Full wwPDB X-ray Structure Validation Report ⓘ

Jun 17, 2024 – 03:40 PM EDT

PDB ID	:	3A2K
Title	:	Crystal structure of TilS complexed with tRNA
Authors	:	Nakanishi, K.; Bonnefond, L.; Ishitani, R.; Nureki, O.
Deposited on	:	2009-05-23
Resolution	:	3.65 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

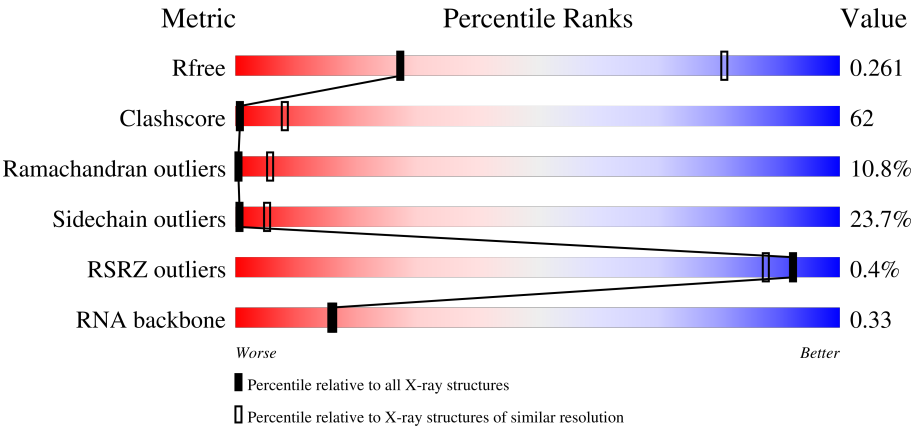
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.20.1
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.65 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1557 (3.82-3.50)
Clashscore	141614	1037 (3.80-3.52)
Ramachandran outliers	138981	1004 (3.80-3.52)
Sidechain outliers	138945	1002 (3.80-3.52)
RSRZ outliers	127900	1441 (3.82-3.50)
RNA backbone	3102	1024 (4.30-3.00)

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

Mol	Chain	Length	Quality of chain
1	A	464	22% 54% 22% .
1	B	464	20% 55% 22% .
2	C	77	19% 35% 21% 25%
2	D	77	16% 38% 21% 26%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 10724 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called tRNA(Ile)-lysidine synthase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	462	Total	C	N	O	S	0	0	0
			3724	2366	687	650	21			
1	B	462	Total	C	N	O	S	0	0	0
			3724	2366	687	650	21			

- Molecule 2 is a RNA chain called bacterial tRNA.

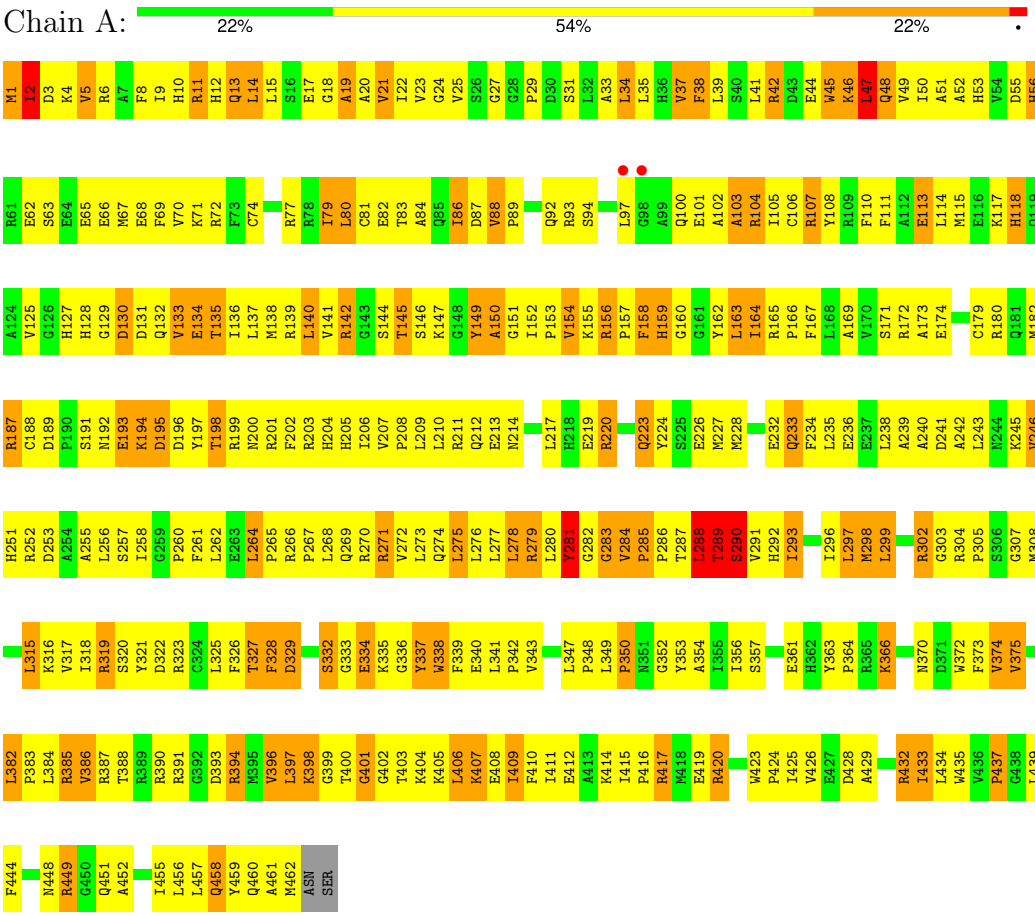
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	C	77	Total	C	N	O	P	0	0	0
			1638	731	290	540	77			
2	D	77	Total	C	N	O	P	0	0	0
			1638	731	290	540	77			

3 Residue-property plots (i)

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

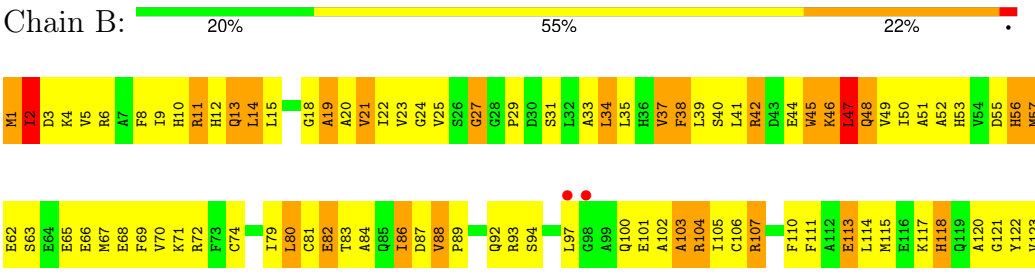
• Molecule 1: tRNA(Ile)-lysidine synthase

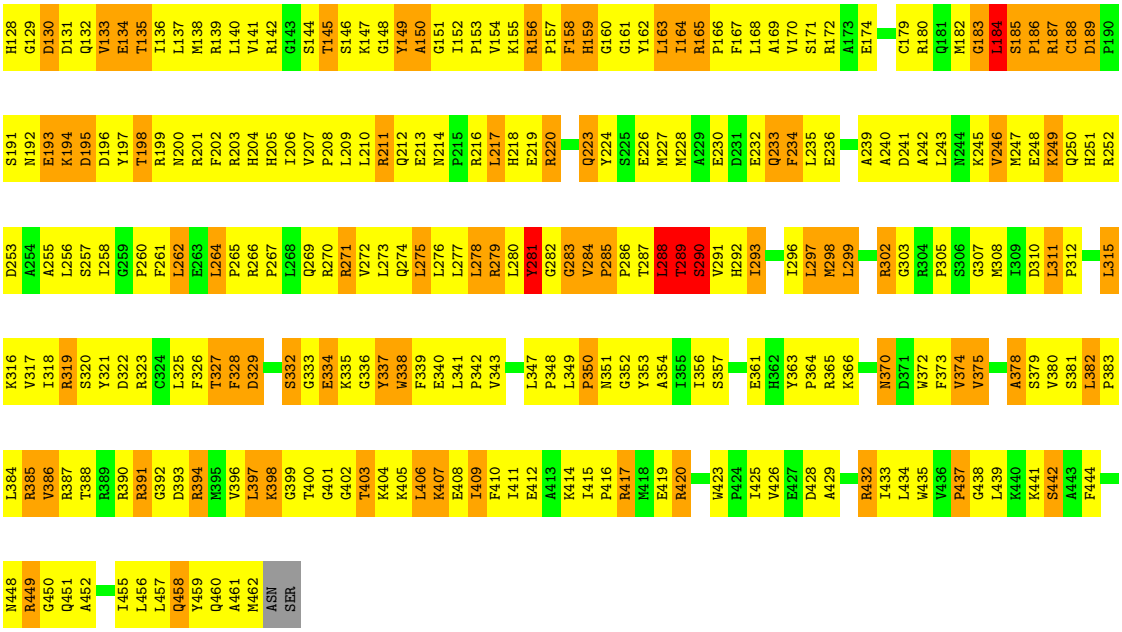
Chain A:



• Molecule 1: tRNA(Ile)-lysidine synthase

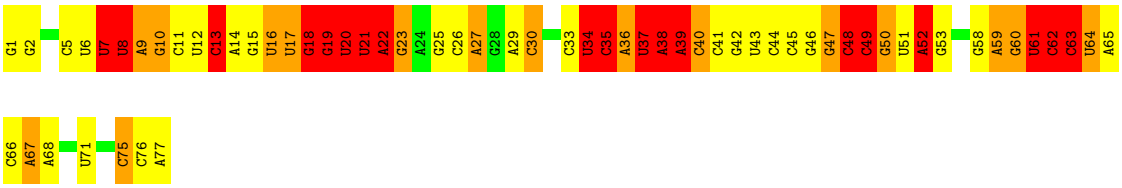
Chain B:





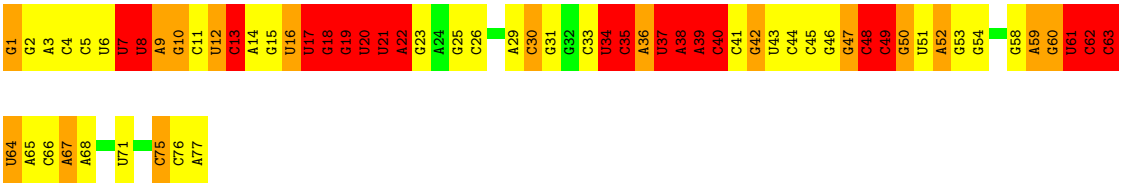
• Molecule 2: bacterial tRNA

Chain C:



• Molecule 2: bacterial tRNA

Chain D:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	85.73Å 157.40Å 208.18Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	43.75 – 3.65 43.75 – 3.64	Depositor EDS
% Data completeness (in resolution range)	96.8 (43.75-3.65) 96.4 (43.75-3.64)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.06	Depositor
$< I/\sigma(I) >$ [1]	2.58 (at 3.66Å)	Xtriage
Refinement program	PHENIX (phenix.refine)	Depositor
R, R_{free}	0.216 , 0.266 0.209 , 0.261	Depositor DCC
R_{free} test set	1563 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	117.5	Xtriage
Anisotropy	0.179	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.23 , 62.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.38$, $< L^2 > = 0.21$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	10724	wwPDB-VP
Average B, all atoms (Å^2)	157.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.63% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

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	0.48	0/3810	0.72	1/5137 (0.0%)
1	B	0.48	0/3810	0.72	1/5137 (0.0%)
2	C	0.81	1/1829 (0.1%)	1.76	59/2846 (2.1%)
2	D	0.75	1/1829 (0.1%)	1.72	58/2846 (2.0%)
All	All	0.59	2/11278 (0.0%)	1.19	119/15966 (0.7%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	1	G	OP3-P	-10.56	1.48	1.61
2	D	1	G	OP3-P	-9.32	1.50	1.61

All (119) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	C	7	U	P-O3'-C3'	12.86	135.13	119.70
2	C	63	C	N1-C1'-C2'	-12.09	98.29	114.00
2	D	63	C	N1-C1'-C2'	-11.65	98.85	114.00
2	D	7	U	P-O3'-C3'	11.50	133.50	119.70
2	C	37	U	P-O3'-C3'	11.19	133.13	119.70
2	C	61	U	P-O3'-C3'	10.81	132.68	119.70
2	D	61	U	P-O3'-C3'	10.69	132.53	119.70
2	D	37	U	O4'-C1'-N1	-10.63	99.69	108.20
2	D	16	U	O4'-C1'-N1	-10.30	99.96	108.20
2	C	37	U	O4'-C1'-N1	-10.18	100.06	108.20
2	D	7	U	N1-C1'-C2'	9.83	126.78	114.00
2	C	34	U	O4'-C1'-N1	9.71	115.97	108.20
2	C	63	C	O4'-C1'-N1	9.65	115.92	108.20
2	C	7	U	N1-C1'-C2'	9.43	126.26	114.00
2	D	63	C	O4'-C1'-N1	9.10	115.48	108.20
2	D	20	U	O4'-C1'-N1	9.05	115.44	108.20
2	D	37	U	P-O3'-C3'	8.99	130.49	119.70
2	C	16	U	O4'-C1'-N1	-8.97	101.02	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	38	A	P-O3'-C3'	-8.68	109.28	119.70
2	C	21	U	O4'-C1'-N1	8.57	115.06	108.20
2	C	8	U	P-O3'-C3'	-8.50	109.50	119.70
2	D	62	C	N1-C1'-C2'	-8.47	102.69	112.00
2	C	20	U	O4'-C1'-N1	8.42	114.94	108.20
2	C	62	C	N1-C1'-C2'	-8.32	102.85	112.00
2	C	20	U	P-O3'-C3'	8.00	129.31	119.70
2	C	48	C	P-O3'-C3'	-7.96	110.15	119.70
2	C	8	U	O4'-C1'-N1	-7.94	101.85	108.20
2	D	8	U	P-O3'-C3'	-7.91	110.21	119.70
2	C	39	A	C3'-C2'-C1'	7.89	107.81	101.50
2	D	21	U	O4'-C1'-N1	7.86	114.49	108.20
2	D	49	C	N1-C2-O2	7.82	123.59	118.90
2	D	8	U	O4'-C1'-N1	-7.62	102.10	108.20
2	D	20	U	P-O3'-C3'	7.62	128.84	119.70
2	D	39	A	C3'-C2'-C1'	7.43	107.45	101.50
2	D	34	U	O4'-C1'-N1	7.39	114.11	108.20
2	D	50	G	P-O5'-C5'	-7.35	109.14	120.90
2	C	75	C	P-O3'-C3'	-7.34	110.89	119.70
2	C	36	A	O4'-C1'-N9	7.29	114.03	108.20
2	C	61	U	N1-C1'-C2'	7.04	123.15	114.00
2	C	38	A	P-O3'-C3'	-6.78	111.56	119.70
2	C	13	C	O4'-C1'-N1	-6.78	102.78	108.20
2	C	39	A	C8-N9-C4	-6.74	103.11	105.80
2	C	49	C	N1-C2-O2	6.63	122.88	118.90
2	C	50	G	P-O5'-C5'	-6.58	110.38	120.90
2	C	39	A	N7-C8-N9	6.53	117.06	113.80
2	C	37	U	N1-C1'-C2'	6.49	122.44	114.00
2	D	75	C	P-O3'-C3'	-6.49	111.91	119.70
2	D	61	U	N1-C1'-C2'	6.48	122.43	114.00
2	D	37	U	N1-C1'-C2'	6.46	122.40	114.00
2	C	50	G	N9-C1'-C2'	-6.38	104.98	112.00
2	D	30	C	O4'-C1'-N1	6.37	113.30	108.20
2	D	36	A	O4'-C1'-N9	6.33	113.27	108.20
2	C	19	G	P-O5'-C5'	-6.31	110.81	120.90
2	C	30	C	O4'-C1'-N1	6.28	113.22	108.20
2	C	19	G	C3'-C2'-C1'	6.25	106.50	101.50
2	C	18	G	O4'-C1'-N9	6.12	113.10	108.20
2	D	39	A	N1-C6-N6	6.07	122.24	118.60
2	C	39	A	O4'-C1'-N9	6.03	113.03	108.20
2	D	13	C	O4'-C1'-N1	-5.98	103.42	108.20
2	D	49	C	O3'-P-O5'	-5.95	92.70	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	C	63	C	C3'-C2'-C1'	5.91	106.23	101.50
2	D	10	G	N9-C1'-C2'	-5.84	105.57	112.00
2	D	62	C	O4'-C1'-N1	5.82	112.86	108.20
2	C	8	U	C2-N1-C1'	5.80	124.67	117.70
2	C	62	C	O4'-C1'-N1	5.78	112.83	108.20
2	C	67	A	P-O3'-C3'	-5.78	112.77	119.70
2	D	40	C	O4'-C1'-N1	-5.76	103.59	108.20
2	D	63	C	P-O3'-C3'	-5.70	112.86	119.70
2	D	63	C	C3'-C2'-C1'	5.70	106.06	101.50
2	C	2	G	N1-C6-O6	5.70	123.32	119.90
2	D	49	C	C3'-C2'-C1'	5.68	106.05	101.50
2	D	19	G	P-O5'-C5'	-5.66	111.85	120.90
2	C	35	C	N1-C1'-C2'	-5.65	105.79	112.00
2	C	49	C	C3'-C2'-C1'	5.63	106.00	101.50
2	D	10	G	P-O3'-C3'	-5.63	112.95	119.70
2	C	49	C	O3'-P-O5'	-5.62	93.32	104.00
2	D	37	U	N1-C2-N3	-5.56	111.56	114.90
2	D	49	C	N3-C2-O2	-5.56	118.01	121.90
2	C	63	C	P-O3'-C3'	-5.55	113.04	119.70
2	D	19	G	C3'-C2'-C1'	5.55	105.94	101.50
2	D	35	C	P-O3'-C3'	-5.54	113.05	119.70
2	D	39	A	O4'-C1'-N9	5.52	112.62	108.20
2	D	39	A	N7-C8-N9	5.52	116.56	113.80
2	C	71	U	P-O5'-C5'	-5.51	112.08	120.90
2	C	35	C	C3'-C2'-C1'	5.48	105.88	101.50
2	D	42	G	P-O3'-C3'	-5.46	113.15	119.70
2	C	39	A	N1-C6-N6	5.43	121.86	118.60
2	D	35	C	C3'-C2'-C1'	5.42	105.83	101.50
2	D	18	G	O4'-C1'-N9	5.40	112.52	108.20
2	D	71	U	P-O5'-C5'	-5.38	112.30	120.90
2	C	39	A	C5-N7-C8	-5.35	101.22	103.90
1	A	47	LEU	CA-CB-CG	5.35	127.61	115.30
2	C	8	U	C3'-C2'-C1'	5.34	105.78	101.50
2	C	10	G	N9-C1'-C2'	-5.33	106.13	112.00
2	D	39	A	C8-N9-C4	-5.31	103.68	105.80
2	D	35	C	N1-C1'-C2'	-5.30	106.17	112.00
2	D	39	A	C6-C5-N7	-5.30	128.59	132.30
2	C	35	C	N1-C2-O2	5.29	122.08	118.90
2	C	22	A	C3'-C2'-C1'	5.28	105.72	101.50
2	C	13	C	P-O3'-C3'	5.26	126.01	119.70
2	D	67	A	P-O3'-C3'	-5.24	113.41	119.70
2	D	8	U	C2-N1-C1'	5.22	123.96	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	50	G	N9-C1'-C2'	-5.20	106.28	112.00
2	D	50	G	P-O3'-C3'	-5.19	113.47	119.70
2	C	39	A	C6-C5-N7	-5.18	128.68	132.30
2	D	2	G	C5-C6-O6	-5.17	125.50	128.60
2	C	27	A	N1-C6-N6	5.16	121.69	118.60
2	D	17	U	O4'-C1'-N1	5.16	112.33	108.20
2	C	35	C	C2-N1-C1'	5.15	124.46	118.80
2	C	16	U	P-O3'-C3'	5.13	125.86	119.70
2	D	48	C	C4'-C3'-C2'	5.12	107.72	102.60
2	C	50	G	P-O3'-C3'	-5.10	113.58	119.70
2	D	22	A	C3'-C2'-C1'	5.08	105.56	101.50
2	C	36	A	C2-N3-C4	5.06	113.13	110.60
1	B	47	LEU	CA-CB-CG	5.05	126.92	115.30
2	D	2	G	N1-C6-O6	5.05	122.93	119.90
2	C	10	G	P-O3'-C3'	-5.04	113.66	119.70
2	C	52	A	C8-N9-C4	5.04	107.81	105.80
2	D	13	C	P-O3'-C3'	5.01	125.72	119.70

