



Full wwPDB/EMDatabank EM Map/Model Validation Report ⓘ

Feb 13, 2017 – 02:59 PM EST

PDB ID : 3JCE
EMDB ID: : EMD-6550
Title : Structure of Escherichia coli EF4 in pretranslocational ribosomes (Pre EF4)
Authors : Zhang, D.; Yan, K.; Liu, G.; Song, G.; Luo, J.; Shi, Y.; Cheng, E.; Wu, S.;
Jiang, T.; Low, J.; Gao, N.; Qin, Y.
Deposited on : 2015-12-01
Resolution : 3.20 Å(reported)
Based on PDB ID : 4V9O

This is a Full wwPDB/EMDatabank EM Map/Model Validation Report
for a publicly released PDB/EMDB entry.

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

A user guide is available at

<http://wwpdb.org/validation/2016/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

MolProbity : 4.02b-467
Mogul : 1.7.1 (RC1), CSD as537be (2016)
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : rb-20028442

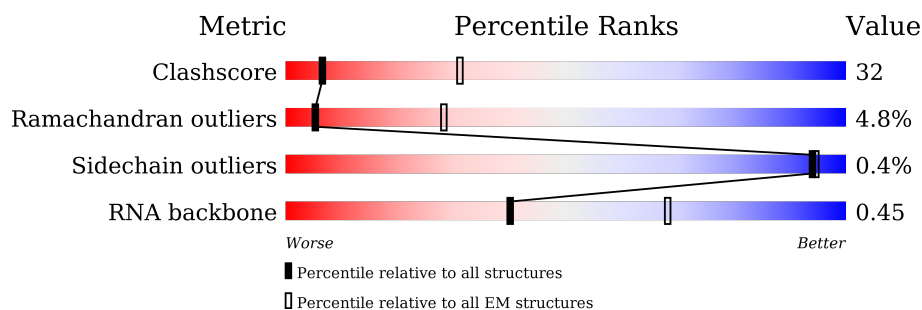
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.20 Å.

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





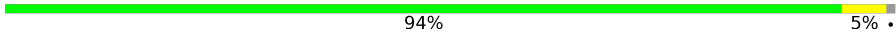
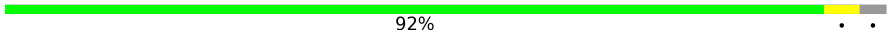

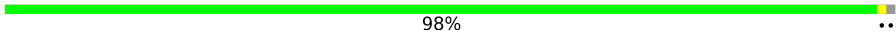
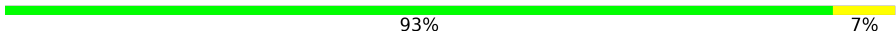
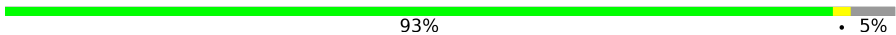


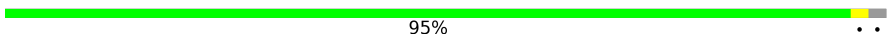














Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	114402	924
Ramachandran outliers	111179	726
Sidechain outliers	111093	686
RNA backbone	3027	244

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	a	1533	80% 20%
2	c	233	86% 12%
3	d	206	96% .
4	e	167	87% 10%
5	f	135	70% 5% 24%
6	g	179	82% . 16%
7	h	130	98% ..
8	i	130	95% ..




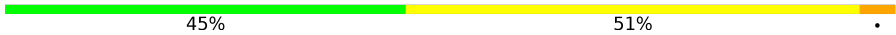
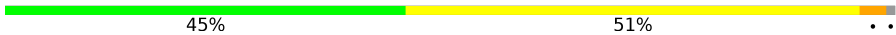
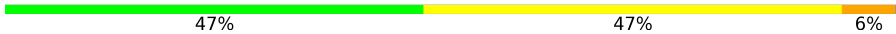
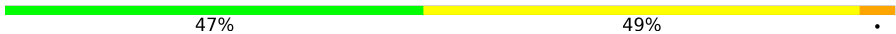

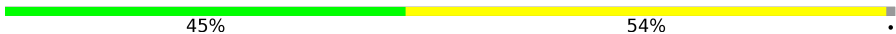


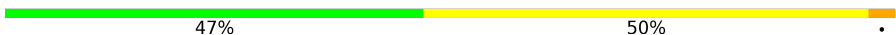
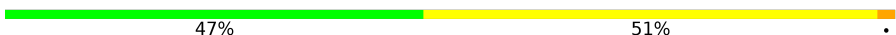
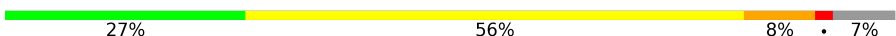


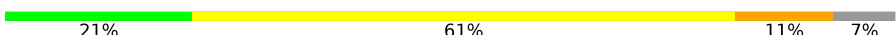








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Mol	Chain	Length	Quality of chain
9	j	103	
10	k	129	
11	l	124	
12	m	118	
13	n	101	
14	o	89	
15	p	82	
16	q	84	
17	r	75	
18	s	92	
19	t	87	
20	u	71	
21	b	241	
22	0	57	
23	1	55	
24	2	46	
25	3	65	
26	4	38	
27	5	234	
28	A	2904	
29	B	120	
30	C	273	
31	D	209	
32	E	201	
33	F	179	

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Mol	Chain	Length	Quality of chain
34	G	177	
35	H	149	
36	I	142	
37	J	142	
38	K	123	
39	L	144	
40	M	136	
41	N	127	
42	O	117	
43	P	115	
44	Q	118	
45	R	103	
46	S	110	
47	T	100	
48	U	104	
49	V	94	
50	W	85	
51	X	78	
52	Y	63	
53	Z	59	
54	6	76	
55	7	15	
56	8	77	
57	x	599	
58	9	76	

2 Entry composition

There are 60 unique types of molecules in this entry. The entry contains 154017 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
1	a	1533	Total	C	N	O	P	0	0
			32895	14671	6036	10655	1533		

- Molecule 2 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	c	206	Total	C	N	O	S	0	0
			1624	1028	305	288	3		

- Molecule 3 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	d	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 4 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	e	150	Total	C	N	O	S	0	0
			1105	687	211	201	6		

- Molecule 5 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	f	102	Total	C	N	O	S	0	0
			832	525	150	150	7		

- Molecule 6 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	g	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

- Molecule 7 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	h	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 8 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	i	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 9 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	j	98	Total	C	N	O	S	0	0
			786	493	150	142	1		

- Molecule 10 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	k	117	Total	C	N	O	S	0	0
			877	540	174	160	3		

- Molecule 11 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	l	123	Total	C	N	O	S	0	0
			955	590	196	165	4		

- Molecule 12 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	m	114	Total	C	N	O	S	0	0
			883	546	178	156	3		

- Molecule 13 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	n	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 14 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	o	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 15 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	p	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 16 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	q	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

- Molecule 17 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	r	55	Total	C	N	O	0	0
			455	288	86	81		

- Molecule 18 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	s	79	Total	C	N	O	S	0	0
			637	408	120	107	2		

- Molecule 19 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	t	85	Total	C	N	O	S	0	0
			665	411	137	114	3		

- Molecule 20 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	u	51	Total	C	N	O	S	0	0
			425	265	86	73	1		

- Molecule 21 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	b	218	Total	C	N	O	S	0	0
			1704	1081	305	311	7		

- Molecule 22 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	0	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 23 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	1	50	Total	C	N	O	0	0
			409	263	75	71		

- Molecule 24 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	2	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 25 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	3	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 26 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	4	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 27 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	5	234	Total	C	N	O	S	0	0
			1733	1081	315	330	7		

- Molecule 28 is a RNA chain called 23 ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	A	2903	Total	C	N	O	P	0	0
			62320	27801	11467	20149	2903		

- Molecule 29 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	B	118	Total	C	N	O	P	0	0
			2529	1126	464	821	118		

- Molecule 30 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	C	270	Total	C	N	O	S	0	0
			2076	1285	422	362	7		

- Molecule 31 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	D	209	Total	C	N	O	S	0	0
			1565	979	288	294	4		

- Molecule 32 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	E	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 33 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	F	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 34 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	G	176	Total	C	N	O	S	0	0
			1323	832	243	246	2		

- Molecule 35 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	H	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 36 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	I	141	Total	C	N	O	S	0	0
			1032	651	179	196	6		

- Molecule 37 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	J	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 38 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	K	122	Total	C	N	O	S	0	0
			938	587	180	165	6		

- Molecule 39 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	L	143	Total	C	N	O	S	0	0
			1045	649	206	189	1		

- Molecule 40 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	M	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

- Molecule 41 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	N	120	Total	C	N	O	S	0	0
			960	593	196	166	5		

- Molecule 42 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	O	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 43 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	P	114	Total	C	N	O	S	0	0
			917	574	179	163	1		

- Molecule 44 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
44	Q	117	Total	C	N	O	0	0
			947	604	192	151		

- Molecule 45 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	R	103	Total	C	N	O	S	0	0
			816	516	153	145	2		

- Molecule 46 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	S	110	Total	C	N	O	S	0	0
			857	532	166	156	3		

- Molecule 47 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	T	93	Total	C	N	O	S	0	0
			738	466	139	131	2		

- Molecule 48 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
48	U	102	Total	C	N	O	0	0
			779	492	146	141		

- Molecule 49 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	V	94	Total	C	N	O	S	0	0
			753	479	137	134	3		

- Molecule 50 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	W	79	Total	C	N	O	S	0	0
			596	367	120	108	1		

- Molecule 51 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	X	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 52 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	Y	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 53 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	Z	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 54 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	6	76	Total	C	N	O	P	0	0
			1633	732	291	534	76		

- Molecule 55 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	7	15	Total	C	N	O	P	0	0
			320	144	59	102	15		

- Molecule 56 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	8	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

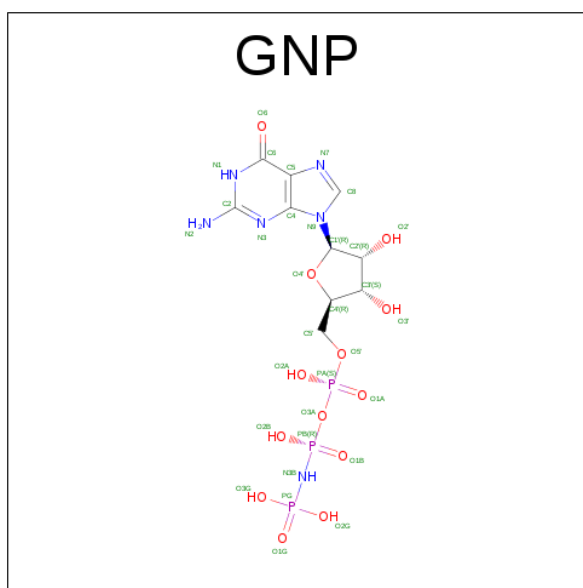
- Molecule 57 is a protein called Elongation factor 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	x	586	Total	C	N	O	S	0	0
			4573	2885	792	875	21		

- Molecule 58 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	9	76	Total	C	N	O	P	0	0
			1623	723	290	534	76		

- Molecule 59 is PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER (three-letter code: GNP) (formula: $C_{10}H_{17}N_6O_{13}P_3$).



Mol	Chain	Residues	Atoms					AltConf
59	x	1	Total	C	N	O	P	0
			32	10	6	13	3	

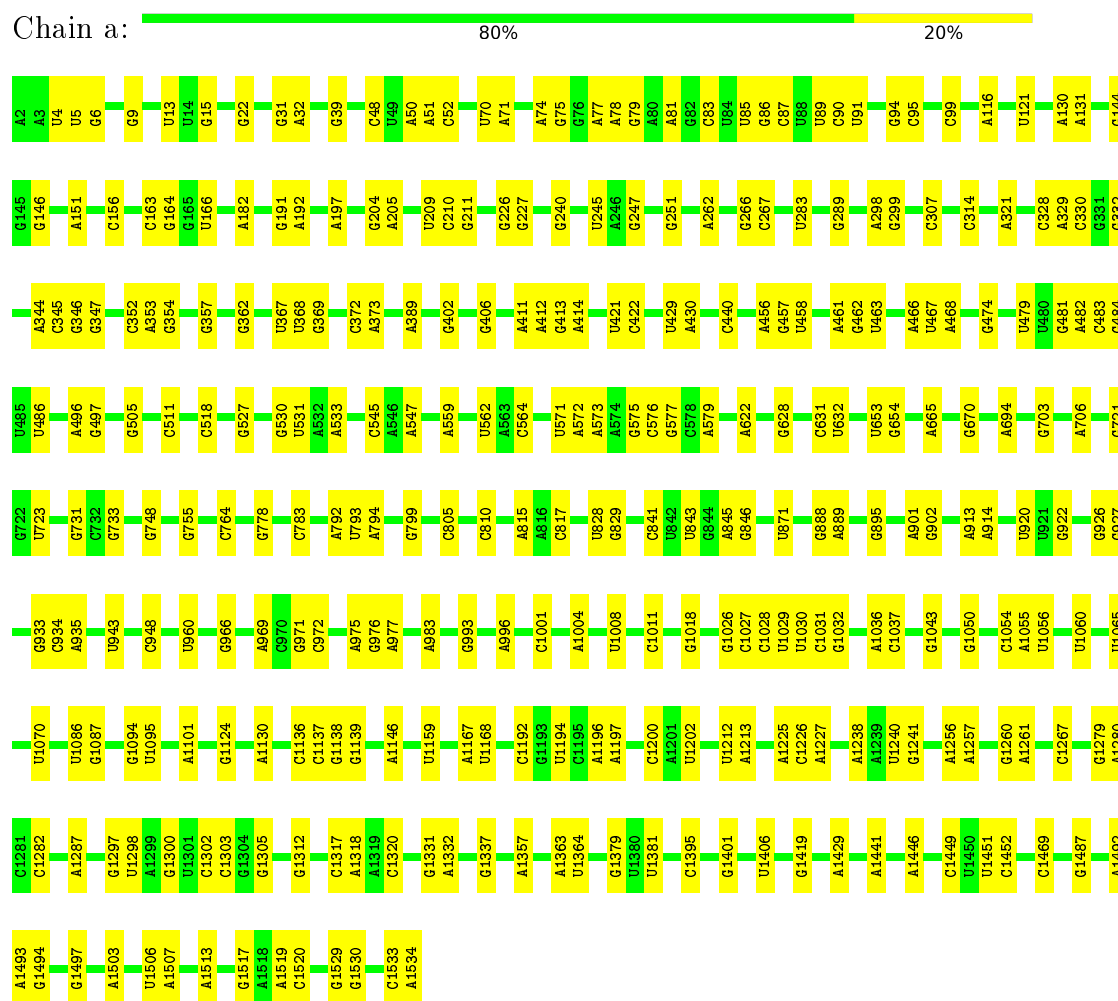
- Molecule 60 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
60	x	1	Total	Mg	0
			1	1	

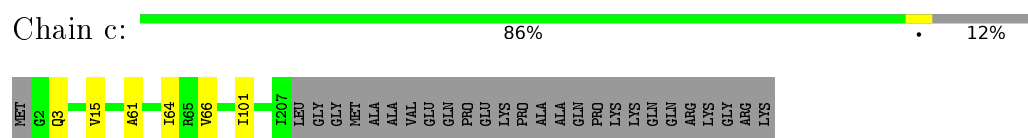
3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. 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. 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 ribosomal RNA



• Molecule 2: 30S ribosomal protein S3



• Molecule 3: 30S ribosomal protein S4

Chain d:  96%



- Molecule 4: 30S ribosomal protein S5

Chain e:  87% 10%




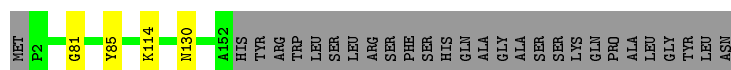
- Molecule 5: 30S ribosomal protein S6

Chain f:  70% 5% 24%



- Molecule 6: 30S ribosomal protein S7

Chain g:  82% 16%



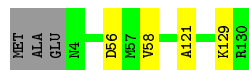
- Molecule 7: 30S ribosomal protein S8

Chain h:  98%




- Molecule 8: 30S ribosomal protein S9

Chain i:  95%



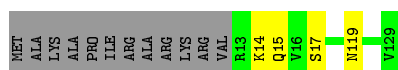
- Molecule 9: 30S ribosomal protein S10

Chain j:  86% 9% 5%



- Molecule 10: 30S ribosomal protein S11

Chain k:  88% 9%



- Molecule 11: 30S ribosomal protein S12

Chain l: 94% 5%



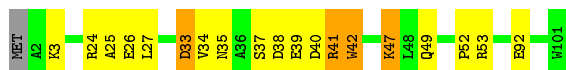
- Molecule 12: 30S ribosomal protein S13

Chain m: 92%



- Molecule 13: 30S ribosomal protein S14

Chain n: 80% 15%



- Molecule 14: 30S ribosomal protein S15

Chain o: 98%



- Molecule 15: 30S ribosomal protein S16

Chain p: 93% 7%



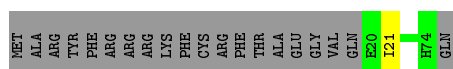
- Molecule 16: 30S ribosomal protein S17

Chain q: 93% 5%




- Molecule 17: 30S ribosomal protein S18

Chain r: 72% 27%



- Molecule 18: 30S ribosomal protein S19

Chain s:  82% 14%



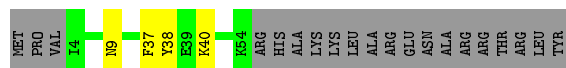
- Molecule 19: 30S ribosomal protein S20

Chain t:  95%




- Molecule 20: 30S ribosomal protein S21

Chain u:  66% 6% 28%



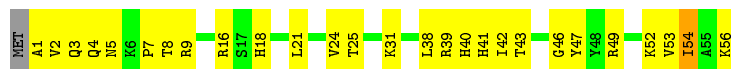
- Molecule 21: 30S ribosomal protein S2

Chain b:  88% 10%

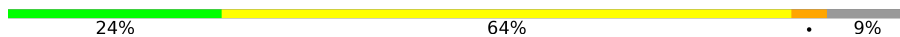


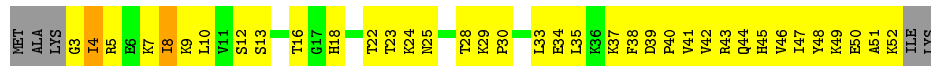
- Molecule 22: 50S ribosomal protein L32

Chain 0:  51% 46%



- Molecule 23: 50S ribosomal protein L33

Chain 1:  24% 64% 9%



- Molecule 24: 50S ribosomal protein L34

Chain 2:  70% 30%



- Molecule 25: 50S ribosomal protein L35

Chain 3:  51% 45%

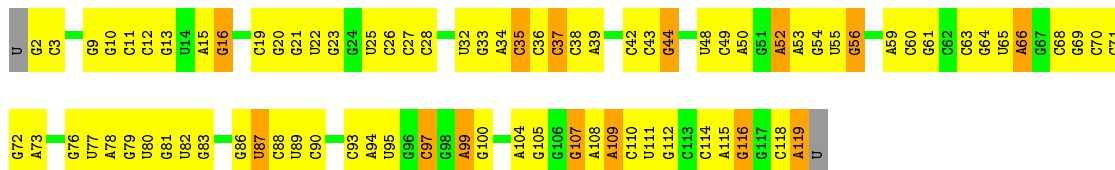
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G1622	A1551	G1491	U1409	C1319	G1236	G1160	U1094	A1028	C961	C888	A819	G745	U591	A527
A1626	A1553	G1492	U1411	C1320	A1095	C1161	A1096	C1030	G962	C890	A821	U746	U594	A528
G1627	G1554	C1493	U1412	A1322	G1238	G1162	U1097	G1031	G966	G891	A824	U747	C595	G530
G1628	G1555	A1494	A1413	C1323	U1242	C1167	A1098	A1032	U967	A892	U824	C748	C596	C531
U1629	U1559	A1495	C1414	G1324	C1243	U1168	G1099	U1033	A972	C893	A825	A749	G597	A532
A1630	G1560	A1496	U1415	G1325	A1244	C1169	U1101	G1036	A973	U894	A826	A750	U598	G533
G1631	C1561	U1497	G1416	U1326	G1245	C1170	C1102	G1037	G974	A896	U827	A751	A599	U534
A1634	U1562	G1498	G1418	A1328	A1247	G1171	A1103	G1041	A975	C897	A828	G757	C601	G535
U1635	A1419	A1500	A1418	U1329	G1248	C1172	C1104	G830	G976	C898	G830	C758	C602	G536
C1564	A1420	G1421	A1420	G1331	U1249	U1173	U1105	G831	G977	A899	G831	G759	A603	A537
C1638	A1502	G1421	G1421	G1332	G1250	U1174	C1100	U832	A978	A900	U832	G760	G604	A538
C1639	A1503	G1421	G1421	G1332	G1250	A1175	G1106	C1043	A979	A901	A833	A761	U686	G539
A1640	A1504	G1426	G1426	A1336	A1253	G1176	U1108	C1044	U979	C902	G834	U762	A541	C540
A1641	A1505	G1426	G1426	A1337	A1254	G1177	U1109	C1045	C982	C903	G835	G763	C610	C542
G1642	U1506	G1426	G1426	A1338	U1255	C1178	C1110	A1046	A983	C904	G836	A764	C619	G543
G1643	C1507	C1428	C1428	G1341	G1256	G1179	A1111	G1047	A984	A905	U842	U767	A613	G544
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C1646	A1510	A1433	A1433	A1348	U1262	G1182	G1116	A1054	A988	A911	U845	G774	G619	G548
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U1648	A1512	A1434	A1434	C1349	A1264	G1184	C1118	G1056	A990	U913	U847	G776	G622	G550
G1649	U1513	G1435	G1435	A1353	A1265	G1185	U1119	A1057	C991	G914	U850	G777	G623	G551
A1652	G1514	G1436	G1436	A1353	A1266	G1186	C1120	G1058	C992	C915	C851	G778	G624	U552
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C1656	G1449	G1449	G1449	A1367	C1270	G1191	G1125	G1062	A996	A920	C854	A782	G628	G556
U1657	G1457	G1457	G1457	G1368	G1271	G1192	G1128	G1063	C997	C921	G855	G783	G629	C557
C1658	A1452	G1452	G1452	A1369	A1272	U1198	G1129	C1064	C998	G922	G856	G784	G630	U558
A1661	A1453	C1370	C1370	G1370	U1273	U1199	U1130	U1065	U999	G923	G857	U709	A631	G559
G1662	G1457	G1371	G1371	A1372	A1274	C1200	U1131	U1066	A1001	G924	G858	G785	A632	C560
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U1671	U1469	G1380	G1380	G1380	C1293	C1207	G1138	A1073	C1006	U932	C865	A793	G638	C565
G1674	A1469	A1387	A1387	A1387	U1294	C1208	G1139	G1074	A933	U934	G869	A794	U639	U566
A1677	C1472	A1383	A1383	A1383	C1295	G1208	C1140	C1075	A1008	U934	U870	C795	U640	G569
A1678	G1473	A1384	A1384	A1384	G1296	C1211	C1076	C1076	A1009	C935	U871	C796	U641	G570
A1679	U1474	C1386	C1386	C1386	C1297	G1212	U1141	U1077	G1010	G940	U872	A800	U642	U571
U1680	G1475	A1387	A1387	A1387	C1298	G1213	A1142	C1078	U1011	A941	C873	G801	A643	A572
G1681	U1475	A1395	A1395	A1395	G1299	G1216	A1143	A1080	U1012	G942	G874	A802	U644	U573
A1684	U1478	A1398	A1398	A1398	G1300	G1220	U1147	U1081	A1014	A943	G875	U803	G647	A574
C1685	G1479	C1398	C1398	C1398	A1301	G1221	U1148	U1082	C944	C945	C876	U804	G648	A575
A1689	U1480	G1306	G1306	G1306	A1302	C1221	G1149	U1083	A945	G946	A877	G728	G649	G579
A1610	G1482	U1402	U1402	U1402	G1309	G1223	A1151	A1085	U1019	A947	A878	A730	C650	U580
G1694	A1544	A1403	A1403	A1403	G1309	C1224	C1152	A1086	A1020	C948	G881	C732	U651	G583
G1695	U1484	U1484	U1484	U1484	U1313	G1225	G1153	G1087	A1021	G954	U882	G733	A654	C584
G1696	U1485	U1314	U1314	U1314	C1314	G1226	G1154	A1088	G1022	U955	U883	U811	G656	G585
A1700	C1615	U1486	U1486	U1486	C1315	G1233	A1155	A1089	U1023	G956	U884	C736	G657	A586
		U1487	U1487	U1487			G1157	G1091	G1025		C812	C737	U658	C587
														U588

C2824	C2755	U2672	G2588	C2517	C2442	G2371	C2306	G2237	C2164	C2104	A2031	A1937	A1858	A1773	A1701
G2825	U2756	U2679	A2589	A2518	C2443	U2372	G2307	G2238	C2165	U2105	G2032	A1938	U1859	C1774	G1702
A2826	A2757	U2680	A2590	U2519	G2444	G2373	G2308	G2239	U2166	U2106	A2033	U1943	G1860	U1778	G1703
C2830	G2759	C2681	C2591	C2520	G2445	G2374	A2309	U2240	U2167	G2107	C2036	U1943	U1864	U1779	C1704
G2831	C2760	A2682	G2599	U2521	G2446	G2375	C2310	A2241	C2168	U2109	A2037	A1952	U1865	U1780	C1706
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U2833	G2765	U2684	C2601	G2536	A2448	G2379	C2313	U2245	A2171	U2111	G2039	U1955	U1867	U1782	A1711
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A2835	G2767	U2686	U2604	U2530	U2457	U2384	G2315	G2247	A2173	U2113	U2041	U1964	C1869	A1784	G1716
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C2839	A2776	U2690	G2534	U2535	A2461	G2391	G2319	U2257	C2177	A2117	C2045	C1967	A1873	U1788	G1720
C2840	G2777	G2693	U2536	G2537	G2464	G2392	U2320	U2258	C2178	U2118	G2046	G1968	C1874	C1789	G1721
C2841	A2778	U2694	A2614	U2538	C2465	U2393	A2321	G2259	A2179	A2119	C2047	A1969	C1875	A1789	A1722
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G2843	G2780	C2699	G2616	C2538	G2469	G2395	U2324	U2262	U2181	G2121	C2054	U1971	A1876	A1791	G1724
G2844	A2781	U2617	U2618	U2540	A2469	G2396	G2325	C2263	A2183	G2123	A2051	A1977	C1877	G1792	U1725
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G2878	U2798	U2729	U2638	U2562	U2489	A2419	U2348	G2279	A2199	U2139	A2070	C2001	C1908	A1809	G1743
G2879	U2800	U2730	U2639	U2563	U2490	G2420	G2349	G2280	U2203	G2140	A2071	C2006	A1913	A1810	G1744
C2880	A2801	U2731	U2640	U2564	U2491	U2421	U2350	G2281	G2204	G2141	C2072	C2006	C1914	G1811	U1745
A2883	G2802	U2732	U2641	U2565	U2492	A2422	G2351	G2282	G2205	A2142	C2073	C2006	C1915	G1812	A1746
G2884	U2803	U2733	U2642	U2566	U2493	U2423	U2352	G2283	U2210	G2143	U2074	G2010	C1916	C1813	
G2885	G2804	U2734	U2643	U2567	C2496	U2424	U2353	G2284	A2211	C2144	U2075	G2011	U1917	G1816	G1750
A2887	C2805	U2735	U2644	U2568	C2497	U2425	U2354	G2285	A2212	G2145	U2076	G2012	U1918	G1817	U1751
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A2893	G2812	U2739	U2648	U2572	G2502	U2429	U2358	G2289	G2219	U2151	C2090	U2016	C1924	A1757	
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G2899	U2816	U2743	U2652	U2576	U2506	U2433	G2362	G2293	G2223	U2155	C2094	C2022	A1928	A1829	A1762
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G2899	U2820	U2747	U2656	U2580	U2512	U2437	G2366	G2297	G2227	G2159	U2099	G2026	U1932	A1847	G1767
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	G2822	U2749	U2658	U2582	U2514	U2439	U2368	G2299	U2230	C2161	A2101	U2028	C1934	A1849	C1771
	A2901	U2750	U2659	U2583	U2515	U2440	U2369	G2300	U2231	C2162	G2102	G2029	C1935	U1856	A1772
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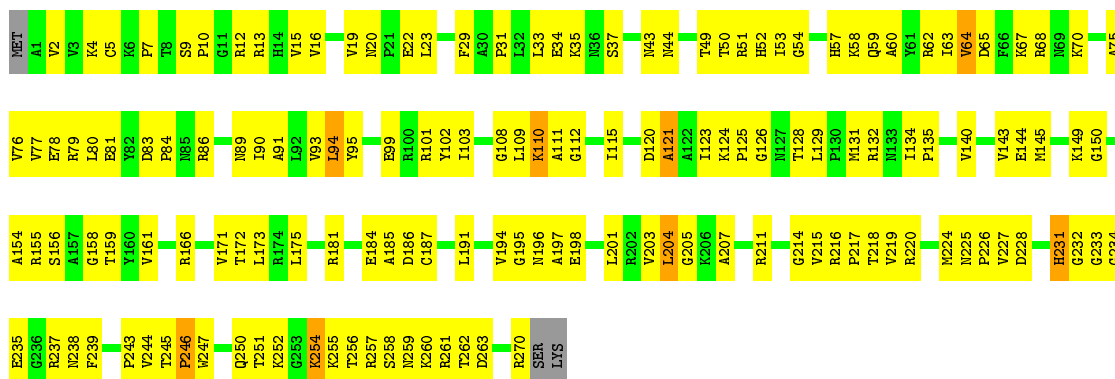
• Molecule 29: 5S ribosomal RNA

Chain B: 30% 57% 12% .



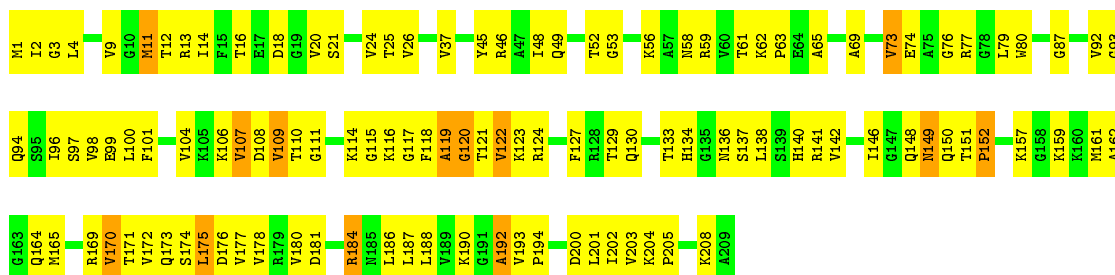
• Molecule 30: 50S ribosomal protein L2

Chain C: 44% 52% . .



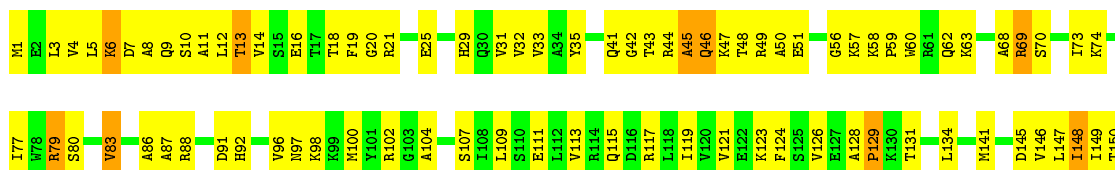
• Molecule 31: 50S ribosomal protein L3

Chain D: 45% 49% 6%



• Molecule 32: 50S ribosomal protein L4

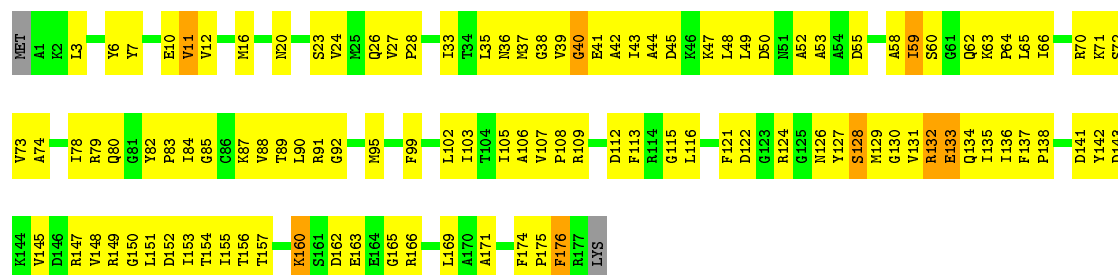
Chain E: 43% 52% 5%





• Molecule 33: 50S ribosomal protein L5

Chain F: 36% 58%



• Molecule 34: 50S ribosomal protein L6

Chain G: 35% 60%



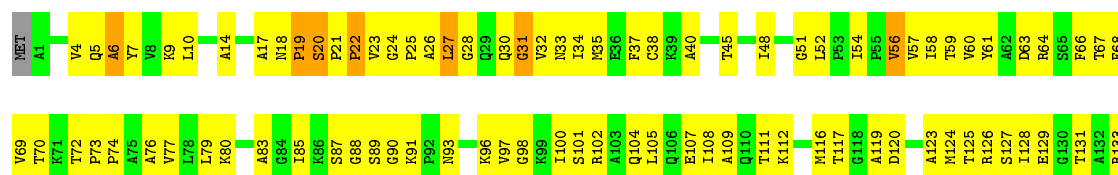
• Molecule 35: 50S ribosomal protein L9

Chain H: 24% 69% 7%



• Molecule 36: 50S ribosomal protein L11

Chain I: 33% 61% 5%



S134
M135
G136
L137
V138
V139
E140
D141

• Molecule 37: 50S ribosomal protein L13

Chain J: 45% 51%

H1 H2 T3 F4 K7 T10 V11 K12 R13 D14 H15 Y16 V17 V18 G26 A29 T30 E31 L32 R35 K36 L36 R37 G38 K39 R40 R41 K42 K43 E44 T45 P46 K47 V48 D49 T50 G51 D52 Y53 I54 I55 V56 L57 M58 A59 V64 T65 K68 R69 T70 D71 R72 V73 Y74

Y75 H80 I81 G82 G83 I84 T88 F89 E90 E91 R96 P97 E98 R99 I103 A104 V105 P110 K111 G112 P113 L114 G115 R116 A117 M118 F119 K120 K121 K122 K123 V124 Y125 A126 E129 H132 Q135 Q136 P137 L140 D141 I142

• Molecule 38: 50S ribosomal protein L14

Chain K: 45% 51%

H1 I2 Q3 E4 Q5 T6 M7 L8 N9 V10 A11 D12 H13 S14 G15 A16 R17 R18 R19 M20 C21 E22 I23 V24 L25 V35 G36 I39 K40 I41 I42 I43 K44 E45 A46 I47 P48 R49 G50 K51 D56 V61 V62 V63 R64 T65 G68 V69 R70 R71 P72 D73 V76 I77

R78 F79 N82 A83 G84 V85 L86 L87 E92 Q93 P94 R98 V103 T104 R105 E106 L107 R108 S109 E110 M113 L118 A119 V122 L120

• Molecule 39: 50S ribosomal protein L15

Chain L: 47% 47% 6%

MET R2 L3 N4 T5 L6 S7 P8 K14 L19 G20 R21 G22 G26 L27 G28 K29 T30 G31 G32 R33 K36 G37 Q38 K39 S40 R41 R47 Q54 P55 P56 L57 R60 L61 P62 P66 T67 S68 R69 K70 A71 T74 I77 R78 L79 S80 D81 L82 A83 R84

V85 E86 V89 V90 N93 T94 L95 K96 I100 I101 I105 E106 F107 A108 K109 V110 I111 L112 A113 T117 T118 P119 V120 V121 V122 R123 G124 L125 R126 V127 G130 I135 A138 K141 I142 E143 E144

• Molecule 40: 50S ribosomal protein L16

Chain M: 47% 49%

M1 L2 P3 K8 F9 R10 H13 K14 L20 A21 G22 G23 T24 D25 V26 S27 F28 G29 S30 F31 G32 A35 V36 G37 R40 L41 T42 A43 R44 Q45 I46 E47 R50 M53 A56 R59 K62 I63 W64 I65 R66 V67 F68 R69 P69 D70 K71 P72 I73 T74

P77 M82 K86 G87 V93 A94 L95 I96 Q97 P98 L102 Y103 E104 M105 D106 G107 V108 P109 E110 F111 L112 A113 R114 F117 A120 K123 L124 P125 I126 K127 T128 V131 T132 K133 T134 V135 M136

• Molecule 41: 50S ribosomal protein L17

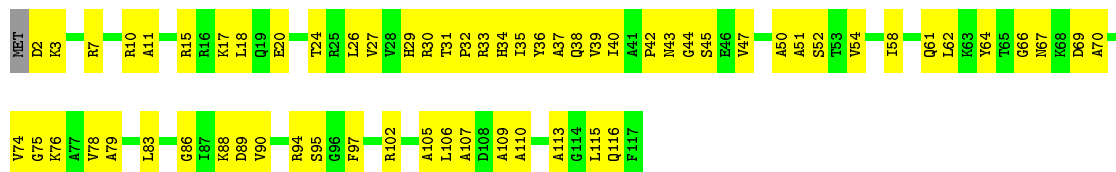
Chain N: 49% 44% 6%

H1 R2 R12 R17 N20 F21 N24 A25 G26 S27 L28 V29 R31 E32 I33 T36 T37 L38 P39 R40 A41 A42 E43 E44 V48 E49 F50 L51 A55 V56 D57 D58 S59 N62 R63 F67 A68 R69 T70 W71 D72 I73 E74 I75 V76 A77 K78 L79 F80 N81



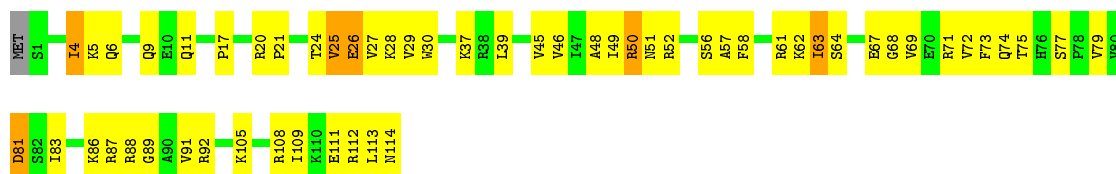
• Molecule 42: 50S ribosomal protein L18

Chain O: 45% 54%



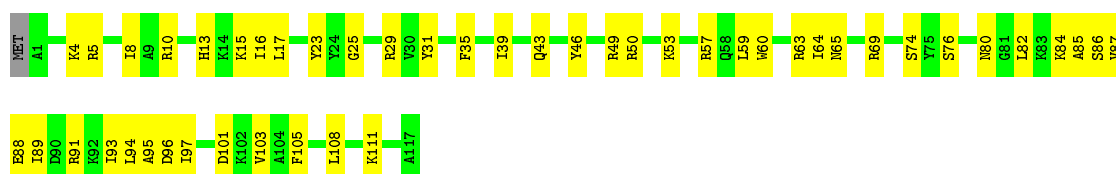
• Molecule 43: 50S ribosomal protein L19

Chain P: 50% 43% 5%



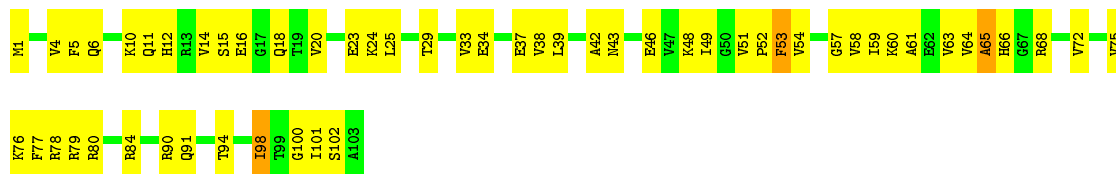
• Molecule 44: 50S ribosomal protein L20

Chain Q: 59% 40%



• Molecule 45: 50S ribosomal protein L21

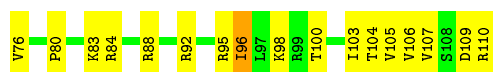
Chain R: 47% 50%



• Molecule 46: 50S ribosomal protein L22

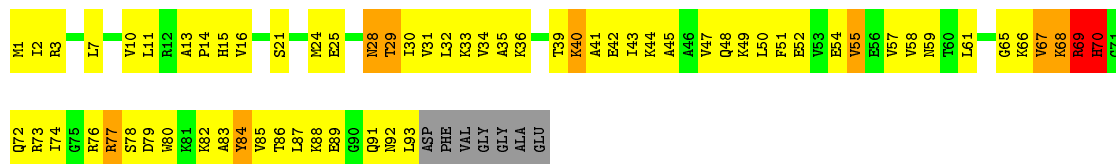
Chain S: 47% 51%





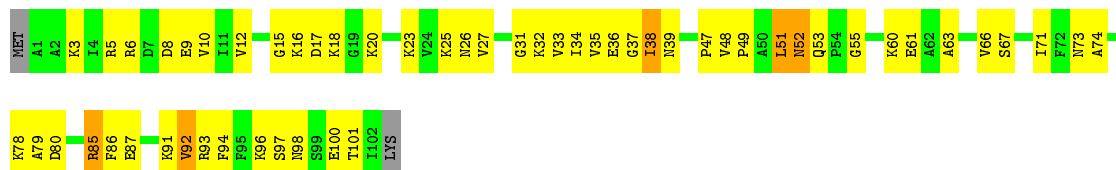
• Molecule 47: 50S ribosomal protein L23

Chain T: 27% 56% 8% 7%



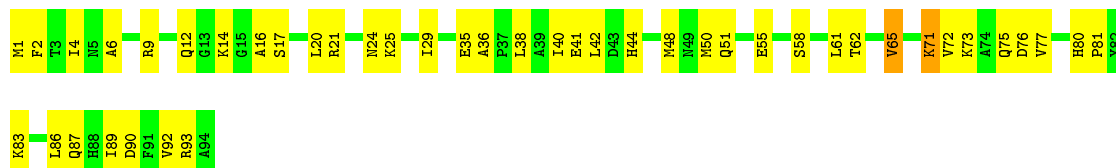
• Molecule 48: 50S ribosomal protein L24

Chain U: 45% 48% 5%



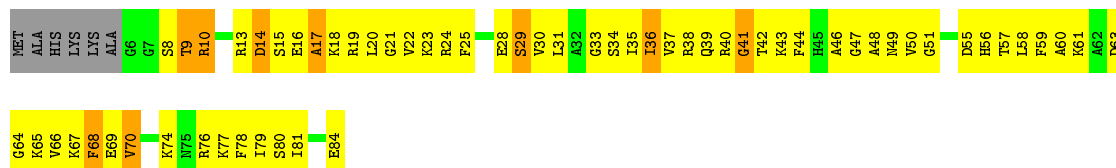
• Molecule 49: 50S ribosomal protein L25

Chain V: 53% 45% 2%



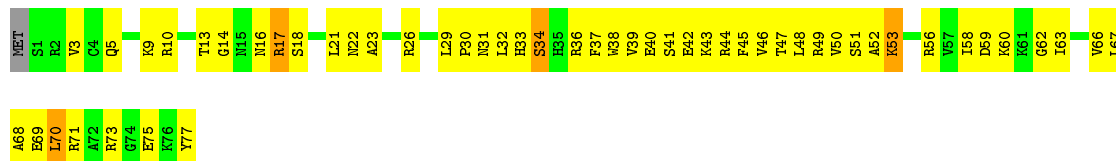
• Molecule 50: 50S ribosomal protein L27

Chain W: 21% 61% 11% 7%



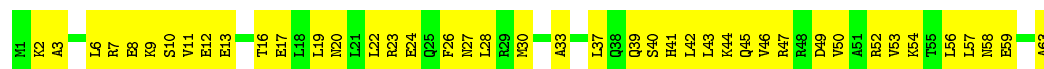
• Molecule 51: 50S ribosomal protein L28

Chain X: 32% 62% 5%



- Molecule 52: 50S ribosomal protein L29

Chain Y: 33% 67%



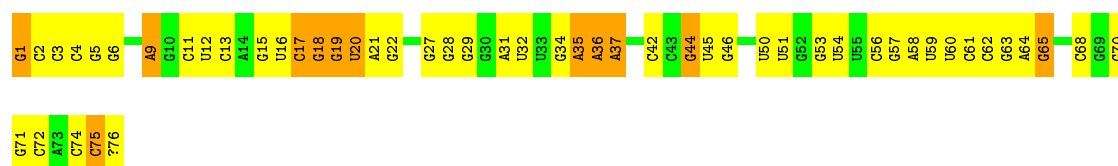
- Molecule 53: 50S ribosomal protein L30

Chain Z: 54% 41% ..



- Molecule 54: tRNA

Chain 6: 32% 53% 16%



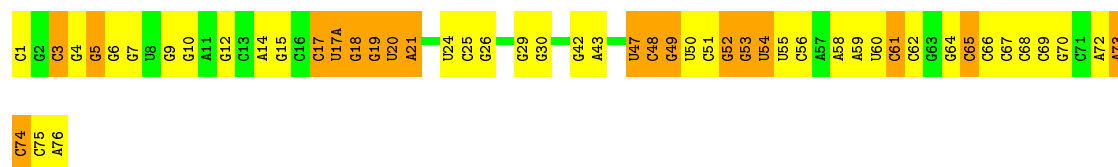
- Molecule 55: mRNA

Chain 7:  7% 47% 40% 7%



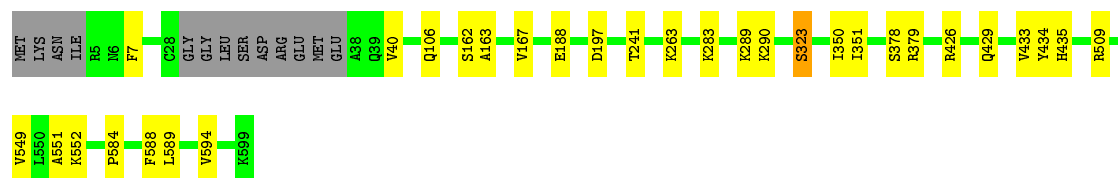
- Molecule 56: tRNA

Chain 8:  34% 43% 23%



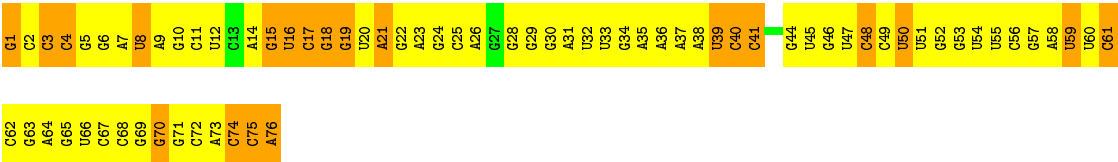
- Molecule 57: Elongation factor 4

Chain x:  93% 5%



- Molecule 58: tRNA

Chain 9: 5% 67% 28%



4 Experimental information

Property	Value	Source
Reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of particles used	107706	Depositor
Resolution determination method	Not provided	Depositor
CTF correction method	Not provided	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	Not provided	Depositor
Minimum defocus (nm)	Not provided	Depositor
Maximum defocus (nm)	Not provided	Depositor
Magnification	Not provided	Depositor
Image detector	GATAN K2 SUMMIT (4K X 4K)	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: GNP, MG, F3O

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z > 2$	RMSZ	# $ Z > 2$
1	a	0.73	0/36834	0.79	0/57462
10	k	0.43	0/893	0.54	0/1205
11	l	0.46	0/969	0.55	0/1300
12	m	0.38	0/892	0.55	0/1193
13	n	0.37	0/817	0.52	0/1088
14	o	0.43	0/722	0.50	0/964
15	p	0.36	0/659	0.47	0/884
16	q	0.42	0/657	0.54	0/881
17	r	0.43	0/462	0.49	0/621
18	s	0.36	0/652	0.50	0/877
19	t	0.37	0/671	0.46	0/888
2	c	0.42	0/1651	0.52	0/2225
20	u	0.38	0/430	0.53	0/570
21	b	0.35	0/1735	0.51	0/2338
22	0	0.48	0/450	0.54	0/599
23	1	0.44	0/416	0.52	0/554
24	2	0.52	0/380	0.57	0/498
25	3	0.45	0/513	0.58	0/676
26	4	0.45	0/303	0.58	0/397
27	5	0.24	0/1748	0.53	0/2355
28	A	0.84	0/69799	0.81	2/108892 (0.0%)
29	B	0.63	0/2828	0.74	0/4410
3	d	0.38	0/1665	0.50	0/2227
30	C	0.52	0/2115	0.58	0/2844
31	D	0.48	0/1586	0.56	0/2134
32	E	0.43	0/1571	0.54	0/2113
33	F	0.37	0/1434	0.47	0/1926
34	G	0.37	0/1343	0.51	0/1816
35	H	0.30	0/1122	0.57	0/1515
36	I	0.28	0/1046	0.50	0/1410
37	J	0.50	0/1152	0.58	0/1551
38	K	0.49	0/947	0.58	0/1268

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >2	RMSZ	# Z >2
39	L	0.45	0/1054	0.57	0/1403
4	e	0.46	0/1118	0.56	0/1504
40	M	0.49	0/1093	0.61	0/1460
41	N	0.48	0/973	0.56	0/1301
42	O	0.38	0/902	0.48	0/1209
43	P	0.45	0/929	0.56	0/1242
44	Q	0.57	0/960	0.55	0/1278
45	R	0.48	0/829	0.54	0/1107
46	S	0.48	0/864	0.57	0/1156
47	T	0.40	0/744	0.57	0/994
48	U	0.37	0/787	0.54	0/1051
49	V	0.40	0/766	0.49	0/1025
5	f	0.37	0/851	0.53	0/1150
50	W	0.47	0/603	0.64	0/797
51	X	0.47	0/635	0.56	0/848
52	Y	0.41	0/510	0.51	0/677
53	Z	0.41	0/453	0.58	0/605
54	6	0.63	1/1788 (0.1%)	0.78	0/2784
55	7	0.64	0/358	0.92	2/555 (0.4%)
56	8	0.64	0/1832	0.76	0/2855
57	x	0.39	0/4646	0.52	0/6285
58	9	0.40	1/1813 (0.1%)	0.79	0/2823
6	g	0.37	0/1195	0.49	0/1602
7	h	0.43	0/989	0.52	0/1326
8	i	0.39	0/1034	0.56	0/1375
9	j	0.37	0/796	0.51	0/1077
All	All	0.70	2/166984 (0.0%)	0.74	4/249170 (0.0%)

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
11	l	0	1
20	u	0	1
All	All	0	2

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
58	9	1	G	OP3-P	-10.74	1.48	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	6	1	G	OP3-P	-10.67	1.48	1.61

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	A	323	C	N1-C2-O2	5.44	122.17	118.90
55	7	21	C	C2-N1-C1'	5.24	124.56	118.80
55	7	21	C	N1-C2-O2	5.22	122.03	118.90
28	A	2689	U	C2-N1-C1'	-5.05	111.64	117.70

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
11	l	23	ALA	Peptide
20	u	37	PHE	Peptide

