU	Mainchain,Peptide
7	W	87	VAL	Peptide
8	Z	196	G	Sidechain
8	Z	254	G	Sidechain
8	Z	3	G	Sidechain
8	Z	6	A	Sidechain
8	Z	81	G	Sidechain
8	Z	94	G	Sidechain

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	4	652	0	703	156	0
2	5	504	0	550	95	0
3	6	671	0	704	117	0
4	A	2748	0	1389	87	0
5	B	869	0	901	80	0
6	S	141	0	146	107	0
7	W	3517	0	3388	1251	0
8	Z	6008	0	3033	302	0
All	All	15110	0	10814	1922	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 74.

All (1922) 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)
7:W:432:LYS:HA	7:W:436:GLY:CA	1.16	1.63
1:4:89:ASN:CB	8:Z:172:C:C5'	1.80	1.60
7:W:52:LEU:CD1	7:W:86:LEU:HD21	1.18	1.57
7:W:87:VAL:HG22	7:W:257:GLY:CA	1.19	1.56
3:6:65:LYS:HD2	8:Z:64:C:C2'	1.23	1.56
3:6:68:TRP:HZ3	8:Z:46:G:C2	1.23	1.55
7:W:239:LYS:CD	7:W:239:LYS:CG	1.83	1.55
6:S:50:LEU:HD12	7:W:478:ALA:CA	1.09	1.55
7:W:52:LEU:CG	7:W:86:LEU:HD11	1.31	1.55
7:W:40:LEU:CB	7:W:40:LEU:CG	1.80	1.54
7:W:52:LEU:HG	7:W:86:LEU:CD1	1.11	1.54
1:4:89:ASN:CA	8:Z:172:C:H5''	1.32	1.54
6:S:58:THR:CG2	7:W:339:ILE:HD13	1.35	1.53
7:W:52:LEU:HD11	7:W:86:LEU:CD2	1.19	1.53
3:6:68:TRP:CZ3	8:Z:46:G:N3	1.78	1.51
7:W:52:LEU:HD21	7:W:86:LEU:CD2	1.25	1.50
7:W:41:GLU:CA	7:W:41:GLU:N	1.72	1.50
7:W:432:LYS:CA	7:W:432:LYS:CG	1.82	1.50
6:S:57:LEU:HD22	7:W:430:MET:CE	1.03	1.49
7:W:297:MET:CG	7:W:297:MET:CB	1.90	1.49
6:S:57:LEU:CD2	7:W:430:MET:CE	1.90	1.48
7:W:52:LEU:HD11	7:W:86:LEU:CG	1.39	1.48
8:Z:159:C:C4'	8:Z:213:A:H1'	1.41	1.48
3:6:68:TRP:HZ3	8:Z:46:G:N3	1.09	1.48
7:W:87:VAL:CG2	7:W:257:GLY:HA2	1.43	1.48
8:Z:159:C:C1'	8:Z:213:A:N3	1.74	1.47
7:W:52:LEU:CD2	7:W:86:LEU:CD2	1.92	1.46
8:Z:159:C:H1'	8:Z:213:A:C2	1.48	1.45
7:W:432:LYS:CB	7:W:432:LYS:CG	1.94	1.45
1:4:89:ASN:HB2	8:Z:172:C:C5'	1.35	1.45
7:W:332:MET:SD	7:W:424:TYR:CD1	2.10	1.45
2:5:34:ARG:CG	2:5:37:LYS:HZ3	1.28	1.44
7:W:430:MET:N	7:W:430:MET:CG	1.82	1.43
8:Z:159:C:H4'	8:Z:213:A:C1'	1.44	1.43
7:W:283:GLU:C	7:W:284:PRO:HB2	1.35	1.43
3:6:64:ASN:HD21	8:Z:48:C:C5'	1.32	1.43
6:S:63:VAL:HG11	7:W:361:SER:CB	1.49	1.42
6:S:62:THR:CG2	7:W:371:ARG:HD3	1.45	1.42
7:W:327:PHE:HB3	7:W:333:TYR:CD2	1.54	1.42
7:W:432:LYS:HG3	7:W:436:GLY:CA	1.50	1.41
1:4:89:ASN:HD22	8:Z:171:C:C3'	1.31	1.41
3:6:65:LYS:CD	8:Z:64:C:C2'	1.80	1.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:298:GLY:C	7:W:299:ASP:N	1.73	1.40
8:Z:159:C:C4'	8:Z:213:A:C1'	1.99	1.39
8:Z:159:C:H1'	8:Z:213:A:N3	1.22	1.38
7:W:429:GLN:O	7:W:432:LYS:CB	1.70	1.37
7:W:365:GLU:O	7:W:368:SER:N	1.57	1.36
3:6:64:ASN:ND2	8:Z:48:C:H5'	1.35	1.36
7:W:365:GLU:C	7:W:366:GLN:N	1.78	1.36
7:W:239:LYS:CG	7:W:239:LYS:CB	2.03	1.35
6:S:50:LEU:CD1	7:W:478:ALA:CA	1.97	1.35
7:W:16:SER:CA	7:W:17:LEU:HB3	1.22	1.34
7:W:77:HIS:O	7:W:81:LYS:CG	1.73	1.34
7:W:250:LEU:CD2	7:W:290:PHE:CZ	2.11	1.34
7:W:239:LYS:N	7:W:239:LYS:CB	1.86	1.33
7:W:432:LYS:CA	7:W:436:GLY:HA2	1.58	1.33
7:W:344:PRO:N	7:W:345:PHE:CD2	1.74	1.33
7:W:441:PHE:O	7:W:444:GLY:C	1.66	1.32
7:W:52:LEU:CD2	7:W:86:LEU:HD22	1.56	1.31
7:W:287:THR:O	7:W:291:ILE:HD12	1.22	1.31
7:W:293:LYS:C	7:W:294:LEU:CB	1.99	1.31
7:W:338:ASN:O	7:W:342:MET:CB	1.78	1.31
8:Z:160:G:H5'	8:Z:212:A:C4	1.64	1.31
7:W:271:ILE:HD12	7:W:272:PHE:CD1	1.66	1.30
7:W:314:ASP:OD2	7:W:319:ILE:HD11	1.13	1.30
7:W:285:PHE:CA	7:W:285:PHE:CG	2.14	1.30
3:6:68:TRP:CZ3	8:Z:46:G:N2	1.99	1.30
7:W:306:LYS:HA	7:W:347:GLN:NE2	1.47	1.30
7:W:88:ASP:CG	7:W:259:ALA:HB1	1.50	1.30
7:W:336:PHE:CD2	7:W:379:MET:HE1	1.64	1.29
7:W:87:VAL:O	7:W:259:ALA:CB	1.78	1.29
7:W:45:ASN:O	7:W:227:GLN:HG3	1.30	1.29
1:4:96:VAL:O	1:4:97:ASP:CG	1.69	1.29
7:W:52:LEU:CD1	7:W:86:LEU:CG	2.07	1.29
7:W:239:LYS:C	7:W:239:LYS:CB	1.98	1.29
6:S:52:PHE:CE2	7:W:351:MET:SD	2.24	1.28
3:6:68:TRP:CZ3	8:Z:46:G:C2	2.15	1.28
2:5:33:LEU:O	2:5:37:LYS:CG	1.63	1.28
8:Z:1:C:O3'	8:Z:2:U:H5''	1.19	1.28
7:W:298:GLY:O	7:W:299:ASP:N	1.63	1.28
1:4:89:ASN:ND2	8:Z:171:C:C3'	1.89	1.28
3:6:65:LYS:CE	8:Z:64:C:O2'	1.82	1.28
7:W:294:LEU:CG	7:W:294:LEU:N	1.97	1.28

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:4:72:ILE:HA	1:4:97:ASP:OD2	1.28	1.28
6:S:56:PHE:O	7:W:352:ILE:CG2	1.82	1.27
7:W:340:MET:N	7:W:372:LEU:CD1	1.89	1.27
7:W:366:GLN:N	7:W:367:GLU:N	1.83	1.26
7:W:289:PRO:CD	7:W:289:PRO:N	1.73	1.26
7:W:40:LEU:CG	7:W:40:LEU:C	2.01	1.26
7:W:285:PHE:HA	7:W:285:PHE:CG	1.69	1.26
7:W:338:ASN:O	7:W:342:MET:HB2	1.18	1.26
2:5:34:ARG:HG2	2:5:37:LYS:NZ	0.94	1.26
7:W:345:PHE:CE1	7:W:365:GLU:OE1	1.89	1.25
7:W:429:GLN:O	7:W:432:LYS:CA	1.84	1.25
7:W:432:LYS:CG	7:W:436:GLY:HA3	1.64	1.25
7:W:339:ILE:C	7:W:372:LEU:HD11	1.55	1.25
7:W:432:LYS:C	7:W:432:LYS:CG	2.05	1.25
7:W:432:LYS:CA	7:W:436:GLY:CA	2.12	1.25
7:W:52:LEU:CG	7:W:86:LEU:HD21	1.66	1.25
7:W:432:LYS:O	7:W:432:LYS:CG	1.85	1.25
7:W:16:SER:C	7:W:17:LEU:CA	2.05	1.25
6:S:60:TYR:HB2	7:W:352:ILE:CG2	1.67	1.25
7:W:340:MET:HE3	7:W:373:LYS:N	1.49	1.24
7:W:87:VAL:O	7:W:259:ALA:HB3	1.09	1.24
2:5:34:ARG:CG	2:5:37:LYS:NZ	1.90	1.24
7:W:179:PHE:CE2	7:W:187:ILE:HG12	1.73	1.24
6:S:58:THR:HG21	7:W:339:ILE:CD1	1.68	1.23
7:W:16:SER:C	7:W:17:LEU:CG	2.04	1.23
7:W:285:PHE:CD1	7:W:285:PHE:CB	2.21	1.23
3:6:65:LYS:CG	8:Z:64:C:O2'	1.83	1.23
6:S:58:THR:CG2	7:W:339:ILE:HG21	1.66	1.23
7:W:179:PHE:CZ	7:W:187:ILE:HG12	1.75	1.22
7:W:250:LEU:HD21	7:W:290:PHE:CE1	1.74	1.22
7:W:283:GLU:O	7:W:284:PRO:N	1.72	1.22
7:W:87:VAL:C	7:W:259:ALA:HB3	1.59	1.22
7:W:287:THR:O	7:W:291:ILE:CD1	1.84	1.22
6:S:58:THR:CB	7:W:339:ILE:HD13	1.69	1.21
7:W:293:LYS:CG	7:W:293:LYS:CA	2.16	1.21
1:4:75:TYR:CD1	2:5:34:ARG:O	1.94	1.21
7:W:342:MET:CG	7:W:342:MET:HA	1.70	1.21
7:W:283:GLU:C	7:W:284:PRO:CB	2.09	1.20
7:W:250:LEU:HD21	7:W:290:PHE:CZ	1.71	1.20
2:5:25:GLU:OE2	7:W:22:ILE:CG2	1.88	1.20
8:Z:160:G:H5'	8:Z:212:A:N9	1.52	1.20

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:342:MET:HE1	7:W:347:GLN:NE2	1.55	1.20
6:S:63:VAL:CG1	7:W:361:SER:HB2	1.72	1.20
7:W:52:LEU:CG	7:W:86:LEU:CD1	1.93	1.19
7:W:293:LYS:CG	7:W:293:LYS:CB	2.19	1.19
7:W:441:PHE:O	7:W:445:ASP:N	1.75	1.19
7:W:89:PRO:CA	7:W:287:THR:OG1	1.91	1.18
7:W:285:PHE:CG	7:W:285:PHE:CB	2.27	1.18
7:W:52:LEU:CD1	7:W:86:LEU:CD2	1.84	1.18
7:W:56:VAL:HA	7:W:82:GLU:OE2	1.42	1.18
7:W:52:LEU:CG	7:W:86:LEU:CD2	2.18	1.18
7:W:106:PHE:HE1	7:W:188:ILE:CG2	1.56	1.17
7:W:297:MET:HB3	7:W:300:ILE:HD12	1.25	1.17
7:W:336:PHE:CD2	7:W:379:MET:CE	2.26	1.17
1:4:89:ASN:CB	8:Z:172:C:H5'	1.53	1.17
7:W:432:LYS:HG2	7:W:432:LYS:O	0.99	1.17
7:W:345:PHE:CD1	7:W:365:GLU:HB3	1.80	1.16
7:W:40:LEU:HG	7:W:40:LEU:C	1.65	1.16
7:W:314:ASP:CG	7:W:319:ILE:HD11	1.66	1.16
8:Z:159:C:H4'	8:Z:213:A:O4'	1.46	1.16
7:W:432:LYS:HA	7:W:432:LYS:CG	1.68	1.16
3:6:60:ASP:C	8:Z:48:C:O2'	1.84	1.16
7:W:350:GLY:O	7:W:352:ILE:HG13	1.44	1.15
7:W:344:PRO:N	7:W:345:PHE:CE2	2.15	1.15
7:W:284:PRO:O	7:W:286:LYS:HD3	1.47	1.15
7:W:335:GLN:HB3	7:W:427:PHE:CZ	1.79	1.15
3:6:65:LYS:HD3	8:Z:64:C:O2'	1.36	1.14
8:Z:159:C:H1'	8:Z:213:A:C4	1.81	1.14
7:W:325:GLY:O	7:W:328:THR:HB	1.45	1.14
7:W:271:ILE:HD12	7:W:272:PHE:CE1	1.82	1.14
3:6:59:ILE:CG1	8:Z:48:C:O3'	1.93	1.14
7:W:327:PHE:HB3	7:W:333:TYR:CE2	1.83	1.14
1:4:89:ASN:CB	8:Z:172:C:H5''	1.52	1.14
3:6:60:ASP:CA	8:Z:48:C:O2'	1.95	1.14
3:6:41:ILE:HG21	8:Z:47:U:O3'	1.48	1.13
2:5:34:ARG:HD3	2:5:37:LYS:HD3	1.14	1.13
7:W:293:LYS:C	7:W:294:LEU:CA	2.17	1.13
7:W:23:ILE:HG23	7:W:26:GLU:OE2	1.49	1.13
6:S:63:VAL:CG1	7:W:361:SER:CB	2.26	1.13
1:4:72:ILE:O	1:4:96:VAL:O	1.64	1.13
7:W:52:LEU:CD2	7:W:86:LEU:HD21	1.62	1.12
8:Z:161:G:C1'	8:Z:267:G:H4'	1.77	1.12

