



Full wwPDB EM Validation Report ⓘ

Mar 20, 2026 – 09:20 AM UTC

PDB ID : 5MYJ / pdb_00005myj
EMDB ID : EMD-3581
Title : Structure of 70S ribosome from *Lactococcus lactis*
Authors : Franken, L.E.; Oostergetel, G.T.; Pijning, T.; Puri, P.; Boekema, E.J.; Poolman, B.; Guskov, A.
Deposited on : 2017-01-26
Resolution : 5.60 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

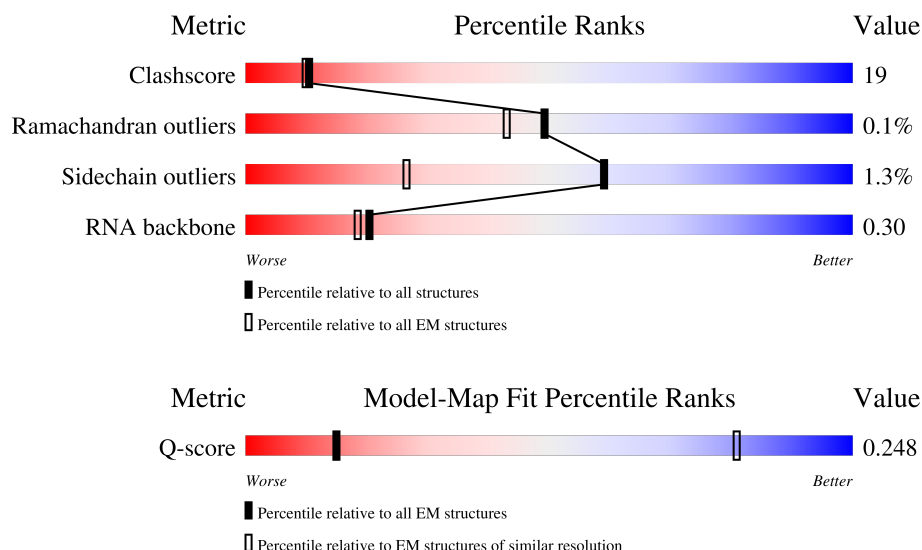
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & 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 5.60 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	513 (5.10 - 6.10)

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	1535	
2	AB	255	
3	AC	217	

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Mol	Chain	Length	Quality of chain
4	AD	203	
5	AE	168	
6	AF	97	
7	AG	155	
8	AH	132	
9	AI	130	
10	AJ	102	
11	AK	127	
12	AL	137	
13	AM	121	
14	AN	61	
15	AO	89	
16	AP	90	
17	AQ	86	
18	AR	81	
19	AS	92	
20	AT	77	
21	AU	58	
22	B0	64	
23	B1	69	
24	B2	59	
25	B3	81	
26	B4	57	
27	B5	49	
28	B6	44	

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Mol	Chain	Length	Quality of chain
29	B7	66	
30	B8	38	
31	BA	2897	
32	BB	115	
33	BD	276	
34	BE	207	
35	BF	208	
36	BG	180	
37	BH	178	
38	BM	148	
39	BN	122	
40	BO	147	
41	BP	137	
42	BQ	126	
43	BR	115	
44	BS	114	
45	BT	119	
46	BU	104	
47	BV	115	
48	BW	97	
49	BX	101	
50	BZ	94	
51	A	185	

2 Entry composition

There are 51 unique types of molecules in this entry. The entry contains 140480 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	1535	Total	C	N	O	P	0	0
			32911	14689	6018	10669	1535		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	AB	224	Total	C	N	O	S	0	0
			1774	1129	311	326	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	AC	211	Total	C	N	O	S	0	0
			1648	1042	302	301	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
4	AD	200	Total	C	N	O	S	0	0
			1610	1014	298	294	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
5	AE	156	Total	C	N	O	S	0	0
			1133	711	212	209	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	AF	97	Total	C	N	O	S	0	0
			797	507	132	156	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	AG	152	Total	C	N	O	S	0	0
			1207	748	236	217	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	AH	130	Total	C	N	O	S	0	0
			1009	641	178	188	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	AI	129	Total	C	N	O	S	0	0
			983	606	199	176	2		

- 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
			794	501	145	146	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AK	118	Total	C	N	O	S	0	0
			857	530	165	160	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AL	136	Total	C	N	O	S	0	0
			1054	656	215	180	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	AM	111	Total	C	N	O	S	0	0
			873	535	174	162	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AN	59	Total	C	N	O	S	0	0
			471	296	94	76	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
15	AO	87	Total	C	N	O	S	0	0
			708	442	140	125	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
16	AP	86	Total	C	N	O	S	0	0
			688	433	127	126	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
17	AQ	82	Total	C	N	O	S	0	0
			675	423	126	124	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	AR	68	Total	C	N	O	S	0	0
			549	349	105	94	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AS	82	Total	C	N	O	S	0	0
			660	419	121	118	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AT	71	Total	C	N	O	S	0	0
			542	333	107	101	1		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
21	AU	56	Total	C	N	O	0	0
			440	269	95	76		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
22	B0	61	Total	C	N	O	S	0	0
			477	299	91	86	1		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
23	B1	67	Total	C	N	O	0	0
			533	334	95	104		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
24	B2	58	Total	C	N	O	S	0	0
			424	269	77	77	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
25	B3	79	Total	C	N	O	S	0	0
			642	408	110	122	2		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
26	B4	53	Total	C	N	O	0	0
			437	270	92	75		

- Molecule 27 is a protein called 50S ribosomal protein L33 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	B5	47	Total	C	N	O	S	0	0
			365	225	72	64	4		

- Molecule 28 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	B6	44	Total	C	N	O	S	0	0
			362	219	86	55	2		

- Molecule 29 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	B7	64	Total	C	N	O	S	0	0
			530	327	120	80	3		

- Molecule 30 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	B8	36	Total	C	N	O	S	0	0
			292	182	62	44	4		

- Molecule 31 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	BA	2897	Total	C	N	O	P	0	0
			62143	27749	11409	20088	2897		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BA	135	U	C	conflict	GB 124491690
BA	376	A	G	conflict	GB 124491690
BA	1239	A	G	conflict	GB 124491690
BA	1489	C	U	conflict	GB 124491690

- Molecule 32 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	BB	115	Total	C	N	O	P	0	0
			2455	1097	439	804	115		

- Molecule 33 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	BD	272	Total	C	N	O	S	0	0
			2041	1264	397	371	9		

- Molecule 34 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	BE	205	Total	C	N	O	S	0	0
			1522	957	282	279	4		

- Molecule 35 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	BF	206	Total	C	N	O	S	0	0
			1563	980	284	299			

- Molecule 36 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	BG	176	Total	C	N	O	S	0	0
			1367	867	238	256	6		

- Molecule 37 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	BH	174	Total	C	N	O	S	0	0
			1303	811	237	251	4		

- Molecule 38 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	BM	147	Total	C	N	O	S	0	0
			1127	714	203	205	5		

- Molecule 39 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	BN	121	Total	C	N	O	S	0	0
			895	563	165	166	1		

- Molecule 40 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	BO	146	Total	C	N	O	S	0	0
			1066	650	210	205	1		

- Molecule 41 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	BP	134	Total	C	N	O	S	0	0
			1061	675	206	174	6		

- Molecule 42 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	BQ	125	Total	C	N	O	S	0	0
			990	613	188	186	3		

- Molecule 43 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	BR	115	Total	C	N	O	S	0	0
			872	542	164	165	1		

- Molecule 44 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	BS	114	Total	C	N	O	S	0	0
			923	578	186	158	1		

- Molecule 45 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	BT	117	Total	C	N	O	S	0	0
			945	601	186	154	4		

- Molecule 46 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	BU	101	Total	C	N	O	S	0	0
			783	501	138	144			

- Molecule 47 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	BV	112	Total	C	N	O	S	0	0
			853	536	160	156	1		

- Molecule 48 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	BW	88	Total	C	N	O	S	0	0
			689	441	116	130	2		

- Molecule 49 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	BX	99	Total	C	N	O	S	0	0
			747	474	136	136	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
50	BZ	75	Total	C	N	O	S	0	0
			562	345	110	106	1		

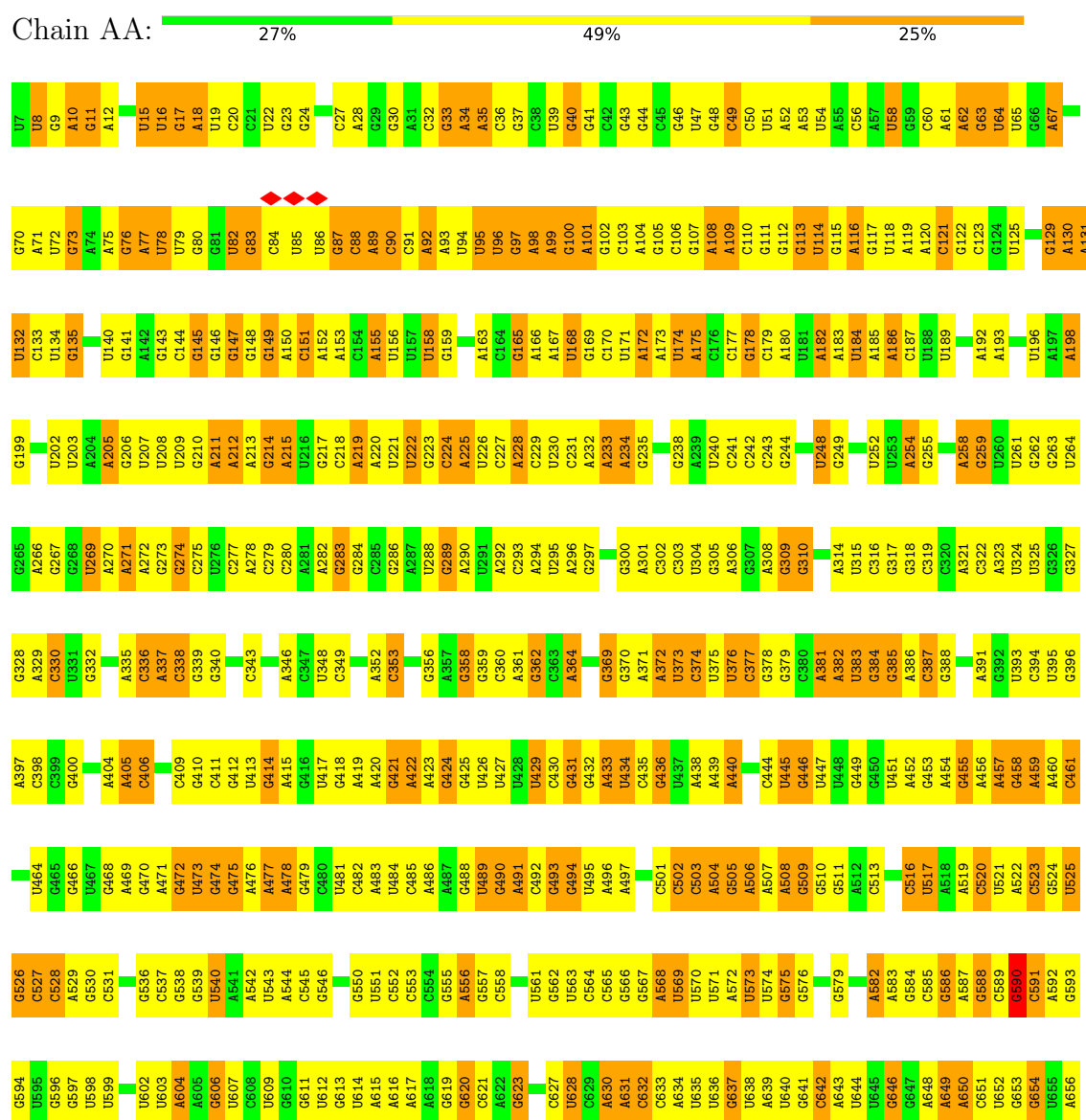
- Molecule 51 is a protein called Ribosome hibernation promotion factor.

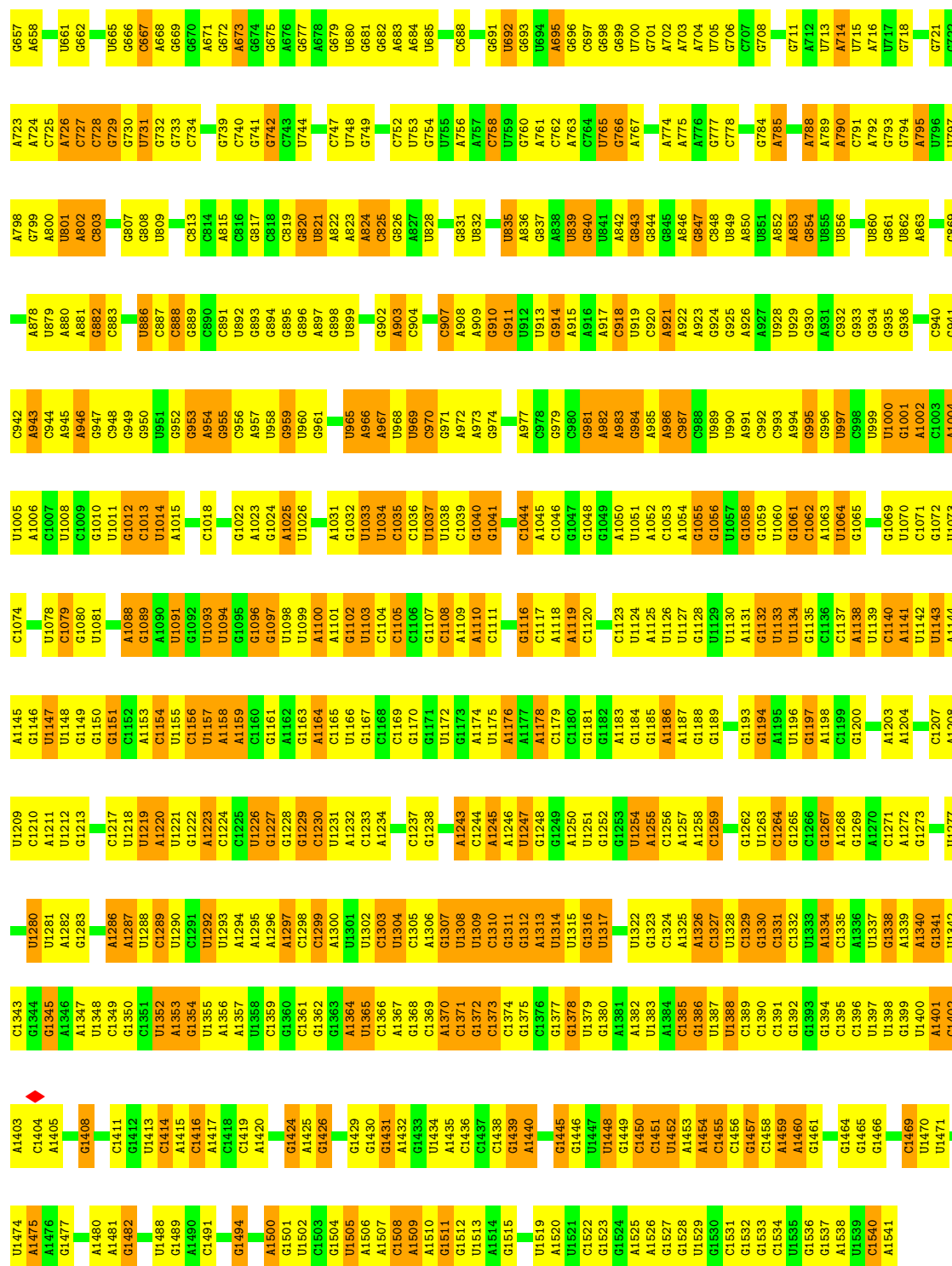
Mol	Chain	Residues	Atoms					AltConf	Trace
51	A	159	Total	C	N	O	S	0	0
			1128	698	209	218	3		

3 Residue-property plots

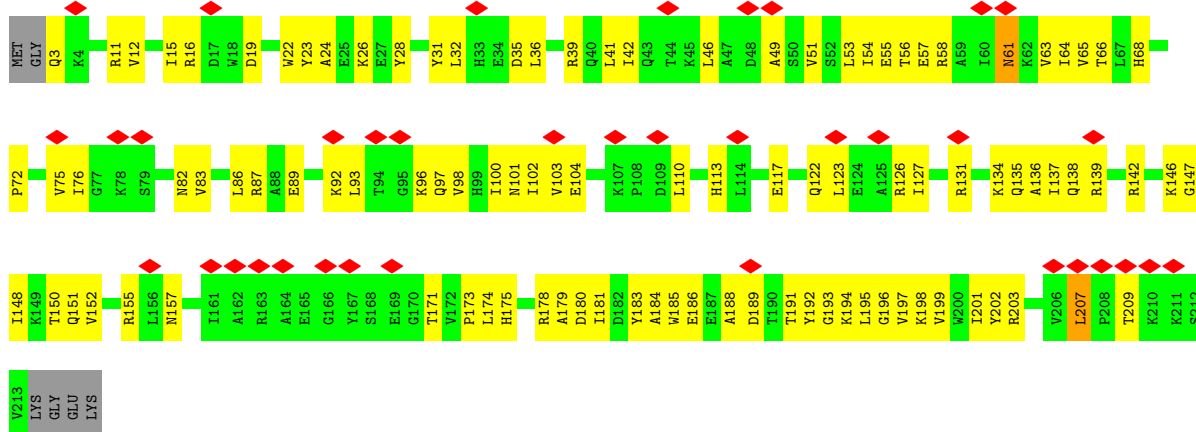
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

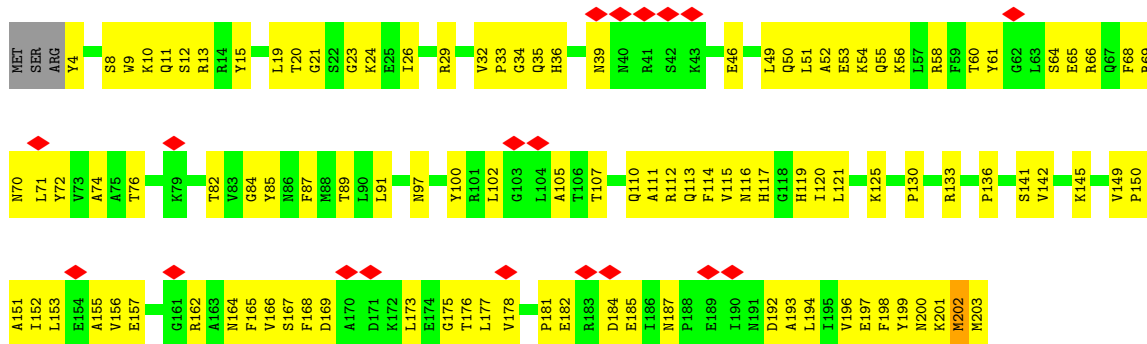




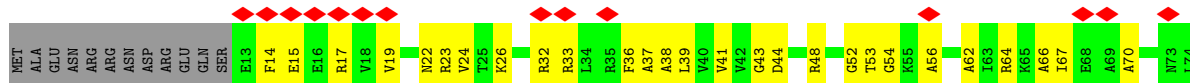
- Molecule 3: 30S ribosomal protein S3

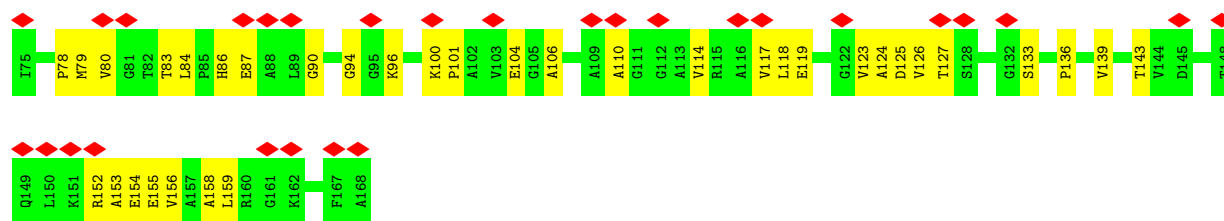


- Molecule 4: 30S ribosomal protein S4

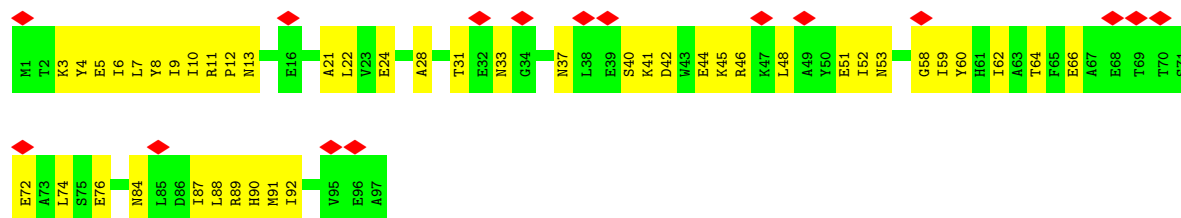


- Molecule 5: 30S ribosomal protein S5

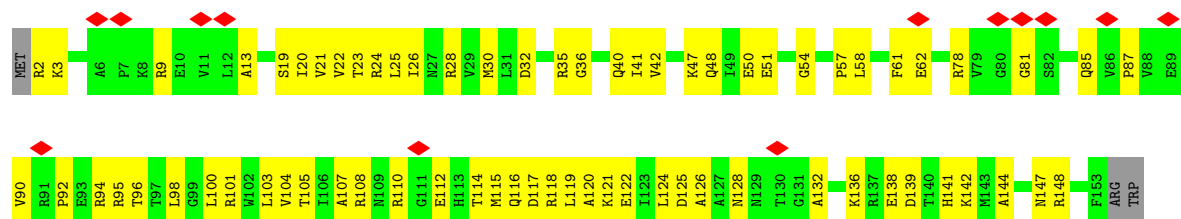




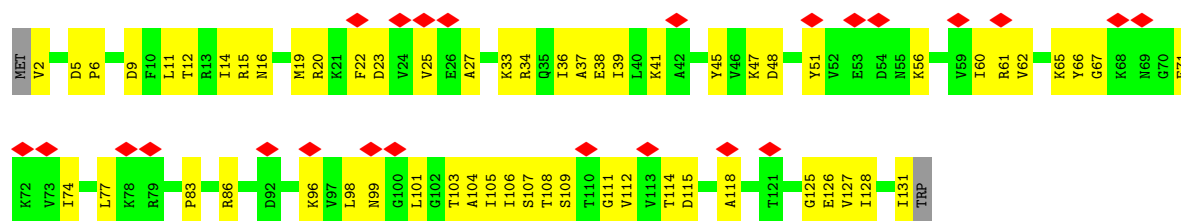
• Molecule 6: 30S ribosomal protein S6



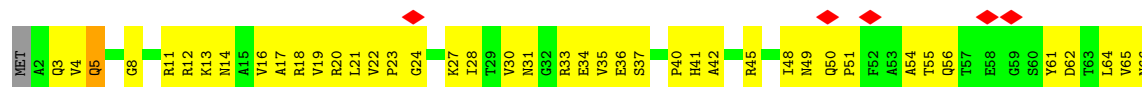
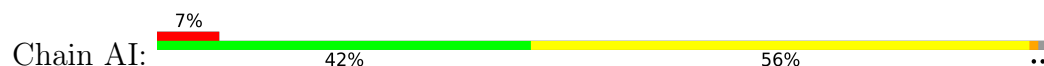
• Molecule 7: 30S ribosomal protein S7

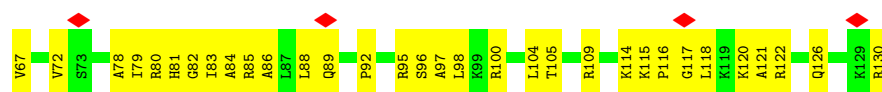


• Molecule 8: 30S ribosomal protein S8

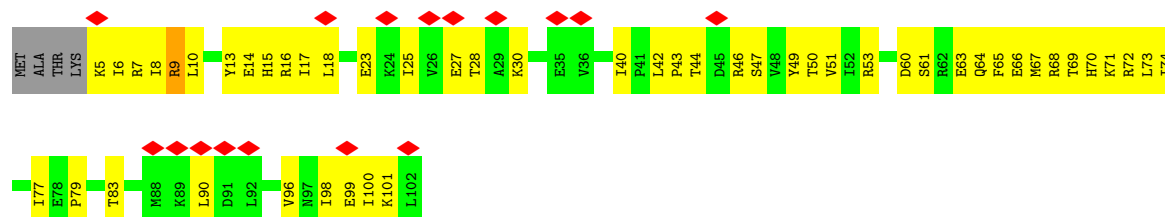


• Molecule 9: 30S ribosomal protein S9

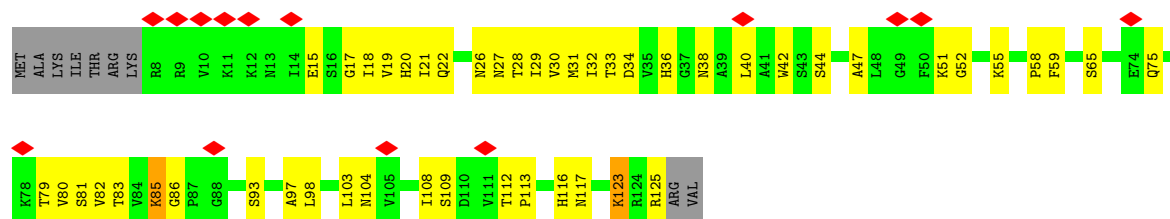




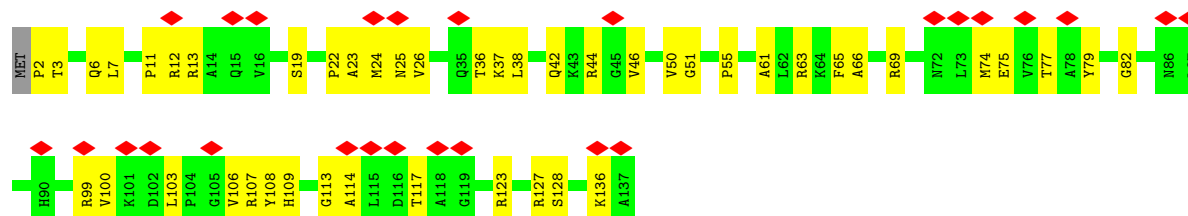
- Molecule 10: 30S ribosomal protein S10



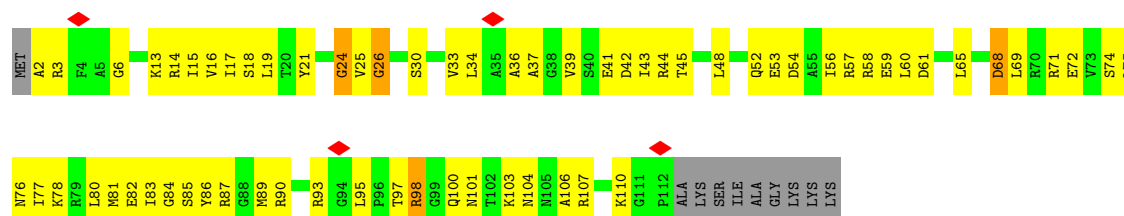
- Molecule 11: 30S ribosomal protein S11



- Molecule 12: 30S ribosomal protein S12



- Molecule 13: 30S ribosomal protein S13



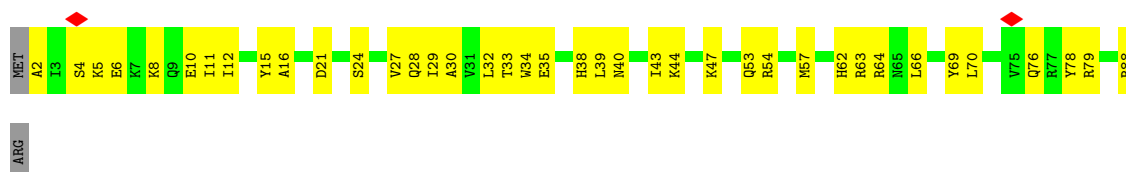
- Molecule 14: 30S ribosomal protein S14 type Z

Chain AN:  51% 46% .



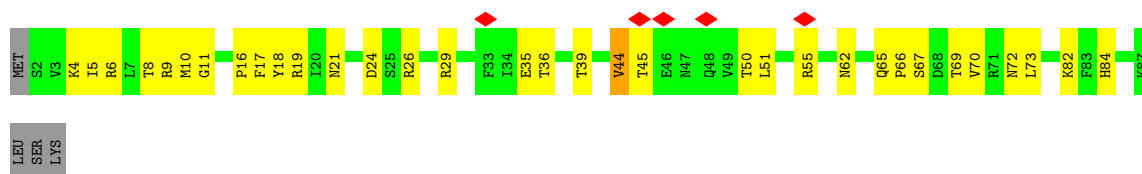
- Molecule 15: 30S ribosomal protein S15

Chain AO:  54% 44% .



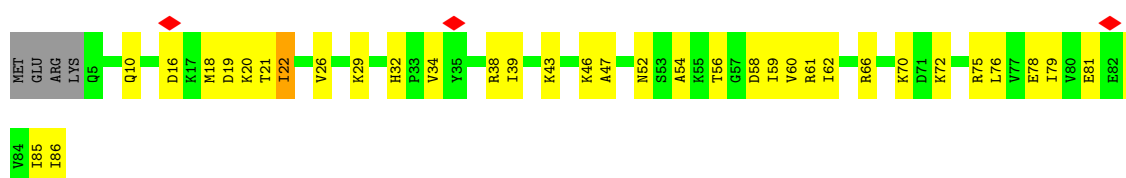
- Molecule 16: 30S ribosomal protein S16

Chain AP:  6% 59% 36% . .