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	32895	0	16553	0	0
2	c	1624	0	1696	0	0
3	d	1643	0	1707	0	0
4	e	1105	0	1148	0	0
5	f	832	0	824	0	0
6	g	1181	0	1238	0	0
7	h	979	0	1031	0	0
8	i	1022	0	1070	0	0
9	j	786	0	828	0	0
10	k	877	0	887	0	0
11	l	955	0	1016	0	0
12	m	883	0	941	0	0
13	n	805	0	843	0	0
14	o	714	0	734	0	0
15	p	649	0	666	0	0
16	q	648	0	691	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
17	r	455	0	478	0	0
18	s	637	0	665	0	0
19	t	665	0	714	0	0
20	u	425	0	449	0	0
21	b	1704	0	1732	0	0
22	0	444	0	461	39	0
23	1	409	0	440	53	0
24	2	377	0	418	16	0
25	3	504	0	574	34	0
26	4	302	0	340	40	0
27	5	1733	0	1824	393	0
28	A	62320	0	31344	2129	0
29	B	2529	0	1281	94	0
30	C	2076	0	2152	168	0
31	D	1565	0	1616	144	0
32	E	1552	0	1619	134	0
33	F	1410	0	1447	127	0
34	G	1323	0	1374	155	0
35	H	1111	0	1148	235	0
36	I	1032	0	1088	163	0
37	J	1129	0	1162	114	0
38	K	938	0	1012	76	0
39	L	1045	0	1117	97	0
40	M	1074	0	1157	81	0
41	N	960	0	1000	59	0
42	O	892	0	923	83	0
43	P	917	0	965	86	0
44	Q	947	0	1022	100	0
45	R	816	0	839	93	0
46	S	857	0	922	61	0
47	T	738	0	807	100	0
48	U	779	0	834	53	0
49	V	753	0	780	47	0
50	W	596	0	610	121	0
51	X	625	0	655	63	0
52	Y	509	0	543	45	0
53	Z	449	0	491	33	0
54	6	1633	0	830	51	0
55	7	320	0	162	18	0
56	8	1640	0	837	50	0
57	x	4573	0	4619	0	0
58	9	1623	0	821	158	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
59	x	32	0	13	0	0
60	x	1	0	0	0	0
All	All	154017	0	105158	4944	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 (4944) 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)
50:W:37:VAL:HG12	50:W:38:ARG:HG3	1.19	1.17
35:H:90:LEU:HD11	35:H:146:VAL:HG23	1.27	1.15
42:O:51:ALA:HB3	42:O:78:VAL:HG12	1.25	1.14
31:D:119:ALA:HB1	31:D:124:ARG:HB2	1.24	1.13
31:D:184:ARG:HG2	31:D:186:LEU:HD13	1.26	1.13
28:A:558:U:H5''	37:J:111:LYS:HE3	1.24	1.13
27:5:85:GLU:HG2	27:5:88:LYS:HD2	1.30	1.12
27:5:62:ALA:HB3	27:5:145:VAL:HA	1.28	1.11
27:5:71:ARG:HA	27:5:177:LYS:HB2	1.24	1.10
28:A:1336:A:P	47:T:68:LYS:HZ3	1.75	1.09
31:D:151:THR:HG23	31:D:152:PRO:HD3	1.18	1.09
27:5:42:VAL:HG21	27:5:175:ILE:HB	1.30	1.08
35:H:77:THR:HG22	35:H:144:VAL:HB	1.26	1.08
27:5:51:ASP:HB2	27:5:204:ALA:HB2	1.32	1.08
36:I:105:LEU:HA	36:I:108:ILE:HD12	1.36	1.07
48:U:38:ILE:HG23	48:U:39:ASN:H	1.18	1.05
28:A:1813:G:H1'	30:C:49:THR:HG21	1.38	1.05
27:5:44:VAL:HG23	27:5:212:VAL:HG13	1.33	1.05
30:C:68:ARG:HD3	30:C:103:ILE:HD13	1.35	1.05
28:A:2117:A:H4'	28:A:2145:C:H4'	1.31	1.04
27:5:131:LEU:HD13	27:5:138:PRO:HG2	1.35	1.03
33:F:105:ILE:HD12	33:F:138:PRO:HG2	1.40	1.03
27:5:45:ALA:HB3	27:5:213:SER:HB2	1.34	1.03
30:C:132:ARG:HG2	35:H:120:GLY:HA3	1.39	1.02
31:D:151:THR:CG2	31:D:152:PRO:HD3	1.89	1.02
41:N:44:LEU:HD23	41:N:113:ILE:HD13	1.39	1.02
34:G:102:ILE:HD12	34:G:116:LEU:HD11	1.38	1.02
27:5:33:LEU:HG	27:5:220:ALA:HB3	1.43	1.01
27:5:11:ILE:HG22	27:5:33:LEU:HD12	1.41	1.01
22:0:42:ILE:HD11	41:N:98:LEU:HB3	1.39	1.01
33:F:39:VAL:HG11	33:F:49:LEU:HD13	1.39	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:9:40:C:H2'	58:9:41:C:H5''	1.40	1.01
28:A:1645:G:H5''	28:A:1646:C:H5'	1.41	1.00
34:G:26:LYS:HB2	34:G:32:LEU:HG	1.40	1.00
28:A:1533:C:H2'	28:A:1534:U:H5''	1.44	1.00
35:H:90:LEU:HG	35:H:147:VAL:HG12	1.40	1.00
37:J:44:TYR:HB2	44:Q:63:ARG:HB3	1.40	1.00
31:D:2:ILE:HD12	31:D:96:ILE:HD13	1.44	0.99
35:H:83:LYS:HG3	35:H:90:LEU:HD22	1.44	0.99
42:O:79:ALA:HB1	42:O:115:LEU:HD13	1.41	0.99
27:5:69:THR:HG22	27:5:73:VAL:HG12	1.42	0.98
27:5:134:ARG:HB3	28:A:2125:G:H1	1.24	0.98
52:Y:9:LYS:HG3	52:Y:11:VAL:H	1.27	0.98
35:H:67:ALA:HB3	35:H:68:ARG:HA	1.43	0.98
48:U:35:VAL:HB	48:U:38:ILE:HG21	1.44	0.98
36:I:17:ALA:HB1	36:I:38:CYS:HA	1.46	0.97
43:P:50:ARG:HB2	43:P:56:SER:HB3	1.45	0.97
27:5:130:VAL:HB	28:A:2170:A:H1'	1.46	0.97
43:P:4:ILE:HG22	43:P:5:LYS:H	1.28	0.97
27:5:36:ALA:HA	27:5:37:LYS:HG2	1.44	0.97
28:A:1043:C:H2'	28:A:1044:C:H5''	1.43	0.97
28:A:547:A:H3'	28:A:548:G:H5'	1.46	0.97
34:G:96:ALA:HB3	34:G:103:ASN:HB2	1.46	0.97
34:G:1:SER:HA	34:G:4:ALA:HB3	1.44	0.97
28:A:1336:A:P	47:T:68:LYS:NZ	2.36	0.96
34:G:24:THR:HG21	34:G:32:LEU:HD23	1.45	0.96
44:Q:111:LYS:HB2	45:R:48:LYS:HE3	1.43	0.96
36:I:4:VAL:HG13	36:I:59:THR:HG23	1.47	0.96
54:6:35:A:H1'	54:6:36:A:H5'	1.48	0.96
32:E:32:VAL:HG23	32:E:178:VAL:HG12	1.47	0.96
27:5:115:ILE:HG21	27:5:153:VAL:HG22	1.44	0.96
35:H:94:ILE:HA	35:H:114:GLU:HG3	1.45	0.96
27:5:148:ASN:HB2	27:5:152:ALA:HB2	1.45	0.96
27:5:36:ALA:HA	27:5:37:LYS:CG	1.95	0.95
28:A:1597:A:H5''	28:A:1598:A:H5'	1.46	0.95
43:P:25:VAL:HB	43:P:83:ILE:HD11	1.45	0.95
36:I:96:LYS:HG2	36:I:138:VAL:HG23	1.47	0.95
23:1:34:GLU:HG2	23:1:49:LYS:HG2	1.47	0.95
27:5:79:THR:HA	27:5:120:ALA:HB3	1.47	0.94
28:A:996:A:H4'	44:Q:91:ARG:HE	1.27	0.94
49:V:86:LEU:HD13	49:V:89:ILE:HD11	1.47	0.94
36:I:10:LEU:HD21	36:I:23:VAL:HG12	1.46	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:K:108:ARG:NH2	38:K:113:MET:SD	2.41	0.94
33:F:113:PHE:HE1	33:F:116:LEU:HD12	1.30	0.94
26:4:7:VAL:HG23	26:4:8:LYS:H	1.32	0.93
44:Q:43:GLN:HE21	45:R:77:PHE:HB3	1.33	0.93
28:A:2131:U:H3	28:A:2157:G:HO2'	1.17	0.93
39:L:95:LEU:HB2	39:L:101:ILE:HD11	1.47	0.93
27:5:175:ILE:HG22	27:5:185:LEU:HD22	1.49	0.93
36:I:85:ILE:HG22	36:I:87:SER:H	1.30	0.93
41:N:33:ILE:HD13	41:N:114:GLU:HB3	1.49	0.92
26:4:3:VAL:HG23	26:4:4:ARG:H	1.30	0.92
31:D:151:THR:HG23	31:D:152:PRO:CD	1.98	0.92
34:G:26:LYS:HD2	34:G:32:LEU:HD11	1.52	0.92
27:5:27:ILE:HG22	27:5:31:LYS:HE3	1.50	0.92
43:P:21:PRO:HD3	43:P:49:ILE:HD12	1.48	0.92
24:2:3:ARG:NH2	28:A:1613:G:O2'	2.03	0.91
33:F:79:ARG:HB3	33:F:82:TYR:CE2	2.05	0.91
28:A:2192:U:H2'	28:A:2193:G:H5'	1.52	0.91
35:H:37:VAL:HG13	35:H:38:PRO:HD2	1.52	0.91
36:I:4:VAL:HG12	36:I:6:ALA:H	1.36	0.91
50:W:13:ARG:HG2	50:W:14:ASP:H	1.32	0.91
28:A:279:A:H2'	28:A:280:U:H5'	1.50	0.91
23:1:8:ILE:HD13	23:1:24:LYS:HG2	1.53	0.90
28:A:710:U:H2'	28:A:711:G:H5''	1.51	0.90
33:F:147:ARG:HG3	33:F:149:ARG:H	1.32	0.90
44:Q:87:VAL:HG12	44:Q:89:ILE:HG23	1.50	0.90
28:A:2354:C:H4'	50:W:31:LEU:HD22	1.51	0.90
28:A:2298:A:OP1	33:F:70:ARG:NH2	2.02	0.90
34:G:15:ASP:HB2	34:G:26:LYS:HB3	1.50	0.90
28:A:2140:G:H2'	28:A:2141:G:C8	2.07	0.90
43:P:17:PRO:HG3	43:P:83:ILE:HG23	1.55	0.89
49:V:72:VAL:HG12	49:V:93:ARG:HA	1.52	0.89
27:5:30:LEU:HD11	27:5:216:THR:H	1.37	0.89
28:A:2355:G:H4'	50:W:20:LEU:HD13	1.52	0.89
36:I:79:LEU:HD12	36:I:131:THR:HG22	1.53	0.89
48:U:92:VAL:HG22	48:U:93:ARG:H	1.36	0.89
28:A:1069:A:H1'	28:A:1073:A:H62	1.38	0.89
28:A:635:C:OP2	39:L:126:ARG:NH1	2.06	0.89
43:P:50:ARG:HD3	43:P:75:THR:HG21	1.54	0.89
35:H:144:VAL:HG23	35:H:146:VAL:HG13	1.53	0.89
28:A:1482:G:H2'	28:A:1483:G:H8	1.36	0.89
44:Q:91:ARG:HD3	45:R:11:GLN:HB2	1.53	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:X:36:ARG:HG2	51:X:47:THR:HG22	1.55	0.89
23:1:8:ILE:HG23	23:1:51:ALA:HA	1.55	0.88
28:A:2138:G:H2'	28:A:2139:U:H6	1.38	0.88
36:I:98:GLY:HA3	36:I:137:LEU:HD22	1.56	0.88
38:K:71:ARG:HB3	38:K:72:PRO:HD2	1.55	0.88
38:K:10:VAL:HG21	38:K:16:ALA:HB3	1.53	0.88
54:6:35:A:H1'	54:6:36:A:C5'	2.04	0.88
27:5:212:VAL:HB	27:5:224:VAL:HG11	1.56	0.88
35:H:129:GLU:CG	35:H:146:VAL:HG22	2.04	0.88
40:M:134:THR:HG22	40:M:136:MET:H	1.37	0.87
37:J:44:TYR:CD1	44:Q:63:ARG:HD3	2.09	0.87
45:R:49:ILE:HD12	45:R:52:PRO:HA	1.56	0.87
51:X:3:VAL:HG22	51:X:10:ARG:HG2	1.54	0.87
58:9:2:C:H2'	58:9:3:C:H5'	1.52	0.87
37:J:55:ILE:HG22	37:J:123:LYS:HB2	1.57	0.87
38:K:18:ARG:HB3	38:K:45:GLU:HG2	1.57	0.87
27:5:186:LYS:HD2	27:5:189:LEU:HD12	1.57	0.87
35:H:1:MET:N	35:H:21:VAL:O	2.08	0.87
35:H:78:VAL:HG12	35:H:81:ALA:HA	1.55	0.87
28:A:1336:A:OP2	47:T:68:LYS:NZ	2.07	0.87
35:H:104:THR:HG23	35:H:109:GLU:HA	1.55	0.87
53:Z:8:GLN:HG2	53:Z:31:ILE:HA	1.54	0.87
28:A:1199:U:H5'	44:Q:4:LYS:HE3	1.53	0.87
25:3:38:LYS:NZ	28:A:2365:G:N7	2.23	0.87
25:3:7:ARG:NH1	28:A:243:U:OP2	2.07	0.87
50:W:49:ASN:HB3	50:W:81:ILE:HD12	1.57	0.87
46:S:59:GLU:HA	46:S:64:ALA:HB2	1.56	0.86
58:9:4:C:H42	58:9:69:G:H1	1.18	0.86
38:K:108:ARG:HH12	38:K:113:MET:HA	1.40	0.86
43:P:50:ARG:HB2	43:P:56:SER:CB	2.04	0.86
27:5:43:ASP:H	27:5:214:ILE:HD12	1.40	0.86
29:B:86:G:H2'	29:B:87:U:H5''	1.55	0.86
47:T:54:GLU:HG3	47:T:88:LYS:HB3	1.53	0.86
55:7:13:C:N4	58:9:34:G:O6	2.08	0.86
27:5:36:ALA:HB1	27:5:38:PHE:N	1.91	0.86
27:5:42:VAL:HA	27:5:214:ILE:HD11	1.56	0.86
28:A:1474:U:H2'	28:A:1475:G:H5'	1.58	0.86
35:H:93:SER:H	35:H:116:ARG:HB3	1.40	0.86
28:A:880:G:N2	28:A:897:C:N3	2.23	0.86
35:H:104:THR:HA	35:H:109:GLU:H	1.41	0.86
37:J:17:VAL:HG13	37:J:137:PRO:HB2	1.57	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1175:A:H5'	28:A:1176:U:H4'	1.57	0.85
28:A:2138:G:H2'	28:A:2139:U:C6	2.10	0.85
36:I:17:ALA:CB	36:I:38:CYS:HA	2.05	0.85
28:A:1055:G:H1	28:A:1104:C:H42	1.24	0.85
36:I:116:MET:HE2	36:I:124:MET:HB3	1.56	0.85
36:I:100:ILE:HB	36:I:139:VAL:HG23	1.58	0.85
28:A:2230:G:H5''	51:X:29:LEU:HD11	1.58	0.85
43:P:105:LYS:HE3	43:P:108:ARG:HH22	1.37	0.85
43:P:50:ARG:CB	43:P:56:SER:HB3	2.06	0.85
28:A:355:U:H2'	28:A:356:G:C8	2.12	0.85
36:I:102:ARG:HB3	36:I:141:ASP:HA	1.58	0.85
30:C:251:THR:HG22	30:C:252:LYS:H	1.42	0.85
34:G:84:LYS:HD2	34:G:131:VAL:HB	1.58	0.84
34:G:24:THR:HG23	34:G:32:LEU:HB3	1.58	0.84
35:H:64:ALA:HA	35:H:71:LYS:HE3	1.57	0.84
47:T:28:ASN:HB2	47:T:91:GLN:HE22	1.42	0.84
49:V:58:SER:O	49:V:73:LYS:NZ	2.11	0.84
50:W:19:ARG:HH11	50:W:22:VAL:HG11	1.41	0.84
28:A:1567:G:H5'	30:C:57:HIS:HD2	1.40	0.84
44:Q:94:LEU:CD2	45:R:4:VAL:HG21	2.07	0.84
47:T:58:VAL:HG12	47:T:85:VAL:HA	1.60	0.84
47:T:68:LYS:HD3	47:T:69:ARG:N	1.93	0.84
28:A:1568:G:H4'	30:C:58:LYS:HB3	1.59	0.84
24:2:12:ARG:HE	24:2:44:VAL:HG11	1.41	0.84
36:I:105:LEU:HD11	36:I:139:VAL:HG21	1.58	0.84
58:9:4:C:N3	58:9:69:G:N2	2.25	0.84
30:C:134:ILE:HD13	30:C:140:VAL:HG11	1.59	0.84
49:V:6:ALA:HB2	49:V:42:LEU:HD23	1.60	0.84
27:5:80:GLN:HG2	27:5:120:ALA:CB	2.07	0.83
53:Z:6:ILE:HD11	53:Z:47:ILE:HD11	1.60	0.83
28:A:2091:C:H3'	28:A:2092:U:H5''	1.58	0.83
28:A:880:G:O2'	28:A:881:G:N7	2.10	0.83
32:E:149:ILE:HG13	32:E:188:MET:HA	1.61	0.83
50:W:23:LYS:HG2	50:W:24:ARG:H	1.42	0.83
28:A:2432:A:H1'	58:9:75:C:H1'	1.58	0.83
58:9:38:A:H2'	58:9:39:U:H5''	1.60	0.83
27:5:45:ALA:HB1	28:A:2177:C:H4'	1.60	0.83
28:A:2557:G:H2'	28:A:2558:C:C6	2.12	0.83
25:3:46:LYS:NZ	28:A:631:A:OP1	2.12	0.83
28:A:716:A:C2	28:A:717:C:H1'	2.14	0.83
28:A:2639:A:O3'	37:J:96:ARG:NH2	2.12	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:139:ASN:HB3	28:A:2123:G:OP1	1.78	0.83
28:A:1069:A:H1'	28:A:1073:A:N6	1.94	0.82
28:A:1779:U:OP2	28:A:1784:A:N6	2.12	0.82
28:A:2115:G:H3'	28:A:2116:G:H5''	1.61	0.82
35:H:54:LEU:HA	35:H:57:LYS:HZ3	1.44	0.82
31:D:107:VAL:HG22	31:D:108:ASP:H	1.44	0.82
27:5:80:GLN:HG2	27:5:120:ALA:HB2	1.60	0.82
43:P:50:ARG:HD2	43:P:56:SER:HB3	1.60	0.82
28:A:2115:G:H5'	28:A:2167:U:H4'	1.60	0.82
30:C:132:ARG:HG2	35:H:120:GLY:CA	2.08	0.82
35:H:129:GLU:HG3	35:H:146:VAL:HG22	1.61	0.82
28:A:996:A:H5'	44:Q:91:ARG:HH21	1.44	0.82
37:J:44:TYR:CD1	44:Q:59:LEU:HD21	2.14	0.82
27:5:64:VAL:HA	27:5:160:GLN:HA	1.62	0.82
28:A:1248:G:OP1	32:E:44:ARG:NH1	2.13	0.82
35:H:41:LYS:HA	35:H:44:ILE:HG12	1.59	0.82
23:1:50:GLU:HG3	23:1:51:ALA:H	1.45	0.82
28:A:597:G:H2'	28:A:598:U:H5'	3.34	0.82
51:X:39:VAL:HG21	51:X:42:GLU:HB2	1.61	0.82
28:A:2822:G:H2'	28:A:2823:A:H5''	1.61	0.82
28:A:996:A:OP2	44:Q:91:ARG:NH2	2.13	0.82
27:5:65:LEU:HD12	27:5:161:VAL:HG21	1.62	0.81
35:H:41:LYS:H	35:H:44:ILE:HG23	1.45	0.81
28:A:1923:U:O2'	56:8:12:G:H1'	1.79	0.81
28:A:2060:A:O4'	28:A:2502:G:H4'	1.80	0.81
33:F:39:VAL:HG12	33:F:85:GLY:HA2	1.60	0.81
28:A:1327:A:C2'	28:A:1328:A:H5'	2.11	0.81
30:C:68:ARG:HD3	30:C:103:ILE:CD1	2.10	0.81
33:F:11:VAL:HG22	33:F:171:ALA:HB1	1.61	0.81
43:P:62:LYS:HE2	43:P:64:SER:HB2	1.61	0.81
58:9:59:U:H2'	58:9:60:U:H5'	1.63	0.81
28:A:833:A:OP2	39:L:39:LYS:NZ	2.13	0.81
42:O:75:GLY:HA3	42:O:106:LEU:HB2	1.61	0.81
48:U:12:VAL:HG21	48:U:38:ILE:HD11	1.62	0.81
27:5:67:HIS:NE2	27:5:187:GLU:OE1	2.13	0.81
35:H:85:GLY:HA2	35:H:90:LEU:HD23	1.63	0.81
53:Z:8:GLN:CG	53:Z:31:ILE:HA	2.11	0.81
27:5:134:ARG:HB3	28:A:2125:G:N1	1.95	0.81
27:5:15:VAL:HB	27:5:33:LEU:HD13	1.60	0.81
28:A:1094:U:O2'	28:A:1096:A:N7	2.13	0.81
58:9:18:G:H22	58:9:55:U:H1'	1.46	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:C:226:PRO:HG3	30:C:233:GLY:HA2	1.61	0.81
36:I:102:ARG:CB	36:I:141:ASP:HA	2.11	0.81
28:A:2345:G:H4'	28:A:2346:A:H5''	1.63	0.81
35:H:90:LEU:HG	35:H:147:VAL:CG1	2.11	0.81
56:8:67:C:H2'	56:8:68:C:H5'	1.61	0.81
28:A:2588:G:H2'	28:A:2589:A:H5'	1.61	0.81
34:G:94:ARG:HB3	34:G:105:SER:HB3	1.62	0.81
28:A:2134:A:N7	28:A:2135:A:H1'	1.96	0.80
28:A:2375:G:N2	28:A:2378:A:OP2	2.13	0.80
28:A:2588:G:C2'	28:A:2589:A:H5'	2.11	0.80
34:G:84:LYS:HB2	34:G:132:LEU:H	1.44	0.80
36:I:76:ALA:HA	36:I:131:THR:CG2	2.10	0.80
34:G:22:VAL:HG12	34:G:36:LEU:HD21	1.63	0.80
27:5:140:PRO:HD3	28:A:2122:U:H5''	1.63	0.80
28:A:2061:G:H5''	28:A:2503:A:H5''	1.63	0.80
33:F:113:PHE:CE1	33:F:116:LEU:HD12	2.15	0.80
38:K:71:ARG:HE	38:K:106:GLU:CG	1.95	0.80
44:Q:63:ARG:NH1	44:Q:95:ALA:O	2.14	0.80
28:A:396:G:OP2	51:X:9:LYS:NZ	2.14	0.80
33:F:10:GLU:O	33:F:12:VAL:N	2.13	0.80
24:2:12:ARG:NE	24:2:44:VAL:HG11	1.96	0.80
28:A:1022:G:H22	28:A:1142:A:H2	1.30	0.80
28:A:2131:U:N3	28:A:2157:G:O2'	2.14	0.80
34:G:102:ILE:CD1	34:G:116:LEU:HD11	2.11	0.80
35:H:78:VAL:HG23	35:H:146:VAL:HG11	1.63	0.80
28:A:2474:U:OP2	28:A:2475:C:N4	2.12	0.80
28:A:468:G:H2'	28:A:469:G:H5'	1.63	0.80
34:G:104:LEU:HB2	34:G:112:VAL:CG2	2.11	0.80
37:J:39:LYS:HA	37:J:43:GLU:HB2	1.61	0.80
41:N:73:ASN:HA	41:N:76:VAL:HG12	1.64	0.80
28:A:1059:G:H1	28:A:1079:C:H42	1.29	0.80
28:A:1495:A:H2	28:A:1578:U:H1'	1.46	0.80
28:A:2061:G:O2'	28:A:2062:A:H5''	1.81	0.80
30:C:234:GLY:O	30:C:238:ASN:ND2	2.15	0.80
27:5:14:LYS:HE2	28:A:2131:U:OP1	1.80	0.80
28:A:320:A:N3	32:E:163:ASN:ND2	2.30	0.80
28:A:630:G:N2	28:A:633:A:OP2	2.15	0.80
35:H:47:PHE:HA	35:H:50:ARG:HE	1.46	0.80
28:A:1080:A:H1'	36:I:127:SER:HA	1.62	0.80
28:A:2062:A:N7	28:A:2503:A:N6	2.30	0.80
28:A:2123:G:H1'	28:A:2176:A:N1	1.97	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:O:51:ALA:HB3	42:O:78:VAL:CG1	2.10	0.80
36:I:4:VAL:HG21	36:I:7:TYR:HB3	1.65	0.79
28:A:280:U:H2'	28:A:281:C:C6	2.17	0.79
28:A:2110:G:H5''	28:A:2111:U:H5	1.45	0.79
35:H:70:GLU:HG2	35:H:74:ALA:HB3	1.61	0.79
28:A:856:G:C1'	50:W:23:LYS:HD3	2.11	0.79
27:5:65:LEU:HG	27:5:161:VAL:HB	1.63	0.79
28:A:558:U:H5''	37:J:111:LYS:CE	2.10	0.79
31:D:37:VAL:HG12	31:D:48:ILE:HG22	1.64	0.79
45:R:38:VAL:HG13	45:R:54:VAL:HG22	1.62	0.79
44:Q:94:LEU:HD23	45:R:4:VAL:HG21	1.63	0.79
27:5:33:LEU:HG	27:5:220:ALA:CB	2.12	0.79
36:I:105:LEU:CD1	36:I:139:VAL:HG21	2.13	0.79
27:5:65:LEU:HD13	27:5:188:ASN:HB3	1.65	0.79
27:5:60:ARG:HD3	27:5:164:ARG:NE	1.98	0.79
28:A:192:C:H2'	28:A:193:U:H5'	1.62	0.79
28:A:2061:G:N2	28:A:2062:A:O2'	2.16	0.79
28:A:2134:A:H1'	28:A:2159:G:N3	1.97	0.79
28:A:2505:G:N2	28:A:2610:C:O2	2.16	0.79
58:9:16:U:C5	58:9:18:G:H5''	2.19	0.79
28:A:998:C:N4	28:A:1157:G:O6	2.16	0.79
47:T:69:ARG:HD2	47:T:70:HIS:N	1.98	0.79
56:8:17:C:H5''	56:8:17(A):U:C6	2.18	0.78
28:A:215:G:H4'	28:A:216:A:H4'	1.63	0.78
42:O:106:LEU:HA	42:O:109:ALA:HB3	1.64	0.78
27:5:140:PRO:HB2	27:5:164:ARG:NH2	1.97	0.78
34:G:116:LEU:HD21	34:G:122:ALA:HB2	1.65	0.78
28:A:2305:U:H5''	33:F:130:GLY:HA3	1.65	0.78
44:Q:91:ARG:NH1	45:R:11:GLN:O	2.17	0.78
27:5:83:ASN:ND2	27:5:118:PRO:HG2	1.99	0.78
28:A:547:A:H3'	28:A:548:G:C5'	2.14	0.78
33:F:33:ILE:HG12	33:F:155:ILE:HG12	1.66	0.78
27:5:51:ASP:CB	27:5:204:ALA:HB2	2.13	0.78
28:A:2602:A:H4'	28:A:2603:G:C5'	2.14	0.78
31:D:52:THR:HG21	31:D:77:ARG:HE	1.49	0.78
39:L:2:ARG:O	39:L:5:THR:HG22	1.84	0.78
58:9:40:C:C2'	58:9:41:C:H5''	2.14	0.78
28:A:2327:A:H2'	28:A:2328:A:C8	2.18	0.78
30:C:158:GLY:H	30:C:194:VAL:HG13	1.48	0.78
28:A:1654:A:O2'	31:D:118:PHE:HB3	1.82	0.78
33:F:79:ARG:HB3	33:F:82:TYR:HE2	1.45	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:L:81:ASP:O	39:L:83:ALA:N	2.17	0.78
47:T:40:LYS:O	47:T:43:ILE:HG13	1.84	0.78
50:W:29:SER:N	50:W:63:ASP:OD1	2.17	0.78
27:5:140:PRO:CD	28:A:2122:U:H5'	2.13	0.78
30:C:5:CYS:SG	30:C:12:ARG:NH2	2.55	0.78
28:A:149:A:N1	28:A:172:A:N6	15.18	0.77
23:1:7:LYS:HG2	23:1:23:THR:HG22	1.66	0.77
28:A:2644:G:N2	28:A:2770:G:O6	2.16	0.77
28:A:905:A:H2'	28:A:906:U:H5'	1.66	0.77
32:E:98:LYS:HB3	32:E:102:ARG:HH22	1.49	0.77
50:W:24:ARG:CZ	50:W:65:LYS:HG2	2.13	0.77
31:D:124:ARG:NH1	31:D:164:GLN:O	2.17	0.77
41:N:21:PHE:CA	41:N:25:ALA:HB3	5.11	0.77
27:5:177:LYS:HG3	27:5:179:ASP:H	1.47	0.77
27:5:181:ASP:HB2	27:5:184:LYS:HB2	1.66	0.77
35:H:116:ARG:NH2	35:H:126:GLY:O	2.18	0.77
45:R:68:ARG:HD3	45:R:90:ARG:HB2	1.65	0.77
28:A:2324:U:H3'	28:A:2325:G:H5'	1.67	0.77
46:S:18:ARG:O	46:S:19:LEU:HB2	1.85	0.77
58:9:29:G:H2'	58:9:30:G:H8	1.49	0.77
58:9:5:G:N2	58:9:68:C:O2	2.17	0.77
28:A:2358:A:H61	39:L:54:GLN:HE22	1.32	0.77
28:A:279:A:OP2	28:A:361:G:N2	2.17	0.77
23:1:9:LYS:HD3	23:1:52:LYS:C	2.05	0.77
58:9:40:C:H2'	58:9:41:C:C5'	2.15	0.77
27:5:1:MET:HB3	28:A:2120:G:C8	2.20	0.77
28:A:2796:U:H3	28:A:2799:A:H61	1.30	0.77
35:H:94:ILE:CA	35:H:114:GLU:HG3	2.14	0.77
27:5:18:THR:HG23	27:5:222:VAL:HA	1.65	0.77
28:A:2793:C:N4	28:A:2803:G:O6	2.15	0.77
38:K:104:THR:HB	38:K:106:GLU:OE1	1.85	0.77
27:5:146:THR:HG22	27:5:152:ALA:HB1	1.66	0.77
28:A:2114:A:C5	28:A:2115:G:H1'	2.21	0.77
43:P:4:ILE:O	43:P:6:GLN:N	2.18	0.77
34:G:8:VAL:CG1	34:G:49:LEU:HB2	2.15	0.76
39:L:74:THR:HG22	39:L:107:PHE:HB2	1.66	0.76
40:M:53:MET:HE2	40:M:63:ILE:HD13	1.67	0.76
44:Q:25:GLY:O	44:Q:29:ARG:NH1	2.18	0.76
28:A:895:U:H2'	28:A:897:C:C6	2.20	0.76
34:G:102:ILE:HD12	34:G:116:LEU:CD1	2.16	0.76
34:G:104:LEU:HB2	34:G:112:VAL:HG21	1.65	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:46:VAL:CG2	27:5:212:VAL:HG22	2.14	0.76
28:A:1043:C:C2'	28:A:1044:C:H5''	2.15	0.76
28:A:1584:U:H2'	28:A:1585:C:C5'	2.15	0.76
28:A:287:G:O6	28:A:352:A:N6	2.18	0.76
28:A:710:U:C2'	28:A:711:G:H5''	2.15	0.76
38:K:19:VAL:CG1	38:K:41:ILE:HG23	2.16	0.76
44:Q:93:ILE:HG23	44:Q:94:LEU:HD13	1.66	0.76
27:5:29:LEU:HB2	27:5:222:VAL:HG21	1.67	0.76
58:9:19:G:H22	58:9:56:C:H42	1.29	0.76
28:A:1771:C:C2'	28:A:1772:A:H5'	2.15	0.76
29:B:43:C:H2'	29:B:44:G:H5'	1.67	0.76
45:R:61:ALA:HB2	45:R:98:ILE:HD13	1.66	0.76
48:U:38:ILE:HG23	48:U:39:ASN:N	1.96	0.76
27:5:11:ILE:HG22	27:5:33:LEU:CD1	2.14	0.76
28:A:1141:U:H4'	28:A:1142:A:O4'	1.85	0.76
28:A:2112:G:C2'	28:A:2113:U:H5'	2.15	0.76
28:A:2162:G:H4'	28:A:2164:C:H1'	1.67	0.76
31:D:2:ILE:CD1	31:D:96:ILE:HD13	2.15	0.76
44:Q:93:ILE:HG23	44:Q:94:LEU:CD1	2.15	0.76
37:J:64:VAL:O	37:J:65:THR:HG22	1.85	0.76
44:Q:85:ALA:O	44:Q:88:GLU:HB2	1.85	0.76
28:A:2125:G:H1'	28:A:2173:A:H61	1.50	0.76
28:A:662:G:C2'	28:A:663:G:H5'	2.16	0.76
32:E:146:VAL:CG2	32:E:167:VAL:HG23	2.15	0.76
27:5:37:LYS:HG3	27:5:38:PHE:CD2	2.21	0.76
43:P:50:ARG:HG3	43:P:51:ASN:H	1.50	0.76
27:5:7:ARG:HH12	27:5:219:GLY:H	1.34	0.76
28:A:1254:A:H5''	28:A:1255:U:H5'	1.68	0.76
43:P:21:PRO:HD3	43:P:49:ILE:CD1	2.16	0.76
50:W:19:ARG:HH11	50:W:22:VAL:CG1	1.99	0.76
58:9:39:U:H2'	58:9:40:C:H5'	1.67	0.75
28:A:1059:G:H2'	28:A:1060:U:C5	2.21	0.75
29:B:21:G:N2	29:B:63:C:O2	2.18	0.75
35:H:73:ASN:HA	35:H:130:VAL:HG13	1.68	0.75
53:Z:23:LEU:HD21	53:Z:53:MET:CE	2.16	0.75
27:5:115:ILE:HG21	27:5:153:VAL:CG2	2.16	0.75
28:A:140:C:H4'	28:A:141:G:OP1	1.85	0.75
28:A:2693:G:O6	28:A:2716:C:N4	2.16	0.75
30:C:16:VAL:HB	30:C:203:VAL:HG12	1.66	0.75
58:9:39:U:C2'	58:9:40:C:H5'	2.16	0.75
28:A:1918:A:O2'	28:A:1920:C:N4	2.18	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:C:184:GLU:O	30:C:186:ASP:N	2.18	0.75
30:C:29:PHE:CE2	30:C:31:PRO:HG2	2.20	0.75
50:W:9:THR:HG23	50:W:10:ARG:HG3	1.69	0.75
58:9:15:G:N1	58:9:48:C:O2	2.19	0.75
28:A:1799:G:OP1	30:C:257:ARG:NE	2.19	0.75
28:A:2537:U:H2'	28:A:2538:C:C6	2.22	0.75
44:Q:91:ARG:NH1	45:R:11:GLN:H	1.85	0.75
27:5:35:THR:HG23	27:5:219:GLY:HA2	1.67	0.75
27:5:71:ARG:HA	27:5:177:LYS:CB	2.11	0.75
28:A:1064:C:H5'	36:I:88:GLY:H	1.50	0.75
28:A:863:A:O3'	29:B:100:G:N2	2.17	0.75
35:H:37:VAL:CG1	35:H:38:PRO:HD2	2.15	0.75
37:J:43:GLU:O	37:J:45:THR:N	2.19	0.75
45:R:4:VAL:HG13	45:R:39:LEU:HB2	1.67	0.75
27:5:21:TYR:O	27:5:225:ASP:N	2.16	0.75
27:5:81:GLY:H	27:5:84:ALA:HB3	1.50	0.75
40:M:66:ARG:NH1	40:M:104:GLU:OE2	2.18	0.75
26:4:2:LYS:NZ	28:A:2478:A:OP2	2.20	0.75
28:A:544:C:H42	28:A:548:G:P	2.09	0.75
33:F:127:TYR:HE2	33:F:129:MET:HB3	1.52	0.75
58:9:15:G:N2	58:9:48:C:N3	2.33	0.75
28:A:1413:A:H61	28:A:1589:U:H3	1.34	0.75
28:A:2133:G:H2'	28:A:2134:A:H4'	1.68	0.75
34:G:132:LEU:O	34:G:140:ILE:HD11	1.87	0.75
35:H:104:THR:HA	35:H:109:GLU:N	2.02	0.75
58:9:18:G:H1	58:9:55:U:H1'	1.52	0.74
27:5:134:ARG:CB	28:A:2125:G:H1	2.00	0.74
28:A:1087:G:H2'	28:A:1088:A:H5''	1.67	0.74
28:A:2478:A:O2'	28:A:2536:G:N2	2.19	0.74
51:X:34:SER:HA	51:X:49:ARG:HA	1.69	0.74
51:X:67:LEU:HD23	51:X:70:LEU:HD12	1.68	0.74
28:A:1064:C:OP1	36:I:80:LYS:NZ	2.17	0.74
28:A:2189:U:C2'	28:A:2190:G:H5'	2.17	0.74
28:A:2502:G:H3'	28:A:2502:G:OP2	1.86	0.74
28:A:613:A:H3'	28:A:614:A:H5'	1.69	0.74
28:A:870:U:H4'	28:A:871:U:H5''	6.34	0.74
38:K:19:VAL:HG13	38:K:41:ILE:HG23	1.68	0.74
28:A:1175:A:H5'	28:A:1176:U:C4'	2.16	0.74
39:L:108:ALA:HB3	39:L:125:LEU:HD22	1.67	0.74
28:A:996:A:H4'	44:Q:91:ARG:NE	2.01	0.74
50:W:18:LYS:HE3	50:W:19:ARG:HG2	1.69	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:4:11:CYS:SG	26:4:33:HIS:ND1	2.57	0.74
58:9:67:C:H2'	58:9:68:C:C6	2.22	0.74
28:A:1327:A:H2'	28:A:1328:A:H5'	1.67	0.74
28:A:856:G:H1'	50:W:23:LYS:HD3	1.68	0.74
28:A:887:U:O2'	28:A:888:C:H5''	1.86	0.74
32:E:134:LEU:CD2	32:E:161:ALA:HB2	2.18	0.74
38:K:108:ARG:NH1	38:K:113:MET:HA	2.02	0.74
27:5:7:ARG:HH12	27:5:219:GLY:N	1.85	0.74
28:A:528:A:C2	28:A:2042:A:H2'	2.22	0.74
28:A:2683:C:H4'	31:D:13:ARG:NH1	2.02	0.74
34:G:101:VAL:HG12	34:G:115:GLN:HA	1.70	0.74
44:Q:111:LYS:HD3	45:R:48:LYS:HE2	1.69	0.74
58:9:52:G:O6	58:9:62:C:N4	2.20	0.74
28:A:1680:U:O2'	28:A:1763:G:N7	2.17	0.74
28:A:289:G:H2'	28:A:290:U:C6	2.23	0.74
34:G:84:LYS:CD	34:G:131:VAL:HB	2.18	0.74
28:A:2748:A:H1'	34:G:66:THR:CG2	2.18	0.74
53:Z:23:LEU:CD1	53:Z:50:VAL:HG11	2.17	0.74
28:A:1801:A:OP2	30:C:149:LYS:NZ	2.20	0.74
28:A:1893:C:H2'	28:A:1894:C:H5'	1.69	0.74
28:A:2469:A:H61	28:A:2481:G:H1'	1.52	0.74
38:K:47:ILE:HG23	38:K:48:PRO:HD2	1.67	0.74
28:A:275:C:H2'	28:A:276:U:H4'	1.70	0.74
28:A:535:G:H2'	28:A:536:G:H8	1.52	0.74
28:A:544:C:N4	28:A:547:A:O3'	2.20	0.74
35:H:14:SER:OG	35:H:17:ASP:HB2	1.88	0.74
44:Q:91:ARG:HH11	45:R:11:GLN:H	1.36	0.74
54:6:1:G:H1	54:6:72:C:H42	1.34	0.73
28:A:1723:G:H2'	28:A:1724:G:O4'	1.86	0.73
28:A:2167:U:H2'	28:A:2168:G:O4'	1.87	0.73
28:A:602:A:HO2'	28:A:604:G:HO2'	1.32	0.73
31:D:58:ASN:OD1	31:D:59:ARG:N	2.21	0.73
36:I:4:VAL:CB	36:I:7:TYR:HB3	2.17	0.73
47:T:32:LEU:H	47:T:83:ALA:HB3	1.53	0.73
28:A:2111:U:H1'	28:A:2117:A:H5''	1.70	0.73
28:A:987:C:H2'	28:A:988:A:H5'	1.70	0.73
44:Q:16:ILE:HD12	44:Q:31:TYR:HE1	1.52	0.73
58:9:63:G:H2'	58:9:64:A:C8	2.23	0.73
28:A:1220:G:H1	28:A:1229:C:H42	1.35	0.73
28:A:1494:A:H2'	28:A:1495:A:C8	2.23	0.73
28:A:2140:G:C2	28:A:2152:G:H1'	2.22	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:404:A:H1'	28:A:405:U:OP2	1.89	0.73
30:C:109:LEU:HD12	30:C:110:LYS:HG3	1.68	0.73
32:E:58:LYS:NZ	32:E:70:SER:OG	2.19	0.73
42:O:106:LEU:O	42:O:110:ALA:N	2.18	0.73
45:R:49:ILE:CD1	45:R:52:PRO:HA	2.19	0.73
27:5:109:MET:CE	27:5:111:PHE:HB2	2.18	0.73
27:5:172:HIS:NE2	28:A:2177:C:H1'	2.03	0.73
28:A:821:A:N6	28:A:972:A:O2'	2.20	0.73
32:E:188:MET:SD	32:E:193:VAL:HG22	2.28	0.73
33:F:3:LEU:HA	33:F:6:TYR:HB3	1.69	0.73
27:5:24:ASN:HD21	27:5:232:SER:HB2	1.51	0.73
27:5:27:ILE:CG2	27:5:31:LYS:HE3	2.19	0.73
58:9:9:A:C2'	58:9:11:C:H41	2.00	0.73
28:A:141:G:N7	47:T:2:ILE:HD11	2.02	0.73
27:5:107:GLY:HA3	28:A:2162:G:C2	2.24	0.73
28:A:265:A:H4'	28:A:266:G:OP1	1.87	0.73
31:D:16:THR:CG2	31:D:20:VAL:HB	2.18	0.73
28:A:2221:G:H5'	35:H:137:GLU:HG2	1.71	0.73
23:1:7:LYS:HA	23:1:23:THR:HG22	1.69	0.73
56:8:6:G:H1	56:8:67:C:H42	1.37	0.73
28:A:1107:G:H2'	28:A:1108:U:C6	2.24	0.73
36:I:19:PRO:HB2	36:I:22:PRO:HD2	1.69	0.73
43:P:88:ARG:NH2	43:P:114:ASN:OD1	2.22	0.73
47:T:28:ASN:CB	47:T:91:GLN:HE22	2.01	0.73
49:V:21:ARG:NH2	49:V:87:GLN:O	2.21	0.73
28:A:2354:C:H4'	50:W:31:LEU:CD2	2.17	0.73
26:4:7:VAL:O	26:4:8:LYS:HG2	1.89	0.73
28:A:1414:C:O2	28:A:1588:G:N1	2.16	0.73
28:A:1725:U:H2'	28:A:1726:C:C6	2.24	0.73
28:A:280:U:H2'	28:A:281:C:H6	1.54	0.73
28:A:2834:G:H2'	28:A:2879:A:H61	1.54	0.73
23:1:3:GLY:O	23:1:5:ARG:N	2.22	0.73
28:A:880:G:H1	28:A:897:C:H42	1.36	0.73
51:X:75:GLU:HG3	51:X:77:TYR:H	1.54	0.73
51:X:75:GLU:HG3	51:X:77:TYR:N	2.04	0.73
22:0:2:VAL:CG1	28:A:2016:U:H1'	2.19	0.72
34:G:84:LYS:CB	34:G:132:LEU:H	2.01	0.72
39:L:135:ILE:HB	39:L:142:ILE:HD11	1.69	0.72
28:A:2158:A:OP2	28:A:2159:G:N1	2.22	0.72
29:B:60:C:H2'	29:B:61:G:C8	2.24	0.72
41:N:38:LEU:HB3	41:N:39:PRO:HD3	1.69	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:1:50:GLU:HG3	23:1:51:ALA:N	2.03	0.72
28:A:1582:C:O2'	28:A:1585:C:N3	2.20	0.72
28:A:1266:G:N2	28:A:2013:A:OP2	2.19	0.72
28:A:548:G:H4'	28:A:549:G:C4	2.23	0.72
28:A:2332:C:OP1	50:W:76:ARG:NH2	2.22	0.72
27:5:110:ASN:HA	28:A:2126:A:OP2	1.89	0.72
28:A:1047:G:HO2'	28:A:1110:G:H1	1.36	0.72
28:A:855:G:N3	50:W:23:LYS:HD2	2.04	0.72
29:B:60:C:H2'	29:B:61:G:H8	1.53	0.72
31:D:149:ASN:OD1	31:D:150:GLN:N	2.21	0.72
56:8:67:C:C2'	56:8:68:C:H5'	2.18	0.72
58:9:3:C:H2'	58:9:4:C:O4'	1.90	0.72
28:A:2177:C:H2'	28:A:2178:C:O4'	1.88	0.72
28:A:757:G:H2'	28:A:758:C:H5'	1.72	0.72
32:E:121:VAL:O	32:E:190:ALA:N	2.19	0.72
28:A:2221:G:OP1	35:H:137:GLU:HB3	1.87	0.72
28:A:2262:U:OP1	50:W:38:ARG:NH2	2.21	0.72
28:A:1107:G:H2'	28:A:1108:U:H6	1.53	0.72
28:A:1533:C:H2'	28:A:1534:U:C5'	2.19	0.72
28:A:414:C:H2'	28:A:415:A:H8	1.54	0.72
35:H:30:LEU:HB3	35:H:36:ALA:HB3	1.71	0.72
28:A:1199:U:C5'	44:Q:4:LYS:HE3	2.20	0.72
47:T:11:LEU:HD22	47:T:32:LEU:HD13	1.71	0.72
27:5:42:VAL:CG2	27:5:175:ILE:HB	2.15	0.72
27:5:83:ASN:HD21	27:5:118:PRO:HG2	1.54	0.72
28:A:783:A:H8	28:A:784:G:H5''	1.54	0.72
30:C:43:ASN:OD1	30:C:44:ASN:N	2.22	0.72
30:C:64:VAL:HG21	30:C:86:ARG:NH2	2.05	0.72
30:C:83:ASP:OD2	30:C:86:ARG:NH2	2.23	0.72
48:U:3:LYS:O	48:U:93:ARG:NH2	2.23	0.72
28:A:2116:G:O6	28:A:2148:G:H4'	1.89	0.72
28:A:2659:G:OP2	34:G:157:LYS:NZ	2.19	0.72
32:E:62:GLN:NE2	32:E:69:ARG:O	2.22	0.72
36:I:129:GLU:O	36:I:133:ARG:N	2.20	0.72
28:A:2684:U:O4'	38:K:70:ARG:NH1	2.21	0.72
28:A:1798:U:OP2	30:C:270:ARG:NH2	2.23	0.72
40:M:42:THR:HA	40:M:93:VAL:HG12	1.69	0.72
47:T:50:LEU:HD23	52:Y:26:PHE:CZ	2.25	0.72
58:9:63:G:H2'	58:9:64:A:H8	1.54	0.72
28:A:1314:C:H5	46:S:6:LYS:HD3	43.83	0.72
28:A:736:C:H2'	28:A:737:C:C6	2.94	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:855:G:N2	50:W:23:LYS:HE2	2.05	0.72
27:5:212:VAL:HB	27:5:224:VAL:CG1	2.18	0.71
58:9:16:U:H3'	58:9:17:C:H5'	1.72	0.71
28:A:1069:A:C1'	28:A:1073:A:H62	2.03	0.71
28:A:543:G:H3'	28:A:544:C:H5''	1.72	0.71
28:A:2386:A:C2	50:W:38:ARG:HG2	2.24	0.71
28:A:2103:C:H2'	28:A:2104:C:C6	2.25	0.71
27:5:71:ARG:NH2	28:A:2126:A:OP1	2.23	0.71
28:A:279:A:C2'	28:A:280:U:H5'	2.20	0.71
28:A:495:G:H5''	46:S:4:ILE:HD11	1.71	0.71
32:E:31:VAL:HG21	32:E:104:ALA:HB2	1.71	0.71
58:9:9:A:H2'	58:9:11:C:H41	1.56	0.71
28:A:2547:A:H2'	28:A:2548:U:C6	2.26	0.71
28:A:45:G:N2	28:A:433:C:O2	2.23	0.71
28:A:998:C:OP2	44:Q:57:ARG:NH2	2.23	0.71
28:A:154:U:N3	28:A:167:A:N1	19.32	0.71
28:A:2137:U:H2'	28:A:2138:G:C8	2.25	0.71
28:A:2330:G:H21	50:W:38:ARG:HA	1.54	0.71
28:A:290:U:H3	28:A:350:G:H1	1.35	0.71
31:D:172:VAL:CG2	31:D:194:PRO:HD3	2.21	0.71
35:H:75:LEU:HD23	35:H:103:VAL:HG13	1.72	0.71
37:J:16:TYR:CD1	37:J:140:LEU:HD23	2.25	0.71
44:Q:63:ARG:HH12	44:Q:95:ALA:C	1.93	0.71
23:1:50:GLU:CG	23:1:51:ALA:H	2.04	0.71
54:6:57:G:H2'	54:6:58:A:H5'	1.71	0.71
28:A:1771:C:H2'	28:A:1772:A:H5'	1.72	0.71
28:A:883:G:H1	28:A:894:U:H1'	1.56	0.71
22:0:42:ILE:HG22	22:0:43:THR:O	1.90	0.71
34:G:84:LYS:HB3	34:G:132:LEU:O	1.91	0.71
35:H:72:ILE:HG12	35:H:130:VAL:CG2	2.20	0.71
40:M:8:LYS:HE3	40:M:9:PHE:CE2	2.25	0.71
31:D:14:ILE:HD11	31:D:178:VAL:HG11	1.72	0.71
31:D:184:ARG:CG	31:D:186:LEU:HD13	2.13	0.71
32:E:146:VAL:HG23	32:E:167:VAL:HG23	1.70	0.71
32:E:4:VAL:HG12	32:E:6:LYS:H	1.54	0.71
33:F:109:ARG:HD3	33:F:136:ILE:O	1.91	0.71
35:H:82:SER:HB3	35:H:99:ILE:HG22	1.73	0.71
47:T:39:THR:O	47:T:41:ALA:N	2.24	0.71
47:T:87:LEU:HB2	47:T:91:GLN:HG2	1.71	0.71
48:U:9:GLU:HA	48:U:23:LYS:HA	1.71	0.71
28:A:1534:U:H5'	28:A:1535:A:OP1	1.91	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2210:U:H4'	28:A:2211:A:H5'	1.72	0.71
42:O:62:LEU:HD13	42:O:70:ALA:CB	2.21	0.71
45:R:49:ILE:HB	45:R:51:VAL:O	1.91	0.71
27:5:140:PRO:HG3	28:A:2122:U:OP1	1.91	0.71
28:A:2135:A:H3'	28:A:2136:G:H8	1.55	0.71
28:A:2123:G:H1'	28:A:2176:A:C2	2.26	0.71
28:A:2503:A:O2'	28:A:2504:U:H5'	1.90	0.71
28:A:2800:A:H3'	28:A:2801:G:H5'	1.71	0.71
28:A:554:U:H2'	28:A:555:G:H5'	1.73	0.71
28:A:948:C:O2	28:A:984:A:O2'	2.08	0.71
30:C:251:THR:HG22	30:C:252:LYS:N	2.05	0.71
30:C:75:ALA:HB2	30:C:95:TYR:CD1	2.25	0.71
31:D:9:VAL:HG22	31:D:26:VAL:O	1.90	0.71
34:G:15:ASP:N	34:G:26:LYS:O	2.23	0.71
37:J:44:TYR:HD1	44:Q:59:LEU:HD21	1.54	0.71
39:L:79:LEU:H	39:L:113:ALA:HB3	1.55	0.71
24:2:12:ARG:HE	24:2:44:VAL:CG1	2.04	0.71
28:A:2115:G:H3'	28:A:2116:G:C5'	2.21	0.71
28:A:2139:U:H2'	28:A:2140:G:H5'	1.71	0.71
28:A:2490:G:H4'	28:A:2491:U:OP1	1.89	0.71
28:A:2006:C:O2'	28:A:2823:A:N3	2.24	0.71
34:G:101:VAL:HA	34:G:116:LEU:HD13	1.73	0.71
45:R:58:VAL:CG1	45:R:102:SER:HB2	2.21	0.71
45:R:39:LEU:O	45:R:49:ILE:HG23	1.91	0.71
28:A:2105:U:H2'	28:A:2106:U:O4'	1.90	0.70
33:F:107:VAL:HB	33:F:108:PRO:HD3	1.73	0.70
35:H:1:MET:N	35:H:20:ASN:OD1	2.19	0.70
35:H:4:ILE:HD11	35:H:44:ILE:HA	1.72	0.70
44:Q:13:HIS:O	44:Q:17:LEU:HD13	1.91	0.70
28:A:974:G:H4'	45:R:78:ARG:HH22	1.54	0.70
28:A:2324:U:H3'	28:A:2325:G:C5'	2.21	0.70
30:C:9:SER:HB2	30:C:10:PRO:HD2	1.73	0.70
31:D:49:GLN:NE2	31:D:79:LEU:HD13	2.06	0.70
35:H:4:ILE:HD11	35:H:44:ILE:HG22	1.71	0.70
35:H:94:ILE:HA	35:H:114:GLU:CG	2.20	0.70
42:O:66:GLY:HA2	42:O:102:ARG:NH1	2.06	0.70
43:P:88:ARG:HD2	43:P:112:ARG:NH2	2.06	0.70
28:A:139:U:C5	47:T:1:MET:HG2	2.26	0.70
28:A:2127:G:O2'	28:A:2128:G:O4'	2.09	0.70
28:A:2147:A:H3'	28:A:2148:G:C8	2.26	0.70
27:5:129:GLN:HB2	28:A:2170:A:C2	2.25	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:G:15:ASP:HB3	34:G:26:LYS:H	1.55	0.70
44:Q:43:GLN:NE2	45:R:77:PHE:HB3	2.07	0.70
28:A:864:G:OP2	40:M:22:GLN:NE2	2.24	0.70
28:A:1816:C:N4	30:C:34:GLU:OE2	2.24	0.70
27:5:212:VAL:HG21	27:5:227:ALA:HB3	1.73	0.70
23:1:29:LYS:NZ	28:A:2287:A:OP1	2.20	0.70
28:A:549:G:H5''	28:A:550:C:C6	2.26	0.70
35:H:46:PHE:CE2	35:H:50:ARG:HD3	2.27	0.70
35:H:71:LYS:HD2	35:H:108:VAL:HG13	1.73	0.70
36:I:100:ILE:O	36:I:140:GLU:N	2.22	0.70
39:L:77:ILE:CD1	39:L:108:ALA:HB1	2.21	0.70
43:P:30:TRP:CE3	43:P:37:LYS:HE2	2.27	0.70
28:A:856:G:H1'	50:W:23:LYS:HB2	1.73	0.70
27:5:62:ALA:HB3	27:5:145:VAL:CA	2.16	0.70
28:A:2146:C:H4'	28:A:2148:G:C2	2.27	0.70
28:A:631:A:O2'	39:L:66:PHE:HB3	1.91	0.70
34:G:19:ASN:O	34:G:22:VAL:HG22	1.92	0.70
28:A:2270:A:O2'	50:W:16:GLU:OE2	2.10	0.70
24:2:4:THR:HG22	28:A:687:C:H1'	1.73	0.70
27:5:8:MET:HG2	28:A:2175:C:H5''	1.72	0.70
39:L:95:LEU:CB	39:L:101:ILE:HD11	2.22	0.70
58:9:21:A:N6	58:9:48:C:O4'	2.25	0.70
28:A:2800:A:H3'	28:A:2801:G:C5'	2.22	0.70
28:A:511:U:H2'	28:A:512:G:H5'	1.73	0.70
28:A:2313:C:H5''	33:F:87:LYS:HD3	1.72	0.70
37:J:29:ALA:HB1	37:J:105:VAL:HG12	1.74	0.70
52:Y:56:LEU:O	52:Y:58:ASN:N	2.24	0.70
27:5:129:GLN:HB2	28:A:2170:A:H2	1.56	0.70
27:5:36:ALA:CA	27:5:37:LYS:HG2	2.21	0.70
55:7:21:C:H2'	55:7:22:A:H5'	1.74	0.70
32:E:172:ALA:HB2	32:E:192:ALA:HB1	1.73	0.70
47:T:36:LYS:HE3	47:T:80:TRP:HA	1.72	0.70
50:W:24:ARG:NH2	50:W:84:GLU:OE1	2.24	0.70
58:9:68:C:O2'	58:9:69:G:H5'	1.92	0.70
28:A:1070:A:H5'	28:A:1072:C:OP2	1.92	0.70
28:A:2352:A:N6	50:W:30:VAL:HG11	2.06	0.70
28:A:2845:U:O3'	43:P:52:ARG:NH1	2.25	0.70
28:A:833:A:H2'	28:A:834:G:H8	1.56	0.70
31:D:111:GLY:HA3	31:D:194:PRO:HG2	1.74	0.70
28:A:72:U:OP2	52:Y:54:LYS:NZ	2.25	0.70
27:5:50:ILE:HG12	27:5:169:GLY:HA3	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1466:U:HO2'	28:A:1546:G:HO2'	1.40	0.69
28:A:1818:U:OP2	30:C:155:ARG:NH1	2.24	0.69
35:H:14:SER:CB	35:H:17:ASP:HB2	2.22	0.69
27:5:65:LEU:HD22	27:5:191:ALA:HB3	1.73	0.69
27:5:85:GLU:CG	27:5:88:LYS:HD2	2.18	0.69
56:8:3:C:H2'	56:8:4:G:H5'	1.74	0.69
28:A:2153:C:O2'	28:A:2154:A:H5''	1.92	0.69
28:A:74:A:H2'	28:A:75:G:H5''	7.45	0.69
35:H:66:ASN:O	35:H:68:ARG:HA	1.92	0.69
28:A:956:G:O6	40:M:14:LYS:NZ	2.25	0.69
23:1:35:LEU:HD11	23:1:37:LYS:HD2	1.74	0.69
27:5:46:VAL:HG22	27:5:212:VAL:HG22	1.73	0.69
56:8:54:U:H2'	56:8:55:U:O4'	1.93	0.69
22:0:2:VAL:HG11	28:A:2016:U:H1'	1.74	0.69
34:G:24:THR:OG1	34:G:34:ARG:NE	2.24	0.69
35:H:75:LEU:HD23	35:H:103:VAL:HG22	1.74	0.69
44:Q:49:ARG:O	44:Q:53:LYS:NZ	2.25	0.69
54:6:60:U:H5''	54:6:61:C:H5	1.57	0.69
28:A:1607:C:N4	28:A:1622:G:OP2	2.25	0.69
28:A:84:A:P	48:U:5:ARG:HH22	2.14	0.69
31:D:109:VAL:HG13	31:D:201:LEU:HD23	1.73	0.69
32:E:149:ILE:CG1	32:E:188:MET:HA	2.22	0.69
33:F:35:LEU:CD2	33:F:153:ILE:HG22	2.23	0.69
33:F:39:VAL:CG1	33:F:49:LEU:HD13	2.17	0.69
58:9:16:U:H5	58:9:18:G:H5''	1.57	0.69
28:A:1097:U:H2'	28:A:1098:A:H5'	1.75	0.69
28:A:1177:G:H3'	28:A:1178:C:H5''	1.74	0.69
28:A:1413:A:H2'	28:A:1414:C:H5'	1.75	0.69
34:G:21:GLN:NE2	34:G:38:ASP:O	2.26	0.69
36:I:4:VAL:CG2	36:I:7:TYR:HB3	2.23	0.69
56:8:61:C:H2'	56:8:62:C:H6	1.58	0.69
28:A:2760:C:O2'	28:A:2761:A:H5'	1.93	0.69
28:A:1847:A:OP1	28:A:1847:A:H2'	1.91	0.69
28:A:28:A:O2'	28:A:296:U:OP1	50.81	0.69
36:I:40:ALA:HB1	36:I:68:PHE:CE2	2.27	0.69
43:P:50:ARG:CD	43:P:56:SER:HB3	2.22	0.69
49:V:76:ASP:OD1	49:V:77:VAL:N	2.24	0.69
27:5:77:VAL:HG22	27:5:115:ILE:HB	1.74	0.69
27:5:43:ASP:H	27:5:214:ILE:CD1	2.04	0.69
58:9:58:A:H1'	58:9:60:U:H5	1.56	0.69
28:A:1071:G:H1'	28:A:1089:A:C8	2.28	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:H:73:ASN:OD1	35:H:131:SER:HA	1.93	0.69
24:2:3:ARG:NH2	28:A:1613:G:HO2'	1.91	0.69
58:9:2:C:C2'	58:9:3:C:H5'	2.23	0.69
28:A:1007:C:H5''	37:J:37:ARG:NH2	2.08	0.69
28:A:2203:U:H5''	28:A:2204:G:OP1	1.93	0.69
38:K:71:ARG:HE	38:K:106:GLU:HG2	1.57	0.69
55:7:23:A:H1'	55:7:24:A:C8	2.27	0.69
28:A:138:U:OP1	28:A:140:C:N4	2.25	0.69
32:E:58:LYS:HE3	32:E:60:TRP:O	1.93	0.69
49:V:17:SER:HB3	49:V:21:ARG:HH12	1.57	0.69
28:A:1478:G:H1	28:A:1513:U:H3	1.41	0.69
28:A:1508:A:O2'	28:A:1509:A:O4'	2.07	0.69
28:A:177:G:N2	28:A:177:G:OP2	2.23	0.69
28:A:2097:A:H2'	28:A:2098:U:C6	2.28	0.69
27:5:168:ASN:ND2	28:A:2179:C:H5'	2.07	0.69
28:A:2339:C:H2'	28:A:2340:A:C8	2.27	0.69
28:A:468:G:C2'	28:A:469:G:H5'	2.23	0.69
43:P:87:ARG:NH2	43:P:109:ILE:O	2.23	0.69
27:5:68:GLY:HA2	27:5:159:GLY:CA	2.23	0.68
58:9:16:U:C4	58:9:18:G:H3'	2.28	0.68
28:A:1077:A:H1'	36:I:93:ASN:HD22	1.56	0.68
28:A:2112:G:H1'	58:9:19:G:C2	2.28	0.68
28:A:2139:U:N3	28:A:2140:G:N7	2.41	0.68
28:A:2502:G:P	28:A:2502:G:H3'	2.33	0.68
28:A:597:G:C2'	28:A:598:U:H5'	3.66	0.68
37:J:122:LEU:O	37:J:123:LYS:HD2	1.92	0.68
47:T:14:PRO:HD3	52:Y:30:MET:HE3	1.74	0.68
56:8:51:C:O2'	56:8:52:G:H5'	1.92	0.68
28:A:118:A:H3'	28:A:119:A:H5''	1.75	0.68
22:0:4:GLN:NE2	28:A:2056:G:O2'	2.26	0.68
35:H:67:ALA:HB3	35:H:68:ARG:CA	2.19	0.68
46:S:13:SER:O	46:S:15:GLN:N	2.26	0.68
28:A:2352:A:C6	50:W:30:VAL:HG11	2.29	0.68
22:0:42:ILE:CG2	22:0:46:GLY:HA2	2.24	0.68
28:A:321:U:O3'	32:E:162:ARG:NH1	2.26	0.68
43:P:91:VAL:O	43:P:92:ARG:HG2	1.93	0.68
23:1:39:ASP:O	23:1:43:ARG:N	2.25	0.68
27:5:47:ASN:HB2	27:5:210:LYS:HB2	1.76	0.68
37:J:4:PHE:N	37:J:44:TYR:OH	2.27	0.68
37:J:17:VAL:HG12	37:J:55:ILE:HD11	1.75	0.68
40:M:31:PHE:CE2	40:M:110:GLU:HA	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:N:21:PHE:HA	41:N:25:ALA:HB3	5.12	0.68
41:N:73:ASN:HA	41:N:76:VAL:CG1	2.23	0.68
42:O:76:LYS:HB2	42:O:109:ALA:HB1	1.74	0.68
28:A:139:U:H5	47:T:1:MET:HG2	1.58	0.68
49:V:24:ASN:O	49:V:25:LYS:HD2	1.93	0.68
27:5:42:VAL:HG22	27:5:176:GLY:O	1.92	0.68
28:A:1019:U:H3	28:A:1142:A:H62	1.42	0.68
35:H:72:ILE:HG21	35:H:132:PHE:HA	1.74	0.68
49:V:80:HIS:HD2	49:V:83:LYS:HB2	1.59	0.68
51:X:16:ASN:HD21	51:X:26:ARG:HD3	1.58	0.68
27:5:48:LEU:HD11	27:5:171:ILE:N	2.07	0.68
56:8:61:C:H2'	56:8:62:C:C6	2.28	0.68
28:A:1870:C:H2'	28:A:1871:A:C5	2.29	0.68
28:A:445:C:C2'	28:A:446:G:H5'	2.23	0.68
34:G:22:VAL:HG12	34:G:36:LEU:CD2	2.23	0.68
35:H:104:THR:HA	35:H:109:GLU:HA	1.76	0.68
28:A:1494:A:H2'	28:A:1495:A:H8	1.59	0.68
28:A:2171:A:N3	28:A:2172:U:N3	2.42	0.68
28:A:266:G:H2'	28:A:267:C:H5''	1.76	0.68
28:A:634:C:H2'	28:A:635:C:H6	1.59	0.68
30:C:90:ILE:HD12	30:C:102:TYR:CD1	2.28	0.68
32:E:56:GLY:CA	32:E:73:ILE:HG22	2.23	0.68
35:H:146:VAL:HA	35:H:149:GLU:CG	2.24	0.68
35:H:54:LEU:HA	35:H:57:LYS:NZ	2.08	0.68
37:J:17:VAL:HG12	37:J:55:ILE:CG1	2.24	0.68
43:P:4:ILE:HG22	43:P:5:LYS:N	2.06	0.68
47:T:65:GLY:O	47:T:76:ARG:NH1	2.27	0.68
26:4:4:ARG:HG3	28:A:2466:C:OP1	1.93	0.68
27:5:134:ARG:HG2	28:A:2125:G:H22	1.57	0.68
28:A:201:C:O2'	28:A:251:A:N1	2.25	0.68
28:A:1:G:N1	28:A:2902:C:O2	2.18	0.68
29:B:114:C:H2'	29:B:115:A:C8	2.28	0.68
32:E:1:MET:O	32:E:13:THR:HA	1.94	0.68
35:H:97:ARG:NE	35:H:114:GLU:OE1	2.21	0.68
36:I:100:ILE:CB	36:I:139:VAL:HG23	2.23	0.68
36:I:20:SER:HB3	36:I:21:PRO:HD3	1.74	0.68
47:T:50:LEU:HD23	52:Y:26:PHE:CE2	2.28	0.68
50:W:49:ASN:HB3	50:W:81:ILE:CD1	2.23	0.68
44:Q:63:ARG:HH22	44:Q:96:ASP:N	1.92	0.68
56:8:52:G:O2'	56:8:53:G:O5'	2.11	0.68
28:A:1364:G:N2	28:A:1367:A:OP2	2.25	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:736:C:H2'	28:A:737:C:H6	2.59	0.68
35:H:41:LYS:CA	35:H:44:ILE:HG12	2.23	0.68
52:Y:16:THR:O	52:Y:20:ASN:ND2	2.27	0.68
28:A:526:A:N6	28:A:2626:C:H4'	2.09	0.67
32:E:4:VAL:HG13	32:E:9:GLN:HG3	1.76	0.67
34:G:132:LEU:O	34:G:132:LEU:HD12	1.94	0.67
48:U:37:GLY:N	48:U:61:GLU:OE2	2.20	0.67
53:Z:3:THR:HA	53:Z:38:GLU:HA	1.75	0.67
28:A:2142:A:H2'	28:A:2143:C:H6	1.59	0.67
53:Z:4:ILE:N	53:Z:37:ARG:O	2.26	0.67
27:5:105:LYS:HB2	28:A:2163:A:O4'	1.95	0.67
27:5:136:LEU:HB3	28:A:2125:G:O6	1.95	0.67
58:9:14:A:C2	58:9:22:G:H1'	2.29	0.67
35:H:146:VAL:HA	35:H:149:GLU:HB2	1.75	0.67
39:L:82:LEU:HD12	39:L:83:ALA:N	2.08	0.67
40:M:2:LEU:O	40:M:69:PRO:HG2	1.94	0.67
47:T:32:LEU:N	47:T:83:ALA:HB3	2.09	0.67
50:W:39:GLN:NE2	50:W:43:LYS:HB2	2.10	0.67
27:5:139:ASN:HB2	27:5:164:ARG:HD3	1.76	0.67
28:A:2355:G:H4'	50:W:20:LEU:CD1	2.24	0.67
27:5:4:LEU:CD1	28:A:2106:U:H3'	2.25	0.67
28:A:1089:A:H4'	28:A:1090:A:OP1	1.93	0.67
28:A:2114:A:H2'	28:A:2167:U:O2'	1.95	0.67
34:G:8:VAL:HG12	34:G:49:LEU:HB2	1.76	0.67
36:I:96:LYS:CG	36:I:138:VAL:HG23	2.22	0.67
28:A:2561:U:O2	38:K:23:LYS:NZ	2.27	0.67
28:A:1614:A:H61	46:S:88:ARG:H	1.40	0.67
47:T:14:PRO:HD3	52:Y:30:MET:CE	2.25	0.67
28:A:58:G:OP1	47:T:78:SER:OG	2.13	0.67
27:5:116:ALA:HB1	27:5:121:MET:HB2	1.76	0.67
27:5:182:ALA:HB1	27:5:234:ASN:H	1.60	0.67
27:5:186:LYS:CD	27:5:189:LEU:HD12	2.24	0.67
28:A:2111:U:C1'	28:A:2117:A:H5''	2.25	0.67
28:A:2600:A:C2'	28:A:2601:C:H5'	2.25	0.67
29:B:66:A:H61	29:B:107:G:H2'	1.59	0.67
34:G:114:HIS:HD1	34:G:150:TYR:HH	1.42	0.67
43:P:50:ARG:HD2	43:P:56:SER:CB	2.25	0.67
49:V:9:ARG:NH2	49:V:12:GLN:HA	2.09	0.67
27:5:54:LYS:HD3	58:9:63:G:C4'	2.24	0.67
28:A:1533:C:H1'	28:A:1534:U:C5	2.29	0.67
28:A:2146:C:H4'	28:A:2148:G:C4	2.30	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:D:119:ALA:HB1	31:D:124:ARG:CB	2.15	0.67
35:H:116:ARG:HE	35:H:122:LEU:HD13	1.60	0.67
36:I:135:MET:HG2	36:I:137:LEU:HD23	1.76	0.67
36:I:4:VAL:HG11	36:I:7:TYR:HB3	1.77	0.67
37:J:35:ARG:HA	37:J:40:HIS:HD2	1.59	0.67
58:9:24:G:C2	58:9:25:C:H1'	2.30	0.67
28:A:1725:U:H2'	28:A:1726:C:H6	1.59	0.67
28:A:279:A:N6	28:A:361:G:H1'	2.09	0.67
28:A:322:A:P	32:E:162:ARG:HH11	2.16	0.67
34:G:44:HIS:HA	34:G:49:LEU:CD2	2.25	0.67
37:J:32:LEU:HD22	37:J:54:ILE:HD13	1.77	0.67
27:5:71:ARG:CA	27:5:177:LYS:HB2	2.14	0.67
58:9:59:U:C2'	58:9:60:U:H5'	2.25	0.67
28:A:879:G:H2'	28:A:880:G:H4'	1.76	0.67
32:E:147:LEU:HB3	32:E:186:VAL:HG23	1.76	0.67
34:G:24:THR:CG2	34:G:32:LEU:HD23	2.24	0.67
35:H:104:THR:CG2	35:H:109:GLU:HA	2.23	0.67
38:K:71:ARG:HB3	38:K:72:PRO:CD	2.25	0.67
28:A:807:U:OP2	39:L:41:ARG:NH1	2.27	0.67
27:5:69:THR:HG22	27:5:73:VAL:CG1	2.20	0.67
28:A:2657:A:O2'	34:G:159:LYS:NZ	2.28	0.67
36:I:56:VAL:HG23	36:I:70:THR:HA	1.75	0.67
42:O:105:ALA:O	42:O:106:LEU:HG	1.94	0.67
28:A:1064:C:H5'	36:I:88:GLY:N	2.09	0.66
28:A:1069:A:N3	28:A:1073:A:N6	2.43	0.66
28:A:1047:G:O2'	28:A:1109:C:N4	2.27	0.66
28:A:141:G:N3	28:A:141:G:H2'	2.09	0.66
28:A:1827:U:O2'	28:A:1970:A:N3	2.24	0.66
41:N:72:ASP:HB3	41:N:75:ILE:HG12	1.76	0.66
27:5:215:SER:HB2	28:A:2175:C:O2'	1.95	0.66
30:C:154:ALA:HB2	30:C:161:VAL:HG23	1.77	0.66
38:K:47:ILE:HG22	38:K:49:ARG:H	1.60	0.66
47:T:76:ARG:HH11	47:T:76:ARG:HG3	1.59	0.66
50:W:18:LYS:H	50:W:35:ILE:HG22	1.60	0.66
54:6:36:A:O2'	54:6:37:A:O5'	2.12	0.66
28:A:327:G:H2'	28:A:328:U:H6	1.60	0.66
30:C:124:LYS:CG	30:C:125:PRO:HD2	2.25	0.66
34:G:22:VAL:HA	34:G:36:LEU:HD23	1.78	0.66
28:A:1002:G:C2	28:A:1003:G:H1'	2.30	0.66
28:A:188:G:H2'	28:A:189:G:H5'	1.76	0.66
28:A:2849:U:H4'	28:A:2868:A:C2	2.30	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:E:31:VAL:HG21	32:E:104:ALA:CB	2.25	0.66
34:G:82:PHE:CZ	34:G:137:LYS:HB2	2.29	0.66
35:H:64:ALA:CA	35:H:71:LYS:HE3	2.25	0.66
28:A:994:C:O2'	45:R:10:LYS:HE2	1.95	0.66
50:W:19:ARG:HH11	50:W:22:VAL:CB	2.09	0.66
27:5:60:ARG:HB3	27:5:164:ARG:HG3	1.76	0.66
28:A:2123:G:N2	28:A:2175:C:N3	2.43	0.66
34:G:15:ASP:CB	34:G:26:LYS:HB3	2.24	0.66
38:K:18:ARG:HB3	38:K:45:GLU:CG	2.26	0.66
47:T:68:LYS:HD3	47:T:69:ARG:H	1.60	0.66
56:8:17:C:H5''	56:8:17(A):U:C5	2.31	0.66
28:A:2140:G:H2'	28:A:2141:G:H8	1.58	0.66
28:A:474:G:O2'	28:A:475:C:H5'	3.24	0.66
28:A:547:A:H8	28:A:548:G:H5'	1.61	0.66
29:B:66:A:O4'	29:B:108:A:N6	2.27	0.66
30:C:128:THR:C	30:C:129:LEU:HD12	2.16	0.66
31:D:107:VAL:HG21	31:D:203:VAL:CG2	2.26	0.66
45:R:68:ARG:HG2	45:R:90:ARG:HB3	1.77	0.66
28:A:170:U:H2'	28:A:171:U:H6	1.61	0.66
28:A:619:G:OP2	28:A:620:G:N2	2.27	0.66
28:A:774:G:H2'	28:A:775:G:H5'	5.69	0.66
28:A:1567:G:H5'	30:C:57:HIS:CD2	2.27	0.66
35:H:32:PRO:HB3	51:X:38:TRP:CG	2.30	0.66
56:8:19:G:OP1	56:8:60:U:N3	2.28	0.66
28:A:84:A:H4'	28:A:85:G:O5'	1.96	0.66
28:A:992:C:O2'	28:A:993:G:H5'	1.95	0.66
40:M:134:THR:HG22	40:M:136:MET:N	2.10	0.66
55:7:14:A:N3	55:7:14:A:H2'	2.10	0.66
28:A:1548:A:H2'	28:A:1549:A:C8	2.31	0.66
28:A:2426:A:H3'	28:A:2427:C:H5'	1.77	0.66
29:B:49:C:OP1	42:O:102:ARG:HG2	1.96	0.66
45:R:49:ILE:HG21	45:R:53:PHE:H	1.61	0.66
47:T:32:LEU:HB2	47:T:83:ALA:HB2	1.77	0.66
47:T:57:VAL:O	47:T:86:THR:OG1	2.13	0.66
50:W:17:ALA:HA	50:W:35:ILE:HG23	1.76	0.66
27:5:131:LEU:CD1	27:5:138:PRO:HG2	2.20	0.66
55:7:27:A:N3	55:7:27:A:H3'	2.11	0.66
56:8:17:C:H5''	56:8:17(A):U:H6	1.59	0.66
58:9:74:C:H4'	58:9:75:C:OP1	1.96	0.66
28:A:27:G:N2	28:A:512:G:H1'	2.11	0.66
29:B:2:G:H22	29:B:119:A:H1'	1.59	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:N:51:LEU:O	41:N:51:LEU:HD12	4.97	0.66
43:P:6:GLN:OE1	43:P:9:GLN:NE2	2.28	0.66
58:9:16:U:C5	58:9:18:G:H3'	2.31	0.65
28:A:1176:U:H2'	28:A:1177:G:C8	2.31	0.65
28:A:2287:A:O2'	28:A:2288:A:H2'	1.96	0.65
28:A:833:A:H2'	28:A:834:G:C8	2.31	0.65
31:D:53:GLY:O	31:D:76:GLY:HA2	1.95	0.65
35:H:26:ALA:O	35:H:28:ASN:N	2.26	0.65
49:V:80:HIS:CD2	49:V:83:LYS:HB2	2.31	0.65
27:5:107:GLY:HA2	27:5:134:ARG:NH2	2.12	0.65
58:9:52:G:H3'	58:9:53:G:H8	1.59	0.65
33:F:53:ALA:HB1	33:F:64:PRO:HG2	1.78	0.65
38:K:2:ILE:HD12	38:K:8:LEU:HD21	1.77	0.65
46:S:73:LYS:HE2	46:S:75:PHE:HE2	1.60	0.65
25:3:21:PHE:O	25:3:22:LYS:HG2	1.95	0.65
27:5:46:VAL:HG22	27:5:212:VAL:HA	1.78	0.65
28:A:1301:A:O2'	28:A:1302:A:H5''	1.97	0.65
28:A:2098:U:H2'	28:A:2099:U:O4'	1.96	0.65
28:A:707:G:C2'	28:A:708:G:H5'	2.26	0.65
34:G:88:LEU:CD2	34:G:161:VAL:HG22	2.26	0.65
42:O:7:ARG:HA	42:O:10:ARG:HE	1.61	0.65
45:R:61:ALA:CB	45:R:98:ILE:HD13	2.26	0.65
47:T:29:THR:CB	47:T:86:THR:HA	2.26	0.65
28:A:2818:U:O2'	28:A:2819:G:H5'	1.96	0.65
34:G:35:THR:HG21	34:G:70:LEU:HD13	1.76	0.65
40:M:28:PHE:HB2	40:M:104:GLU:OE1	1.97	0.65
49:V:4:ILE:CG2	49:V:42:LEU:HD22	2.26	0.65
27:5:21:TYR:CE2	27:5:222:VAL:HB	2.32	0.65
27:5:226:GLN:OE1	27:5:229:LEU:HD12	1.97	0.65
27:5:44:VAL:CG2	27:5:46:VAL:HG23	2.27	0.65
28:A:1474:U:C2'	28:A:1475:G:H5'	2.26	0.65
28:A:163:C:H3'	28:A:163:C:OP2	1.95	0.65
28:A:2510:C:H2'	28:A:2511:U:H6	1.61	0.65
27:5:64:VAL:HG21	27:5:155:ASN:HB3	1.77	0.65
58:9:57:G:H2'	58:9:58:A:H5'	1.77	0.65
28:A:2748:A:H1'	34:G:66:THR:HG22	1.78	0.65
28:A:276:U:H2'	28:A:277:G:O4'	1.96	0.65
31:D:129:THR:HG23	31:D:140:HIS:O	1.95	0.65
44:Q:16:ILE:HD13	44:Q:35:PHE:HD1	1.60	0.65
46:S:73:LYS:HE2	46:S:75:PHE:CE2	2.32	0.65
27:5:19:LYS:HB3	27:5:21:TYR:CZ	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:30:LEU:HD11	27:5:216:THR:N	2.10	0.65
28:A:1535:A:H5''	28:A:1536:C:H5	1.62	0.65
28:A:1723:G:C2	28:A:1724:G:H1'	2.31	0.65
28:A:2140:G:N1	28:A:2151:U:O2	2.18	0.65
28:A:2156:G:H4'	28:A:2158:A:H62	1.61	0.65
28:A:2178:C:H2'	28:A:2179:C:H5	1.61	0.65
28:A:707:G:H2'	28:A:708:G:H5'	1.77	0.65
46:S:69:LEU:HG	46:S:107:VAL:CG2	2.26	0.65
50:W:48:ALA:O	50:W:61:LYS:HB3	1.97	0.65
25:3:27:ASN:O	25:3:35:LYS:NZ	2.30	0.65
26:4:3:VAL:HG23	26:4:4:ARG:N	2.08	0.65
58:9:16:U:H5'	58:9:17:C:OP2	1.96	0.65
58:9:32:U:H2'	58:9:33:U:O4'	1.97	0.65
31:D:136:ASN:OD1	31:D:137:SER:N	2.29	0.65
33:F:113:PHE:CZ	33:F:115:GLY:HA2	2.31	0.65
35:H:113:SER:HA	35:H:133:GLN:NE2	2.12	0.65
35:H:47:PHE:HB2	35:H:50:ARG:HH21	1.62	0.65
36:I:45:THR:HA	36:I:48:ILE:HG12	1.79	0.65
39:L:78:ARG:HB3	39:L:113:ALA:CB	2.25	0.65
28:A:2485:G:OP1	40:M:45:GLN:NE2	2.26	0.65
48:U:86:PHE:CE2	48:U:92:VAL:HG11	2.32	0.65
28:A:2386:A:H2	50:W:38:ARG:HG2	1.62	0.65
27:5:64:VAL:HG22	27:5:160:GLN:HB2	1.79	0.65
28:A:2146:C:H5''	28:A:2147:A:C2	2.31	0.65
41:N:2:ARG:O	41:N:2:ARG:HG2	1.96	0.65
44:Q:91:ARG:CD	45:R:11:GLN:HB2	2.25	0.65
27:5:175:ILE:CG2	27:5:185:LEU:HB3	2.26	0.65
27:5:68:GLY:HA2	27:5:159:GLY:HA3	1.79	0.65
58:9:18:G:HO2'	58:9:57:G:H1	1.43	0.65
58:9:57:G:H2'	58:9:58:A:C5'	2.27	0.65
28:A:1437:C:H2'	28:A:1438:U:H6	1.62	0.65
28:A:2132:U:H6	28:A:2157:G:H21	1.43	0.65
28:A:2189:U:H2'	28:A:2190:G:H5'	1.77	0.65
28:A:2311:A:N3	33:F:84:ILE:HD11	2.11	0.65
28:A:2326:C:O2'	28:A:2327:A:OP1	2.11	0.65
29:B:2:G:N2	29:B:119:A:O2'	2.30	0.65
30:C:244:VAL:HG12	30:C:250:GLN:HA	1.78	0.65
33:F:74:ALA:N	56:8:56:C:O2'	2.30	0.65
35:H:67:ALA:CB	35:H:68:ARG:HA	2.21	0.65
58:9:9:A:O2'	58:9:11:C:N4	2.30	0.64
28:A:1405:U:H2'	28:A:1406:U:C6	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2311:A:C2	33:F:84:ILE:HD11	2.33	0.64
28:A:879:G:H2'	28:A:880:G:C4'	2.27	0.64
29:B:36:C:H5'	29:B:37:C:OP2	1.97	0.64
28:A:2312:U:H5'	33:F:84:ILE:HG21	1.78	0.64
37:J:3:THR:HG21	44:Q:60:TRP:HE1	1.62	0.64
39:L:122:VAL:HG13	39:L:142:ILE:HG23	1.79	0.64
28:A:629:G:H1'	28:A:639:U:H1'	1.80	0.64
28:A:2571:U:O2'	31:D:151:THR:HG21	1.97	0.64
39:L:101:ILE:HG22	39:L:105:ILE:HB	1.79	0.64
42:O:35:ILE:HB	42:O:102:ARG:HH11	1.61	0.64
42:O:62:LEU:HD13	42:O:70:ALA:HB1	1.79	0.64
27:5:210:LYS:O	27:5:226:GLN:NE2	2.24	0.64
28:A:2112:G:N3	58:9:19:G:N1	2.45	0.64
28:A:662:G:H2'	28:A:663:G:H5'	1.79	0.64
34:G:88:LEU:HD22	34:G:161:VAL:HG22	1.78	0.64
35:H:116:ARG:NE	35:H:122:LEU:HD13	2.12	0.64
40:M:42:THR:HG22	40:M:93:VAL:HG12	1.80	0.64
27:5:35:THR:HG1	27:5:218:MET:HG2	1.62	0.64
28:A:1154:G:OP2	44:Q:57:ARG:NH1	2.30	0.64
28:A:1413:A:C2'	28:A:1414:C:H5'	2.28	0.64
28:A:2581:G:N2	28:A:2581:G:OP2	2.30	0.64
28:A:845:A:H3'	28:A:845:A:N3	2.12	0.64
31:D:110:THR:OG1	31:D:171:THR:HG22	1.97	0.64
34:G:51:PHE:CE2	34:G:68:ARG:HA	2.33	0.64
35:H:129:GLU:OE1	35:H:142:VAL:HG13	1.97	0.64
36:I:98:GLY:H	36:I:137:LEU:HB3	1.61	0.64
28:A:1062:G:O2'	28:A:1063:G:H5'	1.98	0.64
28:A:1568:G:H4'	30:C:58:LYS:CB	2.26	0.64
28:A:2059:A:H5'	28:A:2060:A:OP2	1.98	0.64
28:A:2480:C:H2'	28:A:2481:G:H5'	1.78	0.64
28:A:2886:A:C2	28:A:2887:A:H1'	2.32	0.64
31:D:172:VAL:HG23	31:D:194:PRO:HD3	1.79	0.64
35:H:113:SER:HA	35:H:133:GLN:CD	2.18	0.64
35:H:115:VAL:HG11	35:H:137:GLU:N	2.12	0.64
36:I:96:LYS:HE2	36:I:138:VAL:CG2	2.28	0.64
53:Z:23:LEU:HD21	53:Z:53:MET:HE1	1.79	0.64
28:A:2119:A:N1	28:A:2171:A:H5'	2.12	0.64
38:K:9:ASN:O	38:K:83:ALA:HA	1.97	0.64
39:L:57:LEU:HD13	39:L:60:ARG:HH11	1.62	0.64
50:W:51:GLY:HA2	50:W:59:PHE:CD2	2.32	0.64
56:8:64:G:H2'	56:8:65:C:C6	2.33	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1584:U:H2'	28:A:1585:C:H5'	1.77	0.64
28:A:2788:C:H2'	28:A:2789:C:C6	2.33	0.64
28:A:916:G:O2'	28:A:917:A:O4'	2.13	0.64
29:B:23:G:O6	29:B:59:A:N6	2.31	0.64
37:J:110:PRO:HB2	37:J:111:LYS:HG2	1.80	0.64
25:3:26:ALA:O	25:3:27:ASN:HB2	1.98	0.64
58:9:67:C:H2'	58:9:68:C:H6	1.59	0.64
28:A:107:G:C2'	28:A:108:G:H5'	2.81	0.64
28:A:1435:G:C2'	28:A:1436:G:H5'	2.28	0.64
28:A:1766:G:O2'	28:A:1767:G:H5'	1.98	0.64
31:D:25:THR:HG21	31:D:193:VAL:HG22	1.80	0.64
32:E:56:GLY:HA2	32:E:73:ILE:HG22	1.79	0.64
28:A:2683:C:O2	38:K:70:ARG:NH2	2.31	0.64
42:O:83:LEU:HD11	42:O:115:LEU:HD12	1.78	0.64
47:T:54:GLU:CG	47:T:88:LYS:HB3	2.25	0.64
53:Z:38:GLU:HG3	53:Z:40:THR:HG23	1.79	0.64
27:5:60:ARG:HG2	27:5:165:ASN:H	1.62	0.64
27:5:107:GLY:HA3	28:A:2162:G:N2	2.12	0.64
32:E:47:LYS:HA	32:E:51:GLU:OE2	1.98	0.64
44:Q:111:LYS:HD3	45:R:48:LYS:CE	2.27	0.64
52:Y:22:LEU:O	52:Y:27:ASN:ND2	2.31	0.64
27:5:65:LEU:CD2	27:5:191:ALA:HB3	2.28	0.64
58:9:38:A:C2'	58:9:39:U:H5''	2.28	0.64
28:A:198:C:H2'	28:A:199:A:H5''	1.78	0.64
28:A:895:U:O3'	28:A:896:A:H3'	1.98	0.64
31:D:101:PHE:HA	31:D:104:VAL:HG23	1.80	0.64
44:Q:94:LEU:HD21	45:R:4:VAL:HG21	1.78	0.64
49:V:4:ILE:HG21	49:V:42:LEU:HD22	1.80	0.64
28:A:1045:C:H4'	28:A:1046:A:H5''	1.80	0.63
28:A:1437:C:H2'	28:A:1438:U:C6	2.34	0.63
28:A:172:A:H2'	28:A:173:A:C8	2.33	0.63
28:A:1847:A:H4'	28:A:1848:A:OP2	1.97	0.63
28:A:2783:U:O2'	28:A:2784:U:H5'	1.98	0.63
43:P:17:PRO:CG	43:P:83:ILE:HG23	2.26	0.63
52:Y:24:GLU:O	52:Y:28:LEU:HG	1.98	0.63
28:A:1064:C:H42	28:A:1074:G:H1	1.45	0.63
28:A:2030:A:C2	28:A:2499:C:H5''	2.33	0.63
28:A:2117:A:H4'	28:A:2145:C:C4'	2.20	0.63
28:A:2277:G:OP2	50:W:8:SER:HB2	1.98	0.63
28:A:845:A:H61	28:A:932:U:H3	1.45	0.63
34:G:98:LYS:HB2	34:G:103:ASN:HD21	1.61	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:H:7:ASP:OD2	35:H:10:ALA:N	2.24	0.63
22:O:9:ARG:HH12	44:Q:29:ARG:CZ	2.11	0.63
27:5:226:GLN:O	27:5:230:SER:OG	2.17	0.63
28:A:1545:A:H2'	28:A:1546:G:H5'	1.80	0.63
28:A:2210:U:C4'	28:A:2211:A:H5'	2.28	0.63
28:A:2339:C:H2'	28:A:2340:A:H8	1.63	0.63
29:B:65:U:C2'	29:B:66:A:H5'	2.28	0.63
36:I:4:VAL:HG13	36:I:59:THR:CG2	2.25	0.63
23:1:7:LYS:HG2	23:1:23:THR:CG2	2.28	0.63
28:A:14:A:H5''	28:A:15:G:OP2	1.98	0.63
28:A:215:G:C4'	28:A:216:A:H4'	2.29	0.63
29:B:48:U:OP1	42:O:30:ARG:NH1	2.29	0.63
30:C:33:LEU:CD2	30:C:62:ARG:HG2	2.29	0.63
34:G:1:SER:O	34:G:3:VAL:N	2.31	0.63
35:H:104:THR:HA	35:H:109:GLU:CA	2.28	0.63
35:H:90:LEU:HD11	35:H:146:VAL:CG2	2.16	0.63
28:A:1800:C:H5'	30:C:145:MET:CE	2.28	0.63
28:A:207:A:H2'	28:A:208:C:O4'	1.99	0.63
28:A:2174:C:H2'	28:A:2175:C:C4	2.33	0.63
28:A:2287:A:O2'	28:A:2288:A:O5'	2.14	0.63
28:A:2562:U:H4'	38:K:25:LEU:CD2	2.28	0.63
28:A:860:U:H1'	28:A:2268:A:H5'	1.81	0.63
28:A:879:G:C2	28:A:880:G:H1'	2.32	0.63
33:F:127:TYR:CE2	33:F:129:MET:HB3	2.34	0.63
41:N:69:ARG:O	41:N:70:THR:OG1	2.11	0.63
42:O:66:GLY:HA2	42:O:102:ARG:CZ	2.28	0.63
27:5:170:ILE:HD13	28:A:2177:C:O2'	1.98	0.63
54:6:44:G:H5'	54:6:45:U:H5	1.64	0.63
28:A:1055:G:H2'	28:A:1056:G:O4'	1.99	0.63
28:A:1248:G:P	32:E:44:ARG:HH12	2.22	0.63
29:B:37:C:H2'	29:B:38:C:O4'	1.99	0.63
45:R:54:VAL:HG23	45:R:57:GLY:HA3	1.80	0.63
48:U:35:VAL:HB	48:U:38:ILE:CG2	2.24	0.63
51:X:69:GLU:O	51:X:71:ARG:N	2.32	0.63
24:2:34:ARG:CZ	24:2:39:ARG:HD2	2.28	0.63
27:5:21:TYR:HE2	27:5:222:VAL:HB	1.62	0.63
28:A:1964:G:O2'	28:A:1967:C:OP2	2.11	0.63
28:A:2162:G:H3'	28:A:2162:G:N3	2.12	0.63
28:A:2260:C:H5''	50:W:13:ARG:HH21	1.63	0.63
28:A:757:G:C2'	28:A:758:C:H5'	2.28	0.63
28:A:881:G:N1	28:A:898:C:H1'	2.13	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:996:A:C5'	44:Q:91:ARG:HH21	2.11	0.63
49:V:44:HIS:HE1	49:V:86:LEU:H	1.47	0.63
22:0:42:ILE:HD12	41:N:99:LYS:O	1.97	0.63
23:1:35:LEU:CD1	23:1:37:LYS:HD2	2.28	0.63
27:5:101:ALA:O	27:5:104:ILE:HG12	1.99	0.63
27:5:29:LEU:CB	27:5:222:VAL:HG21	2.28	0.63
28:A:1071:G:H1'	28:A:1089:A:C5	2.34	0.63
28:A:370:G:O2'	28:A:424:G:OP1	2.12	0.63
28:A:782:A:N7	30:C:219:VAL:HG21	2.14	0.63
28:A:803:U:C2'	28:A:804:A:H5'	2.28	0.63
33:F:122:ASP:OD2	33:F:126:ASN:ND2	2.31	0.63
34:G:1:SER:HA	34:G:4:ALA:CB	2.23	0.63
36:I:4:VAL:CG1	36:I:59:THR:HG23	2.26	0.63
37:J:53:TYR:CE1	37:J:121:LYS:HG2	2.32	0.63
45:R:68:ARG:HD2	45:R:90:ARG:HE	1.64	0.63
50:W:24:ARG:NH1	50:W:65:LYS:HG2	2.13	0.63
28:A:188:G:H5'	51:X:13:THR:CG2	2.29	0.63
58:9:18:G:H4'	58:9:60:U:C2	2.34	0.63
28:A:1173:U:O2	28:A:1176:U:N3	2.32	0.63
30:C:134:ILE:HD13	30:C:140:VAL:CG1	2.29	0.63
34:G:22:VAL:HA	34:G:36:LEU:CD2	2.29	0.63
37:J:32:LEU:HD22	37:J:54:ILE:CD1	2.28	0.63
44:Q:87:VAL:CG1	44:Q:89:ILE:HG23	2.28	0.63
50:W:19:ARG:NH1	50:W:22:VAL:HG11	2.12	0.63
53:Z:6:ILE:O	53:Z:34:THR:HA	1.98	0.63
58:9:35:A:H2'	58:9:36:A:N7	2.14	0.62
28:A:1159:U:O4'	28:A:1182:G:N2	21.20	0.62
28:A:2133:G:C2'	28:A:2134:A:H4'	2.28	0.62
28:A:304:U:H2'	28:A:305:C:H6	1.64	0.62
28:A:548:G:H4'	28:A:549:G:C5	2.33	0.62
32:E:119:ILE:HG13	32:E:119:ILE:O	1.99	0.62
32:E:149:ILE:HD11	32:E:188:MET:CE	2.29	0.62
34:G:120:ILE:HD11	34:G:139:VAL:HG12	1.80	0.62
34:G:24:THR:CG2	34:G:32:LEU:HB3	2.29	0.62
35:H:146:VAL:HA	35:H:149:GLU:CB	2.28	0.62
23:1:39:ASP:OD1	23:1:41:VAL:HG12	1.99	0.62
28:A:1924:C:C2'	28:A:1925:C:H5'	2.30	0.62
28:A:2780:G:OP2	37:J:120:ARG:NE	2.27	0.62
28:A:285:G:N2	28:A:355:U:O2	2.32	0.62
28:A:464:U:H2'	28:A:466:A:C8	8.33	0.62
28:A:554:U:C2'	28:A:555:G:H5'	2.29	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2530:A:H62	34:G:171:LYS:NZ	1.97	0.62
34:G:26:LYS:HB2	34:G:32:LEU:CG	2.23	0.62
35:H:108:VAL:HG12	35:H:110:VAL:HB	1.80	0.62
35:H:51:ARG:HD3	35:H:55:GLU:OE2	1.98	0.62
36:I:24:GLY:O	36:I:27:LEU:HG	1.99	0.62
42:O:38:GLN:HA	42:O:50:ALA:HB2	1.81	0.62
44:Q:63:ARG:NH1	44:Q:96:ASP:HA	2.14	0.62
28:A:2330:G:N2	50:W:38:ARG:HA	2.13	0.62
58:9:7:A:H3'	58:9:8:U:C5'	2.29	0.62
28:A:107:G:H2'	28:A:108:G:H5'	2.78	0.62
28:A:2047:C:O2'	28:A:2048:G:H5'	1.98	0.62
28:A:2125:G:H1'	28:A:2173:A:N6	2.14	0.62
28:A:291:G:H2'	28:A:292:U:H5'	1.80	0.62
28:A:627:A:H4'	28:A:628:G:OP1	1.98	0.62
34:G:112:VAL:HG23	34:G:113:ASP:N	2.15	0.62
34:G:17:LYS:HB3	34:G:24:THR:HB	1.80	0.62
42:O:58:ILE:O	42:O:61:GLN:HG2	1.98	0.62
48:U:8:ASP:OD2	48:U:71:ILE:HG13	2.00	0.62
27:5:38:PHE:CE2	27:5:218:MET:HB3	2.34	0.62
28:A:1046:A:H3'	28:A:1047:G:H5'	1.81	0.62
28:A:442:G:O4'	32:E:41:GLN:NE2	2.32	0.62
28:A:56:A:C2'	28:A:57:C:H5'	2.29	0.62
28:A:892:A:H2'	28:A:892:A:N3	2.15	0.62
34:G:134:GLY:HA3	34:G:140:ILE:HD13	1.80	0.62
35:H:14:SER:HB2	35:H:17:ASP:OD2	1.99	0.62
28:A:30:G:OP1	44:Q:4:LYS:HD2	1.98	0.62
47:T:69:ARG:HD2	47:T:70:HIS:H	1.62	0.62
28:A:281:C:O2'	28:A:282:A:H5'	1.99	0.62
28:A:291:G:C2'	28:A:292:U:H5'	2.30	0.62
28:A:901:C:H2'	28:A:902:C:O4'	2.00	0.62