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3724	0	3752	514	0
1	B	3724	0	3752	528	0
2	C	1638	0	831	152	1
2	D	1638	0	831	155	1
All	All	10724	0	9166	1239	1

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 62.

All (1239) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:144:SER:HA	2:D:39:A:H5'	1.19	1.18
2:C:49:C:H2'	2:C:49:C:O2	1.37	1.18
2:D:49:C:H2'	2:D:49:C:O2	1.40	1.13
1:B:42:ARG:HD3	1:B:47:LEU:HB3	1.32	1.10
1:A:42:ARG:HD3	1:A:47:LEU:HB3	1.31	1.09
1:A:145:THR:HG22	1:A:149:TYR:HB2	1.38	1.05
1:B:417:ARG:HH11	1:B:417:ARG:N	1.57	1.03
1:A:417:ARG:N	1:A:417:ARG:HH11	1.57	1.03
1:B:145:THR:HG22	1:B:149:TYR:HB2	1.39	1.03
1:A:364:PRO:HG2	1:A:374:VAL:HG21	1.37	1.02
1:B:144:SER:CA	2:D:39:A:H5'	1.90	1.02
1:B:364:PRO:HG2	1:B:374:VAL:HG21	1.42	1.02
1:A:1:MET:N	1:A:4:LYS:HB2	1.76	1.01
1:A:437:PRO:HB3	1:A:459:TYR:CD1	1.98	0.99
1:B:1:MET:N	1:B:4:LYS:HB2	1.78	0.99
1:A:42:ARG:CD	1:A:47:LEU:HB3	1.93	0.98
1:A:235:LEU:HD11	1:B:235:LEU:HD11	1.46	0.97
1:B:42:ARG:CD	1:B:47:LEU:HB3	1.94	0.97
2:C:19:G:O2'	2:C:20:U:H5"	1.66	0.96
1:B:417:ARG:HH11	1:B:417:ARG:H	0.97	0.95
2:D:19:G:O2'	2:D:20:U:H5"	1.66	0.94
1:A:25:VAL:HG13	1:A:31:SER:HB2	1.50	0.93
1:A:417:ARG:H	1:A:417:ARG:NH1	1.67	0.93
1:B:46:LYS:O	1:B:46:LYS:HG2	1.69	0.93
1:A:241:ASP:HB3	1:A:245:LYS:NZ	1.83	0.93
1:A:417:ARG:HH11	1:A:417:ARG:H	0.96	0.92
1:B:289:THR:HG23	2:D:39:A:C8	2.04	0.92
1:A:46:LYS:O	1:A:46:LYS:HG2	1.68	0.92
1:B:5:VAL:O	1:B:9:ILE:HG12	1.70	0.92
1:B:241:ASP:HB3	1:B:245:LYS:NZ	1.84	0.91
1:B:127:HIS:CD2	1:B:165:ARG:HH11	1.88	0.91
1:B:417:ARG:H	1:B:417:ARG:NH1	1.67	0.91
1:B:25:VAL:HG13	1:B:31:SER:HB2	1.52	0.91
1:A:5:VAL:O	1:A:9:ILE:HG12	1.69	0.90
1:B:437:PRO:HB3	1:B:459:TYR:CD1	2.07	0.89
1:B:289:THR:H	2:D:39:A:C2'	1.85	0.88
1:B:15:LEU:HD22	1:B:164:ILE:HG23	1.54	0.88
1:B:114:LEU:O	1:B:118:HIS:HB2	1.73	0.87
1:B:185:SER:HB2	1:B:186:PRO:HD2	1.56	0.87
1:A:115:MET:HE1	1:A:160:GLY:H	1.36	0.87
1:A:127:HIS:CD2	1:A:165:ARG:HH11	1.92	0.87
2:C:60:G:C2'	2:C:61:U:H5'	2.05	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:104:ARG:HG3	2:C:36:A:C2	2.10	0.86
1:B:139:ARG:NH1	2:D:36:A:C8	2.44	0.86
1:A:185:SER:HB2	1:A:186:PRO:HD2	1.57	0.86
1:A:114:LEU:O	1:A:118:HIS:HB2	1.75	0.85
1:B:271:ARG:HH11	1:B:271:ARG:CG	1.89	0.85
1:A:42:ARG:HH11	1:A:48:GLN:N	1.75	0.85
1:A:15:LEU:HD22	1:A:164:ILE:HG23	1.59	0.85
1:B:42:ARG:HH11	1:B:48:GLN:N	1.75	0.84
1:A:210:LEU:HD12	1:B:141:VAL:HG11	1.57	0.84
1:A:145:THR:CG2	1:A:149:TYR:HB2	2.07	0.84
1:A:165:ARG:NH2	2:C:37:U:OP1	2.10	0.84
1:A:241:ASP:HB3	1:A:245:LYS:HZ2	1.43	0.83
1:B:115:MET:HE1	1:B:160:GLY:H	1.43	0.83
1:A:144:SER:HA	2:C:39:A:H5'	1.59	0.83
1:A:86:ILE:CG2	1:A:88:VAL:HG22	2.08	0.83
2:C:49:C:O2	2:C:49:C:C2'	2.25	0.82
2:D:60:G:C2'	2:D:61:U:H5'	2.08	0.82
1:B:145:THR:CG2	1:B:149:TYR:HB2	2.09	0.81
1:B:373:PHE:CD1	1:B:435:TRP:HB2	2.15	0.81
1:A:271:ARG:CG	1:A:271:ARG:HH11	1.92	0.81
1:A:9:ILE:HA	1:A:15:LEU:HD12	1.62	0.81
1:B:35:LEU:HD11	1:B:51:ALA:HB2	1.63	0.80
1:A:338:TRP:C	1:A:339:PHE:HD2	1.83	0.80
1:A:35:LEU:HD11	1:A:51:ALA:HB2	1.62	0.80
1:B:338:TRP:C	1:B:339:PHE:HD2	1.84	0.80
2:C:22:A:C6	2:C:49:C:C5	2.69	0.80
1:B:55:ASP:OD2	1:B:63:SER:HB2	1.82	0.80
1:B:107:ARG:HG3	1:B:111:PHE:HE1	1.47	0.80
1:A:1:MET:H1	1:A:4:LYS:HB2	1.47	0.80
1:A:57:MET:HE2	1:A:59:ARG:HB2	1.63	0.80
1:A:373:PHE:CD1	1:A:435:TRP:HB2	2.17	0.79
1:B:214:ASN:OD1	2:C:41:C:H4'	1.82	0.79
1:A:46:LYS:O	1:A:47:LEU:HD13	1.82	0.79
1:B:46:LYS:O	1:B:47:LEU:HD13	1.83	0.79
1:B:1:MET:H2	1:B:4:LYS:HB2	1.46	0.79
1:B:13:GLN:HG3	1:B:14:LEU:H	1.48	0.79
2:D:49:C:O2	2:D:49:C:C2'	2.29	0.79
1:A:327:THR:HG23	1:A:329:ASP:HB3	1.65	0.79
1:B:128:HIS:HD2	1:B:130:ASP:HB2	1.49	0.78
1:B:408:GLU:O	1:B:412:GLU:HG3	1.83	0.78
2:C:10:G:O2'	2:C:11:C:H5'	1.83	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:13:GLN:HG3	1:A:14:LEU:H	1.47	0.78
1:A:364:PRO:HG2	1:A:374:VAL:CG2	2.12	0.78
1:B:289:THR:H	2:D:39:A:H2'	1.49	0.78
1:A:128:HIS:HD2	1:A:130:ASP:HB2	1.48	0.78
1:B:139:ARG:NH1	2:D:36:A:H8	1.81	0.77
1:B:311:LEU:HB3	1:B:312:PRO:HD2	1.64	0.77
1:B:363:TYR:CE1	1:B:448:ASN:HA	2.19	0.77
1:B:86:ILE:CG2	1:B:88:VAL:HG22	2.14	0.77
1:A:145:THR:HG22	1:A:149:TYR:CB	2.13	0.77
1:A:104:ARG:NH2	2:C:36:A:N6	2.33	0.76
1:B:334:GLU:O	1:B:335:LYS:HG3	1.85	0.76
1:B:373:PHE:CE1	1:B:435:TRP:HB2	2.20	0.76
1:A:55:ASP:OD2	1:A:63:SER:HB2	1.84	0.76
2:D:8:U:C6	2:D:15:G:O6	2.38	0.76
1:A:149:TYR:HE2	1:A:228:MET:HG3	1.50	0.76
1:A:408:GLU:O	1:A:412:GLU:HG3	1.85	0.76
2:C:8:U:C6	2:C:15:G:O6	2.38	0.76
1:B:139:ARG:NH1	2:D:36:A:H1'	1.99	0.76
2:D:36:A:H3'	2:D:36:A:N3	2.01	0.76
1:A:363:TYR:CE1	1:A:448:ASN:HA	2.21	0.75
1:A:14:LEU:HD13	1:A:162:TYR:HE1	1.50	0.75
2:D:60:G:H2'	2:D:61:U:H5'	1.68	0.75
1:B:57:MET:HE2	1:B:59:ARG:HB2	1.69	0.75
1:B:42:ARG:HD2	1:B:49:VAL:HG22	1.70	0.74
2:D:22:A:C6	2:D:49:C:C5	2.74	0.74
1:A:373:PHE:CE1	1:A:435:TRP:HB2	2.21	0.74
1:B:9:ILE:HA	1:B:15:LEU:HD12	1.67	0.74
1:B:327:THR:HG23	1:B:329:ASP:HB3	1.69	0.74
1:B:144:SER:HA	2:D:39:A:C5'	2.10	0.74
1:A:224:TYR:OH	1:B:224:TYR:OH	2.06	0.74
1:B:149:TYR:HE2	1:B:228:MET:HG3	1.52	0.74
1:A:327:THR:CG2	1:A:329:ASP:HB3	2.18	0.74
1:B:241:ASP:HB3	1:B:245:LYS:HZ2	1.50	0.74
1:B:289:THR:OG1	2:D:39:A:H2'	1.88	0.74
2:C:60:G:H2'	2:C:61:U:H5'	1.69	0.74
1:A:311:LEU:HB3	1:A:312:PRO:HD2	1.67	0.73
1:B:14:LEU:HD13	1:B:162:TYR:HE1	1.53	0.73
1:B:364:PRO:HG2	1:B:374:VAL:CG2	2.18	0.73
1:A:107:ARG:HG3	1:A:111:PHE:HE1	1.54	0.73
1:A:288:LEU:O	1:A:291:VAL:HG22	1.89	0.73
1:A:423:TRP:NE1	1:A:439:LEU:HD12	2.04	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:311:LEU:CB	1:B:312:PRO:HD2	2.18	0.73
2:C:48:C:OP1	2:C:48:C:H6	1.72	0.72
1:A:104:ARG:NH1	2:C:34:U:H2'	2.05	0.72
2:D:62:C:HO2'	2:D:63:C:H6	1.35	0.72
2:D:18:G:H2'	2:D:58:G:N2	2.04	0.72
2:C:65:A:H2'	2:C:66:C:H6	1.54	0.72
1:A:311:LEU:CB	1:A:312:PRO:HD2	2.20	0.71
1:B:134:GLU:O	1:B:138:MET:HB2	1.90	0.71
1:A:289:THR:HG23	2:C:39:A:H2'	1.72	0.71
1:B:198:THR:HG21	2:D:33:C:O2'	1.91	0.71
1:B:104:ARG:CZ	2:D:36:A:N6	2.53	0.71
1:B:460:GLN:HG2	1:B:461:ALA:N	2.05	0.71
1:B:407:LYS:O	1:B:411:ILE:HG13	1.90	0.71
2:C:39:A:H4'	2:C:39:A:OP1	1.89	0.71
1:A:193:GLU:O	1:A:194:LYS:HB2	1.91	0.71
2:C:64:U:H2'	2:C:65:A:C8	2.26	0.71
1:A:86:ILE:HG23	1:A:88:VAL:HG22	1.72	0.71
1:B:133:VAL:O	1:B:137:LEU:HD12	1.91	0.70
1:B:145:THR:HG22	1:B:149:TYR:CB	2.17	0.70
1:A:341:LEU:N	1:A:384:LEU:O	2.23	0.70
1:A:59:ARG:HA	1:A:63:SER:HB3	1.73	0.70
1:A:261:PHE:O	1:A:264:LEU:HB2	1.91	0.70
1:B:59:ARG:HA	1:B:63:SER:HB3	1.72	0.70
1:B:149:TYR:CD1	1:B:149:TYR:C	2.65	0.70
1:B:271:ARG:HH11	1:B:271:ARG:HG3	1.56	0.70
2:D:39:A:H4'	2:D:39:A:OP1	1.91	0.70
1:B:289:THR:HG23	2:D:39:A:N9	2.06	0.70
2:D:18:G:H2'	2:D:58:G:H22	1.56	0.70
1:B:327:THR:CG2	1:B:329:ASP:HB3	2.22	0.70
2:C:44:C:H2'	2:C:45:C:H6	1.57	0.70
1:B:14:LEU:HB2	1:B:155:LYS:HE3	1.73	0.70
2:D:10:G:O2'	2:D:11:C:H5'	1.92	0.70
1:B:193:GLU:O	1:B:194:LYS:HB2	1.91	0.70
1:A:165:ARG:NH2	2:C:37:U:P	2.64	0.69
1:B:288:LEU:O	1:B:291:VAL:HG22	1.92	0.69
2:D:64:U:H2'	2:D:65:A:C8	2.26	0.69
1:B:86:ILE:HG23	1:B:88:VAL:HG22	1.72	0.69
1:A:145:THR:HA	1:A:149:TYR:HB2	1.75	0.69
1:B:341:LEU:N	1:B:384:LEU:O	2.25	0.69
1:A:171:SER:HB3	1:A:174:GLU:HG3	1.74	0.69
1:B:171:SER:HB3	1:B:174:GLU:HG3	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:48:C:H6	2:D:48:C:OP1	1.74	0.69
1:A:20:ALA:HB1	1:A:120:ALA:HA	1.73	0.69
2:C:35:C:OP2	2:C:35:C:C4'	2.41	0.69
1:A:149:TYR:OH	1:A:224:TYR:CE2	2.44	0.69
1:A:288:LEU:HB2	1:A:291:VAL:HG22	1.75	0.69
1:A:14:LEU:HB2	1:A:155:LYS:HE3	1.74	0.68
1:A:134:GLU:O	1:A:138:MET:HB2	1.93	0.68
1:A:281:TYR:OH	1:A:315:LEU:HD12	1.92	0.68
2:D:35:C:C4'	2:D:35:C:OP2	2.40	0.68
1:B:423:TRP:NE1	1:B:439:LEU:HD12	2.07	0.68
1:A:417:ARG:HA	1:A:420:ARG:HG3	1.75	0.68
1:B:67:MET:O	1:B:70:VAL:HG22	1.93	0.68
1:B:100:GLN:O	1:B:103:ALA:HB3	1.94	0.68
1:A:405:LYS:HE3	2:C:67:A:P	2.33	0.68
2:D:63:C:O2'	2:D:64:U:H5'	1.94	0.68
1:A:104:ARG:HH12	2:C:34:U:H2'	1.59	0.68
2:D:44:C:H2'	2:D:45:C:H6	1.58	0.68
1:A:42:ARG:HD2	1:A:49:VAL:HG22	1.76	0.68
2:C:36:A:N3	2:C:36:A:H3'	2.08	0.68
1:A:407:LYS:O	1:A:411:ILE:HG13	1.93	0.68
1:B:33:ALA:O	1:B:37:VAL:HG23	1.92	0.68
1:B:288:LEU:HA	2:D:39:A:O2'	1.93	0.68
1:A:144:SER:CA	2:C:39:A:H5'	2.24	0.68
1:A:104:ARG:NE	2:C:36:A:C6	2.62	0.67
1:A:149:TYR:C	1:A:149:TYR:CD1	2.66	0.67
1:A:287:THR:O	1:A:292:HIS:HD2	1.75	0.67
1:A:333:GLY:O	1:A:334:GLU:HB2	1.94	0.67
2:D:59:A:C5	2:D:62:C:C4	2.82	0.67
1:A:416:PRO:O	1:A:420:ARG:HG2	1.94	0.67
1:A:460:GLN:HG2	1:A:461:ALA:N	2.08	0.67
1:B:288:LEU:HB2	1:B:291:VAL:HG22	1.75	0.67
2:C:18:G:H2'	2:C:58:G:N2	2.10	0.67
1:B:56:HIS:CD2	1:B:56:HIS:H	2.13	0.67
2:C:51:U:H3'	2:C:52:A:H8	1.58	0.67
1:B:333:GLY:O	1:B:334:GLU:HB2	1.95	0.67
2:C:59:A:C5	2:C:62:C:C4	2.82	0.67
1:B:107:ARG:O	1:B:111:PHE:HD1	1.78	0.67
2:D:43:U:H2'	2:D:44:C:H6	1.60	0.67
1:A:100:GLN:O	1:A:103:ALA:HB3	1.95	0.67
1:B:15:LEU:HD22	1:B:164:ILE:CG2	2.23	0.67
1:B:20:ALA:HB1	1:B:120:ALA:HA	1.74	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:432:ARG:HD3	1:B:444:PHE:HE1	1.59	0.67
1:A:45:TRP:O	1:A:47:LEU:HD22	1.95	0.67
1:B:208:PRO:O	1:B:212:GLN:HG3	1.95	0.67
1:A:289:THR:HG23	2:C:39:A:C8	2.30	0.66
2:D:51:U:H3'	2:D:52:A:H8	1.59	0.66
1:A:133:VAL:O	1:A:137:LEU:HD12	1.96	0.66
1:B:104:ARG:NH2	2:D:36:A:N6	2.43	0.66
1:B:192:ASN:HD22	1:B:204:HIS:CE1	2.13	0.66
2:D:65:A:H2'	2:D:66:C:H6	1.60	0.66
1:A:8:PHE:CG	1:A:169:ALA:HB2	2.31	0.66
1:A:56:HIS:H	1:A:56:HIS:CD2	2.14	0.66
1:B:127:HIS:HD2	1:B:165:ARG:HD3	1.61	0.66
1:B:261:PHE:O	1:B:264:LEU:HB2	1.95	0.66
2:C:64:U:H2'	2:C:65:A:H8	1.61	0.66
1:A:289:THR:H	2:C:39:A:C2'	2.07	0.66
1:A:149:TYR:CE2	1:A:228:MET:HG3	2.32	0.65
1:B:145:THR:HA	1:B:149:TYR:HB2	1.77	0.65
1:B:185:SER:HB2	1:B:186:PRO:CD	2.25	0.65
1:A:185:SER:CB	1:A:186:PRO:HD2	2.27	0.65
1:A:185:SER:HB2	1:A:186:PRO:CD	2.26	0.65
1:A:271:ARG:HH11	1:A:271:ARG:HG2	1.61	0.65
1:A:334:GLU:O	1:A:335:LYS:HG3	1.95	0.65
1:B:25:VAL:HG13	1:B:31:SER:CB	2.26	0.65
1:A:67:MET:O	1:A:70:VAL:HG22	1.96	0.65
1:A:194:LYS:C	1:A:196:ASP:H	1.99	0.65
1:B:185:SER:CB	1:B:186:PRO:HD2	2.25	0.65
1:A:104:ARG:CZ	2:C:36:A:N6	2.60	0.65
1:B:194:LYS:C	1:B:196:ASP:H	1.99	0.65
1:B:353:TYR:HD2	1:B:459:TYR:HH	1.44	0.65
1:A:192:ASN:HD22	1:A:204:HIS:CE1	2.14	0.65
1:B:13:GLN:O	1:B:15:LEU:N	2.30	0.65
2:D:64:U:H2'	2:D:65:A:H8	1.61	0.65
2:C:22:A:C6	2:C:49:C:C6	2.85	0.64
2:C:44:C:H2'	2:C:45:C:C6	2.33	0.64
1:B:149:TYR:CE2	1:B:228:MET:HG3	2.33	0.64
2:C:63:C:O2'	2:C:64:U:H5'	1.98	0.64
1:A:13:GLN:O	1:A:15:LEU:N	2.30	0.64
