



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 01:37 PM UTC

PDB ID : 6OFX / pdb_00006ofx
EMDB ID : EMD-20048
Title : Non-rotated ribosome (Structure I)
Authors : Svidritskiy, E.; Demo, G.; Loveland, A.B.; Xu, C.; Korostelev, A.A.
Deposited on : 2019-04-01
Resolution : 3.30 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:

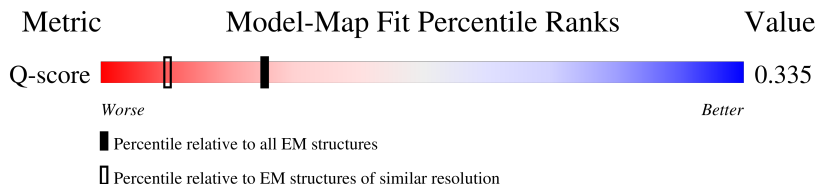
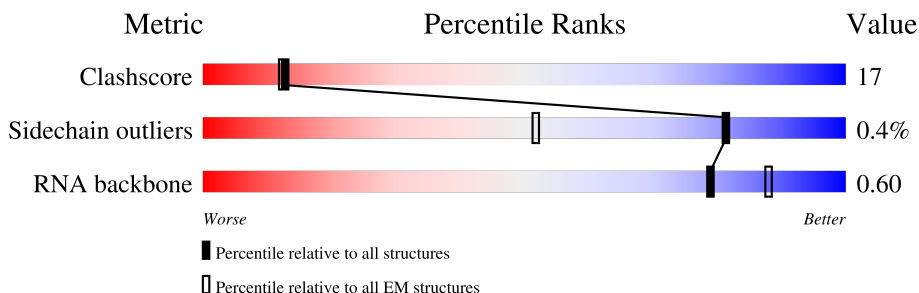
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
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

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.30 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.



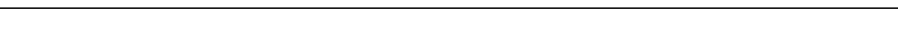
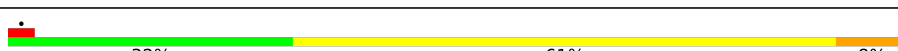
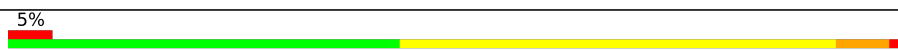
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	15087 (2.80 - 3.80)

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	b	271	
2	c	209	
3	d	201	
4	e	177	

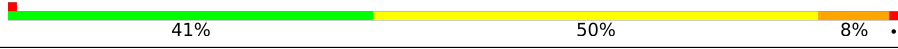
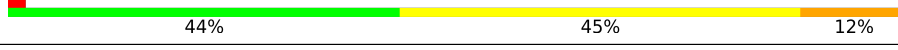
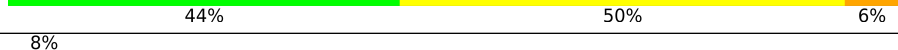
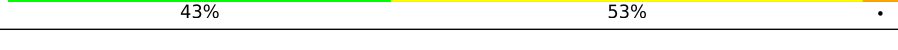
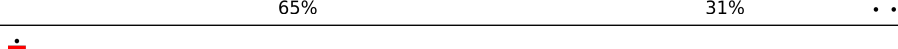
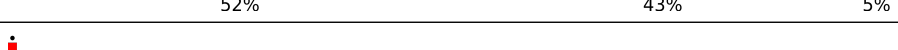
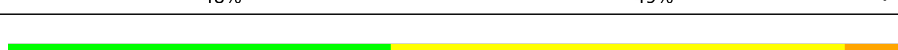
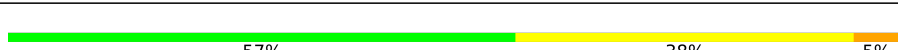
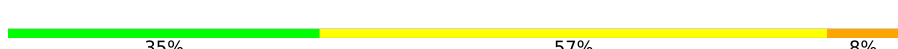
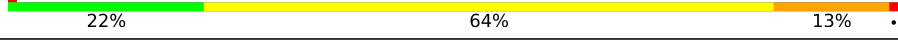
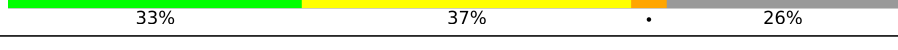
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Mol	Chain	Length	Quality of chain
5	f	176	
6	g	149	
7	j	142	
8	k	122	
9	l	143	
10	m	136	
11	n	120	
12	o	116	
13	p	114	
14	q	117	
15	r	103	
16	s	110	
17	t	93	
18	u	102	
19	v	94	
20	w	75	
21	x	77	
22	y	63	
23	z	58	
24	B	56	
25	C	50	
26	D	46	
27	E	64	
28	F	38	
29	G	225	

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Mol	Chain	Length	Quality of chain
30	H	206	
31	I	205	
32	J	157	
33	K	101	
34	L	151	
35	M	129	
36	N	127	
37	O	98	
38	P	116	
39	Q	123	
40	R	114	
41	S	100	
42	T	88	
43	U	82	
44	V	80	
45	W	65	
46	X	79	
47	Y	85	
48	Z	65	
49	a	223	
50	3	1539	
51	1	2903	
52	2	120	
53	5	77	
54	4	27	

2 Entry composition

There are 55 unique types of molecules in this entry. The entry contains 144986 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	b	271	Total	C	N	O	S	0	0
			2083	1288	423	365	7		

- Molecule 2 is a protein called 50S ribosomal protein L3.

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

- Molecule 3 is a protein called 50S ribosomal protein L4.

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

- Molecule 4 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	e	177	Total	C	N	O	S	0	0
			1411	899	249	257	6		

- Molecule 5 is a protein called 50S ribosomal protein L6.

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

- Molecule 6 is a protein called 50S ribosomal protein L9.

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

- Molecule 7 is a protein called 50S ribosomal protein L13.

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

- Molecule 8 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	k	122	Total	C	N	O	S	0	0
			939	587	180	166	6		

- Molecule 9 is a protein called 50S ribosomal protein L15.

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

- Molecule 10 is a protein called 50S ribosomal protein L16.

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

- Molecule 11 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	n	120	Total	C	N	O	S	0	0
			961	593	196	167	5		

- Molecule 12 is a protein called 50S ribosomal protein L18.

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

- Molecule 13 is a protein called 50S ribosomal protein L19.

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

- Molecule 14 is a protein called 50S ribosomal protein L20.

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

- Molecule 15 is a protein called 50S ribosomal protein L21.

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

- Molecule 16 is a protein called 50S ribosomal protein L22.

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

- Molecule 17 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	t	93	Total	C	N	O	S	0	0
			739	466	139	132	2		

- Molecule 18 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	u	102	Total	C	N	O	0	0
			780	492	146	142		

- Molecule 19 is a protein called 50S ribosomal protein L25.

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

- Molecule 20 is a protein called 50S ribosomal protein L27.

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

- Molecule 21 is a protein called 50S ribosomal protein L28.

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

- Molecule 22 is a protein called 50S ribosomal protein L29.

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

- Molecule 23 is a protein called 50S ribosomal protein L30.

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

- Molecule 24 is a protein called 50S ribosomal protein L32.

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

- Molecule 25 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	C	50	Total	C	N	O	0	0
			410	263	75	72		

- Molecule 26 is a protein called 50S ribosomal protein L34.

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

- Molecule 27 is a protein called 50S ribosomal protein L35.

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

- Molecule 28 is a protein called 50S ribosomal protein L36.

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

- Molecule 29 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	G	225	Total	C	N	O	S	0	0
			1757	1111	315	323	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	H	206	Total	C	N	O	S	0	0
			1625	1028	305	289	3		

- Molecule 31 is a protein called 30S ribosomal protein S4.

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

- Molecule 32 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	J	157	Total	C	N	O	S	0	0
			1157	719	218	214	6		

- Molecule 33 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	K	101	Total	C	N	O	S	0	0
			824	520	149	149	6		

- Molecule 34 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	L	151	Total	C	N	O	S	0	0
			1182	735	227	216	4		

- Molecule 35 is a protein called 30S ribosomal protein S8.

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

- Molecule 36 is a protein called 30S ribosomal protein S9.

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

- Molecule 37 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	O	98	Total	C	N	O	S	0	0
			787	493	150	143	1		

- Molecule 38 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	P	116	Total	C	N	O	S	0	0
			870	535	173	159	3		

- Molecule 39 is a protein called 30S ribosomal protein S12.

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

- Molecule 40 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	R	114	Total	C	N	O	S	0	0
			884	546	178	157	3		

- Molecule 41 is a protein called 30S ribosomal protein S14.

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

- Molecule 42 is a protein called 30S ribosomal protein S15.

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

- Molecule 43 is a protein called 30S ribosomal protein S16.

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

- Molecule 44 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	V	80	Total	C	N	O	S	0	0
			649	411	121	114	3		

- Molecule 45 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	W	65	Total	C	N	O	S	0	0
			536	339	100	96	1		

- Molecule 46 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	X	79	Total	C	N	O	S	0	0
			638	408	120	108	2		

- Molecule 47 is a protein called 30S ribosomal protein S20.

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

- Molecule 48 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Z	65	Total	C	N	O	S	0	0
			545	335	117	92	1		

- Molecule 49 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	a	134	Total	C	N	O	S	0	0
			1027	645	186	194	2		

- Molecule 50 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	3	1539	Total	C	N	O	P	0	0
			33012	14725	6052	10697	1538		

- Molecule 51 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	1	2903	Total	C	N	O	P	0	0
			62317	27801	11468	20146	2902		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	747	C	U	conflict	GB 802133627

- Molecule 52 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	2	120	Total	C	N	O	P	0	0
			2568	1145	471	833	119		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
2	120	A	-	insertion	GB 1266961702

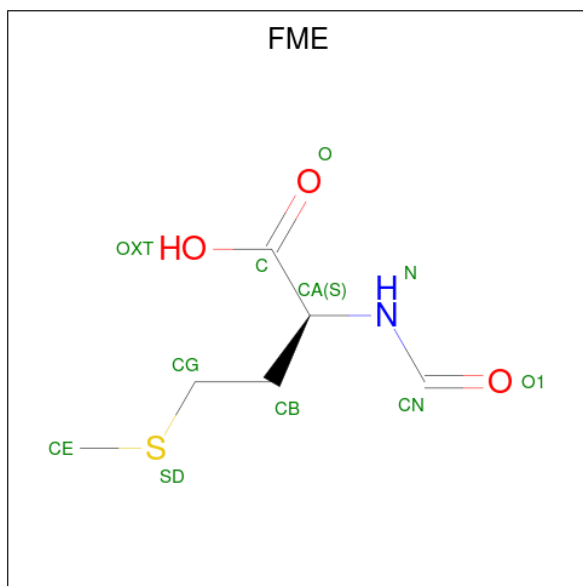
- Molecule 53 is a RNA chain called tRNA^{fMet}.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	5	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

- Molecule 54 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	4	20	Total	C	N	O	P	0	0
			437	197	91	130	19		

- Molecule 55 is N-FORMYLMETHIONINE (CCD ID: FME) (formula: $C_6H_{11}NO_3S$).

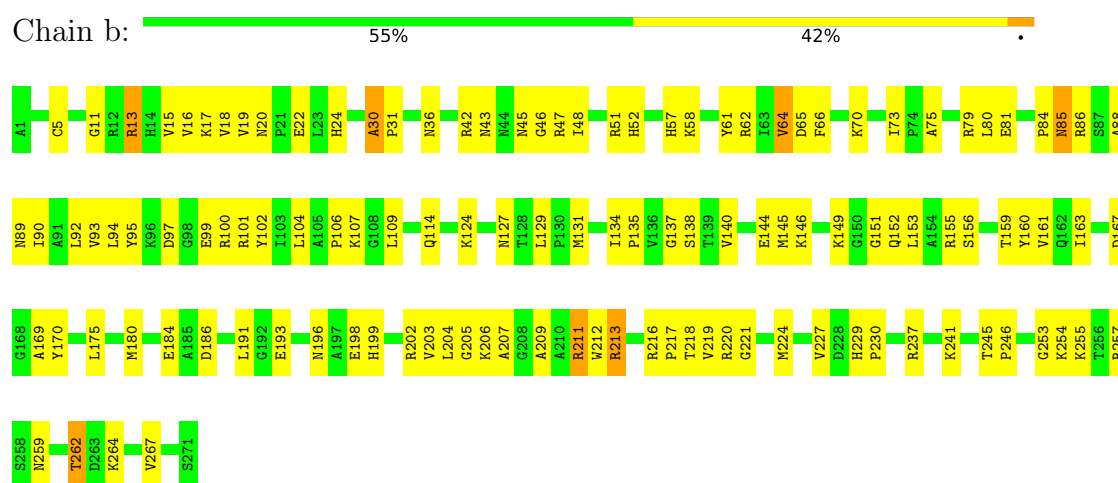


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
55	5	1	10	6	1	2	1	0

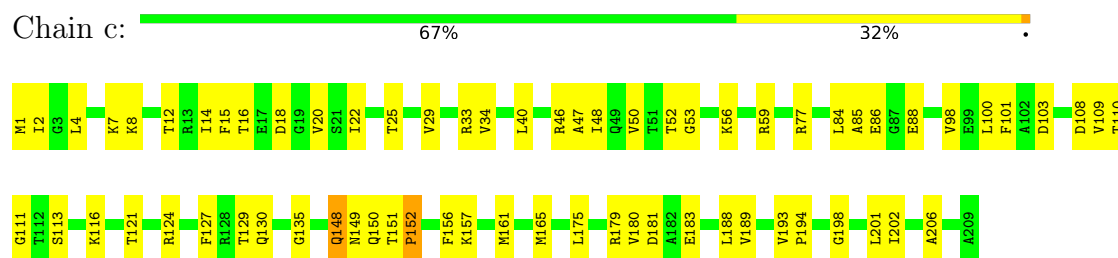
3 Residue-property plots [i](#)

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

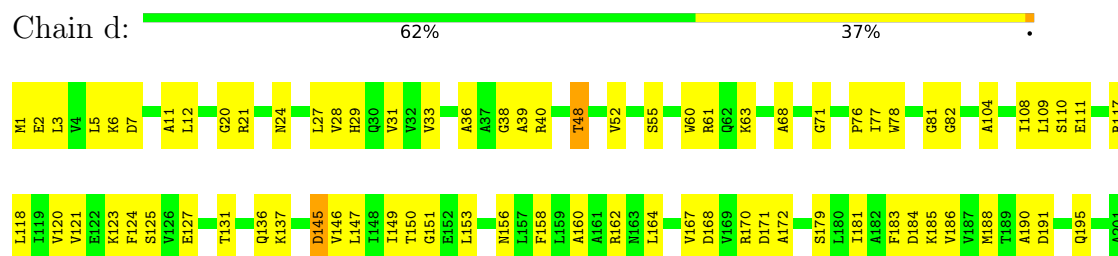
• Molecule 1: 50S ribosomal protein L2



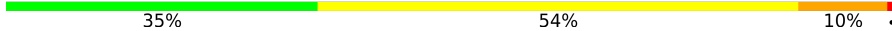
• Molecule 2: 50S ribosomal protein L3

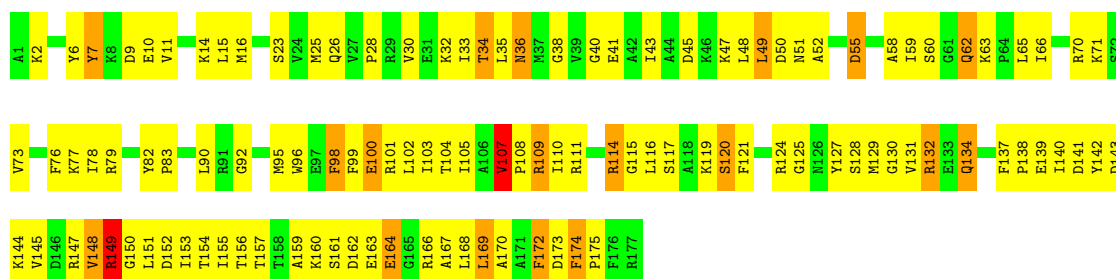


• Molecule 3: 50S ribosomal protein L4



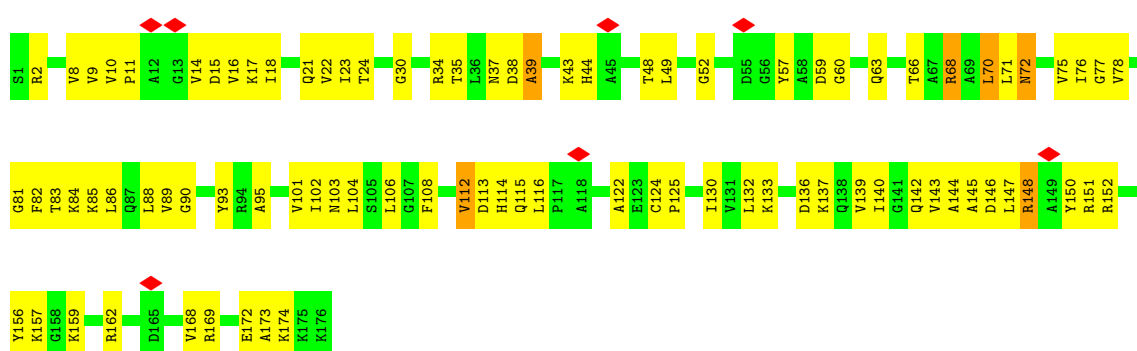
• Molecule 4: 50S ribosomal protein L5

Chain e: 



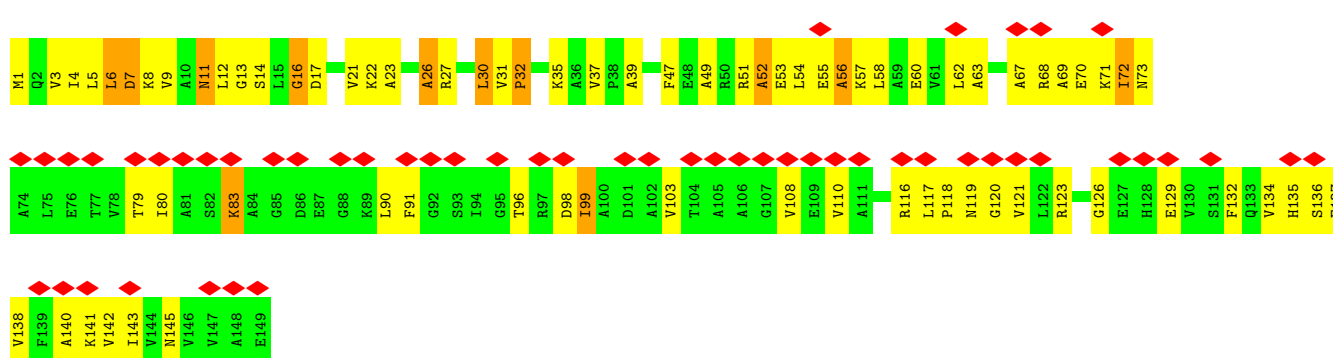
• Molecule 5: 50S ribosomal protein L6

Chain f: 



• Molecule 6: 50S ribosomal protein L9

Chain g: 



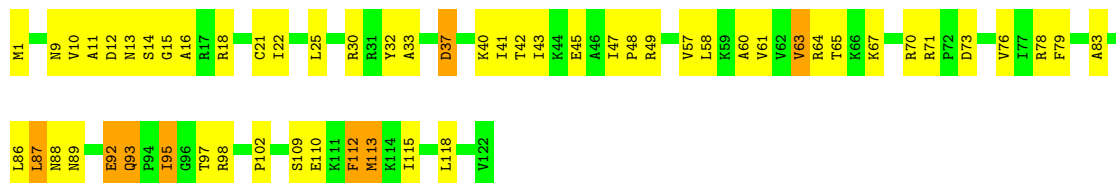
• Molecule 7: 50S ribosomal protein L13

Chain j: 



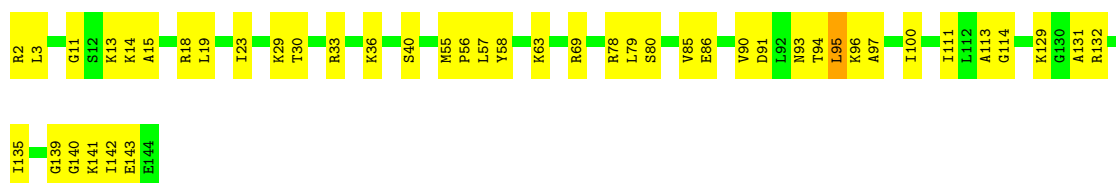
- Molecule 8: 50S ribosomal protein L14

Chain k: 



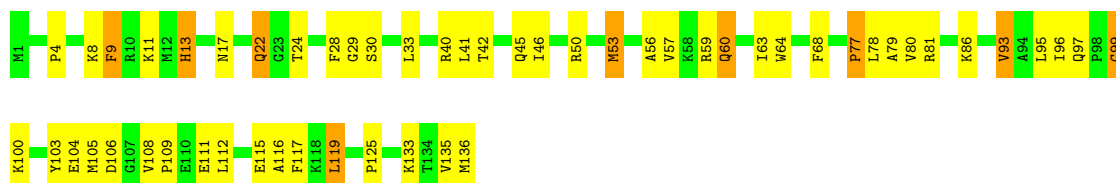
- Molecule 9: 50S ribosomal protein L15

Chain l: 



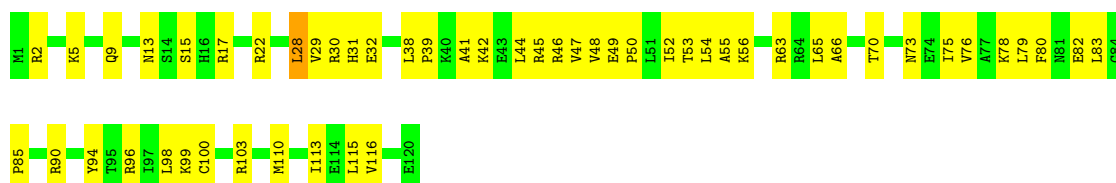
- Molecule 10: 50S ribosomal protein L16

Chain m: 



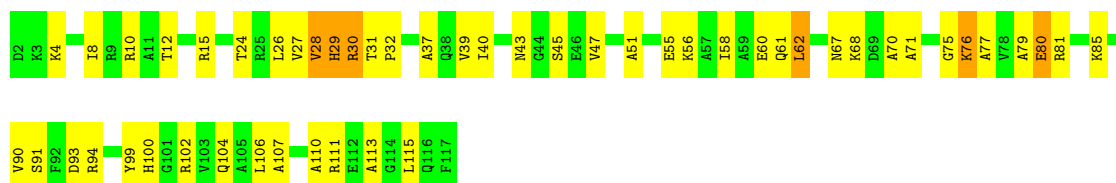
- Molecule 11: 50S ribosomal protein L17

Chain n: 



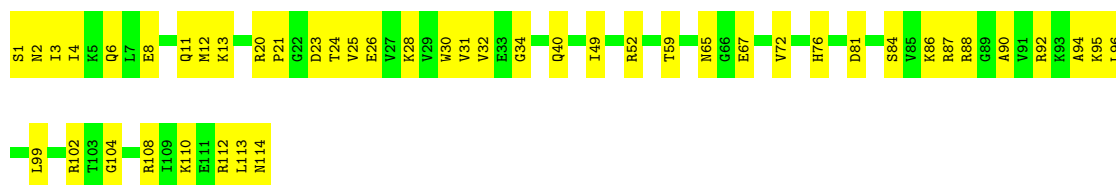
- Molecule 12: 50S ribosomal protein L18

Chain o: 



- Molecule 13: 50S ribosomal protein L19

Chain p:  60% 40%



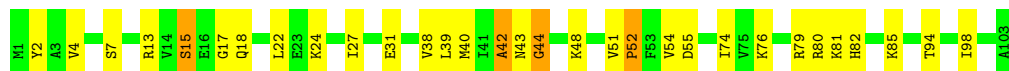
- Molecule 14: 50S ribosomal protein L20

Chain q:  67% 32%



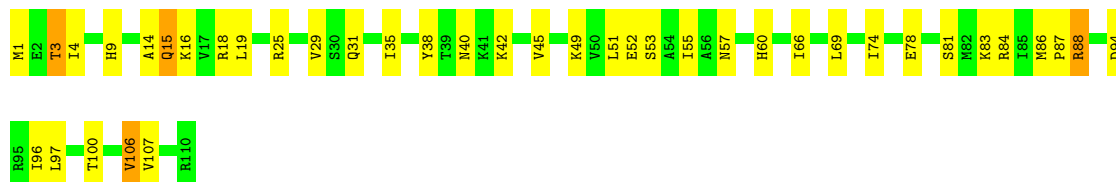
- Molecule 15: 50S ribosomal protein L21

Chain r:  70% 26%



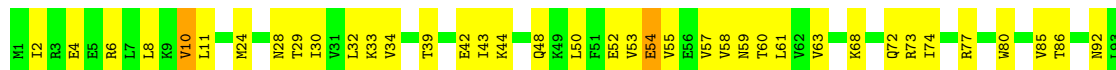
- Molecule 16: 50S ribosomal protein L22

Chain s:  64% 33%



- Molecule 17: 50S ribosomal protein L23

Chain t:  59% 39%

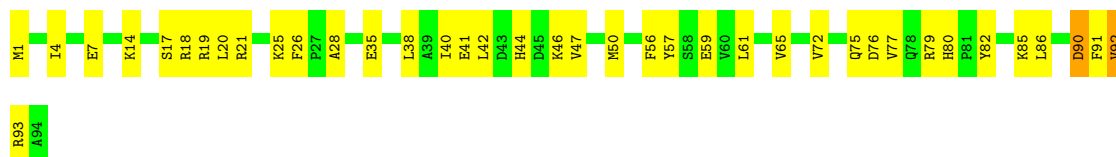


- Molecule 18: 50S ribosomal protein L24

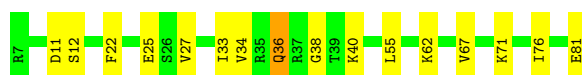
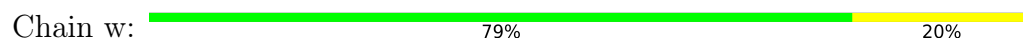
Chain u:  67% 30%



- Molecule 19: 50S ribosomal protein L25



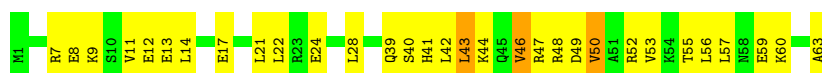
- Molecule 20: 50S ribosomal protein L27



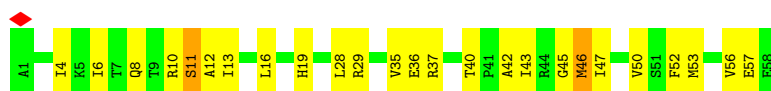
- Molecule 21: 50S ribosomal protein L28



- Molecule 22: 50S ribosomal protein L29



- Molecule 23: 50S ribosomal protein L30



- Molecule 24: 50S ribosomal protein L32



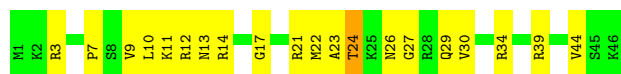
- Molecule 25: 50S ribosomal protein L33

Chain C:  56% 44%



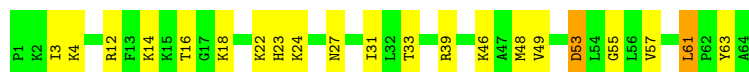
- Molecule 26: 50S ribosomal protein L34

Chain D:  57% 41%

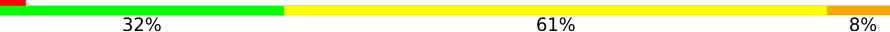


- Molecule 27: 50S ribosomal protein L35

Chain E:  67% 30%



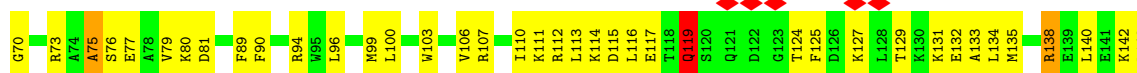
- Molecule 28: 50S ribosomal protein L36

Chain F:  32% 61% 8%

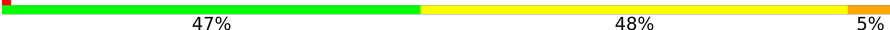


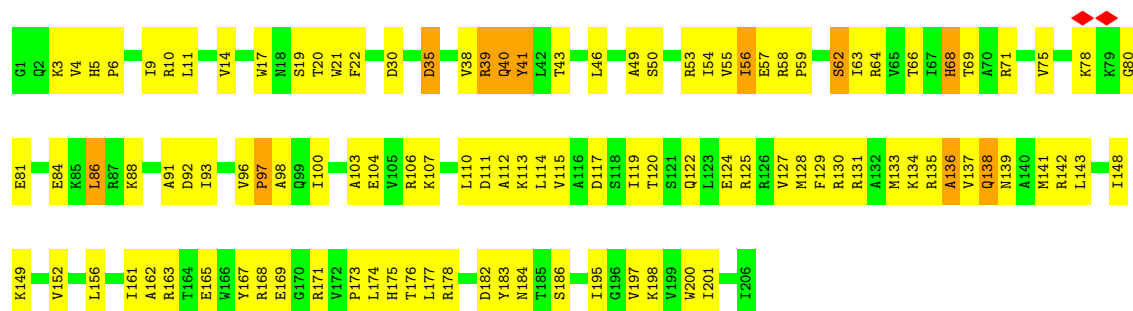
- Molecule 29: 30S ribosomal protein S2

Chain G:  5% 44% 49% 6%

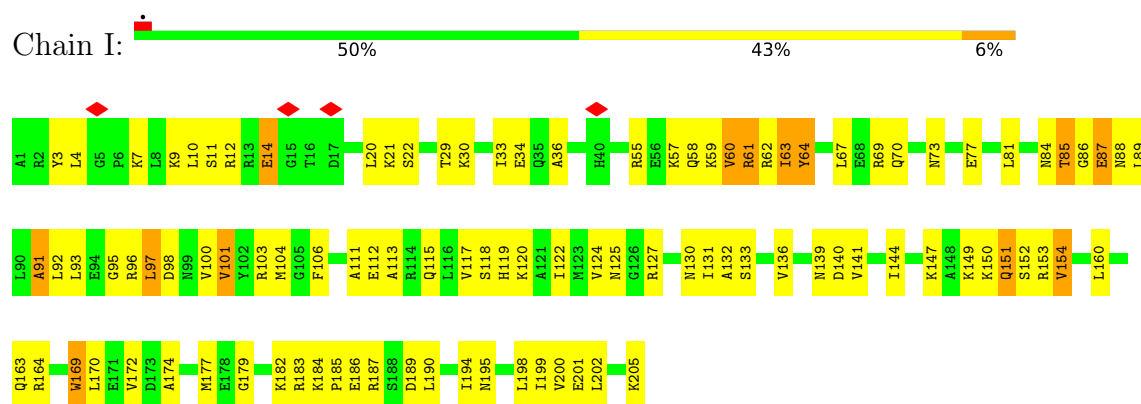


- Molecule 30: 30S ribosomal protein S3

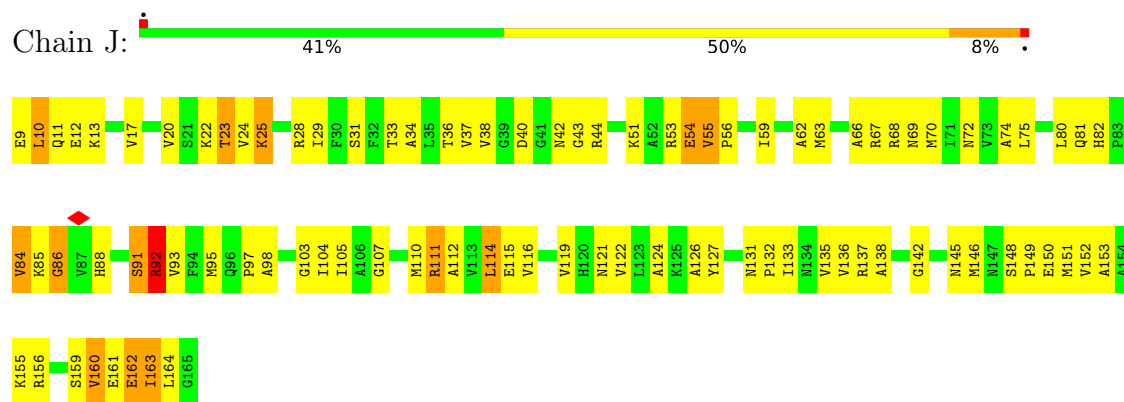
Chain H:  47% 48% 5%



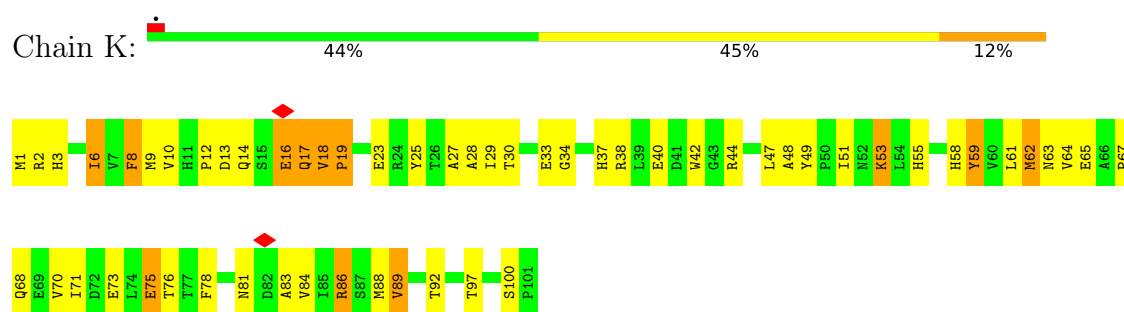
- Molecule 31: 30S ribosomal protein S4



- Molecule 32: 30S ribosomal protein S5

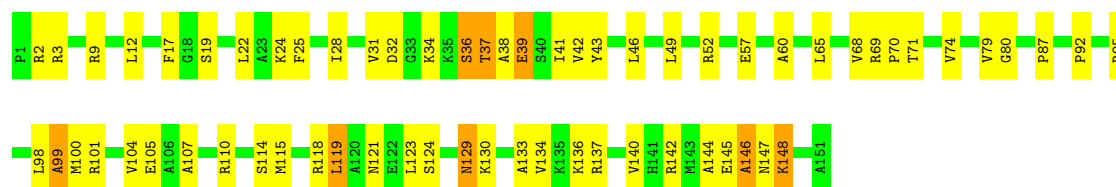


- Molecule 33: 30S ribosomal protein S6



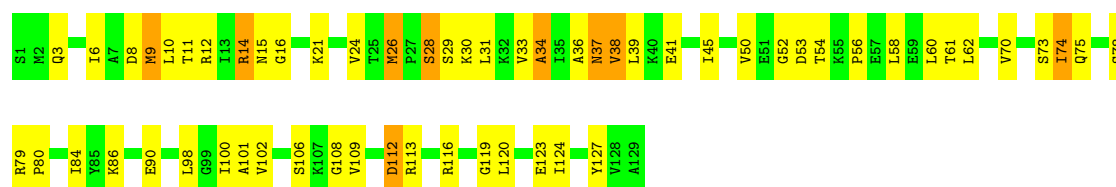
- Molecule 34: 30S ribosomal protein S7

Chain L:  58% 37% 5%



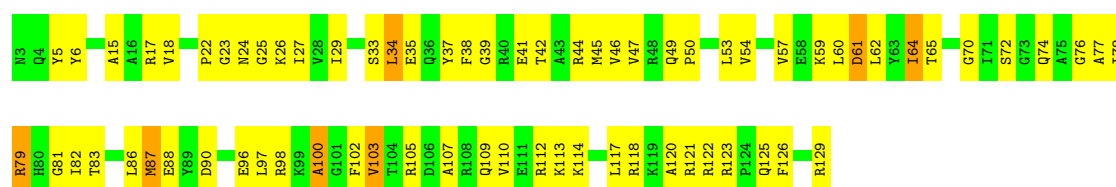
• Molecule 35: 30S ribosomal protein S8

Chain M:  54% 39% 7%



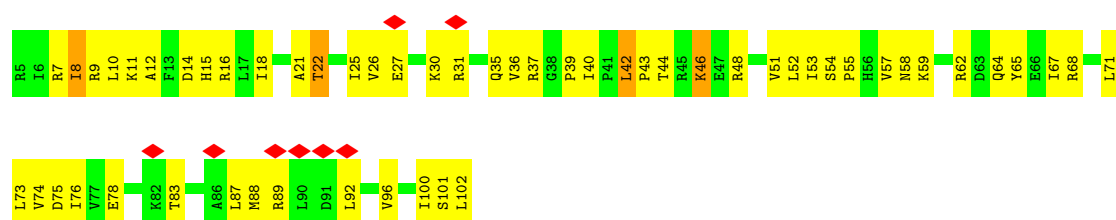
• Molecule 36: 30S ribosomal protein S9

Chain N:  44% 50% 6%



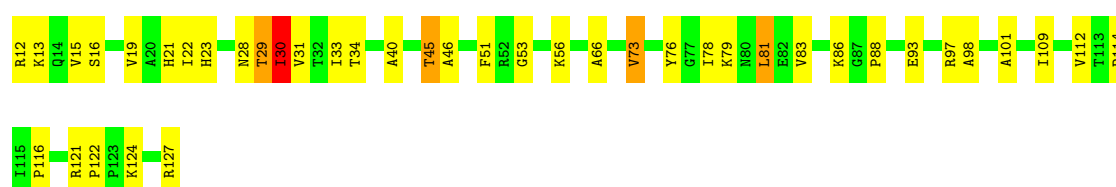
• Molecule 37: 30S ribosomal protein S10

Chain O:  8% 43% 53%

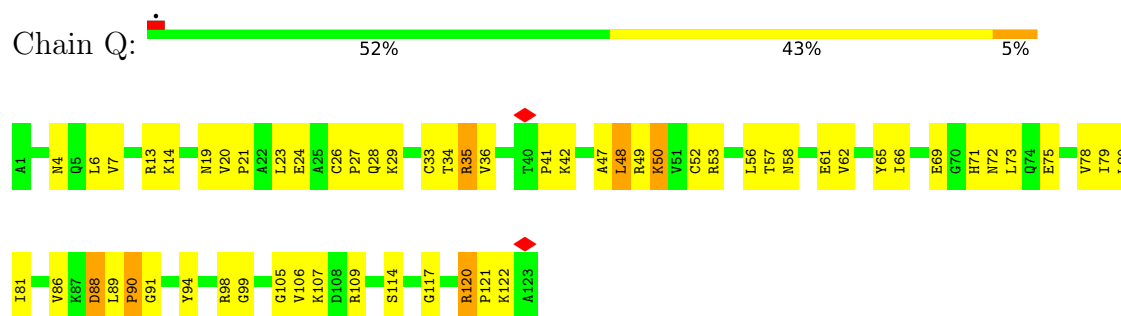


• Molecule 38: 30S ribosomal protein S11

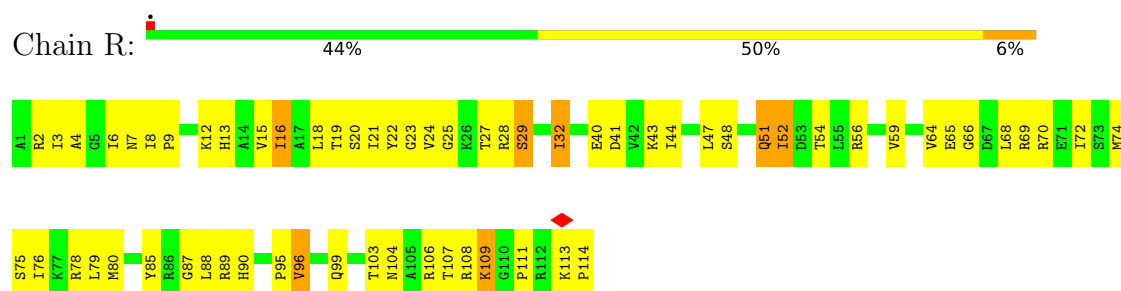
Chain P:  65% 31% 4%



- Molecule 39: 30S ribosomal protein S12



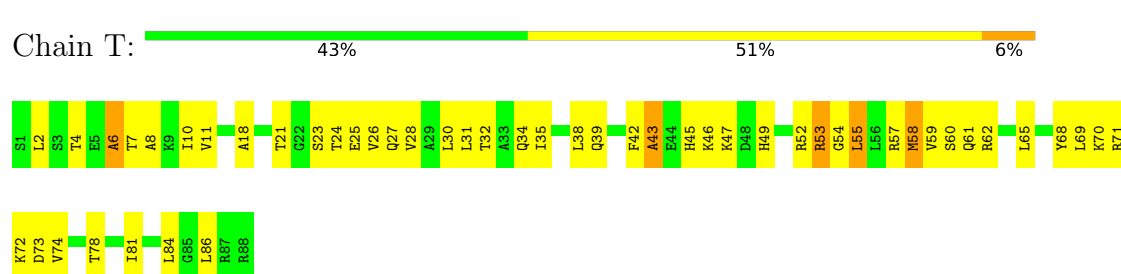
- Molecule 40: 30S ribosomal protein S13



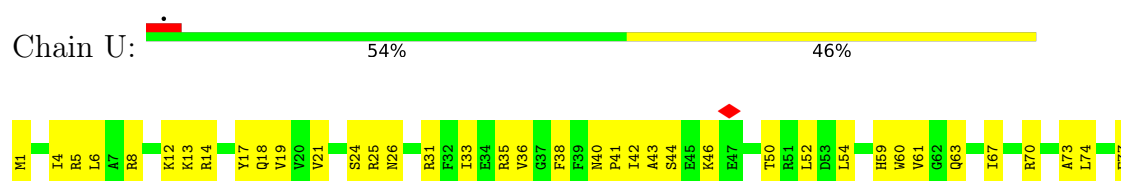
- Molecule 41: 30S ribosomal protein S14



- Molecule 42: 30S ribosomal protein S15



- Molecule 43: 30S ribosomal protein S16





- Molecule 44: 30S ribosomal protein S17

Chain V: 48% 49%



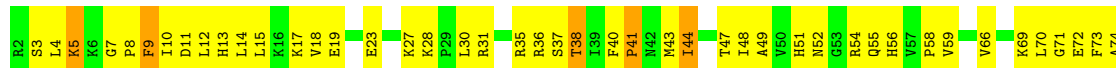
- Molecule 45: 30S ribosomal protein S18

Chain W: 57% 38% 5%



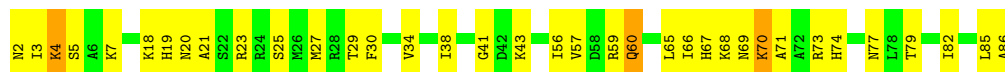
- Molecule 46: 30S ribosomal protein S19

Chain X: 35% 57% 8%



- Molecule 47: 30S ribosomal protein S20

Chain Y: 58% 39%



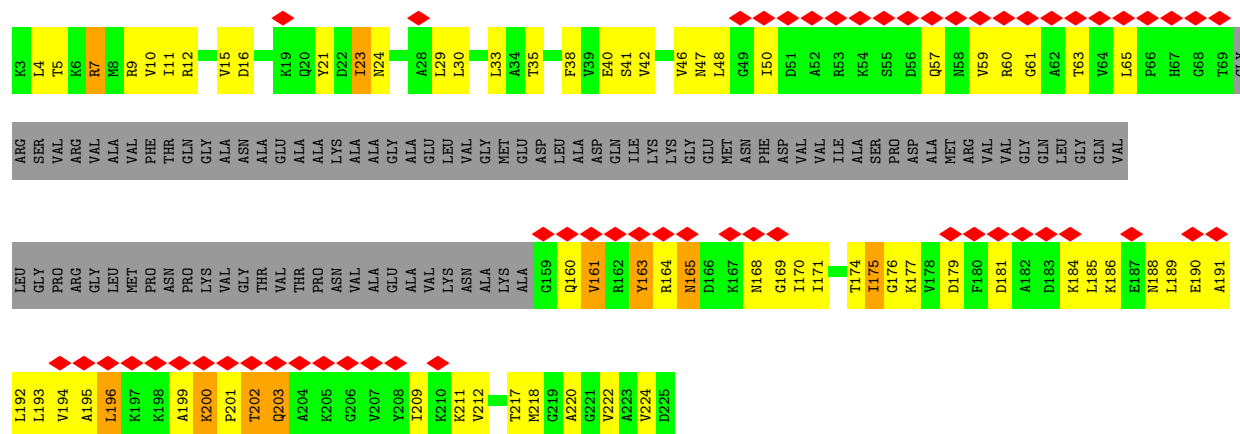
- Molecule 48: 30S ribosomal protein S21

Chain Z: 45% 51% 5%

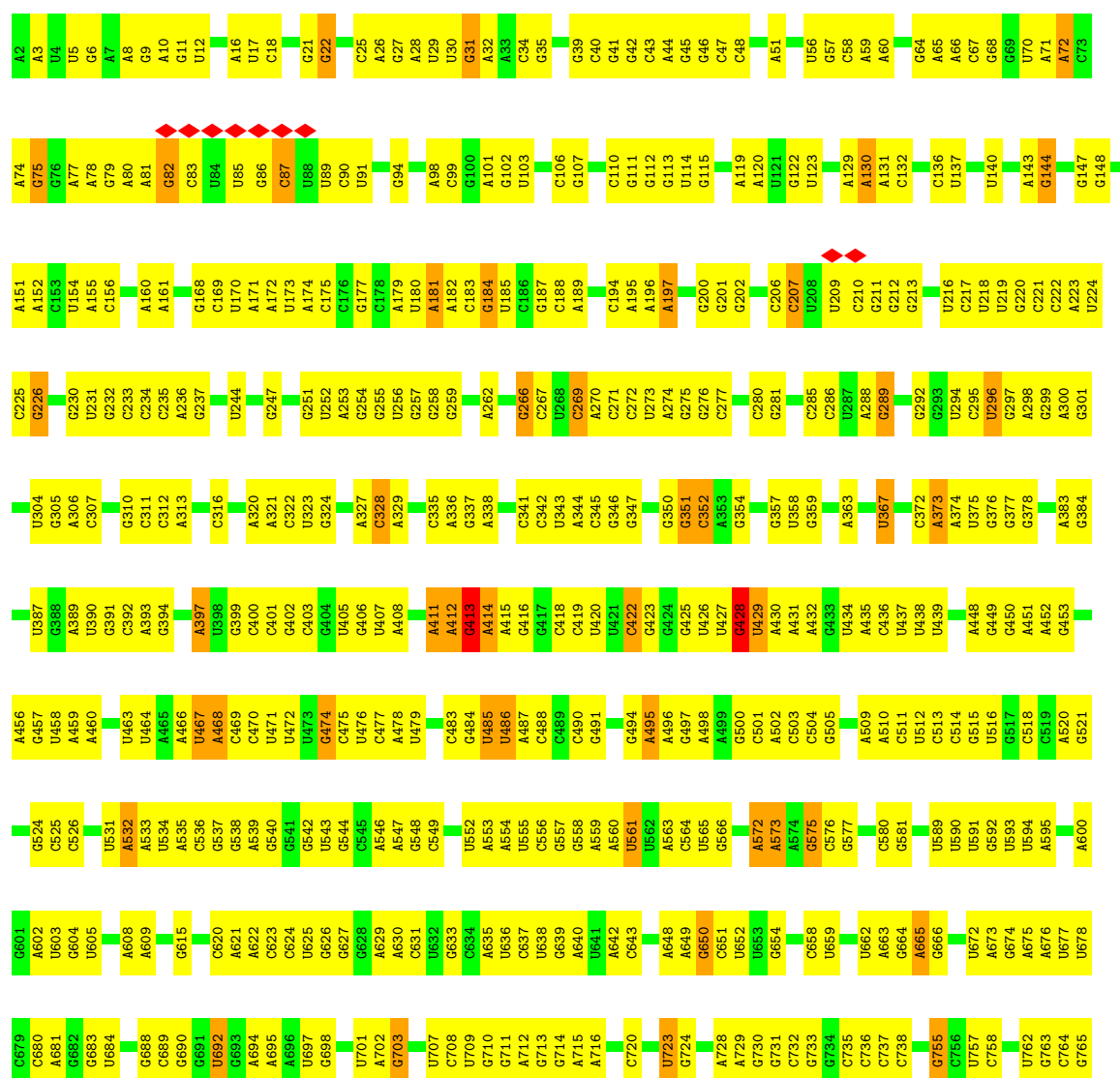


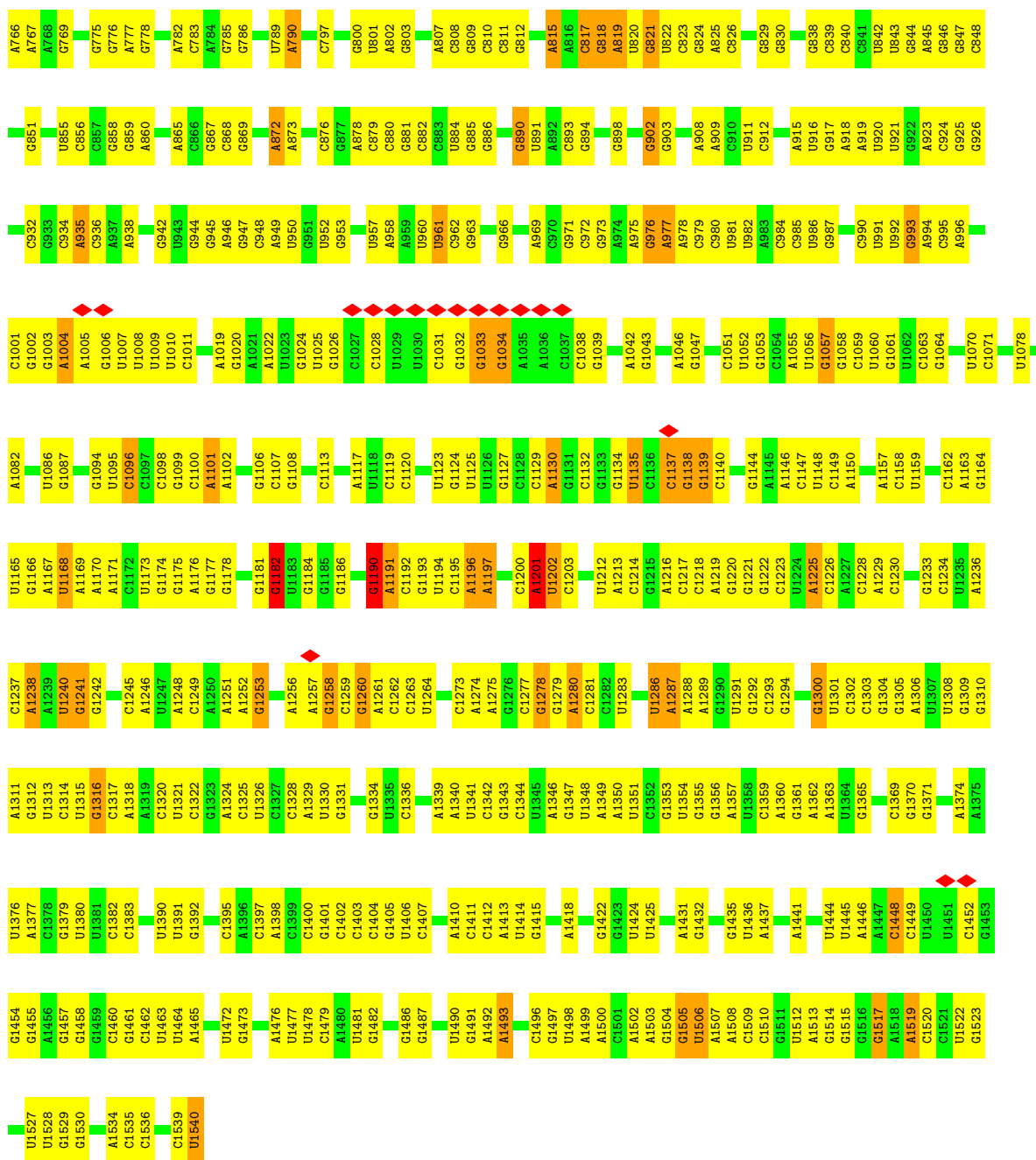
- Molecule 49: 50S ribosomal protein L1

Chain a: 26% 29% 27% 40%



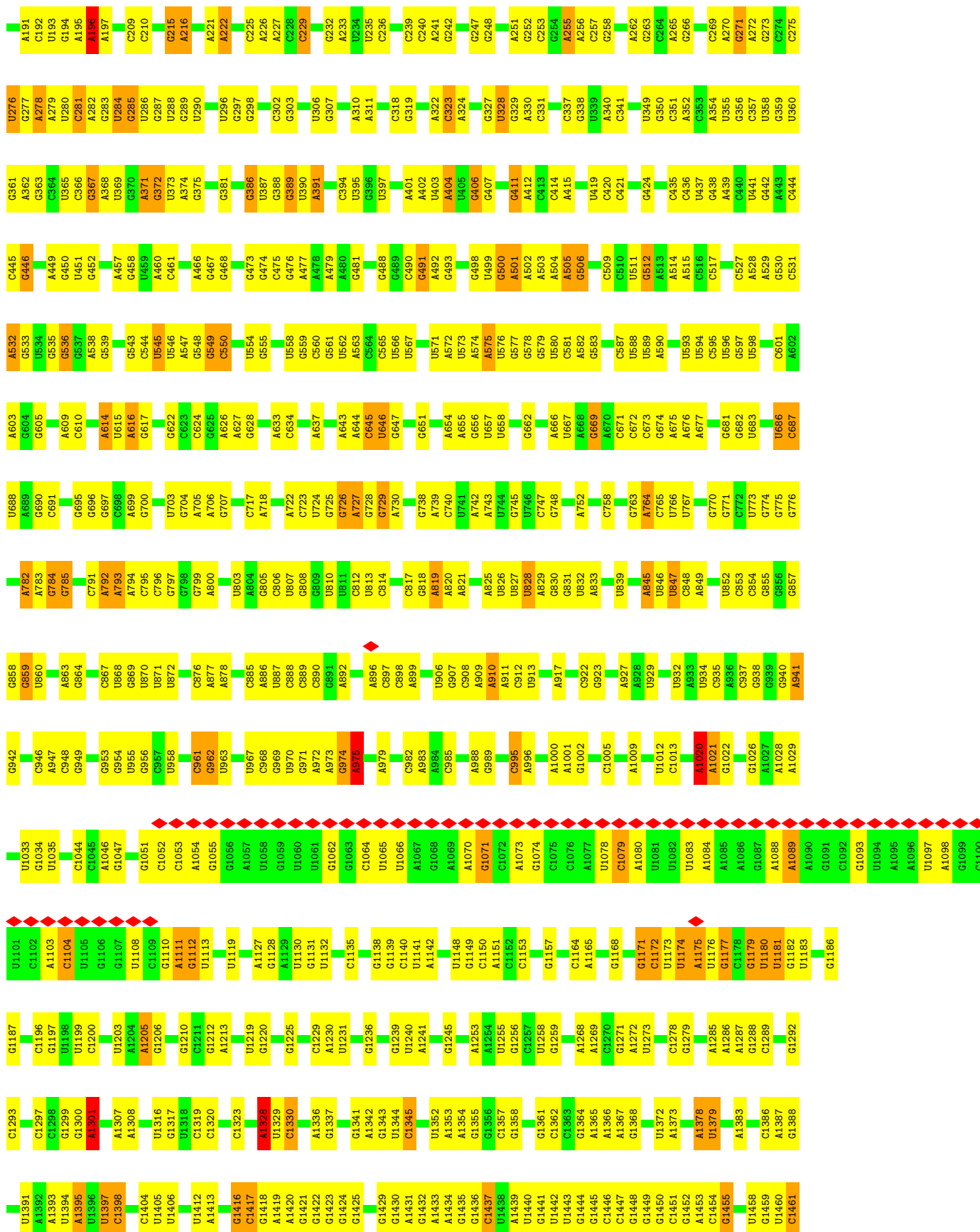
• Molecule 50: 16S ribosomal RNA



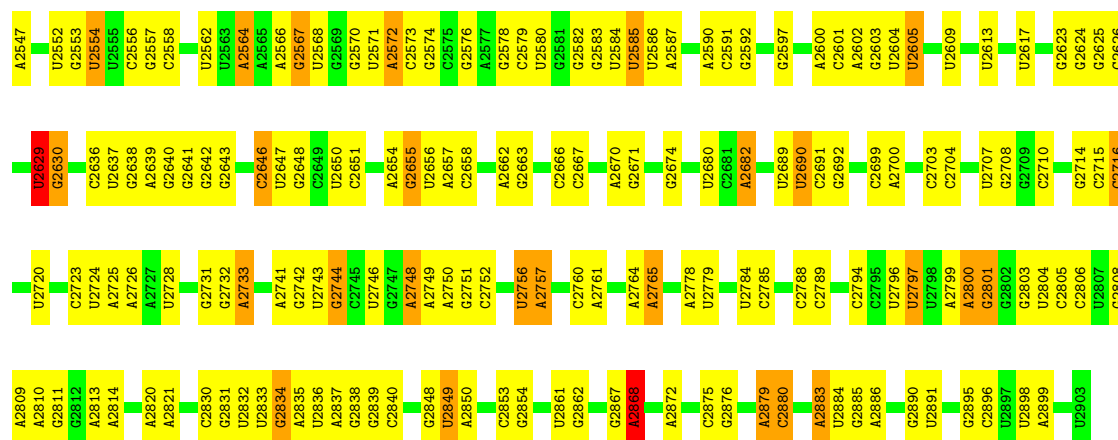


• Molecule 51: 23S ribosomal RNA



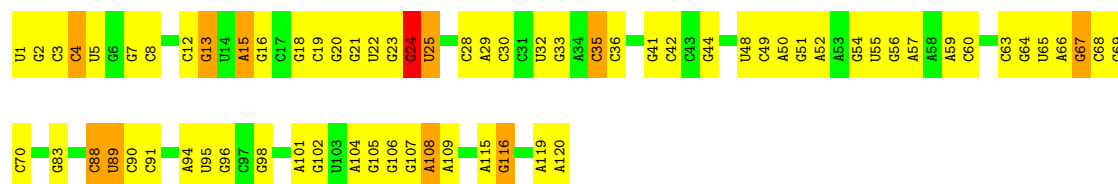


A2471	U2393	G2315	G2446	G2174	A2108	G2029	G1933	A1853	A1773	G1699	A1591	G1524	C1462
G2472	C2394	G2316	A2247	C2175	U2109	A2030	C1934	A1854	C1774	A1700	C1594	A1525	C1463
C2475	U2398	G2317	C2248	A2176	G2110	A2031	G1935	U1855	U1855	U1855	U1594	C1526	G1464
A2476	G2399	G2318	G2250	C2177	U2111	G2032	U1856	U1856	G1776	G1702	C1595	G1527	G1465
U2477	U2320	G2319	G2251	C2178	G2112	C2036	A1937	A1857	A1784	G1703	A1596	U1467	U1466
A2478	U2321	U2180	U2257	U2179	U2113	A2037	U1940	U1859		A1711	A1597	U1468	U1467
U2479	G2322	U2181	C2258	U2180	U2114	A2038	U1943	G1860	A1789	U1712	A1598	U1469	U1468
C2480	A2323	U2182	U2259	U2181	G2115	G2039	U1944	A1866	C1790	U1713	G1601	U1529	A1470
G2481	G2324	A2183	C2260	A2183	U2116	U2038	U1944	G1867	A1791	G1714	U1602	C1531	G1471
A2485	A2406	G2325	C2261	U2184	U2118	G2041	G1948	C1868		G1715	A1603	A1532	C1472
U2487	A2407	G2326	U2262	U2185	A2119	A2042	G1948	C1869	A1794	U1716		C1533	U1473
U2488	U2408	A2327	C2263	U2186	U2122	C2043	A1952	C1870	A1717	U1717	A1608	U1534	G1473
U2489	A2418	A2328	C2264	U2187	G2123	G2046	A1953	C1871	U1796	G1718	A1609	A1535	G1475
G2490	U2419	U2329	U2265	U2188	U2122	U2038	U1953	A1872	U1797	G1719	A1610	C1536	U1476
U2491	C2420	G2330	A2267	U2189	G2123	C2050	U1955	G1873	G1799	U1720	C1612	G1537	A1477
G2494		A2333	A2268	U2190	G2127	A2051	U1956	C1874	C1800	G1721	G1613	G1537	G1478
C2498	C2424	U2334	G2269	U2191	G2128	C2055	A1960	C1875	A1801	A1722	G1614	G1538	G1479
C2499	A2425	G2339	A2270	U2195	G2129	G2056	C1961	A1876	A1802	G1724	G1615	U1539	G1480
G2502	A2426	A2340	U2271	C2196	U2130	A2060	U1963	A1877	A1903	U1725	A1616	G1540	U1481
U2503	C2427	G2341	A2272	U2197	U2131	G2061	U1963	G1878	C1806	C1726	A1630	C1541	G1482
G2504	U2428	U2343	C2273	U2198	G2132	A2062	C1967	U1880	C1807	C1727	G1631	U1542	G1483
U2505	G2429	U2344	A2274	U2199	G2133	G2062	A1970	C1881	A1808	U1729	A1634	A1544	U1484
G2506	A2430	G2345	G2275	U2200	A2135	C2065	A1970	G1884	A1809	C1730	U1635	A1545	U1485
G2507	U2431	U2346	G2276	C2207	G2136	C2066	U1971	A1885	U1817	G1731	U1636	C1546	U1486
C2508	A2432	G2347	A2277	G2208	U2137	G2067	G1972	G1889	U1818	G1732	A1637	C1547	U1487
U2511	G2433	C2350	A2278	G2209	G2138	G2068	A1977	A1890	U1819	G1733	G1642	A1548	U1488
C2512	A2434	G2351	A2283	A2212	U2139	G2069	A1978	G1891	A1820	G1734	G1643	A1549	U1489
A2513	G2435	A2352	G2284	C2213	G2140	A2070	U1979	U1899	G1821	A1739	C1644	C1550	C1489
U2514	C2436	G2353	G2285	C2214	G2141	C2072	G1980	A1900	C1822	C1741	G1645	A1551	G1491
C2515	U2438	C2354	G2286	C2215	A2142	U2074	A1987	A1901	G1823	U1742	U1648	C1555	G1492
U2516	A2440	G2361	A2287	G2216	G2143	U2075	G1988	C1902	G1824	G1743	A1650	C1557	C1493
C2517	U2441	A2366	U2291	G2217	G2144	A2080	U1991	G1906	U1825	U1744	G1651	C1558	A1494
A2518	C2442	G2367	U2292	G2221	C2145	U2081	C1997	G1909	U1826	A1745	A1668	U1559	U1496
U2519	G2443	G2370	G2293	C2222	C2146	A2082	C1998	U1910	U1827	U1746	C1670	C1561	C1498
C2520	G2444	U2371	G2294	G2223	A2147	G2083	C1999	G1911	A1829	U1747	G1674	U1562	C1499
U2521	G2445	G2372	C2295	G2224	G2148	C2084	C2008	A1912	C1830			C1564	G1500
G2526	U2447	U2373	A2297	G2225	U2149	U2085	C2009	A1913	C1837	U1751	A1678	A1569	G1501
C2527	A2448	C2374	U2298	C2226	C2150	U2086	A2009	C1914	C1838	U1752	U1679	A1570	A1502
U2528		G2375	C2300	A2227	U2151	G2087	U2011	U1915	G1841	G1753	U1680	A1571	A1503
A2530	G2455	A2376	C2301	G2228	G2152	C2091	U2016	U1916	U1842	A1754	U1681	A1572	A1504
G2532	C2456	G2378	G2302	U2229	C2153	U2092	G2012	U1917	G1843	A1755	G1682	C1577	U1506
U2533	U2457	G2379	G2303	U2230	A2154	G2093	U2016	A1918	C1844	G1756	U1683	U1578	C1507
A2534	G2458	A2381	U2305	G2234	G2155	C2096	U2016	A1919	G1845	A1757	U1684	U1579	A1508
G2535		G2382	C2306	G2235	U2156	A2097	A2020	G1922	G1846	U1758	U1685	A1580	A1509
U2536	A2461	U2383	G2307	U2236	G2156	U2098	C2021	U1923	A1947	A1759	U1688	G1582	G1510
G2537	C2462	G2384	A2308	G2237	G2157	U2099	U2022	U1923	A1948	C1760	U1689	C1585	G1511
C2538		C2385	C2310	G2238	A2158	U2104	C2023	G1929	A1949	C1764	U1690	G1586	C1512
U2543	G2466	G2389	A2311	U2240	C2159	U2105	G2026	G1930	G1849	U1765	A1598	G1587	U1513
G2544	A2468	U2390	U2312	A2241	G2160	U2106	G2027	U1931	G1850	G1766	A1599	U1589	G1514
C2545	G2469	G2313	C2161	G2242	G2162	G2107	U2028	U1932	U1852	C1771		G1515	A1515
U2546		A2392	A2170	U2245	U2166					A1772		G1516	G1517
			G2168		U2167							G1521	G1522
			A2173		A2171							A1522	U1523



• Molecule 52: 5S ribosomal RNA

Chain 2: 42% 48% 8% .