31:D:52:THR:HG23	31:D:53:GLY:H	1.62	0.62
32:E:21:ARG:NH2	32:E:107:SER:OG	2.32	0.62
33:F:105:ILE:CD1	33:F:138:PRO:HG2	2.25	0.62
33:F:49:LEU:CD2	33:F:83:PRO:HB2	2.30	0.62
35:H:4:ILE:HG12	35:H:18:GLN:HE22	1.63	0.62
38:K:76:VAL:HB	43:P:72:VAL:HG22	1.81	0.62
51:X:48:LEU:CB	51:X:50:VAL:HG23	2.30	0.62
58:9:37:A:H3'	58:9:38:A:H8	1.65	0.62
28:A:1063:G:H2'	28:A:1064:C:O4'	1.99	0.62
28:A:1083:U:H2'	28:A:1085:A:OP2	1.99	0.62
28:A:1968:G:O2'	28:A:1969:A:O4'	2.17	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:893:C:H2'	28:A:894:U:C6	2.35	0.62
28:A:934:U:H2'	28:A:935:C:C6	2.35	0.62
30:C:158:GLY:N	30:C:194:VAL:HG13	2.13	0.62
30:C:203:VAL:O	30:C:205:GLY:N	2.31	0.62
28:A:2683:C:H4'	31:D:13:ARG:HH11	1.64	0.62
33:F:131:VAL:HG22	33:F:151:LEU:O	1.99	0.62
35:H:46:PHE:HE2	35:H:50:ARG:HD3	1.64	0.62
37:J:37:ARG:HG3	37:J:118:MET:HE1	1.80	0.62
37:J:120:ARG:O	37:J:123:LYS:NZ	2.33	0.62
39:L:95:LEU:HD22	39:L:100:ILE:HD11	1.81	0.62
40:M:8:LYS:HE3	40:M:9:PHE:HE2	1.65	0.62
42:O:79:ALA:HB3	42:O:113:ALA:CB	2.29	0.62
48:U:6:ARG:NH2	48:U:25:LYS:O	2.33	0.62
24:2:35:ARG:HE	24:2:42:LEU:HD13	1.64	0.62
27:5:148:ASN:HB2	27:5:152:ALA:CB	2.27	0.62
27:5:69:THR:CB	27:5:161:VAL:HG22	2.30	0.62
28:A:1097:U:C2'	28:A:1098:A:H5'	2.30	0.62
28:A:1411:U:H2'	28:A:1412:U:H5'	1.82	0.62
28:A:1857:G:N2	28:A:1884:G:O2'	2.27	0.62
29:B:38:C:H2'	29:B:39:A:H8	1.64	0.62
35:H:90:LEU:H	35:H:147:VAL:HG12	1.63	0.62
36:I:27:LEU:HD12	36:I:30:GLN:H	1.63	0.62
42:O:15:ARG:NH2	42:O:95:SER:OG	2.32	0.62
28:A:1130:U:N3	28:A:2025:C:H5''	2.15	0.62
28:A:2111:U:N3	28:A:2145:C:OP1	2.33	0.62
28:A:2116:G:C5	28:A:2117:A:H1'	2.34	0.62
28:A:1130:U:OP2	28:A:2570:G:N2	2.32	0.62
28:A:745:G:H2'	28:A:746:U:H5'	1.82	0.62
48:U:15:GLY:O	48:U:17:ASP:N	2.32	0.62
28:A:1046:A:H3'	28:A:1047:G:C5'	2.29	0.62
28:A:1173:U:O2'	28:A:1177:G:N2	2.33	0.62
26:4:3:VAL:HG11	28:A:2539:C:H5'	1.82	0.62
29:B:21:G:C2'	29:B:22:U:H5'	2.29	0.62
30:C:2:VAL:HG11	30:C:201:LEU:HD23	1.80	0.62
36:I:72:THR:OG1	36:I:73:PRO:HD2	1.98	0.62
26:4:16:ILE:HD13	26:4:25:VAL:HG22	1.81	0.62
27:5:1:MET:HB3	28:A:2120:G:N7	2.15	0.62
29:B:48:U:P	42:O:30:ARG:HH22	2.22	0.62
30:C:260:LYS:HA	30:C:263:ASP:OD2	2.00	0.62
38:K:70:ARG:O	38:K:71:ARG:HB2	2.00	0.62
47:T:67:VAL:HG23	47:T:76:ARG:HB2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:O:2:VAL:HG22	28:A:2015:A:C2	2.35	0.61
27:5:137:MET:HB3	27:5:138:PRO:HD2	1.81	0.61
28:A:2314:A:H2'	28:A:2315:G:H8	1.65	0.61
28:A:341:C:H2'	28:A:342:A:C8	2.35	0.61
28:A:883:G:N1	28:A:894:U:H1'	2.15	0.61
31:D:148:GLN:N	31:D:148:GLN:OE1	2.33	0.61
34:G:126:THR:HG22	34:G:128:THR:H	1.65	0.61
36:I:79:LEU:HD12	36:I:131:THR:CG2	2.28	0.61
45:R:34:GLU:HG2	45:R:60:LYS:HG2	1.82	0.61
28:A:144:A:H2'	28:A:145:C:C6	2.35	0.61
35:H:104:THR:HG23	35:H:109:GLU:CA	2.29	0.61
36:I:123:ALA:HB1	36:I:126:ARG:NH2	2.14	0.61
38:K:71:ARG:HE	38:K:106:GLU:HG3	1.64	0.61
40:M:40:ARG:C	40:M:41:LEU:HD12	2.21	0.61
50:W:68:PHE:CD1	50:W:79:ILE:HG12	2.35	0.61
28:A:930:G:H1'	53:Z:24:LEU:HD21	1.81	0.61
23:1:4:ILE:HG23	23:1:5:ARG:N	2.16	0.61
28:A:1759:A:O2'	28:A:2714:G:O2'	2.18	0.61
28:A:200:U:H2'	28:A:201:C:H5'	1.80	0.61
28:A:2745:C:H2'	28:A:2746:U:H6	1.66	0.61
28:A:2758:A:H2'	28:A:2759:G:H5'	1.82	0.61
28:A:549:G:H5''	28:A:550:C:H6	1.64	0.61
33:F:102:LEU:O	33:F:107:VAL:HG23	2.00	0.61
35:H:129:GLU:H	35:H:142:VAL:CG1	2.12	0.61
35:H:77:THR:CG2	35:H:144:VAL:HB	2.17	0.61
36:I:105:LEU:HA	36:I:108:ILE:CD1	2.22	0.61
36:I:72:THR:HG23	36:I:112:LYS:NZ	2.15	0.61
44:Q:60:TRP:CZ3	44:Q:93:ILE:HB	2.35	0.61
47:T:15:HIS:HB3	47:T:31:VAL:HG13	1.81	0.61
49:V:75:GLN:HB3	49:V:90:ASP:O	2.00	0.61
28:A:2112:G:O2'	58:9:19:G:N3	2.22	0.61
28:A:1306:C:N4	28:A:1606:C:H2'	2.16	0.61
28:A:1734:G:H2'	28:A:1735:A:C8	2.34	0.61
28:A:197:A:N1	28:A:220:G:O2'	51.30	0.61
28:A:2192:U:C2'	28:A:2193:G:H5'	2.28	0.61
28:A:2281:A:O2'	28:A:2282:G:H5'	2.00	0.61
28:A:885:C:C2'	28:A:886:A:H5'	2.31	0.61
29:B:114:C:H2'	29:B:115:A:H8	1.64	0.61
34:G:167:VAL:O	34:G:168:VAL:HG22	2.00	0.61
27:5:35:THR:OG1	27:5:218:MET:HG2	2.00	0.61
27:5:21:TYR:HB2	27:5:26:ALA:HB2	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2110:G:C2	28:A:2120:G:H1'	2.35	0.61
28:A:2164:C:H5''	28:A:2172:U:H5	1.65	0.61
28:A:2066:C:O2	28:A:2445:G:N2	2.34	0.61
28:A:2813:A:O2'	28:A:2814:A:H5'	1.98	0.61
33:F:141:ASP:OD2	33:F:143:ASP:HB2	2.01	0.61
34:G:120:ILE:CD1	34:G:139:VAL:HG12	2.30	0.61
35:H:71:LYS:HB3	35:H:108:VAL:HG11	1.83	0.61
46:S:59:GLU:HA	46:S:64:ALA:CB	2.30	0.61
50:W:13:ARG:HG2	50:W:14:ASP:N	2.11	0.61
27:5:38:PHE:HB3	28:A:2126:A:H5''	1.82	0.61
58:9:60:U:P	58:9:61:C:H41	2.23	0.61
30:C:80:LEU:HD23	30:C:91:ALA:HB2	1.82	0.61
35:H:146:VAL:HA	35:H:149:GLU:HG2	1.81	0.61
47:T:35:ALA:C	47:T:36:LYS:HD2	2.21	0.61
48:U:47:PRO:HB3	48:U:55:GLY:CA	2.30	0.61
27:5:69:THR:HB	27:5:161:VAL:HG22	1.81	0.61
28:A:1315:C:O2'	28:A:1316:U:H5'	2.01	0.61
28:A:1528:A:H2'	28:A:1529:G:H5'	1.82	0.61
28:A:1936:A:H2	28:A:1943:U:C5	2.19	0.61
28:A:843:G:O2'	28:A:844:A:H5'	2.01	0.61
30:C:226:PRO:HG3	30:C:233:GLY:CA	2.31	0.61
32:E:25:GLU:OE2	39:L:7:SER:N	2.32	0.61
34:G:86:LEU:HD23	34:G:161:VAL:CG1	2.31	0.61
28:A:1082:U:H5'	36:I:117:THR:OG1	2.01	0.61
28:A:2336:A:N6	50:W:40:ARG:HD3	2.16	0.61
28:A:2491:U:O2'	28:A:2492:U:H5'	2.01	0.61
28:A:414:C:H2'	28:A:415:A:C8	2.36	0.61
41:N:32:GLU:OE1	41:N:118:ARG:HG3	2.00	0.61
44:Q:91:ARG:HB3	44:Q:93:ILE:HG22	1.81	0.61
26:4:15:LYS:HE3	26:4:17:VAL:CG2	2.30	0.61
27:5:77:VAL:HA	27:5:115:ILE:O	2.01	0.61
28:A:1813:G:H1'	30:C:49:THR:CG2	2.24	0.61
28:A:2469:A:N6	28:A:2481:G:H1'	2.16	0.61
28:A:2681:C:OP2	31:D:114:LYS:NZ	2.26	0.61
32:E:145:ASP:HA	32:E:166:LYS:O	2.00	0.61
32:E:91:ASP:OD1	32:E:92:HIS:N	2.34	0.61
40:M:108:VAL:HG13	40:M:112:LEU:HD23	1.82	0.61
41:N:103:ARG:HD3	41:N:110:MET:CE	2.30	0.61
41:N:73:ASN:CA	41:N:76:VAL:HG12	2.30	0.61
42:O:24:THR:OG1	42:O:90:VAL:HG12	2.01	0.61
27:5:133:PRO:HD3	28:A:2171:A:H5'	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1178:C:H2'	28:A:1179:G:C8	2.35	0.61
31:D:3:GLY:O	31:D:4:LEU:HD12	2.00	0.61
34:G:19:ASN:HB3	34:G:22:VAL:CG2	2.31	0.61
40:M:35:ALA:O	40:M:128:THR:HA	2.01	0.61
43:P:74:GLN:HB2	43:P:77:SER:HB2	1.82	0.61
27:5:108:GLU:OE1	28:A:2126:A:O2'	2.14	0.60
54:6:44:G:H5'	54:6:45:U:C5	2.36	0.60
28:A:1173:U:N3	28:A:1174:U:H1'	2.16	0.60
28:A:156:A:H2'	28:A:157:C:O4'	2.02	0.60
28:A:2116:G:OP1	28:A:2117:A:N6	2.34	0.60
28:A:274:C:H2'	28:A:275:C:O4'	2.00	0.60
28:A:588:U:O2'	28:A:589:U:H5'	2.01	0.60
28:A:728:G:H4'	30:C:12:ARG:HD3	1.83	0.60
28:A:893:C:H2'	28:A:894:U:H6	1.65	0.60
30:C:65:ASP:OD2	30:C:101:ARG:NH1	2.34	0.60
30:C:78:GLU:OE2	30:C:94:LEU:HD22	2.01	0.60
32:E:69:ARG:O	32:E:70:SER:OG	2.17	0.60
34:G:31:GLU:O	34:G:33:THR:N	2.32	0.60
35:H:94:ILE:HG23	35:H:115:VAL:O	2.01	0.60
39:L:96:LYS:N	39:L:101:ILE:HD12	2.15	0.60
40:M:108:VAL:HG13	40:M:109:PRO:HD2	1.82	0.60
45:R:24:LYS:O	45:R:25:LEU:HD12	2.01	0.60
27:5:35:THR:CG2	27:5:219:GLY:HA2	2.30	0.60
56:8:47:U:H3'	56:8:48:C:H5'	1.83	0.60
58:9:58:A:H1'	58:9:60:U:C5	2.35	0.60
58:9:7:A:H3'	58:9:8:U:H5''	1.82	0.60
28:A:144:A:H2'	28:A:145:C:H6	1.64	0.60
28:A:1509:A:H1'	28:A:1510:G:H5'	1.83	0.60
28:A:1550:C:H2'	28:A:1551:A:C8	2.36	0.60
28:A:2477:U:H4'	28:A:2479:U:O4	2.01	0.60
28:A:273:G:H2'	28:A:274:C:H6	1.65	0.60
28:A:404:A:H4'	28:A:405:U:O5'	2.01	0.60
31:D:107:VAL:HG21	31:D:203:VAL:HG22	1.81	0.60
32:E:97:ASN:HB2	32:E:100:MET:CG	2.31	0.60
28:A:2748:A:H1'	34:G:66:THR:HG23	1.83	0.60
35:H:104:THR:HG23	35:H:109:GLU:HG3	1.83	0.60
37:J:56:VAL:HB	37:J:124:VAL:HA	1.83	0.60
22:0:8:THR:CG2	28:A:2020:A:H5'	2.32	0.60
58:9:19:G:O5'	58:9:57:G:N2	2.34	0.60
28:A:1492:G:O6	28:A:1498:C:N4	2.34	0.60
28:A:1655:A:C4'	31:D:118:PHE:HB2	2.32	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2107:G:H2'	28:A:2108:A:C8	2.37	0.60
34:G:61:TRP:O	34:G:65:GLY:N	2.26	0.60
35:H:82:SER:HB3	35:H:99:ILE:CG2	2.31	0.60
35:H:99:ILE:HD11	35:H:101:ASP:OD2	2.01	0.60
39:L:110:VAL:HB	39:L:127:VAL:HG23	1.83	0.60
48:U:96:LYS:O	48:U:97:SER:OG	2.15	0.60
58:9:18:G:N2	58:9:55:U:H1'	2.15	0.60
58:9:61:C:H2'	58:9:62:C:C6	2.36	0.60
28:A:1275:A:N1	28:A:1295:C:O2'	2.32	0.60
28:A:1856:U:H2'	28:A:1857:G:H5'	1.83	0.60
28:A:2179:C:H2'	28:A:2180:U:C6	2.36	0.60
28:A:445:C:O2'	28:A:446:G:H5'	2.01	0.60
39:L:85:VAL:CG2	39:L:94:THR:HG22	2.31	0.60
44:Q:86:SER:O	44:Q:88:GLU:N	2.34	0.60
47:T:67:VAL:O	47:T:67:VAL:HG22	2.01	0.60
50:W:24:ARG:NE	50:W:65:LYS:HE2	2.16	0.60
27:5:164:ARG:NH1	27:5:165:ASN:O	2.34	0.60
58:9:18:G:H1	58:9:55:U:C1'	2.14	0.60
28:A:1401:G:OP1	55:7:18:G:O2'	146.26	0.60
28:A:1759:A:HO2'	28:A:2714:G:HO2'	1.43	0.60
31:D:120:GLY:HA2	31:D:162:ALA:CB	2.32	0.60
36:I:76:ALA:HA	36:I:131:THR:HG21	1.83	0.60
37:J:117:ALA:HA	37:J:120:ARG:HH21	1.66	0.60
43:P:27:VAL:CG2	43:P:83:ILE:HD13	2.31	0.60
27:5:3:LYS:NZ	28:A:2109:U:O4	2.35	0.60
22:0:4:GLN:HE22	28:A:2056:G:H4'	1.65	0.60
28:A:2171:A:H1'	28:A:2172:U:C5	2.36	0.60
28:A:2446:G:OP1	28:A:2502:G:N2	2.35	0.60
28:A:995:C:C2	37:J:3:THR:HG23	2.36	0.60
32:E:97:ASN:HB2	32:E:100:MET:HG3	1.83	0.60
32:E:175:ILE:HD11	32:E:180:LEU:HD11	1.83	0.60
35:H:97:ARG:NH2	35:H:114:GLU:HB3	2.17	0.60
38:K:36:GLY:HA2	38:K:62:VAL:O	2.02	0.60
50:W:77:LYS:O	50:W:78:PHE:HB2	2.02	0.60
28:A:2199:A:OP1	51:X:36:ARG:NH1	2.33	0.60
28:A:1046:A:C2'	28:A:1047:G:H5'	3.82	0.60
27:5:35:THR:HG21	28:A:2130:U:C5	2.35	0.60
33:F:128:SER:HA	33:F:154:THR:HA	1.83	0.60
33:F:36:ASN:HB3	33:F:152:ASP:OD1	2.02	0.60
50:W:39:GLN:HG2	50:W:40:ARG:N	2.17	0.60
51:X:33:HIS:O	51:X:34:SER:OG	2.19	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:0:4:GLN:O	22:0:5:ASN:ND2	2.34	0.60
27:5:201:PRO:HG2	27:5:206:GLY:CA	2.32	0.60
28:A:1177:G:C3'	28:A:1178:C:H5''	2.32	0.60
28:A:1550:C:H2'	28:A:1551:A:H8	1.65	0.60
28:A:1563:U:H2'	28:A:1564:C:C6	2.36	0.60
28:A:2169:A:N6	28:A:2170:A:N1	2.50	0.60
28:A:2584:U:H2'	28:A:2585:U:H5'	1.83	0.60
28:A:2679:A:O2'	28:A:2680:U:H5'	2.02	0.60
28:A:493:G:O2'	28:A:494:G:H5'	2.02	0.60
38:K:13:ASN:O	38:K:14:SER:OG	2.15	0.60
42:O:79:ALA:HB3	42:O:113:ALA:HB3	1.83	0.60
43:P:30:TRP:CE3	43:P:37:LYS:HG2	2.37	0.60
53:Z:23:LEU:HD11	53:Z:50:VAL:HG11	1.84	0.60
53:Z:19:HIS:O	53:Z:23:LEU:HD13	2.02	0.60
22:0:24:VAL:O	22:0:25:THR:OG1	2.18	0.60
22:0:8:THR:HG21	28:A:2020:A:H5'	1.82	0.60
28:A:1545:A:C2'	28:A:1546:G:H5'	2.32	0.60
28:A:1592:C:H2'	28:A:1593:A:C8	2.37	0.60
28:A:1924:C:H2'	28:A:1925:C:H5'	1.84	0.60
28:A:2059:A:N7	28:A:2503:A:H2'	2.17	0.60
28:A:2298:A:H2'	28:A:2299:U:O4'	2.01	0.60
28:A:364:C:O2'	28:A:365:U:H5'	2.01	0.60
32:E:134:LEU:HD23	32:E:161:ALA:HB2	1.82	0.60
34:G:101:VAL:CG1	34:G:115:GLN:HG3	2.32	0.60
35:H:129:GLU:H	35:H:142:VAL:HG13	1.67	0.60
40:M:74:THR:HB	40:M:87:GLY:O	2.02	0.60
46:S:3:THR:CG2	46:S:107:VAL:HG13	2.31	0.60
27:5:35:THR:N	27:5:219:GLY:HA3	2.16	0.60
27:5:65:LEU:CD1	27:5:161:VAL:HG21	2.31	0.60
28:A:1279:G:H2'	28:A:1279:G:N3	3.17	0.60
28:A:1496:A:O2'	28:A:1577:C:O2'	2.16	0.60
28:A:1779:U:O2	28:A:1783:A:N6	2.35	0.60
28:A:197:A:H2'	28:A:198:C:H5'	1.84	0.60
28:A:2632:A:H2'	28:A:2633:G:C8	2.37	0.60
28:A:427:U:OP1	31:D:13:ARG:NH2	138.82	0.60
30:C:124:LYS:C	30:C:191:LEU:HD23	2.22	0.60
35:H:104:THR:CB	35:H:109:GLU:HA	2.32	0.60
35:H:78:VAL:H	35:H:146:VAL:HG12	1.65	0.60
36:I:18:ASN:HB2	36:I:38:CYS:HB3	1.84	0.60
42:O:105:ALA:O	42:O:107:ALA:N	2.30	0.60
46:S:29:VAL:HG23	46:S:69:LEU:O	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:35:THR:HG21	28:A:2130:U:C6	2.36	0.59
54:6:36:A:H2'	54:6:37:A:C8	2.37	0.59
28:A:106:C:HO2'	28:A:294:A:HO2'	1.49	0.59
28:A:1386:C:H2'	28:A:1387:A:C8	2.37	0.59
28:A:1411:U:C2'	28:A:1412:U:H5'	2.32	0.59
28:A:2636:C:O2'	31:D:45:TYR:OH	2.20	0.59
28:A:547:A:H4'	28:A:548:G:O5'	3.81	0.59
30:C:20:ASN:OD1	30:C:22:GLU:HG2	2.00	0.59
40:M:42:THR:HG22	40:M:93:VAL:CG1	2.32	0.59
23:1:35:LEU:O	23:1:35:LEU:HD12	2.01	0.59
28:A:1607:C:H4'	28:A:1608:A:O5'	2.02	0.59
28:A:530:G:N3	28:A:530:G:H3'	5.34	0.59
39:L:57:LEU:HD13	39:L:60:ARG:NH1	2.17	0.59
28:A:1112:G:H2'	28:A:1113:U:C6	2.37	0.59
28:A:1207:C:O2'	28:A:1208:C:H5'	2.02	0.59
28:A:188:G:C2'	28:A:189:G:H5'	2.32	0.59
28:A:2638:G:O2'	28:A:2775:G:N2	2.33	0.59
28:A:2791:G:N2	28:A:2805:C:O2	2.29	0.59
32:E:58:LYS:HE2	32:E:62:GLN:HA	1.84	0.59
34:G:153:PRO:HA	34:G:159:LYS:O	2.02	0.59
47:T:28:ASN:HB2	47:T:91:GLN:NE2	2.17	0.59
27:5:36:ALA:HB1	27:5:38:PHE:H	1.66	0.59
54:6:35:A:C1'	54:6:36:A:H5'	2.28	0.59
28:A:1216:G:H5''	44:Q:10:ARG:NH1	2.18	0.59
27:5:133:PRO:HG2	28:A:2172:U:C1'	2.32	0.59
28:A:225:C:H2'	28:A:226:A:O4'	2.03	0.59
28:A:571:U:H5''	28:A:572:A:OP2	4.89	0.59
28:A:881:G:N2	28:A:898:C:O2'	2.35	0.59
28:A:782:A:C8	30:C:219:VAL:HG21	2.36	0.59
34:G:44:HIS:HA	34:G:49:LEU:HD23	1.84	0.59
36:I:4:VAL:CG1	36:I:7:TYR:HB3	2.32	0.59
50:W:36:ILE:HD13	50:W:42:THR:HG21	1.83	0.59
27:5:44:VAL:HA	27:5:213:SER:O	2.02	0.59
28:A:1314:C:OP2	46:S:6:LYS:HD2	40.50	0.59
29:B:76:G:O2'	29:B:77:U:H5'	2.02	0.59
32:E:32:VAL:CG2	32:E:178:VAL:HG12	2.28	0.59
36:I:102:ARG:CA	36:I:141:ASP:HA	2.32	0.59
38:K:15:GLY:O	38:K:46:ALA:HA	2.02	0.59
42:O:38:GLN:HG2	42:O:50:ALA:CB	2.33	0.59
47:T:92:ASN:O	47:T:93:LEU:HD12	2.03	0.59
27:5:33:LEU:O	27:5:220:ALA:N	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:36:ALA:HA	27:5:37:LYS:HG3	1.83	0.59
33:F:79:ARG:NH1	56:8:56:C:N3	2.49	0.59
58:9:9:A:N6	58:9:22:G:H3'	2.18	0.59
28:A:1055:G:O2'	28:A:1056:G:H5'	2.02	0.59
28:A:1132:U:H3'	28:A:1133:A:H5''	1.85	0.59
28:A:976:G:O2'	28:A:1155:A:O2'	2.17	0.59
28:A:1724:G:H1	28:A:1737:G:H1'	1.66	0.59
28:A:1874:C:H2'	28:A:1875:G:O4'	2.02	0.59
28:A:287:G:O6	28:A:353:C:N4	2.35	0.59
44:Q:97:ILE:HD11	44:Q:108:LEU:HD12	1.85	0.59
28:A:1216:G:OP1	44:Q:10:ARG:NH2	2.36	0.59
45:R:54:VAL:CG2	45:R:57:GLY:HA3	2.32	0.59
50:W:19:ARG:HE	50:W:22:VAL:CG2	2.16	0.59
26:4:36:ARG:HD3	28:A:2742:G:OP1	2.02	0.59
28:A:1060:U:H4'	28:A:1061:U:C5'	2.33	0.59
28:A:1495:A:C2	28:A:1578:U:H1'	2.33	0.59
27:5:4:LEU:HD13	28:A:2106:U:H3'	1.84	0.59
28:A:2108:A:O2'	28:A:2109:U:H5'	2.01	0.59
28:A:2115:G:H4'	28:A:2167:U:C1'	2.33	0.59
28:A:2178:C:H2'	28:A:2179:C:C5	2.37	0.59
28:A:2816:G:O2'	28:A:2817:U:H5'	2.02	0.59
28:A:327:G:H2'	28:A:328:U:C6	2.38	0.59
31:D:16:THR:HG22	31:D:20:VAL:HB	1.83	0.59
32:E:149:ILE:HD11	32:E:188:MET:HE3	1.84	0.59
33:F:88:VAL:HG12	33:F:90:LEU:CD1	2.32	0.59
47:T:35:ALA:O	47:T:36:LYS:HD2	2.02	0.59
28:A:2090:A:H2	51:X:31:ASN:HD21	1.50	0.59
26:4:1:MET:CE	26:4:36:ARG:HB2	2.32	0.59
27:5:51:ASP:HB2	27:5:204:ALA:CB	2.22	0.59
28:A:2210:U:H4'	28:A:2211:A:C5'	2.33	0.59
28:A:2345:G:H4'	28:A:2346:A:C5'	2.31	0.59
28:A:854:C:O2'	28:A:855:G:H5'	2.03	0.59
28:A:873:C:O2	28:A:904:G:N2	2.33	0.59
39:L:122:VAL:CG1	39:L:142:ILE:HG23	2.33	0.59
43:P:28:LYS:O	43:P:81:ASP:HB3	2.03	0.59
48:U:73:ASN:ND2	48:U:80:ASP:OD2	2.36	0.59
26:4:2:LYS:HD3	26:4:4:ARG:HH22	1.67	0.59
54:6:64:A:H2'	54:6:65:G:O4'	2.03	0.59
28:A:633:A:OP1	39:L:71:ALA:HB2	2.03	0.59
28:A:818:G:O2'	28:A:819:A:H5'	4.48	0.59
32:E:68:ALA:O	32:E:70:SER:N	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:H:71:LYS:HB3	35:H:108:VAL:CG1	2.33	0.59
27:5:141:LYS:HB2	27:5:164:ARG:HH21	1.68	0.59
27:5:27:ILE:CD1	27:5:214:ILE:HG12	2.33	0.59
55:7:23:A:H1'	55:7:24:A:N7	2.17	0.59
58:9:65:G:H2'	58:9:66:U:C6	2.38	0.59
28:A:1007:C:H5''	37:J:37:ARG:HH21	1.68	0.59
30:C:124:LYS:HG3	30:C:125:PRO:HD2	1.85	0.59
31:D:200:ASP:O	31:D:201:LEU:HD12	2.03	0.59
34:G:32:LEU:O	34:G:33:THR:OG1	2.19	0.59
28:A:558:U:C5'	37:J:111:LYS:HE3	2.16	0.59
37:J:13:ARG:O	37:J:14:ASP:HB2	2.03	0.59
37:J:17:VAL:HG12	37:J:55:ILE:CD1	2.32	0.59
46:S:27:LYS:O	46:S:71:VAL:HG12	2.02	0.59
27:5:97:MET:HG2	27:5:98:GLU:CD	2.24	0.58
28:A:159:G:H21	28:A:161:A:H3'	12.85	0.58
28:A:228:C:H4'	28:A:229:C:H5''	1.85	0.58
28:A:2841:C:H2'	28:A:2842:G:C8	2.38	0.58
28:A:59:U:O2'	28:A:74:A:OP2	2.17	0.58
28:A:880:G:H1	28:A:897:C:N4	2.01	0.58
28:A:888:C:H5'	28:A:889:C:H5	1.68	0.58
31:D:52:THR:HG23	31:D:53:GLY:N	2.16	0.58
35:H:72:ILE:HG12	35:H:130:VAL:HG22	1.85	0.58
35:H:75:LEU:CD2	35:H:103:VAL:HG22	2.32	0.58
37:J:16:TYR:CG	37:J:140:LEU:HD23	2.37	0.58
49:V:2:PHE:HB3	49:V:50:MET:CE	2.33	0.58
28:A:188:G:H5'	51:X:13:THR:HG21	1.85	0.58
28:A:2000:C:O2'	28:A:2001:C:H5'	2.02	0.58
28:A:263:G:H2'	28:A:264:C:O4'	2.03	0.58
28:A:285:G:H3'	28:A:286:U:C5	2.37	0.58
28:A:777:G:O2'	28:A:778:G:H5'	2.03	0.58
32:E:147:LEU:HD22	32:E:149:ILE:HG23	1.84	0.58
35:H:131:SER:OG	35:H:140:ALA:N	2.24	0.58
37:J:140:LEU:O	37:J:140:LEU:HD12	2.02	0.58
46:S:7:HIS:ND1	46:S:10:ALA:HB2	2.19	0.58
47:T:28:ASN:O	47:T:29:THR:HG22	2.03	0.58
26:4:7:VAL:HG23	26:4:8:LYS:N	2.12	0.58
56:8:5:G:O2'	56:8:6:G:H5'	2.03	0.58
27:5:54:LYS:HD3	58:9:63:G:O4'	2.03	0.58
28:A:1365:A:O2'	51:X:10:ARG:NH1	2.35	0.58
28:A:2430:A:H5'	28:A:2431:U:OP2	2.03	0.58
28:A:474:G:H2'	28:A:475:C:O4'	6.62	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B:21:G:H2'	29:B:22:U:H5'	1.86	0.58
34:G:101:VAL:CG1	34:G:115:GLN:HA	2.34	0.58
50:W:23:LYS:O	50:W:66:VAL:HB	2.03	0.58
27:5:130:VAL:HG11	28:A:2119:A:C2	2.39	0.58
28:A:1138:G:H3'	28:A:1138:G:N3	4.71	0.58
28:A:1404:C:O2'	28:A:1405:U:H5'	2.03	0.58
28:A:1548:A:H2'	28:A:1549:A:H8	1.67	0.58
28:A:1724:G:N1	28:A:1737:G:H1'	2.18	0.58
28:A:196:A:H2'	28:A:196:A:N3	2.17	0.58
28:A:322:A:H4'	28:A:323:C:OP2	2.03	0.58
35:H:94:ILE:O	35:H:114:GLU:HG3	2.03	0.58
43:P:48:ALA:O	43:P:49:ILE:HG13	2.04	0.58
46:S:83:LYS:HD3	46:S:95:ARG:HH11	1.68	0.58
27:5:19:LYS:HE3	27:5:20:GLN:HG2	1.85	0.58
28:A:1071:G:H1'	28:A:1089:A:N7	2.18	0.58
28:A:1227:G:OP2	44:Q:15:LYS:NZ	2.34	0.58
28:A:2076:U:OP2	28:A:2238:G:N2	2.33	0.58
28:A:2328:A:H2'	28:A:2329:U:C6	2.39	0.58
28:A:2358:A:H61	39:L:54:GLN:NE2	2.01	0.58
28:A:710:U:C3'	28:A:711:G:H5''	2.32	0.58
28:A:864:G:P	29:B:100:G:H21	2.26	0.58
29:B:2:G:N2	29:B:119:A:H1'	2.18	0.58
29:B:94:A:C2'	29:B:95:U:H5'	2.33	0.58
32:E:56:GLY:HA2	32:E:73:ILE:CG2	2.34	0.58
36:I:101:SER:HB3	36:I:104:GLN:HG3	1.86	0.58
28:A:2562:U:H4'	38:K:25:LEU:HD22	1.85	0.58
28:A:954:G:H4'	40:M:13:HIS:CE1	2.38	0.58
43:P:62:LYS:HB3	43:P:69:VAL:CG2	2.33	0.58
44:Q:46:TYR:O	44:Q:50:ARG:NH1	2.37	0.58
28:A:1185:G:O2'	28:A:1186:G:H5'	5.34	0.58
28:A:1497:U:N3	28:A:1578:U:OP1	2.36	0.58
28:A:2061:G:H21	28:A:2062:A:H8	1.51	0.58
28:A:2065:C:H2'	28:A:2066:C:O4'	2.04	0.58
28:A:2094:A:H5'	35:H:25:TYR:HD1	1.69	0.58
28:A:2842:G:O2'	28:A:2843:G:H5'	2.04	0.58
28:A:350:G:H2'	28:A:351:C:C6	2.39	0.58
28:A:359:G:H2'	28:A:360:U:O4'	2.03	0.58
34:G:85:LYS:HA	34:G:131:VAL:HG12	1.85	0.58
40:M:35:ALA:O	40:M:36:VAL:HB	2.04	0.58
41:N:67:PHE:O	41:N:71:ARG:HD2	2.03	0.58
58:9:19:G:O4'	58:9:57:G:N2	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:1:MET:N	28:A:2109:U:O4	2.30	0.58
28:A:2353:G:N3	50:W:30:VAL:HG13	2.19	0.58
28:A:2393:U:H5'	39:L:60:ARG:O	2.04	0.58
28:A:978:G:O2'	28:A:979:A:H5'	2.03	0.58
33:F:39:VAL:O	33:F:41:GLU:N	2.37	0.58
36:I:40:ALA:HB1	36:I:68:PHE:CZ	2.38	0.58
28:A:635:C:P	39:L:126:ARG:HH11	2.27	0.58
49:V:6:ALA:CB	49:V:42:LEU:HD23	2.33	0.58
50:W:30:VAL:HG23	50:W:59:PHE:HD1	1.68	0.58
27:5:23:ILE:HD13	27:5:227:ALA:HB2	1.86	0.58
58:9:34:G:H2'	58:9:34:G:N3	2.17	0.58
28:A:1198:U:H4'	44:Q:8:ILE:HG21	1.84	0.58
28:A:2193:G:H2'	28:A:2194:U:C6	2.39	0.58
28:A:198:C:H42	28:A:248:G:H1	1.52	0.58
28:A:2570:G:H2'	28:A:2571:U:O4'	2.03	0.58
31:D:80:TRP:CD1	31:D:202:ILE:HD11	2.37	0.58
35:H:43:ASN:HA	35:H:46:PHE:CB	2.33	0.58
36:I:120:ASP:O	36:I:124:MET:HG3	2.03	0.58
36:I:58:ILE:HD12	36:I:68:PHE:CB	2.33	0.58
37:J:54:ILE:HD11	37:J:122:LEU:CD1	2.34	0.58
39:L:122:VAL:HG12	39:L:142:ILE:HG12	1.85	0.58
44:Q:97:ILE:HD12	44:Q:105:PHE:HB2	1.86	0.58
47:T:10:VAL:HG11	47:T:42:GLU:HG2	1.86	0.58
50:W:39:GLN:HE21	50:W:43:LYS:N	2.01	0.58
25:3:15:LYS:HG2	25:3:16:THR:O	2.04	0.58
58:9:5:G:H2'	58:9:6:G:H5'	1.85	0.58
28:A:1416:G:O2'	28:A:1417:C:OP2	2.16	0.58
28:A:1655:A:H5'	31:D:118:PHE:CG	2.38	0.58
28:A:1869:G:N2	28:A:1871:A:O2'	2.37	0.58
28:A:2135:A:H3'	28:A:2136:G:C8	2.36	0.58
28:A:1129:A:O2'	28:A:2515:C:O2	2.14	0.58
28:A:266:G:H2'	28:A:267:C:C5'	2.33	0.58
28:A:308:G:C8	28:A:501:A:H1'	2.39	0.58
28:A:629:G:N3	28:A:639:U:O2'	2.35	0.58
32:E:147:LEU:HB2	32:E:183:PHE:HD2	1.69	0.58
33:F:132:ARG:O	33:F:133:GLU:HB3	2.03	0.58
34:G:112:VAL:HG23	34:G:113:ASP:H	1.68	0.58
37:J:4:PHE:HB3	37:J:44:TYR:HE2	1.68	0.58
43:P:105:LYS:HE3	43:P:108:ARG:NH2	2.15	0.58
49:V:24:ASN:C	49:V:25:LYS:HD2	2.24	0.58
26:4:6:SER:HB2	28:A:1031:G:H4'	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:175:ILE:HG22	27:5:185:LEU:CD2	2.28	0.58
27:5:43:ASP:OD1	27:5:215:SER:N	2.37	0.58
27:5:7:ARG:HH12	27:5:219:GLY:CA	2.16	0.58
58:9:29:G:H2'	58:9:30:G:C8	2.34	0.58
28:A:2533:U:H2'	28:A:2534:A:H5'	1.86	0.58
33:F:99:PHE:CZ	33:F:103:ILE:HD11	2.38	0.58
35:H:21:VAL:HG22	35:H:22:LYS:N	2.18	0.58
48:U:60:LYS:HD2	48:U:61:GLU:H	1.68	0.58
50:W:28:GLU:O	50:W:31:LEU:HG	2.04	0.58
26:4:14:CYS:N	26:4:27:CYS:SG	2.76	0.57
27:5:140:PRO:CG	28:A:2122:U:H5''	2.33	0.57
58:9:29:G:H1	58:9:41:C:N4	2.02	0.57
28:A:2107:G:H2'	28:A:2108:A:H8	1.68	0.57
28:A:2872:A:O2'	28:A:2873:A:H5'	2.04	0.57
28:A:809:G:C2'	28:A:810:U:H5'	2.34	0.57
31:D:107:VAL:CG2	31:D:203:VAL:HG22	2.33	0.57
32:E:16:GLU:O	32:E:20:GLY:N	2.33	0.57
34:G:84:LYS:HD2	34:G:132:LEU:N	2.19	0.57
38:K:61:VAL:HG23	38:K:87:LEU:HD11	1.86	0.57
28:A:1243:C:H1'	39:L:4:ASN:O	2.04	0.57
27:5:80:GLN:N	27:5:120:ALA:HB2	2.19	0.57
28:A:2132:U:H3	28:A:2159:G:N2	2.01	0.57
28:A:1129:A:N6	28:A:2491:U:OP1	2.37	0.57
28:A:394:C:N4	28:A:395:U:O4	2.37	0.57
28:A:402:A:H2'	28:A:403:U:O4'	2.04	0.57
28:A:523:C:O2	28:A:554:U:O2'	2.22	0.57
28:A:827:U:O2'	28:A:2068:U:N3	2.37	0.57
32:E:168:ASP:OD1	32:E:169:VAL:N	2.38	0.57
32:E:49:ARG:O	32:E:74:LYS:HD3	2.04	0.57
32:E:98:LYS:HB3	32:E:102:ARG:NH2	2.18	0.57
33:F:124:ARG:HA	33:F:160:LYS:O	2.03	0.57
35:H:127:GLU:OE1	35:H:147:VAL:HG11	2.04	0.57
35:H:4:ILE:CD1	35:H:44:ILE:HG22	2.34	0.57
35:H:59:ALA:O	35:H:62:LEU:HB3	2.03	0.57
36:I:108:ILE:O	36:I:111:THR:OG1	2.21	0.57
41:N:31:HIS:O	41:N:32:GLU:HB2	2.04	0.57
47:T:29:THR:HB	47:T:86:THR:HG22	1.86	0.57
27:5:60:ARG:HD3	27:5:164:ARG:CZ	2.34	0.57
27:5:87:ALA:HA	27:5:91:GLY:C	2.24	0.57
58:9:58:A:C1'	58:9:60:U:H5	2.17	0.57
58:9:64:A:H2'	58:9:65:G:O4'	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1188:U:O2'	28:A:1189:A:H5'	2.04	0.57
28:A:1510:G:H2'	28:A:1511:G:C8	2.39	0.57
28:A:2321:U:H5'	28:A:2322:A:OP2	2.03	0.57
26:4:1:MET:N	28:A:2526:G:N3	2.51	0.57
28:A:2841:C:N4	28:A:2842:G:O6	2.38	0.57
28:A:31:C:O2'	28:A:1238:G:OP1	2.22	0.57
28:A:527:C:H4'	28:A:528:A:O5'	2.04	0.57
35:H:103:VAL:CG1	35:H:110:VAL:HG12	2.34	0.57
35:H:44:ILE:HG13	35:H:45:GLU:N	2.18	0.57
36:I:104:GLN:O	36:I:105:LEU:HB2	2.04	0.57
53:Z:50:VAL:O	53:Z:54:VAL:HG22	2.04	0.57
27:5:214:ILE:HG22	27:5:224:VAL:N	2.20	0.57
28:A:1301:A:O2'	28:A:1302:A:H3'	2.04	0.57
28:A:1419:A:N6	28:A:1421:G:N3	2.52	0.57
28:A:1526:C:H2'	28:A:1527:G:H5'	1.87	0.57
28:A:1893:C:H2'	28:A:1894:C:C5'	2.35	0.57
28:A:2112:G:H2'	28:A:2113:U:H3'	1.86	0.57
28:A:2729:G:H5'	31:D:190:LYS:NZ	2.19	0.57
37:J:55:ILE:HG22	37:J:123:LYS:CB	2.33	0.57
47:T:69:ARG:HG3	47:T:69:ARG:HH11	1.69	0.57
27:5:21:TYR:CB	27:5:26:ALA:HB2	2.34	0.57
54:6:44:G:H4'	54:6:45:U:O5'	2.04	0.57
28:A:119:A:H1'	28:A:120:U:OP2	2.05	0.57
28:A:1534:U:H2'	28:A:1536:C:C4	2.39	0.57
28:A:774:G:C2'	28:A:775:G:H5'	4.88	0.57
29:B:86:G:C2'	29:B:87:U:H5''	2.30	0.57
31:D:121:THR:HB	31:D:127:PHE:CD2	2.39	0.57
28:A:2757:A:N1	34:G:66:THR:HG21	2.19	0.57
34:G:75:VAL:O	34:G:78:VAL:HG12	2.05	0.57
34:G:86:LEU:HD23	34:G:161:VAL:HG11	1.86	0.57
36:I:27:LEU:HD13	36:I:32:VAL:HG23	1.85	0.57
36:I:27:LEU:HD22	36:I:32:VAL:CB	2.34	0.57
28:A:1790:C:O2'	30:C:207:ALA:HB2	2.05	0.57
28:A:227:A:O2'	28:A:228:C:OP2	2.21	0.57
28:A:237:C:O2'	28:A:609:A:O2'	2.20	0.57
28:A:699:A:H2'	28:A:700:G:H5'	1.87	0.57
31:D:181:ASP:OD2	31:D:184:ARG:HD2	2.04	0.57
35:H:75:LEU:O	35:H:76:GLU:HG2	2.04	0.57
41:N:55:ALA:HA	41:N:80:PHE:CE1	2.39	0.57
28:A:1130:U:C2	28:A:2025:C:H5''	2.40	0.57
28:A:2809:A:OP2	28:A:2890:G:N1	2.25	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:D:120:GLY:HA2	31:D:162:ALA:HB2	1.87	0.57
31:D:9:VAL:CG2	31:D:26:VAL:HB	2.34	0.57
35:H:43:ASN:HA	35:H:46:PHE:HB3	1.85	0.57
36:I:98:GLY:HA3	36:I:137:LEU:CD2	2.31	0.57
40:M:71:LYS:HB3	40:M:93:VAL:O	2.04	0.57
42:O:31:THR:HG23	42:O:32:PRO:HD2	1.86	0.57
43:P:112:ARG:C	43:P:113:LEU:HG	2.24	0.57
47:T:44:LYS:O	47:T:48:GLN:HG2	2.05	0.57
48:U:47:PRO:HD3	48:U:55:GLY:HA2	1.86	0.57
49:V:72:VAL:CG1	49:V:93:ARG:HA	2.29	0.57
27:5:117:SER:OG	27:5:149:VAL:O	2.23	0.57
27:5:48:LEU:HD11	27:5:171:ILE:HG13	1.87	0.57
58:9:24:G:H2'	58:9:25:C:O4'	2.05	0.57
58:9:35:A:H2'	58:9:36:A:C5	2.39	0.57
28:A:1055:G:H1	28:A:1104:C:N4	1.97	0.57
28:A:2115:G:H5'	28:A:2167:U:C4'	2.35	0.57
28:A:2316:G:O2'	28:A:2317:A:H5'	2.05	0.57
28:A:2745:C:H2'	28:A:2746:U:C6	2.40	0.57
28:A:905:A:C2'	28:A:906:U:H5'	2.33	0.57
30:C:154:ALA:CB	30:C:161:VAL:HG23	2.35	0.57
33:F:142:TYR:O	33:F:145:VAL:HG22	2.04	0.57
36:I:109:ALA:HA	36:I:116:MET:SD	2.45	0.57
36:I:27:LEU:CD1	36:I:30:GLN:H	2.18	0.57
39:L:95:LEU:HB2	39:L:101:ILE:CD1	2.27	0.57
43:P:24:THR:O	43:P:86:LYS:HB2	2.05	0.57
50:W:18:LYS:HG3	50:W:19:ARG:N	2.20	0.57
22:0:21:LEU:HD21	46:S:41:LYS:HE3	1.86	0.57
27:5:27:ILE:O	27:5:31:LYS:HG3	2.05	0.57
27:5:81:GLY:H	27:5:84:ALA:CB	2.16	0.57
56:8:69:C:O2'	56:8:70:G:H5'	2.05	0.57
28:A:2315:G:H2'	28:A:2316:G:H8	1.70	0.57
28:A:2438:U:O2'	28:A:2439:A:H5''	2.05	0.57
28:A:2822:G:O6	41:N:2:ARG:HD3	2.04	0.57
28:A:541:A:H2'	28:A:542:C:O4'	2.05	0.57
28:A:587:C:O2'	39:L:19:LEU:HD22	2.04	0.57
28:A:760:G:H2'	28:A:761:A:H5'	1.86	0.57
28:A:885:C:H2'	28:A:886:A:H5'	1.86	0.57
28:A:978:G:C2'	28:A:979:A:H5'	2.34	0.57
33:F:66:ILE:HG13	33:F:66:ILE:O	2.05	0.57
37:J:96:ARG:HE	37:J:99:ARG:HG3	1.70	0.57
32:E:111:GLU:HG2	39:L:2:ARG:NH2	2.20	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:N:24:MET:CE	41:N:36:THR:HG21	2.34	0.57
45:R:58:VAL:HG13	45:R:102:SER:HB2	1.85	0.57
27:5:8:MET:O	27:5:12:ARG:HG3	2.05	0.57
40:M:59:ARG:HD3	54:6:54:U:H4'	1.86	0.57
56:8:17:C:OP1	56:8:60:U:O2'	2.19	0.57
56:8:1:C:H41	56:8:72:A:H61	1.52	0.57
58:9:51:U:H3	58:9:63:G:H1	1.53	0.57
28:A:357:C:H2'	28:A:358:U:C6	2.40	0.57
28:A:436:C:H2'	28:A:437:U:C6	3.14	0.57
28:A:869:G:H2'	28:A:870:U:O4'	2.05	0.57
30:C:2:VAL:HG11	30:C:201:LEU:CD2	2.34	0.57
28:A:674:G:H1'	32:E:69:ARG:NH1	2.20	0.57
33:F:64:PRO:HA	33:F:88:VAL:HG22	1.87	0.57
35:H:92:GLY:HA2	35:H:116:ARG:CG	2.34	0.57
35:H:89:LYS:HD2	35:H:120:GLY:O	10.39	0.57
36:I:100:ILE:CG2	36:I:139:VAL:HG23	2.35	0.57
41:N:1:MET:O	41:N:2:ARG:HB3	2.03	0.57
42:O:26:LEU:HD13	42:O:39:VAL:HG22	1.87	0.57
38:K:76:VAL:N	43:P:72:VAL:HG22	2.20	0.57
37:J:44:TYR:CG	44:Q:63:ARG:HD3	2.39	0.57
24:2:11:LYS:HE3	28:A:686:U:O2	2.05	0.56
28:A:11:C:H2'	28:A:12:U:H5'	1.86	0.56
28:A:1702:G:H2'	28:A:1703:G:O4'	2.04	0.56
27:5:7:ARG:HG3	28:A:2130:U:N3	2.20	0.56
28:A:2521:C:C2'	28:A:2522:U:H5'	2.34	0.56
33:F:3:LEU:O	33:F:7:TYR:N	2.38	0.56
37:J:16:TYR:HB3	37:J:140:LEU:HD23	1.87	0.56
39:L:93:ASN:O	39:L:95:LEU:N	2.35	0.56
46:S:83:LYS:HD3	46:S:95:ARG:NH1	2.20	0.56
47:T:32:LEU:HB2	47:T:83:ALA:CB	2.34	0.56
28:A:102:U:C2	52:Y:2:LYS:HD2	2.40	0.56
27:5:180:PHE:HB3	27:5:184:LYS:HD3	1.87	0.56
27:5:47:ASN:HB2	27:5:210:LYS:CB	2.35	0.56
27:5:23:ILE:HG21	27:5:232:SER:O	2.06	0.56
27:5:51:ASP:N	27:5:57:GLN:OE1	2.37	0.56
28:A:266:G:C2'	28:A:267:C:H5''	2.35	0.56
28:A:426:C:H2'	28:A:427:U:H6	1.70	0.56
28:A:834:G:N3	28:A:2358:A:H1'	2.20	0.56
28:A:881:G:H1	28:A:898:C:H1'	1.69	0.56
28:A:895:U:H5''	28:A:896:A:H5'	1.85	0.56
32:E:155:GLU:HG3	32:E:159:LEU:HD13	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:J:16:TYR:HB2	37:J:54:ILE:HG22	1.87	0.56
37:J:73:VAL:HG21	37:J:75:TYR:CE2	2.40	0.56
41:N:33:ILE:HD11	41:N:114:GLU:OE1	2.04	0.56
44:Q:16:ILE:HD12	44:Q:31:TYR:CE1	2.36	0.56
47:T:69:ARG:NH1	47:T:70:HIS:CD2	2.73	0.56
50:W:36:ILE:HB	50:W:39:GLN:OE1	2.04	0.56
51:X:38:TRP:NE1	51:X:40:GLU:OE1	2.34	0.56
51:X:70:LEU:O	51:X:73:ARG:HG2	2.05	0.56
27:5:141:LYS:CB	27:5:164:ARG:HH21	2.18	0.56
27:5:79:THR:HA	27:5:120:ALA:CB	2.27	0.56
54:6:5:G:N2	54:6:68:C:O2	2.38	0.56
28:A:1020:A:H1'	28:A:1021:A:OP2	2.04	0.56
28:A:1172:C:H2'	28:A:1173:U:C1'	2.35	0.56
28:A:179:C:O2'	28:A:180:G:H5'	2.04	0.56
28:A:1864:U:OP1	28:A:2410:G:O2'	2.19	0.56
28:A:189:G:O6	28:A:205:G:O2'	2.21	0.56
28:A:883:G:C6	28:A:894:U:H1'	2.40	0.56
28:A:883:G:O6	28:A:894:U:H1'	2.05	0.56
29:B:110:C:H2'	29:B:111:U:O4'	2.05	0.56
36:I:51:GLY:C	36:I:52:LEU:HD12	2.26	0.56
42:O:79:ALA:CB	42:O:115:LEU:HD13	2.26	0.56
42:O:11:ALA:O	42:O:15:ARG:HG2	2.04	0.56
22:0:9:ARG:HH12	44:Q:29:ARG:NH1	2.02	0.56
27:5:1:MET:N	28:A:2110:G:O6	2.38	0.56
28:A:1628:G:H2'	28:A:1629:U:H6	1.69	0.56
28:A:2110:G:H5''	28:A:2111:U:C5	2.34	0.56
30:C:77:VAL:HG23	30:C:111:ALA:HA	1.87	0.56
38:K:43:ILE:HD12	38:K:56:ASP:HB2	1.86	0.56
54:6:57:G:C2'	54:6:58:A:H5'	2.35	0.56
27:5:54:LYS:HD3	58:9:63:G:H4'	1.88	0.56
28:A:1097:U:H2'	28:A:1098:A:C5'	2.35	0.56
28:A:1191:G:O2'	28:A:1192:G:H5'	2.06	0.56
28:A:2156:G:H4'	28:A:2158:A:N6	2.21	0.56
28:A:2394:C:N3	58:9:76:A:O2'	2.38	0.56
28:A:2705:A:H2'	28:A:2706:A:O4'	2.04	0.56
28:A:2747:G:O2'	34:G:66:THR:HG22	2.04	0.56
28:A:700:G:O2'	28:A:701:G:H5'	2.05	0.56
34:G:97:VAL:HG12	34:G:97:VAL:O	2.04	0.56
35:H:67:ALA:HB1	35:H:70:GLU:H	1.70	0.56
51:X:48:LEU:HB2	51:X:50:VAL:HG23	1.86	0.56
27:5:133:PRO:HG2	28:A:2172:U:H1'	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1279:G:N2	28:A:1279:G:OP2	9.98	0.56
28:A:363:G:H2'	28:A:364:C:C6	2.40	0.56
35:H:75:LEU:HD21	35:H:103:VAL:HA	1.88	0.56
36:I:4:VAL:HG22	36:I:59:THR:HG23	1.88	0.56
28:A:873:C:H4'	40:M:64:TRP:HE1	1.70	0.56
43:P:50:ARG:HB2	43:P:56:SER:CA	2.36	0.56
27:5:221:GLY:HA3	28:A:2176:A:OP1	2.05	0.56
27:5:23:ILE:HG13	27:5:233:VAL:HA	1.88	0.56
28:A:2112:G:H1'	58:9:19:G:C4	2.41	0.56
58:9:35:A:H2'	58:9:36:A:C8	2.40	0.56
28:A:1055:G:C2'	28:A:1056:G:H5'	2.36	0.56
28:A:1323:C:H2'	28:A:1324:G:H5'	1.87	0.56
28:A:2101:A:H2'	28:A:2102:G:C8	2.40	0.56
28:A:2157:G:O2'	28:A:2158:A:OP1	2.23	0.56
28:A:329:G:O4'	28:A:477:A:H1'	2.06	0.56
30:C:123:ILE:HG23	30:C:191:LEU:CD2	2.35	0.56
28:A:2578:G:H21	31:D:130:GLN:HE22	1.52	0.56
32:E:131:THR:HG22	32:E:161:ALA:H	1.70	0.56
33:F:10:GLU:O	33:F:12:VAL:HG12	2.06	0.56
36:I:89:SER:O	36:I:97:VAL:HG21	2.06	0.56
43:P:63:ILE:HA	43:P:68:GLY:HA2	1.86	0.56
45:R:68:ARG:HD3	45:R:90:ARG:CB	2.35	0.56
28:A:143:C:H5'	47:T:3:ARG:HH12	1.70	0.56
58:9:54:U:H3	58:9:58:A:H62	1.53	0.56
28:A:768:G:N2	28:A:1379:U:O2'	2.39	0.56
28:A:1482:G:H2'	28:A:1483:G:C8	2.28	0.56
28:A:1488:C:O2'	28:A:1489:C:H5'	2.06	0.56
28:A:1870:C:H2'	28:A:1871:A:N7	2.20	0.56
28:A:2124:G:H2'	28:A:2125:G:O4'	2.05	0.56
28:A:228:C:H5''	28:A:229:C:C6	2.40	0.56
28:A:24:G:O2'	28:A:25:U:H5'	2.06	0.56
28:A:634:C:O2'	28:A:635:C:H5'	2.05	0.56
28:A:783:A:H3'	28:A:784:G:H5''	1.88	0.56
28:A:881:G:H22	28:A:898:C:C2'	2.19	0.56
32:E:147:LEU:CD2	32:E:149:ILE:HG23	2.36	0.56
34:G:98:LYS:H	34:G:103:ASN:ND2	2.03	0.56
35:H:44:ILE:O	35:H:47:PHE:HB3	2.05	0.56
36:I:9:LYS:CB	36:I:57:VAL:HG22	2.36	0.56
42:O:38:GLN:HA	42:O:50:ALA:CB	2.36	0.56
48:U:27:VAL:HG23	48:U:33:VAL:HG12	1.88	0.56
51:X:14:GLY:O	51:X:26:ARG:HB3	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:Y:13:GLU:O	52:Y:17:GLU:N	2.37	0.56
27:5:62:ALA:N	27:5:144:THR:O	2.26	0.56
27:5:77:VAL:HG22	27:5:115:ILE:CG2	2.35	0.56
56:8:47:U:H3'	56:8:48:C:C5'	2.36	0.56
58:9:48:C:O2'	58:9:49:C:OP1	2.21	0.56
28:A:56:A:H2'	28:A:57:C:H5'	1.88	0.56
28:A:828:U:OP1	35:H:22:LYS:NZ	68.89	0.56
31:D:16:THR:HG21	31:D:20:VAL:HB	1.86	0.56
34:G:96:ALA:CB	34:G:103:ASN:HB2	2.27	0.56
40:M:53:MET:CE	40:M:63:ILE:HD13	2.34	0.56
42:O:36:TYR:HD1	42:O:52:SER:CB	2.19	0.56
47:T:61:LEU:HD11	47:T:82:LYS:HD3	1.87	0.56
53:Z:56:VAL:HG13	53:Z:56:VAL:O	2.06	0.56
25:3:20:GLY:HA3	25:3:48:MET:CE	2.36	0.56
26:4:36:ARG:HG2	26:4:37:GLN:N	2.21	0.56
28:A:1086:A:H3'	28:A:1086:A:N3	2.21	0.56
28:A:1568:G:H4'	30:C:58:LYS:CG	2.36	0.56
28:A:2044:C:H2'	28:A:2045:C:H5'	1.88	0.56
25:3:34:LYS:NZ	28:A:2390:U:OP2	2.38	0.56
28:A:2713:U:H3'	28:A:2714:G:C5'	2.36	0.56
28:A:638:G:H2'	28:A:639:U:H6	1.70	0.56
34:G:26:LYS:HD2	34:G:32:LEU:CD1	2.33	0.56
35:H:129:GLU:HG2	35:H:144:VAL:CG2	2.36	0.56
40:M:102:LEU:HD21	40:M:126:ILE:HD11	1.87	0.56
41:N:33:ILE:HG12	41:N:118:ARG:CD	2.36	0.56
48:U:92:VAL:HG22	48:U:93:ARG:N	2.16	0.56
28:A:1208:C:H42	28:A:1238:G:H1	1.51	0.56
28:A:1242:U:H2'	28:A:1243:C:C6	2.41	0.56
28:A:2133:G:O2'	28:A:2134:A:O3'	2.20	0.56
28:A:2147:A:H3'	28:A:2148:G:H8	1.71	0.56
28:A:2211:A:O2'	28:A:2212:A:OP1	2.21	0.56
28:A:275:C:H2'	28:A:276:U:C4'	2.37	0.56
28:A:783:A:C8	28:A:784:G:H5''	2.39	0.56
29:B:32:U:H2'	29:B:33:G:C8	2.40	0.56
33:F:72:SER:OG	33:F:78:ILE:O	2.22	0.56
34:G:136:ASP:OD2	34:G:138:GLN:HB3	2.06	0.56
34:G:53:PRO:HG3	34:G:61:TRP:NE1	2.21	0.56
37:J:117:ALA:HA	37:J:120:ARG:NH2	2.21	0.56
39:L:19:LEU:HD23	39:L:19:LEU:O	2.06	0.56
41:N:77:ALA:O	41:N:81:ASN:HB2	2.05	0.56
28:A:533:G:H5'	44:Q:23:TYR:CD1	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:U:23:LYS:HB3	48:U:36:GLU:OE2	2.06	0.56
50:W:30:VAL:HG23	50:W:59:PHE:CD1	2.40	0.56
25:3:53:ASP:OD2	28:A:2359:C:O2'	2.15	0.55
27:5:194:VAL:O	27:5:197:LYS:HB3	2.06	0.55
28:A:1681:G:N2	28:A:1763:G:OP2	2.26	0.55
28:A:2091:C:H3'	28:A:2092:U:C5'	2.33	0.55
25:3:32:LEU:HD13	28:A:2419:U:OP2	2.05	0.55
28:A:2705:A:C2	28:A:2706:A:H1'	2.41	0.55
28:A:2726:A:O2'	28:A:2727:A:O5'	2.21	0.55
29:B:35:C:H2'	29:B:36:C:O4'	2.05	0.55
28:A:1819:A:H5''	30:C:159:THR:HG21	1.87	0.55
28:A:1255:U:H3'	32:E:68:ALA:HB2	1.89	0.55
35:H:129:GLU:HG2	35:H:144:VAL:HG23	1.87	0.55
35:H:7:ASP:OD1	35:H:9:VAL:HB	2.06	0.55
36:I:19:PRO:HG2	36:I:23:VAL:HG22	1.87	0.55
40:M:1:MET:O	40:M:2:LEU:HB3	2.06	0.55
28:A:960:A:H61	40:M:82:MET:HE3	1.71	0.55
29:B:48:U:OP2	42:O:30:ARG:NH2	2.37	0.55
46:S:109:ASP:OD1	46:S:110:ARG:N	2.39	0.55
23:1:50:GLU:CG	23:1:51:ALA:N	2.65	0.55
27:5:73:VAL:HA	27:5:112:ASP:OD2	2.06	0.55
28:A:2262:U:H5''	50:W:38:ARG:HH21	1.70	0.55
28:A:84:A:H62	28:A:101:A:H2	1.53	0.55
29:B:80:U:O4	49:V:14:LYS:NZ	2.32	0.55
28:A:801:G:C8	32:E:50:ALA:HB2	2.42	0.55
35:H:84:ALA:HA	35:H:149:GLU:OXT	2.06	0.55
38:K:77:ILE:HD11	43:P:71:ARG:HD2	1.88	0.55
44:Q:94:LEU:C	44:Q:96:ASP:H	2.09	0.55
52:Y:20:ASN:O	52:Y:24:GLU:HB2	2.05	0.55
52:Y:45:GLN:O	52:Y:47:ARG:N	2.39	0.55
27:5:212:VAL:CB	27:5:224:VAL:HG11	2.34	0.55
56:8:51:C:C2'	56:8:52:G:H5'	2.36	0.55
28:A:1543:G:H5''	28:A:1544:A:OP1	2.06	0.55
28:A:2094:A:H4'	35:H:25:TYR:CE1	2.41	0.55
28:A:2861:U:H2'	28:A:2862:G:H8	1.71	0.55
28:A:318:C:O2'	28:A:319:G:H5'	2.07	0.55
28:A:445:C:H2'	28:A:446:G:H5'	1.88	0.55
28:A:783:A:C3'	28:A:784:G:H5''	2.37	0.55
30:C:123:ILE:CG2	30:C:191:LEU:HD21	2.36	0.55
30:C:216:ARG:HB3	30:C:217:PRO:HD2	1.88	0.55
36:I:125:THR:HA	36:I:128:ILE:HG12	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:J:53:TYR:HE1	37:J:121:LYS:HG2	1.72	0.55
41:N:38:LEU:HD11	41:N:42:LYS:HE3	1.89	0.55
53:Z:23:LEU:HD21	53:Z:53:MET:HE2	1.86	0.55
58:9:44:G:H2'	58:9:45:U:C6	2.41	0.55
28:A:1178:C:N4	28:A:1179:G:O6	2.39	0.55
28:A:1647:U:P	28:A:1647:U:H3'	2.46	0.55
28:A:2115:G:H4'	28:A:2167:U:O4'	2.06	0.55
28:A:229:C:H2'	28:A:230:G:O4'	2.07	0.55
28:A:2396:G:O2'	28:A:2397:G:H5'	2.05	0.55
28:A:4:U:O2'	28:A:5:A:H5'	2.06	0.55
34:G:61:TRP:HA	34:G:64:ALA:HB3	1.89	0.55
35:H:146:VAL:CA	35:H:149:GLU:HB2	2.37	0.55
35:H:85:GLY:CA	35:H:90:LEU:HD23	2.35	0.55
47:T:44:LYS:HG3	47:T:45:ALA:N	4.36	0.55
27:5:211:LYS:HE3	27:5:225:ASP:OD1	2.07	0.55
55:7:20:U:O2'	55:7:21:C:O5'	2.23	0.55
28:A:198:C:C2'	28:A:199:A:H5''	2.37	0.55
28:A:2619:C:O2'	28:A:2620:C:H5'	2.06	0.55
28:A:2631:G:O2'	28:A:2632:A:H5'	2.07	0.55
28:A:600:G:H2'	28:A:601:C:O4'	2.06	0.55
28:A:856:G:N9	50:W:23:LYS:HD3	2.22	0.55
28:A:923:G:O2'	28:A:924:G:H5'	2.07	0.55
35:H:64:ALA:HA	35:H:71:LYS:CE	2.33	0.55
36:I:4:VAL:HG11	36:I:7:TYR:CA	2.36	0.55
37:J:45:THR:H	37:J:46:PRO:HD3	1.71	0.55
42:O:83:LEU:CD1	42:O:115:LEU:HD12	2.36	0.55
43:P:58:PHE:CE2	43:P:75:THR:HG22	2.41	0.55
47:T:76:ARG:HH11	47:T:76:ARG:CG	2.19	0.55
50:W:74:LYS:O	50:W:76:ARG:HG3	2.07	0.55
27:5:39:VAL:HG23	27:5:177:LYS:HE2	1.88	0.55
27:5:214:ILE:HB	27:5:224:VAL:HG23	1.89	0.55
28:A:1244:A:C2'	28:A:1245:G:H5'	2.37	0.55
28:A:1804:C:O2'	28:A:1805:A:H5'	2.07	0.55
28:A:2118:U:H5	28:A:2145:C:H1'	1.71	0.55
28:A:2128:G:H5''	28:A:2129:C:OP2	2.07	0.55
28:A:2645:G:N2	28:A:2645:G:OP2	2.35	0.55
28:A:350:G:H2'	28:A:351:C:H6	1.71	0.55
37:J:71:ASP:O	37:J:73:VAL:HG13	2.07	0.55
22:0:21:LEU:HD11	46:S:41:LYS:HE3	1.88	0.55
52:Y:8:GLU:O	52:Y:12:GLU:HB2	2.07	0.55
25:3:22:LYS:HA	25:3:47:ALA:O	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:134:ARG:HD3	28:A:2125:G:N1	2.22	0.55
55:7:13:C:H3'	55:7:14:A:C5'	2.36	0.55
28:A:1080:A:H4'	36:I:126:ARG:HB3	1.88	0.55
28:A:1353:A:O3'	30:C:35:LYS:NZ	2.39	0.55
28:A:1584:U:H2'	28:A:1585:C:C4'	2.35	0.55
28:A:279:A:H2'	28:A:280:U:C5'	2.31	0.55
28:A:895:U:H4'	28:A:896:A:C5	2.41	0.55
29:B:11:C:H2'	29:B:12:C:H5'	1.89	0.55
30:C:159:THR:O	30:C:194:VAL:HG12	2.07	0.55
31:D:119:ALA:HB2	31:D:165:MET:HB2	1.89	0.55
35:H:25:TYR:CE2	35:H:30:LEU:HD11	2.42	0.55
36:I:27:LEU:HD13	36:I:32:VAL:CG2	2.37	0.55
36:I:87:SER:O	36:I:135:MET:HE1	2.07	0.55
40:M:40:ARG:O	40:M:41:LEU:HD12	2.06	0.55
47:T:29:THR:OG1	47:T:86:THR:N	2.34	0.55
47:T:83:ALA:O	47:T:84:TYR:HB2	2.07	0.55
51:X:52:ALA:O	51:X:53:LYS:HB3	2.07	0.55
27:5:54:LYS:O	27:5:54:LYS:HG2	2.06	0.55
58:9:73:A:H2'	58:9:74:C:C4'	2.37	0.55
28:A:1076:C:H2'	28:A:1077:A:O4'	2.07	0.55
28:A:1534:U:H3'	28:A:1536:C:N4	2.22	0.55
28:A:1738:G:HO2'	28:A:1739:A:H8	1.55	0.55
28:A:2135:A:N6	28:A:2155:U:H1'	2.22	0.55
28:A:857:G:C2'	28:A:858:G:H5'	2.36	0.55
31:D:3:GLY:C	31:D:4:LEU:HD12	2.27	0.55
32:E:45:ALA:O	32:E:46:GLN:HB2	2.07	0.55
33:F:126:ASN:OD1	33:F:156:THR:HG23	2.07	0.55
33:F:47:LYS:HA	33:F:50:ASP:OD2	2.07	0.55
35:H:108:VAL:CG1	35:H:110:VAL:HB	2.36	0.55
36:I:4:VAL:HB	36:I:7:TYR:HD2	1.71	0.55
37:J:11:VAL:HG11	37:J:13:ARG:HE	1.72	0.55
37:J:84:ILE:HG23	37:J:84:ILE:O	2.06	0.55
39:L:79:LEU:N	39:L:113:ALA:HB3	2.22	0.55
40:M:110:GLU:OE2	40:M:114:ARG:NE	2.40	0.55
45:R:38:VAL:HG13	45:R:54:VAL:CG2	2.32	0.55
27:5:215:SER:HB3	28:A:2176:A:H4'	1.87	0.55
28:A:1977:A:O2'	28:A:1978:A:H5'	2.07	0.55
28:A:2558:C:O4'	54:6:76:F3O:H13	2.06	0.55
28:A:84:A:N1	28:A:98:G:O2'	2.35	0.55
30:C:62:ARG:NH2	30:C:84:PRO:HD2	2.22	0.55
31:D:118:PHE:O	31:D:120:GLY:N	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:E:149:ILE:HD11	32:E:188:MET:CG	2.36	0.55
35:H:4:ILE:HG12	35:H:18:GLN:NE2	2.22	0.55
40:M:20:LEU:HD13	49:V:81:PRO:HG2	1.89	0.55
28:A:993:G:OP2	44:Q:50:ARG:NH2	2.40	0.55
51:X:39:VAL:HG22	51:X:44:ARG:H	1.70	0.55
27:5:140:PRO:HD2	27:5:164:ARG:NH1	2.21	0.55
27:5:37:LYS:NZ	28:A:2127:G:H1'	2.22	0.55
27:5:75:VAL:HG13	27:5:115:ILE:HG12	1.89	0.55
28:A:2734:A:N6	28:A:2770:G:O2'	2.40	0.55
28:A:548:G:P	28:A:549:G:H5'	2.46	0.55
28:A:869:G:H5''	28:A:870:U:OP1	5.35	0.55
31:D:110:THR:HG23	31:D:171:THR:HG22	1.88	0.55
33:F:116:LEU:HD21	33:F:129:MET:SD	2.47	0.55
35:H:121:VAL:O	35:H:122:LEU:HB3	2.06	0.55
39:L:121:THR:HG22	39:L:141:LYS:HB3	1.89	0.55
28:A:2331:G:O2'	50:W:39:GLN:O	2.22	0.55
27:5:175:ILE:HG21	27:5:185:LEU:HB3	1.89	0.54
27:5:46:VAL:HG22	27:5:212:VAL:CG2	2.38	0.54
54:6:34:G:C6	54:6:35:A:N6	2.74	0.54
28:A:1182:G:H5''	28:A:1183:U:OP2	2.07	0.54
28:A:1505:A:H2'	28:A:1506:U:O4'	2.07	0.54
28:A:2140:G:N2	28:A:2152:G:H1'	2.23	0.54
28:A:259:G:N2	28:A:260:G:H1'	3.35	0.54
28:A:2688:G:N1	28:A:2720:U:OP2	2.31	0.54
28:A:535:G:H2'	28:A:536:G:C8	2.37	0.54
28:A:792:A:O2'	28:A:794:A:N7	15.27	0.54
28:A:881:G:N1	28:A:898:C:O2	2.36	0.54
29:B:20:G:H2'	29:B:21:G:O4'	2.07	0.54
29:B:38:C:H2'	29:B:39:A:C8	2.43	0.54
34:G:101:VAL:HG12	34:G:115:GLN:HG3	1.89	0.54
35:H:144:VAL:CG2	35:H:146:VAL:HG13	2.34	0.54
28:A:2720:U:H5''	43:P:52:ARG:NH2	2.22	0.54
47:T:29:THR:HB	47:T:86:THR:HA	1.88	0.54
50:W:23:LYS:CG	50:W:24:ARG:H	2.17	0.54
27:5:18:THR:HG23	27:5:223:ALA:H	1.71	0.54
28:A:1501:G:O2'	28:A:1502:A:H5'	2.07	0.54
28:A:474:G:C2'	28:A:475:C:H5'	3.76	0.54
30:C:64:VAL:HG21	30:C:86:ARG:HH22	1.72	0.54
32:E:151:GLY:CA	32:E:192:ALA:HB2	2.37	0.54
32:E:48:THR:CG2	32:E:86:ALA:HB3	2.37	0.54
33:F:162:ASP:HB3	33:F:166:ARG:NH1	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:I:89:SER:O	36:I:91:LYS:N	2.40	0.54
37:J:3:THR:HB	37:J:44:TYR:OH	2.07	0.54
52:Y:41:HIS:CE1	52:Y:42:LEU:HD12	2.42	0.54
28:A:2135:A:N7	28:A:2155:U:N3	2.56	0.54
28:A:2134:A:O4'	28:A:2159:G:N2	2.41	0.54
28:A:776:G:N2	28:A:2241:A:OP1	2.29	0.54
28:A:718:A:H2'	28:A:719:C:H5'	1.89	0.54
38:K:98:ARG:O	38:K:99:ILE:HD13	2.08	0.54
28:A:2406:A:N3	39:L:69:ARG:NH2	2.56	0.54
40:M:29:GLY:O	40:M:133:LYS:HD2	2.07	0.54
42:O:79:ALA:O	42:O:83:LEU:HD13	2.08	0.54
28:A:335:C:O2	48:U:67:SER:OG	2.25	0.54
27:5:109:MET:HE3	27:5:111:PHE:HB2	1.88	0.54
27:5:37:LYS:HD3	27:5:218:MET:SD	2.48	0.54
28:A:1027:A:C2	28:A:2488:G:H5'	2.42	0.54
28:A:1244:A:H2'	28:A:1245:G:H5'	1.90	0.54
28:A:1271:G:H5''	28:A:1272:A:OP1	2.08	0.54
28:A:1432:G:P	43:P:105:LYS:HG2	54.69	0.54
28:A:1529:G:N7	28:A:1543:G:N2	2.56	0.54
28:A:2166:U:H3'	28:A:2167:U:C6	2.42	0.54
28:A:2286:G:H4'	28:A:2287:A:O4'	2.07	0.54
28:A:2314:A:H2'	28:A:2315:G:C8	2.42	0.54
28:A:2489:U:O2'	28:A:2490:G:H5'	2.07	0.54
28:A:543:G:H2'	28:A:544:C:O4'	2.07	0.54
28:A:737:C:O2'	28:A:738:G:H5'	2.07	0.54
29:B:78:A:H2'	29:B:79:G:O4'	2.07	0.54
32:E:124:PHE:HE2	32:E:148:ILE:HD13	1.72	0.54
35:H:67:ALA:CB	35:H:68:ARG:CA	2.83	0.54
35:H:74:ALA:O	35:H:76:GLU:N	2.40	0.54
44:Q:69:ARG:HE	44:Q:74:SER:HA	1.72	0.54
28:A:2329:U:O2	50:W:38:ARG:HD3	2.07	0.54
27:5:141:LYS:CG	27:5:164:ARG:HH21	2.20	0.54
28:A:1036:G:O2'	28:A:1037:G:H5'	2.06	0.54
28:A:1642:G:O2'	28:A:1643:G:H5'	2.07	0.54
28:A:1856:U:C2'	28:A:1857:G:H5'	2.37	0.54
28:A:2714:G:C2'	28:A:2715:C:H5'	2.38	0.54
28:A:275:C:C2'	28:A:276:U:H4'	2.37	0.54
31:D:133:THR:OG1	31:D:134:HIS:N	2.40	0.54
35:H:53:GLU:O	35:H:57:LYS:NZ	2.36	0.54
43:P:58:PHE:CD2	43:P:75:THR:HG22	2.43	0.54
48:U:94:PHE:HA	48:U:101:THR:HA	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:X:18:SER:O	51:X:21:LEU:N	2.35	0.54
51:X:34:SER:HA	51:X:48:LEU:O	2.08	0.54
58:9:18:G:N1	58:9:55:U:H1'	2.21	0.54
28:A:123:G:H2'	28:A:124:G:H5'	1.89	0.54
28:A:1466:U:O2'	28:A:1546:G:O2'	2.14	0.54
28:A:15:G:N2	28:A:16:C:H1'	2.23	0.54
27:5:130:VAL:HG11	28:A:2119:A:N3	2.22	0.54
28:A:304:U:H2'	28:A:305:C:C6	2.43	0.54
28:A:45:G:H2'	28:A:46:G:H8	5.85	0.54
28:A:689:A:N3	28:A:779:U:O2'	2.35	0.54
30:C:144:GLU:HG2	30:C:150:GLY:O	2.08	0.54
30:C:154:ALA:HB2	30:C:161:VAL:CG2	2.37	0.54
35:H:25:TYR:CD2	35:H:30:LEU:HD11	2.43	0.54
42:O:7:ARG:HA	42:O:10:ARG:HH11	1.73	0.54
43:P:105:LYS:O	43:P:108:ARG:HG3	2.08	0.54
43:P:49:ILE:CG2	43:P:50:ARG:N	2.69	0.54
28:A:1341:G:H5'	47:T:61:LEU:CD2	2.37	0.54
48:U:8:ASP:O	48:U:10:VAL:HG13	2.08	0.54
51:X:50:VAL:HG12	51:X:51:SER:O	2.07	0.54
27:5:23:ILE:CG1	27:5:233:VAL:HA	2.38	0.54
27:5:54:LYS:NZ	27:5:56:ASP:OD1	2.38	0.54
27:5:80:GLN:HG2	27:5:120:ALA:HB1	1.85	0.54
58:9:25:C:O2'	58:9:26:A:H5'	2.08	0.54
28:A:1087:G:H2'	28:A:1088:A:C5'	2.35	0.54
28:A:1186:G:O2'	28:A:1187:G:H5'	2.07	0.54
28:A:1867:G:O2'	28:A:1868:C:H5'	2.08	0.54
28:A:1952:A:N3	28:A:2560:A:O2'	2.30	0.54
28:A:204:A:H4'	28:A:205:G:OP1	2.08	0.54
28:A:2114:A:C2	28:A:2168:G:H4'	2.42	0.54
28:A:2127:G:O6	28:A:2161:C:H2'	2.08	0.54
28:A:2163:A:H5''	28:A:2164:C:OP2	2.08	0.54
28:A:882:G:H1'	54:6:17:C:H42	1.72	0.54
29:B:43:C:H4'	33:F:62:GLN:NE2	2.21	0.54
32:E:151:GLY:HA2	32:E:192:ALA:HB2	1.90	0.54
35:H:14:SER:HB2	35:H:17:ASP:HB2	1.90	0.54
36:I:27:LEU:HD22	36:I:32:VAL:HB	1.88	0.54
39:L:79:LEU:HD23	39:L:82:LEU:HD21	1.88	0.54
43:P:62:LYS:CE	43:P:64:SER:HB2	2.34	0.54
46:S:69:LEU:HG	46:S:107:VAL:HG21	1.90	0.54
51:X:32:LEU:O	51:X:33:HIS:ND1	2.41	0.54
27:5:35:THR:HG23	27:5:219:GLY:CA	2.37	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1163:G:OP1	45:R:24:LYS:NZ	2.30	0.54
28:A:2137:U:H2'	28:A:2138:G:N9	2.21	0.54
28:A:2158:A:H3'	28:A:2159:G:C4	2.43	0.54
28:A:633:A:H5''	28:A:634:C:OP2	2.08	0.54
32:E:3:LEU:O	32:E:11:ALA:HA	2.08	0.54
36:I:107:GLU:O	36:I:111:THR:HG23	2.07	0.54
36:I:72:THR:HG23	36:I:112:LYS:HZ1	1.72	0.54
37:J:41:LYS:NZ	37:J:50:THR:O	2.27	0.54
43:P:26:GLU:H	43:P:83:ILE:HD11	1.73	0.54
52:Y:28:LEU:HB3	52:Y:43:LEU:HD21	1.88	0.54
24:2:9:VAL:HG22	28:A:1309:G:OP1	2.08	0.54
27:5:16:ASP:OD2	27:5:29:LEU:HD22	2.08	0.54
28:A:1205:A:H2'	32:E:165:HIS:HE1	1.72	0.54
28:A:1924:C:O2'	28:A:1925:C:H5'	2.08	0.54
28:A:2532:G:N2	28:A:2663:G:O2'	2.41	0.54
28:A:891:G:OP1	28:A:891:G:H4'	2.07	0.54
30:C:15:VAL:HG22	30:C:204:LEU:O	2.07	0.54
28:A:1567:G:C5'	30:C:57:HIS:HD2	2.18	0.54
31:D:25:THR:HG21	31:D:193:VAL:CG2	2.37	0.54
33:F:64:PRO:HA	33:F:88:VAL:CG2	2.37	0.54
40:M:21:ALA:HB2	40:M:97:GLN:O	2.08	0.54
40:M:74:THR:OG1	40:M:86:LYS:HE3	2.07	0.54
46:S:36:LEU:HD21	46:S:47:VAL:HG12	1.88	0.54
28:A:1614:A:N6	46:S:88:ARG:H	2.06	0.54
47:T:28:ASN:CA	47:T:91:GLN:HE22	2.21	0.54
50:W:19:ARG:HA	50:W:34:SER:HA	1.89	0.54
27:5:42:VAL:HA	27:5:214:ILE:CD1	2.34	0.54
28:A:791:C:O2'	28:A:792:A:OP2	2.22	0.54
30:C:203:VAL:HG22	30:C:203:VAL:O	2.08	0.54
32:E:5:LEU:O	32:E:5:LEU:HD23	2.08	0.54
28:A:7:G:H1'	37:J:135:GLN:NE2	2.23	0.54
42:O:29:HIS:HB3	42:O:36:TYR:HB2	1.90	0.54
42:O:88:LYS:O	42:O:89:ASP:HB2	2.07	0.54
27:5:49:GLY:H	27:5:207:VAL:CG2	2.21	0.53
28:A:179:C:C2'	28:A:180:G:H5'	2.38	0.53
28:A:1812:U:O2'	28:A:1813:G:H5'	2.07	0.53
28:A:2631:G:C2'	28:A:2632:A:H5'	2.39	0.53
28:A:463:G:N2	28:A:466:A:OP2	2.36	0.53
28:A:565:C:C2'	28:A:566:U:H5'	2.38	0.53
31:D:58:ASN:OD1	31:D:59:ARG:HG2	2.07	0.53
31:D:61:THR:OG1	31:D:63:PRO:HD2	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:E:175:ILE:HD11	32:E:180:LEU:HD21	1.89	0.53
32:E:189:THR:O	32:E:193:VAL:HG23	2.07	0.53
34:G:136:ASP:OD1	34:G:137:LYS:N	2.41	0.53
34:G:84:LYS:HD2	34:G:131:VAL:CB	2.35	0.53
51:X:32:LEU:HA	51:X:51:SER:HA	1.89	0.53
27:5:170:ILE:HG21	28:A:2177:C:O2'	2.08	0.53
27:5:214:ILE:HG13	27:5:215:SER:N	2.23	0.53
27:5:68:GLY:HA2	27:5:159:GLY:HA2	1.88	0.53
54:6:19:G:H4'	54:6:20:U:OP2	2.08	0.53
28:A:123:G:C2'	28:A:124:G:H5'	2.38	0.53
28:A:1553:A:C6	28:A:1555:G:H1'	2.43	0.53
28:A:1606:C:H5''	28:A:1607:C:OP1	2.07	0.53
28:A:172:A:H2'	28:A:173:A:H8	1.71	0.53
28:A:2662:A:H2'	28:A:2663:G:O4'	2.08	0.53
28:A:2796:U:O2'	28:A:2797:U:H2'	2.08	0.53
34:G:30:GLY:O	34:G:32:LEU:N	2.41	0.53
38:K:68:GLY:HA3	38:K:77:ILE:O	2.08	0.53
47:T:29:THR:CA	47:T:86:THR:HA	2.38	0.53
49:V:1:MET:HG3	49:V:2:PHE:N	2.24	0.53
28:A:2353:G:H1'	50:W:30:VAL:HG12	1.90	0.53
27:5:60:ARG:NE	27:5:165:ASN:HB2	2.23	0.53
27:5:43:ASP:OD1	27:5:214:ILE:HD12	2.08	0.53
54:6:70:G:C2'	54:6:71:G:H5'	2.38	0.53
28:A:141:G:O2'	28:A:142:A:H4'	2.08	0.53
28:A:2575:C:H2'	28:A:2578:G:O6	2.07	0.53
34:G:100:ASN:OD1	34:G:101:VAL:HG13	2.09	0.53
28:A:1001:A:H2'	28:A:1002:G:O4'	2.08	0.53
28:A:1046:A:H2'	28:A:1047:G:O4'	6.01	0.53
28:A:1059:G:H2'	28:A:1060:U:H5	1.72	0.53
28:A:1084:A:H1'	28:A:1105:U:O2'	2.08	0.53
28:A:2267:A:H5''	28:A:2268:A:H5'	1.90	0.53
28:A:2483:C:N3	40:M:123:LYS:NZ	2.56	0.53
28:A:403:U:HO2'	28:A:404:A:P	2.31	0.53
33:F:52:ALA:HA	33:F:149:ARG:NH1	2.24	0.53
37:J:18:VAL:HG22	37:J:140:LEU:HD11	1.91	0.53
38:K:110:GLU:N	38:K:110:GLU:OE1	2.40	0.53
39:L:119:PRO:HG3	39:L:138:ALA:O	2.08	0.53
44:Q:64:ILE:HD11	44:Q:95:ALA:HB3	1.91	0.53
49:V:35:GLU:CG	49:V:93:ARG:HH12	2.22	0.53
50:W:23:LYS:HG2	50:W:24:ARG:N	2.18	0.53
23:1:38:PHE:CZ	23:1:43:ARG:HA	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:4:5:ALA:O	26:4:38:GLY:HA2	2.09	0.53
28:A:1517:G:H2'	28:A:1518:C:O4'	2.08	0.53
28:A:171:U:O2'	28:A:172:A:H5'	2.08	0.53
28:A:1734:G:H2'	28:A:1735:A:H8	1.72	0.53
28:A:1869:G:H2'	28:A:1871:A:N7	2.23	0.53
28:A:2114:A:H2	28:A:2168:G:H4'	1.74	0.53
28:A:2301:C:H2'	28:A:2302:U:H6	1.72	0.53
28:A:2519:U:C6	28:A:2542:A:N6	2.77	0.53
28:A:2618:G:O2'	28:A:2619:C:H5'	2.08	0.53
28:A:2713:U:C3'	28:A:2714:G:H5''	2.39	0.53
28:A:395:U:O2'	28:A:396:G:N7	2.35	0.53
35:H:104:THR:CA	35:H:109:GLU:HA	2.38	0.53
35:H:41:LYS:HA	35:H:44:ILE:CG1	2.34	0.53
42:O:75:GLY:CA	42:O:106:LEU:HB2	2.35	0.53
47:T:43:ILE:O	47:T:47:VAL:HG23	2.09	0.53
47:T:33:LYS:HG3	47:T:80:TRP:CE3	2.44	0.53
52:Y:9:LYS:HB3	52:Y:12:GLU:CG	2.39	0.53
53:Z:3:THR:HA	53:Z:37:ARG:O	2.09	0.53
26:4:22:VAL:HG21	26:4:36:ARG:CG	2.39	0.53
27:5:134:ARG:HD3	28:A:2125:G:H1	1.73	0.53
28:A:201:C:H2'	28:A:202:U:H6	1.74	0.53
28:A:322:A:OP1	32:E:162:ARG:NE	2.41	0.53
28:A:819:A:OP2	28:A:1187:G:N2	2.29	0.53
29:B:49:C:O2'	29:B:50:A:H5'	2.08	0.53
30:C:79:ARG:NE	30:C:81:GLU:OE2	2.42	0.53
39:L:85:VAL:HG22	39:L:94:THR:HG22	1.89	0.53
43:P:50:ARG:HG3	43:P:51:ASN:N	2.23	0.53
43:P:77:SER:OG	43:P:79:VAL:HG22	2.08	0.53
45:R:37:GLU:HB3	45:R:53:PHE:CD1	2.44	0.53
28:A:2155:U:H3'	28:A:2156:G:H8	1.74	0.53
28:A:347:A:O2'	28:A:348:A:H5'	2.09	0.53
28:A:715:A:H2'	28:A:716:A:C8	2.44	0.53
28:A:718:A:C2'	28:A:719:C:H5'	2.39	0.53
33:F:149:ARG:HG2	33:F:150:GLY:N	2.24	0.53
33:F:92:GLY:O	33:F:95:MET:HB3	2.09	0.53
37:J:96:ARG:NE	37:J:99:ARG:HG3	2.24	0.53
39:L:109:LYS:HA	39:L:126:ARG:O	2.08	0.53
22:O:9:ARG:HH22	44:Q:29:ARG:NE	2.06	0.53
48:U:47:PRO:HB3	48:U:55:GLY:N	2.23	0.53
27:5:46:VAL:HG22	27:5:212:VAL:CA	2.39	0.53
28:A:1092:C:H2'	28:A:1093:G:H5'	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:116:C:H2'	28:A:117:G:O4'	2.08	0.53
28:A:1473:G:H2'	28:A:1474:U:C6	2.44	0.53
28:A:1536:C:H1'	28:A:1537:G:C2	2.43	0.53
28:A:2756:U:H4'	28:A:2757:A:OP1	2.07	0.53
28:A:74:A:C2'	28:A:75:G:H5''	6.76	0.53
28:A:1805:A:N3	30:C:49:THR:OG1	2.42	0.53
33:F:131:VAL:HG23	33:F:132:ARG:N	2.23	0.53
33:F:43:ILE:HG13	33:F:44:ALA:N	2.22	0.53
39:L:7:SER:HB2	39:L:8:PRO:HD2	1.91	0.53
40:M:68:PHE:CD1	40:M:69:PRO:HD2	2.44	0.53
51:X:36:ARG:CG	51:X:47:THR:HG22	2.33	0.53
28:A:1156:A:C8	44:Q:50:ARG:HD3	2.43	0.53
28:A:1173:U:H1'	28:A:1177:G:H22	1.72	0.53
28:A:127:A:H5''	28:A:128:C:O5'	2.08	0.53
28:A:1337:G:H5''	28:A:1338:G:OP1	5.00	0.53
28:A:1677:A:H8	28:A:1677:A:O5'	1.92	0.53
28:A:2632:A:H2'	28:A:2633:G:H8	1.74	0.53
28:A:273:G:H2'	28:A:274:C:C6	2.43	0.53
28:A:657:U:H2'	28:A:658:U:C6	2.43	0.53
33:F:27:VAL:CG2	33:F:28:PRO:HD2	2.39	0.53
33:F:79:ARG:CB	33:F:82:TYR:HE2	2.18	0.53
37:J:69:ARG:HD3	37:J:89:PHE:CD2	2.44	0.53
48:U:91:LYS:O	48:U:92:VAL:HG12	2.09	0.53
50:W:70:VAL:O	50:W:70:VAL:HG13	2.08	0.53
51:X:37:PHE:O	51:X:45:PHE:HA	2.09	0.53
27:5:83:ASN:OD1	27:5:149:VAL:HG11	2.08	0.53
27:5:181:ASP:HB2	27:5:184:LYS:CB	2.38	0.53
27:5:59:VAL:HB	27:5:196:LEU:HD22	1.91	0.53
58:9:61:C:H2'	58:9:62:C:C5	2.44	0.53
28:A:1092:C:H2'	28:A:1093:G:C5'	2.39	0.53
28:A:2267:A:H5''	28:A:2268:A:C5'	2.39	0.53
28:A:769:U:O2	28:A:1379:U:H1'	2.09	0.53
28:A:881:G:H2'	28:A:882:G:O4'	2.09	0.53
29:B:118:C:H2'	29:B:119:A:H4'	1.91	0.53
30:C:16:VAL:CB	30:C:203:VAL:HG12	2.38	0.53
33:F:116:LEU:HD23	33:F:127:TYR:OH	2.09	0.53
28:A:1081:U:P	36:I:126:ARG:HE	2.32	0.53
36:I:135:MET:HG2	36:I:137:LEU:CD2	2.38	0.53
36:I:48:ILE:HD12	36:I:54:ILE:CD1	2.38	0.53
39:L:29:LYS:HG2	39:L:30:THR:N	2.24	0.53
44:Q:91:ARG:HH11	45:R:11:GLN:N	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:Q:64:ILE:HG12	44:Q:95:ALA:CB	2.39	0.53
45:R:68:ARG:CD	45:R:90:ARG:HE	2.21	0.53
49:V:61:LEU:O	49:V:61:LEU:HD12	2.08	0.53
51:X:38:TRP:CZ2	51:X:43:LYS:HA	2.44	0.53
27:5:85:GLU:HG2	27:5:88:LYS:CD	2.20	0.52
28:A:2061:G:H5''	28:A:2503:A:C5'	2.37	0.52
28:A:2247:A:H2'	28:A:2248:C:H6	1.74	0.52
28:A:2786:U:O2'	28:A:2787:C:H5'	2.09	0.52
28:A:320:A:H4'	28:A:322:A:N7	2.24	0.52
28:A:652:U:O2'	28:A:653:U:OP2	5.06	0.52
28:A:828:U:H4'	28:A:828:U:OP1	4.97	0.52
33:F:149:ARG:HG2	33:F:150:GLY:H	1.74	0.52
35:H:93:SER:N	35:H:116:ARG:HB3	2.17	0.52
35:H:90:LEU:N	35:H:147:VAL:HG12	2.25	0.52
35:H:4:ILE:CG1	35:H:18:GLN:HE22	2.22	0.52
36:I:105:LEU:HD22	36:I:128:ILE:HG22	1.90	0.52
42:O:26:LEU:HD12	42:O:38:GLN:O	2.09	0.52
42:O:52:SER:OG	42:O:54:VAL:HG12	2.10	0.52
50:W:50:VAL:HB	50:W:61:LYS:CE	2.40	0.52
27:5:23:ILE:HB	27:5:227:ALA:HB2	1.91	0.52
27:5:69:THR:HB	27:5:160:GLN:O	2.09	0.52
54:6:34:G:O6	54:6:35:A:N6	2.42	0.52
56:8:9:G:O2'	56:8:10:G:N7	2.41	0.52
28:A:107:G:O2'	28:A:108:G:H5'	2.09	0.52
28:A:108:G:O2'	28:A:109:C:H5'	2.10	0.52
28:A:1590:A:H2'	28:A:1591:A:C8	2.44	0.52
28:A:1745:A:H2'	28:A:1746:A:O4'	2.09	0.52
28:A:1817:G:H5''	30:C:86:ARG:HG2	1.91	0.52
28:A:2323:G:O2'	28:A:2324:U:H5'	2.09	0.52
28:A:2646:C:H6	28:A:2646:C:O5'	1.92	0.52
29:B:42:C:C5	33:F:65:LEU:HD22	2.44	0.52
35:H:129:GLU:HB2	35:H:142:VAL:CG1	2.40	0.52
36:I:79:LEU:HD21	36:I:105:LEU:HD23	1.90	0.52
44:Q:94:LEU:HD21	45:R:4:VAL:CG2	2.38	0.52
27:5:105:LYS:HB2	28:A:2163:A:C4'	2.40	0.52
27:5:24:ASN:ND2	27:5:232:SER:HB2	2.21	0.52
27:5:67:HIS:HB2	27:5:188:ASN:OD1	2.09	0.52
58:9:21:A:H62	58:9:48:C:P	2.31	0.52
28:A:1186:G:H2'	28:A:1187:G:O4'	2.09	0.52
28:A:2235:G:H2'	28:A:2236:U:O4'	2.09	0.52
28:A:370:G:O2'	28:A:423:A:H3'	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:889:C:C2'	28:A:890:C:H5'	2.39	0.52
28:A:1797:G:O3'	30:C:255:LYS:HA	2.10	0.52
32:E:148:ILE:O	32:E:148:ILE:HG22	2.10	0.52
35:H:10:ALA:HB1	35:H:12:LEU:HG	1.91	0.52
37:J:47:HIS:CD2	37:J:48:VAL:HG23	2.44	0.52
42:O:7:ARG:CB	42:O:10:ARG:HH11	2.23	0.52
44:Q:82:LEU:HG	44:Q:88:GLU:OE1	2.09	0.52
44:Q:88:GLU:HA	45:R:49:ILE:CD1	2.38	0.52
47:T:1:MET:SD	47:T:49:LYS:NZ	2.73	0.52
50:W:30:VAL:O	50:W:30:VAL:HG22	2.09	0.52
28:A:2333:A:OP1	50:W:76:ARG:NH1	2.42	0.52
27:5:182:ALA:CB	27:5:234:ASN:H	2.21	0.52
27:5:212:VAL:C	27:5:224:VAL:HB	2.28	0.52
58:9:74:C:O2'	58:9:75:C:H5'	2.09	0.52
28:A:1314:C:C5	46:S:6:LYS:HD3	44.52	0.52
28:A:1545:A:H2'	28:A:1546:G:C5'	2.39	0.52
28:A:2564:A:OP1	28:A:2648:G:O2'	2.21	0.52
28:A:995:C:C3'	28:A:996:A:H5''	4.94	0.52
31:D:61:THR:CB	31:D:63:PRO:HD2	2.39	0.52
36:I:4:VAL:HB	36:I:7:TYR:CD2	2.45	0.52
41:N:72:ASP:HB3	41:N:75:ILE:CG1	2.38	0.52
29:B:48:U:P	42:O:30:ARG:HH12	2.31	0.52
28:A:1046:A:O2'	28:A:1047:G:H5'	4.40	0.52
28:A:1060:U:O2	28:A:1062:G:H5'	2.08	0.52
28:A:2247:A:H2'	28:A:2248:C:C6	2.45	0.52
29:B:94:A:H2'	29:B:95:U:H5'	1.90	0.52
33:F:169:LEU:HB2	33:F:176:PHE:HZ	1.75	0.52
28:A:1081:U:H5'	36:I:126:ARG:HH21	1.75	0.52
36:I:58:ILE:CD1	36:I:68:PHE:HB2	2.39	0.52
41:N:73:ASN:O	41:N:76:VAL:HG12	2.10	0.52
42:O:24:THR:CG2	42:O:42:PRO:HG3	2.40	0.52
50:W:64:GLY:HA2	50:W:84:GLU:HG2	1.90	0.52
52:Y:49:ASP:OD1	52:Y:52:ARG:NH2	2.43	0.52
27:5:133:PRO:HG2	28:A:2172:U:O4'	2.10	0.52
27:5:173:THR:HG21	27:5:192:LEU:HD22	1.92	0.52
27:5:181:ASP:O	27:5:184:LYS:HB3	2.10	0.52
27:5:46:VAL:CG1	27:5:210:LYS:H	2.23	0.52
58:9:49:C:C2'	58:9:50:U:H5'	2.40	0.52
28:A:1533:C:H1'	28:A:1534:U:C6	2.44	0.52
28:A:159:G:H1'	28:A:167:A:N6	2.25	0.52
32:E:149:ILE:HD11	32:E:188:MET:HG3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:E:5:LEU:O	32:E:6:LYS:HB3	2.09	0.52
36:I:76:ALA:HA	36:I:131:THR:HG23	1.90	0.52
42:O:31:THR:CG2	42:O:32:PRO:HD2	2.39	0.52
23:1:41:VAL:HG13	23:1:42:VAL:HG23	1.91	0.52
54:6:62:C:O2'	54:6:63:G:H5'	2.09	0.52
58:9:31:A:N1	58:9:39:U:N3	2.57	0.52
58:9:29:G:H1	58:9:41:C:H42	1.57	0.52
28:A:1151:A:H4'	44:Q:80:ASN:ND2	2.25	0.52
28:A:1248:G:N2	32:E:83:VAL:HG22	2.25	0.52
28:A:1435:G:H2'	28:A:1436:G:H5'	1.91	0.52
