



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 21, 2026 – 06:12 am BST

PDB ID : 2UU9 / pdb_00002uu9
Title : Structure of the *Thermus thermophilus* 30S ribosomal subunit complexed with a Valine-ASL with cmo5U in position 34 bound to an mRNA with a GUG-codon in the A-site and paromomycin.
Authors : Weixlbaumer, A.; Murphy, F.V.; Dziergowska, A.; Malkiewicz, A.; Vendeix, F.A.P.; Agris, P.F.; Ramakrishnan, V.
Deposited on : 2007-03-01
Resolution : 3.10 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

The following versions of software and data (see [references](#) ①) were used in the production of this report:

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

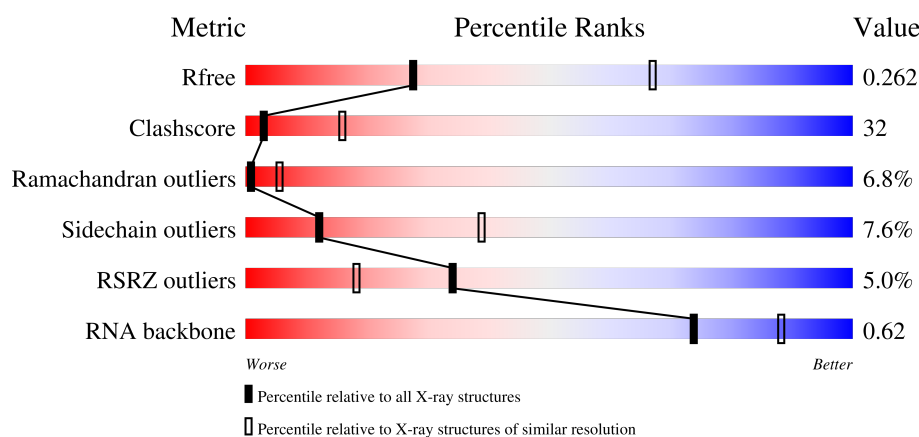
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.10 Å.

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



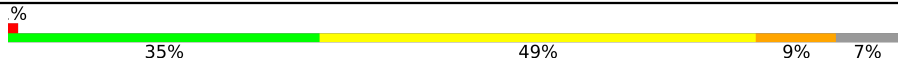
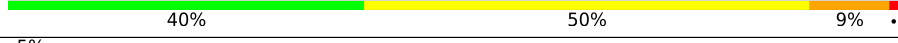
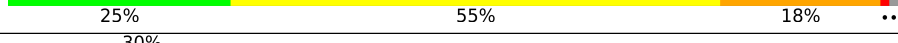
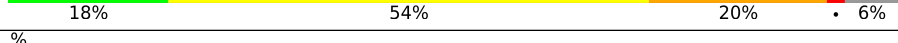
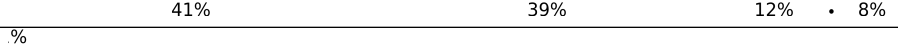
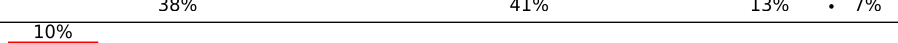
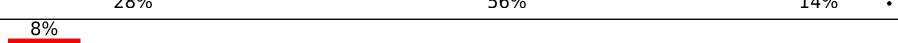
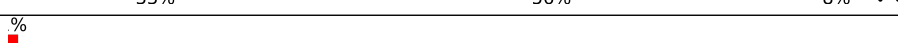
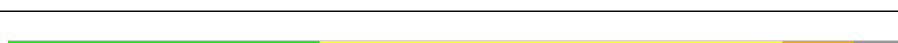
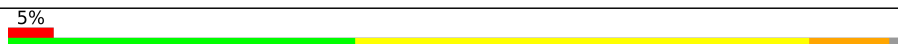
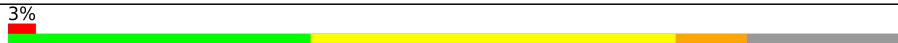
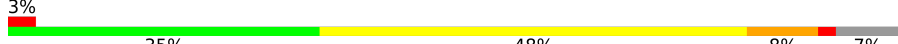
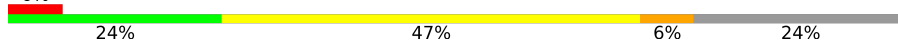
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	1456 (3.10-3.10)
Clashscore	190562	1539 (3.10-3.10)
Ramachandran outliers	187476	1467 (3.10-3.10)
Sidechain outliers	187428	1467 (3.10-3.10)
RSRZ outliers	180081	1456 (3.10-3.10)
RNA backbone	3983	1022 (3.32-2.88)

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

Mol	Chain	Length	Quality of chain
1	A	1522	4% 34% 53% 10% ..
2	B	256	11% 20% 56% 15% 8%
3	C	239	4% 25% 48% 12% 13%
4	D	209	4% 45% 45% 8%

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Mol	Chain	Length	Quality of chain
5	E	162	
6	F	101	
7	G	156	
8	H	138	
9	I	128	
10	J	105	
11	K	129	
12	L	135	
13	M	126	
14	N	61	
15	O	89	
16	P	88	
17	Q	105	
18	R	88	
19	S	93	
20	T	106	
21	U	27	
22	X	5	
23	Y	17	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	MG	A	1603	-	-	-	X
25	MG	A	1631	-	-	-	X
25	MG	A	1655	-	-	-	X
25	MG	A	1738	-	-	-	X

2 Entry composition [i](#)

There are 27 unique types of molecules in this entry. The entry contains 52352 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a RNA chain called 16S RRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1512	Total	C	N	O	P	0	0	0
			32489	14462	6011	10505	1511			

- Molecule 2 is a protein called 30S RIBOSOMAL PROTEIN S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	235	Total	C	N	O	S	0	0	1
			1901	1213	342	341	5			

- Molecule 3 is a protein called 30S RIBOSOMAL PROTEIN S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	207	Total	C	N	O	S	0	0	1
			1613	1016	315	281	1			

- Molecule 4 is a protein called 30S RIBOSOMAL PROTEIN S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	208	Total	C	N	O	S	0	0	0
			1703	1066	339	291	7			

- Molecule 5 is a protein called 30S RIBOSOMAL PROTEIN S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	E	151	Total	C	N	O	S	0	0	1
			1147	724	218	201	4			

- Molecule 6 is a protein called 30S RIBOSOMAL PROTEIN S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	F	101	Total	C	N	O	S	0	0	0
			843	531	155	154	3			

- Molecule 7 is a protein called 30S RIBOSOMAL PROTEIN S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	G	155	Total	C	N	O	S	0	0	0
			1257	781	252	218	6			

- Molecule 8 is a protein called 30S RIBOSOMAL PROTEIN S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	H	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			

- Molecule 9 is a protein called 30S RIBOSOMAL PROTEIN S9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	I	127	Total	C	N	O	S	0	0	0
			1010	639	197	174				

- Molecule 10 is a protein called 30S RIBOSOMAL PROTEIN S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	J	99	Total	C	N	O	S	0	0	1
			793	498	157	137	1			

- Molecule 11 is a protein called 30S RIBOSOMAL PROTEIN S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	K	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			

- Molecule 12 is a protein called 30S RIBOSOMAL PROTEIN S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	L	125	Total	C	N	O	S	0	0	1
			971	611	196	163	1			

- Molecule 13 is a protein called 30S RIBOSOMAL PROTEIN S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	M	125	Total	C	N	O	S	0	0	0
			997	617	207	171	2			

- Molecule 14 is a protein called 30S RIBOSOMAL PROTEIN S14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	N	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			

- Molecule 15 is a protein called 30S RIBOSOMAL PROTEIN S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	O	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			

- Molecule 16 is a protein called 30S RIBOSOMAL PROTEIN S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	P	84	Total	C	N	O	S	0	0	1
			701	443	140	117	1			

- Molecule 17 is a protein called 30S RIBOSOMAL PROTEIN S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	Q	104	Total	C	N	O	S	0	0	0
			857	547	160	148	2			

- Molecule 18 is a protein called 30S RIBOSOMAL PROTEIN S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
18	R	73	Total	C	N	O	0	0	0
			598	381	118	99			

- Molecule 19 is a protein called 30S RIBOSOMAL PROTEIN S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	S	81	Total	C	N	O	S	0	0	1
			648	414	120	112	2			

- Molecule 20 is a protein called 30S RIBOSOMAL PROTEIN S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	T	99	Total	C	N	O	S	0	0	0
			763	470	162	129	2			

- Molecule 21 is a protein called 30S RIBOSOMAL PROTEIN THX.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
21	U	25	Total	C	N	O	0	0	1
			209	128	51	30			

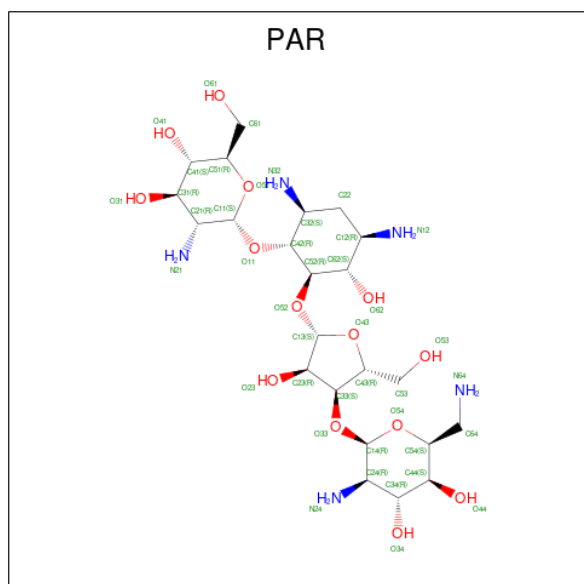
- Molecule 22 is a RNA chain called RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	X	5	Total	C	N	O	P	0	0	0
			107	49	22	32	4			

- Molecule 23 is a RNA chain called RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	Y	13	Total	C	N	O	P	0	0	0
			277	126	48	91	12			

- Molecule 24 is PAROMOMYCIN (CCD ID: PAR) (formula: $C_{23}H_{45}N_5O_{14}$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
24	A	1	Total	C	N	O	0	0
			42	23	5	14		

- Molecule 25 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
25	A	157	Total	Mg	0	0
			157	157		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
25	B	1	Total 1	Mg 1	0	0
25	E	1	Total 1	Mg 1	0	0
25	N	1	Total 1	Mg 1	0	0
25	Q	1	Total 1	Mg 1	0	0

- Molecule 26 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
26	A	34	Total 34	K 34	0	0
26	E	1	Total 1	K 1	0	0
26	R	1	Total 1	K 1	0	0

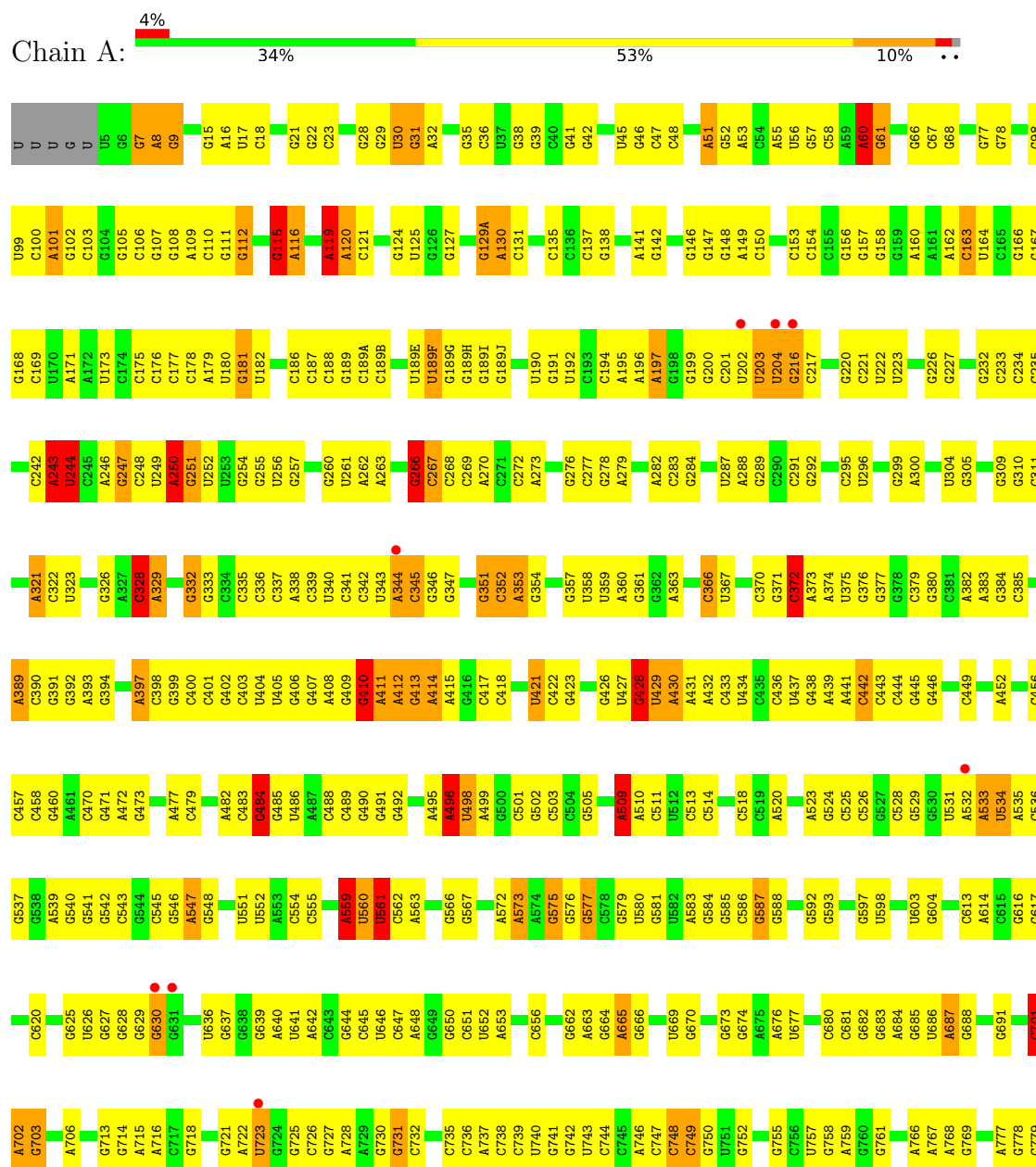
- Molecule 27 is ZINC ION (CCD ID: ZN) (formula: Zn).

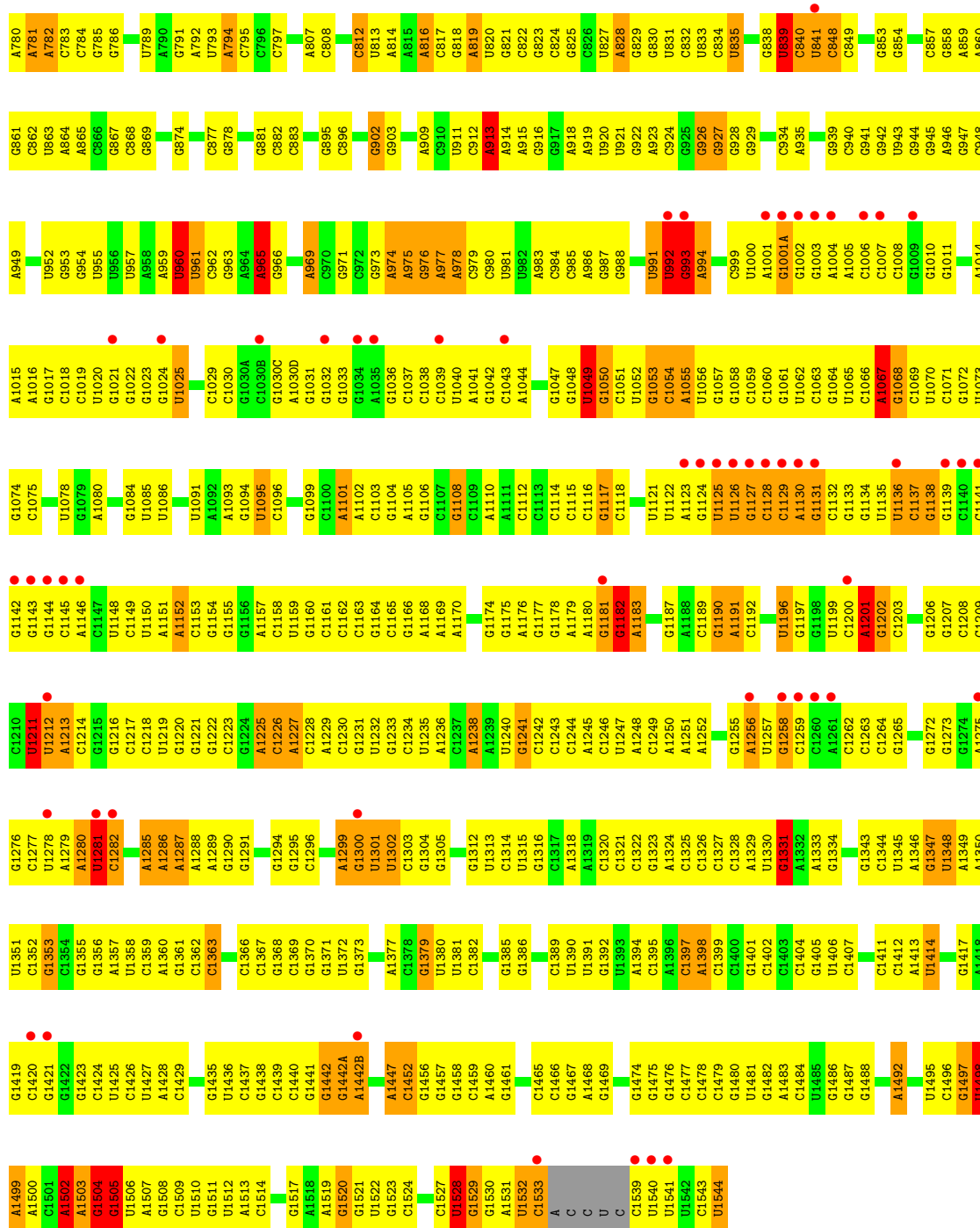
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
27	D	1	Total 1	Zn 1	0	0
27	N	1	Total 1	Zn 1	0	0

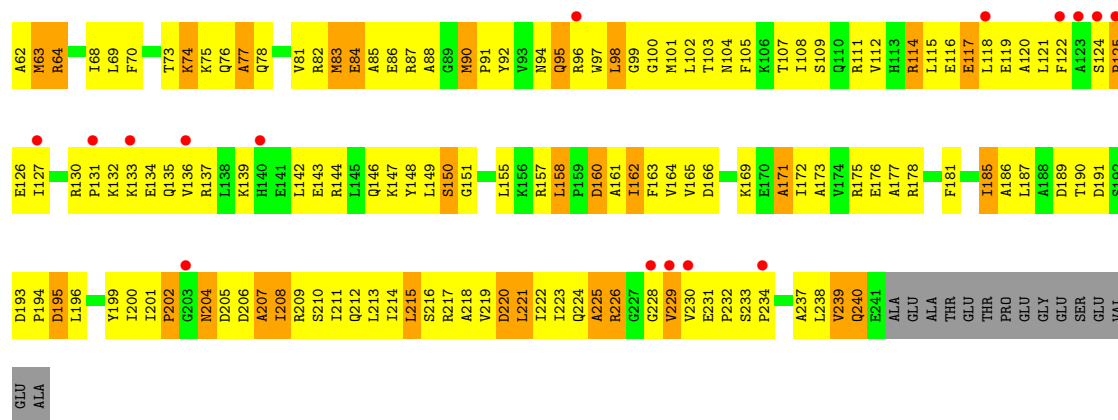
3 Residue-property plots

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

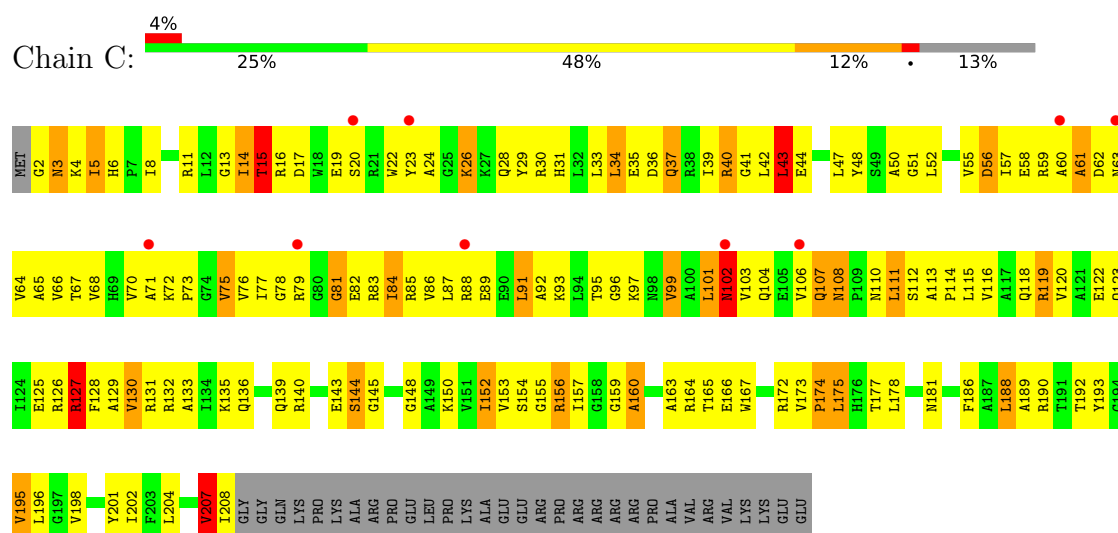
• Molecule 1: 16S rRNA



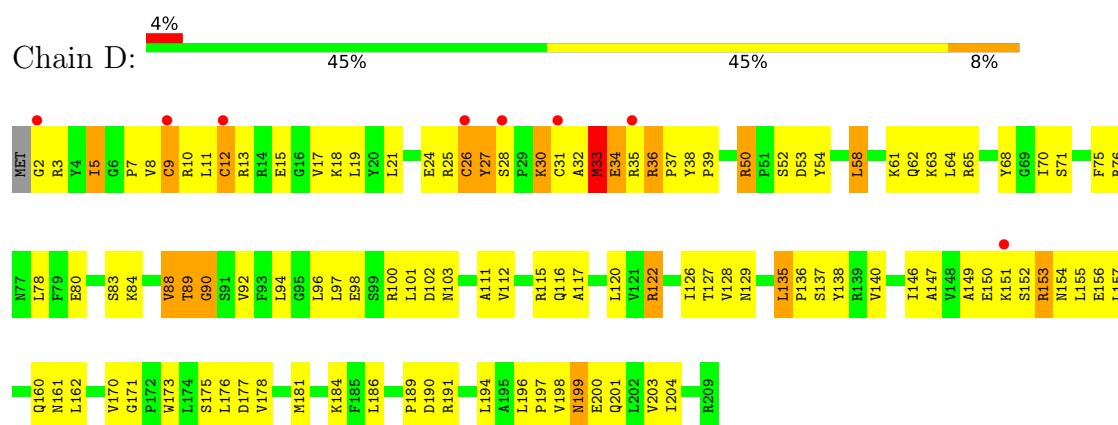




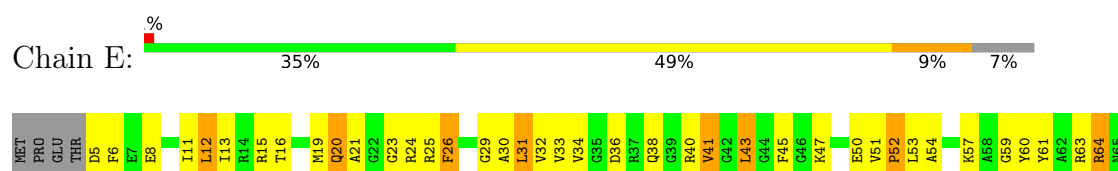
• Molecule 3: 30S RIBOSOMAL PROTEIN S3

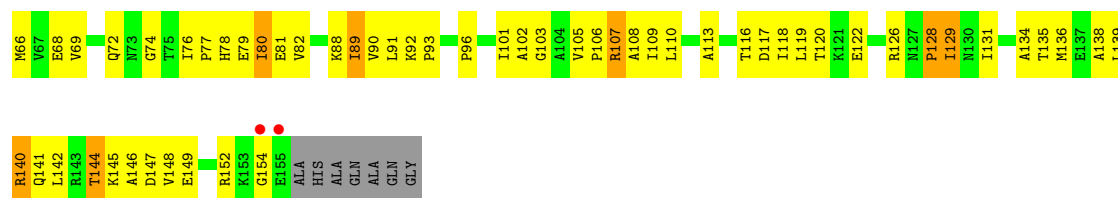


• Molecule 4: 30S RIBOSOMAL PROTEIN S4



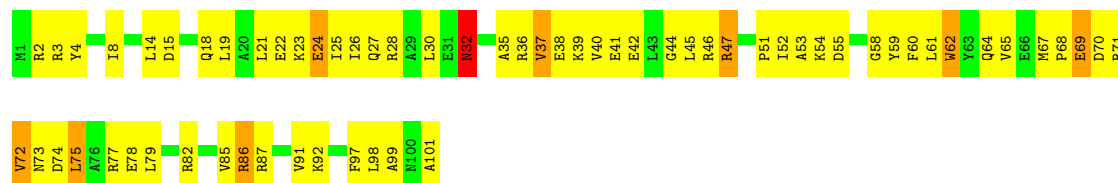
• Molecule 5: 30S RIBOSOMAL PROTEIN S5





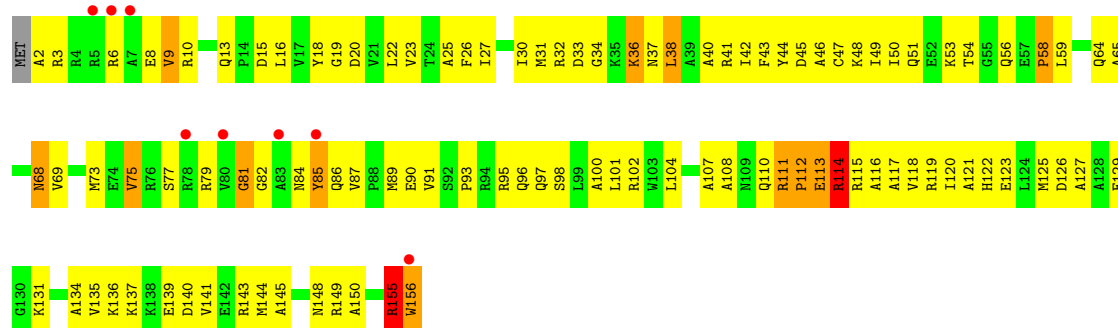
• Molecule 6: 30S RIBOSOMAL PROTEIN S6

Chain F: 37% 54% 8% .



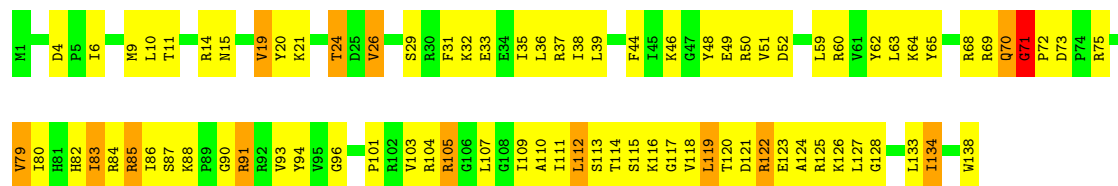
• Molecule 7: 30S RIBOSOMAL PROTEIN S7

Chain G: 5% 33% 58% 8% ..



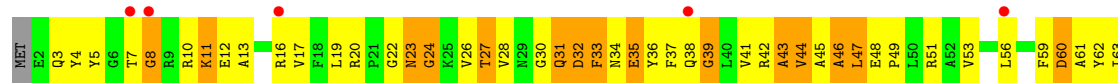
• Molecule 8: 30S RIBOSOMAL PROTEIN S8

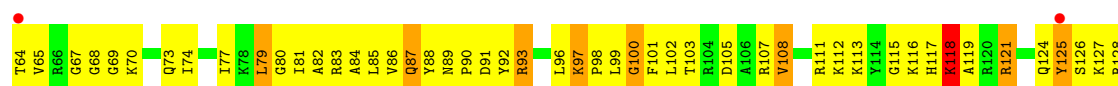
Chain H: 40% 50% 9% .



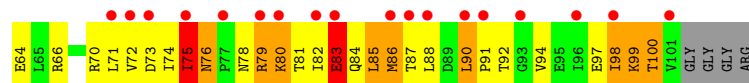
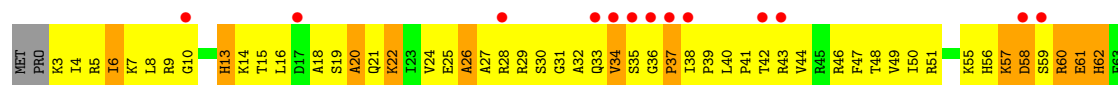
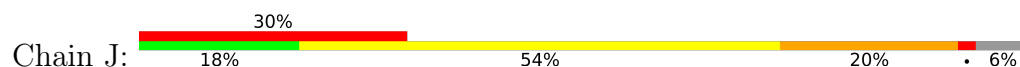
• Molecule 9: 30S RIBOSOMAL PROTEIN S9

Chain I: 5% 25% 55% 18% ..

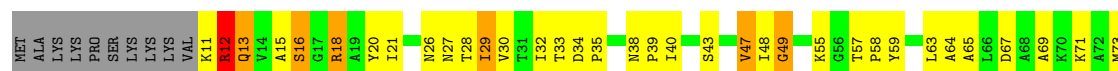




• Molecule 10: 30S RIBOSOMAL PROTEIN S10



• Molecule 11: 30S RIBOSOMAL PROTEIN S11



• Molecule 12: 30S RIBOSOMAL PROTEIN S12

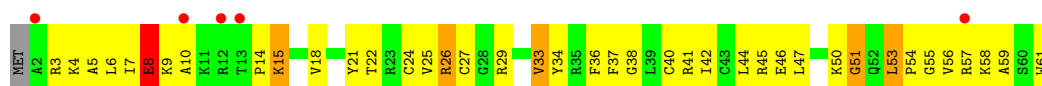


• Molecule 13: 30S RIBOSOMAL PROTEIN S13

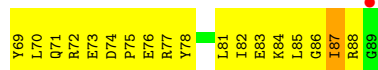


• Molecule 14: 30S RIBOSOMAL PROTEIN S14

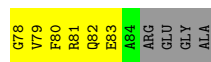




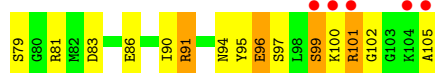
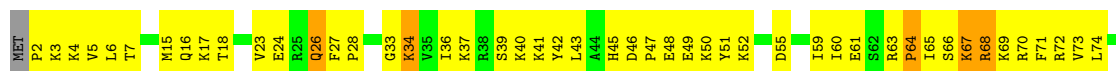
• Molecule 15: 30S RIBOSOMAL PROTEIN S15



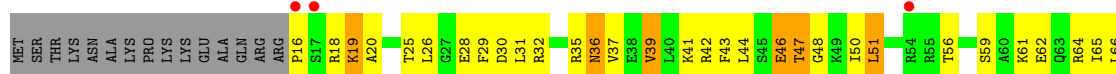
• Molecule 16: 30S RIBOSOMAL PROTEIN S16



• Molecule 17: 30S RIBOSOMAL PROTEIN S17

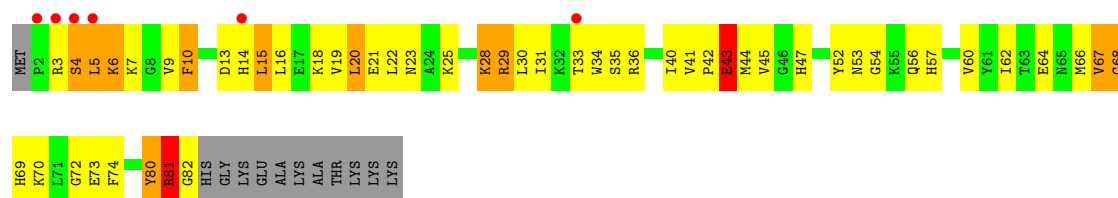


• Molecule 18: 30S RIBOSOMAL PROTEIN S18

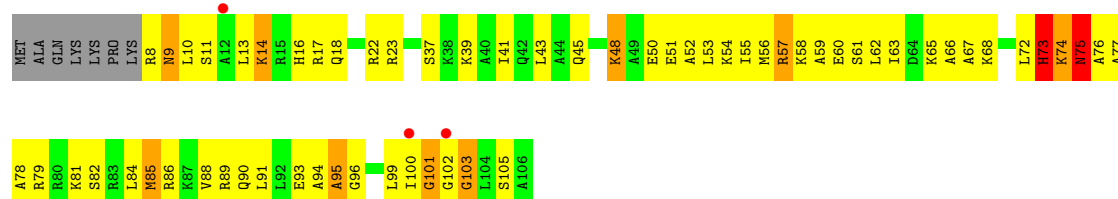


• Molecule 19: 30S RIBOSOMAL PROTEIN S19





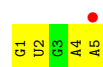
• Molecule 20: 30S RIBOSOMAL PROTEIN S20



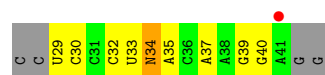
• Molecule 21: 30S RIBOSOMAL PROTEIN THX



• Molecule 22: RNA



• Molecule 23: RNA



4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α , β , γ	400.94Å 400.94Å 174.22Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.89 – 3.10 29.89 – 3.10	Depositor EDS
% Data completeness (in resolution range)	98.6 (29.89-3.10) 98.5 (29.89-3.10)	Depositor EDS
R_{merge}	0.26	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.00 (at 2.96Å)	Xtriage
Refinement program	CNS 1.2	Depositor
R, R_{free}	0.228 , 0.268 0.224 , 0.262	Depositor DCC
R_{free} test set	14754 reflections (5.09%)	wwPDB-VP
Wilson B-factor (Å ²)	52.4	Xtriage
Anisotropy	0.202	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 69.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.43$, $\langle L^2 \rangle = 0.25$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.89	EDS
Total number of atoms	52352	wwPDB-VP
Average B, all atoms (Å ²)	56.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.59% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MG, CM0, 6MZ, K, PAR, ZN

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.49	0/36365	0.69	58/56754 (0.1%)
2	B	0.45	1/1936 (0.1%)	1.04	15/2611 (0.6%)
3	C	0.46	1/1637 (0.1%)	0.95	5/2207 (0.2%)
4	D	0.45	0/1733	1.03	7/2318 (0.3%)
5	E	0.57	1/1163 (0.1%)	1.06	4/1566 (0.3%)
6	F	0.41	0/856	0.86	0/1154
7	G	0.45	0/1276	0.93	2/1709 (0.1%)
8	H	0.56	0/1136	1.12	8/1527 (0.5%)
9	I	0.45	0/1029	1.11	7/1379 (0.5%)
10	J	0.50	1/806 (0.1%)	1.02	6/1084 (0.6%)
11	K	0.50	0/900	1.08	7/1213 (0.6%)
12	L	0.55	1/987 (0.1%)	1.20	8/1322 (0.6%)
13	M	0.45	0/1008	1.01	4/1347 (0.3%)
14	N	0.47	0/501	1.01	4/664 (0.6%)
15	O	0.48	0/745	0.90	1/992 (0.1%)
16	P	0.55	1/717 (0.1%)	1.01	3/965 (0.3%)
17	Q	0.52	0/870	1.07	3/1159 (0.3%)
18	R	0.45	0/604	1.06	6/801 (0.7%)
19	S	0.48	1/662 (0.2%)	1.05	4/892 (0.4%)
20	T	0.52	0/765	1.06	4/1007 (0.4%)
21	U	0.65	1/213 (0.5%)	0.82	0/279
22	X	0.48	0/120	0.81	0/186
23	Y	0.52	0/253	0.81	0/387
All	All	0.49	8/56282 (0.0%)	0.81	156/83523 (0.2%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	3	12

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	J	100	THR	C-N	-5.72	1.25	1.33
2	B	240	GLN	C-N	-5.64	1.25	1.33
21	U	25	LYS	C-N	-5.63	1.25	1.33
3	C	207	VAL	C-N	-5.62	1.25	1.33
19	S	81	ARG	C-N	-5.48	1.25	1.33
16	P	83	GLU	C-N	-5.33	1.25	1.33
12	L	128	ALA	C-N	-5.32	1.25	1.33
5	E	154	GLY	C-N	-5.30	1.25	1.33