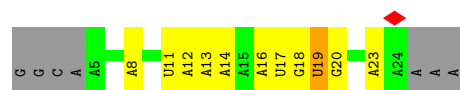
• Molecule 53: tRNAfMet

Chain 5: 22% 64% 13% .



• Molecule 54: mRNA

Chain 4: 33% 37% 26% .



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	102723	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	29.4	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	6.503	Depositor
Minimum map value	-1.639	Depositor
Average map value	0.005	Depositor
Map value standard deviation	0.401	Depositor
Recommended contour level	0.7	Depositor
Map size ($\text{\AA}$)	416.208, 416.208, 416.208	wwPDB
Map dimensions	312, 312, 312	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.334, 1.334, 1.334	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: FME

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	b	0.80	4/2122 (0.2%)	1.10	12/2852 (0.4%)
2	c	0.81	4/1586 (0.3%)	1.11	11/2134 (0.5%)
3	d	0.82	7/1571 (0.4%)	1.05	6/2113 (0.3%)
4	e	0.98	12/1435 (0.8%)	1.22	19/1926 (1.0%)
5	f	1.00	9/1343 (0.7%)	1.16	14/1816 (0.8%)
6	g	1.25	15/1122 (1.3%)	1.36	20/1515 (1.3%)
7	j	0.78	4/1152 (0.3%)	1.09	3/1551 (0.2%)
8	k	0.84	2/948 (0.2%)	1.27	13/1268 (1.0%)
9	l	0.70	1/1054 (0.1%)	1.12	10/1403 (0.7%)
10	m	0.92	6/1093 (0.5%)	1.10	4/1460 (0.3%)
11	n	0.73	1/974 (0.1%)	1.10	5/1301 (0.4%)
12	o	1.10	8/902 (0.9%)	1.17	8/1209 (0.7%)
13	p	0.64	1/929 (0.1%)	0.93	0/1242
14	q	0.80	1/960 (0.1%)	1.15	2/1278 (0.2%)
15	r	0.70	3/829 (0.4%)	0.96	2/1107 (0.2%)
16	s	0.89	6/864 (0.7%)	1.14	6/1156 (0.5%)
17	t	0.83	2/745 (0.3%)	1.04	2/994 (0.2%)
18	u	0.67	1/788 (0.1%)	0.96	5/1051 (0.5%)
19	v	0.72	2/766 (0.3%)	0.97	4/1025 (0.4%)
20	w	0.60	2/582 (0.3%)	0.91	0/769
21	x	0.90	4/635 (0.6%)	1.09	3/848 (0.4%)
22	y	0.89	1/510 (0.2%)	1.18	6/677 (0.9%)
23	z	0.63	1/453 (0.2%)	0.83	0/605
24	B	0.67	0/450	0.93	3/599 (0.5%)
25	C	0.68	1/417 (0.2%)	0.78	0/554
26	D	0.71	1/380 (0.3%)	1.18	4/498 (0.8%)
27	E	0.85	3/513 (0.6%)	1.06	0/676
28	F	1.09	3/303 (1.0%)	1.32	5/397 (1.3%)
29	G	1.24	27/1788 (1.5%)	1.36	27/2408 (1.1%)
30	H	1.07	17/1652 (1.0%)	1.13	15/2225 (0.7%)
31	I	1.08	13/1665 (0.8%)	1.26	18/2227 (0.8%)
32	J	1.15	9/1170 (0.8%)	1.38	22/1573 (1.4%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	K	1.26	14/843 (1.7%)	1.32	14/1140 (1.2%)
34	L	1.02	12/1196 (1.0%)	1.24	10/1602 (0.6%)
35	M	1.05	12/989 (1.2%)	1.19	10/1326 (0.8%)
36	N	1.01	7/1034 (0.7%)	1.18	4/1375 (0.3%)
37	O	1.01	4/797 (0.5%)	1.16	7/1077 (0.6%)
38	P	0.85	4/886 (0.5%)	1.12	6/1195 (0.5%)
39	Q	0.82	2/969 (0.2%)	1.20	13/1300 (1.0%)
40	R	1.11	8/893 (0.9%)	1.30	8/1193 (0.7%)
41	S	1.01	4/817 (0.5%)	1.25	14/1088 (1.3%)
42	T	1.09	7/722 (1.0%)	1.26	8/964 (0.8%)
43	U	0.61	0/659	1.00	1/884 (0.1%)
44	V	0.63	2/658 (0.3%)	0.86	0/881
45	W	1.03	2/545 (0.4%)	1.24	5/731 (0.7%)
46	X	0.93	3/653 (0.5%)	1.22	8/877 (0.9%)
47	Y	1.03	6/671 (0.9%)	1.21	1/888 (0.1%)
48	Z	1.13	5/551 (0.9%)	1.38	7/728 (1.0%)
49	a	1.20	12/1034 (1.2%)	1.29	17/1387 (1.2%)
50	3	0.41	0/36963	0.51	3/57662 (0.0%)
51	1	0.40	0/69796	0.53	8/108888 (0.0%)
52	2	0.42	0/2872	0.50	0/4479
53	5	0.42	0/1832	0.54	1/2855 (0.0%)
54	4	0.41	0/493	0.51	0/769
All	All	0.61	275/157574 (0.2%)	0.74	394/235746 (0.2%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
4	e	0	1
29	G	0	1
32	J	0	2
50	3	0	10
51	1	0	41
52	2	0	1
All	All	0	56

All (275) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
49	a	59	VAL	C-O	15.37	1.40	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	I	61	ARG	C-O	14.67	1.41	1.24
12	o	58	ILE	C-O	14.63	1.41	1.23
45	W	12	PHE	C-O	14.14	1.40	1.24
2	c	157	LYS	C-O	13.65	1.41	1.23
29	G	73	ARG	C-O	-13.21	1.07	1.24
32	J	92	ARG	C-O	13.13	1.41	1.24
32	J	86	GLY	C-N	-13.06	1.15	1.33
41	S	14	ALA	C-O	12.95	1.39	1.24
49	a	42	VAL	C-O	12.73	1.36	1.24
6	g	126	GLY	C-O	11.89	1.36	1.24
29	G	202	ASN	N-CA	11.23	1.60	1.46
31	I	60	VAL	C-O	11.22	1.39	1.24
40	R	16	ILE	C-O	11.12	1.37	1.24
33	K	13	ASP	C-O	10.72	1.36	1.24
30	H	97	PRO	C-O	10.67	1.36	1.23
4	e	132	ARG	C-O	10.61	1.37	1.24
36	N	64	ILE	C-O	10.57	1.34	1.24
48	Z	19	LYS	C-O	10.57	1.36	1.24
30	H	68	HIS	C-O	10.54	1.36	1.23
5	f	148	ARG	C-O	10.16	1.36	1.24
29	G	217	ALA	C-O	10.14	1.35	1.24
3	d	36	ALA	C-O	10.06	1.36	1.24
32	J	160	VAL	C-O	9.99	1.35	1.24
33	K	59	TYR	C-O	9.97	1.36	1.24
29	G	37	VAL	C-O	9.91	1.33	1.24
28	F	4	ARG	C-O	9.88	1.36	1.24
32	J	114	LEU	C-O	9.86	1.37	1.24
10	m	119	LEU	C-O	9.86	1.35	1.24
12	o	30	ARG	N-CA	9.81	1.57	1.45
7	j	81	ILE	N-CA	9.73	1.58	1.46
6	g	67	ALA	C-O	9.73	1.35	1.24
39	Q	78	VAL	C-O	9.72	1.35	1.24
33	K	76	THR	C-O	9.58	1.36	1.24
10	m	53	MET	C-O	9.54	1.35	1.24
5	f	114	HIS	N-CA	9.52	1.57	1.45
5	f	72	ASN	C-O	9.44	1.35	1.24
6	g	68	ARG	C-O	9.40	1.36	1.24
29	G	47	PRO	C-O	9.33	1.35	1.24
49	a	23	ILE	C-O	9.25	1.34	1.24
27	E	53	ASP	C-O	9.24	1.36	1.24
42	T	70	LYS	C-O	9.01	1.34	1.24
36	N	15	ALA	N-CA	8.99	1.57	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
40	R	52	ILE	C-O	8.99	1.34	1.24
1	b	66	PHE	N-CA	8.94	1.57	1.46
42	T	55	LEU	C-O	8.82	1.34	1.24
31	I	64	TYR	N-CA	8.76	1.57	1.46
6	g	35	LYS	C-O	8.71	1.35	1.24
36	N	61	ASP	C-O	8.68	1.35	1.23
30	H	138	GLN	C-O	8.66	1.34	1.24
37	O	46	LYS	N-CA	8.60	1.56	1.46
31	I	101	VAL	C-O	8.55	1.34	1.24
29	G	76	SER	C-O	8.45	1.34	1.24
4	e	145	VAL	N-CA	8.39	1.56	1.46
30	H	88	LYS	C-O	8.34	1.34	1.24
46	X	9	PHE	C-O	8.34	1.33	1.24
30	H	40	GLN	C-O	8.32	1.34	1.24
31	I	201	GLU	C-O	8.30	1.35	1.24
29	G	202	ASN	CA-C	8.28	1.62	1.52
29	G	186	VAL	C-O	8.22	1.32	1.24
25	C	33	LEU	C-O	8.17	1.33	1.23
30	H	69	THR	N-CA	8.17	1.55	1.45
40	R	43	LYS	C-O	8.16	1.35	1.23
33	K	28	ALA	C-O	8.05	1.33	1.24
34	L	133	ALA	C-O	8.03	1.33	1.24
35	M	39	LEU	C-O	8.03	1.34	1.24
3	d	145	ASP	C-O	8.00	1.33	1.23
12	o	77	ALA	C-O	8.00	1.34	1.24
30	H	139	ASN	C-O	8.00	1.34	1.24
48	Z	56	ALA	C-O	7.97	1.34	1.24
5	f	70	LEU	C-O	7.92	1.33	1.24
32	J	91	SER	C-O	7.89	1.32	1.24
29	G	201	GLY	C-N	7.86	1.44	1.33
42	T	6	ALA	C-O	7.84	1.33	1.24
8	k	37	ASP	C-O	7.84	1.34	1.23
29	G	75	ALA	C-O	7.84	1.34	1.24
33	K	27	ALA	C-O	7.79	1.33	1.24
31	I	199	ILE	C-O	7.79	1.33	1.24
5	f	146	ASP	C-O	7.76	1.33	1.24
30	H	56	ILE	C-O	7.70	1.32	1.24
49	a	61	GLY	C-O	7.70	1.32	1.23
29	G	76	SER	N-CA	7.66	1.56	1.46
10	m	97	GLN	C-O	7.63	1.30	1.24
34	L	145	GLU	C-O	-7.54	1.14	1.24
6	g	52	ALA	C-N	7.53	1.45	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	I	169	TRP	C-O	7.43	1.33	1.24
23	z	46	MET	C-O	7.33	1.32	1.24
4	e	174	PHE	N-CA	7.33	1.54	1.45
6	g	7	ASP	N-CA	7.29	1.55	1.46
16	s	40	ASN	N-CA	7.29	1.55	1.46
40	R	20	SER	N-CA	7.28	1.55	1.46
29	G	75	ALA	C-N	7.25	1.44	1.34
33	K	53	LYS	C-O	7.25	1.29	1.24
3	d	109	LEU	C-O	7.24	1.33	1.24
31	I	200	VAL	C-O	7.22	1.33	1.24
41	S	18	LYS	N-CA	7.22	1.54	1.46
42	T	7	THR	C-O	7.22	1.33	1.24
22	y	40	SER	C-O	7.21	1.33	1.24
16	s	16	LYS	C-O	7.20	1.32	1.24
34	L	100	MET	C-O	7.20	1.33	1.24
29	G	38	HIS	C-O	7.18	1.32	1.24
46	X	66	VAL	C-O	7.17	1.33	1.24
15	r	38	VAL	C-O	7.16	1.31	1.24
33	K	75	GLU	C-O	7.12	1.32	1.24
38	P	31	VAL	N-CA	7.11	1.54	1.46
6	g	72	ILE	N-CA	7.09	1.55	1.46
12	o	37	ALA	C-O	7.07	1.31	1.23
33	K	8	PHE	C-O	7.05	1.32	1.24
10	m	93	VAL	C-O	7.04	1.31	1.24
39	Q	50	LYS	N-CA	6.99	1.55	1.46
37	O	76	ILE	C-O	6.92	1.30	1.23
29	G	214	GLY	C-O	6.89	1.32	1.23
34	L	148	LYS	N-CA	6.89	1.55	1.46
36	N	79	ARG	C-O	6.86	1.32	1.24
10	m	77	PRO	C-O	6.84	1.31	1.23
35	M	102	VAL	C-O	6.84	1.31	1.24
48	Z	54	ARG	C-O	6.79	1.32	1.24
8	k	113	MET	N-CA	6.79	1.54	1.46
31	I	91	ALA	C-O	6.78	1.31	1.24
35	M	14	ARG	C-O	6.78	1.32	1.24
15	r	42	ALA	C-O	6.74	1.32	1.23
12	o	75	GLY	C-O	6.71	1.32	1.23
17	t	4	GLU	C-O	6.71	1.32	1.24
33	K	17	GLN	N-CA	6.71	1.54	1.46
33	K	9	MET	N-CA	6.67	1.54	1.46
29	G	59	ILE	C-O	6.67	1.33	1.24
29	G	66	ILE	C-O	6.66	1.31	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
37	O	8	ILE	C-O	6.66	1.31	1.24
34	L	147	ASN	C-N	6.63	1.45	1.33
21	x	65	THR	C-O	6.63	1.32	1.24
32	J	85	LYS	C-N	6.57	1.43	1.33
29	G	218	ALA	C-O	6.55	1.32	1.24
6	g	71	LYS	C-N	6.54	1.42	1.33
17	t	54	GLU	C-O	6.49	1.31	1.23
35	M	124	ILE	C-O	6.47	1.31	1.24
38	P	51	PHE	C-O	-6.46	1.16	1.23
3	d	179	SER	C-O	6.46	1.32	1.24
18	u	95	PHE	C-O	6.44	1.31	1.24
36	N	33	SER	C-O	6.44	1.32	1.23
42	T	57	ARG	C-O	6.43	1.31	1.24
45	W	55	ALA	C-O	6.37	1.32	1.24
34	L	99	ALA	C-O	6.37	1.31	1.24
49	a	175	ILE	N-CA	6.34	1.52	1.46
34	L	37	THR	C-O	6.31	1.32	1.24
3	d	150	THR	C-O	6.27	1.31	1.23
30	H	20	THR	C-O	6.27	1.31	1.24
9	l	94	THR	C-O	-6.26	1.16	1.24
7	j	80	HIS	C-O	6.26	1.31	1.23
7	j	80	HIS	C-N	6.23	1.41	1.33
41	S	28	ALA	C-N	6.23	1.41	1.33
29	G	119	GLN	C-O	6.22	1.32	1.24
5	f	112	VAL	CA-C	6.22	1.59	1.52
29	G	31	PHE	C-O	6.22	1.32	1.24
40	R	51	GLN	C-O	6.20	1.32	1.24
32	J	10	LEU	C-O	6.20	1.32	1.23
19	v	92	VAL	N-CA	6.18	1.54	1.46
35	M	84	ILE	C-O	6.16	1.30	1.24
32	J	85	LYS	C-O	6.15	1.31	1.24
33	K	62	MET	C-O	6.13	1.31	1.23
34	L	147	ASN	C-O	6.12	1.33	1.24
14	q	67	ALA	C-O	6.12	1.31	1.24
27	E	39	ARG	C-O	6.12	1.31	1.24
5	f	75	VAL	C-O	6.11	1.31	1.24
1	b	135	PRO	C-O	6.10	1.30	1.23
6	g	57	LYS	C-O	6.08	1.31	1.24
6	g	83	LYS	C-O	6.08	1.31	1.23
36	N	34	LEU	C-O	6.06	1.31	1.24
4	e	149	ARG	C-O	6.04	1.31	1.23
15	r	15	SER	C-O	6.03	1.31	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
35	M	38	VAL	C-O	6.03	1.31	1.24
30	H	20	THR	N-CA	6.01	1.53	1.46
40	R	29	SER	C-O	6.01	1.31	1.24
4	e	36	ASN	N-CA	5.98	1.53	1.45
29	G	81	ASP	C-O	5.97	1.31	1.24
11	n	41	ALA	C-O	5.95	1.31	1.24
35	M	9	MET	C-O	5.95	1.31	1.24
47	Y	71	ALA	C-O	5.93	1.31	1.24
4	e	100	GLU	C-O	5.92	1.31	1.24
29	G	69	VAL	C-O	5.91	1.30	1.24
35	M	16	GLY	C-O	5.91	1.31	1.23
13	p	6	GLN	C-O	5.90	1.31	1.24
37	O	22	THR	C-O	5.90	1.31	1.24
10	m	100	LYS	N-CA	5.87	1.53	1.46
21	x	67	LEU	C-O	5.86	1.31	1.24
16	s	15	GLN	C-O	5.86	1.31	1.24
6	g	71	LYS	C-O	5.84	1.31	1.24
30	H	43	THR	C-O	5.84	1.31	1.24
1	b	221	GLY	C-O	5.84	1.31	1.23
35	M	34	ALA	C-O	5.82	1.31	1.24
42	T	54	GLY	C-O	5.80	1.30	1.23
35	M	36	ALA	C-O	5.80	1.31	1.24
12	o	62	LEU	N-CA	5.80	1.52	1.45
47	Y	60	GLN	C-O	5.78	1.31	1.24
34	L	36	SER	C-O	5.77	1.30	1.24
34	L	114	SER	C-O	5.75	1.31	1.23
49	a	47	ASN	C-O	5.73	1.30	1.24
29	G	51	GLU	N-CA	5.73	1.53	1.46
40	R	32	ILE	C-O	5.73	1.30	1.24
4	e	104	THR	C-O	5.73	1.31	1.23
6	g	56	ALA	C-O	5.70	1.31	1.24
28	F	18	LYS	C-O	5.68	1.30	1.23
21	x	52	ALA	C-O	5.66	1.30	1.24
48	Z	55	HIS	C-O	5.63	1.31	1.24
47	Y	4	LYS	N-CA	5.63	1.52	1.46
6	g	17	ASP	C-O	5.62	1.32	1.24
31	I	152	SER	C-O	-5.61	1.17	1.24
6	g	30	LEU	C-O	5.60	1.30	1.24
30	H	39	ARG	C-O	5.59	1.30	1.24
31	I	154	VAL	C-N	5.59	1.42	1.33
16	s	3	THR	C-O	5.58	1.31	1.23
3	d	48	THR	C-O	5.58	1.29	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
12	o	80	GLU	C-O	5.57	1.30	1.24
4	e	55	ASP	C-O	5.56	1.30	1.24
44	V	21	VAL	C-O	5.55	1.30	1.24
44	V	56	ASP	C-O	5.55	1.31	1.23
3	d	190	ALA	C-O	5.54	1.30	1.24
48	Z	59	LEU	N-CA	5.51	1.53	1.46
49	a	163	TYR	C-O	5.51	1.30	1.23
4	e	172	PHE	C-O	-5.51	1.16	1.24
38	P	45	THR	C-O	5.49	1.31	1.23
30	H	41	TYR	C-O	5.48	1.30	1.24
29	G	47	PRO	CA-C	5.48	1.60	1.52
29	G	14	HIS	C-O	-5.47	1.17	1.24
20	w	27	VAL	C-O	5.47	1.30	1.23
19	v	46	LYS	C-O	5.47	1.30	1.24
33	K	12	PRO	C-O	5.47	1.31	1.24
41	S	17	ASP	C-N	5.46	1.40	1.33
12	o	76	LYS	C-O	5.43	1.30	1.24
6	g	96	THR	C-O	5.41	1.32	1.23
4	e	142	TYR	C-O	-5.41	1.15	1.24
21	x	26	ARG	N-CA	5.36	1.52	1.46
33	K	25	TYR	C-O	5.36	1.30	1.24
4	e	7	TYR	C-O	5.34	1.30	1.24
32	J	92	ARG	CA-C	5.34	1.60	1.52
49	a	161	VAL	C-O	5.32	1.30	1.24
40	R	16	ILE	CA-C	5.31	1.59	1.52
35	M	112	ASP	C-O	5.31	1.30	1.24
36	N	87	MET	C-O	5.31	1.30	1.24
29	G	208	ALA	C-O	5.29	1.30	1.24
30	H	136	ALA	C-O	5.28	1.30	1.24
5	f	10	VAL	N-CA	5.26	1.53	1.46
2	c	121	THR	C-O	5.26	1.30	1.24
26	D	24	THR	N-CA	5.25	1.52	1.45
31	I	63	ILE	C-O	5.25	1.30	1.24
47	Y	18	LYS	C-O	5.25	1.30	1.24
20	w	36	GLN	N-CA	5.24	1.52	1.45
34	L	119	LEU	C-O	5.24	1.30	1.24
5	f	145	ALA	C-O	5.21	1.30	1.24
2	c	16	THR	N-CA	5.20	1.52	1.45
16	s	52	GLU	C-O	5.20	1.30	1.24
29	G	162	VAL	C-O	5.20	1.29	1.23
35	M	8	ASP	C-O	5.20	1.30	1.24
27	E	55	GLY	C-O	5.17	1.30	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
49	a	7	ARG	C-O	5.17	1.30	1.24
38	P	81	LEU	C-O	5.16	1.30	1.23
49	a	211	LYS	C-O	5.15	1.29	1.23
31	I	97	LEU	N-CA	5.14	1.52	1.46
46	X	38	THR	N-CA	5.12	1.52	1.45
4	e	161	SER	C-O	5.12	1.28	1.24
29	G	206	ILE	C-O	5.12	1.28	1.23
42	T	59	VAL	N-CA	5.11	1.53	1.46
2	c	189	VAL	N-CA	5.11	1.52	1.46
7	j	125	TYR	C-O	5.11	1.29	1.23
1	b	262	THR	C-N	5.11	1.41	1.33
49	a	165	ASN	N-CA	5.10	1.51	1.46
47	Y	74	HIS	C-O	5.09	1.30	1.24
16	s	88	ARG	C-O	5.09	1.31	1.23
47	Y	21	ALA	C-O	5.08	1.30	1.24
30	H	91	ALA	C-O	5.08	1.30	1.24
28	F	23	ILE	N-CA	5.07	1.52	1.46
49	a	201	PRO	C-O	5.06	1.29	1.23
34	L	147	ASN	N-CA	5.03	1.53	1.46
30	H	86	LEU	C-O	5.02	1.30	1.24
33	K	86	ARG	C-O	5.01	1.30	1.23
30	H	53	ARG	N-CA	5.01	1.51	1.46

All (394) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	G	201	GLY	CA-C-N	-12.84	101.95	120.82
29	G	201	GLY	C-N-CA	-12.84	101.95	120.82
7	j	80	HIS	CA-C-N	-12.52	103.95	120.98
7	j	80	HIS	C-N-CA	-12.52	103.95	120.98
29	G	202	ASN	N-CA-C	12.36	126.30	110.24
6	g	9	VAL	N-CA-C	12.16	124.42	108.12
41	S	17	ASP	CA-C-N	-10.59	106.23	120.63
41	S	17	ASP	C-N-CA	-10.59	106.23	120.63
31	I	63	ILE	CA-C-N	-10.57	105.10	122.54
31	I	63	ILE	C-N-CA	-10.57	105.10	122.54
29	G	75	ALA	CA-C-N	-10.47	104.39	120.31
29	G	75	ALA	C-N-CA	-10.47	104.39	120.31
8	k	95	ILE	N-CA-C	10.35	120.16	110.74
32	J	86	GLY	CA-C-N	10.29	140.49	121.97
32	J	86	GLY	C-N-CA	10.29	140.49	121.97
16	s	38	TYR	CA-C-N	-10.09	108.92	123.05

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
16	s	38	TYR	C-N-CA	-10.09	108.92	123.05
4	e	62	GLN	N-CA-C	10.03	123.26	111.02
49	a	174	THR	CA-C-N	-9.72	112.57	122.77
49	a	174	THR	C-N-CA	-9.72	112.57	122.77
18	u	6	ARG	N-CA-C	9.67	122.81	111.02
48	Z	10	PRO	N-CA-C	9.08	125.34	112.26
32	J	85	LYS	CA-C-N	-8.92	103.92	121.41
32	J	85	LYS	C-N-CA	-8.92	103.92	121.41
40	R	96	VAL	N-CA-C	8.84	118.91	110.42
2	c	157	LYS	O-C-N	8.82	133.27	122.86
34	L	147	ASN	CA-C-N	-8.68	104.93	122.55
34	L	147	ASN	C-N-CA	-8.68	104.93	122.55
12	o	28	VAL	O-C-N	-8.63	114.14	123.03
4	e	144	LYS	CA-C-N	-8.62	108.76	122.64
4	e	144	LYS	C-N-CA	-8.62	108.76	122.64
32	J	163	ILE	N-CA-C	-8.52	100.47	113.16
30	H	50	SER	N-CA-C	8.51	121.66	111.02
5	f	112	VAL	O-C-N	-8.51	113.40	122.67
8	k	112	PHE	CA-C-N	-8.25	108.40	120.28
8	k	112	PHE	C-N-CA	-8.25	108.40	120.28
6	g	71	LYS	CA-C-N	-8.09	107.42	121.97
6	g	71	LYS	C-N-CA	-8.09	107.42	121.97
12	o	28	VAL	CA-C-O	8.08	128.25	120.25
8	k	61	VAL	CA-C-N	-7.95	112.51	122.93
8	k	61	VAL	C-N-CA	-7.95	112.51	122.93
2	c	113	SER	N-CA-C	7.93	120.81	110.43
29	G	75	ALA	N-CA-C	-7.91	101.39	113.89
10	m	9	PHE	N-CA-C	7.78	122.45	107.44
28	F	21	GLY	CA-C-N	-7.75	111.82	122.91
28	F	21	GLY	C-N-CA	-7.75	111.82	122.91
10	m	99	GLY	CA-C-N	-7.74	112.04	122.72
10	m	99	GLY	C-N-CA	-7.74	112.04	122.72
34	L	145	GLU	O-C-N	-7.73	112.31	122.59
49	a	200	LYS	N-CA-C	7.72	120.77	109.04
49	a	202	THR	N-CA-C	7.71	119.38	110.97
39	Q	72	ASN	N-CA-C	-7.68	103.49	113.17
40	R	109	LYS	CA-C-N	-7.66	109.84	121.87
40	R	109	LYS	C-N-CA	-7.66	109.84	121.87
41	S	18	LYS	N-CA-C	7.63	119.50	111.03
29	G	38	HIS	CA-C-N	-7.43	111.54	122.68
29	G	38	HIS	C-N-CA	-7.43	111.54	122.68
33	K	30	THR	CA-C-N	-7.42	111.84	120.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
33	K	30	THR	C-N-CA	-7.42	111.84	120.00
30	H	68	HIS	O-C-N	7.38	131.69	122.84
45	W	12	PHE	CA-C-O	7.36	130.01	121.32
30	H	57	GLU	CA-C-N	-7.34	114.07	122.00
30	H	57	GLU	C-N-CA	-7.34	114.07	122.00
31	I	150	LYS	N-CA-C	7.28	120.12	111.02
35	M	36	ALA	CA-C-N	-7.25	108.17	121.52
35	M	36	ALA	C-N-CA	-7.25	108.17	121.52
38	P	73	VAL	N-CA-C	-7.23	106.44	113.53
5	f	112	VAL	CA-C-O	7.18	129.22	121.04
29	G	76	SER	CA-C-O	7.12	128.16	119.97
30	H	62	SER	CA-C-N	-7.11	113.64	123.10
30	H	62	SER	C-N-CA	-7.11	113.64	123.10
39	Q	117	GLY	CA-C-N	-7.10	114.14	122.95
39	Q	117	GLY	C-N-CA	-7.10	114.14	122.95
33	K	13	ASP	CA-C-O	7.07	127.99	120.70
9	l	97	ALA	N-CA-C	-7.01	104.19	112.89
9	l	96	LYS	N-CA-C	-6.99	104.01	112.54
29	G	7	ASP	N-CA-C	-6.95	104.08	114.64
51	1	1738	G	C2'-C3'-O3'	6.94	119.91	109.50
42	T	8	ALA	CA-C-N	-6.93	109.46	121.66
42	T	8	ALA	C-N-CA	-6.93	109.46	121.66
39	Q	114	SER	N-CA-C	-6.92	103.80	111.82
43	U	61	VAL	N-CA-C	-6.89	102.92	112.50
16	s	106	VAL	CA-C-N	-6.88	114.12	123.14
16	s	106	VAL	C-N-CA	-6.88	114.12	123.14
1	b	30	ALA	N-CA-C	6.88	121.83	112.55
26	D	23	ALA	CA-C-N	-6.83	110.89	122.92
26	D	23	ALA	C-N-CA	-6.83	110.89	122.92
36	N	90	ASP	N-CA-C	6.80	125.29	110.80
29	G	27	LYS	N-CA-C	6.69	122.81	113.57
36	N	100	ALA	N-CA-C	-6.69	106.99	114.62
33	K	18	VAL	N-CA-C	6.68	123.32	108.88
46	X	27	LYS	N-CA-C	6.67	118.43	111.03
29	G	167	HIS	N-CA-C	-6.66	105.69	113.88
40	R	72	ILE	N-CA-C	-6.65	103.75	111.00
30	H	43	THR	CA-C-N	-6.64	109.71	122.06
30	H	43	THR	C-N-CA	-6.64	109.71	122.06
21	x	29	LEU	CA-C-O	6.64	125.67	119.76
1	b	262	THR	CA-C-N	-6.57	109.76	120.72
1	b	262	THR	C-N-CA	-6.57	109.76	120.72
6	g	145	ASN	CA-C-N	-6.54	112.04	122.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	g	145	ASN	C-N-CA	-6.54	112.04	122.50
42	T	43	ALA	N-CA-C	-6.53	104.25	111.82
37	O	44	THR	N-CA-C	6.52	119.13	110.53
33	K	59	TYR	O-C-N	6.51	130.98	123.29
18	u	75	ALA	N-CA-C	-6.48	104.06	112.68
46	X	77	ARG	N-CA-C	6.48	119.11	111.02
22	y	43	LEU	CA-C-N	-6.47	111.64	120.44
22	y	43	LEU	C-N-CA	-6.47	111.64	120.44
1	b	13	ARG	N-CA-C	6.45	118.00	110.97
51	l	2299	U	C2'-C3'-O3'	6.45	119.17	109.50
49	a	165	ASN	N-CA-C	6.45	119.85	109.79
5	f	125	PRO	N-CA-C	-6.45	105.12	113.57
37	O	76	ILE	CA-C-O	6.43	128.80	120.69
32	J	111	ARG	CA-C-N	-6.43	109.58	120.58
32	J	111	ARG	C-N-CA	-6.43	109.58	120.58
41	S	58	ARG	CA-C-N	-6.42	111.77	122.17
41	S	58	ARG	C-N-CA	-6.42	111.77	122.17
32	J	160	VAL	CA-C-O	6.42	128.80	120.78
16	s	60	HIS	CA-C-N	-6.41	110.23	122.53
16	s	60	HIS	C-N-CA	-6.41	110.23	122.53
7	j	81	ILE	N-CA-C	6.40	117.30	109.30
5	f	68	ARG	N-CA-C	-6.39	104.18	112.23
48	Z	58	LYS	N-CA-C	6.38	118.23	111.28
50	3	1190	G	C2'-C3'-O3'	6.37	119.05	109.50
8	k	63	VAL	N-CA-C	6.34	116.97	110.82
31	I	154	VAL	CA-C-N	-6.33	109.91	120.68
31	I	154	VAL	C-N-CA	-6.33	109.91	120.68
31	I	61	ARG	CA-C-O	6.33	127.13	120.42
6	g	16	GLY	N-CA-C	6.31	128.14	113.18
4	e	164	GLU	N-CA-C	-6.29	104.66	112.90
4	e	107	VAL	CA-C-N	-6.29	113.70	121.00
4	e	107	VAL	C-N-CA	-6.29	113.70	121.00
4	e	114	ARG	N-CA-C	-6.28	103.72	112.45
49	a	199	ALA	CA-C-N	-6.26	112.06	121.83
49	a	199	ALA	C-N-CA	-6.26	112.06	121.83
29	G	39	ILE	CA-C-N	-6.21	115.49	123.19
29	G	39	ILE	C-N-CA	-6.21	115.49	123.19
35	M	28	SER	N-CA-C	6.21	119.06	109.07
5	f	144	ALA	N-CA-C	-6.15	104.69	111.82
28	F	37	GLN	CA-C-N	6.14	132.75	121.70
28	F	37	GLN	C-N-CA	6.14	132.75	121.70
37	O	42	LEU	CA-C-N	6.14	127.51	119.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
37	O	42	LEU	C-N-CA	6.14	127.51	119.84
32	J	162	GLU	CA-C-N	-6.13	111.76	121.02
32	J	162	GLU	C-N-CA	-6.13	111.76	121.02
39	Q	48	LEU	CA-C-O	6.13	127.97	120.25
4	e	134	GLN	N-CA-C	6.13	123.85	110.80
49	a	199	ALA	N-CA-C	-6.11	105.40	112.92
12	o	61	GLN	CA-C-N	-6.09	112.13	122.67
12	o	61	GLN	C-N-CA	-6.09	112.13	122.67
4	e	169	LEU	N-CA-C	-6.04	104.78	111.36
45	W	15	GLU	N-CA-C	-6.01	105.19	113.18
5	f	39	ALA	CA-C-N	-5.96	114.38	122.91
5	f	39	ALA	C-N-CA	-5.96	114.38	122.91
4	e	109	ARG	CA-C-N	-5.96	112.87	120.98
4	e	109	ARG	C-N-CA	-5.96	112.87	120.98
46	X	38	THR	CA-C-N	-5.96	115.28	122.90
46	X	38	THR	C-N-CA	-5.96	115.28	122.90
6	g	26	ALA	CA-C-N	-5.94	111.98	122.26
6	g	26	ALA	C-N-CA	-5.94	111.98	122.26
31	I	200	VAL	CA-C-N	-5.92	111.23	121.66
31	I	200	VAL	C-N-CA	-5.92	111.23	121.66
42	T	58	MET	CA-C-N	-5.91	110.83	120.64
42	T	58	MET	C-N-CA	-5.91	110.83	120.64
38	P	93	GLU	N-CA-C	-5.91	107.89	114.62
30	H	142	ARG	CA-C-N	-5.91	110.06	121.58
30	H	142	ARG	C-N-CA	-5.91	110.06	121.58
29	G	19	THR	N-CA-C	5.89	123.34	110.80
41	S	16	ALA	CA-C-N	-5.88	111.12	122.06
41	S	16	ALA	C-N-CA	-5.88	111.12	122.06
31	I	118	SER	CA-C-N	-5.88	113.78	122.83
31	I	118	SER	C-N-CA	-5.88	113.78	122.83
31	I	95	GLY	O-C-N	-5.85	115.09	122.70
5	f	75	VAL	CA-C-N	-5.85	110.70	120.30
5	f	75	VAL	C-N-CA	-5.85	110.70	120.30
4	e	172	PHE	N-CA-C	-5.84	106.16	113.28
46	X	66	VAL	O-C-N	5.84	126.48	121.98
35	M	123	GLU	N-CA-C	5.84	117.55	109.15
1	b	64	VAL	O-C-N	-5.83	114.83	122.47
6	g	99	ILE	N-CA-C	-5.83	104.84	110.72
6	g	52	ALA	CA-C-N	-5.82	111.42	121.66
6	g	52	ALA	C-N-CA	-5.82	111.42	121.66
33	K	16	GLU	CA-C-N	-5.81	113.43	123.25
33	K	16	GLU	C-N-CA	-5.81	113.43	123.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	X	41	PRO	N-CA-C	-5.79	106.12	114.18
40	R	43	LYS	CA-C-O	5.79	128.60	121.60
31	I	22	SER	N-CA-C	5.77	123.10	110.80
39	Q	90	PRO	N-CA-C	5.77	121.55	113.53
30	H	136	ALA	CA-C-N	-5.75	113.20	120.56
30	H	136	ALA	C-N-CA	-5.75	113.20	120.56
5	f	112	VAL	N-CA-C	5.74	116.48	109.30
12	o	29	HIS	CA-C-N	-5.73	113.64	122.87
12	o	29	HIS	C-N-CA	-5.73	113.64	122.87
39	Q	34	THR	N-CA-C	-5.73	101.55	110.42
6	g	6	LEU	CA-C-N	-5.71	110.63	121.54
6	g	6	LEU	C-N-CA	-5.71	110.63	121.54
35	M	26	MET	N-CA-C	5.71	113.36	108.22
11	n	79	LEU	N-CA-C	-5.70	102.08	110.52
46	X	5	LYS	N-CA-C	5.69	117.94	111.11
48	Z	58	LYS	CA-C-N	-5.69	110.49	121.58
48	Z	58	LYS	C-N-CA	-5.69	110.49	121.58
51	l	2529	G	N9-C1'-C2'	5.68	120.52	112.00
39	Q	120	ARG	N-CA-C	5.68	117.86	109.62
9	l	11	GLY	CA-C-N	-5.68	111.20	121.14
9	l	11	GLY	C-N-CA	-5.68	111.20	121.14
32	J	84	VAL	N-CA-C	5.67	114.77	106.55
33	K	8	PHE	CA-C-N	-5.67	114.43	122.94
33	K	8	PHE	C-N-CA	-5.67	114.43	122.94
18	u	17	ASP	CA-C-N	-5.67	112.66	120.71
18	u	17	ASP	C-N-CA	-5.67	112.66	120.71
19	v	44	HIS	N-CA-C	5.65	117.30	111.03
51	l	2629	U	C2'-C3'-O3'	-5.65	105.23	113.70
41	S	54	SER	N-CA-C	5.64	119.74	112.86
10	m	60	GLN	N-CA-C	5.64	117.80	110.53
19	v	90	ASP	CA-C-O	5.63	126.38	120.36
41	S	28	ALA	CA-C-N	-5.63	112.10	120.82
41	S	28	ALA	C-N-CA	-5.63	112.10	120.82
45	W	56	ARG	N-CA-C	-5.62	105.15	112.23
14	q	40	LYS	N-CA-C	-5.62	105.15	112.23
39	Q	35	ARG	N-CA-C	5.62	118.04	111.02
2	c	180	VAL	CA-C-N	-5.61	114.42	123.23
2	c	180	VAL	C-N-CA	-5.61	114.42	123.23
51	l	1020	A	C2'-C3'-O3'	5.61	117.92	109.50
4	e	6	TYR	N-CA-C	-5.61	105.31	111.82
31	I	30	LYS	N-CA-C	-5.61	103.87	111.55
46	X	44	ILE	N-CA-C	5.61	116.94	109.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
37	O	76	ILE	O-C-N	-5.60	116.37	122.64
4	e	58	ALA	CA-C-N	-5.59	117.43	123.08
4	e	58	ALA	C-N-CA	-5.59	117.43	123.08
32	J	111	ARG	N-CA-C	-5.59	105.72	112.54
6	g	11	ASN	N-CA-C	-5.59	105.96	112.89
2	c	14	ILE	CA-C-O	5.59	126.20	120.39
32	J	23	THR	N-CA-C	5.59	118.00	111.02
11	n	63	ARG	N-CA-C	-5.58	105.35	111.82
3	d	39	ALA	CA-C-N	-5.57	112.97	120.82
3	d	39	ALA	C-N-CA	-5.57	112.97	120.82
3	d	81	GLY	N-CA-C	-5.57	98.52	110.66
22	y	55	THR	N-CA-C	-5.57	105.13	111.14
41	S	29	ILE	N-CA-C	-5.56	104.51	112.35
31	I	87	GLU	N-CA-C	-5.56	105.14	111.14
32	J	112	ALA	CA-C-N	-5.55	111.20	120.30
32	J	112	ALA	C-N-CA	-5.55	111.20	120.30
51	1	1328	A	N9-C1'-C2'	5.54	120.31	112.00
1	b	213	ARG	N-CA-C	-5.53	106.37	113.23
49	a	164	ARG	CA-C-N	-5.52	112.75	121.86
49	a	164	ARG	C-N-CA	-5.52	112.75	121.86
9	l	95	LEU	N-CA-C	-5.52	106.22	113.12
11	n	66	ALA	N-CA-C	-5.51	106.56	113.28
17	t	10	VAL	N-CA-C	5.49	115.58	110.42
51	1	2273	A	N9-C1'-C2'	5.49	120.23	112.00
15	r	44	GLY	N-CA-C	-5.48	106.06	113.24
32	J	112	ALA	N-CA-C	-5.48	104.94	111.69
50	3	1505	G	N9-C1'-C2'	5.48	120.22	112.00
31	I	14	GLU	CA-C-N	-5.47	113.19	121.51
31	I	14	GLU	C-N-CA	-5.47	113.19	121.51
2	c	152	PRO	N-CA-C	-5.47	101.20	112.47
39	Q	48	LEU	O-C-N	-5.47	116.03	123.14
34	L	129	ASN	N-CA-C	5.46	118.65	111.28
29	G	32	GLY	CA-C-N	5.45	131.95	121.54
29	G	32	GLY	C-N-CA	5.45	131.95	121.54
22	y	50	VAL	N-CA-C	-5.45	104.14	111.44
33	K	6	ILE	CA-C-N	-5.45	115.86	123.10
33	K	6	ILE	C-N-CA	-5.45	115.86	123.10
4	e	49	LEU	N-CA-C	-5.44	105.51	111.82
35	M	37	ASN	N-CA-C	-5.44	105.78	112.90
49	a	196	LEU	N-CA-C	-5.44	106.65	113.28
3	d	40	ARG	N-CA-C	5.43	118.19	110.10
5	f	173	ALA	N-CA-C	-5.43	104.11	111.55

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
53	5	48	C	N1-C1'-C2'	5.43	120.14	112.00
41	S	89	ARG	CA-C-N	-5.43	115.14	122.63
41	S	89	ARG	C-N-CA	-5.43	115.14	122.63
2	c	127	PHE	CA-C-O	5.42	128.00	121.88
37	O	44	THR	O-C-N	-5.42	116.62	122.79
32	J	160	VAL	O-C-N	-5.39	115.83	122.57
19	v	91	PHE	CA-C-N	-5.39	112.91	120.77
19	v	91	PHE	C-N-CA	-5.39	112.91	120.77
5	f	113	ASP	CA-C-N	-5.37	114.24	122.62
5	f	113	ASP	C-N-CA	-5.37	114.24	122.62
42	T	53	ARG	N-CA-C	-5.37	105.50	111.36
50	3	1201	A	C2'-C3'-O3'	5.37	117.55	109.50
4	e	149	ARG	CA-C-O	-5.36	115.32	121.54
22	y	46	VAL	N-CA-C	-5.36	105.16	111.00
26	D	7	PRO	N-CA-C	5.36	119.60	111.19
39	Q	121	PRO	N-CA-C	-5.36	101.43	110.21
3	d	145	ASP	CA-C-N	-5.35	115.33	122.77
3	d	145	ASP	C-N-CA	-5.35	115.33	122.77
22	y	14	LEU	N-CA-C	-5.35	105.61	111.82
26	D	22	MET	N-CA-C	-5.33	106.61	113.23
2	c	103	ASP	N-CA-C	-5.33	108.55	114.62
9	l	40	SER	CA-C-N	-5.32	113.32	123.32
9	l	40	SER	C-N-CA	-5.32	113.32	123.32
1	b	11	GLY	N-CA-C	-5.32	108.16	114.48
6	g	137	GLU	CA-C-O	5.32	124.66	118.97
21	x	29	LEU	CA-C-N	-5.31	114.77	120.03
21	x	29	LEU	C-N-CA	-5.31	114.77	120.03
34	L	39	GLU	CA-C-N	-5.30	112.25	120.31
34	L	39	GLU	C-N-CA	-5.30	112.25	120.31
6	g	32	PRO	CA-C-N	-5.30	113.44	122.56
6	g	32	PRO	C-N-CA	-5.30	113.44	122.56
29	G	57	ASN	N-CA-C	-5.30	106.66	113.23
2	c	127	PHE	CA-C-N	-5.30	114.75	122.65
2	c	127	PHE	C-N-CA	-5.30	114.75	122.65
39	Q	91	GLY	CA-C-N	-5.29	114.39	121.80
39	Q	91	GLY	C-N-CA	-5.29	114.39	121.80
38	P	31	VAL	N-CA-C	5.29	116.20	108.53
29	G	73	ARG	O-C-N	-5.28	115.56	122.59
38	P	29	THR	CA-C-O	5.27	127.85	120.52
42	T	46	LYS	N-CA-C	5.27	122.03	110.80
28	F	30	GLU	N-CA-C	5.27	118.51	108.12
29	G	217	ALA	CA-C-N	-5.27	111.30	121.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	G	217	ALA	C-N-CA	-5.27	111.30	121.58
12	o	58	ILE	CA-C-O	5.26	126.30	120.46
49	a	203	GLN	CA-C-N	-5.25	113.19	121.86
49	a	203	GLN	C-N-CA	-5.25	113.19	121.86
32	J	86	GLY	N-CA-C	-5.25	100.73	113.18
42	T	74	VAL	N-CA-C	5.25	115.87	110.36
31	I	85	THR	N-CA-C	5.24	116.68	110.97
4	e	34	THR	CA-C-O	5.24	126.02	120.36
51	l	501	A	N9-C1'-C2'	5.23	119.84	112.00
8	k	9	ASN	CA-C-N	-5.22	113.88	121.71
8	k	9	ASN	C-N-CA	-5.22	113.88	121.71
32	J	25	LYS	N-CA-C	5.22	121.91	110.80
49	a	60	ARG	CA-C-N	-5.22	116.93	122.30
49	a	60	ARG	C-N-CA	-5.22	116.93	122.30
29	G	46	VAL	CB-CA-C	-5.22	108.82	114.35
8	k	87	LEU	CA-C-N	-5.21	115.60	122.85
8	k	87	LEU	C-N-CA	-5.21	115.60	122.85
12	o	62	LEU	N-CA-C	5.20	118.16	110.46
9	l	80	SER	CA-C-N	-5.20	113.96	122.54
9	l	80	SER	C-N-CA	-5.20	113.96	122.54
5	f	8	VAL	CA-C-O	5.20	126.87	120.84
15	r	52	PRO	N-CA-C	5.20	119.37	111.11
24	B	54	ILE	CA-C-N	-5.18	114.88	122.19
24	B	54	ILE	C-N-CA	-5.18	114.88	122.19
30	H	41	TYR	CA-C-N	-5.18	111.71	120.58
30	H	41	TYR	C-N-CA	-5.18	111.71	120.58
4	e	98	PHE	N-CA-C	-5.18	105.71	111.36
29	G	75	ALA	O-C-N	5.18	127.87	122.23
8	k	93	GLN	CA-C-N	5.17	125.17	119.90
8	k	93	GLN	C-N-CA	5.17	125.17	119.90
36	N	96	GLU	N-CA-C	-5.16	105.72	112.23
17	t	52	GLU	N-CA-C	5.16	118.71	111.90
45	W	64	LEU	CA-C-N	-5.16	115.58	123.47
45	W	64	LEU	C-N-CA	-5.16	115.58	123.47
34	L	146	ALA	CA-C-N	-5.16	112.00	122.31
34	L	146	ALA	C-N-CA	-5.16	112.00	122.31
14	q	83	LYS	N-CA-C	-5.14	105.75	112.23
29	G	6	ARG	N-CA-C	5.14	118.67	110.70
32	J	54	GLU	CA-C-N	5.14	123.48	120.24
32	J	54	GLU	C-N-CA	5.14	123.48	120.24
33	K	42	TRP	CA-C-N	-5.14	113.89	122.43
33	K	42	TRP	C-N-CA	-5.14	113.89	122.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	B	19	ASP	CA-C-O	5.14	125.44	119.32
18	u	51	LEU	N-CA-C	5.12	121.72	110.80
1	b	85	ASN	CA-C-N	-5.12	114.63	122.87
1	b	85	ASN	C-N-CA	-5.12	114.63	122.87
6	g	17	ASP	N-CA-C	-5.12	101.88	109.96
33	K	19	PRO	N-CA-C	5.11	120.55	113.65
1	b	137	GLY	N-CA-C	-5.11	107.64	115.00
1	b	135	PRO	CA-C-O	5.10	127.43	121.31
32	J	55	VAL	CB-CA-C	-5.10	108.94	114.35
48	Z	52	VAL	N-CA-C	-5.10	105.57	110.72
40	R	54	THR	N-CA-C	-5.09	105.81	112.23
34	L	60	ALA	N-CA-C	-5.09	105.43	111.69
49	a	10	VAL	CA-C-N	-5.08	113.20	120.42
49	a	10	VAL	C-N-CA	-5.08	113.20	120.42
6	g	70	GLU	CA-C-N	-5.08	112.24	120.72
6	g	70	GLU	C-N-CA	-5.08	112.24	120.72
38	P	30	ILE	CA-C-N	-5.08	116.55	123.10
38	P	30	ILE	C-N-CA	-5.08	116.55	123.10
47	Y	70	LYS	N-CA-C	-5.07	105.75	111.28
8	k	89	ASN	N-CA-C	5.07	121.60	110.80
35	M	34	ALA	CA-C-O	5.06	125.79	119.97
37	O	67	ILE	CA-C-O	5.06	124.72	120.22
2	c	111	GLY	O-C-N	-5.05	119.00	123.65
11	n	28	LEU	CA-C-N	-5.05	115.11	122.28
11	n	28	LEU	C-N-CA	-5.05	115.11	122.28
41	S	14	ALA	CA-C-O	5.05	125.90	120.55
31	I	97	LEU	N-CA-C	5.04	116.47	110.97
36	N	103	VAL	CA-C-O	5.04	125.21	119.92
48	Z	59	LEU	CA-C-N	-5.04	114.23	122.54
48	Z	59	LEU	C-N-CA	-5.04	114.23	122.54
29	G	50	ASN	CA-C-N	-5.03	113.53	120.28
29	G	50	ASN	C-N-CA	-5.03	113.53	120.28
40	R	32	ILE	CA-C-N	-5.03	112.66	120.31
40	R	32	ILE	C-N-CA	-5.03	112.66	120.31
1	b	221	GLY	CA-C-O	5.02	125.83	120.30
35	M	78	SER	N-CA-C	5.02	117.45	108.17
34	L	142	ARG	N-CA-C	-5.01	106.00	111.82
35	M	37	ASN	CA-C-N	-5.01	113.59	120.46
35	M	37	ASN	C-N-CA	-5.01	113.59	120.46
9	l	139	GLY	CA-C-O	5.01	125.24	119.13
30	H	35	ASP	N-CA-C	-5.01	105.90	111.36
29	G	138	ARG	N-CA-C	-5.00	105.91	111.36

There are no chirality outliers.

All (56) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
51	1	1171	G	Sidechain
51	1	1241	A	Sidechain
51	1	1301	A	Sidechain
51	1	1328	A	Sidechain
51	1	1558	C	Sidechain
51	1	1580	A	Sidechain
51	1	1647	U	Sidechain
51	1	1713	A	Sidechain
51	1	1717	A	Sidechain
51	1	1828	G	Sidechain
51	1	1937	A	Sidechain
51	1	196	A	Sidechain
51	1	2061	G	Sidechain
51	1	2109	U	Sidechain
51	1	2180	U	Sidechain
51	1	2266	A	Sidechain
51	1	2273	A	Sidechain
51	1	2319	G	Sidechain
51	1	2391	G	Sidechain
51	1	2392	A	Sidechain
51	1	2447	G	Sidechain
51	1	2529	G	Sidechain
51	1	2532	G	Sidechain
51	1	27	G	Sidechain
51	1	2848	G	Sidechain
51	1	2868	A	Sidechain
51	1	328	U	Sidechain
51	1	446	G	Sidechain
51	1	450	G	Sidechain
51	1	476	G	Sidechain
51	1	477	A	Sidechain
51	1	500	G	Sidechain
51	1	501	A	Sidechain
51	1	506	G	Sidechain
51	1	51	G	Sidechain
51	1	512	G	Sidechain
51	1	683	U	Sidechain
51	1	726	G	Sidechain
51	1	727	A	Sidechain
51	1	775	G	Sidechain

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Mol	Chain	Res	Type	Group
51	1	975	A	Sidechain
52	2	24	G	Sidechain
50	3	1057	G	Sidechain
50	3	1182	G	Sidechain
50	3	1316	G	Sidechain
50	3	297	G	Sidechain
50	3	413	G	Sidechain
50	3	428	G	Sidechain
50	3	532	A	Sidechain
50	3	872	A	Sidechain
50	3	898	G	Sidechain
50	3	938	A	Sidechain
29	G	14	HIS	Mainchain
32	J	86	GLY	Mainchain
32	J	92	ARG	Mainchain
4	e	149	ARG	Mainchain

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	b	2083	0	2157	120	0
2	c	1565	0	1616	55	0
3	d	1552	0	1619	55	0
4	e	1411	0	1447	122	0
5	f	1323	0	1374	69	0
6	g	1111	0	1148	57	0
7	j	1129	0	1162	55	0
8	k	939	0	1012	54	0
9	l	1045	0	1117	48	0
10	m	1074	0	1157	50	0
11	n	961	0	1000	37	0
12	o	892	0	923	42	0
13	p	917	0	965	45	0
14	q	947	0	1022	36	0
15	r	816	0	839	31	0
16	s	857	0	922	27	0
17	t	739	0	807	31	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
18	u	780	0	834	21	0
19	v	753	0	780	33	0
20	w	575	0	592	13	0
21	x	625	0	655	26	0
22	y	509	0	543	24	0
23	z	449	0	491	24	0
24	B	444	0	461	17	0
25	C	410	0	440	14	0
26	D	377	0	418	17	0
27	E	504	0	574	17	0
28	F	302	0	343	24	0
29	G	1757	0	1787	98	0
30	H	1625	0	1699	89	0
31	I	1643	0	1710	110	0
32	J	1157	0	1198	74	0
33	K	824	0	815	42	0
34	L	1182	0	1240	52	0
35	M	979	0	1034	46	0
36	N	1022	0	1070	71	0
37	O	787	0	828	48	0
38	P	870	0	878	31	0
39	Q	955	0	1019	64	0
40	R	884	0	944	65	0
41	S	805	0	847	58	0
42	T	714	0	737	33	0
43	U	649	0	666	47	0
44	V	649	0	691	41	0
45	W	536	0	552	21	0
46	X	638	0	665	52	0
47	Y	665	0	714	31	0
48	Z	545	0	579	34	0
49	a	1027	0	1092	59	0
50	3	33012	0	16618	872	0
51	1	62317	0	31346	1187	0
52	2	2568	0	1303	65	0
53	5	1640	0	836	56	0
54	4	437	0	219	9	0
55	5	10	0	10	1	0
All	All	144986	0	97515	4022	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 17.