28:A:900:A:O2'	28:A:901:C:H5'	2.09	0.52
28:A:801:G:N7	32:E:50:ALA:HB2	2.24	0.52
36:I:30:GLN:HG3	36:I:30:GLN:O	2.10	0.52
38:K:61:VAL:HG11	38:K:107:LEU:HD11	1.91	0.52
38:K:63:VAL:HG12	38:K:64:ARG:N	2.23	0.52
48:U:47:PRO:HB2	48:U:53:GLN:HB2	1.91	0.52
50:W:49:ASN:HB2	50:W:59:PHE:O	2.09	0.52
51:X:67:LEU:CD2	51:X:70:LEU:HD12	2.39	0.52
58:9:24:G:H2'	58:9:25:C:C6	2.45	0.52
58:9:69:G:H2'	58:9:70:G:C8	2.44	0.52
28:A:1331:G:O2'	28:A:1332:G:H5'	2.10	0.52
28:A:1678:A:O2'	28:A:1679:A:H5'	2.10	0.52
28:A:1720:U:H2'	28:A:1721:G:O4'	2.09	0.52
28:A:1807:G:H5''	28:A:1808:A:OP2	2.09	0.52
28:A:2112:G:O2'	28:A:2113:U:H5'	2.09	0.52
28:A:2112:G:H2'	28:A:2113:U:H5'	1.90	0.52
28:A:2114:A:N3	28:A:2167:U:O2'	2.41	0.52
28:A:2146:C:H4'	28:A:2148:G:N3	2.25	0.52
28:A:2238:G:H2'	28:A:2238:G:N3	2.25	0.52
28:A:536:G:O2'	28:A:537:G:H5'	2.10	0.52
28:A:889:C:H2'	28:A:890:C:O4'	2.09	0.52
28:A:982:C:H5''	28:A:983:A:OP1	2.10	0.52
31:D:107:VAL:HG22	31:D:108:ASP:N	2.21	0.52
34:G:102:ILE:CG2	34:G:104:LEU:HG	2.40	0.52
34:G:82:PHE:CE2	34:G:137:LYS:HB2	2.45	0.52
35:H:75:LEU:CD2	35:H:103:VAL:HG13	2.39	0.52
39:L:100:ILE:O	39:L:100:ILE:HD12	2.09	0.52
43:P:27:VAL:HG22	43:P:83:ILE:HD13	1.92	0.52
28:A:923:G:N3	50:W:23:LYS:NZ	2.58	0.52
51:X:48:LEU:HB3	51:X:50:VAL:HG23	1.92	0.52
28:A:1064:C:N4	28:A:1074:G:H1	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1112:G:H2'	28:A:1113:U:H6	1.74	0.52
28:A:1530:G:H3'	28:A:1531:C:C6	2.45	0.52
28:A:1628:G:H2'	28:A:1629:U:C6	2.44	0.52
22:O:2:VAL:HG11	28:A:2016:U:C1'	2.38	0.52
28:A:511:U:C2'	28:A:512:G:H5'	2.38	0.52
28:A:997:G:O2'	28:A:998:C:H5'	2.10	0.52
31:D:26:VAL:HG22	31:D:188:LEU:CD2	2.40	0.52
32:E:167:VAL:HG22	32:E:168:ASP:N	2.23	0.52
32:E:48:THR:HG23	32:E:86:ALA:HB3	1.92	0.52
34:G:138:GLN:O	34:G:141:GLY:N	2.39	0.52
34:G:27:GLY:HA3	34:G:78:VAL:HG22	1.91	0.52
36:I:135:MET:CG	36:I:137:LEU:HD23	2.40	0.52
37:J:44:TYR:O	37:J:45:THR:HB	2.10	0.52
48:U:26:ASN:OD1	48:U:34:ILE:HB	2.08	0.52
48:U:86:PHE:CD2	48:U:92:VAL:HG11	2.44	0.52
50:W:51:GLY:HA2	50:W:59:PHE:CE2	2.45	0.52
50:W:50:VAL:HB	50:W:61:LYS:HE3	1.92	0.52
27:5:9:ARG:HA	27:5:12:ARG:HH11	1.74	0.52
27:5:155:ASN:O	27:5:158:ALA:HB3	2.09	0.52
28:A:1313:U:O2'	28:A:1314:C:H5'	3.69	0.52
28:A:1420:A:H5'	28:A:1421:G:OP2	2.10	0.52
28:A:1529:G:H2'	28:A:1530:G:O4'	2.10	0.52
28:A:2801:G:O2'	28:A:2802:G:H5'	2.09	0.52
28:A:880:G:H4'	28:A:881:G:OP2	2.10	0.52
30:C:76:VAL:O	30:C:76:VAL:HG13	2.10	0.52
31:D:118:PHE:CE1	31:D:123:LYS:HD3	2.44	0.52
31:D:149:ASN:CG	31:D:150:GLN:H	2.13	0.52
32:E:87:ALA:O	32:E:88:ARG:HD3	2.10	0.52
33:F:102:LEU:HA	33:F:106:ALA:HB3	1.92	0.52
34:G:79:THR:OG1	34:G:80:GLU:N	2.43	0.52
34:G:8:VAL:HG13	34:G:8:VAL:O	2.09	0.52
44:Q:111:LYS:HB2	45:R:48:LYS:CE	2.29	0.52
58:9:28:G:H3'	58:9:29:G:C8	2.45	0.51
28:A:1013:C:H2'	28:A:1014:A:O4'	2.10	0.51
28:A:1220:G:H2'	28:A:1221:C:O4'	2.10	0.51
28:A:2148:G:H5''	28:A:2149:U:OP2	2.10	0.51
28:A:2290:G:O6	28:A:2342:C:N4	2.43	0.51
28:A:2739:U:O2'	28:A:2740:A:H5'	2.10	0.51
28:A:44:A:O2'	28:A:45:G:H5'	2.31	0.51
31:D:184:ARG:HD3	31:D:186:LEU:HD22	1.92	0.51
33:F:11:VAL:HG13	33:F:171:ALA:CB	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:H:32:PRO:HB3	51:X:38:TRP:CB	2.40	0.51
27:5:171:ILE:CD1	27:5:196:LEU:HD11	2.40	0.51
27:5:19:LYS:HB3	27:5:21:TYR:CE1	2.45	0.51
28:A:1590:A:H2'	28:A:1591:A:H8	1.73	0.51
28:A:197:A:C2'	28:A:198:C:H5'	2.40	0.51
28:A:2070:A:H2'	28:A:2071:A:O4'	2.10	0.51
28:A:2147:A:H2'	28:A:2147:A:N3	2.24	0.51
28:A:221:A:N1	28:A:265:A:O2'	2.43	0.51
28:A:327:G:H2'	28:A:328:U:O4'	2.09	0.51
28:A:71:A:H4'	28:A:72:U:H5''	1.91	0.51
28:A:925:A:H2'	28:A:926:G:C8	2.46	0.51
30:C:124:LYS:O	30:C:191:LEU:HD23	2.11	0.51
30:C:196:ASN:O	30:C:197:ALA:HB3	2.10	0.51
35:H:80:ILE:HG22	35:H:99:ILE:HD13	1.91	0.51
37:J:125:TYR:OH	37:J:132:HIS:NE2	2.35	0.51
31:D:157:LYS:O	37:J:81:ILE:HG22	2.10	0.51
28:A:2839:G:H4'	41:N:49:GLU:OE1	2.11	0.51
44:Q:60:TRP:CH2	44:Q:93:ILE:HB	2.45	0.51
44:Q:43:GLN:HE22	45:R:77:PHE:HD2	1.58	0.51
47:T:50:LEU:O	47:T:51:PHE:HB2	2.11	0.51
28:A:1656:C:H2'	28:A:1657:U:C6	2.45	0.51
28:A:2359:C:O2'	28:A:2360:G:H5'	2.10	0.51
28:A:613:A:C3'	28:A:614:A:H5'	2.40	0.51
28:A:974:G:H4'	45:R:78:ARG:NH2	2.25	0.51
30:C:23:LEU:HD21	30:C:89:ASN:ND2	2.26	0.51
31:D:97:SER:OG	31:D:99:GLU:HG2	2.11	0.51
35:H:75:LEU:HD22	35:H:108:VAL:HG21	1.91	0.51
35:H:33:GLN:HG2	35:H:35:LYS:NZ	2.25	0.51
37:J:26:GLY:O	37:J:29:ALA:N	2.44	0.51
42:O:67:ASN:ND2	42:O:69:ASP:HB2	2.25	0.51
49:V:35:GLU:HG2	49:V:93:ARG:HH12	1.75	0.51
50:W:60:ALA:HA	50:W:81:ILE:CD1	2.41	0.51
51:X:56:ARG:O	51:X:59:ASP:HB2	2.11	0.51
27:5:79:THR:HB	27:5:117:SER:HB2	1.91	0.51
28:A:1932:A:H2'	28:A:1933:G:O4'	2.11	0.51
28:A:2188:U:H2'	28:A:2189:U:O4'	2.10	0.51
28:A:2347:C:OP1	28:A:2347:C:H4'	2.11	0.51
28:A:623:C:O2'	28:A:624:C:H5'	3.25	0.51
28:A:777:G:C2'	28:A:778:G:H5'	2.41	0.51
28:A:1812:U:O2	30:C:43:ASN:ND2	2.44	0.51
31:D:172:VAL:HG21	31:D:194:PRO:HD3	1.90	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:E:164:LEU:HB2	32:E:167:VAL:HG12	1.93	0.51
34:G:51:PHE:CD2	34:G:68:ARG:HB2	2.45	0.51
34:G:53:PRO:HD3	34:G:61:TRP:CD2	2.45	0.51
38:K:10:VAL:HG11	38:K:16:ALA:HB1	1.91	0.51
39:L:89:VAL:O	39:L:89:VAL:HG13	2.10	0.51
27:5:131:LEU:HD13	27:5:138:PRO:CG	2.24	0.51
27:5:204:ALA:O	27:5:206:GLY:N	2.35	0.51
27:5:43:ASP:OD2	27:5:215:SER:OG	2.26	0.51
27:5:87:ALA:HA	27:5:91:GLY:CA	2.40	0.51
28:A:1535:A:H4'	28:A:1536:C:OP2	2.09	0.51
28:A:2180:U:H2'	28:A:2181:U:C6	2.46	0.51
28:A:2557:G:H2'	28:A:2558:C:H6	1.73	0.51
28:A:279:A:C6	28:A:361:G:H1'	2.45	0.51
28:A:303:G:H2'	28:A:304:U:O4'	2.10	0.51
30:C:254:LYS:HG2	30:C:254:LYS:O	2.09	0.51
28:A:1568:G:H4'	30:C:58:LYS:HG2	1.92	0.51
31:D:129:THR:HG22	31:D:130:GLN:O	2.10	0.51
36:I:102:ARG:N	36:I:140:GLU:O	2.43	0.51
36:I:23:VAL:C	36:I:25:PRO:HD2	2.30	0.51
36:I:83:ALA:HB1	36:I:85:ILE:CD1	2.41	0.51
37:J:17:VAL:HG12	37:J:55:ILE:HG13	1.91	0.51
37:J:56:VAL:O	37:J:57:LEU:HD12	2.10	0.51
44:Q:35:PHE:HZ	45:R:84:ARG:HH22	1.57	0.51
46:S:18:ARG:O	46:S:19:LEU:CB	2.57	0.51
28:A:1062:G:C2'	28:A:1063:G:H5'	2.41	0.51
28:A:1071:G:O2'	28:A:1089:A:H2'	2.11	0.51
28:A:2287:A:H61	28:A:2344:U:H3	1.59	0.51
28:A:361:G:O2'	28:A:362:A:H5'	2.11	0.51
28:A:544:C:H3'	28:A:545:U:C6	2.45	0.51
28:A:548:G:H5''	28:A:549:G:O4'	2.09	0.51
32:E:146:VAL:HA	32:E:185:LYS:O	2.11	0.51
34:G:116:LEU:N	34:G:116:LEU:HD12	2.25	0.51
34:G:15:ASP:HB3	34:G:26:LYS:N	2.23	0.51
35:H:118:PRO:CD	35:H:122:LEU:HD23	2.41	0.51
35:H:85:GLY:CA	35:H:147:VAL:HA	2.41	0.51
37:J:44:TYR:HD1	44:Q:59:LEU:CD2	2.23	0.51
46:S:71:VAL:O	46:S:71:VAL:HG13	2.10	0.51
54:6:11:C:H2'	54:6:12:U:H6	1.75	0.51
28:A:1079:C:H2'	28:A:1080:A:H5'	1.92	0.51
28:A:1567:G:H2'	30:C:84:PRO:HG3	1.93	0.51
28:A:2130:U:H4'	28:A:2131:U:OP1	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:C:171:VAL:HG12	30:C:173:LEU:CD1	2.40	0.51
38:K:63:VAL:HG11	38:K:103:VAL:HG12	1.93	0.51
39:L:90:VAL:HB	39:L:122:VAL:HA	1.93	0.51
45:R:66:HIS:CD2	45:R:94:THR:HG22	2.46	0.51
46:S:76:VAL:HG13	46:S:76:VAL:O	2.10	0.51
28:A:1336:A:O5'	47:T:68:LYS:NZ	2.41	0.51
50:W:28:GLU:O	50:W:30:VAL:N	2.44	0.51
28:A:2330:G:N3	50:W:38:ARG:HB3	2.26	0.51
23:1:18:HIS:ND1	23:1:40:PRO:HD2	2.25	0.51
27:5:65:LEU:HD12	27:5:161:VAL:CG2	2.39	0.51
56:8:54:U:C2'	56:8:55:U:H5'	2.40	0.51
28:A:1181:U:H2'	28:A:1182:G:C8	2.46	0.51
28:A:1191:G:C2'	28:A:1192:G:H5'	2.41	0.51
28:A:1533:C:H1'	28:A:1534:U:H5	1.73	0.51
28:A:155:A:N6	28:A:166:U:O4	16.58	0.51
28:A:1847:A:H1'	28:A:1848:A:OP1	2.11	0.51
28:A:2414:G:C2'	28:A:2415:G:H5'	2.41	0.51
28:A:479:A:H4'	28:A:480:A:OP1	2.11	0.51
28:A:707:G:H2'	28:A:708:G:C5'	2.41	0.51
28:A:842:U:O2'	28:A:843:G:H5'	2.10	0.51
28:A:934:U:H2'	28:A:935:C:H6	1.75	0.51
31:D:3:GLY:HA3	31:D:204:LYS:HG2	1.92	0.51
32:E:1:MET:HG3	32:E:19:PHE:HB2	1.93	0.51
33:F:131:VAL:O	33:F:132:ARG:HB3	2.11	0.51
34:G:126:THR:HG22	34:G:127:GLN:N	2.26	0.51
36:I:101:SER:O	36:I:104:GLN:HB2	2.11	0.51
36:I:4:VAL:HG11	36:I:7:TYR:CB	2.41	0.51
28:A:139:U:C5	47:T:1:MET:HA	2.46	0.51
51:X:16:ASN:ND2	51:X:26:ARG:HD3	2.24	0.51
52:Y:39:GLN:HG3	52:Y:42:LEU:HD13	1.93	0.51
23:1:4:ILE:HG23	23:1:5:ARG:H	1.76	0.51
25:3:23:HIS:N	25:3:47:ALA:O	2.43	0.51
28:A:1185:G:C2'	28:A:1186:G:H5'	5.10	0.51
28:A:1234:U:H2'	28:A:1235:G:O4'	2.11	0.51
28:A:1332:G:N7	28:A:1609:A:O2'	2.38	0.51
28:A:1576:U:O2'	28:A:1577:C:H5'	2.11	0.51
28:A:1785:A:HO2'	28:A:1786:A:H8	1.59	0.51
28:A:2184:A:H2'	28:A:2185:U:C6	2.46	0.51
28:A:268:C:C2'	28:A:269:C:H5'	2.40	0.51
28:A:2638:G:N2	28:A:2775:G:H2'	2.26	0.51
28:A:783:A:H2'	28:A:784:G:H5"	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:877:A:O2'	28:A:878:A:O4'	2.29	0.51
29:B:82:U:H2'	29:B:83:G:H8	1.74	0.51
30:C:161:VAL:HG11	30:C:173:LEU:HD23	1.93	0.51
35:H:5:LEU:HD12	35:H:14:SER:OG	2.11	0.51
39:L:77:ILE:HD12	39:L:108:ALA:HB1	1.91	0.51
42:O:15:ARG:HH21	42:O:95:SER:CB	2.23	0.51
42:O:24:THR:HG22	42:O:42:PRO:HD3	1.91	0.51
47:T:39:THR:HG22	47:T:39:THR:O	2.10	0.51
48:U:93:ARG:O	48:U:101:THR:HG23	2.10	0.51
26:4:22:VAL:HG21	26:4:36:ARG:HG3	1.92	0.51
54:6:36:A:H2'	54:6:37:A:H8	1.73	0.51
58:9:21:A:N1	58:9:46:G:N2	2.58	0.51
58:9:54:U:H2'	58:9:55:U:H5'	1.93	0.51
58:9:73:A:H2'	58:9:74:C:O4'	2.11	0.51
28:A:1023:U:H2'	28:A:1024:G:C8	4.34	0.51
28:A:1102:C:H2'	28:A:1103:A:O4'	2.11	0.51
28:A:139:U:O2'	28:A:140:C:OP1	2.24	0.51
28:A:1684:G:H2'	28:A:1685:C:C6	2.46	0.51
28:A:1865:U:OP1	28:A:2409:G:N2	2.31	0.51
22:0:3:GLN:O	28:A:2016:U:O2'	2.29	0.51
28:A:2522:U:O2'	28:A:2647:U:OP1	2.29	0.51
28:A:2751:G:N3	28:A:2751:G:H2'	2.25	0.51
28:A:2758:A:C2'	28:A:2759:G:H5'	2.41	0.51
28:A:851:C:H2'	28:A:852:U:C6	2.46	0.51
28:A:855:G:C4	50:W:23:LYS:HD2	2.45	0.51
31:D:92:VAL:O	31:D:94:GLN:N	2.44	0.51
33:F:134:GLN:OE1	33:F:149:ARG:HB3	2.11	0.51
35:H:41:LYS:H	35:H:44:ILE:CG2	2.20	0.51
39:L:135:ILE:CB	39:L:142:ILE:HD11	2.40	0.51
39:L:82:LEU:O	39:L:85:VAL:HG12	2.11	0.51
43:P:30:TRP:CD2	43:P:37:LYS:HE2	2.45	0.51
44:Q:88:GLU:HG2	45:R:49:ILE:HG13	1.93	0.51
46:S:69:LEU:CD1	46:S:107:VAL:HG22	2.41	0.51
49:V:6:ALA:HB2	49:V:42:LEU:CD2	2.37	0.51
51:X:30:PRO:HB2	51:X:32:LEU:CD1	2.41	0.51
52:Y:9:LYS:HG2	52:Y:12:GLU:HG3	1.93	0.51
26:4:25:VAL:O	26:4:26:ILE:HD13	2.10	0.50
27:5:140:PRO:HB2	27:5:164:ARG:HH22	1.73	0.50
56:8:17(A):U:H5''	56:8:18:G:OP2	2.12	0.50
58:9:68:C:C2'	58:9:69:G:H5'	2.41	0.50
28:A:1106:G:C2'	28:A:1107:G:H5'	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1272:A:C3'	28:A:1273:U:H5''	2.41	0.50
28:A:1710:G:O2'	28:A:1711:A:H5'	2.11	0.50
28:A:2104:C:H2'	28:A:2105:U:C6	2.46	0.50
28:A:2114:A:C4	28:A:2115:G:H1'	2.46	0.50
28:A:705:A:C2	28:A:727:A:H1'	2.46	0.50
28:A:855:G:C2	50:W:23:LYS:HE2	2.45	0.50
28:A:974:G:N3	28:A:974:G:H2'	2.26	0.50
29:B:25:U:H2'	29:B:26:C:O4'	2.11	0.50
29:B:55:U:H2'	29:B:56:G:C8	2.46	0.50
38:K:73:ASP:OD2	43:P:79:VAL:HG21	2.10	0.50
39:L:68:SER:O	39:L:70:LYS:N	2.43	0.50
42:O:40:ILE:HA	42:O:47:VAL:HA	1.92	0.50
45:R:38:VAL:CG1	45:R:57:GLY:HA3	2.42	0.50
25:3:49:VAL:CG2	25:3:54:LEU:HD13	2.41	0.50
58:9:15:G:O2'	58:9:16:U:OP1	2.28	0.50
58:9:62:C:H6	58:9:62:C:O5'	1.94	0.50
28:A:1159:U:O2'	28:A:1160:G:H5'	2.10	0.50
28:A:2156:G:C4'	28:A:2158:A:H62	2.22	0.50
28:A:723:C:H2'	28:A:724:U:O4'	2.11	0.50
28:A:760:G:H2'	28:A:761:A:C5'	2.40	0.50
31:D:170:VAL:O	31:D:170:VAL:HG13	2.11	0.50
33:F:42:ALA:HA	33:F:45:ASP:O	2.12	0.50
35:H:100:ALA:O	35:H:103:VAL:HB	2.12	0.50
42:O:7:ARG:CA	42:O:10:ARG:HH11	2.23	0.50
45:R:15:SER:HB2	45:R:18:GLN:CD	2.32	0.50
27:5:214:ILE:CG2	27:5:224:VAL:HG23	2.42	0.50
28:A:141:G:HO2'	28:A:142:A:P	2.34	0.50
28:A:1487:U:H1'	28:A:1503:A:H2	1.76	0.50
28:A:1766:G:C2'	28:A:1767:G:H5'	2.41	0.50
28:A:2342:C:O2	28:A:2374:C:H4'	2.11	0.50
26:4:36:ARG:HH22	28:A:2539:C:H4'	1.76	0.50
28:A:2747:G:O6	28:A:2755:C:H5''	2.10	0.50
28:A:319:G:C2'	28:A:320:A:H5'	2.61	0.50
28:A:536:G:C2'	28:A:537:G:H5'	2.41	0.50
30:C:123:ILE:HG23	30:C:191:LEU:HD21	1.92	0.50
28:A:2599:G:N7	30:C:235:GLU:HB3	2.26	0.50
32:E:149:ILE:HD11	32:E:188:MET:HB2	1.94	0.50
35:H:89:LYS:HE3	35:H:123:ARG:O	2.12	0.50
36:I:4:VAL:HG12	36:I:6:ALA:N	2.16	0.50
36:I:56:VAL:O	36:I:56:VAL:HG13	2.11	0.50
41:N:79:LEU:O	41:N:80:PHE:HB2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:Y:46:VAL:O	52:Y:50:VAL:HG23	2.11	0.50
25:3:44:ARG:N	25:3:45:PRO:HD2	2.27	0.50
26:4:23:ILE:HD12	26:4:38:GLY:OXT	2.11	0.50
27:5:105:LYS:HE3	28:A:2163:A:C1'	2.42	0.50
27:5:47:ASN:CB	27:5:210:LYS:HD2	2.41	0.50
28:A:1963:U:O5'	28:A:1963:U:H6	1.94	0.50
28:A:570:G:H2'	28:A:2030:A:N7	2.27	0.50
28:A:356:G:O2'	28:A:357:C:H5'	2.10	0.50
28:A:613:A:H3'	28:A:614:A:C5'	2.39	0.50
28:A:1568:G:OP2	30:C:62:ARG:NH1	2.44	0.50
31:D:62:LYS:HB2	31:D:63:PRO:HD3	1.93	0.50
40:M:132:THR:HG22	40:M:133:LYS:N	2.26	0.50
40:M:31:PHE:CZ	40:M:110:GLU:HA	2.45	0.50
23:1:33:LEU:HD21	23:1:35:LEU:CD2	2.41	0.50
26:4:1:MET:HE1	26:4:36:ARG:HB2	1.92	0.50
27:5:60:ARG:HG3	27:5:165:ASN:HD22	1.77	0.50
27:5:6:LYS:HE3	28:A:2151:U:P	2.51	0.50
54:6:1:G:H2'	54:6:2:C:C6	2.47	0.50
54:6:31:A:H2'	54:6:32:U:H5'	1.92	0.50
28:A:1079:C:C2'	28:A:1080:A:H5'	2.42	0.50
28:A:1171:G:H2'	28:A:1172:C:O4'	2.11	0.50
28:A:1348:C:H2'	28:A:1349:C:H5'	1.93	0.50
28:A:1657:U:O2'	31:D:138:LEU:HD22	2.12	0.50
28:A:1719:G:O2'	28:A:1720:U:H5'	2.12	0.50
23:1:5:ARG:NH1	28:A:2285:C:OP2	2.45	0.50
28:A:2660:A:H2'	28:A:2661:G:O4'	2.11	0.50
28:A:404:A:OP1	28:A:404:A:H3'	2.11	0.50
28:A:473:G:O2'	28:A:474:G:H5'	2.11	0.50
28:A:322:A:OP2	32:E:163:ASN:HB2	2.11	0.50
35:H:129:GLU:HG2	35:H:146:VAL:HG22	1.91	0.50
35:H:33:GLN:HG2	35:H:35:LYS:HZ3	1.75	0.50
37:J:45:THR:O	37:J:45:THR:HG23	2.11	0.50
38:K:61:VAL:HG12	38:K:62:VAL:O	2.11	0.50
39:L:101:ILE:CG2	39:L:105:ILE:HB	2.41	0.50
42:O:38:GLN:HG2	42:O:50:ALA:HB1	1.93	0.50
45:R:29:THR:HG23	45:R:65:ALA:H	1.74	0.50
27:5:61:GLY:HA3	27:5:144:THR:HB	1.93	0.50
27:5:77:VAL:HG22	27:5:115:ILE:CB	2.40	0.50
28:A:1013:C:O2'	28:A:1014:A:H5'	2.11	0.50
28:A:107:G:H2'	28:A:108:G:C5'	3.14	0.50
28:A:1216:G:H5''	44:Q:10:ARG:HH12	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1661:G:O2'	28:A:1662:U:H5'	2.10	0.50
28:A:1787:A:H2'	28:A:1787:A:N3	2.25	0.50
28:A:2291:U:O2'	28:A:2374:C:O2	2.30	0.50
29:B:19:C:C2'	29:B:20:G:H5'	2.42	0.50
30:C:134:ILE:O	30:C:166:ARG:NH1	2.45	0.50
28:A:1248:G:P	32:E:44:ARG:NH1	2.84	0.50
34:G:84:LYS:HD3	34:G:132:LEU:C	2.32	0.50
38:K:20:MET:O	38:K:42:THR:HG22	2.12	0.50
28:A:873:C:H4'	40:M:64:TRP:NE1	2.26	0.50
41:N:103:ARG:HD3	41:N:110:MET:HE3	1.92	0.50
53:Z:5:LYS:O	53:Z:57:GLU:HB2	2.10	0.50
28:A:149:A:H2'	28:A:150:U:O4'	2.86	0.50
28:A:285:G:H2'	28:A:285:G:N3	2.26	0.50
28:A:635:C:O2'	28:A:639:U:H5''	2.10	0.50
28:A:842:U:C2'	28:A:843:G:H5'	2.42	0.50
28:A:889:C:H2'	28:A:890:C:H5'	1.94	0.50
31:D:177:VAL:HG13	31:D:177:VAL:O	2.12	0.50
32:E:5:LEU:HB3	32:E:8:ALA:O	2.12	0.50
41:N:72:ASP:HB3	41:N:75:ILE:CD1	2.42	0.50
49:V:55:GLU:OE1	49:V:55:GLU:N	2.39	0.50
26:4:16:ILE:CD1	26:4:25:VAL:HG22	2.41	0.50
27:5:21:TYR:H	27:5:225:ASP:N	2.09	0.50
55:7:21:C:C2'	55:7:22:A:H5'	2.40	0.50
58:9:20:U:C2	58:9:21:A:H4'	2.47	0.50
28:A:1614:A:N6	46:S:92:ARG:O	2.45	0.50
28:A:2060:A:N3	28:A:2502:G:H5'	2.27	0.50
28:A:2329:U:O2'	28:A:2330:G:H5'	2.12	0.50
28:A:491:G:O6	46:S:49:LYS:HE2	2.11	0.50
30:C:134:ILE:CD1	30:C:140:VAL:HG11	2.35	0.50
30:C:211:ARG:HD2	30:C:215:VAL:O	2.12	0.50
33:F:147:ARG:HG3	33:F:149:ARG:N	2.15	0.50
36:I:58:ILE:HD12	36:I:68:PHE:HB2	1.93	0.50
50:W:33:GLY:O	50:W:34:SER:HB3	2.12	0.50
51:X:58:ILE:CG2	51:X:63:ILE:HG12	2.42	0.50
51:X:70:LEU:HA	51:X:73:ARG:HG2	1.93	0.50
52:Y:9:LYS:HD2	52:Y:10:SER:H	1.77	0.50
22:0:31:LYS:HE2	22:0:49:ARG:O	2.12	0.50
27:5:141:LYS:HG3	27:5:164:ARG:HH21	1.77	0.50
27:5:185:LEU:O	27:5:188:ASN:HB2	2.11	0.50
27:5:34:ALA:CB	27:5:216:THR:HG21	2.42	0.50
28:A:1893:C:C2'	28:A:1894:C:H5'	2.40	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2281:A:C2'	28:A:2282:G:H5'	2.42	0.50
28:A:37:C:O2'	28:A:38:A:H5'	2.12	0.50
28:A:435:C:H2'	28:A:436:C:H5'	1.94	0.50
28:A:45:G:H2'	28:A:46:G:C8	6.41	0.50
30:C:16:VAL:HB	30:C:203:VAL:CG1	2.39	0.50
31:D:109:VAL:HG11	31:D:193:VAL:CG1	2.41	0.50
35:H:47:PHE:CB	35:H:50:ARG:HH21	2.23	0.50
37:J:56:VAL:N	37:J:123:LYS:O	2.44	0.50
43:P:50:ARG:CG	43:P:51:ASN:H	2.16	0.50
47:T:7:LEU:HD11	47:T:42:GLU:OE2	2.12	0.50
25:3:29:ARG:HH12	39:L:62:PRO:HB2	1.77	0.49
28:A:193:U:O2'	28:A:194:G:H5'	2.12	0.49
28:A:966:G:O4'	28:A:2267:A:N6	2.45	0.49
28:A:2286:G:H5'	28:A:2287:A:O5'	2.12	0.49
28:A:2364:C:H2'	28:A:2365:G:O4'	2.12	0.49
28:A:718:A:H2'	28:A:719:C:C5'	2.42	0.49
28:A:874:G:C2'	28:A:875:G:H5'	2.41	0.49
28:A:895:U:H4'	28:A:896:A:C8	2.47	0.49
32:E:58:LYS:HD2	32:E:70:SER:O	2.12	0.49
32:E:6:LYS:HG2	32:E:7:ASP:N	2.27	0.49
34:G:60:GLY:O	34:G:62:ALA:N	2.44	0.49
36:I:116:MET:CE	36:I:124:MET:HB3	2.36	0.49
36:I:45:THR:HA	36:I:48:ILE:CG1	2.41	0.49
37:J:45:THR:OG1	37:J:48:VAL:HB	2.12	0.49
45:R:6:GLN:HG3	45:R:10:LYS:O	2.12	0.49
45:R:1:MET:HE1	45:R:43:ASN:HD21	1.75	0.49
45:R:42:ALA:HA	45:R:46:GLU:HA	1.94	0.49
27:5:167:LYS:NZ	28:A:2120:G:H21	2.10	0.49
56:8:58:A:H1'	56:8:60:U:OP2	2.12	0.49
58:9:5:G:N1	58:9:68:C:N3	2.56	0.49
28:A:1414:C:H2'	28:A:1415:U:C6	2.47	0.49
28:A:1526:C:C2'	28:A:1527:G:H5'	2.41	0.49
28:A:1413:A:N6	28:A:1589:U:H3	2.08	0.49
28:A:1800:C:H5'	30:C:145:MET:HE3	1.92	0.49
28:A:1859:U:O2'	28:A:1860:G:H5'	2.12	0.49
28:A:2350:C:H2'	28:A:2351:G:O4'	2.12	0.49
31:D:1:MET:HG2	31:D:205:PRO:HG3	1.95	0.49
37:J:96:ARG:N	37:J:97:PRO:HD3	2.27	0.49
38:K:79:PHE:CD1	43:P:69:VAL:HG12	2.47	0.49
45:R:49:ILE:HD12	45:R:52:PRO:CA	2.36	0.49
48:U:49:PRO:HA	48:U:53:GLN:OE1	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:9:9:A:H61	58:9:22:G:H3'	1.75	0.49
58:9:53:G:H2'	58:9:53:G:N3	2.27	0.49
28:A:1070:A:C2	28:A:1097:U:H4'	2.47	0.49
28:A:1600:C:O2'	28:A:1601:G:H5'	2.12	0.49
28:A:223:A:H2'	28:A:224:U:C6	7.27	0.49
28:A:2297:A:N7	28:A:2320:U:N3	2.60	0.49
28:A:2623:G:OP1	28:A:2826:A:O2'	2.27	0.49
28:A:28:A:C2'	28:A:29:U:H5'	2.42	0.49
28:A:500:G:N1	28:A:503:A:OP2	2.45	0.49
28:A:545:U:O5'	28:A:545:U:H6	1.94	0.49
28:A:975:A:H4'	28:A:976:G:H5'	5.93	0.49
28:A:993:G:N3	28:A:993:G:H2'	3.33	0.49
29:B:2:G:H2'	29:B:3:C:C6	2.47	0.49
30:C:124:LYS:HG2	30:C:125:PRO:HD2	1.92	0.49
30:C:33:LEU:HD23	30:C:62:ARG:HG2	1.95	0.49
31:D:52:THR:CG2	31:D:53:GLY:H	2.23	0.49
31:D:65:ALA:O	31:D:69:ALA:HB2	2.12	0.49
33:F:35:LEU:HD22	33:F:153:ILE:HG22	1.92	0.49
39:L:78:ARG:HB3	39:L:113:ALA:HB1	1.94	0.49
42:O:89:ASP:OD1	42:O:116:GLN:HB3	2.12	0.49
46:S:4:ILE:HG22	46:S:106:VAL:HG22	1.93	0.49
49:V:75:GLN:HG2	49:V:92:VAL:HG23	1.94	0.49
27:5:57:GLN:OE1	27:5:204:ALA:HB3	2.12	0.49
28:A:135:U:O2'	28:A:136:G:H5'	2.11	0.49
28:A:1538:G:O2'	28:A:1539:U:H5'	2.12	0.49
28:A:1779:U:H5	28:A:1784:A:N7	2.11	0.49
28:A:2116:G:OP2	28:A:2166:U:H1'	2.12	0.49
28:A:2834:G:H2'	28:A:2879:A:N6	2.26	0.49
28:A:656:G:H2'	28:A:657:U:O4'	2.12	0.49
29:B:43:C:O2	33:F:91:ARG:NH2	2.45	0.49
28:A:1792:G:H5"	30:C:203:VAL:HG23	1.93	0.49
39:L:135:ILE:HD12	39:L:142:ILE:HD11	1.95	0.49
42:O:76:LYS:CB	42:O:109:ALA:HB1	2.43	0.49
46:S:3:THR:HG21	46:S:107:VAL:HG13	1.94	0.49
47:T:44:LYS:HG3	47:T:55:VAL:HG11	1.94	0.49
50:W:9:THR:HG23	50:W:10:ARG:N	2.25	0.49
22:0:52:LYS:HG3	22:0:52:LYS:O	2.13	0.49
23:1:34:GLU:OE2	23:1:49:LYS:HD3	2.12	0.49
26:4:3:VAL:HG12	26:4:36:ARG:NH2	2.28	0.49
27:5:38:PHE:HE2	27:5:218:MET:HB3	1.74	0.49
27:5:50:ILE:HA	27:5:57:GLN:OE1	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:5:THR:O	27:5:8:MET:HB2	2.12	0.49
55:7:15:U:H2'	55:7:16:A:C8	2.47	0.49
58:9:49:C:O2'	58:9:50:U:H5'	2.13	0.49
28:A:1041:G:O2'	28:A:1042:G:H5'	2.12	0.49
28:A:1177:G:H2'	28:A:1178:C:C5'	2.43	0.49
28:A:1179:G:H5''	28:A:1180:U:OP2	2.12	0.49
28:A:167:A:H2'	28:A:168:G:O4'	2.12	0.49
28:A:2135:A:H5'	28:A:2136:G:OP2	2.13	0.49
28:A:2154:A:N7	28:A:2155:U:H5	2.11	0.49
28:A:2411:A:O2'	28:A:2412:A:H5'	2.12	0.49
28:A:2586:U:O2'	28:A:2587:A:H5'	2.13	0.49
28:A:2600:A:H2'	28:A:2601:C:H5'	1.93	0.49
28:A:476:G:N2	28:A:479:A:OP2	2.45	0.49
28:A:85:G:P	48:U:6:ARG:HB2	2.52	0.49
30:C:7:PRO:HB3	30:C:13:ARG:HG3	1.94	0.49
34:G:118:ALA:O	34:G:120:ILE:N	2.39	0.49
34:G:46:ASP:OD1	34:G:47:ASN:N	2.40	0.49
36:I:123:ALA:HA	36:I:126:ARG:NH1	2.27	0.49
37:J:4:PHE:HB3	37:J:44:TYR:CE2	2.47	0.49
37:J:7:LYS:O	37:J:10:THR:OG1	2.28	0.49
49:V:62:THR:HA	49:V:71:LYS:HA	1.95	0.49
53:Z:2:LYS:O	53:Z:3:THR:OG1	2.27	0.49
27:5:70:GLY:N	27:5:176:GLY:HA2	2.27	0.49
54:6:50:U:C2'	54:6:51:U:H5'	2.43	0.49
58:9:14:A:N6	58:9:15:G:N3	2.60	0.49
28:A:1237:A:H4'	28:A:1238:G:OP1	2.12	0.49
28:A:1652:A:H5'	28:A:1653:G:OP2	2.12	0.49
28:A:528:A:C2	28:A:2043:C:H5'	2.47	0.49
28:A:2075:U:OP2	28:A:2238:G:O2'	2.20	0.49
28:A:2271:G:O5'	28:A:2271:G:H8	1.96	0.49
28:A:2292:U:O2'	28:A:2293:G:H5'	2.12	0.49
28:A:2343:U:O2'	28:A:2373:G:O2'	2.24	0.49
28:A:2581:G:N3	28:A:2581:G:H2'	2.27	0.49
28:A:614:A:O2'	28:A:615:U:OP2	2.29	0.49
28:A:792:A:H3'	28:A:793:A:H5'	1.94	0.49
28:A:864:G:O2'	28:A:865:C:H5'	2.12	0.49
29:B:93:C:O2'	29:B:94:A:H5'	2.13	0.49
28:A:2049:G:H21	31:D:161:MET:HE2	1.77	0.49
31:D:49:GLN:HA	31:D:80:TRP:O	2.13	0.49
35:H:83:LYS:HD3	35:H:95:GLY:HA3	1.94	0.49
36:I:105:LEU:HD22	36:I:128:ILE:CG2	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:T:29:THR:HA	47:T:86:THR:HA	1.94	0.49
47:T:50:LEU:HD12	47:T:50:LEU:N	2.27	0.49
50:W:37:VAL:O	50:W:38:ARG:HB2	2.13	0.49
28:A:1428:C:C5	28:A:1569:A:H5'	2.47	0.49
28:A:1517:G:H2'	28:A:1518:C:H6	1.77	0.49
28:A:1684:G:H2'	28:A:1685:C:H6	1.76	0.49
28:A:1794:A:H2'	28:A:1795:C:C6	2.47	0.49
28:A:2304:G:H22	28:A:2312:U:H3	1.59	0.49
28:A:2492:U:O2'	28:A:2493:U:H5'	2.12	0.49
28:A:2657:A:H2'	28:A:2658:C:H5'	1.95	0.49
28:A:699:A:H2'	28:A:700:G:C5'	2.42	0.49
28:A:859:G:OP2	28:A:869:G:N1	21.94	0.49
28:A:881:G:C2	28:A:898:C:H1'	2.48	0.49
30:C:143:VAL:HG12	30:C:144:GLU:N	2.27	0.49
30:C:172:THR:C	30:C:173:LEU:HD12	2.33	0.49
33:F:121:PHE:HB3	33:F:162:ASP:OD1	2.11	0.49
40:M:68:PHE:O	40:M:94:ALA:HB2	2.12	0.49
43:P:30:TRP:CZ3	43:P:37:LYS:HE2	2.47	0.49
54:6:15:G:H2'	54:6:16:U:C6	2.48	0.49
28:A:1172:C:H2'	28:A:1173:U:O4'	2.13	0.49
28:A:1726:C:O2'	28:A:1727:C:H5'	2.13	0.49
28:A:1845:G:H2'	28:A:1846:G:C5'	2.42	0.49
28:A:2130:U:O2'	28:A:2131:U:OP1	2.25	0.49
28:A:2158:A:H2'	28:A:2159:G:N3	2.28	0.49
28:A:2433:A:H5'	28:A:2434:A:P	2.52	0.49
28:A:467:G:H4'	28:A:796:C:O2'	2.13	0.49
30:C:172:THR:HA	30:C:181:ARG:O	2.12	0.49
32:E:188:MET:HG2	32:E:193:VAL:HG22	1.94	0.49
33:F:102:LEU:O	33:F:106:ALA:HB3	2.12	0.49
33:F:72:SER:HB2	33:F:80:GLN:N	2.27	0.49
34:G:26:LYS:HA	34:G:32:LEU:HA	1.93	0.49
35:H:76:GLU:HG3	35:H:77:THR:O	2.13	0.49
37:J:124:VAL:HG23	37:J:125:TYR:H	1.78	0.49
38:K:103:VAL:O	38:K:122:VAL:HB	2.12	0.49
38:K:87:LEU:HD23	38:K:94:PRO:HA	1.94	0.49
31:D:116:LYS:HD3	41:N:1:MET:SD	2.52	0.49
28:A:996:A:O2'	44:Q:91:ARG:HG2	2.12	0.49
50:W:21:GLY:HA2	50:W:25:PHE:CE1	2.48	0.49
52:Y:56:LEU:HA	52:Y:59:GLU:HG2	1.94	0.49
54:6:35:A:O2'	54:6:36:A:O5'	2.30	0.49
58:9:70:G:H4'	58:9:70:G:OP1	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1404:C:C2'	28:A:1405:U:H5'	2.42	0.49
28:A:1433:A:H2'	28:A:1434:A:C1'	2.43	0.49
28:A:2134:A:C8	28:A:2135:A:H1'	2.47	0.49
28:A:276:U:O2	28:A:277:G:H1'	2.13	0.49
28:A:378:C:O2'	28:A:379:G:H5'	2.13	0.49
28:A:966:G:H2'	28:A:967:U:O4'	2.12	0.49
29:B:35:C:H2'	29:B:36:C:C4'	2.43	0.49
32:E:164:LEU:HB2	32:E:167:VAL:CG1	2.43	0.49
32:E:45:ALA:O	32:E:46:GLN:CB	2.61	0.49
35:H:125:THR:O	35:H:125:THR:HG22	2.13	0.49
36:I:27:LEU:HD21	36:I:34:ILE:HD11	1.94	0.49
37:J:122:LEU:C	37:J:123:LYS:HD2	2.32	0.49
43:P:50:ARG:N	43:P:57:ALA:O	2.46	0.49
52:Y:9:LYS:CB	52:Y:12:GLU:HG3	2.43	0.49
27:5:110:ASN:HD22	28:A:2126:A:P	2.36	0.49
58:9:10:G:H3'	58:9:11:C:C6	2.48	0.49
28:A:1432:G:O2'	28:A:1433:A:H5'	2.12	0.49
28:A:136:G:H1	28:A:143:C:H42	1.61	0.49
28:A:1516:G:C2'	28:A:1517:G:H5'	2.43	0.49
28:A:1533:C:O2	28:A:1533:C:H2'	2.13	0.49
27:5:135:GLY:N	28:A:2124:G:O6	2.31	0.49
28:A:2171:A:H4'	28:A:2172:U:O4'	2.13	0.49
28:A:2178:C:H6	28:A:2178:C:O5'	1.95	0.49
28:A:2311:A:C2	33:F:40:GLY:HA2	2.48	0.49
28:A:2600:A:O2'	28:A:2601:C:H5'	2.13	0.49
28:A:528:A:N1	28:A:2042:A:H2'	2.27	0.49
28:A:587:C:O2	39:L:33:ARG:NH2	2.46	0.49
39:L:77:ILE:HG22	39:L:78:ARG:N	2.27	0.49
45:R:37:GLU:HB3	45:R:53:PHE:CE1	2.48	0.49
46:S:29:VAL:CG1	46:S:55:ILE:HD11	2.43	0.49
53:Z:16:LEU:HB2	53:Z:19:HIS:CD2	2.48	0.49
22:0:39:ARG:O	22:0:40:HIS:HB2	2.13	0.48
25:3:49:VAL:HG21	25:3:54:LEU:HD13	1.94	0.48
28:A:1417:C:O2'	28:A:1587:G:O2'	2.31	0.48
28:A:1511:G:H2'	28:A:1512:C:C6	2.48	0.48
28:A:1794:A:H2'	28:A:1795:C:H6	1.78	0.48
27:5:4:LEU:HD12	28:A:2107:G:H5''	1.95	0.48
28:A:2297:A:O2'	28:A:2298:A:H5'	2.13	0.48
28:A:2757:A:H2'	28:A:2758:A:H5'	1.95	0.48
28:A:2839:G:H2'	28:A:2840:C:O4'	2.13	0.48
28:A:327:G:H1	28:A:335:C:H42	1.59	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B:109:A:H2'	29:B:110:C:H6	1.77	0.48
31:D:142:VAL:O	31:D:142:VAL:HG23	2.63	0.48
36:I:31:GLY:HA3	36:I:64:ARG:CZ	2.43	0.48
37:J:56:VAL:C	37:J:57:LEU:HD12	2.33	0.48
39:L:85:VAL:O	39:L:86:GLU:HB3	2.13	0.48
48:U:47:PRO:CD	48:U:55:GLY:HA2	2.43	0.48
52:Y:17:GLU:HA	52:Y:20:ASN:HD22	1.78	0.48
27:5:37:LYS:O	27:5:38:PHE:HB3	2.13	0.48
56:8:14:A:H2'	56:8:15:G:H5'	1.95	0.48
28:A:1173:U:O2	28:A:1174:U:H4'	2.14	0.48
28:A:1589:U:H2'	28:A:1590:A:C8	2.48	0.48
28:A:334:C:O2'	28:A:335:C:H5'	4.79	0.48
28:A:634:C:H2'	28:A:635:C:C6	2.43	0.48
29:B:104:A:H2'	29:B:105:G:O4'	2.13	0.48
29:B:11:C:C2'	29:B:12:C:H5'	2.43	0.48
33:F:151:LEU:HD12	33:F:152:ASP:N	2.27	0.48
33:F:162:ASP:HB3	33:F:166:ARG:HH12	1.77	0.48
35:H:64:ALA:C	35:H:71:LYS:HE3	2.34	0.48
35:H:72:ILE:HG21	35:H:132:PHE:CA	2.42	0.48
36:I:102:ARG:HA	36:I:141:ASP:HA	1.93	0.48
36:I:83:ALA:HB1	36:I:85:ILE:HD12	1.96	0.48
28:A:833:A:P	39:L:39:LYS:HZ1	2.35	0.48
45:R:46:GLU:N	45:R:46:GLU:OE1	2.29	0.48
28:A:372:G:C8	51:X:60:LYS:HE2	2.47	0.48
27:5:7:ARG:NH1	27:5:219:GLY:H	2.06	0.48
27:5:23:ILE:CG1	27:5:227:ALA:HB2	2.43	0.48
28:A:1070:A:H2	28:A:1097:U:HO2'	1.61	0.48
28:A:1188:U:C2'	28:A:1189:A:H5'	2.43	0.48
28:A:1534:U:H2'	28:A:1536:C:N3	2.28	0.48
28:A:1559:U:H4'	28:A:1560:G:OP2	2.13	0.48
28:A:170:U:H2'	28:A:171:U:C6	2.45	0.48
28:A:1799:G:N2	28:A:1819:A:OP2	2.42	0.48
28:A:2567:G:H2'	28:A:2568:U:C6	2.48	0.48
28:A:2602:A:H4'	28:A:2603:G:H5''	1.91	0.48
28:A:2671:G:O2'	28:A:2672:U:H5'	2.14	0.48
28:A:874:G:H2'	28:A:875:G:H5'	1.94	0.48
29:B:36:C:H41	29:B:49:C:H1'	1.77	0.48
30:C:16:VAL:HG12	30:C:16:VAL:O	2.12	0.48
30:C:245:THR:C	30:C:247:TRP:H	2.16	0.48
33:F:27:VAL:HG23	33:F:28:PRO:HD2	1.95	0.48
35:H:94:ILE:C	35:H:114:GLU:HG3	2.33	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:J:89:PHE:HE1	37:J:100:VAL:HG11	1.79	0.48
37:J:12:LYS:O	37:J:13:ARG:HB2	2.13	0.48
37:J:49:ASP:OD1	37:J:121:LYS:NZ	2.39	0.48
38:K:118:LEU:O	38:K:119:ALA:HB3	2.13	0.48
45:R:4:VAL:HG23	45:R:12:HIS:O	2.14	0.48
52:Y:13:GLU:HA	52:Y:16:THR:OG1	2.14	0.48
27:5:146:THR:CG2	27:5:152:ALA:HB1	2.39	0.48
27:5:48:LEU:HD11	27:5:171:ILE:CG1	2.43	0.48
27:5:86:ALA:O	27:5:90:ALA:N	2.46	0.48
54:6:50:U:H2'	54:6:51:U:H5'	1.95	0.48
56:8:7:G:N2	56:8:66:C:O2	2.35	0.48
58:9:49:C:H2'	58:9:50:U:H5'	1.96	0.48
28:A:1120:G:O2'	28:A:1121:C:H5'	2.13	0.48
28:A:1482:G:N2	28:A:1507:C:O2	2.47	0.48
28:A:1533:C:C2'	28:A:1534:U:H5''	2.30	0.48
28:A:2264:C:O2'	28:A:2265:U:H5'	2.13	0.48
25:3:4:LYS:NZ	28:A:253:C:OP2	2.27	0.48
35:H:37:VAL:CG1	35:H:38:PRO:CD	2.87	0.48
36:I:56:VAL:HG23	36:I:70:THR:CA	2.41	0.48
48:U:48:VAL:O	48:U:53:GLN:HB3	2.13	0.48
27:5:211:LYS:HA	27:5:226:GLN:HG2	1.95	0.48
28:A:1128:G:N7	28:A:2489:U:O2'	2.46	0.48
28:A:1176:U:O2'	28:A:1177:G:O4'	2.18	0.48
28:A:1484:U:H2'	28:A:1485:U:C6	2.48	0.48
28:A:2423:U:H4'	28:A:2424:C:O5'	2.13	0.48
28:A:2059:A:C8	28:A:2503:A:N3	2.82	0.48
28:A:1638:C:H5''	28:A:2710:C:O2'	2.14	0.48
28:A:2883:A:H5'	28:A:2884:U:H5'	1.95	0.48
30:C:49:THR:HG23	30:C:50:THR:N	2.29	0.48
31:D:73:VAL:HG23	31:D:74:GLU:N	2.29	0.48
35:H:103:VAL:HA	35:H:106:ALA:HB3	1.95	0.48
36:I:74:PRO:HG2	36:I:77:VAL:CG2	2.44	0.48
37:J:124:VAL:HG23	37:J:125:TYR:N	2.28	0.48
44:Q:91:ARG:CZ	44:Q:93:ILE:HG21	2.44	0.48
50:W:67:LYS:HG2	50:W:69:GLU:OE2	2.12	0.48
27:5:190:GLU:O	27:5:194:VAL:HG22	2.14	0.48
27:5:35:THR:H	27:5:219:GLY:HA3	1.77	0.48
28:A:1206:G:N3	28:A:1206:G:H2'	2.28	0.48
28:A:1253:A:H4'	28:A:1254:A:OP2	2.12	0.48
28:A:1386:C:H2'	28:A:1387:A:H8	1.78	0.48
28:A:1438:U:O2'	28:A:1439:A:H5'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2164:C:H5'	28:A:2172:U:C5	2.46	0.48
28:A:2236:U:C2'	28:A:2237:G:H5'	2.43	0.48
28:A:229:C:O2'	28:A:230:G:OP1	2.26	0.48
28:A:2799:A:C2	28:A:2801:G:H1'	2.49	0.48
28:A:2843:G:H2'	28:A:2844:G:O4'	2.14	0.48
28:A:273:G:H1	28:A:364:C:H42	1.61	0.48
28:A:536:G:H2'	28:A:537:G:C5'	2.43	0.48
28:A:760:G:C2'	28:A:761:A:H5'	2.43	0.48
33:F:127:TYR:O	33:F:128:SER:HB2	2.13	0.48
34:G:8:VAL:HG13	34:G:49:LEU:HB2	1.94	0.48
38:K:11:ALA:HB3	38:K:85:VAL:HG22	1.95	0.48
42:O:2:ASP:CG	42:O:3:LYS:H	2.17	0.48
43:P:50:ARG:HB3	43:P:57:ALA:N	2.28	0.48
25:3:31:ILE:HG13	25:3:31:ILE:O	2.14	0.48
27:5:64:VAL:HG22	27:5:160:GLN:CB	2.43	0.48
27:5:75:VAL:HG13	27:5:115:ILE:CG1	2.44	0.48
54:6:70:G:O2'	54:6:71:G:H5'	2.14	0.48
56:8:73:A:H5'	56:8:74:C:OP1	2.14	0.48
28:A:1124:G:O2'	28:A:1125:G:H5'	2.13	0.48
28:A:156:A:O2'	28:A:157:C:H5'	2.12	0.48
28:A:1694:C:H4'	28:A:1695:G:O5'	2.13	0.48
28:A:2151:U:H2'	28:A:2152:G:O4'	2.13	0.48
28:A:405:U:H4'	28:A:406:G:OP2	2.14	0.48
28:A:809:G:O2'	28:A:810:U:H5'	2.13	0.48
29:B:52:A:N7	42:O:64:TYR:OH	2.37	0.48
28:A:2680:U:H5'	31:D:194:PRO:HA	1.96	0.48
37:J:18:VAL:CG2	37:J:140:LEU:HD11	2.43	0.48
49:V:65:VAL:HG13	49:V:65:VAL:O	2.13	0.48
28:A:1081:U:C5'	36:I:126:ARG:HH21	2.25	0.48
28:A:158:U:O2'	28:A:159:G:H5'	2.14	0.48
28:A:2366:A:H4'	50:W:61:LYS:NZ	2.29	0.48
29:B:114:C:O2'	29:B:115:A:H5'	2.13	0.48
32:E:164:LEU:CB	32:E:167:VAL:HG12	2.43	0.48
34:G:114:HIS:ND1	34:G:150:TYR:OH	2.39	0.48
36:I:33:ASN:OD1	36:I:35:MET:HB3	2.14	0.48
37:J:45:THR:N	37:J:46:PRO:HD3	2.28	0.48
39:L:122:VAL:CG1	39:L:142:ILE:HG12	2.42	0.48
40:M:32:GLY:O	40:M:131:VAL:HG22	2.14	0.48
25:3:12:ARG:NE	39:L:61:LEU:O	2.47	0.48
27:5:46:VAL:CG2	27:5:212:VAL:HA	2.43	0.48
27:5:52:ALA:O	27:5:53:ARG:HG3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:8:54:U:O2'	56:8:55:U:H5'	2.14	0.48
58:9:61:C:N3	58:9:62:C:N4	2.62	0.48
28:A:1201:U:O2'	28:A:1202:G:H5'	2.14	0.48
28:A:2060:A:C1'	28:A:2502:G:H4'	2.43	0.48
28:A:2843:G:O2'	28:A:2844:G:H5'	2.13	0.48
28:A:825:A:O2'	28:A:826:U:H5'	2.13	0.48
28:A:895:U:O2'	28:A:897:C:O4'	2.32	0.48
29:B:80:U:H2'	29:B:81:G:H8	1.79	0.48
32:E:117:ARG:NH2	32:E:183:PHE:O	2.47	0.48
36:I:59:THR:O	36:I:66:PHE:HB2	2.14	0.48
37:J:105:VAL:HG21	37:J:122:LEU:HD22	1.95	0.48
39:L:101:ILE:HG22	39:L:105:ILE:CB	2.44	0.48
41:N:73:ASN:C	41:N:76:VAL:HG12	2.35	0.48
28:A:2295:C:OP2	42:O:10:ARG:HD3	2.14	0.48
43:P:49:ILE:HG22	43:P:50:ARG:N	2.28	0.48
49:V:35:GLU:HG2	49:V:93:ARG:NH1	2.29	0.48
50:W:36:ILE:HG22	50:W:36:ILE:O	2.14	0.48
52:Y:3:ALA:O	52:Y:6:LEU:HB3	2.14	0.48
58:9:2:C:C4	58:9:3:C:C5	3.02	0.48
28:A:143:C:H5'	47:T:3:ARG:NH1	2.29	0.48
28:A:2195:U:O2'	28:A:2196:C:H5'	2.13	0.48
28:A:2457:U:O2'	28:A:2458:G:H5'	2.14	0.48
29:B:53:A:H2'	29:B:54:G:O4'	2.13	0.48
29:B:71:C:H2'	29:B:72:G:H5'	1.96	0.48
31:D:46:ARG:NH2	31:D:87:GLY:O	2.47	0.48
38:K:7:MET:HA	38:K:19:VAL:O	2.14	0.48
38:K:76:VAL:HB	43:P:72:VAL:CG2	2.44	0.48
28:A:1398:C:OP1	47:T:59:ASN:ND2	2.47	0.48
47:T:67:VAL:HA	47:T:76:ARG:HA	1.94	0.48
52:Y:9:LYS:HB3	52:Y:12:GLU:HB2	1.96	0.48
58:9:6:G:O2'	58:9:7:A:H5'	2.13	0.47
22:O:7:PRO:HD2	28:A:1263:U:O2'	2.14	0.47
28:A:1845:G:C2	28:A:1846:G:H1'	2.49	0.47
28:A:2037:A:O2'	28:A:2038:G:H5'	2.14	0.47
28:A:2102:G:C2'	28:A:2103:C:H5'	2.44	0.47
28:A:2115:G:O2'	28:A:2171:A:N6	2.40	0.47
28:A:266:G:C3'	28:A:267:C:H5'	2.44	0.47
28:A:315:G:H2'	28:A:316:C:O4'	2.13	0.47
28:A:50:U:H3'	28:A:51:G:C5'	2.44	0.47
28:A:536:G:H2'	28:A:537:G:H5'	1.96	0.47
28:A:859:G:HO2'	28:A:860:U:P	2.36	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:C:54:GLY:O	30:C:214:GLY:HA2	2.13	0.47
34:G:97:VAL:HG23	34:G:124:CYS:SG	2.54	0.47
35:H:118:PRO:HD3	35:H:122:LEU:HD23	1.96	0.47
36:I:17:ALA:HB3	36:I:38:CYS:HA	1.93	0.47
45:R:54:VAL:HG23	45:R:57:GLY:CA	2.42	0.47
51:X:29:LEU:HB2	51:X:30:PRO:HD2	1.96	0.47
27:5:141:LYS:HB2	27:5:164:ARG:HE	1.79	0.47
28:A:1120:G:H2'	28:A:1121:C:O4'	2.14	0.47
28:A:1871:A:H1'	28:A:1872:A:C8	2.49	0.47
28:A:2311:A:O2'	33:F:84:ILE:HG12	2.14	0.47
28:A:282:A:H2'	28:A:283:G:C8	2.50	0.47
28:A:836:G:O6	28:A:850:U:N3	30.18	0.47
29:B:27:C:H2'	29:B:28:C:H5'	1.96	0.47
31:D:49:GLN:HE21	31:D:79:LEU:HD13	1.78	0.47
31:D:49:GLN:HE21	31:D:79:LEU:HB3	1.78	0.47
35:H:47:PHE:CA	35:H:50:ARG:HH21	2.27	0.47
35:H:66:ASN:O	35:H:71:LYS:HE2	2.14	0.47
36:I:21:PRO:HB2	36:I:22:PRO:HD3	1.96	0.47
36:I:58:ILE:HD12	36:I:68:PHE:HB3	1.96	0.47
37:J:40:HIS:CE1	37:J:41:LYS:HE3	2.50	0.47
38:K:76:VAL:H	43:P:72:VAL:HG22	1.79	0.47
23:1:25:ASN:ND2	23:1:28:THR:HG23	2.29	0.47
24:2:19:ARG:NH2	28:A:124:G:H2'	2.29	0.47
26:4:3:VAL:CG2	26:4:4:ARG:H	2.14	0.47
56:8:24:U:H2'	56:8:25:C:O4'	2.13	0.47
58:9:1:G:H3'	58:9:1:G:OP3	2.15	0.47
58:9:24:G:H2'	58:9:25:C:H6	1.78	0.47
28:A:1116:G:O2'	28:A:1117:C:H5'	2.14	0.47
28:A:1936:A:H2	28:A:1943:U:H5	1.62	0.47
27:5:35:THR:HB	28:A:2128:G:O2'	2.15	0.47
28:A:2134:A:H2'	28:A:2160:C:H5'	1.96	0.47
28:A:2425:A:H4'	28:A:2426:A:H5''	1.97	0.47
28:A:519:U:O2'	28:A:520:G:H5'	2.13	0.47
34:G:102:ILE:O	34:G:113:ASP:HA	2.13	0.47
35:H:145:ASN:O	35:H:148:ALA:HB3	2.15	0.47
35:H:66:ASN:O	35:H:67:ALA:HB3	2.14	0.47
36:I:37:PHE:HA	36:I:40:ALA:HB3	1.96	0.47
36:I:4:VAL:HB	36:I:7:TYR:HB3	1.94	0.47
37:J:16:TYR:CB	37:J:140:LEU:HD23	2.43	0.47
45:R:101:ILE:O	45:R:101:ILE:HG22	2.14	0.47
48:U:25:LYS:HB3	48:U:34:ILE:O	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:W:30:VAL:HA	50:W:60:ALA:O	2.15	0.47
22:0:47:TYR:CZ	22:0:52:LYS:HD3	2.49	0.47
27:5:65:LEU:HD22	27:5:188:ASN:O	2.15	0.47
27:5:216:THR:O	28:A:2175:C:H1'	2.15	0.47
28:A:1722:A:N6	28:A:1738:G:H1'	2.29	0.47
28:A:2405:G:O2'	28:A:2411:A:N6	2.47	0.47
25:3:2:LYS:HB2	28:A:242:G:N7	2.29	0.47
28:A:2877:G:C2'	28:A:2878:U:H5'	2.45	0.47
28:A:493:G:C2'	28:A:494:G:H5'	2.44	0.47
28:A:786:C:O2'	28:A:787:C:H5'	2.14	0.47
28:A:993:G:O2'	28:A:994:C:H5'	2.13	0.47
32:E:147:LEU:HD23	32:E:147:LEU:O	2.14	0.47
32:E:79:ARG:HG2	32:E:80:SER:N	2.29	0.47
33:F:41:GLU:CG	33:F:48:LEU:HD23	2.44	0.47
34:G:166:GLU:OE1	34:G:168:VAL:HG13	2.15	0.47
37:J:18:VAL:HG22	37:J:140:LEU:CD1	2.45	0.47
38:K:7:MET:HB3	38:K:18:ARG:HD2	1.96	0.47
44:Q:93:ILE:HG23	44:Q:94:LEU:HD12	1.93	0.47
46:S:68:ASP:O	46:S:109:ASP:HB3	2.14	0.47
49:V:75:GLN:CB	49:V:92:VAL:HG23	2.44	0.47
26:4:1:MET:HE2	26:4:36:ARG:HB2	1.96	0.47
27:5:201:PRO:HG2	27:5:206:GLY:HA2	1.95	0.47
27:5:38:PHE:HB3	28:A:2126:A:C5'	2.43	0.47
58:9:59:U:H2'	58:9:60:U:C5'	2.41	0.47
28:A:135:U:C2'	28:A:136:G:H5'	2.45	0.47
28:A:1678:A:H2'	28:A:1679:A:C5'	2.44	0.47
28:A:2107:G:H2'	28:A:2108:A:O4'	2.15	0.47
28:A:242:G:O2'	28:A:254:G:O6	2.22	0.47
28:A:256:A:O2'	28:A:257:C:H5'	2.14	0.47
28:A:2841:C:H2'	28:A:2842:G:H8	1.79	0.47
28:A:585:G:OP2	44:Q:5:ARG:NH2	2.48	0.47
28:A:817:C:O2'	28:A:818:G:H5'	2.14	0.47
29:B:66:A:N6	29:B:107:G:H2'	2.29	0.47
29:B:33:G:O2'	29:B:34:A:H5'	2.14	0.47
34:G:134:GLY:CA	34:G:140:ILE:HD13	2.44	0.47
34:G:174:LYS:O	34:G:174:LYS:HG3	2.15	0.47
35:H:129:GLU:HB2	35:H:142:VAL:HG11	1.97	0.47
39:L:142:ILE:HG22	39:L:142:ILE:O	2.14	0.47
47:T:68:LYS:CD	47:T:69:ARG:N	2.73	0.47
50:W:41:GLY:HA2	50:W:44:PHE:CE2	2.50	0.47
28:A:1199:U:H6	28:A:1199:U:O5'	1.98	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1242:U:H2'	28:A:1243:C:H6	1.79	0.47
28:A:1639:C:O2'	28:A:1640:A:H5'	2.14	0.47
28:A:1765:U:O2'	28:A:1766:G:H5'	2.14	0.47
28:A:2111:U:H1'	28:A:2117:A:C5'	2.41	0.47
28:A:2400:G:O2'	28:A:2401:U:H5'	2.14	0.47
28:A:2831:G:N2	28:A:2884:U:OP2	2.47	0.47
28:A:32:C:O2'	28:A:33:C:H5'	2.14	0.47
28:A:995:C:H2'	28:A:996:A:H5''	6.85	0.47
31:D:121:THR:O	31:D:122:VAL:HG23	2.14	0.47
32:E:124:PHE:CE2	32:E:148:ILE:HD13	2.50	0.47
28:A:2094:A:OP1	35:H:22:LYS:HD3	2.14	0.47
43:P:4:ILE:CG2	43:P:5:LYS:H	2.11	0.47
50:W:39:GLN:HG2	50:W:41:GLY:H	1.80	0.47
51:X:68:ALA:HA	51:X:71:ARG:NH2	2.29	0.47
23:1:44:GLN:O	23:1:46:VAL:HG23	2.14	0.47
26:4:17:VAL:HG12	26:4:18:LYS:N	2.28	0.47
27:5:127:LEU:CD2	28:A:2169:A:C4	2.97	0.47
27:5:69:THR:HB	27:5:161:VAL:CG2	2.44	0.47
27:5:7:ARG:HD2	28:A:2130:U:C4	2.49	0.47
58:9:20:U:H2'	58:9:21:A:H4'	1.97	0.47
28:A:1058:U:O2'	28:A:1059:G:H5'	2.14	0.47
28:A:1500:G:O2'	28:A:1501:G:H5'	2.14	0.47
28:A:2092:U:OP1	28:A:2199:A:O2'	2.33	0.47
28:A:2320:U:H4'	28:A:2321:U:H6	1.80	0.47
28:A:2481:G:HO2'	28:A:2482:A:H8	1.63	0.47
28:A:2783:U:H2'	28:A:2784:U:H6	1.80	0.47
28:A:2822:G:C2'	28:A:2823:A:H5''	2.41	0.47
28:A:2877:G:O2'	28:A:2878:U:H5'	2.14	0.47
28:A:308:G:O2'	28:A:329:G:N2	2.47	0.47
28:A:418:C:N3	28:A:419:U:N3	2.63	0.47
28:A:551:G:H2'	28:A:552:U:H5'	1.95	0.47
28:A:707:G:O2'	28:A:708:G:H5'	2.14	0.47
31:D:16:THR:HG23	31:D:18:ASP:OD1	2.15	0.47
32:E:124:PHE:HE1	32:E:141:MET:SD	2.37	0.47
32:E:57:LYS:O	32:E:59:PRO:HD3	2.15	0.47
35:H:118:PRO:HB3	35:H:122:LEU:HB3	1.97	0.47
35:H:7:ASP:N	35:H:35:LYS:O	2.48	0.47
37:J:38:GLY:HA3	37:J:50:THR:OG1	2.15	0.47
37:J:98:GLU:HB3	37:J:124:VAL:HG21	1.95	0.47
45:R:72:VAL:HG23	45:R:72:VAL:O	2.14	0.47
53:Z:24:LEU:HD23	53:Z:24:LEU:O	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:0:38:LEU:HB2	22:0:41:HIS:HB2	1.96	0.47
27:5:37:LYS:HZ2	28:A:2127:G:H1'	1.78	0.47
28:A:12:U:H2'	28:A:12:U:O2	2.15	0.47
28:A:1592:C:H2'	28:A:1593:A:H8	1.79	0.47
28:A:1879:C:H2'	28:A:1880:U:O4'	2.15	0.47
28:A:579:G:O2'	28:A:2019:A:OP1	2.31	0.47
28:A:2186:G:H2'	28:A:2187:U:H6	1.80	0.47
28:A:2216:G:H2'	28:A:2217:G:H8	1.79	0.47
28:A:2829:A:O2'	28:A:2830:C:H5'	2.15	0.47
28:A:426:C:H2'	28:A:427:U:C6	2.48	0.47
28:A:539:G:O2'	28:A:540:C:H5'	2.14	0.47
23:1:43:ARG:NH2	28:A:643:A:H1'	2.29	0.47
32:E:150:THR:HG21	32:E:153:LEU:HA	1.95	0.47
33:F:24:VAL:O	33:F:27:VAL:HG12	2.15	0.47
34:G:51:PHE:HE2	34:G:68:ARG:HA	1.77	0.47
34:G:70:LEU:O	34:G:74:MET:HG3	2.15	0.47
37:J:16:TYR:HB3	37:J:140:LEU:CD2	2.44	0.47
40:M:50:ARG:HD3	40:M:65:ILE:HD11	1.96	0.47
43:P:64:SER:N	43:P:67:GLU:O	2.35	0.47
25:3:44:ARG:HD3	28:A:2418:A:OP1	2.14	0.47
28:A:137:U:H3	28:A:142:A:N6	2.12	0.47
28:A:154:U:O4	28:A:167:A:N6	17.09	0.47
28:A:1777:U:O2'	28:A:1778:U:H5'	2.15	0.47
28:A:188:G:H5'	51:X:13:THR:HG23	1.97	0.47
28:A:2116:G:H3'	28:A:2117:A:C8	2.50	0.47
28:A:2230:G:H5''	51:X:29:LEU:CD1	2.39	0.47
28:A:2234:G:C2'	28:A:2235:G:H5'	2.44	0.47
28:A:2293:G:OP1	42:O:94:ARG:NH1	2.47	0.47
28:A:2428:G:H5''	28:A:2429:G:O5'	2.15	0.47
28:A:2644:G:O2'	28:A:2645:G:H5'	2.14	0.47
28:A:2671:G:H2'	28:A:2672:U:O4'	2.15	0.47
28:A:806:C:O2	28:A:2444:G:O2'	2.32	0.47
28:A:912:C:O2'	28:A:913:U:H5'	2.15	0.47
30:C:60:ALA:O	30:C:62:ARG:NH2	2.48	0.47
32:E:12:LEU:HD23	32:E:12:LEU:O	2.15	0.47
34:G:38:ASP:N	34:G:38:ASP:OD1	2.47	0.47
39:L:112:LEU:O	39:L:112:LEU:HD23	2.15	0.47
41:N:57:THR:O	41:N:62:ASN:ND2	2.38	0.47
46:S:23:LEU:C	46:S:24:ILE:HD13	2.35	0.47
23:1:46:VAL:HG12	23:1:47:ILE:N	2.29	0.47
27:5:224:VAL:HG12	27:5:225:ASP:N	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:7:14:A:C2'	55:7:14:A:N3	2.77	0.47
58:9:20:U:O2	58:9:21:A:H4'	2.15	0.47
58:9:60:U:H2'	58:9:61:C:C5	2.50	0.47
28:A:1060:U:H4'	28:A:1061:U:H5''	1.96	0.47
28:A:1212:G:H1'	28:A:1236:G:N2	2.30	0.47
28:A:1268:A:H2'	28:A:1269:A:O4'	2.15	0.47
28:A:156:A:C2'	28:A:157:C:H5'	2.45	0.47
28:A:1678:A:C2'	28:A:1679:A:H5'	2.45	0.47
28:A:1924:C:H2'	28:A:1925:C:C5'	2.44	0.47
27:5:133:PRO:HB2	28:A:2172:U:H4'	1.97	0.47
28:A:2290:G:N1	28:A:2343:U:O2	2.48	0.47
28:A:2765:A:H5'	28:A:2766:A:OP2	2.15	0.47
28:A:594:U:H2'	28:A:595:C:C6	2.50	0.47
28:A:628:G:O2'	28:A:629:G:H5'	2.15	0.47
28:A:571:U:H5'	28:A:819:A:C5	19.19	0.47
31:D:11:MET:HE1	31:D:192:ALA:H	1.80	0.47
32:E:129:PRO:HG3	32:E:156:ASN:OD1	2.15	0.47
37:J:88:THR:HG22	37:J:91:GLU:CD	2.35	0.47
40:M:41:LEU:CD1	40:M:96:ILE:HG12	2.45	0.47
40:M:59:ARG:HD3	54:6:54:U:C4'	2.45	0.47
45:R:5:PHE:HE2	45:R:14:VAL:HG21	1.80	0.47
48:U:85:ARG:HD3	48:U:86:PHE:N	2.29	0.47
50:W:22:VAL:HG13	50:W:22:VAL:O	2.15	0.47
27:5:70:GLY:O	27:5:177:LYS:N	2.48	0.47
27:5:74:ARG:NH1	27:5:110:ASN:HB3	2.30	0.47
28:A:2157:G:O2'	28:A:2158:A:P	2.73	0.47
28:A:2289:G:O2'	28:A:2383:G:O2'	2.32	0.47
25:3:12:ARG:NH1	28:A:2394:C:H5'	2.30	0.47
28:A:2553:G:H5''	28:A:2554:U:OP2	2.15	0.47
28:A:2654:A:H4'	28:A:2655:G:OP1	2.15	0.47
28:A:497:A:H2'	28:A:498:G:O4'	2.16	0.47
28:A:820:A:N3	28:A:943:A:O2'	2.44	0.47
28:A:903:C:H2'	28:A:904:G:C8	2.50	0.47
30:C:120:ASP:O	30:C:121:ALA:HB3	2.15	0.47
30:C:134:ILE:HG22	30:C:135:PRO:O	2.16	0.47
30:C:156:SER:O	30:C:194:VAL:HG11	2.14	0.47
31:D:146:ILE:HG13	31:D:146:ILE:O	2.15	0.47
32:E:46:GLN:O	32:E:86:ALA:HB1	2.15	0.47
34:G:53:PRO:HB3	34:G:60:GLY:HA3	1.96	0.47
35:H:40:THR:O	35:H:41:LYS:HB2	2.14	0.47
36:I:63:ASP:O	36:I:64:ARG:HB3	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:L:81:ASP:O	39:L:82:LEU:HG	2.15	0.47
40:M:106:ASP:O	40:M:108:VAL:N	2.42	0.47
40:M:53:MET:HB2	40:M:120:ALA:HB2	1.97	0.47
28:A:912:C:P	40:M:8:LYS:HZ1	2.38	0.47
44:Q:64:ILE:HG12	44:Q:95:ALA:HB1	1.95	0.47
45:R:75:VAL:HG12	45:R:76:LYS:N	2.30	0.47
46:S:59:GLU:OE2	46:S:66:ILE:HG23	2.15	0.47
28:A:329:G:O6	48:U:16:LYS:HB2	2.15	0.47
28:A:1047:G:HO2'	28:A:1109:C:N4	2.13	0.46
28:A:2145:C:O2	28:A:2148:G:H2'	2.15	0.46
28:A:376:G:N2	28:A:399:U:O2	2.48	0.46
28:A:783:A:C2'	28:A:784:G:H5''	2.45	0.46
28:A:960:A:H61	40:M:82:MET:CE	2.28	0.46
28:A:1695:G:N7	30:C:13:ARG:NH2	2.63	0.46
31:D:101:PHE:HA	31:D:104:VAL:CG2	2.45	0.46
34:G:116:LEU:HD21	34:G:122:ALA:CB	2.41	0.46
37:J:129:GLU:OE1	37:J:129:GLU:N	2.49	0.46
39:L:40:SER:O	39:L:41:ARG:HB2	2.15	0.46
40:M:26:VAL:HB	40:M:133:LYS:HA	1.96	0.46
46:S:70:LYS:O	46:S:107:VAL:HG23	2.15	0.46
51:X:36:ARG:HG2	51:X:47:THR:CG2	2.38	0.46
53:Z:8:GLN:HB3	53:Z:32:GLY:H	1.80	0.46
27:5:66:PRO:HD3	27:5:191:ALA:HB2	1.97	0.46
27:5:36:ALA:HB2	27:5:38:PHE:CE1	2.50	0.46
56:8:25:C:H2'	56:8:26:G:O4'	2.15	0.46
28:A:1478:G:O2'	28:A:1479:G:H5'	2.16	0.46
28:A:154:U:O2'	28:A:155:A:H5'	2.30	0.46
28:A:2655:G:H4'	28:A:2655:G:OP1	2.14	0.46
28:A:559:G:H2'	28:A:560:C:H6	1.80	0.46
28:A:774:G:O2'	28:A:775:G:OP2	2.27	0.46
28:A:824:U:O2'	28:A:825:A:H5'	2.15	0.46
28:A:886:A:O2'	28:A:887:U:O5'	2.33	0.46
29:B:78:A:C2	29:B:99:A:C4	3.04	0.46
28:A:1655:A:O4'	31:D:118:PHE:HB2	2.16	0.46
31:D:98:VAL:HG12	31:D:180:VAL:HG13	1.96	0.46
32:E:188:MET:CG	32:E:193:VAL:HG22	2.45	0.46
33:F:163:GLU:OE1	33:F:166:ARG:NH2	2.44	0.46
33:F:59:ILE:HG22	33:F:60:SER:N	2.29	0.46
33:F:3:LEU:CA	33:F:6:TYR:HB3	2.43	0.46
34:G:22:VAL:O	34:G:23:ILE:HG13	2.16	0.46
38:K:11:ALA:HB3	38:K:85:VAL:CG2	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:811:U:H2'	39:L:21:ARG:HA	1.97	0.46
39:L:27:LEU:O	39:L:31:GLY:HA2	2.14	0.46
40:M:53:MET:HE3	40:M:63:ILE:HG21	1.96	0.46
40:M:71:LYS:HD3	40:M:95:LEU:CD1	2.44	0.46
41:N:1:MET:O	41:N:2:ARG:CB	2.62	0.46
42:O:24:THR:HG22	42:O:42:PRO:CD	2.45	0.46
47:T:85:VAL:O	47:T:86:THR:OG1	2.32	0.46
22:O:54:ILE:HG22	22:O:56:LYS:OXT	2.15	0.46
24:2:35:ARG:HE	24:2:42:LEU:CD1	2.28	0.46
26:4:11:CYS:HB3	26:4:33:HIS:CE1	2.51	0.46
27:5:150:ALA:HA	27:5:153:VAL:HG23	1.98	0.46
27:5:37:LYS:HG3	27:5:38:PHE:HD2	1.74	0.46
58:9:69:G:H2'	58:9:70:G:O4'	2.15	0.46
28:A:1026:G:OP2	28:A:1134:A:O2'	2.26	0.46
28:A:1323:C:C2'	28:A:1324:G:H5'	2.45	0.46
28:A:1742:U:O2'	28:A:1743:G:H5'	2.15	0.46
28:A:1789:A:H2'	28:A:1790:C:C6	2.50	0.46
28:A:2120:G:C2	28:A:2121:G:H1'	2.50	0.46
28:A:266:G:H3'	28:A:267:C:H5''	1.97	0.46
28:A:640:C:H2'	28:A:641:U:C6	2.50	0.46
28:A:719:C:O2'	28:A:720:U:H5'	2.16	0.46
28:A:803:U:H2'	28:A:804:A:H5'	1.96	0.46
28:A:932:U:O2'	28:A:934:U:O4	2.27	0.46
29:B:118:C:H2'	29:B:119:A:C4'	2.46	0.46
30:C:16:VAL:HG23	30:C:203:VAL:HG11	1.97	0.46
28:A:37:C:O2'	32:E:45:ALA:HB3	2.16	0.46
34:G:114:HIS:HB2	34:G:150:TYR:CE2	2.51	0.46
34:G:129:GLU:HG2	34:G:130:ILE:N	2.31	0.46
41:N:26:GLY:HA2	41:N:29:VAL:HG12	1.96	0.46
46:S:3:THR:O	46:S:3:THR:HG23	2.15	0.46
53:Z:50:VAL:HG23	53:Z:54:VAL:HG22	1.97	0.46
23:1:13:SER:OG	23:1:47:ILE:HG23	2.16	0.46
23:1:7:LYS:NZ	28:A:2420:C:H5''	2.31	0.46
27:5:15:VAL:HG12	27:5:16:ASP:OD1	2.15	0.46
27:5:24:ASN:ND2	27:5:231:ALA:O	2.45	0.46
27:5:34:ALA:HA	27:5:219:GLY:HA3	1.97	0.46
58:9:45:U:H2'	58:9:46:G:H5'	1.96	0.46
28:A:1982:U:C2'	28:A:1983:G:H5'	2.46	0.46
27:5:7:ARG:HG3	28:A:2130:U:C2	2.50	0.46
28:A:412:A:N6	28:A:2411:A:O2'	2.47	0.46
28:A:2867:G:O2'	28:A:2868:A:OP2	2.29	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:296:U:H2'	28:A:297:G:C8	2.50	0.46
28:A:496:G:H2'	28:A:497:A:H5'	1.98	0.46
28:A:538:A:O2'	28:A:539:G:H5'	2.15	0.46
28:A:990:A:N1	45:R:78:ARG:NH1	2.64	0.46
29:B:64:G:H2'	29:B:65:U:C6	2.50	0.46
31:D:14:ILE:HG22	43:P:11:GLN:HE22	1.80	0.46
34:G:29:ASN:ND2	34:G:79:THR:O	2.48	0.46
35:H:104:THR:CG2	35:H:109:GLU:HG3	2.44	0.46
36:I:9:LYS:HB3	36:I:57:VAL:HG22	1.96	0.46
40:M:45:GLN:OE1	40:M:125:PRO:HG3	2.14	0.46
41:N:33:ILE:CD1	41:N:114:GLU:HB3	2.34	0.46
41:N:83:LEU:HD21	41:N:115:LEU:HD11	1.97	0.46
51:X:39:VAL:O	51:X:41:SER:N	2.44	0.46
51:X:39:VAL:HG22	51:X:44:ARG:O	2.16	0.46
27:5:163:TYR:HB2	27:5:171:ILE:CG2	2.46	0.46
27:5:34:ALA:HB2	27:5:216:THR:HG21	1.97	0.46
54:6:34:G:H1	55:7:21:C:H5	1.62	0.46
58:9:30:G:O6	58:9:31:A:N6	2.49	0.46
28:A:1005:C:O2'	37:J:30:THR:HG21	2.16	0.46
28:A:1059:G:H2'	28:A:1060:U:C6	2.48	0.46
28:A:1:G:H2'	28:A:2:G:H8	1.80	0.46
28:A:2038:G:O2'	28:A:2039:U:H5'	2.16	0.46
28:A:2133:G:N1	28:A:2159:G:N7	2.63	0.46
28:A:2685:G:O2'	28:A:2686:G:H5'	2.15	0.46
28:A:273:G:H1	28:A:364:C:N4	2.14	0.46
28:A:2758:A:H2'	28:A:2759:G:C5'	2.45	0.46
28:A:460:A:H2'	28:A:461:C:O4'	2.16	0.46
29:B:13:G:N2	29:B:16:G:N3	2.62	0.46
40:M:73:ILE:HG12	40:M:93:VAL:HG22	1.98	0.46
42:O:26:LEU:HD13	42:O:39:VAL:CG2	2.44	0.46
44:Q:91:ARG:HG3	45:R:11:GLN:OE1	2.15	0.46
45:R:52:PRO:O	45:R:53:PHE:HB2	2.16	0.46
22:0:53:VAL:O	22:0:54:ILE:HB	2.16	0.46
58:9:37:A:H3'	58:9:38:A:C8	2.49	0.46
28:A:118:A:H3'	28:A:119:A:C5'	2.43	0.46
28:A:1656:C:H2'	28:A:1657:U:H6	1.80	0.46
28:A:2135:A:N7	28:A:2155:U:C4	2.84	0.46
31:D:52:THR:OG1	31:D:53:GLY:N	2.49	0.46
33:F:89:THR:C	33:F:90:LEU:HD12	2.36	0.46
35:H:85:GLY:HA3	35:H:147:VAL:HA	1.97	0.46
36:I:100:ILE:HG23	36:I:104:GLN:HB2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:L:117:THR:HG22	39:L:118:THR:N	2.30	0.46
28:A:2428:G:H21	39:L:60:ARG:NH2	2.14	0.46
42:O:33:ARG:O	42:O:34:HIS:ND1	2.49	0.46
43:P:50:ARG:HB3	43:P:57:ALA:O	2.15	0.46
45:R:5:PHE:CE2	45:R:14:VAL:HG21	2.51	0.46
28:A:495:G:C5'	46:S:4:ILE:HD11	2.41	0.46
28:A:1106:G:H2'	28:A:1107:G:H5'	1.98	0.46
28:A:127:A:H5''	28:A:128:C:O4'	2.15	0.46
28:A:1482:G:O2'	28:A:1483:G:O5'	2.31	0.46
28:A:1752:C:O2'	28:A:1753:G:H5'	2.16	0.46
28:A:1847:A:N3	28:A:1847:A:H2'	2.30	0.46
28:A:2029:G:H2'	28:A:2031:A:OP1	2.15	0.46
28:A:2101:A:H2'	28:A:2102:G:H8	1.79	0.46
28:A:2211:A:O2'	28:A:2212:A:P	2.74	0.46
28:A:2364:C:O2'	28:A:2365:G:H5'	2.16	0.46
28:A:259:G:H2'	28:A:260:G:O4'	2.98	0.46
28:A:2777:G:H5''	28:A:2778:A:H3'	1.97	0.46
29:B:115:A:H2'	29:B:116:G:O4'	2.15	0.46
31:D:108:ASP:O	31:D:109:VAL:HB	2.16	0.46
31:D:26:VAL:HG22	31:D:188:LEU:HD21	1.97	0.46
35:H:142:VAL:HG22	35:H:143:ILE:N	2.31	0.46
38:K:19:VAL:CG1	38:K:20:MET:N	2.79	0.46
38:K:40:LYS:O	38:K:41:ILE:HD13	2.16	0.46
42:O:105:ALA:C	42:O:107:ALA:H	2.17	0.46
43:P:20:ARG:HG3	43:P:21:PRO:HD2	1.97	0.46
45:R:4:VAL:HG22	45:R:5:PHE:N	2.30	0.46
47:T:25:GLU:OE1	47:T:30:ILE:HG22	2.15	0.46
47:T:50:LEU:C	47:T:52:GLU:H	2.19	0.46
47:T:76:ARG:NH1	47:T:76:ARG:CG	2.76	0.46
54:6:29:G:N2	54:6:42:C:H1'	2.31	0.46
58:9:48:C:C2	58:9:59:U:H1'	2.51	0.46
28:A:1043:C:C3'	28:A:1044:C:H5''	2.46	0.46
28:A:1094:U:H2'	28:A:1096:A:OP2	2.15	0.46
28:A:55:G:O2'	28:A:127:A:N1	2.39	0.46
28:A:1788:C:H2'	28:A:1789:A:H8	1.79	0.46
28:A:193:U:C2'	28:A:194:G:H5'	2.46	0.46
28:A:2044:C:C2'	28:A:2045:C:H5'	2.45	0.46
28:A:2343:U:HO2'	28:A:2373:G:HO2'	1.59	0.46
28:A:2426:A:H4'	28:A:2427:C:OP2	2.16	0.46
28:A:563:A:OP2	45:R:79:ARG:NH2	2.46	0.46
28:A:82:U:O2	28:A:82:U:H2'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:988:A:P	53:Z:11:SER:HB3	2.55	0.46
28:A:321:U:C2	32:E:159:LEU:HD23	2.51	0.46
33:F:113:PHE:HZ	33:F:175:PRO:HB2	1.80	0.46
37:J:32:LEU:CD2	37:J:54:ILE:HD13	2.45	0.46
42:O:74:VAL:O	42:O:78:VAL:HG22	2.15	0.46
42:O:94:ARG:HD2	42:O:97:PHE:O	2.16	0.46
46:S:9:HIS:O	46:S:11:ARG:NH1	2.49	0.46
51:X:3:VAL:CG2	51:X:10:ARG:HG2	2.37	0.46
23:1:10:LEU:HD21	23:1:33:LEU:HD22	1.97	0.46
27:5:48:LEU:CD1	27:5:171:ILE:HG13	2.46	0.46
28:A:1175:A:P	28:A:1176:U:H1'	2.55	0.46
28:A:1177:G:H2'	28:A:1178:C:H5''	1.98	0.46
28:A:2060:A:O2'	32:E:63:LYS:NZ	2.49	0.46
28:A:209:C:O2'	28:A:210:C:H5'	2.16	0.46
28:A:2278:A:OP1	40:M:10:ARG:NH1	2.49	0.46
28:A:2652:C:C2'	28:A:2653:U:H5'	2.46	0.46
28:A:378:C:C2'	28:A:379:G:H5'	2.46	0.46
28:A:548:G:O2'	28:A:549:G:N1	2.45	0.46
28:A:739:A:H1'	28:A:740:C:H5	1.80	0.46
28:A:784:G:H4'	28:A:785:G:O5'	2.16	0.46
30:C:175:LEU:N	30:C:175:LEU:HD12	2.30	0.46
32:E:47:LYS:HB3	32:E:51:GLU:HG3	1.97	0.46
35:H:99:ILE:HG12	35:H:101:ASP:H	1.80	0.46
35:H:73:ASN:ND2	35:H:132:PHE:HD2	2.14	0.46
37:J:59:ALA:HB3	37:J:126:ALA:HA	1.98	0.46
38:K:2:ILE:O	38:K:3:GLN:HB3	2.16	0.46
38:K:19:VAL:HG11	38:K:41:ILE:HG23	1.94	0.46
39:L:22:GLY:O	39:L:28:GLY:HA3	2.16	0.46
39:L:57:LEU:CD1	39:L:60:ARG:HH11	2.26	0.46
40:M:68:PHE:CG	40:M:69:PRO:HD2	2.51	0.46
43:P:50:ARG:CB	43:P:57:ALA:H	2.28	0.46
44:Q:97:ILE:HD11	44:Q:108:LEU:CD1	2.45	0.46
27:5:109:MET:HG2	28:A:2126:A:N7	2.31	0.46
27:5:37:LYS:O	28:A:2126:A:H4'	2.16	0.46
28:A:1147:A:H2'	28:A:1148:U:C6	2.50	0.46
28:A:335:C:O2'	28:A:1433:A:N3	113.64	0.46
28:A:1517:G:H2'	28:A:1518:C:C6	2.50	0.46
28:A:1584:U:C2	28:A:1585:C:H4'	2.51	0.46
28:A:1750:G:O2'	28:A:1751:U:H5'	2.15	0.46
28:A:2062:A:C5	28:A:2503:A:N6	2.83	0.46
27:5:38:PHE:CB	28:A:2126:A:H5''	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2233:U:H2'	28:A:2234:G:C8	2.51	0.46
28:A:50:U:H3'	28:A:51:G:H5'	1.97	0.46
28:A:669:G:H2'	28:A:670:A:N7	2.30	0.46
28:A:736:C:O2'	28:A:737:C:H5'	2.71	0.46
28:A:857:G:O2'	28:A:858:G:H5'	2.17	0.46
30:C:196:ASN:C	30:C:198:GLU:H	2.20	0.46
30:C:251:THR:CG2	30:C:252:LYS:H	2.18	0.46
28:A:2681:C:P	31:D:114:LYS:HZ2	2.37	0.46
35:H:4:ILE:CG1	35:H:44:ILE:HG22	2.46	0.46
36:I:105:LEU:HD12	36:I:139:VAL:HG21	1.95	0.46
28:A:558:U:P	37:J:113:PRO:HB2	2.56	0.46
37:J:17:VAL:CG1	37:J:55:ILE:HD11	2.45	0.46
45:R:33:VAL:HG22	45:R:61:ALA:O	2.16	0.46
49:V:35:GLU:HG3	49:V:36:ALA:N	2.31	0.46
50:W:74:LYS:O	50:W:74:LYS:HG3	2.16	0.46
27:5:141:LYS:H	27:5:164:ARG:NE	2.14	0.45
58:9:35:A:C2	58:9:36:A:N6	2.84	0.45
28:A:104:A:H2'	28:A:105:C:O4'	2.16	0.45
28:A:1510:G:H2'	28:A:1511:G:H8	1.80	0.45
28:A:1616:A:H4'	28:A:1617:C:OP2	2.16	0.45
28:A:1715:G:O2'	28:A:1743:G:O6	2.35	0.45
28:A:2108:A:H2'	28:A:2109:U:O4'	2.16	0.45
28:A:2356:U:H5'	50:W:16:GLU:HG2	1.97	0.45
28:A:2578:G:H21	31:D:130:GLN:NE2	2.13	0.45
28:A:2760:C:C2'	28:A:2761:A:H5'	2.46	0.45
28:A:285:G:H1'	28:A:356:G:N2	2.31	0.45
28:A:888:C:H5'	28:A:889:C:C5	2.48	0.45
28:A:910:A:HO2'	28:A:2264:C:HO2'	1.60	0.45
31:D:12:THR:O	31:D:24:VAL:HG22	2.16	0.45
32:E:160:ALA:O	32:E:161:ALA:HB3	2.16	0.45
33:F:88:VAL:HG12	33:F:90:LEU:HD12	1.97	0.45
34:G:27:GLY:HA3	34:G:78:VAL:CG2	2.46	0.45
38:K:92:GLU:O	38:K:93:GLN:HB2	2.15	0.45
40:M:35:ALA:O	40:M:36:VAL:CB	2.64	0.45
50:W:13:ARG:CG	50:W:14:ASP:H	2.15	0.45
28:A:855:G:H21	50:W:23:LYS:HE2	1.78	0.45
52:Y:45:GLN:HG3	52:Y:46:VAL:HG23	1.97	0.45
28:A:1088:A:H4'	28:A:1089:A:C8	2.51	0.45
28:A:1425:G:H2'	28:A:1426:G:O4'	2.16	0.45
28:A:2236:U:H2'	28:A:2237:G:H5'	1.98	0.45
28:A:285:G:H3'	28:A:286:U:H5	1.77	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:3:18:LYS:HB2	28:A:651:G:OP1	2.16	0.45
38:K:79:PHE:HD1	43:P:69:VAL:HG12	1.81	0.45
47:T:48:GLN:O	47:T:52:GLU:HA	2.16	0.45
47:T:54:GLU:CD	47:T:54:GLU:H	2.18	0.45
48:U:100:GLU:O	48:U:101:THR:HB	2.17	0.45
48:U:23:LYS:O	48:U:36:GLU:HG2	2.16	0.45
50:W:9:THR:HG23	50:W:10:ARG:CG	2.43	0.45
52:Y:17:GLU:HB2	52:Y:53:VAL:HG11	1.98	0.45
27:5:18:THR:OG1	27:5:221:GLY:O	2.23	0.45
54:6:19:G:H1	54:6:56:C:H42	1.65	0.45
54:6:18:G:H1'	54:6:57:G:H22	1.80	0.45
28:A:1490:A:N3	28:A:1490:A:H2'	2.31	0.45
28:A:1727:C:H2'	28:A:1728:C:C6	2.51	0.45
28:A:2111:U:O4'	28:A:2117:A:H5''	2.16	0.45
28:A:2184:A:H2'	28:A:2185:U:H6	1.81	0.45
28:A:2704:C:H2'	28:A:2705:A:O4'	2.16	0.45
28:A:959:A:N6	40:M:82:MET:HE1	2.31	0.45
30:C:194:VAL:HG22	30:C:195:GLY:N	2.31	0.45
31:D:174:SER:OG	31:D:175:LEU:N	2.49	0.45
32:E:97:ASN:HB2	32:E:100:MET:SD	2.56	0.45
35:H:104:THR:HG23	35:H:109:GLU:CB	2.47	0.45
35:H:71:LYS:HD2	35:H:108:VAL:CG1	2.43	0.45
37:J:4:PHE:HD2	37:J:44:TYR:CE2	2.35	0.45
39:L:93:ASN:O	39:L:94:THR:HB	2.16	0.45
40:M:42:THR:OG1	40:M:45:GLN:HG3	2.17	0.45
40:M:37:GLY:O	40:M:98:PRO:HG3	2.16	0.45
50:W:46:ALA:HB3	50:W:80:SER:HA	1.98	0.45
51:X:34:SER:CA	51:X:49:ARG:HA	2.44	0.45
53:Z:5:LYS:HG2	53:Z:36:GLU:HB2	1.97	0.45
22:0:18:HIS:CD2	28:A:2046:G:H1'	2.51	0.45
23:1:7:LYS:CG	23:1:23:THR:HG22	2.42	0.45
23:1:9:LYS:NZ	23:1:52:LYS:O	2.42	0.45
27:5:15:VAL:HG12	27:5:16:ASP:N	2.31	0.45
58:9:17:C:O2'	58:9:61:C:OP1	2.35	0.45
28:A:1177:G:C2'	28:A:1178:C:H5''	2.46	0.45
28:A:137:U:H3	28:A:142:A:H61	1.64	0.45
28:A:2515:C:O2'	28:A:2516:A:H5'	2.17	0.45
28:A:640:C:O2	28:A:649:G:N2	2.50	0.45
31:D:77:ARG:NH2	31:D:200:ASP:OD1	2.50	0.45
31:D:56:LYS:HD3	31:D:58:ASN:HD21	1.82	0.45
32:E:3:LEU:CD1	32:E:14:VAL:HG22	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B:42:C:H1'	33:F:63:LYS:O	2.16	0.45
35:H:146:VAL:C	35:H:149:GLU:H	2.20	0.45
28:A:2094:A:H4'	35:H:25:TYR:HE1	1.81	0.45
36:I:27:LEU:CD2	36:I:32:VAL:HB	2.46	0.45
38:K:71:ARG:HG3	38:K:105:ARG:NH2	2.32	0.45
39:L:37:GLY:O	39:L:40:SER:OG	2.31	0.45
47:T:69:ARG:NH1	47:T:70:HIS:HD2	2.15	0.45
52:Y:45:GLN:O	52:Y:46:VAL:HB	2.17	0.45
56:8:7:G:O2'	56:8:49:G:O4'	2.33	0.45
28:A:1178:C:H2'	28:A:1179:G:O4'	2.16	0.45
28:A:1211:C:O2'	28:A:1212:G:OP1	2.26	0.45
28:A:1492:G:H5''	28:A:1493:C:H5'	1.98	0.45
28:A:1719:G:C2'	28:A:1720:U:H5'	2.47	0.45
28:A:2029:G:N1	28:A:2033:A:OP2	2.43	0.45
28:A:2305:U:O4	33:F:38:GLY:N	2.45	0.45
28:A:2411:A:H2'	28:A:2412:A:C8	2.52	0.45
28:A:2460:U:C2'	28:A:2461:A:H5'	2.46	0.45
28:A:2531:A:N7	34:G:175:LYS:HG2	2.32	0.45
28:A:253:C:H2'	28:A:254:G:H5'	1.99	0.45
28:A:827:U:H4'	28:A:828:U:C6	2.52	0.45
32:E:149:ILE:HD11	32:E:188:MET:CB	2.46	0.45
36:I:100:ILE:HG23	36:I:104:GLN:CB	2.47	0.45
51:X:70:LEU:HB3	51:X:75:GLU:CB	2.46	0.45
52:Y:9:LYS:NZ	52:Y:11:VAL:HB	2.31	0.45
27:5:71:ARG:CB	27:5:177:LYS:HD3	2.47	0.45
28:A:1003:G:O2'	28:A:1010:A:N1	2.38	0.45
28:A:1516:G:H2'	28:A:1517:G:H5'	1.99	0.45
28:A:1668:A:H4'	28:A:1669:A:O5'	2.17	0.45
28:A:1823:G:O2'	28:A:1824:G:H5'	2.17	0.45
28:A:1847:A:P	28:A:1847:A:H2'	2.55	0.45
28:A:921:C:O2'	28:A:922:C:H5'	2.17	0.45
28:A:995:C:C2'	28:A:996:A:H5''	5.96	0.45
31:D:110:THR:CG2	31:D:171:THR:HG22	2.47	0.45
32:E:18:THR:O	32:E:18:THR:HG22	2.16	0.45
32:E:56:GLY:C	32:E:73:ILE:HG22	2.37	0.45
33:F:37:MET:HE1	33:F:149:ARG:HH11	1.81	0.45
