



Full wwPDB EM Validation Report ⓘ

Jun 21, 2026 – 09:22 am BST

PDB ID : 5NP6 / pdb_00005np6
EMDB ID : EMD-3618
Title : 70S structure prior to bypassing
Authors : Agirrezabala, X.; Samatova, E.; Klimova, M.; Zamora, M.; Gil-Carton, D.;
Rodnina, M.; Valle, M.
Deposited on : 2017-04-13
Resolution : 3.60 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev132
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

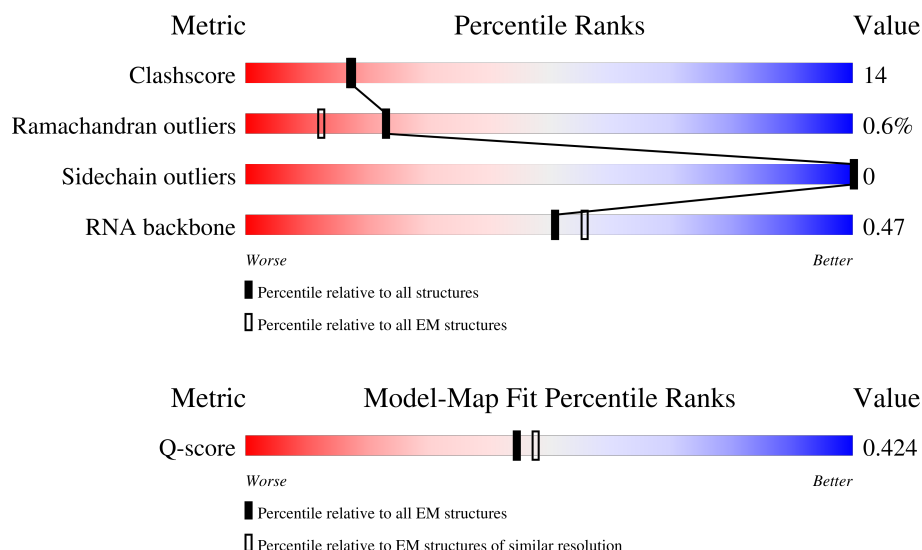
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.60 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.



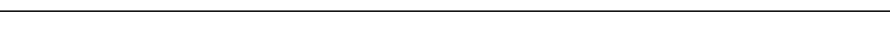
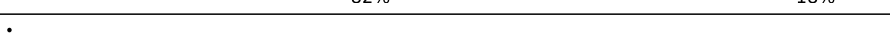
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	12797 (3.10 - 4.10)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	29	14% 24% 28% 45% .
2	B	76	42% 39% 18%
3	C	46	46% 37% 57% 7%

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Mol	Chain	Length	Quality of chain
4	D	1539	
5	E	218	
6	F	206	
7	G	205	
8	H	157	
9	I	100	
10	J	151	
11	K	129	
12	L	127	
13	M	98	
14	N	116	
15	O	123	
16	P	114	
17	Q	101	
18	R	88	
19	S	82	
20	T	80	
21	U	65	
22	V	79	
23	W	85	
24	X	65	
25	Y	2903	
26	Z	120	
27	a	271	
28	b	209	

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Mol	Chain	Length	Quality of chain
29	c	201	
30	d	177	
31	e	176	
32	f	149	
33	g	141	
34	h	142	
35	i	122	
36	j	143	
37	k	136	
38	l	120	
39	m	116	
40	n	114	
41	o	117	
42	p	103	
43	q	110	
44	r	93	
45	s	102	
46	t	94	
47	u	75	
48	v	77	
49	w	63	
50	x	58	
51	y	56	
52	z	50	
53	0	46	

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Mol	Chain	Length	Quality of chain
54	1	64	77% 23%
55	2	38	82% 18%
56	3	131	49% 40% 57%
57	4	66	62% 38%

2 Entry composition

There are 57 unique types of molecules in this entry. The entry contains 146883 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 mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	29	Total	C	N	O	P	0	0
			621	277	111	204	29		

- Molecule 2 is a RNA chain called P-site tRNA-Gly.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	76	Total	C	N	O	P	0	0
			1623	722	291	534	76		

- Molecule 3 is a protein called DNA topoisomerase small subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	46	Total	C	N	O	S	0	0
			362	222	65	71	4		

- Molecule 4 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	1539	Total	C	N	O	P	0	0
			33028	14738	6052	10699	1539		

- Molecule 5 is a protein called 30S ribosomal protein S2.

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

- Molecule 6 is a protein called 30S ribosomal protein S3.

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

- Molecule 7 is a protein called 30S ribosomal protein S4.

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

- Molecule 8 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	157	Total	C	N	O	S	0	0
			1141	709	218	208	6		

- Molecule 9 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	100	Total	C	N	O	S	0	0
			817	515	148	148	6		

- Molecule 10 is a protein called 30S ribosomal protein S7.

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

- Molecule 11 is a protein called 30S ribosomal protein S8.

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

- Molecule 12 is a protein called 30S ribosomal protein S9.

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

- Molecule 13 is a protein called 30S ribosomal protein S10.

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

- Molecule 14 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	116	Total	C	N	O	S	0	0
			869	535	173	158	3		

- Molecule 15 is a protein called 30S ribosomal protein S12.

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

- Molecule 16 is a protein called 30S ribosomal protein S13.

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

- Molecule 17 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Q	101	Total	C	N	O	S	0	0
			799	498	165	133	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	35	ALA	-	insertion	UNP P0AG59

- Molecule 18 is a protein called 30S ribosomal protein S15.

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

- Molecule 19 is a protein called 30S ribosomal protein S16.

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

- Molecule 20 is a protein called 30S ribosomal protein S17.

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

- Molecule 21 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	U	65	Total	C	N	O	0	0
			504	317	96	91		

- Molecule 22 is a protein called 30S ribosomal protein S19.

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

- Molecule 23 is a protein called 30S ribosomal protein S20.

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

- Molecule 24 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	X	65	Total	C	N	O	S	0	0
			495	307	100	87	1		

- Molecule 25 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Y	2903	Total	C	N	O	P	0	0
			62338	27816	11471	20148	2903		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Y	747	5MC	U	conflict	GB 802133627
Y	887	A	U	conflict	GB 802133627
Y	1847	G	A	conflict	GB 802133627

- Molecule 26 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Z	120	Total	C	N	O	P	0	0
			2572	1145	471	836	120		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Z	120	A	U	conflict	GB 1146054517

- Molecule 27 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	a	271	Total	C	N	O	S	0	0
			2082	1288	423	364	7		

- Molecule 28 is a protein called 50S ribosomal protein L3.

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

- Molecule 29 is a protein called 50S ribosomal protein L4.

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

- Molecule 30 is a protein called 50S ribosomal protein L5.

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

- Molecule 31 is a protein called 50S ribosomal protein L6.

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

- Molecule 32 is a protein called 50S ribosomal protein L9.

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

- Molecule 33 is a protein called 50S ribosomal protein L11.

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

- Molecule 34 is a protein called 50S ribosomal protein L13.

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

- Molecule 35 is a protein called 50S ribosomal protein L14.

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

- Molecule 36 is a protein called 50S ribosomal protein L15.

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

- Molecule 37 is a protein called 50S ribosomal protein L16.

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

- Molecule 38 is a protein called 50S ribosomal protein L17.

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

- Molecule 39 is a protein called 50S ribosomal protein L18.

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

- Molecule 40 is a protein called 50S ribosomal protein L19.

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

- Molecule 41 is a protein called 50S ribosomal protein L20.

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

- Molecule 42 is a protein called 50S ribosomal protein L21.

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

- Molecule 43 is a protein called 50S ribosomal protein L22.

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

- Molecule 44 is a protein called 50S ribosomal protein L23.

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

- Molecule 45 is a protein called 50S ribosomal protein L24.

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

- Molecule 46 is a protein called 50S ribosomal protein L25.

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

- Molecule 47 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	u	75	Total	C	N	O	S	0	0
			575	356	116	102	1		

- Molecule 48 is a protein called 50S ribosomal protein L28.

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

- Molecule 49 is a protein called 50S ribosomal protein L29.

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

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

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

- Molecule 51 is a protein called 50S ribosomal protein L32.

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

- Molecule 52 is a protein called 50S ribosomal protein L33.

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

- Molecule 53 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	0	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 54 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	1	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 55 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	2	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 56 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	3	131	Total	C	N	O	S	0	0
			988	625	175	183	5		

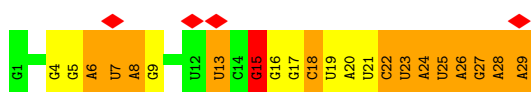
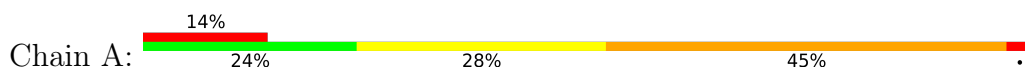
- Molecule 57 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	4	66	Total	C	N	O	S	0	0
			522	323	99	94	6		

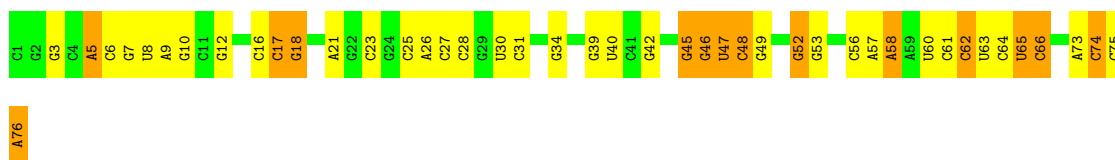
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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.

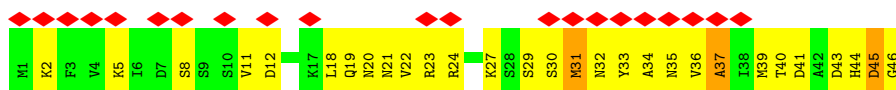
- Molecule 1: mRNA

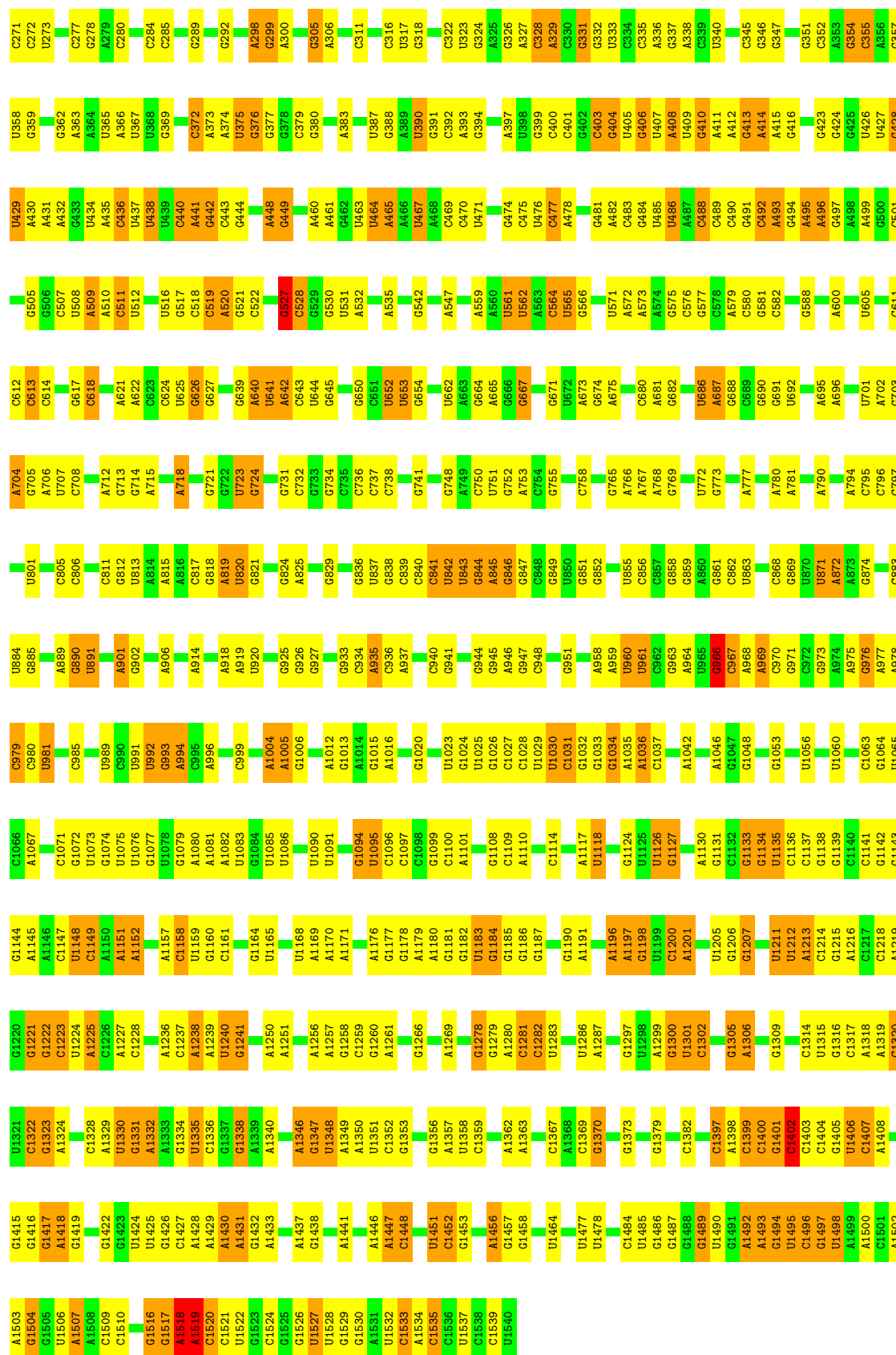


- Molecule 2: P-site tRNA-Gly



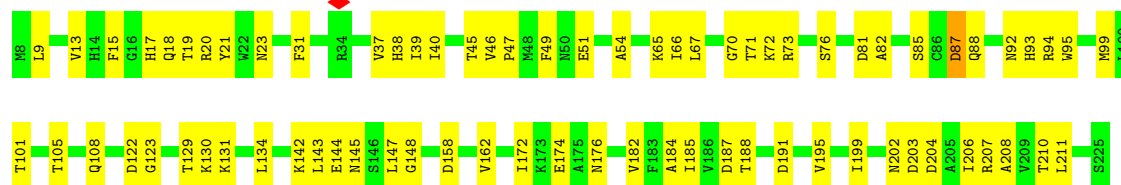
- Molecule 3: DNA topoisomerase small subunit





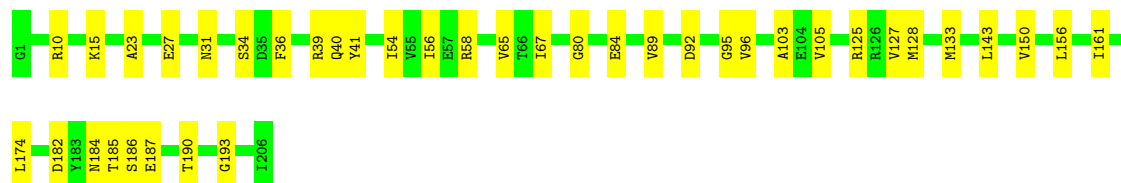
- Molecule 5: 30S ribosomal protein S2

Chain E:  66% 33%



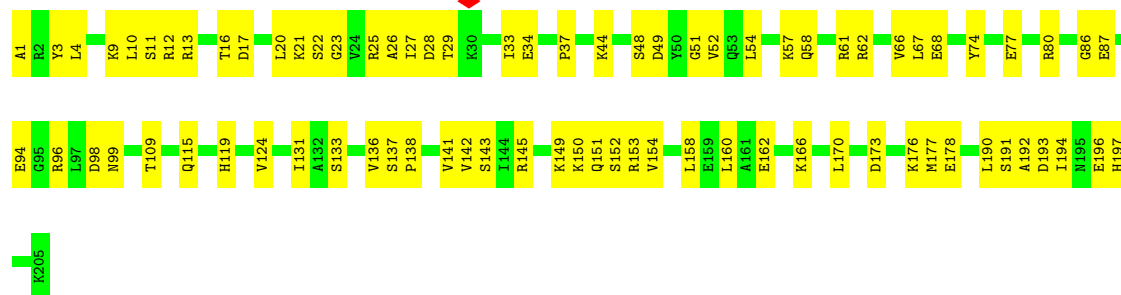
- Molecule 6: 30S ribosomal protein S3

Chain F:  81% 19%



- Molecule 7: 30S ribosomal protein S4

Chain G:  61% 39%



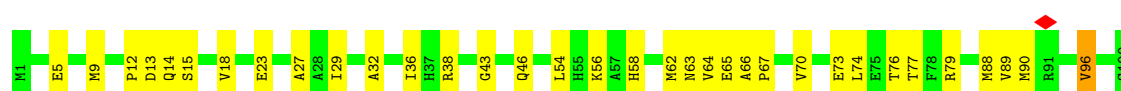
- Molecule 8: 30S ribosomal protein S5

Chain H:  69% 29%



- Molecule 9: 30S ribosomal protein S6

Chain I:  66% 33%



- Molecule 15: 30S ribosomal protein S12

Chain O:  77% 23%



- Molecule 16: 30S ribosomal protein S13

Chain P:  74% 26%



- Molecule 17: 30S ribosomal protein S14

Chain Q:  69% 31%



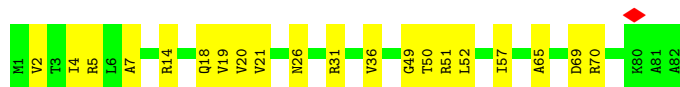
- Molecule 18: 30S ribosomal protein S15

Chain R:  82% 18%



- Molecule 19: 30S ribosomal protein S16

Chain S:  76% 24%



- Molecule 20: 30S ribosomal protein S17

Chain T:  76% 24%



- Molecule 21: 30S ribosomal protein S18

Chain U:  69% 29%



- Molecule 22: 30S ribosomal protein S19

Chain V:  73% 27%



- Molecule 23: 30S ribosomal protein S20

Chain W:  59% 40%

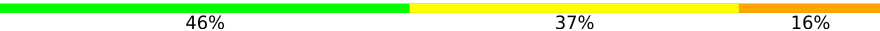


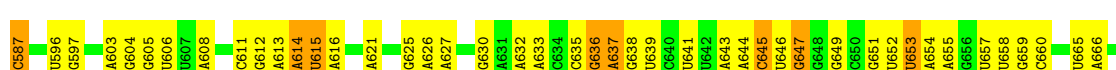
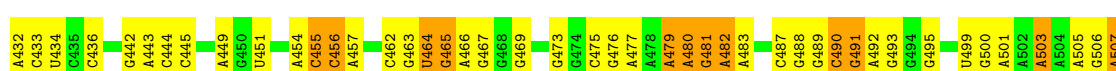
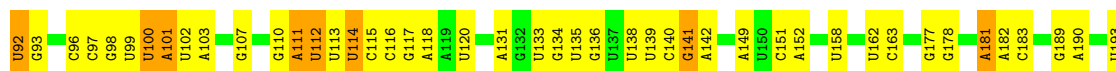
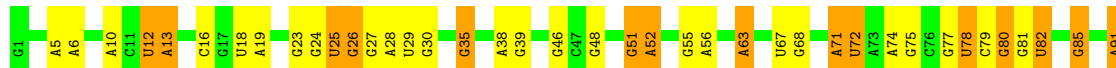
- Molecule 24: 30S ribosomal protein S21

Chain X:  68% 31%

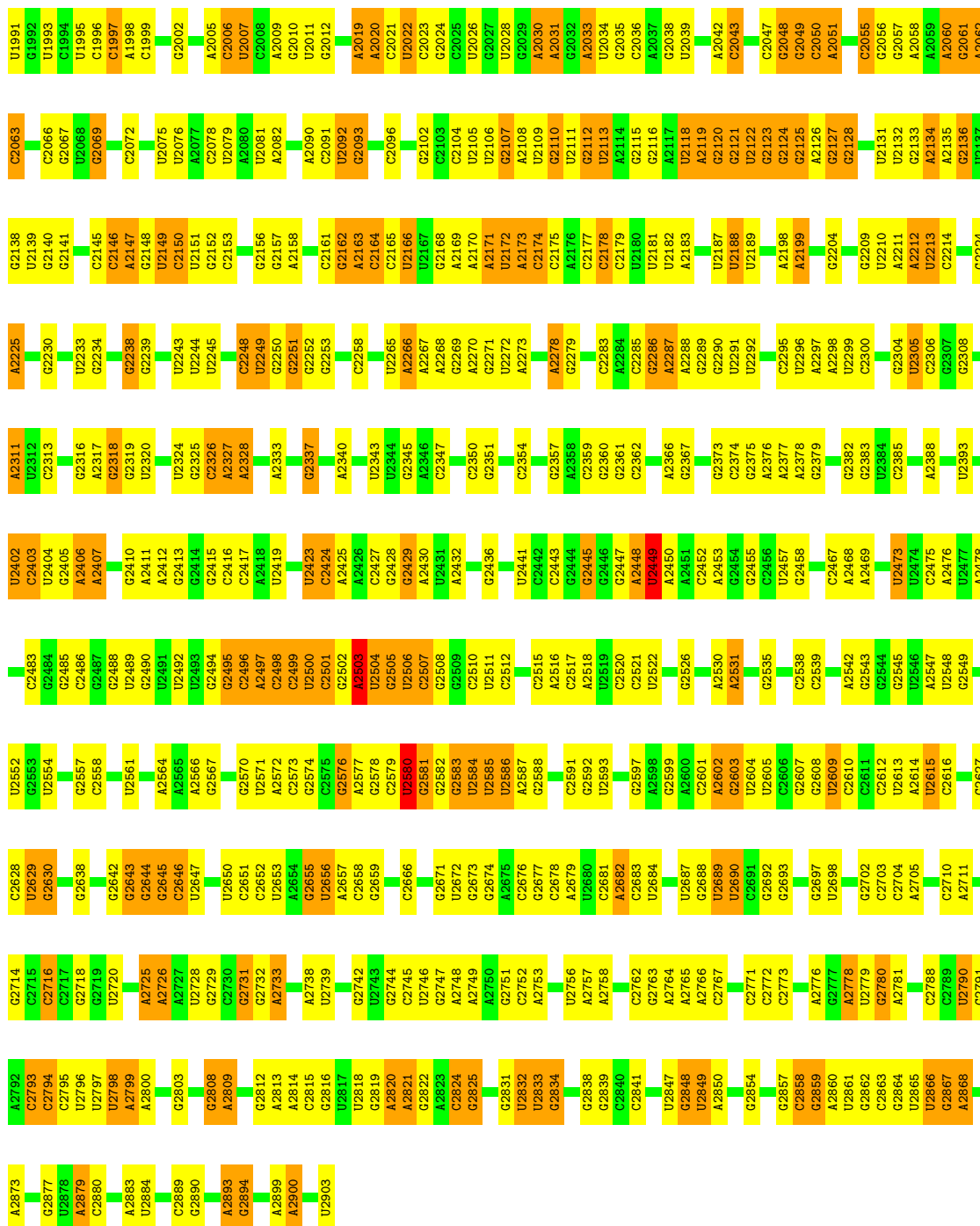


- Molecule 25: 23S ribosomal RNA

Chain Y:  46% 37% 16%

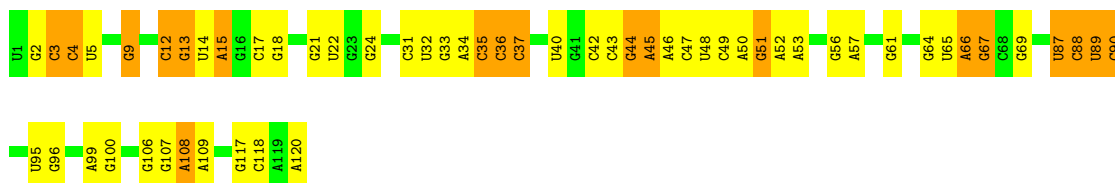


G1905	A1808	U1629	G1538	C1350	G1182	A1095	G1025	A933	C851	G765	G669
G1906	A1809	A1630	U1639	C1351	G1187	A1096	G1026	A934	U852	G766	A670
G1910	G1814	G1631	G1540	U1352	U1188	U1097	A1027	A941	C853	G770	C671
U1911	A1815	A1632	A1453	C1357	A1189	A1098	A1028	G942	C854	G771	C672
A1912	C1816	G1633	G1543	G1358	G1195	G1099	A1029	A945	G855	G772	G773
A1913	G1817	A1634	A1544	A1359	G1196	C1100	G1030	C946	G856	G773	A675
C1914	U1818	U1635	G1545	A1359	C1197	U1101	U1033	C947	G857	G774	A676
3TD1915	A1819	A1636	G1546	A1359	U1198	C1102	G1034	A947	G858	G775	A677
A1916	U1827	A1640	U1559	C1363	G1199	A1103	U1033	G953	G859	G776	U686
U1917	G1828	A1641	G1560	G1364	U1198	A1104	G1034	G954	U860	U779	U687
A1918	A1829	G1642	U1568	A1365	G1202	U1105	C1043	G955	A863	G780	G890
C1920	C1833	U1648	A1569	A1366	C1208	G1106	C1043	G956	G864	A781	G890
U1926	U1834	G1649	U1467	G1368	U1209	G1107	C1045	C957	C865	A782	U703
A1927	G1835	A1650	U1468	G1369	C1291	U1108	A1046	U958	A866	A783	G704
A1928	A1745	G1651	A1469	C1370	G1212	G1109	G1051	A959	G867	G784	G704
G1929	G1836	A1652	G1475	G1371	G1213	G1110	C1052	A960	U868	G785	A705
G1930	A1746	G1653	U1481	A1372	A1214	A1111	A1053	A961	G869	G786	A706
U1931	U1747	G1654	G1482	G1374	G1215	G1112	A1054	G962	U870	C787	U710
U1936	C1748	C1656	U1483	A1378	G1218	U1119	A1055	U963	A878	G788	G711
A1937	A1754	A1664	G1484	U1379	U1221	G1124	G1056	C964	C965	A789	G711
A1938	A1755	A1665	U1484	G1380	G1222	G1125	A1057	C966	G882	A793	A715
U1939	G1756	G1666	G1492	A1383	U1223	A1126	C1064	U967	G883	G796	C717
U1940	A1757	G1667	C1493	C1386	U1224	G1127	U1060	C968	A887	A800	G726
C1941	U1758	A1668	C1494	A1392	G1225	U1128	U1061	G971	C888	G801	A727
C1942	A1762	A1669	A1495	A1392	A1226	G1129	G1062	A972	C889	A972	G728
U1943	G1763	C1670	A1496	A1392	U1227	A1131	C1063	G973	C890	A973	G729
U1946	C1764	U1671	U1497	A1395	G1230	U1132	C1064	G974	G891	G805	A730
C1947	G1672	A1672	C1498	U1396	U1231	A1133	U1065	A983	U894	G806	C731
U1948	G1673	A1673	C1498	U1397	G1232	A1134	A1067	A984	U895	U807	C732
G1949	A1674	A1504	A1505	C1398	C1233	C1135	A1068	A985	U896	G808	G733
U1955	A1678	C1679	U1506	G1407	U1234	G1136	A1069	C986	C897	G809	A734
C1961	A1679	U1680	G1507	U1415	G1235	G1137	A1070	C987	C898	U810	A735
U1963	G1681	G1682	C1508	G1416	U1236	G1138	G1071	C988	C899	U811	C736
C1962	U1683	C1605	A1509	U1417	A1237	G1139	A1072	G989	U899	C812	C737
G1964	U1684	C1606	A1515	G1418	G1238	U1141	A1073	C995	C903	U813	G738
C1967	A1685	C1607	G1516	A1419	U1240	A1142	G1074	A996	G904	C814	U744
U1969	C1686	A1608	U1521	A1420	A1244	C1152	C1075	G997	A905	G818	G745
A1970	U1687	A1609	A1522	G1424	G1245	G1153	C1076	C998	G907	A819	U746
U1971	A1688	A1689	U1523	G1425	A1247	A1154	A1077	U999	A910	U826	G748
G1972	A1698	A1698	G1524	G1426	U1249	A1155	C1079	A1000	A911	U827	A749
G1975	A1699	A1700	U1525	A1427	G1250	C1167	A1080	C1005	G914	U828	A750
U1976	A1700	A1701	A1526	G1428	C1251	G1168	U1081	A1008	C915	A829	A751
G1980	G1702	G1703	C1527	G1429	G1252	A1169	U1082	A1009	G923	U832	A752
A1981	C1704	A1705	G1530	A1430	G1253	C1170	A1084	A1010	G924	A833	U753
U1982	A1705	C1706	C1531	G1432	A1254	G1171	A1085	U1012	A925	G834	U754
G1983	C1706	C1706	A1532	G1433	G1255	A1175	A1086	G1013	G926	A844	G757
G1984	A1801	A1802	U1534	G1435	C1257	U1176	G1087	C1013	A927	C758	C758
C1990	A1802	G1807	A1535	G1436	A1265	A1177	A1088	A1020	A928	A845	G759
	G1807	G1807	C1536	C1437	G1266	G1178	A1089	A1021	U929	U846	G760
			G1537	C1447	A1266	C1179	A1090	A1022	U930	U847	A761
			G1537	C1447	G1266	U1180	G1091	G1023	U931	C848	U762
			G1537	C1447	G1266	U1181	G1092	U1024	U932	A849	A764
			G1537	C1447	G1266	U1181	G1093	G1024	U932	U850	

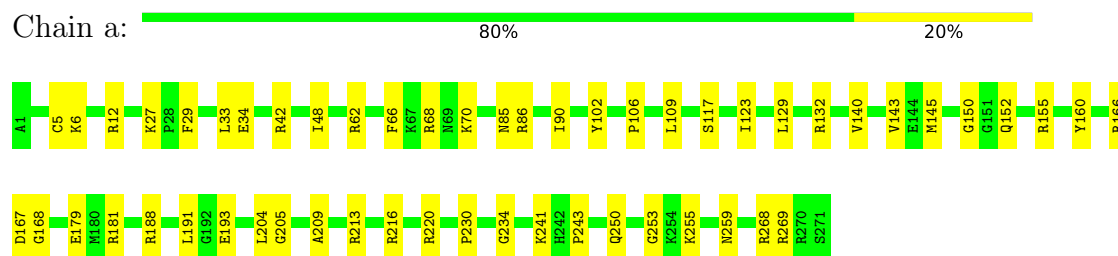


• Molecule 26: 5S ribosomal RNA

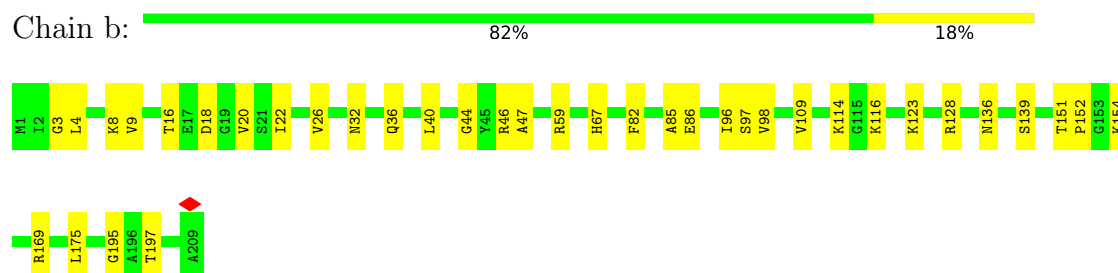
Chain Z: 52% 32% 16%



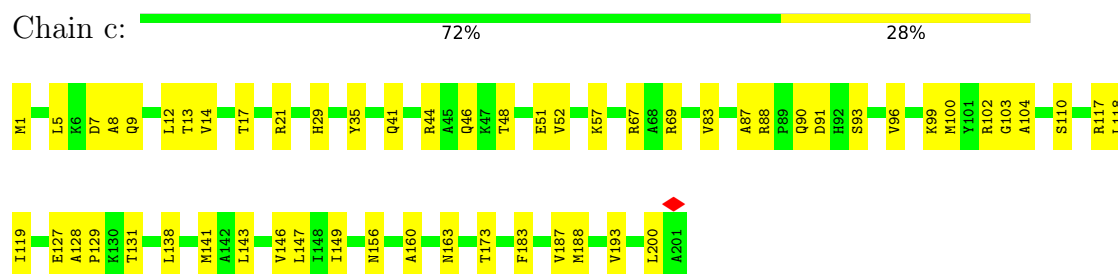
- Molecule 27: 50S ribosomal protein L2



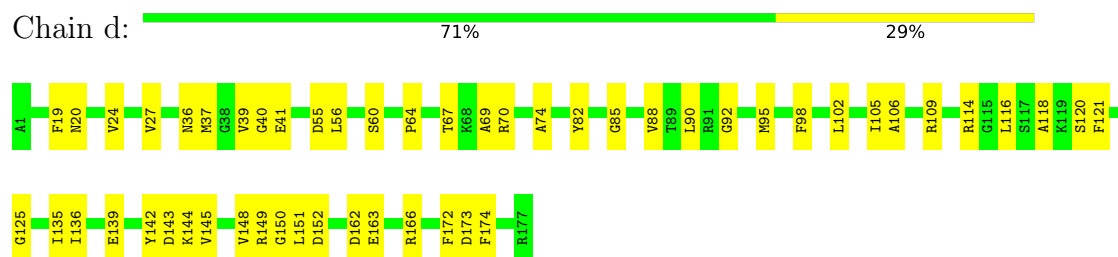
- Molecule 28: 50S ribosomal protein L3



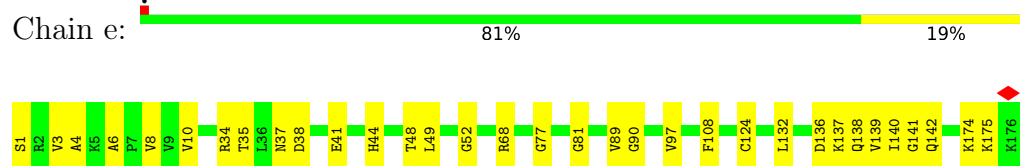
- Molecule 29: 50S ribosomal protein L4



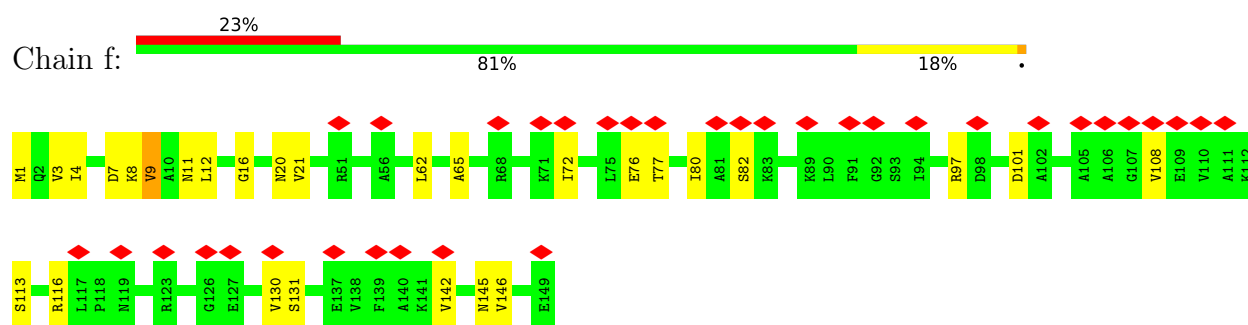
- Molecule 30: 50S ribosomal protein L5



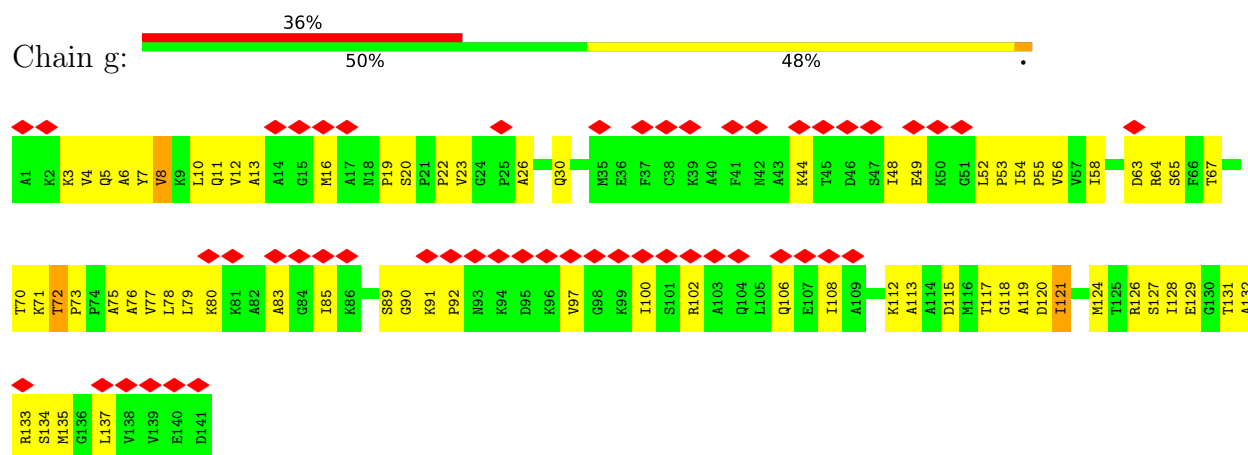
- Molecule 31: 50S ribosomal protein L6



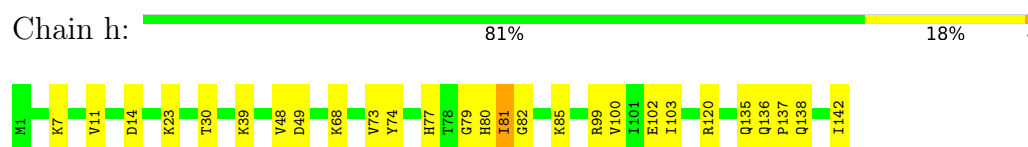
- Molecule 32: 50S ribosomal protein L9



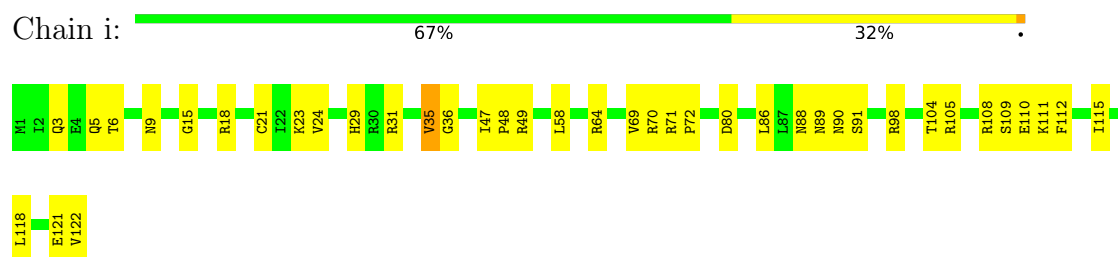
• Molecule 33: 50S ribosomal protein L11



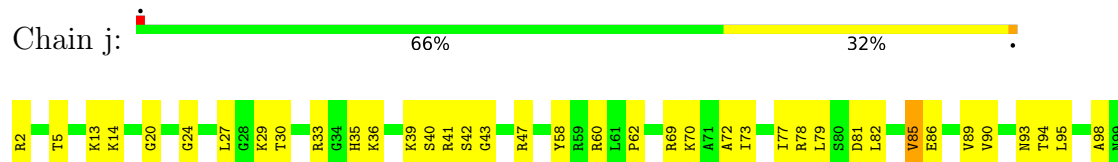
• Molecule 34: 50S ribosomal protein L13



• Molecule 35: 50S ribosomal protein L14



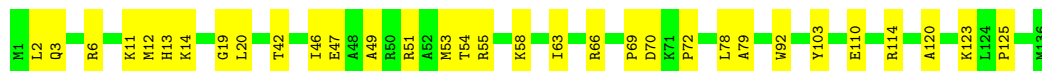
• Molecule 36: 50S ribosomal protein L15





- Molecule 37: 50S ribosomal protein L16

Chain k: 76% 24%



- Molecule 38: 50S ribosomal protein L17

Chain l: 69% 30% .



- Molecule 39: 50S ribosomal protein L18

Chain m: 74% 26%



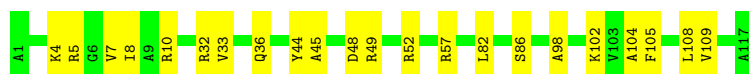
- Molecule 40: 50S ribosomal protein L19

Chain n: 79% 21%



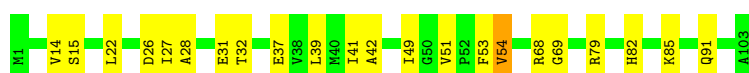
- Molecule 41: 50S ribosomal protein L20

Chain o: 81% 19%



- Molecule 42: 50S ribosomal protein L21

Chain p: 79% 20% .



- Molecule 43: 50S ribosomal protein L22

Chain q:  68% 32%



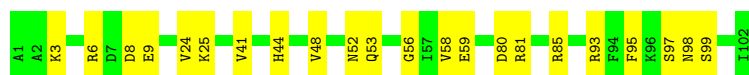
- Molecule 44: 50S ribosomal protein L23

Chain r:  76% 24%



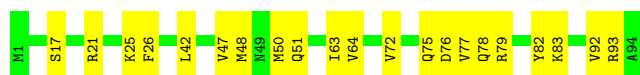
- Molecule 45: 50S ribosomal protein L24

Chain s:  78% 22%



- Molecule 46: 50S ribosomal protein L25

Chain t:  78% 22%



- Molecule 47: 50S ribosomal protein L27

Chain u:  89% 11%



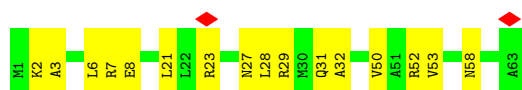
- Molecule 48: 50S ribosomal protein L28

Chain v:  78% 22%

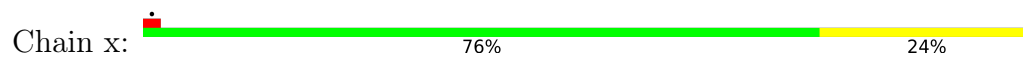


- Molecule 49: 50S ribosomal protein L29

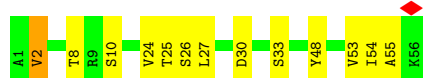
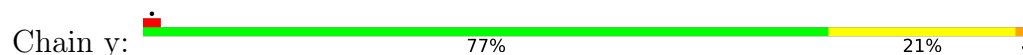
Chain w:  75% 25%



- Molecule 50: 50S ribosomal protein L30



- Molecule 51: 50S ribosomal protein L32



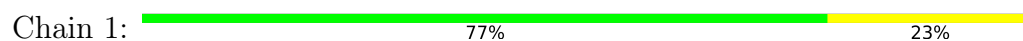
- Molecule 52: 50S ribosomal protein L33



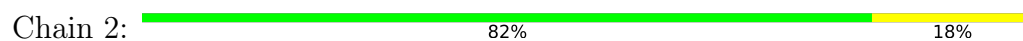
- Molecule 53: 50S ribosomal protein L34



- Molecule 54: 50S ribosomal protein L35

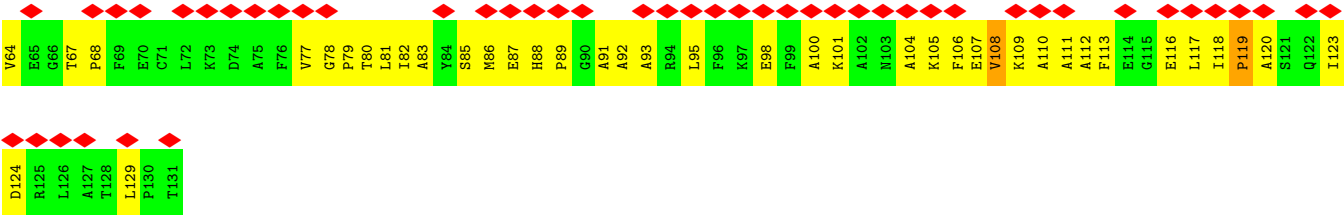


- Molecule 55: 50S ribosomal protein L36

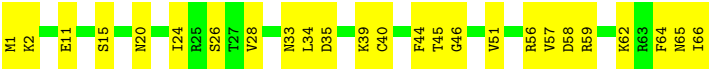


- Molecule 56: 50S ribosomal protein L10





• Molecule 57: 50S ribosomal protein L31



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	36983	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE; CTF correction inside Relion	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	2.66	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	47170	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.033	Depositor
Minimum map value	-0.014	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.0045	Depositor
Map size ($\text{\AA}$)	360.4, 360.4, 360.4	wwPDB
Map dimensions	340, 340, 340	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.06, 1.06, 1.06	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: 5MC, 7MG, 3TD, 2MG, UR3, OMG, 2MA, 6MZ, 1MG, OMU, MA6, PSU, 5MU, 4OC, OMC, H2U

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.58	0/694	1.01	2/1078 (0.2%)
2	B	0.16	0/1812	0.38	0/2822
3	C	0.37	0/365	0.99	4/485 (0.8%)
4	D	0.14	1/36700 (0.0%)	0.30	0/57246
5	E	0.23	1/1735 (0.1%)	0.42	0/2338
6	F	0.21	0/1651	0.40	0/2225
7	G	0.25	1/1665 (0.1%)	0.44	0/2227
8	H	0.18	0/1154	0.44	0/1554
9	I	0.18	0/835	0.44	0/1128
10	J	0.16	0/1195	0.40	0/1602
11	K	0.27	1/989 (0.1%)	0.43	0/1326
12	L	0.31	1/1034 (0.1%)	0.54	2/1375 (0.1%)
13	M	0.28	1/796 (0.1%)	0.37	0/1077
14	N	0.26	1/885 (0.1%)	0.45	0/1195
15	O	0.21	0/969	0.43	0/1300
16	P	0.18	0/892	0.41	0/1193
17	Q	0.20	0/811	0.41	0/1081
18	R	0.34	1/722 (0.1%)	0.50	2/964 (0.2%)
19	S	0.21	0/659	0.41	0/884
20	T	0.19	0/657	0.44	0/881
21	U	0.18	0/511	0.42	0/689
22	V	0.17	0/652	0.40	0/877
23	W	0.35	1/671 (0.1%)	0.49	2/888 (0.2%)
24	X	0.21	0/500	0.52	0/668
25	Y	0.14	1/69244 (0.0%)	0.31	0/108021
26	Z	0.12	0/2876	0.28	0/4483
27	a	0.32	0/2121	0.43	0/2852
28	b	0.17	0/1586	0.35	0/2134
29	c	0.32	1/1571 (0.1%)	0.39	0/2113
30	d	0.17	0/1434	0.39	0/1926
31	e	0.15	0/1343	0.39	0/1816

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	f	0.24	0/1122	0.43	0/1515
33	g	0.18	0/1046	0.45	0/1410
34	h	0.16	0/1152	0.35	0/1551
35	i	0.19	0/947	0.40	0/1268
36	j	0.36	1/1054 (0.1%)	0.55	2/1403 (0.1%)
37	k	0.19	0/1093	0.42	0/1460
38	l	0.19	0/973	0.46	0/1301
39	m	0.15	0/902	0.41	0/1209
40	n	0.29	1/929 (0.1%)	0.40	0/1242
41	o	0.29	0/960	0.42	0/1278
42	p	0.17	0/829	0.41	0/1107
43	q	0.19	0/864	0.43	0/1156
44	r	0.17	0/744	0.34	0/994
45	s	0.21	0/787	0.41	0/1051
46	t	0.16	0/766	0.33	0/1025
47	u	0.18	0/582	0.36	0/769
48	v	0.19	0/635	0.37	0/848
49	w	0.34	1/510 (0.2%)	0.42	0/677
50	x	0.17	0/453	0.35	0/605
51	y	0.17	0/450	0.38	0/599
52	z	0.17	0/416	0.39	0/554
53	0	0.19	0/380	0.45	0/498
54	1	0.17	0/513	0.53	0/676
55	2	0.21	0/303	0.45	0/397
56	3	0.21	0/1001	0.49	0/1350
57	4	0.16	0/531	0.45	0/709
All	All	0.18	14/158671 (0.0%)	0.35	14/237100 (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
1	A	3	3
5	E	0	1
23	W	0	1
40	n	0	1
56	3	0	2
All	All	3	8

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	c	128	ALA	C-N	8.49	1.53	1.33
4	D	1489	G	O3'-P	-7.76	1.49	1.61
11	K	55	LYS	C-N	6.50	1.49	1.33
13	M	78	GLU	C-N	6.20	1.48	1.33
18	R	41	HIS	ND1-CE1	5.25	1.37	1.32
12	L	80	HIS	ND1-CE1	5.22	1.37	1.32
14	N	113	THR	C-N	5.20	1.46	1.33
23	W	19	HIS	ND1-CE1	5.20	1.37	1.32
36	j	35	HIS	ND1-CE1	5.15	1.37	1.32
25	Y	2508	G	O3'-P	5.12	1.68	1.61
7	G	115	GLN	CD-OE1	5.07	1.33	1.23
40	n	2	ASN	CG-OD1	5.05	1.33	1.23
49	w	58	ASN	CG-OD1	5.04	1.33	1.23
5	E	18	GLN	CD-OE1	5.03	1.33	1.23

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	43	ASP	N-CA-C	11.03	123.30	111.28
1	A	15	G	C4'-C3'-O3'	6.62	122.94	113.00
23	W	19	HIS	CB-CG-CD2	-6.62	122.59	131.20
12	L	80	HIS	CB-CG-CD2	-6.56	122.67	131.20
36	j	35	HIS	CB-CG-CD2	-6.52	122.72	131.20
18	R	41	HIS	CB-CG-CD2	-6.51	122.74	131.20
3	C	31	MET	N-CA-C	-6.42	104.21	111.14
3	C	34	ALA	N-CA-C	-5.83	104.92	111.28
1	A	13	U	O4'-C4'-C3'	5.73	109.73	104.00
23	W	19	HIS	CB-CG-ND1	5.69	131.24	122.70
12	L	80	HIS	CB-CG-ND1	5.65	131.17	122.70
18	R	41	HIS	CB-CG-ND1	5.63	131.14	122.70
36	j	35	HIS	CB-CG-ND1	5.61	131.11	122.70
3	C	37	ALA	N-CA-C	-5.11	105.71	111.28

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	15	G	C2',C4',C3'

All (8) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
56	3	58	THR	Peptide
56	3	86	MET	Peptide

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Mol	Chain	Res	Type	Group
1	A	13	U	Sidechain
1	A	17	G	Sidechain
1	A	18	C	Sidechain
5	E	87	ASP	Peptide
23	W	68	LYS	Peptide
40	n	33	GLU	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	621	0	310	111	0
2	B	1623	0	822	75	0
3	C	362	0	368	86	0
4	D	33028	0	16644	614	0
5	E	1704	0	1732	50	0
6	F	1624	0	1699	29	0
7	G	1643	0	1708	68	0
8	H	1141	0	1170	62	0
9	I	817	0	808	29	0
10	J	1181	0	1240	33	0
11	K	979	0	1034	22	0
12	L	1022	0	1070	45	0
13	M	786	0	828	32	0
14	N	869	0	878	38	0
15	O	955	0	1019	20	0
16	P	883	0	944	25	0
17	Q	799	0	841	28	0
18	R	714	0	737	11	0
19	S	649	0	666	14	0
20	T	648	0	691	16	0
21	U	504	0	502	13	0
22	V	637	0	665	16	0
23	W	665	0	714	36	0
24	X	495	0	486	22	0
25	Y	62338	0	31376	1346	0
26	Z	2572	0	1302	45	0
27	a	2082	0	2157	45	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
28	b	1565	0	1616	26	0
29	c	1552	0	1619	37	0
30	d	1410	0	1447	38	0
31	e	1323	0	1374	22	0
32	f	1111	0	1148	18	0
33	g	1032	0	1088	91	0
34	h	1129	0	1162	16	0
35	i	938	0	1012	29	0
36	j	1045	0	1117	40	0
37	k	1074	0	1157	24	0
38	l	960	0	1000	27	0
39	m	892	0	923	19	0
40	n	917	0	965	18	0
41	o	947	0	1022	16	0
42	p	816	0	839	17	0
43	q	857	0	922	35	0
44	r	738	0	807	21	0
45	s	779	0	834	15	0
46	t	753	0	780	13	0
47	u	575	0	592	5	0
48	v	625	0	655	15	0
49	w	509	0	543	12	0
50	x	449	0	491	9	0
51	y	444	0	461	13	0
52	z	409	0	440	9	0
53	0	377	0	418	14	0
54	1	504	0	574	16	0
55	2	302	0	343	7	0
56	3	988	0	1025	82	0
57	4	522	0	522	22	0
All	All	146883	0	99307	3257	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 14.