All (4022) 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)
51:1:2800:A:H3'	51:1:2801:G:H5'	1.26	1.16
44:V:46:HIS:HB2	44:V:70:LYS:HD3	1.20	1.13
30:H:112:ALA:HB3	30:H:184:ASN:HD22	1.14	1.12
51:1:783:A:H2'	51:1:784:G:H4'	1.12	1.11
51:1:2245:U:H5'	51:1:2246:G:H5''	1.37	1.04
4:e:107:VAL:HG13	4:e:108:PRO:HD3	1.39	1.04
50:3:1259:C:H3'	50:3:1260:G:H5''	1.38	1.03
52:2:3:C:H2'	52:2:4:C:H5''	1.39	1.03
51:1:1470:A:H62	51:1:1521:G:H21	1.10	1.00
51:1:1912:A:H62	51:1:1917:U:H3	1.07	1.00
10:m:45:GLN:HE21	51:1:2485:G:H5''	1.23	0.99
44:V:45:VAL:HG21	44:V:60:ILE:HD13	1.39	0.98
51:1:1645:G:H5''	51:1:1646:C:H5'	1.43	0.97
50:3:516:U:H3	50:3:533:A:H62	1.08	0.97
51:1:1103:A:H3'	51:1:1104:C:H5''	1.43	0.97
17:t:8:LEU:HD21	22:y:22:LEU:HD23	1.47	0.97
50:3:1441:A:H62	50:3:1461:G:H21	1.01	0.97
48:Z:13:VAL:HG23	48:Z:14:ALA:H	1.30	0.96
50:3:405:U:H3'	50:3:406:G:H5'	1.48	0.95
2:c:1:MET:HG3	2:c:2:ILE:H	1.30	0.95
51:1:121:G:H4'	51:1:149:A:H5'	1.46	0.95
36:N:121:ARG:HG3	50:3:1348:U:H4'	1.45	0.95
51:1:1527:G:H21	51:1:1545:A:H62	0.98	0.94
43:U:5:ARG:HB2	50:3:376:G:H5''	1.46	0.94
51:1:2508:G:H1	51:1:2580:U:H5	1.08	0.94
36:N:123:ARG:HB2	50:3:1343:G:H4'	1.45	0.93
30:H:55:VAL:HB	30:H:66:THR:HG23	1.51	0.92
51:1:310:A:O2'	51:1:311:A:H2'	1.70	0.92
50:3:1248:A:H2	50:3:1289:A:H62	1.16	0.91
40:R:6:ILE:HG23	40:R:7:ASN:H	1.36	0.91
39:Q:120:ARG:HH12	50:3:500:G:H5'	1.36	0.91
39:Q:56:LEU:HD11	39:Q:62:VAL:HG22	1.53	0.91
51:1:2452:C:H42	51:1:2504:U:H3	1.09	0.91
33:K:38:ARG:HG2	33:K:63:ASN:HD22	1.35	0.90
35:M:80:PRO:HG2	50:3:878:A:H5'	1.51	0.90
39:Q:120:ARG:NH1	50:3:500:G:H5'	1.87	0.90
51:1:2629:U:H5''	51:1:2630:G:OP1	1.73	0.89
13:p:59:THR:HG22	13:p:72:VAL:HG12	1.54	0.89
50:3:1236:A:H4'	50:3:1304:G:H4'	1.53	0.89
51:1:2245:U:H5'	51:1:2246:G:C5'	2.03	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2312:U:H2'	51:1:2313:C:H5'	1.53	0.88
4:e:140:ILE:HD12	4:e:143:ASP:HB3	1.55	0.88
34:L:52:ARG:HH12	34:L:121:ASN:HD22	1.21	0.88
51:1:783:A:C2'	51:1:784:G:H4'	2.02	0.88
51:1:2457:U:H5	51:1:2494:G:H1	1.20	0.88
10:m:63:ILE:HG12	10:m:105:MET:HE1	1.56	0.87
49:a:38:PHE:HZ	49:a:218:MET:HG3	1.39	0.87
11:n:44:LEU:HD23	11:n:113:ILE:HD13	1.55	0.87
1:b:106:PRO:HD2	1:b:109:LEU:HD22	1.56	0.87
30:H:182:ASP:HB2	30:H:201:ILE:HB	1.57	0.87
29:G:142:LYS:HA	29:G:145:ASN:HD22	1.39	0.87
36:N:83:THR:HG22	36:N:97:LEU:HD11	1.56	0.86
51:1:1141:U:H4'	51:1:1142:A:O4'	1.75	0.86
41:S:30:ILE:HG13	41:S:40:ARG:HG2	1.58	0.86
39:Q:29:LYS:HE2	39:Q:58:ASN:HD22	1.41	0.86
51:1:9:G:H22	51:1:2629:U:H2'	1.41	0.86
1:b:145:MET:HE1	51:1:1800:C:H3'	1.58	0.85
5:f:17:LYS:HB3	5:f:24:THR:HB	1.57	0.85
34:L:70:PRO:HG3	34:L:98:LEU:HD23	1.58	0.85
29:G:57:ASN:HD21	29:G:219:THR:HG22	1.40	0.85
51:1:955:U:H3	51:1:962:G:H1	1.20	0.85
51:1:1443:U:H2'	51:1:1444:G:H8	1.38	0.85
37:O:30:LYS:HE2	37:O:36:VAL:HB	1.58	0.85
8:k:102:PRO:HD3	13:p:65:ASN:HD22	1.41	0.85
3:d:24:ASN:HD22	3:d:27:LEU:HB2	1.42	0.85
38:P:73:VAL:HB	38:P:78:ILE:HD12	1.59	0.84
51:1:1874:C:H2'	51:1:1875:G:O4'	1.76	0.84
52:2:3:C:C2'	52:2:4:C:H5''	2.07	0.84
20:w:38:GLY:HA2	51:1:2330:G:H21	1.42	0.84
39:Q:52:CYS:HB2	39:Q:66:ILE:HD11	1.59	0.84
50:3:1033:G:H2'	50:3:1034:G:H5''	1.56	0.84
33:K:53:LYS:HA	33:K:53:LYS:HE2	1.60	0.84
54:4:18:G:H3'	54:4:19:U:H5'	1.59	0.84
39:Q:23:LEU:HD23	39:Q:29:LYS:HD3	1.58	0.84
41:S:58:ARG:NH2	50:3:980:C:H4'	1.93	0.84
36:N:27:ILE:HD13	36:N:34:LEU:HD22	1.60	0.83
43:U:41:PRO:HB2	50:3:450:G:H4'	1.60	0.83
1:b:196:ASN:HD21	1:b:199:HIS:HB2	1.44	0.83
38:P:86:LYS:HD3	38:P:112:VAL:HG23	1.60	0.83
30:H:110:LEU:HG	30:H:143:LEU:HD23	1.60	0.82
34:L:79:VAL:HG13	34:L:80:GLY:H	1.41	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:X:40:PHE:HB2	46:X:43:MET:HG3	1.61	0.82
51:1:1450:G:H21	51:1:1452:G:H1	1.26	0.82
19:v:14:LYS:O	19:v:18:ARG:HG3	1.80	0.82
4:e:107:VAL:HG13	4:e:108:PRO:CD	2.08	0.82
39:Q:86:VAL:HG11	39:Q:89:LEU:HB2	1.62	0.82
4:e:35:LEU:HD22	4:e:60:SER:HB2	1.61	0.81
36:N:98:ARG:HD2	36:N:103:VAL:HG11	1.61	0.81
38:P:28:ASN:ND2	38:P:56:LYS:HD3	1.95	0.81
51:1:1443:U:H2'	51:1:1444:G:C8	2.15	0.81
2:c:46:ARG:HB2	2:c:84:LEU:HD12	1.62	0.81
46:X:77:ARG:HD3	50:3:1222:G:H5''	1.61	0.81
50:3:225:C:H2'	50:3:226:G:H5''	1.63	0.81
51:1:911:A:H5'	51:1:912:C:H5''	1.62	0.81
37:O:37:ARG:HG3	50:3:1124:G:H5''	1.63	0.81
53:5:62:C:H2'	53:5:63:G:C8	2.16	0.81
43:U:31:ARG:HB2	50:3:310:G:H5''	1.63	0.81
32:J:88:HIS:HB3	32:J:137:ARG:HH22	1.45	0.80
12:o:94:ARG:NH2	51:1:2293:G:H5''	1.96	0.80
51:1:655:A:H4'	51:1:656:G:H5'	1.62	0.80
1:b:196:ASN:ND2	1:b:199:HIS:HB2	1.97	0.80
22:y:47:ARG:HH22	51:1:60:G:H5''	1.45	0.80
39:Q:106:VAL:HG21	39:Q:109:ARG:HD3	1.61	0.80
12:o:43:ASN:ND2	12:o:45:SER:HB2	1.97	0.79
19:v:4:ILE:HD13	19:v:47:VAL:HG12	1.63	0.79
51:1:1093:G:H21	51:1:1098:A:H62	1.29	0.79
37:O:39:PRO:HD2	50:3:1123:U:H4'	1.62	0.79
39:Q:48:LEU:HB2	50:3:520:A:OP1	1.81	0.79
51:1:2277:G:H2'	51:1:2278:A:H5''	1.64	0.79
49:a:7:ARG:HD3	51:1:2128:G:H5'	1.63	0.79
50:3:252:U:O2	50:3:252:U:H2'	1.81	0.79
50:3:413:G:N2	50:3:428:G:H1'	1.98	0.79
50:3:212:G:H2'	50:3:213:G:H8	1.46	0.79
37:O:7:ARG:HB3	37:O:101:SER:HB3	1.64	0.79
51:1:1745:A:H2'	51:1:1746:A:H8	1.47	0.79
10:m:45:GLN:NE2	51:1:2485:G:H5''	1.96	0.79
47:Y:70:LYS:HG3	47:Y:73:ARG:HH12	1.48	0.79
49:a:175:ILE:HD12	49:a:185:LEU:HD22	1.64	0.79
2:c:181:ASP:HB3	2:c:183:GLU:OE2	1.81	0.78
50:3:1286:U:H2'	50:3:1287:A:H5'	1.64	0.78
4:e:163:GLU:OE2	4:e:164:GLU:HG2	1.82	0.78
31:I:10:LEU:HD11	31:I:20:LEU:HD22	1.65	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:s:42:LYS:HB2	51:1:2010:G:H5''	1.64	0.78
50:3:673:A:H2'	50:3:674:G:C8	2.18	0.78
4:e:43:ILE:HD12	4:e:77:LYS:HD2	1.65	0.78
40:R:70:ARG:HB3	40:R:74:MET:HE2	1.64	0.78
15:r:15:SER:H	15:r:18:GLN:HE21	1.32	0.78
51:1:2297:A:N1	51:1:2321:U:H5	1.82	0.78
29:G:103:TRP:HE1	29:G:107:ARG:HH21	1.32	0.78
30:H:119:ILE:HD11	30:H:136:ALA:HB2	1.63	0.78
43:U:6:LEU:HD12	50:3:375:U:H5''	1.65	0.78
51:1:1744:A:H3'	51:1:1745:A:C8	2.19	0.78
51:1:2529:G:H5'	51:1:2530:A:H5''	1.65	0.78
34:L:70:PRO:HA	34:L:137:ARG:NH1	1.98	0.78
31:I:103:ARG:HB2	31:I:170:LEU:HD21	1.65	0.78
50:3:1261:A:H1'	50:3:1283:U:H5''	1.66	0.78
35:M:80:PRO:HG2	50:3:878:A:C5'	2.14	0.78
46:X:10:ILE:HG21	46:X:40:PHE:CZ	2.19	0.78
50:3:1230:C:C5'	53:5:30:G:H5''	2.14	0.78
51:1:644:A:H61	51:1:2349:G:H21	1.29	0.78
38:P:33:ILE:HD12	38:P:73:VAL:HG11	1.66	0.77
26:D:24:THR:HG23	26:D:27:GLY:H	1.49	0.77
51:1:161:A:H3'	51:1:162:U:H5''	1.65	0.77
30:H:30:ASP:HA	41:S:64:ARG:HH12	1.49	0.77
51:1:2590:A:N1	51:1:2604:U:H5	1.82	0.77
5:f:90:GLY:HA3	5:f:93:TYR:HD2	1.47	0.77
50:3:1201:A:H1'	50:3:1202:U:OP2	1.85	0.77
49:a:46:VAL:HB	49:a:171:ILE:HG23	1.67	0.77
4:e:71:LYS:HB2	51:1:2312:U:H5'	1.66	0.77
41:S:26:LEU:HD23	41:S:26:LEU:H	1.49	0.77
8:k:48:PRO:HB3	50:3:1422:G:H5'	1.66	0.77
30:H:46:LEU:HG	30:H:49:ALA:HB3	1.66	0.77
50:3:327:A:O2'	50:3:328:C:H4'	1.85	0.77
11:n:22:ARG:HG3	11:n:70:THR:HA	1.66	0.76
6:g:72:ILE:HD12	6:g:108:VAL:HG13	1.67	0.76
15:r:76:LYS:HB2	15:r:85:LYS:HB3	1.65	0.76
33:K:89:VAL:HG23	50:3:737:C:H5'	1.67	0.76
13:p:52:ARG:NH2	51:1:2720:U:H5''	2.01	0.76
3:d:1:MET:HE1	3:d:20:GLY:HA3	1.67	0.76
16:s:86:MET:HE3	16:s:87:PRO:HD2	1.65	0.76
19:v:75:GLN:HB2	19:v:92:VAL:HG13	1.67	0.76
49:a:65:LEU:CD1	49:a:188:ASN:HD21	1.99	0.76
51:1:1020:A:H1'	51:1:1021:A:OP2	1.86	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2314:A:HO2'	51:1:2315:G:H8	1.34	0.76
38:P:23:HIS:HB3	38:P:30:ILE:HG23	1.66	0.75
35:M:29:SER:HB2	50:3:589:U:H5''	1.69	0.75
51:1:2105:U:H2'	51:1:2106:U:O4'	1.86	0.75
35:M:113:ARG:HG3	35:M:116:ARG:HH21	1.52	0.75
44:V:12:VAL:HB	44:V:21:VAL:HG23	1.68	0.75
33:K:48:ALA:HB1	45:W:68:PRO:HG3	1.69	0.75
38:P:16:SER:OG	38:P:79:LYS:HB3	1.87	0.75
51:1:1872:A:H2'	51:1:1873:G:O4'	1.86	0.75
32:J:156:ARG:HH22	32:J:163:ILE:HB	1.50	0.74
35:M:9:MET:HG3	35:M:26:MET:SD	2.27	0.74
12:o:40:ILE:HG13	12:o:47:VAL:HG12	1.70	0.74
1:b:48:ILE:HD11	1:b:51:ARG:HA	1.69	0.74
36:N:42:THR:HG23	50:3:1291:U:H5''	1.69	0.74
52:2:1:U:H2'	52:2:2:G:C8	2.22	0.74
4:e:33:ILE:HB	4:e:90:LEU:HB2	1.69	0.74
50:3:1441:A:H62	50:3:1461:G:N2	1.84	0.74
4:e:148:VAL:HG22	4:e:150:GLY:H	1.52	0.74
51:1:85:G:H2'	51:1:86:G:H5''	1.68	0.74
30:H:3:LYS:NZ	50:3:1191:A:H5''	2.01	0.74
40:R:27:THR:HG21	50:3:1328:C:OP1	1.87	0.74
50:3:412:A:N1	50:3:414:A:H1'	2.02	0.74
51:1:435:C:H2'	51:1:436:C:H5'	1.68	0.74
39:Q:36:VAL:HG21	39:Q:73:LEU:HB3	1.68	0.74
40:R:113:LYS:HG2	40:R:114:PRO:HD3	1.70	0.74
50:3:68:G:H22	50:3:101:A:H2	1.36	0.74
50:3:129:A:O2'	50:3:130:A:H5''	1.86	0.74
32:J:40:ASP:OD2	32:J:42:ASN:HB2	1.88	0.74
32:J:44:ARG:HD2	32:J:70:MET:HB3	1.69	0.74
5:f:148:ARG:HG3	5:f:152:ARG:HE	1.52	0.73
51:1:1175:A:H3'	51:1:1176:U:H5'	1.69	0.73
51:1:1847:A:H2'	51:1:1848:A:H5''	1.70	0.73
30:H:5:HIS:HB3	41:S:88:MET:HE3	1.70	0.73
42:T:68:TYR:HA	42:T:71:ARG:HH12	1.53	0.73
8:k:40:LYS:HE3	8:k:57:VAL:HG12	1.71	0.73
32:J:80:LEU:HB3	32:J:97:PRO:HA	1.70	0.73
35:M:45:ILE:HD13	35:M:60:LEU:HD22	1.69	0.73
16:s:66:ILE:H	16:s:66:ILE:HD12	1.52	0.73
1:b:159:THR:HG22	1:b:160:TYR:H	1.54	0.73
7:j:58:ASN:HD21	7:j:128:ASN:HB2	1.52	0.73
36:N:125:GLN:HE21	50:3:942:G:H21	1.34	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1138:G:H2'	51:1:1139:G:O4'	1.88	0.73
6:g:27:ARG:HH22	51:1:2091:C:H5''	1.52	0.73
29:G:181:PRO:HA	29:G:196:ASP:OD2	1.89	0.72
40:R:48:SER:O	40:R:52:ILE:HG13	1.89	0.72
20:w:62:LYS:HG3	20:w:81:GLU:HG3	1.71	0.72
39:Q:49:ARG:HH12	50:3:521:G:H8	1.36	0.72
17:t:48:GLN:OE1	17:t:54:GLU:HA	1.88	0.72
26:D:34:ARG:HD3	51:1:467:G:OP2	1.88	0.72
35:M:11:THR:HG22	35:M:15:ASN:HD21	1.54	0.72
50:3:1230:C:H5''	53:5:30:G:H5''	1.71	0.72
53:5:47:U:H3'	53:5:48:C:H5'	1.69	0.72
4:e:110:ILE:HD12	4:e:132:ARG:HG3	1.69	0.72
7:j:37:ARG:NH2	7:j:110:PRO:HG3	2.03	0.72
22:y:47:ARG:NH2	51:1:60:G:H5''	2.05	0.72
1:b:106:PRO:HG2	1:b:109:LEU:HB2	1.70	0.72
4:e:25:MET:HE2	4:e:25:MET:HA	1.71	0.72
4:e:129:MET:HB2	4:e:153:ILE:HG23	1.70	0.72
50:3:218:U:H2'	50:3:219:U:C6	2.25	0.72
2:c:8:LYS:HB2	2:c:201:LEU:HD11	1.70	0.72
5:f:83:THR:HG22	5:f:133:LYS:HG2	1.71	0.72
20:w:25:GLU:HG3	51:1:923:G:H4'	1.71	0.72
51:1:1093:G:N2	51:1:1098:A:H62	1.87	0.72
30:H:112:ALA:HB3	30:H:184:ASN:ND2	1.98	0.72
40:R:21:ILE:HB	40:R:24:VAL:HG12	1.71	0.72
43:U:70:ARG:HH12	43:U:74:LEU:HD21	1.53	0.72
4:e:76:PHE:HB2	51:1:2311:A:C8	2.25	0.72
8:k:60:ALA:HA	8:k:87:LEU:HD13	1.72	0.72
10:m:136:MET:SD	19:v:57:TYR:HB3	2.28	0.72
4:e:26:GLN:HE21	52:2:57:A:H4'	1.54	0.71
13:p:96:LEU:HB3	13:p:99:LEU:HD13	1.70	0.71
39:Q:13:ARG:HH11	39:Q:14:LYS:H	1.38	0.71
50:3:413:G:H22	50:3:428:G:H1'	1.54	0.71
13:p:26:GLU:HB3	13:p:84:SER:HB3	1.72	0.71
29:G:41:ASN:HD21	29:G:44:LYS:HE3	1.55	0.71
34:L:110:ARG:O	34:L:118:ARG:HD2	1.88	0.71
36:N:17:ARG:HB2	36:N:65:THR:HG23	1.71	0.71
50:3:1404:C:H2'	50:3:1405:G:C8	2.25	0.71
51:1:1807:G:H2'	51:1:1808:A:H5'	1.70	0.71
10:m:42:THR:OG1	10:m:45:GLN:HG3	1.90	0.71
51:1:2528:U:H2'	51:1:2529:G:H5''	1.70	0.71
53:5:17(A):U:H3'	53:5:18:G:H5'	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:G:103:TRP:HE1	29:G:107:ARG:NH2	1.87	0.71
50:3:273:U:H2'	50:3:274:A:H5'	1.73	0.71
4:e:76:PHE:HB2	51:1:2311:A:H1'	1.72	0.71
19:v:56:PHE:CE1	19:v:61:LEU:HD11	2.25	0.71
47:Y:19:HIS:HE1	47:Y:23:ARG:HH11	1.36	0.71
50:3:411:A:H1'	50:3:413:G:H1'	1.71	0.71
50:3:701:U:H4'	50:3:703:G:H1'	1.70	0.71
31:I:113:ALA:O	31:I:117:VAL:HG23	1.91	0.71
51:1:362:A:H3'	51:1:363:G:H8	1.55	0.71
53:5:1:C:H2'	53:5:2:G:C8	2.26	0.71
28:F:2:LYS:HA	28:F:2:LYS:HE2	1.72	0.71
37:O:59:LYS:HE2	37:O:62:ARG:HH21	1.55	0.71
51:1:280:U:H2'	51:1:281:C:C2	2.25	0.71
16:s:88:ARG:HG3	16:s:94:ASP:OD2	1.91	0.71
27:E:24:LYS:HD3	27:E:46:LYS:HE3	1.71	0.71
44:V:16:MET:HE1	44:V:21:VAL:HG22	1.73	0.71
50:3:292:G:H21	50:3:608:A:H61	1.39	0.71
50:3:1166:G:C6	50:3:1168:U:H5''	2.26	0.71
2:c:15:PHE:H	13:p:11:GLN:HE22	1.39	0.70
3:d:117:ARG:HH12	9:l:2:ARG:HG2	1.55	0.70
36:N:110:VAL:HA	50:3:1348:U:OP2	1.90	0.70
37:O:51:VAL:HG22	37:O:52:LEU:H	1.56	0.70
50:3:539:A:H2'	50:3:540:G:C8	2.26	0.70
2:c:12:THR:HG23	13:p:4:ILE:HD11	1.71	0.70
33:K:3:HIS:N	33:K:92:THR:HG22	2.06	0.70
39:Q:13:ARG:NH1	39:Q:14:LYS:H	1.88	0.70
41:S:52:ARG:HB3	41:S:58:ARG:NH1	2.06	0.70
41:S:58:ARG:HH21	50:3:980:C:H4'	1.55	0.70
51:1:511:U:H2'	51:1:512:G:H5'	1.73	0.70
51:1:1810:A:H2'	51:1:1811:G:O4'	1.91	0.70
11:n:29:VAL:HG21	11:n:75:ILE:HG23	1.72	0.70
51:1:2528:U:C2'	51:1:2529:G:H5''	2.20	0.70
30:H:148:ILE:HG22	30:H:169:GLU:HB3	1.74	0.70
1:b:62:ARG:NE	1:b:84:PRO:HD2	2.06	0.70
1:b:180:MET:HB2	1:b:267:VAL:HB	1.73	0.70
51:1:1416:G:H2'	51:1:1417:C:C6	2.26	0.70
50:3:67:C:H2'	50:3:68:G:C8	2.27	0.70
50:3:1259:C:H3'	50:3:1260:G:C5'	2.20	0.70
6:g:4:ILE:HG13	6:g:37:VAL:HG13	1.72	0.70
7:j:26:GLY:HA3	51:1:1140:C:H5'	1.72	0.70
51:1:281:C:H2'	51:1:282:A:H8	1.54	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:106:LEU:HD13	5:f:151:ARG:HG2	1.74	0.70
50:3:1001:C:H2'	50:3:1002:G:C8	2.26	0.70
29:G:9:LEU:HD23	29:G:9:LEU:O	1.92	0.70
32:J:22:LYS:HD3	32:J:29:ILE:HD11	1.74	0.70
50:3:459:A:H2'	50:3:460:A:C8	2.27	0.70
51:1:2286:G:H4'	51:1:2287:A:O5'	1.92	0.70
51:1:2297:A:N1	51:1:2321:U:C5	2.60	0.70
1:b:237:ARG:HH21	51:1:2590:A:H5''	1.57	0.70
50:3:715:A:H2'	50:3:716:A:C8	2.27	0.70
19:v:35:GLU:HB2	19:v:93:ARG:HH12	1.56	0.69
29:G:124:THR:HB	29:G:127:LYS:HE2	1.74	0.69
51:1:1721:G:N2	51:1:1738:G:H1'	2.06	0.69
1:b:62:ARG:HE	1:b:84:PRO:HD2	1.57	0.69
8:k:76:VAL:H	13:p:72:VAL:HG22	1.57	0.69
29:G:14:HIS:O	29:G:15:PHE:O	2.10	0.69
4:e:59:ILE:HD12	4:e:134:GLN:HG2	1.72	0.69
30:H:115:VAL:O	30:H:119:ILE:HG12	1.92	0.69
32:J:148:SER:HB3	32:J:151:MET:HG2	1.75	0.69
38:P:88:PRO:HG3	48:Z:28:LEU:HD21	1.75	0.69
32:J:84:VAL:HB	32:J:95:MET:HB3	1.74	0.69
10:m:109:PRO:HG2	10:m:112:LEU:HB2	1.73	0.69
29:G:70:GLY:HA3	29:G:79:VAL:HG21	1.75	0.69
44:V:77:VAL:HG12	44:V:80:LYS:HG2	1.74	0.69
49:a:11:ILE:O	49:a:15:VAL:HG23	1.92	0.69
49:a:48:LEU:HD21	49:a:165:ASN:ND2	2.07	0.69
50:3:1369:C:H2'	50:3:1370:G:H8	1.56	0.69
31:I:12:ARG:HH22	50:3:428:G:H3'	1.58	0.69
31:I:115:GLN:HE21	31:I:119:HIS:CE1	2.10	0.69
8:k:49:ARG:HH22	50:3:1422:G:H4'	1.57	0.69
11:n:52:ILE:O	11:n:56:LYS:HG3	1.93	0.69
16:s:29:VAL:HG21	16:s:69:LEU:HD23	1.75	0.69
27:E:61:LEU:HD12	27:E:61:LEU:O	1.93	0.69
29:G:22:TRP:HE1	50:3:830:G:H5'	1.56	0.69
31:I:70:GLN:HA	31:I:73:ASN:HD22	1.55	0.69
33:K:29:ILE:HB	33:K:34:GLY:HA3	1.74	0.69
41:S:53:ASP:HA	41:S:58:ARG:HD3	1.75	0.69
41:S:63:CYS:HB3	41:S:67:GLY:H	1.57	0.69
49:a:16:ASP:HB2	49:a:21:TYR:HE2	1.57	0.69
50:3:389:A:H3'	50:3:390:U:H6	1.58	0.69
50:3:1330:U:H2'	50:3:1331:G:O4'	1.91	0.69
53:5:48:C:H5''	53:5:50:U:OP2	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:90:LEU:HD23	6:g:91:PHE:N	2.07	0.69
7:j:8:PRO:HG3	7:j:48:VAL:HG13	1.75	0.69
29:G:45:THR:OG1	29:G:200:PRO:HD2	1.92	0.69
50:3:1412:C:H2'	50:3:1413:A:C8	2.28	0.69
5:f:37:ASN:ND2	5:f:39:ALA:HB3	2.07	0.69
33:K:88:MET:HE3	45:W:64:LEU:HD21	1.75	0.69
50:3:1502:A:H8	50:3:1505:G:H22	1.40	0.69
29:G:221:ARG:NH2	29:G:224:ARG:HD3	2.07	0.68
36:N:41:GLU:HA	50:3:1291:U:H4'	1.74	0.68
51:1:548:G:H2'	51:1:549:G:H4'	1.76	0.68
12:o:68:LYS:HA	12:o:102:ARG:HG2	1.75	0.68
9:l:95:LEU:HD22	9:l:100:ILE:HD11	1.74	0.68
29:G:221:ARG:HH21	29:G:224:ARG:HD3	1.56	0.68
32:J:23:THR:HG22	32:J:28:ARG:HG2	1.75	0.68
35:M:31:LEU:HD13	50:3:643:C:H5''	1.76	0.68
50:3:343:U:O2'	50:3:344:A:H2'	1.94	0.68
51:1:49:A:H5'	51:1:51:G:O4'	1.94	0.68
4:e:71:LYS:HD3	51:1:2312:U:H5''	1.75	0.68
10:m:60:GLN:HG3	10:m:108:VAL:HG12	1.76	0.68
10:m:78:LEU:HD23	10:m:79:ALA:N	2.08	0.68
29:G:57:ASN:ND2	29:G:219:THR:HG22	2.09	0.68
50:3:769:G:H4'	50:3:1513:A:H4'	1.74	0.68
50:3:1060:U:H2'	50:3:1061:G:H8	1.58	0.68
51:1:362:A:H3'	51:1:363:G:C8	2.29	0.68
31:I:101:VAL:HG22	31:I:106:PHE:HB2	1.76	0.68
31:I:195:ASN:HD22	31:I:198:LEU:HD13	1.59	0.68
9:l:79:LEU:H	9:l:113:ALA:HB3	1.59	0.68
50:3:1038:C:H2'	50:3:1039:G:C8	2.28	0.68
4:e:23:SER:HB3	4:e:26:GLN:HG3	1.76	0.68
50:3:1412:C:H2'	50:3:1413:A:H8	1.57	0.68
51:1:1044:C:H5''	51:1:1047:G:H5'	1.76	0.68
13:p:2:ASN:OD1	13:p:3:ILE:HD12	1.94	0.68
40:R:107:THR:HG21	50:3:1306:A:H2	1.59	0.68
50:3:1024:G:H2'	50:3:1025:U:H5'	1.76	0.67
31:I:120:LYS:NZ	31:I:130:ASN:HD21	1.92	0.67
32:J:80:LEU:HD23	32:J:81:GLN:N	2.09	0.67
50:3:810:C:H2'	50:3:811:C:O4'	1.94	0.67
51:1:1554:U:H3	51:1:1634:A:H62	1.42	0.67
51:1:1745:A:H2'	51:1:1746:A:C8	2.29	0.67
51:1:2861:U:H2'	51:1:2862:G:H8	1.60	0.67
23:z:37:ARG:NH2	51:1:929:U:H4'	2.10	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:F:10:LEU:HD13	28:F:33:HIS:NE2	2.09	0.67
37:O:35:GLN:HB2	37:O:78:GLU:HG2	1.75	0.67
50:3:56:U:H2'	50:3:57:G:H8	1.60	0.67
51:1:2055:C:H2'	51:1:2504:U:H4'	1.75	0.67
19:v:35:GLU:HB2	19:v:93:ARG:NH1	2.08	0.67
30:H:35:ASP:CG	30:H:58:ARG:HH22	2.03	0.67
31:I:131:ILE:HG23	50:3:403:C:H5'	1.75	0.67
50:3:1325:C:H2'	50:3:1326:U:C6	2.30	0.67
53:5:9:G:H5'	53:5:11:A:OP2	1.94	0.67
1:b:211:ARG:NH1	1:b:211:ARG:HB3	2.09	0.67
4:e:172:PHE:O	4:e:173:ASP:HB2	1.95	0.67
14:q:108:LEU:HD23	15:r:48:LYS:HD3	1.76	0.67
29:G:65:LYS:HB2	29:G:157:PRO:HA	1.75	0.67
39:Q:35:ARG:HA	39:Q:75:GLU:OE2	1.94	0.67
1:b:209:ALA:HA	1:b:212:TRP:CE2	2.30	0.67
7:j:104:ALA:O	7:j:108:MET:HE3	1.94	0.67
51:1:390:U:H4'	51:1:391:A:H5''	1.77	0.67
8:k:110:GLU:H	8:k:113:MET:HE3	1.60	0.67
20:w:33:ILE:HG22	20:w:34:VAL:HG23	1.76	0.67
31:I:120:LYS:HG2	50:3:439:U:H4'	1.76	0.67
45:W:72:ARG:HH21	48:Z:4:LYS:HB3	1.58	0.67
51:1:275:C:H2'	51:1:276:U:H4'	1.76	0.67
18:u:48:VAL:HG22	18:u:50:ALA:H	1.60	0.67
21:x:76:LYS:HE2	21:x:76:LYS:HA	1.75	0.67
30:H:59:PRO:HG2	30:H:62:SER:OG	1.94	0.67
51:1:2654:A:O3'	51:1:2655:G:H4'	1.95	0.67
1:b:146:LYS:HB2	1:b:149:LYS:HB2	1.76	0.67
4:e:45:ASP:HB3	4:e:47:LYS:HG2	1.75	0.67
31:I:12:ARG:NH2	50:3:428:G:H3'	2.09	0.67
50:3:471:U:H2'	50:3:472:U:C6	2.30	0.67
51:1:703:U:H2'	51:1:704:G:O4'	1.95	0.67
51:1:1550:C:H2'	51:1:1551:A:C8	2.31	0.67
3:d:118:LEU:HD11	3:d:188:MET:HG3	1.77	0.66
33:K:47:LEU:HD12	33:K:55:HIS:HA	1.76	0.66
13:p:21:PRO:HD3	13:p:49:ILE:HD12	1.78	0.66
34:L:12:LEU:HD23	34:L:12:LEU:H	1.60	0.66
50:3:946:A:H2'	50:3:947:G:C8	2.30	0.66
51:1:1597:A:H5''	51:1:1598:A:H5'	1.77	0.66
51:1:1645:G:H5''	51:1:1646:C:C5'	2.23	0.66
51:1:2590:A:N1	51:1:2604:U:C5	2.64	0.66
51:1:2800:A:H3'	51:1:2801:G:C5'	2.16	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1086:U:H2'	50:3:1087:G:H8	1.61	0.66
15:r:79:ARG:O	15:r:80:ARG:HG2	1.95	0.66
34:L:68:VAL:HG23	34:L:99:ALA:HB1	1.78	0.66
43:U:6:LEU:HD12	50:3:375:U:C5'	2.25	0.66
51:1:2800:A:C3'	51:1:2801:G:H5'	2.16	0.66
40:R:114:PRO:HB2	50:3:1228:C:C5'	2.25	0.66
50:3:675:A:H2'	50:3:676:A:H8	1.60	0.66
50:3:1369:C:H2'	50:3:1370:G:C8	2.31	0.66
53:5:51:C:H2'	53:5:52:G:C8	2.30	0.66
3:d:172:ALA:HB3	3:d:195:GLN:NE2	2.11	0.66
18:u:80:ASP:OD2	18:u:95:PHE:HB3	1.96	0.66
36:N:18:VAL:HG22	36:N:64:ILE:HD13	1.78	0.66
46:X:14:LEU:O	46:X:18:VAL:HG23	1.95	0.66
50:3:45:G:H5''	50:3:307:C:O2'	1.94	0.66
51:1:2646:C:H2'	51:1:2647:U:O4'	1.95	0.66
32:J:11:GLN:HG2	32:J:116:VAL:HG12	1.77	0.66
32:J:54:GLU:HB3	32:J:56:PRO:HD2	1.78	0.66
39:Q:42:LYS:HE2	39:Q:90:PRO:HG3	1.78	0.66
46:X:10:ILE:HG21	46:X:40:PHE:HZ	1.58	0.66
51:1:389:G:H2'	51:1:390:U:H5'	1.78	0.66
11:n:28:LEU:HD23	11:n:48:VAL:HG11	1.78	0.66
40:R:6:ILE:HG23	40:R:7:ASN:N	2.09	0.66
44:V:37:ILE:HG22	44:V:38:LYS:H	1.61	0.66
50:3:1144:G:H21	50:3:1146:A:H62	1.44	0.66
51:1:1213:A:N6	51:1:1236:G:H1'	2.11	0.66
18:u:5:ARG:HG3	18:u:8:ASP:OD2	1.95	0.66
30:H:3:LYS:HZ3	50:3:1191:A:H5''	1.61	0.66
31:I:172:VAL:HG22	31:I:174:ALA:H	1.61	0.66
37:O:12:ALA:HB2	37:O:96:VAL:HG22	1.78	0.66
39:Q:47:ALA:C	39:Q:48:LEU:HD12	2.21	0.66
42:T:72:LYS:HG3	42:T:73:ASP:OD1	1.96	0.66
50:3:458:U:H2'	50:3:459:A:C8	2.30	0.66
11:n:73:ASN:HB3	51:1:1453:A:H62	1.62	0.65
31:I:100:VAL:HG21	31:I:136:VAL:HG21	1.77	0.65
30:H:6:PRO:HG2	30:H:200:TRP:HE1	1.61	0.65
32:J:110:MET:O	32:J:114:LEU:HD23	1.96	0.65
37:O:53:ILE:HG13	41:S:84:ARG:HD2	1.78	0.65
51:1:1097:U:H2'	51:1:1098:A:H5'	1.78	0.65
51:1:1668:A:H4'	51:1:1669:A:H5'	1.78	0.65
51:1:1856:U:H2'	51:1:1857:G:O4'	1.96	0.65
51:1:2682:A:H61	51:1:2728:U:H1'	1.59	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:15:LEU:HD11	4:e:167:ALA:HB1	1.79	0.65
23:z:4:ILE:HD11	23:z:56:VAL:HG21	1.78	0.65
26:D:10:LEU:HD23	51:1:770:G:H5''	1.79	0.65
46:X:4:LEU:HG	46:X:7:GLY:O	1.96	0.65
51:1:1550:C:H2'	51:1:1551:A:H8	1.61	0.65
34:L:105:GLU:OE1	34:L:136:LYS:HE3	1.96	0.65
36:N:37:TYR:HE1	50:3:1249:C:H5'	1.61	0.65
46:X:79:TYR:CE2	50:3:1226:C:H4'	2.32	0.65
50:3:649:A:H2'	50:3:650:G:H5''	1.77	0.65
51:1:792:A:H4'	51:1:793:A:O5'	1.96	0.65
27:E:18:LYS:HG3	51:1:651:G:H5'	1.79	0.65
31:I:7:LYS:HD2	31:I:21:LYS:HA	1.78	0.65
50:3:257:G:H2'	50:3:258:G:H8	1.62	0.65
51:1:310:A:HO2'	51:1:311:A:H2'	1.60	0.65
2:c:135:GLY:HA2	51:1:743:A:OP1	1.97	0.65
24:B:39:ARG:HG3	24:B:40:HIS:ND1	2.11	0.65
51:1:1297:C:OP1	51:1:2710:C:H4'	1.96	0.65
51:1:2553:G:H3'	51:1:2554:U:H5''	1.79	0.65
20:w:71:LYS:HE2	20:w:71:LYS:HA	1.78	0.65
42:T:68:TYR:HA	42:T:71:ARG:NH1	2.12	0.65
51:1:354:A:H2'	51:1:355:U:O4'	1.96	0.65
51:1:1912:A:N6	51:1:1917:U:H3	1.86	0.65
1:b:159:THR:HG22	1:b:160:TYR:N	2.12	0.65
2:c:108:ASP:OD2	2:c:206:ALA:HA	1.96	0.65
34:L:2:ARG:HG2	50:3:1380:U:C4	2.32	0.65
50:3:147:G:H2'	50:3:148:G:C8	2.30	0.65
50:3:1492:A:C2'	50:3:1493:A:H4'	2.26	0.65
51:1:1558:C:H4'	51:1:1559:U:O5'	1.97	0.65
51:1:2149:U:H2'	51:1:2150:C:O4'	1.96	0.65
32:J:55:VAL:HG23	32:J:56:PRO:HD3	1.78	0.65
35:M:38:VAL:HG21	35:M:109:VAL:HG12	1.77	0.65
35:M:120:LEU:HD23	35:M:120:LEU:H	1.62	0.65
36:N:107:ALA:HB2	50:3:1117:A:H4'	1.79	0.65
51:1:2600:A:O2'	51:1:2601:C:H5'	1.97	0.65
51:1:2849:U:H4'	51:1:2868:A:C2	2.32	0.65
10:m:45:GLN:HE21	51:1:2485:G:C5'	2.07	0.65
29:G:80:LYS:HG2	29:G:90:PHE:CD2	2.32	0.65
37:O:18:ILE:HD13	37:O:72:ARG:HD3	1.78	0.65
51:1:962:G:H2'	51:1:963:U:C6	2.31	0.65
28:F:19:ARG:HA	51:1:2756:U:H5''	1.80	0.64
51:1:1073:A:H2'	51:1:1074:G:H5'	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1186:G:H2'	51:1:1187:G:O4'	1.97	0.64
51:1:1937:A:H62	51:1:1940:U:H5	1.45	0.64
4:e:79:ARG:HA	53:5:56:C:H5'	1.79	0.64
41:S:40:ARG:O	41:S:44:VAL:HG23	1.97	0.64
51:1:549:G:H2'	51:1:550:C:C6	2.33	0.64
51:1:1357:C:H2'	51:1:1358:G:O4'	1.97	0.64
51:1:2475:C:H2'	51:1:2477:U:OP1	1.97	0.64
34:L:24:LYS:O	34:L:28:ILE:HG13	1.97	0.64
40:R:9:PRO:HG2	40:R:44:ILE:HG13	1.78	0.64
44:V:29:LYS:HB2	44:V:36:PHE:CE1	2.32	0.64
51:1:2861:U:H2'	51:1:2862:G:C8	2.32	0.64
1:b:211:ARG:HB3	1:b:211:ARG:HH11	1.62	0.64
8:k:21:CYS:HA	8:k:41:ILE:HG22	1.80	0.64
14:q:34:ALA:O	14:q:38:VAL:HG23	1.96	0.64
19:v:20:LEU:HG	19:v:25:LYS:O	1.98	0.64
31:I:59:LYS:HE3	31:I:194:ILE:HG22	1.80	0.64
44:V:20:ILE:HG22	44:V:45:VAL:O	1.97	0.64
50:3:216:U:H4'	50:3:464:U:H4'	1.79	0.64
50:3:995:C:H2'	50:3:996:A:H8	1.63	0.64
51:1:322:A:H5'	51:1:340:A:H1'	1.80	0.64
51:1:1446:C:H2'	51:1:1447:C:C6	2.32	0.64
1:b:253:GLY:O	51:1:1844:C:H5'	1.98	0.64
6:g:31:VAL:CG1	6:g:32:PRO:HD3	2.27	0.64
9:l:69:ARG:NE	9:l:69:ARG:HA	2.12	0.64
22:y:48:ARG:HB3	22:y:52:ARG:HH22	1.62	0.64
50:3:1444:U:H2'	50:3:1445:U:C6	2.32	0.64
5:f:103:ASN:C	5:f:104:LEU:HD12	2.23	0.64
7:j:80:HIS:CD2	51:1:2642:G:H5'	2.32	0.64
31:I:144:ILE:HB	31:I:149:LYS:HE2	1.78	0.64
51:1:2328:A:H2'	51:1:2329:U:C6	2.33	0.64
3:d:24:ASN:ND2	3:d:27:LEU:HB2	2.11	0.64
4:e:28:PRO:HG2	4:e:168:LEU:HD21	1.80	0.64
34:L:69:ARG:HB3	34:L:95:ARG:HD3	1.80	0.64
34:L:79:VAL:HG13	34:L:80:GLY:N	2.13	0.64
51:1:1873:G:H2'	51:1:1874:C:C6	2.33	0.64
48:Z:9:GLU:HB2	48:Z:10:PRO:HD3	1.78	0.64
51:1:554:U:H2'	51:1:555:G:O4'	1.98	0.64
4:e:59:ILE:HD12	4:e:134:GLN:HE21	1.63	0.64
13:p:113:LEU:HD23	13:p:113:LEU:O	1.98	0.64
50:3:1320:C:H2'	50:3:1321:U:C6	2.32	0.64
51:1:577:G:H2'	51:1:578:G:C8	2.33	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:21:A:H61	53:5:46:G:H2'	1.63	0.64
11:n:29:VAL:O	11:n:78:LYS:HD3	1.98	0.63
47:Y:4:LYS:HG2	47:Y:5:SER:N	2.13	0.63
50:3:483:C:H2'	50:3:484:G:C8	2.34	0.63
50:3:572:A:H5''	50:3:917:G:H4'	1.80	0.63
50:3:1280:A:O2'	50:3:1281:C:H5'	1.97	0.63
51:1:2475:C:H42	51:1:2529:G:H22	1.45	0.63
4:e:36:ASN:HB2	4:e:152:ASP:HB3	1.79	0.63
5:f:137:LYS:HG2	51:1:2746:U:H5''	1.80	0.63
5:f:148:ARG:CG	5:f:152:ARG:HE	2.10	0.63
30:H:92:ASP:OD1	30:H:93:ILE:HG23	1.98	0.63
38:P:127:ARG:HA	48:Z:34:ARG:HH22	1.63	0.63
47:Y:20:ASN:ND2	47:Y:65:LEU:HD22	2.13	0.63
4:e:109:ARG:HH22	4:e:132:ARG:NH1	1.96	0.63
12:o:107:ALA:O	12:o:111:ARG:HD3	1.98	0.63
51:1:1900:A:H1'	51:1:1970:A:H2'	1.81	0.63
51:1:2406:A:H4'	51:1:2408:U:OP2	1.98	0.63
48:Z:35:GLU:H	48:Z:35:GLU:CD	2.07	0.63
49:a:50:ILE:HD12	49:a:57:GLN:HG3	1.79	0.63
50:3:485:U:H3'	50:3:486:U:C5'	2.29	0.63
50:3:1418:A:H2	51:1:1948:G:H21	1.44	0.63
51:1:9:G:N2	51:1:2629:U:H2'	2.11	0.63
51:1:1470:A:H62	51:1:1521:G:N2	1.91	0.63
51:1:1746:A:H2'	51:1:1747:U:C6	2.33	0.63
51:1:2724:U:H2'	51:1:2725:A:C8	2.33	0.63
1:b:140:VAL:HG12	1:b:191:LEU:HD23	1.81	0.63
31:I:139:ASN:H	31:I:182:LYS:HA	1.63	0.63
42:T:30:LEU:HD12	42:T:31:LEU:N	2.12	0.63
43:U:40:ASN:HD22	43:U:43:ALA:HA	1.64	0.63
46:X:36:ARG:HG2	50:3:1320:C:N4	2.13	0.63
46:X:52:ASN:O	46:X:76:THR:HG22	1.97	0.63
50:3:320:A:H2'	50:3:321:A:C8	2.33	0.63
50:3:463:U:H3	50:3:469:C:H42	1.46	0.63
50:3:1441:A:N6	50:3:1461:G:H21	1.86	0.63
51:1:2637:U:H2'	51:1:2638:G:O4'	1.98	0.63
9:l:30:THR:HG22	51:1:810:U:O4	1.99	0.63
47:Y:79:THR:HG21	50:3:187:G:H4'	1.80	0.63
9:l:14:LYS:HE2	9:l:14:LYS:HA	1.80	0.63
12:o:26:LEU:HD13	12:o:39:VAL:HG22	1.81	0.63
37:O:35:GLN:CB	37:O:78:GLU:HG2	2.29	0.63
46:X:13:HIS:O	46:X:17:LYS:HG3	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:X:77:ARG:HD3	50:3:1222:G:C5'	2.27	0.63
51:1:974:G:H1'	51:1:975:A:C8	2.34	0.63
51:1:1093:G:H21	51:1:1098:A:N6	1.96	0.63
51:1:1826:G:H2'	51:1:1827:U:C6	2.33	0.63
51:1:2112:G:H2'	51:1:2112:G:N3	2.14	0.63
29:G:75:ALA:O	29:G:79:VAL:HG23	1.98	0.63
43:U:6:LEU:HD11	43:U:70:ARG:HG2	1.80	0.63
44:V:60:ILE:HG23	44:V:73:THR:O	1.99	0.63
50:3:397:A:H3'	50:3:397:A:N3	2.13	0.63
50:3:1170:A:H2'	50:3:1171:A:O4'	1.97	0.63
50:3:1230:C:H5'	53:5:30:G:H5''	1.79	0.63
12:o:51:ALA:HA	12:o:55:GLU:OE1	1.99	0.63
30:H:171:ARG:HG2	30:H:173:PRO:HD3	1.81	0.63
31:I:9:LYS:CE	50:3:542:G:H5''	2.29	0.63
46:X:5:LYS:HG3	50:3:1313:U:OP1	1.99	0.63
50:3:789:U:H2'	50:3:790:A:H5''	1.81	0.63
51:1:876:C:H2'	51:1:877:A:H5'	1.81	0.63
8:k:76:VAL:HG22	13:p:72:VAL:HG22	1.81	0.62
29:G:156:LEU:O	29:G:156:LEU:HD12	1.99	0.62
30:H:186:SER:HB2	30:H:197:VAL:HG13	1.80	0.62
35:M:6:ILE:O	35:M:10:LEU:HD13	1.99	0.62
51:1:1463:C:H2'	51:1:1464:G:C8	2.34	0.62
51:1:1817:G:N2	51:1:1818:U:H1'	2.12	0.62
3:d:181:ILE:HG23	9:l:2:ARG:HG3	1.80	0.62
4:e:114:ARG:NH2	4:e:114:ARG:HB3	2.15	0.62
32:J:107:GLY:HA2	50:3:8:A:H1'	1.81	0.62
50:3:869:G:H4'	50:3:872:A:C8	2.33	0.62
6:g:11:ASN:C	6:g:12:LEU:HD12	2.24	0.62
15:r:4:VAL:HG13	15:r:39:LEU:HB3	1.82	0.62
18:u:32:LYS:HG2	18:u:65:GLN:OE1	2.00	0.62
33:K:37:HIS:HB3	33:K:97:THR:HG22	1.79	0.62
39:Q:41:PRO:HB3	39:Q:88:ASP:HB3	1.82	0.62
50:3:995:C:H2'	50:3:996:A:C8	2.34	0.62
52:2:3:C:C3'	52:2:4:C:H5''	2.29	0.62
2:c:48:ILE:HG23	2:c:84:LEU:HD21	1.81	0.62
43:U:5:ARG:CB	50:3:376:G:H5''	2.26	0.62
39:Q:20:VAL:HG23	39:Q:94:TYR:HE1	1.63	0.62
49:a:48:LEU:HD11	49:a:165:ASN:HD22	1.64	0.62
50:3:1477:U:H2'	50:3:1478:U:C6	2.34	0.62
50:3:1486:G:H2'	50:3:1487:G:C8	2.35	0.62
6:g:3:VAL:HA	6:g:39:ALA:H	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:x:39:VAL:HG12	21:x:42:GLU:H	1.64	0.62
27:E:27:ASN:OD1	51:1:2392:A:H5''	1.99	0.62
36:N:54:VAL:HG11	36:N:86:LEU:HD13	1.82	0.62
50:3:1144:G:N2	50:3:1146:A:H62	1.98	0.62
53:5:3:C:H2'	53:5:4:G:C8	2.35	0.62
9:l:69:ARG:HA	9:l:69:ARG:HE	1.64	0.62
31:I:7:LYS:HG2	50:3:430:A:OP2	2.00	0.62
44:V:68:LYS:HB2	50:3:266:G:H3'	1.82	0.62
48:Z:18:PHE:HA	48:Z:21:SER:OG	2.00	0.62
50:3:81:A:H2'	50:3:82:G:C8	2.34	0.62
53:5:17(A):U:C3'	53:5:18:G:H5'	2.30	0.62
5:f:157:LYS:HB2	5:f:159:LYS:HG3	1.82	0.62
13:p:104:GLY:HA3	50:3:1432:G:OP1	2.00	0.62
28:F:23:ILE:H	28:F:23:ILE:HD12	1.65	0.62
50:3:1460:C:H2'	50:3:1461:G:O4'	1.99	0.62
51:1:1278:C:H2'	51:1:1279:G:H8	1.65	0.62
52:2:12:C:O2'	52:2:13:G:H4'	1.99	0.62
4:e:111:ARG:HB2	4:e:132:ARG:NH2	2.15	0.62
6:g:69:ALA:HB1	6:g:134:VAL:HG21	1.80	0.62
29:G:77:GLU:HA	29:G:80:LYS:NZ	2.14	0.62
29:G:213:LEU:HD12	29:G:214:GLY:N	2.15	0.62
34:L:123:LEU:HD12	34:L:124:SER:N	2.15	0.62
50:3:98:A:H2'	50:3:99:C:C6	2.35	0.62
50:3:993:G:H21	50:3:995:C:H42	1.48	0.62
53:5:15:G:H2'	53:5:16:C:H5'	1.82	0.62
2:c:1:MET:HG3	2:c:2:ILE:N	2.10	0.61
34:L:32:ASP:HB3	50:3:1351:U:H1'	1.82	0.61
48:Z:34:ARG:HD2	48:Z:36:PHE:CE1	2.35	0.61
50:3:604:G:H2'	50:3:605:U:C6	2.35	0.61
50:3:1042:A:H2'	50:3:1043:G:C8	2.35	0.61
51:1:441:U:O2'	51:1:442:G:H5'	2.00	0.61
51:1:572:A:H61	51:1:2029:G:H21	1.46	0.61
51:1:1738:G:H4'	51:1:1739:A:O5'	2.00	0.61
2:c:1:MET:HE3	2:c:100:LEU:HD21	1.82	0.61
22:y:47:ARG:HH22	51:1:60:G:C5'	2.13	0.61
51:1:1715:G:H5''	51:1:1741:C:OP2	1.99	0.61
51:1:2810:A:H2'	51:1:2811:G:O4'	2.00	0.61
1:b:94:LEU:HD21	51:1:1501:G:H4'	1.83	0.61
1:b:207:ALA:HB2	51:1:1790:C:O2'	2.00	0.61
4:e:62:GLN:HB2	4:e:63:LYS:HD2	1.81	0.61
9:l:141:LYS:HE3	9:l:143:GLU:OE2	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:205:LYS:HA	50:3:8:A:N7	2.15	0.61
50:3:847:G:H2'	50:3:848:C:C6	2.36	0.61
51:1:492:A:H2'	51:1:493:G:O4'	1.99	0.61
51:1:1448:G:H2'	51:1:1449:G:C8	2.35	0.61
1:b:64:VAL:CG1	1:b:86:ARG:HH22	2.13	0.61
29:G:142:LYS:HA	29:G:145:ASN:ND2	2.15	0.61
30:H:162:ALA:CB	50:3:1056:U:H4'	2.30	0.61
43:U:24:SER:OG	50:3:377:G:H5''	2.00	0.61
49:a:163:TYR:HD2	49:a:171:ILE:HD11	1.64	0.61
50:3:1033:G:C2'	50:3:1034:G:H5''	2.29	0.61
51:1:813:U:H2'	51:1:814:C:C6	2.36	0.61
10:m:77:PRO:O	10:m:80:VAL:HG12	2.00	0.61
30:H:21:TRP:HB3	30:H:58:ARG:H	1.64	0.61
34:L:65:LEU:O	34:L:69:ARG:HG3	2.01	0.61
41:S:43:ALA:O	41:S:47:LEU:HD23	2.01	0.61
43:U:5:ARG:HD2	50:3:376:G:H4'	1.82	0.61
50:3:477:C:H2'	50:3:478:A:C8	2.36	0.61
50:3:1106:G:O2'	50:3:1107:C:H5'	2.01	0.61
50:3:1241:G:H2'	50:3:1242:G:H8	1.65	0.61
51:1:1802:A:H2'	51:1:1803:A:C8	2.34	0.61
52:2:115:A:H2'	52:2:116:G:C8	2.35	0.61
30:H:175:HIS:ND1	50:3:1108:G:H5'	2.15	0.61
33:K:51:ILE:HG23	33:K:86:ARG:NH2	2.16	0.61
37:O:59:LYS:HE2	37:O:62:ARG:NH2	2.16	0.61
38:P:53:GLY:HA3	50:3:695:A:OP2	2.00	0.61
51:1:1176:U:H2'	51:1:1177:G:C8	2.35	0.61
51:1:2731:G:H2'	51:1:2732:G:C8	2.35	0.61
52:2:2:G:H2'	52:2:3:C:C6	2.35	0.61
1:b:156:SER:OG	51:1:1819:A:H5'	2.01	0.61
3:d:63:LYS:HD2	51:1:2444:G:OP2	1.99	0.61
3:d:123:LYS:HE3	3:d:125:SER:OG	2.01	0.61
51:1:1723:G:H3'	51:1:1724:G:H8	1.65	0.61
51:1:2249:U:H3'	51:1:2250:G:H5'	1.83	0.61
51:1:2259:U:O2	51:1:2259:U:H2'	1.99	0.61
51:1:2345:G:N3	51:1:2381:A:H2'	2.16	0.61
51:1:2471:A:H2'	51:1:2472:G:O4'	2.00	0.61
53:5:14:A:H2'	53:5:15:G:H5'	1.81	0.61
13:p:32:VAL:HG12	13:p:34:GLY:H	1.66	0.61
34:L:19:SER:OG	34:L:22:LEU:HD23	2.01	0.61
37:O:65:TYR:HB3	41:S:95:LEU:HD11	1.82	0.61
50:3:335:C:H2'	50:3:336:A:H8	1.66	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1558:C:H5''	51:1:1559:U:C6	2.36	0.61
51:1:1564:C:H2'	51:1:1565:C:O4'	2.00	0.61
51:1:1589:U:H2'	51:1:1590:A:C8	2.35	0.61
50:3:1454:G:H2'	50:3:1455:G:C8	2.36	0.61
9:l:23:ILE:HG12	15:r:82:HIS:CD2	2.36	0.60
29:G:33:ALA:HA	29:G:37:VAL:O	2.01	0.60
29:G:129:THR:HG23	29:G:132:GLU:HB3	1.83	0.60
33:K:61:LEU:HD23	33:K:62:MET:N	2.16	0.60
1:b:220:ARG:HG3	51:1:1789:A:OP1	2.00	0.60
32:J:74:ALA:O	32:J:146:MET:HE3	2.01	0.60
50:3:225:C:C2'	50:3:226:G:H5''	2.30	0.60
51:1:1182:G:H2'	51:1:1183:U:C6	2.36	0.60
51:1:1571:A:H2'	51:1:1572:A:C8	2.36	0.60
53:5:13:C:H42	53:5:46:G:N2	1.99	0.60
1:b:65:ASP:HB3	1:b:101:ARG:HD3	1.84	0.60
3:d:151:GLY:HA3	3:d:191:ASP:OD2	2.02	0.60
10:m:50:ARG:HD2	10:m:50:ARG:C	2.27	0.60
31:I:98:ASP:HA	31:I:101:VAL:HG12	1.82	0.60
43:U:13:LYS:NZ	50:3:392:C:H5'	2.15	0.60
45:W:29:LYS:HA	45:W:32:ILE:HG12	1.83	0.60
50:3:665:A:O4'	50:3:733:G:H1'	2.01	0.60
51:1:2715:C:H2'	51:1:2716:C:O4'	2.01	0.60
8:k:86:LEU:C	8:k:87:LEU:HD12	2.27	0.60
29:G:103:TRP:HA	29:G:106:VAL:HG22	1.84	0.60
41:S:1:ALA:HB2	50:3:1203:C:H5'	1.83	0.60
50:3:858:G:O6	50:3:869:G:H3'	2.00	0.60
50:3:908:A:H2'	50:3:909:A:H8	1.66	0.60
13:p:112:ARG:HD2	13:p:114:ASN:HD21	1.67	0.60
30:H:198:LYS:HE3	50:3:1058:G:OP1	2.01	0.60
38:P:30:ILE:HG13	38:P:45:THR:HG22	1.84	0.60
47:Y:4:LYS:O	47:Y:7:LYS:HG2	2.01	0.60
1:b:216:ARG:HH11	1:b:216:ARG:HG2	1.67	0.60
6:g:73:ASN:ND2	6:g:140:ALA:HB1	2.17	0.60
8:k:109:SER:O	8:k:110:GLU:HG2	2.01	0.60
30:H:137:VAL:O	30:H:141:MET:HG2	2.00	0.60
41:S:52:ARG:HB3	41:S:58:ARG:HH12	1.66	0.60
49:a:11:ILE:HD11	49:a:35:THR:HG22	1.83	0.60
4:e:102:LEU:O	4:e:107:VAL:HG12	2.01	0.60
24:B:16:ARG:HA	24:B:19:ASP:OD2	2.01	0.60
31:I:104:MET:HE3	31:I:179:GLY:HA3	1.84	0.60
50:3:908:A:H2'	50:3:909:A:C8	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1859:U:H2'	51:1:1860:G:C8	2.35	0.60
51:1:2591:C:H2'	51:1:2592:G:H8	1.66	0.60
7:j:99:ARG:O	7:j:103:ILE:HG13	2.01	0.60
50:3:412:A:H62	50:3:431:A:H61	1.49	0.60
51:1:867:C:H2'	51:1:868:U:H5'	1.83	0.60
5:f:18:ILE:HD12	5:f:18:ILE:N	2.17	0.60
14:q:105:PHE:O	14:q:109:VAL:HG23	2.02	0.60
30:H:149:LYS:HB3	30:H:200:TRP:HB2	1.83	0.60
31:I:84:ASN:HB3	31:I:87:GLU:OE1	2.01	0.60
34:L:52:ARG:NH1	34:L:121:ASN:HD22	1.97	0.60
39:Q:120:ARG:HH12	50:3:500:G:C5'	2.12	0.60
40:R:103:THR:HG21	50:3:950:U:O4	2.02	0.60
43:U:25:ARG:HG2	50:3:110:C:H4'	1.84	0.60
48:Z:13:VAL:HG23	48:Z:14:ALA:N	2.10	0.60
50:3:884:U:H4'	50:3:885:G:H5''	1.84	0.60
51:1:281:C:H2'	51:1:282:A:C8	2.34	0.60
51:1:1465:G:H2'	51:1:1466:U:O4'	2.01	0.60
53:5:15:G:C2'	53:5:16:C:H5'	2.32	0.60
1:b:43:ASN:HD21	1:b:45:ASN:HD22	1.50	0.60
2:c:25:THR:HG21	2:c:193:VAL:HG22	1.84	0.60
9:l:58:TYR:O	27:E:12:ARG:HD2	2.02	0.60
39:Q:50:LYS:HG2	39:Q:66:ILE:HB	1.83	0.60
40:R:56:ARG:HA	40:R:59:VAL:HG12	1.83	0.60
47:Y:29:THR:HG21	50:3:1457:G:O3'	2.01	0.60
51:1:898:C:H2'	51:1:899:A:C8	2.37	0.60
51:1:2277:G:C2'	51:1:2278:A:H5''	2.32	0.60
1:b:47:ARG:HH21	51:1:774:G:H5''	1.66	0.59
2:c:47:ALA:HA	2:c:84:LEU:HG	1.83	0.59
5:f:102:ILE:HD11	5:f:116:LEU:HD11	1.84	0.59
5:f:136:ASP:HB3	5:f:139:VAL:HG22	1.84	0.59
18:u:88:ASP:OD2	18:u:90:LYS:HD3	2.02	0.59
29:G:221:ARG:HA	29:G:221:ARG:HE	1.67	0.59
42:T:24:THR:O	42:T:28:VAL:HG23	2.01	0.59
50:3:256:U:H2'	50:3:257:G:C8	2.37	0.59
50:3:407:U:H2'	50:3:408:A:C8	2.36	0.59
50:3:665:A:C1'	50:3:733:G:H1'	2.32	0.59
51:1:63:A:H2'	51:1:64:A:C8	2.37	0.59
51:1:527:C:H4'	51:1:528:A:O4'	2.02	0.59
51:1:1478:G:N2	51:1:1560:G:H1'	2.17	0.59
19:v:19:ARG:HD3	52:2:94:A:OP1	2.02	0.59
38:P:13:LYS:HG3	38:P:15:VAL:HG13	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:X:9:PHE:CG	50:3:1318:A:H4'	2.38	0.59
49:a:41:SER:H	49:a:217:THR:HG22	1.66	0.59
50:3:1060:U:H2'	50:3:1061:G:C8	2.37	0.59
51:1:1841:U:H2'	51:1:1842:G:C8	2.37	0.59
51:1:2423:U:H2'	51:1:2424:C:O4'	2.02	0.59
1:b:169:ALA:HA	6:g:123:ARG:NH2	2.18	0.59
2:c:46:ARG:NH1	2:c:86:GLU:HA	2.17	0.59
36:N:22:PRO:HA	36:N:60:LEU:HG	1.83	0.59
49:a:189:LEU:HD23	49:a:192:LEU:HD12	1.83	0.59
50:3:1158:C:H3'	50:3:1158:C:O2	2.03	0.59
51:1:226:A:H2'	51:1:227:A:C8	2.38	0.59
51:1:1909:C:H2'	51:1:1910:G:H8	1.66	0.59
4:e:48:LEU:HA	4:e:51:ASN:HD22	1.67	0.59
11:n:39:PRO:HG2	51:1:1651:G:H4'	1.83	0.59
34:L:25:PHE:HA	34:L:28:ILE:HD12	1.83	0.59
34:L:39:GLU:HG2	34:L:43:TYR:CE2	2.36	0.59
37:O:52:LEU:HD21	50:3:973:G:H5''	1.84	0.59
49:a:65:LEU:HD12	49:a:188:ASN:HD21	1.68	0.59
51:1:435:C:C2'	51:1:436:C:H5'	2.33	0.59
51:1:473:G:O2'	51:1:474:G:H5'	2.03	0.59
51:1:1373:A:H5'	51:1:2212:A:H1'	1.83	0.59
51:1:2297:A:C2	51:1:2321:U:H5	2.20	0.59
6:g:31:VAL:HG13	6:g:32:PRO:HD3	1.85	0.59
51:1:593:U:H2'	51:1:594:U:C6	2.38	0.59
1:b:15:VAL:HG22	1:b:205:GLY:HA3	1.84	0.59
2:c:194:PRO:HA	51:1:2680:U:H5'	1.82	0.59