33:F:79:ARG:H	33:F:82:TYR:HE2	1.64	0.45
35:H:11:ASN:OD1	35:H:12:LEU:N	2.49	0.45
36:I:98:GLY:C	36:I:137:LEU:HB2	2.37	0.45
38:K:3:GLN:HG2	38:K:4:GLU:N	2.32	0.45
28:A:636:G:N7	39:L:109:LYS:HE2	2.30	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:V:2:PHE:HB3	49:V:50:MET:HE1	1.99	0.45
52:Y:59:GLU:O	52:Y:63:ALA:HB3	2.16	0.45
27:5:60:ARG:CG	27:5:164:ARG:HG3	2.47	0.45
28:A:1050:A:C2	28:A:2751:G:C4	3.04	0.45
28:A:1409:U:O2'	28:A:1410:G:H5'	2.17	0.45
28:A:1662:U:H2'	28:A:1663:G:O4'	2.16	0.45
28:A:192:C:H2'	28:A:193:U:C5'	2.42	0.45
28:A:253:C:C2'	28:A:254:G:H5'	2.46	0.45
28:A:414:C:H4'	28:A:1879:C:O2	2.16	0.45
30:C:109:LEU:HD12	30:C:110:LYS:N	2.31	0.45
30:C:245:THR:O	30:C:247:TRP:N	2.49	0.45
32:E:111:GLU:HG2	39:L:2:ARG:HH21	1.81	0.45
32:E:194:LYS:HA	32:E:197:GLU:HB3	1.98	0.45
34:G:102:ILE:HG21	34:G:104:LEU:HG	1.97	0.45
37:J:55:ILE:HG13	37:J:55:ILE:O	2.17	0.45
41:N:33:ILE:HG12	41:N:118:ARG:HD2	1.98	0.45
28:A:1341:G:H5'	47:T:61:LEU:HD23	1.98	0.45
50:W:24:ARG:NH1	50:W:25:PHE:O	2.50	0.45
23:1:38:PHE:CE1	23:1:43:ARG:HA	2.51	0.45
23:1:4:ILE:CG2	23:1:5:ARG:N	2.79	0.45
27:5:124:VAL:HG12	27:5:125:GLY:N	2.32	0.45
27:5:4:LEU:HB3	28:A:2107:G:OP2	2.16	0.45
54:6:9:A:OP2	54:6:13:C:N4	2.49	0.45
28:A:1029:A:H5''	28:A:1030:C:OP2	2.17	0.45
28:A:1070:A:N3	28:A:1097:U:H4'	2.31	0.45
28:A:1401:G:H2'	28:A:1402:U:C6	2.52	0.45
28:A:1521:G:H5''	28:A:1522:A:OP2	2.16	0.45
28:A:1695:G:H2'	28:A:1696:G:O4'	2.17	0.45
28:A:2116:G:C6	28:A:2117:A:H1'	2.52	0.45
28:A:2167:U:H2'	28:A:2168:G:C5'	2.47	0.45
28:A:2167:U:C2'	28:A:2168:G:H5'	2.46	0.45
27:5:129:GLN:OE1	28:A:2169:A:N6	2.50	0.45
28:A:2397:G:O2'	28:A:2398:U:H5'	2.16	0.45
28:A:354:A:H2'	28:A:355:U:C6	2.51	0.45
28:A:493:G:H2'	28:A:494:G:O4'	2.16	0.45
28:A:794:A:N3	28:A:794:A:H2'	2.32	0.45
28:A:80:G:C2'	28:A:81:G:H5'	2.46	0.45
28:A:569:U:O2'	28:A:983:A:N1	2.43	0.45
29:B:11:C:H2'	29:B:12:C:C5'	2.47	0.45
36:I:100:ILE:HG23	36:I:104:GLN:OE1	2.16	0.45
38:K:8:LEU:CD2	38:K:82:ASN:HB3	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:632:A:H5''	39:L:68:SER:HB2	1.99	0.45
46:S:20:VAL:HG11	46:S:44:ALA:HA	1.99	0.45
47:T:43:ILE:HD11	47:T:58:VAL:HG11	1.98	0.45
23:1:8:ILE:CG1	23:1:51:ALA:HB1	2.47	0.45
28:A:2112:G:H4'	58:9:19:G:C8	2.51	0.45
28:A:1411:U:H2'	28:A:1412:U:C5'	2.47	0.45
28:A:1876:A:N3	28:A:1876:A:H2'	2.30	0.45
28:A:2152:G:H2'	28:A:2153:C:H5'	1.99	0.45
28:A:2185:U:H2'	28:A:2186:G:O4'	2.17	0.45
28:A:2260:C:H5''	50:W:13:ARG:NH2	2.31	0.45
28:A:2446:G:O6	28:A:2501:C:O2'	2.34	0.45
28:A:2530:A:H62	34:G:171:LYS:HZ1	1.65	0.45
28:A:940:G:H2'	28:A:941:A:C4'	2.47	0.45
28:A:983:A:H2'	28:A:983:A:N3	3.39	0.45
34:G:104:LEU:HB2	34:G:112:VAL:HG22	1.97	0.45
35:H:103:VAL:CA	35:H:106:ALA:HB3	2.47	0.45
36:I:26:ALA:C	36:I:28:GLY:H	2.19	0.45
43:P:57:ALA:HA	43:P:73:PHE:O	2.16	0.45
45:R:29:THR:O	45:R:63:VAL:HG23	2.17	0.45
46:S:3:THR:HG22	46:S:107:VAL:O	2.17	0.45
47:T:83:ALA:O	47:T:84:TYR:CB	2.64	0.45
51:X:16:ASN:O	51:X:17:ARG:HB2	2.16	0.45
52:Y:8:GLU:HG3	52:Y:8:GLU:O	2.16	0.45
23:1:16:THR:HB	23:1:41:VAL:HG11	1.98	0.45
25:3:22:LYS:HA	25:3:48:MET:HA	1.99	0.45
27:5:37:LYS:HB3	28:A:2128:G:H5'	1.99	0.45
27:5:7:ARG:HD2	28:A:2130:U:O4	2.17	0.45
54:6:76:F3O:H24	54:6:76:F3O:H14	1.72	0.45
58:9:5:G:C2'	58:9:6:G:H5'	2.47	0.45
28:A:1093:G:O2'	28:A:1098:A:N6	2.50	0.45
28:A:1106:G:O2'	28:A:1107:G:H5'	2.16	0.45
28:A:1936:A:C2	28:A:1943:U:H5	2.35	0.45
28:A:2262:U:H5''	50:W:38:ARG:NH2	2.33	0.45
28:A:2512:C:O2'	31:D:159:LYS:NZ	2.33	0.45
28:A:2644:G:C2'	28:A:2645:G:H5'	2.47	0.45
28:A:2790:U:H5'	28:A:2893:A:N7	2.32	0.45
28:A:499:U:C2'	28:A:500:G:H5'	2.47	0.45
28:A:597:G:H2'	28:A:598:U:C5'	3.58	0.45
30:C:246:PRO:HG2	30:C:247:TRP:CZ3	2.52	0.45
33:F:147:ARG:HG3	33:F:148:VAL:N	2.32	0.45
34:G:11:PRO:HD2	34:G:75:VAL:HG13	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:G:53:PRO:HG3	34:G:61:TRP:CE2	2.52	0.45
35:H:103:VAL:HG12	35:H:110:VAL:HG12	1.99	0.45
36:I:105:LEU:CA	36:I:108:ILE:HD12	2.25	0.45
37:J:64:VAL:HG22	37:J:68:LYS:HB2	1.99	0.45
43:P:30:TRP:CZ3	43:P:39:LEU:HD12	2.52	0.45
48:U:32:LYS:HB3	48:U:63:ALA:HB1	1.99	0.45
49:V:29:ILE:HG13	49:V:38:LEU:O	2.17	0.45
49:V:75:GLN:HB2	49:V:92:VAL:HG23	1.99	0.45
53:Z:4:ILE:O	53:Z:37:ARG:N	2.42	0.45
53:Z:9:THR:O	53:Z:31:ILE:HB	2.17	0.45
27:5:60:ARG:CB	27:5:164:ARG:HG3	2.45	0.44
54:6:27:G:O2'	54:6:28:G:H5'	2.17	0.44
58:9:17:C:O2'	58:9:61:C:H5'	2.16	0.44
28:A:1378:A:O2'	28:A:1379:U:OP2	2.26	0.44
28:A:2405:G:O2'	28:A:2406:A:OP1	2.32	0.44
28:A:253:C:H2'	28:A:254:G:C5'	2.46	0.44
28:A:2739:U:C2'	28:A:2740:A:H5'	2.47	0.44
28:A:319:G:O2'	28:A:320:A:H5'	2.28	0.44
28:A:933:A:H3'	28:A:933:A:N3	2.32	0.44
29:B:65:U:H2'	29:B:66:A:H5'	1.99	0.44
30:C:4:LYS:HE3	30:C:16:VAL:HG21	1.99	0.44
31:D:107:VAL:CG2	31:D:203:VAL:CG2	2.93	0.44
33:F:12:VAL:HG23	33:F:27:VAL:HG11	1.99	0.44
35:H:12:LEU:C	35:H:12:LEU:HD12	2.37	0.44
51:X:52:ALA:O	51:X:53:LYS:CB	2.65	0.44
23:1:35:LEU:HD12	23:1:37:LYS:HG3	1.98	0.44
27:5:127:LEU:HD22	28:A:2169:A:C4	2.52	0.44
27:5:10:VAL:O	27:5:14:LYS:HG2	2.17	0.44
27:5:166:ASP:HA	28:A:2122:U:H4'	1.99	0.44
27:5:71:ARG:HA	27:5:177:LYS:HD3	2.00	0.44
27:5:36:ALA:HB1	27:5:38:PHE:CA	2.46	0.44
56:8:20:U:C3'	56:8:21:A:C5'	2.96	0.44
28:A:1292:G:O2'	28:A:1293:C:H5'	2.18	0.44
28:A:1408:G:H1	28:A:1594:U:H3	1.63	0.44
28:A:158:U:C2'	28:A:159:G:H5'	2.48	0.44
28:A:1678:A:H2'	28:A:1679:A:O4'	2.17	0.44
28:A:2573:C:H6	28:A:2573:C:O5'	2.00	0.44
28:A:365:U:O2'	28:A:366:C:H5'	2.18	0.44
28:A:538:A:C2'	28:A:539:G:H5'	2.48	0.44
30:C:128:THR:O	30:C:129:LEU:HD12	2.16	0.44
30:C:70:LYS:HD2	30:C:99:GLU:OE1	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:E:149:ILE:CD1	32:E:188:MET:HG3	2.47	0.44
33:F:63:LYS:HA	33:F:64:PRO:HD3	1.84	0.44
34:G:41:GLU:HG3	34:G:54:ARG:NH2	2.32	0.44
41:N:20:MET:HE3	41:N:40:LYS:HE2	1.99	0.44
43:P:61:ARG:HG3	43:P:69:VAL:O	2.17	0.44
47:T:67:VAL:O	47:T:67:VAL:HG13	2.17	0.44
27:5:207:VAL:HB	27:5:210:LYS:HZ1	1.81	0.44
27:5:222:VAL:HG23	27:5:222:VAL:O	2.17	0.44
27:5:48:LEU:HD11	27:5:171:ILE:H	1.80	0.44
27:5:85:GLU:HA	27:5:88:LYS:CG	2.48	0.44
54:6:28:G:H2'	54:6:29:G:O4'	2.17	0.44
56:8:73:A:H5'	56:8:74:C:H5'	1.99	0.44
28:A:1011:G:OP1	44:Q:76:SER:N	2.50	0.44
28:A:1279:G:O2'	28:A:1280:G:H5'	2.17	0.44
28:A:1773:A:H2'	28:A:1774:C:H5'	2.00	0.44
28:A:1966:A:H4'	28:A:1967:C:OP1	2.17	0.44
28:A:2113:U:H2'	28:A:2114:A:C8	2.53	0.44
28:A:2554:U:H2'	28:A:2555:U:C6	2.52	0.44
28:A:2556:C:C2'	28:A:2557:G:H5'	2.47	0.44
28:A:2804:U:H2'	28:A:2805:C:C6	2.52	0.44
28:A:781:A:H5'	28:A:782:A:OP2	6.34	0.44
28:A:83:A:H2'	28:A:84:A:N7	2.32	0.44
30:C:68:ARG:NH2	30:C:126:GLY:O	2.50	0.44
30:C:259:ASN:O	30:C:261:ARG:N	2.43	0.44
31:D:4:LEU:O	31:D:203:VAL:HG12	2.17	0.44
33:F:39:VAL:CB	33:F:49:LEU:HD13	2.47	0.44
34:G:25:ILE:HG22	34:G:25:ILE:O	2.17	0.44
35:H:80:ILE:CD1	35:H:101:ASP:HB3	2.47	0.44
35:H:87:GLU:O	35:H:89:LYS:HG2	2.18	0.44
28:A:1063:G:O3'	36:I:88:GLY:HA3	2.18	0.44
38:K:47:ILE:CG2	38:K:48:PRO:HD2	2.42	0.44
39:L:81:ASP:C	39:L:82:LEU:HG	2.38	0.44
42:O:37:ALA:O	42:O:50:ALA:HB1	2.18	0.44
45:R:20:VAL:O	45:R:20:VAL:HG13	2.17	0.44
46:S:96:ILE:HG23	46:S:96:ILE:O	2.17	0.44
48:U:78:LYS:HG2	48:U:79:ALA:N	2.32	0.44
50:W:50:VAL:CG2	50:W:61:LYS:HE3	2.47	0.44
23:1:3:GLY:O	23:1:4:ILE:HG22	2.18	0.44
27:5:107:GLY:HA2	27:5:134:ARG:HH21	1.81	0.44
27:5:87:ALA:O	27:5:91:GLY:HA2	2.17	0.44
58:9:10:G:H2'	58:9:11:C:C6	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:9:20:U:H2'	58:9:21:A:C5'	2.47	0.44
28:A:1087:G:N2	28:A:1099:G:H1'	18.25	0.44
28:A:1186:G:C2'	28:A:1187:G:H5'	2.47	0.44
28:A:1472:C:O2'	28:A:1473:G:H5'	2.18	0.44
28:A:2132:U:H3	28:A:2159:G:H22	1.64	0.44
28:A:183:C:N4	28:A:213:A:H61	2.15	0.44
28:A:2441:U:O2'	28:A:2442:C:H5'	2.18	0.44
28:A:2734:A:H2'	28:A:2735:G:H5'	2.00	0.44
28:A:436:C:H2'	28:A:437:U:H6	2.75	0.44
30:C:227:VAL:HG13	30:C:228:ASP:OD1	2.17	0.44
31:D:11:MET:HE1	31:D:192:ALA:HA	1.99	0.44
31:D:109:VAL:HG11	31:D:193:VAL:HB	1.99	0.44
32:E:29:HIS:O	32:E:33:VAL:HG23	2.17	0.44
35:H:10:ALA:C	35:H:13:GLY:H	2.20	0.44
36:I:100:ILE:CG2	36:I:104:GLN:HB2	2.47	0.44
38:K:118:LEU:HD12	38:K:118:LEU:N	2.33	0.44
28:A:662:G:O2'	39:L:14:LYS:HG2	2.17	0.44
25:3:29:ARG:NH1	39:L:62:PRO:HB2	2.32	0.44
42:O:30:ARG:HB3	42:O:97:PHE:CE1	2.52	0.44
42:O:43:ASN:OD1	42:O:44:GLY:N	2.50	0.44
29:B:50:A:OP2	42:O:67:ASN:HA	2.18	0.44
42:O:78:VAL:HG23	42:O:79:ALA:N	2.32	0.44
43:P:29:VAL:HG11	43:P:73:PHE:HE1	1.82	0.44
43:P:62:LYS:HB3	43:P:69:VAL:HG23	1.98	0.44
46:S:33:LEU:O	46:S:37:THR:OG1	2.18	0.44
28:A:488:G:H4'	46:S:49:LYS:NZ	2.31	0.44
50:W:36:ILE:HD13	50:W:42:THR:CG2	2.47	0.44
52:Y:19:LEU:O	52:Y:23:ARG:HB3	2.17	0.44
53:Z:16:LEU:HB2	53:Z:19:HIS:HD2	1.83	0.44
27:5:30:LEU:HD12	27:5:221:GLY:HA2	2.00	0.44
40:M:59:ARG:NE	54:6:53:G:O2'	2.49	0.44
28:A:1102:C:O2'	28:A:1103:A:H5'	2.18	0.44
28:A:1418:G:H5''	28:A:1419:A:OP1	2.18	0.44
28:A:2090:A:H5''	28:A:2091:C:OP2	2.18	0.44
28:A:2670:A:H2'	28:A:2671:G:H8	1.82	0.44
28:A:288:U:H2'	28:A:289:G:O4'	2.17	0.44
28:A:544:C:H3'	28:A:545:U:C5	2.52	0.44
28:A:590:A:O2'	28:A:591:U:H5'	2.17	0.44
28:A:803:U:O2'	28:A:804:A:H5'	2.18	0.44
28:A:905:A:H2'	28:A:906:U:C5'	2.40	0.44
29:B:82:U:O2'	29:B:83:G:H5'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:I:27:LEU:HD22	36:I:32:VAL:HG21	1.99	0.44
36:I:27:LEU:CD2	36:I:34:ILE:HD11	2.47	0.44
42:O:43:ASN:OD1	42:O:45:SER:N	2.50	0.44
43:P:50:ARG:CG	43:P:56:SER:HB3	2.47	0.44
22:O:39:ARG:HG2	22:O:40:HIS:ND1	2.32	0.44
27:5:117:SER:HB3	27:5:118:PRO:HD2	1.99	0.44
27:5:113:VAL:HG12	27:5:162:ARG:HH12	1.82	0.44
27:5:201:PRO:HG2	27:5:206:GLY:N	2.32	0.44
27:5:73:VAL:HG21	27:5:156:ALA:O	2.18	0.44
54:6:31:A:C2'	54:6:32:U:H5'	2.48	0.44
58:9:18:G:H4'	58:9:60:U:N3	2.33	0.44
58:9:52:G:H1'	58:9:63:G:C2	2.52	0.44
28:A:1433:A:H2'	28:A:1434:A:O4'	2.17	0.44
28:A:1522:A:C4'	28:A:1524:G:H1'	2.48	0.44
28:A:1535:A:OP2	28:A:1536:C:N4	2.37	0.44
28:A:153:U:O2'	28:A:154:U:H5'	2.17	0.44
28:A:1856:U:H2'	28:A:1857:G:C5'	2.46	0.44
28:A:2481:G:HO2'	28:A:2482:A:P	2.41	0.44
28:A:2714:G:H2'	28:A:2715:C:H5'	1.99	0.44
28:A:365:U:H2'	28:A:366:C:C6	2.53	0.44
28:A:830:G:H4'	28:A:831:G:OP2	2.17	0.44
30:C:5:CYS:CB	30:C:12:ARG:HH21	2.29	0.44
33:F:112:ASP:OD1	33:F:113:PHE:N	2.46	0.44
34:G:11:PRO:HD2	34:G:75:VAL:CG1	2.48	0.44
34:G:46:ASP:CG	34:G:47:ASN:H	2.20	0.44
35:H:104:THR:HG23	35:H:109:GLU:CG	2.45	0.44
35:H:43:ASN:HA	35:H:46:PHE:HB2	1.99	0.44
35:H:51:ARG:O	35:H:55:GLU:HG3	2.17	0.44
35:H:85:GLY:HA3	35:H:147:VAL:CA	2.48	0.44
36:I:48:ILE:HD12	36:I:54:ILE:HD11	2.00	0.44
37:J:99:ARG:O	37:J:103:ILE:HG22	2.17	0.44
41:N:28:LEU:HD12	41:N:32:GLU:O	2.17	0.44
42:O:7:ARG:HB2	42:O:10:ARG:HH11	1.83	0.44
47:T:44:LYS:HG3	47:T:45:ALA:H	4.73	0.44
49:V:48:MET:O	49:V:51:GLN:HG2	2.17	0.44
51:X:29:LEU:HD12	51:X:29:LEU:O	2.17	0.44
27:5:212:VAL:HG21	27:5:227:ALA:CB	2.43	0.44
27:5:31:LYS:HG2	27:5:40:GLU:OE2	2.18	0.44
27:5:69:THR:OG1	27:5:161:VAL:HG22	2.18	0.44
27:5:80:GLN:HG3	27:5:80:GLN:O	2.18	0.44
28:A:1124:G:H2'	28:A:1125:G:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1379:U:H5'	28:A:1380:G:P	2.58	0.44
28:A:1883:U:C2'	28:A:1884:G:H5'	2.48	0.44
28:A:2179:C:H2'	28:A:2180:U:C5	2.53	0.44
28:A:2245:U:H5'	28:A:2246:G:H5'	1.99	0.44
28:A:2328:A:H2'	28:A:2329:U:H6	1.81	0.44
28:A:268:C:O2'	28:A:269:C:H5'	2.18	0.44
28:A:403:U:O2'	28:A:404:A:O5'	2.35	0.44
28:A:549:G:O5'	28:A:550:C:H5'	2.18	0.44
28:A:261:G:HO2'	28:A:610:C:HO2'	1.66	0.44
28:A:685:A:H4'	28:A:686:U:O5'	2.17	0.44
30:C:124:LYS:HG2	30:C:125:PRO:CD	2.48	0.44
30:C:67:LYS:HG2	30:C:150:GLY:HA2	2.00	0.44
30:C:254:LYS:O	30:C:255:LYS:HB2	2.18	0.44
28:A:2732:G:P	31:D:208:LYS:HZ3	2.40	0.44
28:A:2094:A:H5'	35:H:25:TYR:CD1	2.51	0.44
35:H:59:ALA:HA	35:H:62:LEU:HB2	2.00	0.44
28:A:959:A:N6	40:M:82:MET:CE	2.81	0.44
41:N:70:THR:HB	41:N:75:ILE:HD11	2.00	0.44
44:Q:35:PHE:CE2	44:Q:39:ILE:HD11	2.52	0.44
47:T:48:GLN:OE1	47:T:55:VAL:HB	2.17	0.44
50:W:36:ILE:HG22	50:W:39:GLN:HB2	2.00	0.44
27:5:152:ALA:O	27:5:155:ASN:HB2	2.18	0.44
27:5:36:ALA:HB2	27:5:38:PHE:CD1	2.53	0.44
27:5:50:ILE:HG23	27:5:169:GLY:CA	2.47	0.44
28:A:1112:G:O2'	28:A:1113:U:H5'	2.17	0.44
28:A:1347:A:H2'	28:A:1348:C:H5'	2.00	0.44
28:A:2670:A:H2'	28:A:2671:G:C8	2.53	0.44
28:A:2746:U:H2'	28:A:2747:G:H5'	2.00	0.44
28:A:464:U:C2	28:A:466:A:H5''	10.63	0.44
28:A:652:U:H3'	28:A:653:U:C6	2.52	0.44
28:A:737:C:H2'	28:A:738:G:O4'	2.18	0.44
34:G:102:ILE:HG22	34:G:103:ASN:N	2.33	0.44
34:G:148:ARG:HG2	34:G:152:ARG:HG2	1.99	0.44
35:H:72:ILE:CG2	35:H:132:PHE:HB3	2.48	0.44
36:I:100:ILE:HG21	36:I:105:LEU:HG	2.00	0.44
36:I:100:ILE:HG22	36:I:101:SER:O	2.18	0.44
38:K:14:SER:HA	38:K:51:LYS:HB3	1.99	0.44
28:A:1161:C:O2'	45:R:23:GLU:HG2	2.18	0.44
47:T:34:VAL:O	47:T:34:VAL:HG23	2.17	0.44
48:U:31:GLY:O	48:U:66:VAL:HB	2.17	0.44
51:X:36:ARG:HA	51:X:46:VAL:O	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:O:21:LEU:CD2	46:S:41:LYS:HE3	2.48	0.44
54:6:1:G:H1	54:6:72:C:N4	2.10	0.44
54:6:36:A:H2	55:7:19:U:H3	1.66	0.44
55:7:15:U:H4'	55:7:15:U:OP1	2.18	0.44
28:A:1918:A:HO2'	28:A:1920:C:N4	2.15	0.44
25:3:37:THR:HG21	28:A:2348:U:OP1	2.18	0.44
28:A:7:G:H1'	37:J:135:GLN:HE22	1.83	0.44
28:A:855:G:N3	50:W:23:LYS:CD	2.77	0.44
31:D:117:GLY:HA2	31:D:164:GLN:NE2	2.32	0.44
34:G:19:ASN:HB3	34:G:22:VAL:HG21	1.99	0.44
35:H:10:ALA:HB3	35:H:13:GLY:CA	2.48	0.44
35:H:77:THR:HG22	35:H:144:VAL:CB	2.19	0.44
36:I:120:ASP:HB3	36:I:123:ALA:CB	2.47	0.44
38:K:110:GLU:O	38:K:113:MET:HB2	2.17	0.44
40:M:44:ARG:O	40:M:47:GLU:HB3	2.18	0.44
47:T:92:ASN:C	47:T:93:LEU:HD12	2.38	0.44
48:U:85:ARG:HG3	48:U:86:PHE:O	2.17	0.44
56:8:29:G:O2'	56:8:30:G:H5'	2.18	0.43
28:A:1045:C:H4'	28:A:1046:A:C5'	2.48	0.43
28:A:1315:C:H2'	28:A:1316:U:H6	1.83	0.43
28:A:1870:C:P	28:A:1871:A:H62	2.41	0.43
28:A:2051:A:H4'	28:A:2052:A:OP1	2.18	0.43
28:A:223:A:H2'	28:A:224:U:H6	6.44	0.43
28:A:2682:A:H2'	28:A:2683:C:O4'	2.17	0.43
28:A:2698:U:H2'	28:A:2699:C:H6	1.83	0.43
28:A:2795:C:C2	28:A:2796:U:C5	3.05	0.43
28:A:28:A:H2'	28:A:29:U:C5'	2.61	0.43
28:A:323:C:O2'	28:A:1205:A:N6	2.36	0.43
28:A:807:U:O2'	28:A:808:G:H5'	2.17	0.43
29:B:19:C:H2'	29:B:20:G:H5'	2.00	0.43
31:D:117:GLY:HA2	31:D:164:GLN:CD	2.38	0.43
31:D:151:THR:CG2	31:D:152:PRO:CD	2.75	0.43
33:F:23:SER:HB3	33:F:26:GLN:HB2	2.00	0.43
33:F:49:LEU:HD23	33:F:83:PRO:HB2	1.98	0.43
37:J:111:LYS:HG3	37:J:112:GLY:N	2.33	0.43
38:K:39:ILE:HD11	38:K:41:ILE:HD11	2.00	0.43
40:M:62:LYS:HG2	40:M:63:ILE:N	2.33	0.43
41:N:33:ILE:HG12	41:N:118:ARG:HD3	2.00	0.43
42:O:26:LEU:O	42:O:26:LEU:HG	2.18	0.43
42:O:36:TYR:CD1	42:O:52:SER:HB2	2.53	0.43
44:Q:64:ILE:CD1	44:Q:95:ALA:HB3	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:15:VAL:HB	27:5:33:LEU:CD1	2.40	0.43
27:5:70:GLY:H	27:5:176:GLY:HA2	1.82	0.43
27:5:81:GLY:O	27:5:85:GLU:HG3	2.18	0.43
55:7:13:C:O2	55:7:13:C:H2'	2.17	0.43
28:A:141:G:H2'	28:A:142:A:O4'	2.18	0.43
28:A:1657:U:O2'	28:A:1658:C:H5'	2.19	0.43
28:A:1979:U:O2'	28:A:1980:G:H5'	2.18	0.43
28:A:2570:G:O2'	28:A:2571:U:H5'	2.18	0.43
28:A:2813:A:H8	28:A:2813:A:O5'	2.00	0.43
28:A:2813:A:H2'	28:A:2814:A:O4'	2.18	0.43
28:A:524:G:H2'	28:A:525:U:O4'	2.18	0.43
28:A:637:A:H4'	28:A:638:G:O5'	2.18	0.43
28:A:662:G:O2'	28:A:663:G:H5'	2.16	0.43
29:B:9:G:O2'	29:B:10:G:H5'	2.18	0.43
31:D:106:LYS:HG2	31:D:176:ASP:OD1	2.17	0.43
31:D:187:LEU:O	31:D:188:LEU:HD23	2.17	0.43
33:F:112:ASP:CG	33:F:113:PHE:H	2.20	0.43
35:H:90:LEU:CG	35:H:147:VAL:HG12	2.30	0.43
36:I:10:LEU:CD2	36:I:23:VAL:HG12	2.33	0.43
28:A:1007:C:OP1	37:J:39:LYS:HE3	2.17	0.43
40:M:69:PRO:HA	40:M:94:ALA:HB2	2.00	0.43
23:1:35:LEU:CD1	23:1:37:LYS:HG3	2.48	0.43
24:2:3:ARG:HD3	24:2:3:ARG:HA	1.82	0.43
26:4:15:LYS:O	26:4:16:ILE:HB	2.18	0.43
28:A:1181:U:H2'	28:A:1182:G:H8	1.84	0.43
28:A:1257:C:H2'	28:A:1258:U:C6	2.54	0.43
28:A:1319:C:O2'	28:A:1320:C:H5'	2.18	0.43
28:A:1368:G:O2'	28:A:1369:G:H5'	2.18	0.43
28:A:49:A:N6	28:A:177:G:C4	2.86	0.43
28:A:201:C:H2'	28:A:202:U:C6	2.51	0.43
28:A:346:A:H2'	28:A:347:A:H5'	2.00	0.43
28:A:962:G:O2'	28:A:2496:C:O2'	2.29	0.43
29:B:69:G:H2'	29:B:70:C:H5'	2.00	0.43
30:C:33:LEU:HD21	30:C:62:ARG:HG2	2.00	0.43
31:D:118:PHE:HE1	31:D:123:LYS:HD3	1.83	0.43
28:A:1993:U:H4'	31:D:133:THR:HG22	1.99	0.43
37:J:38:GLY:CA	37:J:51:GLY:HA2	2.47	0.43
38:K:65:THR:HA	38:K:82:ASN:OD1	2.18	0.43
42:O:76:LYS:CA	42:O:109:ALA:HB1	2.48	0.43
45:R:68:ARG:HD3	45:R:90:ARG:HD3	1.99	0.43
45:R:61:ALA:HB2	45:R:98:ILE:HA	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:S:69:LEU:HD11	46:S:107:VAL:HG22	2.00	0.43
47:T:10:VAL:HG21	47:T:42:GLU:O	2.18	0.43
52:Y:9:LYS:HZ1	52:Y:11:VAL:HB	1.82	0.43
27:5:132:GLY:HA2	27:5:137:MET:HG3	2.01	0.43
28:A:1084:A:H2'	28:A:1085:A:O4'	2.19	0.43
28:A:163:C:H3'	28:A:163:C:P	2.58	0.43
28:A:1700:A:H2'	28:A:1701:A:H5'	2.00	0.43
28:A:414:C:O2	28:A:1864:U:H4'	2.18	0.43
28:A:2134:A:C2'	28:A:2160:C:H5'	2.48	0.43
28:A:268:C:H2'	28:A:269:C:H5'	2.01	0.43
28:A:2821:A:H2'	28:A:2822:G:O4'	2.17	0.43
28:A:614:A:OP2	28:A:614:A:H3'	2.19	0.43
28:A:792:A:C3'	28:A:793:A:H5'	2.46	0.43
28:A:881:G:H1	28:A:898:C:C1'	2.31	0.43
28:A:881:G:N2	28:A:898:C:H1'	2.34	0.43
28:A:947:A:HO2'	28:A:984:A:H2	1.65	0.43
29:B:97:C:H2'	29:B:97:C:O2	2.17	0.43
30:C:224:MET:O	30:C:232:GLY:HA2	2.18	0.43
33:F:41:GLU:HG2	33:F:48:LEU:HD23	2.00	0.43
34:G:97:VAL:HA	34:G:101:VAL:O	2.18	0.43
35:H:116:ARG:NH2	35:H:122:LEU:HD13	2.33	0.43
28:A:2221:G:OP2	35:H:135:HIS:HB3	2.18	0.43
35:H:54:LEU:HD12	35:H:57:LYS:HZ3	1.82	0.43
36:I:105:LEU:HD23	36:I:108:ILE:HD12	2.00	0.43
43:P:20:ARG:CG	43:P:21:PRO:HD2	2.48	0.43
48:U:60:LYS:HD2	48:U:61:GLU:N	2.31	0.43
50:W:18:LYS:CG	50:W:19:ARG:N	2.80	0.43
26:4:11:CYS:HB3	26:4:33:HIS:HE1	1.82	0.43
58:9:40:C:C3'	58:9:41:C:H5''	2.47	0.43
28:A:1480:C:H2'	28:A:1481:U:O4'	2.17	0.43
28:A:1790:C:H5''	28:A:1791:A:OP1	2.18	0.43
28:A:2039:U:O2'	28:A:2040:G:H5'	2.19	0.43
28:A:2521:C:O2'	28:A:2522:U:H5'	2.17	0.43
28:A:613:A:N3	28:A:613:A:H2'	2.32	0.43
31:D:174:SER:O	31:D:175:LEU:HB2	2.18	0.43
31:D:61:THR:HB	31:D:63:PRO:HD2	1.99	0.43
35:H:103:VAL:O	35:H:106:ALA:HB3	2.17	0.43
35:H:80:ILE:HD12	35:H:101:ASP:HB3	1.99	0.43
35:H:90:LEU:H	35:H:147:VAL:CG1	2.29	0.43
38:K:5:GLN:O	38:K:21:CYS:HB3	2.18	0.43
39:L:26:GLY:C	39:L:27:LEU:HD12	2.38	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:P:37:LYS:HG2	43:P:37:LYS:O	2.18	0.43
49:V:6:ALA:HB1	49:V:40:ILE:HG23	1.99	0.43
23:1:39:ASP:HA	23:1:40:PRO:HD2	1.88	0.43
33:F:79:ARG:NH1	56:8:19:G:O6	2.52	0.43
56:8:47:U:H3	56:8:50:U:H5'	1.84	0.43
56:8:58:A:H4'	56:8:59:A:OP1	2.19	0.43
22:0:1:ALA:CB	28:A:2577:A:H2	2.31	0.43
29:B:70:C:O2'	29:B:71:C:H5'	2.18	0.43
31:D:26:VAL:HA	31:D:188:LEU:HD23	1.99	0.43
33:F:102:LEU:HD23	33:F:102:LEU:C	2.39	0.43
33:F:113:PHE:CE1	33:F:115:GLY:HA2	2.53	0.43
33:F:133:GLU:OE2	33:F:135:ILE:HB	2.18	0.43
35:H:41:LYS:HD3	35:H:44:ILE:HD13	2.01	0.43
35:H:9:VAL:CG2	35:H:65:ALA:HB1	2.48	0.43
36:I:96:LYS:HE2	36:I:138:VAL:HG22	2.00	0.43
44:Q:91:ARG:HG3	45:R:11:GLN:CD	2.39	0.43
52:Y:56:LEU:O	52:Y:57:LEU:HB3	2.18	0.43
27:5:185:LEU:HD13	27:5:233:VAL:HG11	1.99	0.43
27:5:35:THR:OG1	27:5:219:GLY:HA2	2.19	0.43
56:8:42:G:H2'	56:8:43:A:O4'	2.18	0.43
56:8:64:G:H2'	56:8:65:C:H6	1.82	0.43
28:A:1060:U:C4'	28:A:1061:U:H5'	2.49	0.43
28:A:1098:A:H2'	28:A:1099:G:C5'	2.49	0.43
28:A:1119:U:OP1	49:V:83:LYS:NZ	2.51	0.43
28:A:693:A:O2'	28:A:1353:A:N3	2.43	0.43
28:A:2366:A:H4'	50:W:61:LYS:HZ2	1.84	0.43
28:A:2556:C:O2'	28:A:2557:G:H5'	2.18	0.43
28:A:479:A:HO2'	28:A:481:G:H8	1.62	0.43
28:A:259:G:O2'	28:A:621:A:O2'	2.26	0.43
28:A:983:A:N3	28:A:983:A:C2'	3.61	0.43
29:B:27:C:C4	29:B:28:C:C5	3.07	0.43
30:C:131:MET:HE2	30:C:187:CYS:HB2	2.00	0.43
30:C:57:HIS:CG	30:C:58:LYS:H	2.37	0.43
32:E:194:LYS:O	32:E:197:GLU:HB3	2.18	0.43
33:F:3:LEU:HA	33:F:6:TYR:CB	2.45	0.43
33:F:89:THR:O	33:F:90:LEU:HD12	2.19	0.43
35:H:103:VAL:C	35:H:106:ALA:H	2.21	0.43
35:H:8:LYS:CB	35:H:62:LEU:HD11	2.49	0.43
36:I:104:GLN:O	36:I:105:LEU:CB	2.66	0.43
36:I:20:SER:H	36:I:22:PRO:HD2	1.84	0.43
36:I:67:THR:O	36:I:69:VAL:HG23	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:Q:84:LYS:O	44:Q:86:SER:N	2.50	0.43
49:V:36:ALA:O	49:V:93:ARG:NH2	2.48	0.43
51:X:5:GLN:O	51:X:70:LEU:HD21	2.17	0.43
52:Y:9:LYS:HB3	52:Y:12:GLU:HG3	2.00	0.43
23:1:12:SER:HA	23:1:48:TYR:CE1	2.54	0.43
25:3:31:ILE:HD12	28:A:2391:G:OP2	2.19	0.43
27:5:215:SER:HB2	28:A:2175:C:HO2'	1.81	0.43
27:5:33:LEU:CG	27:5:220:ALA:HB3	2.30	0.43
58:9:53:G:H2'	58:9:54:U:C6	2.54	0.43
28:A:1099:G:H2'	28:A:1100:C:O4'	3.14	0.43
28:A:1099:G:N3	28:A:1099:G:H2'	2.34	0.43
28:A:1048:A:C6	28:A:1111:A:C2	3.06	0.43
28:A:1176:U:N3	28:A:1177:G:C6	2.87	0.43
28:A:1341:G:H5'	47:T:61:LEU:HB3	1.99	0.43
28:A:1425:G:O5'	28:A:1425:G:H8	2.00	0.43
28:A:177:G:H2'	28:A:177:G:N3	2.33	0.43
28:A:2129:C:HO2'	28:A:2131:U:P	2.39	0.43
28:A:1998:A:H4'	28:A:2724:U:O2'	2.18	0.43
28:A:28:A:O2'	28:A:583:G:H5'	2.18	0.43
28:A:368:A:H2'	28:A:369:U:H5'	2.01	0.43
28:A:486:C:H4'	46:S:60:HIS:CD2	2.54	0.43
29:B:19:C:O2'	29:B:20:G:H5'	2.19	0.43
35:H:116:ARG:CZ	35:H:122:LEU:HD13	2.47	0.43
35:H:55:GLU:O	35:H:59:ALA:HB2	2.18	0.43
36:I:140:GLU:OE1	36:I:140:GLU:N	2.51	0.43
37:J:69:ARG:HD3	37:J:89:PHE:CE2	2.54	0.43
43:P:89:GLY:HA2	43:P:111:GLU:HA	2.01	0.43
44:Q:93:ILE:O	44:Q:96:ASP:HB2	2.19	0.43
45:R:79:ARG:O	45:R:80:ARG:HB2	2.19	0.43
46:S:6:LYS:HB2	46:S:103:ILE:O	2.19	0.43
46:S:12:SER:HB3	46:S:17:VAL:CG2	2.48	0.43
47:T:65:GLY:N	47:T:79:ASP:OD1	2.51	0.43
25:3:21:PHE:O	25:3:22:LYS:CG	2.65	0.43
26:4:3:VAL:HG11	28:A:2539:C:C5'	2.46	0.43
27:5:83:ASN:HD22	27:5:119:ASP:H	1.67	0.43
27:5:97:MET:HG2	27:5:98:GLU:OE2	2.19	0.43
58:9:15:G:H4'	58:9:16:U:OP1	2.19	0.43
28:A:1762:A:H8	28:A:1762:A:O5'	2.02	0.43
28:A:186:G:O2'	28:A:187:G:H5'	2.19	0.43
28:A:2630:G:C6	28:A:2894:G:C6	3.07	0.43
28:A:2684:U:H4'	38:K:76:VAL:HG21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:855:G:N2	28:A:923:G:C5	2.87	0.43
30:C:255:LYS:O	30:C:256:THR:HG22	2.19	0.43
28:A:1817:G:H5''	30:C:86:ARG:CG	2.49	0.43
32:E:1:MET:HB2	32:E:14:VAL:O	2.18	0.43
32:E:32:VAL:HG23	32:E:178:VAL:CG1	2.32	0.43
28:A:673:C:H4'	32:E:77:ILE:HD12	2.00	0.43
33:F:137:PHE:HA	33:F:138:PRO:HD3	1.72	0.43
33:F:16:MET:O	33:F:20:ASN:HA	2.17	0.43
34:G:21:GLN:O	34:G:23:ILE:HD12	2.19	0.43
34:G:67:ALA:O	34:G:71:LEU:HD13	2.19	0.43
35:H:99:ILE:HG12	35:H:100:ALA:N	2.33	0.43
37:J:88:THR:CG2	37:J:91:GLU:HG3	2.48	0.43
38:K:71:ARG:HH21	38:K:106:GLU:CG	2.32	0.43
44:Q:63:ARG:CZ	44:Q:96:ASP:HA	2.49	0.43
47:T:58:VAL:HG12	47:T:85:VAL:CA	2.40	0.43
28:A:2353:G:N3	50:W:30:VAL:CG1	2.81	0.43
53:Z:8:GLN:C	53:Z:9:THR:HG1	2.20	0.43
28:A:1092:C:C2'	28:A:1093:G:H5'	2.48	0.43
28:A:1641:A:H2'	28:A:1642:G:H5'	2.01	0.43
28:A:1733:G:N3	28:A:1733:G:H2'	2.34	0.43
28:A:528:A:H2	28:A:2042:A:H2'	1.79	0.43
28:A:2108:A:C2'	28:A:2109:U:H5'	2.48	0.43
28:A:2192:U:H2'	28:A:2193:G:C5'	2.36	0.43
28:A:2244:U:O5'	28:A:2244:U:H6	2.02	0.43
28:A:198:C:N4	28:A:248:G:H1	2.16	0.43
28:A:2822:G:O2'	28:A:2824:C:OP2	2.27	0.43
28:A:532:A:H2'	28:A:532:A:N3	2.34	0.43
28:A:540:C:O2'	28:A:541:A:H5'	2.19	0.43
30:C:52:HIS:CE1	30:C:218:THR:HG23	2.53	0.43
28:A:784:G:H5'	30:C:225:ASN:OD1	2.19	0.43
30:C:259:ASN:ND2	30:C:262:THR:OG1	2.50	0.43
28:A:38:A:O2'	32:E:43:THR:HA	2.17	0.43
36:I:123:ALA:HB1	36:I:126:ARG:HH22	1.82	0.43
36:I:18:ASN:ND2	36:I:34:ILE:HG22	2.34	0.43
28:A:557:C:O2	37:J:47:HIS:HB2	2.18	0.43
39:L:77:ILE:CG2	39:L:78:ARG:N	2.81	0.43
28:A:954:G:H5''	40:M:13:HIS:ND1	2.33	0.43
40:M:43:ALA:O	40:M:46:ILE:HG13	2.19	0.43
41:N:21:PHE:N	41:N:25:ALA:HB3	6.25	0.43
45:R:68:ARG:CG	45:R:90:ARG:HB3	2.48	0.43
48:U:73:ASN:O	48:U:74:ALA:HB3	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:2:31:LEU:HD21	24:2:43:THR:CG2	2.49	0.42
27:5:226:GLN:CD	27:5:229:LEU:HD12	2.40	0.42
58:9:38:A:C3'	58:9:39:U:H5''	2.48	0.42
28:A:1323:C:OP1	46:S:84:ARG:NE	2.49	0.42
28:A:1469:A:OP2	28:A:1522:A:N6	2.52	0.42
28:A:1300:G:C2	28:A:1626:A:N6	2.86	0.42
28:A:1736:U:H2'	28:A:1737:G:O4'	2.19	0.42
28:A:1969:A:H2'	28:A:1972:G:H21	1.84	0.42
28:A:196:A:OP2	39:L:47:ARG:NH1	2.33	0.42
28:A:2038:G:H2'	28:A:2039:U:O4'	2.18	0.42
28:A:2115:G:H4'	28:A:2167:U:H1'	2.01	0.42
27:5:134:ARG:CG	28:A:2125:G:H1	2.32	0.42
28:A:2141:G:H2'	28:A:2142:A:H8	1.82	0.42
27:5:105:LYS:HE3	28:A:2163:A:H1'	2.01	0.42
28:A:2296:U:H4'	28:A:2297:A:OP1	2.19	0.42
28:A:2326:C:HO2'	28:A:2327:A:P	2.36	0.42
28:A:2418:A:C6	28:A:2419:U:N3	2.86	0.42
28:A:2510:C:H2'	28:A:2511:U:C6	2.49	0.42
22:0:1:ALA:HB2	28:A:2577:A:C2	2.53	0.42
28:A:2585:U:H6	28:A:2585:U:H3'	1.83	0.42
28:A:2840:C:H4'	41:N:91:ALA:O	2.18	0.42
28:A:2846:G:P	43:P:52:ARG:HH12	2.42	0.42
28:A:745:G:C2'	28:A:746:U:H5'	2.46	0.42
28:A:768:G:H2'	28:A:769:U:O4'	2.19	0.42
29:B:68:C:O2'	29:B:69:G:H5'	2.19	0.42
32:E:35:TYR:CE2	32:E:178:VAL:HG22	2.54	0.42
36:I:96:LYS:HG3	36:I:137:LEU:HA	2.01	0.42
40:M:117:PHE:O	40:M:120:ALA:N	2.51	0.42
43:P:45:VAL:HG12	43:P:46:VAL:O	2.18	0.42
45:R:16:GLU:HB3	45:R:101:ILE:HG13	2.01	0.42
46:S:7:HIS:HD1	46:S:10:ALA:HB2	1.84	0.42
46:S:80:PRO:O	46:S:100:THR:OG1	2.29	0.42
47:T:7:LEU:HD21	47:T:42:GLU:OE2	2.19	0.42
48:U:25:LYS:O	48:U:26:ASN:HB3	2.19	0.42
48:U:53:GLN:O	48:U:53:GLN:HG3	2.19	0.42
49:V:48:MET:SD	49:V:51:GLN:NE2	2.92	0.42
50:W:55:ASP:O	50:W:56:HIS:HB2	2.18	0.42
23:1:51:ALA:O	23:1:52:LYS:HB2	2.19	0.42
26:4:3:VAL:CG2	26:4:4:ARG:N	2.79	0.42
27:5:107:GLY:CA	27:5:134:ARG:NH2	2.80	0.42
27:5:48:LEU:HD11	27:5:171:ILE:CB	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:9:20:U:H2'	58:9:21:A:C4'	2.49	0.42
58:9:3:C:H2'	58:9:4:C:C1'	2.50	0.42
58:9:48:C:OP1	58:9:48:C:H6	2.01	0.42
28:A:1705:A:N6	28:A:1706:C:H42	2.16	0.42
28:A:1734:G:O2'	28:A:1735:A:O4'	2.33	0.42
28:A:1936:A:C2	28:A:1943:U:C5	3.04	0.42
28:A:1982:U:O2'	28:A:1983:G:H5'	2.19	0.42
28:A:2073:C:O2'	28:A:2074:U:H5'	2.19	0.42
28:A:2094:A:C5'	35:H:25:TYR:CD1	3.02	0.42
28:A:2112:G:C3'	28:A:2113:U:H5'	2.49	0.42
28:A:2189:U:O2'	28:A:2190:G:H5'	2.19	0.42
28:A:2322:A:O2'	28:A:2323:G:H5'	2.19	0.42
28:A:220:G:N3	28:A:233:A:H2	2.16	0.42
23:1:45:HIS:CE1	28:A:2371:G:HO2'	2.29	0.42
28:A:2842:G:C2'	28:A:2843:G:H5'	2.49	0.42
28:A:63:A:O2'	28:A:64:A:H5'	2.18	0.42
28:A:825:A:C2'	28:A:826:U:H5'	2.49	0.42
28:A:933:A:H5''	28:A:934:U:H5	1.83	0.42
28:A:966:G:N3	28:A:966:G:H2'	3.36	0.42
30:C:68:ARG:HH22	30:C:115:ILE:CG2	2.31	0.42
30:C:171:VAL:HG12	30:C:173:LEU:HD12	2.01	0.42
28:A:1812:U:O4'	30:C:44:ASN:ND2	2.52	0.42
30:C:64:VAL:CG2	30:C:86:ARG:NH2	2.80	0.42
33:F:151:LEU:CD1	33:F:152:ASP:N	2.82	0.42
36:I:96:LYS:HE2	36:I:138:VAL:HG23	1.99	0.42
37:J:140:LEU:C	37:J:140:LEU:HD12	2.39	0.42
39:L:20:GLY:O	39:L:21:ARG:NH2	2.37	0.42
39:L:79:LEU:HA	39:L:82:LEU:HD21	2.01	0.42
22:0:21:LEU:CD1	46:S:41:LYS:HE3	2.49	0.42
27:5:102:ASP:O	27:5:106:LYS:HG2	2.19	0.42
58:9:11:C:C2	58:9:12:U:C5	3.08	0.42
58:9:38:A:H3'	58:9:39:U:C5'	2.49	0.42
28:A:1167:C:H2'	28:A:1168:G:O4'	2.19	0.42
28:A:1516:G:O2'	28:A:1517:G:H5'	2.19	0.42
28:A:1568:G:P	30:C:62:ARG:HH12	2.41	0.42
28:A:1270:C:N4	28:A:1648:U:O4	2.52	0.42
28:A:1727:C:H1'	28:A:1734:G:N2	2.33	0.42
28:A:179:C:H2'	28:A:180:G:H5'	2.02	0.42
28:A:276:U:H2'	28:A:277:G:C1'	2.50	0.42
29:B:43:C:H2'	29:B:44:G:C5'	2.43	0.42
30:C:245:THR:C	30:C:247:TRP:N	2.73	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:C:255:LYS:O	30:C:257:ARG:N	2.52	0.42
30:C:65:ASP:OD2	30:C:101:ARG:HD3	2.19	0.42
34:G:112:VAL:CG2	34:G:113:ASP:N	2.82	0.42
34:G:68:ARG:NH1	34:G:72:ASN:HD22	2.17	0.42
35:H:118:PRO:CB	35:H:122:LEU:HD23	2.49	0.42
40:M:108:VAL:HG12	40:M:109:PRO:O	2.19	0.42
45:R:38:VAL:CG1	45:R:54:VAL:HG22	2.43	0.42
49:V:75:GLN:CG	49:V:92:VAL:HG23	2.50	0.42
25:3:20:GLY:HA3	25:3:48:MET:HE1	2.01	0.42
27:5:212:VAL:N	27:5:225:ASP:O	2.51	0.42
27:5:11:ILE:CG2	27:5:33:LEU:HD12	2.30	0.42
27:5:79:THR:CB	27:5:117:SER:HB2	2.50	0.42
58:9:53:G:C2	58:9:62:C:N3	2.87	0.42
28:A:1485:U:H2'	28:A:1486:U:C6	2.54	0.42
28:A:1522:A:H4'	28:A:1524:G:H1'	2.01	0.42
28:A:1535:A:H5''	28:A:1536:C:C5	2.48	0.42
28:A:1631:G:N2	28:A:1634:A:OP2	2.52	0.42
28:A:1936:A:OP1	28:A:1936:A:H3'	2.19	0.42
28:A:2223:G:H2'	28:A:2224:G:C5'	2.50	0.42
28:A:2394:C:O5'	28:A:2394:C:H6	2.03	0.42
28:A:2484:G:O2'	28:A:2485:G:H5'	2.19	0.42
28:A:2602:A:H4'	28:A:2603:G:H5'	2.00	0.42
28:A:259:G:C4	28:A:260:G:C8	3.84	0.42
28:A:2647:U:H2'	28:A:2648:G:H8	1.84	0.42
28:A:320:A:H4'	28:A:322:A:C8	2.54	0.42
28:A:551:G:C2'	28:A:552:U:H5'	2.50	0.42
29:B:65:U:O2'	29:B:66:A:H5'	2.18	0.42
30:C:109:LEU:CD1	30:C:110:LYS:N	2.82	0.42
30:C:225:ASN:HB3	30:C:226:PRO:CD	2.48	0.42
28:A:2316:G:H4'	33:F:124:ARG:NH1	2.34	0.42
35:H:41:LYS:N	35:H:44:ILE:HG23	2.24	0.42
36:I:5:GLN:HB3	36:I:60:VAL:O	2.20	0.42
37:J:105:VAL:HG21	37:J:122:LEU:CD2	2.50	0.42
38:K:77:ILE:CD1	43:P:71:ARG:HD2	2.47	0.42
47:T:54:GLU:OE1	47:T:54:GLU:N	2.39	0.42
52:Y:39:GLN:O	52:Y:42:LEU:HD13	2.19	0.42
23:1:4:ILE:CG2	23:1:5:ARG:H	2.32	0.42
27:5:82:ALA:O	27:5:85:GLU:HB2	2.18	0.42
28:A:108:G:H2'	28:A:109:C:O4'	2.20	0.42
28:A:1173:U:H3	28:A:1174:U:H1'	1.82	0.42
28:A:1177:G:H2'	28:A:1178:C:C4'	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:119:A:O2'	28:A:120:U:OP2	2.31	0.42
28:A:1379:U:H5''	28:A:1380:G:OP2	2.19	0.42
28:A:1411:U:O2'	28:A:1412:U:H5'	2.20	0.42
28:A:1431:A:O2'	28:A:1432:G:H5'	2.20	0.42
28:A:1530:G:H2'	28:A:1530:G:N3	2.34	0.42
28:A:1669:A:C8	38:K:5:GLN:HG3	2.55	0.42
28:A:1877:A:O2'	28:A:1878:G:H5'	2.20	0.42
28:A:377:G:O2'	28:A:378:C:H5'	2.20	0.42
28:A:825:A:C2	28:A:833:A:C2	3.07	0.42
29:B:21:G:O2'	29:B:22:U:H5'	2.19	0.42
29:B:32:U:H2'	29:B:33:G:H8	1.83	0.42
31:D:121:THR:O	31:D:122:VAL:CB	2.67	0.42
28:A:574:A:H2	31:D:150:GLN:NE2	2.17	0.42
28:A:2899:A:H5'	37:J:136:GLN:NE2	2.33	0.42
44:Q:97:ILE:CD1	44:Q:105:PHE:HD1	2.32	0.42
44:Q:88:GLU:HA	45:R:49:ILE:HD11	2.00	0.42
47:T:61:LEU:HD12	47:T:61:LEU:C	2.39	0.42
29:B:76:G:OP1	49:V:12:GLN:HB2	2.19	0.42
23:1:10:LEU:CD2	23:1:33:LEU:HD22	2.50	0.42
28:A:1173:U:H2'	28:A:1174:U:H4'	2.02	0.42
28:A:1384:A:O2'	28:A:1404:C:O2	2.38	0.42
28:A:2129:C:O2'	28:A:2130:U:O3'	2.25	0.42
28:A:2142:A:O2'	28:A:2143:C:H5'	2.18	0.42
28:A:2591:C:OP1	30:C:237:ARG:HG3	2.19	0.42
28:A:273:G:H2'	28:A:274:C:O4'	2.20	0.42
28:A:524:G:C2	28:A:525:U:C2	3.08	0.42
28:A:638:G:H2'	28:A:639:U:C6	2.53	0.42
28:A:730:A:C2'	28:A:731:C:H5'	2.49	0.42
28:A:885:C:O2'	28:A:886:A:H5'	2.20	0.42
28:A:920:A:O2'	28:A:921:C:H5'	2.18	0.42
30:C:246:PRO:HG2	30:C:247:TRP:CE3	2.54	0.42
32:E:172:ALA:HB3	32:E:195:GLN:OE1	2.20	0.42
33:F:121:PHE:CZ	33:F:166:ARG:HG2	2.55	0.42
33:F:149:ARG:CG	33:F:150:GLY:H	2.32	0.42
33:F:35:LEU:HD23	33:F:153:ILE:HG22	1.98	0.42
34:G:130:ILE:HG22	34:G:131:VAL:N	2.33	0.42
34:G:16:VAL:O	34:G:16:VAL:HG22	2.19	0.42
35:H:115:VAL:HG21	35:H:138:VAL:O	2.20	0.42
37:J:80:HIS:HB3	37:J:81:ILE:H	1.55	0.42
38:K:10:VAL:HG11	38:K:16:ALA:CB	2.49	0.42
28:A:833:A:P	39:L:39:LYS:NZ	2.93	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:P:26:GLU:H	43:P:83:ILE:CD1	2.33	0.42
45:R:14:VAL:HG11	45:R:98:ILE:HG13	2.01	0.42
52:Y:41:HIS:O	52:Y:44:LYS:HB3	2.19	0.42
22:O:42:ILE:HD11	41:N:98:LEU:CB	2.27	0.42
27:5:60:ARG:HD3	27:5:164:ARG:CG	2.49	0.42
27:5:38:PHE:CE1	27:5:217:THR:HG22	2.54	0.42
54:6:74:C:O5'	54:6:74:C:H6	2.03	0.42
58:9:44:G:N3	58:9:44:G:H2'	2.34	0.42
28:A:84:A:N6	28:A:101:A:H2	2.16	0.42
28:A:9:G:H21	28:A:10:A:H1'	6.49	0.42
28:A:1514:G:H5''	28:A:1515:A:OP1	2.19	0.42
27:5:134:ARG:CD	28:A:2125:G:H1	2.33	0.42
28:A:2152:G:N3	28:A:2152:G:H2'	2.34	0.42
28:A:2591:C:O5'	28:A:2591:C:H6	2.02	0.42
28:A:1297:C:OP1	28:A:2710:C:H4'	2.20	0.42
28:A:2713:U:C3'	28:A:2714:G:C5'	2.96	0.42
28:A:358:U:H2'	28:A:359:G:O4'	2.20	0.42
28:A:464:U:N3	28:A:466:A:H5''	10.74	0.42
28:A:597:G:C2	28:A:661:A:C2	3.07	0.42
29:B:72:G:O2'	29:B:73:A:O4'	2.32	0.42
29:B:9:G:N2	29:B:10:G:H1'	2.34	0.42
32:E:126:VAL:HG22	32:E:128:ALA:H	1.83	0.42
32:E:149:ILE:HG13	32:E:149:ILE:O	2.20	0.42
34:G:146:ASP:O	34:G:149:ALA:HB3	2.20	0.42
34:G:40:VAL:HG12	34:G:41:GLU:N	2.34	0.42
43:P:50:ARG:CG	43:P:51:ASN:N	2.82	0.42
45:R:58:VAL:HG22	45:R:59:ILE:N	2.35	0.42
47:T:69:ARG:CG	47:T:69:ARG:HH11	2.32	0.42
48:U:48:VAL:HG23	48:U:48:VAL:O	2.18	0.42
48:U:51:LEU:O	48:U:52:ASN:HB2	2.20	0.42
49:V:40:ILE:HG22	49:V:41:GLU:N	2.33	0.42
27:5:133:PRO:HD3	28:A:2119:A:C2	2.55	0.42
27:5:215:SER:HB2	28:A:2175:C:C2'	2.49	0.42
27:5:84:ALA:O	27:5:87:ALA:HB3	2.20	0.42
58:9:20:U:H3'	58:9:21:A:H5''	2.02	0.42
26:4:23:ILE:HD13	28:A:1032:A:H1'	2.02	0.42
28:A:1216:G:H5''	44:Q:10:ARG:CZ	2.49	0.42
28:A:1418:G:N2	28:A:1579:A:N7	2.68	0.42
28:A:2146:C:H4'	28:A:2148:G:C5	2.54	0.42
28:A:2134:A:H2'	28:A:2160:C:C5'	2.50	0.42
25:3:11:LYS:NZ	28:A:249:C:O2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2557:G:H2'	28:A:2558:C:C5	2.51	0.42
28:A:2588:G:C3'	28:A:2589:A:H5'	2.49	0.42
28:A:2734:A:H2'	28:A:2735:G:C5'	2.49	0.42
28:A:2778:A:H4'	28:A:2779:U:OP2	2.19	0.42
28:A:499:U:H2'	28:A:500:G:H5'	2.01	0.42
28:A:68:G:H2'	28:A:69:C:O4'	2.19	0.42
28:A:691:C:O5'	28:A:691:C:H6	2.02	0.42
28:A:748:G:O6	28:A:751:A:H5'	2.19	0.42
28:A:869:G:C2'	28:A:870:U:H5'	2.50	0.42
28:A:895:U:H2'	28:A:897:C:N1	2.33	0.42
28:A:978:G:H2'	28:A:979:A:H5'	2.01	0.42
30:C:123:ILE:HG22	30:C:191:LEU:HD21	2.02	0.42
28:A:1655:A:H5'	31:D:118:PHE:CD1	2.54	0.42
31:D:120:GLY:HA2	31:D:162:ALA:HB1	2.01	0.42
32:E:111:GLU:OE2	32:E:115:GLN:NE2	2.53	0.42
33:F:71:LYS:O	33:F:73:VAL:HG13	2.20	0.42
43:P:62:LYS:HE2	43:P:64:SER:CB	2.39	0.42
46:S:14:ALA:O	46:S:18:ARG:HG3	2.19	0.42
50:W:30:VAL:HG13	50:W:30:VAL:O	2.20	0.42
52:Y:37:LEU:HD21	52:Y:40:SER:HA	2.01	0.42
55:7:24:A:O2'	55:7:25:G:H5'	2.19	0.42
58:9:50:U:H2'	58:9:51:U:O4'	2.19	0.42
58:9:68:C:H2'	58:9:69:G:O4'	2.20	0.42
28:A:1272:A:H3'	28:A:1273:U:H5''	2.01	0.42
28:A:1559:U:C3'	28:A:1560:G:H5'	2.50	0.42
27:5:4:LEU:HD13	28:A:2107:G:P	2.60	0.42
28:A:2317:A:O2'	28:A:2318:G:H5'	2.20	0.42
28:A:2456:C:H2'	28:A:2457:U:H5'	2.02	0.42
28:A:28:A:O2'	28:A:29:U:H5'	2.19	0.42
28:A:29:U:H6	28:A:29:U:O5'	2.03	0.42
28:A:521:U:O5'	28:A:521:U:H6	2.03	0.42
28:A:859:G:O2'	28:A:860:U:OP2	2.32	0.42
28:A:998:C:H2'	28:A:999:U:O5'	2.19	0.42
30:C:63:ILE:O	30:C:64:VAL:HB	2.18	0.42
34:G:98:LYS:CB	34:G:103:ASN:HD21	2.32	0.42
36:I:93:ASN:OD1	36:I:136:GLY:HA3	2.19	0.42
36:I:9:LYS:HA	36:I:57:VAL:HA	2.02	0.42
40:M:4:PRO:HG3	40:M:68:PHE:HE2	1.85	0.42
42:O:36:TYR:HD1	42:O:52:SER:HB2	1.85	0.42
42:O:74:VAL:O	42:O:78:VAL:HG13	2.19	0.42
48:U:20:LYS:HD2	48:U:20:LYS:HA	4.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:W:18:LYS:H	50:W:35:ILE:CG2	2.28	0.42
23:1:29:LYS:HA	23:1:30:PRO:HD2	1.64	0.42
26:4:3:VAL:O	26:4:4:ARG:HB3	2.19	0.42
27:5:139:ASN:HB2	27:5:164:ARG:CD	2.48	0.42
27:5:65:LEU:HB3	27:5:66:PRO:HD2	2.02	0.42
27:5:67:HIS:O	27:5:159:GLY:HA3	2.19	0.42
28:A:1010:A:H5''	44:Q:65:ASN:ND2	2.35	0.42
28:A:1559:U:H3'	28:A:1560:G:H5'	2.02	0.42
28:A:1574:C:H2'	28:A:1575:C:H5'	2.01	0.42
28:A:2053:G:N2	28:A:2617:U:H1'	2.35	0.42
28:A:2257:U:O5'	28:A:2257:U:H6	2.03	0.42
28:A:2428:G:H21	39:L:60:ARG:HH21	1.66	0.42
28:A:2776:A:H4'	28:A:2777:G:O5'	2.20	0.42
28:A:633:A:H1'	28:A:2403:C:O3'	2.19	0.42
28:A:641:U:H5''	28:A:642:U:OP2	2.20	0.42
28:A:960:A:H5''	28:A:961:C:P	2.60	0.42
30:C:51:ARG:HG2	30:C:52:HIS:CD2	2.55	0.42
31:D:49:GLN:HE22	31:D:79:LEU:HD13	1.82	0.42
32:E:1:MET:HG2	32:E:16:GLU:HA	2.01	0.42
33:F:134:GLN:N	33:F:134:GLN:OE1	2.41	0.42
36:I:27:LEU:HD22	36:I:32:VAL:CG2	2.50	0.42
37:J:110:PRO:O	37:J:115:GLY:HA3	2.19	0.42
37:J:114:LEU:O	37:J:114:LEU:HD23	2.20	0.42
28:A:873:C:H4'	40:M:64:TRP:CD1	2.55	0.42
41:N:75:ILE:HG13	41:N:76:VAL:N	2.35	0.42
42:O:79:ALA:CB	42:O:113:ALA:HB3	2.47	0.42
45:R:64:VAL:O	45:R:65:ALA:HB3	2.19	0.42
49:V:41:GLU:O	49:V:41:GLU:HG3	2.19	0.42
50:W:9:THR:O	50:W:10:ARG:HB2	2.19	0.42
27:5:4:LEU:HD12	28:A:2107:G:C5'	2.49	0.41
28:A:896:A:N7	54:6:56:C:C5	2.88	0.41
58:9:7:A:H61	58:9:66:U:H3	1.67	0.41
28:A:100:U:H4'	28:A:101:A:O4'	2.19	0.41
28:A:1091:G:O2'	28:A:1092:C:H5'	2.20	0.41
28:A:1419:A:N6	28:A:1421:G:C4	2.88	0.41
28:A:1484:U:O2'	28:A:1485:U:H5'	2.19	0.41
28:A:1584:U:O2	28:A:1585:C:H4'	2.20	0.41
28:A:1915:U:H2'	28:A:1916:A:O4'	2.20	0.41
28:A:2164:C:H6	28:A:2172:U:C5	2.38	0.41
26:4:2:LYS:HE2	28:A:2477:U:H2'	2.01	0.41
28:A:2570:G:C2'	28:A:2571:U:H5'	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:2819:G:C6	28:A:2821:A:N3	2.88	0.41
28:A:2889:C:N4	28:A:2890:G:C6	2.88	0.41
28:A:632:A:H4'	39:L:66:PHE:CE2	2.55	0.41
33:F:3:LEU:O	33:F:6:TYR:HB3	2.20	0.41
41:N:38:LEU:HD13	41:N:99:LYS:HG2	2.02	0.41
45:R:52:PRO:O	45:R:53:PHE:CB	2.68	0.41
46:S:84:ARG:HG3	46:S:98:LYS:HE2	2.02	0.41
47:T:74:ILE:HG23	47:T:74:ILE:O	2.20	0.41
48:U:35:VAL:O	48:U:38:ILE:HG22	2.20	0.41
27:5:19:LYS:HD2	27:5:20:GLN:H	1.84	0.41
54:6:70:G:H2'	54:6:71:G:H5'	2.01	0.41
28:A:1088:A:H4'	28:A:1089:A:H8	1.84	0.41
28:A:1551:A:H2'	28:A:1552:A:O4'	2.20	0.41
28:A:1604:C:O2'	28:A:1610:A:N1	2.40	0.41
28:A:2298:A:O2'	28:A:2299:U:H5'	2.20	0.41
28:A:2713:U:H3'	28:A:2714:G:H5''	1.99	0.41
28:A:2721:A:H2'	28:A:2722:G:O4'	2.20	0.41
28:A:89:A:H2'	28:A:90:U:C6	2.55	0.41
28:A:987:C:C2'	28:A:988:A:H5'	2.43	0.41
29:B:2:G:N1	29:B:119:A:N3	2.67	0.41
30:C:166:ARG:O	30:C:166:ARG:HG3	2.20	0.41
31:D:4:LEU:CD1	31:D:100:LEU:HD23	2.50	0.41
34:G:110:HIS:HA	34:G:111:PRO:HD3	1.91	0.41
35:H:89:LYS:HD3	35:H:125:THR:OG1	2.20	0.41
35:H:72:ILE:HG12	35:H:130:VAL:HG21	2.01	0.41
28:A:1081:U:H5'	36:I:126:ARG:NH2	2.34	0.41
38:K:4:GLU:O	38:K:5:GLN:HB2	2.20	0.41
40:M:41:LEU:HD13	40:M:96:ILE:HG12	2.02	0.41
43:P:50:ARG:CB	43:P:57:ALA:N	2.82	0.41
44:Q:60:TRP:O	44:Q:64:ILE:HG13	2.20	0.41
23:1:12:SER:HA	23:1:48:TYR:CD1	2.55	0.41
23:1:7:LYS:CA	23:1:23:THR:HG22	2.45	0.41
54:6:51:U:H3	54:6:63:G:H1	1.68	0.41
58:9:28:G:H3'	58:9:29:G:H8	1.84	0.41
58:9:21:A:C6	58:9:46:G:C2	3.08	0.41
28:A:1062:G:C2	28:A:1063:G:C8	3.08	0.41
28:A:1347:A:C2'	28:A:1348:C:H5'	2.50	0.41
28:A:1410:G:H2'	28:A:1411:U:C6	2.55	0.41
28:A:1413:A:H2'	28:A:1414:C:C5'	2.46	0.41
28:A:1528:A:H2'	28:A:1529:G:C5'	2.48	0.41
28:A:1810:A:H8	28:A:1810:A:O5'	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:1916:A:H2'	28:A:1917:U:O4'	2.19	0.41
28:A:2010:G:O2'	28:A:2011:U:H5'	2.20	0.41
28:A:2297:A:C2	28:A:2298:A:C8	3.09	0.41
25:3:34:LYS:NZ	28:A:2390:U:O5'	2.53	0.41
22:0:49:ARG:NH1	28:A:2883:A:OP2	2.53	0.41
28:A:334:C:H2'	28:A:335:C:H6	5.85	0.41
28:A:375:G:C2'	28:A:376:G:H5'	2.50	0.41
28:A:575:A:OP2	28:A:2055:C:N4	2.52	0.41
28:A:874:G:C2	28:A:904:G:C2	3.08	0.41
30:C:93:VAL:CG2	30:C:103:ILE:HG22	2.50	0.41
34:G:114:HIS:HB2	34:G:150:TYR:HE2	1.86	0.41
35:H:70:GLU:HG2	35:H:74:ALA:CB	2.41	0.41
35:H:78:VAL:HG23	35:H:146:VAL:CG1	2.43	0.41
35:H:93:SER:O	35:H:114:GLU:HA	2.21	0.41
38:K:77:ILE:HG21	38:K:79:PHE:CZ	2.55	0.41
40:M:2:LEU:HD23	40:M:46:ILE:CD1	2.50	0.41
44:Q:101:ASP:OD1	44:Q:103:VAL:HG22	2.20	0.41
45:R:1:MET:CE	45:R:43:ASN:HD21	2.33	0.41
49:V:21:ARG:HH21	49:V:87:GLN:C	2.23	0.41
50:W:9:THR:OG1	50:W:10:ARG:N	2.49	0.41
51:X:17:ARG:CZ	51:X:23:ALA:HB2	2.50	0.41
56:8:54:U:O5'	56:8:54:U:H6	2.01	0.41
28:A:1009:A:H8	28:A:1009:A:O5'	2.03	0.41
28:A:1533:C:C2'	28:A:1534:U:H6	2.33	0.41
28:A:1661:G:C2'	28:A:1662:U:H5'	2.51	0.41
28:A:1789:A:OP1	30:C:220:ARG:HG2	2.20	0.41
28:A:190:A:C4	28:A:207:A:C2	3.09	0.41
28:A:209:C:C2'	28:A:210:C:H5'	2.50	0.41
28:A:2183:A:C2	28:A:2184:A:C8	3.08	0.41
28:A:2276:G:O2'	28:A:2277:G:H5'	2.21	0.41
28:A:2030:A:N3	28:A:2499:C:H5''	2.34	0.41
28:A:397:U:H6	28:A:397:U:O5'	2.04	0.41
28:A:56:A:O2'	28:A:57:C:H5'	2.20	0.41
28:A:637:A:OP1	39:L:130:GLY:HA3	2.21	0.41
28:A:708:G:H2'	28:A:709:U:H6	1.86	0.41
28:A:858:G:O6	28:A:869:G:H3'	33.26	0.41
31:D:14:ILE:CD1	31:D:178:VAL:HG11	2.47	0.41
31:D:20:VAL:HG12	31:D:21:SER:N	2.36	0.41
33:F:55:ASP:O	33:F:58:ALA:HB3	2.21	0.41
34:G:132:LEU:HD12	34:G:140:ILE:HD11	2.02	0.41
35:H:54:LEU:CD1	35:H:57:LYS:HZ3	2.33	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:I:4:VAL:HG11	36:I:59:THR:HA	2.02	0.41
40:M:108:VAL:CG1	40:M:109:PRO:HD2	2.49	0.41
40:M:22:GLN:O	40:M:24:THR:N	2.52	0.41
47:T:28:ASN:HA	47:T:91:GLN:HE22	1.85	0.41
52:Y:9:LYS:HB3	52:Y:12:GLU:CB	2.50	0.41
53:Z:23:LEU:CD2	53:Z:53:MET:HE1	2.49	0.41
56:8:1:C:N4	56:8:72:A:H61	2.16	0.41
58:9:10:G:N2	58:9:26:A:H1'	2.36	0.41
28:A:1045:C:O2	28:A:1047:G:N1	2.53	0.41
28:A:1060:U:C2	28:A:1062:G:H5'	2.56	0.41
28:A:1178:C:N3	28:A:1179:G:C5	2.89	0.41
28:A:139:U:HO2'	28:A:140:C:P	2.40	0.41
28:A:1731:G:N3	28:A:1733:G:H1'	2.35	0.41
28:A:181:A:H2'	28:A:182:A:C8	2.55	0.41
28:A:2287:A:N6	28:A:2344:U:H3	2.18	0.41
28:A:1863:G:H4'	28:A:2411:A:H4'	2.02	0.41
28:A:2898:U:O5'	28:A:2898:U:H6	2.04	0.41
28:A:28:A:H2'	28:A:29:U:H5'	2.02	0.41
28:A:368:A:H8	28:A:368:A:O5'	2.04	0.41
28:A:368:A:C2'	28:A:369:U:H5'	2.50	0.41
28:A:671:C:O2'	28:A:672:C:H5'	2.20	0.41
30:C:108:GLY:C	30:C:109:LEU:HG	2.41	0.41
33:F:49:LEU:HD22	33:F:83:PRO:O	2.20	0.41
34:G:175:LYS:HA	34:G:176:LYS:HA	1.52	0.41
35:H:115:VAL:O	35:H:116:ARG:HB3	2.20	0.41
37:J:132:HIS:O	37:J:135:GLN:HG2	2.20	0.41
42:O:27:VAL:HG13	42:O:95:SER:OG	2.20	0.41
47:T:87:LEU:HD23	47:T:87:LEU:HA	1.86	0.41
52:Y:7:ARG:HG3	52:Y:7:ARG:O	2.21	0.41
27:5:164:ARG:HG2	27:5:165:ASN:O	2.21	0.41
27:5:207:VAL:HB	27:5:210:LYS:NZ	2.35	0.41
28:A:1147:A:O2'	28:A:1148:U:H5'	2.20	0.41
28:A:1299:G:H5''	28:A:1300:G:OP1	2.20	0.41
28:A:1418:G:O2'	28:A:1580:A:N6	2.54	0.41
28:A:1684:G:C2	28:A:1705:A:C2	3.08	0.41
28:A:2318:G:H8	28:A:2318:G:O5'	2.04	0.41
28:A:2683:C:N3	28:A:2727:A:O2'	2.47	0.41
28:A:275:C:H3'	28:A:276:U:H5''	2.03	0.41
28:A:2862:G:C2	28:A:2863:C:C2	3.08	0.41
28:A:657:U:N3	28:A:749:A:N1	88.59	0.41
28:A:941:A:H2'	28:A:942:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B:55:U:H2'	29:B:56:G:H8	1.84	0.41
30:C:134:ILE:HG23	30:C:135:PRO:HD2	2.02	0.41
32:E:147:LEU:CD2	32:E:149:ILE:CG2	2.98	0.41
32:E:164:LEU:N	32:E:164:LEU:HD12	2.36	0.41
35:H:103:VAL:HG11	35:H:110:VAL:HG12	2.02	0.41
37:J:111:LYS:HG3	37:J:112:GLY:H	1.86	0.41
42:O:83:LEU:C	42:O:86:GLY:H	2.24	0.41
43:P:62:LYS:O	43:P:63:ILE:HB	2.20	0.41
43:P:27:VAL:HG23	43:P:83:ILE:HD13	2.02	0.41
45:R:1:MET:HA	45:R:43:ASN:OD1	2.20	0.41
45:R:68:ARG:HD2	45:R:90:ARG:NE	2.31	0.41
46:S:42:LYS:O	46:S:45:VAL:HG12	2.20	0.41
27:5:10:VAL:O	27:5:13:GLU:HB3	2.21	0.41
27:5:207:VAL:CG2	27:5:210:LYS:HZ3	2.34	0.41
27:5:226:GLN:NE2	27:5:229:LEU:HD12	2.35	0.41
56:8:53:G:H2'	56:8:54:U:C5	2.55	0.41
28:A:1256:G:N3	32:E:77:ILE:HG23	2.35	0.41
28:A:141:G:HO2'	28:A:142:A:C5'	2.31	0.41
28:A:2480:C:C2'	28:A:2481:G:H5'	2.47	0.41
28:A:26:G:C6	28:A:27:G:N1	2.89	0.41
28:A:2776:A:N1	28:A:2782:G:H1'	2.35	0.41
28:A:428:A:O2'	28:A:429:A:H5'	2.20	0.41
28:A:80:G:H2'	28:A:81:G:H5'	2.03	0.41
28:A:855:G:N3	50:W:23:LYS:CE	2.83	0.41
28:A:900:A:O5'	28:A:900:A:H8	2.55	0.41
30:C:258:SER:O	30:C:258:SER:OG	2.38	0.41
33:F:109:ARG:HD3	33:F:136:ILE:C	2.40	0.41
33:F:79:ARG:HG3	33:F:80:GLN:N	2.36	0.41
35:H:97:ARG:O	35:H:112:LYS:HD3	2.20	0.41
35:H:15:LEU:O	35:H:15:LEU:HG	2.19	0.41
35:H:61:VAL:HG12	35:H:61:VAL:O	2.21	0.41
36:I:116:MET:HB3	36:I:124:MET:HE3	2.02	0.41
36:I:100:ILE:HG22	36:I:139:VAL:HG23	2.02	0.41
36:I:20:SER:HA	36:I:23:VAL:O	2.20	0.41
37:J:110:PRO:C	37:J:111:LYS:HG2	2.41	0.41
39:L:95:LEU:O	39:L:100:ILE:HG13	2.21	0.41
44:Q:94:LEU:C	44:Q:96:ASP:N	2.71	0.41
45:R:61:ALA:CB	45:R:98:ILE:HA	2.50	0.41
47:T:13:ALA:HB1	52:Y:33:ALA:CB	2.51	0.41
51:X:70:LEU:HB3	51:X:75:GLU:HB3	2.03	0.41
28:A:851:C:O2'	53:Z:42:ALA:O	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:2:19:ARG:HH21	24:2:19:ARG:HG3	1.86	0.41
27:5:73:VAL:HG21	27:5:157:LYS:HA	2.03	0.41
27:5:189:LEU:O	27:5:192:LEU:HB3	2.20	0.41
27:5:37:LYS:HB3	28:A:2128:G:C4'	2.50	0.41
56:8:69:C:C2'	56:8:70:G:H5'	2.51	0.41
28:A:155:A:C2	28:A:156:A:C4	3.08	0.41
28:A:1845:G:H2'	28:A:1846:G:O4'	2.21	0.41
28:A:2097:A:H2'	28:A:2098:U:N1	2.36	0.41
27:5:37:LYS:HB3	28:A:2128:G:H4'	2.03	0.41
28:A:2516:A:C5	28:A:2517:C:C4	3.09	0.41
28:A:2785:C:O5'	28:A:2785:C:H6	2.04	0.41
28:A:399:U:H3'	51:X:56:ARG:HH12	1.86	0.41
28:A:674:G:H1'	32:E:69:ARG:HH11	1.86	0.41
28:A:853:C:C4	28:A:854:C:C5	3.09	0.41
31:D:115:GLY:O	31:D:116:LYS:HG2	2.21	0.41
32:E:58:LYS:HE2	32:E:62:GLN:CA	2.49	0.41
34:G:40:VAL:CG2	34:G:64:ALA:HA	2.50	0.41
35:H:124:THR:O	35:H:125:THR:CB	2.68	0.41
35:H:59:ALA:HA	35:H:62:LEU:CB	2.50	0.41
28:A:1080:A:O2'	36:I:127:SER:N	2.54	0.41
40:M:71:LYS:HA	40:M:72:PRO:HD3	1.55	0.41
40:M:71:LYS:HD3	40:M:95:LEU:HD13	2.01	0.41
41:N:96:ARG:CZ	41:N:116:VAL:HG23	2.50	0.41
46:S:104:THR:HG22	46:S:105:VAL:N	2.36	0.41
48:U:35:VAL:CG1	48:U:38:ILE:HB	2.51	0.41
50:W:51:GLY:HA3	50:W:58:LEU:HA	2.03	0.41
50:W:24:ARG:HE	50:W:65:LYS:HE2	1.85	0.41
51:X:62:GLY:O	51:X:66:VAL:HG23	2.21	0.41
24:2:34:ARG:NH2	24:2:39:ARG:HD2	2.35	0.41
27:5:37:LYS:HG3	27:5:38:PHE:CE2	2.54	0.41
54:6:3:C:H2'	54:6:4:C:C6	2.55	0.41
56:8:52:G:HO2'	56:8:53:G:P	2.42	0.41
56:8:67:C:H2'	56:8:68:C:C5'	2.43	0.41
28:A:1425:G:O2'	28:A:1426:G:H5'	2.21	0.41
28:A:1750:G:H2'	28:A:1751:U:H6	1.86	0.41
28:A:1869:G:N2	28:A:1871:A:HO2'	2.19	0.41
28:A:2167:U:H2'	28:A:2168:G:C4'	2.50	0.41
28:A:2183:A:H2'	28:A:2184:A:H5'	2.02	0.41
28:A:249:C:H5'	28:A:2394:C:O2'	2.20	0.41
28:A:2059:A:N7	28:A:2503:A:N3	2.68	0.41
25:3:1:PRO:HD2	28:A:667:U:O2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:C:231:HIS:NE2	30:C:243:PRO:HA	2.36	0.41
35:H:118:PRO:HB3	35:H:122:LEU:HD23	2.01	0.41
35:H:31:VAL:HG13	35:H:36:ALA:O	2.21	0.41
35:H:75:LEU:HD23	35:H:103:VAL:CG1	2.46	0.41
36:I:14:ALA:HB1	36:I:48:ILE:HD12	2.03	0.41
50:W:17:ALA:HA	50:W:35:ILE:CG2	2.49	0.41
27:5:95:VAL:HG12	27:5:96:GLY:N	2.36	0.41
56:8:42:G:O2'	56:8:43:A:H5'	2.21	0.41
28:A:1905:C:O2'	28:A:1906:G:OP2	2.23	0.41
28:A:1967:C:H2'	28:A:1968:G:H5'	2.02	0.41
28:A:528:A:H2	28:A:2043:C:H5'	1.86	0.41
28:A:2146:C:H5''	28:A:2147:A:H2	1.82	0.41
28:A:2428:G:H5''	28:A:2429:G:P	2.61	0.41
28:A:317:G:H1	28:A:334:C:H42	1.67	0.41
28:A:565:C:O5'	28:A:565:C:H6	2.04	0.41
28:A:80:G:O2'	28:A:81:G:H5'	2.21	0.41
29:B:35:C:C2	29:B:36:C:H1'	2.56	0.41
30:C:123:ILE:HG23	30:C:191:LEU:HD22	2.02	0.41
31:D:110:THR:CB	31:D:171:THR:HG22	2.51	0.41
31:D:62:LYS:N	31:D:63:PRO:CD	2.83	0.41
33:F:156:THR:HG22	33:F:157:THR:N	2.35	0.41
35:H:75:LEU:HD23	35:H:103:VAL:CG2	2.47	0.41
39:L:95:LEU:CD2	39:L:100:ILE:HD11	2.51	0.41
41:N:100:CYS:SG	41:N:101:GLY:N	2.94	0.41
41:N:12:ARG:O	41:N:17:ARG:NH2	2.54	0.41
50:W:23:LYS:CG	50:W:24:ARG:N	2.81	0.41
28:A:2386:A:N3	50:W:38:ARG:HG2	2.34	0.41
54:6:18:G:H1'	54:6:57:G:N2	2.36	0.41
28:A:100:U:O2	28:A:101:A:N6	2.54	0.41
28:A:1054:A:H61	28:A:1105:U:H3	1.69	0.41
28:A:1149:G:O2'	28:A:1150:C:H5'	2.21	0.41
28:A:1212:G:N3	28:A:1236:G:C2	2.89	0.41
28:A:1324:G:O2'	28:A:1325:U:H5'	2.20	0.41
28:A:1595:C:O2'	28:A:1596:A:H5'	2.20	0.41
28:A:1671:U:H6	28:A:1671:U:O5'	2.03	0.41
28:A:1715:G:O2'	28:A:1716:U:OP2	2.39	0.41
28:A:2162:G:N7	28:A:2173:A:O2'	2.52	0.41
28:A:2250:G:OP1	28:A:2275:C:O2'	2.29	0.41
28:A:2287:A:HO2'	28:A:2288:A:H2'	1.86	0.41
28:A:301:G:O2'	28:A:302:C:OP2	2.23	0.41
28:A:322:A:H5'	28:A:340:A:H1'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:385:C:H6	28:A:385:C:O5'	2.91	0.41
28:A:490:C:O2'	28:A:491:G:O5'	3.93	0.41
28:A:720:U:H2'	28:A:721:A:C8	2.56	0.41
28:A:880:G:O2'	28:A:880:G:N3	2.54	0.41
31:D:118:PHE:CD1	31:D:119:ALA:N	2.89	0.41
32:E:109:LEU:O	32:E:113:VAL:HG12	2.20	0.41
32:E:200:LEU:N	32:E:200:LEU:HD12	2.36	0.41
34:G:16:VAL:HG21	34:G:44:HIS:CE1	2.56	0.41
35:H:97:ARG:HB2	35:H:114:GLU:OE1	2.21	0.41
36:I:102:ARG:HB3	36:I:141:ASP:CA	2.41	0.41
36:I:79:LEU:CD2	36:I:105:LEU:HD23	2.50	0.41
41:N:28:LEU:HD23	41:N:48:VAL:HG21	2.03	0.41
42:O:18:LEU:HD12	42:O:18:LEU:N	2.35	0.41
42:O:24:THR:HG22	42:O:42:PRO:HG3	2.03	0.41
29:B:112:G:N2	42:O:45:SER:O	2.54	0.41
43:P:112:ARG:O	43:P:113:LEU:HG	2.21	0.41
45:R:4:VAL:O	45:R:38:VAL:HG23	2.21	0.41
46:S:29:VAL:O	46:S:33:LEU:HD13	2.20	0.41
46:S:59:GLU:HG2	46:S:64:ALA:HB1	2.03	0.41
23:1:22:THR:OG1	23:1:23:THR:N	2.54	0.40
27:5:214:ILE:CB	27:5:224:VAL:HG23	2.50	0.40
27:5:80:GLN:HA	27:5:84:ALA:HB2	2.03	0.40
55:7:20:U:H2'	55:7:21:C:O2	2.21	0.40
28:A:1021:A:N3	28:A:1021:A:H3'	2.36	0.40
28:A:107:G:H2'	28:A:108:G:H8	1.86	0.40
28:A:1523:U:H3'	28:A:1524:G:C5'	2.50	0.40
28:A:758:C:O2	28:A:1981:A:H2	2.03	0.40
28:A:2331:G:H4'	50:W:41:GLY:HA3	2.02	0.40
28:A:2391:G:O6	28:A:2425:A:H8	2.04	0.40
28:A:2533:U:C2'	28:A:2534:A:H5'	2.49	0.40
28:A:356:G:C2'	28:A:357:C:H5'	2.51	0.40
28:A:565:C:O2'	28:A:566:U:H5'	2.20	0.40
28:A:825:A:H2'	28:A:826:U:O4'	2.20	0.40
30:C:77:VAL:HG23	30:C:112:GLY:H	1.86	0.40
33:F:107:VAL:N	33:F:108:PRO:CD	2.84	0.40
34:G:32:LEU:HD12	34:G:32:LEU:N	2.35	0.40
34:G:86:LEU:O	34:G:129:GLU:HG3	2.21	0.40
35:H:133:GLN:O	35:H:133:GLN:HG3	2.20	0.40
40:M:14:LYS:HE3	40:M:14:LYS:HB2	1.83	0.40
45:R:54:VAL:HG23	45:R:57:GLY:H	1.86	0.40
49:V:16:ALA:O	49:V:20:LEU:HD13	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:W:79:ILE:HG22	50:W:79:ILE:O	2.22	0.40
28:A:2079:U:O2'	51:X:22:ASN:OD1	2.35	0.40
23:1:8:ILE:HG12	23:1:51:ALA:CB	2.51	0.40
26:4:36:ARG:O	26:4:37:GLN:HB3	2.21	0.40
27:5:193:LEU:HD22	27:5:209:ILE:HG22	2.03	0.40
27:5:23:ILE:CD1	27:5:227:ALA:HB2	2.49	0.40
54:6:74:C:H2'	54:6:75:C:O5'	2.21	0.40
28:A:1175:A:OP1	28:A:1176:U:H1'	2.21	0.40
28:A:1873:G:O2'	28:A:1874:C:H5'	2.22	0.40
22:0:4:GLN:NE2	28:A:2056:G:H4'	2.33	0.40
28:A:2112:G:H4'	58:9:19:G:N9	2.36	0.40
27:5:129:GLN:HB3	28:A:2113:U:O4	2.21	0.40
28:A:2216:G:H2'	28:A:2217:G:C8	2.55	0.40
28:A:2352:A:H2'	28:A:2353:G:H5'	2.03	0.40
28:A:2351:G:C2'	28:A:2366:A:H61	2.32	0.40
28:A:2575:C:H6	28:A:2575:C:O5'	2.03	0.40
28:A:2655:G:O2'	28:A:2656:U:OP2	2.39	0.40
28:A:548:G:O5'	28:A:549:G:H5'	2.22	0.40
28:A:58:G:N2	28:A:70:G:C4	2.90	0.40
28:A:878:A:H2'	28:A:879:G:H5'	2.03	0.40
31:D:141:ARG:O	31:D:141:ARG:HG2	2.21	0.40
32:E:131:THR:HB	32:E:164:LEU:HD11	2.03	0.40
34:G:24:THR:C	34:G:25:ILE:HG13	2.41	0.40
34:G:42:VAL:HG22	34:G:43:LYS:N	2.37	0.40
35:H:41:LYS:HD3	35:H:44:ILE:CD1	2.51	0.40
35:H:64:ALA:O	35:H:71:LYS:HE3	2.20	0.40
36:I:88:GLY:HA2	36:I:135:MET:SD	2.61	0.40
39:L:123:ARG:NE	39:L:143:GLU:OE2	2.48	0.40
39:L:55:MET:HA	39:L:56:PRO:HD3	1.88	0.40
40:M:53:MET:HE3	40:M:63:ILE:CG2	2.51	0.40
45:R:34:GLU:CG	45:R:60:LYS:HG2	2.48	0.40
44:Q:43:GLN:NE2	45:R:77:PHE:HD2	2.19	0.40
27:5:107:GLY:CA	27:5:134:ARG:HH22	2.34	0.40
27:5:140:PRO:CG	28:A:2122:U:C5'	3.00	0.40
58:9:64:A:H2'	58:9:65:G:C8	2.56	0.40
28:A:1153:C:O2'	28:A:1154:G:H5'	2.22	0.40
28:A:1231:U:O5'	28:A:1231:U:H6	2.04	0.40
28:A:159:G:O2'	28:A:161:A:N7	9.10	0.40
28:A:1792:G:O2'	28:A:1793:C:H5'	2.21	0.40
28:A:2053:G:H2'	28:A:2054:A:O5'	2.20	0.40
28:A:2307:G:H4'	28:A:2308:G:O4'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:A:523:C:O2'	28:A:524:G:H5'	2.22	0.40
28:A:983:A:N6	28:A:984:A:C2	2.90	0.40
29:B:48:U:H2'	29:B:49:C:C6	2.56	0.40
28:A:1819:A:OP1	30:C:154:ALA:HA	2.20	0.40
30:C:19:VAL:O	30:C:19:VAL:HG23	2.22	0.40
30:C:225:ASN:HB3	30:C:226:PRO:HD2	2.03	0.40
30:C:52:HIS:O	30:C:53:ILE:HG13	2.20	0.40
31:D:11:MET:HE1	31:D:192:ALA:N	2.37	0.40
33:F:47:LYS:O	33:F:50:ASP:HB2	2.21	0.40
39:L:110:VAL:O	39:L:111:ILE:HB	2.21	0.40
41:N:20:MET:HE3	41:N:40:LYS:CE	2.51	0.40
41:N:84:GLY:N	41:N:85:PRO:HD2	2.37	0.40
42:O:24:THR:HG23	42:O:42:PRO:HG3	2.03	0.40
46:S:20:VAL:HG21	46:S:43:ALA:HB3	2.03	0.40
47:T:21:SER:O	47:T:24:MET:HB3	2.21	0.40
47:T:51:PHE:O	47:T:52:GLU:HG2	2.21	0.40
26:4:22:VAL:HG22	26:4:23:ILE:N	2.37	0.40
58:9:37:A:C3'	58:9:38:A:H8	2.34	0.40
58:9:4:C:H6	58:9:4:C:OP2	2.04	0.40
58:9:52:G:H1'	58:9:63:G:N2	2.35	0.40
22:0:16:ARG:NE	28:A:1266:G:OP2	2.53	0.40
28:A:1371:G:HO2'	28:A:1372:U:C5'	2.34	0.40
28:A:1495:A:O2'	28:A:1496:A:H5'	2.21	0.40
28:A:1501:G:C2'	28:A:1502:A:H5'	2.51	0.40
28:A:1642:G:C2'	28:A:1643:G:H5'	2.51	0.40
27:5:11:ILE:HG12	28:A:2130:U:O4'	2.22	0.40
28:A:2223:G:H2'	28:A:2224:G:H5'	2.03	0.40
28:A:2833:U:HO2'	28:A:2834:G:P	2.44	0.40
28:A:717:C:H5'	28:A:718:A:OP2	2.21	0.40
29:B:21:G:H2'	29:B:22:U:C5'	2.50	0.40
30:C:49:THR:CG2	30:C:50:THR:N	2.84	0.40
31:D:169:ARG:C	31:D:170:VAL:HG12	2.42	0.40
35:H:14:SER:HB2	35:H:17:ASP:CG	2.41	0.40
36:I:72:THR:CG2	36:I:112:LYS:HZ1	2.34	0.40
36:I:60:VAL:HG12	36:I:61:TYR:N	2.36	0.40
36:I:72:THR:HG23	36:I:112:LYS:HZ2	1.86	0.40
40:M:133:LYS:O	40:M:134:THR:HB	2.22	0.40
41:N:59:SER:O	41:N:63:ARG:HG3	2.21	0.40
41:N:51:LEU:HD21	41:N:70:THR:HG23	2.03	0.40
42:O:17:LYS:O	42:O:20:GLU:HB3	2.21	0.40
45:R:23:GLU:O	45:R:25:LEU:HD13	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:W:22:VAL:O	50:W:23:LYS:HB3	2.21	0.40
51:X:58:ILE:HG23	51:X:63:ILE:HG12	2.01	0.40
38:K:71:ARG:NE	38:K:106:GLU:HG3	2.32	0.40
39:L:135:ILE:O	39:L:138:ALA:HB3	2.22	0.40
41:N:26:GLY:O	41:N:29:VAL:HG12	2.22	0.40
41:N:72:ASP:CB	41:N:75:ILE:HG12	2.46	0.40
44:Q:16:ILE:CD1	44:Q:31:TYR:CE1	3.04	0.40
50:W:57:THR:C	50:W:58:LEU:HD12	2.42	0.40
53:Z:23:LEU:HD12	53:Z:50:VAL:HG11	1.99	0.40
53:Z:50:VAL:HG23	53:Z:54:VAL:CG2	2.51	0.40
22:O:9:ARG:HH22	44:Q:29:ARG:CD	2.34	0.40
25:3:28:LEU:O	25:3:28:LEU:HG	2.21	0.40
58:9:39:U:H3'	58:9:39:U:O2	2.22	0.40
58:9:55:U:O2'	58:9:57:G:N7	2.51	0.40
28:A:1273:U:H4'	28:A:1275:A:OP1	2.21	0.40
28:A:2134:A:O2'	28:A:2160:C:H5'	2.22	0.40
28:A:2424:C:O2	28:A:2429:G:O2'	2.31	0.40
28:A:2480:C:OP1	28:A:2537:U:H5''	2.22	0.40
28:A:2814:A:H8	28:A:2814:A:O5'	2.04	0.40
28:A:2856:A:O2'	28:A:2857:G:H5'	2.22	0.40
28:A:418:C:H2'	28:A:419:U:O4'	2.21	0.40
28:A:474:G:C2	28:A:475:C:H1'	12.43	0.40
28:A:623:C:H6	28:A:623:C:O5'	2.32	0.40
28:A:883:G:H1	28:A:894:U:C1'	2.29	0.40
28:A:900:A:C2'	28:A:901:C:H5'	2.51	0.40
28:A:910:A:C4	40:M:13:HIS:CD2	3.10	0.40
29:B:33:G:H2'	29:B:34:A:O4'	2.21	0.40
30:C:235:GLU:O	30:C:235:GLU:HG3	2.22	0.40
30:C:64:VAL:CG2	30:C:86:ARG:HH22	2.33	0.40
31:D:151:THR:HG22	31:D:152:PRO:HD3	1.94	0.40
31:D:45:TYR:N	31:D:45:TYR:CD2	2.89	0.40
33:F:165:GLY:O	33:F:169:LEU:HD13	2.21	0.40
33:F:116:LEU:HD22	33:F:174:PHE:CZ	2.57	0.40
36:I:4:VAL:HG21	36:I:7:TYR:CB	2.42	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	c	204/233 (88%)	182 (89%)	16 (8%)	6 (3%)	6	36
3	d	203/206 (98%)	180 (89%)	16 (8%)	7 (3%)	5	31
4	e	148/167 (89%)	125 (84%)	19 (13%)	4 (3%)	6	39
5	f	100/135 (74%)	84 (84%)	9 (9%)	7 (7%)	1	10
6	g	149/179 (83%)	134 (90%)	11 (7%)	4 (3%)	6	39
7	h	127/130 (98%)	114 (90%)	11 (9%)	2 (2%)	12	54
8	i	125/130 (96%)	107 (86%)	14 (11%)	4 (3%)	5	33
9	j	96/103 (93%)	76 (79%)	11 (12%)	9 (9%)	1	5
10	k	115/129 (89%)	102 (89%)	9 (8%)	4 (4%)	4	31
11	l	121/124 (98%)	104 (86%)	12 (10%)	5 (4%)	3	27
12	m	112/118 (95%)	101 (90%)	6 (5%)	5 (4%)	3	24
13	n	98/101 (97%)	70 (71%)	15 (15%)	13 (13%)	0	1
14	o	86/89 (97%)	76 (88%)	9 (10%)	1 (1%)	16	60
15	p	80/82 (98%)	66 (82%)	8 (10%)	6 (8%)	1	9
16	q	78/84 (93%)	62 (80%)	14 (18%)	2 (3%)	7	40
17	r	53/75 (71%)	50 (94%)	2 (4%)	1 (2%)	10	50
18	s	77/92 (84%)	68 (88%)	5 (6%)	4 (5%)	2	19
19	t	83/87 (95%)	78 (94%)	3 (4%)	2 (2%)	7	43
20	u	49/71 (69%)	39 (80%)	7 (14%)	3 (6%)	2	15
21	b	216/241 (90%)	189 (88%)	20 (9%)	7 (3%)	5	33
22	0	54/57 (95%)	51 (94%)	2 (4%)	1 (2%)	10	50
23	1	48/55 (87%)	41 (85%)	6 (12%)	1 (2%)	9	46
24	2	44/46 (96%)	43 (98%)	0	1 (2%)	8	44
25	3	62/65 (95%)	55 (89%)	5 (8%)	2 (3%)	5	33
26	4	36/38 (95%)	25 (69%)	5 (14%)	6 (17%)	0	1