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:432:LYS:HG2	7:W:432:LYS:C	1.67	1.12
7:W:87:VAL:HG22	7:W:257:GLY:N	1.64	1.12
1:4:95:ILE:HG22	1:4:96:VAL:HG11	1.30	1.12
6:S:60:TYR:HB2	7:W:352:ILE:HG21	1.29	1.11
1:4:89:ASN:CA	8:Z:172:C:C5'	2.19	1.11
1:4:98:LEU:HD11	1:4:101:ASP:OD1	1.47	1.11
7:W:239:LYS:CB	7:W:239:LYS:HA	1.63	1.11
7:W:202:PHE:CD2	7:W:239:LYS:HD2	1.85	1.11
7:W:306:LYS:HB2	7:W:347:GLN:OE1	1.50	1.11
7:W:432:LYS:HA	7:W:432:LYS:HG3	1.23	1.11
1:4:85:LYS:HE2	8:Z:171:C:H4'	1.19	1.11
7:W:345:PHE:CD1	7:W:365:GLU:OE1	2.03	1.10
7:W:337:GLN:HA	7:W:340:MET:HB2	1.33	1.10
8:Z:159:C:C1'	8:Z:213:A:C4	2.35	1.10
6:S:56:PHE:O	7:W:352:ILE:HG23	0.94	1.10
7:W:52:LEU:HD11	7:W:86:LEU:HG	1.32	1.10
7:W:314:ASP:C	7:W:315:ASN:N	2.05	1.10
7:W:432:LYS:HA	7:W:436:GLY:HA3	1.16	1.10
1:4:98:LEU:HD12	1:4:130:LYS:HZ3	0.98	1.10
7:W:84:VAL:HG13	7:W:88:ASP:O	1.49	1.10
7:W:94:TRP:CH2	7:W:218:VAL:HG21	1.87	1.09
7:W:313:ASP:HA	7:W:319:ILE:HD11	1.30	1.09
1:4:140:TYR:CZ	1:4:145:VAL:HG21	1.88	1.09
3:6:68:TRP:CZ2	8:Z:47:U:O4'	2.04	1.09
6:S:62:THR:HG21	7:W:371:ARG:CD	1.80	1.09
7:W:430:MET:HG3	7:W:430:MET:N	1.57	1.09
7:W:306:LYS:CA	7:W:347:GLN:NE2	2.14	1.08
3:6:61:VAL:HG21	8:Z:62:G:H22	1.08	1.08
7:W:330:ARG:HB2	7:W:333:TYR:CB	1.83	1.08
7:W:194:ARG:NH2	7:W:202:PHE:HB2	1.66	1.08
8:Z:159:C:O4'	8:Z:213:A:H1'	1.50	1.08
7:W:89:PRO:HA	7:W:287:THR:CG2	1.82	1.08
2:5:36:GLN:O	2:5:40:SER:O	1.71	1.08
7:W:431:VAL:O	7:W:436:GLY:HA2	1.50	1.08
7:W:77:HIS:C	7:W:81:LYS:HG3	1.72	1.08
7:W:106:PHE:CZ	7:W:121:LEU:HD12	1.88	1.08
6:S:58:THR:HG21	7:W:339:ILE:CG2	1.84	1.07
8:Z:160:G:P	8:Z:212:A:H1'	1.94	1.07
3:6:61:VAL:HG21	8:Z:62:G:N2	1.66	1.07
2:5:33:LEU:O	2:5:37:LYS:HG2	1.30	1.07
2:5:34:ARG:HG2	2:5:37:LYS:CE	1.77	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:134:LEU:HD11	7:W:157:ILE:CD1	1.85	1.07
7:W:337:GLN:CA	7:W:340:MET:HB2	1.85	1.07
7:W:202:PHE:CZ	7:W:239:LYS:CB	2.37	1.07
2:5:25:GLU:OE2	7:W:22:ILE:HG22	1.51	1.07
7:W:134:LEU:HD11	7:W:157:ILE:HD11	1.27	1.07
7:W:330:ARG:HB2	7:W:333:TYR:H	1.13	1.06
7:W:202:PHE:CZ	7:W:239:LYS:HB2	1.90	1.06
7:W:479:GLY:C	7:W:480:LEU:N	2.07	1.06
8:Z:159:C:O4'	8:Z:213:A:N3	1.85	1.06
7:W:332:MET:SD	7:W:424:TYR:CG	2.47	1.06
7:W:306:LYS:HA	7:W:347:GLN:HE22	0.94	1.06
6:S:58:THR:HG21	7:W:339:ILE:HG21	1.16	1.06
7:W:429:GLN:O	7:W:432:LYS:HB3	1.37	1.06
7:W:52:LEU:HG	7:W:86:LEU:HD13	1.33	1.06
6:S:57:LEU:HD22	7:W:430:MET:HE2	1.08	1.06
3:6:65:LYS:HD3	8:Z:64:C:C3'	1.84	1.06
1:4:123:LEU:HD21	8:Z:111:U:H5'	1.36	1.05
3:6:65:LYS:HD3	8:Z:64:C:O3'	1.53	1.05
7:W:477:MET:O	7:W:479:GLY:N	1.88	1.05
7:W:332:MET:SD	7:W:424:TYR:HB2	1.96	1.05
7:W:338:ASN:C	7:W:342:MET:HB2	1.76	1.05
6:S:54:ILE:HG23	7:W:427:PHE:CE2	1.91	1.05
6:S:58:THR:CG2	7:W:339:ILE:CD1	2.28	1.05
7:W:42:ALA:HA	7:W:49:VAL:HG21	1.11	1.05
1:4:75:TYR:CE1	2:5:34:ARG:O	2.08	1.05
7:W:106:PHE:HE1	7:W:188:ILE:HG23	1.20	1.05
7:W:136:CYS:SG	7:W:148:LEU:HB3	1.96	1.05
7:W:319:ILE:HA	7:W:323:LYS:CE	1.84	1.04
7:W:366:GLN:CD	7:W:369:MET:N	1.79	1.04
6:S:57:LEU:CD2	7:W:430:MET:HE3	1.86	1.04
7:W:87:VAL:CG2	7:W:257:GLY:CA	2.13	1.04
2:5:34:ARG:CD	2:5:37:LYS:HD3	1.76	1.04
7:W:450:VAL:O	7:W:454:GLN:N	1.87	1.04
7:W:342:MET:CE	7:W:347:GLN:NE2	2.19	1.04
7:W:325:GLY:O	7:W:328:THR:CB	2.05	1.04
7:W:340:MET:CE	7:W:373:LYS:N	2.20	1.04
7:W:84:VAL:HG12	7:W:89:PRO:HB3	1.40	1.04
7:W:429:GLN:C	7:W:432:LYS:HB3	1.77	1.03
6:S:61:VAL:HG11	7:W:423:GLN:HG2	1.34	1.03
3:6:68:TRP:HH2	8:Z:46:G:H2'	1.21	1.03
8:Z:161:G:H1'	8:Z:267:G:H4'	1.39	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:430:MET:HA	7:W:433:LYS:HB2	1.38	1.03
7:W:330:ARG:HD2	7:W:333:TYR:HB2	1.41	1.03
7:W:443:GLY:O	7:W:447:SER:CA	2.05	1.03
7:W:430:MET:O	7:W:433:LYS:HB2	1.57	1.03
7:W:77:HIS:CB	7:W:81:LYS:HE3	1.88	1.03
7:W:41:GLU:HA	7:W:41:GLU:N	1.67	1.03
7:W:330:ARG:CB	7:W:333:TYR:H	1.71	1.03
7:W:52:LEU:HD13	7:W:86:LEU:HD21	1.35	1.02
7:W:358:ASP:CB	7:W:361:SER:OG	2.07	1.02
1:4:85:LYS:CE	8:Z:171:C:H4'	1.88	1.02
7:W:283:GLU:C	7:W:284:PRO:N	2.13	1.02
7:W:52:LEU:CD1	7:W:86:LEU:HD11	1.90	1.02
7:W:340:MET:N	7:W:372:LEU:HD12	1.18	1.02
6:S:58:THR:OG1	7:W:339:ILE:CD1	2.05	1.02
7:W:431:VAL:CB	7:W:431:VAL:CG1	2.36	1.02
7:W:285:PHE:HE1	7:W:304:ILE:HD12	1.24	1.02
8:Z:159:C:C5'	8:Z:213:A:H1'	1.88	1.02
7:W:88:ASP:OD2	7:W:259:ALA:HB1	1.58	1.01
7:W:84:VAL:CG1	7:W:89:PRO:HB3	1.91	1.01
7:W:94:TRP:CZ2	7:W:218:VAL:HG21	1.94	1.01
7:W:330:ARG:CG	7:W:333:TYR:HB2	1.90	1.01
7:W:430:MET:CA	7:W:433:LYS:HB2	1.89	1.01
7:W:16:SER:O	7:W:17:LEU:HB2	0.85	1.01
7:W:299:ASP:HB3	7:W:348:ILE:HA	1.01	1.01
7:W:323:LYS:N	7:W:337:GLN:HE22	1.58	1.01
7:W:430:MET:CG	7:W:430:MET:CA	2.38	1.01
7:W:358:ASP:HB3	7:W:361:SER:OG	1.58	1.01
7:W:429:GLN:CA	7:W:432:LYS:HB3	1.90	1.00
7:W:106:PHE:CE2	7:W:121:LEU:HD12	1.96	1.00
7:W:88:ASP:OD1	7:W:259:ALA:C	1.99	1.00
7:W:330:ARG:HB2	7:W:333:TYR:HB2	1.42	1.00
7:W:330:ARG:CB	7:W:333:TYR:HB2	1.92	1.00
2:5:33:LEU:O	2:5:37:LYS:HG3	1.32	1.00
7:W:239:LYS:HB2	7:W:239:LYS:CA	1.49	1.00
7:W:337:GLN:O	7:W:340:MET:HB2	1.62	1.00
7:W:272:PHE:CG	7:W:282:PHE:CZ	2.50	1.00
8:Z:159:C:C1'	8:Z:213:A:C2	2.31	1.00
7:W:239:LYS:HB3	7:W:239:LYS:CA	1.49	0.99
1:4:85:LYS:HE2	8:Z:171:C:C4'	1.92	0.99
7:W:284:PRO:O	7:W:286:LYS:CD	2.10	0.99
7:W:77:HIS:HB3	7:W:81:LYS:HE3	1.00	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:314:ASP:OD2	7:W:319:ILE:CD1	2.09	0.99
3:6:59:ILE:HD13	8:Z:49:G:P	2.02	0.99
1:4:72:ILE:CA	1:4:97:ASP:OD2	2.10	0.99
7:W:330:ARG:HB2	7:W:333:TYR:N	1.76	0.99
7:W:327:PHE:O	7:W:333:TYR:HB3	1.63	0.99
7:W:365:GLU:CA	7:W:366:GLN:N	2.24	0.99
1:4:98:LEU:HD12	1:4:130:LYS:NZ	1.75	0.99
7:W:394:LYS:HD2	8:Z:14:U:OP1	1.62	0.99
7:W:299:ASP:CB	7:W:348:ILE:HA	1.93	0.98
7:W:432:LYS:HG3	7:W:436:GLY:HA3	1.02	0.98
7:W:250:LEU:CD2	7:W:290:PHE:HZ	1.63	0.98
7:W:87:VAL:CG2	7:W:257:GLY:N	2.25	0.98
7:W:77:HIS:HB3	7:W:81:LYS:CE	1.93	0.98
7:W:84:VAL:HG12	7:W:89:PRO:CB	1.93	0.98
7:W:330:ARG:CD	7:W:333:TYR:HB2	1.93	0.98
7:W:432:LYS:HG3	7:W:436:GLY:N	1.79	0.98
3:6:65:LYS:HD3	8:Z:64:C:C2'	1.78	0.98
7:W:293:LYS:CG	7:W:293:LYS:HA	1.88	0.98
7:W:365:GLU:C	7:W:366:GLN:CB	2.32	0.98
7:W:89:PRO:HA	7:W:287:THR:HG21	1.46	0.98
7:W:429:GLN:C	7:W:432:LYS:CB	2.30	0.97
1:4:136:LEU:HD13	1:4:140:TYR:CE2	1.98	0.97
3:6:68:TRP:HZ3	8:Z:46:G:N2	1.48	0.97
3:6:58:ARG:HH11	8:Z:49:G:P	1.87	0.97
7:W:84:VAL:CG1	7:W:88:ASP:O	2.13	0.97
6:S:56:PHE:CE1	7:W:350:GLY:O	2.17	0.97
7:W:297:MET:CB	7:W:300:ILE:HD12	1.95	0.97
7:W:431:VAL:HG22	7:W:431:VAL:CG1	1.93	0.97
7:W:475:GLY:O	7:W:476:GLY:N	1.98	0.97
3:6:68:TRP:CH2	8:Z:46:G:N3	2.33	0.97
6:S:62:THR:HG21	7:W:371:ARG:HD3	1.00	0.97
7:W:89:PRO:CA	7:W:287:THR:HG21	1.95	0.97
6:S:62:THR:CG2	7:W:371:ARG:CD	2.40	0.97
7:W:106:PHE:CE1	7:W:188:ILE:HG23	2.00	0.97
3:6:72:ILE:HD11	8:Z:45:A:C5	2.00	0.97
7:W:106:PHE:CE1	7:W:188:ILE:CG2	2.48	0.96
7:W:272:PHE:CE2	7:W:282:PHE:CE2	2.53	0.96
7:W:342:MET:CE	7:W:347:GLN:CD	2.34	0.96
7:W:431:VAL:C	7:W:436:GLY:HA2	1.86	0.96
7:W:285:PHE:HD1	7:W:285:PHE:CB	1.70	0.96
7:W:80:PHE:CE2	7:W:291:ILE:HG12	1.93	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:202:PHE:CE2	7:W:239:LYS:HB3	2.00	0.96
6:S:57:LEU:HD22	7:W:430:MET:HE1	0.97	0.96
7:W:80:PHE:CE2	7:W:291:ILE:CG1	2.23	0.96
7:W:306:LYS:CA	7:W:347:GLN:HE22	1.76	0.96
7:W:77:HIS:O	7:W:81:LYS:HG3	0.79	0.96
2:5:34:ARG:HG2	2:5:37:LYS:HZ2	1.23	0.96
8:Z:159:C:O5'	8:Z:213:A:C1'	2.12	0.96
7:W:342:MET:HE1	7:W:347:GLN:HE21	1.21	0.96
4:A:220:C:H2'	4:A:221:C:H5''	1.45	0.96
1:4:123:LEU:HD11	8:Z:111:U:C5'	1.96	0.95
2:5:34:ARG:HH12	2:5:48:ILE:HG23	1.29	0.95
7:W:249:LYS:HD3	7:W:249:LYS:O	1.65	0.95
7:W:272:PHE:HB3	7:W:282:PHE:CE1	2.01	0.95
7:W:337:GLN:HA	7:W:340:MET:CB	1.95	0.95
7:W:339:ILE:HA	7:W:342:MET:CB	1.94	0.95
7:W:431:VAL:O	7:W:436:GLY:CA	2.14	0.95
7:W:337:GLN:C	7:W:340:MET:HB2	1.87	0.95
1:4:119:LYS:HD3	1:4:135:LYS:HZ3	1.30	0.95
7:W:323:LYS:H	7:W:337:GLN:HE22	1.07	0.95
7:W:339:ILE:C	7:W:372:LEU:CD1	2.35	0.95
2:5:25:GLU:OE2	7:W:22:ILE:HG23	1.64	0.95
7:W:342:MET:HE1	7:W:347:GLN:CD	1.87	0.95
7:W:345:PHE:HD1	7:W:365:GLU:CG	1.79	0.95
7:W:89:PRO:HA	7:W:287:THR:CB	1.95	0.95
3:6:65:LYS:CD	8:Z:64:C:O2'	0.65	0.95
5:B:60:VAL:HG23	5:B:83:ARG:O	1.67	0.95
7:W:330:ARG:NE	7:W:387:LEU:HD22	1.81	0.95
1:4:89:ASN:HA	8:Z:172:C:H5''	0.97	0.95
3:6:61:VAL:HA	8:Z:48:C:H1'	1.46	0.95
7:W:293:LYS:O	7:W:293:LYS:HG2	1.67	0.94
7:W:430:MET:O	7:W:433:LYS:CB	2.15	0.94
1:4:88:ASP:O	8:Z:172:C:H4'	1.66	0.94
7:W:45:ASN:C	7:W:227:GLN:HG3	1.86	0.94
1:4:75:TYR:OH	2:5:39:ALA:N	1.78	0.94
6:S:56:PHE:CD1	7:W:350:GLY:C	2.40	0.94
7:W:250:LEU:CD2	7:W:290:PHE:CE1	2.43	0.94
7:W:441:PHE:O	7:W:444:GLY:CA	2.15	0.94
7:W:340:MET:HE1	7:W:373:LYS:HB2	1.49	0.94
7:W:429:GLN:HA	7:W:432:LYS:HB3	1.48	0.94
3:6:68:TRP:CH2	8:Z:46:G:H2'	2.02	0.94
7:W:336:PHE:CE2	7:W:379:MET:HE2	2.03	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:327:PHE:CD2	7:W:333:TYR:CE2	2.55	0.94
7:W:250:LEU:HD13	7:W:250:LEU:O	1.67	0.94
8:Z:160:G:H5'	8:Z:212:A:C1'	1.98	0.94
2:5:30:LEU:O	2:5:37:LYS:NZ	2.01	0.94
7:W:460:GLN:CA	7:W:461:GLN:N	2.30	0.94
7:W:364:ASN:ND2	7:W:367:GLU:OE2	2.01	0.94
7:W:286:LYS:CB	7:W:286:LYS:HD2	1.98	0.94
7:W:299:ASP:HB3	7:W:348:ILE:CA	1.96	0.94
7:W:345:PHE:HD1	7:W:365:GLU:CD	1.72	0.93
7:W:88:ASP:OD1	7:W:259:ALA:O	1.86	0.93
7:W:272:PHE:CD2	7:W:282:PHE:CE2	2.56	0.93
3:6:58:ARG:NH1	8:Z:48:C:H2'	1.84	0.93
7:W:42:ALA:HA	7:W:49:VAL:CG2	1.99	0.93
7:W:429:GLN:HA	7:W:432:LYS:CB	1.98	0.93
6:S:60:TYR:HB2	7:W:352:ILE:HG22	1.44	0.93
7:W:327:PHE:HB3	7:W:333:TYR:HD2	1.12	0.93
7:W:202:PHE:CE2	7:W:239:LYS:CB	2.52	0.93
7:W:358:ASP:O	7:W:361:SER:HB3	1.69	0.93
7:W:340:MET:HE3	7:W:373:LYS:H	1.07	0.93
6:S:58:THR:OG1	7:W:339:ILE:HD11	1.68	0.92
7:W:293:LYS:C	7:W:294:LEU:HA	1.89	0.92
7:W:331:ASP:C	7:W:331:ASP:CG	2.28	0.92
7:W:432:LYS:CG	7:W:436:GLY:CA	2.34	0.92
7:W:89:PRO:N	7:W:287:THR:OG1	2.01	0.92
7:W:42:ALA:CA	7:W:49:VAL:HG21	2.00	0.92
7:W:358:ASP:HB3	7:W:361:SER:CB	1.98	0.92
7:W:293:LYS:O	7:W:294:LEU:HB2	1.69	0.92
7:W:239:LYS:CB	7:W:239:LYS:CA	0.92	0.92
7:W:475:GLY:C	7:W:476:GLY:N	2.22	0.92
7:W:327:PHE:CB	7:W:333:TYR:CD2	2.49	0.92
7:W:345:PHE:CD1	7:W:365:GLU:CD	2.43	0.92
7:W:293:LYS:CD	7:W:293:LYS:CB	2.47	0.92
7:W:430:MET:C	7:W:433:LYS:HB2	1.90	0.92
7:W:336:PHE:HD2	7:W:379:MET:CE	1.80	0.92
3:6:58:ARG:HH12	8:Z:49:G:H8	1.18	0.92
1:4:98:LEU:CD1	1:4:130:LYS:HZ3	1.83	0.91
7:W:272:PHE:CD1	7:W:282:PHE:HZ	1.87	0.91
7:W:250:LEU:HD11	7:W:290:PHE:HE1	1.34	0.91
7:W:366:GLN:CD	7:W:369:MET:H	1.45	0.91
6:S:52:PHE:CD2	7:W:351:MET:SD	2.64	0.91
7:W:18:SER:O	7:W:19:ASN:OD1	1.88	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:302:GLY:O	7:W:305:ASP:N	2.03	0.91
7:W:330:ARG:HD2	7:W:333:TYR:CD1	2.06	0.91
7:W:250:LEU:HD23	7:W:290:PHE:CZ	2.03	0.91
7:W:332:MET:SD	7:W:424:TYR:CB	2.58	0.91
7:W:440:LEU:O	7:W:444:GLY:HA3	1.70	0.91
7:W:272:PHE:CD1	7:W:282:PHE:CZ	2.59	0.90
7:W:270:ILE:O	7:W:270:ILE:HD12	1.71	0.90
6:S:63:VAL:CG1	7:W:361:SER:HB3	2.02	0.90
7:W:449:ASN:O	7:W:452:GLN:N	2.05	0.90
7:W:314:ASP:CG	7:W:319:ILE:CD1	2.39	0.90
7:W:345:PHE:CD1	7:W:365:GLU:CB	2.55	0.90
7:W:365:GLU:C	7:W:366:GLN:CA	2.39	0.90
3:6:68:TRP:CE3	8:Z:46:G:N2	2.24	0.90
3:6:58:ARG:NH1	8:Z:49:G:H8	1.68	0.90
7:W:345:PHE:HE1	7:W:365:GLU:OE1	1.47	0.90
7:W:429:GLN:CA	7:W:432:LYS:CB	2.48	0.90
7:W:285:PHE:CE1	7:W:304:ILE:HD12	2.06	0.90
7:W:443:GLY:O	7:W:447:SER:C	2.09	0.90
7:W:117:THR:HG21	7:W:246:ILE:HD13	1.53	0.90
7:W:202:PHE:CZ	7:W:239:LYS:CG	2.55	0.90
8:Z:160:G:C5'	8:Z:212:A:C4	2.53	0.90
4:A:127:A:C2'	4:A:128:U:H5''	2.02	0.90
3:6:61:VAL:CG2	8:Z:62:G:H22	1.85	0.89
7:W:332:MET:SD	7:W:424:TYR:HD1	1.69	0.89
8:Z:1:C:O3'	8:Z:2:U:C5'	2.14	0.89
1:4:76:PRO:O	2:5:38:VAL:HG11	1.71	0.89
6:S:58:THR:HG21	7:W:339:ILE:HD13	0.99	0.89
6:S:57:LEU:CD2	7:W:430:MET:HE1	1.79	0.89
7:W:165:GLU:OE1	7:W:171:ILE:HD11	1.72	0.89
7:W:339:ILE:CA	7:W:342:MET:HB2	2.03	0.89
7:W:431:VAL:CG2	7:W:431:VAL:CG1	2.50	0.89
1:4:123:LEU:CD1	8:Z:111:U:H4'	2.01	0.89
7:W:89:PRO:HA	7:W:287:THR:OG1	1.67	0.89
5:B:64:LYS:HD3	5:B:64:LYS:N	1.88	0.89
7:W:336:PHE:CE2	7:W:379:MET:CE	2.55	0.89
7:W:202:PHE:CZ	7:W:239:LYS:CD	2.56	0.89
7:W:394:LYS:HA	8:Z:13:C:OP1	1.71	0.89
7:W:429:GLN:O	7:W:432:LYS:C	2.11	0.89
6:S:63:VAL:HG11	7:W:361:SER:HB2	0.90	0.88
6:S:62:THR:HG22	7:W:371:ARG:HD3	1.51	0.88
7:W:52:LEU:CG	7:W:86:LEU:CG	2.43	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:16:SER:C	7:W:17:LEU:CB	0.79	0.88
7:W:342:MET:CE	7:W:347:GLN:HG3	2.02	0.88
7:W:250:LEU:CG	7:W:290:PHE:CZ	2.56	0.88
7:W:272:PHE:CD2	7:W:282:PHE:CZ	2.62	0.88
7:W:272:PHE:CE2	7:W:282:PHE:HE2	1.90	0.88
2:5:35:ILE:C	2:5:37:LYS:H	1.77	0.88
8:Z:159:C:C5'	8:Z:213:A:C1'	2.50	0.88
8:Z:161:G:C4'	8:Z:267:G:C1'	2.27	0.88
7:W:207:GLN:HA	7:W:210:ASN:ND2	1.89	0.88
7:W:297:MET:HB3	7:W:300:ILE:CD1	2.03	0.88
7:W:429:GLN:O	7:W:432:LYS:N	2.05	0.88
7:W:365:GLU:O	7:W:367:GLU:N	2.07	0.87
7:W:202:PHE:CE2	7:W:239:LYS:HD2	2.08	0.87
7:W:337:GLN:O	7:W:341:LYS:N	2.07	0.87
4:A:127:A:H2'	4:A:128:U:H5''	1.56	0.87
7:W:11:THR:HA	7:W:14:LEU:HD23	1.57	0.87
6:S:56:PHE:C	7:W:352:ILE:HG23	1.93	0.87
7:W:16:SER:N	7:W:17:LEU:HB3	1.88	0.87
7:W:285:PHE:HE1	7:W:304:ILE:CD1	1.87	0.87
7:W:194:ARG:NH1	7:W:196:LYS:HA	1.89	0.87
1:4:89:ASN:HA	8:Z:172:C:C5'	1.92	0.87
5:B:94:CYS:O	5:B:95:LEU:HD23	1.74	0.87
7:W:87:VAL:O	7:W:87:VAL:HG12	1.73	0.86
7:W:133:CYS:SG	7:W:179:PHE:HE1	1.97	0.86
8:Z:161:G:H5'	8:Z:267:G:H1'	1.57	0.86
7:W:432:LYS:HG3	7:W:435:GLY:C	1.96	0.86
7:W:23:ILE:CG2	7:W:26:GLU:OE2	2.24	0.86
1:4:122:THR:HG23	1:4:130:LYS:HD3	1.56	0.86
7:W:271:ILE:CD1	7:W:272:PHE:CE1	2.59	0.86
7:W:319:ILE:HA	7:W:323:LYS:NZ	1.90	0.86
7:W:106:PHE:CE2	7:W:121:LEU:CD1	2.58	0.86
1:4:123:LEU:HD11	8:Z:111:U:H4'	1.57	0.86
7:W:272:PHE:CB	7:W:282:PHE:CE1	2.58	0.86
7:W:88:ASP:CG	7:W:259:ALA:CB	2.43	0.86
7:W:225:ILE:CG2	7:W:229:CYS:SG	2.64	0.86
7:W:202:PHE:CE2	7:W:239:LYS:CG	2.59	0.85
7:W:225:ILE:HG22	7:W:229:CYS:SG	2.16	0.85
7:W:432:LYS:N	7:W:436:GLY:HA2	1.90	0.85
1:4:96:VAL:O	1:4:97:ASP:OD1	1.93	0.85
4:A:184:A:N3	7:W:405:ARG:NH1	2.24	0.85
7:W:366:GLN:HG3	7:W:367:GLU:N	1.91	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:76:GLN:HA	7:W:79:VAL:HG22	1.56	0.85
2:5:34:ARG:NH1	2:5:37:LYS:NZ	2.24	0.85
7:W:94:TRP:CZ2	7:W:218:VAL:CG2	2.58	0.85
7:W:340:MET:CE	7:W:373:LYS:HB2	2.06	0.85
5:B:24:ASN:HD22	5:B:27:LYS:HG3	1.42	0.85
7:W:90:GLY:HA3	7:W:286:LYS:HB3	1.58	0.84
7:W:428:ALA:O	7:W:432:LYS:HB2	1.76	0.84
1:4:98:LEU:CD1	1:4:130:LYS:NZ	2.39	0.84
3:6:68:TRP:CH2	8:Z:47:U:O4'	2.30	0.84
7:W:339:ILE:HD12	7:W:427:PHE:HE1	1.42	0.84
6:S:58:THR:CB	7:W:339:ILE:CD1	2.53	0.84
7:W:315:ASN:O	7:W:318:LEU:HG	1.78	0.84
7:W:24:ASN:O	7:W:27:VAL:HG12	1.78	0.84
7:W:52:LEU:CD1	7:W:86:LEU:CD1	2.37	0.84
7:W:350:GLY:C	7:W:352:ILE:HG13	1.98	0.84
7:W:118:CYS:HB3	7:W:190:ASP:OD1	1.76	0.84
6:S:58:THR:OG1	7:W:339:ILE:HD13	1.70	0.83
7:W:250:LEU:CG	7:W:290:PHE:CE1	2.60	0.83
7:W:313:ASP:CA	7:W:319:ILE:HD11	2.04	0.83
3:6:54:THR:HA	3:6:90:GLU:HB2	1.61	0.83
8:Z:27:G:H22	8:Z:30:A:H5'	1.42	0.83