1:A:195:ASP:OD1	1:A:204:HIS:HD2	1.81	0.64
1:A:21:VAL:HG11	1:A:38:PHE:HE2	1.63	0.64
1:A:127:HIS:HD2	1:A:165:ARG:HD3	1.62	0.64
1:B:241:ASP:HB3	1:B:245:LYS:HZ1	1.60	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:107:ARG:NH2	2:C:35:C:O2'	2.30	0.63
1:A:456:LEU:CD1	1:A:458:GLN:HG2	2.28	0.63
1:A:33:ALA:O	1:A:37:VAL:HG23	1.98	0.63
1:A:141:VAL:HG11	1:B:210:LEU:HD12	1.79	0.63
1:B:289:THR:CB	2:D:39:A:H2'	2.29	0.63
2:C:22:A:N6	2:C:47:G:H1'	2.13	0.63
1:B:258:ILE:HG12	1:B:322:ASP:O	1.98	0.63
2:C:18:G:H2'	2:C:58:G:H22	1.62	0.63
1:A:115:MET:HE1	1:A:160:GLY:N	2.11	0.63
2:D:13:C:H2'	2:D:14:A:H5'	1.80	0.63
1:A:145:THR:HA	1:A:149:TYR:CB	2.28	0.63
1:A:432:ARG:HD3	1:A:444:PHE:HE1	1.63	0.63
1:B:274:GLN:HA	2:D:39:A:N6	2.13	0.63
1:B:220:ARG:CZ	1:B:220:ARG:HA	2.28	0.63
2:D:44:C:H2'	2:D:45:C:C6	2.33	0.63
1:A:156:ARG:NH1	2:C:37:U:H5'	2.14	0.63
1:B:139:ARG:HH12	2:D:36:A:C1'	2.11	0.63
1:A:411:ILE:HG12	1:A:420:ARG:NH2	2.13	0.63
1:A:104:ARG:CZ	2:C:36:A:C6	2.82	0.62
1:B:89:PRO:O	1:B:93:ARG:HG3	1.97	0.62
1:B:417:ARG:HA	1:B:420:ARG:HG3	1.79	0.62
2:C:12:U:H2'	2:C:12:U:O2	1.98	0.62
1:A:107:ARG:O	1:A:111:PHE:HD1	1.81	0.62
1:A:139:ARG:NH1	2:C:36:A:H1'	2.14	0.62
1:A:271:ARG:HH11	1:A:271:ARG:HG3	1.64	0.62
2:C:62:C:HO2'	2:C:63:C:H6	1.47	0.62
1:A:14:LEU:HD13	1:A:162:TYR:CE1	2.34	0.62
2:C:49:C:N3	2:C:60:G:O4'	2.32	0.62
2:D:75:C:H2'	2:D:76:C:O4'	1.99	0.62
2:C:59:A:C5	2:C:62:C:N4	2.67	0.62
1:A:42:ARG:NH1	1:A:48:GLN:N	2.47	0.62
1:B:281:TYR:OH	1:B:315:LEU:HD12	2.00	0.62
1:B:287:THR:O	1:B:292:HIS:HD2	1.82	0.62
2:C:43:U:H2'	2:C:44:C:H6	1.62	0.62
1:A:25:VAL:HG13	1:A:31:SER:CB	2.27	0.62
1:B:42:ARG:NH1	1:B:48:GLN:N	2.47	0.62
1:B:289:THR:O	1:B:290:SER:C	2.38	0.62
2:C:19:G:N2	2:C:58:G:H1'	2.13	0.62
2:D:12:U:O2	2:D:12:U:H2'	1.99	0.62
2:D:22:A:N6	2:D:47:G:H1'	2.15	0.62
1:B:21:VAL:HG11	1:B:38:PHE:HE2	1.65	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:165:ARG:NH2	2:D:37:U:OP1	2.33	0.62
1:B:320:SER:HA	1:B:417:ARG:HH22	1.65	0.62
1:B:456:LEU:CD1	1:B:458:GLN:HG2	2.29	0.62
2:C:59:A:C6	2:C:62:C:C4	2.87	0.62
1:B:139:ARG:NH1	2:D:36:A:C1'	2.64	0.61
2:C:75:C:H2'	2:C:76:C:O4'	2.00	0.61
2:D:59:A:C5	2:D:62:C:N4	2.68	0.61
1:A:29:PRO:HG3	1:A:187:ARG:O	2.01	0.61
1:A:363:TYR:CD2	1:A:364:PRO:HD2	2.34	0.61
1:B:8:PHE:CG	1:B:169:ALA:HB2	2.36	0.61
2:D:59:A:C6	2:D:62:C:C4	2.89	0.61
2:D:63:C:O2'	2:D:64:U:C5'	2.47	0.61
1:A:275:LEU:N	1:A:275:LEU:HD23	2.16	0.61
1:A:317:VAL:C	1:A:318:ILE:HD12	2.21	0.61
1:B:391:ARG:O	2:D:68:A:OP1	2.19	0.61
2:C:19:G:H5'	2:C:61:U:O4	2.01	0.61
2:D:8:U:H2'	2:D:8:U:O2	2.01	0.61
1:B:41:LEU:HD13	1:B:44:GLU:CD	2.21	0.61
1:B:416:PRO:O	1:B:420:ARG:HG2	2.00	0.61
1:A:129:GLY:O	1:A:133:VAL:HG23	2.01	0.61
1:A:208:PRO:O	1:A:212:GLN:HG3	2.00	0.61
1:A:137:LEU:HD12	1:A:137:LEU:H	1.65	0.61
1:A:425:ILE:CG2	1:A:433:ILE:HG23	2.30	0.61
1:B:199:ARG:CZ	2:D:35:C:H5"	2.31	0.61
1:B:343:VAL:HG23	1:B:357:SER:HB2	1.82	0.61
1:A:15:LEU:HD22	1:A:164:ILE:CG2	2.30	0.61
1:A:89:PRO:O	1:A:93:ARG:HG3	1.99	0.61
1:A:269:GLN:NE2	1:A:297:LEU:HD21	2.16	0.61
1:B:197:TYR:HB2	1:B:200:ASN:OD1	1.99	0.61
1:B:397:LEU:O	1:B:399:GLY:N	2.33	0.61
2:C:63:C:O2'	2:C:64:U:C5'	2.49	0.61
1:B:29:PRO:HG3	1:B:187:ARG:O	2.00	0.61
1:B:271:ARG:HH11	1:B:271:ARG:HG2	1.64	0.61
2:D:35:C:OP2	2:D:35:C:H4'	2.01	0.61
1:B:278:LEU:HD12	1:B:278:LEU:O	2.00	0.60
1:B:34:LEU:HA	1:B:167:PHE:CE1	2.36	0.60
2:C:9:A:C2	2:C:46:G:C2	2.89	0.60
1:A:343:VAL:HG23	1:A:357:SER:HB2	1.82	0.60
1:B:14:LEU:CB	1:B:155:LYS:HE3	2.31	0.60
1:B:152:ILE:CD1	2:D:36:A:H4'	2.31	0.60
1:B:195:ASP:OD1	1:B:204:HIS:HD2	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:19:G:N2	2:D:58:G:H1'	2.16	0.60
2:D:22:A:C6	2:D:49:C:C6	2.88	0.60
1:A:3:ASP:HA	1:A:6:ARG:HB3	1.83	0.60
1:B:165:ARG:NH2	2:D:37:U:P	2.75	0.60
1:A:149:TYR:HE2	1:A:228:MET:CG	2.15	0.60
1:B:149:TYR:CG	1:B:150:ALA:N	2.68	0.60
2:C:35:C:OP2	2:C:35:C:O4'	2.20	0.60
1:A:310:ASP:O	1:A:311:LEU:HD23	2.02	0.60
2:C:65:A:H2'	2:C:66:C:C6	2.37	0.60
2:D:37:U:O2'	2:D:38:A:P	2.59	0.60
1:A:205:HIS:O	1:A:209:LEU:HG	2.01	0.59
1:A:278:LEU:HD12	1:A:278:LEU:O	2.01	0.59
1:A:288:LEU:HB2	1:A:291:VAL:CG2	2.30	0.59
1:B:145:THR:HA	1:B:149:TYR:CB	2.32	0.59
2:C:13:C:H5"	2:C:13:C:H6	1.65	0.59
1:B:288:LEU:HB2	1:B:291:VAL:CG2	2.32	0.59
1:B:291:VAL:CG2	1:B:292:HIS:N	2.65	0.59
2:D:43:U:H2'	2:D:44:C:C6	2.38	0.59
1:A:289:THR:O	1:A:290:SER:C	2.40	0.59
1:A:139:ARG:HH12	2:C:36:A:H1'	1.67	0.59
1:B:3:ASP:HA	1:B:6:ARG:HB3	1.84	0.59
1:B:137:LEU:HD12	1:B:137:LEU:H	1.67	0.59
1:B:425:ILE:CG2	1:B:433:ILE:HG23	2.33	0.59
1:A:1:MET:HA	1:A:5:VAL:HG12	1.85	0.59
1:B:289:THR:CG2	2:D:39:A:C8	2.84	0.59
1:A:291:VAL:CG2	1:A:292:HIS:N	2.65	0.59
1:A:437:PRO:CB	1:A:459:TYR:CD1	2.82	0.59
1:B:45:TRP:O	1:B:47:LEU:HD22	2.01	0.59
1:B:127:HIS:CD2	1:B:165:ARG:NH1	2.67	0.59
2:D:9:A:C2	2:D:46:G:C2	2.91	0.59
2:D:19:G:H5'	2:D:61:U:O4	2.03	0.59
1:B:353:TYR:HD2	1:B:459:TYR:CZ	2.21	0.59
1:A:197:TYR:HB2	1:A:200:ASN:OD1	2.02	0.58
1:A:86:ILE:HG21	1:A:88:VAL:HG22	1.85	0.58
1:B:149:TYR:HE2	1:B:228:MET:CG	2.14	0.58
1:A:214:ASN:OD1	2:D:41:C:H4'	2.03	0.58
2:D:13:C:H5"	2:D:13:C:H6	1.68	0.58
1:A:14:LEU:CB	1:A:155:LYS:HE3	2.34	0.58
1:A:327:THR:HG23	1:A:329:ASP:CB	2.31	0.58
1:B:310:ASP:O	1:B:311:LEU:HD23	2.03	0.58
1:A:22:ILE:HD13	1:A:114:LEU:HB2	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:291:VAL:HG23	1:B:292:HIS:N	2.18	0.58
2:D:62:C:O2'	2:D:63:C:H6	1.86	0.58
2:C:49:C:N3	2:C:60:G:C1'	2.66	0.58
1:A:41:LEU:HD13	1:A:44:GLU:CD	2.23	0.58
1:A:274:GLN:HA	2:C:39:A:N6	2.19	0.58
1:B:337:TYR:H	1:B:388:THR:CG2	2.17	0.58
1:B:80:LEU:HD12	1:B:81:CYS:N	2.19	0.58
1:B:372:TRP:HA	1:B:457:LEU:O	2.04	0.58
1:B:363:TYR:HE1	1:B:448:ASN:HA	1.68	0.58
1:B:456:LEU:HD11	1:B:458:GLN:HG2	1.85	0.58
2:C:44:C:C2	2:C:45:C:C5	2.92	0.58
1:A:320:SER:HA	1:A:417:ARG:HH22	1.68	0.57
1:B:14:LEU:HD13	1:B:162:TYR:CE1	2.37	0.57
1:B:247:MET:CE	1:B:247:MET:HA	2.34	0.57
2:D:20:U:OP1	2:D:21:U:H5	1.87	0.57
1:A:247:MET:HA	1:A:247:MET:CE	2.34	0.57
1:B:240:ALA:O	1:B:243:LEU:HB3	2.04	0.57
1:A:387:ARG:NE	1:A:390:ARG:HH21	2.03	0.57
1:A:404:LYS:HG2	1:A:405:LYS:N	2.17	0.57
2:D:44:C:C2	2:D:45:C:C5	2.92	0.57
1:A:34:LEU:HA	1:A:167:PHE:CE1	2.40	0.57
1:A:456:LEU:HD11	1:A:458:GLN:HG2	1.86	0.57
1:B:9:ILE:HD13	1:B:166:PRO:HB3	1.85	0.57
1:B:278:LEU:CD1	1:B:282:GLY:HA2	2.34	0.57
2:C:40:C:H2'	2:C:41:C:H6	1.70	0.57
1:B:180:ARG:CB	1:B:187:ARG:HE	2.18	0.57
1:B:205:HIS:O	1:B:209:LEU:HG	2.04	0.57
1:A:180:ARG:CB	1:A:187:ARG:HE	2.18	0.57
1:A:337:TYR:H	1:A:388:THR:CG2	2.18	0.57
1:B:460:GLN:HG2	1:B:461:ALA:H	1.69	0.57
2:D:52:A:C2	2:D:53:G:C8	2.93	0.57
1:A:18:GLY:H	1:A:46:LYS:NZ	2.03	0.57
1:A:291:VAL:HG23	1:A:292:HIS:N	2.20	0.57
1:B:327:THR:HG23	1:B:329:ASP:CB	2.35	0.57
1:A:241:ASP:HB3	1:A:245:LYS:HZ1	1.65	0.57
1:A:278:LEU:CD1	1:A:282:GLY:HA2	2.35	0.57
1:A:315:LEU:HA	1:A:328:PHE:HA	1.87	0.57
1:A:378:ALA:O	1:A:380:VAL:N	2.37	0.57
1:B:12:HIS:O	1:B:13:GLN:O	2.21	0.57
1:A:400:THR:O	1:A:402:GLY:N	2.37	0.57
2:D:65:A:H2'	2:D:66:C:C6	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:397:LEU:HD12	1:A:402:GLY:N	2.19	0.56
1:A:20:ALA:CB	1:A:120:ALA:HA	2.35	0.56
1:A:337:TYR:CZ	1:A:349:LEU:HD22	2.41	0.56
1:B:149:TYR:OH	1:B:224:TYR:CZ	2.57	0.56
2:C:17:U:O4'	2:C:17:U:OP1	2.23	0.56
1:A:333:GLY:O	1:A:334:GLU:CB	2.52	0.56
1:A:460:GLN:HG2	1:A:461:ALA:H	1.70	0.56
1:B:107:ARG:CG	1:B:111:PHE:HE1	2.16	0.56
2:D:66:C:O2'	2:D:67:A:H5'	2.05	0.56
2:C:43:U:H2'	2:C:44:C:C6	2.41	0.56
1:A:220:ARG:HA	1:A:220:ARG:CZ	2.36	0.56
1:A:338:TRP:O	1:A:339:PHE:HD2	1.88	0.56
1:A:142:ARG:HE	2:C:40:C:H1'	1.70	0.56
1:B:42:ARG:HD2	1:B:49:VAL:CG2	2.35	0.56
1:B:261:PHE:C	1:B:261:PHE:CD2	2.79	0.56
1:B:274:GLN:HG2	1:B:293:ILE:HD11	1.88	0.56
2:D:49:C:N3	2:D:60:G:C1'	2.69	0.56
1:A:127:HIS:CD2	1:A:165:ARG:HD3	2.41	0.56
1:A:25:VAL:O	1:A:53:HIS:CD2	2.59	0.56
1:B:42:ARG:CZ	1:B:47:LEU:HG	2.36	0.56
1:B:129:GLY:O	1:B:133:VAL:HG23	2.06	0.56
1:B:338:TRP:O	1:B:339:PHE:HD2	1.88	0.56
2:D:49:C:N3	2:D:60:G:O4'	2.38	0.56
2:C:37:U:O2'	2:C:38:A:P	2.64	0.55
1:B:206:ILE:O	1:B:210:LEU:HD23	2.06	0.55
1:B:275:LEU:N	1:B:275:LEU:HD23	2.20	0.55
1:B:289:THR:N	2:D:39:A:H2'	2.21	0.55
1:B:333:GLY:O	1:B:334:GLU:CB	2.53	0.55
2:C:20:U:OP1	2:C:21:U:H5	1.88	0.55
1:A:289:THR:CG2	2:C:39:A:H2'	2.36	0.55
1:B:127:HIS:HD2	1:B:165:ARG:HH11	1.45	0.55
1:B:337:TYR:H	1:B:388:THR:HG23	1.72	0.55
1:B:223:GLN:O	1:B:223:GLN:HG3	2.05	0.55
1:B:321:TYR:CE2	1:B:414:LYS:HB3	2.42	0.55
1:B:432:ARG:HD3	1:B:444:PHE:CE1	2.41	0.55
2:C:35:C:OP2	2:C:35:C:H4'	2.06	0.55
1:B:45:TRP:O	1:B:46:LYS:HB3	2.06	0.55
1:B:289:THR:N	2:D:39:A:O2'	2.35	0.55
1:B:311:LEU:HB3	1:B:312:PRO:CD	2.36	0.55
1:B:317:VAL:C	1:B:318:ILE:HD12	2.26	0.55
2:D:35:C:OP2	2:D:35:C:O4'	2.25	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:12:HIS:O	1:A:13:GLN:O	2.24	0.55
1:B:13:GLN:C	1:B:15:LEU:H	2.10	0.55
1:B:180:ARG:HB2	1:B:187:ARG:HE	1.72	0.55
1:B:394:ARG:HG2	1:B:394:ARG:HH11	1.72	0.55
1:A:311:LEU:HD13	1:A:312:PRO:HD2	1.87	0.55
1:B:152:ILE:HD12	2:D:36:A:H4'	1.88	0.55
1:A:206:ILE:O	1:A:210:LEU:HD23	2.07	0.55
1:A:303:GLY:O	1:A:305:PRO:HD3	2.07	0.55
1:B:22:ILE:HD13	1:B:114:LEU:HB2	1.88	0.55
1:A:353:TYR:HD2	1:A:459:TYR:CZ	2.25	0.55
1:B:210:LEU:O	1:B:213:GLU:N	2.40	0.55
1:A:197:TYR:O	1:A:200:ASN:N	2.39	0.54
1:A:340:GLU:O	1:A:342:PRO:HD3	2.07	0.54
1:A:404:LYS:HD3	1:A:409:ILE:HG12	1.89	0.54
1:A:8:PHE:CD2	1:A:169:ALA:HB2	2.42	0.54
1:A:9:ILE:HD13	1:A:166:PRO:HB3	1.88	0.54
1:A:13:GLN:C	1:A:15:LEU:H	2.10	0.54
2:C:8:U:H2'	2:C:8:U:O2	2.06	0.54
2:C:52:A:C2	2:C:53:G:C8	2.95	0.54
1:A:24:GLY:HA2	1:A:52:ALA:O	2.07	0.54
1:A:80:LEU:HD12	1:A:81:CYS:N	2.23	0.54
1:A:102:ALA:HA	1:A:105:ILE:CG1	2.38	0.54
1:A:336:GLY:HA2	1:A:388:THR:HG21	1.89	0.54
1:A:353:TYR:HD2	1:A:459:TYR:HH	1.55	0.54
1:B:23:VAL:HG21	1:B:34:LEU:HD22	1.89	0.54
1:B:67:MET:O	1:B:71:LYS:HG2	2.08	0.54
2:D:52:A:N3	2:D:53:G:C8	2.76	0.54
1:A:21:VAL:HG11	1:A:38:PHE:CE2	2.42	0.54
1:A:74:CYS:HB3	1:A:81:CYS:HB2	1.78	0.54
1:B:135:THR:OG1	1:B:152:ILE:HD11	2.08	0.54
1:B:337:TYR:CZ	1:B:349:LEU:HD22	2.43	0.54
1:B:411:ILE:HG12	1:B:420:ARG:NH2	2.22	0.54
1:B:1:MET:C	1:B:3:ASP:H	2.11	0.54
1:B:25:VAL:CG1	1:B:31:SER:HB2	2.33	0.54
1:B:65:GLU:O	1:B:69:PHE:HD1	1.90	0.54
1:B:87:ASP:CA	1:B:89:PRO:HD2	2.38	0.54
1:B:209:LEU:HA	1:B:212:GLN:NE2	2.23	0.54
2:C:13:C:H2'	2:C:14:A:H5'	1.89	0.54
2:D:13:C:C2'	2:D:14:A:H5'	2.38	0.54
1:A:149:TYR:CG	1:A:150:ALA:N	2.73	0.54