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
27	5	232/234 (99%)	190 (82%)	34 (15%)	8 (3%)	5	31
30	C	268/273 (98%)	228 (85%)	28 (10%)	12 (4%)	3	24
31	D	207/209 (99%)	169 (82%)	23 (11%)	15 (7%)	1	10
32	E	199/201 (99%)	171 (86%)	14 (7%)	14 (7%)	1	10
33	F	175/179 (98%)	146 (83%)	21 (12%)	8 (5%)	3	23
34	G	174/177 (98%)	140 (80%)	21 (12%)	13 (8%)	1	9
35	H	147/149 (99%)	114 (78%)	22 (15%)	11 (8%)	1	9
36	I	139/142 (98%)	119 (86%)	11 (8%)	9 (6%)	1	13
37	J	140/142 (99%)	121 (86%)	13 (9%)	6 (4%)	3	25
38	K	120/123 (98%)	100 (83%)	14 (12%)	6 (5%)	3	21
39	L	141/144 (98%)	115 (82%)	17 (12%)	9 (6%)	2	13
40	M	134/136 (98%)	112 (84%)	15 (11%)	7 (5%)	2	19
41	N	118/127 (93%)	104 (88%)	10 (8%)	4 (3%)	5	31
42	O	114/117 (97%)	104 (91%)	10 (9%)	0	100	100
43	P	112/115 (97%)	93 (83%)	13 (12%)	6 (5%)	2	19
44	Q	115/118 (98%)	109 (95%)	6 (5%)	0	100	100
45	R	101/103 (98%)	81 (80%)	15 (15%)	5 (5%)	3	21
46	S	108/110 (98%)	94 (87%)	11 (10%)	3 (3%)	6	37
47	T	91/100 (91%)	61 (67%)	18 (20%)	12 (13%)	0	1
48	U	100/104 (96%)	81 (81%)	11 (11%)	8 (8%)	1	7
49	V	92/94 (98%)	81 (88%)	9 (10%)	2 (2%)	8	45
50	W	77/85 (91%)	49 (64%)	17 (22%)	11 (14%)	0	1
51	X	75/78 (96%)	64 (85%)	7 (9%)	4 (5%)	2	19
52	Y	61/63 (97%)	50 (82%)	11 (18%)	0	100	100
53	Z	56/59 (95%)	51 (91%)	3 (5%)	2 (4%)	4	30
57	x	582/599 (97%)	496 (85%)	58 (10%)	28 (5%)	3	22
All	All	6442/6818 (94%)	5465 (85%)	667 (10%)	310 (5%)	5	22

