



Full wwPDB EM Validation Report ⓘ

Mar 29, 2026 – 03:19 AM UTC

PDB ID : 6WNV / pdb_00006wnv
EMDB ID : EMD-21857
Title : 70S ribosome without free 5S rRNA and with a perturbed PTC
Authors : Loveland, A.B.; Korostelev, A.A.; Mankin, A.S.; Huang, S.; Aleksashin, N.A.; Klepacki, D.; Reier, K.; Kefi, A.; Szal, A.; Remme, J.; Jaeger, L.; Vazquez-Laslop, N.
Deposited on : 2020-04-23
Resolution : 3.50 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:

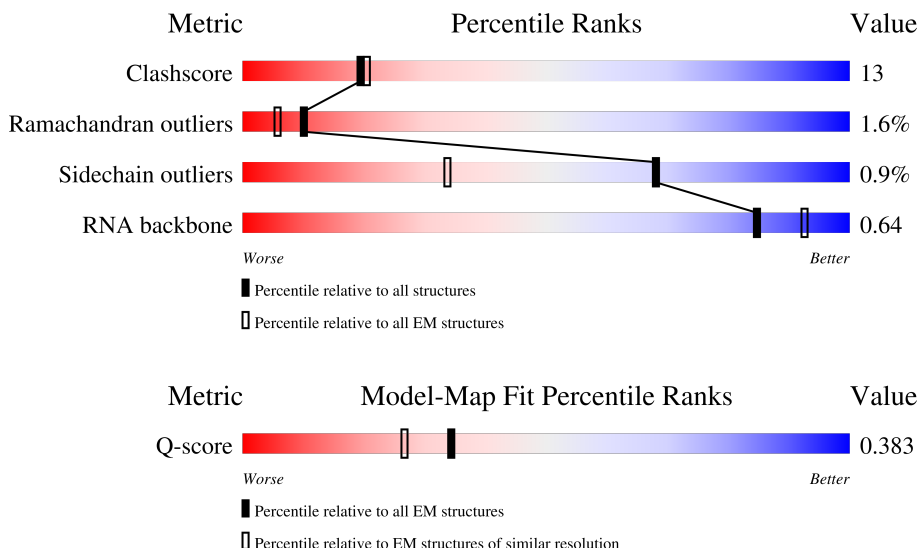
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & 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 3.50 Å.

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



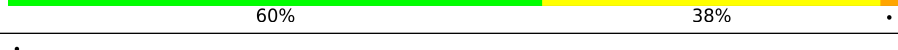
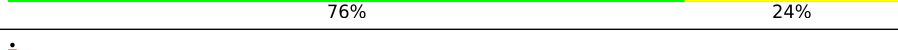
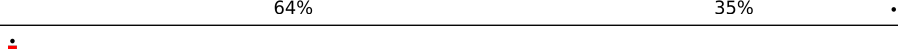
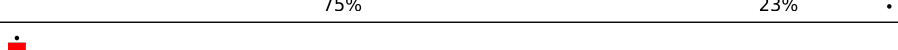
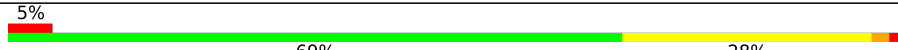
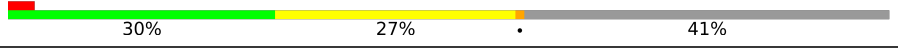
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	13950 (3.00 - 4.00)

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	

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Mol	Chain	Length	Quality of chain
4	e	177	
5	f	176	
6	g	149	
7	h	131	
8	i	141	
9	j	142	
10	k	122	
11	l	143	
12	n	120	
13	o	116	
14	p	114	
15	q	117	
16	r	103	
17	s	110	
18	t	93	
19	u	102	
20	v	94	
21	w	75	
22	x	77	
23	y	63	
24	z	58	
25	A	70	
26	B	56	
27	D	46	
28	E	64	

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Mol	Chain	Length	Quality of chain
29	F	38	
30	G	225	
31	H	206	
32	I	205	
33	J	157	
34	K	100	
35	L	151	
36	M	129	
37	N	127	
38	O	98	
39	P	116	
40	Q	123	
41	R	114	
42	S	100	
43	T	88	
44	U	82	
45	V	80	
46	W	65	
47	X	79	
48	Y	85	
49	Z	65	
50	a	223	
51	3	1539	
52	4	3031	

2 Entry composition

There are 52 unique types of molecules in this entry. The entry contains 143036 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
			2082	1288	423	364	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
			1564	979	288	293	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
			1551	974	283	289	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
			1410	899	249	256	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
			1322	832	243	245	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	g	53	Total	C	N	O	S	0	0
			409	261	74	73	1		

- Molecule 7 is a protein called 50S ribosomal protein L10.

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

- Molecule 8 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	i	141	Total	C	N	O	S	0	0
			1031	651	179	195	6		

- Molecule 9 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	j	142	Total	C	N	O	S	0	0
			1128	714	212	198	4		

- Molecule 10 is a protein called 50S ribosomal protein L14.

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

- Molecule 11 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	l	143	Total	C	N	O	S	0	0
			1044	649	206	188	1		

- Molecule 12 is a protein called 50S ribosomal protein L17.

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

- Molecule 13 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
13	o	116	Total	C	N	O	0	0
			891	552	178	161		

- Molecule 14 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	p	114	Total	C	N	O	S	0	0
			916	574	179	162	1		

- Molecule 15 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	q	117	Total	C	N	O	S	0	0
			946	604	192	150			

- Molecule 16 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	r	103	Total	C	N	O	S	0	0
			815	516	153	144	2		

- Molecule 17 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	s	110	Total	C	N	O	S	0	0
			856	532	166	155	3		

- Molecule 18 is a protein called 50S ribosomal protein L23.

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

- Molecule 19 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	u	102	Total	C	N	O	S	0	0
			779	492	146	141			

- Molecule 20 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	v	94	Total	C	N	O	S	0	0
			752	479	137	133	3		

- Molecule 21 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	w	75	Total	C	N	O	S	0	0
			574	356	116	101	1		

- Molecule 22 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	x	77	Total	C	N	O	S	0	0
			624	388	129	105	2		

- Molecule 23 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	y	63	Total	C	N	O	S	0	0
			508	313	99	94	2		

- Molecule 24 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	z	58	Total	C	N	O	S	0	0
			448	281	87	78	2		

- Molecule 25 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	A	41	Total	C	N	O	S	0	0
			315	192	57	60	6		

- Molecule 26 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	B	56	Total	C	N	O	S	0	0
			443	269	94	79	1		

- Molecule 27 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	D	46	Total	C	N	O	S	0	0
			376	228	90	56	2		

- Molecule 28 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	E	64	Total	C	N	O	S	0	0
			503	323	105	73	2		

- Molecule 29 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	F	38	Total	C	N	O	S	0	0
			301	185	65	47	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	G	225	Total	C	N	O	S	0	0
			1756	1111	315	322	8		

- Molecule 31 is a protein called 30S ribosomal protein S3.

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

- Molecule 32 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	I	205	Total	C	N	O	S	0	0
			1642	1026	315	297	4		

- Molecule 33 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	J	157	Total	C	N	O	S	0	0
			1156	719	218	213	6		

- Molecule 34 is a protein called 30S ribosomal protein S6.

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

- Molecule 35 is a protein called 30S ribosomal protein S7.

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

- Molecule 36 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	M	129	Total	C	N	O	S	0	0
			978	616	173	183	6		

- Molecule 37 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	N	127	Total	C	N	O	S	0	0
			1021	634	206	178	3		

- Molecule 38 is a protein called 30S ribosomal protein S10.

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

- Molecule 39 is a protein called 30S ribosomal protein S11.

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

- Molecule 40 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Q	123	Total	C	N	O	S	0	0
			954	590	196	164	4		

- Molecule 41 is a protein called 30S ribosomal protein S13.

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

- Molecule 42 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	S	100	Total	C	N	O	S	0	0
			804	499	164	138	3		

- Molecule 43 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	T	88	Total	C	N	O	S	0	0
			713	439	144	129	1		

- Molecule 44 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	U	82	Total	C	N	O	S	0	0
			648	406	128	113	1		

- Molecule 45 is a protein called 30S ribosomal protein S17.

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

- Molecule 46 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	W	65	Total	C	N	O	S	0	0
			535	339	100	95	1		

- Molecule 47 is a protein called 30S ribosomal protein S19.

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

- Molecule 48 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Y	85	Total	C	N	O	S	0	0
			664	411	137	113	3		

- Molecule 49 is a protein called 30S ribosomal protein S21.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
50	a	134	Total	C	N	O	S	0	0
			1026	645	186	193	2		

- Molecule 51 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	3	1539	Total	C	N	O	P	0	0
			33012	14725	6052	10697	1538		

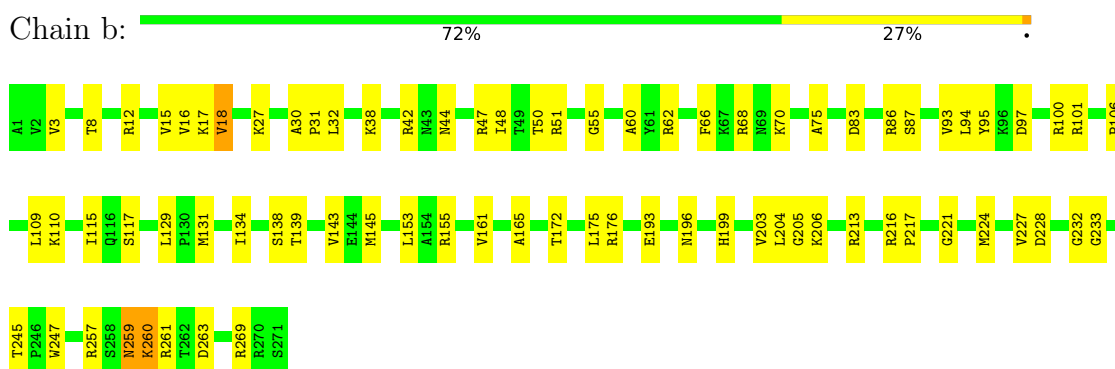
- Molecule 52 is a RNA chain called 23s-5s joint ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	4	3025	Total	C	N	O	P	0	0
			64925	28962	11938	21001	3024		

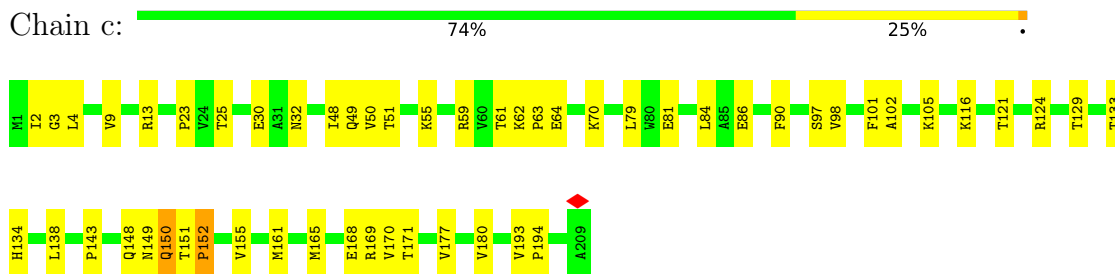
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

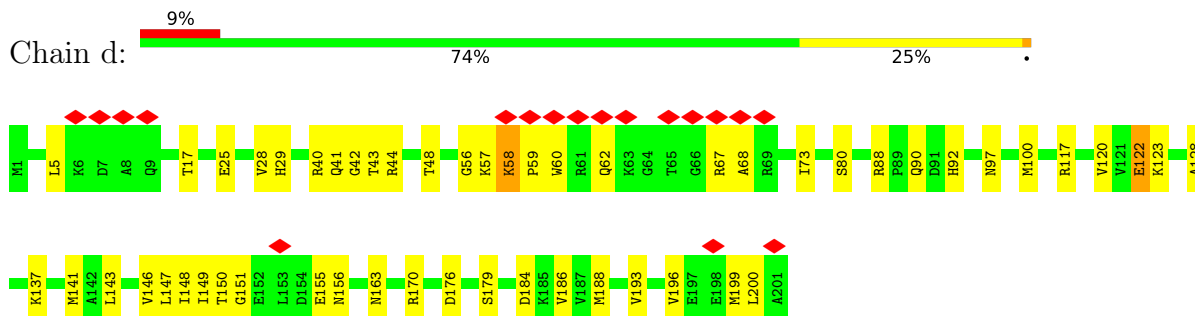
- Molecule 1: 50S ribosomal protein L2



- Molecule 2: 50S ribosomal protein L3

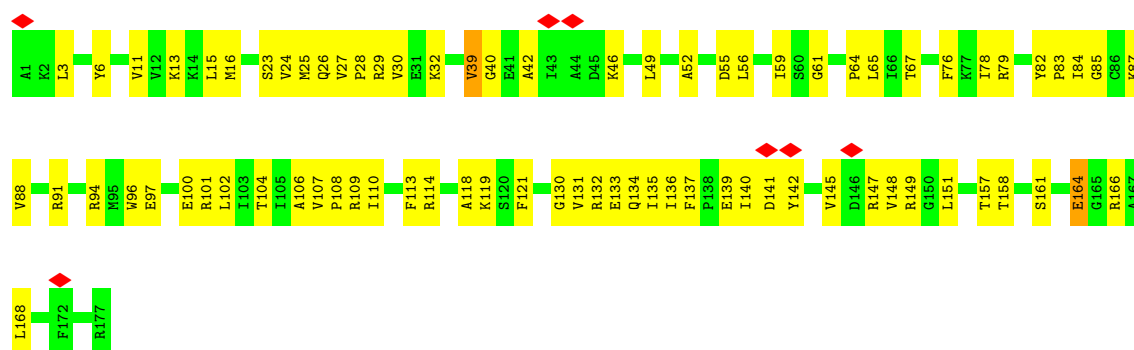


- Molecule 3: 50S ribosomal protein L4



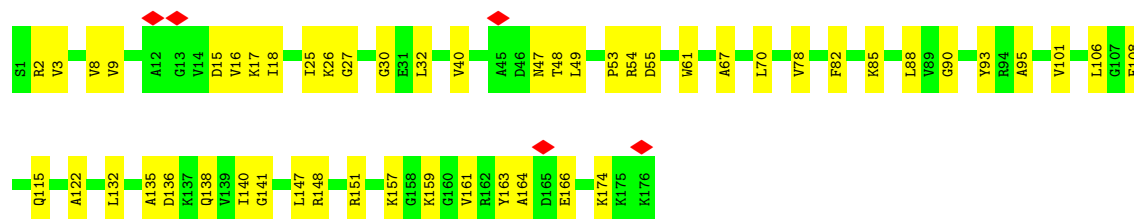
- Molecule 4: 50S ribosomal protein L5

Chain e: 



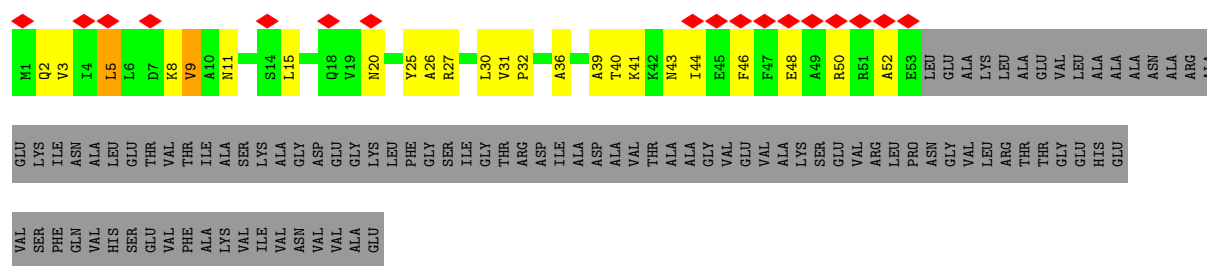
- Molecule 5: 50S ribosomal protein L6

Chain f: 

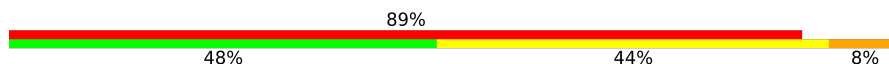


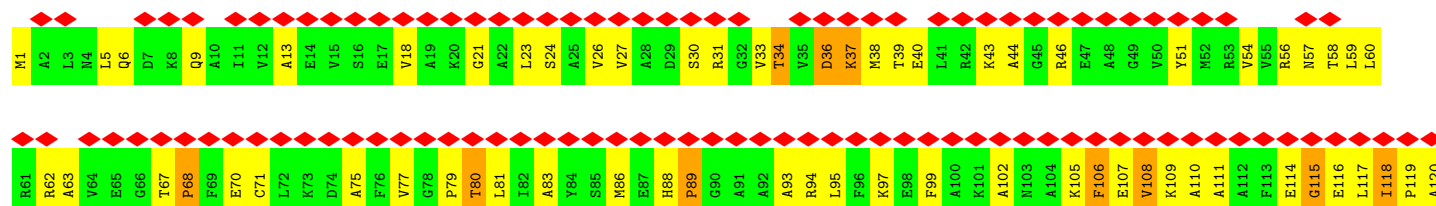
- Molecule 6: 50S ribosomal protein L9

Chain g: 



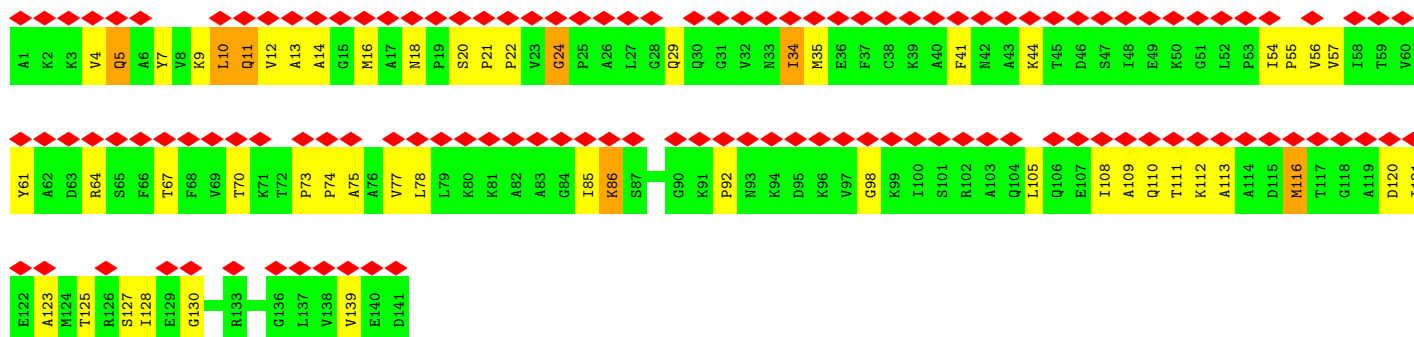
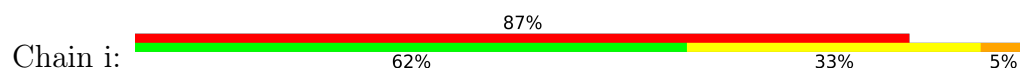
- Molecule 7: 50S ribosomal protein L10

Chain h: 

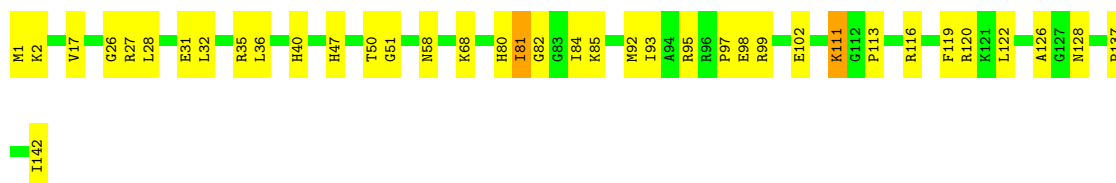




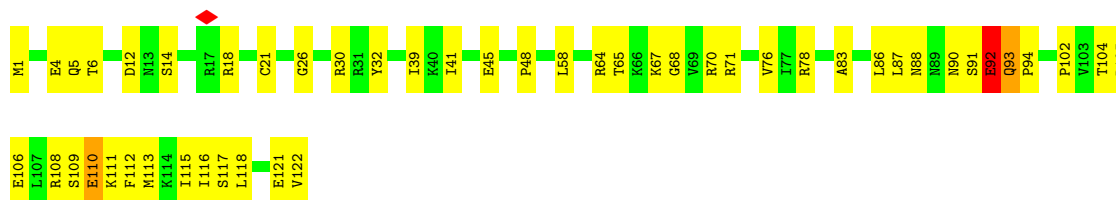
• Molecule 8: 50S ribosomal protein L11



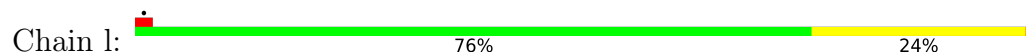
• Molecule 9: 50S ribosomal protein L13



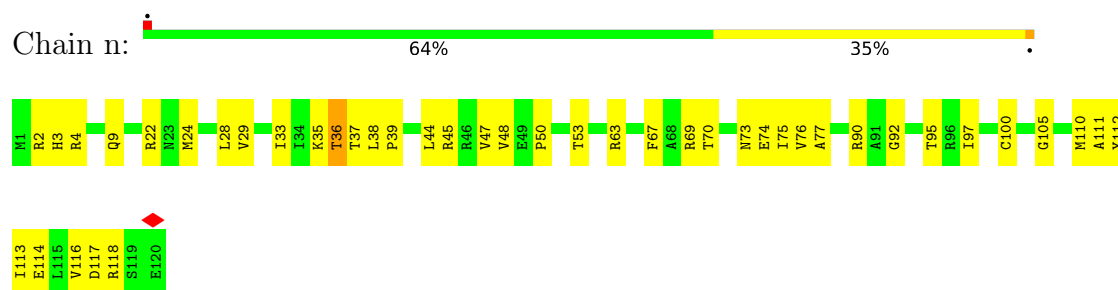
• Molecule 10: 50S ribosomal protein L14



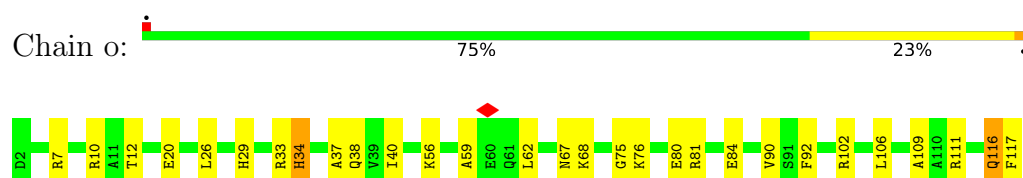
• Molecule 11: 50S ribosomal protein L15



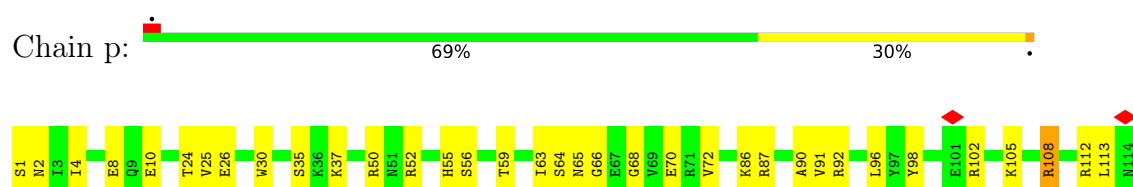
- Molecule 12: 50S ribosomal protein L17



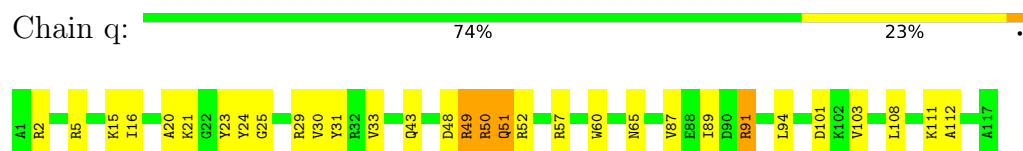
- Molecule 13: 50S ribosomal protein L18



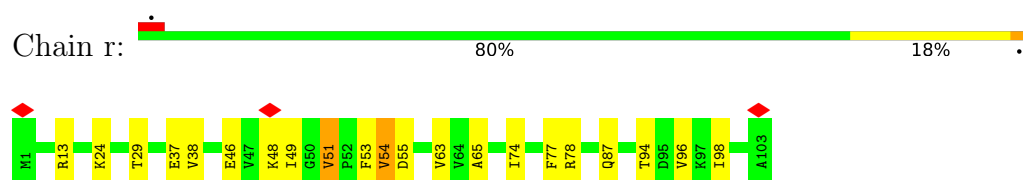
- Molecule 14: 50S ribosomal protein L19



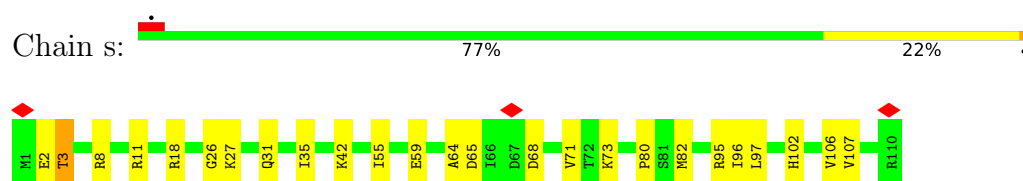
- Molecule 15: 50S ribosomal protein L20



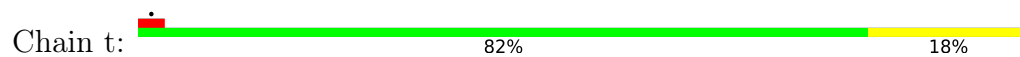
- Molecule 16: 50S ribosomal protein L21



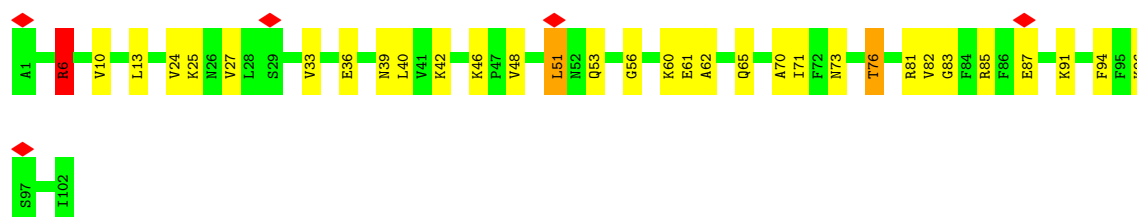
- Molecule 17: 50S ribosomal protein L22



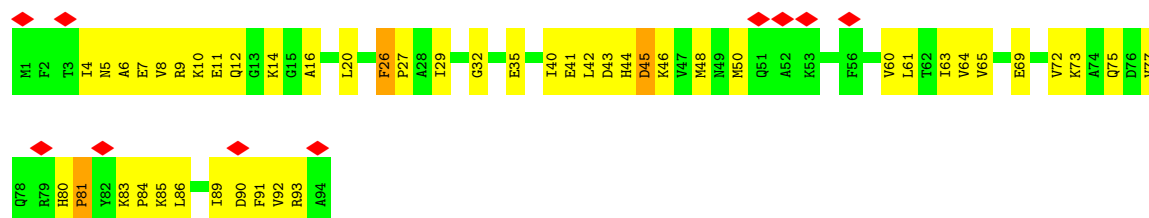
- Molecule 18: 50S ribosomal protein L23



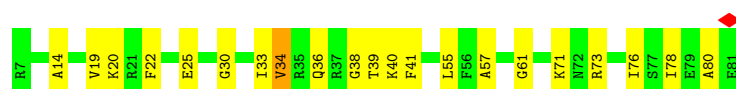
- Molecule 19: 50S ribosomal protein L24



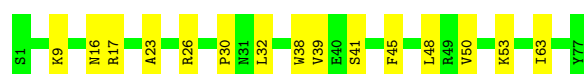
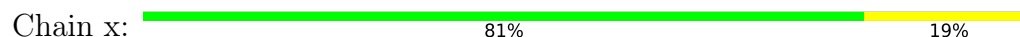
- Molecule 20: 50S ribosomal protein L25



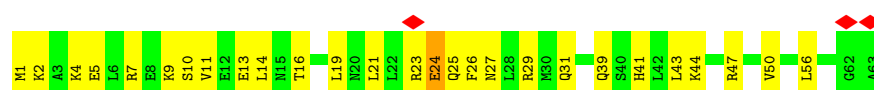
- Molecule 21: 50S ribosomal protein L27



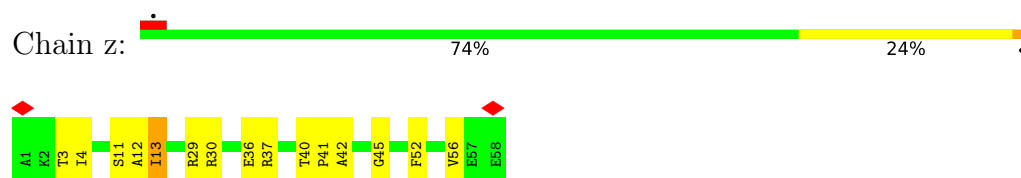
- Molecule 22: 50S ribosomal protein L28



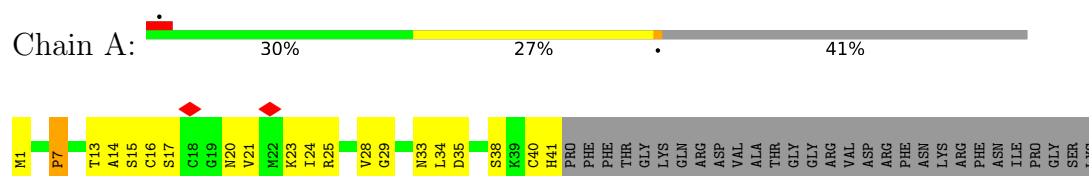
- Molecule 23: 50S ribosomal protein L29



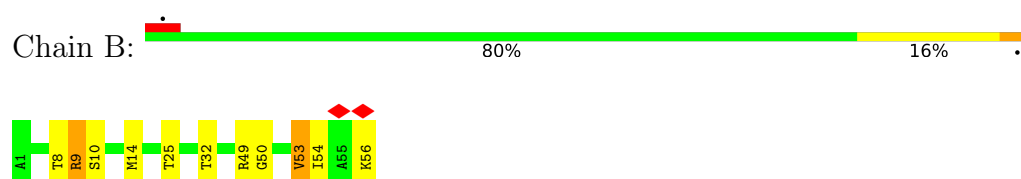
- Molecule 24: 50S ribosomal protein L30



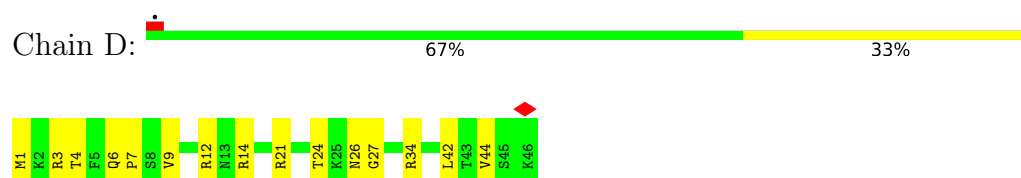
- Molecule 25: 50S ribosomal protein L31



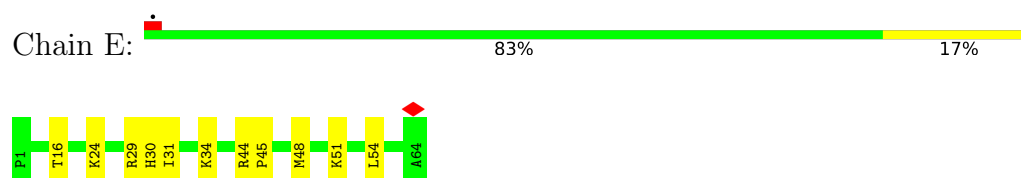
- Molecule 26: 50S ribosomal protein L32



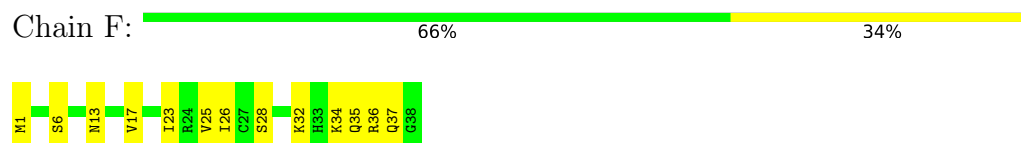
- Molecule 27: 50S ribosomal protein L34



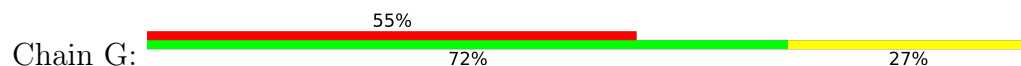
- Molecule 28: 50S ribosomal protein L35

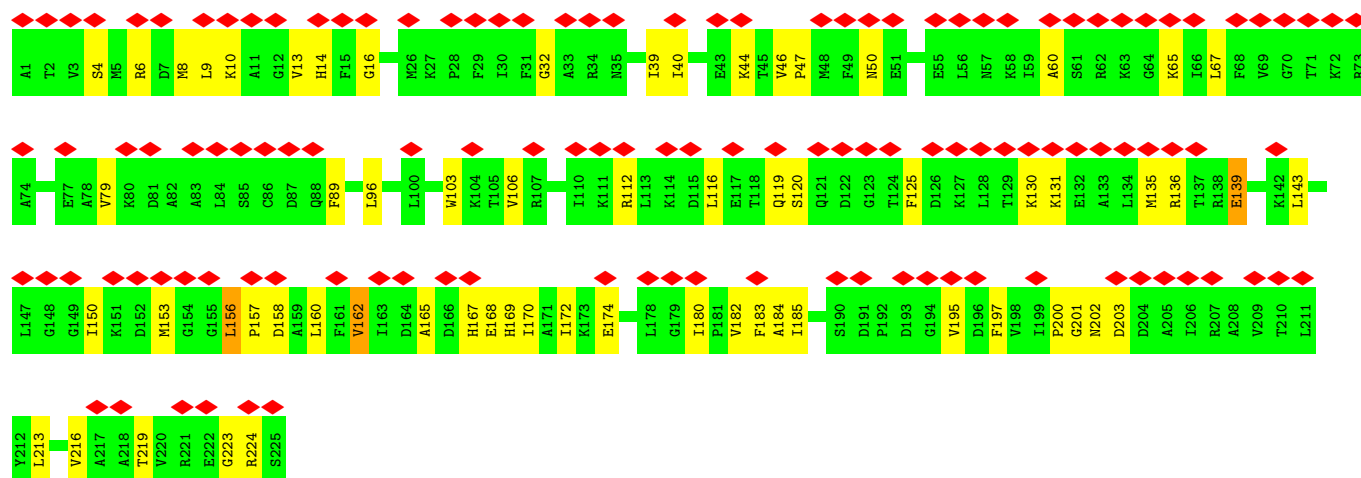


- Molecule 29: 50S ribosomal protein L36



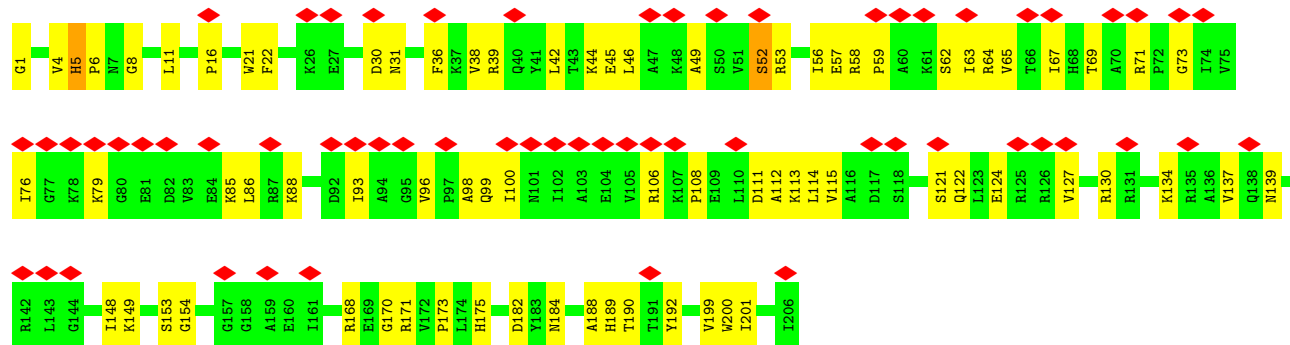
- Molecule 30: 30S ribosomal protein S2





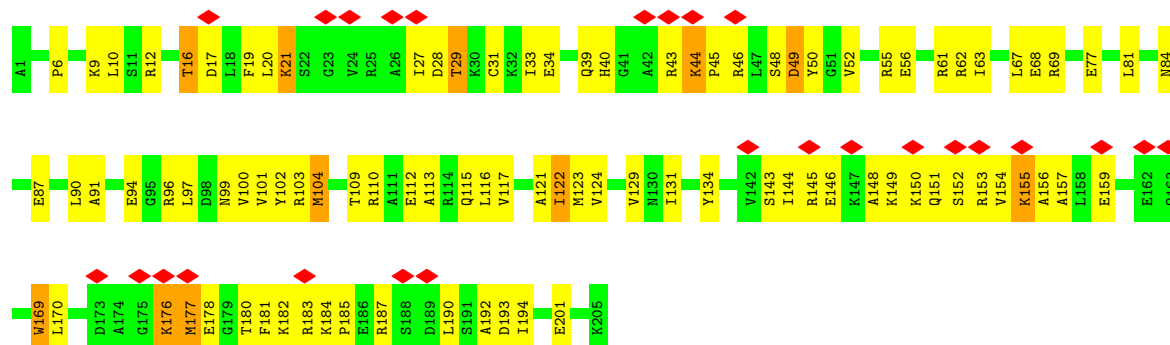
- Molecule 31: 30S ribosomal protein S3

Chain H: 29% 63% 36% .



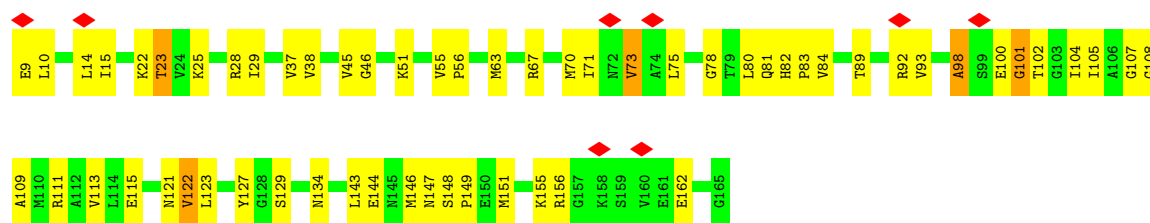
- Molecule 32: 30S ribosomal protein S4

Chain I: 13% 54% 40% 5% .

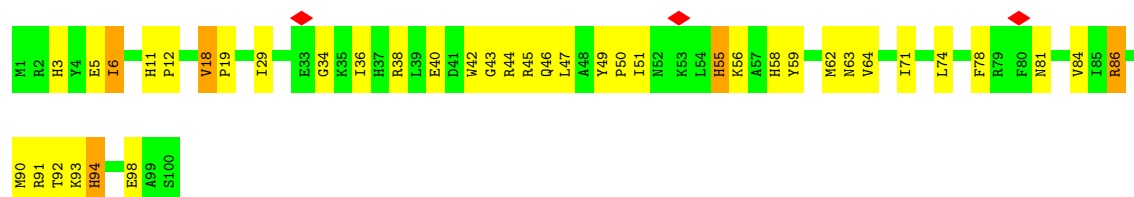


- Molecule 33: 30S ribosomal protein S5

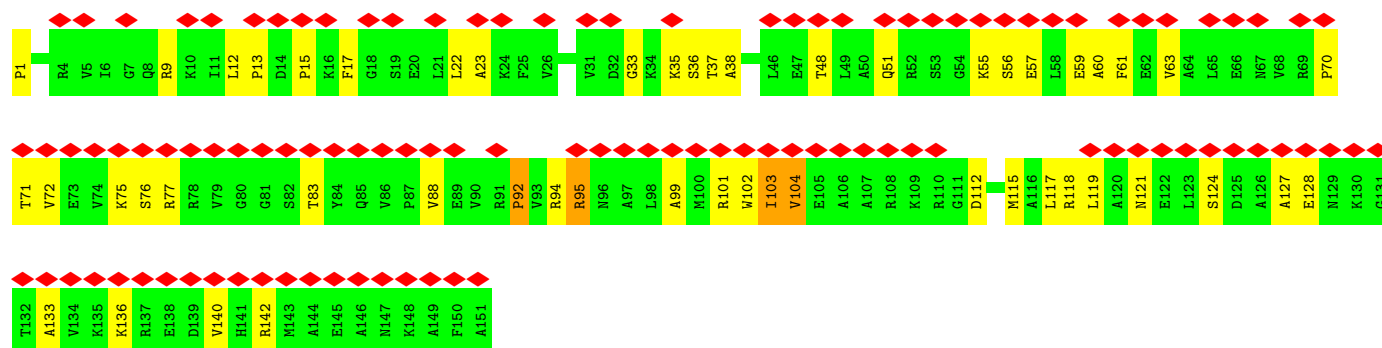
Chain J: 5% 62% 34% .



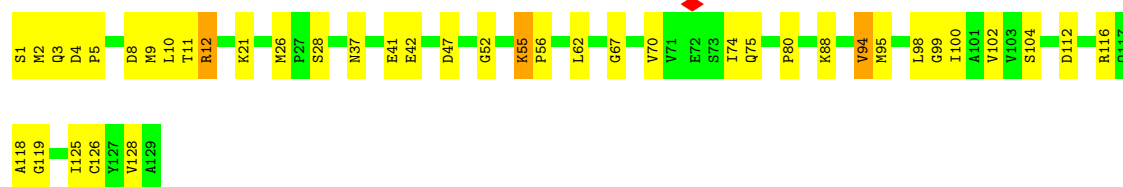
• Molecule 34: 30S ribosomal protein S6



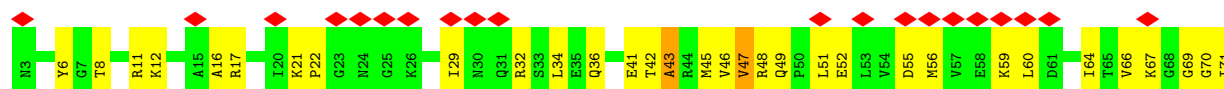
• Molecule 35: 30S ribosomal protein S7

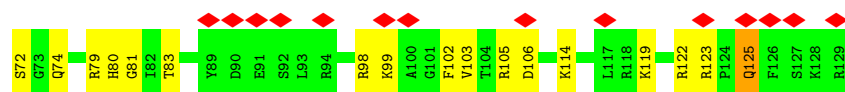


• Molecule 36: 30S ribosomal protein S8

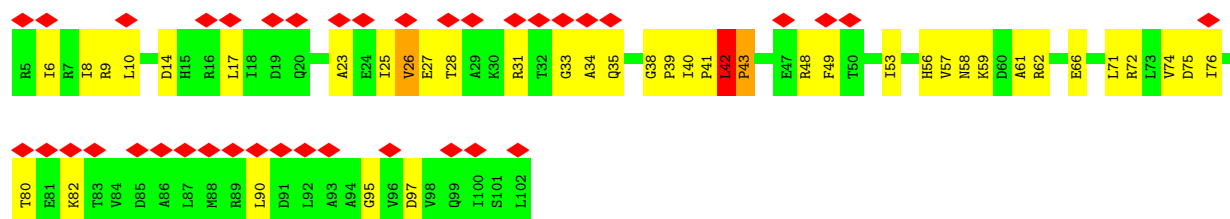
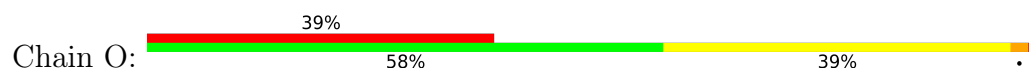


• Molecule 37: 30S ribosomal protein S9

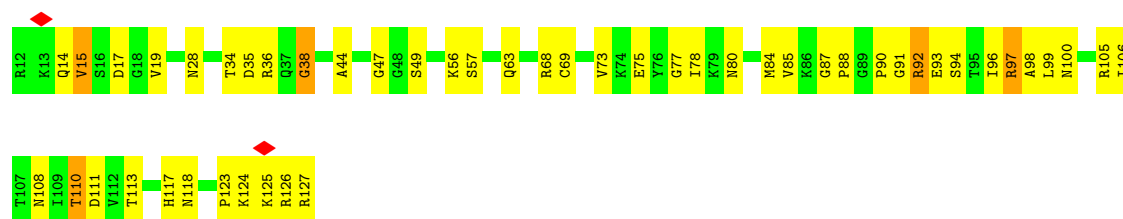




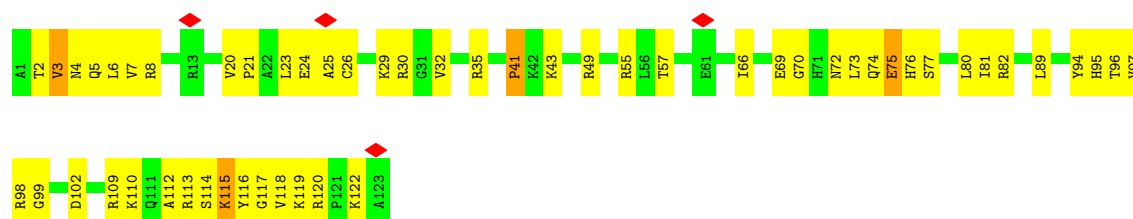
- Molecule 38: 30S ribosomal protein S10



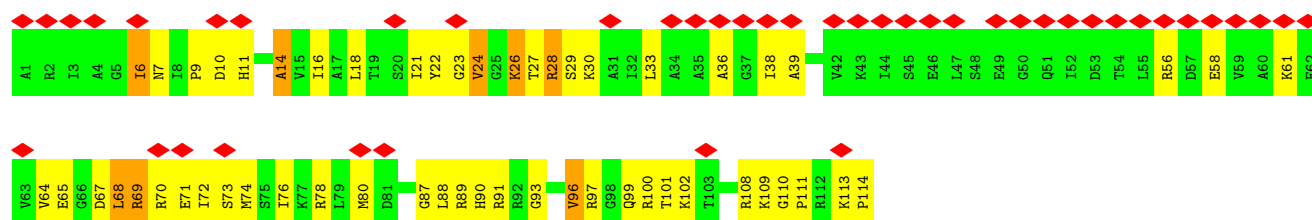
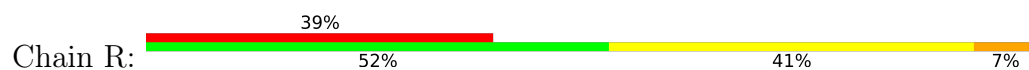
- Molecule 39: 30S ribosomal protein S11



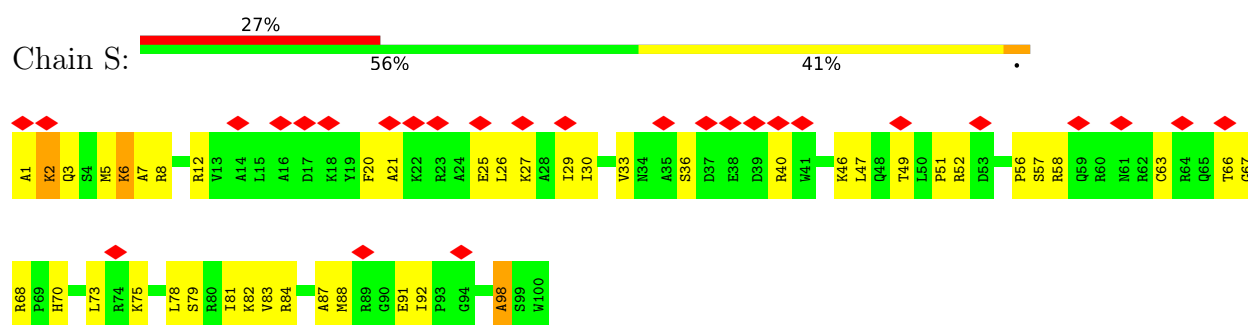
- Molecule 40: 30S ribosomal protein S12



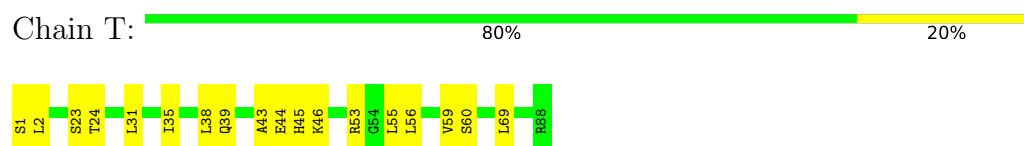
- Molecule 41: 30S ribosomal protein S13



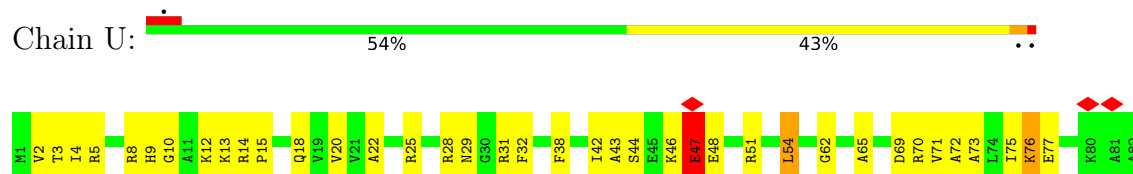
- Molecule 42: 30S ribosomal protein S14



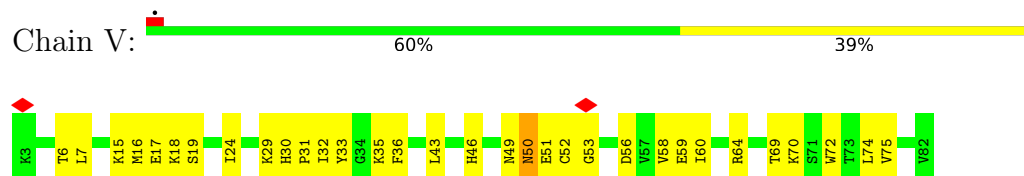
- Molecule 43: 30S ribosomal protein S15