12:o:110:ALA:HB1	12:o:115:LEU:HD23	1.84	0.59
21:x:62:GLY:O	21:x:66:VAL:HG23	2.03	0.59
50:3:295:C:H2'	50:3:296:U:O4'	2.02	0.59
51:1:225:C:H2'	51:1:226:A:O4'	2.03	0.59
51:1:1527:G:N2	51:1:1545:A:H62	1.83	0.59
51:1:1867:G:H2'	51:1:1868:C:C6	2.38	0.59
51:1:2452:C:N4	51:1:2504:U:H3	1.91	0.59
5:f:76:ILE:HD12	5:f:76:ILE:N	2.18	0.59
12:o:94:ARG:HH22	51:1:2293:G:H5''	1.64	0.59
29:G:173:LYS:HD3	29:G:173:LYS:C	2.27	0.59
37:O:51:VAL:HG22	37:O:52:LEU:N	2.17	0.59
50:3:1173:U:H2'	50:3:1174:G:C8	2.37	0.59
4:e:30:VAL:HG21	4:e:33:ILE:HD11	1.84	0.59
12:o:31:THR:CG2	12:o:32:PRO:HD2	2.33	0.59
16:s:25:ARG:HE	16:s:74:ILE:HG23	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:G:134:LEU:HD12	29:G:135:MET:N	2.17	0.59
50:3:490:C:H2'	50:3:491:G:C8	2.38	0.59
51:1:1463:C:H2'	51:1:1464:G:H8	1.67	0.59
51:1:1467:U:H2'	51:1:1468:U:O4'	2.03	0.59
51:1:1791:A:N1	51:1:1829:A:H4'	2.18	0.59
2:c:56:LYS:HE3	51:1:2831:G:P	2.43	0.59
3:d:71:GLY:N	51:1:674:G:H5''	2.17	0.59
46:X:77:ARG:CD	50:3:1222:G:H5''	2.31	0.59
50:3:12:U:H4'	50:3:526:C:H4'	1.85	0.59
50:3:1032:G:H21	50:3:1033:G:H1'	1.67	0.59
51:1:2298:A:H2'	51:1:2299:U:H5'	1.83	0.59
51:1:2389:G:H5''	51:1:2390:U:C4'	2.32	0.59
3:d:153:LEU:HD23	3:d:171:ASP:HB2	1.84	0.59
13:p:13:LYS:HG2	13:p:76:HIS:ND1	2.18	0.59
37:O:40:ILE:HB	37:O:73:LEU:HB3	1.84	0.59
46:X:72:GLU:OE2	50:3:1320:C:H4'	2.03	0.59
50:3:415:A:H2'	50:3:416:G:O4'	2.02	0.59
50:3:1293:C:H2'	50:3:1294:G:H8	1.68	0.59
50:3:1390:U:H2'	50:3:1391:U:C6	2.38	0.59
51:1:1434:A:H2'	51:1:1435:G:C8	2.38	0.59
1:b:93:VAL:HG12	1:b:101:ARG:O	2.03	0.58
28:F:19:ARG:HG2	51:1:2756:U:OP2	2.03	0.58
29:G:100:LEU:HB2	29:G:174:GLU:HG2	1.86	0.58
30:H:107:LYS:HD3	30:H:110:LEU:HD12	1.85	0.58
31:I:73:ASN:O	31:I:77:GLU:HG2	2.03	0.58
32:J:36:THR:HG22	32:J:62:ALA:HB1	1.85	0.58
35:M:11:THR:HG22	35:M:15:ASN:ND2	2.17	0.58
43:U:33:ILE:N	43:U:33:ILE:HD12	2.18	0.58
50:3:944:G:H21	50:3:1339:A:H62	1.49	0.58
51:1:1139:G:O2'	51:1:1140:C:H5'	2.02	0.58
51:1:1809:A:H2'	51:1:1810:A:C8	2.38	0.58
53:5:63:G:H2'	53:5:64:G:H8	1.67	0.58
6:g:5:LEU:HB3	6:g:16:GLY:HA3	1.85	0.58
16:s:78:GLU:OE2	51:1:517:C:H1'	2.03	0.58
24:B:24:VAL:HG23	24:B:25:THR:H	1.68	0.58
31:I:64:TYR:CE2	31:I:93:LEU:HB3	2.38	0.58
31:I:169:TRP:HB2	31:I:185:PRO:HG3	1.84	0.58
32:J:149:PRO:HA	32:J:152:VAL:HG12	1.85	0.58
32:J:160:VAL:HG23	32:J:161:GLU:H	1.67	0.58
34:L:36:SER:HB3	36:N:42:THR:OG1	2.03	0.58
51:1:615:U:H5''	51:1:616:A:OP2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2110:G:C5'	51:1:2118:U:H2'	2.33	0.58
52:2:51:G:H2'	52:2:52:A:O4'	2.04	0.58
29:G:107:ARG:HG2	29:G:111:LYS:HE3	1.85	0.58
49:a:189:LEU:O	49:a:193:LEU:HD23	2.03	0.58
50:3:112:G:H21	50:3:354:G:H5'	1.68	0.58
50:3:300:A:H2'	50:3:301:G:O4'	2.04	0.58
50:3:304:U:H2'	50:3:305:G:C8	2.38	0.58
51:1:908:C:H2'	51:1:909:A:O4'	2.04	0.58
2:c:46:ARG:HG3	2:c:84:LEU:HB2	1.84	0.58
10:m:108:VAL:HB	10:m:112:LEU:HD23	1.86	0.58
11:n:78:LYS:HG2	11:n:83:LEU:HD23	1.85	0.58
12:o:40:ILE:N	12:o:40:ILE:HD12	2.19	0.58
14:q:93:ILE:O	14:q:97:ILE:HG13	2.02	0.58
23:z:52:PHE:CZ	23:z:53:MET:HE2	2.38	0.58
31:I:97:LEU:HD23	31:I:132:ALA:HA	1.86	0.58
43:U:8:ARG:NE	50:3:391:G:H5''	2.18	0.58
50:3:580:C:H2'	50:3:581:G:O4'	2.02	0.58
50:3:672:U:H2'	50:3:673:A:C8	2.38	0.58
50:3:1195:C:H5''	50:3:1196:A:OP2	2.02	0.58
51:1:437:U:H2'	51:1:438:G:C8	2.38	0.58
51:1:1448:G:H2'	51:1:1449:G:H8	1.65	0.58
50:3:102:G:H2'	50:3:103:U:C6	2.38	0.58
50:3:675:A:H2'	50:3:676:A:C8	2.38	0.58
50:3:1261:A:H1'	50:3:1283:U:C5'	2.34	0.58
52:2:106:G:H2'	52:2:107:G:O4'	2.03	0.58
53:5:43:A:H2'	53:5:44:A:C8	2.39	0.58
5:f:86:LEU:HB2	5:f:130:ILE:HG23	1.85	0.58
31:I:186:GLU:OE1	31:I:189:ASP:HB2	2.02	0.58
38:P:34:THR:HG22	38:P:40:ALA:HA	1.85	0.58
50:3:29:U:O2'	50:3:30:U:H5'	2.03	0.58
3:d:104:ALA:O	3:d:108:ILE:HG13	2.04	0.58
18:u:81:ARG:NH2	18:u:96:LYS:HG3	2.19	0.58
31:I:187:ARG:NH1	31:I:190:LEU:HD11	2.19	0.58
42:T:21:THR:HG21	50:3:658:C:H1'	1.86	0.58
50:3:490:C:H2'	50:3:491:G:H8	1.68	0.58
50:3:1033:G:H2'	50:3:1034:G:C5'	2.32	0.58
51:1:2093:G:H21	51:1:2198:A:N6	2.01	0.58
51:1:2834:G:H2'	51:1:2879:A:H61	1.69	0.58
1:b:30:ALA:HB3	1:b:31:PRO:HD3	1.84	0.58
50:3:621:A:H2'	50:3:622:A:C8	2.38	0.58
51:1:907:G:H2'	51:1:908:C:H5'	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1432:G:H2'	51:1:1433:A:C8	2.37	0.58
51:1:2504:U:H2'	51:1:2505:G:H5''	1.86	0.58
51:1:2520:C:H6	51:1:2520:C:H5'	1.68	0.58
2:c:129:THR:HG22	2:c:130:GLN:O	2.04	0.58
28:F:9:LYS:HE2	28:F:16:ILE:HG12	1.86	0.58
33:K:3:HIS:H	33:K:92:THR:HG22	1.69	0.58
48:Z:40:PRO:O	48:Z:44:ARG:HD3	2.03	0.58
49:a:41:SER:H	49:a:217:THR:CG2	2.16	0.58
50:3:971:G:H1'	50:3:1365:G:O2'	2.04	0.58
50:3:1202:U:H2'	50:3:1203:C:O4'	2.04	0.58
1:b:64:VAL:HG12	1:b:86:ARG:HH22	1.69	0.58
4:e:11:VAL:O	4:e:15:LEU:HD23	2.03	0.58
10:m:29:GLY:H	10:m:104:GLU:CD	2.11	0.58
13:p:24:THR:HB	13:p:87:ARG:HB3	1.85	0.58
30:H:112:ALA:CB	30:H:184:ASN:HD22	2.04	0.58
31:I:92:LEU:HD12	31:I:93:LEU:N	2.19	0.58
33:K:19:PRO:O	33:K:23:GLU:HG3	2.04	0.58
50:3:56:U:H2'	50:3:57:G:C8	2.39	0.58
50:3:321:A:H4'	50:3:1436:U:H5'	1.85	0.58
51:1:2055:C:H2'	51:1:2504:U:C4'	2.33	0.58
12:o:43:ASN:HD21	12:o:45:SER:HB2	1.68	0.57
13:p:1:SER:O	13:p:4:ILE:HG22	2.03	0.57
40:R:65:GLU:O	40:R:69:ARG:HG3	2.04	0.57
50:3:21:G:H2'	50:3:22:G:C8	2.39	0.57
50:3:224:U:H2'	50:3:225:C:C6	2.37	0.57
50:3:946:A:H2'	50:3:947:G:H8	1.68	0.57
50:3:1496:C:H2'	50:3:1497:G:O4'	2.04	0.57
51:1:995:C:H6	51:1:995:C:H5'	1.69	0.57
51:1:1127:A:H2'	51:1:1128:G:H5''	1.85	0.57
3:d:3:LEU:HD23	3:d:12:LEU:O	2.04	0.57
6:g:117:LEU:HD23	6:g:119:ASN:H	1.69	0.57
8:k:48:PRO:HB3	50:3:1422:G:C5'	2.34	0.57
11:n:96:ARG:HH11	11:n:116:VAL:HG13	1.69	0.57
29:G:131:LYS:O	29:G:135:MET:HG3	2.03	0.57
32:J:105:ILE:HG22	50:3:8:A:H5'	1.86	0.57
40:R:64:VAL:HG22	40:R:65:GLU:N	2.19	0.57
40:R:114:PRO:HB2	50:3:1228:C:H5''	1.86	0.57
48:Z:50:SER:HA	48:Z:53:LYS:NZ	2.19	0.57
50:3:86:G:H4'	50:3:87:C:C5	2.39	0.57
50:3:271:C:H2'	50:3:272:C:C6	2.40	0.57
50:3:422:C:H4'	50:3:423:G:N2	2.18	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:6:G:H2'	53:5:7:G:C8	2.39	0.57
14:q:40:LYS:HG3	14:q:44:TYR:CE2	2.40	0.57
14:q:95:ALA:O	14:q:99:VAL:HG23	2.04	0.57
29:G:23:ASN:HB3	29:G:26:MET:HB2	1.86	0.57
38:P:109:ILE:HG21	48:Z:16:ARG:HH22	1.68	0.57
38:P:122:PRO:HG2	48:Z:35:GLU:OE1	2.03	0.57
42:T:42:PHE:CE2	42:T:55:LEU:HD22	2.40	0.57
50:3:74:A:H2'	50:3:75:G:O4'	2.03	0.57
51:1:548:G:H2'	51:1:549:G:C4'	2.33	0.57
51:1:2299:U:H1'	51:1:2300:C:OP1	2.05	0.57
2:c:110:THR:HB	2:c:202:ILE:HB	1.86	0.57
5:f:104:LEU:HB2	5:f:112:VAL:HB	1.85	0.57
7:j:78:THR:HG22	51:1:2641:G:H5''	1.84	0.57
7:j:89:PHE:O	7:j:93:ILE:HG12	2.05	0.57
19:v:56:PHE:HE1	19:v:61:LEU:HD11	1.67	0.57
21:x:67:LEU:HA	21:x:70:LEU:HD13	1.86	0.57
31:I:195:ASN:HD22	31:I:198:LEU:CD1	2.16	0.57
46:X:76:THR:HG21	50:3:1221:G:H4'	1.86	0.57
49:a:29:LEU:O	49:a:33:LEU:HG	2.04	0.57
31:I:60:VAL:O	31:I:63:ILE:HG22	2.04	0.57
51:1:2233:U:H2'	51:1:2234:G:H8	1.69	0.57
6:g:5:LEU:HD23	6:g:6:LEU:N	2.19	0.57
6:g:26:ALA:O	6:g:31:VAL:HG12	2.05	0.57
7:j:17:VAL:HG23	7:j:137:PRO:HB2	1.85	0.57
10:m:41:LEU:HD23	10:m:96:ILE:HG13	1.86	0.57
28:F:2:LYS:HB2	28:F:35:GLN:HB3	1.86	0.57
30:H:152:VAL:HG22	30:H:165:GLU:OE2	2.04	0.57
41:S:86:ALA:HB1	41:S:91:GLU:HB2	1.86	0.57
47:Y:59:ARG:NH1	50:3:177:G:H5'	2.20	0.57
50:3:257:G:H2'	50:3:258:G:C8	2.40	0.57
50:3:514:C:H2'	50:3:515:G:H8	1.70	0.57
27:E:31:ILE:O	27:E:31:ILE:HG13	2.05	0.57
29:G:138:ARG:HH22	50:3:1170:A:H5'	1.69	0.57
36:N:35:GLU:HA	36:N:39:GLY:HA3	1.87	0.57
36:N:50:PRO:HG2	36:N:82:ILE:HD12	1.86	0.57
37:O:64:GLN:HB3	41:S:98:ALA:HB3	1.87	0.57
44:V:77:VAL:CG1	44:V:80:LYS:HG2	2.34	0.57
50:3:476:U:H2'	50:3:477:C:C6	2.40	0.57
50:3:539:A:H2'	50:3:540:G:H8	1.69	0.57
50:3:692:U:H5''	50:3:797:C:H5'	1.86	0.57
51:1:69:C:O2'	51:1:70:G:H5'	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:247:G:H4'	51:1:386:G:C6	2.39	0.57
51:1:669:G:H2'	51:1:669:G:N3	2.20	0.57
51:1:863:A:H2'	51:1:864:G:C8	2.40	0.57
51:1:1545:A:H2'	51:1:1546:G:H5'	1.86	0.57
51:1:2345:G:H21	51:1:2381:A:H3'	1.68	0.57
53:5:24:U:H2'	53:5:25:C:O4'	2.04	0.57
4:e:49:LEU:O	4:e:49:LEU:HD23	2.05	0.57
11:n:45:ARG:O	11:n:49:GLU:HG3	2.05	0.57
11:n:54:LEU:HD11	11:n:65:LEU:HD23	1.86	0.57
15:r:7:SER:HB2	15:r:22:LEU:HD22	1.87	0.57
23:z:45:GLY:HA3	51:1:852:U:H5'	1.86	0.57
31:I:104:MET:SD	31:I:170:LEU:HD22	2.44	0.57
33:K:16:GLU:HB2	33:K:17:GLN:NE2	2.20	0.57
42:T:55:LEU:HA	42:T:58:MET:HE3	1.86	0.57
50:3:160:A:H61	50:3:347:G:N2	2.03	0.57
50:3:1005:A:H2'	50:3:1006:G:O4'	2.05	0.57
50:3:1481:U:H2'	50:3:1482:G:C8	2.40	0.57
51:1:1715:G:OP1	51:1:1740:G:H5'	2.04	0.57
4:e:166:ARG:HA	4:e:169:LEU:HD12	1.87	0.57
5:f:66:THR:O	5:f:70:LEU:HD23	2.04	0.57
8:k:65:THR:HG22	8:k:67:LYS:H	1.67	0.57
14:q:30:VAL:HG13	51:1:580:U:O3'	2.05	0.57
16:s:86:MET:HE3	16:s:87:PRO:CD	2.33	0.57
23:z:6:ILE:HD12	23:z:6:ILE:N	2.20	0.57
29:G:27:LYS:HG3	29:G:28:PRO:HD3	1.86	0.57
34:L:129:ASN:HA	34:L:134:VAL:HG11	1.85	0.57
40:R:64:VAL:HG22	40:R:65:GLU:H	1.69	0.57
50:3:155:A:H2'	50:3:156:C:C6	2.40	0.57
50:3:878:A:H2'	50:3:879:C:C6	2.40	0.57
51:1:322:A:H5'	51:1:340:A:C1'	2.35	0.57
51:1:506:G:H4'	51:1:509:C:O2	2.04	0.57
51:1:543:G:H2'	51:1:544:C:O4'	2.05	0.57
51:1:1028:A:H2'	51:1:1029:A:C8	2.39	0.57
51:1:1723:G:H2'	51:1:1724:G:H5'	1.87	0.57
51:1:2834:G:H1'	51:1:2883:A:H61	1.69	0.57
38:P:88:PRO:HD3	48:Z:28:LEU:HD11	1.85	0.57
39:Q:4:ASN:O	39:Q:7:VAL:HG12	2.05	0.57
40:R:9:PRO:CG	40:R:44:ILE:HG13	2.33	0.57
42:T:31:LEU:O	42:T:35:ILE:HG13	2.04	0.57
49:a:4:LEU:HD22	49:a:12:ARG:HD3	1.87	0.57
50:3:514:C:H2'	50:3:515:G:C8	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:935:A:H2'	50:3:936:C:C6	2.40	0.57
51:1:1394:U:H4'	51:1:1603:A:H4'	1.85	0.57
51:1:2306:C:H3'	51:1:2307:G:H5'	1.86	0.57
31:I:59:LYS:HE3	31:I:194:ILE:CG2	2.35	0.56
36:N:59:LYS:C	36:N:60:LEU:HD12	2.30	0.56
46:X:78:THR:HB	50:3:957:U:H4'	1.86	0.56
47:Y:20:ASN:HD21	47:Y:65:LEU:HD22	1.70	0.56
50:3:448:A:H3'	50:3:449:G:C8	2.39	0.56
51:1:349:U:H2'	51:1:350:G:H8	1.68	0.56
51:1:1525:A:H2'	51:1:1526:C:O4'	2.05	0.56
51:1:2662:A:H2'	51:1:2663:G:O4'	2.05	0.56
7:j:78:THR:HG21	7:j:85:LYS:HE2	1.86	0.56
30:H:130:ARG:O	30:H:134:LYS:HG2	2.04	0.56
50:3:976:G:H2'	50:3:1362:A:N1	2.20	0.56
51:1:17:G:H2'	51:1:18:U:C6	2.40	0.56
51:1:75:G:H2'	51:1:75:G:N3	2.19	0.56
51:1:2086:U:H2'	51:1:2087:G:C8	2.40	0.56
52:2:28:C:H2'	52:2:29:A:C8	2.40	0.56
1:b:85:ASN:HB2	1:b:86:ARG:HD2	1.87	0.56
3:d:149:ILE:HG23	3:d:188:MET:HA	1.87	0.56
12:o:67:ASN:OD1	12:o:70:ALA:N	2.36	0.56
19:v:1:MET:HE1	19:v:59:GLU:OE2	2.05	0.56
29:G:56:LEU:O	29:G:56:LEU:HD23	2.06	0.56
31:I:154:VAL:HG13	31:I:177:MET:HE1	1.88	0.56
49:a:165:ASN:ND2	49:a:171:ILE:HB	2.21	0.56
50:3:425:G:H2'	50:3:426:U:C6	2.40	0.56
51:1:288:U:H2'	51:1:289:G:C8	2.39	0.56
51:1:1594:U:H2'	51:1:1595:C:C6	2.41	0.56
51:1:2098:U:H2'	51:1:2099:U:C6	2.41	0.56
53:5:50:U:H2'	53:5:51:C:C6	2.40	0.56
1:b:138:SER:OG	1:b:163:ILE:HD12	2.05	0.56
9:l:90:VAL:HG13	9:l:95:LEU:HD21	1.87	0.56
16:s:66:ILE:HD12	16:s:66:ILE:N	2.19	0.56
42:T:42:PHE:CD2	42:T:55:LEU:HD22	2.40	0.56
43:U:19:VAL:H	43:U:38:PHE:HA	1.70	0.56
50:3:40:C:H2'	50:3:41:G:C8	2.41	0.56
50:3:77:A:H2'	50:3:78:A:H8	1.70	0.56
51:1:1268:A:H2'	51:1:1269:A:O4'	2.05	0.56
51:1:1752:C:H5''	51:1:2862:G:H5'	1.87	0.56
1:b:16:VAL:HB	1:b:203:VAL:HG22	1.87	0.56
6:g:21:VAL:HG22	6:g:22:LYS:N	2.21	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:Y:4:LYS:HG2	47:Y:5:SER:H	1.70	0.56
50:3:252:U:O2	50:3:252:U:C2'	2.53	0.56
51:1:357:C:H2'	51:1:358:U:C6	2.41	0.56
51:1:644:A:H61	51:1:2349:G:N2	2.01	0.56
51:1:907:G:C2'	51:1:908:C:H5'	2.35	0.56
51:1:2093:G:N7	51:1:2225:A:H2'	2.20	0.56
51:1:2443:C:H2'	51:1:2444:G:H8	1.71	0.56
20:w:22:PHE:CD2	51:1:922:C:H1'	2.41	0.56
29:G:5:MET:HE3	29:G:5:MET:O	2.05	0.56
30:H:131:ARG:O	30:H:135:ARG:HG3	2.05	0.56
50:3:591:U:H2'	50:3:592:G:H8	1.70	0.56
51:1:742:A:H2'	51:1:743:A:H8	1.71	0.56
51:1:1740:G:H2'	51:1:1741:C:O4'	2.06	0.56
51:1:2286:G:H5'	51:1:2287:A:OP1	2.06	0.56
3:d:3:LEU:HB2	3:d:12:LEU:HB3	1.86	0.56
4:e:43:ILE:HG21	4:e:77:LYS:HG3	1.88	0.56
11:n:29:VAL:CG2	11:n:75:ILE:HG23	2.36	0.56
11:n:47:VAL:O	11:n:50:PRO:HD2	2.06	0.56
31:I:120:LYS:HZ3	31:I:130:ASN:HD21	1.52	0.56
42:T:2:LEU:HD22	42:T:34:GLN:HB2	1.87	0.56
51:1:191:A:H2'	51:1:192:C:C6	2.41	0.56
51:1:2343:U:H2'	51:1:2344:U:C6	2.40	0.56
10:m:53:MET:HE1	10:m:117:PHE:HA	1.88	0.56
19:v:80:HIS:CD2	19:v:85:LYS:HE3	2.41	0.56
22:y:42:LEU:O	22:y:46:VAL:HG23	2.05	0.56
30:H:171:ARG:HA	50:3:1106:G:O3'	2.05	0.56
36:N:47:VAL:HG11	36:N:78:ILE:HD12	1.86	0.56
50:3:273:U:C2'	50:3:274:A:H5'	2.35	0.56
50:3:428:G:H4'	50:3:429:U:O5'	2.04	0.56
51:1:729:G:H3'	51:1:729:G:N3	2.21	0.56
51:1:2760:C:O2'	51:1:2761:A:H5'	2.06	0.56
2:c:85:ALA:HB3	2:c:88:GLU:OE1	2.05	0.56
30:H:6:PRO:HD2	30:H:183:TYR:CD2	2.41	0.56
51:1:742:A:H2'	51:1:743:A:C8	2.41	0.56
51:1:1112:G:H2'	51:1:1113:U:C6	2.41	0.56
51:1:2834:G:H2'	51:1:2879:A:N6	2.20	0.56
1:b:184:GLU:HG3	1:b:186:ASP:H	1.71	0.56
2:c:100:LEU:C	2:c:100:LEU:HD23	2.31	0.56
8:k:15:GLY:O	8:k:47:ILE:HG12	2.05	0.56
8:k:76:VAL:HG22	13:p:72:VAL:CG2	2.36	0.56
10:m:59:ARG:HA	10:m:59:ARG:NE	2.21	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:n:78:LYS:HG2	11:n:83:LEU:CD2	2.35	0.56
40:R:3:ILE:HD11	40:R:21:ILE:HD13	1.87	0.56
51:1:1571:A:H2'	51:1:1572:A:H8	1.71	0.56
51:1:1635:A:H2'	51:1:1636:U:O4'	2.05	0.56
51:1:1841:U:H2'	51:1:1842:G:H8	1.70	0.56
51:1:1848:A:H2'	51:1:1849:G:C8	2.41	0.56
2:c:33:ARG:HD3	2:c:33:ARG:H	1.70	0.55
8:k:42:THR:HG22	8:k:57:VAL:HG22	1.87	0.55
12:o:31:THR:HG23	12:o:32:PRO:HD2	1.87	0.55
28:F:4:ARG:HB3	51:1:2466:C:OP1	2.06	0.55
30:H:137:VAL:HG21	30:H:167:TYR:CD2	2.41	0.55
32:J:91:SER:HB3	32:J:93:VAL:HG23	1.89	0.55
32:J:92:ARG:HB3	32:J:127:TYR:CB	2.35	0.55
47:Y:30:PHE:O	47:Y:34:VAL:HG23	2.06	0.55
50:3:389:A:H3'	50:3:390:U:C6	2.41	0.55
50:3:516:U:H3	50:3:533:A:N6	1.91	0.55
51:1:912:C:O2'	51:1:913:U:H5'	2.06	0.55
51:1:962:G:H2'	51:1:963:U:H6	1.70	0.55
51:1:969:G:H2'	51:1:970:U:C6	2.41	0.55
51:1:2480:C:H2'	51:1:2481:G:O4'	2.06	0.55
9:l:79:LEU:HD12	9:l:114:GLY:H	1.72	0.55
39:Q:120:ARG:HD3	39:Q:122:LYS:HZ3	1.71	0.55
40:R:22:TYR:CE1	50:3:1330:U:H4'	2.41	0.55
41:S:41:TRP:HE1	46:X:10:ILE:HD11	1.71	0.55
50:3:328:C:H5'	50:3:329:A:H5'	1.89	0.55
51:1:2572:A:H5'	51:1:2574:G:H5''	1.89	0.55
1:b:88:ALA:C	1:b:89:ASN:HD22	2.15	0.55
3:d:76:PRO:HA	3:d:82:GLY:HA2	1.88	0.55
22:y:24:GLU:O	22:y:28:LEU:HD13	2.07	0.55
29:G:57:ASN:HD21	29:G:219:THR:CG2	2.14	0.55
30:H:104:GLU:HG3	30:H:106:ARG:HH12	1.70	0.55
31:I:3:TYR:HB2	31:I:62:ARG:HH12	1.70	0.55
51:1:657:U:H2'	51:1:658:U:C6	2.42	0.55
54:4:17:U:H2'	54:4:18:G:C8	2.41	0.55
1:b:13:ARG:HH12	51:1:1977:A:H2	1.55	0.55
3:d:146:VAL:HG12	3:d:185:LYS:HB2	1.88	0.55
4:e:52:ALA:HB2	4:e:149:ARG:NH1	2.22	0.55
5:f:90:GLY:HA3	5:f:93:TYR:CD2	2.37	0.55
5:f:122:ALA:HB1	5:f:130:ILE:HD11	1.88	0.55
5:f:132:LEU:HD23	5:f:132:LEU:H	1.71	0.55
11:n:9:GLN:HA	11:n:17:ARG:HH21	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:x:17:ARG:HE	21:x:23:ALA:HB2	1.71	0.55
50:3:411:A:H1'	50:3:413:G:C1'	2.36	0.55
50:3:949:A:H2'	50:3:950:U:C6	2.42	0.55
50:3:1200:C:H5''	50:3:1201:A:H3'	1.88	0.55
51:1:2314:A:O2'	51:1:2315:G:H8	1.90	0.55
51:1:2427:C:C5'	51:1:2429:G:H5'	2.36	0.55
3:d:149:ILE:HG21	3:d:188:MET:SD	2.45	0.55
10:m:64:TRP:HB2	10:m:104:GLU:HB3	1.88	0.55
14:q:102:LYS:H	14:q:102:LYS:HD2	1.70	0.55
19:v:28:ALA:HB3	19:v:42:LEU:HD13	1.87	0.55
29:G:89:PHE:HB3	29:G:150:ILE:HA	1.88	0.55
32:J:132:PRO:O	32:J:136:VAL:HG23	2.06	0.55
45:W:54:LEU:O	45:W:58:ILE:HG12	2.07	0.55
49:a:63:THR:OG1	49:a:161:VAL:HG23	2.06	0.55
50:3:1342:C:H2'	50:3:1343:G:C8	2.40	0.55
51:1:296:U:H2'	51:1:297:G:C8	2.42	0.55
4:e:101:ARG:HH11	4:e:138:PRO:HD2	1.72	0.55
30:H:4:VAL:HG13	50:3:1190:G:OP2	2.06	0.55
36:N:53:LEU:HD21	36:N:100:ALA:HB3	1.88	0.55
37:O:8:ILE:O	37:O:73:LEU:HD12	2.06	0.55
44:V:6:THR:HG21	44:V:59:GLU:HB3	1.89	0.55
44:V:44:HIS:CD2	44:V:69:THR:HB	2.41	0.55
51:1:2220:U:H2'	51:1:2221:G:C8	2.41	0.55
51:1:2306:C:H5''	51:1:2307:G:H3'	1.87	0.55
1:b:36:ASN:HB2	1:b:61:TYR:HB2	1.87	0.55
1:b:156:SER:OG	51:1:1818:U:H5'	2.07	0.55
4:e:114:ARG:HH22	4:e:175:PRO:HG2	1.72	0.55
12:o:90:VAL:HG11	12:o:115:LEU:HD21	1.88	0.55
30:H:137:VAL:HG21	30:H:167:TYR:HD2	1.72	0.55
30:H:174:LEU:HD23	30:H:174:LEU:O	2.06	0.55
32:J:75:LEU:HD23	32:J:75:LEU:H	1.71	0.55
36:N:105:ARG:HH11	36:N:105:ARG:HG3	1.71	0.55
41:S:5:MET:HE3	41:S:62:ARG:NH2	2.22	0.55
43:U:14:ARG:HE	43:U:42:ILE:HG21	1.71	0.55
49:a:7:ARG:HH22	49:a:218:MET:HE3	1.71	0.55
50:3:45:G:H2'	50:3:46:G:H8	1.71	0.55
51:1:1909:C:H2'	51:1:1910:G:C8	2.41	0.55
53:5:31:G:H2'	53:5:32:C:C6	2.42	0.55
5:f:30:GLY:H	5:f:78:VAL:HA	1.71	0.55
8:k:88:ASN:OD1	8:k:95:ILE:HG12	2.06	0.55
15:r:15:SER:H	15:r:18:GLN:NE2	2.04	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:w:12:SER:OG	51:1:2262:U:H5	1.89	0.55
39:Q:56:LEU:HD12	39:Q:56:LEU:N	2.21	0.55
41:S:58:ARG:HA	50:3:980:C:O2	2.07	0.55
50:3:218:U:H2'	50:3:219:U:H6	1.72	0.55
51:1:277:G:H4'	51:1:278:A:C2	2.41	0.55
51:1:1173:U:H2'	51:1:1174:U:H5'	1.88	0.55
25:C:37:LYS:HB2	25:C:48:TYR:CE2	2.42	0.55
31:I:131:ILE:HD12	31:I:131:ILE:N	2.21	0.55
33:K:44:ARG:HA	33:K:58:HIS:HA	1.89	0.55
39:Q:98:ARG:HD2	39:Q:105:GLY:HA2	1.89	0.55
50:3:437:U:H2'	50:3:438:U:O4'	2.07	0.55
51:1:2039:U:H2'	51:1:2040:G:C8	2.41	0.55
1:b:206:LYS:HE3	51:1:729:G:H5''	1.88	0.55
1:b:209:ALA:HA	1:b:212:TRP:NE1	2.22	0.55
5:f:71:LEU:HD23	5:f:71:LEU:C	2.32	0.55
14:q:116:LEU:O	14:q:116:LEU:HD23	2.07	0.55
23:z:8:GLN:HB2	23:z:28:LEU:HD13	1.87	0.55
29:G:94:ARG:NE	29:G:96:LEU:HD23	2.21	0.55
30:H:111:ASP:HB2	30:H:114:LEU:HD12	1.89	0.55
51:1:277:G:H5'	51:1:278:A:H5'	1.88	0.55
51:1:466:A:H2'	51:1:467:G:H5'	1.88	0.55
51:1:1418:G:O6	51:1:1578:U:H5''	2.06	0.55
51:1:1682:G:H2'	51:1:1683:U:C6	2.42	0.55
51:1:2122:U:H2'	51:1:2123:G:O4'	2.07	0.55
51:1:2875:C:H2'	51:1:2876:G:C8	2.42	0.55
1:b:73:ILE:HD13	1:b:97:ASP:OD2	2.07	0.54
30:H:39:ARG:HE	30:H:56:ILE:HD12	1.72	0.54
38:P:122:PRO:HB2	48:Z:33:ARG:HA	1.88	0.54
41:S:2:LYS:HE2	41:S:5:MET:HG2	1.87	0.54
50:3:608:A:H2'	50:3:609:A:O4'	2.07	0.54
50:3:1251:A:H2'	50:3:1252:A:C8	2.41	0.54
50:3:1348:U:O2'	50:3:1349:A:H5'	2.07	0.54
51:1:1168:G:H1	51:1:1181:U:H3	1.53	0.54
51:1:1278:C:H2'	51:1:1279:G:C8	2.42	0.54
53:5:58:A:H1'	53:5:60:U:C5	2.42	0.54
1:b:52:HIS:CD2	1:b:218:THR:HA	2.41	0.54
14:q:107:ALA:HB1	15:r:48:LYS:NZ	2.22	0.54
15:r:17:GLY:H	15:r:98:ILE:HB	1.73	0.54
24:B:11:LYS:HA	24:B:14:MET:HE3	1.89	0.54
25:C:21:THR:HG21	51:1:2419:U:H4'	1.89	0.54
29:G:4:SER:O	29:G:46:VAL:HG11	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:231:U:H2'	50:3:232:G:H8	1.72	0.54
50:3:1123:U:H2'	50:3:1124:G:C8	2.42	0.54
50:3:1148:U:H2'	50:3:1149:C:O4'	2.07	0.54
51:1:971:G:H2'	51:1:972:A:O4'	2.07	0.54
51:1:2107:G:H2'	51:1:2108:A:O4'	2.07	0.54
5:f:76:ILE:HD12	5:f:76:ILE:H	1.72	0.54
16:s:96:ILE:C	16:s:97:LEU:HD12	2.32	0.54
29:G:163:ILE:HD11	29:G:203:ASP:HB2	1.90	0.54
32:J:92:ARG:HB3	32:J:127:TYR:HB2	1.88	0.54
49:a:7:ARG:HH12	49:a:218:MET:HE3	1.72	0.54
51:1:437:U:H2'	51:1:438:G:H8	1.73	0.54
51:1:745:G:O2'	51:1:748:G:H1'	2.06	0.54
51:1:1527:G:H21	51:1:1545:A:N6	1.84	0.54
51:1:2287:A:O2'	51:1:2288:A:H2'	2.06	0.54
51:1:2636:C:H2'	51:1:2637:U:C6	2.41	0.54
1:b:129:LEU:N	1:b:129:LEU:HD23	2.22	0.54
23:z:43:ILE:O	23:z:47:ILE:HG13	2.07	0.54
31:I:20:LEU:H	31:I:20:LEU:HD12	1.73	0.54
34:L:71:THR:H	34:L:137:ARG:HH12	1.54	0.54
36:N:26:LYS:C	36:N:27:ILE:HD12	2.31	0.54
49:a:15:VAL:HG21	49:a:220:ALA:HB3	1.89	0.54
50:3:119:A:H4'	50:3:120:A:C4	2.43	0.54
50:3:560:A:H5'	50:3:566:G:N2	2.23	0.54
50:3:1225:A:H5'	50:3:1226:C:OP2	2.06	0.54
51:1:36:G:O2'	51:1:37:C:H5'	2.07	0.54
51:1:222:A:N1	51:1:233:A:H5''	2.22	0.54
51:1:813:U:H2'	51:1:814:C:H6	1.71	0.54
51:1:958:U:H2'	52:2:89:U:O2	2.07	0.54
51:1:1149:G:H2'	51:1:1150:C:C6	2.41	0.54
51:1:2788:C:H2'	51:1:2789:C:C6	2.42	0.54
1:b:227:VAL:HG21	51:1:784:G:C6	2.42	0.54
5:f:39:ALA:HA	5:f:57:TYR:CD2	2.42	0.54
6:g:62:LEU:HD23	6:g:62:LEU:O	2.08	0.54
7:j:34:ARG:NH2	14:q:69:ARG:HD2	2.22	0.54
12:o:90:VAL:HG22	12:o:91:SER:N	2.22	0.54
27:E:23:HIS:HD2	27:E:49:VAL:HG12	1.71	0.54
32:J:68:ARG:HG3	32:J:69:ASN:ND2	2.21	0.54
33:K:18:VAL:HG11	33:K:58:HIS:CD2	2.42	0.54
50:3:82:G:H2'	50:3:83:C:H5'	1.88	0.54
30:H:63:ILE:HG23	30:H:98:ALA:HA	1.88	0.54
41:S:19:TYR:CD2	41:S:50:LEU:HD13	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:59:A:H1'	50:3:354:G:N2	2.22	0.54
50:3:976:G:H22	50:3:1362:A:H2'	1.71	0.54
51:1:119:A:H4'	51:1:120:U:H5'	1.90	0.54
51:1:601:C:O2'	51:1:605:G:H5''	2.07	0.54
51:1:917:A:H5''	51:1:2268:A:H61	1.71	0.54
7:j:4:PHE:HB3	14:q:63:ARG:HH12	1.72	0.54
24:B:5:ASN:ND2	51:1:2020:A:H62	2.05	0.54
31:I:169:TRP:HA	31:I:183:ARG:HB3	1.90	0.54
39:Q:27:PRO:HD2	50:3:363:A:C2	2.43	0.54
50:3:102:G:H2'	50:3:103:U:H6	1.73	0.54
50:3:160:A:H61	50:3:347:G:H21	1.54	0.54
50:3:1293:C:H2'	50:3:1294:G:C8	2.43	0.54
50:3:1436:U:H2'	50:3:1437:A:C8	2.43	0.54
51:1:1866:A:H2'	51:1:1867:G:O4'	2.08	0.54
51:1:2591:C:H2'	51:1:2592:G:C8	2.43	0.54
52:2:55:U:H2'	52:2:56:G:C8	2.43	0.54
3:d:172:ALA:HB3	3:d:195:GLN:HE21	1.72	0.54
5:f:43:LYS:NZ	5:f:52:GLY:HA3	2.23	0.54
17:t:60:THR:O	51:1:1341:G:H4'	2.08	0.54
24:B:2:VAL:HG22	24:B:3:GLN:N	2.23	0.54
29:G:68:PHE:HB3	29:G:79:VAL:CG1	2.38	0.54
31:I:172:VAL:HG22	31:I:174:ALA:N	2.22	0.54
35:M:9:MET:HE2	35:M:10:LEU:HD12	1.90	0.54
50:3:399:G:H2'	50:3:400:C:C6	2.43	0.54
50:3:789:U:C3'	50:3:790:A:H5''	2.38	0.54
51:1:1688:U:H2'	51:1:1698:A:N6	2.22	0.54
1:b:155:ARG:HD3	51:1:1818:U:C5	2.42	0.54
7:j:60:ASP:OD1	7:j:61:LYS:HG2	2.08	0.54
23:z:42:ALA:HB1	51:1:927:A:C2	2.43	0.54
27:E:16:THR:HG21	27:E:48:MET:HE1	1.89	0.54
39:Q:20:VAL:HG23	39:Q:94:TYR:CE1	2.43	0.54
42:T:23:SER:O	42:T:27:GLN:HG3	2.08	0.54
50:3:707:U:H2'	50:3:708:C:C6	2.42	0.54
50:3:1540:U:O2	50:3:1540:U:H3'	2.08	0.54
51:1:871:U:H2'	51:1:872:U:C6	2.43	0.54
51:1:1316:U:H2'	51:1:1317:G:H8	1.72	0.54
4:e:26:GLN:NE2	52:2:57:A:H4'	2.23	0.54
7:j:53:TYR:CE1	7:j:121:LYS:HD3	2.43	0.54
30:H:127:VAL:HG22	30:H:128:MET:N	2.23	0.54
30:H:176:THR:HG22	30:H:178:ARG:HG2	1.90	0.54
31:I:81:LEU:HD12	31:I:88:ASN:HB3	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:J:160:VAL:HG23	32:J:161:GLU:N	2.23	0.54
50:3:57:G:H2'	50:3:58:C:C6	2.43	0.54
50:3:350:G:H2'	50:3:351:G:C8	2.42	0.54
50:3:1491:G:O2'	50:3:1492:A:H5'	2.07	0.54
51:1:2308:G:H2'	51:1:2309:A:H5'	1.90	0.54
53:5:75:C:H2'	53:5:76:A:O4'	2.08	0.54
3:d:2:GLU:HB3	3:d:11:ALA:HB1	1.90	0.53
8:k:76:VAL:HG21	8:k:78:ARG:NH1	2.23	0.53
28:F:23:ILE:HD12	28:F:23:ILE:N	2.22	0.53
29:G:7:ASP:HB3	29:G:8:MET:SD	2.47	0.53
29:G:140:LEU:O	29:G:144:GLU:HG2	2.08	0.53
31:I:103:ARG:HB2	31:I:170:LEU:CD2	2.37	0.53
34:L:92:PRO:HA	34:L:95:ARG:HB3	1.88	0.53
40:R:15:VAL:HG23	40:R:40:GLU:O	2.07	0.53
42:T:78:THR:HA	42:T:81:ILE:HG12	1.89	0.53
50:3:651:C:H2'	50:3:652:U:C6	2.43	0.53
51:1:184:C:H2'	51:1:185:G:H8	1.73	0.53
51:1:562:U:O4'	51:1:2036:C:H5'	2.08	0.53
51:1:677:A:O2'	51:1:2071:A:H5'	2.08	0.53
51:1:819:A:H3'	51:1:973:A:H61	1.72	0.53
51:1:979:A:H2'	51:1:982:C:H42	1.73	0.53
51:1:1878:G:H2'	51:1:1879:C:O4'	2.09	0.53
51:1:2031:A:C6	51:1:2498:C:H1'	2.43	0.53
5:f:21:GLN:NE2	5:f:38:ASP:HA	2.22	0.53
12:o:15:ARG:NH2	52:2:8:C:H5''	2.23	0.53
12:o:68:LYS:HG2	52:2:50:A:OP1	2.09	0.53
21:x:2:ARG:O	21:x:11:PRO:HD3	2.08	0.53
26:D:11:LYS:HZ1	51:1:686:U:H5''	1.72	0.53
39:Q:69:GLU:HA	50:3:521:G:OP1	2.08	0.53
39:Q:120:ARG:HD3	39:Q:122:LYS:NZ	2.22	0.53
42:T:25:GLU:OE2	42:T:69:LEU:HD11	2.08	0.53
49:a:65:LEU:HD11	49:a:188:ASN:HD21	1.73	0.53
50:3:79:G:H2'	50:3:80:A:O4'	2.07	0.53
50:3:935:A:H2'	50:3:936:C:H6	1.71	0.53
50:3:1119:C:H2'	50:3:1120:C:C6	2.44	0.53
51:1:528:A:C2	51:1:2042:A:H2'	2.43	0.53
51:1:1103:A:C3'	51:1:1104:C:H5''	2.29	0.53
51:1:1179:G:C5	51:1:1180:U:H1'	2.43	0.53
51:1:1700:A:H2'	51:1:1701:A:H5'	1.91	0.53
51:1:2146:C:H4'	51:1:2147:A:C5	2.43	0.53
51:1:2259:U:O2'	51:1:2427:C:H2'	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2556:C:H2'	51:1:2557:G:O4'	2.09	0.53
51:1:2636:C:H2'	51:1:2637:U:H6	1.74	0.53
51:1:2875:C:H2'	51:1:2876:G:H8	1.72	0.53
3:d:6:LYS:HD2	3:d:7:ASP:N	2.24	0.53
12:o:71:ALA:O	12:o:106:LEU:HD23	2.08	0.53
23:z:37:ARG:HH21	51:1:929:U:H4'	1.72	0.53
29:G:66:ILE:N	29:G:66:ILE:HD12	2.23	0.53
34:L:118:ARG:NH1	34:L:118:ARG:HB2	2.23	0.53
50:3:223:A:H2'	50:3:224:U:C6	2.42	0.53
50:3:342:C:H2'	50:3:343:U:O4'	2.09	0.53
50:3:924:C:H2'	50:3:925:G:H8	1.73	0.53
51:1:2813:A:H2'	51:1:2814:A:H8	1.74	0.53
4:e:125:GLY:HA3	4:e:159:ALA:HB3	1.90	0.53
20:w:55:LEU:CD1	20:w:76:ILE:HD12	2.39	0.53
31:I:10:LEU:C	31:I:10:LEU:HD12	2.34	0.53
46:X:55:GLN:HG3	46:X:56:HIS:H	1.73	0.53
51:1:1851:U:H2'	51:1:1852:U:O4'	2.09	0.53
2:c:22:ILE:N	2:c:22:ILE:HD12	2.24	0.53
9:l:18:ARG:C	9:l:19:LEU:HD22	2.33	0.53
10:m:57:VAL:HG11	10:m:108:VAL:HG11	1.90	0.53
19:v:20:LEU:HD11	19:v:41:GLU:CD	2.33	0.53
43:U:33:ILE:HD12	43:U:33:ILE:H	1.73	0.53
44:V:17:GLU:OE1	50:3:273:U:H1'	2.08	0.53
50:3:789:U:C2'	50:3:790:A:H5''	2.39	0.53
51:1:740:C:H5''	51:1:1784:A:OP1	2.09	0.53
51:1:826:U:H5''	51:1:2429:G:P	2.48	0.53
51:1:2853:C:H2'	51:1:2854:G:C8	2.44	0.53
52:2:30:C:H1'	52:2:57:A:H61	1.73	0.53
11:n:55:ALA:HA	11:n:80:PHE:CE1	2.44	0.53
29:G:110:ILE:O	29:G:114:LYS:HG3	2.09	0.53
31:I:57:LYS:HA	31:I:60:VAL:HG12	1.90	0.53
33:K:67:PRO:HD2	33:K:70:VAL:HB	1.91	0.53
39:Q:27:PRO:HG3	50:3:553:A:H1'	1.91	0.53
40:R:114:PRO:HB2	50:3:1228:C:H5'	1.90	0.53
50:3:17:U:H2'	50:3:18:C:C6	2.44	0.53
50:3:195:A:H2'	50:3:196:A:C8	2.43	0.53
50:3:373:A:H2'	50:3:374:A:H8	1.72	0.53
51:1:389:G:C2'	51:1:390:U:H5'	2.39	0.53
51:1:2039:U:H2'	51:1:2040:G:H8	1.73	0.53
51:1:2182:U:H2'	51:1:2183:A:C8	2.43	0.53
51:1:2475:C:O5'	51:1:2475:C:H6	1.92	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:d:147:LEU:HB2	3:d:183:PHE:CD2	2.43	0.53
6:g:83:LYS:HD2	6:g:83:LYS:O	2.08	0.53
8:k:25:LEU:HD22	51:1:2562:U:H4'	1.91	0.53
10:m:59:ARG:HA	10:m:59:ARG:HE	1.74	0.53
12:o:81:ARG:O	12:o:85:LYS:HG2	2.09	0.53
31:I:131:ILE:HG21	50:3:620:C:C2	2.43	0.53
33:K:40:GLU:OE1	33:K:100:SER:HA	2.08	0.53
50:3:1411:C:H2'	50:3:1412:C:C6	2.44	0.53
51:1:1562:U:H2'	51:1:1563:U:O4'	2.08	0.53
51:1:1689:A:H2'	51:1:1690:A:H8	1.73	0.53
51:1:1827:U:O2'	51:1:1828:G:H5'	2.08	0.53
53:5:66:C:H2'	53:5:67:C:C6	2.43	0.53
1:b:75:ALA:HB1	1:b:93:VAL:HG22	1.91	0.53
21:x:36:ARG:HA	21:x:47:THR:HA	1.90	0.53
32:J:152:VAL:HA	32:J:155:LYS:HD3	1.90	0.53
45:W:25:ILE:O	45:W:29:LYS:HG3	2.08	0.53
50:3:110:C:H2'	50:3:111:G:O4'	2.08	0.53
50:3:211:G:H2'	50:3:212:G:H5'	1.91	0.53
50:3:269:C:H2'	50:3:270:A:C8	2.44	0.53
50:3:677:U:H2'	50:3:678:U:C6	2.44	0.53
50:3:1137:C:H4'	50:3:1138:G:N2	2.23	0.53
50:3:1162:C:H2'	50:3:1163:A:H8	1.73	0.53
50:3:1349:A:H1'	50:3:1374:A:N6	2.24	0.53
51:1:796:C:H2'	51:1:797:G:C8	2.43	0.53
51:1:1728:C:H2'	51:1:1729:U:H5''	1.91	0.53
51:1:2175:C:H2'	51:1:2176:A:O4'	2.09	0.53
51:1:2639:A:H2'	51:1:2640:G:O4'	2.07	0.53
5:f:44:HIS:HA	5:f:49:LEU:HD13	1.91	0.53
9:l:142:ILE:HD12	9:l:142:ILE:N	2.23	0.53
26:D:3:ARG:HG2	51:1:1613:G:H4'	1.91	0.53
30:H:129:PHE:CD2	30:H:156:LEU:HD22	2.44	0.53
36:N:126:PHE:O	50:3:1342:C:H4'	2.09	0.53
38:P:29:THR:OG1	38:P:46:ALA:HB2	2.09	0.53
41:S:1:ALA:HB2	50:3:1203:C:C5'	2.37	0.53
44:V:29:LYS:HA	44:V:36:PHE:HA	1.90	0.53
46:X:51:HIS:HD2	50:3:1220:G:H1'	1.73	0.53
50:3:603:U:H2'	50:3:604:G:H8	1.73	0.53
50:3:603:U:H2'	50:3:604:G:C8	2.43	0.53
51:1:889:C:H2'	51:1:890:C:O4'	2.08	0.53
51:1:1585:C:H2'	51:1:1586:A:H5'	1.91	0.53
51:1:1915:U:H2'	51:1:1916:A:O4'	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2292:U:H2'	51:1:2293:G:C8	2.44	0.53
51:1:2537:U:H2'	51:1:2538:C:C6	2.43	0.53
29:G:45:THR:HG1	29:G:200:PRO:HD2	1.74	0.53
36:N:121:ARG:HB2	50:3:1348:U:O3'	2.09	0.53
40:R:85:TYR:CZ	40:R:89:ARG:HD3	2.43	0.53
49:a:23:ILE:HG12	49:a:186:LYS:HG3	1.90	0.53
50:3:981:U:H2'	50:3:982:U:C5	2.43	0.53
50:3:1162:C:H2'	50:3:1163:A:C8	2.44	0.53
50:3:1492:A:O2'	50:3:1493:A:H4'	2.08	0.53
51:1:2186:G:H2'	51:1:2187:U:O4'	2.08	0.53
51:1:2457:U:O2'	51:1:2458:G:H5'	2.08	0.53
1:b:70:LYS:HD3	1:b:95:TYR:CE2	2.44	0.52
4:e:34:THR:HG23	4:e:154:THR:HB	1.90	0.52
7:j:78:THR:CG2	51:1:2641:G:H5''	2.38	0.52
10:m:45:GLN:NE2	10:m:125:PRO:HD3	2.24	0.52
19:v:76:ASP:HB2	19:v:90:ASP:OD2	2.10	0.52
36:N:112:ARG:NH2	37:O:64:GLN:HE22	2.07	0.52
50:3:220:G:O2'	50:3:221:C:H5'	2.09	0.52
51:1:825:A:H2'	51:1:826:U:C6	2.45	0.52
51:1:1405:U:H2'	51:1:1406:U:C6	2.44	0.52
51:1:1755:A:H2'	51:1:1756:G:H5'	1.90	0.52
51:1:1858:A:N6	51:1:1884:G:H1'	2.24	0.52
51:1:2066:C:O2'	51:1:2067:G:H5'	2.08	0.52
53:5:7:G:H5''	53:5:8:U:C5	2.44	0.52
7:j:17:VAL:CG2	7:j:137:PRO:HB2	2.39	0.52
13:p:3:ILE:HD12	13:p:3:ILE:H	1.75	0.52
13:p:52:ARG:HH21	51:1:2720:U:H5''	1.73	0.52
31:I:120:LYS:NZ	31:I:130:ASN:ND2	2.57	0.52
34:L:137:ARG:O	34:L:140:VAL:HG12	2.09	0.52
40:R:13:HIS:NE2	40:R:41:ASP:HA	2.24	0.52
47:Y:25:SER:OG	50:3:1458:G:H5''	2.09	0.52
50:3:474:G:H2'	50:3:475:C:C6	2.44	0.52
51:1:95:A:H2'	51:1:96:C:O4'	2.09	0.52
51:1:488:G:H22	51:1:491:G:H5''	1.75	0.52
7:j:4:PHE:HB3	14:q:63:ARG:NH1	2.24	0.52
7:j:76:HIS:CE1	7:j:85:LYS:HB2	2.45	0.52
10:m:24:THR:HG22	10:m:99:GLY:O	2.08	0.52
29:G:110:ILE:HD12	29:G:113:LEU:HD23	1.91	0.52
31:I:10:LEU:HD12	31:I:11:SER:N	2.24	0.52
41:S:45:LEU:HD22	46:X:12:LEU:HA	1.90	0.52
49:a:196:LEU:O	49:a:200:LYS:HG3	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:994:A:H2'	50:3:995:C:O4'	2.09	0.52
51:1:1451:C:H4'	51:1:1452:G:O4'	2.09	0.52
51:1:1889:A:H2'	51:1:1890:A:C8	2.43	0.52
51:1:1936:A:H2	51:1:1943:U:H3	1.56	0.52
2:c:149:ASN:O	2:c:152:PRO:HD2	2.10	0.52
6:g:8:LYS:HG2	6:g:14:SER:HA	1.92	0.52
10:m:86:LYS:HA	51:1:956:G:OP1	2.09	0.52
29:G:68:PHE:HB3	29:G:79:VAL:HG13	1.91	0.52
36:N:78:ILE:O	36:N:82:ILE:HG13	2.10	0.52
50:3:471:U:H2'	50:3:472:U:H6	1.74	0.52
50:3:1435:G:H2'	50:3:1436:U:C6	2.44	0.52
51:1:1505:A:H2'	51:1:1506:U:C6	2.45	0.52
9:l:30:THR:HG22	51:1:810:U:C4	2.45	0.52
29:G:177:ASN:C	29:G:178:LEU:HD22	2.35	0.52
36:N:61:ASP:C	36:N:62:LEU:HD22	2.34	0.52
37:O:57:VAL:HG23	37:O:58:ASN:OD1	2.09	0.52
39:Q:28:GLN:HB3	39:Q:80:LEU:HD11	1.91	0.52
40:R:90:HIS:HA	40:R:108:ARG:NH2	2.24	0.52
43:U:12:LYS:HG2	43:U:13:LYS:HG2	1.90	0.52
48:Z:28:LEU:HD23	48:Z:28:LEU:C	2.35	0.52
50:3:1024:G:C2'	50:3:1025:U:H5'	2.39	0.52
50:3:1252:A:H2'	50:3:1253:G:O4'	2.10	0.52
50:3:1504:G:OP1	50:3:1507:A:H4'	2.09	0.52
51:1:1683:U:H2'	51:1:1684:G:C8	2.44	0.52
51:1:1728:C:C2'	51:1:1729:U:H5''	2.39	0.52
51:1:2317:A:H2'	51:1:2318:G:H5'	1.92	0.52
51:1:2514:U:H2'	51:1:2515:C:C6	2.44	0.52
51:1:2564:A:C2	51:1:2647:U:H4'	2.43	0.52
52:2:19:C:H2'	52:2:20:G:C8	2.45	0.52
3:d:48:THR:O	3:d:52:VAL:HG23	2.08	0.52
31:I:131:ILE:HD12	31:I:131:ILE:H	1.73	0.52
33:K:10:VAL:HB	33:K:58:HIS:HB3	1.92	0.52
41:S:57:SER:HA	50:3:1360:A:C8	2.44	0.52
50:3:184:G:H4'	50:3:224:U:O3'	2.08	0.52
51:1:616:A:H2'	51:1:617:G:O4'	2.09	0.52
51:1:792:A:H2'	51:1:2440:C:N3	2.25	0.52
51:1:1854:A:H2'	51:1:1855:U:H5'	1.92	0.52
8:k:49:ARG:NH2	50:3:1422:G:H4'	2.25	0.52
10:m:8:LYS:O	10:m:9:PHE:HD1	1.92	0.52
11:n:2:ARG:HA	11:n:5:LYS:HD2	1.90	0.52
21:x:31:ASN:HB2	51:1:397:U:H5''	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:x:53:LYS:O	21:x:57:VAL:HG23	2.09	0.52
27:E:14:LYS:HD3	27:E:22:LYS:HE2	1.91	0.52
30:H:122:GLN:O	30:H:127:VAL:HG12	2.09	0.52
36:N:23:GLY:H	36:N:60:LEU:HA	1.75	0.52
36:N:59:LYS:HB2	36:N:60:LEU:HD12	1.91	0.52
36:N:110:VAL:HG23	36:N:110:VAL:O	2.10	0.52
40:R:6:ILE:CG2	40:R:7:ASN:H	2.16	0.52
45:W:38:ILE:HD12	50:3:720:C:H1'	1.92	0.52
50:3:113:G:H1'	50:3:354:G:H5''	1.92	0.52
50:3:923:A:H2'	50:3:924:C:C6	2.45	0.52
50:3:976:G:N2	50:3:1362:A:H2'	2.25	0.52
50:3:1070:U:H2'	50:3:1071:C:C6	2.45	0.52
50:3:1448:C:H2'	50:3:1449:C:C6	2.45	0.52
51:1:758:C:O2	51:1:758:C:H2'	2.10	0.52
51:1:1722:A:H62	51:1:1739:A:H62	1.57	0.52
51:1:2249:U:H4'	51:1:2275:C:C5	2.45	0.52
52:2:19:C:H2'	52:2:20:G:H8	1.75	0.52
19:v:77:VAL:HG21	19:v:79:ARG:HH12	1.74	0.52
20:w:22:PHE:HD2	51:1:922:C:H1'	1.74	0.52
21:x:11:PRO:HG3	21:x:30:PRO:HD2	1.92	0.52
30:H:133:MET:HE3	30:H:167:TYR:HB2	1.90	0.52
32:J:142:GLY:HA2	32:J:145:ASN:HD21	1.75	0.52
36:N:105:ARG:HH12	36:N:107:ALA:HA	1.75	0.52
39:Q:53:ARG:HH12	39:Q:61:GLU:HG3	1.75	0.52
51:1:191:A:H2'	51:1:192:C:H6	1.74	0.52
51:1:609:A:H2'	51:1:610:C:O4'	2.09	0.52
51:1:1051:G:H4'	51:1:2752:C:O2'	2.09	0.52
52:2:25:U:H3'	52:2:25:U:OP2	2.09	0.52
4:e:47:LYS:HA	4:e:50:ASP:OD1	2.10	0.52
4:e:76:PHE:HB2	51:1:2311:A:C1'	2.39	0.52
5:f:77:GLY:HA2	5:f:81:GLY:HA2	1.92	0.52
31:I:151:GLN:HG3	50:3:437:U:H5''	1.91	0.52
32:J:152:VAL:HG22	32:J:156:ARG:HG2	1.91	0.52
49:a:202:THR:HG23	49:a:203:GLN:H	1.75	0.52
50:3:180:U:H2'	50:3:181:A:O4'	2.10	0.52
50:3:602:A:H2'	50:3:603:U:C6	2.45	0.52
50:3:945:G:H2'	50:3:945:G:N3	2.25	0.52
50:3:1339:A:H2'	50:3:1340:A:H5'	1.91	0.52
51:1:869:G:C2	51:1:870:U:H1'	2.45	0.52
51:1:1740:G:O2'	51:1:1741:C:H5'	2.09	0.52
2:c:12:THR:CG2	13:p:4:ILE:HD11	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:o:90:VAL:HG22	12:o:91:SER:H	1.75	0.52
13:p:88:ARG:HB3	13:p:112:ARG:NH2	2.25	0.52
31:I:67:LEU:HB3	50:3:546:A:OP2	2.10	0.52
31:I:153:ARG:HH21	50:3:436:C:H1'	1.75	0.52
39:Q:99:GLY:O	50:3:35:G:H5''	2.09	0.52
44:V:11:VAL:CG1	44:V:20:ILE:HD11	2.40	0.52
50:3:683:G:H2'	50:3:684:U:O4'	2.09	0.52
51:1:727:A:H2'	51:1:728:G:O4'	2.10	0.52
51:1:1258:U:H2'	51:1:1259:G:C8	2.45	0.52
51:1:2662:A:H8	51:1:2662:A:O5'	1.92	0.52
25:C:26:LYS:HG3	25:C:27:ARG:NH2	2.24	0.51
25:C:43:ARG:NH2	51:1:643:A:H1'	2.25	0.51
34:L:49:LEU:HD13	34:L:123:LEU:CD1	2.40	0.51
42:T:4:THR:HG23	50:3:659:U:OP1	2.10	0.51
47:Y:34:VAL:O	47:Y:38:ILE:HG13	2.10	0.51
47:Y:41:GLY:HA2	47:Y:85:LEU:HD11	1.92	0.51
47:Y:66:ILE:HD12	47:Y:70:LYS:HD3	1.92	0.51
50:3:64:G:H4'	50:3:65:A:H3'	1.91	0.51
50:3:817:C:H4'	50:3:818:G:H5''	1.92	0.51
51:1:85:G:C2'	51:1:86:G:H5''	2.38	0.51
51:1:256:A:O2'	51:1:257:C:H5'	2.10	0.51
51:1:633:A:H2'	51:1:634:C:O4'	2.10	0.51
51:1:1319:C:O2'	51:1:1320:C:H5'	2.10	0.51
51:1:1469:A:H2'	51:1:1470:A:H8	1.74	0.51
51:1:2329:U:H2'	51:1:2330:G:C8	2.45	0.51
31:I:20:LEU:HD12	31:I:20:LEU:N	2.25	0.51
40:R:47:LEU:HD12	40:R:51:GLN:HE21	1.76	0.51
46:X:37:SER:HB2	46:X:70:LEU:CD1	2.40	0.51
50:3:915:A:H2'	50:3:916:U:H5'	1.92	0.51
50:3:1490:U:O2'	50:3:1491:G:H5'	2.10	0.51
50:3:1507:A:H2'	50:3:1508:A:C8	2.45	0.51
51:1:414:C:H2'	51:1:415:A:H8	1.76	0.51
51:1:1433:A:O2'	51:1:1434:A:H5'	2.10	0.51
51:1:2295:C:O2'	51:1:2296:U:H5'	2.09	0.51
52:2:65:U:H3'	52:2:108:A:N6	2.25	0.51
53:5:47:U:H3'	53:5:48:C:C5'	2.38	0.51
3:d:68:ALA:HA	51:1:1255:U:C5	2.45	0.51
6:g:54:LEU:O	6:g:58:LEU:HD23	2.10	0.51
8:k:43:ILE:HD12	8:k:43:ILE:N	2.24	0.51
9:l:15:ALA:O	51:1:662:G:H5''	2.09	0.51
22:y:47:ARG:HH12	51:1:60:G:H4'	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:195:ILE:HD12	30:H:195:ILE:N	2.25	0.51
35:M:101:ALA:HB3	35:M:112:ASP:HB3	1.93	0.51
36:N:27:ILE:HB	36:N:34:LEU:HB2	1.91	0.51
39:Q:20:VAL:HG11	50:3:553:A:H5''	1.92	0.51
46:X:37:SER:HB2	46:X:70:LEU:HD12	1.92	0.51
46:X:71:GLY:HA3	50:3:1320:C:O2	2.10	0.51
50:3:990:C:H2'	50:3:991:U:O4'	2.11	0.51
50:3:1057:G:H2'	50:3:1058:G:O4'	2.10	0.51
51:1:62:U:H5''	51:1:63:A:OP2	2.11	0.51
51:1:807:U:H2'	51:1:808:G:C8	2.46	0.51
51:1:876:C:C2'	51:1:877:A:H5'	2.40	0.51
2:c:179:ARG:HB3	2:c:188:LEU:HD12	1.90	0.51
4:e:35:LEU:HG	4:e:153:ILE:HD13	1.92	0.51
7:j:27:ARG:HG2	7:j:27:ARG:HH11	1.75	0.51
10:m:29:GLY:H	10:m:104:GLU:HG2	1.74	0.51
50:3:90:C:H2'	50:3:91:U:C5	2.45	0.51
50:3:1119:C:H2'	50:3:1120:C:H6	1.75	0.51
50:3:1315:U:H2'	50:3:1316:G:O4'	2.09	0.51
50:3:1492:A:H3'	50:3:1493:A:C5'	2.40	0.51
51:1:149:A:H2'	51:1:150:U:C6	2.46	0.51