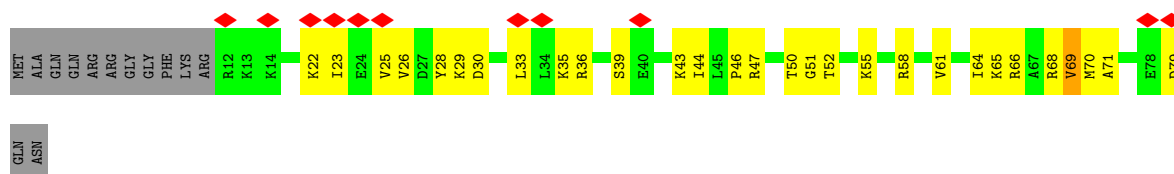
- Molecule 17: 30S ribosomal protein S17

Chain AQ:  55% 40% . 5%



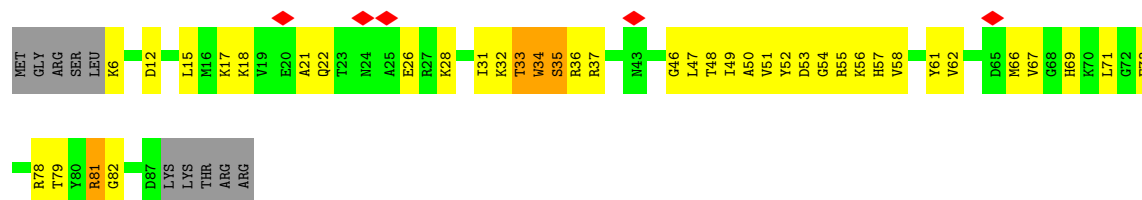
- Molecule 18: 30S ribosomal protein S18

Chain AR:  14% 48% 35% 16%



- Molecule 19: 30S ribosomal protein S19

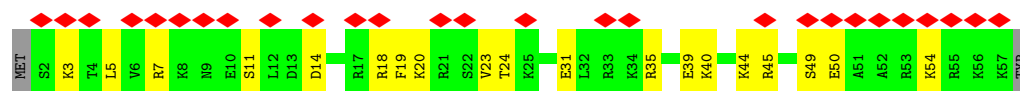
Chain AS:  5% 46% 39% 11%



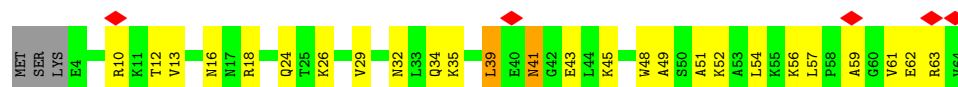
- Molecule 20: 30S ribosomal protein S20



- Molecule 21: 30S ribosomal protein S21



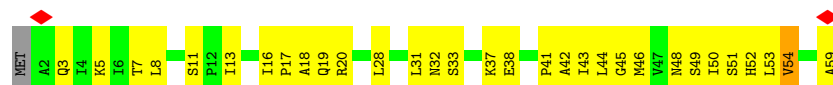
- Molecule 22: 50S ribosomal protein L28



- Molecule 23: 50S ribosomal protein L29

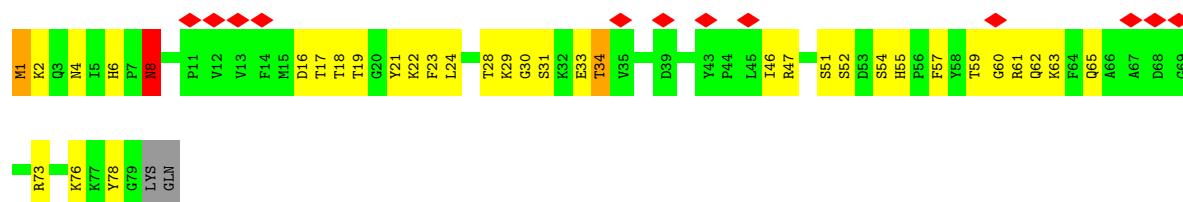


- Molecule 24: 50S ribosomal protein L30



- Molecule 25: 50S ribosomal protein L31 type B





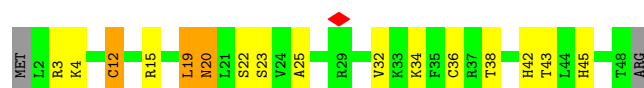
- Molecule 26: 50S ribosomal protein L32

Chain B4:



- Molecule 27: 50S ribosomal protein L33 3

Chain B5:



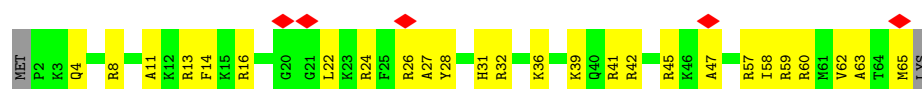
- Molecule 28: 50S ribosomal protein L34

Chain B6:



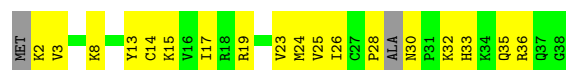
- Molecule 29: 50S ribosomal protein L35

Chain B7:



- Molecule 30: 50S ribosomal protein L36

Chain B8:



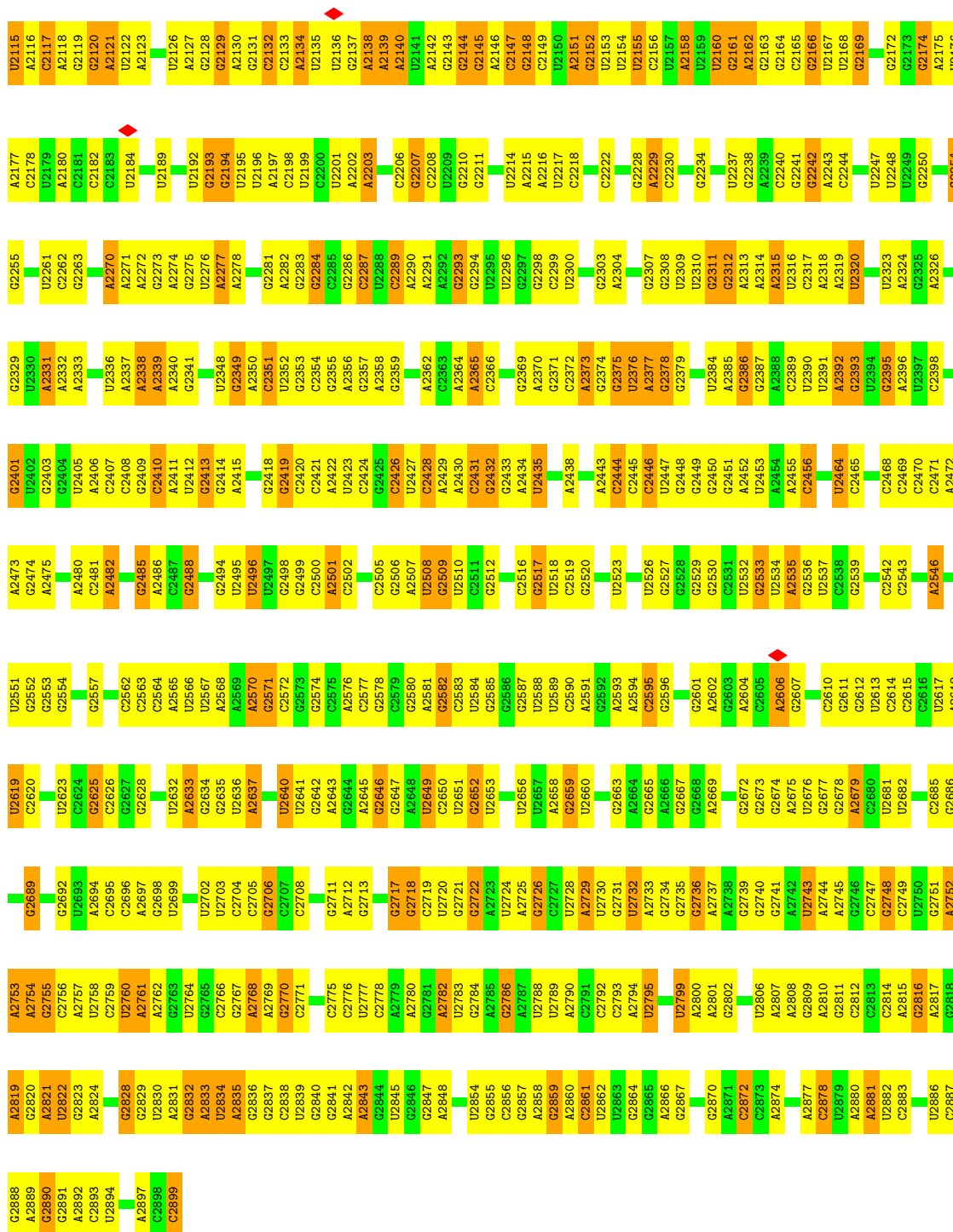
- Molecule 31: 23S ribosomal RNA

Chain BA:



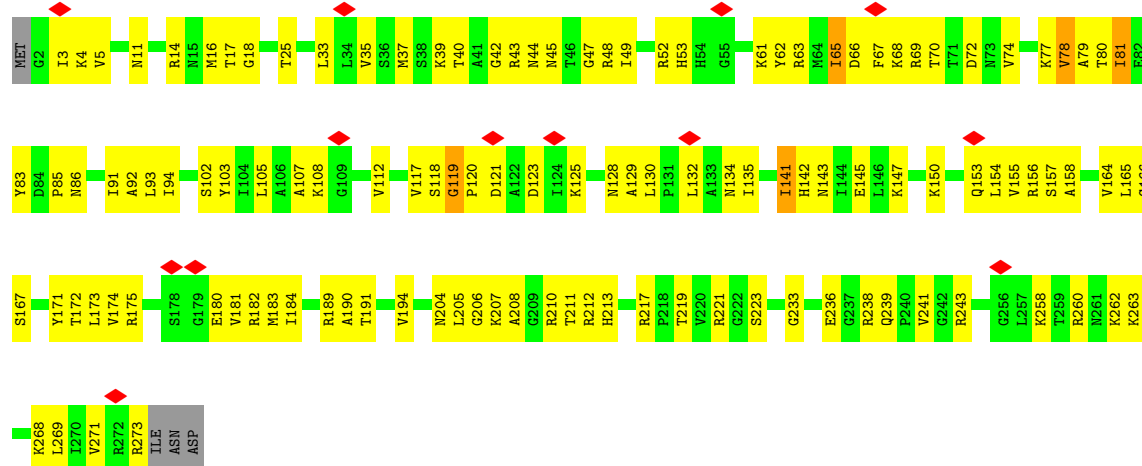
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C1033	G966	G896	G832	G761	C695	U631	U569	G498	C428	A353	A278	A206	U136	A71
U1034	A967	U897	G833	A762	A696	G633	C570	U499	G431	G354	G279	C207	A137	U72
A1035	G969	A898	G834	G763	U697	C633	C571	G500	A432	A355	C280	C208	A138	A73
G1041	G974	A900	G835	G764	A698	A635	A572	A501	U433	U360	U281	A212	U139	U74
C1042	C975	G901	A837	G765	U700	G636	C574	G502	U434	A361	U282	G213	A140	U75
A1043	C976	C902	U838	G767	G701	G637	U578	A506	G435	A362	G283	G214	G141	C76
A1044	A976	A903	A839	G768	A705	U638	U579	A507	U436	A363	C284	A215	G142	U77
A1045	G977	G906	G840	A769	C706	U639	A580	G508	U437	U366	U286	G216	G143	G79
U1046	G978	G907	A841	G770	A707	A640	A581	G511	U438	U367	G291	G217	U145	G80
A1047	C979	U907	U842	G771	A710	A641	A582	A512	C440	G370	G292	A218	U146	G81
A1048	G980	U908	G843	C777	A711	G642	C583	A513	G441	U371	G293	G219	A147	G82
U1049	G981	U909	G844	A778	A712	G643	C584	A514	G442	A372	G294	A220	U148	G83
A1050	A982	G910	U845	G779	C713	U644	G585	A515	G443	A373	U295	A221	U149	A84
U1051	G983	G911	U846	G780	C714	G645	U586	A516	U444	G374	G296	G222	G153	G85
G1052	U984	G912	C847	U781	U715	A646	C587	A517	G445	A375	G297	G223	G154	G88
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A1055	G987	G915	G853	G784	G717	G650	A590	C521	C448	A378	G300	A228	U156	A91
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G1057	G989	U920	A855	G788	A719	A651	G591	A522	A450	U380	A301	A229	U158	G92
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G1059	G991	C922	U857	U790	C721	G653	G593	A526	C452	U383	G303	G231	U160	A94
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A1061	U993	U924	G859	U793	U723	A655	G595	G528	A458	U387	C305	U233	G96	C97
A1062	A994	C925	C860	G794	A724	G656	C596	G529	G458	U388	A306	U234	U164	A98
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G1075	G1007	C935	A870	A807	A734	C668	A606	A539	U474	C402	A317	G248	G177	C112
U1076	A1008	A936	G873	U808	G735	G671	A607	C541	G475	C403	U323	G249	U178	U113
G1077	U937	A937	U874	A809	U738	A672	U608	A542	U476	U404	A324	A250	U179	C114
U1078	U938	U938	C875	C810	G739	U673	A610	C543	G477	G405	U325	G253	A180	G115
A1079	C939	G939	C876	C811	A740	C674	A611	C544	A478	A406	U326	A254	A181	G116
G1080	U940	U940	A877	C812	A741	U675	C612	U545	C479	G407	A326	G327	G182	A117
A1081	G941	C941	A878	G813	G742	G676	C613	G546	C480	U408	G327	A260	A183	A118
G1082	A942	A942	A879	G814	G743	A677	C614	A547	G481	A409	U328	A261	A184	U119
A1083	G943	U944	U880	A816	U744	U678	G615	A548	U482	G410	C329	G262	A185	G120
C1084	U945	U945	C881	A817	G745	U679	C616	A549	U483	G411	U333	A263	A186	G121
G1087	A946	A946	U882	A818	U746	A680	G617	A552	U484	C412	U332	A264	A187	G122
U1088	U947	U947	A883	U819	G747	G683	A618	G552	G485	G415	U333	A265	C191	G123
A1089	A948	A948	A884	U820	G748	G684	C619	U553	U486	G416	U334	G268	U192	A124
G1090	C949	C949	G885	C821	U749	G685	U620	U559	G487	A417	C336	C269	A195	A125
U1091	U950	U950	U886	C822	G752	A686	A622	A560	A488	G420	G340	A270	A196	C127
A1092	C951	C951	A887	A823	G753	C687	C623	C561	A489	G421	G341	A271	A197	C128
U1093	G952	G952	U888	A824	G754	U688	G624	A562	C491	C422	C342	C272	U199	C129
G1094	C953	C953	A889	A825	G755	U689	U625	A563	A492	G423	A342	C273	C200	A130
U1095	U954	U954	U890	C826	G756	A690	U626	G564	A493	G424	A343	A274	A203	G131
U1096	G957	G957	U891	G827	G757	A691	U627	A565	U494	A425	A348	A275	A204	G134
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C2040	U1100	A1164	C1238	A1298	C1363	U1425	U1491	G1553	A1626	A1698	A1761	G1826	G1963	G1963	C2040
A2041	C1101	U1165	A1239	G1299	C1364	U1426	G1492	G1554	A1626	C1699	A1762	G1827	C1898	A1964	A2041
G2042	G1102	G1166	A1240	C1300		C1427	G1493	G1555		U1700	U1763	G1828	C1899	C1965	G2042
G2043	G1103	U1167	G1241	G1301	G1367	A1428	U1494	G1556	G1629	G1702	G1764	G1829	A1900	G1966	G2043
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C2047	C1107	G1171	G1245	G1305	U1371	C1433	A1498	G1560	C1636	A1706	C1768	G1835	A1904	A1970	C2047
C2048	G1108	G1172	A1246	A1306	G1372	U1434	U1499	G1561	U1637	A1707	A1770	G1836	G1908	C1971	C2048
G2049	G1109	G1173	U1247	A1307	G1373	U1435	C1500	A1562	A1638	U1708	A1771	G1837	G1909	G1972	G2049
G2050	G1174	G1174	A1248	A1308	C1374	U1436	G1501	U1563	A1638	U1709	A1772	C1838	A1910	A1973	G2050
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G2052	A1112	U1176	A1250	U1311	G1376		U1503	A1565	C1640	A1711	G1774	C1840	G1911	A1975	G2052
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C2059	A1119	C1188	G1257	A1318	A1383	U1446	U1510	G1574	A1647	U1718	U1781	G1848	A1921	U1988	C2059
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	A1123	A1192	U1261	U1322	G1387	G1451		U1579	A1651	U1722	U1785	G1857	G1925	U1997	A2065
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	U1140	U1207	A1275		U1401	G1465	U1529	A1599	C1667	G1739	U1800	G1872	A1940	G2016	U2089
	G1142	U1208	G1276	U1338	U1404	U1466	G1531	A1600	U1668	U1740	G1801	U1873	A1941	A2017	U2090
		U1209	G1277	U1340	C1405	U1467	U1532	A1601	C1669	U1741	G1802	A1874	A1942	G2091	A2018
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	G1145	G1216	U1279	C1344	A1407	A1473	U1534		U1676	U1743	A1804	G1876	U1944	U2022	U2093
	A1146	G1217	G1280	A1345	U1408	U1474	C1535	U1606	U1677	A1744	A1805	U1877	C1945	A2094	A2094
	G1147	U1218	A1281	G1346	G1409	U1475	U1536	C1607	G1677	A1745	A1806	C1878	C1946	U2023	U2095
	U1148	A1219	G1282	G1347	G1410	C1476	A1537	U1608	G1677	U1746	G1807	G1879	U1947	A2024	U2096
	G1149	G1220	A1283	G1348	A1411	C1477	U1538	A1609	G1680	A1747	C1808	A1880	U1948	G2025	G2097
	A1150	G1221	A1284	G1349	A1412	A1478	G1539	G1610	A1681	G1748			G1949	U2026	A2098
	C1151	A1222	U1285	A1350	A1413	G1479	A1540	G1611	G1682	U1749	G1814	G1883	U1950	A2027	G2099
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	U1154	U1229	G1289	G1354	G1417	A1483	G1545	A1615	U1688	C1753	A1818	G1887	U1954	G2106	
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	G1157	U1232	U1292	U1356	U1420	G1486	G1548	U1618	U1693	C1756	U1821	U1890	G1958	A2035	A2035
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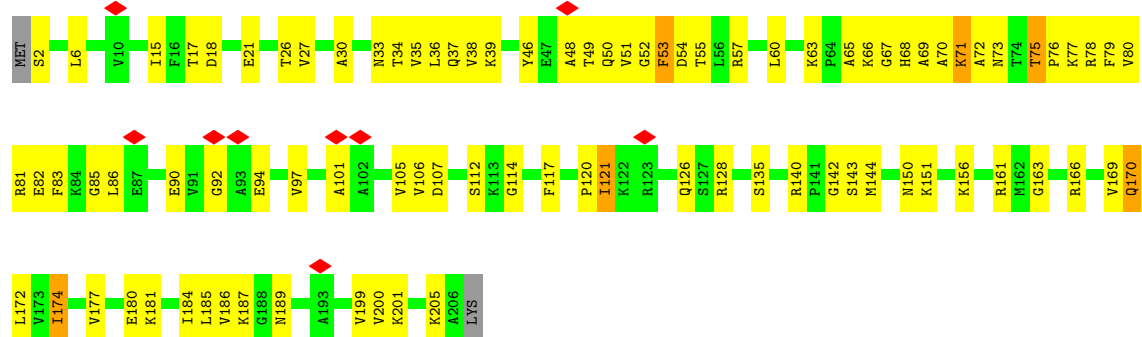




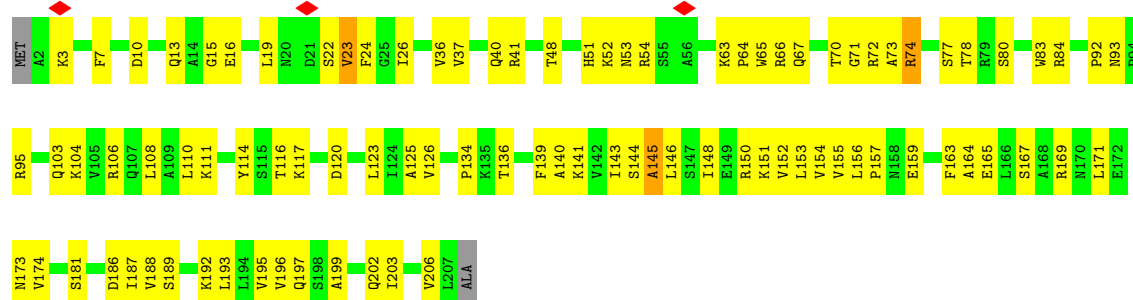
• Molecule 33: 50S ribosomal protein L2



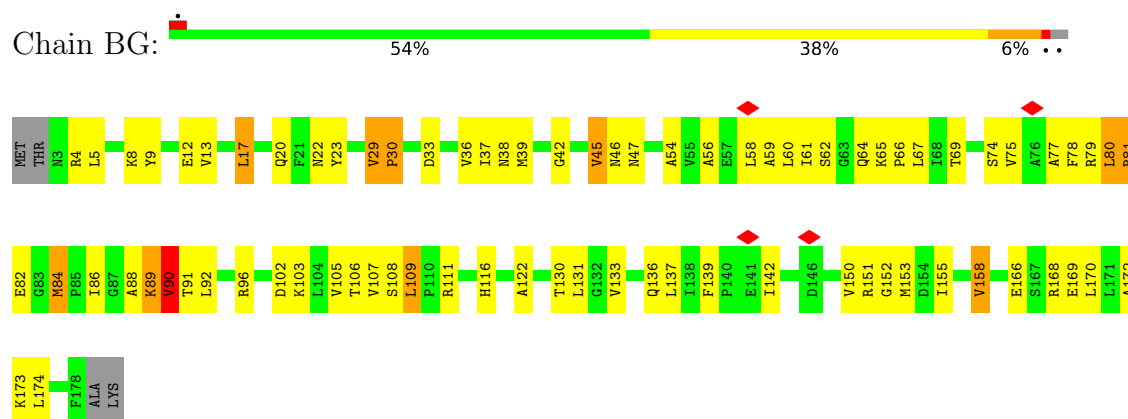
• Molecule 34: 50S ribosomal protein L3



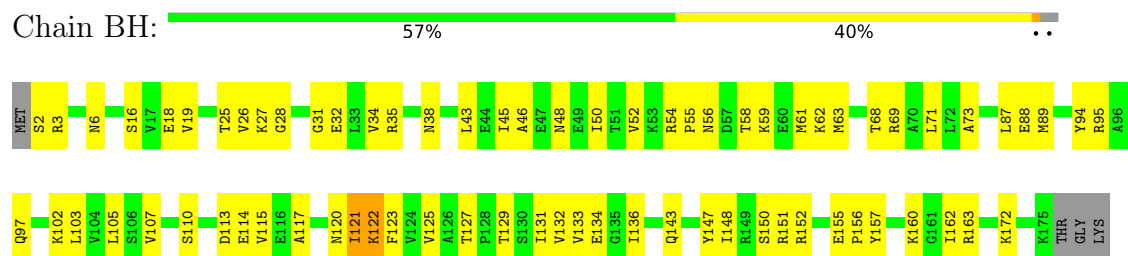
• Molecule 35: 50S ribosomal protein L4



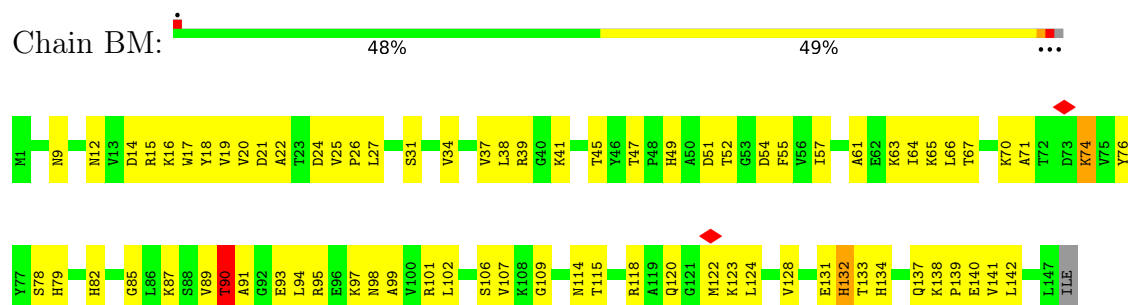
- Molecule 36: 50S ribosomal protein L5



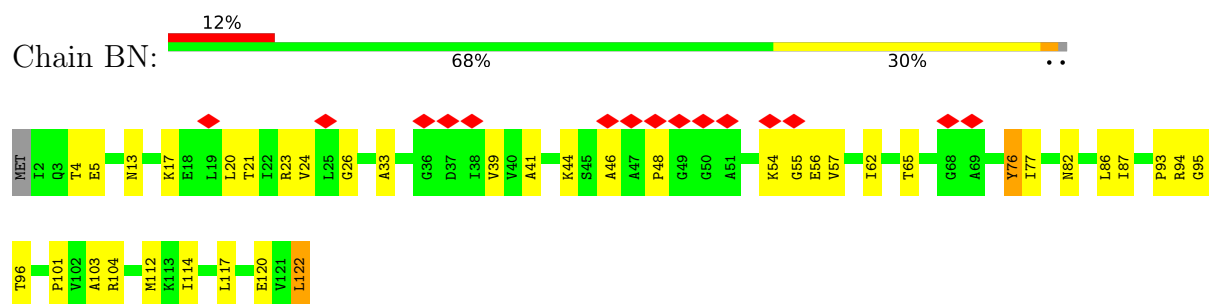
- Molecule 37: 50S ribosomal protein L6



- Molecule 38: 50S ribosomal protein L13

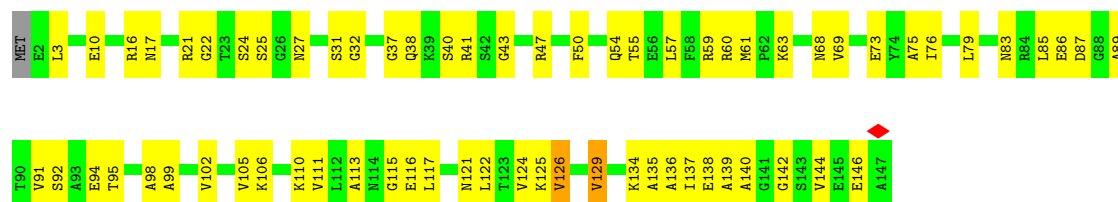


- Molecule 39: 50S ribosomal protein L14

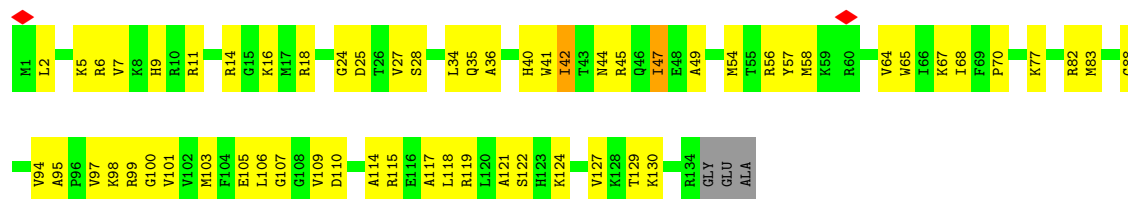


- Molecule 40: 50S ribosomal protein L15

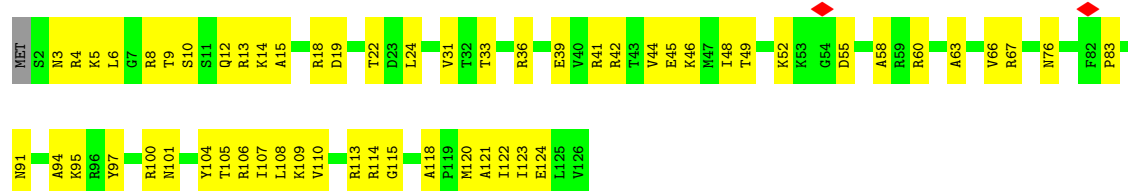




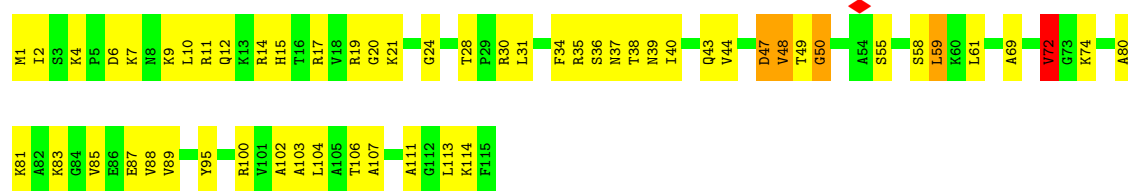
- Molecule 41: 50S ribosomal protein L16



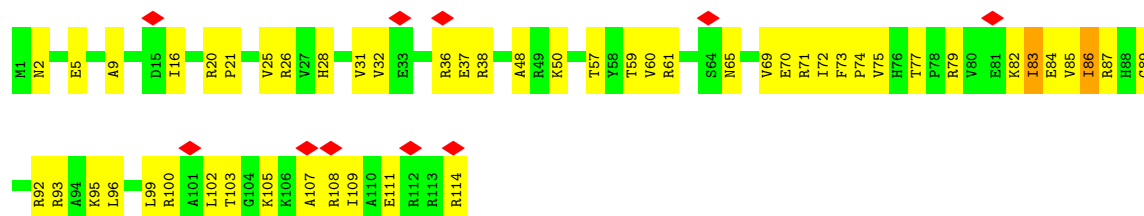
- Molecule 42: 50S ribosomal protein L17



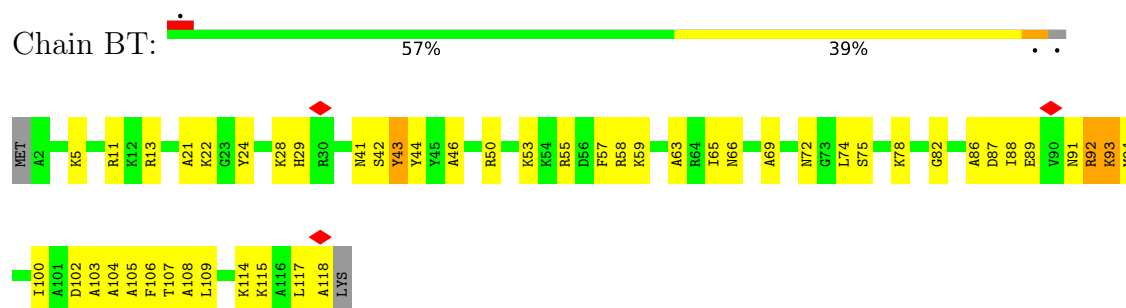
- Molecule 43: 50S ribosomal protein L18



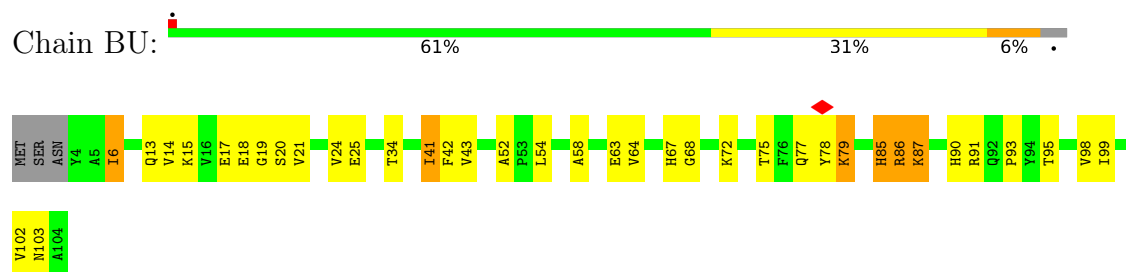
- Molecule 44: 50S ribosomal protein L19



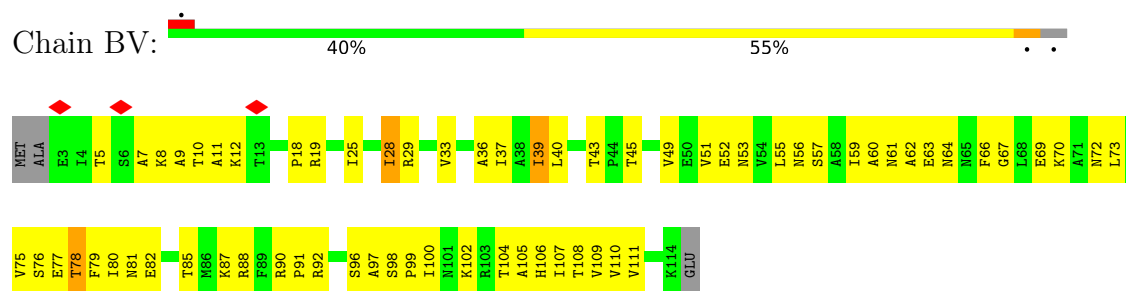
- Molecule 45: 50S ribosomal protein L20



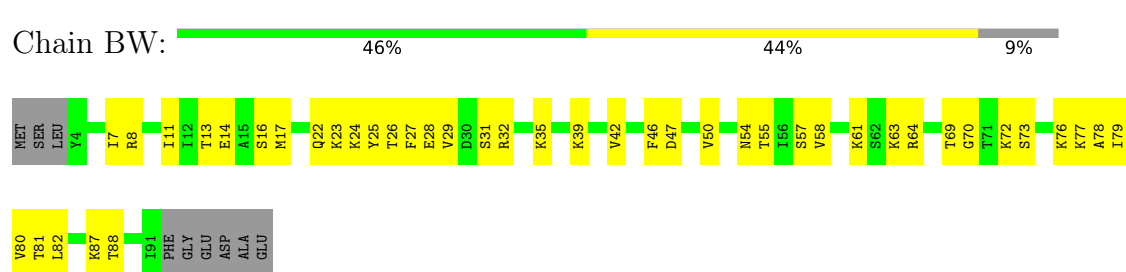
- Molecule 46: 50S ribosomal protein L21



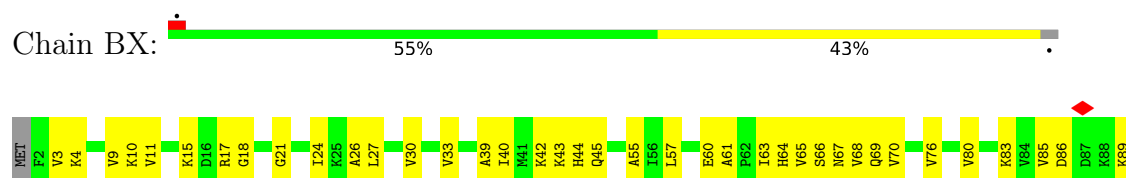
- Molecule 47: 50S ribosomal protein L22



- Molecule 48: 50S ribosomal protein L23



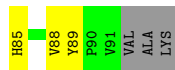
- Molecule 49: 50S ribosomal protein L24





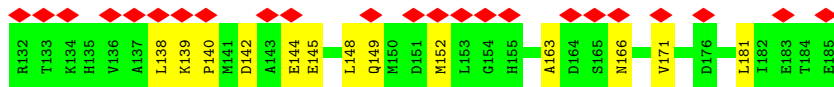
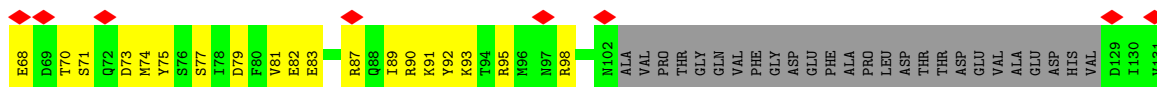
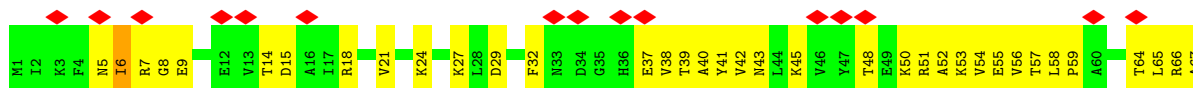
- Molecule 50: 50S ribosomal protein L27

