



Full wwPDB EM Validation Report ⓘ

Mar 28, 2026 – 11:41 PM UTC

PDB ID : 4V7C / pdb_00004v7c
EMDB ID : EMD-5799
Title : Structure of the Ribosome with Elongation Factor G Trapped in the Pre-Translocation State (pre-translocation 70S*tRNA structure)
Authors : Brilot, A.F.; Korostelev, A.A.; Ermolenko, D.N.; Grigorieff, N.
Deposited on : 2013-11-20
Resolution : 7.60 Å(reported)
Based on initial model : 4GD1

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

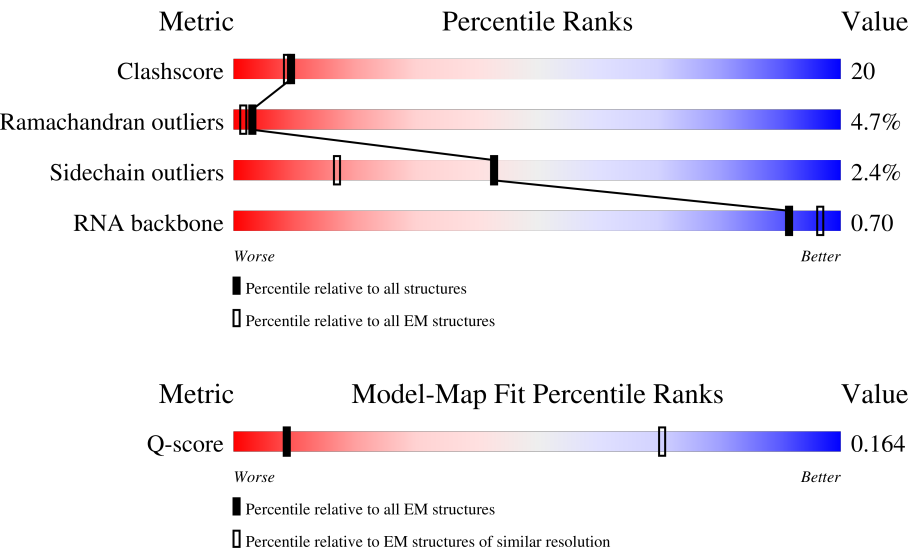
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance i

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

The reported resolution of this entry is 7.60 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	389 (7.10 - 8.10)

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

Mol	Chain	Length	Quality of chain
1	AA	1542	54% 41% 5%
2	AB	240	35% 21% 58% 12% 9%
3	AC	232	13% 35% 50% 11%

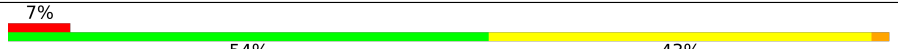
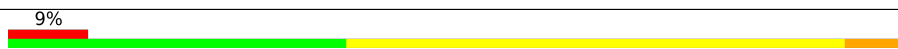
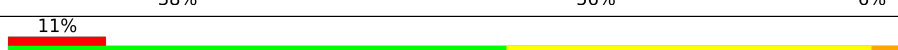
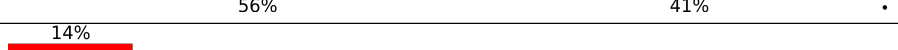
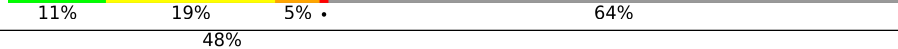
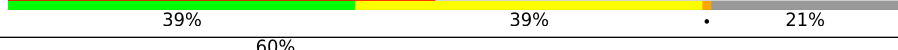
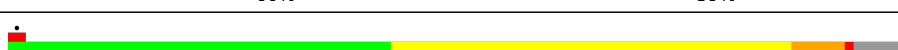
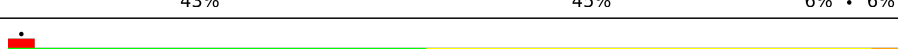
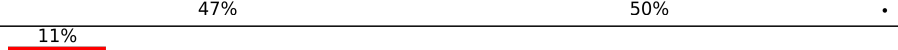
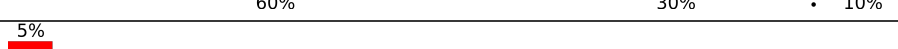
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Mol	Chain	Length	Quality of chain
4	AD	205	
5	AE	166	
6	AF	131	
7	AG	178	
8	AH	129	
9	AI	129	
10	AJ	103	
11	AK	128	
12	AL	123	
13	AM	117	
14	AN	100	
15	AO	88	
16	AP	82	
17	AQ	83	
18	AR	74	
19	AS	91	
20	AT	86	
21	AU	70	
22	AV	76	
22	AW	76	
23	AX	18	
24	AY	6	
25	BA	2903	
26	BB	119	
27	BC	233	

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Mol	Chain	Length	Quality of chain
28	BD	272	
29	BE	209	
30	BF	201	
31	BG	178	
32	BH	176	
33	BI	149	
34	BJ	165	
35	BK	141	
36	BL	142	
37	BM	123	
38	BN	144	
39	BO	136	
40	BP	127	
41	BQ	117	
42	BR	114	
43	BS	117	
44	BT	103	
45	BU	110	
46	BV	100	
47	BW	103	
48	BX	94	
49	BY	84	
50	BZ	77	
51	B1	63	
52	B2	58	

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Mol	Chain	Length	Quality of chain
53	B3	56	
54	B4	54	
55	B5	46	
56	B6	64	
57	B7	38	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
24	5OH	AY	6	-	-	X	-

2 Entry composition

There are 58 unique types of molecules in this entry. The entry contains 148028 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
1	AA	1538	Total	C	N	O	P	0	0
			32995	14716	6050	10691	1538		

- Molecule 2 is a protein called 30S ribosomal protein S2.

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

- Molecule 3 is a protein called 30S ribosomal protein S3.

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

- Molecule 4 is a protein called 30S ribosomal protein S4.

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

- Molecule 5 is a protein called 30S ribosomal protein S5.

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

- Molecule 6 is a protein called 30S ribosomal protein S6.

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

- Molecule 7 is a protein called 30S ribosomal protein S7.

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

- Molecule 8 is a protein called 30S ribosomal protein S8.

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

- Molecule 9 is a protein called 30S ribosomal protein S9.

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

- Molecule 10 is a protein called 30S ribosomal protein S10.

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

- Molecule 11 is a protein called 30S ribosomal protein S11.

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

- Molecule 12 is a protein called 30S ribosomal protein S12.

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

- Molecule 13 is a protein called 30S ribosomal protein S13.

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

- Molecule 14 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AN	96	Total	C	N	O	S	0	0
			774	483	160	128	3		

- Molecule 15 is a protein called 30S ribosomal protein S15.

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

- Molecule 16 is a protein called 30S ribosomal protein S16.

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

- Molecule 17 is a protein called 30S ribosomal protein S17.

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

- Molecule 18 is a protein called 30S ribosomal protein S18.

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

- Molecule 19 is a protein called 30S ribosomal protein S19.

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

- Molecule 20 is a protein called 30S ribosomal protein S20.

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

- Molecule 21 is a protein called 30S ribosomal protein S21.

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

- Molecule 22 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	AV	76	Total	C	N	O	P	0	0
			1619	723	290	531	75		
22	AW	76	Total	C	N	O	P	0	0
			1622	723	290	533	76		

- Molecule 23 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	AX	18	Total	C	N	O	P	0	0
			386	173	71	124	18		

- Molecule 24 is a protein called viomycin.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	AY	6	Total	C	N	O	0	0
			48	25	13	10		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
25	BA	2897	Total	C	N	O	P	0	0
			62192	27744	11444	20107	2897		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
26	BB	119	Total	C	N	O	P	0	0
			2548	1135	466	829	118		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
27	BC	225	Total	C	N	O	S	0	0
			1675	1047	305	317	6		

- Molecule 28 is a protein called 50S ribosomal protein L2.

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

- Molecule 29 is a protein called 50S ribosomal protein L3.

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

- Molecule 30 is a protein called 50S ribosomal protein L4.

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

- Molecule 31 is a protein called 50S ribosomal protein L5.

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

- Molecule 32 is a protein called 50S ribosomal protein L6.

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

- Molecule 33 is a protein called 50S ribosomal protein L9.

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

- Molecule 34 is a protein called 50S ribosomal protein L10.

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

- Molecule 35 is a protein called 50S ribosomal protein L11.

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

- Molecule 36 is a protein called 50S ribosomal protein L13.

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

- Molecule 37 is a protein called 50S ribosomal protein L14.

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

- Molecule 38 is a protein called 50S ribosomal protein L15.

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

- Molecule 39 is a protein called 50S ribosomal protein L16.

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

- Molecule 40 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	BP	120	Total	C	N	O	S	0	0
			959	592	196	166	5		

- Molecule 41 is a protein called 50S ribosomal protein L18.

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

- Molecule 42 is a protein called 50S ribosomal protein L19.

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

- Molecule 43 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	BS	117	Total	C	N	O	S	0	0
			947	604	192	151			

- Molecule 44 is a protein called 50S ribosomal protein L21.

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

- Molecule 45 is a protein called 50S ribosomal protein L22.

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

- Molecule 46 is a protein called 50S ribosomal protein L23.

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

- Molecule 47 is a protein called 50S ribosomal protein L24.

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

- Molecule 48 is a protein called 50S ribosomal protein L25.

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

- Molecule 49 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	BY	76	Total	C	N	O	S	0	0
			575	356	117	101	1		

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

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

- Molecule 51 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	B1	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 52 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	B2	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 53 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	B3	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 54 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
54	B4	50	Total	C	N	O	0	0
			409	263	75	71		

- Molecule 55 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	B5	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 56 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	B6	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 57 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	B7	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

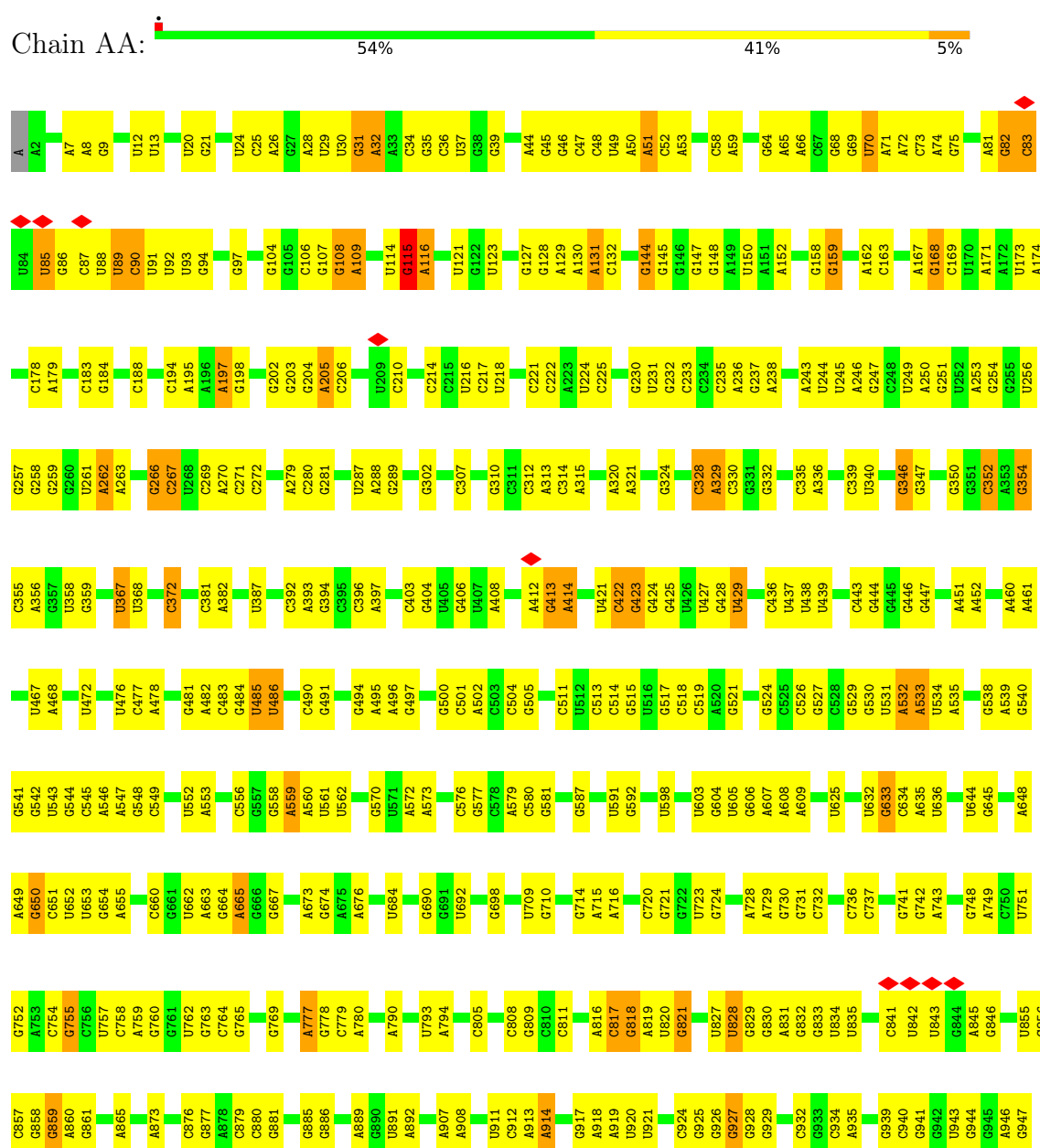
- Molecule 58 is ZINC ION (CCD ID: ZN) (formula: Zn).

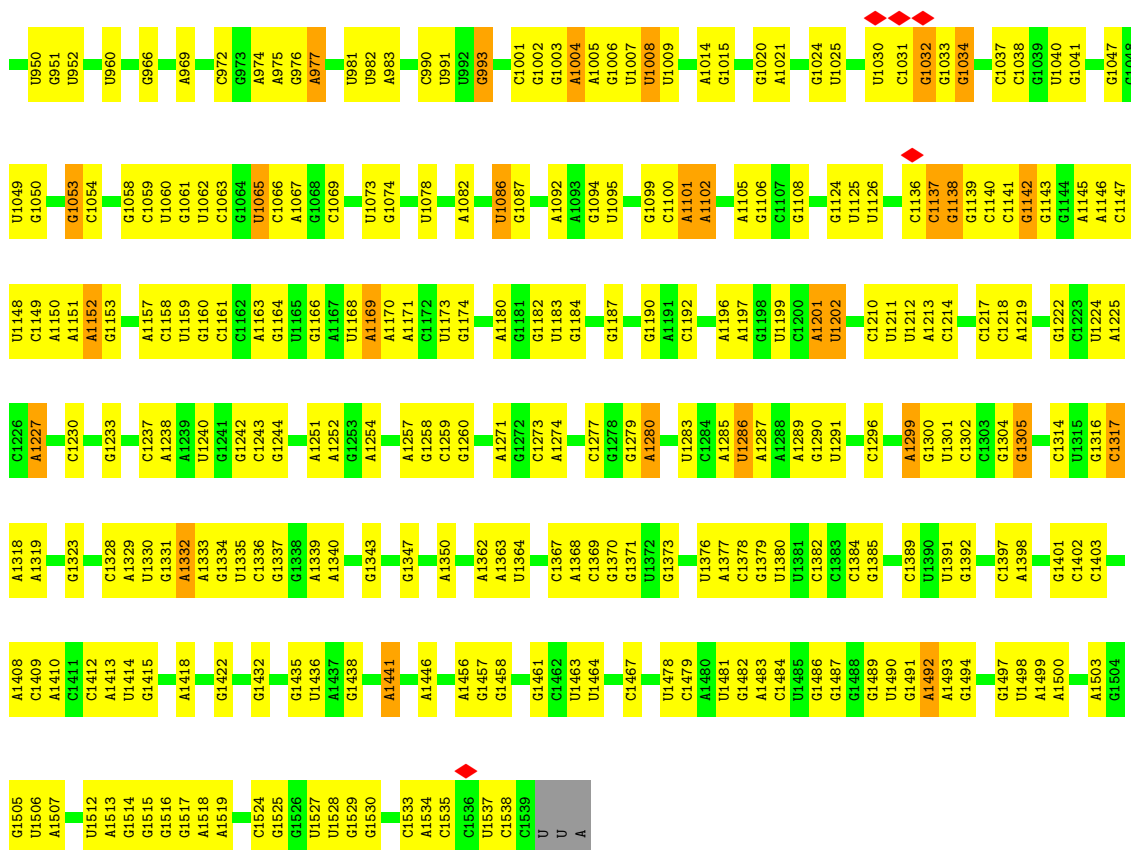
Mol	Chain	Residues	Atoms		AltConf
58	B7	1	Total	Zn	0
			1	1	

3 Residue-property plots

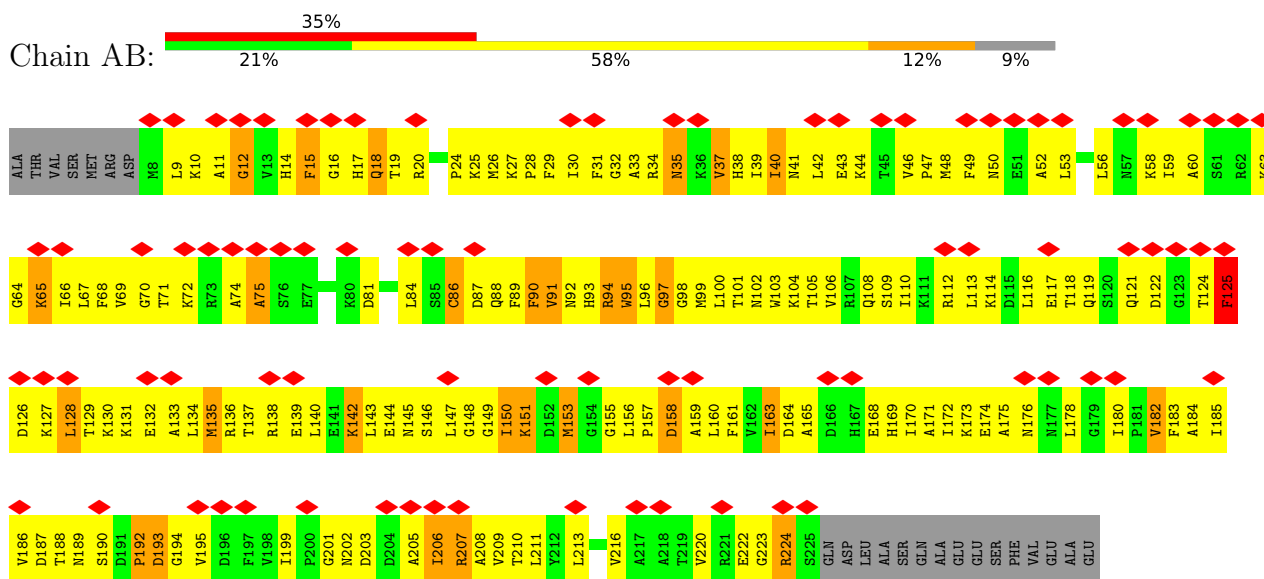
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: 16S ribosomal RNA

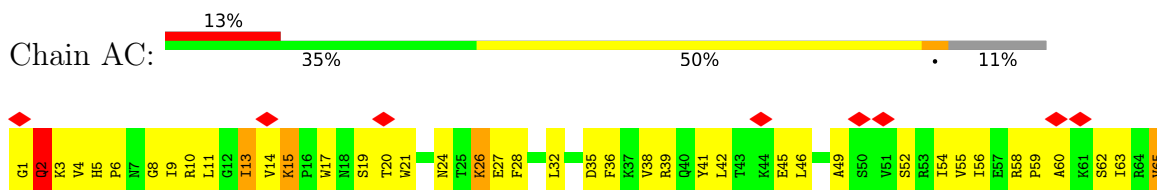


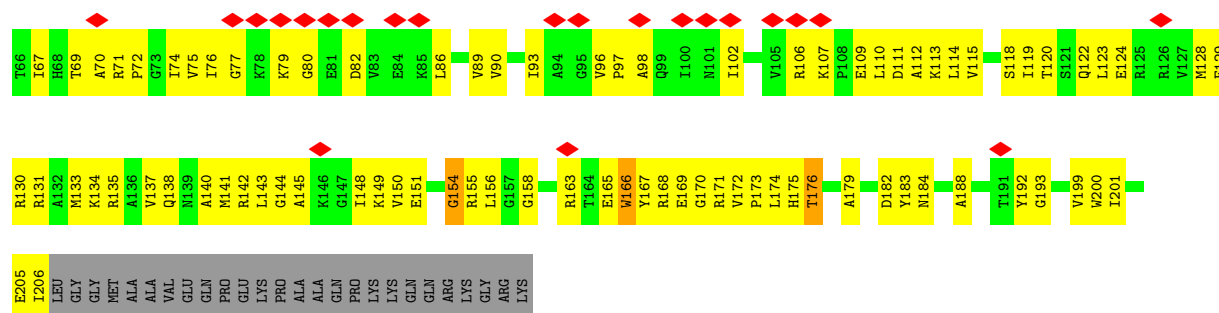


• Molecule 2: 30S ribosomal protein S2

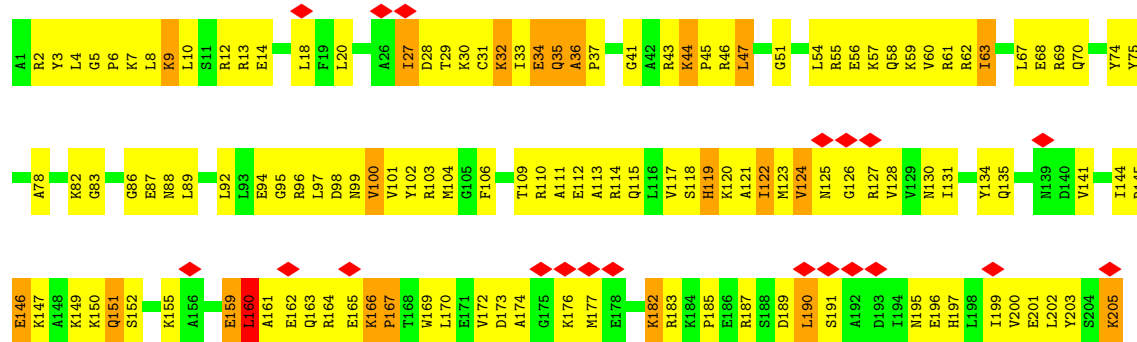


• Molecule 3: 30S ribosomal protein S3

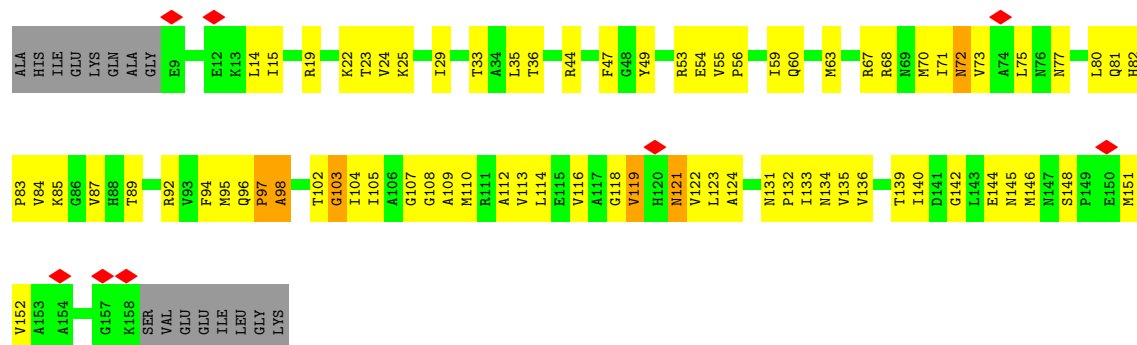




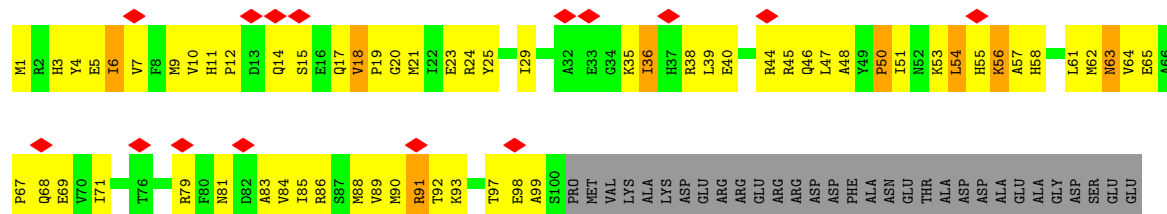
• Molecule 4: 30S ribosomal protein S4



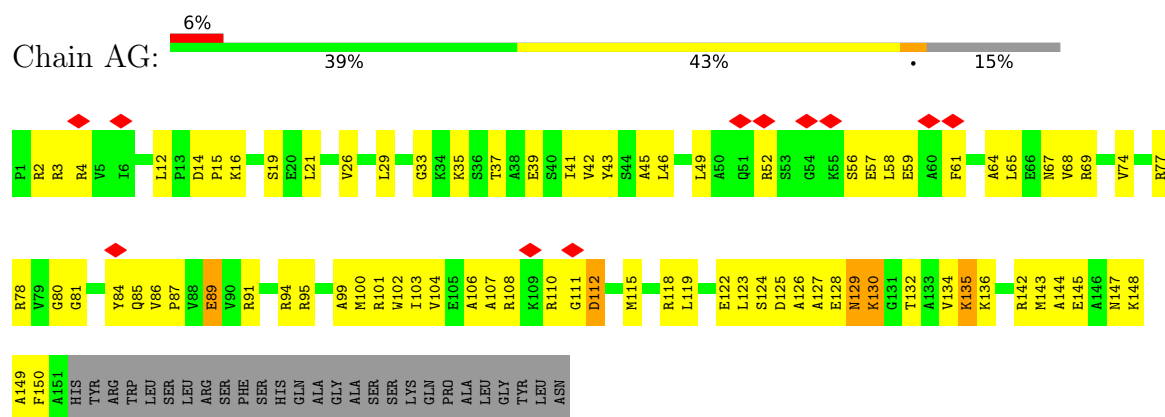
• Molecule 5: 30S ribosomal protein S5



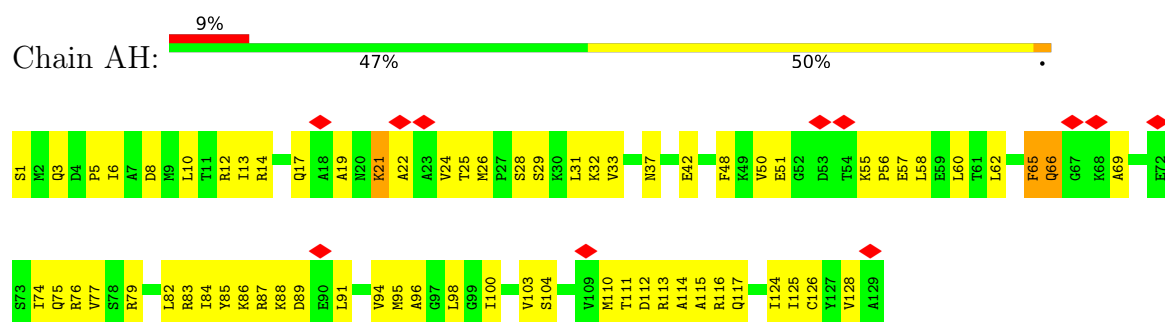
• Molecule 6: 30S ribosomal protein S6



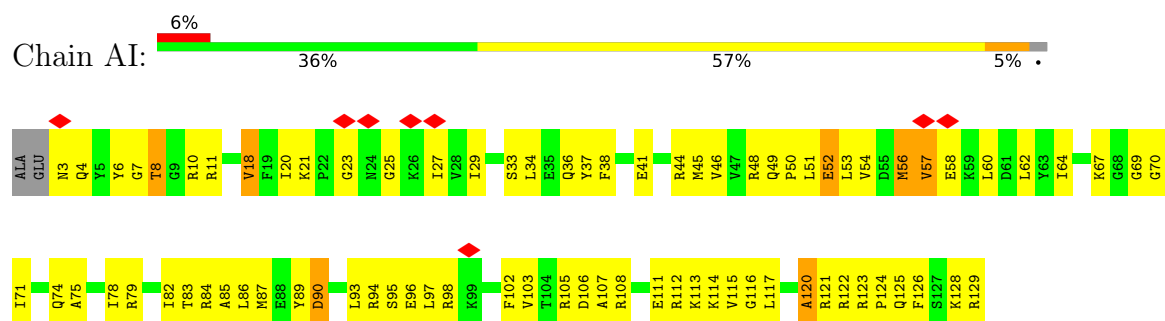
- Molecule 7: 30S ribosomal protein S7



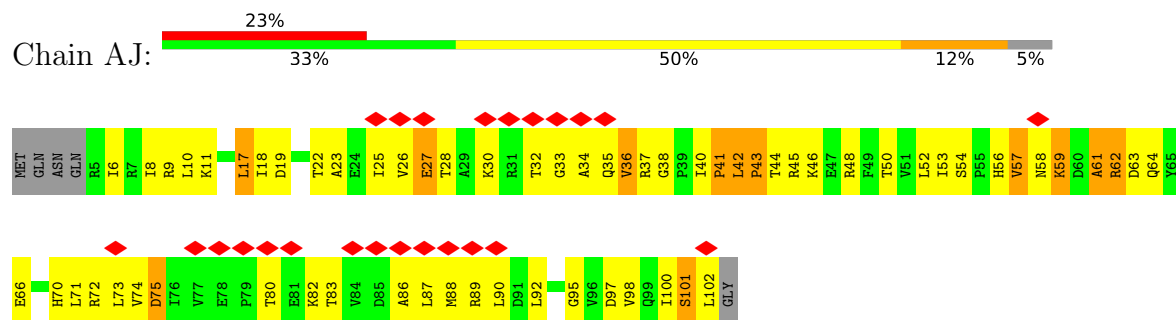
- Molecule 8: 30S ribosomal protein S8



- Molecule 9: 30S ribosomal protein S9

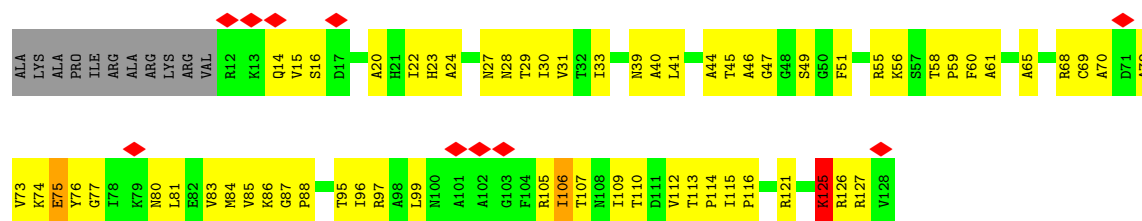


- Molecule 10: 30S ribosomal protein S10

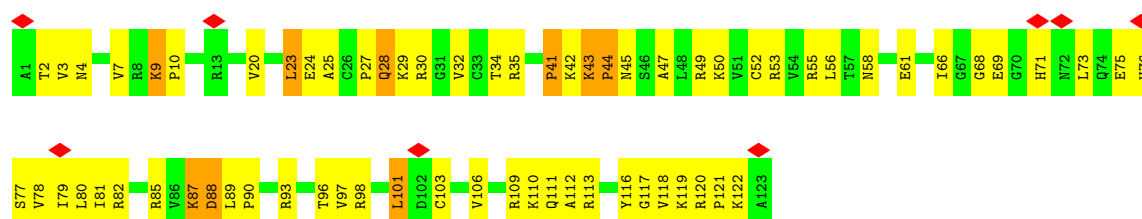


- Molecule 11: 30S ribosomal protein S11

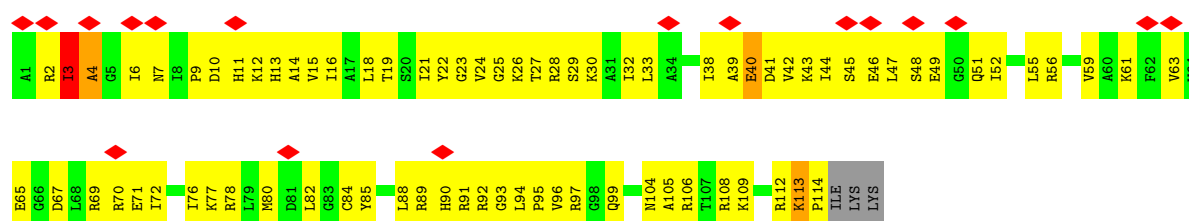




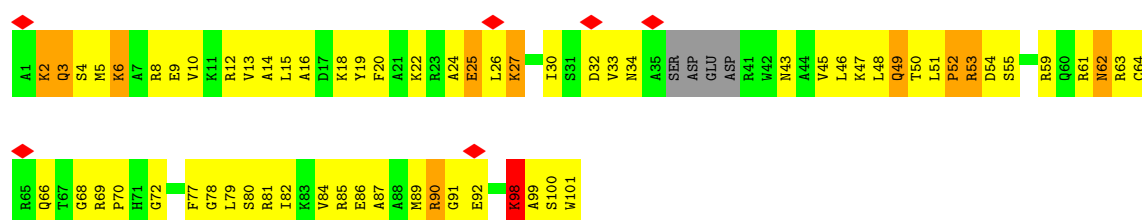
• Molecule 12: 30S ribosomal protein S12



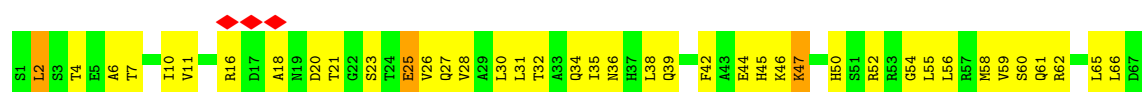
• Molecule 13: 30S ribosomal protein S13

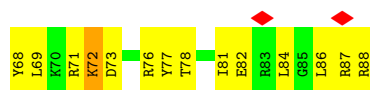


• Molecule 14: 30S ribosomal protein S14

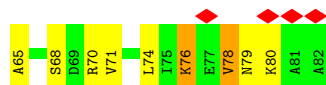
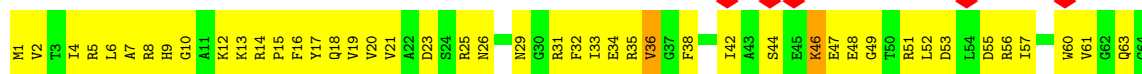


• Molecule 15: 30S ribosomal protein S15

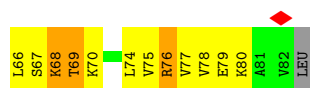




- Molecule 16: 30S ribosomal protein S16



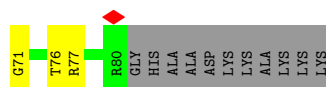
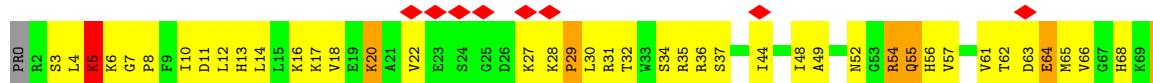
- Molecule 17: 30S ribosomal protein S17



- Molecule 18: 30S ribosomal protein S18

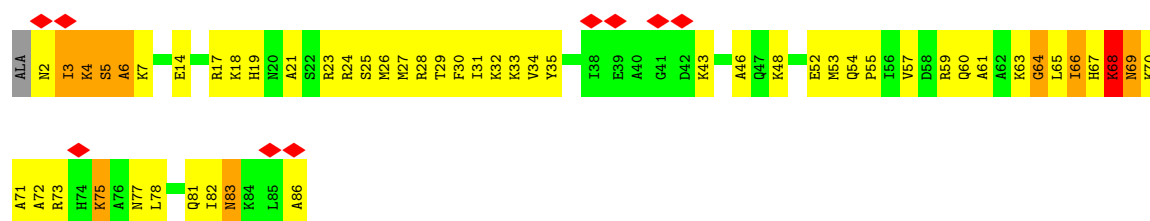


- Molecule 19: 30S ribosomal protein S19

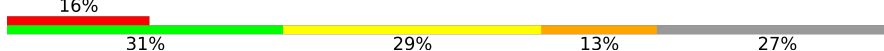


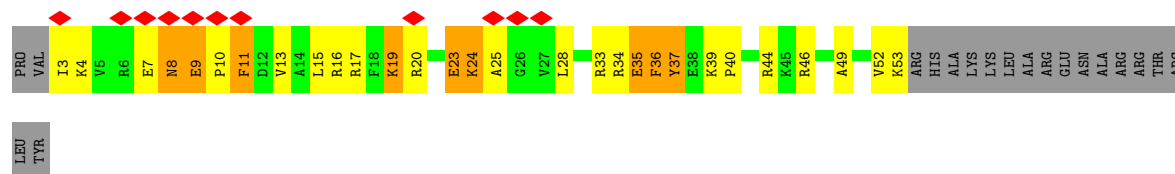
- Molecule 20: 30S ribosomal protein S20

Chain AT: 



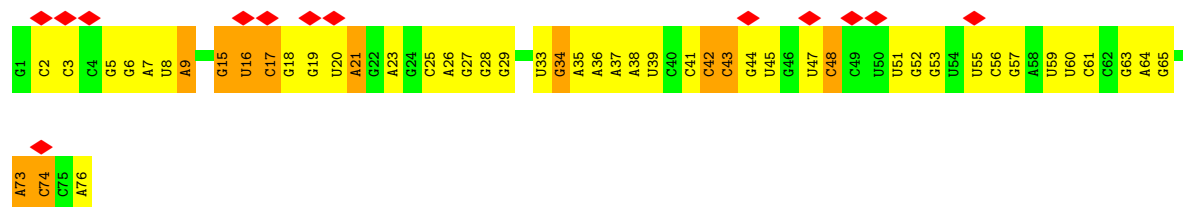
- Molecule 21: 30S ribosomal protein S21

Chain AU: 



- Molecule 22: tRNA

Chain AV: 



- Molecule 22: tRNA

Chain AW: 



- Molecule 23: mRNA

Chain AX: 



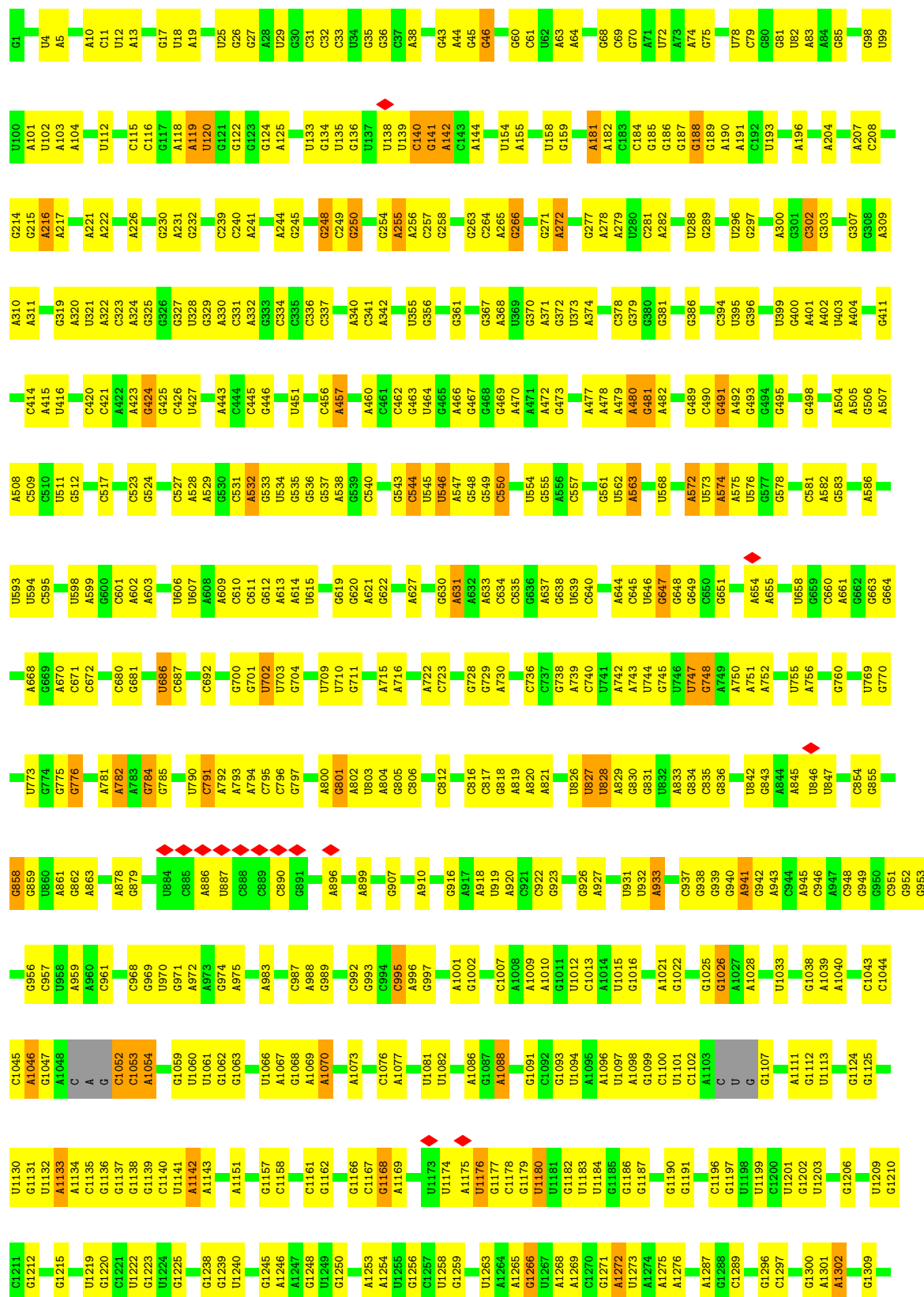
- Molecule 24: viomycin

Chain AY: 

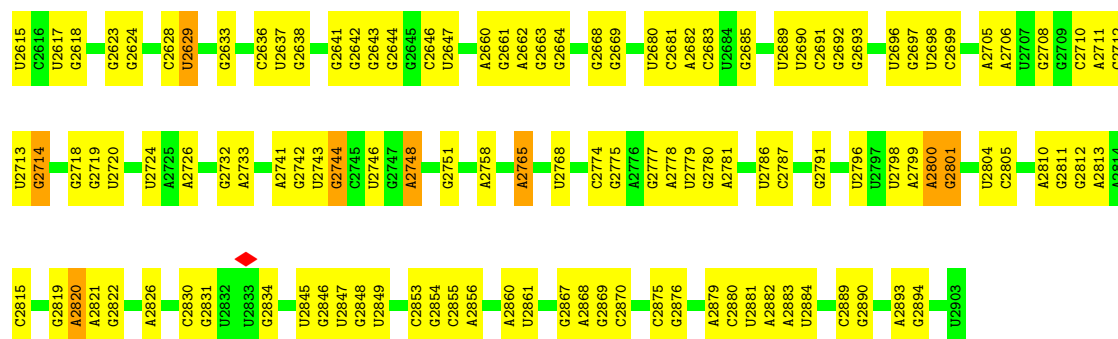


● Molecule 25: 23S ribosomal RNA

Chain BA: 

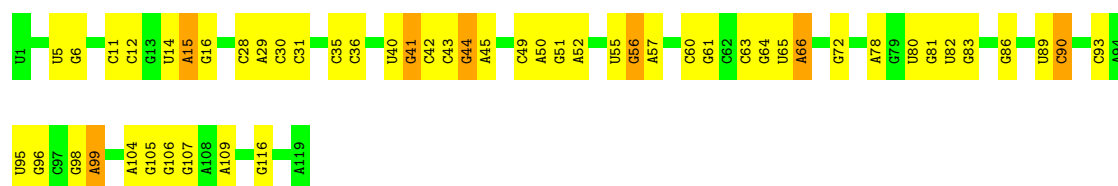


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A2542	G2455	G2361	A2266	C2178	C2072	U1995	U1923	C1816	U1714	A1593	G1506	G1414	C1314
G2543	G2456	G2366	A2267	C2179	U2086	C1996	C1924	G1820	G1715	U1594	U1507	U1415	C1316
G2544	G2457	G2367	G2268	U2182	G2087	G2002	C1925	A1819	U1720	A1596	C1508	C1417	G1317
U2545	G2458	G2368	G2270	A2183	C2091	C2006	A1928	A1821	G1721	U1597	A1509	U1418	U1318
U2546	A2461	G2376	G2271	G2188	U2092	G2010	G1929	A1822	U1729	U1599	A1510	A1419	C1319
A2547	C2462	A2377	G2279	U2189	U2093	G2012	G1930	G1823	C1730	C1600	G1516	A1420	C1320
U2548	C2463	A2378	A2280	U2192	U2098	A2013	U1931	G1826	G1738	G1607	U1515	G1324	G1325
C2551	C2464	G2379	A2281	G2193	U2109	G2014	G1932	G1828	U1739	A1608	G1523	U1326	U1326
U2552	C2465	G2380	G2282	C2198	U2110	A2015	G1933	A1829	G1740	A1609	G1524	C1330	C1330
G2553	G2466	A2381	A2283	A2198	G2111	U2016	C1934	G1832	U1744	A1610	U1525	G1332	G1332
U2554	C2467	G2382	G2284	C2200	G2112	A2017	A1937	U1834	A1745	A1616	G1527	A1434	A1435
U2555	A2469	G2383	G2285	U2203	U2113	U2018	A1938	G1837	G1752	G1628	U1528	G1436	G1436
C2556	G2470	A2384	G2286	G2204	G2115	A2019	U1944	G1838	G1753	G1629	G1529	G1437	G1438
A2564	A2471	G2385	A2287	U2211	G2116	G2020	G1945	G1839	U1754	A1535	U1533	U1438	G1338
A2565	G2472	C2386	A2288	A2212	U2118	C2022	U1946	U1855	A1755	C1536	G1537	U1439	U1340
A2566	C2475	G2387	G2289	A2213	U2119	G2023	C1947	U1856	G1756	G1537	U1539	U1440	G1341
U2568	A2476	A2392	U2291	U2214	G2122	C2025	G1948	G1857	A1757	G1644	G1540	U1442	A1342
G2569	G2480	U2393	U2292	C2215	U2128	U2026	A1952	A1858	G1764	G1646	G1541	U1443	U1344
G2570	G2481	C2394	U2293	G2216	G2129	G2029	A1953	G1869	A1772	U1647	U1542	U1444	U1352
U2571	U2489	C2395	U2294	U2217	G2130	A2030	G1954	C1870	A1773	U1648	G1543	C1447	G1355
A2572	G2490	U2398	U2305	U2220	U2131	A2031	U1955	A1871	G1776	A1652	U1546	G1448	G1356
C2573	U2491	G2399	U2306	G2221	U2132	G2032	U1956	G1872	U1777	G1653	C1547	G1449	G1357
G2574	U2492	U2402	U2307	G2224	U2133	G2038	G1959	G1873	U1778	A1654	U1550	G1450	C1358
U2575	C2496	A2406	A2322	A2226	U2134	U2039	A1960	G1874	U1779	G1655	A1551	G1452	G1364
G2576	C2497	A2407	G2325	C2226	A2135	G2040	C1961	G1875	U1780	G1659	U1554	C1454	A1366
A2577	U2500	U2408	G2326	U2233	G2136	U2041	C1962	U1880	U1781	U1662	U1555	U1458	A1367
U2578	C2501	G2409	A2327	U2234	G2139	C2043	U1963	G1881	U1782	G1663	U1563	G1459	G1368
U2584	G2502	G2410	U2328	G2238	U2140	C2044	G1964	U1882	U1783	A1664	U1564	U1460	C1370
U2585	U2503	A2411	G2239	G2239	G2144	C2045	C1965	U1884	U1784	G1666	C1565	C1461	G1371
A2587	U2504	U2419	U2343	G2251	G2145	G2049	C1966	G1885	U1787	G1667	C1566	C1462	G1372
G2588	C2505	A2425	U2344	G2252	U2146	C2050	A1968	A1889	G1788	G1668	U1567	G1463	U1373
A2589	U2511	A2426	U2345	G2255	C2145	A2051	A1969	A1890	G1789	G1669	U1568	G1465	G1374
C2590	U2514	C2427	U2346	G2256	U2147	A2052	U1970	A1891	U1790	G1670	A1570	U1466	U1375
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C2601	U2519	A2435	U2343	G2260	A2158	G2056	U1979	G1904	U1796	A1675	U1572	G1478	A1386
A2602	C2520	C2440	U2344	G2261	G2162	A2057	G1980	C1908	U1797	A1677	A1579	G1479	A1387
G2603	U2529	U2441	U2345	G2262	U2163	A2060	G1983	U1911	C1800	U1683	U1580	G1482	U1409
G2607	A2530	C2442	A2346	U2257	C2164	A2061	A1987	A1912	G1801	G1684	C1581	G1483	U1410
G2608	C2443	C2443	U2348	C2258	C2165	A2062	G1988	A1913	G1807	G1699	C1582	G1484	G1493
U2609	U2533	G2444	G2349	U2259	G2170	C2065	G1989	C1914	A1808	C1704	U1584	G1485	U1412
U2613	A2534	G2445	C2350	G2260	A2171	U2068	C1990	U1915	A1809	A1705	C1585	G1486	
	U2537	G2446	G2351	C2261	U2172	G2069	U1991	A1918	A1810	C1706	C1586	G1487	
	C2538	A2448	A2358	C2264	A2173	U1992	U1993	A1919	U1812	G1707	U1587	G1488	



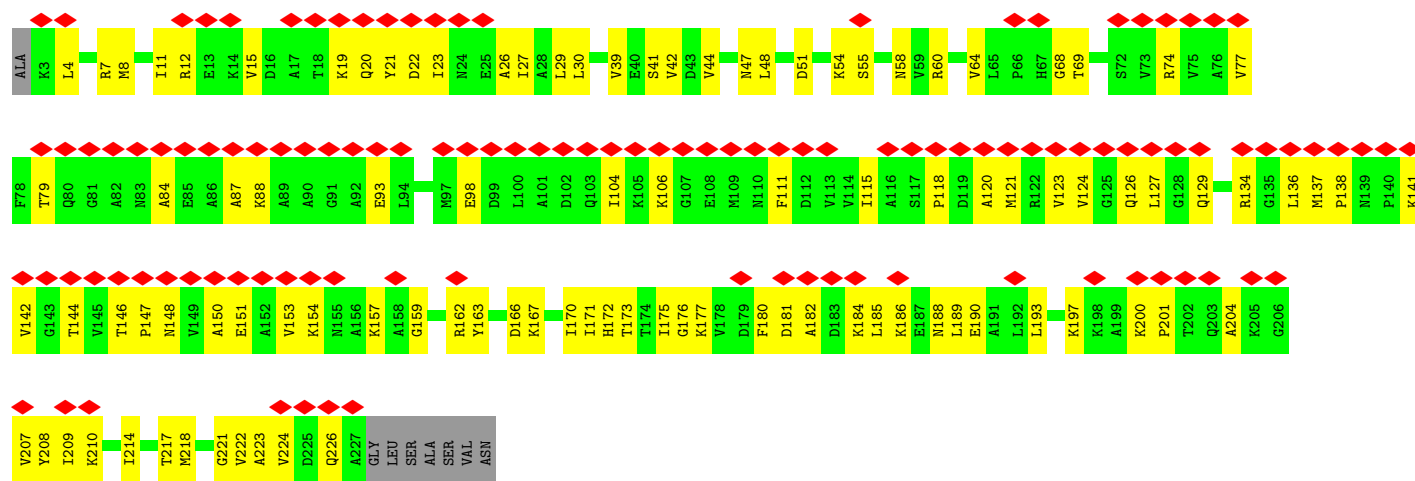
• Molecule 26: 5S ribosomal RNA

Chain BB: 56% 38% 6%



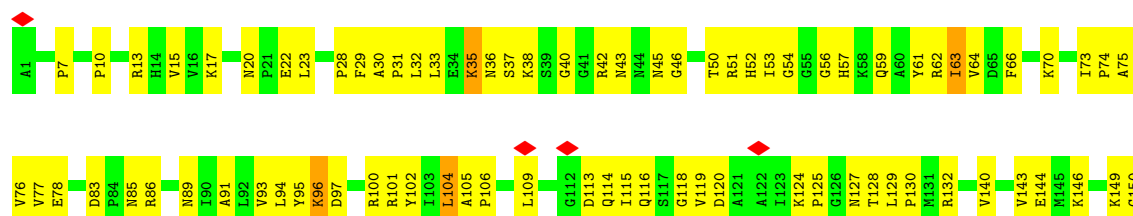
• Molecule 27: 50S ribosomal protein L1

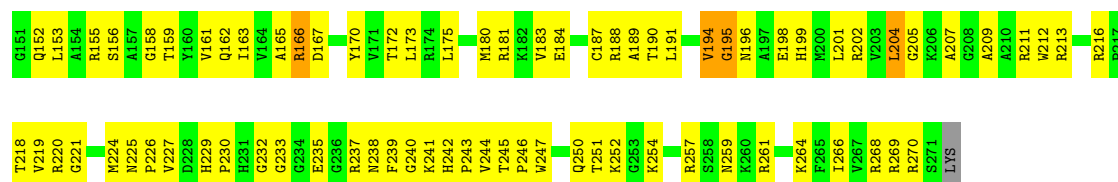
Chain BC: 49% 53% 44%



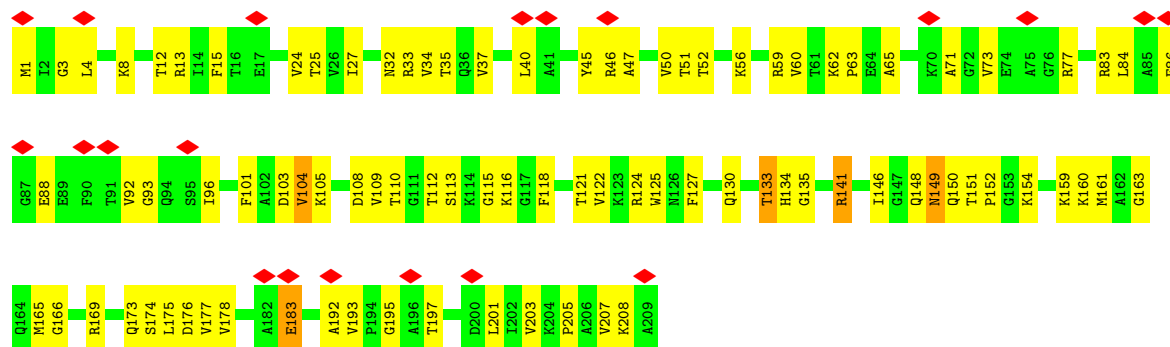
• Molecule 28: 50S ribosomal protein L2

Chain BD: 42% 54%

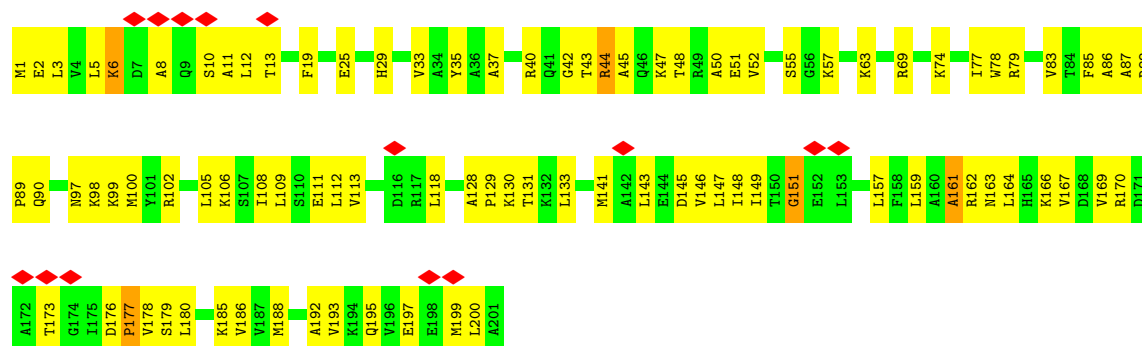




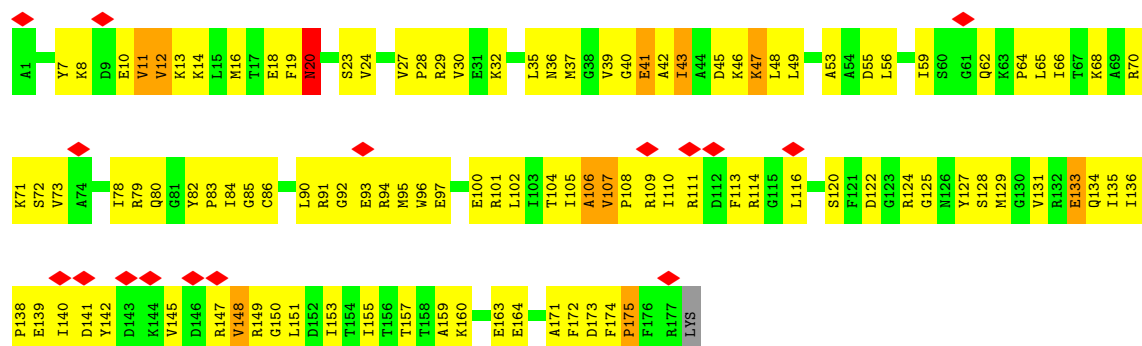
• Molecule 29: 50S ribosomal protein L3



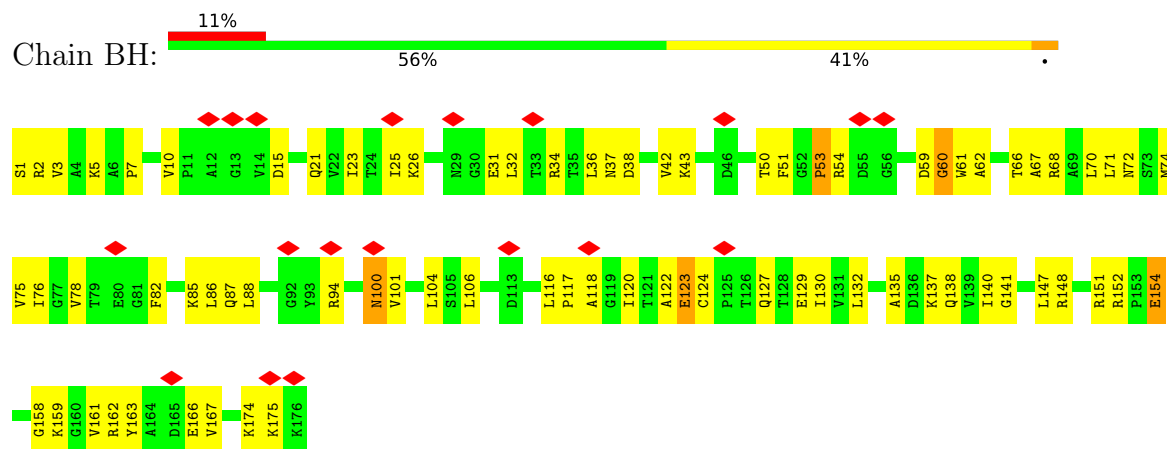
• Molecule 30: 50S ribosomal protein L4



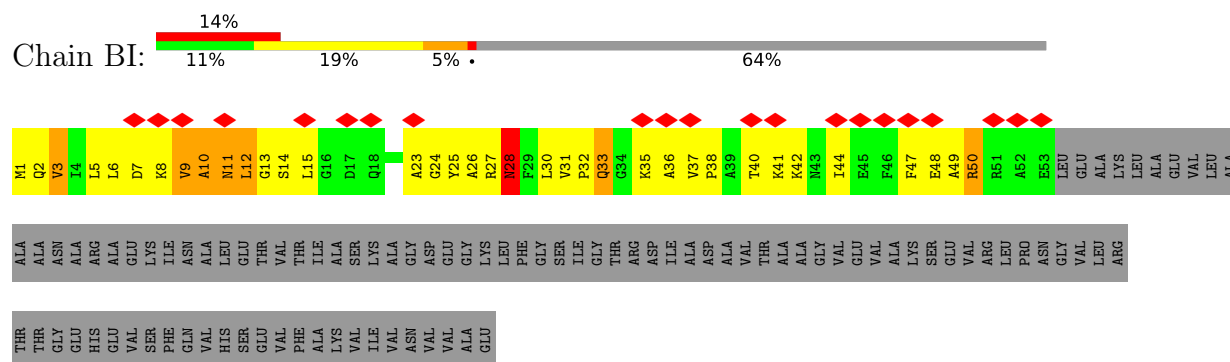
• Molecule 31: 50S ribosomal protein L5



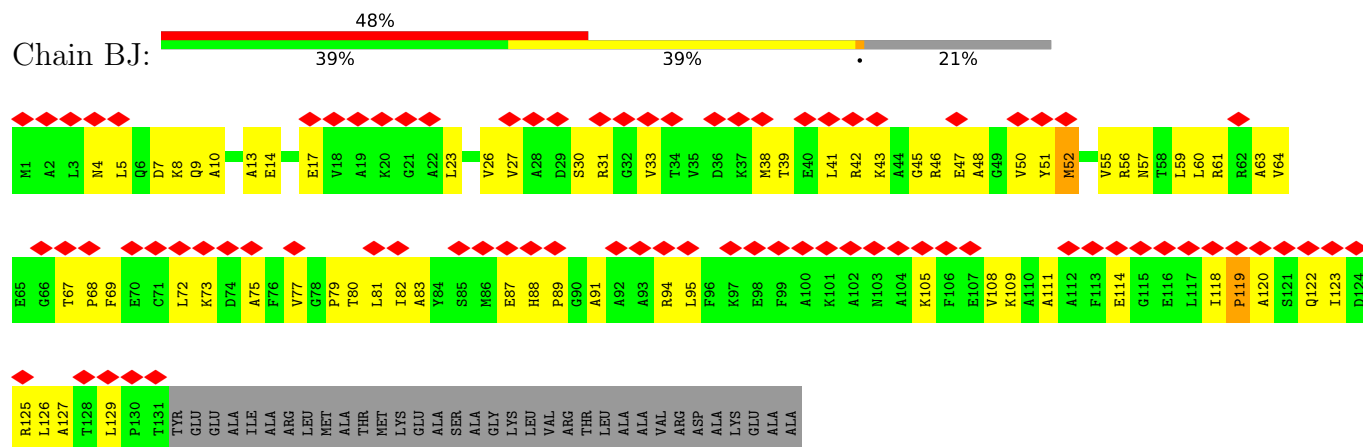
- Molecule 32: 50S ribosomal protein L6



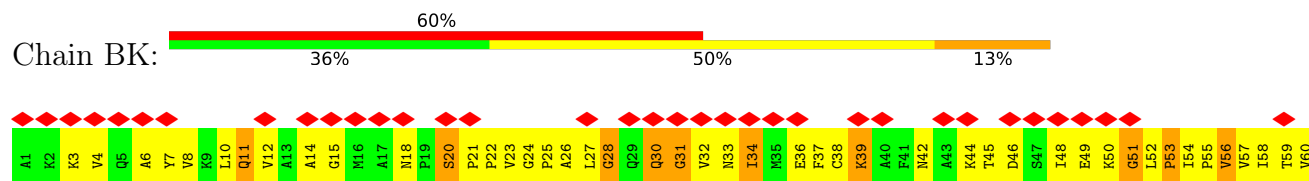
- Molecule 33: 50S ribosomal protein L9

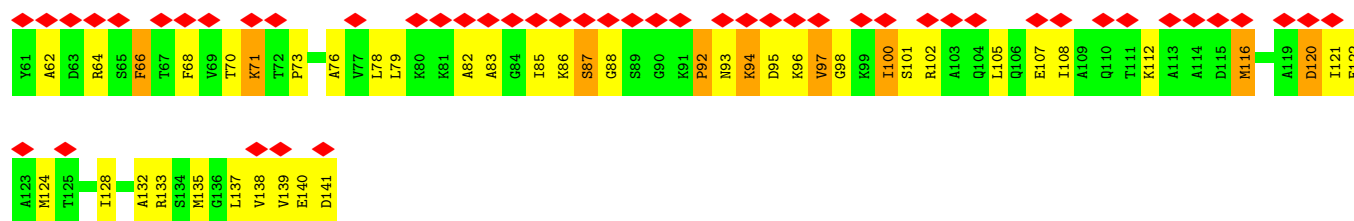


- Molecule 34: 50S ribosomal protein L10

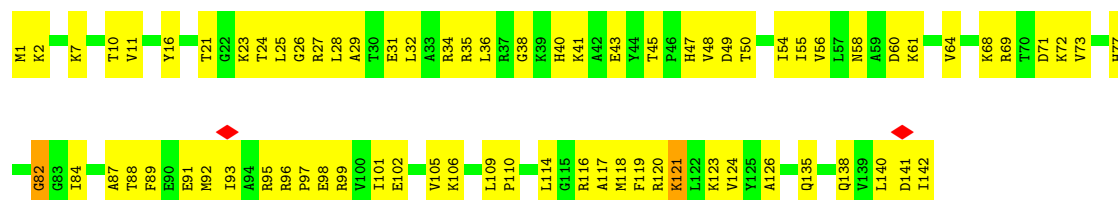


- Molecule 35: 50S ribosomal protein L11

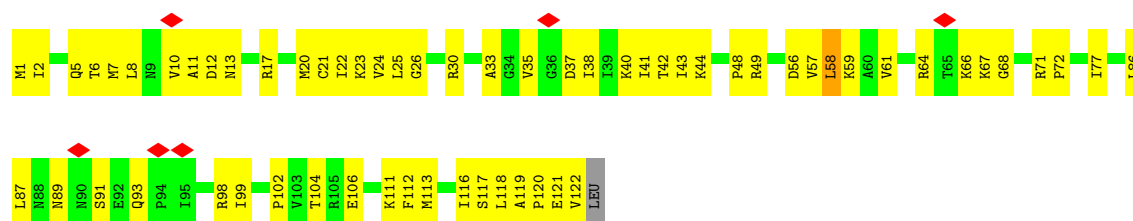




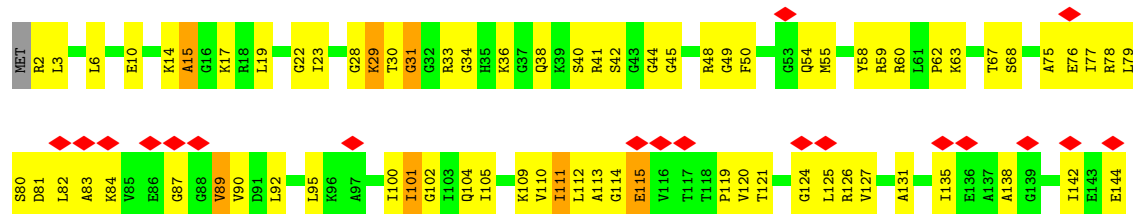
• Molecule 36: 50S ribosomal protein L13



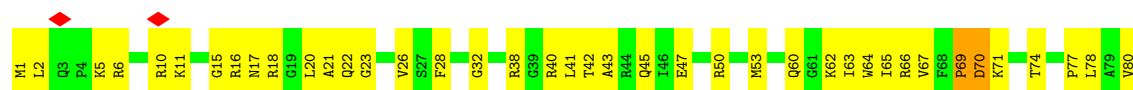
• Molecule 37: 50S ribosomal protein L14



• Molecule 38: 50S ribosomal protein L15



• Molecule 39: 50S ribosomal protein L16





- Molecule 40: 50S ribosomal protein L17

Chain BP: 43% 45% 6% • 6%



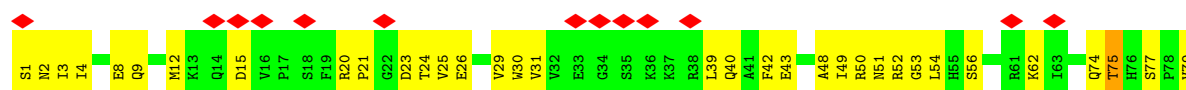
- Molecule 41: 50S ribosomal protein L18

Chain BQ: 47% 50% • •



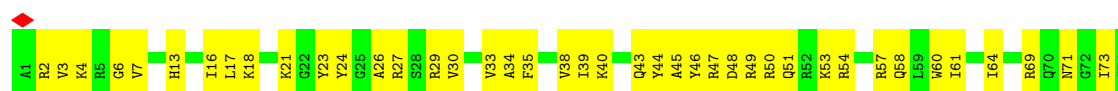
- Molecule 42: 50S ribosomal protein L19

Chain BR: 11% 56% 42% •



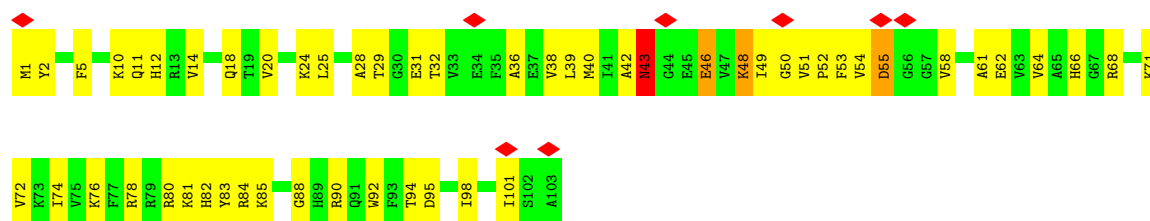
- Molecule 43: 50S ribosomal protein L20

Chain BS: 56% 44%

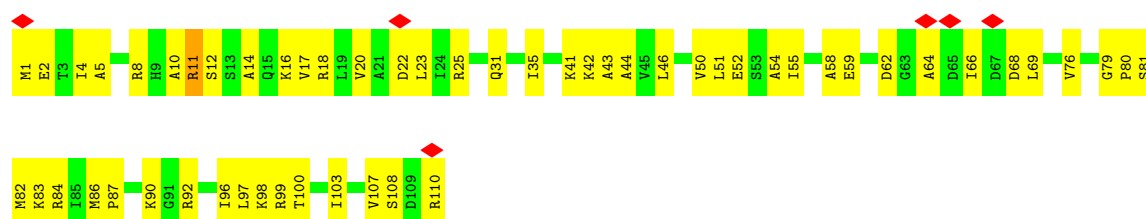


- Molecule 44: 50S ribosomal protein L21

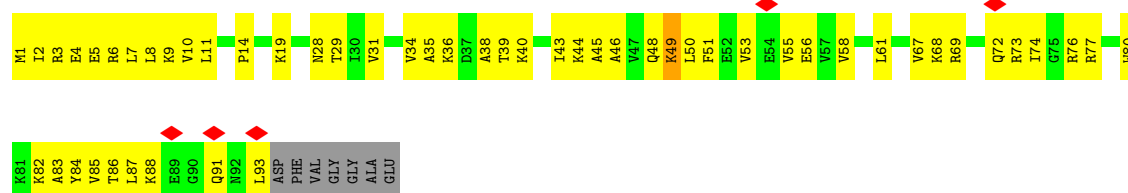
Chain BT: 8% 48% 49% • •



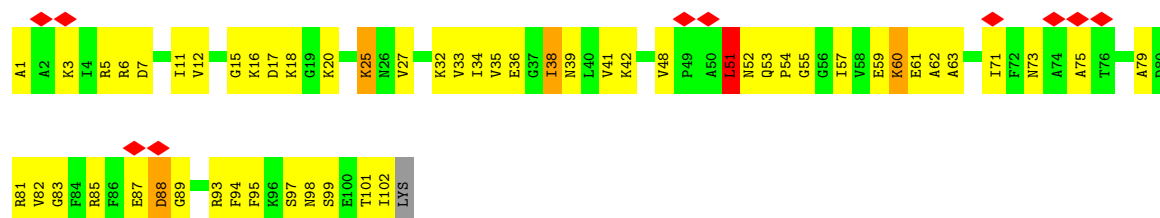
• Molecule 45: 50S ribosomal protein L22



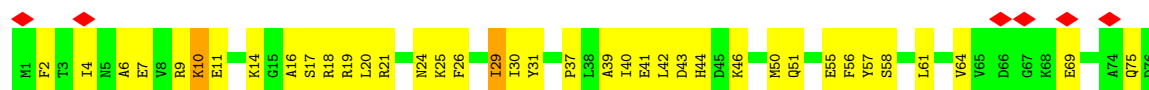
• Molecule 46: 50S ribosomal protein L23



• Molecule 47: 50S ribosomal protein L24



• Molecule 48: 50S ribosomal protein L25

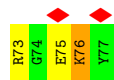
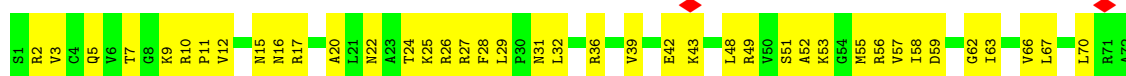
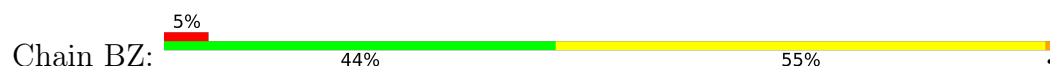




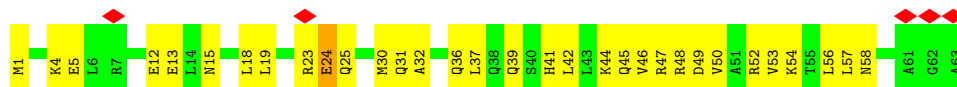
- Molecule 49: 50S ribosomal protein L27



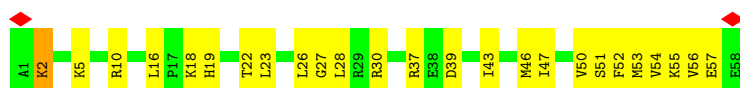
- Molecule 50: 50S ribosomal protein L28



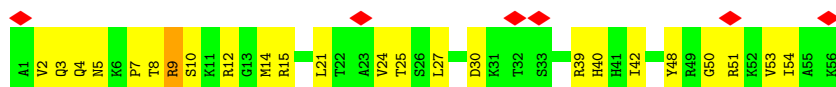
- Molecule 51: 50S ribosomal protein L29



- Molecule 52: 50S ribosomal protein L30

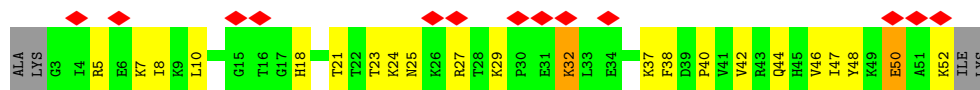


- Molecule 53: 50S ribosomal protein L32

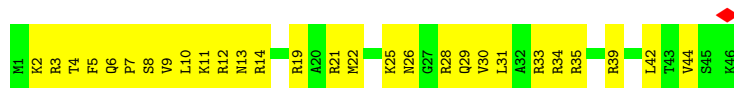


- Molecule 54: 50S ribosomal protein L33





- Molecule 55: 50S ribosomal protein L34



- Molecule 56: 50S ribosomal protein L35



- Molecule 57: 50S ribosomal protein L36



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	85115	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	CTFFIND3, FREALIGN per micrograph	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	30	Depositor
Minimum defocus (nm)	1150	Depositor
Maximum defocus (nm)	6950	Depositor
Magnification	134615	Depositor
Image detector	FEI FALCON I (4k x 4k)	Depositor
Maximum map value	1.302	Depositor
Minimum map value	-0.460	Depositor
Average map value	-0.027	Depositor
Map value standard deviation	0.175	Depositor
Recommended contour level	0.32	Depositor
Map size ($\text{\AA}$)	332.8, 332.8, 332.8	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.04, 1.04, 1.04	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: KBE, DPP, ZN, 5OH, UAL

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	AA	0.37	0/36944	0.41	1/57632 (0.0%)
2	AB	0.27	0/1735	0.71	0/2338
3	AC	0.27	0/1651	0.69	0/2225
4	AD	0.25	0/1665	0.66	1/2227 (0.0%)
5	AE	0.26	0/1118	0.68	0/1504
6	AF	0.27	0/835	0.69	1/1128 (0.1%)
7	AG	0.26	0/1195	0.77	1/1602 (0.1%)
8	AH	0.27	0/989	0.71	0/1326
9	AI	0.27	0/1034	0.69	1/1375 (0.1%)
10	AJ	0.30	0/796	0.74	2/1077 (0.2%)
11	AK	0.29	0/893	0.71	0/1205
12	AL	0.28	0/969	0.75	2/1300 (0.2%)
13	AM	0.28	0/892	0.74	0/1193
14	AN	0.26	0/785	0.72	0/1043
15	AO	0.26	0/722	0.70	0/964
16	AP	0.29	0/659	0.68	1/884 (0.1%)
17	AQ	0.26	0/657	0.66	0/881
18	AR	0.31	0/462	0.70	0/621
19	AS	0.27	0/652	0.70	0/877
20	AT	0.28	0/671	0.72	0/888
21	AU	0.29	0/430	0.70	0/570
22	AV	0.40	0/1809	0.51	0/2819
22	AW	0.38	0/1812	0.42	0/2823
23	AX	0.42	0/432	0.46	0/671
24	AY	3.19	3/11 (27.3%)	0.72	0/13
25	BA	0.39	1/69653 (0.0%)	0.41	5/108657 (0.0%)
26	BB	0.37	0/2847	0.40	0/4440
27	BC	0.26	0/1690	0.68	0/2278
28	BD	0.26	0/2121	0.70	0/2852
29	BE	0.26	0/1586	0.67	0/2134
30	BF	0.26	0/1571	0.67	0/2113
31	BG	0.28	0/1434	0.70	1/1926 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	BH	0.27	0/1343	0.71	0/1816
33	BI	0.28	0/414	0.66	0/556
34	BJ	0.27	0/1001	0.72	0/1350
35	BK	0.28	0/1046	0.75	0/1410
36	BL	0.27	0/1152	0.68	0/1551
37	BM	0.26	0/947	0.71	0/1268
38	BN	0.26	0/1054	0.69	0/1403
39	BO	0.26	0/1093	0.66	0/1460
40	BP	0.27	0/970	0.68	1/1295 (0.1%)
41	BQ	0.26	0/902	0.67	0/1209
42	BR	0.26	0/929	0.68	0/1242
43	BS	0.26	0/960	0.70	0/1278
44	BT	0.26	0/829	0.69	1/1107 (0.1%)
45	BU	0.26	0/864	0.71	0/1156
46	BV	0.26	0/744	0.68	0/994
47	BW	0.25	0/787	0.65	0/1051
48	BX	0.26	0/766	0.67	0/1025
49	BY	0.26	0/582	0.67	0/769
50	BZ	0.26	0/635	0.65	0/848
51	B1	0.25	0/510	0.76	0/677
52	B2	0.28	0/453	0.72	0/605
53	B3	0.25	0/450	0.65	0/599
54	B4	0.29	0/416	0.66	0/554
55	B5	0.28	0/380	0.71	0/498
56	B6	0.27	0/513	0.69	0/676
57	B7	0.26	0/303	0.69	0/397
All	All	0.35	4/160763 (0.0%)	0.50	18/240380 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
25	BA	0	1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	BA	1911	U	O3'-P	-32.45	1.12	1.61
24	AY	3	SER	CA-C	-6.40	1.39	1.52
24	AY	4	SER	CA-C	-6.39	1.39	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	AY	3	SER	C-N	5.12	1.40	1.33

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	BA	1911	U	P-O3'-C3'	-11.83	102.45	120.20
25	BA	1911	U	OP1-P-O3'	-8.21	83.36	108.00
25	BA	1645	G	C2'-C3'-O3'	6.76	119.64	109.50
25	BA	1911	U	OP2-P-O3'	6.09	126.28	108.00
25	BA	1378	A	C2'-C3'-O3'	6.04	118.56	109.50
12	AL	23	LEU	CB-CA-C	-5.73	109.98	116.63
1	AA	115	G	C2'-C3'-O3'	5.56	117.83	109.50
6	AF	18	VAL	CB-CA-C	-5.45	108.52	113.70
12	AL	101	LEU	CB-CA-C	-5.44	109.83	117.23
44	BT	50	GLY	N-CA-C	-5.43	108.21	115.32
4	AD	28	ASP	CB-CA-C	-5.37	109.92	117.23
16	AP	79	ASN	CB-CA-C	-5.35	109.95	117.23
10	AJ	35	GLN	CB-CA-C	-5.33	109.98	117.23
40	BP	2	ARG	CB-CA-C	-5.15	110.22	117.23
10	AJ	92	LEU	CB-CA-C	-5.12	109.70	115.79
7	AG	112	ASP	CB-CA-C	-5.09	109.75	117.07
9	AI	18	VAL	N-CA-C	5.08	113.91	106.55
31	BG	107	VAL	CB-CA-C	-5.01	109.04	114.35

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
25	BA	1915	U	Sidechain

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	AA	32995	0	16607	582	0
2	AB	1704	0	1732	206	0
3	AC	1624	0	1699	132	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	AD	1643	0	1710	177	0
5	AE	1105	0	1148	86	0
6	AF	817	0	808	70	0
7	AG	1181	0	1240	98	0
8	AH	979	0	1034	87	0
9	AI	1022	0	1070	118	0
10	AJ	786	0	828	83	0
11	AK	877	0	887	74	0
12	AL	955	0	1019	82	0
13	AM	883	0	944	86	0
14	AN	774	0	827	88	0
15	AO	714	0	737	54	0
16	AP	649	0	666	58	0
17	AQ	648	0	691	58	0
18	AR	455	0	478	32	0
19	AS	637	0	665	47	0
20	AT	665	0	714	68	0
21	AU	425	0	449	32	0
22	AV	1619	0	822	50	0
22	AW	1622	0	821	39	0
23	AX	386	0	194	8	0
24	AY	48	0	40	13	0
25	BA	62192	0	31283	1060	0
26	BB	2548	0	1292	44	0
27	BC	1675	0	1763	96	0
28	BD	2082	0	2157	175	0
29	BE	1565	0	1616	93	0
30	BF	1552	0	1619	103	0
31	BG	1410	0	1447	119	0
32	BH	1323	0	1374	69	0
33	BI	409	0	429	36	0
34	BJ	988	0	1025	56	0
35	BK	1032	0	1088	99	0
36	BL	1129	0	1162	74	0
37	BM	938	0	1012	52	0
38	BN	1045	0	1117	99	0
39	BO	1074	0	1157	51	0
40	BP	959	0	998	75	0
41	BQ	892	0	923	53	0
42	BR	917	0	965	56	0
43	BS	947	0	1022	61	0
44	BT	816	0	839	53	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
45	BU	857	0	922	51	0
46	BV	738	0	807	52	0
47	BW	779	0	834	49	0
48	BX	753	0	780	44	0
49	BY	575	0	589	33	0
50	BZ	625	0	655	40	0
51	B1	509	0	543	38	0
52	B2	449	0	491	27	0
53	B3	444	0	461	31	0
54	B4	409	0	440	22	0
55	B5	377	0	418	38	0
56	B6	504	0	574	48	0
57	B7	302	0	343	24	0
58	B7	1	0	0	0	0
All	All	148028	0	99975	4976	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 20.