All (156) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1498	U	C2'-C3'-O3'	15.22	132.33	109.50
1	A	366	C	C2'-C3'-O3'	13.18	129.27	109.50
1	A	243	A	C2'-C3'-O3'	12.10	127.65	109.50
1	A	812	C	C2'-C3'-O3'	11.56	126.84	109.50
1	A	559	A	C2'-C3'-O3'	11.55	126.83	109.50
1	A	181	G	C2'-C3'-O3'	11.38	126.56	109.50
1	A	913	A	C2'-C3'-O3'	11.15	126.23	109.50
1	A	687	A	C2'-C3'-O3'	11.06	126.09	109.50
12	L	26	ALA	N-CA-C	-10.92	96.59	111.55
1	A	1504	G	C2'-C3'-O3'	10.89	125.84	109.50
1	A	60	A	C2'-C3'-O3'	10.89	125.83	109.50
1	A	965	A	C2'-C3'-O3'	10.83	125.74	109.50
1	A	328	C	C2'-C3'-O3'	10.79	125.69	109.50
1	A	484	G	C2'-C3'-O3'	10.43	125.14	109.50
1	A	1504	G	C4'-C3'-O3'	10.37	124.95	109.40
1	A	533	A	C2'-C3'-O3'	9.68	124.01	109.50
9	I	60	ASP	N-CA-C	-9.49	94.81	109.52
20	T	75	ASN	N-CA-C	-9.49	101.62	113.01
9	I	39	GLY	N-CA-C	-9.39	103.51	114.69
5	E	69	VAL	N-CA-C	9.21	115.94	107.56
1	A	366	C	C4'-C3'-O3'	9.17	123.16	109.40
4	D	26	CYS	N-CA-C	-9.13	102.71	113.21
1	A	372	C	C2'-C3'-O3'	9.03	123.05	109.50
1	A	428	G	C2'-C3'-O3'	8.93	122.89	109.50
1	A	1067	A	C2'-C3'-O3'	8.69	122.53	109.50
1	A	115	G	C2'-C3'-O3'	8.60	122.40	109.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
18	R	46	GLU	N-CA-C	-8.53	102.06	111.36
8	H	134	ILE	N-CA-C	8.39	119.20	110.72
11	K	49	GLY	N-CA-C	8.14	122.76	112.83
1	A	266	G	C2'-C3'-O3'	8.00	125.69	113.70
10	J	20	ALA	N-CA-C	-7.98	102.32	112.93
11	K	91	ARG	N-CA-C	-7.95	103.53	113.55
2	B	14	GLY	N-CA-C	-7.85	106.04	114.67
1	A	496	A	C2'-C3'-O3'	7.83	121.25	109.50
1	A	1285	A	C2'-C3'-O3'	7.72	121.08	109.50
18	R	47	THR	N-CA-C	-7.63	100.69	110.53
2	B	64	ARG	N-CA-C	-7.59	103.56	114.12
1	A	748	C	C2'-C3'-O3'	7.58	120.87	109.50
9	I	22	GLY	N-CA-C	7.58	120.20	110.20
4	D	12	CYS	N-CA-C	-7.54	102.06	111.11
8	H	79	VAL	N-CA-C	-7.52	103.61	111.58
1	A	1505	G	C2'-C3'-O3'	7.50	124.95	113.70
1	A	1528	U	C2'-C3'-O3'	7.49	120.73	109.50
11	K	116	HIS	N-CA-C	-7.48	105.05	112.97
12	L	117	ARG	N-CA-C	7.47	120.37	111.33
5	E	26	PHE	N-CA-C	7.43	120.59	110.55
4	D	33	MET	N-CA-C	-7.40	104.38	113.19
1	A	960	U	C2'-C3'-O3'	7.35	120.52	109.50
17	Q	67	LYS	N-CA-C	-7.35	99.58	110.23
11	K	126	ARG	N-CA-C	7.33	120.88	109.07
3	C	111	LEU	N-CA-C	-7.31	103.79	114.39
19	S	80	TYR	N-CA-C	7.14	121.15	109.72
8	H	69	ARG	N-CA-C	7.07	119.86	109.69
9	I	87	GLN	N-CA-C	-7.04	103.21	111.03
4	D	178	VAL	N-CA-C	6.99	117.70	110.36
10	J	60	ARG	N-CA-C	6.98	125.66	110.80
19	S	68	GLY	N-CA-C	6.90	122.45	113.27
2	B	133	LYS	N-CA-C	-6.89	104.95	113.15
1	A	181	G	C4'-C3'-O3'	6.80	119.60	109.40
1	A	509	A	C2'-C3'-O3'	6.77	123.86	113.70
11	K	128	ALA	N-CA-C	6.74	116.95	108.45
18	R	51	LEU	CA-C-N	6.72	126.89	120.31
18	R	51	LEU	C-N-CA	6.72	126.89	120.31
12	L	44	THR	CA-C-N	6.71	128.22	119.84
12	L	44	THR	C-N-CA	6.71	128.22	119.84
17	Q	79	SER	N-CA-C	6.62	117.32	108.38
20	T	96	GLY	N-CA-C	6.62	123.55	113.02
1	A	687	A	C4'-C3'-O3'	6.58	119.28	109.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	G	85	TYR	N-CA-C	6.58	119.62	108.90
14	N	8	GLU	N-CA-C	-6.57	105.33	113.15
12	L	119	LYS	N-CA-C	-6.55	99.90	110.32
1	A	250	A	C2'-C3'-O3'	6.55	119.33	109.50
18	R	81	PHE	N-CA-C	-6.53	105.44	113.41
9	I	35	GLU	N-CA-C	-6.46	105.55	113.50
1	A	1200	C	C2'-C3'-O3'	-6.40	104.10	113.70
1	A	1498	U	C4'-C3'-O3'	6.36	118.94	109.40
16	P	20	VAL	N-CA-C	6.32	118.86	108.99
1	A	1544	U	C2'-C3'-O3'	-6.29	100.07	109.50
1	A	1211	U	N1-C1'-C2'	6.29	121.43	112.00
2	B	90	MET	N-CA-C	6.21	118.47	109.84
3	C	195	VAL	N-CA-C	6.14	118.03	109.55
16	P	67	THR	N-CA-C	-6.13	102.42	110.33
1	A	243	A	C4'-C3'-O3'	6.08	118.52	109.40
11	K	95	ILE	N-CA-C	-6.07	104.72	110.42
10	J	62	HIS	N-CA-C	6.06	119.69	109.76
10	J	79	ARG	N-CA-C	-6.04	105.91	113.28
10	J	58	ASP	N-CA-C	6.01	120.34	111.87
20	T	14	LYS	N-CA-C	-6.00	104.81	111.71
1	A	992	U	C2'-C3'-O3'	5.86	118.30	109.50
5	E	23	GLY	N-CA-C	5.86	118.70	110.38
2	B	114	ARG	N-CA-C	-5.81	106.23	113.55
2	B	171	ALA	N-CA-C	5.80	117.61	111.28
9	I	93	ARG	N-CA-C	-5.79	104.93	112.23
2	B	125	PRO	N-CA-C	-5.78	108.67	114.68
2	B	77	ALA	N-CA-C	-5.77	104.08	113.19
8	H	96	GLY	N-CA-C	-5.75	103.59	112.85
13	M	37	THR	N-CA-C	-5.74	107.27	114.56
14	N	51	GLY	N-CA-C	-5.72	107.13	114.85
20	T	85	MET	N-CA-C	-5.67	106.06	112.87
8	H	71	GLY	N-CA-C	5.66	123.88	112.34
9	I	91	ASP	N-CA-C	-5.65	106.36	113.20
7	G	114	ARG	N-CA-C	5.64	119.43	112.54
1	A	993	G	C2'-C3'-O3'	5.63	117.95	109.50
12	L	89	ARG	N-CA-C	5.63	117.80	110.53
1	A	115	G	N9-C1'-C2'	5.63	122.45	114.00
1	A	1049	U	C2'-C3'-O3'	5.62	117.93	109.50
8	H	19	VAL	N-CA-C	-5.59	106.86	112.17
1	A	1201	A	C2'-C3'-O3'	5.59	117.88	109.50
8	H	44	PHE	N-CA-C	-5.58	106.83	113.97
1	A	60	A	C4'-C3'-O3'	5.56	117.74	109.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1331	G	N9-C1'-C2'	5.56	120.33	112.00
1	A	701	C	C2'-C3'-O3'	5.54	117.81	109.50
1	A	839	U	N1-C1'-C2'	5.54	120.31	112.00
2	B	160	ASP	N-CA-C	-5.53	106.70	113.50
11	K	89	ALA	N-CA-C	-5.52	103.62	110.41
1	A	1225	A	C2'-C3'-O3'	-5.51	105.44	113.70
13	M	40	ASN	CA-C-N	5.50	124.96	119.24
13	M	40	ASN	C-N-CA	5.50	124.96	119.24
3	C	152	ILE	N-CA-C	5.46	116.62	107.18
17	Q	91	ARG	N-CA-C	-5.43	104.59	111.11
2	B	186	ALA	N-CA-C	5.41	117.48	108.99
8	H	110	ALA	N-CA-C	-5.40	99.52	108.75
14	N	53	LEU	CA-C-N	5.39	125.70	119.93
14	N	53	LEU	C-N-CA	5.39	125.70	119.93
2	B	47	THR	N-CA-C	-5.38	105.41	111.28
1	A	1502	A	N9-C1'-C2'	5.37	122.06	114.00
1	A	1200	C	N1-C1'-C2'	5.36	120.04	112.00
2	B	225	ALA	N-CA-C	-5.32	107.33	113.88
1	A	1108	G	C5'-C4'-C3'	5.31	123.96	116.00
1	A	410	G	C2'-C3'-O3'	5.29	121.64	113.70
12	L	12	ARG	N-CA-C	5.29	116.74	110.97
1	A	119	A	C2'-C3'-O3'	5.29	117.44	109.50
5	E	32	VAL	N-CA-C	5.27	115.71	108.12
2	B	177	ALA	N-CA-C	-5.25	105.47	111.14
4	D	50	ARG	CA-C-N	5.24	125.41	119.90
4	D	50	ARG	C-N-CA	5.24	125.41	119.90
12	L	61	THR	N-CA-C	-5.24	105.99	112.38
2	B	17	PHE	N-CA-C	5.23	121.94	110.80
3	C	99	VAL	N-CA-C	5.22	117.57	108.90
2	B	220	ASP	N-CA-C	-5.22	105.50	111.14
3	C	37	GLN	N-CA-C	-5.22	105.23	111.03
13	M	11	ARG	N-CA-C	5.22	116.46	108.42
16	P	25	ARG	N-CA-C	5.19	119.24	113.01
1	A	1182	G	C2'-C3'-O3'	5.18	117.28	109.50
4	D	27	TYR	N-CA-C	-5.17	107.99	114.56
1	A	244	U	C5'-C4'-C3'	-5.14	107.49	115.20
19	S	10	PHE	N-CA-C	5.14	117.67	109.96
10	J	75	ILE	N-CA-C	5.14	120.03	109.34
15	O	62	GLN	N-CA-C	-5.11	105.79	111.36
19	S	4	SER	N-CA-C	5.09	117.60	109.81
1	A	389	A	C5'-C4'-C3'	5.08	123.62	116.00
1	A	1299	A	N9-C1'-C2'	5.07	119.60	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1225	A	C4'-C3'-O3'	-5.03	105.45	113.00
1	A	1225	A	N9-C1'-C2'	5.03	119.54	112.00
1	A	1281	U	C2'-C3'-O3'	5.03	121.24	113.70
18	R	77	GLY	N-CA-C	-5.02	108.08	114.85

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	366	C	C3'
1	A	1498	U	C3'
1	A	1504	G	C3'

All (12) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1067	A	Sidechain
1	A	112	G	Sidechain
1	A	1414	U	Sidechain
1	A	1528	U	Sidechain
1	A	250	A	Sidechain
1	A	266	G	Sidechain
1	A	561	U	Sidechain
1	A	573	A	Sidechain
1	A	575	G	Sidechain
1	A	587	G	Sidechain
1	A	691	G	Sidechain
1	A	835	U	Sidechain

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32489	0	16401	1047	0
2	B	1901	0	1951	255	0
3	C	1613	0	1677	204	0
4	D	1703	0	1763	132	0
5	E	1147	0	1207	108	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	F	843	0	856	78	0
7	G	1257	0	1296	117	0
8	H	1116	0	1177	92	0
9	I	1010	0	1037	118	0
10	J	793	0	835	154	0
11	K	885	0	904	73	0
12	L	971	0	1057	79	0
13	M	997	0	1072	120	0
14	N	492	0	530	60	0
15	O	734	0	771	76	0
16	P	701	0	720	61	0
17	Q	857	0	928	80	0
18	R	598	0	670	55	0
19	S	648	0	673	77	0
20	T	763	0	861	84	0
21	U	209	0	221	20	0
22	X	107	0	55	2	0
23	Y	277	0	145	8	0
24	A	42	0	45	0	0
25	A	157	0	0	0	0
25	B	1	0	0	0	0
25	E	1	0	0	0	0
25	N	1	0	0	0	0
25	Q	1	0	0	0	0
26	A	34	0	0	0	0
26	E	1	0	0	0	0
26	R	1	0	0	0	0
27	D	1	0	0	0	0
27	N	1	0	0	0	0
All	All	52352	0	36852	2847	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 32.

All (2847) 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)
21:U:9:ARG:HH12	21:U:22:ARG:HA	1.09	1.16
1:A:1532:U:C2'	1:A:1533:C:H5''	1.77	1.13
3:C:14:ILE:HG22	3:C:15:THR:H	1.16	1.11
1:A:243:A:H4'	1:A:244:U:H5'	1.26	1.09