51:1:1412:U:H2'	51:1:1413:A:C8	2.45	0.51
51:1:1454:C:H2'	51:1:1455:G:H5'	1.91	0.51
51:1:1890:A:H2'	51:1:1891:G:O4'	2.10	0.51
51:1:2029:G:O6	51:1:2032:G:H5''	2.11	0.51
51:1:2216:G:H2'	51:1:2217:G:H8	1.75	0.51
1:b:145:MET:HE2	1:b:152:GLN:HB2	1.92	0.51
23:z:56:VAL:HG22	23:z:57:GLU:N	2.25	0.51
30:H:148:ILE:CG2	30:H:169:GLU:HB3	2.39	0.51
32:J:12:GLU:HA	32:J:38:VAL:HA	1.92	0.51
34:L:12:LEU:H	34:L:12:LEU:CD2	2.23	0.51
36:N:5:TYR:CD2	36:N:88:GLU:HB3	2.45	0.51
36:N:125:GLN:NE2	50:3:942:G:H21	2.07	0.51
39:Q:109:ARG:HA	50:3:538:G:OP1	2.11	0.51
43:U:4:ILE:HD12	43:U:67:ILE:HG12	1.91	0.51
46:X:12:LEU:HD23	46:X:12:LEU:C	2.35	0.51
48:Z:17:ARG:HD2	48:Z:20:ARG:HD2	1.91	0.51
50:3:1248:A:H2	50:3:1289:A:N6	1.97	0.51
50:3:1350:A:H2'	50:3:1351:U:C6	2.45	0.51
51:1:284:U:H2'	51:1:285:G:H5''	1.93	0.51
51:1:532:A:H4'	51:1:533:G:C8	2.46	0.51
51:1:690:G:H2'	51:1:691:C:C6	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:807:U:H2'	51:1:808:G:H8	1.74	0.51
51:1:1524:G:H2'	51:1:1525:A:H8	1.75	0.51
51:1:1802:A:H2'	51:1:1803:A:H8	1.74	0.51
51:1:2172:U:OP2	51:1:2173:A:H5'	2.10	0.51
51:1:2257:U:O2'	51:1:2258:C:H5'	2.10	0.51
5:f:142:GLN:NE2	51:1:2761:A:H1'	2.25	0.51
30:H:171:ARG:HB2	50:3:1106:G:H5''	1.93	0.51
32:J:159:SER:HB2	32:J:162:GLU:HB2	1.93	0.51
39:Q:66:ILE:HD12	39:Q:66:ILE:N	2.25	0.51
45:W:59:LYS:HG3	50:3:735:C:H5'	1.92	0.51
50:3:45:G:H2'	50:3:46:G:C8	2.46	0.51
50:3:405:U:C3'	50:3:406:G:H5'	2.33	0.51
50:3:1288:A:H1'	50:3:1353:G:H4'	1.93	0.51
51:1:2329:U:H2'	51:1:2330:G:H8	1.75	0.51
29:G:17:HIS:CE1	29:G:189:ASN:HD21	2.29	0.51
32:J:20:VAL:HG23	32:J:31:SER:OG	2.11	0.51
32:J:98:ALA:HB3	32:J:122:VAL:HA	1.92	0.51
36:N:17:ARG:HB2	36:N:65:THR:CG2	2.39	0.51
36:N:17:ARG:O	36:N:64:ILE:HD12	2.10	0.51
41:S:84:ARG:NH2	50:3:1059:C:H4'	2.26	0.51
43:U:36:VAL:HG23	43:U:36:VAL:O	2.11	0.51
46:X:41:PRO:O	46:X:44:ILE:HG23	2.10	0.51
48:Z:31:VAL:O	48:Z:31:VAL:HG12	2.11	0.51
51:1:44:A:H2'	51:1:45:G:O4'	2.09	0.51
51:1:2853:C:H2'	51:1:2854:G:H8	1.75	0.51
2:c:2:ILE:N	2:c:2:ILE:HD12	2.26	0.51
3:d:60:TRP:HD1	3:d:61:ARG:O	1.94	0.51
3:d:118:LEU:HD12	3:d:186:VAL:HG23	1.93	0.51
4:e:155:ILE:HD12	4:e:155:ILE:N	2.26	0.51
9:l:131:ALA:O	9:l:135:ILE:HG13	2.11	0.51
31:I:85:THR:HG23	31:I:86:GLY:H	1.76	0.51
40:R:103:THR:HG23	40:R:104:ASN:ND2	2.26	0.51
50:3:1310:G:O2'	50:3:1311:A:H5'	2.10	0.51
51:1:155:A:H2'	51:1:156:A:H8	1.76	0.51
51:1:365:U:H2'	51:1:366:C:C6	2.46	0.51
51:1:857:G:H2'	51:1:858:G:O4'	2.10	0.51
51:1:1454:C:H2'	51:1:1455:G:H8	1.75	0.51
51:1:1630:A:H2'	51:1:1631:G:O4'	2.11	0.51
4:e:28:PRO:HG2	4:e:168:LEU:CD2	2.41	0.51
7:j:26:GLY:HA3	51:1:1140:C:C5'	2.41	0.51
13:p:52:ARG:HG2	13:p:52:ARG:HH11	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:s:66:ILE:H	16:s:66:ILE:CD1	2.19	0.51
29:G:107:ARG:O	29:G:111:LYS:HG3	2.11	0.51
31:I:4:LEU:HD11	50:3:405:U:C5	2.45	0.51
45:W:62:ARG:HB3	45:W:69:TYR:CE1	2.45	0.51
50:3:66:A:H4'	50:3:173:U:C5	2.45	0.51
50:3:131:A:H2'	50:3:132:C:C6	2.46	0.51
51:1:106:C:H2'	51:1:107:G:H8	1.75	0.51
51:1:1182:G:H2'	51:1:1183:U:H6	1.76	0.51
51:1:1715:G:H2'	51:1:1716:U:H5	1.76	0.51
51:1:1794:A:H2'	51:1:1795:C:C6	2.45	0.51
51:1:1930:G:O2'	51:1:1931:U:C5	2.63	0.51
51:1:2557:G:H2'	51:1:2558:C:C6	2.46	0.51
1:b:257:ARG:HH11	1:b:257:ARG:HG3	1.76	0.51
4:e:115:GLY:C	4:e:116:LEU:HD12	2.35	0.51
9:l:55:MET:HE3	51:1:2392:A:H2	1.76	0.51
16:s:53:SER:O	16:s:57:ASN:ND2	2.44	0.51
21:x:70:LEU:HB3	21:x:75:GLU:HB2	1.93	0.51
35:M:30:LYS:HA	35:M:33:VAL:HG22	1.93	0.51
48:Z:14:ALA:HB1	48:Z:16:ARG:HG3	1.93	0.51
50:3:1008:U:H2'	50:3:1009:U:C6	2.46	0.51
50:3:1236:A:H4'	50:3:1304:G:C4'	2.33	0.51
50:3:1424:U:H2'	50:3:1425:U:C6	2.46	0.51
51:1:6:A:H2'	51:1:7:G:C8	2.46	0.51
51:1:1111:A:C2'	51:1:1112:G:H4'	2.41	0.51
51:1:1722:A:N6	51:1:1739:A:N6	2.59	0.51
51:1:2233:U:H2'	51:1:2234:G:C8	2.46	0.51
51:1:2534:A:H2'	51:1:2535:G:O4'	2.10	0.51
5:f:106:LEU:HB2	5:f:108:PHE:CE2	2.47	0.50
37:O:10:LEU:N	37:O:10:LEU:HD23	2.26	0.50
39:Q:23:LEU:O	39:Q:26:CYS:HB3	2.12	0.50
40:R:21:ILE:HB	40:R:24:VAL:CG1	2.41	0.50
44:V:11:VAL:HG13	44:V:20:ILE:HD11	1.94	0.50
50:3:1431:A:H2'	50:3:1432:G:O4'	2.11	0.50
51:1:1446:C:H2'	51:1:1447:C:H6	1.76	0.50
51:1:2427:C:H5''	51:1:2429:G:H5'	1.93	0.50
52:2:104:A:H2'	52:2:105:G:O4'	2.12	0.50
53:5:18:G:H21	53:5:57:A:H2'	1.76	0.50
5:f:37:ASN:HD21	5:f:39:ALA:HB3	1.75	0.50
6:g:49:ALA:O	6:g:53:GLU:HB2	2.10	0.50
8:k:70:ARG:HG2	8:k:76:VAL:HG12	1.93	0.50
35:M:28:SER:HB2	35:M:58:LEU:HB2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:S:26:LEU:H	41:S:26:LEU:CD2	2.22	0.50
46:X:28:LYS:O	46:X:30:LEU:HD12	2.12	0.50
49:a:16:ASP:HB2	49:a:21:TYR:CE2	2.41	0.50
50:3:171:A:H2'	50:3:172:A:C8	2.46	0.50
50:3:337:G:H2'	50:3:338:A:C8	2.46	0.50
50:3:425:G:H2'	50:3:426:U:H6	1.76	0.50
50:3:494:G:O2'	50:3:496:A:H1'	2.12	0.50
51:1:538:A:H2'	51:1:539:G:O4'	2.10	0.50
52:2:68:C:H2'	52:2:69:G:H8	1.76	0.50
54:4:17:U:H2'	54:4:18:G:H8	1.77	0.50
4:e:148:VAL:HG22	4:e:150:GLY:N	2.24	0.50
10:m:29:GLY:HA2	10:m:106:ASP:HB2	1.94	0.50
11:n:47:VAL:C	11:n:50:PRO:HD2	2.36	0.50
11:n:73:ASN:HA	11:n:76:VAL:HG22	1.93	0.50
12:o:27:VAL:HG22	12:o:28:VAL:N	2.26	0.50
16:s:69:LEU:HG	16:s:107:VAL:HG22	1.93	0.50
19:v:4:ILE:HG12	19:v:50:MET:HE1	1.92	0.50
21:x:15:ASN:HD22	51:1:381:G:C5'	2.24	0.50
28:F:5:ALA:HA	28:F:38:GLY:HA2	1.93	0.50
33:K:40:GLU:CD	33:K:61:LEU:HD13	2.36	0.50
35:M:9:MET:HE2	35:M:10:LEU:CD1	2.42	0.50
35:M:14:ARG:NH1	50:3:876:C:H4'	2.27	0.50
37:O:37:ARG:HG3	50:3:1124:G:C5'	2.37	0.50
43:U:6:LEU:HD22	43:U:17:TYR:HB3	1.94	0.50
50:3:715:A:H2'	50:3:716:A:H8	1.75	0.50
51:1:103:A:H2'	51:1:104:A:O4'	2.11	0.50
51:1:869:G:H2'	51:1:870:U:O4'	2.11	0.50
51:1:1307:A:H2'	51:1:1308:A:H5'	1.93	0.50
2:c:4:LEU:HD23	2:c:29:VAL:HG11	1.94	0.50
4:e:14:LYS:HD3	4:e:15:LEU:HD22	1.92	0.50
5:f:22:VAL:HA	5:f:35:THR:HA	1.93	0.50
5:f:85:LYS:C	5:f:86:LEU:HD12	2.37	0.50
5:f:159:LYS:HE2	51:1:2658:C:H5'	1.92	0.50
22:y:9:LYS:HG3	22:y:12:GLU:H	1.76	0.50
29:G:113:LEU:O	29:G:117:GLU:HG3	2.11	0.50
30:H:71:ARG:O	30:H:75:VAL:HG23	2.11	0.50
34:L:38:ALA:HA	34:L:41:ILE:HD12	1.93	0.50
35:M:119:GLY:O	50:3:600:A:H4'	2.11	0.50
43:U:8:ARG:CD	50:3:391:G:H5''	2.42	0.50
44:V:37:ILE:N	44:V:37:ILE:HD12	2.25	0.50
50:3:40:C:H2'	50:3:41:G:H8	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:269:C:H2'	50:3:270:A:H8	1.77	0.50
50:3:478:A:H2'	50:3:479:U:O4'	2.11	0.50
50:3:946:A:H4'	50:3:1334:G:H5'	1.93	0.50
51:1:544:C:H2'	51:1:545:U:C6	2.46	0.50
51:1:2075:U:H1'	51:1:2597:G:H21	1.77	0.50
52:2:35:C:O2'	52:2:36:C:H5'	2.11	0.50
1:b:237:ARG:HE	51:1:2590:A:H5''	1.77	0.50
1:b:245:THR:HB	1:b:246:PRO:HD2	1.94	0.50
8:k:1:MET:HG3	8:k:32:TYR:CD2	2.46	0.50
14:q:39:ILE:O	14:q:43:GLN:HG3	2.12	0.50
30:H:9:ILE:HG23	30:H:10:ARG:HG3	1.93	0.50
33:K:37:HIS:HB2	33:K:63:ASN:ND2	2.27	0.50
34:L:37:THR:O	34:L:41:ILE:HG13	2.12	0.50
36:N:79:ARG:HB2	36:N:79:ARG:NH1	2.26	0.50
40:R:25:GLY:O	40:R:29:SER:N	2.44	0.50
49:a:168:ASN:OD1	49:a:170:ILE:HG12	2.11	0.50
50:3:505:G:P	50:3:535:A:H5'	2.51	0.50
50:3:825:A:H2'	50:3:826:C:H6	1.75	0.50
50:3:1167:A:H2'	50:3:1167:A:N3	2.26	0.50
50:3:1195:C:H2'	50:3:1197:A:O4'	2.11	0.50
51:1:390:U:H4'	51:1:391:A:C5'	2.42	0.50
51:1:528:A:C2	51:1:2043:C:H4'	2.47	0.50
51:1:910:A:H1'	51:1:2264:C:O2'	2.12	0.50
51:1:1711:A:H2'	51:1:1712:U:C6	2.47	0.50
51:1:2333:A:H5''	51:1:2334:U:OP1	2.12	0.50
51:1:2604:U:O2'	51:1:2605:U:H6	1.95	0.50
53:5:7:G:H5''	53:5:8:U:H5	1.77	0.50
3:d:6:LYS:HG2	3:d:121:VAL:HG12	1.94	0.50
3:d:147:LEU:HD13	3:d:183:PHE:CE2	2.46	0.50
9:l:79:LEU:HG	9:l:111:ILE:O	2.12	0.50
28:F:10:LEU:HD13	28:F:33:HIS:CD2	2.47	0.50
30:H:113:LYS:HG2	30:H:117:ASP:OD2	2.11	0.50
31:I:12:ARG:NH1	50:3:427:U:OP2	2.45	0.50
39:Q:106:VAL:C	39:Q:107:LYS:HD3	2.37	0.50
44:V:4:ILE:HG21	44:V:61:ARG:HD2	1.93	0.50
49:a:188:ASN:O	49:a:192:LEU:HG	2.11	0.50
50:3:211:G:C2'	50:3:212:G:H5'	2.41	0.50
50:3:665:A:N3	50:3:732:C:H2'	2.26	0.50
51:1:402:A:H2'	51:1:403:U:O4'	2.12	0.50
51:1:690:G:H2'	51:1:691:C:H6	1.75	0.50
51:1:859:G:HO2'	51:1:860:U:H6	1.55	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:2:50:A:H2'	52:2:51:G:O4'	2.12	0.50
1:b:19:VAL:HG22	1:b:20:ASN:N	2.26	0.50
1:b:167:ASP:OD1	1:b:170:TYR:HB2	2.12	0.50
34:L:34:LYS:HB3	34:L:37:THR:HG22	1.92	0.50
36:N:70:GLY:O	36:N:74:GLN:HG3	2.12	0.50
40:R:85:TYR:CZ	50:3:1321:U:H4'	2.47	0.50
49:a:48:LEU:HD11	49:a:165:ASN:ND2	2.27	0.50
50:3:65:A:H5'	50:3:200:G:H4'	1.94	0.50
50:3:114:U:H2'	50:3:115:G:C8	2.47	0.50
50:3:823:C:H2'	50:3:824:G:H8	1.77	0.50
50:3:825:A:H2'	50:3:826:C:C6	2.47	0.50
50:3:1359:C:H2'	50:3:1361:G:OP2	2.11	0.50
50:3:1436:U:H2'	50:3:1437:A:H8	1.77	0.50
51:1:184:C:H2'	51:1:185:G:C8	2.46	0.50
51:1:796:C:H2'	51:1:797:G:H8	1.77	0.50
51:1:870:U:O2'	51:1:871:U:H5'	2.12	0.50
51:1:1683:U:H2'	51:1:1684:G:H8	1.77	0.50
51:1:2215:C:H2'	51:1:2216:G:C8	2.47	0.50
51:1:2302:U:H2'	51:1:2303:G:C8	2.47	0.50
51:1:2440:C:H5''	51:1:2587:A:H4'	1.94	0.50
51:1:2743:U:H2'	51:1:2744:G:O4'	2.12	0.50
53:5:59:A:H2'	53:5:60:U:H5'	1.93	0.50
54:4:18:G:H3'	54:4:19:U:C5'	2.38	0.50
4:e:59:ILE:HD13	4:e:137:PHE:CD2	2.47	0.50
6:g:134:VAL:HB	6:g:138:VAL:HG11	1.94	0.50
23:z:52:PHE:CD2	52:2:83:G:H4'	2.47	0.50
50:3:222:C:H2'	50:3:223:A:C8	2.47	0.50
51:1:1479:G:O2'	51:1:1480:C:H5'	2.11	0.50
51:1:1581:G:H2'	51:1:1582:C:C6	2.47	0.50
51:1:2725:A:O2'	51:1:2726:A:C8	2.65	0.50
4:e:119:LYS:HG3	51:1:2303:G:H5''	1.93	0.50
12:o:24:THR:OG1	12:o:90:VAL:HA	2.12	0.50
18:u:31:GLY:O	18:u:66:VAL:HG23	2.12	0.50
23:z:13:ILE:HD12	51:1:988:A:C8	2.47	0.50
30:H:38:VAL:HG23	30:H:56:ILE:HD13	1.93	0.50
31:I:33:ILE:HG12	31:I:34:GLU:HG2	1.92	0.50
31:I:169:TRP:CB	31:I:185:PRO:HG3	2.42	0.50
32:J:103:GLY:H	32:J:121:ASN:HB3	1.77	0.50
33:K:68:GLN:O	33:K:71:ILE:HG22	2.11	0.50
36:N:5:TYR:CE2	36:N:88:GLU:HB3	2.47	0.50
39:Q:80:LEU:C	39:Q:81:ILE:HD12	2.37	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:Y:60:GLN:NE2	47:Y:65:LEU:HD12	2.27	0.50
50:3:893:C:H2'	50:3:894:G:C8	2.47	0.50
51:1:215:G:O3'	51:1:216:A:H4'	2.11	0.50
51:1:257:C:H2'	51:1:258:G:O4'	2.12	0.50
51:1:349:U:H2'	51:1:350:G:C8	2.46	0.50
51:1:367:G:H2'	51:1:368:A:O4'	2.11	0.50
51:1:967:U:H2'	51:1:968:C:C6	2.46	0.50
51:1:1869:G:H2'	51:1:1871:A:OP1	2.12	0.50
51:1:2156:G:C2'	51:1:2157:G:H5'	2.42	0.50
51:1:2428:G:H5''	51:1:2429:G:O5'	2.12	0.50
1:b:149:LYS:HD3	51:1:2204:G:H4'	1.93	0.49
4:e:114:ARG:NH2	4:e:175:PRO:HG2	2.26	0.49
5:f:23:ILE:HG12	5:f:34:ARG:O	2.11	0.49
6:g:129:GLU:OE1	6:g:141:LYS:HB2	2.12	0.49
8:k:112:PHE:HB3	8:k:115:ILE:HD12	1.93	0.49
19:v:76:ASP:HB2	19:v:90:ASP:HB2	1.94	0.49
20:w:67:VAL:O	20:w:67:VAL:HG13	2.12	0.49
39:Q:86:VAL:HG13	39:Q:89:LEU:H	1.77	0.49
40:R:9:PRO:HB2	40:R:12:LYS:HD2	1.94	0.49
40:R:18:LEU:HD23	40:R:29:SER:HB2	1.93	0.49
50:3:924:C:H2'	50:3:925:G:C8	2.47	0.49
50:3:1095:U:H2'	50:3:1096:C:O4'	2.10	0.49
51:1:1258:U:H2'	51:1:1259:G:H8	1.77	0.49
52:2:65:U:H3'	52:2:108:A:H61	1.77	0.49
5:f:147:LEU:HA	5:f:150:TYR:CD2	2.47	0.49
6:g:99:ILE:N	6:g:99:ILE:HD12	2.28	0.49
13:p:1:SER:OG	51:1:2875:C:H4'	2.12	0.49
19:v:14:LYS:HB2	52:2:98:G:H1	1.78	0.49
30:H:3:LYS:HZ1	50:3:1191:A:H5''	1.77	0.49
39:Q:50:LYS:HD3	39:Q:71:HIS:HD2	1.77	0.49
50:3:487:A:H2'	50:3:488:C:O4'	2.12	0.49
50:3:536:C:H2'	50:3:537:G:C8	2.47	0.49
50:3:552:U:H2'	50:3:553:A:C8	2.47	0.49
50:3:737:C:H2'	50:3:738:C:C6	2.47	0.49
50:3:737:C:H2'	50:3:738:C:H6	1.76	0.49
50:3:1527:U:O2'	50:3:1528:U:H5'	2.11	0.49
51:1:269:C:H2'	51:1:270:A:C8	2.47	0.49
51:1:302:C:H2'	51:1:303:G:H8	1.77	0.49
51:1:1097:U:C2'	51:1:1098:A:H5'	2.41	0.49
51:1:1316:U:H2'	51:1:1317:G:C8	2.47	0.49
51:1:1378:A:H1'	51:1:1379:U:C5	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1555:G:H5'	51:1:1555:G:H8	1.76	0.49
51:1:1796:U:H2'	51:1:1797:G:H8	1.77	0.49
51:1:2398:U:H2'	51:1:2399:G:C8	2.47	0.49
53:5:29:G:O2'	53:5:30:G:H5'	2.12	0.49
15:r:74:ILE:N	15:r:74:ILE:HD12	2.26	0.49
21:x:54:GLY:O	21:x:58:ILE:HG13	2.12	0.49
26:D:26:ASN:CG	51:1:682:G:H5'	2.38	0.49
35:M:75:GLN:HB2	35:M:127:TYR:HB2	1.94	0.49
36:N:38:PHE:HA	36:N:41:GLU:OE1	2.13	0.49
48:Z:33:ARG:HH11	48:Z:33:ARG:HG3	1.78	0.49
51:1:576:U:H2'	51:1:577:G:C8	2.47	0.49
51:1:784:G:O2'	51:1:785:G:H8	1.95	0.49
51:1:1344:U:H3'	51:1:1345:C:H5'	1.94	0.49
51:1:2529:G:C5'	51:1:2530:A:H5''	2.39	0.49
51:1:2533:U:H2'	51:1:2534:A:H5'	1.95	0.49
52:2:2:G:H2'	52:2:3:C:H6	1.76	0.49
30:H:30:ASP:HA	41:S:64:ARG:NH1	2.22	0.49
30:H:122:GLN:HG2	30:H:125:ARG:NH2	2.27	0.49
33:K:49:TYR:CE1	45:W:65:SER:HA	2.47	0.49
36:N:105:ARG:NH1	36:N:107:ALA:HA	2.27	0.49
37:O:18:ILE:HG12	37:O:22:THR:HG23	1.94	0.49
40:R:75:SER:HB3	50:3:1309:G:H4'	1.94	0.49
41:S:21:ALA:HA	41:S:27:LYS:NZ	2.28	0.49
50:3:321:A:H2'	50:3:322:C:C6	2.46	0.49
50:3:335:C:H2'	50:3:336:A:C8	2.46	0.49
50:3:377:G:H2'	50:3:378:G:C8	2.46	0.49
50:3:823:C:H2'	50:3:824:G:C8	2.47	0.49
51:1:278:A:H3'	51:1:278:A:N3	2.26	0.49
51:1:832:U:H2'	51:1:833:A:C8	2.47	0.49
51:1:1441:G:H2'	51:1:1442:U:C6	2.47	0.49
51:1:1476:U:O2	51:1:1476:U:H2'	2.11	0.49
51:1:1548:A:H2'	51:1:1549:A:C8	2.48	0.49
51:1:1880:U:H2'	51:1:1881:C:C6	2.47	0.49
1:b:75:ALA:HB1	1:b:93:VAL:CG2	2.43	0.49
1:b:211:ARG:HH11	1:b:211:ARG:CB	2.25	0.49
4:e:43:ILE:CD1	4:e:77:LYS:HD2	2.40	0.49
5:f:140:ILE:O	5:f:143:VAL:HG22	2.12	0.49
8:k:58:LEU:HD11	8:k:86:LEU:HD22	1.94	0.49
17:t:74:ILE:HG13	17:t:74:ILE:O	2.13	0.49
30:H:40:GLN:NE2	30:H:41:TYR:HB2	2.28	0.49
30:H:46:LEU:CG	30:H:49:ALA:HB3	2.41	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:P:114:PRO:C	38:P:116:PRO:HD3	2.37	0.49
43:U:6:LEU:HD12	50:3:375:U:H4'	1.94	0.49
45:W:61:ALA:HB3	45:W:67:LEU:HD12	1.94	0.49
50:3:43:C:O2'	50:3:623:C:H4'	2.12	0.49
50:3:425:G:H2'	50:3:426:U:O4'	2.13	0.49
50:3:735:C:H2'	50:3:736:C:C6	2.47	0.49
50:3:921:U:H5''	50:3:1082:A:H5'	1.94	0.49
50:3:1277:C:H2'	50:3:1278:G:H5''	1.94	0.49
51:1:1307:A:C2'	51:1:1308:A:H5'	2.42	0.49
51:1:1739:A:H3'	51:1:1740:G:C8	2.47	0.49
51:1:2339:C:H2'	51:1:2340:A:H8	1.77	0.49
51:1:2467:C:H2'	51:1:2468:A:O4'	2.12	0.49
52:2:4:C:H2'	52:2:5:U:C6	2.47	0.49
15:r:22:LEU:HD12	15:r:94:THR:HB	1.93	0.49
17:t:39:THR:O	17:t:43:ILE:HG13	2.11	0.49
18:u:48:VAL:HG12	18:u:52:ASN:HB3	1.94	0.49
20:w:36:GLN:OE1	20:w:40:LYS:N	2.46	0.49
36:N:46:VAL:HA	36:N:49:GLN:NE2	2.28	0.49
41:S:19:TYR:CE2	41:S:50:LEU:HD22	2.46	0.49
49:a:209:ILE:O	49:a:209:ILE:HG13	2.13	0.49
50:3:820:U:H3'	50:3:821:G:C5'	2.42	0.49
51:1:1879:C:H2'	51:1:1880:U:O4'	2.12	0.49
51:1:2295:C:H2'	51:1:2296:U:C6	2.48	0.49
51:1:2528:U:O2'	51:1:2529:G:H3'	2.12	0.49
51:1:2666:C:H2'	51:1:2667:C:O4'	2.13	0.49
2:c:124:ARG:HA	2:c:165:MET:SD	2.52	0.49
17:t:61:LEU:C	17:t:61:LEU:HD12	2.38	0.49
26:D:12:ARG:HE	26:D:44:VAL:HG21	1.76	0.49
30:H:54:ILE:HG22	30:H:56:ILE:HG13	1.94	0.49
30:H:134:LYS:HB3	30:H:138:GLN:NE2	2.28	0.49
32:J:17:VAL:HA	32:J:34:ALA:HA	1.92	0.49
36:N:129:ARG:HH11	36:N:129:ARG:HG3	1.77	0.49
50:3:829:G:H2'	50:3:830:G:H8	1.78	0.49
51:1:1391:U:H2'	51:1:1393:A:OP2	2.12	0.49
51:1:2241:A:H2'	51:1:2242:G:H8	1.77	0.49
6:g:51:ARG:HA	6:g:55:GLU:HB2	1.94	0.49
9:l:33:ARG:HH22	51:1:671:C:H5	1.61	0.49
10:m:29:GLY:H	10:m:104:GLU:CG	2.26	0.49
23:z:50:VAL:HB	23:z:53:MET:HE3	1.95	0.49
24:B:24:VAL:HG23	24:B:25:THR:N	2.26	0.49
26:D:44:VAL:HG13	26:D:44:VAL:O	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:N:37:TYR:CE1	50:3:1249:C:H5'	2.44	0.49
43:U:70:ARG:HD3	50:3:375:U:OP1	2.13	0.49
44:V:37:ILE:HD12	44:V:37:ILE:H	1.77	0.49
46:X:35:ARG:NH1	50:3:1221:G:H5''	2.27	0.49
46:X:54:ARG:HB3	50:3:958:A:C2	2.48	0.49
46:X:77:ARG:HD2	50:3:1225:A:H1'	1.94	0.49
50:3:414:A:H5'	50:3:428:G:H22	1.78	0.49
50:3:1497:G:O2'	50:3:1498:U:H5'	2.12	0.49
51:1:473:G:C2'	51:1:474:G:H5'	2.42	0.49
51:1:503:A:H4'	51:1:505:A:H5''	1.94	0.49
51:1:2579:C:O2'	51:1:2580:U:H5'	2.12	0.49
1:b:22:GLU:HB3	1:b:80:LEU:HD12	1.94	0.49
4:e:34:THR:CG2	4:e:154:THR:HB	2.43	0.49
4:e:59:ILE:HG12	4:e:139:GLU:OE1	2.13	0.49
6:g:4:ILE:CG1	6:g:37:VAL:HG13	2.41	0.49
15:r:40:MET:HE3	15:r:42:ALA:HB2	1.94	0.49
19:v:65:VAL:HG23	19:v:65:VAL:O	2.13	0.49
29:G:113:LEU:O	29:G:117:GLU:N	2.46	0.49
30:H:174:LEU:HD23	30:H:174:LEU:C	2.38	0.49
40:R:9:PRO:CB	40:R:12:LYS:HD2	2.43	0.49
40:R:13:HIS:HB3	40:R:16:ILE:HB	1.93	0.49
40:R:18:LEU:HB3	40:R:29:SER:HB2	1.94	0.49
41:S:15:LEU:HD11	41:S:19:TYR:OH	2.13	0.49
43:U:26:ASN:HD22	43:U:26:ASN:N	2.10	0.49
43:U:70:ARG:HB2	50:3:375:U:OP1	2.12	0.49
44:V:66:LEU:HD12	44:V:66:LEU:N	2.27	0.49
50:3:484:G:H4'	50:3:485:U:H5''	1.95	0.49
50:3:758:C:H4'	50:3:880:C:H4'	1.95	0.49
50:3:839:C:H2'	50:3:840:C:C6	2.48	0.49
51:1:26:G:H2'	51:1:27:G:O4'	2.12	0.49
51:1:655:A:H4'	51:1:656:G:C5'	2.40	0.49
51:1:1336:A:H2'	51:1:1337:G:H8	1.78	0.49
51:1:1466:U:H1'	51:1:1545:A:H2	1.78	0.49
51:1:2176:A:H2'	51:1:2177:C:C6	2.48	0.49
51:1:2221:G:O2'	51:1:2222:C:H5'	2.13	0.49
2:c:52:THR:O	2:c:77:ARG:HD3	2.13	0.49
4:e:41:GLU:HG2	4:e:48:LEU:HB3	1.95	0.49
4:e:162:ASP:O	4:e:166:ARG:HG3	2.13	0.49
6:g:80:ILE:HD12	6:g:80:ILE:N	2.28	0.49
6:g:108:VAL:HG12	6:g:110:VAL:HG13	1.94	0.49
6:g:117:LEU:HD22	6:g:120:GLY:N	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:j:136:GLN:NE2	51:1:2899:A:H4'	2.28	0.49
29:G:22:TRP:HZ2	50:3:829:G:H4'	1.78	0.49
35:M:3:GLN:HE22	50:3:755:G:H21	1.60	0.49
38:P:81:LEU:C	38:P:81:LEU:HD12	2.38	0.49
42:T:61:GLN:O	42:T:65:LEU:HG	2.13	0.49
46:X:48:ILE:H	46:X:48:ILE:HD12	1.76	0.49
47:Y:19:HIS:O	47:Y:23:ARG:HG2	2.13	0.49
50:3:815:A:H5''	50:3:817:C:N4	2.28	0.49
50:3:1242:G:O2'	50:3:1303:C:H5''	2.11	0.49
50:3:1464:U:H2'	50:3:1465:A:C8	2.47	0.49
51:1:296:U:H2'	51:1:297:G:H8	1.78	0.49
51:1:940:G:H2'	51:1:941:A:H5''	1.95	0.49
51:1:1433:A:H2'	51:1:1434:A:H8	1.76	0.49
51:1:1440:U:H2'	51:1:1441:G:C8	2.48	0.49
51:1:2836:U:H2'	51:1:2837:A:C8	2.48	0.49
1:b:24:HIS:CG	1:b:79:ARG:HD2	2.48	0.48
4:e:35:LEU:HD12	4:e:35:LEU:N	2.28	0.48
4:e:105:ILE:HG13	4:e:105:ILE:O	2.13	0.48
10:m:42:THR:O	10:m:46:ILE:HG13	2.13	0.48
30:H:177:LEU:HD22	50:3:1113:C:H1'	1.95	0.48
32:J:25:LYS:HG2	32:J:25:LYS:O	2.13	0.48
36:N:54:VAL:HG11	36:N:86:LEU:CD1	2.43	0.48
40:R:70:ARG:O	40:R:74:MET:HG3	2.13	0.48
50:3:782:A:O3'	50:3:1515:G:H4'	2.13	0.48
50:3:918:A:H2'	50:3:919:A:O4'	2.13	0.48
50:3:1410:A:H2'	50:3:1411:C:C6	2.48	0.48
51:1:511:U:C2'	51:1:512:G:H5'	2.40	0.48
51:1:565:C:H2'	51:1:566:U:C6	2.48	0.48
51:1:644:A:H2'	51:1:645:C:O4'	2.13	0.48
51:1:1386:C:H2'	51:1:1387:A:C8	2.48	0.48
51:1:1796:U:H2'	51:1:1797:G:C8	2.48	0.48
51:1:2298:A:H2'	51:1:2299:U:C5'	2.43	0.48
51:1:2545:G:N2	51:1:2546:U:H1'	2.28	0.48
52:2:59:A:H2'	52:2:60:C:O4'	2.13	0.48
2:c:53:GLY:HA3	2:c:77:ARG:CD	2.44	0.48
4:e:120:SER:HB2	4:e:127:TYR:HA	1.95	0.48
7:j:135:GLN:NE2	51:1:7:G:H1'	2.28	0.48
23:z:42:ALA:O	23:z:46:MET:HG3	2.12	0.48
32:J:9:GLU:HG3	32:J:10:LEU:HD23	1.95	0.48
34:L:42:VAL:O	34:L:46:LEU:HG	2.13	0.48
36:N:109:GLN:HA	36:N:109:GLN:HE21	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:T:6:ALA:O	42:T:10:ILE:HG13	2.13	0.48
42:T:32:THR:OG1	42:T:84:LEU:HD21	2.13	0.48
42:T:86:LEU:N	42:T:86:LEU:HD23	2.28	0.48
43:U:14:ARG:HH21	43:U:42:ILE:HB	1.78	0.48
49:a:29:LEU:HD23	49:a:222:VAL:HG23	1.94	0.48
50:3:496:A:H5'	50:3:497:G:OP2	2.13	0.48
50:3:1463:U:H2'	50:3:1464:U:C6	2.49	0.48
50:3:1492:A:H3'	50:3:1493:A:H5''	1.95	0.48
51:1:2898:U:H2'	51:1:2899:A:C8	2.48	0.48
1:b:5:CYS:HB2	1:b:17:LYS:NZ	2.27	0.48
12:o:62:LEU:HD13	12:o:70:ALA:HB1	1.95	0.48
14:q:57:ARG:HA	14:q:60:TRP:CE3	2.48	0.48
30:H:161:ILE:HD12	50:3:1056:U:OP1	2.13	0.48
33:K:88:MET:HE3	45:W:64:LEU:CD2	2.43	0.48
35:M:73:SER:HB3	35:M:75:GLN:HE22	1.76	0.48
40:R:79:LEU:HD12	40:R:80:MET:N	2.28	0.48
50:3:457:G:H2'	50:3:458:U:O4'	2.14	0.48
50:3:560:A:H4'	50:3:561:U:H5'	1.95	0.48
50:3:867:G:H2'	50:3:868:C:C6	2.48	0.48
50:3:1277:C:H5''	50:3:1281:C:N4	2.28	0.48
51:1:3:U:H2'	51:1:4:U:C6	2.49	0.48
51:1:1548:A:H2'	51:1:1549:A:H8	1.78	0.48
51:1:1857:G:O2'	51:1:1885:A:N6	2.47	0.48
51:1:1922:G:H2'	51:1:1923:U:O4'	2.14	0.48
51:1:2323:G:H2'	51:1:2324:U:O4'	2.14	0.48
51:1:2327:A:H2'	51:1:2328:A:C8	2.49	0.48
51:1:2732:G:H3'	51:1:2733:A:O4'	2.12	0.48
52:2:12:C:H1'	52:2:15:A:N1	2.29	0.48
5:f:174:LYS:HG2	51:1:2529:G:H4'	1.95	0.48
7:j:89:PHE:HE1	7:j:100:VAL:HG11	1.77	0.48
8:k:30:ARG:HD2	51:1:2674:G:H4'	1.95	0.48
11:n:22:ARG:CG	11:n:70:THR:HA	2.38	0.48
12:o:40:ILE:HA	12:o:47:VAL:HA	1.95	0.48
22:y:49:ASP:O	22:y:53:VAL:HG23	2.12	0.48
32:J:22:LYS:HB3	32:J:29:ILE:CG1	2.43	0.48
50:3:44:A:H2'	50:3:45:G:C8	2.47	0.48
50:3:154:U:H2'	50:3:155:A:C8	2.48	0.48
50:3:649:A:C2'	50:3:650:G:H5''	2.43	0.48
50:3:915:A:C2'	50:3:916:U:H5'	2.42	0.48
51:1:297:G:H2'	51:1:298:G:O4'	2.12	0.48
51:1:1054:A:H2'	51:1:1055:G:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2366:A:H2'	51:1:2367:G:O4'	2.12	0.48
51:1:2849:U:H4'	51:1:2868:A:N1	2.28	0.48
52:2:22:U:H2'	52:2:23:G:C8	2.48	0.48
6:g:23:ALA:O	6:g:27:ARG:HG2	2.12	0.48
6:g:99:ILE:HD12	6:g:99:ILE:H	1.77	0.48
8:k:63:VAL:HG23	8:k:64:ARG:N	2.28	0.48
31:I:58:GLN:HE21	50:3:544:G:P	2.36	0.48
37:O:15:HIS:HA	37:O:18:ILE:HG22	1.95	0.48
40:R:106:ARG:HB2	50:3:947:G:H5''	1.95	0.48
43:U:70:ARG:O	43:U:74:LEU:HG	2.13	0.48
47:Y:69:ASN:HD22	50:3:262:A:H4'	1.78	0.48
50:3:451:A:H4'	50:3:452:A:O4'	2.13	0.48
51:1:52:A:H2'	51:1:53:A:H8	1.78	0.48
51:1:176:A:O2'	51:1:177:G:H5'	2.13	0.48
51:1:807:U:H1'	51:1:2445:G:OP1	2.13	0.48
51:1:1791:A:C2	51:1:1829:A:H4'	2.48	0.48
52:2:101:A:H2'	52:2:102:G:O4'	2.14	0.48
3:d:55:SER:OG	51:1:468:G:H5''	2.13	0.48
5:f:2:ARG:HH21	5:f:2:ARG:HG3	1.78	0.48
8:k:25:LEU:CD2	51:1:2562:U:H4'	2.43	0.48
30:H:171:ARG:HG3	50:3:1107:C:P	2.53	0.48
32:J:22:LYS:HB3	32:J:29:ILE:HG13	1.95	0.48
35:M:54:THR:C	35:M:56:PRO:HD3	2.39	0.48
49:a:212:VAL:HG23	49:a:224:VAL:O	2.14	0.48
50:3:41:G:H2'	50:3:42:G:H8	1.78	0.48
50:3:123:U:H5''	50:3:311:C:O2'	2.12	0.48
50:3:542:G:O2'	50:3:543:U:H5'	2.13	0.48
50:3:1513:A:H2'	50:3:1514:G:C8	2.49	0.48
51:1:1175:A:C3'	51:1:1176:U:H5'	2.42	0.48
51:1:2188:U:H2'	51:1:2189:U:O4'	2.14	0.48
1:b:124:LYS:HB3	1:b:127:ASN:HD21	1.78	0.48
1:b:155:ARG:HD3	51:1:1818:U:C6	2.49	0.48
1:b:254:LYS:O	51:1:1797:G:H4'	2.13	0.48
2:c:98:VAL:HG22	2:c:98:VAL:O	2.14	0.48
4:e:48:LEU:HG	4:e:149:ARG:HH22	1.79	0.48
6:g:121:VAL:HG22	6:g:121:VAL:O	2.13	0.48
9:l:63:LYS:HA	27:E:12:ARG:HG2	1.95	0.48
14:q:102:LYS:HD2	14:q:102:LYS:N	2.29	0.48
33:K:64:VAL:HG22	33:K:65:GLU:N	2.28	0.48
48:Z:50:SER:HA	48:Z:53:LYS:HZ3	1.79	0.48
50:3:31:G:H5'	50:3:306:A:C2	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:184:G:O4'	50:3:224:U:H4'	2.14	0.48
50:3:341:C:O2'	50:3:342:C:H5'	2.14	0.48
50:3:766:A:H2'	50:3:767:A:O4'	2.14	0.48
50:3:838:G:H2'	50:3:839:C:O4'	2.13	0.48
50:3:993:G:N2	50:3:995:C:H42	2.12	0.48
50:3:1130:A:H61	50:3:1144:G:H1'	1.79	0.48
51:1:1464:G:O2'	51:1:1465:G:H5'	2.13	0.48
51:1:1601:G:C2'	51:1:1602:U:H5'	2.43	0.48
51:1:1721:G:H4'	51:1:1722:A:C8	2.48	0.48
51:1:2241:A:H2'	51:1:2242:G:C8	2.48	0.48
51:1:2312:U:H2'	51:1:2313:C:C5'	2.32	0.48
1:b:65:ASP:CB	1:b:101:ARG:HD3	2.43	0.48
4:e:30:VAL:HG13	4:e:95:MET:HE2	1.95	0.48
7:j:13:ARG:HH21	7:j:13:ARG:HG2	1.79	0.48
26:D:12:ARG:NE	26:D:44:VAL:HG21	2.28	0.48
31:I:147:LYS:HD2	50:3:491:G:OP1	2.14	0.48
32:J:149:PRO:HG2	32:J:150:GLU:OE1	2.13	0.48
38:P:21:HIS:CG	50:3:707:U:H4'	2.49	0.48
41:S:18:LYS:NZ	50:3:1007:U:H5''	2.28	0.48
41:S:49:THR:CG2	46:X:12:LEU:HD13	2.43	0.48
42:T:11:VAL:HG13	42:T:18:ALA:HA	1.95	0.48
43:U:40:ASN:HD22	43:U:43:ALA:CA	2.26	0.48
50:3:323:U:H2'	50:3:324:G:O4'	2.14	0.48
50:3:1522:U:H2'	50:3:1523:G:H8	1.79	0.48
51:1:2110:G:H5'	51:1:2118:U:H2'	1.96	0.48
51:1:2461:A:H2'	51:1:2462:C:C6	2.49	0.48
1:b:219:VAL:HG21	51:1:782:A:N7	2.29	0.48
3:d:52:VAL:HG13	51:1:452:G:OP1	2.13	0.48
6:g:1:MET:N	6:g:21:VAL:O	2.47	0.48
11:n:9:GLN:HA	11:n:17:ARG:NH2	2.28	0.48
13:p:92:ARG:HD3	51:1:1753:G:H5''	1.95	0.48
25:C:8:ILE:HD13	25:C:24:LYS:HB2	1.94	0.48
36:N:27:ILE:HD12	36:N:27:ILE:N	2.28	0.48
36:N:109:GLN:HA	36:N:109:GLN:NE2	2.29	0.48
40:R:107:THR:HG21	50:3:1306:A:C2	2.45	0.48
41:S:57:SER:HB2	50:3:1360:A:C4	2.48	0.48
44:V:66:LEU:HD13	44:V:70:LYS:HG2	1.95	0.48
50:3:25:C:H5'	50:3:524:G:O2'	2.14	0.48
50:3:72:A:N6	50:3:99:C:H1'	2.29	0.48
50:3:77:A:H2'	50:3:78:A:C8	2.47	0.48
50:3:312:C:H2'	50:3:313:A:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:418:C:H2'	50:3:419:C:C6	2.48	0.48
50:3:1454:G:H2'	50:3:1455:G:H8	1.78	0.48
51:1:10:A:C2	51:1:2800:A:H2'	2.48	0.48
51:1:1889:A:H2'	51:1:1890:A:H8	1.77	0.48
51:1:2215:C:H2'	51:1:2216:G:H8	1.78	0.48
51:1:2440:C:C5'	51:1:2587:A:H4'	2.44	0.48
51:1:2443:C:H2'	51:1:2444:G:C8	2.49	0.48
51:1:2741:A:H2'	51:1:2742:G:O4'	2.13	0.48
4:e:131:VAL:HG12	4:e:151:LEU:H	1.79	0.48
10:m:40:ARG:HE	10:m:93:VAL:HG21	1.79	0.48
10:m:78:LEU:HD23	10:m:79:ALA:HB2	1.94	0.48
11:n:38:LEU:HB3	11:n:39:PRO:HD3	1.96	0.48
12:o:4:LYS:O	12:o:8:ILE:HG13	2.14	0.48
17:t:2:ILE:HG22	17:t:2:ILE:O	2.14	0.48
33:K:33:GLU:HG2	33:K:33:GLU:O	2.13	0.48
35:M:50:VAL:HG22	35:M:50:VAL:O	2.13	0.48
50:3:680:C:H2'	50:3:681:A:H8	1.79	0.48
51:1:1442:U:H2'	51:1:1443:U:C6	2.48	0.48
1:b:144:GLU:HG2	1:b:151:GLY:N	2.29	0.47
3:d:145:ASP:HB3	3:d:184:ASP:OD2	2.14	0.47
4:e:73:VAL:HG11	51:1:2311:A:O4'	2.13	0.47
9:l:56:PRO:HB2	9:l:58:TYR:CE1	2.49	0.47
15:r:27:ILE:HD11	15:r:31:GLU:HB3	1.96	0.47
25:C:37:LYS:HB2	25:C:48:TYR:CD2	2.49	0.47
27:E:33:THR:HG23	51:1:2420:C:OP1	2.14	0.47
31:I:14:GLU:OE2	31:I:55:ARG:HG3	2.13	0.47
49:a:191:ALA:O	49:a:195:ALA:N	2.47	0.47
51:1:1028:A:H2'	51:1:1029:A:H8	1.77	0.47
51:1:1287:A:C2	51:1:1649:G:H4'	2.48	0.47
51:1:1689:A:H2'	51:1:1690:A:C8	2.48	0.47
51:1:1825:U:H2'	51:1:1826:G:C8	2.48	0.47
51:1:2073:C:O2'	51:1:2074:U:H5'	2.13	0.47
2:c:4:LEU:HD22	2:c:101:PHE:CD2	2.49	0.47
7:j:57:LEU:HD21	7:j:130:HIS:HB3	1.96	0.47
7:j:105:VAL:O	7:j:109:LEU:HG	2.14	0.47
17:t:39:THR:HG23	17:t:42:GLU:H	1.78	0.47
30:H:162:ALA:HB3	50:3:1056:U:H4'	1.96	0.47
32:J:131:ASN:OD1	32:J:133:ILE:HG22	2.13	0.47
34:L:12:LEU:HD23	34:L:12:LEU:N	2.27	0.47
50:3:672:U:H2'	50:3:673:A:H8	1.78	0.47
50:3:807:A:H2'	50:3:808:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:614:A:H5'	51:1:615:U:OP1	2.14	0.47
51:1:656:G:H2'	51:1:657:U:C6	2.49	0.47
51:1:799:G:H5''	51:1:800:A:H2'	1.95	0.47
51:1:1791:A:N1	51:1:1829:A:C4'	2.77	0.47
51:1:2440:C:H2'	51:1:2441:U:H4'	1.96	0.47
3:d:24:ASN:HD22	3:d:27:LEU:CB	2.21	0.47
4:e:116:LEU:HD12	4:e:116:LEU:N	2.29	0.47
6:g:26:ALA:HA	6:g:30:LEU:HD12	1.96	0.47
6:g:99:ILE:O	6:g:103:VAL:HG22	2.13	0.47
9:l:78:ARG:NH2	9:l:78:ARG:HB3	2.29	0.47
19:v:4:ILE:HD13	19:v:47:VAL:CG1	2.41	0.47
29:G:77:GLU:HA	29:G:80:LYS:HZ3	1.80	0.47
32:J:111:ARG:O	32:J:115:GLU:HG3	2.14	0.47
39:Q:106:VAL:HG21	39:Q:109:ARG:CD	2.39	0.47
40:R:90:HIS:HA	40:R:108:ARG:HH21	1.79	0.47
41:S:24:ALA:HA	41:S:27:LYS:HB3	1.96	0.47
50:3:80:A:H62	50:3:86:G:H21	1.61	0.47
50:3:411:A:C1'	50:3:413:G:H1'	2.43	0.47
51:1:1230:A:H2'	51:1:1231:U:C6	2.49	0.47
51:1:1577:C:H2'	51:1:1578:U:C6	2.48	0.47
52:2:32:U:H2'	52:2:33:G:C8	2.49	0.47
1:b:42:ARG:HH11	1:b:42:ARG:HG3	1.80	0.47
2:c:47:ALA:CA	2:c:84:LEU:HG	2.43	0.47
5:f:84:LYS:HG2	5:f:140:ILE:HD12	1.95	0.47
5:f:89:VAL:HG21	5:f:162:ARG:HD3	1.95	0.47
6:g:5:LEU:HD23	6:g:5:LEU:C	2.39	0.47
6:g:53:GLU:C	6:g:54:LEU:HD12	2.39	0.47
13:p:90:ALA:HB2	13:p:112:ARG:HA	1.95	0.47
25:C:46:VAL:HG22	25:C:47:ILE:N	2.29	0.47
27:E:57:VAL:O	27:E:61:LEU:HG	2.15	0.47
29:G:89:PHE:CD2	29:G:153:MET:HG2	2.48	0.47
30:H:156:LEU:HD12	30:H:163:ARG:HE	1.79	0.47
32:J:67:ARG:O	32:J:70:MET:HG3	2.14	0.47
39:Q:81:ILE:HD12	39:Q:81:ILE:N	2.28	0.47
47:Y:66:ILE:HG23	47:Y:70:LYS:HB3	1.96	0.47
50:3:276:G:H2'	50:3:277:C:C6	2.49	0.47
50:3:383:A:H2'	50:3:384:G:O4'	2.14	0.47
50:3:757:U:H5''	50:3:822:U:O2'	2.14	0.47
50:3:785:G:H2'	50:3:786:G:H8	1.79	0.47
50:3:1213:A:O2'	50:3:1214:C:H2'	2.15	0.47
50:3:1370:G:O2'	50:3:1371:G:H5'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1478:U:H2'	50:3:1479:C:C6	2.49	0.47
51:1:876:C:H2'	51:1:877:A:C5'	2.43	0.47
51:1:1127:A:C2'	51:1:1128:G:H5''	2.45	0.47
51:1:1219:U:H2'	51:1:1220:G:C8	2.50	0.47
51:1:1524:G:H2'	51:1:1525:A:C8	2.49	0.47
51:1:2026:U:H2'	51:1:2027:G:C8	2.49	0.47
51:1:2799:A:H2'	51:1:2800:A:H5'	1.96	0.47
1:b:73:ILE:HG12	51:1:1490:A:C5	2.49	0.47
22:y:59:GLU:HA	22:y:63:ALA:HB3	1.96	0.47
33:K:81:ASN:HB2	33:K:84:VAL:HG12	1.97	0.47
49:a:4:LEU:N	49:a:4:LEU:HD12	2.29	0.47
50:3:34:C:H2'	50:3:35:G:C8	2.49	0.47
50:3:79:G:O2'	50:3:80:A:H5'	2.13	0.47
50:3:292:G:N2	50:3:608:A:H61	2.08	0.47
50:3:467:U:H3'	50:3:468:A:H5'	1.96	0.47
51:1:118:A:H5'	51:1:119:A:C8	2.50	0.47
51:1:306:U:H2'	51:1:307:G:O4'	2.14	0.47
51:1:729:G:O2'	51:1:763:G:H4'	2.15	0.47
51:1:1998:A:H2'	51:1:1999:C:C6	2.49	0.47
2:c:77:ARG:HG2	2:c:77:ARG:HH21	1.80	0.47
5:f:82:PHE:CE2	5:f:137:LYS:HB2	2.49	0.47
5:f:132:LEU:HD23	5:f:132:LEU:N	2.29	0.47
6:g:79:THR:C	6:g:80:ILE:HD12	2.40	0.47
10:m:4:PRO:HG3	10:m:68:PHE:CE2	2.50	0.47
18:u:84:PHE:CE1	18:u:93:ARG:HG2	2.49	0.47
19:v:20:LEU:HD11	19:v:41:GLU:OE1	2.15	0.47
31:I:160:LEU:O	31:I:164:ARG:HG3	2.15	0.47
31:I:169:TRP:HB3	31:I:189:ASP:OD2	2.15	0.47
50:3:90:C:H2'	50:3:91:U:C6	2.49	0.47
50:3:202:G:N2	50:3:466:A:H61	2.13	0.47
50:3:622:A:H2'	50:3:623:C:H5'	1.96	0.47
50:3:1258:G:H2'	50:3:1259:C:C6	2.50	0.47
50:3:1288:A:H1'	50:3:1353:G:C4'	2.44	0.47
50:3:1391:U:H2'	50:3:1392:G:C8	2.50	0.47
51:1:8:C:H2'	51:1:9:G:O4'	2.14	0.47
51:1:1718:G:H2'	51:1:1719:G:C8	2.50	0.47
51:1:2216:G:H2'	51:1:2217:G:C8	2.49	0.47
51:1:2834:G:H1'	51:1:2883:A:N6	2.29	0.47
2:c:161:MET:HE1	51:1:2050:C:O2	2.14	0.47
4:e:79:ARG:HD3	4:e:82:TYR:HB2	1.97	0.47
5:f:22:VAL:HG22	5:f:35:THR:HB	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:66:THR:OG1	51:1:2748:A:H1'	2.14	0.47
5:f:104:LEU:O	5:f:112:VAL:N	2.47	0.47
13:p:13:LYS:HE3	13:p:76:HIS:HA	1.97	0.47
29:G:113:LEU:HD13	29:G:143:LEU:HB3	1.97	0.47
39:Q:13:ARG:NH1	39:Q:14:LYS:N	2.60	0.47
39:Q:33:CYS:HB2	39:Q:79:ILE:HG12	1.96	0.47
40:R:106:ARG:HG3	50:3:947:G:P	2.55	0.47
47:Y:25:SER:O	47:Y:29:THR:HG23	2.15	0.47
50:3:225:C:C3'	50:3:226:G:H5''	2.44	0.47
50:3:608:A:C2	50:3:609:A:H1'	2.49	0.47
50:3:662:U:H2'	50:3:663:A:C8	2.50	0.47
50:3:921:U:H5''	50:3:1082:A:C5'	2.45	0.47
50:3:1506:U:O2'	50:3:1507:A:H5'	2.14	0.47
51:1:277:G:H1'	51:1:360:U:O4	2.14	0.47
51:1:438:G:H2'	51:1:439:A:C8	2.50	0.47
51:1:438:G:H2'	51:1:439:A:H8	1.79	0.47
51:1:699:A:H2'	51:1:700:G:O4'	2.15	0.47
51:1:705:A:H2'	51:1:706:A:H8	1.79	0.47
51:1:766:U:H2'	51:1:767:U:C6	2.49	0.47
51:1:1148:U:H2'	51:1:1149:G:C8	2.49	0.47
51:1:1849:G:H2'	51:1:1850:G:H8	1.79	0.47
51:1:2011:U:H2'	51:1:2012:G:O4'	2.15	0.47
51:1:2106:U:H2'	51:1:2107:G:C8	2.50	0.47
51:1:2196:C:O2'	51:1:2197:U:H5'	2.14	0.47
51:1:2545:G:C2	51:1:2546:U:H1'	2.50	0.47
51:1:2813:A:H2'	51:1:2814:A:C8	2.50	0.47
52:2:63:C:H2'	52:2:64:G:C8	2.50	0.47
53:5:1:C:H2'	53:5:2:G:H8	1.76	0.47
1:b:156:SER:HG	51:1:1819:A:H5'	1.79	0.47
2:c:156:PHE:CD2	7:j:81:ILE:HB	2.49	0.47
5:f:11:PRO:HD2	5:f:14:VAL:HG21	1.97	0.47
6:g:62:LEU:HD23	6:g:62:LEU:C	2.39	0.47
7:j:27:ARG:NH2	51:1:1142:A:H4'	2.30	0.47
8:k:76:VAL:H	13:p:72:VAL:CG2	2.26	0.47
10:m:4:PRO:HG3	10:m:68:PHE:HE2	1.80	0.47
31:I:92:LEU:HD12	31:I:92:LEU:C	2.39	0.47
35:M:98:LEU:HD12	35:M:98:LEU:C	2.39	0.47
40:R:106:ARG:NE	40:R:106:ARG:HA	2.29	0.47
41:S:100:TRP:C	50:3:1186:G:H21	2.23	0.47
42:T:60:SER:HB2	50:3:581:G:H5'	1.95	0.47
50:3:1534:A:H2'	50:3:1535:C:O4'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:104:A:H2'	51:1:105:C:H6	1.80	0.47
51:1:1199:U:H2'	51:1:1200:C:C6	2.50	0.47
51:1:1771:C:H2'	51:1:1772:A:C8	2.50	0.47
51:1:2266:A:H4'	51:1:2267:A:N3	2.29	0.47
51:1:2353:G:H2'	51:1:2354:C:O4'	2.14	0.47
51:1:2625:G:H2'	51:1:2626:C:C6	2.50	0.47
52:2:15:A:H5'	52:2:108:A:H4'	1.96	0.47
1:b:241:LYS:O	51:1:1902:C:H4'	2.14	0.47
5:f:147:LEU:HA	5:f:150:TYR:HD2	1.78	0.47
10:m:135:VAL:HG23	10:m:135:VAL:O	2.14	0.47
17:t:32:LEU:N	17:t:32:LEU:HD23	2.30	0.47
22:y:47:ARG:O	22:y:50:VAL:HG12	2.15	0.47
25:C:9:LYS:HE2	25:C:52:LYS:O	2.15	0.47
30:H:19:SER:HA	30:H:56:ILE:O	2.15	0.47
37:O:40:ILE:HD13	50:3:1125:U:O4'	2.15	0.47
37:O:92:LEU:C	37:O:92:LEU:HD12	2.39	0.47
50:3:449:G:H2'	50:3:450:G:C8	2.50	0.47
50:3:1063:C:H2'	50:3:1064:G:C8	2.50	0.47
51:1:460:A:H2'	51:1:461:C:O4'	2.14	0.47
51:1:814:C:H1'	51:1:1225:G:H21	1.78	0.47
51:1:1386:C:H2'	51:1:1387:A:H8	1.78	0.47
51:1:1738:G:O2'	51:1:1739:A:OP2	2.30	0.47
51:1:2129:C:H2'	51:1:2130:U:H5'	1.97	0.47
51:1:2156:G:H2'	51:1:2157:G:H5'	1.97	0.47
51:1:2352:A:H2'	51:1:2353:G:H5'	1.97	0.47
51:1:2515:C:H2'	51:1:2516:A:H8	1.79	0.47
1:b:131:MET:HA	1:b:134:ILE:HD12	1.96	0.47
3:d:124:PHE:CE1	3:d:137:LYS:HE3	2.50	0.47
3:d:181:ILE:CG2	9:l:2:ARG:HG3	2.43	0.47
7:j:98:GLU:HB2	7:j:124:VAL:HG23	1.97	0.47
21:x:11:PRO:HG3	21:x:30:PRO:CD	2.45	0.47
22:y:56:LEU:O	22:y:60:LYS:HG2	2.15	0.47
24:B:27:LEU:HB3	24:B:36:LYS:HD2	1.97	0.47
25:C:20:TYR:CE2	25:C:37:LYS:HB3	2.50	0.47
34:L:2:ARG:HG2	50:3:1380:U:C5	2.50	0.47
35:M:10:LEU:O	35:M:74:ILE:HD11	2.14	0.47
35:M:31:LEU:HD13	50:3:643:C:C5'	2.43	0.47
35:M:52:GLY:HA3	35:M:56:PRO:HA	1.97	0.47
41:S:48:GLN:HA	41:S:48:GLN:HE21	1.80	0.47
43:U:59:HIS:O	43:U:63:GLN:HG2	2.15	0.47
44:V:30:HIS:HD2	44:V:33:TYR:H	1.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:V:53:GLY:O	44:V:54:ILE:HD13	2.15	0.47
50:3:952:U:H5'	50:3:972:C:N4	2.30	0.47
50:3:1256:A:O2'	50:3:1257:A:H5''	2.15	0.47
51:1:181:A:H2'	51:1:182:A:C8	2.50	0.47
51:1:255:A:H2'	51:1:256:A:O4'	2.14	0.47
51:1:286:U:H2'	51:1:287:G:H8	1.79	0.47
51:1:947:A:H2'	51:1:948:C:C6	2.50	0.47
51:1:1001:A:H2'	51:1:1002:G:O4'	2.15	0.47
51:1:1034:G:H2'	51:1:1035:U:O4'	2.15	0.47
51:1:1874:C:C2'	51:1:1875:G:H5'	2.44	0.47
51:1:2153:C:H2'	51:1:2154:A:O4'	2.16	0.47
1:b:114:GLN:O	1:b:124:LYS:HE3	2.15	0.46
3:d:158:PHE:HE1	3:d:162:ARG:HH11	1.64	0.46
4:e:92:GLY:O	4:e:95:MET:HG2	2.14	0.46
4:e:101:ARG:O	4:e:105:ILE:HG22	2.15	0.46
8:k:32:TYR:OH	51:1:2726:A:H4'	2.15	0.46
12:o:110:ALA:HB1	12:o:115:LEU:CD2	2.45	0.46
16:s:81:SER:O	16:s:83:LYS:HD2	2.14	0.46
23:z:4:ILE:HG22	23:z:37:ARG:O	2.15	0.46
28:F:30:GLU:HG2	28:F:33:HIS:CD2	2.51	0.46
29:G:163:ILE:HD12	29:G:185:ILE:HB	1.97	0.46
31:I:202:LEU:HD23	31:I:202:LEU:C	2.39	0.46
49:a:48:LEU:HB2	49:a:169:GLY:HA2	1.97	0.46
50:3:467:U:H3'	50:3:468:A:C5'	2.44	0.46
50:3:1147:C:H2'	50:3:1148:U:C6	2.50	0.46
50:3:1291:U:H2'	50:3:1292:G:C8	2.50	0.46
51:1:845:A:H3'	51:1:846:U:H5''	1.97	0.46
51:1:2065:C:H2'	51:1:2066:C:H6	1.79	0.46
51:1:2585:U:H1'	55:5:101:FME:O1	2.15	0.46
6:g:31:VAL:HG13	6:g:32:PRO:CD	2.44	0.46
6:g:135:HIS:ND1	6:g:136:SER:N	2.58	0.46
7:j:57:LEU:O	7:j:58:ASN:HB2	2.14	0.46
7:j:114:LEU:HG	7:j:118:MET:HE3	1.97	0.46
9:l:13:LYS:HE2	51:1:1245:G:OP1	2.15	0.46
10:m:22:GLN:HB3	51:1:907:G:O5'	2.14	0.46
14:q:75:TYR:HE2	51:1:1153:C:H5'	1.79	0.46
17:t:53:VAL:HG21	17:t:92:ASN:OD1	2.16	0.46
18:u:27:VAL:HG23	18:u:33:VAL:HG12	1.97	0.46
32:J:59:ILE:O	32:J:63:MET:HG2	2.16	0.46
37:O:48:ARG:HH11	37:O:48:ARG:HG3	1.79	0.46
39:Q:20:VAL:O	39:Q:20:VAL:HG13	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:70:U:H2'	50:3:94:G:C6	2.49	0.46
50:3:497:G:H2'	50:3:498:A:C8	2.51	0.46
50:3:692:U:H2'	50:3:694:A:OP2	2.15	0.46
50:3:1218:C:H2'	50:3:1219:A:C8	2.50	0.46
51:1:941:A:H2'	51:1:942:G:O4'	2.14	0.46
51:1:1052:C:H2'	51:1:1053:C:C6	2.50	0.46
51:1:2182:U:H2'	51:1:2183:A:H8	1.80	0.46
51:1:2298:A:H61	51:1:2318:G:H1'	1.79	0.46
51:1:2543:G:N3	51:1:2765:A:H2'	2.30	0.46
53:5:28:C:H2'	53:5:29:G:H8	1.80	0.46
2:c:109:VAL:HG23	2:c:175:LEU:HD12	1.98	0.46
19:v:79:ARG:HG2	19:v:86:LEU:HD23	1.96	0.46
31:I:101:VAL:HG13	31:I:113:ALA:HB1	1.97	0.46
32:J:13:LYS:HB3	32:J:37:VAL:HG23	1.96	0.46
36:N:29:ILE:HG23	36:N:29:ILE:O	2.15	0.46
39:Q:19:ASN:C	39:Q:21:PRO:HD3	2.41	0.46
42:T:62:ARG:HA	42:T:65:LEU:HD12	1.96	0.46