6:S:58:THR:HG22	7:W:339:ILE:HG21	1.58	0.83
7:W:271:ILE:HD12	7:W:272:PHE:CG	2.13	0.83
7:W:453:SER:O	7:W:456:ALA:N	2.10	0.83
7:W:173:SER:O	7:W:176:VAL:HG12	1.78	0.83
7:W:293:LYS:C	7:W:294:LEU:HB2	1.95	0.83
6:S:58:THR:CG2	7:W:339:ILE:CG2	2.51	0.83
8:Z:159:C:O4'	8:Z:213:A:C4	2.32	0.83
8:Z:158:A:OP1	8:Z:214:C:C5'	2.27	0.83
7:W:342:MET:CE	7:W:347:GLN:CG	2.57	0.83
7:W:84:VAL:CG1	7:W:89:PRO:CA	2.55	0.83
7:W:194:ARG:HH11	7:W:196:LYS:HA	1.44	0.83
7:W:88:ASP:C	7:W:287:THR:OG1	2.16	0.83
8:Z:159:C:H4'	8:Z:213:A:N9	1.93	0.83
7:W:306:LYS:CB	7:W:347:GLN:OE1	2.28	0.82
7:W:324:HIS:CE1	7:W:338:ASN:N	2.47	0.82
7:W:348:ILE:HG22	7:W:349:LEU:N	1.94	0.82
7:W:286:LYS:CD	7:W:286:LYS:CB	2.58	0.82
7:W:339:ILE:HA	7:W:342:MET:HB2	1.55	0.82
7:W:283:GLU:C	7:W:284:PRO:CD	2.47	0.82
7:W:84:VAL:CG1	7:W:89:PRO:CB	2.55	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:341:LYS:O	7:W:341:LYS:HG2	1.78	0.82
7:W:348:ILE:CG2	7:W:349:LEU:N	2.37	0.82
7:W:14:LEU:CD1	7:W:295:LEU:CD2	2.57	0.82
2:5:30:LEU:HD23	2:5:37:LYS:NZ	1.94	0.82
2:5:27:LYS:HE3	2:5:27:LYS:O	1.80	0.82
7:W:338:ASN:O	7:W:342:MET:N	2.12	0.82
7:W:293:LYS:CG	7:W:293:LYS:C	2.47	0.82
7:W:179:PHE:CZ	7:W:187:ILE:CG1	2.62	0.82
6:S:57:LEU:CD2	7:W:430:MET:HE2	1.80	0.82
7:W:89:PRO:CB	7:W:287:THR:HG21	2.09	0.82
7:W:330:ARG:HD2	7:W:333:TYR:CB	2.08	0.82
7:W:430:MET:CA	7:W:433:LYS:CB	2.54	0.82
7:W:358:ASP:HB2	7:W:361:SER:OG	1.80	0.82
7:W:87:VAL:CG2	7:W:256:GLY:C	2.46	0.82
6:S:54:ILE:CG2	7:W:427:PHE:CE2	2.63	0.81
7:W:285:PHE:CE1	7:W:304:ILE:CD1	2.63	0.81
7:W:284:PRO:O	7:W:286:LYS:CG	2.28	0.81
7:W:479:GLY:CA	7:W:480:LEU:N	2.43	0.81
7:W:442:LYS:C	7:W:444:GLY:N	2.32	0.81
7:W:342:MET:CA	7:W:342:MET:CG	2.55	0.81
7:W:319:ILE:O	7:W:323:LYS:HG3	1.80	0.81
1:4:136:LEU:HD13	1:4:140:TYR:HE2	1.43	0.81
7:W:15:ARG:NH2	7:W:18:SER:O	2.12	0.81
7:W:299:ASP:HA	7:W:347:GLN:O	1.81	0.81
7:W:430:MET:HA	7:W:433:LYS:CB	1.91	0.81
3:6:61:VAL:HG11	8:Z:63:A:N3	1.94	0.81
7:W:348:ILE:CG2	7:W:349:LEU:H	1.93	0.81
7:W:365:GLU:C	7:W:366:GLN:HB2	2.00	0.81
2:5:34:ARG:HH11	2:5:37:LYS:NZ	1.77	0.81
2:5:12:TRP:HE1	2:5:61:VAL:HG22	1.45	0.81
1:4:123:LEU:HD11	8:Z:111:U:H5'	1.61	0.81
8:Z:159:C:O3'	8:Z:212:A:H1'	1.81	0.81
7:W:432:LYS:CB	7:W:432:LYS:CD	2.58	0.80
7:W:293:LYS:HD2	7:W:293:LYS:CB	2.10	0.80
2:5:34:ARG:CD	2:5:37:LYS:HZ3	1.93	0.80
6:S:59:LEU:HG	7:W:352:ILE:HD13	1.64	0.80
7:W:366:GLN:CA	7:W:367:GLU:N	2.42	0.80
7:W:288:GLN:C	7:W:289:PRO:CD	2.49	0.80
3:6:58:ARG:NH1	8:Z:49:G:P	2.54	0.80
8:Z:160:G:OP1	8:Z:212:A:H1'	1.80	0.80
1:4:75:TYR:HE1	2:5:35:ILE:HA	1.46	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:337:GLN:O	7:W:340:MET:CB	2.30	0.80
7:W:106:PHE:CZ	7:W:121:LEU:CD1	2.64	0.80
1:4:123:LEU:HD11	8:Z:111:U:C4'	2.11	0.80
6:S:60:TYR:CB	7:W:352:ILE:CG2	2.58	0.80
7:W:345:PHE:HD1	7:W:365:GLU:CB	1.92	0.80
7:W:134:LEU:CD1	7:W:157:ILE:CD1	2.59	0.80
3:6:65:LYS:HD2	8:Z:64:C:C1'	2.10	0.80
7:W:149:LYS:HG2	7:W:159:PHE:CD1	2.16	0.79
7:W:365:GLU:C	7:W:367:GLU:N	2.35	0.79
7:W:84:VAL:O	7:W:88:ASP:C	2.21	0.79
3:6:58:ARG:NH1	8:Z:49:G:C8	2.50	0.79
6:S:63:VAL:HG11	7:W:358:ASP:HB3	1.62	0.79
1:4:76:PRO:O	2:5:38:VAL:CG1	2.30	0.79
7:W:327:PHE:CB	7:W:333:TYR:CE2	2.65	0.79
7:W:339:ILE:CA	7:W:342:MET:CB	2.60	0.79
7:W:291:ILE:HD12	7:W:291:ILE:H	1.47	0.79
7:W:302:GLY:O	7:W:304:ILE:N	2.15	0.79
3:6:61:VAL:CA	8:Z:48:C:H1'	2.13	0.79
5:B:14:ARG:HB3	5:B:14:ARG:NH1	1.96	0.79
7:W:299:ASP:CA	7:W:347:GLN:O	2.29	0.79
8:Z:160:G:C5'	8:Z:212:A:N9	2.43	0.79
7:W:365:GLU:O	7:W:366:GLN:HG3	1.83	0.79
3:6:68:TRP:CH2	8:Z:46:G:C2'	2.65	0.79
7:W:339:ILE:HA	7:W:342:MET:HB3	1.63	0.79
7:W:432:LYS:CB	7:W:432:LYS:NZ	2.46	0.79
7:W:250:LEU:CG	7:W:290:PHE:HZ	1.95	0.79
8:Z:160:G:C5'	8:Z:212:A:C1'	2.61	0.79
7:W:297:MET:O	7:W:300:ILE:N	2.15	0.79
1:4:115:ILE:HG21	1:4:140:TYR:OH	1.81	0.79
7:W:339:ILE:C	7:W:340:MET:O	2.20	0.79
7:W:81:LYS:O	7:W:85:LYS:HG3	1.82	0.79
7:W:205:MET:O	7:W:208:VAL:HG12	1.83	0.78
7:W:338:ASN:O	7:W:342:MET:CA	2.30	0.78
7:W:56:VAL:CA	7:W:82:GLU:OE2	2.28	0.78
7:W:21:THR:HG22	7:W:21:THR:O	1.82	0.78
7:W:448:LYS:H	7:W:451:SER:CA	1.96	0.78
1:4:95:ILE:HG22	1:4:96:VAL:CG1	2.10	0.78
2:5:34:ARG:HH11	2:5:37:LYS:CE	1.97	0.78
7:W:15:ARG:NE	7:W:18:SER:O	2.15	0.78
8:Z:6:A:N3	8:Z:8:G:H5"	1.98	0.78
8:Z:161:G:C4'	8:Z:267:G:H1'	2.12	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:453:SER:O	7:W:457:LYS:N	2.16	0.78
7:W:250:LEU:HD23	7:W:290:PHE:HZ	1.39	0.78
7:W:234:LYS:NZ	7:W:237:LYS:HZ2	1.81	0.78
7:W:431:VAL:CA	7:W:431:VAL:CG1	2.61	0.78
1:4:98:LEU:HA	1:4:99:LYS:N	1.97	0.78
3:6:59:ILE:HD13	8:Z:49:G:OP2	1.84	0.78
7:W:202:PHE:CE2	7:W:239:LYS:CD	2.65	0.78
7:W:133:CYS:HG	7:W:179:PHE:HE1	1.31	0.78
1:4:136:LEU:HD13	1:4:140:TYR:CD2	2.18	0.78
7:W:149:LYS:HG2	7:W:159:PHE:CE1	2.18	0.78
7:W:122:ALA:CB	7:W:157:ILE:HD13	2.13	0.78
8:Z:230:A:N6	8:Z:245:G:H1'	1.99	0.78
7:W:250:LEU:CD1	7:W:290:PHE:HE1	1.96	0.78
7:W:342:MET:HE2	7:W:347:GLN:CD	2.03	0.78
7:W:250:LEU:HG	7:W:290:PHE:CZ	2.17	0.78
7:W:447:SER:CA	7:W:451:SER:CA	2.62	0.78
7:W:293:LYS:CG	7:W:293:LYS:O	2.32	0.77
7:W:202:PHE:CE1	7:W:239:LYS:NZ	2.52	0.77
8:Z:161:G:C5'	8:Z:267:G:H1'	2.14	0.77
7:W:366:GLN:CG	7:W:369:MET:H	1.97	0.77
7:W:52:LEU:CD1	7:W:86:LEU:HG	1.97	0.77
3:6:58:ARG:HH12	8:Z:48:C:H2'	1.48	0.77
2:5:35:ILE:C	2:5:37:LYS:N	2.37	0.77
2:5:25:GLU:CD	7:W:22:ILE:HG23	2.04	0.77
4:A:220:C:C2'	4:A:221:C:H5''	2.14	0.77
6:S:60:TYR:CE1	7:W:354:GLY:HA3	2.20	0.77
7:W:202:PHE:CZ	7:W:239:LYS:CE	2.67	0.77
7:W:339:ILE:CD1	7:W:427:PHE:CE1	2.67	0.77
7:W:49:VAL:HG23	7:W:50:LYS:H	1.50	0.77
7:W:14:LEU:HD12	7:W:295:LEU:CD2	2.14	0.77
7:W:56:VAL:HB	7:W:82:GLU:OE1	1.85	0.77
7:W:138:ASP:OD1	7:W:144:ALA:HB1	1.85	0.77
7:W:306:LYS:HB2	7:W:347:GLN:CD	2.06	0.76
6:S:52:PHE:HB3	6:S:53:PRO:HD3	1.65	0.76
7:W:247:VAL:HG12	7:W:273:ILE:HD13	1.66	0.76
7:W:366:GLN:CG	7:W:367:GLU:N	2.48	0.76
7:W:80:PHE:CD2	7:W:291:ILE:HG12	2.10	0.76
7:W:365:GLU:HB2	7:W:366:GLN:CA	2.15	0.76
7:W:202:PHE:CD1	7:W:239:LYS:NZ	2.53	0.76
7:W:145:PHE:O	7:W:149:LYS:HG3	1.85	0.76
4:A:175:G:H3'	4:A:176:A:H5'	1.68	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:4:98:LEU:CD1	1:4:101:ASP:OD1	2.32	0.76
7:W:41:GLU:HG2	7:W:42:ALA:H	1.50	0.76
8:Z:27:G:H22	8:Z:30:A:C5'	1.97	0.76
7:W:365:GLU:HB2	7:W:366:GLN:N	2.01	0.76
7:W:340:MET:SD	7:W:372:LEU:C	2.64	0.76
7:W:299:ASP:C	7:W:347:GLN:O	2.23	0.76
7:W:432:LYS:CG	7:W:435:GLY:O	2.33	0.76
7:W:293:LYS:HG3	7:W:293:LYS:HA	1.66	0.76
7:W:117:THR:CG2	7:W:246:ILE:HD13	2.14	0.76
7:W:339:ILE:CD1	7:W:427:PHE:HE1	1.99	0.76
1:4:75:TYR:CE1	2:5:35:ILE:HA	2.20	0.76
2:5:54:SER:HA	2:5:57:ARG:HE	1.51	0.76
7:W:133:CYS:HB2	7:W:184:PHE:CD2	2.20	0.76
7:W:115:THR:O	7:W:118:CYS:SG	2.43	0.76
7:W:429:GLN:C	7:W:432:LYS:H	1.89	0.76
6:S:60:TYR:CB	7:W:352:ILE:HG21	2.13	0.76
7:W:348:ILE:O	7:W:349:LEU:C	2.20	0.75
7:W:327:PHE:HD2	7:W:333:TYR:CE2	2.02	0.75
7:W:330:ARG:HB2	7:W:333:TYR:CA	2.15	0.75
7:W:342:MET:HE1	7:W:347:GLN:CG	2.15	0.75
7:W:366:GLN:HG3	7:W:368:SER:N	2.01	0.75
7:W:432:LYS:HA	7:W:436:GLY:HA2	0.92	0.75
8:Z:160:G:C5'	8:Z:212:A:H1'	2.16	0.75
7:W:440:LEU:O	7:W:444:GLY:CA	2.34	0.75
7:W:313:ASP:O	7:W:315:ASN:N	2.19	0.75
7:W:340:MET:CE	7:W:373:LYS:CA	2.64	0.75
3:6:59:ILE:CD1	8:Z:48:C:O3'	2.34	0.75
7:W:339:ILE:HD11	7:W:427:PHE:CE1	2.22	0.75
1:4:115:ILE:HG21	1:4:140:TYR:CZ	2.21	0.75
4:A:127:A:H2'	4:A:128:U:C5'	2.17	0.75
1:4:119:LYS:HD3	1:4:135:LYS:NZ	2.02	0.75
1:4:140:TYR:CE2	1:4:145:VAL:HG21	2.22	0.75
7:W:122:ALA:CB	7:W:157:ILE:CD1	2.64	0.75
7:W:319:ILE:CA	7:W:323:LYS:CE	2.64	0.75
7:W:88:ASP:OD1	7:W:259:ALA:HB1	1.86	0.75
7:W:432:LYS:HB3	7:W:432:LYS:HZ3	1.51	0.75
7:W:285:PHE:C	7:W:285:PHE:CG	2.60	0.75
7:W:330:ARG:HD2	7:W:333:TYR:HD1	1.52	0.74
7:W:365:GLU:CB	7:W:366:GLN:N	2.49	0.74
7:W:94:TRP:HH2	7:W:218:VAL:HG21	1.49	0.74
7:W:15:ARG:CZ	7:W:18:SER:O	2.35	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:360:MET:O	7:W:362:LYS:HG3	1.87	0.74
7:W:314:ASP:C	7:W:315:ASN:CA	2.54	0.74
7:W:432:LYS:O	7:W:434:MET:HA	1.87	0.74
7:W:87:VAL:HA	7:W:260:LEU:H	1.53	0.74
3:6:59:ILE:CD1	8:Z:48:C:C3'	2.55	0.74
7:W:202:PHE:HZ	7:W:239:LYS:CG	1.97	0.74
1:4:96:VAL:O	1:4:97:ASP:CB	2.35	0.74
7:W:130:TRP:CG	7:W:186:ILE:HD11	2.22	0.74
7:W:207:GLN:HA	7:W:210:ASN:HD21	1.52	0.74
2:5:16:LYS:HG3	2:5:67:ARG:C	2.08	0.74
1:4:105:ILE:HD11	1:4:130:LYS:HE3	1.70	0.74
7:W:319:ILE:HA	7:W:323:LYS:HE3	1.70	0.74
7:W:131:LYS:HB3	7:W:184:PHE:HA	1.67	0.74
7:W:293:LYS:O	7:W:294:LEU:CB	2.30	0.74
3:6:58:ARG:NH1	8:Z:49:G:O5'	1.93	0.74
7:W:202:PHE:HE2	7:W:239:LYS:HB3	1.50	0.74
1:4:115:ILE:HG22	1:4:140:TYR:CE1	2.23	0.74
3:6:25:HIS:CE1	3:6:79:VAL:HG12	2.23	0.74
7:W:325:GLY:O	7:W:334:GLU:OE2	2.05	0.74
7:W:88:ASP:OD2	7:W:270:ILE:HG21	1.85	0.74
7:W:477:MET:O	7:W:478:ALA:C	2.24	0.74
7:W:452:GLN:O	7:W:456:ALA:N	2.21	0.73
7:W:323:LYS:N	7:W:337:GLN:NE2	2.36	0.73
7:W:336:PHE:CD2	7:W:379:MET:HE2	2.17	0.73
7:W:336:PHE:O	7:W:372:LEU:HD13	1.88	0.73
7:W:88:ASP:O	7:W:287:THR:CB	2.35	0.73
7:W:52:LEU:CB	7:W:86:LEU:HD11	2.18	0.73
7:W:202:PHE:CG	7:W:239:LYS:HD2	2.22	0.73
7:W:327:PHE:CD2	7:W:333:TYR:HE2	2.03	0.73
1:4:75:TYR:HE1	2:5:35:ILE:CA	2.00	0.73
7:W:110:GLN:HE22	7:W:141:ARG:NH1	1.87	0.73
2:5:33:LEU:HB2	2:5:37:LYS:CE	2.18	0.73
2:5:34:ARG:CD	2:5:37:LYS:CD	2.49	0.73
7:W:366:GLN:HG3	7:W:367:GLU:C	2.08	0.73
7:W:84:VAL:O	7:W:88:ASP:O	2.05	0.73
7:W:285:PHE:HD2	7:W:286:LYS:O	1.71	0.73
7:W:94:TRP:CH2	7:W:218:VAL:CG2	2.71	0.73
5:B:14:ARG:HB3	5:B:14:ARG:CZ	2.17	0.73
7:W:319:ILE:O	7:W:319:ILE:HG22	1.88	0.73
7:W:328:THR:HG22	7:W:328:THR:O	1.88	0.73
3:6:65:LYS:NZ	8:Z:65:G:O4'	2.12	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:6:61:VAL:N	8:Z:48:C:O2'	2.22	0.72
8:Z:229:G:N2	8:Z:245:G:H2'	2.05	0.72
7:W:99:GLY:C	7:W:102:ASN:N	2.43	0.72
7:W:84:VAL:HG12	7:W:89:PRO:CA	2.19	0.72
7:W:283:GLU:C	7:W:284:PRO:CA	2.58	0.72
2:5:34:ARG:HD3	2:5:37:LYS:CD	2.05	0.72
7:W:106:PHE:HE2	7:W:121:LEU:CD1	1.99	0.72
3:6:65:LYS:CE	8:Z:64:C:C2'	2.56	0.72
4:A:151:C:OP1	4:A:204:G:H4'	1.90	0.72
7:W:365:GLU:C	7:W:366:GLN:HG3	2.10	0.72
3:6:65:LYS:CD	8:Z:64:C:C3'	2.52	0.72
1:4:115:ILE:CG2	1:4:140:TYR:CZ	2.73	0.72
8:Z:105:G:O2'	8:Z:106:A:H5'	1.90	0.72
2:5:25:GLU:OE1	7:W:22:ILE:HA	1.89	0.72
2:5:30:LEU:HD23	2:5:37:LYS:HZ2	1.54	0.72
1:4:110:LYS:HG2	1:4:115:ILE:O	1.88	0.72
7:W:444:GLY:HA2	7:W:447:SER:O	1.90	0.72
5:B:64:LYS:HZ2	5:B:65:ASN:H	1.38	0.72
7:W:300:ILE:O	7:W:303:LEU:HG	1.90	0.71
7:W:148:LEU:O	7:W:148:LEU:HD13	1.89	0.71
7:W:302:GLY:C	7:W:304:ILE:H	1.94	0.71
8:Z:158:A:OP1	8:Z:214:C:H5"	1.88	0.71
4:A:148:G:H4'	5:B:15:PHE:O	1.89	0.71
3:6:41:ILE:CG2	8:Z:47:U:O3'	2.35	0.71
7:W:326:GLN:O	7:W:329:LEU:HG	1.90	0.71
3:6:83:ILE:HG22	3:6:94:LYS:HB2	1.71	0.71
1:4:98:LEU:HB2	1:4:130:LYS:HB2	1.73	0.71
7:W:247:VAL:CG1	7:W:273:ILE:CD1	2.68	0.71
7:W:151:ASN:HA	7:W:154:LYS:HZ2	1.55	0.71
4:A:117:U:H3	4:A:234:A:H61	1.36	0.71
7:W:432:LYS:HG3	7:W:435:GLY:O	1.91	0.71
2:5:33:LEU:CB	2:5:37:LYS:HE2	2.21	0.71
2:5:34:ARG:NH1	2:5:48:ILE:HG23	2.06	0.71
7:W:340:MET:HE1	7:W:373:LYS:CB	2.20	0.71
2:5:34:ARG:HH12	2:5:48:ILE:CG2	2.04	0.71
7:W:234:LYS:HA	7:W:234:LYS:NZ	2.06	0.71
7:W:197:GLN:NE2	7:W:197:GLN:O	2.24	0.71
3:6:55:ASN:HD22	3:6:92:ASP:HB2	1.56	0.71
6:S:58:THR:HG21	7:W:339:ILE:CG1	2.21	0.70
7:W:18:SER:O	7:W:19:ASN:CG	2.29	0.70
1:4:122:THR:O	1:4:123:LEU:HD12	1.91	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:4:140:TYR:CZ	1:4:145:VAL:CG2	2.71	0.70
5:B:73:ASN:ND2	5:B:75:ASP:H	1.89	0.70
6:S:61:VAL:HG12	7:W:423:GLN:HE21	1.56	0.70
7:W:122:ALA:HB3	7:W:157:ILE:HD13	1.71	0.70
7:W:428:ALA:O	7:W:432:LYS:CB	2.38	0.70
7:W:394:LYS:HD2	8:Z:14:U:P	2.31	0.70
7:W:16:SER:O	7:W:17:LEU:CB	1.64	0.70
3:6:64:ASN:HD21	8:Z:48:C:C4'	2.03	0.70
7:W:136:CYS:O	7:W:145:PHE:HE2	1.75	0.70
4:A:125:G:H1	4:A:225:C:H42	1.39	0.70
7:W:432:LYS:HA	7:W:436:GLY:N	2.05	0.70
7:W:271:ILE:CD1	7:W:272:PHE:CD1	2.61	0.70
8:Z:161:G:C1'	8:Z:267:G:C4'	2.64	0.70
8:Z:160:G:O2'	8:Z:266:A:C2	2.40	0.70
7:W:314:ASP:C	7:W:315:ASN:HA	2.13	0.69
7:W:327:PHE:CB	7:W:333:TYR:HD2	1.95	0.69
6:S:57:LEU:CB	7:W:430:MET:HE3	2.22	0.69
7:W:14:LEU:CD1	7:W:295:LEU:HD23	2.22	0.69
8:Z:159:C:C4'	8:Z:213:A:N9	2.54	0.69
4:A:130:A:H2'	4:A:131:A:C8	2.26	0.69
7:W:109:LEU:H	7:W:109:LEU:HD23	1.57	0.69
7:W:325:GLY:O	7:W:328:THR:OG1	2.09	0.69
7:W:336:PHE:HE2	7:W:379:MET:HE2	1.57	0.69
1:4:79:THR:HG21	8:Z:109:G:OP1	1.92	0.69
3:6:68:TRP:HE3	8:Z:46:G:H21	1.31	0.69
8:Z:159:C:C4'	8:Z:213:A:O4'	2.26	0.69
5:B:93:LEU:N	5:B:93:LEU:HD23	2.08	0.69
7:W:328:THR:O	7:W:334:GLU:OE1	2.11	0.69
7:W:289:PRO:O	7:W:301:GLU:OE1	2.10	0.69
7:W:444:GLY:C	7:W:445:ASP:CA	2.61	0.69
7:W:339:ILE:O	7:W:342:MET:C	2.31	0.69
7:W:365:GLU:C	7:W:366:GLN:CG	2.61	0.69
7:W:260:LEU:O	7:W:263:VAL:HG12	1.92	0.69
7:W:14:LEU:HD11	7:W:295:LEU:HD23	1.73	0.69
7:W:24:ASN:O	7:W:28:LEU:HD13	1.93	0.69
8:Z:160:G:H5'	8:Z:212:A:H1'	1.74	0.69
7:W:138:ASP:OD1	7:W:144:ALA:CB	2.40	0.69
7:W:330:ARG:CB	7:W:333:TYR:N	2.44	0.69
7:W:340:MET:HE3	7:W:373:LYS:CA	2.23	0.69
3:6:64:ASN:ND2	8:Z:48:C:C4'	2.56	0.69
3:6:64:ASN:ND2	8:Z:48:C:C5'	2.16	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:4:103:LYS:O	1:4:103:LYS:HE3	1.93	0.69
7:W:14:LEU:HD11	7:W:295:LEU:CD2	2.23	0.69
7:W:89:PRO:HB3	7:W:287:THR:HG21	1.62	0.69
7:W:179:PHE:CD2	7:W:187:ILE:HG12	2.28	0.68
3:6:72:ILE:HD11	8:Z:45:A:C4	2.28	0.68
8:Z:44:U:H2'	8:Z:44:U:O2	1.92	0.68
7:W:323:LYS:H	7:W:337:GLN:NE2	1.88	0.68
1:4:98:LEU:CA	1:4:99:LYS:N	2.55	0.68
7:W:114:LYS:H	7:W:114:LYS:HD3	1.57	0.68
7:W:109:LEU:CD2	7:W:112:SER:OG	2.41	0.68
3:6:64:ASN:HD21	8:Z:48:C:H5'	0.55	0.68
2:5:33:LEU:CB	2:5:37:LYS:CE	2.71	0.68
6:S:56:PHE:CD1	7:W:350:GLY:O	2.44	0.68
1:4:76:PRO:N	2:5:38:VAL:HG21	2.09	0.68
3:6:25:HIS:HE1	3:6:79:VAL:HG12	1.58	0.68
1:4:119:LYS:HG3	1:4:135:LYS:HB2	1.75	0.68
7:W:16:SER:N	7:W:17:LEU:HD22	2.09	0.68
7:W:202:PHE:CZ	7:W:239:LYS:NZ	2.61	0.68
7:W:136:CYS:SG	7:W:148:LEU:CB	2.78	0.68
7:W:234:LYS:CE	7:W:237:LYS:HZ1	2.06	0.68
7:W:289:PRO:HA	7:W:301:GLU:OE1	1.94	0.67
4:A:154:G:O2'	4:A:155:G:H5'	1.93	0.67
7:W:429:GLN:HA	7:W:432:LYS:HB2	1.74	0.67
8:Z:159:C:O5'	8:Z:213:A:O4'	2.10	0.67
2:5:29:GLU:HG2	7:W:22:ILE:N	2.08	0.67
4:A:127:A:O2'	4:A:128:U:H5''	1.93	0.67
7:W:430:MET:O	7:W:432:LYS:N	2.28	0.67
7:W:271:ILE:HG23	7:W:272:PHE:CD1	2.29	0.67
2:5:29:GLU:HG2	7:W:21:THR:C	2.15	0.67
7:W:340:MET:CE	7:W:373:LYS:CB	2.72	0.67
1:4:89:ASN:CG	8:Z:172:C:C5'	2.29	0.67
7:W:90:GLY:CA	7:W:286:LYS:HB3	2.24	0.67
4:A:175:G:H1	4:A:221:C:H42	1.42	0.67
8:Z:230:A:H61	8:Z:245:G:H1'	1.58	0.67
7:W:290:PHE:HA	7:W:293:LYS:CB	2.25	0.67
7:W:48:LEU:CD2	7:W:52:LEU:HD23	2.25	0.67
3:6:59:ILE:CD1	8:Z:48:C:H3'	2.24	0.67
7:W:131:LYS:HG2	7:W:183:ASN:O	1.95	0.67
7:W:234:LYS:HZ1	7:W:237:LYS:HZ2	1.41	0.67
2:5:44:LYS:NZ	2:5:44:LYS:HA	2.08	0.67
7:W:299:ASP:O	7:W:347:GLN:O	2.12	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:245:VAL:CG2	7:W:270:ILE:HA	2.25	0.67
4:A:215:A:O5'	4:A:215:A:H8	1.78	0.67
7:W:330:ARG:NH1	7:W:379:MET:HB3	2.09	0.67
7:W:14:LEU:HD12	7:W:295:LEU:HD22	1.74	0.67