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:87:ILE:HG22	15:O:88:ARG:H	1.10	1.08
2:B:84:GLU:HB3	2:B:219:VAL:HG21	1.32	1.07
3:C:50:ALA:HB1	3:C:70:VAL:HG11	1.29	1.06
1:A:975:A:H4'	1:A:976:G:H5''	1.39	1.04
2:B:60:ASP:HB3	2:B:64:ARG:HH12	1.21	1.02
20:T:45:GLN:HB2	20:T:91:LEU:HD13	1.43	1.00
20:T:50:GLU:HA	20:T:100:ILE:HG22	1.43	1.00
1:A:1305:G:N2	1:A:1331:G:H2'	1.77	0.99
1:A:1532:U:H2'	1:A:1533:C:C5'	1.92	0.99
1:A:1003:G:H2'	1:A:1004:A:H5''	1.44	0.98
9:I:93:ARG:HB3	9:I:93:ARG:HH11	1.26	0.97
3:C:70:VAL:HG12	3:C:72:LYS:H	1.29	0.97
1:A:1152:A:H5''	10:J:13:HIS:CD2	2.00	0.96
16:P:21:VAL:O	16:P:33:ILE:HB	1.63	0.96
20:T:73:HIS:O	20:T:74:LYS:HB2	1.66	0.95
1:A:1532:U:H2'	1:A:1533:C:H5''	0.98	0.95
12:L:47:LYS:HB3	12:L:48:PRO:CD	1.95	0.95
5:E:81:GLU:HG3	5:E:90:VAL:HG22	1.47	0.95
5:E:50:GLU:HG3	5:E:52:PRO:HD2	1.49	0.94
2:B:118:LEU:HD22	2:B:142:LEU:HD13	1.47	0.94
11:K:15:ALA:HA	11:K:77:MET:HA	1.49	0.94
1:A:975:A:H5'	1:A:975:A:H8	1.32	0.93
20:T:56:MET:HE2	20:T:88:VAL:HG11	1.49	0.93
1:A:1053:G:HO2'	1:A:1199:U:H5	1.04	0.92
9:I:10:ARG:HD3	9:I:105:ASP:HB3	1.52	0.92
13:M:11:ARG:HG3	13:M:12:ASN:N	1.83	0.92
1:A:246:A:O2'	17:Q:99:SER:HB3	1.67	0.91
9:I:93:ARG:HB3	9:I:93:ARG:NH1	1.84	0.91
10:J:99:LYS:HD3	10:J:100:THR:H	1.35	0.91
6:F:2:ARG:NE	6:F:69:GLU:HG2	1.85	0.91
1:A:1305:G:H22	1:A:1331:G:H2'	1.33	0.90
1:A:1502:A:H2	1:A:1505:G:H1	1.19	0.90
15:O:39:LEU:HD12	15:O:56:LEU:HD13	1.52	0.90
1:A:250:A:H4'	1:A:251:G:O5'	1.71	0.90
1:A:759:A:H61	17:Q:94:ASN:HD21	1.15	0.89
1:A:243:A:H4'	1:A:244:U:C5'	2.01	0.89
2:B:16:HIS:NE2	2:B:214:ILE:HD11	1.87	0.89
12:L:27:LEU:C	12:L:29:GLY:H	1.80	0.89
4:D:127:THR:HG23	4:D:147:ALA:HB3	1.54	0.89
7:G:15:ASP:HB3	7:G:20:ASP:H	1.37	0.89
10:J:4:ILE:HA	10:J:100:THR:HA	1.54	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:41:ARG:HG2	12:L:42:THR:H	1.36	0.88
9:I:128:ARG:O	13:M:126:LYS:HD2	1.73	0.88
13:M:49:THR:HG22	13:M:51:ALA:H	1.36	0.88
1:A:718:G:H5'	11:K:117:ASN:ND2	1.89	0.88
1:A:1116:C:H2'	1:A:1117:G:H5''	1.55	0.87
1:A:1126:U:H2'	1:A:1127:G:H8	1.39	0.87
18:R:19:LYS:HG3	18:R:20:ALA:H	1.37	0.87
19:S:36:ARG:HH21	19:S:53:ASN:HA	1.39	0.87
1:A:1123:A:H4'	10:J:37:PRO:HD2	1.56	0.87
17:Q:67:LYS:HA	17:Q:70:ARG:HH12	1.40	0.87
1:A:247:G:OP2	17:Q:99:SER:HB2	1.74	0.87
8:H:112:LEU:HD23	8:H:112:LEU:H	1.39	0.87
1:A:1250:A:H4'	9:I:68:GLY:H	1.37	0.86
1:A:1191:A:P	3:C:3:ASN:HD21	1.99	0.86
3:C:14:ILE:O	3:C:16:ARG:N	2.08	0.86
5:E:80:ILE:CD1	5:E:91:LEU:HB2	2.05	0.86
1:A:1528:U:O2'	1:A:1529:G:H3'	1.75	0.86
15:O:87:ILE:HG22	15:O:88:ARG:N	1.90	0.86
1:A:1125:U:H3	10:J:5:ARG:HH21	1.22	0.86
10:J:4:ILE:HD11	10:J:74:ILE:HD12	1.55	0.86
2:B:19:HIS:HD2	2:B:189:ASP:OD1	1.58	0.86
7:G:69:VAL:HG21	7:G:104:LEU:HD21	1.58	0.86
2:B:178:ARG:HH22	8:H:68:ARG:HH22	1.23	0.85
7:G:75:VAL:HG21	7:G:86:GLN:HB3	1.56	0.85
1:A:954:G:H4'	13:M:120:LYS:HB3	1.57	0.85
14:N:27:CYS:SG	14:N:29:ARG:HB2	2.15	0.85
1:A:421:U:H5'	1:A:422:C:C5	2.11	0.85
1:A:1116:C:C2'	1:A:1117:G:H5''	2.06	0.85
15:O:16:ALA:HB1	15:O:21:ASP:HB3	1.59	0.84
19:S:64:GLU:O	19:S:67:VAL:HG23	1.75	0.84
10:J:32:ALA:H	10:J:78:ASN:ND2	1.75	0.84
6:F:15:ASP:H	6:F:18:GLN:NE2	1.75	0.84
2:B:77:ALA:HB2	2:B:211:ILE:HD13	1.59	0.84
1:A:664:G:H22	1:A:741:G:H1	1.22	0.84
1:A:1086:U:H3	1:A:1099:G:H22	1.24	0.84
5:E:51:VAL:HB	5:E:52:PRO:HD3	1.58	0.84
5:E:74:GLY:HA3	5:E:116:THR:HG22	1.59	0.83
1:A:371:G:O2'	1:A:372:C:H5'	1.76	0.83
7:G:120:ILE:H	7:G:120:ILE:HD12	1.40	0.83
12:L:27:LEU:O	12:L:29:GLY:N	2.10	0.83
6:F:22:GLU:OE2	6:F:82:ARG:HD3	1.79	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:5:ARG:HA	10:J:73:ASP:OD1	1.78	0.83
1:A:969:A:H61	13:M:126:LYS:HB2	1.42	0.83
1:A:192:U:H4'	20:T:102:GLY:O	1.78	0.82
10:J:46:ARG:HG2	10:J:46:ARG:HH11	1.43	0.82
3:C:157:ILE:HG21	3:C:164:ARG:NH2	1.93	0.82
9:I:97:LYS:HA	9:I:102:LEU:HD21	1.60	0.82
10:J:29:ARG:HG3	10:J:84:GLN:HE22	1.45	0.82
2:B:134:GLU:HG2	2:B:137:ARG:NH2	1.95	0.82
15:O:78:TYR:CZ	15:O:82:ILE:HD11	2.14	0.82
10:J:90:LEU:H	10:J:91:PRO:CD	1.93	0.82
1:A:1281:U:H5'	1:A:1282:C:H5	1.46	0.81
1:A:1343:G:H2'	1:A:1344:C:C6	2.14	0.81
5:E:80:ILE:HD12	5:E:80:ILE:H	1.45	0.81
3:C:14:ILE:HG22	3:C:15:THR:N	1.95	0.81
1:A:1366:C:H2'	1:A:1367:C:H6	1.43	0.81
10:J:90:LEU:H	10:J:91:PRO:HD2	1.45	0.81
2:B:204:ASN:C	2:B:204:ASN:HD22	1.88	0.81
9:I:70:LYS:O	9:I:74:ILE:HG13	1.81	0.81
10:J:9:ARG:HB3	10:J:9:ARG:NH1	1.96	0.81
3:C:47:LEU:CD2	3:C:68:VAL:HG11	2.10	0.81
12:L:38:THR:HG22	12:L:39:VAL:HG23	1.61	0.81
2:B:213:LEU:HD22	2:B:214:ILE:HD13	1.62	0.81
3:C:188:LEU:HD11	3:C:195:VAL:HG13	1.63	0.80
10:J:38:ILE:HG13	10:J:71:LEU:HB3	1.62	0.80
2:B:60:ASP:HB3	2:B:64:ARG:NH1	1.96	0.80
3:C:207:VAL:HG12	3:C:208:ILE:N	1.96	0.80
12:L:60:LEU:HD11	12:L:85:ILE:HD12	1.61	0.80
13:M:120:LYS:NZ	13:M:122:LYS:HB3	1.96	0.80
10:J:49:VAL:HG23	14:N:41:ARG:HB2	1.62	0.80
16:P:67:THR:HG22	16:P:69:THR:H	1.46	0.80
4:D:111:ALA:HB2	4:D:120:LEU:HD12	1.62	0.80
1:A:203:U:H5''	1:A:204:U:OP1	1.80	0.79
8:H:112:LEU:HD23	8:H:112:LEU:N	1.97	0.79
16:P:20:VAL:CG1	16:P:32:TYR:HB2	2.13	0.79
3:C:110:ASN:ND2	3:C:140:ARG:HB3	1.97	0.79
8:H:82:HIS:HD2	8:H:138:TRP:NE1	1.81	0.79
16:P:57:ARG:HG2	16:P:57:ARG:HH11	1.45	0.79
1:A:1208:C:H2'	1:A:1209:C:H6	1.47	0.79
2:B:161:ALA:HB1	2:B:185:ILE:HD11	1.62	0.79
2:B:95:GLN:C	2:B:96:ARG:HD2	2.08	0.78
8:H:29:SER:OG	8:H:32:LYS:HB2	1.82	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:129(A):G:O2'	1:A:189(F):U:H2'	1.82	0.78
3:C:154:SER:HB3	3:C:165:THR:HG23	1.64	0.78
8:H:103:VAL:HG21	8:H:109:ILE:O	1.83	0.78
9:I:8:GLY:HA2	9:I:79:LEU:HB3	1.64	0.78
1:A:975:A:H5'	1:A:975:A:C8	2.18	0.78
15:O:3:ILE:HD13	15:O:34:LEU:HD13	1.66	0.78
1:A:351:G:H4'	1:A:352:C:OP1	1.83	0.78
10:J:32:ALA:HB2	10:J:76:ASN:HD22	1.48	0.78
15:O:74:ASP:CG	15:O:77:ARG:HG3	2.09	0.78
1:A:1022:G:H2'	1:A:1023:G:H8	1.49	0.78
5:E:93:PRO:HG2	8:H:105:ARG:NH2	1.98	0.78
1:A:1366:C:H2'	1:A:1367:C:C6	2.18	0.78
1:A:1492:A:OP1	12:L:47:LYS:N	2.15	0.78
3:C:91:LEU:HD11	3:C:99:VAL:CG2	2.13	0.78
3:C:119:ARG:HE	3:C:140:ARG:NE	1.82	0.78
2:B:111:ARG:HB3	2:B:149:LEU:HD11	1.66	0.77
1:A:1127:G:H21	1:A:1146:A:N6	1.82	0.77
17:Q:3:LYS:HB3	17:Q:61:GLU:HB2	1.66	0.77
7:G:149:ARG:HD2	11:K:59:TYR:CE1	2.19	0.77
10:J:37:PRO:HA	10:J:72:VAL:HG22	1.66	0.77
3:C:8:ILE:HG23	3:C:16:ARG:HG2	1.66	0.77
2:B:223:ILE:HD12	2:B:224:GLN:N	2.00	0.77
7:G:111:ARG:HB3	7:G:113:GLU:OE2	1.85	0.77
3:C:70:VAL:HG12	3:C:71:ALA:N	2.00	0.77
8:H:90:GLY:O	8:H:91:ARG:HB2	1.83	0.77
1:A:1007:C:H2'	1:A:1008:C:H6	1.47	0.76
19:S:33:THR:HG22	19:S:35:SER:H	1.50	0.76
3:C:6:HIS:HD2	3:C:8:ILE:H	1.30	0.76
11:K:126:ARG:O	11:K:127:LYS:HE2	1.85	0.76
8:H:86:ILE:HD12	8:H:133:LEU:HD22	1.66	0.76
1:A:1053:G:C3'	1:A:1054:C:H5'	2.16	0.76
13:M:36:LYS:HB2	13:M:59:TYR:HE2	1.51	0.76
11:K:16:SER:HA	11:K:79:SER:O	1.86	0.76
13:M:15:VAL:HG23	13:M:43:THR:O	1.86	0.76
1:A:1216:G:H5''	14:N:5:ALA:HB2	1.67	0.76
2:B:74:LYS:HE3	2:B:206:ASP:HB2	1.67	0.76
18:R:46:GLU:H	18:R:46:GLU:CD	1.93	0.76
1:A:404:U:H2'	1:A:405:U:C6	2.21	0.76
3:C:112:SER:HB3	3:C:115:LEU:HD12	1.66	0.76
3:C:123:GLN:O	3:C:128:PHE:HB2	1.86	0.76
2:B:204:ASN:ND2	2:B:206:ASP:H	1.83	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:579:G:H5'	1:A:728:A:H1'	1.68	0.76
10:J:38:ILE:HD11	10:J:71:LEU:HD12	1.68	0.76
11:K:58:PRO:HA	11:K:90:GLY:HA3	1.67	0.76
2:B:60:ASP:CB	2:B:64:ARG:HH12	1.98	0.76
1:A:1181:G:H4'	1:A:1182:G:OP1	1.86	0.75
2:B:23:ARG:HD2	2:B:23:ARG:O	1.86	0.75
8:H:113:SER:HB2	8:H:134:ILE:HD11	1.68	0.75
13:M:54:VAL:O	13:M:58:GLU:HG2	1.84	0.75
1:A:243:A:C4'	1:A:244:U:H5'	2.11	0.75
1:A:731:G:OP1	1:A:766:A:H1'	1.86	0.75
6:F:14:LEU:HA	6:F:18:GLN:NE2	2.01	0.75
7:G:54:THR:HG22	7:G:56:GLN:H	1.51	0.75
18:R:32:ARG:HA	18:R:69:THR:HG21	1.68	0.75
20:T:50:GLU:HG3	20:T:100:ILE:HB	1.69	0.75
17:Q:101:ARG:HA	17:Q:101:ARG:HE	1.50	0.75
1:A:1003:G:C2'	1:A:1004:A:H5''	2.17	0.75
1:A:1052:U:H2'	1:A:1055:A:OP1	1.86	0.75
3:C:110:ASN:HD22	3:C:140:ARG:HB3	1.50	0.75
1:A:912:C:O2'	1:A:913:A:H5'	1.86	0.75
18:R:19:LYS:CG	18:R:20:ALA:H	2.00	0.75
1:A:404:U:H2'	1:A:405:U:H6	1.51	0.74
6:F:47:ARG:N	6:F:47:ARG:HD3	2.01	0.74
15:O:10:LYS:HD3	15:O:10:LYS:C	2.12	0.74
1:A:437:U:H5''	4:D:155:LEU:HD22	1.69	0.74
10:J:46:ARG:NH1	10:J:64:GLU:HB3	2.01	0.74
1:A:1133:G:H2'	1:A:1134:G:H8	1.50	0.74
12:L:126:LYS:HD2	12:L:126:LYS:O	1.87	0.74
1:A:677:U:H3	1:A:713:G:H22	1.34	0.74
2:B:204:ASN:HD22	2:B:206:ASP:H	1.36	0.74
1:A:377:G:OP1	16:P:3:LYS:HD3	1.87	0.74
1:A:523:A:H61	12:L:92:ASP:HB2	1.52	0.74
21:U:9:ARG:NH1	21:U:22:ARG:HA	1.95	0.74
9:I:93:ARG:HH11	9:I:93:ARG:CB	2.01	0.74
15:O:64:ARG:NH1	15:O:64:ARG:HB3	2.02	0.74
1:A:363:A:H62	12:L:28:LYS:HE3	1.52	0.73
1:A:1250:A:H4'	9:I:68:GLY:N	2.04	0.73
12:L:55:VAL:HG12	12:L:56:ALA:N	2.04	0.73
17:Q:48:GLU:C	17:Q:50:LYS:H	1.96	0.73
1:A:112:G:H4'	1:A:389:A:H5''	1.68	0.73
10:J:32:ALA:H	10:J:78:ASN:HD21	1.35	0.73
14:N:14:PRO:O	14:N:15:LYS:HB2	1.87	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:35:ARG:O	4:D:36:ARG:HB2	1.88	0.73
16:P:74:LEU:O	16:P:79:VAL:HG23	1.89	0.73
1:A:973:G:H3'	1:A:974:A:H5''	1.71	0.73
7:G:113:GLU:HG2	7:G:119:ARG:HG2	1.69	0.73
19:S:30:LEU:O	19:S:31:ILE:HD13	1.89	0.73
2:B:124:SER:O	2:B:127:ILE:HG13	1.89	0.73
15:O:33:THR:HG23	15:O:63:ARG:HH12	1.53	0.73
1:A:853:G:O2'	1:A:854:G:H5'	1.89	0.72
1:A:1001(A):G:H3'	1:A:1002:G:H8	1.53	0.72
4:D:7:PRO:HB2	4:D:10:ARG:HD2	1.71	0.72
10:J:7:LYS:HZ2	10:J:71:LEU:HD23	1.53	0.72
11:K:11:LYS:HD2	11:K:11:LYS:O	1.88	0.72
19:S:22:LEU:HD13	19:S:28:LYS:HB3	1.71	0.72
1:A:1038:C:H2'	1:A:1039:C:H6	1.54	0.72
19:S:20:LEU:HD12	19:S:21:GLU:N	2.05	0.72
22:X:1:G:O2'	22:X:2:U:H5'	1.88	0.72
8:H:9:MET:SD	8:H:32:LYS:HG2	2.29	0.72
13:M:36:LYS:HB2	13:M:59:TYR:CE2	2.24	0.72
9:I:97:LYS:HB3	9:I:98:PRO:HD3	1.71	0.72
18:R:87:ARG:O	18:R:88:LYS:HB2	1.89	0.72
1:A:838:G:H2'	1:A:839:U:H5''	1.72	0.72
18:R:19:LYS:HG3	18:R:20:ALA:N	2.05	0.72
1:A:370:C:O2'	1:A:371:G:H5'	1.89	0.72
1:A:1030(C):G:H2'	1:A:1030(D):A:C8	2.23	0.72
2:B:231:GLU:HB3	2:B:232:PRO:HD2	1.72	0.72
2:B:86:GLU:C	2:B:88:ALA:H	1.98	0.72
10:J:34:VAL:HG22	10:J:74:ILE:HG23	1.72	0.72
1:A:382:A:H2'	1:A:383:A:C8	2.25	0.72
2:B:18:GLY:O	2:B:19:HIS:HB2	1.88	0.72
9:I:65:VAL:HG11	9:I:73:GLN:HB3	1.70	0.72
16:P:20:VAL:HG11	16:P:32:TYR:CB	2.19	0.72
8:H:60:ARG:HH11	8:H:60:ARG:HG3	1.55	0.72
1:A:1347:G:N2	1:A:1373:G:H2'	2.05	0.72
9:I:27:THR:HG23	9:I:62:TYR:HA	1.72	0.72
1:A:328:C:O2	1:A:328:C:H2'	1.90	0.71
9:I:31:GLN:O	9:I:32:ASP:HB3	1.90	0.71
10:J:32:ALA:CB	10:J:75:ILE:HG13	2.19	0.71
15:O:17:ARG:HG3	15:O:17:ARG:HH11	1.53	0.71
18:R:87:ARG:HG2	18:R:88:LYS:H	1.54	0.71
1:A:407:G:H2'	1:A:408:A:C8	2.26	0.71
4:D:24:GLU:OE1	4:D:25:ARG:N	2.22	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:119:LEU:HD12	8:H:124:ALA:HA	1.72	0.71
11:K:126:ARG:O	11:K:127:LYS:HB2	1.89	0.71
16:P:34:GLU:OE2	16:P:55:ARG:HD3	1.90	0.71
1:A:299:G:H2'	1:A:300:A:C8	2.25	0.71
1:A:1499:A:O2'	1:A:1500:A:H5'	1.90	0.71
5:E:53:LEU:HD23	5:E:53:LEU:H	1.55	0.71
1:A:673:G:H2'	1:A:674:G:C8	2.24	0.71
1:A:1189:C:P	10:J:51:ARG:HH22	2.13	0.71
4:D:30:LYS:C	4:D:32:ALA:H	1.96	0.71
10:J:82:ILE:O	10:J:86:MET:HB2	1.89	0.71
12:L:27:LEU:C	12:L:29:GLY:N	2.49	0.71
2:B:178:ARG:HH22	8:H:68:ARG:NH2	1.89	0.71
1:A:1060:C:H2'	1:A:1061:G:H8	1.56	0.71
18:R:18:ARG:O	18:R:19:LYS:HB3	1.89	0.71
1:A:1281:U:H5'	1:A:1282:C:C5	2.26	0.71
3:C:156:ARG:HD2	3:C:160:ALA:O	1.90	0.71
5:E:74:GLY:CA	5:E:116:THR:HG22	2.20	0.71
5:E:79:GLU:HG3	5:E:93:PRO:HD2	1.71	0.71
16:P:57:ARG:NH1	16:P:79:VAL:O	2.23	0.71
1:A:9:G:OP1	5:E:122:GLU:HB2	1.91	0.70
1:A:818:G:O2'	1:A:819:A:H5''	1.92	0.70
1:A:1148:U:H2'	1:A:1149:C:O4'	1.91	0.70
2:B:219:VAL:HA	2:B:222:ILE:HD12	1.73	0.70
12:L:60:LEU:HD11	12:L:85:ILE:CD1	2.20	0.70
13:M:50:GLU:O	13:M:54:VAL:HG23	1.91	0.70
2:B:19:HIS:NE2	2:B:206:ASP:HB3	2.06	0.70
1:A:1014:A:C2	1:A:1219:U:H1'	2.26	0.70
2:B:61:LEU:HD21	2:B:160:ASP:HB3	1.72	0.70
2:B:134:GLU:HG2	2:B:137:ARG:HH21	1.55	0.70
4:D:83:SER:HA	4:D:89:THR:CG2	2.21	0.70
3:C:119:ARG:HG3	3:C:119:ARG:HH11	1.56	0.70
4:D:89:THR:HG22	4:D:89:THR:O	1.91	0.70
1:A:1228:C:H4'	13:M:116:THR:HA	1.72	0.70
23:Y:29:U:O2'	23:Y:30:C:H5'	1.90	0.70
5:E:89:ILE:HD13	5:E:90:VAL:N	2.06	0.70
2:B:142:LEU:HG	2:B:146:GLN:HE21	1.57	0.70
4:D:3:ARG:NH1	4:D:115:ARG:HB3	2.06	0.70
4:D:92:VAL:O	4:D:96:LEU:HD13	1.92	0.70
8:H:122:ARG:HB3	8:H:122:ARG:NH1	2.07	0.70
1:A:1391:U:H2'	1:A:1392:G:C8	2.27	0.69
8:H:120:THR:OG1	8:H:123:GLU:HG3	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:50:GLU:HA	20:T:100:ILE:CG2	2.21	0.69
1:A:340:U:H2'	1:A:341:C:C6	2.27	0.69
1:A:1016:A:H2'	1:A:1017:G:O4'	1.92	0.69
1:A:1287:A:H2'	1:A:1288:A:C8	2.27	0.69
1:A:1413:A:H2	1:A:1487:G:H22	1.36	0.69
13:M:90:LEU:HD22	13:M:94:ARG:NH1	2.07	0.69
13:M:49:THR:HG22	13:M:51:ALA:N	2.06	0.69
20:T:89:ARG:O	20:T:93:GLU:HG3	1.92	0.69
1:A:1401:G:C2	1:A:1402:C:H1'	2.27	0.69
15:O:6:GLU:H	15:O:6:GLU:CD	1.99	0.69
10:J:32:ALA:HB1	10:J:75:ILE:HG13	1.73	0.69
12:L:27:LEU:HB2	12:L:62:SER:HB2	1.74	0.69
1:A:629:G:H2'	1:A:630:G:H5''	1.75	0.69
1:A:969:A:H61	13:M:126:LYS:CB	2.05	0.69
1:A:1201:A:H4'	1:A:1202:G:O5'	1.92	0.69
1:A:1286:A:C8	1:A:1287:A:H4'	2.27	0.69
18:R:25:THR:HG22	18:R:42:ARG:HH12	1.57	0.69
1:A:107:G:C2'	1:A:108:G:H5'	2.22	0.69
1:A:1300:G:O2'	1:A:1301:U:H6	1.75	0.69
1:A:1320:C:N3	19:S:36:ARG:HD3	2.08	0.69
5:E:5:ASP:CG	5:E:6:PHE:H	1.98	0.69
20:T:37:SER:O	20:T:41:ILE:HG13	1.92	0.69
1:A:939:G:H5''	7:G:102:ARG:NH2	2.08	0.69
17:Q:24:GLU:HG2	17:Q:39:SER:HB3	1.75	0.69
1:A:1216:G:H5''	14:N:5:ALA:CB	2.22	0.68
1:A:1531:A:C2'	1:A:1532:U:H5'	2.23	0.68
1:A:1531:A:H2'	1:A:1532:U:H5'	1.75	0.68
2:B:84:GLU:OE1	2:B:216:SER:HA	1.93	0.68
2:B:87:ARG:HD3	2:B:233:SER:OG	1.93	0.68
7:G:75:VAL:CG2	7:G:86:GLN:HB3	2.23	0.68
21:U:9:ARG:HH12	21:U:22:ARG:CA	1.98	0.68
21:U:12:LYS:HB3	21:U:22:ARG:HD2	1.75	0.68
1:A:1241:G:H2'	1:A:1242:C:C6	2.27	0.68
1:A:1356:G:H2'	1:A:1357:A:C8	2.28	0.68
3:C:55:VAL:O	3:C:55:VAL:HG12	1.94	0.68
1:A:984:C:H2'	1:A:985:C:H6	1.58	0.68
3:C:64:VAL:HB	3:C:99:VAL:HG21	1.75	0.68
3:C:157:ILE:HG21	3:C:164:ARG:HH21	1.58	0.68
3:C:188:LEU:CD1	3:C:195:VAL:HG13	2.24	0.68
2:B:28:PHE:HD1	2:B:194:PRO:HG3	1.59	0.68
2:B:211:ILE:O	2:B:215:LEU:HB2	1.94	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:215:LEU:O	2:B:219:VAL:HG23	1.94	0.68
19:S:15:LEU:HA	19:S:18:LYS:HB3	1.76	0.68
1:A:67:C:O2'	1:A:171:A:H1'	1.93	0.68
1:A:384:G:H2'	1:A:385:C:H6	1.59	0.68
9:I:48:GLU:N	9:I:49:PRO:HD2	2.09	0.68
10:J:99:LYS:CD	10:J:100:THR:H	2.06	0.68
1:A:1208:C:H2'	1:A:1209:C:C6	2.28	0.68
3:C:88:ARG:HH12	3:C:101:LEU:H	1.41	0.68
5:E:144:THR:HB	5:E:147:ASP:OD2	1.94	0.68
10:J:9:ARG:HB3	10:J:9:ARG:HH11	1.59	0.68
12:L:45:PRO:HD3	12:L:51:ALA:O	1.93	0.68
1:A:865:A:H5'	1:A:1078:U:O4	1.94	0.68
4:D:152:SER:C	4:D:154:ASN:H	2.02	0.68
13:M:36:LYS:HD2	13:M:59:TYR:OH	1.94	0.68
1:A:107:G:H2'	1:A:108:G:H5'	1.76	0.67
2:B:8:LYS:O	2:B:9:GLU:HB2	1.94	0.67
2:B:17:PHE:HB3	2:B:44:LEU:HD21	1.76	0.67
23:Y:34:CM0:C8	23:Y:34:CM0:O4	2.43	0.67
1:A:1040:U:H2'	1:A:1041:A:C8	2.29	0.67
20:T:53:LEU:HB2	20:T:100:ILE:CG2	2.23	0.67
1:A:1300:G:HO2'	1:A:1301:U:H6	1.38	0.67
6:F:3:ARG:HH11	6:F:3:ARG:HG3	1.59	0.67
9:I:125:TYR:H	9:I:125:TYR:HD2	1.41	0.67
10:J:49:VAL:O	10:J:60:ARG:HA	1.94	0.67
2:B:83:MET:HE3	2:B:234:PRO:HG2	1.77	0.67
5:E:50:GLU:HB3	5:E:53:LEU:HD21	1.75	0.67
1:A:166:G:O2'	1:A:167:G:H5'	1.94	0.67
1:A:344:A:H5''	1:A:345:C:H5	1.60	0.67
1:A:926:G:H3'	1:A:1505:G:H21	1.59	0.67
3:C:91:LEU:HD11	3:C:99:VAL:HG22	1.76	0.67
4:D:25:ARG:C	4:D:27:TYR:H	2.00	0.67
6:F:22:GLU:HA	6:F:25:ILE:HD12	1.77	0.67
6:F:67:MET:HB2	6:F:68:PRO:HD2	1.75	0.67
7:G:50:ILE:HD11	7:G:121:ALA:HA	1.75	0.67
8:H:70:GLN:HE21	8:H:70:GLN:HA	1.60	0.67
10:J:20:ALA:O	10:J:24:VAL:HG23	1.95	0.67
17:Q:63:ARG:O	17:Q:65:ILE:HD12	1.95	0.67
1:A:371:G:C2'	1:A:372:C:H5'	2.24	0.67
17:Q:67:LYS:CA	17:Q:70:ARG:HH12	2.06	0.67
1:A:1226:C:H4'	19:S:80:TYR:CZ	2.29	0.67
1:A:1502:A:H2	1:A:1505:G:N1	1.92	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:145:LYS:O	5:E:149:GLU:HG2	1.95	0.67
14:N:57:ARG:HG2	14:N:58:LYS:H	1.60	0.67
1:A:1323:G:H2'	1:A:1324:A:C8	2.30	0.67
1:A:746:A:O2'	1:A:747:C:H5'	1.95	0.67
1:A:818:G:C2'	1:A:819:A:H5''	2.25	0.67
10:J:8:LEU:HB2	10:J:70:ARG:HB2	1.77	0.67
9:I:17:VAL:HG21	9:I:80:GLY:HA3	1.76	0.66
12:L:47:LYS:HB3	12:L:48:PRO:HD3	1.77	0.66
2:B:218:ALA:O	2:B:222:ILE:HG13	1.95	0.66
11:K:69:ALA:O	11:K:73:MET:HG2	1.95	0.66
16:P:57:ARG:HH11	16:P:57:ARG:CG	2.08	0.66
1:A:287:U:O2'	1:A:288:A:H5'	1.94	0.66
1:A:738:C:H5''	6:F:69:GLU:HB3	1.77	0.66
7:G:16:LEU:HD22	7:G:16:LEU:N	2.11	0.66
1:A:291:C:O2'	1:A:292:G:H5'	1.95	0.66
3:C:70:VAL:HG12	3:C:71:ALA:H	1.58	0.66
1:A:1032:G:H2'	1:A:1033:G:H8	1.60	0.66
1:A:1181:G:H2'	1:A:1182:G:C5	2.30	0.66
10:J:44:VAL:HG22	10:J:66:ARG:HE	1.58	0.66
1:A:839:U:O2	1:A:839:U:H2'	1.95	0.66
1:A:35:G:H2'	1:A:36:C:C6	2.31	0.66
3:C:29:TYR:OH	14:N:54:PRO:HD2	1.95	0.66
10:J:27:ALA:HA	10:J:81:THR:HG23	1.78	0.66
15:O:56:LEU:HA	15:O:59:MET:HE2	1.78	0.66
1:A:105:G:H2'	1:A:106:C:C6	2.31	0.66
1:A:407:G:H2'	1:A:408:A:H8	1.58	0.66
10:J:99:LYS:HD3	10:J:100:THR:N	2.10	0.66
1:A:1435:G:H2'	1:A:1436:U:C6	2.31	0.66
2:B:178:ARG:HH21	2:B:196:LEU:HA	1.61	0.66
3:C:152:ILE:HG12	3:C:167:TRP:CB	2.26	0.66
1:A:1126:U:H2'	1:A:1127:G:C8	2.27	0.65
1:A:1228:C:H2'	1:A:1229:A:H8	1.59	0.65
1:A:1132:C:H2'	1:A:1133:G:H8	1.60	0.65
20:T:43:LEU:HB2	20:T:52:ALA:HB2	1.78	0.65
2:B:53:ARG:NH1	2:B:199:TYR:HD2	1.95	0.65
11:K:43:SER:OG	11:K:47:VAL:HG11	1.96	0.65
1:A:235:C:H5'	17:Q:70:ARG:HG2	1.76	0.65
1:A:254:G:OP1	17:Q:67:LYS:O	2.13	0.65
8:H:24:THR:HG22	8:H:63:LEU:HD21	1.79	0.65
10:J:32:ALA:HB2	10:J:76:ASN:HB2	1.78	0.65
12:L:75:HIS:CD2	12:L:77:LEU:H	2.14	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:3:ARG:HD2	13:M:7:VAL:HA	1.78	0.65
1:A:1187:G:OP1	9:I:113:LYS:HE2	1.97	0.65
3:C:83:ARG:C	3:C:85:ARG:H	2.04	0.65
3:C:102:ASN:N	3:C:102:ASN:HD22	1.94	0.65
4:D:189:PRO:HB2	4:D:194:LEU:HD21	1.77	0.65
13:M:11:ARG:HG3	13:M:12:ASN:H	1.57	0.65
5:E:50:GLU:OE2	5:E:51:VAL:HG23	1.97	0.65
5:E:96:PRO:HA	5:E:117:ASP:OD2	1.97	0.65
16:P:75:ARG:O	16:P:78:GLY:N	2.26	0.65
1:A:390:C:H2'	1:A:391:G:C8	2.32	0.65
1:A:1056:U:H5'	3:C:163:ALA:HB2	1.78	0.65
1:A:1161:C:H2'	1:A:1162:C:C6	2.32	0.65
10:J:76:ASN:C	10:J:78:ASN:H	2.04	0.65
10:J:90:LEU:N	10:J:91:PRO:HD2	2.12	0.65
13:M:15:VAL:HG21	13:M:48:LEU:HD21	1.78	0.65
13:M:81:LEU:CD1	13:M:88:ARG:HD3	2.27	0.65
16:P:20:VAL:HG13	16:P:32:TYR:HB2	1.78	0.65
1:A:524:G:H2'	1:A:525:C:C6	2.32	0.65
1:A:421:U:H5'	1:A:422:C:H5	1.59	0.65
5:E:92:LYS:HB3	5:E:119:LEU:HB2	1.78	0.65
17:Q:95:TYR:C	17:Q:97:SER:H	2.05	0.65
1:A:1329:A:C2'	1:A:1330:U:H5'	2.27	0.65
2:B:75:LYS:HA	2:B:78:GLN:HB2	1.79	0.65
2:B:230:VAL:HG12	2:B:231:GLU:H	1.62	0.65
4:D:146:ILE:N	4:D:146:ILE:HD12	2.12	0.65
13:M:14:ARG:NH1	13:M:16:ASP:OD2	2.27	0.65
1:A:384:G:H2'	1:A:385:C:C6	2.32	0.64
12:L:47:LYS:HB3	12:L:48:PRO:HD2	1.75	0.64
1:A:1106:G:H5''	3:C:172:ARG:HG2	1.79	0.64
1:A:1318:A:H5''	19:S:10:PHE:CD1	2.33	0.64
1:A:818:G:C3'	1:A:819:A:H5''	2.27	0.64
1:A:1068:G:OP2	1:A:1068:G:H8	1.81	0.64
7:G:37:ASN:HD21	9:I:41:VAL:H	1.43	0.64
16:P:20:VAL:HG11	16:P:32:TYR:HB2	1.76	0.64
20:T:73:HIS:O	20:T:74:LYS:CB	2.44	0.64
3:C:64:VAL:CB	3:C:99:VAL:HG11	2.28	0.64
4:D:3:ARG:HH11	4:D:115:ARG:HD2	1.61	0.64
10:J:30:SER:HB3	10:J:84:GLN:HE21	1.60	0.64
1:A:551:U:H2'	1:A:552:U:C6	2.32	0.64
3:C:150:LYS:HD3	3:C:152:ILE:HD11	1.79	0.64
11:K:48:ILE:HG22	11:K:49:GLY:H	1.63	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:17:VAL:O	13:M:20:THR:HB	1.98	0.64
15:O:10:LYS:HE2	15:O:14:GLU:HB2	1.78	0.64
23:Y:32:C:H5'	23:Y:33:U:OP2	1.98	0.64
1:A:1117:G:H5'	1:A:1117:G:H8	1.62	0.64
10:J:19:SER:OG	10:J:91:PRO:HB3	1.98	0.64
2:B:169:LYS:O	2:B:169:LYS:HD3	1.98	0.64
3:C:77:ILE:C	3:C:83:ARG:HB3	2.22	0.64
13:M:3:ARG:HD3	13:M:9:ILE:HG23	1.79	0.64
1:A:895:G:H2'	1:A:896:C:C6	2.33	0.64
2:B:12:GLU:CG	2:B:213:LEU:HD11	2.28	0.64
13:M:93:ARG:NH1	13:M:93:ARG:HB2	2.13	0.64
15:O:33:THR:HG23	15:O:63:ARG:NH1	2.13	0.64
2:B:178:ARG:HH21	2:B:196:LEU:C	2.05	0.64
9:I:53:VAL:HG21	9:I:85:LEU:HD21	1.80	0.64
10:J:49:VAL:O	10:J:60:ARG:O	2.16	0.64
11:K:21:ILE:HD12	11:K:95:ILE:HD13	1.78	0.64
13:M:14:ARG:HG3	13:M:44:ARG:HH21	1.61	0.64
19:S:42:PRO:O	19:S:45:VAL:HG23	1.98	0.64
1:A:105:G:H2'	1:A:106:C:H6	1.63	0.64
1:A:1053:G:H3'	1:A:1054:C:H5'	1.78	0.64
2:B:97:TRP:HZ2	2:B:102:LEU:HD13	1.62	0.64
20:T:84:LEU:C	20:T:86:ARG:H	2.04	0.64
6:F:46:ARG:HG2	6:F:47:ARG:N	2.13	0.63
7:G:79:ARG:HH22	7:G:82:GLY:H	1.45	0.63
9:I:118:LYS:NZ	9:I:118:LYS:HB3	2.13	0.63
11:K:124:LYS:HD2	11:K:125:PHE:CE1	2.32	0.63
12:L:6:THR:OG1	12:L:9:GLN:HG3	1.99	0.63
20:T:94:ALA:O	20:T:95:ALA:HB2	1.97	0.63
21:U:2:GLY:C	21:U:4:GLY:H	2.06	0.63
1:A:625:G:H2'	1:A:626:U:C6	2.33	0.63
1:A:977:A:H2'	1:A:978:A:H5'	1.80	0.63
1:A:1057:G:O2'	1:A:1058:G:H5'	1.98	0.63
1:A:1127:G:H21	1:A:1146:A:H62	1.44	0.63
5:E:80:ILE:HD12	5:E:80:ILE:N	2.11	0.63
8:H:119:LEU:HD12	8:H:124:ALA:CA	2.29	0.63
10:J:6:ILE:HD12	10:J:6:ILE:O	1.98	0.63
12:L:55:VAL:HG12	12:L:56:ALA:H	1.64	0.63
2:B:161:ALA:CB	2:B:185:ILE:HD11	2.29	0.63
3:C:91:LEU:HD11	3:C:99:VAL:HG23	1.81	0.63
3:C:148:GLY:HA3	3:C:172:ARG:O	1.97	0.63
7:G:121:ALA:O	7:G:125:MET:HG3	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:75:ILE:O	10:J:76:ASN:CG	2.41	0.63
12:L:24:VAL:HG13	12:L:98:TYR:CE2	2.33	0.63
13:M:36:LYS:CB	13:M:59:TYR:HE2	2.10	0.63
1:A:835:U:OP1	18:R:64:ARG:NH2	2.27	0.63
1:A:1178:G:N2	1:A:1180:A:H3'	2.13	0.63
1:A:1438:G:H2'	1:A:1439:C:C6	2.34	0.63
4:D:156:GLU:HG2	4:D:160:GLN:HE21	1.63	0.63
7:G:140:ASP:HA	7:G:143:ARG:NH1	2.14	0.63
9:I:16:ARG:O	9:I:63:ILE:HG23	1.97	0.63
9:I:26:VAL:HG13	9:I:61:ALA:HB3	1.79	0.63
1:A:403:C:O2'	1:A:404:U:H5'	1.98	0.63
1:A:1329:A:O2'	1:A:1330:U:H5'	1.98	0.63
3:C:44:GLU:HA	3:C:52:LEU:HD11	1.80	0.63
5:E:13:ILE:HA	5:E:29:GLY:O	1.99	0.63
9:I:4:TYR:HB3	9:I:87:GLN:HB2	1.80	0.63
14:N:57:ARG:HG2	14:N:58:LYS:N	2.14	0.63
20:T:13:LEU:HD12	20:T:14:LYS:N	2.14	0.63
1:A:1151:A:HO2'	1:A:1152:A:H8	1.45	0.63
1:A:1230:C:O2'	1:A:1231:G:H5'	1.98	0.63
6:F:46:ARG:HG2	6:F:47:ARG:H	1.64	0.63
1:A:1053:G:C4'	1:A:1054:C:H5'	2.29	0.63
1:A:1255:G:O2'	1:A:1258:G:H1'	1.99	0.63
9:I:111:ARG:HD3	9:I:112:LYS:N	2.14	0.63
1:A:1412:C:H2'	1:A:1413:A:C8	2.33	0.63
2:B:139:LYS:C	2:B:139:LYS:HD3	2.24	0.63
5:E:12:LEU:HD13	5:E:31:LEU:HB2	1.81	0.63
5:E:107:ARG:CG	5:E:108:ALA:N	2.62	0.63
8:H:10:LEU:HD22	8:H:83:ILE:HD11	1.80	0.63
2:B:132:LYS:HA	2:B:135:GLN:HB2	1.81	0.62
3:C:108:ASN:HD21	3:C:144:SER:HB3	1.64	0.62
9:I:118:LYS:O	9:I:119:ALA:HB3	1.98	0.62
1:A:946:A:H2'	1:A:947:G:C8	2.33	0.62
1:A:1441:G:H4'	1:A:1442:G:C5	2.34	0.62
5:E:72:GLN:NE2	5:E:77:PRO:HB3	2.14	0.62
19:S:5:LEU:O	19:S:6:LYS:CB	2.46	0.62
1:A:489:C:H2'	1:A:490:G:H8	1.65	0.62
1:A:1540:U:C5	1:A:1541:U:C4	2.88	0.62
6:F:4:TYR:CE1	6:F:92:LYS:HG2	2.34	0.62
19:S:5:LEU:O	19:S:6:LYS:HB2	1.99	0.62
3:C:23:TYR:CD2	3:C:24:ALA:N	2.67	0.62
3:C:131:ARG:HD3	3:C:166:GLU:OE2	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:41:VAL:HG13	5:E:113:ALA:HA	1.79	0.62
6:F:14:LEU:HA	6:F:18:GLN:HE21	1.63	0.62
1:A:722:A:H3'	1:A:722:A:N3	2.15	0.62
1:A:861:G:O2'	1:A:862:C:H5'	1.99	0.62
1:A:882:C:O2'	1:A:883:C:H5'	2.00	0.62
1:A:953:G:H1'	13:M:125:ARG:HB2	1.81	0.62
2:B:7:VAL:C	2:B:8:LYS:HG3	2.24	0.62
3:C:64:VAL:HG23	3:C:99:VAL:HG11	1.80	0.62
5:E:29:GLY:HA2	5:E:47:LYS:HG3	1.81	0.62
10:J:3:LYS:HA	10:J:76:ASN:H	1.63	0.62
10:J:84:GLN:O	10:J:88:LEU:HD12	1.99	0.62
20:T:53:LEU:HD23	20:T:56:MET:CE	2.29	0.62
1:A:266:G:H5'	1:A:266:G:C8	2.35	0.62
2:B:88:ALA:HB2	2:B:219:VAL:HG13	1.82	0.62
2:B:92:TYR:CE2	2:B:151:GLY:HA3	2.34	0.62
3:C:19:GLU:HB3	3:C:40:ARG:NH2	2.13	0.62
9:I:5:TYR:O	9:I:84:ALA:HA	2.00	0.62
13:M:88:ARG:HD2	19:S:3:ARG:HH21	1.64	0.62
2:B:115:LEU:HD11	2:B:146:GLN:HG2	1.82	0.62
2:B:189:ASP:HB3	2:B:191:ASP:OD1	1.99	0.62
9:I:48:GLU:HA	9:I:51:ARG:HH11	1.64	0.62
19:S:15:LEU:O	19:S:19:VAL:N	2.33	0.62
7:G:73:MET:HE2	7:G:90:GLU:HA	1.82	0.62
4:D:64:LEU:HD12	4:D:75:PHE:CZ	2.35	0.62
17:Q:40:LYS:HD2	17:Q:42:TYR:CE1	2.33	0.62
1:A:509:A:H5'	4:D:54:TYR:HD2	1.65	0.62
3:C:50:ALA:CB	3:C:70:VAL:HG11	2.19	0.62
11:K:59:TYR:CE2	11:K:63:LEU:HD11	2.35	0.62
2:B:7:VAL:HG12	2:B:221:LEU:HD23	1.81	0.61
12:L:74:GLY:O	12:L:75:HIS:CB	2.48	0.61
1:A:1286:A:H2'	1:A:1287:A:H4'	1.81	0.61
12:L:75:HIS:NE2	12:L:77:LEU:HB2	2.15	0.61
12:L:90:VAL:HG11	12:L:93:LEU:HG	1.82	0.61
13:M:57:ARG:HG2	13:M:61:GLU:HG3	1.82	0.61
1:A:737:A:H2'	1:A:738:C:C6	2.35	0.61
1:A:1040:U:H2'	1:A:1041:A:H8	1.64	0.61
1:A:1379:G:O6	7:G:2:ALA:HB3	2.01	0.61
15:O:81:LEU:O	15:O:81:LEU:HD23	2.00	0.61
1:A:943:U:O2'	1:A:944:G:H5'	2.00	0.61
1:A:1095:U:H2'	1:A:1096:C:C6	2.35	0.61
4:D:31:CYS:C	4:D:33:MET:H	2.07	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:3:ARG:HD3	6:F:64:GLN:NE2	2.16	0.61
12:L:75:HIS:CD2	12:L:75:HIS:C	2.79	0.61
1:A:1132:C:H2'	1:A:1133:G:C8	2.35	0.61
1:A:1216:G:O2'	1:A:1217:C:H5'	2.00	0.61
2:B:165:VAL:HG23	2:B:166:ASP:H	1.66	0.61
10:J:61:GLU:OE1	14:N:45:ARG:NH1	2.33	0.61
1:A:390:C:O3'	16:P:28:ARG:NH2	2.33	0.61
1:A:961:U:C2'	1:A:962:C:H5'	2.31	0.61
2:B:132:LYS:HB3	2:B:136:VAL:HG23	1.82	0.61
11:K:32:ILE:CG2	11:K:77:MET:HE3	2.30	0.61
11:K:40:ILE:HD12	11:K:77:MET:HE1	1.83	0.61
1:A:991:U:C4	1:A:1212:U:H1'	2.36	0.61
1:A:1256:A:H5'	1:A:1258:G:H1'	1.81	0.61
4:D:83:SER:HA	4:D:89:THR:HG21	1.83	0.61
8:H:85:ARG:NE	8:H:87:SER:O	2.34	0.61
1:A:539:A:H2'	1:A:540:G:C8	2.36	0.61
1:A:923:A:OP1	5:E:21:ALA:HB2	1.99	0.61
1:A:1280:A:H5'	10:J:40:LEU:HD22	1.81	0.61
1:A:1351:U:O2'	1:A:1352:C:H5'	2.01	0.61
2:B:230:VAL:HG12	2:B:231:GLU:N	2.15	0.61
3:C:23:TYR:CG	3:C:24:ALA:N	2.68	0.61
6:F:86:ARG:O	6:F:87:ARG:HG2	2.00	0.61
1:A:337:C:H2'	1:A:338:A:C8	2.35	0.61
3:C:157:ILE:CG2	3:C:164:ARG:HH21	2.14	0.61
6:F:4:TYR:HE1	6:F:92:LYS:HG2	1.66	0.61
11:K:82:VAL:C	11:K:83:ILE:HD12	2.26	0.61
12:L:50:SER:O	12:L:51:ALA:HB2	2.00	0.61
13:M:64:TRP:HB2	13:M:66:LEU:HD21	1.83	0.61
1:A:939:G:H2'	1:A:940:C:C6	2.35	0.60
1:A:952:U:O2'	1:A:953:G:H5'	2.00	0.60
1:A:1022:G:H2'	1:A:1023:G:C8	2.35	0.60
1:A:1369:C:H2'	1:A:1370:G:C8	2.36	0.60
4:D:24:GLU:C	4:D:26:CYS:H	2.09	0.60
5:E:74:GLY:HA3	5:E:116:THR:CG2	2.29	0.60
7:G:116:ALA:O	7:G:120:ILE:HD12	2.01	0.60
10:J:57:LYS:HE2	10:J:60:ARG:NH2	2.16	0.60
1:A:127:G:HO2'	17:Q:2:PRO:N	1.99	0.60
1:A:1137:C:H4'	1:A:1138:G:C2	2.36	0.60
20:T:56:MET:HE2	20:T:88:VAL:CG1	2.30	0.60
15:O:18:PHE:HB2	15:O:19:PRO:HD2	1.81	0.60
16:P:54:GLU:O	16:P:57:ARG:HB2	2.00	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:639:G:O2'	1:A:640:A:H5'	2.01	0.60
1:A:1123:A:O2'	10:J:38:ILE:HG23	2.02	0.60
3:C:126:ARG:HA	3:C:127:ARG:HH21	1.66	0.60
10:J:21:GLN:NE2	10:J:21:GLN:HA	2.15	0.60
1:A:353:A:H5'	1:A:353:A:H8	1.67	0.60
1:A:1481:U:O2'	1:A:1482:G:H5'	2.01	0.60
3:C:91:LEU:HD21	3:C:99:VAL:HG22	1.83	0.60
5:E:107:ARG:HG2	5:E:108:ALA:N	2.16	0.60
7:G:38:LEU:O	7:G:42:ILE:HG13	2.02	0.60
9:I:111:ARG:HD3	9:I:112:LYS:C	2.25	0.60
17:Q:18:THR:HG23	17:Q:69:LYS:HE3	1.84	0.60
1:A:254:G:O2'	1:A:255:G:H5'	2.01	0.60
1:A:701:C:H5''	1:A:703:G:O4'	2.01	0.60
2:B:60:ASP:C	2:B:64:ARG:HH12	2.10	0.60
3:C:159:GLY:HA2	3:C:193:TYR:CZ	2.36	0.60
9:I:89:ASN:O	9:I:92:TYR:HB2	2.00	0.60
17:Q:68:ARG:N	17:Q:70:ARG:NH1	2.49	0.60
1:A:909:A:OP1	12:L:21:LYS:HE2	2.02	0.60
1:A:920:U:H2'	1:A:921:U:C6	2.37	0.60
1:A:1352:C:H2'	1:A:1353:G:C8	2.37	0.60
2:B:47:THR:HA	2:B:202:PRO:HG2	1.82	0.60
2:B:206:ASP:O	2:B:207:ALA:HB2	2.01	0.60
8:H:36:LEU:HA	8:H:39:LEU:HD23	1.82	0.60
20:T:45:GLN:HB2	20:T:91:LEU:CD1	2.28	0.60
1:A:60:A:H4'	1:A:61:G:O5'	2.02	0.60
3:C:88:ARG:NH1	3:C:101:LEU:H	1.98	0.60
4:D:58:LEU:HD22	4:D:62:GLN:HG2	1.84	0.60
5:E:82:VAL:HG21	5:E:138:ALA:HA	1.84	0.60
10:J:3:LYS:HA	10:J:76:ASN:N	2.17	0.60
13:M:37:THR:HG23	13:M:55:ARG:HD2	1.82	0.60
15:O:64:ARG:CB	15:O:64:ARG:HH11	2.14	0.60
19:S:62:ILE:HA	19:S:66:MET:SD	2.42	0.60
20:T:57:ARG:NH2	20:T:102:GLY:HA3	2.16	0.60
1:A:616:G:O2'	1:A:617:G:H5'	2.02	0.60
1:A:1373:G:H5''	7:G:36:LYS:HB2	1.83	0.60
2:B:115:LEU:O	2:B:119:GLU:HG3	2.02	0.60
3:C:47:LEU:HD23	3:C:68:VAL:HG11	1.84	0.60
6:F:2:ARG:CZ	6:F:69:GLU:HG2	2.32	0.60
1:A:17:U:H2'	1:A:18:C:C6	2.37	0.60
1:A:1075:C:H5'	2:B:103:THR:HG21	1.83	0.60
1:A:1117:G:N2	1:A:1180:A:H1'	2.17	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1532:U:C2'	1:A:1533:C:C5'	2.67	0.60
2:B:69:LEU:C	2:B:69:LEU:HD23	2.27	0.60
2:B:135:GLN:O	2:B:139:LYS:HB2	2.01	0.60
2:B:208:ILE:O	2:B:212:GLN:HB2	2.02	0.60
7:G:77:SER:HB2	7:G:86:GLN:OE1	2.01	0.60
8:H:112:LEU:N	8:H:112:LEU:CD2	2.65	0.60
10:J:51:ARG:HG3	10:J:59:SER:HB2	1.83	0.60
13:M:27:LYS:HB2	13:M:27:LYS:NZ	2.17	0.60
18:R:43:PHE:HD2	18:R:56:THR:HG22	1.66	0.60
1:A:16:A:C2'	1:A:17:U:H5'	2.32	0.59
1:A:547:A:H4'	1:A:548:G:O5'	2.01	0.59
2:B:35:GLU:HA	2:B:39:ILE:O	2.02	0.59
2:B:68:ILE:HB	2:B:90:MET:HE3	1.84	0.59
1:A:645:C:H2'	1:A:646:U:C6	2.37	0.59
1:A:1116:C:H2'	1:A:1117:G:C5'	2.27	0.59
1:A:1367:C:H5'	10:J:60:ARG:NH1	2.17	0.59
3:C:70:VAL:O	3:C:106:VAL:HG23	2.02	0.59
13:M:37:THR:HG22	13:M:39:ILE:HG13	1.85	0.59
19:S:40:ILE:HB	19:S:67:VAL:O	2.02	0.59
20:T:53:LEU:HD23	20:T:56:MET:HE3	1.83	0.59
1:A:1135:U:H4'	1:A:1136:U:H5	1.66	0.59
2:B:98:LEU:HD23	2:B:98:LEU:N	2.17	0.59
3:C:64:VAL:HB	3:C:99:VAL:HG11	1.83	0.59
7:G:26:PHE:CE2	7:G:30:ILE:HD11	2.37	0.59
1:A:337:C:H2'	1:A:338:A:H8	1.67	0.59
1:A:1312:G:O2'	1:A:1313:U:H5'	2.01	0.59
2:B:20:GLU:HB2	2:B:190:THR:OG1	2.01	0.59
3:C:28:GLN:HA	3:C:31:HIS:HD2	1.66	0.59
10:J:21:GLN:HA	10:J:21:GLN:HE21	1.67	0.59
13:M:81:LEU:HD13	13:M:88:ARG:HD3	1.84	0.59
1:A:833:U:H2'	1:A:834:C:C6	2.37	0.59
3:C:33:LEU:HD11	14:N:53:LEU:HD23	1.84	0.59
16:P:20:VAL:HG11	16:P:32:TYR:HB3	1.85	0.59
19:S:44:MET:HA	19:S:47:HIS:HD2	1.67	0.59
1:A:1024:G:H2'	1:A:1025:U:O4'	2.03	0.59
1:A:1042:G:O2'	1:A:1043:C:H5'	2.03	0.59
3:C:78:GLY:HA3	3:C:83:ARG:HB2	1.83	0.59
4:D:3:ARG:NH1	4:D:115:ARG:HD2	2.17	0.59
17:Q:3:LYS:HD3	17:Q:61:GLU:O	2.02	0.59
1:A:335:C:H2'	1:A:336:C:C6	2.38	0.59
1:A:442:C:H42	1:A:492:G:H1	1.49	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:539:A:OP1	12:L:114:LYS:HE2	2.02	0.59
2:B:14:GLY:C	2:B:15:VAL:HG22	2.28	0.59
2:B:19:HIS:CD2	2:B:189:ASP:OD1	2.48	0.59
3:C:108:ASN:ND2	3:C:144:SER:HB3	2.18	0.59
10:J:32:ALA:HB2	10:J:76:ASN:ND2	2.16	0.59
1:A:16:A:O2'	1:A:17:U:H5'	2.02	0.59
1:A:21:G:H2'	1:A:22:G:C8	2.37	0.59
1:A:189(A):C:H2'	1:A:189(B):C:C6	2.38	0.59
3:C:152:ILE:HG12	3:C:167:TRP:HB2	1.85	0.59
9:I:8:GLY:CA	9:I:79:LEU:HB3	2.33	0.59
9:I:56:LEU:O	9:I:56:LEU:HD23	2.02	0.59
9:I:97:LYS:HA	9:I:102:LEU:CD2	2.33	0.59
9:I:118:LYS:NZ	9:I:118:LYS:CB	2.66	0.59
17:Q:15:MET:HE1	17:Q:43:LEU:HD22	1.85	0.59
18:R:50:ILE:HG13	18:R:74:ARG:NH2	2.18	0.59
19:S:44:MET:O	19:S:47:HIS:HB2	2.03	0.59
1:A:838:G:C2'	1:A:839:U:H5''	2.32	0.59
1:A:999:C:H2'	1:A:1000:U:C6	2.38	0.59
1:A:1118:C:H1'	1:A:1179:A:C4	2.37	0.59
1:A:1288:A:H2'	1:A:1289:A:C8	2.38	0.59
3:C:60:ALA:HB3	3:C:63:ASN:HD22	1.67	0.59
15:O:65:ARG:HH11	15:O:65:ARG:HG2	1.67	0.59
1:A:580:U:H2'	1:A:581:G:O4'	2.03	0.59
1:A:759:A:H61	17:Q:94:ASN:ND2	1.95	0.59
1:A:841:U:H3'	1:A:848:C:O4'	2.02	0.59
1:A:1169:A:H2'	1:A:1170:A:C8	2.38	0.59
1:A:757:U:H2'	1:A:758:G:O4'	2.02	0.58
1:A:939:G:H5''	7:G:102:ARG:HH22	1.67	0.58
1:A:954:G:H2'	1:A:955:U:H6	1.66	0.58
2:B:98:LEU:O	2:B:101:MET:HG3	2.03	0.58
3:C:58:GLU:HB2	3:C:65:ALA:HB3	1.85	0.58
4:D:30:LYS:HB3	4:D:35:ARG:HH21	1.68	0.58
10:J:46:ARG:HH11	10:J:64:GLU:HB3	1.64	0.58
13:M:10:PRO:HB2	13:M:18:ALA:HB1	1.84	0.58
15:O:87:ILE:CG2	15:O:88:ARG:H	1.94	0.58
18:R:36:ASN:HD22	18:R:36:ASN:C	2.10	0.58
1:A:130:A:C8	17:Q:63:ARG:HG3	2.38	0.58
1:A:706:A:C1'	11:K:29:ILE:HD11	2.32	0.58
3:C:60:ALA:O	3:C:61:ALA:HB2	2.03	0.58
7:G:16:LEU:HD22	7:G:16:LEU:H	1.68	0.58
20:T:84:LEU:C	20:T:86:ARG:N	2.58	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:743:U:H2'	1:A:744:C:H6	1.68	0.58
6:F:21:LEU:O	6:F:25:ILE:HG13	2.02	0.58
7:G:58:PRO:HG2	7:G:59:LEU:H	1.66	0.58
15:O:70:LEU:HD12	15:O:78:TYR:HA	1.85	0.58
2:B:10:LEU:HD22	2:B:11:LEU:HD23	1.86	0.58
2:B:12:GLU:C	2:B:14:GLY:H	2.10	0.58
3:C:30:ARG:HG2	3:C:30:ARG:HH11	1.68	0.58
18:R:29:PHE:CE1	18:R:31:LEU:HG	2.39	0.58
1:A:620:C:N1	4:D:135:LEU:HD13	2.18	0.58
1:A:1241:G:H2'	1:A:1242:C:H6	1.68	0.58
6:F:3:ARG:HD3	6:F:64:GLN:HE21	1.69	0.58
7:G:79:ARG:NH1	7:G:81:GLY:H	2.01	0.58
2:B:47:THR:HG23	2:B:202:PRO:O	2.02	0.58
2:B:49:GLU:O	2:B:52:GLU:HB3	2.03	0.58
1:A:706:A:O4'	11:K:29:ILE:HD11	2.04	0.58
1:A:1347:G:O2'	1:A:1348:U:P	2.60	0.58
19:S:16:LEU:C	19:S:19:VAL:HG12	2.28	0.58
1:A:189(E):U:O2'	1:A:189(F):U:H5'	2.04	0.58
1:A:536:C:H2'	1:A:537:G:C8	2.39	0.58
1:A:640:A:O2'	1:A:641:U:H5'	2.04	0.58
1:A:941:G:O2'	1:A:942:G:H5'	2.04	0.58
9:I:3:GLN:HB3	9:I:20:ARG:HG2	1.86	0.58
14:N:45:ARG:HH11	14:N:45:ARG:HG3	1.68	0.58
19:S:36:ARG:NH1	19:S:72:GLY:HA2	2.19	0.58
20:T:56:MET:CE	20:T:88:VAL:HG11	2.29	0.58
21:U:14:TRP:HZ3	21:U:15:ARG:NH1	2.02	0.58
1:A:942:G:H2'	1:A:943:U:C6	2.39	0.58
1:A:1457:G:H2'	1:A:1458:G:H8	1.69	0.58
2:B:88:ALA:HB1	2:B:90:MET:HG2	1.86	0.58
2:B:144:ARG:O	2:B:147:LYS:HG2	2.03	0.58
4:D:175:SER:OG	4:D:184:LYS:HB3	2.04	0.58
1:A:242:C:H2'	1:A:243:A:H5'	1.85	0.58
1:A:919:A:O2'	1:A:920:U:H5'	2.04	0.58
2:B:132:LYS:C	2:B:134:GLU:H	2.12	0.58
2:B:178:ARG:HH21	2:B:196:LEU:CA	2.17	0.58
10:J:9:ARG:HH11	10:J:9:ARG:CB	2.16	0.58
12:L:89:ARG:HB3	12:L:97:ARG:HA	1.85	0.58
1:A:814:A:H2'	1:A:816:A:H5''	1.86	0.57
3:C:152:ILE:HG12	3:C:167:TRP:HB3	1.86	0.57
5:E:40:ARG:NH1	5:E:68:GLU:OE1	2.37	0.57
19:S:15:LEU:HD12	19:S:16:LEU:H	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:407:G:O2'	4:D:116:GLN:HG3	2.03	0.57
1:A:1190:G:P	3:C:5:ILE:HG13	2.45	0.57
2:B:118:LEU:HD23	2:B:118:LEU:C	2.29	0.57
3:C:129:ALA:HB3	3:C:132:ARG:NH1	2.19	0.57
3:C:207:VAL:CG1	3:C:208:ILE:N	2.67	0.57
5:E:76:ILE:HG13	5:E:142:LEU:CD1	2.35	0.57
18:R:43:PHE:O	18:R:51:LEU:HD12	2.03	0.57
1:A:163:C:O2'	1:A:164:U:H5'	2.04	0.57
1:A:579:G:H2'	1:A:580:U:C6	2.38	0.57
1:A:1531:A:C5	1:A:1532:U:C5	2.92	0.57
3:C:111:LEU:HD21	3:C:144:SER:O	2.05	0.57
10:J:35:SER:HB3	10:J:73:ASP:HB2	1.85	0.57
10:J:80:LYS:HA	10:J:83:GLU:OE2	2.04	0.57
10:J:90:LEU:N	10:J:91:PRO:CD	2.63	0.57
19:S:44:MET:HB2	19:S:62:ILE:CD1	2.34	0.57
20:T:53:LEU:HB2	20:T:100:ILE:HG23	1.86	0.57
20:T:53:LEU:HD13	20:T:101:GLY:H	1.70	0.57
1:A:737:A:H1'	6:F:73:ASN:OD1	2.05	0.57
1:A:1425:U:H3	1:A:1475:G:H1	1.53	0.57
2:B:27:LYS:HD3	2:B:195:ASP:OD2	2.05	0.57
3:C:64:VAL:CG2	3:C:99:VAL:HG11	2.34	0.57
7:G:69:VAL:HG21	7:G:104:LEU:CD2	2.32	0.57
14:N:53:LEU:HB3	14:N:56:VAL:HG21	1.86	0.57
19:S:19:VAL:HG13	19:S:20:LEU:N	2.19	0.57
19:S:80:TYR:O	19:S:82:GLY:N	2.38	0.57
20:T:76:ALA:HA	20:T:79:ARG:NH1	2.18	0.57
3:C:22:TRP:CE3	3:C:22:TRP:O	2.58	0.57
5:E:80:ILE:HD12	5:E:91:LEU:HB2	1.85	0.57
8:H:51:VAL:HG11	8:H:60:ARG:NH1	2.18	0.57
11:K:15:ALA:HA	11:K:77:MET:CA	2.30	0.57
13:M:22:ILE:CD1	13:M:25:ILE:HD12	2.35	0.57
1:A:918:A:H2'	1:A:919:A:C8	2.39	0.57
1:A:922:G:H4'	5:E:20:GLN:HA	1.86	0.57
1:A:1084:G:H5'	1:A:1102:A:OP2	2.04	0.57
2:B:43:ASP:OD1	2:B:46:LYS:HG3	2.05	0.57
3:C:64:VAL:O	3:C:99:VAL:HB	2.04	0.57
3:C:181:ASN:ND2	3:C:204:LEU:HD11	2.19	0.57
1:A:382:A:H2'	1:A:383:A:H8	1.68	0.57
1:A:738:C:H2'	1:A:739:C:H6	1.70	0.57
1:A:1007:C:H2'	1:A:1008:C:C6	2.36	0.57
3:C:70:VAL:CG1	3:C:71:ALA:N	2.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:148:ASN:C	7:G:150:ALA:H	2.12	0.57
9:I:112:LYS:HE2	9:I:117:HIS:O	2.05	0.57
10:J:6:ILE:HG22	10:J:98:ILE:HA	1.86	0.57
16:P:20:VAL:CG1	16:P:21:VAL:N	2.68	0.57
17:Q:67:LYS:O	17:Q:68:ARG:HB3	2.05	0.57
1:A:266:G:H5''	1:A:268:C:H41	1.70	0.57
1:A:560:U:H5'	1:A:566:G:N2	2.18	0.57
1:A:857:C:H2'	1:A:858:G:O4'	2.04	0.57
1:A:1296:C:H4'	1:A:1302:U:C5	2.39	0.57
7:G:135:VAL:O	7:G:139:GLU:HG3	2.03	0.57
1:A:818:G:H3'	1:A:819:A:C5'	2.35	0.57
1:A:1072:G:H2'	1:A:1073:U:C6	2.40	0.57
2:B:84:GLU:HB3	2:B:219:VAL:CG2	2.22	0.57
18:R:73:ALA:HB3	18:R:79:LEU:HD12	1.87	0.57
1:A:921:U:O2'	5:E:19:MET:O	2.22	0.57
1:A:1053:G:C3'	1:A:1054:C:C5'	2.83	0.57
1:A:1066:C:C2'	1:A:1067:A:H5'	2.35	0.57
1:A:1424:C:O2'	1:A:1425:U:H5'	2.04	0.57
2:B:15:VAL:HG11	2:B:209:ARG:HB2	1.87	0.57
2:B:53:ARG:HH12	2:B:199:TYR:HD2	1.52	0.57
6:F:75:LEU:C	6:F:75:LEU:HD23	2.30	0.57
8:H:118:VAL:C	8:H:119:LEU:HD23	2.30	0.57
14:N:24:CYS:HB2	14:N:29:ARG:HB3	1.87	0.57
19:S:67:VAL:HG12	19:S:68:GLY:N	2.19	0.57
1:A:222:U:H2'	1:A:223:U:C6	2.40	0.56
1:A:864:A:H2'	1:A:865:A:C8	2.39	0.56
2:B:7:VAL:O	2:B:8:LYS:HG3	2.05	0.56
2:B:97:TRP:HZ3	2:B:99:GLY:HA2	1.69	0.56
2:B:181:PHE:CE2	8:H:70:GLN:HB3	2.39	0.56
4:D:24:GLU:CD	4:D:25:ARG:H	2.12	0.56
8:H:86:ILE:HD12	8:H:133:LEU:CD2	2.34	0.56
15:O:76:GLU:C	15:O:78:TYR:N	2.61	0.56
5:E:148:VAL:HG21	8:H:107:LEU:HD22	1.87	0.56
10:J:50:ILE:HB	14:N:41:ARG:HE	1.70	0.56
1:A:149:A:H2'	1:A:150:C:C6	2.40	0.56
1:A:390:C:H2'	1:A:391:G:H8	1.68	0.56
1:A:456:C:H2'	1:A:457:C:C6	2.39	0.56
1:A:662:G:H2'	1:A:663:A:C8	2.40	0.56
1:A:1054:C:N3	23:Y:34:CM0:O4'	2.37	0.56
1:A:1056:U:H5'	3:C:163:ALA:CB	2.35	0.56
1:A:1226:C:H4'	19:S:80:TYR:OH	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1333:A:H2'	1:A:1334:G:O4'	2.06	0.56
1:A:1442(A):G:H4'	1:A:1442(B):A:H5'	1.87	0.56
2:B:17:PHE:CD1	2:B:18:GLY:N	2.73	0.56
2:B:61:LEU:HD13	2:B:61:LEU:O	2.04	0.56
15:O:29:VAL:HG11	15:O:67:LEU:HD21	1.86	0.56
19:S:36:ARG:NH2	19:S:53:ASN:HA	2.15	0.56
1:A:961:U:H2'	1:A:962:C:H5'	1.88	0.56
4:D:13:ARG:HD3	4:D:36:ARG:O	2.05	0.56
8:H:101:PRO:HG3	8:H:133:LEU:HD11	1.88	0.56
11:K:15:ALA:O	11:K:16:SER:HB3	2.06	0.56
16:P:28:ARG:HG3	16:P:29:ASP:OD2	2.05	0.56
1:A:598:U:H4'	8:H:94:TYR:CD1	2.41	0.56
1:A:976:G:H5'	1:A:1358:U:O2'	2.06	0.56
1:A:978:A:O2'	1:A:1322:C:N3	2.37	0.56
4:D:199:ASN:HD22	4:D:199:ASN:C	2.13	0.56
5:E:6:PHE:CZ	5:E:66:MET:HE2	2.40	0.56
6:F:61:LEU:O	6:F:62:TRP:HB2	2.04	0.56
12:L:89:ARG:CB	12:L:97:ARG:HA	2.35	0.56
13:M:33:ALA:O	13:M:37:THR:HB	2.05	0.56
1:A:740:U:O2'	1:A:741:G:H5'	2.05	0.56
1:A:794:A:H2'	1:A:795:C:C6	2.40	0.56
1:A:1014:A:H2	1:A:1219:U:H1'	1.70	0.56
1:A:1404:C:H2'	1:A:1405:G:C8	2.40	0.56
2:B:15:VAL:HB	2:B:210:SER:HB2	1.87	0.56
4:D:80:GLU:O	4:D:84:LYS:HG3	2.05	0.56
5:E:122:GLU:HG2	5:E:131:ILE:HD12	1.88	0.56
6:F:44:GLY:O	6:F:59:TYR:HA	2.04	0.56
7:G:140:ASP:HA	7:G:143:ARG:HH11	1.70	0.56
9:I:26:VAL:O	9:I:32:ASP:HA	2.06	0.56
1:A:7:G:O2'	1:A:8:A:OP1	2.23	0.56
2:B:51:LEU:HD22	2:B:55:PHE:CE1	2.40	0.56
2:B:171:ALA:C	2:B:173:ALA:H	2.13	0.56
7:G:108:ALA:O	7:G:119:ARG:HD2	2.06	0.56
8:H:51:VAL:HG11	8:H:60:ARG:HG3	1.88	0.56
1:A:412:A:N6	4:D:35:ARG:HB3	2.21	0.56
1:A:437:U:C2'	1:A:438:G:H5'	2.35	0.56
2:B:157:ARG:O	2:B:158:LEU:C	2.49	0.56
4:D:64:LEU:HD12	4:D:75:PHE:HZ	1.70	0.56
4:D:70:ILE:HG22	4:D:71:SER:O	2.06	0.56
4:D:156:GLU:HG2	4:D:160:GLN:NE2	2.20	0.56
13:M:13:LYS:O	13:M:45:VAL:HG23	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:743:U:H2'	1:A:744:C:C6	2.40	0.56
1:A:781:A:H2'	1:A:782:A:H5'	1.87	0.56
1:A:1131:G:H2'	1:A:1132:C:C6	2.40	0.56
2:B:69:LEU:HD12	2:B:155:LEU:HD22	1.88	0.56
3:C:44:GLU:HA	3:C:52:LEU:CD1	2.36	0.56
9:I:115:GLY:HA2	10:J:58:ASP:OD1	2.05	0.56
10:J:32:ALA:N	10:J:78:ASN:HD21	2.03	0.56
13:M:57:ARG:HG2	13:M:61:GLU:CG	2.36	0.56
17:Q:59:ILE:HG23	17:Q:71:PHE:HB3	1.88	0.56
18:R:88:LYS:HB3	18:R:88:LYS:NZ	2.21	0.56
19:S:16:LEU:O	19:S:19:VAL:HG12	2.04	0.56
1:A:323:U:H5'	20:T:23:ARG:HB2	1.88	0.56
1:A:421:U:H5'	1:A:422:C:C6	2.42	0.56
1:A:832:C:O2'	1:A:833:U:H5'	2.05	0.56
1:A:977:A:C2'	1:A:978:A:H5'	2.35	0.56
1:A:1330:U:OP1	13:M:23:TYR:O	2.24	0.56
1:A:1521:G:H2'	1:A:1522:U:C6	2.41	0.56
2:B:50:GLU:HB3	2:B:200:ILE:O	2.06	0.56
3:C:91:LEU:HD23	3:C:92:ALA:N	2.21	0.56
5:E:78:HIS:O	5:E:93:PRO:HD3	2.06	0.56
10:J:32:ALA:N	10:J:78:ASN:ND2	2.51	0.56
1:A:160:A:H1'	1:A:344:A:N7	2.21	0.55
1:A:991:U:O4	1:A:1212:U:H1'	2.05	0.55
1:A:1157:A:H4'	1:A:1158:C:O5'	2.05	0.55
2:B:14:GLY:O	2:B:15:VAL:HG13	2.06	0.55
2:B:78:GLN:HG3	2:B:94:ASN:OD1	2.06	0.55
3:C:35:GLU:OE2	3:C:59:ARG:NH2	2.39	0.55
4:D:31:CYS:O	4:D:31:CYS:SG	2.64	0.55
15:O:26:GLU:HA	15:O:81:LEU:HD11	1.89	0.55
1:A:820:U:H4'	1:A:821:G:OP2	2.05	0.55
3:C:39:ILE:HG22	3:C:40:ARG:N	2.20	0.55
4:D:127:THR:CG2	4:D:147:ALA:HB3	2.32	0.55
5:E:126:ARG:NH1	5:E:126:ARG:HG3	2.22	0.55
8:H:80:ILE:O	8:H:80:ILE:HG22	2.06	0.55
11:K:33:THR:HG22	11:K:39:PRO:HA	1.86	0.55
15:O:54:ARG:HG2	15:O:54:ARG:HH11	1.69	0.55
1:A:295:C:O2'	1:A:296:U:H5'	2.07	0.55
1:A:645:C:H2'	1:A:646:U:H6	1.69	0.55
1:A:1126:U:OP2	1:A:1281:U:H1'	2.07	0.55
1:A:1510:U:H2'	1:A:1511:G:C8	2.41	0.55