50:3:592:G:H2'	50:3:593:U:C6	2.50	0.46
50:3:692:U:H5''	50:3:797:C:C5'	2.45	0.46
50:3:1173:U:H2'	50:3:1174:G:H8	1.81	0.46
50:3:1201:A:C1'	50:3:1202:U:OP2	2.59	0.46
50:3:1376:U:O5'	50:3:1376:U:H6	1.98	0.46
50:3:1500:A:H5''	50:3:1508:A:H5''	1.97	0.46
51:1:953:G:O2'	51:1:954:G:H5'	2.14	0.46
51:1:2756:U:H4'	51:1:2757:A:OP1	2.15	0.46
51:1:2898:U:H2'	51:1:2899:A:H8	1.81	0.46
53:5:18:G:O2'	53:5:19:G:H5''	2.15	0.46
1:b:73:ILE:HG12	51:1:1490:A:C4	2.50	0.46
4:e:30:VAL:HA	4:e:157:THR:HA	1.96	0.46
5:f:59:ASP:O	5:f:63:GLN:HG2	2.15	0.46
13:p:102:ARG:NH2	51:1:1755:A:H5'	2.30	0.46
19:v:80:HIS:HE1	19:v:82:TYR:CE1	2.33	0.46
28:F:1:MET:HA	28:F:1:MET:HE3	1.97	0.46
29:G:26:MET:HA	29:G:26:MET:HE3	1.98	0.46
31:I:111:ALA:HB3	50:3:408:A:OP1	2.14	0.46
34:L:101:ARG:O	34:L:105:GLU:HG3	2.14	0.46
38:P:66:ALA:HB3	38:P:98:ALA:HB3	1.96	0.46
44:V:66:LEU:HD12	44:V:66:LEU:H	1.80	0.46
50:3:41:G:H2'	50:3:42:G:C8	2.50	0.46
50:3:358:U:H2'	50:3:359:G:C8	2.51	0.46
50:3:377:G:H2'	50:3:378:G:H8	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:513:C:H2'	50:3:514:C:C6	2.50	0.46
50:3:1019:A:H2'	50:3:1020:G:O4'	2.15	0.46
51:1:1794:A:H2'	51:1:1795:C:H6	1.80	0.46
51:1:2183:A:H2'	51:1:2184:A:C8	2.51	0.46
51:1:2292:U:H2'	51:1:2293:G:H8	1.79	0.46
51:1:2895:G:H2'	51:1:2896:C:C6	2.51	0.46
52:2:3:C:H3'	52:2:4:C:H5''	1.97	0.46
1:b:43:ASN:HD21	1:b:45:ASN:ND2	2.14	0.46
4:e:55:ASP:HB3	4:e:134:GLN:OE1	2.16	0.46
4:e:65:LEU:HB2	52:2:42:C:O4'	2.16	0.46
5:f:9:VAL:HA	5:f:48:THR:HA	1.96	0.46
5:f:93:TYR:HD1	5:f:106:LEU:HA	1.80	0.46
9:l:78:ARG:NE	51:1:626:A:H2'	2.30	0.46
12:o:67:ASN:HA	52:2:50:A:OP2	2.15	0.46
30:H:46:LEU:HD23	30:H:46:LEU:C	2.40	0.46
35:M:86:LYS:HD2	35:M:90:GLU:O	2.16	0.46
36:N:83:THR:HG21	36:N:102:PHE:HB2	1.97	0.46
38:P:124:LYS:HD2	38:P:124:LYS:C	2.41	0.46
39:Q:21:PRO:HA	39:Q:24:GLU:OE2	2.15	0.46
43:U:5:ARG:HD2	50:3:376:G:C4'	2.45	0.46
46:X:47:THR:HG22	46:X:58:PRO:CB	2.45	0.46
50:3:236:A:H2'	50:3:237:G:C8	2.50	0.46
50:3:402:G:H2'	50:3:403:C:C6	2.50	0.46
50:3:1051:C:H2'	50:3:1052:U:C6	2.51	0.46
51:1:262:A:H2'	51:1:263:G:O4'	2.16	0.46
51:1:414:C:H2'	51:1:415:A:C8	2.50	0.46
51:1:706:A:H2'	51:1:707:G:O4'	2.14	0.46
51:1:1299:G:H4'	51:1:1301:A:C8	2.50	0.46
51:1:1557:C:H2'	51:1:1558:C:C5	2.50	0.46
51:1:2082:A:H2'	51:1:2083:G:O4'	2.15	0.46
51:1:2283:C:H5''	51:1:2389:G:O2'	2.16	0.46
1:b:124:LYS:HB3	1:b:127:ASN:ND2	2.31	0.46
1:b:152:GLN:HG3	51:1:1818:U:O4	2.16	0.46
9:l:55:MET:HE3	51:1:2392:A:C2	2.50	0.46
11:n:94:TYR:C	11:n:116:VAL:HG23	2.41	0.46
12:o:56:LYS:O	12:o:60:GLU:HG3	2.16	0.46
14:q:88:GLU:OE1	15:r:52:PRO:HB3	2.16	0.46
18:u:65:GLN:HG3	51:1:328:U:O3'	2.15	0.46
21:x:2:ARG:HH12	51:1:1364:G:H5''	1.79	0.46
21:x:60:LYS:HG2	51:1:372:G:O4'	2.16	0.46
26:D:14:ARG:HG3	51:1:771:G:OP1	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:4:LEU:HD22	50:3:406:G:H5''	1.97	0.46
34:L:52:ARG:HH12	34:L:121:ASN:ND2	2.00	0.46
36:N:50:PRO:HG3	36:N:79:ARG:HG2	1.98	0.46
41:S:25:GLU:HG2	41:S:26:LEU:N	2.30	0.46
44:V:13:SER:H	44:V:21:VAL:HG23	1.80	0.46
49:a:202:THR:HG23	49:a:203:GLN:N	2.31	0.46
50:3:151:A:H2'	50:3:152:A:O4'	2.16	0.46
50:3:234:C:H2'	50:3:235:C:H6	1.81	0.46
50:3:591:U:H2'	50:3:592:G:C8	2.50	0.46
50:3:868:C:H2'	50:3:869:G:O4'	2.15	0.46
50:3:1010:U:H2'	50:3:1011:C:C6	2.50	0.46
51:1:467:G:O2'	51:1:468:G:H5'	2.16	0.46
51:1:645:C:O2'	51:1:646:U:H5'	2.15	0.46
51:1:863:A:H2'	51:1:864:G:H8	1.79	0.46
51:1:1430:G:H2'	51:1:1431:A:C8	2.51	0.46
51:1:1960:A:H2'	51:1:1961:C:C6	2.51	0.46
2:c:25:THR:HG21	2:c:193:VAL:CG2	2.45	0.46
9:l:29:LYS:HB3	15:r:82:HIS:CE1	2.50	0.46
14:q:65:ASN:O	14:q:69:ARG:HG3	2.16	0.46
14:q:69:ARG:HG2	14:q:69:ARG:HH21	1.80	0.46
15:r:51:VAL:CG2	15:r:52:PRO:HD2	2.45	0.46
17:t:8:LEU:HD13	22:y:21:LEU:CB	2.46	0.46
22:y:7:ARG:HG3	22:y:8:GLU:OE2	2.15	0.46
34:L:9:ARG:HG3	34:L:9:ARG:NH1	2.31	0.46
35:M:106:SER:OG	50:3:640:A:N3	2.45	0.46
36:N:25:GLY:HA2	36:N:57:VAL:HG22	1.96	0.46
38:P:28:ASN:CG	38:P:56:LYS:HD3	2.38	0.46
44:V:37:ILE:HG22	44:V:38:LYS:N	2.29	0.46
45:W:24:ASP:O	45:W:28:LEU:HD13	2.15	0.46
49:a:170:ILE:HD12	51:1:2177:C:O2'	2.16	0.46
50:3:202:G:H21	50:3:466:A:H61	1.63	0.46
50:3:961:U:OP2	50:3:1223:C:H1'	2.15	0.46
50:3:1165:U:H2'	50:3:1166:G:C8	2.50	0.46
50:3:1241:G:H2'	50:3:1242:G:C8	2.49	0.46
51:1:624:C:O2'	51:1:657:U:H5''	2.16	0.46
51:1:765:C:H2'	51:1:766:U:C6	2.51	0.46
51:1:1678:A:H2'	51:1:1679:A:O4'	2.16	0.46
3:d:127:GLU:O	3:d:156:ASN:ND2	2.49	0.46
4:e:59:ILE:CD1	4:e:134:GLN:HE21	2.26	0.46
6:g:8:LYS:C	6:g:8:LYS:HD3	2.41	0.46
6:g:54:LEU:HD12	6:g:54:LEU:N	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:k:14:SER:CB	8:k:86:LEU:HD12	2.46	0.46
24:B:5:ASN:HD21	51:1:2020:A:H62	1.64	0.46
28:F:17:VAL:HG23	28:F:24:ARG:HB3	1.97	0.46
36:N:123:ARG:HD2	50:3:1343:G:H5'	1.98	0.46
40:R:88:LEU:HD23	40:R:88:LEU:C	2.41	0.46
44:V:66:LEU:HB2	44:V:70:LYS:HD2	1.97	0.46
47:Y:27:MET:SD	47:Y:56:ILE:HG22	2.56	0.46
50:3:123:U:OP1	50:3:312:C:H5'	2.15	0.46
50:3:357:G:OP1	50:3:367:U:H5'	2.15	0.46
50:3:427:U:H2'	50:3:428:G:C8	2.51	0.46
50:3:552:U:H2'	50:3:553:A:H8	1.80	0.46
50:3:775:G:H2'	50:3:776:G:O4'	2.16	0.46
50:3:1098:C:H2'	50:3:1099:G:H8	1.79	0.46
51:1:52:A:H2'	51:1:53:A:C8	2.51	0.46
51:1:155:A:H2'	51:1:156:A:C8	2.51	0.46
51:1:1745:A:O2'	51:1:1746:A:H5'	2.15	0.46
53:5:63:G:H2'	53:5:64:G:C8	2.49	0.46
7:j:131:ASN:ND2	51:1:6:A:H5'	2.30	0.46
10:m:29:GLY:HA3	10:m:104:GLU:HG2	1.98	0.46
10:m:50:ARG:HD2	10:m:50:ARG:O	2.16	0.46
13:p:94:ALA:O	13:p:95:LYS:HD2	2.16	0.46
17:t:33:LYS:HG2	17:t:80:TRP:CZ3	2.50	0.46
20:w:55:LEU:HD12	20:w:76:ILE:HD12	1.98	0.46
29:G:77:GLU:HA	29:G:80:LYS:HZ2	1.81	0.46
32:J:9:GLU:HG3	32:J:10:LEU:CD2	2.46	0.46
36:N:77:ALA:O	36:N:81:GLY:N	2.48	0.46
50:3:136:C:H2'	50:3:137:U:C6	2.50	0.46
50:3:407:U:H2'	50:3:408:A:H8	1.81	0.46
50:3:635:A:H2'	50:3:636:U:C6	2.50	0.46
50:3:952:U:H5'	50:3:972:C:H41	1.81	0.46
50:3:1177:G:H2'	50:3:1178:G:O4'	2.16	0.46
50:3:1354:U:H2'	50:3:1355:G:H8	1.81	0.46
51:1:106:C:H2'	51:1:107:G:C8	2.50	0.46
51:1:974:G:N3	51:1:974:G:H2'	2.30	0.46
51:1:1821:A:H2'	51:1:1822:C:C6	2.51	0.46
51:1:2106:U:H2'	51:1:2107:G:H8	1.80	0.46
51:1:2277:G:C3'	51:1:2278:A:H5'	2.46	0.46
53:5:59:A:C2'	53:5:60:U:H5'	2.46	0.46
2:c:116:LYS:HG3	2:c:165:MET:HE2	1.98	0.46
3:d:170:ARG:HH21	3:d:170:ARG:HG3	1.81	0.46
14:q:70:GLN:C	14:q:71:ASN:HD22	2.24	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:t:29:THR:OG1	17:t:86:THR:HG22	2.15	0.46
29:G:19:THR:HG22	29:G:38:HIS:CD2	2.51	0.46
38:P:28:ASN:OD1	38:P:29:THR:N	2.49	0.46
42:T:23:SER:O	42:T:26:VAL:HG22	2.16	0.46
43:U:40:ASN:HD21	43:U:42:ILE:HG13	1.80	0.46
50:3:1164:G:O2'	50:3:1165:U:H5'	2.16	0.46
51:1:1987:A:H2'	51:1:1988:G:C8	2.51	0.46
51:1:2207:C:H2'	51:1:2208:C:C6	2.51	0.46
51:1:2249:U:H3'	51:1:2250:G:C5'	2.45	0.46
51:1:2293:G:H2'	51:1:2294:G:H8	1.80	0.46
52:2:88:C:OP1	52:2:88:C:H3'	2.15	0.46
4:e:40:GLY:HA3	4:e:76:PHE:HE2	1.81	0.45
9:l:23:ILE:HG12	15:r:82:HIS:NE2	2.31	0.45
9:l:57:LEU:HD22	27:E:53:ASP:HB3	1.97	0.45
32:J:110:MET:HE3	32:J:126:ALA:HB2	1.98	0.45
45:W:56:ARG:O	45:W:60:ARG:HG3	2.16	0.45
50:3:184:G:H2'	50:3:185:U:C6	2.50	0.45
50:3:503:C:H2'	50:3:504:C:C6	2.52	0.45
50:3:548:G:H2'	50:3:549:C:C6	2.52	0.45
50:3:575:G:O2'	50:3:821:G:H5'	2.16	0.45
50:3:979:C:H2'	50:3:980:C:H5'	1.98	0.45
50:3:1086:U:H3	50:3:1099:G:H1	1.64	0.45
50:3:1406:U:H2'	50:3:1407:C:O4'	2.16	0.45
51:1:948:C:H5''	51:1:961:C:O2'	2.16	0.45
51:1:1213:A:H62	51:1:1236:G:H1'	1.78	0.45
51:1:1826:G:H2'	51:1:1827:U:H6	1.76	0.45
51:1:2249:U:H4'	51:1:2275:C:H5	1.81	0.45
51:1:2743:U:H2'	51:1:2744:G:C4'	2.47	0.45
51:1:2837:A:H2'	51:1:2838:G:H8	1.82	0.45
52:2:48:U:H2'	52:2:49:C:H6	1.81	0.45
4:e:9:ASP:OD2	4:e:10:GLU:HG2	2.17	0.45
4:e:116:LEU:HD13	4:e:174:PHE:CZ	2.51	0.45
7:j:131:ASN:HD22	51:1:6:A:H5''	1.81	0.45
8:k:18:ARG:HB3	8:k:45:GLU:HB3	1.98	0.45
9:l:36:LYS:HE2	51:1:808:G:OP2	2.16	0.45
12:o:10:ARG:HD3	51:1:2295:C:OP2	2.15	0.45
16:s:42:LYS:CB	51:1:2010:G:H5''	2.42	0.45
17:t:6:ARG:O	17:t:10:VAL:HG23	2.16	0.45
31:I:85:THR:HG23	31:I:86:GLY:N	2.31	0.45
37:O:42:LEU:HA	37:O:43:PRO:HD2	1.71	0.45
44:V:18:LYS:HE3	50:3:255:G:H4'	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:802:A:H2'	50:3:803:G:O4'	2.16	0.45
50:3:1288:A:O2'	50:3:1353:G:H5'	2.16	0.45
50:3:1316:G:N2	50:3:1318:A:H3'	2.31	0.45
51:1:286:U:H2'	51:1:287:G:C8	2.50	0.45
51:1:1559:U:H2'	51:1:1560:G:H5'	1.98	0.45
51:1:2031:A:N1	51:1:2498:C:H1'	2.31	0.45
51:1:2143:C:H2'	51:1:2144:G:O4'	2.16	0.45
51:1:2398:U:H2'	51:1:2399:G:H8	1.81	0.45
52:2:54:G:H2'	52:2:55:U:C6	2.52	0.45
53:5:2:G:H2'	53:5:3:C:O4'	2.16	0.45
11:n:13:ASN:ND2	11:n:15:SER:HB3	2.31	0.45
11:n:98:LEU:HD13	24:B:53:VAL:HG21	1.98	0.45
12:o:100:HIS:O	12:o:104:GLN:NE2	2.49	0.45
13:p:8:GLU:O	13:p:12:MET:HG3	2.16	0.45
15:r:54:VAL:HG23	15:r:55:ASP:N	2.32	0.45
15:r:81:LYS:HD2	51:1:973:A:H5''	1.98	0.45
23:z:35:VAL:HG22	23:z:36:GLU:N	2.31	0.45
38:P:86:LYS:HD3	38:P:112:VAL:CG2	2.41	0.45
49:a:175:ILE:HG13	49:a:176:GLY:N	2.32	0.45
50:3:678:U:H4'	50:3:778:G:OP1	2.15	0.45
51:1:78:U:H2'	51:1:79:C:C6	2.51	0.45
51:1:671:C:H2'	51:1:672:C:C6	2.52	0.45
51:1:906:U:H2'	51:1:907:G:O4'	2.17	0.45
51:1:1387:A:H2'	51:1:1388:G:H8	1.81	0.45
51:1:1460:U:H3'	51:1:1461:C:H5'	1.98	0.45
51:1:2128:G:H21	51:1:2173:A:H1'	1.82	0.45
51:1:2194:U:H2'	51:1:2195:U:C6	2.52	0.45
51:1:2475:C:H2'	51:1:2477:U:P	2.56	0.45
52:2:63:C:H2'	52:2:64:G:H8	1.81	0.45
4:e:7:TYR:HA	4:e:11:VAL:CG2	2.46	0.45
4:e:38:GLY:HA2	51:1:2312:U:H1'	1.98	0.45
4:e:147:ARG:HG2	4:e:147:ARG:HH11	1.81	0.45
5:f:156:TYR:CE1	51:1:2531:A:H4'	2.51	0.45
7:j:31:GLU:HG2	7:j:142:ILE:HG12	1.98	0.45
13:p:94:ALA:C	13:p:95:LYS:HD2	2.41	0.45
14:q:71:ASN:OD1	14:q:106:THR:HG22	2.16	0.45
26:D:17:GLY:O	26:D:21:ARG:HG2	2.16	0.45
29:G:49:PHE:CE2	29:G:53:LEU:HD11	2.52	0.45
31:I:3:TYR:HB2	31:I:62:ARG:NH1	2.30	0.45
31:I:58:GLN:HG3	50:3:544:G:OP1	2.17	0.45
32:J:24:VAL:HG23	32:J:24:VAL:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:J:114:LEU:HD12	32:J:119:VAL:HG21	1.97	0.45
40:R:6:ILE:HG12	40:R:8:ILE:H	1.81	0.45
42:T:60:SER:HB2	50:3:581:G:C5'	2.47	0.45
45:W:59:LYS:HG3	50:3:735:C:C5'	2.45	0.45
47:Y:67:HIS:HB2	50:3:262:A:H5'	1.98	0.45
49:a:38:PHE:CZ	49:a:218:MET:HG3	2.32	0.45
50:3:66:A:H61	50:3:103:U:H3	1.65	0.45
50:3:505:G:H5'	50:3:534:U:H2'	1.98	0.45
50:3:558:G:H2'	50:3:559:A:C2	2.51	0.45
50:3:626:G:H2'	50:3:627:G:C8	2.52	0.45
50:3:785:G:H2'	50:3:786:G:C8	2.51	0.45
50:3:1273:C:H2'	50:3:1274:A:O4'	2.16	0.45
50:3:1390:U:H2'	50:3:1391:U:H6	1.82	0.45
50:3:1401:G:H2'	50:3:1402:C:O4'	2.16	0.45
51:1:1196:C:H2'	51:1:1197:G:C8	2.51	0.45
51:1:1239:G:H2'	51:1:1240:U:C6	2.51	0.45
51:1:2533:U:H2'	51:1:2534:A:C5'	2.46	0.45
51:1:2699:C:H2'	51:1:2700:A:C8	2.51	0.45
4:e:95:MET:O	4:e:99:PHE:HB2	2.16	0.45
8:k:13:ASN:OD1	8:k:98:ARG:N	2.48	0.45
14:q:102:LYS:O	14:q:106:THR:HG23	2.17	0.45
17:t:11:LEU:HD23	17:t:34:VAL:HG12	1.99	0.45
19:v:42:LEU:N	19:v:42:LEU:HD12	2.31	0.45
30:H:186:SER:HB2	30:H:197:VAL:CG1	2.44	0.45
31:I:117:VAL:HG22	31:I:122:ILE:HG13	1.98	0.45
31:I:125:ASN:HA	31:I:141:VAL:HG13	1.98	0.45
36:N:82:ILE:O	36:N:86:LEU:HG	2.16	0.45
36:N:118:ARG:NH2	36:N:122:ARG:HG2	2.30	0.45
37:O:42:LEU:HD21	50:3:1125:U:O2	2.17	0.45
42:T:39:GLN:O	42:T:43:ALA:N	2.49	0.45
50:3:689:C:H2'	50:3:690:G:C8	2.51	0.45
51:1:1857:G:N2	51:1:1884:G:H2'	2.32	0.45
51:1:1999:C:H5''	51:1:2723:C:O2'	2.17	0.45
51:1:2167:U:H3	51:1:2170:A:H62	1.64	0.45
51:1:2809:A:C8	51:1:2890:G:N2	2.84	0.45
53:5:67:C:H2'	53:5:68:C:O4'	2.16	0.45
4:e:2:LYS:O	4:e:2:LYS:HD3	2.17	0.45
4:e:105:ILE:HG12	4:e:138:PRO:HD3	1.99	0.45
5:f:43:LYS:HZ1	5:f:52:GLY:HA3	1.81	0.45
5:f:68:ARG:HG2	5:f:68:ARG:HH11	1.80	0.45
6:g:116:ARG:O	6:g:118:PRO:HD3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:q:30:VAL:HG12	14:q:33:VAL:H	1.81	0.45
14:q:60:TRP:O	14:q:64:ILE:HG13	2.16	0.45
28:F:26:ILE:HG13	28:F:26:ILE:O	2.15	0.45
37:O:46:LYS:HG2	37:O:68:ARG:HG2	1.99	0.45
41:S:62:ARG:NH2	50:3:981:U:H5''	2.32	0.45
46:X:31:ARG:HA	46:X:49:ALA:HB3	1.97	0.45
50:3:79:G:C2'	50:3:80:A:H5'	2.46	0.45
50:3:211:G:H2'	50:3:212:G:C4'	2.47	0.45
50:3:501:C:H2'	50:3:502:A:C8	2.51	0.45
50:3:1291:U:H2'	50:3:1292:G:H8	1.81	0.45
50:3:1356:G:H2'	50:3:1357:A:C8	2.51	0.45
51:1:163:C:H2'	51:1:164:C:O4'	2.16	0.45
51:1:466:A:C2'	51:1:467:G:H5'	2.47	0.45
51:1:820:A:H2'	51:1:821:A:C8	2.51	0.45
51:1:1079:C:H2'	51:1:1080:A:C8	2.51	0.45
51:1:1561:C:H2'	51:1:1562:U:C6	2.51	0.45
51:1:2109:U:H2'	51:1:2110:G:C8	2.52	0.45
51:1:2703:C:H2'	51:1:2704:C:C6	2.52	0.45
51:1:2784:U:H2'	51:1:2785:C:C6	2.51	0.45
52:2:68:C:H2'	52:2:69:G:C8	2.52	0.45
53:5:71:C:O2'	53:5:72:A:H5'	2.16	0.45
1:b:46:GLY:HA3	51:1:773:U:H5'	1.99	0.45
18:u:72:PHE:CD2	18:u:74:ALA:HB2	2.52	0.45
29:G:209:VAL:O	29:G:213:LEU:HG	2.16	0.45
30:H:11:LEU:HD11	30:H:17:TRP:HA	1.98	0.45
30:H:127:VAL:HG22	30:H:128:MET:H	1.82	0.45
34:L:110:ARG:HG2	34:L:110:ARG:HH11	1.82	0.45
38:P:97:ARG:O	38:P:101:ALA:N	2.48	0.45
50:3:10:A:H2'	50:3:11:G:H8	1.82	0.45
50:3:160:A:H2'	50:3:161:A:O4'	2.16	0.45
50:3:168:G:H2'	50:3:169:C:H5'	1.99	0.45
50:3:206:C:H2'	50:3:207:C:O4'	2.17	0.45
50:3:392:C:H2'	50:3:393:A:H8	1.81	0.45
50:3:414:A:C5'	50:3:428:G:H22	2.29	0.45
50:3:470:C:H2'	50:3:471:U:C6	2.51	0.45
50:3:855:U:H2'	50:3:856:C:C6	2.51	0.45
50:3:1512:U:H2'	50:3:1513:A:C8	2.52	0.45
51:1:272:A:H2'	51:1:273:G:H8	1.81	0.45
51:1:937:C:H2'	51:1:938:G:C8	2.51	0.45
51:1:1979:U:O2'	51:1:1980:G:H5'	2.17	0.45
51:1:2455:G:H2'	51:1:2456:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2508:G:N1	51:1:2580:U:H5	1.92	0.45
52:2:48:U:H2'	52:2:49:C:C6	2.52	0.45
1:b:160:TYR:HB3	1:b:193:GLU:HG2	1.99	0.45
3:d:63:LYS:HD2	51:1:2444:G:P	2.57	0.45
4:e:41:GLU:HG3	4:e:45:ASP:O	2.17	0.45
7:j:27:ARG:HG2	7:j:27:ARG:NH1	2.32	0.45
7:j:136:GLN:HE22	51:1:2899:A:H4'	1.82	0.45
21:x:2:ARG:HD2	21:x:29:LEU:HD22	1.99	0.45
29:G:162:VAL:HG22	29:G:163:ILE:N	2.31	0.45
32:J:75:LEU:H	32:J:75:LEU:CD2	2.30	0.45
32:J:95:MET:HA	32:J:124:ALA:HA	1.99	0.45
35:M:38:VAL:HG21	35:M:109:VAL:CG1	2.47	0.45
37:O:12:ALA:CB	37:O:96:VAL:HG22	2.45	0.45
38:P:19:VAL:O	38:P:34:THR:N	2.50	0.45
41:S:20:PHE:CE1	41:S:47:LEU:HD12	2.52	0.45
49:a:5:THR:O	49:a:9:ARG:N	2.49	0.45
50:3:624:C:H2'	50:3:625:U:C6	2.52	0.45
51:1:594:U:H2'	51:1:595:C:C6	2.52	0.45
51:1:724:U:O2'	51:1:725:G:H5'	2.17	0.45
51:1:729:G:H4'	51:1:763:G:H5'	1.99	0.45
51:1:2070:A:H2'	51:1:2071:A:H8	1.82	0.45
51:1:2208:C:H2'	51:1:2209:G:H8	1.82	0.45
51:1:2208:C:H2'	51:1:2209:G:C8	2.52	0.45
51:1:2310:C:H2'	51:1:2311:A:H4'	1.99	0.45
51:1:2339:C:H2'	51:1:2340:A:C8	2.52	0.45
51:1:2427:C:H5'	51:1:2429:G:H5'	1.97	0.45
51:1:2570:G:C2'	51:1:2571:U:H5'	2.46	0.45
1:b:70:LYS:HD3	1:b:95:TYR:CD2	2.52	0.45
1:b:100:ARG:HG3	1:b:100:ARG:HH11	1.81	0.45
1:b:140:VAL:HG23	1:b:161:VAL:CG1	2.47	0.45
2:c:1:MET:HB2	2:c:2:ILE:HD12	1.98	0.45
3:d:77:ILE:HG13	3:d:78:TRP:HD1	1.81	0.45
4:e:7:TYR:HA	4:e:11:VAL:HG23	1.98	0.45
4:e:41:GLU:HG2	4:e:48:LEU:HD23	1.99	0.45
9:l:14:LYS:O	51:1:662:G:H4'	2.16	0.45
9:l:19:LEU:HD23	51:1:587:C:O2'	2.16	0.45
15:r:43:ASN:CG	15:r:44:GLY:H	2.25	0.45
16:s:1:MET:HG3	16:s:3:THR:HG23	1.97	0.45
16:s:9:HIS:CE1	16:s:100:THR:HG21	2.52	0.45
21:x:67:LEU:HD12	21:x:70:LEU:HD22	1.98	0.45
30:H:168:ARG:HD2	30:H:168:ARG:C	2.42	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:127:ARG:HG2	31:I:127:ARG:HH11	1.82	0.45
32:J:33:THR:HG22	32:J:51:LYS:HB3	1.99	0.45
34:L:9:ARG:HG3	34:L:9:ARG:HH11	1.82	0.45
35:M:14:ARG:CZ	50:3:876:C:H4'	2.47	0.45
36:N:70:GLY:HA3	50:3:1371:G:O3'	2.16	0.45
40:R:79:LEU:HD13	40:R:87:GLY:HA2	1.98	0.45
44:V:74:LEU:C	44:V:74:LEU:HD23	2.42	0.45
50:3:636:U:H2'	50:3:637:C:C6	2.52	0.45
51:1:1328:A:H2'	51:1:1330:C:C4	2.52	0.45
51:1:1586:A:H3'	51:1:1587:G:H8	1.81	0.45
52:2:95:U:H2'	52:2:96:G:C8	2.51	0.45
4:e:105:ILE:CG1	4:e:137:PHE:HA	2.46	0.45
12:o:12:THR:HA	12:o:15:ARG:HB2	1.98	0.45
14:q:109:VAL:O	14:q:113:LYS:N	2.49	0.45
27:E:4:LYS:HE3	51:1:253:C:OP2	2.17	0.45
28:F:3:VAL:HG23	28:F:3:VAL:O	2.17	0.45
29:G:213:LEU:HA	29:G:216:VAL:HG22	1.97	0.45
30:H:120:THR:O	30:H:124:GLU:HG3	2.16	0.45
37:O:10:LEU:HD23	37:O:10:LEU:H	1.80	0.45
39:Q:20:VAL:N	39:Q:21:PRO:HD3	2.32	0.45
39:Q:23:LEU:CD2	39:Q:29:LYS:HD3	2.38	0.45
46:X:59:VAL:HG21	46:X:73:PHE:HB3	1.98	0.45
50:3:714:G:H2'	50:3:715:A:C8	2.52	0.45
50:3:1002:G:H2'	50:3:1003:G:O4'	2.17	0.45
51:1:226:A:H2'	51:1:227:A:O4'	2.17	0.45
51:1:279:A:H2'	51:1:280:U:O4'	2.17	0.45
51:1:502:A:H2'	51:1:503:A:H5'	1.98	0.45
51:1:1164:C:H2'	51:1:1165:A:H8	1.82	0.45
51:1:1372:U:H2'	51:1:1373:A:C8	2.52	0.45
51:1:1429:G:H2'	51:1:1430:G:H8	1.82	0.45
51:1:2065:C:H2'	51:1:2066:C:C6	2.52	0.45
51:1:2567:G:H2'	51:1:2568:U:C6	2.52	0.45
51:1:2832:U:H1'	51:1:2834:G:C2	2.52	0.45
2:c:150:GLN:CD	51:1:2572:A:H62	2.25	0.44
7:j:27:ARG:HH22	51:1:1142:A:H4'	1.82	0.44
16:s:15:GLN:O	16:s:19:LEU:HD13	2.16	0.44
17:t:8:LEU:HD21	22:y:22:LEU:CD2	2.34	0.44
18:u:83:GLY:CA	18:u:96:LYS:HE3	2.47	0.44
43:U:73:ALA:HB1	50:3:453:G:O5'	2.17	0.44
49:a:23:ILE:HG23	49:a:24:ASN:N	2.32	0.44
50:3:920:U:H2'	50:3:921:U:C6	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1046:A:H2'	50:3:1047:G:O4'	2.16	0.44
50:3:1139:G:H4'	50:3:1140:C:O5'	2.17	0.44
50:3:1464:U:H2'	50:3:1465:A:H8	1.82	0.44
51:1:20:C:H2'	51:1:21:A:H8	1.82	0.44
51:1:288:U:H2'	51:1:289:G:H8	1.80	0.44
51:1:318:C:H2'	51:1:319:G:H8	1.80	0.44
51:1:445:C:C2'	51:1:446:G:H5'	2.47	0.44
51:1:1479:G:O2'	51:1:1561:C:H5'	2.17	0.44
52:2:22:U:H2'	52:2:23:G:H8	1.81	0.44
52:2:66:A:H5''	52:2:67:G:OP1	2.16	0.44
52:2:69:G:H2'	52:2:70:C:O4'	2.17	0.44
1:b:75:ALA:HA	1:b:95:TYR:HA	1.99	0.44
1:b:104:LEU:HD12	1:b:104:LEU:N	2.32	0.44
1:b:145:MET:HE2	1:b:152:GLN:CB	2.48	0.44
5:f:172:GLU:O	51:1:2531:A:H5'	2.16	0.44
6:g:98:ASP:OD2	6:g:99:ILE:HD12	2.18	0.44
8:k:102:PRO:CD	13:p:65:ASN:HD22	2.20	0.44
11:n:49:GLU:OE1	51:1:2839:G:H4'	2.18	0.44
13:p:20:ARG:HB3	13:p:21:PRO:HD2	1.99	0.44
13:p:26:GLU:OE1	13:p:28:LYS:HG3	2.16	0.44
24:B:2:VAL:HG22	24:B:3:GLN:H	1.82	0.44
29:G:206:ILE:HG13	29:G:207:ARG:N	2.33	0.44
32:J:149:PRO:HB2	32:J:164:LEU:HD21	1.99	0.44
32:J:156:ARG:HH11	35:M:100:ILE:CG2	2.30	0.44
46:X:49:ALA:HB1	46:X:56:HIS:HB3	1.98	0.44
48:Z:44:ARG:HG2	48:Z:44:ARG:HH11	1.81	0.44
51:1:671:C:H2'	51:1:672:C:H6	1.83	0.44
51:1:1336:A:H2'	51:1:1337:G:C8	2.52	0.44
51:1:1726:C:H2'	51:1:1727:C:C6	2.52	0.44
51:1:1789:A:H2'	51:1:1790:C:O4'	2.17	0.44
51:1:1919:A:H2'	51:1:1919:A:N3	2.32	0.44
51:1:2162:G:H5''	51:1:2171:A:N7	2.32	0.44
51:1:2543:G:H2'	51:1:2544:G:C8	2.52	0.44
1:b:237:ARG:NH2	51:1:2590:A:H5''	2.30	0.44
6:g:47:PHE:HA	6:g:51:ARG:HB2	1.99	0.44
7:j:47:HIS:CD2	51:1:536:G:H21	2.35	0.44
8:k:11:ALA:HB2	8:k:83:ALA:HB1	1.99	0.44
14:q:61:ILE:HD12	14:q:75:TYR:OH	2.18	0.44
17:t:59:ASN:HD22	51:1:1342:A:H5''	1.82	0.44
22:y:43:LEU:O	22:y:47:ARG:HG3	2.16	0.44
25:C:5:ARG:HG3	25:C:23:THR:OG1	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:G:116:LEU:HB3	29:G:140:LEU:HD13	1.98	0.44
29:G:216:VAL:O	29:G:220:VAL:HG23	2.17	0.44
30:H:86:LEU:O	30:H:86:LEU:HD23	2.17	0.44
33:K:61:LEU:HD21	33:K:63:ASN:HB2	2.00	0.44
34:L:115:MET:HG3	34:L:119:LEU:CD1	2.48	0.44
36:N:118:ARG:CZ	36:N:122:ARG:HG2	2.47	0.44
40:R:15:VAL:O	40:R:19:THR:HG23	2.17	0.44
42:T:71:ARG:NH1	42:T:71:ARG:HB3	2.32	0.44
50:3:630:A:H2'	50:3:631:C:O4'	2.17	0.44
50:3:680:C:H2'	50:3:681:A:C8	2.52	0.44
50:3:1175:G:H2'	50:3:1176:A:C8	2.53	0.44
50:3:1245:C:H2'	50:3:1246:A:C8	2.53	0.44
50:3:1256:A:H1'	50:3:1258:G:C8	2.52	0.44
50:3:1382:C:H2'	50:3:1383:C:H6	1.81	0.44
51:1:74:A:H4'	51:1:75:G:O5'	2.17	0.44
51:1:597:G:H2'	51:1:598:U:C6	2.52	0.44
51:1:672:C:O2'	51:1:673:C:H5'	2.18	0.44
51:1:1387:A:H2'	51:1:1388:G:C8	2.53	0.44
51:1:1825:U:H2'	51:1:1826:G:H8	1.82	0.44
52:2:88:C:H4'	52:2:89:U:OP1	2.16	0.44
1:b:140:VAL:O	1:b:161:VAL:HG12	2.17	0.44
4:e:32:LYS:HB3	4:e:156:THR:OG1	2.17	0.44
4:e:105:ILE:HG12	4:e:137:PHE:HA	1.99	0.44
4:e:143:ASP:HB2	40:R:2:ARG:HH12	1.81	0.44
5:f:68:ARG:HH12	5:f:72:ASN:HB2	1.82	0.44
5:f:88:LEU:HD11	5:f:95:ALA:HB3	1.99	0.44
9:l:95:LEU:CD2	9:l:100:ILE:HD11	2.46	0.44
10:m:30:SER:O	10:m:133:LYS:N	2.50	0.44
14:q:116:LEU:HD23	14:q:116:LEU:C	2.42	0.44
15:r:54:VAL:HG23	15:r:55:ASP:H	1.83	0.44
22:y:48:ARG:HB3	22:y:52:ARG:NH2	2.31	0.44
31:I:119:HIS:CE1	50:3:495:A:N6	2.86	0.44
36:N:44:ARG:HG2	36:N:44:ARG:HH11	1.82	0.44
37:O:52:LEU:N	37:O:52:LEU:HD12	2.32	0.44
39:Q:57:THR:HG21	50:3:363:A:OP2	2.18	0.44
41:S:19:TYR:HD2	41:S:50:LEU:HD13	1.83	0.44
46:X:35:ARG:HH11	50:3:1221:G:H5''	1.82	0.44
49:a:192:LEU:O	49:a:196:LEU:HG	2.17	0.44
50:3:1193:G:O2'	50:3:1194:U:H5'	2.18	0.44
50:3:1472:U:H2'	50:3:1473:G:H8	1.83	0.44
50:3:1492:A:C3'	50:3:1493:A:H4'	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:38:A:H2'	51:1:39:G:O4'	2.17	0.44
51:1:356:G:H2'	51:1:357:C:O4'	2.17	0.44
51:1:1174:U:H4'	51:1:1176:U:C2	2.52	0.44
51:1:1511:G:O2'	51:1:1512:C:H5'	2.17	0.44
2:c:34:VAL:HG22	2:c:50:VAL:HG12	1.99	0.44
3:d:21:ARG:HG2	3:d:110:SER:OG	2.17	0.44
9:l:85:VAL:HG22	9:l:86:GLU:N	2.32	0.44
10:m:56:ALA:HB2	10:m:119:LEU:HD12	2.00	0.44
10:m:109:PRO:HG2	10:m:112:LEU:CB	2.42	0.44
14:q:82:LEU:HD23	14:q:112:ALA:HB2	1.98	0.44
17:t:8:LEU:CD2	22:y:22:LEU:HD23	2.32	0.44
28:F:1:MET:HE3	28:F:34:LYS:HG2	1.98	0.44
28:F:30:GLU:HG3	28:F:32:LYS:HB2	2.00	0.44
31:I:10:LEU:HD21	31:I:20:LEU:HD23	1.99	0.44
31:I:149:LYS:HD3	31:I:177:MET:HB2	2.00	0.44
36:N:72:SER:O	36:N:76:GLY:N	2.49	0.44
37:O:14:ASP:OD2	37:O:16:ARG:HB2	2.16	0.44
50:3:17:U:H2'	50:3:18:C:H6	1.82	0.44
50:3:256:U:H2'	50:3:257:G:H8	1.80	0.44
50:3:321:A:H2'	50:3:322:C:H6	1.83	0.44
50:3:1181:G:H1'	50:3:1182:G:C5	2.52	0.44
50:3:1218:C:H2'	50:3:1219:A:H8	1.82	0.44
50:3:1478:U:H2'	50:3:1479:C:H6	1.83	0.44
51:1:39:G:H2'	51:1:40:U:C6	2.52	0.44
51:1:277:G:H3'	51:1:277:G:N3	2.33	0.44
51:1:2228:G:H2'	51:1:2229:U:C6	2.53	0.44
51:1:2328:A:H2'	51:1:2329:U:H6	1.81	0.44
51:1:2527:C:H2'	51:1:2528:U:C6	2.53	0.44
51:1:2647:U:H2'	51:1:2648:G:H8	1.81	0.44
51:1:2656:U:O2'	51:1:2657:A:H5'	2.17	0.44
1:b:107:LYS:N	1:b:193:GLU:O	2.45	0.44
7:j:69:ARG:HA	7:j:89:PHE:CD2	2.53	0.44
8:k:33:ALA:HB1	8:k:37:ASP:HB2	2.00	0.44
13:p:23:ASP:O	13:p:25:VAL:HG23	2.17	0.44
28:F:13:ASN:ND2	28:F:28:SER:N	2.66	0.44
29:G:26:MET:HE2	29:G:29:PHE:HD2	1.82	0.44
29:G:66:ILE:HG13	29:G:159:ALA:HB3	1.99	0.44
31:I:20:LEU:H	31:I:20:LEU:CD1	2.31	0.44
34:L:144:ALA:O	34:L:146:ALA:N	2.47	0.44
37:O:9:ARG:NH2	50:3:1279:G:H5'	2.33	0.44
44:V:24:ILE:HB	44:V:41:THR:HB	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:82:G:C2'	50:3:83:C:H5'	2.47	0.44
50:3:879:C:O2'	50:3:880:C:H5'	2.16	0.44
50:3:984:C:H2'	50:3:985:C:C6	2.52	0.44
51:1:366:C:H2'	51:1:367:G:C5'	2.48	0.44
51:1:1353:A:H2'	51:1:1354:A:H8	1.83	0.44
51:1:1367:A:H2'	51:1:1368:G:H5'	1.99	0.44
51:1:1670:C:O5'	51:1:1670:C:H6	2.00	0.44
51:1:2062:A:H4'	51:1:2442:C:OP2	2.18	0.44
51:1:2515:C:H2'	51:1:2516:A:C8	2.53	0.44
51:1:2623:G:H2'	51:1:2624:G:H8	1.83	0.44
51:1:2715:C:H3'	51:1:2716:C:H5''	1.99	0.44
1:b:97:ASP:HB3	51:1:1490:A:C8	2.53	0.44
2:c:7:LYS:HE3	2:c:198:GLY:HA2	2.00	0.44
5:f:106:LEU:HD13	5:f:151:ARG:CG	2.47	0.44
7:j:131:ASN:HD22	51:1:6:A:C5'	2.31	0.44
8:k:97:THR:HA	8:k:118:LEU:HD13	1.99	0.44
9:l:56:PRO:HB2	9:l:58:TYR:CD1	2.53	0.44
11:n:53:THR:OG1	51:1:2840:C:H5''	2.17	0.44
13:p:26:GLU:HB2	13:p:86:LYS:HE2	2.00	0.44
18:u:5:ARG:HD2	18:u:93:ARG:NH1	2.32	0.44
31:I:98:ASP:HA	31:I:101:VAL:CG1	2.46	0.44
32:J:43:GLY:HA3	32:J:75:LEU:HD22	2.00	0.44
35:M:37:ASN:O	35:M:41:GLU:HG3	2.18	0.44
40:R:79:LEU:HD12	40:R:79:LEU:C	2.43	0.44
46:X:3:SER:HA	50:3:1314:C:H41	1.82	0.44
47:Y:2:ASN:ND2	50:3:351:G:OP1	2.51	0.44
49:a:50:ILE:HB	49:a:57:GLN:NE2	2.32	0.44
50:3:392:C:H2'	50:3:393:A:C8	2.52	0.44
50:3:1339:A:C2'	50:3:1340:A:H5'	2.48	0.44
51:1:284:U:C2'	51:1:285:G:H5''	2.48	0.44
51:1:327:G:O2'	51:1:328:U:H5'	2.18	0.44
51:1:717:C:H2'	51:1:718:A:H5'	1.98	0.44
51:1:1469:A:H2'	51:1:1470:A:C8	2.53	0.44
51:1:1932:A:H2'	51:1:1933:G:O4'	2.16	0.44
51:1:2022:U:O2'	51:1:2617:U:H5'	2.17	0.44
51:1:2756:U:H1'	51:1:2757:A:H5''	1.99	0.44
1:b:64:VAL:HG22	1:b:65:ASP:N	2.32	0.44
3:d:68:ALA:HA	51:1:1255:U:C6	2.53	0.44
4:e:49:LEU:HD21	4:e:66:ILE:HD12	1.99	0.44
5:f:85:LYS:N	5:f:85:LYS:HD2	2.33	0.44
8:k:10:VAL:HG21	8:k:16:ALA:HB3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:m:108:VAL:HB	10:m:109:PRO:HD2	2.00	0.44
11:n:99:LYS:HE2	24:B:40:HIS:O	2.18	0.44
15:r:22:LEU:O	15:r:94:THR:N	2.51	0.44
18:u:61:GLU:HG2	18:u:61:GLU:O	2.18	0.44
24:B:2:VAL:HG21	51:1:2016:U:H1'	1.99	0.44
29:G:221:ARG:HA	29:G:221:ARG:NE	2.30	0.44
35:M:53:ASP:OD1	35:M:54:THR:N	2.43	0.44
39:Q:56:LEU:HD12	39:Q:56:LEU:H	1.81	0.44
39:Q:66:ILE:CG2	39:Q:98:ARG:HH21	2.31	0.44
40:R:111:PRO:HD2	40:R:113:LYS:NZ	2.33	0.44
43:U:18:GLN:HB2	43:U:35:ARG:HH21	1.83	0.44
50:3:89:U:H2'	50:3:90:C:O4'	2.17	0.44
50:3:271:C:H2'	50:3:272:C:H6	1.82	0.44
50:3:470:C:H2'	50:3:471:U:H6	1.83	0.44
50:3:859:G:H2'	50:3:860:A:C8	2.53	0.44
50:3:1070:U:H2'	50:3:1071:C:H6	1.82	0.44
50:3:1245:C:H2'	50:3:1246:A:H8	1.83	0.44
51:1:16:C:O2'	51:1:17:G:H5'	2.17	0.44
51:1:64:A:H2'	51:1:65:U:C6	2.53	0.44
51:1:289:G:H2'	51:1:290:U:C6	2.52	0.44
51:1:374:A:H2'	51:1:375:G:O4'	2.17	0.44
51:1:1229:C:H2'	51:1:1230:A:C8	2.53	0.44
51:1:1341:G:C2	51:1:1398:C:H4'	2.53	0.44
51:1:1453:A:H5''	51:1:1454:C:OP2	2.18	0.44
51:1:2537:U:H2'	51:1:2538:C:H6	1.82	0.44
4:e:62:GLN:HG2	4:e:63:LYS:N	2.33	0.44
4:e:82:TYR:CG	4:e:83:PRO:HD2	2.53	0.44
5:f:101:VAL:HA	5:f:115:GLN:HA	1.98	0.44
11:n:103:ARG:HH21	11:n:110:MET:HE1	1.83	0.44
14:q:93:ILE:HD12	15:r:13:ARG:HB2	1.99	0.44
21:x:76:LYS:HE2	21:x:76:LYS:CA	2.47	0.44
22:y:9:LYS:HE3	22:y:11:VAL:HB	1.99	0.44
23:z:10:ARG:HB2	23:z:53:MET:HB2	2.00	0.44
24:B:47:TYR:CE1	24:B:52:LYS:HB2	2.53	0.44
30:H:96:VAL:HG23	30:H:97:PRO:HD2	1.99	0.44
31:I:153:ARG:NH2	50:3:435:A:N3	2.66	0.44
33:K:51:ILE:HG23	33:K:86:ARG:HH21	1.81	0.44
36:N:24:ASN:HD21	36:N:26:LYS:HE3	1.83	0.44
37:O:100:ILE:HD11	37:O:102:LEU:HD21	1.99	0.44
40:R:2:ARG:NE	40:R:2:ARG:HA	2.33	0.44
41:S:42:ASN:O	41:S:46:LYS:HG3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:T:34:GLN:O	42:T:38:LEU:HD13	2.18	0.44
46:X:80:ARG:HG2	46:X:80:ARG:HH11	1.83	0.44
50:3:1216:A:H2'	50:3:1217:C:H6	1.83	0.44
51:1:2586:U:H2'	51:1:2587:A:C8	2.52	0.44
2:c:4:LEU:HD22	2:c:101:PHE:CE2	2.53	0.43
2:c:18:ASP:OD2	2:c:20:VAL:HG23	2.18	0.43
2:c:148:GLN:N	2:c:148:GLN:OE1	2.51	0.43
8:k:97:THR:O	8:k:118:LEU:HD13	2.17	0.43
21:x:2:ARG:NH1	51:1:1364:G:H5''	2.32	0.43
26:D:26:ASN:O	26:D:30:VAL:HG23	2.17	0.43
30:H:22:PHE:CE2	37:O:11:LYS:HG3	2.53	0.43
31:I:9:LYS:HE2	50:3:542:G:H5''	1.99	0.43
33:K:6:ILE:HB	33:K:62:MET:HG3	1.99	0.43
36:N:114:LYS:HB2	36:N:117:LEU:HD22	2.00	0.43
37:O:22:THR:O	37:O:26:VAL:HG23	2.18	0.43
41:S:39:ASP:HA	41:S:42:ASN:HD22	1.83	0.43
50:3:174:A:O2'	50:3:175:C:H5'	2.18	0.43
50:3:182:A:N6	50:3:194:C:O2	2.47	0.43
50:3:234:C:H2'	50:3:235:C:C6	2.53	0.43
50:3:697:U:H2'	50:3:698:G:H5'	1.98	0.43
50:3:709:U:H2'	50:3:710:G:C8	2.52	0.43
50:3:711:G:O2'	50:3:712:A:H5'	2.18	0.43
50:3:1134:G:H2'	50:3:1135:U:H5''	1.99	0.43
50:3:1341:U:OP1	53:5:32:C:H4'	2.18	0.43
51:1:937:C:H2'	51:1:938:G:H8	1.83	0.43
51:1:1585:C:C2'	51:1:1586:A:H5'	2.48	0.43
51:1:2027:G:O2'	51:1:2028:U:H5'	2.18	0.43
52:2:23:G:H2'	52:2:24:G:C8	2.52	0.43
53:5:41:C:H2'	53:5:42:G:C8	2.54	0.43
3:d:29:HIS:O	3:d:33:VAL:HG23	2.17	0.43
4:e:121:PHE:CD2	4:e:162:ASP:HA	2.53	0.43
7:j:69:ARG:HA	7:j:89:PHE:HD2	1.83	0.43
8:k:65:THR:HG22	8:k:67:LYS:N	2.33	0.43
10:m:53:MET:SD	10:m:116:ALA:HB1	2.58	0.43
17:t:50:LEU:HD12	17:t:50:LEU:N	2.33	0.43
34:L:34:LYS:HB3	34:L:37:THR:CG2	2.48	0.43
34:L:46:LEU:HB3	34:L:57:GLU:OE2	2.18	0.43
35:M:34:ALA:O	35:M:38:VAL:HG23	2.18	0.43
39:Q:4:ASN:HB3	50:3:880:C:OP2	2.17	0.43
42:T:45:HIS:O	42:T:47:LYS:N	2.50	0.43
43:U:70:ARG:HH21	50:3:451:A:H5''	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:Y:66:ILE:CG2	47:Y:70:LYS:HB3	2.48	0.43
50:3:948:C:H4'	50:3:1306:A:H4'	1.99	0.43
50:3:1405:G:O2'	50:3:1406:U:H5'	2.18	0.43
51:1:112:U:H2'	51:1:113:U:H5'	1.99	0.43
51:1:446:G:H4'	51:1:449:A:N3	2.32	0.43
51:1:848:C:H2'	51:1:849:A:C8	2.53	0.43
51:1:1514:G:O2'	51:1:1557:C:H4'	2.18	0.43
51:1:1721:G:H22	51:1:1738:G:H1'	1.82	0.43
51:1:1987:A:H2'	51:1:1988:G:H8	1.83	0.43
1:b:213:ARG:HG2	1:b:213:ARG:HH11	1.81	0.43
2:c:4:LEU:HB2	2:c:101:PHE:HE2	1.84	0.43
4:e:62:GLN:HG2	4:e:63:LYS:H	1.83	0.43
7:j:93:ILE:HD13	7:j:100:VAL:HG21	2.01	0.43
10:m:13:HIS:HE1	51:1:2265:U:H4'	1.84	0.43
12:o:99:TYR:CE1	12:o:104:GLN:HA	2.54	0.43
14:q:47:ARG:HG2	14:q:47:ARG:HH21	1.83	0.43
33:K:38:ARG:NH2	33:K:100:SER:OG	2.49	0.43
41:S:12:ARG:NH1	41:S:58:ARG:O	2.51	0.43
43:U:21:VAL:HG21	43:U:60:TRP:CD1	2.53	0.43
44:V:10:ARG:HG2	44:V:10:ARG:HH11	1.83	0.43
50:3:230:G:H2'	50:3:231:U:O4'	2.18	0.43
50:3:352:C:H4'	50:3:354:G:OP1	2.18	0.43
50:3:1134:G:H3'	50:3:1135:U:H5''	2.01	0.43
51:1:270:A:C2	51:1:369:U:H4'	2.53	0.43
51:1:696:G:O2'	51:1:697:G:H5'	2.17	0.43
51:1:852:U:H2'	51:1:853:C:C6	2.53	0.43
51:1:1343:G:N3	51:1:1343:G:H2'	2.33	0.43
51:1:1544:A:H2'	51:1:1545:A:C8	2.53	0.43
51:1:2227:A:H2'	51:1:2228:G:O4'	2.18	0.43
51:1:2238:G:H5'	51:1:2239:G:N7	2.32	0.43
3:d:131:THR:HG22	3:d:160:ALA:HA	2.00	0.43
7:j:32:LEU:O	7:j:36:LEU:HG	2.19	0.43
10:m:28:PHE:HB2	10:m:104:GLU:OE1	2.18	0.43
26:D:3:ARG:HH21	26:D:3:ARG:HG3	1.83	0.43
29:G:131:LYS:O	29:G:134:LEU:HG	2.18	0.43
31:I:58:GLN:OE1	31:I:58:GLN:HA	2.18	0.43
34:L:130:LYS:C	34:L:130:LYS:HD3	2.43	0.43
35:M:54:THR:O	35:M:56:PRO:HD3	2.19	0.43
36:N:45:MET:O	36:N:49:GLN:HG3	2.18	0.43
41:S:48:GLN:HG3	46:X:11:ASP:HA	2.00	0.43
48:Z:11:PHE:CG	48:Z:12:ASP:N	2.87	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:a:65:LEU:H	49:a:160:GLN:HA	1.82	0.43
50:3:402:G:H5'	50:3:621:A:H1'	2.00	0.43
50:3:765:G:H2'	50:3:812:G:N2	2.32	0.43
50:3:818:G:H3'	50:3:819:A:H5'	2.01	0.43
50:3:1100:C:O2	50:3:1102:A:H5'	2.17	0.43
50:3:1137:C:H4'	50:3:1138:G:H21	1.82	0.43
51:1:394:C:H2'	51:1:395:U:O4'	2.18	0.43
51:1:419:U:H2'	51:1:420:C:C6	2.53	0.43
51:1:444:C:O2'	51:1:445:C:H5'	2.17	0.43
51:1:580:U:H2'	51:1:581:C:C6	2.53	0.43
51:1:854:C:H2'	51:1:855:G:H8	1.83	0.43
51:1:1440:U:H2'	51:1:1441:G:H8	1.83	0.43
51:1:1733:G:H2'	51:1:1734:G:C8	2.54	0.43
51:1:2030:A:C2	51:1:2499:C:H5''	2.53	0.43
51:1:2080:A:H2'	51:1:2081:U:C6	2.53	0.43
51:1:2804:U:H2'	51:1:2805:C:C6	2.53	0.43
52:2:21:G:O2'	52:2:22:U:H5'	2.18	0.43
53:5:52:G:H2'	53:5:53:G:H8	1.83	0.43
3:d:170:ARG:HG3	3:d:170:ARG:NH2	2.34	0.43
8:k:22:ILE:HD12	51:1:1952:A:C2	2.54	0.43
15:r:2:TYR:CE1	15:r:42:ALA:HB3	2.54	0.43
26:D:21:ARG:HH22	51:1:466:A:H5'	1.82	0.43
30:H:86:LEU:HD22	30:H:100:ILE:CD1	2.48	0.43
31:I:119:HIS:CE1	50:3:495:A:H61	2.36	0.43
32:J:55:VAL:HG23	32:J:56:PRO:CD	2.46	0.43
33:K:47:LEU:HD23	33:K:59:TYR:OH	2.19	0.43
37:O:53:ILE:O	37:O:53:ILE:HG12	2.18	0.43
39:Q:47:ALA:O	39:Q:48:LEU:HD12	2.18	0.43
40:R:96:VAL:HG23	50:3:1308:U:OP1	2.18	0.43
40:R:109:LYS:HG2	40:R:109:LYS:O	2.19	0.43
43:U:38:PHE:O	43:U:50:THR:HG23	2.17	0.43
50:3:29:U:H5'	50:3:296:U:OP1	2.18	0.43
50:3:554:A:H2'	50:3:555:U:C6	2.52	0.43
50:3:1228:C:H2'	50:3:1229:A:H8	1.83	0.43
51:1:251:A:H2'	51:1:252:G:O4'	2.17	0.43
51:1:1000:A:H2'	51:1:1001:A:C8	2.53	0.43
51:1:1431:A:H2'	51:1:1432:G:C8	2.53	0.43
51:1:1934:C:O2'	51:1:1935:G:H5'	2.19	0.43
51:1:2224:G:H4'	51:1:2226:C:C2	2.54	0.43
51:1:2691:C:H2'	51:1:2692:G:H8	1.84	0.43
51:1:2805:C:H2'	51:1:2806:C:H6	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:2:3:C:H3'	52:2:4:C:C5'	2.48	0.43
53:5:18:G:C3'	53:5:19:G:H5''	2.49	0.43
53:5:49:G:H3'	53:5:50:U:C6	2.53	0.43
1:b:47:ARG:HG2	1:b:47:ARG:HH11	1.82	0.43
4:e:141:ASP:OD2	40:R:4:ALA:HA	2.18	0.43
5:f:2:ARG:HG3	5:f:2:ARG:NH2	2.34	0.43
10:m:41:LEU:HD23	10:m:96:ILE:CG1	2.49	0.43
10:m:80:VAL:HG22	10:m:81:ARG:N	2.34	0.43
15:r:43:ASN:ND2	15:r:44:GLY:H	2.16	0.43
17:t:24:MET:HE3	17:t:28:ASN:HA	2.01	0.43
19:v:61:LEU:N	19:v:72:VAL:O	2.51	0.43
20:w:11:ASP:CG	20:w:12:SER:H	2.26	0.43
32:J:84:VAL:N	32:J:95:MET:O	2.52	0.43
38:P:121:ARG:HD3	50:3:778:G:N2	2.33	0.43
40:R:44:ILE:O	40:R:44:ILE:HG22	2.19	0.43
42:T:68:TYR:HD1	42:T:71:ARG:HH22	1.67	0.43
43:U:1:MET:N	43:U:24:SER:HB3	2.34	0.43
50:3:288:A:H2'	50:3:289:G:H4'	2.00	0.43
50:3:1163:A:H2'	50:3:1164:G:C8	2.53	0.43
51:1:20:C:H2'	51:1:21:A:C8	2.53	0.43
51:1:171:U:H2'	51:1:172:A:H8	1.83	0.43
51:1:171:U:H2'	51:1:172:A:C8	2.53	0.43
51:1:549:G:H2'	51:1:550:C:H6	1.83	0.43
51:1:558:U:H2'	51:1:559:G:H8	1.84	0.43
51:1:1285:A:H2'	51:1:1286:A:H5'	2.01	0.43
51:1:1563:U:H2'	51:1:1564:C:C6	2.54	0.43
51:1:1636:U:H2'	51:1:1637:A:C8	2.53	0.43
51:1:2051:A:H2'	51:1:2578:G:OP1	2.19	0.43
51:1:2379:G:H2'	51:1:2380:C:C6	2.54	0.43
51:1:2749:A:OP2	51:1:2751:G:H5''	2.18	0.43
51:1:2885:G:H2'	51:1:2886:A:O4'	2.18	0.43
54:4:13:A:O2'	54:4:14:A:H5'	2.19	0.43
1:b:229:HIS:ND1	1:b:230:PRO:HD2	2.33	0.43
4:e:16:MET:HA	4:e:16:MET:HE2	1.99	0.43
4:e:48:LEU:HG	4:e:149:ARG:NH2	2.33	0.43
11:n:30:ARG:HD2	11:n:31:HIS:CE1	2.54	0.43
17:t:44:LYS:HG3	17:t:55:VAL:HG21	2.01	0.43
22:y:39:GLN:HB3	22:y:41:HIS:CE1	2.53	0.43
29:G:100:LEU:HB2	29:G:174:GLU:CG	2.48	0.43
29:G:113:LEU:HD13	29:G:143:LEU:HD13	1.99	0.43
29:G:172:ILE:O	29:G:176:ASN:ND2	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:J:13:LYS:N	32:J:37:VAL:O	2.52	0.43
32:J:104:ILE:O	32:J:104:ILE:HG23	2.19	0.43
33:K:8:PHE:CD2	33:K:84:VAL:HG23	2.54	0.43
35:M:21:LYS:O	35:M:62:LEU:HD12	2.18	0.43
38:P:22:ILE:HD12	38:P:83:VAL:CG1	2.49	0.43
40:R:44:ILE:HD12	40:R:47:LEU:HD22	2.01	0.43
40:R:85:TYR:O	40:R:89:ARG:HG2	2.18	0.43
43:U:5:ARG:HB2	50:3:376:G:C5'	2.34	0.43
46:X:51:HIS:CD2	50:3:1220:G:H1'	2.53	0.43
48:Z:52:VAL:HG21	50:3:723:U:O4	2.19	0.43
48:Z:66:ARG:HH21	48:Z:66:ARG:HG3	1.83	0.43
50:3:143:A:H2	50:3:220:G:H1	1.65	0.43
51:1:52:A:C5	51:1:118:A:C2	3.07	0.43
51:1:94:A:H2'	51:1:95:A:O4'	2.18	0.43
51:1:282:A:H2'	51:1:283:G:C8	2.54	0.43
51:1:2074:U:H2'	51:1:2075:U:C6	2.54	0.43
51:1:2178:C:H2'	51:1:2179:C:C6	2.54	0.43
51:1:2194:U:H2'	51:1:2195:U:H6	1.83	0.43
51:1:2295:C:H2'	51:1:2296:U:H6	1.84	0.43
54:4:16:A:H2'	54:4:17:U:C6	2.53	0.43
4:e:128:SER:HA	4:e:154:THR:HA	2.00	0.43
5:f:168:VAL:HG22	5:f:169:ARG:N	2.33	0.43
16:s:97:LEU:HD12	16:s:97:LEU:N	2.33	0.43
22:y:44:LYS:HE2	22:y:48:ARG:HH22	1.83	0.43
29:G:17:HIS:ND1	29:G:189:ASN:ND2	2.66	0.43
29:G:96:LEU:HB2	29:G:99:MET:HG3	2.00	0.43
31:I:89:LEU:O	31:I:93:LEU:HG	2.17	0.43
31:I:160:LEU:HD23	31:I:163:GLN:OE1	2.18	0.43
32:J:67:ARG:HD3	32:J:67:ARG:HA	1.86	0.43
33:K:29:ILE:HG21	33:K:64:VAL:HG21	2.01	0.43
35:M:12:ARG:HG2	50:3:826:C:H4'	1.99	0.43
40:R:28:ARG:O	40:R:32:ILE:HG12	2.19	0.43
43:U:5:ARG:HD2	50:3:376:G:H5''	2.01	0.43
50:3:1402:C:H2'	50:3:1403:C:O4'	2.18	0.43
50:3:1435:G:H2'	50:3:1436:U:H6	1.81	0.43
50:3:1513:A:H2'	50:3:1514:G:H8	1.83	0.43
51:1:445:C:O2'	51:1:446:G:H5'	2.18	0.43
51:1:1436:G:H2'	51:1:1437:C:C1'	2.49	0.43
51:1:2389:G:H5''	51:1:2390:U:O4'	2.18	0.43
1:b:264:LYS:HE2	51:1:2223:G:O3'	2.19	0.43
3:d:27:LEU:O	3:d:31:VAL:HG23	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:d:136:GLN:NE2	3:d:136:GLN:HA	2.34	0.43
18:u:36:GLU:H	18:u:36:GLU:CD	2.27	0.43
27:E:63:TYR:CE2	51:1:242:G:H5''	2.54	0.43
30:H:162:ALA:HB2	50:3:1056:U:H4'	2.00	0.43
33:K:75:GLU:HA	33:K:78:PHE:CD2	2.53	0.43
36:N:6:TYR:OH	50:3:1148:U:H5'	2.19	0.43
49:a:170:ILE:HG21	51:1:2177:C:O2	2.19	0.43
50:3:272:C:H2'	50:3:273:U:H6	1.84	0.43
50:3:320:A:H2'	50:3:321:A:H8	1.80	0.43
50:3:728:A:H2'	50:3:729:A:C8	2.53	0.43
50:3:1191:A:H2'	50:3:1192:C:C6	2.54	0.43
50:3:1201:A:H4'	50:3:1203:C:OP2	2.19	0.43
50:3:1342:C:H2'	50:3:1343:G:H8	1.84	0.43
51:1:6:A:H2'	51:1:7:G:H8	1.84	0.43
51:1:141:G:H3'	51:1:142:A:O4'	2.18	0.43