Chain BZ: 48% 32% 20%



- Molecule 51: Ribosome hibernation promotion factor

Chain A: 25% 49% 36% 14%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	43530	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	25	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.161	Depositor
Minimum map value	-0.064	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.035	Depositor
Map size ($\text{\AA}$)	663.0, 663.0, 663.0	wwPDB
Map dimensions	600, 600, 600	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.105, 1.105, 1.105	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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	0.32	0/36854	0.52	1/57482 (0.0%)
2	AB	0.27	0/1805	0.67	3/2442 (0.1%)
3	AC	0.26	0/1674	0.66	2/2259 (0.1%)
4	AD	0.28	0/1639	0.67	0/2205
5	AE	0.27	0/1143	0.64	0/1540
6	AF	0.36	0/809	0.83	0/1089
7	AG	0.28	0/1224	0.66	0/1649
8	AH	0.26	0/1020	0.60	0/1374
9	AI	0.28	0/995	0.84	4/1334 (0.3%)
10	AJ	0.27	0/805	0.72	0/1084
11	AK	0.33	0/870	0.71	2/1175 (0.2%)
12	AL	0.29	0/1070	0.74	0/1433
13	AM	0.37	0/880	0.92	2/1176 (0.2%)
14	AN	0.26	0/479	0.67	0/637
15	AO	0.27	0/718	0.70	0/958
16	AP	0.26	0/699	0.60	0/938
17	AQ	0.29	0/684	0.72	0/915
18	AR	0.34	0/554	0.87	0/740
19	AS	0.29	0/676	0.70	0/911
20	AT	0.28	0/545	0.68	0/723
21	AU	0.29	0/443	0.65	0/583
22	B0	0.36	0/483	0.80	0/649
23	B1	0.39	0/534	1.06	1/713 (0.1%)
24	B2	0.35	0/427	0.75	0/575
25	B3	0.38	0/659	1.00	4/888 (0.5%)
26	B4	0.38	0/447	0.68	0/599
27	B5	0.37	0/368	0.81	0/489
28	B6	0.42	0/366	0.85	0/481
29	B7	0.38	0/538	0.96	0/704
30	B8	0.34	0/297	0.78	0/396
31	BA	0.40	0/69612	0.54	3/108576 (0.0%)
32	BB	0.37	0/2746	0.52	0/4278
33	BD	0.39	0/2071	0.91	5/2789 (0.2%)
34	BE	0.46	1/1544 (0.1%)	0.92	6/2079 (0.3%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	BF	0.37	0/1586	0.86	2/2145 (0.1%)
36	BG	0.43	1/1385 (0.1%)	1.03	6/1866 (0.3%)
37	BH	0.32	0/1317	0.79	2/1776 (0.1%)
38	BM	0.36	0/1147	0.83	0/1549
39	BN	0.36	0/904	0.80	0/1215
40	BO	0.36	0/1072	0.81	0/1430
41	BP	0.36	0/1084	0.67	0/1450
42	BQ	0.36	0/998	0.85	0/1338
43	BR	0.38	0/881	0.92	4/1184 (0.3%)
44	BS	0.34	0/935	0.75	0/1255
45	BT	0.43	0/958	0.88	3/1273 (0.2%)
46	BU	0.43	0/796	1.03	3/1070 (0.3%)
47	BV	0.36	0/862	0.86	1/1164 (0.1%)
48	BW	0.31	0/697	0.60	0/935
49	BX	0.37	0/755	0.90	0/1013
50	BZ	0.33	0/570	0.74	0/760
51	A	0.29	0/1138	0.70	0/1538
All	All	0.37	2/152763 (0.0%)	0.61	54/228824 (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
2	AB	0	1
3	AC	0	1
4	AD	0	2
6	AF	0	1
9	AI	0	1
10	AJ	0	1
11	AK	0	2
13	AM	0	4
14	AN	0	2
19	AS	0	3
22	B0	0	1
23	B1	0	3
24	B2	0	2
25	B3	0	3
26	B4	0	1
27	B5	0	1
33	BD	0	4

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Mol	Chain	#Chirality outliers	#Planarity outliers
34	BE	0	4
35	BF	0	2
36	BG	0	3
37	BH	0	1
38	BM	0	4
39	BN	0	2
43	BR	0	2
44	BS	0	1
45	BT	0	1
46	BU	0	4
47	BV	0	2
48	BW	0	1
49	BX	0	1
All	All	0	61

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
34	BE	75	THR	C-N	6.95	1.42	1.33
36	BG	84	MET	C-N	5.67	1.38	1.33

All (54) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	BU	86	ARG	N-CA-C	10.40	126.40	109.96
43	BR	72	VAL	N-CA-C	-8.38	103.06	111.77
36	BG	90	VAL	CA-C-N	8.09	136.26	121.70
36	BG	90	VAL	C-N-CA	8.09	136.26	121.70
13	AM	41	GLU	CA-C-N	7.39	135.00	121.70
13	AM	41	GLU	C-N-CA	7.39	135.00	121.70
46	BU	77	GLN	CA-C-N	7.19	135.27	121.54
46	BU	77	GLN	C-N-CA	7.19	135.27	121.54
33	BD	119	GLY	CA-C-N	6.32	142.18	127.00
33	BD	119	GLY	C-N-CA	6.32	142.18	127.00
3	AC	61	ASN	CA-C-N	5.99	132.99	121.54
3	AC	61	ASN	C-N-CA	5.99	132.99	121.54
31	BA	1313	A	P-O3'-C3'	5.90	129.05	120.20
9	AI	104	LEU	CA-C-N	5.88	132.77	121.54
9	AI	104	LEU	C-N-CA	5.88	132.77	121.54
36	BG	23	TYR	CA-C-N	5.84	132.70	121.54
36	BG	23	TYR	C-N-CA	5.84	132.70	121.54
43	BR	59	LEU	CA-CB-CG	5.75	136.41	116.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	B3	8	ASN	CA-C-N	5.72	132.46	121.54
25	B3	8	ASN	C-N-CA	5.72	132.46	121.54
33	BD	119	GLY	C-N-CD	-5.71	108.04	120.60
36	BG	152	GLY	CA-C-O	-5.70	117.05	122.13
35	BF	19	LEU	CA-C-N	5.70	131.96	121.70
35	BF	19	LEU	C-N-CA	5.70	131.96	121.70
11	AK	36	HIS	CA-C-N	5.68	131.92	121.70
11	AK	36	HIS	C-N-CA	5.68	131.92	121.70
43	BR	50	GLY	CA-C-N	5.62	130.13	121.19
43	BR	50	GLY	C-N-CA	5.62	130.13	121.19
9	AI	42	ALA	CA-C-N	5.53	132.10	121.54
9	AI	42	ALA	C-N-CA	5.53	132.10	121.54
47	BV	49	VAL	N-CA-C	-5.50	106.34	111.45
23	B1	36	ARG	N-CA-C	-5.48	102.17	110.28
45	BT	42	SER	CA-C-N	-5.45	113.55	122.54
45	BT	42	SER	C-N-CA	-5.45	113.55	122.54
31	BA	1285	U	P-O3'-C3'	5.43	128.34	120.20
1	AA	590	G	P-O3'-C3'	5.42	128.32	120.20
2	AB	23	TRP	CA-C-N	-5.36	112.09	122.70
2	AB	23	TRP	C-N-CA	-5.36	112.09	122.70
33	BD	72	ASP	CA-C-N	5.25	129.86	122.46
33	BD	72	ASP	C-N-CA	5.25	129.86	122.46
37	BH	48	ASN	CA-C-N	5.22	130.76	122.10
37	BH	48	ASN	C-N-CA	5.22	130.76	122.10
36	BG	17	LEU	CA-CB-CG	5.15	134.34	116.30
25	B3	60	GLY	CA-C-N	5.14	131.35	121.54
25	B3	60	GLY	C-N-CA	5.14	131.35	121.54
34	BE	53	PHE	CA-C-N	5.10	131.28	121.54
34	BE	53	PHE	C-N-CA	5.10	131.28	121.54
2	AB	28	LYS	N-CA-C	5.09	121.07	109.81
31	BA	1313	A	C4'-C3'-O3'	5.08	117.02	109.40
34	BE	170	GLN	CA-C-N	5.05	131.19	121.54
34	BE	170	GLN	C-N-CA	5.05	131.19	121.54
34	BE	70	ALA	CA-C-N	5.01	131.11	121.54
34	BE	70	ALA	C-N-CA	5.01	131.11	121.54
45	BT	43	TYR	CA-CB-CG	5.00	122.91	113.90

There are no chirality outliers.

All (61) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	AB	4	ILE	Peptide

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Mol	Chain	Res	Type	Group
3	AC	207	LEU	Peptide
4	AD	187	ASN	Peptide
4	AD	201	LYS	Peptide
6	AF	51	GLU	Peptide
9	AI	5	GLN	Peptide
10	AJ	9	ARG	Peptide
11	AK	123	LYS	Peptide
11	AK	32	ILE	Peptide
13	AM	24	GLY	Peptide
13	AM	26	GLY	Peptide
13	AM	68	ASP	Peptide
13	AM	98	ARG	Peptide
14	AN	31	HIS	Peptide
14	AN	48	ALA	Peptide
19	AS	34	TRP	Peptide
19	AS	35	SER	Peptide
19	AS	81	ARG	Mainchain
22	B0	41	ASN	Peptide
23	B1	10	LEU	Peptide
23	B1	16	LEU	Peptide
23	B1	35	LEU	Peptide
24	B2	42	ALA	Peptide
24	B2	43	ILE	Peptide
25	B3	1	MET	Peptide
25	B3	16	ASP	Peptide
25	B3	8	ASN	Peptide
26	B4	47	TYR	Peptide
27	B5	20	ASN	Peptide
33	BD	102	SER	Peptide
33	BD	141	ILE	Peptide
33	BD	155	VAL	Peptide
33	BD	25	THR	Peptide
34	BE	105	VAL	Peptide
34	BE	121	ILE	Peptide
34	BE	54	ASP	Peptide
34	BE	71	LYS	Peptide
35	BF	145	ALA	Peptide
35	BF	148	ILE	Peptide
36	BG	81	ARG	Peptide
36	BG	89	LYS	Peptide
36	BG	90	VAL	Peptide
37	BH	122	LYS	Peptide

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Mol	Chain	Res	Type	Group
38	BM	131	GLU	Peptide
38	BM	21	ASP	Peptide
38	BM	74	LYS	Peptide
38	BM	90	THR	Peptide
39	BN	76	TYR	Peptide
39	BN	77	ILE	Peptide
43	BR	47	ASP	Peptide
43	BR	50	GLY	Peptide
44	BS	21	PRO	Peptide
45	BT	92	ARG	Peptide
46	BU	41	ILE	Peptide
46	BU	79	LYS	Peptide
46	BU	85	HIS	Peptide
46	BU	87	LYS	Peptide
47	BV	28	ILE	Peptide
47	BV	78	THR	Peptide
48	BW	55	THR	Peptide
49	BX	86	ASP	Peptide

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	AA	32911	0	16551	939	0
2	AB	1774	0	1820	85	0
3	AC	1648	0	1704	81	0
4	AD	1610	0	1632	98	0
5	AE	1133	0	1205	50	0
6	AF	797	0	795	36	0
7	AG	1207	0	1235	63	0
8	AH	1009	0	1068	47	0
9	AI	983	0	1025	61	0
10	AJ	794	0	841	49	0
11	AK	857	0	886	46	0
12	AL	1054	0	1141	39	0
13	AM	873	0	912	70	0
14	AN	471	0	499	25	0
15	AO	708	0	737	33	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
16	AP	688	0	716	32	0
17	AQ	675	0	704	28	0
18	AR	549	0	599	27	0
19	AS	660	0	658	36	0
20	AT	542	0	577	27	0
21	AU	440	0	448	14	0
22	B0	477	0	503	18	0
23	B1	533	0	572	25	0
24	B2	424	0	471	20	0
25	B3	642	0	620	31	0
26	B4	437	0	444	17	0
27	B5	365	0	389	14	0
28	B6	362	0	400	31	0
29	B7	530	0	573	28	0
30	B8	292	0	320	15	0
31	BA	62143	0	31234	1426	0
32	BB	2455	0	1236	59	0
33	BD	2041	0	2142	105	0
34	BE	1522	0	1608	72	0
35	BF	1563	0	1606	78	0
36	BG	1367	0	1417	62	0
37	BH	1303	0	1343	56	0
38	BM	1127	0	1176	52	0
39	BN	895	0	951	29	0
40	BO	1066	0	1109	60	0
41	BP	1061	0	1111	48	0
42	BQ	990	0	1037	52	0
43	BR	872	0	911	52	0
44	BS	923	0	983	41	0
45	BT	945	0	1012	40	0
46	BU	783	0	818	32	0
47	BV	853	0	915	57	0
48	BW	689	0	738	33	0
49	BX	747	0	808	32	0
50	BZ	562	0	567	29	0
51	A	1128	0	992	94	0
All	All	140480	0	93759	4036	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 19.