2:B:7:VAL:HG12	2:B:221:LEU:CD2	2.35	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:62:ALA:C	2:B:64:ARG:H	2.14	0.55
5:E:105:VAL:N	5:E:106:PRO:HD2	2.21	0.55
7:G:26:PHE:HD1	7:G:101:LEU:HD22	1.71	0.55
13:M:40:ASN:HD22	13:M:41:PRO:HD2	1.72	0.55
18:R:26:LEU:HD21	18:R:39:VAL:HG22	1.86	0.55
1:A:146:G:H2'	1:A:147:G:H8	1.70	0.55
1:A:189(A):C:H2'	1:A:189(B):C:H6	1.71	0.55
1:A:256:U:H2'	1:A:257:G:C8	2.41	0.55
1:A:1133:G:H1	1:A:1141:C:H42	1.54	0.55
2:B:137:ARG:NH1	2:B:137:ARG:HB2	2.22	0.55
4:D:68:TYR:CB	4:D:70:ILE:HD13	2.36	0.55
10:J:79:ARG:HG2	10:J:79:ARG:HH11	1.72	0.55
1:A:115:G:H1'	1:A:116:A:N7	2.22	0.55
1:A:433:C:H2'	1:A:434:U:C6	2.42	0.55
1:A:1038:C:H2'	1:A:1039:C:C6	2.37	0.55
1:A:1154:G:H2'	1:A:1155:G:H8	1.71	0.55
4:D:102:ASP:HB3	4:D:136:PRO:HB3	1.88	0.55
4:D:201:GLN:NE2	4:D:204:ILE:HD12	2.21	0.55
5:E:81:GLU:HG3	5:E:90:VAL:CG2	2.30	0.55
11:K:57:THR:HG22	11:K:59:TYR:H	1.71	0.55
19:S:42:PRO:HB2	19:S:43:GLU:OE2	2.06	0.55
1:A:77:G:O2'	1:A:78:G:H5'	2.07	0.55
1:A:1350:A:H2'	1:A:1351:U:C6	2.42	0.55
1:A:1504:G:OP1	1:A:1507:A:H4'	2.06	0.55
13:M:20:THR:C	13:M:22:ILE:H	2.15	0.55
1:A:1438:G:H2'	1:A:1439:C:H6	1.71	0.55
2:B:28:PHE:CD2	2:B:190:THR:HA	2.42	0.55
4:D:32:ALA:C	4:D:34:GLU:H	2.14	0.55
6:F:2:ARG:HE	6:F:69:GLU:HG2	1.69	0.55
7:G:69:VAL:HG12	7:G:69:VAL:O	2.07	0.55
7:G:85:TYR:O	7:G:87:VAL:HG23	2.07	0.55
15:O:60:VAL:O	15:O:64:ARG:HG3	2.06	0.55
20:T:63:ILE:HG23	20:T:72:LEU:HD21	1.88	0.55
1:A:1124:G:H2'	1:A:1145:C:H5	1.71	0.55
1:A:1474:G:H2'	1:A:1475:G:H8	1.72	0.55
2:B:74:LYS:C	2:B:76:GLN:H	2.15	0.55
4:D:62:GLN:HE22	4:D:65:ARG:HH12	1.52	0.55
4:D:88:VAL:C	4:D:90:GLY:H	2.14	0.55
12:L:28:LYS:O	12:L:29:GLY:C	2.50	0.55
12:L:41:ARG:HG2	12:L:42:THR:N	2.16	0.55
12:L:55:VAL:CG1	12:L:56:ALA:N	2.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:39:VAL:O	18:R:42:ARG:HB2	2.07	0.55
1:A:1425:U:H2'	1:A:1426:C:C6	2.41	0.55
2:B:77:ALA:CB	2:B:211:ILE:HG21	2.37	0.55
2:B:139:LYS:HE3	2:B:143:GLU:OE2	2.07	0.55
18:R:16:PRO:HB2	18:R:18:ARG:HE	1.71	0.55
1:A:397:A:H5'	1:A:398:C:OP1	2.06	0.55
1:A:723:U:O2	1:A:723:U:H2'	2.06	0.55
1:A:1114:C:H2'	1:A:1115:C:H6	1.72	0.55
2:B:42:ILE:H	2:B:42:ILE:HD12	1.71	0.55
2:B:78:GLN:O	2:B:94:ASN:ND2	2.40	0.55
3:C:119:ARG:HG3	3:C:119:ARG:NH1	2.21	0.55
7:G:46:ALA:O	7:G:50:ILE:HG12	2.06	0.55
9:I:86:VAL:HG13	9:I:90:PRO:HA	1.89	0.55
13:M:34:LEU:HD13	13:M:41:PRO:HA	1.89	0.55
15:O:72:ARG:HD2	15:O:73:GLU:OE2	2.08	0.55
1:A:191:G:N2	20:T:85:MET:HE1	2.22	0.54
1:A:877:C:O2'	1:A:878:G:H5'	2.07	0.54
1:A:1060:C:O2'	1:A:1061:G:H5'	2.07	0.54
1:A:1258:G:H2'	1:A:1259:C:C6	2.42	0.54
1:A:1457:G:O2'	1:A:1458:G:H5'	2.07	0.54
2:B:76:GLN:O	2:B:208:ILE:HD13	2.06	0.54
7:G:50:ILE:HD11	7:G:121:ALA:CA	2.37	0.54
14:N:22:THR:HG23	14:N:33:VAL:HG21	1.88	0.54
1:A:35:G:H2'	1:A:36:C:H6	1.72	0.54
1:A:226:G:O2'	1:A:227:G:H5'	2.07	0.54
1:A:268:C:O2'	1:A:269:C:H5'	2.07	0.54
1:A:1152:A:OP1	10:J:13:HIS:HB2	2.07	0.54
2:B:36:ARG:HB2	2:B:41:ILE:HD11	1.90	0.54
2:B:82:ARG:O	2:B:86:GLU:HG3	2.08	0.54
3:C:66:VAL:O	3:C:66:VAL:HG12	2.08	0.54
17:Q:5:VAL:HA	17:Q:59:ILE:O	2.06	0.54
18:R:46:GLU:CD	18:R:46:GLU:N	2.63	0.54
1:A:1349:A:OP2	9:I:118:LYS:NZ	2.40	0.54
7:G:50:ILE:O	7:G:54:THR:HB	2.07	0.54
9:I:69:GLY:O	9:I:73:GLN:HG3	2.06	0.54
10:J:19:SER:HA	10:J:22:LYS:NZ	2.22	0.54
10:J:49:VAL:HG21	14:N:41:ARG:O	2.08	0.54
11:K:48:ILE:HG22	11:K:49:GLY:N	2.22	0.54
12:L:24:VAL:HG13	12:L:98:TYR:HE2	1.72	0.54
15:O:17:ARG:HG3	15:O:17:ARG:NH1	2.20	0.54
16:P:43:LYS:HG3	16:P:48:TRP:CD2	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:178:C:O2'	1:A:179:A:H5'	2.08	0.54
1:A:477:A:O2'	1:A:479:C:H5'	2.07	0.54
4:D:36:ARG:HG2	4:D:38:TYR:OH	2.07	0.54
5:E:80:ILE:HD13	5:E:91:LEU:HD12	1.89	0.54
6:F:101:ALA:HB2	18:R:28:GLU:HG3	1.88	0.54
7:G:73:MET:HA	7:G:91:VAL:HG23	1.89	0.54
8:H:63:LEU:HD22	8:H:63:LEU:N	2.23	0.54
1:A:272:C:O2'	1:A:273:A:H5'	2.07	0.54
1:A:716:A:N3	11:K:117:ASN:O	2.41	0.54
1:A:746:A:C2'	1:A:747:C:H5'	2.38	0.54
1:A:1250:A:C4'	9:I:68:GLY:H	2.16	0.54
1:A:1264:C:O2'	1:A:1265:G:H5'	2.08	0.54
1:A:1326:C:OP1	21:U:12:LYS:NZ	2.40	0.54
8:H:87:SER:HA	8:H:93:VAL:HG23	1.89	0.54
1:A:841:U:H2'	1:A:848:C:H5'	1.89	0.54
1:A:954:G:H2'	1:A:955:U:C6	2.42	0.54
1:A:1127:G:N2	1:A:1145:C:N3	2.56	0.54
6:F:97:PHE:HB2	18:R:32:ARG:NH2	2.23	0.54
9:I:125:TYR:CD2	9:I:125:TYR:N	2.75	0.54
13:M:40:ASN:HD22	13:M:41:PRO:CD	2.20	0.54
20:T:56:MET:HG3	20:T:84:LEU:HD22	1.90	0.54
1:A:792:A:H1'	1:A:794:A:N7	2.23	0.54
1:A:969:A:N6	13:M:126:LYS:HE3	2.23	0.54
4:D:62:GLN:HA	4:D:62:GLN:NE2	2.22	0.54
5:E:101:ILE:HG22	5:E:101:ILE:O	2.06	0.54
9:I:79:LEU:HD22	9:I:83:ARG:HG3	1.88	0.54
19:S:20:LEU:HD12	19:S:21:GLU:H	1.71	0.54
1:A:332:G:OP2	20:T:10:LEU:HD23	2.08	0.54
1:A:376:G:OP2	16:P:67:THR:HG21	2.07	0.54
1:A:1258:G:O2'	1:A:1259:C:H5'	2.08	0.54
14:N:9:LYS:HE3	14:N:21:TYR:O	2.08	0.54
16:P:67:THR:HG22	16:P:68:ASP:N	2.23	0.54
1:A:1251:A:H2'	1:A:1252:A:C8	2.43	0.54
1:A:1347:G:H2'	1:A:1373:G:H1	1.72	0.54
3:C:47:LEU:N	3:C:47:LEU:HD12	2.23	0.54
6:F:15:ASP:N	6:F:18:GLN:NE2	2.52	0.54
7:G:27:ILE:HD12	7:G:40:ALA:HA	1.90	0.54
9:I:99:LEU:HB3	9:I:101:PHE:CE1	2.42	0.54
15:O:29:VAL:HG12	15:O:85:LEU:CD1	2.37	0.54
1:A:629:G:C2'	1:A:630:G:H5''	2.38	0.54
1:A:921:U:O2	5:E:19:MET:HB2	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1325:C:P	21:U:6:ARG:HH22	2.31	0.54
1:A:1360:A:H2'	1:A:1361:G:O4'	2.08	0.54
1:A:1435:G:H2'	1:A:1436:U:H6	1.73	0.54
2:B:86:GLU:C	2:B:88:ALA:N	2.64	0.54
6:F:53:ALA:O	6:F:54:LYS:HB2	2.07	0.54
8:H:4:ASP:OD2	8:H:85:ARG:NH1	2.41	0.54
17:Q:101:ARG:HE	17:Q:101:ARG:CA	2.21	0.54
1:A:383:A:H2'	1:A:384:G:H5'	1.90	0.53
4:D:3:ARG:HH12	4:D:115:ARG:HB3	1.70	0.53
4:D:157:LEU:HD11	4:D:161:ASN:HD21	1.73	0.53
5:E:45:PHE:CE2	5:E:47:LYS:HD2	2.44	0.53
6:F:27:GLN:HA	6:F:27:GLN:HE21	1.73	0.53
8:H:9:MET:O	8:H:10:LEU:C	2.51	0.53
14:N:29:ARG:HB3	14:N:40:CYS:HB3	1.90	0.53
18:R:16:PRO:HB2	18:R:18:ARG:NE	2.23	0.53
19:S:33:THR:HG22	19:S:34:TRP:N	2.22	0.53
1:A:112:G:H5'	1:A:389:A:H4'	1.89	0.53
1:A:342:C:H2'	1:A:343:U:H5'	1.90	0.53
1:A:818:G:C3'	1:A:819:A:C5'	2.86	0.53
1:A:1121:U:H2'	1:A:1122:U:H6	1.73	0.53
2:B:172:ILE:O	2:B:172:ILE:HG22	2.08	0.53
3:C:175:LEU:HD21	3:C:201:TYR:CE2	2.43	0.53
4:D:98:GLU:HG2	4:D:189:PRO:HG3	1.90	0.53
8:H:70:GLN:HA	8:H:70:GLN:NE2	2.22	0.53
10:J:60:ARG:O	10:J:61:GLU:O	2.26	0.53
1:A:1244:C:O2'	1:A:1245:A:H5'	2.09	0.53
1:A:1320:C:C2	19:S:72:GLY:HA3	2.43	0.53
6:F:28:ARG:HH11	6:F:28:ARG:HG3	1.72	0.53
7:G:47:CYS:SG	7:G:58:PRO:HB2	2.49	0.53
13:M:3:ARG:NH1	13:M:7:VAL:HG12	2.23	0.53
13:M:23:TYR:O	13:M:25:ILE:N	2.40	0.53
3:C:70:VAL:CG1	3:C:71:ALA:H	2.21	0.53
6:F:77:ARG:HD2	6:F:77:ARG:C	2.33	0.53
12:L:8:ASN:OD1	17:Q:34:LYS:HE2	2.08	0.53
13:M:124:PRO:CB	13:M:126:LYS:HE2	2.39	0.53
15:O:55:GLY:HA2	15:O:58:MET:HE3	1.90	0.53
1:A:376:G:O3'	16:P:5:ARG:HD2	2.09	0.53
1:A:947:G:H2'	1:A:948:C:O4'	2.09	0.53
1:A:1328:C:O2'	1:A:1329:A:H5'	2.09	0.53
1:A:1352:C:H2'	1:A:1353:G:H8	1.73	0.53
4:D:176:LEU:HD12	4:D:177:ASP:N	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:31:MET:SD	7:G:34:GLY:HA2	2.48	0.53
9:I:48:GLU:OE2	9:I:51:ARG:HD2	2.09	0.53
15:O:29:VAL:HG12	15:O:85:LEU:HD11	1.91	0.53
19:S:15:LEU:HD12	19:S:16:LEU:N	2.22	0.53
1:A:713:G:H2'	1:A:714:G:C8	2.44	0.53
1:A:718:G:C5'	11:K:117:ASN:ND2	2.66	0.53
1:A:1176:A:H2'	1:A:1177:G:C8	2.43	0.53
2:B:83:MET:O	2:B:86:GLU:N	2.39	0.53
9:I:37:PHE:HB3	9:I:43:ALA:HB2	1.91	0.53
10:J:21:GLN:HE21	10:J:21:GLN:CA	2.21	0.53
14:N:36:PHE:O	14:N:36:PHE:CD1	2.62	0.53
19:S:66:MET:HE3	19:S:74:PHE:CD2	2.44	0.53
20:T:13:LEU:HD12	20:T:13:LEU:C	2.33	0.53
1:A:343:U:H2'	1:A:345:C:N4	2.23	0.53
1:A:642:A:N7	8:H:115:SER:HA	2.24	0.53
1:A:1125:U:H5'	1:A:1126:U:C5	2.43	0.53
1:A:1255:G:OP2	10:J:43:ARG:NH2	2.42	0.53
3:C:35:GLU:CG	3:C:59:ARG:HH22	2.22	0.53
6:F:21:LEU:O	6:F:24:GLU:HG3	2.08	0.53
12:L:24:VAL:O	12:L:24:VAL:HG12	2.06	0.53
12:L:40:VAL:O	12:L:40:VAL:HG12	2.07	0.53
1:A:189(A):C:O2'	1:A:189(B):C:H5'	2.09	0.53
1:A:437:U:O2'	1:A:438:G:H5'	2.09	0.53
2:B:97:TRP:CZ2	2:B:102:LEU:HD13	2.42	0.53
2:B:118:LEU:CD2	2:B:142:LEU:HB2	2.38	0.53
4:D:100:ARG:HB3	4:D:102:ASP:OD1	2.09	0.53
17:Q:48:GLU:C	17:Q:50:LYS:N	2.61	0.53
1:A:560:U:O2'	1:A:561:U:OP2	2.22	0.53
1:A:1286:A:H8	1:A:1287:A:H4'	1.73	0.53
1:A:1460:A:H2'	1:A:1461:G:O4'	2.09	0.53
2:B:139:LYS:HD3	2:B:139:LYS:O	2.09	0.53
9:I:97:LYS:CB	9:I:98:PRO:HD3	2.39	0.53
13:M:65:LYS:HD3	13:M:69:GLU:HG2	1.91	0.53
19:S:43:GLU:H	19:S:43:GLU:CD	2.17	0.53
19:S:80:TYR:CG	19:S:81:ARG:N	2.77	0.53
23:Y:39:G:O2'	23:Y:40:G:H5'	2.09	0.53
1:A:45:U:H2'	1:A:46:G:C8	2.44	0.53
1:A:586:C:O2'	1:A:587:G:H5'	2.08	0.53
1:A:828:A:H4'	1:A:828:A:OP1	2.09	0.53
1:A:833:U:H2'	1:A:834:C:H6	1.74	0.53
1:A:1110:A:H8	1:A:1110:A:O5'	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1232:U:H5''	9:I:124:GLN:O	2.09	0.53
1:A:1497:G:H2'	1:A:1498:U:H5'	1.91	0.53
3:C:72:LYS:O	3:C:75:VAL:HG23	2.09	0.53
13:M:73:GLU:O	13:M:76:ALA:HB3	2.09	0.53
16:P:26:ARG:HG2	16:P:27:LYS:N	2.24	0.53
1:A:736:C:H2'	1:A:737:A:C8	2.43	0.52
1:A:1149:C:H2'	1:A:1150:U:C6	2.44	0.52
1:A:1191:A:P	3:C:3:ASN:ND2	2.76	0.52
2:B:139:LYS:O	2:B:143:GLU:HG3	2.09	0.52
2:B:178:ARG:HD2	8:H:71:GLY:O	2.09	0.52
3:C:30:ARG:HG2	3:C:30:ARG:NH1	2.22	0.52
4:D:140:VAL:CG1	4:D:146:ILE:HD11	2.38	0.52
6:F:75:LEU:O	6:F:78:GLU:HB3	2.09	0.52
11:K:13:GLN:HA	11:K:75:TYR:O	2.09	0.52
20:T:22:ARG:HG2	20:T:22:ARG:NH1	2.24	0.52
1:A:342:C:C2'	1:A:343:U:H5'	2.39	0.52
1:A:981:U:H5'	14:N:21:TYR:CE1	2.43	0.52
1:A:1543:C:O2'	1:A:1544:U:H5'	2.10	0.52
2:B:171:ALA:C	2:B:173:ALA:N	2.65	0.52
2:B:200:ILE:HG12	2:B:201:ILE:N	2.24	0.52
11:K:34:ASP:OD2	11:K:38:ASN:HB2	2.09	0.52
15:O:74:ASP:OD1	15:O:77:ARG:HG3	2.10	0.52
18:R:26:LEU:HD23	18:R:29:PHE:CE2	2.44	0.52
19:S:13:ASP:HA	19:S:16:LEU:HB3	1.90	0.52
1:A:824:C:H2'	1:A:825:G:H8	1.75	0.52
1:A:1066:C:O2'	1:A:1067:A:H5'	2.09	0.52
2:B:132:LYS:N	2:B:132:LYS:HD2	2.24	0.52
8:H:29:SER:OG	8:H:32:LYS:HE3	2.09	0.52
8:H:91:ARG:NH1	17:Q:33:GLY:HA3	2.25	0.52
18:R:87:ARG:HG2	18:R:88:LYS:N	2.24	0.52
21:U:14:TRP:HE3	21:U:15:ARG:HG2	1.73	0.52
1:A:488:C:O2'	1:A:489:C:H5'	2.09	0.52
1:A:1477:C:H2'	1:A:1478:C:C6	2.44	0.52
1:A:1480:G:H2'	1:A:1481:U:C6	2.44	0.52
7:G:13:GLN:HA	7:G:13:GLN:NE2	2.24	0.52
10:J:18:ALA:C	10:J:20:ALA:H	2.14	0.52
12:L:74:GLY:O	12:L:75:HIS:HB2	2.10	0.52
13:M:120:LYS:CE	13:M:122:LYS:HB3	2.40	0.52
17:Q:68:ARG:HG2	17:Q:68:ARG:HH11	1.74	0.52
19:S:5:LEU:HD11	19:S:70:LYS:NZ	2.24	0.52
19:S:52:TYR:HA	19:S:56:GLN:O	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:23:ARG:HG2	20:T:23:ARG:HH11	1.74	0.52
1:A:1385:G:O2'	1:A:1386:G:H5'	2.10	0.52
2:B:12:GLU:HG2	2:B:213:LEU:HD11	1.90	0.52
4:D:189:PRO:HB2	4:D:194:LEU:CD2	2.40	0.52
6:F:39:LYS:HZ2	6:F:39:LYS:HB3	1.74	0.52
8:H:6:ILE:HB	8:H:85:ARG:HH12	1.74	0.52
17:Q:66:SER:O	17:Q:70:ARG:NH1	2.43	0.52
19:S:7:LYS:HG3	19:S:7:LYS:O	2.10	0.52
1:A:472:A:H4'	16:P:80:PHE:O	2.09	0.52
1:A:559:A:OP1	5:E:126:ARG:NH2	2.41	0.52
1:A:975:A:H4'	1:A:976:G:C5'	2.25	0.52
1:A:984:C:H2'	1:A:985:C:C6	2.43	0.52
1:A:1117:G:H21	1:A:1180:A:H1'	1.74	0.52
1:A:1127:G:H1	1:A:1145:C:H42	1.56	0.52
2:B:92:TYR:CD2	2:B:151:GLY:HA3	2.45	0.52
4:D:140:VAL:HG11	4:D:146:ILE:HD11	1.92	0.52
10:J:4:ILE:HD11	10:J:74:ILE:CD1	2.34	0.52
10:J:46:ARG:HG2	10:J:46:ARG:NH1	2.16	0.52
11:K:111:ASP:CG	11:K:111:ASP:O	2.53	0.52
19:S:44:MET:HB2	19:S:62:ILE:HD13	1.91	0.52
21:U:14:TRP:CZ3	21:U:15:ARG:NH1	2.78	0.52
1:A:67:C:H2'	1:A:68:G:C8	2.45	0.52
1:A:1121:U:H2'	1:A:1122:U:C6	2.44	0.52
1:A:1247:U:O2'	1:A:1248:A:H5'	2.10	0.52
1:A:1329:A:P	13:M:28:ALA:HB3	2.49	0.52
1:A:1373:G:H5''	7:G:36:LYS:CB	2.40	0.52
1:A:1522:U:O2'	1:A:1523:G:H5'	2.09	0.52
7:G:15:ASP:O	7:G:19:GLY:HA2	2.09	0.52
9:I:115:GLY:O	9:I:116:LYS:HD3	2.10	0.52
10:J:30:SER:CB	10:J:84:GLN:HE21	2.23	0.52
11:K:32:ILE:HG21	11:K:77:MET:HE3	1.92	0.52
13:M:120:LYS:HZ1	13:M:122:LYS:HB3	1.75	0.52
15:O:10:LYS:C	15:O:10:LYS:CD	2.81	0.52
17:Q:67:LYS:O	17:Q:68:ARG:CB	2.58	0.52
1:A:328:C:O2	1:A:328:C:C2'	2.57	0.52
1:A:472:A:H2'	1:A:473:G:O4'	2.09	0.52
1:A:985:C:H2'	1:A:986:A:C8	2.45	0.52
1:A:1125:U:H3	10:J:5:ARG:NH2	2.01	0.52
1:A:1125:U:H5'	1:A:1126:U:H5	1.75	0.52
2:B:28:PHE:CD1	2:B:194:PRO:HG3	2.44	0.52
2:B:163:PHE:HA	2:B:185:ILE:O	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:33:MET:HE3	4:D:37:PRO:HB2	1.92	0.52
7:G:65:ALA:HB1	7:G:127:ALA:HB3	1.90	0.52
9:I:118:LYS:HB3	9:I:118:LYS:HZ3	1.73	0.52
11:K:27:ASN:HD22	11:K:55:LYS:HE3	1.73	0.52
12:L:57:LYS:HE3	12:L:65:GLU:HG2	1.92	0.52
12:L:60:LEU:HD21	12:L:66:VAL:HG22	1.92	0.52
19:S:16:LEU:O	19:S:20:LEU:HG	2.10	0.52
20:T:101:GLY:C	20:T:103:GLY:H	2.18	0.52
1:A:220:G:O2'	1:A:221:C:H5'	2.10	0.52
1:A:332:G:H2'	1:A:333:G:H8	1.75	0.52
1:A:501:C:H2'	1:A:502:G:C8	2.45	0.52
1:A:969:A:N6	13:M:126:LYS:HB2	2.19	0.52
1:A:1001:A:O2'	1:A:1001(A):G:H5''	2.10	0.52
1:A:1152:A:H2'	1:A:1153:C:C6	2.45	0.52
1:A:1250:A:H2'	1:A:1251:A:C8	2.45	0.52
1:A:1280:A:C5'	10:J:40:LEU:HD22	2.39	0.52
6:F:8:ILE:HD11	6:F:79:LEU:HD13	1.92	0.52
10:J:3:LYS:N	10:J:3:LYS:HD3	2.25	0.52
18:R:36:ASN:C	18:R:36:ASN:ND2	2.68	0.52
1:A:706:A:H1'	11:K:29:ILE:HD11	1.91	0.52
1:A:911:U:H2'	1:A:912:C:C6	2.45	0.52
1:A:1005:A:H5''	1:A:1038:C:H1'	1.92	0.52
2:B:53:ARG:NH1	2:B:199:TYR:CD2	2.77	0.52
2:B:60:ASP:C	2:B:64:ARG:NH1	2.67	0.52
2:B:73:THR:O	2:B:73:THR:HG22	2.10	0.52
2:B:223:ILE:C	2:B:225:ALA:H	2.18	0.52
3:C:35:GLU:HG2	3:C:59:ARG:HH22	1.75	0.52
7:G:126:ASP:HB3	7:G:131:LYS:HG3	1.91	0.52
10:J:47:PHE:CE2	14:N:37:PHE:HE1	2.27	0.52
14:N:25:VAL:HG12	14:N:38:GLY:O	2.10	0.52
1:A:102:G:H2'	1:A:103:C:H6	1.75	0.51
1:A:343:U:H2'	1:A:345:C:C4	2.45	0.51
2:B:12:GLU:HA	2:B:12:GLU:OE2	2.10	0.51
2:B:124:SER:C	2:B:126:GLU:H	2.18	0.51
4:D:30:LYS:C	4:D:32:ALA:N	2.60	0.51
5:E:139:LEU:O	5:E:141:GLN:N	2.43	0.51
6:F:47:ARG:HD3	6:F:47:ARG:H	1.71	0.51
12:L:47:LYS:O	12:L:49:ASN:N	2.43	0.51
13:M:8:GLU:OE1	13:M:67:GLU:OE2	2.28	0.51
20:T:57:ARG:NH2	20:T:100:ILE:HD11	2.24	0.51
1:A:56:U:H2'	1:A:57:G:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:357:G:O2'	1:A:358:U:H5'	2.11	0.51
1:A:831:U:H2'	1:A:832:C:C6	2.45	0.51
1:A:1206:G:H1'	3:C:193:TYR:O	2.09	0.51
1:A:1497:G:C2'	1:A:1498:U:H5'	2.40	0.51
3:C:108:ASN:HD21	3:C:144:SER:CB	2.23	0.51
10:J:31:GLY:HA3	10:J:81:THR:OG1	2.10	0.51
10:J:76:ASN:HB2	10:J:78:ASN:ND2	2.25	0.51
13:M:86:CYS:HA	19:S:73:GLU:O	2.10	0.51
1:A:203:U:H4'	1:A:204:U:O5'	2.09	0.51
1:A:353:A:H5'	1:A:353:A:C8	2.46	0.51
1:A:666:G:H5'	1:A:726:C:H1'	1.92	0.51
1:A:1001:A:C2'	1:A:1001(A):G:H5''	2.40	0.51
1:A:1303:C:H2'	1:A:1304:G:H5'	1.92	0.51
2:B:96:ARG:HD2	2:B:96:ARG:N	2.18	0.51
4:D:200:GLU:HG2	4:D:201:GLN:N	2.25	0.51
11:K:124:LYS:HD2	11:K:125:PHE:HE1	1.73	0.51
12:L:34:ARG:O	12:L:61:THR:HG23	2.09	0.51
14:N:54:PRO:C	14:N:56:VAL:H	2.18	0.51
1:A:443:C:H2'	1:A:444:C:H6	1.75	0.51
1:A:472:A:H1'	16:P:82:GLN:OE1	2.10	0.51
1:A:825:G:N2	8:H:11:THR:HG21	2.26	0.51
1:A:1019:C:C2'	1:A:1020:U:H5'	2.41	0.51
1:A:1031:G:H2'	1:A:1032:G:C8	2.46	0.51
2:B:189:ASP:HB2	2:B:205:ASP:CG	2.35	0.51
4:D:78:LEU:HD22	4:D:96:LEU:HB3	1.92	0.51
4:D:83:SER:HA	4:D:89:THR:HG23	1.92	0.51
5:E:76:ILE:HG22	5:E:78:HIS:O	2.09	0.51
7:G:79:ARG:HA	7:G:84:ASN:HA	1.90	0.51
13:M:81:LEU:HD11	13:M:88:ARG:HD3	1.93	0.51
15:O:64:ARG:HH22	15:O:68:ARG:NH2	2.08	0.51
19:S:33:THR:HG22	19:S:35:SER:N	2.21	0.51
1:A:627:G:H2'	1:A:628:G:H8	1.76	0.51
3:C:64:VAL:N	3:C:99:VAL:CG1	2.73	0.51
3:C:110:ASN:HD21	3:C:140:ARG:HD2	1.76	0.51
3:C:188:LEU:HD11	3:C:195:VAL:CG1	2.38	0.51
4:D:63:LYS:HD2	4:D:198:VAL:HG22	1.92	0.51
5:E:5:ASP:CG	5:E:6:PHE:N	2.68	0.51
10:J:26:ALA:HB3	10:J:85:LEU:CD2	2.40	0.51
11:K:84:VAL:HG11	11:K:91:ARG:HH11	1.75	0.51
11:K:108:ILE:N	11:K:108:ILE:HD12	2.24	0.51
15:O:87:ILE:CG2	15:O:88:ARG:N	2.63	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:U:2:GLY:O	21:U:4:GLY:N	2.43	0.51
1:A:321:A:O2'	1:A:322:C:H5'	2.09	0.51
1:A:433:C:H2'	1:A:434:U:H6	1.76	0.51
1:A:742:G:P	15:O:35:ARG:HH22	2.34	0.51
1:A:858:G:OP2	1:A:858:G:H8	1.94	0.51
1:A:1004:A:H2'	1:A:1005:A:O4'	2.10	0.51
1:A:1054:C:C2'	1:A:1054:C:O2	2.58	0.51
3:C:19:GLU:HB3	3:C:40:ARG:HH22	1.74	0.51
3:C:44:GLU:HG2	3:C:52:LEU:HD11	1.92	0.51
13:M:67:GLU:O	13:M:70:LEU:N	2.40	0.51
17:Q:68:ARG:H	17:Q:70:ARG:NH1	2.08	0.51
1:A:279:A:H5'	1:A:279:A:H8	1.75	0.51
1:A:928:G:O2'	1:A:929:G:H5'	2.11	0.51
1:A:1343:G:H2'	1:A:1344:C:H6	1.72	0.51
1:A:1405:G:O4'	1:A:1519:A:H4'	2.11	0.51
1:A:1413:A:H2'	1:A:1414:U:O4'	2.10	0.51
2:B:25:ASN:HD22	2:B:25:ASN:C	2.18	0.51
7:G:43:PHE:O	7:G:47:CYS:N	2.44	0.51
15:O:61:GLY:O	15:O:65:ARG:HG3	2.11	0.51
1:A:269:C:H2'	1:A:270:A:C8	2.45	0.51
1:A:414:A:H2'	1:A:415:A:O4'	2.11	0.51
1:A:948:C:O2'	1:A:949:A:H5'	2.10	0.51
1:A:1359:C:OP1	14:N:22:THR:HG22	2.11	0.51
1:A:1392:G:O2'	1:A:1502:A:H5''	2.11	0.51
2:B:87:ARG:HD3	2:B:233:SER:CB	2.40	0.51
3:C:39:ILE:C	3:C:41:GLY:H	2.19	0.51
8:H:11:THR:HA	8:H:14:ARG:NH1	2.26	0.51
13:M:65:LYS:HG3	13:M:69:GLU:OE2	2.11	0.51
16:P:14:ASN:OD1	16:P:16:HIS:HE1	1.93	0.51
17:Q:66:SER:OG	17:Q:69:LYS:HB2	2.09	0.51
19:S:5:LEU:HD11	19:S:70:LYS:HZ2	1.74	0.51
1:A:168:G:O2'	1:A:169:C:H5'	2.11	0.51
1:A:251:G:H4'	1:A:252:U:O5'	2.09	0.51
1:A:1161:C:H2'	1:A:1162:C:H6	1.76	0.51
1:A:1196:U:C5	22:X:5:A:N3	2.79	0.51
1:A:1513:A:H2'	1:A:1514:C:C6	2.46	0.51
4:D:152:SER:O	4:D:154:ASN:N	2.44	0.51
7:G:50:ILE:HD12	7:G:125:MET:CG	2.41	0.51
9:I:7:THR:O	9:I:8:GLY:O	2.29	0.51
10:J:13:HIS:CD2	10:J:13:HIS:C	2.89	0.51
10:J:76:ASN:O	10:J:78:ASN:N	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:63:ILE:O	20:T:66:ALA:HB3	2.11	0.51
1:A:242:C:C2'	1:A:243:A:H5'	2.41	0.51
1:A:287:U:C2'	1:A:288:A:H5'	2.41	0.51
1:A:335:C:H2'	1:A:336:C:H6	1.76	0.51
1:A:840:C:H4'	1:A:848:C:N3	2.25	0.51
1:A:1162:C:H2'	1:A:1163:C:C6	2.45	0.51
14:N:26:ARG:HH21	14:N:47:LEU:HG	1.76	0.51
16:P:20:VAL:HG12	16:P:21:VAL:N	2.26	0.51
19:S:33:THR:CG2	19:S:35:SER:H	2.20	0.51
1:A:867:G:O2'	1:A:868:C:H5'	2.10	0.50
1:A:1017:G:H2'	1:A:1018:C:C6	2.47	0.50
2:B:17:PHE:HB2	2:B:41:ILE:HG23	1.94	0.50
4:D:32:ALA:C	4:D:34:GLU:N	2.69	0.50
5:E:12:LEU:CD1	5:E:31:LEU:HB2	2.40	0.50
5:E:81:GLU:CD	5:E:88:LYS:HE2	2.37	0.50
7:G:93:PRO:O	7:G:96:GLN:HB2	2.11	0.50
11:K:18:ARG:HB2	11:K:33:THR:OG1	2.11	0.50
15:O:83:GLU:OE1	15:O:83:GLU:HA	2.11	0.50
1:A:52:G:O2'	1:A:53:A:H5'	2.11	0.50
1:A:1001:A:H2'	1:A:1001:A:N3	2.26	0.50
1:A:1101:A:H4'	1:A:1102:A:O5'	2.12	0.50
3:C:64:VAL:N	3:C:99:VAL:HG11	2.26	0.50
3:C:119:ARG:HE	3:C:140:ARG:HE	1.53	0.50
4:D:64:LEU:HD11	4:D:97:LEU:CD1	2.42	0.50
5:E:31:LEU:CD2	5:E:45:PHE:HB2	2.41	0.50
8:H:82:HIS:CE1	8:H:84:ARG:HB2	2.46	0.50
10:J:62:HIS:HB3	14:N:59:ALA:HB3	1.93	0.50
1:A:247:G:N7	17:Q:96:GLU:OE2	2.45	0.50
1:A:1047:G:O2'	1:A:1048:G:H5'	2.12	0.50
1:A:1495:U:H2'	1:A:1496:C:H6	1.76	0.50
4:D:36:ARG:HG2	4:D:38:TYR:CZ	2.47	0.50
7:G:46:ALA:HB2	7:G:117:ALA:HA	1.93	0.50
10:J:32:ALA:HB3	10:J:75:ILE:HG13	1.91	0.50
10:J:78:ASN:HB2	10:J:81:THR:OG1	2.12	0.50
13:M:124:PRO:HB2	13:M:126:LYS:HE2	1.93	0.50
14:N:24:CYS:HB3	14:N:29:ARG:N	2.27	0.50
1:A:398:C:O2'	1:A:399:G:H5'	2.11	0.50
1:A:436:C:H2'	1:A:437:U:C6	2.46	0.50
1:A:1423:G:O2'	1:A:1424:C:H5'	2.11	0.50
1:A:1495:U:H2'	1:A:1496:C:C6	2.45	0.50
16:P:10:GLY:HA3	16:P:15:PRO:HA	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:30:U:O2'	1:A:31:G:OP1	2.25	0.50
1:A:309:G:O2'	1:A:310:G:H5'	2.11	0.50
1:A:496:A:H1'	1:A:498:U:OP1	2.11	0.50
1:A:613:C:O2'	1:A:614:A:H5'	2.11	0.50
1:A:1249:C:O2'	9:I:73:GLN:NE2	2.45	0.50
2:B:213:LEU:O	2:B:217:ARG:HG2	2.11	0.50
5:E:76:ILE:HG13	5:E:142:LEU:HD11	1.94	0.50
9:I:88:TYR:O	9:I:89:ASN:HB2	2.11	0.50
12:L:115:LYS:O	12:L:117:ARG:N	2.38	0.50
13:M:78:ILE:O	13:M:82:MET:HG3	2.12	0.50
13:M:120:LYS:HZ2	13:M:122:LYS:HB3	1.75	0.50
2:B:73:THR:O	2:B:75:LYS:N	2.45	0.50
3:C:6:HIS:CD2	3:C:8:ILE:HB	2.47	0.50
3:C:34:LEU:HD13	3:C:34:LEU:C	2.36	0.50
7:G:6:ARG:HB3	7:G:6:ARG:HH11	1.75	0.50
10:J:16:LEU:HD23	10:J:94:VAL:HG22	1.94	0.50
10:J:55:LYS:HG3	10:J:56:HIS:N	2.27	0.50
10:J:86:MET:O	10:J:86:MET:HE3	2.12	0.50
11:K:30:VAL:HG21	11:K:65:ALA:HA	1.94	0.50
15:O:54:ARG:HG2	15:O:54:ARG:NH1	2.25	0.50
1:A:542:G:OP1	4:D:10:ARG:NH2	2.44	0.50
1:A:1320:C:H2'	1:A:1321:C:O4'	2.12	0.50
1:A:1347:G:C2'	1:A:1373:G:H1	2.24	0.50
2:B:17:PHE:HB2	2:B:41:ILE:CG2	2.41	0.50
3:C:75:VAL:O	3:C:83:ARG:HG2	2.11	0.50
4:D:17:VAL:HG12	4:D:18:LYS:N	2.26	0.50
4:D:94:LEU:HD23	4:D:97:LEU:HD12	1.93	0.50
5:E:50:GLU:HB3	5:E:53:LEU:CD2	2.39	0.50
7:G:26:PHE:HE2	7:G:30:ILE:HD11	1.75	0.50
13:M:22:ILE:HB	13:M:25:ILE:HB	1.93	0.50
14:N:9:LYS:HD3	14:N:9:LYS:C	2.36	0.50
1:A:526:C:OP2	12:L:91:LYS:HE3	2.11	0.50
1:A:542:G:H2'	1:A:543:C:H6	1.77	0.50
1:A:761:G:H21	17:Q:105:ALA:HB1	1.76	0.50
1:A:780:A:O2'	1:A:781:A:H5''	2.12	0.50
1:A:823:G:O2'	1:A:824:C:H5'	2.12	0.50
1:A:1165:C:O2'	1:A:1166:G:H5'	2.09	0.50
1:A:1248:A:N3	9:I:70:LYS:HE3	2.27	0.50
1:A:1498:U:H4'	1:A:1519:A:C2	2.47	0.50
8:H:82:HIS:HD2	8:H:138:TRP:CE2	2.29	0.50
9:I:31:GLN:HB3	9:I:35:GLU:HB3	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:6:ILE:HG22	10:J:97:GLU:O	2.11	0.50
11:K:67:ASP:OD1	11:K:71:LYS:HE3	2.12	0.50
16:P:58:TYR:O	16:P:61:SER:OG	2.25	0.50
1:A:16:A:H2'	1:A:17:U:H5'	1.93	0.50
1:A:421:U:H2'	1:A:423:G:O6	2.12	0.50
1:A:584:G:H2'	1:A:585:G:C8	2.47	0.50
1:A:650:G:O2'	1:A:651:C:H5'	2.11	0.50
1:A:1481:U:C2'	1:A:1482:G:H5'	2.42	0.50
2:B:15:VAL:HG21	2:B:210:SER:CA	2.42	0.50
2:B:147:LYS:HE3	2:B:148:TYR:CZ	2.47	0.50
3:C:58:GLU:HB3	10:J:92:THR:HG21	1.94	0.50
5:E:110:LEU:HD13	5:E:118:ILE:HG21	1.93	0.50
5:E:126:ARG:HG3	5:E:126:ARG:HH11	1.76	0.50
6:F:82:ARG:HB2	6:F:85:VAL:CG2	2.41	0.50
7:G:137:LYS:O	7:G:141:VAL:HG23	2.12	0.50
9:I:19:LEU:HB3	9:I:59:PHE:CD2	2.47	0.50
9:I:102:LEU:HD12	9:I:103:THR:N	2.26	0.50
16:P:10:GLY:HA3	16:P:14:ASN:O	2.11	0.50
1:A:66:G:H4'	1:A:173:U:C5	2.47	0.49
1:A:175:C:H2'	1:A:176:C:H6	1.76	0.49
1:A:1024:G:H3'	1:A:1025:U:H5''	1.94	0.49
1:A:1151:A:O2'	1:A:1152:A:H8	1.94	0.49
1:A:1201:A:O2'	1:A:1202:G:OP2	2.27	0.49
1:A:1428:A:H2'	1:A:1429:C:C6	2.46	0.49
2:B:15:VAL:HG21	2:B:210:SER:HA	1.93	0.49
2:B:88:ALA:HB2	2:B:219:VAL:CG1	2.42	0.49
2:B:213:LEU:HD23	2:B:213:LEU:C	2.36	0.49
3:C:26:LYS:HB3	3:C:26:LYS:NZ	2.27	0.49
3:C:126:ARG:O	3:C:127:ARG:C	2.55	0.49
10:J:3:LYS:HA	10:J:74:ILE:O	2.12	0.49
10:J:47:PHE:CZ	14:N:37:PHE:HE1	2.31	0.49
17:Q:40:LYS:HG2	17:Q:41:LYS:N	2.25	0.49
18:R:47:THR:HG22	18:R:48:GLY:N	2.27	0.49
1:A:1128:C:O2'	1:A:1130:A:N7	2.41	0.49
1:A:1256:A:OP1	3:C:26:LYS:HD2	2.11	0.49
5:E:80:ILE:HD13	5:E:91:LEU:HB2	1.91	0.49
8:H:122:ARG:HB3	8:H:122:ARG:HH11	1.77	0.49
9:I:31:GLN:O	9:I:32:ASP:CB	2.60	0.49
9:I:43:ALA:O	9:I:45:ALA:N	2.45	0.49
9:I:112:LYS:C	9:I:112:LYS:HD3	2.37	0.49
10:J:85:LEU:O	10:J:87:THR:N	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:27:LEU:CB	12:L:62:SER:HB2	2.42	0.49
13:M:96:LEU:O	13:M:97:PRO:C	2.55	0.49
16:P:57:ARG:NH1	16:P:57:ARG:CG	2.71	0.49
17:Q:48:GLU:O	17:Q:50:LYS:N	2.45	0.49
1:A:22:G:O2'	1:A:23:C:H5'	2.12	0.49
1:A:437:U:H5''	4:D:155:LEU:CD2	2.41	0.49
1:A:759:A:N6	17:Q:94:ASN:HD21	1.97	0.49
1:A:1005:A:H3'	1:A:1006:C:H6	1.77	0.49
1:A:1021:G:H2'	1:A:1022:G:C8	2.48	0.49
1:A:1325:C:O3'	21:U:17:THR:HG21	2.11	0.49
2:B:52:GLU:HG2	2:B:56:ARG:NH2	2.25	0.49
2:B:61:LEU:HD21	2:B:160:ASP:CB	2.41	0.49
2:B:118:LEU:HD22	2:B:142:LEU:CD1	2.33	0.49
2:B:142:LEU:CG	2:B:146:GLN:HE21	2.24	0.49
2:B:212:GLN:O	2:B:213:LEU:C	2.55	0.49
3:C:52:LEU:N	3:C:52:LEU:HD23	2.27	0.49
5:E:11:ILE:HB	5:E:31:LEU:HB3	1.94	0.49
9:I:65:VAL:CG1	9:I:73:GLN:HB3	2.40	0.49
10:J:16:LEU:HB3	10:J:70:ARG:HG3	1.94	0.49
20:T:65:LYS:HA	20:T:68:LYS:HG3	1.94	0.49
1:A:625:G:H2'	1:A:626:U:H6	1.75	0.49
1:A:1190:G:OP1	3:C:5:ILE:HG13	2.13	0.49
1:A:1314:C:OP2	19:S:6:LYS:HG3	2.12	0.49
1:A:1405:G:O2'	1:A:1406:U:H5'	2.12	0.49
2:B:223:ILE:HD13	2:B:229:VAL:HA	1.95	0.49
5:E:131:ILE:O	5:E:134:ALA:HB3	2.11	0.49
9:I:43:ALA:N	9:I:74:ILE:HD13	2.28	0.49
11:K:21:ILE:CD1	11:K:95:ILE:HD13	2.42	0.49
15:O:36:ILE:HG12	15:O:59:MET:HE3	1.95	0.49
16:P:1:MET:O	16:P:24:ALA:HB2	2.12	0.49
20:T:94:ALA:O	20:T:95:ALA:CB	2.61	0.49
20:T:100:ILE:HG12	20:T:102:GLY:H	1.78	0.49
1:A:110:C:H2'	1:A:111:G:O4'	2.12	0.49
1:A:541:G:O2'	1:A:542:G:H5'	2.11	0.49
2:B:189:ASP:HB2	2:B:205:ASP:OD2	2.13	0.49
4:D:173:TRP:O	4:D:186:LEU:HB2	2.11	0.49
8:H:46:LYS:N	8:H:64:LYS:HG3	2.28	0.49
11:K:26:ASN:O	11:K:27:ASN:HB2	2.12	0.49
1:A:222:U:H2'	1:A:223:U:H6	1.77	0.49
1:A:974:A:OP2	14:N:41:ARG:NH1	2.45	0.49
1:A:1060:C:N4	3:C:2:GLY:N	2.60	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1427:U:H2'	1:A:1428:A:C8	2.48	0.49
2:B:28:PHE:O	2:B:32:ILE:HG13	2.12	0.49
2:B:233:SER:OG	2:B:234:PRO:HD2	2.11	0.49
3:C:52:LEU:H	3:C:52:LEU:CD2	2.25	0.49
10:J:26:ALA:HB3	10:J:85:LEU:HD23	1.95	0.49
10:J:30:SER:HB2	10:J:80:LYS:O	2.12	0.49
13:M:108:ARG:HD3	13:M:114:ARG:NH1	2.28	0.49
14:N:14:PRO:O	14:N:15:LYS:CB	2.58	0.49
15:O:64:ARG:NH1	15:O:64:ARG:CB	2.70	0.49
15:O:78:TYR:CE1	15:O:82:ILE:HD11	2.48	0.49
16:P:59:TRP:O	16:P:60:LEU:C	2.55	0.49
18:R:61:LYS:O	18:R:65:ILE:HG13	2.13	0.49
1:A:942:G:H2'	1:A:943:U:H6	1.78	0.49
1:A:1359:C:OP1	14:N:22:THR:CG2	2.60	0.49
3:C:79:ARG:C	3:C:81:GLY:H	2.19	0.49
6:F:91:VAL:CG1	18:R:72:ARG:NH2	2.76	0.49
10:J:26:ALA:HB1	10:J:84:GLN:HB2	1.95	0.49
11:K:28:THR:C	11:K:29:ILE:HG22	2.37	0.49
15:O:22:THR:O	15:O:27:VAL:HG11	2.13	0.49
20:T:57:ARG:HH21	20:T:102:GLY:HA3	1.76	0.49
20:T:84:LEU:HD23	20:T:88:VAL:HG23	1.95	0.49
1:A:156:G:O2'	1:A:157:G:H5'	2.13	0.49
1:A:199:G:O2'	1:A:200:G:H5'	2.13	0.49
1:A:1456:G:H2'	1:A:1457:G:O4'	2.12	0.49
2:B:75:LYS:HB2	2:B:76:GLN:NE2	2.27	0.49
3:C:60:ALA:HB3	3:C:63:ASN:HB2	1.95	0.49
7:G:89:MET:HE3	7:G:155:ARG:O	2.13	0.49
11:K:115:PRO:C	11:K:117:ASN:H	2.20	0.49
14:N:22:THR:HG23	14:N:33:VAL:CG2	2.43	0.49
15:O:74:ASP:C	15:O:76:GLU:H	2.21	0.49
19:S:36:ARG:NH1	19:S:72:GLY:CA	2.75	0.49
1:A:269:C:H2'	1:A:270:A:H8	1.78	0.49
1:A:750:G:N3	15:O:23:GLY:HA3	2.27	0.49
1:A:992:U:H3	1:A:1044:A:H62	1.60	0.49
1:A:1032:G:H2'	1:A:1033:G:C8	2.43	0.49
1:A:1136:U:H5''	1:A:1137:C:OP2	2.13	0.49
1:A:1160:G:O2'	1:A:1161:C:H5'	2.13	0.49
1:A:1294:G:O2'	1:A:1295:G:H5'	2.12	0.49
1:A:1397:C:H4'	1:A:1398:A:OP2	2.13	0.49
2:B:105:PHE:HE1	2:B:155:LEU:HD23	1.77	0.49
2:B:118:LEU:C	2:B:120:ALA:N	2.68	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:61:ALA:C	3:C:63:ASN:H	2.20	0.49
6:F:4:TYR:CZ	6:F:72:VAL:HG21	2.48	0.49
8:H:63:LEU:HD22	8:H:63:LEU:H	1.78	0.49
9:I:33:PHE:CE2	9:I:47:LEU:HD11	2.48	0.49
9:I:97:LYS:HB3	9:I:98:PRO:CD	2.41	0.49
10:J:49:VAL:CG2	14:N:41:ARG:HB2	2.36	0.49
10:J:74:ILE:HD13	10:J:81:THR:HG21	1.94	0.49
15:O:74:ASP:O	15:O:76:GLU:N	2.46	0.49
21:U:2:GLY:C	21:U:4:GLY:N	2.68	0.49
1:A:29:G:O2'	1:A:30:U:H5'	2.13	0.49
1:A:374:A:C6	1:A:375:U:C4	3.01	0.49
1:A:828:A:H2'	1:A:829:G:O4'	2.13	0.49
1:A:1125:U:H3'	1:A:1126:U:H5	1.77	0.49
1:A:1291:G:H4'	9:I:39:GLY:HA3	1.94	0.49
1:A:1474:G:H2'	1:A:1475:G:C8	2.48	0.49
2:B:73:THR:C	2:B:75:LYS:H	2.21	0.49
3:C:112:SER:O	3:C:116:VAL:HG23	2.13	0.49
4:D:199:ASN:C	4:D:199:ASN:ND2	2.69	0.49
5:E:24:ARG:HG2	5:E:24:ARG:HH11	1.77	0.49
7:G:31:MET:HG2	7:G:32:ARG:N	2.27	0.49
7:G:120:ILE:HD12	7:G:120:ILE:N	2.20	0.49
12:L:91:LYS:O	12:L:91:LYS:HD3	2.12	0.49
13:M:23:TYR:HB2	13:M:67:GLU:OE2	2.12	0.49
15:O:39:LEU:O	15:O:43:LEU:HG	2.13	0.49
16:P:4:ILE:HA	16:P:20:VAL:O	2.12	0.49
16:P:4:ILE:HG13	16:P:64:ALA:HB1	1.95	0.49
18:R:43:PHE:C	18:R:51:LEU:HD12	2.37	0.49
1:A:149:A:O2'	1:A:150:C:H5'	2.13	0.48
1:A:262:A:H5'	20:T:74:LYS:HG3	1.95	0.48
1:A:547:A:OP2	4:D:2:GLY:N	2.46	0.48
1:A:714:G:H2'	1:A:715:A:C8	2.48	0.48
1:A:1048:G:H5''	14:N:3:ARG:HB3	1.95	0.48
1:A:1176:A:H2'	1:A:1177:G:O4'	2.12	0.48
2:B:64:ARG:NH1	2:B:64:ARG:HB2	2.28	0.48
5:E:144:THR:O	5:E:148:VAL:HG23	2.13	0.48
12:L:55:VAL:CG1	12:L:56:ALA:H	2.24	0.48
13:M:125:ARG:HD2	13:M:125:ARG:C	2.37	0.48
20:T:14:LYS:O	20:T:18:GLN:HG3	2.13	0.48
1:A:186:C:H5'	20:T:78:ALA:HB1	1.95	0.48
1:A:1127:G:H1	1:A:1145:C:N4	2.12	0.48
1:A:1288:A:H2'	1:A:1289:A:H8	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:10:LEU:HG	2:B:48:MET:HE2	1.94	0.48
2:B:137:ARG:NH1	2:B:137:ARG:CB	2.77	0.48
6:F:3:ARG:NH1	6:F:38:GLU:OE1	2.45	0.48
6:F:71:ARG:O	6:F:72:VAL:C	2.57	0.48
7:G:79:ARG:NH2	7:G:82:GLY:H	2.10	0.48
11:K:120:ARG:HH11	11:K:120:ARG:HG2	1.78	0.48
13:M:114:ARG:HG2	13:M:114:ARG:HH11	1.78	0.48
17:Q:95:TYR:O	17:Q:97:SER:N	2.46	0.48
20:T:23:ARG:HG2	20:T:23:ARG:NH1	2.28	0.48
20:T:50:GLU:O	20:T:100:ILE:HG21	2.12	0.48
20:T:82:SER:O	20:T:86:ARG:HB2	2.13	0.48
1:A:328:C:H4'	1:A:329:A:H5'	1.95	0.48
1:A:721:G:H4'	1:A:722:A:O4'	2.13	0.48
1:A:881:G:P	12:L:12:ARG:HH22	2.35	0.48
1:A:1251:A:H5'	9:I:12:GLU:CG	2.44	0.48
3:C:58:GLU:HB2	3:C:65:ALA:CB	2.43	0.48
3:C:115:LEU:HD23	3:C:118:GLN:OE1	2.13	0.48
6:F:23:LYS:NZ	6:F:42:GLU:OE2	2.39	0.48
6:F:99:ALA:HB2	18:R:31:LEU:HD12	1.95	0.48
8:H:19:VAL:HG23	8:H:21:LYS:HG2	1.95	0.48
8:H:20:TYR:HE2	8:H:75:ARG:HD2	1.76	0.48
10:J:81:THR:HG22	10:J:85:LEU:HD12	1.95	0.48
13:M:5:ALA:O	13:M:6:GLY:C	2.56	0.48
15:O:24:SER:OG	15:O:27:VAL:HG23	2.12	0.48
17:Q:40:LYS:HD2	17:Q:42:TYR:CZ	2.49	0.48
1:A:190:U:O2'	1:A:191:G:H5'	2.13	0.48
1:A:360:A:O2'	1:A:361:G:H5'	2.14	0.48
1:A:376:G:H2'	1:A:377:G:H8	1.79	0.48
1:A:583:A:H2'	1:A:584:G:O4'	2.14	0.48
1:A:725:G:O2'	1:A:726:C:H5'	2.14	0.48
1:A:926:G:H3'	1:A:1505:G:N2	2.27	0.48
1:A:1436:U:H2'	1:A:1437:C:C6	2.49	0.48
1:A:1479:C:O2'	1:A:1480:G:H5'	2.13	0.48
2:B:42:ILE:HD12	2:B:42:ILE:N	2.28	0.48
3:C:78:GLY:HA3	3:C:83:ARG:CB	2.43	0.48
7:G:37:ASN:O	7:G:38:LEU:C	2.56	0.48
9:I:23:ASN:HD22	9:I:23:ASN:C	2.21	0.48
10:J:25:GLU:C	10:J:27:ALA:H	2.21	0.48
11:K:27:ASN:OD1	11:K:28:THR:N	2.47	0.48
14:N:7:ILE:C	14:N:9:LYS:H	2.19	0.48
17:Q:59:ILE:HD13	17:Q:73:VAL:HA	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:100:ILE:C	20:T:102:GLY:N	2.71	0.48
1:A:1477:C:H2'	1:A:1478:C:H6	1.78	0.48
5:E:8:GLU:HB3	5:E:34:VAL:HG23	1.95	0.48
14:N:8:GLU:OE1	14:N:8:GLU:C	2.56	0.48
16:P:28:ARG:HG3	16:P:29:ASP:N	2.27	0.48
1:A:741:G:O2'	1:A:742:G:H5'	2.13	0.48
1:A:1003:G:C3'	1:A:1004:A:H5''	2.43	0.48
3:C:43:LEU:O	3:C:52:LEU:HD13	2.13	0.48
3:C:87:LEU:C	3:C:89:GLU:N	2.71	0.48
4:D:17:VAL:CG1	4:D:18:LYS:N	2.77	0.48
6:F:47:ARG:N	6:F:47:ARG:CD	2.67	0.48
6:F:91:VAL:HG13	18:R:72:ARG:NH2	2.28	0.48
10:J:76:ASN:C	10:J:78:ASN:N	2.71	0.48
12:L:58:VAL:O	12:L:65:GLU:HA	2.14	0.48
13:M:116:THR:HG22	13:M:117:VAL:N	2.29	0.48
16:P:27:LYS:HG3	16:P:30:GLY:HA3	1.95	0.48
17:Q:69:LYS:C	17:Q:70:ARG:HD2	2.39	0.48
20:T:22:ARG:HG2	20:T:22:ARG:HH11	1.78	0.48
21:U:6:ARG:HH21	21:U:15:ARG:NE	2.12	0.48
1:A:490:G:O2'	1:A:491:G:H5'	2.14	0.48
1:A:1401:G:H2'	1:A:1402:C:O4'	2.14	0.48
2:B:178:ARG:NH2	2:B:196:LEU:HA	2.28	0.48
3:C:47:LEU:HD22	3:C:68:VAL:HG11	1.90	0.48
5:E:36:ASP:OD2	5:E:40:ARG:HB2	2.13	0.48
9:I:118:LYS:O	9:I:119:ALA:CB	2.62	0.48
10:J:7:LYS:HD3	10:J:9:ARG:HH22	1.78	0.48
18:R:44:LEU:HD11	18:R:79:LEU:HD22	1.96	0.48
20:T:39:LYS:HD3	20:T:55:ILE:HD13	1.95	0.48
1:A:473:G:H5''	16:P:81:ARG:NH1	2.29	0.48
1:A:915:A:H2'	1:A:916:G:H5'	1.96	0.48
1:A:1047:G:C2'	1:A:1048:G:H5'	2.43	0.48
1:A:1207:G:O2'	1:A:1208:C:H5'	2.13	0.48
2:B:74:LYS:O	2:B:75:LYS:HB2	2.14	0.48
2:B:137:ARG:CB	2:B:137:ARG:HH11	2.27	0.48
4:D:26:CYS:HA	4:D:31:CYS:HB2	1.95	0.48
5:E:144:THR:O	5:E:145:LYS:C	2.57	0.48
6:F:82:ARG:HB2	6:F:85:VAL:HG23	1.95	0.48
8:H:82:HIS:CD2	8:H:138:TRP:CE2	3.01	0.48
20:T:57:ARG:HG2	20:T:57:ARG:NH1	2.29	0.48
1:A:807:A:H2'	1:A:808:C:C6	2.49	0.48
1:A:848:C:O2'	1:A:849:C:H5'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1236:A:O2'	1:A:1304:G:H4'	2.13	0.48
1:A:1245:A:H2'	1:A:1246:C:C6	2.49	0.48
2:B:101:MET:O	2:B:105:PHE:HA	2.14	0.48
3:C:82:GLU:O	3:C:86:VAL:HG23	2.13	0.48
4:D:100:ARG:O	4:D:103:ASN:HB3	2.13	0.48
12:L:86:ARG:HB3	12:L:101:VAL:HG23	1.96	0.48
13:M:49:THR:O	13:M:50:GLU:C	2.57	0.48
17:Q:3:LYS:CB	17:Q:61:GLU:HB2	2.41	0.48
20:T:53:LEU:HD13	20:T:101:GLY:N	2.28	0.48
1:A:441:A:H5'	1:A:442:C:OP2	2.14	0.48
1:A:1437:C:O2'	1:A:1438:G:H5'	2.14	0.48
3:C:77:ILE:O	3:C:83:ARG:HB3	2.14	0.48
7:G:108:ALA:HA	7:G:111:ARG:HD2	1.94	0.48
13:M:31:LYS:O	13:M:35:GLU:HB2	2.13	0.48
1:A:1478:C:O2'	1:A:1479:C:H5'	2.14	0.47
2:B:206:ASP:O	2:B:207:ALA:CB	2.62	0.47
4:D:18:LYS:NZ	4:D:31:CYS:HB3	2.28	0.47
4:D:31:CYS:O	4:D:32:ALA:HB3	2.13	0.47
9:I:34:ASN:O	9:I:38:GLN:HB2	2.14	0.47
15:O:65:ARG:HG2	15:O:65:ARG:NH1	2.28	0.47
1:A:141:A:O2'	1:A:142:G:H5'	2.14	0.47
1:A:1256:A:N6	1:A:1278:U:O4'	2.47	0.47
1:A:1320:C:OP1	19:S:70:LYS:HE2	2.14	0.47
1:A:1367:C:H5'	10:J:60:ARG:HH12	1.79	0.47
1:A:1483:A:H2'	1:A:1484:C:O4'	2.14	0.47
2:B:23:ARG:O	2:B:23:ARG:CD	2.61	0.47
2:B:27:LYS:HD2	2:B:193:ASP:OD2	2.14	0.47
3:C:107:GLN:O	3:C:108:ASN:HB3	2.13	0.47
5:E:107:ARG:HG2	5:E:108:ALA:H	1.79	0.47
9:I:93:ARG:O	9:I:97:LYS:HB2	2.13	0.47
10:J:30:SER:HB2	10:J:80:LYS:HG3	1.96	0.47
11:K:27:ASN:ND2	11:K:55:LYS:HE3	2.30	0.47
11:K:77:MET:CG	11:K:103:LEU:HD21	2.44	0.47
19:S:42:PRO:C	19:S:44:MET:H	2.22	0.47
1:A:153:C:O2'	1:A:154:C:H5'	2.14	0.47
1:A:1104:G:OP1	2:B:111:ARG:HD2	2.14	0.47
1:A:1112:C:N3	3:C:178:LEU:HB2	2.29	0.47
3:C:52:LEU:HD23	3:C:52:LEU:H	1.79	0.47
3:C:122:GLU:O	3:C:123:GLN:C	2.57	0.47
4:D:149:ALA:HB3	4:D:152:SER:OG	2.13	0.47
5:E:30:ALA:O	5:E:45:PHE:HA	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:11:THR:HG22	8:H:15:ASN:ND2	2.29	0.47
12:L:104:VAL:O	12:L:105:TYR:HB2	2.14	0.47
14:N:26:ARG:HH21	14:N:47:LEU:CD2	2.26	0.47
15:O:10:LYS:HD3	15:O:10:LYS:O	2.15	0.47
18:R:66:LEU:O	18:R:67:ALA:C	2.57	0.47
1:A:682:G:O2'	1:A:683:G:H5'	2.15	0.47
1:A:818:G:H3'	1:A:819:A:H5''	1.96	0.47
2:B:17:PHE:HA	2:B:42:ILE:HB	1.96	0.47
2:B:28:PHE:HD2	2:B:190:THR:HG22	1.79	0.47
2:B:226:ARG:HE	2:B:226:ARG:N	2.12	0.47
3:C:51:GLY:O	3:C:115:LEU:HD21	2.14	0.47
10:J:42:THR:HG22	10:J:43:ARG:N	2.28	0.47
11:K:83:ILE:HD12	11:K:83:ILE:N	2.29	0.47
14:N:61:TRP:N	14:N:61:TRP:CE3	2.83	0.47
15:O:70:LEU:HD12	15:O:78:TYR:CA	2.45	0.47
1:A:501:C:H2'	1:A:502:G:H8	1.79	0.47
1:A:979:C:H2'	1:A:980:C:H5'	1.96	0.47
1:A:983:A:H5'	1:A:984:C:OP2	2.14	0.47
1:A:1232:U:P	9:I:124:GLN:HE21	2.37	0.47
3:C:172:ARG:HB3	3:C:174:PRO:HD3	1.96	0.47
3:C:173:VAL:O	3:C:173:VAL:HG12	2.13	0.47
6:F:101:ALA:HB2	18:R:28:GLU:CG	2.45	0.47
8:H:121:ASP:HB2	8:H:125:ARG:NH2	2.29	0.47
18:R:29:PHE:HE1	18:R:31:LEU:HG	1.77	0.47
20:T:53:LEU:HB2	20:T:100:ILE:HG21	1.95	0.47
1:A:332:G:O2'	1:A:333:G:H5'	2.14	0.47
1:A:376:G:H5''	16:P:5:ARG:HB2	1.97	0.47
1:A:592:G:O2'	1:A:593:G:H5'	2.14	0.47
1:A:656:C:H4'	15:O:62:GLN:NE2	2.30	0.47
1:A:1220:G:H2'	1:A:1221:G:H8	1.80	0.47
1:A:1288:A:H1'	1:A:1352:C:O2'	2.14	0.47
1:A:1399:C:C2	1:A:1502:A:N6	2.82	0.47
1:A:1487:G:O2'	1:A:1488:G:H5'	2.14	0.47
5:E:93:PRO:HG2	8:H:105:ARG:CZ	2.43	0.47
7:G:129:GLU:CD	7:G:131:LYS:HE2	2.40	0.47
8:H:60:ARG:NH1	8:H:60:ARG:CG	2.78	0.47
8:H:119:LEU:HB2	8:H:123:GLU:HB2	1.96	0.47
10:J:32:ALA:CB	10:J:76:ASN:HD22	2.23	0.47
20:T:72:LEU:O	20:T:73:HIS:C	2.56	0.47
1:A:160:A:H1'	1:A:344:A:C5	2.50	0.47
1:A:163:C:C2'	1:A:164:U:H5'	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:346:G:C2'	1:A:347:G:H5'	2.45	0.47
1:A:410:G:H2'	1:A:429:U:C5	2.49	0.47
1:A:489:C:H2'	1:A:490:G:C8	2.47	0.47
1:A:738:C:H2'	1:A:739:C:C6	2.50	0.47
1:A:1004:A:O2'	1:A:1005:A:H5'	2.15	0.47
1:A:1085:U:H3'	1:A:1086:U:C5	2.50	0.47
1:A:1102:A:H2'	1:A:1103:C:C6	2.50	0.47
2:B:95:GLN:O	2:B:96:ARG:HD2	2.14	0.47
3:C:129:ALA:HB3	3:C:132:ARG:CZ	2.44	0.47
3:C:153:VAL:HG12	3:C:154:SER:N	2.28	0.47
5:E:60:TYR:CE1	5:E:64:ARG:CZ	2.98	0.47
5:E:152:ARG:NH2	8:H:107:LEU:O	2.47	0.47
6:F:44:GLY:HA2	6:F:59:TYR:CE1	2.50	0.47
7:G:37:ASN:ND2	9:I:41:VAL:HG23	2.30	0.47
7:G:107:ALA:O	7:G:110:GLN:HB2	2.15	0.47
7:G:136:LYS:O	7:G:137:LYS:C	2.58	0.47
8:H:111:ILE:O	8:H:134:ILE:HB	2.14	0.47
9:I:47:LEU:C	9:I:49:PRO:HD2	2.39	0.47
13:M:14:ARG:HG3	13:M:44:ARG:NH2	2.29	0.47
15:O:50:HIS:O	15:O:53:HIS:HB3	2.15	0.47
16:P:11:SER:OG	16:P:14:ASN:HB3	2.14	0.47
17:Q:60:ILE:C	17:Q:71:PHE:HD1	2.22	0.47
1:A:718:G:H5'	11:K:117:ASN:HD22	1.75	0.47
1:A:797:C:OP1	11:K:124:LYS:HE2	2.15	0.47
1:A:960:U:O2	1:A:960:U:H2'	2.14	0.47
1:A:1182:G:O2'	1:A:1183:A:OP2	2.21	0.47
1:A:1381:U:O2'	1:A:1382:C:H5'	2.14	0.47
1:A:1468:A:H2'	1:A:1469:G:O4'	2.14	0.47
2:B:114:ARG:NH1	2:B:118:LEU:HD12	2.29	0.47
3:C:79:ARG:HG3	3:C:79:ARG:HH11	1.78	0.47
7:G:115:ARG:O	7:G:116:ALA:C	2.58	0.47
8:H:86:ILE:HG22	8:H:87:SER:N	2.29	0.47
9:I:100:GLY:C	9:I:102:LEU:N	2.68	0.47
16:P:57:ARG:HH12	16:P:79:VAL:HA	1.79	0.47
18:R:87:ARG:O	18:R:88:LYS:CB	2.60	0.47
1:A:581:G:O6	1:A:758:G:C8	2.68	0.47
1:A:927:G:H4'	1:A:1503:A:N7	2.30	0.47
1:A:1128:C:H5'	9:I:16:ARG:NH2	2.30	0.47
1:A:1287:A:C6	1:A:1288:A:N6	2.83	0.47
2:B:130:ARG:O	2:B:135:GLN:NE2	2.46	0.47
3:C:102:ASN:N	3:C:102:ASN:ND2	2.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:181:ASN:ND2	3:C:204:LEU:CD1	2.77	0.47
5:E:51:VAL:HB	5:E:52:PRO:CD	2.36	0.47
5:E:57:LYS:HG2	5:E:61:TYR:CE2	2.49	0.47
7:G:53:LYS:HE3	7:G:53:LYS:HB2	1.77	0.47
10:J:33:GLN:CB	10:J:75:ILE:HD11	2.44	0.47
10:J:76:ASN:HB2	10:J:78:ASN:HD21	1.80	0.47
14:N:42:ILE:O	14:N:45:ARG:HB3	2.15	0.47
20:T:57:ARG:HH11	20:T:57:ARG:CG	2.28	0.47
1:A:457:C:H2'	1:A:458:C:H6	1.80	0.47
1:A:1327:C:O2'	1:A:1328:C:H5'	2.15	0.47
1:A:1347:G:O2'	1:A:1348:U:OP2	2.32	0.47
1:A:1372:U:O2'	1:A:1373:G:H5'	2.14	0.47
2:B:225:ALA:HB3	2:B:226:ARG:NE	2.30	0.47
15:O:4:THR:OG1	15:O:7:GLU:HG3	2.15	0.47
15:O:82:ILE:HD13	15:O:88:ARG:HG2	1.97	0.47
1:A:255:G:H1'	17:Q:16:GLN:NE2	2.30	0.46
1:A:431:A:O2'	1:A:432:A:H5'	2.14	0.46
1:A:554:C:H2'	1:A:555:C:C6	2.50	0.46
1:A:976:G:C8	1:A:1358:U:C2	3.03	0.46
1:A:1053:G:H3'	1:A:1054:C:C5'	2.44	0.46
1:A:1108:G:H4'	1:A:1191:A:O4'	2.15	0.46
1:A:1129:C:OP1	1:A:1130:A:H5'	2.14	0.46
1:A:1152:A:H5''	10:J:13:HIS:CG	2.48	0.46
1:A:1389:C:O2'	1:A:1390:U:H5'	2.15	0.46
3:C:29:TYR:C	3:C:29:TYR:CD2	2.93	0.46
4:D:61:LYS:HD2	4:D:61:LYS:C	2.41	0.46
4:D:111:ALA:HB2	4:D:120:LEU:CD1	2.39	0.46
5:E:82:VAL:CG2	5:E:138:ALA:HA	2.45	0.46
6:F:26:ILE:O	6:F:30:LEU:HG	2.14	0.46
10:J:15:THR:HG22	10:J:94:VAL:HG21	1.95	0.46
15:O:76:GLU:C	15:O:78:TYR:H	2.22	0.46
16:P:43:LYS:HA	16:P:48:TRP:HB3	1.97	0.46
16:P:55:ARG:O	16:P:56:ALA:C	2.58	0.46
16:P:57:ARG:HH12	16:P:79:VAL:C	2.22	0.46
17:Q:17:LYS:HA	17:Q:46:ASP:O	2.15	0.46
1:A:162:A:C5	1:A:163:C:H1'	2.50	0.46
1:A:782:A:H2'	1:A:783:C:O4'	2.16	0.46
1:A:1229:A:C2	1:A:1230:C:C4	3.03	0.46
3:C:113:ALA:HA	3:C:202:ILE:HD11	1.98	0.46
13:M:87:TYR:N	19:S:73:GLU:O	2.44	0.46
19:S:20:LEU:HA	19:S:23:ASN:ND2	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:254:G:OP1	17:Q:68:ARG:HB3	2.16	0.46
1:A:359:U:H2'	1:A:360:A:H8	1.79	0.46
1:A:537:G:OP1	12:L:113:ARG:NH2	2.49	0.46
1:A:924:C:H5'	1:A:1399:C:OP2	2.15	0.46
1:A:1061:G:C6	1:A:1062:U:C4	3.04	0.46
4:D:9:CYS:O	4:D:12:CYS:HB2	2.16	0.46
7:G:20:ASP:OD1	7:G:22:LEU:HB3	2.15	0.46
8:H:60:ARG:HH11	8:H:60:ARG:CG	2.22	0.46
8:H:65:TYR:HA	8:H:79:VAL:HG23	1.97	0.46
9:I:32:ASP:O	9:I:33:PHE:C	2.58	0.46
9:I:97:LYS:CG	9:I:102:LEU:HD21	2.46	0.46
9:I:99:LEU:HD22	9:I:99:LEU:N	2.31	0.46
16:P:54:GLU:CD	16:P:54:GLU:C	2.83	0.46
17:Q:67:LYS:HA	17:Q:70:ARG:NH1	2.21	0.46
17:Q:86:GLU:O	17:Q:90:ILE:HG13	2.14	0.46
20:T:59:ALA:O	20:T:63:ILE:HG13	2.15	0.46
1:A:179:A:H2'	1:A:180:U:C6	2.50	0.46
1:A:1164:G:C6	1:A:1165:C:N4	2.83	0.46
1:A:1226:C:N4	13:M:104:ARG:HG3	2.31	0.46
2:B:162:ILE:HG23	2:B:164:VAL:HG23	1.97	0.46
2:B:165:VAL:HG23	2:B:166:ASP:N	2.29	0.46
4:D:152:SER:C	4:D:154:ASN:N	2.66	0.46
9:I:28:VAL:C	9:I:30:GLY:N	2.71	0.46
10:J:3:LYS:CB	10:J:75:ILE:HA	2.45	0.46
10:J:7:LYS:NZ	10:J:40:LEU:HD11	2.30	0.46
12:L:111:LYS:O	12:L:112:ASP:HB2	2.15	0.46
18:R:47:THR:HG22	18:R:48:GLY:H	1.79	0.46
1:A:579:G:H2'	1:A:580:U:H6	1.79	0.46
1:A:736:C:H2'	1:A:737:A:H8	1.79	0.46
1:A:960:U:H1'	1:A:1223:C:H5'	1.97	0.46
1:A:1054:C:H42	23:Y:34:CM0:C1'	2.28	0.46
1:A:1074:G:O3'	2:B:103:THR:CG2	2.64	0.46
2:B:204:ASN:C	2:B:204:ASN:ND2	2.62	0.46
3:C:57:ILE:HA	3:C:65:ALA:O	2.14	0.46
9:I:17:VAL:CG2	9:I:80:GLY:HA3	2.45	0.46
1:A:445:G:H2'	1:A:446:G:H8	1.80	0.46
1:A:769:G:H4'	1:A:1513:A:H4'	1.98	0.46
1:A:895:G:H2'	1:A:896:C:H6	1.77	0.46
1:A:1057:G:H2'	1:A:1058:G:O4'	2.15	0.46
1:A:1262:C:H2'	1:A:1263:C:C6	2.51	0.46
1:A:1420:C:O5'	1:A:1420:C:H6	1.99	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:9:GLU:HG2	2:B:217:ARG:HH22	1.81	0.46
2:B:21:ARG:HH11	2:B:21:ARG:H	1.63	0.46
11:K:15:ALA:CA	11:K:77:MET:HA	2.34	0.46
12:L:75:HIS:CD2	12:L:77:LEU:N	2.84	0.46
20:T:100:ILE:O	20:T:102:GLY:N	2.48	0.46
1:A:135:C:O2	16:P:1:MET:N	2.42	0.46
1:A:627:G:O2'	1:A:628:G:H5'	2.15	0.46
1:A:783:C:O2'	1:A:784:C:H5'	2.15	0.46
1:A:840:C:H4'	1:A:848:C:C2	2.50	0.46