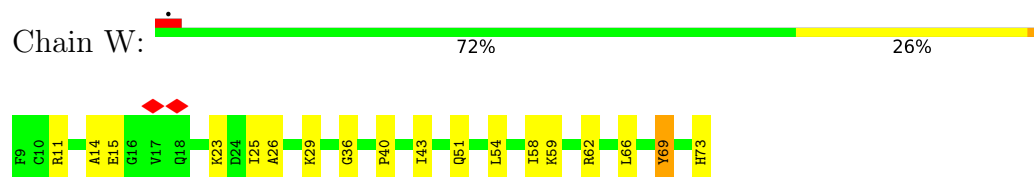
- Molecule 44: 30S ribosomal protein S16



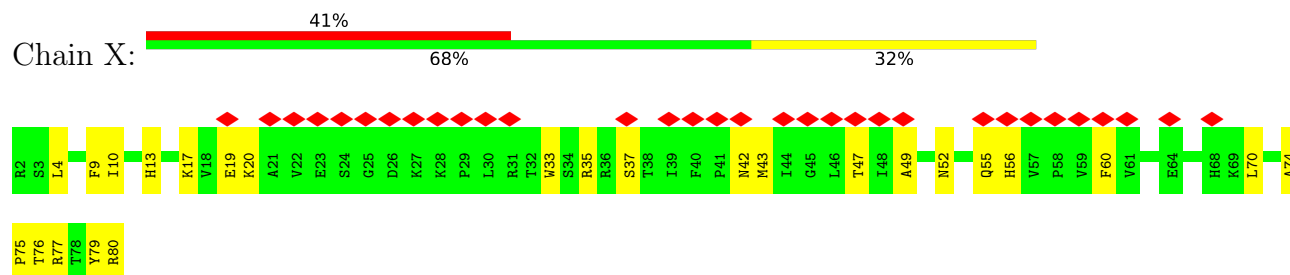
- Molecule 45: 30S ribosomal protein S17



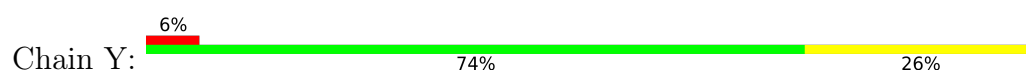
- Molecule 46: 30S ribosomal protein S18



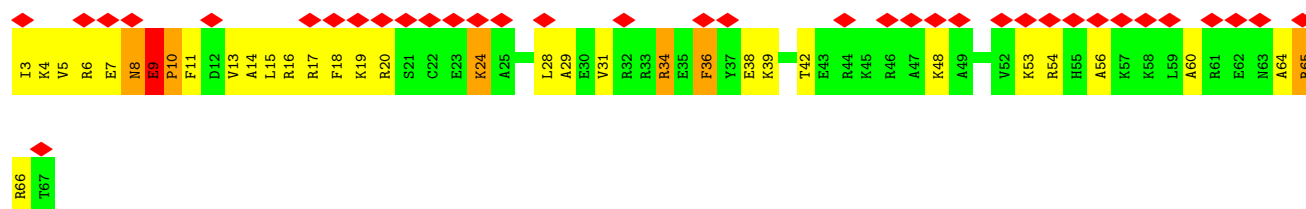
- Molecule 47: 30S ribosomal protein S19



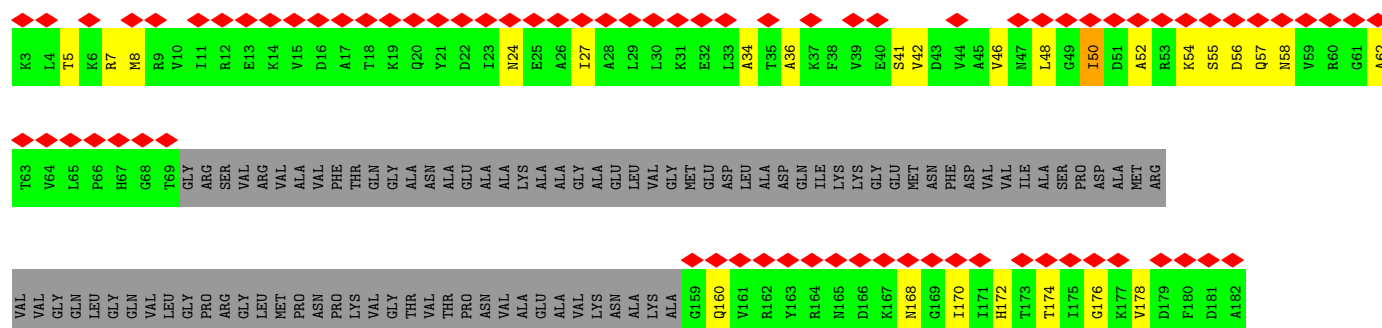
- Molecule 48: 30S ribosomal protein S20



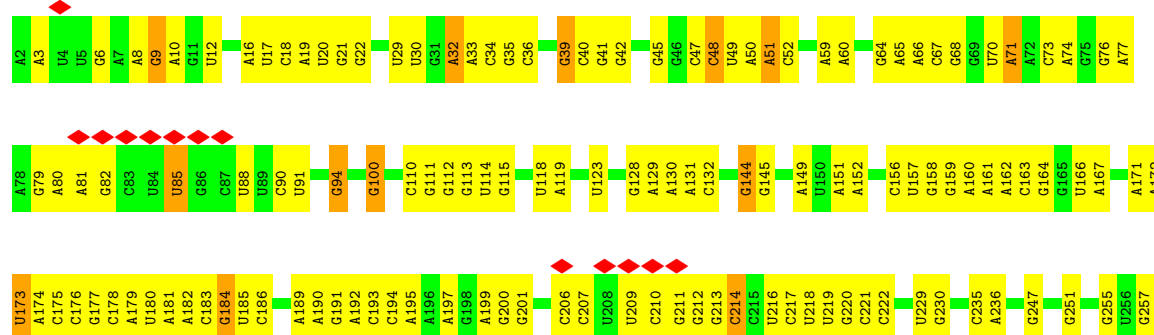
• Molecule 49: 30S ribosomal protein S21

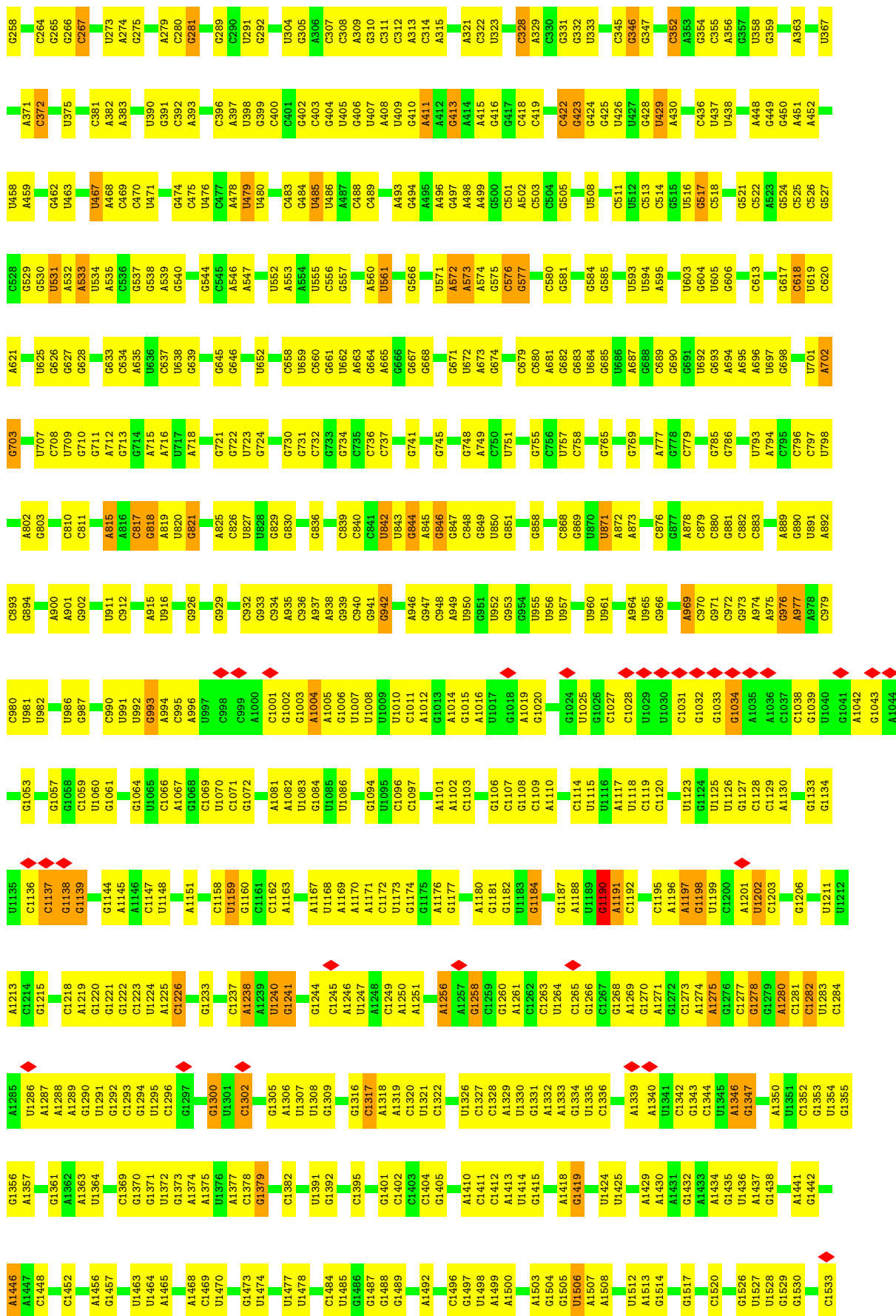


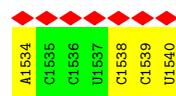
• Molecule 50: 50S ribosomal protein L1



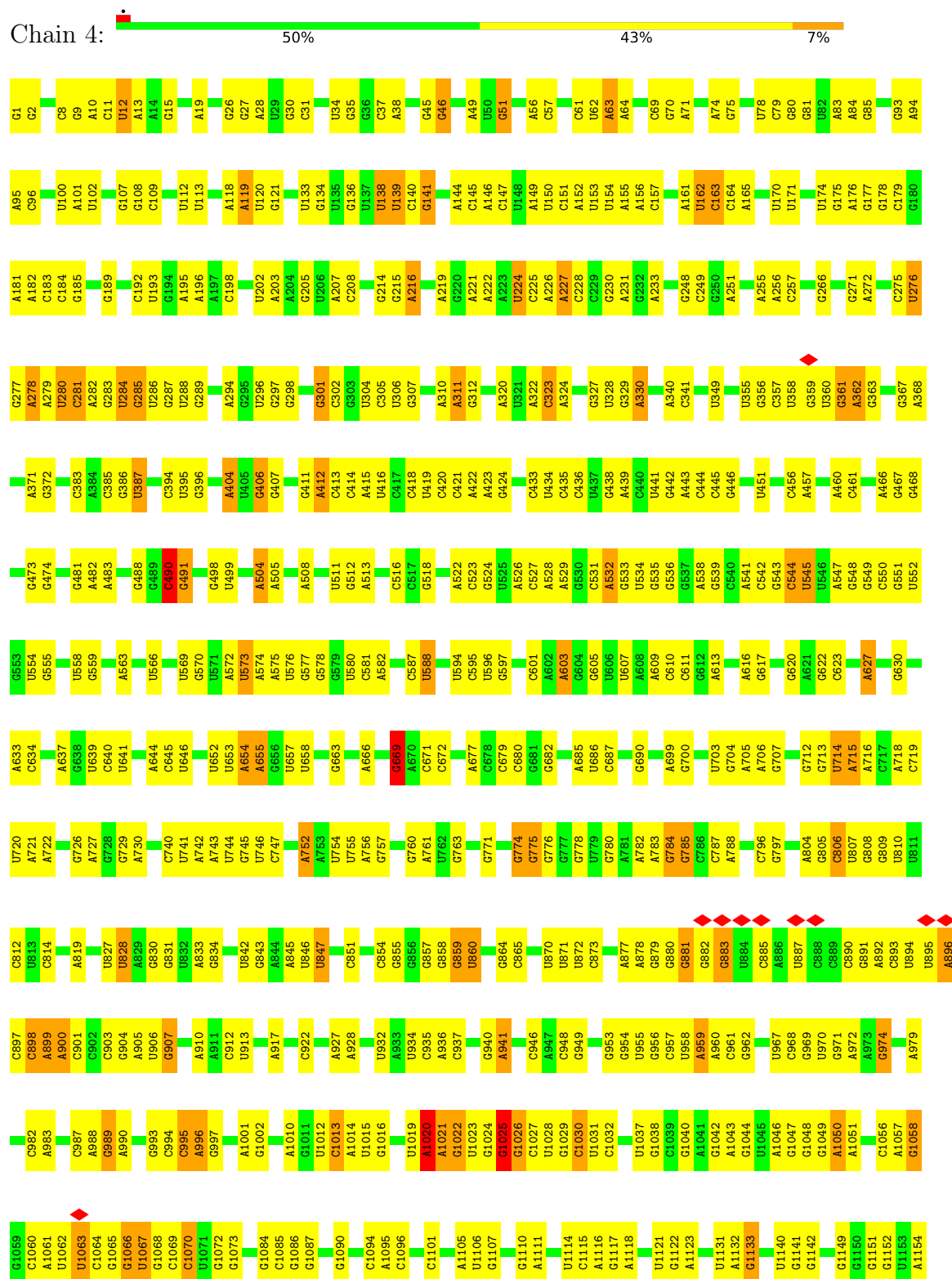
• Molecule 51: 16S ribosomal RNA







• Molecule 52: 23s-5s joint ribosomal RNA



U2313	A2247	G2181	U2091	A1986	C1892	G1802	G1701	U1613	C1514	C1406	A1303	G1219	A1155
G2314	G2248	A2182	C2095	G1991	A1901	A1806	C1702	U1614	A1515	G1407	U1304	C1220	A1156
U2315	U2250	G2183	G2096	U1992	C1902	A1807	C1703	A1618	U1522	A1407	G1305	G1221	A1157
G2318	G2253	G2185	A2097	G1997	G1903	U1808	C1705	A1624	U1533	A1413	C1306	U1222	A1160
A2319	A2254	A2186	A2098	G1998	G1904	G1809	U1706	U1625	U1534	A1414	U1308	A1223	U1161
U2320	G2256	A2187	U2099	A1999	U1905	G1810	A1707	A1626	U1537	C1425	U1309	A1224	G1166
G2321	G2255	A2188	G2100	A1999	U1906	U1811	A1708	C1626	U1537	G1426	U1310	U1225	A1167
U2322	C2256	G2189	U2110	A2000	U1907	U1812	A1709	G1629	U1538	G1428	U1311	A1226	A1168
C2323	C2257	A2190	U2119	G2001	A1908	C1813	U1712	A1630	U1539	A1429	U1312	G1227	G1169
G2324	U2258	C2191	U2120	C2002	A1912	G1814	C1713	A1631	U1540	G1429	G1313	C1228	G1170
U2325	U2259	C2192	U2121	G2003	A1914	G1815	G1718	A1632	A1541	G1437	G1314	U1229	C1171
A2326	U2260	C2193	G2120	A2004	A1913	G1823	A1719	A1633	U1542	U1444	U1315	C1230	G1172
U2331	G2261	G2194	U2121	C2009	A1914	G1824	A1720	U1634	U1543	U1445	U1316	C1231	A1173
G2332	A2262	U2196	C2124	U2010	A1917	U1825	U1722	C1635	G1544	U1446	A1317	U1232	A1174
C2336	A2263	G2197	A2125	U2011	C1918	A1828	C1723	A1636	U1547	G1447	G1325	G1175	A1176
G2337	G2264	A2198	G2127	G2012	A1919	A1829	A1724	A1637	A1547	C1447	U1326	G1177	G1177
U2338	U2265	A2199	C2127	A2013	A1922	C1834	A1726	G1638	G1552	U1327	U1327	U1236	A1178
A2339	G2266	C2200	C2128	A2013	A1922	C1834	A1726	G1639	G1553	A1450	C1328	C1237	G1179
U2340	U2267	A2133	U2139	G2018	C1923	U1837	A1731	A1643	C1556	U1454	A1383	C1238	C1180
C2342	G2268	G2202	C2134	U2019	U1924	G1838	C1732	A1650	G1557	A1455	A1239	A1239	C1181
G2343	G2269	U2207	A2134	C2020	G1925	A1839	C1733	U1651	G1558	U1457	U1337	G1240	A1182
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G2345	C2273	A2211	U2139	A2029	C1928	U1848	C1735	A1653	G1560	C1458	C1340	G1242	G1184
U2346	G2274	G2214	A2141	U2033	G1935	U1849	A1736	C1654	A1561	G1461	A1341	G1253	A1186
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G2367	G2287	G2230	G2160	G2057	U1955	A1872	G1779	A1673	U1586	G1489	C1379	A1271	A1201
U2368	C2288	C2231	A2161	U2058	A1957	A1873	A1780	C1675	G1587	A1493	A1381	C1272	C1202
A2369	G2289	C2232	U2162	U2059	C1957	A1874	G1781	A1676	U1588	A1494	G1380	U1272	C1203
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U2387	C2306	U2246										U1301	A1218
	C2307											U1302	
	U2308												
	U2309												

G3004	C2388	C2460	A2625	A2730	U2924	U2829
A3007	A2461	A2461	C2626	G2731	U2925	C2832
C3008	U2392	U2462	C2627	U2732	U2926	A2833
A3011	U2393	A2463	U2628	U2733	A2927	A2834
U3012	A2394	G2473	A2631	C2734	A2928	G2837
G3013	A2395	A2474	U2632	U2737	C2930	C2838
A3021	A2396	C2475	G2633	C2738	G2842	C2843
G3022	G2397	U2476	G2636	U2741	C2843	C2844
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A3028	U2406	G2479	C2640	C2747	U2848	U2848
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	G2408	U2484	A2642	C2754	G2860	G2860
	A2409	G2485	A2643	C2755	A2861	A2861
	G2410	C2486	C2644	C2756	G2870	G2870
	C2411	C2487	A2645	U2757	U2871	U2871
	G2412	G2488	A2646	A2760	G2872	G2872
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	G2414	C2490	G2660	C2764	A2876	A2876
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	A2416	G2495	A2662	G2766	A2878	A2878
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	U2420	G2499	C2666	C2776	A2880	A2880
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	U2424	G2501	U2673	U2784	U2882	U2882
	A2425	A2504	A2675	A2785	C2883	C2883
	U2430	A2505	U2676	G2787	A2884	A2884
	G2431	A2506	G2681	A2788	U2885	U2885
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	C2434	C2508	U2683	A2790	C2888	C2888
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	A2437	G2511	C2686	A2806	A2893	A2893
	C2438	U2512	C2687	U2807	C2900	C2900
	A2439	G2513	A2688	U2808	C2901	C2901
	U2440	G2517	A2689	C2809	C2902	C2902
	C2441	U2518	A2694	A2810	A2906	A2906
	A2442	G2519	G2695	C2811	U2907	U2907
	G2443	A2520	U2696	U2812	G2906	G2906
	G2444	G2521	G2707	G2813	A2909	A2909
	G2446	G2524	U2708	U2817	C2913	C2913
	G2447	G2525	G2709	U2818	G2821	G2821
	U2448	U2530	G2710	G2822	U2823	U2823
	U2449	G2531	G2711	U2824	C2915	C2915
	A2450	U2532	U2712	G2825	C2916	C2916
	U2452	G2533	U2713	U2826	C2917	C2917
	G2453	A2534	A2728	C2827	C2923	C2923
	C2454	A2535	C2729	A2828		
	A2456	A2539				
	U2457	A2540				
	G2458	G2541				
	G2459					

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	9620	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	TFS TALOS	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	30	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	16.217	Depositor
Minimum map value	-5.852	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.783	Depositor
Recommended contour level	3	Depositor
Map size ($\text{\AA}$)	528.96, 528.96, 528.96	wwPDB
Map dimensions	608, 608, 608	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.87000006, 0.87000006, 0.87000006	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	0.33	0/2121	0.88	5/2852 (0.2%)
2	c	0.34	0/1585	0.83	2/2134 (0.1%)
3	d	0.39	0/1570	0.89	5/2113 (0.2%)
4	e	0.42	0/1434	0.94	3/1926 (0.2%)
5	f	0.40	0/1342	0.87	3/1816 (0.2%)
6	g	0.44	0/414	1.03	2/556 (0.4%)
7	h	0.55	0/1001	1.15	14/1350 (1.0%)
8	i	0.54	0/1045	1.11	7/1410 (0.5%)
9	j	0.34	0/1151	0.84	1/1551 (0.1%)
10	k	0.34	0/947	0.92	2/1268 (0.2%)
11	l	0.36	0/1053	0.96	2/1403 (0.1%)
12	n	0.34	0/973	0.93	3/1301 (0.2%)
13	o	0.35	0/901	0.94	2/1209 (0.2%)
14	p	0.33	0/928	0.83	2/1242 (0.2%)
15	q	0.31	0/959	0.92	5/1278 (0.4%)
16	r	0.35	0/828	0.85	4/1107 (0.4%)
17	s	0.32	0/863	0.86	1/1156 (0.1%)
18	t	0.35	0/744	0.80	0/994
19	u	0.35	0/787	0.85	1/1051 (0.1%)
20	v	0.44	0/765	0.94	3/1025 (0.3%)
21	w	0.31	0/581	0.83	1/769 (0.1%)
22	x	0.33	0/634	0.80	0/848
23	y	0.34	0/509	0.90	1/677 (0.1%)
24	z	0.35	0/452	0.77	0/605
25	A	0.43	0/319	0.93	1/426 (0.2%)
26	B	0.32	0/449	0.82	3/599 (0.5%)
27	D	0.35	0/379	0.88	1/498 (0.2%)
28	E	0.32	0/512	0.89	1/676 (0.1%)
29	F	0.34	0/302	0.94	0/397
30	G	0.43	0/1787	0.91	3/2408 (0.1%)
31	H	0.43	0/1651	0.94	9/2225 (0.4%)
32	I	0.39	0/1664	0.99	10/2227 (0.4%)
33	J	0.41	0/1169	0.94	3/1573 (0.2%)
34	K	0.41	0/835	0.92	1/1128 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	L	0.50	0/1195	1.06	6/1602 (0.4%)
36	M	0.35	0/988	0.93	6/1326 (0.5%)
37	N	0.46	0/1033	0.94	4/1375 (0.3%)
38	O	0.47	0/796	1.00	5/1077 (0.5%)
39	P	0.42	0/885	0.96	3/1195 (0.3%)
40	Q	0.35	0/968	0.92	7/1300 (0.5%)
41	R	0.48	0/892	1.07	11/1193 (0.9%)
42	S	0.45	0/816	0.95	3/1088 (0.3%)
43	T	0.33	0/721	0.88	3/964 (0.3%)
44	U	0.35	0/658	1.02	7/884 (0.8%)
45	V	0.39	0/657	0.93	0/881
46	W	0.40	0/544	0.94	3/731 (0.4%)
47	X	0.51	0/652	0.82	1/877 (0.1%)
48	Y	0.36	0/670	0.95	4/888 (0.5%)
49	Z	0.50	0/551	1.08	6/728 (0.8%)
50	a	0.53	0/1033	0.97	6/1387 (0.4%)
51	3	0.47	0/36963	0.49	2/57662 (0.0%)
52	4	0.45	0/72710	0.50	4/113431 (0.0%)
All	All	0.44	0/155386	0.64	182/232387 (0.1%)

There are no bond length outliers.

All (182) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	R	96	VAL	N-CA-C	10.07	120.09	110.42
37	N	52	GLU	N-CA-C	-8.98	101.89	113.12
31	H	76	ILE	N-CA-C	-8.85	103.22	111.45
41	R	11	HIS	N-CA-C	8.55	123.28	111.74
7	h	89	PRO	N-CA-C	-8.36	103.98	114.68
8	i	111	THR	N-CA-C	-8.01	102.13	112.23
42	S	21	ALA	N-CA-C	-8.00	104.41	114.56
31	H	121	SER	N-CA-C	-7.94	103.74	113.50
32	I	104	MET	N-CA-C	-7.92	101.51	112.12
1	b	12	ARG	N-CA-C	-7.89	102.64	114.64
33	J	101	GLY	N-CA-C	-7.66	105.29	115.32
39	P	97	ARG	N-CA-C	-7.39	102.92	112.23
8	i	35	MET	N-CA-C	7.38	120.02	111.02
48	Y	5	SER	N-CA-C	-7.33	104.22	113.02
44	U	72	ALA	N-CA-C	-7.30	103.33	112.90
41	R	69	ARG	N-CA-C	-7.21	103.15	112.23
11	l	92	LEU	N-CA-C	-7.07	103.91	112.54
1	b	87	SER	N-CA-C	-7.02	104.75	113.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	i	86	LYS	N-CA-C	-7.00	106.65	114.62
35	L	142	ARG	N-CA-C	-6.95	104.83	113.38
44	U	69	ASP	N-CA-C	6.95	118.55	110.97
32	I	68	GLU	N-CA-C	6.94	118.84	111.28
38	O	95	GLY	N-CA-C	-6.92	106.17	113.58
9	j	99	ARG	N-CA-C	6.87	118.77	111.28
49	Z	53	LYS	N-CA-C	-6.84	104.41	112.89
13	o	116	GLN	N-CA-C	6.68	119.58	108.96
35	L	140	VAL	N-CA-C	-6.67	105.61	113.42
51	3	1256	A	N9-C1'-C2'	6.65	121.98	112.00
46	W	69	TYR	N-CA-C	-6.60	105.80	114.31
8	i	34	ILE	N-CA-C	6.59	116.74	110.42
43	T	43	ALA	N-CA-C	-6.56	104.21	111.82
35	L	57	GLU	N-CA-C	-6.55	105.82	113.88
52	4	1025	G	C2'-C3'-O3'	6.54	119.31	109.50
10	k	32	TYR	N-CA-C	6.53	120.27	109.96
2	c	152	PRO	N-CA-C	-6.50	104.69	113.40
44	U	54	LEU	N-CA-C	6.50	118.44	111.36
12	n	116	VAL	N-CA-C	6.43	119.13	111.09
15	q	49	ARG	N-CA-C	-6.43	105.19	113.16
7	h	110	ALA	N-CA-C	6.42	119.69	108.52
7	h	115	GLY	N-CA-C	-6.41	101.94	112.83
31	H	36	PHE	N-CA-C	-6.40	105.12	113.12
41	R	28	ARG	N-CA-C	-6.39	106.07	114.31
46	W	51	GLN	N-CA-C	-6.37	103.59	112.45
40	Q	122	LYS	N-CA-C	-6.36	103.87	111.69
36	M	94	VAL	N-CA-C	6.31	116.58	108.12
38	O	57	VAL	N-CA-C	6.31	117.83	107.24
32	I	155	LYS	N-CA-C	-6.29	105.57	113.18
43	T	60	SER	N-CA-C	-6.26	104.69	112.90
49	Z	9	GLU	N-CA-C	6.26	123.65	109.81
6	g	27	ARG	N-CA-C	6.20	118.12	111.36
7	h	37	LYS	N-CA-C	-6.20	105.20	112.89
31	H	31	ASN	N-CA-C	-6.19	105.76	113.38
50	a	176	GLY	N-CA-C	6.17	119.61	111.52
41	R	10	ASP	N-CA-C	6.16	118.10	107.93
40	Q	115	LYS	N-CA-C	-6.15	101.37	110.48
6	g	52	ALA	N-CA-C	-6.15	105.94	113.50
35	L	95	ARG	N-CA-C	-6.14	105.27	112.89
7	h	102	ALA	N-CA-C	-6.13	104.50	112.23
48	Y	84	LYS	N-CA-C	-6.09	105.68	113.23
5	f	47	ASN	N-CA-C	-6.06	104.59	112.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	l	95	LEU	N-CA-C	-6.05	104.60	112.23
2	c	124	ARG	N-CA-C	6.02	117.71	111.03
7	h	44	ALA	N-CA-C	-6.00	105.96	113.28
7	h	46	ARG	N-CA-C	-5.99	105.80	113.23
36	M	118	ALA	N-CA-C	-5.94	105.53	112.89
8	i	116	MET	N-CA-C	5.91	119.30	109.96
8	i	10	LEU	N-CA-C	5.89	117.92	109.14
50	a	56	ASP	N-CA-C	5.89	119.56	112.38
26	B	25	THR	N-CA-C	5.86	119.73	112.47
32	I	177	MET	N-CA-C	-5.85	103.33	111.52
43	T	53	ARG	N-CA-C	-5.84	105.42	112.54
36	M	12	ARG	N-CA-C	-5.83	103.64	112.04
48	Y	8	LYS	N-CA-C	-5.82	105.07	111.82
41	R	14	ALA	N-CA-C	5.81	120.11	113.19
10	k	71	ARG	N-CA-C	-5.81	103.34	110.31
5	f	30	GLY	N-CA-C	5.78	119.24	111.20
44	U	77	GLU	N-CA-C	-5.76	104.97	112.23
15	q	57	ARG	N-CA-C	-5.76	105.14	111.82
32	I	49	ASP	N-CA-C	5.74	119.80	112.34
25	A	7	PRO	N-CA-C	-5.73	102.85	111.57
52	4	490	C	C2'-C3'-O3'	5.71	118.07	109.50
50	a	209	ILE	N-CA-C	5.70	115.80	107.37
32	I	176	LYS	N-CA-C	-5.69	103.62	111.81
51	3	1190	G	C2'-C3'-O3'	5.69	118.03	109.50
14	p	35	SER	N-CA-C	-5.66	107.61	114.75
37	N	99	LYS	N-CA-C	5.64	117.23	111.14
50	a	55	SER	N-CA-C	5.63	119.25	112.38
7	h	68	PRO	N-CA-C	-5.62	106.82	114.80
50	a	24	ASN	N-CA-C	5.62	118.17	111.71
7	h	75	ALA	N-CA-C	-5.62	106.38	113.18
35	L	92	PRO	N-CA-C	-5.62	107.46	114.20
1	b	145	MET	N-CA-C	-5.61	108.23	114.62
37	N	119	LYS	N-CA-C	5.59	116.54	107.32
1	b	259	ASN	N-CA-C	-5.58	108.26	114.62
19	u	76	THR	N-CA-C	-5.55	104.73	112.45
35	L	61	PHE	N-CA-C	-5.55	106.46	113.18
15	q	50	ARG	N-CA-C	-5.55	106.56	113.55
16	r	51	VAL	CA-C-N	-5.54	115.03	120.52
16	r	51	VAL	C-N-CA	-5.54	115.03	120.52
4	e	39	VAL	N-CA-C	5.54	116.28	110.62
36	M	55	LYS	CA-C-N	5.54	125.49	119.78
36	M	55	LYS	C-N-CA	5.54	125.49	119.78

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	Y	40	ALA	N-CA-C	-5.54	106.88	113.97
28	E	30	HIS	N-CA-C	5.53	116.66	108.86
8	i	121	ILE	N-CA-C	-5.53	105.14	110.72
32	I	91	ALA	N-CA-C	-5.51	104.91	111.69
12	n	67	PHE	N-CA-C	-5.50	106.70	113.41
14	p	10	GLU	N-CA-C	-5.48	106.59	113.28
4	e	118	ALA	N-CA-C	5.46	118.15	111.82
49	Z	54	ARG	N-CA-C	-5.46	104.98	111.69
39	P	75	GLU	N-CA-C	-5.45	105.50	111.82
26	B	53	VAL	N-CA-C	5.44	116.22	110.72
13	o	20	GLU	N-CA-C	-5.43	106.83	113.50
33	J	162	GLU	N-CA-C	5.42	117.94	111.71
7	h	57	ASN	N-CA-C	-5.42	104.36	112.54
31	H	93	ILE	N-CA-C	-5.41	107.52	111.90
38	O	26	VAL	N-CA-C	-5.40	104.73	112.35
40	Q	43	LYS	N-CA-C	5.39	121.71	109.81
7	h	51	TYR	N-CA-C	-5.38	108.48	114.62
42	S	98	ALA	N-CA-C	5.36	118.42	110.48
49	Z	24	LYS	N-CA-C	5.36	119.65	113.38
31	H	5	HIS	CA-C-N	5.35	124.53	118.97
31	H	5	HIS	C-N-CA	5.35	124.53	118.97
39	P	73	VAL	N-CA-C	-5.35	108.63	113.71
7	h	36	ASP	N-CA-C	-5.34	106.26	112.89
49	Z	29	ALA	N-CA-C	-5.33	106.08	112.59
4	e	164	GLU	N-CA-C	-5.32	105.53	112.23
38	O	42	LEU	CA-C-N	5.32	126.49	119.84
38	O	42	LEU	C-N-CA	5.32	126.49	119.84
31	H	100	ILE	N-CA-C	5.29	115.83	108.84
1	b	213	ARG	N-CA-C	-5.29	105.19	111.69
3	d	41	GLN	N-CA-C	-5.27	107.51	114.31
20	v	26	PHE	CA-C-N	5.27	125.19	119.76
20	v	26	PHE	C-N-CA	5.27	125.19	119.76
41	R	36	ALA	N-CA-C	-5.27	107.40	113.88
49	Z	8	ASN	N-CA-C	5.27	122.03	110.80
42	S	6	LYS	N-CA-C	-5.27	106.00	112.90
34	K	98	GLU	N-CA-C	5.26	115.33	108.07
50	a	184	LYS	N-CA-C	-5.26	105.22	111.69
27	D	6	GLN	N-CA-C	-5.24	103.43	109.93
40	Q	57	THR	N-CA-C	-5.24	106.89	113.28
20	v	45	ASP	N-CA-C	5.24	119.95	111.37
3	d	122	GLU	N-CA-C	5.23	117.66	111.33
41	R	56	ARG	N-CA-C	-5.22	106.91	113.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
52	4	1020	A	C2'-C3'-O3'	5.22	117.33	109.50
5	f	40	VAL	N-CA-C	5.20	115.26	107.51
32	I	44	LYS	N-CA-C	5.18	117.11	109.50
41	R	72	ILE	N-CA-C	-5.17	107.30	111.91
41	R	78	ARG	N-CA-C	5.16	116.98	111.36
33	J	93	VAL	N-CA-C	5.15	116.88	109.51
17	s	2	GLU	N-CA-C	-5.15	107.13	113.41
40	Q	26	CYS	CA-C-N	5.15	124.32	118.97
40	Q	26	CYS	C-N-CA	5.15	124.32	118.97
44	U	75	ILE	N-CA-C	-5.14	106.42	111.77
15	q	112	ALA	N-CA-C	-5.14	105.75	111.36
26	B	9	ARG	N-CA-C	-5.13	105.76	112.23
32	I	56	GLU	N-CA-C	-5.12	105.77	112.23
44	U	62	GLY	N-CA-C	-5.12	108.61	115.32
52	4	669	G	N9-C1'-C2'	5.12	119.68	112.00
23	y	16	THR	N-CA-C	-5.11	105.79	112.23
30	G	4	SER	N-CA-C	5.10	118.94	111.04
16	r	65	ALA	N-CA-C	5.10	116.81	108.76
44	U	76	LYS	N-CA-C	-5.09	107.72	114.04
30	G	112	ARG	N-CA-C	-5.08	106.59	112.89
40	Q	114	SER	N-CA-C	-5.08	105.83	111.36
3	d	17	THR	N-CA-C	-5.08	106.77	113.17
36	M	67	GLY	N-CA-C	-5.07	106.57	113.37
15	q	91	ARG	N-CA-C	5.07	116.50	111.07
3	d	58	LYS	CA-C-N	5.07	126.17	119.84
3	d	58	LYS	C-N-CA	5.07	126.17	119.84
12	n	105	GLY	N-CA-C	5.07	120.29	114.16
32	I	178	GLU	N-CA-C	5.05	118.45	109.96
21	w	34	VAL	N-CA-C	5.05	115.30	107.78
41	R	89	ARG	N-CA-C	-5.04	105.88	112.23
47	X	19	GLU	N-CA-C	-5.04	105.49	111.69
31	H	52	SER	N-CA-C	-5.04	106.82	113.12
16	r	46	GLU	N-CA-C	5.04	117.45	109.24
37	N	80	HIS	N-CA-C	-5.03	107.14	113.28
7	h	79	PRO	N-CA-C	5.03	118.26	111.22
7	h	13	ALA	N-CA-C	-5.02	105.99	111.82
30	G	184	ALA	N-CA-C	5.01	117.17	109.95
46	W	15	GLU	N-CA-C	-5.01	106.68	112.89

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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	2082	0	2157	56	0
2	c	1564	0	1616	42	0
3	d	1551	0	1619	34	0
4	e	1410	0	1447	71	0
5	f	1322	0	1374	41	0
6	g	409	0	429	17	0
7	h	988	0	1025	60	0
8	i	1031	0	1088	52	0
9	j	1128	0	1162	31	0
10	k	938	0	1012	38	0
11	l	1044	0	1117	26	0
12	n	960	0	1000	32	0
13	o	891	0	923	23	0
14	p	916	0	965	23	0
15	q	946	0	1022	26	0
16	r	815	0	839	18	0
17	s	856	0	922	19	0
18	t	738	0	807	16	0
19	u	779	0	834	22	0
20	v	752	0	780	43	0
21	w	574	0	592	16	0
22	x	624	0	655	9	0
23	y	508	0	543	23	0
24	z	448	0	491	13	0
25	A	315	0	318	16	0
26	B	443	0	461	10	0
27	D	376	0	418	16	0
28	E	503	0	574	8	0
29	F	301	0	343	10	0
30	G	1756	0	1787	54	0
31	H	1624	0	1699	54	0
32	I	1642	0	1710	74	0
33	J	1156	0	1199	46	0
34	K	817	0	808	34	0
35	L	1181	0	1240	34	0
36	M	978	0	1034	29	0
37	N	1021	0	1070	48	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	O	786	0	828	37	0
39	P	869	0	878	39	0
40	Q	954	0	1019	37	0
41	R	883	0	944	47	0
42	S	804	0	847	44	0
43	T	713	0	737	10	0
44	U	648	0	666	28	0
45	V	648	0	691	26	0
46	W	535	0	552	12	0
47	X	637	0	665	25	0
48	Y	664	0	714	15	0
49	Z	545	0	579	32	0
50	a	1026	0	1092	34	0
51	3	33012	0	16618	676	0
52	4	64925	0	32667	1192	0
All	All	143036	0	96577	3019	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 13.