All (4036) 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)
1:AA:1439:G:N2	1:AA:1475:A:N7	1.81	1.28
31:BA:1487:A:C2	31:BA:2706:G:N1	2.06	1.23
2:AB:207:ILE:HD11	51:A:144:GLU:O	1.48	1.11
2:AB:207:ILE:CD1	51:A:145:GLU:HA	1.84	1.07
31:BA:2312:G:N1	31:BA:2315:A:C2	2.22	1.06
2:AB:207:ILE:HD11	51:A:145:GLU:HA	1.38	1.04
51:A:55:GLU:HA	51:A:67:ALA:O	1.58	1.04
2:AB:207:ILE:CG1	51:A:145:GLU:HA	1.89	1.02
1:AA:304:U:H3	1:AA:309:G:H1	1.08	1.02
31:BA:989:G:H1	31:BA:998:U:H3	1.03	1.02
33:BD:77:LYS:O	33:BD:94:ILE:HA	1.59	1.02
1:AA:466:G:H1	1:AA:484:U:H3	1.07	1.01
1:AA:840:G:O6	1:AA:862:U:C4	2.14	1.01
31:BA:1911:G:H1	31:BA:1927:U:H3	1.03	1.01
31:BA:604:A:N6	31:BA:2033:G:H21	1.59	1.01
6:AF:6:ILE:HA	6:AF:91:MET:O	1.59	1.00
5:AE:37:ALA:HA	5:AE:54:GLY:O	1.61	1.00
6:AF:8:TYR:HA	6:AF:89:ARG:O	1.61	1.00
31:BA:604:A:H61	31:BA:2033:G:N2	1.58	1.00
31:BA:2854:U:H3	31:BA:2859:G:H1	1.09	1.00
33:BD:172:THR:O	33:BD:183:MET:HA	1.60	1.00
31:BA:898:A:H62	31:BA:953:G:H21	1.00	1.00
1:AA:1254:U:H3	1:AA:1298:C:N4	1.60	0.99
1:AA:1457:G:H21	1:AA:1460:A:N6	1.61	0.99
2:AB:162:TYR:HA	2:AB:184:VAL:O	1.62	0.99
1:AA:330:C:N4	1:AA:337:A:H62	1.59	0.99
31:BA:1693:A:H61	31:BA:2000:C:N4	1.60	0.99
1:AA:109:A:N6	1:AA:332:G:N3	2.10	0.98
27:B5:32:VAL:O	27:B5:45:HIS:HB2	1.63	0.98
47:BV:10:THR:HA	47:BV:107:ILE:O	1.62	0.98
37:BH:102:LYS:HA	37:BH:115:VAL:O	1.63	0.98
1:AA:1452:U:H3	1:AA:1464:G:H1	1.01	0.98
3:AC:55:GLU:O	3:AC:66:THR:HB	1.63	0.98
1:AA:986:A:C2	1:AA:1323:G:N2	2.31	0.98
4:AD:167:SER:O	4:AD:175:GLY:HA2	1.61	0.98
31:BA:2808:A:H62	31:BA:2888:G:N2	1.60	0.98
31:BA:1235:C:N4	31:BA:1272:U:H3	1.61	0.97
2:AB:75:GLN:HE22	51:A:152:MET:HA	1.25	0.97
1:AA:950:G:H1	1:AA:1348:U:H3	1.04	0.97
1:AA:1127:U:H3	1:AA:1161:G:H1	1.09	0.97
4:AD:193:ALA:O	4:AD:197:GLU:HB2	1.62	0.97
2:AB:38:ILE:HD11	51:A:163:ALA:CB	1.95	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:974:G:N7	51:A:66:ARG:NH1	2.13	0.97
47:BV:8:LYS:HA	47:BV:109:VAL:O	1.64	0.96
13:AM:68:ASP:O	13:AM:72:GLU:HB2	1.64	0.96
31:BA:1487:A:H2	31:BA:2706:G:H1	1.02	0.96
31:BA:1441:G:H21	31:BA:1615:A:N6	1.63	0.96
32:BB:9:U:H3	32:BB:107:G:H1	1.03	0.96
36:BG:8:LYS:O	36:BG:12:GLU:HB2	1.66	0.96
9:AI:20:ARG:HB2	9:AI:64:LEU:O	1.65	0.95
33:BD:129:ALA:HA	33:BD:190:ALA:O	1.66	0.95
3:AC:188:ALA:O	3:AC:194:LYS:HA	1.67	0.95
1:AA:70:G:N2	1:AA:101:A:H62	1.64	0.95
1:AA:330:C:H42	1:AA:337:A:N6	1.61	0.95
31:BA:1388:A:H62	31:BA:1401:U:H3	0.97	0.95
15:AO:35:GLU:O	15:AO:39:LEU:HB2	1.67	0.95
31:BA:1507:G:H1	31:BA:1540:A:H61	1.11	0.94
44:BS:61:ARG:HA	44:BS:69:VAL:O	1.66	0.94
31:BA:2300:U:H3	31:BA:2339:A:H62	1.07	0.94
1:AA:623:G:H1	1:AA:635:U:H3	0.95	0.94
3:AC:186:GLU:O	3:AC:196:GLY:HA2	1.66	0.94
31:BA:1796:U:H3	31:BA:1827:G:H1	1.16	0.94
31:BA:2808:A:H62	31:BA:2888:G:H21	1.00	0.94
1:AA:593:G:H1	1:AA:765:U:H3	1.16	0.94
1:AA:1008:U:H3	1:AA:1048:G:H1	1.10	0.94
16:AP:8:THR:O	16:AP:18:TYR:HA	1.68	0.94
31:BA:568:U:H3	31:BA:591:G:H1	1.00	0.94
31:BA:1441:G:H21	31:BA:1615:A:H61	1.06	0.94
34:BE:49:THR:O	34:BE:82:GLU:HA	1.65	0.94
46:BU:68:GLY:O	46:BU:93:PRO:HA	1.68	0.94
47:BV:87:LYS:HA	47:BV:100:ILE:O	1.67	0.94
2:AB:207:ILE:HD11	51:A:144:GLU:C	1.93	0.93
38:BM:79:HIS:HA	38:BM:85:GLY:O	1.67	0.93
31:BA:898:A:H62	31:BA:953:G:N2	1.65	0.93
31:BA:2656:U:H3	31:BA:2672:G:H1	1.09	0.93
1:AA:1317:U:H3	1:AA:1334:A:N6	1.68	0.92
35:BF:126:VAL:HB	35:BF:195:VAL:O	1.69	0.92
1:AA:158:U:H3	1:AA:165:G:H1	1.01	0.92
17:AQ:21:THR:HA	17:AQ:47:ALA:O	1.67	0.92
31:BA:2751:G:N3	31:BA:2761:A:N6	2.16	0.92
3:AC:57:GLU:HB2	3:AC:64:ILE:O	1.69	0.92
40:BO:134:LYS:O	40:BO:138:GLU:HB2	1.69	0.92
6:AF:7:LEU:O	6:AF:90:HIS:HA	1.70	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:481:G:H21	31:BA:489:A:N6	1.67	0.92
44:BS:26:ARG:O	44:BS:83:ILE:HA	1.70	0.92
1:AA:152:A:H62	1:AA:171:U:H3	0.92	0.91
1:AA:258:A:N6	1:AA:282:A:C2	2.38	0.91
7:AG:103:LEU:O	7:AG:107:ALA:HB3	1.69	0.91
33:BD:130:LEU:O	33:BD:190:ALA:HB3	1.71	0.91
31:BA:1487:A:H2	31:BA:2706:G:N1	1.56	0.91
31:BA:673:U:H3	31:BA:683:G:H1	0.98	0.90
1:AA:894:G:H1	1:AA:919:U:H3	0.97	0.90
47:BV:60:ALA:O	47:BV:64:ASN:HB2	1.70	0.90
4:AD:68:PHE:O	4:AD:72:TYR:HB2	1.72	0.90
1:AA:1439:G:N2	1:AA:1475:A:C8	2.39	0.90
31:BA:1441:G:N2	31:BA:1615:A:H61	1.69	0.90
31:BA:1558:A:H62	31:BA:1573:G:N2	1.68	0.90
31:BA:2751:G:H21	31:BA:2761:A:H62	1.17	0.90
1:AA:1317:U:H3	1:AA:1334:A:H62	0.93	0.90
1:AA:28:A:N6	1:AA:567:G:N3	2.20	0.90
31:BA:898:A:N6	31:BA:953:G:H21	1.69	0.90
31:BA:1693:A:N6	31:BA:2000:C:H42	1.70	0.90
38:BM:19:VAL:O	38:BM:141:VAL:HA	1.72	0.89
31:BA:892:G:H1	31:BA:959:U:H3	0.93	0.89
31:BA:1558:A:H62	31:BA:1573:G:H21	1.06	0.89
1:AA:418:G:H21	1:AA:440:A:H62	1.13	0.89
31:BA:632:G:H1	31:BA:692:U:H3	0.92	0.89
2:AB:207:ILE:HD11	51:A:145:GLU:CA	2.03	0.89
31:BA:1451:G:H1	31:BA:1606:U:H3	1.16	0.89
31:BA:1693:A:H61	31:BA:2000:C:H42	0.89	0.89
47:BV:7:ALA:O	47:BV:110:VAL:HA	1.73	0.89
31:BA:1916:A:N6	31:BA:1921:U:H3	1.71	0.88
31:BA:1507:G:H1	31:BA:1540:A:N6	1.71	0.88
5:AE:15:GLU:HB2	5:AE:43:GLY:O	1.72	0.88
4:AD:112:ARG:O	4:AD:116:ASN:HB2	1.72	0.88
1:AA:602:U:H3	1:AA:654:G:H1	0.89	0.88
31:BA:131:G:H1	31:BA:145:U:H3	0.89	0.88
4:AD:111:ALA:O	4:AD:115:VAL:HB	1.74	0.88
4:AD:192:ASP:O	4:AD:196:VAL:HB	1.72	0.88
31:BA:1916:A:H62	31:BA:1921:U:H3	0.88	0.88
1:AA:935:G:H1	1:AA:1397:U:H3	1.22	0.87
41:BP:35:GLN:O	41:BP:129:THR:HA	1.72	0.87
22:B0:13:VAL:O	22:B0:29:VAL:HB	1.74	0.87
3:AC:53:LEU:O	3:AC:68:HIS:HB2	1.73	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1533:G:N7	21:AU:40:LYS:NZ	2.22	0.87
41:BP:34:LEU:HA	41:BP:130:LYS:O	1.73	0.87
31:BA:1388:A:N6	31:BA:1401:U:H3	1.73	0.87
31:BA:2518:U:H3	31:BA:2574:G:H1	0.87	0.87
1:AA:418:G:N2	1:AA:440:A:H62	1.72	0.87
2:AB:138:ASN:O	2:AB:142:GLU:HB2	1.74	0.86
31:BA:1076:U:H3	31:BA:1149:G:H1	1.21	0.86
2:AB:207:ILE:HG13	51:A:145:GLU:HA	1.57	0.86
4:AD:9:TRP:O	4:AD:13:ARG:HB2	1.75	0.86
31:BA:1388:A:N6	31:BA:1401:U:O2	2.08	0.86
1:AA:274:G:H1	1:AA:279:C:N4	1.73	0.86
2:AB:75:GLN:NE2	51:A:152:MET:HA	1.91	0.86
1:AA:1541:A:OP1	21:AU:54:LYS:NZ	2.09	0.86
2:AB:38:ILE:HD11	51:A:163:ALA:HB2	1.58	0.86
9:AI:96:SER:O	9:AI:100:ARG:HB2	1.75	0.86
34:BE:63:LYS:O	34:BE:67:GLY:HA3	1.74	0.86
31:BA:1558:A:N6	31:BA:1573:G:H21	1.72	0.86
1:AA:418:G:H21	1:AA:440:A:N6	1.71	0.85
1:AA:274:G:H1	1:AA:279:C:H42	1.22	0.85
1:AA:1167:G:H1	1:AA:1183:A:H61	1.21	0.85
1:AA:1167:G:H1	1:AA:1183:A:N6	1.74	0.85
37:BH:105:LEU:O	37:BH:113:ASP:HB3	1.76	0.85
2:AB:137:LEU:O	2:AB:141:ARG:HB2	1.76	0.85
36:BG:169:GLU:O	36:BG:173:LYS:HB2	1.76	0.85
8:AH:15:ARG:O	8:AH:19:MET:HB2	1.75	0.85
31:BA:242:U:N3	31:BA:254:A:C8	2.44	0.85
31:BA:727:C:OP1	33:BD:39:LYS:NZ	2.09	0.85
34:BE:27:VAL:HA	34:BE:184:ILE:O	1.77	0.85
1:AA:1445:G:H1	1:AA:1470:U:H3	0.87	0.85
36:BG:56:ALA:O	36:BG:60:LEU:HB2	1.76	0.85
1:AA:152:A:N6	1:AA:171:U:H3	1.74	0.85
33:BD:175:ARG:HA	33:BD:180:GLU:O	1.77	0.84
47:BV:62:ALA:O	47:BV:66:PHE:HB2	1.78	0.84
1:AA:330:C:H42	1:AA:337:A:H62	0.85	0.84
2:AB:75:GLN:NE2	51:A:152:MET:CB	2.40	0.84
41:BP:54:MET:O	41:BP:58:MET:HB2	1.76	0.84
3:AC:183:TYR:HA	3:AC:199:VAL:O	1.77	0.84
2:AB:75:GLN:HE22	51:A:152:MET:CA	1.89	0.84
31:BA:604:A:H61	31:BA:2033:G:H21	0.87	0.84
31:BA:2751:G:N2	31:BA:2761:A:H62	1.74	0.84
2:AB:207:ILE:CD1	51:A:144:GLU:O	2.26	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:BH:103:LEU:O	37:BH:114:GLU:HA	1.76	0.84
30:B8:3:VAL:HA	30:B8:36:ARG:O	1.78	0.83
31:BA:729:U:H3	31:BA:803:G:H1	1.24	0.83
51:A:39:THR:O	51:A:56:VAL:HA	1.78	0.83
1:AA:842:A:N1	1:AA:860:U:C4	2.46	0.83
8:AH:107:SER:O	8:AH:125:GLY:HA3	1.77	0.83
31:BA:1082:G:N2	31:BA:1146:A:H62	1.77	0.83
43:BR:30:ARG:HA	43:BR:89:VAL:O	1.78	0.83
1:AA:72:U:N3	1:AA:98:A:C6	2.47	0.83
31:BA:2148:G:N2	31:BA:2151:A:C8	2.46	0.83
31:BA:2808:A:N6	31:BA:2888:G:H21	1.77	0.83
1:AA:149:G:H1	1:AA:175:A:N6	1.77	0.82
44:BS:60:VAL:O	44:BS:70:GLU:HA	1.77	0.82
31:BA:1245:G:H1	31:BA:1264:U:H3	0.85	0.82
8:AH:16:ASN:O	8:AH:20:ARG:HB2	1.79	0.82
10:AJ:8:ILE:O	10:AJ:73:LEU:HA	1.78	0.82
1:AA:1317:U:O2	1:AA:1334:A:N6	2.12	0.82
46:BU:24:VAL:O	46:BU:95:THR:HB	1.79	0.82
43:BR:30:ARG:O	43:BR:44:VAL:HA	1.80	0.82
1:AA:427:U:H3	1:AA:432:G:H1	1.25	0.82
3:AC:152:VAL:HA	3:AC:196:GLY:O	1.80	0.82
30:B8:17:ILE:O	30:B8:23:VAL:HA	1.80	0.82
31:BA:410:G:H1	31:BA:434:U:H3	1.26	0.82
42:BQ:105:THR:HA	42:BQ:124:GLU:O	1.80	0.82
9:AI:18:ARG:O	9:AI:66:ASN:HB3	1.80	0.82
31:BA:740:A:C8	31:BA:761:G:N2	2.47	0.82
1:AA:693:G:N2	1:AA:714:A:C6	2.48	0.82
3:AC:83:VAL:O	3:AC:87:ARG:HB2	1.80	0.81
19:AS:50:ALA:HA	19:AS:58:VAL:O	1.80	0.81
47:BV:11:ALA:O	47:BV:106:HIS:HA	1.81	0.81
2:AB:75:GLN:NE2	51:A:152:MET:CA	2.43	0.81
45:BT:102:ASP:O	45:BT:106:PHE:HB3	1.80	0.81
5:AE:36:PHE:HB3	5:AE:56:ALA:O	1.81	0.81
3:AC:113:HIS:O	3:AC:117:GLU:HB2	1.78	0.81
42:BQ:110:VAL:HB	42:BQ:120:MET:O	1.80	0.80
1:AA:693:G:N2	1:AA:714:A:N6	2.29	0.80
3:AC:185:TRP:HA	3:AC:197:VAL:O	1.81	0.80
31:BA:1083:A:C8	31:BA:1145:G:N2	2.49	0.80
1:AA:70:G:C2	1:AA:101:A:N6	2.50	0.80
33:BD:174:VAL:O	33:BD:181:VAL:HA	1.80	0.80
16:AP:10:MET:O	16:AP:17:PHE:HB3	1.82	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1857:G:H1	31:BA:1891:U:H3	0.84	0.79
9:AI:22:VAL:HB	9:AI:62:ASP:O	1.81	0.79
31:BA:1485:G:N2	31:BA:2708:C:C2	2.50	0.79
47:BV:36:ALA:O	47:BV:40:LEU:HB2	1.82	0.79
31:BA:715:U:H3	31:BA:832:G:H1	0.84	0.79
36:BG:168:ARG:O	36:BG:172:ALA:HB3	1.81	0.79
48:BW:42:VAL:O	48:BW:46:PHE:HB2	1.82	0.79
31:BA:742:G:H1	31:BA:759:U:H3	1.31	0.79
1:AA:847:G:N1	1:AA:856:U:C2	2.51	0.79
1:AA:620:G:H1	1:AA:638:U:H3	0.83	0.79
1:AA:1254:U:H3	1:AA:1298:C:H42	0.83	0.79
31:BA:226:A:H61	31:BA:445:G:H21	1.31	0.78
31:BA:2349:G:O6	31:BA:2375:G:N1	2.16	0.78
1:AA:119:A:N6	1:AA:295:U:O2	2.16	0.78
45:BT:104:ALA:O	45:BT:108:ALA:HB3	1.83	0.78
31:BA:481:G:N2	31:BA:489:A:N6	2.31	0.78
34:BE:50:GLN:HA	34:BE:81:ARG:O	1.83	0.78
1:AA:840:G:N1	1:AA:862:U:C2	2.52	0.78
41:BP:115:ARG:O	41:BP:119:ARG:HB2	1.83	0.78
14:AN:3:LYS:O	14:AN:7:VAL:HB	1.84	0.78
31:BA:1235:C:H42	31:BA:1272:U:H3	1.30	0.78
2:AB:38:ILE:HD11	51:A:163:ALA:HB1	1.64	0.77
10:AJ:9:ARG:HA	10:AJ:72:ARG:O	1.84	0.77
1:AA:1457:G:N2	1:AA:1460:A:C6	2.51	0.77
51:A:54:VAL:O	51:A:68:GLU:HA	1.84	0.77
1:AA:691:G:N1	1:AA:715:U:N3	2.31	0.77
1:AA:609:U:O2	1:AA:646:G:N1	2.17	0.77
31:BA:573:G:H1	31:BA:586:U:H3	0.82	0.77
51:A:58:LEU:HB2	51:A:65:LEU:O	1.84	0.77
1:AA:72:U:C2	1:AA:98:A:C6	2.73	0.76
1:AA:254:A:H62	1:AA:289:G:H21	1.33	0.76
31:BA:1385:G:H1	31:BA:1404:U:H3	1.31	0.76
31:BA:2300:U:H3	31:BA:2339:A:N6	1.83	0.76
47:BV:51:VAL:O	47:BV:55:LEU:HB2	1.85	0.76
7:AG:132:ALA:O	7:AG:136:LYS:HB2	1.85	0.76
1:AA:847:G:C6	1:AA:856:U:N3	2.54	0.76
6:AF:5:GLU:O	6:AF:92:ILE:HA	1.86	0.76
38:BM:118:ARG:O	38:BM:122:MET:HB2	1.86	0.76
1:AA:1011:U:H3	1:AA:1046:C:N4	1.83	0.76
29:B7:45:ARG:HH21	31:BA:2422:A:H5'	1.50	0.76
31:BA:79:G:H21	31:BA:378:A:H61	1.33	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:38:ILE:HG23	51:A:140:PRO:CB	2.15	0.76
31:BA:1929:C:H42	31:BA:1933:G:H22	1.34	0.76
35:BF:141:LYS:O	35:BF:145:ALA:HB2	1.86	0.76
1:AA:847:G:O6	1:AA:856:U:C4	2.39	0.75
31:BA:481:G:N2	31:BA:489:A:C6	2.54	0.75
31:BA:1864:G:H1	31:BA:1884:U:H3	1.32	0.75
1:AA:609:U:H3	1:AA:646:G:H1	1.30	0.75
35:BF:37:VAL:O	35:BF:41:ARG:HB2	1.86	0.75
1:AA:72:U:C2	1:AA:98:A:N6	2.54	0.75
7:AG:120:ALA:O	7:AG:124:LEU:HB3	1.87	0.75
34:BE:21:GLU:H	44:BS:79:ARG:HH22	1.32	0.75
31:BA:856:A:H62	31:BA:1007:G:N2	1.84	0.75
10:AJ:44:THR:HA	10:AJ:69:THR:O	1.86	0.75
29:B7:32:ARG:NH2	31:BA:2426:C:N3	2.35	0.75
38:BM:70:LYS:O	38:BM:74:LYS:HB2	1.87	0.75
35:BF:110:LEU:O	35:BF:114:TYR:HB2	1.87	0.74
2:AB:19:GLN:HG3	51:A:139:LYS:HA	1.68	0.74
1:AA:933:G:H1	1:AA:1398:U:H3	0.79	0.74
31:BA:1076:U:O2	31:BA:1149:G:N2	2.20	0.74
31:BA:2395:G:H3'	31:BA:2428:C:H42	1.51	0.74
47:BV:81:ASN:O	47:BV:105:ALA:HA	1.87	0.74
2:AB:38:ILE:HG23	51:A:140:PRO:N	2.02	0.74
10:AJ:15:HIS:H	10:AJ:70:HIS:HB2	1.52	0.74
51:A:91:LYS:O	51:A:95:ARG:NH1	2.19	0.74
13:AM:77:ILE:O	13:AM:80:LEU:C	2.31	0.74
33:BD:145:GLU:HG3	33:BD:154:LEU:HB2	1.70	0.74
1:AA:28:A:H62	1:AA:567:G:N2	1.86	0.73
10:AJ:47:SER:HB3	10:AJ:67:MET:O	1.88	0.73
1:AA:1012:G:N1	1:AA:1044:C:N3	2.36	0.73
1:AA:1317:U:C2	1:AA:1334:A:N6	2.56	0.73
31:BA:1487:A:N1	31:BA:2706:G:O6	2.22	0.73
41:BP:65:TRP:HB2	41:BP:105:GLU:HB2	1.69	0.73
46:BU:58:ALA:HA	46:BU:103:ASN:HB2	1.69	0.73
51:A:15:ASP:HA	51:A:18:ARG:HB2	1.69	0.73
1:AA:986:A:H2	1:AA:1323:G:H21	1.33	0.73
31:BA:775:G:N1	31:BA:792:U:O2	2.17	0.73
31:BA:1068:U:O4	31:BA:2754:A:C6	2.41	0.73
51:A:58:LEU:O	51:A:64:THR:HA	1.88	0.73
14:AN:4:LYS:O	14:AN:8:VAL:HB	1.88	0.73
2:AB:207:ILE:HG12	51:A:148:LEU:CB	2.19	0.73
31:BA:1941:A:H61	31:BA:1968:G:H21	1.36	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:691:G:N1	1:AA:715:U:C2	2.54	0.72
51:A:77:SER:O	51:A:81:VAL:HB	1.88	0.72
31:BA:1301:G:H22	31:BA:1644:C:N4	1.86	0.72
2:AB:139:LYS:O	2:AB:143:ARG:HB2	1.90	0.72
7:AG:92:PRO:HG3	7:AG:95:ARG:HH21	1.54	0.72
20:AT:45:ARG:O	20:AT:49:SER:HB3	1.89	0.72
33:BD:80:THR:O	33:BD:92:ALA:HA	1.89	0.72
1:AA:1502:U:O3'	51:A:27:LYS:NZ	2.23	0.72
13:AM:17:ILE:O	13:AM:21:TYR:HB2	1.89	0.72
31:BA:2512:G:H1	31:BA:2584:U:H3	1.37	0.72
1:AA:693:G:H5'	11:AK:40:LEU:HG	1.70	0.72
19:AS:52:TYR:H	19:AS:71:LEU:HD21	1.54	0.72
1:AA:72:U:N3	1:AA:98:A:C5	2.58	0.71
40:BO:135:ALA:O	40:BO:139:ALA:HB3	1.90	0.71
2:AB:211:LYS:O	2:AB:215:ALA:HB2	1.89	0.71
31:BA:734:A:H62	31:BA:768:G:H21	1.38	0.71
33:BD:16:MET:SD	33:BD:210:ARG:NH1	2.63	0.71
31:BA:1479:G:H1	31:BA:1488:U:H3	1.39	0.71
1:AA:1511:G:N3	1:AA:1512:G:N1	2.39	0.71
15:AO:6:GLU:O	15:AO:10:GLU:HB2	1.91	0.71
31:BA:242:U:C2	31:BA:254:A:N7	2.59	0.71
1:AA:840:G:C6	1:AA:862:U:C4	2.78	0.71
31:BA:1082:G:H21	31:BA:1146:A:N6	1.88	0.71
35:BF:136:THR:O	35:BF:140:ALA:HB2	1.91	0.70
36:BG:131:LEU:HB3	36:BG:155:ILE:O	1.91	0.70
51:A:24:LYS:HZ1	51:A:83:GLU:HG2	1.55	0.70
4:AD:8:SER:O	4:AD:12:SER:HB2	1.90	0.70
47:BV:62:ALA:O	47:BV:67:GLY:N	2.23	0.70
10:AJ:47:SER:O	10:AJ:66:GLU:HA	1.91	0.70
51:A:52:ALA:O	51:A:70:THR:HA	1.92	0.70
1:AA:1491:C:HO2'	31:BA:1964:A:HO2'	1.40	0.70
31:BA:310:U:N3	31:BA:313:A:C5	2.60	0.70
35:BF:152:VAL:HA	35:BF:192:LYS:O	1.91	0.70
39:BN:17:LYS:H	39:BN:46:ALA:HA	1.55	0.70
42:BQ:4:ARG:HD3	42:BQ:6:LEU:H	1.54	0.70
11:AK:79:THR:HA	11:AK:104:ASN:HB2	1.74	0.70
31:BA:911:G:H1	31:BA:940:U:H3	0.78	0.70
47:BV:76:SER:H	47:BV:111:VAL:HA	1.56	0.70
1:AA:119:A:N7	1:AA:295:U:O2	2.24	0.70
1:AA:691:G:H2'	11:AK:38:ASN:HD22	1.57	0.70
1:AA:680:U:H3	1:AA:742:G:H1	1.39	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:AG:121:LYS:O	7:AG:125:ASP:HB2	1.92	0.69
1:AA:1257:A:N7	1:AA:1294:A:N6	2.41	0.69
9:AI:80:ARG:O	9:AI:84:ALA:HB3	1.92	0.69
31:BA:1487:A:N1	31:BA:2706:G:C6	2.60	0.69
9:AI:16:VAL:O	9:AI:67:VAL:HA	1.92	0.69
1:AA:1011:U:N3	1:AA:1046:C:N4	2.41	0.69
31:BA:1399:C:H4'	33:BD:45:ASN:HD21	1.56	0.69
1:AA:693:G:C2	1:AA:714:A:N6	2.58	0.69
7:AG:26:ILE:O	7:AG:30:MET:HB3	1.92	0.69
1:AA:274:G:N1	1:AA:279:C:N4	2.40	0.69
2:AB:110:ARG:O	2:AB:114:LEU:HB2	1.92	0.69
1:AA:986:A:H2	1:AA:1323:G:N2	1.86	0.69
1:AA:1317:U:N3	1:AA:1334:A:N6	2.32	0.69
28:B6:34:ARG:NH1	31:BA:502:G:OP2	2.24	0.69
31:BA:1301:G:H22	31:BA:1644:C:H42	1.40	0.69
31:BA:1328:G:H22	31:BA:1669:C:H5'	1.58	0.69
31:BA:1485:G:N1	31:BA:2708:C:N3	2.40	0.69
34:BE:51:VAL:O	34:BE:80:VAL:HA	1.91	0.69
1:AA:1457:G:N2	1:AA:1460:A:C5	2.60	0.69
31:BA:1485:G:C2	31:BA:2708:C:C2	2.80	0.69
13:AM:56:ILE:HG12	13:AM:60:LEU:HB2	1.75	0.69
1:AA:1414:C:N3	1:AA:1502:U:O4	2.26	0.68
2:AB:144:LEU:O	2:AB:148:ILE:HA	1.91	0.68
31:BA:92:G:N3	31:BA:93:U:N3	2.41	0.68
31:BA:1203:A:N7	31:BA:1205:A:N6	2.42	0.68
1:AA:384:G:N1	1:AA:395:U:N3	2.40	0.68
31:BA:242:U:O2	31:BA:254:A:N7	2.27	0.68
31:BA:1516:G:N3	31:BA:1517:U:N3	2.38	0.68
9:AI:82:GLY:O	9:AI:86:ALA:HB2	1.93	0.68
13:AM:98:ARG:HB3	13:AM:100:GLN:HB2	1.76	0.68
31:BA:304:G:H1	31:BA:396:C:H2'	1.59	0.68
31:BA:1929:C:N4	31:BA:1933:G:H22	1.91	0.68
42:BQ:14:LYS:O	42:BQ:18:ARG:HB2	1.92	0.68
2:AB:19:GLN:CG	51:A:139:LYS:HA	2.23	0.68
1:AA:619:G:H1	1:AA:639:A:H2	1.39	0.68
40:BO:94:GLU:O	40:BO:98:ALA:HB3	1.93	0.68
1:AA:259:G:O6	1:AA:280:C:N4	2.27	0.68
1:AA:599:U:O2	1:AA:657:G:N2	2.26	0.68
1:AA:1432:A:H2	1:AA:1482:G:H1	1.41	0.68
15:AO:29:ILE:O	15:AO:33:THR:HB	1.93	0.68
31:BA:678:A:H61	31:BA:2353:G:H21	1.41	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1596:A:H1'	33:BD:213:HIS:HB3	1.76	0.68
42:BQ:113:ARG:HG2	42:BQ:115:GLY:H	1.58	0.68
31:BA:1409:G:H21	31:BA:1600:A:H2	1.41	0.68
31:BA:2312:G:H1	31:BA:2315:A:H2	1.35	0.68
49:BX:80:VAL:HA	49:BX:92:PHE:O	1.93	0.68
1:AA:1375:G:H5'	10:AJ:64:GLN:HE22	1.59	0.68
17:AQ:47:ALA:HB3	17:AQ:76:LEU:HD23	1.76	0.68
31:BA:377:A:N3	31:BA:379:A:N6	2.41	0.68
31:BA:2134:A:O2'	31:BA:2162:A:N6	2.26	0.68
33:BD:81:ILE:HA	33:BD:91:ILE:O	1.93	0.68
43:BR:35:ARG:HA	43:BR:40:ILE:HG22	1.76	0.68
11:AK:17:GLY:O	11:AK:81:SER:HB2	1.94	0.68
25:B3:21:TYR:HB3	36:BG:4:ARG:HH12	1.57	0.68
31:BA:2652:G:O6	31:BA:2676:U:C2	2.47	0.68
23:B1:24:ARG:HG3	23:B1:25:GLU:HG2	1.75	0.68
31:BA:1739:G:C6	31:BA:1751:A:N1	2.62	0.67
1:AA:1509:A:N7	1:AA:1512:G:N2	2.42	0.67
31:BA:1929:C:H42	31:BA:1933:G:N2	1.92	0.67
31:BA:2672:G:H1'	37:BH:110:SER:HB2	1.75	0.67
33:BD:120:PRO:HD3	33:BD:189:ARG:HH22	1.60	0.67
1:AA:384:G:N1	1:AA:395:U:C2	2.62	0.67
1:AA:1246:A:HO2'	1:AA:1304:U:H3	1.42	0.67
3:AC:147:GLY:O	3:AC:202:TYR:HB3	1.93	0.67
20:AT:72:LEU:O	20:AT:76:LEU:HB3	1.95	0.67
31:BA:1388:A:N6	31:BA:1401:U:C2	2.56	0.67
41:BP:110:ASP:O	41:BP:114:ALA:HB2	1.94	0.67
9:AI:50:GLN:HE22	9:AI:100:ARG:HH22	1.43	0.67
1:AA:508:A:N7	4:AD:4:TYR:N	2.43	0.67
5:AE:62:ALA:O	5:AE:66:ALA:HB2	1.95	0.67
12:AL:46:VAL:HG12	12:AL:69:ARG:HE	1.59	0.67
1:AA:28:A:H62	1:AA:567:G:H21	1.43	0.67
1:AA:899:U:O2	1:AA:915:A:N7	2.27	0.67
31:BA:226:A:H61	31:BA:445:G:N2	1.91	0.67
31:BA:1245:G:N2	31:BA:1264:U:O2	2.24	0.67
31:BA:1301:G:N1	31:BA:1644:C:N3	2.42	0.67
31:BA:1497:A:H2'	31:BA:1498:A:H8	1.59	0.67
43:BR:31:LEU:HA	43:BR:43:GLN:O	1.95	0.67
31:BA:1297:U:H2'	31:BA:1298:A:H8	1.59	0.67
31:BA:1729:A:H3'	31:BA:1730:A:H8	1.60	0.67
31:BA:2734:G:O2'	34:BE:170:GLN:NE2	2.28	0.67
34:BE:180:GLU:HG3	34:BE:181:LYS:HD3	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:131:G:N2	31:BA:145:U:O2	2.26	0.66
31:BA:2456:C:N3	31:BA:2508:U:O4	2.28	0.66
47:BV:90:ARG:HB3	47:BV:98:SER:O	1.94	0.66
1:AA:1432:A:N1	1:AA:1482:G:O6	2.28	0.66
1:AA:1439:G:C2	1:AA:1475:A:N7	2.62	0.66
6:AF:42:ASP:HA	6:AF:62:ILE:O	1.94	0.66
31:BA:411:G:H1	31:BA:433:U:H3	1.41	0.66
31:BA:626:U:H3	31:BA:698:G:H1	1.42	0.66
35:BF:139:PHE:O	35:BF:143:ILE:HB	1.94	0.66
31:BA:1445:G:N3	31:BA:1616:A:N1	2.44	0.66
32:BB:3:U:H1'	32:BB:24:U:H3	1.60	0.66
31:BA:1172:G:N2	38:BM:109:GLY:O	2.28	0.66
31:BA:2144:G:N2	31:BA:2155:U:O2'	2.29	0.66
35:BF:155:VAL:HB	35:BF:195:VAL:HA	1.78	0.66
45:BT:94:MET:H	46:BU:13:GLN:HE21	1.43	0.66
31:BA:2144:G:N2	31:BA:2145:G:N7	2.42	0.66
35:BF:103:GLN:HG3	35:BF:106:ARG:HH21	1.61	0.66
1:AA:258:A:N7	1:AA:282:A:N1	2.44	0.66
1:AA:1324:C:H41	14:AN:18:THR:HG1	1.38	0.66
7:AG:116:GLN:O	7:AG:120:ALA:HB2	1.94	0.66
9:AI:81:HIS:O	9:AI:85:ARG:HB3	1.96	0.66
31:BA:1922:A:O2'	31:BA:1923:A:N7	2.29	0.66
39:BN:20:LEU:HB3	39:BN:44:LYS:HZ1	1.60	0.66
42:BQ:24:LEU:HD11	42:BQ:44:VAL:HG11	1.77	0.66
50:BZ:36:GLY:HA2	50:BZ:75:VAL:H	1.61	0.66
1:AA:1538:A:N7	1:AA:1541:A:N6	2.44	0.66
3:AC:28:TYR:O	3:AC:32:LEU:HB2	1.96	0.66
31:BA:2519:C:H2'	31:BA:2520:G:H8	1.60	0.66
48:BW:7:ILE:HA	48:BW:29:VAL:HG12	1.76	0.66
1:AA:609:U:O2	1:AA:646:G:N2	2.28	0.66
1:AA:691:G:C6	1:AA:715:U:N3	2.63	0.66
2:AB:140:GLU:HA	2:AB:144:LEU:HD13	1.77	0.66
47:BV:88:ARG:O	47:BV:99:PRO:HA	1.96	0.66
1:AA:97:G:C8	1:AA:100:G:N1	2.64	0.66
1:AA:370:G:H5''	12:AL:44:ARG:HB3	1.77	0.66
1:AA:1311:G:O2'	1:AA:1340:A:N6	2.29	0.66
31:BA:181:A:N1	31:BA:214:G:O6	2.29	0.66
31:BA:1511:G:H1	31:BA:1532:U:H3	1.44	0.66
31:BA:2108:A:N7	31:BA:2189:U:O4	2.29	0.66