All (3257) 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)
2:B:17:C:H4'	2:B:18:G:C5'	1.44	1.44
1:A:26:A:H62	8:H:19:ARG:NH1	1.15	1.41
1:A:26:A:H62	8:H:19:ARG:CZ	1.32	1.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:17:C:N3	2:B:61:C:H5'	1.22	1.40
1:A:27:G:H2'	1:A:28:A:C8	1.59	1.38
1:A:26:A:N6	8:H:19:ARG:NH1	1.72	1.37
1:A:26:A:C5	8:H:19:ARG:NH1	2.00	1.29
1:A:26:A:N7	8:H:19:ARG:NH1	1.79	1.29
1:A:26:A:C6	8:H:19:ARG:NH1	2.06	1.22
2:B:17:C:N3	2:B:61:C:C5'	2.05	1.20
2:B:17:C:N4	2:B:61:C:H5''	1.58	1.18
3:C:33:TYR:HA	3:C:36:VAL:HG23	1.28	1.13
1:A:25:U:O2	1:A:26:A:C8	2.03	1.12
2:B:17:C:C4'	2:B:18:G:C5'	2.28	1.11
3:C:29:SER:O	3:C:33:TYR:N	1.84	1.10
3:C:20:ASN:O	3:C:24:ARG:HG2	1.51	1.09
1:A:29:A:C6	7:G:44:LYS:HE2	1.87	1.08
1:A:22:C:H4'	1:A:23:U:H5'	1.35	1.08
1:A:28:A:H5''	8:H:56:PRO:HD3	1.36	1.07
3:C:33:TYR:HA	3:C:36:VAL:CG2	1.83	1.07
1:A:27:G:C2'	1:A:28:A:C8	2.38	1.06
2:B:17:C:H4'	2:B:18:G:O5'	1.43	1.06
3:C:33:TYR:CA	3:C:36:VAL:HG23	1.87	1.05
1:A:24:A:O2'	6:F:161:ILE:HD11	1.53	1.04
25:Y:1834:U:O2'	25:Y:1835:2MG:OP2	1.74	1.03
2:B:17:C:H42	2:B:61:C:H5''	1.06	1.02
2:B:17:C:C4	2:B:61:C:H5'	1.96	1.01
1:A:7:U:C5	1:A:8:A:O2'	2.14	1.00
1:A:7:U:N3	1:A:8:A:N3	2.10	0.99
1:A:6:A:H2	2:B:34:G:N2	1.61	0.98
1:A:27:G:N2	8:H:14:LEU:HD22	1.79	0.98
3:C:21:ASN:HA	3:C:24:ARG:NE	1.79	0.98
2:B:17:C:C4	2:B:61:C:C5'	2.47	0.97
12:L:14:SER:OG	12:L:67:LYS:O	1.83	0.97
1:A:22:C:H4'	1:A:23:U:C5'	1.96	0.96
8:H:13:LYS:HZ1	8:H:112:ALA:HB1	1.31	0.96
25:Y:1103:A:OP2	25:Y:1104:C:N4	1.99	0.95
4:D:82:G:O2'	4:D:83:C:O4'	1.84	0.95
2:B:75:C:N4	25:Y:2251:OMG:O6	2.00	0.95
25:Y:1607:C:N4	25:Y:1622:G:OP2	1.99	0.95
25:Y:1942:C:O2'	25:Y:1943:U:OP1	1.84	0.95
3:C:33:TYR:CE2	25:Y:2609:U:O4	2.20	0.94
4:D:1134:G:O2'	4:D:1135:U:O4'	1.84	0.94
14:N:84:MET:SD	14:N:110:THR:OG1	2.26	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:26:A:N6	8:H:19:ARG:CZ	2.18	0.93
25:Y:1085:A:O2'	25:Y:1104:C:O2	1.86	0.93
25:Y:1668:A:N3	25:Y:1670:C:N4	2.16	0.93
1:A:7:U:C2	1:A:8:A:C4	2.56	0.93
25:Y:1064:C:O2'	33:g:89:SER:O	1.85	0.93
1:A:7:U:C2	1:A:8:A:N3	2.36	0.93
25:Y:401:A:O2'	25:Y:402:A:O5'	1.83	0.93
25:Y:1252:G:N2	41:o:32:ARG:O	2.02	0.93
1:A:22:C:OP2	4:D:1397:C:N4	2.02	0.92
1:A:25:U:O2	1:A:26:A:H8	1.48	0.92
4:D:575:G:O2'	4:D:821:G:OP2	1.88	0.92
25:Y:2075:U:OP2	25:Y:2238:G:O2'	1.87	0.92
25:Y:91:A:O2'	25:Y:92:U:O4'	1.87	0.91
25:Y:240:C:O2	25:Y:257:C:N4	2.01	0.91
25:Y:1059:G:O6	25:Y:1079:C:N4	2.02	0.91
25:Y:1047:G:O2'	25:Y:1110:G:N2	2.03	0.91
25:Y:1664:A:H61	25:Y:1996:C:H42	1.17	0.91
4:D:77:A:N6	4:D:92:U:O4	2.03	0.91
4:D:392:C:O2'	4:D:483:C:O2'	1.86	0.91
4:D:427:U:OP2	4:D:428:G:O2'	1.89	0.91
4:D:871:U:O2'	4:D:872:A:OP1	1.88	0.90
56:3:25:ALA:O	56:3:85:SER:OG	1.89	0.90
4:D:1281:C:O2'	4:D:1282:C:OP1	1.88	0.90
25:Y:2496:C:O2'	25:Y:2497:A:O5'	1.88	0.90
4:D:967:5MC:OP2	4:D:968:A:O2'	1.89	0.90
4:D:438:U:O2	4:D:495:A:N6	2.03	0.90
25:Y:2601:C:O2'	25:Y:2603:G:OP1	1.88	0.90
25:Y:2646:C:OP2	25:Y:2732:G:O2'	1.88	0.89
25:Y:2296:U:OP2	39:m:9:ARG:NH2	2.04	0.89
25:Y:2503:2MA:O2'	25:Y:2505:G:OP2	1.89	0.89
1:A:22:C:C4'	1:A:23:U:H5'	2.03	0.89
2:B:17:C:H4'	2:B:18:G:H5''	1.49	0.89
3:C:19:GLN:NE2	43:q:91:GLY:O	2.05	0.89
25:Y:240:C:OP2	25:Y:241:A:O2'	1.90	0.89
4:D:701:U:OP1	4:D:702:A:O2'	1.91	0.89
25:Y:1215:G:O6	25:Y:1235:G:N2	2.06	0.88
4:D:340:U:OP2	35:i:98:ARG:NH2	2.07	0.88
4:D:692:U:OP1	14:N:126:ARG:NH2	2.07	0.88
2:B:58:A:O2'	2:B:60:U:OP2	1.91	0.88
1:A:7:U:O2	1:A:8:A:C4	2.26	0.88
1:A:7:U:O2	1:A:8:A:C5	2.27	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:45:ASN:ND2	15:O:88:ASP:OD1	2.06	0.88
1:A:7:U:O2	1:A:8:A:C2	2.27	0.88
1:A:21:U:O2	4:D:530:G:O6	1.91	0.87
3:C:18:LEU:O	3:C:22:VAL:HG23	1.75	0.87
25:Y:1168:G:O2'	25:Y:1169:A:O5'	1.92	0.87
4:D:438:U:H1'	4:D:440:C:H41	1.36	0.87
3:C:20:ASN:O	3:C:24:ARG:CG	2.21	0.87
4:D:662:U:O2'	4:D:836:G:OP1	1.92	0.87
25:Y:1061:U:O2'	25:Y:1068:G:O3'	1.93	0.87
25:Y:2599:G:OP2	27:a:234:GLY:N	2.08	0.86
2:B:17:C:O5'	2:B:18:G:H5''	1.75	0.86
4:D:436:C:O2'	4:D:437:U:O4'	1.92	0.86
25:Y:1093:G:N2	25:Y:1098:A:C5	2.43	0.86
1:A:7:U:N3	1:A:8:A:C2	2.42	0.86
2:B:17:C:N4	2:B:61:C:C5'	2.38	0.86
5:E:23:ASN:ND2	5:E:191:ASP:OD1	2.07	0.86
9:I:74:LEU:O	9:I:77:THR:OG1	1.93	0.86
25:Y:1171:G:O2'	25:Y:1172:C:O4'	1.94	0.86
25:Y:2150:C:O2'	25:Y:2151:U:O4'	1.93	0.86
1:A:7:U:O2	1:A:8:A:C6	2.29	0.85
1:A:22:C:P	4:D:1397:C:H42	1.98	0.85
3:C:27:LYS:NZ	3:C:30:SER:OG	2.08	0.85
25:Y:1324:G:O2'	25:Y:1326:U:OP2	1.92	0.85
25:Y:776:G:N7	25:Y:793:A:O2'	2.10	0.85
4:D:183:C:O2'	4:D:184:G:OP1	1.94	0.85
25:Y:1093:G:C2	25:Y:1098:A:C5	2.65	0.85
25:Y:1814:G:OP2	25:Y:1815:A:O2'	1.92	0.85
25:Y:2128:G:O2'	25:Y:2174:C:O2'	1.95	0.85
1:A:27:G:O2'	1:A:28:A:O4'	1.94	0.84
2:B:17:C:H4'	2:B:18:G:H5'	1.56	0.84
25:Y:2867:G:O2'	25:Y:2868:A:O5'	1.96	0.84
33:g:55:PRO:O	33:g:70:THR:OG1	1.95	0.84
25:Y:1084:A:OP1	56:3:54:VAL:N	2.10	0.84
1:A:7:U:C2	1:A:8:A:C2	2.65	0.84
25:Y:1664:A:H61	25:Y:1996:C:N4	1.74	0.84
1:A:6:A:H2	2:B:34:G:H22	0.88	0.84
4:D:1127:G:O6	4:D:1145:A:N1	2.10	0.84
4:D:618:C:O2'	19:S:14:ARG:NH1	2.10	0.84
1:A:26:A:H62	8:H:19:ARG:NH2	1.76	0.83
4:D:331:G:O3'	23:W:2:ASN:ND2	2.11	0.83
25:Y:660:C:O2'	36:j:13:LYS:NZ	2.12	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:437:U:O2'	7:G:119:HIS:ND1	2.11	0.83
25:Y:1056:G:O2'	25:Y:1087:G:N1	2.11	0.83
25:Y:2584:U:H5''	25:Y:2585:U:OP2	1.79	0.83
6:F:10:ARG:NH2	6:F:174:LEU:O	2.12	0.83
30:d:55:ASP:OD2	30:d:149:ARG:NH2	2.12	0.83
33:g:71:LYS:O	33:g:72:THR:OG1	1.96	0.83
1:A:6:A:O2'	1:A:8:A:OP2	1.95	0.83
3:C:45:ASP:HA	25:Y:2063:C:H1'	1.61	0.83
25:Y:641:U:O2	25:Y:647:G:O6	1.95	0.82
1:A:5:G:O2'	1:A:6:A:OP2	1.95	0.82
4:D:1496:C:O2	4:D:1517:G:N2	2.11	0.82
25:Y:1043:C:O2'	56:3:1:MET:N	2.12	0.82
4:D:891:U:OP2	4:D:906:A:N6	2.11	0.82
25:Y:1631:G:N2	25:Y:1636:U:O4	2.12	0.82
12:L:122:ARG:NH1	12:L:123:ARG:O	2.12	0.82
25:Y:984:A:O2'	25:Y:985:C:OP1	1.97	0.82
25:Y:477:A:N6	25:Y:501:A:N7	2.28	0.82
25:Y:464:U:O2'	25:Y:465:G:OP1	1.96	0.82
4:D:1401:G:C2'	4:D:1402:4OC:O5'	2.28	0.82
1:A:26:A:H3'	1:A:26:A:OP2	1.80	0.81
4:D:1046:A:N6	4:D:1211:U:O2	2.14	0.81
25:Y:2285:C:OP2	52:z:5:ARG:NH1	2.12	0.81
4:D:7:A:N6	8:H:96:GLN:OE1	2.13	0.81
4:D:311:C:OP1	19:S:31:ARG:NH1	2.13	0.81
25:Y:1086:A:N7	56:3:37:LYS:NZ	2.29	0.81
1:A:29:A:C6	7:G:44:LYS:CE	2.63	0.81
25:Y:641:U:C2	25:Y:647:G:O6	2.33	0.81
25:Y:1235:G:O2'	25:Y:1236:G:O4'	1.99	0.81
25:Y:2266:A:N6	25:Y:2273:A:OP2	2.14	0.81
49:w:2:LYS:O	49:w:6:LEU:N	2.13	0.81
3:C:27:LYS:HG2	3:C:30:SER:OG	1.81	0.81
25:Y:2308:G:O6	25:Y:2311:A:N6	2.14	0.81
4:D:958:A:N7	22:V:54:ARG:NH1	2.28	0.81
25:Y:6:A:N3	34:h:135:GLN:NE2	2.29	0.81
25:Y:1058:U:OP1	25:Y:1089:A:N6	2.14	0.81
25:Y:1469:A:OP2	25:Y:1522:A:N6	2.14	0.81
16:P:51:GLN:O	16:P:54:THR:OG1	1.99	0.81
1:A:26:A:N6	8:H:19:ARG:HH12	1.50	0.81
4:D:1320:C:N3	22:V:35:ARG:NH1	2.29	0.81
14:N:126:ARG:O	24:X:34:ARG:NH2	2.14	0.80
25:Y:141:G:OP2	25:Y:141:G:N2	2.13	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1415:U:O2	25:Y:1587:G:O6	1.99	0.80
45:s:6:ARG:NH2	45:s:25:LYS:O	2.14	0.80
3:C:39:MET:HG2	25:Y:2062:A:N1	1.96	0.80
25:Y:1070:A:N7	25:Y:1096:A:O2'	2.13	0.80
25:Y:1528:A:N6	25:Y:1543:G:O2'	2.14	0.80
4:D:522:C:OP2	15:O:65:TYR:OH	1.99	0.80
25:Y:2326:C:O2'	25:Y:2327:A:OP1	1.99	0.80
25:Y:774:G:O2'	25:Y:775:G:O5'	1.98	0.80
25:Y:1668:A:O2'	25:Y:1674:G:N7	2.15	0.80
1:A:29:A:N1	7:G:44:LYS:HE2	1.96	0.80
2:B:17:C:C4'	2:B:18:G:H5'	2.07	0.80
4:D:409:U:O2'	4:D:410:G:O5'	1.99	0.80
25:Y:222:A:H62	25:Y:232:G:H21	1.28	0.80
25:Y:1800:C:O2'	25:Y:1801:A:OP2	1.99	0.80
38:l:86:ARG:NE	38:l:117:ASP:OD2	2.14	0.80
4:D:461:A:N6	4:D:471:U:O4	2.14	0.80
25:Y:647:G:N2	25:Y:2350:C:O3'	2.13	0.80
4:D:130:A:N6	4:D:233:C:O2	2.15	0.80
4:D:1398:A:N6	8:H:25:LYS:O	2.14	0.80
25:Y:249:C:O2	54:l:11:LYS:NZ	2.14	0.80
26:Z:88:C:O2'	26:Z:89:U:O5'	1.97	0.80
4:D:1114:C:O2'	17:Q:100:SER:OG	1.98	0.79
25:Y:1397:U:OP2	25:Y:1398:C:N4	2.15	0.79
1:A:7:U:C6	1:A:8:A:O2'	2.30	0.79
21:U:70:THR:HG23	21:U:71:ASP:H	1.48	0.79
25:Y:2865:U:OP2	25:Y:2866:U:O2'	1.99	0.79
4:D:958:A:N3	4:D:985:C:O2'	2.15	0.79
25:Y:1818:U:OP2	27:a:155:ARG:NE	2.14	0.79
25:Y:2258:C:O2'	25:Y:2427:C:OP2	2.00	0.79
4:D:723:U:O2	4:D:855:U:O2'	1.99	0.79
25:Y:882:G:N2	25:Y:895:U:O4'	2.16	0.79
30:d:56:LEU:O	30:d:60:SER:OG	2.01	0.79
56:3:4:ASN:O	56:3:8:LYS:N	2.15	0.79
4:D:564:C:O2'	4:D:565:U:OP1	2.00	0.79
25:Y:1060:U:O2'	25:Y:1070:A:O3'	2.00	0.79
1:A:27:G:C3'	1:A:28:A:H8	1.95	0.79
25:Y:1124:G:O2'	55:2:37:GLN:OE1	2.01	0.79
25:Y:2857:G:N2	25:Y:2860:A:OP2	2.12	0.78
25:Y:1779:U:OP2	25:Y:1784:A:N6	2.15	0.78
25:Y:2725:A:O2'	25:Y:2726:A:O5'	2.01	0.78
35:i:64:ARG:NE	40:n:67:GLU:OE2	2.16	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:39:GLY:O	12:L:44:ARG:NE	2.17	0.78
25:Y:1223:G:OP1	42:p:68:ARG:NH2	2.16	0.78
25:Y:2822:G:O2'	25:Y:2824:C:OP2	2.00	0.78
4:D:492:C:O2'	4:D:493:A:N7	2.16	0.78
26:Z:36:C:N4	26:Z:44:G:O6	2.11	0.78
4:D:1382:C:O2'	10:J:78:ARG:NH1	2.17	0.78
1:A:27:G:O2'	1:A:28:A:H5'	1.83	0.78
1:A:27:G:H3'	1:A:28:A:H8	1.47	0.78
24:X:16:ARG:O	24:X:20:ARG:NH1	2.17	0.78
25:Y:676:A:H62	25:Y:802:A:H61	1.32	0.78
25:Y:1453:A:O2'	25:Y:1454:C:OP1	2.00	0.78
25:Y:1168:G:HO2'	25:Y:1169:A:C5'	1.97	0.78
25:Y:1664:A:N6	25:Y:1996:C:H42	1.81	0.78
17:Q:54:ASP:O	17:Q:55:SER:OG	2.01	0.78
4:D:1300:G:O2'	4:D:1301:U:O5'	2.01	0.78
2:B:52:G:N2	2:B:63:U:O2	2.17	0.77
4:D:404:G:O2'	4:D:405:U:O4'	2.01	0.77
5:E:122:ASP:OD1	5:E:123:GLY:N	2.18	0.77
9:I:73:GLU:O	9:I:76:THR:OG1	2.03	0.77
25:Y:1064:C:O2	25:Y:1075:C:N4	2.16	0.77
5:E:207:ARG:O	5:E:210:THR:OG1	2.02	0.77
25:Y:2127:G:O2'	25:Y:2128:G:O4'	2.01	0.77
13:M:7:ARG:NE	13:M:75:ASP:OD1	2.17	0.77
25:Y:2170:A:O2'	25:Y:2172:U:OP1	2.01	0.77
7:G:11:SER:OG	7:G:16:THR:O	2.03	0.77
25:Y:35:G:O2'	25:Y:454:A:O4'	2.02	0.77
25:Y:222:A:H62	25:Y:232:G:N2	1.81	0.77
33:g:131:THR:O	33:g:134:SER:OG	2.03	0.77
4:D:39:G:N3	4:D:404:G:N2	2.32	0.77
4:D:980:C:O2'	17:Q:12:ARG:NH2	2.18	0.77
4:D:1447:A:O2'	4:D:1448:C:OP1	2.03	0.77
28:b:16:THR:OG1	28:b:18:ASP:OD1	2.00	0.77
2:B:17:C:C2	2:B:61:C:H5'	2.19	0.77
4:D:979:C:O2	17:Q:59:ARG:NH1	2.17	0.77
5:E:92:ASN:OD1	5:E:93:HIS:ND1	2.16	0.77
4:D:1350:A:OP1	12:L:118:ARG:NH2	2.18	0.77
25:Y:1936:A:OP2	25:Y:1962:5MC:N4	2.18	0.77
25:Y:2209:G:OP2	25:Y:2210:U:O2'	2.01	0.77
4:D:564:C:OP1	15:O:11:ARG:NH2	2.17	0.77
4:D:1250:A:OP1	12:L:68:GLY:N	2.18	0.77
23:W:82:ILE:O	23:W:86:ALA:N	2.17	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:781:A:OP1	27:a:216:ARG:NH2	2.17	0.77
25:Y:1010:A:O2'	25:Y:1152:C:O2'	2.00	0.77
27:a:70:LYS:O	27:a:117:SER:OG	2.01	0.77
36:j:29:LYS:O	36:j:30:THR:OG1	2.01	0.77
25:Y:2629:U:O2'	25:Y:2630:G:O5'	2.02	0.76
3:C:35:ASN:O	3:C:39:MET:N	2.19	0.76
3:C:44:HIS:O	3:C:46:GLY:N	2.18	0.76
25:Y:2584:U:H3'	25:Y:2585:U:H5''	1.65	0.76
5:E:81:ASP:O	5:E:85:SER:N	2.17	0.76
26:Z:66:A:OP2	26:Z:108:A:N6	2.18	0.76
43:q:1:MET:N	43:q:108:SER:OG	2.17	0.76
30:d:24:VAL:O	30:d:27:VAL:HG12	1.85	0.76
25:Y:2055:C:O2	25:Y:2572:A:N6	2.17	0.76
56:3:101:LYS:O	56:3:105:LYS:N	2.17	0.76
1:A:26:A:H3'	1:A:26:A:P	2.26	0.76
1:A:27:G:C3'	1:A:28:A:C8	2.70	0.76
2:B:17:C:C4	2:B:61:C:H5''	2.14	0.76
11:K:105:THR:OG1	11:K:108:GLY:O	2.03	0.76
28:b:46:ARG:NH1	28:b:86:GLU:OE1	2.19	0.75
25:Y:1754:A:O2'	40:n:102:ARG:NH2	2.20	0.75
25:Y:957:C:N4	25:Y:959:A:N1	2.34	0.75
3:C:18:LEU:O	3:C:21:ASN:OD1	2.05	0.75
4:D:1492:A:O2'	4:D:1493:A:OP1	2.03	0.75
25:Y:307:G:H21	25:Y:330:A:N6	1.82	0.75
25:Y:1527:G:N1	25:Y:1544:A:OP2	2.19	0.75
4:D:588:G:N2	4:D:653:U:O4	2.19	0.75
25:Y:2858:C:O2'	25:Y:2859:G:OP1	2.04	0.75
33:g:75:ALA:O	33:g:79:LEU:N	2.19	0.75
35:i:9:ASN:OD1	35:i:18:ARG:NH1	2.19	0.75
25:Y:1055:G:N2	25:Y:1085:A:O2'	2.20	0.75
1:A:27:G:H3'	1:A:28:A:C8	2.22	0.75
25:Y:812:C:HO2'	25:Y:1226:A:HO2'	1.34	0.75
25:Y:1283:G:N2	25:Y:1329:U:O4	2.15	0.75
25:Y:250:G:O2'	25:Y:251:A:O4'	2.03	0.74
25:Y:2756:U:OP2	55:2:19:ARG:NE	2.18	0.74
3:C:2:LYS:NZ	25:Y:482:A:OP2	2.20	0.74
7:G:197:HIS:HE1	8:H:104:ILE:HG22	1.50	0.74
4:D:978:A:O2'	4:D:1322:C:N3	2.20	0.74
25:Y:2796:U:O2	25:Y:2799:A:N6	2.20	0.74
25:Y:63:A:H61	25:Y:91:A:H61	1.35	0.74
25:Y:1521:G:OP2	25:Y:1522:A:O2'	2.03	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:24:A:C3'	1:A:25:U:H5'	2.17	0.74
4:D:427:U:OP1	7:G:12:ARG:NH2	2.21	0.74
4:D:642:A:N3	11:K:104:SER:OG	2.19	0.74
4:D:1026:G:O2'	4:D:1027:C:O4'	2.04	0.74
4:D:1178:G:N2	4:D:1181:G:OP2	2.20	0.74
25:Y:2299:U:O4	25:Y:2318:G:N2	2.20	0.74
25:Y:2506:U:H5	25:Y:2585:U:O4	1.71	0.74
12:L:24:ASN:OD1	12:L:25:GLY:N	2.21	0.74
25:Y:1093:G:C2	25:Y:1098:A:C6	2.76	0.74
25:Y:2745:C:O2	31:e:138:GLN:NE2	2.20	0.74
4:D:1200:C:O2'	4:D:1201:A:OP2	2.04	0.74
26:Z:40:U:O4	57:4:1:MET:N	2.15	0.74
37:k:49:ALA:HB1	37:k:120:ALA:HB1	1.70	0.74
2:B:17:C:C5'	2:B:18:G:H5''	2.16	0.74
4:D:182:A:H62	4:D:194:C:H42	1.34	0.74
25:Y:2126:A:N6	25:Y:2163:A:N3	2.36	0.74
25:Y:2128:G:HO2'	25:Y:2174:C:HO2'	1.24	0.74
39:m:108:ASP:OD1	39:m:111:ARG:NH1	2.21	0.74
4:D:667:G:OP1	4:D:732:C:O2'	2.06	0.74
3:C:32:ASN:O	3:C:36:VAL:N	2.21	0.73
3:C:33:TYR:O	3:C:36:VAL:HB	1.88	0.73
3:C:39:MET:HG3	25:Y:2062:A:H61	1.53	0.73
2:B:9:A:O2'	2:B:10:G:N7	2.21	0.73
3:C:23:ARG:CZ	43:q:92:ARG:HB3	2.19	0.73
25:Y:2106:U:N3	25:Y:2107:G:O6	2.20	0.73
3:C:23:ARG:HG3	3:C:24:ARG:N	2.03	0.73
8:H:13:LYS:NZ	8:H:112:ALA:HB1	2.03	0.73
25:Y:490:C:O2'	25:Y:491:G:OP2	2.07	0.73
25:Y:1428:C:OP2	27:a:27:LYS:NZ	2.21	0.73
25:Y:1601:G:OP1	44:r:64:LYS:NZ	2.21	0.73
25:Y:2788:C:O2'	25:Y:2809:A:N3	2.22	0.73
25:Y:2883:A:OP1	51:y:48:TYR:OH	2.03	0.73
25:Y:2773:C:OP1	28:b:169:ARG:NH2	2.22	0.73
5:E:92:ASN:OD1	5:E:93:HIS:N	2.21	0.72
25:Y:1093:G:N2	25:Y:1098:A:C4	2.57	0.72
3:C:23:ARG:CD	43:q:92:ARG:HA	2.20	0.72
25:Y:1071:G:N2	25:Y:1090:A:N7	2.37	0.72
25:Y:2136:G:N2	25:Y:2156:G:O2'	2.22	0.72
4:D:80:A:O2'	4:D:90:C:O2	2.03	0.72
4:D:261:U:OP2	23:W:73:ARG:NH2	2.22	0.72
25:Y:1266:G:O2'	25:Y:2012:G:O6	2.07	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:2899:A:O2'	25:Y:2900:A:O5'	2.06	0.72
4:D:62:U:O2'	4:D:379:C:O2	2.07	0.72
25:Y:1082:U:OP1	33:g:120:ASP:N	2.23	0.72
33:g:113:ALA:HB1	33:g:121:ILE:O	1.89	0.72
3:C:32:ASN:HA	3:C:35:ASN:HB2	1.69	0.72
4:D:501:C:OP1	15:O:113:ARG:NH2	2.22	0.72
25:Y:2507:C:C2	25:Y:2583:G:N2	2.57	0.72
4:D:1027:C:N4	4:D:1034:G:O6	2.22	0.72
25:Y:1980:G:O2'	25:Y:1982:U:OP2	2.06	0.72
25:Y:2507:C:C4	25:Y:2583:G:N1	2.58	0.72
25:Y:669:G:O2'	25:Y:670:A:OP1	2.06	0.72
1:A:6:A:C2'	1:A:8:A:OP2	2.37	0.72
15:O:52:CYS:SG	15:O:64:SER:OG	2.46	0.72
1:A:24:A:O2'	6:F:161:ILE:CD1	2.35	0.72
25:Y:466:A:OP1	53:O:34:ARG:NH1	2.23	0.72
25:Y:2506:U:C5	25:Y:2585:U:O4	2.43	0.72
1:A:7:U:H2'	1:A:8:A:C8	2.25	0.71
3:C:20:ASN:OD1	3:C:24:ARG:HD3	1.90	0.71
4:D:501:C:O3'	15:O:114:SER:OG	2.07	0.71
25:Y:320:A:N3	29:c:163:ASN:ND2	2.38	0.71
25:Y:2780:G:OP2	34:h:120:ARG:NE	2.22	0.71
5:E:15:PHE:O	5:E:40:ILE:N	2.24	0.71
4:D:1493:A:N6	25:Y:1914:C:OP2	2.23	0.71
25:Y:643:A:N3	52:z:43:ARG:NH1	2.38	0.71
25:Y:1858:A:N6	25:Y:1884:G:O2'	2.23	0.71
3:C:39:MET:CG	25:Y:2062:A:N1	2.54	0.71
6:F:95:GLY:O	6:F:96:VAL:HG12	1.90	0.71
25:Y:1937:A:O2'	25:Y:1938:A:O5'	2.05	0.71
4:D:109:A:C6	4:D:326:G:C6	2.78	0.71
16:P:16:ILE:O	16:P:19:THR:OG1	2.06	0.71
7:G:191:SER:OG	7:G:193:ASP:OD1	2.06	0.71
25:Y:870:U:OP1	37:k:6:ARG:NH1	2.24	0.71
25:Y:2248:C:O2'	25:Y:2249:U:OP1	2.08	0.71
33:g:76:ALA:HB1	33:g:135:MET:HE3	1.71	0.71
4:D:410:G:N7	4:D:429:U:O2'	2.23	0.70
4:D:1259:C:O2'	4:D:1283:U:O2	2.06	0.70
25:Y:639:U:O4	25:Y:649:G:O6	2.09	0.70
25:Y:2050:C:O2'	25:Y:2051:A:O5'	2.02	0.70
25:Y:971:G:O2'	25:Y:972:A:OP1	2.09	0.70
25:Y:1328:A:O2'	25:Y:1329:U:O5'	2.09	0.70
2:B:31:C:O2'	4:D:1340:A:O2'	2.08	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:31:MET:O	3:C:35:ASN:CG	2.35	0.70
14:N:27:ASN:O	14:N:57:SER:OG	2.08	0.70
25:Y:1095:A:N6	33:g:22:PRO:O	2.24	0.70
20:T:8:GLN:NE2	20:T:59:GLU:OE2	2.24	0.70
25:Y:1730:C:O2	25:Y:1731:G:N1	2.24	0.70
27:a:68:ARG:O	27:a:188:ARG:NH1	2.24	0.70
43:q:3:THR:OG1	43:q:62:ASP:OD2	2.09	0.70
40:n:105:LYS:O	40:n:108:ARG:NH2	2.23	0.70
25:Y:111:A:O2'	25:Y:112:U:OP1	2.10	0.70
28:b:8:LYS:NZ	28:b:195:GLY:O	2.18	0.70
35:i:90:ASN:OD1	35:i:91:SER:N	2.25	0.70
12:L:54:VAL:HG12	12:L:93:LEU:HD22	1.71	0.70
4:D:1401:G:H2'	4:D:1402:4OC:O5'	1.92	0.70
4:D:1464:U:OP1	40:n:108:ARG:NH1	2.25	0.70
25:Y:2684:U:O4'	35:i:70:ARG:NH1	2.25	0.70
4:D:324:G:N1	4:D:327:A:OP2	2.25	0.70
21:U:13:THR:O	21:U:17:VAL:N	2.25	0.70
25:Y:1084:A:O2'	25:Y:1105:U:O2'	2.02	0.70
25:Y:2126:A:N3	25:Y:2173:A:N6	2.40	0.70
25:Y:2850:A:OP2	25:Y:2866:U:N3	2.24	0.70
1:A:23:U:N3	6:F:161:ILE:HG21	2.07	0.69
4:D:7:A:N3	4:D:298:A:N6	2.40	0.69
25:Y:1672:A:O2'	25:Y:1673:G:OP1	2.09	0.69
29:c:127:GLU:O	29:c:156:ASN:ND2	2.24	0.69
25:Y:964:C:O2'	25:Y:2273:A:N3	2.22	0.69
25:Y:1961:C:O2'	25:Y:1962:5MC:OP1	2.09	0.69
3:C:33:TYR:HA	3:C:36:VAL:HG21	1.73	0.69
25:Y:942:G:OP2	36:j:39:LYS:NZ	2.16	0.69
25:Y:1827:U:OP2	27:a:220:ARG:NH1	2.25	0.69
2:B:18:G:C2	2:B:57:A:C5	2.80	0.69
12:L:45:MET:O	12:L:48:ARG:N	2.26	0.69
21:U:45:GLY:O	21:U:46:THR:OG1	2.10	0.69
2:B:74:C:H42	25:Y:2252:G:H1	1.41	0.69
25:Y:704:G:H1'	25:Y:727:A:H61	1.58	0.69
26:Z:9:G:OP2	39:m:15:ARG:NH1	2.26	0.69
4:D:405:U:O4	7:G:1:ALA:N	2.25	0.69
25:Y:2793:C:N4	25:Y:2803:G:O6	2.25	0.69
3:C:27:LYS:CG	3:C:30:SER:OG	2.41	0.69
3:C:39:MET:HG3	25:Y:2062:A:N6	2.06	0.69
4:D:171:A:O2'	4:D:172:A:O4'	2.08	0.69
4:D:183:C:HO2'	4:D:184:G:P	2.14	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:1134:G:O2'	4:D:1135:U:O5'	2.10	0.69
4:D:1238:A:OP1	4:D:1335:U:O2'	2.09	0.69
23:W:26:MET:O	23:W:29:THR:OG1	2.08	0.69
25:Y:1080:A:N6	25:Y:1088:A:OP2	2.21	0.69
25:Y:1236:G:O2'	25:Y:1237:A:O5'	2.10	0.69
25:Y:225:C:H42	25:Y:231:A:H61	1.41	0.69
25:Y:2121:G:OP1	25:Y:2169:A:N6	2.25	0.69
56:3:39:THR:OG1	56:3:40:GLU:OE1	2.11	0.69
25:Y:2141:G:N2	25:Y:2151:U:O2	2.26	0.68
25:Y:2450:A:OP1	25:Y:2497:A:O2'	2.05	0.68
25:Y:2499:C:O2'	25:Y:2500:U:OP1	2.10	0.68
12:L:94:ARG:O	12:L:98:ARG:N	2.27	0.68
25:Y:1109:C:O2'	25:Y:1110:G:O4'	2.11	0.68
26:Z:48:U:OP1	39:m:30:ARG:NH1	2.26	0.68
29:c:102:ARG:NH1	29:c:200:LEU:O	2.26	0.68
25:Y:1104:C:O2'	25:Y:1105:U:OP1	2.10	0.68
30:d:36:ASN:OD1	30:d:37:MET:N	2.27	0.68
4:D:380:G:N2	4:D:383:A:OP2	2.23	0.68
25:Y:25:U:O2'	25:Y:26:G:OP1	2.09	0.68
4:D:1330:U:O2'	4:D:1331:G:OP1	2.11	0.68
28:b:3:GLY:O	28:b:4:LEU:HD12	1.94	0.68
9:I:12:PRO:O	9:I:15:SER:OG	2.07	0.68
7:G:197:HIS:CE1	8:H:104:ILE:HG22	2.28	0.68
25:Y:1099:G:O3'	33:g:3:LYS:NZ	2.27	0.68
25:Y:1816:C:N4	27:a:34:GLU:OE2	2.26	0.68
33:g:64:ARG:NH1	33:g:65:SER:OG	2.26	0.68
18:R:4:THR:O	18:R:7:THR:OG1	2.12	0.68
25:Y:2576:G:O2'	25:Y:2579:C:OP2	2.12	0.68
8:H:100:GLU:OE2	8:H:102:THR:OG1	2.11	0.68
21:U:36:GLY:O	21:U:62:ARG:NH2	2.26	0.68
25:Y:1094:U:O2'	25:Y:1095:A:OP1	2.09	0.68
1:A:6:A:H4'	1:A:9:G:OP1	1.93	0.67
25:Y:464:U:HO2'	25:Y:465:G:P	2.16	0.67
4:D:261:U:N3	4:D:264:C:OP2	2.26	0.67
6:F:156:LEU:HD12	6:F:156:LEU:O	1.95	0.67
19:S:19:VAL:HG13	19:S:36:VAL:O	1.94	0.67
25:Y:370:G:O2'	25:Y:424:G:OP1	2.13	0.67
2:B:17:C:O5'	2:B:18:G:C5'	2.41	0.67
25:Y:1103:A:P	25:Y:1104:C:H41	2.16	0.67
25:Y:2019:A:O2'	25:Y:2020:A:OP1	2.13	0.67
25:Y:2362:C:OP1	54:1:27:ASN:ND2	2.28	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:842:U:O2'	4:D:845:A:OP2	2.12	0.67
4:D:159:G:N2	4:D:162:A:OP2	2.24	0.67
8:H:106:ALA:HB1	8:H:110:MET:HE3	1.77	0.67
25:Y:1626:A:O2'	25:Y:1627:G:O5'	2.13	0.67
45:s:52:ASN:OD1	45:s:53:GLN:N	2.26	0.67
4:D:83:C:O2	4:D:87:C:N4	2.27	0.67
4:D:1281:C:HO2'	4:D:1282:C:P	2.18	0.67
30:d:114:ARG:NH2	57:4:46:GLY:O	2.28	0.67
4:D:1147:C:O2'	12:L:6:TYR:OH	2.09	0.67
1:A:6:A:O2'	1:A:8:A:H5''	1.95	0.66
25:Y:1054:A:N6	25:Y:1105:U:O2	2.28	0.66
26:Z:37:C:O2	39:m:100:HIS:NE2	2.27	0.66
3:C:44:HIS:C	3:C:46:GLY:H	2.01	0.66
5:E:70:GLY:O	5:E:71:THR:OG1	2.13	0.66
10:J:56:SER:OG	10:J:57:GLU:OE1	2.11	0.66
23:W:2:ASN:OD1	23:W:3:ILE:N	2.28	0.66
25:Y:810:U:O2'	36:j:20:GLY:O	2.14	0.66
25:Y:1467:U:OP2	25:Y:1546:G:O2'	2.13	0.66
25:Y:1631:G:N1	25:Y:1634:A:OP2	2.28	0.66
25:Y:2149:U:O2'	25:Y:2150:C:O5'	2.08	0.66
25:Y:233:A:H61	25:Y:429:A:H61	1.43	0.66
25:Y:2187:U:O2'	25:Y:2188:U:O5'	2.11	0.66
14:N:36:ARG:NH2	14:N:82:GLU:OE2	2.28	0.66
25:Y:210:C:OP1	53:0:25:LYS:NZ	2.29	0.66
49:w:27:ASN:O	49:w:31:GLN:N	2.27	0.66
1:A:22:C:H4'	1:A:23:U:O4'	1.96	0.66
5:E:202:ASN:OD1	5:E:203:ASP:N	2.28	0.66
11:K:115:ALA:O	11:K:119:GLY:N	2.29	0.66
44:r:57:VAL:O	44:r:86:THR:OG1	2.12	0.66
14:N:57:SER:O	14:N:58:THR:HG23	1.95	0.66
1:A:22:C:P	4:D:1397:C:N4	2.68	0.66
3:C:27:LYS:CE	3:C:30:SER:OG	2.44	0.66
4:D:346:G:OP1	40:n:38:ARG:NH1	2.29	0.66
4:D:690:G:OP2	14:N:28:ASN:ND2	2.29	0.66
25:Y:396:G:OP1	48:v:9:LYS:NZ	2.28	0.66
25:Y:770:G:O3'	53:0:14:ARG:NH2	2.29	0.66
4:D:652:U:O2'	4:D:653:U:O5'	2.13	0.66
25:Y:1056:G:HO2'	25:Y:1087:G:H1	1.39	0.66
25:Y:1103:A:O2'	25:Y:1104:C:OP2	2.14	0.66
25:Y:1688:U:O2	25:Y:1701:A:N6	2.29	0.66
4:D:979:C:OP1	4:D:1223:C:N4	2.30	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:4:15:SER:OG	57:4:20:ASN:O	2.12	0.65
4:D:652:U:O4	4:D:752:G:O2'	2.09	0.65
4:D:951:G:OP2	16:P:100:ARG:NH2	2.29	0.65
25:Y:434:U:O2	25:Y:436:C:N4	2.29	0.65
25:Y:534:U:O2'	41:o:48:ASP:OD2	2.09	0.65
25:Y:1084:A:OP1	56:3:55:VAL:N	2.23	0.65
3:C:37:ALA:CB	25:Y:2609:U:H2'	2.26	0.65
25:Y:1111:A:O2'	25:Y:1112:G:OP1	2.14	0.65
25:Y:1089:A:N6	25:Y:1098:A:OP1	2.28	0.65
28:b:40:LEU:O	28:b:44:GLY:N	2.29	0.65
4:D:1504:G:OP2	4:D:1507:A:O2'	2.14	0.65
23:W:77:ASN:OD1	23:W:78:LEU:N	2.29	0.65
25:Y:851:C:O2'	50:x:42:ALA:O	2.14	0.65
56:3:23:LEU:HD22	56:3:93:ALA:N	2.11	0.65
1:A:7:U:O2	1:A:8:A:N1	2.29	0.65
25:Y:1059:G:N2	33:g:127:SER:O	2.29	0.65
25:Y:1171:G:O2'	25:Y:1172:C:O5'	2.14	0.65
4:D:438:U:N3	4:D:495:A:N7	2.43	0.65
5:E:82:ALA:O	5:E:85:SER:OG	2.08	0.65
12:L:83:THR:HG21	12:L:102:PHE:HB3	1.79	0.65
25:Y:263:G:O2'	25:Y:429:A:N3	2.29	0.65
25:Y:569:U:O2'	25:Y:570:G:OP1	2.14	0.65
4:D:1081:A:OP2	8:H:51:LYS:NZ	2.28	0.65
25:Y:1026:G:N2	25:Y:1027:A:N7	2.45	0.65
25:Y:1047:G:OP2	56:3:62:ARG:NH2	2.29	0.65
2:B:17:C:H42	2:B:61:C:C5'	1.96	0.65
30:d:39:VAL:HG13	30:d:40:GLY:H	1.62	0.65
1:A:21:U:C2	4:D:530:G:O6	2.49	0.64
4:D:105:G:OP2	23:W:12:GLN:NE2	2.30	0.64
7:G:49:ASP:O	7:G:52:VAL:HG22	1.97	0.64
2:B:18:G:N3	2:B:57:A:C6	2.64	0.64
4:D:766:A:OP2	4:D:812:G:N2	2.30	0.64
4:D:842:U:OP2	4:D:846:G:N1	2.30	0.64
4:D:1318:A:O4'	22:V:36:ARG:NH2	2.29	0.64
25:Y:1942:C:H3'	25:Y:1943:U:H2'	1.78	0.64
25:Y:2689:U:O2'	25:Y:2690:U:OP1	2.16	0.64
33:g:3:LYS:O	33:g:7:TYR:OH	2.04	0.64
56:3:77:VAL:CG1	56:3:82:ILE:HG21	2.27	0.64
25:Y:1104:C:H2'	25:Y:1105:U:O4'	1.96	0.64
25:Y:1715:G:O2'	25:Y:1716:U:O5'	2.15	0.64
36:j:36:LYS:O	36:j:40:SER:OG	2.13	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:4:64:PHE:CE2	57:4:66:ILE:HG23	2.32	0.64
2:B:17:C:C4'	2:B:18:G:H5''	2.15	0.64
25:Y:276:U:O2'	25:Y:278:A:N7	2.30	0.64
4:D:1004:A:O2'	4:D:1036:A:N1	2.31	0.64
25:Y:1046:A:O2'	25:Y:1047:G:O5'	2.16	0.64
25:Y:1847:G:O2'	25:Y:1848:A:O5'	2.13	0.64
5:E:31:PHE:N	5:E:39:ILE:O	2.25	0.64
25:Y:2666:C:N4	31:e:108:PHE:O	2.31	0.64
3:C:21:ASN:CA	3:C:24:ARG:NE	2.60	0.64
3:C:33:TYR:C	3:C:36:VAL:HG23	2.23	0.64
4:D:1316:G:N1	4:D:1319:A:OP2	2.31	0.64
9:I:90:MET:HE1	21:U:22:TYR:CZ	2.32	0.64
25:Y:535:G:O3'	41:o:52:ARG:NH2	2.31	0.64
4:D:1196:A:O2'	4:D:1197:A:OP2	2.15	0.64
25:Y:238:C:O2'	25:Y:608:A:N3	2.31	0.64
25:Y:671:C:OP1	36:j:43:GLY:N	2.27	0.64
30:d:109:ARG:NH1	30:d:135:ILE:O	2.31	0.64
35:i:35:VAL:HG21	35:i:69:VAL:HG11	1.79	0.64
25:Y:1154:G:OP2	41:o:57:ARG:NH1	2.31	0.64
25:Y:1817:G:OP1	27:a:86:ARG:NH2	2.31	0.64
1:A:7:U:C4	1:A:8:A:O2'	2.50	0.64
3:C:44:HIS:C	3:C:46:GLY:N	2.54	0.64
14:N:30:ILE:HD13	14:N:45:THR:HG22	1.79	0.64
25:Y:2584:U:C3'	25:Y:2585:U:H5''	2.27	0.64
4:D:842:U:N3	4:D:843:U:O2'	2.31	0.63
25:Y:48:G:H22	25:Y:177:G:P	2.21	0.63
25:Y:1418:G:N1	25:Y:1579:A:OP2	2.28	0.63
23:W:67:HIS:ND1	23:W:67:HIS:O	2.31	0.63
25:Y:98:G:O2'	25:Y:99:U:O4'	2.16	0.63
25:Y:1234:U:O2'	25:Y:1235:G:OP1	2.17	0.63
3:C:39:MET:CG	25:Y:2062:A:C6	2.81	0.63
25:Y:506:G:O2'	25:Y:507:A:OP2	2.16	0.63
25:Y:1071:G:O2'	25:Y:1072:C:O5'	2.17	0.63
32:f:97:ARG:O	32:f:101:ASP:N	2.30	0.63
2:B:5:A:O2'	2:B:6:C:O4'	2.17	0.63
4:D:1401:G:O2'	4:D:1402:4OC:O5'	2.17	0.63
25:Y:25:U:HO2'	25:Y:26:G:P	2.21	0.63
25:Y:2127:G:O2'	25:Y:2128:G:O5'	2.16	0.63
4:D:203:G:O2'	4:D:204:G:O5'	2.14	0.63
4:D:841:C:O2'	4:D:842:U:O5'	2.16	0.63
4:D:1402:4OC:C5	4:D:1403:C:N3	2.62	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:64:VAL:HG22	9:I:65:GLU:H	1.62	0.63
25:Y:12:U:O2'	25:Y:13:A:OP1	2.15	0.63
25:Y:2449:H2U:O2'	25:Y:2501:C:N4	2.32	0.63
4:D:19:A:OP1	8:H:134:ASN:ND2	2.32	0.63
10:J:12:LEU:HD12	10:J:13:PRO:HD2	1.79	0.63
4:D:464:U:O2'	4:D:465:A:OP1	2.13	0.63
25:Y:2572:A:OP1	25:Y:2574:G:O2'	2.07	0.63
29:c:99:LYS:O	29:c:103:GLY:N	2.31	0.63
32:f:113:SER:O	32:f:116:ARG:NH1	2.31	0.63
33:g:79:LEU:HD12	33:g:132:ALA:HB1	1.81	0.63
4:D:1238:A:N7	4:D:1301:U:O4	2.32	0.63
25:Y:48:G:N2	25:Y:177:G:OP2	2.31	0.63
25:Y:227:A:O2'	25:Y:228:C:O5'	2.12	0.63
25:Y:279:A:O2'	25:Y:280:U:OP1	2.17	0.63
25:Y:2831:G:OP2	28:b:59:ARG:NH1	2.28	0.63
40:n:45:VAL:HG12	40:n:46:VAL:N	2.14	0.63
51:y:26:SER:O	51:y:27:LEU:HD12	1.99	0.63
2:B:18:G:C4	2:B:57:A:C6	2.87	0.62
4:D:1367:C:OP2	12:L:113:LYS:NZ	2.31	0.62
16:P:56:ARG:NH2	57:4:35:ASP:OD1	2.31	0.62
1:A:27:G:N2	8:H:14:LEU:CD2	2.61	0.62
10:J:16:LYS:NZ	10:J:47:GLU:OE2	2.32	0.62
4:D:1492:A:HO2'	4:D:1493:A:P	2.22	0.62
12:L:35:GLU:O	12:L:40:ARG:N	2.32	0.62
25:Y:404:A:O2'	25:Y:405:U:O5'	2.10	0.62
25:Y:2790:U:O4'	25:Y:2893:A:N6	2.32	0.62
42:p:27:ILE:HG22	42:p:28:ALA:N	2.14	0.62
3:C:21:ASN:HA	3:C:24:ARG:CG	2.30	0.62
4:D:1063:C:OP2	4:D:1064:G:O2'	2.08	0.62
25:Y:307:G:H21	25:Y:330:A:H61	1.45	0.62
4:D:298:A:O2'	4:D:299:G:O5'	2.18	0.62
54:1:31:ILE:O	54:1:31:ILE:HG22	1.99	0.62
57:4:33:ASN:OD1	57:4:34:LEU:N	2.33	0.62
25:Y:2298:A:OP1	30:d:70:ARG:NH2	2.33	0.62
25:Y:2304:G:OP1	30:d:120:SER:OG	2.18	0.62
5:E:71:THR:HG22	5:E:72:LYS:N	2.15	0.62
25:Y:1429:G:O4'	25:Y:1568:G:O2'	2.13	0.62
43:q:58:ALA:O	43:q:62:ASP:N	2.31	0.62
29:c:117:ARG:NH2	29:c:183:PHE:O	2.32	0.62
44:r:37:ASP:O	44:r:81:LYS:NZ	2.32	0.62
4:D:713:G:H2'	4:D:714:G:C8	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:1422:G:O2'	35:i:49:ARG:NH2	2.32	0.62
20:T:16:MET:SD	20:T:19:SER:OG	2.54	0.62
25:Y:77:G:C6	25:Y:110:G:C6	2.88	0.62
25:Y:2507:C:N4	25:Y:2583:G:O6	2.33	0.62
1:A:7:U:H3'	1:A:8:A:H2'	1.81	0.61
5:E:71:THR:HG22	5:E:72:LYS:H	1.64	0.61
12:L:61:ASP:C	12:L:62:LEU:HD12	2.25	0.61
25:Y:1169:A:O2'	25:Y:1170:C:O4'	2.17	0.61
25:Y:2147:A:O2'	25:Y:2148:G:O5'	2.18	0.61
25:Y:2584:U:C5'	25:Y:2585:U:OP2	2.47	0.61
4:D:1301:U:O2'	4:D:1302:C:OP1	2.08	0.61
17:Q:47:LYS:O	17:Q:50:THR:N	2.32	0.61
25:Y:1053:C:O3'	56:3:31:ARG:NH2	2.32	0.61
25:Y:2506:U:O2'	25:Y:2507:C:O5'	2.17	0.61
1:A:18:C:H2'	1:A:19:U:O4'	2.00	0.61
4:D:448:A:O2'	4:D:449:G:OP1	2.15	0.61
10:J:52:ARG:NH1	10:J:121:ASN:OD1	2.31	0.61
3:C:32:ASN:O	3:C:36:VAL:HG23	2.01	0.61
7:G:74:TYR:OH	7:G:96:ARG:NH1	2.33	0.61
25:Y:2116:G:N2	25:Y:2162:G:OP1	2.33	0.61
25:Y:2644:G:O2'	25:Y:2645:G:O5'	2.18	0.61
33:g:4:VAL:HG22	33:g:7:TYR:CZ	2.36	0.61
52:z:46:VAL:HG12	52:z:47:ILE:N	2.14	0.61
12:L:102:PHE:O	12:L:104:THR:N	2.34	0.61
25:Y:443:A:H2	25:Y:1245:G:H21	1.49	0.61
25:Y:1378:A:O2'	25:Y:1380:G:N7	2.34	0.61
25:Y:1941:C:O2'	25:Y:1942:C:OP1	2.19	0.61
25:Y:2357:G:N2	25:Y:2360:G:OP2	2.29	0.61
30:d:69:ALA:N	30:d:82:TYR:O	2.33	0.61
3:C:45:ASP:CA	25:Y:2063:C:H1'	2.29	0.61
11:K:112:ASP:OD1	11:K:113:ARG:N	2.34	0.61
25:Y:974:G:O2'	25:Y:989:G:N2	2.33	0.61
25:Y:1681:G:O2'	25:Y:1762:A:N3	2.26	0.61
25:Y:1715:G:N2	25:Y:1744:A:OP2	2.33	0.61
25:Y:2116:G:N1	25:Y:2163:A:OP1	2.32	0.61
57:4:62:LYS:O	57:4:65:ASN:ND2	2.32	0.61
4:D:618:C:O2	4:D:622:A:N6	2.33	0.61
5:E:144:GLU:O	5:E:148:GLY:N	2.32	0.61
10:J:145:GLU:O	10:J:148:LYS:N	2.27	0.61
25:Y:745:1MG:HN22	25:Y:750:A:H61	1.49	0.61
25:Y:1093:G:N1	25:Y:1098:A:N7	2.49	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1094:U:O4'	25:Y:1098:A:N6	2.34	0.61
25:Y:2019:A:HO2'	25:Y:2020:A:P	2.22	0.61
24:X:27:VAL:O	24:X:31:VAL:N	2.28	0.61
25:Y:2849:U:O2'	25:Y:2866:U:O2	2.17	0.61
31:e:6:ALA:O	31:e:68:ARG:NE	2.29	0.61
46:t:17:SER:O	46:t:21:ARG:N	2.33	0.61
37:k:51:ARG:O	37:k:55:ARG:N	2.33	0.61
53:0:34:ARG:NH2	53:0:41:ARG:O	2.34	0.61
54:1:61:LEU:HD12	54:1:61:LEU:O	2.01	0.61
4:D:582:C:OP2	4:D:758:C:N4	2.25	0.60
4:D:780:A:N6	4:D:801:U:OP2	2.31	0.60
24:X:9:GLU:HB2	24:X:10:PRO:HD3	1.82	0.60
25:Y:2121:G:O2'	25:Y:2122:U:OP1	2.19	0.60
35:i:5:GLN:N	35:i:21:CYS:O	2.34	0.60
2:B:75:C:H3'	2:B:76:A:H5''	1.82	0.60
4:D:406:G:N2	4:D:437:U:O2	2.34	0.60
4:D:1266:G:N2	4:D:1269:A:OP2	2.29	0.60
4:D:1279:G:OP1	13:M:9:ARG:NH2	2.34	0.60
4:D:1347:G:O2'	4:D:1348:U:OP2	2.18	0.60
25:Y:2780:G:N1	34:h:102:GLU:OE2	2.34	0.60
3:C:23:ARG:HD3	43:q:92:ARG:HA	1.82	0.60
4:D:640:A:O2'	4:D:641:U:O5'	2.19	0.60
10:J:59:GLU:O	10:J:63:VAL:HG23	2.00	0.60
25:Y:240:C:H3'	25:Y:241:A:H2'	1.83	0.60
25:Y:1053:C:O2'	56:3:31:ARG:NH2	2.34	0.60
25:Y:1454:C:O5'	38:l:63:ARG:NH2	2.33	0.60
25:Y:1798:U:OP1	27:a:269:ARG:NH2	2.34	0.60
4:D:1221:G:HO2'	4:D:1222:G:P	2.25	0.60
25:Y:1071:G:O2'	25:Y:1072:C:O4'	2.12	0.60
25:Y:2507:C:N3	25:Y:2583:G:N1	2.49	0.60
6:F:143:LEU:HD23	6:F:143:LEU:O	2.02	0.60
16:P:57:ASP:OD1	16:P:58:GLU:N	2.34	0.60
25:Y:279:A:H61	25:Y:361:G:C2'	2.15	0.60
25:Y:953:G:O2'	25:Y:2266:A:OP2	2.19	0.60
6:F:31:ASN:O	6:F:34:SER:OG	2.11	0.60
25:Y:910:A:H62	37:k:12:MET:HA	1.67	0.60
25:Y:1583:A:O2'	25:Y:1584:U:O5'	2.17	0.60
3:C:33:TYR:HE2	25:Y:2609:U:O4	1.80	0.60
4:D:81:A:O2'	4:D:82:G:O5'	2.20	0.60
25:Y:1223:G:N2	25:Y:1226:A:OP2	2.34	0.60
1:A:27:G:C2	8:H:14:LEU:CD2	2.85	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:201:G:HO2'	4:D:469:C:HO2'	1.50	0.60
4:D:1533:C:O2'	4:D:1535:C:OP1	2.09	0.60
25:Y:26:G:O2'	25:Y:27:G:O4'	2.19	0.60
25:Y:480:A:H5'	45:s:41:VAL:HG21	1.84	0.60
25:Y:774:G:HO2'	25:Y:775:G:P	2.25	0.60
46:t:26:PHE:CZ	46:t:42:LEU:HD11	2.37	0.60
4:D:765:G:H1	4:D:812:G:HO2'	1.49	0.60
25:Y:1072:C:N4	25:Y:1098:A:OP2	2.35	0.60
37:k:110:GLU:OE2	37:k:114:ARG:NH1	2.34	0.60
44:r:65:GLY:N	44:r:79:ASP:OD1	2.35	0.60
4:D:9:G:OP2	8:H:125:LYS:NZ	2.32	0.59
4:D:323:U:OP1	23:W:20:ASN:ND2	2.34	0.59
25:Y:1736:U:O2'	25:Y:1737:G:O4'	2.18	0.59
4:D:765:G:N2	4:D:813:U:OP2	2.24	0.59
25:Y:1140:C:OP2	34:h:68:LYS:NZ	2.33	0.59
25:Y:2583:G:O2'	25:Y:2584:U:OP1	2.18	0.59
4:D:507:C:OP2	4:D:508:U:O2'	2.21	0.59
25:Y:253:C:OP2	54:l:4:LYS:NZ	2.21	0.59
41:o:7:VAL:HG13	41:o:8:ILE:H	1.65	0.59
9:I:29:ILE:HD13	9:I:64:VAL:HG21	1.82	0.59
10:J:70:PRO:O	10:J:95:ARG:NH1	2.35	0.59
13:M:71:LEU:O	13:M:72:ARG:NH1	2.28	0.59
25:Y:2579:C:O2'	25:Y:2580:PSU:H5''	2.03	0.59
4:D:1240:U:O4	10:J:108:ARG:NE	2.35	0.59
25:Y:1234:U:HO2'	25:Y:1235:G:P	2.25	0.59
25:Y:2123:G:N2	25:Y:2124:G:O6	2.30	0.59
4:D:765:G:N1	4:D:812:G:O2'	2.34	0.59
17:Q:30:ILE:HD13	17:Q:44:ALA:HB2	1.85	0.59
25:Y:2112:G:O2'	25:Y:2113:U:OP1	2.20	0.59
25:Y:2295:C:OP1	39:m:10:ARG:NH1	2.36	0.59
56:3:28:ALA:HB1	56:3:81:LEU:HD23	1.84	0.59
4:D:1305:G:O2'	4:D:1306:A:O4'	2.21	0.59
25:Y:332:A:O2'	25:Y:334:C:OP2	2.16	0.59
25:Y:1995:U:O2	35:i:3:GLN:NE2	2.31	0.59
33:g:119:ALA:HB1	56:3:45:GLY:N	2.18	0.59
51:y:53:VAL:HG23	51:y:54:ILE:N	2.18	0.59
3:C:31:MET:O	3:C:35:ASN:OD1	2.21	0.59
4:D:511:C:O2'	4:D:512:U:O5'	2.11	0.59
5:E:131:LYS:O	5:E:134:LEU:N	2.36	0.59
25:Y:1084:A:N3	56:3:56:ARG:NH1	2.51	0.59
25:Y:1930:G:O2'	25:Y:1931:U:OP2	2.19	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:2278:A:OP1	37:k:11:LYS:NZ	2.28	0.59
28:b:136:ASN:ND2	28:b:139:SER:O	2.35	0.59
32:f:145:ASN:OD1	32:f:146:VAL:N	2.32	0.59
38:l:66:ALA:O	38:l:70:THR:OG1	2.19	0.59
1:A:25:U:O2	1:A:26:A:N7	2.34	0.59
4:D:298:A:O2'	4:D:299:G:P	2.61	0.59
12:L:68:GLY:O	12:L:74:GLN:NE2	2.36	0.59
25:Y:339:U:O2'	25:Y:340:A:OP1	2.19	0.59
25:Y:1837:C:O2'	25:Y:1927:A:N3	2.36	0.59
49:w:3:ALA:O	49:w:7:ARG:NH1	2.36	0.59
25:Y:1104:C:O2'	25:Y:1105:U:P	2.61	0.58
40:n:26:GLU:O	40:n:84:SER:OG	2.17	0.58
53:0:32:ALA:O	53:0:36:ALA:N	2.31	0.58
25:Y:644:A:H2'	25:Y:645:C:O4'	2.03	0.58
25:Y:2360:G:O2'	36:j:60:ARG:NH2	2.36	0.58
54:l:3:ILE:N	54:l:63:TYR:OH	2.36	0.58
25:Y:779:U:OP1	27:a:48:ILE:HG22	2.04	0.58
25:Y:1044:C:O2'	25:Y:1111:A:N6	2.35	0.58
25:Y:1084:A:N6	56:3:33:VAL:O	2.29	0.58
25:Y:2507:C:N4	25:Y:2583:G:C6	2.71	0.58
39:m:101:GLY:O	39:m:104:GLN:N	2.35	0.58
3:C:23:ARG:HG3	3:C:24:ARG:H	1.67	0.58
4:D:1489:G:O2'	4:D:1490:U:H5'	2.03	0.58
17:Q:20:PHE:CD1	17:Q:24:ALA:HB2	2.38	0.58
25:Y:2031:A:N3	25:Y:2455:G:O2'	2.36	0.58
25:Y:2359:C:O2'	54:l:53:ASP:OD2	2.15	0.58
5:E:9:LEU:HD11	5:E:13:VAL:HG22	1.85	0.58
42:p:26:ASP:O	42:p:27:ILE:HD13	2.02	0.58
4:D:438:U:C1'	4:D:440:C:H41	2.11	0.58
4:D:640:A:O2'	4:D:641:U:O4'	2.20	0.58
4:D:1347:G:O2'	4:D:1348:U:P	2.61	0.58
7:G:142:VAL:HG22	7:G:143:SER:H	1.69	0.58
32:f:20:ASN:OD1	32:f:21:VAL:N	2.37	0.58
25:Y:2110:G:H22	25:Y:2179:C:H42	1.50	0.58
4:D:408:A:C5'	7:G:109:THR:HG21	2.33	0.58
7:G:33:ILE:HG13	7:G:34:GLU:H	1.67	0.58
2:B:62:C:H2'	2:B:63:U:C6	2.38	0.58
4:D:406:G:O2'	4:D:407:U:H5'	2.04	0.58
4:D:1331:G:H4'	4:D:1332:A:O5'	2.02	0.58
4:D:1401:G:O2'	4:D:1402:4OC:P	2.62	0.58
6:F:67:ILE:O	6:F:103:ALA:N	2.34	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:10:LEU:HD22	7:G:62:ARG:NE	2.17	0.58
20:T:69:THR:HG22	20:T:70:LYS:H	1.68	0.58
25:Y:2118:U:OP1	25:Y:2147:A:O2'	2.18	0.58
25:Y:2666:C:H42	31:e:108:PHE:C	2.11	0.58
26:Z:12:C:O2'	26:Z:13:G:O5'	2.20	0.58
41:o:44:TYR:O	41:o:48:ASP:N	2.37	0.58
25:Y:1688:U:O2'	25:Y:1700:A:N7	2.36	0.58
56:3:59:LEU:HD23	56:3:62:ARG:HB3	1.85	0.58
4:D:35:G:C2'	4:D:36:C:H5'	2.35	0.57
4:D:493:A:O2'	4:D:494:G:O4'	2.22	0.57
25:Y:971:G:HO2'	25:Y:972:A:P	2.26	0.57
25:Y:1779:U:C2'	25:Y:1783:A:H62	2.17	0.57
25:Y:2747:G:OP1	31:e:137:LYS:NZ	2.22	0.57
57:4:39:LYS:O	57:4:40:CYS:SG	2.62	0.57
3:C:39:MET:SD	25:Y:2062:A:C6	2.97	0.57
25:Y:690:G:O2'	25:Y:780:G:OP1	2.22	0.57
25:Y:2858:C:O2'	25:Y:2859:G:P	2.62	0.57
2:B:17:C:C5'	2:B:18:G:C5'	2.79	0.57
2:B:18:G:C4	2:B:57:A:N6	2.72	0.57
21:U:71:ASP:OD1	21:U:72:ARG:N	2.35	0.57
25:Y:183:C:O2'	25:Y:432:A:N3	2.37	0.57
25:Y:225:C:H42	25:Y:231:A:N6	2.01	0.57
27:a:123:ILE:O	27:a:123:ILE:HG22	2.04	0.57
29:c:1:MET:N	29:c:14:VAL:O	2.37	0.57
4:D:640:A:O2'	4:D:641:U:P	2.63	0.57
4:D:1406:U:C6	4:D:1407:5MC:HM53	2.39	0.57
16:P:53:ASP:OD1	16:P:54:THR:N	2.37	0.57
25:Y:2033:A:O2'	25:Y:2035:G:OP1	2.20	0.57
32:f:80:ILE:HG22	32:f:82:SER:H	1.69	0.57
52:z:10:LEU:N	52:z:20:TYR:O	2.31	0.57
1:A:5:G:O2'	1:A:6:A:C8	2.57	0.57
4:D:781:A:O2'	4:D:1522:U:O2	2.21	0.57
4:D:992:U:O2'	4:D:993:G:OP2	2.23	0.57
7:G:16:THR:HG22	7:G:17:ASP:N	2.19	0.57
3:C:21:ASN:HA	3:C:24:ARG:HE	1.67	0.57
25:Y:958:U:OP2	37:k:14:LYS:NZ	2.38	0.57
25:Y:1063:G:O2'	25:Y:1064:C:O5'	2.13	0.57
25:Y:1133:A:O2'	25:Y:1134:A:OP2	2.23	0.57
25:Y:850:U:O2'	50:x:22:THR:OG1	2.21	0.57
25:Y:906:U:O2'	37:k:66:ARG:NH2	2.37	0.57
36:j:2:ARG:O	36:j:5:THR:OG1	2.19	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:o:105:PHE:O	41:o:109:VAL:HG23	2.05	0.57
43:q:29:VAL:HG21	43:q:69:LEU:HD23	1.85	0.57
56:3:23:LEU:HD22	56:3:93:ALA:H	1.69	0.57
3:C:23:ARG:HD2	43:q:92:ARG:HA	1.87	0.57
9:I:13:ASP:OD1	9:I:14:GLN:N	2.38	0.57
25:Y:30:G:OP2	41:o:4:LYS:NZ	2.33	0.57
25:Y:307:G:N2	25:Y:330:A:H61	2.02	0.57
25:Y:1056:G:H1	25:Y:1104:C:H42	1.52	0.57
25:Y:2248:C:HO2'	25:Y:2249:U:P	2.28	0.57
25:Y:2286:G:H4'	25:Y:2287:A:O4'	2.05	0.57
25:Y:2313:C:O4'	30:d:36:ASN:ND2	2.32	0.57
27:a:85:ASN:O	27:a:85:ASN:ND2	2.36	0.57
30:d:39:VAL:HG13	30:d:40:GLY:N	2.20	0.57
33:g:6:ALA:HB2	33:g:30:GLN:HB2	1.87	0.57
57:4:51:VAL:O	57:4:51:VAL:HG12	2.03	0.57
4:D:1090:U:O2'	4:D:1171:A:O2'	2.23	0.57
1:A:26:A:N6	8:H:19:ARG:NH2	2.45	0.57
4:D:673:A:H2'	4:D:674:G:C8	2.40	0.57
4:D:1134:G:N2	4:D:1141:C:N3	2.53	0.57
4:D:1330:U:HO2'	4:D:1331:G:P	2.28	0.57
25:Y:1322:A:OP1	43:q:11:ARG:NE	2.38	0.57
27:a:145:MET:SD	27:a:181:ARG:NH2	2.78	0.57
5:E:162:VAL:O	5:E:184:ALA:HB1	2.04	0.56
25:Y:339:U:HO2'	25:Y:340:A:P	2.28	0.56
25:Y:675:A:N3	25:Y:2443:C:O2'	2.35	0.56
56:3:87:GLU:OE2	56:3:95:LEU:N	2.38	0.56
9:I:15:SER:HA	9:I:18:VAL:HG23	1.86	0.56
25:Y:507:A:O2'	25:Y:508:A:OP2	2.15	0.56
25:Y:630:G:N1	25:Y:633:A:OP2	2.36	0.56
25:Y:1130:U:O2'	25:Y:1131:G:P	2.63	0.56
50:x:15:ARG:O	50:x:20:LYS:NZ	2.38	0.56
2:B:18:G:C5	2:B:57:A:N6	2.73	0.56
4:D:429:U:O2'	7:G:21:LYS:NZ	2.38	0.56
4:D:839:C:H42	4:D:847:G:H1	1.53	0.56
4:D:1430:A:O2'	4:D:1431:A:OP1	2.23	0.56
10:J:67:ASN:O	10:J:137:ARG:NE	2.38	0.56
19:S:2:VAL:HG23	19:S:65:ALA:HA	1.87	0.56
25:Y:56:A:O3'	53:0:46:LYS:NZ	2.38	0.56
25:Y:372:G:HO2'	25:Y:373:U:P	2.27	0.56
25:Y:747:5MC:OP2	43:q:90:LYS:NZ	2.37	0.56
25:Y:1059:G:H22	33:g:127:SER:C	2.12	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:2419:U:OP2	54:1:32:LEU:HD13	2.05	0.56
56:3:44:ALA:HB2	56:3:52:MET:HB3	1.87	0.56
56:3:81:LEU:O	56:3:82:ILE:HD13	2.04	0.56
4:D:690:G:O6	14:N:52:ARG:NH2	2.38	0.56
9:I:64:VAL:HG22	9:I:65:GLU:N	2.21	0.56
19:S:49:GLY:O	19:S:50:THR:OG1	2.19	0.56
25:Y:641:U:O2	25:Y:647:G:C6	2.58	0.56
25:Y:1020:A:O2'	25:Y:1021:A:OP2	2.21	0.56
25:Y:1845:G:H1	25:Y:1895:C:H42	1.53	0.56
2:B:18:G:C2	2:B:57:A:C6	2.93	0.56
9:I:12:PRO:O	9:I:15:SER:N	2.38	0.56
1:A:21:U:O3'	4:D:1397:C:N4	2.39	0.56
4:D:354:G:H2'	4:D:355:C:H5'	1.88	0.56
4:D:797:C:OP1	14:N:126:ARG:NH1	2.39	0.56
7:G:136:VAL:HG12	7:G:137:SER:N	2.21	0.56
25:Y:85:G:C5	25:Y:98:G:N2	2.74	0.56
25:Y:546:U:O2'	25:Y:547:A:OP1	2.20	0.56
25:Y:1834:U:HO2'	25:Y:1835:2MG:P	2.23	0.56
33:g:6:ALA:HB2	33:g:30:GLN:CG	2.36	0.56
4:D:489:C:C2	4:D:490:C:C5	2.94	0.56
13:M:85:ASP:O	13:M:89:ARG:NH1	2.39	0.56
25:Y:1327:A:HO2'	25:Y:1328:A:P	2.29	0.56
25:Y:2585:U:O2'	25:Y:2586:U:H5''	2.05	0.56
41:o:7:VAL:HG13	41:o:8:ILE:N	2.21	0.56
25:Y:1130:U:O2'	25:Y:1131:G:OP1	2.24	0.56
3:C:27:LYS:HG2	3:C:30:SER:HG	1.70	0.56
4:D:373:A:H61	4:D:391:G:H1'	1.70	0.56
25:Y:1060:U:H4'	25:Y:1061:U:O5'	2.06	0.56
37:k:42:THR:O	37:k:46:ILE:HD12	2.05	0.56
3:C:21:ASN:HB3	3:C:24:ARG:HH21	1.71	0.56
4:D:1458:G:OP1	23:W:29:THR:HG21	2.06	0.56
5:E:143:LEU:O	5:E:147:LEU:N	2.33	0.56
16:P:6:ILE:HG13	16:P:7:ASN:H	1.70	0.56
25:Y:404:A:HO2'	25:Y:405:U:P	2.29	0.56
25:Y:415:A:O2'	25:Y:1866:A:OP1	2.20	0.56
25:Y:1234:U:O2'	25:Y:1235:G:P	2.64	0.56
34:h:80:HIS:O	34:h:81:ILE:HG22	2.05	0.56
1:A:24:A:H3'	1:A:25:U:H5'	1.88	0.55
1:A:27:G:C2	8:H:14:LEU:HD22	2.41	0.55
2:B:28:C:H42	2:B:42:G:H1	1.54	0.55
5:E:51:GLU:O	5:E:54:ALA:HB3	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:V:10:ILE:HG21	22:V:40:PHE:HE2	1.71	0.55
25:Y:1653:G:O6	38:l:11:ASN:N	2.38	0.55
25:Y:1416:G:O2'	25:Y:1417:C:O5'	2.21	0.55
26:Z:40:U:N3	26:Z:44:G:OP2	2.37	0.55
18:R:21:THR:HG23	18:R:22:GLY:N	2.21	0.55
25:Y:190:A:OP2	48:v:25:LYS:NZ	2.26	0.55
25:Y:1378:A:O2'	25:Y:1380:G:OP2	2.20	0.55
25:Y:2305:U:H2'	25:Y:2306:C:C6	2.41	0.55
1:A:6:A:C2	2:B:34:G:N2	2.52	0.55
3:C:33:TYR:O	3:C:36:VAL:CB	2.54	0.55
4:D:1221:G:O2'	4:D:1222:G:P	2.64	0.55
4:D:1403:C:O2'	4:D:1404:C:H5'	2.05	0.55
25:Y:510:C:H2'	25:Y:511:U:O4'	2.06	0.55
25:Y:1218:G:N1	25:Y:1232:G:N7	2.54	0.55
25:Y:1364:G:H8	48:v:1:SER:H1	1.53	0.55
25:Y:2286:G:H4'	25:Y:2287:A:O5'	2.05	0.55
4:D:95:C:O2'	4:D:96:U:OP1	2.24	0.55
4:D:491:G:O2'	4:D:492:C:O5'	2.24	0.55
25:Y:248:G:O2'	25:Y:2432:A:OP1	2.13	0.55
25:Y:276:U:H1'	25:Y:278:A:H62	1.72	0.55
25:Y:587:C:O2	36:j:33:ARG:NH1	2.40	0.55
25:Y:859:G:O2'	25:Y:860:U:P	2.64	0.55
25:Y:2458:G:HO2'	25:Y:2490:G:H1	1.55	0.55
6:F:133:MET:HG3	6:F:150:VAL:HG21	1.89	0.55
30:d:173:ASP:O	30:d:174:PHE:HB3	2.07	0.55
36:j:79:LEU:HD12	36:j:112:LEU:HD12	1.88	0.55
44:r:35:ALA:HB3	44:r:38:ALA:HB2	1.89	0.55
1:A:29:A:OP2	1:A:29:A:H8	1.89	0.55
4:D:272:C:C2	4:D:273:U:C5	2.95	0.55
4:D:1399:C:H1'	4:D:1400:C:OP2	2.06	0.55
7:G:193:ASP:OD1	7:G:194:ILE:N	2.38	0.55
25:Y:850:U:HO2'	50:x:22:THR:HG1	1.55	0.55
25:Y:903:C:O2'	25:Y:904:G:O5'	2.23	0.55
25:Y:1208:C:H2'	25:Y:1209:U:O4'	2.07	0.55
33:g:76:ALA:HB1	33:g:135:MET:CE	2.35	0.55
44:r:61:LEU:HD11	44:r:82:LYS:HG2	1.87	0.55
46:t:77:VAL:HG11	46:t:79:ARG:NH1	2.22	0.55
56:3:77:VAL:O	56:3:77:VAL:HG12	2.06	0.55
4:D:1403:C:O2	4:D:1500:A:N6	2.40	0.55
25:Y:2742:G:OP2	55:2:24:ARG:NH1	2.39	0.55
25:Y:2749:A:OP1	31:e:1:SER:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:23:ARG:CG	3:C:24:ARG:N	2.70	0.55
4:D:671:G:O2'	9:I:79:ARG:NH2	2.37	0.55
4:D:1300:G:HO2'	4:D:1301:U:P	2.27	0.55
9:I:36:ILE:HG23	9:I:36:ILE:O	2.06	0.55
25:Y:320:A:O2'	25:Y:322:A:OP2	2.15	0.55
25:Y:572:A:OP2	42:p:79:ARG:NH1	2.40	0.55
25:Y:859:G:O2'	25:Y:860:U:OP2	2.21	0.55
27:a:5:CYS:SG	27:a:12:ARG:NH2	2.79	0.55
31:e:41:GLU:O	31:e:52:GLY:N	2.40	0.55
1:A:22:C:H4'	1:A:23:U:C4'	2.37	0.55
3:C:39:MET:CG	25:Y:2062:A:N6	2.69	0.55
4:D:372:C:O2'	4:D:387:U:O4	2.07	0.55
4:D:652:U:HO2'	4:D:653:U:P	2.30	0.55
6:F:184:ASN:OD1	6:F:185:THR:N	2.37	0.55
25:Y:676:A:H62	25:Y:802:A:N6	2.02	0.55
25:Y:2109:U:H2'	25:Y:2110:G:C4	2.42	0.55
25:Y:2499:C:HO2'	25:Y:2500:U:P	2.29	0.55
57:4:56:ARG:O	57:4:59:ARG:N	2.40	0.55
3:C:23:ARG:HH22	43:q:92:ARG:HH21	1.55	0.54
25:Y:889:C:O2'	25:Y:890:C:OP1	2.22	0.54
25:Y:989:G:OP2	50:x:11:SER:OG	2.15	0.54
25:Y:1055:G:H2'	25:Y:1056:G:C8	2.42	0.54
25:Y:1327:A:O2'	25:Y:1328:A:OP1	2.22	0.54
25:Y:1672:A:HO2'	25:Y:1673:G:P	2.30	0.54
29:c:188:MET:HE2	29:c:193:VAL:HG22	1.89	0.54
32:f:130:VAL:O	32:f:142:VAL:N	2.31	0.54
1:A:28:A:HO2'	1:A:29:A:H8	1.54	0.54
4:D:59:A:H3'	4:D:331:G:H22	1.72	0.54
4:D:263:A:OP1	23:W:73:ARG:NH1	2.40	0.54
13:M:65:TYR:HB3	17:Q:96:LEU:HD11	1.89	0.54
18:R:35:ILE:HG13	18:R:58:MET:HE2	1.89	0.54
25:Y:748:G:OP2	43:q:88:ARG:NE	2.40	0.54
25:Y:1081:U:O2	25:Y:1081:U:H2'	2.08	0.54
25:Y:1084:A:O3'	25:Y:1105:U:O2'	2.23	0.54
25:Y:2832:U:O2'	25:Y:2833:U:P	2.65	0.54
4:D:1319:A:O2'	4:D:1323:G:N7	2.23	0.54
4:D:1348:U:OP1	12:L:111:GLU:N	2.32	0.54
7:G:136:VAL:HG12	7:G:137:SER:H	1.71	0.54
10:J:15:PRO:CA	12:L:45:MET:HE1	2.37	0.54
14:N:60:PHE:O	14:N:63:GLN:N	2.40	0.54
19:S:36:VAL:O	19:S:36:VAL:HG13	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1627:G:N3	25:Y:1640:A:N1	2.56	0.54
33:g:6:ALA:HB2	33:g:30:GLN:CD	2.32	0.54
33:g:102:ARG:NH1	33:g:106:GLN:OE1	2.41	0.54
39:m:11:ALA:HB2	39:m:96:GLY:N	2.22	0.54
3:C:23:ARG:CD	43:q:92:ARG:CA	2.84	0.54
4:D:81:A:O2'	4:D:82:G:O4'	2.17	0.54
4:D:969:A:O2'	4:D:970:C:O4'	2.24	0.54
4:D:1164:G:C2	4:D:1165:U:C5	2.95	0.54
5:E:19:THR:HG23	5:E:20:ARG:N	2.22	0.54
12:L:66:VAL:HG22	12:L:67:LYS:N	2.23	0.54
25:Y:1568:G:OP2	27:a:62:ARG:NH2	2.35	0.54
4:D:476:U:O2'	4:D:477:C:O5'	2.25	0.54
4:D:680:C:O2'	27:a:268:ARG:NH2	2.40	0.54
4:D:1401:G:HO2'	4:D:1402:4OC:P	2.30	0.54
7:G:98:ASP:OD1	7:G:99:ASN:N	2.40	0.54
25:Y:966:G:O2'	25:Y:967:U:OP1	2.23	0.54
25:Y:1942:C:O2'	25:Y:1943:U:P	2.65	0.54
33:g:44:LYS:HG2	33:g:70:THR:HG22	1.88	0.54
38:l:37:THR:HG22	38:l:110:MET:HE1	1.89	0.54
46:t:76:ASP:OD1	46:t:77:VAL:N	2.37	0.54
25:Y:954:G:O2'	25:Y:955:PSU:H5''	2.07	0.54
25:Y:971:G:O2'	25:Y:972:A:P	2.66	0.54
25:Y:2038:G:H2'	25:Y:2039:U:O4'	2.07	0.54
25:Y:2512:C:OP2	28:b:128:ARG:NH2	2.40	0.54
26:Z:3:C:O2'	26:Z:4:C:P	2.65	0.54
26:Z:43:C:OP1	57:4:2:LYS:N	2.39	0.54
56:3:118:ILE:HB	56:3:119:PRO:CD	2.38	0.54
5:E:19:THR:HG23	5:E:20:ARG:H	1.72	0.54
6:F:36:PHE:O	6:F:40:GLN:OE1	2.26	0.54
25:Y:402:A:O2'	25:Y:403:U:O5'	2.24	0.54
25:Y:566:U:O2'	25:Y:809:G:OP2	2.20	0.54
26:Z:3:C:O2'	26:Z:4:C:O5'	2.22	0.54
42:p:49:ILE:HB	42:p:51:VAL:O	2.08	0.54
2:B:17:C:C4'	2:B:18:G:O5'	2.34	0.54
1:A:25:U:H3	8:H:19:ARG:CZ	2.21	0.54
3:C:44:HIS:O	3:C:44:HIS:ND1	2.41	0.54
4:D:477:C:H2'	4:D:478:A:C8	2.43	0.54
4:D:947:G:O2'	4:D:1306:A:O2'	2.26	0.54
4:D:1430:A:HO2'	4:D:1431:A:P	2.29	0.54
13:M:32:THR:HG23	13:M:33:GLY:N	2.23	0.54
20:T:49:ASN:OD1	20:T:50:ASN:N	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:781:A:O2'	25:Y:1789:A:O4'	2.25	0.54
43:q:70:LYS:N	43:q:108:SER:O	2.40	0.54
4:D:981:U:OP1	17:Q:8:ARG:NH1	2.39	0.54
25:Y:2123:G:O2'	25:Y:2124:G:P	2.66	0.54
25:Y:2406:A:H4'	25:Y:2407:A:O5'	2.07	0.54
25:Y:2578:G:C2	25:Y:2579:C:C5	2.96	0.54
3:C:21:ASN:HA	3:C:24:ARG:HG2	1.89	0.53
4:D:176:C:O2'	4:D:177:G:OP1	2.24	0.53
4:D:408:A:H5'	7:G:109:THR:HG21	1.88	0.53
4:D:1405:G:H21	4:D:1518:MA6:H8	1.73	0.53
24:X:32:ARG:HG3	24:X:33:ARG:HG2	1.91	0.53
25:Y:373:U:H3	25:Y:401:A:H62	1.54	0.53
25:Y:1508:A:H2'	25:Y:1509:A:O4'	2.07	0.53
42:p:49:ILE:HG21	42:p:53:PHE:O	2.07	0.53
56:3:64:VAL:O	56:3:64:VAL:HG12	2.08	0.53
4:D:448:A:HO2'	4:D:449:G:P	2.31	0.53
13:M:88:MET:O	13:M:89:ARG:HG2	2.08	0.53
25:Y:78:U:H2'	25:Y:79:C:C6	2.43	0.53
25:Y:339:U:O2'	25:Y:340:A:P	2.65	0.53
25:Y:1076:C:O2'	25:Y:1077:A:OP1	2.26	0.53
25:Y:2507:C:C2	25:Y:2583:G:C2	2.95	0.53
51:y:53:VAL:HG23	51:y:54:ILE:H	1.74	0.53
4:D:1405:G:O2'	4:D:1518:MA6:O2'	1.96	0.53
19:S:69:ASP:OD1	19:S:70:ARG:N	2.40	0.53
25:Y:100:U:H4'	25:Y:101:A:O5'	2.07	0.53
25:Y:372:G:O2'	25:Y:373:U:P	2.66	0.53
25:Y:690:G:O2'	27:a:216:ARG:NH1	2.40	0.53
25:Y:1640:A:H2'	25:Y:1641:A:O4'	2.08	0.53
30:d:162:ASP:OD1	30:d:163:GLU:N	2.42	0.53
31:e:10:VAL:HG13	31:e:10:VAL:O	2.07	0.53
42:p:69:GLY:N	42:p:91:GLN:O	2.34	0.53
46:t:48:MET:SD	46:t:51:GLN:NE2	2.82	0.53
21:U:70:THR:HG23	21:U:71:ASP:N	2.22	0.53
25:Y:2199:A:OP1	48:v:36:ARG:NH2	2.40	0.53
1:A:29:A:N6	7:G:44:LYS:CE	2.71	0.53
4:D:1211:U:H4'	4:D:1212:U:OP1	2.08	0.53
25:Y:604:G:C6	25:Y:625:G:N1	2.77	0.53
25:Y:813:U:O2'	25:Y:1225:G:O2'	2.27	0.53
25:Y:1104:C:C2'	25:Y:1105:U:O4'	2.56	0.53
25:Y:1969:A:O2'	25:Y:1972:G:O2'	2.25	0.53
25:Y:2748:A:N7	25:Y:2753:A:N6	2.56	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Z:35:C:C4	26:Z:36:C:H1'	2.43	0.53
56:3:58:THR:OG1	56:3:80:THR:O	2.23	0.53
12:L:66:VAL:HG22	12:L:67:LYS:H	1.73	0.53
25:Y:1291:C:C2	25:Y:1292:G:C8	2.96	0.53
25:Y:1687:G:O2'	25:Y:1688:U:O4'	2.23	0.53
44:r:29:THR:HG23	44:r:85:VAL:O	2.09	0.53
3:C:23:ARG:NH2	43:q:92:ARG:NH2	2.57	0.53
4:D:197:A:N1	4:D:220:G:O2'	2.38	0.53
4:D:580:C:H2'	4:D:581:G:O4'	2.09	0.53
4:D:1238:A:H62	4:D:1301:U:H3	1.57	0.53
4:D:1494:G:O2'	4:D:1495:U:P	2.67	0.53
25:Y:372:G:O2'	25:Y:373:U:O5'	2.24	0.53
25:Y:2642:G:OP2	34:h:85:LYS:NZ	2.37	0.53
27:a:243:PRO:O	27:a:250:GLN:NE2	2.42	0.53
28:b:3:GLY:C	28:b:4:LEU:HD12	2.34	0.53
29:c:88:ARG:O	29:c:90:GLN:N	2.42	0.53
56:3:92:ALA:O	56:3:129:LEU:HD22	2.09	0.53
4:D:335:C:O2'	4:D:1433:A:N3	2.40	0.53
4:D:518:C:H4'	4:D:519:C:H5''	1.90	0.53
4:D:819:A:H3'	4:D:820:U:H5'	1.90	0.53
4:D:1015:G:O2'	4:D:1016:A:O4'	2.22	0.53
25:Y:1061:U:H4'	25:Y:1070:A:C4	2.44	0.53
25:Y:1111:A:HO2'	25:Y:1112:G:P	2.31	0.53