All (3019) 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)
52:4:45:G:H5''	52:4:46:G:H5'	1.26	1.16
52:4:138:U:H2'	52:4:139:U:H4'	1.31	1.12
52:4:1024:G:H3'	52:4:1025:G:H2'	1.17	1.12
52:4:283:G:H3'	52:4:284:U:H5''	1.30	1.06
51:3:1378:C:H3'	51:3:1379:G:H5''	1.32	1.05
52:4:906:U:H3'	52:4:907:G:H5''	1.37	1.04
20:v:7:GLU:HG3	20:v:41:GLU:HG3	1.41	1.03
34:K:18:VAL:HG23	34:K:19:PRO:HD3	1.34	1.03
52:4:1233:U:H2'	52:4:1234:G:H5''	1.40	1.02
52:4:1635:C:H2'	52:4:1636:A:H4'	1.41	1.02
52:4:2034:G:H2'	52:4:2035:G:H5''	1.37	1.02
41:R:113:LYS:HG3	41:R:114:PRO:HD3	1.42	1.02
3:d:60:TRP:HB2	3:d:67:ARG:HD3	1.42	1.01
52:4:1304:U:H2'	52:4:1305:G:H5''	1.39	1.00
51:3:405:U:H3'	51:3:406:G:H5'	1.46	0.97
5:f:174:LYS:HD3	52:4:2657:G:H4'	1.46	0.97
51:3:1197:A:H2'	51:3:1198:G:H5''	1.42	0.96
50:a:200:LYS:HE3	50:a:204:ALA:HB3	1.45	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:R:108:ARG:HE	51:3:1308:U:H5'	1.28	0.94
31:H:85:LYS:HA	31:H:88:LYS:HE2	1.48	0.94
42:S:52:ARG:HH21	51:3:1015:G:H5'	1.31	0.94
51:3:112:G:H21	51:3:354:G:H5'	1.31	0.94
52:4:1069:C:H2'	52:4:1070:C:H5''	1.49	0.94
4:e:132:ARG:HH22	52:4:2434:C:H5'	1.29	0.93
52:4:956:G:H2'	52:4:957:C:H2'	1.49	0.92
21:w:39:THR:H	52:4:2459:G:H4'	1.33	0.92
47:X:77:ARG:HD3	51:3:1222:G:H5''	1.52	0.91
52:4:1210:U:H3'	52:4:1211:U:H5''	1.52	0.91
7:h:108:VAL:HG23	7:h:109:LYS:HD2	1.53	0.90
52:4:1935:G:H2'	52:4:1936:A:H5'	1.54	0.90
13:o:33:ARG:HG3	52:4:1118:A:H62	1.37	0.90
1:b:216:ARG:HG2	1:b:217:PRO:HD2	1.54	0.89
33:J:107:GLY:HA3	51:3:9:G:H5'	1.54	0.89
5:f:82:PHE:HB3	5:f:140:ILE:HD13	1.55	0.89
4:e:87:LYS:HD2	52:4:2441:C:H5''	1.54	0.88
32:I:97:LEU:HD11	32:I:124:VAL:HG11	1.56	0.88
52:4:2414:G:H4'	52:4:2415:A:O4'	1.74	0.88
52:4:360:U:H2'	52:4:361:G:C8	2.08	0.88
2:c:151:THR:HB	2:c:152:PRO:HD3	1.55	0.86
42:S:70:HIS:HB3	51:3:974:A:H5'	1.56	0.86
51:3:1197:A:C2'	51:3:1198:G:H5''	2.05	0.86
11:l:77:ILE:HD11	11:l:108:ALA:HB1	1.58	0.85
32:I:152:SER:HB3	51:3:436:C:H4'	1.58	0.85
1:b:16:VAL:HB	1:b:203:VAL:HG22	1.59	0.84
52:4:1050:A:H61	52:4:1131:U:H3'	1.42	0.84
51:3:1306:A:N6	51:3:1331:G:H1'	1.93	0.84
52:4:283:G:H3'	52:4:284:U:C5'	2.07	0.84
52:4:2034:G:C2'	52:4:2035:G:H5''	2.08	0.83
12:n:2:ARG:O	12:n:2:ARG:HD3	1.77	0.83
19:u:71:ILE:H	19:u:71:ILE:HD12	1.43	0.83
52:4:1307:G:O2'	52:4:1308:U:H5'	1.78	0.83
8:i:85:ILE:HD13	8:i:98:GLY:HA3	1.59	0.83
51:3:1033:G:H2'	51:3:1034:G:H4'	1.58	0.83
52:4:1304:U:C2'	52:4:1305:G:H5''	2.08	0.83
2:c:116:LYS:HG3	2:c:165:MET:HE2	1.59	0.83
52:4:2620:U:H3'	52:4:2621:U:H5'	1.60	0.83
1:b:106:PRO:HG2	1:b:109:LEU:HB2	1.58	0.82
52:4:1233:U:C2'	52:4:1234:G:H5''	2.09	0.82
7:h:54:VAL:HG13	52:4:1212:A:H5''	1.60	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:R:64:VAL:HG22	41:R:65:GLU:H	1.44	0.81
10:k:104:THR:HG22	10:k:106:GLU:H	1.44	0.81
41:R:58:GLU:HA	41:R:61:LYS:HE2	1.63	0.81
41:R:24:VAL:HG23	41:R:28:ARG:HB3	1.62	0.81
37:N:16:ALA:HB1	37:N:64:ILE:HD11	1.62	0.80
52:4:1635:C:C2'	52:4:1636:A:H4'	2.10	0.80
51:3:1418:A:H3'	51:3:1419:G:H5''	1.64	0.80
52:4:1773:G:H5''	52:4:1774:C:H5'	1.63	0.80
39:P:124:LYS:HB2	49:Z:34:ARG:HD3	1.62	0.80
51:3:842:U:H2'	51:3:844:G:H5'	1.64	0.79
31:H:175:HIS:ND1	51:3:1108:G:H5'	1.98	0.79
51:3:206:C:H2'	51:3:207:C:H5'	1.62	0.79
51:3:664:G:H22	51:3:741:G:H1	1.27	0.79
32:I:33:ILE:HG13	32:I:34:GLU:HG3	1.63	0.79
51:3:505:G:H5'	51:3:534:U:H2'	1.65	0.79
51:3:1211:U:H4'	51:3:1213:A:H1'	1.65	0.79
52:4:961:C:H2'	52:4:962:G:H5'	1.63	0.79
52:4:1182:A:H61	52:4:1233:U:H3	1.30	0.79
32:I:44:LYS:HD3	32:I:45:PRO:HD2	1.64	0.79
5:f:2:ARG:NH1	52:4:1241:U:H5'	1.96	0.78
13:o:33:ARG:HG3	52:4:1118:A:N6	1.96	0.78
31:H:154:GLY:HA2	51:3:1057:G:H5'	1.63	0.78
52:4:1635:C:H2'	52:4:1636:A:C4'	2.14	0.78
5:f:2:ARG:HH11	52:4:1241:U:H5'	1.45	0.78
33:J:108:GLY:H	51:3:9:G:H4'	1.48	0.78
51:3:980:C:H2'	51:3:981:U:H5'	1.66	0.78
32:I:156:ALA:HA	32:I:159:GLU:HB2	1.63	0.77
30:G:14:HIS:HB2	30:G:39:ILE:HG23	1.65	0.77
42:S:52:ARG:NH2	51:3:1015:G:H5'	1.99	0.77
52:4:906:U:C3'	52:4:907:G:H5''	2.14	0.77
33:J:80:LEU:HD13	33:J:122:VAL:HG11	1.63	0.77
52:4:713:G:H2'	52:4:714:U:H5''	1.67	0.77
52:4:891:G:H2'	52:4:892:A:H8	1.50	0.77
8:i:4:VAL:HG22	8:i:5:GLN:N	2.00	0.77
9:j:81:ILE:H	9:j:81:ILE:HD12	1.50	0.77
52:4:2064:A:H2	52:4:2071:U:H3	1.31	0.77
38:O:43:PRO:HA	51:3:1151:A:H5'	1.66	0.77
31:H:5:HIS:HB2	42:S:88:MET:HE2	1.64	0.77
52:4:2589:A:H61	52:4:2617:U:H3	1.32	0.76
31:H:58:ARG:HG2	31:H:63:ILE:HG22	1.67	0.76
33:J:45:VAL:HG23	33:J:46:GLY:H	1.47	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:216:ARG:HH22	52:4:690:G:H4'	1.51	0.76
12:n:22:ARG:HH22	52:4:2837:G:H5'	1.50	0.76
52:4:2376:C:H2'	52:4:2377:U:H5'	1.67	0.76
31:H:175:HIS:HD1	51:3:1108:G:H5'	1.51	0.76
52:4:1173:C:H5'	52:4:1174:A:H5'	1.68	0.76
52:4:1205:A:H2'	52:4:1206:U:H5'	1.67	0.76
4:e:40:GLY:HA2	4:e:84:ILE:HD11	1.67	0.76
7:h:31:ARG:NH2	7:h:108:VAL:HG22	2.01	0.76
52:4:2927:A:H2'	52:4:2928:A:H5'	1.66	0.75
52:4:275:C:H2'	52:4:276:U:H4'	1.67	0.75
52:4:284:U:H2'	52:4:285:G:C8	2.22	0.75
1:b:221:GLY:HA2	1:b:224:MET:HE3	1.68	0.75
32:I:169:TRP:HA	32:I:183:ARG:HH11	1.52	0.75
35:L:48:THR:HA	35:L:51:GLN:HE21	1.50	0.75
52:4:2575:G:N7	52:4:2631:A:H2'	2.01	0.75
30:G:6:ARG:H	30:G:6:ARG:HD2	1.52	0.75
12:n:28:LEU:HD23	12:n:48:VAL:HG11	1.66	0.75
9:j:26:GLY:HA3	52:4:1268:C:H5'	1.68	0.75
52:4:1303:A:H3'	52:4:1304:U:H5'	1.70	0.74
52:4:2236:A:H5'	52:4:2278:C:H4'	1.67	0.74
51:3:1346:A:O2'	51:3:1347:G:H4'	1.87	0.74
40:Q:35:ARG:H	40:Q:75:GLU:HG2	1.52	0.74
49:Z:9:GLU:HG3	49:Z:10:PRO:HD3	1.70	0.74
52:4:138:U:H2'	52:4:139:U:C4'	2.15	0.74
52:4:1181:C:H2'	52:4:1182:A:H5''	1.69	0.74
4:e:64:PRO:HB3	4:e:88:VAL:HB	1.70	0.73
52:4:355:U:H2'	52:4:356:G:C8	2.23	0.73
4:e:107:VAL:HG12	4:e:108:PRO:HD3	1.70	0.73
31:H:57:GLU:HG3	31:H:59:PRO:HD3	1.70	0.73
51:3:1250:A:H61	51:3:1354:U:H4'	1.54	0.73
49:Z:9:GLU:CG	49:Z:10:PRO:HD3	2.19	0.73
52:4:2473:G:H5'	52:4:2475:C:H5'	1.70	0.73
8:i:29:GLN:CD	52:4:1224:A:H61	1.97	0.73
18:t:11:LEU:HD11	18:t:32:LEU:HD13	1.71	0.73
4:e:3:LEU:HA	4:e:6:TYR:HB3	1.70	0.72
7:h:34:THR:HG22	52:4:1214:A:N7	2.04	0.72
33:J:155:LYS:HG2	36:M:70:VAL:HG13	1.71	0.72
50:a:8:MET:HG3	52:4:2303:C:H5'	1.72	0.72
7:h:34:THR:HG21	52:4:1185:A:H1'	1.72	0.72
23:y:9:LYS:HD3	23:y:10:SER:N	2.05	0.72
52:4:1030:C:H2'	52:4:1154:A:N6	2.05	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:1190:G:C2	52:4:1191:G:H1'	2.24	0.72
47:X:79:TYR:CG	51:3:1226:C:H5'	2.25	0.72
51:3:50:A:H4'	51:3:51:A:H5'	1.70	0.72
52:4:1069:C:C2'	52:4:1070:C:H5''	2.20	0.72
52:4:1269:U:H4'	52:4:1270:A:O4'	1.88	0.72
52:4:2257:C:H2'	52:4:2258:U:H5'	1.70	0.72
45:V:58:VAL:HG23	45:V:60:ILE:HD11	1.70	0.72
47:X:35:ARG:HH12	51:3:1221:G:H5'	1.53	0.72
52:4:1029:G:N7	52:4:1154:A:H3'	2.05	0.72
35:L:9:ARG:HH12	51:3:1377:A:N6	1.88	0.71
52:4:1020:A:H1'	52:4:1021:A:OP2	1.90	0.71
52:4:1985:G:N2	52:4:2012:G:H2'	2.05	0.71
31:H:112:ALA:HB3	31:H:184:ASN:HD22	1.54	0.71
51:3:328:C:H4'	51:3:329:A:H5'	1.71	0.71
52:4:45:G:H5''	52:4:46:G:C5'	2.14	0.71
18:t:14:PRO:HA	18:t:32:LEU:HD23	1.70	0.71
39:P:125:LYS:HG3	39:P:126:ARG:HG2	1.72	0.71
44:U:31:ARG:HB2	51:3:310:G:H5''	1.72	0.71
51:3:149:A:H1'	51:3:1446:A:H2	1.54	0.71
2:c:148:GLN:O	52:4:2180:A:H4'	1.90	0.71
31:H:124:GLU:HG3	31:H:188:ALA:HB1	1.72	0.71
52:4:880:G:H2'	52:4:881:G:C8	2.26	0.70
31:H:42:LEU:HD11	31:H:86:LEU:HD21	1.71	0.70
36:M:10:LEU:HD22	36:M:74:ILE:HD11	1.73	0.70
40:Q:112:ALA:HB2	51:3:503:C:OP2	1.91	0.70
52:4:2810:A:H61	52:4:2856:U:H1'	1.56	0.70
52:4:1181:C:H42	52:4:1234:G:H1	1.39	0.70
42:S:52:ARG:HG2	51:3:1219:A:H5'	1.73	0.70
4:e:107:VAL:CG1	4:e:108:PRO:HD3	2.21	0.70
16:r:49:ILE:HG21	16:r:54:VAL:HA	1.72	0.70
34:K:3:HIS:O	34:K:92:THR:HG22	1.92	0.70
39:P:28:ASN:HB2	39:P:56:LYS:HE2	1.73	0.70
52:4:752:A:H62	52:4:2737:U:H3	1.38	0.70
52:4:958:U:H5''	52:4:959:A:H5'	1.74	0.70
10:k:112:PHE:HB3	10:k:115:ILE:HD12	1.73	0.70
37:N:51:LEU:HB3	37:N:56:MET:HB2	1.73	0.70
51:3:990:C:H2'	51:3:991:U:O4'	1.92	0.70
51:3:1197:A:C3'	51:3:1198:G:H5''	2.22	0.70
52:4:1025:G:H4'	52:4:1026:G:C5'	2.20	0.69
35:L:55:LYS:HB2	35:L:60:ALA:HB2	1.72	0.69
51:3:422:C:H4'	51:3:423:G:C2	2.27	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:h:114:GLU:HG2	7:h:115:GLY:H	1.57	0.69
14:p:63:ILE:HA	14:p:68:GLY:HA2	1.74	0.69
44:U:14:ARG:HG3	44:U:42:ILE:HD11	1.75	0.69
52:4:161:A:H3'	52:4:162:U:H5''	1.75	0.69
19:u:73:ASN:HD22	19:u:76:THR:H	1.37	0.69
51:3:715:A:H2'	51:3:716:A:C8	2.27	0.69
50:a:202:THR:HG22	52:4:2002:C:H4'	1.74	0.69
52:4:2254:A:C8	52:4:2291:A:H1'	2.27	0.69
7:h:59:LEU:HB3	7:h:62:ARG:HG2	1.75	0.69
51:3:1273:C:H2'	51:3:1274:A:O4'	1.93	0.69
51:3:1378:C:H3'	51:3:1379:G:C5'	2.16	0.69
51:3:1418:A:H3'	51:3:1419:G:C5'	2.22	0.69
44:U:42:ILE:HG22	51:3:450:G:H4'	1.74	0.69
51:3:1033:G:C2'	51:3:1034:G:H4'	2.23	0.69
51:3:1127:G:H1	51:3:1145:A:H61	1.39	0.69
17:s:97:LEU:HD23	17:s:97:LEU:H	1.58	0.69
45:V:16:MET:HG3	45:V:19:SER:HB2	1.75	0.69
51:3:1005:A:H2'	51:3:1006:G:O4'	1.93	0.68
52:4:891:G:H2'	52:4:892:A:C8	2.27	0.68
35:L:112:ASP:HB3	35:L:118:ARG:HG3	1.75	0.68
44:U:15:PRO:HD2	44:U:42:ILE:HD13	1.73	0.68
51:3:494:G:H2'	51:3:496:A:H8	1.56	0.68
52:4:948:C:H2'	52:4:949:G:H8	1.59	0.68
31:H:182:ASP:HB2	31:H:201:ILE:HB	1.75	0.68
40:Q:119:LYS:HA	51:3:36:C:H5''	1.75	0.68
39:P:111:ASP:HB3	49:Z:3:ILE:HG13	1.75	0.68
1:b:216:ARG:HG2	1:b:217:PRO:CD	2.24	0.68
52:4:215:G:H4'	52:4:216:A:H4'	1.75	0.68
7:h:5:LEU:O	7:h:9:GLN:HG3	1.93	0.68
33:J:55:VAL:HG13	33:J:56:PRO:HD3	1.75	0.68
52:4:61:C:H2'	52:4:62:U:H5'	1.74	0.68
4:e:135:ILE:HD13	4:e:140:ILE:HG21	1.76	0.68
40:Q:3:VAL:HG23	45:V:33:TYR:HB3	1.76	0.68
52:4:1029:G:H4'	52:4:1030:C:O5'	1.94	0.68
7:h:117:LEU:HD12	7:h:117:LEU:O	1.94	0.68
50:a:205:LYS:HA	52:4:2004:A:H5''	1.76	0.68
51:3:458:U:H2'	51:3:459:A:H8	1.59	0.68
51:3:1305:G:H1'	51:3:1332:A:N6	2.10	0.68
7:h:54:VAL:HG22	7:h:56:ARG:HH21	1.60	0.67
27:D:26:ASN:CG	52:4:682:G:H5'	2.20	0.67
32:I:143:SER:C	32:I:144:ILE:HD12	2.20	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:769:G:H4'	51:3:1513:A:H4'	1.76	0.67
52:4:713:G:C2'	52:4:714:U:H5''	2.24	0.67
52:4:1023:U:H2'	52:4:1024:G:H5'	1.75	0.67
17:s:42:LYS:HB2	52:4:2138:G:H5''	1.76	0.67
24:z:40:THR:HG22	24:z:42:ALA:H	1.59	0.67
31:H:21:TRP:HB3	31:H:58:ARG:H	1.59	0.67
1:b:83:ASP:OD2	1:b:86:ARG:HG2	1.93	0.67
12:n:45:ARG:HD3	12:n:97:ILE:HD11	1.76	0.67
31:H:46:LEU:HA	31:H:49:ALA:HB3	1.77	0.67
40:Q:98:ARG:HB3	40:Q:116:TYR:HA	1.77	0.67
52:4:2406:A:H3'	52:4:2407:G:H5''	1.75	0.67
7:h:118:ILE:H	7:h:119:PRO:HD2	1.58	0.67
11:l:17:LYS:HD3	52:4:663:G:H5''	1.76	0.67
12:n:47:VAL:C	12:n:50:PRO:HD2	2.19	0.67
14:p:52:ARG:HH22	52:4:2848:U:H5''	1.59	0.67
50:a:42:VAL:HG22	50:a:216:THR:HG22	1.77	0.67
52:4:112:U:H2'	52:4:113:U:H5'	1.76	0.67
45:V:59:GLU:HG3	45:V:75:VAL:HB	1.77	0.67
14:p:113:LEU:HD11	51:3:1442:G:H4'	1.76	0.67
20:v:72:VAL:HG12	20:v:93:ARG:HA	1.77	0.67
51:3:59:A:H3'	51:3:331:G:H22	1.59	0.67
52:4:713:G:C3'	52:4:714:U:H5''	2.24	0.67
52:4:864:G:O2'	52:4:865:C:H5'	1.94	0.67
36:M:62:LEU:H	36:M:62:LEU:HD12	1.57	0.67
14:p:4:ILE:O	14:p:8:GLU:HG3	1.94	0.66
37:N:98:ARG:HD2	37:N:103:VAL:HG11	1.75	0.66
52:4:858:G:H5'	52:4:859:G:OP2	1.95	0.66
52:4:1955:U:O2'	52:4:1956:G:H5'	1.95	0.66
52:4:2297:A:C2'	52:4:2298:A:H5'	2.25	0.66
8:i:10:LEU:O	8:i:11:GLN:HB2	1.94	0.66
52:4:2632:U:H5''	52:4:2633:G:O5'	1.95	0.66
52:4:2928:A:H3'	52:4:2929:G:H5'	1.77	0.66
35:L:115:MET:HG2	51:3:1240:U:OP1	1.95	0.66
41:R:22:TYR:CB	41:R:65:GLU:HG3	2.26	0.66
51:3:381:C:H2'	51:3:382:A:O4'	1.96	0.66
13:o:12:THR:HG21	52:4:2462:U:H5'	1.78	0.66
49:Z:5:VAL:HG21	49:Z:16:ARG:HA	1.78	0.66
51:3:90:C:H2'	51:3:91:U:C5	2.31	0.66
33:J:22:LYS:HB3	33:J:29:ILE:HG23	1.77	0.66
38:O:90:LEU:HD12	38:O:90:LEU:O	1.95	0.66
51:3:1296:C:H4'	51:3:1302:C:N4	2.10	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:528:A:C2	52:4:2170:A:H2'	2.30	0.66
52:4:2254:A:H8	52:4:2291:A:H1'	1.59	0.66
7:h:56:ARG:HG2	52:4:1212:A:O2'	1.94	0.66
31:H:8:GLY:HA2	31:H:11:LEU:HD11	1.78	0.66
51:3:1293:C:H2'	51:3:1294:G:C8	2.31	0.66
52:4:704:G:H1'	52:4:727:A:N6	2.11	0.66
31:H:4:VAL:HG22	51:3:1190:G:OP1	1.96	0.66
39:P:44:ALA:HB3	39:P:69:CYS:HB2	1.78	0.66
34:K:6:ILE:N	34:K:6:ILE:HD12	2.11	0.66
52:4:898:C:H2'	52:4:899:A:H5'	1.77	0.66
18:t:69:ARG:NH1	18:t:74:ILE:HD11	2.11	0.65
52:4:1602:U:H2'	52:4:1603:G:O4'	1.97	0.65
4:e:161:SER:HB3	4:e:164:GLU:HG3	1.77	0.65
51:3:1096:C:H2'	51:3:1097:C:C6	2.31	0.65
52:4:877:A:H2	52:4:899:A:H1'	1.61	0.65
4:e:102:LEU:HA	4:e:106:ALA:HB3	1.78	0.65
7:h:33:VAL:HG12	7:h:36:ASP:OD2	1.96	0.65
9:j:82:GLY:HA2	52:4:1259:G:OP1	1.97	0.65
24:z:13:ILE:HD12	52:4:989:G:C8	2.32	0.65
51:3:662:U:H2'	51:3:663:A:C8	2.31	0.65
52:4:394:C:H2'	52:4:395:U:O4'	1.97	0.65
52:4:633:A:H2'	52:4:634:C:H5'	1.78	0.65
4:e:130:GLY:HA3	52:4:2433:U:H5''	1.78	0.65
25:A:13:THR:HG22	25:A:23:LYS:HG2	1.78	0.65
52:4:2186:A:H2'	52:4:2187:A:H5''	1.79	0.65
52:4:2977:U:H4'	52:4:2996:A:C2	2.31	0.65
51:3:1296:C:H4'	51:3:1302:C:H42	1.61	0.65
52:4:1984:U:H2'	52:4:1985:G:O4'	1.97	0.65
34:K:47:LEU:HD13	34:K:51:ILE:HD12	1.78	0.65
13:o:12:THR:CG2	52:4:2462:U:H5'	2.26	0.65
49:Z:3:ILE:HA	49:Z:19:LYS:HG2	1.79	0.65
51:3:673:A:H2'	51:3:674:G:C8	2.31	0.65
52:4:310:A:C2'	52:4:311:A:H5''	2.27	0.65
52:4:995:C:H5'	52:4:995:C:H6	1.62	0.65
3:d:148:ILE:H	3:d:148:ILE:HD12	1.62	0.64
8:i:7:TYR:O	52:4:1226:A:H4'	1.98	0.64
43:T:38:LEU:HD23	43:T:55:LEU:HD13	1.78	0.64
51:3:730:G:H2'	51:3:731:G:H5'	1.79	0.64
52:4:1189:U:H3'	52:4:1190:G:C5'	2.26	0.64
52:4:2313:U:H2'	52:4:2314:G:C8	2.33	0.64
20:v:77:VAL:HG22	20:v:89:ILE:HG23	1.77	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:Q:30:ARG:HG3	51:3:363:A:H5''	1.80	0.64
52:4:1219:G:H2'	52:4:1220:C:C6	2.31	0.64
52:4:2424:U:H5''	52:4:2425:A:OP1	1.97	0.64
11:l:101:ILE:HB	11:l:105:ILE:HG13	1.79	0.64
14:p:26:GLU:HB3	14:p:86:LYS:HE2	1.77	0.64
52:4:961:C:C2'	52:4:962:G:H5'	2.28	0.64
7:h:54:VAL:HG13	52:4:1212:A:C5'	2.28	0.64
41:R:26:LYS:HG2	41:R:27:THR:HG23	1.78	0.64
52:4:774:G:O2'	52:4:775:G:H5''	1.98	0.64
52:4:1901:A:C2'	52:4:1902:C:H5'	2.27	0.64
27:D:7:PRO:HB2	52:4:1437:G:H4'	1.79	0.64
37:N:11:ARG:HA	37:N:105:ARG:HH12	1.62	0.64
52:4:833:A:H2'	52:4:834:G:H8	1.62	0.64
52:4:1495:A:H2'	52:4:1496:G:H5'	1.78	0.64
6:g:25:TYR:O	6:g:30:LEU:HD13	1.97	0.64
52:4:121:G:H4'	52:4:149:A:H5'	1.78	0.64
52:4:2962:G:H2'	52:4:3007:A:N6	2.13	0.64
6:g:11:ASN:ND2	52:4:2223:A:H5'	2.13	0.63
35:L:9:ARG:HH12	51:3:1377:A:H61	1.46	0.63
51:3:530:G:H3'	51:3:531:U:H5''	1.80	0.63
8:i:74:PRO:HA	52:4:1188:U:OP1	1.98	0.63
52:4:677:A:O2'	52:4:2199:A:H5'	1.99	0.63
52:4:704:G:H2'	52:4:726:G:H22	1.61	0.63
52:4:1211:U:H2'	52:4:1213:A:OP2	1.99	0.63
3:d:176:ASP:HB2	3:d:179:SER:HB2	1.80	0.63
11:l:48:ARG:HD3	52:4:666:A:H4'	1.79	0.63
13:o:33:ARG:O	13:o:34:HIS:HB2	1.98	0.63
30:G:32:GLY:HA3	30:G:39:ILE:H	1.62	0.63
9:j:58:ASN:HA	9:j:126:ALA:O	1.98	0.63
41:R:22:TYR:HB2	41:R:65:GLU:HG3	1.80	0.63
51:3:1506:U:O2'	51:3:1507:A:H5'	1.98	0.63
52:4:2257:C:C2'	52:4:2258:U:H5'	2.28	0.63
52:4:2294:U:H5'	52:4:2295:U:OP2	1.97	0.63
4:e:132:ARG:NH2	52:4:2434:C:H5'	2.10	0.63
32:I:187:ARG:HH22	32:I:192:ALA:HA	1.61	0.63
52:4:362:A:H3'	52:4:363:G:H8	1.64	0.63
45:V:18:LYS:HE3	51:3:255:G:H4'	1.79	0.63
10:k:70:ARG:HG2	10:k:76:VAL:HG12	1.80	0.63
14:p:90:ALA:HB2	14:p:112:ARG:HA	1.81	0.63
51:3:715:A:H2'	51:3:716:A:H8	1.62	0.63
51:3:1288:A:N1	51:3:1371:G:H1'	2.14	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:898:C:C3'	52:4:899:A:H5'	2.28	0.63
52:4:1050:A:N6	52:4:1131:U:H3'	2.12	0.63
11:l:135:ILE:HB	11:l:142:ILE:HD11	1.80	0.63
37:N:41:GLU:HG2	51:3:1291:U:C4'	2.28	0.63
40:Q:49:ARG:HG3	40:Q:89:LEU:HD21	1.79	0.63
41:R:113:LYS:CG	41:R:114:PRO:HD3	2.26	0.63
52:4:282:A:H2'	52:4:283:G:C8	2.33	0.63
52:4:1901:A:H2'	52:4:1902:C:H5'	1.80	0.63
51:3:352:C:H4'	51:3:354:G:OP1	1.99	0.62
52:4:644:A:H2'	52:4:645:C:C4'	2.29	0.62
52:4:1185:A:O2'	52:4:1186:U:H5'	1.98	0.62
52:4:1236:U:H2'	52:4:1237:C:C6	2.34	0.62
52:4:2681:G:H3'	52:4:2682:U:H5''	1.80	0.62
7:h:67:THR:N	7:h:68:PRO:HD3	2.14	0.62
9:j:113:PRO:HD2	52:4:558:U:OP1	1.99	0.62
46:W:11:ARG:HD2	51:3:845:A:H1'	1.79	0.62
52:4:2681:G:C3'	52:4:2682:U:H5''	2.29	0.62
2:c:4:LEU:HD13	2:c:101:PHE:CE2	2.34	0.62
38:O:41:PRO:HB3	51:3:1151:A:H1'	1.80	0.62
39:P:123:PRO:HB3	51:3:779:C:H5''	1.82	0.62
47:X:77:ARG:CD	51:3:1222:G:H5''	2.26	0.62
51:3:206:C:C2'	51:3:207:C:H5'	2.30	0.62
52:4:2430:U:H2'	52:4:2431:G:C8	2.35	0.62
30:G:65:LYS:HB3	30:G:153:MET:HE1	1.81	0.62
31:H:64:ARG:HG3	31:H:99:GLN:HB3	1.82	0.62
35:L:12:LEU:HD23	35:L:35:LYS:HZ3	1.65	0.62
35:L:56:SER:H	35:L:60:ALA:HB2	1.64	0.62
41:R:23:GLY:HA2	41:R:68:LEU:HD13	1.81	0.62
52:4:1637:A:H2'	52:4:1638:G:C8	2.34	0.62
19:u:83:GLY:HA3	19:u:96:LYS:HE3	1.80	0.62
21:w:71:LYS:HD2	21:w:73:ARG:HH21	1.64	0.62
52:4:1665:G:H3'	52:4:1665:G:N3	2.15	0.62
52:4:1985:G:H1'	52:4:2013:A:N6	2.14	0.62
52:4:2712:U:H2'	52:4:2713:U:H2'	1.81	0.62
8:i:73:PRO:HB2	8:i:78:LEU:HD13	1.79	0.62
51:3:1404:C:H2'	51:3:1405:G:C8	2.34	0.62
28:E:51:LYS:HA	28:E:54:LEU:HB2	1.81	0.62
29:F:23:ILE:HD13	52:4:1160:A:H1'	1.81	0.62
52:4:898:C:H3'	52:4:899:A:C5'	2.29	0.62
7:h:23:LEU:HD13	7:h:118:ILE:HG12	1.82	0.62
30:G:65:LYS:HB2	30:G:158:ASP:H	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1370:G:O2'	51:3:1371:G:H5'	1.98	0.62
2:c:48:ILE:HG23	2:c:84:LEU:HD11	1.82	0.62
45:V:15:LYS:CD	51:3:275:G:H5'	2.30	0.62
46:W:40:PRO:HG2	46:W:43:ILE:HG12	1.81	0.62
51:3:59:A:N6	51:3:331:G:H1'	2.15	0.62
52:4:904:G:H2'	52:4:905:A:O4'	2.00	0.62
6:g:31:VAL:HG13	6:g:32:PRO:HD3	1.81	0.61
8:i:4:VAL:HG22	8:i:5:GLN:H	1.62	0.61
15:q:23:TYR:CD1	52:4:533:G:H5'	2.35	0.61
29:F:17:VAL:HG21	29:F:26:ILE:HD11	1.82	0.61
36:M:9:MET:HG3	36:M:26:MET:SD	2.40	0.61
39:P:94:SER:HA	39:P:97:ARG:HD3	1.82	0.61
51:3:1237:C:H5''	51:3:1238:A:C8	2.35	0.61
51:3:1250:A:H2	51:3:1353:G:H21	1.46	0.61
51:3:1369:C:H2'	51:3:1370:G:H8	1.65	0.61
8:i:20:SER:HB3	8:i:21:PRO:HD3	1.82	0.61
35:L:75:LYS:HE3	35:L:77:ARG:HB2	1.82	0.61
52:4:871:U:H2'	52:4:872:U:C6	2.35	0.61
52:4:2230:G:H2'	52:4:2231:C:H5'	1.80	0.61
52:4:2588:U:H3	52:4:2618:G:H1	1.48	0.61
7:h:58:THR:HA	7:h:63:ALA:HB3	1.81	0.61
16:r:63:VAL:HG12	16:r:96:VAL:HG22	1.83	0.61
39:P:85:VAL:HG21	39:P:92:ARG:HB2	1.82	0.61
52:4:703:U:H2'	52:4:704:G:O4'	2.01	0.61
52:4:890:C:H2'	52:4:891:G:O4'	2.00	0.61
52:4:1196:G:H2'	52:4:1197:A:O4'	1.99	0.61
4:e:32:LYS:HD3	4:e:91:ARG:NH1	2.16	0.61
5:f:9:VAL:HG22	5:f:48:THR:HG22	1.83	0.61
10:k:76:VAL:H	14:p:72:VAL:HG22	1.65	0.61
30:G:65:LYS:H	30:G:158:ASP:HB2	1.66	0.61
39:P:118:ASN:HB2	51:3:718:A:H5'	1.82	0.61
49:Z:9:GLU:CD	49:Z:10:PRO:HD3	2.25	0.61
52:4:900:A:H2'	52:4:901:C:O4'	2.01	0.61
50:a:48:LEU:HD23	50:a:52:ALA:HB2	1.82	0.61
51:3:1305:G:H1'	51:3:1332:A:H62	1.66	0.61
51:3:1306:A:H62	51:3:1331:G:H1'	1.66	0.61
4:e:119:LYS:HD3	4:e:166:ARG:HH22	1.65	0.61
8:i:14:ALA:HB3	8:i:54:ILE:HD12	1.83	0.61
45:V:52:CYS:SG	45:V:53:GLY:N	2.73	0.61
21:w:38:GLY:HA2	52:4:2458:G:H21	1.65	0.61
23:y:44:LYS:HA	23:y:47:ARG:HH22	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:2157:G:O6	52:4:2160:G:H5''	2.01	0.61
52:4:2314:G:H2'	52:4:2315:U:C6	2.35	0.61
52:4:2988:A:H2'	52:4:2989:U:H5'	1.83	0.61
4:e:139:GLU:HA	25:A:28:VAL:HG22	1.83	0.61
33:J:81:GLN:HG3	33:J:147:ASN:O	2.00	0.61
40:Q:109:ARG:NH1	51:3:537:G:H5''	2.16	0.61
34:K:46:GLN:HA	34:K:56:LYS:HA	1.82	0.61
36:M:88:LYS:HE2	36:M:119:GLY:HA2	1.83	0.61
36:M:102:VAL:HG23	36:M:126:CYS:H	1.65	0.61
46:W:11:ARG:HG3	46:W:14:ALA:HB3	1.82	0.61
49:Z:6:ARG:HG2	49:Z:8:ASN:H	1.66	0.61
50:a:189:LEU:O	50:a:192:LEU:HG	2.00	0.61
52:4:575:A:O2'	52:4:576:U:H5'	2.00	0.61
52:4:905:A:H2'	52:4:906:U:C6	2.35	0.61
52:4:1048:G:H2'	52:4:1049:G:O4'	2.00	0.61
51:3:113:G:H1'	51:3:354:G:H5''	1.82	0.60
51:3:193:C:H2'	51:3:194:C:C6	2.36	0.60
20:v:4:ILE:O	20:v:63:ILE:HG23	2.01	0.60
40:Q:113:ARG:HB2	40:Q:118:VAL:HB	1.83	0.60
52:4:310:A:O2'	52:4:311:A:H5''	2.02	0.60
3:d:56:GLY:HA2	3:d:73:ILE:HG22	1.83	0.60
8:i:10:LEU:HD11	52:4:1198:A:C2	2.36	0.60
8:i:11:GLN:HG3	8:i:12:VAL:H	1.65	0.60
36:M:8:ASP:O	36:M:12:ARG:HG2	2.01	0.60
51:3:1289:A:H3'	51:3:1290:G:H8	1.66	0.60
52:4:195:A:H61	52:4:198:C:H3'	1.66	0.60
52:4:1191:G:O6	52:4:1197:A:H5''	2.00	0.60
52:4:1197:A:C2	52:4:1224:A:H5''	2.36	0.60
52:4:1454:U:H2'	52:4:1455:A:H8	1.66	0.60
51:3:483:C:H2'	51:3:484:G:C8	2.36	0.60
52:4:554:U:H2'	52:4:555:G:O4'	2.01	0.60
41:R:64:VAL:HG22	41:R:65:GLU:N	2.15	0.60
45:V:15:LYS:HD3	51:3:275:G:H5'	1.83	0.60
47:X:79:TYR:CE1	51:3:956:U:H1'	2.37	0.60
51:3:436:C:H2'	51:3:437:U:C6	2.36	0.60
52:4:704:G:H2'	52:4:726:G:N2	2.15	0.60
1:b:86:ARG:HH12	1:b:155:ARG:HH21	1.48	0.60
2:c:51:THR:HB	2:c:79:LEU:HD23	1.84	0.60
8:i:92:PRO:HD2	52:4:1205:A:H4'	1.83	0.60
41:R:108:ARG:NE	51:3:1308:U:H5'	2.10	0.60
52:4:2410:G:H4'	52:4:2517:G:O2'	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:q:87:VAL:HG12	15:q:89:ILE:HG13	1.84	0.60
34:K:36:ILE:H	34:K:36:ILE:HD12	1.66	0.60
34:K:42:TRP:HB3	34:K:45:ARG:HD2	1.83	0.60
52:4:61:C:C2'	52:4:62:U:H5'	2.32	0.60
52:4:1311:U:H2'	52:4:1312:U:C6	2.36	0.60
30:G:6:ARG:HD2	30:G:6:ARG:N	2.17	0.60
47:X:35:ARG:NH1	51:3:1221:G:H5'	2.16	0.60
51:3:1130:A:H61	51:3:1144:G:H1'	1.67	0.60
52:4:1854:C:H2'	52:4:1855:C:C6	2.37	0.60
52:4:2230:G:H1	52:4:2315:U:H3	1.48	0.60
32:I:6:PRO:HB2	32:I:9:LYS:HB3	1.82	0.60
36:M:55:LYS:HE2	51:3:652:U:O2'	2.02	0.60
52:4:1828:A:H2'	52:4:1829:A:H5'	1.84	0.60
52:4:2923:C:H2'	52:4:2924:U:H5'	1.84	0.60
7:h:94:ARG:HA	7:h:97:LYS:HE2	1.84	0.60
29:F:25:VAL:HB	29:F:35:GLN:HG2	1.84	0.60
52:4:654:A:H3'	52:4:654:A:N3	2.17	0.60
52:4:783:A:H2'	52:4:784:G:H5'	1.84	0.60
52:4:1924:U:H2'	52:4:1925:G:H8	1.67	0.60
25:A:13:THR:HA	25:A:23:LYS:HA	1.84	0.59
52:4:192:C:H2'	52:4:193:U:H5'	1.84	0.59
52:4:895:U:H3'	52:4:896:A:H4'	1.82	0.59
52:4:1028:U:H2'	52:4:1029:G:N2	2.17	0.59
52:4:2230:G:C2'	52:4:2231:C:H5'	2.32	0.59
37:N:47:VAL:HG13	37:N:48:ARG:HG3	1.82	0.59
38:O:25:ILE:HA	38:O:28:THR:HG22	1.84	0.59
51:3:1019:A:H2'	51:3:1020:G:O4'	2.03	0.59
52:4:859:G:H1'	52:4:860:U:H5	1.67	0.59
52:4:955:U:H3	52:4:962:G:H1	1.48	0.59
4:e:65:LEU:HD11	52:4:1107:G:C8	2.37	0.59
5:f:163:TYR:HB2	5:f:166:GLU:HB2	1.84	0.59
52:4:2478:C:H2'	52:4:2479:G:O4'	2.02	0.59
5:f:8:VAL:HG23	5:f:49:LEU:HB3	1.84	0.59
7:h:58:THR:HA	7:h:63:ALA:CB	2.32	0.59
8:i:4:VAL:HG23	8:i:7:TYR:H	1.68	0.59
41:R:16:ILE:HG12	51:3:1302:C:C6	2.37	0.59
52:4:340:A:H2'	52:4:341:C:O4'	2.03	0.59
52:4:720:U:H2'	52:4:721:A:C8	2.38	0.59
52:4:1015:U:H2'	52:4:1016:G:C8	2.37	0.59
52:4:1501:A:H5'	52:4:2340:A:H1'	1.83	0.59
52:4:1929:A:H5''	52:4:2331:U:H2'	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:67:THR:HG21	52:4:2440:U:O3'	2.03	0.59
20:v:14:LYS:HB2	52:4:1040:G:H1	1.68	0.59
32:I:40:HIS:HD2	32:I:43:ARG:HE	1.48	0.59
52:4:358:U:H2'	52:4:359:G:C8	2.37	0.59
52:4:760:G:H2'	52:4:761:A:O4'	2.01	0.59
52:4:2871:U:H2'	52:4:2872:G:H5''	1.84	0.59
51:3:212:G:H2'	51:3:213:G:O4'	2.03	0.59
51:3:555:U:H2'	51:3:556:C:C6	2.37	0.59
52:4:956:G:H1'	52:4:960:A:N6	2.16	0.59
52:4:2875:G:O6	52:4:2883:C:H5''	2.02	0.59
12:n:38:LEU:HB3	12:n:39:PRO:HD3	1.83	0.59
32:I:16:THR:HG22	32:I:17:ASP:H	1.68	0.59
33:J:75:LEU:HD13	33:J:78:GLY:H	1.68	0.59
37:N:114:LYS:HZ1	51:3:1187:G:C5'	2.16	0.59
52:4:1634:U:H2'	52:4:1635:C:C6	2.37	0.59
29:F:13:ASN:HB3	29:F:28:SER:HB3	1.84	0.59
45:V:59:GLU:C	45:V:60:ILE:HD12	2.28	0.59
51:3:29:U:O2'	51:3:30:U:H5'	2.02	0.59
51:3:40:C:H2'	51:3:41:G:C8	2.38	0.59
51:3:980:C:C2'	51:3:981:U:H5'	2.31	0.59
52:4:613:A:H3'	52:4:613:A:N3	2.18	0.59
52:4:833:A:H2'	52:4:834:G:C8	2.38	0.59
52:4:959:A:H2'	52:4:960:A:O4'	2.03	0.59
1:b:62:ARG:HG3	1:b:62:ARG:HH11	1.66	0.59
11:l:60:ARG:O	52:4:2521:U:H5'	2.03	0.59
32:I:21:LYS:HG3	51:3:409:U:OP2	2.02	0.59
52:4:1864:U:H2'	52:4:1865:G:O4'	2.02	0.59
52:4:1986:A:H1'	52:4:2013:A:C2	2.38	0.59
52:4:2783:G:O2'	52:4:2784:U:H5	1.86	0.59
4:e:24:VAL:O	4:e:27:VAL:HG12	2.02	0.58
16:r:38:VAL:HG13	16:r:54:VAL:HG23	1.85	0.58
19:u:81:ARG:HG3	19:u:96:LYS:HB2	1.83	0.58
22:x:9:LYS:HE3	22:x:53:LYS:HG2	1.85	0.58
29:F:36:ARG:HD2	52:4:2870:G:OP1	2.03	0.58
34:K:92:THR:OG1	34:K:93:LYS:N	2.32	0.58
48:Y:79:THR:O	48:Y:83:ASN:ND2	2.36	0.58
8:i:4:VAL:CG2	8:i:5:GLN:N	2.65	0.58
37:N:22:PRO:HA	37:N:60:LEU:HG	1.84	0.58
52:4:898:C:H3'	52:4:899:A:H5'	1.84	0.58
52:4:2258:U:C5'	52:4:2287:G:H1	2.16	0.58
9:j:17:VAL:HG23	9:j:137:PRO:HB2	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:K:81:ASN:HB3	34:K:84:VAL:HG12	1.84	0.58
52:4:310:A:H2'	52:4:311:A:H5''	1.85	0.58
52:4:1241:U:H2'	52:4:1242:C:C6	2.38	0.58
7:h:36:ASP:O	7:h:39:THR:HG22	2.03	0.58
51:3:915:A:H2'	51:3:916:U:H5'	1.86	0.58
51:3:1354:U:H2'	51:3:1355:G:H8	1.69	0.58
52:4:226:A:H2'	52:4:227:A:O4'	2.03	0.58
52:4:870:U:O2'	52:4:871:U:H5'	2.03	0.58
52:4:2194:C:O2'	52:4:2195:G:H5'	2.03	0.58
5:f:18:ILE:HD12	5:f:18:ILE:H	1.69	0.58
44:U:5:ARG:HH12	44:U:28:ARG:HA	1.69	0.58
7:h:89:PRO:HG2	7:h:93:ALA:HB3	1.85	0.58
9:j:27:ARG:HH22	52:4:1270:A:H4'	1.67	0.58
30:G:46:VAL:HG23	30:G:47:PRO:HD3	1.86	0.58
38:O:41:PRO:CB	51:3:1151:A:H1'	2.34	0.58
40:Q:5:GLN:HA	40:Q:8:ARG:HH21	1.68	0.58
51:3:90:C:H2'	51:3:91:U:C6	2.38	0.58
51:3:1218:C:H2'	51:3:1219:A:C8	2.38	0.58
52:4:288:U:H2'	52:4:289:G:H8	1.69	0.58
17:s:18:ARG:HE	52:4:518:G:H4'	1.67	0.58
32:I:90:LEU:HD13	32:I:190:LEU:HD11	1.85	0.58
34:K:18:VAL:CG2	34:K:19:PRO:HD3	2.22	0.58
8:i:21:PRO:HB2	8:i:22:PRO:HD3	1.86	0.58
11:l:101:ILE:HG13	11:l:102:GLY:H	1.69	0.58
41:R:27:THR:HG22	41:R:30:LYS:HE2	1.86	0.58
51:3:40:C:H2'	51:3:41:G:H8	1.69	0.58
52:4:718:A:H2'	52:4:719:C:O4'	2.03	0.58
52:4:1239:A:O2'	52:4:1240:G:H4'	2.04	0.58
52:4:2683:U:H2'	52:4:2684:C:H5'	1.86	0.58
30:G:79:VAL:HG22	30:G:213:LEU:HD11	1.86	0.58
44:U:47:GLU:HG3	44:U:48:GLU:HG3	1.84	0.58
50:a:212:VAL:HB	50:a:224:VAL:HB	1.85	0.58
51:3:1369:C:H2'	51:3:1370:G:C8	2.38	0.58
7:h:21:GLY:HA2	7:h:88:HIS:HB3	1.86	0.57
20:v:41:GLU:C	20:v:42:LEU:HD12	2.30	0.57
37:N:11:ARG:HA	37:N:105:ARG:NH1	2.18	0.57
37:N:66:VAL:HG11	37:N:74:GLN:HB3	1.85	0.57
51:3:418:C:H2'	51:3:419:C:C6	2.39	0.57
51:3:1513:A:H2'	51:3:1514:G:C8	2.39	0.57
52:4:49:A:H5'	52:4:51:G:O4'	2.04	0.57
52:4:69:C:O2'	52:4:70:G:H5'	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:1166:G:H2'	52:4:1167:A:H8	1.68	0.57
52:4:1613:U:H2'	52:4:1614:U:C6	2.39	0.57
52:4:2289:C:H3'	52:4:2290:G:H5''	1.86	0.57
52:4:2473:G:N3	52:4:2509:A:H2'	2.19	0.57
6:g:5:LEU:HD22	6:g:9:VAL:HG21	1.84	0.57
32:I:10:LEU:HD21	32:I:62:ARG:HD2	1.85	0.57
37:N:66:VAL:HG22	37:N:74:GLN:HE21	1.68	0.57
38:O:10:LEU:HD23	38:O:10:LEU:H	1.68	0.57
52:4:11:C:H2'	52:4:12:U:H5''	1.86	0.57
52:4:288:U:H2'	52:4:289:G:C8	2.39	0.57
52:4:1122:G:H4'	52:4:1123:A:H8	1.69	0.57
52:4:1522:U:H4'	52:4:1731:A:H4'	1.84	0.57
52:4:1698:A:H2'	52:4:1699:A:C8	2.38	0.57
17:s:18:ARG:NE	52:4:518:G:H4'	2.19	0.57
34:K:42:TRP:HZ2	46:W:23:LYS:HE2	1.68	0.57
41:R:67:ASP:O	41:R:71:GLU:HG3	2.05	0.57
10:k:110:GLU:HA	10:k:113:MET:HE3	1.84	0.57
51:3:211:G:H2'	51:3:212:G:O4'	2.05	0.57
51:3:829:G:O2'	51:3:830:G:H5'	2.05	0.57
51:3:1195:C:H2'	51:3:1197:A:O4'	2.04	0.57
52:4:488:G:N2	52:4:491:G:H5''	2.18	0.57
52:4:2265:U:H2'	52:4:2266:G:C8	2.39	0.57
5:f:148:ARG:HA	5:f:161:VAL:HG13	1.87	0.57
8:i:4:VAL:CG2	8:i:5:GLN:H	2.17	0.57
19:u:6:ARG:O	19:u:24:VAL:HB	2.05	0.57
52:4:2224:C:H2'	52:4:2225:A:C8	2.40	0.57
20:v:64:VAL:HA	20:v:69:GLU:HA	1.87	0.57
45:V:24:ILE:HD12	45:V:43:LEU:HD12	1.87	0.57
51:3:1237:C:H4'	51:3:1300:G:N2	2.18	0.57
52:4:467:G:O2'	52:4:468:G:H5'	2.04	0.57
52:4:581:C:H2'	52:4:582:A:C8	2.39	0.57
52:4:2322:U:H2'	52:4:2323:U:C6	2.39	0.57
4:e:133:GLU:OE1	4:e:133:GLU:N	2.38	0.57
7:h:80:THR:HA	52:4:1235:G:O2'	2.05	0.57
23:y:19:LEU:O	23:y:23:ARG:HB2	2.05	0.57
30:G:156:LEU:HD13	30:G:180:ILE:HD11	1.84	0.57
33:J:23:THR:HA	33:J:28:ARG:HA	1.85	0.57
35:L:75:LYS:HE2	35:L:88:VAL:HG21	1.87	0.57
51:3:189:A:H2'	51:3:190:A:O4'	2.05	0.57
52:4:176:A:O2'	52:4:177:G:H5'	2.04	0.57
34:K:42:TRP:HB2	34:K:59:TYR:HB2	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:R:97:ARG:HB2	41:R:99:GLN:HE22	1.69	0.57
50:a:203:GLN:NE2	52:4:2002:C:H5''	2.19	0.57
52:4:1094:C:H2'	52:4:1095:A:C8	2.40	0.57
52:4:1792:A:H61	52:4:2124:C:H42	1.50	0.57
52:4:1999:A:H2'	52:4:2000:A:O4'	2.04	0.57
52:4:2455:A:H2'	52:4:2456:A:C8	2.40	0.57
52:4:2962:G:H2'	52:4:3007:A:H61	1.69	0.57
4:e:107:VAL:HG22	4:e:113:PHE:CE2	2.40	0.57
31:H:153:SER:OG	51:3:1057:G:H5''	2.04	0.57
37:N:114:LYS:NZ	51:3:1187:G:C5'	2.68	0.57
42:S:2:LYS:HG2	42:S:3:GLN:H	1.69	0.57
43:T:1:SER:O	43:T:2:LEU:HG	2.05	0.57
48:Y:72:ALA:HB1	51:3:186:C:H5'	1.87	0.57
51:3:842:U:H2'	51:3:844:G:C5'	2.33	0.57
51:3:948:C:H2'	51:3:949:A:H8	1.70	0.57
51:3:1069:C:O2'	51:3:1192:C:H1'	2.05	0.57
51:3:1171:A:H2'	51:3:1172:C:C6	2.40	0.57
52:4:948:C:H2'	52:4:949:G:C8	2.37	0.57
52:4:2627:C:H2'	52:4:2628:U:C6	2.40	0.57
14:p:59:THR:HG22	14:p:72:VAL:HG12	1.87	0.57
23:y:9:LYS:HD2	23:y:11:VAL:HG12	1.87	0.57
23:y:44:LYS:HA	23:y:47:ARG:NH2	2.20	0.57
44:U:54:LEU:H	44:U:54:LEU:HD12	1.70	0.57
51:3:321:A:H2'	51:3:322:C:C6	2.40	0.57
51:3:940:C:H2'	51:3:941:G:C8	2.40	0.57
51:3:994:A:C2'	51:3:995:C:H5'	2.35	0.57
51:3:1356:G:H2'	51:3:1357:A:C8	2.40	0.57
52:4:898:C:C2'	52:4:899:A:H5'	2.33	0.57
52:4:1114:U:H2'	52:4:1115:C:C6	2.40	0.57
52:4:2575:G:H5''	52:4:2631:A:N6	2.20	0.57
14:p:102:ARG:NH2	52:4:1882:A:O3'	2.38	0.56
31:H:4:VAL:HG22	51:3:1190:G:P	2.45	0.56
45:V:74:LEU:HD23	45:V:75:VAL:N	2.20	0.56
52:4:1654:C:H2'	52:4:1655:G:O4'	2.05	0.56
52:4:1823:G:H2'	52:4:1824:G:O4'	2.05	0.56
52:4:1907:U:H5	52:4:1912:A:N7	2.03	0.56
52:4:2361:U:H2'	52:4:2362:G:C8	2.40	0.56
51:3:396:C:H2'	51:3:397:A:H5''	1.86	0.56
52:4:441:U:O2'	52:4:442:G:H5'	2.05	0.56
5:f:174:LYS:CD	52:4:2657:G:H4'	2.29	0.56
7:h:38:MET:HG3	52:4:1210:U:H1'	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:s:8:ARG:HE	17:s:102:HIS:CD2	2.23	0.56
19:u:65:GLN:HG3	52:4:328:U:O3'	2.05	0.56
27:D:34:ARG:NE	27:D:42:LEU:O	2.37	0.56
41:R:21:ILE:HB	41:R:24:VAL:HG13	1.87	0.56
41:R:108:ARG:HH21	51:3:1308:U:H5''	1.70	0.56
46:W:26:ALA:HA	46:W:29:LYS:HD3	1.88	0.56
49:Z:6:ARG:C	49:Z:8:ASN:H	2.11	0.56
51:3:1277:C:H2'	51:3:1278:G:H5''	1.87	0.56
52:4:979:A:H2'	52:4:982:C:H42	1.71	0.56
52:4:2927:A:C2'	52:4:2928:A:H5'	2.34	0.56
2:c:30:GLU:OE1	2:c:30:GLU:N	2.38	0.56
16:r:48:LYS:HD3	16:r:49:ILE:N	2.20	0.56
30:G:8:MET:HB3	30:G:13:VAL:HG11	1.87	0.56
51:3:407:U:H2'	51:3:408:A:H8	1.68	0.56
51:3:458:U:H3	51:3:474:G:H1	1.53	0.56
52:4:1215:G:H2'	52:4:1217:A:O4'	2.06	0.56
52:4:2187:A:H2'	52:4:2189:G:OP1	2.05	0.56
23:y:21:LEU:HA	23:y:25:GLN:HB3	1.87	0.56
35:L:56:SER:OG	35:L:59:GLU:HG2	2.06	0.56
44:U:14:ARG:HH12	51:3:618:C:H1'	1.70	0.56
52:4:279:A:H2'	52:4:280:U:H5'	1.87	0.56
52:4:2875:G:H21	52:4:2885:A:H62	1.52	0.56
51:3:458:U:H2'	51:3:459:A:C8	2.41	0.56
52:4:2258:U:H5'	52:4:2287:G:H1	1.68	0.56
52:4:2640:C:H2'	52:4:2641:A:O4'	2.05	0.56
52:4:2901:C:H2'	52:4:2902:C:C6	2.41	0.56
5:f:15:ASP:HB3	5:f:17:LYS:HE2	1.87	0.56
52:4:45:G:C5'	52:4:46:G:H5'	2.18	0.56
52:4:2361:U:H2'	52:4:2362:G:H8	1.71	0.56
52:4:2575:G:H5''	52:4:2631:A:C6	2.41	0.56
8:i:13:ALA:HB3	8:i:16:MET:HB3	1.88	0.56
20:v:60:VAL:HG13	20:v:60:VAL:O	2.06	0.56
23:y:44:LYS:HG3	23:y:47:ARG:HH12	1.70	0.56
37:N:48:ARG:HG2	37:N:56:MET:HE1	1.86	0.56
37:N:83:THR:HG21	37:N:102:PHE:HB3	1.88	0.56
42:S:63:CYS:HB3	42:S:67:GLY:H	1.69	0.56
51:3:200:G:H2'	51:3:201:G:H8	1.71	0.56
51:3:309:A:H2'	51:3:310:G:H8	1.70	0.56
52:4:1029:G:C8	52:4:1154:A:H3'	2.40	0.56
9:j:1:MET:HE1	16:r:13:ARG:HE	1.71	0.56
33:J:63:MET:HG2	33:J:67:ARG:HE	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:707:U:H2'	51:3:708:C:C6	2.41	0.56
51:3:1504:G:OP1	51:3:1507:A:H4'	2.06	0.56
52:4:1309:U:H2'	52:4:1310:G:C8	2.41	0.56
52:4:2009:C:H2'	52:4:2010:U:O4'	2.06	0.56
52:4:2214:U:H2'	52:4:2215:G:C8	2.41	0.56
10:k:109:SER:O	10:k:110:GLU:HG3	2.06	0.56
28:E:31:ILE:O	28:E:34:LYS:HG2	2.05	0.56
49:Z:17:ARG:HH22	51:3:1538:C:H4'	1.71	0.56
51:3:638:U:H2'	51:3:639:G:O4'	2.06	0.56
52:4:2033:C:H4'	52:4:2057:G:H8	1.71	0.56
52:4:2201:C:O2'	52:4:2202:U:H5'	2.06	0.56
52:4:2371:U:H2'	52:4:2372:U:C6	2.40	0.56
10:k:26:GLY:HA3	10:k:30:ARG:HH11	1.70	0.55
39:P:84:MET:HG2	39:P:110:THR:HB	1.88	0.55
42:S:36:SER:HA	42:S:40:ARG:HB2	1.87	0.55
47:X:35:ARG:HD3	51:3:1220:G:H4'	1.87	0.55
51:3:408:A:H2'	51:3:409:U:O4'	2.06	0.55
51:3:979:C:H2'	51:3:980:C:H5'	1.88	0.55
51:3:1202:U:H2'	51:3:1203:C:O4'	2.06	0.55
52:4:1485:C:H2'	52:4:1486:G:O4'	2.05	0.55
9:j:58:ASN:HD21	9:j:128:ASN:HB2	1.71	0.55
11:l:77:ILE:CD1	11:l:108:ALA:HB1	2.35	0.55
26:B:32:THR:HG22	26:B:50:GLY:HA2	1.88	0.55
47:X:49:ALA:HB1	47:X:56:HIS:HB3	1.87	0.55
51:3:493:A:H2'	51:3:494:G:C8	2.41	0.55
51:3:1238:A:H4'	51:3:1336:C:H41	1.71	0.55
52:4:2297:A:H2'	52:4:2298:A:H5'	1.87	0.55
19:u:46:LYS:HE2	52:4:483:A:OP1	2.06	0.55
33:J:148:SER:HB2	33:J:149:PRO:HD2	1.88	0.55
51:3:265:G:H2'	51:3:267:C:H5	1.72	0.55
52:4:729:G:H4'	52:4:763:G:H5'	1.87	0.55
52:4:2366:G:N3	52:4:2366:G:H2'	2.20	0.55
39:P:87:GLY:H	39:P:113:THR:HG22	1.71	0.55
51:3:130:A:O2'	51:3:264:C:H5'	2.06	0.55
51:3:584:G:H2'	51:3:585:G:H8	1.71	0.55
52:4:286:U:H2'	52:4:287:G:C8	2.41	0.55
52:4:2642:U:H2'	52:4:2643:C:C6	2.41	0.55
1:b:42:ARG:N	1:b:42:ARG:HD2	2.22	0.55
22:x:38:TRP:HB2	22:x:45:PHE:CE1	2.41	0.55
51:3:1244:G:H2'	51:3:1245:C:C6	2.41	0.55
52:4:594:U:H2'	52:4:595:C:C6	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:1670:U:O2'	52:4:1671:G:H5'	2.07	0.55
1:b:153:LEU:HD13	1:b:175:LEU:HD21	1.89	0.55
2:c:49:GLN:OE1	2:c:79:LEU:HD13	2.06	0.55
30:G:185:ILE:HG21	30:G:203:ASP:HB3	1.89	0.55
51:3:1497:G:O2'	51:3:1498:U:H5'	2.07	0.55
52:4:1425:C:OP1	52:4:2838:C:H4'	2.07	0.55
52:4:1636:A:H2'	52:4:1637:A:O4'	2.06	0.55
2:c:161:MET:HE1	52:4:2177:G:N2	2.21	0.55
3:d:97:ASN:ND2	3:d:100:MET:SD	2.77	0.55
4:e:30:VAL:HA	4:e:157:THR:HG22	1.89	0.55
4:e:147:ARG:HH21	4:e:149:ARG:HG3	1.72	0.55
51:3:1002:G:H2'	51:3:1003:G:H8	1.72	0.55
51:3:1332:A:H2'	51:3:1333:A:H8	1.72	0.55
52:4:1656:A:H2'	52:4:1657:G:H5'	1.89	0.55
52:4:2623:G:H2'	52:4:2624:C:O4'	2.07	0.55
8:i:109:ALA:HB3	8:i:125:THR:HG22	1.89	0.55
32:l:55:ARG:NH1	51:3:544:G:OP1	2.39	0.55
49:Z:17:ARG:HE	49:Z:20:ARG:HH21	1.55	0.55
52:4:1562:A:H2'	52:4:1563:G:C8	2.42	0.55
52:4:1858:C:H4'	52:4:1859:G:C4	2.41	0.55
52:4:2517:G:H5'	52:4:2518:U:O4'	2.06	0.55
52:4:2627:C:H2'	52:4:2628:U:N1	2.22	0.55
1:b:257:ARG:HD2	1:b:269:ARG:NH2	2.21	0.55
8:i:127:SER:HA	52:4:1208:A:O2'	2.06	0.55
51:3:524:G:H2'	51:3:525:C:C6	2.42	0.55
52:4:1668:G:O2'	52:4:1669:C:H5'	2.07	0.55
21:w:36:GLN:OE1	21:w:40:LYS:N	2.40	0.55
27:D:3:ARG:HH22	27:D:4:THR:HG23	1.72	0.55
49:Z:7:GLU:HB2	49:Z:11:PHE:HB3	1.89	0.55
51:3:20:U:H2'	51:3:21:G:O4'	2.07	0.55
51:3:1346:A:H2'	51:3:1346:A:N3	2.21	0.55
52:4:1037:U:H2'	52:4:1038:G:C8	2.42	0.55
52:4:2380:G:H2'	52:4:2381:G:C8	2.42	0.55
1:b:32:LEU:HD11	1:b:101:ARG:HA	1.88	0.54
1:b:109:LEU:C	1:b:110:LYS:HE2	2.32	0.54
6:g:3:VAL:HA	6:g:39:ALA:HB2	1.89	0.54
18:t:10:VAL:HG13	18:t:11:LEU:H	1.72	0.54
47:X:9:PHE:CG	51:3:1318:A:H4'	2.42	0.54
51:3:530:G:H3'	51:3:531:U:C5'	2.37	0.54
51:3:1033:G:C3'	51:3:1034:G:H4'	2.38	0.54
51:3:1305:G:N2	51:3:1331:G:H2'	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1316:G:H2'	51:3:1317:C:C5'	2.36	0.54
52:4:281:C:H2'	52:4:282:A:C8	2.42	0.54
52:4:558:U:H2'	52:4:559:G:H8	1.73	0.54
52:4:2198:A:H2'	52:4:2199:A:O4'	2.06	0.54
10:k:41:ILE:HD11	10:k:86:LEU:HD21	1.88	0.54
32:I:40:HIS:CD2	32:I:43:ARG:HE	2.25	0.54
50:a:41:SER:HB3	50:a:174:THR:HG21	1.89	0.54
51:3:112:G:N2	51:3:354:G:H5'	2.11	0.54
51:3:560:A:H5'	51:3:566:G:N2	2.22	0.54
51:3:948:C:H2'	51:3:949:A:C8	2.42	0.54
52:4:657:U:H2'	52:4:658:U:C6	2.41	0.54
52:4:1189:U:H3'	52:4:1190:G:H5''	1.90	0.54
52:4:2318:G:H2'	52:4:2319:A:C8	2.43	0.54
7:h:31:ARG:HH21	7:h:108:VAL:HG22	1.71	0.54
8:i:74:PRO:HB3	52:4:1188:U:H5'	1.89	0.54
10:k:64:ARG:HB2	10:k:83:ALA:HB3	1.89	0.54
30:G:169:HIS:HA	30:G:172:ILE:HG12	1.89	0.54
31:H:1:GLY:HA3	51:3:1060:U:H5	1.70	0.54
42:S:47:LEU:HD21	51:3:1317:C:H4'	1.89	0.54
49:Z:48:LYS:HE2	51:3:723:U:H3'	1.88	0.54
51:3:1270:G:H2'	51:3:1271:A:H8	1.72	0.54
52:4:669:G:H2'	52:4:669:G:N3	2.22	0.54
52:4:961:C:C3'	52:4:962:G:H5'	2.38	0.54
52:4:1955:U:C2'	52:4:1956:G:H5'	2.38	0.54
52:4:2002:C:H2'	52:4:2003:G:O4'	2.06	0.54
4:e:114:ARG:HG2	25:A:41:HIS:CE1	2.43	0.54
32:I:201:GLU:HG2	33:J:111:ARG:HH22	1.71	0.54
39:P:63:GLN:HG3	39:P:98:ALA:HB2	1.89	0.54
42:S:84:ARG:HH12	51:3:1059:C:H4'	1.72	0.54
44:U:22:ALA:HB2	44:U:32:PHE:HA	1.90	0.54
50:a:209:ILE:HD12	50:a:209:ILE:N	2.22	0.54
52:4:970:U:H2'	52:4:971:G:C8	2.43	0.54
52:4:1029:G:H1'	52:4:1154:A:C5	2.42	0.54
2:c:81:GLU:HG3	52:4:2764:C:O5'	2.08	0.54
2:c:149:ASN:HB3	52:4:2700:A:OP2	2.08	0.54
2:c:194:PRO:HA	52:4:2808:U:H5'	1.89	0.54
16:r:49:ILE:C	16:r:51:VAL:H	2.16	0.54
31:H:63:ILE:HG12	31:H:96:VAL:HG23	1.89	0.54
35:L:36:SER:HB2	51:3:1290:G:H4'	1.89	0.54
42:S:27:LYS:HD3	51:3:1317:C:OP2	2.08	0.54
44:U:2:VAL:HG23	44:U:65:ALA:HA	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:917:A:H5''	52:4:2396:A:H61	1.72	0.54
52:4:1233:U:C3'	52:4:1234:G:H5''	2.37	0.54
52:4:2253:G:H21	52:4:2301:A:N6	2.04	0.54
51:3:1246:A:H2'	51:3:1247:U:C6	2.43	0.54
52:4:1151:G:H2'	52:4:1152:G:H8	1.73	0.54
52:4:1190:G:OP1	52:4:1198:A:H5''	2.08	0.54
52:4:2368:U:O2'	52:4:2369:A:H5'	2.07	0.54
52:4:2379:G:H1	52:4:2628:U:H3	1.54	0.54
1:b:70:LYS:HG3	1:b:95:TYR:CZ	2.42	0.54
4:e:78:ILE:O	4:e:79:ARG:HD2	2.08	0.54
5:f:88:LEU:HD22	5:f:95:ALA:HB2	1.90	0.54
8:i:105:LEU:HD23	8:i:108:ILE:HD12	1.90	0.54
41:R:29:SER:HB3	41:R:33:LEU:HD13	1.89	0.54
42:S:57:SER:HB2	51:3:979:C:H42	1.72	0.54
42:S:68:ARG:NH2	51:3:973:G:O2'	2.41	0.54
51:3:494:G:O2'	51:3:496:A:H1'	2.07	0.54
52:4:473:G:O2'	52:4:474:G:H5'	2.07	0.54
52:4:1095:A:H2'	52:4:1096:C:C6	2.43	0.54
52:4:2413:C:O2'	52:4:2415:A:H1'	2.06	0.54
52:4:2504:A:H2'	52:4:2505:A:O4'	2.08	0.54
52:4:2575:G:C8	52:4:2631:A:H2'	2.42	0.54
52:4:3027:A:H2'	52:4:3028:A:C8	2.42	0.54
23:y:47:ARG:O	23:y:50:VAL:HG12	2.08	0.54
30:G:183:PHE:HD1	30:G:197:PHE:HB2	1.72	0.54
31:H:171:ARG:HG3	51:3:1107:C:OP1	2.08	0.54
32:I:77:GLU:O	32:I:81:LEU:HD13	2.08	0.54
32:I:109:THR:HG21	51:3:408:A:OP1	2.07	0.54
40:Q:4:ASN:HD22	45:V:35:LYS:HE3	1.73	0.54
41:R:97:ARG:HB2	41:R:99:GLN:NE2	2.23	0.54
51:3:1002:G:H2'	51:3:1003:G:C8	2.43	0.54
51:3:1339:A:H2'	51:3:1340:A:O4'	2.07	0.54
1:b:143:VAL:HB	1:b:153:LEU:HB2	1.90	0.54
5:f:157:LYS:HB3	5:f:159:LYS:HG2	1.89	0.54
19:u:13:LEU:HD11	19:u:70:ALA:HB2	1.89	0.54
32:I:102:TYR:HD2	32:I:110:ARG:HE	1.55	0.54
32:I:115:GLN:HE21	32:I:153:ARG:HH22	1.56	0.54
51:3:936:C:H2'	51:3:937:A:H8	1.72	0.54
1:b:216:ARG:NH2	52:4:690:G:H4'	2.21	0.54
10:k:116:ILE:HG13	10:k:117:SER:N	2.22	0.54
30:G:40:ILE:HG21	30:G:201:GLY:HA2	1.90	0.54
34:K:78:PHE:HA	34:K:84:VAL:HG11	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:N:114:LYS:NZ	51:3:1187:G:H5''	2.22	0.54
42:S:66:THR:HB	51:3:1202:U:O2'	2.07	0.54
43:T:2:LEU:HD12	43:T:2:LEU:O	2.08	0.54
51:3:736:C:H2'	51:3:737:C:C6	2.43	0.54
51:3:1293:C:H2'	51:3:1294:G:H8	1.71	0.54
51:3:1372:U:H2'	51:3:1373:G:O4'	2.08	0.54
52:4:435:C:H2'	52:4:436:C:H5'	1.89	0.54
52:4:912:C:O2'	52:4:913:U:H5'	2.08	0.54
3:d:57:LYS:O	3:d:59:PRO:HD3	2.08	0.53
14:p:52:ARG:H	14:p:56:SER:HB3	1.73	0.53
15:q:94:LEU:HD21	15:q:108:LEU:HD13	1.90	0.53
20:v:64:VAL:HB	20:v:69:GLU:HG2	1.90	0.53
31:H:63:ILE:HG13	31:H:98:ALA:HA	1.90	0.53
32:I:50:TYR:CD2	51:3:508:U:H4'	2.43	0.53
33:J:10:LEU:HD12	33:J:70:MET:HE1	1.91	0.53
38:O:42:LEU:HB3	38:O:71:LEU:O	2.08	0.53
38:O:56:HIS:CD2	51:3:1199:U:H4'	2.42	0.53
52:4:1736:A:H1'	52:4:1738:A:OP2	2.08	0.53
1:b:204:LEU:HB2	52:4:1919:A:H4'	1.89	0.53
7:h:1:MET:HB2	7:h:62:ARG:HH12	1.73	0.53
52:4:2040:A:H62	52:4:2045:U:H3	1.55	0.53
52:4:2728:A:O2'	52:4:2729:C:H5'	2.08	0.53
9:j:2:LYS:HG3	52:4:995:C:N4	2.24	0.53
12:n:36:THR:HG22	12:n:37:THR:H	1.73	0.53
12:n:47:VAL:O	12:n:50:PRO:HD2	2.08	0.53
15:q:15:LYS:NZ	52:4:1355:G:OP2	2.41	0.53
24:z:52:PHE:CD2	52:4:1149:G:H4'	2.44	0.53
26:B:8:THR:CG2	52:4:2148:A:H5'	2.38	0.53
27:D:24:THR:HG23	27:D:27:GLY:H	1.73	0.53
28:E:31:ILE:HD12	28:E:34:LYS:HD3	1.90	0.53
30:G:65:LYS:HB2	30:G:158:ASP:N	2.23	0.53
37:N:67:LYS:HE3	51:3:1128:C:H5''	1.89	0.53
51:3:802:A:H2'	51:3:803:G:O4'	2.07	0.53
51:3:1539:C:O2'	51:3:1540:U:H5'	2.08	0.53
52:4:482:A:H1'	52:4:498:G:N2	2.23	0.53
52:4:2235:G:H2'	52:4:2236:A:O4'	2.08	0.53
5:f:132:LEU:HD12	5:f:132:LEU:O	2.09	0.53
10:k:21:CYS:HA	10:k:41:ILE:HG22	1.89	0.53
12:n:3:HIS:O	12:n:4:ARG:HB2	2.08	0.53
20:v:7:GLU:O	20:v:40:ILE:HG23	2.09	0.53
36:M:62:LEU:HD12	36:M:62:LEU:N	2.22	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:S:79:SER:O	42:S:83:VAL:HG22	2.08	0.53
51:3:1477:U:H2'	51:3:1478:U:C6	2.44	0.53
52:4:2046:A:H2	52:4:2047:A:H62	1.56	0.53
52:4:2675:A:H2'	52:4:2676:U:C6	2.44	0.53
52:4:2764:C:H2'	52:4:2765:U:C6	2.42	0.53
2:c:3:GLY:C	2:c:4:LEU:HD12	2.33	0.53
12:n:29:VAL:HG21	12:n:75:ILE:HG23	1.89	0.53
18:t:30:ILE:HG23	18:t:85:VAL:HB	1.90	0.53
19:u:56:GLY:N	52:4:483:A:O2'	2.42	0.53
30:G:103:TRP:HA	30:G:106:VAL:HG22	1.89	0.53
32:I:152:SER:CB	51:3:436:C:H4'	2.33	0.53
33:J:55:VAL:CG1	33:J:56:PRO:HD3	2.38	0.53
41:R:102:LYS:HG3	51:3:1226:C:C4	2.44	0.53
51:3:70:U:H2'	51:3:94:G:N7	2.24	0.53
52:4:1922:A:H2'	52:4:1923:C:C6	2.43	0.53
4:e:161:SER:HB3	4:e:164:GLU:CG	2.37	0.53
7:h:24:SER:H	7:h:116:GLU:HB2	1.74	0.53
9:j:35:ARG:HA	9:j:40:HIS:CD2	2.44	0.53
30:G:46:VAL:O	30:G:50:ASN:ND2	2.41	0.53
31:H:44:LYS:HB2	31:H:45:GLU:OE2	2.09	0.53
51:3:407:U:H2'	51:3:408:A:C8	2.43	0.53
51:3:748:G:H2'	51:3:749:A:C8	2.44	0.53
51:3:1288:A:H1'	51:3:1353:G:H4'	1.91	0.53
52:4:967:U:H2'	52:4:968:C:C6	2.44	0.53
52:4:2707:C:O2'	52:4:2708:U:H5'	2.08	0.53
10:k:121:GLU:HG2	10:k:122:VAL:HG23	1.90	0.53
18:t:1:MET:HE2	52:4:144:A:H1'	1.89	0.53
18:t:29:THR:HG23	18:t:85:VAL:C	2.34	0.53
32:I:12:ARG:HG2	32:I:33:ILE:HA	1.89	0.53
34:K:5:GLU:HB3	34:K:90:MET:HB2	1.91	0.53
51:3:1330:U:H2'	51:3:1331:G:O4'	2.08	0.53
52:4:78:U:H2'	52:4:79:C:C6	2.43	0.53
52:4:1156:A:N6	52:4:1253:G:H2'	2.24	0.53
52:4:1447:C:O2'	52:4:1448:C:H5'	2.08	0.53
52:4:2126:A:H2'	52:4:2127:C:C6	2.43	0.53
52:4:2190:A:O2'	52:4:2191:C:H5'	2.09	0.53
52:4:2278:C:H2'	52:4:2279:U:H4'	1.91	0.53
52:4:2590:C:H2'	52:4:2591:C:C6	2.44	0.53
5:f:174:LYS:HB3	52:4:2657:G:H5'	1.90	0.53
34:K:11:HIS:CG	34:K:12:PRO:HD2	2.43	0.53
35:L:33:GLY:HA3	51:3:1350:A:H2	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:3:A:H1'	51:3:613:C:H1'	1.91	0.53
51:3:990:C:H2'	51:3:991:U:C1'	2.39	0.53
52:4:971:G:H2'	52:4:972:A:O4'	2.09	0.53
52:4:1811:U:H2'	52:4:1812:G:C8	2.44	0.53
52:4:2916:C:H2'	52:4:2917:C:C6	2.44	0.53
2:c:59:ARG:HH11	52:4:2958:C:H3'	1.73	0.53
13:o:81:ARG:HA	13:o:84:GLU:HB2	1.91	0.53
20:v:73:LYS:HB3	20:v:92:VAL:HG13	1.90	0.53
22:x:17:ARG:NE	22:x:23:ALA:HB2	2.24	0.53
51:3:162:A:H2'	51:3:163:C:H5'	1.91	0.53
51:3:220:G:O2'	51:3:221:C:H5'	2.09	0.53
51:3:1280:A:O2'	51:3:1281:C:H5'	2.09	0.53
52:4:706:A:H2'	52:4:707:G:O4'	2.09	0.53
52:4:1304:U:C3'	52:4:1305:G:H5''	2.38	0.53
4:e:65:LEU:HD11	52:4:1107:G:H8	1.74	0.53
8:i:74:PRO:HG3	52:4:1188:U:H5'	1.91	0.53
15:q:23:TYR:CE1	52:4:533:G:H5'	2.43	0.53
19:u:10:VAL:HG12	19:u:71:ILE:HA	1.90	0.53
41:R:6:ILE:HG23	41:R:7:ASN:H	1.74	0.53
51:3:956:U:H2'	51:3:957:U:O4'	2.09	0.53
52:4:1570:U:H2'	52:4:1571:U:C6	2.44	0.53
2:c:129:THR:HG22	52:4:2125:C:P	2.50	0.52
3:d:122:GLU:OE2	3:d:123:LYS:HG2	2.09	0.52
11:l:62:PRO:HB2	28:E:29:ARG:HH11	1.74	0.52
13:o:80:GLU:O	13:o:84:GLU:HG3	2.09	0.52
36:M:80:PRO:HG2	51:3:878:A:H5''	1.90	0.52
50:a:202:THR:CG2	52:4:2002:C:H4'	2.39	0.52
51:3:390:U:H2'	51:3:391:G:H8	1.74	0.52
51:3:660:C:H2'	51:3:661:G:O4'	2.09	0.52
52:4:877:A:C2	52:4:899:A:H1'	2.41	0.52
52:4:906:U:H3'	52:4:907:G:C5'	2.25	0.52
52:4:1811:U:H2'	52:4:1812:G:H8	1.74	0.52
4:e:28:PRO:O	4:e:168:LEU:HD21	2.08	0.52
25:A:15:SER:HA	25:A:21:VAL:HG22	1.91	0.52
33:J:105:ILE:HD11	33:J:123:LEU:HG	1.90	0.52
39:P:110:THR:HG22	39:P:111:ASP:H	1.74	0.52
51:3:392:C:H2'	51:3:393:A:H8	1.74	0.52
52:4:1180:C:H2'	52:4:1181:C:C5	2.44	0.52
52:4:2437:A:H2'	52:4:2438:C:H5'	1.91	0.52
8:i:44:LYS:HD2	8:i:70:THR:OG1	2.09	0.52
20:v:10:LYS:HD2	20:v:11:GLU:N	2.24	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:I:27:ILE:HD12	32:I:29:THR:HG21	1.92	0.52
32:I:150:LYS:HA	32:I:155:LYS:HB3	1.92	0.52
43:T:56:LEU:HA	43:T:59:VAL:HG22	1.91	0.52
51:3:748:G:H2'	51:3:749:A:H8	1.73	0.52
51:3:932:C:H2'	51:3:933:G:H8	1.74	0.52
51:3:936:C:H1'	51:3:1382:C:H42	1.75	0.52
51:3:977:A:H3'	51:3:977:A:N3	2.24	0.52
51:3:1266:G:H2'	51:3:1268:G:OP2	2.08	0.52
52:4:2444:G:H2'	52:4:2445:A:C8	2.44	0.52
7:h:1:MET:HB2	7:h:62:ARG:NH1	2.25	0.52
10:k:12:ASP:OD2	10:k:14:SER:HB3	2.09	0.52
30:G:131:LYS:HD2	51:3:1160:G:OP1	2.09	0.52
37:N:32:ARG:HD3	37:N:36:GLN:HB2	1.91	0.52
51:3:358:U:H2'	51:3:359:G:H8	1.73	0.52
52:4:275:C:H3'	52:4:276:U:H5''	1.90	0.52
52:4:323:C:H2'	52:4:1333:A:N1	2.25	0.52
52:4:1834:C:C2	52:4:1885:A:H5'	2.44	0.52
52:4:2152:G:OP2	52:4:2162:U:H4'	2.09	0.52
52:4:2323:U:O2'	52:4:2324:C:H5'	2.10	0.52
52:4:2826:U:H2'	52:4:2827:C:C6	2.43	0.52
30:G:167:HIS:HB3	30:G:168:GLU:OE1	2.10	0.52
34:K:36:ILE:HD12	34:K:36:ILE:N	2.25	0.52
35:L:94:ARG:NH2	51:3:938:A:O2'	2.43	0.52
36:M:37:ASN:O	36:M:41:GLU:HG2	2.09	0.52
48:Y:66:ILE:HG21	48:Y:70:LYS:HB3	1.91	0.52
51:3:81:A:H61	51:3:85:U:H1'	1.75	0.52
52:4:271:G:H1'	52:4:272:A:C8	2.44	0.52
52:4:1025:G:H4'	52:4:1026:G:H5'	1.90	0.52
52:4:2489:G:O2'	52:4:2490:C:H5'	2.10	0.52
7:h:81:LEU:HD13	52:4:1234:G:HO2'	1.75	0.52
12:n:22:ARG:NH2	52:4:2837:G:H5'	2.23	0.52
20:v:80:HIS:HB3	20:v:83:LYS:O	2.09	0.52
24:z:36:GLU:O	24:z:37:ARG:NH1	2.43	0.52
40:Q:77:SER:HB2	40:Q:102:ASP:OD2	2.08	0.52
52:4:63:A:O2'	52:4:64:A:H5'	2.09	0.52
52:4:1765:A:H5'	52:4:1888:C:O2'	2.08	0.52
3:d:163:ASN:HB2	52:4:322:A:OP2	2.10	0.52
44:U:14:ARG:NH1	51:3:618:C:H1'	2.25	0.52
52:4:1156:A:H2'	52:4:1157:A:C8	2.45	0.52
52:4:1386:U:H2'	52:4:1387:G:C8	2.44	0.52
52:4:1872:A:H3'	52:4:1873:A:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:2415:A:O2'	52:4:2416:A:H2'	2.10	0.52
52:4:2505:A:O2'	52:4:2506:A:H5'	2.10	0.52
4:e:13:LYS:HA	4:e:16:MET:HE3	1.92	0.52
10:k:1:MET:HB2	52:4:1793:A:H1'	1.91	0.52
10:k:92:GLU:O	10:k:93:GLN:C	2.52	0.52
16:r:53:PHE:O	16:r:54:VAL:C	2.53	0.52
16:r:63:VAL:O	16:r:63:VAL:HG23	2.09	0.52
17:s:55:ILE:O	17:s:59:GLU:HG2	2.10	0.52
31:H:56:ILE:HD12	31:H:65:VAL:HG12	1.91	0.52
33:J:101:GLY:H	33:J:121:ASN:HD22	1.57	0.52
51:3:437:U:H2'	51:3:438:U:O4'	2.10	0.52
51:3:501:C:H2'	51:3:502:A:C8	2.44	0.52
51:3:620:C:H2'	51:3:621:A:O4'	2.10	0.52
51:3:1414:U:H2'	51:3:1415:G:H8	1.75	0.52
52:4:893:C:H2'	52:4:894:U:O4'	2.10	0.52
52:4:1028:U:H3'	52:4:1029:G:H5''	1.92	0.52
52:4:1155:A:H2	52:4:2615:G:HO2'	1.55	0.52
52:4:1181:C:C2'	52:4:1182:A:H5''	2.37	0.52
52:4:1701:G:H2'	52:4:1702:C:H5'	1.92	0.52
52:4:2888:C:O2'	52:4:2889:A:H5'	2.09	0.52
6:g:30:LEU:HB3	6:g:36:ALA:HB3	1.91	0.52
7:h:114:GLU:HG2	7:h:115:GLY:N	2.23	0.52
12:n:100:CYS:H	12:n:111:ALA:HA	1.74	0.52
20:v:75:GLN:HB3	20:v:90:ASP:O	2.09	0.52
39:P:96:ILE:HA	39:P:99:LEU:HB2	1.91	0.52
40:Q:7:VAL:HG13	40:Q:8:ARG:HD3	1.91	0.52
51:3:144:G:H2'	51:3:145:G:O4'	2.09	0.52
51:3:1275:A:H61	51:3:1283:U:H4'	1.75	0.52
51:3:1513:A:H2'	51:3:1514:G:H8	1.72	0.52
52:4:112:U:C2'	52:4:113:U:H5'	2.40	0.52
52:4:596:U:H2'	52:4:597:G:H8	1.75	0.52
52:4:787:C:H5''	52:4:788:A:H5'	1.91	0.52
52:4:1067:U:H2'	52:4:1068:G:C8	2.45	0.52
52:4:1190:G:H2'	52:4:1191:G:O4'	2.08	0.52
52:4:1202:G:H4'	52:4:2602:U:H4'	1.90	0.52
52:4:2946:U:H2'	52:4:2947:G:H8	1.74	0.52
11:l:111:ILE:HD12	52:4:627:A:N7	2.25	0.52
13:o:33:ARG:O	13:o:34:HIS:CB	2.57	0.52
15:q:25:GLY:O	15:q:29:ARG:NH1	2.43	0.52
21:w:20:LYS:HG3	52:4:2483:G:H4'	1.91	0.52
33:J:73:VAL:HG21	33:J:143:LEU:HB3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:M:102:VAL:HG23	36:M:125:ILE:HB	1.92	0.52
37:N:21:LYS:HD3	37:N:22:PRO:HD2	1.92	0.52
38:O:59:LYS:HE3	38:O:62:ARG:HH21	1.75	0.52
47:X:33:TRP:HB2	51:3:1014:A:H1'	1.92	0.52
52:4:1446:U:H2'	52:4:1447:C:C6	2.45	0.52
52:4:1722:U:H2'	52:4:1723:C:C6	2.45	0.52
52:4:1914:A:H1'	52:4:2066:A:N6	2.25	0.52
52:4:2860:G:O2'	52:4:2861:A:H5'	2.09	0.52
52:4:2976:G:O2'	52:4:2995:G:N2	2.38	0.52
4:e:42:ALA:HB1	4:e:49:LEU:HD11	1.92	0.51
7:h:119:PRO:HB3	7:h:126:LEU:HD11	1.92	0.51
8:i:110:GLN:HA	8:i:113:ALA:HB3	1.92	0.51
37:N:6:TYR:OH	37:N:17:ARG:HG2	2.11	0.51
51:3:880:C:H2'	51:3:881:G:H8	1.75	0.51
51:3:1218:C:H2'	51:3:1219:A:H8	1.75	0.51
52:4:230:G:O2'	52:4:231:A:H5'	2.10	0.51
52:4:804:A:H2'	52:4:806:C:C4	2.46	0.51
52:4:1718:A:H2'	52:4:1719:A:C8	2.46	0.51
52:4:1872:A:H3'	52:4:1873:A:H8	1.75	0.51
52:4:2476:U:O2'	52:4:2477:G:H5'	2.09	0.51
1:b:260:LYS:HA	1:b:263:ASP:OD2	2.08	0.51
5:f:136:ASP:OD2	5:f:138:GLN:HB3	2.11	0.51
32:I:180:THR:OG1	32:I:181:PHE:N	2.42	0.51
41:R:22:TYR:HB3	41:R:65:GLU:HG3	1.91	0.51
51:3:66:A:H4'	51:3:173:U:C5	2.45	0.51
51:3:701:U:H4'	51:3:703:G:H1'	1.91	0.51
52:4:679:C:H2'	52:4:680:C:C6	2.46	0.51
52:4:1057:A:H2'	52:4:1058:G:C8	2.46	0.51
52:4:1656:A:C2'	52:4:1657:G:H5'	2.40	0.51
52:4:1699:A:H2'	52:4:1700:A:C8	2.45	0.51
52:4:2343:C:H2'	52:4:2344:G:H8	1.74	0.51
52:4:2425:A:N1	52:4:2449:U:H5	2.08	0.51
4:e:109:ARG:HD3	4:e:136:ILE:O	2.08	0.51
9:j:31:GLU:HG2	9:j:142:ILE:HG12	1.93	0.51
12:n:63:ARG:HD2	52:4:1582:C:O4'	2.10	0.51
24:z:40:THR:HG23	24:z:41:PRO:HD2	1.91	0.51
31:H:149:LYS:HB3	31:H:200:TRP:HB2	1.92	0.51
51:3:580:C:H2'	51:3:581:G:O4'	2.10	0.51
3:d:43:THR:O	52:4:38:A:H1'	2.09	0.51
19:u:85:ARG:HG3	19:u:94:PHE:CE1	2.44	0.51
37:N:105:ARG:HD2	51:3:1117:A:H4'	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:U:44:SER:H	44:U:46:LYS:HE3	1.74	0.51
51:3:185:U:H2'	51:3:186:C:C6	2.46	0.51
51:3:939:G:H21	51:3:1375:A:H2	1.57	0.51
51:3:1436:U:H2'	51:3:1437:A:C8	2.46	0.51
52:4:2225:A:H2'	52:4:2226:U:H6	1.76	0.51
1:b:62:ARG:HG3	1:b:62:ARG:NH1	2.26	0.51
4:e:39:VAL:HG22	4:e:84:ILE:O	2.11	0.51
10:k:58:LEU:N	10:k:58:LEU:HD23	2.25	0.51
40:Q:21:PRO:HD2	40:Q:94:TYR:OH	2.10	0.51
50:a:168:ASN:HB2	50:a:170:ILE:HG12	1.93	0.51
51:3:41:G:H2'	51:3:42:G:C8	2.45	0.51
51:3:130:A:H1'	51:3:264:C:O4'	2.10	0.51
51:3:1042:A:C2'	51:3:1043:G:H5'	2.41	0.51
52:4:742:A:H2'	52:4:743:A:C8	2.46	0.51
52:4:1379:C:O2'	52:4:1380:G:H3'	2.10	0.51
52:4:1938:A:H2'	52:4:1939:G:O4'	2.10	0.51
3:d:170:ARG:NH2	3:d:176:ASP:OD2	2.44	0.51
4:e:29:ARG:H	4:e:158:THR:HG22	1.76	0.51
15:q:30:VAL:HB	15:q:33:VAL:HG22	1.93	0.51
33:J:148:SER:OG	33:J:151:MET:HG2	2.10	0.51
40:Q:82:ARG:HG2	40:Q:95:HIS:O	2.10	0.51
41:R:28:ARG:HD3	51:3:1328:C:O2'	2.10	0.51
51:3:539:A:H2'	51:3:540:G:H8	1.76	0.51
51:3:940:C:H4'	51:3:1374:A:H2	1.76	0.51
51:3:991:U:O2'	51:3:993:G:H1'	2.10	0.51
51:3:1010:U:H2'	51:3:1011:C:C6	2.46	0.51
52:4:639:U:H2'	52:4:640:C:C6	2.46	0.51
52:4:1386:U:H2'	52:4:1387:G:H8	1.75	0.51
2:c:151:THR:HB	2:c:152:PRO:CD	2.35	0.51
3:d:163:ASN:OD1	52:4:323:C:H5''	2.10	0.51
12:n:35:LYS:HG2	12:n:110:MET:HE3	1.93	0.51
21:w:55:LEU:HD13	21:w:76:ILE:HD12	1.92	0.51
30:G:46:VAL:N	30:G:47:PRO:HD2	2.26	0.51
32:I:193:ASP:OD1	32:I:194:ILE:HD12	2.11	0.51
45:V:60:ILE:HG22	45:V:72:TRP:HE3	1.75	0.51
52:4:547:A:H3'	52:4:547:A:N3	2.26	0.51
52:4:581:C:H2'	52:4:582:A:H8	1.76	0.51
52:4:1046:A:H2'	52:4:1047:G:O4'	2.11	0.51
52:4:1495:A:C2'	52:4:1496:G:H5'	2.41	0.51
52:4:1918:C:H2'	52:4:1919:A:C5	2.45	0.51
52:4:2224:C:H2'	52:4:2225:A:H8	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:2442:A:H2'	52:4:2443:G:H8	1.76	0.51
15:q:48:ASP:HA	15:q:51:GLN:HB2	1.91	0.51
30:G:89:PHE:CZ	30:G:153:MET:HA	2.46	0.51
49:Z:17:ARG:HA	49:Z:20:ARG:HG2	1.91	0.51
50:a:196:LEU:HA	50:a:199:ALA:HB3	1.92	0.51
51:3:868:C:H2'	51:3:869:G:O4'	2.10	0.51
52:4:488:G:H22	52:4:491:G:H5''	1.76	0.51
52:4:1214:A:H3'	52:4:1214:A:N3	2.25	0.51
52:4:1472:U:H3'	52:4:1473:C:H5'	1.92	0.51
52:4:2620:U:H3'	52:4:2621:U:C5'	2.37	0.51
52:4:2766:G:H1'	52:4:2906:A:H61	1.76	0.51
1:b:3:VAL:HG12	1:b:17:LYS:O	2.11	0.51
2:c:2:ILE:HD13	2:c:90:PHE:CE2	2.46	0.51
8:i:75:ALA:HB1	8:i:128:ILE:HG23	1.93	0.51
10:k:41:ILE:HD11	10:k:86:LEU:CD2	2.41	0.51
15:q:91:ARG:HD3	52:4:997:G:OP1	2.11	0.51
37:N:79:ARG:HH22	37:N:106:ASP:HB2	1.76	0.51
38:O:38:GLY:O	38:O:40:ILE:HD12	2.11	0.51
41:R:108:ARG:HH21	51:3:1308:U:C5'	2.24	0.51
45:V:60:ILE:HD12	45:V:60:ILE:N	2.26	0.51
49:Z:16:ARG:O	49:Z:20:ARG:HG2	2.11	0.51
52:4:580:U:H2'	52:4:581:C:C6	2.46	0.51
52:4:1231:A:N3	52:4:1231:A:H2'	2.26	0.51
2:c:161:MET:HE1	52:4:2177:G:H21	1.75	0.51
3:d:48:THR:HG23	3:d:88:ARG:HH12	1.76	0.51
5:f:25:ILE:HG22	5:f:78:VAL:HG21	1.93	0.51
37:N:55:ASP:HB2	37:N:59:LYS:HB2	1.92	0.51
47:X:10:ILE:HA	47:X:37:SER:HA	1.93	0.51
51:3:513:C:H2'	51:3:514:C:C6	2.46	0.51
51:3:710:G:O2'	51:3:711:G:H5'	2.11	0.51
19:u:39:ASN:HB3	19:u:62:ALA:HB3	1.94	0.50
30:G:160:LEU:O	30:G:182:VAL:HG23	2.11	0.50
31:H:171:ARG:CG	31:H:173:PRO:HD3	2.42	0.50
37:N:17:ARG:NH2	51:3:1129:C:H5''	2.27	0.50
40:Q:74:GLN:O	40:Q:76:HIS:N	2.44	0.50
40:Q:77:SER:HB2	40:Q:102:ASP:CG	2.36	0.50
51:3:197:A:C6	51:3:221:C:H4'	2.46	0.50
51:3:757:U:H2'	51:3:758:C:O4'	2.11	0.50
52:4:297:G:H2'	52:4:298:G:O4'	2.11	0.50
52:4:1023:U:C2'	52:4:1024:G:H5'	2.40	0.50
52:4:2343:C:H2'	52:4:2344:G:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:2587:A:H61	52:4:2619:U:H3	1.60	0.50
52:4:2682:U:H2'	52:4:2683:U:C6	2.45	0.50
6:g:2:GLN:NE2	6:g:20:ASN:HB2	2.26	0.50
7:h:30:SER:HA	7:h:81:LEU:HD23	1.93	0.50
12:n:97:ILE:HG12	12:n:113:ILE:HD13	1.93	0.50
27:D:14:ARG:HD2	52:4:771:G:OP1	2.10	0.50
31:H:11:LEU:H	31:H:11:LEU:HD12	1.76	0.50
44:U:46:LYS:HG3	44:U:47:GLU:H	1.75	0.50
50:a:172:HIS:HE2	52:4:2250:U:HO2'	1.58	0.50
51:3:882:C:O2'	51:3:883:C:H5'	2.11	0.50
52:4:310:A:O2'	52:4:311:A:H2'	2.11	0.50
52:4:534:U:H2'	52:4:535:G:C8	2.46	0.50
52:4:1231:A:H5''	52:4:1232:C:C5	2.45	0.50
52:4:1303:A:C3'	52:4:1304:U:H5'	2.40	0.50
52:4:1514:C:H2'	52:4:1515:A:C8	2.47	0.50
52:4:2643:C:H2'	52:4:2644:A:H8	1.76	0.50
1:b:176:ARG:NH2	52:4:1948:U:H5	2.08	0.50
7:h:33:VAL:HG22	7:h:34:THR:H	1.76	0.50
28:E:31:ILE:HD11	52:4:2519:G:C5'	2.41	0.50
33:J:37:VAL:HG11	33:J:113:VAL:HG22	1.93	0.50
50:a:48:LEU:HG	50:a:50:ILE:H	1.76	0.50
51:3:67:C:H2'	51:3:68:G:C8	2.46	0.50
52:4:404:A:H1'	52:4:406:G:C4	2.45	0.50
52:4:420:C:O2'	52:4:421:C:H5'	2.11	0.50
52:4:1024:G:C6	52:4:1025:G:C6	2.99	0.50
52:4:1268:C:H2'	52:4:1269:U:H5'	1.92	0.50
52:4:1537:U:H2'	52:4:1538:G:C8	2.46	0.50
52:4:1562:A:H2'	52:4:1563:G:H8	1.75	0.50
52:4:1924:U:H2'	52:4:1925:G:C8	2.47	0.50
52:4:2392:C:H2'	52:4:2393:U:O4'	2.12	0.50
52:4:2687:C:O2'	52:4:2688:A:H5'	2.10	0.50
2:c:102:ALA:HA	2:c:180:VAL:HG21	1.93	0.50
19:u:85:ARG:NH2	19:u:87:GLU:OE2	2.44	0.50
23:y:9:LYS:O	23:y:13:GLU:HG2	2.10	0.50
30:G:67:LEU:HD22	30:G:157:PRO:HG3	1.93	0.50
35:L:102:TRP:O	35:L:103:ILE:HG13	2.11	0.50
51:3:411:A:H1'	51:3:413:G:H1'	1.93	0.50
51:3:1001:C:H2'	51:3:1002:G:C8	2.47	0.50
51:3:1260:G:H4'	51:3:1284:C:H5'	1.93	0.50
51:3:1270:G:H2'	51:3:1271:A:C8	2.47	0.50
52:4:215:G:C4'	52:4:216:A:H4'	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:740:C:H42	52:4:757:G:H1	1.60	0.50
52:4:2345:G:O2'	52:4:2346:G:H5'	2.11	0.50
52:4:2871:U:C3'	52:4:2872:G:H5''	2.42	0.50
33:J:107:GLY:HA2	51:3:8:A:H1'	1.92	0.50
48:Y:55:PRO:HB3	51:3:193:C:H4'	1.93	0.50
51:3:494:G:H2'	51:3:496:A:C8	2.43	0.50
51:3:1342:C:H2'	51:3:1343:G:H8	1.76	0.50
51:3:1499:A:O2'	51:3:1520:C:H5'	2.12	0.50
52:4:974:G:H2'	52:4:974:G:N3	2.27	0.50
52:4:1030:C:H2'	52:4:1030:C:O2	2.12	0.50
52:4:1969:U:H2'	52:4:1970:G:H8	1.77	0.50
52:4:2283:U:H2'	52:4:2284:G:H5'	1.93	0.50
52:4:2969:C:H2'	52:4:2970:G:C8	2.46	0.50
1:b:48:ILE:HD11	1:b:51:ARG:HA	1.93	0.50
11:l:14:LYS:O	11:l:16:GLY:N	2.44	0.50
19:u:42:LYS:HE2	52:4:499:U:H5''	1.93	0.50
27:D:12:ARG:NE	27:D:44:VAL:HG21	2.26	0.50
34:K:50:PRO:HD2	46:W:73:HIS:HB3	1.93	0.50
37:N:114:LYS:NZ	51:3:1187:G:H5'	2.27	0.50
51:3:424:G:H2'	51:3:425:G:H8	1.75	0.50
51:3:891:U:O2'	51:3:892:A:H5'	2.11	0.50
51:3:1282:C:H2'	51:3:1283:U:C6	2.46	0.50
52:4:534:U:H2'	52:4:535:G:H8	1.76	0.50
52:4:1972:C:H2'	52:4:1973:G:H8	1.76	0.50
52:4:2666:C:H2'	52:4:2667:C:C6	2.47	0.50
1:b:165:ALA:HB3	1:b:172:THR:OG1	2.12	0.50
2:c:121:THR:HG21	2:c:143:PRO:HB3	1.94	0.50
17:s:73:LYS:HB2	17:s:106:VAL:HB	1.93	0.50
18:t:6:ARG:NH2	18:t:37:ASP:OD2	2.45	0.50
20:v:12:GLN:HB3	52:4:1142:G:P	2.52	0.50
20:v:48:MET:SD	20:v:85:LYS:HA	2.52	0.50
41:R:6:ILE:HG23	41:R:7:ASN:N	2.26	0.50
45:V:46:HIS:HB2	45:V:70:LYS:HD2	1.93	0.50
47:X:80:ARG:HG2	51:3:956:U:H4'	1.93	0.50
50:a:208:TYR:HB3	50:a:209:ILE:HD12	1.93	0.50
51:3:49:U:O2'	51:3:50:A:H2'	2.12	0.50
52:4:1295:C:H2'	52:4:1296:G:C8	2.47	0.50
1:b:86:ARG:HH12	1:b:155:ARG:NH2	2.08	0.50
5:f:54:ARG:HG2	5:f:55:ASP:H	1.75	0.50
30:G:119:GLN:HB2	30:G:125:PHE:CZ	2.47	0.50
50:a:200:LYS:HE3	50:a:204:ALA:CB	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1003:G:H21	51:3:1005:A:H5'	1.76	0.50
51:3:1328:C:H2'	51:3:1329:A:H8	1.76	0.50
52:4:1837:U:O2'	52:4:2987:G:H1'	2.11	0.50
52:4:1901:A:N7	52:4:1957:A:H1'	2.26	0.50
52:4:2445:A:H2'	52:4:2446:G:O4'	2.11	0.50
13:o:90:VAL:O	13:o:117:PHE:HB3	2.11	0.50
22:x:30:PRO:HG2	22:x:32:LEU:HG	1.94	0.50
23:y:11:VAL:HA	23:y:14:LEU:HB2	1.93	0.50
31:H:124:GLU:HG2	31:H:190:THR:HG22	1.93	0.50
49:Z:5:VAL:HG22	49:Z:18:PHE:HB2	1.94	0.50
51:3:603:U:H2'	51:3:604:G:H8	1.76	0.50
52:4:2225:A:H2'	52:4:2226:U:C6	2.46	0.50
52:4:2665:U:H2'	52:4:2666:C:C6	2.47	0.50
4:e:121:PHE:HE2	4:e:166:ARG:HE	1.60	0.49
7:h:26:VAL:HG22	7:h:27:VAL:N	2.27	0.49
10:k:92:GLU:O	10:k:93:GLN:O	2.30	0.49
31:H:71:ARG:NH1	31:H:73:GLY:H	2.10	0.49
42:S:2:LYS:O	42:S:6:LYS:HG3	2.11	0.49
42:S:78:LEU:HD13	42:S:82:LYS:HG3	1.93	0.49
52:4:1295:C:H2'	52:4:1296:G:H8	1.75	0.49
52:4:1428:G:H4'	52:4:1429:A:C5'	2.42	0.49
52:4:2210:A:H2'	52:4:2211:G:O4'	2.12	0.49
52:4:2313:U:H2'	52:4:2314:G:H8	1.76	0.49
9:j:85:LYS:HE2	9:j:85:LYS:HA	1.94	0.49
35:L:9:ARG:NH1	51:3:1377:A:N6	2.59	0.49
51:3:955:U:H2'	51:3:956:U:O4'	2.12	0.49
51:3:1342:C:H2'	51:3:1343:G:C8	2.47	0.49
51:3:1413:A:H2	51:3:1487:G:H22	1.60	0.49
52:4:2036:C:H2'	52:4:2037:C:C6	2.47	0.49
5:f:2:ARG:HH11	52:4:1241:U:C5'	2.18	0.49
7:h:18:VAL:HG22	7:h:70:GLU:HG2	1.93	0.49
8:i:86:LYS:O	8:i:86:LYS:HD3	2.12	0.49
14:p:105:LYS:O	14:p:108:ARG:HD3	2.13	0.49
20:v:6:ALA:HB3	20:v:65:VAL:HA	1.93	0.49
34:K:3:HIS:H	34:K:92:THR:CG2	2.25	0.49
37:N:114:LYS:HZ1	51:3:1187:G:H5'	1.78	0.49
49:Z:3:ILE:HG23	49:Z:4:LYS:HG3	1.93	0.49
51:3:390:U:H2'	51:3:391:G:C8	2.48	0.49
51:3:539:A:H2'	51:3:540:G:C8	2.47	0.49
51:3:692:U:H2'	51:3:694:A:OP2	2.12	0.49
52:4:796:C:H2'	52:4:797:G:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:1413:A:H2'	52:4:1414:A:H5'	1.94	0.49
1:b:143:VAL:HG21	1:b:161:VAL:HG21	1.94	0.49
2:c:32:ASN:HB3	2:c:50:VAL:HG11	1.93	0.49
8:i:74:PRO:HG3	52:4:1188:U:C5'	2.42	0.49
30:G:125:PHE:CE1	30:G:136:ARG:HD3	2.47	0.49
45:V:6:THR:C	45:V:7:LEU:HD12	2.37	0.49
47:X:42:ASN:OD1	47:X:43:MET:HG3	2.12	0.49
51:3:1109:C:H2'	51:3:1110:A:O4'	2.12	0.49
51:3:1456:A:H2'	51:3:1457:G:O4'	2.12	0.49
52:4:278:A:N3	52:4:278:A:H3'	2.27	0.49
52:4:1568:U:H2'	52:4:1569:G:C8	2.47	0.49
52:4:2285:G:O2'	52:4:2286:A:H5'	2.11	0.49
52:4:2981:C:H2'	52:4:2982:G:H8	1.78	0.49
6:g:8:LYS:O	6:g:9:VAL:HB	2.11	0.49
12:n:73:ASN:HA	12:n:76:VAL:HG22	1.95	0.49
13:o:7:ARG:HA	13:o:10:ARG:NH2	2.28	0.49
22:x:39:VAL:HA	22:x:63:ILE:HD12	1.95	0.49
44:U:38:PHE:CE1	44:U:51:ARG:HB2	2.47	0.49
46:W:59:LYS:HD3	51:3:734:G:O2'	2.11	0.49
51:3:219:U:H2'	51:3:220:G:C8	2.47	0.49
51:3:452:A:H61	51:3:480:U:H3	1.60	0.49
51:3:605:U:O2'	51:3:606:G:H5'	2.12	0.49
51:3:1256:A:H1'	51:3:1258:G:C4	2.46	0.49
52:4:741:U:H2'	52:4:742:A:H8	1.76	0.49
52:4:1210:U:H3'	52:4:1211:U:C5'	2.35	0.49
52:4:1973:G:O2'	52:4:1974:G:H5'	2.12	0.49
52:4:2150:U:O2'	52:4:2745:U:H5'	2.12	0.49
5:f:148:ARG:HA	5:f:161:VAL:CG1	2.43	0.49
7:h:105:LYS:HG2	7:h:106:PHE:HD1	1.77	0.49
41:R:65:GLU:O	41:R:69:ARG:HG3	2.12	0.49
42:S:66:THR:HG22	51:3:1203:C:H4'	1.94	0.49
48:Y:65:LEU:HB3	48:Y:66:ILE:HD12	1.94	0.49
49:Z:11:PHE:O	49:Z:13:VAL:HG12	2.12	0.49
50:a:8:MET:HG3	52:4:2303:C:C5'	2.39	0.49
51:3:34:C:H2'	51:3:35:G:C8	2.48	0.49
51:3:475:C:H2'	51:3:476:U:C6	2.46	0.49
51:3:1003:G:N2	51:3:1005:A:H5'	2.28	0.49
52:4:1307:G:C2'	52:4:1308:U:H5'	2.41	0.49
52:4:1905:U:O2'	52:4:1906:U:H5'	2.13	0.49
52:4:1935:G:C2'	52:4:1936:A:H5'	2.36	0.49
52:4:2084:U:H2'	52:4:2085:C:H5'	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:2708:U:H2'	52:4:2709:G:H5'	1.94	0.49
52:4:2833:A:H2'	52:4:2834:A:O4'	2.13	0.49
4:e:134:GLN:HE22	4:e:148:VAL:HA	1.78	0.49
15:q:2:ARG:HD2	52:4:1376:G:C2	2.48	0.49
19:u:27:VAL:HG12	19:u:33:VAL:HG22	1.94	0.49
19:u:48:VAL:N	19:u:53:GLN:OE1	2.46	0.49
34:K:91:ARG:HG3	34:K:92:THR:H	1.78	0.49
35:L:102:TRP:C	35:L:103:ILE:HG13	2.37	0.49
42:S:7:ALA:HB1	51:3:994:A:O2'	2.12	0.49
44:U:73:ALA:HA	44:U:76:LYS:HB2	1.94	0.49
51:3:584:G:H2'	51:3:585:G:C8	2.48	0.49
51:3:1354:U:H2'	51:3:1355:G:C8	2.47	0.49
51:3:1424:U:H2'	51:3:1425:U:O4'	2.12	0.49
52:4:1281:C:H2'	52:4:1282:G:O4'	2.12	0.49
52:4:2709:G:H4'	52:4:2710:G:C8	2.48	0.49
10:k:78:ARG:NH2	14:p:70:GLU:OE2	2.39	0.49
14:p:64:SER:O	14:p:66:GLY:N	2.45	0.49
31:H:106:ARG:O	31:H:108:PRO:HD3	2.13	0.49
33:J:104:ILE:O	33:J:104:ILE:HG23	2.12	0.49
51:3:663:A:H5'	51:3:836:G:OP1	2.11	0.49
51:3:842:U:H5''	51:3:846:G:C6	2.48	0.49
51:3:1237:C:H4'	51:3:1300:G:H22	1.78	0.49
52:4:699:A:H2'	52:4:700:G:O4'	2.13	0.49
52:4:828:U:H4'	52:4:831:G:N1	2.27	0.49
52:4:1673:A:H2'	52:4:1674:G:O4'	2.13	0.49
52:4:2500:U:H2'	52:4:2501:G:C8	2.47	0.49
3:d:29:HIS:NE2	11:l:8:PRO:HD3	2.27	0.49
8:i:120:ASP:HB2	8:i:123:ALA:H	1.77	0.49
14:p:24:THR:OG1	14:p:87:ARG:HB2	2.13	0.49
17:s:65:ASP:HB2	17:s:68:ASP:HB3	1.94	0.49
18:t:51:PHE:O	18:t:52:GLU:HG2	2.13	0.49
24:z:3:THR:HB	24:z:36:GLU:CD	2.38	0.49
31:H:46:LEU:HD11	31:H:67:ILE:HD13	1.94	0.49
34:K:44:ARG:HD2	34:K:56:LYS:HB3	1.94	0.49
39:P:15:VAL:O	39:P:78:ILE:HG13	2.12	0.49
39:P:108:ASN:HB3	49:Z:6:ARG:NH1	2.28	0.49
48:Y:43:LYS:HB2	48:Y:86:ALA:HB3	1.93	0.49
51:3:576:C:H3'	51:3:577:G:H5''	1.95	0.49
51:3:825:A:H2'	51:3:826:C:C6	2.48	0.49
51:3:1119:C:O2'	51:3:1120:C:H5'	2.13	0.49
52:4:1851:G:H2'	52:4:1852:G:O4'	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:94:LEU:HD13	1:b:100:ARG:HG2	1.95	0.49
9:j:80:HIS:CD2	52:4:2770:G:H5'	2.48	0.49
21:w:33:ILE:HD11	21:w:78:ILE:HD11	1.94	0.49
32:I:148:ALA:O	32:I:154:VAL:HG11	2.13	0.49
32:I:149:LYS:HE2	32:I:177:MET:HG2	1.95	0.49
39:P:47:GLY:HA3	51:3:689:C:OP2	2.13	0.49
49:Z:56:ALA:O	49:Z:60:ALA:HB3	2.13	0.49
50:a:50:ILE:HD12	50:a:57:GLN:HB3	1.95	0.49
51:3:79:G:H2'	51:3:80:A:O4'	2.12	0.49
51:3:213:G:H3'	51:3:214:C:C5	2.48	0.49
51:3:448:A:H3'	51:3:449:G:C8	2.48	0.49
51:3:946:A:H2'	51:3:947:G:H8	1.78	0.49
51:3:1042:A:H2'	51:3:1043:G:H5'	1.94	0.49
52:4:162:U:O2'	52:4:163:C:H5'	2.12	0.49
52:4:1060:C:H2'	52:4:1061:A:C8	2.47	0.49
52:4:1182:A:N6	52:4:1233:U:H3	2.05	0.49
52:4:2900:C:H2'	52:4:2901:C:C6	2.48	0.49
20:v:83:LYS:HD3	20:v:85:LYS:HD2	1.95	0.48
24:z:45:GLY:HA3	52:4:851:C:O2'	2.12	0.48
32:I:48:SER:O	32:I:52:VAL:HG13	2.13	0.48
32:I:94:GLU:HA	32:I:99:ASN:HD22	1.78	0.48
39:P:124:LYS:O	39:P:124:LYS:HD2	2.13	0.48
40:Q:4:ASN:O	40:Q:7:VAL:HG12	2.12	0.48
42:S:29:ILE:HD12	42:S:29:ILE:H	1.77	0.48
49:Z:24:LYS:HD3	49:Z:24:LYS:N	2.28	0.48
49:Z:66:ARG:HG3	51:3:1167:A:C6	2.48	0.48
52:4:1982:A:H2'	52:4:1983:U:H5'	1.95	0.48
52:4:2394:A:H4'	52:4:2395:A:N3	2.28	0.48
7:h:56:ARG:HH22	7:h:83:ALA:HB2	1.78	0.48
14:p:52:ARG:NH2	52:4:2848:U:H5''	2.26	0.48
17:s:26:GLY:O	17:s:27:LYS:HG3	2.12	0.48
34:K:92:THR:C	34:K:94:HIS:H	2.21	0.48
37:N:74:GLN:OE1	51:3:1249:C:H4'	2.13	0.48
38:O:49:PHE:HZ	42:S:75:LYS:HG3	1.76	0.48
51:3:70:U:H5''	51:3:71:A:OP1	2.13	0.48
51:3:149:A:H1'	51:3:1446:A:C2	2.41	0.48
52:4:745:G:H2'	52:4:746:U:H5'	1.94	0.48
52:4:1013:C:H2'	52:4:1014:A:H8	1.76	0.48
40:Q:49:ARG:HH22	51:3:522:C:H41	1.61	0.48
51:3:745:G:H5'	51:3:851:G:H21	1.78	0.48
51:3:900:A:H2'	51:3:901:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:383:C:H5''	52:4:385:C:OP2	2.14	0.48
52:4:2708:U:C2'	52:4:2709:G:H5'	2.43	0.48
52:4:2989:U:H2'	52:4:2990:G:H8	1.77	0.48
5:f:106:LEU:HD13	5:f:151:ARG:HB2	1.95	0.48
10:k:1:MET:HG2	10:k:67:LYS:HG2	1.94	0.48
38:O:23:ALA:O	38:O:27:GLU:HG3	2.14	0.48
39:P:80:ASN:HA	39:P:105:ARG:HB3	1.96	0.48
42:S:87:ALA:HA	42:S:92:ILE:HD13	1.96	0.48
2:c:148:GLN:HB2	2:c:152:PRO:HG2	1.94	0.48
2:c:150:GLN:NE2	52:4:2700:A:N7	2.62	0.48
4:e:132:ARG:NH2	52:4:2433:U:O2'	2.46	0.48
6:g:8:LYS:HA	6:g:15:LEU:HG	1.95	0.48
7:h:81:LEU:HD13	52:4:1234:G:O2'	2.14	0.48
11:l:111:ILE:HD12	52:4:627:A:C5	2.48	0.48
20:v:26:PHE:HE1	20:v:44:HIS:HA	1.77	0.48
26:B:10:SER:O	26:B:14:MET:HG2	2.13	0.48
30:G:44:LYS:C	30:G:47:PRO:HD2	2.39	0.48
34:K:38:ARG:NH2	34:K:40:GLU:OE1	2.47	0.48
36:M:2:MET:HE3	36:M:5:PRO:HA	1.94	0.48
36:M:11:THR:HG21	51:3:876:C:H1'	1.96	0.48
40:Q:69:GLU:HG2	40:Q:70:GLY:H	1.77	0.48
46:W:36:GLY:O	46:W:62:ARG:NH2	2.47	0.48
51:3:17:U:H2'	51:3:18:C:C6	2.48	0.48
51:3:181:A:N6	51:3:194:C:H2'	2.28	0.48
51:3:1434:A:H2'	51:3:1435:G:O4'	2.14	0.48
52:4:1069:C:C3'	52:4:1070:C:H5''	2.43	0.48
52:4:1406:C:H2'	52:4:1407:G:H8	1.78	0.48
52:4:1428:G:H4'	52:4:1429:A:H5''	1.94	0.48
52:4:2603:C:C2'	52:4:2604:A:H5'	2.43	0.48
52:4:2603:C:H2'	52:4:2604:A:H5'	1.96	0.48
3:d:199:MET:HG3	3:d:200:LEU:HD12	1.96	0.48
5:f:122:ALA:HB2	5:f:132:LEU:HB3	1.94	0.48
11:l:30:THR:O	11:l:33:ARG:HG2	2.14	0.48
11:l:93:ASN:O	11:l:94:THR:OG1	2.28	0.48
27:D:26:ASN:ND2	52:4:682:G:H5'	2.29	0.48
30:G:79:VAL:HA	30:G:213:LEU:HD13	1.94	0.48
37:N:45:MET:O	37:N:49:GLN:HG3	2.13	0.48
46:W:25:ILE:HD13	46:W:66:LEU:HB3	1.96	0.48
49:Z:65:ARG:O	49:Z:65:ARG:HG2	2.13	0.48
51:3:178:C:O2'	51:3:179:A:H5'	2.14	0.48
51:3:229:U:H2'	51:3:230:G:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1488:G:O2'	51:3:1489:G:H5'	2.12	0.48
52:4:882:G:H2'	52:4:883:G:C8	2.48	0.48
52:4:1624:A:H2'	52:4:1626:C:N4	2.28	0.48
52:4:2232:C:H2'	52:4:2233:U:C2	2.49	0.48
11:l:20:GLY:O	11:l:21:ARG:NH2	2.43	0.48
13:o:68:LYS:HA	13:o:102:ARG:HG2	1.96	0.48
20:v:35:GLU:HB3	20:v:93:ARG:CZ	2.44	0.48
31:H:168:ARG:NH2	31:H:170:GLY:O	2.44	0.48
34:K:29:ILE:HG22	34:K:34:GLY:HA3	1.94	0.48
40:Q:30:ARG:HB2	51:3:363:A:OP2	2.13	0.48
51:3:9:G:O2'	51:3:10:A:H5'	2.13	0.48
51:3:76:G:O2'	51:3:77:A:H5'	2.14	0.48
51:3:424:G:H2'	51:3:425:G:C8	2.48	0.48
52:4:164:C:H2'	52:4:165:A:H5'	1.96	0.48
52:4:895:U:H3'	52:4:896:A:C5'	2.44	0.48
52:4:2221:G:N7	52:4:2353:A:H2'	2.28	0.48
4:e:32:LYS:HD3	4:e:91:ARG:CZ	2.44	0.48
9:j:26:GLY:HA3	52:4:1268:C:C5'	2.41	0.48
17:s:11:ARG:NH2	52:4:1450:A:H5'	2.29	0.48