44:BS:61:ARG:HH12	44:BS:100:ARG:HA	1.59	0.66
13:AM:87:ARG:NH1	13:AM:97:THR:O	2.28	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1862:G:N1	31:BA:1886:U:N3	2.44	0.65
33:BD:205:LEU:HD12	33:BD:210:ARG:HG3	1.78	0.65
1:AA:23:G:H21	1:AA:922:A:H62	1.44	0.65
2:AB:207:ILE:CD1	51:A:144:GLU:C	2.70	0.65
28:B6:1:MET:H2	28:B6:3:ARG:HH12	1.43	0.65
31:BA:1516:G:H1	31:BA:1528:U:H3	1.43	0.65
34:BE:174:ILE:HG12	34:BE:186:VAL:HA	1.77	0.65
42:BQ:49:THR:HA	42:BQ:52:LYS:HD3	1.78	0.65
31:BA:2778:C:OP2	34:BE:166:ARG:NH1	2.29	0.65
42:BQ:18:ARG:HG3	42:BQ:67:ARG:HH21	1.61	0.65
46:BU:43:VAL:HG23	46:BU:52:ALA:HB2	1.78	0.65
31:BA:1082:G:N2	31:BA:1146:A:N6	2.43	0.65
36:BG:5:LEU:HA	36:BG:8:LYS:HG2	1.77	0.65
37:BH:38:ASN:H	37:BH:43:LEU:HD11	1.61	0.65
1:AA:1012:G:C6	1:AA:1044:C:O2	2.49	0.65
1:AA:1457:G:N2	1:AA:1460:A:N6	2.40	0.65
31:BA:215:A:N7	31:BA:466:U:C2	2.65	0.65
7:AG:115:MET:O	7:AG:119:LEU:HB3	1.96	0.65
12:AL:63:ARG:HD2	12:AL:103:LEU:HD21	1.79	0.65
13:AM:72:GLU:O	13:AM:76:ASN:HB2	1.97	0.65
31:BA:1027:C:H2'	31:BA:1028:A:H8	1.61	0.65
32:BB:28:C:H1'	32:BB:55:A:H61	1.61	0.65
1:AA:684:A:H5''	11:AK:113:PRO:HB2	1.78	0.65
1:AA:842:A:N6	1:AA:860:U:O4	2.29	0.65
1:AA:1365:U:O2	1:AA:1370:A:N7	2.30	0.65
31:BA:993:U:H3'	32:BB:87:G:H21	1.61	0.65
31:BA:1465:G:N1	31:BA:1586:U:C2	2.65	0.65
47:BV:90:ARG:O	47:BV:97:ALA:HA	1.96	0.65
1:AA:398:C:O2'	16:AP:9:ARG:NH1	2.30	0.65
3:AC:150:THR:HA	3:AC:198:LYS:O	1.96	0.65
1:AA:109:A:H62	1:AA:332:G:N2	1.94	0.65
3:AC:61:ASN:O	3:AC:97:GLN:NE2	2.30	0.65
23:B1:2:LYS:HG3	31:BA:98:A:H3'	1.79	0.65
8:AH:103:THR:H	8:AH:131:ILE:HG12	1.62	0.64
31:BA:2847:G:O6	44:BS:20:ARG:NH1	2.30	0.64
46:BU:75:THR:O	46:BU:87:LYS:HA	1.97	0.64
50:BZ:53:ILE:HG23	50:BZ:84:LYS:HG3	1.78	0.64
51:A:37:GLU:HB3	51:A:59:PRO:HG2	1.79	0.64
2:AB:38:ILE:CG2	51:A:140:PRO:N	2.60	0.64
2:AB:207:ILE:HG22	2:AB:208:ARG:HG3	1.78	0.64
31:BA:880:U:O2'	31:BA:884:A:N6	2.28	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1097:A:N6	31:BA:1123:A:N7	2.45	0.64
31:BA:2836:G:N3	42:BQ:41:ARG:NH2	2.46	0.64
47:BV:25:ILE:HD13	47:BV:29:ARG:HE	1.61	0.64
1:AA:840:G:C6	1:AA:862:U:N3	2.65	0.64
31:BA:892:G:N2	31:BA:959:U:O2	2.24	0.64
31:BA:1519:U:O2	31:BA:1525:G:N2	2.31	0.64
31:BA:2237:U:H2'	31:BA:2238:G:H8	1.62	0.64
31:BA:2308:G:H22	31:BA:2316:U:H3	1.45	0.64
46:BU:21:VAL:HA	46:BU:98:VAL:HA	1.80	0.64
50:BZ:48:GLN:H	50:BZ:66:THR:HG22	1.62	0.64
31:BA:911:G:N2	31:BA:940:U:O2	2.23	0.64
11:AK:21:ILE:HG12	11:AK:30:VAL:HA	1.79	0.64
28:B6:39:ARG:NH1	28:B6:41:SER:OG	2.31	0.64
31:BA:1794:G:N2	31:BA:1829:U:O2	2.28	0.64
1:AA:113:G:H1'	1:AA:362:G:H4'	1.80	0.64
8:AH:5:ASP:O	8:AH:9:ASP:HB2	1.98	0.64
31:BA:1301:G:N2	31:BA:1644:C:H42	1.95	0.64
31:BA:1465:G:N2	31:BA:1586:U:O2	2.31	0.64
35:BF:156:LEU:HD21	35:BF:165:GLU:HG2	1.79	0.64
37:BH:25:THR:HG22	37:BH:34:VAL:HB	1.80	0.64
45:BT:72:ASN:HD21	45:BT:107:THR:HG22	1.63	0.64
1:AA:222:U:H4'	1:AA:474:G:H1	1.63	0.64
31:BA:478:A:H61	35:BF:41:ARG:HG3	1.62	0.64
33:BD:128:ASN:O	33:BD:191:THR:HA	1.98	0.64
1:AA:1117:C:OP2	1:AA:1119:A:N6	2.31	0.64
31:BA:921:C:N4	31:BA:928:G:O6	2.30	0.64
32:BB:9:U:O2	32:BB:107:G:N2	2.27	0.64
36:BG:74:SER:OG	36:BG:81:ARG:NH1	2.30	0.64
1:AA:329:A:C2	1:AA:340:G:N1	2.60	0.64
1:AA:941:G:H5''	7:AG:2:ARG:HH21	1.62	0.64
3:AC:72:PRO:HD3	3:AC:104:GLU:HB2	1.79	0.64
31:BA:2733:A:O2'	34:BE:187:LYS:NZ	2.31	0.64
31:BA:2748:G:N3	37:BH:143:GLN:NE2	2.46	0.64
45:BT:21:ALA:O	45:BT:28:LYS:NZ	2.31	0.64
1:AA:72:U:O2	1:AA:98:A:C6	2.51	0.63
1:AA:1138:A:H62	1:AA:1151:G:H21	1.46	0.63
13:AM:15:ILE:HA	13:AM:18:SER:HB2	1.80	0.63
2:AB:38:ILE:CD1	51:A:163:ALA:HB2	2.27	0.63
26:B4:39:SER:HB3	31:BA:2883:C:H42	1.64	0.63
29:B7:16:ARG:HA	29:B7:22:LEU:HA	1.80	0.63
31:BA:2790:A:H5'	34:BE:71:LYS:HB2	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2838:C:H5''	42:BQ:49:THR:HG21	1.80	0.63
1:AA:72:U:N3	1:AA:98:A:N6	2.45	0.63
1:AA:1094:U:O2	1:AA:1107:G:N2	2.31	0.63
25:B3:1:MET:H2	32:BB:41:C:H3'	1.63	0.63
31:BA:1348:G:H3'	31:BA:1349:G:H21	1.63	0.63
31:BA:1351:A:N1	31:BA:1362:C:O2'	2.31	0.63
31:BA:2821:A:N7	34:BE:161:ARG:NH2	2.46	0.63
1:AA:505:G:N2	1:AA:507:A:OP2	2.31	0.63
2:AB:86:ARG:HB3	2:AB:222:ILE:HD11	1.80	0.63
31:BA:215:A:N7	31:BA:466:U:O2	2.31	0.63
31:BA:856:A:N6	31:BA:1007:G:N2	2.46	0.63
31:BA:2566:U:O2	31:BA:2570:A:N7	2.32	0.63
51:A:7:ARG:HB2	51:A:40:ALA:O	1.99	0.63
1:AA:695:A:N1	1:AA:708:G:O2'	2.30	0.63
1:AA:1440:A:N6	1:AA:1474:U:O2'	2.32	0.63
4:AD:64:SER:O	4:AD:68:PHE:HB2	1.98	0.63
31:BA:1794:G:H1	31:BA:1829:U:H3	1.43	0.63
35:BF:153:LEU:HD22	35:BF:193:LEU:HD22	1.81	0.63
1:AA:23:G:N2	1:AA:922:A:H62	1.97	0.63
9:AI:34:GLU:HG2	9:AI:36:GLU:H	1.64	0.63
13:AM:56:ILE:O	13:AM:60:LEU:CB	2.46	0.63
13:AM:77:ILE:HA	13:AM:80:LEU:HB2	1.81	0.63
22:B0:16:ASN:HA	22:B0:26:LYS:HA	1.81	0.63
31:BA:1067:A:N1	31:BA:1157:G:O6	2.32	0.63
31:BA:2089:U:H5''	33:BD:263:LYS:HZ1	1.64	0.63
1:AA:899:U:N3	1:AA:915:A:C8	2.67	0.63
2:AB:186:MET:HA	2:AB:200:ILE:HB	1.80	0.63
31:BA:1756:C:N3	31:BA:2720:U:O2'	2.30	0.63
31:BA:2139:A:N7	31:BA:2160:U:O2	2.31	0.63
18:AR:33:LEU:O	18:AR:36:ARG:NH1	2.32	0.63
38:BM:47:THR:HG22	38:BM:49:HIS:H	1.64	0.63
39:BN:120:GLU:OE2	44:BS:65:ASN:ND2	2.31	0.63
45:BT:75:SER:H	45:BT:78:LYS:HE3	1.64	0.63
1:AA:409:C:OP1	4:AD:70:ASN:ND2	2.32	0.63
3:AC:66:THR:HA	3:AC:101:ASN:HD22	1.64	0.63
31:BA:372:A:O2'	35:BF:169:ARG:NH2	2.31	0.63
31:BA:1697:A:H61	31:BA:1705:A:H61	1.46	0.63
1:AA:58:U:H1'	1:AA:376:U:H3	1.64	0.62
1:AA:155:A:N6	1:AA:168:U:O2'	2.29	0.62
12:AL:99:ARG:NH1	12:AL:106:VAL:O	2.32	0.62
31:BA:389:U:H2'	31:BA:390:A:H8	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2151:A:H2'	31:BA:2152:G:H4'	1.80	0.62
45:BT:94:MET:HG2	46:BU:6:ILE:HG12	1.79	0.62
1:AA:121:C:N4	1:AA:244:G:OP2	2.32	0.62
1:AA:703:A:H5''	11:AK:51:LYS:HE3	1.82	0.62
33:BD:78:VAL:HA	33:BD:93:LEU:O	1.99	0.62
40:BO:111:VAL:H	40:BO:129:VAL:HG22	1.64	0.62
42:BQ:12:GLN:HA	42:BQ:15:ALA:HB3	1.82	0.62
1:AA:591:C:O2	1:AA:767:A:N6	2.32	0.62
1:AA:790:A:OP1	1:AA:1528:G:N2	2.32	0.62
3:AC:136:ALA:HA	3:AC:139:ARG:HE	1.64	0.62
4:AD:182:GLU:H	4:AD:185:GLU:HB2	1.65	0.62
28:B6:9:LYS:HA	28:B6:12:ARG:HE	1.64	0.62
10:AJ:49:TYR:O	10:AJ:64:GLN:HA	1.98	0.62
31:BA:1231:U:O4	31:BA:1273:A:N6	2.30	0.62
31:BA:2012:C:H2'	31:BA:2013:G:H8	1.62	0.62
38:BM:27:LEU:O	38:BM:31:SER:HB3	1.99	0.62
49:BX:40:ILE:HA	49:BX:60:GLU:HG2	1.81	0.62
3:AC:151:GLN:HB3	3:AC:198:LYS:HB2	1.81	0.62
33:BD:123:ASP:O	33:BD:128:ASN:ND2	2.31	0.62
1:AA:198:A:N3	17:AQ:75:ARG:NH1	2.48	0.62
1:AA:960:U:H4'	1:AA:972:A:H61	1.64	0.62
1:AA:1420:A:N1	1:AA:1494:G:C6	2.67	0.62
6:AF:45:LYS:HA	6:AF:60:TYR:HB2	1.82	0.62
31:BA:411:G:N2	31:BA:433:U:O2	2.31	0.62
35:BF:199:ALA:O	35:BF:203:ILE:HB	1.99	0.62
1:AA:263:G:O6	1:AA:274:G:N2	2.32	0.62
1:AA:1307:G:OP2	1:AA:1342:U:N3	2.29	0.62
2:AB:207:ILE:CD1	51:A:145:GLU:CA	2.67	0.62
19:AS:55:ARG:HG3	19:AS:56:LYS:HG3	1.80	0.62
20:AT:72:LEU:O	20:AT:76:LEU:HA	2.00	0.62
22:B0:24:GLN:NE2	31:BA:200:C:OP1	2.33	0.62
28:B6:18:PHE:O	28:B6:22:MET:HB2	1.98	0.62
31:BA:726:C:OP1	33:BD:217:ARG:NH1	2.32	0.62
2:AB:105:ASN:HA	2:AB:108:GLN:HB2	1.82	0.62
13:AM:74:SER:O	13:AM:78:LYS:HB2	1.99	0.62
30:B8:30:ASN:HD22	30:B8:33:HIS:HE1	1.48	0.62
31:BA:624:G:N2	31:BA:700:U:O2	2.33	0.62
31:BA:2732:U:O2	34:BE:189:ASN:ND2	2.33	0.62
38:BM:9:ASN:ND2	38:BM:45:THR:O	2.32	0.62
39:BN:13:ASN:HB2	39:BN:95:GLY:HA3	1.81	0.62
47:BV:73:LEU:HD13	47:BV:111:VAL:HG21	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:72:U:O4	1:AA:98:A:N7	2.33	0.62
1:AA:623:G:N2	1:AA:635:U:O2	2.26	0.62
10:AJ:10:LEU:HB2	10:AJ:72:ARG:HB3	1.81	0.62
31:BA:1550:G:N2	31:BA:1551:A:O2'	2.33	0.62
1:AA:184:U:OP1	1:AA:187:C:N4	2.33	0.62
2:AB:207:ILE:HD11	51:A:145:GLU:N	2.14	0.62
7:AG:19:SER:HB3	7:AG:22:VAL:HG23	1.80	0.62
20:AT:18:ASN:O	20:AT:22:ALA:HB3	2.00	0.62
31:BA:617:G:H21	31:BA:1284:A:H62	1.45	0.62
31:BA:1465:G:C2	31:BA:1586:U:O2	2.52	0.62
1:AA:1255:A:OP1	9:AI:33:ARG:NH2	2.33	0.61
31:BA:1083:A:H62	31:BA:1145:G:H1'	1.64	0.61
51:A:39:THR:HB	51:A:57:THR:HG22	1.80	0.61
1:AA:362:G:N2	1:AA:396:G:O2'	2.33	0.61
2:AB:167:HIS:HB2	2:AB:191:ALA:HB2	1.82	0.61
9:AI:21:LEU:HD21	9:AI:86:ALA:HB1	1.82	0.61
31:BA:925:C:H3'	31:BA:926:U:H2'	1.82	0.61
31:BA:2743:U:O2	31:BA:2768:A:N7	2.33	0.61
32:BB:6:U:H3	32:BB:110:G:H1	1.46	0.61
33:BD:3:ILE:HD11	33:BD:17:THR:HB	1.82	0.61
1:AA:1424:G:O2'	1:AA:1489:G:N2	2.28	0.61
2:AB:83:GLU:OE2	2:AB:86:ARG:NH2	2.34	0.61
13:AM:19:LEU:HB3	13:AM:25:VAL:HG13	1.82	0.61
15:AO:40:ASN:HA	15:AO:43:ILE:HG12	1.82	0.61
19:AS:33:THR:HG23	19:AS:52:TYR:HB2	1.82	0.61
31:BA:856:A:N6	31:BA:1007:G:C2	2.68	0.61
31:BA:1510:U:O4	31:BA:1534:U:N3	2.32	0.61
31:BA:2743:U:C2	31:BA:2768:A:N7	2.68	0.61
35:BF:117:LYS:HG3	35:BF:187:ILE:HD11	1.82	0.61
37:BH:121:ILE:HB	37:BH:123:PHE:HB2	1.81	0.61
1:AA:1022:G:H21	1:AA:1025:A:H8	1.47	0.61
2:AB:6:MET:HA	2:AB:9:LEU:HB2	1.81	0.61
31:BA:723:U:H2'	31:BA:724:A:H8	1.65	0.61
31:BA:1068:U:O4	31:BA:2754:A:C5	2.54	0.61
34:BE:69:ALA:HA	34:BE:72:ALA:HB3	1.81	0.61
44:BS:5:GLU:O	44:BS:9:ALA:HB2	2.00	0.61
51:A:57:THR:HA	51:A:66:ARG:HA	1.82	0.61
1:AA:88:C:O2'	1:AA:89:A:N7	2.31	0.61
1:AA:224:C:H1'	1:AA:477:A:H61	1.65	0.61
1:AA:899:U:C2	1:AA:915:A:N7	2.69	0.61
1:AA:1259:C:OP1	1:AA:1375:G:N2	2.30	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AC:184:ALA:O	3:AC:198:LYS:HA	2.00	0.61
31:BA:1388:A:N7	31:BA:1401:U:O4	2.34	0.61
33:BD:37:MET:SD	33:BD:37:MET:N	2.73	0.61
36:BG:4:ARG:NH2	36:BG:102:ASP:OD2	2.34	0.61
44:BS:105:LYS:O	44:BS:109:ILE:HB	2.01	0.61
1:AA:546:G:OP1	12:AL:123:ARG:NH2	2.31	0.61
1:AA:1096:G:H21	1:AA:1176:A:H2	1.48	0.61
1:AA:1420:A:N1	1:AA:1494:G:O6	2.33	0.61
5:AE:100:LYS:HB2	5:AE:127:THR:HB	1.81	0.61
31:BA:621:U:O2'	35:BF:93:ASN:ND2	2.32	0.61
31:BA:705:A:H5''	40:BO:43:GLY:HA2	1.81	0.61
36:BG:59:ALA:HB2	36:BG:66:PRO:HG3	1.83	0.61
40:BO:25:SER:OG	40:BO:27:ASN:ND2	2.33	0.61
1:AA:715:U:OP1	11:AK:85:LYS:NZ	2.33	0.61
2:AB:112:THR:O	2:AB:116:GLU:HB2	2.01	0.61
3:AC:157:ASN:H	3:AC:192:TYR:HB2	1.64	0.61
4:AD:196:VAL:HG13	4:AD:200:ASN:HD22	1.65	0.61
31:BA:341:G:N7	31:BA:362:A:N6	2.48	0.61
31:BA:651:A:H5''	35:BF:206:VAL:HG11	1.83	0.61
33:BD:63:ARG:NH2	33:BD:86:ASN:OD1	2.33	0.61
1:AA:11:G:N1	1:AA:27:C:O2	2.33	0.61
1:AA:97:G:N7	1:AA:100:G:C2	2.68	0.61
25:B3:51:SER:O	25:B3:54:SER:HB3	2.00	0.61
31:BA:226:A:N6	31:BA:445:G:H21	1.97	0.61
31:BA:1451:G:N2	31:BA:1606:U:O2	2.24	0.61
1:AA:18:A:H5''	5:AE:23:ARG:HH11	1.65	0.61
1:AA:496:A:H3'	1:AA:497:A:H8	1.64	0.61
1:AA:1185:G:N2	1:AA:1188:G:OP2	2.34	0.61
9:AI:35:VAL:HG12	9:AI:45:ARG:HH11	1.65	0.61
31:BA:568:U:O4	31:BA:591:G:O6	2.19	0.61
31:BA:2255:G:OP2	41:BP:82:ARG:NH1	2.34	0.61
32:BB:89:C:OP1	41:BP:99:ARG:NH2	2.34	0.61
1:AA:553:C:OP2	4:AD:10:LYS:NZ	2.33	0.61
8:AH:37:ALA:O	8:AH:41:LYS:HB2	2.01	0.61
31:BA:842:U:OP2	40:BO:41:ARG:NH2	2.33	0.61
31:BA:2660:U:N3	31:BA:2669:A:C8	2.62	0.61
1:AA:109:A:H62	1:AA:332:G:H21	1.49	0.60
1:AA:235:G:N2	16:AP:62:ASN:O	2.34	0.60
1:AA:382:A:N3	16:AP:9:ARG:NH2	2.49	0.60
27:B5:3:ARG:NH2	31:BA:2289:C:OP1	2.34	0.60
31:BA:410:G:N2	31:BA:434:U:O2	2.33	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1285:U:N3	35:BF:71:GLY:O	2.33	0.60
31:BA:1519:U:H3	31:BA:1525:G:H1	1.48	0.60
31:BA:1660:G:N2	31:BA:1663:U:OP2	2.34	0.60
1:AA:149:G:N1	1:AA:175:A:N6	2.36	0.60
1:AA:1158:A:H5'	10:AJ:43:PRO:HA	1.82	0.60
2:AB:38:ILE:HG21	51:A:140:PRO:O	2.01	0.60
8:AH:48:ASP:OD2	8:AH:61:ARG:NH1	2.34	0.60
10:AJ:14:GLU:HG2	10:AJ:16:ARG:H	1.67	0.60
11:AK:30:VAL:HG11	11:AK:65:SER:HA	1.82	0.60
23:B1:11:LYS:O	23:B1:14:ARG:NH2	2.34	0.60
31:BA:137:A:N3	31:BA:140:A:N6	2.49	0.60
31:BA:1956:A:H5'	39:BN:55:GLY:HA3	1.83	0.60
31:BA:2228:G:OP1	33:BD:268:LYS:NZ	2.32	0.60
31:BA:2401:G:O6	31:BA:2423:U:O2	2.19	0.60
33:BD:33:LEU:HB3	33:BD:63:ARG:HB2	1.83	0.60
44:BS:59:THR:HA	44:BS:71:ARG:O	2.01	0.60
1:AA:44:G:N3	1:AA:630:A:N6	2.49	0.60
1:AA:422:A:N6	1:AA:440:A:OP1	2.35	0.60
1:AA:758:C:O2'	15:AO:21:ASP:OD1	2.18	0.60
1:AA:1312:G:N2	1:AA:1338:G:O3'	2.34	0.60
31:BA:1221:G:H2'	31:BA:1222:A:H8	1.67	0.60
45:BT:88:ILE:HG21	46:BU:54:LEU:HD12	1.82	0.60
1:AA:1323:G:N2	1:AA:1326:A:OP2	2.30	0.60
13:AM:56:ILE:O	13:AM:60:LEU:HB3	2.02	0.60
15:AO:53:GLN:HE21	15:AO:57:MET:HE2	1.67	0.60
24:B2:7:THR:H	24:B2:54:VAL:HG23	1.66	0.60
31:BA:2855:G:N2	31:BA:2858:A:OP2	2.33	0.60
43:BR:38:THR:O	43:BR:100:ARG:NH1	2.31	0.60
1:AA:166:A:H2'	1:AA:167:A:H8	1.67	0.60
4:AD:120:ILE:HG23	4:AD:142:VAL:HA	1.84	0.60
4:AD:162:ARG:NH2	4:AD:166:VAL:O	2.34	0.60
7:AG:104:VAL:O	7:AG:108:ARG:CB	2.50	0.60
31:BA:1798:U:H3	31:BA:1825:G:H1	1.50	0.60
34:BE:172:LEU:HD11	34:BE:187:LYS:H	1.67	0.60
1:AA:17:G:H1	1:AA:928:U:H3	1.50	0.60
1:AA:148:G:H21	1:AA:1454:A:H8	1.47	0.60
20:AT:72:LEU:O	20:AT:76:LEU:CA	2.50	0.60
31:BA:2391:U:O2'	50:BZ:49:ARG:NH1	2.34	0.60
32:BB:28:C:OP2	43:BR:37:ASN:ND2	2.35	0.60
1:AA:732:G:N3	18:AR:58:ARG:NH2	2.48	0.60
1:AA:1264:C:N3	3:AC:26:LYS:NZ	2.49	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:AL:113:GLY:H	12:AL:117:THR:HG21	1.67	0.60
13:AM:84:GLY:HA3	13:AM:86:TYR:H	1.65	0.60
31:BA:1939:G:H1	31:BA:1966:C:HO2'	1.49	0.60
1:AA:1040:G:N2	1:AA:1041:G:N3	2.50	0.60
8:AH:27:ALA:HB1	8:AH:33:LYS:HD3	1.84	0.60
28:B6:13:LYS:HG3	28:B6:14:THR:HG23	1.84	0.60
37:BH:150:SER:OG	37:BH:151:ARG:NH1	2.35	0.60
1:AA:1039:C:OP1	1:AA:1041:G:N2	2.34	0.60
1:AA:1445:G:N2	1:AA:1470:U:O2	2.27	0.60
11:AK:31:MET:HG2	11:AK:42:TRP:HB2	1.83	0.60
31:BA:901:G:OP2	32:BB:98:G:N2	2.34	0.60
31:BA:1448:A:OP2	31:BA:1607:C:N4	2.35	0.60
31:BA:1643:A:N6	47:BV:92:ARG:O	2.35	0.60
31:BA:2748:G:N2	31:BA:2764:U:O2	2.35	0.60
46:BU:72:LYS:HA	46:BU:90:HIS:O	2.02	0.60
1:AA:424:G:N2	1:AA:440:A:OP2	2.34	0.60
1:AA:634:A:H5''	16:AP:10:MET:HG2	1.82	0.60
1:AA:1513:U:O2	11:AK:125:ARG:NH2	2.34	0.60
7:AG:21:VAL:HA	7:AG:24:ARG:HB2	1.83	0.60
26:B4:48:TYR:HB3	42:BQ:108:LEU:HD23	1.84	0.60
31:BA:246:G:OP2	31:BA:248:C:N4	2.33	0.60
31:BA:676:G:H21	31:BA:680:A:H62	1.50	0.60
31:BA:857:U:H2'	31:BA:858:A:H8	1.67	0.60
31:BA:1916:A:N7	31:BA:1921:U:O4	2.35	0.60
32:BB:41:C:OP1	36:BG:64:GLN:NE2	2.35	0.60
43:BR:11:ARG:O	43:BR:15:HIS:HB2	2.01	0.60
43:BR:74:LYS:NZ	43:BR:107:ALA:O	2.34	0.60
44:BS:5:GLU:O	44:BS:9:ALA:CB	2.49	0.60
51:A:89:ILE:HA	51:A:92:TYR:HB3	1.84	0.60
1:AA:961:G:O6	13:AM:103:LYS:NZ	2.35	0.59
4:AD:13:ARG:NH2	4:AD:29:ARG:O	2.34	0.59
31:BA:1740:G:C2	31:BA:1750:C:C2	2.90	0.59
31:BA:1740:G:N1	31:BA:1750:C:N3	2.49	0.59
31:BA:1771:A:H2'	31:BA:1772:G:H8	1.66	0.59
31:BA:1804:A:H5''	31:BA:1816:G:H22	1.65	0.59
42:BQ:42:ARG:HG2	42:BQ:46:LYS:HZ3	1.67	0.59
15:AO:35:GLU:HA	15:AO:38:HIS:HB3	1.84	0.59
31:BA:1204:U:H2'	31:BA:1207:U:H3	1.67	0.59
31:BA:2455:A:OP1	31:BA:2501:A:N6	2.35	0.59
31:BA:2806:U:H2'	31:BA:2807:A:H8	1.66	0.59
33:BD:11:ASN:HD22	33:BD:14:ARG:HH11	1.49	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BF:157:PRO:HB2	35:BF:159:GLU:HG3	1.83	0.59
42:BQ:31:VAL:HA	42:BQ:121:ALA:O	2.01	0.59
44:BS:32:VAL:HG11	44:BS:37:GLU:H	1.66	0.59
1:AA:1167:G:C8	1:AA:1189:G:N2	2.69	0.59
29:B7:42:ARG:NH2	31:BA:2386:G:O2'	2.35	0.59
31:BA:15:G:H1	31:BA:559:U:H3	1.48	0.59
31:BA:1070:U:O2	31:BA:1155:G:C6	2.55	0.59
1:AA:602:U:O2	1:AA:654:G:N2	2.30	0.59
49:BX:66:SER:O	49:BX:69:GLN:NE2	2.35	0.59
1:AA:329:A:N1	1:AA:340:G:O6	2.35	0.59
1:AA:698:G:OP2	11:AK:27:ASN:ND2	2.34	0.59
1:AA:933:G:O6	1:AA:1398:U:O4	2.21	0.59
7:AG:58:LEU:O	7:AG:62:GLU:HB3	2.03	0.59
27:B5:42:HIS:NE2	31:BA:2376:U:O2'	2.34	0.59
31:BA:1911:G:N2	31:BA:1927:U:O2	2.30	0.59
1:AA:83:G:N3	1:AA:89:A:N6	2.51	0.59
1:AA:461:C:O2'	16:AP:72:ASN:ND2	2.35	0.59
12:AL:74:MET:SD	12:AL:107:ARG:NH1	2.76	0.59
31:BA:80:G:H2'	31:BA:81:G:H8	1.67	0.59
31:BA:2449:G:OP1	35:BF:74:ARG:NH1	2.35	0.59
31:BA:2565:A:N3	39:BN:23:ARG:NH2	2.45	0.59
33:BD:180:GLU:HA	33:BD:271:VAL:HG11	1.83	0.59
1:AA:18:A:H4'	5:AE:24:VAL:HA	1.85	0.59
1:AA:152:A:N7	1:AA:171:U:O4	2.35	0.59
1:AA:371:A:N6	12:AL:38:LEU:O	2.30	0.59
1:AA:1159:A:OP2	10:AJ:16:ARG:NH1	2.36	0.59
7:AG:90:VAL:HG21	7:AG:94:ARG:HD2	1.85	0.59
7:AG:138:GLU:HA	7:AG:141:HIS:HB2	1.85	0.59
13:AM:37:ALA:O	13:AM:52:GLN:NE2	2.36	0.59
31:BA:498:G:N2	31:BA:501:A:OP2	2.35	0.59
31:BA:1076:U:O2	31:BA:1149:G:C2	2.55	0.59
32:BB:75:U:O2	32:BB:97:A:N7	2.35	0.59
46:BU:41:ILE:HD12	46:BU:54:LEU:HA	1.85	0.59
1:AA:177:C:H2'	1:AA:178:G:H8	1.68	0.59
1:AA:445:U:N3	1:AA:504:A:C8	2.65	0.59
1:AA:630:A:H4'	4:AD:133:ARG:HH22	1.67	0.59
1:AA:1062:C:H41	51:A:51:ARG:HB3	1.66	0.59
1:AA:1259:C:OP2	10:AJ:46:ARG:NH2	2.35	0.59
3:AC:12:VAL:HA	3:AC:16:ARG:HB3	1.85	0.59
31:BA:156:U:O2	31:BA:166:G:N2	2.34	0.59
31:BA:1065:G:O6	31:BA:1160:G:N2	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2108:A:N7	31:BA:2189:U:C4	2.70	0.59
35:BF:116:THR:O	35:BF:120:ASP:HB2	2.01	0.59
36:BG:13:VAL:O	36:BG:17:LEU:N	2.30	0.59
36:BG:36:VAL:HA	36:BG:91:THR:H	1.68	0.59
1:AA:76:G:H5'	1:AA:78:U:H5''	1.85	0.59
1:AA:119:A:N7	1:AA:295:U:C2	2.70	0.59
1:AA:1001:G:O2'	1:AA:1055:G:N2	2.36	0.59
3:AC:36:LEU:HD23	3:AC:39:ARG:HD2	1.85	0.59
5:AE:17:ARG:NH1	5:AE:119:GLU:OE1	2.35	0.59
5:AE:19:VAL:HB	5:AE:39:LEU:O	2.02	0.59
6:AF:37:ASN:HB3	6:AF:66:GLU:H	1.68	0.59
31:BA:408:U:C2	31:BA:436:A:N7	2.71	0.59
31:BA:633:C:O2'	35:BF:104:LYS:NZ	2.35	0.59
31:BA:1552:U:O2'	31:BA:1553:G:N7	2.34	0.59
1:AA:528:C:N4	1:AA:538:G:O2'	2.33	0.59
3:AC:181:ILE:HA	3:AC:201:ILE:O	2.02	0.59
22:B0:56:LYS:HD3	22:B0:59:ALA:HB2	1.85	0.59
31:BA:10:A:N6	31:BA:2632:U:OP1	2.36	0.59
31:BA:661:A:O2'	31:BA:671:A:N6	2.36	0.59
31:BA:676:G:O2'	31:BA:2353:G:O2'	2.20	0.59
31:BA:1740:G:N2	31:BA:1750:C:C2	2.71	0.59
31:BA:1929:C:N3	31:BA:1933:G:N1	2.48	0.59
31:BA:2823:G:H3'	31:BA:2824:A:H8	1.67	0.59
1:AA:505:G:H1	1:AA:507:A:H62	1.50	0.58
1:AA:835:U:O2	8:AH:20:ARG:NH2	2.35	0.58
1:AA:1385:C:OP1	7:AG:94:ARG:NH2	2.29	0.58
17:AQ:10:GLN:HG3	17:AQ:59:ILE:HG21	1.85	0.58
32:BB:13:U:OP2	32:BB:67:G:N1	2.36	0.58
33:BD:125:LYS:HD2	33:BD:128:ASN:HD21	1.67	0.58
36:BG:75:VAL:O	36:BG:79:ARG:N	2.36	0.58
1:AA:83:G:OP2	1:AA:89:A:N6	2.36	0.58
1:AA:611:G:N2	1:AA:644:U:O2'	2.35	0.58
1:AA:1355:U:H2'	1:AA:1356:A:H8	1.68	0.58
3:AC:151:GLN:O	3:AC:197:VAL:HA	2.03	0.58
30:B8:14:CYS:SG	30:B8:15:LYS:N	2.76	0.58
31:BA:614:G:O2'	45:BT:11:ARG:NH2	2.36	0.58
31:BA:888:U:H2'	31:BA:889:A:H8	1.68	0.58
31:BA:2312:G:C6	31:BA:2315:A:N1	2.71	0.58
40:BO:76:ILE:HG12	40:BO:110:LYS:HB3	1.85	0.58
1:AA:603:U:H2'	1:AA:604:A:H8	1.68	0.58
1:AA:1327:C:O2	19:AS:78:ARG:NH2	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:B1:46:ASN:O	23:B1:49:LYS:NZ	2.36	0.58
31:BA:614:G:H2'	31:BA:615:G:H8	1.68	0.58
31:BA:663:G:N3	31:BA:673:U:O2'	2.36	0.58
31:BA:1269:C:H2'	31:BA:1270:G:H8	1.68	0.58
31:BA:1756:C:O4'	44:BS:93:ARG:NH1	2.37	0.58
33:BD:74:VAL:H	33:BD:117:VAL:HG21	1.68	0.58
38:BM:18:TYR:HA	38:BM:140:GLU:O	2.03	0.58
1:AA:10:A:N6	4:AD:202:MET:O	2.37	0.58
10:AJ:9:ARG:HB2	10:AJ:99:GLU:HB3	1.84	0.58
31:BA:2897:A:N6	31:BA:2899:C:O2	2.35	0.58
1:AA:218:C:O2'	1:AA:477:A:N7	2.33	0.58
1:AA:1032:G:N2	1:AA:1032:G:OP2	2.37	0.58
1:AA:1327:C:N4	19:AS:73:GLU:OE1	2.36	0.58
1:AA:1388:U:O2	7:AG:78:ARG:NH2	2.36	0.58
1:AA:1454:A:OP1	1:AA:1459:A:N6	2.36	0.58
4:AD:85:TYR:O	4:AD:89:THR:OG1	2.22	0.58
9:AI:31:ASN:ND2	9:AI:66:ASN:OD1	2.36	0.58
31:BA:1141:A:H2'	31:BA:1142:G:H8	1.69	0.58
31:BA:2172:G:N2	31:BA:2174:G:OP2	2.36	0.58
31:BA:2660:U:O2	31:BA:2669:A:N7	2.37	0.58
1:AA:574:U:H3'	1:AA:575:G:H2'	1.86	0.58
17:AQ:60:VAL:HG22	17:AQ:79:ILE:HG12	1.86	0.58
18:AR:26:VAL:HG21	18:AR:29:LYS:HB2	1.85	0.58
22:B0:12:THR:HA	22:B0:29:VAL:O	2.03	0.58
31:BA:249:G:OP1	40:BO:59:ARG:NH2	2.36	0.58
31:BA:526:A:N1	47:BV:53:ASN:ND2	2.51	0.58
31:BA:840:G:O4'	40:BO:38:GLN:NE2	2.36	0.58
31:BA:922:C:N4	31:BA:929:G:N3	2.52	0.58
31:BA:1799:C:H5''	33:BD:258:LYS:HD2	1.86	0.58
31:BA:1929:C:O2	31:BA:1933:G:O6	2.22	0.58
51:A:51:ARG:HG3	51:A:53:LYS:NZ	2.19	0.58
1:AA:798:A:N6	1:AA:1505:U:OP1	2.36	0.58
3:AC:138:GLN:O	3:AC:142:ARG:HB2	2.03	0.58