1:A:945:G:C2	1:A:946:A:C8	3.03	0.46
2:B:149:LEU:O	2:B:150:SER:C	2.59	0.46
3:C:5:ILE:O	3:C:5:ILE:HD12	2.15	0.46
4:D:68:TYR:HB3	4:D:70:ILE:HD13	1.95	0.46
8:H:86:ILE:O	8:H:88:LYS:HG3	2.16	0.46
12:L:75:HIS:HD2	12:L:76:ASN:N	2.13	0.46
13:M:66:LEU:O	13:M:67:GLU:O	2.34	0.46
14:N:53:LEU:HB3	14:N:56:VAL:CG2	2.45	0.46
18:R:30:ASP:C	18:R:32:ARG:H	2.23	0.46
1:A:119:A:H4'	1:A:120:A:O5'	2.16	0.46
1:A:382:A:C2	1:A:383:A:C4	3.04	0.46
1:A:509:A:H5'	4:D:54:TYR:CD2	2.48	0.46
1:A:1018:C:O5'	1:A:1018:C:H6	1.98	0.46
1:A:1039:C:H2'	1:A:1040:U:C6	2.50	0.46
2:B:12:GLU:CD	2:B:213:LEU:HD11	2.40	0.46
4:D:122:ARG:HA	4:D:122:ARG:HE	1.81	0.46
5:E:76:ILE:HG13	5:E:142:LEU:HD13	1.97	0.46
7:G:148:ASN:C	7:G:150:ALA:N	2.72	0.46
8:H:82:HIS:CD2	8:H:138:TRP:NE1	2.72	0.46
10:J:79:ARG:HG2	10:J:79:ARG:NH1	2.28	0.46
11:K:110:ASP:HB2	18:R:88:LYS:HD3	1.97	0.46
12:L:127:GLU:O	12:L:128:ALA:HB2	2.15	0.46
13:M:35:GLU:C	13:M:37:THR:H	2.24	0.46
16:P:67:THR:CG2	16:P:68:ASP:N	2.78	0.46
19:S:28:LYS:O	19:S:29:ARG:C	2.58	0.46
1:A:283:C:C2	1:A:284:G:C8	3.04	0.46
1:A:957:U:H3	1:A:960:U:H5''	1.79	0.46
1:A:980:C:H2'	1:A:981:U:O4'	2.16	0.46
1:A:1003:G:N2	1:A:1038:C:C2	2.84	0.46
1:A:1019:C:O2'	1:A:1020:U:H5'	2.16	0.46
1:A:1191:A:OP1	3:C:4:LYS:HE2	2.16	0.46
2:B:68:ILE:HG12	2:B:161:ALA:HB3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:132:LYS:C	2:B:134:GLU:N	2.73	0.46
3:C:113:ALA:HB3	3:C:114:PRO:HD3	1.98	0.46
9:I:85:LEU:HD23	9:I:96:LEU:HD21	1.97	0.46
9:I:97:LYS:HG2	9:I:102:LEU:HD21	1.96	0.46
10:J:19:SER:HA	10:J:22:LYS:HZ2	1.81	0.46
12:L:56:ALA:HB2	12:L:70:ILE:HD11	1.98	0.46
13:M:22:ILE:HD12	13:M:25:ILE:HD12	1.96	0.46
1:A:260:G:H2'	1:A:261:U:C6	2.50	0.46
1:A:276:G:O2'	1:A:277:C:H5'	2.15	0.46
1:A:304:U:H2'	1:A:305:G:C8	2.51	0.46
1:A:437:U:C5'	4:D:155:LEU:HD22	2.43	0.46
1:A:824:C:H2'	1:A:825:G:C8	2.50	0.46
1:A:1080:A:H5''	5:E:16:THR:HG21	1.97	0.46
1:A:1207:G:C6	1:A:1208:C:C4	3.04	0.46
1:A:1314:C:O2'	1:A:1315:U:H5'	2.16	0.46
1:A:1390:U:H2'	1:A:1391:U:C6	2.51	0.46
2:B:31:TYR:HE1	2:B:200:ILE:HD13	1.80	0.46
2:B:53:ARG:NH1	2:B:53:ARG:HG2	2.30	0.46
4:D:76:ARG:HG2	4:D:76:ARG:HH11	1.80	0.46
7:G:97:GLN:O	7:G:98:SER:C	2.58	0.46
8:H:72:PRO:O	8:H:73:ASP:C	2.58	0.46
10:J:4:ILE:HG12	10:J:74:ILE:HB	1.97	0.46
15:O:29:VAL:HG21	15:O:67:LEU:HD23	1.97	0.46
19:S:33:THR:CG2	19:S:34:TRP:N	2.78	0.46
1:A:1056:U:C5'	3:C:163:ALA:HB2	2.46	0.45
1:A:1169:A:C6	1:A:1170:A:C6	3.05	0.45
1:A:1251:A:H5'	9:I:12:GLU:HG2	1.98	0.45
3:C:83:ARG:O	3:C:85:ARG:N	2.50	0.45
6:F:69:GLU:O	6:F:71:ARG:N	2.49	0.45
7:G:23:VAL:O	7:G:27:ILE:HG12	2.16	0.45
9:I:33:PHE:CZ	9:I:47:LEU:HD21	2.50	0.45
10:J:8:LEU:HB3	10:J:16:LEU:HD22	1.97	0.45
15:O:81:LEU:HD23	15:O:81:LEU:C	2.41	0.45
17:Q:51:TYR:C	17:Q:52:LYS:HD2	2.41	0.45
17:Q:95:TYR:C	17:Q:97:SER:N	2.70	0.45
1:A:129(A):G:O2'	1:A:130:A:OP2	2.35	0.45
1:A:129(A):G:O2'	1:A:189(F):U:C6	2.69	0.45
1:A:902:G:O2'	1:A:903:G:H5'	2.16	0.45
1:A:1054:C:H5	1:A:1196:U:C5	2.35	0.45
1:A:1179:A:O3'	9:I:103:THR:HG23	2.15	0.45
1:A:1362:C:H2'	1:A:1363:C:H5''	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:16:HIS:O	2:B:204:ASN:HB2	2.15	0.45
3:C:58:GLU:HB3	10:J:92:THR:CG2	2.46	0.45
4:D:89:THR:CG2	4:D:89:THR:O	2.60	0.45
5:E:13:ILE:C	5:E:13:ILE:HD12	2.41	0.45
5:E:79:GLU:HG3	5:E:93:PRO:CD	2.42	0.45
6:F:38:GLU:HB2	6:F:64:GLN:O	2.16	0.45
9:I:31:GLN:HG2	9:I:35:GLU:CG	2.46	0.45
12:L:60:LEU:CD2	12:L:66:VAL:HG22	2.45	0.45
13:M:85:GLY:O	13:M:86:CYS:C	2.59	0.45
18:R:37:VAL:HG22	18:R:78:LEU:HB3	1.98	0.45
19:S:52:TYR:HB2	19:S:57:HIS:CE1	2.50	0.45
1:A:189(G):G:H4'	1:A:189(H):G:OP2	2.16	0.45
1:A:393:A:O2'	1:A:394:G:H5'	2.16	0.45
1:A:1050:G:C2	1:A:1051:C:C5	3.04	0.45
1:A:1069:C:O2'	1:A:1192:C:H1'	2.17	0.45
1:A:1129:C:OP1	9:I:62:TYR:HE2	2.00	0.45
1:A:1226:C:H5'	19:S:80:TYR:CE1	2.51	0.45
1:A:1436:U:O2'	1:A:1437:C:H5'	2.16	0.45
6:F:28:ARG:HG3	6:F:28:ARG:NH1	2.30	0.45
6:F:44:GLY:O	6:F:60:PHE:N	2.49	0.45
6:F:53:ALA:O	6:F:54:LYS:CB	2.64	0.45
9:I:126:SER:O	9:I:128:ARG:N	2.49	0.45
13:M:3:ARG:HD3	13:M:9:ILE:CG2	2.45	0.45
14:N:33:VAL:HA	14:N:40:CYS:HA	1.99	0.45
15:O:14:GLU:HG3	15:O:15:PHE:CD1	2.51	0.45
17:Q:6:LEU:HB3	17:Q:23:VAL:HG11	1.98	0.45
1:A:16:A:N1	1:A:919:A:H2	2.13	0.45
1:A:577:G:H1'	1:A:816:A:N3	2.31	0.45
1:A:628:G:H2'	1:A:629:G:C8	2.52	0.45
1:A:1275:A:O2'	1:A:1276:G:H5'	2.16	0.45
2:B:10:LEU:O	2:B:12:GLU:N	2.49	0.45
5:E:33:VAL:HG11	5:E:109:ILE:HA	1.98	0.45
6:F:36:ARG:O	6:F:37:VAL:C	2.59	0.45
6:F:69:GLU:HA	6:F:72:VAL:HG23	1.98	0.45
12:L:86:ARG:HB3	12:L:101:VAL:CG2	2.46	0.45
13:M:81:LEU:HD22	13:M:86:CYS:SG	2.56	0.45
20:T:67:ALA:HB2	20:T:77:ALA:HB2	1.98	0.45
20:T:84:LEU:C	20:T:84:LEU:HD23	2.41	0.45
1:A:194:C:OP1	20:T:61:SER:OG	2.34	0.45
3:C:39:ILE:C	3:C:41:GLY:N	2.74	0.45
5:E:128:PRO:O	5:E:129:ILE:C	2.58	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:129:ILE:H	5:E:129:ILE:HD12	1.82	0.45
10:J:55:LYS:HE3	10:J:56:HIS:CE1	2.51	0.45
15:O:14:GLU:OE1	15:O:84:LYS:HE2	2.16	0.45
1:A:267:C:P	17:Q:67:LYS:HB2	2.57	0.45
1:A:399:G:H2'	1:A:400:C:C6	2.52	0.45
1:A:505:G:OP2	1:A:535:A:H5'	2.16	0.45
1:A:528:C:H41	12:L:49:ASN:CG	2.25	0.45
1:A:858:G:O6	1:A:869:G:C8	2.70	0.45
1:A:960:U:O2'	1:A:1223:C:H4'	2.16	0.45
1:A:978:A:H1'	1:A:1322:C:O2	2.17	0.45
1:A:992:U:H3	1:A:1044:A:N6	2.14	0.45
1:A:1019:C:H2'	1:A:1020:U:O4'	2.17	0.45
1:A:1402:C:O2	1:A:1500:A:N1	2.49	0.45
2:B:53:ARG:HG2	2:B:53:ARG:HH11	1.82	0.45
4:D:24:GLU:C	4:D:26:CYS:N	2.75	0.45
7:G:73:MET:HE2	7:G:90:GLU:CA	2.46	0.45
7:G:100:ALA:O	7:G:104:LEU:HG	2.17	0.45
7:G:114:ARG:H	7:G:114:ARG:HG2	1.49	0.45
11:K:116:HIS:O	11:K:117:ASN:HB2	2.15	0.45
12:L:109:GLY:O	12:L:110:VAL:C	2.60	0.45
17:Q:4:LYS:H	17:Q:61:GLU:HG3	1.82	0.45
17:Q:59:ILE:CG2	17:Q:71:PHE:HB3	2.46	0.45
17:Q:68:ARG:HH11	17:Q:68:ARG:CG	2.27	0.45
1:A:597:G:C4	1:A:644:G:C2	3.04	0.45
1:A:827:U:O2'	8:H:19:VAL:HG11	2.17	0.45
1:A:1085:U:H3'	1:A:1086:U:H5	1.82	0.45
1:A:1126:U:OP1	1:A:1126:U:H6	2.00	0.45
1:A:1217:C:H2'	1:A:1218:C:O4'	2.16	0.45
3:C:35:GLU:CD	3:C:59:ARG:HH22	2.25	0.45
3:C:112:SER:CB	3:C:115:LEU:HD12	2.40	0.45
4:D:88:VAL:O	4:D:90:GLY:N	2.44	0.45
4:D:150:GLU:C	4:D:152:SER:H	2.25	0.45
7:G:16:LEU:N	7:G:16:LEU:CD2	2.80	0.45
7:G:140:ASP:O	7:G:143:ARG:HB3	2.17	0.45
8:H:6:ILE:HB	8:H:85:ARG:NH1	2.32	0.45
8:H:114:THR:C	8:H:116:LYS:N	2.75	0.45
9:I:11:LYS:O	9:I:11:LYS:HG2	2.16	0.45
9:I:118:LYS:CB	9:I:118:LYS:HZ2	2.28	0.45
11:K:77:MET:HG3	11:K:103:LEU:HD21	1.98	0.45
17:Q:96:GLU:O	17:Q:102:GLY:HA2	2.16	0.45
19:S:4:SER:OG	19:S:5:LEU:N	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:137:C:O2'	1:A:138:G:H5'	2.16	0.45
1:A:738:C:OP1	6:F:92:LYS:HD3	2.17	0.45
1:A:1054:C:O2'	1:A:1055:A:H5''	2.17	0.45
1:A:1181:G:O2'	1:A:1182:G:O5'	2.34	0.45
1:A:1325:C:P	21:U:6:ARG:NH2	2.90	0.45
1:A:1347:G:C2'	1:A:1348:U:OP2	2.65	0.45
2:B:124:SER:HB2	2:B:125:PRO:HD2	1.99	0.45
5:E:12:LEU:HD22	5:E:12:LEU:C	2.42	0.45
6:F:97:PHE:HB2	18:R:32:ARG:CZ	2.47	0.45
11:K:18:ARG:O	11:K:32:ILE:HA	2.16	0.45
12:L:82:VAL:HG23	12:L:106:ASP:OD1	2.17	0.45
16:P:43:LYS:HA	16:P:48:TRP:CB	2.47	0.45
1:A:192:U:H4'	20:T:102:GLY:C	2.39	0.45
1:A:421:U:H4'	1:A:422:C:OP2	2.17	0.45
1:A:505:G:H4'	1:A:534:U:C4	2.52	0.45
1:A:636:U:H2'	1:A:637:G:C8	2.52	0.45
1:A:993:G:H4'	1:A:994:A:OP2	2.17	0.45
1:A:1127:G:N2	1:A:1144:G:C2	2.85	0.45
1:A:1350:A:H2'	1:A:1351:U:H6	1.81	0.45
2:B:207:ALA:O	2:B:208:ILE:C	2.60	0.45
3:C:11:ARG:C	3:C:13:GLY:N	2.75	0.45
3:C:189:ALA:HB3	3:C:196:LEU:HB2	1.99	0.45
4:D:128:VAL:HG12	4:D:129:ASN:ND2	2.32	0.45
5:E:11:ILE:HB	5:E:31:LEU:HD12	1.97	0.45
7:G:126:ASP:CG	7:G:131:LYS:HE3	2.41	0.45
13:M:106:ASN:O	13:M:107:ALA:HB3	2.17	0.45
19:S:36:ARG:HH11	19:S:72:GLY:CA	2.30	0.45
19:S:40:ILE:HG13	19:S:69:HIS:O	2.17	0.45
1:A:586:C:C2'	1:A:587:G:H5'	2.47	0.45
1:A:629:G:C3'	1:A:630:G:H5''	2.47	0.45
1:A:767:A:H2'	1:A:768:A:C8	2.51	0.45
1:A:1029:C:O2'	1:A:1030:C:H5'	2.16	0.45
1:A:1130:A:C2	1:A:1146:A:N3	2.85	0.45
1:A:1498:U:H4'	1:A:1519:A:H2	1.81	0.45
6:F:42:GLU:HG3	6:F:61:LEU:HD23	1.98	0.45
6:F:52:ILE:O	6:F:53:ALA:HB3	2.16	0.45
7:G:113:GLU:CG	7:G:119:ARG:HG2	2.44	0.45
9:I:92:TYR:O	9:I:96:LEU:HB2	2.17	0.45
10:J:39:PRO:HB3	10:J:70:ARG:NH1	2.32	0.45
11:K:12:ARG:O	11:K:12:ARG:HD2	2.17	0.45
11:K:80:VAL:HG13	11:K:103:LEU:HD22	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:83:VAL:HG21	12:L:100:ILE:CG2	2.46	0.45
14:N:29:ARG:HG2	14:N:40:CYS:HB2	1.99	0.45
17:Q:33:GLY:O	17:Q:34:LYS:C	2.60	0.45
1:A:417:C:H2'	1:A:418:C:C6	2.52	0.44
1:A:443:C:H2'	1:A:444:C:C6	2.52	0.44
1:A:498:U:O2'	1:A:499:A:H5'	2.17	0.44
1:A:539:A:H2'	1:A:540:G:H8	1.79	0.44
1:A:647:C:O2'	1:A:648:A:H5'	2.16	0.44
1:A:1074:G:O3'	2:B:103:THR:HG22	2.17	0.44
1:A:1181:G:H2'	1:A:1182:G:C4	2.51	0.44
1:A:1533:C:H3'	1:A:1533:C:H6	1.82	0.44
2:B:10:LEU:HG	2:B:48:MET:CE	2.47	0.44
2:B:114:ARG:HA	2:B:117:GLU:HG3	1.98	0.44
2:B:207:ALA:O	2:B:209:ARG:N	2.49	0.44
4:D:30:LYS:HB3	4:D:35:ARG:NH2	2.31	0.44
8:H:117:GLY:O	8:H:119:LEU:CD2	2.65	0.44
11:K:43:SER:HB3	11:K:64:ALA:O	2.17	0.44
11:K:89:ALA:O	11:K:90:GLY:C	2.59	0.44
12:L:73:GLU:O	12:L:74:GLY:O	2.35	0.44
13:M:4:ILE:CD1	13:M:56:LEU:HD13	2.47	0.44
13:M:84:ILE:O	13:M:84:ILE:HG13	2.16	0.44
1:A:445:G:H2'	1:A:446:G:C8	2.52	0.44
1:A:620:C:C6	4:D:135:LEU:HD13	2.52	0.44
1:A:629:G:H2'	1:A:630:G:O4'	2.17	0.44
1:A:1121:U:O2'	1:A:1122:U:H5'	2.16	0.44
1:A:1202:G:O2'	1:A:1203:C:H5'	2.17	0.44
1:A:1413:A:O2'	1:A:1414:U:H5'	2.17	0.44
1:A:1476:G:H2'	1:A:1477:C:C6	2.52	0.44
2:B:59:GLU:O	2:B:62:ALA:HB3	2.18	0.44
2:B:169:LYS:HD3	2:B:169:LYS:C	2.41	0.44
3:C:68:VAL:HG12	3:C:70:VAL:HG23	1.98	0.44
17:Q:24:GLU:OE2	17:Q:37:LYS:HD3	2.18	0.44
1:A:157:G:H2'	1:A:158:G:H8	1.82	0.44
1:A:642:A:C5	8:H:115:SER:HA	2.53	0.44
1:A:722:A:HO2'	1:A:723:U:H3	1.65	0.44
1:A:959:A:H2'	1:A:960:U:O4'	2.16	0.44
1:A:1014:A:H2'	1:A:1015:A:C8	2.53	0.44
1:A:1054:C:O2	1:A:1054:C:H2'	2.16	0.44
1:A:1057:G:C2'	1:A:1058:G:H5'	2.47	0.44
1:A:1163:C:H2'	1:A:1164:G:H8	1.82	0.44
2:B:12:GLU:HB3	2:B:16:HIS:CE1	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:175:ARG:O	2:B:178:ARG:HB2	2.17	0.44
3:C:143:GLU:C	3:C:145:GLY:H	2.25	0.44
4:D:24:GLU:CG	4:D:25:ARG:N	2.80	0.44
4:D:76:ARG:HG2	4:D:76:ARG:NH1	2.33	0.44
4:D:196:LEU:HD23	4:D:197:PRO:HD2	1.99	0.44
12:L:83:VAL:CG2	12:L:100:ILE:HG23	2.48	0.44
19:S:18:LYS:O	19:S:22:LEU:HG	2.17	0.44
1:A:98:G:H2'	1:A:99:U:O4'	2.17	0.44
1:A:379:C:O2'	1:A:380:G:H5'	2.17	0.44
1:A:676:A:O2'	1:A:677:U:H5'	2.17	0.44
1:A:730:G:C5	1:A:731:G:H1'	2.52	0.44
1:A:1206:G:C1'	3:C:193:TYR:O	2.65	0.44
1:A:1459:C:O2'	1:A:1460:A:H5'	2.18	0.44
3:C:113:ALA:N	3:C:114:PRO:CD	2.81	0.44
4:D:24:GLU:O	4:D:25:ARG:HB3	2.16	0.44
6:F:67:MET:HB2	6:F:68:PRO:CD	2.47	0.44
10:J:18:ALA:C	10:J:20:ALA:N	2.75	0.44
13:M:67:GLU:O	13:M:68:GLY:C	2.61	0.44
14:N:6:LEU:C	14:N:8:GLU:H	2.24	0.44
15:O:82:ILE:O	15:O:86:GLY:N	2.43	0.44
1:A:482:A:H2'	1:A:483:C:O4'	2.18	0.44
1:A:665:A:N3	1:A:732:C:H2'	2.32	0.44
1:A:860:A:H2'	1:A:861:G:O4'	2.17	0.44
1:A:959:A:C2	1:A:1222:G:O4'	2.71	0.44
1:A:1116:C:O2'	1:A:1117:G:H5''	2.16	0.44
2:B:102:LEU:N	2:B:102:LEU:HD12	2.33	0.44
3:C:42:LEU:O	3:C:44:GLU:N	2.51	0.44
10:J:3:LYS:HA	10:J:75:ILE:HA	1.98	0.44
13:M:40:ASN:HD22	13:M:40:ASN:C	2.25	0.44
1:A:157:G:O2'	1:A:158:G:H5'	2.18	0.44
1:A:986:A:H2'	1:A:987:G:O4'	2.17	0.44
1:A:1069:C:O3'	5:E:25:ARG:NH1	2.51	0.44
1:A:1125:U:H3'	1:A:1126:U:C5	2.52	0.44
3:C:64:VAL:H	3:C:99:VAL:CG1	2.30	0.44
4:D:30:LYS:CB	4:D:35:ARG:HH21	2.29	0.44
4:D:61:LYS:HA	4:D:203:VAL:HG22	2.00	0.44
5:E:6:PHE:HB3	5:E:34:VAL:HG22	2.00	0.44
5:E:36:ASP:O	5:E:38:GLN:HG3	2.18	0.44
5:E:76:ILE:HG23	5:E:142:LEU:HD22	2.00	0.44
7:G:15:ASP:OD2	7:G:16:LEU:N	2.50	0.44
7:G:41:ARG:O	7:G:42:ILE:C	2.60	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:45:ASP:O	7:G:49:ILE:HG13	2.18	0.44
9:I:4:TYR:CD2	9:I:88:TYR:HB2	2.53	0.44
9:I:23:ASN:HB3	9:I:60:ASP:OD1	2.18	0.44
12:L:83:VAL:HG21	12:L:100:ILE:HG21	2.00	0.44
13:M:23:TYR:HB3	13:M:67:GLU:H	1.83	0.44
16:P:2:VAL:O	16:P:64:ALA:HA	2.17	0.44
19:S:41:VAL:HB	19:S:42:PRO:HD2	2.00	0.44
20:T:53:LEU:HD23	20:T:56:MET:HE1	2.00	0.44
1:A:189:G:C6	1:A:189(A):C:C4	3.06	0.44
1:A:1060:C:C5	3:C:2:GLY:HA3	2.53	0.44
1:A:1300:G:O2'	1:A:1301:U:P	2.76	0.44
1:A:1368:G:O2'	1:A:1369:C:H5'	2.18	0.44
2:B:204:ASN:ND2	2:B:206:ASP:O	2.51	0.44
3:C:157:ILE:CD1	3:C:166:GLU:HG3	2.47	0.44
4:D:88:VAL:C	4:D:90:GLY:N	2.76	0.44
4:D:146:ILE:N	4:D:146:ILE:CD1	2.78	0.44
5:E:51:VAL:O	5:E:54:ALA:HB3	2.17	0.44
9:I:17:VAL:HG11	9:I:81:ILE:N	2.33	0.44
9:I:79:LEU:O	9:I:80:GLY:C	2.60	0.44
10:J:4:ILE:O	10:J:73:ASP:HA	2.18	0.44
20:T:13:LEU:C	20:T:13:LEU:CD1	2.91	0.44
1:A:545:C:O2'	1:A:546:G:H5'	2.17	0.44
1:A:1238:A:N7	1:A:1303:C:H1'	2.32	0.44
3:C:84:ILE:O	3:C:84:ILE:HG12	2.18	0.44
4:D:8:VAL:O	4:D:21:LEU:HD12	2.18	0.44
4:D:15:GLU:HA	4:D:15:GLU:OE2	2.17	0.44
8:H:31:PHE:O	8:H:35:ILE:HG13	2.18	0.44
9:I:43:ALA:O	9:I:44:VAL:C	2.60	0.44
11:K:105:VAL:HG11	11:K:108:ILE:HD11	2.00	0.44
14:N:24:CYS:N	14:N:29:ARG:O	2.42	0.44
16:P:11:SER:O	16:P:12:LYS:C	2.60	0.44
20:T:56:MET:HG3	20:T:84:LEU:CD2	2.47	0.44
1:A:200:G:H2'	1:A:201:C:O4'	2.18	0.44
1:A:384:G:O2'	1:A:385:C:H5'	2.18	0.44
1:A:617:G:H4'	16:P:44:THR:O	2.18	0.44
1:A:983:A:H2	1:A:984:C:C6	2.35	0.44
1:A:1304:G:C6	1:A:1305:G:N1	2.85	0.44
2:B:178:ARG:NH2	8:H:68:ARG:HH22	2.03	0.44
3:C:73:PRO:HA	3:C:76:VAL:HG23	1.99	0.44
4:D:100:ARG:HH21	4:D:102:ASP:CG	2.25	0.44
5:E:43:LEU:HB2	5:E:136:MET:HE2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:16:LEU:H	7:G:16:LEU:CD2	2.31	0.44
9:I:23:ASN:C	9:I:23:ASN:ND2	2.76	0.44
13:M:87:TYR:O	13:M:90:LEU:HB2	2.17	0.44
19:S:4:SER:O	19:S:5:LEU:HG	2.18	0.44
20:T:53:LEU:O	20:T:57:ARG:HD2	2.18	0.44
23:Y:34:CM0:O2'	23:Y:35:A:H5'	2.17	0.44
1:A:100:C:H2'	1:A:101:A:C8	2.53	0.43
1:A:1371:G:P	9:I:11:LYS:HD3	2.58	0.43
2:B:97:TRP:CZ3	2:B:99:GLY:HA2	2.50	0.43
3:C:11:ARG:NH1	3:C:177:THR:O	2.51	0.43
4:D:58:LEU:CD2	4:D:62:GLN:HG2	2.48	0.43
6:F:98:LEU:O	6:F:99:ALA:HB2	2.18	0.43
8:H:104:ARG:CZ	8:H:138:TRP:CH2	3.00	0.43
10:J:64:GLU:HG2	14:N:59:ALA:HB2	2.00	0.43
13:M:20:THR:C	13:M:22:ILE:N	2.76	0.43
13:M:40:ASN:C	13:M:40:ASN:ND2	2.76	0.43
15:O:26:GLU:HG3	15:O:81:LEU:HD12	2.00	0.43
17:Q:90:ILE:O	17:Q:91:ARG:C	2.61	0.43
1:A:142:G:N3	1:A:196:A:H2	2.15	0.43
1:A:148:G:H2'	1:A:149:A:C8	2.54	0.43
1:A:896:C:H5''	17:Q:100:LYS:HD3	1.99	0.43
1:A:1010:G:O2'	1:A:1011:G:H5'	2.18	0.43
1:A:1106:G:OP1	3:C:172:ARG:HD3	2.19	0.43
1:A:1191:A:H5''	3:C:4:LYS:NZ	2.32	0.43
1:A:1272:G:O2'	1:A:1273:G:H5'	2.18	0.43
1:A:1355:G:O2'	1:A:1356:G:H5'	2.18	0.43
2:B:30:ARG:HD2	2:B:31:TYR:CE2	2.54	0.43
2:B:42:ILE:H	2:B:42:ILE:CD1	2.29	0.43
2:B:69:LEU:HD23	2:B:70:PHE:N	2.33	0.43
3:C:107:GLN:H	3:C:107:GLN:CD	2.26	0.43
3:C:131:ARG:O	3:C:135:LYS:HB2	2.17	0.43
3:C:157:ILE:CG2	3:C:164:ARG:NH2	2.70	0.43
4:D:128:VAL:HG12	4:D:129:ASN:HD22	1.82	0.43
5:E:107:ARG:C	5:E:109:ILE:N	2.75	0.43
7:G:13:GLN:HA	7:G:13:GLN:HE21	1.83	0.43
7:G:156:TRP:CD1	7:G:156:TRP:C	2.96	0.43
8:H:31:PHE:CZ	8:H:134:ILE:HD13	2.53	0.43
9:I:100:GLY:C	9:I:102:LEU:H	2.25	0.43
13:M:85:GLY:O	13:M:86:CYS:O	2.36	0.43
14:N:5:ALA:O	14:N:8:GLU:HG2	2.18	0.43
16:P:28:ARG:HH11	16:P:29:ASP:CG	2.25	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:63:ARG:HG2	17:Q:64:PRO:HD2	2.00	0.43
20:T:76:ALA:HA	20:T:79:ARG:HH12	1.81	0.43
1:A:344:A:C5'	1:A:345:C:H5	2.30	0.43
1:A:408:A:O2'	1:A:409:G:H5'	2.18	0.43
1:A:652:U:O4	1:A:752:G:O2'	2.32	0.43
1:A:1125:U:N3	10:J:5:ARG:NH2	2.60	0.43
1:A:1447:A:O2'	1:A:1452:C:OP1	2.32	0.43
2:B:45:GLN:O	2:B:48:MET:HB2	2.18	0.43
2:B:217:ARG:HA	2:B:220:ASP:OD2	2.18	0.43
3:C:116:VAL:O	3:C:120:VAL:HG23	2.18	0.43
3:C:157:ILE:HD12	3:C:166:GLU:HG3	2.00	0.43
5:E:102:ALA:C	5:E:103:GLY:O	2.60	0.43
12:L:47:LYS:CB	12:L:48:PRO:HD2	2.47	0.43
13:M:20:THR:O	13:M:22:ILE:N	2.50	0.43
15:O:3:ILE:HG13	15:O:38:ARG:HD2	2.00	0.43
17:Q:26:GLN:O	17:Q:27:PHE:HB3	2.18	0.43
1:A:954:G:H4'	13:M:120:LYS:CB	2.40	0.43
1:A:1102:A:H2'	1:A:1103:C:H6	1.84	0.43
1:A:1318:A:OP1	19:S:10:PHE:CE1	2.72	0.43
1:A:1347:G:HO2'	1:A:1348:U:P	2.40	0.43
1:A:1520:G:O2'	1:A:1521:G:H5'	2.17	0.43
3:C:186:PHE:HA	3:C:198:VAL:O	2.19	0.43
4:D:150:GLU:HA	4:D:153:ARG:HG3	2.00	0.43
11:K:101:SER:C	11:K:103:LEU:H	2.26	0.43
13:M:81:LEU:HA	13:M:81:LEU:HD23	1.81	0.43
13:M:84:ILE:O	13:M:85:GLY:C	2.60	0.43
17:Q:94:ASN:O	17:Q:97:SER:OG	2.34	0.43
1:A:188:C:O2'	1:A:189:G:H5'	2.19	0.43
1:A:248:C:O2'	1:A:249:U:H5'	2.19	0.43
1:A:446:G:H1	1:A:488:C:H42	1.67	0.43
1:A:768:A:O2'	1:A:769:G:H5'	2.18	0.43
1:A:862:C:O2'	1:A:863:U:H5'	2.18	0.43
1:A:1060:C:OP1	14:N:45:ARG:NH2	2.51	0.43
1:A:1070:U:O2'	1:A:1071:C:H5'	2.18	0.43
1:A:1135:U:H4'	1:A:1136:U:C5	2.51	0.43
1:A:1240:U:O3'	7:G:38:LEU:HD21	2.18	0.43
7:G:79:ARG:HH22	7:G:82:GLY:N	2.15	0.43
17:Q:81:ARG:HB3	17:Q:83:ASP:OD1	2.19	0.43
19:S:66:MET:O	19:S:67:VAL:C	2.61	0.43
1:A:491:G:O2'	1:A:492:G:H5'	2.18	0.43
1:A:737:A:H4'	6:F:72:VAL:HG11	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:830:G:O2'	1:A:831:U:H5'	2.19	0.43
1:A:839:U:O2	1:A:839:U:C2'	2.65	0.43
1:A:1004:A:H8	1:A:1036:G:H22	1.66	0.43
1:A:1234:C:O2'	1:A:1235:U:H5'	2.18	0.43
2:B:181:PHE:CD2	8:H:70:GLN:HB3	2.53	0.43
2:B:239:VAL:H	2:B:240:GLN:NE2	2.17	0.43
4:D:12:CYS:SG	4:D:19:LEU:O	2.77	0.43
4:D:68:TYR:HB2	4:D:70:ILE:HD13	2.01	0.43
6:F:14:LEU:CA	6:F:18:GLN:HE21	2.30	0.43
17:Q:52:LYS:N	17:Q:55:ASP:OD2	2.43	0.43
21:U:6:ARG:HH21	21:U:15:ARG:HE	1.65	0.43
1:A:55:A:C2	1:A:56:U:H1'	2.53	0.43
1:A:124:G:C6	1:A:125:U:C4	3.06	0.43
1:A:426:G:O2'	1:A:427:U:H5'	2.19	0.43
1:A:551:U:H2'	1:A:552:U:H6	1.78	0.43
1:A:603:U:H2'	1:A:604:G:C8	2.54	0.43
1:A:778:G:O2'	1:A:779:C:H5'	2.18	0.43
1:A:1055:A:C6	1:A:1206:G:C5	3.06	0.43
1:A:1127:G:N2	1:A:1144:G:N2	2.67	0.43
1:A:1305:G:H5'	21:U:4:GLY:HA3	1.99	0.43
1:A:1370:G:O2'	1:A:1371:G:H5'	2.18	0.43
1:A:1527:C:O2'	1:A:1528:U:H5'	2.19	0.43
5:E:102:ALA:HA	5:E:120:THR:OG1	2.19	0.43
7:G:79:ARG:HB3	7:G:84:ASN:OD1	2.18	0.43
13:M:120:LYS:HE3	13:M:122:LYS:HB3	1.99	0.43
20:T:100:ILE:C	20:T:102:GLY:H	2.26	0.43
1:A:1030(D):A:H2'	1:A:1031:G:H5'	2.01	0.43
1:A:1277:C:O2'	1:A:1279:A:H8	2.01	0.43
2:B:120:ALA:C	2:B:122:PHE:H	2.27	0.43
4:D:62:GLN:NE2	4:D:65:ARG:HH12	2.15	0.43
4:D:64:LEU:HD11	4:D:97:LEU:HD11	1.99	0.43
6:F:40:VAL:HG22	6:F:41:GLU:N	2.34	0.43
7:G:8:GLU:O	7:G:10:ARG:N	2.52	0.43
7:G:50:ILE:HG23	7:G:125:MET:HG2	2.01	0.43
17:Q:67:LYS:CA	17:Q:70:ARG:NH1	2.80	0.43
18:R:32:ARG:CA	18:R:69:THR:HG21	2.44	0.43
1:A:101:A:O2'	1:A:102:G:H5'	2.19	0.43
1:A:115:G:H4'	1:A:116:A:O5'	2.18	0.43
1:A:359:U:H2'	1:A:360:A:C8	2.54	0.43
1:A:959:A:H5''	1:A:960:U:OP2	2.19	0.43
1:A:1003:G:H2'	1:A:1004:A:C5'	2.31	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1091:U:O2	1:A:1093:A:C8	2.72	0.43
1:A:1174:G:H2'	1:A:1175:G:H8	1.84	0.43
1:A:1316:G:N2	1:A:1318:A:H3'	2.34	0.43
1:A:1347:G:H2'	1:A:1373:G:N1	2.31	0.43
1:A:1406:U:O2'	1:A:1407:C:H5'	2.19	0.43
1:A:1539:C:H2'	1:A:1540:U:H5'	2.01	0.43
2:B:25:ASN:HD22	2:B:26:PRO:HD2	1.83	0.43
3:C:40:ARG:O	3:C:44:GLU:HG3	2.19	0.43
3:C:42:LEU:C	3:C:44:GLU:N	2.77	0.43
4:D:155:LEU:O	4:D:156:GLU:C	2.61	0.43
6:F:32:ASN:N	6:F:32:ASN:ND2	2.64	0.43
8:H:36:LEU:O	8:H:37:ARG:C	2.61	0.43
12:L:71:PRO:O	12:L:102:ARG:HD2	2.19	0.43
14:N:50:LYS:HB3	14:N:50:LYS:HE2	1.74	0.43
14:N:51:GLY:C	14:N:53:LEU:H	2.27	0.43
17:Q:45:HIS:HB3	17:Q:72:ARG:HG2	2.00	0.43
19:S:13:ASP:O	19:S:14:HIS:C	2.60	0.43
20:T:72:LEU:O	20:T:72:LEU:HG	2.18	0.43
1:A:56:U:H2'	1:A:57:G:H8	1.83	0.43
1:A:187:C:H2'	1:A:188:C:C6	2.54	0.43
1:A:243:A:C5'	1:A:244:U:H5'	2.48	0.43
1:A:577:G:H1'	1:A:816:A:C4	2.54	0.43
1:A:987:G:H2'	1:A:988:G:C8	2.54	0.43
1:A:1142:G:H2'	1:A:1143:G:O4'	2.19	0.43
1:A:1262:C:H2'	1:A:1263:C:H6	1.83	0.43
1:A:1440:C:C2'	1:A:1441:G:H5'	2.49	0.43
2:B:107:THR:C	2:B:109:SER:N	2.77	0.43
3:C:34:LEU:HD23	14:N:25:VAL:CG2	2.49	0.43
3:C:107:GLN:H	3:C:107:GLN:NE2	2.16	0.43
7:G:37:ASN:HD21	9:I:41:VAL:HG23	1.83	0.43
7:G:44:TYR:HA	7:G:47:CYS:CB	2.49	0.43
10:J:16:LEU:HB3	10:J:70:ARG:CG	2.49	0.43
10:J:32:ALA:HB1	10:J:75:ILE:CG1	2.46	0.43
12:L:76:ASN:O	12:L:76:ASN:CG	2.62	0.43
13:M:5:ALA:O	13:M:7:VAL:N	2.52	0.43
17:Q:68:ARG:CG	17:Q:68:ARG:NH1	2.81	0.43
19:S:66:MET:HE3	19:S:74:PHE:CE2	2.53	0.43
1:A:267:C:OP2	17:Q:67:LYS:HD2	2.19	0.42
1:A:896:C:C5'	17:Q:100:LYS:HD3	2.49	0.42
1:A:1131:G:H2'	1:A:1132:C:C5	2.53	0.42
1:A:1154:G:O2'	1:A:1155:G:H5'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1190:G:HO2'	1:A:1191:A:P	2.41	0.42
1:A:1232:U:H2'	1:A:1233:G:O4'	2.19	0.42
2:B:24:TRP:CD1	2:B:24:TRP:N	2.86	0.42
2:B:55:PHE:O	2:B:58:ILE:HB	2.19	0.42
2:B:60:ASP:CA	2:B:64:ARG:HH12	2.31	0.42
2:B:147:LYS:HG3	2:B:148:TYR:CD2	2.54	0.42
3:C:58:GLU:CG	10:J:92:THR:HG21	2.49	0.42
4:D:170:VAL:HG22	4:D:171:GLY:N	2.34	0.42
5:E:89:ILE:HD13	5:E:90:VAL:H	1.79	0.42
6:F:75:LEU:C	6:F:75:LEU:CD2	2.92	0.42
7:G:38:LEU:O	7:G:38:LEU:HD12	2.19	0.42
7:G:95:ARG:O	7:G:96:GLN:C	2.62	0.42
12:L:47:LYS:O	12:L:48:PRO:C	2.61	0.42
12:L:86:ARG:HH11	12:L:86:ARG:HG3	1.84	0.42
13:M:4:ILE:HD11	13:M:56:LEU:HD13	2.01	0.42
14:N:42:ILE:O	14:N:46:GLU:HG3	2.19	0.42
17:Q:45:HIS:CD2	17:Q:47:PRO:HD3	2.54	0.42
1:A:456:C:H2'	1:A:457:C:H6	1.84	0.42
1:A:1305:G:O2'	1:A:1331:G:N2	2.50	0.42
1:A:1360:A:H8	1:A:1360:A:OP1	2.02	0.42
1:A:1370:G:C2	1:A:1371:G:C8	3.07	0.42
2:B:55:PHE:HD2	2:B:58:ILE:HD12	1.84	0.42
3:C:136:GLN:O	3:C:139:GLN:N	2.52	0.42
5:E:31:LEU:HD22	5:E:31:LEU:HA	1.87	0.42
5:E:139:LEU:C	5:E:141:GLN:N	2.77	0.42
13:M:23:TYR:C	13:M:25:ILE:H	2.24	0.42
15:O:29:VAL:CG1	15:O:67:LEU:HD21	2.48	0.42
1:A:282:A:C4	1:A:283:C:C6	3.07	0.42
1:A:965:A:H5'	1:A:969:A:O4'	2.19	0.42
1:A:1168:A:H2'	1:A:1169:A:C8	2.54	0.42
1:A:1190:G:C2'	1:A:1191:A:OP2	2.67	0.42
2:B:216:SER:OG	2:B:217:ARG:N	2.51	0.42
3:C:6:HIS:CD2	3:C:8:ILE:H	2.22	0.42
3:C:89:GLU:OE2	3:C:93:LYS:HE2	2.18	0.42
4:D:30:LYS:O	4:D:32:ALA:N	2.52	0.42
6:F:30:LEU:HB3	6:F:35:ALA:HB3	2.00	0.42
10:J:29:ARG:HG3	10:J:84:GLN:NE2	2.24	0.42
13:M:4:ILE:O	13:M:57:ARG:HG3	2.19	0.42
14:N:9:LYS:CE	14:N:21:TYR:O	2.67	0.42
14:N:34:TYR:HD1	14:N:34:TYR:H	1.66	0.42
17:Q:27:PHE:CE1	17:Q:36:ILE:HD11	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:8:ARG:O	20:T:9:ASN:HB3	2.19	0.42
1:A:723:U:O2	1:A:723:U:C2'	2.66	0.42
1:A:1202:G:C2	14:N:42:ILE:HG21	2.54	0.42
1:A:1220:G:O2'	1:A:1221:G:H5'	2.19	0.42
1:A:1465:C:H2'	1:A:1466:C:O4'	2.19	0.42
1:A:1465:C:O2'	1:A:1466:C:H5'	2.18	0.42
2:B:102:LEU:N	2:B:102:LEU:CD1	2.82	0.42
2:B:112:VAL:O	2:B:116:GLU:HG3	2.18	0.42
2:B:118:LEU:C	2:B:120:ALA:H	2.27	0.42
4:D:28:SER:C	4:D:30:LYS:H	2.27	0.42
4:D:62:GLN:HE22	4:D:65:ARG:NH1	2.16	0.42
7:G:73:MET:HG2	7:G:145:ALA:HB1	2.00	0.42
7:G:112:PRO:O	7:G:113:GLU:C	2.62	0.42
7:G:115:ARG:HB2	7:G:118:VAL:HG23	2.01	0.42
11:K:40:ILE:HD12	11:K:77:MET:CE	2.48	0.42
13:M:122:LYS:O	13:M:123:ALA:HB2	2.19	0.42
14:N:8:GLU:C	14:N:10:ALA:N	2.77	0.42
16:P:52:ASP:HB3	16:P:55:ARG:HB2	2.01	0.42
1:A:429:U:H4'	1:A:430:A:O5'	2.18	0.42
1:A:961:U:H2'	1:A:962:C:C5'	2.49	0.42
1:A:1061:G:O2'	1:A:1062:U:H5'	2.20	0.42
1:A:1296:C:H5''	13:M:14:ARG:HD2	2.00	0.42
1:A:1540:U:C5	1:A:1541:U:N3	2.88	0.42
3:C:11:ARG:O	3:C:14:ILE:O	2.38	0.42
3:C:58:GLU:H	3:C:65:ALA:HB3	1.84	0.42
4:D:126:ILE:HG22	4:D:127:THR:N	2.34	0.42
5:E:36:ASP:OD1	5:E:38:GLN:N	2.47	0.42
7:G:144:MET:O	7:G:145:ALA:C	2.63	0.42
8:H:33:GLU:HG3	8:H:48:TYR:CE1	2.54	0.42
10:J:44:VAL:CG2	10:J:66:ARG:HH21	2.33	0.42
11:K:128:ALA:O	11:K:129:SER:HB3	2.20	0.42
15:O:66:LEU:O	15:O:69:TYR:N	2.52	0.42
1:A:57:G:H2'	1:A:58:C:C6	2.54	0.42
1:A:685:G:C2	1:A:686:U:C4	3.08	0.42
1:A:1508:G:H2'	1:A:1509:C:C6	2.55	0.42
2:B:17:PHE:CD2	2:B:44:LEU:HD21	2.54	0.42
2:B:75:LYS:CA	2:B:78:GLN:HB2	2.47	0.42
3:C:16:ARG:HG3	3:C:17:ASP:N	2.34	0.42
3:C:29:TYR:C	3:C:29:TYR:HD2	2.28	0.42
4:D:33:MET:HE3	4:D:37:PRO:CB	2.49	0.42
7:G:6:ARG:HB3	7:G:6:ARG:NH1	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:105:ARG:HG3	8:H:105:ARG:HH11	1.85	0.42
9:I:36:TYR:HD2	9:I:37:PHE:CE2	2.37	0.42
12:L:50:SER:O	12:L:51:ALA:CB	2.64	0.42
13:M:99:ARG:HG2	13:M:99:ARG:HH11	1.85	0.42
17:Q:68:ARG:N	17:Q:70:ARG:HH11	2.17	0.42
1:A:148:G:H2'	1:A:149:A:H8	1.85	0.42
1:A:520:A:H61	1:A:529:G:H1'	1.84	0.42
1:A:1005:A:H3'	1:A:1006:C:C6	2.53	0.42
1:A:1058:G:C5	1:A:1059:C:C4	3.07	0.42
7:G:150:ALA:O	11:K:57:THR:HG21	2.20	0.42
8:H:121:ASP:HB2	8:H:125:ARG:HH22	1.84	0.42
10:J:35:SER:N	10:J:73:ASP:O	2.33	0.42
11:K:106:LYS:O	11:K:107:SER:HB3	2.20	0.42
13:M:125:ARG:O	13:M:126:LYS:C	2.62	0.42
16:P:45:THR:C	16:P:47:ASP:H	2.26	0.42
18:R:30:ASP:C	18:R:32:ARG:N	2.78	0.42
1:A:339:C:H2'	1:A:340:U:C6	2.55	0.42
1:A:437:U:H2'	1:A:438:G:H5'	1.99	0.42
1:A:785:G:O2'	1:A:786:G:H5'	2.20	0.42
1:A:1250:A:H5''	9:I:68:GLY:N	2.35	0.42
3:C:155:GLY:O	3:C:157:ILE:N	2.52	0.42
3:C:173:VAL:N	3:C:174:PRO:CD	2.83	0.42
7:G:3:ARG:HH11	7:G:3:ARG:HG3	1.85	0.42
8:H:116:LYS:HD3	8:H:127:LEU:HD22	2.02	0.42
9:I:79:LEU:O	9:I:82:ALA:N	2.52	0.42
9:I:86:VAL:O	9:I:86:VAL:HG12	2.19	0.42
10:J:24:VAL:CG1	10:J:28:ARG:HE	2.33	0.42
12:L:47:LYS:CB	12:L:48:PRO:CD	2.75	0.42
13:M:44:ARG:HH11	13:M:44:ARG:CG	2.33	0.42
13:M:90:LEU:HD22	13:M:94:ARG:HH11	1.82	0.42
14:N:7:ILE:O	14:N:7:ILE:HG22	2.20	0.42
20:T:60:GLU:HG3	20:T:81:LYS:HE3	2.02	0.42
1:A:458:C:C2	1:A:460:G:C8	3.08	0.42
1:A:718:G:C4'	11:K:117:ASN:ND2	2.83	0.42
1:A:822:C:O2'	1:A:823:G:H5'	2.19	0.42
1:A:1054:C:C5	1:A:1196:U:C5	3.07	0.42
1:A:1228:C:H2'	1:A:1229:A:C8	2.48	0.42
1:A:1440:C:H2'	1:A:1441:G:H5'	2.01	0.42
1:A:1447:A:OP2	1:A:1452:C:H5	2.02	0.42
2:B:25:ASN:HD22	2:B:26:PRO:CD	2.33	0.42
2:B:44:LEU:HA	2:B:47:THR:OG1	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:73:THR:HG23	2:B:95:GLN:O	2.19	0.42
2:B:118:LEU:HD21	2:B:142:LEU:HB2	2.01	0.42
3:C:48:TYR:O	3:C:51:GLY:N	2.53	0.42
5:E:144:THR:HG22	5:E:146:ALA:N	2.35	0.42
7:G:122:HIS:O	7:G:123:GLU:C	2.63	0.42
11:K:34:ASP:C	11:K:34:ASP:OD1	2.63	0.42
13:M:90:LEU:HD22	13:M:94:ARG:HH12	1.82	0.42
19:S:44:MET:C	19:S:62:ILE:HD13	2.45	0.42
1:A:176:C:H2'	1:A:177:C:H6	1.85	0.42
1:A:216:G:O2'	1:A:217:C:O4'	2.27	0.42
1:A:401:C:O2'	1:A:402:G:H5'	2.19	0.42
1:A:603:U:H2'	1:A:604:G:H8	1.85	0.42
1:A:945:G:H2'	1:A:945:G:N3	2.35	0.42
1:A:1058:G:H2'	1:A:1059:C:C6	2.55	0.42
1:A:1060:C:H2'	1:A:1061:G:C8	2.45	0.42
1:A:1486:G:H2'	1:A:1487:G:C8	2.54	0.42
2:B:81:VAL:O	2:B:85:ALA:CB	2.68	0.42
2:B:115:LEU:CD1	2:B:146:GLN:HG2	2.48	0.42
2:B:237:ALA:O	2:B:239:VAL:N	2.52	0.42
3:C:42:LEU:C	3:C:44:GLU:H	2.28	0.42
4:D:150:GLU:C	4:D:152:SER:N	2.78	0.42
5:E:15:ARG:CZ	5:E:26:PHE:CE2	3.03	0.42
5:E:41:VAL:HG13	5:E:113:ALA:CA	2.48	0.42
8:H:31:PHE:HZ	8:H:134:ILE:HD13	1.85	0.42
8:H:49:GLU:HG2	8:H:62:TYR:HE2	1.84	0.42
8:H:50:ARG:O	8:H:51:VAL:HG13	2.20	0.42
9:I:24:GLY:HA2	9:I:59:PHE:O	2.20	0.42
10:J:15:THR:HG22	10:J:94:VAL:CG2	2.49	0.42
10:J:81:THR:C	10:J:83:GLU:N	2.78	0.42
11:K:27:ASN:OD1	11:K:28:THR:O	2.37	0.42
13:M:96:LEU:O	13:M:110:ARG:NH1	2.53	0.42
14:N:34:TYR:N	14:N:34:TYR:CD1	2.88	0.42
17:Q:59:ILE:HG22	17:Q:71:PHE:CD1	2.55	0.42
1:A:115:G:O2'	1:A:116:A:OP2	2.37	0.41
1:A:1008:C:H42	1:A:1021:G:H1	1.67	0.41
1:A:1220:G:H2'	1:A:1221:G:C8	2.55	0.41
3:C:34:LEU:O	3:C:34:LEU:HD22	2.20	0.41
3:C:76:VAL:O	3:C:83:ARG:CG	2.68	0.41
4:D:190:ASP:O	4:D:191:ARG:C	2.62	0.41
5:E:81:GLU:HG2	5:E:88:LYS:HE2	2.02	0.41
6:F:3:ARG:HH11	6:F:3:ARG:CG	2.29	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:79:ARG:CB	7:G:84:ASN:HA	2.50	0.41
10:J:32:ALA:O	10:J:34:VAL:HG23	2.20	0.41
15:O:88:ARG:HD2	15:O:88:ARG:HA	1.91	0.41
16:P:20:VAL:CG1	16:P:32:TYR:CB	2.83	0.41
18:R:26:LEU:HD21	18:R:39:VAL:CG2	2.50	0.41
19:S:15:LEU:O	19:S:16:LEU:C	2.63	0.41
20:T:43:LEU:HD13	20:T:51:GLU:CG	2.50	0.41
20:T:65:LYS:O	20:T:66:ALA:C	2.62	0.41
20:T:74:LYS:C	20:T:76:ALA:N	2.78	0.41
1:A:55:A:C2	1:A:56:U:C1'	3.03	0.41
1:A:279:A:H5'	1:A:279:A:C8	2.55	0.41
1:A:392:G:H2'	1:A:393:A:C8	2.54	0.41
1:A:413:G:H1'	1:A:428:G:N2	2.35	0.41
1:A:768:A:H5'	1:A:1524:C:H1'	2.02	0.41
1:A:881:G:OP2	12:L:12:ARG:NH2	2.53	0.41
1:A:1124:G:H2'	1:A:1145:C:C5	2.53	0.41
1:A:1227:A:C4	19:S:81:ARG:NH1	2.88	0.41
1:A:1258:G:H2'	1:A:1259:C:H6	1.85	0.41
1:A:1419:G:H2'	1:A:1420:C:C6	2.54	0.41
2:B:157:ARG:O	2:B:158:LEU:O	2.38	0.41
2:B:162:ILE:O	2:B:162:ILE:HG22	2.20	0.41
4:D:101:LEU:O	4:D:102:ASP:C	2.62	0.41
4:D:111:ALA:HB3	4:D:117:ALA:HB2	2.02	0.41
4:D:150:GLU:O	4:D:152:SER:N	2.54	0.41
4:D:196:LEU:C	4:D:198:VAL:H	2.28	0.41
6:F:42:GLU:C	6:F:44:GLY:H	2.28	0.41
7:G:58:PRO:HG2	7:G:59:LEU:N	2.35	0.41
9:I:38:GLN:NE2	9:I:39:GLY:H	2.18	0.41
11:K:18:ARG:HB3	11:K:20:TYR:CE1	2.54	0.41
11:K:57:THR:CG2	11:K:58:PRO:HD2	2.50	0.41
15:O:26:GLU:HA	15:O:81:LEU:CD1	2.50	0.41
16:P:3:LYS:HG3	16:P:24:ALA:HB2	2.01	0.41
18:R:69:THR:O	18:R:72:ARG:HB2	2.20	0.41
1:A:51:A:H4'	1:A:52:G:C5'	2.50	0.41
1:A:232:G:H1'	1:A:262:A:N1	2.35	0.41
1:A:262:A:C6	1:A:263:A:C6	3.08	0.41
1:A:421:U:O4	3:C:127:ARG:HD3	2.20	0.41
1:A:513:C:H2'	1:A:514:C:C6	2.55	0.41
1:A:542:G:O2'	1:A:543:C:H5'	2.20	0.41
1:A:959:A:H3'	1:A:960:U:H5''	2.02	0.41
1:A:1105:A:H2'	1:A:1106:G:H8	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1152:A:O3'	10:J:13:HIS:NE2	2.53	0.41
1:A:1313:U:O4	19:S:4:SER:HB2	2.20	0.41
1:A:1411:C:O2'	1:A:1412:C:H5'	2.20	0.41
2:B:230:VAL:CG1	2:B:231:GLU:H	2.30	0.41
3:C:58:GLU:HG2	10:J:92:THR:HG21	2.01	0.41
7:G:79:ARG:CA	7:G:84:ASN:HA	2.51	0.41
8:H:4:ASP:OD1	8:H:85:ARG:NH1	2.53	0.41
9:I:28:VAL:C	9:I:30:GLY:H	2.29	0.41
10:J:46:ARG:NH1	10:J:46:ARG:CG	2.78	0.41
13:M:102:ARG:HB2	13:M:102:ARG:HH11	1.85	0.41
18:R:36:ASN:ND2	18:R:39:VAL:H	2.17	0.41
18:R:59:SER:OG	18:R:62:GLU:HG3	2.19	0.41
1:A:102:G:H2'	1:A:103:C:C6	2.52	0.41
1:A:103:C:P	20:T:17:ARG:NH1	2.94	0.41
1:A:176:C:O2'	1:A:177:C:H5'	2.20	0.41
1:A:413:G:H1'	1:A:428:G:H21	1.85	0.41
1:A:1001:A:N1	1:A:1002:G:O6	2.53	0.41
1:A:1049:U:O2'	1:A:1050:G:OP2	2.31	0.41
1:A:1343:G:OP1	9:I:125:TYR:HE2	2.04	0.41
2:B:100:GLY:O	2:B:104:ASN:N	2.51	0.41
2:B:213:LEU:C	2:B:213:LEU:CD2	2.94	0.41
3:C:130:VAL:O	3:C:131:ARG:C	2.63	0.41
4:D:162:LEU:HD13	4:D:181:MET:HG2	2.01	0.41
5:E:135:THR:O	5:E:136:MET:C	2.63	0.41
6:F:45:LEU:HA	6:F:58:GLY:O	2.20	0.41
6:F:101:ALA:HB2	18:R:28:GLU:CB	2.51	0.41
7:G:22:LEU:O	7:G:25:ALA:HB3	2.20	0.41
7:G:104:LEU:HD23	7:G:134:ALA:HB1	2.01	0.41
8:H:126:LYS:C	8:H:128:GLY:H	2.27	0.41
10:J:57:LYS:HG3	10:J:57:LYS:O	2.21	0.41
11:K:12:ARG:O	11:K:13:GLN:O	2.38	0.41
12:L:115:LYS:C	12:L:117:ARG:H	2.24	0.41
20:T:53:LEU:O	20:T:54:LYS:C	2.63	0.41
1:A:41:G:H2'	1:A:42:G:C8	2.55	0.41
1:A:107:G:H2'	1:A:108:G:C5'	2.48	0.41
1:A:520:A:N6	1:A:529:G:H1'	2.36	0.41
1:A:1496:C:H2'	1:A:1497:G:O4'	2.19	0.41
2:B:12:GLU:C	2:B:14:GLY:N	2.75	0.41
2:B:62:ALA:C	2:B:64:ARG:N	2.78	0.41
2:B:97:TRP:CZ3	2:B:176:GLU:OE2	2.74	0.41
2:B:230:VAL:CG1	2:B:231:GLU:N	2.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:34:LEU:HD13	3:C:34:LEU:O	2.20	0.41
4:D:94:LEU:HD23	4:D:94:LEU:HA	1.90	0.41
5:E:11:ILE:CB	5:E:31:LEU:HD12	2.50	0.41
6:F:51:PRO:HA	6:F:55:ASP:O	2.21	0.41
7:G:32:ARG:O	7:G:33:ASP:C	2.63	0.41
7:G:64:GLN:HE21	7:G:68:ASN:ND2	2.18	0.41
8:H:19:VAL:HG21	8:H:21:LYS:HZ3	1.85	0.41
10:J:6:ILE:CD1	10:J:72:VAL:HB	2.49	0.41
16:P:59:TRP:HA	16:P:62:VAL:HG22	2.02	0.41
19:S:19:VAL:CG1	19:S:20:LEU:N	2.82	0.41
19:S:22:LEU:HD13	19:S:28:LYS:CB	2.47	0.41
1:A:130:A:OP2	1:A:189(F):U:H2'	2.20	0.41
1:A:449:C:O2	16:P:42:ARG:HD2	2.21	0.41
1:A:723:U:C5	1:A:723:U:OP1	2.74	0.41
1:A:1203:C:O5'	1:A:1203:C:H6	2.04	0.41
1:A:1229:A:O2'	13:M:125:ARG:NE	2.49	0.41
1:A:1242:C:O2'	1:A:1243:C:H5'	2.20	0.41
2:B:90:MET:HA	2:B:91:PRO:HD3	1.73	0.41
3:C:36:ASP:HA	3:C:39:ILE:HD12	2.03	0.41
6:F:15:ASP:OD1	6:F:15:ASP:C	2.63	0.41
9:I:13:ALA:CB	9:I:67:GLY:O	2.69	0.41
9:I:107:ARG:C	9:I:108:VAL:CG2	2.92	0.41
10:J:50:ILE:HA	10:J:60:ARG:HD3	2.02	0.41
15:O:54:ARG:O	15:O:58:MET:HG3	2.21	0.41
16:P:21:VAL:HG11	16:P:59:TRP:CD2	2.56	0.41
20:T:16:HIS:O	20:T:17:ARG:C	2.62	0.41
21:U:14:TRP:CE3	21:U:15:ARG:HG2	2.54	0.41
1:A:28:G:O2'	1:A:296:U:OP1	2.34	0.41
1:A:197:A:N1	1:A:220:G:O2'	2.51	0.41
1:A:411:A:C5	1:A:429:U:C5	3.09	0.41
1:A:680:C:O2'	1:A:681:C:H5'	2.21	0.41
1:A:789:U:O2	1:A:791:G:C8	2.73	0.41
1:A:973:G:C3'	1:A:974:A:H5''	2.47	0.41
1:A:1054:C:N4	23:Y:34:CM0:C6	2.84	0.41
1:A:1127:G:N2	1:A:1146:A:H62	2.15	0.41
1:A:1256:A:H2	1:A:1277:C:C5	2.38	0.41
1:A:1528:U:O2'	1:A:1529:G:P	2.79	0.41
3:C:60:ALA:O	3:C:61:ALA:CB	2.65	0.41
4:D:52:SER:O	4:D:53:ASP:C	2.64	0.41
7:G:73:MET:HE3	7:G:73:MET:HB2	1.87	0.41
7:G:101:LEU:O	7:G:102:ARG:C	2.63	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:26:VAL:HG13	8:H:59:LEU:HB2	2.03	0.41
9:I:65:VAL:HG21	9:I:77:ILE:HD11	2.00	0.41
10:J:4:ILE:CG1	10:J:74:ILE:HB	2.50	0.41
13:M:93:ARG:CB	13:M:93:ARG:HH11	2.34	0.41
13:M:120:LYS:HE3	13:M:122:LYS:C	2.45	0.41
1:A:38:G:C2	1:A:397:A:C2	3.09	0.41
1:A:644:G:C5	1:A:645:C:C5	3.09	0.41
1:A:735:C:H5'	18:R:71:LYS:HD3	2.03	0.41
1:A:1021:G:H2'	1:A:1022:G:H8	1.84	0.41
1:A:1352:C:N3	1:A:1371:G:C6	2.89	0.41
1:A:1379:G:C6	1:A:1380:U:C4	3.08	0.41
2:B:92:TYR:CE2	2:B:151:GLY:CA	3.03	0.41
2:B:228:GLY:O	2:B:229:VAL:C	2.63	0.41
7:G:9:VAL:O	7:G:10:ARG:C	2.63	0.41
9:I:16:ARG:NH1	9:I:64:THR:HG21	2.36	0.41
10:J:48:THR:OG1	10:J:62:HIS:CD2	2.74	0.41
11:K:21:ILE:HD13	11:K:94:ALA:CB	2.51	0.41
12:L:39:VAL:HG12	12:L:40:VAL:N	2.35	0.41
12:L:54:LYS:N	12:L:54:LYS:HD2	2.36	0.41
15:O:25:THR:HG21	15:O:70:LEU:HB2	2.03	0.41
20:T:74:LYS:HB3	20:T:75:ASN:H	1.62	0.41
1:A:109:A:C6	1:A:326:G:C6	3.08	0.41
1:A:175:C:H2'	1:A:176:C:C6	2.53	0.41
1:A:554:C:H2'	1:A:555:C:H6	1.85	0.41
1:A:669:U:H2'	1:A:670:G:C8	2.56	0.41
1:A:726:C:O2'	1:A:727:G:H5'	2.21	0.41
1:A:749:C:O2'	1:A:750:G:H5'	2.20	0.41
1:A:1112:C:C2	3:C:178:LEU:HB2	2.56	0.41
1:A:1151:A:H5'	10:J:41:PRO:HA	2.02	0.41
1:A:1211:U:O2'	1:A:1213:A:C2	2.74	0.41
1:A:1289:A:H2'	1:A:1290:G:H5'	2.03	0.41
1:A:1417:G:C6	1:A:1482:G:C6	3.08	0.41
2:B:137:ARG:HH11	2:B:137:ARG:HB3	1.85	0.41
3:C:23:TYR:CD1	10:J:10:GLY:HA2	2.56	0.41
3:C:84:ILE:O	3:C:88:ARG:HG3	2.20	0.41
3:C:172:ARG:NH1	3:C:174:PRO:HG3	2.36	0.41
4:D:5:ILE:O	4:D:5:ILE:HG22	2.21	0.41
4:D:11:LEU:O	4:D:12:CYS:C	2.63	0.41
4:D:65:ARG:HD2	4:D:75:PHE:HB2	2.03	0.41
5:E:63:ARG:O	5:E:66:MET:HG2	2.21	0.41
5:E:139:LEU:O	5:E:140:ARG:C	2.63	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:86:ARG:H	6:F:86:ARG:HG2	1.65	0.41
7:G:44:TYR:HA	7:G:47:CYS:HB3	2.03	0.41
7:G:44:TYR:O	7:G:48:LYS:N	2.53	0.41
8:H:6:ILE:HD11	8:H:31:PHE:CD2	2.55	0.41
8:H:85:ARG:C	8:H:85:ARG:HD3	2.46	0.41
9:I:89:ASN:HA	9:I:90:PRO:HD2	1.97	0.41
10:J:9:ARG:NH1	10:J:9:ARG:CB	2.74	0.41
10:J:35:SER:CB	10:J:73:ASP:HB2	2.50	0.41
12:L:83:VAL:HG22	12:L:100:ILE:HG23	2.01	0.41
13:M:37:THR:HG23	13:M:55:ARG:CD	2.48	0.41
13:M:65:LYS:C	13:M:66:LEU:HD23	2.46	0.41
15:O:21:ASP:OD2	15:O:24:SER:HB3	2.21	0.41
16:P:14:ASN:O	16:P:14:ASN:CG	2.62	0.41
18:R:35:ARG:O	18:R:37:VAL:N	2.54	0.41
20:T:55:ILE:O	20:T:56:MET:C	2.64	0.41
20:T:74:LYS:HA	20:T:74:LYS:HD3	1.79	0.41
1:A:255:G:O6	1:A:266:G:O6	2.39	0.41
1:A:345:C:O4'	1:A:346:G:C2	2.73	0.41
1:A:722:A:O3'	1:A:723:U:C4	2.74	0.41
1:A:1036:G:H2'	1:A:1037:C:O4'	2.21	0.41
1:A:1157:A:H1'	1:A:1181:G:N2	2.36	0.41
1:A:1168:A:H8	1:A:1168:A:OP1	2.03	0.41
1:A:1242:C:H2'	1:A:1243:C:H6	1.86	0.41
1:A:1278:U:H5''	1:A:1279:A:O4'	2.20	0.41
1:A:1315:U:H2'	1:A:1316:G:O4'	2.21	0.41
1:A:1329:A:H2'	1:A:1330:U:H5'	2.01	0.41
1:A:1508:G:H2'	1:A:1509:C:H6	1.86	0.41
2:B:101:MET:HG2	2:B:108:ILE:HG21	2.03	0.41
3:C:107:GLN:O	3:C:108:ASN:CB	2.69	0.41
6:F:19:LEU:HD23	6:F:19:LEU:C	2.46	0.41
6:F:71:ARG:O	6:F:74:ASP:N	2.54	0.41
7:G:18:TYR:CE2	7:G:59:LEU:HB2	2.56	0.41
8:H:117:GLY:C	8:H:119:LEU:HD23	2.45	0.41
9:I:65:VAL:CG1	9:I:73:GLN:CD	2.94	0.41
13:M:93:ARG:HB2	13:M:93:ARG:CZ	2.51	0.41
14:N:4:LYS:C	14:N:6:LEU:N	2.79	0.41
17:Q:91:ARG:O	17:Q:95:TYR:CD1	2.74	0.41
20:T:67:ALA:O	20:T:73:HIS:ND1	2.54	0.41
1:A:278:G:OP2	17:Q:41:LYS:NZ	2.53	0.40
1:A:310:G:H2'	1:A:311:C:H6	1.86	0.40
1:A:383:A:C2'	1:A:384:G:H5'	2.50	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:559:A:H4'	1:A:560:U:O3'	2.21	0.40
1:A:961:U:O2'	1:A:962:C:H5'	2.21	0.40
1:A:1001(A):G:H2'	1:A:1002:G:H5'	2.02	0.40
1:A:1227:A:OP2	13:M:111:LYS:NZ	2.46	0.40
1:A:1246:C:O2'	1:A:1247:U:H5'	2.21	0.40
1:A:1326:C:H5''	21:U:12:LYS:NZ	2.36	0.40
1:A:1345:U:C2	1:A:1377:A:N1	2.89	0.40
2:B:31:TYR:CE1	2:B:200:ILE:HD13	2.56	0.40
3:C:20:SER:O	14:N:54:PRO:HG3	2.21	0.40
5:E:15:ARG:HD2	5:E:26:PHE:CD2	2.56	0.40
7:G:58:PRO:O	7:G:59:LEU:C	2.64	0.40
10:J:21:GLN:O	10:J:25:GLU:HG2	2.20	0.40
10:J:24:VAL:O	10:J:28:ARG:HG3	2.21	0.40
10:J:75:ILE:O	10:J:76:ASN:ND2	2.54	0.40
10:J:81:THR:HG22	10:J:85:LEU:CD1	2.50	0.40
11:K:18:ARG:NH1	11:K:35:PRO:O	2.53	0.40
13:M:39:ILE:HD13	13:M:52:GLU:HB3	2.02	0.40
15:O:8:LYS:O	15:O:12:ILE:HG13	2.21	0.40
17:Q:3:LYS:HB3	17:Q:61:GLU:CB	2.46	0.40
17:Q:43:LEU:HD23	17:Q:43:LEU:HA	1.76	0.40
19:S:20:LEU:O	19:S:23:ASN:HB2	2.21	0.40
19:S:29:ARG:HG3	19:S:29:ARG:HH11	1.86	0.40
1:A:109:A:H2'	1:A:326:G:N2	2.36	0.40
1:A:484:G:H5'	1:A:486:U:O4'	2.21	0.40
1:A:563:A:N7	1:A:567:G:H1'	2.36	0.40
1:A:841:U:C5	1:A:848:C:H1'	2.56	0.40
1:A:943:U:C2'	1:A:944:G:H5'	2.52	0.40
1:A:1314:C:OP2	19:S:6:LYS:CG	2.70	0.40
1:A:1466:C:H2'	1:A:1467:G:O4'	2.21	0.40
3:C:172:ARG:HH12	3:C:174:PRO:HG3	1.86	0.40
4:D:137:SER:O	4:D:138:TYR:C	2.62	0.40
8:H:38:ILE:O	8:H:39:LEU:C	2.65	0.40
13:M:59:TYR:HE1	13:M:63:THR:HG21	1.87	0.40
15:O:64:ARG:HB3	15:O:64:ARG:CZ	2.52	0.40
1:A:15:G:O2'	5:E:24:ARG:HD3	2.21	0.40
1:A:431:A:H2'	1:A:432:A:O4'	2.21	0.40
1:A:433:C:H6	1:A:433:C:O5'	2.05	0.40
1:A:502:G:H2'	1:A:503:C:C6	2.56	0.40
1:A:828:A:H5''	1:A:859:A:C2	2.57	0.40
1:A:986:A:H1'	19:S:54:GLY:O	2.21	0.40
1:A:1305:G:C5'	21:U:4:GLY:HA3	2.52	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:51:LEU:O	2:B:55:PHE:HB2	2.21	0.40
3:C:102:ASN:HD22	3:C:102:ASN:H	1.67	0.40
3:C:125:GLU:HG2	3:C:190:ARG:O	2.22	0.40
4:D:170:VAL:HG22	4:D:171:GLY:H	1.87	0.40
5:E:20:GLN:C	5:E:20:GLN:NE2	2.80	0.40
5:E:36:ASP:OD2	5:E:40:ARG:HD3	2.21	0.40
7:G:149:ARG:O	7:G:149:ARG:HG2	2.22	0.40
8:H:114:THR:C	8:H:116:LYS:H	2.29	0.40
9:I:62:TYR:C	9:I:63:ILE:HG13	2.46	0.40
10:J:29:ARG:H	10:J:29:ARG:HG2	1.68	0.40
11:K:57:THR:HG23	11:K:58:PRO:HD2	2.03	0.40
15:O:74:ASP:C	15:O:76:GLU:N	2.79	0.40
20:T:63:ILE:HG23	20:T:72:LEU:CD2	2.52	0.40
1:A:233:C:O2'	1:A:234:C:H5'	2.21	0.40
1:A:283:C:O2'	1:A:284:G:H5'	2.21	0.40
1:A:664:G:H2'	1:A:666:G:OP1	2.22	0.40
1:A:701:C:O2'	1:A:702:A:OP2	2.33	0.40
1:A:723:U:OP1	1:A:723:U:C6	2.75	0.40
1:A:749:C:H2'	1:A:750:G:H8	1.87	0.40
1:A:1086:U:H3	1:A:1099:G:N2	2.05	0.40
1:A:1091:U:H2'	1:A:1093:A:OP2	2.21	0.40
1:A:1154:G:H2'	1:A:1155:G:C8	2.54	0.40
1:A:1175:G:O2'	1:A:1176:A:H5'	2.21	0.40
1:A:1349:A:P	9:I:118:LYS:NZ	2.95	0.40
2:B:73:THR:C	2:B:75:LYS:N	2.79	0.40
3:C:132:ARG:O	3:C:133:ALA:C	2.64	0.40
5:E:59:GLY:O	5:E:60:TYR:C	2.65	0.40
6:F:62:TRP:CG	18:R:35:ARG:NH1	2.89	0.40
7:G:54:THR:HG22	7:G:56:GLN:N	2.29	0.40
9:I:46:ALA:HB2	9:I:74:ILE:HG23	2.02	0.40
13:M:11:ARG:CG	13:M:12:ASN:N	2.64	0.40
15:O:25:THR:HG21	15:O:70:LEU:HD23	2.02	0.40
15:O:53:HIS:O	15:O:56:LEU:HB3	2.21	0.40
16:P:52:ASP:CG	16:P:55:ARG:HG3	2.47	0.40
20:T:48:LYS:HD3	20:T:48:LYS:N	2.35	0.40
20:T:57:ARG:O	20:T:58:LYS:C	2.62	0.40
1:A:189(I):G:O2'	1:A:189(J):G:H5'	2.22	0.40
1:A:342:C:H2'	1:A:343:U:C5'	2.52	0.40
1:A:370:C:C2'	1:A:371:G:H5'	2.51	0.40
1:A:541:G:HO2'	1:A:542:G:H5'	1.86	0.40
1:A:684:A:N6	1:A:685:G:C6	2.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:962:C:H2'	1:A:963:G:O4'	2.22	0.40
1:A:1063:C:H2'	1:A:1064:G:C8	2.56	0.40
1:A:1226:C:H2'	13:M:103:THR:OG1	2.22	0.40
1:A:1511:G:H2'	1:A:1512:U:O4'	2.21	0.40
2:B:17:PHE:HD2	2:B:44:LEU:HD21	1.87	0.40
2:B:97:TRP:CH2	2:B:176:GLU:CD	3.00	0.40
3:C:6:HIS:HD2	3:C:8:ILE:N	2.08	0.40
3:C:56:ASP:OD1	3:C:56:ASP:N	2.37	0.40
12:L:85:ILE:CG2	12:L:98:TYR:HB3	2.51	0.40
15:O:82:ILE:HD13	15:O:88:ARG:CG	2.51	0.40
17:Q:7:THR:O	17:Q:23:VAL:HG13	2.21	0.40
18:R:37:VAL:O	18:R:41:LYS:HB3	2.20	0.40
18:R:88:LYS:HB3	18:R:88:LYS:HZ3	1.84	0.40
20:T:101:GLY:C	20:T:103:GLY:N	2.80	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	B	233/256 (91%)	159 (68%)	51 (22%)	23 (10%)	0	3
3	C	205/239 (86%)	146 (71%)	37 (18%)	22 (11%)	0	2
4	D	206/209 (99%)	174 (84%)	23 (11%)	9 (4%)	2	12
5	E	149/162 (92%)	130 (87%)	15 (10%)	4 (3%)	4	20
6	F	99/101 (98%)	77 (78%)	17 (17%)	5 (5%)	1	10
7	G	153/156 (98%)	116 (76%)	31 (20%)	6 (4%)	2	14
8	H	136/138 (99%)	114 (84%)	17 (12%)	5 (4%)	2	15
9	I	125/128 (98%)	93 (74%)	19 (15%)	13 (10%)	0	2
10	J	97/105 (92%)	67 (69%)	18 (19%)	12 (12%)	0	1