25:Y:2111:U:O2'	25:Y:2119:A:N7	2.34	0.53
25:Y:2643:G:HO2'	25:Y:2644:G:P	2.32	0.53
29:c:91:ASP:OD2	29:c:93:SER:OG	2.17	0.53
3:C:21:ASN:CA	3:C:24:ARG:HE	2.20	0.53
4:D:414:A:H2'	4:D:415:A:O4'	2.08	0.53
25:Y:402:A:O2'	25:Y:403:U:P	2.67	0.53
25:Y:481:G:O2'	25:Y:482:A:O5'	2.27	0.53
25:Y:727:A:H2'	25:Y:728:G:O4'	2.09	0.53
25:Y:1930:G:O2'	25:Y:1931:U:P	2.66	0.53
25:Y:2678:C:H2'	25:Y:2679:A:O4'	2.09	0.53
26:Z:5:U:OP1	26:Z:61:G:O2'	2.26	0.53
1:A:23:U:O3'	1:A:24:A:H4'	2.09	0.53
2:B:17:C:O2	2:B:60:U:O2'	2.25	0.53
4:D:95:C:O2'	4:D:96:U:P	2.67	0.53
4:D:1221:G:O2'	4:D:1222:G:OP1	2.26	0.53
4:D:1494:G:O2'	4:D:1495:U:O5'	2.27	0.53
7:G:61:ARG:NH1	7:G:68:GLU:OE1	2.42	0.53
21:U:27:THR:O	21:U:30:ASN:N	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:960:A:H5''	25:Y:961:C:P	2.49	0.53
25:Y:1941:C:HO2'	25:Y:1942:C:P	2.32	0.53
4:D:542:G:OP1	7:G:9:LYS:NZ	2.29	0.52
5:E:87:ASP:OD2	5:E:88:GLN:NE2	2.41	0.52
14:N:71:ASP:O	14:N:72:ALA:HB3	2.08	0.52
25:Y:243:U:OP2	54:1:7:ARG:NH1	2.39	0.52
25:Y:2048:G:O2'	25:Y:2049:G:P	2.67	0.52
25:Y:2687:U:H2'	25:Y:2688:G:O4'	2.10	0.52
4:D:1438:G:OP1	23:W:28:ARG:NH1	2.42	0.52
17:Q:2:LYS:O	17:Q:5:MET:N	2.37	0.52
25:Y:614:A:O2'	25:Y:615:U:O5'	2.25	0.52
25:Y:1058:U:C2	33:g:117:THR:HG23	2.45	0.52
25:Y:2028:U:O4	25:Y:2033:A:N7	2.42	0.52
4:D:1196:A:O2'	4:D:1197:A:P	2.67	0.52
4:D:1496:C:H2'	4:D:1497:G:O4'	2.09	0.52
14:N:26:PHE:O	14:N:57:SER:OG	2.27	0.52
14:N:30:ILE:CD1	14:N:45:THR:HG22	2.39	0.52
24:X:28:LEU:O	24:X:32:ARG:N	2.42	0.52
25:Y:651:G:O2'	25:Y:652:U:H5'	2.08	0.52
25:Y:931:U:HO2'	25:Y:932:U:P	2.32	0.52
25:Y:1508:A:HO2'	25:Y:1509:A:P	2.33	0.52
25:Y:2123:G:HO2'	25:Y:2124:G:P	2.32	0.52
25:Y:2156:G:N7	25:Y:2157:G:N2	2.57	0.52
25:Y:2343:U:O2'	25:Y:2373:G:O2'	2.07	0.52
30:d:19:PHE:O	30:d:20:ASN:OD1	2.27	0.52
3:C:23:ARG:HH22	43:q:92:ARG:NH2	2.07	0.52
4:D:176:C:HO2'	4:D:177:G:P	2.33	0.52
8:H:104:ILE:HG23	8:H:104:ILE:O	2.08	0.52
25:Y:189:G:O6	25:Y:205:G:O2'	2.26	0.52
25:Y:1020:A:H1'	25:Y:1021:A:OP2	2.09	0.52
25:Y:2507:C:C4	25:Y:2583:G:C6	2.98	0.52
4:D:978:A:C5	4:D:1319:A:C2	2.98	0.52
25:Y:1054:A:H2'	25:Y:1055:G:O4'	2.09	0.52
25:Y:1349:C:C2	25:Y:1350:C:C5	2.97	0.52
25:Y:1672:A:O2'	25:Y:1673:G:P	2.68	0.52
4:D:1495:U:H2'	4:D:1496:C:H5'	1.92	0.52
5:E:208:ALA:O	5:E:211:LEU:N	2.43	0.52
13:M:77:VAL:O	13:M:77:VAL:HG12	2.09	0.52
25:Y:807:U:C2	25:Y:808:G:C8	2.97	0.52
25:Y:1195:G:C2	25:Y:1196:C:C5	2.98	0.52
25:Y:1437:C:O2'	25:Y:1516:G:O2'	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:a:48:ILE:O	27:a:48:ILE:HG23	2.09	0.52
44:r:61:LEU:HD12	44:r:61:LEU:C	2.35	0.52
4:D:1349:A:H62	4:D:1373:G:H21	1.57	0.52
5:E:20:ARG:HG3	5:E:21:TYR:N	2.25	0.52
25:Y:374:A:C5	25:Y:401:A:N6	2.78	0.52
25:Y:1028:A:N3	25:Y:2486:C:O2'	2.42	0.52
25:Y:1087:G:C4	25:Y:1089:A:H1'	2.45	0.52
25:Y:1583:A:HO2'	25:Y:1584:U:P	2.33	0.52
23:W:34:VAL:HG11	23:W:78:LEU:HD21	1.91	0.52
25:Y:1062:G:O2'	33:g:77:VAL:HG13	2.10	0.52
25:Y:1582:C:O2'	25:Y:1585:C:N3	2.42	0.52
25:Y:2496:C:C2'	25:Y:2497:A:O5'	2.57	0.52
25:Y:2583:G:HO2'	25:Y:2584:U:P	2.33	0.52
26:Z:36:C:O2	26:Z:36:C:H2'	2.08	0.52
4:D:1240:U:O2'	4:D:1241:G:OP1	2.23	0.52
5:E:95:TRP:CD1	5:E:99:MET:HE3	2.44	0.52
8:H:9:GLU:OE1	8:H:9:GLU:N	2.43	0.52
15:O:32:VAL:O	15:O:32:VAL:HG12	2.10	0.52
25:Y:382:A:H2'	25:Y:383:C:O4'	2.09	0.52
25:Y:569:U:HO2'	25:Y:570:G:P	2.32	0.52
25:Y:760:G:H2'	25:Y:761:A:O4'	2.10	0.52
2:B:8:U:O4'	2:B:48:C:O2'	2.26	0.52
4:D:811:C:O2'	4:D:901:A:N1	2.43	0.52
4:D:1200:C:O2'	4:D:1201:A:P	2.68	0.52
25:Y:25:U:O2'	25:Y:26:G:P	2.66	0.52
25:Y:245:G:N7	54:l:7:ARG:NH2	2.57	0.52
25:Y:464:U:O2'	25:Y:465:G:P	2.65	0.52
25:Y:733:G:N2	25:Y:734:A:N7	2.57	0.52
42:p:49:ILE:HG22	42:p:54:VAL:HA	1.92	0.52
55:2:14:CYS:SG	55:2:33:HIS:ND1	2.83	0.52
1:A:27:G:H2'	1:A:28:A:N9	2.17	0.51
5:E:187:ASP:OD1	5:E:188:THR:N	2.37	0.51
11:K:50:VAL:O	11:K:50:VAL:HG22	2.09	0.51
25:Y:421:C:HO2'	25:Y:422:A:P	2.33	0.51
25:Y:1055:G:H4'	25:Y:1056:G:OP1	2.10	0.51
25:Y:1629:U:O4	25:Y:1630:A:N6	2.43	0.51
25:Y:1685:C:C2	25:Y:1686:C:C5	2.97	0.51
34:h:77:HIS:HD1	34:h:79:GLY:H	1.57	0.51
38:l:69:ARG:O	38:l:71:ARG:N	2.40	0.51
4:D:1074:G:O6	4:D:1083:U:O4	2.28	0.51
20:T:16:MET:CE	20:T:19:SER:HG	2.23	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:507:A:O2'	25:Y:508:A:P	2.68	0.51
25:Y:810:U:O4	36:j:30:THR:HG22	2.10	0.51
25:Y:1079:C:O2	33:g:131:THR:N	2.44	0.51
38:l:56:LYS:NZ	38:l:87:PHE:O	2.43	0.51
39:m:27:VAL:HG21	39:m:40:ILE:HD12	1.92	0.51
56:3:27:VAL:O	56:3:83:ALA:N	2.44	0.51
1:A:6:A:HO2'	1:A:8:A:P	2.28	0.51
1:A:22:C:C5'	1:A:23:U:H5'	2.40	0.51
1:A:29:A:N6	7:G:44:LYS:HE3	2.25	0.51
4:D:403:C:O2'	4:D:404:G:P	2.68	0.51
10:J:96:ASN:OD1	10:J:97:ALA:N	2.43	0.51
25:Y:379:G:C6	25:Y:396:G:O6	2.64	0.51
25:Y:465:G:O2'	25:Y:466:A:O4'	2.23	0.51
25:Y:703:U:H2'	25:Y:704:G:O4'	2.10	0.51
25:Y:2643:G:O2'	25:Y:2644:G:OP1	2.28	0.51
29:c:48:THR:O	29:c:52:VAL:HG23	2.11	0.51
33:g:13:ALA:O	33:g:16:MET:N	2.41	0.51
45:s:95:PHE:O	45:s:99:SER:HA	2.10	0.51
4:D:126:G:OP1	4:D:605:U:O2'	2.28	0.51
4:D:464:U:N3	4:D:467:U:OP2	2.39	0.51
9:I:5:GLU:HA	9:I:63:ASN:HA	1.92	0.51
25:Y:658:U:C2	25:Y:659:G:C8	2.98	0.51
25:Y:2644:G:O2'	25:Y:2645:G:P	2.68	0.51
43:q:53:SER:O	43:q:57:ASN:N	2.38	0.51
57:4:58:ASP:OD1	57:4:59:ARG:N	2.42	0.51
2:B:34:G:OP2	12:L:128:LYS:NZ	2.40	0.51
4:D:999:C:N3	4:D:1042:A:N6	2.58	0.51
4:D:1359:C:O2'	4:D:1362:A:N6	2.44	0.51
25:Y:1062:G:O6	25:Y:1076:C:N4	2.44	0.51
25:Y:2650:U:C2	25:Y:2671:G:N2	2.79	0.51
25:Y:2841:C:C2	25:Y:2877:G:N2	2.79	0.51
4:D:269:C:H2'	4:D:270:A:C8	2.46	0.51
25:Y:279:A:HO2'	25:Y:280:U:P	2.32	0.51
25:Y:2602:A:H5'	25:Y:2603:G:OP1	2.10	0.51
30:d:105:ILE:HG13	30:d:106:ALA:N	2.25	0.51
31:e:139:VAL:O	31:e:142:GLN:N	2.44	0.51
1:A:27:G:C2'	1:A:28:A:H8	2.02	0.51
3:C:36:VAL:HG13	3:C:39:MET:HE2	1.92	0.51
4:D:373:A:C2	4:D:374:A:C8	2.99	0.51
13:M:9:ARG:NH2	13:M:99:GLN:OE1	2.44	0.51
13:M:57:VAL:HG22	13:M:58:ASN:H	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:X:13:VAL:HG13	24:X:15:LEU:HG	1.91	0.51
25:Y:301:G:OP2	45:s:81:ARG:NH1	2.39	0.51
25:Y:2028:U:H3	25:Y:2033:A:H62	1.57	0.51
25:Y:2450:A:N6	25:Y:2501:C:O2	2.44	0.51
25:Y:2526:G:H21	55:2:1:MET:N	2.09	0.51
25:Y:2580:PSU:O2'	25:Y:2581:G:P	2.68	0.51
13:M:59:LYS:O	13:M:62:ARG:NH1	2.44	0.51
25:Y:863:A:O2'	26:Z:100:G:N3	2.41	0.51
25:Y:1310:G:O6	25:Y:1311:G:N2	2.44	0.51
25:Y:1782:U:O2	25:Y:2608:G:O2'	2.29	0.51
25:Y:2688:G:N1	25:Y:2720:U:OP2	2.34	0.51
25:Y:2808:G:H4'	25:Y:2809:A:O5'	2.11	0.51
30:d:148:VAL:O	30:d:148:VAL:HG12	2.09	0.51
14:N:122:PRO:CG	24:X:33:ARG:HA	2.41	0.51
25:Y:224:U:O4	25:Y:225:C:N4	2.44	0.51
25:Y:636:G:O2'	25:Y:637:A:O5'	2.22	0.51
25:Y:647:G:H21	25:Y:2351:G:H5'	1.75	0.51
25:Y:1348:C:C5	25:Y:1349:C:C5	2.99	0.51
25:Y:2090:A:N6	25:Y:2230:G:O6	2.43	0.51
25:Y:2125:G:N2	25:Y:2172:U:OP2	2.44	0.51
25:Y:2496:C:HO2'	25:Y:2497:A:P	2.25	0.51
26:Z:21:G:H2'	26:Z:22:U:O4'	2.11	0.51
26:Z:117:G:H2'	26:Z:118:C:C6	2.46	0.51
30:d:118:ALA:HB1	30:d:166:ARG:HE	1.74	0.51
33:g:48:ILE:HD11	33:g:54:ILE:HD11	1.92	0.51
53:0:18:PHE:O	53:0:21:ARG:N	2.44	0.51
4:D:490:C:OP1	7:G:145:ARG:NH2	2.43	0.51
4:D:868:C:H2'	4:D:869:G:O4'	2.11	0.51
5:E:31:PHE:O	5:E:39:ILE:N	2.36	0.51
17:Q:9:GLU:OE2	17:Q:60:GLN:NE2	2.44	0.51
25:Y:414:C:O2	25:Y:1864:U:O2'	2.20	0.51
25:Y:853:C:H42	25:Y:925:A:N6	2.09	0.51
25:Y:2110:G:H22	25:Y:2179:C:N4	2.09	0.51
36:j:95:LEU:O	36:j:98:ALA:N	2.44	0.51
38:l:69:ARG:C	38:l:71:ARG:H	2.19	0.51
4:D:819:A:H3'	4:D:820:U:C5'	2.41	0.50
4:D:1100:C:OP1	5:E:94:ARG:NE	2.33	0.50
4:D:1160:G:C2	4:D:1161:C:C6	2.99	0.50
4:D:1415:G:C6	4:D:1486:G:C6	3.00	0.50
4:D:1518:MA6:C9	4:D:1519:MA6:H103	2.41	0.50
6:F:187:GLU:OE1	6:F:187:GLU:N	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:76:ARG:NE	11:K:78:SER:O	2.44	0.50
22:V:9:PHE:O	22:V:10:ILE:HG23	2.11	0.50
25:Y:1097:U:O4	33:g:30:GLN:NE2	2.44	0.50
25:Y:1744:A:H2'	25:Y:1745:A:O4'	2.11	0.50
29:c:131:THR:HG22	29:c:160:ALA:O	2.11	0.50
31:e:8:VAL:O	31:e:49:LEU:N	2.43	0.50
47:u:29:ALA:N	47:u:60:ASP:OD1	2.44	0.50
4:D:403:C:O2'	4:D:404:G:O5'	2.28	0.50
4:D:686:U:HO2'	4:D:687:A:P	2.30	0.50
4:D:1158:C:C4	4:D:1160:G:C8	2.99	0.50
4:D:1402:4OC:O2'	4:D:1403:C:H5'	2.12	0.50
22:V:10:ILE:HG22	22:V:37:SER:HB2	1.93	0.50
25:Y:568:U:N3	25:Y:571:U:OP2	2.44	0.50
25:Y:614:A:HO2'	25:Y:615:U:P	2.34	0.50
25:Y:1340:U:OP1	44:r:84:TYR:OH	2.20	0.50
25:Y:1358:G:N1	25:Y:1372:U:OP2	2.37	0.50
25:Y:1927:A:C2'	25:Y:1928:A:O5'	2.59	0.50
25:Y:2795:C:H2'	25:Y:2796:U:O4'	2.10	0.50
31:e:136:ASP:OD2	31:e:139:VAL:HG23	2.11	0.50
33:g:20:SER:O	33:g:23:VAL:N	2.41	0.50
4:D:232:G:O2'	4:D:262:A:N6	2.44	0.50
4:D:271:C:C2	4:D:272:C:C5	2.99	0.50
4:D:438:U:C4	4:D:496:A:C8	2.99	0.50
4:D:641:U:C5'	4:D:642:A:OP1	2.60	0.50
4:D:855:U:OP2	4:D:871:U:N3	2.38	0.50
25:Y:182:A:N3	25:Y:433:C:O2'	2.41	0.50
25:Y:244:A:H62	25:Y:254:G:H21	1.58	0.50
25:Y:1083:U:H4'	56:3:41:LEU:HD13	1.93	0.50
25:Y:1093:G:N2	25:Y:1098:A:C6	2.77	0.50
25:Y:1111:A:O2'	25:Y:1112:G:P	2.69	0.50
26:Z:46:A:C5	26:Z:47:C:C5	2.99	0.50
7:G:27:ILE:HG21	7:G:33:ILE:HG21	1.93	0.50
25:Y:1294:U:N3	25:Y:1295:C:C5	2.79	0.50
25:Y:1527:G:H21	25:Y:1545:A:H62	1.58	0.50
33:g:10:LEU:HD12	33:g:10:LEU:O	2.11	0.50
4:D:316:C:C2	4:D:317:U:C5	2.99	0.50
9:I:23:GLU:O	9:I:27:ALA:HB2	2.11	0.50
15:O:13:ARG:NH1	15:O:14:LYS:O	2.43	0.50
25:Y:1598:A:C5	25:Y:1599:U:C5	3.00	0.50
40:n:99:LEU:O	40:n:99:LEU:HD23	2.12	0.50
44:r:8:LEU:O	49:w:29:ARG:NH1	2.38	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:28:A:O2'	1:A:29:A:C8	2.64	0.50
4:D:561:U:C2'	4:D:562:U:OP2	2.60	0.50
7:G:20:LEU:O	7:G:109:THR:HG22	2.12	0.50
7:G:124:VAL:HG23	7:G:141:VAL:O	2.12	0.50
13:M:88:MET:O	13:M:90:LEU:N	2.44	0.50
25:Y:965:C:H2'	25:Y:966:G:H5'	1.93	0.50
25:Y:1103:A:HO2'	25:Y:1104:C:P	2.34	0.50
25:Y:1196:C:C2	25:Y:1197:G:C8	3.00	0.50
25:Y:1244:A:O2'	29:c:29:HIS:NE2	2.38	0.50
25:Y:1495:A:H2'	25:Y:1496:A:O4'	2.11	0.50
25:Y:2112:G:HO2'	25:Y:2113:U:P	2.34	0.50
25:Y:2115:G:O3'	25:Y:2166:U:N3	2.45	0.50
25:Y:2815:C:C2	25:Y:2816:G:C8	3.00	0.50
4:D:600:A:N6	4:D:639:G:O6	2.45	0.50
4:D:1180:A:OP2	12:L:98:ARG:NH2	2.35	0.50
8:H:88:HIS:CE1	8:H:89:THR:HG1	2.29	0.50
12:L:51:LEU:HB3	12:L:57:VAL:HG22	1.93	0.50
16:P:113:LYS:HB2	16:P:114:PRO:HD3	1.94	0.50
25:Y:1054:A:C2	25:Y:1084:A:N3	2.80	0.50
29:c:7:ASP:OD1	29:c:8:ALA:N	2.43	0.50
33:g:91:LYS:N	33:g:92:PRO:HD3	2.27	0.50
33:g:119:ALA:HB1	56:3:45:GLY:H	1.76	0.50
36:j:110:VAL:HG11	36:j:131:ALA:HB1	1.94	0.50
47:u:37:ARG:O	47:u:53:HIS:ND1	2.42	0.50
4:D:35:G:H2'	4:D:36:C:H5'	1.94	0.50
4:D:401:C:O2'	4:D:621:A:N3	2.38	0.50
8:H:98:ALA:HB2	8:H:123:LEU:HD12	1.93	0.50
12:L:5:TYR:HB2	12:L:20:ILE:HG23	1.93	0.50
25:Y:1106:G:O2'	56:3:56:ARG:HG2	2.12	0.50
25:Y:1364:G:OP2	48:v:1:SER:N	2.42	0.50
25:Y:1705:A:HO2'	25:Y:1706:C:P	2.34	0.50
25:Y:1910:G:O2'	25:Y:1911:PSU:H5''	2.11	0.50
25:Y:2121:G:HO2'	25:Y:2122:U:P	2.34	0.50
25:Y:2652:C:H2'	25:Y:2653:U:O4'	2.12	0.50
25:Y:2703:C:C2	25:Y:2704:C:C5	3.00	0.50
30:d:120:SER:O	30:d:121:PHE:CD1	2.64	0.50
36:j:127:VAL:HG12	36:j:128:THR:N	2.27	0.50
37:k:53:MET:HE1	37:k:103:TYR:CD1	2.46	0.50
41:o:104:ALA:O	41:o:108:LEU:N	2.43	0.50
56:3:109:LYS:HG3	56:3:109:LYS:O	2.11	0.50
2:B:53:G:C2	2:B:62:C:N3	2.80	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:362:G:N2	4:D:365:U:OP2	2.40	0.50
4:D:564:C:O2'	4:D:565:U:P	2.69	0.50
4:D:890:G:H1'	4:D:891:U:OP2	2.12	0.50
4:D:1100:C:P	5:E:94:ARG:HE	2.35	0.50
25:Y:1106:G:OP1	56:3:56:ARG:O	2.29	0.50
25:Y:1526:C:H2'	25:Y:1527:G:O4'	2.12	0.50
25:Y:1705:A:O2'	25:Y:1706:C:OP1	2.29	0.50
25:Y:1927:A:O2'	25:Y:1928:A:O5'	2.29	0.50
25:Y:2266:A:O4'	25:Y:2267:A:C2	2.65	0.50
25:Y:2847:U:H2'	25:Y:2848:G:O4'	2.12	0.50
31:e:140:ILE:HD12	31:e:141:GLY:N	2.27	0.50
44:r:8:LEU:HD13	49:w:21:LEU:HB3	1.94	0.50
7:G:21:LYS:HG2	7:G:21:LYS:O	2.11	0.49
25:Y:28:A:O2'	25:Y:582:A:O2'	2.30	0.49
25:Y:754:U:O2'	25:Y:1272:A:N1	2.45	0.49
25:Y:1386:C:O2'	25:Y:1469:A:N3	2.38	0.49
25:Y:1594:U:H2'	25:Y:1595:C:C6	2.47	0.49
25:Y:1790:C:H2'	25:Y:1791:A:C8	2.47	0.49
25:Y:2893:A:H4'	25:Y:2894:G:O5'	2.11	0.49
29:c:12:LEU:HD23	29:c:13:THR:N	2.27	0.49
4:D:945:G:C2	4:D:946:A:C8	3.00	0.49
4:D:963:G:H1'	4:D:973:G:N2	2.27	0.49
5:E:172:ILE:O	5:E:176:ASN:N	2.35	0.49
8:H:86:GLY:O	8:H:138:ALA:HB1	2.13	0.49
12:L:48:ARG:O	12:L:51:LEU:N	2.42	0.49
14:N:124:LYS:C	24:X:33:ARG:HH21	2.20	0.49
25:Y:12:U:HO2'	25:Y:13:A:P	2.33	0.49
25:Y:1236:G:HO2'	25:Y:1237:A:P	2.35	0.49
25:Y:1799:G:N2	25:Y:1819:A:OP2	2.34	0.49
25:Y:2655:G:O2'	25:Y:2656:U:P	2.71	0.49
25:Y:2725:A:H2'	25:Y:2726:A:H2'	1.94	0.49
25:Y:2824:C:HO2'	25:Y:2825:G:P	2.35	0.49
25:Y:2854:G:C6	25:Y:2864:G:O6	2.66	0.49
33:g:79:LEU:HD22	33:g:83:ALA:HB2	1.94	0.49
4:D:95:C:HO2'	4:D:96:U:P	2.35	0.49
7:G:28:ASP:OD1	7:G:29:THR:N	2.41	0.49
8:H:93:VAL:O	8:H:93:VAL:HG12	2.12	0.49
13:M:80:THR:O	13:M:84:VAL:HG12	2.13	0.49
20:T:13:SER:HB3	20:T:21:VAL:CG1	2.42	0.49
25:Y:91:A:O2'	25:Y:92:U:O5'	2.28	0.49
25:Y:277:G:O2'	25:Y:278:A:N1	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:287:G:C2	25:Y:354:A:C2	3.00	0.49
25:Y:361:G:O2'	25:Y:362:A:O5'	2.19	0.49
25:Y:481:G:O2'	25:Y:482:A:P	2.70	0.49
25:Y:549:G:O2'	25:Y:550:C:P	2.70	0.49
25:Y:1363:C:O2'	25:Y:1809:A:N3	2.42	0.49
25:Y:1536:C:H5''	25:Y:1537:G:O4'	2.13	0.49
25:Y:2867:G:O2'	25:Y:2868:A:P	2.71	0.49
33:g:7:TYR:O	33:g:8:VAL:HG13	2.12	0.49
33:g:76:ALA:HB2	33:g:131:THR:O	2.12	0.49
33:g:89:SER:N	33:g:135:MET:SD	2.86	0.49
37:k:47:GLU:OE2	37:k:51:ARG:NE	2.45	0.49
38:l:69:ARG:O	38:l:70:THR:OG1	2.30	0.49
2:B:64:C:N4	2:B:65:U:O4	2.45	0.49
4:D:115:G:O2'	4:D:117:G:O6	2.20	0.49
4:D:624:C:H2'	4:D:625:U:O4'	2.12	0.49
4:D:861:G:O6	4:D:869:G:N2	2.45	0.49
4:D:1148:U:O2'	4:D:1149:C:OP1	2.30	0.49
4:D:1407:5MC:N3	4:D:1408:A:N7	2.60	0.49
25:Y:1791:A:O2'	27:a:205:GLY:HA2	2.11	0.49
25:Y:1937:A:HO2'	25:Y:1938:A:C5'	2.23	0.49
25:Y:1997:C:H2'	25:Y:1998:A:H8	1.77	0.49
29:c:48:THR:OG1	29:c:51:GLU:OE1	2.14	0.49
30:d:142:TYR:O	30:d:145:VAL:HG22	2.12	0.49
32:f:8:LYS:O	32:f:9:VAL:C	2.55	0.49
33:g:64:ARG:HG3	33:g:65:SER:N	2.28	0.49
4:D:564:C:HO2'	4:D:565:U:P	2.35	0.49
4:D:737:C:C2	4:D:738:C:C5	3.00	0.49
4:D:1133:G:O6	4:D:1142:G:C6	2.65	0.49
25:Y:1071:G:C2	25:Y:1089:A:O2'	2.65	0.49
25:Y:1373:A:HO2'	25:Y:1374:G:P	2.35	0.49
25:Y:2151:U:H3'	25:Y:2153:C:H41	1.77	0.49
25:Y:2526:G:H21	55:2:1:MET:H2	1.59	0.49
33:g:72:THR:HG22	33:g:112:LYS:HD3	1.95	0.49
43:q:24:ILE:O	43:q:24:ILE:HG13	2.12	0.49
51:y:26:SER:C	51:y:27:LEU:HD12	2.36	0.49
4:D:376:G:H2'	4:D:377:G:H8	1.77	0.49
4:D:408:A:O5'	7:G:109:THR:HG21	2.12	0.49
4:D:442:G:N2	4:D:493:A:C2	2.81	0.49
4:D:1484:C:H2'	4:D:1485:U:O4'	2.12	0.49
7:G:86:GLY:HA3	7:G:196:GLU:HG3	1.94	0.49
8:H:69:ASN:O	8:H:69:ASN:OD1	2.31	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:23:G:C6	25:Y:518:G:C6	3.01	0.49
25:Y:223:A:O2'	25:Y:224:U:OP2	2.21	0.49
25:Y:828:U:HO2'	25:Y:829:A:C5'	2.25	0.49
25:Y:2286:G:H5''	25:Y:2287:A:OP1	2.12	0.49
26:Z:87:U:O2'	26:Z:88:C:OP1	2.24	0.49
32:f:72:ILE:HG21	32:f:108:VAL:HG22	1.93	0.49
44:r:57:VAL:HG22	44:r:58:VAL:N	2.27	0.49
45:s:85:ARG:NH1	45:s:99:SER:OG	2.45	0.49
52:z:46:VAL:CG1	52:z:47:ILE:N	2.75	0.49
4:D:712:A:H2'	4:D:713:G:C8	2.48	0.49
7:G:57:LYS:NZ	7:G:58:GLN:OE1	2.45	0.49
7:G:173:ASP:OD2	7:G:176:LYS:N	2.43	0.49
12:L:54:VAL:CG1	12:L:93:LEU:HD22	2.38	0.49
16:P:88:LEU:HA	16:P:91:ARG:HE	1.77	0.49
25:Y:401:A:C6	25:Y:402:A:N6	2.80	0.49
25:Y:495:G:O2'	43:q:57:ASN:ND2	2.45	0.49
25:Y:521:U:H2'	25:Y:522:A:H8	1.78	0.49
25:Y:704:G:N2	25:Y:726:G:O2'	2.45	0.49
25:Y:846:U:O2'	25:Y:847:U:O5'	2.31	0.49
25:Y:966:G:H1'	25:Y:2267:A:N7	2.27	0.49
26:Z:32:U:H2'	26:Z:33:G:O4'	2.13	0.49
40:n:59:THR:HG22	40:n:72:VAL:HG12	1.95	0.49
56:3:35:VAL:HG12	56:3:39:THR:HG23	1.93	0.49
7:G:66:VAL:HG12	7:G:67:LEU:N	2.28	0.49
9:I:63:ASN:ND2	9:I:96:VAL:HG22	2.28	0.49
25:Y:402:A:O2'	25:Y:403:U:O4'	2.29	0.49
25:Y:704:G:HO2'	25:Y:705:A:P	2.36	0.49
25:Y:959:A:O2'	25:Y:960:A:H5'	2.12	0.49
25:Y:1080:A:H2'	25:Y:1081:U:O4'	2.12	0.49
25:Y:1415:U:O2	25:Y:1587:G:C6	2.66	0.49
25:Y:2602:A:H4'	25:Y:2603:G:O5'	2.12	0.49
3:C:39:MET:SD	25:Y:2062:A:N6	2.86	0.49
4:D:300:A:H2'	4:D:564:C:H42	1.77	0.49
24:X:9:GLU:CB	24:X:10:PRO:HD3	2.43	0.49
25:Y:63:A:N6	25:Y:91:A:H61	2.08	0.49
25:Y:476:G:N1	25:Y:479:A:OP2	2.46	0.49
25:Y:626:A:N3	36:j:78:ARG:NH2	2.61	0.49
25:Y:931:U:O2'	25:Y:932:U:P	2.71	0.49
25:Y:1054:A:O2'	56:3:32:GLY:N	2.46	0.49
25:Y:1359:A:OP2	25:Y:1371:G:N1	2.45	0.49
25:Y:1889:A:H2'	25:Y:1890:A:O4'	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:l:33:ILE:HD12	38:l:118:ARG:HH22	1.78	0.49
42:p:82:HIS:ND1	42:p:82:HIS:O	2.45	0.49
43:q:78:GLU:OE1	43:q:99:ARG:NH2	2.46	0.49
55:2:36:ARG:HG2	55:2:37:GLN:N	2.28	0.49
56:3:95:LEU:HD22	56:3:98:GLU:HG3	1.95	0.49
4:D:448:A:N7	4:D:486:U:O4	2.46	0.49
4:D:1148:U:HO2'	4:D:1149:C:P	2.36	0.49
12:L:21:LYS:O	12:L:60:LEU:HB2	2.12	0.49
16:P:8:ILE:O	16:P:8:ILE:HG22	2.13	0.49
25:Y:492:A:H2'	25:Y:493:G:O4'	2.13	0.49
25:Y:888:C:H2'	25:Y:889:C:O4'	2.12	0.49
25:Y:1187:G:OP1	42:p:85:LYS:NZ	2.45	0.49
25:Y:1425:G:H2'	25:Y:1426:G:C8	2.48	0.49
25:Y:1754:A:N1	25:Y:2716:C:O2'	2.45	0.49
25:Y:2580:PSU:HO2'	25:Y:2581:G:P	2.36	0.49
36:j:70:LYS:O	36:j:73:ILE:HG12	2.13	0.49
3:C:23:ARG:NE	43:q:92:ARG:HB3	2.27	0.48
4:D:269:C:H2'	4:D:270:A:H8	1.78	0.48
4:D:766:A:H62	4:D:813:U:H3	1.60	0.48
7:G:87:GLU:OE1	7:G:87:GLU:N	2.41	0.48
8:H:45:VAL:HG11	8:H:117:ALA:HB2	1.95	0.48
17:Q:25:GLU:O	17:Q:29:ILE:N	2.33	0.48
25:Y:1097:U:N3	33:g:5:GLN:O	2.43	0.48
25:Y:1941:C:O2	25:Y:1941:C:H2'	2.13	0.48
43:q:37:THR:OG1	43:q:48:LYS:NZ	2.35	0.48
3:C:41:ASP:O	25:Y:2506:U:O4	2.31	0.48
10:J:85:GLN:O	10:J:147:ASN:ND2	2.43	0.48
15:O:67:GLY:O	15:O:98:ARG:NH1	2.46	0.48
16:P:15:VAL:HG23	16:P:16:ILE:N	2.28	0.48
25:Y:481:G:HO2'	25:Y:482:A:P	2.37	0.48
25:Y:1295:C:C2	25:Y:1296:G:C8	3.01	0.48
25:Y:1604:C:C2	25:Y:1605:C:C5	3.01	0.48
25:Y:2643:G:O2'	25:Y:2644:G:P	2.71	0.48
35:i:71:ARG:HB3	35:i:72:PRO:HD2	1.94	0.48
56:3:38:MET:O	56:3:42:ARG:NE	2.46	0.48
3:C:21:ASN:HA	3:C:24:ARG:CD	2.40	0.48
4:D:327:A:O2'	4:D:328:C:O4'	2.26	0.48
4:D:1095:U:OP2	4:D:1108:G:N1	2.47	0.48
4:D:1496:C:H1'	4:D:1517:G:H22	1.79	0.48
8:H:114:LEU:HD23	8:H:122:VAL:HG21	1.94	0.48
9:I:66:ALA:HB1	9:I:67:PRO:HD2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:89:TYR:O	12:L:90:ASP:OD1	2.31	0.48
24:X:9:GLU:HB2	24:X:10:PRO:CD	2.43	0.48
25:Y:221:A:N6	25:Y:265:A:O2'	2.40	0.48
25:Y:259:G:O2'	25:Y:621:A:O2'	2.25	0.48
25:Y:1009:A:O2'	25:Y:1010:A:O4'	2.28	0.48
25:Y:1095:A:H62	33:g:26:ALA:HB2	1.79	0.48
25:Y:1626:A:O2'	25:Y:1627:G:P	2.71	0.48
33:g:6:ALA:HB2	33:g:30:GLN:CB	2.42	0.48
33:g:118:GLY:O	56:3:42:ARG:HG3	2.14	0.48
4:D:644:U:C2	4:D:645:G:C8	3.02	0.48
4:D:1329:A:C2	4:D:1330:U:C6	3.01	0.48
17:Q:33:VAL:HG23	17:Q:33:VAL:O	2.13	0.48
25:Y:227:A:HO2'	25:Y:228:C:P	2.33	0.48
25:Y:240:C:P	25:Y:241:A:HO2'	2.31	0.48
25:Y:511:U:H4'	25:Y:1235:G:H4'	1.96	0.48
25:Y:960:A:C8	25:Y:962:G:C8	3.01	0.48
25:Y:966:G:O2'	25:Y:967:U:P	2.70	0.48
25:Y:1045:C:O2'	25:Y:1047:G:N7	2.46	0.48
25:Y:1197:G:C2	25:Y:1198:U:C5	3.01	0.48
25:Y:1351:C:H2'	25:Y:1352:U:O4'	2.13	0.48
25:Y:2375:G:N2	25:Y:2378:A:OP2	2.45	0.48
25:Y:2899:A:HO2'	25:Y:2900:A:C5'	2.21	0.48
28:b:151:THR:HB	28:b:152:PRO:HD3	1.96	0.48
30:d:116:LEU:HD22	30:d:174:PHE:CZ	2.48	0.48
46:t:77:VAL:HG11	46:t:79:ARG:HH12	1.79	0.48
2:B:17:C:OP1	2:B:60:U:O2	2.31	0.48
4:D:407:U:H5''	4:D:408:A:P	2.54	0.48
4:D:409:U:HO2'	4:D:410:G:H8	1.61	0.48
9:I:9:MET:HA	9:I:58:HIS:O	2.13	0.48
13:M:32:THR:HG23	13:M:33:GLY:H	1.79	0.48
24:X:33:ARG:HH22	24:X:34:ARG:CZ	2.26	0.48
25:Y:706:A:OP1	27:a:6:LYS:NZ	2.47	0.48
25:Y:1069:A:O2'	25:Y:1096:A:O3'	2.32	0.48
25:Y:1827:U:H2'	25:Y:1828:G:O4'	2.13	0.48
25:Y:1996:C:OP2	35:i:31:ARG:NH1	2.46	0.48
25:Y:2406:A:N1	36:j:69:ARG:NH2	2.60	0.48
27:a:145:MET:HE1	27:a:181:ARG:CZ	2.43	0.48
36:j:62:PRO:HD3	54:1:26:ALA:HB2	1.93	0.48
56:3:108:VAL:HG12	56:3:109:LYS:N	2.27	0.48
1:A:21:U:C4	1:A:22:C:H5	2.31	0.48
4:D:7:A:C8	8:H:123:LEU:HD13	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:201:G:O2'	4:D:469:C:O2'	2.23	0.48
4:D:392:C:C2	4:D:393:A:C8	3.01	0.48
4:D:444:G:C6	4:D:491:G:O6	2.67	0.48
7:G:16:THR:HG22	7:G:17:ASP:H	1.78	0.48
22:V:66:VAL:HG21	57:4:57:VAL:HG22	1.95	0.48
25:Y:1298:C:H2'	25:Y:1299:G:O4'	2.13	0.48
25:Y:1635:A:H2'	25:Y:1636:U:O4'	2.13	0.48
25:Y:2473:U:O2	25:Y:2473:U:H2'	2.12	0.48
25:Y:2673:G:C2	25:Y:2674:G:N7	2.81	0.48
26:Z:33:G:H2'	26:Z:34:A:O4'	2.14	0.48
27:a:259:ASN:HD22	27:a:259:ASN:C	2.21	0.48
30:d:39:VAL:HG22	30:d:41:GLU:H	1.79	0.48
46:t:75:GLN:HB2	46:t:92:VAL:HG23	1.95	0.48
7:G:149:LYS:HG2	7:G:150:LYS:N	2.28	0.48
14:N:23:HIS:HB3	14:N:30:ILE:CG2	2.44	0.48
16:P:89:ARG:NE	16:P:95:PRO:O	2.41	0.48
25:Y:2251:OMG:O3'	25:Y:2251:OMG:CM2	2.61	0.48
25:Y:2583:G:O2'	25:Y:2584:U:P	2.71	0.48
25:Y:2673:G:C2	25:Y:2674:G:C8	3.02	0.48
25:Y:2812:G:H2'	25:Y:2813:A:O4'	2.14	0.48
30:d:109:ARG:NH2	30:d:136:ILE:O	2.47	0.48
37:k:69:PRO:O	37:k:70:ASP:OD1	2.31	0.48
1:A:6:A:C2	2:B:34:G:N1	2.76	0.48
4:D:1218:C:H2'	4:D:1219:A:C8	2.49	0.48
8:H:75:LEU:C	8:H:75:LEU:HD12	2.38	0.48
16:P:52:ILE:HG22	16:P:56:ARG:NH1	2.29	0.48
25:Y:966:G:HO2'	25:Y:967:U:P	2.36	0.48
25:Y:1110:G:O2'	25:Y:1111:A:O4'	2.24	0.48
25:Y:1357:C:H2'	25:Y:1358:G:O4'	2.14	0.48
25:Y:2105:U:H2'	25:Y:2106:U:O4'	2.13	0.48
56:3:101:LYS:O	56:3:104:ALA:N	2.47	0.48
1:A:27:G:HO2'	1:A:28:A:C4'	2.18	0.48
4:D:430:A:C5	4:D:431:A:C8	3.02	0.48
4:D:936:C:C2	4:D:937:A:C8	3.02	0.48
4:D:978:A:H2'	4:D:979:C:H5'	1.95	0.48
7:G:142:VAL:HG22	7:G:143:SER:N	2.29	0.48
7:G:170:LEU:C	7:G:170:LEU:HD12	2.39	0.48
22:V:63:ASP:OD1	57:4:57:VAL:HG23	2.13	0.48
25:Y:827:U:H4'	25:Y:828:U:C5	2.48	0.48
25:Y:1425:G:H22	25:Y:1574:C:N4	2.12	0.48
25:Y:1631:G:N2	25:Y:1635:A:H62	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1730:C:O2'	25:Y:1731:G:O5'	2.31	0.48
29:c:21:ARG:N	29:c:110:SER:OG	2.47	0.48
39:m:18:LEU:HD21	39:m:25:ARG:CB	2.44	0.48
43:q:4:ILE:HG22	43:q:106:VAL:HG22	1.96	0.48
1:A:22:C:H1'	1:A:23:U:OP2	2.14	0.48
7:G:190:LEU:HD12	7:G:191:SER:HB3	1.96	0.48
13:M:67:ILE:HG22	17:Q:95:GLY:O	2.14	0.48
25:Y:222:A:N6	25:Y:232:G:H21	2.05	0.48
25:Y:369:U:C2'	25:Y:370:G:OP2	2.62	0.48
25:Y:1317:G:H2'	25:Y:1318:U:O4'	2.14	0.48
25:Y:1844:C:O3'	27:a:255:LYS:NZ	2.43	0.48
25:Y:2591:C:C2	25:Y:2592:G:N7	2.82	0.48
25:Y:2643:G:C6	25:Y:2644:G:C6	3.02	0.48
29:c:149:ILE:HG22	29:c:187:VAL:O	2.13	0.48
33:g:75:ALA:HB3	33:g:132:ALA:HB2	1.94	0.48
36:j:100:ILE:HG13	36:j:101:ILE:HG23	1.96	0.48
2:B:27:C:C2	2:B:28:C:C5	3.02	0.47
4:D:437:U:O2'	7:G:119:HIS:CG	2.67	0.47
4:D:488:C:C2	4:D:489:C:C5	3.02	0.47
11:K:24:VAL:O	11:K:59:GLU:HA	2.13	0.47
14:N:111:ASP:OD1	14:N:113:THR:HG23	2.14	0.47
25:Y:233:A:H61	25:Y:429:A:N6	2.11	0.47
25:Y:253:C:H2'	25:Y:254:G:O4'	2.14	0.47
25:Y:569:U:O2'	25:Y:570:G:P	2.72	0.47
25:Y:745:1MG:C3'	25:Y:746:PSU:H5'	2.44	0.47
25:Y:807:U:OP2	36:j:41:ARG:NH1	2.47	0.47
25:Y:1946:U:C2	25:Y:1947:C:C5	3.02	0.47
25:Y:1947:C:C2	25:Y:1948:G:C8	3.02	0.47
25:Y:2499:C:O2'	25:Y:2500:U:P	2.72	0.47
27:a:167:ASP:OD1	27:a:168:GLY:N	2.47	0.47
52:z:45:HIS:C	52:z:46:VAL:HG23	2.38	0.47
3:C:36:VAL:HA	3:C:39:MET:CB	2.43	0.47
4:D:176:C:H5''	23:W:23:ARG:NH2	2.29	0.47
5:E:206:ILE:O	5:E:210:THR:HG23	2.13	0.47
8:H:71:ILE:HG22	8:H:72:ASN:N	2.28	0.47
10:J:14:ASP:CG	10:J:22:LEU:HD11	2.39	0.47
17:Q:44:ALA:O	17:Q:47:LYS:N	2.43	0.47
25:Y:394:C:H2'	25:Y:395:U:O4'	2.14	0.47
25:Y:483:A:O2'	45:s:56:GLY:N	2.47	0.47
25:Y:1107:G:H5''	56:3:58:THR:HG22	1.96	0.47
25:Y:1208:C:N3	25:Y:1239:G:N1	2.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1686:C:C2'	25:Y:1687:G:O5'	2.62	0.47
25:Y:1735:A:C2	25:Y:1736:U:C2	3.02	0.47
30:d:92:GLY:O	30:d:95:MET:HG2	2.14	0.47
33:g:117:THR:HG22	56:3:42:ARG:NH2	2.29	0.47
36:j:93:ASN:O	36:j:94:THR:HB	2.13	0.47
4:D:641:U:O2'	4:D:642:A:N7	2.41	0.47
4:D:1330:U:O2'	4:D:1331:G:P	2.71	0.47
4:D:1430:A:O2'	4:D:1431:A:P	2.73	0.47
25:Y:855:G:C6	25:Y:923:G:C6	3.02	0.47
25:Y:2586:U:H2'	25:Y:2587:A:O4'	2.14	0.47
33:g:63:ASP:O	33:g:64:ARG:HB3	2.13	0.47
33:g:67:THR:HG23	33:g:67:THR:O	2.14	0.47
35:i:35:VAL:HG12	35:i:36:GLY:N	2.29	0.47
35:i:58:LEU:HD12	35:i:58:LEU:C	2.39	0.47
38:l:64:ARG:O	38:l:68:ALA:N	2.41	0.47
40:n:113:LEU:HD12	40:n:113:LEU:O	2.14	0.47
20:T:13:SER:HB3	20:T:21:VAL:HG12	1.95	0.47
25:Y:230:G:O6	25:Y:231:A:N6	2.48	0.47
25:Y:657:U:C2	25:Y:658:U:C5	3.02	0.47
25:Y:1627:G:C2	25:Y:1628:G:C8	3.02	0.47
25:Y:1939:5MU:H3'	25:Y:1940:U:H5'	1.96	0.47
46:t:47:VAL:O	46:t:50:MET:N	2.48	0.47
1:A:28:A:O2'	1:A:29:A:H8	1.96	0.47
4:D:840:C:N4	4:D:842:U:OP1	2.47	0.47
4:D:1300:G:O2'	4:D:1301:U:P	2.71	0.47
4:D:1438:G:OP1	23:W:28:ARG:HD2	2.15	0.47
9:I:54:LEU:O	9:I:54:LEU:HD23	2.14	0.47
25:Y:222:A:C2	25:Y:233:A:H4'	2.49	0.47
25:Y:1918:A:O2'	25:Y:1920:C:N4	2.48	0.47
25:Y:2091:C:OP2	25:Y:2092:U:O2'	2.28	0.47
33:g:75:ALA:CB	33:g:132:ALA:HB2	2.45	0.47
38:l:14:SER:O	38:l:18:GLN:N	2.46	0.47
2:B:76:A:N1	25:Y:2450:A:O2'	2.42	0.47
4:D:491:G:C2'	4:D:492:C:O5'	2.62	0.47
4:D:1004:A:N6	4:D:1024:G:O2'	2.40	0.47
8:H:56:PRO:O	8:H:59:ILE:HG13	2.15	0.47
22:V:51:HIS:NE2	22:V:53:GLY:HA2	2.29	0.47
25:Y:63:A:H61	25:Y:91:A:N6	2.09	0.47
25:Y:672:C:OP2	36:j:42:SER:OG	2.26	0.47
25:Y:704:G:O2'	25:Y:705:A:O5'	2.28	0.47
25:Y:1321:A:C4	25:Y:1322:A:C8	3.03	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1534:U:O2'	25:Y:1536:C:O5'	2.32	0.47
25:Y:1715:G:HO2'	25:Y:1716:U:H6	1.61	0.47
32:f:62:LEU:HA	32:f:65:ALA:HB3	1.96	0.47
32:f:77:THR:O	32:f:77:THR:HG23	2.13	0.47
41:o:82:LEU:O	41:o:86:SER:N	2.47	0.47
49:w:7:ARG:HG3	49:w:7:ARG:O	2.14	0.47
1:A:23:U:H5''	1:A:24:A:OP2	2.14	0.47
4:D:5:U:C2'	4:D:6:G:OP2	2.63	0.47
4:D:519:C:HO2'	4:D:520:A:P	2.36	0.47
4:D:1143:G:C2	4:D:1144:G:N7	2.83	0.47
13:M:88:MET:C	13:M:89:ARG:HG2	2.40	0.47
24:X:39:LYS:O	24:X:42:THR:N	2.48	0.47
25:Y:279:A:O2'	25:Y:280:U:P	2.72	0.47
25:Y:382:A:H2	25:Y:393:C:N3	2.13	0.47
25:Y:730:A:C2	25:Y:731:C:C6	3.03	0.47
25:Y:967:U:H2'	25:Y:968:C:C6	2.50	0.47
25:Y:1061:U:H3'	25:Y:1062:G:C5'	2.45	0.47
25:Y:1289:C:C2	25:Y:1290:C:C5	3.02	0.47
25:Y:1532:A:C6	25:Y:1540:G:N1	2.83	0.47
25:Y:2327:A:H2'	25:Y:2328:A:C8	2.49	0.47
25:Y:2416:C:C2	25:Y:2417:C:C5	3.02	0.47
25:Y:2494:G:C2	25:Y:2495:G:N7	2.83	0.47
25:Y:2495:G:C2'	25:Y:2496:C:O5'	2.62	0.47
25:Y:2592:G:H2'	25:Y:2593:U:O4'	2.13	0.47
30:d:98:PHE:O	30:d:102:LEU:N	2.48	0.47
31:e:44:HIS:O	31:e:48:THR:O	2.33	0.47
35:i:121:GLU:HG2	35:i:122:VAL:HG23	1.97	0.47
37:k:49:ALA:HB1	37:k:120:ALA:CB	2.41	0.47
46:t:72:VAL:HG12	46:t:93:ARG:HA	1.96	0.47
56:3:117:LEU:HB3	56:3:120:ALA:HA	1.97	0.47
57:4:44:PHE:CE1	57:4:45:THR:HG23	2.50	0.47
1:A:7:U:C3'	1:A:8:A:H2'	2.45	0.47
4:D:176:C:H2'	4:D:177:G:O4'	2.15	0.47
4:D:358:U:C2	4:D:359:G:C8	3.03	0.47
4:D:1126:U:O2'	4:D:1127:G:P	2.73	0.47
4:D:1221:G:C2'	4:D:1222:G:O5'	2.62	0.47
22:V:62:THR:HG22	22:V:63:ASP:N	2.29	0.47
25:Y:928:A:H2'	25:Y:929:U:C6	2.50	0.47
25:Y:1407:G:C2	25:Y:1596:A:C2	3.03	0.47
25:Y:1631:G:H21	25:Y:1635:A:H62	1.63	0.47
25:Y:2658:C:N4	25:Y:2659:G:O6	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:2798:U:H4'	25:Y:2799:A:O5'	2.15	0.47
40:n:80:VAL:HG23	40:n:80:VAL:O	2.15	0.47
48:v:3:VAL:HG12	48:v:4:CYS:N	2.29	0.47
51:y:30:ASP:OD2	51:y:33:SER:N	2.40	0.47
3:C:21:ASN:CA	3:C:24:ARG:HG2	2.44	0.47
4:D:34:C:H2'	4:D:35:G:H8	1.80	0.47
4:D:890:G:H4'	4:D:891:U:O5'	2.15	0.47
4:D:1197:A:H2'	4:D:1198:G:H5'	1.96	0.47
4:D:1213:A:N6	4:D:1215:G:C2	2.83	0.47
10:J:50:ALA:O	10:J:54:GLY:N	2.41	0.47
13:M:10:LEU:C	13:M:10:LEU:HD12	2.40	0.47
15:O:81:ILE:HG22	15:O:82:ARG:N	2.29	0.47
25:Y:1056:G:O2'	25:Y:1087:G:C6	2.68	0.47
25:Y:1069:A:H5'	25:Y:1070:A:OP1	2.15	0.47
25:Y:1373:A:O2'	25:Y:1374:G:OP1	2.28	0.47
25:Y:1466:U:O2'	25:Y:1546:G:O2'	2.32	0.47
25:Y:1964:G:O6	25:Y:1967:C:N4	2.48	0.47
29:c:5:LEU:O	29:c:9:GLN:N	2.44	0.47
34:h:14:ASP:OD2	34:h:138:GLN:NE2	2.47	0.47
38:l:114:GLU:N	38:l:114:GLU:OE1	2.47	0.47
44:r:23:ALA:HB1	44:r:29:THR:HB	1.96	0.47
6:F:15:LYS:NZ	6:F:182:ASP:OD1	2.48	0.47
8:H:156:ARG:NH1	11:K:42:GLU:OE2	2.48	0.47
25:Y:1046:A:HO2'	25:Y:1047:G:P	2.38	0.47
25:Y:1234:U:C2'	25:Y:1235:G:O5'	2.63	0.47
25:Y:1683:U:C2	25:Y:1684:G:C8	3.03	0.47
33:g:71:LYS:HB3	33:g:115:ASP:OD2	2.14	0.47
38:l:54:LEU:HD11	38:l:62:ASN:HD22	1.79	0.47
48:v:57:VAL:O	48:v:60:LYS:N	2.48	0.47
4:D:413:G:C4'	4:D:414:A:OP2	2.62	0.46
13:M:17:LEU:HA	13:M:20:GLN:HE22	1.80	0.46
25:Y:499:U:O4	25:Y:503:A:N7	2.49	0.46
25:Y:1605:C:H2'	25:Y:1606:C:O4'	2.15	0.46
25:Y:1727:C:H2'	25:Y:1728:C:O4'	2.16	0.46
25:Y:1871:A:OP1	25:Y:1872:A:N6	2.48	0.46
25:Y:2107:G:O6	25:Y:2183:A:N6	2.48	0.46
25:Y:2467:C:H2'	25:Y:2468:A:O4'	2.15	0.46
27:a:132:ARG:O	27:a:166:ARG:NH1	2.46	0.46
2:B:7:G:H1	2:B:66:C:H42	1.62	0.46
4:D:36:C:H2'	4:D:37:U:O4'	2.14	0.46
4:D:1239:A:O2'	10:J:113:LYS:O	2.24	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:37:ILE:HG22	20:T:38:LYS:N	2.30	0.46
25:Y:355:U:H2'	25:Y:356:G:N7	2.30	0.46
25:Y:894:U:H1'	25:Y:895:U:H5'	1.97	0.46
25:Y:1061:U:O4	33:g:53:PRO:O	2.33	0.46
25:Y:1095:A:N6	33:g:23:VAL:O	2.48	0.46
25:Y:2359:C:H2'	25:Y:2360:G:O4'	2.14	0.46
25:Y:2821:A:OP2	38:l:3:HIS:NE2	2.48	0.46
36:j:27:LEU:HD12	36:j:27:LEU:O	2.14	0.46
36:j:93:ASN:C	36:j:95:LEU:H	2.23	0.46
4:D:442:G:N2	4:D:493:A:N1	2.63	0.46
4:D:1179:A:H2'	4:D:1180:A:O4'	2.14	0.46
9:I:38:ARG:O	9:I:62:MET:O	2.33	0.46
13:M:57:VAL:HG13	13:M:58:ASN:N	2.30	0.46
16:P:104:ASN:O	16:P:105:ALA:HB3	2.16	0.46
18:R:87:ARG:HG3	18:R:88:ARG:N	2.31	0.46
25:Y:1060:U:H5''	25:Y:1061:U:OP1	2.15	0.46
25:Y:1874:C:H2'	25:Y:1875:G:O4'	2.16	0.46
25:Y:2243:U:H2'	25:Y:2244:U:C6	2.50	0.46
25:Y:2515:C:H2'	25:Y:2516:A:H8	1.81	0.46
30:d:67:THR:N	30:d:85:GLY:O	2.48	0.46
38:l:28:LEU:O	38:l:32:GLU:N	2.47	0.46
42:p:31:GLU:O	42:p:32:THR:HB	2.15	0.46
51:y:54:ILE:HG23	51:y:55:ALA:N	2.30	0.46
1:A:27:G:H22	8:H:14:LEU:HD22	1.73	0.46
3:C:18:LEU:HD21	25:Y:462:C:H4'	1.97	0.46
4:D:1486:G:H2'	4:D:1487:G:O4'	2.14	0.46
6:F:105:VAL:O	6:F:105:VAL:HG13	2.15	0.46
8:H:122:VAL:O	8:H:123:LEU:HG	2.15	0.46
13:M:56:HIS:O	13:M:57:VAL:HG12	2.15	0.46
25:Y:745:1MG:H3'	25:Y:746:PSU:H5'	1.96	0.46
25:Y:966:G:O4'	25:Y:2267:A:N6	2.41	0.46
25:Y:1168:G:C2'	25:Y:1169:A:O5'	2.63	0.46
25:Y:2548:U:C4	25:Y:2549:G:N7	2.83	0.46
31:e:89:VAL:HG12	31:e:90:GLY:N	2.30	0.46
33:g:48:ILE:HG13	33:g:49:GLU:N	2.31	0.46
38:l:59:SER:HG	38:l:62:ASN:CG	2.23	0.46
43:q:50:VAL:O	43:q:53:SER:N	2.47	0.46
56:3:82:ILE:HG22	56:3:83:ALA:N	2.30	0.46
4:D:10:A:OP2	8:H:130:THR:OG1	2.28	0.46
4:D:76:G:H2'	4:D:77:A:C8	2.51	0.46
4:D:147:G:H2'	4:D:148:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:686:U:O2'	4:D:687:A:O5'	2.09	0.46
11:K:115:ALA:HB1	11:K:120:LEU:O	2.15	0.46
25:Y:196:A:OP2	36:j:47:ARG:NH1	2.49	0.46
25:Y:287:G:C2	25:Y:354:A:N1	2.84	0.46
25:Y:374:A:C4	25:Y:401:A:N6	2.84	0.46
25:Y:521:U:H2'	25:Y:522:A:C8	2.51	0.46
25:Y:1071:G:H2'	25:Y:1072:C:C6	2.50	0.46
25:Y:1235:G:C2'	25:Y:1236:G:O4'	2.63	0.46
25:Y:1508:A:H2'	25:Y:1509:A:O5'	2.15	0.46
25:Y:1584:U:O2'	25:Y:1585:C:OP1	2.31	0.46
25:Y:2507:C:N3	25:Y:2583:G:C2	2.84	0.46
25:Y:2766:A:C5	25:Y:2767:C:C5	3.04	0.46
28:b:36:GLN:OE1	28:b:67:HIS:NE2	2.49	0.46
30:d:151:LEU:C	30:d:151:LEU:HD12	2.41	0.46
33:g:90:GLY:O	33:g:91:LYS:HD2	2.16	0.46
45:s:8:ASP:OD1	45:s:9:GLU:N	2.41	0.46
4:D:357:G:C2	4:D:358:U:C5	3.03	0.46
4:D:1493:A:H1'	4:D:1494:G:H5'	1.97	0.46
15:O:39:THR:HG22	15:O:40:THR:N	2.30	0.46
20:T:16:MET:HG3	20:T:19:SER:OG	2.16	0.46
25:Y:216:A:C8	25:Y:432:A:N6	2.84	0.46
25:Y:372:G:O6	48:v:56:ARG:NH2	2.47	0.46
25:Y:487:C:H2'	25:Y:488:G:O4'	2.16	0.46
25:Y:810:U:C2'	25:Y:811:U:OP2	2.63	0.46
25:Y:1297:C:H2'	25:Y:1298:C:C6	2.50	0.46
25:Y:1326:U:O2	25:Y:1326:U:H2'	2.15	0.46
25:Y:1599:U:C2	25:Y:1600:C:C5	3.04	0.46
27:a:259:ASN:O	27:a:259:ASN:ND2	2.37	0.46
30:d:151:LEU:HD12	30:d:152:ASP:N	2.30	0.46
51:y:24:VAL:HG13	51:y:25:THR:N	2.31	0.46
4:D:492:C:H1'	4:D:493:A:OP1	2.15	0.46
10:J:69:ARG:HG3	10:J:95:ARG:HG2	1.96	0.46
14:N:81:LEU:C	14:N:81:LEU:HD12	2.40	0.46
17:Q:24:ALA:O	17:Q:27:LYS:HG2	2.15	0.46
23:W:23:ARG:O	23:W:24:ARG:C	2.58	0.46
25:Y:280:U:H4'	25:Y:281:C:OP1	2.16	0.46
25:Y:475:C:H2'	25:Y:476:G:O4'	2.15	0.46
25:Y:571:U:O2'	25:Y:573:U:O5'	2.32	0.46
25:Y:1055:G:N2	25:Y:1085:A:C2'	2.79	0.46
25:Y:1091:G:H2'	25:Y:1092:C:C6	2.51	0.46
25:Y:1347:A:C5	25:Y:1348:C:C6	3.04	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:2157:G:O2'	25:Y:2158:A:O4'	2.31	0.46
37:k:54:THR:O	37:k:58:LYS:O	2.33	0.46
56:3:44:ALA:HB1	56:3:49:GLY:O	2.15	0.46
3:C:5:LYS:HE3	25:Y:1321:A:H1'	1.98	0.46
4:D:626:G:H2'	4:D:627:G:O4'	2.16	0.46
4:D:736:C:O2'	9:I:89:VAL:O	2.26	0.46
4:D:1403:C:O2'	4:D:1404:C:C5'	2.63	0.46
5:E:203:ASP:OD1	5:E:204:ASP:N	2.48	0.46
13:M:54:SER:O	17:Q:81:ARG:NH1	2.44	0.46
25:Y:223:A:HO2'	25:Y:224:U:P	2.36	0.46
25:Y:1318:U:C2	25:Y:1319:C:C5	3.04	0.46
25:Y:1689:A:OP2	25:Y:1698:A:N6	2.28	0.46
25:Y:1848:A:C4	25:Y:1849:G:C8	3.04	0.46
25:Y:2324:U:O2'	25:Y:2337:G:H5''	2.15	0.46
25:Y:2655:G:HO2'	25:Y:2656:U:P	2.38	0.46
25:Y:2682:A:C2	25:Y:2683:C:C6	3.04	0.46
26:Z:13:G:P	47:u:72:ASN:HD21	2.38	0.46
29:c:143:LEU:HB3	29:c:146:VAL:HG11	1.98	0.46
30:d:172:PHE:O	30:d:173:ASP:HB2	2.15	0.46
38:l:50:PRO:O	38:l:54:LEU:N	2.48	0.46
1:A:28:A:H8	1:A:28:A:OP2	1.98	0.46
4:D:1518:MA6:O2'	4:D:1519:MA6:O4'	2.34	0.46
4:D:1526:G:C2	4:D:1527:U:C4	3.04	0.46
14:N:92:ARG:HG2	14:N:93:GLU:N	2.29	0.46
15:O:22:ALA:O	15:O:26:CYS:SG	2.74	0.46
19:S:7:ALA:HB3	19:S:18:GLN:HB2	1.98	0.46
20:T:73:THR:HG22	20:T:74:LEU:N	2.31	0.46
22:V:5:LYS:HG3	22:V:6:LYS:HG2	1.97	0.46
25:Y:1081:U:O5'	33:g:126:ARG:NH2	2.48	0.46
25:Y:1666:G:O2'	35:i:6:THR:OG1	2.31	0.46
25:Y:2415:G:C4	25:Y:2416:C:C5	3.04	0.46
30:d:90:LEU:C	30:d:90:LEU:HD12	2.41	0.46
35:i:80:ASP:OD2	40:n:61:ARG:NH1	2.48	0.46
1:A:24:A:C2'	1:A:25:U:H5'	2.45	0.46
4:D:408:A:C6	4:D:435:A:C2	3.03	0.46
4:D:825:A:O2'	11:K:8:ASP:OD1	2.32	0.46
8:H:29:ILE:HG23	8:H:29:ILE:O	2.15	0.46
8:H:82:HIS:NE2	8:H:147:ASN:OD1	2.48	0.46
25:Y:291:G:C6	25:Y:350:G:C6	3.04	0.46
25:Y:358:U:H2'	25:Y:359:G:O4'	2.16	0.46
25:Y:385:C:O2'	25:Y:388:G:N2	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:535:G:H2'	25:Y:536:G:O4'	2.16	0.46
25:Y:863:A:O3'	26:Z:100:G:N2	2.49	0.46
25:Y:1047:G:HO2'	25:Y:1110:G:H22	1.56	0.46
25:Y:1071:G:HO2'	25:Y:1072:C:C4'	2.26	0.46
25:Y:1482:G:O2'	25:Y:1483:G:O5'	2.20	0.46
25:Y:1629:U:N3	25:Y:1630:A:N7	2.64	0.46
25:Y:2161:C:H2'	25:Y:2162:G:H5'	1.98	0.46
25:Y:2412:A:H2'	25:Y:2413:G:O4'	2.15	0.46
25:Y:2644:G:H2'	25:Y:2645:G:C4	2.50	0.46
29:c:138:LEU:O	29:c:141:MET:N	2.49	0.46
33:g:73:PRO:O	33:g:112:LYS:HD3	2.16	0.46
33:g:119:ALA:HB1	56:3:46:ARG:H	1.81	0.46
38:l:79:LEU:HD23	38:l:83:LEU:HD12	1.98	0.46
56:3:8:LYS:O	56:3:12:VAL:N	2.40	0.46
56:3:77:VAL:HG11	56:3:116:GLU:OE2	2.16	0.46
57:4:26:SER:OG	57:4:28:VAL:HG23	2.16	0.46
1:A:22:C:O2'	1:A:23:U:OP2	2.32	0.45
4:D:39:G:C2	4:D:404:G:C2	3.04	0.45
4:D:204:G:H2'	4:D:205:A:C8	2.51	0.45
4:D:640:A:H2'	4:D:641:U:C6	2.51	0.45
4:D:1169:A:H2'	4:D:1170:A:O4'	2.16	0.45
4:D:1309:G:OP2	16:P:97:ARG:NH2	2.42	0.45
6:F:190:THR:OG1	6:F:193:GLY:O	2.20	0.45
10:J:92:PRO:O	10:J:95:ARG:HB3	2.16	0.45
25:Y:240:C:C3'	25:Y:241:A:H2'	2.46	0.45
25:Y:954:G:H2'	25:Y:955:PSU:O4'	2.15	0.45
25:Y:1005:C:O2'	34:h:30:THR:HG21	2.16	0.45
25:Y:2009:A:C2	25:Y:2010:G:C8	3.04	0.45
26:Z:95:U:C2	26:Z:96:G:C8	3.04	0.45
28:b:151:THR:HB	28:b:152:PRO:CD	2.46	0.45
35:i:115:ILE:O	35:i:118:LEU:N	2.50	0.45
37:k:78:LEU:HD23	37:k:79:ALA:N	2.30	0.45
41:o:33:VAL:O	41:o:36:GLN:HG2	2.17	0.45
45:s:80:ASP:OD1	45:s:81:ARG:N	2.48	0.45
1:A:22:C:C2'	1:A:23:U:OP2	2.64	0.45
4:D:843:U:O2'	4:D:844:G:OP2	2.34	0.45
4:D:1071:C:H2'	4:D:1072:G:H8	1.80	0.45
4:D:1086:U:H3	4:D:1099:G:H22	1.63	0.45
4:D:1094:G:O2'	4:D:1095:U:P	2.74	0.45
10:J:15:PRO:HA	12:L:45:MET:HE1	1.97	0.45
11:K:58:LEU:C	11:K:58:LEU:HD12	2.41	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:52:LEU:HD11	19:S:57:ILE:HD11	1.98	0.45
25:Y:5:A:C6	25:Y:2899:A:N6	2.84	0.45
25:Y:78:U:O2'	25:Y:79:C:O4'	2.29	0.45
25:Y:507:A:HO2'	25:Y:508:A:P	2.33	0.45
25:Y:903:C:HO2'	25:Y:904:G:C5'	2.29	0.45
25:Y:1180:U:C2'	25:Y:1181:U:O5'	2.64	0.45
25:Y:1359:A:OP2	25:Y:1371:G:N2	2.50	0.45
25:Y:2048:G:H2'	25:Y:2049:G:O4'	2.16	0.45
25:Y:2289:G:C2	25:Y:2290:G:C8	3.04	0.45
25:Y:2671:G:O2'	25:Y:2672:U:O4'	2.33	0.45
26:Z:33:G:C2	26:Z:50:A:C2	3.04	0.45
50:x:10:ARG:NH2	50:x:52:PHE:O	2.48	0.45
52:z:4:ILE:O	52:z:4:ILE:HG22	2.16	0.45
4:D:495:A:C4	4:D:496:A:C2	3.04	0.45
4:D:639:G:C2'	4:D:640:A:O5'	2.65	0.45
4:D:675:A:H1'	14:N:117:HIS:CD2	2.52	0.45
4:D:985:C:C2	4:D:1221:G:N1	2.85	0.45
4:D:1004:A:O2'	4:D:1036:A:N6	2.49	0.45
4:D:1417:G:HO2'	4:D:1418:A:P	2.40	0.45
9:I:46:GLN:HA	9:I:56:LYS:HA	1.98	0.45
13:M:42:LEU:HD11	13:M:73:LEU:HG	1.97	0.45
25:Y:219:A:H2'	25:Y:220:G:O4'	2.16	0.45
25:Y:582:A:O3'	41:o:10:ARG:NH1	2.43	0.45
25:Y:910:A:C2	37:k:13:HIS:CE1	3.05	0.45
25:Y:1233:C:N3	25:Y:1234:U:C5	2.84	0.45
25:Y:2019:A:O2'	25:Y:2020:A:P	2.73	0.45
25:Y:2317:A:C2'	25:Y:2318:G:O5'	2.64	0.45
25:Y:2644:G:H2'	25:Y:2645:G:N3	2.31	0.45
31:e:1:SER:O	31:e:4:ALA:N	2.49	0.45
36:j:70:LYS:O	36:j:72:ALA:N	2.50	0.45
4:D:333:U:OP1	23:W:2:ASN:N	2.49	0.45
7:G:58:GLN:HB3	7:G:62:ARG:NH1	2.31	0.45
12:L:30:ASN:C	12:L:32:ARG:H	2.22	0.45
14:N:60:PHE:O	14:N:63:GLN:HB3	2.16	0.45
14:N:98:ALA:O	14:N:102:ALA:N	2.49	0.45
25:Y:135:U:H2'	25:Y:136:G:O4'	2.16	0.45
25:Y:633:A:O2'	25:Y:2404:U:OP1	2.31	0.45
25:Y:738:G:N1	25:Y:759:G:C6	2.84	0.45
25:Y:1054:A:C8	25:Y:1106:G:C8	3.05	0.45
25:Y:1070:A:H3'	25:Y:1071:G:C5'	2.45	0.45
25:Y:1084:A:H5'	56:3:54:VAL:HG13	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:2376:A:H2'	25:Y:2377:A:O4'	2.17	0.45
25:Y:2638:G:H1'	25:Y:2778:A:H61	1.82	0.45
25:Y:2643:G:C2'	25:Y:2644:G:O5'	2.65	0.45
26:Z:47:C:C4	26:Z:48:U:C5	3.05	0.45
33:g:48:ILE:HG13	33:g:49:GLU:H	1.82	0.45
33:g:80:LYS:O	33:g:85:ILE:N	2.50	0.45
37:k:72:PRO:HD3	37:k:92:TRP:CZ3	2.51	0.45
46:t:63:ILE:HG22	46:t:64:VAL:N	2.31	0.45
52:z:44:GLN:O	52:z:45:HIS:HB2	2.16	0.45
53:0:13:ASN:O	53:0:17:GLY:N	2.45	0.45
53:0:44:VAL:O	53:0:44:VAL:HG13	2.17	0.45
1:A:4:G:H2'	1:A:5:G:O5'	2.17	0.45
4:D:375:U:HO2'	4:D:376:G:P	2.39	0.45
4:D:490:C:O2	4:D:491:G:C8	2.69	0.45
13:M:10:LEU:HD11	13:M:72:ARG:HB2	1.98	0.45
15:O:101:LEU:N	15:O:101:LEU:HD12	2.31	0.45
25:Y:206:U:C2	25:Y:207:A:C8	3.05	0.45
25:Y:818:G:N1	25:Y:1188:U:OP2	2.44	0.45
25:Y:1370:C:H2'	25:Y:1371:G:O4'	2.17	0.45
25:Y:1926:U:N3	25:Y:1929:G:OP2	2.42	0.45
25:Y:1928:A:H2'	25:Y:1929:G:O4'	2.16	0.45
25:Y:2483:C:N3	37:k:123:LYS:NZ	2.58	0.45
35:i:29:HIS:ND1	35:i:29:HIS:O	2.50	0.45
35:i:108:ARG:O	35:i:109:SER:HB3	2.17	0.45
36:j:58:TYR:O	54:l:12:ARG:CD	2.65	0.45
44:r:60:THR:OG1	44:r:82:LYS:O	2.26	0.45
53:0:12:ARG:NE	53:0:44:VAL:HG21	2.31	0.45
1:A:28:A:H5''	8:H:56:PRO:CD	2.25	0.45
2:B:75:C:C5'	2:B:76:A:OP2	2.65	0.45
3:C:44:HIS:O	3:C:45:ASP:C	2.60	0.45
4:D:246:A:O2'	4:D:247:G:OP2	2.25	0.45
4:D:1060:U:OP1	17:Q:85:ARG:NH2	2.49	0.45
4:D:1094:G:HO2'	4:D:1095:U:P	2.39	0.45
4:D:1437:A:O3'	23:W:28:ARG:NH1	2.50	0.45
10:J:26:VAL:O	10:J:29:LEU:N	2.50	0.45
25:Y:362:A:C4	25:Y:363:G:C8	3.05	0.45
25:Y:828:U:O2'	25:Y:829:A:C5'	2.65	0.45
25:Y:866:A:C6	25:Y:867:C:C5	3.05	0.45
25:Y:1167:C:N4	25:Y:1168:G:O6	2.49	0.45
25:Y:1686:C:N4	25:Y:1703:G:C6	2.84	0.45
25:Y:1704:C:C2	25:Y:1705:A:N7	2.85	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:2150:C:C2'	25:Y:2151:U:O4'	2.64	0.45
25:Y:2188:U:H2'	25:Y:2189:U:O4'	2.16	0.45
25:Y:2732:G:H3'	25:Y:2733:A:O4'	2.17	0.45
56:3:108:VAL:HG12	56:3:109:LYS:H	1.81	0.45
3:C:45:ASP:HA	25:Y:2063:C:C1'	2.41	0.45
4:D:7:A:C4	4:D:298:A:C6	3.05	0.45
4:D:51:A:N1	4:D:116:A:N6	2.65	0.45
4:D:71:A:N1	4:D:100:G:C8	2.85	0.45
4:D:820:U:H4'	4:D:821:G:OP2	2.17	0.45
4:D:1012:A:H2'	4:D:1013:G:O4'	2.16	0.45
9:I:38:ARG:HB3	9:I:62:MET:O	2.17	0.45
25:Y:67:U:C2	25:Y:68:G:C8	3.05	0.45
25:Y:133:U:C2	25:Y:134:G:C8	3.05	0.45
25:Y:193:U:H2'	25:Y:194:G:H5'	1.98	0.45
25:Y:1062:G:O3'	25:Y:1063:G:O4'	2.35	0.45
25:Y:1432:G:H2'	25:Y:1433:A:C8	2.52	0.45
25:Y:1508:A:O2'	25:Y:1509:A:OP1	2.32	0.45
25:Y:2057:G:C1'	51:y:2:VAL:HG21	2.47	0.45
34:h:80:HIS:O	34:h:82:GLY:N	2.49	0.45
38:l:63:ARG:HD2	38:l:80:PHE:CD2	2.52	0.45
3:C:23:ARG:CG	3:C:24:ARG:H	2.28	0.45
4:D:441:A:H3'	4:D:442:G:H5'	1.99	0.45
4:D:621:A:H2'	4:D:622:A:O4'	2.17	0.45
4:D:976:G:OP2	4:D:1358:U:O2'	2.34	0.45
4:D:1108:G:N3	4:D:1108:G:H2'	2.31	0.45
4:D:1451:U:H4'	4:D:1452:C:OP2	2.17	0.45
4:D:1527:U:H2'	4:D:1528:U:C6	2.51	0.45
12:L:14:SER:HB2	12:L:68:GLY:C	2.42	0.45
25:Y:181:A:H2'	25:Y:182:A:O4'	2.16	0.45
25:Y:729:G:O2'	25:Y:763:G:H4'	2.17	0.45
25:Y:1030:C:C4	25:Y:1125:G:N2	2.85	0.45
25:Y:2164:C:N4	25:Y:2165:C:O2	2.50	0.45
33:g:53:PRO:O	33:g:73:PRO:HB3	2.17	0.45
33:g:108:ILE:HG23	33:g:112:LYS:HZ1	1.81	0.45
49:w:7:ARG:O	49:w:8:GLU:CD	2.59	0.45
56:3:78:GLY:N	56:3:79:PRO:CD	2.80	0.45
57:4:44:PHE:CD1	57:4:45:THR:HG23	2.52	0.45
4:D:109:A:N1	4:D:326:G:C6	2.85	0.45
4:D:178:C:C2	4:D:179:A:C8	3.05	0.45
4:D:600:A:C6	4:D:639:G:C6	3.05	0.45
16:P:1:ALA:O	16:P:7:ASN:O	2.34	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:225:C:H2'	25:Y:226:A:O5'	2.17	0.45
25:Y:818:G:H21	25:Y:1189:A:H62	1.64	0.45
25:Y:1684:G:C6	25:Y:1705:A:N6	2.85	0.45
25:Y:2407:A:C8	25:Y:2407:A:OP2	2.70	0.45
25:Y:2657:A:C8	25:Y:2658:C:C5	3.05	0.45
32:f:76:GLU:OE1	32:f:142:VAL:HG22	2.16	0.45
56:3:110:ALA:O	56:3:112:ALA:N	2.50	0.45
2:B:5:A:H2'	2:B:6:C:C6	2.51	0.45
4:D:39:G:C2	4:D:404:G:N2	2.85	0.45
4:D:409:U:O2'	4:D:410:G:P	2.75	0.45
4:D:519:C:O2'	4:D:520:A:OP1	2.33	0.45
4:D:1077:G:N2	4:D:1080:A:OP2	2.30	0.45
4:D:1258:G:N2	4:D:1279:G:H22	2.15	0.45
8:H:45:VAL:O	8:H:71:ILE:N	2.39	0.45
16:P:54:THR:O	16:P:57:ASP:OD1	2.34	0.45
23:W:23:ARG:O	23:W:26:MET:HG2	2.17	0.45
25:Y:828:U:O2'	25:Y:829:A:O5'	2.34	0.45
25:Y:1026:G:C8	25:Y:1134:A:C4	3.05	0.45
25:Y:1433:A:H2'	25:Y:1434:A:C8	2.52	0.45
25:Y:2725:A:C2'	25:Y:2726:A:O5'	2.65	0.45
25:Y:2731:G:O2'	25:Y:2732:G:O4'	2.33	0.45
26:Z:106:G:H2'	26:Z:107:G:O4'	2.17	0.45
40:n:21:PRO:HD3	40:n:49:ILE:HD12	1.99	0.45
4:D:436:C:C2'	4:D:437:U:O4'	2.64	0.44
4:D:1493:A:H1'	4:D:1494:G:C5'	2.47	0.44
5:E:45:THR:HG22	5:E:49:PHE:HE2	1.81	0.44
15:O:87:LYS:HG2	15:O:87:LYS:O	2.17	0.44
23:W:14:GLU:O	23:W:17:ARG:HG2	2.17	0.44
25:Y:77:G:OP1	49:w:52:ARG:NE	2.45	0.44
25:Y:280:U:O3'	25:Y:281:C:O4'	2.34	0.44
25:Y:500:G:N1	25:Y:503:A:OP2	2.47	0.44
25:Y:998:C:H2'	25:Y:999:U:O4'	2.17	0.44
25:Y:1055:G:O2'	25:Y:1056:G:O5'	2.26	0.44
25:Y:1326:U:O2	25:Y:1326:U:C2'	2.65	0.44
25:Y:1748:C:C2	25:Y:1749:A:C8	3.05	0.44
25:Y:2146:C:H5''	25:Y:2147:A:OP1	2.18	0.44
25:Y:2147:A:O2'	25:Y:2148:G:O4'	2.34	0.44
25:Y:2834:G:H2'	25:Y:2879:A:H61	1.82	0.44
4:D:404:G:HO2'	4:D:405:U:C4'	2.22	0.44
4:D:947:G:H2'	4:D:948:C:O4'	2.17	0.44
4:D:959:A:H2'	4:D:961:U:OP2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:1416:G:C2'	4:D:1417:G:O5'	2.65	0.44
25:Y:226:A:O2'	25:Y:227:A:O4'	2.26	0.44
25:Y:404:A:H1'	25:Y:406:G:C5	2.52	0.44
25:Y:1236:G:O2'	25:Y:1237:A:P	2.75	0.44
25:Y:1656:C:C2	25:Y:1657:U:C5	3.05	0.44
25:Y:2134:A:H62	25:Y:2157:G:H4'	1.82	0.44
25:Y:2629:U:O2'	25:Y:2630:G:P	2.75	0.44
30:d:142:TYR:O	30:d:143:ASP:C	2.60	0.44
33:g:129:GLU:O	33:g:133:ARG:N	2.40	0.44
35:i:58:LEU:HD11	35:i:86:LEU:HD22	2.00	0.44
40:n:69:VAL:HG12	40:n:70:GLU:N	2.32	0.44
42:p:37:GLU:O	42:p:39:LEU:HD12	2.17	0.44
43:q:2:GLU:O	43:q:3:THR:HB	2.17	0.44
43:q:77:ASP:OD1	43:q:102:HIS:HB2	2.18	0.44
56:3:38:MET:HA	56:3:42:ARG:HB2	1.99	0.44
1:A:23:U:O2	1:A:23:U:H2'	2.16	0.44
2:B:63:U:H2'	2:B:64:C:C6	2.52	0.44
2:B:75:C:H5''	2:B:76:A:OP2	2.18	0.44
4:D:379:C:H2'	4:D:380:G:O4'	2.18	0.44
4:D:403:C:HO2'	4:D:404:G:C5'	2.30	0.44
4:D:1221:G:H2'	4:D:1222:G:O4'	2.18	0.44
5:E:185:ILE:HA	5:E:199:ILE:HB	1.99	0.44
7:G:137:SER:OG	7:G:138:PRO:HD2	2.16	0.44
7:G:190:LEU:HD12	7:G:190:LEU:C	2.42	0.44
9:I:88:MET:SD	21:U:64:LEU:HD21	2.57	0.44
13:M:91:ASP:OD1	13:M:92:LEU:N	2.45	0.44
22:V:30:LEU:HB2	22:V:48:ILE:HG22	2.00	0.44
25:Y:71:A:H4'	25:Y:72:U:H5'	1.99	0.44
25:Y:1082:U:H5'	33:g:119:ALA:HB3	2.00	0.44
25:Y:2629:U:HO2'	25:Y:2630:G:P	2.39	0.44
26:Z:12:C:HO2'	26:Z:13:G:P	2.40	0.44
32:f:130:VAL:HG12	32:f:131:SER:N	2.32	0.44
1:A:28:A:C8	1:A:28:A:OP2	2.70	0.44
2:B:25:C:H2'	2:B:26:A:O4'	2.18	0.44
4:D:195:A:N3	4:D:222:C:O2'	2.44	0.44
4:D:477:C:H2'	4:D:478:A:H8	1.83	0.44
4:D:641:U:H4'	4:D:642:A:OP1	2.17	0.44
4:D:1118:U:H1'	4:D:1179:A:C5	2.53	0.44
18:R:34:GLN:HB3	18:R:58:MET:HE1	2.00	0.44
25:Y:24:G:H2'	25:Y:25:U:H6	1.83	0.44
25:Y:546:U:HO2'	25:Y:547:A:P	2.39	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1059:G:H5''	25:Y:1060:U:H3'	2.00	0.44
25:Y:1775:U:C5	25:Y:1776:G:C8	3.05	0.44
25:Y:2081:U:H2'	25:Y:2082:A:H8	1.82	0.44
31:e:97:VAL:HG23	31:e:124:CYS:SG	2.57	0.44
33:g:75:ALA:H	33:g:128:ILE:HG23	1.82	0.44
38:l:79:LEU:C	38:l:81:ASN:H	2.24	0.44
42:p:27:ILE:CG2	42:p:28:ALA:N	2.80	0.44
56:3:28:ALA:O	56:3:29:ASP:OD1	2.35	0.44
1:A:22:C:H5''	1:A:23:U:H5'	1.98	0.44
5:E:185:ILE:HA	5:E:199:ILE:O	2.18	0.44
6:F:23:ALA:HB1	6:F:27:GLU:CG	2.48	0.44
11:K:45:ILE:HG22	11:K:46:GLU:N	2.32	0.44
14:N:92:ARG:O	14:N:95:THR:HG22	2.16	0.44
16:P:6:ILE:HG13	16:P:7:ASN:N	2.32	0.44
25:Y:690:G:H4'	27:a:216:ARG:HH22	1.82	0.44
25:Y:704:G:H1'	25:Y:727:A:N6	2.29	0.44
25:Y:910:A:N1	37:k:13:HIS:NE2	2.65	0.44
25:Y:1076:C:O2'	33:g:90:GLY:HA2	2.18	0.44
25:Y:1104:C:O2'	25:Y:1105:U:O4'	2.36	0.44
25:Y:1168:G:N1	25:Y:1182:G:C2	2.85	0.44
25:Y:1168:G:C2	25:Y:1169:A:C2	3.06	0.44
25:Y:1872:A:H2'	25:Y:1873:G:O4'	2.17	0.44
25:Y:2291:U:O2'	25:Y:2374:C:O2	2.35	0.44
32:f:12:LEU:C	32:f:12:LEU:HD12	2.43	0.44
48:v:37:PHE:O	48:v:46:VAL:N	2.47	0.44
56:3:31:ARG:O	56:3:108:VAL:HG11	2.17	0.44
2:B:17:C:N3	2:B:61:C:OP1	2.51	0.44
3:C:36:VAL:HA	3:C:39:MET:HB3	2.00	0.44
4:D:673:A:H2'	4:D:674:G:H8	1.82	0.44
4:D:723:U:C4'	4:D:724:G:OP2	2.65	0.44
4:D:919:A:C2	4:D:920:U:C5	3.06	0.44
4:D:940:C:H2'	4:D:941:G:O4'	2.17	0.44
4:D:1151:A:C2	4:D:1152:A:C5	3.05	0.44
4:D:1369:C:H2'	4:D:1370:G:O4'	2.17	0.44
5:E:129:THR:HG22	5:E:130:LYS:N	2.33	0.44
10:J:43:TYR:O	10:J:47:GLU:OE1	2.36	0.44
12:L:114:LYS:HB2	12:L:117:LEU:HD22	1.98	0.44
14:N:91:GLY:O	14:N:92:ARG:C	2.60	0.44
15:O:29:LYS:O	15:O:80:LEU:HD12	2.17	0.44
17:Q:42:TRP:HB2	57:4:64:PHE:HZ	1.83	0.44
18:R:86:LEU:HD12	18:R:87:ARG:N	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:V:79:TYR:O	22:V:80:ARG:C	2.60	0.44