All (4976) 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)
25:BA:45:G:H5'	25:BA:46:G:H5'	1.24	1.16
25:BA:1912:A:C2	25:BA:1919:A:C5	2.33	1.16
1:AA:1033:G:H2'	1:AA:1034:G:H5''	1.31	1.10
48:BX:10:LYS:HE2	48:BX:10:LYS:H	1.16	1.09
27:BC:201:PRO:HG2	27:BC:204:ALA:HB2	1.39	1.02
20:AT:66:ILE:HD11	20:AT:70:LYS:HG2	1.39	1.02
25:BA:2427:C:H5''	25:BA:2429:G:H5'	1.38	1.01
1:AA:1493:A:C2	22:AV:36:A:H1'	1.96	1.00
25:BA:1167:C:H2'	25:BA:1168:G:H5''	1.42	1.00
4:AD:36:ALA:H	4:AD:37:PRO:HD3	1.24	1.00
25:BA:187:G:H2'	25:BA:188:G:H5''	1.44	1.00
4:AD:162:GLU:HA	4:AD:166:LYS:HD3	1.44	0.99
38:BN:95:LEU:HB3	38:BN:100:ILE:HD11	1.41	0.99
16:AP:46:LYS:HD3	16:AP:47:GLU:H	1.26	0.98
17:AQ:11:VAL:HG12	17:AQ:12:VAL:H	1.28	0.98
25:BA:2831:G:H1'	25:BA:2883:A:H2'	1.44	0.98
53:B3:9:ARG:HB3	53:B3:9:ARG:HH21	1.28	0.98
1:AA:73:C:HO2'	1:AA:74:A:H8	1.05	0.97
28:BD:194:VAL:HG22	28:BD:195:GLY:H	1.25	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:BE:151:THR:HB	29:BE:152:PRO:HD3	1.47	0.96
25:BA:244:A:H5''	38:BN:67:THR:HG21	1.47	0.96
20:AT:24:ARG:HG2	20:AT:28:ARG:HH12	1.29	0.96
9:AI:18:VAL:HA	9:AI:64:ILE:HG22	1.48	0.95
25:BA:1061:U:H4'	25:BA:1070:A:H1'	1.48	0.95
2:AB:163:ILE:HG23	2:AB:164:ASP:H	1.30	0.95
5:AE:54:GLU:HG2	5:AE:56:PRO:HD2	1.48	0.95
22:AV:16:U:H3'	22:AV:17:C:H5'	1.48	0.95
1:AA:167:A:H2'	1:AA:168:G:H5''	1.47	0.94
1:AA:966:G:H1'	22:AW:34:G:H4'	1.47	0.93
27:BC:163:TYR:HB2	27:BC:171:ILE:HD11	1.48	0.93
29:BE:12:THR:HG22	29:BE:13:ARG:H	1.34	0.93
21:AU:19:LYS:HZ3	21:AU:19:LYS:HA	1.34	0.93
35:BK:82:ALA:HB1	35:BK:108:ILE:HD13	1.51	0.92
37:BM:26:GLY:HA3	37:BM:30:ARG:HH11	1.35	0.92
17:AQ:75:VAL:HG23	17:AQ:76:ARG:HG3	1.50	0.92
28:BD:106:PRO:HD2	28:BD:109:LEU:HD22	1.50	0.92
25:BA:215:G:H4'	25:BA:216:A:H4'	1.52	0.91
25:BA:250:G:H4'	38:BN:59:ARG:HD3	1.49	0.91
29:BE:141:ARG:HH11	29:BE:141:ARG:HB3	1.31	0.91
57:B7:3:VAL:HG12	57:B7:36:ARG:HB3	1.49	0.91
27:BC:98:GLU:HG3	27:BC:123:VAL:HG11	1.54	0.90
28:BD:235:GLU:H	28:BD:238:ASN:HD22	1.17	0.90
1:AA:439:U:H4'	4:AD:120:LYS:HE3	1.54	0.90
22:AV:28:G:H1	22:AV:42:C:H42	1.15	0.90
1:AA:1328:C:H5''	13:AM:27:THR:HG21	1.53	0.89
31:BG:32:LYS:HD3	31:BG:91:ARG:HH11	1.38	0.89
7:AG:129:ASN:HA	7:AG:134:VAL:HG11	1.55	0.89
25:BA:2491:U:H5'	25:BA:2570:G:H5''	1.55	0.89
1:AA:943:U:H1'	9:AI:125:GLN:HE22	1.35	0.89
45:BU:59:GLU:HA	45:BU:64:ALA:HA	1.53	0.89
25:BA:701:G:H2'	25:BA:702:U:H5''	1.54	0.89
35:BK:48:ILE:HG13	35:BK:49:GLU:H	1.35	0.89
2:AB:127:LYS:HG3	2:AB:128:LEU:H	1.38	0.88
35:BK:46:ASP:HA	35:BK:50:LYS:HD2	1.55	0.88
1:AA:1373:G:H5''	7:AG:35:LYS:HB2	1.53	0.88
6:AF:35:LYS:HB2	6:AF:65:GLU:HB3	1.55	0.88
28:BD:77:VAL:HG21	28:BD:109:LEU:HD11	1.54	0.88
49:BY:36:GLN:HE22	49:BY:41:PHE:HB2	1.37	0.88
1:AA:93:U:H2'	1:AA:94:G:H5'	1.55	0.88
1:AA:1106:G:H5''	3:AC:171:ARG:HG2	1.54	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:87:C:H2'	1:AA:88:U:H5'	1.55	0.88
35:BK:133:ARG:HD3	35:BK:139:VAL:HB	1.53	0.88
4:AD:10:LEU:HD13	4:AD:62:ARG:HD3	1.56	0.87
25:BA:31:C:H4'	25:BA:1238:G:H5''	1.56	0.87
41:BQ:40:ILE:HG12	41:BQ:47:VAL:HG12	1.56	0.87
1:AA:521:G:H4'	12:AL:69:GLU:HG2	1.57	0.87
2:AB:170:ILE:H	2:AB:170:ILE:HD12	1.37	0.87
36:BL:140:LEU:HG	36:BL:142:ILE:HD13	1.56	0.87
2:AB:150:ILE:HG23	2:AB:151:LYS:H	1.38	0.87
28:BD:198:GLU:HA	28:BD:201:LEU:HD13	1.56	0.87
57:B7:2:LYS:HE2	57:B7:4:ARG:HE	1.39	0.86
4:AD:160:LEU:H	4:AD:160:LEU:HD13	1.39	0.86
25:BA:651:G:H5'	56:B6:18:LYS:HG3	1.57	0.86
28:BD:251:THR:HG22	28:BD:252:LYS:H	1.41	0.86
48:BX:10:LYS:HE3	48:BX:11:GLU:HG2	1.57	0.86
9:AI:129:ARG:HB3	9:AI:129:ARG:HH11	1.39	0.86
1:AA:310:G:H5''	16:AP:31:ARG:HB2	1.58	0.86
32:BH:59:ASP:HB2	32:BH:62:ALA:HB3	1.57	0.86
6:AF:29:ILE:HD13	6:AF:64:VAL:HG11	1.58	0.86
25:BA:744:U:H5''	25:BA:1658:C:H5''	1.56	0.86
13:AM:40:GLU:HG3	13:AM:41:ASP:H	1.40	0.86
37:BM:49:ARG:HH11	37:BM:49:ARG:HB2	1.38	0.86
25:BA:1912:A:C2	25:BA:1919:A:C4	2.64	0.86
1:AA:1060:U:H4'	10:AJ:54:SER:HA	1.58	0.85
25:BA:2800:A:H3'	25:BA:2801:G:H5'	1.57	0.85
56:B6:24:LYS:HB2	56:B6:46:LYS:HE3	1.58	0.85
6:AF:6:ILE:HG12	6:AF:89:VAL:HG12	1.56	0.85
9:AI:129:ARG:HB3	9:AI:129:ARG:NH1	1.91	0.85
18:AR:49:LYS:HA	18:AR:52:ARG:HH12	1.40	0.85
45:BU:90:LYS:HD2	45:BU:92:ARG:HH12	1.41	0.85
2:AB:209:VAL:HG23	2:AB:210:THR:H	1.41	0.85
1:AA:981:U:H3'	1:AA:982:U:H5''	1.56	0.84
9:AI:117:LEU:HA	9:AI:124:PRO:HD3	1.59	0.84
14:AN:61:ARG:HG3	14:AN:62:ASN:H	1.41	0.84
37:BM:40:LYS:HE3	37:BM:57:VAL:HG12	1.58	0.84
27:BC:44:VAL:HG22	27:BC:214:ILE:HG22	1.59	0.84
2:AB:110:ILE:HG12	2:AB:150:ILE:HG12	1.59	0.84
55:B5:34:ARG:HE	55:B5:39:ARG:HG3	1.42	0.84
10:AJ:57:VAL:HG22	10:AJ:58:ASN:H	1.40	0.84
18:AR:49:LYS:HG2	18:AR:53:GLN:HE21	1.42	0.84
19:AS:28:LYS:HB3	19:AS:29:PRO:HD2	1.60	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:649:A:H2'	1:AA:650:G:H5''	1.60	0.84
47:BW:60:LYS:HA	47:BW:60:LYS:HE3	1.58	0.84
17:AQ:58:VAL:HG13	17:AQ:60:ILE:HD11	1.59	0.83
47:BW:60:LYS:HG3	47:BW:61:GLU:H	1.44	0.83
1:AA:158:G:H2'	1:AA:159:G:H5''	1.61	0.83
1:AA:328:C:H4'	1:AA:329:A:H5''	1.61	0.83
19:AS:54:ARG:HG3	19:AS:55:GLN:H	1.42	0.83
45:BU:66:ILE:HA	45:BU:69:LEU:HD23	1.58	0.83
1:AA:1047:G:H5''	14:AN:3:GLN:HE21	1.42	0.83
35:BK:100:ILE:HG22	35:BK:101:SER:H	1.42	0.83
1:AA:1237:C:H3'	1:AA:1238:A:H5'	1.60	0.82
9:AI:50:PRO:HD3	9:AI:79:ARG:HG2	1.61	0.82
40:BP:60:VAL:CA	40:BP:61:ALA:N	2.43	0.82
38:BN:63:LYS:HG2	56:B6:12:ARG:HE	1.43	0.82
11:AK:87:GLY:H	11:AK:113:THR:HG22	1.45	0.82
6:AF:1:MET:HA	6:AF:67:PRO:HA	1.61	0.82
22:AV:25:C:H2'	22:AV:26:A:H8	1.45	0.82
25:BA:45:G:C5'	25:BA:46:G:H5'	2.06	0.82
33:BI:3:VAL:HG12	33:BI:38:PRO:HA	1.62	0.82
2:AB:130:LYS:HE2	2:AB:130:LYS:HA	1.60	0.81
4:AD:97:LEU:HB2	4:AD:134:TYR:HB3	1.63	0.81
13:AM:106:ARG:HE	13:AM:112:ARG:HB3	1.43	0.81
31:BG:73:VAL:HG22	31:BG:78:ILE:HD11	1.62	0.81
2:AB:63:LYS:HE2	2:AB:63:LYS:HA	1.60	0.81
9:AI:46:VAL:HA	9:AI:49:GLN:HE21	1.45	0.81
25:BA:671:C:H41	38:BN:41:ARG:HA	1.45	0.81
35:BK:135:MET:HG3	35:BK:137:LEU:HG	1.63	0.81
28:BD:17:LYS:HA	28:BD:17:LYS:HE2	1.61	0.81
42:BR:88:ARG:HD2	42:BR:112:ARG:HH21	1.45	0.81
25:BA:1666:G:H4'	37:BM:6:THR:HG23	1.61	0.81
1:AA:243:A:H4'	1:AA:244:U:H3'	1.61	0.80
28:BD:244:VAL:HG12	28:BD:250:GLN:HA	1.60	0.80
48:BX:9:ARG:HD3	48:BX:39:ALA:HB1	1.63	0.80
19:AS:62:THR:HG22	19:AS:63:ASP:H	1.46	0.80
8:AH:5:PRO:HG2	8:AH:6:ILE:HD12	1.64	0.80
15:AO:72:LYS:HE2	15:AO:72:LYS:HA	1.63	0.80
19:AS:4:LEU:HD23	19:AS:8:PRO:HA	1.62	0.80
20:AT:34:VAL:HG11	20:AT:78:LEU:HD13	1.64	0.80
27:BC:137:MET:HE3	27:BC:138:PRO:HD2	1.64	0.80
28:BD:15:VAL:HG22	28:BD:205:GLY:HA3	1.62	0.80
28:BD:106:PRO:HG2	28:BD:109:LEU:HB2	1.64	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1007:U:H2'	1:AA:1008:U:H5''	1.64	0.80
2:AB:72:LYS:HE2	2:AB:75:ALA:HB3	1.63	0.80
5:AE:87:VAL:HG23	5:AE:92:ARG:HG2	1.64	0.80
25:BA:1912:A:N7	25:BA:1918:A:C2	2.49	0.80
25:BA:668:A:H2'	25:BA:670:A:H62	1.45	0.79
35:BK:54:ILE:HG12	35:BK:73:PRO:HB3	1.64	0.79
49:BY:33:ILE:HG22	49:BY:34:VAL:HG23	1.64	0.79
3:AC:107:LYS:HB3	3:AC:110:LEU:HD23	1.61	0.79
35:BK:78:LEU:HD13	35:BK:108:ILE:HG22	1.63	0.79
44:BT:10:LYS:HG3	44:BT:12:HIS:HE1	1.48	0.79
37:BM:49:ARG:HB2	37:BM:49:ARG:NH1	1.97	0.79
51:B1:12:GLU:HA	51:B1:15:ASN:HD22	1.47	0.79
53:B3:9:ARG:HB3	53:B3:9:ARG:NH2	1.96	0.79
1:AA:673:A:H4'	6:AF:86:ARG:HH12	1.45	0.79
44:BT:1:MET:HE1	44:BT:101:ILE:HB	1.64	0.79
1:AA:237:G:H5''	17:AQ:26:ARG:NH2	1.98	0.79
25:BA:2529:G:H4'	32:BH:174:LYS:HD2	1.63	0.79
40:BP:83:LEU:HD23	40:BP:86:ARG:HH21	1.48	0.79
55:B5:34:ARG:HH21	55:B5:39:ARG:HD2	1.47	0.79
11:AK:126:ARG:HA	11:AK:126:ARG:HE	1.46	0.79
16:AP:4:ILE:HG12	16:AP:21:VAL:HG22	1.63	0.79
39:BO:42:THR:HG22	39:BO:93:VAL:HG12	1.62	0.79
3:AC:19:SER:HB3	3:AC:21:TRP:HE1	1.47	0.79
1:AA:1397:C:H42	23:AX:22:A:H3'	1.47	0.78
1:AA:1493:A:N1	22:AV:36:A:H1'	1.98	0.78
25:BA:2553:G:H1'	25:BA:2582:G:H21	1.47	0.78
48:BX:77:VAL:HG23	48:BX:89:ILE:HG12	1.66	0.78
42:BR:112:ARG:HG2	42:BR:114:ASN:HD21	1.46	0.78
1:AA:737:C:H5'	6:AF:89:VAL:HG23	1.65	0.78
27:BC:142:VAL:HB	27:BC:162:ARG:HD2	1.65	0.78
1:AA:1108:G:H5'	3:AC:175:HIS:CD2	2.18	0.78
12:AL:71:HIS:HB2	12:AL:73:LEU:HD23	1.65	0.78
25:BA:646:U:H3'	25:BA:647:G:H5''	1.66	0.78
39:BO:11:LYS:HD3	39:BO:86:LYS:HD3	1.66	0.78
34:BJ:27:VAL:HG11	34:BJ:75:ALA:HB1	1.65	0.78
47:BW:25:LYS:HA	47:BW:25:LYS:HE3	1.63	0.78
25:BA:776:G:H22	25:BA:2072:C:H5'	1.48	0.78
1:AA:89:U:O2'	1:AA:90:C:H5''	1.84	0.78
25:BA:1912:A:C2	25:BA:1919:A:C6	2.71	0.78
28:BD:52:HIS:HE2	28:BD:218:THR:HG23	1.48	0.78
50:BZ:76:LYS:HA	50:BZ:76:LYS:HE3	1.66	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AK:22:ILE:HD11	11:AK:85:VAL:HG13	1.65	0.78
48:BX:10:LYS:HE2	48:BX:10:LYS:N	1.96	0.78
4:AD:195:ASN:HD22	4:AD:197:HIS:HE1	1.32	0.77
24:AY:6:5OH:N	24:AY:6:5OH:HS	1.99	0.77
57:B7:19:ARG:HD2	57:B7:24:ARG:HD2	1.66	0.77
4:AD:104:MET:HG2	4:AD:170:LEU:HD22	1.64	0.77
29:BE:104:VAL:HG23	29:BE:105:LYS:H	1.49	0.77
35:BK:112:LYS:HE2	35:BK:116:MET:HE3	1.64	0.77
4:AD:47:LEU:HD23	4:AD:47:LEU:H	1.47	0.77
25:BA:187:G:C2'	25:BA:188:G:H5''	2.15	0.77
25:BA:543:G:H2'	25:BA:544:C:H5''	1.66	0.77
26:BB:12:C:H4'	26:BB:15:A:H62	1.50	0.77
1:AA:1409:C:H2'	1:AA:1410:A:C8	2.20	0.77
25:BA:2440:C:H5''	25:BA:2587:A:H4'	1.66	0.77
1:AA:451:A:H4'	1:AA:452:A:O4'	1.85	0.77
42:BR:20:ARG:HD3	42:BR:112:ARG:NH1	2.00	0.77
28:BD:61:TYR:HA	28:BD:85:ASN:HD21	1.47	0.77
50:BZ:73:ARG:HG3	50:BZ:75:GLU:HG2	1.67	0.77
25:BA:265:A:H4'	25:BA:266:G:H5'	1.68	0.76
25:BA:1158:C:H5''	52:B2:30:ARG:HD3	1.67	0.76
1:AA:494:G:H2'	1:AA:495:A:H5''	1.66	0.76
14:AN:15:LEU:HD23	14:AN:18:LYS:HD2	1.67	0.76
2:AB:207:ARG:HB3	2:AB:207:ARG:NH1	2.01	0.76
1:AA:13:U:H1'	1:AA:914:A:H5''	1.67	0.76
1:AA:636:U:H5''	17:AQ:5:ARG:HG2	1.67	0.76
3:AC:69:THR:HG21	3:AC:75:VAL:HG21	1.68	0.76
12:AL:32:VAL:HG12	12:AL:78:VAL:HG22	1.66	0.76
42:BR:20:ARG:HD3	42:BR:112:ARG:HH12	1.50	0.76
48:BX:17:SER:HB3	48:BX:21:ARG:HH12	1.51	0.76
1:AA:150:U:H3	1:AA:171:A:H62	1.32	0.76
1:AA:1535:C:H42	23:AX:10:G:H1	1.34	0.76
44:BT:24:LYS:HA	44:BT:94:THR:HG23	1.67	0.76
1:AA:504:C:H2'	1:AA:511:C:H5	1.51	0.76
1:AA:1409:C:C5'	25:BA:1915:U:O4	2.34	0.76
3:AC:15:LYS:HA	3:AC:15:LYS:HE3	1.67	0.76
25:BA:1199:U:H1'	43:BS:3:VAL:HG22	1.67	0.76
25:BA:2876:G:H5''	42:BR:2:ASN:HB2	1.67	0.76
1:AA:167:A:C2'	1:AA:168:G:H5''	2.16	0.76
10:AJ:32:THR:HG23	10:AJ:33:GLY:H	1.51	0.76
22:AV:41:C:H3'	22:AV:42:C:H5''	1.66	0.76
30:BF:5:LEU:HB2	30:BF:8:ALA:HB3	1.67	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BK:23:VAL:HG23	35:BK:24:GLY:H	1.51	0.76
48:BX:10:LYS:H	48:BX:10:LYS:CE	1.96	0.76
2:AB:99:MET:HA	2:AB:106:VAL:HG21	1.68	0.76
2:AB:114:LYS:HA	2:AB:117:GLU:HG2	1.68	0.76
21:AU:9:GLU:H	21:AU:10:PRO:HD2	1.51	0.75
25:BA:784:G:H5''	28:BD:225:ASN:HD21	1.51	0.75
52:B2:2:LYS:HD3	52:B2:2:LYS:H	1.51	0.75
4:AD:190:LEU:HD12	4:AD:190:LEU:O	1.85	0.75
25:BA:630:G:H2'	25:BA:631:A:H5''	1.68	0.75
28:BD:20:ASN:HD22	28:BD:23:LEU:HB2	1.50	0.75
25:BA:2045:C:H5''	53:B3:14:MET:HE2	1.67	0.75
4:AD:47:LEU:HD12	4:AD:51:GLY:HA3	1.68	0.75
6:AF:3:HIS:H	6:AF:92:THR:HG23	1.49	0.75
28:BD:140:VAL:HG22	28:BD:191:LEU:HD13	1.69	0.75
4:AD:2:ARG:NE	4:AD:114:ARG:HH11	1.84	0.75
5:AE:81:GLN:HE21	5:AE:146:MET:HE3	1.50	0.75
25:BA:1068:G:H21	25:BA:1096:A:H5'	1.51	0.75
25:BA:1167:C:C2'	25:BA:1168:G:H5''	2.16	0.75
56:B6:7:ARG:HA	56:B6:7:ARG:HE	1.49	0.75
31:BG:66:ILE:O	31:BG:66:ILE:HD12	1.86	0.75
45:BU:22:ASP:HA	45:BU:25:ARG:HH12	1.52	0.75
3:AC:13:ILE:HD13	3:AC:13:ILE:H	1.52	0.75
6:AF:81:ASN:HD21	6:AF:83:ALA:HB3	1.52	0.74
22:AV:48:C:H2'	22:AV:48:C:OP2	1.87	0.74
27:BC:30:LEU:HD12	27:BC:214:ILE:HD12	1.69	0.74
44:BT:51:VAL:HB	44:BT:52:PRO:HD2	1.69	0.74
53:B3:39:ARG:HG3	53:B3:40:HIS:ND1	2.02	0.74
7:AG:135:LYS:HE2	7:AG:135:LYS:HA	1.67	0.74
4:AD:36:ALA:N	4:AD:37:PRO:HD3	2.03	0.74
8:AH:77:VAL:HG23	8:AH:126:CYS:HA	1.69	0.74
47:BW:71:ILE:HD13	47:BW:82:VAL:HG22	1.68	0.74
13:AM:93:GLY:HA2	13:AM:108:ARG:HH12	1.52	0.74
25:BA:1417:C:H1'	25:BA:1587:G:H21	1.50	0.74
3:AC:120:THR:HG23	3:AC:188:ALA:HB2	1.70	0.74
7:AG:110:ARG:HG2	7:AG:111:GLY:H	1.52	0.74
25:BA:2282:G:H21	25:BA:2390:U:H3	1.34	0.74
54:B4:8:ILE:HD13	54:B4:24:LYS:HD2	1.68	0.74
4:AD:103:ARG:HB3	4:AD:167:PRO:HG2	1.68	0.74
38:BN:100:ILE:HD12	38:BN:101:ILE:HG23	1.70	0.74
6:AF:91:ARG:HG3	6:AF:92:THR:H	1.52	0.74
25:BA:1993:U:H4'	29:BE:133:THR:HG21	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:BP:29:VAL:HG13	40:BP:83:LEU:HD11	1.68	0.74
19:AS:5:LYS:HD2	19:AS:6:LYS:HG2	1.70	0.74
21:AU:35:GLU:OE1	21:AU:37:TYR:HB2	1.88	0.74
42:BR:112:ARG:HG2	42:BR:114:ASN:ND2	2.02	0.74
9:AI:6:TYR:HB2	9:AI:18:VAL:O	1.88	0.74
10:AJ:28:THR:HG22	10:AJ:86:ALA:HB1	1.70	0.74
14:AN:47:LYS:HB3	19:AS:12:LEU:HD21	1.69	0.74
37:BM:43:ILE:HD12	37:BM:56:ASP:HB2	1.69	0.74
4:AD:6:PRO:HB2	4:AD:9:LYS:HZ2	1.52	0.73
6:AF:90:MET:HE1	18:AR:64:LEU:HD11	1.69	0.73
25:BA:2743:U:H2'	25:BA:2744:G:H5''	1.69	0.73
28:BD:35:LYS:HE3	28:BD:37:SER:HB3	1.69	0.73
56:B6:40:LYS:HZ2	56:B6:40:LYS:HB2	1.53	0.73
1:AA:254:G:H5''	17:AQ:70:LYS:HD2	1.69	0.73
17:AQ:11:VAL:HB	17:AQ:55:GLY:H	1.53	0.73
25:BA:1474:U:H2'	25:BA:1475:G:H5'	1.69	0.73
25:BA:1912:A:N3	25:BA:1919:A:C6	2.57	0.73
4:AD:2:ARG:HH21	4:AD:114:ARG:HD3	1.53	0.73
27:BC:27:ILE:HD13	27:BC:186:LYS:HB2	1.70	0.73
27:BC:175:ILE:HG22	27:BC:188:ASN:HB3	1.70	0.73
2:AB:207:ARG:HB3	2:AB:207:ARG:HH11	1.51	0.73
20:AT:33:LYS:HE2	20:AT:33:LYS:HA	1.70	0.73
2:AB:18:GLN:HG2	2:AB:189:ASN:HD22	1.52	0.73
25:BA:619:G:H3'	25:BA:620:G:H21	1.54	0.73
30:BF:173:THR:HA	30:BF:199:MET:HE1	1.71	0.73
9:AI:112:ARG:NH2	10:AJ:64:GLN:HE22	1.87	0.73
21:AU:13:VAL:HG13	21:AU:15:LEU:HG	1.71	0.73
36:BL:118:MET:HA	36:BL:121:LYS:HE3	1.71	0.73
12:AL:27:PRO:HG2	12:AL:28:GLN:OE1	1.89	0.72
35:BK:11:GLN:HE22	35:BK:53:PRO:HB3	1.54	0.72
43:BS:47:ARG:HG2	43:BS:51:GLN:HE21	1.54	0.72
1:AA:1033:G:C2'	1:AA:1034:G:H5''	2.15	0.72
25:BA:1554:U:H3'	25:BA:1555:G:H5'	1.69	0.72
4:AD:7:LYS:HG3	4:AD:8:LEU:HD22	1.69	0.72
7:AG:78:ARG:NH1	7:AG:81:GLY:H	1.85	0.72
27:BC:77:VAL:HG11	27:BC:87:ALA:HB1	1.71	0.72
21:AU:19:LYS:HA	21:AU:19:LYS:NZ	2.03	0.72
25:BA:1837:C:H2'	25:BA:1899:A:H61	1.53	0.72
38:BN:59:ARG:HA	56:B6:12:ARG:HH22	1.53	0.72
1:AA:31:G:H3'	1:AA:32:A:H5''	1.72	0.72
9:AI:83:THR:HB	9:AI:97:LEU:HD21	1.72	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:BD:235:GLU:H	28:BD:238:ASN:ND2	1.87	0.72
38:BN:14:LYS:HD3	38:BN:15:ALA:N	2.04	0.72
2:AB:224:ARG:H	2:AB:224:ARG:NE	1.87	0.72
4:AD:9:LYS:HB3	4:AD:9:LYS:HZ3	1.55	0.72
4:AD:29:THR:HG22	4:AD:30:LYS:H	1.55	0.72
10:AJ:27:GLU:HA	10:AJ:30:LYS:HE2	1.70	0.72
14:AN:24:ALA:O	14:AN:27:LYS:HG3	1.90	0.72
27:BC:55:SER:HA	27:BC:58:ASN:HD21	1.54	0.72
34:BJ:5:LEU:HD23	34:BJ:8:LYS:HZ1	1.53	0.72
36:BL:21:THR:HA	36:BL:61:LYS:HB3	1.71	0.72
3:AC:8:GLY:HA2	3:AC:11:LEU:HG	1.72	0.72
3:AC:11:LEU:HB3	3:AC:17:TRP:HE1	1.54	0.72
38:BN:90:VAL:HG23	38:BN:120:VAL:HG21	1.72	0.72
4:AD:55:ARG:HA	4:AD:55:ARG:HE	1.55	0.72
22:AV:74:C:OP1	22:AV:74:C:H3'	1.90	0.72
25:BA:1807:G:H2'	25:BA:1808:A:H5'	1.72	0.72
28:BD:140:VAL:HG11	28:BD:189:ALA:HB1	1.70	0.72
31:BG:149:ARG:HG3	31:BG:150:GLY:H	1.55	0.72
39:BO:110:GLU:HG2	39:BO:114:ARG:HH22	1.55	0.72
11:AK:15:VAL:HG22	11:AK:16:SER:H	1.55	0.71
25:BA:646:U:C3'	25:BA:647:G:H5''	2.19	0.71
31:BG:40:GLY:HA2	31:BG:84:ILE:HD11	1.70	0.71
31:BG:124:ARG:HA	31:BG:124:ARG:HE	1.55	0.71
8:AH:77:VAL:HG12	8:AH:84:ILE:HG13	1.73	0.71
16:AP:6:LEU:HG	16:AP:19:VAL:HG12	1.72	0.71
22:AV:41:C:C3'	22:AV:42:C:H5''	2.20	0.71
25:BA:2685:G:H1	25:BA:2724:U:H3	1.37	0.71
27:BC:74:ARG:HB3	27:BC:74:ARG:NH1	2.06	0.71
15:AO:21:THR:HA	15:AO:26:VAL:HG11	1.72	0.71
10:AJ:80:THR:HG22	10:AJ:82:LYS:H	1.54	0.71
1:AA:736:C:H5'	6:AF:88:MET:HE2	1.72	0.71
1:AA:1492:A:H2'	1:AA:1493:A:C8	2.25	0.71
18:AR:49:LYS:HG2	18:AR:53:GLN:NE2	2.03	0.71
4:AD:36:ALA:H	4:AD:37:PRO:CD	2.00	0.71
28:BD:89:ASN:HD21	28:BD:196:ASN:HD22	1.39	0.71
31:BG:133:GLU:HB3	31:BG:135:ILE:HD13	1.71	0.71
49:BY:43:ALA:HB2	49:BY:55:LEU:HD22	1.73	0.71
30:BF:99:LYS:HG2	30:BF:102:ARG:HH12	1.56	0.71
44:BT:28:ALA:HB3	44:BT:31:GLU:HG2	1.71	0.71
46:BV:73:ARG:HH21	46:BV:73:ARG:HA	1.56	0.71
25:BA:1454:C:H5'	40:BP:63:ARG:NH2	2.06	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BQ:24:THR:HG22	41:BQ:42:PRO:HD3	1.72	0.71
47:BW:39:ASN:HD22	47:BW:62:ALA:HB3	1.56	0.71
2:AB:32:GLY:HA3	2:AB:39:ILE:H	1.56	0.70
2:AB:185:ILE:HA	2:AB:199:ILE:HB	1.73	0.70
25:BA:701:G:C2'	25:BA:702:U:H5''	2.21	0.70
38:BN:79:LEU:HD12	38:BN:114:GLY:N	2.06	0.70
48:BX:29:ILE:HD13	48:BX:30:ILE:N	2.06	0.70
56:B6:32:LEU:HB3	56:B6:40:LYS:HD3	1.71	0.70
22:AV:28:G:H1	22:AV:42:C:N4	1.89	0.70
25:BA:2172:U:H4'	25:BA:2173:A:H5'	1.71	0.70
40:BP:13:ASN:HD21	40:BP:16:HIS:HB2	1.55	0.70
13:AM:26:LYS:HE2	13:AM:30:LYS:HD2	1.71	0.70
24:AY:4:SER:O	24:AY:5:UAL:N1	2.24	0.70
1:AA:828:U:H2'	2:AB:24:PRO:HB3	1.73	0.70
25:BA:1141:U:H4'	25:BA:1142:A:O4'	1.92	0.70
4:AD:44:LYS:HD2	4:AD:46:ARG:HE	1.56	0.70
20:AT:60:GLN:HB3	20:AT:65:LEU:HD11	1.73	0.70
25:BA:2553:G:H3'	25:BA:2554:U:H5''	1.73	0.70
30:BF:143:LEU:HD22	30:BF:146:VAL:HG11	1.74	0.70
5:AE:103:GLY:HA3	5:AE:121:ASN:HA	1.74	0.70
28:BD:239:PHE:HD1	28:BD:241:LYS:H	1.37	0.70
29:BE:40:LEU:HD23	29:BE:45:TYR:HA	1.74	0.70
40:BP:60:VAL:O	40:BP:61:ALA:N	2.25	0.70
49:BY:55:LEU:HD12	49:BY:76:ILE:HD12	1.73	0.70
5:AE:148:SER:HB2	5:AE:151:MET:HB2	1.74	0.69
11:AK:55:ARG:HA	11:AK:55:ARG:HE	1.57	0.69
16:AP:46:LYS:CD	16:AP:47:GLU:H	2.02	0.69
22:AW:36:A:H2'	22:AW:37:A:H5''	1.73	0.69
25:BA:1754:A:H4'	42:BR:102:ARG:HH21	1.55	0.69
40:BP:60:VAL:CA	40:BP:60:VAL:O	2.40	0.69
3:AC:110:LEU:HD21	3:AC:143:LEU:HB2	1.73	0.69
12:AL:29:LYS:HZ3	12:AL:58:ASN:HB3	1.56	0.69
27:BC:217:THR:O	27:BC:218:MET:HE2	1.92	0.69
38:BN:30:THR:O	38:BN:33:ARG:HG2	1.92	0.69
37:BM:121:GLU:HG2	37:BM:122:VAL:HG23	1.74	0.69
48:BX:14:LYS:HB2	48:BX:18:ARG:NH1	2.07	0.69
33:BI:30:LEU:HB3	33:BI:36:ALA:HB3	1.73	0.69
34:BJ:91:ALA:HB1	34:BJ:94:ARG:HH12	1.57	0.69
12:AL:56:LEU:HD21	12:AL:81:ILE:HD11	1.73	0.69
25:BA:940:G:H2'	25:BA:941:A:H5''	1.75	0.69
16:AP:7:ALA:HB3	16:AP:18:GLN:HB3	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:215:G:C4'	25:BA:216:A:H4'	2.22	0.69
25:BA:296:U:H2'	25:BA:297:G:C8	2.27	0.69
25:BA:2171:A:O2'	25:BA:2172:U:H5'	1.93	0.69
28:BD:28:PRO:HG2	28:BD:33:LEU:HD11	1.74	0.69
33:BI:31:VAL:HB	33:BI:32:PRO:HD3	1.73	0.69
4:AD:69:ARG:HA	4:AD:69:ARG:HE	1.58	0.69
4:AD:205:LYS:HD2	4:AD:205:LYS:OXT	1.92	0.69
21:AU:36:PHE:HB3	21:AU:40:PRO:HD3	1.74	0.69
22:AV:8:U:H4'	22:AV:48:C:H4'	1.74	0.69
25:BA:1112:G:H4'	32:BH:2:ARG:HH12	1.56	0.69
40:BP:41:ALA:HB1	40:BP:97:ILE:HD12	1.75	0.69
43:BS:18:LYS:HA	43:BS:21:LYS:HE2	1.74	0.69
12:AL:2:THR:HG22	12:AL:4:ASN:H	1.57	0.69
17:AQ:11:VAL:HG12	17:AQ:12:VAL:N	2.05	0.69
29:BE:141:ARG:HB3	29:BE:141:ARG:NH1	2.06	0.69
44:BT:78:ARG:HB3	44:BT:83:TYR:HB3	1.75	0.69
47:BW:53:GLN:N	47:BW:54:PRO:HD2	2.07	0.69
56:B6:24:LYS:HA	56:B6:46:LYS:HG2	1.75	0.69
1:AA:664:G:H22	1:AA:741:G:H1	1.41	0.69
1:AA:1397:C:N4	23:AX:22:A:H3'	2.08	0.69
13:AM:33:LEU:HB3	13:AM:38:ILE:HB	1.75	0.69
20:AT:64:GLY:HA2	20:AT:67:HIS:NE2	2.07	0.69
25:BA:886:A:O2'	25:BA:887:U:H4'	1.93	0.69
29:BE:13:ARG:HD2	29:BE:15:PHE:CZ	2.28	0.69
43:BS:108:LEU:HD23	44:BT:48:LYS:HZ3	1.58	0.69
42:BR:3:ILE:HD12	42:BR:3:ILE:H	1.57	0.69
1:AA:1491:G:H2'	24:AY:6:5OH:O	1.92	0.68
12:AL:43:LYS:HD3	12:AL:43:LYS:H	1.59	0.68
28:BD:221:GLY:HA2	28:BD:224:MET:HE3	1.74	0.68
37:BM:26:GLY:HA3	37:BM:30:ARG:NH1	2.07	0.68
50:BZ:58:ILE:HG12	50:BZ:66:VAL:HG21	1.75	0.68
25:BA:1546:G:H5''	25:BA:1547:C:H5''	1.75	0.68
35:BK:21:PRO:HB2	35:BK:22:PRO:HD3	1.75	0.68
4:AD:150:LYS:HB2	4:AD:155:LYS:HE3	1.75	0.68
13:AM:76:ILE:HG22	13:AM:80:MET:HE2	1.74	0.68
25:BA:2330:G:H2'	25:BA:2331:G:H5''	1.76	0.68
44:BT:25:LEU:H	44:BT:94:THR:HG21	1.58	0.68
3:AC:26:LYS:H	3:AC:26:LYS:HD2	1.57	0.68
32:BH:21:GLN:HE22	32:BH:54:ARG:HH22	1.42	0.68
40:BP:2:ARG:HA	40:BP:5:LYS:HD2	1.76	0.68
7:AG:46:LEU:HB3	7:AG:57:GLU:OE2	1.94	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2748:A:H5'	32:BH:3:VAL:HG21	1.74	0.68
27:BC:4:LEU:HD21	27:BC:12:ARG:HH21	1.58	0.68
30:BF:2:GLU:HB3	30:BF:11:ALA:HB1	1.74	0.68
31:BG:32:LYS:HD3	31:BG:91:ARG:NH1	2.07	0.68
37:BM:77:ILE:H	37:BM:77:ILE:HD12	1.58	0.68
4:AD:87:GLU:HG2	4:AD:187:ARG:HD3	1.74	0.68
5:AE:14:LEU:HB3	5:AE:36:THR:HG22	1.75	0.68
25:BA:1777:U:H3	25:BA:1787:A:H61	1.40	0.68
25:BA:2065:C:H5'	25:BA:2251:G:H21	1.59	0.68
25:BA:2131:U:H5'	25:BA:2132:U:H5''	1.74	0.68
28:BD:43:ASN:HD21	28:BD:45:ASN:HD22	1.42	0.68
45:BU:2:GLU:HA	45:BU:108:SER:HB3	1.75	0.68
3:AC:150:VAL:HG12	3:AC:199:VAL:HG12	1.76	0.67
6:AF:5:GLU:HG2	6:AF:90:MET:HE3	1.76	0.67
34:BJ:42:ARG:HG2	34:BJ:51:TYR:O	1.95	0.67
1:AA:858:G:H2'	1:AA:859:G:H5''	1.76	0.67
1:AA:1201:A:H1'	1:AA:1202:U:OP2	1.94	0.67
25:BA:528:A:H2'	25:BA:529:A:H5''	1.75	0.67
25:BA:2708:G:H1'	40:BP:71:ARG:NH2	2.08	0.67
13:AM:113:LYS:HB3	13:AM:114:PRO:HD3	1.76	0.67
25:BA:995:C:H42	36:BL:2:LYS:HA	1.59	0.67
38:BN:82:LEU:HD11	38:BN:120:VAL:HG11	1.75	0.67
3:AC:155:ARG:HA	3:AC:155:ARG:HE	1.60	0.67
5:AE:44:ARG:HG2	5:AE:72:ASN:HB3	1.76	0.67
25:BA:1912:A:H2	25:BA:1919:A:C4	2.09	0.67
52:B2:27:GLY:HA3	52:B2:37:ARG:HH21	1.60	0.67
25:BA:1912:A:N1	25:BA:1919:A:N7	2.43	0.67
29:BE:8:LYS:HB2	29:BE:201:LEU:HD11	1.76	0.67
1:AA:87:C:C2'	1:AA:88:U:H5'	2.24	0.67
25:BA:1441:G:H4'	25:BA:1628:G:H5'	1.76	0.67
25:BA:2147:A:H2'	25:BA:2148:G:O4'	1.95	0.67
3:AC:59:PRO:HG2	3:AC:62:SER:HB3	1.77	0.67
28:BD:170:TYR:HA	28:BD:184:GLU:HA	1.77	0.67
31:BG:116:LEU:HD23	31:BG:175:PRO:HB2	1.76	0.67
15:AO:35:ILE:HD13	15:AO:59:VAL:HG22	1.76	0.67
30:BF:146:VAL:HG12	30:BF:185:LYS:HB2	1.77	0.67
37:BM:98:ARG:HA	37:BM:118:LEU:HD13	1.77	0.67
40:BP:79:LEU:HG	40:BP:83:LEU:HD12	1.77	0.67
19:AS:62:THR:HB	19:AS:64:GLU:OE2	1.95	0.67
25:BA:2847:U:H2'	25:BA:2848:G:H5'	1.77	0.67
42:BR:26:GLU:HA	42:BR:43:GLU:HA	1.75	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:158:G:C2'	1:AA:159:G:H5''	2.25	0.67
1:AA:346:G:H2'	1:AA:347:G:H5'	1.76	0.67
12:AL:41:PRO:HG2	12:AL:47:ALA:H	1.60	0.67
27:BC:217:THR:HG22	27:BC:218:MET:HE3	1.77	0.67
42:BR:24:THR:HB	42:BR:87:ARG:HB3	1.76	0.67
12:AL:75:GLU:HG2	12:AL:76:HIS:ND1	2.10	0.66
13:AM:94:LEU:HB3	13:AM:95:PRO:HD2	1.76	0.66
35:BK:20:SER:HB3	35:BK:21:PRO:HD3	1.76	0.66
35:BK:66:PHE:H	35:BK:66:PHE:HD2	1.42	0.66
8:AH:110:MET:HE2	8:AH:114:ALA:HB1	1.77	0.66
11:AK:83:VAL:HG11	11:AK:96:ILE:HG22	1.76	0.66
25:BA:2093:G:O5'	33:BI:24:GLY:HA3	1.95	0.66
25:BA:2133:G:H2'	25:BA:2157:G:N2	2.10	0.66
31:BG:135:ILE:H	31:BG:135:ILE:HD12	1.60	0.66
1:AA:413:G:H4'	1:AA:414:A:H5''	1.77	0.66
5:AE:131:ASN:HB3	5:AE:134:ASN:HD22	1.59	0.66
12:AL:42:LYS:HG2	12:AL:43:LYS:H	1.61	0.66
28:BD:38:LYS:HE3	28:BD:40:GLY:HA2	1.76	0.66
31:BG:19:PHE:C	31:BG:20:ASN:HD22	2.04	0.66
2:AB:46:VAL:HB	2:AB:47:PRO:HD3	1.76	0.66
20:AT:4:LYS:O	20:AT:6:ALA:N	2.29	0.66
20:AT:34:VAL:HG21	20:AT:53:MET:SD	2.34	0.66
25:BA:1713:A:H61	25:BA:1745:A:H61	1.42	0.66
27:BC:4:LEU:HD23	27:BC:8:MET:HG3	1.76	0.66
28:BD:166:ARG:HB2	28:BD:166:ARG:NH2	2.11	0.66
28:BD:194:VAL:HG22	28:BD:195:GLY:N	2.04	0.66
25:BA:1924:C:H3'	25:BA:1925:C:H5''	1.77	0.66
1:AA:1285:A:H4'	1:AA:1286:U:O2	1.96	0.66
28:BD:251:THR:HG22	28:BD:252:LYS:N	2.11	0.66
38:BN:79:LEU:HD11	38:BN:112:LEU:HD12	1.78	0.66
40:BP:13:ASN:ND2	40:BP:16:HIS:HB2	2.11	0.66
1:AA:1409:C:OP1	25:BA:1916:A:H2	1.78	0.66
9:AI:48:ARG:O	9:AI:48:ARG:HD3	1.96	0.66
17:AQ:61:ARG:HH12	17:AQ:63:CYS:HB3	1.60	0.66
25:BA:378:C:H4'	25:BA:1855:U:OP1	1.96	0.66
25:BA:2466:C:H5''	57:B7:6:SER:HB2	1.78	0.66
25:BA:2758:A:H2	32:BH:70:LEU:HD11	1.61	0.66
30:BF:45:ALA:HB1	30:BF:88:ARG:HH11	1.60	0.66
55:B5:31:LEU:HB3	55:B5:35:ARG:HH12	1.60	0.66
2:AB:113:LEU:HD13	2:AB:143:LEU:HB2	1.78	0.66
3:AC:26:LYS:NZ	3:AC:26:LYS:HB3	2.11	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:AQ:54:ILE:HD13	17:AQ:55:GLY:N	2.10	0.66
20:AT:24:ARG:HG2	20:AT:28:ARG:NH1	2.08	0.66
1:AA:1073:U:H3	1:AA:1102:A:H61	1.43	0.65
25:BA:2502:G:H5'	25:BA:2503:A:H5''	1.78	0.65
36:BL:43:GLU:CD	36:BL:43:GLU:H	2.04	0.65
56:B6:61:LEU:HB3	56:B6:64:ALA:HB2	1.78	0.65
14:AN:8:ARG:O	14:AN:12:ARG:HG2	1.95	0.65
14:AN:32:ASP:CG	14:AN:33:VAL:H	2.04	0.65
25:BA:60:G:H5''	51:B1:47:ARG:HH22	1.62	0.65
1:AA:1031:C:H4'	1:AA:1032:G:C2	2.31	0.65
2:AB:168:GLU:HB3	2:AB:171:ALA:HB3	1.77	0.65
16:AP:68:SER:HB2	16:AP:71:VAL:HG23	1.77	0.65
22:AW:7:A:H3'	22:AW:8:U:H5'	1.77	0.65
57:B7:9:LYS:HZ2	57:B7:9:LYS:HB3	1.62	0.65
1:AA:396:C:H2'	1:AA:397:A:H5''	1.78	0.65
1:AA:598:U:H4'	8:AH:85:TYR:HD1	1.61	0.65
4:AD:122:ILE:HD13	4:AD:122:ILE:H	1.61	0.65
1:AA:1108:G:H5'	3:AC:175:HIS:HD2	1.61	0.65
1:AA:1305:G:H21	1:AA:1332:A:H2	1.44	0.65
4:AD:29:THR:HB	4:AD:30:LYS:NZ	2.12	0.65
14:AN:12:ARG:HD3	14:AN:54:ASP:HB3	1.78	0.65
20:AT:30:PHE:O	20:AT:34:VAL:HG23	1.97	0.65
22:AV:33:U:C3'	22:AV:34:G:H5''	2.26	0.65
28:BD:86:ARG:NH1	28:BD:86:ARG:HB3	2.11	0.65
33:BI:7:ASP:CG	33:BI:8:LYS:H	2.05	0.65
51:B1:13:GLU:OE2	51:B1:53:VAL:HG13	1.96	0.65
55:B5:30:VAL:HG22	55:B5:33:ARG:HH12	1.60	0.65
32:BH:123:GLU:CD	32:BH:124:CYS:H	2.04	0.65
40:BP:24:MET:HE3	40:BP:44:LEU:HB2	1.79	0.65
1:AA:649:A:C2'	1:AA:650:G:H5''	2.26	0.65
7:AG:3:ARG:HG3	7:AG:4:ARG:H	1.60	0.65
25:BA:322:A:H5'	25:BA:340:A:H1'	1.77	0.65
28:BD:54:GLY:HA3	28:BD:216:ARG:HD2	1.78	0.65
35:BK:58:ILE:HG22	35:BK:60:VAL:HG23	1.79	0.65
1:AA:245:U:O2'	1:AA:246:A:H5'	1.96	0.65
1:AA:1422:G:H5'	37:BM:48:PRO:HB3	1.77	0.65
7:AG:58:LEU:H	7:AG:58:LEU:HD23	1.62	0.65
28:BD:61:TYR:HA	28:BD:85:ASN:ND2	2.11	0.65
33:BI:2:GLN:O	33:BI:3:VAL:HG22	1.97	0.65
39:BO:60:GLN:HE21	39:BO:108:VAL:HG12	1.62	0.65
29:BE:122:VAL:HB	29:BE:141:ARG:HH12	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:BO:77:PRO:HG2	39:BO:80:VAL:HG21	1.78	0.65
2:AB:163:ILE:HG23	2:AB:164:ASP:N	2.08	0.65
25:BA:135:U:H3	25:BA:144:A:H61	1.43	0.65
25:BA:1386:C:H1'	25:BA:1470:A:H1'	1.79	0.65
25:BA:2055:C:H5'	25:BA:2056:G:H5'	1.78	0.65
37:BM:21:CYS:HA	37:BM:41:ILE:HG22	1.79	0.65
37:BM:116:ILE:HD12	37:BM:117:SER:N	2.12	0.65
3:AC:155:ARG:HD3	3:AC:193:GLY:HA3	1.78	0.64
8:AH:125:ILE:H	8:AH:125:ILE:HD12	1.63	0.64
25:BA:1273:U:H5''	25:BA:1646:C:H41	1.61	0.64
30:BF:149:ILE:HG23	30:BF:188:MET:HA	1.79	0.64
31:BG:110:ILE:HG12	31:BG:136:ILE:HG21	1.77	0.64
13:AM:28:ARG:O	13:AM:32:ILE:HG12	1.96	0.64
16:AP:6:LEU:HB3	16:AP:17:TYR:HB3	1.77	0.64
25:BA:792:A:H3'	25:BA:793:A:H5'	1.79	0.64
25:BA:1448:G:H1	25:BA:1463:C:H42	1.45	0.64
36:BL:69:ARG:HA	36:BL:89:PHE:HB3	1.79	0.64
46:BV:69:ARG:HB3	46:BV:74:ILE:HG22	1.79	0.64
47:BW:39:ASN:ND2	47:BW:62:ALA:HB3	2.12	0.64
1:AA:1493:A:C2	22:AV:36:A:N3	2.65	0.64
3:AC:106:ARG:HD3	3:AC:106:ARG:H	1.60	0.64
9:AI:23:GLY:H	9:AI:60:LEU:HA	1.61	0.64
10:AJ:10:LEU:HD21	10:AJ:25:ILE:HD12	1.78	0.64
25:BA:575:A:H5'	25:BA:2055:C:H41	1.63	0.64
41:BQ:6:ALA:HA	41:BQ:9:ARG:HH12	1.63	0.64
51:B1:13:GLU:HG2	51:B1:57:LEU:HB2	1.78	0.64
9:AI:29:ILE:HG22	9:AI:64:ILE:HG12	1.79	0.64
1:AA:132:C:H5''	20:AT:68:LYS:HZ1	1.62	0.64
1:AA:858:G:C2'	1:AA:859:G:H5''	2.26	0.64
25:BA:644:A:H2'	25:BA:645:C:H5''	1.80	0.64
1:AA:1190:G:H5''	3:AC:175:HIS:HE1	1.63	0.64
4:AD:75:TYR:HE2	4:AD:200:VAL:HA	1.63	0.64
22:AV:43:C:H2'	22:AV:44:G:O4'	1.97	0.64
22:AW:7:A:H3'	22:AW:8:U:C5'	2.28	0.64
25:BA:528:A:C2'	25:BA:529:A:H5''	2.27	0.64
50:BZ:2:ARG:HG2	50:BZ:49:ARG:NH1	2.12	0.64
30:BF:97:ASN:HB2	30:BF:100:MET:HB2	1.80	0.64
16:AP:6:LEU:HD11	16:AP:71:VAL:HG22	1.79	0.64
45:BU:20:VAL:HG11	45:BU:44:ALA:HA	1.80	0.64
1:AA:513:C:H2'	1:AA:514:C:C6	2.33	0.64
5:AE:123:LEU:O	5:AE:123:LEU:HD12	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AK:23:HIS:HB3	11:AK:30:ILE:HG23	1.80	0.64
14:AN:69:ARG:NH2	14:AN:81:ARG:HH22	1.94	0.64
22:AV:76:A:H5''	25:BA:2602:A:H62	1.63	0.64
24:AY:5:UAL:C	24:AY:6:5OH:HS	2.27	0.64
25:BA:1132:U:H3'	25:BA:1133:A:H5''	1.79	0.64
25:BA:1674:G:H21	25:BA:1677:A:H61	1.44	0.64
25:BA:2060:A:H3'	30:BF:63:LYS:NZ	2.12	0.64
28:BD:89:ASN:ND2	28:BD:196:ASN:HD22	1.95	0.64
1:AA:8:A:N6	4:AD:201:GLU:HB3	2.13	0.64
11:AK:30:ILE:HD13	11:AK:45:THR:HG22	1.79	0.64
25:BA:2020:A:H5'	53:B3:8:THR:HG22	1.80	0.64
25:BA:2491:U:C5'	25:BA:2570:G:H5''	2.28	0.64
35:BK:57:VAL:HG12	35:BK:58:ILE:H	1.63	0.64
50:BZ:31:ASN:HD22	50:BZ:52:ALA:HB2	1.63	0.64
1:AA:46:G:OP1	1:AA:307:C:H4'	1.98	0.63
25:BA:43:G:H2'	25:BA:44:A:O4'	1.98	0.63
25:BA:2628:C:O2'	25:BA:2781:A:H2'	1.98	0.63
29:BE:113:SER:HA	29:BE:195:GLY:H	1.62	0.63
25:BA:60:G:H5''	51:B1:47:ARG:NH2	2.13	0.63
25:BA:561:G:H4'	43:BS:47:ARG:HH22	1.62	0.63
25:BA:1928:A:H2'	25:BA:1929:G:H5''	1.80	0.63
33:BI:33:GLN:HE21	33:BI:35:LYS:NZ	1.97	0.63
45:BU:58:ALA:HA	45:BU:62:ASP:OD2	1.98	0.63
1:AA:1032:G:H2'	1:AA:1033:G:H5'	1.79	0.63
25:BA:2575:C:H5''	29:BE:149:ASN:HD22	1.63	0.63
8:AH:65:PHE:CD2	8:AH:66:GLN:HG2	2.34	0.63
33:BI:9:VAL:HG12	33:BI:10:ALA:H	1.63	0.63
2:AB:112:ARG:O	2:AB:116:LEU:HD23	1.98	0.63
5:AE:113:VAL:HG13	5:AE:114:LEU:HD12	1.80	0.63
10:AJ:44:THR:HG22	10:AJ:70:HIS:HA	1.80	0.63
15:AO:62:ARG:HA	15:AO:65:LEU:HD12	1.80	0.63
28:BD:225:ASN:HB3	28:BD:226:PRO:HD2	1.81	0.63
56:B6:16:THR:HG22	56:B6:20:GLY:O	1.97	0.63
25:BA:31:C:H4'	25:BA:1238:G:C5'	2.26	0.63
25:BA:296:U:H2'	25:BA:297:G:H8	1.61	0.63
27:BC:55:SER:HA	27:BC:58:ASN:ND2	2.14	0.63
34:BJ:5:LEU:HA	34:BJ:8:LYS:NZ	2.12	0.63
1:AA:714:G:H21	1:AA:777:A:H1'	1.64	0.63
11:AK:15:VAL:HG22	11:AK:16:SER:N	2.14	0.63
15:AO:32:THR:HG22	15:AO:36:ASN:HD21	1.62	0.63
25:BA:543:G:C2'	25:BA:544:C:H5''	2.28	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:BW:73:ASN:HD21	47:BW:75:ALA:HB3	1.64	0.63
1:AA:230:G:H4'	16:AP:25:ARG:NH2	2.14	0.63
2:AB:16:GLY:N	2:AB:39:ILE:HG23	2.13	0.63
11:AK:106:ILE:HD13	11:AK:107:THR:N	2.14	0.63
12:AL:43:LYS:HB2	12:AL:43:LYS:NZ	2.13	0.63
1:AA:981:U:H4'	14:AN:63:ARG:HH21	1.64	0.63
10:AJ:52:LEU:HD21	10:AJ:59:LYS:HA	1.81	0.63
25:BA:2172:U:H4'	25:BA:2173:A:C5'	2.29	0.63
25:BA:2425:A:H4'	25:BA:2426:A:O5'	1.98	0.63
3:AC:96:VAL:HB	3:AC:97:PRO:HD2	1.80	0.62
6:AF:81:ASN:ND2	6:AF:83:ALA:HB3	2.12	0.62
14:AN:5:MET:HE3	14:AN:63:ARG:HH22	1.62	0.62
28:BD:30:ALA:HA	28:BD:33:LEU:HD12	1.81	0.62
35:BK:100:ILE:HG22	35:BK:101:SER:N	2.11	0.62
3:AC:113:LYS:HD3	3:AC:184:ASN:HD21	1.63	0.62
15:AO:30:LEU:HD12	15:AO:31:LEU:N	2.15	0.62
20:AT:4:LYS:C	20:AT:4:LYS:HE2	2.23	0.62
25:BA:538:A:H4'	36:BL:7:LYS:HG2	1.81	0.62
28:BD:52:HIS:C	28:BD:53:ILE:HD12	2.24	0.62
28:BD:130:PRO:HA	28:BD:188:ARG:HA	1.80	0.62
44:BT:61:ALA:HB2	44:BT:98:ILE:HD13	1.80	0.62
20:AT:3:ILE:HA	20:AT:7:LYS:HD3	1.81	0.62
35:BK:28:GLY:HA2	35:BK:32:VAL:HB	1.80	0.62
35:BK:48:ILE:HG13	35:BK:49:GLU:N	2.12	0.62
40:BP:78:LYS:HG3	40:BP:82:GLU:OE1	1.99	0.62
1:AA:114:U:H2'	1:AA:115:G:C8	2.34	0.62
1:AA:608:A:H1'	16:AP:32:PHE:HZ	1.64	0.62
4:AD:123:MET:HE2	4:AD:145:ARG:HG2	1.80	0.62
30:BF:108:ILE:HG23	30:BF:109:LEU:HD12	1.82	0.62
38:BN:33:ARG:HE	38:BN:40:SER:HA	1.62	0.62
41:BQ:51:ALA:HB3	41:BQ:78:VAL:HG22	1.80	0.62
5:AE:152:VAL:HG11	8:AH:98:LEU:HD22	1.82	0.62
35:BK:52:LEU:O	35:BK:54:ILE:HG13	1.99	0.62
38:BN:79:LEU:HD12	38:BN:114:GLY:H	1.65	0.62
39:BO:69:PRO:HA	39:BO:94:ALA:HB2	1.80	0.62
2:AB:95:TRP:HZ3	2:AB:170:ILE:HG22	1.64	0.62
4:AD:12:ARG:HG2	4:AD:33:ILE:HA	1.82	0.62
29:BE:159:LYS:HD3	29:BE:160:LYS:N	2.15	0.62
30:BF:118:LEU:HD11	30:BF:188:MET:HG3	1.81	0.62
38:BN:92:LEU:H	38:BN:92:LEU:HD12	1.62	0.62
46:BV:3:ARG:HB2	46:BV:6:ARG:HB3	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AD:197:HIS:O	4:AD:201:GLU:HG3	2.00	0.62
7:AG:78:ARG:HH12	7:AG:81:GLY:H	1.46	0.62
11:AK:22:ILE:HG22	11:AK:31:VAL:HG13	1.82	0.62
17:AQ:37:ILE:HD12	17:AQ:37:ILE:O	2.00	0.62
25:BA:373:U:H2'	25:BA:374:A:H8	1.63	0.62
29:BE:103:ASP:O	29:BE:105:LYS:N	2.33	0.62
29:BE:115:GLY:HA2	29:BE:166:GLY:HA3	1.81	0.62
13:AM:3:ILE:HD13	13:AM:3:ILE:N	2.14	0.62
25:BA:506:G:H4'	25:BA:509:C:H1'	1.81	0.62
25:BA:2491:U:H5'	25:BA:2570:G:C5'	2.26	0.62
29:BE:12:THR:HG22	29:BE:13:ARG:N	2.12	0.62
39:BO:1:MET:HB3	39:BO:43:ALA:HB1	1.81	0.62
25:BA:2157:G:H4'	25:BA:2158:A:OP1	2.00	0.62
35:BK:57:VAL:HG12	35:BK:58:ILE:N	2.15	0.62
8:AH:6:ILE:HD12	8:AH:6:ILE:H	1.63	0.62
15:AO:47:LYS:HZ3	15:AO:47:LYS:HB2	1.64	0.62
19:AS:49:ALA:HB1	19:AS:56:HIS:HB3	1.82	0.62
25:BA:479:A:O2'	25:BA:481:G:H5'	2.00	0.62
25:BA:784:G:C4	28:BD:227:VAL:HG11	2.35	0.62
25:BA:1053:C:H3'	25:BA:1054:A:H5''	1.81	0.62
34:BJ:59:LEU:O	34:BJ:59:LEU:HD23	2.00	0.62
43:BS:39:ILE:HG22	43:BS:43:GLN:HE21	1.65	0.62
46:BV:58:VAL:HG22	46:BV:85:VAL:HG13	1.82	0.62
2:AB:34:ARG:HE	2:AB:35:ASN:H	1.47	0.61
7:AG:42:VAL:O	7:AG:46:LEU:HD13	1.99	0.61
19:AS:10:ILE:HG13	19:AS:37:SER:HB3	1.82	0.61
20:AT:68:LYS:HB2	20:AT:68:LYS:NZ	2.14	0.61
22:AV:51:U:H3	22:AV:63:G:H1	1.48	0.61
25:BA:2248:C:H2'	25:BA:2249:U:H5'	1.82	0.61
40:BP:22:ARG:HG3	40:BP:70:THR:H	1.65	0.61
10:AJ:10:LEU:HB2	10:AJ:72:ARG:HB2	1.82	0.61
25:BA:1052:C:H3'	25:BA:1052:C:H6	1.65	0.61
25:BA:1053:C:C3'	25:BA:1054:A:H5''	2.30	0.61
25:BA:2597:G:H5''	28:BD:240:GLY:HA3	1.82	0.61
43:BS:2:ARG:HH22	43:BS:4:LYS:HG2	1.64	0.61
1:AA:1347:G:N2	1:AA:1373:G:H2'	2.15	0.61
5:AE:44:ARG:HB3	5:AE:70:MET:HE3	1.82	0.61
6:AF:12:PRO:HG3	6:AF:54:LEU:HD11	1.82	0.61
11:AK:126:ARG:HA	11:AK:126:ARG:NE	2.15	0.61
25:BA:1869:G:H3'	25:BA:1870:C:H5''	1.81	0.61
1:AA:1291:U:H4'	9:AI:41:GLU:HG3	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AC:26:LYS:HD2	3:AC:26:LYS:N	2.15	0.61
7:AG:15:PRO:HB2	9:AI:45:MET:HE2	1.83	0.61
8:AH:28:SER:HB3	8:AH:56:PRO:HB3	1.81	0.61
25:BA:2743:U:C2'	25:BA:2744:G:H5''	2.30	0.61
26:BB:42:C:O4'	31:BG:65:LEU:HB2	2.00	0.61
37:BM:11:ALA:HB2	37:BM:64:ARG:HH22	1.66	0.61
37:BM:23:LYS:HB3	37:BM:40:LYS:HB3	1.83	0.61
42:BR:88:ARG:HD2	42:BR:112:ARG:NH2	2.14	0.61
1:AA:477:C:H2'	1:AA:478:A:C8	2.36	0.61
1:AA:865:A:H5'	1:AA:1078:U:O4	1.99	0.61
2:AB:150:ILE:HG23	2:AB:151:LYS:N	2.12	0.61
14:AN:80:SER:O	14:AN:84:VAL:HG23	2.00	0.61
14:AN:90:ARG:HH12	14:AN:92:GLU:HG3	1.65	0.61
25:BA:373:U:H1'	25:BA:423:A:C2	2.34	0.61
25:BA:1273:U:H5''	25:BA:1646:C:N4	2.16	0.61
26:BB:43:C:H2'	26:BB:44:G:H5''	1.82	0.61
27:BC:111:PHE:HE1	27:BC:136:LEU:HD13	1.65	0.61
30:BF:111:GLU:HG3	38:BN:2:ARG:HH22	1.64	0.61
33:BI:26:ALA:HA	33:BI:30:LEU:HB2	1.82	0.61
40:BP:69:ARG:C	40:BP:71:ARG:H	2.08	0.61
1:AA:676:A:H1'	11:AK:116:PRO:HB3	1.81	0.61
3:AC:56:ILE:HG12	3:AC:65:VAL:HG22	1.83	0.61
17:AQ:76:ARG:HD3	17:AQ:76:ARG:O	2.01	0.61
22:AV:16:U:C3'	22:AV:17:C:H5'	2.27	0.61
25:BA:2590:A:H5''	28:BD:237:ARG:NH1	2.16	0.61
35:BK:23:VAL:HG23	35:BK:24:GLY:N	2.15	0.61
47:BW:6:ARG:HG3	47:BW:7:ASP:OD1	2.00	0.61
13:AM:97:ARG:HB2	13:AM:99:GLN:OE1	2.01	0.61
14:AN:63:ARG:HB3	14:AN:68:GLY:HA2	1.83	0.61
22:AW:36:A:C3'	22:AW:37:A:H5''	2.31	0.61
25:BA:1462:C:H2'	25:BA:1463:C:H5'	1.83	0.61
36:BL:141:ASP:C	36:BL:142:ILE:HD12	2.26	0.61
2:AB:12:GLY:HA3	2:AB:207:ARG:HH22	1.66	0.61
9:AI:50:PRO:HB3	9:AI:83:THR:HG23	1.83	0.61
10:AJ:56:HIS:O	10:AJ:57:VAL:HG12	2.00	0.61
16:AP:23:ASP:HB3	16:AP:26:ASN:ND2	2.15	0.61
25:BA:27:G:N2	25:BA:512:G:H1'	2.16	0.61
25:BA:244:A:H62	25:BA:254:G:H21	1.46	0.61
45:BU:22:ASP:HA	45:BU:25:ARG:NH1	2.14	0.61
1:AA:1170:A:H2'	1:AA:1171:A:O4'	2.00	0.61
7:AG:74:VAL:HB	7:AG:85:GLN:HE21	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:AO:2:LEU:HB2	15:AO:34:GLN:CD	2.26	0.61
25:BA:827:U:H4'	25:BA:828:U:C5	2.36	0.61
25:BA:2259:U:H4'	25:BA:2428:G:OP2	2.01	0.61
4:AD:29:THR:HG22	4:AD:30:LYS:HD3	1.83	0.61
9:AI:51:LEU:HD13	9:AI:56:MET:HG2	1.83	0.61
25:BA:576:U:H5''	25:BA:2503:A:OP1	2.00	0.61
27:BC:68:GLY:HA2	27:BC:159:GLY:HA3	1.83	0.61
2:AB:170:ILE:H	2:AB:170:ILE:CD1	2.10	0.60
22:AW:35:A:H2'	22:AW:36:A:H8	1.65	0.60
25:BA:1669:A:O4'	37:BM:5:GLN:HG3	2.01	0.60
25:BA:2347:C:O2'	54:B4:38:PHE:HB3	2.01	0.60
25:BA:2351:G:H2'	25:BA:2365:G:N2	2.15	0.60
37:BM:77:ILE:HD12	37:BM:77:ILE:N	2.15	0.60
52:B2:2:LYS:HD3	52:B2:2:LYS:N	2.16	0.60
2:AB:105:THR:O	2:AB:108:GLN:HG2	2.01	0.60
10:AJ:70:HIS:C	10:AJ:71:LEU:HD22	2.26	0.60
25:BA:619:G:H3'	25:BA:620:G:N2	2.15	0.60
25:BA:1068:G:N2	25:BA:1096:A:H5'	2.15	0.60
25:BA:1309:G:H4'	55:B5:7:PRO:HB2	1.83	0.60
25:BA:1668:A:H61	25:BA:1676:A:H61	1.49	0.60
39:BO:21:ALA:HB1	39:BO:100:LYS:HG2	1.83	0.60
45:BU:82:MET:HB2	45:BU:98:LYS:HB2	1.83	0.60
1:AA:24:U:H4'	1:AA:524:G:O2'	2.01	0.60
1:AA:232:G:H1'	1:AA:262:A:H61	1.66	0.60
2:AB:65:LYS:NZ	2:AB:155:GLY:HA3	2.15	0.60
22:AV:25:C:H2'	22:AV:26:A:C8	2.33	0.60
25:BA:226:A:H5''	25:BA:257:C:O2'	2.00	0.60
25:BA:244:A:C5'	38:BN:67:THR:HG21	2.28	0.60
27:BC:23:ILE:HG22	27:BC:186:LYS:HG3	1.83	0.60
31:BG:24:VAL:O	31:BG:27:VAL:HG12	2.01	0.60
31:BG:42:ALA:HB1	31:BG:49:LEU:HB2	1.84	0.60
36:BL:58:ASN:HB3	36:BL:61:LYS:HB2	1.81	0.60
37:BM:58:LEU:HD21	37:BM:86:LEU:HD22	1.83	0.60
1:AA:68:G:H4'	1:AA:171:A:H1'	1.82	0.60
8:AH:10:LEU:HD12	8:AH:76:ARG:HG2	1.83	0.60
25:BA:1447:C:H2'	25:BA:1448:G:C8	2.36	0.60
25:BA:2224:G:H4'	25:BA:2226:C:C2	2.37	0.60
51:B1:24:GLU:HB3	51:B1:46:VAL:HG11	1.84	0.60
2:AB:125:PHE:CD2	2:AB:125:PHE:N	2.69	0.60
2:AB:140:LEU:O	2:AB:144:GLU:HG2	2.02	0.60
25:BA:545:U:H2'	25:BA:546:U:O3'	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:BL:116:ARG:O	36:BL:120:ARG:HG3	2.01	0.60
45:BU:90:LYS:HB2	45:BU:92:ARG:NH1	2.17	0.60
1:AA:106:C:H2'	1:AA:107:G:C8	2.37	0.60
1:AA:132:C:H5''	20:AT:68:LYS:NZ	2.16	0.60
2:AB:209:VAL:HG23	2:AB:210:THR:N	2.12	0.60
5:AE:44:ARG:HA	5:AE:72:ASN:HA	1.81	0.60
6:AF:3:HIS:HB2	6:AF:92:THR:HG23	1.84	0.60
14:AN:90:ARG:NH1	14:AN:90:ARG:HB2	2.16	0.60
20:AT:5:SER:C	20:AT:7:LYS:H	2.10	0.60
25:BA:1912:A:C5	25:BA:1918:A:C2	2.89	0.60
25:BA:2093:G:N7	25:BA:2225:A:H2'	2.16	0.60
25:BA:2768:U:H4'	36:BL:95:ARG:HH22	1.66	0.60
28:BD:7:PRO:HA	28:BD:13:ARG:HB3	1.83	0.60
47:BW:60:LYS:HG3	47:BW:61:GLU:N	2.15	0.60
55:B5:31:LEU:HD22	55:B5:42:LEU:HB3	1.83	0.60
4:AD:29:THR:HG22	4:AD:30:LYS:N	2.17	0.60
25:BA:956:G:H2'	25:BA:957:C:H2'	1.83	0.60
25:BA:2539:C:H5'	57:B7:3:VAL:HG21	1.84	0.60
32:BH:36:LEU:HD21	32:BH:71:LEU:HD11	1.83	0.60
40:BP:65:LEU:HG	40:BP:69:ARG:HH12	1.65	0.60
42:BR:3:ILE:HD12	42:BR:3:ILE:N	2.16	0.60
42:BR:20:ARG:HB2	42:BR:21:PRO:HD2	1.83	0.60
47:BW:85:ARG:HH12	47:BW:99:SER:HB2	1.66	0.60
49:BY:41:PHE:O	49:BY:55:LEU:HD11	2.02	0.60
57:B7:36:ARG:HG2	57:B7:37:GLN:N	2.17	0.60
1:AA:1100:C:H2'	1:AA:1101:A:H4'	1.83	0.60
2:AB:170:ILE:HD12	2:AB:170:ILE:N	2.14	0.60
6:AF:18:VAL:N	6:AF:19:PRO:HD2	2.16	0.60
7:AG:149:ALA:HA	11:AK:60:PHE:CB	2.32	0.60
10:AJ:80:THR:HB	10:AJ:83:THR:HG22	1.83	0.60
22:AW:48:C:H2'	22:AW:59:U:C4'	2.32	0.60
25:BA:186:G:H2'	25:BA:187:G:H8	1.66	0.60
28:BD:259:ASN:OD1	28:BD:261:ARG:HB3	2.00	0.60
37:BM:2:ILE:HG21	37:BM:8:LEU:HD21	1.84	0.60
48:BX:14:LYS:HB2	48:BX:18:ARG:HH12	1.66	0.60
49:BY:16:ARG:N	49:BY:16:ARG:HD2	2.16	0.60
5:AE:83:PRO:HB3	5:AE:96:GLN:HG2	1.82	0.60
44:BT:10:LYS:HG3	44:BT:12:HIS:CE1	2.34	0.60
25:BA:319:G:H1	25:BA:323:C:H42	1.50	0.60
25:BA:1819:A:H5''	28:BD:159:THR:HG21	1.83	0.60
25:BA:1837:C:H2'	25:BA:1899:A:N6	2.17	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1916:A:O3'	25:BA:1917:U:P	2.60	0.60
31:BG:137:PHE:HB2	31:BG:140:ILE:HD13	1.84	0.60
34:BJ:46:ARG:HG2	34:BJ:48:ALA:H	1.67	0.60
48:BX:29:ILE:HD11	48:BX:37:PRO:HB3	1.84	0.60
2:AB:207:ARG:O	2:AB:211:LEU:HD13	2.01	0.59
3:AC:131:ARG:O	3:AC:135:ARG:HG2	2.02	0.59
8:AH:85:TYR:C	8:AH:86:LYS:HD2	2.26	0.59
25:BA:743:A:OP1	29:BE:135:GLY:HA2	2.01	0.59
25:BA:1523:U:O2'	25:BA:1524:G:H5'	2.02	0.59
25:BA:2452:C:H42	25:BA:2504:U:H3	1.48	0.59
35:BK:33:ASN:HD22	35:BK:34:ILE:N	1.99	0.59
1:AA:546:A:OP2	4:AD:67:LEU:HB3	2.02	0.59
1:AA:1032:G:C2'	1:AA:1033:G:H5'	2.32	0.59
1:AA:1343:G:H4'	9:AI:123:ARG:HB3	1.83	0.59
2:AB:121:GLN:HG2	2:AB:122:ASP:OD1	2.02	0.59
10:AJ:42:LEU:HD22	10:AJ:71:LEU:HB2	1.83	0.59
25:BA:2380:C:H5'	41:BQ:17:LYS:HZ3	1.67	0.59
25:BA:2529:G:OP2	25:BA:2530:A:H5''	2.02	0.59
33:BI:8:LYS:O	33:BI:13:GLY:HA2	2.02	0.59
37:BM:10:VAL:HG12	37:BM:12:ASP:H	1.67	0.59
38:BN:38:GLN:HG2	38:BN:45:GLY:H	1.65	0.59
46:BV:2:ILE:HD12	46:BV:2:ILE:N	2.17	0.59
54:B4:32:LYS:HB3	54:B4:32:LYS:NZ	2.18	0.59
56:B6:7:ARG:HA	56:B6:7:ARG:NE	2.17	0.59
2:AB:118:THR:O	2:AB:122:ASP:HB2	2.02	0.59
2:AB:137:THR:HA	2:AB:140:LEU:HD13	1.84	0.59
2:AB:165:ALA:HB3	2:AB:190:SER:HB3	1.84	0.59
3:AC:6:PRO:HG2	3:AC:200:TRP:HE1	1.65	0.59
4:AD:57:LYS:HD2	4:AD:58:GLN:N	2.17	0.59
4:AD:123:MET:HE2	4:AD:145:ARG:HA	1.84	0.59
13:AM:77:LYS:HD3	13:AM:80:MET:HE3	1.83	0.59
14:AN:2:LYS:HE2	14:AN:4:SER:OG	2.02	0.59
20:AT:75:LYS:NZ	20:AT:75:LYS:HB3	2.17	0.59
25:BA:184:C:H4'	25:BA:217:A:C2	2.37	0.59
38:BN:54:GLN:HE21	38:BN:60:ARG:NH1	2.00	0.59
51:B1:32:ALA:HB2	51:B1:37:LEU:HD23	1.84	0.59
51:B1:39:GLN:HE21	51:B1:42:LEU:HD11	1.66	0.59
52:B2:2:LYS:HE3	52:B2:39:ASP:HB3	1.85	0.59
1:AA:1409:C:H4'	25:BA:1915:U:O4	2.03	0.59
1:AA:1506:U:O2'	1:AA:1507:A:H5'	2.01	0.59
9:AI:46:VAL:HG21	9:AI:75:ALA:HB1	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:997:G:OP1	43:BS:91:ARG:HG2	2.02	0.59
25:BA:2796:U:H3	25:BA:2799:A:H61	1.49	0.59
29:BE:56:LYS:O	29:BE:60:VAL:HG23	2.03	0.59
40:BP:103:ARG:O	40:BP:107:ASN:HA	2.01	0.59
46:BV:44:LYS:O	46:BV:48:GLN:HG2	2.02	0.59
1:AA:423:G:H2'	1:AA:424:G:H5'	1.83	0.59
25:BA:687:C:H5''	55:B5:2:LYS:HE2	1.85	0.59
25:BA:1441:G:H4'	25:BA:1628:G:C5'	2.32	0.59
25:BA:1912:A:N1	25:BA:1919:A:C5	2.70	0.59
30:BF:105:LEU:O	30:BF:109:LEU:HD13	2.02	0.59
33:BI:9:VAL:HG12	33:BI:10:ALA:N	2.18	0.59
9:AI:25:GLY:HA3	9:AI:57:VAL:O	2.02	0.59
22:AW:36:A:C2'	22:AW:37:A:H5''	2.31	0.59
25:BA:1066:U:H2'	25:BA:1068:G:OP2	2.02	0.59
25:BA:2114:A:H2'	25:BA:2114:A:N3	2.18	0.59
27:BC:30:LEU:HD11	27:BC:42:VAL:HG13	1.84	0.59
28:BD:96:LYS:N	28:BD:96:LYS:HE2	2.17	0.59
34:BJ:26:VAL:HG23	34:BJ:111:ALA:HB2	1.83	0.59
3:AC:19:SER:HB3	3:AC:21:TRP:NE1	2.15	0.59
17:AQ:3:LYS:C	17:AQ:4:ILE:HD12	2.27	0.59
25:BA:244:A:H5''	38:BN:67:THR:CG2	2.29	0.59
44:BT:80:ARG:NH1	44:BT:80:ARG:HB2	2.18	0.59
45:BU:4:ILE:N	45:BU:4:ILE:HD12	2.18	0.59
56:B6:49:VAL:HG11	56:B6:57:VAL:HG21	1.85	0.59
7:AG:108:ARG:HH21	7:AG:118:ARG:NH1	2.00	0.59
10:AJ:53:ILE:HG12	10:AJ:63:ASP:HB2	1.83	0.59
25:BA:140:C:H4'	25:BA:141:G:N2	2.17	0.59
28:BD:20:ASN:HD21	28:BD:22:GLU:HG3	1.67	0.59
30:BF:164:LEU:H	30:BF:164:LEU:HD22	1.66	0.59
45:BU:84:ARG:HB2	45:BU:96:ILE:HG13	1.84	0.59
5:AE:82:HIS:HB2	5:AE:83:PRO:HD2	1.85	0.59
15:AO:23:SER:HB3	15:AO:26:VAL:HG23	1.85	0.59
25:BA:464:U:H5'	55:B5:5:PHE:CD2	2.37	0.59
25:BA:1352:U:H5'	25:BA:1571:A:H1'	1.85	0.59
28:BD:77:VAL:HG22	28:BD:93:VAL:HG12	1.84	0.59
34:BJ:52:MET:SD	34:BJ:83:ALA:HB2	2.41	0.59
38:BN:29:LYS:HG2	38:BN:30:THR:HG23	1.85	0.59
45:BU:52:GLU:HA	45:BU:55:ILE:HD12	1.85	0.59
47:BW:57:ILE:H	47:BW:57:ILE:HD12	1.68	0.59
1:AA:1126:U:O2	1:AA:1280:A:H2'	2.03	0.59
1:AA:1497:G:H1'	1:AA:1518:A:H2	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:44:LYS:C	2:AB:47:PRO:HD2	2.27	0.59
2:AB:187:ASP:HA	2:AB:201:GLY:O	2.03	0.59
9:AI:18:VAL:HG11	9:AI:82:ILE:HG12	1.85	0.59
33:BI:9:VAL:HG12	33:BI:12:LEU:HD21	1.84	0.59
35:BK:120:ASP:O	35:BK:124:MET:HG3	2.02	0.59
39:BO:18:ARG:NH2	39:BO:18:ARG:HB3	2.18	0.59
6:AF:35:LYS:O	6:AF:64:VAL:HG13	2.03	0.58
7:AG:15:PRO:O	9:AI:45:MET:HE2	2.03	0.58
12:AL:4:ASN:HA	17:AQ:35:LYS:NZ	2.18	0.58
14:AN:14:ALA:O	14:AN:18:LYS:HG3	2.03	0.58
14:AN:30:ILE:HD12	14:AN:30:ILE:N	2.18	0.58
19:AS:20:LYS:NZ	19:AS:20:LYS:HB2	2.18	0.58
19:AS:62:THR:HG22	19:AS:63:ASP:N	2.17	0.58
22:AV:33:U:H2'	22:AV:34:G:H5''	1.85	0.58
25:BA:254:G:C2'	25:BA:255:A:H5''	2.33	0.58
25:BA:477:A:H2'	25:BA:478:A:O4'	2.03	0.58
25:BA:835:C:H4'	25:BA:2358:A:H4'	1.85	0.58
25:BA:1168:G:H2'	25:BA:1169:A:O4'	2.03	0.58
25:BA:1339:G:H5''	46:BV:19:LYS:HD3	1.84	0.58
25:BA:1507:C:H2'	25:BA:1508:A:H4'	1.83	0.58
25:BA:1902:C:H4'	28:BD:241:LYS:O	2.02	0.58
31:BG:47:LYS:NZ	31:BG:47:LYS:HB3	2.18	0.58
34:BJ:55:VAL:HG11	34:BJ:59:LEU:HD22	1.84	0.58
37:BM:58:LEU:HD13	37:BM:58:LEU:N	2.18	0.58
1:AA:1414:U:H2'	1:AA:1415:G:H8	1.67	0.58
7:AG:67:ASN:ND2	7:AG:127:ALA:HA	2.18	0.58
10:AJ:59:LYS:HD2	10:AJ:59:LYS:H	1.68	0.58
15:AO:32:THR:HG22	15:AO:36:ASN:ND2	2.17	0.58
25:BA:1869:G:H3'	25:BA:1870:C:C5'	2.32	0.58
25:BA:2480:C:H2'	25:BA:2481:G:O4'	2.02	0.58
29:BE:110:THR:HG21	29:BE:169:ARG:HE	1.69	0.58
35:BK:56:VAL:HG21	35:BK:68:PHE:HD2	1.67	0.58
48:BX:80:HIS:HB3	48:BX:83:LYS:O	2.03	0.58
56:B6:40:LYS:HB2	56:B6:40:LYS:NZ	2.18	0.58
1:AA:106:C:H2'	1:AA:107:G:H8	1.68	0.58
1:AA:460:A:H61	1:AA:472:U:H3	1.51	0.58
1:AA:501:C:OP1	12:AL:120:ARG:HB2	2.03	0.58
1:AA:1334:G:H2'	1:AA:1335:U:H5'	1.85	0.58
5:AE:121:ASN:HD22	5:AE:121:ASN:N	2.00	0.58
9:AI:89:TYR:HB3	9:AI:93:LEU:HD21	1.84	0.58
14:AN:85:ARG:O	14:AN:89:MET:HG2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:373:U:H1'	25:BA:423:A:H2	1.66	0.58
25:BA:609:A:H2'	25:BA:610:C:O4'	2.03	0.58
28:BD:202:ARG:HH22	28:BD:213:ARG:HH21	1.51	0.58
35:BK:56:VAL:HA	35:BK:71:LYS:HE2	1.85	0.58
38:BN:49:GLY:HA3	38:BN:58:TYR:HE2	1.69	0.58
3:AC:168:ARG:HD2	3:AC:169:GLU:N	2.19	0.58
9:AI:93:LEU:HD12	9:AI:94:ARG:N	2.19	0.58
14:AN:69:ARG:CZ	14:AN:81:ARG:HH12	2.15	0.58
25:BA:770:G:H5''	55:B5:10:LEU:HD23	1.86	0.58
25:BA:1239:G:H2'	25:BA:1240:U:O4'	2.04	0.58
25:BA:2291:U:H5''	25:BA:2380:C:O2'	2.03	0.58
31:BG:140:ILE:N	31:BG:140:ILE:HD12	2.18	0.58
31:BG:155:ILE:HD12	31:BG:155:ILE:N	2.18	0.58
42:BR:102:ARG:HD3	42:BR:106:ALA:O	2.03	0.58
48:BX:64:VAL:HG22	48:BX:69:GLU:HG2	1.85	0.58
1:AA:730:G:H2'	1:AA:731:G:H5'	1.84	0.58
1:AA:1418:A:H1'	25:BA:1959:G:H4'	1.86	0.58
9:AI:67:LYS:HD3	9:AI:67:LYS:N	2.19	0.58
9:AI:105:ARG:HH11	9:AI:107:ALA:HA	1.69	0.58
12:AL:9:LYS:HB2	12:AL:9:LYS:NZ	2.18	0.58
25:BA:1140:C:H5'	36:BL:26:GLY:HA3	1.83	0.58
25:BA:1934:C:H4'	25:BA:1974:C:O3'	2.03	0.58
25:BA:2055:C:H5'	25:BA:2056:G:C5'	2.33	0.58
25:BA:2256:G:H4'	49:BY:7:ARG:NH1	2.19	0.58
27:BC:8:MET:SD	27:BC:11:ILE:HD11	2.44	0.58
27:BC:148:ASN:HD22	27:BC:151:GLU:HB3	1.69	0.58
44:BT:78:ARG:HG3	44:BT:81:LYS:HB2	1.84	0.58
2:AB:16:GLY:H	2:AB:39:ILE:HD12	1.67	0.58