1:A:456:LEU:C	1:A:457:LEU:HD22	2.28	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:128:HIS:O	1:A:131:ASP:HB2	2.08	0.54
1:A:269:GLN:HE21	1:A:297:LEU:HD21	1.72	0.54
1:B:87:ASP:HA	1:B:89:PRO:HD2	1.89	0.54
1:B:197:TYR:O	1:B:200:ASN:N	2.40	0.54
2:C:52:A:H2'	2:C:53:G:H8	1.72	0.54
2:D:40:C:H2'	2:D:41:C:H6	1.73	0.54
1:B:21:VAL:HG11	1:B:38:PHE:CE2	2.43	0.54
1:B:21:VAL:HG21	1:B:38:PHE:CE2	2.43	0.54
2:C:62:C:O2'	2:C:63:C:H6	1.90	0.54
1:A:375:VAL:HG23	1:A:455:ILE:HB	1.89	0.54
1:A:416:PRO:O	1:A:419:GLU:HB2	2.08	0.54
1:A:42:ARG:NH1	1:A:48:GLN:H	2.06	0.54
1:A:180:ARG:HB2	1:A:187:ARG:HE	1.71	0.54
1:B:1:MET:HA	1:B:5:VAL:HG12	1.89	0.54
1:B:410:PHE:HB3	1:B:420:ARG:HD2	1.89	0.54
1:B:456:LEU:C	1:B:456:LEU:HD13	2.28	0.54
1:A:87:ASP:CA	1:A:89:PRO:HD2	2.38	0.53
1:A:217:LEU:C	1:A:219:GLU:H	2.11	0.53
1:B:107:ARG:CG	1:B:111:PHE:CE1	2.90	0.53
1:B:127:HIS:CD2	1:B:165:ARG:HD3	2.41	0.53
1:B:437:PRO:CB	1:B:459:TYR:CD1	2.89	0.53
1:A:1:MET:H2	1:A:4:LYS:HB2	1.70	0.53
1:A:147:LYS:HA	1:A:232:GLU:OE1	2.08	0.53
1:B:302:ARG:HB2	1:B:319:ARG:HH12	1.73	0.53
1:A:45:TRP:O	1:A:46:LYS:HB3	2.08	0.53
1:A:100:GLN:OE1	2:C:35:C:H1'	2.09	0.53
1:B:207:VAL:HB	1:B:208:PRO:HD3	1.91	0.53
1:A:42:ARG:CZ	1:A:47:LEU:HG	2.38	0.53
1:A:311:LEU:HB3	1:A:312:PRO:CD	2.38	0.53
1:B:248:GLU:HB2	1:B:255:ALA:HB3	1.90	0.53
1:B:407:LYS:HG2	1:B:411:ILE:HD11	1.90	0.53
2:C:52:A:N3	2:C:53:G:C8	2.76	0.53
2:D:17:U:O4'	2:D:17:U:OP1	2.26	0.53
1:B:315:LEU:HA	1:B:328:PHE:HA	1.90	0.53
2:D:7:U:O2'	2:D:8:U:OP1	2.26	0.53
1:A:19:ALA:C	1:A:42:ARG:HH12	2.12	0.53
1:A:127:HIS:CD2	1:A:165:ARG:NH1	2.71	0.53
1:A:127:HIS:HD2	1:A:165:ARG:HH11	1.51	0.53
1:B:83:THR:HG22	1:B:84:ALA:N	2.24	0.53
1:A:67:MET:O	1:A:71:LYS:HG2	2.09	0.53
1:A:223:GLN:HG3	1:A:223:GLN:O	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:302:ARG:HB2	1:A:319:ARG:HH12	1.74	0.53
1:B:42:ARG:NH1	1:B:48:GLN:H	2.07	0.53
1:B:115:MET:HE1	1:B:160:GLY:N	2.18	0.53
2:C:18:G:N2	2:C:59:A:C4	2.76	0.53
1:A:69:PHE:CD2	1:A:72:ARG:HD2	2.43	0.53
1:A:258:ILE:HG12	1:A:322:ASP:O	2.08	0.53
1:A:272:VAL:HG23	1:A:273:LEU:N	2.24	0.53
1:B:363:TYR:CD2	1:B:364:PRO:HD2	2.44	0.53
1:B:397:LEU:O	1:B:398:LYS:C	2.47	0.53
1:B:8:PHE:CD2	1:B:169:ALA:HB2	2.44	0.53
1:B:102:ALA:HA	1:B:105:ILE:CG1	2.38	0.53
2:C:37:U:O2'	2:C:38:A:C8	2.59	0.53
2:D:7:U:H3'	2:D:8:U:C5'	2.38	0.53
1:A:87:ASP:HA	1:A:89:PRO:HD2	1.90	0.52
1:A:386:VAL:HB	1:A:426:VAL:HG22	1.90	0.52
1:B:289:THR:HG23	2:D:39:A:C4	2.44	0.52
1:B:299:LEU:O	1:B:299:LEU:HD22	2.09	0.52
1:B:336:GLY:HA2	1:B:388:THR:HG21	1.90	0.52
1:A:417:ARG:HA	1:A:420:ARG:CG	2.39	0.52
1:A:107:ARG:CG	1:A:111:PHE:HE1	2.21	0.52
1:A:115:MET:CE	1:A:160:GLY:H	2.17	0.52
1:A:296:ILE:HD12	1:A:317:VAL:HG11	1.91	0.52
1:B:20:ALA:CB	1:B:120:ALA:HA	2.38	0.52
1:B:69:PHE:CD2	1:B:72:ARG:HD2	2.45	0.52
1:B:87:ASP:C	1:B:89:PRO:HD2	2.29	0.52
1:B:269:GLN:NE2	1:B:297:LEU:HD21	2.24	0.52
2:C:51:U:H3'	2:C:52:A:C8	2.41	0.52
2:D:29:A:O2'	2:D:30:C:H5'	2.09	0.52
1:A:144:SER:O	1:A:145:THR:C	2.47	0.52
1:A:156:ARG:CZ	2:C:37:U:H5'	2.40	0.52
1:A:183:GLY:O	1:A:184:LEU:HD13	2.08	0.52
1:B:25:VAL:O	1:B:53:HIS:CD2	2.63	0.52
2:C:9:A:N6	2:C:47:G:C2	2.78	0.52
1:A:2:ILE:O	1:A:6:ARG:HB2	2.10	0.52
1:A:9:ILE:CG2	1:A:15:LEU:HB2	2.39	0.52
1:A:25:VAL:CG1	1:A:31:SER:HB2	2.32	0.52
1:A:217:LEU:C	1:A:219:GLU:N	2.63	0.52
1:A:276:LEU:O	1:A:279:ARG:HB3	2.10	0.52
1:A:372:TRP:HA	1:A:457:LEU:O	2.09	0.52
1:B:57:MET:HB2	1:B:87:ASP:HA	1.91	0.52
1:B:149:TYR:OH	1:B:224:TYR:CE2	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:337:TYR:HD2	1:B:337:TYR:O	1.92	0.52
1:B:416:PRO:O	1:B:419:GLU:HB2	2.10	0.52
1:A:65:GLU:O	1:A:69:PHE:HD1	1.93	0.52
1:A:370:ASN:HA	1:A:441:LYS:HE3	1.92	0.52
1:B:128:HIS:O	1:B:131:ASP:HB2	2.10	0.52
1:B:400:THR:O	1:B:402:GLY:N	2.42	0.52
1:A:207:VAL:HB	1:A:208:PRO:HD3	1.92	0.52
1:A:397:LEU:O	1:A:398:LYS:C	2.48	0.52
1:A:235:LEU:HD23	1:A:271:ARG:NH2	2.25	0.52
1:B:136:ILE:HD12	1:B:149:TYR:HE1	1.75	0.52
1:B:183:GLY:O	1:B:184:LEU:HD13	2.10	0.52
1:B:397:LEU:HD12	1:B:402:GLY:N	2.25	0.52
2:D:7:U:H3'	2:D:8:U:H5'	1.91	0.52
1:A:149:TYR:O	1:A:151:GLY:N	2.44	0.51
1:A:240:ALA:O	1:A:243:LEU:HB3	2.09	0.51
1:A:248:GLU:HB2	1:A:255:ALA:HB3	1.91	0.51
1:A:289:THR:CB	2:C:39:A:H2'	2.40	0.51
1:A:299:LEU:O	1:A:299:LEU:HD22	2.10	0.51
1:A:337:TYR:H	1:A:388:THR:HG23	1.75	0.51
1:B:149:TYR:O	1:B:151:GLY:N	2.44	0.51
2:C:29:A:O2'	2:C:30:C:H5'	2.10	0.51
2:D:52:A:C2	2:D:53:G:C5	2.98	0.51
1:A:57:MET:HB2	1:A:87:ASP:HA	1.92	0.51
1:A:88:VAL:O	1:A:92:GLN:N	2.42	0.51
1:A:356:ILE:HD11	1:A:460:GLN:OE1	2.10	0.51
1:A:357:SER:HA	1:A:456:LEU:O	2.10	0.51
1:A:104:ARG:HG3	2:C:36:A:N1	2.24	0.51
1:A:274:GLN:HG2	1:A:293:ILE:HD11	1.92	0.51
1:B:57:MET:O	1:B:58:PHE:HB3	2.10	0.51
1:B:107:ARG:HG3	1:B:111:PHE:CE1	2.36	0.51
1:B:315:LEU:HD23	1:B:316:LYS:N	2.25	0.51
1:B:353:TYR:HD2	1:B:459:TYR:OH	1.92	0.51
1:A:315:LEU:HD23	1:A:316:LYS:N	2.26	0.51
1:A:197:TYR:O	1:A:198:THR:C	2.48	0.51
1:B:103:ALA:HB1	1:B:107:ARG:HH21	1.75	0.51
2:C:15:G:H2'	2:C:60:G:N2	2.25	0.51
2:D:37:U:O2'	2:D:38:A:C8	2.61	0.51
1:A:1:MET:C	1:A:3:ASP:H	2.13	0.51
1:A:210:LEU:HD12	1:B:141:VAL:CG1	2.36	0.51
1:A:337:TYR:N	1:A:388:THR:CG2	2.74	0.51
1:A:410:PHE:HB3	1:A:420:ARG:NE	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:417:ARG:HA	1:B:420:ARG:CG	2.40	0.51
2:C:9:A:C4	2:C:46:G:N2	2.79	0.51
1:A:45:TRP:C	1:A:47:LEU:HD22	2.31	0.51
1:A:267:PRO:HG2	1:B:234:PHE:HB2	1.93	0.51
1:A:287:THR:O	1:A:292:HIS:CD2	2.61	0.51
1:B:21:VAL:HB	1:B:42:ARG:NH2	2.26	0.51
1:B:340:GLU:OE2	1:B:383:PRO:HG2	2.11	0.51
1:A:261:PHE:C	1:A:261:PHE:CD2	2.84	0.51
1:B:338:TRP:C	1:B:339:PHE:CD2	2.76	0.51
1:B:410:PHE:HB3	1:B:420:ARG:NE	2.25	0.51
2:C:18:G:N3	2:C:59:A:C2	2.79	0.51
2:C:19:G:C5'	2:C:61:U:O4	2.58	0.51
1:A:42:ARG:HD2	1:A:49:VAL:CG2	2.40	0.51
1:B:149:TYR:OH	1:B:224:TYR:CD2	2.64	0.51
1:B:323:ARG:NH1	1:B:325:LEU:HD21	2.25	0.51
1:B:341:LEU:HB3	1:B:384:LEU:HB2	1.93	0.51
1:B:387:ARG:NE	1:B:390:ARG:HH21	2.08	0.51
1:A:266:ARG:O	1:A:267:PRO:C	2.49	0.51
1:A:407:LYS:HG2	1:A:411:ILE:HD11	1.91	0.51
1:A:437:PRO:HB3	1:A:459:TYR:CG	2.45	0.51
1:B:357:SER:HA	1:B:456:LEU:O	2.10	0.51
2:C:7:U:O2'	2:C:8:U:OP1	2.29	0.51
2:C:22:A:C5	2:C:49:C:C5	2.98	0.51
1:A:235:LEU:HD11	1:B:235:LEU:CD1	2.32	0.50
1:B:456:LEU:HD13	1:B:457:LEU:N	2.26	0.50
1:A:266:ARG:N	1:A:267:PRO:HD2	2.26	0.50
1:A:287:THR:O	1:A:288:LEU:C	2.50	0.50
1:A:21:VAL:HB	1:A:42:ARG:NH2	2.27	0.50
1:A:397:LEU:O	1:A:399:GLY:N	2.45	0.50
1:A:415:ILE:O	1:A:420:ARG:HD3	2.12	0.50
1:B:220:ARG:HH11	1:B:220:ARG:HB3	1.77	0.50
2:C:7:U:H3'	2:C:8:U:C5'	2.42	0.50
1:A:21:VAL:HG21	1:A:38:PHE:CE2	2.46	0.50
1:A:107:ARG:CG	1:A:111:PHE:CE1	2.95	0.50
1:A:321:TYR:CE2	1:A:414:LYS:HB3	2.46	0.50
1:A:340:GLU:OE2	1:A:383:PRO:HG2	2.11	0.50
1:A:363:TYR:HE1	1:A:448:ASN:HA	1.72	0.50
1:B:2:ILE:O	1:B:6:ARG:HB2	2.11	0.50
1:B:197:TYR:O	1:B:198:THR:C	2.48	0.50
1:B:404:LYS:HD3	1:B:409:ILE:HG12	1.92	0.50
2:C:25:G:C5	2:C:26:C:C5	2.99	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:49:C:N3	2:C:60:G:H1'	2.26	0.50
2:D:52:A:H2'	2:D:53:G:H8	1.76	0.50
1:A:233:GLN:O	1:A:233:GLN:HG2	2.08	0.50
1:B:428:ASP:HB3	1:B:434:LEU:HD11	1.92	0.50
1:A:103:ALA:HB1	1:A:107:ARG:HH21	1.77	0.50
1:A:210:LEU:O	1:A:213:GLU:N	2.44	0.50
1:A:394:ARG:HG2	1:A:394:ARG:HH11	1.76	0.50
1:B:14:LEU:O	1:B:122:TYR:CZ	2.65	0.50
1:A:83:THR:HG22	1:A:84:ALA:N	2.26	0.50
1:A:337:TYR:N	1:A:388:THR:HG21	2.27	0.50
1:A:432:ARG:HD3	1:A:444:PHE:CE1	2.46	0.50
1:A:87:ASP:C	1:A:89:PRO:HD2	2.31	0.50
1:A:209:LEU:HA	1:A:212:GLN:NE2	2.27	0.50
1:A:448:ASN:O	1:A:449:ARG:C	2.50	0.50
1:B:57:MET:HE3	1:B:57:MET:HA	1.93	0.50
1:B:104:ARG:CZ	2:D:36:A:C6	2.95	0.50
1:B:356:ILE:HD11	1:B:460:GLN:OE1	2.12	0.50
2:D:51:U:H3'	2:D:52:A:C8	2.44	0.50
1:A:217:LEU:O	1:A:219:GLU:N	2.45	0.50
1:A:289:THR:H	2:C:39:A:H2'	1.76	0.49
1:A:410:PHE:HB3	1:A:420:ARG:HD2	1.94	0.49
1:B:303:GLY:O	1:B:305:PRO:HD3	2.11	0.49
1:A:102:ALA:HA	1:A:105:ILE:HD11	1.94	0.49
1:A:315:LEU:HA	1:A:328:PHE:CB	2.42	0.49
1:B:19:ALA:C	1:B:42:ARG:HH12	2.15	0.49
1:B:163:LEU:HD23	1:B:163:LEU:O	2.12	0.49
1:B:410:PHE:HB3	1:B:420:ARG:CD	2.42	0.49
1:B:415:ILE:HD11	1:B:439:LEU:HD21	1.94	0.49
2:D:15:G:H2'	2:D:60:G:N2	2.27	0.49
2:D:49:C:N3	2:D:60:G:H1'	2.26	0.49
1:A:57:MET:O	1:A:58:PHE:HB3	2.12	0.49
1:B:347:LEU:O	1:B:354:ALA:HB1	2.12	0.49
1:A:14:LEU:O	1:A:122:TYR:CZ	2.65	0.49
1:A:242:ALA:O	1:A:243:LEU:C	2.51	0.49
1:A:405:LYS:HE2	2:C:68:A:OP2	2.13	0.49
1:B:13:GLN:O	1:B:15:LEU:HG	2.13	0.49
1:B:217:LEU:O	1:B:219:GLU:N	2.46	0.49
1:B:217:LEU:C	1:B:219:GLU:H	2.15	0.49
2:C:19:G:HO2'	2:C:20:U:H5"	1.76	0.49
2:D:65:A:C5	2:D:66:C:C5	3.01	0.49
1:A:136:ILE:HD12	1:A:149:TYR:HE1	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:88:VAL:O	1:B:92:GLN:N	2.42	0.49
1:B:207:VAL:O	1:B:210:LEU:HB2	2.11	0.49
1:B:278:LEU:HD12	1:B:278:LEU:C	2.33	0.49
1:A:282:GLY:O	1:A:283:GLY:C	2.49	0.49
1:A:375:VAL:HB	1:A:455:ILE:HD12	1.95	0.49
1:B:185:SER:CB	1:B:186:PRO:CD	2.85	0.49
1:B:284:VAL:O	1:B:287:THR:HG22	2.12	0.49
1:A:251:HIS:HE1	1:A:323:ARG:HH21	1.61	0.49
1:A:341:LEU:HB3	1:A:384:LEU:HB2	1.95	0.49
1:A:428:ASP:HB3	1:A:434:LEU:HD11	1.95	0.49
1:A:434:LEU:O	1:A:442:SER:HB3	2.13	0.49
1:B:251:HIS:HB2	1:B:253:ASP:O	2.13	0.49
1:B:437:PRO:HB3	1:B:459:TYR:CG	2.48	0.49
1:A:456:LEU:C	1:A:456:LEU:HD13	2.33	0.49
1:B:144:SER:O	1:B:145:THR:C	2.49	0.49
1:B:185:SER:O	1:B:186:PRO:C	2.51	0.49
1:A:22:ILE:HD13	1:A:114:LEU:CB	2.43	0.49
1:A:185:SER:CB	1:A:186:PRO:CD	2.86	0.49
1:B:113:GLU:O	1:B:117:LYS:HB2	2.13	0.49
1:B:115:MET:HE2	1:B:159:HIS:HB3	1.93	0.49
2:C:39:A:OP1	2:C:39:A:C4'	2.58	0.49
2:D:39:A:OP1	2:D:39:A:C4'	2.59	0.49
1:A:42:ARG:HD3	1:A:47:LEU:CB	2.23	0.49
1:B:247:MET:HA	1:B:247:MET:HE2	1.95	0.49
1:A:142:ARG:NE	2:C:40:C:H1'	2.28	0.48
1:A:288:LEU:O	1:A:289:THR:O	2.31	0.48
1:B:13:GLN:CG	1:B:14:LEU:H	2.18	0.48
1:B:115:MET:CE	1:B:160:GLY:H	2.20	0.48
1:A:13:GLN:O	1:A:15:LEU:HG	2.12	0.48
1:A:105:ILE:HG13	1:A:106:CYS:N	2.28	0.48
1:A:128:HIS:NE2	1:A:172:ARG:NH2	2.61	0.48
1:A:247:MET:HE2	1:A:256:LEU:HA	1.95	0.48
1:A:287:THR:C	1:A:292:HIS:HD2	2.15	0.48
1:A:323:ARG:NH1	1:A:325:LEU:HD21	2.29	0.48
1:B:21:VAL:HG21	1:B:38:PHE:HE2	1.76	0.48
1:B:128:HIS:NE2	1:B:172:ARG:NH2	2.61	0.48
1:B:403:THR:OG1	2:D:1:G:OP1	2.27	0.48
2:C:52:A:C2	2:C:53:G:C5	3.00	0.48
2:D:5:C:H2'	2:D:6:U:H6	1.77	0.48
1:A:207:VAL:O	1:A:210:LEU:HB2	2.13	0.48
1:B:348:PRO:HA	1:B:354:ALA:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:67:A:H2'	2:C:68:A:C8	2.48	0.48
1:B:217:LEU:C	1:B:219:GLU:N	2.67	0.48
1:B:264:LEU:HD23	1:B:265:PRO:HD3	1.94	0.48