51:1:193:U:O3'	51:1:803:U:H4'	2.18	0.43
51:1:318:C:H2'	51:1:319:G:C8	2.54	0.43
51:1:366:C:H2'	51:1:367:G:C4'	2.49	0.43
51:1:1108:U:O5'	51:1:1108:U:H6	2.02	0.43
51:1:1422:G:H2'	51:1:1423:G:H8	1.82	0.43
51:1:1424:G:H2'	51:1:1425:G:O4'	2.18	0.43
51:1:2084:C:H2'	51:1:2085:U:C6	2.54	0.43
51:1:2650:U:H2'	51:1:2651:C:C6	2.54	0.43
1:b:159:THR:CG2	1:b:160:TYR:N	2.81	0.43
7:j:30:THR:HG21	51:1:1005:C:O2'	2.19	0.43
16:s:31:GLN:O	16:s:35:ILE:HG12	2.18	0.43
31:I:133:SER:HB3	50:3:403:C:OP1	2.19	0.43
32:J:13:LYS:HB3	32:J:37:VAL:CG2	2.49	0.43
32:J:131:ASN:O	32:J:135:VAL:HG13	2.19	0.43
39:Q:53:ARG:NH1	39:Q:61:GLU:HG3	2.33	0.43
41:S:1:ALA:HA	50:3:1203:C:OP1	2.19	0.43
42:T:11:VAL:CG1	42:T:18:ALA:HA	2.49	0.43
43:U:26:ASN:N	43:U:26:ASN:ND2	2.66	0.43
46:X:47:THR:HG22	46:X:58:PRO:HB3	2.01	0.43
50:3:5:U:H4'	50:3:6:G:C8	2.53	0.43
50:3:16:A:O2'	50:3:17:U:H5'	2.19	0.43
50:3:212:G:H2'	50:3:213:G:C8	2.38	0.43
50:3:285:C:H2'	50:3:286:C:C6	2.54	0.43
50:3:358:U:H2'	50:3:359:G:H8	1.84	0.43
50:3:515:G:H2'	50:3:516:U:H6	1.83	0.43
50:3:648:A:H2'	50:3:649:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1175:G:H2'	50:3:1176:A:H8	1.83	0.43
50:3:1414:U:H2'	50:3:1415:G:H8	1.84	0.43
51:1:2055:C:H5'	51:1:2056:G:O5'	2.18	0.43
51:1:2070:A:O2'	51:1:2071:A:H5'	2.19	0.43
51:1:2283:C:H2'	51:1:2284:A:O4'	2.19	0.43
7:j:99:ARG:HD2	7:j:102:GLU:OE2	2.19	0.42
8:k:65:THR:H	8:k:79:PHE:HD2	1.66	0.42
8:k:71:ARG:HB2	8:k:73:ASP:OD1	2.20	0.42
11:n:32:GLU:HG2	11:n:115:LEU:HD12	2.01	0.42
14:q:66:ALA:O	14:q:70:GLN:HG3	2.19	0.42
17:t:24:MET:HE3	17:t:24:MET:O	2.18	0.42
17:t:73:ARG:HA	17:t:73:ARG:HD3	1.88	0.42
22:y:17:GLU:HB2	22:y:53:VAL:HG11	2.01	0.42
23:z:11:SER:HB2	51:1:989:G:OP2	2.19	0.42
25:C:28:THR:C	25:C:30:PRO:HD3	2.44	0.42
29:G:48:MET:HE1	29:G:198:VAL:HG23	2.00	0.42
29:G:67:LEU:HB3	29:G:160:LEU:HD13	2.00	0.42
29:G:210:THR:HA	29:G:213:LEU:HG	2.01	0.42
31:I:170:LEU:C	31:I:170:LEU:HD12	2.43	0.42
32:J:53:ARG:HG2	32:J:53:ARG:HH11	1.83	0.42
32:J:155:LYS:HB3	35:M:70:VAL:HG13	2.01	0.42
41:S:41:TRP:HE1	46:X:10:ILE:CD1	2.32	0.42
47:Y:27:MET:HE1	47:Y:57:VAL:HA	2.00	0.42
49:a:190:GLU:O	49:a:194:VAL:HG23	2.19	0.42
50:3:420:U:OP2	50:3:513:C:H4'	2.18	0.42
50:3:503:C:H2'	50:3:504:C:H6	1.83	0.42
50:3:649:A:C3'	50:3:650:G:H5''	2.48	0.42
50:3:977:A:H3'	50:3:977:A:N3	2.34	0.42
50:3:1086:U:H2'	50:3:1087:G:C8	2.47	0.42
50:3:1174:G:H2'	50:3:1175:G:H8	1.83	0.42
50:3:1237:C:OP1	50:3:1238:A:H1'	2.19	0.42
51:1:21:A:O2'	51:1:22:C:H5'	2.19	0.42
51:1:227:A:H1'	51:1:229:C:N4	2.34	0.42
51:1:241:A:H61	51:1:255:A:H3'	1.83	0.42
51:1:475:C:O2	51:1:479:A:N6	2.41	0.42
51:1:666:A:H2'	51:1:667:U:C6	2.53	0.42
51:1:819:A:H3'	51:1:973:A:N6	2.34	0.42
51:1:1054:A:H2'	51:1:1055:G:H8	1.83	0.42
51:1:1354:A:H2'	51:1:1355:G:O4'	2.19	0.42
51:1:2350:C:H2'	51:1:2351:G:O4'	2.19	0.42
51:1:2699:C:H2'	51:1:2700:A:H8	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2803:G:H2'	51:1:2804:U:C6	2.54	0.42
53:5:37:A:H2'	53:5:38:A:C8	2.54	0.42
1:b:18:VAL:HB	1:b:202:ARG:HH21	1.84	0.42
14:q:57:ARG:HG3	14:q:57:ARG:HH11	1.83	0.42
18:u:17:ASP:HB3	18:u:20:LYS:HD2	2.01	0.42
19:v:26:PHE:CZ	19:v:47:VAL:HG21	2.55	0.42
21:x:7:THR:OG1	21:x:9:LYS:HG3	2.18	0.42
23:z:16:LEU:HB2	23:z:19:HIS:CD2	2.55	0.42
34:L:17:PHE:CD1	34:L:17:PHE:N	2.87	0.42
46:X:52:ASN:HB3	46:X:74:ALA:HB1	2.01	0.42
46:X:79:TYR:CD2	50:3:1226:C:H4'	2.53	0.42
48:Z:23:GLU:CD	48:Z:24:LYS:N	2.77	0.42
50:3:78:A:H2'	50:3:79:G:C8	2.53	0.42
50:3:140:U:O2	50:3:223:A:H2	2.02	0.42
50:3:762:U:H2'	50:3:763:G:H8	1.84	0.42
50:3:986:U:H2'	50:3:987:G:C8	2.54	0.42
50:3:1376:U:H2'	50:3:1377:A:H8	1.83	0.42
51:1:1458:U:H4'	51:1:1459:G:C4	2.54	0.42
51:1:2271:G:H2'	51:1:2272:U:C6	2.54	0.42
51:1:2404:U:H2'	51:1:2405:G:C8	2.54	0.42
51:1:2533:U:C2'	51:1:2534:A:H5'	2.48	0.42
51:1:2690:U:O2'	51:1:2872:A:H1'	2.19	0.42
52:2:35:C:H2'	52:2:36:C:O4'	2.19	0.42
3:d:111:GLU:HG2	9:l:2:ARG:NH2	2.34	0.42
6:g:5:LEU:HD13	6:g:13:GLY:CA	2.49	0.42
21:x:16:ASN:HD21	21:x:26:ARG:HB3	1.84	0.42
21:x:31:ASN:OD1	21:x:33:HIS:NE2	2.52	0.42
26:D:29:GLN:HE22	51:1:210:C:P	2.41	0.42
30:H:80:GLY:O	30:H:84:GLU:HG3	2.20	0.42
30:H:96:VAL:CG2	30:H:97:PRO:HD2	2.50	0.42
36:N:113:LYS:HA	36:N:120:ALA:HB2	2.02	0.42
37:O:43:PRO:HD3	50:3:1150:A:O2'	2.19	0.42
40:R:66:GLY:O	40:R:70:ARG:HG2	2.18	0.42
40:R:76:ILE:HA	40:R:79:LEU:HG	2.00	0.42
48:Z:9:GLU:HB2	48:Z:10:PRO:CD	2.46	0.42
49:a:30:LEU:HD12	49:a:33:LEU:HD12	2.01	0.42
49:a:192:LEU:O	49:a:196:LEU:N	2.49	0.42
50:3:411:A:C4	50:3:413:G:H1'	2.54	0.42
50:3:730:G:N2	50:3:765:G:H5''	2.34	0.42
50:3:1476:A:H2'	50:3:1477:U:C6	2.55	0.42
51:1:36:G:H4'	51:1:451:U:C2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:358:U:H2'	51:1:359:G:C8	2.54	0.42
51:1:372:G:O2'	51:1:373:U:C5	2.73	0.42
51:1:687:C:H2'	51:1:688:U:O4'	2.20	0.42
51:1:814:C:H1'	51:1:1225:G:N2	2.34	0.42
51:1:1229:C:H2'	51:1:1230:A:H8	1.84	0.42
51:1:1590:A:H2'	51:1:1591:A:H8	1.84	0.42
51:1:1803:A:H2	51:1:1823:G:H1'	1.83	0.42
51:1:2038:G:H2'	51:1:2039:U:C6	2.54	0.42
51:1:2104:C:H2'	51:1:2105:U:C6	2.54	0.42
51:1:2195:U:H2'	51:1:2196:C:C6	2.54	0.42
51:1:2507:C:H2'	51:1:2508:G:O4'	2.19	0.42
5:f:106:LEU:HD12	5:f:112:VAL:HG21	2.01	0.42
5:f:140:ILE:HA	5:f:143:VAL:HG22	2.01	0.42
6:g:60:GLU:OE1	6:g:63:ALA:HB3	2.19	0.42
12:o:26:LEU:HB2	12:o:90:VAL:HG21	2.01	0.42
16:s:74:ILE:HG23	16:s:74:ILE:O	2.19	0.42
21:x:2:ARG:CD	21:x:29:LEU:HD22	2.50	0.42
26:D:34:ARG:CZ	26:D:39:ARG:HD2	2.48	0.42
31:I:29:THR:O	31:I:29:THR:HG22	2.19	0.42
31:I:36:ALA:O	50:3:426:U:C5'	2.67	0.42
31:I:69:ARG:HD2	50:3:401:C:OP1	2.19	0.42
31:I:151:GLN:HG3	50:3:437:U:C5'	2.50	0.42
34:L:104:VAL:HA	34:L:107:ALA:HB3	2.00	0.42
37:O:88:MET:HG2	37:O:89:ARG:N	2.34	0.42
40:R:23:GLY:HA2	40:R:68:LEU:HD22	2.00	0.42
50:3:59:A:H5''	50:3:387:U:H5''	2.02	0.42
50:3:294:U:O5'	50:3:294:U:H6	2.03	0.42
50:3:505:G:OP1	50:3:535:A:H5'	2.20	0.42
50:3:590:U:H2'	50:3:591:U:C6	2.55	0.42
50:3:881:G:O2'	50:3:882:C:H5'	2.19	0.42
50:3:1098:C:H2'	50:3:1099:G:C8	2.54	0.42
50:3:1259:C:H6	50:3:1259:C:O5'	2.03	0.42
50:3:1519:A:H3'	50:3:1520:C:O4'	2.20	0.42
50:3:1534:A:H61	54:4:11:U:H3	1.65	0.42
51:1:391:A:H1'	51:1:411:G:O4'	2.18	0.42
51:1:940:G:C3'	51:1:941:A:H5''	2.49	0.42
51:1:968:C:H2'	51:1:969:G:H8	1.85	0.42
51:1:1164:C:H2'	51:1:1165:A:C8	2.54	0.42
51:1:1496:A:H2'	51:1:1498:C:C5	2.54	0.42
51:1:2376:A:H2'	51:1:2377:A:O4'	2.19	0.42
51:1:2418:A:H2'	51:1:2419:U:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2437:G:O2'	51:1:2438:U:H5'	2.20	0.42
51:1:2553:G:H2'	51:1:2554:U:C4'	2.49	0.42
52:2:13:G:N2	52:2:16:G:H1'	2.35	0.42
1:b:43:ASN:ND2	1:b:45:ASN:H	2.17	0.42
1:b:224:MET:HE2	51:1:782:A:N1	2.34	0.42
3:d:24:ASN:O	3:d:28:VAL:HG23	2.20	0.42
3:d:164:LEU:O	3:d:167:VAL:HG12	2.19	0.42
6:g:4:ILE:HG13	6:g:37:VAL:CG1	2.44	0.42
6:g:52:ALA:HA	6:g:56:ALA:HB3	2.00	0.42
29:G:17:HIS:O	29:G:38:HIS:N	2.49	0.42
29:G:67:LEU:HD23	29:G:160:LEU:CD1	2.48	0.42
29:G:112:ARG:HA	29:G:112:ARG:HD2	1.88	0.42
29:G:134:LEU:HD12	29:G:134:LEU:C	2.44	0.42
31:I:63:ILE:HG23	31:I:64:TYR:N	2.35	0.42
43:U:6:LEU:HD12	50:3:375:U:C4'	2.49	0.42
48:Z:66:ARG:HA	48:Z:66:ARG:HD2	1.88	0.42
50:3:236:A:H2'	50:3:237:G:H8	1.84	0.42
50:3:637:C:O2'	50:3:638:U:H5'	2.19	0.42
50:3:978:A:H4'	50:3:1322:C:C2	2.55	0.42
50:3:1216:A:H2'	50:3:1217:C:C6	2.53	0.42
50:3:1472:U:H2'	50:3:1473:G:C8	2.54	0.42
50:3:1481:U:H2'	50:3:1482:G:H8	1.84	0.42
51:1:118:A:H5'	51:1:119:A:H8	1.82	0.42
53:5:18:G:N2	53:5:57:A:H2'	2.35	0.42
1:b:86:ARG:HD2	1:b:86:ARG:N	2.34	0.42
1:b:259:ASN:ND2	1:b:262:THR:OG1	2.53	0.42
9:l:29:LYS:C	9:l:30:THR:HG23	2.45	0.42
15:r:27:ILE:CD1	15:r:31:GLU:HB3	2.50	0.42
16:s:87:PRO:HB3	51:1:1614:A:C6	2.53	0.42
17:t:2:ILE:CG1	51:1:144:A:H4'	2.50	0.42
32:J:80:LEU:HD23	32:J:82:HIS:N	2.34	0.42
35:M:86:LYS:HD2	35:M:90:GLU:HG2	2.01	0.42
36:N:17:ARG:NH1	50:3:1129:C:H5'	2.34	0.42
36:N:105:ARG:HG3	36:N:105:ARG:NH1	2.34	0.42
37:O:21:ALA:O	37:O:25:ILE:HG12	2.18	0.42
37:O:72:ARG:HG3	37:O:72:ARG:HH11	1.84	0.42
39:Q:49:ARG:HB3	39:Q:65:TYR:HE1	1.85	0.42
41:S:15:LEU:HB3	41:S:54:SER:HB3	2.01	0.42
50:3:216:U:H2'	50:3:217:C:C6	2.54	0.42
50:3:800:G:H2'	50:3:801:U:C5	2.54	0.42
51:1:2030:A:N3	51:1:2499:C:H5''	2.33	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2246:G:O2'	51:1:2247:A:C8	2.69	0.42
51:1:2440:C:C4	51:1:2441:U:H1'	2.55	0.42
51:1:2757:A:H2'	51:1:2757:A:N3	2.35	0.42
1:b:47:ARG:HG2	1:b:47:ARG:NH1	2.35	0.42
1:b:198:GLU:CD	1:b:198:GLU:N	2.78	0.42
1:b:213:ARG:HG2	1:b:213:ARG:NH1	2.35	0.42
1:b:255:LYS:HD2	51:1:1845:G:OP1	2.20	0.42
2:c:77:ARG:CD	2:c:77:ARG:H	2.32	0.42
3:d:167:VAL:HG22	3:d:168:ASP:N	2.35	0.42
9:l:135:ILE:HG22	9:l:140:GLY:HA3	2.00	0.42
11:n:100:CYS:HA	24:B:42:ILE:HG12	2.01	0.42
18:u:32:LYS:HB3	18:u:63:ALA:HB1	2.02	0.42
30:H:68:HIS:HA	30:H:103:ALA:O	2.20	0.42
31:I:202:LEU:HD23	31:I:202:LEU:O	2.19	0.42
32:J:75:LEU:HD23	32:J:75:LEU:N	2.34	0.42
32:J:88:HIS:CD2	32:J:138:ALA:HB1	2.54	0.42
36:N:6:TYR:O	36:N:87:MET:HE2	2.19	0.42
50:3:144:G:C6	50:3:179:A:C6	3.08	0.42
50:3:232:G:H2'	50:3:233:C:H6	1.85	0.42
50:3:865:A:H5'	50:3:1078:U:O4	2.19	0.42
50:3:1158:C:O2	50:3:1158:C:C3'	2.67	0.42
51:1:49:A:C5'	51:1:51:G:H5'	2.50	0.42
51:1:388:G:H2'	51:1:390:U:H5	1.85	0.42
51:1:498:G:O2'	51:1:499:U:H5'	2.19	0.42
51:1:794:A:H2'	51:1:795:C:C6	2.54	0.42
51:1:820:A:H2'	51:1:821:A:H8	1.85	0.42
51:1:2159:G:H2'	51:1:2160:C:C6	2.55	0.42
1:b:94:LEU:HD12	1:b:99:GLU:O	2.19	0.42
2:c:161:MET:HE2	51:1:2050:C:H1'	2.02	0.42
4:e:90:LEU:HD13	4:e:95:MET:HA	2.00	0.42
4:e:129:MET:HB2	4:e:153:ILE:CG2	2.44	0.42
6:g:27:ARG:NH2	51:1:2091:C:H5''	2.28	0.42
7:j:15:TRP:CH2	51:1:7:G:H4'	2.55	0.42
11:n:46:ARG:HD2	51:1:2839:G:OP1	2.19	0.42
12:o:79:ALA:HB3	12:o:113:ALA:HB3	2.01	0.42
19:v:26:PHE:HD1	19:v:26:PHE:H	1.68	0.42
33:K:40:GLU:CD	33:K:100:SER:HA	2.45	0.42
34:L:115:MET:HB2	50:3:1240:U:OP1	2.19	0.42
47:Y:77:ASN:ND2	50:3:259:G:OP1	2.53	0.42
48:Z:66:ARG:HG2	50:3:1167:A:N6	2.35	0.42
49:a:48:LEU:HD21	49:a:165:ASN:HD22	1.81	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:629:A:O2'	50:3:630:A:H5'	2.19	0.42
50:3:819:A:H5''	50:3:820:U:H5	1.85	0.42
50:3:885:G:H2'	50:3:886:G:H8	1.84	0.42
50:3:993:G:H21	50:3:995:C:N4	2.16	0.42
51:1:235:U:H2'	51:1:236:C:C6	2.54	0.42
51:1:406:G:H2'	51:1:407:G:H8	1.84	0.42
51:1:582:A:H2'	51:1:583:G:H8	1.85	0.42
51:1:1404:C:O2'	51:1:1405:U:H5'	2.20	0.42
51:1:2008:C:H2'	51:1:2009:A:H8	1.84	0.42
51:1:2808:G:H2'	51:1:2890:G:C6	2.55	0.42
4:e:33:ILE:HG12	4:e:95:MET:HE3	2.02	0.42
4:e:70:ARG:HH22	51:1:2297:A:H5'	1.84	0.42
6:g:116:ARG:HD2	6:g:116:ARG:HA	1.84	0.42
7:j:37:ARG:HH21	7:j:110:PRO:HG3	1.79	0.42
8:k:10:VAL:HG12	8:k:12:ASP:H	1.84	0.42
8:k:18:ARG:HG2	8:k:18:ARG:HH11	1.84	0.42
9:l:3:LEU:HD23	51:1:1203:U:H5'	2.02	0.42
18:u:53:GLN:N	18:u:54:PRO:HD2	2.35	0.42
28:F:13:ASN:ND2	28:F:28:SER:H	2.18	0.42
30:H:64:ARG:HH11	30:H:64:ARG:HG3	1.84	0.42
37:O:27:GLU:O	37:O:31:ARG:HG2	2.20	0.42
40:R:13:HIS:ND1	40:R:16:ILE:HD13	2.34	0.42
43:U:52:LEU:O	43:U:54:LEU:HD12	2.20	0.42
45:W:21:ASP:CG	45:W:22:TYR:H	2.28	0.42
48:Z:22:CYS:SG	48:Z:23:GLU:N	2.93	0.42
51:1:499:U:H2'	51:1:500:G:O4'	2.20	0.42
51:1:596:U:H2'	51:1:597:G:H8	1.85	0.42
51:1:634:C:O5'	51:1:634:C:H6	2.03	0.42
51:1:871:U:H2'	51:1:872:U:H6	1.85	0.42
51:1:1179:G:H2'	51:1:1180:U:H4'	2.02	0.42
51:1:1503:A:H2'	51:1:1504:A:H8	1.84	0.42
51:1:1773:A:C2'	51:1:1774:C:H5'	2.50	0.42
51:1:2060:A:O4'	51:1:2502:G:H1'	2.20	0.42
1:b:160:TYR:N	1:b:160:TYR:CD1	2.88	0.42
1:b:216:ARG:HG2	1:b:216:ARG:NH1	2.34	0.42
3:d:38:GLY:HA3	51:1:615:U:O2	2.20	0.42
7:j:16:TYR:HE1	7:j:138:GLN:NE2	2.17	0.42
9:l:91:ASP:OD2	9:l:93:ASN:HB2	2.20	0.42
11:n:90:ARG:HD2	51:1:2880:C:O2'	2.20	0.42
14:q:78:PHE:HE1	14:q:109:VAL:HA	1.85	0.42
15:r:51:VAL:HG22	15:r:52:PRO:HD2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:t:29:THR:HG23	17:t:85:VAL:C	2.45	0.42
26:D:9:VAL:HG12	26:D:13:ASN:ND2	2.34	0.42
31:I:112:GLU:HG3	50:3:407:U:O2'	2.20	0.42
31:I:120:LYS:HZ2	31:I:130:ASN:ND2	2.18	0.42
36:N:122:ARG:NH1	50:3:1343:G:H1'	2.35	0.42
43:U:73:ALA:O	43:U:77:GLU:HG3	2.19	0.42
50:3:211:G:H2'	50:3:212:G:C5'	2.49	0.42
50:3:298:A:H2'	50:3:299:G:O4'	2.20	0.42
50:3:762:U:H2'	50:3:763:G:C8	2.55	0.42
50:3:911:U:H2'	50:3:912:C:C6	2.55	0.42
50:3:1004:A:C6	50:3:1026:G:H1'	2.55	0.42
51:1:222:A:H61	51:1:232:G:H1'	1.85	0.42
51:1:1499:C:H2'	51:1:1500:G:H8	1.85	0.42
51:1:2186:G:H2'	51:1:2187:U:C6	2.54	0.42
51:1:2220:U:H2'	51:1:2221:G:H8	1.81	0.42
52:2:3:C:C3'	52:2:4:C:C5'	2.97	0.42
52:2:119:A:N6	52:2:120:A:C6	2.87	0.42
1:b:92:LEU:HB2	1:b:102:TYR:CE1	2.54	0.41
2:c:129:THR:HG22	2:c:130:GLN:N	2.34	0.41
6:g:7:ASP:OD1	6:g:8:LYS:N	2.48	0.41
8:k:22:ILE:HB	51:1:1952:A:C2	2.54	0.41
8:k:88:ASN:N	8:k:92:GLU:O	2.48	0.41
9:l:3:LEU:HD23	51:1:1203:U:C4'	2.50	0.41
9:l:129:LYS:HE2	9:l:129:LYS:HB3	1.93	0.41
11:n:38:LEU:HG	11:n:42:LYS:HE2	2.00	0.41
12:o:30:ARG:HH11	12:o:30:ARG:HG3	1.85	0.41
13:p:4:ILE:O	13:p:8:GLU:HG3	2.20	0.41
13:p:104:GLY:O	13:p:108:ARG:HG3	2.20	0.41
16:s:51:LEU:O	16:s:55:ILE:HG13	2.20	0.41
17:t:72:GLN:OE1	17:t:72:GLN:N	2.53	0.41
28:F:22:VAL:HG21	28:F:24:ARG:HH11	1.84	0.41
33:K:1:MET:C	33:K:2:ARG:HD2	2.45	0.41
41:S:87:ALA:HB2	41:S:95:LEU:HD23	2.00	0.41
43:U:44:SER:H	43:U:46:LYS:HZ3	1.67	0.41
47:Y:79:THR:HA	47:Y:82:ILE:HG12	2.01	0.41
49:a:12:ARG:HA	49:a:15:VAL:HB	2.02	0.41
50:3:25:C:O2'	50:3:26:A:H5'	2.19	0.41
50:3:573:A:H5'	50:3:573:A:H8	1.85	0.41
50:3:890:G:O2'	50:3:891:U:H5	2.03	0.41
50:3:1411:C:H2'	50:3:1412:C:H6	1.83	0.41
50:3:1509:C:H2'	50:3:1510:C:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:323:C:H2'	51:1:1205:A:N6	2.35	0.41
51:1:560:C:H2'	51:1:561:G:O4'	2.20	0.41
51:1:645:C:H2'	51:1:647:G:N7	2.34	0.41
51:1:704:G:H2'	51:1:726:G:H22	1.84	0.41
51:1:1071:G:H1'	51:1:1089:A:C8	2.55	0.41
51:1:1292:G:O2'	51:1:1293:C:H5'	2.20	0.41
51:1:1395:A:O2'	51:1:1397:U:C6	2.73	0.41
51:1:1713:A:C5	51:1:1716:U:H1'	2.55	0.41
52:2:48:U:O2'	52:2:49:C:H5'	2.20	0.41
1:b:153:LEU:HD13	1:b:175:LEU:HD21	2.01	0.41
1:b:224:MET:HE2	51:1:782:A:C6	2.55	0.41
7:j:37:ARG:HH21	7:j:37:ARG:HG3	1.85	0.41
8:k:102:PRO:HD2	13:p:67:GLU:OE2	2.19	0.41
14:q:80:ASN:OD1	51:1:1151:A:H4'	2.21	0.41
18:u:6:ARG:HG3	18:u:7:ASP:N	2.36	0.41
19:v:26:PHE:HZ	19:v:47:VAL:HG21	1.84	0.41
27:E:14:LYS:HD3	27:E:22:LYS:CE	2.49	0.41
29:G:125:PHE:HB3	29:G:133:ALA:HB1	2.02	0.41
31:I:98:ASP:HB3	31:I:132:ALA:HB1	2.02	0.41
34:L:3:ARG:HB2	50:3:932:C:OP1	2.20	0.41
34:L:31:VAL:HG22	34:L:32:ASP:CG	2.45	0.41
34:L:80:GLY:HA3	54:4:11:U:O2'	2.19	0.41
39:Q:71:HIS:HB2	39:Q:73:LEU:H	1.85	0.41
49:a:40:GLU:OE2	49:a:218:MET:HB2	2.20	0.41
49:a:181:ASP:H	49:a:184:LYS:HE2	1.84	0.41
50:3:197:A:C5	50:3:221:C:H4'	2.55	0.41
50:3:436:C:H2'	50:3:437:U:C6	2.55	0.41
50:3:502:A:H2'	50:3:503:C:O4'	2.20	0.41
50:3:560:A:H5'	50:3:566:G:H22	1.85	0.41
50:3:962:C:H2'	50:3:963:G:C8	2.55	0.41
50:3:1166:G:O6	50:3:1168:U:H5''	2.19	0.41
50:3:1330:U:H2'	50:3:1331:G:C1'	2.50	0.41
51:1:173:A:H2'	51:1:174:U:C6	2.55	0.41
51:1:331:C:N4	51:1:1210:G:H22	2.17	0.41
51:1:738:G:O2'	51:1:739:A:H5'	2.19	0.41
51:1:1829:A:H3'	51:1:1830:C:C6	2.55	0.41
51:1:2187:U:H2'	51:1:2188:U:C6	2.56	0.41
51:1:2576:G:H5'	51:1:2578:G:N7	2.36	0.41
51:1:2583:G:H2'	51:1:2584:U:O4'	2.20	0.41
52:2:66:A:H2'	52:2:107:G:O6	2.20	0.41
1:b:237:ARG:HH21	51:1:2590:A:C5'	2.29	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:124:ARG:HD3	4:e:160:LYS:HA	2.03	0.41
4:e:137:PHE:HB3	4:e:138:PRO:CD	2.50	0.41
4:e:151:LEU:HD12	4:e:151:LEU:N	2.35	0.41
6:g:27:ARG:HA	6:g:31:VAL:HG12	2.02	0.41
6:g:129:GLU:OE2	6:g:143:ILE:HD13	2.20	0.41
11:n:82:GLU:C	11:n:85:PRO:HD2	2.46	0.41
16:s:4:ILE:HG22	16:s:106:VAL:HG22	2.02	0.41
19:v:40:ILE:HG22	19:v:41:GLU:N	2.36	0.41
23:z:29:ARG:NE	51:1:1183:U:H5'	2.36	0.41
25:C:5:ARG:HE	25:C:23:THR:HG23	1.84	0.41
29:G:22:TRP:CZ2	50:3:829:G:H4'	2.55	0.41
33:K:14:GLN:HG3	33:K:83:ALA:HB2	2.03	0.41
44:V:64:ARG:HH11	44:V:64:ARG:HG3	1.85	0.41
47:Y:43:LYS:CE	47:Y:86:ALA:HA	2.50	0.41
50:3:169:C:H2'	50:3:170:U:C6	2.56	0.41
50:3:235:C:H2'	50:3:236:A:H8	1.85	0.41
50:3:254:G:H2'	50:3:255:G:C8	2.55	0.41
51:1:270:A:N6	51:1:368:A:H2	2.18	0.41
51:1:818:G:H5'	51:1:839:U:OP1	2.20	0.41
51:1:934:U:H2'	51:1:935:C:C6	2.56	0.41
51:1:2236:U:H2'	51:1:2237:G:O4'	2.20	0.41
51:1:2393:U:H2'	51:1:2394:C:C6	2.55	0.41
51:1:2489:U:O2'	51:1:2490:G:H5'	2.19	0.41
51:1:2629:U:C5'	51:1:2630:G:OP1	2.58	0.41
51:1:2741:A:H2'	51:1:2742:G:H5'	2.02	0.41
52:2:4:C:H2'	52:2:5:U:O4'	2.20	0.41
53:5:25:C:C2	53:5:26:G:C8	3.08	0.41
1:b:209:ALA:O	1:b:213:ARG:HG3	2.20	0.41
4:e:62:GLN:OE1	4:e:62:GLN:N	2.51	0.41
5:f:157:LYS:HD3	5:f:159:LYS:HD2	2.02	0.41
7:j:4:PHE:O	14:q:63:ARG:NH2	2.48	0.41
7:j:15:TRP:HH2	51:1:7:G:H4'	1.86	0.41
9:l:19:LEU:HD22	9:l:19:LEU:N	2.36	0.41
17:t:63:VAL:HG11	17:t:80:TRP:CZ2	2.54	0.41
29:G:63:LYS:HG2	29:G:224:ARG:HG2	2.02	0.41
30:H:10:ARG:HB3	30:H:14:VAL:HB	2.02	0.41
30:H:78:LYS:HG3	30:H:81:GLU:HB2	2.02	0.41
31:I:96:ARG:O	31:I:100:VAL:HG23	2.21	0.41
32:J:44:ARG:HA	32:J:72:ASN:HA	2.01	0.41
32:J:142:GLY:HA2	32:J:145:ASN:ND2	2.35	0.41
32:J:151:MET:O	32:J:155:LYS:HG3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:L:148:LYS:HG2	34:L:148:LYS:O	2.21	0.41
37:O:83:THR:HG22	37:O:87:LEU:HG	2.02	0.41
44:V:29:LYS:HB2	44:V:36:PHE:CD1	2.55	0.41
50:3:201:G:H2'	50:3:202:G:H8	1.86	0.41
50:3:346:G:H2'	50:3:347:G:O4'	2.20	0.41
50:3:513:C:H2'	50:3:514:C:H6	1.85	0.41
50:3:626:G:H2'	50:3:627:G:H8	1.84	0.41
50:3:952:U:H2'	50:3:953:G:H8	1.84	0.41
50:3:984:C:H2'	50:3:985:C:H6	1.85	0.41
51:1:340:A:H2'	51:1:341:C:O4'	2.20	0.41
51:1:404:A:O2'	51:1:406:G:C8	2.69	0.41
51:1:1372:U:H2'	51:1:1373:A:H8	1.84	0.41
51:1:1549:A:H2'	51:1:1550:C:O4'	2.20	0.41
51:1:1609:A:H1'	51:1:1616:A:C1'	2.50	0.41
51:1:1637:A:H5'	51:1:1760:C:O2'	2.21	0.41
51:1:1739:A:H3'	51:1:1740:G:H8	1.84	0.41
51:1:2086:U:H2'	51:1:2087:G:H8	1.84	0.41
51:1:2370:G:H2'	51:1:2371:G:C8	2.55	0.41
51:1:2488:G:H2'	51:1:2489:U:C6	2.55	0.41
51:1:2784:U:H2'	51:1:2785:C:H6	1.85	0.41
52:2:28:C:H2'	52:2:29:A:H8	1.83	0.41
1:b:211:ARG:HG3	51:1:764:A:O4'	2.20	0.41
2:c:40:LEU:HD12	2:c:40:LEU:N	2.36	0.41
4:e:15:LEU:HD11	4:e:167:ALA:CB	2.49	0.41
7:j:35:ARG:HH11	7:j:35:ARG:HG2	1.85	0.41
7:j:81:ILE:HD13	51:1:1130:U:O2'	2.20	0.41
15:r:22:LEU:HD12	15:r:22:LEU:C	2.46	0.41
15:r:54:VAL:HG23	15:r:55:ASP:OD1	2.20	0.41
17:t:39:THR:HG22	17:t:42:GLU:HG3	2.02	0.41
29:G:187:ASP:CG	29:G:188:THR:H	2.28	0.41
30:H:133:MET:SD	30:H:165:GLU:OE2	2.79	0.41
33:K:38:ARG:HD3	33:K:97:THR:C	2.46	0.41
35:M:3:GLN:HE22	50:3:755:G:N2	2.19	0.41
35:M:10:LEU:HG	35:M:74:ILE:HD12	2.03	0.41
40:R:95:PRO:HB2	40:R:99:GLN:HB2	2.02	0.41
41:S:52:ARG:NH2	50:3:1219:A:H5''	2.35	0.41
46:X:10:ILE:HD13	46:X:40:PHE:HZ	1.84	0.41
46:X:48:ILE:HD12	46:X:48:ILE:N	2.35	0.41
48:Z:29:ALA:HA	48:Z:32:ARG:HG3	2.02	0.41
49:a:188:ASN:O	49:a:192:LEU:N	2.53	0.41
51:1:270:A:H5''	51:1:271:G:H5''	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:589:U:H2'	51:1:590:A:C8	2.55	0.41
51:1:948:C:H2'	51:1:949:G:H8	1.85	0.41
51:1:1366:A:H2'	51:1:1367:A:O4'	2.21	0.41
51:1:1470:A:N6	51:1:1521:G:H21	1.94	0.41
51:1:1799:G:H5'	51:1:1800:C:C5	2.55	0.41
51:1:2238:G:H2'	51:1:2238:G:N3	2.36	0.41
51:1:2511:U:H2'	51:1:2512:C:C6	2.55	0.41
1:b:155:ARG:HG3	51:1:1818:U:H5''	2.02	0.41
4:e:2:LYS:HD3	4:e:2:LYS:C	2.46	0.41
4:e:25:MET:HB3	52:2:57:A:C4	2.55	0.41
9:l:132:ARG:NH1	9:l:142:ILE:HB	2.36	0.41
10:m:17:ASN:OD1	10:m:95:LEU:HD22	2.21	0.41
16:s:14:ALA:O	16:s:18:ARG:HG3	2.20	0.41
28:F:2:LYS:HE2	28:F:2:LYS:CA	2.46	0.41
30:H:168:ARG:NH2	50:3:1071:C:H1'	2.35	0.41
31:I:61:ARG:HD2	31:I:61:ARG:C	2.46	0.41
31:I:64:TYR:HE2	31:I:93:LEU:HB3	1.83	0.41
31:I:120:LYS:CG	50:3:439:U:H4'	2.48	0.41
32:J:38:VAL:HG22	32:J:66:ALA:HB1	2.03	0.41
38:P:109:ILE:HG21	48:Z:16:ARG:NH2	2.34	0.41
41:S:45:LEU:HD11	46:X:15:LEU:HD23	2.03	0.41
43:U:13:LYS:HZ1	50:3:392:C:H5'	1.82	0.41
49:a:4:LEU:HD21	49:a:220:ALA:HB2	2.02	0.41
50:3:98:A:H2'	50:3:99:C:H6	1.85	0.41
50:3:357:G:O2'	50:3:358:U:H5'	2.21	0.41
50:3:401:C:H2'	50:3:402:G:H8	1.86	0.41
50:3:411:A:OP2	50:3:429:U:H5	2.04	0.41
50:3:629:A:H2'	50:3:630:A:O4'	2.21	0.41
50:3:890:G:HO2'	50:3:891:U:H5	1.64	0.41
50:3:1324:A:H2'	50:3:1325:C:O4'	2.20	0.41
51:1:270:A:H2	51:1:369:U:H4'	1.84	0.41
51:1:514:A:H2'	51:1:515:A:C8	2.56	0.41
51:1:1047:G:H2'	51:1:1110:G:H21	1.85	0.41
51:1:1773:A:H2'	51:1:1774:C:H5'	2.01	0.41
51:1:2526:G:H2'	51:1:2527:C:C6	2.55	0.41
53:5:69:C:H2'	53:5:70:G:H8	1.86	0.41
1:b:48:ILE:HG23	1:b:48:ILE:O	2.21	0.41
3:d:6:LYS:HD2	3:d:7:ASP:HB3	2.03	0.41
4:e:36:ASN:HB3	51:1:2312:U:O2	2.20	0.41
4:e:127:TYR:O	4:e:155:ILE:N	2.46	0.41
5:f:15:ASP:OD2	5:f:16:VAL:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:m:111:GLU:O	10:m:115:GLU:HG2	2.21	0.41
13:p:52:ARG:HG2	13:p:52:ARG:NH1	2.35	0.41
19:v:38:LEU:HD23	19:v:40:ILE:HD11	2.01	0.41
24:B:18:HIS:CD2	51:1:2046:G:H1'	2.56	0.41
29:G:33:ALA:C	29:G:35:ASN:H	2.28	0.41
29:G:115:ASP:HB3	29:G:119:GLN:HE22	1.86	0.41
29:G:138:ARG:HH22	50:3:1170:A:C5'	2.34	0.41
31:I:190:LEU:C	31:I:190:LEU:HD12	2.46	0.41
34:L:49:LEU:HD13	34:L:123:LEU:HD13	2.03	0.41
39:Q:23:LEU:HG	39:Q:26:CYS:HB3	2.03	0.41
40:R:28:ARG:CB	50:3:1329:A:OP1	2.69	0.41
42:T:53:ARG:HG2	42:T:53:ARG:HH11	1.86	0.41
45:W:10:CYS:SG	45:W:11:ARG:N	2.93	0.41
49:a:30:LEU:HA	49:a:33:LEU:HD12	2.03	0.41
50:3:70:U:H2'	50:3:94:G:O6	2.21	0.41
50:3:272:C:H2'	50:3:273:U:C6	2.55	0.41
50:3:524:G:H2'	50:3:525:C:C6	2.55	0.41
50:3:594:U:C2'	50:3:595:A:H5'	2.51	0.41
50:3:1228:C:H2'	50:3:1229:A:C8	2.55	0.41
51:1:182:A:H2'	51:1:183:C:C6	2.55	0.41
51:1:351:C:H2'	51:1:352:A:C8	2.55	0.41
51:1:848:C:H2'	51:1:849:A:H8	1.85	0.41
51:1:1287:A:O2'	51:1:1288:G:H5'	2.21	0.41
51:1:2260:C:O2	51:1:2260:C:H2'	2.21	0.41
1:b:204:LEU:HB2	51:1:1791:A:H4'	2.02	0.41
4:e:82:TYR:CD1	4:e:83:PRO:HD2	2.56	0.41
16:s:84:ARG:HE	51:1:1323:C:H5''	1.85	0.41
17:t:68:LYS:HD3	17:t:77:ARG:HE	1.85	0.41
21:x:13:THR:HA	21:x:27:ARG:HA	2.02	0.41
21:x:15:ASN:HD22	51:1:381:G:H5'	1.85	0.41
23:z:11:SER:OG	23:z:12:ALA:N	2.53	0.41
28:F:20:ASP:H	51:1:2757:A:P	2.44	0.41
29:G:170:ILE:HG23	50:3:1101:A:N7	2.35	0.41
30:H:134:LYS:HB3	30:H:138:GLN:HE21	1.86	0.41
33:K:59:TYR:HE1	45:W:66:LEU:HD21	1.86	0.41
39:Q:13:ARG:HH11	39:Q:14:LYS:N	2.13	0.41
41:S:19:TYR:HE2	41:S:50:LEU:HB3	1.85	0.41
42:T:49:HIS:HA	42:T:52:ARG:HB3	2.02	0.41
44:V:59:GLU:HG3	44:V:76:ARG:CZ	2.50	0.41
50:3:456:A:H2'	50:3:457:G:C8	2.56	0.41
50:3:663:A:H2'	50:3:664:G:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:710:G:H2'	50:3:711:G:H8	1.85	0.41
51:1:209:C:H4'	51:1:681:G:H4'	2.03	0.41
51:1:389:G:O2'	51:1:412:A:H1'	2.21	0.41
51:1:854:C:H2'	51:1:855:G:C8	2.56	0.41
51:1:1462:C:H4'	51:1:2703:C:O4'	2.21	0.41
51:1:1682:G:H2'	51:1:1683:U:H6	1.85	0.41
51:1:1838:C:N4	51:1:1898:U:H2'	2.35	0.41
51:1:2270:A:H2'	51:1:2271:G:O4'	2.21	0.41
51:1:2723:C:H2'	51:1:2724:U:O4'	2.20	0.41
53:5:55:U:H3'	53:5:55:U:O2	2.21	0.41
1:b:81:GLU:HB3	1:b:90:ILE:HG13	2.03	0.41
1:b:259:ASN:HD21	1:b:262:THR:HG23	1.86	0.41
4:e:47:LYS:O	4:e:50:ASP:HB2	2.21	0.41
4:e:76:PHE:O	4:e:78:ILE:HG13	2.21	0.41
4:e:98:PHE:O	4:e:102:LEU:HG	2.21	0.41
4:e:103:ILE:HB	4:e:172:PHE:CZ	2.56	0.41
4:e:147:ARG:HD3	4:e:149:ARG:CZ	2.51	0.41
4:e:152:ASP:CG	51:1:2304:G:H21	2.29	0.41
7:j:84:ILE:O	7:j:84:ILE:HG23	2.20	0.41
8:k:92:GLU:HB2	8:k:93:GLN:H	1.64	0.41
10:m:11:LYS:HD2	10:m:86:LYS:HD3	2.01	0.41
12:o:40:ILE:HD12	12:o:40:ILE:H	1.86	0.41
12:o:51:ALA:HB2	12:o:81:ARG:HH21	1.86	0.41
12:o:76:LYS:HE2	12:o:80:GLU:OE2	2.21	0.41
13:p:31:VAL:HB	13:p:40:GLN:HE21	1.85	0.41
17:t:30:ILE:HG23	17:t:85:VAL:HB	2.02	0.41
19:v:7:GLU:O	19:v:41:GLU:N	2.48	0.41
19:v:17:SER:O	19:v:21:ARG:HG2	2.21	0.41
22:y:13:GLU:OE2	22:y:57:LEU:HA	2.21	0.41
29:G:213:LEU:HD12	29:G:213:LEU:C	2.46	0.41
30:H:4:VAL:HG22	50:3:1190:G:OP1	2.21	0.41
31:I:57:LYS:HA	31:I:60:VAL:CG1	2.51	0.41
31:I:100:VAL:O	31:I:104:MET:HG2	2.20	0.41
35:M:108:GLY:HA2	50:3:642:A:H1'	2.03	0.41
37:O:42:LEU:HD12	37:O:71:LEU:O	2.21	0.41
40:R:78:ARG:HH11	40:R:78:ARG:HG2	1.86	0.41
41:S:37:ASP:OD1	41:S:40:ARG:HG3	2.21	0.41
42:T:42:PHE:CZ	42:T:52:ARG:HA	2.56	0.41
44:V:15:LYS:O	50:3:275:G:H4'	2.21	0.41
44:V:56:ASP:OD2	44:V:77:VAL:CG1	2.69	0.41
46:X:19:GLU:O	46:X:23:GLU:HG3	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:X:52:ASN:ND2	46:X:75:PRO:O	2.54	0.41
50:3:27:G:H2'	50:3:28:A:C8	2.55	0.41
50:3:351:G:OP2	50:3:351:G:H8	2.04	0.41
50:3:393:A:O2'	50:3:394:G:H5'	2.21	0.41
50:3:406:G:O2'	50:3:407:U:H5'	2.20	0.41
50:3:434:U:H2'	50:3:435:A:C8	2.56	0.41
50:3:648:A:H2'	50:3:649:A:H8	1.86	0.41
50:3:829:G:H2'	50:3:830:G:C8	2.56	0.41
50:3:971:G:C4	50:3:1365:G:H4'	2.56	0.41
50:3:1300:G:H4'	50:3:1301:U:C6	2.56	0.41
50:3:1461:G:H2'	50:3:1462:C:C6	2.55	0.41
51:1:52:A:O2'	51:1:53:A:H5'	2.21	0.41
51:1:196:A:O2'	51:1:197:A:H5'	2.21	0.41
51:1:239:C:H2'	51:1:240:C:O4'	2.21	0.41
51:1:366:C:H2'	51:1:367:G:H5''	2.02	0.41
51:1:535:G:H2'	51:1:536:G:O4'	2.21	0.41
51:1:575:A:O2'	51:1:576:U:H5'	2.20	0.41
51:1:722:A:H2'	51:1:723:C:C6	2.56	0.41
51:1:847:U:O2	51:1:847:U:H2'	2.20	0.41
51:1:968:C:H2'	51:1:969:G:C8	2.56	0.41
51:1:1361:G:H2'	51:1:1362:C:C6	2.56	0.41
51:1:1439:A:H3'	51:1:1440:U:C6	2.56	0.41
51:1:1585:C:H2'	51:1:1586:A:O4'	2.21	0.41
51:1:1837:C:H2'	51:1:1899:A:H61	1.85	0.41
51:1:1874:C:O2'	51:1:1875:G:H5'	2.21	0.41
51:1:2070:A:H2'	51:1:2071:A:C8	2.56	0.41
51:1:2392:A:OP2	51:1:2392:A:H8	2.04	0.41
51:1:2498:C:H6	51:1:2498:C:H5'	1.86	0.41
51:1:2642:G:O2'	51:1:2643:G:H5'	2.20	0.41
51:1:2707:U:H2'	51:1:2708:G:C8	2.56	0.41
51:1:2707:U:H2'	51:1:2708:G:H8	1.85	0.41
53:5:25:C:H2'	53:5:26:G:H8	1.85	0.41
4:e:96:TRP:O	4:e:100:GLU:HG3	2.21	0.41
8:k:63:VAL:HG23	8:k:64:ARG:H	1.85	0.41
8:k:70:ARG:HG2	8:k:70:ARG:HH11	1.86	0.41
10:m:33:LEU:HD23	10:m:103:TYR:HD2	1.86	0.41
13:p:90:ALA:N	13:p:110:LYS:O	2.45	0.41
15:r:24:LYS:HA	15:r:94:THR:OG1	2.21	0.41
32:J:150:GLU:C	32:J:151:MET:HE2	2.46	0.41
37:O:54:SER:OG	37:O:55:PRO:HD2	2.20	0.41
39:Q:6:LEU:HB3	44:V:33:TYR:CZ	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Q:56:LEU:CD2	39:Q:58:ASN:HD21	2.33	0.41
41:S:48:GLN:HA	41:S:48:GLN:NE2	2.35	0.41
44:V:76:ARG:HG2	44:V:76:ARG:HH11	1.85	0.41
45:W:25:ILE:HA	45:W:28:LEU:HB2	2.03	0.41
47:Y:3:ILE:HG13	47:Y:7:LYS:NZ	2.37	0.41
47:Y:68:LYS:HG2	47:Y:68:LYS:O	2.21	0.41
50:3:402:G:H2'	50:3:403:C:H6	1.85	0.41
50:3:555:U:H2'	50:3:556:C:C6	2.57	0.41
50:3:556:C:O2'	50:3:557:G:H5'	2.21	0.41
50:3:638:U:H2'	50:3:639:G:O4'	2.21	0.41
50:3:763:G:H2'	50:3:764:C:H6	1.86	0.41
50:3:782:A:H2'	50:3:783:C:H5'	2.03	0.41
50:3:1009:U:H2'	50:3:1010:U:H6	1.86	0.41
50:3:1233:G:H2'	50:3:1234:C:C6	2.56	0.41
50:3:1517:G:H1'	51:1:1919:A:O2'	2.21	0.41
51:1:133:U:H2'	51:1:134:G:C8	2.56	0.41
51:1:337:C:H2'	51:1:338:G:O4'	2.20	0.41
51:1:579:G:H2'	51:1:580:U:C6	2.55	0.41
51:1:766:U:H2'	51:1:767:U:H6	1.85	0.41
51:1:1171:G:H2'	51:1:1172:C:H4'	2.03	0.41
51:1:1765:U:H2'	51:1:1766:G:H8	1.86	0.41
51:1:1806:C:H2'	51:1:1807:G:O4'	2.21	0.41
51:1:2803:G:H2'	51:1:2804:U:H6	1.86	0.41
53:5:9:G:H5''	53:5:11:A:N7	2.35	0.41
1:b:57:HIS:ND1	1:b:58:LYS:N	2.69	0.40
2:c:59:ARG:HH11	51:1:2830:C:H3'	1.86	0.40
3:d:5:LEU:HD12	3:d:120:VAL:O	2.21	0.40
8:k:112:PHE:CD1	8:k:115:ILE:HD12	2.56	0.40
13:p:30:TRP:CD1	13:p:81:ASP:HB2	2.56	0.40
17:t:57:VAL:HG22	17:t:58:VAL:N	2.36	0.40
24:B:12:ARG:HG2	24:B:12:ARG:HH11	1.86	0.40
27:E:3:ILE:HG22	27:E:4:LYS:O	2.21	0.40
29:G:18:GLN:HA	29:G:37:VAL:HA	2.02	0.40
31:I:91:ALA:HB1	31:I:184:LYS:NZ	2.37	0.40
31:I:101:VAL:CG2	31:I:106:PHE:HB2	2.49	0.40
31:I:115:GLN:HG2	31:I:119:HIS:CE1	2.56	0.40
41:S:20:PHE:HE1	41:S:47:LEU:HD12	1.86	0.40
41:S:41:TRP:HH2	46:X:8:PRO:HD2	1.86	0.40
41:S:57:SER:HB2	50:3:1360:A:C5	2.56	0.40
49:a:177:LYS:HD2	49:a:179:ASP:OD2	2.21	0.40
50:3:10:A:H2'	50:3:11:G:C8	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:106:C:H2'	50:3:107:G:H8	1.86	0.40
50:3:184:G:H2'	50:3:185:U:H6	1.86	0.40
50:3:322:C:H2'	50:3:323:U:C6	2.56	0.40
50:3:431:A:O2'	50:3:432:A:H5'	2.21	0.40
50:3:456:A:H2'	50:3:457:G:H8	1.86	0.40
50:3:1194:U:H2'	50:3:1195:C:C6	2.56	0.40
50:3:1304:G:H2'	50:3:1305:G:N9	2.36	0.40
50:3:1325:C:H2'	50:3:1326:U:H6	1.80	0.40
50:3:1497:G:C2'	50:3:1498:U:H5'	2.50	0.40
51:1:275:C:H3'	51:1:276:U:H5''	2.03	0.40
51:1:828:U:C5	51:1:2247:A:H4'	2.56	0.40
51:1:1478:G:H21	51:1:1560:G:H1'	1.85	0.40
51:1:2552:U:C6	51:1:2554:U:H5'	2.56	0.40
51:1:2796:U:H4'	51:1:2797:U:C5	2.56	0.40
53:5:17(A):U:C3'	53:5:18:G:C5'	2.98	0.40
2:c:150:GLN:NE2	51:1:574:A:H2	2.19	0.40
6:g:132:PHE:CE2	6:g:142:VAL:HG21	2.56	0.40
10:m:30:SER:HA	10:m:133:LYS:HB2	2.02	0.40
12:o:4:LYS:HE2	12:o:4:LYS:HB3	1.86	0.40
12:o:28:VAL:HG12	12:o:93:ASP:O	2.20	0.40
25:C:39:ASP:OD2	25:C:42:VAL:HG12	2.22	0.40
29:G:46:VAL:HB	29:G:47:PRO:HD3	2.03	0.40
29:G:56:LEU:HD23	29:G:56:LEU:C	2.47	0.40
30:H:161:ILE:HG13	30:H:162:ALA:N	2.37	0.40
31:I:55:ARG:HH22	50:3:510:A:H5'	1.85	0.40
35:M:24:VAL:CG1	35:M:60:LEU:HB2	2.51	0.40
39:Q:49:ARG:HB3	39:Q:65:TYR:CE1	2.56	0.40
41:S:61:ASN:HB3	41:S:72:PHE:CE2	2.56	0.40
45:W:51:GLN:O	45:W:55:ALA:N	2.54	0.40
50:3:188:C:H2'	50:3:189:A:O4'	2.21	0.40
50:3:893:C:H2'	50:3:894:G:H8	1.86	0.40
50:3:1157:A:H61	50:3:1178:G:H1'	1.85	0.40
51:1:1636:U:H2'	51:1:1637:A:H8	1.86	0.40
51:1:2259:U:O2	51:1:2259:U:C2'	2.68	0.40
51:1:2372:U:H2'	51:1:2373:G:C8	2.56	0.40
53:5:6:G:H2'	53:5:7:G:H8	1.86	0.40
1:b:217:PRO:HB3	51:1:1789:A:O3'	2.21	0.40
4:e:130:GLY:HA3	51:1:2305:U:C5	2.55	0.40
4:e:166:ARG:O	4:e:170:ALA:N	2.47	0.40
5:f:124:CYS:SG	5:f:130:ILE:HD13	2.62	0.40
8:k:58:LEU:HD12	8:k:58:LEU:C	2.46	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:l:13:LYS:HG3	51:1:1245:G:OP1	2.22	0.40
10:m:33:LEU:HB2	10:m:117:PHE:CD1	2.57	0.40
12:o:29:HIS:ND1	52:2:7:G:H5'	2.36	0.40
23:z:40:THR:CG2	23:z:43:ILE:HG12	2.51	0.40
29:G:199:ILE:HD12	29:G:199:ILE:N	2.36	0.40
30:H:46:LEU:HD23	30:H:46:LEU:O	2.21	0.40
31:I:125:ASN:HD21	31:I:140:ASP:HB3	1.84	0.40
34:L:74:VAL:HA	34:L:87:PRO:HA	2.03	0.40
37:O:74:VAL:HG23	37:O:75:ASP:N	2.36	0.40
45:W:54:LEU:HD21	45:W:58:ILE:HD11	2.03	0.40
46:X:38:THR:HA	46:X:69:LYS:HA	2.03	0.40
50:3:222:C:H2'	50:3:223:A:H8	1.85	0.40
50:3:428:G:O4'	50:3:430:A:C8	2.75	0.40
50:3:511:C:H2'	50:3:512:U:C6	2.57	0.40
50:3:1354:U:H2'	50:3:1355:G:C8	2.56	0.40
51:1:150:U:H2'	51:1:151:C:C6	2.56	0.40
51:1:194:G:H2'	51:1:195:A:O4'	2.20	0.40
51:1:371:A:H61	51:1:401:A:H3'	1.87	0.40
51:1:566:U:H2'	51:1:567:U:O4'	2.21	0.40
51:1:572:A:H61	51:1:2029:G:N2	2.15	0.40
51:1:1680:U:C2'	51:1:1681:G:H5'	2.52	0.40
51:1:1700:A:C2'	51:1:1701:A:H5'	2.51	0.40
51:1:1717:A:H62	51:1:1743:G:H21	1.70	0.40
51:1:1775:U:H2'	51:1:1776:G:O4'	2.21	0.40
51:1:1954:G:H1'	51:1:1956:U:O4	2.21	0.40
51:1:2291:U:H2'	51:1:2292:U:C6	2.57	0.40
51:1:2572:A:H5'	51:1:2574:G:C5'	2.50	0.40
51:1:2805:C:H2'	51:1:2806:C:C6	2.57	0.40
3:d:136:GLN:HA	3:d:136:GLN:HE21	1.86	0.40
4:e:103:ILE:HA	4:e:107:VAL:CG1	2.51	0.40
6:g:138:VAL:HG13	6:g:138:VAL:O	2.20	0.40
16:s:45:VAL:O	16:s:49:LYS:HG3	2.21	0.40
18:u:9:GLU:HG3	18:u:72:PHE:HB3	2.03	0.40
23:z:29:ARG:HG2	23:z:29:ARG:HH21	1.86	0.40
25:C:11:VAL:HG22	25:C:12:SER:N	2.36	0.40
28:F:2:LYS:HD2	51:1:2479:U:OP1	2.21	0.40
31:I:124:VAL:HG13	31:I:124:VAL:O	2.21	0.40
33:K:84:VAL:O	33:K:84:VAL:HG13	2.22	0.40
35:M:79:ARG:H	35:M:79:ARG:HG2	1.69	0.40
39:Q:27:PRO:HB2	39:Q:28:GLN:OE1	2.20	0.40
47:Y:4:LYS:HE2	50:3:60:A:O2'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:Z:54:ARG:HA	48:Z:57:LYS:HE2	2.03	0.40
50:3:389:A:N3	50:3:389:A:H2'	2.35	0.40
50:3:538:G:H2'	50:3:539:A:H8	1.86	0.40
50:3:731:G:O2'	50:3:732:C:H5'	2.21	0.40
50:3:1392:G:O2'	50:3:1502:A:H5''	2.21	0.40
51:1:26:G:H1'	51:1:514:A:H61	1.86	0.40
51:1:675:A:H2'	51:1:676:A:C8	2.56	0.40
51:1:705:A:H2'	51:1:706:A:C8	2.56	0.40
51:1:1179:G:H3'	51:1:1180:U:H4'	2.04	0.40
51:1:1601:G:H2'	51:1:1602:U:H5'	2.04	0.40
51:1:1642:G:O2'	51:1:1643:G:H5'	2.21	0.40
51:1:2293:G:H2'	51:1:2294:G:C8	2.57	0.40
51:1:2373:G:H2'	51:1:2374:C:C6	2.55	0.40
51:1:2543:G:H2'	51:1:2544:G:H8	1.87	0.40
51:1:2670:A:H2'	51:1:2671:G:C8	2.56	0.40
2:c:149:ASN:O	2:c:152:PRO:HG2	2.21	0.40
5:f:60:GLY:HA2	5:f:63:GLN:HB2	2.02	0.40
5:f:71:LEU:HD23	5:f:71:LEU:O	2.22	0.40
8:k:14:SER:HB3	8:k:86:LEU:HD12	2.03	0.40
9:l:78:ARG:HE	51:1:626:A:H2'	1.86	0.40
23:z:4:ILE:HG22	23:z:37:ARG:C	2.47	0.40
32:J:153:ALA:HB1	32:J:160:VAL:HA	2.04	0.40
33:K:70:VAL:O	33:K:73:GLU:HG2	2.22	0.40
36:N:121:ARG:O	50:3:1344:C:H5'	2.22	0.40
38:P:12:ARG:HD3	38:P:76:TYR:CE1	2.56	0.40
39:Q:98:ARG:HD3	39:Q:98:ARG:HA	1.95	0.40
44:V:23:ALA:HA	44:V:42:LYS:HA	2.03	0.40
44:V:58:VAL:HG12	44:V:60:ILE:HG13	2.02	0.40
48:Z:23:GLU:CD	48:Z:24:LYS:H	2.30	0.40
50:3:187:G:N2	50:3:189:A:H3'	2.37	0.40
50:3:216:U:H2'	50:3:217:C:H6	1.87	0.40
50:3:563:A:H5'	50:3:565:U:O4	2.22	0.40
50:3:902:G:H2'	50:3:903:G:H8	1.85	0.40
50:3:952:U:H2'	50:3:953:G:C8	2.57	0.40
50:3:1009:U:O2'	50:3:1010:U:H5'	2.21	0.40
50:3:1195:C:O3'	50:3:1197:A:H5'	2.21	0.40
50:3:1263:C:H2'	50:3:1264:U:C6	2.56	0.40
50:3:1400:C:H5'	54:4:18:G:C6	2.57	0.40
51:1:100:U:H4'	51:1:101:A:C4	2.57	0.40
51:1:817:C:H2'	51:1:818:G:O4'	2.22	0.40
51:1:1020:A:Cl'	51:1:1021:A:OP2	2.62	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1445:G:H2'	51:1:1446:C:C6	2.57	0.40
51:1:1771:C:H2'	51:1:1772:A:H8	1.85	0.40
51:1:1775:U:H2'	51:1:1776:G:H5'	2.03	0.40
51:1:1854:A:C2'	51:1:1855:U:H5'	2.51	0.40
53:5:69:C:H2'	53:5:70:G:C8	2.57	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	b	216/216 (100%)	215 (100%)	1 (0%)	81	83
2	c	164/164 (100%)	162 (99%)	2 (1%)	63	75
3	d	165/165 (100%)	165 (100%)	0	100	100
4	e	148/148 (100%)	144 (97%)	4 (3%)	39	63
5	f	137/137 (100%)	137 (100%)	0	100	100
6	g	114/114 (100%)	114 (100%)	0	100	100
7	j	116/116 (100%)	116 (100%)	0	100	100
8	k	103/103 (100%)	102 (99%)	1 (1%)	68	76
9	l	102/102 (100%)	102 (100%)	0	100	100
10	m	109/109 (100%)	107 (98%)	2 (2%)	51	70
11	n	100/100 (100%)	100 (100%)	0	100	100
12	o	86/86 (100%)	86 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
13	p	99/99 (100%)	99 (100%)	0	100	100
14	q	89/89 (100%)	89 (100%)	0	100	100
15	r	84/84 (100%)	84 (100%)	0	100	100
16	s	93/93 (100%)	93 (100%)	0	100	100
17	t	80/80 (100%)	80 (100%)	0	100	100
18	u	83/83 (100%)	83 (100%)	0	100	100
19	v	78/78 (100%)	78 (100%)	0	100	100
20	w	57/57 (100%)	57 (100%)	0	100	100
21	x	67/67 (100%)	67 (100%)	0	100	100
22	y	55/55 (100%)	55 (100%)	0	100	100
23	z	48/48 (100%)	47 (98%)	1 (2%)	47	67
24	B	47/47 (100%)	47 (100%)	0	100	100
25	C	45/45 (100%)	45 (100%)	0	100	100
26	D	38/38 (100%)	38 (100%)	0	100	100
27	E	51/51 (100%)	50 (98%)	1 (2%)	48	68
28	F	34/34 (100%)	34 (100%)	0	100	100
29	G	186/186 (100%)	185 (100%)	1 (0%)	81	83
30	H	170/170 (100%)	170 (100%)	0	100	100
31	I	172/172 (100%)	171 (99%)	1 (1%)	78	81
32	J	119/119 (100%)	119 (100%)	0	100	100
33	K	88/88 (100%)	87 (99%)	1 (1%)	65	76
34	L	124/124 (100%)	124 (100%)	0	100	100
35	M	104/104 (100%)	102 (98%)	2 (2%)	50	68
36	N	105/105 (100%)	105 (100%)	0	100	100
37	O	86/86 (100%)	86 (100%)	0	100	100
38	P	89/89 (100%)	88 (99%)	1 (1%)	65	76
39	Q	103/103 (100%)	102 (99%)	1 (1%)	68	76
40	R	92/92 (100%)	92 (100%)	0	100	100
41	S	83/83 (100%)	83 (100%)	0	100	100
42	T	76/76 (100%)	76 (100%)	0	100	100
43	U	65/65 (100%)	65 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
44	V	74/74 (100%)	73 (99%)	1 (1%)	59	73
45	W	56/56 (100%)	56 (100%)	0	100	100
46	X	70/70 (100%)	70 (100%)	0	100	100
47	Y	65/65 (100%)	65 (100%)	0	100	100
48	Z	55/55 (100%)	55 (100%)	0	100	100
49	a	110/174 (63%)	110 (100%)	0	100	100
All	All	4700/4764 (99%)	4680 (100%)	20 (0%)	81	84