13:AM:3:ARG:NH2	13:AM:6:GLY:O	2.36	0.58
14:AN:15:LYS:HB2	14:AN:19:GLN:HG3	1.86	0.58
14:AN:47:LEU:O	14:AN:50:LYS:N	2.36	0.58
28:B6:39:ARG:HD2	28:B6:41:SER:H	1.68	0.58
31:BA:836:G:N7	35:BF:53:ASN:ND2	2.51	0.58
31:BA:1369:U:OP2	48:BW:77:LYS:NZ	2.36	0.58
31:BA:1440:U:O2	31:BA:1620:A:N6	2.37	0.58
31:BA:1485:G:C2	31:BA:2708:C:O2	2.57	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2854:U:O2	31:BA:2859:G:N2	2.34	0.58
1:AA:539:G:N2	51:A:48:THR:O	2.35	0.58
1:AA:1408:G:OP2	51:A:87:ARG:NH2	2.37	0.58
28:B6:34:ARG:HD3	28:B6:39:ARG:HE	1.69	0.58
31:BA:486:U:OP2	35:BF:52:LYS:NZ	2.33	0.58
31:BA:532:G:O2'	49:BX:44:HIS:NE2	2.37	0.58
31:BA:1659:C:H3'	31:BA:1660:G:H8	1.69	0.58
31:BA:2317:C:O2'	36:BG:38:ASN:ND2	2.37	0.58
51:A:6:ILE:HA	51:A:40:ALA:HB3	1.86	0.58
1:AA:371:A:OP2	12:AL:44:ARG:NE	2.35	0.58
1:AA:523:C:HO2'	1:AA:546:G:H1	1.49	0.58
13:AM:58:ARG:HA	13:AM:61:ASP:HB3	1.86	0.58
31:BA:492:A:H62	31:BA:506:A:H62	1.51	0.58
31:BA:2755:G:OP1	37:BH:3:ARG:NH1	2.36	0.58
33:BD:66:ASP:N	33:BD:103:TYR:O	2.36	0.58
34:BE:2:SER:N	34:BE:85:GLY:O	2.37	0.58
38:BM:38:LEU:HD22	38:BM:124:LEU:HD21	1.86	0.58
6:AF:53:ASN:ND2	6:AF:88:LEU:O	2.37	0.58
31:BA:181:A:N1	31:BA:214:G:C6	2.72	0.58
31:BA:1361:G:N7	31:BA:1638:A:O2'	2.35	0.58
31:BA:1612:G:O2'	31:BA:1614:A:N7	2.36	0.58
45:BT:104:ALA:O	45:BT:108:ALA:CB	2.50	0.58
1:AA:986:A:N3	19:AS:36:ARG:NH2	2.49	0.57
24:B2:46:MET:O	24:B2:50:ILE:HB	2.02	0.57
31:BA:2129:G:H21	31:BA:2178:C:H41	1.52	0.57
31:BA:2201:U:O2	31:BA:2229:A:N7	2.37	0.57
36:BG:5:LEU:O	36:BG:9:TYR:CB	2.52	0.57
39:BN:21:THR:HA	39:BN:41:ALA:HA	1.86	0.57
1:AA:609:U:O2	1:AA:646:G:C2	2.57	0.57
6:AF:7:LEU:HG	6:AF:62:ILE:HG12	1.85	0.57
9:AI:19:VAL:HG22	9:AI:65:VAL:HG13	1.86	0.57
28:B6:19:ARG:HH22	31:BA:123:G:H2'	1.69	0.57
31:BA:1083:A:N7	31:BA:1145:G:C2	2.72	0.57
31:BA:2651:U:O2	31:BA:2677:G:O6	2.22	0.57
38:BM:24:ASP:O	38:BM:65:LYS:N	2.37	0.57
39:BN:96:THR:HA	39:BN:117:LEU:HD23	1.86	0.57
1:AA:959:G:O6	13:AM:104:ASN:ND2	2.37	0.57
2:AB:211:LYS:O	2:AB:215:ALA:CB	2.51	0.57
7:AG:41:ILE:HA	7:AG:116:GLN:HE21	1.68	0.57
31:BA:353:A:O2'	31:BA:372:A:N3	2.36	0.57
31:BA:742:G:N2	31:BA:759:U:O2	2.34	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:756:C:H2'	31:BA:757:A:H8	1.69	0.57
31:BA:1507:G:N2	31:BA:1540:A:N1	2.51	0.57
31:BA:2535:A:N6	31:BA:2665:G:O6	2.37	0.57
35:BF:36:VAL:O	35:BF:40:GLN:HB3	2.04	0.57
40:BO:110:LYS:HG3	40:BO:129:VAL:HA	1.86	0.57
41:BP:18:ARG:H	41:BP:98:LYS:HZ2	1.50	0.57
1:AA:1426:G:C6	1:AA:1488:U:O2	2.58	0.57
13:AM:71:ARG:O	13:AM:75:LEU:CB	2.53	0.57
31:BA:1096:U:H1'	31:BA:1099:C:H41	1.69	0.57
31:BA:2652:G:O6	31:BA:2676:U:O2	2.22	0.57
31:BA:2751:G:H1	31:BA:2758:U:H2'	1.70	0.57
43:BR:74:LYS:HD2	43:BR:107:ALA:HB1	1.86	0.57
47:BV:69:GLU:HB2	47:BV:72:ASN:HB2	1.86	0.57
48:BW:35:LYS:O	48:BW:39:LYS:HB2	2.04	0.57
1:AA:329:A:N1	1:AA:340:G:C6	2.73	0.57
1:AA:555:G:H4'	4:AD:66:ARG:HH21	1.69	0.57
1:AA:1155:U:H3'	1:AA:1156:C:H4'	1.86	0.57
1:AA:1452:U:O2	1:AA:1464:G:N2	2.33	0.57
4:AD:50:GLN:HG2	4:AD:194:LEU:HA	1.87	0.57
4:AD:110:GLN:HE22	4:AD:155:ALA:HB3	1.70	0.57
31:BA:841:C:H3'	40:BO:41:ARG:HH22	1.69	0.57
31:BA:2656:U:O2	31:BA:2672:G:N2	2.29	0.57
38:BM:66:LEU:HD21	38:BM:71:ALA:H	1.69	0.57
1:AA:831:G:H21	8:AH:2:VAL:HG22	1.70	0.57
1:AA:1014:U:H5'	1:AA:1033:U:H1'	1.85	0.57
6:AF:3:LYS:HD2	6:AF:64:THR:HG22	1.87	0.57
6:AF:9:ILE:HD13	6:AF:48:LEU:HD11	1.87	0.57
6:AF:84:ASN:HB3	6:AF:87:ILE:HG12	1.86	0.57
12:AL:36:THR:HG23	12:AL:37:LYS:HB2	1.87	0.57
21:AU:39:GLU:O	21:AU:44:LYS:NZ	2.36	0.57
29:B7:41:ARG:NH2	31:BA:2422:A:O3'	2.37	0.57
31:BA:488:A:N3	31:BA:492:A:O2'	2.37	0.57
31:BA:855:A:N3	31:BA:978:U:O2'	2.35	0.57
31:BA:1042:C:H3'	31:BA:1043:A:H2'	1.86	0.57
31:BA:1544:A:HO2'	31:BA:1586:U:HO2'	1.50	0.57
40:BO:57:LEU:HD23	40:BO:60:ARG:HH22	1.69	0.57
40:BO:89:ALA:HA	40:BO:121:ASN:HD22	1.70	0.57
1:AA:561:U:H2'	1:AA:562:G:H8	1.68	0.57
1:AA:1238:G:H4'	9:AI:130:ARG:HH21	1.68	0.57
2:AB:110:ARG:O	2:AB:114:LEU:CB	2.52	0.57
8:AH:106:ILE:HG12	8:AH:127:VAL:HA	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:AP:6:ARG:HH11	16:AP:29:ARG:HB3	1.69	0.57
23:B1:25:GLU:O	23:B1:30:LYS:HB2	2.04	0.57
31:BA:408:U:O2	31:BA:436:A:N7	2.38	0.57
33:BD:143:ASN:HA	33:BD:156:ARG:HB3	1.87	0.57
38:BM:26:PRO:HG3	38:BM:65:LYS:HB2	1.87	0.57
39:BN:112:MET:SD	39:BN:112:MET:N	2.77	0.57
1:AA:730:G:O5'	18:AR:47:ARG:NH2	2.37	0.57
1:AA:777:G:N2	1:AA:819:C:O2	2.38	0.57
1:AA:1448:U:O2	1:AA:1450:C:N4	2.37	0.57
2:AB:44:GLN:O	2:AB:48:LYS:NZ	2.35	0.57
3:AC:134:LYS:O	3:AC:138:GLN:HB2	2.05	0.57
17:AQ:16:ASP:HB2	17:AQ:54:ALA:HB1	1.86	0.57
31:BA:1793:A:N6	31:BA:1830:G:O2'	2.38	0.57
31:BA:2312:G:O6	31:BA:2315:A:N1	2.37	0.57
34:BE:140:ARG:HH21	34:BE:142:GLY:H	1.52	0.57
1:AA:604:A:N1	1:AA:651:C:N4	2.52	0.57
1:AA:1134:U:HO2'	1:AA:1287:A:HO2'	1.52	0.57
7:AG:26:ILE:O	7:AG:30:MET:CB	2.52	0.57
28:B6:39:ARG:NH2	28:B6:44:VAL:O	2.38	0.57
31:BA:1029:A:OP1	45:BT:50:ARG:NH1	2.38	0.57
31:BA:1774:A:H2'	31:BA:1775:A:H4'	1.87	0.57
31:BA:1857:G:N2	31:BA:1891:U:O2	2.28	0.57
48:BW:42:VAL:HG13	48:BW:46:PHE:HD2	1.69	0.57
49:BX:11:VAL:O	49:BX:18:GLY:N	2.38	0.57
1:AA:527:C:N4	1:AA:538:G:OP2	2.38	0.57
1:AA:1008:U:O2	1:AA:1048:G:N2	2.36	0.57
4:AD:82:THR:HA	5:AE:106:ALA:HB2	1.86	0.57
6:AF:42:ASP:HA	6:AF:62:ILE:C	2.30	0.57
15:AO:70:LEU:HG	15:AO:78:TYR:HB2	1.87	0.57
31:BA:323:U:H2'	31:BA:324:A:H8	1.69	0.57
31:BA:1007:G:H3'	31:BA:1008:A:H2'	1.86	0.57
31:BA:1941:A:N6	31:BA:1968:G:H21	2.02	0.57
51:A:52:ALA:HB3	51:A:71:SER:O	2.05	0.57
1:AA:832:U:O2	8:AH:2:VAL:N	2.38	0.56
1:AA:1012:G:N2	1:AA:1035:C:O2'	2.38	0.56
1:AA:1287:A:OP1	10:AJ:9:ARG:NH2	2.37	0.56
21:AU:50:GLU:O	21:AU:54:LYS:HB2	2.04	0.56
22:B0:18:ARG:NE	31:BA:416:G:OP1	2.38	0.56
24:B2:45:GLY:O	24:B2:49:SER:OG	2.20	0.56
31:BA:26:G:H1'	31:BA:549:A:H61	1.70	0.56
31:BA:733:C:O2'	31:BA:769:A:N6	2.30	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2529:G:H2'	31:BA:2530:G:H8	1.69	0.56
31:BA:2832:G:O6	31:BA:2877:A:O2'	2.23	0.56
35:BF:150:ARG:HB2	35:BF:192:LYS:HE3	1.86	0.56
41:BP:57:TYR:HB3	41:BP:117:ALA:HB2	1.87	0.56
1:AA:847:G:N1	1:AA:856:U:N3	2.53	0.56
3:AC:134:LYS:O	3:AC:138:GLN:CB	2.54	0.56
8:AH:27:ALA:HB3	8:AH:60:ILE:HB	1.86	0.56
21:AU:3:LYS:HD3	21:AU:5:LEU:HD12	1.86	0.56
28:B6:34:ARG:HD3	28:B6:39:ARG:HH21	1.70	0.56
31:BA:360:U:O2'	49:BX:66:SER:OG	2.23	0.56
31:BA:1035:A:OP2	31:BA:1189:G:N1	2.34	0.56
31:BA:1864:G:N2	31:BA:1884:U:O2	2.38	0.56
31:BA:1999:U:H3'	31:BA:2000:C:H2'	1.86	0.56
40:BO:75:ALA:H	40:BO:106:LYS:HE3	1.69	0.56
42:BQ:22:THR:HG21	42:BQ:67:ARG:HG2	1.87	0.56
49:BX:43:LYS:HB3	49:BX:57:LEU:HB2	1.86	0.56
1:AA:119:A:C5	1:AA:295:U:O2	2.59	0.56
1:AA:682:G:O6	1:AA:724:A:N1	2.38	0.56
1:AA:832:U:H1'	8:AH:2:VAL:HA	1.87	0.56
1:AA:1420:A:C2	1:AA:1494:G:N1	2.60	0.56
5:AE:155:GLU:O	5:AE:159:LEU:N	2.37	0.56
11:AK:22:GLN:O	11:AK:28:THR:HA	2.04	0.56
31:BA:84:A:N1	31:BA:98:A:O2'	2.33	0.56
31:BA:271:A:H62	31:BA:292:G:N2	2.03	0.56
31:BA:534:G:OP1	49:BX:42:LYS:NZ	2.38	0.56
31:BA:1468:A:H2	31:BA:1582:G:H21	1.51	0.56
32:BB:7:A:OP1	43:BR:19:ARG:NH1	2.38	0.56
33:BD:125:LYS:O	33:BD:128:ASN:ND2	2.37	0.56
33:BD:171:TYR:HA	33:BD:184:ILE:O	2.04	0.56
42:BQ:9:THR:O	42:BQ:12:GLN:N	2.38	0.56
46:BU:19:GLY:N	46:BU:99:ILE:O	2.34	0.56
47:BV:39:ILE:O	47:BV:43:THR:OG1	2.23	0.56
1:AA:125:U:O4	1:AA:244:G:O6	2.24	0.56
1:AA:481:U:O2	16:AP:84:HIS:NE2	2.38	0.56
1:AA:693:G:N2	1:AA:715:U:O2	2.38	0.56
1:AA:693:G:C2	1:AA:714:A:N1	2.73	0.56
1:AA:1023:A:H1'	19:AS:34:TRP:HB3	1.87	0.56
7:AG:120:ALA:O	7:AG:124:LEU:CB	2.54	0.56
20:AT:40:SER:HB3	20:AT:43:LEU:HB2	1.86	0.56
31:BA:1505:A:H2'	31:BA:1506:G:H8	1.71	0.56
31:BA:1969:C:H3'	31:BA:1970:A:H2'	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:BM:14:ASP:O	38:BM:15:ARG:NE	2.38	0.56
38:BM:15:ARG:NH2	38:BM:51:ASP:O	2.38	0.56
38:BM:76:TYR:HB2	38:BM:89:VAL:O	2.05	0.56
4:AD:56:LYS:O	4:AD:60:THR:OG1	2.24	0.56
13:AM:65:LEU:O	13:AM:69:LEU:N	2.39	0.56
31:BA:994:A:OP1	32:BB:87:G:N2	2.38	0.56
31:BA:1338:G:O2'	31:BA:1640:C:O2'	2.22	0.56
31:BA:2595:C:H2'	31:BA:2596:G:H8	1.71	0.56
38:BM:120:GLN:HA	38:BM:123:LYS:HB2	1.88	0.56
51:A:29:ASP:HA	51:A:32:PHE:HB3	1.88	0.56
1:AA:383:U:O2'	16:AP:29:ARG:NH2	2.39	0.56
1:AA:1197:G:N3	1:AA:1198:A:N6	2.48	0.56
7:AG:98:LEU:HD22	7:AG:101:ARG:HH21	1.69	0.56
27:B5:43:THR:OG1	27:B5:45:HIS:NE2	2.37	0.56
28:B6:34:ARG:NH1	31:BA:501:A:O5'	2.39	0.56
31:BA:55:G:O2'	31:BA:126:A:N6	2.38	0.56
31:BA:205:U:H2'	31:BA:206:A:H8	1.70	0.56
31:BA:1033:C:OP2	45:BT:92:ARG:NH1	2.39	0.56
40:BO:73:GLU:OE1	40:BO:106:LYS:NZ	2.39	0.56
42:BQ:91:ASN:HB3	42:BQ:95:LYS:HE2	1.87	0.56
1:AA:111:G:H22	1:AA:338:C:H41	1.53	0.56
1:AA:277:C:H2'	1:AA:278:A:H8	1.70	0.56
1:AA:1124:U:H2'	1:AA:1125:A:H8	1.70	0.56
10:AJ:5:LYS:N	10:AJ:77:ILE:O	2.38	0.56
31:BA:985:G:O6	31:BA:1002:U:O2	2.23	0.56
31:BA:2001:A:H5''	34:BE:128:ARG:HE	1.69	0.56
31:BA:2432:G:N3	40:BO:54:GLN:NE2	2.54	0.56
31:BA:2681:U:H3	31:BA:2734:G:H1	1.52	0.56
32:BB:29:C:O2'	32:BB:51:A:N1	2.38	0.56
34:BE:34:THR:OG1	34:BE:52:GLY:O	2.22	0.56
43:BR:39:ASN:HD22	43:BR:58:SER:HB3	1.71	0.56
9:AI:80:ARG:O	9:AI:84:ALA:CB	2.54	0.56
31:BA:241:G:N2	31:BA:242:U:O4	2.36	0.56
31:BA:485:G:N1	31:BA:489:A:OP2	2.36	0.56
31:BA:568:U:O2	31:BA:591:G:N2	2.35	0.56
31:BA:590:A:O5'	38:BM:114:ASN:ND2	2.39	0.56
31:BA:989:G:OP1	41:BP:16:LYS:NZ	2.39	0.56
31:BA:1519:U:H5''	31:BA:1520:C:H5''	1.87	0.56
31:BA:2037:A:O2'	31:BA:2039:G:OP2	2.24	0.56
37:BH:148:ILE:HG22	37:BH:162:ILE:HG13	1.86	0.56
1:AA:70:G:N2	1:AA:101:A:N7	2.50	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:107:G:H22	20:AT:10:ARG:HH21	1.54	0.56
1:AA:993:C:H2'	1:AA:994:A:H8	1.70	0.56
1:AA:1256:C:H2'	1:AA:1257:A:H8	1.71	0.56
4:AD:91:LEU:O	4:AD:97:ASN:ND2	2.38	0.56
11:AK:80:VAL:HG11	11:AK:103:LEU:HD13	1.88	0.56
19:AS:18:LYS:HA	19:AS:21:ALA:HB3	1.88	0.56
31:BA:311:G:N2	31:BA:312:G:N7	2.54	0.56
31:BA:1958:G:O2'	31:BA:1960:U:O4	2.22	0.56
32:BB:6:U:OP1	43:BR:12:GLN:NE2	2.39	0.56
1:AA:186:A:N6	1:AA:208:U:O4	2.39	0.56
1:AA:411:C:O3'	4:AD:116:ASN:ND2	2.39	0.56
1:AA:847:G:C2	1:AA:856:U:C2	2.94	0.56
1:AA:1159:A:OP2	10:AJ:70:HIS:ND1	2.39	0.56
1:AA:1259:C:O2	1:AA:1361:C:O2'	2.24	0.56
1:AA:1311:G:N2	1:AA:1341:G:O6	2.39	0.56
2:AB:9:LEU:HD22	2:AB:14:VAL:HG21	1.87	0.56
2:AB:54:TYR:O	2:AB:58:LYS:NZ	2.35	0.56
31:BA:1242:G:N2	31:BA:1266:G:O2'	2.37	0.56
31:BA:1513:G:H1	31:BA:1530:U:H3	1.53	0.56
31:BA:2299:C:OP1	43:BR:14:ARG:NH2	2.38	0.56
41:BP:2:LEU:O	41:BP:44:ASN:ND2	2.39	0.56
48:BW:24:LYS:HG3	48:BW:81:THR:HA	1.88	0.56
1:AA:332:G:N1	1:AA:335:A:OP2	2.30	0.55
1:AA:672:G:H21	1:AA:734:C:H4'	1.71	0.55
1:AA:1420:A:H2	1:AA:1494:G:H1	1.43	0.55
3:AC:87:ARG:NH1	3:AC:98:VAL:O	2.38	0.55
25:B3:57:PHE:O	25:B3:61:ARG:NH2	2.37	0.55
35:BF:36:VAL:O	35:BF:40:GLN:CB	2.53	0.55
35:BF:37:VAL:O	35:BF:41:ARG:CB	2.53	0.55
36:BG:22:ASN:HD21	36:BG:29:VAL:HA	1.71	0.55
51:A:51:ARG:HG3	51:A:53:LYS:HZ1	1.71	0.55
1:AA:1254:U:O2	1:AA:1298:C:N3	2.38	0.55
1:AA:1302:U:O2'	13:AM:44:ARG:NH2	2.39	0.55
2:AB:87:ALA:O	2:AB:225:ARG:NH1	2.36	0.55
2:AB:140:GLU:O	2:AB:144:LEU:HB2	2.06	0.55
7:AG:139:ASP:O	7:AG:142:LYS:NZ	2.33	0.55
23:B1:18:VAL:O	23:B1:22:THR:OG1	2.20	0.55
31:BA:517:A:N6	31:BA:540:G:O2'	2.39	0.55
31:BA:1904:A:H1'	31:BA:1974:A:H2'	1.88	0.55
31:BA:2474:G:H2'	31:BA:2475:A:H8	1.70	0.55
36:BG:5:LEU:O	36:BG:9:TYR:HB2	2.05	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:BH:2:SER:OG	37:BH:62:LYS:NZ	2.38	0.55
44:BS:96:LEU:HD23	44:BS:99:LEU:HD12	1.87	0.55
51:A:24:LYS:NZ	51:A:83:GLU:HG2	2.20	0.55
1:AA:1312:G:N1	1:AA:1338:G:O2'	2.37	0.55
4:AD:166:VAL:HA	4:AD:176:THR:O	2.07	0.55
15:AO:30:ALA:O	15:AO:34:TRP:HB2	2.06	0.55
31:BA:1046:A:OP2	45:BT:66:ASN:ND2	2.40	0.55
31:BA:1656:A:H2'	31:BA:1657:G:H8	1.71	0.55
32:BB:40:U:OP1	36:BG:65:LYS:NZ	2.36	0.55
50:BZ:58:ASN:HB2	50:BZ:88:VAL:HB	1.87	0.55
1:AA:791:C:H2'	1:AA:792:A:H8	1.72	0.55
1:AA:953:G:O6	1:AA:1243:A:N1	2.39	0.55
1:AA:997:U:O2'	1:AA:1223:A:N1	2.35	0.55
1:AA:1245:A:N6	1:AA:1310:C:O2'	2.39	0.55
1:AA:1307:G:O2'	1:AA:1310:C:N4	2.40	0.55
3:AC:58:ARG:HA	3:AC:63:VAL:HA	1.87	0.55
6:AF:33:ASN:ND2	6:AF:76:GLU:OE1	2.39	0.55
23:B1:5:GLU:O	23:B1:9:LEU:HB2	2.07	0.55
29:B7:39:LYS:NZ	31:BA:2355:G:O6	2.39	0.55
31:BA:113:U:O2'	48:BW:32:ARG:NH2	2.39	0.55
39:BN:76:TYR:HB2	44:BS:72:ILE:HB	1.88	0.55
48:BW:27:PHE:O	48:BW:78:ALA:HB3	2.06	0.55
1:AA:445:U:C2	1:AA:504:A:N7	2.74	0.55
1:AA:778:C:O2'	1:AA:907:C:N3	2.35	0.55
1:AA:950:G:O6	1:AA:1348:U:O4	2.23	0.55
1:AA:1081:U:OP1	5:AE:64:ARG:NH1	2.36	0.55
1:AA:1414:C:N3	1:AA:1502:U:C4	2.74	0.55
2:AB:19:GLN:CD	51:A:138:LEU:CB	2.73	0.55
2:AB:207:ILE:HG13	51:A:145:GLU:CA	2.34	0.55
28:B6:26:ASN:HD21	31:BA:717:G:H5''	1.70	0.55
31:BA:573:G:O6	31:BA:586:U:O4	2.24	0.55
31:BA:734:A:H62	31:BA:768:G:N2	2.02	0.55
31:BA:1407:A:O2'	31:BA:1409:G:OP2	2.23	0.55
31:BA:2089:U:O2	31:BA:2238:G:N2	2.35	0.55
33:BD:221:ARG:NH1	33:BD:223:SER:OG	2.39	0.55
33:BD:233:GLY:O	33:BD:239:GLN:NE2	2.40	0.55
35:BF:10:ASP:HB2	35:BF:146:LEU:HB2	1.88	0.55
36:BG:65:LYS:HD2	36:BG:66:PRO:HD2	1.88	0.55
42:BQ:14:LYS:O	42:BQ:18:ARG:CB	2.54	0.55
42:BQ:33:THR:OG1	42:BQ:36:ARG:NH1	2.39	0.55
44:BS:89:GLY:HA2	44:BS:111:GLU:HA	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:274:G:C6	1:AA:279:C:N4	2.73	0.55
13:AM:77:ILE:O	13:AM:80:LEU:O	2.24	0.55
20:AT:41:GLU:HG3	20:AT:45:ARG:HE	1.72	0.55
21:AU:7:ARG:HH21	21:AU:18:ARG:HA	1.71	0.55
31:BA:181:A:C2	31:BA:214:G:N1	2.68	0.55
31:BA:840:G:H22	31:BA:863:U:H5''	1.71	0.55
31:BA:1717:U:O2'	31:BA:1729:A:N7	2.38	0.55
31:BA:1850:A:H61	31:BA:1898:C:H1'	1.72	0.55
31:BA:1859:G:N2	31:BA:1890:U:O4	2.40	0.55
31:BA:1940:A:OP2	31:BA:1965:C:N4	2.40	0.55
31:BA:2120:G:OP1	31:BA:2120:G:N2	2.33	0.55
31:BA:2792:C:O2'	31:BA:2807:A:N3	2.38	0.55
31:BA:2847:G:N2	31:BA:2864:G:O2'	2.39	0.55
31:BA:2854:U:O4	31:BA:2859:G:O6	2.24	0.55
31:BA:2878:C:O3'	42:BQ:100:ARG:NH1	2.39	0.55
35:BF:125:ALA:HA	35:BF:195:VAL:HB	1.89	0.55
36:BG:133:VAL:HG11	36:BG:136:GLN:HE21	1.70	0.55
51:A:45:LYS:NZ	51:A:53:LYS:HE2	2.21	0.55
1:AA:17:G:O2'	5:AE:32:ARG:NH1	2.39	0.55
1:AA:205:A:H3'	1:AA:206:G:H21	1.72	0.55
1:AA:680:U:O4	1:AA:742:G:O6	2.25	0.55
7:AG:104:VAL:O	7:AG:108:ARG:HB2	2.07	0.55
8:AH:106:ILE:HA	8:AH:126:GLU:O	2.06	0.55
31:BA:711:A:HO2'	31:BA:2446:C:HO2'	1.55	0.55
31:BA:2296:U:OP1	43:BR:21:LYS:NZ	2.36	0.55
38:BM:94:LEU:HA	38:BM:97:LYS:HB3	1.89	0.55
1:AA:131:A:H8	17:AQ:66:ARG:HG2	1.72	0.55
1:AA:211:A:O2'	1:AA:229:C:N4	2.40	0.55
1:AA:455:G:N2	1:AA:457:A:OP2	2.39	0.55
1:AA:620:G:O6	1:AA:638:U:O4	2.24	0.55
1:AA:691:G:O6	1:AA:715:U:C4	2.60	0.55
1:AA:957:A:OP1	13:AM:100:GLN:NE2	2.40	0.55
1:AA:1118:A:N7	1:AA:1119:A:N6	2.55	0.55
1:AA:1355:U:O2	1:AA:1382:A:N6	2.40	0.55
4:AD:152:ILE:O	4:AD:157:GLU:N	2.39	0.55
10:AJ:27:GLU:HG3	10:AJ:30:LYS:HD2	1.88	0.55
20:AT:69:LYS:O	20:AT:73:ALA:HB3	2.06	0.55
27:B5:3:ARG:HG2	27:B5:23:SER:H	1.71	0.55
31:BA:513:A:N6	31:BA:534:G:O2'	2.36	0.55
31:BA:613:C:H2'	31:BA:614:G:C8	2.41	0.55
31:BA:1022:C:O2'	31:BA:1035:A:N3	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1106:G:H4'	31:BA:1124:G:H2'	1.88	0.55
31:BA:1485:G:N2	31:BA:2708:C:O2	2.40	0.55
39:BN:24:VAL:HG11	39:BN:33:ALA:HB2	1.89	0.55
1:AA:134:U:O2'	1:AA:135:G:N7	2.39	0.55
1:AA:135:G:O6	16:AP:26:ARG:NH2	2.39	0.55
1:AA:699:G:O6	11:AK:51:LYS:NZ	2.40	0.55
13:AM:53:GLU:O	13:AM:56:ILE:N	2.40	0.55
31:BA:177:G:H2'	31:BA:178:G:H8	1.72	0.55
31:BA:241:G:N2	31:BA:254:A:O5'	2.39	0.55
31:BA:856:A:O2'	31:BA:980:A:O2'	2.22	0.55
31:BA:1070:U:O2	31:BA:1155:G:O6	2.25	0.55
31:BA:1196:U:O2'	46:BU:25:GLU:OE2	2.25	0.55
48:BW:57:SER:HA	48:BW:76:LYS:HA	1.88	0.55
1:AA:572:A:O2'	1:AA:575:G:O3'	2.25	0.55
4:AD:11:GLN:NE2	4:AD:55:GLN:O	2.39	0.55
13:AM:106:ALA:O	13:AM:110:LYS:CB	2.54	0.55
31:BA:989:G:H1'	31:BA:2277:A:H61	1.72	0.55
31:BA:1243:A:OP2	31:BA:1265:G:N2	2.39	0.55
31:BA:1468:A:N6	31:BA:1582:G:O2'	2.39	0.55
31:BA:2633:A:O2'	31:BA:2892:A:N7	2.39	0.55
44:BS:48:ALA:HB3	44:BS:95:LYS:HG2	1.88	0.55
44:BS:57:THR:OG1	44:BS:73:PHE:O	2.25	0.55
47:BV:63:GLU:HA	47:BV:67:GLY:H	1.72	0.55
1:AA:39:U:OP1	12:AL:136:LYS:NZ	2.38	0.54
1:AA:405:A:N7	1:AA:556:A:O2'	2.37	0.54
1:AA:1140:C:N4	1:AA:1150:G:N3	2.54	0.54
1:AA:1158:A:O2'	10:AJ:16:ARG:NH2	2.40	0.54
4:AD:164:ASN:ND2	4:AD:185:GLU:OE1	2.39	0.54
14:AN:23:ARG:HA	14:AN:33:VAL:HG11	1.88	0.54
41:BP:40:HIS:H	41:BP:97:VAL:HB	1.72	0.54
41:BP:83:MET:SD	41:BP:83:MET:N	2.79	0.54
48:BW:50:VAL:HA	48:BW:82:LEU:HA	1.89	0.54
1:AA:346:A:N1	1:AA:359:G:C6	2.75	0.54
1:AA:1325:A:H1'	19:AS:37:ARG:HG2	1.89	0.54
4:AD:153:LEU:HA	4:AD:157:GLU:HB3	1.89	0.54
13:AM:17:ILE:O	13:AM:21:TYR:CB	2.55	0.54
31:BA:614:G:H2'	31:BA:615:G:C8	2.42	0.54
34:BE:73:ASN:ND2	34:BE:90:GLU:OE2	2.41	0.54
35:BF:157:PRO:HG3	35:BF:196:VAL:HG11	1.88	0.54
48:BW:64:ARG:HA	48:BW:70:GLY:H	1.71	0.54
1:AA:271:A:H2	1:AA:272:A:H62	1.55	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:433:A:H5'	4:AD:29:ARG:HE	1.71	0.54
1:AA:842:A:N1	1:AA:860:U:O4	2.41	0.54
3:AC:15:ILE:O	3:AC:209:THR:N	2.41	0.54
8:AH:45:TYR:HB3	8:AH:74:ILE:HD11	1.88	0.54
10:AJ:51:VAL:HG23	14:AN:41:ARG:HB3	1.89	0.54
11:AK:108:ILE:HB	21:AU:19:PHE:HE2	1.73	0.54
17:AQ:19:ASP:OD1	17:AQ:52:ASN:ND2	2.41	0.54
20:AT:23:GLN:O	20:AT:26:SER:OG	2.25	0.54
21:AU:20:LYS:O	21:AU:24:THR:CB	2.55	0.54
22:B0:57:LEU:HA	22:B0:61:VAL:HB	1.89	0.54
29:B7:26:ARG:HB2	29:B7:47:ALA:HB2	1.89	0.54
31:BA:313:A:H4'	31:BA:392:C:H1'	1.89	0.54
31:BA:920:U:O4	31:BA:930:A:O2'	2.24	0.54
31:BA:1908:G:O2'	31:BA:1932:A:N1	2.33	0.54
34:BE:177:VAL:HG13	34:BE:185:LEU:HG	1.90	0.54
1:AA:277:C:H2'	1:AA:278:A:C8	2.42	0.54
1:AA:1103:U:OP1	1:AA:1116:G:N1	2.37	0.54
1:AA:1374:C:H5''	9:AI:117:GLY:H	1.72	0.54
3:AC:87:ARG:HD3	3:AC:100:ILE:HB	1.89	0.54
16:AP:35:GLU:OE2	16:AP:55:ARG:NH1	2.41	0.54
16:AP:39:THR:H	16:AP:50:THR:HB	1.72	0.54
20:AT:44:TYR:O	20:AT:48:SER:HB3	2.07	0.54
31:BA:489:A:OP1	31:BA:490:C:N4	2.40	0.54
31:BA:749:U:O2'	31:BA:752:G:N7	2.40	0.54
31:BA:1681:A:O5'	42:BQ:4:ARG:NH1	2.38	0.54
33:BD:108:LYS:H	33:BD:194:VAL:HG13	1.71	0.54
50:BZ:48:GLN:HE22	50:BZ:53:ILE:H	1.54	0.54
1:AA:224:C:H2'	1:AA:225:A:H8	1.72	0.54
3:AC:63:VAL:HG11	3:AC:96:LYS:HD2	1.90	0.54
11:AK:52:GLY:H	11:AK:55:LYS:HG3	1.72	0.54
23:B1:23:THR:HA	23:B1:27:GLU:HB2	1.90	0.54
28:B6:28:ARG:NH2	31:BA:178:G:OP1	2.40	0.54
28:B6:43:THR:HG23	28:B6:44:VAL:HG23	1.89	0.54
31:BA:588:A:H3'	31:BA:589:G:H8	1.71	0.54
31:BA:856:A:N6	31:BA:1007:G:H21	2.06	0.54
31:BA:1445:G:H2'	31:BA:1446:U:C6	2.43	0.54
31:BA:2298:G:OP2	43:BR:17:ARG:NH2	2.40	0.54
34:BE:37:GLN:HE22	34:BE:39:LYS:HB2	1.72	0.54
35:BF:151:LYS:HA	35:BF:173:ASN:HB3	1.90	0.54
41:BP:35:GLN:HE21	41:BP:100:GLY:HA2	1.71	0.54
42:BQ:107:ILE:HG12	42:BQ:123:ILE:HG22	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:BT:115:LYS:HA	45:BT:118:ALA:HB3	1.90	0.54
51:A:41:TYR:O	51:A:55:GLU:HB3	2.07	0.54
5:AE:39:LEU:HA	5:AE:52:GLY:O	2.07	0.54
23:B1:17:SER:O	23:B1:21:LEU:N	2.26	0.54
31:BA:195:A:O4'	40:BO:47:ARG:NH2	2.40	0.54
31:BA:1696:G:O2'	31:BA:1698:A:N7	2.39	0.54
31:BA:1943:U:N3	31:BA:1971:C:O2'	2.41	0.54
31:BA:2822:U:H3'	31:BA:2823:G:H21	1.73	0.54
31:BA:2880:A:OP1	42:BQ:106:ARG:NH1	2.41	0.54
1:AA:207:U:O3'	20:AT:45:ARG:NH1	2.41	0.54
1:AA:920:C:OP2	12:AL:99:ARG:NH2	2.40	0.54
4:AD:112:ARG:O	4:AD:116:ASN:CB	2.51	0.54
6:AF:41:LYS:O	6:AF:62:ILE:O	2.25	0.54
9:AI:27:LYS:NZ	9:AI:28:ILE:O	2.41	0.54
31:BA:882:U:O2'	31:BA:883:A:O4'	2.26	0.54
31:BA:908:U:OP2	41:BP:6:ARG:NH1	2.41	0.54
31:BA:1010:A:OP1	46:BU:78:TYR:OH	2.26	0.54
31:BA:2074:G:H2'	31:BA:2075:A:H8	1.73	0.54
31:BA:2147:C:O2'	31:BA:2148:G:O4'	2.26	0.54
1:AA:373:U:H2'	1:AA:374:C:H4'	1.88	0.54
1:AA:1426:G:O6	1:AA:1488:U:O2	2.26	0.54
4:AD:68:PHE:O	4:AD:72:TYR:CB	2.51	0.54
12:AL:51:GLY:N	12:AL:65:PHE:O	2.38	0.54
31:BA:590:A:H2'	31:BA:591:G:C8	2.43	0.54
31:BA:2518:U:O4	31:BA:2574:G:O6	2.24	0.54
31:BA:2610:C:H2'	31:BA:2611:G:H8	1.71	0.54