5:AE:71:ILE:HD13	5:AE:144:GLU:HG3	1.85	0.58
8:AH:12:ARG:HG2	8:AH:26:MET:HE2	1.86	0.58
16:AP:7:ALA:HB1	16:AP:9:HIS:CE1	2.39	0.58
25:BA:1131:G:H1	25:BA:2024:G:H21	1.51	0.58
25:BA:2330:G:C3'	25:BA:2331:G:H5''	2.34	0.58
29:BE:104:VAL:HG23	29:BE:105:LYS:N	2.16	0.58
34:BJ:38:MET:O	34:BJ:42:ARG:HG3	2.04	0.58
42:BR:8:GLU:HA	42:BR:54:LEU:HD22	1.84	0.58
51:B1:31:GLN:HG2	51:B1:37:LEU:HB2	1.85	0.58
54:B4:47:ILE:H	54:B4:47:ILE:HD12	1.68	0.58
1:AA:598:U:H4'	8:AH:85:TYR:CD1	2.38	0.58
4:AD:103:ARG:NH2	4:AD:110:ARG:HH22	2.01	0.58
5:AE:97:PRO:HG2	5:AE:98:ALA:H	1.69	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:AO:59:VAL:HG11	25:BA:715:A:O4'	2.03	0.58
17:AQ:26:ARG:NH1	17:AQ:39:ARG:HB3	2.19	0.58
25:BA:834:G:H1'	25:BA:2358:A:N3	2.19	0.58
25:BA:1081:U:H2'	25:BA:1082:U:C6	2.38	0.58
25:BA:1415:U:H3'	25:BA:1415:U:O2	2.03	0.58
32:BH:140:ILE:HD12	32:BH:141:GLY:N	2.19	0.58
34:BJ:126:LEU:HA	34:BJ:129:LEU:HG	1.86	0.58
35:BK:71:LYS:HD3	35:BK:71:LYS:N	2.19	0.58
37:BM:38:ILE:HD11	37:BM:112:PHE:HZ	1.69	0.58
41:BQ:29:HIS:HB3	41:BQ:36:TYR:HB2	1.85	0.58
44:BT:1:MET:HB2	44:BT:43:ASN:HD21	1.68	0.58
55:B5:25:LYS:HA	55:B5:28:ARG:NH2	2.18	0.58
1:AA:940:C:H2'	1:AA:941:G:C8	2.39	0.58
2:AB:175:ALA:HB1	2:AB:182:VAL:HG21	1.85	0.58
11:AK:33:ILE:HG12	11:AK:69:CYS:SG	2.43	0.58
25:BA:1052:C:H2'	25:BA:1053:C:C6	2.39	0.58
25:BA:1093:G:H21	25:BA:1098:A:H62	1.52	0.58
25:BA:1367:A:H2'	25:BA:1368:G:H5'	1.84	0.58
28:BD:165:ALA:HB3	28:BD:172:THR:HB	1.84	0.58
30:BF:111:GLU:HG3	38:BN:2:ARG:NH2	2.18	0.58
31:BG:68:LYS:N	31:BG:68:LYS:HD2	2.19	0.58
33:BI:26:ALA:HA	33:BI:30:LEU:HD12	1.86	0.58
35:BK:96:LYS:HE3	35:BK:138:VAL:HG22	1.86	0.58
47:BW:57:ILE:HD12	47:BW:57:ILE:N	2.18	0.58
1:AA:929:G:H5''	1:AA:1534:A:O2'	2.04	0.58
11:AK:44:ALA:HB3	11:AK:69:CYS:HB2	1.85	0.58
17:AQ:30:HIS:HB3	17:AQ:34:GLY:N	2.18	0.58
17:AQ:60:ILE:HD12	17:AQ:60:ILE:N	2.18	0.58
22:AW:35:A:H2'	22:AW:36:A:C8	2.39	0.58
25:BA:489:G:H22	25:BA:1320:C:H3'	1.68	0.58
25:BA:1443:U:H2'	25:BA:1444:G:C8	2.39	0.58
29:BE:62:LYS:HB2	29:BE:63:PRO:HD3	1.85	0.58
38:BN:142:ILE:N	38:BN:142:ILE:HD12	2.19	0.58
54:B4:47:ILE:HD12	54:B4:47:ILE:N	2.18	0.58
1:AA:1001:C:H2'	1:AA:1002:G:C8	2.39	0.58
2:AB:224:ARG:NE	2:AB:224:ARG:N	2.52	0.58
9:AI:7:GLY:HA3	9:AI:84:ARG:C	2.29	0.58
10:AJ:57:VAL:HG22	10:AJ:58:ASN:N	2.16	0.58
14:AN:27:LYS:C	14:AN:27:LYS:HD2	2.29	0.58
17:AQ:30:HIS:HB3	17:AQ:34:GLY:H	1.68	0.58
18:AR:23:LYS:HB2	18:AR:23:LYS:NZ	2.19	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:466:A:H2'	25:BA:467:G:H5'	1.86	0.58
25:BA:1138:G:H2'	25:BA:1139:G:O4'	2.03	0.58
25:BA:2780:G:H22	36:BL:96:ARG:HH12	1.52	0.58
30:BF:161:ALA:HA	30:BF:164:LEU:HD23	1.86	0.58
44:BT:5:PHE:HA	44:BT:39:LEU:HD13	1.85	0.58
50:BZ:27:ARG:HH11	50:BZ:29:LEU:HD21	1.69	0.58
1:AA:346:G:C2'	1:AA:347:G:H5'	2.34	0.57
1:AA:381:C:H2'	1:AA:382:A:O4'	2.04	0.57
4:AD:44:LYS:HB2	4:AD:44:LYS:NZ	2.19	0.57
4:AD:69:ARG:HA	4:AD:69:ARG:NE	2.19	0.57
5:AE:59:ILE:O	5:AE:63:MET:HG2	2.04	0.57
7:AG:37:THR:O	7:AG:41:ILE:HG13	2.04	0.57
11:AK:112:VAL:HG12	18:AR:72:ARG:HH21	1.69	0.57
13:AM:15:VAL:HA	13:AM:29:SER:OG	2.04	0.57
25:BA:340:A:H2'	25:BA:341:C:O4'	2.04	0.57
25:BA:543:G:C3'	25:BA:544:C:H5''	2.34	0.57
25:BA:1911:U:O2'	25:BA:1912:A:H5'	2.04	0.57
31:BG:73:VAL:H	31:BG:78:ILE:CD1	2.17	0.57
31:BG:102:LEU:HA	31:BG:106:ALA:HB3	1.85	0.57
35:BK:50:LYS:N	35:BK:50:LYS:HD3	2.19	0.57
35:BK:102:ARG:HB2	35:BK:141:ASP:HA	1.85	0.57
36:BL:34:ARG:HH12	36:BL:40:HIS:HB3	1.67	0.57
36:BL:41:LYS:HB3	36:BL:43:GLU:OE2	2.04	0.57
36:BL:121:LYS:HB2	36:BL:121:LYS:NZ	2.19	0.57
39:BO:5:LYS:NZ	39:BO:5:LYS:HB3	2.18	0.57
3:AC:149:LYS:HE2	3:AC:168:ARG:HG2	1.86	0.57
5:AE:131:ASN:HD22	5:AE:132:PRO:HD2	1.69	0.57
14:AN:98:LYS:HB2	14:AN:98:LYS:NZ	2.19	0.57
25:BA:2475:C:H2'	25:BA:2476:A:H5'	1.85	0.57
29:BE:141:ARG:HH11	29:BE:141:ARG:CB	2.10	0.57
31:BG:135:ILE:HD12	31:BG:135:ILE:N	2.19	0.57
32:BH:163:TYR:HB2	32:BH:166:GLU:HB2	1.85	0.57
36:BL:140:LEU:CG	36:BL:142:ILE:HD13	2.32	0.57
43:BS:16:ILE:HG23	43:BS:38:VAL:HG21	1.85	0.57
4:AD:96:ARG:O	4:AD:100:VAL:HG23	2.04	0.57
8:AH:6:ILE:HD12	8:AH:6:ILE:N	2.18	0.57
10:AJ:36:VAL:HG12	10:AJ:38:GLY:H	1.70	0.57
10:AJ:52:LEU:HD12	10:AJ:54:SER:O	2.04	0.57
22:AV:6:G:O2'	22:AV:7:A:H5'	2.04	0.57
31:BG:7:TYR:HD2	31:BG:11:VAL:HB	1.70	0.57
38:BN:81:ASP:C	38:BN:83:ALA:H	2.13	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BQ:15:ARG:HH21	41:BQ:95:SER:HB3	1.69	0.57
1:AA:1149:C:P	9:AI:10:ARG:HH21	2.27	0.57
1:AA:1151:A:H5''	10:AJ:44:THR:HG23	1.85	0.57
2:AB:192:PRO:C	2:AB:194:GLY:H	2.13	0.57
11:AK:106:ILE:HD13	11:AK:106:ILE:C	2.30	0.57
22:AV:59:U:O2'	22:AV:60:U:H5'	2.05	0.57
25:BA:1874:C:H2'	25:BA:1875:G:O4'	2.05	0.57
25:BA:2020:A:H5'	53:B3:8:THR:CG2	2.33	0.57
29:BE:148:GLN:OE1	29:BE:152:PRO:HG2	2.03	0.57
35:BK:86:LYS:HD2	35:BK:87:SER:N	2.19	0.57
57:B7:9:LYS:HB3	57:B7:9:LYS:NZ	2.19	0.57
1:AA:158:G:C3'	1:AA:159:G:H5''	2.35	0.57
10:AJ:32:THR:HG21	10:AJ:83:THR:HA	1.87	0.57
25:BA:1111:A:H4'	25:BA:1112:G:H5'	1.86	0.57
25:BA:2845:U:H5''	42:BR:51:ASN:O	2.05	0.57
32:BH:116:LEU:HD13	32:BH:120:ILE:O	2.05	0.57
36:BL:73:VAL:HG22	36:BL:88:THR:HG22	1.86	0.57
37:BM:13:ASN:HD22	37:BM:98:ARG:HB2	1.69	0.57
40:BP:33:ILE:HD12	40:BP:118:ARG:HH21	1.68	0.57
46:BV:73:ARG:HH21	46:BV:73:ARG:CA	2.17	0.57
4:AD:117:VAL:HA	4:AD:122:ILE:HD12	1.84	0.57
5:AE:142:GLY:HA2	5:AE:145:ASN:HD21	1.70	0.57
10:AJ:8:ILE:HG12	10:AJ:100:ILE:HG22	1.84	0.57
12:AL:44:PRO:HG2	12:AL:45:ASN:H	1.69	0.57
12:AL:106:VAL:HG23	12:AL:116:TYR:HB3	1.87	0.57
13:AM:7:ASN:ND2	13:AM:9:PRO:HD3	2.19	0.57
25:BA:886:A:C2'	25:BA:887:U:H4'	2.34	0.57
25:BA:2024:G:H4'	29:BE:154:LYS:HZ2	1.70	0.57
25:BA:2741:A:H5''	57:B7:36:ARG:NH2	2.19	0.57
25:BA:2743:U:C3'	25:BA:2744:G:H5''	2.34	0.57
30:BF:157:LEU:HG	30:BF:169:VAL:HG21	1.85	0.57
32:BH:159:LYS:NZ	32:BH:159:LYS:HB3	2.20	0.57
35:BK:8:VAL:HG22	35:BK:58:ILE:HG13	1.86	0.57
36:BL:49:ASP:HB2	36:BL:114:LEU:HD11	1.87	0.57
41:BQ:26:LEU:HD13	41:BQ:39:VAL:HG22	1.87	0.57
53:B3:42:ILE:HG22	53:B3:48:TYR:HB2	1.86	0.57
1:AA:545:C:O2'	1:AA:549:C:H5''	2.05	0.57
1:AA:950:U:H2'	1:AA:951:G:C8	2.40	0.57
3:AC:26:LYS:HB3	3:AC:26:LYS:HZ2	1.69	0.57
3:AC:168:ARG:HH11	3:AC:170:GLY:H	1.50	0.57
4:AD:9:LYS:HB3	4:AD:9:LYS:NZ	2.19	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:AH:95:MET:HB2	8:AH:98:LEU:O	2.05	0.57
14:AN:6:LYS:O	14:AN:10:VAL:HG23	2.03	0.57
20:AT:54:GLN:N	20:AT:55:PRO:HD2	2.20	0.57
25:BA:709:U:H3	25:BA:722:A:H61	1.52	0.57
27:BC:74:ARG:HB3	27:BC:74:ARG:HH11	1.68	0.57
34:BJ:94:ARG:HG2	34:BJ:127:ALA:HA	1.87	0.57
42:BR:74:GLN:HB2	42:BR:77:SER:HB2	1.86	0.57
45:BU:46:LEU:O	45:BU:50:VAL:HG23	2.05	0.57
57:B7:2:LYS:HB3	57:B7:2:LYS:NZ	2.20	0.57
1:AA:195:A:H1'	1:AA:222:C:O2'	2.04	0.57
2:AB:16:GLY:H	2:AB:39:ILE:HG23	1.67	0.57
4:AD:117:VAL:HA	4:AD:122:ILE:CD1	2.35	0.57
7:AG:74:VAL:HA	7:AG:87:PRO:HA	1.86	0.57
19:AS:17:LYS:HD3	19:AS:30:LEU:HD11	1.86	0.57
24:AY:6:5OH:N	24:AY:6:5OH:CS	2.66	0.57
25:BA:630:G:C2'	25:BA:631:A:H5''	2.35	0.57
25:BA:2144:G:H1'	25:BA:2147:A:H61	1.70	0.57
25:BA:2330:G:C2'	25:BA:2331:G:H5''	2.34	0.57
28:BD:32:LEU:HB3	28:BD:63:ILE:HB	1.85	0.57
34:BJ:81:LEU:HD23	34:BJ:82:ILE:N	2.20	0.57
1:AA:1142:G:H2'	1:AA:1143:G:O4'	2.04	0.57
2:AB:207:ARG:HH11	2:AB:207:ARG:CB	2.17	0.57
12:AL:98:ARG:HA	12:AL:103:CYS:SG	2.44	0.57
17:AQ:67:SER:O	17:AQ:68:LYS:C	2.48	0.57
25:BA:2751:G:H2'	25:BA:2751:G:N3	2.20	0.57
30:BF:77:ILE:HG13	30:BF:78:TRP:HD1	1.70	0.57
39:BO:50:ARG:HD3	39:BO:65:ILE:HD11	1.87	0.57
44:BT:74:ILE:N	44:BT:74:ILE:HD12	2.20	0.57
1:AA:315:A:O2'	1:AA:330:C:H4'	2.05	0.57
1:AA:1373:G:H5''	7:AG:35:LYS:CB	2.33	0.57
4:AD:61:ARG:HH21	4:AD:67:LEU:HA	1.69	0.57
9:AI:27:ILE:N	9:AI:27:ILE:HD12	2.19	0.57
9:AI:53:LEU:H	9:AI:53:LEU:HD12	1.69	0.57
12:AL:98:ARG:HB2	12:AL:116:TYR:HA	1.87	0.57
20:AT:53:MET:O	20:AT:57:VAL:HG23	2.04	0.57
25:BA:2663:G:H2'	25:BA:2664:G:O4'	2.05	0.57
43:BS:57:ARG:HG2	43:BS:57:ARG:HH11	1.69	0.57
52:B2:51:SER:HA	52:B2:54:VAL:HG22	1.87	0.57
56:B6:58:ILE:HD12	56:B6:58:ILE:H	1.70	0.57
1:AA:184:G:H4'	1:AA:224:U:O3'	2.05	0.56
1:AA:1279:G:H3'	1:AA:1279:G:N3	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AC:41:TYR:OH	3:AC:89:VAL:HG11	2.04	0.56
4:AD:160:LEU:H	4:AD:160:LEU:CD1	2.15	0.56
4:AD:182:LYS:HZ3	4:AD:182:LYS:HB3	1.70	0.56
7:AG:26:VAL:HG12	7:AG:42:VAL:HG21	1.87	0.56
13:AM:45:SER:C	13:AM:47:LEU:H	2.11	0.56
16:AP:23:ASP:HB3	16:AP:26:ASN:HD22	1.69	0.56
25:BA:322:A:OP2	30:BF:163:ASN:HB2	2.05	0.56
27:BC:193:LEU:HB3	27:BC:226:GLN:HG3	1.86	0.56
30:BF:48:THR:O	30:BF:52:VAL:HG23	2.03	0.56
30:BF:148:ILE:HG21	30:BF:157:LEU:HD21	1.86	0.56
39:BO:21:ALA:HB2	39:BO:97:GLN:HB2	1.87	0.56
48:BX:24:ASN:OD1	48:BX:44:HIS:HB3	2.05	0.56
1:AA:8:A:H1'	5:AE:107:GLY:HA2	1.87	0.56
1:AA:1391:U:H2'	1:AA:1392:G:C8	2.41	0.56
7:AG:56:SER:HB3	7:AG:59:GLU:HG2	1.87	0.56
25:BA:29:U:H4'	43:BS:6:GLY:HA3	1.86	0.56
25:BA:1856:U:H2'	25:BA:1857:G:H5'	1.87	0.56
35:BK:71:LYS:HD3	35:BK:71:LYS:H	1.69	0.56
1:AA:1497:G:O2'	1:AA:1498:U:H5'	2.05	0.56
2:AB:86:CYS:HB2	2:AB:88:GLN:OE1	2.06	0.56
2:AB:138:ARG:O	2:AB:142:LYS:HB2	2.04	0.56
4:AD:144:ILE:N	4:AD:144:ILE:HD12	2.20	0.56
5:AE:113:VAL:HG13	5:AE:114:LEU:CD1	2.36	0.56
7:AG:107:ALA:HB2	7:AG:122:GLU:HG3	1.87	0.56
8:AH:6:ILE:HB	8:AH:76:ARG:NH1	2.20	0.56
8:AH:125:ILE:HD12	8:AH:125:ILE:N	2.19	0.56
11:AK:96:ILE:C	11:AK:96:ILE:HD12	2.30	0.56
15:AO:42:PHE:HE2	15:AO:52:ARG:HA	1.70	0.56
15:AO:42:PHE:CE2	15:AO:52:ARG:HA	2.40	0.56
17:AQ:54:ILE:HD13	17:AQ:54:ILE:C	2.30	0.56
25:BA:859:G:N2	25:BA:916:G:H2'	2.20	0.56
25:BA:2261:C:C6	49:BY:12:SER:HB3	2.40	0.56
25:BA:2425:A:H5''	25:BA:2427:C:O4'	2.06	0.56
25:BA:2461:A:H1'	25:BA:2492:U:H3	1.69	0.56
25:BA:2720:U:H5''	42:BR:52:ARG:NH2	2.21	0.56
26:BB:66:A:H61	26:BB:107:G:H2'	1.70	0.56
29:BE:124:ARG:HA	29:BE:165:MET:SD	2.45	0.56
31:BG:7:TYR:O	31:BG:12:VAL:HG23	2.05	0.56
32:BH:104:LEU:HD11	32:BH:147:LEU:HD22	1.87	0.56
36:BL:24:THR:HB	36:BL:27:ARG:HB2	1.86	0.56
38:BN:120:VAL:HG22	38:BN:121:THR:N	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BQ:26:LEU:HD11	41:BQ:78:VAL:HG11	1.87	0.56
42:BR:83:ILE:HD12	42:BR:83:ILE:N	2.20	0.56
49:BY:19:VAL:HA	49:BY:34:VAL:HG22	1.88	0.56
55:B5:3:ARG:NE	55:B5:3:ARG:HA	2.20	0.56
1:AA:237:G:H5''	17:AQ:26:ARG:CZ	2.36	0.56
1:AA:1069:C:O2'	1:AA:1192:C:H1'	2.06	0.56
8:AH:10:LEU:HD11	8:AH:126:CYS:SG	2.46	0.56
13:AM:32:ILE:HG22	13:AM:55:LEU:HD22	1.88	0.56
14:AN:14:ALA:HB1	14:AN:18:LYS:HE2	1.88	0.56
16:AP:76:LYS:HB2	16:AP:76:LYS:NZ	2.21	0.56
17:AQ:45:VAL:HG21	17:AQ:60:ILE:HG12	1.86	0.56
22:AV:5:G:H2'	22:AV:6:G:C8	2.40	0.56
25:BA:646:U:H3'	25:BA:647:G:C5'	2.33	0.56
28:BD:209:ALA:HA	28:BD:212:TRP:CZ2	2.41	0.56
29:BE:4:LEU:HD23	29:BE:101:PHE:HE1	1.71	0.56
34:BJ:111:ALA:HB3	34:BJ:118:ILE:HD11	1.88	0.56
55:B5:42:LEU:HD22	55:B5:42:LEU:H	1.70	0.56
1:AA:1409:C:H2'	1:AA:1410:A:H8	1.68	0.56
3:AC:154:GLY:HA2	3:AC:163:ARG:H	1.70	0.56
14:AN:87:ALA:HB1	14:AN:92:GLU:HB2	1.87	0.56
25:BA:523:C:H5''	25:BA:540:C:O2'	2.05	0.56
25:BA:1130:U:C2	25:BA:2025:C:H5'	2.41	0.56
25:BA:1302:A:H5''	25:BA:1608:A:OP1	2.05	0.56
25:BA:1820:U:C4	28:BD:158:GLY:HA3	2.41	0.56
25:BA:1935:G:H1'	25:BA:1964:G:N2	2.21	0.56
25:BA:2295:C:O2'	25:BA:2296:U:H5'	2.05	0.56
29:BE:46:ARG:HB3	29:BE:84:LEU:HD12	1.86	0.56
32:BH:122:ALA:HB2	32:BH:132:LEU:HD23	1.87	0.56
32:BH:158:GLY:HA3	32:BH:162:ARG:NH1	2.21	0.56
1:AA:981:U:H3'	1:AA:982:U:C5'	2.30	0.56
6:AF:29:ILE:HG21	6:AF:64:VAL:HG11	1.87	0.56
8:AH:91:LEU:HD12	8:AH:116:ARG:HG3	1.87	0.56
13:AM:89:ARG:HA	13:AM:89:ARG:HE	1.69	0.56
19:AS:48:ILE:HD12	19:AS:48:ILE:N	2.20	0.56
25:BA:72:U:O4	25:BA:112:U:H4'	2.06	0.56
25:BA:1045:C:H4'	25:BA:1046:A:H5'	1.87	0.56
25:BA:1444:G:H1	25:BA:1547:C:H42	1.53	0.56
29:BE:25:THR:HG21	29:BE:193:VAL:HG22	1.88	0.56
31:BG:91:ARG:HA	31:BG:95:MET:SD	2.46	0.56
34:BJ:52:MET:SD	34:BJ:81:LEU:HD22	2.45	0.56
36:BL:7:LYS:O	36:BL:11:VAL:HG23	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:BN:63:LYS:CG	56:B6:12:ARG:HE	2.15	0.56
42:BR:25:VAL:HG23	42:BR:84:SER:C	2.30	0.56
54:B4:7:LYS:HA	54:B4:23:THR:HG22	1.86	0.56
1:AA:1148:U:H5''	9:AI:8:THR:HG23	1.88	0.56
2:AB:125:PHE:N	2:AB:125:PHE:HD2	2.04	0.56
2:AB:133:ALA:O	2:AB:137:THR:HG23	2.06	0.56
3:AC:166:TRP:HH2	5:AE:53:ARG:HH11	1.52	0.56
12:AL:23:LEU:HG	12:AL:24:GLU:H	1.69	0.56
12:AL:28:GLN:HG2	12:AL:80:LEU:HD11	1.88	0.56
19:AS:14:LEU:HD22	19:AS:34:SER:HB3	1.88	0.56
29:BE:105:LYS:NZ	29:BE:105:LYS:HB3	2.20	0.56
34:BJ:4:ASN:HB3	34:BJ:7:ASP:OD2	2.06	0.56
1:AA:1380:U:C4	7:AG:2:ARG:HD3	2.41	0.56
2:AB:206:ILE:HD13	2:AB:206:ILE:H	1.71	0.56
4:AD:131:ILE:HD12	4:AD:131:ILE:O	2.06	0.56
10:AJ:89:ARG:NH1	10:AJ:89:ARG:HB2	2.21	0.56
25:BA:663:G:H4'	38:BN:17:LYS:HE3	1.88	0.56
25:BA:2017:U:H4'	53:B3:4:GLN:O	2.06	0.56
25:BA:2248:C:H42	25:BA:2256:G:H1	1.52	0.56
28:BD:64:VAL:HA	28:BD:102:TYR:HB2	1.87	0.56
31:BG:37:MET:HB2	31:BG:56:LEU:HD21	1.88	0.56
33:BI:37:VAL:HG11	33:BI:47:PHE:CE2	2.41	0.56
35:BK:39:LYS:NZ	35:BK:39:LYS:HB2	2.20	0.56
36:BL:116:ARG:HD3	36:BL:116:ARG:H	1.71	0.56
41:BQ:64:TYR:HB3	41:BQ:67:ASN:HD22	1.70	0.56
44:BT:85:LYS:NZ	44:BT:85:LYS:HB3	2.21	0.56
1:AA:1102:A:H4'	2:AB:94:ARG:HH22	1.71	0.56
2:AB:47:PRO:HA	2:AB:50:ASN:HD22	1.71	0.56
16:AP:36:VAL:HG23	16:AP:53:ASP:HB3	1.88	0.56
25:BA:606:U:H4'	25:BA:658:U:O2'	2.05	0.56
25:BA:2282:G:H4'	25:BA:2283:C:H5''	1.87	0.56
25:BA:2713:U:H3'	25:BA:2714:G:H5''	1.88	0.56
28:BD:216:ARG:NH1	28:BD:216:ARG:HB3	2.20	0.56
30:BF:105:LEU:HD12	30:BF:200:LEU:HD11	1.87	0.56
31:BG:138:PRO:HG2	31:BG:139:GLU:OE2	2.05	0.56
39:BO:32:GLY:HA2	39:BO:104:GLU:HA	1.88	0.56
46:BV:51:PHE:O	46:BV:53:VAL:HG13	2.06	0.56
48:BX:6:ALA:HB1	48:BX:40:ILE:HG23	1.86	0.56
56:B6:38:LYS:HA	56:B6:41:ARG:NH2	2.21	0.56
1:AA:558:G:H2'	1:AA:559:A:C2	2.41	0.56
1:AA:1409:C:H4'	25:BA:1914:C:H41	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AD:82:LYS:HD3	4:AD:83:GLY:N	2.21	0.56
4:AD:89:LEU:HD23	4:AD:199:ILE:HD12	1.88	0.56
5:AE:140:ILE:HD12	5:AE:140:ILE:N	2.21	0.56
13:AM:10:ASP:CG	13:AM:11:HIS:H	2.13	0.56
20:AT:66:ILE:HG23	20:AT:66:ILE:O	2.04	0.56
25:BA:186:G:H2'	25:BA:187:G:C8	2.41	0.56
28:BD:226:PRO:HB3	28:BD:232:GLY:HA2	1.88	0.56
38:BN:23:ILE:HG12	44:BT:82:HIS:CE1	2.41	0.56
40:BP:45:ARG:HB3	40:BP:49:GLU:OE2	2.05	0.56
1:AA:52:C:H2'	1:AA:53:A:C8	2.40	0.55
25:BA:1582:C:H2'	25:BA:1583:A:H5''	1.86	0.55
31:BG:46:LYS:HZ1	31:BG:83:PRO:HG2	1.71	0.55
32:BH:3:VAL:HG12	32:BH:68:ARG:HD2	1.88	0.55
50:BZ:27:ARG:HD3	50:BZ:29:LEU:HD21	1.87	0.55
1:AA:1299:A:H2'	1:AA:1299:A:N3	2.21	0.55
13:AM:44:ILE:HD12	13:AM:44:ILE:N	2.21	0.55
14:AN:61:ARG:HG3	14:AN:62:ASN:N	2.14	0.55
16:AP:57:ILE:O	16:AP:61:VAL:HG23	2.07	0.55
25:BA:2443:C:OP1	30:BF:63:LYS:HD3	2.07	0.55
38:BN:79:LEU:H	38:BN:113:ALA:HB3	1.71	0.55
46:BV:58:VAL:HG13	46:BV:85:VAL:HG22	1.87	0.55
50:BZ:2:ARG:NH2	50:BZ:29:LEU:HD13	2.22	0.55
50:BZ:32:LEU:HA	50:BZ:51:SER:HA	1.87	0.55
56:B6:29:ARG:HG2	56:B6:29:ARG:HH21	1.71	0.55
1:AA:263:A:P	20:AT:73:ARG:HH22	2.29	0.55
1:AA:1432:G:N2	1:AA:1467:C:H2'	2.21	0.55
1:AA:1492:A:H5'	24:AY:6:5OH:NP	2.21	0.55
2:AB:184:ALA:HB3	2:AB:195:VAL:HG21	1.89	0.55
5:AE:82:HIS:HD2	8:AH:98:LEU:HD12	1.71	0.55
9:AI:51:LEU:HD13	9:AI:56:MET:HE3	1.89	0.55
14:AN:48:LEU:O	14:AN:48:LEU:HD23	2.06	0.55
20:AT:83:ASN:H	20:AT:83:ASN:HD22	1.54	0.55
21:AU:46:ARG:HA	21:AU:46:ARG:HE	1.72	0.55
25:BA:1450:G:H21	25:BA:1452:G:H1	1.53	0.55
27:BC:121:MET:HA	27:BC:124:VAL:HG12	1.88	0.55
30:BF:45:ALA:HA	30:BF:87:ALA:O	2.07	0.55
31:BG:113:PHE:HZ	31:BG:175:PRO:HB3	1.71	0.55
35:BK:79:LEU:HA	35:BK:83:ALA:HB3	1.89	0.55
38:BN:23:ILE:HD12	44:BT:84:ARG:HG2	1.89	0.55
44:BT:80:ARG:HB2	44:BT:80:ARG:CZ	2.36	0.55
50:BZ:9:LYS:HE3	50:BZ:53:LYS:HD3	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:B1:56:LEU:C	51:B1:58:ASN:H	2.14	0.55
1:AA:483:C:H2'	1:AA:484:G:C8	2.40	0.55
2:AB:206:ILE:HD13	2:AB:206:ILE:N	2.21	0.55
7:AG:64:ALA:HB1	7:AG:126:ALA:HB3	1.89	0.55
12:AL:43:LYS:HB2	12:AL:43:LYS:HZ2	1.70	0.55
22:AV:73:A:O2'	22:AV:74:C:OP2	2.24	0.55
25:BA:64:A:H5''	46:BV:76:ARG:O	2.07	0.55
25:BA:190:A:H3'	25:BA:204:A:H61	1.71	0.55
25:BA:2334:U:H5''	41:BQ:9:ARG:HB2	1.87	0.55
25:BA:2343:U:H2'	25:BA:2344:U:C6	2.42	0.55
25:BA:2350:C:H5	56:B6:41:ARG:HE	1.55	0.55
25:BA:2457:U:O2'	25:BA:2458:G:H5'	2.07	0.55
25:BA:2732:G:O2'	25:BA:2733:A:H5'	2.07	0.55
27:BC:136:LEU:O	27:BC:138:PRO:HD3	2.06	0.55
27:BC:146:THR:OG1	27:BC:147:PRO:HD2	2.05	0.55
38:BN:110:VAL:HG11	38:BN:135:ILE:HD11	1.89	0.55
1:AA:1062:U:H2'	1:AA:1063:C:C6	2.41	0.55
1:AA:1271:A:H5'	1:AA:1314:C:H5''	1.87	0.55
2:AB:30:ILE:HG13	2:AB:40:ILE:HA	1.89	0.55
3:AC:166:TRP:H	3:AC:166:TRP:HE3	1.54	0.55
4:AD:18:LEU:HB2	4:AD:20:LEU:HG	1.87	0.55
4:AD:169:TRP:CD2	4:AD:185:PRO:HG3	2.41	0.55
7:AG:39:GLU:HA	7:AG:42:VAL:HG22	1.89	0.55
7:AG:106:ALA:HB1	7:AG:132:THR:HB	1.88	0.55
8:AH:21:LYS:HE2	8:AH:21:LYS:HA	1.87	0.55
16:AP:19:VAL:HG22	16:AP:38:PHE:HA	1.89	0.55
25:BA:1166:G:N2	25:BA:1184:U:H1'	2.21	0.55
33:BI:49:ALA:HB3	33:BI:50:ARG:HE	1.72	0.55
40:BP:28:LEU:HD22	40:BP:44:LEU:HD21	1.87	0.55
40:BP:49:GLU:HB2	40:BP:50:PRO:HD3	1.88	0.55
46:BV:29:THR:HG21	46:BV:84:TYR:HB3	1.89	0.55
52:B2:27:GLY:HA3	52:B2:37:ARG:NH2	2.21	0.55
54:B4:5:ARG:HH12	54:B4:23:THR:C	2.15	0.55
1:AA:396:C:C3'	1:AA:397:A:H5''	2.36	0.55
2:AB:93:HIS:O	2:AB:94:ARG:C	2.49	0.55
5:AE:132:PRO:HA	5:AE:135:VAL:HG12	1.87	0.55
6:AF:47:LEU:HG	6:AF:56:LYS:HA	1.89	0.55
7:AG:130:LYS:N	7:AG:134:VAL:HG21	2.21	0.55
11:AK:95:THR:HG23	11:AK:96:ILE:N	2.22	0.55
16:AP:8:ARG:C	16:AP:29:ASN:HD21	2.15	0.55
25:BA:828:U:H4'	25:BA:831:G:N1	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1417:C:C1'	25:BA:1587:G:H21	2.19	0.55
31:BG:93:GLU:O	31:BG:97:GLU:HG3	2.06	0.55
38:BN:79:LEU:HG	38:BN:113:ALA:H	1.72	0.55
40:BP:53:THR:HA	40:BP:56:LYS:HE2	1.89	0.55
1:AA:1273:C:H2'	1:AA:1274:A:O4'	2.07	0.55
1:AA:1409:C:H5''	25:BA:1915:U:O4	2.07	0.55
2:AB:18:GLN:O	2:AB:37:VAL:HG23	2.06	0.55
2:AB:59:ILE:HD12	2:AB:60:ALA:N	2.21	0.55
4:AD:101:VAL:HG13	4:AD:106:PHE:HB2	1.89	0.55
5:AE:22:LYS:HB3	5:AE:29:ILE:HG23	1.89	0.55
9:AI:113:LYS:C	9:AI:113:LYS:HD3	2.32	0.55
9:AI:117:LEU:HA	9:AI:124:PRO:CD	2.36	0.55
18:AR:41:SER:HB2	18:AR:51:GLN:HE21	1.72	0.55
20:AT:77:ASN:O	20:AT:81:GLN:HG2	2.06	0.55
21:AU:4:LYS:HD2	21:AU:4:LYS:O	2.06	0.55
25:BA:2282:G:N2	25:BA:2390:U:H3	2.05	0.55
25:BA:2623:G:OP1	25:BA:2826:A:H1'	2.07	0.55
30:BF:102:ARG:HB2	30:BF:102:ARG:NH2	2.21	0.55
36:BL:96:ARG:NH2	36:BL:98:GLU:HB2	2.21	0.55
53:B3:9:ARG:HH21	53:B3:9:ARG:CB	2.10	0.55
1:AA:302:G:N3	1:AA:556:C:H4'	2.22	0.55
7:AG:64:ALA:HA	7:AG:67:ASN:HD22	1.71	0.55
25:BA:1275:A:N6	25:BA:1296:G:H4'	2.22	0.55
48:BX:25:LYS:HD3	48:BX:43:ASP:HA	1.87	0.55
50:BZ:39:VAL:CG2	50:BZ:42:GLU:HB2	2.37	0.55
54:B4:32:LYS:HB3	54:B4:32:LYS:HZ2	1.71	0.55
1:AA:1498:U:H4'	1:AA:1519:A:H2	1.72	0.55
3:AC:113:LYS:HD3	3:AC:184:ASN:ND2	2.22	0.55
9:AI:79:ARG:HD2	9:AI:79:ARG:C	2.31	0.55
16:AP:68:SER:HB2	16:AP:71:VAL:CG2	2.37	0.55
21:AU:8:ASN:H	21:AU:11:PHE:HZ	1.55	0.55
25:BA:63:A:O2'	25:BA:64:A:H5'	2.07	0.55
25:BA:1370:C:H2'	25:BA:1371:G:O4'	2.06	0.55
25:BA:1654:A:OP1	40:BP:1:MET:HA	2.07	0.55
25:BA:2720:U:H4'	25:BA:2845:U:O2'	2.07	0.55
28:BD:43:ASN:HD21	28:BD:45:ASN:HB2	1.71	0.55
31:BG:82:TYR:HD2	31:BG:83:PRO:HD2	1.72	0.55
36:BL:45:THR:HG22	36:BL:47:HIS:H	1.72	0.55
36:BL:98:GLU:OE1	36:BL:126:ALA:HB2	2.06	0.55
1:AA:68:G:C4'	1:AA:171:A:H1'	2.37	0.55
4:AD:36:ALA:N	4:AD:37:PRO:CD	2.66	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:AL:98:ARG:HB2	12:AL:116:TYR:C	2.32	0.55
16:AP:10:GLY:HA3	16:AP:16:PHE:N	2.22	0.55
17:AQ:4:ILE:HD12	17:AQ:4:ILE:N	2.22	0.55
25:BA:701:G:C3'	25:BA:702:U:H5''	2.37	0.55
25:BA:1357:C:H2'	25:BA:1358:G:O4'	2.06	0.55
25:BA:1364:G:H5'	25:BA:1809:A:H1'	1.88	0.55
25:BA:2366:A:H2'	25:BA:2367:G:O4'	2.06	0.55
31:BG:73:VAL:H	31:BG:78:ILE:HD12	1.72	0.55
33:BI:9:VAL:CG1	33:BI:12:LEU:HD21	2.37	0.55
35:BK:33:ASN:HD22	35:BK:34:ILE:H	1.55	0.55
56:B6:58:ILE:HD12	56:B6:58:ILE:N	2.22	0.55
9:AI:49:GLN:N	9:AI:50:PRO:HD2	2.22	0.54
11:AK:125:LYS:O	11:AK:126:ARG:HG2	2.08	0.54
13:AM:89:ARG:HA	13:AM:89:ARG:NE	2.22	0.54
14:AN:4:SER:O	14:AN:8:ARG:HG3	2.07	0.54
19:AS:61:VAL:HA	19:AS:65:MET:SD	2.46	0.54
25:BA:971:G:H2'	25:BA:972:A:O4'	2.07	0.54
28:BD:140:VAL:HG13	28:BD:190:THR:C	2.32	0.54
35:BK:24:GLY:O	35:BK:27:LEU:HG	2.07	0.54
36:BL:32:LEU:O	36:BL:36:LEU:HG	2.07	0.54
46:BV:11:LEU:HD23	46:BV:34:VAL:HG12	1.89	0.54
49:BY:66:GLU:HB3	49:BY:68:LYS:NZ	2.23	0.54
1:AA:808:C:H2'	1:AA:809:G:C8	2.42	0.54
1:AA:1187:G:O2'	14:AN:100:SER:HB2	2.07	0.54
2:AB:27:LYS:HB3	2:AB:28:PRO:HD3	1.89	0.54
2:AB:145:ASN:C	2:AB:147:LEU:H	2.14	0.54
10:AJ:32:THR:HG23	10:AJ:33:GLY:N	2.19	0.54
25:BA:244:A:H2'	25:BA:245:G:O4'	2.07	0.54
25:BA:859:G:H22	25:BA:916:G:H2'	1.72	0.54
25:BA:862:G:H2'	25:BA:863:A:O4'	2.07	0.54
25:BA:1059:G:H2'	25:BA:1060:U:C5	2.42	0.54
25:BA:1443:U:H2'	25:BA:1444:G:H8	1.70	0.54
25:BA:2039:U:H2'	25:BA:2040:G:C8	2.42	0.54
28:BD:30:ALA:HB3	28:BD:31:PRO:HD3	1.89	0.54
37:BM:104:THR:HB	37:BM:106:GLU:OE1	2.07	0.54
42:BR:23:ASP:HA	42:BR:89:GLY:H	1.72	0.54
43:BS:35:PHE:CE1	43:BS:39:ILE:HD11	2.42	0.54
46:BV:36:LYS:O	46:BV:36:LYS:HD3	2.08	0.54
57:B7:19:ARG:C	57:B7:21:GLY:H	2.16	0.54
1:AA:115:G:H1'	1:AA:116:A:OP2	2.07	0.54
1:AA:352:C:H4'	1:AA:354:G:OP1	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:632:U:H3'	1:AA:633:G:H5'	1.89	0.54
1:AA:653:U:H5'	8:AH:55:LYS:NZ	2.21	0.54
1:AA:769:G:H4'	1:AA:1513:A:H4'	1.89	0.54
2:AB:129:THR:HG22	2:AB:131:LYS:H	1.72	0.54
3:AC:155:ARG:HA	3:AC:155:ARG:NE	2.22	0.54
4:AD:147:LYS:N	4:AD:147:LYS:HD3	2.22	0.54
14:AN:69:ARG:NH1	14:AN:81:ARG:HH12	2.05	0.54
25:BA:2380:C:H5'	41:BQ:17:LYS:NZ	2.22	0.54
29:BE:32:ASN:HB3	29:BE:50:VAL:HB	1.89	0.54
32:BH:140:ILE:HD12	32:BH:140:ILE:C	2.32	0.54
38:BN:82:LEU:HD23	38:BN:82:LEU:C	2.32	0.54
39:BO:28:PHE:HB2	39:BO:104:GLU:OE2	2.08	0.54
52:B2:2:LYS:H	52:B2:2:LYS:CD	2.20	0.54
1:AA:1020:G:H2'	1:AA:1021:A:H8	1.72	0.54
2:AB:58:LYS:C	2:AB:58:LYS:HD3	2.32	0.54
2:AB:103:TRP:HZ2	2:AB:153:MET:HG2	1.73	0.54
2:AB:127:LYS:HG3	2:AB:128:LEU:N	2.14	0.54
2:AB:207:ARG:HH12	2:AB:211:LEU:HD21	1.72	0.54
11:AK:28:ASN:HD22	11:AK:56:LYS:HD2	1.72	0.54
25:BA:18:U:O2'	25:BA:554:U:H5''	2.06	0.54
25:BA:563:A:H4'	43:BS:40:LYS:HZ1	1.73	0.54
28:BD:152:GLN:HA	28:BD:155:ARG:HD2	1.87	0.54
35:BK:30:GLN:NE2	35:BK:30:GLN:N	2.55	0.54
2:AB:156:LEU:HD23	2:AB:156:LEU:H	1.72	0.54
3:AC:4:VAL:HG23	14:AN:98:LYS:HE2	1.88	0.54
4:AD:82:LYS:HD3	4:AD:82:LYS:C	2.32	0.54
4:AD:182:LYS:HB3	4:AD:182:LYS:NZ	2.23	0.54
11:AK:23:HIS:HB3	11:AK:30:ILE:CG2	2.37	0.54
11:AK:113:THR:O	11:AK:115:ILE:HG12	2.07	0.54
22:AV:28:G:H2'	22:AV:29:G:H8	1.71	0.54
25:BA:2233:U:H2'	25:BA:2234:G:C8	2.41	0.54
25:BA:2636:C:H2'	25:BA:2637:U:C6	2.42	0.54
33:BI:30:LEU:HB3	33:BI:36:ALA:CB	2.36	0.54
47:BW:34:ILE:HD13	47:BW:63:ALA:HA	1.90	0.54
1:AA:167:A:C3'	1:AA:168:G:H5''	2.37	0.54
22:AV:73:A:O2'	22:AV:74:C:P	2.65	0.54
25:BA:745:G:O2'	25:BA:748:G:H1'	2.06	0.54
26:BB:82:U:H5''	52:B2:16:LEU:CD1	2.37	0.54
35:BK:68:PHE:HD1	35:BK:68:PHE:H	1.55	0.54
38:BN:126:ARG:H	38:BN:126:ARG:HD3	1.73	0.54
1:AA:972:C:O2'	10:AJ:57:VAL:HA	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:AE:15:ILE:HD12	5:AE:15:ILE:N	2.22	0.54
7:AG:4:ARG:NE	7:AG:4:ARG:HA	2.22	0.54
8:AH:13:ILE:HD11	8:AH:60:LEU:HD13	1.89	0.54
8:AH:21:LYS:HE2	8:AH:22:ALA:H	1.71	0.54
10:AJ:10:LEU:HD12	10:AJ:10:LEU:N	2.23	0.54
11:AK:22:ILE:HG22	11:AK:31:VAL:HG22	1.89	0.54
25:BA:1196:C:H2'	25:BA:1197:G:C8	2.43	0.54
25:BA:1225:G:OP1	44:BT:71:LYS:HD2	2.08	0.54
25:BA:1507:C:H2'	25:BA:1508:A:C4'	2.37	0.54
25:BA:2091:C:H4'	50:BZ:55:MET:HE1	1.89	0.54
25:BA:2345:G:N3	25:BA:2381:A:H2'	2.22	0.54
35:BK:78:LEU:O	35:BK:82:ALA:HB3	2.07	0.54
36:BL:45:THR:HB	36:BL:48:VAL:HB	1.88	0.54
40:BP:38:LEU:HB3	40:BP:39:PRO:HD3	1.89	0.54
45:BU:8:ARG:HB3	45:BU:8:ARG:NH1	2.23	0.54
46:BV:77:ARG:HG2	46:BV:77:ARG:HH11	1.72	0.54
3:AC:11:LEU:HB3	3:AC:17:TRP:NE1	2.22	0.54
9:AI:97:LEU:HG	9:AI:103:VAL:HG13	1.89	0.54
9:AI:128:LYS:N	9:AI:128:LYS:HD2	2.23	0.54
11:AK:28:ASN:HD21	11:AK:47:GLY:H	1.53	0.54
20:AT:28:ARG:O	20:AT:32:LYS:HG2	2.08	0.54
25:BA:1026:G:OP2	25:BA:1134:A:H1'	2.07	0.54
25:BA:1314:C:H42	25:BA:1338:G:H1	1.55	0.54
31:BG:66:ILE:HA	31:BG:86:CYS:HB3	1.90	0.54
37:BM:61:VAL:HB	37:BM:87:LEU:HD11	1.90	0.54
43:BS:46:TYR:HA	43:BS:49:ARG:NH2	2.22	0.54
44:BT:1:MET:CB	44:BT:43:ASN:HD21	2.21	0.54
1:AA:396:C:C2'	1:AA:397:A:H5''	2.38	0.54
2:AB:9:LEU:HD23	2:AB:10:LYS:N	2.23	0.54
2:AB:34:ARG:HE	2:AB:34:ARG:HA	1.72	0.54
2:AB:59:ILE:HD12	2:AB:59:ILE:C	2.33	0.54
11:AK:125:LYS:HD3	11:AK:125:LYS:N	2.23	0.54
19:AS:44:ILE:HG12	19:AS:62:THR:O	2.08	0.54
25:BA:2279:G:H21	25:BA:2327:A:H2	1.56	0.54
25:BA:2876:G:H5''	42:BR:2:ASN:CB	2.36	0.54
28:BD:144:GLU:HG2	28:BD:150:GLY:C	2.32	0.54
30:BF:195:GLN:O	30:BF:199:MET:HG3	2.08	0.54
35:BK:10:LEU:N	35:BK:10:LEU:HD23	2.23	0.54
2:AB:26:MET:HE2	2:AB:29:PHE:HB2	1.90	0.54
5:AE:35:LEU:HD21	5:AE:136:VAL:HG11	1.89	0.54
9:AI:105:ARG:NH1	9:AI:107:ALA:HA	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:AJ:6:ILE:HD12	10:AJ:6:ILE:O	2.07	0.54
13:AM:49:GLU:HA	13:AM:52:ILE:HD12	1.90	0.54
13:AM:78:ARG:O	13:AM:82:LEU:HG	2.07	0.54
13:AM:89:ARG:HH21	13:AM:92:ARG:HD3	1.73	0.54
25:BA:1028:A:N6	25:BA:1125:G:H2'	2.23	0.54
25:BA:1099:G:H2'	25:BA:1100:C:O4'	2.08	0.54
37:BM:41:ILE:C	37:BM:41:ILE:HD12	2.33	0.54
37:BM:113:MET:SD	37:BM:116:ILE:HD11	2.48	0.54
40:BP:47:VAL:C	40:BP:50:PRO:HD2	2.32	0.54
40:BP:79:LEU:C	40:BP:81:ASN:H	2.16	0.54
1:AA:12:U:H2'	1:AA:13:U:H5''	1.89	0.53
1:AA:423:G:C2'	1:AA:424:G:H5'	2.38	0.53
1:AA:439:U:H1'	4:AD:118:SER:O	2.08	0.53
1:AA:1242:G:H4'	1:AA:1304:G:OP1	2.08	0.53
1:AA:1486:G:H2'	1:AA:1487:G:O4'	2.08	0.53
7:AG:94:ARG:NH1	7:AG:94:ARG:HB2	2.23	0.53
10:AJ:57:VAL:HG13	10:AJ:58:ASN:CG	2.31	0.53
12:AL:41:PRO:HG2	12:AL:47:ALA:N	2.23	0.53
13:AM:85:TYR:O	13:AM:89:ARG:HG2	2.07	0.53
20:AT:46:ALA:HB1	20:AT:82:ILE:HG22	1.90	0.53
25:BA:254:G:H2'	25:BA:255:A:H5''	1.90	0.53
25:BA:563:A:H4'	43:BS:40:LYS:NZ	2.24	0.53
25:BA:703:U:H2'	25:BA:704:G:H5'	1.89	0.53
25:BA:941:A:H2'	25:BA:942:G:O4'	2.08	0.53
25:BA:2553:G:C3'	25:BA:2554:U:H5''	2.38	0.53
25:BA:2581:G:H4'	25:BA:2582:G:C8	2.43	0.53
26:BB:30:C:H2'	26:BB:31:C:O4'	2.07	0.53
29:BE:109:VAL:HG22	29:BE:203:VAL:HG22	1.90	0.53
38:BN:120:VAL:HG22	38:BN:121:THR:H	1.73	0.53
39:BO:71:LYS:HB3	39:BO:93:VAL:O	2.08	0.53
40:BP:90:ARG:NH1	40:BP:90:ARG:HB2	2.24	0.53
46:BV:56:GLU:HA	46:BV:88:LYS:HE2	1.90	0.53
48:BX:29:ILE:HD12	48:BX:31:TYR:HD2	1.73	0.53
1:AA:45:G:H5''	1:AA:307:C:O2'	2.08	0.53
1:AA:320:A:H2'	1:AA:321:A:C8	2.44	0.53
1:AA:921:U:H5''	1:AA:1082:A:H5''	1.90	0.53
4:AD:57:LYS:HD2	4:AD:57:LYS:C	2.32	0.53
8:AH:62:LEU:HD22	8:AH:62:LEU:N	2.23	0.53
9:AI:83:THR:HG21	9:AI:102:PHE:HB3	1.90	0.53
19:AS:18:VAL:O	19:AS:22:VAL:HG23	2.06	0.53
25:BA:120:U:H5''	25:BA:122:G:OP2	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:124:G:H3'	55:B5:19:ARG:NH2	2.22	0.53
25:BA:255:A:H2'	25:BA:256:A:O4'	2.08	0.53
38:BN:59:ARG:HA	56:B6:12:ARG:NH2	2.22	0.53
38:BN:126:ARG:HD3	38:BN:126:ARG:N	2.24	0.53
43:BS:53:LYS:O	43:BS:57:ARG:HB2	2.09	0.53
43:BS:71:ASN:ND2	43:BS:109:VAL:HG21	2.23	0.53
1:AA:530:G:H3'	1:AA:530:G:N3	2.23	0.53
4:AD:97:LEU:O	4:AD:101:VAL:HG23	2.08	0.53
6:AF:51:ILE:HD12	6:AF:86:ARG:NE	2.24	0.53
9:AI:21:LYS:HD2	9:AI:21:LYS:C	2.32	0.53
9:AI:60:LEU:N	9:AI:60:LEU:HD23	2.24	0.53
9:AI:93:LEU:HA	9:AI:96:GLU:OE1	2.09	0.53
12:AL:73:LEU:HD11	12:AL:103:CYS:HA	1.89	0.53
17:AQ:24:ILE:HB	17:AQ:41:THR:HB	1.90	0.53
25:BA:687:C:O4'	55:B5:4:THR:HA	2.09	0.53
25:BA:1112:G:O2'	25:BA:1113:U:H5'	2.08	0.53
28:BD:43:ASN:ND2	28:BD:45:ASN:HD22	2.04	0.53
34:BJ:5:LEU:HA	34:BJ:8:LYS:HZ3	1.72	0.53
37:BM:116:ILE:HD12	37:BM:116:ILE:C	2.32	0.53
38:BN:77:ILE:O	38:BN:111:ILE:HB	2.09	0.53
40:BP:55:ALA:HA	40:BP:80:PHE:CE1	2.43	0.53
51:B1:25:GLN:OE1	51:B1:50:VAL:HG21	2.08	0.53
1:AA:587:G:H4'	8:AH:3:GLN:CA	2.39	0.53
1:AA:1124:G:H3'	1:AA:1145:A:N1	2.24	0.53
2:AB:12:GLY:HA3	2:AB:207:ARG:NH2	2.23	0.53
4:AD:43:ARG:HA	4:AD:43:ARG:NE	2.23	0.53
4:AD:113:ALA:O	4:AD:117:VAL:HG23	2.09	0.53
4:AD:196:GLU:O	4:AD:200:VAL:HG23	2.09	0.53
9:AI:106:ASP:OD2	9:AI:108:ARG:HG3	2.09	0.53
12:AL:4:ASN:HA	17:AQ:35:LYS:HZ3	1.74	0.53
16:AP:6:LEU:CD1	16:AP:71:VAL:HG22	2.39	0.53
18:AR:29:LYS:HD2	18:AR:30:ASN:N	2.23	0.53
19:AS:30:LEU:HD23	19:AS:48:ILE:HG13	1.89	0.53
20:AT:19:HIS:O	20:AT:23:ARG:HG2	2.09	0.53
22:AV:33:U:C2'	22:AV:34:G:H5''	2.38	0.53
25:BA:480:A:H5'	47:BW:41:VAL:HG21	1.89	0.53
25:BA:744:U:C5'	25:BA:1658:C:H5''	2.35	0.53
25:BA:948:C:H2'	25:BA:949:G:C8	2.43	0.53
25:BA:1554:U:C3'	25:BA:1555:G:H5'	2.39	0.53
26:BB:55:U:H4'	31:BG:24:VAL:HG12	1.91	0.53
29:BE:104:VAL:O	29:BE:105:LYS:HB2	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BQ:68:LYS:HA	41:BQ:102:ARG:HG2	1.89	0.53
2:AB:121:GLN:H	2:AB:121:GLN:CD	2.16	0.53
5:AE:110:MET:O	5:AE:114:LEU:HD13	2.09	0.53
7:AG:99:ALA:O	7:AG:103:ILE:HG13	2.09	0.53
7:AG:149:ALA:HA	11:AK:60:PHE:HB2	1.90	0.53
9:AI:48:ARG:HD3	9:AI:48:ARG:C	2.33	0.53
17:AQ:68:LYS:O	17:AQ:69:THR:CB	2.56	0.53
17:AQ:68:LYS:O	17:AQ:69:THR:HB	2.09	0.53
22:AV:64:A:H2'	22:AV:65:G:H8	1.72	0.53
25:BA:248:G:O5'	25:BA:249:C:H5''	2.09	0.53
25:BA:302:C:H2'	25:BA:303:G:C8	2.43	0.53
25:BA:414:C:H2'	25:BA:415:A:C8	2.44	0.53
25:BA:2022:U:O2'	25:BA:2617:U:H5'	2.08	0.53
26:BB:98:G:C2'	26:BB:99:A:H5''	2.38	0.53
30:BF:86:ALA:HB3	30:BF:88:ARG:HH22	1.74	0.53
30:BF:147:LEU:HD23	30:BF:180:LEU:HD23	1.91	0.53
36:BL:29:ALA:HA	36:BL:32:LEU:HD12	1.90	0.53
36:BL:102:GLU:HB3	36:BL:119:PHE:HZ	1.73	0.53
38:BN:19:LEU:HD12	38:BN:19:LEU:O	2.09	0.53
42:BR:113:LEU:O	42:BR:113:LEU:HD12	2.08	0.53
45:BU:14:ALA:O	45:BU:18:ARG:HG3	2.07	0.53
46:BV:56:GLU:HB2	46:BV:88:LYS:HD3	1.89	0.53
1:AA:32:A:H61	1:AA:552:U:H3	1.55	0.53
1:AA:501:C:P	12:AL:113:ARG:HH21	2.32	0.53
1:AA:649:A:C3'	1:AA:650:G:H5''	2.39	0.53
1:AA:692:U:H5	11:AK:27:ASN:HD22	1.56	0.53
1:AA:1438:G:OP1	20:AT:28:ARG:HD3	2.08	0.53
1:AA:1493:A:H2	22:AV:36:A:N3	2.07	0.53
2:AB:173:LYS:HD3	2:AB:173:LYS:C	2.33	0.53
5:AE:82:HIS:NE2	8:AH:95:MET:HE2	2.24	0.53
6:AF:46:GLN:HA	6:AF:56:LYS:HG2	1.90	0.53
9:AI:11:ARG:HD3	9:AI:11:ARG:C	2.33	0.53
10:AJ:42:LEU:HD23	10:AJ:43:PRO:N	2.23	0.53
17:AQ:66:LEU:N	17:AQ:66:LEU:HD12	2.24	0.53
17:AQ:79:GLU:C	17:AQ:80:LYS:HD3	2.34	0.53
19:AS:31:ARG:HA	19:AS:49:ALA:HB3	1.91	0.53
25:BA:827:U:H2'	25:BA:2068:U:O2	2.09	0.53
25:BA:970:U:H2'	25:BA:971:G:H8	1.73	0.53
25:BA:1645:G:H4'	25:BA:1646:C:OP2	2.09	0.53
25:BA:1912:A:N1	25:BA:1919:A:C8	2.77	0.53
25:BA:2330:G:H3'	25:BA:2331:G:H5''	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:BD:264:LYS:HD3	28:BD:264:LYS:C	2.33	0.53
31:BG:46:LYS:NZ	31:BG:83:PRO:HG2	2.23	0.53
33:BI:1:MET:HE3	33:BI:23:ALA:HA	1.91	0.53
51:B1:45:GLN:HG3	51:B1:46:VAL:HG23	1.89	0.53
1:AA:302:G:O2'	1:AA:556:C:H5''	2.09	0.53
1:AA:648:A:H2'	1:AA:649:A:C8	2.43	0.53
1:AA:966:G:C1'	22:AW:34:G:H4'	2.31	0.53
1:AA:1005:A:H2'	1:AA:1006:G:O4'	2.08	0.53
4:AD:103:ARG:CZ	4:AD:110:ARG:HH22	2.21	0.53
6:AF:54:LEU:HD13	6:AF:55:HIS:N	2.23	0.53
9:AI:21:LYS:NZ	9:AI:23:GLY:HA3	2.23	0.53
9:AI:79:ARG:HD3	9:AI:102:PHE:CD1	2.44	0.53
15:AO:69:LEU:HD21	15:AO:76:ARG:HB2	1.90	0.53
16:AP:55:ASP:OD1	16:AP:56:ARG:HG2	2.09	0.53
25:BA:309:A:H2'	25:BA:310:A:H5'	1.90	0.53
25:BA:796:C:H2'	25:BA:797:G:C8	2.43	0.53
25:BA:1420:A:O2'	25:BA:1421:G:H5'	2.08	0.53
25:BA:1460:U:H3'	25:BA:1461:C:H5''	1.90	0.53
25:BA:2800:A:H3'	25:BA:2801:G:C5'	2.35	0.53
27:BC:115:ILE:HD12	27:BC:153:VAL:HG12	1.90	0.53
28:BD:224:MET:O	28:BD:233:GLY:HA2	2.09	0.53
29:BE:146:ILE:HA	29:BE:159:LYS:NZ	2.23	0.53
46:BV:4:GLU:O	46:BV:8:LEU:HG	2.09	0.53
1:AA:1227:A:OP2	13:AM:109:LYS:HE3	2.08	0.53
1:AA:1336:C:H4'	1:AA:1337:G:O4'	2.09	0.53
7:AG:86:VAL:HG22	7:AG:150:PHE:HB3	1.91	0.53
8:AH:88:LYS:HA	8:AH:91:LEU:HG	1.91	0.53
15:AO:61:GLN:O	15:AO:65:LEU:HG	2.08	0.53
25:BA:1223:G:P	44:BT:68:ARG:HH12	2.32	0.53
25:BA:2662:A:H2'	25:BA:2663:G:O4'	2.09	0.53
32:BH:94:ARG:HD2	32:BH:127:GLN:HB3	1.91	0.53
37:BM:49:ARG:HH11	37:BM:49:ARG:CB	2.15	0.53
38:BN:100:ILE:CD1	38:BN:101:ILE:HG23	2.39	0.53
45:BU:17:VAL:HG11	45:BU:103:ILE:HG12	1.89	0.53
47:BW:53:GLN:N	47:BW:54:PRO:CD	2.71	0.53
1:AA:974:A:P	14:AN:69:ARG:HH22	2.32	0.53
5:AE:131:ASN:HD22	5:AE:132:PRO:CD	2.22	0.53
7:AG:65:LEU:HG	7:AG:69:ARG:HH21	1.74	0.53
8:AH:10:LEU:HD22	8:AH:74:ILE:HG12	1.90	0.53
13:AM:13:HIS:HB2	13:AM:16:ILE:HD12	1.91	0.53
14:AN:6:LYS:HD3	14:AN:6:LYS:H	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:AR:61:ALA:HA	18:AR:66:LEU:HD12	1.91	0.53
25:BA:700:G:H2'	25:BA:701:G:H8	1.74	0.53
29:BE:33:ARG:HB3	29:BE:73:VAL:HG11	1.90	0.53
39:BO:66:ARG:HB2	39:BO:101:VAL:O	2.09	0.53
50:BZ:16:ASN:OD1	50:BZ:26:ARG:HD2	2.09	0.53
52:B2:2:LYS:HG2	52:B2:39:ASP:HB3	1.90	0.53
1:AA:162:A:H2'	1:AA:163:C:O4'	2.09	0.53
11:AK:14:GLN:HE22	11:AK:77:GLY:HA3	1.74	0.53
11:AK:30:ILE:HD13	11:AK:45:THR:CG2	2.38	0.53
16:AP:60:TRP:HA	16:AP:63:GLN:HB3	1.89	0.53
20:AT:75:LYS:HB3	20:AT:75:LYS:HZ3	1.74	0.53
22:AV:55:U:H2'	22:AV:56:C:H3'	1.90	0.53
25:BA:302:C:H2'	25:BA:303:G:H8	1.74	0.53
25:BA:575:A:O2'	25:BA:576:U:H5'	2.09	0.53
25:BA:1276:A:OP2	25:BA:1645:G:H2'	2.08	0.53
25:BA:1990:C:H2'	25:BA:1991:U:C6	2.44	0.53
25:BA:1995:U:H2'	25:BA:1996:C:C5	2.43	0.53
25:BA:2329:U:H2'	25:BA:2330:G:C8	2.44	0.53
28:BD:173:LEU:HD22	28:BD:173:LEU:N	2.24	0.53
32:BH:5:LYS:O	32:BH:7:PRO:HD3	2.09	0.53
33:BI:24:GLY:O	33:BI:28:ASN:HB2	2.09	0.53
48:BX:29:ILE:HD13	48:BX:29:ILE:C	2.34	0.53
4:AD:27:ILE:O	4:AD:27:ILE:HG22	2.09	0.52
7:AG:3:ARG:HG3	7:AG:4:ARG:N	2.25	0.52
10:AJ:19:ASP:HB3	10:AJ:72:ARG:NH2	2.25	0.52
11:AK:80:ASN:HB3	11:AK:105:ARG:HB3	1.91	0.52
20:AT:53:MET:HE3	20:AT:57:VAL:HG21	1.90	0.52
25:BA:1319:C:O2'	25:BA:1320:C:H5'	2.08	0.52
25:BA:1494:A:C2	25:BA:1579:A:H1'	2.45	0.52
25:BA:1796:U:H2'	25:BA:1797:G:H8	1.74	0.52
25:BA:1799:G:C5	28:BD:175:LEU:HD13	2.44	0.52
32:BH:23:ILE:HG13	32:BH:71:LEU:HD21	1.90	0.52
33:BI:50:ARG:NE	33:BI:50:ARG:N	2.57	0.52
38:BN:58:TYR:CD1	38:BN:59:ARG:HG3	2.44	0.52
44:BT:54:VAL:HG12	44:BT:55:ASP:N	2.24	0.52
1:AA:817:C:O4'	1:AA:819:A:H4'	2.09	0.52
2:AB:139:GLU:O	2:AB:143:LEU:HG	2.08	0.52
2:AB:153:MET:HE2	2:AB:155:GLY:O	2.09	0.52
2:AB:163:ILE:HG12	2:AB:164:ASP:N	2.25	0.52
4:AD:102:TYR:CE1	4:AD:109:THR:HA	2.45	0.52
9:AI:51:LEU:HA	9:AI:54:VAL:HG23	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:AJ:59:LYS:H	10:AJ:59:LYS:CD	2.21	0.52
13:AM:14:ALA:O	13:AM:18:LEU:HD23	2.10	0.52
15:AO:56:LEU:HD23	15:AO:56:LEU:O	2.09	0.52
19:AS:52:ASN:HB2	19:AS:76:THR:HA	1.91	0.52
22:AV:63:G:H2'	22:AV:64:A:C8	2.44	0.52
25:BA:507:A:H5'	25:BA:509:C:O4'	2.09	0.52
25:BA:1460:U:H3'	25:BA:1461:C:C5'	2.39	0.52
30:BF:6:LYS:HE2	30:BF:141:MET:HB2	1.90	0.52
32:BH:66:THR:O	32:BH:70:LEU:HG	2.09	0.52
34:BJ:13:ALA:O	34:BJ:17:GLU:HG3	2.09	0.52
38:BN:76:GLU:HG3	38:BN:111:ILE:HG12	1.90	0.52
43:BS:34:ALA:O	43:BS:38:VAL:HG23	2.09	0.52
56:B6:13:PHE:HB2	56:B6:61:LEU:HD11	1.91	0.52
2:AB:56:LEU:C	2:AB:56:LEU:HD13	2.34	0.52
2:AB:95:TRP:CZ3	2:AB:170:ILE:HG22	2.45	0.52
5:AE:75:LEU:N	5:AE:75:LEU:HD12	2.25	0.52
11:AK:46:ALA:HB1	11:AK:61:ALA:HB1	1.90	0.52
12:AL:29:LYS:NZ	12:AL:58:ASN:HB3	2.25	0.52
13:AM:14:ALA:C	13:AM:16:ILE:H	2.17	0.52
25:BA:648:G:H2'	25:BA:649:G:H8	1.74	0.52
25:BA:2156:G:H2'	25:BA:2157:G:O4'	2.09	0.52
27:BC:30:LEU:C	27:BC:30:LEU:HD23	2.34	0.52
28:BD:140:VAL:HG13	28:BD:190:THR:O	2.09	0.52
31:BG:28:PRO:HG2	31:BG:164:GLU:HB3	1.90	0.52
46:BV:67:VAL:O	46:BV:68:LYS:HD3	2.10	0.52
51:B1:46:VAL:O	51:B1:50:VAL:HG23	2.09	0.52
1:AA:8:A:H61	4:AD:201:GLU:HB3	1.73	0.52
1:AA:939:G:H5'	7:AG:101:ARG:HH12	1.74	0.52
1:AA:1458:G:H5'	20:AT:26:MET:HB3	1.90	0.52
3:AC:106:ARG:HD3	3:AC:106:ARG:N	2.25	0.52
7:AG:119:LEU:HD23	7:AG:123:LEU:HD23	1.91	0.52
11:AK:55:ARG:HA	11:AK:55:ARG:NE	2.24	0.52
11:AK:86:LYS:HG3	11:AK:114:PRO:HD3	1.92	0.52
25:BA:784:G:OP1	25:BA:2588:G:H5''	2.09	0.52
25:BA:1314:C:N4	25:BA:1338:G:H1	2.06	0.52
26:BB:51:G:O2'	26:BB:52:A:H5'	2.09	0.52
28:BD:226:PRO:HD3	28:BD:233:GLY:N	2.24	0.52
29:BE:3:GLY:C	29:BE:4:LEU:HD22	2.34	0.52
29:BE:151:THR:HB	29:BE:152:PRO:CD	2.32	0.52
29:BE:159:LYS:HD3	29:BE:159:LYS:C	2.34	0.52
31:BG:48:LEU:CD1	31:BG:149:ARG:HH22	2.22	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:BH:68:ARG:HD3	32:BH:68:ARG:C	2.34	0.52
37:BM:1:MET:SD	37:BM:67:LYS:HE3	2.49	0.52
43:BS:35:PHE:HE1	43:BS:39:ILE:HD11	1.75	0.52
43:BS:108:LEU:HD23	44:BT:48:LYS:NZ	2.24	0.52
1:AA:194:C:O2'	1:AA:195:A:H5'	2.09	0.52
1:AA:651:C:O2'	1:AA:652:U:H5'	2.09	0.52
9:AI:45:MET:N	9:AI:45:MET:SD	2.82	0.52
9:AI:57:VAL:HG12	9:AI:58:GLU:HG2	1.91	0.52
14:AN:53:ARG:HG3	14:AN:59:ARG:NE	2.24	0.52
18:AR:29:LYS:HD2	18:AR:29:LYS:C	2.35	0.52
25:BA:1132:U:H2'	25:BA:1133:A:C8	2.45	0.52
28:BD:264:LYS:HD3	28:BD:264:LYS:O	2.09	0.52
31:BG:101:ARG:HA	31:BG:104:THR:HG22	1.91	0.52
34:BJ:45:GLY:HA2	34:BJ:95:LEU:HD13	1.90	0.52
45:BU:23:LEU:HD21	53:B3:21:LEU:HB2	1.91	0.52
1:AA:1369:C:H2'	1:AA:1370:G:C8	2.44	0.52
2:AB:186:VAL:HB	2:AB:190:SER:HB2	1.92	0.52
3:AC:10:ARG:O	3:AC:15:LYS:HB3	2.09	0.52
7:AG:58:LEU:HD23	7:AG:58:LEU:N	2.25	0.52
7:AG:68:VAL:HG21	7:AG:103:ILE:HD11	1.91	0.52
9:AI:33:SER:HB3	9:AI:36:GLN:HG3	1.91	0.52
11:AK:84:MET:HE2	11:AK:112:VAL:HG11	1.89	0.52
17:AQ:80:LYS:HD3	17:AQ:80:LYS:N	2.24	0.52
25:BA:451:U:H4'	30:BF:47:LYS:NZ	2.24	0.52
25:BA:1665:A:H5''	37:BM:66:LYS:HG3	1.92	0.52
25:BA:2350:C:H2'	25:BA:2351:G:O4'	2.09	0.52
28:BD:75:ALA:HA	28:BD:95:TYR:HA	1.91	0.52
31:BG:32:LYS:CD	31:BG:91:ARG:HH11	2.18	0.52
40:BP:45:ARG:HA	40:BP:48:VAL:HG12	1.92	0.52
1:AA:570:G:O2'	1:AA:819:A:H2'	2.09	0.52
1:AA:606:G:H5''	1:AA:607:A:H5'	1.91	0.52
2:AB:9:LEU:HD23	2:AB:9:LEU:C	2.35	0.52
2:AB:96:LEU:HD12	2:AB:147:LEU:HD21	1.91	0.52
6:AF:39:LEU:HD23	6:AF:62:MET:SD	2.49	0.52
8:AH:74:ILE:HD13	8:AH:128:VAL:HG22	1.92	0.52
8:AH:100:ILE:C	8:AH:100:ILE:HD12	2.35	0.52
9:AI:116:GLY:C	9:AI:117:LEU:HD12	2.34	0.52
10:AJ:89:ARG:HA	10:AJ:89:ARG:HH11	1.75	0.52
14:AN:63:ARG:N	14:AN:63:ARG:HD2	2.24	0.52
19:AS:64:GLU:OE2	19:AS:65:MET:HG3	2.09	0.52
25:BA:2024:G:H4'	29:BE:154:LYS:NZ	2.23	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2039:U:H2'	25:BA:2040:G:H8	1.75	0.52
25:BA:2245:U:H5''	25:BA:2246:G:H5'	1.92	0.52
29:BE:24:VAL:HG12	29:BE:178:VAL:HG21	1.90	0.52
31:BG:79:ARG:HG2	31:BG:80:GLN:N	2.24	0.52
33:BI:40:THR:C	33:BI:42:LYS:H	2.17	0.52
52:B2:50:VAL:HA	52:B2:52:PHE:CE1	2.45	0.52
1:AA:880:C:H2'	1:AA:881:G:H8	1.74	0.52
1:AA:1106:G:H5''	3:AC:171:ARG:HH11	1.75	0.52
2:AB:25:LYS:O	2:AB:192:PRO:HG3	2.10	0.52
2:AB:37:VAL:O	2:AB:37:VAL:HG13	2.10	0.52
2:AB:93:HIS:CG	2:AB:145:ASN:HB2	2.44	0.52
3:AC:13:ILE:HD13	3:AC:13:ILE:N	2.20	0.52
3:AC:24:ASN:HB2	3:AC:26:LYS:HD3	1.91	0.52
3:AC:166:TRP:HE3	3:AC:166:TRP:N	2.08	0.52
4:AD:47:LEU:HD12	4:AD:51:GLY:CA	2.39	0.52
9:AI:114:LYS:H	9:AI:120:ALA:HA	1.75	0.52
16:AP:52:LEU:HD11	16:AP:57:ILE:HD11	1.92	0.52
25:BA:940:G:C2'	25:BA:941:A:H5''	2.39	0.52
25:BA:1107:G:H5''	34:BJ:56:ARG:HA	1.90	0.52
25:BA:1706:C:C2	25:BA:1757:A:H5'	2.45	0.52
25:BA:2054:A:H2'	53:B3:4:GLN:OE1	2.09	0.52
25:BA:2768:U:H4'	36:BL:95:ARG:NH2	2.25	0.52
25:BA:2810:A:H2'	25:BA:2811:G:O4'	2.10	0.52
39:BO:78:LEU:HD12	39:BO:78:LEU:N	2.24	0.52
44:BT:66:HIS:ND1	44:BT:94:THR:HG22	2.24	0.52
1:AA:763:G:H2'	1:AA:764:C:C6	2.45	0.52
1:AA:879:C:H2'	1:AA:880:C:C6	2.45	0.52
1:AA:1210:C:H2'	1:AA:1211:U:O4'	2.08	0.52
2:AB:9:LEU:HD21	2:AB:11:ALA:O	2.10	0.52
2:AB:96:LEU:HB2	2:AB:99:MET:HE2	1.92	0.52
6:AF:47:LEU:HD13	6:AF:51:ILE:HG22	1.90	0.52
11:AK:33:ILE:HB	11:AK:73:VAL:HG11	1.91	0.52
11:AK:58:THR:HB	11:AK:59:PRO:HD2	1.92	0.52
13:AM:21:ILE:HD12	13:AM:21:ILE:N	2.24	0.52
14:AN:98:LYS:HB2	14:AN:98:LYS:HZ2	1.74	0.52
20:AT:17:ARG:HD2	20:AT:17:ARG:C	2.35	0.52
20:AT:48:LYS:HD3	20:AT:48:LYS:C	2.35	0.52
22:AV:42:C:H3'	22:AV:43:C:H5''	1.91	0.52
22:AW:36:A:H3'	22:AW:37:A:H5''	1.91	0.52
25:BA:1069:A:H4'	25:BA:1070:A:C8	2.45	0.52
25:BA:1186:G:H2'	25:BA:1187:G:O4'	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2267:A:H3'	25:BA:2267:A:N3	2.24	0.52
25:BA:2419:U:H5''	54:B4:21:THR:HB	1.92	0.52
27:BC:15:VAL:HG22	27:BC:29:LEU:HD21	1.91	0.52
27:BC:104:ILE:HD12	27:BC:104:ILE:N	2.25	0.52
28:BD:76:VAL:HA	28:BD:113:ASP:O	2.09	0.52
32:BH:21:GLN:NE2	32:BH:54:ARG:HH22	2.08	0.52
37:BM:77:ILE:H	37:BM:77:ILE:CD1	2.23	0.52
40:BP:22:ARG:HG3	40:BP:70:THR:N	2.25	0.52
49:BY:19:VAL:HG13	49:BY:34:VAL:HG22	1.92	0.52
57:B7:2:LYS:HE2	57:B7:4:ARG:NE	2.18	0.52
1:AA:790:A:OP1	22:AW:39:U:H5'	2.10	0.52
2:AB:65:LYS:HE3	2:AB:158:ASP:OD2	2.08	0.52
4:AD:162:GLU:OE2	4:AD:163:GLN:HG3	2.10	0.52
4:AD:176:LYS:HD3	4:AD:176:LYS:N	2.25	0.52
5:AE:25:LYS:C	5:AE:25:LYS:HD3	2.34	0.52
6:AF:40:GLU:HB2	6:AF:61:LEU:HB3	1.92	0.52
8:AH:8:ASP:O	8:AH:12:ARG:HB2	2.09	0.52
9:AI:74:GLN:O	9:AI:78:ILE:HG13	2.10	0.52
11:AK:106:ILE:HD11	11:AK:109:ILE:HG13	1.92	0.52
12:AL:23:LEU:HG	12:AL:24:GLU:N	2.25	0.52
12:AL:113:ARG:HH11	12:AL:113:ARG:HG3	1.74	0.52
15:AO:32:THR:OG1	15:AO:84:LEU:HD21	2.09	0.52
20:AT:82:ILE:C	20:AT:82:ILE:HD12	2.34	0.52
25:BA:937:C:H2'	25:BA:938:G:C8	2.45	0.52
25:BA:987:C:H2'	25:BA:988:A:O4'	2.10	0.52
25:BA:1355:G:H2'	25:BA:1356:G:H8	1.74	0.52
25:BA:1912:A:N6	25:BA:1918:A:C1'	2.72	0.52
25:BA:2812:G:H2'	25:BA:2813:A:O4'	2.09	0.52
38:BN:62:PRO:HB2	56:B6:29:ARG:NH2	2.25	0.52
38:BN:63:LYS:HA	56:B6:12:ARG:HG2	1.91	0.52
38:BN:111:ILE:N	38:BN:111:ILE:HD12	2.25	0.52
45:BU:5:ALA:HB3	45:BU:54:ALA:HB2	1.92	0.52
45:BU:51:LEU:O	45:BU:55:ILE:HG13	2.10	0.52
48:BX:61:LEU:HD22	48:BX:61:LEU:N	2.24	0.52
54:B4:10:LEU:HB3	54:B4:48:TYR:HB3	1.92	0.52
1:AA:202:G:H2'	1:AA:203:G:H8	1.75	0.51
1:AA:446:G:H2'	1:AA:447:G:O4'	2.10	0.51
1:AA:758:C:H4'	1:AA:880:C:H4'	1.92	0.51
1:AA:1009:U:H3	1:AA:1020:G:H1	1.57	0.51
1:AA:1233:G:OP1	9:AI:124:PRO:HB3	2.10	0.51
1:AA:1376:U:H2'	1:AA:1377:A:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:223:GLY:H	2:AB:224:ARG:NH2	2.07	0.51
4:AD:57:LYS:O	4:AD:61:ARG:HG3	2.10	0.51
4:AD:59:LYS:HD2	4:AD:59:LYS:C	2.35	0.51
7:AG:29:LEU:HA	7:AG:104:VAL:HG11	1.91	0.51
8:AH:82:LEU:HD12	12:AL:3:VAL:HG11	1.92	0.51
10:AJ:17:LEU:HD23	10:AJ:17:LEU:O	2.10	0.51
18:AR:52:ARG:HH11	18:AR:52:ARG:HG3	1.75	0.51
25:BA:2289:G:O3'	25:BA:2384:U:H4'	2.10	0.51
25:BA:2321:U:H5'	25:BA:2322:A:OP2	2.10	0.51
33:BI:33:GLN:HE21	33:BI:35:LYS:HZ3	1.57	0.51
40:BP:75:ILE:HD12	40:BP:75:ILE:N	2.24	0.51
1:AA:993:G:N3	1:AA:993:G:H2'	2.26	0.51
1:AA:1481:U:H2'	1:AA:1482:G:C8	2.46	0.51
3:AC:5:HIS:HB2	14:AN:89:MET:HE3	1.92	0.51
3:AC:118:SER:O	3:AC:122:GLN:HG3	2.10	0.51
6:AF:24:ARG:HD3	6:AF:24:ARG:H	1.75	0.51
10:AJ:40:ILE:N	10:AJ:40:ILE:HD12	2.25	0.51
11:AK:22:ILE:C	11:AK:22:ILE:HD12	2.34	0.51
11:AK:22:ILE:HD12	11:AK:22:ILE:O	2.09	0.51
12:AL:49:ARG:C	12:AL:50:LYS:HD2	2.35	0.51
12:AL:120:ARG:HD2	12:AL:120:ARG:C	2.35	0.51
14:AN:33:VAL:C	14:AN:34:ASN:HD22	2.18	0.51
15:AO:35:ILE:O	15:AO:39:GLN:HB2	2.10	0.51
17:AQ:30:HIS:CE1	17:AQ:32:ILE:HB	2.45	0.51
22:AV:27:G:H2'	22:AV:28:G:C8	2.46	0.51
22:AW:48:C:H2'	22:AW:59:U:H4'	1.92	0.51
25:BA:72:U:C6	51:B1:54:LYS:HG2	2.46	0.51
25:BA:1506:U:H2'	25:BA:1507:C:C6	2.45	0.51
25:BA:1810:A:H2'	25:BA:1811:G:O4'	2.10	0.51
25:BA:2343:U:O2'	25:BA:2344:U:H5'	2.09	0.51
25:BA:2847:U:C2'	25:BA:2848:G:H5'	2.41	0.51
30:BF:25:GLU:OE1	38:BN:6:LEU:HA	2.10	0.51
30:BF:130:LYS:HB2	30:BF:133:LEU:HG	1.92	0.51
35:BK:96:LYS:CE	35:BK:138:VAL:HG22	2.40	0.51
1:AA:1147:C:H2'	1:AA:1148:U:C6	2.45	0.51
2:AB:91:VAL:HG11	2:AB:95:TRP:HD1	1.75	0.51
2:AB:131:LYS:HA	2:AB:135:MET:HE2	1.91	0.51
4:AD:86:GLY:HA3	4:AD:196:GLU:HB3	1.91	0.51
9:AI:53:LEU:HD12	9:AI:53:LEU:N	2.25	0.51
10:AJ:10:LEU:HG	10:AJ:98:VAL:HG12	1.92	0.51
25:BA:36:G:H4'	25:BA:451:U:C2	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:64:A:OP1	46:BV:77:ARG:HA	2.10	0.51
25:BA:1258:U:H4'	30:BF:79:ARG:HD2	1.92	0.51
25:BA:2016:U:H1'	53:B3:2:VAL:HG21	1.92	0.51
25:BA:2019:A:H62	53:B3:5:ASN:HD21	1.57	0.51
28:BD:74:PRO:HB2	28:BD:96:LYS:HD3	1.91	0.51
31:BG:109:ARG:HH22	31:BG:138:PRO:HB3	1.75	0.51
32:BH:26:LYS:HB3	32:BH:31:GLU:HG3	1.92	0.51
35:BK:105:LEU:HA	35:BK:108:ILE:HD12	1.91	0.51
36:BL:31:GLU:O	36:BL:35:ARG:HG3	2.10	0.51
41:BQ:29:HIS:CD2	41:BQ:30:ARG:H	2.28	0.51
1:AA:730:G:H21	1:AA:765:G:H4'	1.76	0.51
1:AA:921:U:H5''	1:AA:1082:A:C5'	2.40	0.51
5:AE:114:LEU:HD23	5:AE:122:VAL:HG21	1.93	0.51
7:AG:110:ARG:HG2	7:AG:111:GLY:N	2.24	0.51
8:AH:76:ARG:HA	8:AH:126:CYS:CB	2.41	0.51
11:AK:95:THR:HG23	11:AK:96:ILE:H	1.75	0.51
18:AR:49:LYS:O	18:AR:53:GLN:HG3	2.11	0.51
22:AV:48:C:H2'	22:AV:48:C:P	2.51	0.51
25:BA:321:U:H1'	30:BF:162:ARG:NH1	2.25	0.51
25:BA:740:C:H5'	25:BA:1784:A:H2'	1.92	0.51
25:BA:1434:A:H2'	25:BA:1435:G:C8	2.45	0.51
25:BA:1928:A:C3'	25:BA:1929:G:H5''	2.40	0.51
25:BA:2070:A:H2'	25:BA:2071:A:O4'	2.10	0.51
25:BA:2282:G:C4'	25:BA:2283:C:H5''	2.41	0.51
25:BA:2705:A:H2'	25:BA:2706:A:O4'	2.11	0.51
27:BC:137:MET:HE3	27:BC:138:PRO:CD	2.38	0.51
27:BC:193:LEU:HD13	27:BC:226:GLN:HG3	1.92	0.51
28:BD:259:ASN:C	28:BD:261:ARG:H	2.19	0.51
29:BE:52:THR:O	29:BE:77:ARG:HG2	2.11	0.51
36:BL:25:LEU:HD22	36:BL:89:PHE:HE2	1.74	0.51
46:BV:4:GLU:OE1	51:B1:18:LEU:HD11	2.10	0.51
1:AA:1014:A:C2	1:AA:1219:A:H1'	2.45	0.51
3:AC:52:SER:HB2	3:AC:113:LYS:HB3	1.93	0.51
3:AC:133:MET:O	3:AC:137:VAL:HG23	2.11	0.51
4:AD:94:GLU:HG2	4:AD:185:PRO:HG2	1.92	0.51
6:AF:91:ARG:CG	6:AF:92:THR:H	2.20	0.51
7:AG:68:VAL:HG23	7:AG:99:ALA:HB1	1.93	0.51
8:AH:25:THR:HB	8:AH:57:GLU:OE2	2.09	0.51
10:AJ:88:MET:C	10:AJ:90:LEU:H	2.18	0.51
11:AK:127:ARG:HD3	11:AK:127:ARG:N	2.25	0.51
12:AL:41:PRO:CG	12:AL:47:ALA:H	2.21	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:AU:46:ARG:HA	21:AU:46:ARG:NE	2.26	0.51
25:BA:158:U:H2'	25:BA:159:G:O4'	2.11	0.51