23:W:53:MET:O	23:W:57:VAL:HG12	2.17	0.44
24:X:18:PHE:O	24:X:22:CYS:N	2.50	0.44
25:Y:246:C:H2'	25:Y:247:G:O4'	2.18	0.44
25:Y:353:C:H3'	25:Y:354:A:C8	2.53	0.44
25:Y:527:C:N4	25:Y:2043:C:OP2	2.51	0.44
25:Y:1084:A:H62	56:3:37:LYS:HB2	1.82	0.44
25:Y:1086:A:H5'	25:Y:1104:C:O2	2.17	0.44
25:Y:1095:A:N7	33:g:26:ALA:N	2.65	0.44
25:Y:1107:G:C2'	25:Y:1108:U:O5'	2.65	0.44
25:Y:2146:C:H4'	25:Y:2147:A:C4	2.52	0.44
25:Y:2251:OMG:O3'	25:Y:2251:OMG:HM23	2.17	0.44
25:Y:2676:C:H2'	25:Y:2677:G:O4'	2.17	0.44
25:Y:2824:C:O2'	25:Y:2825:G:OP1	2.34	0.44
30:d:64:PRO:HA	30:d:88:VAL:HG22	1.98	0.44
30:d:142:TYR:O	30:d:144:LYS:N	2.50	0.44
2:B:5:A:O2'	2:B:6:C:O5'	2.36	0.44
4:D:519:C:O2'	4:D:520:A:P	2.76	0.44
4:D:1091:U:C2	4:D:1095:U:C4	3.06	0.44
4:D:1205:U:H2'	4:D:1206:G:H8	1.83	0.44
4:D:1315:U:H2'	4:D:1316:G:O4'	2.17	0.44
5:E:65:LYS:O	5:E:158:ASP:N	2.47	0.44
7:G:142:VAL:O	7:G:178:GLU:HG3	2.17	0.44
8:H:123:LEU:O	8:H:124:ALA:HB2	2.18	0.44
17:Q:30:ILE:HD13	17:Q:44:ALA:CB	2.47	0.44
18:R:86:LEU:HD12	18:R:86:LEU:C	2.43	0.44
22:V:54:ARG:HG3	22:V:55:GLN:HG2	1.98	0.44
25:Y:12:U:O2'	25:Y:13:A:P	2.75	0.44
25:Y:193:U:H2'	25:Y:194:G:C5'	2.47	0.44
25:Y:194:G:H2'	25:Y:195:A:O4'	2.17	0.44
25:Y:390:U:O2'	25:Y:391:A:OP2	2.35	0.44
25:Y:1098:A:O2'	33:g:4:VAL:C	2.60	0.44
25:Y:1293:C:C2	25:Y:1294:U:C6	3.06	0.44
25:Y:1315:C:O2'	25:Y:1392:A:N3	2.44	0.44
25:Y:1482:G:N2	25:Y:1508:A:N7	2.66	0.44
25:Y:1772:A:H2'	25:Y:1773:A:O3'	2.17	0.44
25:Y:2402:U:O2'	25:Y:2403:C:O5'	2.32	0.44
25:Y:2704:C:H2'	25:Y:2705:A:O4'	2.17	0.44
25:Y:2793:C:H3'	25:Y:2794:C:H6	1.83	0.44
27:a:66:PHE:HB2	27:a:150:GLY:O	2.17	0.44
40:n:70:GLU:OE2	40:n:100:ARG:NH1	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:117:G:H5''	4:D:118:U:OP2	2.18	0.44
4:D:323:U:H2'	4:D:324:G:O4'	2.18	0.44
4:D:642:A:C5	4:D:643:C:C5	3.06	0.44
4:D:1314:C:H2'	4:D:1315:U:H6	1.83	0.44
4:D:1330:U:OP1	16:P:24:VAL:N	2.50	0.44
7:G:23:GLY:C	7:G:160:LEU:HD21	2.43	0.44
12:L:12:LYS:O	12:L:13:SER:HB3	2.17	0.44
19:S:4:ILE:HG12	19:S:21:VAL:HG22	1.99	0.44
24:X:31:VAL:O	24:X:31:VAL:HG22	2.17	0.44
25:Y:26:G:C2'	25:Y:27:G:O4'	2.66	0.44
25:Y:467:G:OP2	53:O:34:ARG:HD3	2.18	0.44
25:Y:490:C:HO2'	25:Y:491:G:P	2.36	0.44
25:Y:499:U:H2'	25:Y:500:G:O4'	2.17	0.44
25:Y:676:A:N6	25:Y:802:A:H61	2.09	0.44
25:Y:896:A:C4'	25:Y:897:C:OP1	2.65	0.44
25:Y:903:C:O2'	25:Y:904:G:H8	2.01	0.44
25:Y:1417:C:H4'	25:Y:1587:G:H21	1.83	0.44
25:Y:1686:C:C4	25:Y:1687:G:C2	3.05	0.44
25:Y:1715:G:O2'	25:Y:1716:U:P	2.75	0.44
25:Y:1770:G:C6	25:Y:1983:G:C6	3.06	0.44
25:Y:1839:G:C2	25:Y:1840:G:C8	3.06	0.44
25:Y:2066:C:O2'	25:Y:2067:G:H5'	2.17	0.44
25:Y:2318:G:H2'	25:Y:2319:G:C1'	2.48	0.44
25:Y:2867:G:HO2'	25:Y:2868:A:P	2.40	0.44
26:Z:13:G:O2'	26:Z:15:A:H2'	2.18	0.44
26:Z:66:A:H5'	26:Z:67:G:OP1	2.18	0.44
31:e:132:LEU:C	31:e:132:LEU:HD12	2.43	0.44
33:g:108:ILE:HG23	33:g:112:LYS:NZ	2.33	0.44
2:B:12:G:H1	2:B:23:C:H42	1.66	0.44
4:D:106:C:H2'	4:D:107:G:O4'	2.18	0.44
4:D:1250:A:H2'	4:D:1251:A:C8	2.52	0.44
4:D:1521:C:O2'	4:D:1522:U:H5'	2.18	0.44
6:F:185:THR:HG22	6:F:186:SER:N	2.32	0.44
17:Q:54:ASP:O	17:Q:55:SER:CB	2.66	0.44
25:Y:225:C:C2'	25:Y:226:A:O5'	2.66	0.44
25:Y:1181:U:O2'	25:Y:1182:G:O4'	2.35	0.44
25:Y:1483:G:H2'	25:Y:1483:G:N3	2.33	0.44
25:Y:2011:U:H2'	25:Y:2012:G:O4'	2.18	0.44
25:Y:2024:G:O2'	28:b:154:LYS:NZ	2.51	0.44
27:a:230:PRO:O	27:a:241:LYS:NZ	2.44	0.44
31:e:37:ASN:OD1	31:e:38:ASP:N	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:f:7:ASP:OD1	32:f:8:LYS:N	2.47	0.44
36:j:101:ILE:HG13	36:j:102:GLY:N	2.33	0.44
43:q:59:GLU:HA	43:q:64:ALA:HB2	1.98	0.44
56:3:43:LYS:O	56:3:47:GLU:N	2.49	0.44
5:E:182:VAL:HG23	5:E:195:VAL:HA	2.00	0.43
8:H:100:GLU:OE1	8:H:100:GLU:O	2.36	0.43
10:J:110:ARG:NE	10:J:122:GLU:OE2	2.51	0.43
11:K:77:VAL:HG12	11:K:84:ILE:HD12	2.00	0.43
15:O:26:CYS:SG	15:O:29:LYS:HD3	2.57	0.43
25:Y:38:A:H2'	25:Y:39:G:O4'	2.18	0.43
25:Y:536:G:H2'	25:Y:537:G:O4'	2.18	0.43
25:Y:604:G:O2'	25:Y:605:G:H5'	2.18	0.43
25:Y:984:A:HO2'	25:Y:985:C:P	2.34	0.43
25:Y:1071:G:N2	25:Y:1090:A:C5	2.86	0.43
25:Y:1287:A:N6	25:Y:1649:G:O2'	2.51	0.43
25:Y:1453:A:HO2'	25:Y:1454:C:P	2.36	0.43
25:Y:2326:C:O2'	25:Y:2327:A:P	2.76	0.43
25:Y:2710:C:H2'	25:Y:2711:A:C8	2.53	0.43
27:a:179:GLU:HG3	27:a:268:ARG:O	2.17	0.43
29:c:118:LEU:O	29:c:119:ILE:HD13	2.18	0.43
33:g:12:VAL:O	33:g:13:ALA:C	2.59	0.43
36:j:77:ILE:CG2	36:j:78:ARG:N	2.81	0.43
36:j:85:VAL:O	36:j:86:GLU:HB2	2.18	0.43
56:3:22:ALA:HB1	56:3:91:ALA:N	2.33	0.43
4:D:642:A:N7	11:K:106:SER:HA	2.33	0.43
4:D:925:G:C2	4:D:927:G:C8	3.07	0.43
4:D:1109:C:C2	4:D:1110:A:C8	3.06	0.43
4:D:1424:U:H2'	4:D:1425:U:O4'	2.18	0.43
4:D:1432:G:C2'	4:D:1433:A:OP2	2.66	0.43
5:E:15:PHE:CE2	5:E:17:HIS:CE1	3.07	0.43
5:E:73:ARG:O	5:E:76:SER:OG	2.30	0.43
19:S:50:THR:HG22	19:S:51:ARG:N	2.32	0.43
22:V:61:VAL:HG12	22:V:62:THR:N	2.33	0.43
25:Y:374:A:H2'	25:Y:375:G:O4'	2.17	0.43
25:Y:923:G:H2'	25:Y:924:G:C8	2.52	0.43
25:Y:1063:G:H2'	25:Y:1064:C:O4'	2.18	0.43
25:Y:1084:A:H62	56:3:37:LYS:CB	2.31	0.43
25:Y:1320:C:O2'	25:Y:1321:A:OP2	2.27	0.43
25:Y:1523:U:H2'	25:Y:1524:G:OP1	2.18	0.43
25:Y:1869:G:H3'	25:Y:1870:C:H5''	2.00	0.43
25:Y:2121:G:N2	25:Y:2178:C:C2	2.86	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:a:90:ILE:HD12	27:a:102:TYR:CD1	2.53	0.43
28:b:22:ILE:HG13	28:b:22:ILE:O	2.18	0.43
34:h:48:VAL:HG12	34:h:49:ASP:N	2.34	0.43
40:n:45:VAL:HG12	40:n:46:VAL:H	1.82	0.43
43:q:87:PRO:O	43:q:88:ARG:HD2	2.18	0.43
2:B:5:A:O2'	2:B:6:C:C5'	2.67	0.43
4:D:442:G:O2'	4:D:443:C:H5'	2.18	0.43
4:D:664:G:H22	4:D:741:G:H1	1.66	0.43
4:D:992:U:HO2'	4:D:993:G:P	2.41	0.43
7:G:25:ARG:HG2	7:G:26:ALA:N	2.34	0.43
7:G:149:LYS:C	7:G:150:LYS:HG2	2.43	0.43
12:L:29:ILE:O	12:L:32:ARG:N	2.50	0.43
19:S:5:ARG:NH2	19:S:26:ASN:O	2.44	0.43
23:W:17:ARG:O	23:W:18:LYS:C	2.60	0.43
25:Y:51:G:C4'	25:Y:52:A:OP2	2.66	0.43
25:Y:853:C:H2'	25:Y:854:C:O4'	2.18	0.43
25:Y:1058:U:H2'	25:Y:1059:G:O4'	2.18	0.43
25:Y:1061:U:H3'	25:Y:1062:G:H5'	2.01	0.43
25:Y:1630:A:N6	25:Y:1637:A:N6	2.67	0.43
25:Y:2006:C:O2'	25:Y:2007:U:P	2.75	0.43
25:Y:2181:U:H2'	25:Y:2182:U:O4'	2.17	0.43
25:Y:2450:A:P	25:Y:2497:A:HO2'	2.33	0.43
25:Y:2557:G:H2'	25:Y:2558:C:C6	2.53	0.43
31:e:174:LYS:HG2	31:e:175:LYS:N	2.33	0.43
33:g:12:VAL:HG22	33:g:19:PRO:HD3	2.01	0.43
39:m:43:ASN:OD1	39:m:44:GLY:N	2.52	0.43
40:n:45:VAL:CG1	40:n:46:VAL:N	2.80	0.43
41:o:45:ALA:HB1	41:o:49:ARG:NH1	2.33	0.43
45:s:97:SER:O	45:s:98:ASN:HB3	2.18	0.43
56:3:28:ALA:O	56:3:109:LYS:O	2.36	0.43
2:B:34:G:C5'	4:D:966:2MG:HM22	2.49	0.43
4:D:155:A:H2'	4:D:156:C:O4'	2.19	0.43
4:D:177:G:C5	4:D:178:C:C5	3.06	0.43
4:D:363:A:C2	15:O:27:PRO:HD2	2.53	0.43
4:D:844:G:H2'	4:D:844:G:N3	2.32	0.43
4:D:1352:C:H2'	4:D:1353:G:O4'	2.18	0.43
14:N:30:ILE:HD12	14:N:44:ALA:O	2.18	0.43
25:Y:264:C:O2'	25:Y:265:A:H2'	2.18	0.43
25:Y:550:C:H2'	25:Y:551:G:O4'	2.18	0.43
25:Y:582:A:H2'	25:Y:583:G:H8	1.84	0.43
25:Y:985:C:C2	25:Y:986:C:C5	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1085:A:H62	56:3:37:LYS:HE2	1.83	0.43
25:Y:1290:C:C2	25:Y:1291:C:C5	3.05	0.43
25:Y:1447:C:O2'	25:Y:1544:A:N3	2.50	0.43
25:Y:1600:C:C2	25:Y:1601:G:N7	2.86	0.43
25:Y:1837:C:N4	25:Y:1899:A:N7	2.66	0.43
25:Y:1837:C:C2	25:Y:1904:G:N2	2.86	0.43
25:Y:1843:C:C2	25:Y:1844:C:C5	3.07	0.43
25:Y:2149:U:H2'	25:Y:2150:C:C5	2.53	0.43
25:Y:2681:C:OP2	28:b:114:LYS:NZ	2.30	0.43
25:Y:2692:G:H2'	25:Y:2693:G:O4'	2.18	0.43
25:Y:2863:C:O2	25:Y:2864:G:C8	2.72	0.43
26:Z:36:C:O2'	26:Z:37:C:H5'	2.18	0.43
26:Z:44:G:N3	26:Z:47:C:N4	2.56	0.43
36:j:85:VAL:CG1	36:j:94:THR:HG22	2.48	0.43
38:l:49:GLU:HB2	38:l:50:PRO:HD3	2.00	0.43
2:B:34:G:H5'	4:D:966:2MG:HM22	2.00	0.43
4:D:71:A:C2	4:D:72:A:C8	3.06	0.43
4:D:851:G:C2	4:D:852:G:C8	3.06	0.43
14:N:45:THR:OG1	14:N:48:GLY:N	2.51	0.43
25:Y:26:G:HO2'	25:Y:27:G:C4'	2.31	0.43
25:Y:111:A:O2'	25:Y:112:U:P	2.76	0.43
25:Y:253:C:P	54:1:4:LYS:HZ2	2.35	0.43
25:Y:374:A:C4	25:Y:401:A:C6	3.06	0.43
25:Y:552:U:C2	25:Y:553:G:C8	3.06	0.43
25:Y:864:G:H5'	26:Z:100:G:H21	1.83	0.43
25:Y:1058:U:C4	25:Y:1059:G:C4	3.06	0.43
25:Y:1239:G:H2'	25:Y:1240:U:O4'	2.19	0.43
25:Y:1248:G:OP1	29:c:44:ARG:NH2	2.46	0.43
25:Y:1287:A:C2'	25:Y:1288:G:O5'	2.66	0.43
25:Y:1528:A:OP2	25:Y:1543:G:N2	2.52	0.43
25:Y:1599:U:N3	25:Y:1600:C:C5	2.86	0.43
25:Y:1664:A:N3	25:Y:1664:A:H2'	2.34	0.43
25:Y:2495:G:H2'	25:Y:2496:C:O5'	2.18	0.43
25:Y:2579:C:H2'	25:Y:2580:PSU:H6	1.82	0.43
26:Z:45:A:C4	26:Z:46:A:C8	3.06	0.43
33:g:78:LEU:HD13	33:g:112:LYS:NZ	2.33	0.43
44:r:61:LEU:O	44:r:81:LYS:HG3	2.18	0.43
45:s:58:VAL:HG12	45:s:59:GLU:N	2.33	0.43
50:x:6:ILE:HG22	50:x:7:THR:N	2.33	0.43
56:3:100:ALA:HA	56:3:113:PHE:HB3	1.99	0.43
1:A:22:C:O2'	1:A:23:U:P	2.76	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:82:G:C2'	4:D:83:C:O4'	2.66	0.43
4:D:203:G:HO2'	4:D:204:G:C5'	2.30	0.43
4:D:292:G:OP2	4:D:305:G:N2	2.47	0.43
4:D:1176:A:C4	4:D:1177:G:C8	3.07	0.43
4:D:1186:G:H2'	4:D:1187:G:O4'	2.18	0.43
4:D:1477:U:H2'	4:D:1478:U:C6	2.54	0.43
12:L:81:GLY:O	12:L:85:ALA:HB2	2.18	0.43
13:M:8:ILE:O	13:M:73:LEU:HA	2.18	0.43
14:N:125:LYS:O	24:X:34:ARG:NH2	2.52	0.43
17:Q:93:ILE:HG21	17:Q:96:LEU:HD22	1.99	0.43
25:Y:29:U:C2	25:Y:30:G:C8	3.07	0.43
25:Y:114:U:C2	25:Y:115:C:C5	3.06	0.43
25:Y:652:U:H5''	25:Y:653:U:P	2.57	0.43
25:Y:710:U:C2	25:Y:711:G:C8	3.06	0.43
25:Y:895:U:C2'	25:Y:896:A:H3'	2.48	0.43
25:Y:1082:U:OP1	33:g:120:ASP:O	2.36	0.43
25:Y:1232:G:C6	25:Y:1233:C:C4	3.07	0.43
25:Y:1319:C:N4	25:Y:1334:G:O6	2.52	0.43
25:Y:1506:U:O2'	25:Y:1507:C:O4'	2.26	0.43
25:Y:2049:G:O2'	25:Y:2050:C:H5'	2.19	0.43
25:Y:2111:U:OP1	25:Y:2118:U:O2'	2.35	0.43
25:Y:2814:A:C5	25:Y:2815:C:C5	3.07	0.43
25:Y:2838:G:C4	25:Y:2839:G:C8	3.06	0.43
28:b:20:VAL:HG12	28:b:22:ILE:HG23	2.00	0.43
33:g:112:LYS:O	33:g:113:ALA:C	2.61	0.43
41:o:5:ARG:HG3	41:o:5:ARG:O	2.18	0.43
42:p:41:ILE:HG22	42:p:42:ALA:N	2.33	0.43
44:r:57:VAL:HG22	44:r:58:VAL:H	1.83	0.43
1:A:22:C:C1'	1:A:23:U:OP2	2.67	0.43
4:D:270:A:C5	4:D:271:C:C5	3.06	0.43
4:D:438:U:H1'	4:D:440:C:N4	2.18	0.43
4:D:491:G:C6	4:D:492:C:N4	2.86	0.43
4:D:1228:C:OP1	16:P:106:ARG:NH1	2.37	0.43
4:D:1237:C:O2'	4:D:1300:G:N2	2.48	0.43
4:D:1456:A:H2'	4:D:1457:G:O4'	2.18	0.43
5:E:46:VAL:HB	5:E:47:PRO:HD3	2.00	0.43
5:E:101:THR:N	5:E:174:GLU:OE2	2.45	0.43
13:M:26:VAL:O	13:M:29:ALA:N	2.50	0.43
15:O:20:VAL:HG23	15:O:20:VAL:O	2.18	0.43
16:P:2:ARG:HB3	57:4:35:ASP:OD2	2.19	0.43
25:Y:554:U:H2'	25:Y:555:G:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:772:C:O2'	25:Y:773:U:H5'	2.18	0.43
25:Y:1000:A:OP2	25:Y:1154:G:N1	2.41	0.43
25:Y:1322:A:C2	25:Y:1323:C:C6	3.06	0.43
25:Y:1451:C:H5''	25:Y:1452:G:OP1	2.19	0.43
25:Y:1505:A:H2'	25:Y:1505:A:N3	2.34	0.43
25:Y:1705:A:O2'	25:Y:1706:C:P	2.76	0.43
25:Y:1789:A:H2'	25:Y:1790:C:O4'	2.19	0.43
25:Y:1969:A:HO2'	25:Y:1972:G:HO2'	1.59	0.43
25:Y:2522:U:O2'	25:Y:2647:U:OP1	2.22	0.43
25:Y:2627:G:H2'	25:Y:2628:C:C6	2.53	0.43
27:a:106:PRO:HG2	27:a:109:LEU:HB2	2.00	0.43
28:b:9:VAL:O	28:b:26:VAL:HB	2.19	0.43
3:C:44:HIS:O	3:C:44:HIS:CG	2.70	0.43
4:D:404:G:O2'	4:D:405:U:C5'	2.67	0.43
4:D:1096:C:H2'	4:D:1097:C:C6	2.53	0.43
16:P:2:ARG:HG2	16:P:2:ARG:O	2.18	0.43
24:X:56:ALA:O	24:X:59:LEU:N	2.49	0.43
25:Y:445:C:O2'	25:Y:449:A:N3	2.47	0.43
25:Y:1054:A:N6	25:Y:1105:U:C2	2.86	0.43
25:Y:1213:A:C8	25:Y:1237:A:C2	3.07	0.43
25:Y:1328:A:H4'	25:Y:1329:U:OP1	2.18	0.43
25:Y:1523:U:C2'	25:Y:1524:G:OP1	2.67	0.43
25:Y:2107:G:H2'	25:Y:2108:A:H8	1.84	0.43
25:Y:2498:OMC:O2	25:Y:2498:OMC:HM23	2.19	0.43
25:Y:2580:PSU:C2'	25:Y:2581:G:O5'	2.66	0.43
25:Y:2581:G:H2'	25:Y:2581:G:N3	2.34	0.43
37:k:2:LEU:O	37:k:3:GLN:HG3	2.18	0.43
44:r:74:ILE:O	44:r:74:ILE:HG13	2.18	0.43
3:C:20:ASN:O	3:C:24:ARG:CD	2.66	0.43
4:D:116:A:H2'	4:D:117:G:O5'	2.18	0.43
4:D:262:A:C2	4:D:263:A:C5	3.07	0.43
4:D:542:G:O3'	7:G:13:ARG:NH2	2.52	0.43
4:D:1126:U:O2'	4:D:1127:G:OP1	2.31	0.43
4:D:1319:A:C8	4:D:1323:G:C5	3.07	0.43
7:G:77:GLU:O	7:G:80:ARG:HG2	2.18	0.43
9:I:90:MET:SD	21:U:60:ARG:NE	2.86	0.43
11:K:91:LEU:HB2	11:K:116:ARG:HE	1.83	0.43
12:L:11:ARG:O	12:L:12:LYS:C	2.61	0.43
23:W:67:HIS:O	23:W:68:LYS:HG2	2.18	0.43
25:Y:28:A:C5	25:Y:29:U:C5	3.07	0.43
25:Y:195:A:H3'	25:Y:196:A:H4'	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:611:C:H2'	25:Y:612:G:O4'	2.19	0.43
25:Y:665:U:C2	25:Y:666:A:C8	3.06	0.43
25:Y:796:C:OP1	29:c:57:LYS:NZ	2.49	0.43
25:Y:813:U:OP2	36:j:24:GLY:N	2.50	0.43
25:Y:987:C:H2'	25:Y:988:A:O4'	2.19	0.43
25:Y:1071:G:N3	25:Y:1089:A:O2'	2.50	0.43
25:Y:1079:C:C5	25:Y:1088:A:C4	3.07	0.43
25:Y:1424:G:H2'	25:Y:1425:G:C8	2.54	0.43
25:Y:2889:C:H2'	25:Y:2890:G:O4'	2.19	0.43
29:c:12:LEU:CD2	29:c:14:VAL:HG13	2.49	0.43
33:g:52:LEU:HB3	33:g:73:PRO:HG3	2.00	0.43
35:i:88:ASN:O	35:i:89:ASN:HB2	2.19	0.43
36:j:33:ARG:HD3	36:j:40:SER:HA	2.01	0.43
43:q:29:VAL:HG11	43:q:55:ILE:HD11	2.00	0.43
56:3:56:ARG:HA	56:3:83:ALA:HB2	2.00	0.43
56:3:67:THR:N	56:3:68:PRO:CD	2.82	0.43
57:4:11:GLU:HA	57:4:24:ILE:O	2.18	0.43
1:A:27:G:O2'	1:A:28:A:C5'	2.59	0.43
2:B:56:C:O2	30:d:74:ALA:N	2.52	0.43
2:B:58:A:C5	2:B:61:C:C4	3.07	0.43
2:B:61:C:O2'	2:B:62:C:O5'	2.20	0.43
3:C:36:VAL:O	3:C:40:THR:HG23	2.19	0.43
4:D:298:A:HO2'	4:D:299:G:P	2.40	0.43
4:D:431:A:C6	4:D:432:A:C8	3.06	0.43
4:D:600:A:N6	4:D:639:G:C6	2.87	0.43
4:D:641:U:C4'	4:D:642:A:OP1	2.67	0.43
4:D:718:A:H5'	14:N:118:ASN:OD1	2.19	0.43
4:D:1151:A:N3	4:D:1152:A:C8	2.87	0.43
4:D:1430:A:C2'	4:D:1431:A:O5'	2.66	0.43
6:F:95:GLY:O	6:F:96:VAL:CG1	2.64	0.43
10:J:110:ARG:HG2	10:J:110:ARG:O	2.19	0.43
14:N:93:GLU:O	14:N:96:ILE:HG12	2.19	0.43
20:T:74:LEU:HD12	20:T:75:VAL:H	1.83	0.43
25:Y:315:G:H2'	25:Y:316:C:C6	2.54	0.43
25:Y:382:A:H2'	25:Y:383:C:C5'	2.48	0.43
25:Y:848:C:H2'	25:Y:849:A:H8	1.84	0.43
25:Y:1009:A:OP1	34:h:39:LYS:NZ	2.51	0.43
25:Y:1324:G:H3'	25:Y:1325:U:H4'	2.00	0.43
25:Y:2252:G:C4	25:Y:2253:G:C8	3.07	0.43
25:Y:2410:G:H2'	25:Y:2411:A:O4'	2.19	0.43
25:Y:2423:U:H4'	25:Y:2424:C:O5'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:2824:C:H3'	25:Y:2825:G:H21	1.83	0.43
25:Y:2824:C:C2'	25:Y:2825:G:O5'	2.67	0.43
27:a:129:LEU:C	27:a:129:LEU:HD12	2.44	0.43
39:m:49:VAL:HG12	39:m:50:ALA:N	2.33	0.43
46:t:77:VAL:HG22	46:t:78:GLN:N	2.34	0.43
1:A:6:A:C2	2:B:34:G:C2	3.07	0.42
4:D:707:U:C2	4:D:708:C:C5	3.07	0.42
4:D:805:C:C2	4:D:806:C:C5	3.07	0.42
4:D:862:C:H2'	4:D:863:U:O4'	2.19	0.42
4:D:1221:G:O2'	4:D:1222:G:H5'	2.19	0.42
4:D:1346:A:C8	10:J:9:ARG:NH2	2.87	0.42
4:D:1406:U:C5	4:D:1407:5MC:CM5	3.03	0.42
4:D:1430:A:H2'	4:D:1431:A:O5'	2.19	0.42
6:F:89:VAL:O	6:F:92:ASP:HB2	2.18	0.42
6:F:125:ARG:O	6:F:125:ARG:HG2	2.19	0.42
8:H:95:MET:HA	8:H:124:ALA:HA	2.01	0.42
11:K:45:ILE:CG2	11:K:46:GLU:N	2.82	0.42
12:L:57:VAL:HG12	12:L:58:GLU:N	2.34	0.42
13:M:15:HIS:HA	13:M:18:ILE:HG22	2.01	0.42
13:M:96:VAL:HG12	13:M:97:ASP:N	2.34	0.42
22:V:47:THR:O	22:V:48:ILE:C	2.62	0.42
23:W:43:LYS:HD2	23:W:86:ALA:HB2	2.01	0.42
25:Y:279:A:N6	25:Y:362:A:O4'	2.52	0.42
25:Y:532:A:N3	25:Y:532:A:C2'	2.81	0.42
25:Y:826:U:H5''	25:Y:2429:G:P	2.59	0.42
25:Y:1061:U:C5	33:g:11:GLN:NE2	2.87	0.42
25:Y:1283:G:O2'	25:Y:1329:U:O2	2.30	0.42
25:Y:1633:G:C6	25:Y:1635:A:N1	2.87	0.42
25:Y:2102:G:N2	25:Y:2187:U:O2	2.51	0.42
25:Y:2291:U:H2'	25:Y:2292:U:C6	2.54	0.42
25:Y:2507:C:H42	25:Y:2582:G:H1	1.66	0.42
25:Y:2531:A:H2'	25:Y:2531:A:N3	2.33	0.42
25:Y:2821:A:H2'	25:Y:2822:G:O4'	2.18	0.42
27:a:143:VAL:O	27:a:152:GLN:N	2.38	0.42
27:a:145:MET:HE1	27:a:181:ARG:NH1	2.34	0.42
44:r:61:LEU:HD12	44:r:62:VAL:N	2.34	0.42
47:u:7:ARG:HG2	47:u:7:ARG:O	2.19	0.42
56:3:78:GLY:N	56:3:79:PRO:HD2	2.33	0.42
2:B:45:G:H5''	2:B:46:G:P	2.59	0.42
4:D:7:A:N1	8:H:94:PHE:CE2	2.87	0.42
4:D:579:A:H2'	4:D:580:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:611:C:N3	4:D:612:C:C5	2.87	0.42
7:G:3:TYR:O	7:G:4:LEU:HG	2.19	0.42
14:N:87:GLY:H	14:N:113:THR:HG22	1.84	0.42
23:W:67:HIS:O	23:W:67:HIS:CG	2.72	0.42
25:Y:77:G:OP1	49:w:52:ARG:NH1	2.51	0.42
25:Y:233:A:N6	25:Y:429:A:H61	2.14	0.42
25:Y:239:C:N4	25:Y:259:G:O6	2.52	0.42
25:Y:287:G:N1	25:Y:354:A:N1	2.68	0.42
25:Y:329:G:P	25:Y:329:G:H8	2.43	0.42
25:Y:546:U:O2	25:Y:548:G:C6	2.72	0.42
25:Y:1051:G:H4'	25:Y:2752:C:O2'	2.18	0.42
25:Y:1055:G:O2'	25:Y:1056:G:P	2.77	0.42
25:Y:1060:U:O4'	25:Y:1062:G:O4'	2.38	0.42
25:Y:1230:A:H2'	25:Y:1231:U:O4'	2.19	0.42
25:Y:1625:C:O2'	25:Y:1626:A:H5'	2.19	0.42
25:Y:1998:A:H2'	25:Y:1999:C:H6	1.85	0.42
25:Y:2248:C:O2'	25:Y:2249:U:P	2.76	0.42
25:Y:2271:G:O2'	25:Y:2272:U:H5'	2.20	0.42
26:Z:4:C:N3	26:Z:117:G:N1	2.67	0.42
27:a:140:VAL:HG12	27:a:191:LEU:HA	2.02	0.42
30:d:139:GLU:HA	57:4:28:VAL:HG22	2.01	0.42
32:f:9:VAL:O	32:f:11:ASN:N	2.51	0.42
1:A:29:A:OP2	1:A:29:A:C8	2.70	0.42
4:D:337:G:H2'	4:D:338:A:H8	1.84	0.42
4:D:375:U:H2'	4:D:376:G:O5'	2.19	0.42
4:D:509:A:H2'	4:D:510:A:O4'	2.20	0.42
4:D:1026:G:H2'	4:D:1027:C:C6	2.53	0.42
4:D:1076:U:H2'	4:D:1077:G:O4'	2.19	0.42
4:D:1314:C:H2'	4:D:1315:U:C6	2.55	0.42
8:H:122:VAL:HG23	8:H:123:LEU:N	2.35	0.42
9:I:88:MET:HE2	9:I:90:MET:SD	2.59	0.42
10:J:75:LYS:O	10:J:86:VAL:N	2.38	0.42
12:L:102:PHE:O	12:L:103:VAL:C	2.62	0.42
12:L:112:ARG:HE	17:Q:101:TRP:NE1	2.17	0.42
14:N:109:ILE:HG21	24:X:16:ARG:NH1	2.34	0.42
17:Q:54:ASP:OD1	17:Q:59:ARG:NE	2.53	0.42
20:T:51:GLU:OE1	20:T:51:GLU:N	2.50	0.42
25:Y:27:G:O2'	25:Y:28:A:OP2	2.28	0.42
25:Y:230:G:C6	25:Y:231:A:N6	2.88	0.42
25:Y:287:G:O2'	25:Y:288:U:H5'	2.20	0.42
25:Y:360:U:O3'	25:Y:361:G:O4'	2.37	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1287:A:O2'	25:Y:1288:G:H5'	2.19	0.42
25:Y:1791:A:C2	25:Y:1829:A:H4'	2.54	0.42
25:Y:1807:G:H2'	25:Y:1808:A:H5'	2.02	0.42
25:Y:2316:G:C2	25:Y:2317:A:C5	3.07	0.42
25:Y:2849:U:N3	25:Y:2867:G:O4'	2.47	0.42
25:Y:2864:G:C6	25:Y:2865:U:O4	2.72	0.42
32:f:4:ILE:HD11	32:f:16:GLY:C	2.44	0.42
37:k:19:GLY:C	37:k:20:LEU:HD12	2.44	0.42
42:p:22:LEU:C	42:p:22:LEU:HD12	2.45	0.42
43:q:32:ALA:O	43:q:35:ILE:N	2.52	0.42
48:v:2:ARG:C	48:v:3:VAL:HG23	2.44	0.42
4:D:264:C:H2'	4:D:265:G:O4'	2.19	0.42
4:D:332:G:C2	4:D:333:U:C6	3.07	0.42
4:D:519:C:C2'	4:D:520:A:O5'	2.66	0.42
4:D:705:G:C5	4:D:706:A:C8	3.07	0.42
11:K:87:ARG:HG2	11:K:88:LYS:N	2.34	0.42
25:Y:96:C:H2'	25:Y:97:C:C6	2.54	0.42
25:Y:352:A:C6	25:Y:353:C:C4	3.07	0.42
25:Y:549:G:C2'	25:Y:550:C:O5'	2.67	0.42
25:Y:1076:C:H1'	33:g:90:GLY:HA2	2.01	0.42
25:Y:1703:G:C6	25:Y:1704:C:N4	2.87	0.42
25:Y:2350:C:H2'	25:Y:2351:G:O4'	2.20	0.42
25:Y:2820:A:O2'	25:Y:2821:A:P	2.77	0.42
25:Y:2832:U:O2'	25:Y:2833:U:O5'	2.34	0.42
26:Z:49:C:H2'	26:Z:50:A:C8	2.55	0.42
27:a:160:TYR:HB3	27:a:193:GLU:HG2	2.02	0.42
31:e:77:GLY:O	31:e:81:GLY:N	2.52	0.42
38:l:57:THR:HG22	38:l:58:ASP:N	2.34	0.42
56:3:88:HIS:HB2	56:3:89:PRO:HD3	2.01	0.42
4:D:68:G:N7	4:D:69:G:C8	2.88	0.42
4:D:375:U:C2'	4:D:376:G:O5'	2.67	0.42
4:D:519:C:H2'	4:D:520:A:O4'	2.19	0.42
4:D:1006:G:N2	4:D:1023:U:O2	2.52	0.42
4:D:1030:U:H3'	4:D:1031:C:C5'	2.50	0.42
4:D:1148:U:O2'	4:D:1149:C:P	2.77	0.42
7:G:151:GLN:O	7:G:152:SER:C	2.62	0.42
10:J:147:ASN:OD1	10:J:147:ASN:O	2.37	0.42
23:W:8:LYS:O	23:W:9:ARG:C	2.63	0.42
23:W:10:ALA:O	23:W:13:SER:OG	2.35	0.42
25:Y:92:U:H2'	25:Y:93:G:O4'	2.19	0.42
25:Y:240:C:O2'	25:Y:241:A:P	2.76	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:375:G:O2'	25:Y:376:G:H5'	2.20	0.42
25:Y:401:A:HO2'	25:Y:402:A:C5'	2.16	0.42
25:Y:828:U:H2'	25:Y:829:A:C8	2.55	0.42
25:Y:856:G:H2'	25:Y:857:G:C8	2.55	0.42
25:Y:1326:U:O2	25:Y:1327:A:C8	2.73	0.42
25:Y:1346:G:N1	25:Y:1601:G:C6	2.88	0.42
25:Y:1746:A:H2'	25:Y:1747:U:H6	1.85	0.42
25:Y:2048:G:O2'	25:Y:2049:G:OP1	2.36	0.42
25:Y:2150:C:H2'	25:Y:2151:U:N1	2.35	0.42
25:Y:2510:C:H2'	25:Y:2511:U:C6	2.55	0.42
26:Z:51:G:H2'	26:Z:52:A:O4'	2.19	0.42
29:c:147:LEU:O	29:c:187:VAL:HG12	2.19	0.42
40:n:27:VAL:HG12	40:n:28:LYS:N	2.35	0.42
42:p:14:VAL:HG22	42:p:15:SER:N	2.35	0.42
56:3:87:GLU:OE2	56:3:95:LEU:HB2	2.20	0.42
4:D:967:5MC:P	4:D:968:A:HO2'	2.38	0.42
4:D:985:C:N3	4:D:1221:G:N1	2.67	0.42
4:D:1036:A:H2'	4:D:1036:A:N3	2.34	0.42
4:D:1331:G:H1'	4:D:1332:A:OP2	2.20	0.42
10:J:133:ALA:O	10:J:136:LYS:HB3	2.20	0.42
12:L:56:MET:SD	12:L:60:LEU:HD21	2.59	0.42
18:R:81:ILE:HG13	18:R:82:GLU:N	2.34	0.42
19:S:20:VAL:HG22	19:S:21:VAL:N	2.33	0.42
25:Y:271:G:C6	25:Y:367:G:C6	3.08	0.42
25:Y:374:A:C2	25:Y:375:G:H1'	2.55	0.42
25:Y:442:G:O4'	29:c:41:GLN:OE1	2.37	0.42
25:Y:1941:C:O2'	25:Y:1942:C:P	2.78	0.42
25:Y:2516:A:O2'	25:Y:2517:C:H5'	2.20	0.42
25:Y:2615:U:C2	25:Y:2616:C:C5	3.08	0.42
25:Y:2697:G:H2'	25:Y:2698:U:O4'	2.20	0.42
26:Z:17:C:C2	26:Z:18:G:C8	3.08	0.42
29:c:187:VAL:HG22	29:c:188:MET:N	2.34	0.42
33:g:100:ILE:HG12	33:g:137:LEU:HD22	2.01	0.42
36:j:73:ILE:O	36:j:105:ILE:HG23	2.19	0.42
45:s:48:VAL:HG13	45:s:48:VAL:O	2.18	0.42
47:u:34:VAL:O	47:u:54:THR:HG23	2.19	0.42
56:3:40:GLU:OE2	56:3:106:PHE:C	2.62	0.42
2:B:39:G:C2	2:B:40:U:C6	3.07	0.42
2:B:74:C:N4	25:Y:2252:G:H1	2.13	0.42
4:D:82:G:H1'	4:D:87:C:H42	1.85	0.42
4:D:187:G:N1	4:D:191:G:O6	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:505:G:C6	4:D:535:A:C2	3.08	0.42
4:D:527:7MG:H2'	4:D:528:C:H5''	2.02	0.42
4:D:844:G:H22	4:D:846:G:H4'	1.84	0.42
4:D:1356:G:H2'	4:D:1357:A:C8	2.53	0.42
4:D:1422:G:H4'	35:i:48:PRO:HB3	2.01	0.42
6:F:31:ASN:OD1	6:F:58:ARG:CZ	2.67	0.42
8:H:119:VAL:O	8:H:119:VAL:HG23	2.19	0.42
10:J:43:TYR:O	10:J:46:LEU:HB2	2.20	0.42
10:J:128:GLU:O	10:J:129:ASN:OD1	2.38	0.42
11:K:102:VAL:O	11:K:125:ILE:N	2.46	0.42
20:T:70:LYS:O	20:T:70:LYS:HG2	2.19	0.42
21:U:39:VAL:HG13	21:U:40:PRO:HD2	2.01	0.42
25:Y:151:C:H2'	25:Y:152:A:H8	1.84	0.42
25:Y:638:G:H2'	25:Y:639:U:H6	1.84	0.42
25:Y:1055:G:HO2'	25:Y:1056:G:P	2.41	0.42
25:Y:1063:G:C2'	25:Y:1064:C:O5'	2.67	0.42
25:Y:1169:A:H2'	25:Y:1170:C:C6	2.55	0.42
25:Y:1306:C:N4	25:Y:1623:G:O6	2.53	0.42
25:Y:1416:G:H1	25:Y:1582:C:H42	1.67	0.42
25:Y:1483:G:C4	25:Y:1484:U:C5	3.08	0.42
25:Y:1704:C:H2'	25:Y:1705:A:H8	1.84	0.42
25:Y:1983:G:C2	25:Y:1984:G:C8	3.08	0.42
25:Y:2819:G:C6	25:Y:2821:A:C2	3.08	0.42
25:Y:2820:A:N6	28:b:197:THR:O	2.52	0.42
33:g:10:LEU:O	33:g:11:GLN:HB3	2.19	0.42
34:h:99:ARG:O	34:h:103:ILE:N	2.53	0.42
37:k:53:MET:HE3	37:k:63:ILE:HG21	2.01	0.42
39:m:109:ALA:O	39:m:113:ALA:N	2.49	0.42
46:t:82:TYR:CE1	46:t:83:LYS:HG3	2.54	0.42
56:3:10:ALA:O	56:3:14:GLU:N	2.44	0.42
1:A:4:G:C2'	1:A:5:G:O5'	2.68	0.42
2:B:61:C:HO2'	2:B:62:C:C5'	2.30	0.42
3:C:19:GLN:NE2	25:Y:1614:A:C6	2.88	0.42
4:D:155:A:N6	4:D:167:A:N6	2.68	0.42
4:D:235:C:H2'	4:D:236:A:H8	1.85	0.42
4:D:393:A:C2	4:D:394:G:C8	3.08	0.42
4:D:411:A:H61	4:D:430:A:H62	1.67	0.42
4:D:415:A:C4	4:D:416:G:C8	3.08	0.42
4:D:1075:U:C2	4:D:1076:U:C5	3.08	0.42
4:D:1225:A:H2'	4:D:1225:A:N3	2.35	0.42
4:D:1348:U:C2	4:D:1349:A:C8	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:1407:5MC:C2	4:D:1408:A:C8	3.08	0.42
4:D:1425:U:H2'	4:D:1426:G:H8	1.85	0.42
7:G:191:SER:O	7:G:192:ALA:HB3	2.19	0.42
8:H:10:LEU:HD21	8:H:67:ARG:HH12	1.84	0.42
25:Y:1086:A:H3'	25:Y:1086:A:N3	2.35	0.42
25:Y:1507:C:H2'	25:Y:1508:A:C1'	2.49	0.42
25:Y:1737:G:O3'	25:Y:1738:G:O4'	2.38	0.42
25:Y:2212:A:HO2'	25:Y:2213:U:P	2.42	0.42
25:Y:2683:C:C2	25:Y:2684:U:C5	3.07	0.42
48:v:70:LEU:HD23	48:v:73:ARG:NH2	2.34	0.42
56:3:58:THR:CB	56:3:80:THR:O	2.68	0.42
57:4:51:VAL:O	57:4:51:VAL:CG1	2.68	0.42
1:A:24:A:H3'	1:A:25:U:C5'	2.48	0.42
3:C:39:MET:HG3	25:Y:2062:A:C6	2.50	0.42
4:D:91:U:O2	4:D:92:U:C5	2.72	0.42
4:D:206:C:H2'	4:D:207:C:C6	2.55	0.42
4:D:337:G:C2	4:D:338:A:C5	3.08	0.42
4:D:690:G:H2'	4:D:691:G:O4'	2.20	0.42
4:D:855:U:H2'	4:D:856:C:H6	1.83	0.42
4:D:960:U:H4'	4:D:961:U:O5'	2.19	0.42
4:D:1493:A:H1'	4:D:1494:G:O5'	2.19	0.42
4:D:1509:C:C2	4:D:1510:C:C5	3.08	0.42
9:I:43:GLY:HA2	9:I:58:HIS:CE1	2.55	0.42
14:N:35:ASP:OD2	14:N:39:ASN:ND2	2.53	0.42
14:N:93:GLU:OE1	14:N:97:ARG:NH1	2.53	0.42
20:T:16:MET:CG	20:T:19:SER:OG	2.68	0.42
25:Y:78:U:H2'	25:Y:79:C:H6	1.83	0.42
25:Y:79:C:H2'	25:Y:80:G:O4'	2.20	0.42
25:Y:241:A:H4'	25:Y:242:G:H4'	2.01	0.42
25:Y:442:G:C2	25:Y:444:C:C5	3.08	0.42
25:Y:882:G:H2'	25:Y:883:G:O4'	2.19	0.42
25:Y:910:A:O2'	25:Y:911:A:H5'	2.19	0.42
25:Y:964:C:O2	25:Y:2273:A:H2	2.03	0.42
25:Y:1056:G:N7	25:Y:1102:C:C5	2.87	0.42
25:Y:1061:U:C2	33:g:11:GLN:O	2.73	0.42
25:Y:1098:A:H2'	25:Y:1099:G:C8	2.55	0.42
25:Y:1678:A:C4	25:Y:1679:A:C8	3.08	0.42
25:Y:1936:A:H3'	25:Y:1937:A:H5'	2.01	0.42
25:Y:2285:C:O2'	25:Y:2287:A:H1'	2.20	0.42
25:Y:2579:C:C2	25:Y:2580:PSU:N1	2.87	0.42
25:Y:2771:C:C2	25:Y:2772:C:C5	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:2813:A:C4	25:Y:2814:A:C8	3.08	0.42
29:c:173:THR:O	29:c:173:THR:HG22	2.19	0.42
36:j:81:ASP:OD1	36:j:82:LEU:N	2.53	0.42
37:k:72:PRO:HD3	37:k:92:TRP:HZ3	1.85	0.42
38:l:77:ALA:O	38:l:81:ASN:ND2	2.52	0.42
48:v:63:ILE:HG23	48:v:64:ASP:N	2.34	0.42
53:0:26:ASN:O	53:0:30:VAL:HG23	2.19	0.42
56:3:106:PHE:O	56:3:106:PHE:CG	2.72	0.42
4:D:21:G:H2'	4:D:22:G:C8	2.54	0.42
4:D:318:G:C6	4:D:336:A:C6	3.08	0.42
4:D:438:U:O2	4:D:438:U:O4'	2.38	0.42
4:D:681:A:H2'	4:D:682:G:O4'	2.20	0.42
4:D:1005:A:C5	4:D:1006:G:H1'	2.55	0.42
4:D:1329:A:C2	4:D:1330:U:C5	3.07	0.42
4:D:1493:A:HO2'	4:D:1494:G:H8	1.68	0.42
7:G:12:ARG:HE	7:G:37:PRO:HA	1.85	0.42
9:I:32:ALA:HB1	9:I:70:VAL:HG21	2.02	0.42
12:L:94:ARG:HA	12:L:97:LEU:HB3	2.02	0.42
12:L:117:LEU:HD23	12:L:121:ARG:C	2.45	0.42
25:Y:255:A:H2'	25:Y:256:A:O4'	2.20	0.42
25:Y:417:C:H2'	25:Y:418:C:C6	2.54	0.42
25:Y:481:G:OP2	45:s:44:HIS:N	2.50	0.42
25:Y:813:U:H2'	25:Y:814:C:H6	1.84	0.42
25:Y:848:C:H2'	25:Y:849:A:C8	2.54	0.42
25:Y:947:A:C6	25:Y:971:G:C6	3.08	0.42
25:Y:1057:A:H1'	56:3:38:MET:HE1	2.01	0.42
25:Y:1062:G:OP1	25:Y:1069:A:OP1	2.38	0.42
25:Y:1076:C:H4'	25:Y:1076:C:OP1	2.20	0.42
25:Y:1670:C:C2'	25:Y:1671:U:H5'	2.50	0.42
25:Y:2170:A:H2'	25:Y:2171:A:O3'	2.20	0.42
25:Y:2564:A:C2	25:Y:2647:U:H4'	2.55	0.42
25:Y:2745:C:H2'	25:Y:2746:U:C6	2.55	0.42
28:b:109:VAL:HG23	28:b:175:LEU:HD12	2.02	0.42
30:d:125:GLY:HA2	30:d:162:ASP:HA	2.01	0.42
38:l:109:PRO:O	38:l:110:MET:HE2	2.20	0.42
41:o:98:ALA:O	41:o:102:LYS:NZ	2.49	0.42
4:D:193:C:H2'	4:D:194:C:C6	2.55	0.41
4:D:208:U:O2'	4:D:211:G:O6	2.24	0.41
4:D:588:G:N7	4:D:753:A:O2'	2.41	0.41
4:D:883:C:O2'	4:D:884:U:H5'	2.20	0.41
4:D:963:G:N1	4:D:964:A:C8	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:1094:G:C2'	4:D:1095:U:OP2	2.68	0.41
4:D:1218:C:H2'	4:D:1219:A:H8	1.85	0.41
4:D:1240:U:O2'	4:D:1241:G:P	2.78	0.41
4:D:1346:A:O2'	4:D:1347:G:H4'	2.20	0.41
7:G:21:LYS:O	7:G:22:SER:C	2.63	0.41
7:G:131:ILE:HG22	7:G:133:SER:N	2.34	0.41
10:J:91:ARG:O	10:J:95:ARG:HB2	2.20	0.41
14:N:117:HIS:O	14:N:118:ASN:HB2	2.20	0.41
25:Y:77:G:C5	25:Y:78:U:C4	3.08	0.41
25:Y:110:G:N2	25:Y:111:A:C6	2.88	0.41
25:Y:289:G:N1	25:Y:352:A:C6	2.88	0.41
25:Y:399:U:H2'	25:Y:400:G:O4'	2.19	0.41
25:Y:643:A:C5	25:Y:644:A:C6	3.08	0.41
25:Y:867:C:N3	25:Y:868:U:C5	2.88	0.41
25:Y:1171:G:H2'	25:Y:1172:C:C6	2.55	0.41
25:Y:1323:C:N4	25:Y:1324:G:O6	2.53	0.41
25:Y:2093:G:C6	25:Y:2225:A:N7	2.88	0.41
25:Y:2139:U:O2	25:Y:2153:C:O2	2.38	0.41
25:Y:2233:U:H2'	25:Y:2234:G:H8	1.85	0.41
25:Y:2300:C:N4	25:Y:2317:A:H61	2.18	0.41
25:Y:2517:C:C2	25:Y:2542:A:N6	2.88	0.41
25:Y:2521:C:C2	25:Y:2545:G:N2	2.87	0.41
25:Y:2899:A:C2'	25:Y:2900:A:O5'	2.67	0.41
27:a:213:ARG:O	27:a:213:ARG:HG2	2.20	0.41
34:h:7:LYS:O	34:h:11:VAL:HG23	2.20	0.41
35:i:112:PHE:O	35:i:115:ILE:N	2.52	0.41
39:m:66:GLY:O	39:m:102:ARG:NH2	2.52	0.41
39:m:98:GLN:O	39:m:103:VAL:HG21	2.20	0.41
54:l:49:VAL:HG12	54:l:50:SER:N	2.35	0.41
4:D:438:U:C5	4:D:494:G:N2	2.87	0.41
4:D:695:A:H2'	4:D:696:A:O4'	2.20	0.41
4:D:872:A:C4	4:D:874:G:C8	3.07	0.41
4:D:1074:G:C6	4:D:1075:U:C4	3.08	0.41
4:D:1183:U:O2'	4:D:1184:G:P	2.79	0.41
5:E:142:LYS:O	5:E:145:ASN:OD1	2.37	0.41
6:F:127:VAL:HG22	6:F:128:MET:N	2.35	0.41
8:H:10:LEU:O	8:H:39:GLY:O	2.38	0.41
14:N:111:ASP:CG	14:N:113:THR:HG23	2.44	0.41
24:X:32:ARG:HG3	24:X:33:ARG:N	2.35	0.41
25:Y:303:G:C6	25:Y:315:G:N1	2.88	0.41
25:Y:528:A:N1	25:Y:2042:A:H2'	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:690:G:H21	27:a:42:ARG:NH1	2.18	0.41
25:Y:1061:U:O2'	25:Y:1069:A:P	2.76	0.41
25:Y:1107:G:H5''	56:3:58:THR:H	1.85	0.41
25:Y:1233:C:C2	25:Y:1234:U:C5	3.07	0.41
25:Y:1297:C:H2'	25:Y:1298:C:H6	1.84	0.41
25:Y:1431:A:H2'	25:Y:1432:G:O4'	2.19	0.41
25:Y:1532:A:H2'	25:Y:1533:C:O4'	2.20	0.41
25:Y:1603:A:C5	25:Y:1604:C:C5	3.08	0.41
25:Y:1970:A:C4	25:Y:1972:G:N7	2.88	0.41
25:Y:2020:A:H5'	51:y:8:THR:HG22	2.00	0.41
25:Y:2048:G:O2'	25:Y:2049:G:O5'	2.37	0.41
25:Y:2162:G:O3'	25:Y:2163:A:O4'	2.38	0.41
25:Y:2453:A:O2'	25:Y:2572:A:H1'	2.19	0.41
29:c:129:PRO:HD3	29:c:156:ASN:OD1	2.20	0.41
33:g:64:ARG:HG3	33:g:65:SER:H	1.85	0.41
35:i:35:VAL:HG21	35:i:69:VAL:CG1	2.49	0.41
42:p:27:ILE:HG22	42:p:28:ALA:H	1.83	0.41
4:D:109:A:H4'	4:D:110:C:OP2	2.20	0.41
4:D:174:A:C5	4:D:175:C:C5	3.09	0.41
4:D:408:A:N6	4:D:435:A:N1	2.68	0.41
4:D:946:A:C2	4:D:947:G:C5	3.08	0.41
4:D:1415:G:C2	4:D:1416:G:C8	3.08	0.41
5:E:95:TRP:CH2	5:E:174:GLU:OE1	2.73	0.41
5:E:105:THR:O	5:E:108:GLN:N	2.53	0.41
7:G:33:ILE:HG13	7:G:34:GLU:N	2.34	0.41
7:G:66:VAL:HG12	7:G:67:LEU:O	2.20	0.41
7:G:153:ARG:O	7:G:154:VAL:C	2.63	0.41
8:H:84:VAL:HG22	8:H:85:LYS:N	2.36	0.41
13:M:36:VAL:HG22	13:M:38:GLY:H	1.85	0.41
25:Y:744:U:H2'	25:Y:745:1MG:O4'	2.21	0.41
25:Y:832:U:H2'	25:Y:833:A:H8	1.85	0.41
25:Y:1347:A:H2'	25:Y:1348:C:H5'	2.02	0.41
25:Y:1716:U:H3	25:Y:1744:A:H62	1.66	0.41
25:Y:2021:C:H3'	25:Y:2022:U:C5'	2.49	0.41
25:Y:2748:A:C2	25:Y:2757:A:C5	3.09	0.41
25:Y:2893:A:H5''	25:Y:2894:G:OP1	2.19	0.41
26:Z:13:G:N2	26:Z:69:G:H21	2.18	0.41
33:g:85:ILE:O	33:g:85:ILE:HD12	2.20	0.41
33:g:97:VAL:O	33:g:97:VAL:HG12	2.20	0.41
50:x:35:VAL:HG22	50:x:36:GLU:N	2.35	0.41
3:C:29:SER:O	3:C:33:TYR:CB	2.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:82:G:N2	4:D:86:G:H22	2.17	0.41
4:D:399:G:H2'	4:D:400:C:C6	2.55	0.41
4:D:837:U:H2'	4:D:838:G:C8	2.55	0.41
4:D:1148:U:C2'	4:D:1149:C:O5'	2.68	0.41
14:N:57:SER:O	14:N:58:THR:CG2	2.67	0.41
24:X:18:PHE:HD2	24:X:19:LYS:HD2	1.85	0.41
25:Y:26:G:H2'	25:Y:27:G:O4'	2.20	0.41
25:Y:80:G:C6	25:Y:107:G:C6	3.09	0.41
25:Y:643:A:H2'	25:Y:644:A:C8	2.55	0.41
25:Y:1084:A:HO2'	25:Y:1105:U:C2'	2.21	0.41
25:Y:1601:G:H2'	25:Y:1602:U:O4'	2.20	0.41
25:Y:1747:U:C2	25:Y:1748:C:C5	3.08	0.41
25:Y:2104:C:H2'	25:Y:2105:U:C1'	2.50	0.41
31:e:34:ARG:HG2	31:e:35:THR:N	2.35	0.41
36:j:77:ILE:O	36:j:110:VAL:O	2.38	0.41
43:q:1:MET:H3	43:q:109:ASP:H	1.69	0.41
44:r:14:PRO:HA	44:r:32:LEU:HA	2.01	0.41
3:C:18:LEU:O	3:C:22:VAL:CG2	2.56	0.41
4:D:476:U:C2'	4:D:477:C:O5'	2.68	0.41
4:D:933:G:N2	4:D:935:A:O4'	2.54	0.41
4:D:944:G:N1	4:D:1338:G:OP2	2.50	0.41
4:D:1074:G:C5	4:D:1075:U:C5	3.09	0.41
4:D:1240:U:H4'	4:D:1241:G:OP2	2.19	0.41
19:S:51:ARG:O	19:S:52:LEU:HB2	2.20	0.41
20:T:48:GLU:O	20:T:49:ASN:OD1	2.39	0.41
21:U:12:PHE:CB	21:U:31:TYR:OH	2.68	0.41
25:Y:35:G:H1'	25:Y:454:A:C4	2.55	0.41
25:Y:247:G:O2'	25:Y:250:G:O6	2.33	0.41
25:Y:605:G:H2'	25:Y:606:U:O4'	2.21	0.41
25:Y:958:U:N3	26:Z:90:C:OP1	2.52	0.41
25:Y:1138:G:H3'	25:Y:1139:G:O4'	2.21	0.41
25:Y:1179:G:C5	25:Y:1180:U:C6	3.08	0.41
25:Y:1319:C:O2'	25:Y:1320:C:H5'	2.21	0.41
25:Y:1341:G:H2'	25:Y:1397:U:O2	2.20	0.41
25:Y:1506:U:H2'	25:Y:1507:C:C6	2.56	0.41
25:Y:1728:C:H5''	25:Y:1729:U:P	2.61	0.41
25:Y:1871:A:OP2	25:Y:1871:A:C4	2.74	0.41
25:Y:2057:G:H1'	51:y:2:VAL:HG21	2.01	0.41
25:Y:2265:U:H3'	25:Y:2266:A:H5''	2.02	0.41
25:Y:2393:U:OP1	54:1:29:ARG:HG2	2.20	0.41
25:Y:2468:A:HO2'	25:Y:2469:A:H8	1.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:2832:U:O2'	25:Y:2833:U:OP2	2.38	0.41
35:i:104:THR:HG22	35:i:105:ARG:N	2.35	0.41
4:D:100:G:C4	4:D:101:A:C8	3.09	0.41
4:D:767:A:C4	4:D:768:A:C8	3.09	0.41
5:E:17:HIS:CD2	5:E:202:ASN:ND2	2.89	0.41
8:H:108:GLY:O	8:H:109:ALA:HB3	2.19	0.41
13:M:41:PRO:O	13:M:42:LEU:HB2	2.21	0.41
25:Y:240:C:C2'	25:Y:241:A:OP1	2.69	0.41
25:Y:280:U:H5''	25:Y:281:C:P	2.60	0.41
25:Y:399:U:OP2	48:v:56:ARG:NH1	2.53	0.41
25:Y:464:U:C4	25:Y:788:A:C4	3.08	0.41
25:Y:604:G:C4	25:Y:625:G:N2	2.89	0.41
25:Y:896:A:O2'	25:Y:897:C:H5'	2.21	0.41
25:Y:931:U:H4'	25:Y:932:U:OP2	2.20	0.41
25:Y:966:G:C1'	25:Y:2267:A:H62	2.32	0.41
25:Y:1180:U:C4	25:Y:1181:U:C4	3.09	0.41
25:Y:1705:A:C2'	25:Y:1706:C:O5'	2.68	0.41
25:Y:1961:C:HO2'	25:Y:1962:5MC:P	2.39	0.41
25:Y:2006:C:O2'	25:Y:2007:U:OP1	2.37	0.41
25:Y:2366:A:H2'	25:Y:2367:G:O4'	2.21	0.41
25:Y:2728:U:H2'	25:Y:2729:G:C8	2.54	0.41
26:Z:24:G:N7	26:Z:56:G:O2'	2.32	0.41
33:g:113:ALA:O	33:g:124:MET:SD	2.78	0.41
35:i:110:GLU:HG3	35:i:111:LYS:N	2.35	0.41
1:A:6:A:H2'	1:A:8:A:OP2	2.16	0.41
2:B:9:A:O4'	2:B:46:G:H1'	2.21	0.41
2:B:61:C:C2'	2:B:62:C:O5'	2.69	0.41
4:D:1215:G:C2	4:D:1216:A:C8	3.09	0.41
4:D:1278:G:O2'	4:D:1279:G:C2	2.74	0.41
4:D:1427:C:C2	4:D:1428:A:C8	3.08	0.41
4:D:1520:C:C2	4:D:1521:C:C5	3.08	0.41
6:F:80:GLY:O	6:F:84:GLU:OE1	2.39	0.41
8:H:89:THR:HG22	8:H:90:GLY:N	2.35	0.41
9:I:36:ILE:HD12	9:I:64:VAL:HG23	2.03	0.41
12:L:41:GLU:N	12:L:41:GLU:OE1	2.54	0.41
17:Q:84:VAL:O	17:Q:88:ALA:HB2	2.21	0.41
23:W:11:ILE:HG13	23:W:12:GLN:N	2.36	0.41
24:X:24:LYS:HG2	24:X:25:ALA:H	1.86	0.41
25:Y:370:G:H4'	25:Y:371:A:OP2	2.21	0.41
25:Y:489:G:O6	25:Y:491:G:N1	2.54	0.41
25:Y:543:G:H2'	25:Y:544:C:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:632:A:N3	25:Y:2403:C:O2'	2.39	0.41
25:Y:687:C:H42	25:Y:787:C:H4'	1.85	0.41
25:Y:833:A:H2'	25:Y:834:G:C8	2.56	0.41
25:Y:1085:A:H62	56:3:37:LYS:CE	2.33	0.41
25:Y:1608:A:H1'	25:Y:1610:A:OP1	2.20	0.41
25:Y:1684:G:C6	25:Y:1685:C:C4	3.08	0.41
25:Y:1847:G:O2'	25:Y:1848:A:H8	2.02	0.41
25:Y:2047:C:C2	25:Y:2048:G:N7	2.89	0.41
25:Y:2050:C:H2'	25:Y:2051:A:O4'	2.21	0.41
25:Y:2245:U:O2'	25:Y:2436:G:OP2	2.33	0.41
25:Y:2650:U:C2	25:Y:2651:C:C5	3.08	0.41
29:c:96:VAL:O	29:c:96:VAL:HG23	2.21	0.41
34:h:73:VAL:HG12	34:h:74:TYR:N	2.36	0.41
56:3:119:PRO:O	56:3:120:ALA:HB3	2.21	0.41
4:D:298:A:O2'	4:D:299:G:C5'	2.69	0.41
4:D:316:C:C5	4:D:351:G:C5	3.08	0.41
4:D:714:G:H2'	4:D:715:A:C8	2.55	0.41
4:D:824:G:O4'	11:K:1:SER:N	2.53	0.41
4:D:1196:A:HO2'	4:D:1197:A:P	2.37	0.41
4:D:1197:A:C2	4:D:1198:G:N7	2.89	0.41
4:D:1346:A:H1'	4:D:1348:U:C1'	2.51	0.41
5:E:37:VAL:HG22	5:E:38:HIS:N	2.36	0.41
11:K:28:SER:OG	11:K:29:SER:N	2.53	0.41
13:M:52:LEU:O	17:Q:81:ARG:NH1	2.48	0.41
25:Y:71:A:H4'	25:Y:72:U:C5'	2.51	0.41
25:Y:116:C:H2'	25:Y:117:G:O4'	2.20	0.41
25:Y:462:C:H2'	25:Y:463:G:O4'	2.20	0.41
25:Y:575:A:C2	25:Y:576:U:C6	3.09	0.41
25:Y:925:A:C2	25:Y:926:G:C5	3.09	0.41
25:Y:1059:G:O2'	33:g:55:PRO:HG3	2.20	0.41
25:Y:1082:U:O5'	33:g:119:ALA:N	2.36	0.41
25:Y:2078:C:H2'	25:Y:2079:U:C6	2.56	0.41
25:Y:2738:A:C6	25:Y:2739:U:C5	3.09	0.41
25:Y:2848:G:O2'	25:Y:2849:U:O5'	2.28	0.41
26:Z:31:C:H1'	26:Z:53:A:H61	1.83	0.41
28:b:47:ALA:HB1	28:b:82:PHE:O	2.21	0.41
36:j:14:LYS:O	36:j:14:LYS:HG3	2.20	0.41
38:l:54:LEU:HD11	38:l:62:ASN:ND2	2.36	0.41
45:s:24:VAL:HG12	45:s:25:LYS:N	2.35	0.41
3:C:24:ARG:HH12	29:c:67:ARG:HD3	1.86	0.41
4:D:51:A:C2	4:D:116:A:N6	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:105:G:N2	4:D:379:C:O2'	2.54	0.41
4:D:166:U:H2'	4:D:167:A:H8	1.85	0.41
4:D:171:A:H2'	4:D:172:A:C8	2.56	0.41
4:D:204:G:O4'	4:D:465:A:C2	2.74	0.41
4:D:323:U:O4	4:D:327:A:N7	2.53	0.41
4:D:705:G:C4	4:D:706:A:C8	3.09	0.41
4:D:750:C:O2'	18:R:20:ASP:OD1	2.38	0.41
4:D:750:C:C2	4:D:751:U:C5	3.09	0.41
4:D:768:A:C5	4:D:769:G:C8	3.09	0.41
4:D:772:U:H2'	4:D:773:G:O4'	2.20	0.41
4:D:1073:U:H2'	4:D:1074:G:O4'	2.21	0.41
4:D:1211:U:H4'	4:D:1212:U:H5''	2.02	0.41
4:D:1299:A:C4	4:D:1301:U:H1'	2.56	0.41
4:D:1416:G:H2'	4:D:1417:G:O5'	2.21	0.41
5:E:87:ASP:N	5:E:87:ASP:OD1	2.54	0.41
6:F:23:ALA:HB1	6:F:27:GLU:HG2	2.03	0.41
7:G:162:GLU:O	7:G:166:LYS:NZ	2.53	0.41
8:H:13:LYS:CE	8:H:112:ALA:HB1	2.50	0.41
13:M:10:LEU:CD1	13:M:18:ILE:HD11	2.51	0.41
16:P:15:VAL:HG23	16:P:16:ILE:H	1.85	0.41
17:Q:42:TRP:O	17:Q:46:LEU:CB	2.69	0.41
18:R:55:LEU:O	18:R:58:MET:HG2	2.21	0.41
23:W:17:ARG:O	23:W:21:ALA:N	2.36	0.41
23:W:57:VAL:HG13	23:W:58:ASP:N	2.36	0.41
23:W:82:ILE:HD12	23:W:83:ASN:N	2.35	0.41
25:Y:48:G:O3'	25:Y:51:G:H5'	2.21	0.41
25:Y:81:G:H2'	25:Y:82:U:O4'	2.21	0.41
25:Y:523:C:C2	25:Y:524:G:C8	3.08	0.41
25:Y:615:U:N3	29:c:35:TYR:O	2.45	0.41
25:Y:644:A:H2'	25:Y:645:C:C1'	2.51	0.41
25:Y:898:C:H2'	25:Y:899:A:O4'	2.21	0.41
25:Y:1056:G:H5''	25:Y:1057:A:OP1	2.21	0.41
25:Y:1057:A:H5'	25:Y:1089:A:N1	2.36	0.41
25:Y:1085:A:H61	56:3:34:THR:HA	1.85	0.41
25:Y:1232:G:C4	25:Y:1233:C:C5	3.09	0.41
25:Y:1325:U:C4	43:q:86:MET:HE2	2.56	0.41
25:Y:1494:A:H3'	25:Y:1494:A:P	2.61	0.41
25:Y:1733:G:H2'	25:Y:1734:G:C8	2.56	0.41
25:Y:1867:G:H2'	25:Y:1868:C:O4'	2.21	0.41
25:Y:1948:G:O2'	25:Y:1949:G:H5'	2.21	0.41
25:Y:2006:C:HO2'	25:Y:2007:U:P	2.43	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:2057:G:C4'	51:y:2:VAL:HG11	2.51	0.41
25:Y:2061:G:C8	25:Y:2501:C:O2'	2.71	0.41
25:Y:2147:A:H2'	25:Y:2148:G:O4'	2.21	0.41
25:Y:2244:U:H2'	25:Y:2245:U:O4'	2.21	0.41
25:Y:2251:OMG:H1'	25:Y:2450:A:O4'	2.21	0.41
25:Y:2316:G:H2'	25:Y:2317:A:H8	1.85	0.41
25:Y:2538:C:N3	25:Y:2539:C:C5	2.88	0.41
26:Z:99:A:C4	26:Z:100:G:C8	3.09	0.41
27:a:29:PHE:O	27:a:33:LEU:HD13	2.20	0.41
27:a:204:LEU:HD22	27:a:209:ALA:HB1	2.02	0.41
28:b:32:ASN:HB2	28:b:96:ILE:HB	2.03	0.41
28:b:96:ILE:HG22	28:b:97:SER:N	2.35	0.41
30:d:90:LEU:HD12	30:d:90:LEU:O	2.21	0.41
33:g:56:VAL:O	33:g:56:VAL:HG13	2.21	0.41
33:g:73:PRO:O	33:g:112:LYS:CD	2.69	0.41
34:h:23:LYS:NZ	34:h:142:ILE:OXT	2.44	0.41
36:j:89:VAL:HG22	36:j:90:VAL:N	2.36	0.41
39:m:83:LEU:HD23	39:m:87:ILE:O	2.21	0.41
46:t:21:ARG:HA	46:t:25:LYS:O	2.20	0.41
53:0:44:VAL:O	53:0:45:SER:OG	2.34	0.41
56:3:123:ILE:O	56:3:124:ASP:OD1	2.39	0.41
2:B:30:U:H2'	2:B:31:C:O4'	2.21	0.41
3:C:21:ASN:OD1	3:C:22:VAL:N	2.55	0.41
4:D:186:C:H2'	4:D:187:G:O4'	2.21	0.41
4:D:390:U:H2'	4:D:391:G:H8	1.86	0.41
4:D:613:C:H2'	4:D:614:C:C6	2.56	0.41
4:D:639:G:O2'	4:D:640:A:O5'	2.39	0.41
4:D:704:A:C4	4:D:705:G:C8	3.08	0.41
4:D:704:A:C5	4:D:705:G:C8	3.09	0.41
4:D:844:G:H22	4:D:846:G:C4'	2.34	0.41
6:F:39:ARG:NH2	17:Q:92:GLU:OE1	2.54	0.41
7:G:48:SER:O	7:G:51:GLY:N	2.54	0.41
9:I:23:GLU:O	9:I:27:ALA:CB	2.69	0.41
16:P:50:GLY:O	16:P:53:ASP:OD1	2.38	0.41
23:W:14:GLU:O	23:W:15:LYS:C	2.63	0.41
23:W:43:LYS:CD	23:W:86:ALA:HB2	2.51	0.41
25:Y:16:C:O3'	51:y:10:SER:OG	2.35	0.41
25:Y:25:U:C2'	25:Y:26:G:O5'	2.68	0.41
25:Y:111:A:H2'	25:Y:112:U:O5'	2.21	0.41
25:Y:401:A:C2'	25:Y:402:A:O5'	2.66	0.41
25:Y:469:G:N7	53:0:37:LYS:NZ	2.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1062:G:P	25:Y:1070:A:O4'	2.79	0.41
25:Y:1099:G:H8	25:Y:1099:G:O5'	2.04	0.41
25:Y:1342:A:C5	25:Y:1397:U:C6	3.09	0.41
25:Y:2057:G:H2'	25:Y:2058:A:O4'	2.20	0.41
25:Y:2060:A:N7	29:c:69:ARG:NH2	2.66	0.41
25:Y:2187:U:HO2'	25:Y:2188:U:C5'	2.29	0.41
25:Y:2224:G:O2'	25:Y:2225:A:O4'	2.30	0.41
25:Y:2485:G:O3'	37:k:125:PRO:HB3	2.20	0.41
25:Y:2570:G:H2'	25:Y:2571:U:O4'	2.20	0.41
25:Y:2718:G:O2'	25:Y:2847:U:OP1	2.39	0.41
25:Y:2824:C:O2'	25:Y:2825:G:P	2.78	0.41
36:j:111:ILE:O	36:j:111:ILE:HG22	2.21	0.41
44:r:37:ASP:CG	44:r:38:ALA:H	2.29	0.41
45:s:3:LYS:O	45:s:93:ARG:NH2	2.47	0.41
49:w:23:ARG:HA	49:w:27:ASN:OD1	2.21	0.41
49:w:50:VAL:O	49:w:53:VAL:N	2.53	0.41
52:z:36:LYS:HG2	52:z:45:HIS:NE2	2.36	0.41
1:A:5:G:HO2'	1:A:6:A:P	2.34	0.40
4:D:14:U:N3	4:D:17:U:OP2	2.52	0.40
4:D:322:C:H42	4:D:329:A:H62	1.68	0.40
4:D:407:U:O3'	4:D:408:A:O4'	2.40	0.40
4:D:519:C:H2'	4:D:520:A:O5'	2.20	0.40
4:D:640:A:C2'	4:D:641:U:O5'	2.69	0.40
4:D:837:U:H2'	4:D:838:G:H8	1.87	0.40
4:D:1004:A:O2'	4:D:1005:A:O4'	2.38	0.40
4:D:1328:C:H2'	4:D:1329:A:O4'	2.21	0.40
4:D:1447:A:HO2'	4:D:1448:C:P	2.39	0.40
8:H:100:GLU:O	8:H:100:GLU:CD	2.65	0.40
10:J:68:VAL:HG11	10:J:133:ALA:HB3	2.03	0.40
11:K:24:VAL:HG12	11:K:25:THR:N	2.36	0.40
11:K:46:GLU:O	11:K:61:THR:HB	2.21	0.40
14:N:30:ILE:HD13	14:N:45:THR:CG2	2.49	0.40
15:O:22:ALA:O	15:O:23:LEU:HB3	2.21	0.40
18:R:7:THR:O	18:R:11:VAL:HG23	2.20	0.40
20:T:22:VAL:HG12	20:T:23:ALA:N	2.35	0.40
21:U:32:ILE:HG22	21:U:38:ILE:HA	2.03	0.40
23:W:15:LYS:O	23:W:16:ALA:C	2.64	0.40
25:Y:24:G:C4	25:Y:25:U:C5	3.10	0.40
25:Y:241:A:H5'	25:Y:243:U:O4'	2.21	0.40
25:Y:630:G:N2	25:Y:633:A:OP2	2.53	0.40
25:Y:752:A:O2'	25:Y:753:A:OP2	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1107:G:O4'	56:3:81:LEU:HD12	2.20	0.40
25:Y:1128:G:O2'	25:Y:1129:A:H5''	2.21	0.40
25:Y:1537:G:N2	25:Y:1538:G:N3	2.68	0.40
25:Y:2269:G:O6	25:Y:2270:A:N6	2.54	0.40
25:Y:2494:G:C2	25:Y:2495:G:C8	3.09	0.40
25:Y:2824:C:H2'	25:Y:2825:G:O5'	2.21	0.40
25:Y:2862:G:C4	25:Y:2863:C:C5	3.09	0.40
28:b:85:ALA:O	28:b:86:GLU:HB3	2.20	0.40
32:f:1:MET:O	32:f:20:ASN:HA	2.20	0.40
35:i:15:GLY:O	35:i:47:ILE:HG12	2.21	0.40
36:j:58:TYR:O	54:1:12:ARG:HD2	2.21	0.40
39:m:8:ILE:O	39:m:11:ALA:N	2.54	0.40
2:B:47:U:C2'	2:B:47:U:OP2	2.70	0.40
3:C:33:TYR:C	3:C:36:VAL:H	2.29	0.40
4:D:298:A:C6	4:D:299:G:N2	2.89	0.40
4:D:406:G:H2'	4:D:407:U:O5'	2.22	0.40
4:D:460:A:C4	4:D:461:A:C8	3.09	0.40
4:D:474:G:H2'	4:D:475:C:C6	2.56	0.40
4:D:493:A:OP1	4:D:493:A:C4	2.74	0.40
4:D:918:A:H2'	4:D:919:A:O4'	2.21	0.40
4:D:1184:G:C2	4:D:1185:G:C8	3.09	0.40
6:F:56:ILE:HD13	6:F:65:VAL:HG13	2.04	0.40
25:Y:111:A:C6	25:Y:112:U:N3	2.89	0.40
25:Y:289:G:H2'	25:Y:290:U:O4'	2.21	0.40
25:Y:585:G:N1	25:Y:1256:G:O6	2.54	0.40
25:Y:596:U:C2	25:Y:597:G:C8	3.10	0.40
25:Y:1044:C:OP1	56:3:3:LEU:HA	2.21	0.40
25:Y:1593:A:H2'	25:Y:1594:U:C6	2.55	0.40
25:Y:1734:G:C2	25:Y:1735:A:N7	2.89	0.40
25:Y:1754:A:O2'	25:Y:1755:A:O5'	2.34	0.40
25:Y:2026:U:C2	25:Y:2038:G:N2	2.89	0.40
25:Y:2050:C:HO2'	25:Y:2051:A:P	2.33	0.40
25:Y:2488:G:C4	25:Y:2489:U:C5	3.10	0.40
25:Y:2497:A:OP2	25:Y:2497:A:H8	2.03	0.40
25:Y:2642:G:C2	25:Y:2643:G:C8	3.09	0.40
26:Z:64:G:H2'	26:Z:65:U:C6	2.57	0.40
28:b:98:VAL:HG22	28:b:98:VAL:O	2.21	0.40
33:g:7:TYR:CD1	33:g:58:ILE:O	2.74	0.40
35:i:23:LYS:HG2	35:i:24:VAL:N	2.36	0.40
1:A:5:G:OP1	4:D:1498:UR3:O2'	2.30	0.40
1:A:25:U:O2	1:A:25:U:C2'	2.69	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:18:G:N2	2:B:57:A:C5	2.89	0.40
3:C:8:SER:O	3:C:11:VAL:N	2.48	0.40
3:C:23:ARG:HD2	43:q:92:ARG:CA	2.50	0.40
4:D:218:U:H2'	4:D:219:U:O4'	2.21	0.40
4:D:263:A:C2	4:D:264:C:C5	3.10	0.40
4:D:469:C:C4	4:D:470:C:C5	3.09	0.40
4:D:993:G:O2'	4:D:994:A:N7	2.43	0.40
4:D:1004:A:N6	4:D:1025:U:O4'	2.54	0.40
4:D:1323:G:H2'	4:D:1324:A:C8	2.56	0.40
4:D:1350:A:H2'	4:D:1351:U:O4'	2.21	0.40
5:E:66:ILE:HG22	5:E:67:LEU:N	2.37	0.40
7:G:158:LEU:HD13	7:G:177:MET:HE1	2.03	0.40
8:H:93:VAL:HG13	8:H:110:MET:SD	2.61	0.40
24:X:27:VAL:HG23	24:X:28:LEU:N	2.36	0.40
25:Y:28:A:H1'	25:Y:513:A:C2	2.56	0.40
25:Y:111:A:C5	25:Y:112:U:C4	3.09	0.40
25:Y:845:A:O3'	25:Y:846:U:H4'	2.21	0.40
25:Y:945:A:C4	25:Y:2448:A:C2	3.10	0.40
25:Y:1283:G:N1	25:Y:1286:A:OP2	2.54	0.40
25:Y:1341:G:OP1	25:Y:1602:U:O2'	2.31	0.40
25:Y:1739:A:H2'	25:Y:1740:G:O4'	2.21	0.40
25:Y:1818:U:H2'	27:a:155:ARG:HG2	2.03	0.40
25:Y:2110:G:H2'	25:Y:2120:G:C8	2.56	0.40
25:Y:2561:U:O2	35:i:23:LYS:HE3	2.21	0.40
25:Y:2588:G:O6	25:Y:2607:G:N1	2.55	0.40
25:Y:2630:G:C5	25:Y:2894:G:C6	3.09	0.40
25:Y:2683:C:N3	25:Y:2684:U:C5	2.89	0.40
25:Y:2762:C:H2'	25:Y:2763:G:O4'	2.21	0.40
28:b:116:LYS:HB3	28:b:123:LYS:HZ1	1.86	0.40
29:c:17:THR:O	29:c:21:ARG:HB3	2.21	0.40
33:g:91:LYS:N	33:g:92:PRO:CD	2.84	0.40
38:l:101:GLY:O	38:l:102:PHE:CD1	2.74	0.40
39:m:18:LEU:HD21	39:m:25:ARG:HB3	2.03	0.40
48:v:3:VAL:CG1	48:v:4:CYS:N	2.84	0.40
56:3:29:ASP:OD1	56:3:107:GLU:O	2.40	0.40
56:3:36:ASP:O	56:3:40:GLU:OE1	2.39	0.40
4:D:277:C:N4	4:D:278:G:O6	2.55	0.40
4:D:284:C:C2	4:D:285:C:C5	3.09	0.40
4:D:872:A:C4	4:D:874:G:N7	2.89	0.40
5:E:20:ARG:HG3	5:E:21:TYR:H	1.87	0.40
7:G:54:LEU:O	7:G:58:GLN:HG2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:50:PRO:HB3	12:L:102:PHE:CE1	2.57	0.40
25:Y:365:U:H2'	25:Y:366:C:C6	2.56	0.40
25:Y:369:U:O2'	25:Y:370:G:OP2	2.40	0.40
25:Y:411:G:OP1	25:Y:2407:A:OP2	2.39	0.40
25:Y:635:C:H2'	25:Y:636:G:O4'	2.21	0.40
25:Y:809:G:O2'	25:Y:810:U:H5'	2.22	0.40
25:Y:1202:G:O6	25:Y:1244:A:N6	2.54	0.40
25:Y:1434:A:H2'	25:Y:1435:G:H8	1.87	0.40
25:Y:1528:A:C4	25:Y:1529:G:H1'	2.56	0.40
25:Y:1640:A:O2'	25:Y:1641:A:H5'	2.20	0.40
25:Y:1964:G:N1	25:Y:1967:C:C4	2.90	0.40
25:Y:2123:G:O2'	25:Y:2124:G:OP2	2.39	0.40
25:Y:2645:G:H3'	25:Y:2646:C:H5'	2.02	0.40
29:c:46:GLN:OE1	29:c:87:ALA:N	2.49	0.40
31:e:3:VAL:HG12	31:e:68:ARG:HG2	2.03	0.40
32:f:130:VAL:N	32:f:142:VAL:O	2.45	0.40
33:g:48:ILE:HD11	33:g:54:ILE:CD1	2.51	0.40
48:v:5:GLN:O	48:v:70:LEU:HD21	2.22	0.40
3:C:12:ASP:O	43:q:85:ILE:HD11	2.22	0.40
4:D:271:C:N3	4:D:272:C:C5	2.89	0.40
4:D:406:G:C6	4:D:495:A:C2	3.09	0.40
4:D:408:A:C6	4:D:435:A:N1	2.89	0.40
4:D:431:A:C2	4:D:432:A:C8	3.10	0.40
4:D:643:C:N3	4:D:644:U:C5	2.90	0.40
4:D:1015:G:H2'	4:D:1016:A:C8	2.57	0.40
4:D:1082:A:C6	4:D:1083:U:C5	3.09	0.40
6:F:39:ARG:HG3	6:F:54:ILE:HD11	2.04	0.40
6:F:41:TYR:CE2	6:F:89:VAL:HG21	2.56	0.40
7:G:94:GLU:HA	7:G:99:ASN:ND2	2.37	0.40
10:J:93:VAL:O	10:J:96:ASN:OD1	2.39	0.40
10:J:132:THR:O	10:J:135:LYS:HB3	2.21	0.40
12:L:35:GLU:HA	12:L:39:GLY:HA3	2.02	0.40
15:O:43:LYS:HB3	15:O:44:PRO:HD3	2.03	0.40
16:P:28:ARG:O	16:P:31:ALA:HB3	2.21	0.40
23:W:8:LYS:O	23:W:11:ILE:HG12	2.21	0.40
23:W:21:ALA:O	23:W:22:SER:C	2.63	0.40
25:Y:18:U:C2	25:Y:19:A:C8	3.09	0.40
25:Y:357:C:C2	25:Y:358:U:C5	3.09	0.40
25:Y:455:C:H4'	25:Y:456:C:OP2	2.22	0.40
25:Y:1077:A:O2'	33:g:134:SER:CB	2.70	0.40
25:Y:1507:C:H2'	25:Y:1508:A:O4'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:1788:C:C2	25:Y:1789:A:C8	3.10	0.40
25:Y:1844:C:H5'	27:a:253:GLY:O	2.22	0.40
25:Y:1914:C:O2	25:Y:1914:C:O4'	2.36	0.40
25:Y:1975:G:H2'	25:Y:1976:U:O4'	2.21	0.40
25:Y:2316:G:H2'	25:Y:2317:A:C8	2.56	0.40
25:Y:2702:G:C2	25:Y:2703:C:C6	3.09	0.40
29:c:100:MET:O	29:c:104:ALA:N	2.52	0.40
29:c:188:MET:CE	29:c:193:VAL:HG22	2.52	0.40
30:d:149:ARG:HG2	30:d:150:GLY:N	2.36	0.40
33:g:75:ALA:O	33:g:76:ALA:C	2.64	0.40
39:m:68:LYS:HA	39:m:102:ARG:HG2	2.03	0.40
44:r:37:ASP:OD1	44:r:37:ASP:N	2.54	0.40
49:w:28:LEU:O	49:w:32:ALA:HB3	2.22	0.40
50:x:50:VAL:O	50:x:51:SER:C	2.65	0.40
56:3:8:LYS:HG3	56:3:11:ILE:HB	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	
3	C	44/46 (96%)	37 (84%)	6 (14%)	1 (2%)	5	30
5	E	216/218 (99%)	177 (82%)	39 (18%)	0	100	100
6	F	204/206 (99%)	178 (87%)	26 (13%)	0	100	100
7	G	203/205 (99%)	162 (80%)	41 (20%)	0	100	100
8	H	155/157 (99%)	128 (83%)	24 (16%)	3 (2%)	6	33
9	I	98/100 (98%)	79 (81%)	18 (18%)	1 (1%)	12	45
10	J	149/151 (99%)	124 (83%)	25 (17%)	0	100	100
11	K	127/129 (98%)	107 (84%)	19 (15%)	1 (1%)	16	49