1:B:340:GLU:O	1:B:342:PRO:HD3	2.13	0.48
2:C:13:C:C2'	2:C:14:A:H5'	2.44	0.48
1:B:337:TYR:N	1:B:388:THR:CG2	2.76	0.48
2:D:9:A:C4	2:D:46:G:N2	2.82	0.48
1:B:22:ILE:HD13	1:B:114:LEU:CB	2.44	0.48
1:B:272:VAL:HG23	1:B:273:LEU:N	2.28	0.48
1:B:375:VAL:HG23	1:B:455:ILE:HB	1.95	0.48
2:C:59:A:N7	2:C:62:C:N4	2.61	0.48
1:A:18:GLY:N	1:A:46:LYS:NZ	2.60	0.48
1:A:288:LEU:O	1:A:289:THR:C	2.52	0.48
1:B:18:GLY:H	1:B:46:LYS:NZ	2.11	0.48
1:A:278:LEU:HD12	1:A:278:LEU:C	2.34	0.48
1:B:287:THR:O	1:B:288:LEU:C	2.52	0.48
1:B:378:ALA:O	1:B:380:VAL:N	2.46	0.48
1:A:241:ASP:O	1:A:242:ALA:C	2.52	0.48
1:B:266:ARG:HG2	1:B:269:GLN:NE2	2.29	0.48
2:C:66:C:O2'	2:C:67:A:H5'	2.14	0.48
1:A:108:TYR:CE1	2:C:36:A:OP2	2.67	0.48
1:A:386:VAL:HA	1:A:425:ILE:O	2.13	0.48
1:B:202:PHE:CD2	1:B:206:ILE:HD12	2.48	0.48
1:B:448:ASN:O	1:B:449:ARG:C	2.51	0.48
1:A:9:ILE:HG23	1:A:15:LEU:HB2	1.96	0.47
1:A:251:HIS:CE1	1:A:323:ARG:HH21	2.32	0.47
1:A:284:VAL:HG23	1:A:287:THR:HB	1.95	0.47
1:A:298:MET:HE2	1:A:298:MET:HB2	1.74	0.47
1:A:332:SER:HA	1:A:333:GLY:HA3	1.53	0.47
1:A:387:ARG:NE	1:A:390:ARG:NH2	2.62	0.47
1:B:24:GLY:HA2	1:B:52:ALA:O	2.13	0.47
1:B:152:ILE:HG22	1:B:165:ARG:HD2	1.96	0.47
1:B:251:HIS:HE1	1:B:323:ARG:HH21	1.60	0.47
2:D:19:G:C5'	2:D:61:U:O4	2.61	0.47
1:A:194:LYS:C	1:A:196:ASP:N	2.65	0.47
1:B:288:LEU:CA	2:D:39:A:O2'	2.60	0.47
1:B:382:LEU:HD23	1:B:382:LEU:N	2.29	0.47
1:A:18:GLY:H	1:A:46:LYS:CE	2.27	0.47
1:A:115:MET:HE2	1:A:159:HIS:HB3	1.95	0.47
1:A:163:LEU:HD23	1:A:163:LEU:O	2.14	0.47
1:B:9:ILE:CD1	1:B:166:PRO:HB3	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:70:VAL:CG2	1:B:71:LYS:N	2.77	0.47
1:B:127:HIS:CE1	2:D:36:A:OP1	2.67	0.47
1:B:128:HIS:CD2	1:B:172:ARG:HB3	2.49	0.47
1:B:282:GLY:O	1:B:283:GLY:C	2.52	0.47
2:C:7:U:H3'	2:C:8:U:H5'	1.96	0.47
2:C:7:U:HO2'	2:C:8:U:P	2.37	0.47
2:D:68:A:O5'	2:D:68:A:H8	1.97	0.47
1:A:353:TYR:HD2	1:A:459:TYR:OH	1.97	0.47
1:A:382:LEU:N	1:A:382:LEU:HD23	2.29	0.47
1:B:233:GLN:O	1:B:233:GLN:HG2	2.09	0.47
2:C:65:A:C5	2:C:66:C:C5	3.02	0.47
2:D:9:A:N6	2:D:47:G:C2	2.82	0.47
1:A:149:TYR:OH	1:A:224:TYR:CD2	2.65	0.47
1:A:269:GLN:O	1:A:273:LEU:HG	2.14	0.47
1:B:102:ALA:HA	1:B:105:ILE:HD11	1.95	0.47
1:B:296:ILE:HD12	1:B:317:VAL:HG11	1.96	0.47
2:D:7:U:HO2'	2:D:8:U:P	2.38	0.47
1:A:22:ILE:HB	1:A:123:VAL:HG22	1.96	0.47
1:A:106:CYS:O	1:A:107:ARG:C	2.53	0.47
1:A:185:SER:O	1:A:186:PRO:C	2.51	0.47
1:A:251:HIS:HB2	1:A:253:ASP:O	2.15	0.47
1:A:337:TYR:CD1	1:A:350:PRO:HG2	2.50	0.47
1:A:366:LYS:HD3	1:A:372:TRP:CD1	2.50	0.47
1:B:21:VAL:HG12	1:B:49:VAL:HA	1.97	0.47
1:B:41:LEU:HD13	1:B:44:GLU:OE1	2.15	0.47
1:B:50:ILE:HD13	1:B:118:HIS:CE1	2.50	0.47
1:B:59:ARG:HG2	1:B:60:GLY:H	1.80	0.47
1:B:147:LYS:O	1:B:150:ALA:HB2	2.14	0.47
1:B:269:GLN:O	1:B:273:LEU:HG	2.14	0.47
1:B:327:THR:O	1:B:327:THR:HG22	2.15	0.47
2:C:9:A:C6	2:C:47:G:C2	3.03	0.47
2:D:25:G:C5	2:D:26:C:C5	3.03	0.47
1:A:23:VAL:HG21	1:A:34:LEU:HD22	1.97	0.47
1:B:55:ASP:OD1	1:B:63:SER:HA	2.15	0.47
1:B:305:PRO:O	1:B:319:ARG:HG2	2.14	0.47
1:A:128:HIS:CD2	1:A:172:ARG:HB3	2.50	0.47
1:A:327:THR:HG23	1:A:329:ASP:N	2.30	0.47
1:B:102:ALA:O	1:B:106:CYS:HB2	2.15	0.47
1:A:72:ARG:HE	1:A:72:ARG:HB3	1.43	0.47
1:A:266:ARG:N	1:A:267:PRO:CD	2.77	0.47
1:A:289:THR:O	1:A:292:HIS:N	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:13:GLN:C	1:B:15:LEU:N	2.68	0.47
1:B:88:VAL:N	1:B:89:PRO:CD	2.78	0.47
1:B:156:ARG:NH1	2:D:37:U:H5'	2.30	0.47
1:B:404:LYS:HG2	1:B:405:LYS:N	2.30	0.47
2:D:14:A:H2'	2:D:15:G:O4'	2.15	0.47
2:D:22:A:C5	2:D:49:C:C5	3.03	0.47
1:A:139:ARG:HH12	2:C:36:A:C1'	2.28	0.46
1:A:457:LEU:HD22	1:A:457:LEU:N	2.29	0.46
1:B:194:LYS:C	1:B:196:ASP:N	2.66	0.46
1:B:315:LEU:HA	1:B:328:PHE:CB	2.44	0.46
1:B:432:ARG:CD	1:B:444:PHE:CE1	2.98	0.46
2:C:14:A:H2'	2:C:15:G:O4'	2.15	0.46
2:C:60:G:C3'	2:C:61:U:H5'	2.42	0.46
1:A:21:VAL:HG21	1:A:38:PHE:HE2	1.80	0.46
1:A:59:ARG:HG2	1:A:60:GLY:H	1.80	0.46
1:A:88:VAL:N	1:A:89:PRO:CD	2.78	0.46
1:A:201:ARG:HD2	1:B:213:GLU:OE2	2.15	0.46
1:A:242:ALA:O	1:A:246:VAL:HG23	2.15	0.46
1:A:347:LEU:O	1:A:354:ALA:HB1	2.15	0.46
1:B:270:ARG:O	1:B:273:LEU:HB2	2.15	0.46
2:C:75:C:O5'	2:C:75:C:H6	1.98	0.46
1:A:285:PRO:HD2	1:A:286:PRO:HD3	1.97	0.46
1:A:373:PHE:CD1	1:A:435:TRP:CB	2.95	0.46
1:B:337:TYR:N	1:B:388:THR:HG21	2.31	0.46
1:A:115:MET:CE	1:A:159:HIS:HB3	2.46	0.46
1:A:238:LEU:HD12	1:A:238:LEU:H	1.80	0.46
1:A:247:MET:HA	1:A:247:MET:HE2	1.97	0.46
1:A:410:PHE:HB3	1:A:420:ARG:CD	2.46	0.46
1:B:279:ARG:HE	1:B:279:ARG:HB2	1.48	0.46
1:A:70:VAL:CG2	1:A:71:LYS:N	2.79	0.46
1:A:339:PHE:HD2	1:A:339:PHE:N	2.14	0.46
1:B:242:ALA:O	1:B:243:LEU:C	2.53	0.46
2:D:18:G:N2	2:D:59:A:C4	2.83	0.46
2:D:20:U:O2'	2:D:21:U:OP2	2.30	0.46
2:D:59:A:N7	2:D:62:C:N4	2.62	0.46
1:A:46:LYS:O	1:A:47:LEU:CD1	2.58	0.46
1:A:104:ARG:HH21	2:C:36:A:N6	2.12	0.46
1:A:133:VAL:O	1:A:134:GLU:C	2.54	0.46
1:B:251:HIS:CE1	1:B:323:ARG:HH21	2.33	0.46
1:B:276:LEU:O	1:B:279:ARG:HB3	2.16	0.46
1:B:45:TRP:C	1:B:47:LEU:HD22	2.36	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:337:TYR:O	1:B:388:THR:HG23	2.15	0.46
2:C:20:U:O2'	2:C:21:U:P	2.73	0.46
1:A:13:GLN:C	1:A:15:LEU:N	2.69	0.46
1:A:24:GLY:HA3	1:A:111:PHE:HE2	1.81	0.46
1:B:198:THR:HG23	1:B:201:ARG:NH2	2.30	0.46
1:B:266:ARG:N	1:B:267:PRO:HD2	2.30	0.46
1:B:269:GLN:HE21	1:B:297:LEU:HD21	1.81	0.46
1:A:339:PHE:N	1:A:339:PHE:CD2	2.83	0.46
1:B:107:ARG:O	1:B:110:PHE:HB3	2.16	0.46
1:B:158:PHE:CD2	1:B:159:HIS:HB2	2.51	0.46
1:B:406:LEU:HA	1:B:406:LEU:HD12	1.68	0.46
1:B:415:ILE:O	1:B:420:ARG:HD3	2.16	0.46
1:A:382:LEU:CB	1:A:383:PRO:HA	2.46	0.46
1:B:105:ILE:HG13	1:B:106:CYS:N	2.31	0.46
1:B:261:PHE:CZ	1:B:269:GLN:HB3	2.51	0.46
1:B:426:VAL:O	1:B:426:VAL:HG12	2.13	0.46
2:C:14:A:C2	2:C:15:G:H1'	2.51	0.46
2:D:20:U:O2'	2:D:21:U:P	2.73	0.46
1:A:364:PRO:CG	1:A:374:VAL:HG21	2.28	0.45
1:B:128:HIS:O	1:B:131:ASP:N	2.48	0.45
1:B:284:VAL:HG23	1:B:287:THR:HB	1.97	0.45
2:D:46:G:H5"	2:D:47:G:OP2	2.16	0.45
1:A:132:GLN:OE1	1:A:152:ILE:HG12	2.16	0.45
1:A:424:PRO:HG2	1:A:437:PRO:HG2	1.98	0.45
1:B:46:LYS:O	1:B:47:LEU:CD1	2.58	0.45
1:B:288:LEU:O	1:B:289:THR:C	2.54	0.45
2:C:76:C:C5	2:C:77:A:N3	2.85	0.45
1:A:1:MET:C	1:A:2:ILE:HG13	2.36	0.45
1:A:50:ILE:HD13	1:A:118:HIS:CE1	2.51	0.45
1:A:128:HIS:O	1:A:131:ASP:N	2.49	0.45
1:A:274:GLN:HG2	1:A:293:ILE:CD1	2.46	0.45
1:A:338:TRP:O	1:A:339:PHE:CD2	2.67	0.45
1:B:274:GLN:HG2	1:B:293:ILE:CD1	2.46	0.45
1:B:370:ASN:HA	1:B:441:LYS:HE3	1.97	0.45
1:B:403:THR:O	2:D:1:G:C8	2.70	0.45
2:C:68:A:O5'	2:C:68:A:H8	2.00	0.45
1:A:13:GLN:CG	1:A:14:LEU:H	2.18	0.45
1:A:264:LEU:HD23	1:A:265:PRO:HD3	1.97	0.45
1:B:9:ILE:CG2	1:B:15:LEU:HB2	2.45	0.45
1:B:373:PHE:CD1	1:B:435:TRP:CB	2.93	0.45
1:A:147:LYS:O	1:A:150:ALA:HB2	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:152:ILE:HG22	1:A:165:ARG:HD2	1.99	0.45
1:A:276:LEU:C	1:A:276:LEU:HD13	2.37	0.45
1:B:22:ILE:HB	1:B:123:VAL:HG22	1.99	0.45
1:B:239:ALA:O	1:B:240:ALA:C	2.54	0.45
1:B:337:TYR:C	1:B:337:TYR:CD2	2.90	0.45
1:B:390:ARG:O	1:B:392:GLY:N	2.49	0.45
2:D:52:A:N1	2:D:53:G:C5	2.85	0.45
1:A:18:GLY:O	1:A:46:LYS:HE3	2.17	0.45
1:A:201:ARG:NH1	1:B:213:GLU:OE2	2.49	0.45
1:A:338:TRP:HA	1:A:387:ARG:HB3	1.99	0.45
1:B:158:PHE:HD1	1:B:163:LEU:HB2	1.81	0.45
1:B:327:THR:HG23	1:B:329:ASP:N	2.32	0.45
2:D:3:A:H2'	2:D:4:C:H6	1.82	0.45
1:A:42:ARG:NE	1:A:47:LEU:HB3	2.31	0.45
1:B:18:GLY:H	1:B:46:LYS:CE	2.30	0.45
1:B:199:ARG:NH1	2:D:35:C:H5"	2.32	0.45
1:A:256:LEU:HD11	1:A:261:PHE:HB2	1.98	0.45
1:A:270:ARG:NE	1:B:230:GLU:OE2	2.50	0.45
1:A:338:TRP:C	1:A:339:PHE:CD2	2.74	0.45
1:A:425:ILE:HG22	1:A:426:VAL:N	2.31	0.45
1:A:432:ARG:CD	1:A:444:PHE:CE1	2.99	0.45
1:B:337:TYR:CD1	1:B:350:PRO:HG2	2.52	0.45
1:A:152:ILE:CG2	1:A:165:ARG:HD2	2.47	0.45
1:A:400:THR:HB	1:A:401:GLY:H	1.51	0.45
1:B:41:LEU:HD13	1:B:44:GLU:OE2	2.17	0.45
1:B:198:THR:CG2	2:D:33:C:O2'	2.62	0.45
1:B:241:ASP:O	1:B:242:ALA:C	2.55	0.45
1:B:434:LEU:O	1:B:442:SER:HB3	2.16	0.45
2:D:13:C:H2'	2:D:14:A:C5'	2.47	0.45
1:A:250:GLN:C	1:A:251:HIS:HD2	2.21	0.45
1:B:216:ARG:NH2	2:C:41:C:OP1	2.46	0.45
2:C:47:G:HO2'	2:C:48:C:P	2.40	0.45
2:D:9:A:C6	2:D:47:G:C2	3.05	0.45
2:D:18:G:N3	2:D:59:A:C2	2.84	0.45
1:A:165:ARG:HH22	2:C:37:U:P	2.40	0.44
1:A:289:THR:HG23	2:C:39:A:N9	2.32	0.44
1:A:372:TRP:O	1:A:441:LYS:HE2	2.17	0.44
1:B:285:PRO:HD2	1:B:286:PRO:HD3	1.99	0.44
1:B:386:VAL:HB	1:B:426:VAL:HG22	1.99	0.44
1:A:239:ALA:O	1:A:240:ALA:C	2.54	0.44
1:A:337:TYR:O	1:A:388:THR:HG23	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:18:GLY:N	1:B:46:LYS:NZ	2.66	0.44
1:B:235:LEU:HD23	1:B:271:ARG:NH2	2.32	0.44
2:C:22:A:N1	2:C:49:C:C6	2.84	0.44
1:B:375:VAL:HB	1:B:455:ILE:HD12	1.99	0.44
1:B:390:ARG:N	1:B:393:ASP:OD2	2.50	0.44
2:C:12:U:O2	2:C:12:U:C2'	2.65	0.44
1:A:158:PHE:C	1:A:158:PHE:CD2	2.91	0.44
1:A:220:ARG:HH11	1:A:220:ARG:HB3	1.83	0.44
1:A:417:ARG:O	1:A:420:ARG:N	2.51	0.44
1:B:311:LEU:HD13	1:B:312:PRO:HD2	2.00	0.44
1:B:338:TRP:O	1:B:339:PHE:CD2	2.68	0.44
1:B:363:TYR:HD2	1:B:364:PRO:O	2.00	0.44
1:B:394:ARG:HG2	1:B:394:ARG:NH1	2.33	0.44
2:C:5:C:H2'	2:C:6:U:H6	1.83	0.44
2:D:18:G:C2'	2:D:58:G:N2	2.78	0.44
1:B:42:ARG:NE	1:B:47:LEU:HB3	2.31	0.44
1:B:266:ARG:N	1:B:267:PRO:CD	2.80	0.44
1:B:338:TRP:C	1:B:338:TRP:CD1	2.90	0.44
1:B:382:LEU:CB	1:B:383:PRO:HA	2.48	0.44
2:C:34:U:H5"	2:C:35:C:OP1	2.18	0.44
1:B:66:GLU:O	1:B:70:VAL:HG13	2.18	0.44
1:B:337:TYR:HD2	1:B:337:TYR:C	2.20	0.44
2:D:37:U:H2'	2:D:37:U:O2	2.18	0.44
2:D:67:A:H2'	2:D:68:A:C8	2.53	0.44
1:A:135:THR:OG1	1:A:152:ILE:HD11	2.18	0.44
1:A:184:LEU:HD12	1:A:184:LEU:HA	1.72	0.44
1:A:280:LEU:HA	1:A:280:LEU:HD23	1.69	0.44
1:A:305:PRO:O	1:A:319:ARG:HG2	2.18	0.44
1:B:152:ILE:CG2	1:B:165:ARG:HD2	2.48	0.44
1:B:332:SER:HA	1:B:333:GLY:HA3	1.56	0.44
1:A:57:MET:H	1:A:89:PRO:HG2	1.83	0.44
1:A:390:ARG:N	1:A:393:ASP:OD2	2.50	0.44
1:A:405:LYS:HE3	2:C:67:A:OP1	2.17	0.44
1:B:287:THR:C	1:B:292:HIS:HD2	2.21	0.44
1:B:403:THR:O	2:D:1:G:H8	2.01	0.44
1:A:41:LEU:HD13	1:A:44:GLU:OE1	2.17	0.44
1:A:257:SER:O	1:A:260:PRO:HG2	2.18	0.44
1:A:337:TYR:HD1	1:A:350:PRO:HG2	1.82	0.44
1:A:382:LEU:HB3	1:A:383:PRO:HA	1.99	0.44
1:B:24:GLY:HA3	1:B:111:PHE:HE2	1.82	0.44
1:B:86:ILE:HG21	1:B:88:VAL:HG22	1.95	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:266:ARG:O	1:B:267:PRO:C	2.56	0.44
1:B:396:VAL:O	1:B:442:SER:HA	2.17	0.44
2:D:3:A:H2'	2:D:4:C:C6	2.53	0.44
2:D:76:C:C5	2:D:77:A:N3	2.86	0.44
1:B:3:ASP:OD1	1:B:4:LYS:N	2.50	0.43
1:B:88:VAL:N	1:B:89:PRO:HD2	2.33	0.43
1:B:220:ARG:HA	1:B:220:ARG:NH1	2.32	0.43