25:BA:1179:G:N7	25:BA:1180:U:H1'	2.25	0.51
26:BB:65:U:C2'	26:BB:66:A:H5'	2.41	0.51
28:BD:115:ILE:HD12	28:BD:115:ILE:C	2.35	0.51
30:BF:88:ARG:HA	30:BF:88:ARG:NE	2.26	0.51
35:BK:101:SER:HA	35:BK:140:GLU:HB2	1.92	0.51
41:BQ:56:LYS:O	41:BQ:60:GLU:HG3	2.09	0.51
42:BR:87:ARG:HH12	42:BR:89:GLY:HA2	1.76	0.51
45:BU:25:ARG:NH1	45:BU:25:ARG:HB2	2.26	0.51
45:BU:86:MET:HE3	45:BU:87:PRO:HD2	1.92	0.51
1:AA:7:A:H5''	5:AE:105:ILE:HD12	1.92	0.51
1:AA:1049:U:H5'	1:AA:1201:A:OP2	2.10	0.51
1:AA:1317:C:H2'	1:AA:1318:A:H5'	1.92	0.51
1:AA:1332:A:H2'	1:AA:1333:A:O4'	2.11	0.51
1:AA:1492:A:H3'	24:AY:6:5OH:HNQ	1.74	0.51
2:AB:143:LEU:O	2:AB:147:LEU:HB2	2.10	0.51
3:AC:149:LYS:HG3	3:AC:200:TRP:HE3	1.76	0.51
4:AD:54:LEU:O	4:AD:54:LEU:HD23	2.11	0.51
4:AD:122:ILE:O	4:AD:128:VAL:HG23	2.11	0.51
7:AG:49:LEU:C	7:AG:49:LEU:HD13	2.36	0.51
22:AW:76:A:H4'	25:BA:2395:C:H1'	1.92	0.51
25:BA:402:A:H2'	25:BA:403:U:H5'	1.93	0.51
25:BA:672:C:H5	38:BN:42:SER:HB2	1.74	0.51
25:BA:948:C:H2'	25:BA:949:G:H8	1.76	0.51
25:BA:1858:A:H1'	25:BA:1885:A:C2	2.45	0.51
26:BB:82:U:H5''	52:B2:16:LEU:HD12	1.91	0.51
38:BN:78:ARG:NH2	38:BN:78:ARG:HB3	2.26	0.51
39:BO:23:GLY:O	39:BO:101:VAL:HG23	2.11	0.51
41:BQ:34:HIS:HA	41:BQ:65:THR:O	2.11	0.51
57:B7:18:LYS:HE2	57:B7:21:GLY:HA2	1.92	0.51
3:AC:58:ARG:HH12	3:AC:63:ILE:HD12	1.75	0.51
4:AD:101:VAL:HB	4:AD:113:ALA:HB1	1.92	0.51
5:AE:121:ASN:HD22	5:AE:121:ASN:H	1.59	0.51
10:AJ:37:ARG:NE	10:AJ:37:ARG:HA	2.25	0.51
16:AP:78:VAL:O	16:AP:78:VAL:HG22	2.10	0.51
25:BA:544:C:H2'	25:BA:545:U:O4'	2.10	0.51
25:BA:549:G:H5''	25:BA:550:C:C6	2.46	0.51
25:BA:742:A:H2'	25:BA:743:A:C8	2.46	0.51
25:BA:1094:U:H2'	25:BA:1096:A:OP2	2.11	0.51
25:BA:2010:G:OP1	45:BU:41:LYS:HA	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2554:U:H2'	25:BA:2555:U:C6	2.46	0.51
27:BC:74:ARG:HH11	27:BC:74:ARG:CB	2.23	0.51
31:BG:12:VAL:O	31:BG:16:MET:HG2	2.10	0.51
34:BJ:23:LEU:HD11	34:BJ:114:GLU:HG2	1.93	0.51
35:BK:85:ILE:HD12	35:BK:85:ILE:O	2.10	0.51
1:AA:1222:G:H5''	19:AS:77:ARG:HG2	1.93	0.51
1:AA:1316:G:H2'	1:AA:1318:A:OP2	2.10	0.51
1:AA:1371:G:O3'	9:AI:70:GLY:HA3	2.09	0.51
3:AC:168:ARG:HD2	3:AC:168:ARG:C	2.36	0.51
5:AE:118:GLY:O	5:AE:119:VAL:C	2.54	0.51
6:AF:54:LEU:HD13	6:AF:54:LEU:C	2.36	0.51
10:AJ:41:PRO:HG2	10:AJ:42:LEU:H	1.76	0.51
13:AM:14:ALA:HB3	13:AM:33:LEU:HD21	1.92	0.51
25:BA:919:U:O2'	26:BB:81:G:H4'	2.11	0.51
25:BA:1993:U:H4'	29:BE:133:THR:CG2	2.38	0.51
26:BB:11:C:C2'	26:BB:12:C:H5'	2.41	0.51
28:BD:29:PHE:CE2	28:BD:31:PRO:HB2	2.46	0.51
28:BD:104:LEU:HD12	28:BD:104:LEU:N	2.26	0.51
31:BG:107:VAL:HG13	31:BG:110:ILE:HD12	1.91	0.51
32:BH:15:ASP:HB2	32:BH:26:LYS:HG3	1.92	0.51
32:BH:70:LEU:O	32:BH:74:MET:HG3	2.11	0.51
34:BJ:55:VAL:HG13	34:BJ:59:LEU:HD13	1.93	0.51
36:BL:98:GLU:OE1	36:BL:98:GLU:N	2.43	0.51
42:BR:82:SER:C	42:BR:83:ILE:HD12	2.36	0.51
44:BT:39:LEU:N	44:BT:39:LEU:HD12	2.26	0.51
53:B3:27:LEU:N	53:B3:27:LEU:HD12	2.26	0.51
1:AA:1060:U:H5	3:AC:1:GLY:HA3	1.76	0.51
6:AF:7:VAL:HG13	6:AF:7:VAL:O	2.11	0.51
7:AG:29:LEU:HD23	7:AG:29:LEU:C	2.36	0.51
14:AN:89:MET:C	14:AN:91:GLY:H	2.19	0.51
19:AS:48:ILE:HG21	19:AS:70:LEU:HD11	1.92	0.51
21:AU:52:VAL:HG13	21:AU:53:LYS:N	2.25	0.51
25:BA:692:C:H5''	28:BD:38:LYS:HD2	1.92	0.51
25:BA:1289:C:O2'	25:BA:1330:C:H4'	2.10	0.51
25:BA:1344:U:H1'	25:BA:1384:A:H2'	1.92	0.51
25:BA:1428:C:O2'	25:BA:1429:G:H5'	2.11	0.51
25:BA:1546:G:H5''	25:BA:1547:C:C5'	2.41	0.51
25:BA:1834:U:H4'	25:BA:1969:A:C5	2.46	0.51
30:BF:12:LEU:HD23	30:BF:13:THR:N	2.26	0.51
33:BI:47:PHE:HA	33:BI:50:ARG:HD2	1.93	0.51
37:BM:25:LEU:HD12	37:BM:38:ILE:HG22	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:BT:64:VAL:HG22	44:BT:95:ASP:O	2.10	0.51
56:B6:56:LEU:HD12	56:B6:56:LEU:N	2.26	0.51
1:AA:757:U:H2'	1:AA:758:C:O4'	2.11	0.51
4:AD:118:SER:C	4:AD:120:LYS:H	2.19	0.51
4:AD:196:GLU:HA	4:AD:199:ILE:HG12	1.93	0.51
7:AG:39:GLU:O	7:AG:42:VAL:HG22	2.11	0.51
7:AG:145:GLU:HA	7:AG:148:LYS:HE2	1.92	0.51
9:AI:29:ILE:HD13	9:AI:34:LEU:HD12	1.93	0.51
10:AJ:87:LEU:O	10:AJ:87:LEU:HD13	2.11	0.51
14:AN:19:TYR:CD2	14:AN:51:LEU:HD22	2.46	0.51
16:AP:23:ASP:OD2	16:AP:25:ARG:HB2	2.11	0.51
25:BA:102:U:H3	51:B1:1:MET:N	2.09	0.51
25:BA:327:G:H2'	25:BA:328:U:O4'	2.11	0.51
25:BA:1001:A:H2'	25:BA:1002:G:O4'	2.11	0.51
25:BA:1053:C:H2'	25:BA:1054:A:H5''	1.92	0.51
26:BB:95:U:H2'	26:BB:96:G:C8	2.46	0.51
28:BD:198:GLU:OE1	28:BD:198:GLU:N	2.44	0.51
30:BF:193:VAL:O	30:BF:197:GLU:HB2	2.11	0.51
34:BJ:120:ALA:O	34:BJ:123:ILE:HG12	2.11	0.51
35:BK:14:ALA:HB3	35:BK:51:GLY:H	1.75	0.51
41:BQ:106:LEU:HD23	41:BQ:106:LEU:C	2.36	0.51
42:BR:48:ALA:HB2	42:BR:97:TYR:HE2	1.75	0.51
1:AA:529:G:H1	12:AL:47:ALA:HB2	1.76	0.50
1:AA:952:U:H5'	1:AA:972:C:N4	2.25	0.50
1:AA:1024:G:H2'	1:AA:1025:U:H5'	1.93	0.50
1:AA:1087:G:N2	1:AA:1099:G:H1'	2.26	0.50
4:AD:2:ARG:HE	4:AD:114:ARG:HH11	1.56	0.50
4:AD:55:ARG:HA	4:AD:55:ARG:NE	2.26	0.50
18:AR:33:THR:HG22	18:AR:37:LYS:O	2.12	0.50
25:BA:773:U:H5'	28:BD:46:GLY:HA3	1.92	0.50
25:BA:1776:G:N2	25:BA:1789:A:H1'	2.26	0.50
25:BA:2350:C:H5	56:B6:41:ARG:NE	2.09	0.50
25:BA:2591:C:OP1	28:BD:237:ARG:HD2	2.11	0.50
30:BF:108:ILE:O	30:BF:112:LEU:HG	2.11	0.50
31:BG:124:ARG:HA	31:BG:124:ARG:NE	2.24	0.50
37:BM:8:LEU:HD12	37:BM:8:LEU:N	2.27	0.50
1:AA:587:G:H1'	1:AA:755:G:N2	2.26	0.50
1:AA:714:G:N2	1:AA:777:A:H1'	2.25	0.50
4:AD:57:LYS:HG2	4:AD:202:LEU:HD23	1.93	0.50
20:AT:5:SER:O	20:AT:7:LYS:N	2.44	0.50
22:AW:48:C:P	22:AW:59:U:H5'	2.51	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1196:C:H2'	25:BA:1197:G:H8	1.76	0.50
25:BA:1474:U:C2'	25:BA:1475:G:H5'	2.38	0.50
25:BA:1796:U:H2'	25:BA:1797:G:C8	2.46	0.50
25:BA:2774:C:H2'	25:BA:2775:G:O4'	2.11	0.50
42:BR:29:VAL:HG13	42:BR:79:VAL:HG12	1.91	0.50
51:B1:5:GLU:OE1	51:B1:53:VAL:HG22	2.11	0.50
56:B6:44:ARG:HH11	56:B6:44:ARG:HG3	1.76	0.50
1:AA:335:C:H2'	1:AA:336:A:H8	1.77	0.50
1:AA:501:C:H2'	1:AA:502:A:C8	2.45	0.50
2:AB:65:LYS:HZ2	2:AB:155:GLY:HA3	1.75	0.50
2:AB:192:PRO:O	2:AB:194:GLY:N	2.42	0.50
3:AC:166:TRP:N	3:AC:166:TRP:CE3	2.76	0.50
5:AE:140:ILE:HD12	5:AE:140:ILE:H	1.76	0.50
7:AG:12:LEU:HD22	7:AG:12:LEU:N	2.27	0.50
8:AH:13:ILE:HG23	8:AH:62:LEU:HD11	1.92	0.50
11:AK:127:ARG:HD3	11:AK:127:ARG:H	1.76	0.50
12:AL:10:PRO:HB3	17:AQ:33:TYR:OH	2.09	0.50
12:AL:20:VAL:O	12:AL:20:VAL:HG13	2.11	0.50
15:AO:54:GLY:O	15:AO:58:MET:HG3	2.10	0.50
16:AP:8:ARG:NH2	16:AP:15:PRO:HB3	2.27	0.50
17:AQ:20:ILE:HD12	17:AQ:20:ILE:N	2.25	0.50
18:AR:41:SER:HB2	18:AR:51:GLN:NE2	2.25	0.50
25:BA:492:A:H2'	25:BA:493:G:O4'	2.11	0.50
25:BA:817:C:H2'	25:BA:818:G:O4'	2.11	0.50
25:BA:2576:G:H3'	25:BA:2576:G:N3	2.26	0.50
28:BD:129:LEU:N	28:BD:129:LEU:HD23	2.26	0.50
30:BF:48:THR:C	30:BF:50:ALA:H	2.18	0.50
32:BH:88:LEU:HD12	32:BH:88:LEU:N	2.26	0.50
34:BJ:27:VAL:HG23	34:BJ:80:THR:HG23	1.93	0.50
34:BJ:64:VAL:HG21	34:BJ:72:LEU:HD12	1.92	0.50
38:BN:92:LEU:H	38:BN:92:LEU:CD1	2.25	0.50
41:BQ:53:THR:HB	41:BQ:65:THR:HB	1.93	0.50
45:BU:97:LEU:HD22	45:BU:97:LEU:N	2.26	0.50
54:B4:25:ASN:OD1	54:B4:27:ARG:HB2	2.12	0.50
1:AA:202:G:H2'	1:AA:203:G:C8	2.47	0.50
1:AA:929:G:H5''	1:AA:1534:A:H1'	1.92	0.50
2:AB:40:ILE:HD13	2:AB:40:ILE:N	2.27	0.50
6:AF:39:LEU:C	6:AF:39:LEU:HD13	2.36	0.50
13:AM:72:ILE:O	13:AM:76:ILE:HG13	2.12	0.50
16:AP:36:VAL:O	16:AP:36:VAL:HG13	2.12	0.50
25:BA:752:A:O2'	25:BA:1781:U:H5'	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1059:G:O2'	35:BK:116:MET:HE1	2.12	0.50
25:BA:1494:A:H2	25:BA:1579:A:C1'	2.24	0.50
25:BA:2581:G:H2'	25:BA:2581:G:N3	2.27	0.50
27:BC:77:VAL:HA	27:BC:115:ILE:O	2.11	0.50
32:BH:174:LYS:HG2	32:BH:175:LYS:N	2.26	0.50
36:BL:88:THR:O	36:BL:92:MET:HG2	2.11	0.50
38:BN:92:LEU:HD12	38:BN:92:LEU:N	2.25	0.50
43:BS:109:VAL:HG12	43:BS:113:LYS:HE3	1.93	0.50
44:BT:38:VAL:HG22	44:BT:40:MET:H	1.76	0.50
49:BY:39:THR:HG23	49:BY:53:HIS:HD2	1.75	0.50
55:B5:3:ARG:HA	55:B5:3:ARG:CZ	2.41	0.50
1:AA:29:U:O2'	1:AA:30:U:H5'	2.12	0.50
2:AB:35:ASN:O	2:AB:37:VAL:HG12	2.11	0.50
3:AC:26:LYS:HG2	3:AC:27:GLU:H	1.77	0.50
3:AC:106:ARG:H	3:AC:106:ARG:CD	2.24	0.50
3:AC:143:LEU:HD22	3:AC:143:LEU:N	2.26	0.50
7:AG:149:ALA:HB1	11:AK:58:THR:CB	2.41	0.50
9:AI:62:LEU:N	9:AI:62:LEU:HD23	2.26	0.50
9:AI:115:VAL:HG21	10:AJ:62:ARG:HD2	1.94	0.50
12:AL:75:GLU:C	12:AL:77:SER:H	2.20	0.50
12:AL:79:ILE:HD12	12:AL:96:THR:HG23	1.94	0.50
25:BA:801:G:H8	30:BF:50:ALA:HB2	1.77	0.50
25:BA:995:C:H42	36:BL:2:LYS:HG2	1.77	0.50
25:BA:1187:G:H5'	44:BT:83:TYR:CE2	2.47	0.50
25:BA:1258:U:H2'	25:BA:1259:G:C8	2.46	0.50
25:BA:1655:A:H1'	29:BE:118:PHE:HE2	1.76	0.50
25:BA:2553:G:N3	25:BA:2583:G:H1'	2.27	0.50
25:BA:2811:G:H2'	25:BA:2812:G:C8	2.46	0.50
31:BG:62:GLN:NE2	31:BG:90:LEU:HD23	2.27	0.50
31:BG:160:LYS:HD2	31:BG:160:LYS:N	2.26	0.50
37:BM:111:LYS:HG3	37:BM:112:PHE:CD2	2.47	0.50
42:BR:12:MET:HE3	42:BR:53:GLY:C	2.37	0.50
44:BT:38:VAL:HG13	44:BT:54:VAL:CG2	2.41	0.50
48:BX:86:LEU:HD13	48:BX:89:ILE:HD11	1.92	0.50
57:B7:9:LYS:HZ2	57:B7:9:LYS:CB	2.24	0.50
1:AA:393:A:H5'	1:AA:483:C:O2'	2.11	0.50
3:AC:6:PRO:HD2	3:AC:183:TYR:CD2	2.46	0.50
8:AH:58:LEU:C	8:AH:58:LEU:HD13	2.37	0.50
11:AK:70:ALA:O	11:AK:74:LYS:HG3	2.12	0.50
15:AO:47:LYS:HB2	15:AO:47:LYS:NZ	2.25	0.50
16:AP:7:ALA:HB1	16:AP:9:HIS:ND1	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:AP:53:ASP:O	16:AP:57:ILE:HG13	2.11	0.50
25:BA:2330:G:H2'	25:BA:2331:G:C5'	2.42	0.50
27:BC:74:ARG:HA	27:BC:93:GLU:HG3	1.92	0.50
28:BD:43:ASN:HD21	28:BD:45:ASN:ND2	2.09	0.50
31:BG:36:ASN:O	31:BG:151:LEU:HD12	2.12	0.50
35:BK:10:LEU:HD23	35:BK:10:LEU:H	1.77	0.50
37:BM:68:GLY:HA3	37:BM:77:ILE:O	2.11	0.50
40:BP:13:ASN:HD22	40:BP:13:ASN:N	2.08	0.50
51:B1:50:VAL:O	51:B1:54:LYS:HB2	2.11	0.50
1:AA:367:U:O2'	1:AA:368:U:H4'	2.11	0.50
1:AA:1401:G:H2'	1:AA:1402:C:O4'	2.12	0.50
3:AC:119:ILE:O	3:AC:123:LEU:HG	2.11	0.50
3:AC:206:ILE:O	3:AC:206:ILE:HG13	2.11	0.50
8:AH:50:VAL:O	8:AH:50:VAL:HG13	2.11	0.50
9:AI:96:GLU:H	9:AI:96:GLU:CD	2.20	0.50
10:AJ:9:ARG:HG2	10:AJ:9:ARG:HH11	1.77	0.50
10:AJ:40:ILE:HG21	10:AJ:73:LEU:HD12	1.93	0.50
14:AN:48:LEU:HD23	14:AN:48:LEU:C	2.37	0.50
25:BA:420:C:O2'	25:BA:421:C:H5'	2.12	0.50
25:BA:736:C:H42	25:BA:760:G:H1	1.58	0.50
25:BA:1912:A:N6	25:BA:1918:A:H1'	2.27	0.50
25:BA:1928:A:C2'	25:BA:1929:G:H5''	2.41	0.50
25:BA:2002:G:OP1	40:BP:13:ASN:HA	2.12	0.50
32:BH:82:PHE:CE2	32:BH:137:LYS:HB2	2.47	0.50
35:BK:66:PHE:N	35:BK:66:PHE:CD2	2.74	0.50
41:BQ:52:SER:OG	41:BQ:54:VAL:HG12	2.11	0.50
1:AA:392:C:H2'	1:AA:393:A:C8	2.47	0.50
1:AA:436:C:H2'	1:AA:437:U:C6	2.47	0.50
2:AB:31:PHE:CE1	2:AB:41:ASN:HA	2.46	0.50
6:AF:21:MET:HE2	6:AF:25:TYR:OH	2.11	0.50
7:AG:21:LEU:HD13	7:AG:21:LEU:C	2.37	0.50
12:AL:109:ARG:HB2	12:AL:118:VAL:HG11	1.93	0.50
13:AM:3:ILE:HD11	13:AM:9:PRO:HD2	1.94	0.50
13:AM:39:ALA:HB3	13:AM:42:VAL:CG1	2.41	0.50
25:BA:729:G:H3'	25:BA:729:G:N3	2.27	0.50
25:BA:821:A:O2'	25:BA:945:A:H3'	2.12	0.50
25:BA:940:G:H2'	25:BA:941:A:C5'	2.42	0.50
25:BA:2134:A:H62	25:BA:2157:G:H1'	1.77	0.50
25:BA:2661:G:H2'	25:BA:2662:A:O4'	2.11	0.50
28:BD:51:ARG:O	28:BD:52:HIS:HB2	2.12	0.50
28:BD:266:ILE:HD13	28:BD:269:ARG:HH11	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:BF:1:MET:HE2	30:BF:3:LEU:HD21	1.92	0.50
30:BF:77:ILE:HG13	30:BF:78:TRP:CD1	2.46	0.50
30:BF:118:LEU:HD12	30:BF:186:VAL:O	2.12	0.50
40:BP:99:LYS:O	53:B3:42:ILE:HG12	2.12	0.50
46:BV:31:VAL:HG11	46:BV:82:LYS:HE3	1.92	0.50
47:BW:48:VAL:HG13	47:BW:51:LEU:O	2.12	0.50
50:BZ:56:ARG:HA	50:BZ:59:ASP:OD2	2.12	0.50
1:AA:765:G:H21	1:AA:816:A:H2	1.59	0.50
1:AA:1180:A:P	9:AI:98:ARG:HH12	2.35	0.50
1:AA:1409:C:P	25:BA:1916:A:H2	2.35	0.50
1:AA:1491:G:H5'	12:AL:90:PRO:HG2	1.93	0.50
2:AB:156:LEU:HD23	2:AB:156:LEU:N	2.26	0.50
4:AD:173:ASP:CG	4:AD:174:ALA:H	2.19	0.50
5:AE:152:VAL:HG21	8:AH:98:LEU:HD22	1.94	0.50
7:AG:149:ALA:HA	11:AK:60:PHE:HB3	1.93	0.50
15:AO:86:LEU:C	15:AO:88:ARG:H	2.20	0.50
16:AP:46:LYS:HD3	16:AP:47:GLU:N	2.10	0.50
21:AU:16:ARG:NH1	21:AU:19:LYS:HG3	2.27	0.50
22:AV:76:A:C5'	25:BA:2602:A:H62	2.24	0.50
22:AW:5:G:H2'	22:AW:6:G:H8	1.77	0.50
25:BA:1371:G:C2'	25:BA:1372:U:H5''	2.42	0.50
25:BA:2011:U:H2'	25:BA:2012:G:O4'	2.11	0.50
28:BD:119:VAL:HG23	28:BD:120:ASP:OD1	2.11	0.50
28:BD:161:VAL:HG12	28:BD:162:GLN:N	2.27	0.50
30:BF:86:ALA:CB	30:BF:88:ARG:HH22	2.25	0.50
30:BF:164:LEU:HD22	30:BF:164:LEU:N	2.26	0.50
31:BG:19:PHE:O	31:BG:20:ASN:C	2.53	0.50
31:BG:100:GLU:O	31:BG:104:THR:HG22	2.11	0.50
31:BG:141:ASP:O	31:BG:145:VAL:HG13	2.11	0.50
32:BH:86:LEU:HD12	32:BH:86:LEU:N	2.27	0.50
34:BJ:10:ALA:O	34:BJ:14:GLU:HG3	2.12	0.50
37:BM:7:MET:SD	37:BM:20:MET:HB2	2.51	0.50
44:BT:38:VAL:C	44:BT:39:LEU:HD12	2.37	0.50
45:BU:11:ARG:N	45:BU:11:ARG:HD2	2.26	0.50
50:BZ:3:VAL:HG13	50:BZ:10:ARG:HB3	1.94	0.50
55:B5:30:VAL:HA	55:B5:33:ARG:CZ	2.42	0.50
1:AA:460:A:H2'	1:AA:461:A:O4'	2.11	0.49
3:AC:86:LEU:O	3:AC:90:VAL:HG23	2.12	0.49
8:AH:29:SER:O	8:AH:33:VAL:HG23	2.12	0.49
10:AJ:102:LEU:N	10:AJ:102:LEU:HD22	2.27	0.49
11:AK:84:MET:HA	11:AK:110:THR:O	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:607:U:H5''	30:BF:98:LYS:HE2	1.94	0.49
25:BA:933:A:H3'	25:BA:933:A:N3	2.27	0.49
25:BA:1272:A:H3'	25:BA:1646:C:N4	2.27	0.49
25:BA:2256:G:H4'	49:BY:7:ARG:HH12	1.77	0.49
26:BB:11:C:H2'	26:BB:12:C:H5'	1.94	0.49
26:BB:12:C:H4'	26:BB:15:A:N6	2.24	0.49
26:BB:83:G:H4'	52:B2:52:PHE:CD2	2.47	0.49
29:BE:122:VAL:HG13	29:BE:127:PHE:O	2.12	0.49
32:BH:122:ALA:CB	32:BH:132:LEU:HD23	2.42	0.49
40:BP:31:HIS:O	40:BP:33:ILE:HG22	2.12	0.49
45:BU:81:SER:HA	45:BU:99:ARG:HA	1.94	0.49
46:BV:93:LEU:N	46:BV:93:LEU:HD22	2.27	0.49
47:BW:17:ASP:HB3	47:BW:20:LYS:HB2	1.94	0.49
48:BX:2:PHE:HB3	48:BX:50:MET:HE2	1.93	0.49
50:BZ:39:VAL:HG21	50:BZ:42:GLU:HB2	1.94	0.49
53:B3:39:ARG:O	53:B3:40:HIS:HB2	2.12	0.49
1:AA:310:G:C5'	16:AP:31:ARG:HB2	2.37	0.49
1:AA:1330:U:H2'	1:AA:1331:G:H5'	1.94	0.49
2:AB:19:THR:C	2:AB:20:ARG:HE	2.21	0.49
2:AB:132:GLU:O	2:AB:136:ARG:HG3	2.12	0.49
5:AE:131:ASN:ND2	5:AE:133:ILE:HG22	2.27	0.49
11:AK:49:SER:OG	11:AK:68:ARG:HG3	2.12	0.49
22:AV:20:U:H2'	22:AV:21:A:H4'	1.95	0.49
25:BA:646:U:C5'	25:BA:647:G:H5''	2.42	0.49
25:BA:680:C:H2'	25:BA:681:G:H8	1.77	0.49
25:BA:703:U:C2'	25:BA:704:G:H5'	2.42	0.49
25:BA:920:A:OP1	52:B2:18:LYS:HE3	2.12	0.49
25:BA:1077:A:H2	25:BA:1088:A:H2'	1.77	0.49
25:BA:1936:A:H4'	25:BA:1937:A:C8	2.46	0.49
28:BD:245:THR:HB	28:BD:246:PRO:HD2	1.94	0.49
31:BG:105:ILE:HG13	31:BG:106:ALA:N	2.27	0.49
32:BH:43:LYS:HB2	32:BH:50:THR:OG1	2.11	0.49
35:BK:45:THR:HG22	35:BK:50:LYS:HG3	1.94	0.49
36:BL:84:ILE:O	36:BL:84:ILE:HG23	2.13	0.49
39:BO:62:LYS:HE3	39:BO:64:TRP:NE1	2.27	0.49
51:B1:23:ARG:HA	51:B1:23:ARG:HE	1.77	0.49
51:B1:23:ARG:HA	51:B1:23:ARG:NE	2.26	0.49
56:B6:28:LEU:C	56:B6:29:ARG:HD2	2.37	0.49
1:AA:232:G:C1'	1:AA:262:A:H61	2.25	0.49
1:AA:477:C:H2'	1:AA:478:A:H8	1.75	0.49
1:AA:606:G:C5'	1:AA:607:A:H5'	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AC:6:PRO:HG2	3:AC:200:TRP:NE1	2.27	0.49
3:AC:35:ASP:O	3:AC:39:ARG:HG3	2.11	0.49
9:AI:60:LEU:HD23	9:AI:60:LEU:H	1.77	0.49
14:AN:30:ILE:HD12	14:AN:30:ILE:H	1.78	0.49
16:AP:76:LYS:HB2	16:AP:76:LYS:HZ3	1.76	0.49
21:AU:39:LYS:N	21:AU:40:PRO:CD	2.75	0.49
25:BA:187:G:C3'	25:BA:188:G:H5''	2.41	0.49
25:BA:919:U:H2'	25:BA:920:A:O4'	2.13	0.49
25:BA:970:U:H2'	25:BA:971:G:C8	2.47	0.49
25:BA:1592:C:H2'	25:BA:1593:A:C8	2.47	0.49
25:BA:2109:U:H2'	25:BA:2110:G:C8	2.47	0.49
25:BA:2200:C:OP1	50:BZ:36:ARG:HD3	2.13	0.49
27:BC:51:ASP:OD1	27:BC:54:LYS:HG3	2.13	0.49
29:BE:101:PHE:CD2	29:BE:104:VAL:HG11	2.48	0.49
31:BG:16:MET:HE1	31:BG:23:SER:O	2.11	0.49
36:BL:47:HIS:ND1	36:BL:48:VAL:HG23	2.27	0.49
39:BO:2:LEU:HD22	39:BO:2:LEU:N	2.28	0.49
40:BP:28:LEU:HD22	40:BP:44:LEU:CD2	2.42	0.49
46:BV:74:ILE:C	46:BV:74:ILE:HD12	2.37	0.49
48:BX:26:PHE:CE1	48:BX:42:LEU:HB2	2.48	0.49
48:BX:75:GLN:HB2	48:BX:92:VAL:HG23	1.95	0.49
1:AA:943:U:C1'	9:AI:125:GLN:HE22	2.18	0.49
2:AB:102:ASN:HB3	2:AB:106:VAL:HG23	1.94	0.49
6:AF:54:LEU:HD22	6:AF:55:HIS:H	1.77	0.49
6:AF:97:THR:HG22	6:AF:98:GLU:N	2.26	0.49
7:AG:74:VAL:HG11	7:AG:143:MET:HG3	1.93	0.49
25:BA:25:U:H5''	45:BU:80:PRO:HD3	1.94	0.49
25:BA:532:A:N3	25:BA:532:A:H2'	2.28	0.49
27:BC:4:LEU:HD23	27:BC:8:MET:CG	2.41	0.49
27:BC:39:VAL:HG13	27:BC:39:VAL:O	2.12	0.49
27:BC:175:ILE:HG22	27:BC:175:ILE:O	2.13	0.49
28:BD:140:VAL:CG1	28:BD:189:ALA:HB1	2.39	0.49
32:BH:32:LEU:N	32:BH:32:LEU:HD12	2.27	0.49
32:BH:67:ALA:O	32:BH:71:LEU:HD13	2.12	0.49
34:BJ:42:ARG:HA	34:BJ:51:TYR:HB3	1.93	0.49
47:BW:51:LEU:HD12	47:BW:52:ASN:OD1	2.12	0.49
48:BX:82:TYR:CE1	48:BX:83:LYS:HG3	2.47	0.49
56:B6:44:ARG:HB3	56:B6:45:PRO:HD3	1.95	0.49
1:AA:73:C:O2'	1:AA:74:A:H8	1.83	0.49
1:AA:1004:A:H2'	1:AA:1005:A:O4'	2.13	0.49
1:AA:1412:C:H2'	1:AA:1413:A:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:192:PRO:O	2:AB:193:ASP:CG	2.56	0.49
3:AC:171:ARG:HG2	3:AC:171:ARG:HH11	1.77	0.49
6:AF:91:ARG:HG3	6:AF:92:THR:N	2.25	0.49
10:AJ:37:ARG:HB2	10:AJ:75:ASP:HB2	1.95	0.49
10:AJ:89:ARG:HH11	10:AJ:89:ARG:CA	2.26	0.49
19:AS:5:LYS:CD	19:AS:6:LYS:HG2	2.41	0.49
19:AS:11:ASP:HB3	19:AS:13:HIS:CE1	2.48	0.49
25:BA:511:U:H2'	25:BA:512:G:H5'	1.94	0.49
25:BA:680:C:H2'	25:BA:681:G:C8	2.47	0.49
25:BA:702:U:H2'	25:BA:703:U:C6	2.47	0.49
25:BA:1662:U:H2'	25:BA:1663:G:C8	2.47	0.49
36:BL:38:GLY:HA3	36:BL:50:THR:OG1	2.13	0.49
38:BN:124:GLY:C	38:BN:125:LEU:HD12	2.37	0.49
40:BP:29:VAL:HG11	40:BP:79:LEU:HD11	1.95	0.49
41:BQ:31:THR:HG22	41:BQ:33:ARG:H	1.77	0.49
51:B1:56:LEU:O	51:B1:57:LEU:HB3	2.12	0.49
1:AA:876:C:H4'	8:AH:14:ARG:NH2	2.27	0.49
1:AA:1105:A:H2'	1:AA:1106:G:H8	1.78	0.49
2:AB:89:PHE:HD2	2:AB:149:GLY:O	1.95	0.49
3:AC:120:THR:O	3:AC:124:GLU:HG3	2.12	0.49
3:AC:206:ILE:O	3:AC:206:ILE:HG23	2.12	0.49
5:AE:54:GLU:HG2	5:AE:56:PRO:CD	2.32	0.49
7:AG:58:LEU:H	7:AG:58:LEU:CD2	2.24	0.49
9:AI:49:GLN:O	9:AI:52:GLU:HG3	2.12	0.49
9:AI:112:ARG:HH22	10:AJ:64:GLN:NE2	2.10	0.49
11:AK:24:ALA:HA	11:AK:29:THR:HG22	1.94	0.49
11:AK:81:LEU:N	11:AK:81:LEU:HD23	2.27	0.49
17:AQ:7:LEU:HD12	17:AQ:7:LEU:N	2.27	0.49
21:AU:15:LEU:H	21:AU:17:ARG:NH1	2.10	0.49
25:BA:332:A:H1'	25:BA:334:C:OP2	2.12	0.49
25:BA:460:A:H62	25:BA:469:G:H21	1.60	0.49
25:BA:951:C:H2'	25:BA:952:G:H8	1.76	0.49
25:BA:1015:U:H2'	25:BA:1016:G:C8	2.48	0.49
25:BA:1912:A:H5''	25:BA:1913:A:OP1	2.13	0.49
25:BA:2646:C:H2'	25:BA:2647:U:O4'	2.13	0.49
27:BC:185:LEU:O	27:BC:189:LEU:HG	2.11	0.49
31:BG:90:LEU:HB3	31:BG:95:MET:HA	1.95	0.49
35:BK:132:ALA:O	35:BK:137:LEU:HD12	2.13	0.49
38:BN:49:GLY:HA3	38:BN:58:TYR:CE2	2.48	0.49
39:BO:26:VAL:HG13	39:BO:104:GLU:CD	2.37	0.49
41:BQ:6:ALA:HA	41:BQ:9:ARG:NH1	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:BU:1:MET:HE3	45:BU:62:ASP:OD1	2.12	0.49
51:B1:15:ASN:O	51:B1:19:LEU:HG	2.12	0.49
1:AA:1409:C:H5'	25:BA:1915:U:O4	2.12	0.49
2:AB:17:HIS:HB3	2:AB:187:ASP:OD1	2.11	0.49
3:AC:32:LEU:C	3:AC:32:LEU:HD13	2.37	0.49
6:AF:79:ARG:NE	6:AF:79:ARG:HA	2.28	0.49
14:AN:3:GLN:HA	14:AN:6:LYS:HE3	1.94	0.49
21:AU:28:LEU:HD23	21:AU:28:LEU:C	2.37	0.49
24:AY:3:SER:O	24:AY:4:SER:HB3	2.13	0.49
25:BA:635:C:O2'	25:BA:639:U:H5''	2.13	0.49
25:BA:2122:U:O2'	27:BC:166:ASP:HB3	2.13	0.49
25:BA:2628:C:H3'	25:BA:2629:U:H5'	1.95	0.49
26:BB:15:A:O2'	26:BB:16:G:H5'	2.12	0.49
27:BC:200:LYS:HE3	27:BC:208:TYR:HB2	1.93	0.49
28:BD:163:ILE:HG12	28:BD:173:LEU:CD1	2.43	0.49
30:BF:43:THR:O	30:BF:44:ARG:HB3	2.11	0.49
31:BG:14:LYS:O	31:BG:18:GLU:HG3	2.13	0.49
31:BG:157:THR:HG22	31:BG:159:ALA:H	1.77	0.49
32:BH:51:PHE:CE2	32:BH:68:ARG:HA	2.48	0.49
35:BK:52:LEU:HD12	35:BK:52:LEU:N	2.28	0.49
37:BM:24:VAL:HG13	37:BM:33:ALA:HB2	1.94	0.49
41:BQ:64:TYR:HB3	41:BQ:67:ASN:ND2	2.27	0.49
1:AA:81:A:H2'	1:AA:82:G:H5'	1.95	0.49
1:AA:730:G:C2'	1:AA:731:G:H5'	2.42	0.49
1:AA:1086:U:O3'	1:AA:1389:C:H4'	2.13	0.49
1:AA:1379:G:O2'	1:AA:1380:U:H5'	2.12	0.49
2:AB:68:PHE:CD1	2:AB:161:PHE:HB3	2.47	0.49
2:AB:113:LEU:HD13	2:AB:143:LEU:CB	2.43	0.49
2:AB:163:ILE:HD11	2:AB:203:ASP:O	2.13	0.49
4:AD:159:GLU:C	4:AD:161:ALA:H	2.20	0.49
7:AG:52:ARG:NH2	7:AG:124:SER:HB2	2.28	0.49
7:AG:86:VAL:HG22	7:AG:150:PHE:CB	2.43	0.49
9:AI:50:PRO:HG3	9:AI:82:ILE:HD12	1.95	0.49
14:AN:77:PHE:HD1	14:AN:84:VAL:HG13	1.78	0.49
21:AU:3:ILE:HD13	21:AU:19:LYS:HE3	1.95	0.49
21:AU:24:LYS:C	21:AU:24:LYS:HD3	2.38	0.49
25:BA:103:A:H2'	25:BA:104:A:O4'	2.12	0.49
25:BA:533:G:OP1	43:BS:24:TYR:HB3	2.12	0.49
25:BA:943:A:OP1	38:BN:34:GLY:HA3	2.12	0.49
25:BA:1441:G:O2'	25:BA:1628:G:H5''	2.13	0.49
25:BA:2093:G:O6	25:BA:2225:A:H5''	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2463:C:H2'	25:BA:2464:G:C8	2.48	0.49
25:BA:2466:C:H5''	57:B7:6:SER:CB	2.43	0.49
25:BA:2860:A:H2'	25:BA:2861:U:H5'	1.94	0.49
32:BH:68:ARG:HD3	32:BH:68:ARG:O	2.12	0.49
32:BH:100:ASN:ND2	32:BH:101:VAL:HG23	2.28	0.49
35:BK:83:ALA:HB1	35:BK:100:ILE:HD12	1.94	0.49
1:AA:147:G:H2'	1:AA:148:G:C8	2.47	0.49
1:AA:237:G:H2'	1:AA:238:A:O4'	2.12	0.49
4:AD:13:ARG:CZ	4:AD:37:PRO:HB3	2.43	0.49
4:AD:121:ALA:O	4:AD:144:ILE:HG23	2.13	0.49
9:AI:18:VAL:HG22	9:AI:64:ILE:HG21	1.93	0.49
9:AI:112:ARG:NH2	10:AJ:64:GLN:NE2	2.59	0.49
11:AK:99:LEU:H	11:AK:99:LEU:HD22	1.78	0.49
18:AR:55:ALA:O	18:AR:59:LYS:HG3	2.13	0.49
25:BA:81:G:H2'	25:BA:82:U:O4'	2.12	0.49
25:BA:2741:A:H5''	57:B7:36:ARG:HH22	1.78	0.49
25:BA:2830:C:H3'	29:BE:59:ARG:HH11	1.78	0.49
28:BD:104:LEU:HD12	28:BD:104:LEU:H	1.77	0.49
28:BD:115:ILE:HD12	28:BD:115:ILE:O	2.13	0.49
28:BD:130:PRO:HG3	28:BD:188:ARG:HG2	1.94	0.49
39:BO:20:LEU:HD22	39:BO:20:LEU:N	2.28	0.49
43:BS:2:ARG:NH2	43:BS:4:LYS:HG2	2.25	0.49
45:BU:41:LYS:HB2	45:BU:44:ALA:HB2	1.94	0.49
56:B6:25:HIS:HB3	56:B6:43:LEU:HD22	1.95	0.49
56:B6:38:LYS:HA	56:B6:41:ARG:CZ	2.43	0.49
1:AA:253:A:H2'	1:AA:254:G:H8	1.78	0.49
1:AA:526:C:C2'	1:AA:527:G:H5'	2.43	0.49
2:AB:66:ILE:HG22	2:AB:67:LEU:N	2.27	0.49
9:AI:117:LEU:HD12	9:AI:117:LEU:N	2.28	0.49
13:AM:2:ARG:O	13:AM:3:ILE:C	2.56	0.49
19:AS:54:ARG:HG3	19:AS:55:GLN:N	2.21	0.49
21:AU:34:ARG:HG2	21:AU:36:PHE:H	1.78	0.49
25:BA:12:U:H2'	25:BA:13:A:H5'	1.93	0.49
25:BA:953:G:H5''	39:BO:16:ARG:NH1	2.27	0.49
25:BA:1137:G:H2'	25:BA:1138:G:H8	1.78	0.49
25:BA:1182:G:H2'	25:BA:1183:U:O4'	2.13	0.49
25:BA:1494:A:H2	25:BA:1579:A:H1'	1.78	0.49
25:BA:1924:C:H3'	25:BA:1925:C:C5'	2.42	0.49
26:BB:5:U:H2'	26:BB:6:G:H8	1.78	0.49
27:BC:15:VAL:HG11	27:BC:222:VAL:HG22	1.95	0.49
27:BC:193:LEU:HD22	27:BC:226:GLN:HG3	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BK:51:GLY:C	35:BK:52:LEU:HD12	2.38	0.49
39:BO:16:ARG:HG2	39:BO:16:ARG:HH11	1.78	0.49
39:BO:69:PRO:O	39:BO:70:ASP:OD2	2.29	0.49
42:BR:112:ARG:O	42:BR:113:LEU:HD12	2.13	0.49
43:BS:39:ILE:HG22	43:BS:43:GLN:NE2	2.26	0.49
55:B5:42:LEU:HD22	55:B5:42:LEU:N	2.27	0.49
1:AA:428:G:H4'	1:AA:429:U:O5'	2.12	0.48
1:AA:608:A:H1'	16:AP:32:PHE:CZ	2.48	0.48
1:AA:950:U:H2'	1:AA:951:G:H8	1.77	0.48
1:AA:1224:U:O2'	1:AA:1225:A:H5'	2.13	0.48
1:AA:1498:U:C4	23:AX:17:U:H4'	2.48	0.48
9:AI:20:ILE:HG21	9:AI:60:LEU:HD12	1.94	0.48
21:AU:7:GLU:HB3	21:AU:11:PHE:CE2	2.48	0.48
25:BA:381:G:OP1	50:BZ:17:ARG:HD3	2.12	0.48
25:BA:538:A:H5''	36:BL:7:LYS:HE3	1.93	0.48
25:BA:858:G:H21	25:BA:2268:A:H2'	1.78	0.48
25:BA:1025:G:H3'	25:BA:1026:G:C5'	2.43	0.48
25:BA:1912:A:C6	25:BA:1918:A:N3	2.82	0.48
28:BD:245:THR:C	28:BD:247:TRP:H	2.21	0.48
38:BN:38:GLN:O	38:BN:44:GLY:HA3	2.13	0.48
38:BN:90:VAL:HG13	38:BN:95:LEU:HD21	1.94	0.48
38:BN:125:LEU:HD12	38:BN:125:LEU:N	2.27	0.48
41:BQ:30:ARG:HD2	41:BQ:102:ARG:HH11	1.78	0.48
46:BV:61:LEU:C	46:BV:61:LEU:HD12	2.38	0.48
48:BX:16:ALA:O	48:BX:20:LEU:HG	2.13	0.48
49:BY:7:ARG:HH11	49:BY:7:ARG:HG3	1.77	0.48
54:B4:37:LYS:HB2	54:B4:48:TYR:CE2	2.47	0.48
55:B5:10:LEU:HD11	55:B5:14:ARG:NE	2.28	0.48
1:AA:197:A:C6	1:AA:221:C:H4'	2.48	0.48
1:AA:829:G:H2'	1:AA:830:G:H8	1.77	0.48
1:AA:891:U:H2'	1:AA:892:A:H8	1.78	0.48
2:AB:26:MET:HG2	2:AB:188:THR:HA	1.95	0.48
2:AB:34:ARG:HA	2:AB:34:ARG:NE	2.28	0.48
2:AB:98:GLY:O	2:AB:102:ASN:HB2	2.13	0.48
4:AD:75:TYR:CE2	4:AD:203:TYR:HB2	2.48	0.48
6:AF:18:VAL:HG21	6:AF:58:HIS:ND1	2.28	0.48
7:AG:89:GLU:OE1	7:AG:89:GLU:N	2.46	0.48
11:AK:125:LYS:O	11:AK:125:LYS:HG2	2.13	0.48
18:AR:71:ASP:OD2	21:AU:3:ILE:HG13	2.12	0.48
21:AU:4:LYS:HD2	21:AU:4:LYS:C	2.38	0.48
21:AU:52:VAL:HG22	21:AU:53:LYS:HG2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:AV:64:A:H2'	22:AV:65:G:C8	2.48	0.48
25:BA:69:C:O2'	25:BA:70:G:H5'	2.12	0.48
25:BA:232:G:H22	25:BA:420:C:H5''	1.76	0.48
25:BA:1007:C:O3'	36:BL:110:PRO:HG3	2.14	0.48
26:BB:5:U:H2'	26:BB:6:G:C8	2.48	0.48
26:BB:78:A:H62	26:BB:98:G:H21	1.61	0.48
27:BC:44:VAL:HG21	27:BC:189:LEU:HD22	1.95	0.48
29:BE:25:THR:O	29:BE:27:ILE:HG13	2.14	0.48
32:BH:106:LEU:HD13	32:BH:151:ARG:CB	2.43	0.48
35:BK:3:LYS:CD	35:BK:4:VAL:H	2.27	0.48
36:BL:23:LYS:HB2	36:BL:28:LEU:HD22	1.95	0.48
36:BL:93:ILE:HA	36:BL:97:PRO:HG3	1.95	0.48
43:BS:54:ARG:O	43:BS:58:GLN:HG2	2.12	0.48
47:BW:95:PHE:CE1	47:BW:102:ILE:HG12	2.48	0.48
53:B3:10:SER:O	53:B3:14:MET:HG3	2.13	0.48
55:B5:31:LEU:CB	55:B5:35:ARG:HH12	2.25	0.48
56:B6:14:LYS:HB3	56:B6:22:LYS:HE2	1.95	0.48
56:B6:28:LEU:HA	56:B6:32:LEU:HD21	1.95	0.48
1:AA:12:U:H4'	1:AA:526:C:H4'	1.95	0.48
1:AA:83:C:H2'	1:AA:85:U:OP2	2.13	0.48
1:AA:1516:G:H2'	1:AA:1518:A:OP2	2.13	0.48
7:AG:119:LEU:HD23	7:AG:119:LEU:C	2.39	0.48
8:AH:31:LEU:C	8:AH:31:LEU:HD13	2.38	0.48
8:AH:84:ILE:HG23	8:AH:86:LYS:HE3	1.96	0.48
12:AL:89:LEU:N	12:AL:89:LEU:HD12	2.27	0.48
13:AM:21:ILE:HG23	13:AM:65:GLU:OE2	2.13	0.48
13:AM:40:GLU:HG3	13:AM:41:ASP:N	2.20	0.48
16:AP:6:LEU:HD12	16:AP:6:LEU:N	2.29	0.48
17:AQ:3:LYS:C	17:AQ:3:LYS:HD2	2.37	0.48
25:BA:886:A:H2'	25:BA:887:U:H4'	1.94	0.48
25:BA:1086:A:H3'	25:BA:1086:A:N3	2.29	0.48
25:BA:1265:A:OP2	25:BA:2615:U:H5'	2.13	0.48
25:BA:1425:G:H2'	25:BA:1426:G:O4'	2.13	0.48
25:BA:2287:A:H61	25:BA:2344:U:H3	1.60	0.48
27:BC:4:LEU:CD2	27:BC:12:ARG:HH21	2.25	0.48
38:BN:33:ARG:NE	38:BN:40:SER:HA	2.28	0.48
38:BN:77:ILE:HG22	38:BN:78:ARG:N	2.29	0.48
44:BT:11:GLN:HE21	44:BT:39:LEU:HD22	1.78	0.48
53:B3:24:VAL:HG13	53:B3:25:THR:N	2.28	0.48
56:B6:50:SER:O	56:B6:54:LEU:HG	2.13	0.48
1:AA:552:U:H2'	1:AA:553:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AD:100:VAL:O	4:AD:100:VAL:HG12	2.13	0.48
9:AI:112:ARG:HH22	10:AJ:64:GLN:CD	2.21	0.48
13:AM:44:ILE:HD12	13:AM:44:ILE:H	1.79	0.48
15:AO:59:VAL:HG21	25:BA:715:A:H1'	1.94	0.48
15:AO:86:LEU:N	15:AO:86:LEU:HD23	2.28	0.48
18:AR:20:ILE:C	18:AR:20:ILE:HD12	2.38	0.48
22:AV:9:A:H2	22:AV:45:U:H3	1.62	0.48
25:BA:1061:U:H4'	25:BA:1070:A:C1'	2.32	0.48
25:BA:1324:G:H1'	25:BA:1616:A:N6	2.28	0.48
27:BC:27:ILE:HD12	27:BC:182:ALA:C	2.38	0.48
28:BD:156:SER:O	28:BD:194:VAL:HG11	2.14	0.48
28:BD:257:ARG:NH2	28:BD:266:ILE:HD11	2.28	0.48
31:BG:102:LEU:HD21	31:BG:153:ILE:HG21	1.95	0.48
37:BM:71:ARG:HB3	37:BM:72:PRO:HD2	1.96	0.48
39:BO:136:MET:HE2	48:BX:57:TYR:HD2	1.78	0.48
43:BS:60:TRP:O	43:BS:64:ILE:HG13	2.13	0.48
43:BS:82:LEU:HB3	43:BS:87:VAL:HB	1.95	0.48
55:B5:12:ARG:HH21	55:B5:44:VAL:HG11	1.78	0.48
1:AA:257:G:H2'	1:AA:258:G:C8	2.48	0.48
1:AA:1371:G:H5''	9:AI:69:GLY:C	2.38	0.48
2:AB:131:LYS:HG3	2:AB:135:MET:HE3	1.95	0.48
5:AE:72:ASN:HD22	5:AE:72:ASN:N	2.11	0.48
7:AG:69:ARG:HD2	7:AG:95:ARG:HG2	1.96	0.48
8:AH:88:LYS:HG3	8:AH:89:ASP:OD1	2.13	0.48
13:AM:26:LYS:O	13:AM:30:LYS:HG3	2.14	0.48
14:AN:25:GLU:O	14:AN:25:GLU:HG2	2.13	0.48
14:AN:64:CYS:HB3	14:AN:68:GLY:H	1.78	0.48
17:AQ:5:ARG:NH1	17:AQ:5:ARG:HB3	2.28	0.48
20:AT:68:LYS:HB2	20:AT:68:LYS:HZ2	1.77	0.48
25:BA:26:G:O2'	25:BA:27:G:H5'	2.13	0.48
25:BA:45:G:H2'	25:BA:215:G:C6	2.49	0.48
25:BA:63:A:HO2'	25:BA:64:A:H5'	1.77	0.48
25:BA:188:G:H2'	25:BA:189:G:O4'	2.14	0.48
25:BA:533:G:H5'	43:BS:23:TYR:CD2	2.49	0.48
25:BA:784:G:H5''	28:BD:225:ASN:ND2	2.26	0.48
25:BA:834:G:O2'	25:BA:2358:A:H1'	2.13	0.48
25:BA:1827:U:H2'	25:BA:1828:G:O4'	2.14	0.48
25:BA:2430:A:H3'	25:BA:2430:A:N3	2.27	0.48
25:BA:2811:G:H2'	25:BA:2812:G:H8	1.79	0.48
31:BG:105:ILE:C	31:BG:108:PRO:HD2	2.39	0.48
31:BG:131:VAL:HG23	31:BG:151:LEU:HB3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:BJ:47:GLU:CD	34:BJ:47:GLU:H	2.21	0.48
34:BJ:77:VAL:HG13	34:BJ:77:VAL:O	2.13	0.48
46:BV:46:ALA:O	46:BV:50:LEU:HD13	2.13	0.48
1:AA:580:C:H2'	1:AA:581:G:O4'	2.14	0.48
1:AA:667:G:H4'	15:AO:50:HIS:CE1	2.47	0.48
1:AA:1441:A:H62	1:AA:1461:G:H21	1.61	0.48
2:AB:52:ALA:O	2:AB:56:LEU:HB2	2.14	0.48
2:AB:153:MET:HA	2:AB:153:MET:HE3	1.95	0.48
3:AC:111:ASP:OD2	3:AC:114:LEU:HG	2.13	0.48
3:AC:148:ILE:HD12	3:AC:201:ILE:HG12	1.96	0.48
4:AD:70:GLN:HG2	4:AD:74:TYR:CE2	2.48	0.48
12:AL:109:ARG:HG3	12:AL:118:VAL:HG21	1.94	0.48
25:BA:533:G:OP1	43:BS:27:ARG:HD2	2.13	0.48
25:BA:797:G:OP2	30:BF:57:LYS:HB2	2.13	0.48
25:BA:1501:G:H5''	28:BD:94:LEU:HD21	1.95	0.48
25:BA:1883:U:H2'	25:BA:1884:G:H5'	1.94	0.48
25:BA:2660:A:H2'	25:BA:2661:G:O4'	2.14	0.48
27:BC:4:LEU:N	27:BC:4:LEU:HD12	2.27	0.48
32:BH:100:ASN:ND2	32:BH:100:ASN:H	2.12	0.48
34:BJ:61:ARG:HH12	34:BJ:73:LYS:HG2	1.78	0.48
41:BQ:9:ARG:HA	41:BQ:12:THR:OG1	2.14	0.48
44:BT:14:VAL:HG21	44:BT:20:VAL:HB	1.94	0.48
48:BX:82:TYR:CD1	48:BX:83:LYS:HG3	2.49	0.48
1:AA:173:U:H5''	1:AA:198:G:O2'	2.13	0.48
1:AA:526:C:H2'	1:AA:527:G:H5'	1.95	0.48
1:AA:808:C:H2'	1:AA:809:G:H8	1.77	0.48
1:AA:1271:A:C5'	1:AA:1314:C:H5''	2.43	0.48
1:AA:1382:C:H4'	7:AG:78:ARG:NH2	2.28	0.48
1:AA:1513:A:H2'	1:AA:1514:G:C8	2.49	0.48
9:AI:89:TYR:O	9:AI:90:ASP:OD2	2.31	0.48
12:AL:101:LEU:HD12	12:AL:101:LEU:N	2.28	0.48
13:AM:49:GLU:OE2	13:AM:52:ILE:HD12	2.14	0.48
15:AO:7:THR:O	15:AO:11:VAL:HG23	2.14	0.48
22:AW:6:G:O2'	22:AW:7:A:H5'	2.13	0.48
25:BA:258:G:H1'	38:BN:104:GLN:NE2	2.29	0.48
25:BA:638:G:O2'	25:BA:639:U:H5'	2.14	0.48
25:BA:700:G:H2'	25:BA:701:G:C8	2.48	0.48
25:BA:1528:A:H2'	25:BA:1529:G:O4'	2.13	0.48
36:BL:105:VAL:O	36:BL:109:LEU:HG	2.13	0.48
38:BN:100:ILE:HD12	38:BN:100:ILE:C	2.39	0.48
40:BP:44:LEU:O	40:BP:48:VAL:HG12	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:28:A:H2'	1:AA:29:U:O4'	2.14	0.48
1:AA:546:A:H4'	1:AA:548:G:O2'	2.13	0.48
1:AA:940:C:H2'	1:AA:941:G:H8	1.78	0.48
2:AB:42:LEU:HD12	2:AB:43:GLU:N	2.28	0.48
2:AB:202:ASN:HB3	2:AB:208:ALA:HB2	1.95	0.48
3:AC:55:VAL:O	3:AC:65:VAL:HA	2.13	0.48
5:AE:121:ASN:N	5:AE:121:ASN:ND2	2.61	0.48
12:AL:98:ARG:HB2	12:AL:116:TYR:CA	2.44	0.48
15:AO:62:ARG:O	15:AO:66:LEU:HG	2.13	0.48
18:AR:61:ALA:HB1	18:AR:66:LEU:HB2	1.95	0.48
21:AU:11:PHE:N	21:AU:11:PHE:CD2	2.81	0.48
25:BA:11:C:H2'	25:BA:12:U:H5'	1.95	0.48
25:BA:115:C:H2'	25:BA:116:C:C6	2.49	0.48
25:BA:1151:A:H4'	43:BS:80:ASN:OD1	2.14	0.48
25:BA:1266:G:N2	25:BA:2012:G:H2'	2.29	0.48
25:BA:1822:C:H2'	25:BA:1823:G:H8	1.79	0.48
25:BA:2244:U:H2'	25:BA:2245:U:O4'	2.14	0.48
25:BA:2765:A:H3'	25:BA:2765:A:N3	2.29	0.48
28:BD:130:PRO:HB2	28:BD:132:ARG:HG2	1.96	0.48
31:BG:43:ILE:HD13	31:BG:43:ILE:H	1.79	0.48
33:BI:27:ARG:HD3	50:BZ:59:ASP:OD1	2.13	0.48
34:BJ:27:VAL:CG2	34:BJ:80:THR:HG23	2.44	0.48
35:BK:85:ILE:HD12	35:BK:85:ILE:C	2.39	0.48
47:BW:27:VAL:HG23	47:BW:33:VAL:HG12	1.96	0.48
1:AA:730:G:N2	1:AA:765:G:H4'	2.29	0.48
1:AA:1024:G:C2'	1:AA:1025:U:H5'	2.44	0.48
1:AA:1066:C:H2'	1:AA:1067:A:H5'	1.96	0.48
2:AB:53:LEU:N	2:AB:53:LEU:HD22	2.29	0.48
2:AB:94:ARG:HH12	2:AB:96:LEU:HA	1.79	0.48
2:AB:150:ILE:O	2:AB:151:LYS:C	2.57	0.48
5:AE:136:VAL:O	5:AE:136:VAL:HG22	2.14	0.48
7:AG:15:PRO:HB2	9:AI:45:MET:CE	2.44	0.48
10:AJ:37:ARG:HA	10:AJ:37:ARG:HE	1.78	0.48
12:AL:3:VAL:O	12:AL:7:VAL:HG23	2.14	0.48
14:AN:12:ARG:HH11	14:AN:12:ARG:HG3	1.78	0.48
15:AO:35:ILE:HA	15:AO:55:LEU:HD11	1.96	0.48
17:AQ:6:THR:C	17:AQ:7:LEU:HD12	2.39	0.48
25:BA:1566:A:O2'	25:BA:1567:G:H5'	2.14	0.48
25:BA:2264:C:H2'	25:BA:2265:U:C6	2.49	0.48
27:BC:181:ASP:HB2	27:BC:184:LYS:HG2	1.95	0.48
31:BG:135:ILE:H	31:BG:135:ILE:CD1	2.25	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BQ:37:ALA:HB2	41:BQ:106:LEU:HD11	1.96	0.48
48:BX:4:ILE:HG22	48:BX:42:LEU:HD22	1.96	0.48
3:AC:77:GLY:HA3	3:AC:82:ASP:OD1	2.14	0.48
4:AD:104:MET:O	4:AD:172:VAL:HG21	2.13	0.48
7:AG:29:LEU:HD23	7:AG:29:LEU:O	2.13	0.48
8:AH:77:VAL:HG11	8:AH:124:ILE:CD1	2.43	0.48
9:AI:54:VAL:HG21	9:AI:86:LEU:HD21	1.96	0.48
14:AN:16:ALA:HA	14:AN:55:SER:O	2.13	0.48
22:AV:42:C:H2'	22:AV:43:C:H5''	1.95	0.48
25:BA:288:U:H2'	25:BA:289:G:C8	2.49	0.48
25:BA:1582:C:C3'	25:BA:1583:A:H5''	2.44	0.48
25:BA:1889:A:O2'	25:BA:2087:G:H5'	2.14	0.48
25:BA:2266:A:H4'	25:BA:2267:A:C4	2.49	0.48
28:BD:43:ASN:ND2	28:BD:45:ASN:H	2.12	0.48
28:BD:74:PRO:HB2	28:BD:96:LYS:CD	2.44	0.48
28:BD:166:ARG:HB2	28:BD:166:ARG:HH21	1.78	0.48
29:BE:35:THR:O	29:BE:71:ALA:HB2	2.12	0.48
30:BF:164:LEU:H	30:BF:164:LEU:CD2	2.25	0.48
30:BF:200:LEU:N	30:BF:200:LEU:HD22	2.29	0.48
32:BH:71:LEU:O	32:BH:75:VAL:HG23	2.13	0.48
42:BR:90:ALA:HB2	42:BR:112:ARG:CA	2.44	0.48
43:BS:45:ALA:O	43:BS:49:ARG:HG3	2.14	0.48
44:BT:81:LYS:HD2	44:BT:81:LYS:N	2.27	0.48
1:AA:235:C:H2'	1:AA:236:A:C8	2.49	0.47
1:AA:526:C:H2'	1:AA:527:G:O4'	2.14	0.47
1:AA:1456:A:H2'	1:AA:1457:G:O4'	2.14	0.47
2:AB:165:ALA:HB2	2:AB:186:VAL:HG12	1.95	0.47
3:AC:52:SER:HA	3:AC:113:LYS:HG2	1.96	0.47
4:AD:131:ILE:HD12	4:AD:131:ILE:C	2.39	0.47
4:AD:131:ILE:CD1	4:AD:134:TYR:HB2	2.44	0.47
8:AH:125:ILE:H	8:AH:125:ILE:CD1	2.25	0.47
10:AJ:87:LEU:HD13	10:AJ:87:LEU:C	2.39	0.47
11:AK:96:ILE:HD12	11:AK:97:ARG:N	2.28	0.47
12:AL:87:LYS:O	12:AL:87:LYS:HG3	2.14	0.47
13:AM:6:ILE:C	13:AM:6:ILE:HD12	2.39	0.47
25:BA:482:A:H1'	25:BA:498:G:N2	2.28	0.47
25:BA:2025:C:H42	25:BA:2038:G:H1	1.60	0.47
25:BA:2441:U:O2'	25:BA:2442:C:H5'	2.14	0.47
25:BA:2533:U:H2'	25:BA:2534:A:O4'	2.14	0.47
27:BC:77:VAL:HG22	27:BC:79:THR:HG23	1.94	0.47
28:BD:140:VAL:HG11	28:BD:189:ALA:CB	2.39	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:BP:69:ARG:HD3	40:BP:69:ARG:N	2.29	0.47
1:AA:36:C:H5''	12:AL:119:LYS:HG2	1.96	0.47
1:AA:51:A:C2	1:AA:116:A:H1'	2.50	0.47
1:AA:1251:A:H2'	1:AA:1252:A:O4'	2.14	0.47
1:AA:1328:C:H2'	1:AA:1329:A:C8	2.50	0.47
1:AA:1518:A:H2'	1:AA:1519:A:C8	2.49	0.47
5:AE:81:GLN:NE2	5:AE:146:MET:HE3	2.25	0.47
8:AH:13:ILE:HG23	8:AH:62:LEU:CD1	2.44	0.47
9:AI:128:LYS:HD2	9:AI:128:LYS:H	1.78	0.47
13:AM:10:ASP:CG	13:AM:11:HIS:N	2.72	0.47
22:AW:14:A:H2'	22:AW:15:G:H5'	1.96	0.47
25:BA:528:A:H5''	25:BA:557:C:OP1	2.14	0.47
25:BA:598:U:H2'	25:BA:599:A:C8	2.49	0.47
25:BA:686:U:O2	55:B5:8:SER:HB3	2.14	0.47
25:BA:951:C:H2'	25:BA:952:G:C8	2.49	0.47
25:BA:2174:C:O2'	25:BA:2175:C:H5'	2.14	0.47
25:BA:2585:U:H3'	25:BA:2585:U:OP2	2.13	0.47
26:BB:93:C:OP2	48:BX:18:ARG:HD3	2.15	0.47
29:BE:105:LYS:HB3	29:BE:105:LYS:HZ3	1.78	0.47
30:BF:164:LEU:HB2	30:BF:167:VAL:HB	1.95	0.47
36:BL:38:GLY:HA3	36:BL:50:THR:HG1	1.79	0.47
41:BQ:5:SER:HA	41:BQ:8:ILE:HD12	1.95	0.47
41:BQ:24:THR:OG1	41:BQ:90:VAL:HG12	2.14	0.47
49:BY:42:HIS:NE2	49:BY:73:ARG:HD3	2.29	0.47
1:AA:256:U:H2'	1:AA:257:G:C8	2.50	0.47
2:AB:66:ILE:HD12	2:AB:159:ALA:HB3	1.97	0.47
3:AC:58:ARG:NH1	3:AC:63:ILE:HD12	2.29	0.47
8:AH:28:SER:HB2	8:AH:58:LEU:HB2	1.95	0.47
9:AI:112:ARG:HH22	10:AJ:64:GLN:HE22	1.61	0.47
14:AN:16:ALA:O	14:AN:20:PHE:HB2	2.15	0.47
15:AO:25:GLU:OE1	15:AO:25:GLU:N	2.47	0.47
18:AR:54:LEU:HD13	18:AR:54:LEU:C	2.39	0.47
22:AW:16:U:H2'	22:AW:17:C:H5''	1.96	0.47
25:BA:833:A:H2'	25:BA:834:G:C8	2.49	0.47
25:BA:1448:G:H1	25:BA:1463:C:N4	2.09	0.47
25:BA:1571:A:H2'	25:BA:1572:A:C8	2.49	0.47
25:BA:1599:U:OP1	46:BV:40:LYS:HG3	2.14	0.47
25:BA:1883:U:C2'	25:BA:1884:G:H5'	2.44	0.47
25:BA:2637:U:H2'	25:BA:2638:G:H5'	1.97	0.47
35:BK:15:GLY:HA2	35:BK:50:LYS:HB3	1.95	0.47
35:BK:92:PRO:HD2	35:BK:94:LYS:CE	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BQ:79:ALA:O	41:BQ:83:LEU:HG	2.14	0.47
56:B6:38:LYS:HA	56:B6:41:ARG:NH1	2.29	0.47
1:AA:93:U:C2'	1:AA:94:G:H5'	2.36	0.47
1:AA:127:G:O2'	1:AA:128:G:H5'	2.13	0.47
1:AA:579:A:H2'	1:AA:580:C:C6	2.49	0.47
1:AA:1101:A:H1'	1:AA:1102:A:OP2	2.14	0.47
1:AA:1150:A:H4'	10:AJ:43:PRO:HG3	1.95	0.47
1:AA:1238:A:C5'	1:AA:1336:C:H41	2.27	0.47
4:AD:44:LYS:HB2	4:AD:44:LYS:HZ2	1.78	0.47
6:AF:24:ARG:HD3	6:AF:24:ARG:N	2.29	0.47
7:AG:69:ARG:CD	7:AG:95:ARG:HG2	2.44	0.47
7:AG:115:MET:HE3	7:AG:118:ARG:HB2	1.95	0.47
9:AI:122:ARG:HH11	9:AI:122:ARG:HG3	1.79	0.47
12:AL:23:LEU:HD22	12:AL:58:ASN:CB	2.44	0.47
15:AO:31:LEU:O	15:AO:35:ILE:HG13	2.15	0.47
15:AO:81:ILE:HG13	15:AO:82:GLU:CD	2.39	0.47
20:AT:68:LYS:O	20:AT:70:LYS:N	2.47	0.47
25:BA:72:U:C4	25:BA:112:U:H4'	2.49	0.47
25:BA:2419:U:H5''	54:B4:21:THR:CG2	2.44	0.47
25:BA:2475:C:C2'	25:BA:2476:A:H5'	2.45	0.47
30:BF:42:GLY:HA3	30:BF:90:GLN:O	2.13	0.47
32:BH:100:ASN:HD22	32:BH:100:ASN:N	2.11	0.47
39:BO:10:ARG:HB3	39:BO:10:ARG:NH2	2.29	0.47
39:BO:42:THR:OG1	39:BO:45:GLN:HG3	2.14	0.47
39:BO:97:GLN:OE1	39:BO:97:GLN:N	2.47	0.47
56:B6:53:ASP:O	56:B6:57:VAL:HG23	2.15	0.47
1:AA:1330:U:H4'	13:AM:22:TYR:CE1	2.49	0.47
1:AA:1478:U:H2'	1:AA:1479:C:C6	2.48	0.47
1:AA:1493:A:H2	22:AV:36:A:H1'	1.66	0.47
1:AA:1494:G:O6	24:AY:1:KBE:HAA	2.14	0.47
2:AB:101:THR:HG22	2:AB:174:GLU:OE1	2.15	0.47
4:AD:29:THR:HB	4:AD:30:LYS:HZ2	1.80	0.47
4:AD:61:ARG:CZ	4:AD:68:GLU:HG2	2.44	0.47
12:AL:50:LYS:HD2	12:AL:50:LYS:N	2.29	0.47
14:AN:32:ASP:CG	14:AN:33:VAL:N	2.72	0.47
22:AW:5:G:H2'	22:AW:6:G:C8	2.49	0.47
25:BA:443:A:H3'	30:BF:40:ARG:NH1	2.30	0.47
25:BA:1151:A:O2'	43:BS:80:ASN:HB2	2.15	0.47
25:BA:1827:U:H1'	25:BA:1970:A:N3	2.30	0.47
25:BA:2445:G:O2'	25:BA:2446:G:H5'	2.15	0.47
25:BA:2618:G:O2'	29:BE:154:LYS:HB2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2831:G:OP1	29:BE:56:LYS:HE2	2.14	0.47
25:BA:2849:U:H4'	25:BA:2868:A:C2	2.49	0.47
27:BC:150:ALA:O	27:BC:154:LYS:HG3	2.14	0.47
28:BD:172:THR:CG2	28:BD:180:MET:HB3	2.44	0.47
28:BD:202:ARG:NH2	28:BD:213:ARG:HH21	2.12	0.47
30:BF:88:ARG:HB3	30:BF:89:PRO:HD2	1.96	0.47
31:BG:78:ILE:HD12	31:BG:78:ILE:C	2.39	0.47
31:BG:107:VAL:HB	31:BG:108:PRO:HD3	1.95	0.47
32:BH:167:VAL:HG13	32:BH:167:VAL:O	2.15	0.47
34:BJ:57:ASN:O	34:BJ:61:ARG:HB2	2.13	0.47
40:BP:103:ARG:HB3	40:BP:108:ALA:H	1.78	0.47
42:BR:3:ILE:H	42:BR:3:ILE:CD1	2.24	0.47
43:BS:79:ILE:HD12	43:BS:91:ARG:NH1	2.29	0.47
51:B1:39:GLN:HB2	51:B1:41:HIS:ND1	2.30	0.47
55:B5:22:MET:HA	55:B5:28:ARG:HG2	1.97	0.47
1:AA:1047:G:H5''	14:AN:3:GLN:NE2	2.22	0.47
4:AD:54:LEU:HD23	4:AD:54:LEU:C	2.39	0.47
5:AE:82:HIS:CD2	8:AH:98:LEU:HD12	2.50	0.47
7:AG:45:ALA:HB1	7:AG:119:LEU:HD22	1.96	0.47
8:AH:76:ARG:HA	8:AH:126:CYS:HB3	1.96	0.47
8:AH:82:LEU:HD23	8:AH:82:LEU:C	2.40	0.47
11:AK:87:GLY:N	11:AK:113:THR:HG22	2.21	0.47
12:AL:42:LYS:CG	12:AL:43:LYS:H	2.26	0.47
12:AL:73:LEU:HD22	12:AL:73:LEU:N	2.29	0.47
12:AL:85:ARG:HA	12:AL:93:ARG:HA	1.96	0.47
25:BA:288:U:H2'	25:BA:289:G:H8	1.80	0.47
25:BA:729:G:N2	28:BD:10:PRO:HG2	2.30	0.47
25:BA:1822:C:H2'	25:BA:1823:G:C8	2.49	0.47
25:BA:2564:A:C2	25:BA:2647:U:H4'	2.49	0.47
31:BG:131:VAL:HG23	31:BG:131:VAL:O	2.14	0.47
34:BJ:39:THR:O	34:BJ:43:LYS:HG2	2.14	0.47
36:BL:141:ASP:O	36:BL:142:ILE:HD12	2.13	0.47
41:BQ:115:LEU:HG	41:BQ:117:PHE:HD2	1.79	0.47
46:BV:35:ALA:HB3	46:BV:38:ALA:HB2	1.96	0.47
49:BY:19:VAL:HA	49:BY:34:VAL:HG13	1.95	0.47
1:AA:123:U:OP1	1:AA:312:C:H5'	2.15	0.47
1:AA:249:U:H2'	1:AA:250:A:H5''	1.97	0.47
1:AA:257:G:H2'	1:AA:258:G:H8	1.80	0.47
1:AA:335:C:H2'	1:AA:336:A:C8	2.49	0.47
1:AA:496:A:H3'	1:AA:496:A:N3	2.30	0.47
1:AA:505:G:H4'	1:AA:534:U:C4	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:587:G:H4'	8:AH:3:GLN:HA	1.95	0.47
1:AA:939:G:H5'	7:AG:101:ARG:NH1	2.30	0.47
1:AA:1020:G:H2'	1:AA:1021:A:C8	2.50	0.47
1:AA:1230:C:C5'	22:AW:30:G:H5''	2.44	0.47
1:AA:1333:A:H2'	1:AA:1334:G:O4'	2.15	0.47
2:AB:84:LEU:HD22	2:AB:90:PHE:CZ	2.50	0.47
3:AC:26:LYS:HG2	3:AC:27:GLU:CD	2.40	0.47
4:AD:6:PRO:HB2	4:AD:9:LYS:NZ	2.28	0.47
4:AD:103:ARG:HG2	4:AD:103:ARG:HH11	1.79	0.47
4:AD:150:LYS:HB2	4:AD:155:LYS:CE	2.44	0.47
5:AE:85:LYS:HD3	5:AE:94:PHE:HD2	1.80	0.47
9:AI:8:THR:HG21	9:AI:10:ARG:HH22	1.79	0.47
9:AI:49:GLN:C	9:AI:51:LEU:H	2.23	0.47
9:AI:53:LEU:H	9:AI:53:LEU:CD1	2.28	0.47
10:AJ:34:ALA:O	10:AJ:36:VAL:HG23	2.15	0.47
11:AK:86:LYS:HB2	11:AK:112:VAL:HG23	1.96	0.47
11:AK:112:VAL:HG12	18:AR:72:ARG:NH2	2.29	0.47
12:AL:98:ARG:HD2	12:AL:103:CYS:SG	2.55	0.47
14:AN:20:PHE:HA	14:AN:24:ALA:CB	2.44	0.47
14:AN:82:ILE:HG22	14:AN:86:GLU:OE2	2.15	0.47
16:AP:48:GLU:OE2	16:AP:51:ARG:HB2	2.15	0.47
18:AR:54:LEU:O	18:AR:58:ILE:HG13	2.14	0.47
20:AT:32:LYS:HD3	20:AT:35:TYR:HE2	1.78	0.47
20:AT:59:ARG:O	20:AT:63:LYS:HG2	2.15	0.47
25:BA:378:C:H2'	25:BA:379:G:C8	2.50	0.47
25:BA:710:U:H2'	25:BA:711:G:H8	1.80	0.47
25:BA:1313:U:H3'	25:BA:1313:U:O2	2.14	0.47
25:BA:1355:G:H2'	25:BA:1356:G:C8	2.49	0.47
25:BA:1537:G:H3'	25:BA:1537:G:N3	2.30	0.47
25:BA:1777:U:H3	25:BA:1787:A:N6	2.11	0.47
25:BA:2030:A:N3	25:BA:2499:C:H5''	2.29	0.47
25:BA:2280:G:O2'	25:BA:2281:A:H5'	2.15	0.47
25:BA:2469:A:H2'	25:BA:2470:G:O4'	2.15	0.47
25:BA:2570:G:H2'	25:BA:2571:U:O4'	2.14	0.47
27:BC:26:ALA:HB1	27:BC:214:ILE:CD1	2.44	0.47
31:BG:37:MET:SD	31:BG:149:ARG:HG2	2.55	0.47
31:BG:120:SER:HB2	31:BG:127:TYR:CE1	2.49	0.47
34:BJ:60:LEU:HD21	34:BJ:82:ILE:HD13	1.96	0.47
34:BJ:119:PRO:HG2	34:BJ:122:GLN:HG2	1.96	0.47
36:BL:11:VAL:HG11	36:BL:50:THR:HA	1.97	0.47
38:BN:89:VAL:O	38:BN:89:VAL:HG13	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:BO:110:GLU:HG2	39:BO:114:ARG:NH2	2.28	0.47
40:BP:14:SER:HA	40:BP:17:ARG:CZ	2.44	0.47
42:BR:29:VAL:CG1	42:BR:79:VAL:HG12	2.45	0.47
43:BS:13:HIS:O	43:BS:17:LEU:HD23	2.15	0.47
48:BX:4:ILE:HD11	48:BX:56:PHE:HE1	1.79	0.47
52:B2:23:LEU:HD22	52:B2:28:LEU:HD12	1.96	0.47
55:B5:9:VAL:HG12	55:B5:13:ASN:ND2	2.29	0.47
55:B5:26:ASN:HA	55:B5:29:GLN:OE1	2.14	0.47
1:AA:92:U:H2'	1:AA:93:U:O4'	2.15	0.47
1:AA:484:G:O3'	1:AA:485:U:H3'	2.14	0.47
1:AA:758:C:H4'	1:AA:880:C:C4'	2.44	0.47
1:AA:1040:U:H2'	1:AA:1041:G:C8	2.50	0.47
4:AD:122:ILE:HG22	4:AD:144:ILE:HG13	1.96	0.47
4:AD:141:VAL:O	4:AD:141:VAL:HG23	2.15	0.47
4:AD:146:GLU:N	4:AD:146:GLU:OE1	2.48	0.47
6:AF:17:GLN:HE22	6:AF:24:ARG:NH2	2.13	0.47
11:AK:84:MET:HE2	11:AK:112:VAL:CG1	2.45	0.47
14:AN:6:LYS:HD3	14:AN:6:LYS:N	2.30	0.47
17:AQ:18:LYS:HE2	17:AQ:49:ASN:H	1.79	0.47
25:BA:61:C:OP1	51:B1:44:LYS:HE3	2.15	0.47
25:BA:534:U:H2'	25:BA:535:G:C8	2.50	0.47
25:BA:940:G:C3'	25:BA:941:A:H5''	2.44	0.47
25:BA:1790:C:H4'	28:BD:207:ALA:CB	2.45	0.47
25:BA:1912:A:C5	25:BA:1918:A:N3	2.82	0.47
25:BA:2383:G:O2'	25:BA:2384:U:H5'	2.14	0.47
27:BC:197:LYS:HD3	27:BC:226:GLN:HE22	1.78	0.47
28:BD:181:ARG:NH2	28:BD:183:VAL:HG22	2.30	0.47
30:BF:105:LEU:HD21	30:BF:177:PRO:HG3	1.97	0.47
32:BH:106:LEU:HD13	32:BH:151:ARG:HB3	1.96	0.47
34:BJ:4:ASN:O	34:BJ:8:LYS:HG3	2.14	0.47
35:BK:11:GLN:C	35:BK:11:GLN:NE2	2.73	0.47
44:BT:29:THR:O	44:BT:29:THR:HG22	2.15	0.47
44:BT:49:ILE:HB	44:BT:51:VAL:O	2.15	0.47
48:BX:31:TYR:HA	48:BX:93:ARG:HH12	1.80	0.47
50:BZ:27:ARG:HD3	50:BZ:29:LEU:CD2	2.44	0.47
51:B1:49:ASP:O	51:B1:53:VAL:HG23	2.14	0.47
52:B2:26:LEU:HD21	52:B2:46:MET:HB2	1.96	0.47
1:AA:570:G:H5'	1:AA:820:U:O4'	2.15	0.47
1:AA:927:G:H2'	1:AA:928:G:C8	2.50	0.47
2:AB:26:MET:HA	2:AB:26:MET:HE3	1.96	0.47
2:AB:206:ILE:H	2:AB:206:ILE:CD1	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AD:37:PRO:HD2	4:AD:41:GLY:CA	2.45	0.47
7:AG:112:ASP:HB2	7:AG:118:ARG:HG2	1.96	0.47
8:AH:104:SER:HB2	8:AH:125:ILE:HD11	1.97	0.47
16:AP:33:ILE:HG21	16:AP:60:TRP:CH2	2.50	0.47
19:AS:28:LYS:HB3	19:AS:29:PRO:CD	2.41	0.47
20:AT:83:ASN:HD22	20:AT:83:ASN:N	2.13	0.47
24:AY:4:SER:O	25:BA:1914:C:H5'	2.15	0.47
25:BA:38:A:N3	30:BF:43:THR:HB	2.30	0.47
25:BA:144:A:H4'	46:BV:3:ARG:HD2	1.97	0.47
25:BA:1419:A:O2'	25:BA:1420:A:H5''	2.14	0.47
25:BA:1427:A:H4'	25:BA:1428:C:O4'	2.15	0.47
25:BA:1752:C:H2'	25:BA:1753:G:C8	2.50	0.47
25:BA:2313:C:H4'	31:BG:36:ASN:HD22	1.80	0.47
25:BA:2601:C:H2'	25:BA:2603:G:C8	2.49	0.47
27:BC:175:ILE:CG2	27:BC:188:ASN:HB3	2.42	0.47
31:BG:35:LEU:HB3	31:BG:151:LEU:HD11	1.97	0.47
31:BG:78:ILE:HD12	31:BG:78:ILE:O	2.15	0.47
32:BH:100:ASN:H	32:BH:100:ASN:HD22	1.62	0.47
33:BI:6:LEU:N	33:BI:6:LEU:HD12	2.29	0.47
35:BK:27:LEU:C	35:BK:27:LEU:HD12	2.39	0.47
38:BN:41:ARG:HH21	38:BN:41:ARG:HG2	1.78	0.47
40:BP:113:ILE:HG23	40:BP:113:ILE:O	2.15	0.47
49:BY:33:ILE:HG21	49:BY:76:ILE:HG21	1.96	0.47
55:B5:42:LEU:H	55:B5:42:LEU:CD2	2.27	0.47
1:AA:263:A:H5'	20:AT:69:ASN:ND2	2.29	0.47
2:AB:131:LYS:O	2:AB:135:MET:HB2	2.16	0.47
4:AD:67:LEU:HD22	4:AD:67:LEU:N	2.29	0.47
4:AD:122:ILE:HD13	4:AD:122:ILE:N	2.25	0.47
6:AF:9:MET:HG3	6:AF:85:ILE:HB	1.96	0.47
11:AK:75:GLU:OE1	11:AK:75:GLU:N	2.48	0.47
16:AP:14:ARG:HB3	16:AP:14:ARG:NH1	2.29	0.47
21:AU:36:PHE:HB3	21:AU:40:PRO:CD	2.45	0.47
22:AV:5:G:H2'	22:AV:6:G:H8	1.79	0.47
25:BA:231:A:C2'	25:BA:232:G:H5'	2.45	0.47
25:BA:231:A:H2'	25:BA:232:G:H5'	1.97	0.47
25:BA:239:C:H2'	25:BA:240:C:O4'	2.15	0.47
25:BA:1792:G:OP1	28:BD:204:LEU:HD13	2.15	0.47
25:BA:1826:G:H2'	25:BA:1827:U:C6	2.50	0.47
25:BA:2060:A:H3'	30:BF:63:LYS:HZ1	1.77	0.47
25:BA:2291:U:H2'	25:BA:2292:U:C6	2.49	0.47
26:BB:28:C:P	41:BQ:31:THR:HG21	2.55	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:BB:65:U:H2'	26:BB:66:A:H5'	1.97	0.47
27:BC:47:ASN:ND2	27:BC:210:LYS:HD3	2.29	0.47
28:BD:62:ARG:O	28:BD:64:VAL:HG23	2.14	0.47
30:BF:105:LEU:HA	30:BF:108:ILE:HG22	1.97	0.47
31:BG:11:VAL:HG22	31:BG:171:ALA:HB1	1.96	0.47
46:BV:1:MET:HB2	46:BV:2:ILE:HD12	1.97	0.47
57:B7:4:ARG:NH1	57:B7:6:SER:HB3	2.29	0.47
1:AA:232:G:H2'	1:AA:233:C:O4'	2.14	0.46
1:AA:269:C:H2'	1:AA:270:A:C8	2.51	0.46
1:AA:720:C:H4'	18:AR:38:ILE:HB	1.97	0.46
1:AA:820:U:H3'	1:AA:821:G:C5'	2.45	0.46
2:AB:205:ALA:O	2:AB:209:VAL:HG22	2.15	0.46
4:AD:47:LEU:HD23	4:AD:47:LEU:N	2.22	0.46
4:AD:61:ARG:NH1	4:AD:68:GLU:HG2	2.30	0.46
6:AF:11:HIS:ND1	6:AF:12:PRO:HD2	2.29	0.46
6:AF:62:MET:HG3	6:AF:63:ASN:N	2.30	0.46
9:AI:21:LYS:HZ2	9:AI:23:GLY:HA3	1.79	0.46
9:AI:111:GLU:OE2	9:AI:120:ALA:HB1	2.15	0.46
10:AJ:9:ARG:O	10:AJ:98:VAL:HA	2.15	0.46
13:AM:26:LYS:O	13:AM:26:LYS:HD3	2.16	0.46
15:AO:6:ALA:O	15:AO:10:ILE:HG13	2.14	0.46
20:AT:5:SER:C	20:AT:7:LYS:N	2.73	0.46
22:AW:60:U:H5''	22:AW:61:C:H5	1.79	0.46