7:W:239:LYS:CG	7:W:239:LYS:CA	2.73	0.67
3:6:22:VAL:HG12	3:6:23:ASN:O	1.95	0.67
6:S:60:TYR:CD1	7:W:354:GLY:HA3	2.30	0.67
7:W:339:ILE:N	7:W:342:MET:HB2	2.09	0.67
7:W:432:LYS:CB	7:W:432:LYS:HZ3	2.06	0.67
7:W:87:VAL:HG23	7:W:257:GLY:HA2	1.70	0.67
7:W:245:VAL:HG23	7:W:270:ILE:HA	1.75	0.66
7:W:84:VAL:HG11	7:W:89:PRO:HA	1.72	0.66
5:B:15:PHE:CE1	5:B:85:GLN:HB2	2.30	0.66
7:W:443:GLY:O	7:W:447:SER:N	2.28	0.66
8:Z:159:C:O5'	8:Z:213:A:C4'	2.43	0.66
8:Z:159:C:O5'	8:Z:213:A:H1'	1.86	0.66
7:W:340:MET:CE	7:W:369:MET:O	2.44	0.66
7:W:271:ILE:CD1	7:W:272:PHE:CG	2.79	0.66
2:5:34:ARG:NH1	2:5:37:LYS:HZ1	1.93	0.66
7:W:118:CYS:CB	7:W:190:ASP:OD1	2.43	0.66
8:Z:201:U:H2'	8:Z:202:C:H6	1.60	0.66
7:W:347:GLN:O	7:W:348:ILE:HG13	1.96	0.66
7:W:339:ILE:HG22	7:W:372:LEU:HD21	1.77	0.66
7:W:10:ILE:HD11	7:W:38:ALA:HB2	1.78	0.66
7:W:330:ARG:CZ	7:W:387:LEU:HD22	2.26	0.66
3:6:37:ALA:HB1	3:6:68:TRP:CD1	2.31	0.66
7:W:41:GLU:HG2	7:W:42:ALA:N	2.11	0.66
7:W:84:VAL:O	7:W:89:PRO:HD3	1.96	0.66
7:W:130:TRP:CB	7:W:186:ILE:HD12	2.25	0.66
8:Z:253:C:H2'	8:Z:254:G:O4'	1.96	0.65
1:4:85:LYS:HD2	8:Z:171:C:O2'	1.97	0.65
7:W:117:THR:HG21	7:W:246:ILE:CD1	2.26	0.65
7:W:130:TRP:HB3	7:W:186:ILE:HD12	1.77	0.65
7:W:267:LYS:NZ	7:W:267:LYS:HA	2.11	0.65
7:W:324:HIS:HE1	7:W:338:ASN:N	1.67	0.65
7:W:432:LYS:CA	7:W:436:GLY:HA3	2.00	0.65
7:W:16:SER:C	7:W:17:LEU:HB3	0.60	0.65
7:W:250:LEU:HG	7:W:290:PHE:CE1	2.31	0.65
7:W:448:LYS:H	7:W:451:SER:N	1.93	0.65
7:W:330:ARG:HD2	7:W:333:TYR:CG	2.30	0.65
7:W:194:ARG:NH1	7:W:196:LYS:CA	2.59	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:289:PRO:O	7:W:293:LYS:N	2.29	0.65
7:W:234:LYS:CE	7:W:237:LYS:NZ	2.59	0.65
7:W:432:LYS:HD2	7:W:435:GLY:O	1.97	0.65
8:Z:112:A:H5'	8:Z:171:C:OP1	1.96	0.65
8:Z:159:C:C2	8:Z:213:A:C2	2.84	0.65
7:W:104:ILE:HG22	7:W:216:ASN:HB2	1.78	0.65
5:B:14:ARG:O	5:B:14:ARG:HG2	1.95	0.65
7:W:432:LYS:HB3	7:W:432:LYS:NZ	2.09	0.65
8:Z:159:C:O4'	8:Z:213:A:C1'	2.28	0.65
7:W:46:ILE:HD12	7:W:227:GLN:HB3	1.79	0.65
7:W:240:VAL:O	7:W:240:VAL:HG12	1.97	0.65
4:A:157:A:H2'	4:A:158:C:C6	2.32	0.65
6:S:57:LEU:HD23	7:W:430:MET:CE	2.19	0.65
7:W:250:LEU:HD11	7:W:290:PHE:CE1	2.25	0.65
7:W:288:GLN:HB2	7:W:289:PRO:CD	2.26	0.65
7:W:152:ALA:HB1	7:W:157:ILE:O	1.97	0.65
3:6:44:ILE:CD1	3:6:67:ILE:HD11	2.26	0.65
1:4:85:LYS:NZ	8:Z:171:C:H4'	2.13	0.65
7:W:449:ASN:O	7:W:453:SER:N	2.25	0.65
7:W:179:PHE:CE2	7:W:187:ILE:CG1	2.67	0.65
3:6:67:ILE:HG23	3:6:75:VAL:HG23	1.77	0.65
4:A:157:A:H2'	4:A:158:C:H6	1.62	0.64
8:Z:219:C:H2'	8:Z:220:A:C8	2.33	0.64
7:W:270:ILE:O	7:W:270:ILE:CD1	2.44	0.64
3:6:56:ASP:O	3:6:92:ASP:HB3	1.97	0.64
7:W:160:TYR:CZ	7:W:174:GLU:HB3	2.33	0.64
7:W:308:ASN:O	7:W:309:GLU:HB2	1.98	0.64
3:6:59:ILE:HD11	8:Z:48:C:P	2.32	0.64
7:W:194:ARG:NH2	7:W:198:GLU:O	2.31	0.64
7:W:247:VAL:CG1	7:W:273:ILE:HD13	2.27	0.64
7:W:88:ASP:O	7:W:287:THR:OG1	2.16	0.64
3:6:60:ASP:HA	8:Z:48:C:O2'	1.91	0.64
7:W:217:ILE:CG2	7:W:242:VAL:HG22	2.28	0.64
7:W:283:GLU:CA	7:W:284:PRO:HB2	2.23	0.64
7:W:290:PHE:HA	7:W:293:LYS:HB2	1.80	0.64
7:W:87:VAL:HG22	7:W:257:GLY:HA2	0.64	0.64
7:W:428:ALA:HA	7:W:431:VAL:HB	1.80	0.64
7:W:430:MET:O	7:W:433:LYS:HB3	1.97	0.64
1:4:125:ARG:HH22	1:4:131:LYS:HZ3	1.45	0.64
7:W:287:THR:O	7:W:291:ILE:HD13	1.90	0.64
7:W:45:ASN:O	7:W:227:GLN:CG	2.26	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:94:TRP:HZ2	7:W:218:VAL:HG21	1.62	0.64
7:W:218:VAL:HG11	7:W:246:ILE:HG13	1.80	0.64
2:5:32:GLN:NE2	7:W:70:ASN:HB2	2.14	0.64
7:W:247:VAL:O	7:W:247:VAL:HG13	1.97	0.63
7:W:98:LYS:NZ	7:W:98:LYS:HA	2.14	0.63
7:W:29:ASN:HA	7:W:32:LEU:HD22	1.81	0.63
5:B:60:VAL:HG23	5:B:83:ARG:C	2.18	0.63
7:W:206:LEU:HD23	7:W:206:LEU:O	1.98	0.63
7:W:340:MET:SD	7:W:373:LYS:N	2.71	0.63
7:W:430:MET:HA	7:W:430:MET:CG	2.26	0.63
7:W:40:LEU:HD23	7:W:41:GLU:CB	2.28	0.63
7:W:327:PHE:CG	7:W:333:TYR:CE2	2.86	0.63
1:4:98:LEU:HB2	1:4:130:LYS:CB	2.28	0.63
7:W:318:LEU:C	7:W:320:GLU:H	2.01	0.63
7:W:340:MET:HE3	7:W:369:MET:O	1.98	0.63
7:W:88:ASP:OD1	7:W:259:ALA:CB	2.45	0.63
7:W:136:CYS:O	7:W:145:PHE:CE2	2.52	0.63
4:A:148:G:O2'	5:B:83:ARG:NH2	2.31	0.63
7:W:431:VAL:HG13	7:W:431:VAL:HG22	1.78	0.63
8:Z:158:A:OP1	8:Z:214:C:H5'	1.97	0.63
3:6:28:LEU:HD23	3:6:75:VAL:HG11	1.80	0.63
7:W:340:MET:O	7:W:342:MET:N	2.31	0.63
1:4:119:LYS:HD2	1:4:119:LYS:C	2.18	0.63
7:W:109:LEU:HD21	7:W:112:SER:OG	1.98	0.63
1:4:89:ASN:HB2	8:Z:172:C:H5'	0.65	0.62
7:W:11:THR:CA	7:W:14:LEU:HD23	2.27	0.62
7:W:83:LEU:CD1	7:W:294:LEU:N	2.62	0.62
7:W:87:VAL:O	7:W:87:VAL:CG1	2.43	0.62
7:W:15:ARG:O	7:W:18:SER:N	2.31	0.62
7:W:222:ASP:O	7:W:225:ILE:HG12	1.99	0.62
7:W:234:LYS:NZ	7:W:237:LYS:NZ	2.47	0.62
5:B:76:VAL:HG13	5:B:77:GLN:N	2.14	0.62
7:W:431:VAL:O	7:W:431:VAL:HG12	2.00	0.62
7:W:53:ARG:O	7:W:56:VAL:HG12	2.00	0.62
7:W:235:ALA:HB1	7:W:239:LYS:HE3	1.81	0.62
8:Z:114:C:O2'	8:Z:157:A:H2'	2.00	0.62
3:6:72:ILE:CD1	8:Z:45:A:C5	2.80	0.62
1:4:123:LEU:CD1	8:Z:111:U:C4'	2.74	0.62
7:W:82:GLU:O	7:W:85:LYS:HB2	1.99	0.62
7:W:179:PHE:CZ	7:W:187:ILE:CG2	2.81	0.62
5:B:88:GLN:HE21	5:B:92:SER:HB2	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:4:98:LEU:O	1:4:129:LYS:C	2.38	0.62
7:W:359:PHE:O	7:W:360:MET:HB2	1.99	0.62
4:A:120:G:N2	4:A:230:C:O2	2.32	0.62
7:W:339:ILE:CG2	7:W:372:LEU:HD21	2.29	0.62
7:W:22:ILE:O	7:W:22:ILE:HG22	2.00	0.62
7:W:95:THR:O	7:W:95:THR:HG23	1.98	0.62
4:A:139:A:H2'	4:A:140:C:H6	1.63	0.62
1:4:89:ASN:HD22	8:Z:171:C:C2'	2.10	0.62
7:W:285:PHE:CD1	7:W:285:PHE:HA	2.31	0.62
7:W:87:VAL:C	7:W:259:ALA:CB	2.45	0.62
7:W:40:LEU:CG	7:W:41:GLU:N	2.63	0.62
8:Z:161:G:C2'	8:Z:267:G:H4'	2.07	0.62
7:W:160:TYR:OH	7:W:174:GLU:HG3	2.00	0.62
4:A:195:U:O4'	7:W:411:GLY:HA3	1.99	0.62
7:W:77:HIS:O	7:W:81:LYS:CB	2.47	0.62
7:W:443:GLY:O	7:W:447:SER:O	2.18	0.62
7:W:96:PRO:HG2	7:W:130:TRP:CZ2	2.35	0.62
3:6:34:LYS:HG3	8:Z:44:U:C5	2.34	0.62
7:W:449:ASN:O	7:W:451:SER:N	2.33	0.62
4:A:117:U:H3	4:A:234:A:N6	1.98	0.62
7:W:297:MET:HB3	7:W:300:ILE:HB	1.81	0.62
1:4:122:THR:HG23	1:4:130:LYS:CD	2.30	0.62
7:W:453:SER:O	7:W:454:GLN:C	2.37	0.62
7:W:306:LYS:CB	7:W:347:GLN:NE2	2.63	0.62
1:4:119:LYS:NZ	1:4:135:LYS:HD3	2.14	0.62
3:6:59:ILE:HD13	8:Z:48:C:O3'	1.94	0.62
1:4:96:VAL:HG12	1:4:97:ASP:N	2.15	0.62
7:W:10:ILE:CD1	7:W:38:ALA:HB2	2.30	0.61
3:6:58:ARG:CZ	8:Z:48:C:H2'	2.29	0.61
7:W:294:LEU:HG	7:W:294:LEU:N	2.06	0.61
7:W:207:GLN:CA	7:W:210:ASN:ND2	2.62	0.61
8:Z:138:C:H5'	8:Z:138:C:H6	1.65	0.61
7:W:365:GLU:HB2	7:W:366:GLN:C	2.21	0.61
7:W:84:VAL:O	7:W:260:LEU:HD11	2.00	0.61
7:W:271:ILE:HD13	7:W:271:ILE:O	2.00	0.61
8:Z:159:C:C5'	8:Z:213:A:O4'	2.47	0.61
7:W:94:TRP:HZ2	7:W:218:VAL:CG2	2.11	0.61
1:4:123:LEU:CD2	8:Z:111:U:H5'	2.21	0.61
1:4:88:ASP:O	8:Z:172:C:C4'	2.44	0.61
7:W:255:LYS:NZ	7:W:255:LYS:HA	2.14	0.61
6:S:58:THR:HG21	7:W:339:ILE:CB	2.31	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:337:GLN:O	7:W:340:MET:C	2.39	0.61
6:S:60:TYR:OH	7:W:355:PHE:C	2.39	0.61
7:W:136:CYS:SG	7:W:148:LEU:HD12	2.41	0.61
5:B:107:TYR:CZ	5:B:111:MET:HG3	2.35	0.61
4:A:149:A:H4'	5:B:17:CYS:SG	2.39	0.61
1:4:89:ASN:ND2	8:Z:171:C:H3'	2.06	0.61
7:W:272:PHE:CG	7:W:282:PHE:CE1	2.89	0.61
6:S:56:PHE:CE2	7:W:351:MET:O	2.50	0.61
7:W:327:PHE:CG	7:W:333:TYR:HE2	2.18	0.61
7:W:366:GLN:HG3	7:W:367:GLU:CA	2.30	0.61
6:S:63:VAL:CG1	7:W:358:ASP:HB3	2.29	0.61
7:W:330:ARG:HH21	7:W:387:LEU:HD13	1.66	0.61
7:W:340:MET:N	7:W:372:LEU:HD13	2.07	0.61
7:W:304:ILE:O	7:W:308:ASN:N	2.33	0.61
6:S:61:VAL:CG1	7:W:423:GLN:HG2	2.21	0.61
6:S:57:LEU:CG	7:W:430:MET:CE	2.75	0.61
7:W:52:LEU:HG	7:W:86:LEU:HD11	0.61	0.61
7:W:202:PHE:HZ	7:W:239:LYS:CE	2.14	0.61
7:W:84:VAL:HG11	7:W:89:PRO:HB3	1.78	0.60
7:W:441:PHE:C	7:W:445:ASP:N	2.52	0.60
7:W:303:LEU:CG	7:W:348:ILE:HD11	2.32	0.60
1:4:98:LEU:HB2	1:4:130:LYS:HG3	1.83	0.60
7:W:57:LYS:HA	7:W:57:LYS:HE3	1.83	0.60
8:Z:161:G:C5'	8:Z:267:G:C1'	2.75	0.60
4:A:139:A:H2'	4:A:140:C:C6	2.35	0.60
8:Z:41:C:H5'	8:Z:41:C:H6	1.66	0.60
7:W:202:PHE:HZ	7:W:239:LYS:CD	2.11	0.60
3:6:45:ARG:HD2	8:Z:48:C:OP1	2.02	0.60
6:S:59:LEU:HD21	7:W:352:ILE:HD11	1.84	0.60
6:S:62:THR:HG22	7:W:371:ARG:NH1	2.15	0.60
1:4:110:LYS:HE3	1:4:110:LYS:O	2.01	0.60
7:W:138:ASP:O	7:W:138:ASP:OD1	2.19	0.60
6:S:57:LEU:CG	7:W:430:MET:HE1	2.30	0.60
7:W:271:ILE:HG23	7:W:272:PHE:N	2.17	0.60
7:W:76:GLN:CA	7:W:79:VAL:HG22	2.31	0.60
7:W:477:MET:C	7:W:479:GLY:N	2.55	0.60
7:W:62:LEU:O	7:W:62:LEU:HD23	2.02	0.60
7:W:12:SER:O	7:W:17:LEU:HD22	2.02	0.60
7:W:290:PHE:O	7:W:294:LEU:HA	2.02	0.60
6:S:60:TYR:CB	7:W:352:ILE:HG22	2.25	0.60
7:W:247:VAL:CG1	7:W:273:ILE:HD12	2.30	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:193:G:N1	7:W:409:GLY:O	2.32	0.60
8:Z:35:G:H3'	8:Z:35:G:OP1	2.02	0.60
7:W:365:GLU:CB	7:W:366:GLN:CA	2.78	0.60
7:W:88:ASP:CG	7:W:270:ILE:HG21	2.21	0.60
2:5:33:LEU:HB2	2:5:37:LYS:HE2	1.83	0.60
7:W:92:LYS:HD2	7:W:269:PRO:HB2	1.83	0.60
8:Z:198:G:O2'	8:Z:199:C:H5'	2.02	0.60
1:4:91:THR:HG22	1:4:135:LYS:HG3	1.83	0.59
6:S:51:GLY:O	6:S:55:ASN:HB2	2.01	0.59
1:4:83:MET:HA	1:4:86:ILE:HG22	1.84	0.59
7:W:340:MET:CA	7:W:372:LEU:HD12	2.26	0.59
3:6:58:ARG:NH1	8:Z:48:C:C2'	2.63	0.59
7:W:444:GLY:C	7:W:445:ASP:N	2.55	0.59
1:4:114:ASP:C	1:4:115:ILE:HG23	2.15	0.59
7:W:298:GLY:CA	7:W:299:ASP:N	2.64	0.59
1:4:72:ILE:O	1:4:97:ASP:CG	2.40	0.59
7:W:213:GLN:NE2	7:W:213:GLN:O	2.35	0.59
7:W:217:ILE:HB	7:W:242:VAL:HA	1.83	0.59
8:Z:276:G:O2'	8:Z:277:A:H5'	2.02	0.59
7:W:310:LEU:C	7:W:312:LEU:N	2.52	0.59
7:W:87:VAL:HG21	7:W:257:GLY:N	2.15	0.59
8:Z:141:C:O2'	8:Z:142:U:H5'	2.03	0.59
7:W:271:ILE:C	7:W:271:ILE:HD13	2.23	0.59
7:W:48:LEU:CD2	7:W:52:LEU:CD2	2.81	0.59
2:5:31:GLY:O	2:5:35:ILE:HG12	2.03	0.59
1:4:113:TYR:HB2	1:4:115:ILE:HD12	1.84	0.59
7:W:114:LYS:HG2	7:W:115:THR:N	2.18	0.59
1:4:88:ASP:C	8:Z:172:C:H4'	2.22	0.59
2:5:30:LEU:O	2:5:37:LYS:CE	2.50	0.59
7:W:323:LYS:CA	7:W:337:GLN:NE2	2.66	0.58
7:W:194:ARG:CZ	7:W:195:HIS:O	2.51	0.58
1:4:125:ARG:HD3	1:4:127:ASP:HB3	1.84	0.58
7:W:240:VAL:O	7:W:240:VAL:CG1	2.51	0.58
7:W:430:MET:C	7:W:432:LYS:N	2.56	0.58
1:4:89:ASN:ND2	8:Z:171:C:O3'	0.74	0.58
6:S:60:TYR:HE2	7:W:355:PHE:HA	1.68	0.58
1:4:76:PRO:O	2:5:38:VAL:HG21	2.03	0.58
7:W:240:VAL:O	7:W:241:ASP:O	2.21	0.58
8:Z:179:A:H2'	8:Z:180:C:H6	1.69	0.58
7:W:286:LYS:CB	7:W:286:LYS:CE	2.81	0.58
3:6:65:LYS:CE	8:Z:64:C:H2'	2.33	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:233:U:H2'	4:A:234:A:H5''	1.84	0.58
8:Z:170:U:H5'	8:Z:170:U:H6	1.67	0.58
7:W:293:LYS:C	7:W:294:LEU:HB3	2.14	0.58
7:W:32:LEU:CD2	7:W:57:LYS:HZ3	2.17	0.58
7:W:84:VAL:CG1	7:W:88:ASP:C	2.71	0.58
4:A:212:C:H4'	4:A:213:A:OP1	2.03	0.58
4:A:163:A:O5'	4:A:163:A:H8	1.87	0.58
7:W:8:ARG:N	7:W:253:HIS:CE1	2.72	0.58
7:W:347:GLN:C	7:W:348:ILE:HG13	2.24	0.58
7:W:52:LEU:HD21	7:W:86:LEU:HD22	0.61	0.58
4:A:233:U:H3'	4:A:234:A:H5'	1.86	0.58
8:Z:179:A:H2'	8:Z:180:C:C6	2.38	0.58
6:S:60:TYR:CE2	7:W:355:PHE:HA	2.39	0.58
7:W:122:ALA:HB1	7:W:157:ILE:HG21	1.85	0.58
4:A:128:U:H6	4:A:128:U:H5'	1.68	0.58
1:4:123:LEU:HD13	8:Z:111:U:H4'	1.82	0.58
7:W:23:ILE:HG23	7:W:26:GLU:CD	2.23	0.58
8:Z:159:C:N1	8:Z:213:A:C2	2.72	0.58
7:W:179:PHE:HZ	7:W:187:ILE:HG23	1.69	0.58
7:W:397:SER:OG	8:Z:12:C:O3'	2.17	0.58
4:A:214:A:H5'	4:A:215:A:P	2.43	0.58
7:W:335:GLN:HB3	7:W:427:PHE:CE2	2.38	0.57
7:W:431:VAL:HA	7:W:431:VAL:CG1	2.33	0.57
7:W:432:LYS:CD	7:W:436:GLY:HA3	2.32	0.57
3:6:65:LYS:CB	8:Z:64:C:HO2'	2.17	0.57
8:Z:159:C:O2	8:Z:213:A:C2	2.57	0.57
8:Z:160:G:OP1	8:Z:212:A:C1'	2.51	0.57
6:S:60:TYR:CZ	7:W:354:GLY:HA3	2.39	0.57
7:W:194:ARG:CZ	7:W:202:PHE:HB2	2.29	0.57
7:W:41:GLU:CG	7:W:42:ALA:H	2.17	0.57
7:W:118:CYS:SG	7:W:190:ASP:OD2	2.62	0.57
5:B:73:ASN:HD21	5:B:75:ASP:H	1.50	0.57
7:W:52:LEU:HD11	7:W:86:LEU:HD23	1.61	0.57
7:W:194:ARG:NH1	7:W:195:HIS:O	2.38	0.57
7:W:49:VAL:HG23	7:W:50:LYS:N	2.14	0.57
6:S:60:TYR:OH	7:W:356:GLY:N	2.37	0.57
7:W:139:THR:HA	7:W:145:PHE:CE1	2.39	0.57
5:B:73:ASN:HD21	5:B:75:ASP:CB	2.16	0.57
1:4:115:ILE:CG2	1:4:140:TYR:CE1	2.85	0.57
7:W:221:MET:HE2	7:W:247:VAL:HB	1.85	0.57
7:W:429:GLN:C	7:W:432:LYS:N	2.54	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:53:ARG:C	7:W:56:VAL:HG12	2.25	0.57
5:B:73:ASN:ND2	5:B:75:ASP:N	2.51	0.57
7:W:202:PHE:CE1	7:W:239:LYS:HB2	2.30	0.57
7:W:122:ALA:HB1	7:W:157:ILE:HD13	1.86	0.57
7:W:331:ASP:CB	7:W:331:ASP:CG	2.72	0.57
7:W:330:ARG:CD	7:W:387:LEU:HD22	2.35	0.57
7:W:432:LYS:CD	7:W:435:GLY:O	2.52	0.57
7:W:194:ARG:HH12	7:W:196:LYS:C	2.08	0.57
7:W:267:LYS:HZ2	7:W:267:LYS:HA	1.69	0.57
7:W:160:TYR:OH	7:W:174:GLU:CB	2.53	0.57
7:W:319:ILE:CA	7:W:323:LYS:HE3	2.34	0.57
7:W:432:LYS:CG	7:W:435:GLY:C	2.68	0.57
7:W:163:TYR:CD1	7:W:163:TYR:O	2.57	0.57
4:A:220:C:H2'	4:A:221:C:C5'	2.29	0.57
7:W:217:ILE:HG22	7:W:242:VAL:HG22	1.87	0.57
8:Z:217:U:O2'	8:Z:218:C:H5'	2.05	0.57
7:W:319:ILE:O	7:W:319:ILE:CG2	2.52	0.57
7:W:364:ASN:CG	7:W:367:GLU:OE2	2.43	0.57
7:W:379:MET:HA	7:W:382:MET:HG3	1.87	0.57
7:W:335:GLN:CB	7:W:427:PHE:CZ	2.73	0.57
7:W:285:PHE:HD1	7:W:285:PHE:HB2	1.63	0.57
7:W:84:VAL:HG22	7:W:287:THR:O	2.05	0.57
7:W:234:LYS:HZ1	7:W:234:LYS:HA	1.69	0.57
7:W:364:ASN:CB	7:W:367:GLU:OE2	2.53	0.56
7:W:440:LEU:O	7:W:444:GLY:N	2.38	0.56
7:W:429:GLN:CA	7:W:432:LYS:HB2	2.33	0.56
7:W:286:LYS:HE3	7:W:286:LYS:CB	2.35	0.56
7:W:84:VAL:O	7:W:260:LEU:HD21	2.03	0.56
7:W:89:PRO:CA	7:W:287:THR:CB	2.68	0.56
6:S:59:LEU:HG	7:W:352:ILE:CD1	2.34	0.56
7:W:134:LEU:HB3	7:W:148:LEU:HD11	1.87	0.56
7:W:122:ALA:HB1	7:W:157:ILE:CD1	2.35	0.56
7:W:391:ASP:HB3	7:W:394:LYS:HZ2	1.69	0.56
5:B:60:VAL:CG2	5:B:84:VAL:HG12	2.35	0.56
5:B:77:GLN:HG2	5:B:77:GLN:O	2.05	0.56
8:Z:219:C:H2'	8:Z:220:A:H8	1.68	0.56
5:B:86:LEU:HD13	5:B:99:PRO:O	2.05	0.56
3:6:65:LYS:HD2	8:Z:64:C:HO2'	0.75	0.56
7:W:135:ILE:CD1	7:W:160:TYR:HB3	2.36	0.56
7:W:250:LEU:HG	7:W:290:PHE:HZ	1.61	0.56
2:5:34:ARG:NH1	2:5:37:LYS:HZ3	2.02	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:4:96:VAL:O	1:4:97:ASP:OD2	2.20	0.56
7:W:104:ILE:HD11	7:W:188:ILE:HG12	1.87	0.56
4:A:127:A:C2'	4:A:128:U:C5'	2.79	0.56
8:Z:202:C:H3'	8:Z:203:G:C8	2.40	0.56
8:Z:114:C:H4'	8:Z:115:C:OP2	2.06	0.56
8:Z:197:G:O2'	8:Z:198:G:H5'	2.05	0.56
2:5:44:LYS:HZ2	2:5:44:LYS:HA	1.70	0.56
7:W:8:ARG:HB2	7:W:253:HIS:NE2	2.21	0.56
7:W:83:LEU:HD13	7:W:294:LEU:N	2.21	0.56
7:W:444:GLY:CA	7:W:447:SER:O	2.52	0.56
1:4:125:ARG:NH2	1:4:131:LYS:HZ3	2.04	0.56
7:W:56:VAL:HG13	7:W:57:LYS:N	2.21	0.56
7:W:84:VAL:O	7:W:88:ASP:CA	2.54	0.56
3:6:68:TRP:CH2	8:Z:47:U:C1'	2.89	0.56
8:Z:226:G:O2'	8:Z:227:U:H5'	2.06	0.56
7:W:13:ALA:O	7:W:17:LEU:HA	2.06	0.56
3:6:41:ILE:HD12	3:6:64:ASN:HD22	1.71	0.56
4:A:220:C:C3'	4:A:221:C:H5''	2.36	0.56
7:W:247:VAL:HG11	7:W:273:ILE:HD12	1.88	0.56
7:W:96:PRO:HG2	7:W:130:TRP:HZ2	1.70	0.56
3:6:17:THR:HG22	3:6:82:ARG:HE	1.71	0.56
1:4:106:LYS:HG3	1:4:117:ALA:HB3	1.88	0.55
7:W:16:SER:H	7:W:17:LEU:HD22	1.71	0.55
7:W:448:LYS:N	7:W:451:SER:CA	2.67	0.55
7:W:151:ASN:HA	7:W:154:LYS:NZ	2.22	0.55
5:B:76:VAL:HG13	5:B:77:GLN:H	1.71	0.55
5:B:112:ILE:HG23	5:B:115:LEU:HD12	1.87	0.55
5:B:62:LEU:HD12	5:B:81:ARG:O	2.07	0.55
7:W:84:VAL:C	7:W:260:LEU:HD11	2.26	0.55