33:BD:91:ILE:HD12	33:BD:105:LEU:HA	1.90	0.54
34:BE:106:VAL:HG22	34:BE:172:LEU:HB3	1.89	0.54
35:BF:104:LYS:O	35:BF:108:LEU:HB2	2.08	0.54
42:BQ:4:ARG:HH21	42:BQ:6:LEU:H	1.54	0.54
43:BR:85:VAL:HB	43:BR:88:VAL:HG11	1.90	0.54
1:AA:17:G:O6	1:AA:928:U:O4	2.25	0.54
1:AA:510:G:O2'	1:AA:558:C:O2	2.25	0.54
4:AD:50:GLN:HB3	4:AD:198:PHE:HB2	1.89	0.54
31:BA:1504:G:OP2	31:BA:1543:G:N2	2.41	0.54
31:BA:2051:C:H2'	31:BA:2052:G:C8	2.43	0.54
31:BA:2300:U:O4	31:BA:2339:A:N7	2.41	0.54
31:BA:2659:G:N2	31:BA:2660:U:O4	2.35	0.54
31:BA:2743:U:N3	31:BA:2768:A:C8	2.60	0.54
32:BB:6:U:O3'	43:BR:30:ARG:NH2	2.41	0.54
32:BB:64:U:O4'	32:BB:106:C:N4	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:BM:17:TRP:HA	38:BM:55:PHE:HB2	1.89	0.54
40:BO:134:LYS:HZ2	40:BO:144:VAL:HG22	1.73	0.54
45:BT:114:LYS:HD3	45:BT:117:LEU:HD21	1.90	0.54
1:AA:789:A:N7	1:AA:809:U:C2	2.76	0.54
1:AA:1099:U:H2'	1:AA:1100:A:H3'	1.88	0.54
1:AA:1244:C:O2'	1:AA:1307:G:N2	2.41	0.54
2:AB:161:MET:HB2	2:AB:183:VAL:HG12	1.90	0.54
3:AC:23:TYR:HB2	10:AJ:96:VAL:HA	1.91	0.54
22:B0:10:ARG:NH1	31:BA:431:G:OP1	2.41	0.54
23:B1:48:ALA:O	23:B1:52:GLU:HB2	2.07	0.54
31:BA:247:G:N3	31:BA:2435:U:O2'	2.37	0.54
31:BA:600:U:OP1	31:BA:980:A:N6	2.41	0.54
31:BA:662:G:H2'	31:BA:663:G:H8	1.73	0.54
31:BA:1311:U:O2	31:BA:1315:A:N7	2.41	0.54
35:BF:7:PHE:HD1	35:BF:13:GLN:H	1.56	0.54
39:BN:76:TYR:O	44:BS:71:ARG:NH2	2.41	0.54
1:AA:1337:U:H5'	13:AM:24:GLY:H	1.73	0.53
4:AD:150:PRO:HA	4:AD:153:LEU:HB2	1.89	0.53
17:AQ:56:THR:HB	17:AQ:85:ILE:HG12	1.89	0.53
21:AU:45:ARG:O	21:AU:49:SER:OG	2.21	0.53
24:B2:16:ILE:HG13	24:B2:18:ALA:H	1.73	0.53
25:B3:28:THR:HG23	25:B3:29:LYS:HG2	1.89	0.53
29:B7:28:TYR:HH	31:BA:2365:A:HO2'	1.56	0.53
31:BA:534:G:N1	31:BA:537:A:OP2	2.35	0.53
31:BA:1492:G:H2'	31:BA:1493:G:C5	2.44	0.53
31:BA:1636:C:N4	31:BA:1651:A:OP2	2.41	0.53
31:BA:1770:A:H2'	31:BA:1771:A:H8	1.72	0.53
31:BA:2118:A:H5''	31:BA:2121:A:H5'	1.90	0.53
35:BF:51:HIS:ND1	35:BF:92:PRO:O	2.41	0.53
1:AA:371:A:H2'	1:AA:372:A:C4	2.44	0.53
1:AA:427:U:O2	1:AA:432:G:N2	2.31	0.53
1:AA:609:U:C4	1:AA:646:G:O6	2.62	0.53
1:AA:685:U:H3	1:AA:721:G:H22	1.55	0.53
2:AB:19:GLN:HG3	51:A:139:LYS:CA	2.38	0.53
6:AF:5:GLU:HA	6:AF:64:THR:HA	1.90	0.53
10:AJ:49:TYR:HB2	10:AJ:65:PHE:HB2	1.89	0.53
18:AR:55:LYS:HG2	18:AR:58:ARG:HD2	1.90	0.53
31:BA:341:G:N3	31:BA:361:A:O2'	2.40	0.53
31:BA:1285:U:OP2	31:BA:2064:A:N6	2.41	0.53
31:BA:1781:U:H5''	31:BA:1782:A:H5'	1.90	0.53
31:BA:2135:U:O4'	31:BA:2162:A:N6	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2405:U:O2	31:BA:2419:G:O6	2.27	0.53
1:AA:524:G:N7	1:AA:546:G:N1	2.55	0.53
1:AA:1127:U:OP1	9:AI:85:ARG:NH1	2.41	0.53
1:AA:1164:A:N7	1:AA:1185:G:O2'	2.42	0.53
1:AA:1317:U:OP1	25:B3:73:ARG:NH2	2.41	0.53
17:AQ:59:ILE:HB	17:AQ:81:GLU:HB3	1.90	0.53
31:BA:13:A:O4'	31:BA:560:A:N6	2.41	0.53
31:BA:834:G:H3'	31:BA:835:A:H2'	1.90	0.53
31:BA:1554:G:H1'	31:BA:1555:G:H5'	1.91	0.53
31:BA:1862:G:H1	31:BA:1886:U:H3	1.54	0.53
31:BA:2681:U:O2	31:BA:2734:G:N2	2.36	0.53
40:BO:83:ASN:HD21	40:BO:116:GLU:H	1.54	0.53
48:BW:47:ASP:OD2	48:BW:87:LYS:NZ	2.36	0.53
1:AA:485:C:H2'	1:AA:486:A:H8	1.73	0.53
1:AA:1094:U:H3	1:AA:1107:G:H1	1.56	0.53
1:AA:1167:G:N2	1:AA:1183:A:N1	2.55	0.53
5:AE:104:GLU:HB2	5:AE:124:ALA:HB3	1.91	0.53
9:AI:82:GLY:O	9:AI:86:ALA:CB	2.56	0.53
16:AP:6:ARG:NH2	16:AP:24:ASP:O	2.42	0.53
29:B7:32:ARG:NH1	31:BA:2396:A:OP1	2.41	0.53
31:BA:310:U:O2'	31:BA:314:C:OP2	2.26	0.53
31:BA:741:A:H61	31:BA:760:G:H1'	1.73	0.53
31:BA:1739:G:N1	31:BA:1751:A:C2	2.77	0.53
31:BA:2270:A:N6	31:BA:2277:A:OP2	2.40	0.53
33:BD:17:THR:OG1	33:BD:204:ASN:N	2.41	0.53
34:BE:75:THR:O	34:BE:77:LYS:NZ	2.28	0.53
36:BG:9:TYR:HE1	36:BG:170:LEU:HD11	1.74	0.53
1:AA:65:U:O2	1:AA:105:G:N2	2.32	0.53
1:AA:1079:C:H2'	1:AA:1080:G:H8	1.73	0.53
1:AA:1116:G:OP1	3:AC:174:LEU:N	2.42	0.53
5:AE:22:ASN:HB2	5:AE:37:ALA:HB3	1.89	0.53
9:AI:114:LYS:HZ1	9:AI:120:LYS:HD2	1.73	0.53
11:AK:34:ASP:HB2	11:AK:38:ASN:H	1.73	0.53
11:AK:93:SER:O	11:AK:97:ALA:HB2	2.08	0.53
31:BA:13:A:H61	31:BA:559:U:H3'	1.73	0.53
31:BA:572:A:H3'	31:BA:573:G:H8	1.74	0.53
31:BA:719:G:O2'	31:BA:823:A:N6	2.38	0.53
31:BA:1071:G:O6	31:BA:1154:U:O2	2.26	0.53
31:BA:1235:C:C4	31:BA:1272:U:N3	2.72	0.53
31:BA:1247:U:O2	31:BA:1262:G:N2	2.39	0.53
31:BA:2660:U:C2	31:BA:2669:A:N7	2.77	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:BD:260:ARG:NH2	33:BD:260:ARG:O	2.42	0.53
49:BX:83:LYS:HA	49:BX:89:LYS:HA	1.89	0.53
51:A:41:TYR:HB3	51:A:55:GLU:HB3	1.90	0.53
1:AA:99:A:N7	1:AA:100:G:O2'	2.41	0.53
1:AA:212:A:H1'	1:AA:214:G:H1'	1.90	0.53
1:AA:619:G:N1	1:AA:639:A:C2	2.66	0.53
1:AA:682:G:H2'	1:AA:683:A:H8	1.74	0.53
1:AA:1299:C:N3	1:AA:1300:A:N6	2.57	0.53
1:AA:1432:A:N1	1:AA:1482:G:C6	2.76	0.53
2:AB:15:HIS:HB3	2:AB:41:ILE:HB	1.90	0.53
5:AE:66:ALA:O	5:AE:70:ALA:CB	2.57	0.53
5:AE:66:ALA:O	5:AE:70:ALA:HB2	2.08	0.53
6:AF:3:LYS:HE2	6:AF:66:GLU:HG2	1.91	0.53
8:AH:12:THR:HA	8:AH:15:ARG:HE	1.74	0.53
31:BA:729:U:O4	31:BA:803:G:O6	2.27	0.53
31:BA:799:A:N3	33:BD:212:ARG:NH2	2.56	0.53
31:BA:1029:A:O2'	31:BA:1031:A:OP1	2.23	0.53
31:BA:1256:A:O3'	45:BT:13:ARG:NH1	2.41	0.53
31:BA:1387:G:N1	31:BA:1401:U:OP2	2.33	0.53
31:BA:1939:G:N1	31:BA:1966:C:O2'	2.42	0.53
31:BA:2104:U:O4	31:BA:2193:G:O6	2.26	0.53
31:BA:2320:U:OP1	43:BR:1:MET:N	2.40	0.53
47:BV:8:LYS:O	47:BV:61:ASN:ND2	2.42	0.53
51:A:71:SER:OG	51:A:73:ASP:O	2.26	0.53
1:AA:346:A:N1	1:AA:359:G:O6	2.41	0.53
6:AF:28:ALA:HA	6:AF:31:THR:HG22	1.90	0.53
6:AF:72:GLU:O	6:AF:76:GLU:HB2	2.08	0.53
8:AH:34:ARG:O	8:AH:38:GLU:HB2	2.07	0.53
13:AM:71:ARG:O	13:AM:75:LEU:HB2	2.07	0.53
20:AT:18:ASN:O	20:AT:22:ALA:CB	2.56	0.53
31:BA:648:G:H3'	31:BA:649:A:H8	1.73	0.53
31:BA:724:A:N3	31:BA:814:A:O2'	2.37	0.53
31:BA:1269:C:H2'	31:BA:1270:G:C8	2.43	0.53
31:BA:2689:G:H1	31:BA:2728:U:H3	1.57	0.53
32:BB:6:U:O2	32:BB:110:G:N2	2.37	0.53
36:BG:90:VAL:HG22	36:BG:92:LEU:HB2	1.90	0.53
41:BP:42:ILE:HB	41:BP:47:ILE:HD11	1.89	0.53
1:AA:801:U:O2	1:AA:1523:G:O2'	2.27	0.53
1:AA:842:A:C6	1:AA:860:U:O4	2.62	0.53
1:AA:1167:G:N7	1:AA:1189:G:C2	2.77	0.53
21:AU:19:PHE:O	21:AU:23:VAL:CB	2.57	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1191:A:OP2	45:BT:55:ARG:NH2	2.41	0.53
31:BA:1516:G:N2	31:BA:1528:U:O2	2.41	0.53
31:BA:1934:G:N2	31:BA:1935:U:O4	2.42	0.53
31:BA:2356:A:H3'	31:BA:2357:G:H8	1.74	0.53
41:BP:25:ASP:OD1	41:BP:25:ASP:N	2.42	0.53
45:BT:43:TYR:HA	45:BT:46:ALA:HB3	1.91	0.53
1:AA:56:C:OP1	1:AA:359:G:N2	2.41	0.53
1:AA:593:G:O6	1:AA:765:U:O4	2.26	0.53
1:AA:607:U:H5'	17:AQ:38:ARG:HH22	1.74	0.53
1:AA:744:U:OP1	18:AR:66:ARG:NE	2.39	0.53
1:AA:1137:C:O5'	9:AI:18:ARG:NH1	2.41	0.53
4:AD:36:HIS:HA	4:AD:39:ASN:HB2	1.90	0.53
4:AD:51:LEU:HD12	4:AD:54:LYS:HE3	1.90	0.53
6:AF:45:LYS:HG2	6:AF:60:TYR:H	1.74	0.53
7:AG:115:MET:O	7:AG:119:LEU:CB	2.56	0.53
31:BA:299:G:H2'	31:BA:300:G:H8	1.73	0.53
31:BA:1597:A:OP2	33:BD:83:TYR:OH	2.20	0.53
31:BA:1739:G:O2'	31:BA:2856:C:N3	2.41	0.53
31:BA:1844:G:O6	31:BA:1902:U:O2	2.26	0.53
31:BA:2526:U:O2'	31:BA:2651:U:OP1	2.25	0.53
41:BP:119:ARG:O	41:BP:122:SER:OG	2.23	0.53
1:AA:158:U:O4	1:AA:165:G:O6	2.27	0.53
1:AA:455:G:N1	1:AA:495:U:OP2	2.42	0.53
1:AA:609:U:N3	1:AA:646:G:N1	2.37	0.53
1:AA:652:U:H4'	8:AH:86:ARG:HH21	1.73	0.53
1:AA:691:G:O6	1:AA:715:U:O4	2.27	0.53
1:AA:702:A:H2'	1:AA:703:A:C4	2.44	0.53
1:AA:839:U:OP1	2:AB:21:ARG:NH2	2.42	0.53
1:AA:1134:U:N3	1:AA:1287:A:OP1	2.42	0.53
1:AA:1408:G:O6	1:AA:1511:G:N2	2.42	0.53
4:AD:136:PRO:HA	4:AD:177:LEU:HB3	1.89	0.53
13:AM:82:GLU:HA	13:AM:85:SER:HB2	1.89	0.53
14:AN:23:ARG:HG3	14:AN:28:GLY:HA2	1.91	0.53
19:AS:22:GLN:NE2	19:AS:26:GLU:O	2.41	0.53
31:BA:697:U:H2'	31:BA:698:G:H8	1.73	0.53
31:BA:1323:C:O2'	42:BQ:67:ARG:NH1	2.38	0.53
31:BA:1344:C:H2'	31:BA:1345:A:H8	1.74	0.53
31:BA:2096:U:N3	31:BA:2230:C:OP2	2.41	0.53
31:BA:2410:C:OP2	31:BA:2415:A:N6	2.41	0.53
35:BF:117:LYS:HB3	35:BF:123:LEU:HD23	1.91	0.53
44:BS:96:LEU:O	44:BS:99:LEU:CB	2.57	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:789:A:N7	1:AA:809:U:O2	2.42	0.52
1:AA:1287:A:OP2	10:AJ:71:LYS:NZ	2.41	0.52
1:AA:1313:A:N6	1:AA:1338:G:O4'	2.42	0.52
4:AD:56:LYS:O	4:AD:60:THR:CB	2.56	0.52
10:AJ:90:LEU:HD21	10:AJ:98:ILE:HG21	1.91	0.52
13:AM:56:ILE:HA	13:AM:59:GLU:HB2	1.90	0.52
13:AM:71:ARG:HA	13:AM:74:SER:HB2	1.90	0.52
20:AT:65:ALA:O	20:AT:69:LYS:HB2	2.08	0.52
23:B1:51:ASP:O	23:B1:55:LYS:HB2	2.09	0.52
31:BA:420:C:O2'	31:BA:425:A:N1	2.37	0.52
31:BA:1445:G:N2	31:BA:1616:A:C6	2.77	0.52
31:BA:2634:G:H2'	31:BA:2635:G:H8	1.74	0.52
31:BA:2837:G:N2	42:BQ:101:ASN:O	2.37	0.52
32:BB:27:A:OP2	43:BR:36:SER:OG	2.26	0.52
40:BO:73:GLU:HB2	40:BO:106:LYS:HD2	1.91	0.52
1:AA:15:U:H3	1:AA:923:A:N6	2.08	0.52
1:AA:842:A:H2'	1:AA:843:G:C8	2.45	0.52
4:AD:53:GLU:HA	4:AD:56:LYS:HG2	1.91	0.52
8:AH:108:THR:N	8:AH:111:GLY:O	2.43	0.52
24:B2:48:ASN:HA	24:B2:51:SER:HB3	1.91	0.52
31:BA:218:A:H2'	31:BA:219:G:C4	2.43	0.52
31:BA:894:A:N1	31:BA:957:G:O6	2.43	0.52
31:BA:894:A:N1	31:BA:957:G:C6	2.77	0.52
31:BA:899:G:H3'	31:BA:900:A:H8	1.74	0.52
33:BD:5:VAL:HA	33:BD:18:GLY:H	1.74	0.52
51:A:91:LYS:HB3	51:A:95:ARG:NH1	2.24	0.52
1:AA:76:G:H4'	1:AA:77:A:H4'	1.90	0.52
1:AA:1372:G:N2	1:AA:1373:C:O4'	2.42	0.52
1:AA:1452:U:O4	1:AA:1464:G:O6	2.28	0.52
14:AN:32:SER:HB3	14:AN:41:ARG:HD2	1.91	0.52
31:BA:92:G:H1'	31:BA:93:U:C2	2.44	0.52
31:BA:483:U:H4'	35:BF:84:ARG:HE	1.74	0.52
31:BA:572:A:H62	31:BA:587:G:H21	1.57	0.52
31:BA:960:A:O2'	50:BZ:37:GLU:OE2	2.23	0.52
31:BA:2300:U:C2	31:BA:2339:A:N6	2.76	0.52
31:BA:2753:A:H2'	31:BA:2754:A:H8	1.74	0.52
31:BA:2755:G:OP1	31:BA:2755:G:N2	2.42	0.52
33:BD:164:VAL:HG13	33:BD:174:VAL:HG12	1.91	0.52
36:BG:139:PHE:HD2	36:BG:142:ILE:HB	1.75	0.52
37:BH:88:GLU:HB2	37:BH:163:ARG:HB2	1.91	0.52
45:BT:89:GLU:HG2	45:BT:91:ASN:H	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:446:G:N2	1:AA:447:U:O4	2.42	0.52
1:AA:461:C:N4	1:AA:489:U:O2'	2.40	0.52
1:AA:918:C:OP1	12:AL:107:ARG:NH2	2.43	0.52
10:AJ:8:ILE:HD12	10:AJ:74:ILE:HD11	1.91	0.52
13:AM:56:ILE:O	13:AM:60:LEU:HB2	2.10	0.52
15:AO:32:LEU:HD22	15:AO:62:HIS:HD2	1.73	0.52
31:BA:85:G:OP2	49:BX:4:LYS:NZ	2.42	0.52
31:BA:500:G:H2'	31:BA:501:A:C4	2.45	0.52
31:BA:596:C:O2'	31:BA:1283:A:N1	2.34	0.52
31:BA:1025:A:O2'	31:BA:1027:C:OP2	2.28	0.52
31:BA:2828:G:OP1	34:BE:78:ARG:NH2	2.43	0.52
33:BD:52:ARG:HH11	33:BD:53:HIS:HB2	1.75	0.52
45:BT:102:ASP:O	45:BT:106:PHE:CB	2.53	0.52
1:AA:64:U:O2	1:AA:387:C:O2'	2.26	0.52
1:AA:118:U:H3'	1:AA:296:A:H61	1.75	0.52
1:AA:119:A:C6	1:AA:295:U:O2	2.62	0.52
1:AA:385:G:H2'	1:AA:386:A:C8	2.44	0.52
1:AA:1353:A:OP1	7:AG:9:ARG:NH2	2.35	0.52
5:AE:110:ALA:HB1	5:AE:114:VAL:HG13	1.90	0.52
20:AT:72:LEU:O	20:AT:76:LEU:CB	2.56	0.52
30:B8:15:LYS:HB3	30:B8:26:ILE:HB	1.91	0.52
31:BA:334:A:H2'	31:BA:335:A:C8	2.44	0.52
31:BA:615:G:H5'	45:BT:11:ARG:HH21	1.74	0.52
31:BA:888:U:H2'	31:BA:889:A:C8	2.44	0.52
31:BA:1427:C:O2'	48:BW:22:GLN:NE2	2.42	0.52
31:BA:1517:U:O2'	31:BA:1518:G:O4'	2.27	0.52
31:BA:2332:A:H2'	31:BA:2333:A:C8	2.45	0.52
31:BA:2752:A:N7	31:BA:2758:U:O2	2.42	0.52
43:BR:72:VAL:HB	43:BR:104:LEU:HB2	1.90	0.52
46:BU:34:THR:HA	46:BU:64:VAL:H	1.75	0.52
47:BV:18:PRO:HG3	47:BV:105:ALA:HB2	1.91	0.52
50:BZ:58:ASN:O	50:BZ:70:LYS:N	2.43	0.52
1:AA:258:A:C5	1:AA:282:A:N1	2.77	0.52
1:AA:466:G:O6	1:AA:484:U:O4	2.27	0.52
1:AA:466:G:N2	1:AA:484:U:O2	2.37	0.52
1:AA:713:U:OP2	1:AA:714:A:N6	2.41	0.52
6:AF:12:PRO:HD3	6:AF:58:GLY:HA2	1.90	0.52
20:AT:69:LYS:HA	20:AT:72:LEU:HB3	1.90	0.52
31:BA:1459:C:H2'	31:BA:1460:A:C8	2.44	0.52
31:BA:1857:G:O6	31:BA:1891:U:O4	2.28	0.52
31:BA:2112:A:H4'	31:BA:2154:U:H1'	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2663:G:O2'	31:BA:2665:G:N7	2.43	0.52
33:BD:132:LEU:HD13	33:BD:135:ILE:HB	1.92	0.52
42:BQ:36:ARG:HA	42:BQ:39:GLU:HG3	1.92	0.52
1:AA:123:C:OP1	1:AA:319:C:O2'	2.27	0.52
1:AA:263:G:H5''	17:AQ:20:LYS:HD2	1.92	0.52
1:AA:794:G:H2'	1:AA:795:A:H8	1.74	0.52
1:AA:946:A:N3	1:AA:1383:U:O2'	2.37	0.52
1:AA:1330:G:H5'	13:AM:98:ARG:HH22	1.74	0.52
1:AA:1386:G:O6	7:AG:2:ARG:N	2.42	0.52
4:AD:58:ARG:NH1	4:AD:65:GLU:OE1	2.43	0.52
10:AJ:79:PRO:O	10:AJ:83:THR:OG1	2.27	0.52
11:AK:18:ILE:O	11:AK:33:THR:CB	2.58	0.52
20:AT:45:ARG:O	20:AT:49:SER:CB	2.57	0.52
24:B2:11:SER:HB2	31:BA:1023:A:H5''	1.91	0.52
31:BA:1700:U:N3	31:BA:1703:G:OP2	2.31	0.52
31:BA:2447:U:H2'	31:BA:2448:G:C8	2.45	0.52
34:BE:55:THR:H	34:BE:77:LYS:HD2	1.75	0.52
35:BF:136:THR:O	35:BF:140:ALA:CB	2.56	0.52
36:BG:103:LYS:HA	36:BG:107:VAL:HB	1.91	0.52
37:BH:68:THR:HG22	37:BH:71:LEU:HD12	1.92	0.52
41:BP:7:VAL:HG12	41:BP:9:HIS:H	1.75	0.52
1:AA:233:A:H2'	1:AA:234:A:C8	2.45	0.52
1:AA:847:G:C6	1:AA:856:U:C4	2.96	0.52
1:AA:1060:U:O2	1:AA:1213:G:C6	2.63	0.52
1:AA:1262:G:H2'	1:AA:1286:A:H61	1.74	0.52
17:AQ:22:ILE:O	17:AQ:46:LYS:HA	2.09	0.52
19:AS:33:THR:OG1	19:AS:34:TRP:N	2.42	0.52
20:AT:69:LYS:HG3	20:AT:73:ALA:HB2	1.92	0.52
25:B3:22:LYS:HB3	25:B3:33:GLU:HB2	1.90	0.52
31:BA:1443:U:O2'	31:BA:1617:G:N2	2.43	0.52
31:BA:2585:G:N2	31:BA:2585:G:OP2	2.42	0.52
37:BH:27:LYS:HA	37:BH:31:GLY:O	2.09	0.52
42:BQ:113:ARG:HB3	42:BQ:118:ALA:HB3	1.92	0.52
44:BS:25:VAL:HA	44:BS:84:GLU:O	2.10	0.52
51:A:89:ILE:HG22	51:A:93:LYS:NZ	2.25	0.52
1:AA:379:G:O2'	1:AA:381:A:N6	2.43	0.52
1:AA:1100:A:OP2	7:AG:3:LYS:NZ	2.42	0.52
3:AC:188:ALA:HB3	3:AC:195:LEU:HB2	1.92	0.52
4:AD:61:TYR:HE2	4:AD:91:LEU:HD22	1.73	0.52
4:AD:65:GLU:HG3	4:AD:69:ARG:HH11	1.75	0.52
4:AD:120:ILE:HG12	4:AD:142:VAL:HG13	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:AI:33:ARG:NH2	9:AI:37:SER:O	2.43	0.52
12:AL:25:ASN:ND2	12:AL:42:GLN:O	2.43	0.52
19:AS:51:VAL:HB	19:AS:58:VAL:HB	1.92	0.52
31:BA:1221:G:H2'	31:BA:1222:A:C8	2.44	0.52
31:BA:1400:G:N2	31:BA:1401:U:O4	2.42	0.52
31:BA:2760:U:H1'	31:BA:2761:A:H5''	1.92	0.52
31:BA:2847:G:O3'	31:BA:2864:G:N2	2.43	0.52
33:BD:167:SER:HA	33:BD:172:THR:HA	1.91	0.52
36:BG:58:LEU:HD22	36:BG:88:ALA:HB1	1.92	0.52
41:BP:106:LEU:HD21	41:BP:118:LEU:HD11	1.91	0.52
48:BW:11:ILE:O	48:BW:26:THR:OG1	2.28	0.52
51:A:43:ASN:HB3	51:A:45:LYS:HZ2	1.73	0.52
1:AA:34:A:H2'	1:AA:35:A:C8	2.45	0.52
1:AA:170:C:H2'	1:AA:171:U:H6	1.75	0.52
1:AA:1014:U:OP2	1:AA:1033:U:O2'	2.28	0.52
1:AA:1157:U:O2'	1:AA:1158:A:O4'	2.27	0.52
1:AA:1451:C:O2'	1:AA:1465:G:N2	2.39	0.52
2:AB:110:ARG:HD3	2:AB:149:GLY:HA3	1.92	0.52
9:AI:115:LYS:HB3	9:AI:118:LEU:HD12	1.90	0.52
11:AK:83:THR:HA	11:AK:109:SER:HB3	1.91	0.52
22:B0:52:LYS:NZ	31:BA:408:U:OP1	2.43	0.52
31:BA:738:U:O2	31:BA:763:G:O6	2.29	0.52
31:BA:1814:G:N3	33:BD:44:ASN:ND2	2.57	0.52
31:BA:2312:G:C2	31:BA:2315:A:C2	2.96	0.52
31:BA:2735:G:OP1	34:BE:171:ASN:ND2	2.43	0.52
33:BD:118:SER:OG	33:BD:129:ALA:N	2.43	0.52
35:BF:199:ALA:HA	35:BF:202:GLN:HB3	1.92	0.52
37:BH:27:LYS:NZ	37:BH:28:GLY:O	2.38	0.52
38:BM:34:VAL:HA	38:BM:37:VAL:HG22	1.92	0.52
1:AA:125:U:O2	1:AA:244:G:N2	2.40	0.51
2:AB:6:MET:SD	2:AB:46:THR:OG1	2.67	0.51
3:AC:76:ILE:HG13	3:AC:102:ILE:HG23	1.92	0.51
6:AF:44:GLU:HB3	6:AF:62:ILE:HD12	1.92	0.51
17:AQ:60:VAL:HA	17:AQ:79:ILE:HA	1.92	0.51
31:BA:2722:G:O2'	31:BA:2845:U:OP1	2.28	0.51
31:BA:2817:A:O2'	31:BA:2819:A:N7	2.37	0.51
38:BM:27:LEU:HD12	38:BM:64:ILE:HG13	1.92	0.51
50:BZ:54:HIS:O	50:BZ:85:HIS:HA	2.10	0.51
51:A:171:VAL:HA	51:A:181:LEU:HA	1.92	0.51
1:AA:384:G:H5'	16:AP:6:ARG:HD3	1.91	0.51
1:AA:418:G:N2	1:AA:439:A:OP2	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1210:C:O2'	3:AC:194:LYS:NZ	2.44	0.51
1:AA:1382:A:O2'	7:AG:28:ARG:NH2	2.42	0.51
2:AB:36:ASN:HD21	51:A:166:ASN:HA	1.75	0.51
12:AL:24:MET:SD	12:AL:36:THR:OG1	2.68	0.51
13:AM:106:ALA:O	13:AM:110:LYS:HB2	2.11	0.51
31:BA:8:U:OP1	38:BM:123:LYS:NZ	2.36	0.51
31:BA:353:A:N7	31:BA:373:G:O2'	2.37	0.51
31:BA:894:A:H5'	50:BZ:77:PHE:HE2	1.75	0.51
31:BA:1557:A:H2'	31:BA:1558:A:C8	2.45	0.51
31:BA:1742:G:O2'	31:BA:1747:A:N6	2.44	0.51
31:BA:1780:U:O2	31:BA:1787:A:N7	2.43	0.51
31:BA:2395:G:N1	31:BA:2428:C:O2'	2.42	0.51
31:BA:2659:G:N2	31:BA:2669:A:O5'	2.33	0.51
40:BO:79:LEU:HB3	40:BO:115:GLY:HA3	1.91	0.51
1:AA:472:G:H1'	1:AA:473:U:H5	1.74	0.51
17:AQ:70:LYS:O	17:AQ:72:LYS:NZ	2.43	0.51
23:B1:35:LEU:HD12	23:B1:36:ARG:H	1.73	0.51
27:B5:15:ARG:NH2	31:BA:2423:U:O2'	2.43	0.51
31:BA:234:U:O4	31:BA:262:G:N2	2.43	0.51
31:BA:511:G:O3'	31:BA:535:A:N6	2.43	0.51
31:BA:579:U:O4'	31:BA:1260:G:N2	2.44	0.51
31:BA:1504:G:O6	31:BA:1543:G:O2'	2.27	0.51
31:BA:2303:G:H2'	31:BA:2304:A:H8	1.75	0.51
34:BE:30:ALA:HB2	34:BE:184:ILE:HG13	1.92	0.51
37:BH:35:ARG:HH12	37:BH:71:LEU:HD13	1.76	0.51
37:BH:156:PRO:O	37:BH:172:LYS:N	2.43	0.51
42:BQ:45:GLU:OE2	42:BQ:105:THR:N	2.36	0.51
51:A:59:PRO:HA	51:A:64:THR:HG22	1.92	0.51
1:AA:223:G:H21	1:AA:475:G:H1	1.58	0.51
1:AA:591:C:N3	1:AA:767:A:N7	2.59	0.51
1:AA:955:G:OP1	13:AM:107:ARG:NE	2.35	0.51
1:AA:1322:U:O2'	1:AA:1367:A:N3	2.38	0.51
3:AC:82:ASN:O	3:AC:86:LEU:CB	2.58	0.51
8:AH:39:ILE:HG21	8:AH:105:ILE:HD13	1.92	0.51
31:BA:1801:G:O4'	31:BA:1821:A:N6	2.44	0.51
31:BA:2142:A:N1	31:BA:2158:A:N6	2.58	0.51
31:BA:2208:C:O3'	33:BD:150:LYS:NZ	2.42	0.51
1:AA:436:G:H3'	4:AD:8:SER:H	1.75	0.51
1:AA:1091:U:O2'	1:AA:1110:A:N7	2.42	0.51
1:AA:1380:G:OP1	7:AG:35:ARG:NH2	2.43	0.51
4:AD:197:GLU:HG2	4:AD:203:MET:HB3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:AI:48:ILE:HG12	9:AI:79:ILE:HD13	1.92	0.51
11:AK:44:SER:OG	11:AK:47:ALA:N	2.36	0.51
14:AN:24:CYS:HB3	14:AN:40:CYS:H	1.75	0.51
28:B6:22:MET:HA	28:B6:28:ARG:HB3	1.93	0.51
31:BA:271:A:N6	31:BA:292:G:C2	2.79	0.51
31:BA:334:A:H2'	31:BA:335:A:H8	1.75	0.51
31:BA:2040:C:H2'	31:BA:2041:A:H8	1.75	0.51
31:BA:2349:G:H4'	31:BA:2350:A:H3'	1.92	0.51
31:BA:2828:G:H5'	34:BE:60:LEU:HD21	1.91	0.51
35:BF:140:ALA:O	35:BF:144:SER:OG	2.28	0.51
37:BH:87:LEU:HD21	37:BH:132:VAL:HA	1.93	0.51
38:BM:133:THR:HG23	38:BM:134:HIS:CD2	2.45	0.51
44:BS:32:VAL:HB	44:BS:38:ARG:H	1.75	0.51
47:BV:92:ARG:HB3	47:BV:97:ALA:H	1.75	0.51
49:BX:70:VAL:O	49:BX:93:ASN:ND2	2.40	0.51
1:AA:379:G:O6	1:AA:398:C:N4	2.42	0.51
1:AA:563:U:OP1	12:AL:19:SER:OG	2.28	0.51
1:AA:1297:A:H4'	7:AG:36:GLY:HA3	1.93	0.51
9:AI:95:ARG:HA	9:AI:98:LEU:HB2	1.93	0.51
15:AO:24:SER:HB3	15:AO:27:VAL:HG13	1.93	0.51
19:AS:17:LYS:O	19:AS:21:ALA:HB2	2.09	0.51
25:B3:76:LYS:HE2	25:B3:78:TYR:HB2	1.92	0.51
31:BA:219:G:H21	31:BA:464:A:H62	1.59	0.51
31:BA:406:A:N6	31:BA:437:A:OP2	2.34	0.51
31:BA:518:A:H1'	49:BX:55:ALA:HA	1.93	0.51
31:BA:1550:G:H3'	31:BA:1551:A:H2'	1.92	0.51
32:BB:85:U:O2'	32:BB:86:U:O4'	2.29	0.51
37:BH:122:LYS:HB2	37:BH:134:GLU:HB3	1.93	0.51
45:BT:105:ALA:O	45:BT:109:LEU:HB2	2.11	0.51
1:AA:295:U:H2'	1:AA:296:A:H8	1.76	0.51
1:AA:808:G:N2	1:AA:809:U:O4	2.43	0.51
3:AC:137:ILE:HG23	3:AC:148:ILE:HG12	1.93	0.51
7:AG:87:PRO:HD3	7:AG:147:ASN:HB3	1.93	0.51
9:AI:17:ALA:HB2	9:AI:78:ALA:HB1	1.93	0.51
13:AM:3:ARG:HH11	36:BG:137:LEU:HD13	1.75	0.51
13:AM:13:LYS:HB3	13:AM:17:ILE:HG23	1.93	0.51
13:AM:33:VAL:HA	13:AM:36:ALA:HB3	1.92	0.51
19:AS:46:GLY:H	19:AS:62:VAL:HG23	1.75	0.51
23:B1:34:ASP:H	23:B1:37:PHE:HB3	1.75	0.51
31:BA:120:G:H4'	31:BA:147:A:H5'	1.92	0.51
31:BA:922:C:O2'	31:BA:923:G:O4'	2.28	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:947:A:H2'	31:BA:948:A:C8	2.45	0.51
31:BA:1175:C:OP1	38:BM:70:LYS:NZ	2.44	0.51
31:BA:2024:A:O2'	31:BA:2025:G:N2	2.42	0.51
31:BA:2312:G:C6	31:BA:2315:A:C2	2.96	0.51
31:BA:2640:U:H2'	31:BA:2641:U:H6	1.76	0.51
38:BM:12:ASN:OD1	38:BM:12:ASN:N	2.43	0.51
1:AA:163:A:HO2'	1:AA:356:G:HO2'	1.49	0.51
1:AA:300:G:H3'	1:AA:301:A:H8	1.76	0.51
1:AA:609:U:O4	1:AA:646:G:O6	2.28	0.51
1:AA:896:G:H21	1:AA:917:A:H62	1.59	0.51
1:AA:983:A:N6	1:AA:1374:C:O4'	2.44	0.51
9:AI:18:ARG:O	9:AI:66:ASN:CB	2.57	0.51
23:B1:4:SER:N	31:BA:98:A:OP1	2.36	0.51
25:B3:31:SER:HB2	36:BG:103:LYS:H	1.75	0.51
31:BA:632:G:O6	31:BA:692:U:O4	2.29	0.51
34:BE:36:LEU:HA	34:BE:92:GLY:H	1.76	0.51
37:BH:95:ARG:HD2	37:BH:97:GLN:HE22	1.75	0.51
38:BM:20:VAL:HG22	38:BM:142:LEU:HB2	1.93	0.51
43:BR:103:ALA:O	43:BR:107:ALA:CB	2.59	0.51