25:BA:517:C:H5''	53:B3:12:ARG:HH12	1.80	0.46
25:BA:791:C:C2	25:BA:794:A:H5'	2.50	0.46
25:BA:792:A:C3'	25:BA:793:A:H5'	2.43	0.46
25:BA:1101:U:H2'	25:BA:1102:C:C6	2.50	0.46
25:BA:1358:G:H1'	25:BA:1374:G:N2	2.30	0.46
25:BA:1594:U:H2'	25:BA:1595:C:C6	2.50	0.46
27:BC:167:LYS:HD2	27:BC:167:LYS:C	2.39	0.46
28:BD:91:ALA:HB2	28:BD:105:ALA:HB2	1.96	0.46
28:BD:257:ARG:HG2	28:BD:257:ARG:HH11	1.80	0.46
32:BH:104:LEU:HD21	32:BH:130:ILE:HD11	1.98	0.46
49:BY:39:THR:HG23	49:BY:53:HIS:CD2	2.49	0.46
56:B6:7:ARG:HE	56:B6:7:ARG:CA	2.23	0.46
1:AA:1328:C:H2'	1:AA:1329:A:H8	1.79	0.46
3:AC:54:ILE:O	3:AC:54:ILE:HG13	2.15	0.46
4:AD:2:ARG:HE	4:AD:114:ARG:CD	2.28	0.46
4:AD:118:SER:HA	4:AD:130:ASN:O	2.15	0.46
6:AF:25:TYR:O	6:AF:29:ILE:HG13	2.15	0.46
7:AG:3:ARG:HB2	7:AG:3:ARG:HH11	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:AH:28:SER:HB3	8:AH:56:PRO:CB	2.45	0.46
9:AI:115:VAL:CG2	10:AJ:62:ARG:HD2	2.45	0.46
10:AJ:17:LEU:HD23	10:AJ:17:LEU:C	2.40	0.46
15:AO:56:LEU:HD23	15:AO:56:LEU:C	2.40	0.46
22:AW:13:C:H2'	22:AW:14:A:H8	1.81	0.46
25:BA:593:U:H2'	25:BA:594:U:C6	2.50	0.46
25:BA:858:G:OP2	25:BA:858:G:H8	1.98	0.46
25:BA:1219:U:H2'	25:BA:1220:G:C8	2.51	0.46
25:BA:1343:G:H5'	25:BA:1598:A:OP1	2.14	0.46
25:BA:2011:U:OP1	45:BU:42:LYS:HD3	2.15	0.46
25:BA:2875:C:H4'	42:BR:1:SER:HB2	1.96	0.46
26:BB:104:A:H2'	26:BB:105:G:O4'	2.15	0.46
28:BD:105:ALA:O	28:BD:195:GLY:HA2	2.15	0.46
28:BD:166:ARG:HH21	28:BD:166:ARG:CB	2.29	0.46
29:BE:125:TRP:CG	29:BE:160:LYS:HB3	2.50	0.46
31:BG:43:ILE:HD13	31:BG:43:ILE:N	2.30	0.46
31:BG:102:LEU:O	31:BG:107:VAL:HG23	2.15	0.46
38:BN:63:LYS:HG3	56:B6:12:ARG:HH11	1.80	0.46
45:BU:17:VAL:HG12	45:BU:76:VAL:HG21	1.98	0.46
49:BY:51:ARG:HG3	49:BY:52:ASP:N	2.30	0.46
1:AA:116:A:H61	1:AA:313:A:H1'	1.80	0.46
1:AA:205:A:H2'	1:AA:206:C:H5'	1.96	0.46
1:AA:350:G:H5''	20:AT:2:ASN:ND2	2.29	0.46
1:AA:517:G:H4'	1:AA:519:C:N3	2.30	0.46
1:AA:818:G:O2'	1:AA:819:A:H5'	2.15	0.46
1:AA:1092:A:H5''	7:AG:3:ARG:CZ	2.46	0.46
1:AA:1243:C:H2'	1:AA:1244:G:C8	2.50	0.46
1:AA:1384:C:H2'	1:AA:1385:G:C8	2.50	0.46
1:AA:1408:A:O3'	25:BA:1916:A:C2	2.68	0.46
3:AC:13:ILE:HG12	3:AC:14:VAL:HG22	1.98	0.46
3:AC:19:SER:HA	3:AC:56:ILE:O	2.15	0.46
4:AD:58:GLN:O	4:AD:62:ARG:HG2	2.15	0.46
6:AF:3:HIS:N	6:AF:92:THR:HG23	2.23	0.46
12:AL:42:LYS:HG2	12:AL:43:LYS:HD3	1.98	0.46
12:AL:120:ARG:HD2	12:AL:121:PRO:N	2.31	0.46
13:AM:2:ARG:HG2	13:AM:2:ARG:HH11	1.80	0.46
25:BA:2376:A:H2'	25:BA:2377:A:O4'	2.15	0.46
25:BA:2553:G:H2'	25:BA:2554:U:H4'	1.95	0.46
25:BA:2623:G:H2'	25:BA:2624:G:H8	1.81	0.46
31:BG:35:LEU:HD12	31:BG:35:LEU:N	2.30	0.46
32:BH:32:LEU:HD11	32:BH:135:ALA:HB1	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:BH:68:ARG:O	32:BH:72:ASN:HB2	2.16	0.46
34:BJ:50:VAL:O	34:BJ:50:VAL:HG13	2.14	0.46
35:BK:56:VAL:HG21	35:BK:68:PHE:CD2	2.48	0.46
36:BL:64:VAL:HG21	36:BL:68:LYS:HB2	1.96	0.46
40:BP:2:ARG:HD3	40:BP:5:LYS:HB2	1.97	0.46
42:BR:39:LEU:N	42:BR:39:LEU:HD12	2.30	0.46
44:BT:46:GLU:OE1	44:BT:46:GLU:N	2.48	0.46
46:BV:49:LYS:HD3	46:BV:49:LYS:N	2.30	0.46
46:BV:68:LYS:NZ	46:BV:77:ARG:NH2	2.63	0.46
52:B2:43:ILE:O	52:B2:47:ILE:HG13	2.15	0.46
54:B4:8:ILE:HG22	54:B4:52:LYS:HB2	1.97	0.46
1:AA:109:A:H62	1:AA:324:G:H1'	1.80	0.46
1:AA:1125:U:O2'	1:AA:1126:U:H2'	2.15	0.46
2:AB:134:LEU:HD12	2:AB:137:THR:OG1	2.15	0.46
3:AC:110:LEU:HD22	3:AC:110:LEU:N	2.30	0.46
4:AD:78:ALA:HB1	4:AD:88:ASN:HB2	1.96	0.46
4:AD:124:VAL:HG23	4:AD:125:ASN:N	2.30	0.46
4:AD:196:GLU:O	4:AD:199:ILE:HG12	2.16	0.46
6:AF:48:ALA:HB1	18:AR:68:PRO:HG3	1.96	0.46
8:AH:6:ILE:H	8:AH:6:ILE:CD1	2.29	0.46
8:AH:113:ARG:O	8:AH:117:GLN:HG3	2.14	0.46
21:AU:25:ALA:HB3	23:AX:9:G:H4'	1.97	0.46
25:BA:464:U:H5'	55:B5:5:PHE:HD2	1.80	0.46
25:BA:1465:G:H2'	25:BA:1466:U:O4'	2.15	0.46
25:BA:2053:G:H5'	29:BE:149:ASN:O	2.15	0.46
28:BD:226:PRO:CA	28:BD:232:GLY:HA2	2.45	0.46
29:BE:113:SER:HA	29:BE:195:GLY:N	2.28	0.46
30:BF:108:ILE:HG23	30:BF:109:LEU:CD1	2.45	0.46
33:BI:44:ILE:O	33:BI:48:GLU:HB2	2.16	0.46
35:BK:100:ILE:CG2	35:BK:101:SER:H	2.14	0.46
39:BO:41:LEU:HG	39:BO:96:ILE:HG13	1.98	0.46
46:BV:55:VAL:HG13	46:BV:86:THR:O	2.16	0.46
1:AA:224:U:H2'	1:AA:225:C:C6	2.50	0.46
2:AB:69:VAL:O	2:AB:163:ILE:HG22	2.14	0.46
2:AB:150:ILE:CG2	2:AB:151:LYS:H	2.20	0.46
5:AE:73:VAL:HG23	5:AE:75:LEU:HD11	1.98	0.46
5:AE:103:GLY:CA	5:AE:121:ASN:HA	2.42	0.46
5:AE:139:THR:OG1	5:AE:140:ILE:HD12	2.15	0.46
8:AH:21:LYS:HE2	8:AH:21:LYS:CA	2.45	0.46
11:AK:112:VAL:HA	18:AR:72:ARG:NH2	2.31	0.46
13:AM:47:LEU:HD23	13:AM:47:LEU:C	2.41	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:710:U:H2'	25:BA:711:G:C8	2.50	0.46
25:BA:740:C:H5'	25:BA:1784:A:C2'	2.45	0.46
25:BA:800:A:O4'	25:BA:802:A:H5'	2.14	0.46
25:BA:1542:U:H2'	25:BA:1543:G:O4'	2.15	0.46
25:BA:2178:C:H2'	25:BA:2179:C:C6	2.50	0.46
25:BA:2220:U:H2'	25:BA:2221:G:C8	2.51	0.46
25:BA:2339:C:H2'	25:BA:2340:A:C8	2.51	0.46
25:BA:2820:A:O5'	40:BP:3:HIS:HA	2.15	0.46
28:BD:250:GLN:HB3	28:BD:254:LYS:HG2	1.97	0.46
29:BE:183:GLU:OE1	29:BE:183:GLU:N	2.48	0.46
29:BE:207:VAL:HG13	29:BE:208:LYS:HG3	1.98	0.46
31:BG:148:VAL:O	31:BG:148:VAL:HG23	2.16	0.46
32:BH:159:LYS:HB3	32:BH:159:LYS:HZ3	1.81	0.46
56:B6:14:LYS:C	56:B6:14:LYS:HD3	2.40	0.46
1:AA:504:C:H2'	1:AA:511:C:C5	2.41	0.46
2:AB:202:ASN:OD1	2:AB:203:ASP:N	2.48	0.46
4:AD:43:ARG:HA	4:AD:43:ARG:CZ	2.44	0.46
4:AD:164:ARG:HG2	4:AD:165:GLU:N	2.30	0.46
15:AO:16:ARG:HD3	15:AO:16:ARG:N	2.30	0.46
22:AW:36:A:H2'	22:AW:37:A:C5'	2.44	0.46
25:BA:491:G:H2'	25:BA:491:G:N3	2.31	0.46
25:BA:523:C:H2'	25:BA:524:G:C8	2.51	0.46
25:BA:578:G:H5'	25:BA:1254:A:OP1	2.15	0.46
25:BA:922:C:H2'	25:BA:923:G:H8	1.81	0.46
25:BA:1053:C:C2'	25:BA:1054:A:H5''	2.45	0.46
25:BA:1245:G:H2'	25:BA:1246:A:C8	2.51	0.46
25:BA:1297:C:OP1	25:BA:2710:C:H4'	2.15	0.46
25:BA:2711:A:OP2	25:BA:2714:G:H5'	2.15	0.46
30:BF:102:ARG:O	30:BF:106:LYS:HG3	2.16	0.46
31:BG:71:LYS:HA	31:BG:80:GLN:OE1	2.15	0.46
36:BL:77:HIS:HE1	36:BL:82:GLY:HA2	1.79	0.46
41:BQ:17:LYS:O	41:BQ:17:LYS:HD3	2.16	0.46
41:BQ:28:VAL:HG23	41:BQ:36:TYR:O	2.14	0.46
42:BR:21:PRO:HD3	42:BR:49:ILE:HD12	1.97	0.46
44:BT:32:THR:HA	44:BT:62:GLU:HA	1.97	0.46
46:BV:39:THR:O	46:BV:43:ILE:HG13	2.15	0.46
1:AA:128:G:O2'	1:AA:129:A:H5'	2.16	0.46
1:AA:230:G:O2'	1:AA:231:U:H5'	2.16	0.46
1:AA:946:A:H2'	1:AA:947:G:C8	2.51	0.46
1:AA:1527:U:O2'	1:AA:1528:U:H5'	2.16	0.46
3:AC:24:ASN:O	3:AC:28:PHE:HB2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AD:32:LYS:O	4:AD:36:ALA:HB3	2.15	0.46
9:AI:105:ARG:HD3	9:AI:105:ARG:C	2.39	0.46
12:AL:98:ARG:HH11	12:AL:98:ARG:HG3	1.80	0.46
13:AM:28:ARG:HA	13:AM:28:ARG:HE	1.81	0.46
14:AN:81:ARG:HG2	14:AN:81:ARG:HH11	1.80	0.46
17:AQ:37:ILE:HD12	17:AQ:37:ILE:C	2.40	0.46
25:BA:648:G:H2'	25:BA:649:G:C8	2.51	0.46
25:BA:854:C:H2'	25:BA:855:G:H8	1.81	0.46
25:BA:879:G:C6	25:BA:899:A:H1'	2.51	0.46
25:BA:2552:U:O2	25:BA:2554:U:H5'	2.15	0.46
27:BC:21:TYR:O	27:BC:224:VAL:HA	2.16	0.46
30:BF:55:SER:N	30:BF:74:LYS:HE3	2.30	0.46
31:BG:30:VAL:O	31:BG:30:VAL:HG23	2.14	0.46
43:BS:79:ILE:HD12	43:BS:91:ARG:HH12	1.80	0.46
46:BV:6:ARG:O	46:BV:10:VAL:HG23	2.14	0.46
55:B5:34:ARG:HB3	55:B5:39:ARG:HG3	1.96	0.46
1:AA:1330:U:C2'	1:AA:1331:G:H5'	2.46	0.46
1:AA:1414:U:H2'	1:AA:1415:G:C8	2.49	0.46
1:AA:1535:C:N4	23:AX:10:G:H1	2.07	0.46
2:AB:14:HIS:HB2	2:AB:208:ALA:HB2	1.97	0.46
2:AB:18:GLN:CG	2:AB:189:ASN:HD22	2.25	0.46
3:AC:70:ALA:C	3:AC:72:PRO:HD3	2.40	0.46
6:AF:29:ILE:HG21	6:AF:64:VAL:CG1	2.46	0.46
9:AI:129:ARG:HH11	9:AI:129:ARG:CB	2.20	0.46
10:AJ:23:ALA:O	10:AJ:27:GLU:HB2	2.16	0.46
11:AK:83:VAL:HG11	11:AK:96:ILE:CG2	2.44	0.46
16:AP:12:LYS:O	16:AP:13:LYS:HB2	2.15	0.46
17:AQ:58:VAL:HG13	17:AQ:60:ILE:CD1	2.40	0.46
25:BA:85:G:OP1	47:BW:5:ARG:HA	2.16	0.46
25:BA:527:C:H4'	25:BA:528:A:O4'	2.15	0.46
25:BA:646:U:O4	25:BA:2368:C:H1'	2.15	0.46
25:BA:660:C:H2'	25:BA:661:A:C8	2.51	0.46
25:BA:1052:C:H3'	25:BA:1052:C:C6	2.47	0.46
25:BA:1936:A:H3'	25:BA:1937:A:H5'	1.96	0.46
30:BF:149:ILE:HD12	30:BF:170:ARG:O	2.16	0.46
30:BF:159:LEU:HD12	30:BF:159:LEU:N	2.31	0.46
31:BG:11:VAL:HG21	31:BG:172:PHE:CE1	2.50	0.46
38:BN:90:VAL:HG23	38:BN:120:VAL:CG2	2.43	0.46
41:BQ:97:PHE:HB3	41:BQ:103:VAL:HG21	1.97	0.46
46:BV:68:LYS:HZ2	46:BV:77:ARG:NH2	2.13	0.46
47:BW:17:ASP:CA	47:BW:20:LYS:HD3	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:BZ:2:ARG:O	50:BZ:11:PRO:HD3	2.15	0.46
55:B5:12:ARG:HH21	55:B5:12:ARG:HG2	1.81	0.46
1:AA:505:G:OP2	1:AA:535:A:H5'	2.16	0.46
1:AA:736:C:C5'	6:AF:88:MET:HE2	2.44	0.46
1:AA:751:U:C2'	1:AA:752:G:H5'	2.46	0.46
1:AA:977:A:H3'	1:AA:977:A:N3	2.31	0.46
1:AA:1457:G:O2'	1:AA:1458:G:H5'	2.16	0.46
2:AB:12:GLY:H	2:AB:211:LEU:CD2	2.29	0.46
3:AC:5:HIS:CB	14:AN:89:MET:HE3	2.45	0.46
3:AC:111:ASP:O	3:AC:115:VAL:HG23	2.16	0.46
3:AC:176:THR:HG22	3:AC:179:ALA:H	1.80	0.46
5:AE:103:GLY:HA3	5:AE:121:ASN:CA	2.43	0.46
10:AJ:59:LYS:HD2	10:AJ:59:LYS:N	2.31	0.46
12:AL:75:GLU:O	12:AL:76:HIS:HB2	2.16	0.46
14:AN:5:MET:HB3	14:AN:63:ARG:HH12	1.81	0.46
15:AO:28:VAL:HG11	15:AO:66:LEU:HD21	1.98	0.46
25:BA:310:A:OP1	47:BW:18:LYS:HD2	2.15	0.46
25:BA:722:A:H2'	25:BA:723:C:O4'	2.16	0.46
25:BA:1203:U:H4'	38:BN:3:LEU:HD23	1.98	0.46
25:BA:2547:A:H2'	25:BA:2548:U:C6	2.51	0.46
27:BC:26:ALA:HB1	27:BC:214:ILE:HD13	1.98	0.46
28:BD:78:GLU:OE1	28:BD:94:LEU:HB2	2.16	0.46
31:BG:8:LYS:HA	31:BG:12:VAL:HG21	1.97	0.46
33:BI:25:TYR:O	33:BI:30:LEU:HG	2.16	0.46
35:BK:24:GLY:C	35:BK:26:ALA:H	2.23	0.46
35:BK:139:VAL:O	35:BK:139:VAL:HG13	2.16	0.46
38:BN:110:VAL:HG23	38:BN:127:VAL:HG22	1.97	0.46
42:BR:90:ALA:HB2	42:BR:112:ARG:HA	1.97	0.46
46:BV:5:GLU:O	46:BV:9:LYS:HG3	2.16	0.46
1:AA:754:C:O2'	15:AO:65:LEU:HD23	2.15	0.46
8:AH:74:ILE:HG23	8:AH:74:ILE:O	2.16	0.46
13:AM:99:GLN:OE1	13:AM:99:GLN:N	2.47	0.46
16:AP:6:LEU:HD23	16:AP:17:TYR:HB3	1.98	0.46
25:BA:118:A:OP2	25:BA:119:A:H5''	2.16	0.46
25:BA:926:G:H2'	25:BA:927:A:C8	2.50	0.46
25:BA:1059:G:H4'	35:BK:116:MET:CE	2.46	0.46
25:BA:1912:A:N6	25:BA:1918:A:C4	2.84	0.46
25:BA:2351:G:H2'	25:BA:2365:G:H22	1.79	0.46
25:BA:2893:A:H4'	25:BA:2894:G:O4'	2.16	0.46
28:BD:78:GLU:OE1	28:BD:94:LEU:HD22	2.16	0.46
31:BG:7:TYR:OH	31:BG:29:ARG:HG2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:BH:1:SER:O	32:BH:5:LYS:HG2	2.16	0.46
37:BM:59:LYS:HG3	37:BM:89:ASN:OD1	2.16	0.46
38:BN:30:THR:O	38:BN:31:GLY:C	2.58	0.46
39:BO:21:ALA:CB	39:BO:100:LYS:HG2	2.46	0.46
41:BQ:71:ALA:HB2	41:BQ:102:ARG:HB3	1.98	0.46
42:BR:25:VAL:HG23	42:BR:84:SER:O	2.15	0.46
43:BS:16:ILE:N	43:BS:16:ILE:HD12	2.31	0.46
43:BS:47:ARG:HG2	43:BS:51:GLN:NE2	2.28	0.46
45:BU:23:LEU:HD11	53:B3:21:LEU:HD12	1.97	0.46
46:BV:73:ARG:NH2	46:BV:73:ARG:HB3	2.31	0.46
48:BX:41:GLU:HG3	48:BX:41:GLU:O	2.16	0.46
50:BZ:53:LYS:O	50:BZ:57:VAL:HG23	2.16	0.46
52:B2:51:SER:HA	52:B2:54:VAL:CG2	2.46	0.46
1:AA:1001:C:H2'	1:AA:1002:G:H8	1.80	0.45
1:AA:1108:G:OP1	3:AC:174:LEU:HB3	2.15	0.45
2:AB:94:ARG:NH1	2:AB:96:LEU:HA	2.31	0.45
2:AB:160:LEU:HD23	2:AB:160:LEU:C	2.41	0.45
2:AB:172:ILE:HG22	2:AB:176:ASN:HD21	1.81	0.45
5:AE:14:LEU:C	5:AE:14:LEU:HD12	2.41	0.45
5:AE:47:PHE:H	5:AE:47:PHE:HD1	1.64	0.45
6:AF:15:SER:HA	6:AF:18:VAL:HG23	1.98	0.45
7:AG:102:TRP:CD1	7:AG:136:LYS:HG2	2.51	0.45
8:AH:103:VAL:HB	8:AH:124:ILE:HG22	1.97	0.45
10:AJ:11:LYS:CG	10:AJ:97:ASP:HB3	2.46	0.45
14:AN:2:LYS:HD3	14:AN:5:MET:HG2	1.98	0.45
19:AS:10:ILE:HA	19:AS:37:SER:HA	1.98	0.45
22:AV:35:A:O2'	22:AV:36:A:H5'	2.15	0.45
25:BA:68:G:H2'	25:BA:69:C:O4'	2.16	0.45
25:BA:2691:C:H2'	25:BA:2692:G:C8	2.51	0.45
25:BA:2819:G:H2'	25:BA:2821:A:N7	2.30	0.45
27:BC:180:PHE:HB2	27:BC:185:LEU:HD21	1.98	0.45
28:BD:56:GLY:HA2	28:BD:212:TRP:C	2.41	0.45
28:BD:66:PHE:CE2	28:BD:104:LEU:HD11	2.51	0.45
29:BE:12:THR:CG2	29:BE:13:ARG:H	2.17	0.45
34:BJ:38:MET:HE1	34:BJ:81:LEU:HD11	1.97	0.45
35:BK:3:LYS:HD2	35:BK:4:VAL:H	1.82	0.45
37:BM:30:ARG:HH22	37:BM:37:ASP:CG	2.24	0.45
38:BN:110:VAL:CG2	38:BN:127:VAL:HG22	2.46	0.45
40:BP:60:VAL:O	40:BP:64:ARG:HG3	2.16	0.45
47:BW:52:ASN:C	47:BW:54:PRO:HD2	2.40	0.45
49:BY:16:ARG:HD2	49:BY:16:ARG:H	1.79	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:BY:66:GLU:HB3	49:BY:68:LYS:HZ3	1.80	0.45
52:B2:19:HIS:O	52:B2:23:LEU:HG	2.17	0.45
1:AA:591:U:H2'	1:AA:592:G:C8	2.50	0.45
1:AA:603:U:H2'	1:AA:604:G:C8	2.51	0.45
1:AA:1408:A:O3'	25:BA:1916:A:N1	2.49	0.45
4:AD:37:PRO:HD2	4:AD:41:GLY:HA2	1.97	0.45
8:AH:112:ASP:O	8:AH:115:ALA:HB3	2.15	0.45
15:AO:39:GLN:NE2	25:BA:716:A:H4'	2.32	0.45
20:AT:83:ASN:H	20:AT:83:ASN:ND2	2.13	0.45
25:BA:378:C:H2'	25:BA:379:G:H8	1.82	0.45
25:BA:2006:C:H5'	25:BA:2049:G:OP1	2.16	0.45
25:BA:2244:U:H3	25:BA:2435:A:H62	1.63	0.45
25:BA:2452:C:N4	25:BA:2504:U:H3	2.12	0.45
25:BA:2834:G:H2'	25:BA:2879:A:H61	1.81	0.45
27:BC:60:ARG:HE	27:BC:142:VAL:CG1	2.29	0.45
36:BL:60:ASP:OD1	36:BL:61:LYS:HD2	2.16	0.45
40:BP:8:ARG:HH21	40:BP:8:ARG:HG2	1.81	0.45
40:BP:59:SER:O	40:BP:63:ARG:HG3	2.17	0.45
50:BZ:70:LEU:HB3	50:BZ:75:GLU:HB2	1.98	0.45
55:B5:30:VAL:HA	55:B5:33:ARG:NH1	2.31	0.45
1:AA:1438:G:H5''	20:AT:32:LYS:NZ	2.31	0.45
2:AB:209:VAL:CG2	2:AB:210:THR:H	2.22	0.45
2:AB:223:GLY:H	2:AB:224:ARG:CZ	2.29	0.45
3:AC:79:LYS:HD2	3:AC:79:LYS:N	2.32	0.45
4:AD:54:LEU:HG	4:AD:57:LYS:HE3	1.98	0.45
4:AD:59:LYS:HD2	4:AD:59:LYS:O	2.16	0.45
4:AD:103:ARG:NE	4:AD:110:ARG:HH22	2.13	0.45
8:AH:42:GLU:OE1	8:AH:111:THR:HG21	2.17	0.45
9:AI:6:TYR:C	9:AI:85:ALA:HA	2.42	0.45
10:AJ:6:ILE:HD12	10:AJ:6:ILE:C	2.42	0.45
13:AM:77:LYS:HD3	13:AM:80:MET:CE	2.46	0.45
15:AO:44:GLU:HG2	15:AO:45:HIS:CD2	2.52	0.45
17:AQ:49:ASN:O	17:AQ:50:ASN:C	2.59	0.45
20:AT:35:TYR:CD1	20:AT:35:TYR:C	2.95	0.45
21:AU:10:PRO:O	21:AU:11:PHE:HB3	2.17	0.45
25:BA:281:C:H2'	25:BA:282:A:C8	2.52	0.45
25:BA:464:U:H1'	25:BA:686:U:H5	1.81	0.45
25:BA:644:A:C2'	25:BA:645:C:H5''	2.45	0.45
25:BA:1917:U:O2'	25:BA:1918:A:H5'	2.16	0.45
25:BA:2537:U:H2'	25:BA:2538:C:C6	2.51	0.45
25:BA:2607:G:H2'	25:BA:2608:G:O4'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BG:7:TYR:CD2	31:BG:11:VAL:HB	2.50	0.45
33:BI:7:ASP:CG	33:BI:8:LYS:N	2.73	0.45
35:BK:138:VAL:HG12	35:BK:139:VAL:N	2.31	0.45
39:BO:50:ARG:HG2	39:BO:50:ARG:HH21	1.81	0.45
42:BR:108:ARG:HD2	42:BR:108:ARG:N	2.32	0.45
45:BU:96:ILE:HG13	45:BU:96:ILE:O	2.15	0.45
49:BY:36:GLN:NE2	49:BY:41:PHE:HB2	2.18	0.45
50:BZ:62:GLY:O	50:BZ:66:VAL:HG23	2.16	0.45
53:B3:2:VAL:HG22	53:B3:3:GLN:N	2.31	0.45
1:AA:625:U:H4'	16:AP:16:PHE:CZ	2.52	0.45
1:AA:1330:U:H4'	13:AM:22:TYR:HE1	1.81	0.45
3:AC:9:ILE:HD13	14:AN:98:LYS:HZ3	1.80	0.45
4:AD:14:GLU:HG3	4:AD:59:LYS:HG2	1.98	0.45
5:AE:132:PRO:O	5:AE:136:VAL:HG12	2.16	0.45
6:AF:20:GLY:O	6:AF:23:GLU:HB3	2.17	0.45
9:AI:38:PHE:CD1	9:AI:38:PHE:C	2.94	0.45
10:AJ:71:LEU:HD22	10:AJ:71:LEU:N	2.31	0.45
12:AL:88:ASP:C	12:AL:89:LEU:HD12	2.42	0.45
13:AM:3:ILE:O	13:AM:4:ALA:HB3	2.14	0.45
13:AM:12:LYS:CA	13:AM:43:LYS:HE3	2.47	0.45
13:AM:33:LEU:HD12	13:AM:33:LEU:N	2.31	0.45
16:AP:12:LYS:C	16:AP:14:ARG:H	2.24	0.45
22:AW:68:C:H2'	22:AW:69:G:H8	1.81	0.45
25:BA:426:C:H2'	25:BA:427:U:C6	2.51	0.45
25:BA:495:G:H4'	45:BU:4:ILE:O	2.16	0.45
25:BA:1009:A:O4'	43:BS:58:GLN:HB2	2.16	0.45
25:BA:1641:A:H2'	25:BA:1642:G:O4'	2.17	0.45
25:BA:1720:U:H2'	25:BA:1721:G:O4'	2.17	0.45
25:BA:1955:U:H2'	25:BA:2551:C:O2'	2.16	0.45
25:BA:2504:U:H2'	25:BA:2505:G:H5'	1.99	0.45
28:BD:38:LYS:C	28:BD:38:LYS:HD3	2.40	0.45
28:BD:76:VAL:HB	28:BD:114:GLN:HE22	1.81	0.45
29:BE:37:VAL:HG23	29:BE:92:VAL:HG22	1.99	0.45
30:BF:178:VAL:HG13	30:BF:179:SER:N	2.31	0.45
36:BL:7:LYS:HB2	36:BL:10:THR:OG1	2.17	0.45
42:BR:31:VAL:HG11	42:BR:40:GLN:NE2	2.31	0.45
44:BT:14:VAL:HG13	44:BT:18:GLN:NE2	2.32	0.45
49:BY:55:LEU:CD1	49:BY:76:ILE:HD12	2.42	0.45
51:B1:1:MET:O	51:B1:5:GLU:HG2	2.16	0.45
1:AA:49:U:O2'	1:AA:50:A:H2'	2.17	0.45
1:AA:539:A:P	12:AL:110:LYS:HG3	2.57	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1065:U:H5''	1:AA:1190:G:N2	2.31	0.45
2:AB:169:HIS:O	2:AB:173:LYS:HB2	2.17	0.45
3:AC:168:ARG:NH1	3:AC:170:GLY:H	2.13	0.45
4:AD:3:TYR:C	4:AD:5:GLY:H	2.25	0.45
5:AE:72:ASN:H	5:AE:72:ASN:ND2	2.13	0.45
8:AH:14:ARG:HB2	8:AH:74:ILE:CG2	2.46	0.45
9:AI:3:ASN:CG	9:AI:4:GLN:H	2.23	0.45
11:AK:99:LEU:HD22	11:AK:99:LEU:N	2.31	0.45
12:AL:52:CYS:SG	12:AL:66:ILE:HD11	2.57	0.45
13:AM:63:VAL:HG13	13:AM:67:ASP:HB3	1.98	0.45
16:AP:5:ARG:O	16:AP:19:VAL:HA	2.17	0.45
22:AV:35:A:C2'	22:AV:36:A:H5'	2.46	0.45
25:BA:781:A:H2'	25:BA:1777:U:O2'	2.17	0.45
25:BA:2136:G:N2	25:BA:2156:G:H1'	2.32	0.45
25:BA:2520:C:H42	25:BA:2545:G:H1	1.64	0.45
28:BD:105:ALA:HB1	28:BD:109:LEU:HD23	1.99	0.45
30:BF:12:LEU:HD23	30:BF:12:LEU:C	2.41	0.45
32:BH:25:ILE:HG22	32:BH:78:VAL:HG21	1.99	0.45
35:BK:25:PRO:HA	35:BK:34:ILE:CD1	2.46	0.45
35:BK:94:LYS:HD3	35:BK:94:LYS:N	2.31	0.45
47:BW:83:GLY:O	47:BW:93:ARG:HA	2.17	0.45
50:BZ:7:THR:OG1	50:BZ:9:LYS:HG3	2.17	0.45
50:BZ:67:LEU:HD23	50:BZ:70:LEU:HD12	1.97	0.45
1:AA:885:G:H2'	1:AA:886:G:H8	1.82	0.45
1:AA:1492:A:H5'	24:AY:6:5OH:HNP	1.81	0.45
2:AB:216:VAL:O	2:AB:220:VAL:HG23	2.17	0.45
4:AD:124:VAL:C	4:AD:126:GLY:H	2.25	0.45
5:AE:33:THR:HB	5:AE:49:TYR:HE2	1.82	0.45
15:AO:69:LEU:HD23	15:AO:69:LEU:O	2.17	0.45
25:BA:804:A:H2'	25:BA:806:C:C4	2.52	0.45
25:BA:2815:C:O2'	53:B3:39:ARG:HB3	2.16	0.45
26:BB:86:G:H1	26:BB:90:C:H42	1.65	0.45
28:BD:74:PRO:HG3	28:BD:116:GLN:OE1	2.17	0.45
28:BD:95:TYR:HB2	28:BD:97:ASP:OD1	2.17	0.45
29:BE:150:GLN:HG2	29:BE:150:GLN:O	2.16	0.45
31:BG:48:LEU:HD11	31:BG:149:ARG:HH22	1.81	0.45
31:BG:84:ILE:HG23	31:BG:85:GLY:N	2.31	0.45
34:BJ:109:LYS:O	34:BJ:120:ALA:HB2	2.16	0.45
35:BK:14:ALA:HB2	35:BK:52:LEU:O	2.17	0.45
40:BP:71:ARG:HH21	40:BP:71:ARG:HG2	1.82	0.45
43:BS:26:ALA:HB1	43:BS:30:VAL:HB	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:BW:57:ILE:H	47:BW:57:ILE:CD1	2.30	0.45
51:B1:12:GLU:HA	51:B1:15:ASN:ND2	2.25	0.45
5:AE:84:VAL:HG21	5:AE:142:GLY:O	2.17	0.45
8:AH:13:ILE:HD11	8:AH:60:LEU:CD1	2.47	0.45
8:AH:124:ILE:O	8:AH:124:ILE:HG13	2.17	0.45
9:AI:121:ARG:HH11	9:AI:121:ARG:HG3	1.82	0.45
11:AK:22:ILE:HD11	11:AK:85:VAL:HA	1.98	0.45
15:AO:18:ALA:C	15:AO:20:ASP:H	2.23	0.45
15:AO:78:THR:HA	15:AO:81:ILE:HG12	1.98	0.45
17:AQ:74:LEU:C	17:AQ:74:LEU:HD12	2.42	0.45
25:BA:207:A:H2'	25:BA:208:C:O4'	2.16	0.45
25:BA:536:G:H2'	25:BA:537:G:O4'	2.15	0.45
25:BA:633:A:H2'	25:BA:634:C:H5'	1.97	0.45
25:BA:1582:C:C2'	25:BA:1583:A:H5''	2.46	0.45
25:BA:1928:A:H3'	25:BA:1929:G:H5''	1.99	0.45
25:BA:2820:A:H4'	40:BP:3:HIS:CD2	2.51	0.45
27:BC:30:LEU:HD23	27:BC:30:LEU:O	2.17	0.45
27:BC:84:ALA:O	27:BC:88:LYS:HG3	2.17	0.45
31:BG:72:SER:HB2	31:BG:80:GLN:N	2.32	0.45
31:BG:134:GLN:OE1	31:BG:134:GLN:N	2.50	0.45
32:BH:71:LEU:HD12	32:BH:71:LEU:N	2.32	0.45
33:BI:11:ASN:O	33:BI:12:LEU:HB3	2.16	0.45
36:BL:98:GLU:O	36:BL:102:GLU:HG3	2.16	0.45
38:BN:54:GLN:NE2	38:BN:60:ARG:NH1	2.65	0.45
38:BN:81:ASP:O	38:BN:82:LEU:HB3	2.16	0.45
42:BR:31:VAL:HG11	42:BR:40:GLN:HE21	1.82	0.45
54:B4:32:LYS:HZ1	54:B4:50:GLU:HA	1.81	0.45
57:B7:9:LYS:HB3	57:B7:14:CYS:HB2	1.99	0.45
1:AA:168:G:H2'	1:AA:169:C:O4'	2.16	0.45
1:AA:216:U:H2'	1:AA:217:C:C6	2.52	0.45
1:AA:918:A:H2'	1:AA:919:A:O4'	2.17	0.45
1:AA:1218:C:H2'	1:AA:1219:A:C8	2.52	0.45
2:AB:65:LYS:HD3	2:AB:65:LYS:N	2.31	0.45
2:AB:202:ASN:HB3	2:AB:208:ALA:CB	2.47	0.45
4:AD:12:ARG:HD2	4:AD:32:LYS:O	2.17	0.45
4:AD:94:GLU:HA	4:AD:99:ASN:ND2	2.32	0.45
4:AD:169:TRP:CH2	4:AD:190:LEU:HD23	2.51	0.45
20:AT:48:LYS:HD3	20:AT:48:LYS:O	2.16	0.45
25:BA:1371:G:O2'	25:BA:1372:U:H5''	2.17	0.45
25:BA:1450:G:N2	25:BA:1452:G:H1	2.14	0.45
25:BA:1755:A:H2'	25:BA:1756:G:H5'	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2297:A:N1	25:BA:2321:U:H5	2.15	0.45
26:BB:72:G:H21	26:BB:104:A:H62	1.65	0.45
26:BB:95:U:H2'	26:BB:96:G:H8	1.82	0.45
28:BD:70:LYS:HG2	28:BD:101:ARG:NH1	2.32	0.45
42:BR:8:GLU:O	42:BR:12:MET:HG3	2.17	0.45
45:BU:83:LYS:O	45:BU:84:ARG:HD3	2.16	0.45
56:B6:32:LEU:HD23	56:B6:35:LYS:HD2	1.98	0.45
1:AA:69:G:H2'	1:AA:70:U:C6	2.52	0.45
2:AB:71:THR:HG22	2:AB:93:HIS:N	2.31	0.45
3:AC:89:VAL:HG23	3:AC:90:VAL:N	2.32	0.45
3:AC:109:GLU:C	3:AC:110:LEU:HD22	2.42	0.45
4:AD:3:TYR:O	4:AD:4:LEU:HB2	2.17	0.45
13:AM:47:LEU:HD23	13:AM:48:SER:O	2.17	0.45
14:AN:63:ARG:HG3	14:AN:70:PRO:HG3	1.99	0.45
15:AO:30:LEU:HD12	15:AO:30:LEU:C	2.41	0.45
18:AR:58:ILE:O	18:AR:62:ARG:HG3	2.16	0.45
25:BA:18:U:H2'	25:BA:19:A:C8	2.52	0.45
25:BA:543:G:H3'	25:BA:544:C:H5''	1.98	0.45
25:BA:968:C:H2'	25:BA:969:G:C8	2.52	0.45
25:BA:1263:U:O2'	53:B3:7:PRO:HD2	2.17	0.45
25:BA:1437:C:O2'	25:BA:1516:G:H4'	2.17	0.45
25:BA:1582:C:H3'	25:BA:1583:A:H5''	1.99	0.45
25:BA:1652:A:H2'	25:BA:1653:G:H5'	1.98	0.45
25:BA:1966:A:H1'	25:BA:2593:U:H5'	1.98	0.45
25:BA:2157:G:O2'	25:BA:2158:A:O5'	2.29	0.45
25:BA:2511:U:H4'	29:BE:130:GLN:HG2	1.99	0.45
29:BE:108:ASP:CG	29:BE:173:GLN:HA	2.42	0.45
32:BH:71:LEU:HA	32:BH:74:MET:SD	2.57	0.45
35:BK:21:PRO:CB	35:BK:22:PRO:HD3	2.46	0.45
39:BO:65:ILE:HG22	39:BO:67:VAL:O	2.17	0.45
43:BS:35:PHE:O	43:BS:39:ILE:HG13	2.17	0.45
43:BS:97:ILE:HG23	43:BS:101:ASP:HB3	1.99	0.45
50:BZ:20:ALA:HB3	50:BZ:22:ASN:OD1	2.17	0.45
1:AA:131:A:H2'	1:AA:132:C:C6	2.52	0.45
1:AA:287:U:H2'	1:AA:288:A:C8	2.52	0.45
1:AA:790:A:H5'	22:AW:39:U:OP1	2.17	0.45
1:AA:1007:U:C2'	1:AA:1008:U:H5''	2.42	0.45
1:AA:1254:A:OP2	10:AJ:45:ARG:HD2	2.17	0.45
1:AA:1368:A:OP2	9:AI:113:LYS:HD2	2.17	0.45
2:AB:158:ASP:O	2:AB:180:ILE:HG23	2.17	0.45
8:AH:75:GLN:O	8:AH:126:CYS:HB2	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:AJ:66:GLU:HG2	14:AN:99:ALA:CB	2.47	0.45
12:AL:43:LYS:N	12:AL:44:PRO:HD2	2.32	0.45
12:AL:49:ARG:HH11	12:AL:49:ARG:HG3	1.82	0.45
21:AU:19:LYS:HZ1	21:AU:23:GLU:HB2	1.82	0.45
22:AV:42:C:C3'	22:AV:43:C:H5''	2.45	0.45
22:AW:48:C:H2'	22:AW:59:U:O4'	2.17	0.45
25:BA:214:G:O2'	25:BA:215:G:H5'	2.17	0.45
25:BA:687:C:OP1	55:B5:6:GLN:HG3	2.16	0.45
25:BA:975:A:H5'	44:BT:78:ARG:HH22	1.82	0.45
25:BA:1744:A:H2'	25:BA:1745:A:O4'	2.17	0.45
25:BA:2092:U:H5'	25:BA:2225:A:H2	1.82	0.45
25:BA:2114:A:H61	25:BA:2170:A:H61	1.64	0.45
25:BA:2408:U:H2'	25:BA:2409:G:C8	2.52	0.45
25:BA:2553:G:H2'	25:BA:2554:U:C4'	2.47	0.45
27:BC:60:ARG:O	27:BC:141:LYS:HE2	2.16	0.45
31:BG:142:TYR:O	31:BG:145:VAL:HG22	2.16	0.45
32:BH:122:ALA:HB2	32:BH:132:LEU:HA	1.99	0.45
38:BN:19:LEU:HD22	38:BN:31:GLY:O	2.16	0.45
40:BP:3:HIS:C	40:BP:5:LYS:H	2.25	0.45
43:BS:109:VAL:CG1	43:BS:113:LYS:HE3	2.46	0.45
1:AA:144:G:H2'	1:AA:145:G:O4'	2.17	0.44
1:AA:263:A:H5'	20:AT:69:ASN:HD22	1.82	0.44
2:AB:156:LEU:H	2:AB:156:LEU:CD2	2.30	0.44
4:AD:33:ILE:HG12	4:AD:34:GLU:N	2.32	0.44
4:AD:94:GLU:CD	4:AD:99:ASN:HD21	2.25	0.44
7:AG:147:ASN:C	7:AG:149:ALA:H	2.24	0.44
9:AI:78:ILE:O	9:AI:82:ILE:HG13	2.17	0.44
13:AM:90:HIS:CE1	13:AM:96:VAL:HG21	2.52	0.44
22:AV:37:A:H2'	22:AV:38:A:C8	2.52	0.44
25:BA:263:G:H2'	25:BA:264:C:O4'	2.17	0.44
25:BA:575:A:C5'	25:BA:2055:C:H41	2.30	0.44
25:BA:581:C:H2'	25:BA:582:A:C8	2.52	0.44
25:BA:1564:C:O2'	25:BA:1565:C:H5'	2.17	0.44
25:BA:2251:G:H2'	25:BA:2252:G:C8	2.52	0.44
25:BA:2633:G:H5''	25:BA:2812:G:H5'	1.99	0.44
25:BA:2743:U:H3'	25:BA:2744:G:H5''	1.99	0.44
27:BC:48:LEU:HD22	27:BC:208:TYR:CZ	2.52	0.44
27:BC:126:GLN:HG3	27:BC:127:LEU:HD13	1.99	0.44
28:BD:53:ILE:HD12	28:BD:53:ILE:N	2.32	0.44
28:BD:61:TYR:CD2	28:BD:62:ARG:N	2.84	0.44
28:BD:86:ARG:CB	28:BD:86:ARG:HH11	2.31	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:BE:84:LEU:HD22	29:BE:88:GLU:HB3	1.98	0.44
30:BF:151:GLY:N	30:BF:192:ALA:HB2	2.31	0.44
31:BG:53:ALA:O	31:BG:64:PRO:HG3	2.17	0.44
34:BJ:59:LEU:O	34:BJ:63:ALA:HB2	2.17	0.44
35:BK:11:GLN:HE21	35:BK:12:VAL:N	2.15	0.44
37:BM:58:LEU:HD13	37:BM:58:LEU:H	1.81	0.44
38:BN:48:ARG:C	38:BN:50:PHE:H	2.23	0.44
39:BO:53:MET:HG3	39:BO:63:ILE:HD13	1.99	0.44
39:BO:66:ARG:HH11	39:BO:66:ARG:HG3	1.82	0.44
53:B3:51:ARG:HB2	53:B3:51:ARG:NH2	2.32	0.44
54:B4:32:LYS:HZ1	54:B4:50:GLU:CA	2.31	0.44
56:B6:31:ILE:O	56:B6:31:ILE:HG22	2.17	0.44
1:AA:34:C:H2'	1:AA:35:G:C8	2.53	0.44
1:AA:1376:U:H5'	7:AG:101:ARG:NH2	2.32	0.44
2:AB:70:GLY:O	2:AB:92:ASN:HA	2.17	0.44
3:AC:9:ILE:HG23	3:AC:10:ARG:HG3	1.99	0.44
4:AD:31:CYS:SG	4:AD:32:LYS:N	2.86	0.44
4:AD:94:GLU:CG	4:AD:185:PRO:HG2	2.48	0.44
5:AE:29:ILE:HG23	5:AE:29:ILE:O	2.16	0.44
5:AE:72:ASN:HD22	5:AE:72:ASN:H	1.65	0.44
7:AG:77:ARG:O	7:AG:84:TYR:HB2	2.17	0.44
7:AG:125:ASP:OD2	7:AG:130:LYS:HE3	2.17	0.44
7:AG:145:GLU:HA	7:AG:148:LYS:HB2	1.99	0.44
9:AI:123:ARG:HH21	9:AI:123:ARG:HG3	1.83	0.44
13:AM:70:ARG:HB2	31:BG:142:TYR:CE2	2.52	0.44
15:AO:27:GLN:O	15:AO:31:LEU:HG	2.18	0.44
15:AO:73:ASP:HB3	15:AO:76:ARG:HD3	1.98	0.44
17:AQ:59:GLU:C	17:AQ:60:ILE:HD12	2.42	0.44
20:AT:33:LYS:HE2	20:AT:33:LYS:CA	2.43	0.44
25:BA:69:C:H2'	25:BA:70:G:C8	2.53	0.44
25:BA:750:A:H2'	25:BA:751:A:H5''	1.98	0.44
25:BA:790:U:H3	25:BA:795:C:H5'	1.82	0.44
25:BA:1358:G:H1'	25:BA:1374:G:H22	1.82	0.44
25:BA:1374:G:H2'	25:BA:1375:U:O4'	2.17	0.44
25:BA:2333:A:P	49:BY:73:ARG:HH22	2.39	0.44
25:BA:2777:G:O4'	25:BA:2779:U:H5	2.00	0.44
27:BC:163:TYR:HB3	27:BC:173:THR:HG21	1.99	0.44
28:BD:128:THR:HA	28:BD:189:ALA:O	2.17	0.44
28:BD:229:HIS:CD2	28:BD:246:PRO:HB3	2.52	0.44
29:BE:4:LEU:HD22	29:BE:4:LEU:N	2.33	0.44
31:BG:116:LEU:N	31:BG:116:LEU:HD22	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BK:33:ASN:ND2	35:BK:34:ILE:N	2.65	0.44
36:BL:60:ASP:HB3	36:BL:97:PRO:HG2	1.99	0.44
36:BL:101:ILE:O	36:BL:105:VAL:HG23	2.16	0.44
40:BP:69:ARG:O	40:BP:71:ARG:N	2.50	0.44
47:BW:32:LYS:HE2	47:BW:63:ALA:CB	2.47	0.44
47:BW:93:ARG:O	47:BW:101:THR:HA	2.18	0.44
48:BX:18:ARG:HH11	48:BX:18:ARG:HG3	1.82	0.44
56:B6:30:HIS:ND1	56:B6:31:ILE:HG13	2.33	0.44
1:AA:25:C:O2'	1:AA:26:A:H5'	2.17	0.44
1:AA:397:A:H3'	1:AA:397:A:N3	2.32	0.44
1:AA:1124:G:H3'	1:AA:1145:A:C6	2.53	0.44
1:AA:1260:G:H4'	1:AA:1283:U:O2'	2.17	0.44
1:AA:1512:U:H2'	1:AA:1513:A:C8	2.52	0.44
3:AC:41:TYR:CE1	3:AC:45:GLU:HG3	2.53	0.44
4:AD:8:LEU:O	4:AD:12:ARG:HG3	2.17	0.44
4:AD:162:GLU:H	4:AD:162:GLU:CD	2.25	0.44
13:AM:39:ALA:HB3	13:AM:42:VAL:HG11	2.00	0.44
13:AM:77:LYS:HA	13:AM:80:MET:HE3	1.99	0.44
17:AQ:20:ILE:HD12	17:AQ:20:ILE:H	1.81	0.44
17:AQ:20:ILE:HD13	17:AQ:47:ASP:OD1	2.18	0.44
18:AR:71:ASP:OD1	21:AU:3:ILE:HG21	2.17	0.44
19:AS:5:LYS:HD2	19:AS:5:LYS:C	2.42	0.44
20:AT:65:LEU:C	20:AT:65:LEU:HD12	2.43	0.44
22:AW:14:A:C2'	22:AW:15:G:H5'	2.47	0.44
25:BA:537:G:OP1	36:BL:2:LYS:HD3	2.18	0.44
25:BA:842:U:H2'	25:BA:843:G:C8	2.52	0.44
25:BA:1386:C:H2'	25:BA:1387:A:C8	2.52	0.44
25:BA:1947:C:H2'	25:BA:1948:G:H8	1.82	0.44
25:BA:2446:G:C6	25:BA:2501:C:H2'	2.53	0.44
25:BA:2542:A:H4'	25:BA:2543:G:C8	2.53	0.44
25:BA:2820:A:N1	29:BE:197:THR:HB	2.32	0.44
25:BA:2869:G:H2'	25:BA:2870:C:O4'	2.17	0.44
26:BB:29:A:OP2	41:BQ:31:THR:HG23	2.17	0.44
27:BC:214:ILE:O	27:BC:221:GLY:HA2	2.17	0.44
31:BG:39:VAL:HG11	31:BG:42:ALA:HB2	2.00	0.44
32:BH:87:GLN:HA	32:BH:129:GLU:HA	1.99	0.44
43:BS:57:ARG:HA	43:BS:60:TRP:CE3	2.52	0.44
56:B6:58:ILE:H	56:B6:58:ILE:CD1	2.30	0.44
1:AA:350:G:H5''	20:AT:2:ASN:HD22	1.83	0.44
1:AA:1299:A:O2'	1:AA:1300:G:H4'	2.17	0.44
2:AB:14:HIS:CD2	2:AB:15:PHE:N	2.85	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AD:55:ARG:HH21	4:AD:58:GLN:HG2	1.83	0.44
5:AE:68:ARG:HH11	5:AE:68:ARG:HG3	1.83	0.44
6:AF:3:HIS:H	6:AF:92:THR:CG2	2.26	0.44
13:AM:26:LYS:HD3	13:AM:26:LYS:C	2.42	0.44
17:AQ:11:VAL:HG12	17:AQ:13:SER:H	1.82	0.44
18:AR:19:GLU:HA	18:AR:54:LEU:HD23	1.98	0.44
19:AS:35:ARG:HH21	19:AS:52:ASN:HA	1.82	0.44
25:BA:78:U:H2'	25:BA:79:C:C6	2.51	0.44
25:BA:367:G:H2'	25:BA:368:A:O4'	2.18	0.44
25:BA:562:U:H2'	25:BA:572:A:O4'	2.18	0.44
25:BA:1383:A:H2'	25:BA:1384:A:O4'	2.17	0.44
25:BA:1563:U:H2'	25:BA:1564:C:C6	2.53	0.44
25:BA:2461:A:H1'	25:BA:2492:U:N3	2.32	0.44
27:BC:127:LEU:HD12	27:BC:127:LEU:N	2.33	0.44
27:BC:142:VAL:HG23	27:BC:144:THR:HG23	2.00	0.44
28:BD:180:MET:HE2	28:BD:268:ARG:HH21	1.82	0.44
28:BD:194:VAL:CG2	28:BD:195:GLY:H	2.07	0.44
31:BG:10:GLU:O	31:BG:13:LYS:HG2	2.17	0.44
35:BK:76:ALA:C	35:BK:78:LEU:H	2.24	0.44
42:BR:102:ARG:HG2	42:BR:102:ARG:HH11	1.81	0.44
43:BS:57:ARG:O	43:BS:61:ILE:HG13	2.17	0.44
44:BT:49:ILE:O	44:BT:49:ILE:HG13	2.16	0.44
48:BX:31:TYR:O	48:BX:92:VAL:HA	2.18	0.44
51:B1:31:GLN:HE21	51:B1:37:LEU:HB2	1.81	0.44
51:B1:31:GLN:HE21	51:B1:37:LEU:CA	2.31	0.44
1:AA:24:U:H2'	1:AA:25:C:C6	2.53	0.44
1:AA:204:G:H2'	1:AA:205:A:H5''	1.99	0.44
1:AA:321:A:H4'	1:AA:1435:G:O2'	2.17	0.44
1:AA:581:G:H5''	15:AO:60:SER:HB2	2.00	0.44
1:AA:834:U:H2'	1:AA:835:U:C6	2.52	0.44
1:AA:1202:U:N3	14:AN:82:ILE:HG21	2.32	0.44
1:AA:1323:G:O2'	1:AA:1362:A:H4'	2.17	0.44
2:AB:41:ASN:HB3	2:AB:44:LYS:HB3	2.00	0.44
2:AB:125:PHE:CD2	2:AB:126:ASP:N	2.79	0.44
2:AB:140:LEU:HD12	2:AB:140:LEU:N	2.33	0.44
2:AB:145:ASN:C	2:AB:147:LEU:N	2.74	0.44
3:AC:38:VAL:O	3:AC:42:LEU:HD13	2.18	0.44
3:AC:155:ARG:HD3	3:AC:192:TYR:O	2.18	0.44
8:AH:21:LYS:HE2	8:AH:22:ALA:N	2.32	0.44
25:BA:12:U:C2'	25:BA:13:A:H5'	2.48	0.44
25:BA:942:G:H2'	25:BA:943:A:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1201:U:H2'	25:BA:1202:G:C8	2.53	0.44
25:BA:1492:G:H5''	25:BA:1493:C:H5'	1.99	0.44
25:BA:1779:U:H5''	25:BA:1780:A:H5''	1.98	0.44
25:BA:1801:A:H5'	25:BA:2203:U:H2'	1.98	0.44
25:BA:1827:U:H5''	25:BA:1972:G:OP2	2.17	0.44
25:BA:2016:U:H1'	53:B3:2:VAL:CG2	2.48	0.44
25:BA:2555:U:H2'	25:BA:2556:C:H5'	2.00	0.44
27:BC:197:LYS:HD3	27:BC:226:GLN:NE2	2.32	0.44
27:BC:207:VAL:HG23	27:BC:207:VAL:O	2.17	0.44
28:BD:230:PRO:HD2	28:BD:246:PRO:HA	2.00	0.44
41:BQ:6:ALA:O	41:BQ:10:ARG:HB2	2.17	0.44
45:BU:17:VAL:HA	45:BU:43:ALA:HB1	1.99	0.44
49:BY:15:LYS:HB2	49:BY:37:ARG:HH21	1.82	0.44
50:BZ:52:ALA:HA	50:BZ:55:MET:HE3	1.99	0.44
1:AA:408:A:OP1	4:AD:111:ALA:HB3	2.17	0.44
1:AA:484:G:H1'	1:AA:486:U:OP2	2.18	0.44
1:AA:654:G:H2'	1:AA:655:A:O4'	2.17	0.44
1:AA:1494:G:C6	24:AY:1:KBE:HAA	2.53	0.44
4:AD:7:LYS:HB2	4:AD:20:LEU:HD13	1.98	0.44
5:AE:80:LEU:HD22	5:AE:80:LEU:N	2.33	0.44
10:AJ:11:LYS:HA	10:AJ:70:HIS:O	2.17	0.44
10:AJ:73:LEU:HB3	10:AJ:75:ASP:OD1	2.17	0.44
17:AQ:14:ASP:OD1	17:AQ:54:ILE:HB	2.17	0.44
17:AQ:26:ARG:HH11	17:AQ:26:ARG:HG3	1.83	0.44
19:AS:4:LEU:O	19:AS:6:LYS:N	2.51	0.44
22:AW:43:C:H2'	22:AW:44:G:H5'	1.98	0.44
25:BA:135:U:H2'	25:BA:136:G:C8	2.53	0.44
25:BA:416:U:H3	25:BA:2407:A:H61	1.66	0.44
25:BA:1021:A:H3'	25:BA:1021:A:N3	2.32	0.44
25:BA:1662:U:H2'	25:BA:1663:G:H8	1.81	0.44
25:BA:1807:G:C2'	25:BA:1808:A:H5'	2.46	0.44
25:BA:1827:U:O2'	25:BA:1828:G:H5'	2.17	0.44
25:BA:2398:U:H2'	25:BA:2399:G:C8	2.52	0.44
25:BA:2698:U:H2'	25:BA:2699:C:C6	2.52	0.44
25:BA:2853:C:H2'	25:BA:2854:G:C8	2.52	0.44
28:BD:118:GLY:C	28:BD:120:ASP:H	2.24	0.44
29:BE:34:VAL:HB	29:BE:93:GLY:H	1.83	0.44
30:BF:19:PHE:CE1	30:BF:109:LEU:HD23	2.52	0.44
30:BF:145:ASP:HA	30:BF:166:LYS:O	2.17	0.44
32:BH:85:LYS:C	32:BH:86:LEU:HD12	2.42	0.44
32:BH:154:GLU:N	32:BH:154:GLU:OE1	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:BJ:67:THR:O	34:BJ:69:PHE:N	2.51	0.44
36:BL:47:HIS:HD1	36:BL:48:VAL:HG23	1.83	0.44
36:BL:135:GLN:HA	36:BL:135:GLN:NE2	2.32	0.44
38:BN:79:LEU:N	38:BN:113:ALA:HB3	2.32	0.44
43:BS:48:ASP:C	43:BS:50:ARG:H	2.25	0.44
50:BZ:12:VAL:HG22	50:BZ:28:PHE:HB2	2.00	0.44
55:B5:10:LEU:HD11	55:B5:14:ARG:CZ	2.48	0.44
1:AA:253:A:H2'	1:AA:254:G:C8	2.52	0.44
1:AA:358:U:H2'	1:AA:359:G:H8	1.83	0.44
1:AA:427:U:H5''	1:AA:542:G:OP1	2.17	0.44
1:AA:690:G:H1'	1:AA:698:G:H22	1.83	0.44
1:AA:1061:G:H4'	10:AJ:58:ASN:HB3	1.99	0.44
1:AA:1300:G:H1'	1:AA:1301:U:H5	1.83	0.44
2:AB:30:ILE:HD11	2:AB:38:HIS:ND1	2.33	0.44
2:AB:44:LYS:O	2:AB:47:PRO:HD2	2.18	0.44
2:AB:224:ARG:H	2:AB:224:ARG:HE	1.62	0.44
3:AC:20:THR:HG23	3:AC:20:THR:O	2.17	0.44
3:AC:149:LYS:HE3	3:AC:172:VAL:HG21	2.00	0.44
4:AD:173:ASP:CG	4:AD:174:ALA:N	2.76	0.44
25:BA:320:A:H4'	25:BA:322:A:N7	2.33	0.44
25:BA:664:G:H1'	25:BA:940:G:H5''	1.99	0.44
25:BA:800:A:H1'	25:BA:802:A:OP2	2.18	0.44
25:BA:1077:A:H5''	35:BK:93:ASN:HD21	1.82	0.44
25:BA:1124:G:H2'	25:BA:1125:G:O4'	2.17	0.44
25:BA:1705:A:O2'	25:BA:1706:C:H5'	2.17	0.44
25:BA:2042:A:H2'	25:BA:2043:C:H5'	2.00	0.44
25:BA:2386:A:H2	49:BY:37:ARG:HB3	1.82	0.44
25:BA:2392:A:H2	38:BN:55:MET:HE3	1.82	0.44
30:BF:118:LEU:HD11	30:BF:188:MET:SD	2.58	0.44
30:BF:131:THR:HB	30:BF:164:LEU:HD21	1.99	0.44
34:BJ:52:MET:HG3	34:BJ:81:LEU:HD21	1.99	0.44
56:B6:50:SER:HB2	56:B6:53:ASP:OD2	2.18	0.44
1:AA:52:C:H2'	1:AA:53:A:H8	1.81	0.44
1:AA:676:A:O3'	11:AK:114:PRO:HB3	2.17	0.44
1:AA:1166:G:C6	1:AA:1168:U:H5''	2.52	0.44
1:AA:1376:U:H2'	1:AA:1377:A:H8	1.81	0.44
1:AA:1409:C:O2'	25:BA:1914:C:N4	2.51	0.44
2:AB:99:MET:HG3	2:AB:100:LEU:N	2.32	0.44
2:AB:102:ASN:C	2:AB:104:LYS:H	2.25	0.44
4:AD:117:VAL:O	4:AD:130:ASN:HA	2.18	0.44
5:AE:83:PRO:CB	5:AE:96:GLN:HG2	2.45	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:AH:10:LEU:HD12	8:AH:76:ARG:CG	2.46	0.44
10:AJ:42:LEU:HD23	10:AJ:42:LEU:C	2.43	0.44
16:AP:74:LEU:O	16:AP:78:VAL:HG12	2.18	0.44
19:AS:4:LEU:HD12	19:AS:4:LEU:N	2.32	0.44
20:AT:64:GLY:HA2	20:AT:67:HIS:CD2	2.52	0.44
22:AV:45:U:O5'	22:AV:45:U:H6	2.00	0.44
25:BA:64:A:H5''	46:BV:76:ARG:C	2.43	0.44
25:BA:402:A:C2'	25:BA:403:U:H5'	2.48	0.44
25:BA:1177:G:H2'	25:BA:1178:C:O4'	2.17	0.44
25:BA:1642:G:H2'	25:BA:1643:G:C8	2.53	0.44
25:BA:1903:G:H2'	25:BA:1904:G:H8	1.82	0.44
25:BA:2220:U:H2'	25:BA:2221:G:H8	1.83	0.44
25:BA:2668:G:H2'	25:BA:2669:G:H8	1.82	0.44
27:BC:19:LYS:O	27:BC:223:ALA:HB3	2.18	0.44
28:BD:75:ALA:HB3	28:BD:115:ILE:CD1	2.47	0.44
28:BD:95:TYR:C	28:BD:96:LYS:HE2	2.43	0.44
29:BE:118:PHE:CE1	29:BE:163:GLY:HA2	2.52	0.44
30:BF:37:ALA:HA	30:BF:40:ARG:HG2	2.00	0.44
31:BG:129:MET:HG3	31:BG:153:ILE:HB	1.98	0.44
36:BL:106:LYS:HB2	36:BL:119:PHE:CE2	2.53	0.44
38:BN:131:ALA:O	38:BN:135:ILE:HG13	2.18	0.44
40:BP:75:ILE:HD12	40:BP:75:ILE:H	1.82	0.44
1:AA:709:U:H2'	1:AA:710:G:C8	2.53	0.44
1:AA:762:U:H2'	1:AA:763:G:C8	2.52	0.44
1:AA:943:U:H1'	9:AI:125:GLN:NE2	2.18	0.44
1:AA:982:U:OP2	14:AN:5:MET:HE2	2.18	0.44
1:AA:1367:C:O2'	10:AJ:50:THR:HG21	2.17	0.44
5:AE:25:LYS:HD3	5:AE:25:LYS:O	2.18	0.44
5:AE:73:VAL:HG23	5:AE:75:LEU:CD1	2.47	0.44
6:AF:36:ILE:HG23	6:AF:36:ILE:O	2.18	0.44
13:AM:45:SER:C	13:AM:47:LEU:N	2.76	0.44
14:AN:9:GLU:O	14:AN:13:VAL:HG12	2.18	0.44
15:AO:38:LEU:O	15:AO:42:PHE:HD1	2.01	0.44
16:AP:42:ILE:O	16:AP:42:ILE:HG22	2.18	0.44
19:AS:10:ILE:HG13	19:AS:37:SER:CB	2.48	0.44
23:AX:16:U:H2'	23:AX:17:U:C6	2.53	0.44
25:BA:466:A:C2'	25:BA:467:G:H5'	2.45	0.44
25:BA:816:C:H2'	25:BA:817:C:C6	2.53	0.44
25:BA:1326:U:H4'	25:BA:2011:U:H1'	2.00	0.44
27:BC:41:SER:HA	27:BC:177:LYS:HA	2.00	0.44
28:BD:83:ASP:OD1	28:BD:86:ARG:HG2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:BF:97:ASN:HB2	30:BF:100:MET:CB	2.47	0.44
31:BG:8:LYS:HA	31:BG:12:VAL:CG2	2.48	0.44
31:BG:149:ARG:HG3	31:BG:150:GLY:N	2.29	0.44
35:BK:116:MET:SD	35:BK:128:ILE:HD11	2.57	0.44
37:BM:7:MET:C	37:BM:8:LEU:HD12	2.43	0.44
38:BN:42:SER:C	38:BN:44:GLY:H	2.26	0.44
38:BN:82:LEU:HD21	38:BN:120:VAL:HG11	1.98	0.44
38:BN:109:LYS:HB2	38:BN:111:ILE:CD1	2.47	0.44
50:BZ:73:ARG:HE	50:BZ:75:GLU:HG3	1.82	0.44
1:AA:396:C:H3'	1:AA:397:A:H5''	2.00	0.43
1:AA:728:A:H2'	1:AA:729:A:C8	2.53	0.43
1:AA:924:C:H2'	1:AA:925:G:C8	2.53	0.43
1:AA:1271:A:H5'	1:AA:1314:C:C5'	2.48	0.43
4:AD:150:LYS:HA	4:AD:177:MET:HE1	2.00	0.43
6:AF:50:PRO:HG3	6:AF:55:HIS:HE1	1.81	0.43
8:AH:94:VAL:HG12	8:AH:95:MET:HG3	1.99	0.43
12:AL:111:GLN:O	12:AL:112:ALA:HB3	2.18	0.43
14:AN:90:ARG:CB	14:AN:90:ARG:HH11	2.31	0.43
25:BA:29:U:C5'	43:BS:6:GLY:HA3	2.48	0.43
25:BA:38:A:C5'	30:BF:45:ALA:HB3	2.48	0.43
25:BA:1137:G:H2'	25:BA:1138:G:C8	2.53	0.43
25:BA:1265:A:H3'	53:B3:15:ARG:NH1	2.32	0.43
25:BA:1595:C:H2'	25:BA:1596:A:C8	2.52	0.43
25:BA:2086:U:H2'	25:BA:2087:G:C8	2.53	0.43
25:BA:2358:A:H2'	25:BA:2359:C:O4'	2.18	0.43
25:BA:2472:G:H2'	25:BA:2529:G:N2	2.33	0.43
25:BA:2514:U:H2'	25:BA:2515:C:C6	2.53	0.43
25:BA:2746:U:H5''	32:BH:137:LYS:HE3	1.99	0.43
28:BD:242:HIS:O	28:BD:244:VAL:HG13	2.17	0.43
30:BF:159:LEU:HD12	30:BF:159:LEU:H	1.83	0.43
31:BG:107:VAL:HA	31:BG:110:ILE:HG13	2.00	0.43
38:BN:82:LEU:HD21	38:BN:120:VAL:CG1	2.47	0.43
38:BN:119:PRO:HG3	38:BN:138:ALA:O	2.17	0.43
40:BP:84:GLY:N	40:BP:85:PRO:HD2	2.33	0.43
47:BW:11:ILE:HG21	47:BW:79:ALA:HB2	2.00	0.43
47:BW:73:ASN:ND2	47:BW:75:ALA:HB3	2.30	0.43
51:B1:44:LYS:O	51:B1:48:ARG:HG2	2.17	0.43
57:B7:7:VAL:HG21	57:B7:38:GLY:HA3	1.99	0.43
1:AA:438:U:H4'	4:AD:119:HIS:HB3	2.00	0.43
1:AA:741:G:H2'	1:AA:742:G:O4'	2.18	0.43
1:AA:1059:C:O2'	1:AA:1060:U:H5'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1105:A:H2'	1:AA:1106:G:C8	2.52	0.43
2:AB:114:LYS:HA	2:AB:117:GLU:CG	2.44	0.43
2:AB:127:LYS:CG	2:AB:128:LEU:H	2.17	0.43
11:AK:97:ARG:HH11	11:AK:97:ARG:HG3	1.84	0.43
12:AL:109:ARG:CB	12:AL:118:VAL:HG11	2.49	0.43
16:AP:70:ARG:O	16:AP:74:LEU:HG	2.17	0.43
22:AV:33:U:H3'	22:AV:34:G:H5''	1.99	0.43
25:BA:4:U:H2'	25:BA:5:A:C8	2.53	0.43
25:BA:575:A:O4'	25:BA:2500:U:H5''	2.18	0.43
25:BA:582:A:H2'	25:BA:583:G:C8	2.53	0.43
25:BA:794:A:H2'	25:BA:795:C:O4'	2.18	0.43
25:BA:1052:C:C6	25:BA:1052:C:C3'	3.01	0.43
25:BA:1063:G:H5''	35:BK:76:ALA:HB1	1.99	0.43
25:BA:1928:A:H2'	25:BA:1929:G:C5'	2.47	0.43
25:BA:2051:A:H2'	25:BA:2578:G:OP1	2.18	0.43
25:BA:2443:C:H2'	25:BA:2444:G:C8	2.53	0.43
25:BA:2553:G:H1'	25:BA:2582:G:N2	2.25	0.43
29:BE:112:THR:O	29:BE:195:GLY:HA2	2.17	0.43
31:BG:94:ARG:HB3	31:BG:94:ARG:NH1	2.33	0.43
32:BH:23:ILE:HD11	32:BH:42:VAL:HG11	1.99	0.43
35:BK:83:ALA:HB2	35:BK:105:LEU:HD21	2.00	0.43
41:BQ:100:HIS:O	41:BQ:104:GLN:HB3	2.18	0.43
42:BR:74:GLN:HA	42:BR:74:GLN:HE21	1.82	0.43
44:BT:36:ALA:HA	44:BT:58:VAL:HG23	2.00	0.43
46:BV:28:ASN:OD1	46:BV:91:GLN:HB3	2.19	0.43
46:BV:86:THR:HG22	46:BV:87:LEU:N	2.33	0.43
49:BY:68:LYS:HB2	49:BY:75:PHE:CD2	2.52	0.43
53:B3:53:VAL:O	53:B3:54:ILE:HB	2.18	0.43
1:AA:36:C:H2'	1:AA:37:U:O4'	2.19	0.43
1:AA:314:C:O2'	1:AA:315:A:H5'	2.19	0.43
1:AA:605:U:H2'	1:AA:606:G:O4'	2.18	0.43
1:AA:889:A:H5'	1:AA:891:U:O4'	2.18	0.43
1:AA:1402:C:H2'	1:AA:1403:C:O4'	2.18	0.43
2:AB:14:HIS:O	2:AB:15:PHE:C	2.61	0.43
3:AC:54:ILE:HG22	3:AC:67:ILE:HA	2.00	0.43
25:BA:17:G:H4'	43:BS:24:TYR:CE1	2.53	0.43
25:BA:181:A:O2'	25:BA:182:A:H5'	2.18	0.43
25:BA:324:A:H2'	25:BA:325:G:O4'	2.18	0.43
25:BA:1161:C:H2'	25:BA:1162:G:C8	2.54	0.43
25:BA:1550:C:H2'	25:BA:1551:A:C8	2.53	0.43
27:BC:27:ILE:HD12	27:BC:182:ALA:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:BE:46:ARG:NH1	29:BE:84:LEU:HB2	2.33	0.43
31:BG:122:ASP:OD2	31:BG:124:ARG:HB2	2.19	0.43
39:BO:110:GLU:CG	39:BO:114:ARG:HH22	2.28	0.43
48:BX:6:ALA:HB1	48:BX:40:ILE:CG2	2.48	0.43
57:B7:24:ARG:NH2	57:B7:36:ARG:HG3	2.33	0.43
1:AA:13:U:C1'	1:AA:914:A:H5''	2.44	0.43
1:AA:1296:C:H5'	13:AM:13:HIS:CE1	2.53	0.43
1:AA:1329:A:H5''	13:AM:24:VAL:HA	2.01	0.43
3:AC:10:ARG:HH22	3:AC:174:LEU:C	2.26	0.43
4:AD:99:ASN:C	4:AD:101:VAL:H	2.26	0.43
4:AD:170:LEU:C	4:AD:170:LEU:HD12	2.42	0.43
6:AF:47:LEU:HD21	6:AF:57:ALA:HB3	2.00	0.43
6:AF:53:LYS:O	6:AF:54:LEU:HB3	2.18	0.43
6:AF:68:GLN:H	6:AF:68:GLN:CD	2.24	0.43
7:AG:147:ASN:ND2	11:AK:55:ARG:HH12	2.16	0.43
9:AI:93:LEU:HD12	9:AI:93:LEU:C	2.43	0.43
12:AL:53:ARG:HG2	12:AL:53:ARG:HH11	1.83	0.43
17:AQ:8:GLN:HE21	17:AQ:8:GLN:HA	1.83	0.43
17:AQ:78:VAL:HG12	17:AQ:79:GLU:HG3	2.00	0.43
25:BA:355:U:H2'	25:BA:356:G:C8	2.54	0.43
25:BA:638:G:H2'	25:BA:639:U:O4'	2.18	0.43
25:BA:1880:U:H2'	25:BA:1881:C:C6	2.52	0.43
25:BA:1965:C:H5''	25:BA:1966:A:H2'	2.00	0.43
25:BA:2130:U:H4'	25:BA:2134:A:H5'	2.00	0.43
25:BA:2215:C:H2'	25:BA:2216:G:C8	2.53	0.43
25:BA:2633:G:H5'	25:BA:2811:G:O2'	2.18	0.43
27:BC:111:PHE:CE1	27:BC:136:LEU:HD13	2.51	0.43
28:BD:124:LYS:HB2	28:BD:125:PRO:HD2	1.99	0.43
33:BI:31:VAL:C	33:BI:33:GLN:H	2.25	0.43
35:BK:12:VAL:HG11	35:BK:22:PRO:HB3	2.01	0.43
35:BK:76:ALA:C	35:BK:78:LEU:N	2.76	0.43
35:BK:124:MET:SD	35:BK:124:MET:C	3.01	0.43
41:BQ:28:VAL:HG12	41:BQ:93:ASP:O	2.19	0.43
46:BV:14:PRO:HD3	51:B1:30:MET:SD	2.58	0.43
46:BV:45:ALA:O	46:BV:48:GLN:HB2	2.18	0.43
48:BX:7:GLU:O	48:BX:41:GLU:HG2	2.18	0.43
48:BX:79:ARG:HH11	48:BX:79:ARG:HG2	1.83	0.43
52:B2:50:VAL:O	52:B2:54:VAL:HG22	2.18	0.43
1:AA:26:A:H61	1:AA:558:G:H1'	1.84	0.43
1:AA:552:U:H2'	1:AA:553:A:H8	1.83	0.43
1:AA:858:G:H2'	1:AA:859:G:C5'	2.46	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:912:C:O2'	1:AA:913:A:H5'	2.18	0.43
6:AF:62:MET:O	6:AF:63:ASN:ND2	2.52	0.43
7:AG:39:GLU:HB2	7:AG:43:TYR:CE2	2.54	0.43
12:AL:55:ARG:HA	12:AL:61:GLU:HA	2.01	0.43
13:AM:19:THR:HG22	13:AM:25:GLY:O	2.18	0.43
13:AM:44:ILE:O	13:AM:47:LEU:HB3	2.18	0.43
13:AM:47:LEU:HG	13:AM:51:GLN:HB2	2.01	0.43
15:AO:44:GLU:O	15:AO:45:HIS:HB2	2.19	0.43
16:AP:6:LEU:HA	16:AP:19:VAL:HA	2.00	0.43
25:BA:644:A:H2'	25:BA:645:C:C5'	2.44	0.43
25:BA:687:C:H1'	55:B5:4:THR:HG22	2.01	0.43
25:BA:820:A:H4'	25:BA:836:G:H22	1.84	0.43
25:BA:1222:U:P	44:BT:90:ARG:HH12	2.42	0.43
25:BA:2032:G:OP2	25:BA:2455:G:H5'	2.18	0.43
26:BB:98:G:O2'	26:BB:99:A:H5''	2.19	0.43
27:BC:69:THR:O	27:BC:176:GLY:HA2	2.18	0.43
28:BD:36:ASN:HB2	28:BD:61:TYR:HB2	2.01	0.43
28:BD:180:MET:HE2	28:BD:268:ARG:NH2	2.33	0.43
28:BD:250:GLN:HA	28:BD:250:GLN:HE21	1.84	0.43
29:BE:133:THR:HG23	29:BE:134:HIS:N	2.33	0.43
30:BF:47:LYS:HA	30:BF:51:GLU:OE1	2.17	0.43
32:BH:53:PRO:HG3	32:BH:61:TRP:NE1	2.34	0.43
35:BK:34:ILE:HG22	35:BK:34:ILE:O	2.18	0.43
36:BL:96:ARG:HH21	36:BL:99:ARG:HG2	1.83	0.43
43:BS:23:TYR:HD1	43:BS:27:ARG:HB3	1.83	0.43
44:BT:83:TYR:OH	44:BT:85:LYS:HD3	2.17	0.43
44:BT:98:ILE:HG21	44:BT:101:ILE:HD11	2.00	0.43
48:BX:16:ALA:HA	48:BX:19:ARG:CZ	2.49	0.43
49:BY:65:PHE:CD1	49:BY:76:ILE:HG12	2.53	0.43
1:AA:173:U:OP1	1:AA:198:G:H4'	2.19	0.43
1:AA:184:G:O2'	1:AA:224:U:H5''	2.18	0.43
1:AA:262:A:OP2	20:AT:70:LYS:HB2	2.19	0.43
1:AA:403:C:H5'	4:AD:131:ILE:HG22	2.01	0.43
1:AA:920:U:O2'	1:AA:921:U:H5'	2.18	0.43
3:AC:11:LEU:HD22	3:AC:17:TRP:CD1	2.54	0.43
4:AD:123:MET:HG3	4:AD:145:ARG:HG2	1.99	0.43
10:AJ:36:VAL:C	10:AJ:38:GLY:H	2.26	0.43
12:AL:113:ARG:HB3	12:AL:118:VAL:O	2.19	0.43
20:AT:27:MET:O	20:AT:31:ILE:HG13	2.18	0.43
21:AU:9:GLU:N	21:AU:10:PRO:HD2	2.26	0.43
25:BA:1268:A:H2'	25:BA:1269:A:O4'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1412:U:H2'	25:BA:1413:A:C8	2.53	0.43
25:BA:1600:C:H2'	25:BA:1601:G:H8	1.83	0.43
25:BA:2443:C:H2'	25:BA:2444:G:H8	1.82	0.43
27:BC:189:LEU:O	27:BC:193:LEU:HG	2.18	0.43
28:BD:144:GLU:HB2	28:BD:187:CYS:HB3	2.01	0.43
29:BE:121:THR:HB	29:BE:127:PHE:CD1	2.53	0.43
29:BE:177:VAL:HG13	29:BE:177:VAL:O	2.18	0.43
30:BF:113:VAL:HG22	30:BF:118:LEU:HD23	1.99	0.43
30:BF:118:LEU:HD11	30:BF:188:MET:CG	2.47	0.43
30:BF:170:ARG:HH21	30:BF:170:ARG:HG2	1.84	0.43
36:BL:64:VAL:CG2	36:BL:68:LYS:HD2	2.48	0.43
36:BL:68:LYS:HA	36:BL:72:LYS:H	1.84	0.43
36:BL:71:ASP:O	36:BL:73:VAL:HG23	2.18	0.43
36:BL:135:GLN:HA	36:BL:135:GLN:HE21	1.83	0.43
38:BN:41:ARG:HG2	38:BN:41:ARG:NH2	2.33	0.43
40:BP:25:ALA:O	40:BP:29:VAL:HG23	2.19	0.43
40:BP:79:LEU:N	40:BP:79:LEU:HD12	2.34	0.43
40:BP:102:PHE:HD1	40:BP:109:PRO:HA	1.83	0.43
41:BQ:17:LYS:HD3	41:BQ:17:LYS:C	2.44	0.43
54:B4:47:ILE:H	54:B4:47:ILE:CD1	2.30	0.43
56:B6:38:LYS:HA	56:B6:41:ARG:HH22	1.83	0.43
1:AA:660:C:OP2	15:AO:4:THR:HG21	2.18	0.43
2:AB:34:ARG:O	2:AB:35:ASN:C	2.61	0.43
2:AB:131:LYS:HG3	2:AB:135:MET:CE	2.48	0.43
2:AB:148:GLY:O	2:AB:151:LYS:HE3	2.18	0.43
3:AC:63:ILE:HG23	3:AC:98:ALA:HA	2.01	0.43
4:AD:59:LYS:O	4:AD:63:ILE:HG13	2.18	0.43
4:AD:96:ARG:HG2	4:AD:96:ARG:HH11	1.84	0.43
5:AE:123:LEU:HD12	5:AE:123:LEU:C	2.43	0.43
12:AL:23:LEU:CG	12:AL:24:GLU:H	2.29	0.43
14:AN:59:ARG:O	14:AN:59:ARG:HG2	2.19	0.43
17:AQ:64:ARG:HG2	17:AQ:64:ARG:HH11	1.84	0.43
20:AT:14:GLU:OE1	20:AT:18:LYS:HE2	2.19	0.43
25:BA:118:A:H2'	25:BA:120:U:O4	2.19	0.43
25:BA:457:A:N1	25:BA:470:A:H5''	2.33	0.43
25:BA:534:U:H2'	25:BA:535:G:H8	1.83	0.43
25:BA:545:U:H3'	25:BA:545:U:O2	2.18	0.43
25:BA:1409:U:H2'	25:BA:1410:G:C8	2.54	0.43
25:BA:1437:C:H2'	25:BA:1438:U:C6	2.54	0.43
26:BB:82:U:H2'	26:BB:83:G:C8	2.54	0.43
27:BC:209:ILE:HG13	27:BC:226:GLN:NE2	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:BD:161:VAL:CG1	28:BD:173:LEU:HB3	2.48	0.43
35:BK:100:ILE:HG13	35:BK:132:ALA:HB1	2.00	0.43
36:BL:27:ARG:HG2	36:BL:27:ARG:HH11	1.83	0.43
37:BM:26:GLY:O	37:BM:30:ARG:HD2	2.19	0.43
38:BN:109:LYS:HG2	38:BN:126:ARG:HB2	1.99	0.43
41:BQ:2:ASP:HB3	41:BQ:5:SER:OG	2.19	0.43
41:BQ:106:LEU:HD23	41:BQ:106:LEU:O	2.18	0.43
55:B5:22:MET:HG3	55:B5:22:MET:O	2.18	0.43
1:AA:178:C:H2'	1:AA:179:A:H8	1.83	0.43
1:AA:393:A:OP2	16:AP:12:LYS:HD2	2.19	0.43
1:AA:517:G:H4'	1:AA:519:C:C4	2.53	0.43
1:AA:1058:G:H2'	1:AA:1059:C:O4'	2.19	0.43
1:AA:1157:A:H4'	1:AA:1158:C:H5''	2.01	0.43
1:AA:1489:G:H2'	1:AA:1490:U:O4'	2.19	0.43
2:AB:42:LEU:HD12	2:AB:42:LEU:C	2.44	0.43
2:AB:94:ARG:NH1	2:AB:96:LEU:HD23	2.32	0.43
4:AD:151:GLN:HG3	4:AD:152:SER:N	2.33	0.43
4:AD:173:ASP:OD2	4:AD:176:LYS:HE2	2.19	0.43
6:AF:79:ARG:HA	6:AF:79:ARG:HE	1.82	0.43
12:AL:34:THR:HG22	12:AL:35:ARG:HG3	2.00	0.43
13:AM:89:ARG:HD3	13:AM:95:PRO:O	2.18	0.43
14:AN:19:TYR:HD2	14:AN:51:LEU:HD22	1.84	0.43
17:AQ:77:VAL:HG12	17:AQ:78:VAL:N	2.34	0.43
25:BA:193:U:O3'	25:BA:803:U:H4'	2.18	0.43
25:BA:399:U:H2'	25:BA:400:G:O4'	2.18	0.43
25:BA:611:C:H2'	25:BA:612:G:O4'	2.18	0.43
25:BA:995:C:N4	36:BL:2:LYS:HG2	2.32	0.43
25:BA:1386:C:H2'	25:BA:1387:A:H8	1.84	0.43
25:BA:1827:U:H5''	25:BA:1972:G:P	2.59	0.43
25:BA:1966:A:C4	25:BA:2593:U:H4'	2.53	0.43
25:BA:2256:G:H2'	25:BA:2257:U:O4'	2.19	0.43
29:BE:1:MET:HG3	29:BE:205:PRO:HG2	2.01	0.43
29:BE:4:LEU:HD11	29:BE:96:ILE:CG2	2.49	0.43
31:BG:11:VAL:HG21	31:BG:172:PHE:CZ	2.54	0.43
35:BK:30:GLN:NE2	35:BK:30:GLN:H	2.16	0.43
35:BK:55:PRO:O	35:BK:56:VAL:HB	2.18	0.43
35:BK:93:ASN:C	35:BK:95:ASP:H	2.25	0.43
35:BK:93:ASN:C	35:BK:95:ASP:N	2.77	0.43
37:BM:99:ILE:HG12	37:BM:118:LEU:HD12	2.01	0.43
38:BN:30:THR:HB	38:BN:34:GLY:O	2.19	0.43
39:BO:16:ARG:N	39:BO:16:ARG:HD2	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BQ:9:ARG:HH11	41:BQ:9:ARG:HG2	1.84	0.43