23:y:26:PHE:HD1	23:y:29:ARG:HH11	1.61	0.48
30:G:16:GLY:H	30:G:202:ASN:HB2	1.79	0.48
32:I:131:ILE:HG23	51:3:403:C:OP1	2.14	0.48
32:I:194:ILE:HD12	32:I:194:ILE:H	1.78	0.48
36:M:28:SER:HB2	36:M:56:PRO:HB2	1.96	0.48
51:3:51:A:H4'	51:3:52:C:H5''	1.95	0.48
51:3:151:A:H2'	51:3:152:A:O4'	2.14	0.48
51:3:1086:U:O5'	51:3:1086:U:H6	1.96	0.48
51:3:1158:C:H2'	51:3:1159:U:H4'	1.96	0.48
52:4:154:U:H2'	52:4:155:A:C8	2.48	0.48
52:4:1277:G:H2'	52:4:1278:C:C6	2.49	0.48
52:4:2409:A:O2'	52:4:2410:G:H5'	2.14	0.48
52:4:3003:C:H2'	52:4:3004:G:C8	2.49	0.48
5:f:16:VAL:HG12	5:f:18:ILE:HD11	1.95	0.48
38:O:6:ILE:HB	38:O:76:ILE:HB	1.95	0.48
51:3:708:C:O2'	51:3:709:U:H5'	2.13	0.48
51:3:730:G:C2'	51:3:731:G:H5'	2.44	0.48
51:3:981:U:H2'	51:3:982:U:C5	2.48	0.48
52:4:596:U:H2'	52:4:597:G:C8	2.49	0.48
52:4:893:C:C2'	52:4:894:U:H5'	2.44	0.48
52:4:996:A:H2'	52:4:997:G:H8	1.78	0.48
52:4:2232:C:H2'	52:4:2233:U:N1	2.29	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:3026:U:H2'	52:4:3027:A:C8	2.49	0.48
3:d:146:VAL:HG22	3:d:147:LEU:N	2.29	0.48
6:g:40:THR:OG1	6:g:43:ASN:ND2	2.45	0.48
21:w:14:ALA:HB1	52:4:2399:G:OP1	2.13	0.48
31:H:111:ASP:HB3	31:H:114:LEU:HB2	1.96	0.48
33:J:81:GLN:CD	33:J:148:SER:HA	2.39	0.48
50:a:5:THR:HG21	52:4:2256:G:O2'	2.13	0.48
51:3:166:U:H2'	51:3:167:A:C8	2.49	0.48
51:3:707:U:H2'	51:3:708:C:H6	1.79	0.48
51:3:1118:U:H2'	51:3:1119:C:C6	2.49	0.48
51:3:1138:G:H3'	51:3:1138:G:N3	2.29	0.48
52:4:37:C:H4'	52:4:451:U:OP1	2.14	0.48
52:4:356:G:H2'	52:4:357:C:C6	2.48	0.48
52:4:1267:G:O2'	52:4:1268:C:H5'	2.13	0.48
14:p:91:VAL:HG21	14:p:96:LEU:HD11	1.96	0.47
14:p:92:ARG:HD3	52:4:1881:G:H5''	1.96	0.47
19:u:40:LEU:HA	19:u:60:LYS:O	2.14	0.47
32:I:20:LEU:O	32:I:21:LYS:C	2.56	0.47
32:I:84:ASN:HB3	32:I:87:GLU:HB2	1.96	0.47
33:J:22:LYS:HG3	51:3:1081:A:H5'	1.95	0.47
36:M:80:PRO:HG2	51:3:878:A:C5'	2.44	0.47
41:R:73:SER:HA	41:R:76:ILE:HG12	1.94	0.47
51:3:59:A:H3'	51:3:331:G:N2	2.28	0.47
52:4:419:U:H2'	52:4:420:C:C6	2.49	0.47
52:4:1094:C:H2'	52:4:1095:A:H8	1.79	0.47
52:4:1703:C:O2'	52:4:1704:U:H5'	2.14	0.47
52:4:1705:C:H2'	52:4:1706:U:O4'	2.13	0.47
52:4:1972:C:H2'	52:4:1973:G:C8	2.48	0.47
52:4:2494:A:H2'	52:4:2495:G:O4'	2.14	0.47
1:b:86:ARG:NH1	1:b:155:ARG:HH21	2.11	0.47
5:f:26:LYS:NZ	5:f:27:GLY:O	2.47	0.47
13:o:116:GLN:O	13:o:117:PHE:HB3	2.14	0.47
51:3:462:G:H2'	51:3:463:U:H5'	1.96	0.47
51:3:467:U:H2'	51:3:468:A:H5'	1.96	0.47
51:3:1114:C:H2'	51:3:1115:U:O4'	2.13	0.47
51:3:1291:U:H2'	51:3:1292:G:C8	2.48	0.47
51:3:1316:G:H2'	51:3:1317:C:H5''	1.95	0.47
52:4:2385:U:O2'	52:4:2386:C:H5'	2.14	0.47
1:b:93:VAL:HG22	1:b:94:LEU:N	2.30	0.47
3:d:188:MET:SD	3:d:193:VAL:HG22	2.54	0.47
5:f:140:ILE:HG13	5:f:141:GLY:N	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:y:39:GLN:HG3	23:y:41:HIS:HE1	1.79	0.47
35:L:13:PRO:HA	35:L:23:ALA:HB1	1.96	0.47
41:R:18:LEU:HD22	41:R:33:LEU:HD11	1.97	0.47
41:R:33:LEU:HB3	41:R:38:ILE:HB	1.96	0.47
42:S:5:MET:SD	51:3:981:U:OP1	2.72	0.47
49:Z:48:LYS:CE	51:3:723:U:H6	2.27	0.47
51:3:986:U:H3	51:3:1219:A:H61	1.62	0.47
51:3:1004:A:H5''	51:3:1025:U:O2	2.14	0.47
51:3:1265:C:C2'	51:3:1266:G:H5'	2.44	0.47
52:4:1498:C:H2'	52:4:1499:G:O4'	2.13	0.47
52:4:1903:U:H2'	52:4:1904:G:H5'	1.96	0.47
52:4:2127:C:H2'	52:4:2128:C:C6	2.49	0.47
4:e:134:GLN:HE21	4:e:145:VAL:HG11	1.78	0.47
9:j:116:ARG:O	9:j:120:ARG:HG3	2.15	0.47
17:s:3:THR:OG1	17:s:107:VAL:HG23	2.13	0.47
30:G:120:SER:HB3	30:G:125:PHE:CD2	2.49	0.47
45:V:29:LYS:HB2	45:V:36:PHE:CE1	2.50	0.47
51:3:871:U:H5''	51:3:872:A:OP2	2.14	0.47
51:3:994:A:H2'	51:3:995:C:H5'	1.96	0.47
51:3:1320:C:H2'	51:3:1321:U:C6	2.49	0.47
52:4:900:A:O2'	52:4:901:C:H5'	2.15	0.47
52:4:1575:C:H2'	52:4:1576:G:C8	2.50	0.47
52:4:2147:A:H2	52:4:2163:G:H22	1.62	0.47
52:4:2756:C:O2'	52:4:2909:A:H2'	2.14	0.47
5:f:18:ILE:HD12	5:f:18:ILE:N	2.29	0.47
38:O:14:ASP:OD2	38:O:17:LEU:HB2	2.13	0.47
44:U:18:GLN:O	44:U:20:VAL:HG13	2.14	0.47
50:a:42:VAL:HA	50:a:216:THR:HA	1.95	0.47
51:3:213:G:H3'	51:3:214:C:H5	1.78	0.47
51:3:946:A:H2'	51:3:947:G:C8	2.50	0.47
52:4:754:U:H2'	52:4:755:U:C6	2.50	0.47
52:4:968:C:H2'	52:4:969:G:H8	1.80	0.47
52:4:1280:C:H2'	52:4:1281:C:H6	1.79	0.47
52:4:1314:G:H2'	52:4:1315:G:O4'	2.15	0.47
52:4:2181:G:O2'	52:4:2182:A:H5'	2.14	0.47
1:b:95:TYR:HE2	1:b:101:ARG:HD2	1.80	0.47
15:q:49:ARG:HG2	15:q:52:ARG:HH22	1.79	0.47
17:s:80:PRO:HG2	52:4:508:A:H2	1.79	0.47
29:F:1:MET:SD	29:F:1:MET:N	2.86	0.47
32:I:110:ARG:HG3	32:I:110:ARG:HH11	1.80	0.47
51:3:396:C:C3'	51:3:397:A:H5''	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:526:A:N6	52:4:2754:C:H4'	2.30	0.47
52:4:1231:A:H5''	52:4:1232:C:H5	1.79	0.47
52:4:1670:U:H2'	52:4:1671:G:O4'	2.15	0.47
52:4:2255:G:H21	52:4:2301:A:H1'	1.80	0.47
52:4:2877:A:H3'	52:4:2878:A:H2'	1.97	0.47
2:c:138:LEU:HD12	52:4:744:U:OP1	2.15	0.47
4:e:3:LEU:HA	4:e:6:TYR:CB	2.41	0.47
4:e:29:ARG:H	4:e:158:THR:CG2	2.28	0.47
7:h:54:VAL:HG22	7:h:54:VAL:O	2.14	0.47
13:o:59:ALA:HA	13:o:62:LEU:HD12	1.97	0.47
32:I:113:ALA:O	32:I:117:VAL:HG23	2.15	0.47
32:I:190:LEU:HD23	32:I:190:LEU:H	1.80	0.47
34:K:92:THR:O	34:K:93:LYS:HB2	2.15	0.47
40:Q:115:LYS:O	40:Q:116:TYR:HB2	2.14	0.47
45:V:32:ILE:HD12	45:V:32:ILE:N	2.29	0.47
51:3:513:C:H2'	51:3:514:C:H6	1.80	0.47
51:3:721:G:H4'	51:3:722:G:O4'	2.15	0.47
51:3:817:C:H4'	51:3:818:G:H5''	1.96	0.47
51:3:1128:C:O2'	51:3:1129:C:H5'	2.14	0.47
51:3:1245:C:H2'	51:3:1246:A:O4'	2.15	0.47
51:3:1484:C:O2'	51:3:1485:U:H5'	2.15	0.47
52:4:202:U:H2'	52:4:203:A:O4'	2.14	0.47
52:4:306:U:H2'	52:4:307:G:O4'	2.15	0.47
52:4:603:A:H62	52:4:655:A:H5'	1.79	0.47
52:4:895:U:H3'	52:4:896:A:C4'	2.45	0.47
52:4:1020:A:C1'	52:4:1021:A:OP2	2.62	0.47
52:4:1316:U:O2'	52:4:1317:A:H5'	2.15	0.47
52:4:1396:A:H2'	52:4:1397:A:O4'	2.15	0.47
52:4:1667:U:H2'	52:4:1668:G:H8	1.79	0.47
52:4:1739:C:H5'	52:4:1739:C:H6	1.78	0.47
52:4:1785:U:O2'	52:4:1786:C:H5'	2.15	0.47
52:4:1794:G:C2'	52:4:1795:G:H5'	2.45	0.47
52:4:2060:A:H2'	52:4:2061:G:O4'	2.15	0.47
52:4:2395:A:H5''	52:4:2396:A:H5'	1.97	0.47
2:c:170:VAL:HG22	2:c:171:THR:H	1.79	0.47
9:j:84:ILE:HG23	9:j:84:ILE:O	2.15	0.47
12:n:39:PRO:HG2	52:4:1779:G:H4'	1.97	0.47
21:w:34:VAL:HG11	21:w:41:PHE:HD2	1.79	0.47
22:x:16:ASN:HD22	22:x:26:ARG:HD2	1.80	0.47
31:H:62:SER:HA	31:H:96:VAL:HB	1.96	0.47
37:N:69:GLY:H	51:3:1250:A:H4'	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:R:18:LEU:HD22	41:R:33:LEU:HD21	1.96	0.47
51:3:163:C:H2'	51:3:164:G:O4'	2.15	0.47
51:3:200:G:H2'	51:3:201:G:C8	2.48	0.47
52:4:577:G:H2'	52:4:578:G:C8	2.50	0.47
52:4:1037:U:H2'	52:4:1038:G:H8	1.79	0.47
52:4:1341:A:H62	52:4:1364:G:H1'	1.79	0.47
52:4:2002:C:H2'	52:4:2003:G:C8	2.50	0.47
52:4:2821:G:O2'	52:4:2822:G:H5'	2.14	0.47
4:e:23:SER:HB3	4:e:26:GLN:HB2	1.97	0.47
5:f:15:ASP:HB2	5:f:26:LYS:HB3	1.97	0.47
31:H:39:ARG:NH1	42:S:91:GLU:OE2	2.48	0.47
31:H:106:ARG:HD3	31:H:106:ARG:H	1.80	0.47
36:M:21:LYS:HE3	51:3:827:U:OP1	2.15	0.47
38:O:61:ALA:HB2	51:3:1061:G:H5'	1.97	0.47
42:S:73:LEU:HD12	42:S:83:VAL:HG11	1.97	0.47
52:4:27:G:N2	52:4:512:G:H1'	2.30	0.47
52:4:30:G:H2'	52:4:31:C:C6	2.50	0.47
52:4:118:A:OP2	52:4:119:A:H5''	2.15	0.47
52:4:174:U:H2'	52:4:175:G:C8	2.50	0.47
52:4:178:G:O2'	52:4:179:C:H5'	2.14	0.47
52:4:587:C:H3'	52:4:588:U:H5'	1.96	0.47
52:4:741:U:H2'	52:4:742:A:C8	2.50	0.47
52:4:1025:G:H8	52:4:1025:G:OP1	1.98	0.47
52:4:1198:A:O2'	52:4:1225:U:H4'	2.15	0.47
52:4:1913:A:OP2	52:4:2110:U:H5''	2.15	0.47
52:4:2544:C:H2'	52:4:2545:C:C6	2.49	0.47
52:4:2807:A:O2'	52:4:2808:U:H5'	2.15	0.47
20:v:92:VAL:HG13	20:v:92:VAL:O	2.15	0.47
26:B:54:ILE:HG23	26:B:56:LYS:H	1.79	0.47
27:D:4:THR:HG22	52:4:687:C:H1'	1.97	0.47
29:F:1:MET:HB2	29:F:34:LYS:O	2.14	0.47
32:I:102:TYR:C	32:I:104:MET:H	2.21	0.47
32:I:129:VAL:HG12	51:3:619:U:H1'	1.97	0.47
40:Q:66:ILE:HG12	40:Q:96:THR:HG21	1.97	0.47
40:Q:81:ILE:HD12	40:Q:96:THR:HA	1.96	0.47
40:Q:99:GLY:HA3	40:Q:117:GLY:HA3	1.96	0.47
41:R:16:ILE:H	41:R:16:ILE:HD12	1.80	0.47
46:W:62:ARG:HD3	46:W:69:TYR:CE1	2.50	0.47
51:3:308:C:H2'	51:3:309:A:C8	2.49	0.47
51:3:405:U:C3'	51:3:406:G:H5'	2.32	0.47
51:3:929:G:H5''	51:3:1534:A:H1'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1129:C:H2'	51:3:1139:G:N7	2.30	0.47
51:3:1238:A:H2	51:3:1241:G:N3	2.13	0.47
52:4:84:A:H4'	52:4:85:G:O5'	2.14	0.47
52:4:146:A:H2'	52:4:147:C:C6	2.50	0.47
52:4:633:A:C2'	52:4:634:C:H5'	2.43	0.47
52:4:1480:U:O2'	52:4:1481:A:H5'	2.15	0.47
52:4:2001:G:O2'	52:4:2002:C:H5'	2.15	0.47
52:4:2193:C:H5''	52:4:2379:G:O2'	2.15	0.47
52:4:2381:G:N2	52:4:2626:C:O2	2.48	0.47
52:4:2524:G:O2'	52:4:2525:G:H5'	2.15	0.47
2:c:61:THR:OG1	2:c:64:GLU:HG3	2.15	0.46
7:h:118:ILE:HB	7:h:119:PRO:HD3	1.97	0.46
20:v:77:VAL:HG11	20:v:86:LEU:HD13	1.97	0.46
35:L:17:PHE:HE2	35:L:22:LEU:HD13	1.79	0.46
35:L:36:SER:HA	37:N:42:THR:HB	1.96	0.46
41:R:96:VAL:HG11	51:3:1309:G:OP2	2.15	0.46
51:3:291:U:O2'	51:3:292:G:H5'	2.15	0.46
51:3:399:G:O2'	51:3:400:C:H5'	2.14	0.46
52:4:26:G:C6	52:4:27:G:N1	2.84	0.46
52:4:796:C:H2'	52:4:797:G:H8	1.79	0.46
52:4:893:C:H2'	52:4:894:U:H5'	1.96	0.46
52:4:1855:C:H2'	52:4:1856:C:O4'	2.14	0.46
52:4:2442:A:H2'	52:4:2443:G:C8	2.50	0.46
52:4:2871:U:C2'	52:4:2872:G:H5''	2.45	0.46
1:b:48:ILE:HG23	1:b:48:ILE:O	2.14	0.46
7:h:81:LEU:N	52:4:1235:G:H4'	2.31	0.46
32:I:94:GLU:OE2	32:I:103:ARG:NH1	2.48	0.46
51:3:405:U:H1'	51:3:498:A:H2'	1.97	0.46
51:3:451:A:H4'	51:3:452:A:O4'	2.15	0.46
51:3:593:U:H2'	51:3:594:U:C6	2.50	0.46
51:3:911:U:H2'	51:3:912:C:C6	2.49	0.46
51:3:1071:C:H2'	51:3:1072:G:C8	2.50	0.46
51:3:1527:U:H2'	51:3:1528:U:C6	2.50	0.46
52:4:784:G:H5'	52:4:785:G:OP1	2.15	0.46
52:4:1280:C:H2'	52:4:1281:C:C6	2.50	0.46
52:4:1537:U:H2'	52:4:1538:G:H8	1.80	0.46
52:4:1565:C:H2'	52:4:1566:U:C6	2.50	0.46
52:4:2175:C:O2'	52:4:2176:G:H5'	2.16	0.46
52:4:2487:C:O2'	52:4:2488:G:H5'	2.15	0.46
52:4:2938:A:H2'	52:4:2939:G:O4'	2.15	0.46
52:4:2953:G:H2'	52:4:2954:A:H5'	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:74:PRO:CG	52:4:1188:U:H5'	2.44	0.46
11:l:100:ILE:HG13	11:l:101:ILE:HG23	1.95	0.46
25:A:16:CYS:HB3	25:A:20:ASN:H	1.79	0.46
32:I:144:ILE:HB	32:I:177:MET:HB2	1.97	0.46
38:O:80:THR:OG1	38:O:82:LYS:HG2	2.15	0.46
41:R:101:THR:HB	41:R:109:LYS:HD3	1.96	0.46
51:3:41:G:H2'	51:3:42:G:H8	1.81	0.46
51:3:80:A:H61	51:3:88:U:H3	1.63	0.46
51:3:171:A:H2'	51:3:172:A:C8	2.50	0.46
51:3:409:U:H2'	51:3:410:G:C8	2.50	0.46
51:3:797:C:O2'	51:3:798:U:H5'	2.15	0.46
51:3:1106:G:H2'	51:3:1107:C:C6	2.49	0.46
51:3:1429:A:H2'	51:3:1430:A:H8	1.81	0.46
51:3:1464:U:H2'	51:3:1465:A:C8	2.50	0.46
52:4:970:U:H2'	52:4:971:G:H8	1.80	0.46
52:4:1015:U:H2'	52:4:1016:G:H8	1.79	0.46
52:4:1327:U:H2'	52:4:1328:C:C6	2.50	0.46
52:4:1406:C:H2'	52:4:1407:G:C8	2.50	0.46
52:4:1753:C:H2'	52:4:1754:A:O4'	2.15	0.46
52:4:2450:A:H2'	52:4:2451:G:O4'	2.15	0.46
52:4:2534:A:H5'	52:4:2535:A:OP1	2.15	0.46
52:4:2765:U:H2'	52:4:2766:G:O4'	2.15	0.46
52:4:2827:C:H2'	52:4:2828:A:C8	2.51	0.46
7:h:33:VAL:HG22	7:h:34:THR:N	2.31	0.46
8:i:9:LYS:HG2	8:i:57:VAL:HG22	1.96	0.46
12:n:90:ARG:HD3	52:4:3008:C:O2'	2.15	0.46
39:P:92:ARG:HG3	49:Z:16:ARG:HH12	1.81	0.46
39:P:118:ASN:CB	51:3:718:A:H5'	2.45	0.46
42:S:51:PRO:HB3	51:3:1016:A:OP1	2.15	0.46
47:X:9:PHE:CD2	51:3:1318:A:H4'	2.51	0.46
47:X:13:HIS:HD1	47:X:17:LYS:HE2	1.80	0.46
52:4:1028:U:H3'	52:4:1029:G:C5'	2.45	0.46
52:4:2307:C:H2'	52:4:2308:U:C5	2.50	0.46
52:4:2946:U:H2'	52:4:2947:G:C8	2.50	0.46
32:I:49:ASP:O	32:I:52:VAL:HG22	2.15	0.46
32:I:149:LYS:HZ3	32:I:176:LYS:HA	1.81	0.46
51:3:410:G:H2'	51:3:429:U:C4	2.50	0.46
52:4:1806:A:H2'	52:4:1807:A:O4'	2.15	0.46
3:d:40:ARG:HD2	52:4:443:A:C6	2.50	0.46
4:e:140:ILE:HG23	4:e:145:VAL:HG21	1.98	0.46
21:w:39:THR:H	52:4:2459:G:C4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:B:32:THR:CG2	26:B:50:GLY:HA2	2.46	0.46
32:I:19:PHE:HD2	32:I:63:ILE:HD11	1.81	0.46
51:3:32:A:H2'	51:3:33:A:C8	2.50	0.46
51:3:194:C:O2'	51:3:195:A:H5'	2.16	0.46
51:3:415:A:H2'	51:3:416:G:O4'	2.16	0.46
51:3:1071:C:H2'	51:3:1072:G:H8	1.80	0.46
51:3:1320:C:H2'	51:3:1321:U:C5	2.51	0.46
52:4:1175:G:H2'	52:4:1238:G:N1	2.30	0.46
52:4:1638:G:H2'	52:4:1639:G:C8	2.51	0.46
52:4:1669:C:H2'	52:4:1670:U:O4'	2.15	0.46
52:4:2461:A:H1'	52:4:2463:A:C8	2.50	0.46
7:h:60:LEU:HD22	52:4:1236:U:OP2	2.16	0.46
20:v:6:ALA:HB1	20:v:40:ILE:HG21	1.97	0.46
32:I:145:ARG:O	32:I:149:LYS:HG3	2.15	0.46
33:J:51:LYS:NZ	51:3:1081:A:N7	2.59	0.46
40:Q:109:ARG:HB3	40:Q:118:VAL:HG21	1.97	0.46
48:Y:54:GLN:N	48:Y:55:PRO:HD2	2.31	0.46
50:a:212:VAL:HG12	50:a:214:ILE:HG13	1.96	0.46
52:4:445:C:O2'	52:4:446:G:H5'	2.15	0.46
52:4:569:U:H2'	52:4:570:G:O4'	2.15	0.46
52:4:1072:G:O2'	52:4:1073:G:H5'	2.16	0.46
52:4:1798:C:H2'	52:4:1799:U:O4'	2.15	0.46
52:4:1985:G:H2'	52:4:2012:G:N2	2.31	0.46
1:b:15:VAL:HG22	1:b:205:GLY:HA3	1.98	0.46
5:f:3:VAL:HG23	52:4:2879:G:H4'	1.98	0.46
12:n:90:ARG:NH1	12:n:90:ARG:HB2	2.30	0.46
33:J:111:ARG:O	33:J:115:GLU:HG2	2.15	0.46
46:W:54:LEU:O	46:W:58:ILE:HG12	2.16	0.46
51:3:73:C:H2'	51:3:74:A:C8	2.50	0.46
51:3:110:C:H2'	51:3:111:G:O4'	2.16	0.46
51:3:123:U:H5''	51:3:311:C:O2'	2.15	0.46
51:3:1295:U:H2'	51:3:1296:C:C6	2.51	0.46
52:4:1226:A:H2'	52:4:1227:G:H5'	1.97	0.46
52:4:2000:A:H2'	52:4:2001:G:O4'	2.16	0.46
52:4:2318:G:H2'	52:4:2319:A:H8	1.79	0.46
52:4:2632:U:H4'	52:4:2633:G:OP2	2.15	0.46
52:4:2923:C:C2'	52:4:2924:U:H5'	2.45	0.46
1:b:228:ASP:CG	52:4:780:G:H1	2.24	0.46
10:k:87:LEU:HA	10:k:94:PRO:HA	1.98	0.46
16:r:49:ILE:HD12	16:r:51:VAL:O	2.16	0.46
22:x:48:LEU:HB3	22:x:50:VAL:HG13	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:A:35:ASP:O	25:A:40:CYS:HB3	2.15	0.46
27:D:9:VAL:HG12	52:4:1437:G:OP1	2.16	0.46
31:H:49:ALA:O	31:H:69:THR:OG1	2.34	0.46
32:I:180:THR:OG1	32:I:182:LYS:HE2	2.15	0.46
38:O:40:ILE:HG21	51:3:1125:U:C2	2.51	0.46
51:3:308:C:H2'	51:3:309:A:H8	1.81	0.46
51:3:332:G:O2'	51:3:333:U:H5'	2.16	0.46
51:3:1505:G:H5''	51:3:1506:U:O5'	2.16	0.46
52:4:277:G:H4'	52:4:278:A:C6	2.51	0.46
52:4:367:G:H2'	52:4:368:A:O4'	2.16	0.46
52:4:528:A:H2	52:4:2170:A:H2'	1.78	0.46
52:4:1325:G:H2'	52:4:1326:U:C6	2.51	0.46
52:4:1666:G:O2'	52:4:1667:U:H5'	2.16	0.46
52:4:1903:U:C2'	52:4:1904:G:H5'	2.45	0.46
52:4:2926:U:H4'	52:4:2927:A:C4	2.51	0.46
4:e:52:ALA:O	4:e:56:LEU:HB2	2.16	0.46
7:h:121:SER:HB2	7:h:124:ASP:CG	2.41	0.46
12:n:4:ARG:O	52:4:3001:A:O2'	2.33	0.46
14:p:30:TRP:CE3	14:p:37:LYS:HB3	2.51	0.46
16:r:29:THR:HA	16:r:63:VAL:HG23	1.98	0.46
23:y:1:MET:HE3	23:y:4:LYS:HB2	1.97	0.46
32:I:123:MET:N	32:I:123:MET:SD	2.89	0.46
35:L:76:SER:HB3	35:L:83:THR:HB	1.98	0.46
37:N:59:LYS:C	37:N:60:LEU:HD12	2.41	0.46
39:P:118:ASN:CG	51:3:718:A:H5'	2.41	0.46
42:S:1:ALA:O	42:S:2:LYS:HB2	2.15	0.46
51:3:216:U:H2'	51:3:217:C:C6	2.51	0.46
51:3:711:G:O2'	51:3:712:A:H5'	2.16	0.46
51:3:986:U:H2'	51:3:987:G:C8	2.50	0.46
51:3:1473:G:O2'	51:3:1474:U:H5'	2.16	0.46
52:4:1105:A:H2'	52:4:1106:U:C6	2.51	0.46
52:4:1210:U:C3'	52:4:1211:U:H5''	2.35	0.46
52:4:1601:G:O2'	52:4:1602:U:H5'	2.16	0.46
52:4:1733:C:H2'	52:4:1734:C:O4'	2.16	0.46
52:4:2711:G:H2'	52:4:2712:U:O4'	2.16	0.46
1:b:50:THR:HG21	52:4:1942:G:H5'	1.98	0.45
2:c:168:GLU:OE1	2:c:169:ARG:N	2.49	0.45
6:g:46:PHE:O	6:g:50:ARG:HB2	2.16	0.45
8:i:74:PRO:HB2	8:i:77:VAL:HG22	1.96	0.45
17:s:96:ILE:HG22	52:4:2141:A:H4'	1.97	0.45
31:H:38:VAL:O	31:H:42:LEU:HD23	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:L:104:VAL:HG22	35:L:119:LEU:HD21	1.99	0.45
39:P:124:LYS:CB	49:Z:34:ARG:HD3	2.40	0.45
42:S:84:ARG:HD2	42:S:84:ARG:O	2.15	0.45
51:3:131:A:H2'	51:3:132:C:C6	2.51	0.45
51:3:1391:U:H2'	51:3:1392:G:C8	2.51	0.45
52:4:2246:U:H1'	52:4:2273:C:H41	1.81	0.45
52:4:2348:U:H2'	52:4:2349:G:H8	1.81	0.45
52:4:2681:G:H2'	52:4:2682:U:H5''	1.97	0.45
52:4:3023:G:H2'	52:4:3024:C:C6	2.51	0.45
5:f:85:LYS:HG3	5:f:164:ALA:CB	2.46	0.45
7:h:34:THR:HG21	52:4:1185:A:C1'	2.43	0.45
8:i:4:VAL:HG21	52:4:1227:G:H5'	1.98	0.45
10:k:109:SER:C	10:k:111:LYS:H	2.25	0.45
18:t:10:VAL:HG13	18:t:11:LEU:N	2.32	0.45
32:I:115:GLN:NE2	32:I:153:ARG:HH22	2.14	0.45
32:I:122:ILE:HA	32:I:143:SER:O	2.16	0.45
32:I:154:VAL:HA	32:I:157:ALA:HB2	1.97	0.45
33:J:98:ALA:HB2	33:J:123:LEU:HD13	1.99	0.45
38:O:48:ARG:HA	38:O:66:GLU:HA	1.97	0.45
48:Y:48:LYS:HE2	48:Y:48:LYS:HA	1.97	0.45
51:3:257:G:H2'	51:3:258:G:H8	1.80	0.45
51:3:411:A:H1'	51:3:413:G:C1'	2.45	0.45
51:3:529:G:H4'	51:3:533:A:C2	2.51	0.45
51:3:964:A:H2'	51:3:965:U:H5'	1.98	0.45
51:3:1213:A:C2	51:3:1215:G:H1'	2.52	0.45
51:3:1346:A:C2'	51:3:1347:G:H4'	2.46	0.45
52:4:473:G:C2'	52:4:474:G:H5'	2.46	0.45
52:4:609:A:H2'	52:4:610:C:O4'	2.15	0.45
52:4:1030:C:H2'	52:4:1154:A:H62	1.76	0.45
52:4:1203:C:H2'	52:4:1204:C:H5'	1.98	0.45
52:4:1838:G:H2'	52:4:1839:A:C8	2.51	0.45
52:4:1874:A:H2'	52:4:1875:U:C6	2.51	0.45
52:4:2308:U:H2'	52:4:2309:U:H5'	1.97	0.45
52:4:2488:G:H2'	52:4:2489:G:H5'	1.99	0.45
52:4:2540:A:H2'	52:4:2541:G:O4'	2.16	0.45
52:4:2913:C:H2'	52:4:2914:U:C6	2.51	0.45
4:e:61:GLY:C	25:A:7:PRO:HD2	2.42	0.45
6:g:26:ALA:HA	6:g:30:LEU:HD22	1.97	0.45
8:i:61:TYR:CE2	8:i:67:THR:HB	2.51	0.45
11:l:37:GLY:HA2	52:4:831:G:H5''	1.98	0.45
11:l:101:ILE:HG13	11:l:102:GLY:N	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:r:98:ILE:N	16:r:98:ILE:HD12	2.30	0.45
19:u:25:LYS:NZ	19:u:61:GLU:HG3	2.31	0.45
27:D:12:ARG:CZ	27:D:44:VAL:HG21	2.46	0.45
35:L:1:PRO:HB3	51:3:1379:G:O6	2.16	0.45
38:O:42:LEU:HA	38:O:43:PRO:HD2	1.77	0.45
50:a:7:ARG:HH12	50:a:36:ALA:HA	1.80	0.45
51:3:314:C:O2'	51:3:315:A:H5'	2.15	0.45
51:3:396:C:C2'	51:3:397:A:H5''	2.46	0.45
51:3:526:C:H2'	51:3:527:G:H4'	1.97	0.45
51:3:1319:A:N6	51:3:1361:G:H1'	2.31	0.45
51:3:1496:C:H2'	51:3:1497:G:O4'	2.15	0.45
52:4:783:A:C2'	52:4:784:G:H5'	2.46	0.45
52:4:1062:U:H2'	52:4:1065:G:H21	1.80	0.45
52:4:1181:C:N4	52:4:1234:G:H1	2.12	0.45
52:4:1901:A:H2'	52:4:1902:C:C5'	2.44	0.45
52:4:2441:C:H2'	52:4:2442:A:C8	2.51	0.45
52:4:2880:C:H2'	52:4:2881:A:O4'	2.16	0.45
52:4:2933:C:H2'	52:4:2934:C:C6	2.51	0.45
52:4:2962:G:O2'	52:4:2963:A:H5'	2.17	0.45
4:e:67:THR:HB	4:e:85:GLY:HA3	1.97	0.45
7:h:118:ILE:H	7:h:119:PRO:CD	2.28	0.45
9:j:93:ILE:O	9:j:97:PRO:HG3	2.16	0.45
20:v:45:ASP:O	20:v:48:MET:HB3	2.16	0.45
23:y:27:ASN:O	23:y:31:GLN:HB2	2.16	0.45
30:G:65:LYS:HB2	30:G:157:PRO:HA	1.98	0.45
33:J:129:SER:OG	51:3:19:A:H5'	2.17	0.45
34:K:71:ILE:HD12	34:K:74:LEU:HD12	1.99	0.45
35:L:71:THR:HG23	35:L:72:VAL:H	1.81	0.45
38:O:39:PRO:HD2	51:3:1123:U:H4'	1.98	0.45
38:O:53:ILE:HG22	38:O:61:ALA:O	2.17	0.45
48:Y:23:ARG:NH1	51:3:176:C:H5''	2.31	0.45
51:3:358:U:H2'	51:3:359:G:C8	2.50	0.45
51:3:1084:G:H5'	51:3:1102:A:OP2	2.16	0.45
52:4:1488:G:H2'	52:4:1489:G:H5'	1.99	0.45
52:4:2788:A:H2'	52:4:2789:G:O4'	2.16	0.45
5:f:32:LEU:HD11	5:f:135:ALA:O	2.16	0.45
5:f:85:LYS:HG3	5:f:164:ALA:HB3	1.99	0.45
7:h:27:VAL:CG1	7:h:83:ALA:HB3	2.46	0.45
8:i:4:VAL:HG21	52:4:1227:G:C5'	2.46	0.45
9:j:98:GLU:O	9:j:102:GLU:HG3	2.16	0.45
11:l:135:ILE:HG22	11:l:140:GLY:HA3	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:I:12:ARG:HD3	32:I:31:CYS:SG	2.57	0.45
36:M:94:VAL:HB	36:M:99:GLY:O	2.17	0.45
38:O:39:PRO:O	38:O:41:PRO:HD3	2.16	0.45
51:3:1033:G:H3'	51:3:1034:G:H4'	1.98	0.45
51:3:1187:G:O2'	51:3:1188:A:H5'	2.16	0.45
51:3:1265:C:H2'	51:3:1266:G:H5'	1.97	0.45
51:3:1352:C:O2'	51:3:1353:G:H5'	2.17	0.45
52:4:93:G:O2'	52:4:94:A:H5'	2.17	0.45
52:4:415:A:H2'	52:4:416:U:C6	2.51	0.45
52:4:435:C:C2'	52:4:436:C:H5'	2.46	0.45
52:4:490:C:H4'	52:4:491:G:OP2	2.17	0.45
52:4:610:C:H2'	52:4:611:C:C6	2.51	0.45
52:4:2037:C:H2'	52:4:2038:G:C8	2.51	0.45
52:4:2425:A:N6	52:4:2447:G:H1'	2.32	0.45
52:4:2937:A:H2'	52:4:2938:A:C8	2.51	0.45
8:i:41:PHE:HE1	8:i:56:VAL:HG11	1.82	0.45
9:j:111:LYS:H	9:j:111:LYS:HD2	1.81	0.45
10:k:104:THR:HG22	10:k:105:ARG:N	2.32	0.45
20:v:27:PRO:HA	20:v:41:GLU:HA	1.97	0.45
23:y:23:ARG:HB3	23:y:24:GLU:H	1.54	0.45
30:G:67:LEU:CD2	30:G:157:PRO:HG3	2.47	0.45
39:P:49:SER:HB3	39:P:68:ARG:HD3	1.99	0.45
47:X:35:ARG:HA	47:X:70:LEU:HB2	1.98	0.45
49:Z:13:VAL:HG22	49:Z:15:LEU:HG	1.98	0.45
52:4:1266:G:H2'	52:4:1267:G:O4'	2.17	0.45
52:4:1341:A:N6	52:4:1364:G:H1'	2.32	0.45
52:4:1876:C:H2'	52:4:1877:A:H8	1.82	0.45
52:4:1975:A:O2'	52:4:1976:A:H8	1.98	0.45
52:4:2064:A:H3'	52:4:2065:A:H5'	1.98	0.45
4:e:134:GLN:HB3	4:e:149:ARG:O	2.16	0.45
10:k:90:ASN:OD1	10:k:91:SER:N	2.39	0.45
14:p:1:SER:OG	14:p:2:ASN:N	2.50	0.45
37:N:71:ILE:CG1	51:3:1289:A:H61	2.29	0.45
40:Q:32:VAL:HG11	40:Q:55:ARG:HH11	1.81	0.45
41:R:80:MET:HE1	41:R:91:ARG:HA	1.98	0.45
51:3:436:C:H2'	51:3:437:U:H6	1.80	0.45
52:4:327:G:H2'	52:4:328:U:O4'	2.17	0.45
52:4:1552:G:H2'	52:4:1553:G:O4'	2.16	0.45
52:4:1667:U:H2'	52:4:1668:G:C8	2.52	0.45
52:4:1676:A:H2'	52:4:1677:A:C8	2.52	0.45
52:4:2167:U:H2'	52:4:2168:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:8:THR:HG21	52:4:727:A:H2	1.81	0.45
12:n:33:ILE:HG13	12:n:114:GLU:HB3	1.99	0.45
13:o:29:HIS:CE1	52:4:1073:G:H5'	2.52	0.45
17:s:11:ARG:HE	17:s:82:MET:HE1	1.81	0.45
23:y:4:LYS:HA	23:y:7:ARG:NH1	2.30	0.45
30:G:182:VAL:HG13	30:G:195:VAL:HG13	1.98	0.45
32:I:169:TRP:HA	32:I:183:ARG:NH1	2.28	0.45
38:O:8:ILE:HD11	38:O:76:ILE:HG13	1.98	0.45
40:Q:109:ARG:HH21	40:Q:116:TYR:HE2	1.65	0.45
41:R:70:ARG:O	41:R:74:MET:HG3	2.17	0.45
41:R:87:GLY:HA2	41:R:90:HIS:HB2	1.99	0.45
47:X:13:HIS:ND1	47:X:17:LYS:HE2	2.31	0.45
51:3:571:U:H2'	51:3:572:A:H5''	1.99	0.45
51:3:695:A:H2'	51:3:696:A:C8	2.52	0.45
51:3:969:A:H2'	51:3:970:C:O4'	2.16	0.45
51:3:1307:U:H3	51:3:1330:U:H3	1.65	0.45
51:3:1463:U:H2'	51:3:1464:U:C6	2.52	0.45
52:4:94:A:H2'	52:4:95:A:O4'	2.16	0.45
52:4:783:A:H2'	52:4:784:G:C5'	2.46	0.45
52:4:1596:U:H2'	52:4:1650:A:N6	2.31	0.45
52:4:1814:C:H2'	52:4:1815:G:O4'	2.17	0.45
52:4:2349:G:O2'	52:4:2350:C:H5'	2.17	0.45
3:d:90:GLN:HG3	3:d:92:HIS:CE1	2.52	0.45
3:d:137:LYS:O	3:d:141:MET:HG2	2.16	0.45
4:e:91:ARG:HD3	52:4:1111:A:H5'	1.99	0.45
5:f:93:TYR:HE1	5:f:159:LYS:HB3	1.81	0.45
6:g:25:TYR:CE1	52:4:2222:A:H4'	2.52	0.45
9:j:2:LYS:HG3	52:4:995:C:H42	1.82	0.45
34:K:38:ARG:HB2	34:K:63:ASN:HB2	1.99	0.45
37:N:45:MET:CB	37:N:48:ARG:HD2	2.46	0.45
42:S:20:PHE:CD2	42:S:56:PRO:HD3	2.52	0.45
48:Y:28:ARG:NH1	51:3:1437:A:H5''	2.32	0.45
48:Y:66:ILE:HG22	48:Y:67:HIS:N	2.32	0.45
50:a:62:ALA:HB1	50:a:160:GLN:HB3	1.99	0.45
51:3:560:A:H4'	51:3:561:U:H5'	1.99	0.45
51:3:603:U:H2'	51:3:604:G:C8	2.52	0.45
51:3:952:U:H2'	51:3:953:G:O4'	2.17	0.45
52:4:12:U:H2'	52:4:13:A:H5'	1.99	0.45
52:4:1193:U:H5'	52:4:1194:U:O5'	2.17	0.45
52:4:1722:U:H2'	52:4:1723:C:H6	1.82	0.45
7:h:40:GLU:O	7:h:43:LYS:HG3	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:74:PRO:CB	52:4:1188:U:H5'	2.46	0.45
16:r:78:ARG:NH1	52:4:990:A:H61	2.14	0.45
30:G:103:TRP:HH2	30:G:150:ILE:HG21	1.81	0.45
30:G:170:ILE:O	30:G:174:GLU:HG3	2.17	0.45
30:G:216:VAL:HA	30:G:219:THR:HG22	1.99	0.45
32:I:97:LEU:HD13	32:I:134:TYR:HD2	1.81	0.45
38:O:59:LYS:HE2	51:3:972:C:OP2	2.17	0.45
42:S:5:MET:HE1	42:S:8:ARG:HE	1.80	0.45
49:Z:64:ALA:C	49:Z:66:ARG:H	2.25	0.45
51:3:219:U:H2'	51:3:220:G:H8	1.81	0.45
51:3:1015:G:H2'	51:3:1016:A:O4'	2.16	0.45
51:3:1319:A:H61	51:3:1361:G:H1'	1.82	0.45
52:4:511:U:H2'	52:4:512:G:H5'	1.99	0.45
52:4:807:U:H2'	52:4:808:G:H8	1.82	0.45
52:4:1166:G:H2'	52:4:1167:A:C8	2.50	0.45
52:4:1998:C:H2'	52:4:1999:A:C8	2.52	0.45
52:4:2971:G:O2'	52:4:2972:G:H5'	2.17	0.45
7:h:54:VAL:O	52:4:1212:A:H5''	2.16	0.44
19:u:25:LYS:HG3	19:u:36:GLU:HB3	1.98	0.44
37:N:41:GLU:HG2	51:3:1291:U:H4'	1.97	0.44
38:O:59:LYS:HG2	51:3:972:C:P	2.57	0.44
51:3:114:U:O2'	51:3:115:G:H5'	2.17	0.44
51:3:627:G:H2'	51:3:628:G:O4'	2.17	0.44
51:3:667:G:H2'	51:3:668:G:H8	1.82	0.44
51:3:1106:G:H2'	51:3:1107:C:H6	1.81	0.44
51:3:1162:C:H2'	51:3:1163:A:C8	2.51	0.44
52:4:1:G:H2'	52:4:2:G:H8	1.82	0.44
52:4:154:U:H2'	52:4:155:A:H8	1.80	0.44
52:4:630:G:H4'	52:4:640:C:H4'	1.99	0.44
52:4:1121:U:O2'	52:4:1122:G:H5'	2.16	0.44
52:4:1951:G:O2'	52:4:1952:G:H5'	2.16	0.44
52:4:2783:G:HO2'	52:4:2784:U:H5	1.64	0.44
3:d:150:THR:OG1	3:d:151:GLY:N	2.51	0.44
8:i:9:LYS:O	52:4:1189:U:H4'	2.17	0.44
17:s:64:ALA:C	17:s:65:ASP:OD2	2.60	0.44
31:H:30:ASP:OD2	31:H:30:ASP:N	2.49	0.44
37:N:8:THR:O	37:N:81:GLY:HA2	2.17	0.44
39:P:88:PRO:HD3	49:Z:28:LEU:HD13	2.00	0.44
51:3:45:G:H5''	51:3:307:C:O2'	2.16	0.44
51:3:346:G:C2'	51:3:347:G:H5'	2.47	0.44
51:3:1137:C:H4'	51:3:1138:G:N2	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:174:U:H2'	52:4:175:G:H8	1.82	0.44
52:4:327:G:O2'	52:4:328:U:H5'	2.16	0.44
52:4:538:A:H2'	52:4:539:G:O4'	2.17	0.44
52:4:705:A:C2	52:4:727:A:H1'	2.52	0.44
52:4:987:C:H2'	52:4:988:A:O4'	2.16	0.44
52:4:1357:C:H2'	52:4:1358:A:C8	2.53	0.44
52:4:1637:A:H2'	52:4:1638:G:H8	1.81	0.44
52:4:2352:G:H4'	52:4:2354:C:C2	2.52	0.44
52:4:2828:A:H2'	52:4:2829:U:C6	2.52	0.44
52:4:2929:G:H2'	52:4:2930:G:H8	1.82	0.44
52:4:2946:U:H4'	52:4:2965:A:H4'	1.99	0.44
18:t:1:MET:HG3	52:4:136:G:H21	1.81	0.44
20:v:64:VAL:CB	20:v:69:GLU:HG2	2.47	0.44
30:G:60:ALA:HB3	30:G:223:GLY:HA3	1.98	0.44
33:J:10:LEU:HB3	33:J:38:VAL:CG2	2.47	0.44
33:J:14:LEU:HD23	33:J:15:ILE:N	2.32	0.44
33:J:71:ILE:HD13	33:J:144:GLU:OE1	2.17	0.44
36:M:104:SER:HB3	36:M:125:ILE:HD11	1.99	0.44
41:R:14:ALA:HB3	41:R:39:ALA:O	2.17	0.44
41:R:22:TYR:HB3	41:R:65:GLU:HA	1.99	0.44
44:U:4:ILE:O	44:U:71:VAL:HG21	2.17	0.44
47:X:47:THR:HG22	47:X:60:PHE:HB2	2.00	0.44
51:3:428:G:H5'	51:3:430:A:H1'	1.98	0.44
51:3:467:U:H3'	51:3:468:A:H8	1.82	0.44
51:3:712:A:H2'	51:3:713:G:O4'	2.17	0.44
51:3:1251:A:O2'	51:3:1370:G:H5'	2.17	0.44
52:4:189:G:H2'	52:4:205:G:N2	2.32	0.44
52:4:414:C:H2'	52:4:415:A:C8	2.52	0.44
52:4:544:C:H2'	52:4:545:U:C1'	2.48	0.44
52:4:1056:C:O2'	52:4:1057:A:H5'	2.17	0.44
52:4:1886:U:C5	52:4:2824:U:H5'	2.52	0.44
52:4:2610:A:H2'	52:4:2611:C:H5'	1.99	0.44
8:i:112:LYS:HD2	8:i:116:MET:SD	2.58	0.44
13:o:12:THR:HG23	52:4:2462:U:H5'	1.97	0.44
20:v:43:ASP:OD2	20:v:46:LYS:HG2	2.17	0.44
30:G:65:LYS:CB	30:G:157:PRO:HA	2.47	0.44
33:J:108:GLY:O	33:J:109:ALA:HB3	2.17	0.44
40:Q:29:LYS:H	40:Q:81:ILE:HG22	1.81	0.44
40:Q:80:LEU:HB3	40:Q:97:VAL:HB	1.98	0.44
51:3:59:A:H2'	51:3:59:A:N3	2.33	0.44
51:3:64:G:H4'	51:3:65:A:H3'	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:199:A:H61	51:3:218:U:H3	1.65	0.44
51:3:425:G:H2'	51:3:426:U:O4'	2.17	0.44
51:3:517:G:H8	51:3:517:G:OP2	2.00	0.44
51:3:730:G:N2	51:3:765:G:H5''	2.32	0.44
52:4:685:A:H5''	52:4:788:A:H62	1.82	0.44
52:4:857:G:H2'	52:4:858:G:O4'	2.18	0.44
52:4:1067:U:H2'	52:4:1068:G:H8	1.82	0.44
52:4:1883:A:H2'	52:4:1884:G:H5'	1.99	0.44
52:4:2398:A:H2'	52:4:2399:G:O4'	2.17	0.44
1:b:70:LYS:O	1:b:117:SER:HB3	2.18	0.44
1:b:129:LEU:N	1:b:129:LEU:HD23	2.31	0.44
7:h:24:SER:HA	7:h:86:MET:HG2	2.00	0.44
7:h:40:GLU:O	7:h:43:LYS:HE3	2.18	0.44
15:q:60:TRP:HB3	15:q:91:ARG:HB3	1.99	0.44
24:z:29:ARG:NH2	52:4:1311:U:O3'	2.50	0.44
30:G:60:ALA:HB1	30:G:224:ARG:HG3	1.99	0.44
32:I:184:LYS:HA	32:I:185:PRO:HD3	1.84	0.44
41:R:7:ASN:HD21	41:R:21:ILE:CG1	2.31	0.44
41:R:21:ILE:HB	41:R:24:VAL:CG1	2.48	0.44
51:3:463:U:H3	51:3:469:C:H42	1.66	0.44
51:3:645:G:O2'	51:3:646:G:H5'	2.18	0.44
51:3:731:G:O2'	51:3:732:C:H5'	2.18	0.44
51:3:849:G:O2'	51:3:850:U:H5'	2.17	0.44
52:4:1255:A:H2'	52:4:1256:G:H5''	2.00	0.44
52:4:1337:U:O3'	52:4:1340:G:H5'	2.18	0.44
52:4:2444:G:H2'	52:4:2445:A:H8	1.81	0.44
1:b:245:THR:C	1:b:247:TRP:H	2.25	0.44
5:f:132:LEU:HD12	5:f:132:LEU:C	2.42	0.44
10:k:14:SER:OG	10:k:86:LEU:HD12	2.18	0.44
25:A:14:ALA:O	25:A:21:VAL:HA	2.18	0.44
26:B:8:THR:HG22	52:4:2148:A:H5'	2.00	0.44
32:I:101:VAL:HG23	32:I:113:ALA:HB1	1.99	0.44
32:I:187:ARG:NH2	32:I:192:ALA:HA	2.31	0.44
34:K:62:MET:HB3	34:K:64:VAL:HG13	1.98	0.44
38:O:9:ARG:HD3	51:3:1126:U:O4	2.18	0.44
38:O:42:LEU:HD21	51:3:1280:A:H5''	1.99	0.44
40:Q:113:ARG:HE	40:Q:120:ARG:HA	1.82	0.44
45:V:49:ASN:O	45:V:50:ASN:CG	2.61	0.44
51:3:68:G:H5'	51:3:171:A:O2'	2.18	0.44
51:3:1038:C:H2'	51:3:1039:G:C8	2.52	0.44
51:3:1169:A:H2'	51:3:1170:A:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:108:G:O2'	52:4:109:C:H5'	2.17	0.44
52:4:532:A:H2'	52:4:532:A:N3	2.32	0.44
52:4:1922:A:H2'	52:4:1923:C:H6	1.82	0.44
52:4:2406:A:C3'	52:4:2407:G:H5''	2.45	0.44
52:4:2643:C:H2'	52:4:2644:A:C8	2.52	0.44
52:4:2733:U:H2'	52:4:2734:C:C6	2.52	0.44
52:4:2988:A:C2'	52:4:2989:U:H5'	2.46	0.44
1:b:30:ALA:HB3	1:b:31:PRO:HD3	2.00	0.44
2:c:25:THR:HG21	2:c:193:VAL:HG22	2.00	0.44
10:k:18:ARG:HB3	10:k:45:GLU:HB2	1.99	0.44
17:s:95:ARG:HD2	17:s:95:ARG:O	2.18	0.44
26:B:53:VAL:HG13	26:B:54:ILE:N	2.32	0.44
51:3:411:A:N3	51:3:413:G:H1'	2.33	0.44
51:3:411:A:C4	51:3:413:G:H1'	2.52	0.44
51:3:604:G:H2'	51:3:605:U:O4'	2.18	0.44
52:4:63:A:HO2'	52:4:64:A:H5'	1.82	0.44
52:4:80:G:O2'	52:4:81:G:H5'	2.17	0.44
52:4:551:G:H2'	52:4:552:U:C6	2.52	0.44
52:4:719:C:O2'	52:4:720:U:H5'	2.17	0.44
52:4:1566:U:O2'	52:4:1567:A:H5'	2.18	0.44
52:4:2133:A:C8	52:4:2134:C:C5	3.06	0.44
52:4:2144:U:H2'	52:4:2145:U:C6	2.52	0.44
52:4:2790:A:H2'	52:4:2791:G:O4'	2.18	0.44
1:b:257:ARG:HD2	1:b:269:ARG:HH21	1.83	0.44
10:k:108:ARG:HG3	10:k:116:ILE:HD13	1.99	0.44
13:o:76:LYS:O	13:o:80:GLU:HG3	2.17	0.44
14:p:50:ARG:NH2	52:4:2811:C:OP1	2.51	0.44
15:q:2:ARG:HB2	52:4:1376:G:C5	2.53	0.44
20:v:29:ILE:O	20:v:91:PHE:HB2	2.18	0.44
20:v:32:GLY:O	20:v:93:ARG:HB3	2.18	0.44
21:w:30:GLY:N	21:w:57:ALA:O	2.46	0.44
30:G:39:ILE:HD12	30:G:39:ILE:N	2.33	0.44
30:G:120:SER:HB3	30:G:125:PHE:CE2	2.53	0.44
31:H:171:ARG:HG2	31:H:173:PRO:HD3	2.00	0.44
37:N:29:ILE:HG23	37:N:64:ILE:HG23	1.99	0.44
42:S:26:LEU:HG	42:S:30:ILE:HD12	1.99	0.44
43:T:39:GLN:NE2	52:4:716:A:H1'	2.31	0.44
43:T:44:GLU:O	43:T:45:HIS:HB2	2.17	0.44
47:X:52:ASN:CB	47:X:75:PRO:HD2	2.48	0.44
51:3:158:G:H2'	51:3:159:G:O4'	2.18	0.44
51:3:634:C:H2'	51:3:635:A:H8	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1180:A:O2'	51:3:1184:G:H1'	2.18	0.44
51:3:1334:G:H2'	51:3:1335:U:H5'	1.98	0.44
52:4:8:C:H2'	52:4:9:G:O4'	2.18	0.44
52:4:395:U:H2'	52:4:396:G:C8	2.52	0.44
52:4:412:A:H2'	52:4:413:C:H5'	1.99	0.44
52:4:1170:G:H2'	52:4:1171:C:O4'	2.18	0.44
52:4:1234:G:H2'	52:4:1235:G:O4'	2.17	0.44
52:4:1780:A:H2'	52:4:1781:G:O4'	2.17	0.44
52:4:2193:C:H2'	52:4:2194:C:C6	2.53	0.44
52:4:2989:U:H2'	52:4:2990:G:C8	2.52	0.44
2:c:23:PRO:HB3	52:4:2810:A:C2	2.53	0.44
4:e:94:ARG:NH2	25:A:1:MET:HG2	2.33	0.44
4:e:148:VAL:O	4:e:148:VAL:HG13	2.17	0.44
9:j:97:PRO:HB2	9:j:126:ALA:HB2	2.00	0.44
10:k:88:ASN:ND2	10:k:90:ASN:OD1	2.51	0.44
12:n:95:THR:OG1	12:n:113:ILE:HD11	2.17	0.44
15:q:21:LYS:HG2	52:4:19:A:H5''	2.00	0.44
15:q:30:VAL:HG13	52:4:580:U:O3'	2.17	0.44
19:u:82:VAL:HG22	19:u:83:GLY:N	2.33	0.44
20:v:80:HIS:ND1	20:v:81:PRO:HD2	2.33	0.44
23:y:41:HIS:CE1	52:4:96:C:H4'	2.52	0.44
24:z:4:ILE:HD11	24:z:56:VAL:HG23	2.00	0.44
30:G:96:LEU:HD13	51:3:1103:C:H4'	1.99	0.44
32:I:46:ARG:HA	32:I:46:ARG:HD3	1.84	0.44
33:J:89:THR:OG1	33:J:134:ASN:ND2	2.50	0.44
38:O:59:LYS:HD3	51:3:973:G:OP1	2.18	0.44
46:W:25:ILE:O	46:W:29:LYS:HG3	2.18	0.44
51:3:521:G:O2'	51:3:522:C:H5'	2.18	0.44
51:3:842:U:C2'	51:3:844:G:H5'	2.42	0.44
51:3:995:C:H2'	51:3:996:A:C8	2.52	0.44
51:3:1126:U:O4'	51:3:1281:C:H1'	2.18	0.44
51:3:1412:C:H2'	51:3:1413:A:C8	2.52	0.44
52:4:277:G:H4'	52:4:278:A:C5	2.53	0.44
52:4:438:G:H2'	52:4:439:A:C8	2.53	0.44
52:4:712:G:N2	52:4:720:U:H1'	2.33	0.44
52:4:1061:A:C2'	52:4:1062:U:H5'	2.47	0.44
52:4:1086:G:O2'	52:4:1087:G:H5'	2.17	0.44
52:4:1204:C:H5'	52:4:1204:C:H6	1.83	0.44
52:4:1394:G:N2	52:4:2140:G:H2'	2.33	0.44
52:4:1539:U:H2'	52:4:1540:U:C6	2.53	0.44
52:4:2336:C:H2'	52:4:2337:G:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:2681:G:C2'	52:4:2682:U:H5''	2.48	0.44
17:s:64:ALA:O	17:s:65:ASP:C	2.61	0.43
30:G:150:ILE:HG23	30:G:153:MET:HB3	2.00	0.43
43:T:59:VAL:HB	52:4:715:A:H1'	2.00	0.43
48:Y:73:ARG:O	48:Y:77:ASN:ND2	2.51	0.43
50:a:46:VAL:O	50:a:170:ILE:HA	2.16	0.43
52:4:940:G:H3'	52:4:941:A:H5''	2.00	0.43
52:4:1084:G:H2'	52:4:1085:C:C6	2.53	0.43
52:4:1200:C:N4	52:4:1220:C:N4	2.66	0.43
52:4:1289:C:H2'	52:4:1290:G:C8	2.53	0.43
52:4:1310:G:H2'	52:4:1311:U:O4'	2.18	0.43
52:4:2167:U:H2'	52:4:2168:G:H8	1.82	0.43
52:4:2226:U:H2'	52:4:2227:U:O4'	2.19	0.43
52:4:2273:C:H3'	52:4:2274:C:C5'	2.48	0.43
4:e:28:PRO:HA	4:e:158:THR:HG23	2.00	0.43
4:e:32:LYS:HD3	4:e:91:ARG:HH12	1.82	0.43
4:e:46:LYS:NZ	4:e:83:PRO:HG3	2.33	0.43
8:i:4:VAL:HG11	52:4:1227:G:H5''	2.00	0.43
9:j:47:HIS:CG	52:4:536:G:H21	2.36	0.43
10:k:21:CYS:HB2	10:k:39:ILE:HD12	2.01	0.43
10:k:88:ASN:HD21	10:k:90:ASN:HD21	1.66	0.43
20:v:9:ARG:NH2	20:v:11:GLU:O	2.51	0.43
23:y:2:LYS:HB2	52:4:78:U:P	2.57	0.43
29:F:6:SER:HB3	52:4:2594:C:H5''	1.98	0.43
30:G:6:ARG:H	30:G:6:ARG:CD	2.27	0.43
31:H:16:PRO:HG2	31:H:53:ARG:HH22	1.83	0.43
40:Q:24:GLU:O	40:Q:25:ALA:HB3	2.18	0.43
42:S:26:LEU:HA	42:S:30:ILE:HB	2.01	0.43
42:S:58:ARG:HH21	51:3:980:C:H5'	1.83	0.43
44:U:47:GLU:HG2	44:U:48:GLU:N	2.34	0.43
44:U:70:ARG:HD3	51:3:375:U:OP1	2.19	0.43
45:V:30:HIS:HA	45:V:31:PRO:HD3	1.89	0.43
49:Z:39:LYS:HD3	49:Z:42:THR:OG1	2.18	0.43
51:3:47:C:H4'	51:3:48:C:C5'	2.47	0.43
51:3:428:G:H5'	51:3:430:A:C1'	2.48	0.43
51:3:689:C:H2'	51:3:690:G:O4'	2.17	0.43
51:3:810:C:O2'	51:3:811:C:H5'	2.18	0.43
51:3:1221:G:H5''	51:3:1321:U:O2	2.19	0.43
52:4:1047:G:O2'	52:4:1048:G:H5'	2.18	0.43
52:4:2139:U:H2'	52:4:2140:G:O4'	2.18	0.43
12:n:35:LYS:HB2	12:n:112:TYR:CE1	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:q:91:ARG:NH2	52:4:1281:C:OP1	2.51	0.43
18:t:9:LYS:HE2	23:y:29:ARG:HH22	1.83	0.43
30:G:46:VAL:N	30:G:47:PRO:CD	2.82	0.43
33:J:108:GLY:N	51:3:9:G:H4'	2.25	0.43
34:K:3:HIS:HB2	34:K:92:THR:HB	2.00	0.43
36:M:112:ASP:O	36:M:116:ARG:HG3	2.18	0.43
40:Q:6:LEU:HB3	45:V:33:TYR:CZ	2.52	0.43
42:S:46:LYS:HA	42:S:49:THR:HG23	2.00	0.43
47:X:4:LEU:HD21	47:X:9:PHE:H	1.83	0.43
51:3:1004:A:H2'	51:3:1005:A:O4'	2.18	0.43
52:4:304:U:H2'	52:4:305:C:C6	2.53	0.43
52:4:774:G:C2'	52:4:775:G:H5''	2.48	0.43
52:4:1029:G:H4'	52:4:1030:C:C5'	2.48	0.43
52:4:1029:G:H1'	52:4:1154:A:C6	2.53	0.43
52:4:1591:C:H2'	52:4:1592:G:C8	2.54	0.43
52:4:1808:U:C2'	52:4:1809:G:H5'	2.48	0.43
52:4:2246:U:H5	52:4:2277:U:H1'	1.83	0.43
52:4:2486:A:H2'	52:4:2487:C:O4'	2.19	0.43
2:c:138:LEU:HD12	2:c:138:LEU:N	2.34	0.43
4:e:101:ARG:HG3	25:A:24:ILE:HG21	2.00	0.43
4:e:161:SER:CB	4:e:164:GLU:HG3	2.48	0.43
5:f:17:LYS:HA	5:f:17:LYS:HD3	1.89	0.43
7:h:58:THR:O	7:h:58:THR:HG22	2.18	0.43
8:i:21:PRO:CB	8:i:22:PRO:HD3	2.49	0.43
33:J:82:HIS:CD2	36:M:98:LEU:HD21	2.53	0.43
34:K:46:GLN:HG2	34:K:47:LEU:N	2.33	0.43
38:O:27:GLU:O	38:O:31:ARG:HD2	2.18	0.43
40:Q:20:VAL:HB	40:Q:94:TYR:HE1	1.83	0.43
44:U:3:THR:OG1	44:U:4:ILE:N	2.51	0.43
47:X:52:ASN:HA	47:X:74:ALA:HB1	1.99	0.43
50:a:54:LYS:O	50:a:58:ASN:ND2	2.50	0.43
51:3:65:A:H5'	51:3:200:G:H5'	2.01	0.43
51:3:405:U:H3'	51:3:406:G:C5'	2.31	0.43
51:3:422:C:H4'	51:3:423:G:N1	2.33	0.43
51:3:502:A:H2'	51:3:503:C:C6	2.53	0.43
51:3:1027:C:H2'	51:3:1034:G:O6	2.18	0.43
51:3:1401:G:H2'	51:3:1402:C:O4'	2.18	0.43
51:3:1435:G:H2'	51:3:1436:U:C6	2.53	0.43
51:3:1512:U:H2'	51:3:1513:A:C8	2.54	0.43
52:4:1560:G:O2'	52:4:1561:A:H5'	2.17	0.43
1:b:259:ASN:C	1:b:261:ARG:H	2.27	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:106:LEU:HB2	5:f:108:PHE:CE2	2.54	0.43
10:k:118:LEU:HD23	10:k:118:LEU:O	2.18	0.43
20:v:46:LYS:HZ3	20:v:50:MET:HE1	1.83	0.43
26:B:14:MET:HE1	52:4:15:G:H21	1.84	0.43
37:N:12:LYS:H	37:N:105:ARG:HH22	1.65	0.43
37:N:71:ILE:HG13	51:3:1289:A:H61	1.83	0.43
39:P:19:VAL:HG23	39:P:36:ARG:HA	2.01	0.43
40:Q:110:LYS:HG2	51:3:538:G:H5''	2.01	0.43
41:R:7:ASN:HD21	41:R:21:ILE:HG13	1.82	0.43
48:Y:24:ARG:NH2	51:3:323:U:OP1	2.51	0.43
50:a:203:GLN:HE22	52:4:2002:C:H5''	1.82	0.43
51:3:235:C:H2'	51:3:236:A:C8	2.53	0.43
52:4:133:U:H2'	52:4:134:G:C8	2.54	0.43
52:4:566:U:H4'	52:4:809:G:P	2.59	0.43
52:4:1061:A:H2'	52:4:1062:U:O4'	2.18	0.43
52:4:1184:G:H4'	52:4:1214:A:H8	1.83	0.43
52:4:1289:C:H2'	52:4:1290:G:H8	1.83	0.43
1:b:27:LYS:HD3	1:b:27:LYS:HA	1.71	0.43
1:b:196:ASN:ND2	1:b:199:HIS:HB2	2.34	0.43
4:e:76:PHE:HB3	52:4:2439:A:C2	2.54	0.43
11:l:64:PHE:HB3	28:E:24:LYS:HD2	2.00	0.43
13:o:75:GLY:HA3	13:o:109:ALA:HB3	1.99	0.43
20:v:61:LEU:HD12	20:v:61:LEU:N	2.34	0.43
26:B:9:ARG:NH1	52:4:516:C:OP1	2.52	0.43
27:D:44:VAL:HG13	27:D:44:VAL:O	2.19	0.43
29:F:32:LYS:CD	52:4:2606:A:H5'	2.49	0.43
34:K:47:LEU:HD12	34:K:55:HIS:HA	2.00	0.43
37:N:17:ARG:CZ	51:3:1129:C:H5''	2.49	0.43
37:N:123:ARG:NH1	51:3:1344:C:OP2	2.52	0.43
51:3:470:C:H2'	51:3:471:U:C6	2.54	0.43
51:3:634:C:H2'	51:3:635:A:C8	2.53	0.43
51:3:1263:C:H2'	51:3:1264:U:H6	1.83	0.43
51:3:1334:G:C2'	51:3:1335:U:H5'	2.48	0.43
52:4:156:A:H2'	52:4:157:C:C6	2.54	0.43
52:4:225:C:H2'	52:4:226:A:O4'	2.19	0.43
52:4:296:U:H2'	52:4:297:G:C8	2.54	0.43
52:4:418:C:H2'	52:4:419:U:O4'	2.18	0.43
52:4:859:G:C2'	52:4:860:U:OP2	2.67	0.43
52:4:903:C:H2'	52:4:904:G:C8	2.54	0.43
52:4:906:U:C3'	52:4:907:G:C5'	2.92	0.43
52:4:1019:U:H3	52:4:1270:A:H62	1.67	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:1707:A:H2'	52:4:1708:A:C8	2.54	0.43
52:4:2844:C:O2'	52:4:2845:C:H5'	2.19	0.43
52:4:2901:C:H2'	52:4:2902:C:H6	1.82	0.43
13:o:37:ALA:HB2	13:o:106:LEU:HD11	2.01	0.43
13:o:111:ARG:NH1	52:4:2504:A:N3	2.67	0.43
30:G:139:GLU:O	30:G:143:LEU:HD23	2.19	0.43
31:H:139:ASN:HD22	31:H:139:ASN:HA	1.63	0.43
31:H:171:ARG:HG3	31:H:173:PRO:HD3	2.01	0.43
38:O:53:ILE:HG23	51:3:1060:U:H4'	2.01	0.43
44:U:25:ARG:NH2	51:3:230:G:O2'	2.52	0.43
47:X:77:ARG:NH1	51:3:1223:C:OP1	2.52	0.43
51:3:162:A:C2'	51:3:163:C:H5'	2.48	0.43
51:3:1269:A:O4'	51:3:1326:U:H4'	2.18	0.43
52:4:170:U:H2'	52:4:171:U:C6	2.54	0.43
52:4:301:G:H1'	52:4:302:C:C6	2.54	0.43
52:4:504:A:H2'	52:4:504:A:N3	2.34	0.43
52:4:652:U:H2'	52:4:653:U:C2	2.53	0.43
52:4:2234:U:H2'	52:4:2235:G:C8	2.54	0.43
6:g:31:VAL:N	6:g:32:PRO:HD2	2.33	0.43
13:o:67:ASN:HA	52:4:1116:A:OP2	2.19	0.43
18:t:29:THR:HG23	18:t:85:VAL:O	2.18	0.43
24:z:11:SER:OG	24:z:12:ALA:N	2.51	0.43
32:I:97:LEU:HB2	32:I:134:TYR:HB3	2.00	0.43
40:Q:41:PRO:HA	40:Q:89:LEU:HD23	2.00	0.43
44:U:28:ARG:HE	44:U:29:ASN:ND2	2.16	0.43
50:a:27:ILE:HG22	50:a:189:LEU:HD21	2.00	0.43
51:3:12:U:H4'	51:3:526:C:H4'	2.00	0.43
52:4:549:G:H2'	52:4:550:C:H6	1.84	0.43
52:4:1043:A:H2'	52:4:1044:G:O4'	2.19	0.43
52:4:1200:C:N4	52:4:1220:C:H42	2.16	0.43
52:4:1700:A:O2'	52:4:1701:G:H5'	2.19	0.43
52:4:2597:A:H2'	52:4:2598:G:O4'	2.18	0.43
1:b:206:LYS:HB2	52:4:729:G:C5	2.54	0.43
5:f:67:ALA:HA	5:f:70:LEU:HD12	2.01	0.43
13:o:56:LYS:HA	13:o:59:ALA:HB3	1.99	0.43
15:q:101:ASP:OD2	15:q:103:VAL:HG12	2.19	0.43
27:D:1:MET:HE1	52:4:752:A:OP1	2.18	0.43
32:I:102:TYR:CZ	32:I:109:THR:HA	2.54	0.43
36:M:100:ILE:HG12	36:M:128:VAL:HB	2.00	0.43
51:3:371:A:H2'	51:3:372:C:O4'	2.19	0.43
51:3:505:G:OP2	51:3:535:A:H5'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:552:U:H2'	51:3:553:A:C8	2.53	0.43
51:3:889:A:H5'	51:3:891:U:H1'	1.99	0.43
51:3:1307:U:H2'	51:3:1308:U:C6	2.54	0.43
52:4:224:U:O4	52:4:420:C:H5'	2.19	0.43
52:4:1901:A:C5	52:4:1957:A:H1'	2.54	0.43
52:4:2171:C:H1'	52:4:2907:U:O4	2.19	0.43
52:4:2230:G:H2'	52:4:2231:C:C5'	2.48	0.43
52:4:2419:U:H5''	52:4:2508:C:O2'	2.19	0.43
52:4:2754:C:O2'	52:4:2755:G:H5'	2.19	0.43
52:4:2832:C:H2'	52:4:2833:A:O4'	2.18	0.43
2:c:133:THR:HG23	2:c:134:HIS:CD2	2.54	0.43
2:c:170:VAL:HG22	2:c:171:THR:N	2.34	0.43
3:d:60:TRP:NE1	3:d:68:ALA:O	2.52	0.43
6:g:2:GLN:HE21	6:g:20:ASN:HD22	1.65	0.43
12:n:9:GLN:HB3	52:4:1781:G:C6	2.54	0.43
15:q:20:ALA:HA	15:q:23:TYR:CE2	2.54	0.43
21:w:61:GLY:HA3	21:w:80:ALA:HA	2.00	0.43
31:H:130:ARG:O	31:H:134:LYS:HG2	2.19	0.43
36:M:62:LEU:H	36:M:62:LEU:CD1	2.29	0.43
37:N:59:LYS:HG2	37:N:60:LEU:CD1	2.49	0.43
40:Q:72:ASN:C	40:Q:73:LEU:HD12	2.44	0.43
51:3:214:C:O5'	51:3:214:C:H6	2.02	0.43
51:3:684:U:H2'	51:3:685:G:O4'	2.19	0.43
51:3:994:A:O2'	51:3:995:C:H5'	2.19	0.43
51:3:1011:C:H2'	51:3:1012:A:H8	1.83	0.43
51:3:1487:G:O2'	51:3:1488:G:H5'	2.19	0.43
52:4:150:U:H2'	52:4:151:C:C6	2.53	0.43
52:4:744:U:H2'	52:4:745:G:O4'	2.19	0.43
52:4:847:U:O2	52:4:847:U:H2'	2.19	0.43
52:4:1226:A:C2'	52:4:1227:G:H5'	2.49	0.43
52:4:2228:G:H2'	52:4:2229:A:O4'	2.19	0.43
52:4:2636:G:H2'	52:4:2637:G:H8	1.83	0.43
52:4:2842:G:O2'	52:4:2843:C:H5'	2.19	0.43
4:e:104:THR:HA	25:A:38:SER:HB3	2.01	0.42
11:l:47:ARG:NE	52:4:251:A:H5''	2.33	0.42
15:q:5:ARG:HD2	52:4:1378:G:H5''	2.00	0.42
19:u:91:LYS:NZ	52:4:83:A:OP2	2.48	0.42
20:v:5:ASN:HA	20:v:64:VAL:HG13	2.01	0.42
20:v:14:LYS:HB2	52:4:1040:G:N1	2.34	0.42
33:J:10:LEU:HD13	33:J:10:LEU:HA	1.92	0.42
35:L:101:ARG:NH1	51:3:940:C:H5''	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:M:95:MET:HE2	36:M:98:LEU:HD11	2.01	0.42
42:S:8:ARG:NE	51:3:981:U:OP1	2.52	0.42
49:Z:36:PHE:C	49:Z:38:GLU:H	2.27	0.42
51:3:304:U:O2'	51:3:305:G:H5'	2.19	0.42
51:3:858:G:O6	51:3:869:G:H3'	2.19	0.42
51:3:1171:A:H2'	51:3:1172:C:H6	1.81	0.42
51:3:1224:U:O2	51:3:1322:C:H5'	2.19	0.42
52:4:527:C:H4'	52:4:528:A:O4'	2.19	0.42
52:4:704:G:H1'	52:4:727:A:H61	1.83	0.42
52:4:721:A:H2'	52:4:722:A:C8	2.54	0.42
52:4:807:U:H2'	52:4:808:G:C8	2.54	0.42
52:4:936:A:H2'	52:4:937:C:C6	2.54	0.42
52:4:1177:C:H2'	52:4:1178:A:H5'	2.01	0.42
52:4:1437:G:H21	52:4:1739:C:H5''	1.84	0.42
52:4:2369:A:H2'	52:4:2370:G:C8	2.54	0.42
52:4:2387:U:H2'	52:4:2388:C:H6	1.84	0.42
52:4:2871:U:H2'	52:4:2872:G:C5'	2.49	0.42
52:4:2997:G:H2'	52:4:2998:C:O4'	2.18	0.42
1:b:38:LYS:NZ	1:b:55:GLY:O	2.52	0.42
1:b:131:MET:HG2	1:b:134:ILE:HD12	2.01	0.42
2:c:62:LYS:HB2	2:c:63:PRO:HD3	2.01	0.42
3:d:44:ARG:HD3	52:4:444:C:OP2	2.19	0.42
4:e:55:ASP:O	4:e:59:ILE:HG13	2.19	0.42
4:e:107:VAL:CG1	4:e:108:PRO:CD	2.96	0.42
9:j:27:ARG:HA	9:j:27:ARG:HD3	1.82	0.42
9:j:113:PRO:HD2	52:4:558:U:P	2.58	0.42
20:v:29:ILE:HG12	52:4:1140:U:O2	2.19	0.42
33:J:9:GLU:C	33:J:10:LEU:HD22	2.45	0.42
34:K:43:GLY:HA2	34:K:58:HIS:CE1	2.55	0.42
51:3:273:U:C2'	51:3:274:A:H5'	2.50	0.42
51:3:382:A:O2'	51:3:383:A:H5'	2.18	0.42
51:3:701:U:OP1	51:3:702:A:H2'	2.18	0.42
51:3:879:C:O2'	51:3:880:C:H5'	2.19	0.42
51:3:1173:U:H2'	51:3:1174:G:C8	2.53	0.42
52:4:145:C:H2'	52:4:146:A:C8	2.53	0.42
52:4:256:A:O2'	52:4:257:C:H5'	2.19	0.42
52:4:644:A:H2'	52:4:645:C:C5'	2.49	0.42
52:4:842:U:O2'	52:4:843:G:H5'	2.18	0.42
52:4:872:U:H2'	52:4:873:C:C6	2.54	0.42
52:4:2033:C:H2'	52:4:2058:G:C8	2.55	0.42
52:4:2242:A:H61	52:4:2245:A:H62	1.65	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:2253:G:N2	52:4:2301:A:N6	2.67	0.42
52:4:2598:G:H2'	52:4:2599:A:H8	1.84	0.42
2:c:161:MET:HE3	52:4:2178:C:H1'	2.00	0.42
4:e:131:VAL:HG22	4:e:151:LEU:O	2.17	0.42
7:h:89:PRO:HG3	7:h:95:LEU:HG	2.01	0.42
8:i:86:LYS:HD3	8:i:86:LYS:C	2.44	0.42
10:k:70:ARG:NH1	52:4:2812:U:O4'	2.52	0.42
10:k:91:SER:O	10:k:92:GLU:C	2.63	0.42
12:n:53:THR:OG1	52:4:2968:C:H5''	2.19	0.42
20:v:64:VAL:HA	20:v:69:GLU:HG2	2.02	0.42
25:A:33:ASN:OD1	25:A:34:LEU:N	2.53	0.42
35:L:63:VAL:HG12	35:L:127:ALA:HB1	2.02	0.42
37:N:70:GLY:HA3	51:3:1371:G:H5''	2.00	0.42
37:N:72:SER:N	51:3:1372:U:OP1	2.53	0.42
50:a:42:VAL:HG11	50:a:214:ILE:HG23	2.02	0.42
52:4:155:A:H2'	52:4:156:A:C8	2.54	0.42
52:4:433:C:O2'	52:4:434:U:H5'	2.19	0.42
52:4:460:A:H2'	52:4:461:C:O4'	2.20	0.42
52:4:1237:C:H2'	52:4:1238:G:O4'	2.19	0.42
52:4:1401:U:H5''	52:4:1774:C:N4	2.34	0.42
52:4:1463:C:H2'	52:4:1464:A:C8	2.54	0.42
52:4:1629:G:O2'	52:4:1630:A:H5'	2.19	0.42
52:4:2021:C:H2'	52:4:2022:C:H5'	2.02	0.42
52:4:3012:U:H2'	52:4:3013:G:C8	2.53	0.42
4:e:137:PHE:CE2	4:e:151:LEU:HD21	2.55	0.42
8:i:4:VAL:HG23	8:i:7:TYR:CB	2.48	0.42
8:i:130:GLY:HA3	52:4:1208:A:H4'	2.01	0.42
10:k:6:THR:HG23	52:4:1794:G:H4'	2.01	0.42
16:r:74:ILE:HB	16:r:87:GLN:HB3	2.01	0.42
18:t:21:SER:O	18:t:24:MET:HB3	2.19	0.42
28:E:16:THR:HG21	28:E:48:MET:SD	2.60	0.42
33:J:38:VAL:O	33:J:38:VAL:HG13	2.20	0.42
39:P:125:LYS:HB2	51:3:797:C:OP1	2.19	0.42
45:V:16:MET:HE2	45:V:19:SER:HB3	2.00	0.42
48:Y:66:ILE:HD12	48:Y:66:ILE:N	2.34	0.42
51:3:516:U:H3'	51:3:517:G:C8	2.54	0.42
51:3:977:A:H1'	51:3:1223:C:N4	2.33	0.42
51:3:1176:A:H2'	51:3:1177:G:C8	2.55	0.42
51:3:1181:G:H4'	51:3:1184:G:H4'	2.01	0.42
52:4:572:A:H5''	52:4:573:U:OP2	2.18	0.42
52:4:854:C:O2'	52:4:855:G:H5'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:1027:C:O5'	52:4:1027:C:H6	2.02	0.42
52:4:1240:G:H2'	52:4:1241:U:C6	2.54	0.42
52:4:2039:U:H2'	52:4:2046:A:N1	2.34	0.42
52:4:2095:C:H2'	52:4:2096:G:H5'	2.02	0.42
52:4:2483:G:O2'	52:4:2484:U:H5'	2.19	0.42
52:4:2661:U:H2'	52:4:2662:A:H5'	2.02	0.42
3:d:25:GLU:O	3:d:28:VAL:HG12	2.19	0.42
3:d:117:ARG:NE	3:d:184:ASP:O	2.52	0.42
5:f:93:TYR:CE1	5:f:159:LYS:HE3	2.54	0.42
10:k:102:PRO:HB3	10:k:121:GLU:HB3	2.01	0.42
11:l:78:ARG:HH22	11:l:80:SER:HB2	1.84	0.42
12:n:69:ARG:O	12:n:70:THR:OG1	2.31	0.42
17:s:31:GLN:O	17:s:35:ILE:HG13	2.19	0.42
35:L:37:THR:OG1	51:3:1290:G:H5''	2.20	0.42
38:O:66:GLU:HG2	42:S:98:ALA:HB2	2.02	0.42
51:3:355:C:C4	51:3:356:A:N7	2.87	0.42
51:3:637:C:H2'	51:3:638:U:C6	2.55	0.42
51:3:839:C:H2'	51:3:840:C:C6	2.54	0.42
52:4:742:A:H2'	52:4:743:A:H8	1.83	0.42
52:4:905:A:H2'	52:4:906:U:C5	2.54	0.42
52:4:934:U:H2'	52:4:935:C:C6	2.54	0.42
52:4:1065:G:H4'	52:4:1066:G:C8	2.54	0.42
52:4:1533:U:H2'	52:4:1534:U:C6	2.55	0.42
52:4:1586:U:H4'	52:4:1587:G:C4	2.54	0.42
52:4:2225:A:O2'	52:4:2226:U:H5'	2.20	0.42
52:4:2420:U:H2'	52:4:2421:G:H8	1.85	0.42
52:4:2665:U:H2'	52:4:2666:C:H6	1.83	0.42
1:b:47:ARG:HD2	52:4:778:G:H5''	2.02	0.42
8:i:55:PRO:HG3	52:4:1188:U:H5''	2.02	0.42
31:H:42:LEU:HB3	31:H:46:LEU:HD12	2.02	0.42
32:I:116:LEU:O	32:I:121:ALA:HB3	2.19	0.42
36:M:4:ASP:HB2	36:M:80:PRO:HG3	2.00	0.42
36:M:75:GLN:O	36:M:126:CYS:HB3	2.18	0.42
44:U:46:LYS:NZ	51:3:617:G:H4'	2.34	0.42
51:3:180:U:H2'	51:3:181:A:O4'	2.19	0.42
51:3:191:G:H2'	51:3:192:A:C8	2.54	0.42
51:3:576:C:H3'	51:3:577:G:C5'	2.50	0.42
51:3:1263:C:H2'	51:3:1264:U:C6	2.54	0.42
51:3:1437:A:H2'	51:3:1438:G:H8	1.83	0.42
52:4:422:A:H2'	52:4:423:A:O4'	2.20	0.42
52:4:523:C:H2'	52:4:524:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:601:C:O2'	52:4:605:G:H5''	2.19	0.42
52:4:1042:G:H2'	52:4:1043:A:O4'	2.20	0.42
52:4:1216:A:H5'	52:4:1217:A:O5'	2.20	0.42
52:4:2084:U:C2'	52:4:2085:C:H5'	2.50	0.42
52:4:2152:G:H2'	52:4:2153:C:O4'	2.19	0.42
52:4:2394:A:H4'	52:4:2395:A:C2	2.54	0.42
52:4:2684:C:H2'	52:4:2685:G:H5'	2.01	0.42
1:b:227:VAL:O	1:b:227:VAL:HG22	2.19	0.42
3:d:128:ALA:HA	3:d:156:ASN:ND2	2.34	0.42
3:d:149:ILE:HA	3:d:170:ARG:O	2.20	0.42
8:i:109:ALA:CB	8:i:125:THR:HG22	2.48	0.42
16:r:37:GLU:N	16:r:37:GLU:OE2	2.53	0.42
19:u:51:LEU:N	19:u:51:LEU:HD12	2.34	0.42
30:G:130:LYS:NZ	51:3:1160:G:H4'	2.35	0.42
32:I:96:ARG:O	32:I:100:VAL:HG23	2.20	0.42
33:J:92:ARG:HB2	33:J:127:TYR:HB2	2.01	0.42
37:N:125:GLN:OE1	51:3:1233:G:OP2	2.36	0.42
43:T:31:LEU:O	43:T:35:ILE:HG13	2.19	0.42
47:X:20:LYS:HD2	47:X:20:LYS:O	2.19	0.42
51:3:51:A:H4'	51:3:52:C:C5'	2.49	0.42
51:3:392:C:H2'	51:3:393:A:C8	2.53	0.42
51:3:594:U:C2'	51:3:595:A:H5'	2.50	0.42
51:3:1007:U:H2'	51:3:1008:U:C6	2.55	0.42
52:4:1132:A:H4'	52:4:1133:G:N7	2.35	0.42
4:e:132:ARG:HA	52:4:2433:U:H1'	2.01	0.42
5:f:101:VAL:HA	5:f:115:GLN:HA	2.01	0.42
12:n:36:THR:HG23	52:4:1406:C:OP1	2.20	0.42
23:y:1:MET:N	52:4:102:U:O2	2.53	0.42
32:I:61:ARG:HH21	32:I:67:LEU:HA	1.84	0.42
42:S:78:LEU:HD13	42:S:82:LYS:CG	2.50	0.42
51:3:346:G:H2'	51:3:347:G:H5'	2.02	0.42
51:3:1167:A:H2'	51:3:1169:A:C8	2.54	0.42
52:4:192:C:C2'	52:4:193:U:H5'	2.49	0.42
52:4:713:G:H3'	52:4:714:U:H5''	2.02	0.42
52:4:1218:A:H2'	52:4:1219:G:O4'	2.20	0.42
52:4:2187:A:N1	52:4:2738:C:H4'	2.34	0.42
52:4:2289:C:O2'	52:4:2301:A:H4'	2.20	0.42
52:4:2574:G:H2'	52:4:2631:A:H61	1.83	0.42
52:4:2660:G:H1'	52:4:2791:G:N2	2.33	0.42
2:c:55:LYS:HE2	2:c:59:ARG:HG3	2.01	0.42
4:e:141:ASP:O	4:e:142:TYR:HB3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:j:28:LEU:O	9:j:32:LEU:HD13	2.20	0.42
9:j:36:LEU:O	9:j:51:GLY:HA3	2.20	0.42
12:n:74:GLU:O	12:n:77:ALA:HB3	2.20	0.42
14:p:25:VAL:HG22	14:p:26:GLU:N	2.34	0.42
23:y:1:MET:N	52:4:102:U:H3	2.18	0.42
31:H:192:TYR:O	51:3:1206:G:H1'	2.20	0.42
34:K:49:TYR:HH	34:K:86:ARG:HH12	1.64	0.42
39:P:34:THR:OG1	39:P:35:ASP:N	2.53	0.42
43:T:23:SER:HA	51:3:751:U:H4'	2.02	0.42
44:U:43:ALA:HB1	44:U:46:LYS:HD2	2.01	0.42
45:V:64:ARG:HG3	51:3:130:A:C8	2.55	0.42
51:3:484:G:H4'	51:3:485:U:H5''	2.01	0.42
52:4:2183:C:H5'	52:4:2184:G:O5'	2.20	0.42
52:4:2783:G:O2'	52:4:2784:U:C5	2.68	0.42
9:j:102:GLU:HB3	9:j:119:PHE:HZ	1.84	0.42
15:q:65:ASN:ND2	52:4:1010:A:OP1	2.53	0.42
17:s:97:LEU:HD23	17:s:97:LEU:N	2.32	0.42
33:J:45:VAL:HG23	33:J:46:GLY:N	2.24	0.42
35:L:70:PRO:HD2	35:L:99:ALA:HB2	2.01	0.42
39:P:118:ASN:OD1	51:3:718:A:H4'	2.20	0.42
42:S:25:GLU:HA	42:S:29:ILE:HD13	2.01	0.42
50:a:205:LYS:HD3	52:4:2004:A:OP1	2.19	0.42
51:3:128:G:H2'	51:3:129:A:C8	2.55	0.42
51:3:556:C:O2'	51:3:557:G:H5'	2.20	0.42
51:3:1114:C:C2'	51:3:1115:U:H5'	2.50	0.42
51:3:1291:U:H2'	51:3:1292:G:H8	1.85	0.42
51:3:1477:U:H2'	51:3:1478:U:H6	1.82	0.42
52:4:622:G:O2'	52:4:623:C:H5'	2.20	0.42
52:4:633:A:H2'	52:4:634:C:C5'	2.48	0.42
52:4:671:C:H2'	52:4:672:C:C6	2.55	0.42
52:4:1234:G:H2'	52:4:1235:G:C8	2.55	0.42
52:4:1301:U:H2'	52:4:1302:U:H4'	2.01	0.42
52:4:1450:A:N6	52:4:1461:G:H21	2.18	0.42
52:4:2038:G:H1	52:4:2048:C:H42	1.68	0.42
52:4:2206:C:H2'	52:4:2207:U:C6	2.55	0.42
52:4:2220:U:H4'	52:4:2221:G:O5'	2.20	0.42
52:4:2812:U:C4	52:4:2813:G:N7	2.87	0.42
52:4:3026:U:H2'	52:4:3027:A:H8	1.85	0.42
1:b:75:ALA:HB3	1:b:115:ILE:HG13	2.02	0.41
5:f:90:GLY:HA3	5:f:93:TYR:CD1	2.54	0.41
8:i:24:GLY:HA2	8:i:34:ILE:HG13	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:j:68:LYS:HD3	52:4:1022:G:N7	2.35	0.41
16:r:49:ILE:HD13	16:r:54:VAL:HA	2.02	0.41
35:L:35:LYS:HA	35:L:38:ALA:HB3	2.02	0.41
42:S:68:ARG:NH1	42:S:81:ILE:HD11	2.35	0.41
51:3:671:G:H2'	51:3:672:U:O4'	2.20	0.41
52:4:296:U:H2'	52:4:297:G:H8	1.85	0.41
52:4:644:A:H2'	52:4:645:C:H5''	2.02	0.41
52:4:1692:C:O2'	52:4:1693:C:H5'	2.20	0.41
52:4:1985:G:H1'	52:4:2013:A:H62	1.84	0.41
52:4:2240:G:H2'	52:4:2241:U:O4'	2.20	0.41
52:4:2302:C:H2'	52:4:2303:C:O4'	2.20	0.41
52:4:2483:G:C2'	52:4:2484:U:H5'	2.49	0.41
1:b:138:SER:OG	1:b:139:THR:N	2.53	0.41
3:d:57:LYS:C	3:d:58:LYS:HD3	2.45	0.41
3:d:155:GLU:HG3	3:d:156:ASN:N	2.35	0.41
6:g:41:LYS:HA	6:g:44:ILE:HD12	2.02	0.41
8:i:139:VAL:O	8:i:139:VAL:HG13	2.20	0.41
15:q:50:ARG:NH2	52:4:993:G:OP2	2.53	0.41
20:v:44:HIS:O	20:v:48:MET:N	2.53	0.41
24:z:29:ARG:CB	24:z:30:ARG:HD3	2.51	0.41
31:H:122:GLN:HB3	31:H:127:VAL:HG21	2.01	0.41
35:L:133:ALA:O	35:L:136:LYS:HB3	2.19	0.41
44:U:12:LYS:O	44:U:13:LYS:HB2	2.18	0.41
44:U:47:GLU:CG	44:U:48:GLU:HG3	2.48	0.41
51:3:893:C:H2'	51:3:894:G:C8	2.55	0.41
52:4:404:A:H1'	52:4:406:G:N3	2.35	0.41
52:4:814:C:H1'	52:4:1353:G:N2	2.35	0.41
52:4:917:A:H5''	52:4:2396:A:N6	2.33	0.41
52:4:1151:G:H2'	52:4:1152:G:C8	2.55	0.41
52:4:1272:A:H2'	52:4:1273:C:C6	2.56	0.41
52:4:1501:A:C5'	52:4:2340:A:H1'	2.50	0.41
52:4:1657:G:H2'	52:4:1658:G:C8	2.55	0.41
52:4:1764:U:H2'	52:4:1765:A:H8	1.85	0.41
52:4:2498:G:H2'	52:4:2499:G:O4'	2.20	0.41
52:4:2685:G:H2'	52:4:2686:C:C6	2.55	0.41
4:e:96:TRP:O	4:e:100:GLU:HG3	2.20	0.41
7:h:107:GLU:O	7:h:108:VAL:C	2.63	0.41
15:q:16:ILE:HG13	15:q:31:TYR:HE1	1.86	0.41
33:J:82:HIS:HB2	33:J:83:PRO:HD2	2.01	0.41
38:O:26:VAL:HG22	38:O:74:VAL:HG13	2.03	0.41
39:P:38:GLY:O	51:3:683:G:N2	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:P:57:SER:HB2	39:P:90:PRO:HG3	2.01	0.41
39:P:91:GLY:O	39:P:93:GLU:N	2.52	0.41
39:P:110:THR:HG23	49:Z:4:LYS:HG2	2.03	0.41
45:V:6:THR:HB	45:V:59:GLU:CD	2.45	0.41
51:3:160:A:H2'	51:3:161:A:O4'	2.20	0.41
52:4:1168:A:O2'	52:4:1169:G:H5'	2.20	0.41
52:4:2544:C:H2'	52:4:2545:C:H6	1.85	0.41
52:4:2695:G:H2'	52:4:2696:U:C6	2.56	0.41
52:4:2981:C:H2'	52:4:2982:G:C8	2.55	0.41
4:e:110:ILE:HG13	4:e:136:ILE:HG21	2.02	0.41
7:h:54:VAL:HG22	7:h:56:ARG:NH2	2.32	0.41
12:n:2:ARG:O	12:n:2:ARG:CD	2.60	0.41
15:q:24:TYR:HB3	52:4:533:G:OP1	2.21	0.41
15:q:33:VAL:HG11	52:4:2147:A:H4'	2.02	0.41
30:G:9:LEU:HD23	30:G:9:LEU:O	2.19	0.41
30:G:131:LYS:O	30:G:135:MET:HG2	2.20	0.41
31:H:137:VAL:HA	31:H:148:ILE:HD11	2.02	0.41
36:M:1:SER:H3	36:M:3:GLN:HE21	1.67	0.41
37:N:59:LYS:HG2	37:N:60:LEU:HD12	2.02	0.41
38:O:72:ARG:NH2	51:3:1151:A:O2'	2.53	0.41
42:S:5:MET:HE2	42:S:5:MET:HA	2.02	0.41
51:3:100:G:N3	51:3:100:G:H2'	2.35	0.41
51:3:279:A:H5'	51:3:281:G:H5'	2.01	0.41
51:3:952:U:O2'	51:3:953:G:H5'	2.20	0.41
51:3:1144:G:O2'	51:3:1145:A:H5'	2.19	0.41
51:3:1190:G:H1'	51:3:1191:A:OP2	2.20	0.41
51:3:1316:G:H2'	51:3:1317:C:H5'	2.01	0.41
52:4:616:A:H2'	52:4:617:G:O4'	2.20	0.41
52:4:927:A:H2'	52:4:928:A:C8	2.56	0.41
52:4:1168:A:H2	52:4:1243:G:H22	1.69	0.41
52:4:1217:A:H2	52:4:1230:C:H42	1.66	0.41
52:4:1764:U:H2'	52:4:1765:A:C8	2.56	0.41
52:4:1907:U:C5	52:4:1912:A:N7	2.86	0.41
52:4:2273:C:O5'	52:4:2274:C:H5''	2.20	0.41
52:4:2457:U:H2'	52:4:2458:G:C8	2.55	0.41
4:e:25:MET:HG3	52:4:1121:U:H1'	2.03	0.41
12:n:92:GLY:O	52:4:3008:C:H1'	2.20	0.41
20:v:16:ALA:O	20:v:20:LEU:HD23	2.20	0.41
21:w:55:LEU:CD1	21:w:76:ILE:HD12	2.50	0.41
22:x:17:ARG:HA	22:x:17:ARG:HD3	1.89	0.41
24:z:29:ARG:HH22	52:4:1311:U:H4'	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:z:30:ARG:HD3	24:z:30:ARG:N	2.35	0.41
27:D:7:PRO:CB	52:4:1437:G:H4'	2.49	0.41
35:L:117:LEU:O	35:L:121:ASN:ND2	2.53	0.41
37:N:12:LYS:N	37:N:105:ARG:HH22	2.19	0.41
39:P:117:HIS:HA	51:3:718:A:O4'	2.20	0.41
41:R:7:ASN:O	41:R:9:PRO:HD3	2.21	0.41
42:S:12:ARG:NH2	51:3:1218:C:OP1	2.53	0.41
43:T:24:THR:HG21	43:T:69:LEU:HD13	2.02	0.41
45:V:56:ASP:N	45:V:56:ASP:OD1	2.52	0.41
51:3:176:C:H3'	51:3:177:G:H21	1.85	0.41
51:3:221:C:H2'	51:3:222:C:C6	2.55	0.41
51:3:573:A:O2'	51:3:574:A:H5'	2.21	0.41
51:3:847:G:O2'	51:3:848:C:H5'	2.21	0.41
52:4:640:C:H2'	52:4:641:U:C6	2.56	0.41
52:4:809:G:O2'	52:4:810:U:H5'	2.21	0.41
52:4:1190:G:C2'	52:4:1191:G:H5'	2.51	0.41
52:4:2246:U:H1'	52:4:2273:C:N4	2.36	0.41
52:4:2262:A:H61	52:4:2284:G:H2'	1.85	0.41
52:4:2624:C:H2'	52:4:2625:A:C8	2.55	0.41
3:d:5:LEU:HD12	3:d:120:VAL:HG13	2.03	0.41
7:h:5:LEU:HD12	7:h:6:GLN:N	2.36	0.41
8:i:64:ARG:HA	8:i:64:ARG:HD3	1.77	0.41
9:j:92:MET:HE3	9:j:95:ARG:HB3	2.02	0.41
11:l:109:LYS:NZ	11:l:126:ARG:HG2	2.36	0.41
15:q:111:LYS:HG3	16:r:48:LYS:HZ2	1.84	0.41
22:x:39:VAL:HG22	22:x:41:SER:H	1.84	0.41
31:H:115:VAL:CG2	31:H:199:VAL:HG11	2.50	0.41
32:I:109:THR:HG23	32:I:112:GLU:H	1.86	0.41
32:I:151:GLN:HB3	51:3:437:U:H5''	2.03	0.41
37:N:114:LYS:HZ1	51:3:1187:G:H5''	1.82	0.41
51:3:79:G:O2'	51:3:80:A:H5'	2.20	0.41
51:3:1070:U:O2'	51:3:1071:C:H5'	2.20	0.41
51:3:1197:A:H2'	51:3:1198:G:C5'	2.32	0.41
52:4:139:U:H5'	52:4:141:G:C2	2.55	0.41
52:4:184:C:H2'	52:4:185:G:C8	2.56	0.41
52:4:940:G:C3'	52:4:941:A:H5''	2.50	0.41
52:4:1446:U:H2'	52:4:1447:C:H6	1.85	0.41
52:4:1557:G:H2'	52:4:1558:G:H8	1.84	0.41
52:4:1917:A:H2'	52:4:1918:C:O4'	2.20	0.41
52:4:2284:G:H2'	52:4:2285:G:H5'	2.02	0.41
52:4:2364:U:O2'	52:4:2365:G:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:93:VAL:HG22	1:b:94:LEU:H	1.82	0.41
1:b:175:LEU:HD13	52:4:1927:G:C5	2.56	0.41
2:c:155:VAL:O	52:4:2747:C:H5'	2.21	0.41
2:c:161:MET:CE	52:4:2177:G:H21	2.32	0.41
3:d:193:VAL:O	3:d:196:VAL:HG12	2.21	0.41
6:g:43:ASN:HA	6:g:46:PHE:CD2	2.56	0.41
13:o:38:GLN:HG3	13:o:40:ILE:HD11	2.03	0.41
15:q:43:GLN:OE1	16:r:77:PHE:HB3	2.20	0.41
18:t:14:PRO:CA	18:t:32:LEU:HD23	2.45	0.41
23:y:43:LEU:HD22	52:4:61:C:H5''	2.01	0.41
30:G:14:HIS:HA	30:G:40:ILE:HG22	2.03	0.41
31:H:52:SER:HA	31:H:113:LYS:HB3	2.02	0.41
32:I:109:THR:OG1	32:I:110:ARG:N	2.54	0.41
39:P:126:ARG:NH2	51:3:693:G:OP1	2.53	0.41
41:R:100:ARG:CG	51:3:950:U:OP2	2.69	0.41
42:S:81:ILE:HG21	51:3:1202:U:N3	2.36	0.41
50:a:5:THR:HB	52:4:2257:C:OP1	2.20	0.41
51:3:174:A:C2'	51:3:175:C:H5'	2.51	0.41
51:3:312:C:H2'	51:3:313:A:C8	2.56	0.41
51:3:478:A:H2'	51:3:479:U:C1'	2.50	0.41
51:3:915:A:C2'	51:3:916:U:H5'	2.49	0.41
51:3:1404:C:H2'	51:3:1405:G:H8	1.80	0.41
51:3:1526:G:H2'	51:3:1527:U:C6	2.55	0.41
52:4:100:U:H4'	52:4:101:A:O4'	2.20	0.41
52:4:286:U:H2'	52:4:287:G:H8	1.84	0.41
52:4:603:A:N6	52:4:655:A:H5'	2.36	0.41
52:4:1563:G:H2'	52:4:1564:G:H8	1.85	0.41
52:4:1837:U:H2'	52:4:1838:G:H8	1.86	0.41
52:4:2661:U:C2'	52:4:2662:A:H5'	2.51	0.41
52:4:2930:G:O2'	52:4:2931:G:H5'	2.20	0.41
2:c:70:LYS:NZ	52:4:2914:U:OP1	2.52	0.41
3:d:40:ARG:HD2	52:4:443:A:C5	2.55	0.41
3:d:148:ILE:HD12	3:d:148:ILE:N	2.31	0.41
4:e:42:ALA:CB	4:e:49:LEU:HD11	2.50	0.41
5:f:106:LEU:HB3	5:f:151:ARG:HD2	2.03	0.41
7:h:30:SER:OG	7:h:81:LEU:HB3	2.21	0.41
8:i:55:PRO:HD3	8:i:74:PRO:HD3	2.02	0.41
13:o:26:LEU:HD23	13:o:92:PHE:HD1	1.85	0.41
20:v:12:GLN:HG2	52:4:1141:G:H5''	2.02	0.41
28:E:44:ARG:N	28:E:45:PRO:HD2	2.35	0.41
29:F:32:LYS:HD2	52:4:2606:A:OP1	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:I:104:MET:SD	32:I:104:MET:C	3.04	0.41
47:X:55:GLN:HG3	47:X:56:HIS:H	1.85	0.41
48:Y:23:ARG:O	48:Y:26:MET:HG3	2.20	0.41
51:3:39:G:O2'	51:3:40:C:H5'	2.21	0.41
51:3:47:C:H4'	51:3:48:C:O5'	2.20	0.41
51:3:697:U:H2'	51:3:698:G:H5'	2.01	0.41
51:3:1082:A:H2'	51:3:1083:U:O4'	2.21	0.41
51:3:1410:A:H2'	51:3:1411:C:C6	2.56	0.41
52:4:330:A:H8	52:4:1338:G:C5	2.39	0.41
52:4:607:U:O4	52:4:620:G:H5'	2.20	0.41
52:4:881:G:H1	52:4:895:U:H3	1.69	0.41
52:4:893:C:H2'	52:4:894:U:C5'	2.51	0.41
52:4:1001:A:H2'	52:4:1002:G:O4'	2.20	0.41
52:4:1030:C:O2'	52:4:1031:U:H5'	2.21	0.41
52:4:1095:A:H2'	52:4:1096:C:O4'	2.20	0.41
52:4:1444:U:H2'	52:4:1445:G:H8	1.85	0.41
52:4:1463:C:H2'	52:4:1464:A:H8	1.85	0.41
52:4:1514:C:H2'	52:4:1515:A:H8	1.83	0.41
52:4:1636:A:H2'	52:4:1637:A:C1'	2.51	0.41
52:4:2393:U:H2'	52:4:2394:A:C8	2.56	0.41
52:4:2673:G:C2'	52:4:2674:U:H5'	2.50	0.41
1:b:44:ASN:OD1	1:b:44:ASN:N	2.54	0.41
1:b:60:ALA:O	1:b:62:ARG:NH1	2.53	0.41
2:c:97:SER:OG	2:c:98:VAL:N	2.52	0.41
2:c:105:LYS:O	2:c:177:VAL:HG12	2.21	0.41
3:d:163:ASN:ND2	52:4:320:A:N3	2.68	0.41
4:e:26:GLN:HE21	52:4:1123:A:H4'	1.85	0.41
4:e:26:GLN:HA	52:4:1123:A:H1'	2.02	0.41
4:e:79:ARG:HB2	4:e:82:TYR:CE1	2.56	0.41
4:e:97:GLU:OE2	25:A:25:ARG:HD2	2.21	0.41
7:h:56:ARG:CG	52:4:1212:A:O2'	2.68	0.41
8:i:61:TYR:HE2	8:i:67:THR:HB	1.85	0.41
9:j:36:LEU:HD11	9:j:122:LEU:HD13	2.02	0.41
10:k:93:GLN:HA	10:k:94:PRO:HD2	1.84	0.41
20:v:83:LYS:HA	20:v:84:PRO:HD3	1.89	0.41
21:w:19:VAL:HG22	21:w:34:VAL:HG22	2.02	0.41
21:w:22:PHE:CD2	52:4:922:C:H1'	2.55	0.41
25:A:17:SER:HA	25:A:33:ASN:HD21	1.85	0.41
30:G:116:LEU:HD23	30:G:116:LEU:HA	1.91	0.41
31:H:79:LYS:HD3	31:H:79:LYS:HA	1.95	0.41
32:I:69:ARG:HB2	51:3:546:A:OP1	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:I:116:LEU:O	32:I:122:ILE:HG12	2.20	0.41
34:K:29:ILE:HD13	34:K:64:VAL:HG11	2.02	0.41
36:M:52:GLY:HA3	36:M:56:PRO:HA	2.03	0.41
37:N:43:ALA:HB1	37:N:46:VAL:CG1	2.50	0.41
39:P:124:LYS:HD2	39:P:124:LYS:C	2.46	0.41
41:R:108:ARG:HD3	51:3:1307:U:O2'	2.21	0.41
42:S:70:HIS:ND1	51:3:976:G:OP1	2.46	0.41
44:U:9:HIS:HB3	44:U:10:GLY:H	1.74	0.41
51:3:16:A:O2'	51:3:17:U:H5'	2.20	0.41
51:3:73:C:H2'	51:3:74:A:H8	1.86	0.41
51:3:1158:C:H3'	51:3:1158:C:O2	2.20	0.41
51:3:1211:U:C5'	51:3:1213:A:H1'	2.51	0.41
52:4:28:A:H1'	52:4:513:A:C2	2.56	0.41
52:4:164:C:C2'	52:4:165:A:H5'	2.50	0.41
52:4:182:A:O2'	52:4:183:C:H5'	2.20	0.41
52:4:898:C:C3'	52:4:899:A:C5'	2.94	0.41
52:4:968:C:H2'	52:4:969:G:C8	2.56	0.41
52:4:1063:U:H2'	52:4:1066:G:H22	1.86	0.41
52:4:1090:G:C6	52:4:1122:G:C2	3.09	0.41
52:4:1117:G:H2'	52:4:1118:A:O4'	2.20	0.41
52:4:1241:U:H2'	52:4:1242:C:H6	1.85	0.41
52:4:1303:A:C5'	52:4:1304:U:H5'	2.51	0.41
52:4:1683:G:H8	52:4:1683:G:H5'	1.86	0.41
52:4:1702:C:H2'	52:4:1703:C:C6	2.56	0.41
52:4:1725:A:H5'	52:4:1726:A:H5'	2.03	0.41
52:4:1837:U:H2'	52:4:1838:G:C8	2.56	0.41
52:4:2058:G:N2	52:4:2096:G:H2'	2.35	0.41
52:4:2532:U:H2'	52:4:2533:G:O4'	2.20	0.41
52:4:2760:A:O2'	52:4:2761:G:H5'	2.21	0.41
52:4:2785:A:H2'	52:4:2786:C:O4'	2.21	0.41
52:4:2885:A:N3	52:4:2885:A:H2'	2.34	0.41
52:4:2929:G:H2'	52:4:2930:G:C8	2.56	0.41
1:b:66:PHE:O	1:b:68:ARG:HG2	2.20	0.41
4:e:11:VAL:O	4:e:15:LEU:HD23	2.22	0.41
7:h:119:PRO:O	7:h:120:ALA:HB3	2.21	0.41
20:v:83:LYS:HD3	20:v:85:LYS:CE	2.51	0.41
30:G:10:LYS:HB3	30:G:10:LYS:HE2	1.91	0.41
38:O:41:PRO:HA	38:O:72:ARG:HG2	2.03	0.41
39:P:100:ASN:HA	39:P:106:ILE:HD11	2.01	0.41
41:R:64:VAL:CG2	41:R:65:GLU:H	2.24	0.41
44:U:8:ARG:O	44:U:29:ASN:ND2	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:a:34:ALA:CB	50:a:178:VAL:HG21	2.51	0.41
51:3:118:U:H2'	51:3:119:A:H5'	2.02	0.41
51:3:156:C:H2'	51:3:157:U:O4'	2.21	0.41
51:3:182:A:H2'	51:3:184:G:C8	2.56	0.41
51:3:309:A:H2'	51:3:310:G:C8	2.54	0.41
51:3:672:U:H2'	51:3:673:A:C8	2.56	0.41
51:3:869:G:H4'	51:3:872:A:C8	2.56	0.41
51:3:1147:C:H2'	51:3:1148:U:C6	2.55	0.41
51:3:1332:A:H2'	51:3:1333:A:C8	2.55	0.41
52:4:214:G:O2'	52:4:215:G:H5'	2.21	0.41
52:4:406:G:O2'	52:4:407:G:H5'	2.21	0.41
52:4:2805:G:H2'	52:4:2806:C:C6	2.55	0.41
8:i:73:PRO:HA	8:i:74:PRO:HD3	1.91	0.40
10:k:65:THR:HG23	10:k:68:GLY:H	1.86	0.40
11:l:93:ASN:C	11:l:95:LEU:H	2.29	0.40
14:p:96:LEU:HD22	14:p:98:TYR:HE1	1.86	0.40
20:v:8:VAL:HA	20:v:40:ILE:HD12	2.02	0.40
21:w:22:PHE:N	21:w:25:GLU:OE2	2.54	0.40
31:H:5:HIS:HA	31:H:6:PRO:HD3	1.80	0.40
32:I:84:ASN:ND2	33:J:100:GLU:OE1	2.54	0.40
32:I:102:TYR:HD2	32:I:110:ARG:NE	2.18	0.40
33:J:101:GLY:N	33:J:121:ASN:HD22	2.19	0.40
33:J:156:ARG:NH1	36:M:42:GLU:OE1	2.54	0.40
51:3:174:A:H2'	51:3:175:C:H5'	2.03	0.40
51:3:815:A:H4'	51:3:817:C:C5	2.56	0.40
51:3:941:G:H2'	51:3:942:G:O4'	2.21	0.40
51:3:986:U:H2'	51:3:987:G:H8	1.86	0.40
51:3:1133:G:H2'	51:3:1134:G:O4'	2.21	0.40
51:3:1326:U:H2'	51:3:1327:C:C6	2.56	0.40
51:3:1432:G:H1'	51:3:1468:A:H62	1.86	0.40
52:4:56:A:H2'	52:4:57:C:O4'	2.22	0.40
52:4:107:G:H2'	52:4:108:G:H8	1.85	0.40
52:4:152:A:H2'	52:4:153:U:C6	2.56	0.40
52:4:387:U:H6	52:4:387:U:H5'	1.87	0.40
52:4:1230:C:H2'	52:4:1231:A:O4'	2.20	0.40
52:4:1848:U:H2'	52:4:1849:G:O4'	2.20	0.40
52:4:1991:G:H2'	52:4:1992:U:O4'	2.20	0.40
52:4:2119:U:H2'	52:4:2120:G:C5'	2.51	0.40
52:4:2419:U:H2'	52:4:2420:U:C6	2.56	0.40
52:4:2681:G:H2'	52:4:2682:U:C4'	2.51	0.40
1:b:18:VAL:O	1:b:18:VAL:HG13	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:c:133:THR:OG1	2:c:134:HIS:N	2.53	0.40
3:d:143:LEU:HD23	3:d:146:VAL:HG11	2.03	0.40
12:n:24:MET:SD	12:n:44:LEU:HD13	2.62	0.40
12:n:73:ASN:OD1	52:4:1582:C:N4	2.54	0.40
18:t:69:ARG:CZ	18:t:74:ILE:HD11	2.50	0.40
26:B:49:ARG:HG2	52:4:3012:U:C6	2.56	0.40
30:G:162:VAL:HG21	30:G:165:ALA:HB2	2.02	0.40
31:H:22:PHE:CD2	38:O:97:ASP:HB2	2.56	0.40
33:J:84:VAL:HG11	33:J:146:MET:HB2	2.03	0.40
34:K:6:ILE:N	34:K:6:ILE:CD1	2.80	0.40
35:L:124:SER:O	35:L:128:GLU:HG3	2.21	0.40
37:N:41:GLU:HG2	51:3:1291:U:O4'	2.21	0.40
38:O:40:ILE:HD12	38:O:40:ILE:H	1.85	0.40
41:R:110:GLY:HA2	41:R:111:PRO:HD3	1.92	0.40
45:V:15:LYS:CG	51:3:275:G:H5'	2.51	0.40
51:3:59:A:H5'	51:3:60:A:H5''	2.03	0.40
51:3:79:G:H2'	51:3:80:A:C8	2.55	0.40
51:3:123:U:OP1	51:3:312:C:H5'	2.22	0.40
51:3:354:G:O2'	51:3:355:C:H5'	2.22	0.40
51:3:423:G:H2'	51:3:424:G:H5'	2.04	0.40
51:3:820:U:H3'	51:3:821:G:C5'	2.52	0.40
51:3:1500:A:H5''	51:3:1508:A:H5''	2.01	0.40
52:4:755:U:H2'	52:4:756:A:C8	2.56	0.40
52:4:1220:C:O5'	52:4:1220:C:H6	2.04	0.40
52:4:1357:C:H2'	52:4:1358:A:H8	1.86	0.40
52:4:1563:G:H2'	52:4:1564:G:C8	2.56	0.40
52:4:1663:A:H62	52:4:1666:G:H21	1.68	0.40
52:4:2931:G:H2'	52:4:2932:U:C6	2.56	0.40
2:c:13:ARG:HG2	14:p:55:HIS:HE1	1.86	0.40
4:e:114:ARG:HG2	25:A:41:HIS:NE2	2.36	0.40
5:f:53:PRO:HG3	5:f:61:TRP:CE2	2.57	0.40
11:l:93:ASN:OD1	11:l:94:THR:N	2.50	0.40
32:I:146:GLU:OE2	32:I:176:LYS:HE3	2.21	0.40
35:L:92:PRO:HA	35:L:95:ARG:HB3	2.04	0.40
47:X:74:ALA:O	47:X:76:THR:HG23	2.21	0.40
51:3:1264:U:H3	51:3:1271:A:H61	1.70	0.40
51:3:1469:C:H2'	51:3:1470:U:O4'	2.21	0.40
51:3:1527:U:O2'	51:3:1528:U:H5'	2.22	0.40
52:4:26:G:O2'	52:4:27:G:H5'	2.21	0.40
52:4:207:A:H2'	52:4:208:C:O4'	2.21	0.40
52:4:541:A:H2'	52:4:542:C:O4'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:859:G:O2'	52:4:860:U:C6	2.75	0.40
52:4:1122:G:H4'	52:4:1123:A:C8	2.54	0.40
52:4:1444:U:H2'	52:4:1445:G:C8	2.56	0.40
52:4:1556:C:O2'	52:4:1557:G:H5'	2.22	0.40
52:4:1638:G:H2'	52:4:1639:G:H8	1.86	0.40
52:4:1876:C:H2'	52:4:1877:A:C8	2.56	0.40
52:4:1907:U:H5	52:4:1912:A:C8	2.40	0.40
52:4:2018:A:H2'	52:4:2019:G:O4'	2.20	0.40
52:4:2420:U:H2'	52:4:2421:G:C8	2.56	0.40
52:4:2555:C:H5''	52:4:2557:G:H5'	2.03	0.40
52:4:2707:C:C2'	52:4:2708:U:H5'	2.51	0.40
7:h:37:LYS:HD2	7:h:54:VAL:HG11	2.03	0.40
10:k:4:GLU:O	10:k:5:GLN:HB2	2.22	0.40
27:D:3:ARG:HA	27:D:3:ARG:HH21	1.86	0.40
27:D:21:ARG:NH1	52:4:466:A:H5'	2.35	0.40
35:L:9:ARG:NH1	51:3:1377:A:H61	2.14	0.40
51:3:161:A:H2'	51:3:162:A:O4'	2.22	0.40
51:3:488:C:H2'	51:3:489:C:C6	2.56	0.40
51:3:658:C:O2'	51:3:659:U:H5'	2.22	0.40
51:3:681:A:H2'	51:3:682:G:O4'	2.22	0.40
51:3:785:G:O2'	51:3:786:G:H5'	2.21	0.40
51:3:995:C:H2'	51:3:996:A:H8	1.87	0.40
51:3:1066:C:O2'	51:3:1067:A:H5'	2.21	0.40
51:3:1269:A:C4'	51:3:1326:U:H4'	2.51	0.40
52:4:522:A:H2'	52:4:523:C:C6	2.57	0.40
52:4:1181:C:C3'	52:4:1182:A:H5''	2.51	0.40
52:4:2215:G:H2'	52:4:2216:A:H8	1.87	0.40
52:4:2847:G:H4'	52:4:2974:G:O3'	2.21	0.40
52:4:2956:G:O2'	52:4:2957:A:H5'	2.20	0.40
16:r:24:LYS:HA	16:r:94:THR:HG23	2.04	0.40
23:y:5:GLU:O	23:y:56:LEU:HD13	2.21	0.40
30:G:40:ILE:HD11	30:G:200:PRO:HB2	2.02	0.40
31:H:57:GLU:HG2	31:H:64:ARG:O	2.21	0.40
32:I:39:GLN:NE2	32:I:40:HIS:CE1	2.89	0.40
33:J:147:ASN:OD1	33:J:147:ASN:N	2.52	0.40
38:O:49:PHE:CZ	42:S:75:LYS:HG3	2.55	0.40
39:P:17:ASP:HB2	39:P:36:ARG:NE	2.37	0.40
39:P:127:ARG:HB2	51:3:796:C:OP1	2.21	0.40
50:a:187:GLU:O	50:a:191:ALA:HB2	2.22	0.40
51:3:625:U:H2'	51:3:626:G:H8	1.86	0.40
51:3:679:C:H2'	51:3:680:C:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1069:C:HO2'	51:3:1192:C:H1'	1.85	0.40
52:4:953:G:O2'	52:4:954:G:H5'	2.22	0.40
52:4:993:G:O2'	52:4:994:C:H5'	2.22	0.40
52:4:1563:G:O2'	52:4:1564:G:H5'	2.21	0.40
52:4:1955:U:H2'	52:4:1956:G:O4'	2.22	0.40
52:4:1971:C:H2'	52:4:1972:C:C6	2.56	0.40
52:4:1991:G:H4'	52:4:2539:A:H4'	2.04	0.40
52:4:2215:G:H2'	52:4:2216:A:C8	2.57	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	b	269/271 (99%)	230 (86%)	35 (13%)	4 (2%)	8	37
2	c	207/209 (99%)	185 (89%)	21 (10%)	1 (0%)	24	57
3	d	199/201 (99%)	173 (87%)	23 (12%)	3 (2%)	8	37
4	e	175/177 (99%)	155 (89%)	20 (11%)	0	100	100
5	f	174/176 (99%)	158 (91%)	16 (9%)	0	100	100
6	g	51/149 (34%)	38 (74%)	11 (22%)	2 (4%)	2	20
7	h	129/131 (98%)	95 (74%)	28 (22%)	6 (5%)	2	17
8	i	139/141 (99%)	118 (85%)	17 (12%)	4 (3%)	3	26
9	j	140/142 (99%)	129 (92%)	9 (6%)	2 (1%)	9	38
10	k	120/122 (98%)	99 (82%)	17 (14%)	4 (3%)	3	23
11	l	141/143 (99%)	118 (84%)	20 (14%)	3 (2%)	5	31
12	n	118/120 (98%)	99 (84%)	17 (14%)	2 (2%)	7	35
13	o	114/116 (98%)	106 (93%)	7 (6%)	1 (1%)	14	47