2:D:34:U:H5"	2:D:35:C:OP1	2.17	0.43
1:B:1:MET:C	1:B:2:ILE:HG13	2.38	0.43
1:B:18:GLY:O	1:B:46:LYS:HE3	2.18	0.43
1:B:68:GLU:HA	1:B:71:LYS:HG3	2.00	0.43
1:B:72:ARG:HE	1:B:72:ARG:HB3	1.45	0.43
1:B:133:VAL:O	1:B:134:GLU:C	2.56	0.43
1:B:158:PHE:CD2	1:B:158:PHE:C	2.92	0.43
1:B:194:LYS:O	1:B:196:ASP:N	2.49	0.43
1:B:203:ARG:NH2	2:D:35:C:N4	2.66	0.43
1:B:261:PHE:HD2	1:B:262:LEU:N	2.16	0.43
1:B:385:ARG:CZ	1:B:429:ALA:HA	2.48	0.43
1:A:83:THR:CG2	1:A:84:ALA:N	2.82	0.43
1:A:289:THR:OG1	2:C:39:A:H2'	2.18	0.43
1:B:276:LEU:CD1	1:B:280:LEU:HD12	2.48	0.43
1:B:373:PHE:C	1:B:373:PHE:CD2	2.92	0.43
1:B:409:ILE:HG22	1:B:410:PHE:N	2.32	0.43
1:B:456:LEU:C	1:B:457:LEU:HD22	2.39	0.43
2:D:47:G:HO2'	2:D:48:C:P	2.42	0.43
1:A:326:PHE:N	1:A:326:PHE:CD1	2.86	0.43
1:B:34:LEU:CA	1:B:167:PHE:HE1	2.31	0.43
1:B:74:CYS:HB3	1:B:81:CYS:HB2	1.75	0.43
1:B:169:ALA:C	1:B:170:VAL:HG13	2.39	0.43
1:B:242:ALA:O	1:B:246:VAL:HG23	2.18	0.43
1:A:55:ASP:HB2	1:A:67:MET:HE3	1.99	0.43
1:B:70:VAL:HG23	1:B:71:LYS:N	2.33	0.43
1:B:158:PHE:HD2	1:B:159:HIS:N	2.17	0.43
1:B:250:GLN:C	1:B:251:HIS:HD2	2.21	0.43
1:B:386:VAL:HA	1:B:425:ILE:O	2.18	0.43
1:A:104:ARG:NH1	2:C:34:U:C2'	2.80	0.43
1:A:270:ARG:O	1:A:273:LEU:HB2	2.19	0.43
1:A:396:VAL:O	1:A:442:SER:HA	2.19	0.43
1:A:415:ILE:HD11	1:A:439:LEU:HD21	2.00	0.43
2:C:46:G:H5"	2:C:47:G:OP2	2.18	0.43
1:A:147:LYS:HB3	1:A:232:GLU:CD	2.38	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:158:PHE:HD1	1:A:163:LEU:HB2	1.84	0.43
1:B:83:THR:CG2	1:B:84:ALA:N	2.81	0.43
1:B:184:LEU:HD12	1:B:184:LEU:HA	1.76	0.43
2:C:59:A:C6	2:C:62:C:C5	3.06	0.43
2:D:64:U:O2'	2:D:65:A:H5'	2.18	0.43
1:A:233:GLN:O	1:A:236:GLU:HB2	2.18	0.43
1:B:52:ALA:HA	1:B:82:GLU:O	2.19	0.43
1:B:55:ASP:HB2	1:B:67:MET:HE3	2.00	0.43
1:B:128:HIS:HA	1:B:167:PHE:O	2.18	0.43
1:B:158:PHE:H	1:B:162:TYR:HA	1.83	0.43
1:B:276:LEU:HD13	1:B:280:LEU:HD12	2.00	0.43
1:B:288:LEU:O	1:B:289:THR:O	2.37	0.43
1:B:337:TYR:HD1	1:B:350:PRO:HG2	1.83	0.43
1:B:425:ILE:HG22	1:B:426:VAL:N	2.33	0.43
2:C:25:G:C6	2:C:26:C:C4	3.07	0.43
2:C:37:U:H2'	2:C:37:U:O2	2.19	0.43
1:A:88:VAL:N	1:A:89:PRO:HD2	2.33	0.43
1:A:155:LYS:HA	1:A:163:LEU:O	2.19	0.43
1:A:156:ARG:NH1	2:C:37:U:C5'	2.82	0.43
1:B:132:GLN:OE1	1:B:152:ILE:HG12	2.19	0.43
1:B:318:ILE:HD12	1:B:318:ILE:N	2.34	0.43
1:A:18:GLY:H	1:A:46:LYS:HE3	1.83	0.43
1:A:41:LEU:HD13	1:A:44:GLU:OE2	2.19	0.43
1:A:102:ALA:O	1:A:106:CYS:HB2	2.18	0.43
1:A:198:THR:HG21	2:C:33:C:O2'	2.19	0.43
1:A:326:PHE:N	1:A:326:PHE:HD1	2.17	0.43
1:A:352:GLY:O	1:A:353:TYR:HD1	2.02	0.43
1:A:456:LEU:HD13	1:A:457:LEU:N	2.33	0.43
1:B:42:ARG:HH11	1:B:47:LEU:C	2.22	0.43
1:B:261:PHE:CE2	1:B:269:GLN:HB3	2.54	0.43
1:B:289:THR:HG23	2:D:39:A:H2'	2.01	0.43
2:C:11:C:H2'	2:C:12:U:H6	1.84	0.43
2:D:14:A:C2	2:D:15:G:H1'	2.53	0.43
2:D:48:C:OP1	2:D:48:C:C6	2.64	0.43
1:A:10:HIS:O	1:A:11:ARG:C	2.58	0.42
1:A:104:ARG:NE	2:C:36:A:N1	2.66	0.42
1:A:338:TRP:C	1:A:338:TRP:CD1	2.91	0.42
1:B:18:GLY:H	1:B:46:LYS:HE3	1.84	0.42
1:B:133:VAL:HG12	1:B:137:LEU:HD11	2.00	0.42
1:B:147:LYS:HA	1:B:232:GLU:OE1	2.19	0.42
1:B:208:PRO:O	1:B:211:ARG:HB3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:256:LEU:HD11	1:B:261:PHE:HB2	2.01	0.42
1:B:289:THR:HG22	1:B:293:ILE:HD12	2.00	0.42
2:D:75:C:H6	2:D:75:C:O5'	2.02	0.42
1:A:9:ILE:CD1	1:A:166:PRO:HB3	2.49	0.42
1:A:104:ARG:NH2	2:C:36:A:H62	2.16	0.42
1:A:198:THR:HG23	1:A:201:ARG:NH2	2.34	0.42
1:A:304:ARG:HA	1:A:305:PRO:HD3	1.62	0.42
1:B:42:ARG:HD3	1:B:47:LEU:CB	2.24	0.42
1:B:57:MET:H	1:B:89:PRO:HG2	1.84	0.42
1:B:299:LEU:HD21	1:B:307:GLY:HA3	2.00	0.42
1:B:352:GLY:O	1:B:353:TYR:HD1	2.02	0.42
1:A:24:GLY:HA3	1:A:111:PHE:CE2	2.54	0.42
1:A:158:PHE:H	1:A:162:TYR:HA	1.85	0.42
1:A:318:ILE:HD12	1:A:318:ILE:N	2.33	0.42
1:B:247:MET:HE2	1:B:256:LEU:HA	2.00	0.42
1:B:339:PHE:CD2	1:B:339:PHE:N	2.87	0.42
1:A:70:VAL:HG23	1:A:71:LYS:N	2.34	0.42
1:A:79:ILE:O	1:A:79:ILE:HG22	2.20	0.42
1:A:194:LYS:O	1:A:196:ASP:N	2.50	0.42
1:B:133:VAL:HG12	1:B:137:LEU:CD1	2.49	0.42
1:B:233:GLN:O	1:B:236:GLU:HB2	2.19	0.42
1:A:58:PHE:HZ	1:A:62:GLU:HG2	1.84	0.42
1:A:74:CYS:HB3	1:A:79:ILE:O	2.19	0.42
1:A:97:LEU:HD12	1:A:101:GLU:HG2	2.01	0.42
1:A:405:LYS:NZ	2:C:68:A:OP2	2.50	0.42
1:B:58:PHE:CZ	1:B:62:GLU:HG2	2.54	0.42
1:B:276:LEU:HD13	1:B:276:LEU:C	2.39	0.42
1:B:338:TRP:HA	1:B:387:ARG:HB3	2.02	0.42
1:A:58:PHE:CZ	1:A:62:GLU:HG2	2.54	0.42
1:A:363:TYR:HD2	1:A:364:PRO:O	2.03	0.42
1:B:9:ILE:HG23	1:B:15:LEU:HB2	2.02	0.42
1:B:58:PHE:HZ	1:B:62:GLU:HG2	1.85	0.42
1:B:152:ILE:HA	1:B:153:PRO:HD3	1.81	0.42
1:B:168:LEU:HA	1:B:168:LEU:HD12	1.80	0.42
1:B:327:THR:CG2	1:B:327:THR:O	2.67	0.42
1:A:46:LYS:C	1:A:47:LEU:HD13	2.40	0.42
1:A:276:LEU:CD1	1:A:280:LEU:HD12	2.49	0.42
1:A:396:VAL:HA	1:A:402:GLY:O	2.19	0.42
1:B:382:LEU:HB3	1:B:383:PRO:HA	2.00	0.42
1:B:104:ARG:NE	2:D:36:A:C6	2.87	0.42
1:B:372:TRP:O	1:B:441:LYS:HE2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:387:ARG:NE	1:B:390:ARG:NH2	2.67	0.42
1:B:403:THR:OG1	2:D:1:G:P	2.78	0.42
2:C:22:A:N6	2:C:49:C:C6	2.87	0.42
1:A:17:GLU:HA	1:A:46:LYS:HZ1	1.85	0.42
1:B:363:TYR:CD1	1:B:448:ASN:HA	2.53	0.42
2:C:14:A:C8	2:C:23:G:N2	2.88	0.42
2:D:59:A:C8	2:D:62:C:N4	2.88	0.42
1:A:373:PHE:C	1:A:373:PHE:CD2	2.93	0.42
1:B:299:LEU:O	1:B:319:ARG:NH1	2.53	0.42
2:D:11:C:H2'	2:D:12:U:H6	1.85	0.42
2:D:22:A:N6	2:D:49:C:C6	2.88	0.42
1:A:39:LEU:HD23	1:A:39:LEU:HA	1.89	0.41
1:A:101:GLU:CD	2:C:34:U:C6	2.93	0.41
1:B:25:VAL:HG22	1:B:31:SER:HB2	2.02	0.41
1:B:155:LYS:HA	1:B:163:LEU:O	2.20	0.41
2:C:26:C:H2'	2:C:27:A:H8	1.85	0.41
1:A:66:GLU:O	1:A:70:VAL:HG13	2.20	0.41
1:A:158:PHE:CD2	1:A:159:HIS:HB2	2.55	0.41
1:A:299:LEU:HD21	1:A:307:GLY:HA3	2.01	0.41
1:A:337:TYR:O	1:A:337:TYR:HD2	2.03	0.41
1:B:41:LEU:HA	1:B:44:GLU:HB3	2.03	0.41
1:B:80:LEU:HD12	1:B:81:CYS:H	1.84	0.41
1:B:226:GLU:O	1:B:227:MET:C	2.58	0.41
1:B:273:LEU:O	1:B:274:GLN:C	2.57	0.41
2:D:59:A:C6	2:D:62:C:C5	3.09	0.41
1:B:34:LEU:O	1:B:35:LEU:C	2.58	0.41
1:B:121:GLY:O	1:B:161:GLY:HA3	2.19	0.41
1:B:271:ARG:HG2	1:B:271:ARG:NH1	2.33	0.41
1:B:370:ASN:HB3	1:B:438:GLY:HA2	2.02	0.41
1:A:55:ASP:OD1	1:A:63:SER:HA	2.20	0.41
1:A:107:ARG:O	1:A:110:PHE:HB3	2.20	0.41
1:A:247:MET:CE	1:A:256:LEU:HB2	2.51	0.41
1:A:348:PRO:HA	1:A:354:ALA:HB2	2.02	0.41
1:A:394:ARG:HG2	1:A:394:ARG:NH1	2.35	0.41
2:D:40:C:O2'	2:D:41:C:H5'	2.20	0.41
1:A:1:MET:CA	1:A:5:VAL:HG12	2.50	0.41
1:A:327:THR:HG22	1:A:327:THR:O	2.19	0.41
1:B:39:LEU:HD23	1:B:39:LEU:HA	1.93	0.41
1:B:128:HIS:NE2	1:B:172:ARG:CZ	2.83	0.41
1:B:188:CYS:SG	1:B:189:ASP:N	2.94	0.41
1:B:200:ASN:O	1:B:203:ARG:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:275:LEU:O	1:B:276:LEU:C	2.59	0.41
2:C:52:A:N1	2:C:53:G:C5	2.88	0.41
2:D:30:C:N3	2:D:31:G:N7	2.69	0.41
1:A:153:PRO:O	1:A:154:VAL:C	2.58	0.41
1:A:275:LEU:O	1:A:276:LEU:C	2.59	0.41
1:B:169:ALA:HB3	1:B:170:VAL:HG13	2.01	0.41
1:B:271:ARG:CG	1:B:271:ARG:NH1	2.60	0.41
1:B:349:LEU:HA	1:B:350:PRO:HD3	1.91	0.41
1:B:373:PHE:CD2	1:B:374:VAL:N	2.89	0.41
2:C:51:U:C3'	2:C:52:A:H8	2.29	0.41
1:A:276:LEU:HD13	1:A:280:LEU:HD12	2.01	0.41
2:C:59:A:C8	2:C:62:C:N4	2.89	0.41
1:A:171:SER:OG	1:A:173:ALA:HB3	2.21	0.41
1:A:202:PHE:CD2	1:A:206:ILE:HD12	2.56	0.41
1:A:226:GLU:O	1:A:227:MET:C	2.59	0.41
1:A:271:ARG:HG2	1:A:271:ARG:NH1	2.32	0.41
1:B:61:ARG:HG2	1:B:62:GLU:OE1	2.20	0.41
1:B:289:THR:OG1	2:D:39:A:C2'	2.64	0.41
2:C:48:C:OP1	2:C:48:C:C6	2.61	0.41
1:A:21:VAL:HG12	1:A:49:VAL:HA	2.03	0.41
1:A:34:LEU:CA	1:A:167:PHE:HE1	2.33	0.41
1:A:42:ARG:HH11	1:A:47:LEU:C	2.22	0.41
1:A:68:GLU:HA	1:A:71:LYS:HG3	2.02	0.41
1:A:104:ARG:NE	2:C:36:A:N6	2.69	0.41
1:A:113:GLU:O	1:A:117:LYS:HB2	2.21	0.41
1:A:209:LEU:HD11	1:B:209:LEU:HD11	2.02	0.41
1:A:247:MET:HE1	1:A:256:LEU:HB2	2.02	0.41
1:A:393:ASP:HB3	1:A:406:LEU:HD22	2.03	0.41
1:B:115:MET:CE	1:B:159:HIS:HB3	2.49	0.41
1:B:243:LEU:O	1:B:247:MET:HG2	2.21	0.41
1:B:274:GLN:CA	2:D:39:A:H61	2.34	0.41
1:B:351:ASN:O	1:B:353:TYR:N	2.54	0.41
2:C:22:A:H62	2:C:47:G:H1'	1.83	0.41
1:A:41:LEU:HA	1:A:44:GLU:HB3	2.03	0.41
1:A:132:GLN:O	1:A:133:VAL:C	2.59	0.41
1:A:133:VAL:HG12	1:A:137:LEU:HD11	2.03	0.41
1:A:136:ILE:O	1:A:140:LEU:N	2.54	0.41
1:A:315:LEU:C	1:A:315:LEU:CD2	2.88	0.41
1:A:405:LYS:CE	2:C:68:A:OP2	2.69	0.41
1:B:104:ARG:HG3	2:D:36:A:C2	2.55	0.41
1:B:203:ARG:HH22	2:D:35:C:N4	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:337:TYR:CE2	1:B:388:THR:HG22	2.56	0.41
2:C:25:G:C4	2:C:26:C:C5	3.09	0.41
1:A:128:HIS:NE2	1:A:172:ARG:CZ	2.84	0.40
1:A:238:LEU:O	1:A:239:ALA:C	2.59	0.40
1:A:265:PRO:HG2	1:A:268:LEU:HD12	2.03	0.40
1:A:328:PHE:N	1:A:328:PHE:CD2	2.88	0.40
1:A:347:LEU:HD23	1:A:347:LEU:C	2.42	0.40
1:B:18:GLY:N	1:B:46:LYS:HZ2	2.19	0.40
1:B:136:ILE:HD12	1:B:149:TYR:CE1	2.55	0.40
1:B:139:ARG:HH11	2:D:36:A:H8	1.64	0.40
1:B:159:HIS:HB3	1:B:160:GLY:H	1.59	0.40
1:B:234:PHE:O	1:B:235:LEU:C	2.59	0.40
1:B:393:ASP:HB3	1:B:406:LEU:HD22	2.02	0.40
2:C:40:C:O2'	2:C:41:C:H5'	2.21	0.40
2:D:30:C:C2	2:D:31:G:C8	3.09	0.40
1:A:296:ILE:CD1	1:A:317:VAL:HG11	2.51	0.40
1:A:415:ILE:HG22	1:A:419:GLU:HB2	2.03	0.40
1:B:10:HIS:O	1:B:11:ARG:C	2.60	0.40
1:B:27:GLY:O	1:B:66:GLU:HG2	2.20	0.40
1:B:38:PHE:O	1:B:39:LEU:C	2.58	0.40
1:B:153:PRO:HD2	2:D:37:U:OP1	2.21	0.40
1:B:257:SER:O	1:B:260:PRO:HG2	2.20	0.40
1:B:289:THR:CG2	2:D:39:A:H2'	2.51	0.40
1:A:39:LEU:CD1	1:A:77:ARG:HD2	2.51	0.40
1:A:311:LEU:HD22	1:A:311:LEU:HA	1.76	0.40
1:A:404:LYS:CD	1:A:409:ILE:HG12	2.51	0.40
1:B:107:ARG:HG2	1:B:111:PHE:CE1	2.56	0.40
1:B:391:ARG:O	2:D:68:A:P	2.80	0.40
1:B:415:ILE:HG22	1:B:419:GLU:HB2	2.03	0.40
1:B:448:ASN:O	1:B:450:GLY:N	2.54	0.40
1:A:198:THR:O	1:A:199:ARG:C	2.60	0.40
1:A:285:PRO:HD2	1:A:286:PRO:CD	2.52	0.40
1:A:289:THR:N	2:C:39:A:O2'	2.43	0.40
1:A:311:LEU:HB2	1:A:315:LEU:O	2.22	0.40
1:A:385:ARG:CZ	1:A:429:ALA:HA	2.52	0.40
1:A:407:LYS:HE2	1:A:408:GLU:HG3	2.03	0.40
1:B:50:ILE:O	1:B:50:ILE:HG22	2.21	0.40
1:B:148:GLY:O	1:B:149:TYR:C	2.59	0.40
1:B:298:MET:HE2	1:B:298:MET:HB2	1.69	0.40
2:D:51:U:C3'	2:D:52:A:H8	2.31	0.40
1:A:9:ILE:HG22	1:A:15:LEU:HB2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:102:ALA:HA	1:A:105:ILE:HG12	2.03	0.40
1:A:200:ASN:O	1:A:203:ARG:N	2.55	0.40
1:A:284:VAL:O	1:A:287:THR:HG22	2.22	0.40
1:A:432:ARG:CD	1:A:444:PHE:HE1	2.32	0.40
1:B:97:LEU:HD12	1:B:101:GLU:HG2	2.03	0.40
1:B:198:THR:O	1:B:199:ARG:C	2.60	0.40
1:B:326:PHE:N	1:B:326:PHE:CD1	2.90	0.40
2:D:54:G:N3	2:D:54:G:H2'	2.37	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:77:A:N7	2:D:77:A:N7[4_545]	2.00	0.20