47:BW:83:GLY:HA3	47:BW:94:PHE:CE1	2.54	0.43
48:BX:46:LYS:O	48:BX:50:MET:HG3	2.18	0.43
50:BZ:63:ILE:O	50:BZ:67:LEU:HG	2.18	0.43
52:B2:5:LYS:O	52:B2:56:VAL:HA	2.18	0.43
1:AA:500:G:H5''	12:AL:120:ARG:NH1	2.34	0.43
1:AA:684:U:H1'	11:AK:39:ASN:HB3	1.99	0.43
1:AA:911:U:H2'	1:AA:912:C:C6	2.54	0.43
2:AB:153:MET:HG3	2:AB:155:GLY:H	1.83	0.43
3:AC:142:ARG:HH11	3:AC:142:ARG:HG3	1.84	0.43
9:AI:87:MET:SD	9:AI:87:MET:C	3.02	0.43
9:AI:112:ARG:HD2	14:AN:101:TRP:O	2.19	0.43
10:AJ:59:LYS:C	10:AJ:61:ALA:H	2.26	0.43
12:AL:23:LEU:HD22	12:AL:58:ASN:HB2	2.01	0.43
13:AM:92:ARG:HG2	13:AM:92:ARG:HH11	1.83	0.43
19:AS:63:ASP:O	19:AS:64:GLU:HB3	2.19	0.43
20:AT:21:ALA:O	20:AT:25:SER:HB2	2.18	0.43
20:AT:43:LYS:HE2	20:AT:86:ALA:HA	2.01	0.43
25:BA:133:U:H2'	25:BA:134:G:C8	2.54	0.43
25:BA:861:A:H2'	25:BA:862:G:O4'	2.18	0.43
25:BA:1258:U:H4'	30:BF:79:ARG:CD	2.49	0.43
25:BA:1856:U:C2'	25:BA:1857:G:H5'	2.47	0.43
25:BA:2881:U:H2'	25:BA:2882:A:H8	1.84	0.43
26:BB:45:A:OP1	31:BG:91:ARG:HD3	2.18	0.43
26:BB:98:G:H2'	26:BB:99:A:H5''	2.00	0.43
29:BE:125:TRP:CD1	29:BE:160:LYS:HB3	2.53	0.43
34:BJ:30:SER:OG	34:BJ:33:VAL:HG11	2.19	0.43
38:BN:114:GLY:O	38:BN:115:GLU:O	2.36	0.43
44:BT:68:ARG:HD3	44:BT:92:TRP:CE2	2.54	0.43
47:BW:3:LYS:CG	47:BW:82:VAL:HB	2.49	0.43
47:BW:42:LYS:HB3	47:BW:57:ILE:HG23	2.00	0.43
52:B2:22:THR:HG23	52:B2:46:MET:HB3	2.01	0.43
53:B3:5:ASN:O	53:B3:7:PRO:HD3	2.18	0.43
1:AA:769:G:N2	1:AA:811:C:H1'	2.34	0.43
1:AA:855:U:H2'	1:AA:856:C:C6	2.54	0.43
1:AA:990:C:O2'	1:AA:991:U:H5'	2.19	0.43
1:AA:1409:C:C4'	25:BA:1915:U:O4	2.65	0.43
3:AC:32:LEU:HD13	3:AC:32:LEU:O	2.18	0.43
4:AD:92:LEU:HD22	4:AD:92:LEU:N	2.34	0.43
4:AD:183:ARG:HH11	4:AD:183:ARG:HG3	1.84	0.43
9:AI:89:TYR:HB3	9:AI:93:LEU:CD2	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:AL:41:PRO:HB3	12:AL:45:ASN:HB2	2.01	0.43
18:AR:24:ASP:O	18:AR:28:LEU:HD13	2.19	0.43
22:AV:16:U:H3'	22:AV:17:C:C5'	2.33	0.43
25:BA:32:C:O2'	25:BA:33:C:H5'	2.19	0.43
25:BA:1331:G:O2'	25:BA:1332:G:H5'	2.19	0.43
25:BA:1582:C:H2'	25:BA:1583:A:C5'	2.48	0.43
25:BA:1658:C:H2'	25:BA:1659:G:C8	2.54	0.43
25:BA:2360:G:H2'	25:BA:2361:G:H5'	2.00	0.43
28:BD:43:ASN:ND2	28:BD:45:ASN:ND2	2.65	0.43
29:BE:104:VAL:HG23	29:BE:177:VAL:HG11	1.99	0.43
35:BK:54:ILE:HG12	35:BK:73:PRO:CB	2.43	0.43
38:BN:77:ILE:HB	38:BN:109:LYS:O	2.19	0.43
50:BZ:39:VAL:HG23	50:BZ:42:GLU:HB2	2.01	0.43
1:AA:759:A:H2'	1:AA:760:G:H5'	2.01	0.42
1:AA:932:C:H5	7:AG:2:ARG:HH22	1.67	0.42
1:AA:1157:A:H4'	1:AA:1158:C:C5'	2.49	0.42
1:AA:1258:G:H2'	1:AA:1259:C:C6	2.54	0.42
2:AB:131:LYS:O	2:AB:135:MET:HE2	2.19	0.42
2:AB:175:ALA:CB	2:AB:182:VAL:HG21	2.49	0.42
2:AB:222:GLU:HA	2:AB:224:ARG:NH2	2.34	0.42
3:AC:71:ARG:O	3:AC:74:ILE:HG22	2.19	0.42
6:AF:9:MET:HE3	6:AF:86:ARG:HD2	2.01	0.42
7:AG:119:LEU:O	7:AG:123:LEU:HD23	2.19	0.42
10:AJ:40:ILE:HB	10:AJ:73:LEU:HB2	2.01	0.42
13:AM:12:LYS:HA	13:AM:43:LYS:HE3	2.01	0.42
13:AM:14:ALA:C	13:AM:16:ILE:N	2.77	0.42
14:AN:52:PRO:O	14:AN:53:ARG:HB2	2.18	0.42
14:AN:90:ARG:HB2	14:AN:90:ARG:HH11	1.84	0.42
17:AQ:48:GLU:O	17:AQ:49:ASN:C	2.61	0.42
20:AT:26:MET:SD	20:AT:26:MET:C	3.02	0.42
21:AU:46:ARG:HH21	21:AU:49:ALA:CB	2.32	0.42
22:AW:4:C:H2'	22:AW:5:G:C8	2.54	0.42
25:BA:424:G:H2'	25:BA:425:G:C8	2.54	0.42
25:BA:773:U:C5'	28:BD:46:GLY:HA3	2.49	0.42
25:BA:2255:G:H2'	25:BA:2256:G:O4'	2.19	0.42
26:BB:63:C:H2'	26:BB:64:G:H8	1.83	0.42
28:BD:124:LYS:HG3	28:BD:127:ASN:OD1	2.18	0.42
30:BF:151:GLY:HA2	30:BF:192:ALA:HA	2.01	0.42
32:BH:10:VAL:O	32:BH:10:VAL:HG23	2.19	0.42
34:BJ:60:LEU:CD2	34:BJ:82:ILE:HD13	2.49	0.42
36:BL:16:TYR:HA	36:BL:138:GLN:O	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:BL:73:VAL:HG13	36:BL:87:ALA:C	2.44	0.42
39:BO:78:LEU:O	39:BO:80:VAL:HG23	2.19	0.42
47:BW:5:ARG:HG3	47:BW:93:ARG:NH2	2.33	0.42
49:BY:36:GLN:OE1	49:BY:40:LYS:HB3	2.19	0.42
50:BZ:52:ALA:HA	50:BZ:55:MET:CE	2.49	0.42
51:B1:45:GLN:O	51:B1:47:ARG:N	2.46	0.42
1:AA:64:G:H4'	1:AA:65:A:H3'	2.01	0.42
1:AA:422:C:H1'	1:AA:423:G:N2	2.34	0.42
1:AA:476:U:H2'	1:AA:477:C:C6	2.54	0.42
1:AA:715:A:H2'	1:AA:716:A:C8	2.54	0.42
1:AA:1152:A:H2'	1:AA:1153:G:C8	2.55	0.42
2:AB:207:ARG:HH12	2:AB:211:LEU:CD2	2.32	0.42
4:AD:110:ARG:HG2	4:AD:110:ARG:HH11	1.84	0.42
4:AD:115:GLN:HE21	4:AD:115:GLN:HA	1.83	0.42
5:AE:67:ARG:HG2	5:AE:67:ARG:HH11	1.84	0.42
7:AG:14:ASP:HB3	7:AG:19:SER:H	1.84	0.42
8:AH:28:SER:HB2	8:AH:58:LEU:N	2.34	0.42
10:AJ:10:LEU:HD22	10:AJ:22:THR:OG1	2.19	0.42
11:AK:105:ARG:HG2	11:AK:105:ARG:HH11	1.84	0.42
13:AM:3:ILE:N	13:AM:3:ILE:CD1	2.82	0.42
18:AR:72:ARG:HH11	18:AR:72:ARG:HG3	1.84	0.42
20:AT:29:THR:O	20:AT:32:LYS:HB2	2.19	0.42
22:AV:63:G:H2'	22:AV:64:A:H8	1.83	0.42
22:AW:63:G:H2'	22:AW:64:A:H8	1.84	0.42
22:AW:72:C:H2'	22:AW:73:A:C8	2.55	0.42
25:BA:184:C:H2'	25:BA:185:G:C8	2.54	0.42
25:BA:1112:G:H4'	32:BH:2:ARG:NH1	2.29	0.42
25:BA:1983:G:H5''	25:BA:2607:G:OP1	2.19	0.42
25:BA:2192:U:H2'	25:BA:2193:G:C8	2.54	0.42
25:BA:2285:C:H2'	25:BA:2286:G:H5''	2.00	0.42
25:BA:2333:A:H5'	25:BA:2335:A:H1'	2.00	0.42
25:BA:2445:G:P	30:BF:69:ARG:HH22	2.41	0.42
27:BC:118:PRO:C	27:BC:120:ALA:H	2.27	0.42
28:BD:226:PRO:HD3	28:BD:233:GLY:H	1.85	0.42
37:BM:42:THR:CG2	37:BM:44:LYS:HE2	2.49	0.42
39:BO:22:GLN:H	39:BO:100:LYS:HZ2	1.66	0.42
40:BP:48:VAL:HG13	40:BP:49:GLU:N	2.34	0.42
42:BR:4:ILE:O	42:BR:8:GLU:HG3	2.19	0.42
47:BW:87:GLU:O	47:BW:88:ASP:HB3	2.17	0.42
50:BZ:5:GLN:NE2	50:BZ:48:LEU:HD22	2.34	0.42
52:B2:10:ARG:HG2	52:B2:10:ARG:HH21	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:B3:39:ARG:HG2	53:B3:39:ARG:HH11	1.84	0.42
1:AA:66:A:H4'	1:AA:173:U:C5	2.54	0.42
1:AA:107:G:H3'	1:AA:108:G:H5''	2.00	0.42
1:AA:521:G:H5'	12:AL:68:GLY:O	2.19	0.42
1:AA:1277:C:O2'	1:AA:1279:G:H1'	2.19	0.42
1:AA:1514:G:H2'	1:AA:1515:G:C8	2.54	0.42
2:AB:30:ILE:HA	2:AB:40:ILE:HA	2.00	0.42
4:AD:47:LEU:H	4:AD:47:LEU:CD2	2.24	0.42
5:AE:108:GLY:O	5:AE:109:ALA:HB3	2.19	0.42
7:AG:123:LEU:N	7:AG:123:LEU:HD22	2.34	0.42
7:AG:147:ASN:C	7:AG:149:ALA:N	2.75	0.42
8:AH:28:SER:CB	8:AH:58:LEU:HB2	2.48	0.42
9:AI:48:ARG:HH11	9:AI:48:ARG:HG3	1.84	0.42
12:AL:79:ILE:HG22	12:AL:103:CYS:HB2	2.01	0.42
13:AM:78:ARG:HG2	13:AM:78:ARG:HH11	1.85	0.42
25:BA:98:G:O2'	25:BA:99:U:H5'	2.20	0.42
25:BA:755:U:H2'	25:BA:756:A:C8	2.53	0.42
25:BA:1199:U:C1'	43:BS:3:VAL:HG22	2.44	0.42
25:BA:1658:C:H2'	25:BA:1659:G:H8	1.83	0.42
25:BA:1739:A:H2'	25:BA:1740:G:O4'	2.19	0.42
25:BA:1790:C:H4'	28:BD:207:ALA:HB2	2.01	0.42
25:BA:1798:U:H5	28:BD:270:ARG:NH2	2.17	0.42
25:BA:2200:C:O5'	25:BA:2200:C:H6	2.01	0.42
31:BG:111:ARG:HG2	31:BG:111:ARG:HH21	1.84	0.42
34:BJ:51:TYR:HD1	34:BJ:52:MET:HB2	1.84	0.42
38:BN:19:LEU:HD12	38:BN:19:LEU:C	2.44	0.42
42:BR:74:GLN:HA	42:BR:74:GLN:NE2	2.33	0.42
42:BR:108:ARG:HH21	42:BR:108:ARG:HG2	1.84	0.42
46:BV:77:ARG:HG2	46:BV:77:ARG:NH1	2.33	0.42
48:BX:51:GLN:HA	48:BX:56:PHE:CD2	2.54	0.42
51:B1:39:GLN:HB2	51:B1:41:HIS:CE1	2.54	0.42
56:B6:44:ARG:HB3	56:B6:45:PRO:CD	2.48	0.42
1:AA:1350:A:H2	7:AG:33:GLY:HA3	1.85	0.42
2:AB:26:MET:CE	2:AB:29:PHE:HB2	2.49	0.42
2:AB:94:ARG:HG2	2:AB:94:ARG:HH11	1.84	0.42
4:AD:115:GLN:HA	4:AD:115:GLN:NE2	2.35	0.42
7:AG:69:ARG:HG2	7:AG:69:ARG:HH11	1.85	0.42
10:AJ:40:ILE:HG23	10:AJ:41:PRO:HD2	1.99	0.42
10:AJ:48:ARG:HG2	10:AJ:48:ARG:HH11	1.84	0.42
13:AM:15:VAL:HG23	13:AM:16:ILE:HG13	2.01	0.42
13:AM:69:ARG:HG2	13:AM:69:ARG:HH11	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:AM:84:CYS:O	13:AM:88:LEU:HG	2.18	0.42
15:AO:66:LEU:HB3	15:AO:77:TYR:HE1	1.84	0.42
25:BA:83:A:H5''	47:BW:1:ALA:N	2.34	0.42
25:BA:142:A:H1'	46:BV:1:MET:SD	2.60	0.42
25:BA:751:A:O4'	45:BU:90:LYS:HA	2.20	0.42
25:BA:2286:G:H4'	25:BA:2287:A:O4'	2.18	0.42
25:BA:2590:A:H5''	28:BD:237:ARG:HH12	1.83	0.42
25:BA:2710:C:H2'	25:BA:2711:A:C8	2.54	0.42
25:BA:2821:A:H2'	25:BA:2822:G:C8	2.55	0.42
26:BB:49:C:H2'	26:BB:50:A:C8	2.55	0.42
28:BD:209:ALA:O	28:BD:213:ARG:HD2	2.19	0.42
29:BE:47:ALA:HA	29:BE:84:LEU:HG	2.01	0.42
29:BE:109:VAL:HG23	29:BE:175:LEU:HD12	2.02	0.42
30:BF:128:ALA:O	30:BF:133:LEU:HD12	2.18	0.42
33:BI:12:LEU:N	33:BI:12:LEU:HD23	2.34	0.42
35:BK:100:ILE:CG2	35:BK:101:SER:N	2.78	0.42
37:BM:21:CYS:CA	37:BM:41:ILE:HG22	2.47	0.42
40:BP:28:LEU:O	40:BP:32:GLU:HA	2.19	0.42
1:AA:246:A:H62	1:AA:281:G:N2	2.17	0.42
1:AA:692:U:H5	11:AK:27:ASN:ND2	2.17	0.42
1:AA:857:C:H2'	1:AA:858:G:C8	2.54	0.42
1:AA:1217:C:O2'	1:AA:1218:C:H5'	2.19	0.42
1:AA:1319:A:H2'	19:AS:3:SER:OG	2.20	0.42
1:AA:1376:U:H5'	7:AG:101:ARG:HH22	1.85	0.42
2:AB:91:VAL:HG11	2:AB:95:TRP:CD1	2.54	0.42
3:AC:76:ILE:HG22	3:AC:80:GLY:H	1.85	0.42
4:AD:7:LYS:HG3	4:AD:8:LEU:CD2	2.46	0.42
6:AF:38:ARG:HB3	6:AF:63:ASN:HB2	2.02	0.42
7:AG:91:ARG:O	7:AG:95:ARG:HB2	2.20	0.42
8:AH:51:GLU:N	8:AH:51:GLU:OE2	2.52	0.42
9:AI:29:ILE:HG22	9:AI:64:ILE:CG1	2.48	0.42
15:AO:69:LEU:HD21	15:AO:76:ARG:CB	2.50	0.42
17:AQ:8:GLN:HA	17:AQ:8:GLN:NE2	2.34	0.42
19:AS:66:VAL:C	19:AS:68:HIS:H	2.27	0.42
20:AT:70:LYS:CD	20:AT:73:ARG:HE	2.32	0.42
25:BA:322:A:H5'	25:BA:340:A:C1'	2.47	0.42
25:BA:826:U:H2'	25:BA:828:U:O4'	2.19	0.42
25:BA:1820:U:O2	28:BD:199:HIS:HB3	2.19	0.42
25:BA:1933:G:H2'	25:BA:1934:C:O4'	2.19	0.42
25:BA:2359:C:H4'	56:B6:53:ASP:OD2	2.19	0.42
25:BA:2786:U:O2'	25:BA:2787:C:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:BD:50:THR:HG22	28:BD:53:ILE:HD13	2.00	0.42
28:BD:181:ARG:HG2	28:BD:181:ARG:HH21	1.85	0.42
33:BI:2:GLN:O	33:BI:3:VAL:O	2.37	0.42
35:BK:36:GLU:C	35:BK:38:CYS:H	2.28	0.42
36:BL:88:THR:OG1	36:BL:91:GLU:HG3	2.18	0.42
38:BN:75:ALA:HB2	38:BN:105:ILE:HD12	2.02	0.42
40:BP:37:THR:HB	40:BP:39:PRO:HD2	2.00	0.42
41:BQ:64:TYR:C	41:BQ:66:GLY:H	2.28	0.42
45:BU:69:LEU:HB3	45:BU:107:VAL:CG2	2.50	0.42
47:BW:48:VAL:HG13	47:BW:48:VAL:O	2.19	0.42
1:AA:115:G:H4'	1:AA:116:A:H5'	2.02	0.42
1:AA:424:G:O2'	1:AA:425:G:H5'	2.19	0.42
1:AA:543:U:H2'	1:AA:544:G:H8	1.84	0.42
2:AB:87:ASP:N	2:AB:88:GLN:OE1	2.52	0.42
2:AB:192:PRO:C	2:AB:194:GLY:N	2.78	0.42
2:AB:209:VAL:CG2	2:AB:210:THR:N	2.82	0.42
3:AC:205:GLU:O	3:AC:206:ILE:C	2.62	0.42
7:AG:91:ARG:HG2	7:AG:91:ARG:HH11	1.85	0.42
10:AJ:18:ILE:HG23	10:AJ:19:ASP:N	2.34	0.42
10:AJ:57:VAL:HG13	10:AJ:58:ASN:ND2	2.34	0.42
13:AM:108:ARG:HH11	13:AM:108:ARG:HG3	1.85	0.42
14:AN:66:GLN:HG3	14:AN:79:LEU:HD22	2.02	0.42
14:AN:77:PHE:CD1	14:AN:84:VAL:HG13	2.55	0.42
25:BA:740:C:H5''	25:BA:1784:A:OP1	2.19	0.42
25:BA:769:U:H2'	25:BA:770:G:C8	2.55	0.42
25:BA:1190:G:H2'	25:BA:1191:G:H8	1.83	0.42
25:BA:1209:U:H2'	25:BA:1210:G:H21	1.84	0.42
25:BA:2446:G:O6	25:BA:2501:C:H2'	2.20	0.42
25:BA:2628:C:H3'	25:BA:2629:U:C5'	2.49	0.42
25:BA:2683:C:H5'	29:BE:13:ARG:HH11	1.84	0.42
26:BB:40:U:H3'	26:BB:41:G:H4'	2.00	0.42
30:BF:5:LEU:N	30:BF:5:LEU:HD12	2.34	0.42
30:BF:128:ALA:O	30:BF:130:LYS:N	2.53	0.42
31:BG:10:GLU:O	31:BG:11:VAL:C	2.62	0.42
38:BN:78:ARG:HH22	38:BN:80:SER:HB3	1.83	0.42
38:BN:114:GLY:C	38:BN:115:GLU:HG3	2.45	0.42
40:BP:114:GLU:OE1	40:BP:114:GLU:N	2.47	0.42
43:BS:46:TYR:HA	43:BS:49:ARG:CZ	2.49	0.42
1:AA:1065:U:H5''	1:AA:1190:G:C2	2.54	0.42
1:AA:1169:A:H2'	1:AA:1170:A:O4'	2.19	0.42
1:AA:1524:C:H2'	1:AA:1525:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:67:LEU:HD23	2:AB:67:LEU:C	2.45	0.42
2:AB:185:ILE:HG13	2:AB:185:ILE:O	2.20	0.42
4:AD:119:HIS:O	4:AD:120:LYS:C	2.63	0.42
7:AG:142:ARG:HG2	7:AG:142:ARG:HH11	1.84	0.42
9:AI:6:TYR:CG	9:AI:7:GLY:N	2.85	0.42
11:AK:41:LEU:HB3	11:AK:76:TYR:CE2	2.55	0.42
12:AL:88:ASP:HB3	12:AL:89:LEU:HD12	2.02	0.42
13:AM:33:LEU:CD2	13:AM:40:GLU:HA	2.50	0.42
13:AM:33:LEU:CB	13:AM:38:ILE:HB	2.47	0.42
14:AN:2:LYS:HG2	14:AN:4:SER:OG	2.20	0.42
15:AO:68:TYR:O	15:AO:71:ARG:HB3	2.20	0.42
25:BA:472:A:H2'	25:BA:473:G:H5'	2.02	0.42
25:BA:686:U:H5''	55:B5:11:LYS:HE2	2.01	0.42
25:BA:782:A:N7	28:BD:219:VAL:HG21	2.35	0.42
25:BA:1097:U:H2'	25:BA:1098:A:H5'	2.00	0.42
25:BA:1201:U:H2'	25:BA:1202:G:H8	1.85	0.42
25:BA:1564:C:H2'	25:BA:1565:C:C6	2.55	0.42
25:BA:1655:A:H1'	29:BE:118:PHE:CE2	2.54	0.42
25:BA:2029:G:O6	25:BA:2032:G:H5''	2.20	0.42
27:BC:7:ARG:HG2	27:BC:7:ARG:HH11	1.83	0.42
28:BD:104:LEU:H	28:BD:104:LEU:CD1	2.32	0.42
28:BD:220:ARG:HH11	28:BD:220:ARG:HG3	1.84	0.42
31:BG:114:ARG:HG3	31:BG:114:ARG:HH21	1.85	0.42
38:BN:22:GLY:O	38:BN:28:GLY:HA3	2.20	0.42
41:BQ:99:TYR:CE1	41:BQ:104:GLN:HG3	2.55	0.42
43:BS:29:ARG:HG2	43:BS:29:ARG:HH11	1.83	0.42
47:BW:41:VAL:O	47:BW:59:GLU:HA	2.20	0.42
54:B4:25:ASN:O	54:B4:29:LYS:HB2	2.18	0.42
1:AA:203:G:H1	1:AA:214:C:H42	1.66	0.42
1:AA:204:G:C2'	1:AA:205:A:H5''	2.49	0.42
1:AA:372:C:N4	1:AA:387:U:H2'	2.35	0.42
3:AC:4:VAL:O	3:AC:6:PRO:HD3	2.19	0.42
3:AC:26:LYS:HG2	3:AC:27:GLU:N	2.34	0.42
3:AC:134:LYS:O	3:AC:138:GLN:HG3	2.19	0.42
4:AD:56:GLU:O	4:AD:60:VAL:HG23	2.20	0.42
4:AD:189:ASP:O	4:AD:190:LEU:HG	2.20	0.42
8:AH:79:ARG:HG3	8:AH:82:LEU:H	1.84	0.42
10:AJ:22:THR:O	10:AJ:26:VAL:HG23	2.20	0.42
25:BA:462:C:H2'	25:BA:463:G:C8	2.54	0.42
25:BA:607:U:OP1	30:BF:97:ASN:HA	2.19	0.42
25:BA:739:A:H5''	25:BA:1784:A:N1	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:1061:U:C4'	25:BA:1070:A:H1'	2.34	0.42
25:BA:2681:C:H4'	25:BA:2682:A:C8	2.55	0.42
25:BA:2713:U:H3'	25:BA:2714:G:C5'	2.50	0.42
25:BA:2720:U:H5'	25:BA:2846:G:H4'	2.01	0.42
25:BA:2742:G:OP1	57:B7:36:ARG:HD2	2.20	0.42
28:BD:199:HIS:O	28:BD:202:ARG:HG2	2.19	0.42
32:BH:148:ARG:HH11	32:BH:148:ARG:HG3	1.84	0.42
40:BP:13:ASN:ND2	40:BP:13:ASN:N	2.68	0.42
54:B4:7:LYS:HG2	54:B4:23:THR:HG22	2.02	0.42
1:AA:44:A:H2'	1:AA:45:G:C8	2.55	0.42
1:AA:482:A:H2'	1:AA:483:C:O4'	2.20	0.42
1:AA:530:G:OP1	1:AA:531:U:H5''	2.20	0.42
1:AA:877:G:H21	8:AH:1:SER:N	2.18	0.42
1:AA:1163:A:H2'	1:AA:1164:G:C8	2.55	0.42
5:AE:22:LYS:HZ3	5:AE:24:VAL:HG12	1.84	0.42
5:AE:112:ALA:O	5:AE:116:VAL:HG22	2.20	0.42
6:AF:98:GLU:HG3	6:AF:99:ALA:N	2.35	0.42
9:AI:112:ARG:HH21	10:AJ:64:GLN:HE22	1.65	0.42
11:AK:121:ARG:HG2	11:AK:121:ARG:HH11	1.84	0.42
14:AN:3:GLN:OE1	14:AN:3:GLN:N	2.53	0.42
15:AO:86:LEU:O	15:AO:87:ARG:HB3	2.20	0.42
17:AQ:16:MET:SD	17:AQ:16:MET:N	2.93	0.42
25:BA:188:G:H2'	25:BA:189:G:H5'	2.01	0.42
25:BA:594:U:H2'	25:BA:595:C:C6	2.55	0.42
25:BA:621:A:H2'	25:BA:622:G:H5'	2.01	0.42
25:BA:728:G:O2'	25:BA:729:G:H5''	2.19	0.42
25:BA:828:U:H2'	25:BA:829:A:C8	2.54	0.42
25:BA:907:G:H5'	39:BO:22:GLN:CB	2.49	0.42
25:BA:937:C:H2'	25:BA:938:G:H8	1.83	0.42
25:BA:1683:U:H2'	25:BA:1684:G:C8	2.55	0.42
25:BA:1790:C:H2'	25:BA:1791:A:C5	2.55	0.42
29:BE:32:ASN:HA	29:BE:51:THR:O	2.20	0.42
29:BE:151:THR:CB	29:BE:152:PRO:HD3	2.31	0.42
30:BF:48:THR:C	30:BF:50:ALA:N	2.78	0.42
34:BJ:5:LEU:O	34:BJ:9:GLN:HG3	2.20	0.42
35:BK:56:VAL:HG23	35:BK:70:THR:HA	2.01	0.42
35:BK:95:ASP:O	35:BK:97:VAL:HG23	2.19	0.42
38:BN:23:ILE:HD12	44:BT:84:ARG:NE	2.35	0.42
39:BO:32:GLY:CA	39:BO:104:GLU:HA	2.48	0.42
39:BO:136:MET:HG2	39:BO:136:MET:OXT	2.20	0.42
41:BQ:48:LEU:HD13	41:BQ:87:ILE:HD12	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:BT:72:VAL:O	44:BT:88:GLY:HA2	2.20	0.42
45:BU:23:LEU:HD11	53:B3:21:LEU:HB2	2.02	0.42
47:BW:15:GLY:O	47:BW:17:ASP:N	2.53	0.42
1:AA:104:G:H4'	1:AA:174:A:H4'	2.02	0.42
1:AA:355:C:H2'	1:AA:356:A:C8	2.55	0.42
1:AA:393:A:H2'	1:AA:394:G:H8	1.85	0.42
1:AA:608:A:H2'	1:AA:609:A:O4'	2.20	0.42
1:AA:644:U:H2'	1:AA:645:G:C8	2.55	0.42
1:AA:751:U:H2'	1:AA:752:G:H5'	2.01	0.42
1:AA:832:G:O2'	1:AA:833:G:H5'	2.20	0.42
1:AA:860:A:H2'	1:AA:861:G:O4'	2.20	0.42
2:AB:14:HIS:CD2	2:AB:15:PHE:H	2.37	0.42
2:AB:110:ILE:CG2	2:AB:114:LYS:HE3	2.49	0.42
2:AB:119:GLN:HG2	2:AB:124:THR:O	2.19	0.42
3:AC:89:VAL:O	3:AC:93:ILE:HG13	2.19	0.42
4:AD:4:LEU:N	4:AD:4:LEU:HD12	2.35	0.42
4:AD:30:LYS:HD3	4:AD:30:LYS:N	2.34	0.42
4:AD:96:ARG:HB3	4:AD:98:ASP:OD1	2.20	0.42
7:AG:128:GLU:CD	7:AG:130:LYS:HE2	2.45	0.42
8:AH:84:ILE:HG21	8:AH:124:ILE:HD11	2.02	0.42
12:AL:30:ARG:HG2	12:AL:30:ARG:HH11	1.85	0.42
14:AN:61:ARG:CG	14:AN:62:ASN:H	2.13	0.42
17:AQ:42:LYS:O	17:AQ:43:LEU:HD23	2.19	0.42
20:AT:72:ALA:HA	20:AT:75:LYS:HD2	2.02	0.42
22:AW:63:G:H2'	22:AW:64:A:C8	2.55	0.42
25:BA:443:A:H3'	30:BF:40:ARG:HH12	1.85	0.42
25:BA:538:A:H62	25:BA:555:G:H21	1.66	0.42
25:BA:1316:U:H2'	25:BA:1317:G:C8	2.55	0.42
25:BA:1367:A:C2'	25:BA:1368:G:H5'	2.47	0.42
25:BA:1706:C:O2'	25:BA:1707:G:H5'	2.20	0.42
25:BA:1813:G:H4'	28:BD:43:ASN:HA	2.01	0.42
25:BA:1922:G:H2'	25:BA:1923:U:O4'	2.20	0.42
25:BA:2463:C:H2'	25:BA:2464:G:H8	1.82	0.42
32:BH:59:ASP:OD1	32:BH:60:GLY:N	2.53	0.42
32:BH:72:ASN:O	32:BH:76:ILE:HG12	2.20	0.42
33:BI:25:TYR:CE2	33:BI:30:LEU:HD21	2.54	0.42
34:BJ:108:VAL:HB	34:BJ:123:ILE:HD13	2.02	0.42
35:BK:28:GLY:CA	35:BK:32:VAL:HB	2.46	0.42
42:BR:30:TRP:NE1	42:BR:81:ASP:HB2	2.35	0.42
42:BR:75:THR:C	42:BR:77:SER:H	2.27	0.42
44:BT:2:TYR:CE1	44:BT:42:ALA:HB3	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:BV:82:LYS:HG2	46:BV:83:ALA:N	2.35	0.42
47:BW:35:VAL:HB	47:BW:38:ILE:HG13	2.02	0.42
49:BY:37:ARG:HG3	49:BY:37:ARG:HH11	1.84	0.42
53:B3:30:ASP:OD1	53:B3:50:GLY:HA2	2.20	0.42
1:AA:178:C:H2'	1:AA:179:A:C8	2.54	0.41
1:AA:514:C:H2'	1:AA:515:G:H8	1.85	0.41
1:AA:662:U:H2'	1:AA:663:A:C8	2.55	0.41
3:AC:112:ALA:HB2	3:AC:182:ASP:O	2.20	0.41
3:AC:172:VAL:N	3:AC:173:PRO:HD3	2.35	0.41
9:AI:29:ILE:HD11	9:AI:37:TYR:HB3	2.01	0.41
9:AI:95:SER:O	9:AI:98:ARG:HB2	2.20	0.41
13:AM:93:GLY:CA	13:AM:108:ARG:HH12	2.28	0.41
16:AP:35:ARG:NH2	16:AP:38:PHE:HD2	2.18	0.41
20:AT:73:ARG:HH11	20:AT:73:ARG:HG3	1.85	0.41
25:BA:25:U:C5'	45:BU:79:GLY:HA2	2.50	0.41
25:BA:214:G:H1'	25:BA:217:A:H5'	2.01	0.41
25:BA:575:A:H5'	25:BA:2500:U:H4'	2.01	0.41
25:BA:738:G:C2'	25:BA:739:A:H5'	2.50	0.41
25:BA:751:A:O4'	45:BU:90:LYS:HG2	2.20	0.41
25:BA:1539:U:H2'	25:BA:1540:G:C8	2.55	0.41
26:BB:14:U:O2	26:BB:107:G:H4'	2.20	0.41
26:BB:60:C:H2'	26:BB:61:G:C8	2.55	0.41
26:BB:116:G:H4'	41:BQ:54:VAL:HG22	2.02	0.41
27:BC:127:LEU:C	27:BC:129:GLN:H	2.28	0.41
29:BE:33:ARG:HD3	29:BE:73:VAL:HB	2.02	0.41
30:BF:109:LEU:HD11	30:BF:180:LEU:HD13	2.02	0.41
35:BK:42:ASN:HA	35:BK:45:THR:HB	2.02	0.41
36:BL:117:ALA:HA	36:BL:120:ARG:HD2	2.03	0.41
39:BO:6:ARG:HG2	39:BO:6:ARG:HH11	1.85	0.41
42:BR:52:ARG:HG2	42:BR:52:ARG:HH11	1.84	0.41
49:BY:47:VAL:HG13	49:BY:56:PHE:O	2.19	0.41
54:B4:18:HIS:CD2	54:B4:40:PRO:HD2	2.55	0.41
1:AA:443:C:H2'	1:AA:444:G:C8	2.55	0.41
1:AA:673:A:H2'	1:AA:674:G:C8	2.56	0.41
1:AA:777:A:H2'	1:AA:778:G:O4'	2.21	0.41
3:AC:148:ILE:CD1	3:AC:201:ILE:HG12	2.49	0.41
4:AD:29:THR:CG2	4:AD:30:LYS:HD3	2.47	0.41
5:AE:59:ILE:HG13	5:AE:60:GLN:N	2.35	0.41
6:AF:86:ARG:HG2	6:AF:86:ARG:HH11	1.85	0.41
11:AK:20:ALA:HB3	11:AK:83:VAL:HG22	2.01	0.41
12:AL:41:PRO:CD	12:AL:47:ALA:H	2.33	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:AL:113:ARG:HA	12:AL:118:VAL:HB	2.02	0.41
21:AU:20:ARG:HG2	21:AU:20:ARG:HH11	1.86	0.41
25:BA:336:C:H2'	25:BA:337:C:C6	2.55	0.41
25:BA:462:C:H2'	25:BA:463:G:H8	1.85	0.41
25:BA:574:A:C5	25:BA:2054:A:H5''	2.55	0.41
25:BA:1912:A:C4	25:BA:1919:A:C6	3.08	0.41
25:BA:1961:C:C2'	25:BA:1962:C:H5'	2.51	0.41
25:BA:2016:U:H5''	25:BA:2058:A:OP1	2.20	0.41
25:BA:2061:G:H5''	25:BA:2503:A:C2	2.55	0.41
25:BA:2136:G:H22	25:BA:2156:G:H1'	1.85	0.41
25:BA:2139:U:H2'	25:BA:2140:G:H8	1.85	0.41
25:BA:2270:A:H2'	25:BA:2271:G:O4'	2.19	0.41
25:BA:2569:G:O2'	25:BA:2570:G:H5'	2.20	0.41
27:BC:64:VAL:HG13	27:BC:64:VAL:O	2.19	0.41
28:BD:64:VAL:HG22	28:BD:102:TYR:HB3	2.02	0.41
29:BE:84:LEU:HD13	29:BE:88:GLU:O	2.20	0.41
36:BL:1:MET:HG2	36:BL:2:LYS:N	2.34	0.41
39:BO:17:ASN:ND2	39:BO:38:ARG:HH11	2.18	0.41
39:BO:78:LEU:HD12	39:BO:78:LEU:H	1.84	0.41
40:BP:70:THR:O	40:BP:71:ARG:C	2.63	0.41
44:BT:76:LYS:HB2	44:BT:85:LYS:HB2	2.02	0.41
51:B1:1:MET:HA	51:B1:4:LYS:HB2	2.02	0.41
54:B4:46:VAL:HG22	54:B4:47:ILE:N	2.34	0.41
55:B5:30:VAL:O	55:B5:34:ARG:HG3	2.19	0.41
1:AA:109:A:N6	1:AA:324:G:H1'	2.35	0.41
1:AA:266:G:H4'	1:AA:267:C:C5	2.55	0.41
1:AA:1240:U:OP1	7:AG:115:MET:HB2	2.20	0.41
2:AB:14:HIS:HD2	2:AB:15:PHE:H	1.66	0.41
2:AB:97:GLY:HA2	2:AB:170:ILE:HG21	2.02	0.41
2:AB:165:ALA:CB	2:AB:186:VAL:HG12	2.51	0.41
4:AD:95:GLY:HA3	4:AD:135:GLN:HE22	1.85	0.41
22:AW:68:C:H2'	22:AW:69:G:C8	2.55	0.41
25:BA:241:A:N1	25:BA:255:A:H5'	2.35	0.41
25:BA:2050:C:O2	29:BE:161:MET:HE1	2.20	0.41
25:BA:2529:G:OP2	25:BA:2530:A:H8	2.03	0.41
25:BA:2889:C:H2'	25:BA:2890:G:O4'	2.19	0.41
26:BB:106:G:H2'	26:BB:107:G:O4'	2.19	0.41
27:BC:217:THR:HG22	27:BC:218:MET:CE	2.45	0.41
28:BD:15:VAL:HG13	28:BD:204:LEU:O	2.20	0.41
29:BE:116:LYS:HD2	40:BP:1:MET:HE1	2.03	0.41
31:BG:120:SER:HB3	31:BG:128:SER:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:BI:10:ALA:O	33:BI:12:LEU:N	2.50	0.41
34:BJ:87:GLU:HG2	34:BJ:88:HIS:N	2.36	0.41
38:BN:14:LYS:HD3	38:BN:14:LYS:C	2.45	0.41
39:BO:70:ASP:OD2	39:BO:70:ASP:C	2.63	0.41
42:BR:102:ARG:HG2	42:BR:102:ARG:NH1	2.35	0.41
43:BS:73:ILE:HG21	43:BS:109:VAL:HG13	2.02	0.41
45:BU:97:LEU:HD22	45:BU:97:LEU:H	1.86	0.41
47:BW:12:VAL:HB	47:BW:17:ASP:O	2.20	0.41
50:BZ:12:VAL:CG2	50:BZ:28:PHE:HB2	2.50	0.41
52:B2:30:ARG:HG2	52:B2:30:ARG:HH11	1.86	0.41
52:B2:57:GLU:N	52:B2:57:GLU:OE2	2.53	0.41
1:AA:404:G:OP1	4:AD:118:SER:HB3	2.20	0.41
1:AA:742:G:O2'	1:AA:743:A:H5'	2.20	0.41
1:AA:982:U:H5'	14:AN:5:MET:CE	2.51	0.41
1:AA:1002:G:H2'	1:AA:1003:G:O4'	2.20	0.41
1:AA:1106:G:H5''	3:AC:171:ARG:CG	2.39	0.41
1:AA:1493:A:O2'	23:AX:19:U:O2	2.33	0.41
3:AC:2:GLN:OE1	3:AC:3:LYS:HG2	2.20	0.41
4:AD:12:ARG:CG	4:AD:33:ILE:HA	2.48	0.41
4:AD:35:GLN:O	4:AD:36:ALA:HB2	2.21	0.41
5:AE:15:ILE:HG23	5:AE:109:ALA:HA	2.02	0.41
5:AE:110:MET:HE1	5:AE:124:ALA:HB3	2.02	0.41
6:AF:10:VAL:HA	6:AF:84:VAL:HA	2.03	0.41
8:AH:10:LEU:HD22	8:AH:74:ILE:CG1	2.50	0.41
9:AI:11:ARG:HH11	9:AI:11:ARG:HG2	1.86	0.41
9:AI:56:MET:SD	9:AI:57:VAL:N	2.78	0.41
13:AM:56:ARG:HH11	13:AM:56:ARG:HG3	1.85	0.41
14:AN:45:VAL:HG23	14:AN:46:LEU:N	2.34	0.41
14:AN:72:GLY:O	14:AN:80:SER:HA	2.20	0.41
15:AO:38:LEU:N	15:AO:38:LEU:HD12	2.35	0.41
15:AO:81:ILE:HA	15:AO:86:LEU:HD21	2.02	0.41
17:AQ:61:ARG:NH1	17:AQ:63:CYS:HB3	2.32	0.41
25:BA:341:C:H2'	25:BA:342:A:C8	2.55	0.41
25:BA:879:G:O6	25:BA:899:A:H1'	2.19	0.41
25:BA:1908:C:H42	25:BA:1922:G:H1	1.67	0.41
25:BA:2213:U:O2'	25:BA:2214:C:H5'	2.20	0.41
25:BA:2215:C:H2'	25:BA:2216:G:H8	1.85	0.41
25:BA:2410:G:H2'	25:BA:2411:A:O4'	2.20	0.41
25:BA:2712:C:P	25:BA:2712:C:H6	2.43	0.41
32:BH:158:GLY:HA3	32:BH:162:ARG:HH11	1.82	0.41
35:BK:18:ASN:HA	35:BK:37:PHE:HD2	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BK:105:LEU:HA	35:BK:108:ILE:HB	2.03	0.41
40:BP:44:LEU:HD23	40:BP:113:ILE:HD13	2.02	0.41
42:BR:50:ARG:HH11	42:BR:50:ARG:HG3	1.85	0.41
51:B1:31:GLN:HE21	51:B1:37:LEU:HA	1.85	0.41
55:B5:31:LEU:HB3	55:B5:35:ARG:NH1	2.32	0.41
1:AA:107:G:H2'	1:AA:108:G:H5''	2.03	0.41
1:AA:540:G:H2'	1:AA:541:G:O4'	2.21	0.41
1:AA:876:C:H2'	1:AA:877:G:C8	2.56	0.41
1:AA:907:A:H2'	1:AA:908:A:O4'	2.20	0.41
1:AA:944:G:H21	1:AA:1339:A:H62	1.69	0.41
1:AA:1053:G:O6	1:AA:1199:U:H2'	2.20	0.41
1:AA:1289:A:H2'	1:AA:1290:G:H5'	2.01	0.41
3:AC:156:LEU:C	3:AC:158:GLY:H	2.28	0.41
5:AE:19:ARG:HG2	5:AE:19:ARG:HH11	1.84	0.41
5:AE:148:SER:O	5:AE:152:VAL:HG13	2.20	0.41
6:AF:53:LYS:HG3	6:AF:54:LEU:N	2.36	0.41
8:AH:31:LEU:HD13	8:AH:31:LEU:O	2.21	0.41
9:AI:27:ILE:HG21	9:AI:34:LEU:HD22	2.03	0.41
16:AP:6:LEU:HG	16:AP:19:VAL:CG1	2.47	0.41
22:AW:7:A:C3'	22:AW:8:U:C5'	2.97	0.41
25:BA:190:A:H2'	25:BA:191:A:O4'	2.19	0.41
25:BA:1132:U:H3'	25:BA:1133:A:C5'	2.50	0.41
25:BA:2097:A:H2'	25:BA:2098:U:O4'	2.20	0.41
27:BC:23:ILE:O	27:BC:27:ILE:HG23	2.19	0.41
27:BC:217:THR:C	27:BC:218:MET:HE2	2.46	0.41
28:BD:226:PRO:CB	28:BD:232:GLY:HA2	2.48	0.41
31:BG:41:GLU:C	31:BG:43:ILE:HD13	2.45	0.41
31:BG:55:ASP:O	31:BG:59:ILE:HG13	2.20	0.41
41:BQ:76:LYS:O	41:BQ:80:GLU:HG3	2.20	0.41
46:BV:48:GLN:OE1	46:BV:55:VAL:HG23	2.21	0.41
55:B5:21:ARG:HH21	55:B5:21:ARG:HG3	1.84	0.41
1:AA:183:C:O2'	1:AA:184:G:H5'	2.20	0.41
1:AA:339:C:H2'	1:AA:340:U:C6	2.56	0.41
1:AA:560:A:H5''	1:AA:561:U:H3'	2.03	0.41
1:AA:1497:G:C2'	1:AA:1498:U:H5'	2.51	0.41
2:AB:14:HIS:CD2	2:AB:14:HIS:H	2.39	0.41
2:AB:40:ILE:HD13	2:AB:40:ILE:H	1.84	0.41
2:AB:131:LYS:HG3	2:AB:135:MET:HG2	2.02	0.41
3:AC:36:PHE:HZ	14:AN:92:GLU:HG3	1.86	0.41
3:AC:128:MET:SD	3:AC:130:ARG:CZ	3.09	0.41
4:AD:2:ARG:NH2	4:AD:114:ARG:HD3	2.29	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:AF:44:ARG:HH11	6:AF:44:ARG:HG3	1.86	0.41
7:AG:112:ASP:HB2	7:AG:118:ARG:CG	2.51	0.41
7:AG:119:LEU:HD23	7:AG:119:LEU:O	2.21	0.41
7:AG:144:ALA:O	7:AG:145:GLU:HB2	2.20	0.41
12:AL:56:LEU:HB3	12:AL:58:ASN:OD1	2.20	0.41
16:AP:35:ARG:HG2	16:AP:35:ARG:HH11	1.85	0.41
19:AS:13:HIS:O	19:AS:17:LYS:HE2	2.21	0.41
19:AS:36:ARG:HG2	19:AS:36:ARG:HH11	1.85	0.41
25:BA:307:G:N2	25:BA:309:A:H3'	2.35	0.41
25:BA:401:A:H2'	25:BA:402:A:C8	2.55	0.41
25:BA:639:U:H2'	25:BA:640:C:C6	2.55	0.41
25:BA:939:G:H2'	25:BA:940:G:H8	1.85	0.41
25:BA:1364:G:OP1	50:BZ:2:ARG:HG3	2.20	0.41
25:BA:1438:U:H2'	25:BA:1439:A:C8	2.56	0.41
25:BA:1772:A:H2'	25:BA:1773:A:H4'	2.02	0.41
25:BA:2256:G:O2'	25:BA:2257:U:H5'	2.20	0.41
25:BA:2496:C:C2'	25:BA:2497:A:H5'	2.51	0.41
25:BA:2539:C:C5'	57:B7:3:VAL:HG21	2.49	0.41
25:BA:2820:A:H4'	40:BP:3:HIS:CG	2.55	0.41
25:BA:2820:A:C6	29:BE:197:THR:HB	2.56	0.41
25:BA:2855:C:H2'	25:BA:2856:A:C8	2.56	0.41
26:BB:30:C:H1'	26:BB:57:A:H61	1.86	0.41
27:BC:207:VAL:HG23	27:BC:210:LYS:HG2	2.03	0.41
30:BF:29:HIS:O	30:BF:33:VAL:HG23	2.20	0.41
30:BF:102:ARG:HH21	30:BF:102:ARG:CB	2.33	0.41
30:BF:164:LEU:CB	30:BF:167:VAL:HB	2.51	0.41
31:BG:42:ALA:CB	31:BG:49:LEU:HB2	2.49	0.41
32:BH:34:ARG:HG3	32:BH:34:ARG:HH11	1.85	0.41
32:BH:154:GLU:H	32:BH:154:GLU:CD	2.27	0.41
39:BO:18:ARG:CB	39:BO:18:ARG:HH21	2.33	0.41
43:BS:26:ALA:HB3	43:BS:33:VAL:HG11	2.02	0.41
45:BU:110:ARG:HG3	45:BU:110:ARG:HH21	1.86	0.41
56:B6:14:LYS:HD3	56:B6:15:LYS:N	2.36	0.41
1:AA:68:G:N2	1:AA:152:A:H1'	2.35	0.41
1:AA:258:G:H2'	1:AA:259:G:O4'	2.20	0.41
1:AA:827:U:H4'	8:AH:19:ALA:HB2	2.03	0.41
1:AA:1074:G:H21	1:AA:1101:A:H2	1.69	0.41
2:AB:128:LEU:HD13	2:AB:128:LEU:C	2.46	0.41
3:AC:63:ILE:HG12	3:AC:65:VAL:HG23	2.01	0.41
3:AC:133:MET:CE	3:AC:151:GLU:HA	2.51	0.41
7:AG:58:LEU:HG	7:AG:59:GLU:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:AH:17:GLN:NE2	8:AH:69:ALA:HB1	2.35	0.41
9:AI:79:ARG:HD2	9:AI:79:ARG:O	2.20	0.41
9:AI:83:THR:HG21	9:AI:102:PHE:CB	2.49	0.41
11:AK:65:ALA:O	11:AK:68:ARG:HB2	2.20	0.41
12:AL:82:ARG:HH11	12:AL:82:ARG:HG3	1.86	0.41
13:AM:91:ARG:HH11	13:AM:91:ARG:HG3	1.85	0.41
14:AN:43:ASN:C	14:AN:45:VAL:H	2.29	0.41
14:AN:78:GLY:O	14:AN:79:LEU:HD23	2.19	0.41
18:AR:42:ARG:NH1	18:AR:42:ARG:HB2	2.36	0.41
20:AT:53:MET:HG3	20:AT:54:GLN:N	2.34	0.41
25:BA:118:A:OP2	25:BA:119:A:H2'	2.21	0.41
25:BA:1219:U:OP2	43:BS:18:LYS:HE3	2.21	0.41
25:BA:1791:A:N6	25:BA:1829:A:H5'	2.36	0.41
25:BA:1952:A:N3	37:BM:22:ILE:HD12	2.35	0.41
25:BA:2246:G:O2'	25:BA:2247:A:H5'	2.21	0.41
25:BA:2257:U:O2'	25:BA:2258:C:H5'	2.21	0.41
25:BA:2579:C:O2'	25:BA:2580:U:H5'	2.21	0.41
25:BA:2692:G:H2'	25:BA:2693:G:C8	2.56	0.41
28:BD:230:PRO:C	28:BD:232:GLY:H	2.29	0.41
28:BD:270:ARG:HG2	28:BD:270:ARG:HH11	1.85	0.41
30:BF:5:LEU:HD13	30:BF:10:SER:O	2.20	0.41
31:BG:19:PHE:HZ	31:BG:163:GLU:HG3	1.84	0.41
31:BG:39:VAL:HG13	31:BG:40:GLY:N	2.36	0.41
34:BJ:89:PRO:C	34:BJ:91:ALA:H	2.29	0.41
36:BL:16:TYR:HB3	36:BL:140:LEU:HB2	2.02	0.41
38:BN:67:THR:HG22	38:BN:68:SER:O	2.20	0.41
42:BR:42:PHE:CZ	42:BR:62:LYS:HE2	2.55	0.41
42:BR:50:ARG:O	42:BR:56:SER:HA	2.21	0.41
43:BS:40:LYS:HD3	43:BS:44:TYR:OH	2.21	0.41
44:BT:38:VAL:HG22	44:BT:39:LEU:N	2.35	0.41
47:BW:85:ARG:NH1	47:BW:99:SER:HB2	2.35	0.41
48:BX:80:HIS:NE2	48:BX:83:LYS:HE2	2.36	0.41
50:BZ:43:LYS:N	50:BZ:43:LYS:HD2	2.36	0.41
1:AA:271:C:H2'	1:AA:272:C:C6	2.56	0.41
1:AA:483:C:H2'	1:AA:484:G:N7	2.36	0.41
1:AA:876:C:H2'	1:AA:877:G:H8	1.86	0.41
1:AA:1100:C:C2'	1:AA:1101:A:H4'	2.49	0.41
1:AA:1409:C:H5'	25:BA:1916:A:C2	2.55	0.41
3:AC:129:PHE:H	3:AC:129:PHE:HD1	1.64	0.41
5:AE:105:ILE:HG13	5:AE:105:ILE:O	2.20	0.41
6:AF:6:ILE:O	6:AF:62:MET:HB3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:AI:126:PHE:CD1	9:AI:126:PHE:C	2.98	0.41
13:AM:6:ILE:HD12	13:AM:7:ASN:N	2.36	0.41
18:AR:28:LEU:N	18:AR:28:LEU:HD12	2.36	0.41
18:AR:54:LEU:HD13	18:AR:54:LEU:O	2.21	0.41
19:AS:3:SER:O	19:AS:5:LYS:N	2.52	0.41
19:AS:57:VAL:HG23	19:AS:57:VAL:O	2.20	0.41
20:AT:69:ASN:O	20:AT:73:ARG:N	2.53	0.41
22:AW:57:G:O2'	22:AW:58:A:H5'	2.20	0.41
25:BA:970:U:H5''	25:BA:989:G:O6	2.21	0.41
25:BA:1010:A:H5'	43:BS:61:ILE:HG21	2.03	0.41
25:BA:1038:G:H2'	25:BA:1039:A:H8	1.85	0.41
25:BA:2131:U:P	25:BA:2133:G:H4'	2.61	0.41
25:BA:2623:G:H2'	25:BA:2624:G:C8	2.56	0.41
25:BA:2643:G:H2'	25:BA:2644:G:O4'	2.21	0.41
27:BC:22:ASP:OD1	27:BC:23:ILE:N	2.54	0.41
30:BF:35:TYR:CE2	30:BF:176:ASP:HB2	2.55	0.41
30:BF:149:ILE:HG23	30:BF:149:ILE:O	2.21	0.41
34:BJ:41:LEU:HD21	34:BJ:52:MET:HE3	2.01	0.41
34:BJ:125:ARG:HH11	34:BJ:125:ARG:HG3	1.85	0.41
36:BL:32:LEU:HD22	36:BL:54:ILE:HG21	2.03	0.41
36:BL:55:ILE:HG12	36:BL:123:LYS:HB2	2.03	0.41
37:BM:58:LEU:HD23	37:BM:59:LYS:O	2.21	0.41
38:BN:101:ILE:HG13	38:BN:102:GLY:N	2.35	0.41
38:BN:115:GLU:O	38:BN:115:GLU:CD	2.64	0.41
40:BP:24:MET:HE3	40:BP:44:LEU:HD13	2.03	0.41
46:BV:82:LYS:HE2	46:BV:84:TYR:CE1	2.56	0.41
51:B1:56:LEU:C	51:B1:58:ASN:N	2.77	0.41
1:AA:104:G:H4'	1:AA:174:A:C4'	2.50	0.41
1:AA:429:U:H3'	4:AD:8:LEU:HD23	2.02	0.41
1:AA:490:C:H2'	1:AA:491:G:H8	1.85	0.41
1:AA:526:C:H2'	1:AA:527:G:C5'	2.50	0.41
1:AA:665:A:N3	1:AA:732:C:H2'	2.36	0.41
1:AA:748:G:H2'	1:AA:749:A:C8	2.56	0.41
1:AA:827:U:H4'	8:AH:19:ALA:CB	2.51	0.41
1:AA:831:A:OP1	2:AB:20:ARG:HG3	2.21	0.41
1:AA:1032:G:H2'	1:AA:1033:G:C5'	2.49	0.41
1:AA:1230:C:H5''	22:AW:30:G:H5''	2.03	0.41
1:AA:1384:C:H2'	1:AA:1385:G:H8	1.84	0.41
1:AA:1391:U:H2'	1:AA:1392:G:H8	1.85	0.41
1:AA:1494:G:H8	1:AA:1494:G:OP2	2.03	0.41
1:AA:1537:U:H2'	1:AA:1538:C:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:30:ILE:HD11	2:AB:38:HIS:CG	2.55	0.41
2:AB:60:ALA:HA	2:AB:64:GLY:HA3	2.03	0.41
2:AB:118:THR:O	2:AB:118:THR:HG22	2.21	0.41
2:AB:121:GLN:CD	2:AB:121:GLN:N	2.79	0.41
2:AB:187:ASP:OD2	2:AB:188:THR:HG23	2.21	0.41
3:AC:8:GLY:CA	3:AC:11:LEU:HG	2.48	0.41
3:AC:26:LYS:H	3:AC:26:LYS:CD	2.31	0.41
3:AC:27:GLU:H	3:AC:27:GLU:CD	2.28	0.41
3:AC:109:GLU:N	3:AC:109:GLU:OE2	2.54	0.41
4:AD:103:ARG:HH21	4:AD:110:ARG:NH2	2.19	0.41
4:AD:127:ARG:HD3	4:AD:127:ARG:N	2.36	0.41
4:AD:195:ASN:HD22	4:AD:197:HIS:CE1	2.24	0.41
5:AE:131:ASN:CB	5:AE:134:ASN:HD22	2.30	0.41
6:AF:14:GLN:O	6:AF:18:VAL:HG23	2.20	0.41
6:AF:47:LEU:HG	6:AF:56:LYS:CA	2.50	0.41
6:AF:68:GLN:OE1	6:AF:68:GLN:N	2.44	0.41
8:AH:82:LEU:HD23	8:AH:83:ARG:N	2.36	0.41
9:AI:3:ASN:CG	9:AI:4:GLN:N	2.79	0.41
9:AI:20:ILE:CG2	9:AI:60:LEU:HD12	2.51	0.41
9:AI:44:ARG:HG2	9:AI:44:ARG:HH11	1.85	0.41
10:AJ:50:THR:HG23	10:AJ:50:THR:O	2.21	0.41
10:AJ:57:VAL:CG2	10:AJ:58:ASN:H	2.22	0.41
13:AM:45:SER:O	13:AM:46:GLU:HB3	2.19	0.41
14:AN:48:LEU:O	14:AN:50:THR:N	2.54	0.41
14:AN:82:ILE:O	14:AN:86:GLU:HG3	2.20	0.41
15:AO:44:GLU:O	15:AO:46:LYS:N	2.54	0.41
16:AP:1:MET:SD	16:AP:1:MET:N	2.93	0.41
20:AT:83:ASN:HD22	20:AT:83:ASN:C	2.29	0.41
25:BA:230:G:H2'	25:BA:231:A:O4'	2.21	0.41
25:BA:271:G:H1'	25:BA:272:A:C8	2.55	0.41
25:BA:279:A:H61	25:BA:361:G:C2'	2.34	0.41
25:BA:373:U:H2'	25:BA:374:A:C8	2.50	0.41
25:BA:394:C:O2'	25:BA:395:U:H5'	2.21	0.41
25:BA:568:U:H4'	25:BA:945:A:N6	2.35	0.41
25:BA:1313:U:H2'	25:BA:1610:A:C2	2.56	0.41
25:BA:1313:U:H4'	25:BA:1332:G:H4'	2.03	0.41
25:BA:1646:C:O5'	25:BA:1646:C:H6	2.04	0.41
25:BA:1943:U:C1'	25:BA:1945:G:H5'	2.51	0.41
25:BA:1987:A:H2'	25:BA:1988:G:C8	2.56	0.41
25:BA:2052:A:N3	29:BE:154:LYS:HA	2.36	0.41
25:BA:2117:A:H61	25:BA:2170:A:N6	2.18	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:2182:U:H2'	25:BA:2183:A:C8	2.55	0.41
25:BA:2261:C:C5	49:BY:12:SER:HB3	2.56	0.41
25:BA:2692:G:H2'	25:BA:2693:G:H8	1.86	0.41
25:BA:2718:G:H2'	25:BA:2719:G:O4'	2.21	0.41
26:BB:63:C:H2'	26:BB:64:G:C8	2.56	0.41
27:BC:115:ILE:HG23	27:BC:144:THR:O	2.21	0.41
28:BD:42:ARG:HG3	28:BD:42:ARG:HH11	1.86	0.41
28:BD:57:HIS:O	28:BD:59:GLN:HG3	2.21	0.41
29:BE:133:THR:OG1	29:BE:134:HIS:N	2.52	0.41
30:BF:141:MET:SD	30:BF:143:LEU:HD12	2.61	0.41
31:BG:16:MET:CE	31:BG:24:VAL:HA	2.51	0.41
31:BG:70:ARG:HG2	31:BG:70:ARG:HH21	1.86	0.41
31:BG:105:ILE:O	31:BG:109:ARG:HG3	2.21	0.41
31:BG:134:GLN:OE1	31:BG:135:ILE:HD12	2.21	0.41
33:BI:5:LEU:HD11	33:BI:12:LEU:HD12	2.02	0.41
36:BL:119:PHE:C	36:BL:121:LYS:H	2.29	0.41
37:BM:64:ARG:HD3	37:BM:102:PRO:O	2.21	0.41
38:BN:77:ILE:CD1	38:BN:95:LEU:HD13	2.51	0.41
39:BO:40:ARG:HD3	39:BO:93:VAL:HG21	2.03	0.41
40:BP:108:ALA:O	40:BP:110:MET:N	2.54	0.41
41:BQ:7:ARG:HH11	41:BQ:7:ARG:HG2	1.86	0.41
41:BQ:28:VAL:HG13	41:BQ:28:VAL:O	2.21	0.41
41:BQ:89:ASP:HA	41:BQ:116:GLN:O	2.20	0.41
42:BR:9:GLN:HA	42:BR:12:MET:SD	2.61	0.41
43:BS:69:ARG:HG3	43:BS:69:ARG:HH21	1.86	0.41
45:BU:10:ALA:O	45:BU:100:THR:HB	2.21	0.41
45:BU:66:ILE:C	45:BU:68:ASP:H	2.28	0.41
45:BU:84:ARG:HB2	45:BU:96:ILE:CG1	2.49	0.41
45:BU:90:LYS:HD2	45:BU:92:ARG:NH1	2.23	0.41
47:BW:93:ARG:HB2	47:BW:102:ILE:HD12	2.03	0.41
48:BX:31:TYR:CE1	48:BX:92:VAL:HG22	2.56	0.41
50:BZ:32:LEU:HD23	50:BZ:51:SER:HB3	2.02	0.41
51:B1:31:GLN:HE21	51:B1:37:LEU:CB	2.33	0.41
1:AA:715:A:H5''	1:AA:805:C:O2'	2.21	0.41
1:AA:779:C:H2'	1:AA:780:A:O4'	2.21	0.41
1:AA:1014:A:H2'	1:AA:1015:G:O4'	2.20	0.41
1:AA:1137:C:H1'	1:AA:1138:G:N2	2.36	0.41
2:AB:160:LEU:O	2:AB:182:VAL:HA	2.21	0.41
3:AC:141:MET:HA	3:AC:144:GLY:O	2.21	0.41
5:AE:35:LEU:HD21	5:AE:136:VAL:CG1	2.51	0.41
5:AE:72:ASN:N	5:AE:72:ASN:ND2	2.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:AE:95:MET:HB3	5:AE:124:ALA:HB2	2.03	0.41
7:AG:61:PHE:HE1	7:AG:65:LEU:HD22	1.86	0.41
8:AH:5:PRO:HB2	8:AH:32:LYS:HE3	2.03	0.41
8:AH:21:LYS:HA	8:AH:21:LYS:CE	2.49	0.41
9:AI:79:ARG:HG3	9:AI:79:ARG:HH11	1.86	0.41
10:AJ:101:SER:C	10:AJ:102:LEU:HD22	2.45	0.41
14:AN:20:PHE:HA	14:AN:24:ALA:HB2	2.03	0.41
20:AT:48:LYS:O	20:AT:52:GLU:HG3	2.20	0.41
20:AT:70:LYS:HD2	20:AT:73:ARG:HE	1.85	0.41
22:AW:11:C:H42	22:AW:24:G:H1	1.70	0.41
25:BA:38:A:O2'	30:BF:43:THR:HA	2.21	0.41
25:BA:859:G:OP2	49:BY:40:LYS:NZ	2.54	0.41
25:BA:918:A:O2'	26:BB:80:U:H1'	2.20	0.41
25:BA:1215:G:H5''	43:BS:7:VAL:HG21	2.03	0.41
25:BA:1478:G:H2'	25:BA:1479:G:H8	1.85	0.41
25:BA:1979:U:O2'	25:BA:1980:G:H5'	2.21	0.41
25:BA:2175:C:H5''	27:BC:8:MET:HE3	2.03	0.41
25:BA:2696:U:H2'	25:BA:2697:G:C8	2.56	0.41
25:BA:2733:A:H61	29:BE:208:LYS:HG2	1.86	0.41
25:BA:2804:U:H2'	25:BA:2805:C:C6	2.56	0.41
26:BB:55:U:H2'	26:BB:56:G:O4'	2.21	0.41
27:BC:20:GLN:O	27:BC:20:GLN:HG3	2.21	0.41
28:BD:201:LEU:N	28:BD:201:LEU:HD12	2.36	0.41
29:BE:60:VAL:HG12	29:BE:65:ALA:HB2	2.03	0.41
29:BE:105:LYS:O	29:BE:176:ASP:HA	2.21	0.41
31:BG:92:GLY:O	31:BG:96:TRP:HD1	2.04	0.41
31:BG:125:GLY:O	31:BG:157:THR:HB	2.21	0.41
36:BL:56:VAL:HB	36:BL:124:VAL:HG23	2.02	0.41
40:BP:47:VAL:O	40:BP:51:LEU:HG	2.21	0.41
43:BS:51:GLN:HA	43:BS:54:ARG:HD2	2.03	0.41
43:BS:61:ILE:HG23	43:BS:75:TYR:CZ	2.56	0.41
47:BW:38:ILE:HG22	47:BW:39:ASN:N	2.35	0.41
48:BX:55:GLU:HA	48:BX:58:SER:OG	2.20	0.41
50:BZ:15:ASN:OD1	50:BZ:25:LYS:HD3	2.20	0.41
52:B2:10:ARG:HB2	52:B2:53:MET:CB	2.51	0.41
57:B7:36:ARG:HG2	57:B7:37:GLN:H	1.85	0.41
1:AA:538:G:O3'	12:AL:110:LYS:HG3	2.21	0.40
1:AA:1037:C:H2'	1:AA:1038:C:C6	2.56	0.40
1:AA:1173:U:H2'	1:AA:1174:G:H8	1.86	0.40
1:AA:1483:A:H2'	1:AA:1484:C:H5'	2.02	0.40
1:AA:1491:G:H2'	24:AY:6:5OH:C	2.50	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:130:LYS:HE2	2:AB:130:LYS:CA	2.43	0.40
2:AB:172:ILE:HG22	2:AB:176:ASN:ND2	2.35	0.40
2:AB:183:PHE:N	2:AB:183:PHE:CD2	2.90	0.40
6:AF:45:ARG:HG2	6:AF:45:ARG:HH11	1.86	0.40
7:AG:35:LYS:O	7:AG:39:GLU:HG2	2.21	0.40
11:AK:127:ARG:HG2	11:AK:127:ARG:HH11	1.85	0.40
16:AP:20:VAL:HG23	16:AP:34:GLU:O	2.21	0.40
19:AS:4:LEU:C	19:AS:5:LYS:HG3	2.46	0.40
22:AV:38:A:H2'	22:AV:39:U:O4'	2.21	0.40
22:AW:27:G:H2'	22:AW:28:G:C8	2.55	0.40
25:BA:992:C:H2'	25:BA:993:G:H8	1.87	0.40
25:BA:1053:C:H2'	25:BA:1054:A:C5'	2.51	0.40
25:BA:1336:A:H2'	25:BA:1337:G:C8	2.55	0.40
25:BA:1668:A:N6	25:BA:1676:A:H61	2.16	0.40
25:BA:2515:C:H2'	25:BA:2516:A:H8	1.85	0.40
27:BC:170:ILE:HG22	27:BC:171:ILE:N	2.37	0.40
28:BD:100:ARG:HG3	28:BD:100:ARG:HH11	1.86	0.40
28:BD:209:ALA:HA	28:BD:212:TRP:CE2	2.56	0.40
28:BD:250:GLN:HA	28:BD:250:GLN:NE2	2.35	0.40
30:BF:44:ARG:HH21	30:BF:44:ARG:HG2	1.85	0.40
31:BG:47:LYS:HB3	31:BG:47:LYS:HZ3	1.86	0.40
33:BI:41:LYS:HA	33:BI:44:ILE:CD1	2.51	0.40
34:BJ:48:ALA:HB3	34:BJ:50:VAL:HG12	2.02	0.40
35:BK:38:CYS:O	35:BK:42:ASN:HB2	2.21	0.40
39:BO:17:ASN:HB2	39:BO:95:LEU:HD22	2.03	0.40
40:BP:79:LEU:O	40:BP:80:PHE:HB2	2.21	0.40
45:BU:31:GLN:O	45:BU:35:ILE:HG12	2.21	0.40
45:BU:90:LYS:CD	45:BU:92:ARG:HH12	2.20	0.40
54:B4:42:VAL:HG13	54:B4:44:GLN:H	1.85	0.40
1:AA:1339:A:H2'	1:AA:1340:A:H5'	2.03	0.40
1:AA:1435:G:H2'	1:AA:1436:U:C6	2.56	0.40
3:AC:46:LEU:HB3	3:AC:49:ALA:HB3	2.03	0.40
3:AC:111:ASP:HB3	3:AC:114:LEU:HD12	2.03	0.40
4:AD:12:ARG:NH1	4:AD:12:ARG:CB	2.84	0.40
4:AD:149:LYS:O	4:AD:150:LYS:C	2.65	0.40
5:AE:14:LEU:CB	5:AE:36:THR:HG22	2.49	0.40
6:AF:3:HIS:CB	6:AF:92:THR:HG23	2.48	0.40
7:AG:107:ALA:HB1	7:AG:115:MET:HE1	2.03	0.40
19:AS:30:LEU:O	19:AS:32:THR:HG23	2.22	0.40
19:AS:62:THR:CG2	19:AS:63:ASP:N	2.82	0.40
20:AT:32:LYS:HA	20:AT:35:TYR:CE2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BA:370:G:O5'	25:BA:423:A:N6	2.54	0.40
25:BA:1239:G:O2'	25:BA:1240:U:H5'	2.21	0.40
25:BA:1798:U:H3	25:BA:1821:A:H61	1.69	0.40
25:BA:2251:G:H2'	25:BA:2252:G:H8	1.86	0.40
25:BA:2377:A:H2'	25:BA:2378:A:C8	2.56	0.40
25:BA:2457:U:H2'	25:BA:2458:G:C8	2.55	0.40
28:BD:211:ARG:HH21	28:BD:211:ARG:HG3	1.85	0.40
29:BE:83:ARG:HH21	29:BE:83:ARG:HG3	1.86	0.40
30:BF:97:ASN:HB2	30:BF:100:MET:CG	2.51	0.40
30:BF:109:LEU:HA	30:BF:112:LEU:HD12	2.03	0.40
31:BG:147:ARG:HG2	31:BG:148:VAL:N	2.36	0.40
31:BG:159:ALA:C	31:BG:160:LYS:HD2	2.46	0.40
34:BJ:59:LEU:HD23	34:BJ:59:LEU:C	2.46	0.40
40:BP:2:ARG:HG3	40:BP:2:ARG:HH11	1.87	0.40
41:BQ:28:VAL:HG21	41:BQ:106:LEU:HD13	2.03	0.40
46:BV:2:ILE:HG23	46:BV:7:LEU:HD11	2.03	0.40
55:B5:5:PHE:CD1	55:B5:5:PHE:C	3.00	0.40
56:B6:21:PHE:O	56:B6:49:VAL:HG23	2.22	0.40
57:B7:2:LYS:HB3	57:B7:2:LYS:HZ3	1.84	0.40
1:AA:20:U:H2'	1:AA:21:G:O4'	2.22	0.40
1:AA:217:C:H2'	1:AA:218:U:C6	2.56	0.40
1:AA:532:A:H3'	1:AA:533:A:C5'	2.51	0.40
1:AA:591:U:H2'	1:AA:592:G:H8	1.85	0.40
1:AA:917:G:H2'	1:AA:918:A:C8	2.56	0.40
1:AA:1329:A:H4'	13:AM:23:GLY:O	2.21	0.40
2:AB:48:MET:HA	2:AB:48:MET:HE3	2.03	0.40
2:AB:100:LEU:CD1	2:AB:178:LEU:HD12	2.51	0.40
2:AB:102:ASN:C	2:AB:104:LYS:N	2.78	0.40
2:AB:209:VAL:O	2:AB:213:LEU:HB3	2.22	0.40
3:AC:15:LYS:HA	3:AC:15:LYS:CE	2.45	0.40
3:AC:59:PRO:HD2	3:AC:62:SER:O	2.21	0.40
3:AC:140:ALA:CB	3:AC:148:ILE:HG21	2.51	0.40
5:AE:103:GLY:C	5:AE:121:ASN:HA	2.46	0.40
7:AG:100:MET:O	7:AG:104:VAL:HG23	2.21	0.40
9:AI:85:ALA:C	9:AI:87:MET:H	2.29	0.40
14:AN:13:VAL:O	14:AN:16:ALA:HB3	2.22	0.40
16:AP:4:ILE:CD1	16:AP:57:ILE:HG23	2.51	0.40
16:AP:10:GLY:HA3	16:AP:16:PHE:H	1.86	0.40
17:AQ:20:ILE:H	17:AQ:20:ILE:CD1	2.34	0.40
19:AS:12:LEU:O	19:AS:16:LYS:HG3	2.22	0.40
19:AS:20:LYS:HB2	19:AS:20:LYS:HZ2	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:AV:15:G:O2'	22:AV:16:U:OP1	2.30	0.40
25:BA:154:U:H2'	25:BA:155:A:C8	2.56	0.40
25:BA:426:C:H2'	25:BA:427:U:H6	1.86	0.40
25:BA:445:C:O2'	25:BA:446:G:H5'	2.22	0.40
25:BA:747:U:O2	25:BA:2014:A:H1'	2.21	0.40
25:BA:1043:C:H2'	25:BA:1044:C:C6	2.56	0.40
25:BA:1133:A:H1'	25:BA:2026:U:O2'	2.21	0.40
25:BA:1418:G:N2	25:BA:1581:G:C6	2.89	0.40
25:BA:1507:C:C2'	25:BA:1508:A:H4'	2.48	0.40
25:BA:1779:U:C2'	25:BA:1783:A:H62	2.34	0.40
25:BA:2164:C:H2'	25:BA:2165:C:H5	1.86	0.40
25:BA:2347:C:H2'	25:BA:2348:U:C6	2.56	0.40
25:BA:2881:U:H2'	25:BA:2882:A:C8	2.57	0.40
28:BD:70:LYS:HE3	28:BD:73:ILE:HD12	2.02	0.40
28:BD:140:VAL:CG2	28:BD:191:LEU:HD13	2.46	0.40
28:BD:146:LYS:HD2	28:BD:149:LYS:HE3	2.04	0.40
30:BF:159:LEU:C	30:BF:161:ALA:H	2.30	0.40
32:BH:152:ARG:HB2	32:BH:152:ARG:NH2	2.36	0.40
34:BJ:4:ASN:OD1	34:BJ:5:LEU:N	2.55	0.40
39:BO:74:THR:HB	39:BO:87:GLY:C	2.47	0.40
40:BP:12:ARG:HD3	40:BP:16:HIS:ND1	2.36	0.40
41:BQ:90:VAL:HG22	41:BQ:115:LEU:HD11	2.02	0.40
42:BR:31:VAL:HG21	42:BR:40:GLN:HE21	1.86	0.40
43:BS:26:ALA:HB1	43:BS:33:VAL:HG21	2.02	0.40
44:BT:43:ASN:HD22	44:BT:43:ASN:HA	1.57	0.40
44:BT:83:TYR:CD1	44:BT:83:TYR:C	2.99	0.40
46:BV:2:ILE:N	46:BV:2:ILE:CD1	2.85	0.40
47:BW:36:GLU:HA	47:BW:61:GLU:OE2	2.21	0.40
50:BZ:16:ASN:HB2	50:BZ:24:THR:HB	2.02	0.40
1:AA:34:C:H2'	1:AA:35:G:H8	1.87	0.40
1:AA:731:G:O2'	1:AA:732:C:H5'	2.22	0.40
1:AA:859:G:H2'	1:AA:860:A:O4'	2.21	0.40
1:AA:1463:U:H2'	1:AA:1464:U:C6	2.56	0.40
1:AA:1499:A:O2'	1:AA:1500:A:H5'	2.21	0.40
3:AC:36:PHE:CZ	14:AN:92:GLU:HG3	2.57	0.40
4:AD:29:THR:CG2	4:AD:30:LYS:H	2.31	0.40
5:AE:22:LYS:HB3	5:AE:29:ILE:CG2	2.51	0.40
5:AE:119:VAL:O	5:AE:119:VAL:HG23	2.21	0.40
6:AF:4:TYR:CE2	6:AF:71:ILE:HG21	2.56	0.40
7:AG:3:ARG:HB2	7:AG:3:ARG:NH1	2.36	0.40
7:AG:108:ARG:NE	7:AG:108:ARG:HA	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:AH:10:LEU:CD1	8:AH:76:ARG:HG2	2.49	0.40
8:AH:12:ARG:HG3	8:AH:24:VAL:HG21	2.02	0.40
8:AH:37:ASN:HA	8:AH:48:PHE:CE2	2.56	0.40
8:AH:83:ARG:HB3	8:AH:85:TYR:CE2	2.56	0.40
10:AJ:46:LYS:O	10:AJ:46:LYS:HG3	2.22	0.40
14:AN:30:ILE:H	14:AN:30:ILE:CD1	2.35	0.40
14:AN:98:LYS:HZ2	14:AN:98:LYS:CB	2.33	0.40
19:AS:30:LEU:HB3	19:AS:48:ILE:HA	2.03	0.40
20:AT:61:ALA:HB2	20:AT:71:ALA:HB2	2.04	0.40
25:BA:300:A:H8	47:BW:81:ARG:HH12	1.70	0.40
25:BA:403:U:H4'	25:BA:404:A:H5'	2.03	0.40
25:BA:1167:C:C3'	25:BA:1168:G:H5''	2.51	0.40
25:BA:1287:A:N7	40:BP:105:GLY:HA3	2.36	0.40
25:BA:1525:A:H2'	25:BA:1526:C:O4'	2.21	0.40
25:BA:1704:C:H2'	25:BA:1705:A:C8	2.57	0.40
25:BA:1753:G:H5''	42:BR:92:ARG:HD3	2.04	0.40
25:BA:1954:G:N2	25:BA:1956:U:H3	2.19	0.40
25:BA:2188:U:H2'	25:BA:2189:U:C6	2.57	0.40
25:BA:2343:U:H2'	25:BA:2344:U:H6	1.82	0.40
25:BA:2641:G:H2'	25:BA:2642:G:H8	1.86	0.40
25:BA:2680:U:H4'	29:BE:192:ALA:HB1	2.03	0.40
27:BC:23:ILE:HD13	27:BC:190:GLU:HG2	2.04	0.40
27:BC:134:ARG:HG3	27:BC:134:ARG:HH11	1.86	0.40
28:BD:143:VAL:HB	28:BD:153:LEU:HB2	2.02	0.40
28:BD:216:ARG:CB	28:BD:216:ARG:HH11	2.35	0.40
29:BE:33:ARG:O	29:BE:50:VAL:HA	2.22	0.40
30:BF:102:ARG:NH2	30:BF:102:ARG:CB	2.85	0.40
31:BG:29:ARG:HG3	31:BG:29:ARG:HH11	1.85	0.40
31:BG:107:VAL:N	31:BG:108:PRO:CD	2.84	0.40
34:BJ:31:ARG:HD3	34:BJ:79:PRO:HB3	2.04	0.40
35:BK:30:GLN:HG2	35:BK:31:GLY:N	2.36	0.40
37:BM:77:ILE:N	37:BM:77:ILE:CD1	2.83	0.40
38:BN:81:ASP:OD1	38:BN:84:LYS:HD2	2.22	0.40
40:BP:33:ILE:HG23	40:BP:33:ILE:O	2.22	0.40
41:BQ:25:ARG:HG2	41:BQ:25:ARG:HH21	1.86	0.40
45:BU:69:LEU:HD12	45:BU:107:VAL:HG22	2.04	0.40
46:BV:61:LEU:CD1	46:BV:82:LYS:HB3	2.52	0.40
48:BX:29:ILE:HG22	48:BX:88:HIS:CE1	2.57	0.40
51:B1:52:ARG:HH21	51:B1:52:ARG:HG3	1.85	0.40
52:B2:55:LYS:HG2	52:B2:57:GLU:OE1	2.22	0.40
1:AA:58:C:H2'	1:AA:59:A:H8	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:68:G:H4'	1:AA:171:A:C1'	2.48	0.40
1:AA:188:C:H3'	1:AA:188:C:O2	2.21	0.40
1:AA:230:G:H4'	16:AP:25:ARG:HH22	1.85	0.40
1:AA:261:U:H2'	1:AA:263:A:OP2	2.21	0.40
1:AA:634:C:H2'	1:AA:635:A:C8	2.56	0.40
2:AB:109:SER:O	2:AB:112:ARG:HB3	2.21	0.40
3:AC:8:GLY:HA2	3:AC:11:LEU:CG	2.47	0.40
3:AC:10:ARG:HG3	3:AC:10:ARG:HH11	1.86	0.40
4:AD:109:THR:HG23	4:AD:112:GLU:H	1.86	0.40
5:AE:55:VAL:N	5:AE:56:PRO:HD2	2.37	0.40
9:AI:85:ALA:C	9:AI:87:MET:N	2.79	0.40
13:AM:59:VAL:C	13:AM:61:LYS:H	2.28	0.40
13:AM:89:ARG:HE	13:AM:89:ARG:CA	2.35	0.40
16:AP:2:VAL:HG13	16:AP:65:ALA:HA	2.04	0.40
19:AS:4:LEU:C	19:AS:6:LYS:H	2.29	0.40
21:AU:44:ARG:HD2	21:AU:44:ARG:N	2.37	0.40
25:BA:249:C:H2'	25:BA:2394:C:O3'	2.21	0.40
25:BA:300:A:OP2	47:BW:81:ARG:NH1	2.55	0.40
25:BA:601:C:H2'	25:BA:602:A:O4'	2.21	0.40
25:BA:709:U:H2'	25:BA:710:U:C6	2.57	0.40
25:BA:1091:G:H1	25:BA:1100:C:H42	1.69	0.40
25:BA:1176:U:H2'	25:BA:1177:G:C8	2.55	0.40
25:BA:1266:G:C5	45:BU:16:LYS:HE3	2.56	0.40
25:BA:1550:C:H2'	25:BA:1551:A:H8	1.87	0.40
25:BA:2248:C:C2'	25:BA:2249:U:H5'	2.49	0.40
25:BA:2329:U:H2'	25:BA:2330:G:H8	1.85	0.40
25:BA:2360:G:C2'	25:BA:2361:G:H5'	2.52	0.40
25:BA:2489:U:C2'	25:BA:2490:G:H5'	2.51	0.40
27:BC:153:VAL:O	27:BC:157:LYS:HG2	2.22	0.40
30:BF:83:VAL:HG12	30:BF:85:PHE:H	1.86	0.40
31:BG:45:ASP:OD2	31:BG:48:LEU:HB2	2.22	0.40
32:BH:88:LEU:HG	32:BH:161:VAL:HG22	2.03	0.40
35:BK:97:VAL:HG12	35:BK:98:GLY:N	2.36	0.40
37:BM:17:ARG:HH11	37:BM:17:ARG:HG3	1.87	0.40
40:BP:28:LEU:HD23	40:BP:48:VAL:HG21	2.03	0.40
46:BV:80:TRP:H	46:BV:80:TRP:CD1	2.40	0.40
47:BW:54:PRO:HG2	47:BW:55:GLY:H	1.87	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	AB	216/240 (90%)	140 (65%)	51 (24%)	25 (12%)	0	4
3	AC	204/232 (88%)	169 (83%)	28 (14%)	7 (3%)	3	21
4	AD	203/205 (99%)	161 (79%)	26 (13%)	16 (8%)	1	9
5	AE	148/166 (89%)	111 (75%)	28 (19%)	9 (6%)	1	13
6	AF	98/131 (75%)	72 (74%)	19 (19%)	7 (7%)	1	11
7	AG	149/178 (84%)	120 (80%)	25 (17%)	4 (3%)	4	25
8	AH	127/129 (98%)	113 (89%)	10 (8%)	4 (3%)	3	22
9	AI	125/129 (97%)	94 (75%)	25 (20%)	6 (5%)	2	16
10	AJ	96/103 (93%)	66 (69%)	18 (19%)	12 (12%)	0	4
11	AK	115/128 (90%)	88 (76%)	22 (19%)	5 (4%)	2	17
12	AL	121/123 (98%)	96 (79%)	17 (14%)	8 (7%)	1	12
13	AM	112/117 (96%)	94 (84%)	12 (11%)	6 (5%)	1	15
14	AN	92/100 (92%)	66 (72%)	19 (21%)	7 (8%)	1	10
15	AO	86/88 (98%)	72 (84%)	12 (14%)	2 (2%)	5	28
16	AP	80/82 (98%)	60 (75%)	15 (19%)	5 (6%)	1	13
17	AQ	78/83 (94%)	57 (73%)	13 (17%)	8 (10%)	0	6
18	AR	53/74 (72%)	48 (91%)	5 (9%)	0	100	100
19	AS	77/91 (85%)	59 (77%)	11 (14%)	7 (9%)	0	8
20	AT	83/86 (96%)	70 (84%)	6 (7%)	7 (8%)	0	9
21	AU	49/70 (70%)	29 (59%)	13 (26%)	7 (14%)	0	3
24	AY	2/6 (33%)	1 (50%)	1 (50%)	0	100	100
27	BC	223/233 (96%)	204 (92%)	18 (8%)	1 (0%)	30	67
28	BD	269/272 (99%)	220 (82%)	41 (15%)	8 (3%)	3	22
29	BE	207/209 (99%)	180 (87%)	22 (11%)	5 (2%)	4	27
30	BF	199/201 (99%)	170 (85%)	23 (12%)	6 (3%)	3	22