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	K	117/129 (91%)	96 (82%)	16 (14%)	5 (4%)	2	12
12	L	123/135 (91%)	98 (80%)	14 (11%)	11 (9%)	0	3
13	M	123/126 (98%)	93 (76%)	17 (14%)	13 (11%)	0	2
14	N	58/61 (95%)	44 (76%)	12 (21%)	2 (3%)	3	16
15	O	86/89 (97%)	69 (80%)	14 (16%)	3 (4%)	3	16
16	P	82/88 (93%)	63 (77%)	17 (21%)	2 (2%)	4	22
17	Q	102/105 (97%)	88 (86%)	9 (9%)	5 (5%)	1	11
18	R	71/88 (81%)	59 (83%)	11 (16%)	1 (1%)	9	34
19	S	79/93 (85%)	62 (78%)	7 (9%)	10 (13%)	0	1
20	T	97/106 (92%)	77 (79%)	12 (12%)	8 (8%)	0	4
21	U	23/27 (85%)	15 (65%)	6 (26%)	2 (9%)	0	4
All	All	2364/2541 (93%)	1840 (78%)	363 (15%)	161 (7%)	1	5

All (161) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	15	VAL
2	B	23	ARG
2	B	207	ALA
3	C	15	THR
3	C	61	ALA
3	C	95	THR
3	C	160	ALA
6	F	72	VAL
8	H	70	GLN
8	H	71	GLY
8	H	91	ARG
9	I	8	GLY
9	I	23	ASN
9	I	43	ALA
10	J	61	GLU
10	J	85	LEU
10	J	86	MET
10	J	90	LEU
11	K	13	GLN
11	K	16	SER
11	K	127	LYS
12	L	28	LYS