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	460/464 (99%)	330 (72%)	81 (18%)	49 (11%)	0 6
1	B	460/464 (99%)	327 (71%)	83 (18%)	50 (11%)	0 5
All	All	920/928 (99%)	657 (71%)	164 (18%)	99 (11%)	0 6

All (99) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	13	GLN
1	A	14	LEU
1	A	27	GLY
1	A	58	PHE
1	A	146	SER

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Mol	Chain	Res	Type
1	A	150	ALA
1	A	185	SER
1	A	187	ARG
1	A	194	LYS
1	A	289	THR
1	A	290	SER
1	A	302	ARG
1	A	329	ASP
1	A	334	GLU
1	A	379	SER
1	A	391	ARG
1	A	452	ALA
1	B	13	GLN
1	B	14	LEU
1	B	58	PHE
1	B	146	SER
1	B	150	ALA
1	B	154	VAL
1	B	185	SER
1	B	187	ARG
1	B	194	LYS
1	B	289	THR
1	B	290	SER
1	B	329	ASP
1	B	334	GLU
1	B	379	SER
1	B	391	ARG
1	B	452	ALA
1	A	19	ALA
1	A	133	VAL
1	A	154	VAL
1	A	281	TYR
1	A	283	GLY
1	A	288	LEU
1	A	378	ALA
1	A	401	GLY
1	A	442	SER
1	B	19	ALA
1	B	27	GLY
1	B	281	TYR
1	B	283	GLY
1	B	288	LEU