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	BG	175/178 (98%)	147 (84%)	19 (11%)	9 (5%)	1	15
32	BH	174/176 (99%)	144 (83%)	24 (14%)	6 (3%)	3	21
33	BI	51/149 (34%)	29 (57%)	14 (28%)	8 (16%)	0	2
34	BJ	129/165 (78%)	111 (86%)	14 (11%)	4 (3%)	3	22
35	BK	139/141 (99%)	77 (55%)	40 (29%)	22 (16%)	0	2
36	BL	140/142 (99%)	117 (84%)	22 (16%)	1 (1%)	18	56
37	BM	120/123 (98%)	101 (84%)	14 (12%)	5 (4%)	2	17
38	BN	141/144 (98%)	107 (76%)	24 (17%)	10 (7%)	1	11
39	BO	134/136 (98%)	116 (87%)	14 (10%)	4 (3%)	3	22
40	BP	116/127 (91%)	96 (83%)	14 (12%)	6 (5%)	1	15
41	BQ	114/117 (97%)	94 (82%)	16 (14%)	4 (4%)	3	20
42	BR	112/114 (98%)	94 (84%)	15 (13%)	3 (3%)	4	25
43	BS	115/117 (98%)	102 (89%)	13 (11%)	0	100	100
44	BT	101/103 (98%)	82 (81%)	15 (15%)	4 (4%)	2	18
45	BU	108/110 (98%)	87 (81%)	19 (18%)	2 (2%)	6	32
46	BV	91/100 (91%)	79 (87%)	11 (12%)	1 (1%)	11	46
47	BW	100/103 (97%)	78 (78%)	15 (15%)	7 (7%)	1	11
48	BX	92/94 (98%)	85 (92%)	7 (8%)	0	100	100
49	BY	74/84 (88%)	63 (85%)	10 (14%)	1 (1%)	9	40
50	BZ	75/77 (97%)	65 (87%)	10 (13%)	0	100	100
51	B1	61/63 (97%)	51 (84%)	8 (13%)	2 (3%)	3	21
52	B2	56/58 (97%)	53 (95%)	3 (5%)	0	100	100
53	B3	54/56 (96%)	46 (85%)	8 (15%)	0	100	100
54	B4	48/54 (89%)	38 (79%)	9 (19%)	1 (2%)	5	30
55	B5	44/46 (96%)	39 (89%)	5 (11%)	0	100	100
56	B6	62/64 (97%)	53 (86%)	8 (13%)	1 (2%)	7	38
57	B7	36/38 (95%)	28 (78%)	7 (19%)	1 (3%)	4	24
All	All	5874/6355 (92%)	4742 (81%)	858 (15%)	274 (5%)	3	16