All (20) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	b	211	ARG
2	c	148	GLN
2	c	151	THR
4	e	107	VAL
4	e	117	SER
4	e	120	SER
4	e	148	VAL
8	k	92	GLU
10	m	13	HIS
10	m	22	GLN
23	z	11	SER
27	E	61	LEU
29	G	119	GLN
31	I	151	GLN
33	K	89	VAL
35	M	61	THR
35	M	74	ILE
38	P	30	ILE
39	Q	88	ASP
44	V	37	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (147) such sidechains are listed below:

Mol	Chain	Res	Type
1	b	36	ASN
1	b	43	ASN
1	b	44	ASN
1	b	45	ASN

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Mol	Chain	Res	Type
1	b	85	ASN
1	b	89	ASN
1	b	133	ASN
1	b	162	GLN
1	b	196	ASN
1	b	199	HIS
1	b	259	ASN
2	c	36	GLN
2	c	42	ASN
2	c	94	GLN
2	c	130	GLN
2	c	150	GLN
2	c	167	ASN
3	d	24	ASN
3	d	41	GLN
3	d	90	GLN
3	d	92	HIS
3	d	94	GLN
3	d	136	GLN
3	d	163	ASN
3	d	195	GLN
4	e	26	GLN
4	e	36	ASN
4	e	51	ASN
5	f	47	ASN
5	f	114	HIS
5	f	142	GLN
6	g	43	ASN
6	g	73	ASN
6	g	128	HIS
7	j	40	HIS
7	j	58	ASN
7	j	80	HIS
7	j	86	GLN
7	j	136	GLN
7	j	138	GLN
8	k	9	ASN
9	l	35	HIS
9	l	54	GLN
10	m	3	GLN
11	n	3	HIS
11	n	23	ASN

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Mol	Chain	Res	Type
11	n	62	ASN
11	n	73	ASN
12	o	38	GLN
12	o	104	GLN
13	p	11	GLN
13	p	40	GLN
13	p	65	ASN
13	p	114	ASN
14	q	55	GLN
14	q	65	ASN
15	r	18	GLN
15	r	43	ASN
16	s	7	HIS
16	s	9	HIS
17	t	59	ASN
17	t	91	GLN
18	u	39	ASN
18	u	68	ASN
18	u	98	ASN
19	v	5	ASN
19	v	78	GLN
20	w	8	ASN
20	w	53	HIS
21	x	15	ASN
21	x	16	ASN
21	x	22	ASN
22	y	20	ASN
22	y	41	HIS
23	z	33	HIS
24	B	5	ASN
26	D	13	ASN
26	D	16	HIS
26	D	29	GLN
28	F	13	ASN
29	G	57	ASN
29	G	121	GLN
29	G	145	ASN
29	G	176	ASN
29	G	189	ASN
30	H	31	ASN
30	H	40	GLN
30	H	138	GLN

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Mol	Chain	Res	Type
30	H	139	ASN
30	H	184	ASN
31	I	53	GLN
31	I	73	ASN
31	I	88	ASN
31	I	115	GLN
31	I	119	HIS
31	I	130	ASN
31	I	139	ASN
31	I	195	ASN
32	J	69	ASN
32	J	96	GLN
32	J	121	ASN
33	K	17	GLN
33	K	55	HIS
33	K	63	ASN
34	L	27	ASN
34	L	67	ASN
34	L	96	ASN
34	L	121	ASN
35	M	3	GLN
35	M	15	ASN
35	M	37	ASN
35	M	66	GLN
35	M	75	GLN
35	M	117	GLN
36	N	74	GLN
36	N	80	HIS
36	N	109	GLN
36	N	125	GLN
37	O	35	GLN
37	O	64	GLN
38	P	63	GLN
38	P	118	ASN
39	Q	111	GLN
40	R	51	GLN
41	S	42	ASN
41	S	48	GLN
41	S	59	GLN
42	T	61	GLN
43	U	26	ASN
43	U	40	ASN

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Mol	Chain	Res	Type
43	U	79	ASN
44	V	30	HIS
45	W	73	HIS
46	X	51	HIS
46	X	68	HIS
47	Y	2	ASN
47	Y	19	HIS
47	Y	47	GLN
47	Y	69	ASN
47	Y	83	ASN
48	Z	63	ASN
49	a	20	GLN
49	a	67	HIS
49	a	160	GLN
49	a	165	ASN
49	a	172	HIS
49	a	188	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
50	3	1538/1539 (99%)	182 (11%)	2 (0%)
51	1	2902/2903 (99%)	423 (14%)	13 (0%)
52	2	119/120 (99%)	16 (13%)	1 (0%)
53	5	76/77 (98%)	14 (18%)	0
54	4	19/27 (70%)	5 (26%)	0
All	All	4654/4666 (99%)	640 (13%)	16 (0%)

All (640) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
50	3	3	A
50	3	9	G
50	3	22	G
50	3	31	G
50	3	32	A
50	3	39	G
50	3	47	C
50	3	48	C
50	3	51	A
50	3	71	A

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Mol	Chain	Res	Type
50	3	72	A
50	3	75	G
50	3	82	G
50	3	85	U
50	3	87	C
50	3	122	G
50	3	130	A
50	3	144	G
50	3	181	A
50	3	183	C
50	3	184	G
50	3	197	A
50	3	207	C
50	3	209	U
50	3	210	C
50	3	226	G
50	3	244	U
50	3	247	G
50	3	251	G
50	3	253	A
50	3	266	G
50	3	267	C
50	3	269	C
50	3	280	C
50	3	281	G
50	3	289	G
50	3	296	U
50	3	316	C
50	3	328	C
50	3	345	C
50	3	351	G
50	3	352	C
50	3	367	U
50	3	372	C
50	3	373	A
50	3	397	A
50	3	411	A
50	3	412	A
50	3	413	G
50	3	414	A
50	3	422	C
50	3	428	G

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Mol	Chain	Res	Type
50	3	429	U
50	3	467	U
50	3	468	A
50	3	474	G
50	3	485	U
50	3	486	U
50	3	495	A
50	3	509	A
50	3	518	C
50	3	531	U
50	3	532	A
50	3	547	A
50	3	561	U
50	3	564	C
50	3	572	A
50	3	573	A
50	3	575	G
50	3	576	C
50	3	577	G
50	3	615	G
50	3	633	G
50	3	650	G
50	3	654	G
50	3	665	A
50	3	666	G
50	3	688	G
50	3	692	U
50	3	702	A
50	3	703	G
50	3	713	G
50	3	723	U
50	3	724	G
50	3	755	G
50	3	777	A
50	3	790	A
50	3	809	G
50	3	815	A
50	3	817	C
50	3	818	G
50	3	819	A
50	3	821	G
50	3	842	U

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Mol	Chain	Res	Type
50	3	843	U
50	3	844	G
50	3	845	A
50	3	846	G
50	3	851	G
50	3	873	A
50	3	890	G
50	3	902	G
50	3	926	G
50	3	934	C
50	3	935	A
50	3	960	U
50	3	961	U
50	3	966	G
50	3	969	A
50	3	975	A
50	3	976	G
50	3	977	A
50	3	992	U
50	3	993	G
50	3	1004	A
50	3	1022	A
50	3	1028	C
50	3	1031	C
50	3	1033	G
50	3	1034	G
50	3	1053	G
50	3	1055	A
50	3	1094	G
50	3	1096	C
50	3	1101	A
50	3	1127	G
50	3	1130	A
50	3	1132	C
50	3	1135	U
50	3	1137	C
50	3	1138	G
50	3	1139	G
50	3	1159	U
50	3	1168	U
50	3	1169	A
50	3	1182	G

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Mol	Chain	Res	Type
50	3	1184	G
50	3	1191	A
50	3	1196	A
50	3	1197	A
50	3	1201	A
50	3	1202	U
50	3	1212	U
50	3	1225	A
50	3	1238	A
50	3	1240	U
50	3	1241	G
50	3	1253	G
50	3	1258	G
50	3	1260	G
50	3	1262	C
50	3	1275	A
50	3	1278	G
50	3	1280	A
50	3	1286	U
50	3	1287	A
50	3	1300	G
50	3	1302	C
50	3	1312	G
50	3	1317	C
50	3	1336	C
50	3	1346	A
50	3	1347	G
50	3	1363	A
50	3	1379	G
50	3	1395	C
50	3	1397	C
50	3	1398	A
50	3	1446	A
50	3	1448	C
50	3	1452	C
50	3	1493	A
50	3	1499	A
50	3	1503	A
50	3	1506	U
50	3	1517	G
50	3	1519	A
50	3	1529	G

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Mol	Chain	Res	Type
50	3	1530	G
50	3	1536	C
50	3	1539	C
50	3	1540	U
51	1	10	A
51	1	34	U
51	1	35	G
51	1	46	G
51	1	51	G
51	1	63	A
51	1	71	A
51	1	74	A
51	1	75	G
51	1	86	G
51	1	96	C
51	1	118	A
51	1	120	U
51	1	137	U
51	1	138	U
51	1	139	U
51	1	140	C
51	1	141	G
51	1	142	A
51	1	146	A
51	1	162	U
51	1	163	C
51	1	196	A
51	1	215	G
51	1	216	A
51	1	221	A
51	1	222	A
51	1	229	C
51	1	248	G
51	1	255	A
51	1	265	A
51	1	266	G
51	1	271	G
51	1	276	U
51	1	278	A
51	1	281	C
51	1	284	U
51	1	285	G

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Mol	Chain	Res	Type
51	1	323	C
51	1	324	A
51	1	329	G
51	1	330	A
51	1	361	G
51	1	367	G
51	1	371	A
51	1	372	G
51	1	386	G
51	1	387	U
51	1	389	G
51	1	391	A
51	1	404	A
51	1	406	G
51	1	411	G
51	1	421	C
51	1	424	G
51	1	457	A
51	1	458	G
51	1	481	G
51	1	491	G
51	1	504	A
51	1	505	A
51	1	529	A
51	1	530	G
51	1	531	C
51	1	532	A
51	1	536	G
51	1	545	U
51	1	546	U
51	1	547	A
51	1	549	G
51	1	550	C
51	1	563	A
51	1	571	U
51	1	573	U
51	1	575	A
51	1	588	U
51	1	603	A
51	1	614	A
51	1	616	A
51	1	622	G

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Mol	Chain	Res	Type
51	1	627	A
51	1	628	G
51	1	637	A
51	1	645	C
51	1	646	U
51	1	654	A
51	1	669	G
51	1	686	U
51	1	687	C
51	1	695	G
51	1	729	G
51	1	730	A
51	1	747	C
51	1	752	A
51	1	764	A
51	1	776	G
51	1	782	A
51	1	784	G
51	1	785	G
51	1	791	C
51	1	792	A
51	1	793	A
51	1	805	G
51	1	806	C
51	1	812	C
51	1	819	A
51	1	827	U
51	1	828	U
51	1	829	A
51	1	830	G
51	1	831	G
51	1	845	A
51	1	847	U
51	1	859	G
51	1	878	A
51	1	885	C
51	1	886	A
51	1	887	U
51	1	888	C
51	1	892	A
51	1	896	A
51	1	897	C

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Mol	Chain	Res	Type
51	1	910	A
51	1	932	U
51	1	941	A
51	1	946	C
51	1	961	C
51	1	962	G
51	1	974	G
51	1	975	A
51	1	983	A
51	1	985	C
51	1	995	C
51	1	996	A
51	1	1009	A
51	1	1012	U
51	1	1013	C
51	1	1021	A
51	1	1022	G
51	1	1026	G
51	1	1033	U
51	1	1046	A
51	1	1062	G
51	1	1064	C
51	1	1065	U
51	1	1066	U
51	1	1070	A
51	1	1071	G
51	1	1078	U
51	1	1079	C
51	1	1083	U
51	1	1084	A
51	1	1088	A
51	1	1089	A
51	1	1104	C
51	1	1111	A
51	1	1112	G
51	1	1119	U
51	1	1131	G
51	1	1132	U
51	1	1135	C
51	1	1157	G
51	1	1172	C
51	1	1174	U

Continued on next page...

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Mol	Chain	Res	Type
51	1	1175	A
51	1	1177	G
51	1	1179	G
51	1	1180	U
51	1	1181	U
51	1	1205	A
51	1	1206	G
51	1	1212	G
51	1	1253	A
51	1	1256	G
51	1	1271	G
51	1	1272	A
51	1	1273	U
51	1	1289	C
51	1	1300	G
51	1	1301	A
51	1	1329	U
51	1	1330	C
51	1	1345	C
51	1	1352	U
51	1	1365	A
51	1	1378	A
51	1	1379	U
51	1	1383	A
51	1	1395	A
51	1	1397	U
51	1	1398	C
51	1	1416	G
51	1	1417	C
51	1	1419	A
51	1	1420	A
51	1	1421	G
51	1	1437	C
51	1	1455	G
51	1	1461	C
51	1	1475	G
51	1	1482	G
51	1	1490	A
51	1	1516	G
51	1	1517	G
51	1	1524	G
51	1	1533	C

Continued on next page...

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Mol	Chain	Res	Type
51	1	1535	A
51	1	1536	C
51	1	1537	G
51	1	1555	G
51	1	1559	U
51	1	1569	A
51	1	1578	U
51	1	1581	G
51	1	1585	C
51	1	1608	A
51	1	1611	C
51	1	1616	A
51	1	1646	C
51	1	1647	U
51	1	1648	U
51	1	1674	G
51	1	1703	G
51	1	1714	U
51	1	1715	G
51	1	1721	G
51	1	1722	A
51	1	1723	G
51	1	1724	G
51	1	1729	U
51	1	1730	C
51	1	1731	G
51	1	1737	G
51	1	1738	G
51	1	1739	A
51	1	1740	G
51	1	1742	U
51	1	1743	G
51	1	1751	U
51	1	1752	C
51	1	1758	U
51	1	1764	C
51	1	1773	A
51	1	1800	C
51	1	1801	A
51	1	1808	A
51	1	1816	C
51	1	1829	A

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Mol	Chain	Res	Type
51	1	1848	A
51	1	1866	A
51	1	1870	C
51	1	1875	G
51	1	1876	A
51	1	1881	C
51	1	1884	G
51	1	1901	A
51	1	1906	G
51	1	1913	A
51	1	1914	C
51	1	1929	G
51	1	1930	G
51	1	1937	A
51	1	1944	U
51	1	1948	G
51	1	1955	U
51	1	1963	U
51	1	1967	C
51	1	1970	A
51	1	1971	U
51	1	1972	G
51	1	1991	U
51	1	1997	C
51	1	2022	U
51	1	2023	C
51	1	2030	A
51	1	2031	A
51	1	2043	C
51	1	2055	C
51	1	2056	G
51	1	2060	A
51	1	2061	G
51	1	2062	A
51	1	2069	G
51	1	2093	G
51	1	2096	C
51	1	2110	G
51	1	2111	U
51	1	2112	G
51	1	2113	U
51	1	2118	U

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Mol	Chain	Res	Type
51	1	2119	A
51	1	2127	G
51	1	2132	U
51	1	2133	G
51	1	2145	C
51	1	2147	A
51	1	2166	U
51	1	2171	A
51	1	2172	U
51	1	2173	A
51	1	2189	U
51	1	2198	A
51	1	2203	U
51	1	2204	G
51	1	2212	A
51	1	2213	U
51	1	2225	A
51	1	2226	C
51	1	2238	G
51	1	2239	G
51	1	2246	G
51	1	2247	A
51	1	2250	G
51	1	2259	U
51	1	2260	C
51	1	2278	A
51	1	2283	C
51	1	2287	A
51	1	2297	A
51	1	2299	U
51	1	2300	C
51	1	2302	U
51	1	2304	G
51	1	2305	U
51	1	2307	G
51	1	2308	G
51	1	2309	A
51	1	2310	C
51	1	2312	U
51	1	2313	C
51	1	2314	A
51	1	2315	G

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Mol	Chain	Res	Type
51	1	2317	A
51	1	2319	G
51	1	2320	U
51	1	2325	G
51	1	2327	A
51	1	2334	U
51	1	2350	C
51	1	2354	C
51	1	2361	G
51	1	2383	G
51	1	2385	C
51	1	2392	A
51	1	2402	U
51	1	2406	A
51	1	2424	C
51	1	2425	A
51	1	2426	A
51	1	2427	C
51	1	2429	G
51	1	2430	A
51	1	2431	U
51	1	2433	A
51	1	2435	A
51	1	2437	G
51	1	2441	U
51	1	2448	A
51	1	2469	A
51	1	2476	A
51	1	2491	U
51	1	2498	C
51	1	2502	G
51	1	2503	A
51	1	2506	U
51	1	2517	C
51	1	2518	A
51	1	2520	C
51	1	2529	G
51	1	2530	A
51	1	2531	A
51	1	2535	G
51	1	2543	G
51	1	2547	A

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Mol	Chain	Res	Type
51	1	2554	U
51	1	2564	A
51	1	2566	A
51	1	2567	G
51	1	2572	A
51	1	2573	C
51	1	2582	G
51	1	2585	U
51	1	2602	A
51	1	2603	G
51	1	2605	U
51	1	2609	U
51	1	2613	U
51	1	2629	U
51	1	2630	G
51	1	2646	C
51	1	2655	G
51	1	2682	A
51	1	2689	U
51	1	2690	U
51	1	2714	G
51	1	2716	C
51	1	2733	A
51	1	2744	G
51	1	2748	A
51	1	2750	A
51	1	2757	A
51	1	2764	A
51	1	2765	A
51	1	2778	A
51	1	2779	U
51	1	2794	C
51	1	2797	U
51	1	2800	A
51	1	2801	G
51	1	2820	A
51	1	2821	A
51	1	2833	U
51	1	2834	G
51	1	2835	A
51	1	2849	U
51	1	2850	A

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Mol	Chain	Res	Type
51	1	2867	G
51	1	2868	A
51	1	2879	A
51	1	2880	C
51	1	2883	A
51	1	2884	U
51	1	2891	U
52	2	4	C
52	2	13	G
52	2	15	A
52	2	18	G
52	2	24	G
52	2	25	U
52	2	35	C
52	2	41	G
52	2	44	G
52	2	67	G
52	2	89	U
52	2	90	C
52	2	91	C
52	2	108	A
52	2	109	A
52	2	116	G
53	5	8	U
53	5	9	G
53	5	14	A
53	5	15	G
53	5	17	C
53	5	18	G
53	5	19	G
53	5	20	U
53	5	47	U
53	5	48	C
53	5	49	G
53	5	59	A
53	5	61	C
53	5	76	A
54	4	8	A
54	4	12	A
54	4	19	U
54	4	20	G
54	4	23	A

All (16) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
50	3	1190	G
50	3	1201	A
51	1	490	C
51	1	784	G
51	1	792	A
51	1	1020	A
51	1	1738	G
51	1	1875	G
51	1	2286	G
51	1	2299	U
51	1	2326	C
51	1	2430	A
51	1	2436	G
51	1	2529	G
51	1	2756	U
52	2	88	C

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

1 ligand is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
55	FME	5	101	-	8,9,10	1.27	1 (12%)	8,9,11	1.28	1 (12%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
55	FME	5	101	-	-	1/7/9/11	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
55	5	101	FME	CA-N	2.88	1.50	1.46

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
55	5	101	FME	CA-N-CN	2.31	126.37	122.82

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
55	5	101	FME	CB-CA-N-CN

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
55	5	101	FME	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
32	J	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	J	86:GLY	C	87:VAL	N	1.15

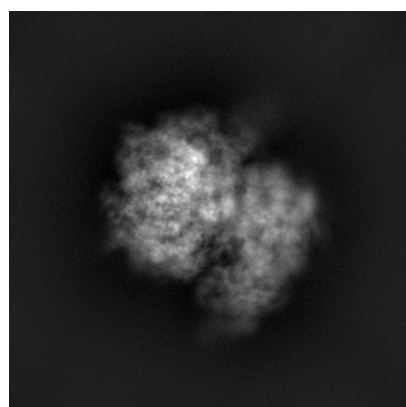
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-20048. These allow visual inspection of the internal detail of the map and identification of artifacts.

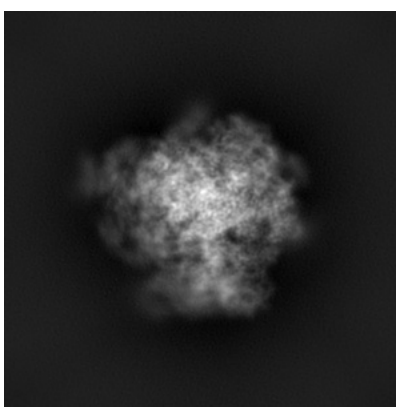
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

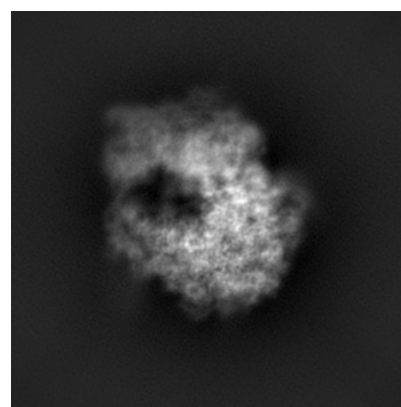
6.1.1 Primary map



X



Y

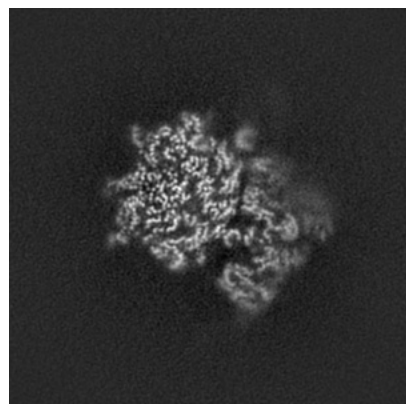


Z

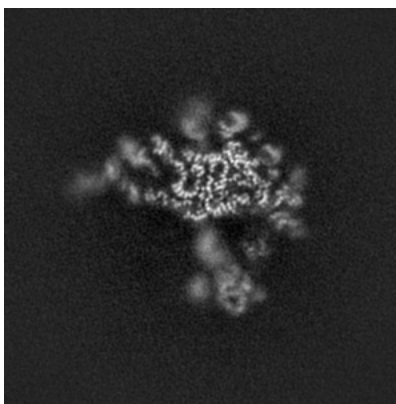
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

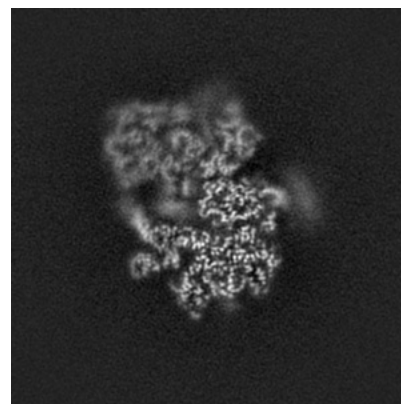
6.2.1 Primary map



X Index: 156



Y Index: 156

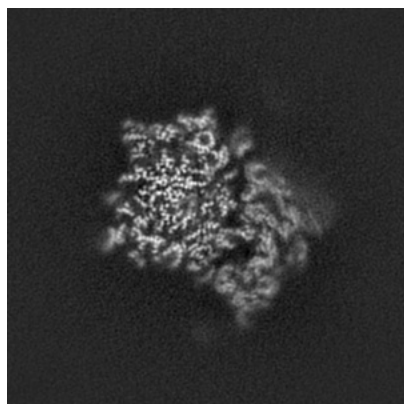


Z Index: 156

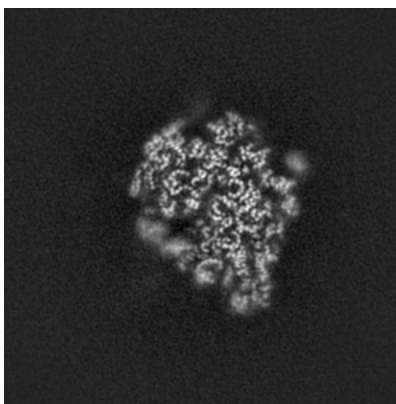
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

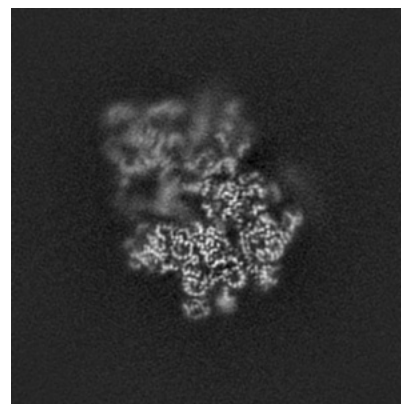
6.3.1 Primary map



X Index: 161



Y Index: 139

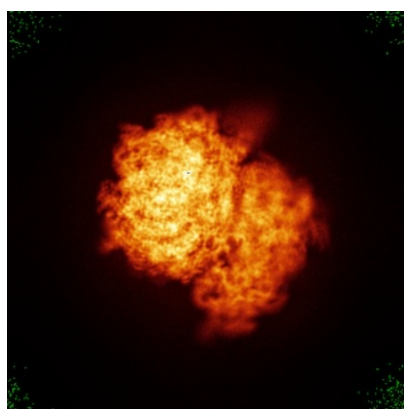


Z Index: 164

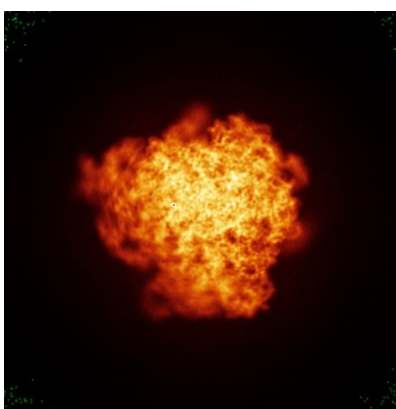
The images above show the largest variance slices of the map in three orthogonal directions.

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

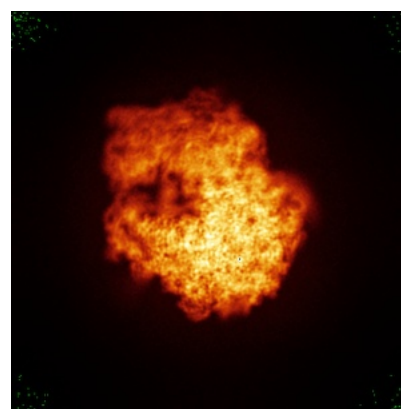
6.4.1 Primary map



X



Y



Z

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



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.7. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

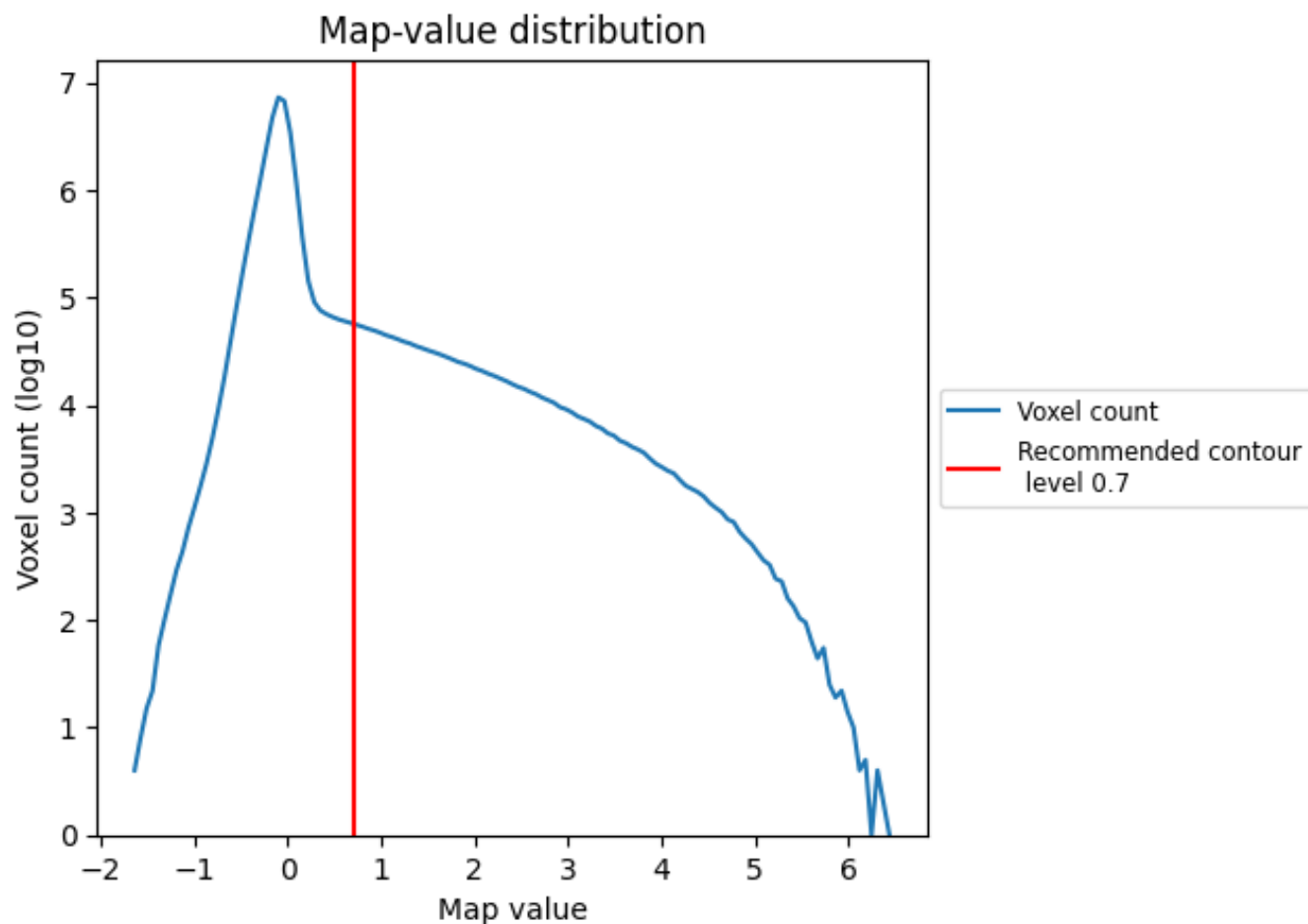
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

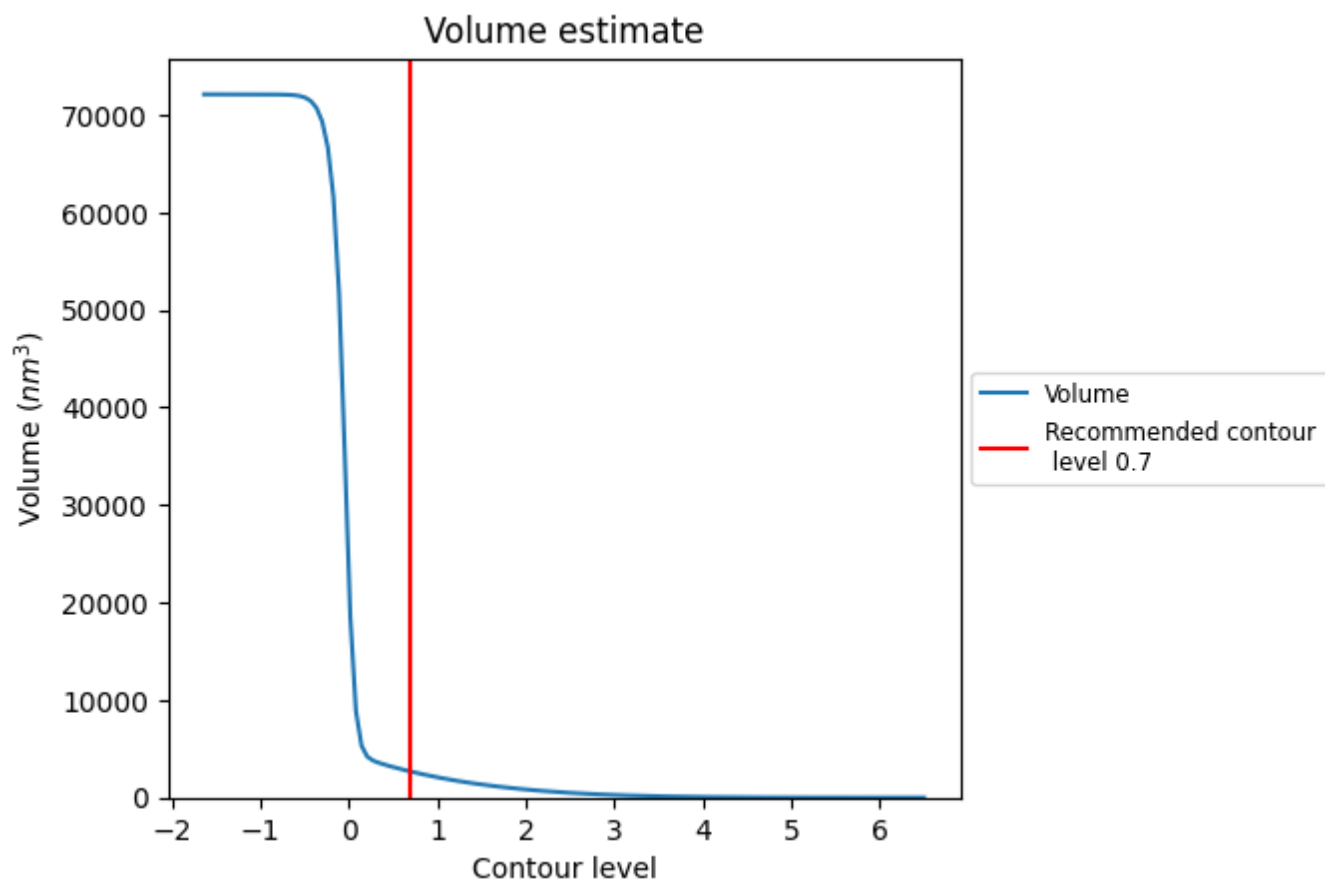
This section contains the results of statistical analysis of the map.

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.

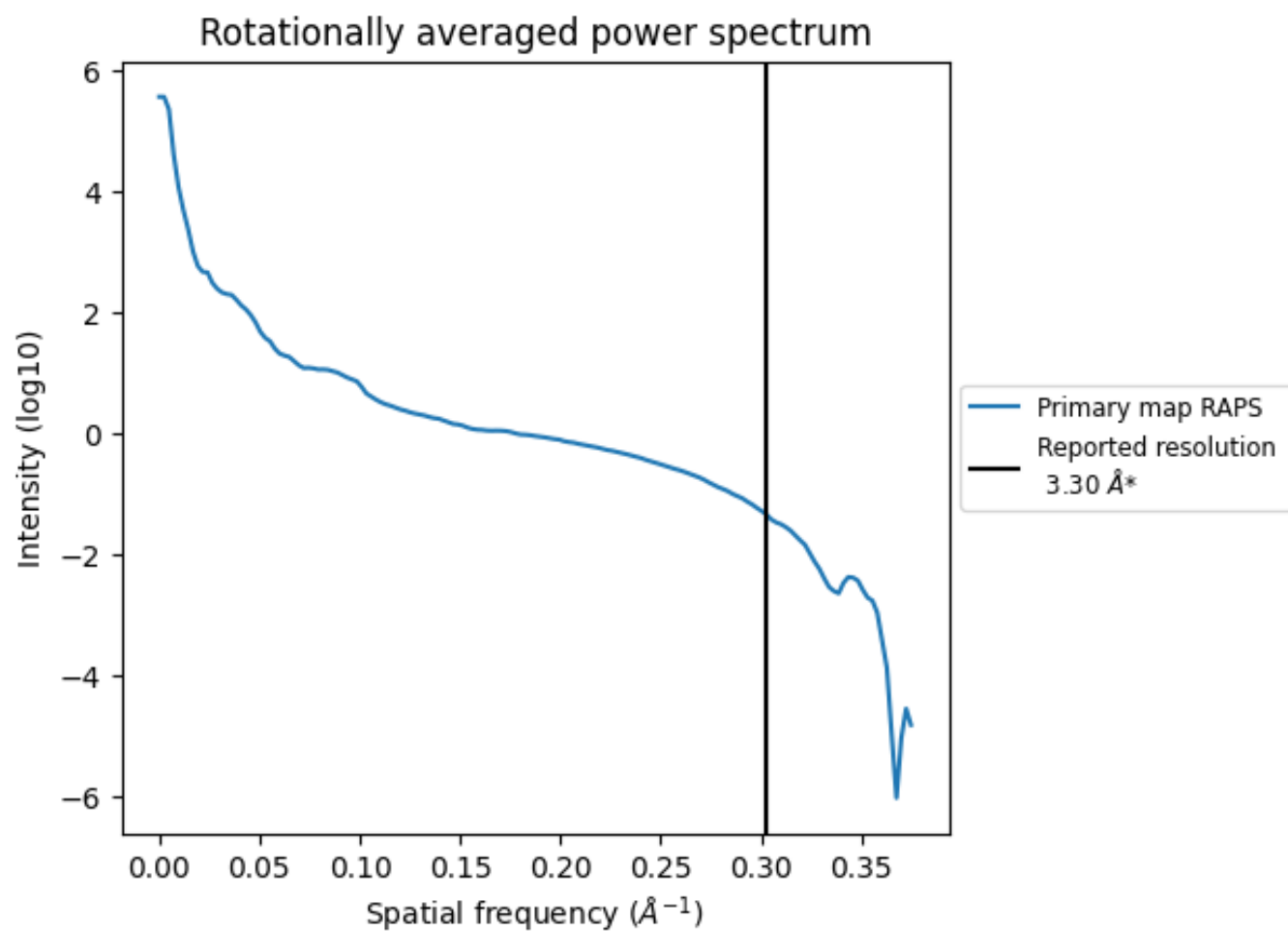
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2665 nm³; this corresponds to an approximate mass of 2407 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 ⓘ



*Reported resolution corresponds to spatial frequency of 0.303 Å⁻¹

8 Fourier-Shell correlation ⓘ

This section was not generated. No FSC curve or half-maps provided.

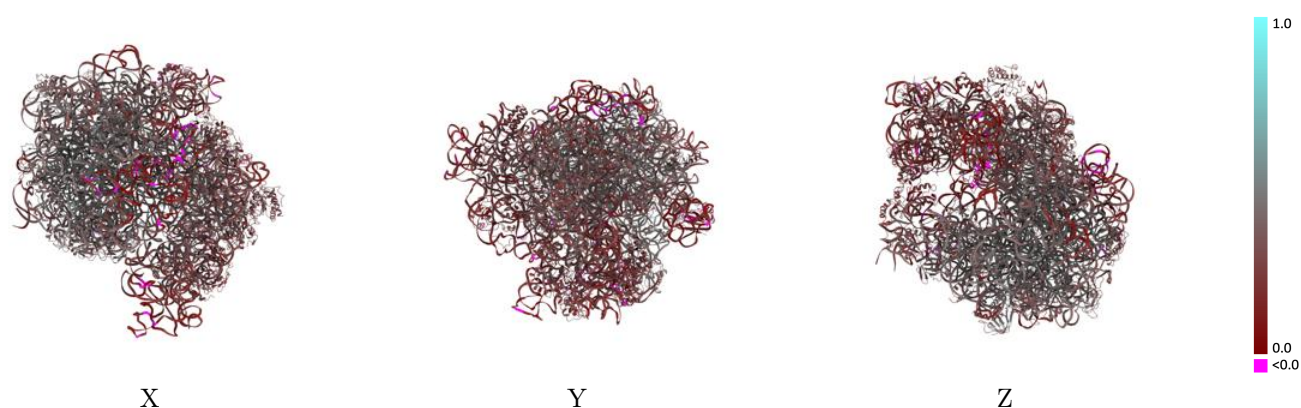
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-20048 and PDB model 6OFX. Per-residue inclusion information can be found in section 3 on page 14.

9.1 Map-model overlay [i](#)

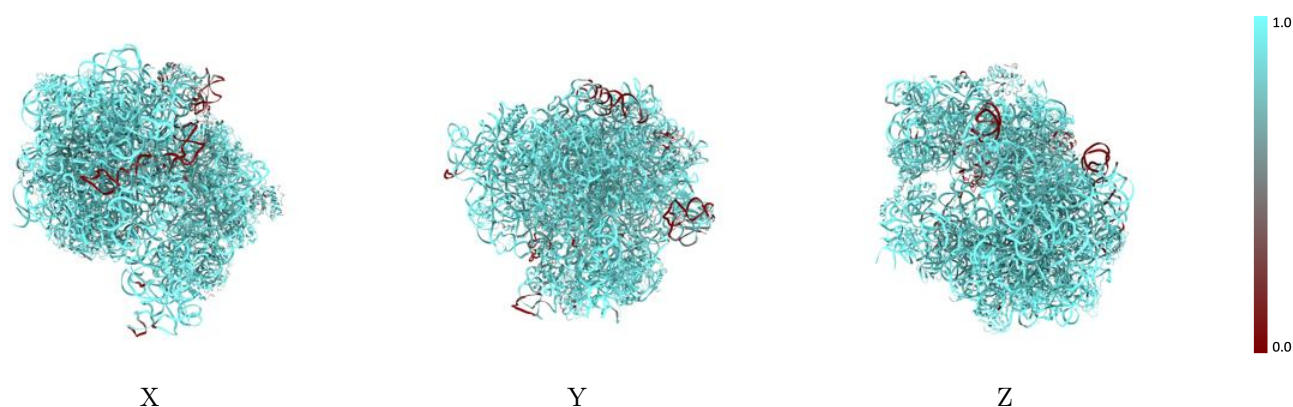
This section was not generated.

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



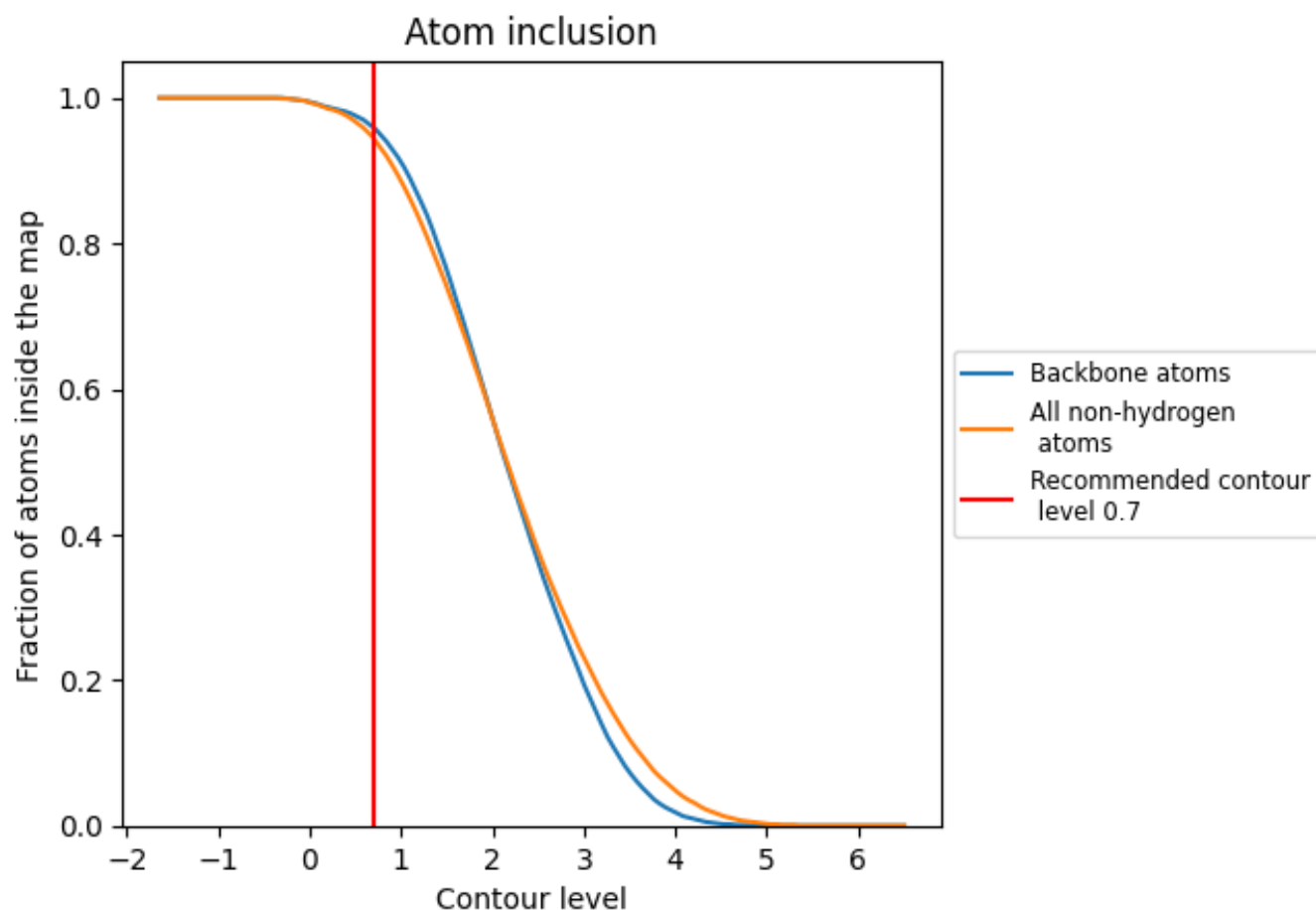
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.7).

9.4 Atom inclusion [i](#)



At the recommended contour level, 96% of all backbone atoms, 94% 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 (0.7) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9450	 0.3350
1	 0.9380	 0.3650
2	 0.9980	 0.3280
3	 0.9750	 0.2890
4	 0.8970	 0.2230
5	 0.9510	 0.1920
B	 0.9700	 0.4130
C	 0.9300	 0.3790
D	 0.9690	 0.4370
E	 0.9650	 0.4330
F	 0.9350	 0.3190
G	 0.8200	 0.2840
H	 0.9110	 0.2960
I	 0.9230	 0.2240
J	 0.9600	 0.3240
K	 0.9360	 0.2930
L	 0.9340	 0.2570
M	 0.9780	 0.3140
N	 0.9770	 0.2350
O	 0.8520	 0.2740
P	 0.9750	 0.3330
Q	 0.9250	 0.2930
R	 0.9370	 0.2130
S	 0.9570	 0.2380
T	 0.9520	 0.2810
U	 0.9510	 0.3060
V	 0.9810	 0.2880
W	 0.9900	 0.3060
X	 0.9790	 0.2080
Y	 0.9630	 0.2760
Z	 0.9360	 0.2700
a	 0.5140	 0.1640
b	 0.9740	 0.4110
c	 0.9830	 0.4350
d	 0.9580	 0.3950



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Chain	Atom inclusion	Q-score
e	 0.9590	 0.2200
f	 0.7980	 0.3080
g	 0.5650	 0.3070
j	 0.9780	 0.4150
k	 0.9720	 0.4170
l	 0.9660	 0.4170
m	 0.9740	 0.4140
n	 0.9780	 0.4270
o	 0.9700	 0.3360
p	 0.9720	 0.4040
q	 0.9710	 0.4200
r	 0.9670	 0.4170
s	 0.9550	 0.4250
t	 0.9700	 0.4020
u	 0.9700	 0.3850
v	 0.9690	 0.3650
w	 0.9680	 0.4410
x	 0.9630	 0.3870
y	 0.9520	 0.3250
z	 0.9470	 0.4070