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	p	112/114 (98%)	99 (88%)	12 (11%)	1 (1%)	14	47
15	q	115/117 (98%)	109 (95%)	6 (5%)	0	100	100
16	r	101/103 (98%)	92 (91%)	7 (7%)	2 (2%)	6	32
17	s	108/110 (98%)	96 (89%)	11 (10%)	1 (1%)	14	47
18	t	91/93 (98%)	81 (89%)	10 (11%)	0	100	100
19	u	100/102 (98%)	84 (84%)	14 (14%)	2 (2%)	6	32
20	v	92/94 (98%)	75 (82%)	16 (17%)	1 (1%)	11	43
21	w	73/75 (97%)	67 (92%)	6 (8%)	0	100	100
22	x	75/77 (97%)	70 (93%)	5 (7%)	0	100	100
23	y	61/63 (97%)	57 (93%)	3 (5%)	1 (2%)	7	36
24	z	56/58 (97%)	49 (88%)	6 (11%)	1 (2%)	6	34
25	A	39/70 (56%)	26 (67%)	12 (31%)	1 (3%)	4	27
26	B	54/56 (96%)	48 (89%)	6 (11%)	0	100	100
27	D	44/46 (96%)	38 (86%)	6 (14%)	0	100	100
28	E	62/64 (97%)	56 (90%)	6 (10%)	0	100	100
29	F	36/38 (95%)	28 (78%)	7 (19%)	1 (3%)	4	26
30	G	223/225 (99%)	199 (89%)	24 (11%)	0	100	100
31	H	204/206 (99%)	182 (89%)	21 (10%)	1 (0%)	24	57
32	I	203/205 (99%)	172 (85%)	27 (13%)	4 (2%)	6	32
33	J	155/157 (99%)	123 (79%)	27 (17%)	5 (3%)	3	24
34	K	98/100 (98%)	85 (87%)	11 (11%)	2 (2%)	6	32
35	L	149/151 (99%)	129 (87%)	18 (12%)	2 (1%)	9	39
36	M	127/129 (98%)	116 (91%)	10 (8%)	1 (1%)	16	49
37	N	125/127 (98%)	90 (72%)	32 (26%)	3 (2%)	4	29
38	O	96/98 (98%)	74 (77%)	16 (17%)	6 (6%)	1	12
39	P	114/116 (98%)	99 (87%)	11 (10%)	4 (4%)	3	23
40	Q	121/123 (98%)	89 (74%)	28 (23%)	4 (3%)	3	23
41	R	112/114 (98%)	79 (70%)	30 (27%)	3 (3%)	4	27
42	S	98/100 (98%)	80 (82%)	16 (16%)	2 (2%)	6	32
43	T	86/88 (98%)	77 (90%)	8 (9%)	1 (1%)	10	41
44	U	80/82 (98%)	63 (79%)	16 (20%)	1 (1%)	9	39