All (274) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	AB	15	PHE

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Mol	Chain	Res	Type
2	AB	33	ALA
2	AB	86	CYS
2	AB	94	ARG
2	AB	163	ILE
4	AD	32	LYS
4	AD	36	ALA
4	AD	190	LEU
4	AD	191	SER
5	AE	104	ILE
5	AE	119	VAL
6	AF	91	ARG
7	AG	129	ASN
9	AI	8	THR
9	AI	90	ASP
10	AJ	57	VAL
10	AJ	101	SER
12	AL	41	PRO
13	AM	40	GLU
14	AN	49	GLN
14	AN	52	PRO
19	AS	5	LYS
19	AS	64	GLU
20	AT	5	SER
20	AT	6	ALA
20	AT	66	ILE
20	AT	68	LYS
20	AT	69	ASN
29	BE	104	VAL
32	BH	37	ASN
32	BH	38	ASP
32	BH	118	ALA
33	BI	3	VAL
33	BI	9	VAL
33	BI	10	ALA
33	BI	12	LEU
35	BK	62	ALA
35	BK	92	PRO
38	BN	115	GLU
42	BR	113	LEU
44	BT	43	ASN
51	B1	24	GLU
2	AB	12	GLY

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Mol	Chain	Res	Type
2	AB	74	ALA
2	AB	81	ASP
2	AB	153	MET
2	AB	158	ASP
2	AB	192	PRO
3	AC	65	VAL
3	AC	165	GLU
3	AC	176	THR
4	AD	151	GLN
5	AE	103	GLY
6	AF	36	ILE
7	AG	80	GLY
7	AG	130	LYS
8	AH	65	PHE
8	AH	87	ARG
9	AI	71	ILE
10	AJ	61	ALA
10	AJ	62	ARG
11	AK	72	ALA
12	AL	25	ALA
12	AL	44	PRO
12	AL	88	ASP
13	AM	3	ILE
13	AM	105	ALA
13	AM	113	LYS
14	AN	53	ARG
17	AQ	8	GLN
17	AQ	12	VAL
17	AQ	19	SER
17	AQ	68	LYS
17	AQ	69	THR
20	AT	3	ILE
21	AU	23	GLU
21	AU	37	TYR
31	BG	11	VAL
31	BG	20	ASN
32	BH	117	PRO
33	BI	11	ASN
33	BI	14	SER
33	BI	28	ASN
34	BJ	105	LYS
35	BK	6	ALA

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Mol	Chain	Res	Type
35	BK	100	ILE
35	BK	122	GLU
36	BL	82	GLY
37	BM	35	VAL
40	BP	113	ILE
41	BQ	88	LYS
44	BT	55	ASP
45	BU	11	ARG
47	BW	16	LYS
2	AB	193	ASP
3	AC	60	ALA
3	AC	145	ALA
4	AD	166	LYS
5	AE	77	ASN
5	AE	89	THR
6	AF	56	LYS
7	AG	16	LYS
8	AH	66	GLN
8	AH	96	ALA
9	AI	52	GLU
11	AK	40	ALA
11	AK	88	PRO
12	AL	87	LYS
12	AL	117	GLY
13	AM	104	ASN
15	AO	2	LEU
15	AO	72	LYS
16	AP	80	LYS
17	AQ	5	ARG
19	AS	27	LYS
19	AS	71	GLY
21	AU	9	GLU
27	BC	106	LYS
28	BD	35	LYS
28	BD	167	ASP
28	BD	204	LEU
29	BE	86	GLU
29	BE	174	SER
31	BG	106	ALA
31	BG	174	PHE
31	BG	175	PRO
32	BH	60	GLY

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Mol	Chain	Res	Type
34	BJ	68	PRO
35	BK	64	ARG
35	BK	88	GLY
35	BK	97	VAL
37	BM	91	SER
37	BM	120	PRO
39	BO	70	ASP
40	BP	3	HIS
40	BP	119	SER
42	BR	75	THR
44	BT	48	LYS
47	BW	51	LEU
47	BW	97	SER
47	BW	98	ASN
54	B4	50	GLU
57	B7	10	LEU
2	AB	95	TRP
2	AB	97	GLY
2	AB	128	LEU
2	AB	151	LYS
2	AB	182	VAL
4	AD	35	GLN
4	AD	119	HIS
4	AD	124	VAL
4	AD	159	GLU
4	AD	167	PRO
5	AE	23	THR
5	AE	98	ALA
5	AE	102	THR
10	AJ	17	LEU
10	AJ	36	VAL
10	AJ	75	ASP
11	AK	51	PHE
13	AM	4	ALA
14	AN	2	LYS
14	AN	22	LYS
16	AP	49	GLY
19	AS	54	ARG
21	AU	8	ASN
21	AU	24	LYS
21	AU	36	PHE
28	BD	243	PRO

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Mol	Chain	Res	Type
29	BE	133	THR
29	BE	149	ASN
30	BF	6	LYS
30	BF	44	ARG
31	BG	133	GLU
31	BG	173	ASP
33	BI	33	GLN
35	BK	7	TYR
35	BK	20	SER
35	BK	51	GLY
35	BK	59	THR
35	BK	116	MET
38	BN	36	LYS
38	BN	111	ILE
40	BP	33	ILE
40	BP	109	PRO
42	BR	15	ASP
47	BW	38	ILE
51	B1	36	GLN
2	AB	35	ASN
2	AB	75	ALA
2	AB	125	PHE
2	AB	146	SER
2	AB	157	PRO
3	AC	2	GLN
4	AD	45	PRO
4	AD	100	VAL
5	AE	97	PRO
6	AF	6	ILE
6	AF	50	PRO
6	AF	54	LEU
6	AF	93	LYS
9	AI	120	ALA
10	AJ	41	PRO
10	AJ	42	LEU
11	AK	125	LYS
12	AL	122	LYS
14	AN	90	ARG
17	AQ	50	ASN
19	AS	7	GLY
21	AU	33	ARG
28	BD	104	LEU

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Mol	Chain	Res	Type
28	BD	194	VAL
30	BF	129	PRO
34	BJ	52	MET
35	BK	34	ILE
35	BK	53	PRO
35	BK	87	SER
35	BK	120	ASP
37	BM	119	ALA
38	BN	10	GLU
38	BN	15	ALA
38	BN	31	GLY
40	BP	71	ARG
41	BQ	100	HIS
44	BT	53	PHE
45	BU	12	SER
46	BV	72	GLN
49	BY	7	ARG
2	AB	150	ILE
4	AD	160	LEU
14	AN	98	LYS
16	AP	44	SER
16	AP	78	VAL
30	BF	161	ALA
34	BJ	119	PRO
35	BK	44	LYS
35	BK	56	VAL
38	BN	29	LYS
41	BQ	89	ASP
41	BQ	114	GLY
47	BW	88	ASP
2	AB	37	VAL
2	AB	91	VAL
3	AC	154	GLY
10	AJ	43	PRO
12	AL	97	VAL
19	AS	29	PRO
28	BD	195	GLY
31	BG	148	VAL
39	BO	98	PRO
47	BW	89	GLY
56	B6	19	GLY
10	AJ	74	VAL

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Mol	Chain	Res	Type
10	AJ	95	GLY
28	BD	63	ILE
35	BK	31	GLY
38	BN	89	VAL
38	BN	101	ILE
39	BO	15	GLY
4	AD	27	ILE
16	AP	36	VAL
20	AT	64	GLY
31	BG	12	VAL
35	BK	121	ILE
37	BM	93	GLN
38	BN	87	GLY
4	AD	63	ILE
9	AI	57	VAL
17	AQ	11	VAL
30	BF	151	GLY
30	BF	177	PRO
32	BH	53	PRO
35	BK	28	GLY
39	BO	69	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	AB	180/198 (91%)	169 (94%)	11 (6%)	17	38
3	AC	170/189 (90%)	163 (96%)	7 (4%)	27	48
4	AD	172/172 (100%)	163 (95%)	9 (5%)	21	42
5	AE	113/125 (90%)	111 (98%)	2 (2%)	51	68
6	AF	87/112 (78%)	85 (98%)	2 (2%)	44	64
7	AG	124/146 (85%)	122 (98%)	2 (2%)	55	70
8	AH	104/104 (100%)	103 (99%)	1 (1%)	68	78
9	AI	105/106 (99%)	104 (99%)	1 (1%)	68	78

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
10	AJ	86/90 (96%)	84 (98%)	2 (2%)	44	64
11	AK	90/98 (92%)	87 (97%)	3 (3%)	33	55
12	AL	103/103 (100%)	100 (97%)	3 (3%)	37	58
13	AM	92/95 (97%)	90 (98%)	2 (2%)	45	64
14	AN	79/83 (95%)	71 (90%)	8 (10%)	7	23
15	AO	76/76 (100%)	74 (97%)	2 (3%)	40	62
16	AP	65/65 (100%)	63 (97%)	2 (3%)	35	56
17	AQ	74/77 (96%)	71 (96%)	3 (4%)	27	48
18	AR	48/64 (75%)	47 (98%)	1 (2%)	47	65
19	AS	70/78 (90%)	66 (94%)	4 (6%)	18	40
20	AT	65/65 (100%)	61 (94%)	4 (6%)	16	38
21	AU	44/60 (73%)	41 (93%)	3 (7%)	14	36
24	AY	2/2 (100%)	2 (100%)	0	100	100
27	BC	175/180 (97%)	174 (99%)	1 (1%)	78	83
28	BD	216/217 (100%)	214 (99%)	2 (1%)	70	79
29	BE	164/164 (100%)	162 (99%)	2 (1%)	63	75
30	BF	165/165 (100%)	165 (100%)	0	100	100
31	BG	148/149 (99%)	144 (97%)	4 (3%)	39	61
32	BH	137/137 (100%)	133 (97%)	4 (3%)	37	58
33	BI	42/114 (37%)	39 (93%)	3 (7%)	13	35
34	BJ	100/123 (81%)	100 (100%)	0	100	100
35	BK	109/109 (100%)	102 (94%)	7 (6%)	16	37
36	BL	116/116 (100%)	115 (99%)	1 (1%)	70	79
37	BM	103/104 (99%)	102 (99%)	1 (1%)	68	78
38	BN	102/103 (99%)	101 (99%)	1 (1%)	68	78
39	BO	109/109 (100%)	108 (99%)	1 (1%)	70	79
40	BP	100/103 (97%)	97 (97%)	3 (3%)	36	57
41	BQ	86/87 (99%)	84 (98%)	2 (2%)	44	64
42	BR	99/99 (100%)	99 (100%)	0	100	100
43	BS	89/89 (100%)	89 (100%)	0	100	100
44	BT	84/84 (100%)	82 (98%)	2 (2%)	43	64

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
45	BU	93/93 (100%)	93 (100%)	0	100	100
46	BV	80/84 (95%)	79 (99%)	1 (1%)	61	74
47	BW	83/84 (99%)	80 (96%)	3 (4%)	31	52
48	BX	78/78 (100%)	76 (97%)	2 (3%)	40	62
49	BY	56/62 (90%)	56 (100%)	0	100	100
50	BZ	67/67 (100%)	66 (98%)	1 (2%)	57	72
51	B1	55/55 (100%)	55 (100%)	0	100	100
52	B2	48/48 (100%)	47 (98%)	1 (2%)	47	65
53	B3	47/47 (100%)	46 (98%)	1 (2%)	47	65
54	B4	45/48 (94%)	44 (98%)	1 (2%)	45	64
55	B5	38/38 (100%)	38 (100%)	0	100	100
56	B6	51/51 (100%)	50 (98%)	1 (2%)	48	66
57	B7	34/34 (100%)	33 (97%)	1 (3%)	37	58
All	All	4868/5149 (94%)	4750 (98%)	118 (2%)	43	64

All (118) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	AB	18	GLN
2	AB	40	ILE
2	AB	49	PHE
2	AB	65	LYS
2	AB	90	PHE
2	AB	125	PHE
2	AB	135	MET
2	AB	142	LYS
2	AB	206	ILE
2	AB	207	ARG
2	AB	224	ARG
3	AC	2	GLN
3	AC	13	ILE
3	AC	15	LYS
3	AC	26	LYS
3	AC	102	ILE
3	AC	166	TRP
3	AC	167	TYR
4	AD	9	LYS

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Mol	Chain	Res	Type
4	AD	34	GLU
4	AD	44	LYS
4	AD	47	LEU
4	AD	122	ILE
4	AD	146	GLU
4	AD	160	LEU
4	AD	182	LYS
4	AD	205	LYS
5	AE	72	ASN
5	AE	121	ASN
6	AF	63	ASN
6	AF	69	GLU
7	AG	89	GLU
7	AG	135	LYS
8	AH	21	LYS
9	AI	56	MET
10	AJ	27	GLU
10	AJ	59	LYS
11	AK	75	GLU
11	AK	106	ILE
11	AK	125	LYS
12	AL	9	LYS
12	AL	28	GLN
12	AL	43	LYS
13	AM	3	ILE
13	AM	71	GLU
14	AN	3	GLN
14	AN	6	LYS
14	AN	25	GLU
14	AN	26	LEU
14	AN	27	LYS
14	AN	49	GLN
14	AN	62	ASN
14	AN	98	LYS
15	AO	25	GLU
15	AO	47	LYS
16	AP	46	LYS
16	AP	76	LYS
17	AQ	51	GLU
17	AQ	54	ILE
17	AQ	76	ARG
18	AR	23	LYS

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Mol	Chain	Res	Type
19	AS	5	LYS
19	AS	20	LYS
19	AS	55	GLN
19	AS	70	LEU
20	AT	4	LYS
20	AT	68	LYS
20	AT	75	LYS
20	AT	83	ASN
21	AU	11	PHE
21	AU	19	LYS
21	AU	35	GLU
27	BC	172	HIS
28	BD	96	LYS
28	BD	166	ARG
29	BE	141	ARG
29	BE	183	GLU
31	BG	20	ASN
31	BG	41	GLU
31	BG	43	ILE
31	BG	47	LYS
32	BH	100	ASN
32	BH	123	GLU
32	BH	138	GLN
32	BH	154	GLU
33	BI	15	LEU
33	BI	28	ASN
33	BI	50	ARG
35	BK	11	GLN
35	BK	30	GLN
35	BK	39	LYS
35	BK	66	PHE
35	BK	71	LYS
35	BK	94	LYS
35	BK	107	GLU
36	BL	121	LYS
37	BM	58	LEU
38	BN	144	GLU
39	BO	47	GLU
40	BP	2	ARG
40	BP	13	ASN
40	BP	114	GLU
41	BQ	17	LYS

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Mol	Chain	Res	Type
41	BQ	112	GLU
44	BT	43	ASN
44	BT	46	GLU
46	BV	49	LYS
47	BW	25	LYS
47	BW	51	LEU
47	BW	60	LYS
48	BX	10	LYS
48	BX	29	ILE
50	BZ	76	LYS
52	B2	2	LYS
53	B3	9	ARG
54	B4	32	LYS
56	B6	40	LYS
57	B7	2	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (167) such sidechains are listed below:

Mol	Chain	Res	Type
2	AB	14	HIS
2	AB	50	ASN
2	AB	176	ASN
2	AB	189	ASN
3	AC	5	HIS
3	AC	24	ASN
3	AC	122	GLN
3	AC	138	GLN
4	AD	53	GLN
4	AD	73	ASN
4	AD	88	ASN
4	AD	115	GLN
4	AD	135	GLN
4	AD	163	GLN
4	AD	197	HIS
5	AE	42	ASN
5	AE	69	ASN
5	AE	72	ASN
5	AE	81	GLN
5	AE	121	ASN
5	AE	131	ASN
5	AE	134	ASN
6	AF	46	GLN

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Mol	Chain	Res	Type
6	AF	52	ASN
6	AF	55	HIS
6	AF	81	ASN
7	AG	8	GLN
7	AG	51	GLN
7	AG	67	ASN
7	AG	85	GLN
7	AG	141	HIS
7	AG	147	ASN
9	AI	49	GLN
9	AI	74	GLN
9	AI	80	HIS
9	AI	125	GLN
10	AJ	20	GLN
10	AJ	99	GLN
11	AK	14	GLN
11	AK	21	HIS
11	AK	28	ASN
11	AK	100	ASN
12	AL	5	GLN
12	AL	72	ASN
12	AL	111	GLN
14	AN	34	ASN
14	AN	62	ASN
14	AN	71	HIS
15	AO	34	GLN
15	AO	36	ASN
15	AO	41	HIS
15	AO	45	HIS
15	AO	49	HIS
15	AO	61	GLN
15	AO	79	GLN
16	AP	18	GLN
16	AP	26	ASN
16	AP	29	ASN
17	AQ	8	GLN
17	AQ	46	HIS
18	AR	53	GLN
19	AS	68	HIS
20	AT	19	HIS
20	AT	47	GLN
20	AT	54	GLN

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Mol	Chain	Res	Type
20	AT	69	ASN
20	AT	77	ASN
20	AT	83	ASN
27	BC	24	ASN
27	BC	57	GLN
27	BC	58	ASN
27	BC	67	HIS
27	BC	80	GLN
28	BD	20	ASN
28	BD	43	ASN
28	BD	45	ASN
28	BD	59	GLN
28	BD	85	ASN
28	BD	89	ASN
28	BD	114	GLN
28	BD	199	HIS
28	BD	225	ASN
28	BD	238	ASN
28	BD	250	GLN
29	BE	94	GLN
29	BE	140	HIS
29	BE	150	GLN
30	BF	41	GLN
30	BF	97	ASN
31	BG	20	ASN
31	BG	51	ASN
31	BG	80	GLN
32	BH	21	GLN
32	BH	72	ASN
32	BH	100	ASN
33	BI	28	ASN
33	BI	33	GLN
33	BI	43	ASN
34	BJ	6	GLN
35	BK	11	GLN
35	BK	18	ASN
35	BK	30	GLN
35	BK	33	ASN
35	BK	104	GLN
35	BK	110	GLN
36	BL	67	ASN
36	BL	77	HIS

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Mol	Chain	Res	Type
36	BL	86	GLN
36	BL	135	GLN
36	BL	138	GLN
37	BM	3	GLN
37	BM	5	GLN
37	BM	13	ASN
37	BM	29	HIS
37	BM	90	ASN
38	BN	38	GLN
38	BN	54	GLN
39	BO	22	GLN
39	BO	60	GLN
40	BP	3	HIS
40	BP	9	GLN
40	BP	13	ASN
40	BP	18	GLN
40	BP	23	ASN
40	BP	62	ASN
41	BQ	38	GLN
41	BQ	98	GLN
42	BR	2	ASN
42	BR	6	GLN
42	BR	11	GLN
42	BR	40	GLN
42	BR	51	ASN
42	BR	55	HIS
42	BR	74	GLN
42	BR	114	ASN
43	BS	43	GLN
43	BS	51	GLN
43	BS	55	GLN
44	BT	12	HIS
44	BT	18	GLN
44	BT	43	ASN
45	BU	7	HIS
45	BU	31	GLN
45	BU	57	ASN
46	BV	28	ASN
46	BV	91	GLN
47	BW	39	ASN
47	BW	68	ASN
47	BW	73	ASN

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Mol	Chain	Res	Type
48	BX	49	ASN
48	BX	51	GLN
50	BZ	5	GLN
50	BZ	31	ASN
51	B1	15	ASN
51	B1	20	ASN
51	B1	25	GLN
51	B1	27	ASN
51	B1	31	GLN
51	B1	39	GLN
51	B1	41	HIS
51	B1	58	ASN
53	B3	3	GLN
53	B3	18	HIS
55	B5	6	GLN
55	B5	13	ASN
55	B5	16	HIS
57	B7	37	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	AA	1537/1542 (99%)	163 (10%)	3 (0%)
22	AV	75/76 (98%)	20 (26%)	2 (2%)
22	AW	75/76 (98%)	12 (16%)	0
23	AX	17/18 (94%)	3 (17%)	0
25	BA	2895/2903 (99%)	293 (10%)	5 (0%)
26	BB	118/119 (99%)	11 (9%)	0
All	All	4717/4734 (99%)	502 (10%)	10 (0%)

All (502) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	AA	9	G
1	AA	31	G
1	AA	32	A
1	AA	39	G
1	AA	47	C
1	AA	48	C
1	AA	51	A
1	AA	70	U

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Mol	Chain	Res	Type
1	AA	71	A
1	AA	72	A
1	AA	75	G
1	AA	82	G
1	AA	83	C
1	AA	85	U
1	AA	86	G
1	AA	89	U
1	AA	90	C
1	AA	91	U
1	AA	97	G
1	AA	108	G
1	AA	109	A
1	AA	116	A
1	AA	121	U
1	AA	130	A
1	AA	131	A
1	AA	144	G
1	AA	159	G
1	AA	168	G
1	AA	197	A
1	AA	205	A
1	AA	210	C
1	AA	247	G
1	AA	251	G
1	AA	262	A
1	AA	266	G
1	AA	267	C
1	AA	279	A
1	AA	280	C
1	AA	289	G
1	AA	328	C
1	AA	329	A
1	AA	332	G
1	AA	346	G
1	AA	352	C
1	AA	354	G
1	AA	367	U
1	AA	372	C
1	AA	406	G
1	AA	412	A
1	AA	413	G

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Mol	Chain	Res	Type
1	AA	414	A
1	AA	421	U
1	AA	422	C
1	AA	423	G
1	AA	429	U
1	AA	467	U
1	AA	468	A
1	AA	481	G
1	AA	485	U
1	AA	486	U
1	AA	497	G
1	AA	518	C
1	AA	532	A
1	AA	533	A
1	AA	547	A
1	AA	559	A
1	AA	562	U
1	AA	572	A
1	AA	573	A
1	AA	576	C
1	AA	577	G
1	AA	633	G
1	AA	650	G
1	AA	665	A
1	AA	721	G
1	AA	723	U
1	AA	724	G
1	AA	755	G
1	AA	777	A
1	AA	793	U
1	AA	794	A
1	AA	817	C
1	AA	818	G
1	AA	821	G
1	AA	828	U
1	AA	841	C
1	AA	842	U
1	AA	843	U
1	AA	845	A
1	AA	846	G
1	AA	859	G
1	AA	873	A

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Mol	Chain	Res	Type
1	AA	914	A
1	AA	926	G
1	AA	927	G
1	AA	934	C
1	AA	935	A
1	AA	960	U
1	AA	969	A
1	AA	975	A
1	AA	976	G
1	AA	977	A
1	AA	983	A
1	AA	993	G
1	AA	1004	A
1	AA	1008	U
1	AA	1030	U
1	AA	1032	G
1	AA	1034	G
1	AA	1050	G
1	AA	1053	G
1	AA	1054	C
1	AA	1065	U
1	AA	1086	U
1	AA	1094	G
1	AA	1095	U
1	AA	1101	A
1	AA	1102	A
1	AA	1136	C
1	AA	1137	C
1	AA	1138	G
1	AA	1139	G
1	AA	1140	C
1	AA	1141	C
1	AA	1142	G
1	AA	1146	A
1	AA	1152	A
1	AA	1159	U
1	AA	1160	G
1	AA	1161	C
1	AA	1169	A
1	AA	1182	G
1	AA	1183	U
1	AA	1184	G

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Mol	Chain	Res	Type
1	AA	1196	A
1	AA	1197	A
1	AA	1202	U
1	AA	1212	U
1	AA	1213	A
1	AA	1214	C
1	AA	1227	A
1	AA	1257	A
1	AA	1280	A
1	AA	1286	U
1	AA	1287	A
1	AA	1299	A
1	AA	1302	C
1	AA	1305	G
1	AA	1317	C
1	AA	1332	A
1	AA	1363	A
1	AA	1364	U
1	AA	1378	C
1	AA	1398	A
1	AA	1441	A
1	AA	1446	A
1	AA	1492	A
1	AA	1503	A
1	AA	1505	G
1	AA	1517	G
1	AA	1529	G
1	AA	1530	G
1	AA	1533	C
22	AV	2	C
22	AV	3	C
22	AV	9	A
22	AV	16	U
22	AV	17	C
22	AV	18	G
22	AV	19	G
22	AV	21	A
22	AV	23	A
22	AV	34	G
22	AV	42	C
22	AV	43	C
22	AV	47	U

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Mol	Chain	Res	Type
22	AV	48	C
22	AV	52	G
22	AV	53	G
22	AV	57	G
22	AV	61	C
22	AV	73	A
22	AV	74	C
22	AW	8	U
22	AW	18	G
22	AW	19	G
22	AW	21	A
22	AW	22	G
22	AW	37	A
22	AW	45	U
22	AW	47	U
22	AW	48	C
22	AW	58	A
22	AW	59	U
22	AW	61	C
23	AX	12	A
23	AX	13	A
23	AX	14	A
25	BA	10	A
25	BA	35	G
25	BA	46	G
25	BA	74	A
25	BA	75	G
25	BA	101	A
25	BA	119	A
25	BA	120	U
25	BA	125	A
25	BA	138	U
25	BA	139	U
25	BA	140	C
25	BA	141	G
25	BA	142	A
25	BA	181	A
25	BA	188	G
25	BA	196	A
25	BA	216	A
25	BA	221	A
25	BA	222	A

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Mol	Chain	Res	Type
25	BA	248	G
25	BA	250	G
25	BA	255	A
25	BA	266	G
25	BA	272	A
25	BA	277	G
25	BA	278	A
25	BA	302	C
25	BA	311	A
25	BA	329	G
25	BA	330	A
25	BA	331	C
25	BA	371	A
25	BA	372	G
25	BA	386	G
25	BA	396	G
25	BA	411	G
25	BA	424	G
25	BA	456	C
25	BA	457	A
25	BA	480	A
25	BA	481	G
25	BA	490	C
25	BA	491	G
25	BA	504	A
25	BA	505	A
25	BA	508	A
25	BA	531	C
25	BA	532	A
25	BA	544	C
25	BA	546	U
25	BA	547	A
25	BA	548	G
25	BA	550	C
25	BA	563	A
25	BA	572	A
25	BA	573	U
25	BA	574	A
25	BA	586	A
25	BA	603	A
25	BA	613	A
25	BA	614	A

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Mol	Chain	Res	Type
25	BA	615	U
25	BA	627	A
25	BA	631	A
25	BA	637	A
25	BA	647	G
25	BA	654	A
25	BA	655	A
25	BA	686	U
25	BA	702	U
25	BA	730	A
25	BA	747	U
25	BA	748	G
25	BA	775	G
25	BA	776	G
25	BA	782	A
25	BA	784	G
25	BA	785	G
25	BA	791	C
25	BA	801	G
25	BA	805	G
25	BA	812	C
25	BA	819	A
25	BA	827	U
25	BA	828	U
25	BA	830	G
25	BA	845	A
25	BA	846	U
25	BA	847	U
25	BA	858	G
25	BA	878	A
25	BA	890	C
25	BA	896	A
25	BA	910	A
25	BA	931	U
25	BA	932	U
25	BA	933	A
25	BA	941	A
25	BA	946	C
25	BA	959	A
25	BA	961	C
25	BA	974	G
25	BA	983	A

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Mol	Chain	Res	Type
25	BA	995	C
25	BA	996	A
25	BA	1012	U
25	BA	1013	C
25	BA	1022	G
25	BA	1026	G
25	BA	1033	U
25	BA	1040	A
25	BA	1046	A
25	BA	1047	G
25	BA	1053	C
25	BA	1054	A
25	BA	1062	G
25	BA	1067	A
25	BA	1070	A
25	BA	1073	A
25	BA	1076	C
25	BA	1088	A
25	BA	1133	A
25	BA	1135	C
25	BA	1136	G
25	BA	1142	A
25	BA	1143	A
25	BA	1157	G
25	BA	1168	G
25	BA	1174	U
25	BA	1175	A
25	BA	1176	U
25	BA	1180	U
25	BA	1206	G
25	BA	1212	G
25	BA	1248	G
25	BA	1250	G
25	BA	1253	A
25	BA	1256	G
25	BA	1266	G
25	BA	1271	G
25	BA	1272	A
25	BA	1300	G
25	BA	1301	A
25	BA	1302	A
25	BA	1341	G

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Mol	Chain	Res	Type
25	BA	1365	A
25	BA	1372	U
25	BA	1378	A
25	BA	1379	U
25	BA	1383	A
25	BA	1416	G
25	BA	1420	A
25	BA	1452	G
25	BA	1458	U
25	BA	1461	C
25	BA	1463	C
25	BA	1482	G
25	BA	1493	C
25	BA	1494	A
25	BA	1509	A
25	BA	1510	G
25	BA	1515	A
25	BA	1535	A
25	BA	1536	C
25	BA	1547	C
25	BA	1555	G
25	BA	1569	A
25	BA	1583	A
25	BA	1585	C
25	BA	1607	C
25	BA	1608	A
25	BA	1616	A
25	BA	1646	C
25	BA	1647	U
25	BA	1648	U
25	BA	1674	G
25	BA	1699	G
25	BA	1715	G
25	BA	1729	U
25	BA	1730	C
25	BA	1738	G
25	BA	1764	C
25	BA	1773	A
25	BA	1800	C
25	BA	1808	A
25	BA	1816	C
25	BA	1839	G

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Mol	Chain	Res	Type
25	BA	1870	C
25	BA	1872	A
25	BA	1885	A
25	BA	1913	A
25	BA	1925	C
25	BA	1930	G
25	BA	1931	U
25	BA	1937	A
25	BA	1938	A
25	BA	1944	U
25	BA	1955	U
25	BA	1963	U
25	BA	1967	C
25	BA	1970	A
25	BA	1972	G
25	BA	1991	U
25	BA	1992	G
25	BA	1993	U
25	BA	2018	G
25	BA	2022	U
25	BA	2023	C
25	BA	2030	A
25	BA	2031	A
25	BA	2043	C
25	BA	2055	C
25	BA	2060	A
25	BA	2061	G
25	BA	2062	A
25	BA	2069	G
25	BA	2110	G
25	BA	2111	U
25	BA	2112	G
25	BA	2116	G
25	BA	2118	U
25	BA	2119	A
25	BA	2128	G
25	BA	2132	U
25	BA	2133	G
25	BA	2146	C
25	BA	2158	A
25	BA	2162	G
25	BA	2164	C

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Mol	Chain	Res	Type
25	BA	2170	A
25	BA	2171	A
25	BA	2172	U
25	BA	2173	A
25	BA	2198	A
25	BA	2203	U
25	BA	2204	G
25	BA	2211	A
25	BA	2213	U
25	BA	2225	A
25	BA	2238	G
25	BA	2239	G
25	BA	2283	C
25	BA	2287	A
25	BA	2288	A
25	BA	2297	A
25	BA	2305	U
25	BA	2325	G
25	BA	2331	G
25	BA	2335	A
25	BA	2383	G
25	BA	2385	C
25	BA	2402	U
25	BA	2406	A
25	BA	2425	A
25	BA	2426	A
25	BA	2428	G
25	BA	2429	G
25	BA	2430	A
25	BA	2435	A
25	BA	2441	U
25	BA	2448	A
25	BA	2476	A
25	BA	2491	U
25	BA	2502	G
25	BA	2504	U
25	BA	2505	G
25	BA	2518	A
25	BA	2529	G
25	BA	2554	U
25	BA	2566	A
25	BA	2567	G

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Mol	Chain	Res	Type
25	BA	2573	C
25	BA	2585	U
25	BA	2609	U
25	BA	2613	U
25	BA	2629	U
25	BA	2689	U
25	BA	2690	U
25	BA	2714	G
25	BA	2726	A
25	BA	2744	G
25	BA	2748	A
25	BA	2765	A
25	BA	2778	A
25	BA	2791	G
25	BA	2798	U
25	BA	2800	A
25	BA	2801	G
25	BA	2820	A
25	BA	2867	G
25	BA	2880	C
25	BA	2884	U
26	BB	15	A
26	BB	35	C
26	BB	36	C
26	BB	41	G
26	BB	44	G
26	BB	56	G
26	BB	66	A
26	BB	89	U
26	BB	90	C
26	BB	99	A
26	BB	109	A

All (10) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	AA	115	G
1	AA	1101	A
1	AA	1201	A
22	AV	15	G
22	AV	73	A
25	BA	1052	C

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Mol	Chain	Res	Type
25	BA	1378	A
25	BA	1645	G
25	BA	2157	G
25	BA	2425	A

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
24	5OH	AY	6	24	7,12,13	0.62	0	4,16,18	1.76	1 (25%)
24	UAL	AY	5	24	6,8,9	2.14	2 (33%)	4,9,11	1.62	1 (25%)
24	DPP	AY	2	24	4,5,6	0.49	0	1,5,7	0.27	0
24	KBE	AY	1	24	8,8,9	0.56	0	6,8,10	0.90	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
24	5OH	AY	6	24	-	0/2/18/20	0/1/1/1
24	UAL	AY	5	24	-	0/3/7/9	-
24	DPP	AY	2	24	-	0/2/4/6	-
24	KBE	AY	1	24	-	0/7/7/8	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	AY	5	UAL	C1-N1	-3.78	1.34	1.40
24	AY	5	UAL	C-CA	-3.46	1.39	1.45

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	AY	6	5OH	CR-CB-CA	-3.18	109.24	112.61
24	AY	5	UAL	O-C-CA	-2.96	121.68	125.39

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
24	AY	6	5OH	8	0
24	AY	5	UAL	2	0
24	AY	1	KBE	2	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
25	BA	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	BA	1916:A	O3'	1917:U	P	2.60
1	BA	1911:U	O3'	1912:A	P	1.12

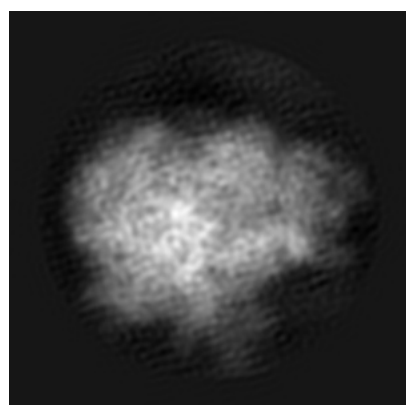
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-5799. These allow visual inspection of the internal detail of the map and identification of artifacts.

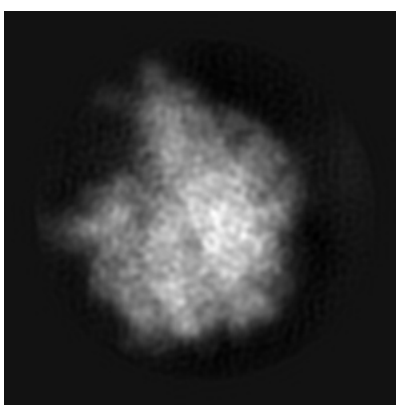
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

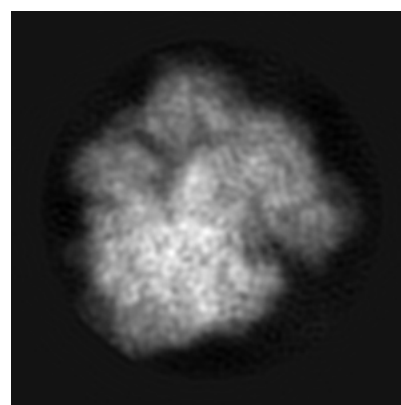
6.1.1 Primary map



X



Y

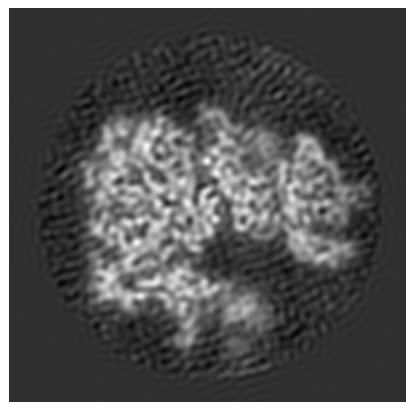


Z

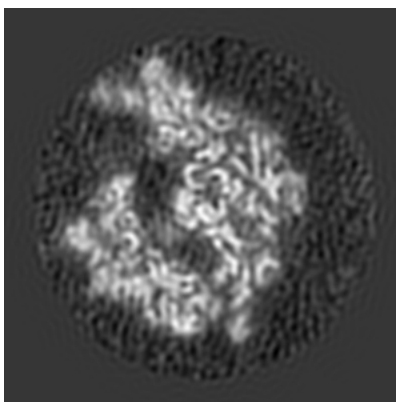
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

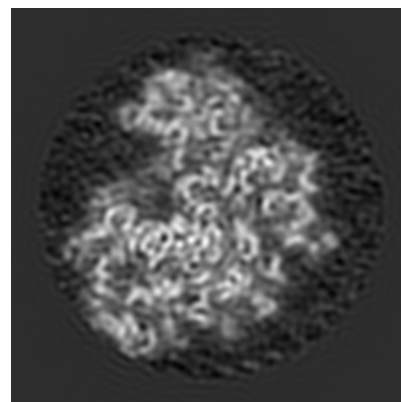
6.2.1 Primary map



X Index: 160



Y Index: 160

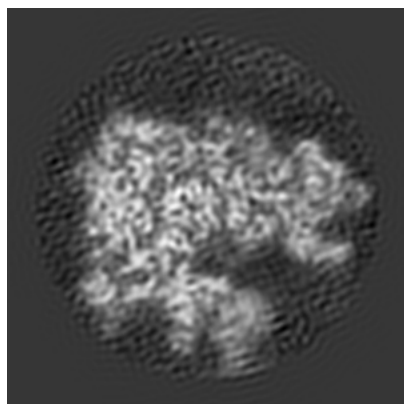


Z Index: 160

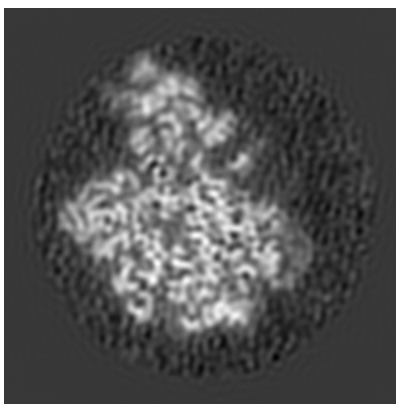
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

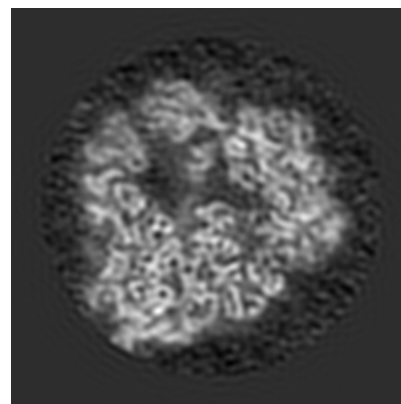
6.3.1 Primary map



X Index: 154



Y Index: 144

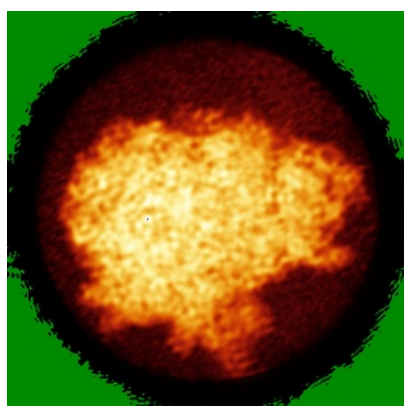


Z Index: 138

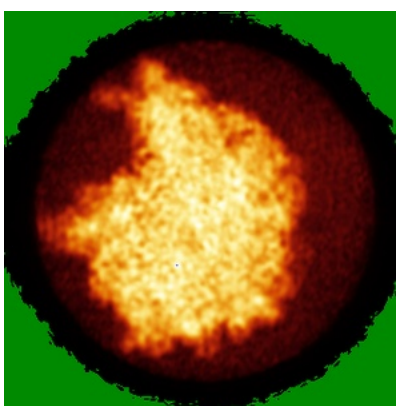
The images above show the largest variance slices of the map in three orthogonal directions.

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

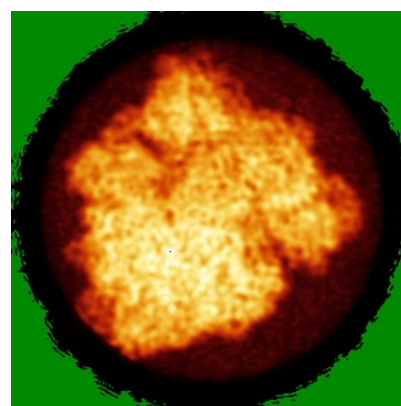
6.4.1 Primary map



X



Y



Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.32. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

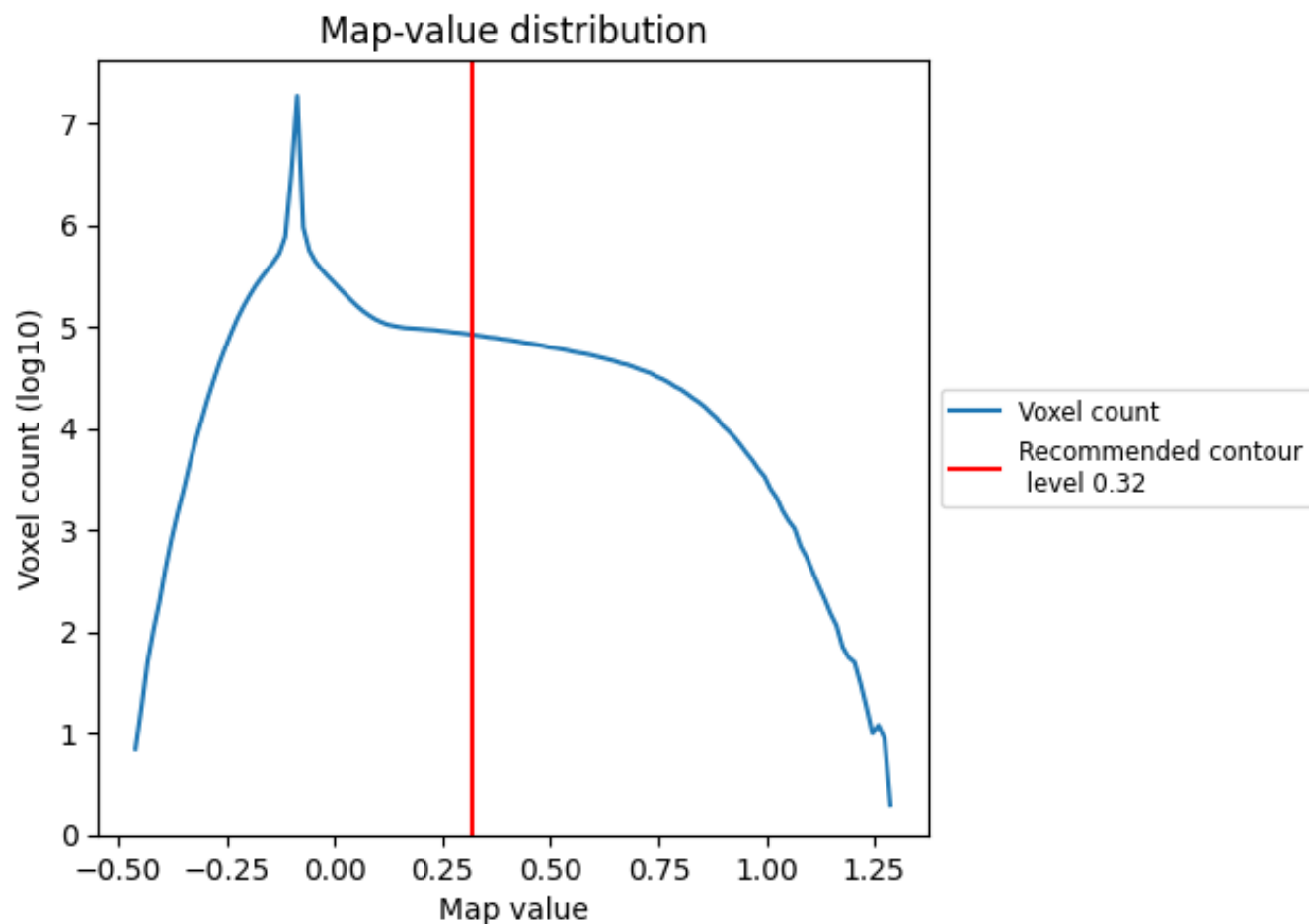
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

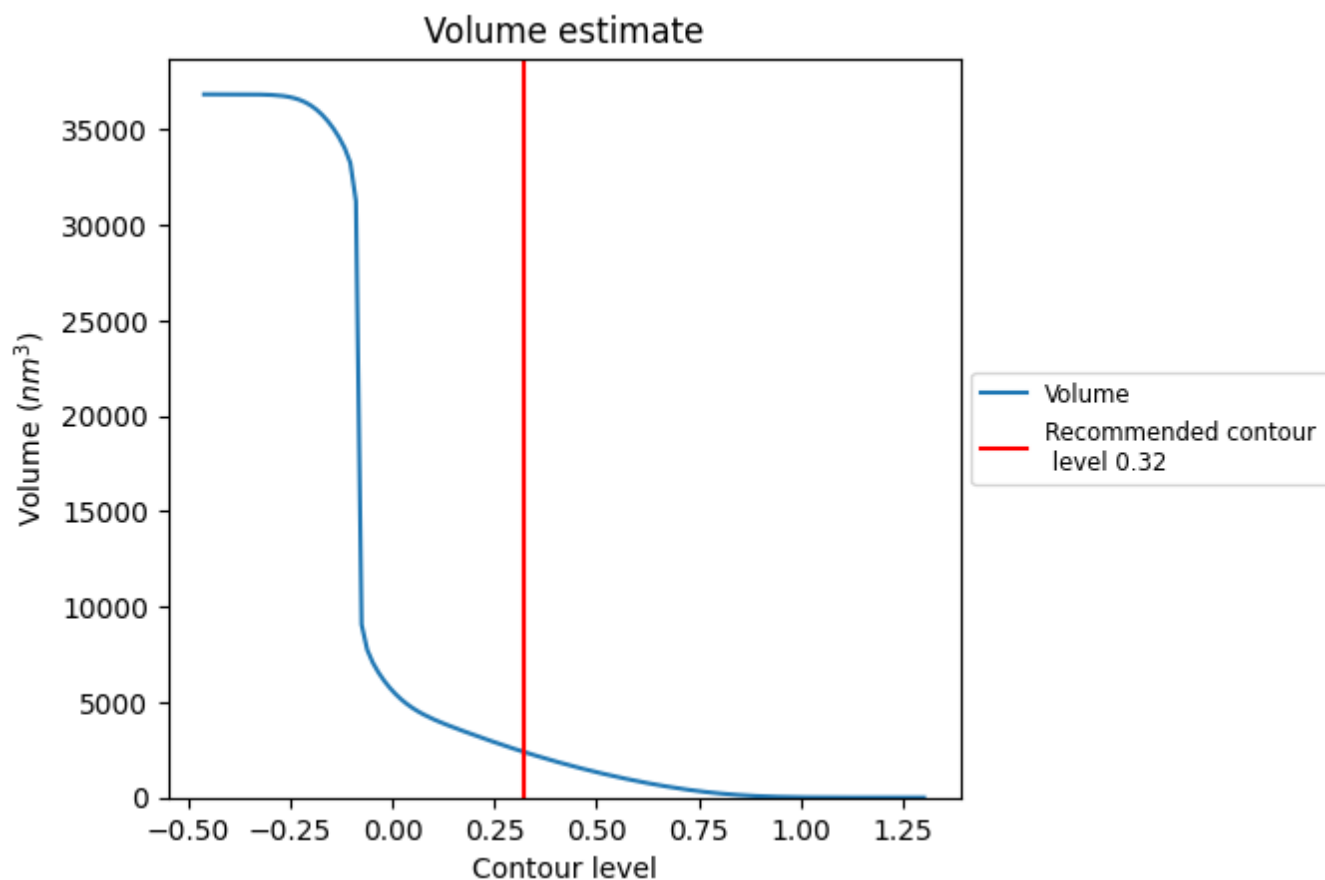
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

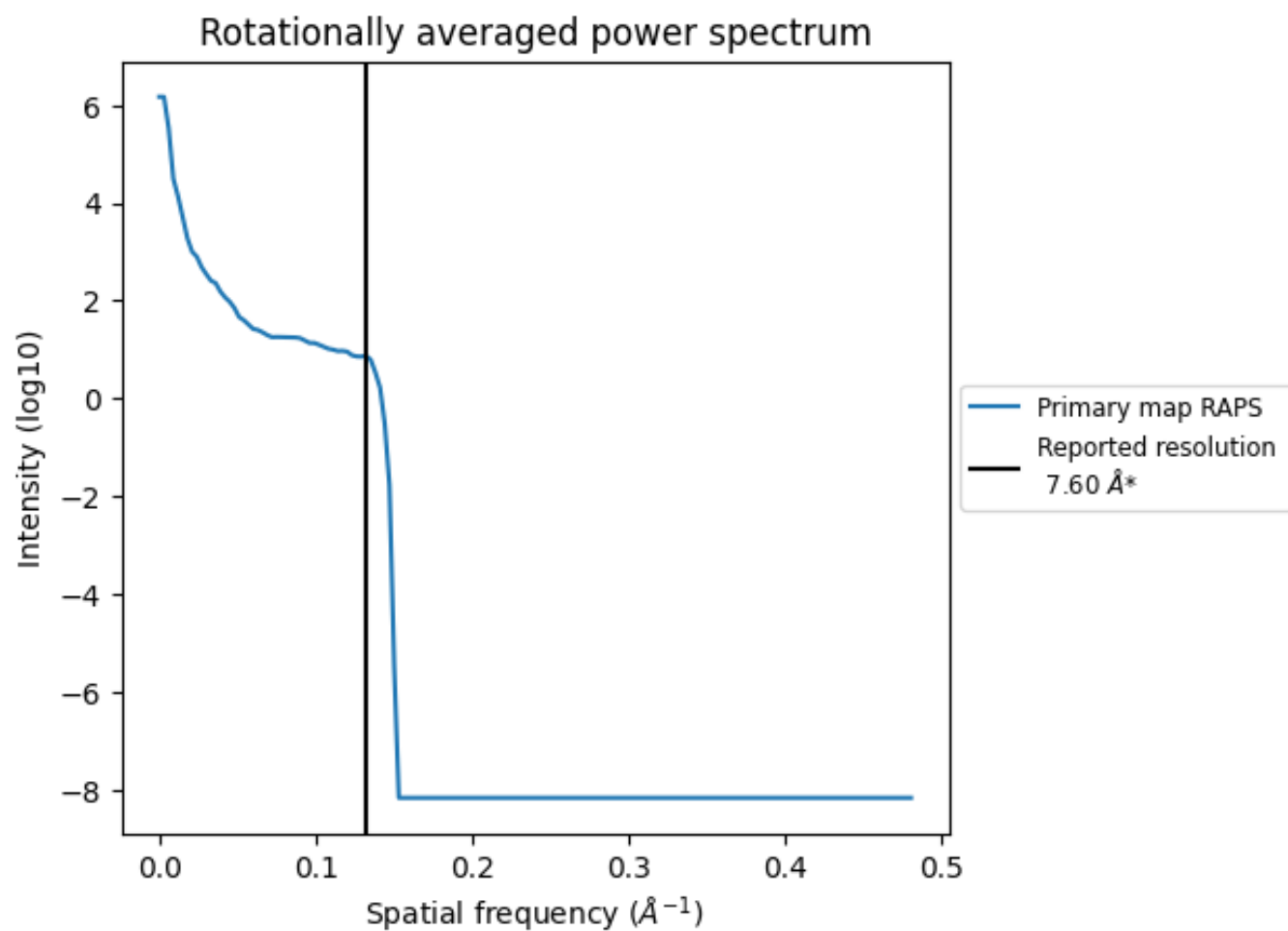
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2409 nm³; this corresponds to an approximate mass of 2176 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 0.132 Å⁻¹

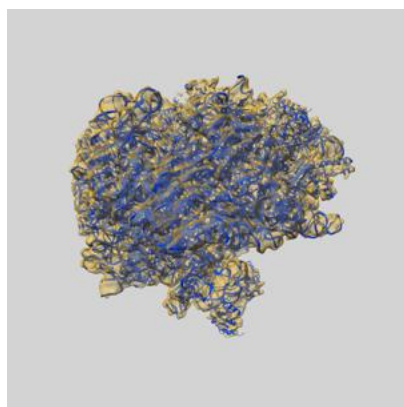
8 Fourier-Shell correlation

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

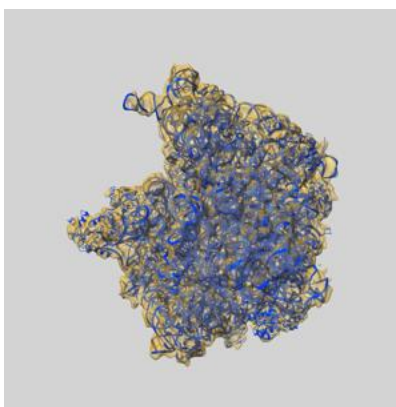
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-5799 and PDB model 4V7C. Per-residue inclusion information can be found in [section 3](#) on [page 15](#).

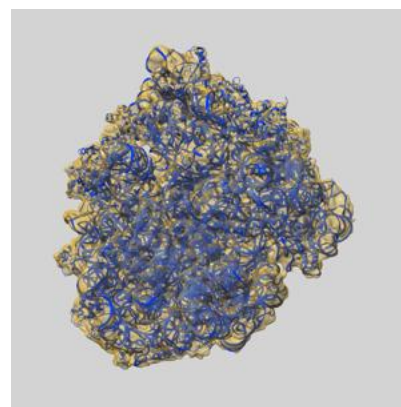
9.1 Map-model overlay [i](#)



X



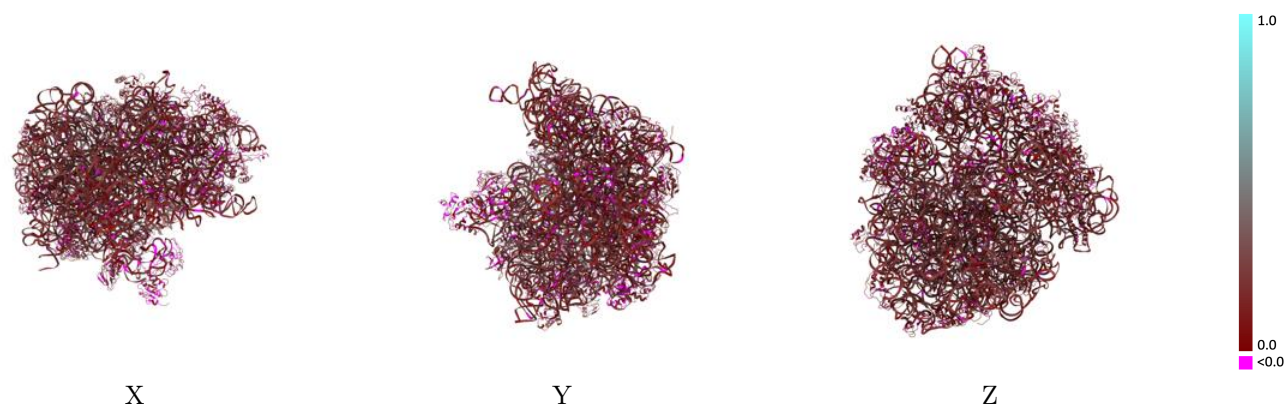
Y



Z

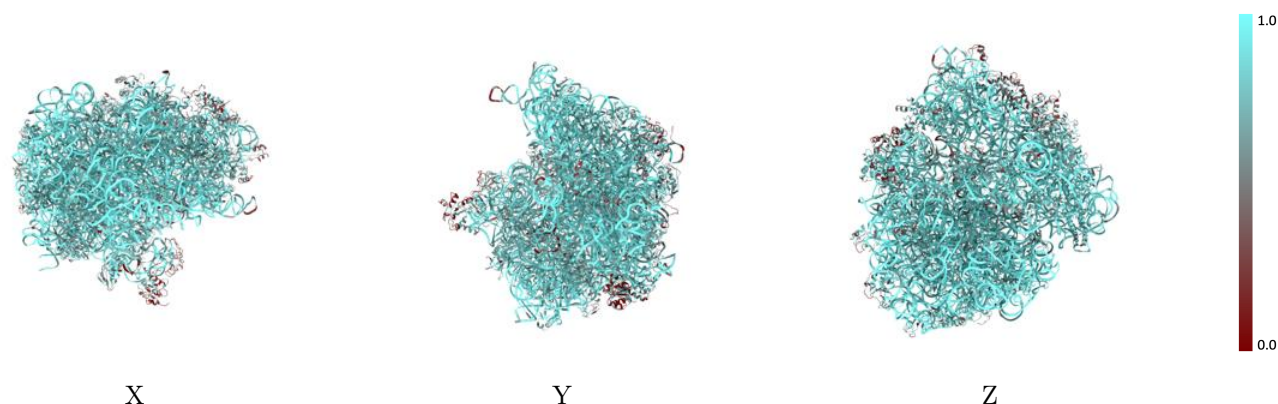
The images above show the 3D surface view of the map at the recommended contour level 0.32 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



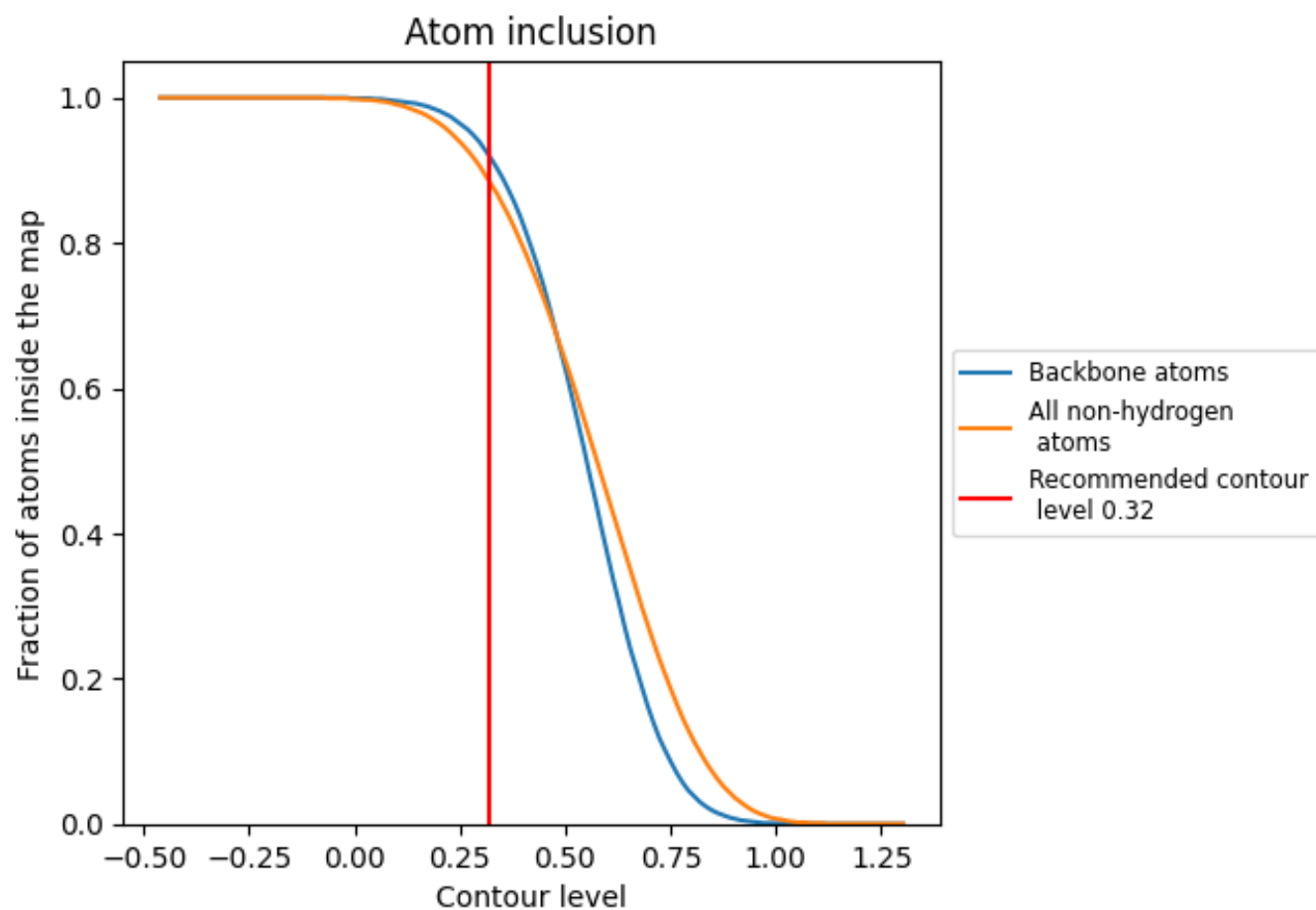
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.32).

9.4 Atom inclusion [i](#)



At the recommended contour level, 92% of all backbone atoms, 88% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.32) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8850	 0.1640
AA	 0.9510	 0.1790
AB	 0.4870	 0.1330
AC	 0.6840	 0.1140
AD	 0.7790	 0.1240
AE	 0.7460	 0.1410
AF	 0.6470	 0.1480
AG	 0.7460	 0.1500
AH	 0.7390	 0.1440
AI	 0.8000	 0.1080
AJ	 0.6430	 0.0890
AK	 0.7630	 0.1270
AL	 0.7870	 0.1370
AM	 0.7070	 0.1470
AN	 0.8160	 0.1210
AO	 0.7650	 0.1450
AP	 0.8180	 0.1070
AQ	 0.7610	 0.1190
AR	 0.7520	 0.1290
AS	 0.7570	 0.0980
AT	 0.7920	 0.1500
AU	 0.5940	 0.1420
AV	 0.6730	 0.1250
AW	 0.9350	 0.2010
AX	 0.9090	 0.1630
AY	 0.9580	 0.1680
B1	 0.7260	 0.1340
B2	 0.8310	 0.1480
B3	 0.7940	 0.1240
B4	 0.6110	 0.1100
B5	 0.8990	 0.1220
B6	 0.8450	 0.1130
B7	 0.9450	 0.1070
BA	 0.9660	 0.1880
BB	 0.9580	 0.1790



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Chain	Atom inclusion	Q-score
BC	 0.4040	 0.0770
BD	 0.8660	 0.1290
BE	 0.7810	 0.1150
BF	 0.7570	 0.1190
BG	 0.7700	 0.1220
BH	 0.7520	 0.1310
BI	 0.4680	 0.1260
BJ	 0.3550	 0.0340
BK	 0.3520	 0.0340
BL	 0.8570	 0.1450
BM	 0.7130	 0.1340
BN	 0.7610	 0.1230
BO	 0.7900	 0.1370
BP	 0.8460	 0.1210
BQ	 0.8370	 0.1350
BR	 0.7100	 0.1330
BS	 0.8840	 0.1040
BT	 0.7930	 0.1400
BU	 0.7660	 0.1280
BV	 0.8070	 0.1320
BW	 0.7430	 0.1200
BX	 0.7900	 0.1360
BY	 0.8440	 0.1100
BZ	 0.8040	 0.1200