All (310) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	d	125	VAL
5	f	98	GLU

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Mol	Chain	Res	Type
5	f	101	PRO
9	j	57	VAL
9	j	61	ALA
11	l	44	LYS
12	m	10	PRO
13	n	34	VAL
13	n	35	ASN
13	n	37	SER
13	n	41	ARG
13	n	42	TRP
13	n	49	GLN
13	n	52	PRO
16	q	50	ASN
20	u	9	ASN
20	u	38	TYR
20	u	40	LYS
21	b	150	ILE
21	b	163	ILE
27	5	38	PHE
30	C	59	GLN
30	C	64	VAL
30	C	204	LEU
31	D	11	MET
31	D	73	VAL
31	D	122	VAL
31	D	192	ALA
32	E	69	ARG
32	E	79	ARG
33	F	40	GLY
34	G	2	ARG
34	G	84	LYS
34	G	163	TYR
34	G	168	VAL
35	H	125	THR
36	I	56	VAL
37	J	44	TYR
37	J	45	THR
38	K	13	ASN
39	L	111	ILE
40	M	36	VAL
41	N	106	ASP
43	P	50	ARG

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Mol	Chain	Res	Type
46	S	19	LEU
46	S	96	ILE
47	T	72	GLN
48	U	92	VAL
49	V	65	VAL
50	W	29	SER
50	W	36	ILE
50	W	70	VAL
57	x	40	VAL
57	x	197	ASP
57	x	323	SER
57	x	350	ILE
57	x	351	ILE
57	x	378	SER
57	x	426	ARG
57	x	549	VAL
57	x	584	PRO
57	x	588	PHE
57	x	594	VAL
2	c	15	VAL
2	c	64	ILE
2	c	101	ILE
3	d	24	GLY
3	d	25	VAL
3	d	36	GLN
5	f	85	ILE
5	f	93	LYS
6	g	130	ASN
7	h	67	GLN
7	h	75	ILE
8	i	121	ALA
8	i	129	LYS
9	j	36	VAL
9	j	91	ASP
10	k	119	ASN
11	l	73	ASN
11	l	75	GLN
12	m	4	ILE
12	m	47	GLU
12	m	105	ASN
13	n	25	ALA
13	n	33	ASP