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Mol	Chain	Res	Type
1	B	302	ARG
1	B	378	ALA
1	B	442	SER
1	A	2	ILE
1	A	195	ASP
1	B	2	ILE
1	B	103	ALA
1	B	133	VAL
1	B	195	ASP
1	B	401	GLY
1	B	449	ARG
1	B	451	GLN
1	A	46	LYS
1	A	103	ALA
1	A	184	LEU
1	A	234	PHE
1	A	350	PRO
1	A	398	LYS
1	A	437	PRO
1	A	449	ARG
1	A	451	GLN
1	B	34	LEU
1	B	46	LYS
1	B	82	GLU
1	B	184	LEU
1	B	211	ARG
1	B	350	PRO
1	B	398	LYS
1	B	437	PRO
1	A	34	LEU
1	A	82	GLU
1	A	88	VAL
1	A	134	GLU
1	A	183	GLY
1	A	193	GLU
1	A	211	ARG
1	A	249	LYS
1	A	285	PRO
1	B	88	VAL
1	B	157	PRO
1	B	193	GLU
1	B	218	HIS

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Mol	Chain	Res	Type
1	B	234	PHE
1	B	249	LYS
1	B	285	PRO
1	A	157	PRO
1	A	186	PRO
1	B	134	GLU
1	B	183	GLY
1	B	186	PRO
1	B	264	LEU
1	A	264	LEU

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	391/393 (100%)	300 (77%)	91 (23%)	1 5
1	B	391/393 (100%)	297 (76%)	94 (24%)	0 5
All	All	782/786 (100%)	597 (76%)	185 (24%)	1 5

All (185) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MET
1	A	2	ILE
1	A	5	VAL
1	A	11	ARG
1	A	21	VAL
1	A	37	VAL
1	A	38	PHE
1	A	42	ARG
1	A	45	TRP
1	A	47	LEU
1	A	48	GLN
1	A	56	HIS
1	A	57	MET

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Mol	Chain	Res	Type
1	A	58	PHE
1	A	79	ILE
1	A	80	LEU
1	A	86	ILE
1	A	94	SER
1	A	104	ARG
1	A	107	ARG
1	A	113	GLU
1	A	118	HIS
1	A	125	VAL
1	A	130	ASP
1	A	135	THR
1	A	140	LEU
1	A	142	ARG
1	A	145	THR
1	A	149	TYR
1	A	156	ARG
1	A	158	PHE
1	A	159	HIS
1	A	163	LEU
1	A	164	ILE
1	A	179	CYS
1	A	182	MET
1	A	184	LEU
1	A	188	CYS
1	A	189	ASP
1	A	191	SER
1	A	198	THR
1	A	220	ARG
1	A	223	GLN
1	A	233	GLN
1	A	246	VAL
1	A	249	LYS
1	A	252	ARG
1	A	262	LEU
1	A	271	ARG
1	A	275	LEU
1	A	277	LEU
1	A	278	LEU
1	A	279	ARG
1	A	281	TYR
1	A	284	VAL

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Mol	Chain	Res	Type
1	A	288	LEU
1	A	289	THR
1	A	290	SER
1	A	293	ILE
1	A	297	LEU
1	A	298	MET
1	A	299	LEU
1	A	308	MET
1	A	311	LEU
1	A	315	LEU
1	A	319	ARG
1	A	327	THR
1	A	328	PHE
1	A	332	SER
1	A	337	TYR
1	A	338	TRP
1	A	361	GLU
1	A	366	LYS
1	A	374	VAL
1	A	375	VAL
1	A	382	LEU
1	A	385	ARG
1	A	386	VAL
1	A	394	ARG
1	A	396	VAL
1	A	397	LEU
1	A	403	THR
1	A	406	LEU
1	A	407	LYS
1	A	409	ILE
1	A	417	ARG
1	A	420	ARG
1	A	432	ARG
1	A	433	ILE
1	A	458	GLN
1	A	462	MET
1	B	1	MET
1	B	2	ILE
1	B	11	ARG
1	B	21	VAL
1	B	37	VAL
1	B	38	PHE

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Mol	Chain	Res	Type
1	B	40	SER
1	B	42	ARG
1	B	45	TRP
1	B	47	LEU
1	B	48	GLN
1	B	56	HIS
1	B	57	MET
1	B	58	PHE
1	B	79	ILE
1	B	80	LEU
1	B	86	ILE
1	B	94	SER
1	B	104	ARG
1	B	107	ARG
1	B	113	GLU
1	B	118	HIS
1	B	125	VAL
1	B	130	ASP
1	B	135	THR
1	B	140	LEU
1	B	142	ARG
1	B	145	THR
1	B	149	TYR
1	B	156	ARG
1	B	158	PHE
1	B	159	HIS
1	B	163	LEU
1	B	164	ILE
1	B	165	ARG
1	B	179	CYS
1	B	182	MET
1	B	184	LEU
1	B	188	CYS
1	B	189	ASP
1	B	191	SER
1	B	198	THR
1	B	217	LEU
1	B	220	ARG
1	B	223	GLN
1	B	233	GLN
1	B	246	VAL
1	B	249	LYS

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Mol	Chain	Res	Type
1	B	252	ARG
1	B	262	LEU
1	B	271	ARG
1	B	275	LEU
1	B	277	LEU
1	B	278	LEU
1	B	279	ARG
1	B	281	TYR
1	B	284	VAL
1	B	288	LEU
1	B	289	THR
1	B	290	SER
1	B	293	ILE
1	B	297	LEU
1	B	298	MET
1	B	299	LEU
1	B	308	MET
1	B	311	LEU
1	B	315	LEU
1	B	319	ARG
1	B	327	THR
1	B	328	PHE
1	B	332	SER
1	B	337	TYR
1	B	338	TRP
1	B	361	GLU
1	B	365	ARG
1	B	366	LYS
1	B	370	ASN
1	B	374	VAL
1	B	375	VAL
1	B	381	SER
1	B	382	LEU
1	B	385	ARG
1	B	386	VAL
1	B	394	ARG
1	B	397	LEU
1	B	403	THR
1	B	406	LEU
1	B	407	LYS
1	B	409	ILE
1	B	417	ARG

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Mol	Chain	Res	Type
1	B	420	ARG
1	B	432	ARG
1	B	458	GLN
1	B	462	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (24) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	36	HIS
1	A	53	HIS
1	A	56	HIS
1	A	118	HIS
1	A	127	HIS
1	A	204	HIS
1	A	212	GLN
1	A	251	HIS
1	A	269	GLN
1	A	274	GLN
1	A	292	HIS
1	A	362	HIS
1	B	36	HIS
1	B	53	HIS
1	B	56	HIS
1	B	118	HIS
1	B	127	HIS
1	B	204	HIS
1	B	212	GLN
1	B	251	HIS
1	B	269	GLN
1	B	274	GLN
1	B	292	HIS
1	B	362	HIS

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	C	76/77 (98%)	29 (38%)	16 (21%)
2	D	76/77 (98%)	30 (39%)	16 (21%)
All	All	152/154 (98%)	59 (38%)	32 (21%)

All (59) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	C	7	U
2	C	8	U
2	C	9	A
2	C	13	C
2	C	16	U
2	C	17	U
2	C	18	G
2	C	19	G
2	C	20	U
2	C	21	U
2	C	22	A
2	C	23	G
2	C	34	U
2	C	35	C
2	C	37	U
2	C	38	A
2	C	39	A
2	C	40	C
2	C	42	G
2	C	47	G
2	C	48	C
2	C	49	C
2	C	50	G
2	C	52	A
2	C	59	A
2	C	60	G
2	C	62	C
2	C	63	C
2	C	64	U
2	D	7	U
2	D	8	U
2	D	9	A
2	D	12	U
2	D	13	C
2	D	16	U
2	D	17	U
2	D	18	G
2	D	19	G
2	D	20	U
2	D	21	U
2	D	22	A
2	D	23	G

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Mol	Chain	Res	Type
2	D	34	U
2	D	35	C
2	D	37	U
2	D	38	A
2	D	39	A
2	D	40	C
2	D	42	G
2	D	47	G
2	D	48	C
2	D	49	C
2	D	50	G
2	D	52	A
2	D	59	A
2	D	60	G
2	D	62	C
2	D	63	C
2	D	64	U

All (32) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	C	7	U
2	C	8	U
2	C	18	G
2	C	19	G
2	C	20	U
2	C	22	A
2	C	34	U
2	C	35	C
2	C	37	U
2	C	38	A
2	C	39	A
2	C	48	C
2	C	49	C
2	C	61	U
2	C	62	C
2	C	63	C
2	D	7	U
2	D	8	U
2	D	18	G
2	D	19	G
2	D	20	U

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Mol	Chain	Res	Type
2	D	22	A
2	D	34	U
2	D	35	C
2	D	37	U
2	D	38	A
2	D	39	A
2	D	48	C
2	D	49	C
2	D	61	U
2	D	62	C
2	D	63	C

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

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, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	462/464 (99%)	-0.46	2 (0%) 92 88	69, 145, 232, 272	0
1	B	462/464 (99%)	-0.41	2 (0%) 92 88	73, 145, 232, 271	0
2	C	77/77 (100%)	-0.52	0 100 100	122, 162, 239, 263	0
2	D	77/77 (100%)	-0.26	0 100 100	125, 168, 244, 264	0
All	All	1078/1082 (99%)	-0.43	4 (0%) 92 88	69, 149, 235, 272	0

All (4) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	97	LEU	3.3
1	B	98	GLY	2.8
1	A	97	LEU	2.6
1	A	98	GLY	2.5

6.2 Non-standard residues in protein, DNA, RNA chains

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

6.3 Carbohydrates

There are no monosaccharides in this entry.

6.4 Ligands

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.