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
12	L	125/127 (98%)	95 (76%)	29 (23%)	1 (1%)	16	49
13	M	96/98 (98%)	75 (78%)	20 (21%)	1 (1%)	12	45
14	N	114/116 (98%)	97 (85%)	16 (14%)	1 (1%)	14	46
15	O	121/123 (98%)	101 (84%)	20 (16%)	0	100	100
16	P	112/114 (98%)	91 (81%)	21 (19%)	0	100	100
17	Q	99/101 (98%)	75 (76%)	24 (24%)	0	100	100
18	R	86/88 (98%)	66 (77%)	20 (23%)	0	100	100
19	S	80/82 (98%)	66 (82%)	14 (18%)	0	100	100
20	T	78/80 (98%)	69 (88%)	9 (12%)	0	100	100
21	U	63/65 (97%)	52 (82%)	10 (16%)	1 (2%)	7	36
22	V	77/79 (98%)	66 (86%)	11 (14%)	0	100	100
23	W	83/85 (98%)	66 (80%)	17 (20%)	0	100	100
24	X	63/65 (97%)	41 (65%)	21 (33%)	1 (2%)	7	36
27	a	269/271 (99%)	241 (90%)	28 (10%)	0	100	100
28	b	207/209 (99%)	184 (89%)	23 (11%)	0	100	100
29	c	199/201 (99%)	172 (86%)	26 (13%)	1 (0%)	24	57
30	d	175/177 (99%)	151 (86%)	24 (14%)	0	100	100
31	e	174/176 (99%)	153 (88%)	21 (12%)	0	100	100
32	f	147/149 (99%)	121 (82%)	24 (16%)	2 (1%)	9	38
33	g	139/141 (99%)	114 (82%)	22 (16%)	3 (2%)	5	30
34	h	140/142 (99%)	129 (92%)	7 (5%)	4 (3%)	3	26
35	i	120/122 (98%)	108 (90%)	11 (9%)	1 (1%)	16	49
36	j	141/143 (99%)	121 (86%)	18 (13%)	2 (1%)	9	38
37	k	134/136 (98%)	116 (87%)	18 (13%)	0	100	100
38	l	118/120 (98%)	98 (83%)	19 (16%)	1 (1%)	16	49
39	m	114/116 (98%)	92 (81%)	21 (18%)	1 (1%)	14	46
40	n	112/114 (98%)	103 (92%)	9 (8%)	0	100	100
41	o	115/117 (98%)	92 (80%)	23 (20%)	0	100	100
42	p	101/103 (98%)	89 (88%)	11 (11%)	1 (1%)	12	45
43	q	108/110 (98%)	92 (85%)	16 (15%)	0	100	100
44	r	91/93 (98%)	74 (81%)	17 (19%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
45	s	100/102 (98%)	89 (89%)	11 (11%)	0	100	100
46	t	92/94 (98%)	85 (92%)	7 (8%)	0	100	100
47	u	73/75 (97%)	69 (94%)	4 (6%)	0	100	100
48	v	75/77 (97%)	67 (89%)	8 (11%)	0	100	100
49	w	61/63 (97%)	49 (80%)	12 (20%)	0	100	100
50	x	56/58 (97%)	49 (88%)	6 (11%)	1 (2%)	6	34
51	y	54/56 (96%)	49 (91%)	4 (7%)	1 (2%)	6	33
52	z	48/50 (96%)	42 (88%)	5 (10%)	1 (2%)	5	31
53	0	44/46 (96%)	35 (80%)	9 (20%)	0	100	100
54	1	62/64 (97%)	56 (90%)	6 (10%)	0	100	100
55	2	36/38 (95%)	32 (89%)	4 (11%)	0	100	100
56	3	129/131 (98%)	102 (79%)	23 (18%)	4 (3%)	3	25
57	4	64/66 (97%)	53 (83%)	11 (17%)	0	100	100
All	All	5891/5995 (98%)	4979 (84%)	878 (15%)	34 (1%)	23	54