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Mol	Chain	Res	Type
12	L	47	LYS
12	L	75	HIS
13	M	23	TYR
13	M	67	GLU
13	M	86	CYS
19	S	6	LYS
19	S	29	ARG
19	S	67	VAL
19	S	81	ARG
20	T	74	LYS
20	T	95	ALA
21	U	17	THR
2	B	17	PHE
2	B	19	HIS
2	B	22	LYS
2	B	24	TRP
2	B	74	LYS
2	B	83	MET
2	B	150	SER
2	B	195	ASP
2	B	208	ILE
3	C	67	THR
3	C	102	ASN
3	C	127	ARG
3	C	130	VAL
3	C	207	VAL
4	D	153	ARG
5	E	140	ARG
6	F	70	ASP
7	G	9	VAL
9	I	33	PHE
9	I	44	VAL
9	I	100	GLY
10	J	26	ALA
10	J	34	VAL
10	J	57	LYS
10	J	75	ILE
10	J	76	ASN
10	J	83	GLU
11	K	12	ARG
12	L	51	ALA
12	L	74	GLY

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Mol	Chain	Res	Type
13	M	6	GLY
13	M	21	TYR
13	M	24	GLY
13	M	68	GLY
17	Q	96	GLU
18	R	19	LYS
19	S	5	LEU
19	S	25	LYS
19	S	28	LYS
19	S	43	GLU
20	T	103	GLY
21	U	3	LYS
2	B	84	GLU
2	B	131	PRO
2	B	238	LEU
3	C	43	LEU
3	C	103	VAL
4	D	151	LYS
6	F	32	ASN
6	F	62	TRP
7	G	155	ARG
8	H	24	THR
9	I	46	ALA
9	I	121	ARG
9	I	127	LYS
12	L	128	ALA
14	N	15	LYS
15	O	75	PRO
16	P	10	GLY
20	T	9	ASN
20	T	73	HIS
20	T	99	LEU
2	B	9	GLU
2	B	95	GLN
2	B	158	LEU
3	C	84	ILE
3	C	91	LEU
3	C	96	GLY
3	C	144	SER
4	D	88	VAL
4	D	89	THR
4	D	90	GLY

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Mol	Chain	Res	Type
5	E	52	PRO
7	G	36	LYS
9	I	24	GLY
9	I	32	ASP
12	L	48	PRO
13	M	36	LYS
13	M	99	ARG
13	M	117	VAL
17	Q	34	LYS
17	Q	49	GLU
17	Q	99	SER
20	T	11	SER
2	B	11	LEU
3	C	3	ASN
3	C	40	ARG
3	C	81	GLY
3	C	119	ARG
4	D	39	PRO
7	G	81	GLY
8	H	105	ARG
9	I	42	ARG
9	I	118	LYS
11	K	117	ASN
12	L	14	GLY
12	L	27	LEU
12	L	79	GLU
15	O	14	GLU
16	P	53	VAL
2	B	63	MET
2	B	229	VAL
3	C	14	ILE
3	C	108	ASN
3	C	174	PRO
4	D	30	LYS
13	M	7	VAL
19	S	60	VAL
20	T	101	GLY
10	J	37	PRO
13	M	97	PRO
14	N	55	GLY
5	E	128	PRO
7	G	112	PRO

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Mol	Chain	Res	Type
12	L	110	VAL
19	S	9	VAL
2	B	239	VAL
4	D	5	ILE
5	E	129	ILE
6	F	37	VAL
10	J	36	GLY
13	M	38	GLY
15	O	87	ILE
2	B	202	PRO
7	G	58	PRO
4	D	36	ARG
17	Q	64	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	B	202/220 (92%)	188 (93%)	14 (7%)	14	41
3	C	160/188 (85%)	141 (88%)	19 (12%)	5	21
4	D	180/181 (99%)	171 (95%)	9 (5%)	22	53
5	E	115/123 (94%)	105 (91%)	10 (9%)	9	34
6	F	90/90 (100%)	83 (92%)	7 (8%)	11	38
7	G	126/127 (99%)	117 (93%)	9 (7%)	13	41
8	H	119/119 (100%)	112 (94%)	7 (6%)	18	48
9	I	98/99 (99%)	88 (90%)	10 (10%)	7	28
10	J	87/92 (95%)	79 (91%)	8 (9%)	8	31
11	K	90/99 (91%)	84 (93%)	6 (7%)	15	43
12	L	104/111 (94%)	95 (91%)	9 (9%)	9	34
13	M	100/101 (99%)	91 (91%)	9 (9%)	9	33
14	N	49/50 (98%)	44 (90%)	5 (10%)	7	28
15	O	79/80 (99%)	72 (91%)	7 (9%)	9	33

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
16	P	72/74 (97%)	67 (93%)	5 (7%)	14	41
17	Q	96/97 (99%)	91 (95%)	5 (5%)	21	51
18	R	64/77 (83%)	61 (95%)	3 (5%)	23	55
19	S	71/80 (89%)	68 (96%)	3 (4%)	26	58
20	T	76/82 (93%)	69 (91%)	7 (9%)	8	31
21	U	19/22 (86%)	19 (100%)	0	100	100
All	All	1997/2112 (95%)	1845 (92%)	152 (8%)	12	39

All (152) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	15	VAL
2	B	21	ARG
2	B	23	ARG
2	B	63	MET
2	B	98	LEU
2	B	117	GLU
2	B	121	LEU
2	B	162	ILE
2	B	185	ILE
2	B	187	LEU
2	B	204	ASN
2	B	215	LEU
2	B	221	LEU
2	B	226	ARG
3	C	5	ILE
3	C	15	THR
3	C	26	LYS
3	C	34	LEU
3	C	37	GLN
3	C	43	LEU
3	C	56	ASP
3	C	62	ASP
3	C	75	VAL
3	C	97	LYS
3	C	101	LEU
3	C	102	ASN
3	C	104	GLN
3	C	107	GLN
3	C	127	ARG

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Mol	Chain	Res	Type
3	C	156	ARG
3	C	175	LEU
3	C	188	LEU
3	C	192	THR
4	D	9	CYS
4	D	33	MET
4	D	34	GLU
4	D	50	ARG
4	D	58	LEU
4	D	112	VAL
4	D	122	ARG
4	D	135	LEU
4	D	199	ASN
5	E	12	LEU
5	E	20	GLN
5	E	31	LEU
5	E	41	VAL
5	E	43	LEU
5	E	64	ARG
5	E	80	ILE
5	E	89	ILE
5	E	107	ARG
5	E	144	THR
6	F	24	GLU
6	F	32	ASN
6	F	47	ARG
6	F	65	VAL
6	F	69	GLU
6	F	75	LEU
6	F	86	ARG
7	G	38	LEU
7	G	51	GLN
7	G	68	ASN
7	G	75	VAL
7	G	111	ARG
7	G	113	GLU
7	G	114	ARG
7	G	155	ARG
7	G	156	TRP
8	H	26	VAL
8	H	52	ASP
8	H	83	ILE

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Mol	Chain	Res	Type
8	H	85	ARG
8	H	112	LEU
8	H	119	LEU
8	H	122	ARG
9	I	11	LYS
9	I	27	THR
9	I	31	GLN
9	I	47	LEU
9	I	79	LEU
9	I	97	LYS
9	I	108	VAL
9	I	118	LYS
9	I	121	ARG
9	I	125	TYR
10	J	6	ILE
10	J	13	HIS
10	J	14	LYS
10	J	22	LYS
10	J	80	LYS
10	J	83	GLU
10	J	98	ILE
10	J	99	LYS
11	K	12	ARG
11	K	18	ARG
11	K	29	ILE
11	K	47	VAL
11	K	82	VAL
11	K	96	ARG
12	L	21	LYS
12	L	53	ARG
12	L	59	ARG
12	L	60	LEU
12	L	67	THR
12	L	73	GLU
12	L	79	GLU
12	L	111	LYS
12	L	126	LYS
13	M	9	ILE
13	M	16	ASP
13	M	44	ARG
13	M	56	LEU
13	M	70	LEU

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Mol	Chain	Res	Type
13	M	86	CYS
13	M	94	ARG
13	M	97	PRO
13	M	110	ARG
14	N	8	GLU
14	N	18	VAL
14	N	26	ARG
14	N	33	VAL
14	N	44	LEU
15	O	6	GLU
15	O	10	LYS
15	O	31	LEU
15	O	34	LEU
15	O	38	ARG
15	O	54	ARG
15	O	71	GLN
16	P	1	MET
16	P	2	VAL
16	P	8	ARG
16	P	45	THR
16	P	57	ARG
17	Q	26	GLN
17	Q	28	PRO
17	Q	68	ARG
17	Q	74	LEU
17	Q	101	ARG
18	R	36	ASN
18	R	39	VAL
18	R	88	LYS
19	S	15	LEU
19	S	20	LEU
19	S	43	GLU
20	T	48	LYS
20	T	57	ARG
20	T	62	LEU
20	T	73	HIS
20	T	75	ASN
20	T	90	GLN
20	T	105	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (75) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	19	HIS
2	B	25	ASN
2	B	76	GLN
2	B	78	GLN
2	B	146	GLN
2	B	204	ASN
2	B	240	GLN
3	C	3	ASN
3	C	6	HIS
3	C	31	HIS
3	C	63	ASN
3	C	102	ASN
3	C	104	GLN
3	C	110	ASN
3	C	176	HIS
3	C	181	ASN
4	D	42	GLN
4	D	62	GLN
4	D	123	HIS
4	D	129	ASN
4	D	154	ASN
4	D	160	GLN
4	D	161	ASN
4	D	199	ASN
4	D	201	GLN
5	E	20	GLN
5	E	72	GLN
5	E	73	ASN
6	F	18	GLN
6	F	27	GLN
6	F	32	ASN
6	F	57	GLN
6	F	64	GLN
6	F	73	ASN
7	G	13	GLN
7	G	37	ASN
7	G	64	GLN
7	G	96	GLN
7	G	106	GLN
8	H	70	GLN
8	H	82	HIS
9	I	3	GLN
9	I	23	ASN