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Mol	Chain	Res	Type
13	n	47	LYS
13	n	53	ARG
13	n	92	GLU
15	p	43	ALA
16	q	15	ASP
18	s	28	LYS
19	t	4	ILE
21	b	19	THR
23	1	4	ILE
25	3	22	LYS
26	4	7	VAL
27	5	124	VAL
27	5	145	VAL
27	5	167	LYS
30	C	185	ALA
30	C	239	PHE
31	D	93	GLY
31	D	170	VAL
31	D	184	ARG
32	E	148	ILE
33	F	176	PHE
34	G	117	PRO
35	H	14	SER
35	H	27	ARG
35	H	75	LEU
35	H	103	VAL
35	H	115	VAL
35	H	137	GLU
36	I	6	ALA
36	I	20	SER
37	J	13	ARG
37	J	82	GLY
37	J	125	TYR
38	K	35	VAL
38	K	50	GLY
39	L	81	ASP
39	L	82	LEU
40	M	73	ILE
41	N	2	ARG
47	T	40	LYS
47	T	69	ARG
47	T	77	ARG

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Mol	Chain	Res	Type
47	T	84	TYR
47	T	89	GLU
48	U	87	GLU
48	U	98	ASN
50	W	17	ALA
50	W	68	PHE
57	x	7	PHE
57	x	163	ALA
57	x	263	LYS
57	x	289	LYS
57	x	379	ARG
57	x	552	LYS
3	d	32	CYS
4	e	12	GLN
4	e	24	THR
4	e	45	ARG
4	e	78	ASN
5	f	54	LEU
5	f	92	THR
5	f	94	HIS
10	k	17	SER
12	m	114	LYS
15	p	49	GLY
18	s	4	SER
18	s	5	LEU
21	b	81	ASP
21	b	125	PHE
25	3	27	ASN
27	5	53	ARG
31	D	119	ALA
32	E	6	LYS
32	E	13	THR
32	E	123	LYS
34	G	31	GLU
34	G	33	THR
34	G	45	ALA
34	G	118	ALA
35	H	30	LEU
35	H	67	ALA
35	H	76	GLU
35	H	114	GLU
39	L	41	ARG

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Mol	Chain	Res	Type
40	M	56	ALA
40	M	69	PRO
40	M	77	PRO
47	T	29	THR
47	T	55	VAL
47	T	70	HIS
48	U	18	LYS
50	W	14	ASP
50	W	41	GLY
50	W	47	GLY
51	X	53	LYS
57	x	429	GLN
57	x	433	VAL
57	x	434	TYR
57	x	435	HIS
6	g	114	LYS
8	i	56	ASP
8	i	58	VAL
9	j	34	ALA
10	k	14	LYS
10	k	15	GLN
11	l	98	VAL
13	n	3	LYS
14	o	46	HIS
15	p	44	SER
15	p	79	ASN
15	p	81	ALA
18	s	6	LYS
21	b	148	GLY
26	4	29	ALA
26	4	37	GLN
27	5	15	VAL
30	C	37	SER
30	C	110	LYS
32	E	10	SER
32	E	42	GLY
32	E	45	ALA
34	G	83	THR
36	I	19	PRO
36	I	27	LEU
38	K	93	GLN
39	L	19	LEU

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Mol	Chain	Res	Type
39	L	40	SER
43	P	81	ASP
45	R	100	GLY
47	T	28	ASN
48	U	52	ASN
49	V	71	LYS
50	W	9	THR
53	Z	3	THR
57	x	188	GLU
57	x	283	LYS
2	c	61	ALA
2	c	66	VAL
3	d	167	LYS
6	g	85	TYR
9	j	89	ARG
9	j	93	ALA
11	l	48	ALA
19	t	68	HIS
24	2	45	SER
26	4	8	LYS
26	4	16	ILE
27	5	150	ALA
30	C	94	LEU
30	C	121	ALA
30	C	231	HIS
30	C	254	LYS
31	D	149	ASN
31	D	152	PRO
31	D	173	GLN
32	E	46	GLN
32	E	83	VAL
32	E	96	VAL
33	F	11	VAL
33	F	128	SER
33	F	133	GLU
33	F	160	LYS
34	G	119	GLY
36	I	90	GLY
36	I	119	ALA
38	K	46	ALA
39	L	36	LYS
39	L	86	GLU

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Mol	Chain	Res	Type
40	M	35	ALA
43	P	63	ILE
45	R	65	ALA
45	R	91	GLN
45	R	98	ILE
46	S	65	ASP
47	T	67	VAL
48	U	85	ARG
50	W	10	ARG
50	W	15	SER
51	X	34	SER
51	X	70	LEU
53	Z	34	THR
57	x	162	SER
57	x	290	LYS
2	c	3	GLN
3	d	195	ILE
9	j	42	LEU
21	b	67	LEU
22	o	54	ILE
31	D	109	VAL
31	D	120	GLY
31	D	175	LEU
32	E	151	GLY
33	F	132	ARG
36	I	22	PRO
37	J	65	THR
38	K	119	ALA
39	L	66	PHE
40	M	134	THR
41	N	32	GLU
41	N	102	PHE
43	P	4	ILE
43	P	25	VAL
43	P	26	GLU
45	R	53	PHE
47	T	16	VAL
48	U	51	LEU
51	X	17	ARG
57	x	551	ALA
30	C	246	PRO
33	F	59	ILE

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Mol	Chain	Res	Type
36	I	31	GLY
15	p	33	ILE
26	4	3	VAL
31	D	107	VAL
34	G	25	ILE
48	U	38	ILE
57	x	167	VAL
6	g	81	GLY
17	r	21	ILE
27	5	233	VAL
34	G	23	ILE
57	x	241	THR
9	j	74	VAL
32	E	129	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 PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	c	170/190 (90%)	170 (100%)	0	100	100
3	d	172/173 (99%)	172 (100%)	0	100	100
4	e	113/126 (90%)	113 (100%)	0	100	100
5	f	89/116 (77%)	89 (100%)	0	100	100
6	g	124/147 (84%)	124 (100%)	0	100	100
7	h	104/105 (99%)	104 (100%)	0	100	100
8	i	105/107 (98%)	105 (100%)	0	100	100
9	j	86/90 (96%)	86 (100%)	0	100	100
10	k	90/99 (91%)	90 (100%)	0	100	100
11	l	103/104 (99%)	103 (100%)	0	100	100
12	m	92/96 (96%)	92 (100%)	0	100	100
13	n	83/84 (99%)	73 (88%)	10 (12%)	6	28
14	o	76/77 (99%)	76 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	p	65/65 (100%)	65 (100%)	0	100	100
16	q	74/78 (95%)	74 (100%)	0	100	100
17	r	48/65 (74%)	48 (100%)	0	100	100
18	s	70/79 (89%)	70 (100%)	0	100	100
19	t	65/66 (98%)	65 (100%)	0	100	100
20	u	44/61 (72%)	44 (100%)	0	100	100
21	b	180/199 (90%)	180 (100%)	0	100	100
22	0	47/48 (98%)	47 (100%)	0	100	100
23	1	45/49 (92%)	44 (98%)	1 (2%)	60	87
24	2	38/38 (100%)	38 (100%)	0	100	100
25	3	51/52 (98%)	51 (100%)	0	100	100
26	4	34/34 (100%)	34 (100%)	0	100	100
27	5	181/181 (100%)	181 (100%)	0	100	100
30	C	215/218 (99%)	215 (100%)	0	100	100
31	D	164/164 (100%)	164 (100%)	0	100	100
32	E	165/165 (100%)	165 (100%)	0	100	100
33	F	148/150 (99%)	148 (100%)	0	100	100
34	G	137/138 (99%)	137 (100%)	0	100	100
35	H	114/114 (100%)	114 (100%)	0	100	100
36	I	109/110 (99%)	109 (100%)	0	100	100
37	J	116/116 (100%)	116 (100%)	0	100	100
38	K	103/104 (99%)	103 (100%)	0	100	100
39	L	102/103 (99%)	102 (100%)	0	100	100
40	M	109/109 (100%)	109 (100%)	0	100	100
41	N	100/103 (97%)	100 (100%)	0	100	100
42	O	86/87 (99%)	86 (100%)	0	100	100
43	P	99/100 (99%)	99 (100%)	0	100	100
44	Q	89/90 (99%)	89 (100%)	0	100	100
45	R	84/84 (100%)	84 (100%)	0	100	100
46	S	93/93 (100%)	93 (100%)	0	100	100
47	T	80/84 (95%)	74 (92%)	6 (8%)	17	55

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
48	U	83/85 (98%)	83 (100%)	0	100	100
49	V	78/78 (100%)	78 (100%)	0	100	100
50	W	59/63 (94%)	59 (100%)	0	100	100
51	X	67/68 (98%)	67 (100%)	0	100	100
52	Y	55/55 (100%)	55 (100%)	0	100	100
53	Z	48/49 (98%)	48 (100%)	0	100	100
57	x	500/511 (98%)	496 (99%)	4 (1%)	86	96
All	All	5352/5570 (96%)	5331 (100%)	21 (0%)	94	98

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
13	n	24	ARG
13	n	26	GLU
13	n	27	LEU
13	n	33	ASP
13	n	38	ASP
13	n	39	GLU
13	n	40	ASP
13	n	41	ARG
13	n	42	TRP
13	n	47	LYS
23	1	8	ILE
47	T	66	LYS
47	T	68	LYS
47	T	69	ARG
47	T	70	HIS
47	T	73	ARG
47	T	77	ARG
57	x	106	GLN
57	x	323	SER
57	x	509	ARG
57	x	589	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (74) such sidechains are listed below:

Mol	Chain	Res	Type
3	d	120	HIS

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Mol	Chain	Res	Type
5	f	46	GLN
5	f	55	HIS
5	f	63	ASN
6	g	86	GLN
7	h	67	GLN
8	i	75	GLN
9	j	35	GLN
10	k	22	HIS
11	l	5	ASN
12	m	14	HIS
13	n	35	ASN
13	n	43	ASN
13	n	60	GLN
14	o	35	GLN
16	q	51	ASN
18	s	69	HIS
19	t	48	GLN
19	t	82	GLN
21	b	119	GLN
22	0	4	GLN
22	0	5	ASN
22	0	18	HIS
27	5	58	ASN
27	5	83	ASN
27	5	110	ASN
30	C	52	HIS
30	C	57	HIS
30	C	114	GLN
30	C	259	ASN
31	D	49	GLN
31	D	130	GLN
32	E	62	GLN
32	E	165	HIS
34	G	21	GLN
34	G	72	ASN
34	G	103	ASN
34	G	110	HIS
35	H	2	GLN
35	H	18	GLN
35	H	28	ASN
37	J	40	HIS
37	J	135	GLN

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Mol	Chain	Res	Type
39	L	54	GLN
40	M	22	GLN
41	N	9	GLN
43	P	9	GLN
43	P	11	GLN
44	Q	43	GLN
45	R	66	HIS
47	T	15	HIS
47	T	70	HIS
47	T	91	GLN
48	U	65	GLN
49	V	44	HIS
49	V	51	GLN
49	V	80	HIS
50	W	39	GLN
51	X	16	ASN
52	Y	20	ASN
52	Y	27	ASN
52	Y	41	HIS
53	Z	19	HIS
57	x	81	HIS
57	x	192	GLN
57	x	214	ASN
57	x	266	HIS
57	x	294	GLN
57	x	407	HIS
57	x	429	GLN
57	x	476	GLN
57	x	548	ASN
57	x	568	GLN
57	x	593	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	a	1532/1533 (99%)	302 (19%)	0
28	A	2902/2904 (99%)	566 (19%)	24 (0%)
29	B	117/120 (97%)	18 (15%)	0
54	6	74/76 (97%)	15 (20%)	3 (4%)
55	7	14/15 (93%)	7 (50%)	1 (7%)
56	8	76/77 (98%)	20 (26%)	0

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
58	9	75/76 (98%)	24 (32%)	2 (2%)
All	All	4790/4801 (99%)	952 (19%)	30 (0%)

All (952) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	a	4	U
1	a	5	U
1	a	6	G
1	a	9	G
1	a	13	U
1	a	15	G
1	a	22	G
1	a	31	G
1	a	32	A
1	a	39	G
1	a	48	C
1	a	50	A
1	a	51	A
1	a	52	C
1	a	70	U
1	a	71	A
1	a	74	A
1	a	75	G
1	a	77	A
1	a	78	A
1	a	79	G
1	a	81	A
1	a	83	C
1	a	85	U
1	a	86	G
1	a	87	C
1	a	89	U
1	a	90	C
1	a	91	U
1	a	94	G
1	a	95	C
1	a	99	C
1	a	116	A
1	a	121	U
1	a	130	A
1	a	131	A

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Mol	Chain	Res	Type
1	a	144	G
1	a	146	G
1	a	151	A
1	a	156	C
1	a	163	C
1	a	164	G
1	a	166	U
1	a	182	A
1	a	191	G
1	a	192	A
1	a	197	A
1	a	204	G
1	a	205	A
1	a	209	U
1	a	210	C
1	a	211	G
1	a	226	G
1	a	227	G
1	a	240	G
1	a	245	U
1	a	247	G
1	a	251	G
1	a	262	A
1	a	266	G
1	a	267	C
1	a	283	U
1	a	289	G
1	a	298	A
1	a	299	G
1	a	307	C
1	a	314	C
1	a	321	A
1	a	328	C
1	a	329	A
1	a	330	C
1	a	332	G
1	a	344	A
1	a	345	C
1	a	346	G
1	a	347	G
1	a	352	C
1	a	353	A

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Mol	Chain	Res	Type
1	a	354	G
1	a	357	G
1	a	362	G
1	a	367	U
1	a	368	U
1	a	369	G
1	a	372	C
1	a	373	A
1	a	389	A
1	a	402	G
1	a	406	G
1	a	411	A
1	a	412	A
1	a	413	G
1	a	414	A
1	a	421	U
1	a	422	C
1	a	429	U
1	a	430	A
1	a	440	C
1	a	456	A
1	a	457	G
1	a	458	U
1	a	461	A
1	a	462	G
1	a	463	U
1	a	466	A
1	a	467	U
1	a	468	A
1	a	474	G
1	a	479	U
1	a	481	G
1	a	482	A
1	a	483	C
1	a	484	G
1	a	486	U
1	a	496	A
1	a	497	G
1	a	505	G
1	a	511	C
1	a	518	C
1	a	527	G

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Mol	Chain	Res	Type
1	a	530	G
1	a	531	U
1	a	533	A
1	a	545	C
1	a	547	A
1	a	559	A
1	a	562	U
1	a	564	C
1	a	571	U
1	a	572	A
1	a	573	A
1	a	575	G
1	a	576	C
1	a	577	G
1	a	579	A
1	a	622	A
1	a	628	G
1	a	631	C
1	a	632	U
1	a	653	U
1	a	654	G
1	a	665	A
1	a	670	G
1	a	694	A
1	a	703	G
1	a	706	A
1	a	721	G
1	a	723	U
1	a	731	G
1	a	733	G
1	a	748	G
1	a	755	G
1	a	764	C
1	a	778	G
1	a	783	C
1	a	792	A
1	a	793	U
1	a	794	A
1	a	799	G
1	a	805	C
1	a	810	C
1	a	815	A

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Mol	Chain	Res	Type
1	a	817	C
1	a	828	U
1	a	829	G
1	a	841	C
1	a	843	U
1	a	845	A
1	a	846	G
1	a	871	U
1	a	888	G
1	a	889	A
1	a	895	G
1	a	901	A
1	a	902	G
1	a	913	A
1	a	914	A
1	a	920	U
1	a	922	G
1	a	926	G
1	a	927	G
1	a	933	G
1	a	934	C
1	a	935	A
1	a	943	U
1	a	948	C
1	a	960	U
1	a	966	G
1	a	969	A
1	a	971	G
1	a	972	C
1	a	975	A
1	a	976	G
1	a	977	A
1	a	983	A
1	a	993	G
1	a	996	A
1	a	1001	C
1	a	1004	A
1	a	1008	U
1	a	1011	C
1	a	1018	G
1	a	1026	G
1	a	1027	C

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Mol	Chain	Res	Type
1	a	1028	C
1	a	1029	U
1	a	1030	U
1	a	1031	C
1	a	1032	G
1	a	1036	A
1	a	1037	C
1	a	1043	G
1	a	1050	G
1	a	1054	C
1	a	1055	A
1	a	1056	U
1	a	1060	U
1	a	1065	U
1	a	1070	U
1	a	1086	U
1	a	1087	G
1	a	1094	G
1	a	1095	U
1	a	1101	A
1	a	1124	G
1	a	1130	A
1	a	1136	C
1	a	1137	C
1	a	1138	G
1	a	1139	G
1	a	1146	A
1	a	1159	U
1	a	1167	A
1	a	1168	U
1	a	1192	C
1	a	1194	U
1	a	1196	A
1	a	1197	A
1	a	1200	C
1	a	1202	U
1	a	1212	U
1	a	1213	A
1	a	1225	A
1	a	1226	C
1	a	1227	A
1	a	1238	A

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Mol	Chain	Res	Type
1	a	1240	U
1	a	1241	G
1	a	1256	A
1	a	1257	A
1	a	1260	G
1	a	1261	A
1	a	1267	C
1	a	1279	G
1	a	1280	A
1	a	1282	C
1	a	1287	A
1	a	1297	G
1	a	1298	U
1	a	1300	G
1	a	1302	C
1	a	1303	C
1	a	1305	G
1	a	1312	G
1	a	1317	C
1	a	1318	A
1	a	1320	C
1	a	1331	G
1	a	1332	A
1	a	1337	G
1	a	1357	A
1	a	1363	A
1	a	1364	U
1	a	1379	G
1	a	1381	U
1	a	1395	C
1	a	1401	G
1	a	1406	U
1	a	1419	G
1	a	1429	A
1	a	1441	A
1	a	1446	A
1	a	1449	C
1	a	1451	U
1	a	1452	C
1	a	1469	C
1	a	1487	G
1	a	1492	A

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Mol	Chain	Res	Type
1	a	1493	A
1	a	1494	G
1	a	1497	G
1	a	1503	A
1	a	1506	U
1	a	1507	A
1	a	1513	A
1	a	1517	G
1	a	1519	A
1	a	1520	C
1	a	1529	G
1	a	1530	G
1	a	1533	C
1	a	1534	A
28	A	10	A
28	A	14	A
28	A	15	G
28	A	34	U
28	A	35	G
28	A	46	G
28	A	50	U
28	A	51	G
28	A	63	A
28	A	71	A
28	A	72	U
28	A	74	A
28	A	75	G
28	A	84	A
28	A	92	U
28	A	103	A
28	A	118	A
28	A	120	U
28	A	123	G
28	A	124	G
28	A	138	U
28	A	139	U
28	A	140	C
28	A	141	G
28	A	142	A
28	A	163	C
28	A	164	C
28	A	174	U

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Mol	Chain	Res	Type
28	A	181	A
28	A	185	G
28	A	193	U
28	A	196	A
28	A	199	A
28	A	205	G
28	A	208	C
28	A	216	A
28	A	222	A
28	A	228	C
28	A	230	G
28	A	241	A
28	A	248	G
28	A	249	C
28	A	255	A
28	A	266	G
28	A	267	C
28	A	272	A
28	A	273	G
28	A	276	U
28	A	277	G
28	A	285	G
28	A	293	U
28	A	294	A
28	A	306	U
28	A	311	A
28	A	325	G
28	A	329	G
28	A	330	A
28	A	335	C
28	A	353	C
28	A	361	G
28	A	362	A
28	A	363	G
28	A	371	A
28	A	372	G
28	A	386	G
28	A	389	G
28	A	396	G
28	A	399	U
28	A	404	A
28	A	405	U

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Mol	Chain	Res	Type
28	A	411	G
28	A	412	A
28	A	424	G
28	A	449	A
28	A	451	U
28	A	467	G
28	A	472	A
28	A	481	G
28	A	491	G
28	A	504	A
28	A	505	A
28	A	509	C
28	A	510	C
28	A	528	A
28	A	531	C
28	A	532	A
28	A	533	G
28	A	543	G
28	A	544	C
28	A	546	U
28	A	548	G
28	A	549	G
28	A	550	C
28	A	551	G
28	A	562	U
28	A	563	A
28	A	573	U
28	A	575	A
28	A	580	U
28	A	584	C
28	A	586	A
28	A	588	U
28	A	595	C
28	A	603	A
28	A	604	G
28	A	614	A
28	A	615	U
28	A	627	A
28	A	633	A
28	A	637	A
28	A	647	G
28	A	654	A

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Mol	Chain	Res	Type
28	A	655	A
28	A	656	G
28	A	663	G
28	A	686	U
28	A	696	G
28	A	711	G
28	A	717	C
28	A	724	U
28	A	728	G
28	A	730	A
28	A	733	G
28	A	739	A
28	A	747	U
28	A	750	A
28	A	751	A
28	A	762	U
28	A	764	A
28	A	767	U
28	A	775	G
28	A	776	G
28	A	782	A
28	A	784	G
28	A	785	G
28	A	792	A
28	A	794	A
28	A	801	G
28	A	805	G
28	A	812	C
28	A	819	A
28	A	827	U
28	A	846	U
28	A	847	U
28	A	859	G
28	A	872	U
28	A	873	C
28	A	880	G
28	A	881	G
28	A	887	U
28	A	888	C
28	A	891	G
28	A	895	U
28	A	896	A

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Mol	Chain	Res	Type
28	A	897	C
28	A	899	A
28	A	910	A
28	A	914	G
28	A	915	C
28	A	931	U
28	A	941	A
28	A	945	A
28	A	946	C
28	A	955	U
28	A	961	C
28	A	972	A
28	A	973	A
28	A	974	G
28	A	976	G
28	A	983	A
28	A	984	A
28	A	985	C
28	A	990	A
28	A	995	C
28	A	996	A
28	A	1003	G
28	A	1006	C
28	A	1012	U
28	A	1013	C
28	A	1017	G
28	A	1021	A
28	A	1022	G
28	A	1023	U
28	A	1024	G
28	A	1025	G
28	A	1026	G
28	A	1033	U
28	A	1044	C
28	A	1047	G
28	A	1056	G
28	A	1061	U
28	A	1062	G
28	A	1064	C
28	A	1066	U
28	A	1069	A
28	A	1070	A

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Mol	Chain	Res	Type
28	A	1072	C
28	A	1081	U
28	A	1082	U
28	A	1089	A
28	A	1112	G
28	A	1120	G
28	A	1130	U
28	A	1132	U
28	A	1133	A
28	A	1135	C
28	A	1139	G
28	A	1141	U
28	A	1142	A
28	A	1143	A
28	A	1151	A
28	A	1168	G
28	A	1169	A
28	A	1171	G
28	A	1173	U
28	A	1174	U
28	A	1175	A
28	A	1176	U
28	A	1178	C
28	A	1180	U
28	A	1183	U
28	A	1190	G
28	A	1191	G
28	A	1206	G
28	A	1212	G
28	A	1227	G
28	A	1233	C
28	A	1238	G
28	A	1246	A
28	A	1247	A
28	A	1248	G
28	A	1250	G
28	A	1253	A
28	A	1254	A
28	A	1255	U
28	A	1256	G
28	A	1262	A
28	A	1265	A

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Mol	Chain	Res	Type
28	A	1266	G
28	A	1268	A
28	A	1271	G
28	A	1272	A
28	A	1273	U
28	A	1274	A
28	A	1275	A
28	A	1300	G
28	A	1301	A
28	A	1302	A
28	A	1313	U
28	A	1321	A
28	A	1326	U
28	A	1365	A
28	A	1366	A
28	A	1376	C
28	A	1379	U
28	A	1380	G
28	A	1383	A
28	A	1386	C
28	A	1395	A
28	A	1398	C
28	A	1415	U
28	A	1416	G
28	A	1417	C
28	A	1419	A
28	A	1420	A
28	A	1425	G
28	A	1428	C
28	A	1434	A
28	A	1436	G
28	A	1449	G
28	A	1452	G
28	A	1453	A
28	A	1456	G
28	A	1458	U
28	A	1459	G
28	A	1478	G
28	A	1482	G
28	A	1483	G
28	A	1493	C
28	A	1497	U

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Mol	Chain	Res	Type
28	A	1504	A
28	A	1507	C
28	A	1510	G
28	A	1512	C
28	A	1515	A
28	A	1522	A
28	A	1524	G
28	A	1530	G
28	A	1532	A
28	A	1534	U
28	A	1535	A
28	A	1536	C
28	A	1538	G
28	A	1540	G
28	A	1542	U
28	A	1544	A
28	A	1560	G
28	A	1562	U
28	A	1566	A
28	A	1569	A
28	A	1583	A
28	A	1585	C
28	A	1605	C
28	A	1608	A
28	A	1609	A
28	A	1610	A
28	A	1629	U
28	A	1639	C
28	A	1647	U
28	A	1648	U
28	A	1649	G
28	A	1652	A
28	A	1654	A
28	A	1656	C
28	A	1674	G
28	A	1703	G
28	A	1705	A
28	A	1721	G
28	A	1729	U
28	A	1730	C
28	A	1733	G
28	A	1738	G

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Mol	Chain	Res	Type
28	A	1756	G
28	A	1758	U
28	A	1764	C
28	A	1772	A
28	A	1773	A
28	A	1781	U
28	A	1791	A
28	A	1800	C
28	A	1802	A
28	A	1806	C
28	A	1807	G
28	A	1808	A
28	A	1809	A
28	A	1811	G
28	A	1816	C
28	A	1819	A
28	A	1829	A
28	A	1847	A
28	A	1848	A
28	A	1869	G
28	A	1870	C
28	A	1872	A
28	A	1882	U
28	A	1891	G
28	A	1903	G
28	A	1906	G
28	A	1913	A
28	A	1914	C
28	A	1927	A
28	A	1929	G
28	A	1930	G
28	A	1935	G
28	A	1937	A
28	A	1938	A
28	A	1955	U
28	A	1965	C
28	A	1966	A
28	A	1967	C
28	A	1970	A
28	A	1971	U
28	A	1972	G
28	A	1981	A

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Mol	Chain	Res	Type
28	A	1991	U
28	A	1992	G
28	A	1993	U
28	A	1997	C
28	A	2022	U
28	A	2023	C
28	A	2024	G
28	A	2027	G
28	A	2031	A
28	A	2033	A
28	A	2036	C
28	A	2037	A
28	A	2041	U
28	A	2043	C
28	A	2047	C
28	A	2052	A
28	A	2054	A
28	A	2055	C
28	A	2056	G
28	A	2060	A
28	A	2061	G
28	A	2062	A
28	A	2069	G
28	A	2072	C
28	A	2077	A
28	A	2090	A
28	A	2092	U
28	A	2093	G
28	A	2107	G
28	A	2111	U
28	A	2112	G
28	A	2113	U
28	A	2117	A
28	A	2119	A
28	A	2120	G
28	A	2127	G
28	A	2129	C
28	A	2130	U
28	A	2131	U
28	A	2132	U
28	A	2133	G
28	A	2134	A

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Mol	Chain	Res	Type
28	A	2135	A
28	A	2137	U
28	A	2140	G
28	A	2141	G
28	A	2142	A
28	A	2145	C
28	A	2146	C
28	A	2147	A
28	A	2148	G
28	A	2149	U
28	A	2153	C
28	A	2154	A
28	A	2157	G
28	A	2158	A
28	A	2159	G
28	A	2160	C
28	A	2161	C
28	A	2162	G
28	A	2164	C
28	A	2165	C
28	A	2170	A
28	A	2172	U
28	A	2173	A
28	A	2174	C
28	A	2176	A
28	A	2183	A
28	A	2186	G
28	A	2189	U
28	A	2190	G
28	A	2191	A
28	A	2198	A
28	A	2199	A
28	A	2203	U
28	A	2204	G
28	A	2211	A
28	A	2212	A
28	A	2225	A
28	A	2226	C
28	A	2238	G
28	A	2239	G
28	A	2250	G
28	A	2257	U

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Mol	Chain	Res	Type
28	A	2279	G
28	A	2283	C
28	A	2286	G
28	A	2287	A
28	A	2288	A
28	A	2292	U
28	A	2305	U
28	A	2308	G
28	A	2309	A
28	A	2311	A
28	A	2322	A
28	A	2325	G
28	A	2327	A
28	A	2334	U
28	A	2345	G
28	A	2347	C
28	A	2355	G
28	A	2361	G
28	A	2371	G
28	A	2383	G
28	A	2385	C
28	A	2396	G
28	A	2402	U
28	A	2403	C
28	A	2406	A
28	A	2423	U
28	A	2424	C
28	A	2425	A
28	A	2429	G
28	A	2430	A
28	A	2431	U
28	A	2434	A
28	A	2439	A
28	A	2440	C
28	A	2441	U
28	A	2448	A
28	A	2464	G
28	A	2475	C
28	A	2476	A
28	A	2478	A
28	A	2479	U
28	A	2480	C

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Mol	Chain	Res	Type
28	A	2482	A
28	A	2491	U
28	A	2492	U
28	A	2501	C
28	A	2502	G
28	A	2503	A
28	A	2504	U
28	A	2505	G
28	A	2506	U
28	A	2507	C
28	A	2513	A
28	A	2518	A
28	A	2520	C
28	A	2529	G
28	A	2530	A
28	A	2542	A
28	A	2546	U
28	A	2553	G
28	A	2554	U
28	A	2566	A
28	A	2567	G
28	A	2573	C
28	A	2585	U
28	A	2586	U
28	A	2587	A
28	A	2589	A
28	A	2590	A
28	A	2601	C
28	A	2602	A
28	A	2604	U
28	A	2609	U
28	A	2613	U
28	A	2615	U
28	A	2629	U
28	A	2630	G
28	A	2638	G
28	A	2682	A
28	A	2689	U
28	A	2690	U
28	A	2714	G
28	A	2716	C
28	A	2727	A

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Mol	Chain	Res	Type
28	A	2728	U
28	A	2729	G
28	A	2733	A
28	A	2744	G
28	A	2748	A
28	A	2758	A
28	A	2778	A
28	A	2791	G
28	A	2793	C
28	A	2795	C
28	A	2797	U
28	A	2798	U
28	A	2800	A
28	A	2811	G
28	A	2820	A
28	A	2821	A
28	A	2824	C
28	A	2832	U
28	A	2833	U
28	A	2834	G
28	A	2835	A
28	A	2837	A
28	A	2851	A
28	A	2861	U
28	A	2867	G
28	A	2872	A
28	A	2873	A
28	A	2879	A
28	A	2880	C
28	A	2883	A
28	A	2884	U
28	A	2885	G
28	A	2887	A
28	A	2901	C
29	B	15	A
29	B	16	G
29	B	35	C
29	B	37	C
29	B	44	G
29	B	52	A
29	B	56	G
29	B	66	A

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Mol	Chain	Res	Type
29	B	87	U
29	B	88	C
29	B	89	U
29	B	90	C
29	B	97	C
29	B	99	A
29	B	107	G
29	B	109	A
29	B	116	G
29	B	119	A
54	6	6	G
54	6	9	A
54	6	17	C
54	6	18	G
54	6	19	G
54	6	20	U
54	6	21	A
54	6	22	G
54	6	36	A
54	6	37	A
54	6	44	G
54	6	46	G
54	6	59	U
54	6	65	G
54	6	75	C
55	7	14	A
55	7	15	U
55	7	21	C
55	7	23	A
55	7	24	A
55	7	26	A
55	7	27	A
56	8	3	C
56	8	5	G
56	8	17	C
56	8	17(A)	U
56	8	18	G
56	8	19	G
56	8	20	U
56	8	21	A
56	8	47	U
56	8	48	C

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Mol	Chain	Res	Type
56	8	49	G
56	8	52	G
56	8	53	G
56	8	54	U
56	8	61	C
56	8	65	C
56	8	73	A
56	8	74	C
56	8	75	C
56	8	76	A
58	9	3	C
58	9	4	C
58	9	8	U
58	9	15	G
58	9	16	U
58	9	17	C
58	9	18	G
58	9	19	G
58	9	21	A
58	9	23	A
58	9	39	U
58	9	40	C
58	9	41	C
58	9	47	U
58	9	48	C
58	9	50	U
58	9	59	U
58	9	61	C
58	9	70	G
58	9	71	G
58	9	72	C
58	9	74	C
58	9	75	C
58	9	76	A

All (30) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
28	A	119	A
28	A	229	C
28	A	271	G
28	A	328	U

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Mol	Chain	Res	Type
28	A	344	A
28	A	403	U
28	A	404	A
28	A	527	C
28	A	530	G
28	A	784	G
28	A	800	A
28	A	894	U
28	A	976	G
28	A	1020	A
28	A	1331	G
28	A	1584	U
28	A	1847	A
28	A	1905	C
28	A	2119	A
28	A	2130	U
28	A	2326	C
28	A	2423	U
28	A	2481	G
28	A	2820	A
54	6	17	C
54	6	35	A
54	6	36	A
55	7	20	U
58	9	15	G
58	9	74	C

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

1 non-standard protein/DNA/RNA residue is 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
54	F3O	6	76	54	29,35,37	1.11	1 (3%)	31,49,54	2.15	6 (19%)

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
54	F3O	6	76	54	-	0/14/36/38	0/4/4/4

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	6	76	F3O	O3'-C	4.84	1.45	1.34

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	6	76	F3O	N3-C2-N1	-9.62	121.31	128.87
54	6	76	F3O	C3'-O3'-C	-3.35	112.54	118.06
54	6	76	F3O	O3'-C-O	-2.46	119.12	123.88
54	6	76	F3O	C4'-O4'-C1'	2.32	112.10	109.64
54	6	76	F3O	C3'-C2'-C1'	2.65	105.82	100.06
54	6	76	F3O	O3'-C-CA	2.94	120.15	111.74

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
54	6	76	F3O	2	0

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 2 ligands modelled in this entry, 1 is 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	$\# Z > 2$
59	GNP	x	701	60	29,34,34	2.80	10 (34%)	28,54,54	1.95	7 (25%)

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
59	GNP	x	701	60	-	0/16/38/38	0/3/3/3

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
59	x	701	GNP	C4-N9	-7.78	1.37	1.47
59	x	701	GNP	C5-C6	-6.26	1.41	1.53
59	x	701	GNP	PB-O3A	-5.91	1.51	1.59
59	x	701	GNP	PB-O2B	-3.23	1.48	1.56
59	x	701	GNP	C8-N9	-3.04	1.37	1.47
59	x	701	GNP	C2-N3	-2.52	1.33	1.43
59	x	701	GNP	PG-O2G	-2.26	1.50	1.56
59	x	701	GNP	PG-O3G	-2.24	1.50	1.56
59	x	701	GNP	C6-N1	3.62	1.39	1.33
59	x	701	GNP	PG-O1G	4.67	1.51	1.46

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
59	x	701	GNP	PA-O3A-PB	-3.63	119.55	132.71
59	x	701	GNP	O3G-PG-O1G	-2.99	105.70	113.58
59	x	701	GNP	O6-C6-N1	-2.45	119.58	122.80
59	x	701	GNP	O3G-PG-O2G	2.39	114.62	107.67
59	x	701	GNP	O2B-PB-O1B	4.42	118.72	110.02
59	x	701	GNP	O6-C6-C5	4.64	128.57	119.69
59	x	701	GNP	C4-C5-N7	5.12	110.67	102.67

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.