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
45	V	78/80 (98%)	65 (83%)	10 (13%)	3 (4%)	2	20
46	W	63/65 (97%)	55 (87%)	8 (13%)	0	100	100
47	X	77/79 (98%)	58 (75%)	19 (25%)	0	100	100
48	Y	83/85 (98%)	80 (96%)	3 (4%)	0	100	100
49	Z	63/65 (97%)	38 (60%)	19 (30%)	6 (10%)	0	6
50	a	130/223 (58%)	121 (93%)	9 (7%)	0	100	100
All	All	5680/5996 (95%)	4852 (85%)	737 (13%)	91 (2%)	10	36

All (91) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	b	232	GLY
7	h	80	THR
7	h	108	VAL
7	h	111	ALA
8	i	11	GLN
9	j	81	ILE
11	l	15	ALA
13	o	34	HIS
14	p	65	ASN
16	r	54	VAL
19	u	6	ARG
23	y	24	GLU
32	I	29	THR
32	I	122	ILE
33	J	122	VAL
38	O	35	GLN
39	P	92	ARG
40	Q	2	THR
40	Q	75	GLU
41	R	6	ILE
49	Z	10	PRO
3	d	62	GLN
6	g	9	VAL
7	h	71	CYS
7	h	106	PHE
8	i	5	GLN
10	k	92	GLU
10	k	110	GLU
11	l	31	GLY