All (34) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	C	45	ASP
34	h	81	ILE
52	z	4	ILE
8	H	122	VAL
39	m	35	ILE
13	M	57	VAL
21	U	17	VAL
34	h	137	PRO
56	3	108	VAL
56	3	119	PRO
8	H	25	LYS
12	L	57	VAL
35	i	35	VAL
56	3	111	ALA
11	K	48	PHE
33	g	8	VAL
33	g	72	THR
14	N	118	ASN
24	X	10	PRO

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Mol	Chain	Res	Type
32	f	9	VAL
34	h	136	GLN
38	l	70	THR
36	j	111	ILE
29	c	83	VAL
33	g	121	ILE
56	3	55	VAL
8	H	93	VAL
9	I	96	VAL
32	f	3	VAL
34	h	100	VAL
36	j	85	VAL
51	y	2	VAL
42	p	54	VAL
50	x	13	ILE

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	
3	C	42/42 (100%)	42 (100%)	0	100	100
5	E	180/180 (100%)	180 (100%)	0	100	100
6	F	170/170 (100%)	170 (100%)	0	100	100
7	G	172/172 (100%)	172 (100%)	0	100	100
8	H	114/119 (96%)	114 (100%)	0	100	100
9	I	87/87 (100%)	87 (100%)	0	100	100
10	J	124/124 (100%)	124 (100%)	0	100	100
11	K	104/104 (100%)	104 (100%)	0	100	100
12	L	105/105 (100%)	105 (100%)	0	100	100
13	M	86/86 (100%)	86 (100%)	0	100	100
14	N	89/89 (100%)	89 (100%)	0	100	100
15	O	103/103 (100%)	103 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
16	P	92/92 (100%)	92 (100%)	0	100	100
17	Q	79/83 (95%)	79 (100%)	0	100	100
18	R	76/76 (100%)	76 (100%)	0	100	100
19	S	65/65 (100%)	65 (100%)	0	100	100
20	T	74/74 (100%)	74 (100%)	0	100	100
21	U	48/56 (86%)	48 (100%)	0	100	100
22	V	70/70 (100%)	70 (100%)	0	100	100
23	W	65/65 (100%)	65 (100%)	0	100	100
24	X	44/55 (80%)	44 (100%)	0	100	100
27	a	216/216 (100%)	216 (100%)	0	100	100
28	b	164/164 (100%)	164 (100%)	0	100	100
29	c	165/165 (100%)	165 (100%)	0	100	100
30	d	148/148 (100%)	148 (100%)	0	100	100
31	e	137/137 (100%)	137 (100%)	0	100	100
32	f	114/114 (100%)	114 (100%)	0	100	100
33	g	109/109 (100%)	109 (100%)	0	100	100
34	h	116/116 (100%)	116 (100%)	0	100	100
35	i	103/103 (100%)	103 (100%)	0	100	100
36	j	102/102 (100%)	102 (100%)	0	100	100
37	k	109/109 (100%)	109 (100%)	0	100	100
38	l	100/100 (100%)	100 (100%)	0	100	100
39	m	86/86 (100%)	86 (100%)	0	100	100
40	n	99/99 (100%)	99 (100%)	0	100	100
41	o	89/89 (100%)	89 (100%)	0	100	100
42	p	84/84 (100%)	84 (100%)	0	100	100
43	q	93/93 (100%)	93 (100%)	0	100	100
44	r	80/80 (100%)	80 (100%)	0	100	100
45	s	83/83 (100%)	83 (100%)	0	100	100
46	t	78/78 (100%)	78 (100%)	0	100	100
47	u	57/57 (100%)	57 (100%)	0	100	100
48	v	67/67 (100%)	67 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
49	w	55/55 (100%)	55 (100%)	0	100	100
50	x	48/48 (100%)	48 (100%)	0	100	100
51	y	47/47 (100%)	47 (100%)	0	100	100
52	z	45/45 (100%)	45 (100%)	0	100	100
53	0	38/38 (100%)	38 (100%)	0	100	100
54	1	51/51 (100%)	51 (100%)	0	100	100
55	2	34/34 (100%)	34 (100%)	0	100	100
56	3	100/100 (100%)	100 (100%)	0	100	100
57	4	59/59 (100%)	59 (100%)	0	100	100
All	All	4865/4893 (99%)	4865 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (26) such sidechains are listed below:

Mol	Chain	Res	Type
7	G	125	ASN
7	G	151	GLN
8	H	69	ASN
8	H	77	ASN
9	I	55	HIS
9	I	58	HIS
14	N	21	HIS
23	W	47	GLN
23	W	51	ASN
23	W	81	GLN
27	a	133	ASN
27	a	152	GLN
28	b	94	GLN
32	f	2	GLN
32	f	128	HIS
35	i	93	GLN
37	k	17	ASN
41	o	80	ASN
42	p	12	HIS
42	p	66	HIS
45	s	98	ASN
46	t	75	GLN
47	u	46	ASN

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Mol	Chain	Res	Type
52	z	44	GLN
53	0	29	GLN
54	1	25	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	28/29 (96%)	14 (50%)	8 (28%)
2	B	75/76 (98%)	18 (24%)	3 (4%)
25	Y	2902/2903 (99%)	676 (23%)	123 (4%)
26	Z	119/120 (99%)	22 (18%)	6 (5%)
4	D	1538/1539 (99%)	329 (21%)	58 (3%)
All	All	4662/4667 (99%)	1059 (22%)	198 (4%)

All (1059) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	6	A
1	A	7	U
1	A	8	A
1	A	15	G
1	A	16	G
1	A	20	A
1	A	22	C
1	A	23	U
1	A	24	A
1	A	25	U
1	A	26	A
1	A	27	G
1	A	28	A
1	A	29	A
2	B	3	G
2	B	5	A
2	B	16	C
2	B	17	C
2	B	18	G
2	B	21	A
2	B	46	G
2	B	47	U
2	B	48	C
2	B	49	G

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Mol	Chain	Res	Type
2	B	52	G
2	B	58	A
2	B	62	C
2	B	65	U
2	B	66	C
2	B	73	A
2	B	74	C
2	B	76	A
4	D	4	U
4	D	6	G
4	D	8	A
4	D	9	G
4	D	31	G
4	D	32	A
4	D	36	C
4	D	41	G
4	D	46	G
4	D	47	C
4	D	48	C
4	D	50	A
4	D	51	A
4	D	61	G
4	D	71	A
4	D	77	A
4	D	78	A
4	D	79	G
4	D	81	A
4	D	82	G
4	D	84	U
4	D	86	G
4	D	94	G
4	D	96	U
4	D	116	A
4	D	117	G
4	D	118	U
4	D	121	U
4	D	122	G
4	D	130	A
4	D	164	G
4	D	166	U
4	D	177	G
4	D	183	C

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Mol	Chain	Res	Type
4	D	184	G
4	D	197	A
4	D	209	U
4	D	210	C
4	D	211	G
4	D	212	G
4	D	226	G
4	D	240	G
4	D	245	U
4	D	247	G
4	D	251	G
4	D	253	A
4	D	260	G
4	D	266	G
4	D	267	C
4	D	280	C
4	D	289	G
4	D	299	G
4	D	305	G
4	D	306	A
4	D	328	C
4	D	329	A
4	D	331	G
4	D	345	C
4	D	347	G
4	D	352	C
4	D	354	G
4	D	355	C
4	D	366	A
4	D	367	U
4	D	369	G
4	D	372	C
4	D	376	G
4	D	388	G
4	D	390	U
4	D	397	A
4	D	404	G
4	D	406	G
4	D	408	A
4	D	410	G
4	D	412	A
4	D	413	G

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Mol	Chain	Res	Type
4	D	414	A
4	D	423	G
4	D	424	G
4	D	426	U
4	D	429	U
4	D	434	U
4	D	436	C
4	D	438	U
4	D	440	C
4	D	441	A
4	D	442	G
4	D	449	G
4	D	463	U
4	D	465	A
4	D	467	U
4	D	477	C
4	D	481	G
4	D	482	A
4	D	484	G
4	D	485	U
4	D	486	U
4	D	488	C
4	D	492	C
4	D	493	A
4	D	495	A
4	D	496	A
4	D	497	G
4	D	499	A
4	D	509	A
4	D	511	C
4	D	517	G
4	D	519	C
4	D	520	A
4	D	521	G
4	D	527	7MG
4	D	528	C
4	D	531	U
4	D	532	A
4	D	547	A
4	D	559	A
4	D	562	U
4	D	564	C

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Mol	Chain	Res	Type
4	D	565	U
4	D	566	G
4	D	571	U
4	D	572	A
4	D	573	A
4	D	576	C
4	D	577	G
4	D	613	C
4	D	618	C
4	D	626	G
4	D	640	A
4	D	641	U
4	D	642	A
4	D	650	G
4	D	653	U
4	D	654	G
4	D	665	A
4	D	667	G
4	D	687	A
4	D	688	G
4	D	703	G
4	D	704	A
4	D	718	A
4	D	721	G
4	D	723	U
4	D	724	G
4	D	731	G
4	D	734	G
4	D	748	G
4	D	755	G
4	D	777	A
4	D	790	A
4	D	794	A
4	D	795	C
4	D	796	C
4	D	815	A
4	D	817	C
4	D	818	G
4	D	819	A
4	D	820	U
4	D	829	G
4	D	842	U

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Mol	Chain	Res	Type
4	D	843	U
4	D	844	G
4	D	845	A
4	D	846	G
4	D	849	G
4	D	858	G
4	D	859	G
4	D	872	A
4	D	885	G
4	D	890	G
4	D	891	U
4	D	901	A
4	D	902	G
4	D	914	A
4	D	926	G
4	D	934	C
4	D	935	A
4	D	960	U
4	D	961	U
4	D	966	2MG
4	D	969	A
4	D	971	G
4	D	975	A
4	D	976	G
4	D	977	A
4	D	979	C
4	D	981	U
4	D	989	U
4	D	992	U
4	D	993	G
4	D	994	A
4	D	996	A
4	D	1004	A
4	D	1005	A
4	D	1020	G
4	D	1028	C
4	D	1029	U
4	D	1030	U
4	D	1031	C
4	D	1032	G
4	D	1033	G
4	D	1034	G