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Mol	Chain	Res	Type
9	I	31	GLN
9	I	73	GLN
9	I	87	GLN
9	I	124	GLN
10	J	21	GLN
10	J	56	HIS
10	J	76	ASN
10	J	78	ASN
10	J	84	GLN
11	K	13	GLN
11	K	22	HIS
11	K	104	GLN
11	K	116	HIS
11	K	117	ASN
12	L	75	HIS
12	L	78	GLN
13	M	12	ASN
13	M	40	ASN
13	M	62	ASN
13	M	77	ASN
14	N	49	HIS
15	O	13	GLN
15	O	37	ASN
15	O	46	HIS
16	P	16	HIS
16	P	65	GLN
16	P	76	GLN
17	Q	16	GLN
17	Q	94	ASN
18	R	36	ASN
19	S	47	HIS
19	S	56	GLN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1510/1522 (99%)	208 (13%)	55 (3%)
22	X	4/5 (80%)	1 (25%)	0
23	Y	12/17 (70%)	0	0
All	All	1526/1544 (98%)	209 (13%)	55 (3%)

All (209) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	8	A
1	A	9	G
1	A	31	G
1	A	32	A
1	A	39	G
1	A	47	C
1	A	48	C
1	A	51	A
1	A	61	G
1	A	101	A
1	A	116	A
1	A	120	A
1	A	121	C
1	A	129(A)	G
1	A	130	A
1	A	131	C
1	A	163	C
1	A	182	U
1	A	189(F)	U
1	A	195	A
1	A	197	A
1	A	202	U
1	A	204	U
1	A	216	G
1	A	244	U
1	A	247	G
1	A	251	G
1	A	266	G
1	A	267	C
1	A	289	G
1	A	321	A
1	A	328	C
1	A	329	A
1	A	332	G
1	A	345	C
1	A	352	C
1	A	353	A
1	A	354	G
1	A	367	U
1	A	373	A
1	A	397	A
1	A	406	G
1	A	411	A

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Mol	Chain	Res	Type
1	A	412	A
1	A	413	G
1	A	414	A
1	A	421	U
1	A	429	U
1	A	430	A
1	A	439	A
1	A	442	C
1	A	452	A
1	A	470	C
1	A	471	G
1	A	484	G
1	A	485	G
1	A	496	A
1	A	498	U
1	A	509	A
1	A	510	A
1	A	511	C
1	A	518	C
1	A	531	U
1	A	532	A
1	A	533	A
1	A	534	U
1	A	547	A
1	A	559	A
1	A	560	U
1	A	561	U
1	A	562	C
1	A	572	A
1	A	573	A
1	A	576	G
1	A	577	G
1	A	588	G
1	A	630	G
1	A	653	A
1	A	665	A
1	A	688	G
1	A	701	C
1	A	702	A
1	A	703	G
1	A	723	U
1	A	731	G

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Mol	Chain	Res	Type
1	A	749	C
1	A	755	G
1	A	777	A
1	A	781	A
1	A	782	A
1	A	793	U
1	A	794	A
1	A	812	C
1	A	813	U
1	A	816	A
1	A	817	C
1	A	819	A
1	A	828	A
1	A	839	U
1	A	840	C
1	A	841	U
1	A	848	C
1	A	874	G
1	A	902	G
1	A	913	A
1	A	914	A
1	A	926	G
1	A	927	G
1	A	934	C
1	A	935	A
1	A	960	U
1	A	961	U
1	A	965	A
1	A	966	G
1	A	969	A
1	A	971	G
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	978	A
1	A	991	U
1	A	992	U
1	A	993	G
1	A	994	A
1	A	1001(A)	G
1	A	1025	U

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Mol	Chain	Res	Type
1	A	1050	G
1	A	1053	G
1	A	1054	C
1	A	1055	A
1	A	1065	U
1	A	1068	G
1	A	1094	G
1	A	1095	U
1	A	1101	A
1	A	1117	G
1	A	1125	U
1	A	1126	U
1	A	1127	G
1	A	1128	C
1	A	1129	C
1	A	1130	A
1	A	1131	G
1	A	1136	U
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1152	A
1	A	1159	U
1	A	1182	G
1	A	1183	A
1	A	1191	A
1	A	1196	U
1	A	1197	G
1	A	1201	A
1	A	1202	G
1	A	1211	U
1	A	1212	U
1	A	1213	A
1	A	1214	C
1	A	1225	A
1	A	1226	C
1	A	1227	A
1	A	1238	A
1	A	1241	G
1	A	1256	A
1	A	1257	U
1	A	1258	G

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Mol	Chain	Res	Type
1	A	1280	A
1	A	1281	U
1	A	1282	C
1	A	1285	A
1	A	1286	A
1	A	1287	A
1	A	1299	A
1	A	1300	G
1	A	1301	U
1	A	1302	U
1	A	1331	G
1	A	1346	A
1	A	1348	U
1	A	1353	G
1	A	1363	C
1	A	1379	G
1	A	1394	A
1	A	1395	C
1	A	1398	A
1	A	1421	G
1	A	1442	G
1	A	1442(A)	G
1	A	1442(B)	A
1	A	1447	A
1	A	1452	C
1	A	1492	A
1	A	1497	G
1	A	1499	A
1	A	1502	A
1	A	1503	A
1	A	1504	G
1	A	1505	G
1	A	1506	U
1	A	1517	G
1	A	1520	G
1	A	1529	G
1	A	1530	G
1	A	1532	U
1	A	1533	C
22	X	4	A

All (55) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	7	G
1	A	30	U
1	A	60	A
1	A	115	G
1	A	119	A
1	A	129(A)	G
1	A	181	G
1	A	203	U
1	A	243	A
1	A	250	A
1	A	266	G
1	A	328	C
1	A	344	A
1	A	351	G
1	A	353	A
1	A	366	C
1	A	372	C
1	A	410	G
1	A	428	G
1	A	429	U
1	A	484	G
1	A	495	A
1	A	496	A
1	A	509	A
1	A	533	A
1	A	559	A
1	A	560	U
1	A	575	G
1	A	687	A
1	A	701	C
1	A	748	C
1	A	793	U
1	A	812	C
1	A	913	A
1	A	960	U
1	A	965	A
1	A	992	U
1	A	993	G
1	A	1049	U
1	A	1067	A
1	A	1181	G
1	A	1182	G
1	A	1190	G

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Mol	Chain	Res	Type
1	A	1201	A
1	A	1225	A
1	A	1281	U
1	A	1285	A
1	A	1300	G
1	A	1347	G
1	A	1397	C
1	A	1447	A
1	A	1498	U
1	A	1504	G
1	A	1505	G
1	A	1528	U

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
23	6MZ	Y	37	23	22,25,26	0.59	0	30,36,39	0.59	1 (3%)
23	CM0	Y	34	23	22,26,27	1.50	3 (13%)	28,37,40	2.95	3 (10%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
23	6MZ	Y	37	23	-	0/9/27/28	0/3/3/3
23	CM0	Y	34	23	-	5/12/30/31	0/2/2/2

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
23	Y	34	CM0	O9-C8	4.66	1.37	1.22
23	Y	34	CM0	O5-C7	3.85	1.53	1.44
23	Y	34	CM0	O8-C8	-2.35	1.22	1.30

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
23	Y	34	CM0	C7-O5-C5	14.16	136.12	117.58
23	Y	34	CM0	O5-C7-C8	5.04	121.81	110.88
23	Y	34	CM0	O4-C4-N3	-2.33	115.64	120.12
23	Y	37	6MZ	C9-N6-C6	2.21	124.78	122.87

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
23	Y	34	CM0	C4-C5-O5-C7
23	Y	34	CM0	C6-C5-O5-C7
23	Y	34	CM0	C8-C7-O5-C5
23	Y	34	CM0	O5-C7-C8-O8
23	Y	34	CM0	O5-C7-C8-O9

There are no ring outliers.

1 monomer is involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
23	Y	34	CM0	5	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 200 ligands modelled in this entry, 199 are monoatomic - leaving 1 for Mogul analysis.

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
24	PAR	A	1601	26	45,45,45	1.54	8 (17%)	64,67,67	1.24	8 (12%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
24	PAR	A	1601	26	-	2/18/94/94	0/4/4/4

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	A	1601	PAR	C64-C54	4.98	1.58	1.52
24	A	1601	PAR	C34-C24	2.86	1.57	1.53
24	A	1601	PAR	O54-C14	2.69	1.48	1.41
24	A	1601	PAR	C52-C42	2.64	1.57	1.52
24	A	1601	PAR	C11-C21	2.53	1.57	1.52
24	A	1601	PAR	C31-C21	2.41	1.56	1.53
24	A	1601	PAR	O54-C54	2.14	1.49	1.44
24	A	1601	PAR	O51-C11	2.03	1.47	1.41

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	A	1601	PAR	O54-C54-C64	3.98	113.41	106.01
24	A	1601	PAR	C14-O54-C54	3.37	120.30	113.69
24	A	1601	PAR	O33-C14-C24	3.28	113.87	108.22
24	A	1601	PAR	O52-C13-C23	2.74	113.64	107.96
24	A	1601	PAR	C22-C32-C42	2.44	115.69	109.53
24	A	1601	PAR	O11-C11-C21	2.36	112.28	108.22
24	A	1601	PAR	C11-O51-C51	2.21	118.03	113.69
24	A	1601	PAR	O52-C13-O43	-2.21	109.04	111.43

There are no chirality outliers.

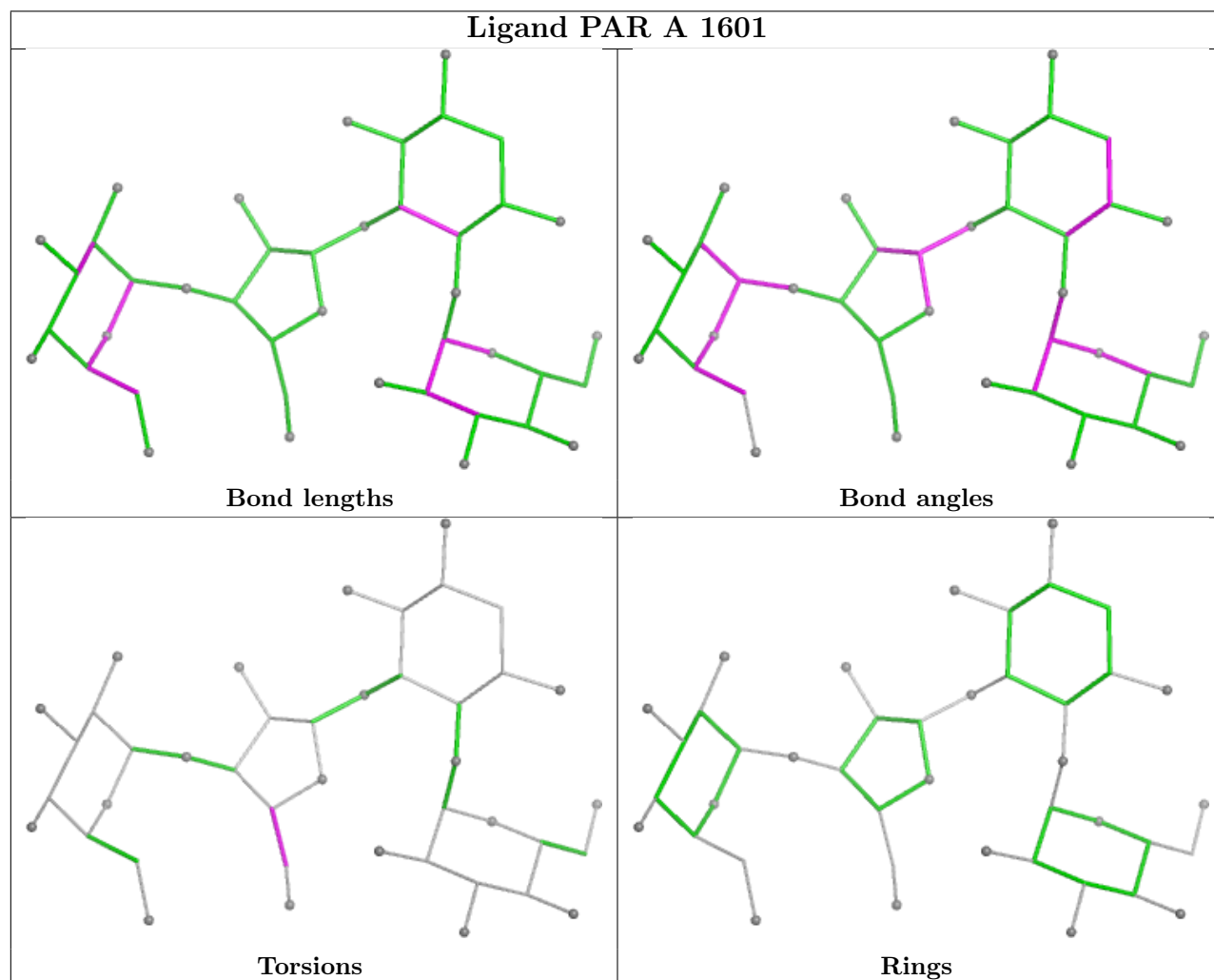
All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
24	A	1601	PAR	C33-C43-C53-O53
24	A	1601	PAR	O43-C43-C53-O53

There are no ring outliers.

No monomer is involved in short contacts.

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	1512/1522 (99%)	0.04	65 (4%) 40 22	19, 46, 113, 166	0
2	B	235/256 (91%)	0.77	27 (11%) 9 5	42, 77, 123, 142	0
3	C	207/239 (86%)	0.67	9 (4%) 40 22	44, 69, 106, 111	0
4	D	208/209 (99%)	0.05	8 (3%) 44 25	31, 52, 72, 84	0
5	E	151/162 (93%)	-0.26	2 (1%) 75 56	18, 37, 59, 77	0
6	F	101/101 (100%)	0.29	0 100 100	49, 71, 83, 91	0
7	G	155/156 (99%)	0.25	8 (5%) 33 17	42, 59, 96, 114	0
8	H	138/138 (100%)	-0.44	0 100 100	18, 36, 52, 59	0
9	I	127/128 (99%)	0.83	7 (5%) 30 16	39, 75, 95, 101	0
10	J	99/105 (94%)	1.57	31 (31%) 1 1	39, 98, 139, 144	0
11	K	119/129 (92%)	-0.02	1 (0%) 82 65	26, 47, 70, 87	0
12	L	125/135 (92%)	0.02	1 (0%) 82 65	13, 43, 61, 97	0
13	M	125/126 (99%)	0.54	12 (9%) 13 7	38, 62, 125, 160	0
14	N	60/61 (98%)	0.75	5 (8%) 17 9	44, 59, 82, 90	0
15	O	88/89 (98%)	-0.15	1 (1%) 78 59	33, 49, 72, 93	0
16	P	84/88 (95%)	-0.27	0 100 100	27, 37, 52, 77	0
17	Q	104/105 (99%)	-0.12	5 (4%) 35 19	22, 41, 88, 127	0
18	R	73/88 (82%)	0.11	3 (4%) 41 23	36, 56, 102, 134	0
19	S	81/93 (87%)	0.98	6 (7%) 20 11	52, 78, 100, 112	0
20	T	99/106 (93%)	0.06	3 (3%) 52 31	28, 43, 64, 79	0
21	U	25/27 (92%)	0.53	0 100 100	36, 52, 76, 77	0
22	X	5/5 (100%)	0.45	1 (20%) 3 1	38, 44, 87, 98	0
23	Y	11/17 (64%)	0.65	1 (9%) 15 8	50, 67, 78, 80	0
All	All	3932/4085 (96%)	0.21	196 (4%) 34 18	13, 52, 107, 166	0

All (196) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
13	M	126	LYS	6.5
2	B	16	HIS	6.1
17	Q	105	ALA	6.0
19	S	3	ARG	5.8
1	A	1003	G	5.7
13	M	125	ARG	5.6
1	A	1129	C	5.5
2	B	19	HIS	5.0
13	M	119	GLY	4.9
1	A	1002	G	4.8
4	D	31	CYS	4.7
13	M	123	ALA	4.6
10	J	10	GLY	4.6
10	J	36	GLY	4.5
1	A	1126	U	4.4
1	A	723	U	4.3
2	B	127	ILE	4.3
13	M	124	PRO	4.2
10	J	90	LEU	4.2
10	J	77	PRO	4.2
10	J	82	ILE	4.1
4	D	2	GLY	4.1
1	A	630	G	4.0
1	A	1281	U	4.0
2	B	131	PRO	4.0
1	A	1539	C	3.9
4	D	26	CYS	3.8
11	K	128	ALA	3.8
2	B	10	LEU	3.8
17	Q	104	LYS	3.7
2	B	122	PHE	3.7
1	A	993	G	3.6
1	A	1421	G	3.6
19	S	2	PRO	3.6
1	A	1140	C	3.6
13	M	118	ALA	3.6
1	A	1130	A	3.6
10	J	79	ARG	3.6
1	A	631	G	3.5
1	A	1001(A)	G	3.5
10	J	75	ILE	3.5
1	A	1533	C	3.5

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Mol	Chain	Res	Type	RSRZ
18	R	16	PRO	3.5
13	M	8	GLU	3.4
9	I	7	THR	3.4
13	M	122	LYS	3.4
1	A	1004	A	3.3
17	Q	100	LYS	3.3
1	A	1006	C	3.3
10	J	35	SER	3.3
1	A	1001	A	3.3
13	M	121	LYS	3.3
1	A	1131	G	3.3
1	A	1125	U	3.3
2	B	229	VAL	3.2
14	N	13	THR	3.2
10	J	88	LEU	3.2
2	B	133	LYS	3.2
10	J	34	VAL	3.2
1	A	1144	G	3.1
1	A	1127	G	3.1
10	J	80	LYS	3.0
1	A	1124	G	2.9
2	B	34	ALA	2.9
1	A	992	U	2.9
10	J	43	ARG	2.9
1	A	1128	C	2.9
19	S	4	SER	2.9
3	C	102	ASN	2.9
7	G	85	TYR	2.9
2	B	123	ALA	2.8
2	B	125	PRO	2.8
1	A	1256	A	2.8
1	A	1141	C	2.8
1	A	1139	G	2.8
13	M	120	LYS	2.7
2	B	230	VAL	2.7
1	A	1145	C	2.7
3	C	71	ALA	2.7
10	J	72	VAL	2.7
10	J	37	PRO	2.7
20	T	102	GLY	2.7
19	S	5	LEU	2.7
13	M	10	PRO	2.7

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Mol	Chain	Res	Type	RSRZ
10	J	86	MET	2.7
1	A	1024	G	2.7
3	C	20	SER	2.7
1	A	1146	A	2.6
1	A	1039	C	2.6
2	B	136	VAL	2.6
1	A	1142	G	2.6
4	D	35	ARG	2.6
2	B	35	GLU	2.6
7	G	156	TRP	2.6
1	A	1034	G	2.6
9	I	64	THR	2.6
12	L	26	ALA	2.6
13	M	9	ILE	2.6
1	A	1030(B)	C	2.6
10	J	98	ILE	2.6
20	T	100	ILE	2.6
17	Q	99	SER	2.6
18	R	17	SER	2.6
1	A	1200	C	2.6
14	N	2	ALA	2.6
9	I	8	GLY	2.5
2	B	228	GLY	2.5
3	C	79	ARG	2.5
10	J	73	ASP	2.5
10	J	93	GLY	2.5
3	C	60	ALA	2.4
23	Y	41	A	2.4
10	J	91	PRO	2.4
1	A	202	U	2.4
2	B	14	GLY	2.4
2	B	7	VAL	2.4
15	O	89	GLY	2.4
14	N	10	ALA	2.4
1	A	841	U	2.4
9	I	16	ARG	2.4
14	N	57	ARG	2.4
20	T	12	ALA	2.4
2	B	124	SER	2.4
1	A	1181	G	2.4
2	B	18	GLY	2.4
3	C	23	TYR	2.4

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Mol	Chain	Res	Type	RSRZ
10	J	28	ARG	2.3
14	N	12	ARG	2.3
1	A	1032	G	2.3
2	B	11	LEU	2.3
9	I	38	GLN	2.3
19	S	33	THR	2.3
1	A	1021	G	2.3
3	C	106	VAL	2.3
7	G	83	ALA	2.3
1	A	532	A	2.3
4	D	151	LYS	2.3
10	J	42	THR	2.3
10	J	17	ASP	2.3
1	A	1442(B)	A	2.3
7	G	6	ARG	2.3
7	G	7	ALA	2.3
1	A	1282	C	2.3
1	A	1275	A	2.2
1	A	1420	C	2.2
1	A	1009	G	2.2
1	A	1143	G	2.2
1	A	344	A	2.2
1	A	1035	A	2.2
1	A	1261	A	2.2
10	J	59	SER	2.2
4	D	9	CYS	2.2
5	E	154	GLY	2.2
10	J	87	THR	2.2
2	B	33	TYR	2.2
1	A	1136	U	2.2
1	A	1541	U	2.2
7	G	5	ARG	2.2
1	A	1260	C	2.2
3	C	63	ASN	2.2
10	J	83	GLU	2.2
17	Q	101	ARG	2.2
10	J	58	ASP	2.2
1	A	1043	C	2.1
2	B	22	LYS	2.1
4	D	12	CYS	2.1
2	B	140	HIS	2.1
1	A	1123	A	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	1300	G	2.1
1	A	1007	C	2.1
2	B	234	PRO	2.1
10	J	96	ILE	2.1
2	B	96	ARG	2.1
7	G	80	VAL	2.1
19	S	14	HIS	2.1
1	A	1212	U	2.1
1	A	1278	U	2.1
10	J	33	GLN	2.1
10	J	101	VAL	2.1
9	I	125	TYR	2.1
1	A	216	G	2.1
1	A	1258	G	2.1
2	B	203	GLY	2.1
5	E	155	GLU	2.1
1	A	204	U	2.0
1	A	1540	U	2.0
4	D	28	SER	2.0
3	C	88	ARG	2.0
7	G	78	ARG	2.0
10	J	38	ILE	2.0
18	R	54	ARG	2.0
22	X	5	A	2.0
1	A	1259	C	2.0
10	J	71	LEU	2.0
2	B	118	LEU	2.0
9	I	56	LEU	2.0

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

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
23	CM0	Y	34	25/26	0.88	0.12	54,56,60,61	0
23	6MZ	Y	37	23/24	0.92	0.13	54,59,62,66	0

6.3 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

6.4 Ligands ⓘ

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	A	1738	1/1	0.66	0.47	67,67,67,67	0
25	MG	A	1746	1/1	0.70	0.38	86,86,86,86	0
25	MG	A	1603	1/1	0.71	0.43	83,83,83,83	0
25	MG	A	1655	1/1	0.72	0.51	72,72,72,72	0
25	MG	A	1741	1/1	0.73	0.30	60,60,60,60	0
25	MG	A	1695	1/1	0.73	0.24	74,74,74,74	0
25	MG	A	1607	1/1	0.76	0.26	61,61,61,61	0
25	MG	A	1619	1/1	0.77	0.40	47,47,47,47	0
25	MG	A	1631	1/1	0.79	0.48	70,70,70,70	0
25	MG	A	1743	1/1	0.80	0.29	64,64,64,64	0
25	MG	N	101	1/1	0.80	0.38	51,51,51,51	0
25	MG	A	1630	1/1	0.81	0.35	71,71,71,71	0
25	MG	A	1624	1/1	0.81	0.61	81,81,81,81	0
25	MG	A	1626	1/1	0.81	0.31	55,55,55,55	0
26	K	A	1772	1/1	0.82	0.13	101,101,101,101	0
26	K	A	1773	1/1	0.82	0.15	75,75,75,75	0
26	K	A	1768	1/1	0.83	0.15	96,96,96,96	0
26	K	A	1780	1/1	0.83	0.18	98,98,98,98	0
25	MG	A	1606	1/1	0.85	0.34	50,50,50,50	0
26	K	A	1767	1/1	0.85	0.35	91,91,91,91	0
26	K	A	1785	1/1	0.85	0.21	111,111,111,111	0
25	MG	A	1648	1/1	0.86	0.18	40,40,40,40	0
26	K	A	1787	1/1	0.86	0.25	115,115,115,115	0
25	MG	A	1617	1/1	0.87	0.29	52,52,52,52	0
26	K	A	1765	1/1	0.87	0.16	100,100,100,100	0
25	MG	A	1733	1/1	0.87	0.25	61,61,61,61	0
25	MG	A	1735	1/1	0.87	0.19	42,42,42,42	0
25	MG	A	1628	1/1	0.87	0.11	27,27,27,27	0
25	MG	A	1740	1/1	0.87	0.33	41,41,41,41	0
26	K	A	1778	1/1	0.87	0.10	78,78,78,78	0
25	MG	A	1674	1/1	0.87	0.30	51,51,51,51	0
25	MG	A	1675	1/1	0.87	0.28	59,59,59,59	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
26	K	A	1786	1/1	0.87	0.17	83,83,83,83	0
25	MG	A	1680	1/1	0.87	0.20	34,34,34,34	0
26	K	A	1775	1/1	0.88	0.08	61,61,61,61	0
26	K	A	1763	1/1	0.88	0.28	80,80,80,80	0
25	MG	Q	201	1/1	0.88	0.23	49,49,49,49	0
25	MG	A	1702	1/1	0.89	0.36	51,51,51,51	0
25	MG	A	1705	1/1	0.89	0.24	25,25,25,25	0
25	MG	A	1707	1/1	0.89	0.30	57,57,57,57	0
25	MG	A	1715	1/1	0.89	0.19	14,14,14,14	0
26	K	A	1776	1/1	0.89	0.12	76,76,76,76	0
26	K	A	1777	1/1	0.89	0.11	77,77,77,77	0
25	MG	A	1645	1/1	0.89	0.09	11,11,11,11	0
26	K	A	1758	1/1	0.89	0.16	98,98,98,98	0
26	K	A	1782	1/1	0.89	0.11	92,92,92,92	0
25	MG	A	1627	1/1	0.89	0.34	65,65,65,65	0
25	MG	A	1640	1/1	0.89	0.19	11,11,11,11	0
25	MG	A	1673	1/1	0.89	0.23	57,57,57,57	0
25	MG	A	1604	1/1	0.90	0.25	33,33,33,33	0
25	MG	A	1632	1/1	0.90	0.18	34,34,34,34	0
25	MG	A	1737	1/1	0.90	0.40	73,73,73,73	0
25	MG	A	1633	1/1	0.90	0.31	64,64,64,64	0
25	MG	A	1708	1/1	0.90	0.13	19,19,19,19	0
26	K	A	1766	1/1	0.90	0.17	70,70,70,70	0
25	MG	A	1713	1/1	0.90	0.20	50,50,50,50	0
25	MG	A	1700	1/1	0.90	0.28	38,38,38,38	0
26	K	A	1771	1/1	0.90	0.12	76,76,76,76	0
25	MG	A	1732	1/1	0.90	0.19	41,41,41,41	0
26	K	A	1789	1/1	0.90	0.15	91,91,91,91	0
26	K	R	201	1/1	0.90	0.11	116,116,116,116	0
26	K	A	1760	1/1	0.91	0.13	67,67,67,67	0
25	MG	A	1742	1/1	0.91	0.18	58,58,58,58	0
25	MG	A	1671	1/1	0.91	0.41	54,54,54,54	0
25	MG	A	1744	1/1	0.91	0.50	85,85,85,85	0
25	MG	A	1745	1/1	0.91	0.16	27,27,27,27	0
25	MG	A	1659	1/1	0.91	0.15	28,28,28,28	0
26	K	A	1769	1/1	0.91	0.23	83,83,83,83	0
26	K	A	1770	1/1	0.91	0.08	73,73,73,73	0
25	MG	A	1730	1/1	0.91	0.10	11,11,11,11	0
25	MG	A	1679	1/1	0.91	0.41	69,69,69,69	0
25	MG	A	1701	1/1	0.91	0.40	65,65,65,65	0
25	MG	A	1676	1/1	0.92	0.24	21,21,21,21	0
25	MG	A	1667	1/1	0.92	0.31	43,43,43,43	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	A	1706	1/1	0.92	0.26	59,59,59,59	0
25	MG	A	1646	1/1	0.92	0.11	7,7,7,7	0
25	MG	A	1690	1/1	0.92	0.22	26,26,26,26	0
26	K	A	1783	1/1	0.92	0.14	75,75,75,75	0
25	MG	A	1739	1/1	0.92	0.14	35,35,35,35	0
26	K	A	1757	1/1	0.92	0.10	68,68,68,68	0
25	MG	A	1658	1/1	0.92	0.20	16,16,16,16	0
25	MG	A	1614	1/1	0.92	0.22	46,46,46,46	0
25	MG	A	1661	1/1	0.92	0.36	40,40,40,40	0
25	MG	A	1669	1/1	0.93	0.46	76,76,76,76	0
25	MG	A	1650	1/1	0.93	0.29	47,47,47,47	0
25	MG	A	1710	1/1	0.93	0.20	12,12,12,12	0
25	MG	A	1698	1/1	0.93	0.40	47,47,47,47	0
24	PAR	A	1601	42/42	0.93	0.14	31,39,54,58	0
25	MG	A	1718	1/1	0.93	0.28	42,42,42,42	0
25	MG	A	1719	1/1	0.93	0.37	58,58,58,58	0
25	MG	A	1723	1/1	0.93	0.12	34,34,34,34	0
25	MG	A	1621	1/1	0.93	0.12	41,41,41,41	0
25	MG	A	1749	1/1	0.93	0.21	21,21,21,21	0
25	MG	A	1751	1/1	0.93	0.08	29,29,29,29	0
25	MG	A	1753	1/1	0.93	0.20	45,45,45,45	0
25	MG	A	1754	1/1	0.93	0.12	35,35,35,35	0
25	MG	A	1790	1/1	0.93	0.07	19,19,19,19	0
25	MG	A	1682	1/1	0.93	0.23	39,39,39,39	0
25	MG	A	1703	1/1	0.93	0.26	51,51,51,51	0
26	K	A	1756	1/1	0.93	0.06	60,60,60,60	0
25	MG	A	1734	1/1	0.93	0.18	34,34,34,34	0
25	MG	A	1687	1/1	0.93	0.20	45,45,45,45	0
25	MG	A	1689	1/1	0.93	0.20	22,22,22,22	0
26	K	A	1761	1/1	0.93	0.10	68,68,68,68	0
26	K	A	1762	1/1	0.93	0.11	75,75,75,75	0
25	MG	A	1638	1/1	0.94	0.38	77,77,77,77	0
25	MG	A	1792	1/1	0.94	0.21	22,22,22,22	0
25	MG	A	1692	1/1	0.94	0.10	20,20,20,20	0
25	MG	A	1712	1/1	0.94	0.19	26,26,26,26	0
25	MG	A	1620	1/1	0.94	0.26	49,49,49,49	0
25	MG	A	1714	1/1	0.94	0.35	49,49,49,49	0
25	MG	A	1611	1/1	0.94	0.35	1,1,1,1	0
25	MG	A	1660	1/1	0.94	0.26	33,33,33,33	0
25	MG	A	1634	1/1	0.94	0.34	61,61,61,61	0
26	K	A	1781	1/1	0.94	0.12	85,85,85,85	0
25	MG	A	1722	1/1	0.94	0.24	17,17,17,17	0

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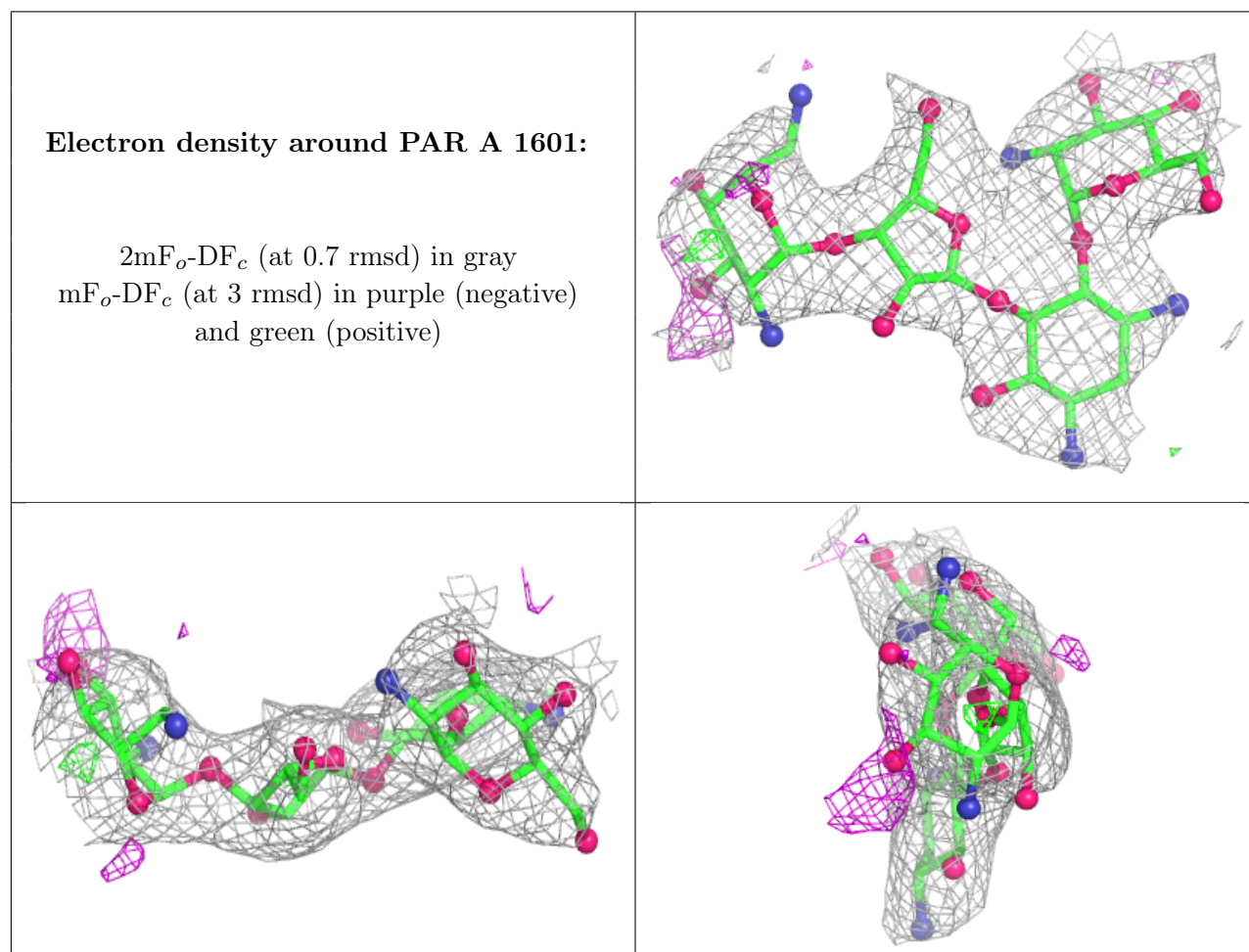
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	A	1665	1/1	0.94	0.23	16,16,16,16	0
26	K	A	1784	1/1	0.94	0.14	101,101,101,101	0
25	MG	A	1635	1/1	0.94	0.20	10,10,10,10	0
25	MG	A	1731	1/1	0.94	0.18	49,49,49,49	0
25	MG	A	1686	1/1	0.94	0.14	14,14,14,14	0
25	MG	A	1637	1/1	0.94	0.65	67,67,67,67	0
25	MG	A	1652	1/1	0.94	0.11	16,16,16,16	0
25	MG	A	1678	1/1	0.95	0.44	61,61,61,61	0
25	MG	A	1668	1/1	0.95	0.21	27,27,27,27	0
25	MG	A	1736	1/1	0.95	0.17	33,33,33,33	0
25	MG	A	1625	1/1	0.95	0.24	26,26,26,26	0
25	MG	A	1602	1/1	0.95	0.05	20,20,20,20	0
25	MG	A	1683	1/1	0.95	0.16	25,25,25,25	0
25	MG	A	1672	1/1	0.95	0.18	51,51,51,51	0
25	MG	A	1704	1/1	0.95	0.24	32,32,32,32	0
25	MG	A	1612	1/1	0.95	0.47	69,69,69,69	0
25	MG	A	1725	1/1	0.95	0.14	24,24,24,24	0
25	MG	A	1726	1/1	0.95	0.18	11,11,11,11	0
25	MG	A	1728	1/1	0.95	0.14	6,6,6,6	0
26	K	A	1764	1/1	0.95	0.13	69,69,69,69	0
25	MG	A	1662	1/1	0.95	0.15	16,16,16,16	0
25	MG	A	1748	1/1	0.95	0.14	16,16,16,16	0
25	MG	A	1622	1/1	0.95	0.23	68,68,68,68	0
25	MG	A	1613	1/1	0.95	0.35	44,44,44,44	0
25	MG	A	1694	1/1	0.95	0.29	35,35,35,35	0
25	MG	A	1656	1/1	0.96	0.13	9,9,9,9	0
25	MG	A	1727	1/1	0.96	0.14	20,20,20,20	0
25	MG	A	1642	1/1	0.96	0.16	1,1,1,1	0
25	MG	A	1616	1/1	0.96	0.07	28,28,28,28	0
25	MG	A	1750	1/1	0.96	0.13	30,30,30,30	0
25	MG	A	1608	1/1	0.96	0.18	9,9,9,9	0
25	MG	A	1752	1/1	0.96	0.04	5,5,5,5	0
25	MG	A	1647	1/1	0.96	0.21	21,21,21,21	0
25	MG	A	1629	1/1	0.96	0.20	21,21,21,21	0
25	MG	A	1755	1/1	0.96	0.12	28,28,28,28	0
26	K	A	1774	1/1	0.96	0.09	71,71,71,71	0
25	MG	A	1618	1/1	0.96	0.10	16,16,16,16	0
25	MG	A	1791	1/1	0.96	0.09	19,19,19,19	0
25	MG	A	1696	1/1	0.96	0.17	35,35,35,35	0
25	MG	E	201	1/1	0.96	0.19	20,20,20,20	0
26	K	A	1779	1/1	0.96	0.07	72,72,72,72	0
25	MG	A	1651	1/1	0.96	0.33	1,1,1,1	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	A	1717	1/1	0.96	0.08	15,15,15,15	0
25	MG	A	1610	1/1	0.96	0.15	58,58,58,58	0
25	MG	A	1681	1/1	0.96	0.37	40,40,40,40	0
25	MG	A	1720	1/1	0.96	0.12	23,23,23,23	0
26	K	A	1759	1/1	0.96	0.06	74,74,74,74	0
25	MG	A	1605	1/1	0.96	0.10	12,12,12,12	0
25	MG	A	1670	1/1	0.96	0.25	22,22,22,22	0
25	MG	A	1724	1/1	0.96	0.13	14,14,14,14	0
26	K	E	202	1/1	0.96	0.07	72,72,72,72	0
25	MG	A	1684	1/1	0.96	0.26	47,47,47,47	0
25	MG	A	1657	1/1	0.97	0.27	29,29,29,29	0
25	MG	A	1677	1/1	0.97	0.21	1,1,1,1	0
25	MG	A	1716	1/1	0.97	0.25	28,28,28,28	0
25	MG	A	1664	1/1	0.97	0.16	16,16,16,16	0
25	MG	A	1644	1/1	0.97	0.17	47,47,47,47	0
25	MG	A	1615	1/1	0.97	0.20	58,58,58,58	0
25	MG	A	1649	1/1	0.97	0.12	11,11,11,11	0
26	K	A	1788	1/1	0.97	0.10	81,81,81,81	0
25	MG	A	1711	1/1	0.97	0.06	11,11,11,11	0
25	MG	A	1691	1/1	0.97	0.34	52,52,52,52	0
25	MG	A	1623	1/1	0.97	0.08	36,36,36,36	0
27	ZN	D	301	1/1	0.97	0.15	42,42,42,42	0
25	MG	A	1609	1/1	0.98	0.21	20,20,20,20	0
25	MG	A	1636	1/1	0.98	0.20	9,9,9,9	0
25	MG	A	1699	1/1	0.98	0.17	13,13,13,13	0
25	MG	A	1653	1/1	0.98	0.28	33,33,33,33	0
25	MG	A	1729	1/1	0.98	0.12	7,7,7,7	0
25	MG	A	1654	1/1	0.98	0.18	26,26,26,26	0
25	MG	A	1747	1/1	0.98	0.06	3,3,3,3	0
25	MG	A	1639	1/1	0.98	0.13	17,17,17,17	0
25	MG	A	1709	1/1	0.98	0.23	21,21,21,21	0
25	MG	B	301	1/1	0.98	0.07	25,25,25,25	0
25	MG	A	1688	1/1	0.99	0.22	16,16,16,16	0
25	MG	A	1663	1/1	0.99	0.33	38,38,38,38	0
25	MG	A	1721	1/1	0.99	0.07	6,6,6,6	0
25	MG	A	1697	1/1	0.99	0.05	1,1,1,1	0
25	MG	A	1643	1/1	0.99	0.19	33,33,33,33	0
25	MG	A	1685	1/1	0.99	0.12	14,14,14,14	0
25	MG	A	1641	1/1	0.99	0.22	11,11,11,11	0
25	MG	A	1693	1/1	0.99	0.30	32,32,32,32	0
25	MG	A	1666	1/1	0.99	0.09	1,1,1,1	0
27	ZN	N	102	1/1	1.00	0.01	55,55,55,55	0

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



6.5 Other polymers [i](#)

There are no such residues in this entry.