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Mol	Chain	Res	Type
32	I	21	LYS
33	J	23	THR
33	J	25	LYS
37	N	125	GLN
38	O	75	ASP
39	P	14	GLN
39	P	77	GLY
44	U	47	GLU
45	V	17	GLU
45	V	51	GLU
49	Z	14	ALA
2	c	86	GLU
3	d	80	SER
11	l	29	LYS
12	n	117	ASP
16	r	55	ASP
20	v	81	PRO
29	F	37	GLN
32	I	169	TRP
33	J	102	THR
36	M	47	ASP
37	N	122	ARG
38	O	33	GLY
38	O	34	ALA
42	S	2	LYS
43	T	46	LYS
45	V	50	ASN
49	Z	34	ARG
49	Z	36	PHE
1	b	260	LYS
3	d	42	GLY
9	j	111	LYS
10	k	93	GLN
17	s	3	THR
19	u	51	LEU
33	J	98	ALA
34	K	94	HIS
38	O	42	LEU
38	O	43	PRO
40	Q	23	LEU
41	R	93	GLY
7	h	118	ILE

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Mol	Chain	Res	Type
12	n	118	ARG
31	H	189	HIS
34	K	86	ARG
37	N	43	ALA
39	P	38	GLY
41	R	26	LYS
1	b	97	ASP
1	b	233	GLY
6	g	48	GLU
49	Z	65	ARG
10	k	48	PRO
49	Z	9	GLU
8	i	18	ASN
40	Q	41	PRO
24	z	13	ILE
25	A	29	GLY
8	i	24	GLY
35	L	15	PRO
35	L	103	ILE
42	S	33	VAL

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	b	216/216 (100%)	214 (99%)	2 (1%)	70	76
2	c	164/164 (100%)	162 (99%)	2 (1%)	63	73
3	d	165/165 (100%)	164 (99%)	1 (1%)	78	79
4	e	148/148 (100%)	148 (100%)	0	100	100
5	f	137/137 (100%)	136 (99%)	1 (1%)	76	78
6	g	42/114 (37%)	41 (98%)	1 (2%)	43	64
7	h	100/100 (100%)	97 (97%)	3 (3%)	36	60
8	i	109/109 (100%)	109 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	j	116/116 (100%)	115 (99%)	1 (1%)	70	76
10	k	103/103 (100%)	102 (99%)	1 (1%)	68	75
11	l	102/102 (100%)	102 (100%)	0	100	100
12	n	100/100 (100%)	99 (99%)	1 (1%)	68	75
13	o	86/86 (100%)	86 (100%)	0	100	100
14	p	99/99 (100%)	98 (99%)	1 (1%)	68	75
15	q	89/89 (100%)	88 (99%)	1 (1%)	65	74
16	r	84/84 (100%)	84 (100%)	0	100	100
17	s	93/93 (100%)	92 (99%)	1 (1%)	65	74
18	t	80/80 (100%)	80 (100%)	0	100	100
19	u	83/83 (100%)	82 (99%)	1 (1%)	63	73
20	v	78/78 (100%)	78 (100%)	0	100	100
21	w	57/57 (100%)	57 (100%)	0	100	100
22	x	67/67 (100%)	67 (100%)	0	100	100
23	y	55/55 (100%)	55 (100%)	0	100	100
24	z	48/48 (100%)	48 (100%)	0	100	100
25	A	38/62 (61%)	38 (100%)	0	100	100
26	B	47/47 (100%)	47 (100%)	0	100	100
27	D	38/38 (100%)	38 (100%)	0	100	100
28	E	51/51 (100%)	51 (100%)	0	100	100
29	F	34/34 (100%)	34 (100%)	0	100	100
30	G	186/186 (100%)	183 (98%)	3 (2%)	55	70
31	H	170/170 (100%)	170 (100%)	0	100	100
32	I	172/172 (100%)	169 (98%)	3 (2%)	53	70
33	J	119/119 (100%)	118 (99%)	1 (1%)	73	77
34	K	87/87 (100%)	84 (97%)	3 (3%)	32	57
35	L	124/124 (100%)	123 (99%)	1 (1%)	73	77
36	M	104/104 (100%)	104 (100%)	0	100	100
37	N	105/105 (100%)	103 (98%)	2 (2%)	50	68
38	O	86/86 (100%)	84 (98%)	2 (2%)	44	64
39	P	89/89 (100%)	87 (98%)	2 (2%)	45	65

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
40	Q	103/103 (100%)	102 (99%)	1 (1%)	68	75
41	R	92/92 (100%)	89 (97%)	3 (3%)	33	58
42	S	83/83 (100%)	83 (100%)	0	100	100
43	T	76/76 (100%)	76 (100%)	0	100	100
44	U	65/65 (100%)	64 (98%)	1 (2%)	57	71
45	V	74/74 (100%)	73 (99%)	1 (1%)	59	71
46	W	56/56 (100%)	56 (100%)	0	100	100
47	X	70/70 (100%)	70 (100%)	0	100	100
48	Y	65/65 (100%)	65 (100%)	0	100	100
49	Z	55/55 (100%)	54 (98%)	1 (2%)	51	69
50	a	110/174 (63%)	109 (99%)	1 (1%)	70	76
All	All	4720/4880 (97%)	4678 (99%)	42 (1%)	68	76

All (42) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	b	18	VAL
1	b	193	GLU
2	c	9	VAL
2	c	150	GLN
3	d	186	VAL
5	f	147	LEU
6	g	5	LEU
7	h	34	THR
7	h	77	VAL
7	h	99	PHE
9	j	50	THR
10	k	92	GLU
12	n	36	THR
14	p	108	ARG
15	q	51	GLN
17	s	71	VAL
19	u	6	ARG
30	G	139	GLU
30	G	156	LEU
30	G	162	VAL
32	I	16	THR
32	I	28	ASP

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Mol	Chain	Res	Type
32	I	170	LEU
33	J	73	VAL
34	K	6	ILE
34	K	18	VAL
34	K	55	HIS
35	L	104	VAL
37	N	34	LEU
37	N	47	VAL
38	O	42	LEU
38	O	58	ASN
39	P	15	VAL
39	P	110	THR
40	Q	3	VAL
41	R	24	VAL
41	R	68	LEU
41	R	88	LEU
44	U	47	GLU
45	V	69	THR
49	Z	31	VAL
50	a	50	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (100) such sidechains are listed below:

Mol	Chain	Res	Type
1	b	24	HIS
1	b	52	HIS
1	b	259	ASN
2	c	49	GLN
2	c	67	HIS
2	c	164	GLN
3	d	94	GLN
3	d	136	GLN
3	d	163	ASN
4	e	4	HIS
4	e	26	GLN
5	f	19	ASN
5	f	72	ASN
5	f	114	HIS
6	g	11	ASN
6	g	20	ASN
6	g	43	ASN
7	h	4	ASN

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Mol	Chain	Res	Type
7	h	88	HIS
7	h	122	GLN
8	i	110	GLN
9	j	40	HIS
10	k	5	GLN
10	k	88	ASN
11	l	38	GLN
12	n	3	HIS
12	n	81	ASN
12	n	107	ASN
13	o	38	GLN
13	o	98	GLN
13	o	100	HIS
13	o	104	GLN
15	q	71	ASN
17	s	9	HIS
17	s	40	ASN
18	t	59	ASN
19	u	39	ASN
19	u	73	ASN
20	v	87	GLN
21	w	46	ASN
22	x	5	GLN
22	x	16	ASN
22	x	19	HIS
23	y	39	GLN
23	y	58	ASN
24	z	19	HIS
27	D	13	ASN
27	D	29	GLN
29	F	37	GLN
30	G	50	ASN
30	G	108	GLN
30	G	176	ASN
30	G	177	ASN
30	G	189	ASN
31	H	122	GLN
31	H	138	GLN
31	H	139	ASN
31	H	184	ASN
32	I	40	HIS
32	I	73	ASN

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Mol	Chain	Res	Type
32	I	115	GLN
32	I	130	ASN
32	I	151	GLN
32	I	197	HIS
33	J	69	ASN
33	J	121	ASN
33	J	145	ASN
34	K	11	HIS
34	K	81	ASN
35	L	51	GLN
35	L	141	HIS
35	L	147	ASN
36	M	3	GLN
36	M	66	GLN
37	N	3	ASN
37	N	4	GLN
38	O	64	GLN
39	P	27	ASN
40	Q	71	HIS
40	Q	111	GLN
41	R	7	ASN
41	R	13	HIS
42	S	42	ASN
42	S	48	GLN
42	S	65	GLN
43	T	27	GLN
43	T	39	GLN
44	U	26	ASN
45	V	44	HIS
46	W	30	ASN
46	W	51	GLN
47	X	51	HIS
47	X	52	ASN
47	X	68	HIS
48	Y	19	HIS
48	Y	20	ASN
48	Y	47	GLN
48	Y	69	ASN
50	a	57	GLN
50	a	160	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
51	3	1538/1539 (99%)	154 (10%)	1 (0%)
52	4	3023/3031 (99%)	377 (12%)	10 (0%)
All	All	4561/4570 (99%)	531 (11%)	11 (0%)

All (531) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
51	3	6	G
51	3	9	G
51	3	22	G
51	3	32	A
51	3	39	G
51	3	48	C
51	3	51	A
51	3	71	A
51	3	82	G
51	3	85	U
51	3	94	G
51	3	100	G
51	3	144	G
51	3	173	U
51	3	183	C
51	3	184	G
51	3	209	U
51	3	210	C
51	3	214	C
51	3	247	G
51	3	251	G
51	3	266	G
51	3	267	C
51	3	280	C
51	3	281	G
51	3	289	G
51	3	328	C
51	3	345	C
51	3	346	G
51	3	352	C
51	3	367	U
51	3	372	C
51	3	398	U
51	3	402	G
51	3	404	G
51	3	411	A

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Mol	Chain	Res	Type
51	3	413	G
51	3	422	C
51	3	423	G
51	3	429	U
51	3	467	U
51	3	479	U
51	3	485	U
51	3	486	U
51	3	497	G
51	3	499	A
51	3	511	C
51	3	517	G
51	3	518	C
51	3	531	U
51	3	532	A
51	3	533	A
51	3	547	A
51	3	561	U
51	3	572	A
51	3	573	A
51	3	575	G
51	3	576	C
51	3	577	G
51	3	618	C
51	3	633	G
51	3	665	A
51	3	687	A
51	3	702	A
51	3	703	G
51	3	724	G
51	3	755	G
51	3	777	A
51	3	793	U
51	3	794	A
51	3	815	A
51	3	817	C
51	3	818	G
51	3	819	A
51	3	821	G
51	3	842	U
51	3	843	U
51	3	844	G

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Mol	Chain	Res	Type
51	3	846	G
51	3	871	U
51	3	873	A
51	3	890	G
51	3	902	G
51	3	926	G
51	3	934	C
51	3	935	A
51	3	942	G
51	3	960	U
51	3	961	U
51	3	966	G
51	3	969	A
51	3	971	G
51	3	975	A
51	3	976	G
51	3	977	A
51	3	992	U
51	3	993	G
51	3	1004	A
51	3	1028	C
51	3	1031	C
51	3	1032	G
51	3	1034	G
51	3	1053	G
51	3	1064	G
51	3	1094	G
51	3	1101	A
51	3	1136	C
51	3	1137	C
51	3	1138	G
51	3	1139	G
51	3	1159	U
51	3	1168	U
51	3	1182	G
51	3	1184	G
51	3	1191	A
51	3	1196	A
51	3	1197	A
51	3	1198	G
51	3	1201	A
51	3	1202	U

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Mol	Chain	Res	Type
51	3	1225	A
51	3	1226	C
51	3	1238	A
51	3	1240	U
51	3	1241	G
51	3	1258	G
51	3	1261	A
51	3	1275	A
51	3	1278	G
51	3	1280	A
51	3	1282	C
51	3	1286	U
51	3	1287	A
51	3	1300	G
51	3	1302	C
51	3	1317	C
51	3	1346	A
51	3	1347	G
51	3	1363	A
51	3	1364	U
51	3	1379	G
51	3	1395	C
51	3	1419	G
51	3	1441	A
51	3	1446	A
51	3	1448	C
51	3	1452	C
51	3	1492	A
51	3	1503	A
51	3	1506	U
51	3	1517	G
51	3	1529	G
51	3	1530	G
51	3	1533	C
52	4	10	A
52	4	12	U
52	4	34	U
52	4	35	G
52	4	46	G
52	4	51	G
52	4	63	A
52	4	71	A

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Mol	Chain	Res	Type
52	4	74	A
52	4	75	G
52	4	119	A
52	4	120	U
52	4	138	U
52	4	139	U
52	4	140	C
52	4	141	G
52	4	162	U
52	4	163	C
52	4	181	A
52	4	196	A
52	4	216	A
52	4	219	A
52	4	221	A
52	4	222	A
52	4	224	U
52	4	228	C
52	4	233	A
52	4	248	G
52	4	249	C
52	4	255	A
52	4	266	G
52	4	276	U
52	4	278	A
52	4	280	U
52	4	281	C
52	4	284	U
52	4	285	G
52	4	294	A
52	4	301	G
52	4	311	A
52	4	312	G
52	4	323	C
52	4	324	A
52	4	329	G
52	4	330	A
52	4	349	U
52	4	361	G
52	4	362	A
52	4	371	A
52	4	372	G