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Mol	Chain	Res	Type
4	D	1035	A
4	D	1036	A
4	D	1037	C
4	D	1048	G
4	D	1053	G
4	D	1056	U
4	D	1065	U
4	D	1067	A
4	D	1079	G
4	D	1085	U
4	D	1094	G
4	D	1095	U
4	D	1101	A
4	D	1117	A
4	D	1118	U
4	D	1124	G
4	D	1126	U
4	D	1127	G
4	D	1130	A
4	D	1131	G
4	D	1133	G
4	D	1134	G
4	D	1135	U
4	D	1136	C
4	D	1137	C
4	D	1138	G
4	D	1139	G
4	D	1149	C
4	D	1151	A
4	D	1152	A
4	D	1157	A
4	D	1158	C
4	D	1159	U
4	D	1168	U
4	D	1183	U
4	D	1184	G
4	D	1191	A
4	D	1196	A
4	D	1197	A
4	D	1198	G
4	D	1200	C
4	D	1201	A

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Mol	Chain	Res	Type
4	D	1207	2MG
4	D	1212	U
4	D	1213	A
4	D	1214	C
4	D	1222	G
4	D	1223	C
4	D	1224	U
4	D	1225	A
4	D	1227	A
4	D	1236	A
4	D	1238	A
4	D	1240	U
4	D	1241	G
4	D	1256	A
4	D	1257	A
4	D	1260	G
4	D	1261	A
4	D	1278	G
4	D	1280	A
4	D	1282	C
4	D	1286	U
4	D	1287	A
4	D	1297	G
4	D	1300	G
4	D	1301	U
4	D	1302	C
4	D	1306	A
4	D	1317	C
4	D	1320	C
4	D	1322	C
4	D	1323	G
4	D	1331	G
4	D	1332	A
4	D	1334	G
4	D	1335	U
4	D	1336	C
4	D	1338	G
4	D	1346	A
4	D	1347	G
4	D	1348	U
4	D	1363	A
4	D	1370	G

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Mol	Chain	Res	Type
4	D	1379	G
4	D	1397	C
4	D	1400	C
4	D	1401	G
4	D	1402	4OC
4	D	1406	U
4	D	1417	G
4	D	1418	A
4	D	1419	G
4	D	1429	A
4	D	1431	A
4	D	1441	A
4	D	1446	A
4	D	1448	C
4	D	1452	C
4	D	1453	G
4	D	1456	A
4	D	1492	A
4	D	1493	A
4	D	1494	G
4	D	1495	U
4	D	1496	C
4	D	1497	G
4	D	1502	A
4	D	1503	A
4	D	1504	G
4	D	1506	U
4	D	1507	A
4	D	1516	2MG
4	D	1517	G
4	D	1518	MA6
4	D	1519	MA6
4	D	1520	C
4	D	1524	C
4	D	1527	U
4	D	1529	G
4	D	1530	G
4	D	1532	U
4	D	1533	C
4	D	1534	A
4	D	1535	C
4	D	1537	U

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Mol	Chain	Res	Type
4	D	1539	C
25	Y	10	A
25	Y	12	U
25	Y	13	A
25	Y	26	G
25	Y	35	G
25	Y	46	G
25	Y	51	G
25	Y	52	A
25	Y	55	G
25	Y	63	A
25	Y	71	A
25	Y	72	U
25	Y	74	A
25	Y	75	G
25	Y	78	U
25	Y	80	G
25	Y	82	U
25	Y	85	G
25	Y	91	A
25	Y	92	U
25	Y	100	U
25	Y	101	A
25	Y	102	U
25	Y	103	A
25	Y	112	U
25	Y	113	U
25	Y	114	U
25	Y	118	A
25	Y	120	U
25	Y	131	A
25	Y	138	U
25	Y	139	U
25	Y	140	C
25	Y	141	G
25	Y	142	A
25	Y	149	A
25	Y	158	U
25	Y	162	U
25	Y	163	C
25	Y	178	G
25	Y	181	A

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Mol	Chain	Res	Type
25	Y	194	G
25	Y	196	A
25	Y	199	A
25	Y	204	A
25	Y	205	G
25	Y	216	A
25	Y	221	A
25	Y	222	A
25	Y	223	A
25	Y	224	U
25	Y	226	A
25	Y	228	C
25	Y	229	C
25	Y	230	G
25	Y	233	A
25	Y	241	A
25	Y	242	G
25	Y	245	G
25	Y	248	G
25	Y	250	G
25	Y	255	A
25	Y	266	G
25	Y	276	U
25	Y	277	G
25	Y	278	A
25	Y	279	A
25	Y	280	U
25	Y	281	C
25	Y	282	A
25	Y	285	G
25	Y	286	U
25	Y	291	G
25	Y	294	A
25	Y	306	U
25	Y	307	G
25	Y	310	A
25	Y	321	U
25	Y	323	C
25	Y	324	A
25	Y	329	G
25	Y	330	A
25	Y	332	A

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Mol	Chain	Res	Type
25	Y	340	A
25	Y	358	U
25	Y	361	G
25	Y	362	A
25	Y	366	C
25	Y	370	G
25	Y	372	G
25	Y	373	U
25	Y	386	G
25	Y	387	U
25	Y	389	G
25	Y	396	G
25	Y	402	A
25	Y	403	U
25	Y	404	A
25	Y	405	U
25	Y	406	G
25	Y	412	A
25	Y	421	C
25	Y	422	A
25	Y	424	G
25	Y	430	A
25	Y	451	U
25	Y	455	C
25	Y	456	C
25	Y	457	A
25	Y	464	U
25	Y	465	G
25	Y	473	G
25	Y	479	A
25	Y	480	A
25	Y	481	G
25	Y	482	A
25	Y	491	G
25	Y	503	A
25	Y	505	A
25	Y	508	A
25	Y	509	C
25	Y	510	C
25	Y	518	G
25	Y	527	C
25	Y	528	A

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Mol	Chain	Res	Type
25	Y	529	A
25	Y	531	C
25	Y	532	A
25	Y	543	G
25	Y	545	U
25	Y	546	U
25	Y	547	A
25	Y	548	G
25	Y	550	C
25	Y	556	A
25	Y	563	A
25	Y	568	U
25	Y	569	U
25	Y	570	G
25	Y	572	A
25	Y	573	U
25	Y	575	A
25	Y	586	A
25	Y	587	C
25	Y	603	A
25	Y	613	A
25	Y	614	A
25	Y	615	U
25	Y	616	A
25	Y	627	A
25	Y	637	A
25	Y	645	C
25	Y	646	U
25	Y	647	G
25	Y	653	U
25	Y	654	A
25	Y	655	A
25	Y	670	A
25	Y	676	A
25	Y	677	A
25	Y	686	U
25	Y	687	C
25	Y	705	A
25	Y	715	A
25	Y	717	C
25	Y	729	G
25	Y	730	A

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Mol	Chain	Res	Type
25	Y	736	C
25	Y	747	5MC
25	Y	748	G
25	Y	752	A
25	Y	757	G
25	Y	764	A
25	Y	765	C
25	Y	775	G
25	Y	776	G
25	Y	781	A
25	Y	782	A
25	Y	784	G
25	Y	785	G
25	Y	789	A
25	Y	800	A
25	Y	805	G
25	Y	811	U
25	Y	812	C
25	Y	819	A
25	Y	827	U
25	Y	828	U
25	Y	844	A
25	Y	845	A
25	Y	846	U
25	Y	860	U
25	Y	878	A
25	Y	883	G
25	Y	887	A
25	Y	888	C
25	Y	890	C
25	Y	891	G
25	Y	895	U
25	Y	896	A
25	Y	897	C
25	Y	904	G
25	Y	907	G
25	Y	910	A
25	Y	914	G
25	Y	915	C
25	Y	932	U
25	Y	933	A
25	Y	941	A

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Mol	Chain	Res	Type
25	Y	945	A
25	Y	946	C
25	Y	953	G
25	Y	959	A
25	Y	961	C
25	Y	966	G
25	Y	967	U
25	Y	972	A
25	Y	973	A
25	Y	974	G
25	Y	983	A
25	Y	985	C
25	Y	995	C
25	Y	996	A
25	Y	997	G
25	Y	1005	C
25	Y	1008	A
25	Y	1009	A
25	Y	1012	U
25	Y	1013	C
25	Y	1021	A
25	Y	1022	G
25	Y	1023	U
25	Y	1025	G
25	Y	1026	G
25	Y	1033	U
25	Y	1034	G
25	Y	1046	A
25	Y	1047	G
25	Y	1053	C
25	Y	1054	A
25	Y	1056	G
25	Y	1057	A
25	Y	1058	U
25	Y	1060	U
25	Y	1061	U
25	Y	1062	G
25	Y	1063	G
25	Y	1065	U
25	Y	1066	U
25	Y	1068	G
25	Y	1069	A

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Mol	Chain	Res	Type
25	Y	1070	A
25	Y	1071	G
25	Y	1072	C
25	Y	1073	A
25	Y	1075	C
25	Y	1076	C
25	Y	1077	A
25	Y	1078	U
25	Y	1079	C
25	Y	1081	U
25	Y	1082	U
25	Y	1085	A
25	Y	1087	G
25	Y	1088	A
25	Y	1089	A
25	Y	1095	A
25	Y	1097	U
25	Y	1101	U
25	Y	1103	A
25	Y	1104	C
25	Y	1105	U
25	Y	1106	G
25	Y	1108	U
25	Y	1109	C
25	Y	1110	G
25	Y	1112	G
25	Y	1119	U
25	Y	1126	A
25	Y	1131	G
25	Y	1132	U
25	Y	1134	A
25	Y	1135	C
25	Y	1136	G
25	Y	1139	G
25	Y	1141	U
25	Y	1142	A
25	Y	1154	G
25	Y	1155	A
25	Y	1169	A
25	Y	1171	G
25	Y	1172	C
25	Y	1175	A

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Mol	Chain	Res	Type
25	Y	1176	U
25	Y	1177	G
25	Y	1178	C
25	Y	1180	U
25	Y	1181	U
25	Y	1212	G
25	Y	1221	C
25	Y	1235	G
25	Y	1237	A
25	Y	1247	A
25	Y	1248	G
25	Y	1249	U
25	Y	1251	C
25	Y	1252	G
25	Y	1253	A
25	Y	1255	U
25	Y	1256	G
25	Y	1257	C
25	Y	1265	A
25	Y	1270	C
25	Y	1271	G
25	Y	1272	A
25	Y	1273	U
25	Y	1280	G
25	Y	1284	A
25	Y	1288	G
25	Y	1300	G
25	Y	1301	A
25	Y	1306	C
25	Y	1321	A
25	Y	1327	A
25	Y	1328	A
25	Y	1329	U
25	Y	1330	C
25	Y	1341	G
25	Y	1345	C
25	Y	1365	A
25	Y	1368	G
25	Y	1374	G
25	Y	1378	A
25	Y	1379	U
25	Y	1383	A

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Mol	Chain	Res	Type
25	Y	1386	C
25	Y	1392	A
25	Y	1395	A
25	Y	1416	G
25	Y	1419	A
25	Y	1420	A
25	Y	1425	G
25	Y	1437	C
25	Y	1451	C
25	Y	1452	G
25	Y	1454	C
25	Y	1458	U
25	Y	1459	G
25	Y	1460	U
25	Y	1461	C
25	Y	1475	G
25	Y	1481	U
25	Y	1482	G
25	Y	1490	A
25	Y	1491	G
25	Y	1493	C
25	Y	1494	A
25	Y	1498	C
25	Y	1504	A
25	Y	1505	A
25	Y	1509	A
25	Y	1515	A
25	Y	1524	G
25	Y	1529	G
25	Y	1530	G
25	Y	1534	U
25	Y	1535	A
25	Y	1536	C
25	Y	1537	G
25	Y	1538	G
25	Y	1540	G
25	Y	1559	U
25	Y	1560	G
25	Y	1569	A
25	Y	1578	U
25	Y	1584	U
25	Y	1585	C

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Mol	Chain	Res	Type
25	Y	1587	G
25	Y	1607	C
25	Y	1610	A
25	Y	1616	A
25	Y	1617	C
25	Y	1619	G
25	Y	1627	G
25	Y	1632	A
25	Y	1635	A
25	Y	1637	A
25	Y	1648	U
25	Y	1649	G
25	Y	1651	G
25	Y	1665	A
25	Y	1672	A
25	Y	1673	G
25	Y	1674	G
25	Y	1687	G
25	Y	1698	A
25	Y	1699	G
25	Y	1706	C
25	Y	1715	G
25	Y	1716	U
25	Y	1729	U
25	Y	1730	C
25	Y	1731	G
25	Y	1732	C
25	Y	1733	G
25	Y	1735	A
25	Y	1736	U
25	Y	1738	G
25	Y	1755	A
25	Y	1758	U
25	Y	1764	C
25	Y	1773	A
25	Y	1781	U
25	Y	1782	U
25	Y	1784	A
25	Y	1800	C
25	Y	1801	A
25	Y	1802	A
25	Y	1808	A

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Mol	Chain	Res	Type
25	Y	1816	C
25	Y	1829	A
25	Y	1833	C
25	Y	1835	2MG
25	Y	1842	G
25	Y	1848	A
25	Y	1869	G
25	Y	1871	A
25	Y	1873	G
25	Y	1876	A
25	Y	1901	A
25	Y	1906	G
25	Y	1912	A
25	Y	1913	A
25	Y	1914	C
25	Y	1927	A
25	Y	1928	A
25	Y	1929	G
25	Y	1930	G
25	Y	1931	U
25	Y	1936	A
25	Y	1937	A
25	Y	1938	A
25	Y	1939	5MU
25	Y	1940	U
25	Y	1941	C
25	Y	1942	C
25	Y	1943	U
25	Y	1955	U
25	Y	1962	5MC
25	Y	1964	G
25	Y	1967	C
25	Y	1970	A
25	Y	1971	U
25	Y	1972	G
25	Y	1990	C
25	Y	1991	U
25	Y	1993	U
25	Y	1997	C
25	Y	2002	G
25	Y	2005	A
25	Y	2006	C

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Mol	Chain	Res	Type
25	Y	2007	U
25	Y	2020	A
25	Y	2022	U
25	Y	2023	C
25	Y	2030	6MZ
25	Y	2031	A
25	Y	2033	A
25	Y	2034	U
25	Y	2036	C
25	Y	2043	C
25	Y	2049	G
25	Y	2051	A
25	Y	2055	C
25	Y	2056	G
25	Y	2060	A
25	Y	2061	G
25	Y	2062	A
25	Y	2063	C
25	Y	2069	7MG
25	Y	2072	C
25	Y	2076	U
25	Y	2092	U
25	Y	2093	G
25	Y	2096	C
25	Y	2107	G
25	Y	2110	G
25	Y	2112	G
25	Y	2113	U
25	Y	2118	U
25	Y	2119	A
25	Y	2120	G
25	Y	2122	U
25	Y	2123	G
25	Y	2124	G
25	Y	2125	G
25	Y	2127	G
25	Y	2128	G
25	Y	2131	U
25	Y	2132	U
25	Y	2133	G
25	Y	2134	A
25	Y	2135	A

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Mol	Chain	Res	Type
25	Y	2136	G
25	Y	2138	G
25	Y	2140	G
25	Y	2145	C
25	Y	2146	C
25	Y	2147	A
25	Y	2149	U
25	Y	2150	C
25	Y	2152	G
25	Y	2162	G
25	Y	2163	A
25	Y	2164	C
25	Y	2166	U
25	Y	2168	G
25	Y	2171	A
25	Y	2172	U
25	Y	2173	A
25	Y	2174	C
25	Y	2175	C
25	Y	2177	C
25	Y	2178	C
25	Y	2188	U
25	Y	2198	A
25	Y	2199	A
25	Y	2204	G
25	Y	2211	A
25	Y	2213	U
25	Y	2214	C
25	Y	2225	A
25	Y	2238	G
25	Y	2239	G
25	Y	2249	U
25	Y	2250	G
25	Y	2266	A
25	Y	2268	A
25	Y	2278	A
25	Y	2279	G
25	Y	2283	C
25	Y	2287	A
25	Y	2288	A
25	Y	2297	A
25	Y	2305	U

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Mol	Chain	Res	Type
25	Y	2311	A
25	Y	2318	G
25	Y	2320	U
25	Y	2325	G
25	Y	2327	A
25	Y	2328	A
25	Y	2333	A
25	Y	2337	G
25	Y	2340	A
25	Y	2345	G
25	Y	2347	C
25	Y	2354	C
25	Y	2361	G
25	Y	2379	G
25	Y	2382	G
25	Y	2383	G
25	Y	2385	C
25	Y	2388	A
25	Y	2402	U
25	Y	2403	C
25	Y	2406	A
25	Y	2407	A
25	Y	2423	U
25	Y	2424	C
25	Y	2425	A
25	Y	2428	G
25	Y	2429	G
25	Y	2430	A
25	Y	2441	U
25	Y	2445	2MG
25	Y	2447	G
25	Y	2448	A
25	Y	2449	H2U
25	Y	2452	C
25	Y	2473	U
25	Y	2475	C
25	Y	2476	A
25	Y	2478	A
25	Y	2492	U
25	Y	2496	C
25	Y	2497	A
25	Y	2499	C

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Mol	Chain	Res	Type
25	Y	2500	U
25	Y	2501	C
25	Y	2502	G
25	Y	2503	2MA
25	Y	2504	PSU
25	Y	2505	G
25	Y	2506	U
25	Y	2507	C
25	Y	2518	A
25	Y	2520	C
25	Y	2530	A
25	Y	2531	A
25	Y	2535	G
25	Y	2543	G
25	Y	2547	A
25	Y	2554	U
25	Y	2567	G
25	Y	2573	C
25	Y	2576	G
25	Y	2577	A
25	Y	2581	G
25	Y	2584	U
25	Y	2585	U
25	Y	2586	U
25	Y	2597	G
25	Y	2602	A
25	Y	2603	G
25	Y	2609	U
25	Y	2610	C
25	Y	2612	C
25	Y	2613	U
25	Y	2614	A
25	Y	2615	U
25	Y	2630	G
25	Y	2644	G
25	Y	2645	G
25	Y	2646	C
25	Y	2655	G
25	Y	2656	U
25	Y	2682	A
25	Y	2689	U
25	Y	2690	U

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Mol	Chain	Res	Type
25	Y	2714	G
25	Y	2716	C
25	Y	2725	A
25	Y	2726	A
25	Y	2731	G
25	Y	2733	A
25	Y	2744	G
25	Y	2751	G
25	Y	2758	A
25	Y	2764	A
25	Y	2765	A
25	Y	2776	A
25	Y	2778	A
25	Y	2779	U
25	Y	2780	G
25	Y	2781	A
25	Y	2790	U
25	Y	2791	G
25	Y	2793	C
25	Y	2794	C
25	Y	2797	U
25	Y	2798	U
25	Y	2799	A
25	Y	2800	A
25	Y	2808	G
25	Y	2809	A
25	Y	2818	U
25	Y	2820	A
25	Y	2821	A
25	Y	2825	G
25	Y	2833	U
25	Y	2834	G
25	Y	2848	G
25	Y	2849	U
25	Y	2859	G
25	Y	2861	U
25	Y	2866	U
25	Y	2867	G
25	Y	2868	A
25	Y	2873	A
25	Y	2879	A
25	Y	2880	C

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Mol	Chain	Res	Type
25	Y	2884	U
25	Y	2893	A
25	Y	2894	G
25	Y	2900	A
25	Y	2903	U
26	Z	2	G
26	Z	4	C
26	Z	9	G
26	Z	13	G
26	Z	14	U
26	Z	15	A
26	Z	35	C
26	Z	36	C
26	Z	37	C
26	Z	42	C
26	Z	44	G
26	Z	45	A
26	Z	51	G
26	Z	57	A
26	Z	66	A
26	Z	67	G
26	Z	88	C
26	Z	89	U
26	Z	90	C
26	Z	108	A
26	Z	109	A
26	Z	120	A

All (198) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	15	G
1	A	22	C
1	A	23	U
1	A	24	A
1	A	25	U
1	A	26	A
1	A	27	G
1	A	28	A
2	B	17	C
2	B	45	G
2	B	47	U

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Mol	Chain	Res	Type
4	D	5	U
4	D	81	A
4	D	95	C
4	D	116	A
4	D	176	C
4	D	183	C
4	D	298	A
4	D	375	U
4	D	403	C
4	D	413	G
4	D	428	G
4	D	448	A
4	D	464	U
4	D	492	C
4	D	519	C
4	D	561	U
4	D	564	C
4	D	617	G
4	D	640	A
4	D	641	U
4	D	652	U
4	D	686	U
4	D	703	G
4	D	723	U
4	D	841	C
4	D	871	U
4	D	889	A
4	D	890	G
4	D	960	U
4	D	991	U
4	D	1094	G
4	D	1134	G
4	D	1148	U
4	D	1151	A
4	D	1182	G
4	D	1183	U
4	D	1190	G
4	D	1196	A
4	D	1200	C
4	D	1211	U
4	D	1221	G
4	D	1240	U

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Mol	Chain	Res	Type
4	D	1256	A
4	D	1281	C
4	D	1300	G
4	D	1301	U
4	D	1305	G
4	D	1330	U
4	D	1331	G
4	D	1347	G
4	D	1399	C
4	D	1417	G
4	D	1430	A
4	D	1447	A
4	D	1451	U
4	D	1492	A
4	D	1493	A
4	D	1494	G
25	Y	12	U
25	Y	25	U
25	Y	51	G
25	Y	91	A
25	Y	100	U
25	Y	111	A
25	Y	223	A
25	Y	227	A
25	Y	240	C
25	Y	279	A
25	Y	280	U
25	Y	328	U
25	Y	339	U
25	Y	369	U
25	Y	372	G
25	Y	401	A
25	Y	402	A
25	Y	404	A
25	Y	421	C
25	Y	455	C
25	Y	464	U
25	Y	481	G
25	Y	490	C
25	Y	507	A
25	Y	546	U
25	Y	549	G

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Mol	Chain	Res	Type
25	Y	555	G
25	Y	569	U
25	Y	614	A
25	Y	636	G
25	Y	669	G
25	Y	704	G
25	Y	774	G
25	Y	810	U
25	Y	859	G
25	Y	889	C
25	Y	894	U
25	Y	896	A
25	Y	931	U
25	Y	960	A
25	Y	966	G
25	Y	971	G
25	Y	984	A
25	Y	1020	A
25	Y	1046	A
25	Y	1055	G
25	Y	1060	U
25	Y	1071	G
25	Y	1076	C
25	Y	1094	U
25	Y	1103	A
25	Y	1104	C
25	Y	1109	C
25	Y	1111	A
25	Y	1130	U
25	Y	1168	G
25	Y	1171	G
25	Y	1176	U
25	Y	1234	U
25	Y	1236	G
25	Y	1320	C
25	Y	1327	A
25	Y	1328	A
25	Y	1373	A
25	Y	1378	A
25	Y	1453	A
25	Y	1508	A
25	Y	1523	U

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Mol	Chain	Res	Type
25	Y	1583	A
25	Y	1584	U
25	Y	1626	A
25	Y	1672	A
25	Y	1705	A
25	Y	1715	G
25	Y	1728	C
25	Y	1730	C
25	Y	1757	A
25	Y	1834	U
25	Y	1847	G
25	Y	1875	G
25	Y	1930	G
25	Y	1941	C
25	Y	1942	C
25	Y	1961	C
25	Y	2006	C
25	Y	2019	A
25	Y	2048	G
25	Y	2050	C
25	Y	2112	G
25	Y	2121	G
25	Y	2122	U
25	Y	2123	G
25	Y	2127	G
25	Y	2149	U
25	Y	2212	A
25	Y	2248	C
25	Y	2286	G
25	Y	2326	C
25	Y	2405	G
25	Y	2406	A
25	Y	2423	U
25	Y	2428	G
25	Y	2495	G
25	Y	2496	C
25	Y	2499	C
25	Y	2566	A
25	Y	2580	PSU
25	Y	2583	G
25	Y	2602	A
25	Y	2629	U

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Mol	Chain	Res	Type
25	Y	2643	G
25	Y	2644	G
25	Y	2655	G
25	Y	2790	U
25	Y	2798	U
25	Y	2808	G
25	Y	2820	A
25	Y	2824	C
25	Y	2832	U
25	Y	2848	G
25	Y	2858	C
25	Y	2867	G
25	Y	2893	A
26	Z	3	C
26	Z	12	C
26	Z	44	G
26	Z	66	A
26	Z	87	U
26	Z	88	C

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
25	5MU	Y	1939	25	19,22,23	4.76	7 (36%)	28,32,35	3.56	9 (32%)
4	2MG	D	966	4	23,26,27	2.96	8 (34%)	32,38,41	2.22	12 (37%)
4	MA6	D	1519	4	23,26,27	1.40	5 (21%)	34,38,41	2.70	11 (32%)
4	5MC	D	1407	4	18,22,23	3.74	7 (38%)	26,32,35	1.04	1 (3%)
25	PSU	Y	1911	25	18,21,22	1.03	1 (5%)	22,30,33	1.85	5 (22%)
25	5MC	Y	747	25	18,22,23	3.78	7 (38%)	26,32,35	1.05	2 (7%)
25	2MG	Y	1835	25	23,26,27	2.97	8 (34%)	32,38,41	2.19	10 (31%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	UR3	D	1498	4	19,22,23	2.74	8 (42%)	26,32,35	1.23	1 (3%)
4	PSU	D	516	4	18,21,22	1.09	1 (5%)	22,30,33	1.84	6 (27%)
25	PSU	Y	2580	25	18,21,22	0.98	1 (5%)	22,30,33	1.84	4 (18%)
25	1MG	Y	745	25	22,26,27	2.71	5 (22%)	33,39,42	1.97	7 (21%)
25	7MG	Y	2069	25	22,26,27	3.74	10 (45%)	29,39,42	1.98	8 (27%)
25	6MZ	Y	1618	25	22,25,26	3.01	4 (18%)	30,36,39	4.00	12 (40%)
25	2MG	Y	2445	25	23,26,27	2.96	8 (34%)	32,38,41	2.17	11 (34%)
25	5MC	Y	1962	25	18,22,23	3.81	7 (38%)	26,32,35	1.08	2 (7%)
4	2MG	D	1207	4	23,26,27	2.97	8 (34%)	32,38,41	2.16	9 (28%)
25	PSU	Y	2604	25	18,21,22	1.05	1 (5%)	22,30,33	1.87	5 (22%)
25	PSU	Y	2605	25	18,21,22	1.04	1 (5%)	22,30,33	1.85	5 (22%)
25	OMC	Y	2498	25	19,22,23	3.01	7 (36%)	26,31,34	0.70	0
4	5MC	D	967	4	18,22,23	3.77	7 (38%)	26,32,35	1.09	2 (7%)
25	3TD	Y	1915	25	18,22,23	4.40	5 (27%)	22,32,35	1.61	3 (13%)
25	H2U	Y	2449	25	18,21,22	3.00	5 (27%)	21,30,33	2.11	5 (23%)
4	4OC	D	1402	4	20,23,24	0.79	0	26,32,35	1.15	2 (7%)
25	6MZ	Y	2030	25	22,25,26	2.97	4 (18%)	30,36,39	4.16	14 (46%)
25	2MA	Y	2503	25	22,25,26	3.75	8 (36%)	33,37,40	2.08	9 (27%)
25	PSU	Y	746	25	18,21,22	1.04	1 (5%)	22,30,33	1.77	4 (18%)
4	2MG	D	1516	4	23,26,27	2.97	8 (34%)	32,38,41	2.14	10 (31%)
25	PSU	Y	2504	25	18,21,22	1.02	2 (11%)	22,30,33	1.94	5 (22%)
4	MA6	D	1518	4	23,26,27	1.43	5 (21%)	34,38,41	2.64	11 (32%)
25	PSU	Y	955	25	18,21,22	1.07	1 (5%)	22,30,33	1.81	5 (22%)
25	PSU	Y	1917	25	18,21,22	1.05	1 (5%)	22,30,33	1.81	5 (22%)
25	OMG	Y	2251	25,2	23,26,27	2.45	8 (34%)	33,38,41	1.95	9 (27%)
25	OMU	Y	2552	25	19,22,23	3.02	8 (42%)	26,31,34	1.66	4 (15%)
25	PSU	Y	2457	25	18,21,22	1.01	1 (5%)	22,30,33	1.84	4 (18%)
4	7MG	D	527	4	22,26,27	3.82	10 (45%)	29,39,42	2.09	9 (31%)

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
25	5MU	Y	1939	25	-	2/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	2MG	D	966	4	-	2/9/27/28	0/3/3/3
4	MA6	D	1519	4	-	6/11/29/30	0/3/3/3
4	5MC	D	1407	4	-	1/7/25/26	0/2/2/2
25	PSU	Y	1911	25	-	1/7/25/26	0/2/2/2
25	5MC	Y	747	25	-	3/7/25/26	0/2/2/2
25	2MG	Y	1835	25	-	2/9/27/28	0/3/3/3
4	UR3	D	1498	4	-	2/7/25/26	0/2/2/2
4	PSU	D	516	4	-	0/7/25/26	0/2/2/2
25	PSU	Y	2580	25	-	0/7/25/26	0/2/2/2
25	1MG	Y	745	25	-	0/7/25/26	0/3/3/3
25	7MG	Y	2069	25	-	2/7/37/38	0/3/3/3
25	6MZ	Y	1618	25	-	2/9/27/28	0/3/3/3
25	2MG	Y	2445	25	-	2/9/27/28	0/3/3/3
25	5MC	Y	1962	25	-	3/7/25/26	0/2/2/2
4	2MG	D	1207	4	-	2/9/27/28	0/3/3/3
25	PSU	Y	2604	25	-	0/7/25/26	0/2/2/2
25	PSU	Y	2605	25	-	0/7/25/26	0/2/2/2
25	OMC	Y	2498	25	-	2/9/27/28	0/2/2/2
4	5MC	D	967	4	-	0/7/25/26	0/2/2/2
25	3TD	Y	1915	25	-	3/7/25/26	0/2/2/2
25	H2U	Y	2449	25	-	2/7/38/39	0/2/2/2
4	4OC	D	1402	4	-	4/9/29/30	0/2/2/2
25	6MZ	Y	2030	25	-	3/9/27/28	0/3/3/3
25	2MA	Y	2503	25	-	4/7/25/26	0/3/3/3
25	PSU	Y	746	25	-	4/7/25/26	0/2/2/2
4	2MG	D	1516	4	-	2/9/27/28	0/3/3/3
25	PSU	Y	2504	25	-	2/7/25/26	0/2/2/2
4	MA6	D	1518	4	-	6/11/29/30	0/3/3/3
25	PSU	Y	955	25	-	2/7/25/26	0/2/2/2
25	PSU	Y	1917	25	-	0/7/25/26	0/2/2/2
25	OMG	Y	2251	25,2	-	1/9/27/28	0/3/3/3
25	OMU	Y	2552	25	-	5/9/27/28	0/2/2/2
25	PSU	Y	2457	25	-	0/7/25/26	0/2/2/2
4	7MG	D	527	4	-	3/7/37/38	0/3/3/3

All (178) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	Y	1915	3TD	C6-C5	13.21	1.50	1.35
25	Y	1618	6MZ	C6-N6	12.71	1.48	1.34
25	Y	2030	6MZ	C6-N6	12.41	1.47	1.34
25	Y	2503	2MA	C4-N3	11.89	1.49	1.34
25	Y	1939	5MU	C2-N1	11.02	1.56	1.38
25	Y	1939	5MU	C6-N1	10.16	1.55	1.38
25	Y	1939	5MU	C4-C5	9.99	1.61	1.44
4	D	527	7MG	C8-N9	9.93	1.51	1.46
4	D	1407	5MC	C6-C5	9.82	1.50	1.34
25	Y	1915	3TD	C2-N1	9.71	1.49	1.37
25	Y	2069	7MG	C8-N9	9.51	1.51	1.46
25	Y	1962	5MC	C6-C5	9.39	1.50	1.34
25	Y	747	5MC	C6-C5	9.35	1.50	1.34
4	D	967	5MC	C6-C5	9.31	1.49	1.34
25	Y	2449	H2U	C2-N1	9.06	1.48	1.35
4	D	1207	2MG	C2-N3	7.74	1.46	1.31
25	Y	1939	5MU	C4-N3	-7.71	1.24	1.38
25	Y	1835	2MG	C2-N3	7.71	1.46	1.31
4	D	1516	2MG	C2-N3	7.64	1.46	1.31
25	Y	2445	2MG	C2-N3	7.62	1.46	1.31
4	D	966	2MG	C2-N3	7.59	1.46	1.31
25	Y	745	1MG	C2-N2	7.44	1.47	1.34
25	Y	1962	5MC	C4-N3	7.24	1.46	1.34
25	Y	2069	7MG	C5-N7	7.24	1.43	1.35
4	D	967	5MC	C4-N3	7.19	1.46	1.34
25	Y	747	5MC	C4-N3	7.11	1.46	1.34
25	Y	2503	2MA	C2-N3	7.07	1.46	1.34
4	D	527	7MG	C5-N7	7.01	1.43	1.35
25	Y	2552	OMU	C2-N3	6.98	1.50	1.38
4	D	1498	UR3	C2-N1	6.94	1.48	1.38
25	Y	2552	OMU	C2-N1	6.90	1.49	1.38
25	Y	1835	2MG	C4-N3	6.58	1.49	1.34
25	Y	1962	5MC	C2-N3	6.57	1.49	1.36
4	D	1407	5MC	C4-N3	6.57	1.45	1.34
4	D	1207	2MG	C4-N3	6.55	1.49	1.34
4	D	1516	2MG	C4-N3	6.54	1.49	1.34
25	Y	745	1MG	C4-N3	6.52	1.49	1.34
25	Y	2445	2MG	C4-N3	6.49	1.49	1.34
4	D	966	2MG	C4-N3	6.46	1.49	1.34
25	Y	747	5MC	C2-N3	6.46	1.49	1.36
4	D	967	5MC	C2-N3	6.43	1.49	1.36
25	Y	2449	H2U	C2-N3	6.40	1.49	1.38
25	Y	2251	OMG	C4-N3	6.39	1.49	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	Y	2498	OMC	C6-C5	6.39	1.49	1.35
25	Y	2498	OMC	C2-N3	6.34	1.49	1.36
4	D	1516	2MG	C2-N2	6.32	1.47	1.33
4	D	1207	2MG	C2-N2	6.29	1.47	1.33
25	Y	2445	2MG	C2-N2	6.29	1.47	1.33
4	D	966	2MG	C2-N2	6.28	1.47	1.33
25	Y	1835	2MG	C2-N2	6.24	1.47	1.33
4	D	1498	UR3	C6-C5	6.23	1.49	1.35
4	D	527	7MG	C2-N3	6.12	1.47	1.33
25	Y	2498	OMC	C4-N3	6.00	1.46	1.34
4	D	1407	5MC	C2-N3	5.99	1.48	1.36
25	Y	2069	7MG	C2-N3	5.98	1.47	1.33
25	Y	1915	3TD	C6-N1	5.95	1.46	1.36
25	Y	745	1MG	C2-N3	5.92	1.45	1.34
4	D	527	7MG	C4-N9	5.92	1.44	1.37
25	Y	1939	5MU	C6-C5	5.73	1.44	1.34
25	Y	2552	OMU	C6-C5	5.64	1.48	1.35
25	Y	2503	2MA	C2-N1	5.63	1.44	1.34
4	D	527	7MG	C4-N3	5.62	1.47	1.34
25	Y	2069	7MG	C4-N9	5.57	1.44	1.37
25	Y	2069	7MG	C4-N3	5.56	1.47	1.34
25	Y	2503	2MA	C6-N1	5.56	1.43	1.35
25	Y	2251	OMG	C2-N3	5.48	1.46	1.33
25	Y	1915	3TD	C2-N3	5.15	1.50	1.38
4	D	1498	UR3	C2-N3	5.03	1.48	1.39
4	D	1407	5MC	C6-N1	4.91	1.46	1.38
25	Y	1962	5MC	C4-N4	4.90	1.46	1.34
25	Y	2449	H2U	C4-N3	4.88	1.45	1.37
25	Y	747	5MC	C4-N4	4.87	1.46	1.34
4	D	967	5MC	C4-N4	4.82	1.46	1.34
25	Y	2251	OMG	C2-N2	4.80	1.45	1.34
4	D	1407	5MC	C4-N4	4.78	1.46	1.34
4	D	527	7MG	C2-N2	4.78	1.45	1.34
25	Y	747	5MC	C6-N1	4.65	1.46	1.38
25	Y	2069	7MG	C2-N2	4.64	1.45	1.34
25	Y	1962	5MC	C6-N1	4.61	1.45	1.38
4	D	966	2MG	C2-N1	4.58	1.44	1.36
4	D	1516	2MG	C2-N1	4.57	1.44	1.36
4	D	967	5MC	C6-N1	4.56	1.45	1.38
25	Y	2445	2MG	C2-N1	4.51	1.43	1.36
4	D	1207	2MG	C2-N1	4.50	1.43	1.36
4	D	967	5MC	C2-N1	4.43	1.49	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	Y	1962	5MC	C2-N1	4.43	1.49	1.40
25	Y	747	5MC	C2-N1	4.42	1.49	1.40
25	Y	2503	2MA	C5-C6	4.41	1.53	1.41
25	Y	1835	2MG	C2-N1	4.40	1.43	1.36
25	Y	2552	OMU	C4-N3	4.04	1.45	1.38
4	D	1407	5MC	C2-N1	3.98	1.48	1.40
25	Y	2498	OMC	C4-N4	3.95	1.43	1.33
4	D	527	7MG	C2-N1	3.71	1.46	1.37
25	Y	2498	OMC	C2-N1	3.70	1.48	1.40
25	Y	2069	7MG	C2-N1	3.67	1.46	1.37
25	Y	2498	OMC	C6-N1	3.63	1.46	1.38
25	Y	2503	2MA	C6-N6	-3.55	1.25	1.34
25	Y	746	PSU	C6-C5	3.44	1.39	1.35
25	Y	1835	2MG	O6-C6	-3.40	1.17	1.23
4	D	516	PSU	C6-C5	3.38	1.39	1.35
25	Y	2069	7MG	C5-C6	3.37	1.52	1.43
25	Y	1835	2MG	C5-N7	-3.32	1.32	1.39
25	Y	955	PSU	C6-C5	3.31	1.39	1.35
4	D	1207	2MG	C5-N7	-3.30	1.32	1.39
4	D	527	7MG	C5-C6	3.30	1.52	1.43
25	Y	1917	PSU	C6-C5	3.29	1.39	1.35
25	Y	2604	PSU	C6-C5	3.28	1.39	1.35
4	D	1516	2MG	C5-N7	-3.28	1.32	1.39
25	Y	2069	7MG	C6-N1	3.27	1.44	1.38
25	Y	1911	PSU	C6-C5	3.27	1.39	1.35
25	Y	2445	2MG	O6-C6	-3.26	1.17	1.23
25	Y	2445	2MG	C5-N7	-3.24	1.32	1.39
25	Y	2605	PSU	C6-C5	3.23	1.39	1.35
4	D	1519	MA6	C6-N6	3.22	1.46	1.36
4	D	1516	2MG	O6-C6	-3.22	1.17	1.23
4	D	966	2MG	O6-C6	-3.22	1.17	1.23
4	D	527	7MG	C6-N1	3.21	1.44	1.38
4	D	1207	2MG	O6-C6	-3.19	1.17	1.23
25	Y	1915	3TD	C4-N3	3.16	1.47	1.40
25	Y	745	1MG	C5-N7	-3.14	1.33	1.39
4	D	1518	MA6	C6-N6	3.13	1.46	1.36
4	D	1407	5MC	O2-C2	-3.13	1.17	1.23
4	D	966	2MG	C5-N7	-3.13	1.33	1.39
25	Y	747	5MC	O2-C2	-3.05	1.18	1.23
4	D	967	5MC	O2-C2	-3.05	1.18	1.23
4	D	1498	UR3	C6-N1	3.04	1.45	1.38
25	Y	2580	PSU	C6-C5	3.03	1.38	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	Y	2457	PSU	C6-C5	3.02	1.38	1.35
25	Y	1962	5MC	O2-C2	-3.01	1.18	1.23
25	Y	2030	6MZ	C8-N9	-2.97	1.32	1.37
25	Y	2251	OMG	C5-N7	-2.92	1.33	1.39
25	Y	2503	2MA	C5-N7	-2.90	1.33	1.39
25	Y	1618	6MZ	C8-N9	-2.87	1.32	1.37
25	Y	2552	OMU	O4-C4	-2.86	1.18	1.24
25	Y	2498	OMC	O2-C2	-2.83	1.18	1.23
25	Y	2552	OMU	C6-N1	2.83	1.44	1.38
4	D	1518	MA6	C8-N9	-2.81	1.32	1.37
25	Y	2030	6MZ	C5-C4	-2.76	1.33	1.39
25	Y	745	1MG	C5-C6	2.71	1.52	1.45
25	Y	2251	OMG	C2-N1	2.70	1.44	1.37
4	D	1519	MA6	C5-N7	-2.70	1.33	1.39
4	D	1518	MA6	C5-C4	-2.64	1.34	1.39
4	D	1518	MA6	C5-N7	-2.63	1.34	1.39
25	Y	1618	6MZ	C5-C4	-2.61	1.34	1.39
4	D	1519	MA6	C8-N9	-2.60	1.32	1.37
4	D	527	7MG	O6-C6	-2.55	1.18	1.23
25	Y	2251	OMG	C5-C6	2.54	1.53	1.44
25	Y	2251	OMG	C6-N1	2.53	1.43	1.38
25	Y	1939	5MU	O4-C4	-2.53	1.18	1.23
4	D	966	2MG	C5-C6	2.52	1.53	1.44
4	D	1519	MA6	C5-C4	-2.52	1.34	1.39
25	Y	2251	OMG	O6-C6	-2.50	1.18	1.23
4	D	1207	2MG	C5-C6	2.46	1.53	1.44
4	D	1516	2MG	C5-C6	2.46	1.53	1.44
25	Y	2069	7MG	O6-C6	-2.46	1.18	1.23
25	Y	2445	2MG	C5-C6	2.45	1.53	1.44
4	D	1518	MA6	C8-N7	2.42	1.36	1.31
25	Y	1835	2MG	C5-C6	2.40	1.53	1.44
25	Y	2030	6MZ	C4-N9	-2.38	1.32	1.37
4	D	1519	MA6	C8-N7	2.37	1.36	1.31
4	D	966	2MG	C6-N1	2.35	1.43	1.38
25	Y	2504	PSU	C6-C5	2.33	1.38	1.35
25	Y	2449	H2U	O4-C4	-2.32	1.18	1.23
25	Y	2449	H2U	O2-C2	-2.29	1.18	1.23
25	Y	2552	OMU	C5-C4	2.28	1.48	1.43
25	Y	1939	5MU	O2-C2	-2.26	1.18	1.23
4	D	1516	2MG	C6-N1	2.26	1.43	1.38
25	Y	2552	OMU	O2-C2	-2.25	1.18	1.23
4	D	1498	UR3	C5-C4	2.25	1.49	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	Y	2445	2MG	C6-N1	2.25	1.43	1.38
4	D	1207	2MG	C6-N1	2.24	1.43	1.38
25	Y	2503	2MA	C4-N9	-2.23	1.32	1.37
4	D	1498	UR3	C4-N3	2.18	1.45	1.40
25	Y	1618	6MZ	C4-N9	-2.18	1.32	1.37
25	Y	2504	PSU	C4-C5	-2.14	1.38	1.44
4	D	1498	UR3	O4-C4	-2.14	1.18	1.23
25	Y	1835	2MG	C6-N1	2.13	1.42	1.38
4	D	1498	UR3	O2-C2	-2.10	1.18	1.22

All (221) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	Y	2030	6MZ	C4-N9-C8	12.59	119.38	105.73
25	Y	1618	6MZ	C4-N9-C8	12.17	118.92	105.73
25	Y	1939	5MU	C5-C4-N3	12.07	125.62	115.31
25	Y	2030	6MZ	N9-C8-N7	-9.64	100.73	113.91
25	Y	1618	6MZ	N9-C8-N7	-9.39	101.07	113.91
25	Y	1939	5MU	C5-C6-N1	-9.27	113.80	123.34
4	D	1519	MA6	N1-C6-N6	-9.15	107.08	117.08
4	D	1518	MA6	N1-C6-N6	-8.56	107.72	117.08
25	Y	2030	6MZ	C5-C6-N1	8.44	127.19	118.20
25	Y	1618	6MZ	C5-C6-N1	8.16	126.89	118.20
25	Y	2449	H2U	C4-N3-C2	-7.37	119.67	125.79
25	Y	1618	6MZ	N3-C4-N9	6.53	137.84	127.08
25	Y	2030	6MZ	N3-C4-N9	6.41	137.65	127.08
4	D	966	2MG	C2-N3-C4	6.36	119.93	112.04
25	Y	1835	2MG	C2-N3-C4	6.36	119.92	112.04
4	D	1207	2MG	C2-N3-C4	6.33	119.89	112.04
25	Y	2445	2MG	C2-N3-C4	6.26	119.80	112.04
4	D	1516	2MG	C2-N3-C4	6.19	119.72	112.04
25	Y	2503	2MA	C5-C4-N3	-5.83	120.63	127.19
4	D	1518	MA6	N1-C2-N3	-5.64	119.77	128.60
25	Y	2030	6MZ	N1-C2-N3	-5.46	120.06	128.60
4	D	1519	MA6	N1-C2-N3	-5.45	120.08	128.60
4	D	1207	2MG	C5-C4-N3	-5.44	119.63	128.46
25	Y	1618	6MZ	N1-C2-N3	-5.42	120.13	128.60
25	Y	1835	2MG	C5-C4-N3	-5.41	119.68	128.46
25	Y	2030	6MZ	C9-N6-C6	-5.33	118.28	122.87
25	Y	2445	2MG	C5-C4-N3	-5.22	120.00	128.46
4	D	1516	2MG	C5-C4-N3	-5.21	120.00	128.46
25	Y	2503	2MA	N9-C8-N7	-5.19	106.81	113.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	Y	745	1MG	C5-C4-N3	-5.17	120.07	128.46
4	D	966	2MG	C5-C4-N3	-5.10	120.18	128.46
4	D	1519	MA6	C5-C4-N3	-5.06	120.15	126.75
25	Y	2552	OMU	C4-N3-C2	-4.99	120.00	126.58
4	D	1518	MA6	C5-C4-N3	-4.96	120.28	126.75
25	Y	1939	5MU	O4-C4-C5	-4.93	119.19	124.90
4	D	527	7MG	C5-C6-N1	4.88	119.59	110.99
25	Y	2251	OMG	C5-C4-N3	-4.87	120.56	128.46
25	Y	1915	3TD	N1-C2-N3	4.85	119.97	116.14
25	Y	2604	PSU	C4-N3-C2	-4.83	119.38	126.34
25	Y	1911	PSU	C4-N3-C2	-4.82	119.39	126.34
25	Y	1939	5MU	C4-N3-C2	-4.77	121.17	127.35
25	Y	2030	6MZ	C5-C4-N9	-4.77	100.23	105.78
25	Y	2504	PSU	N1-C2-N3	4.77	120.53	115.13
25	Y	2605	PSU	C4-N3-C2	-4.75	119.49	126.34
25	Y	2069	7MG	C5-C6-N1	4.74	119.35	110.99
25	Y	1917	PSU	C4-N3-C2	-4.73	119.53	126.34
25	Y	746	PSU	C4-N3-C2	-4.70	119.56	126.34
25	Y	1911	PSU	N1-C2-N3	4.70	120.45	115.13
25	Y	2604	PSU	N1-C2-N3	4.68	120.43	115.13
25	Y	745	1MG	C1'-N9-C4	-4.65	112.68	126.50
25	Y	955	PSU	N1-C2-N3	4.63	120.38	115.13
25	Y	2457	PSU	C4-N3-C2	-4.61	119.69	126.34
25	Y	2605	PSU	N1-C2-N3	4.61	120.35	115.13
4	D	516	PSU	C4-N3-C2	-4.59	119.72	126.34
25	Y	955	PSU	C4-N3-C2	-4.59	119.73	126.34
4	D	527	7MG	C5-C4-N3	-4.56	119.45	128.13
25	Y	1917	PSU	N1-C2-N3	4.55	120.29	115.13
25	Y	1618	6MZ	C5-C4-N9	-4.55	100.49	105.78
25	Y	2504	PSU	C4-N3-C2	-4.54	119.80	126.34
25	Y	2580	PSU	C4-N3-C2	-4.51	119.83	126.34
25	Y	746	PSU	N1-C2-N3	4.51	120.24	115.13
4	D	1518	MA6	N9-C8-N7	-4.50	107.76	113.91
4	D	516	PSU	N1-C2-N3	4.50	120.22	115.13
25	Y	2251	OMG	C2-N3-C4	4.46	120.24	112.30
25	Y	1835	2MG	C2-N1-C6	-4.45	119.36	124.48
25	Y	2457	PSU	N1-C2-N3	4.44	120.16	115.13
4	D	1519	MA6	N9-C8-N7	-4.43	107.85	113.91
25	Y	2503	2MA	N3-C4-N9	4.43	133.13	126.99
4	D	527	7MG	C2-N3-C4	4.43	120.18	112.30
25	Y	2580	PSU	N1-C2-N3	4.41	120.13	115.13
4	D	1498	UR3	C4-N3-C2	-4.40	120.42	124.56

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	D	1207	2MG	C2-N1-C6	-4.38	119.44	124.48
25	Y	1939	5MU	N3-C2-N1	4.35	120.67	114.89
4	D	966	2MG	C2-N1-C6	-4.33	119.50	124.48
25	Y	2445	2MG	C2-N1-C6	-4.31	119.52	124.48
25	Y	745	1MG	C1'-N9-C8	4.28	138.87	126.70
25	Y	1939	5MU	C5M-C5-C4	4.26	123.45	118.77
4	D	1516	2MG	C2-N1-C6	-4.20	119.65	124.48
25	Y	2069	7MG	C5-C4-N3	-4.18	120.17	128.13
25	Y	2069	7MG	C2-N3-C4	4.15	119.69	112.30
25	Y	2503	2MA	C4-N9-C8	4.11	110.18	105.73
4	D	1519	MA6	C5-C6-N6	4.11	132.46	125.30
25	Y	1618	6MZ	C1'-N9-C8	-4.04	118.02	127.14
25	Y	1939	5MU	C5M-C5-C6	-3.99	117.52	122.85
25	Y	1618	6MZ	C5-C4-N3	-3.89	121.67	126.75
25	Y	1618	6MZ	C5-N7-C8	3.84	108.96	103.51
25	Y	2030	6MZ	C5-N7-C8	3.83	108.96	103.51
25	Y	1915	3TD	C4-N3-C2	-3.82	120.46	124.61
25	Y	1618	6MZ	C2-N3-C4	3.65	120.37	111.75
4	D	1518	MA6	C5-C6-N6	3.63	131.63	125.30
25	Y	745	1MG	C2-N3-C4	3.63	120.13	111.98
25	Y	2251	OMG	CM2-O2'-C2'	3.62	124.03	114.52
25	Y	2504	PSU	C6-C5-C4	3.59	120.71	118.20
25	Y	1835	2MG	N9-C4-N3	3.59	133.14	125.94
25	Y	2030	6MZ	C5-C4-N3	-3.55	122.12	126.75
25	Y	2030	6MZ	C2-N3-C4	3.55	120.13	111.75
4	D	1518	MA6	C2-N3-C4	3.55	120.13	111.75
4	D	967	5MC	C5-C6-N1	-3.51	119.72	123.34
25	Y	2552	OMU	N3-C2-N1	3.51	119.55	114.89
4	D	1519	MA6	C2-N3-C4	3.47	119.96	111.75
4	D	1207	2MG	N9-C4-N3	3.47	132.90	125.94
25	Y	2030	6MZ	C1'-N9-C8	-3.43	119.39	127.14
4	D	1407	5MC	C5-C6-N1	-3.41	119.83	123.34
4	D	1518	MA6	C2-N1-C6	3.40	119.77	111.75
4	D	1519	MA6	C2-N1-C6	3.39	119.75	111.75
4	D	527	7MG	C4-C5-N7	3.36	110.19	105.53
4	D	1516	2MG	N9-C4-N3	3.35	132.67	125.94
25	Y	745	1MG	N9-C4-N3	3.33	132.63	125.94
4	D	527	7MG	N9-C4-N3	3.33	130.44	125.47
4	D	1519	MA6	C4-C5-C6	3.32	119.60	115.88
25	Y	2449	H2U	N3-C2-N1	3.31	120.15	116.65
25	Y	1618	6MZ	C9-N6-C6	-3.30	120.03	122.87
25	Y	2445	2MG	N9-C4-N3	3.29	132.56	125.94

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	Y	1962	5MC	C5-C6-N1	-3.29	119.95	123.34
25	Y	2503	2MA	C5-N7-C8	3.21	108.07	103.51
4	D	1519	MA6	N3-C4-N9	3.20	132.35	127.08
4	D	1518	MA6	N3-C4-N9	3.17	132.31	127.08
25	Y	2552	OMU	C5-C4-N3	3.16	119.57	114.84
4	D	1518	MA6	C4-C5-C6	3.15	119.40	115.88
25	Y	747	5MC	C5-C6-N1	-3.12	120.12	123.34
25	Y	2251	OMG	N9-C8-N7	-3.12	107.51	113.39
4	D	966	2MG	C1'-N9-C4	-3.07	117.39	126.50
4	D	966	2MG	N9-C4-N3	3.07	132.10	125.94
25	Y	2069	7MG	C4-C5-N7	3.07	109.79	105.53
25	Y	2030	6MZ	C4-C5-C6	-3.07	114.43	116.81
25	Y	2069	7MG	C5-C4-N9	3.02	110.27	106.35
4	D	1519	MA6	C5-N7-C8	2.99	107.75	103.51
4	D	527	7MG	O6-C6-C5	-2.98	120.24	127.54
4	D	527	7MG	C2-N1-C6	-2.97	119.68	125.10
25	Y	2449	H2U	O2-C2-N1	-2.97	119.38	123.11
4	D	966	2MG	N9-C8-N7	-2.95	107.84	113.39
4	D	527	7MG	C5-C4-N9	2.90	110.11	106.35
25	Y	746	PSU	O2-C2-N1	-2.89	119.61	122.79
4	D	1518	MA6	C5-N7-C8	2.89	107.61	103.51
25	Y	745	1MG	N9-C8-N7	-2.88	107.96	113.39
25	Y	2069	7MG	O6-C6-C5	-2.88	120.47	127.54
25	Y	2445	2MG	N9-C8-N7	-2.88	107.97	113.39
25	Y	2251	OMG	N9-C4-N3	2.86	131.68	125.94
25	Y	2251	OMG	C2-N1-C6	-2.86	119.89	125.10
25	Y	2449	H2U	C5-C4-N3	2.86	119.86	116.65
25	Y	2069	7MG	C2-N1-C6	-2.86	119.89	125.10
4	D	1516	2MG	N9-C8-N7	-2.85	108.01	113.39
4	D	1402	4OC	C2'-C1'-N1	-2.85	108.70	114.22
25	Y	2552	OMU	O4-C4-C5	-2.84	120.16	125.16
25	Y	1835	2MG	N9-C8-N7	-2.82	108.08	113.39
4	D	1518	MA6	C4-N9-C8	2.80	108.76	105.73
25	Y	1835	2MG	C5-C6-N1	2.78	120.24	113.19
25	Y	2503	2MA	N3-C2-N1	-2.77	120.62	125.72
25	Y	2457	PSU	C6-C5-C4	2.76	120.12	118.20
25	Y	2069	7MG	N9-C4-N3	2.74	129.57	125.47
25	Y	1911	PSU	O2-C2-N1	-2.73	119.79	122.79
4	D	516	PSU	O2-C2-N1	-2.71	119.80	122.79
25	Y	2251	OMG	C5-C6-N1	2.70	120.06	113.19
4	D	966	2MG	C5-C6-N1	2.70	120.04	113.19
4	D	1207	2MG	N9-C8-N7	-2.67	108.36	113.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	Y	2445	2MG	C5-C6-N1	2.66	119.95	113.19
4	D	1207	2MG	C5-C6-N1	2.66	119.94	113.19
25	Y	2457	PSU	O2-C2-N1	-2.65	119.87	122.79
4	D	966	2MG	C1'-N9-C8	2.63	134.19	126.70
25	Y	2445	2MG	C1'-N9-C4	-2.61	118.76	126.50
4	D	1516	2MG	C5-C6-N1	2.61	119.81	113.19
25	Y	1835	2MG	O6-C6-C5	-2.60	119.70	126.60
25	Y	1917	PSU	O2-C2-N1	-2.59	119.94	122.79
25	Y	2605	PSU	O2-C2-N1	-2.59	119.94	122.79
25	Y	2449	H2U	C5-C6-N1	2.58	120.13	111.61
25	Y	955	PSU	O2-C2-N1	-2.58	119.95	122.79
25	Y	2580	PSU	O2-C2-N1	-2.58	119.95	122.79
25	Y	2604	PSU	O2-C2-N1	-2.58	119.95	122.79
25	Y	2504	PSU	O2-C2-N1	-2.58	119.95	122.79
25	Y	745	1MG	C5-C6-N1	2.58	119.89	114.91
25	Y	1939	5MU	O4-C4-N3	-2.57	115.20	120.12
25	Y	2504	PSU	C6-N1-C2	-2.56	120.06	122.68
4	D	516	PSU	C6-C5-C4	2.56	119.99	118.20
4	D	1519	MA6	C4-N9-C8	2.55	108.49	105.73
25	Y	1939	5MU	O2-C2-N1	-2.51	119.46	122.79
25	Y	955	PSU	C6-N1-C2	-2.50	120.13	122.68
25	Y	1915	3TD	C6-C5-C4	2.50	119.94	118.22
25	Y	2445	2MG	O6-C6-C5	-2.49	119.99	126.60
4	D	966	2MG	O6-C6-C5	-2.49	119.99	126.60
25	Y	2251	OMG	O6-C6-C5	-2.48	120.03	126.60
25	Y	2580	PSU	C6-C5-C4	2.47	119.92	118.20
25	Y	1618	6MZ	C4-C5-C6	-2.47	114.89	116.81
4	D	1516	2MG	O6-C6-C5	-2.46	120.08	126.60
25	Y	1962	5MC	CM5-C5-C6	-2.45	119.58	122.85
4	D	1207	2MG	O6-C6-C5	-2.43	120.15	126.60
4	D	1516	2MG	C1'-N9-C4	-2.43	119.29	126.50
25	Y	2503	2MA	CM2-C2-N3	2.42	120.93	117.15
4	D	966	2MG	N1-C2-N3	-2.38	120.26	123.95
25	Y	2604	PSU	C6-C5-C4	2.32	119.82	118.20
25	Y	1835	2MG	N1-C2-N3	-2.32	120.37	123.95
4	D	1516	2MG	N1-C2-N3	-2.31	120.38	123.95
25	Y	2445	2MG	N1-C2-N3	-2.31	120.39	123.95
25	Y	2030	6MZ	C6-C5-N7	2.30	134.88	132.39
25	Y	747	5MC	CM5-C5-C6	-2.29	119.79	122.85
4	D	1402	4OC	C6-C5-C4	2.27	119.73	116.96
25	Y	2030	6MZ	C4-N9-C1'	-2.26	121.22	126.59
4	D	1207	2MG	N1-C2-N3	-2.25	120.47	123.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	D	516	PSU	O4'-C1'-C2'	2.25	108.32	105.14
25	Y	2605	PSU	C6-N1-C2	-2.24	120.39	122.68
25	Y	1911	PSU	C6-N1-C2	-2.23	120.40	122.68
25	Y	2605	PSU	C6-C5-C4	2.23	119.75	118.20
25	Y	2604	PSU	C6-N1-C2	-2.20	120.44	122.68
25	Y	2251	OMG	C8-N7-C5	2.19	108.21	104.24
4	D	527	7MG	N9-C8-N7	2.19	106.51	103.38
25	Y	2445	2MG	C1'-N9-C8	2.16	132.84	126.70
25	Y	1917	PSU	C6-C5-C4	2.14	119.70	118.20
4	D	1207	2MG	C1'-N9-C4	-2.14	120.15	126.50
4	D	966	2MG	CM2-N2-C2	-2.11	119.20	123.86
25	Y	1835	2MG	C1'-N9-C4	-2.11	120.23	126.50
4	D	967	5MC	CM5-C5-C6	-2.11	120.03	122.85
4	D	966	2MG	C8-N7-C5	2.09	108.03	104.24
25	Y	1917	PSU	C6-N1-C2	-2.09	120.54	122.68
4	D	516	PSU	C6-N1-C2	-2.09	120.55	122.68
25	Y	2445	2MG	CM2-N2-C2	-2.09	119.25	123.86
25	Y	2503	2MA	C6-C5-C4	2.06	119.95	117.18
25	Y	1835	2MG	CM2-N2-C2	-2.05	119.33	123.86
25	Y	1911	PSU	C6-C5-C4	2.03	119.62	118.20
4	D	1516	2MG	C8-N7-C5	2.01	107.88	104.24
25	Y	2503	2MA	N6-C6-N1	2.01	119.88	117.03
25	Y	746	PSU	C6-C5-C4	2.01	119.60	118.20
25	Y	955	PSU	C6-C5-C4	2.00	119.60	118.20

There are no chirality outliers.