3:6:58:ARG:NH1	8:Z:49:G:OP2	2.37	0.55
7:W:328:THR:CG2	7:W:328:THR:O	2.55	0.55
7:W:90:GLY:HA3	7:W:286:LYS:CB	2.33	0.55
1:4:109:VAL:HG22	1:4:115:ILE:HD11	1.89	0.55
4:A:171:U:C3'	4:A:172:A:H5''	2.36	0.55
7:W:356:GLY:C	7:W:358:ASP:N	2.54	0.55
7:W:448:LYS:N	7:W:451:SER:H	2.04	0.55
7:W:179:PHE:HD1	7:W:184:PHE:HD2	1.53	0.55
2:5:36:GLN:C	2:5:40:SER:O	2.43	0.55
8:Z:196:G:O2'	8:Z:197:G:P	2.64	0.55
7:W:23:ILE:HG22	7:W:24:ASN:N	2.22	0.55
7:W:88:ASP:C	7:W:287:THR:HG1	2.10	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:6:59:ILE:CB	8:Z:48:C:O3'	2.01	0.55
7:W:42:ALA:O	7:W:43:ASP:HB3	2.07	0.55
7:W:332:MET:CG	7:W:424:TYR:HD1	2.20	0.55
6:S:62:THR:CG2	7:W:371:ARG:HH11	2.19	0.55
7:W:118:CYS:SG	7:W:190:ASP:CG	2.85	0.55
2:5:27:LYS:HE3	2:5:27:LYS:C	2.28	0.55
4:A:130:A:H2'	4:A:131:A:H8	1.72	0.55
6:S:57:LEU:HD23	7:W:430:MET:HE3	1.84	0.55
5:B:64:LYS:HD3	5:B:64:LYS:H	1.71	0.55
7:W:306:LYS:O	7:W:310:LEU:HB2	2.07	0.54
7:W:430:MET:C	7:W:432:LYS:H	2.10	0.54
7:W:225:ILE:CB	7:W:229:CYS:SG	2.94	0.54
1:4:83:MET:O	1:4:86:ILE:HG22	2.07	0.54
8:Z:135:A:H2'	8:Z:136:C:C6	2.43	0.54
7:W:23:ILE:CG2	7:W:26:GLU:CD	2.76	0.54
7:W:84:VAL:HG12	7:W:88:ASP:C	2.27	0.54
8:Z:114:C:O2'	8:Z:158:A:H5'	2.07	0.54
7:W:135:ILE:HD13	7:W:160:TYR:HB3	1.89	0.54
7:W:92:LYS:CE	7:W:269:PRO:HG2	2.36	0.54
7:W:90:GLY:CA	7:W:286:LYS:CB	2.85	0.54
8:Z:159:C:H2'	8:Z:160:G:C8	2.42	0.54
8:Z:160:G:H5'	8:Z:212:A:N3	2.15	0.54
7:W:133:CYS:CB	7:W:179:PHE:HE1	2.19	0.54
1:4:145:VAL:O	7:W:68:GLY:CA	2.55	0.54
5:B:73:ASN:HD21	5:B:75:ASP:N	2.05	0.54
5:B:116:LYS:N	5:B:116:LYS:HD2	2.23	0.54
1:4:125:ARG:HG3	1:4:129:LYS:O	2.08	0.54
7:W:245:VAL:CG2	7:W:270:ILE:HG22	2.38	0.54
7:W:292:SER:O	7:W:295:LEU:N	2.37	0.54
7:W:450:VAL:C	7:W:454:GLN:H	2.03	0.54
5:B:60:VAL:HB	5:B:84:VAL:HG12	1.90	0.54
7:W:460:GLN:N	7:W:461:GLN:N	2.55	0.54
7:W:160:TYR:CE2	7:W:174:GLU:HB3	2.42	0.54
7:W:271:ILE:CD1	7:W:272:PHE:CZ	2.90	0.54
3:6:65:LYS:CD	8:Z:64:C:HO2'	1.37	0.54
8:Z:243:A:H5'	8:Z:245:G:O4'	2.07	0.54
7:W:247:VAL:HG11	7:W:273:ILE:CD1	2.38	0.54
1:4:98:LEU:HG	1:4:100:ALA:H	1.73	0.54
7:W:341:LYS:C	7:W:344:PRO:HB3	2.28	0.54
7:W:430:MET:C	7:W:433:LYS:CB	2.64	0.54
7:W:32:LEU:O	7:W:35:VAL:HG12	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:84:VAL:O	7:W:88:ASP:N	2.39	0.54
7:W:130:TRP:CG	7:W:186:ILE:CD1	2.90	0.54
6:S:57:LEU:CB	7:W:430:MET:CE	2.85	0.54
8:Z:159:C:O3'	8:Z:212:A:C1'	2.54	0.54
2:5:33:LEU:HD13	2:5:48:ILE:HG13	1.89	0.54
7:W:448:LYS:H	7:W:451:SER:H	1.55	0.54
4:A:195:U:H4'	7:W:411:GLY:O	2.08	0.54
7:W:314:ASP:OD1	7:W:315:ASN:N	2.41	0.53
6:S:50:LEU:HD13	7:W:478:ALA:CA	2.24	0.53
8:Z:159:C:O2	8:Z:212:A:C2	2.61	0.53
8:Z:228:G:C6	8:Z:229:G:N1	2.77	0.53
4:A:233:U:H3'	4:A:234:A:C5'	2.39	0.53
1:4:123:LEU:HD23	8:Z:110:U:O2'	2.08	0.53
7:W:84:VAL:HG22	7:W:287:THR:HB	1.88	0.53
7:W:288:GLN:HB2	7:W:289:PRO:HD2	1.90	0.53
1:4:75:TYR:CD1	2:5:34:ARG:C	2.79	0.53
7:W:179:PHE:HZ	7:W:187:ILE:CG2	2.21	0.53
7:W:122:ALA:HB3	7:W:157:ILE:CD1	2.34	0.53
2:5:14:LYS:NZ	2:5:14:LYS:HA	2.23	0.53
1:4:72:ILE:O	1:4:97:ASP:OD2	2.25	0.53
7:W:179:PHE:CE1	7:W:187:ILE:HG12	2.35	0.53
6:S:54:ILE:CG2	7:W:427:PHE:CZ	2.90	0.53
2:5:34:ARG:HH11	2:5:37:LYS:HZ3	1.57	0.53
5:B:88:GLN:O	5:B:91:GLY:N	2.42	0.53
7:W:297:MET:CA	7:W:297:MET:CG	2.81	0.53
7:W:260:LEU:HA	7:W:263:VAL:HG12	1.90	0.53
7:W:449:ASN:C	7:W:451:SER:N	2.61	0.53
1:4:76:PRO:O	2:5:38:VAL:CG2	2.56	0.53
7:W:114:LYS:HG2	7:W:115:THR:H	1.74	0.53
7:W:313:ASP:HA	7:W:319:ILE:CD1	2.19	0.53
7:W:42:ALA:CA	7:W:49:VAL:CG2	2.75	0.53
7:W:106:PHE:HZ	7:W:121:LEU:HD12	1.62	0.53
4:A:208:A:H1'	7:W:380:ASP:O	2.08	0.53
8:Z:87:C:O2'	8:Z:88:A:H5'	2.08	0.53
7:W:342:MET:HE3	7:W:347:GLN:HG3	1.88	0.53
7:W:365:GLU:N	7:W:366:GLN:N	2.56	0.53
7:W:88:ASP:OD2	7:W:259:ALA:CB	2.45	0.53
8:Z:161:G:C4'	8:Z:267:G:C4'	2.86	0.53
6:S:60:TYR:CE2	7:W:358:ASP:OD2	2.61	0.53
7:W:218:VAL:CG1	7:W:246:ILE:HG13	2.39	0.53
7:W:207:GLN:O	7:W:210:ASN:ND2	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:Z:231:A:H4'	8:Z:232:G:O5'	2.09	0.53
7:W:307:VAL:O	7:W:310:LEU:N	2.42	0.53
2:5:34:ARG:NH1	2:5:48:ILE:CG2	2.70	0.53
3:6:68:TRP:CZ2	8:Z:46:G:O2'	2.51	0.52
7:W:330:ARG:CZ	7:W:387:LEU:CD2	2.86	0.52
7:W:340:MET:HE2	7:W:369:MET:O	2.09	0.52
7:W:448:LYS:N	7:W:451:SER:N	2.58	0.52
8:Z:5:A:N1	8:Z:27:G:H4'	2.24	0.52
5:B:71:GLU:OE2	5:B:78:TYR:HD2	1.92	0.52
8:Z:229:G:H22	8:Z:245:G:H2'	1.73	0.52
7:W:306:LYS:CB	7:W:347:GLN:CD	2.74	0.52
6:S:62:THR:HG22	7:W:371:ARG:HH11	1.74	0.52
7:W:441:PHE:C	7:W:444:GLY:CA	2.77	0.52
7:W:134:LEU:HD12	7:W:157:ILE:HG13	1.90	0.52
7:W:293:LYS:C	7:W:294:LEU:C	2.69	0.52
3:6:61:VAL:CG1	8:Z:63:A:N3	2.69	0.52
7:W:442:LYS:C	7:W:444:GLY:H	2.10	0.52
1:4:85:LYS:HB3	1:4:91:THR:OG1	2.10	0.52
7:W:122:ALA:CB	7:W:157:ILE:HD12	2.37	0.52
7:W:397:SER:HB3	8:Z:13:C:H5'	1.92	0.52
5:B:116:LYS:O	5:B:120:GLN:HG2	2.09	0.52
4:A:199:A:H8	4:A:199:A:OP1	1.93	0.52
7:W:276:GLY:H	7:W:281:ASP:HB3	1.73	0.52
7:W:52:LEU:CD2	7:W:86:LEU:CD1	2.77	0.52
7:W:272:PHE:CB	7:W:282:PHE:HE1	2.19	0.52
8:Z:62:G:H2'	8:Z:63:A:C8	2.44	0.52
7:W:194:ARG:NH2	7:W:202:PHE:CB	2.57	0.52
1:4:114:ASP:C	1:4:115:ILE:CG2	2.75	0.52
4:A:175:G:H1	4:A:221:C:N4	2.08	0.52
5:B:15:PHE:CZ	5:B:85:GLN:HB2	2.45	0.52
4:A:172:A:H2	4:A:225:C:H1'	1.73	0.52
8:Z:256:A:H2'	8:Z:258:G:C8	2.46	0.52
7:W:330:ARG:NH2	7:W:387:LEU:CD1	2.73	0.51
1:4:123:LEU:CD1	8:Z:111:U:H5'	2.37	0.51
7:W:88:ASP:OD1	7:W:259:ALA:CA	2.59	0.51
1:4:96:VAL:CG1	1:4:97:ASP:N	2.73	0.51
7:W:92:LYS:HE3	7:W:269:PRO:CG	2.40	0.51
5:B:112:ILE:C	5:B:114:LYS:H	2.13	0.51
8:Z:24:G:H2'	8:Z:25:G:H8	1.75	0.51
4:A:136:G:N3	4:A:214:A:H2	2.09	0.51
7:W:40:LEU:HD23	7:W:41:GLU:HB3	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:4:119:LYS:CD	1:4:135:LYS:HZ3	2.13	0.51
7:W:284:PRO:O	7:W:286:LYS:HG2	2.03	0.51
7:W:56:VAL:HG13	7:W:57:LYS:H	1.75	0.51
7:W:40:LEU:CD2	7:W:40:LEU:CB	2.82	0.51
7:W:134:LEU:HD13	7:W:148:LEU:HD11	1.93	0.51
4:A:164:G:OP2	4:A:164:G:H8	1.92	0.51
7:W:134:LEU:CG	7:W:157:ILE:HD12	2.41	0.51
7:W:219:TYR:CE2	7:W:221:MET:HB3	2.45	0.51
5:B:93:LEU:H	5:B:93:LEU:HD23	1.75	0.51
5:B:56:VAL:HG21	5:B:107:TYR:CE2	2.45	0.51
7:W:80:PHE:CD2	7:W:291:ILE:CG1	2.66	0.51
1:4:75:TYR:CE1	2:5:35:ILE:CA	2.87	0.51
7:W:359:PHE:O	7:W:360:MET:CB	2.59	0.51
3:6:59:ILE:HD13	8:Z:48:C:C3'	2.38	0.51
1:4:78:THR:HG23	2:5:38:VAL:CG1	2.40	0.51
7:W:217:ILE:HG21	7:W:242:VAL:HG22	1.92	0.51
5:B:41:VAL:CG1	5:B:42:GLU:N	2.72	0.51
7:W:84:VAL:HG12	7:W:88:ASP:O	2.08	0.51
3:6:65:LYS:CB	8:Z:64:C:O2'	2.56	0.51
7:W:354:GLY:O	7:W:355:PHE:CD1	2.64	0.51
7:W:450:VAL:O	7:W:454:GLN:CA	2.58	0.51
7:W:329:LEU:C	7:W:331:ASP:H	2.14	0.51
7:W:130:TRP:CB	7:W:186:ILE:CD1	2.88	0.51
2:5:11:LEU:HD22	2:5:58:VAL:HG22	1.92	0.51
7:W:348:ILE:HG23	7:W:349:LEU:H	1.69	0.51
7:W:40:LEU:HD22	7:W:44:VAL:HG21	1.92	0.51
7:W:225:ILE:HB	7:W:229:CYS:SG	2.51	0.51
7:W:21:THR:CG2	7:W:21:THR:O	2.54	0.50
4:A:121:U:H2'	4:A:122:U:C6	2.46	0.50
6:S:54:ILE:HG23	7:W:427:PHE:CZ	2.43	0.50
1:4:125:ARG:CZ	1:4:131:LYS:CD	2.90	0.50
7:W:245:VAL:HG21	7:W:270:ILE:HG22	1.93	0.50
6:S:50:LEU:HG	7:W:479:GLY:HA3	1.93	0.50
7:W:106:PHE:HE2	7:W:121:LEU:HD11	1.74	0.50
6:S:54:ILE:N	7:W:433:LYS:NZ	2.57	0.50
7:W:432:LYS:HZ2	7:W:432:LYS:CB	2.24	0.50
1:4:98:LEU:HB2	1:4:130:LYS:CG	2.40	0.50
3:6:65:LYS:NZ	8:Z:64:C:O2'	2.41	0.50
7:W:239:LYS:CB	7:W:239:LYS:H	2.10	0.50
3:6:61:VAL:N	8:Z:48:C:H1'	2.26	0.50
7:W:179:PHE:CZ	7:W:187:ILE:HG23	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:130:TRP:CD2	7:W:186:ILE:HD11	2.45	0.50
1:4:123:LEU:CD2	8:Z:110:U:O2'	2.60	0.50
7:W:52:LEU:HD12	7:W:86:LEU:HD11	1.90	0.50
7:W:134:LEU:CD1	7:W:157:ILE:HD12	2.39	0.50
7:W:160:TYR:OH	7:W:174:GLU:CG	2.60	0.50
5:B:68:TYR:CE2	5:B:70:ARG:HB2	2.46	0.50
7:W:330:ARG:HH21	7:W:387:LEU:CD1	2.24	0.50
1:4:119:LYS:CE	1:4:135:LYS:HD3	2.41	0.50
7:W:25:GLU:O	7:W:28:LEU:HB2	2.12	0.50
7:W:302:GLY:C	7:W:304:ILE:N	2.63	0.50
2:5:29:GLU:O	2:5:33:LEU:HG	2.11	0.50
8:Z:160:G:C1'	8:Z:266:A:H2	2.24	0.50
7:W:173:SER:O	7:W:176:VAL:CG1	2.56	0.50
3:6:52:MET:CE	3:6:83:ILE:HD11	2.42	0.50
5:B:14:ARG:CB	5:B:14:ARG:CZ	2.88	0.50
2:5:16:LYS:HE2	2:5:16:LYS:N	2.27	0.50
1:4:98:LEU:CD1	1:4:130:LYS:HZ1	2.20	0.49
8:Z:6:A:O2'	8:Z:8:G:H5'	2.11	0.49
7:W:340:MET:HE3	7:W:373:LYS:CB	2.41	0.49
7:W:430:MET:SD	7:W:433:LYS:HE3	2.52	0.49
7:W:431:VAL:O	7:W:436:GLY:C	2.50	0.49
6:S:60:TYR:CE2	7:W:355:PHE:CA	2.95	0.49
8:Z:1:C:H3'	8:Z:2:U:H5"	1.94	0.49
2:5:12:TRP:NE1	2:5:61:VAL:HG22	2.23	0.49
3:6:28:LEU:CD1	3:6:43:GLU:HG3	2.42	0.49
7:W:366:GLN:CG	7:W:367:GLU:CA	2.90	0.49
1:4:125:ARG:CZ	1:4:131:LYS:HG3	2.42	0.49
7:W:291:ILE:HD12	7:W:291:ILE:N	2.20	0.49
7:W:162:SER:HB2	7:W:171:ILE:HG12	1.94	0.49
7:W:320:GLU:O	7:W:322:LEU:HG	2.12	0.49
7:W:365:GLU:O	7:W:368:SER:CA	2.53	0.49
7:W:260:LEU:C	7:W:263:VAL:HG12	2.32	0.49
7:W:89:PRO:C	7:W:287:THR:OG1	2.47	0.49
2:5:7:LYS:HA	2:5:7:LYS:NZ	2.27	0.49
7:W:292:SER:O	7:W:295:LEU:O	2.30	0.49
7:W:74:MET:HA	7:W:77:HIS:ND1	2.28	0.49
5:B:64:LYS:NZ	5:B:65:ASN:H	2.06	0.49
7:W:91:VAL:HB	7:W:92:LYS:N	2.27	0.49
7:W:253:HIS:ND1	7:W:253:HIS:O	2.46	0.49
7:W:340:MET:HE1	7:W:373:LYS:CA	2.39	0.49
7:W:293:LYS:C	7:W:295:LEU:N	2.66	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:130:TRP:HB3	7:W:186:ILE:CD1	2.41	0.49
7:W:69:LEU:HD23	7:W:70:ASN:O	2.13	0.49
7:W:92:LYS:HE3	7:W:269:PRO:HG2	1.93	0.49
7:W:392:GLY:O	7:W:396:PHE:HD1	1.95	0.49
7:W:339:ILE:HD11	7:W:427:PHE:CZ	2.47	0.49
7:W:285:PHE:CE1	7:W:304:ILE:HD13	2.46	0.49
8:Z:50:G:O2'	8:Z:51:G:H5'	2.11	0.49
1:4:145:VAL:O	7:W:68:GLY:HA3	2.13	0.49
4:A:172:A:H2	4:A:225:C:C1'	2.26	0.49
7:W:373:LYS:O	7:W:377:THR:HG23	2.13	0.49
6:S:61:VAL:CG1	7:W:423:GLN:HE21	2.24	0.49
7:W:75:ILE:O	7:W:78:ALA:HB3	2.13	0.49
7:W:453:SER:O	7:W:456:ALA:CA	2.60	0.49
7:W:133:CYS:SG	7:W:179:PHE:CE1	2.86	0.49
7:W:394:LYS:HB3	7:W:394:LYS:NZ	2.27	0.49
7:W:460:GLN:H	7:W:461:GLN:N	2.11	0.49
7:W:160:TYR:CE2	7:W:174:GLU:CB	2.95	0.49
8:Z:127:A:H2'	8:Z:128:U:C6	2.48	0.49
6:S:57:LEU:O	6:S:61:VAL:HG23	2.13	0.49
7:W:306:LYS:N	7:W:347:GLN:NE2	2.58	0.48
2:5:30:LEU:O	2:5:37:LYS:HE3	2.12	0.48
6:S:56:PHE:CD1	7:W:351:MET:N	2.80	0.48
7:W:148:LEU:C	7:W:148:LEU:HD13	2.33	0.48
8:Z:44:U:C2'	8:Z:44:U:O2	2.60	0.48
8:Z:175:U:O2'	8:Z:176:G:H5'	2.13	0.48
7:W:347:GLN:O	7:W:348:ILE:CG1	2.60	0.48
7:W:270:ILE:CG1	7:W:270:ILE:O	2.61	0.48
7:W:10:ILE:HG13	7:W:38:ALA:CB	2.43	0.48
7:W:239:LYS:C	7:W:239:LYS:HB2	1.97	0.48
7:W:221:MET:CE	7:W:247:VAL:HB	2.43	0.48
4:A:160:A:H2'	4:A:161:C:C6	2.49	0.48
8:Z:17:G:H4'	8:Z:18:A:OP1	2.12	0.48
1:4:103:LYS:HE3	1:4:103:LYS:C	2.33	0.48
8:Z:208:G:O2'	8:Z:209:U:H5'	2.12	0.48
6:S:54:ILE:HG23	7:W:427:PHE:HE2	1.70	0.48
7:W:41:GLU:CA	7:W:41:GLU:H	2.06	0.48
6:S:59:LEU:CD2	7:W:352:ILE:HD11	2.43	0.48
7:W:449:ASN:C	7:W:451:SER:H	2.17	0.48
8:Z:29:A:H2'	8:Z:30:A:H5''	1.95	0.48
4:A:231:A:H5''	4:A:232:G:OP2	2.12	0.48
8:Z:89:G:O2'	8:Z:90:C:H5'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:Z:264:A:O2'	8:Z:265:U:P	2.71	0.48
7:W:303:LEU:HD21	7:W:348:ILE:HD12	1.96	0.48
3:6:59:ILE:CD1	8:Z:49:G:P	2.88	0.48
8:Z:160:G:O4'	8:Z:212:A:C2	2.66	0.48
1:4:72:ILE:C	1:4:97:ASP:OD2	2.52	0.48
8:Z:125:U:H2'	8:Z:126:C:C6	2.48	0.48
1:4:119:LYS:HD2	1:4:120:VAL:N	2.29	0.48
8:Z:167:U:H2'	8:Z:168:A:O4'	2.13	0.48
7:W:87:VAL:CA	7:W:259:ALA:HB3	2.39	0.48
3:6:58:ARG:HG3	8:Z:50:G:OP2	2.14	0.48
7:W:206:LEU:HD23	7:W:206:LEU:C	2.34	0.48
7:W:318:LEU:C	7:W:320:GLU:N	2.67	0.48
7:W:330:ARG:NH1	7:W:379:MET:CB	2.76	0.48
1:4:119:LYS:HZ3	1:4:135:LYS:HD3	1.78	0.48
7:W:134:LEU:HG	7:W:157:ILE:HD12	1.95	0.48
1:4:78:THR:HG23	2:5:38:VAL:HG11	1.96	0.48
1:4:75:TYR:HE1	2:5:35:ILE:C	2.16	0.48
1:4:140:TYR:OH	1:4:145:VAL:HG11	2.14	0.48
3:6:54:THR:CA	3:6:90:GLU:HB2	2.39	0.48
2:5:16:LYS:HZ2	2:5:65:LYS:HE2	1.78	0.48
7:W:109:LEU:N	7:W:109:LEU:HD23	2.26	0.48
4:A:160:A:H2'	4:A:161:C:O4'	2.14	0.48
7:W:164:THR:OG1	7:W:170:ILE:CG2	2.62	0.48
7:W:366:GLN:HA	7:W:367:GLU:N	2.28	0.48
7:W:358:ASP:CB	7:W:361:SER:HG	2.22	0.48
7:W:32:LEU:CD2	7:W:57:LYS:NZ	2.77	0.47
8:Z:159:C:O2	8:Z:212:A:H2	1.96	0.47
7:W:21:THR:HA	7:W:72:ARG:HH21	1.78	0.47
4:A:125:G:H2'	4:A:126:C:C6	2.48	0.47
7:W:16:SER:C	7:W:17:LEU:HB2	1.01	0.47
7:W:202:PHE:CD2	7:W:239:LYS:CD	2.73	0.47
2:5:34:ARG:NH1	2:5:37:LYS:CE	2.72	0.47
6:S:59:LEU:HD23	7:W:352:ILE:HG12	1.95	0.47
8:Z:201:U:H2'	8:Z:202:C:C6	2.44	0.47
7:W:303:LEU:CD2	7:W:348:ILE:HD12	2.44	0.47
1:4:125:ARG:HH22	1:4:131:LYS:NZ	2.11	0.47
7:W:263:VAL:HG13	7:W:264:ALA:N	2.29	0.47
4:A:165:G:N7	4:A:176:A:C6	2.82	0.47
4:A:192:A:H2'	4:A:193:G:O4'	2.13	0.47
5:B:62:LEU:HD12	5:B:63:GLU:N	2.29	0.47
5:B:29:ILE:HG22	5:B:30:ALA:N	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:297:MET:HB3	7:W:300:ILE:CG1	2.45	0.47
7:W:297:MET:C	7:W:299:ASP:N	2.68	0.47
7:W:26:GLU:HG2	7:W:27:VAL:N	2.29	0.47
3:6:68:TRP:CH2	8:Z:46:G:O2'	2.65	0.47
7:W:42:ALA:HB2	7:W:50:LYS:H	1.80	0.47
7:W:141:ARG:HH12	7:W:193:GLY:H	1.63	0.47
7:W:8:ARG:N	7:W:253:HIS:HE1	2.12	0.47
7:W:430:MET:CB	7:W:430:MET:CG	2.92	0.47
7:W:118:CYS:SG	7:W:190:ASP:OD1	2.72	0.47
3:6:55:ASN:HD21	3:6:85:ARG:HB3	1.79	0.47
3:6:55:ASN:ND2	3:6:92:ASP:HB2	2.26	0.47
7:W:343:GLY:C	7:W:369:MET:HG2	2.35	0.47
1:4:125:ARG:HA	1:4:125:ARG:CZ	2.45	0.47
7:W:56:VAL:CG1	7:W:57:LYS:H	2.27	0.47
7:W:98:LYS:HZ3	7:W:98:LYS:HA	1.78	0.47
7:W:308:ASN:O	7:W:309:GLU:CB	2.62	0.47
7:W:48:LEU:HD22	7:W:52:LEU:HD23	1.94	0.47
7:W:84:VAL:HG12	7:W:89:PRO:N	2.29	0.47
6:S:63:VAL:HG13	7:W:361:SER:CB	2.35	0.47
8:Z:86:U:H2'	8:Z:87:C:C6	2.50	0.47
8:Z:193:G:H2'	8:Z:194:C:C6	2.50	0.47
4:A:224:G:H8	4:A:224:G:H5'	1.79	0.47
7:W:270:ILE:HD11	7:W:286:LYS:HA	1.97	0.47
7:W:239:LYS:HB3	7:W:239:LYS:C	2.03	0.47
7:W:46:ILE:HG12	7:W:47:LYS:HB3	1.97	0.47
4:A:116:C:H2'	4:A:117:U:C6	2.50	0.47
4:A:125:G:H1	4:A:225:C:N4	2.08	0.47
4:A:171:U:H3'	4:A:172:A:H5''	1.97	0.47
8:Z:247:A:H2'	8:Z:248:G:O4'	2.15	0.47
1:4:91:THR:HG22	1:4:135:LYS:CG	2.44	0.47
8:Z:111:U:H3'	8:Z:170:U:O2	2.14	0.47
7:W:157:ILE:O	7:W:157:ILE:HG13	2.15	0.47
3:6:94:LYS:HB3	3:6:94:LYS:HZ2	1.80	0.47
7:W:196:LYS:O	7:W:239:LYS:HE2	2.15	0.47
7:W:133:CYS:CB	7:W:179:PHE:CE1	2.98	0.47
7:W:249:LYS:CE	7:W:252:GLY:HA3	2.45	0.47
7:W:249:LYS:NZ	7:W:252:GLY:HA3	2.30	0.47
5:B:75:ASP:OD1	5:B:76:VAL:N	2.47	0.47
7:W:160:TYR:CZ	7:W:174:GLU:CB	2.98	0.47
7:W:218:VAL:HG11	7:W:246:ILE:CD1	2.44	0.46
2:5:36:GLN:O	2:5:40:SER:C	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:167:U:H2'	4:A:168:G:O4'	2.15	0.46
7:W:428:ALA:O	7:W:432:LYS:N	2.49	0.46
7:W:16:SER:CA	7:W:17:LEU:HD22	2.44	0.46
7:W:304:ILE:HG22	7:W:308:ASN:HB3	1.97	0.46
3:6:59:ILE:HD13	8:Z:48:C:H3'	1.98	0.46
4:A:207:C:C4	4:A:208:A:N7	2.84	0.46
8:Z:185:U:O2'	8:Z:186:C:H5'	2.15	0.46
7:W:48:LEU:HD21	7:W:52:LEU:CD2	2.44	0.46
7:W:139:THR:HA	7:W:145:PHE:HE1	1.79	0.46
7:W:249:LYS:O	7:W:249:LYS:CD	2.51	0.46
8:Z:245:G:C8	8:Z:245:G:H5''	2.50	0.46
7:W:477:MET:O	7:W:479:GLY:CA	2.61	0.46
1:4:75:TYR:HH	2:5:39:ALA:H	1.60	0.46
8:Z:27:G:N2	8:Z:30:A:H5'	2.21	0.46
7:W:219:TYR:HB2	7:W:242:VAL:HG11	1.96	0.46
3:6:40:ALA:HB2	3:6:75:VAL:HG21	1.98	0.46