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Mol	Chain	Res	Type
52	4	386	G
52	4	387	U
52	4	404	A
52	4	406	G
52	4	411	G
52	4	412	A
52	4	424	G
52	4	456	C
52	4	457	A
52	4	481	G
52	4	491	G
52	4	504	A
52	4	505	A
52	4	529	A
52	4	531	C
52	4	532	A
52	4	543	G
52	4	544	C
52	4	545	U
52	4	548	G
52	4	563	A
52	4	573	U
52	4	574	A
52	4	588	U
52	4	603	A
52	4	627	A
52	4	637	A
52	4	646	U
52	4	654	A
52	4	655	A
52	4	669	G
52	4	686	U
52	4	714	U
52	4	715	A
52	4	730	A
52	4	747	C
52	4	752	A
52	4	774	G
52	4	775	G
52	4	776	G
52	4	782	A
52	4	784	G

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Mol	Chain	Res	Type
52	4	785	G
52	4	805	G
52	4	806	C
52	4	812	C
52	4	819	A
52	4	827	U
52	4	828	U
52	4	830	G
52	4	845	A
52	4	846	U
52	4	847	U
52	4	860	U
52	4	878	A
52	4	879	G
52	4	881	G
52	4	883	G
52	4	885	C
52	4	887	U
52	4	896	A
52	4	897	C
52	4	898	C
52	4	899	A
52	4	900	A
52	4	907	G
52	4	910	A
52	4	932	U
52	4	941	A
52	4	946	C
52	4	959	A
52	4	974	G
52	4	983	A
52	4	989	G
52	4	995	C
52	4	996	A
52	4	1012	U
52	4	1013	C
52	4	1021	A
52	4	1022	G
52	4	1025	G
52	4	1026	G
52	4	1030	C
52	4	1032	C

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Mol	Chain	Res	Type
52	4	1050	A
52	4	1051	A
52	4	1058	G
52	4	1063	U
52	4	1064	C
52	4	1066	G
52	4	1067	U
52	4	1070	C
52	4	1101	C
52	4	1110	G
52	4	1133	G
52	4	1155	A
52	4	1161	U
52	4	1173	C
52	4	1174	A
52	4	1175	G
52	4	1181	C
52	4	1182	A
52	4	1185	A
52	4	1188	U
52	4	1189	U
52	4	1190	G
52	4	1193	U
52	4	1194	U
52	4	1195	A
52	4	1198	A
52	4	1199	G
52	4	1200	C
52	4	1204	C
52	4	1211	U
52	4	1212	A
52	4	1215	G
52	4	1216	A
52	4	1217	A
52	4	1218	A
52	4	1232	C
52	4	1234	G
52	4	1239	A
52	4	1260	U
52	4	1263	C
52	4	1271	A
52	4	1301	U

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Mol	Chain	Res	Type
52	4	1302	U
52	4	1303	A
52	4	1305	G
52	4	1307	G
52	4	1308	U
52	4	1340	G
52	4	1366	G
52	4	1379	C
52	4	1381	A
52	4	1384	G
52	4	1399	G
52	4	1400	A
52	4	1429	A
52	4	1449	A
52	4	1457	U
52	4	1458	C
52	4	1473	C
52	4	1493	A
52	4	1506	A
52	4	1507	U
52	4	1511	A
52	4	1542	C
52	4	1544	G
52	4	1547	A
52	4	1556	C
52	4	1582	C
52	4	1589	C
52	4	1610	G
52	4	1618	A
52	4	1626	C
52	4	1632	A
52	4	1636	A
52	4	1643	A
52	4	1652	G
52	4	1658	G
52	4	1663	A
52	4	1664	C
52	4	1665	G
52	4	1683	G
52	4	1688	G
52	4	1697	A
52	4	1706	U

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Mol	Chain	Res	Type
52	4	1713	C
52	4	1736	A
52	4	1739	C
52	4	1744	A
52	4	1775	U
52	4	1776	U
52	4	1782	A
52	4	1802	G
52	4	1843	G
52	4	1857	U
52	4	1858	C
52	4	1866	G
52	4	1886	U
52	4	1892	C
52	4	1901	A
52	4	1908	A
52	4	1928	C
52	4	1929	A
52	4	1936	A
52	4	1944	C
52	4	1957	A
52	4	1997	G
52	4	2029	A
52	4	2035	G
52	4	2041	A
52	4	2047	A
52	4	2057	G
52	4	2058	G
52	4	2065	A
52	4	2066	A
52	4	2072	U
52	4	2083	U
52	4	2091	U
52	4	2095	C
52	4	2098	A
52	4	2099	U
52	4	2100	G
52	4	2110	U
52	4	2119	U
52	4	2120	G
52	4	2121	U
52	4	2125	C

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Mol	Chain	Res	Type
52	4	2150	U
52	4	2151	C
52	4	2158	A
52	4	2159	A
52	4	2171	C
52	4	2183	C
52	4	2184	G
52	4	2187	A
52	4	2188	A
52	4	2189	G
52	4	2190	A
52	4	2197	G
52	4	2238	G
52	4	2239	U
52	4	2240	G
52	4	2246	U
52	4	2247	A
52	4	2248	G
52	4	2254	A
52	4	2255	G
52	4	2256	G
52	4	2259	U
52	4	2260	U
52	4	2261	G
52	4	2273	C
52	4	2274	C
52	4	2275	A
52	4	2277	U
52	4	2280	G
52	4	2284	G
52	4	2290	G
52	4	2294	U
52	4	2295	U
52	4	2300	U
52	4	2301	A
52	4	2306	C
52	4	2321	G
52	4	2326	A
52	4	2331	U
52	4	2332	G
52	4	2339	A
52	4	2340	A

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Mol	Chain	Res	Type
52	4	2341	U
52	4	2353	A
52	4	2367	G
52	4	2379	G
52	4	2394	A
52	4	2407	G
52	4	2411	C
52	4	2415	A
52	4	2425	A
52	4	2431	G
52	4	2433	U
52	4	2435	G
52	4	2437	A
52	4	2439	A
52	4	2453	G
52	4	2455	A
52	4	2462	U
52	4	2511	G
52	4	2513	C
52	4	2530	U
52	4	2534	A
52	4	2535	A
52	4	2551	U
52	4	2557	G
52	4	2558	A
52	4	2563	A
52	4	2569	U
52	4	2575	G
52	4	2576	A
52	4	2586	G
52	4	2604	A
52	4	2612	G
52	4	2619	U
52	4	2622	G
52	4	2623	G
52	4	2625	A
52	4	2627	C
52	4	2628	U
52	4	2633	G
52	4	2646	A
52	4	2657	G
52	4	2675	A

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Mol	Chain	Res	Type
52	4	2682	U
52	4	2694	A
52	4	2695	G
52	4	2700	A
52	4	2730	A
52	4	2731	G
52	4	2737	U
52	4	2741	U
52	4	2757	U
52	4	2783	G
52	4	2810	A
52	4	2817	U
52	4	2818	U
52	4	2842	G
52	4	2872	G
52	4	2876	A
52	4	2878	A
52	4	2885	A
52	4	2892	A
52	4	2893	A
52	4	2906	A
52	4	2907	U
52	4	2925	U
52	4	2928	A
52	4	2937	A
52	4	2948	A
52	4	2949	A
52	4	2995	G
52	4	2996	A
52	4	3008	C
52	4	3011	A
52	4	3012	U
52	4	3021	A

All (11) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
51	3	1190	G
52	4	227	A
52	4	490	C
52	4	859	G
52	4	1020	A

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Mol	Chain	Res	Type
52	4	1025	G
52	4	1030	C
52	4	2424	U
52	4	2430	U
52	4	2454	C
52	4	2632	U

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](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

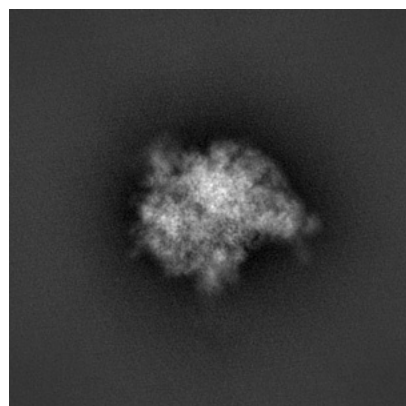
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-21857. These allow visual inspection of the internal detail of the map and identification of artifacts.

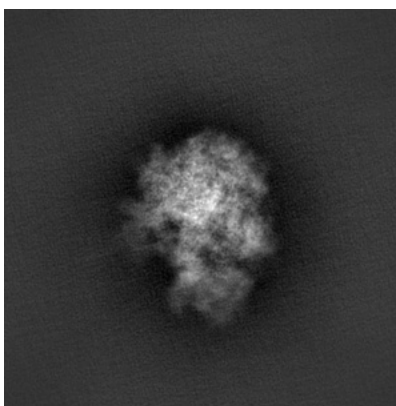
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

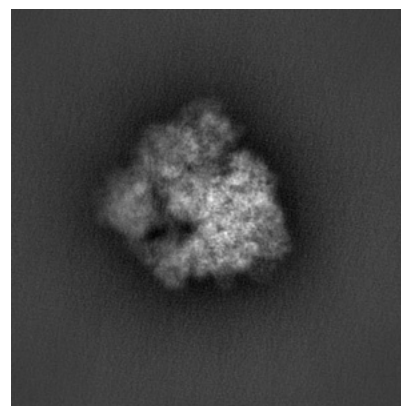
6.1.1 Primary map



X

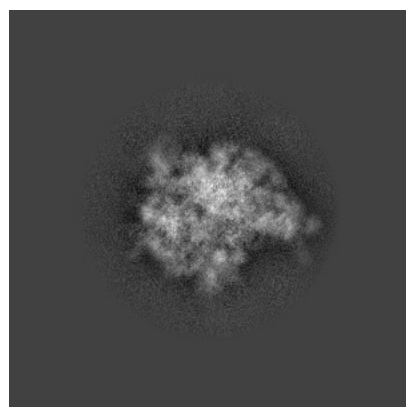


Y

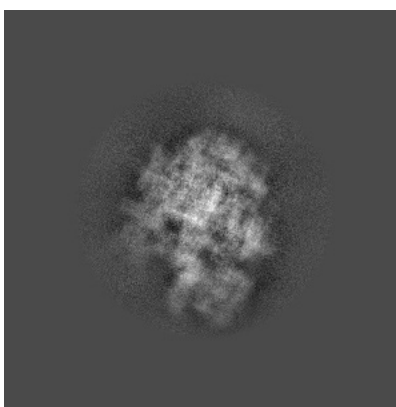


Z

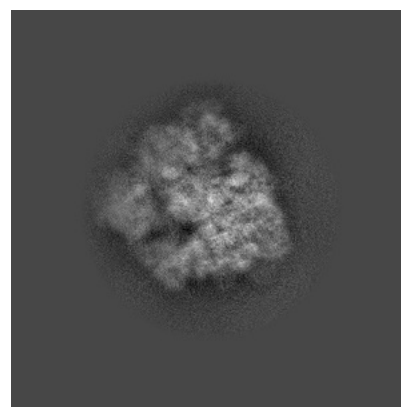
6.1.2 Raw map



X



Y

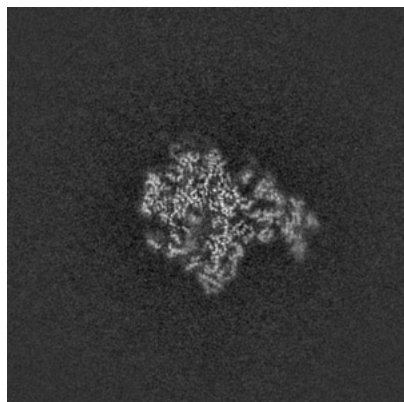


Z

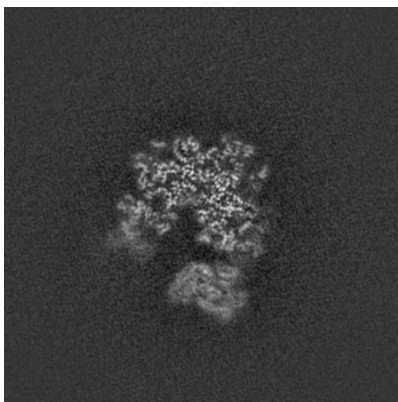
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

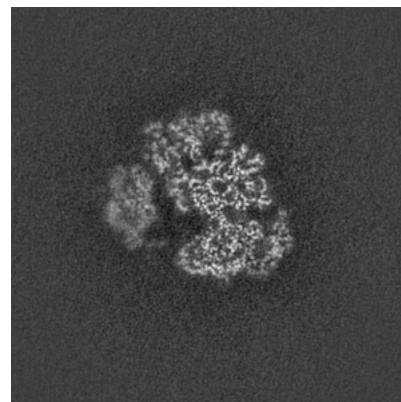
6.2.1 Primary map



X Index: 304

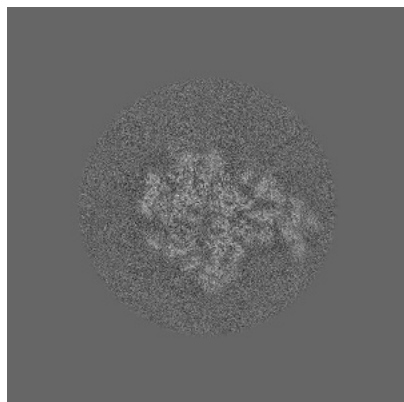


Y Index: 304

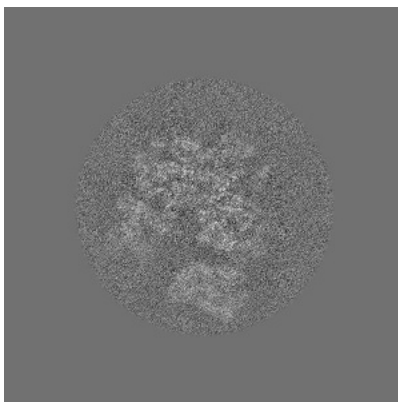


Z Index: 304

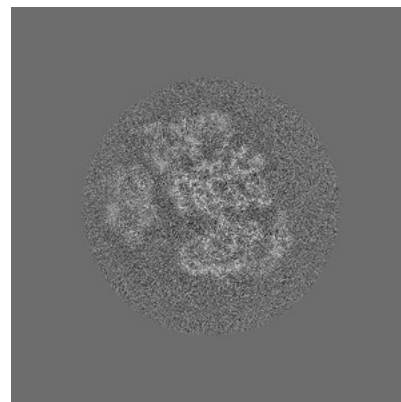
6.2.2 Raw map



X Index: 304



Y Index: 304

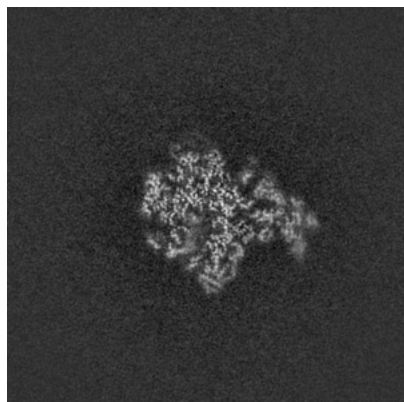


Z Index: 304

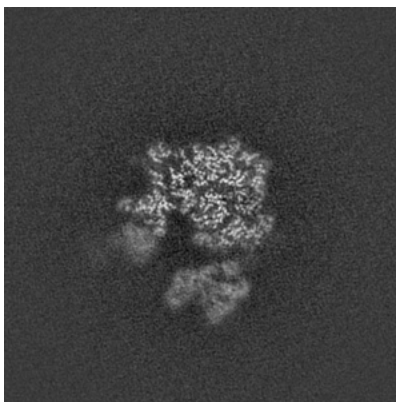
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

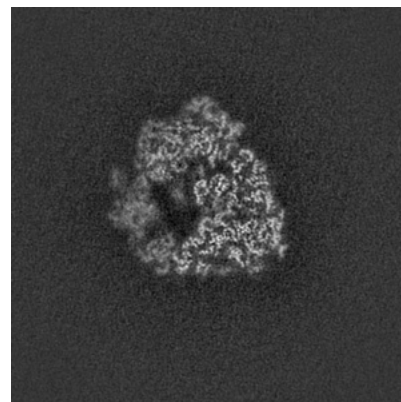
6.3.1 Primary map



X Index: 303

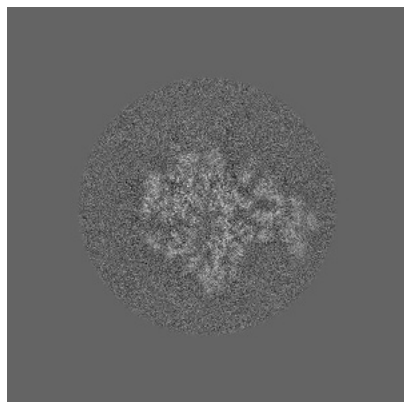


Y Index: 317

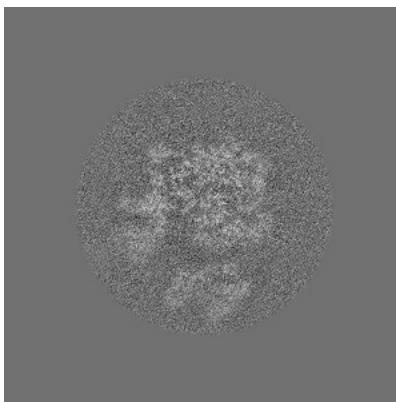


Z Index: 290

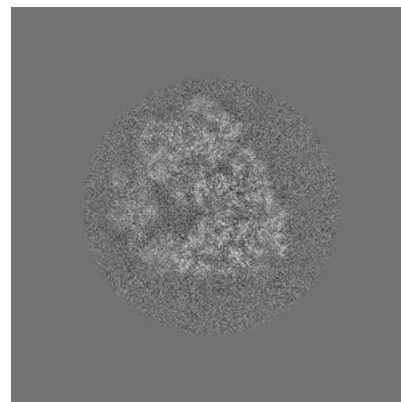
6.3.2 Raw map



X Index: 303



Y Index: 318

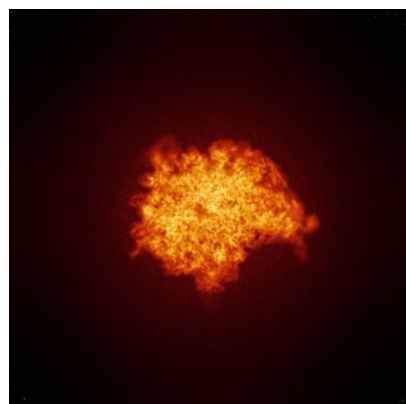


Z Index: 291

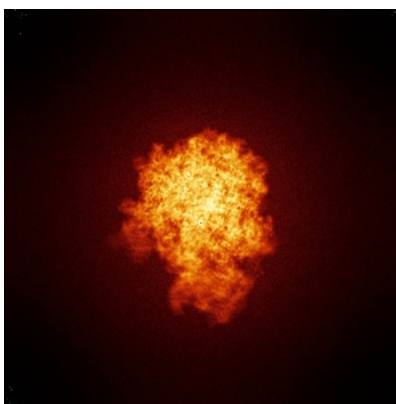
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



X

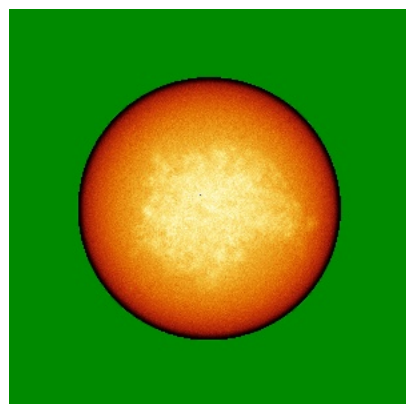


Y

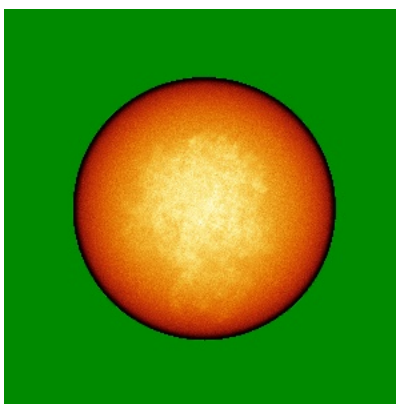


Z

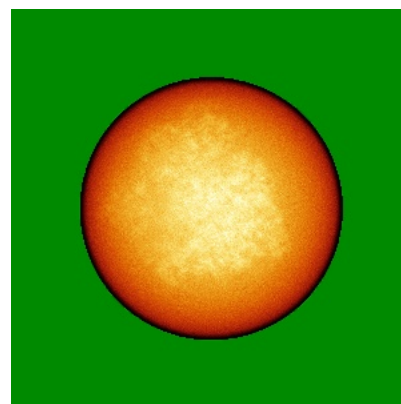
6.4.2 Raw map



X



Y

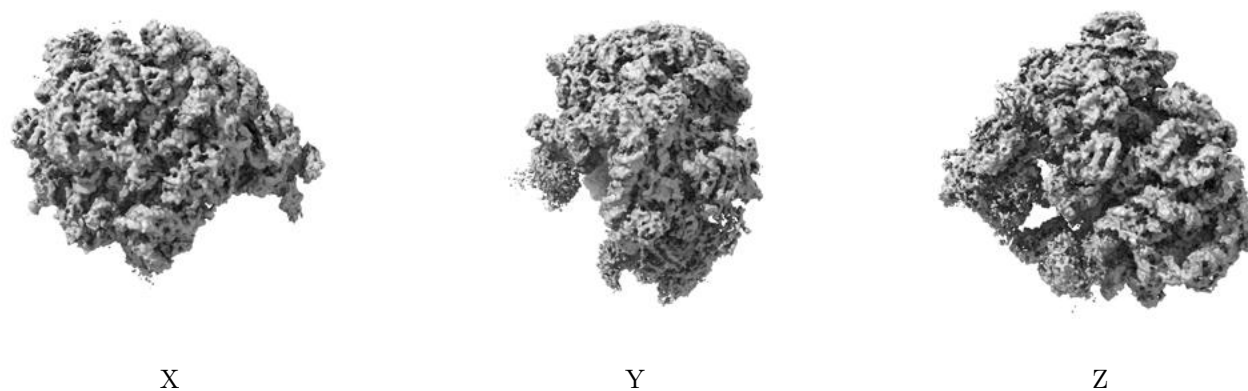


Z

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

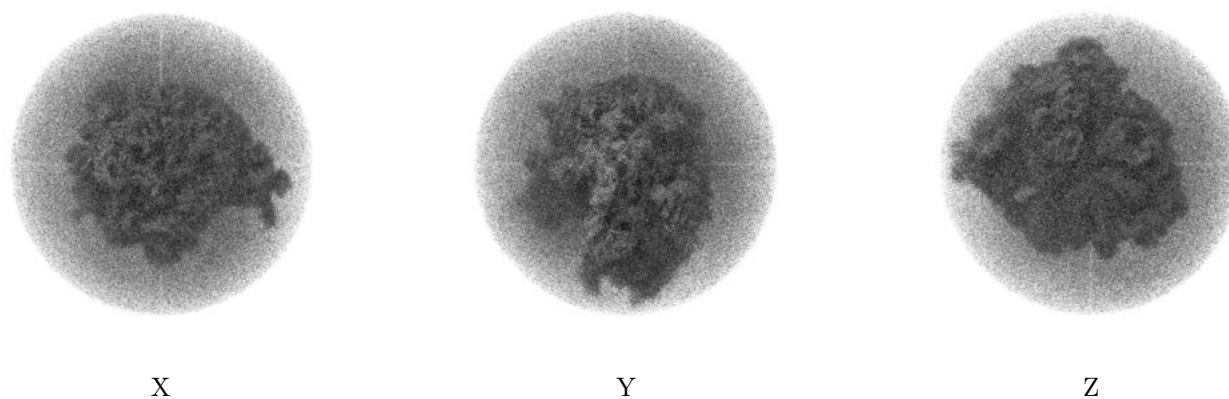
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 3.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

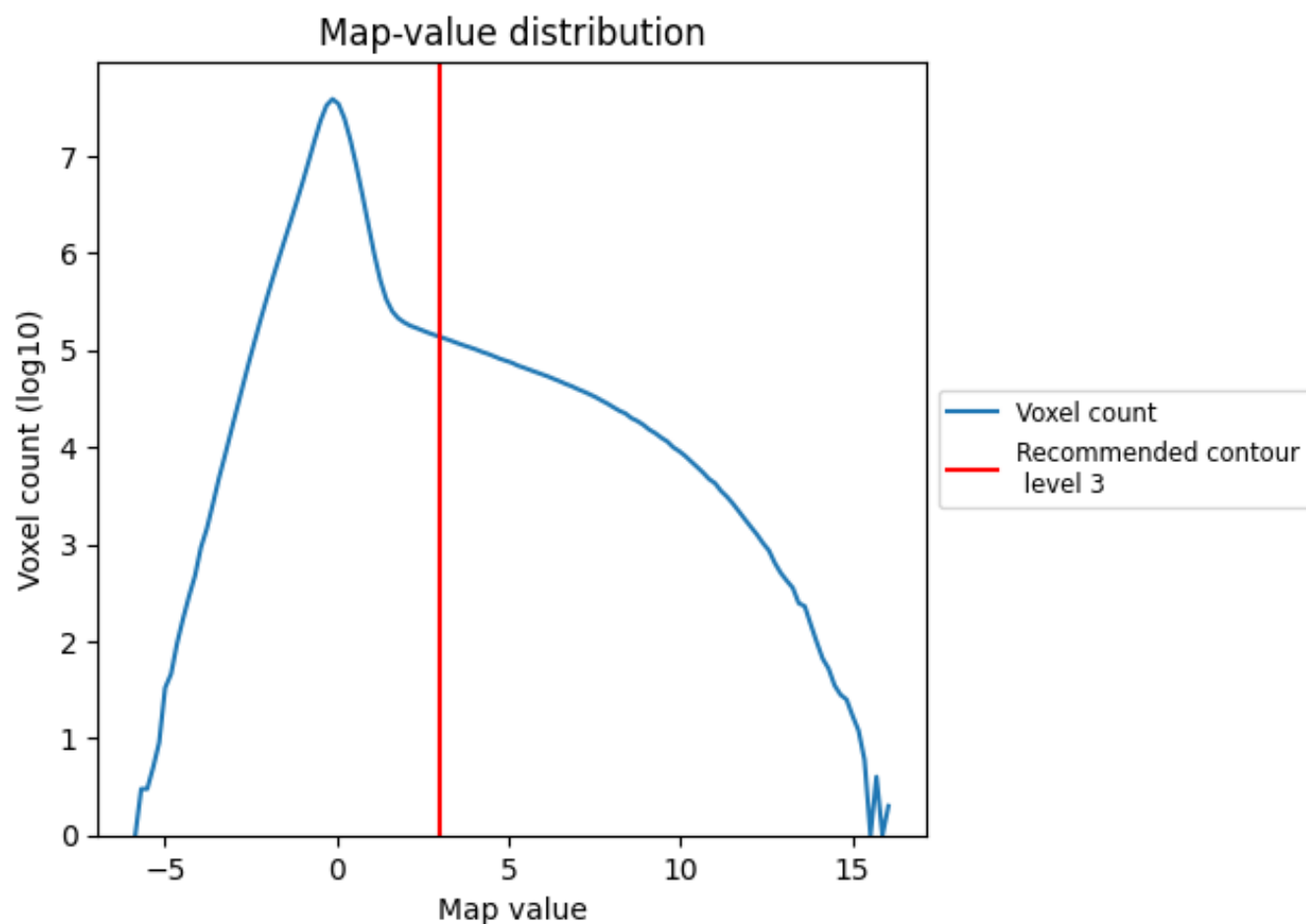
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

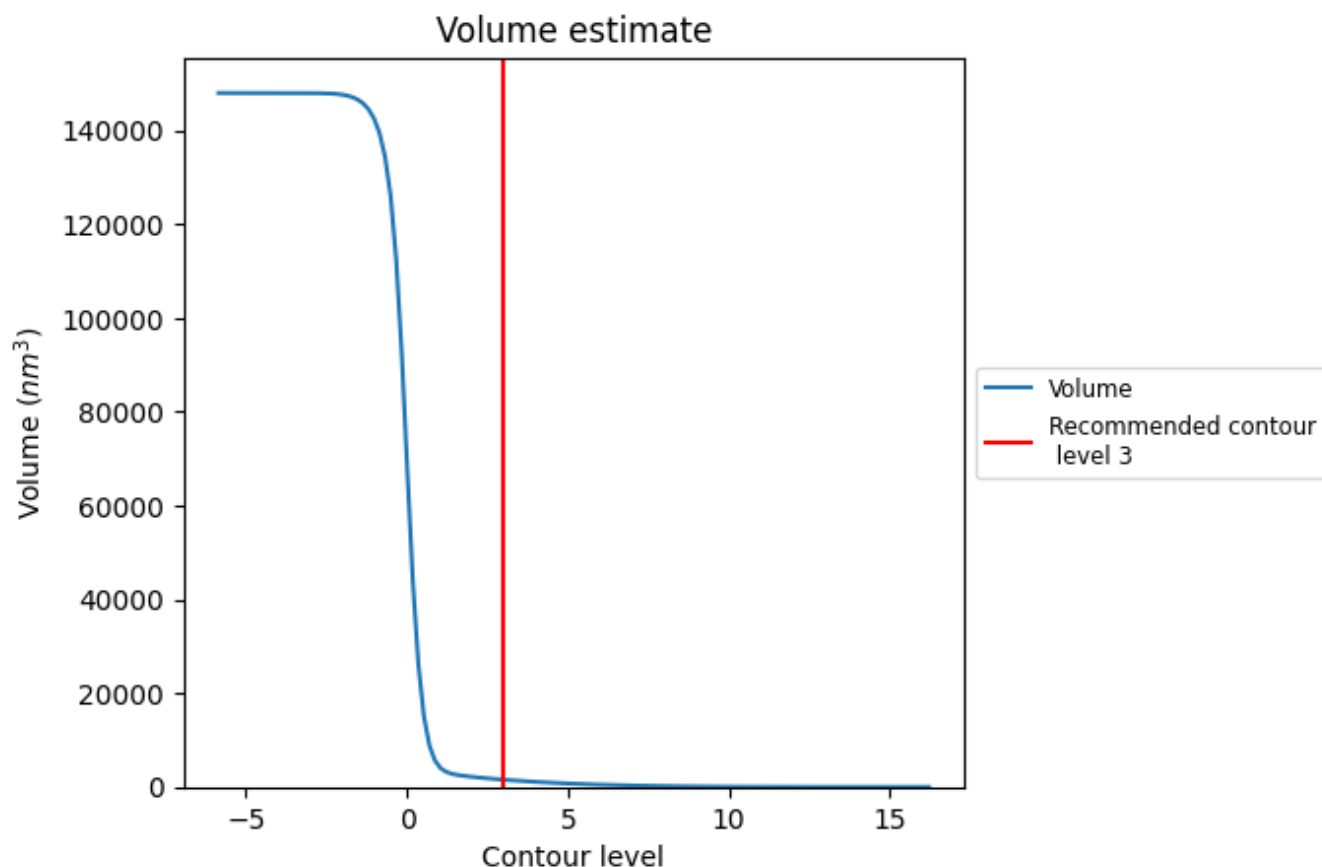
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

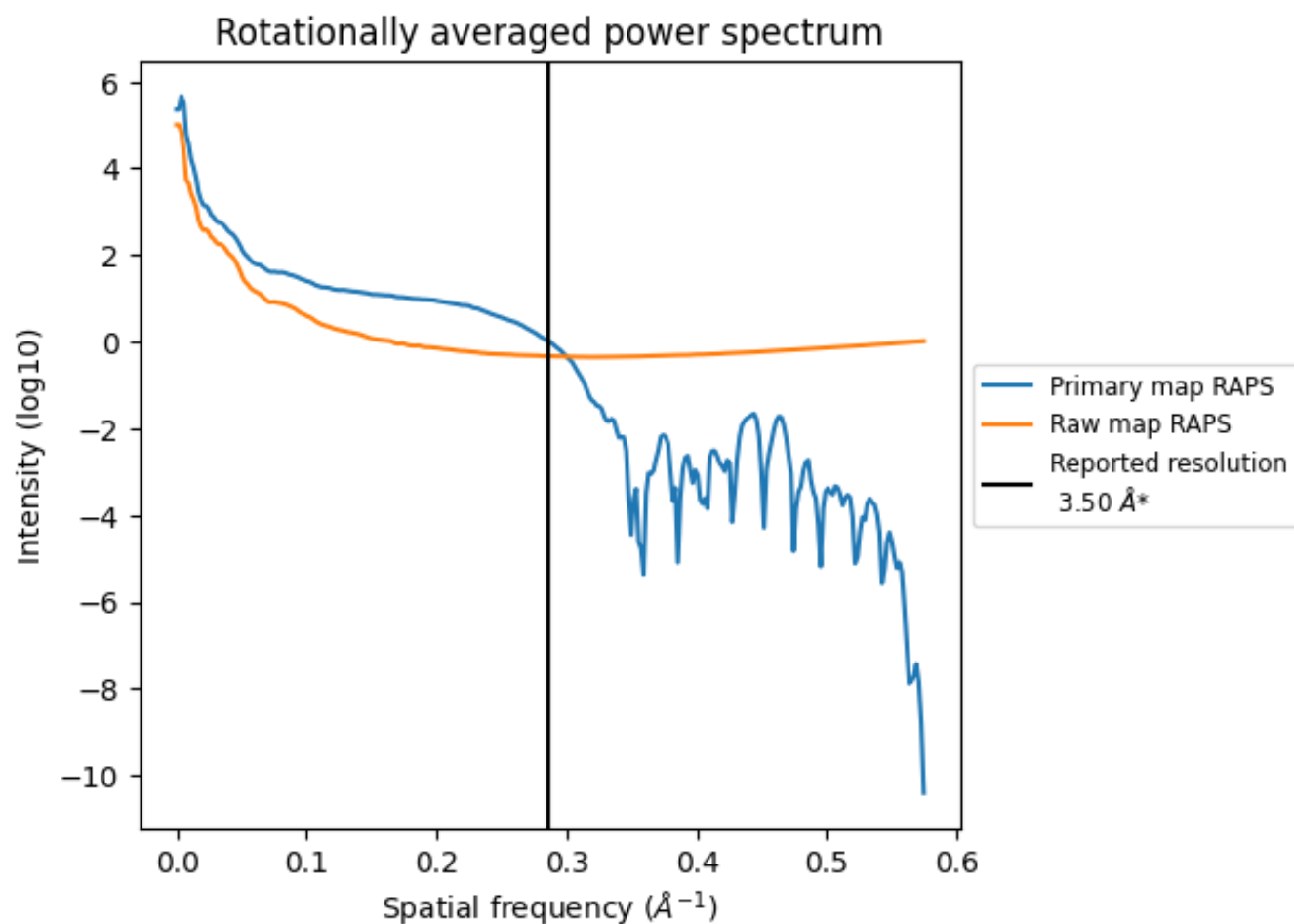
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1548 nm^3 ; this corresponds to an approximate mass of 1398 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 ⓘ

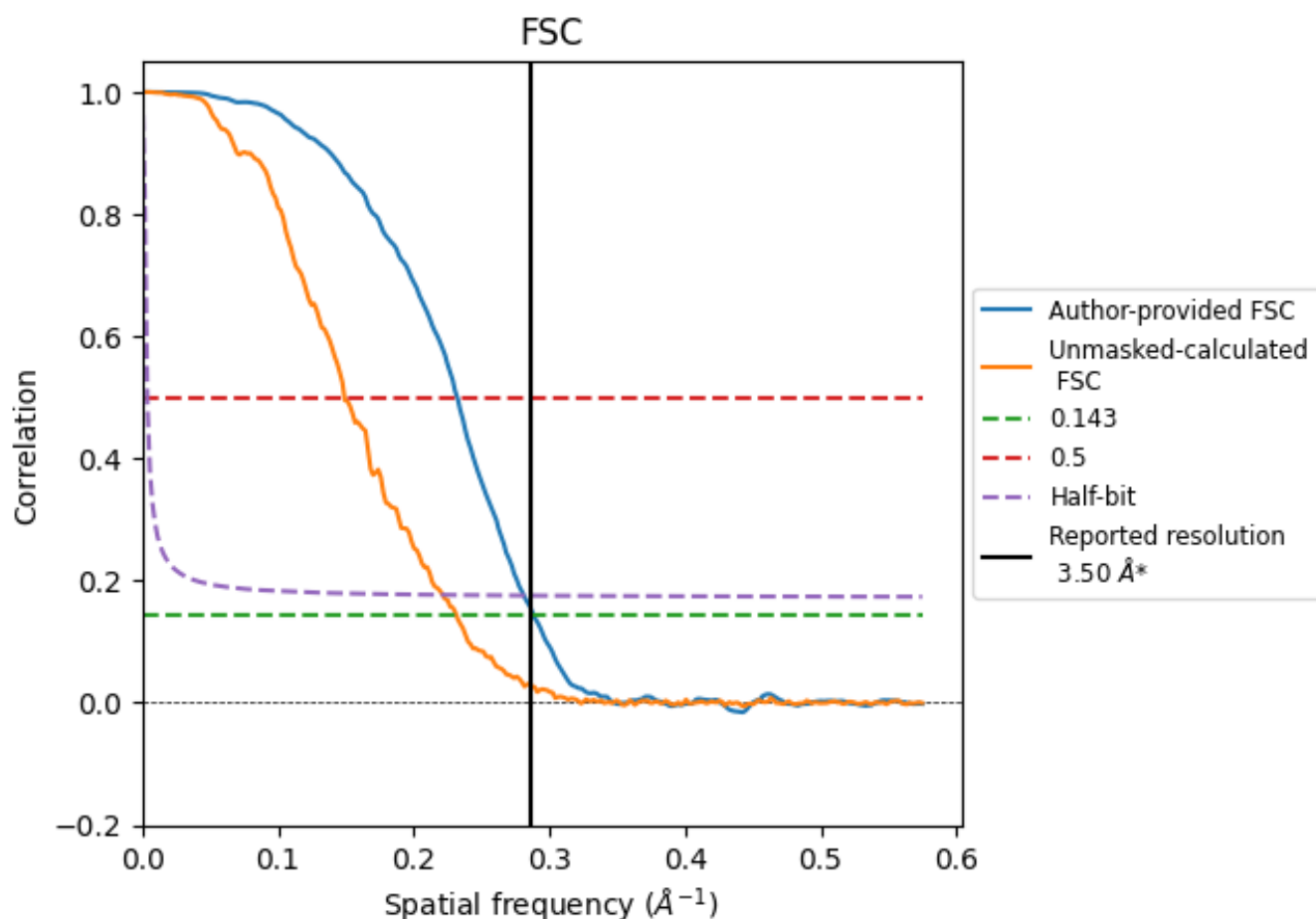


*Reported resolution corresponds to spatial frequency of 0.286 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.286 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

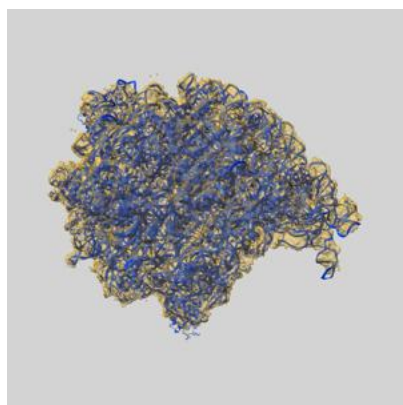
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.50	-	-
Author-provided FSC curve	3.47	4.31	3.56
Unmasked-calculated*	4.32	6.71	4.52

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.32 differs from the reported value 3.5 by more than 10 %

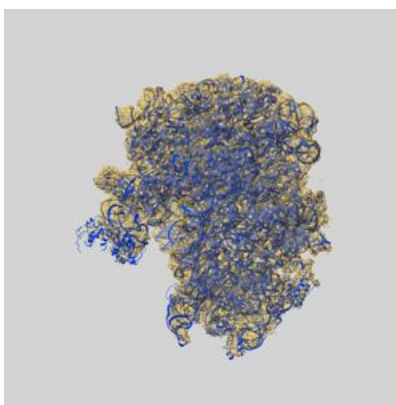
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-21857 and PDB model 6WNV. Per-residue inclusion information can be found in [section 3](#) on [page 13](#).

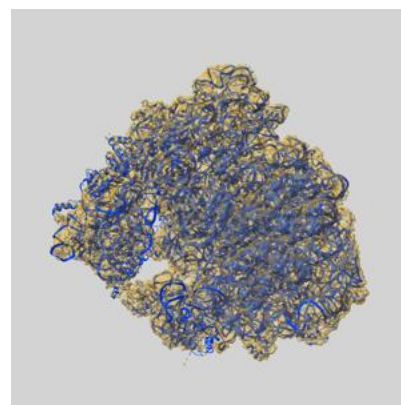
9.1 Map-model overlay [i](#)



X



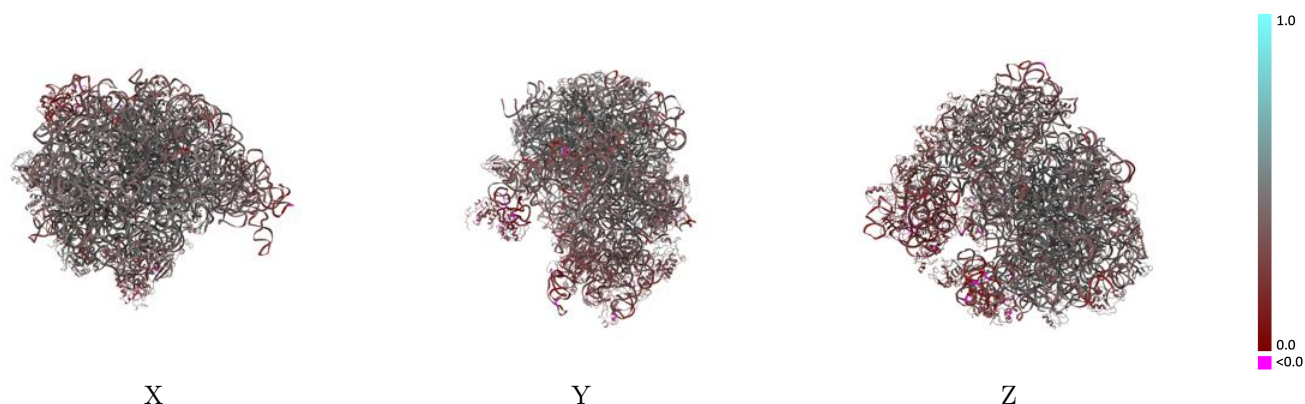
Y



Z

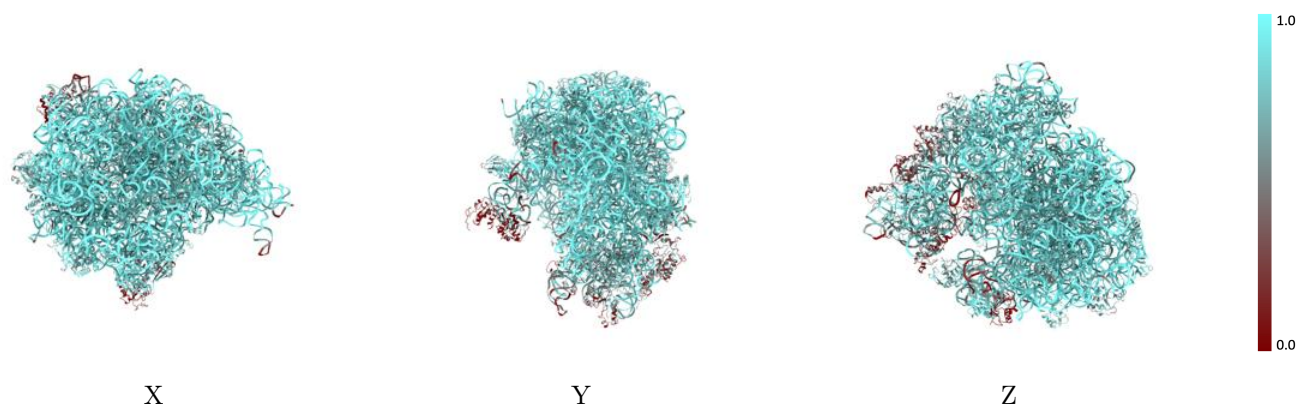
The images above show the 3D surface view of the map at the recommended contour level 3.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



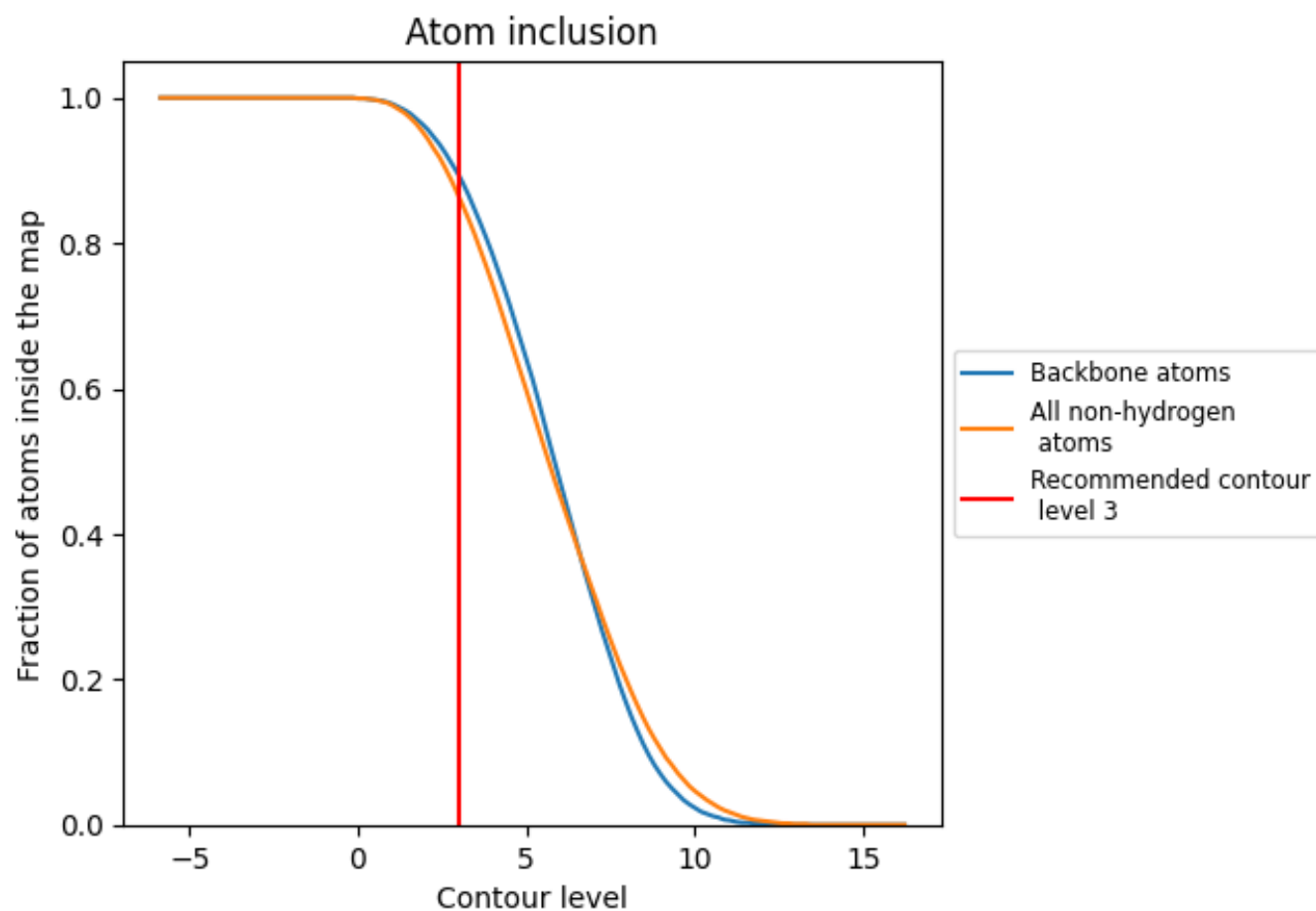
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (3).

9.4 Atom inclusion [i](#)



At the recommended contour level, 89% of all backbone atoms, 86% 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 (3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8640	 0.3830
3	 0.9140	 0.3500
4	 0.9550	 0.4050
A	 0.7690	 0.3250
B	 0.8500	 0.4490
D	 0.8760	 0.4610
E	 0.8960	 0.4640
F	 0.8110	 0.4470
G	 0.3750	 0.3510
H	 0.5510	 0.3320
I	 0.6920	 0.3470
J	 0.7330	 0.3930
K	 0.8090	 0.3760
L	 0.2620	 0.2700
M	 0.7870	 0.4140
N	 0.5860	 0.2560
O	 0.4650	 0.2900
P	 0.8300	 0.3610
Q	 0.8160	 0.4260
R	 0.5050	 0.2380
S	 0.5670	 0.2710
T	 0.8550	 0.3870
U	 0.8100	 0.4080
V	 0.8100	 0.4000
W	 0.8350	 0.3970
X	 0.5460	 0.2330
Y	 0.7810	 0.3560
Z	 0.4190	 0.3280
a	 0.1440	 0.2320
b	 0.8740	 0.4690
c	 0.8520	 0.4580
d	 0.7240	 0.4020
e	 0.7560	 0.3120
f	 0.8030	 0.3780
g	 0.4900	 0.3450



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Chain	Atom inclusion	Q-score
h	 0.1260	 0.2270
i	 0.1470	 0.2210
j	 0.8290	 0.4450
k	 0.8140	 0.4650
l	 0.8410	 0.4420
n	 0.8760	 0.4470
o	 0.8560	 0.3820
p	 0.8140	 0.4500
q	 0.8660	 0.4400
r	 0.8190	 0.4420
s	 0.8110	 0.4410
t	 0.8190	 0.4170
u	 0.8280	 0.4130
v	 0.7040	 0.3090
w	 0.8510	 0.4610
x	 0.8400	 0.4400
y	 0.8080	 0.3580
z	 0.8140	 0.4310