All (73) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	D	527	7MG	C3'-C4'-C5'-O5'
4	D	1207	2MG	C3'-C4'-C5'-O5'
4	D	1402	4OC	O4'-C4'-C5'-O5'
4	D	1402	4OC	C1'-C2'-O2'-CM2
4	D	1498	UR3	O4'-C1'-N1-C2
4	D	1516	2MG	O4'-C4'-C5'-O5'
4	D	1516	2MG	C3'-C4'-C5'-O5'
4	D	1519	MA6	C3'-C4'-C5'-O5'
4	D	1519	MA6	C5-C6-N6-C9
4	D	1519	MA6	C5-C6-N6-C10
4	D	1519	MA6	N1-C6-N6-C9
25	Y	746	PSU	C2'-C1'-C5-C4
25	Y	1915	3TD	C2'-C1'-C5-C4

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Mol	Chain	Res	Type	Atoms
25	Y	1915	3TD	O4'-C1'-C5-C4
25	Y	1915	3TD	O4'-C1'-C5-C6
25	Y	1962	5MC	C3'-C4'-C5'-O5'
25	Y	2030	6MZ	N1-C6-N6-C9
25	Y	2030	6MZ	O4'-C4'-C5'-O5'
25	Y	2030	6MZ	C3'-C4'-C5'-O5'
25	Y	2251	OMG	C3'-C2'-O2'-CM2
25	Y	2445	2MG	C3'-C4'-C5'-O5'
25	Y	2449	H2U	O4'-C4'-C5'-O5'
25	Y	2504	PSU	C3'-C4'-C5'-O5'
25	Y	2504	PSU	O4'-C4'-C5'-O5'
25	Y	2552	OMU	O4'-C1'-N1-C2
25	Y	2552	OMU	O4'-C1'-N1-C6
25	Y	747	5MC	C3'-C4'-C5'-O5'
4	D	1498	UR3	O4'-C1'-N1-C6
25	Y	1962	5MC	C4'-C5'-O5'-P
4	D	1402	4OC	C3'-C4'-C5'-O5'
25	Y	746	PSU	O4'-C4'-C5'-O5'
25	Y	1939	5MU	C3'-C4'-C5'-O5'
25	Y	1939	5MU	O4'-C4'-C5'-O5'
25	Y	2449	H2U	C3'-C4'-C5'-O5'
25	Y	747	5MC	O4'-C4'-C5'-O5'
4	D	966	2MG	O4'-C4'-C5'-O5'
4	D	966	2MG	C3'-C4'-C5'-O5'
4	D	1519	MA6	O4'-C4'-C5'-O5'
25	Y	746	PSU	C3'-C4'-C5'-O5'
25	Y	1835	2MG	O4'-C4'-C5'-O5'
25	Y	1835	2MG	C3'-C4'-C5'-O5'
25	Y	2445	2MG	O4'-C4'-C5'-O5'
25	Y	2552	OMU	O4'-C4'-C5'-O5'
4	D	1519	MA6	N1-C6-N6-C10
4	D	527	7MG	O4'-C4'-C5'-O5'
4	D	1207	2MG	O4'-C4'-C5'-O5'
4	D	1518	MA6	O4'-C4'-C5'-O5'
25	Y	1962	5MC	O4'-C4'-C5'-O5'
4	D	1518	MA6	C5-C6-N6-C10
25	Y	1618	6MZ	C2'-C1'-N9-C4
25	Y	2503	2MA	O4'-C1'-N9-C4
25	Y	2552	OMU	C4'-C5'-O5'-P
25	Y	1618	6MZ	C2'-C1'-N9-C8
25	Y	2503	2MA	O4'-C1'-N9-C8
25	Y	2069	7MG	C4'-C5'-O5'-P

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Mol	Chain	Res	Type	Atoms
25	Y	2503	2MA	C4'-C5'-O5'-P
25	Y	2498	OMC	O4'-C4'-C5'-O5'
4	D	1518	MA6	C5-C6-N6-C9
25	Y	2498	OMC	C4'-C5'-O5'-P
4	D	1518	MA6	O4'-C1'-N9-C4
4	D	527	7MG	C4'-C5'-O5'-P
25	Y	746	PSU	O4'-C1'-C5-C4
25	Y	955	PSU	O4'-C1'-C5-C4
25	Y	1911	PSU	O4'-C1'-C5-C4
25	Y	2552	OMU	C3'-C4'-C5'-O5'
25	Y	2069	7MG	O4'-C4'-C5'-O5'
4	D	1518	MA6	O4'-C1'-N9-C8
4	D	1407	5MC	C2'-C1'-N1-C2
4	D	1518	MA6	C3'-C4'-C5'-O5'
25	Y	747	5MC	C2'-C1'-N1-C2
25	Y	955	PSU	O4'-C1'-C5-C6
4	D	1402	4OC	C3'-C2'-O2'-CM2
25	Y	2503	2MA	O4'-C4'-C5'-O5'

There are no ring outliers.

21 monomers are involved in 48 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	Y	1939	5MU	1	0
4	D	966	2MG	2	0
4	D	1519	MA6	2	0
4	D	1407	5MC	4	0
25	Y	1911	PSU	1	0
25	Y	747	5MC	1	0
25	Y	1835	2MG	2	0
4	D	1498	UR3	1	0
25	Y	2580	PSU	6	0
25	Y	745	1MG	4	0
25	Y	1962	5MC	3	0
25	Y	2498	OMC	1	0
4	D	967	5MC	2	0
25	Y	2449	H2U	1	0
4	D	1402	4OC	7	0
25	Y	2503	2MA	1	0
25	Y	746	PSU	2	0
4	D	1518	MA6	4	0
25	Y	955	PSU	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	Y	2251	OMG	4	0
4	D	527	7MG	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

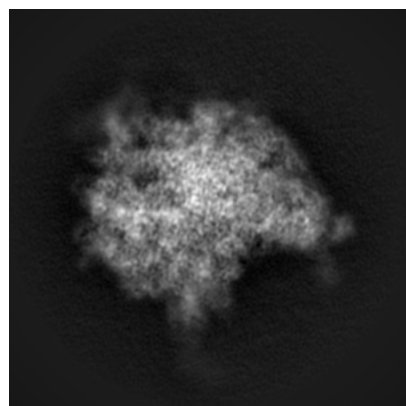
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-3618. These allow visual inspection of the internal detail of the map and identification of artifacts.

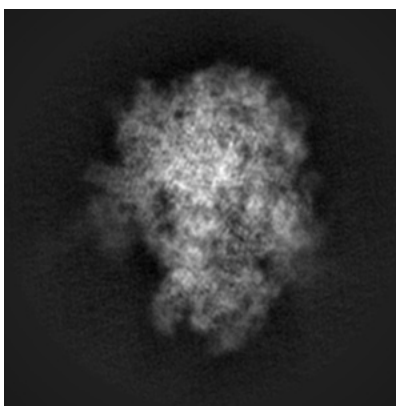
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

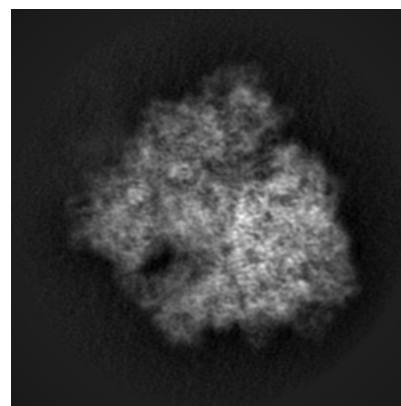
6.1.1 Primary map



X

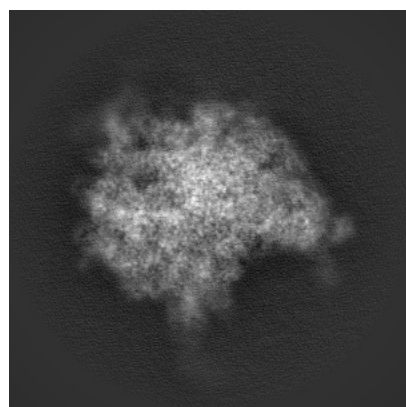


Y

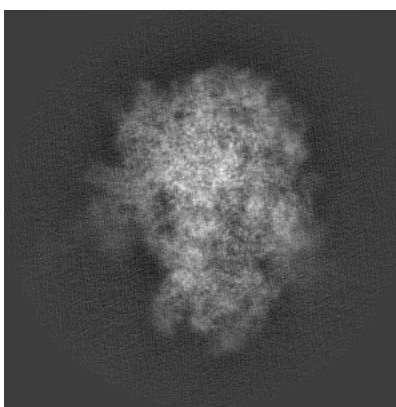


Z

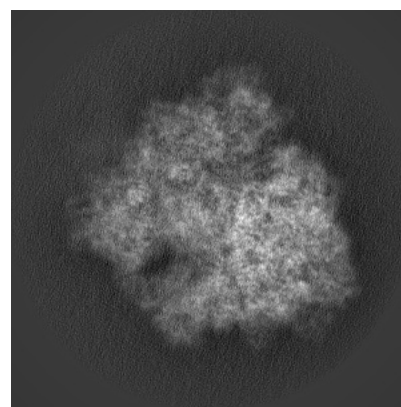
6.1.2 Raw map



X



Y

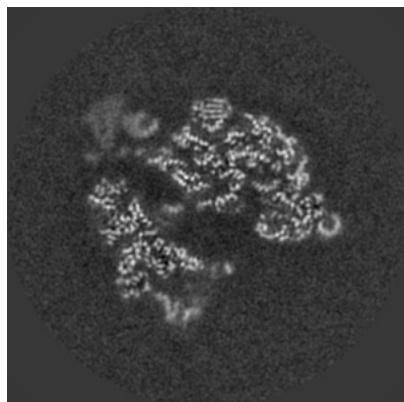


Z

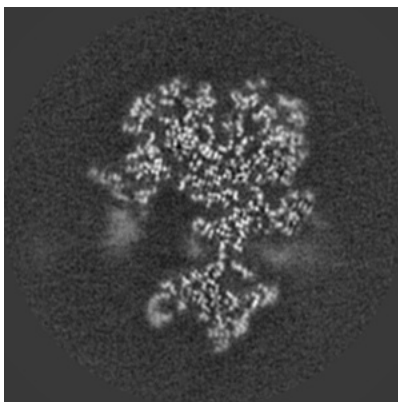
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

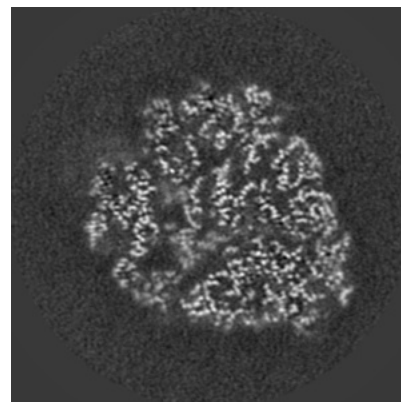
6.2.1 Primary map



X Index: 170

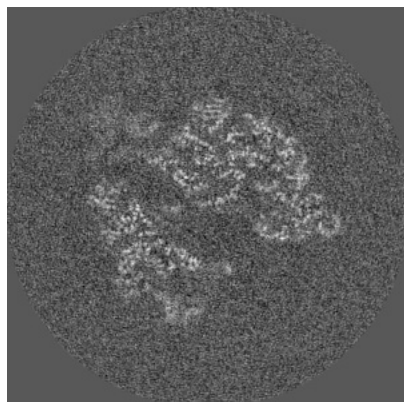


Y Index: 170

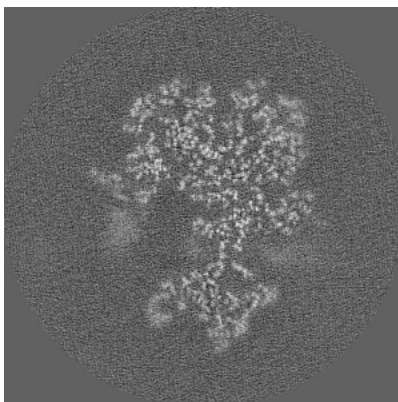


Z Index: 170

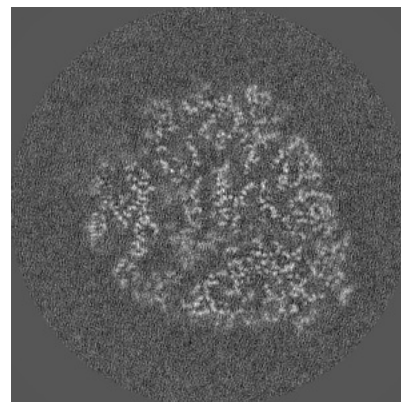
6.2.2 Raw map



X Index: 170



Y Index: 170

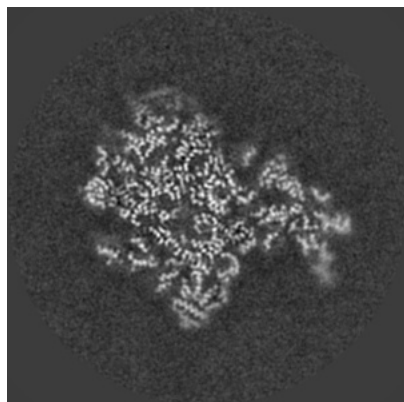


Z Index: 170

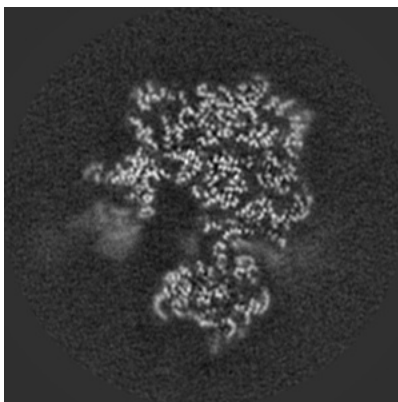
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

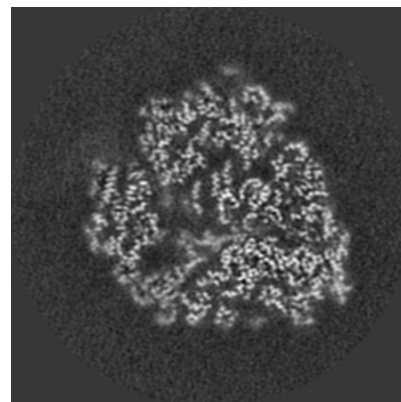
6.3.1 Primary map



X Index: 196

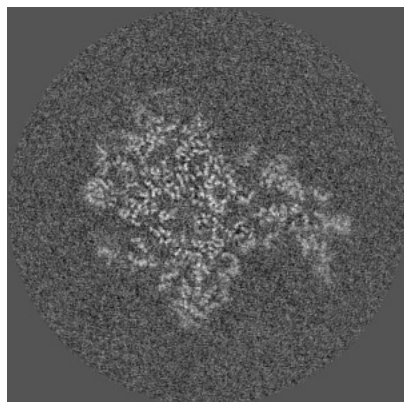


Y Index: 163

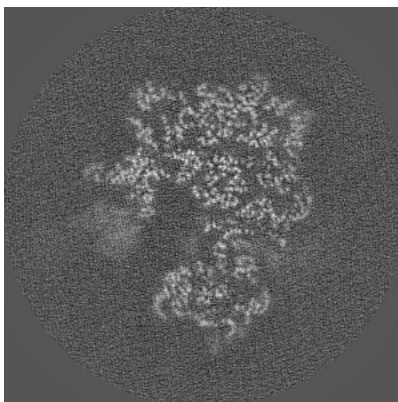


Z Index: 166

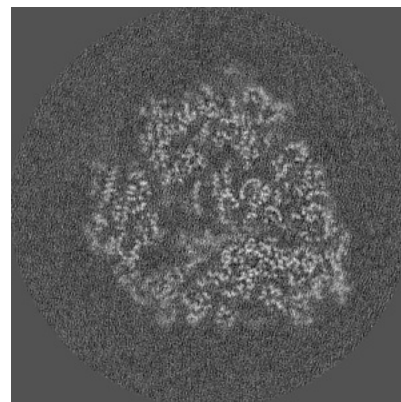
6.3.2 Raw map



X Index: 196



Y Index: 163

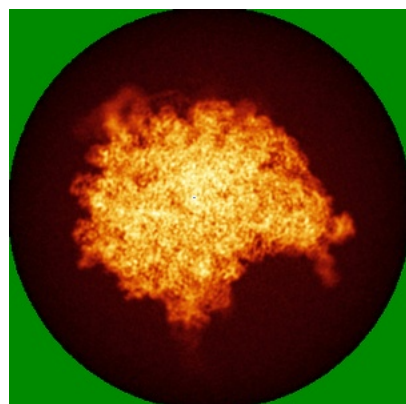


Z Index: 166

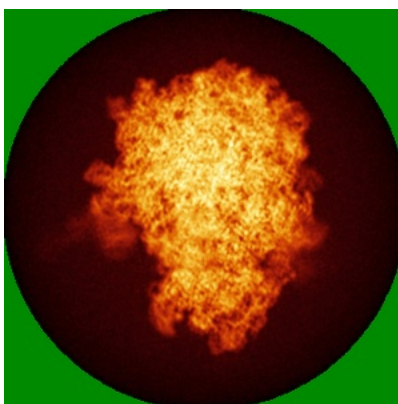
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

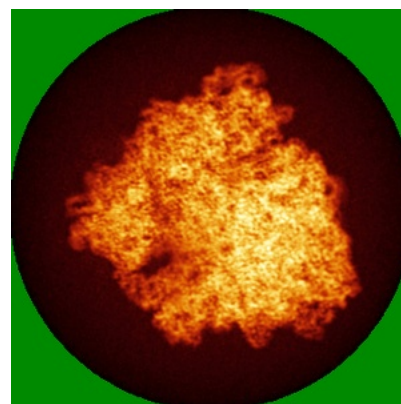
6.4.1 Primary map



X

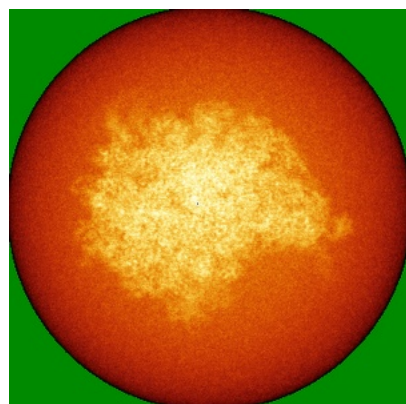


Y

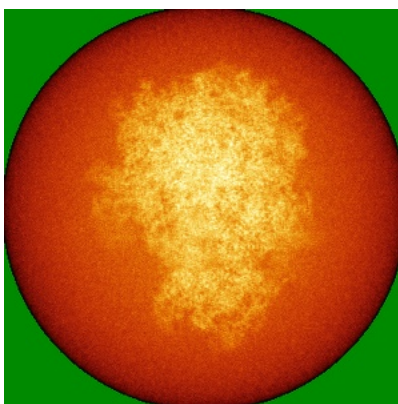


Z

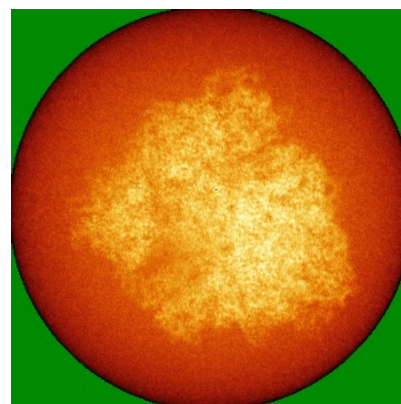
6.4.2 Raw map



X



Y

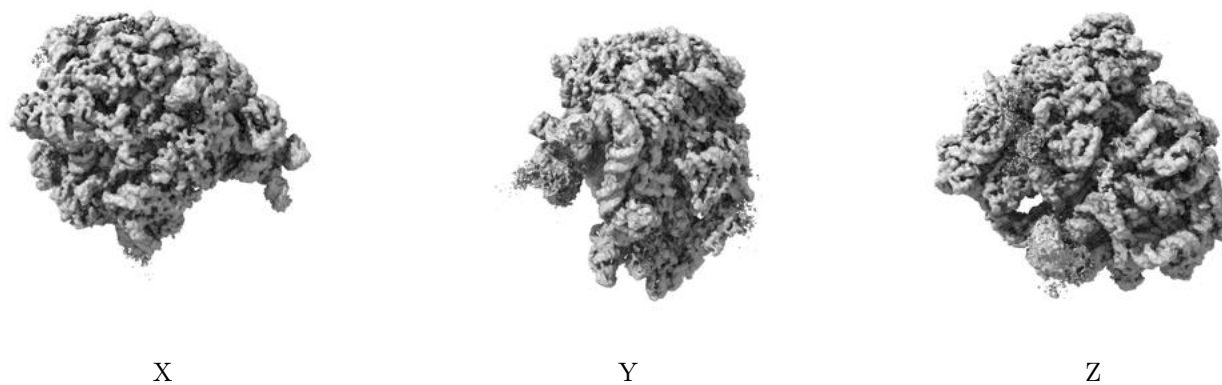


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

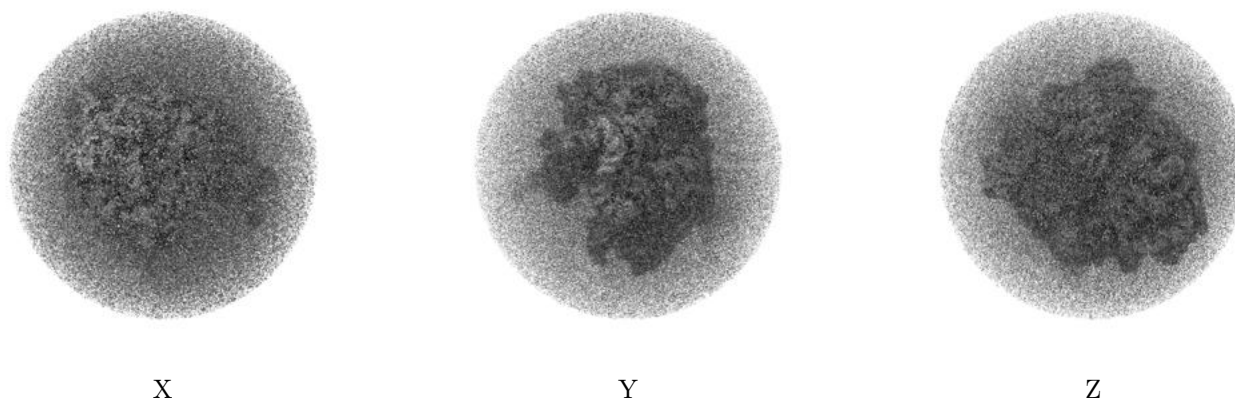
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0045. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

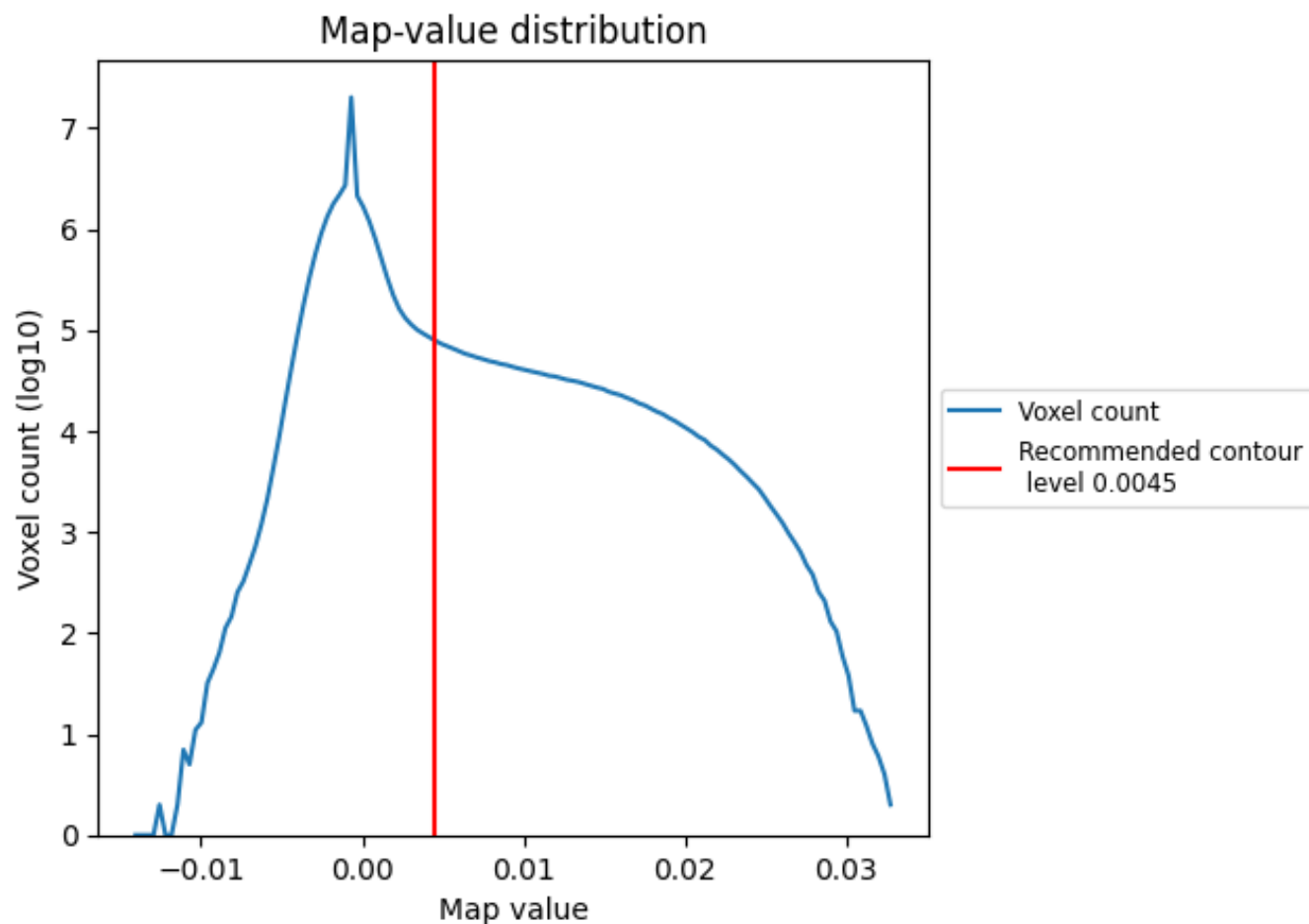
6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

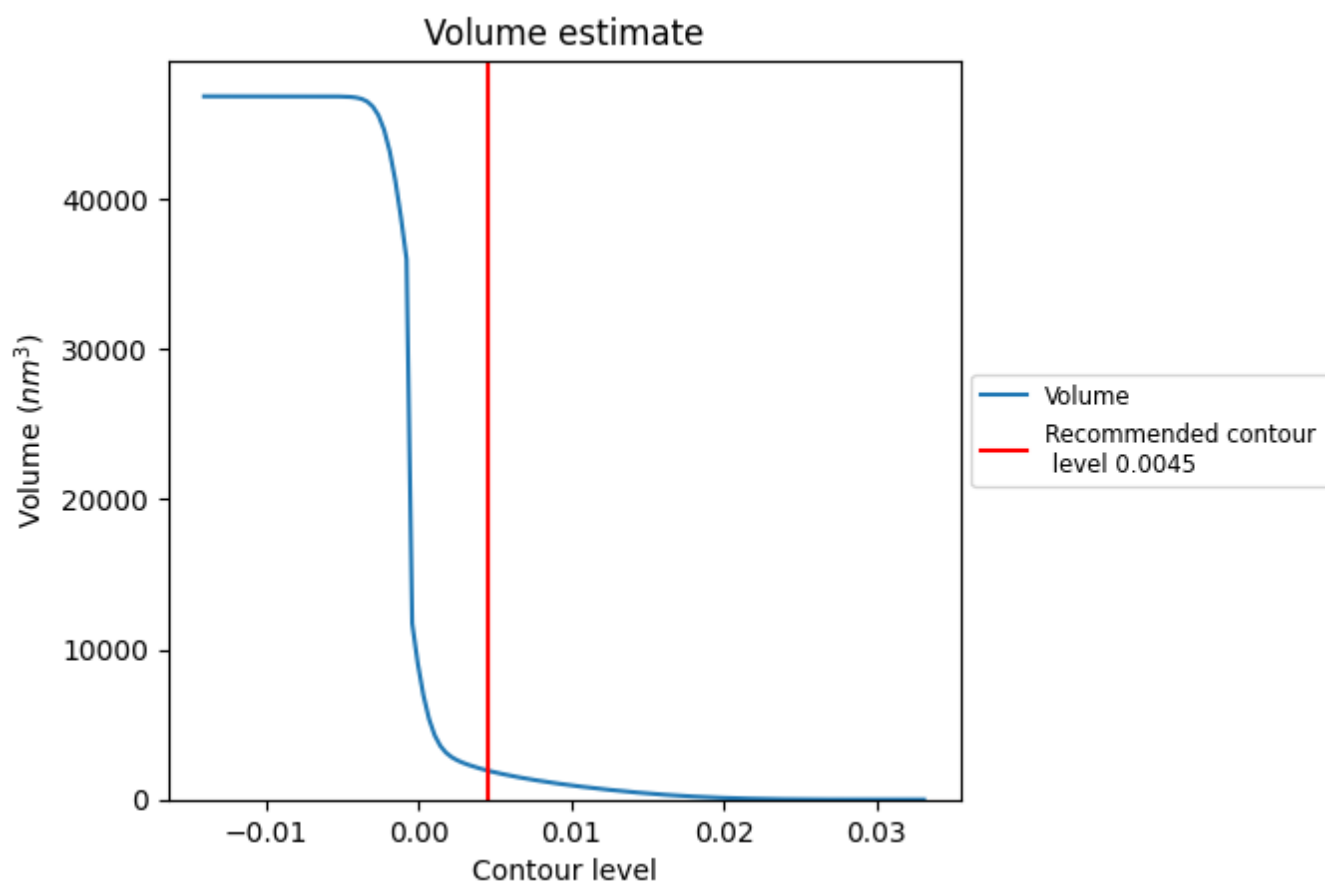
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

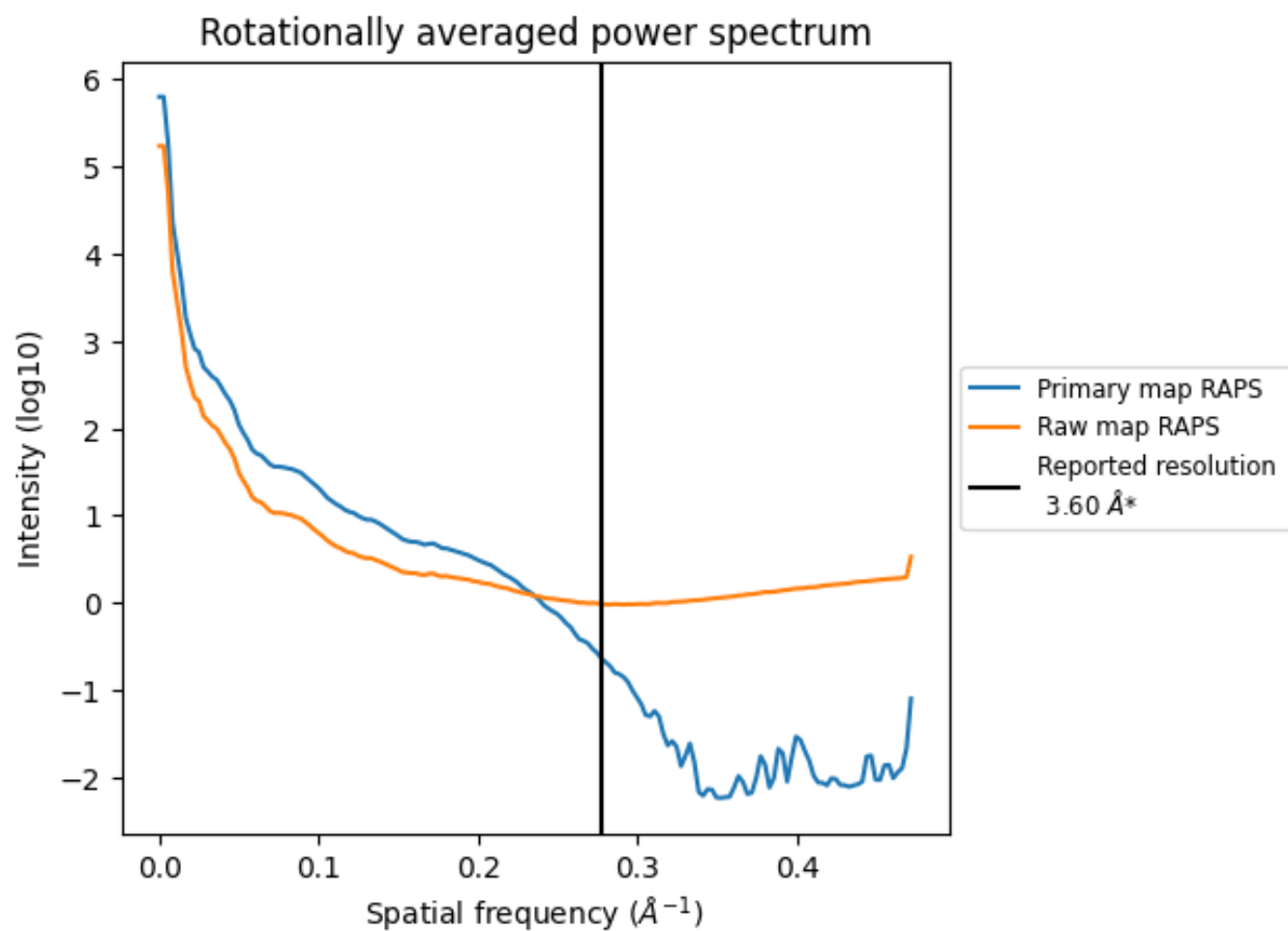
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1939 nm³; this corresponds to an approximate mass of 1751 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)

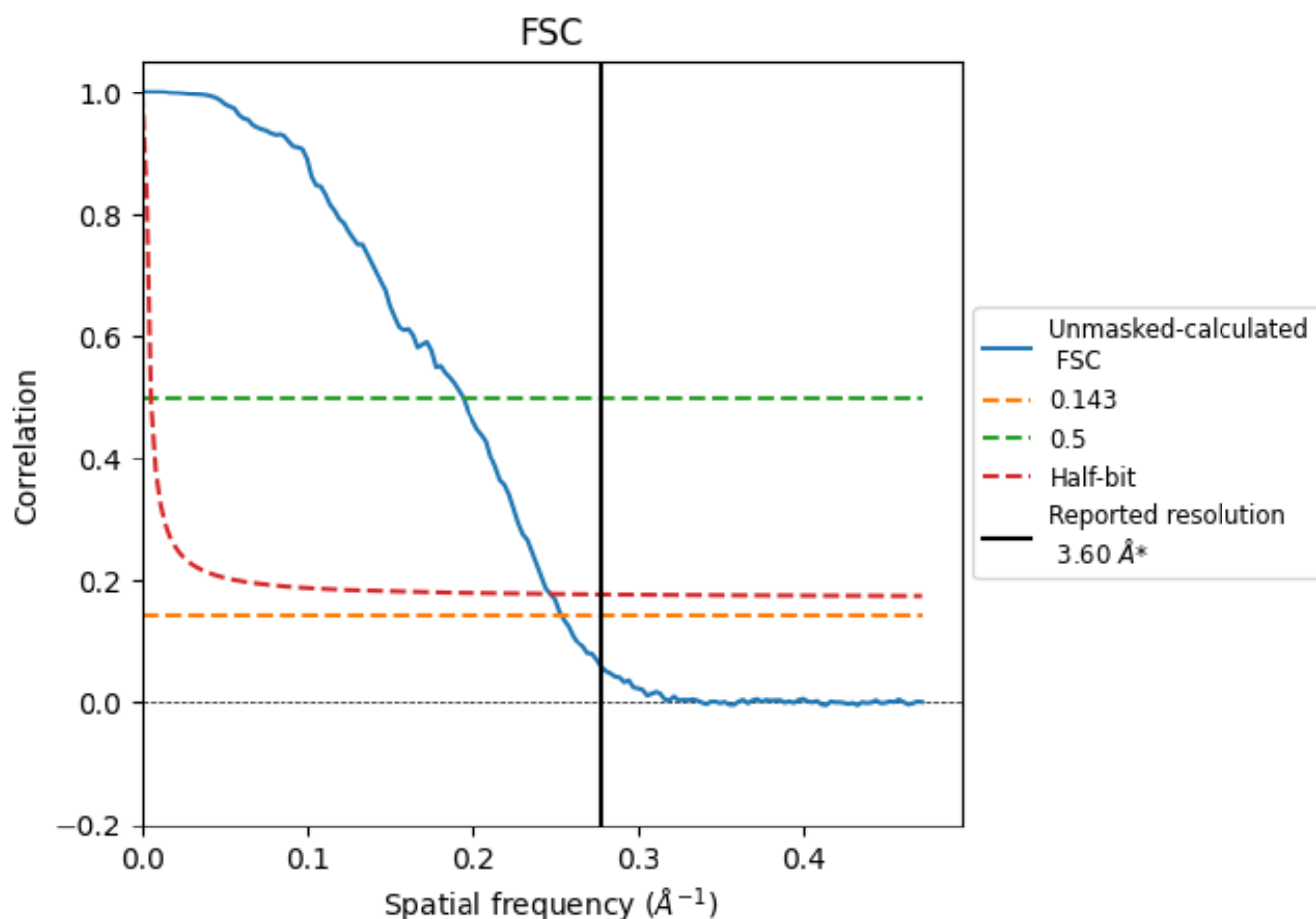


*Reported resolution corresponds to spatial frequency of 0.278 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.278 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

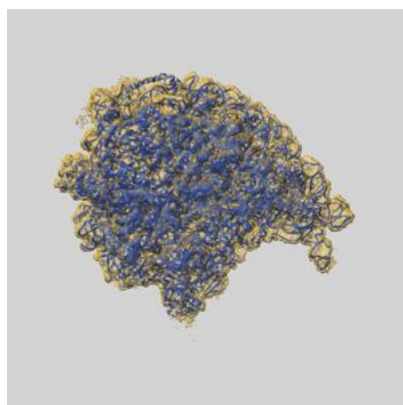
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.94	5.15	4.05

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

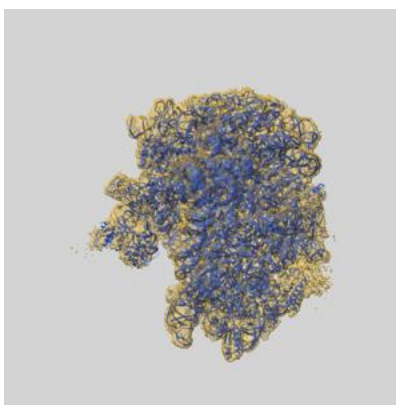
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-3618 and PDB model 5NP6. Per-residue inclusion information can be found in section [3](#) on page [15](#).

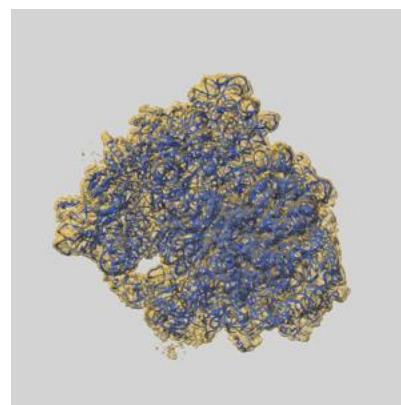
9.1 Map-model overlay [i](#)



X



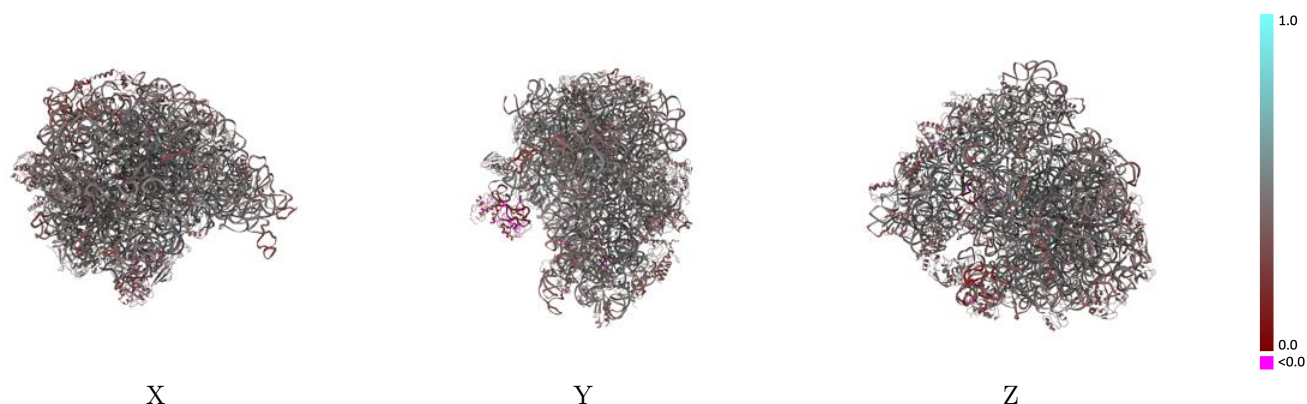
Y



Z

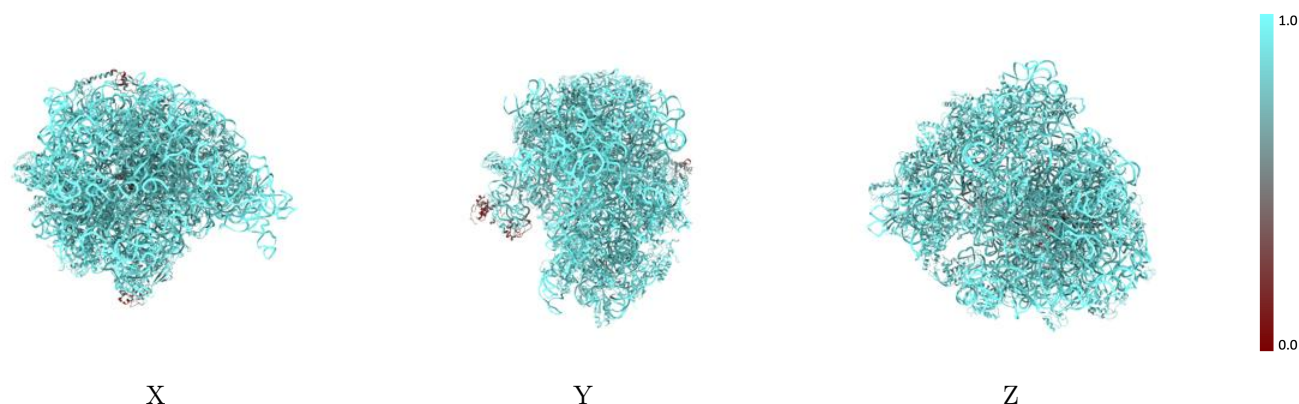
The images above show the 3D surface view of the map at the recommended contour level 0.0045 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



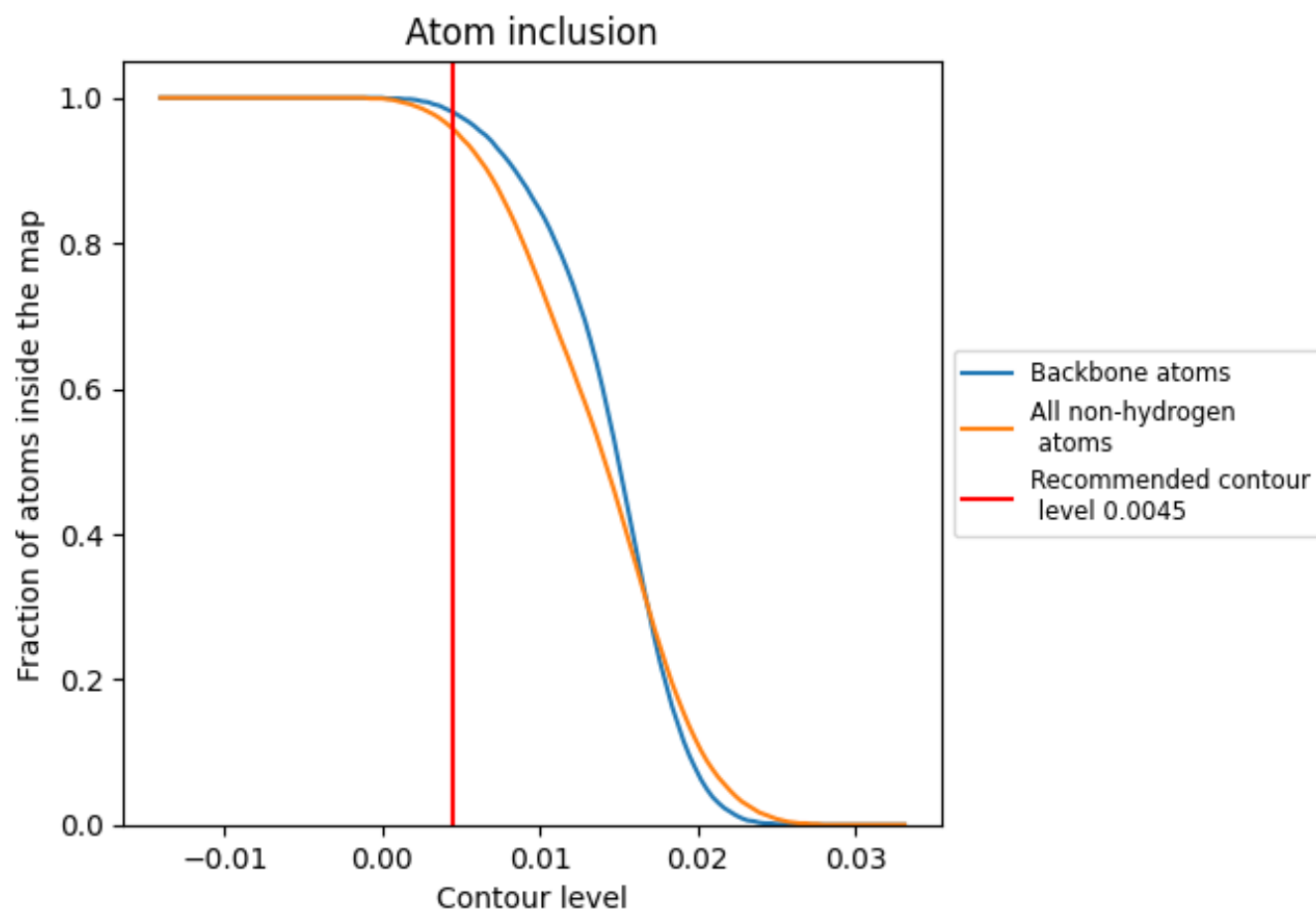
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0045).

9.4 Atom inclusion [i](#)



At the recommended contour level, 98% of all backbone atoms, 96% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0045) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9570	 0.4240
0	 0.9210	 0.4360
1	 0.9330	 0.4710
2	 0.9210	 0.4480
3	 0.4620	 0.1670
4	 0.8920	 0.3630
A	 0.6960	 0.1820
B	 0.9690	 0.4010
C	 0.4410	 0.2550
D	 0.9950	 0.4470
E	 0.8690	 0.3620
F	 0.9000	 0.4290
G	 0.8910	 0.3960
H	 0.9250	 0.4340
I	 0.8930	 0.3920
J	 0.9110	 0.3840
K	 0.9180	 0.4360
L	 0.9120	 0.4000
M	 0.8560	 0.3880
N	 0.9290	 0.4190
O	 0.8960	 0.4470
P	 0.9240	 0.3940
Q	 0.9220	 0.4260
R	 0.9270	 0.4020
S	 0.9230	 0.4250
T	 0.9080	 0.4230
U	 0.9280	 0.4170
V	 0.9310	 0.4080
W	 0.9050	 0.3790
X	 0.8340	 0.3030
Y	 0.9920	 0.4310
Z	 0.9950	 0.4310
a	 0.9310	 0.4600
b	 0.9280	 0.4590
c	 0.9090	 0.4070



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Chain	Atom inclusion	Q-score
d	 0.9070	 0.3880
e	 0.9230	 0.4120
f	 0.6130	 0.3260
g	 0.5800	 0.1280
h	 0.9210	 0.4340
i	 0.8990	 0.4500
j	 0.9240	 0.4270
k	 0.9240	 0.4550
l	 0.9390	 0.4370
m	 0.9430	 0.4070
n	 0.9060	 0.4350
o	 0.9310	 0.4240
p	 0.9110	 0.4360
q	 0.8830	 0.4250
r	 0.9020	 0.4080
s	 0.9280	 0.3940
t	 0.9150	 0.4370
u	 0.9160	 0.4570
v	 0.9100	 0.4260
w	 0.8850	 0.3560
x	 0.9200	 0.4370
y	 0.9160	 0.4270
z	 0.8550	 0.4230