7:W:339:ILE:C	7:W:342:MET:CB	2.84	0.46
2:5:36:GLN:CA	2:5:40:SER:O	2.63	0.46
5:B:60:VAL:CG2	5:B:83:ARG:O	2.52	0.46
7:W:297:MET:HB3	7:W:300:ILE:CB	2.46	0.46
1:4:85:LYS:HE3	8:Z:111:U:O2	2.14	0.46
7:W:284:PRO:C	7:W:286:LYS:CG	2.79	0.46
7:W:442:LYS:CA	7:W:445:ASP:N	2.79	0.46
1:4:144:ASP:OD1	1:4:145:VAL:HG23	2.14	0.46
7:W:207:GLN:HA	7:W:210:ASN:HD22	1.77	0.46
2:5:53:LYS:O	2:5:57:ARG:HD3	2.15	0.46
7:W:164:THR:OG1	7:W:170:ILE:HG22	2.15	0.46
7:W:311:LYS:O	7:W:312:LEU:C	2.54	0.46
3:6:52:MET:HE1	3:6:83:ILE:HD11	1.96	0.46
7:W:40:LEU:HD23	7:W:41:GLU:CA	2.46	0.46
1:4:110:LYS:HZ2	1:4:115:ILE:N	2.14	0.46
7:W:207:GLN:CA	7:W:210:ASN:HD21	2.23	0.46
5:B:24:ASN:ND2	5:B:27:LYS:HG3	2.22	0.46
8:Z:243:A:H4'	8:Z:244:G:OP2	2.14	0.46
4:A:125:G:H2'	4:A:126:C:H6	1.81	0.46
2:5:5:LYS:NZ	2:5:47:ARG:HD2	2.31	0.46
1:4:125:ARG:HD3	1:4:127:ASP:CB	2.45	0.46
7:W:202:PHE:CD1	7:W:239:LYS:CE	2.99	0.46
6:S:52:PHE:CB	6:S:53:PRO:HD3	2.40	0.46
7:W:149:LYS:CG	7:W:159:PHE:CE1	2.95	0.46
7:W:234:LYS:HA	7:W:234:LYS:HZ2	1.78	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:73:ASN:HD21	5:B:75:ASP:HB3	1.80	0.46
4:A:229:U:H2'	4:A:230:C:C6	2.51	0.46
7:W:287:THR:C	7:W:291:ILE:CD1	2.78	0.46
7:W:93:ALA:HA	7:W:271:ILE:HG12	1.98	0.46
7:W:234:LYS:HE3	7:W:237:LYS:NZ	2.31	0.46
5:B:76:VAL:C	5:B:78:TYR:N	2.70	0.46
7:W:306:LYS:CB	7:W:347:GLN:HE22	2.23	0.46
8:Z:161:G:O4'	8:Z:267:G:C4'	2.64	0.46
1:4:72:ILE:O	1:4:97:ASP:OD1	2.33	0.46
3:6:28:LEU:HD11	3:6:40:ALA:HA	1.97	0.46
4:A:223:U:H2'	4:A:224:G:H5''	1.98	0.46
4:A:146:G:C6	4:A:147:G:C5	3.03	0.46
7:W:330:ARG:NH2	7:W:387:LEU:HD13	2.30	0.45
7:W:134:LEU:HD11	7:W:157:ILE:HD12	1.88	0.45
7:W:92:LYS:CD	7:W:269:PRO:HB2	2.45	0.45
2:5:14:LYS:HB3	2:5:18:ASP:HB2	1.98	0.45
7:W:318:LEU:O	7:W:320:GLU:N	2.49	0.45
7:W:271:ILE:CG2	7:W:272:PHE:N	2.79	0.45
7:W:48:LEU:C	7:W:48:LEU:HD23	2.36	0.45
8:Z:226:G:H2'	8:Z:227:U:O4'	2.16	0.45
7:W:251:ASP:HB2	7:W:275:THR:O	2.16	0.45
7:W:78:ALA:O	7:W:82:GLU:HG3	2.16	0.45
7:W:218:VAL:HG11	7:W:246:ILE:CG1	2.47	0.45
1:4:125:ARG:HB3	1:4:126:PRO:C	2.36	0.45
4:A:223:U:C2'	4:A:224:G:H5''	2.47	0.45
2:5:59:LEU:HD13	2:5:59:LEU:O	2.17	0.45
7:W:136:CYS:SG	7:W:148:LEU:CG	3.05	0.45
6:S:57:LEU:HD13	7:W:430:MET:HE1	1.99	0.45
7:W:340:MET:HE3	7:W:373:LYS:HB2	1.97	0.45
7:W:260:LEU:CA	7:W:263:VAL:HG12	2.46	0.45
7:W:479:GLY:N	7:W:480:LEU:N	2.63	0.45
7:W:139:THR:CG2	7:W:163:TYR:CE1	3.00	0.45
7:W:255:LYS:HZ3	7:W:255:LYS:HA	1.78	0.45
7:W:337:GLN:O	7:W:340:MET:O	2.35	0.45
7:W:289:PRO:CA	7:W:301:GLU:OE1	2.63	0.45
7:W:32:LEU:HD21	7:W:57:LYS:HZ3	1.80	0.45
7:W:90:GLY:C	7:W:286:LYS:CB	2.85	0.45
7:W:351:MET:O	7:W:353:PRO:N	2.50	0.45
7:W:139:THR:HG23	7:W:163:TYR:CE1	2.52	0.45
4:A:166:U:H2'	4:A:167:U:O4'	2.17	0.45
7:W:319:ILE:HA	7:W:323:LYS:HZ2	1.79	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:432:LYS:CB	7:W:436:GLY:HA3	2.47	0.45
7:W:301:GLU:O	7:W:302:GLY:C	2.55	0.45
8:Z:213:A:H2'	8:Z:214:C:O4'	2.16	0.45
6:S:60:TYR:CE2	7:W:354:GLY:C	2.91	0.45
6:S:60:TYR:CE2	7:W:355:PHE:N	2.85	0.45
7:W:247:VAL:CG1	7:W:247:VAL:O	2.64	0.45
2:5:65:LYS:O	2:5:66:GLN:HB3	2.16	0.45
7:W:336:PHE:CE2	7:W:379:MET:HE1	2.27	0.45
8:Z:114:C:C4'	8:Z:115:C:OP2	2.64	0.45
7:W:397:SER:CB	8:Z:13:C:H5'	2.46	0.45
4:A:168:G:H3'	4:A:169:C:H5'	1.99	0.45
7:W:24:ASN:HB2	7:W:25:GLU:H	1.66	0.45
7:W:26:GLU:HG2	7:W:27:VAL:H	1.82	0.45
4:A:162:C:H2'	4:A:163:A:C8	2.52	0.45
8:Z:70:A:H4'	8:Z:71:A:O5'	2.17	0.45
7:W:83:LEU:HD22	7:W:294:LEU:HD22	1.56	0.44
1:4:83:MET:CA	1:4:86:ILE:HG22	2.47	0.44
7:W:116:THR:HG22	7:W:120:LYS:HE3	2.00	0.44
7:W:447:SER:CA	7:W:451:SER:N	2.81	0.44
5:B:64:LYS:HZ3	5:B:65:ASN:HB2	1.82	0.44
7:W:160:TYR:OH	7:W:174:GLU:HB3	2.15	0.44
5:B:43:ASN:C	5:B:118:ARG:HH22	2.20	0.44
4:A:186:C:O5'	4:A:186:C:H6	2.01	0.44
6:S:57:LEU:HB3	7:W:430:MET:HE3	1.97	0.44
7:W:87:VAL:HA	7:W:260:LEU:N	2.27	0.44
8:Z:159:C:C2	8:Z:212:A:H2	2.36	0.44
3:6:25:HIS:CE1	3:6:79:VAL:CG1	2.99	0.44
6:S:61:VAL:HG12	7:W:423:GLN:NE2	2.28	0.44
1:4:85:LYS:HB3	1:4:91:THR:HG1	1.83	0.44
7:W:141:ARG:HB2	7:W:144:ALA:HB2	2.00	0.44
3:6:56:ASP:H	3:6:91:GLU:HA	1.83	0.44
5:B:76:VAL:O	5:B:78:TYR:N	2.50	0.44
5:B:76:VAL:CG1	5:B:77:GLN:N	2.80	0.44
8:Z:138:C:H5'	8:Z:138:C:C6	2.49	0.44
5:B:35:ILE:HD11	5:B:40:ALA:HA	1.99	0.44
7:W:199:ASP:OD1	7:W:200:SER:N	2.51	0.44
7:W:286:LYS:HB3	7:W:286:LYS:HD2	1.95	0.44
4:A:221:C:H2'	4:A:222:G:O4'	2.18	0.44
8:Z:97:G:O2'	8:Z:98:A:H5'	2.18	0.44
7:W:35:VAL:O	7:W:39:LEU:HD13	2.18	0.44
8:Z:160:G:H2'	8:Z:161:G:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:Z:227:U:C4	8:Z:228:G:C6	3.06	0.44
2:5:16:LYS:HG3	2:5:67:ARG:O	2.17	0.44
7:W:70:ASN:HD22	7:W:73:LYS:NZ	2.15	0.44
4:A:138:G:H2'	4:A:139:A:H8	1.83	0.44
4:A:163:A:H2'	4:A:164:G:N9	2.32	0.44
8:Z:209:U:H3'	8:Z:210:C:H5'	2.00	0.44
1:4:89:ASN:O	8:Z:172:C:OP1	2.36	0.44
7:W:45:ASN:HB3	7:W:227:GLN:HG2	1.99	0.44
7:W:179:PHE:CD1	7:W:184:PHE:HD2	2.33	0.44
2:5:66:GLN:O	2:5:66:GLN:HG2	2.18	0.44
5:B:93:LEU:N	5:B:93:LEU:CD2	2.78	0.44
5:B:116:LYS:CD	5:B:116:LYS:N	2.80	0.44
7:W:324:HIS:C	7:W:334:GLU:HG2	2.38	0.44
7:W:176:VAL:HG13	7:W:177:GLU:N	2.33	0.44
1:4:119:LYS:HE2	1:4:135:LYS:HD3	1.99	0.44
2:5:47:ARG:O	2:5:51:ILE:HG12	2.17	0.44
7:W:245:VAL:HG22	7:W:270:ILE:HA	1.99	0.43
7:W:32:LEU:HD21	7:W:57:LYS:NZ	2.33	0.43
3:6:51:ALA:HB3	3:6:52:MET:HG3	1.99	0.43
8:Z:159:C:H2'	8:Z:160:G:H8	1.83	0.43
8:Z:160:G:H1'	8:Z:266:A:C2	2.53	0.43
1:4:110:LYS:HE3	1:4:110:LYS:C	2.37	0.43
2:5:32:GLN:HE22	7:W:70:ASN:HB2	1.83	0.43
5:B:88:GLN:HG3	5:B:92:SER:O	2.18	0.43
7:W:271:ILE:HD11	7:W:272:PHE:CZ	2.52	0.43
7:W:282:PHE:O	7:W:283:GLU:OE2	2.36	0.43
7:W:90:GLY:C	7:W:286:LYS:HB3	2.38	0.43
8:Z:159:C:O4'	8:Z:213:A:N9	2.48	0.43
7:W:141:ARG:O	7:W:144:ALA:HB3	2.18	0.43
5:B:45:THR:O	5:B:46:ALA:C	2.56	0.43
1:4:74:LYS:NZ	1:4:74:LYS:HA	2.33	0.43
8:Z:234:C:O2'	8:Z:235:G:H5'	2.19	0.43
7:W:306:LYS:CG	7:W:347:GLN:OE1	2.65	0.43
7:W:56:VAL:HA	7:W:82:GLU:CD	2.29	0.43
7:W:479:GLY:H	7:W:480:LEU:N	2.16	0.43
8:Z:159:C:O5'	8:Z:213:A:H4'	2.18	0.43
7:W:153:THR:HG23	7:W:156:ARG:NH2	2.33	0.43
7:W:293:LYS:HG2	7:W:293:LYS:C	2.23	0.43
7:W:342:MET:CB	7:W:342:MET:CG	2.95	0.43
7:W:10:ILE:HG21	7:W:35:VAL:HG23	2.01	0.43
7:W:87:VAL:HG21	7:W:256:GLY:C	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:271:ILE:CG2	7:W:272:PHE:CD1	3.01	0.43
7:W:79:VAL:O	7:W:82:GLU:N	2.51	0.43
7:W:195:HIS:CE1	7:W:196:LYS:HD3	2.53	0.43
7:W:194:ARG:HH22	7:W:202:PHE:HB2	1.69	0.43
7:W:45:ASN:C	7:W:227:GLN:CG	2.73	0.43
1:4:77:LEU:HD13	1:4:95:ILE:HD11	1.99	0.43
7:W:179:PHE:CD2	7:W:187:ILE:CD1	3.01	0.43
7:W:134:LEU:CD1	7:W:157:ILE:HG13	2.49	0.43
2:5:65:LYS:O	2:5:66:GLN:CB	2.66	0.43
5:B:96:VAL:HG23	5:B:97:GLN:N	2.33	0.43
7:W:303:LEU:CD2	7:W:348:ILE:CD1	2.97	0.43
7:W:335:GLN:HG3	7:W:427:PHE:CE2	2.54	0.43
1:4:85:LYS:CD	8:Z:171:C:O2'	2.65	0.43
7:W:394:LYS:CA	8:Z:13:C:OP1	2.55	0.43
4:A:171:U:H3'	4:A:172:A:C5'	2.49	0.43
7:W:109:LEU:CG	7:W:112:SER:OG	2.66	0.43
7:W:153:THR:HG23	7:W:156:ARG:HH21	1.84	0.43
6:S:57:LEU:HB2	7:W:430:MET:CE	2.48	0.43
7:W:29:ASN:O	7:W:32:LEU:HB2	2.18	0.43
6:S:52:PHE:CE2	7:W:351:MET:CE	3.00	0.43
7:W:329:LEU:C	7:W:331:ASP:N	2.72	0.43
4:A:160:A:H2'	4:A:161:C:H6	1.84	0.43
6:S:54:ILE:CG2	7:W:427:PHE:HE2	2.23	0.43
6:S:57:LEU:CD1	7:W:430:MET:HE1	2.49	0.43
7:W:430:MET:O	7:W:431:VAL:C	2.58	0.43
7:W:272:PHE:CZ	7:W:282:PHE:HE2	2.35	0.43
8:Z:63:A:H2'	8:Z:64:C:C6	2.54	0.43
8:Z:161:G:O3'	8:Z:267:G:O3'	2.37	0.43
8:Z:161:G:O4'	8:Z:267:G:C1'	2.67	0.43
6:S:62:THR:HG22	7:W:371:ARG:CD	2.29	0.43
1:4:110:LYS:HZ1	1:4:114:ASP:HA	1.83	0.43
4:A:127:A:H2'	4:A:128:U:H5'	1.99	0.43
4:A:117:U:H2'	4:A:118:A:C8	2.53	0.43
1:4:118:LYS:HA	1:4:118:LYS:NZ	2.33	0.43
7:W:16:SER:C	7:W:17:LEU:C	2.76	0.43
7:W:23:ILE:CG2	7:W:24:ASN:N	2.81	0.43
7:W:56:VAL:CG1	7:W:57:LYS:N	2.81	0.43
5:B:15:PHE:O	5:B:83:ARG:NH2	2.52	0.43
7:W:205:MET:O	7:W:208:VAL:CG1	2.62	0.43
7:W:205:MET:C	7:W:208:VAL:HG12	2.38	0.43
2:5:62:ILE:HG23	2:5:67:ARG:HA	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:117:U:H2'	4:A:118:A:H8	1.83	0.43
5:B:23:LEU:HB2	5:B:44:PRO:HG3	2.01	0.43
4:A:179:G:N2	4:A:180:G:H1'	2.33	0.43
7:W:194:ARG:C	7:W:194:ARG:HD3	2.39	0.42
7:W:42:ALA:HB2	7:W:50:LYS:N	2.34	0.42
8:Z:6:A:H1'	8:Z:7:A:H5'	2.00	0.42
2:5:66:GLN:O	2:5:67:ARG:CB	2.67	0.42
1:4:119:LYS:CD	1:4:119:LYS:C	2.85	0.42
1:4:125:ARG:NE	1:4:131:LYS:HG3	2.34	0.42
7:W:285:PHE:HB2	7:W:285:PHE:CD1	2.37	0.42
7:W:289:PRO:O	7:W:292:SER:HB2	2.11	0.42
8:Z:160:G:H2'	8:Z:161:G:H8	1.83	0.42
6:S:60:TYR:HE2	7:W:358:ASP:OD2	2.02	0.42
7:W:15:ARG:NE	7:W:15:ARG:O	2.52	0.42
2:5:54:SER:CA	2:5:57:ARG:HE	2.26	0.42
7:W:92:LYS:NZ	7:W:269:PRO:HG2	2.34	0.42
6:S:59:LEU:CD2	7:W:352:ILE:CD1	2.97	0.42
7:W:106:PHE:HZ	7:W:121:LEU:CD1	2.25	0.42
7:W:225:ILE:HD12	7:W:225:ILE:HG23	1.79	0.42
7:W:237:LYS:HB3	7:W:237:LYS:NZ	2.34	0.42
7:W:455:MET:O	7:W:459:ASN:N	2.41	0.42
7:W:260:LEU:O	7:W:263:VAL:CG1	2.66	0.42
7:W:28:LEU:C	7:W:32:LEU:HD13	2.40	0.42
7:W:133:CYS:HB3	7:W:179:PHE:CE1	2.54	0.42
5:B:73:ASN:ND2	5:B:74:ARG:N	2.67	0.42
5:B:53:CYS:O	5:B:58:LEU:HB2	2.19	0.42
8:Z:121:U:O2'	8:Z:122:A:H5'	2.20	0.42
7:W:32:LEU:C	7:W:36:CYS:HG	2.22	0.42
7:W:36:CYS:SG	7:W:53:ARG:NH1	2.93	0.42
8:Z:160:G:C4'	8:Z:212:A:C4	3.01	0.42
8:Z:160:G:C1'	8:Z:266:A:C2	3.02	0.42
5:B:116:LYS:H	5:B:116:LYS:HE3	1.83	0.42
4:A:223:U:H2'	4:A:224:G:C5'	2.49	0.42
8:Z:91:A:H61	8:Z:104:U:H1'	1.84	0.42
4:A:150:G:O2'	4:A:203:G:N3	2.49	0.42
7:W:11:THR:HA	7:W:14:LEU:CD2	2.39	0.42
8:Z:159:C:C4'	8:Z:213:A:C4	3.00	0.42
2:5:34:ARG:HG2	2:5:37:LYS:HZ3	0.62	0.42
4:A:233:U:C3'	4:A:234:A:C5'	2.98	0.42
7:W:310:LEU:O	7:W:313:ASP:N	2.50	0.42
7:W:33:LYS:HA	7:W:36:CYS:HB2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:79:VAL:HG23	7:W:80:PHE:N	2.34	0.42
3:6:48:ALA:O	3:6:52:MET:HB2	2.19	0.42
3:6:83:ILE:HG22	3:6:94:LYS:CB	2.44	0.42
6:S:56:PHE:HD1	7:W:350:GLY:C	2.12	0.42
5:B:107:TYR:O	5:B:111:MET:HG2	2.19	0.42
5:B:19:TYR:CE2	5:B:81:ARG:HD3	2.55	0.42
8:Z:249:C:H2'	8:Z:250:G:H8	1.83	0.42
7:W:345:PHE:CE1	7:W:366:GLN:C	2.93	0.42
7:W:260:LEU:HD13	7:W:260:LEU:HA	1.87	0.42
7:W:284:PRO:C	7:W:286:LYS:HG2	2.13	0.42
7:W:45:ASN:HB3	7:W:227:GLN:CG	2.50	0.42
5:B:60:VAL:CB	5:B:84:VAL:HG12	2.49	0.42
8:Z:43:A:O2'	8:Z:44:U:H5''	2.19	0.42
5:B:42:GLU:HG3	5:B:43:ASN:N	2.34	0.42
8:Z:55:G:H2'	8:Z:56:A:H5'	2.01	0.42
7:W:323:LYS:CA	7:W:337:GLN:CD	2.84	0.42
7:W:11:THR:C	7:W:14:LEU:HD23	2.40	0.42
7:W:42:ALA:HB2	7:W:49:VAL:HG23	2.02	0.42
7:W:10:ILE:C	7:W:12:SER:H	2.22	0.41
7:W:272:PHE:CZ	7:W:282:PHE:CE2	3.06	0.41
7:W:331:ASP:CG	7:W:331:ASP:CA	2.88	0.41
4:A:195:U:C4'	7:W:411:GLY:HA3	2.49	0.41
7:W:271:ILE:CD1	7:W:271:ILE:C	2.88	0.41
7:W:194:ARG:NH1	7:W:196:LYS:C	2.73	0.41
8:Z:266:A:H2'	8:Z:267:G:C5'	2.50	0.41
4:A:118:A:H2'	4:A:119:A:H5'	2.03	0.41
5:B:88:GLN:O	5:B:89:GLU:C	2.58	0.41
8:Z:186:C:H2'	8:Z:187:G:O4'	2.19	0.41
5:B:22:TYR:CD1	5:B:34:ARG:HG3	2.55	0.41
7:W:319:ILE:O	7:W:323:LYS:HE3	2.20	0.41
7:W:479:GLY:HA2	7:W:482:SER:H	1.85	0.41
3:6:84:ALA:O	3:6:92:ASP:HA	2.19	0.41
7:W:95:THR:O	7:W:95:THR:CG2	2.66	0.41
5:B:41:VAL:HG12	5:B:42:GLU:N	2.34	0.41
8:Z:126:C:H2'	8:Z:127:A:C8	2.55	0.41
7:W:180:LYS:HB3	7:W:180:LYS:NZ	2.36	0.41
7:W:341:LYS:C	7:W:344:PRO:CB	2.88	0.41
7:W:114:LYS:HD3	7:W:114:LYS:N	2.31	0.41
4:A:182:G:H21	4:A:215:A:H62	1.67	0.41
8:Z:125:U:H2'	8:Z:126:C:H6	1.86	0.41
7:W:319:ILE:C	7:W:323:LYS:HE3	2.41	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:4:125:ARG:HH22	1:4:131:LYS:CE	2.34	0.41
3:6:59:ILE:HG22	3:6:94:LYS:HD2	2.01	0.41
8:Z:158:A:O2'	8:Z:169:U:O2	2.29	0.41
7:W:205:MET:HG2	7:W:240:VAL:HG21	2.02	0.41
5:B:56:VAL:O	5:B:56:VAL:HG12	2.20	0.41
7:W:280:ASP:OD1	7:W:280:ASP:O	2.38	0.41
7:W:339:ILE:HG22	7:W:372:LEU:HD11	2.03	0.41
1:4:88:ASP:O	8:Z:172:C:O3'	2.38	0.41
7:W:9:LYS:O	7:W:10:ILE:HD13	2.21	0.41
5:B:76:VAL:CG1	5:B:77:GLN:H	2.34	0.41
5:B:116:LYS:CE	5:B:116:LYS:H	2.34	0.41
7:W:250:LEU:CD1	7:W:290:PHE:CE1	2.83	0.41
8:Z:3:G:H4'	8:Z:29:A:N1	2.36	0.41
2:5:5:LYS:HG3	2:5:6:VAL:HG23	2.03	0.41
7:W:339:ILE:HD12	7:W:427:PHE:CE1	2.30	0.41
7:W:366:GLN:CG	7:W:367:GLU:C	2.84	0.41
7:W:285:PHE:CD2	7:W:286:LYS:O	2.62	0.41
7:W:33:LYS:O	7:W:37:THR:N	2.54	0.41
5:B:16:ILE:HG12	5:B:84:VAL:HG22	2.01	0.41
7:W:138:ASP:OD1	7:W:144:ALA:HB3	2.17	0.41
4:A:151:C:H2'	4:A:152:G:H8	1.86	0.41
8:Z:196:G:H4'	8:Z:270:A:H2	1.85	0.41
5:B:112:ILE:C	5:B:114:LYS:N	2.74	0.41
1:4:100:ALA:O	1:4:104:LYS:HG3	2.21	0.41
7:W:260:LEU:HA	7:W:263:VAL:CG1	2.50	0.41
7:W:80:PHE:HZ	7:W:288:GLN:O	2.04	0.41
7:W:239:LYS:CG	7:W:239:LYS:CE	2.87	0.41
7:W:40:LEU:HG	7:W:41:GLU:N	2.30	0.41
8:Z:266:A:C2'	8:Z:267:G:H5'	2.50	0.41
7:W:157:ILE:HG21	7:W:157:ILE:HD13	1.81	0.41
7:W:249:LYS:NZ	7:W:252:GLY:CA	2.84	0.41
8:Z:196:G:O2'	8:Z:197:G:H8	2.03	0.41
4:A:164:G:OP2	4:A:164:G:C8	2.73	0.41
7:W:288:GLN:CA	7:W:289:PRO:CD	2.98	0.41
3:6:51:ALA:HB3	3:6:52:MET:CG	2.51	0.41
7:W:134:LEU:CB	7:W:148:LEU:HD11	2.51	0.41
7:W:213:GLN:C	7:W:213:GLN:NE2	2.74	0.41
1:4:119:LYS:HE2	1:4:135:LYS:CB	2.52	0.40
8:Z:172:C:O2'	8:Z:173:C:H5'	2.21	0.40
7:W:52:LEU:HB2	7:W:53:ARG:HE	1.85	0.40
7:W:42:ALA:O	7:W:43:ASP:CB	2.69	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:W:249:LYS:HE3	7:W:252:GLY:HA3	2.02	0.40
4:A:171:U:H5'	4:A:172:A:OP2	2.20	0.40
7:W:412:VAL:HG22	7:W:416:ASP:OD2	2.20	0.40
1:4:124:ILE:O	1:4:124:ILE:HD12	2.20	0.40
7:W:365:GLU:O	7:W:368:SER:CB	2.70	0.40
7:W:32:LEU:O	7:W:36:CYS:SG	2.80	0.40
7:W:442:LYS:O	7:W:443:GLY:C	2.52	0.40
8:Z:196:G:C4'	8:Z:270:A:H2	2.35	0.40
5:B:99:PRO:HB2	5:B:100:SER:H	1.59	0.40
5:B:29:ILE:HA	5:B:29:ILE:HD13	1.78	0.40
8:Z:181:G:O2'	8:Z:182:G:H5'	2.21	0.40
8:Z:33:G:O3'	8:Z:34:A:H8	2.04	0.40
5:B:18:ILE:HD12	5:B:105:MET:HG2	2.02	0.40
7:W:297:MET:CG	7:W:300:ILE:HD12	2.52	0.40
8:Z:168:A:O2'	8:Z:170:U:OP2	2.39	0.40
7:W:87:VAL:HG11	7:W:256:GLY:HA3	1.58	0.40
7:W:76:GLN:O	7:W:79:VAL:HG22	2.21	0.40
1:4:106:LYS:O	1:4:109:VAL:HG12	2.20	0.40
7:W:163:TYR:CG	7:W:163:TYR:O	2.74	0.40
5:B:94:CYS:C	5:B:95:LEU:HD23	2.38	0.40
3:6:54:THR:HA	3:6:90:GLU:CB	2.41	0.40
8:Z:27:G:N2	8:Z:30:A:C5'	2.77	0.40
7:W:110:GLN:NE2	7:W:141:ARG:NH1	2.62	0.40
4:A:207:C:O2'	4:A:208:A:H5'	2.21	0.40
8:Z:117:G:H2'	8:Z:118:U:O4'	2.20	0.40
7:W:330:ARG:CD	7:W:333:TYR:CD1	2.92	0.40
6:S:54:ILE:HG21	7:W:335:GLN:OE1	2.22	0.40
7:W:52:LEU:HD22	7:W:86:LEU:HD21	1.81	0.40
3:6:20:TYR:CE1	3:6:52:MET:HE3	2.56	0.40
7:W:41:GLU:HA	7:W:41:GLU:H	1.70	0.40
7:W:131:LYS:CG	7:W:183:ASN:O	2.68	0.40
1:4:148:LYS:HA	7:W:69:LEU:HB2	1.06	0.40
7:W:272:PHE:CE1	7:W:282:PHE:HZ	2.35	0.40
7:W:360:MET:O	7:W:362:LYS:CG	2.54	0.40
8:Z:18:A:H2'	8:Z:19:A:H5'	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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	4	75/152 (49%)	66 (88%)	4 (5%)	5 (7%)	1	24
2	5	62/124 (50%)	54 (87%)	3 (5%)	5 (8%)	1	19
3	6	79/123 (64%)	66 (84%)	10 (13%)	3 (4%)	4	37
5	B	105/108 (97%)	87 (83%)	12 (11%)	6 (6%)	2	28
6	S	15/17 (88%)	13 (87%)	2 (13%)	0	100	100
7	W	442/504 (88%)	338 (76%)	56 (13%)	48 (11%)	0	11
All	All	778/1028 (76%)	624 (80%)	87 (11%)	67 (9%)	2	17

All (67) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	4	101	ASP
1	4	125	ARG
2	5	35	ILE
2	5	36	GLN
2	5	40	SER
2	5	45	LEU
3	6	24	LEU
3	6	52	MET
3	6	90	GLU
5	B	42	GLU
5	B	75	ASP
7	W	41	GLU
7	W	46	ILE
7	W	48	LEU
7	W	49	VAL
7	W	88	ASP
7	W	89	PRO
7	W	162	SER
7	W	168	PRO
7	W	241	ASP

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Mol	Chain	Res	Type
7	W	244	SER
7	W	309	GLU
7	W	319	ILE
7	W	352	ILE
7	W	353	PRO
7	W	358	ASP
7	W	361	SER
7	W	442	LYS
7	W	443	GLY
7	W	448	LYS
7	W	478	ALA
1	4	97	ASP
1	4	127	ASP
1	4	141	ASP
2	5	66	GLN
5	B	99	PRO
7	W	10	ILE
7	W	19	ASN
7	W	32	LEU
7	W	47	LYS
7	W	56	VAL
7	W	60	ILE
7	W	67	SER
7	W	303	LEU
7	W	307	VAL
7	W	325	GLY
7	W	360	MET
7	W	431	VAL
7	W	450	VAL
7	W	28	LEU
7	W	62	LEU
7	W	69	LEU
7	W	73	LYS
7	W	74	MET
7	W	75	ILE
7	W	438	LYS
5	B	64	LYS
5	B	77	GLN
7	W	30	ALA
7	W	38	ALA
7	W	72	ARG
7	W	321	LYS

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Mol	Chain	Res	Type
7	W	79	VAL
7	W	291	ILE
7	W	308	ASN
7	W	14	LEU
5	B	56	VAL

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 PDB entries followed by that with respect to all EM entries.

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	4	72/128 (56%)	54 (75%)	18 (25%)	1	6
2	5	55/109 (50%)	45 (82%)	10 (18%)	2	15
3	6	72/108 (67%)	51 (71%)	21 (29%)	0	3
5	B	96/97 (99%)	92 (96%)	4 (4%)	36	70
6	S	16/16 (100%)	16 (100%)	0	100	100
7	W	360/420 (86%)	329 (91%)	31 (9%)	13	47
All	All	671/878 (76%)	587 (88%)	84 (12%)	10	30

All (84) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	4	70	TYR
1	4	74	LYS
1	4	80	GLU
1	4	87	GLU
1	4	90	ASN
1	4	99	LYS
1	4	101	ASP
1	4	103	LYS
1	4	104	LYS
1	4	110	LYS
1	4	115	ILE
1	4	118	LYS
1	4	119	LYS

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Mol	Chain	Res	Type
1	4	125	ARG
1	4	129	LYS
1	4	135	LYS
1	4	141	ASP
1	4	147	ASN
2	5	7	LYS
2	5	14	LYS
2	5	16	LYS
2	5	21	LYS
2	5	25	GLU
2	5	27	LYS
2	5	44	LYS
2	5	46	ASN
2	5	57	ARG
2	5	63	ASN
3	6	18	ARG
3	6	23	ASN
3	6	26	LYS
3	6	27	ARG
3	6	28	LEU
3	6	34	LYS
3	6	57	VAL
3	6	58	ARG
3	6	59	ILE
3	6	62	LYS
3	6	65	LYS
3	6	73	ARG
3	6	77	ARG
3	6	80	ARG
3	6	85	ARG
3	6	86	LYS
3	6	87	ARG
3	6	88	ASN
3	6	90	GLU
3	6	91	GLU
3	6	94	LYS
5	B	39	LYS
5	B	64	LYS
5	B	93	LEU
5	B	116	LYS
7	W	12	SER
7	W	15	ARG

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Mol	Chain	Res	Type
7	W	27	VAL
7	W	40	LEU
7	W	47	LYS
7	W	53	ARG
7	W	57	LYS
7	W	65	MET
7	W	98	LYS
7	W	114	LYS
7	W	131	LYS
7	W	180	LYS
7	W	194	ARG
7	W	196	LYS
7	W	197	GLN
7	W	213	GLN
7	W	234	LYS
7	W	237	LYS
7	W	255	LYS
7	W	267	LYS
7	W	271	ILE
7	W	284	PRO
7	W	285	PHE
7	W	286	LYS
7	W	294	LEU
7	W	331	ASP
7	W	340	MET
7	W	342	MET
7	W	383	ASN
7	W	412	VAL
7	W	427	PHE

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (33) such sidechains are listed below:

Mol	Chain	Res	Type
1	4	71	GLN
1	4	89	ASN
1	4	116	GLN
2	5	22	GLN
2	5	32	GLN
2	5	36	GLN
2	5	63	ASN
2	5	66	GLN
3	6	23	ASN

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Mol	Chain	Res	Type
3	6	29	HIS
3	6	39	ASN
3	6	64	ASN
5	B	24	ASN
5	B	59	ASN
5	B	65	ASN
5	B	73	ASN
5	B	88	GLN
6	S	65	HIS
7	W	51	GLN
7	W	70	ASN
7	W	76	GLN
7	W	110	GLN
7	W	126	GLN
7	W	147	GLN
7	W	183	ASN
7	W	210	ASN
7	W	213	GLN
7	W	324	HIS
7	W	337	GLN
7	W	383	ASN
7	W	385	GLN
7	W	423	GLN
7	W	429	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
4	A	127/128 (99%)	22 (17%)	1 (0%)
8	Z	274/280 (97%)	35 (12%)	13 (4%)
All	All	401/408 (98%)	57 (14%)	14 (3%)

All (57) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
4	A	128	U
4	A	129	C
4	A	164	G
4	A	168	G
4	A	169	C
4	A	171	U

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Mol	Chain	Res	Type
4	A	172	A
4	A	173	A
4	A	174	G
4	A	176	A
4	A	177	G
4	A	187	G
4	A	191	C
4	A	213	A
4	A	214	A
4	A	215	A
4	A	219	C
4	A	221	C
4	A	224	G
4	A	227	G
4	A	232	G
4	A	234	A
8	Z	6	A
8	Z	7	A
8	Z	8	G
8	Z	18	A
8	Z	19	A
8	Z	31	U
8	Z	32	A
8	Z	33	G
8	Z	35	G
8	Z	36	C
8	Z	41	C
8	Z	44	U
8	Z	71	A
8	Z	73	G
8	Z	113	G
8	Z	115	C
8	Z	138	C
8	Z	149	A
8	Z	152	U
8	Z	156	A
8	Z	170	U
8	Z	171	C
8	Z	197	G
8	Z	203	G
8	Z	204	C
8	Z	232	G

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Mol	Chain	Res	Type
8	Z	233	C
8	Z	244	G
8	Z	245	G
8	Z	246	A
8	Z	264	A
8	Z	265	U
8	Z	266	A
8	Z	273	C
8	Z	274	G

All (14) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
4	A	212	C
8	Z	6	A
8	Z	17	G
8	Z	35	G
8	Z	43	A
8	Z	70	A
8	Z	72	U
8	Z	112	A
8	Z	114	C
8	Z	170	U
8	Z	231	A
8	Z	243	A
8	Z	245	G
8	Z	264	A

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

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

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.