48:BW:54:ASN:HB2	48:BW:79:ILE:HB	1.93	0.51
1:AA:254:A:N6	1:AA:286:G:O2'	2.44	0.51
1:AA:510:G:H2'	1:AA:511:G:C8	2.46	0.51
1:AA:950:G:N2	1:AA:1348:U:O2	2.36	0.51
1:AA:1000:U:H1'	1:AA:1004:A:H61	1.75	0.51
1:AA:1331:C:OP2	13:AM:98:ARG:NH2	2.43	0.51
1:AA:1357:A:O2'	7:AG:32:ASP:OD1	2.23	0.51
1:AA:1391:C:H2'	1:AA:1392:G:H8	1.76	0.51
3:AC:89:GLU:HA	3:AC:92:LYS:HG2	1.92	0.51
10:AJ:13:TYR:HB3	14:AN:54:PRO:HG3	1.93	0.51
11:AK:18:ILE:HA	11:AK:81:SER:O	2.10	0.51
13:AM:90:ARG:HD2	13:AM:95:LEU:HD12	1.92	0.51
31:BA:783:G:H5'	47:BV:92:ARG:HH22	1.75	0.51
31:BA:857:U:H2'	31:BA:858:A:C8	2.45	0.51
31:BA:1103:G:N1	31:BA:1131:A:O3'	2.44	0.51
31:BA:1442:A:N6	31:BA:1615:A:OP2	2.43	0.51
31:BA:1656:A:H2'	31:BA:1657:G:C8	2.46	0.51
31:BA:2056:G:H2'	31:BA:2057:G:H8	1.76	0.51
31:BA:2689:G:OP2	44:BS:50:LYS:NZ	2.44	0.51
34:BE:35:VAL:HA	34:BE:51:VAL:HG23	1.93	0.51
1:AA:1138:A:O2'	9:AI:5:GLN:N	2.43	0.51
19:AS:48:THR:HA	19:AS:61:TYR:HA	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:B6:33:ALA:HA	28:B6:36:ARG:HG2	1.92	0.51
31:BA:33:U:O4	31:BA:481:G:O2'	2.29	0.51
31:BA:213:G:H2'	31:BA:214:G:C8	2.46	0.51
31:BA:476:U:O2'	31:BA:647:A:N6	2.42	0.51
31:BA:605:G:N1	31:BA:2035:A:OP1	2.37	0.51
31:BA:819:U:O4	31:BA:828:A:N6	2.44	0.51
31:BA:2129:G:H22	31:BA:2176:U:H5'	1.76	0.51
37:BH:147:TYR:O	37:BH:151:ARG:NH1	2.41	0.51
43:BR:36:SER:HB3	43:BR:39:ASN:H	1.76	0.51
51:A:5:ASN:HB3	51:A:39:THR:HG23	1.93	0.51
1:AA:540:U:OP2	51:A:50:LYS:NZ	2.40	0.50
1:AA:620:G:N2	1:AA:638:U:O2	2.35	0.50
1:AA:730:G:O2'	1:AA:732:G:OP1	2.29	0.50
4:AD:162:ARG:HH21	4:AD:166:VAL:H	1.59	0.50
9:AI:79:ILE:O	9:AI:83:ILE:HB	2.11	0.50
30:B8:36:ARG:NH2	31:BA:2745:A:O3'	2.44	0.50
31:BA:511:G:N1	31:BA:514:A:OP2	2.44	0.50
31:BA:578:U:N3	31:BA:580:A:N7	2.59	0.50
31:BA:666:A:O2'	40:BO:68:ASN:ND2	2.42	0.50
31:BA:919:G:OP2	31:BA:930:A:N6	2.38	0.50
31:BA:1289:G:H2'	31:BA:1290:G:C8	2.46	0.50
31:BA:2051:C:H2'	31:BA:2052:G:H8	1.76	0.50
31:BA:2074:G:H2'	31:BA:2075:A:C8	2.46	0.50
47:BV:78:THR:HG22	47:BV:109:VAL:HG22	1.94	0.50
1:AA:214:G:H2'	1:AA:215:A:C8	2.46	0.50
1:AA:417:U:OP1	4:AD:24:LYS:NZ	2.44	0.50
1:AA:1367:A:OP2	14:AN:35:ARG:NH1	2.44	0.50
1:AA:1445:G:O6	1:AA:1470:U:O4	2.29	0.50
8:AH:48:ASP:HB3	8:AH:62:VAL:HA	1.92	0.50
12:AL:23:ALA:HB3	12:AL:37:LYS:HD2	1.93	0.50
31:BA:53:A:H61	31:BA:116:G:H1'	1.76	0.50
31:BA:99:U:H4'	31:BA:101:G:H1'	1.93	0.50
31:BA:1076:U:H2'	31:BA:1077:G:H8	1.75	0.50
31:BA:2619:U:H2'	31:BA:2620:C:H6	1.76	0.50
33:BD:123:ASP:H	33:BD:125:LYS:HZ2	1.60	0.50
1:AA:70:G:N2	1:AA:101:A:N6	2.46	0.50
1:AA:158:U:O2	1:AA:165:G:N2	2.39	0.50
1:AA:308:A:H1'	1:AA:574:U:H3	1.76	0.50
1:AA:425:G:N2	1:AA:434:U:O2'	2.44	0.50
1:AA:1352:U:OP1	9:AI:122:ARG:NH2	2.45	0.50
1:AA:1414:C:C4	1:AA:1502:U:O4	2.64	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:AJ:46:ARG:HA	10:AJ:68:ARG:HA	1.94	0.50
17:AQ:60:VAL:HB	17:AQ:76:LEU:HD12	1.93	0.50
28:B6:8:HIS:HA	31:BA:1338:G:H5'	1.93	0.50
31:BA:299:G:H2'	31:BA:300:G:C8	2.46	0.50
31:BA:959:U:H2'	31:BA:960:A:H8	1.75	0.50
31:BA:2816:G:H2'	31:BA:2817:A:C8	2.46	0.50
36:BG:84:MET:SD	36:BG:84:MET:N	2.77	0.50
1:AA:151:C:N4	1:AA:171:U:OP2	2.40	0.50
1:AA:843:G:N1	1:AA:860:U:O4	2.44	0.50
1:AA:943:A:O2'	1:AA:1390:C:N3	2.38	0.50
1:AA:1012:G:H22	1:AA:1044:C:H42	1.59	0.50
8:AH:37:ALA:O	8:AH:41:LYS:CB	2.59	0.50
22:B0:41:ASN:HD22	22:B0:63:ARG:HG2	1.76	0.50
31:BA:52:A:OP2	31:BA:118:A:N6	2.44	0.50
31:BA:662:G:H2'	31:BA:663:G:C8	2.46	0.50
31:BA:2287:C:OP2	31:BA:2393:G:O2'	2.28	0.50
31:BA:2421:C:H2'	31:BA:2422:A:C8	2.47	0.50
31:BA:2842:A:OP2	31:BA:2843:A:N6	2.42	0.50
34:BE:112:SER:OG	34:BE:163:GLY:O	2.23	0.50
41:BP:45:ARG:O	41:BP:49:ALA:HB2	2.12	0.50
51:A:41:TYR:O	51:A:55:GLU:CB	2.59	0.50
1:AA:599:U:H3	1:AA:657:G:H1	1.60	0.50
1:AA:935:G:N2	1:AA:1397:U:O2	2.34	0.50
3:AC:155:ARG:HB3	3:AC:193:GLY:HA3	1.94	0.50
19:AS:17:LYS:O	19:AS:21:ALA:CB	2.60	0.50
20:AT:59:LEU:O	20:AT:64:LYS:NZ	2.38	0.50
23:B1:61:LYS:HA	23:B1:65:ALA:HB3	1.94	0.50
31:BA:401:U:H2'	31:BA:402:C:C6	2.47	0.50
31:BA:673:U:O2	31:BA:683:G:N2	2.31	0.50
31:BA:1436:G:H2'	31:BA:1437:A:C8	2.46	0.50
31:BA:1770:A:H2'	31:BA:1771:A:C8	2.47	0.50
31:BA:2527:G:O2'	31:BA:2768:A:O2'	2.30	0.50
32:BB:111:C:O2'	43:BR:48:VAL:O	2.28	0.50
34:BE:66:LYS:HA	34:BE:76:PRO:HG3	1.94	0.50
36:BG:136:GLN:H	36:BG:150:VAL:HG21	1.77	0.50
45:BT:87:ASP:OD1	45:BT:87:ASP:N	2.43	0.50
46:BU:18:GLU:HG3	46:BU:102:VAL:H	1.76	0.50
1:AA:820:G:OP1	1:AA:910:G:N2	2.45	0.50
9:AI:116:PRO:HG3	10:AJ:64:GLN:HG3	1.94	0.50
28:B6:18:PHE:O	28:B6:22:MET:CB	2.59	0.50
31:BA:1784:C:O2	31:BA:2612:G:O2'	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2271:A:H62	31:BA:2276:U:H3	1.60	0.50
35:BF:22:SER:O	35:BF:24:PHE:N	2.44	0.50
45:BT:92:ARG:HB3	45:BT:93:LYS:HE3	1.94	0.50
48:BW:25:TYR:HB2	48:BW:80:VAL:HB	1.94	0.50
1:AA:266:A:H2'	1:AA:267:G:C8	2.46	0.50
1:AA:1139:U:H4'	9:AI:4:VAL:HG22	1.93	0.50
3:AC:138:GLN:O	3:AC:142:ARG:CB	2.59	0.50
31:BA:159:A:N6	31:BA:164:U:O2	2.44	0.50
31:BA:221:A:O2'	31:BA:223:G:O5'	2.29	0.50
31:BA:307:A:O4'	31:BA:394:A:N6	2.45	0.50
31:BA:449:C:H2'	31:BA:450:A:C8	2.46	0.50
31:BA:600:U:O2'	31:BA:602:G:N7	2.35	0.50
31:BA:2307:G:H2'	31:BA:2308:G:C8	2.47	0.50
31:BA:2732:U:H2'	31:BA:2733:A:C8	2.46	0.50
47:BV:82:GLU:HA	47:BV:104:THR:O	2.12	0.50
1:AA:71:A:H1'	1:AA:101:A:H61	1.75	0.50
1:AA:981:G:H3'	1:AA:982:A:H8	1.76	0.50
3:AC:22:TRP:HZ3	3:AC:24:ALA:HB2	1.76	0.50
4:AD:8:SER:O	4:AD:12:SER:CB	2.59	0.50
14:AN:10:ASN:HD22	14:AN:23:ARG:CZ	2.25	0.50
15:AO:12:ILE:O	15:AO:16:ALA:HB2	2.11	0.50
31:BA:1243:A:OP2	31:BA:1266:G:N2	2.43	0.50
32:BB:103:A:H2'	32:BB:104:G:C8	2.47	0.50
1:AA:525:U:H2'	1:AA:526:G:C4	2.47	0.50
1:AA:987:C:N4	14:AN:18:THR:O	2.45	0.50
1:AA:1069:G:O5'	3:AC:3:GLN:NE2	2.45	0.50
1:AA:1328:U:OP1	13:AM:98:ARG:NH1	2.44	0.50
1:AA:1439:G:N2	1:AA:1475:A:OP2	2.33	0.50
4:AD:113:GLN:OE1	4:AD:117:HIS:NE2	2.45	0.50
5:AE:38:ALA:O	5:AE:53:THR:HA	2.12	0.50
7:AG:40:GLN:O	7:AG:116:GLN:NE2	2.45	0.50
18:AR:47:ARG:O	18:AR:51:GLY:HA2	2.12	0.50
21:AU:7:ARG:HB2	21:AU:18:ARG:HG3	1.94	0.50
28:B6:1:MET:O	28:B6:3:ARG:NH1	2.44	0.50
31:BA:842:U:H2'	31:BA:843:G:H8	1.76	0.50
31:BA:2237:U:H2'	31:BA:2238:G:C8	2.44	0.50
31:BA:2472:A:O2'	31:BA:2486:A:N6	2.45	0.50
31:BA:2512:G:O6	31:BA:2584:U:O4	2.30	0.50
39:BN:103:ALA:HA	39:BN:122:LEU:H	1.75	0.50
40:BO:95:THR:O	40:BO:99:ALA:CB	2.60	0.50
1:AA:358:G:H2'	1:AA:359:G:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:568:A:H4'	1:AA:569:U:H3'	1.94	0.49
1:AA:681:G:H2'	1:AA:682:G:C8	2.47	0.49
1:AA:693:G:H22	1:AA:714:A:N6	2.09	0.49
24:B2:8:LEU:HD22	24:B2:31:LEU:HB2	1.93	0.49
31:BA:518:A:O2'	49:BX:45:GLN:O	2.25	0.49
31:BA:661:A:N6	31:BA:671:A:OP2	2.44	0.49
31:BA:715:U:O4	31:BA:832:G:O6	2.30	0.49
31:BA:991:G:OP2	41:BP:14:ARG:NH1	2.44	0.49
31:BA:1202:G:H2'	31:BA:1203:A:C8	2.46	0.49
36:BG:54:ALA:HB2	36:BG:151:ARG:HD2	1.94	0.49
51:A:145:GLU:O	51:A:149:GLN:N	2.45	0.49
1:AA:254:A:H62	1:AA:289:G:N2	2.06	0.49
4:AD:169:ASP:O	4:AD:173:LEU:N	2.45	0.49
18:AR:33:LEU:HD22	18:AR:36:ARG:HH22	1.77	0.49
23:B1:22:THR:O	23:B1:26:ALA:N	2.46	0.49
31:BA:1009:A:O2'	31:BA:1024:G:N1	2.45	0.49
31:BA:1296:G:H1'	31:BA:1297:U:H5	1.78	0.49
31:BA:1325:A:OP1	31:BA:2713:G:O2'	2.27	0.49
31:BA:1758:G:H4'	31:BA:1760:G:H5''	1.94	0.49
31:BA:2370:A:H3'	31:BA:2371:G:H8	1.76	0.49
32:BB:20:G:H2'	32:BB:21:A:C8	2.48	0.49
35:BF:125:ALA:HB1	35:BF:197:GLN:HG2	1.93	0.49
37:BH:55:PRO:HG2	37:BH:61:MET:HE3	1.94	0.49
1:AA:149:G:N2	1:AA:175:A:N1	2.59	0.49
1:AA:1185:G:O2'	1:AA:1187:A:N7	2.37	0.49
2:AB:210:VAL:O	2:AB:214:THR:HB	2.12	0.49
8:AH:47:LYS:HE2	8:AH:65:LYS:HA	1.95	0.49
11:AK:15:GLU:HG3	11:AK:79:THR:HG22	1.94	0.49
24:B2:3:GLN:O	24:B2:59:ALA:N	2.45	0.49
29:B7:4:GLN:HG2	31:BA:624:G:H1'	1.93	0.49
31:BA:411:G:H2'	31:BA:412:G:H8	1.77	0.49
31:BA:932:U:O2'	31:BA:933:A:O4'	2.30	0.49
31:BA:1306:A:O2'	42:BQ:19:ASP:OD2	2.26	0.49
31:BA:2447:U:H2'	31:BA:2448:G:H8	1.76	0.49
33:BD:43:ARG:HB2	33:BD:47:GLY:HA2	1.93	0.49
34:BE:114:GLY:HA2	34:BE:163:GLY:HA3	1.94	0.49
39:BN:104:ARG:HH12	44:BS:31:VAL:HB	1.77	0.49
1:AA:847:G:O6	1:AA:856:U:O4	2.29	0.49
1:AA:1000:U:O2'	1:AA:1050:A:N6	2.44	0.49
2:AB:101:LEU:HD13	2:AB:175:GLU:HB3	1.92	0.49
8:AH:51:TYR:HB3	8:AH:60:ILE:HG12	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:AI:8:GLY:HA2	9:AI:89:GLN:HG3	1.94	0.49
22:B0:39:LEU:HD22	22:B0:62:GLU:HB2	1.95	0.49
31:BA:82:G:N1	31:BA:102:A:OP2	2.44	0.49
31:BA:219:G:O2'	31:BA:232:A:N3	2.44	0.49
31:BA:726:C:H4'	33:BD:43:ARG:HH12	1.77	0.49
31:BA:740:A:N7	31:BA:761:G:C2	2.80	0.49
31:BA:1487:A:C2	31:BA:2706:G:C6	2.92	0.49
31:BA:1745:A:H2'	31:BA:1746:A:C5	2.47	0.49
31:BA:2311:G:OP1	31:BA:2311:G:N2	2.36	0.49
31:BA:2685:C:O2	31:BA:2729:A:N6	2.46	0.49
34:BE:68:HIS:O	34:BE:72:ALA:HB3	2.12	0.49
44:BS:96:LEU:O	44:BS:99:LEU:HB2	2.13	0.49
51:A:73:ASP:OD2	51:A:75:TYR:HB3	2.13	0.49
1:AA:62:A:OP1	1:AA:339:G:N1	2.46	0.49
1:AA:364:A:HO2'	1:AA:396:G:H1	1.60	0.49
7:AG:104:VAL:O	7:AG:108:ARG:HB3	2.12	0.49
17:AQ:29:LYS:HA	17:AQ:39:ILE:O	2.13	0.49
31:BA:2115:U:O2'	31:BA:2117:C:OP1	2.30	0.49
31:BA:2473:A:H5''	41:BP:56:ARG:HE	1.77	0.49
31:BA:2811:G:H2'	31:BA:2812:C:H6	1.77	0.49
34:BE:107:ASP:HA	34:BE:170:GLN:HA	1.93	0.49
1:AA:80:G:O6	1:AA:92:A:O2'	2.25	0.49
1:AA:107:G:H1	20:AT:10:ARG:HH21	1.61	0.49
1:AA:224:C:H2'	1:AA:225:A:C8	2.47	0.49
1:AA:429:U:O4	3:AC:126:ARG:NH2	2.46	0.49
1:AA:1061:G:N2	1:AA:1065:G:OP2	2.45	0.49
4:AD:112:ARG:HG3	4:AD:130:PRO:HG2	1.95	0.49
8:AH:22:PHE:O	8:AH:66:TYR:OH	2.29	0.49
17:AQ:26:VAL:HB	17:AQ:43:LYS:H	1.78	0.49
23:B1:48:ALA:O	23:B1:52:GLU:CB	2.61	0.49
31:BA:165:A:H3'	31:BA:166:G:H8	1.76	0.49
31:BA:260:A:O2'	31:BA:642:G:O2'	2.29	0.49
31:BA:860:C:O2'	40:BO:54:GLN:OE1	2.29	0.49
31:BA:1034:U:O2	31:BA:1190:A:N7	2.45	0.49
31:BA:1847:G:H2'	31:BA:1848:G:C8	2.48	0.49
31:BA:2089:U:H3	31:BA:2238:G:H1	1.59	0.49
35:BF:188:VAL:HG12	40:BO:3:LEU:HB2	1.95	0.49
40:BO:135:ALA:O	40:BO:139:ALA:CB	2.58	0.49
47:BV:52:GLU:HA	47:BV:55:LEU:HB3	1.94	0.49
1:AA:1125:A:O2'	9:AI:105:THR:O	2.27	0.49
1:AA:1226:U:O2	19:AS:52:TYR:OH	2.26	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:36:ASN:ND2	51:A:166:ASN:HA	2.28	0.49
2:AB:80:VAL:HG12	2:AB:91:TYR:HB2	1.94	0.49
3:AC:83:VAL:O	3:AC:87:ARG:CB	2.57	0.49
6:AF:41:LYS:C	6:AF:62:ILE:O	2.55	0.49
7:AG:58:LEU:O	7:AG:62:GLU:CB	2.61	0.49
13:AM:16:VAL:HG23	13:AM:34:LEU:HD13	1.94	0.49
18:AR:64:ILE:O	18:AR:68:ARG:N	2.39	0.49
31:BA:906:G:N2	31:BA:945:U:O2	2.46	0.49
31:BA:1083:A:N7	31:BA:1145:G:N3	2.61	0.49
31:BA:1864:G:O6	31:BA:1884:U:O4	2.31	0.49
31:BA:2753:A:H8	37:BH:59:LYS:HD3	1.78	0.49
39:BN:24:VAL:HB	39:BN:39:VAL:HG12	1.95	0.49
40:BO:122:LEU:HA	40:BO:142:GLY:HA2	1.95	0.49
42:BQ:31:VAL:HG22	42:BQ:122:ILE:HB	1.94	0.49
49:BX:27:LEU:HD22	49:BX:30:VAL:HG23	1.94	0.49
50:BZ:51:THR:OG1	50:BZ:53:ILE:O	2.30	0.49
51:A:92:TYR:HA	51:A:95:ARG:HB2	1.94	0.49
1:AA:446:G:O2'	1:AA:502:C:N4	2.46	0.49
1:AA:567:G:OP2	1:AA:568:A:O2'	2.29	0.49
1:AA:821:U:OP1	1:AA:911:G:O2'	2.30	0.49
1:AA:1438:C:N4	1:AA:1439:G:O6	2.46	0.49
3:AC:82:ASN:O	3:AC:86:LEU:HB3	2.13	0.49
3:AC:122:GLN:HG2	3:AC:127:ILE:HB	1.92	0.49
4:AD:55:GLN:OE1	4:AD:58:ARG:NH2	2.46	0.49
7:AG:122:GLU:O	7:AG:126:ALA:HB2	2.12	0.49
8:AH:14:ILE:HA	8:AH:25:VAL:HG11	1.95	0.49
29:B7:36:LYS:NZ	31:BA:2395:G:O5'	2.44	0.49
31:BA:710:A:N3	31:BA:2447:U:O2'	2.44	0.49
31:BA:1475:G:O2'	31:BA:1575:A:O2'	2.31	0.49
31:BA:1945:C:N4	31:BA:1946:C:O2	2.45	0.49
31:BA:2262:C:O2'	31:BA:2431:C:OP2	2.31	0.49
1:AA:219:A:O3'	1:AA:475:G:N2	2.45	0.49
1:AA:648:A:O2'	8:AH:109:SER:O	2.29	0.49
1:AA:839:U:H2'	1:AA:863:A:H61	1.77	0.49
1:AA:956:C:H5'	1:AA:1313:A:H4'	1.95	0.49
1:AA:967:A:O2'	1:AA:1229:G:N2	2.46	0.49
3:AC:11:ARG:HA	3:AC:15:ILE:HB	1.94	0.49
5:AE:67:ILE:HA	5:AE:70:ALA:HB3	1.95	0.49
5:AE:117:VAL:HG21	5:AE:143:THR:HG21	1.94	0.49
7:AG:103:LEU:O	7:AG:107:ALA:CB	2.53	0.49
15:AO:29:ILE:O	15:AO:33:THR:CB	2.60	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:131:G:O6	31:BA:145:U:O4	2.30	0.49
31:BA:309:G:N2	31:BA:313:A:O2'	2.46	0.49
31:BA:644:U:O2	31:BA:650:G:O6	2.31	0.49
31:BA:818:A:H8	31:BA:819:U:H4'	1.77	0.49
31:BA:1096:U:H4'	31:BA:1097:A:H5'	1.94	0.49
31:BA:1323:C:HO2'	42:BQ:67:ARG:HH11	1.56	0.49
31:BA:2040:C:H2'	31:BA:2041:A:C8	2.47	0.49
31:BA:2293:G:H2'	31:BA:2294:G:H8	1.77	0.49
31:BA:2312:G:N1	31:BA:2315:A:N1	2.58	0.49
31:BA:2717:G:O2'	31:BA:2719:C:OP2	2.31	0.49
32:BB:64:U:OP2	32:BB:106:C:N4	2.35	0.49
36:BG:37:ILE:N	36:BG:90:VAL:O	2.42	0.49
1:AA:451:U:H2'	1:AA:452:A:C8	2.48	0.49
1:AA:468:G:H2'	1:AA:469:A:H8	1.77	0.49
1:AA:635:U:H5''	16:AP:39:THR:HG21	1.94	0.49
1:AA:1135:G:H1'	1:AA:1287:A:C4	2.48	0.49
1:AA:1446:G:N2	1:AA:1469:C:O2'	2.36	0.49
23:B1:59:ARG:HA	23:B1:62:THR:HG22	1.94	0.49
25:B3:18:THR:HG22	25:B3:19:THR:HG23	1.93	0.49
31:BA:1509:G:N2	31:BA:1510:U:O2'	2.46	0.49
31:BA:1796:U:O2	31:BA:1827:G:N2	2.31	0.49
31:BA:1799:C:OP1	33:BD:258:LYS:NZ	2.44	0.49
31:BA:2516:C:O3'	34:BE:156:LYS:NZ	2.43	0.49
31:BA:2652:G:C6	31:BA:2676:U:O2	2.66	0.49
32:BB:61:U:H2'	32:BB:62:A:H8	1.78	0.49
35:BF:163:PHE:N	35:BF:165:GLU:OE1	2.46	0.49
36:BG:102:ASP:HA	36:BG:105:VAL:HG22	1.95	0.49
38:BM:39:ARG:O	38:BM:52:THR:OG1	2.25	0.49
1:AA:370:G:O2'	1:AA:372:A:N6	2.44	0.48
1:AA:472:G:O2'	1:AA:476:A:OP1	2.26	0.48
1:AA:728:C:H5'	18:AR:44:ILE:HG21	1.95	0.48
1:AA:1500:A:H1'	51:A:79:ASP:OD2	2.11	0.48
3:AC:186:GLU:HB3	3:AC:197:VAL:HB	1.95	0.48
7:AG:48:GLN:NE2	7:AG:116:GLN:O	2.46	0.48
14:AN:40:CYS:O	14:AN:44:LEU:CB	2.61	0.48
19:AS:35:SER:HB2	19:AS:71:LEU:HB3	1.95	0.48
29:B7:13:ARG:HH22	40:BO:63:LYS:HG2	1.78	0.48
29:B7:60:ARG:HH12	29:B7:62:VAL:HG23	1.79	0.48
31:BA:626:U:H2'	31:BA:627:A:C8	2.48	0.48
31:BA:723:U:H2'	31:BA:724:A:C8	2.48	0.48
31:BA:777:C:H2'	31:BA:778:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1739:G:C2	31:BA:1751:A:C2	3.01	0.48
31:BA:2091:G:H2'	31:BA:2092:A:H8	1.77	0.48
31:BA:2464:U:H5	31:BA:2496:U:H3	1.61	0.48
31:BA:2634:G:H2'	31:BA:2635:G:C8	2.47	0.48
36:BG:103:LYS:O	36:BG:108:SER:N	2.37	0.48
43:BR:80:ALA:HA	43:BR:83:LYS:HE2	1.95	0.48
46:BU:85:HIS:HA	46:BU:86:ARG:HD3	1.94	0.48
47:BV:43:THR:HG22	47:BV:45:THR:H	1.77	0.48
47:BV:52:GLU:O	47:BV:56:ASN:CB	2.61	0.48
51:A:45:LYS:HZ1	51:A:53:LYS:HE2	1.77	0.48
1:AA:140:U:H2'	1:AA:141:G:C8	2.47	0.48
1:AA:731:U:H3	1:AA:863:A:H4'	1.78	0.48
1:AA:1071:C:H3'	1:AA:1072:G:H2'	1.95	0.48
1:AA:1457:G:O6	1:AA:1461:G:N1	2.46	0.48
22:B0:43:GLU:HG2	22:B0:45:LYS:H	1.77	0.48
31:BA:27:G:O2'	31:BA:546:G:N2	2.46	0.48
31:BA:181:A:O2'	31:BA:468:C:O2'	2.29	0.48
31:BA:268:C:H2'	31:BA:269:A:H8	1.78	0.48
31:BA:2093:U:O2	31:BA:2234:G:O6	2.31	0.48
33:BD:208:ALA:O	33:BD:211:THR:OG1	2.25	0.48
33:BD:271:VAL:HG13	33:BD:273:ARG:H	1.77	0.48
42:BQ:108:LEU:HB2	42:BQ:122:ILE:HG23	1.95	0.48
1:AA:340:G:OP1	20:AT:7:ALA:N	2.45	0.48
1:AA:700:U:H2'	1:AA:701:G:H3'	1.96	0.48
1:AA:984:G:N2	1:AA:1370:A:O5'	2.43	0.48
1:AA:1013:C:OP1	1:AA:1033:U:O2'	2.27	0.48
2:AB:186:MET:HB2	2:AB:202:ALA:HB3	1.96	0.48
24:B2:52:HIS:CE1	24:B2:53:LEU:HB2	2.47	0.48
30:B8:2:LYS:NZ	31:BA:2530:G:N3	2.55	0.48
31:BA:38:A:N3	35:BF:48:THR:OG1	2.44	0.48
31:BA:481:G:N2	31:BA:489:A:N1	2.61	0.48
31:BA:1031:A:H2'	31:BA:1032:G:C8	2.48	0.48
31:BA:1363:C:H5''	48:BW:64:ARG:HH22	1.77	0.48
31:BA:1544:A:H3'	31:BA:1545:G:H8	1.78	0.48
31:BA:1755:G:N1	31:BA:1758:G:OP2	2.32	0.48
31:BA:1945:C:H2'	31:BA:1946:C:H4'	1.95	0.48
31:BA:2372:C:H2'	31:BA:2373:A:C8	2.48	0.48
31:BA:2518:U:H2'	31:BA:2519:C:C6	2.49	0.48
31:BA:2768:A:H3'	31:BA:2770:G:H1	1.78	0.48
31:BA:2834:U:H2'	31:BA:2835:A:C8	2.48	0.48
33:BD:35:VAL:HG11	33:BD:62:TYR:HD2	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BF:189:SER:HA	40:BO:3:LEU:HD13	1.95	0.48
36:BG:102:ASP:OD1	36:BG:106:THR:OG1	2.30	0.48
37:BH:43:LEU:HA	37:BH:52:VAL:HG13	1.95	0.48
38:BM:19:VAL:HG23	38:BM:139:PRO:HB2	1.95	0.48
43:BR:11:ARG:O	43:BR:15:HIS:CB	2.61	0.48
45:BT:58:ARG:HH11	45:BT:92:ARG:HH22	1.61	0.48
46:BU:6:ILE:HB	46:BU:42:PHE:HB2	1.95	0.48
1:AA:12:A:HO2'	1:AA:516:C:HO2'	1.56	0.48
1:AA:182:A:N1	1:AA:209:U:H2'	2.29	0.48
1:AA:569:U:O5'	1:AA:575:G:N2	2.46	0.48
1:AA:932:C:H2'	1:AA:933:G:C8	2.48	0.48
1:AA:1354:G:O4'	9:AI:109:ARG:NH2	2.46	0.48
3:AC:49:ALA:HB1	3:AC:75:VAL:HG13	1.96	0.48
3:AC:56:THR:HG23	3:AC:65:VAL:HG22	1.95	0.48
18:AR:44:ILE:HA	18:AR:68:ARG:HH22	1.78	0.48
19:AS:28:LYS:O	19:AS:48:THR:OG1	2.30	0.48
31:BA:848:U:P	46:BU:86:ARG:HH12	2.36	0.48
31:BA:877:A:H2'	31:BA:878:A:C8	2.49	0.48
31:BA:934:C:N3	31:BA:935:C:C4	2.82	0.48
31:BA:1253:G:OP1	46:BU:91:ARG:NH2	2.47	0.48
31:BA:1825:G:H2'	31:BA:1826:G:H8	1.78	0.48
34:BE:174:ILE:HG23	34:BE:187:LYS:HB2	1.96	0.48
37:BH:150:SER:HG	37:BH:151:ARG:HH11	1.60	0.48
1:AA:110:C:H3'	1:AA:111:G:H8	1.78	0.48
1:AA:457:A:H5'	1:AA:496:A:H62	1.76	0.48
3:AC:42:ILE:HG21	3:AC:54:ILE:HG21	1.96	0.48
4:AD:194:LEU:O	4:AD:198:PHE:HB2	2.14	0.48
6:AF:10:ILE:O	6:AF:59:ILE:N	2.40	0.48
31:BA:273:C:H2'	31:BA:274:A:C8	2.48	0.48
31:BA:305:C:O2'	31:BA:306:A:N7	2.39	0.48
31:BA:1232:U:H2'	31:BA:1233:A:H4'	1.96	0.48
31:BA:1820:U:H3'	33:BD:157:SER:HA	1.95	0.48
31:BA:1952:G:H2'	31:BA:1953:G:H8	1.78	0.48
31:BA:2005:A:OP1	42:BQ:5:LYS:NZ	2.47	0.48
31:BA:2006:G:H2'	31:BA:2007:A:H8	1.78	0.48
31:BA:2372:C:H2'	31:BA:2373:A:H8	1.78	0.48
35:BF:163:PHE:O	35:BF:167:SER:OG	2.26	0.48
37:BH:155:GLU:HB3	37:BH:157:TYR:H	1.78	0.48
40:BO:95:THR:O	40:BO:99:ALA:HB2	2.12	0.48
43:BR:12:GLN:HA	43:BR:15:HIS:HB3	1.95	0.48
1:AA:266:A:H2'	1:AA:267:G:H8	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:569:U:N3	1:AA:575:G:O4'	2.47	0.48
1:AA:840:G:N1	1:AA:862:U:N3	2.61	0.48
1:AA:967:A:N6	19:AS:79:THR:O	2.46	0.48
1:AA:987:C:H5''	1:AA:1230:C:H41	1.78	0.48
1:AA:1127:U:O2	1:AA:1161:G:N2	2.34	0.48
1:AA:1167:G:O6	1:AA:1189:G:C6	2.67	0.48
2:AB:5:SER:OG	2:AB:6:MET:N	2.47	0.48
3:AC:131:ARG:O	3:AC:135:GLN:HB2	2.14	0.48
31:BA:67:G:N1	31:BA:74:U:C2	2.81	0.48
31:BA:242:U:H3	31:BA:254:A:H8	1.42	0.48
31:BA:621:U:HO2'	35:BF:93:ASN:HD21	1.62	0.48
31:BA:782:U:H3	31:BA:2018:A:H2	1.61	0.48
31:BA:822:C:H3'	31:BA:826:C:H41	1.78	0.48
31:BA:1235:C:N4	31:BA:1272:U:N3	2.44	0.48
31:BA:2054:C:O2'	31:BA:2055:A:O4'	2.31	0.48
31:BA:2298:G:H5'	43:BR:14:ARG:HE	1.77	0.48
31:BA:2753:A:H2'	31:BA:2754:A:C8	2.48	0.48
32:BB:61:U:H2'	32:BB:62:A:C8	2.48	0.48
40:BO:94:GLU:O	40:BO:98:ALA:CB	2.59	0.48
40:BO:117:LEU:HD21	40:BO:136:ALA:HB1	1.95	0.48
46:BU:6:ILE:HA	46:BU:14:VAL:O	2.13	0.48
47:BV:92:ARG:HB3	47:BV:96:SER:HB2	1.96	0.48
51:A:142:ASP:HA	51:A:163:ALA:H	1.78	0.48
1:AA:97:G:C8	1:AA:100:G:C6	3.01	0.48
1:AA:327:G:H2'	1:AA:328:G:H8	1.77	0.48
1:AA:606:G:O2'	17:AQ:38:ARG:NH2	2.40	0.48
3:AC:53:LEU:O	3:AC:68:HIS:CB	2.55	0.48
11:AK:20:HIS:O	11:AK:31:MET:HB2	2.14	0.48
12:AL:25:ASN:HA	12:AL:26:VAL:HA	1.53	0.48
13:AM:43:ILE:HD13	13:AM:48:LEU:HD23	1.95	0.48
31:BA:408:U:H2'	31:BA:409:A:H8	1.78	0.48
31:BA:511:G:O2'	31:BA:536:A:N6	2.47	0.48
31:BA:673:U:H2'	31:BA:674:C:C6	2.48	0.48
31:BA:911:G:O6	31:BA:940:U:O4	2.32	0.48
31:BA:1274:A:H2'	31:BA:1275:G:H8	1.78	0.48
31:BA:1481:U:O2'	31:BA:2706:G:O6	2.28	0.48
31:BA:1483:A:H2	42:BQ:60:ARG:HE	1.61	0.48
31:BA:1742:G:H5'	31:BA:1744:A:H61	1.78	0.48
31:BA:1840:C:H4'	31:BA:1841:G:H5'	1.96	0.48
36:BG:67:LEU:HG	36:BG:89:LYS:HB2	1.95	0.48
50:BZ:45:LEU:HB2	50:BZ:67:LEU:O	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:33:G:N2	1:AA:49:C:OP1	2.47	0.48
1:AA:129:G:O6	1:AA:240:U:O4	2.31	0.48
1:AA:238:G:O2'	16:AP:26:ARG:NH1	2.47	0.48
1:AA:612:U:H2'	1:AA:613:G:H8	1.78	0.48
1:AA:952:G:N1	1:AA:1345:G:OP2	2.38	0.48
1:AA:966:A:O2'	1:AA:994:A:O4'	2.30	0.48
1:AA:1355:U:H2'	1:AA:1356:A:C8	2.47	0.48
7:AG:85:GLN:O	7:AG:147:ASN:ND2	2.47	0.48
9:AI:96:SER:O	9:AI:100:ARG:CB	2.55	0.48
12:AL:50:VAL:HA	12:AL:66:ALA:HA	1.95	0.48
27:B5:12:CYS:SG	27:B5:15:ARG:N	2.86	0.48
28:B6:19:ARG:O	28:B6:23:ALA:HB2	2.14	0.48
31:BA:332:A:H1'	31:BA:351:C:H1'	1.96	0.48
31:BA:1546:C:H2'	31:BA:1547:U:C6	2.48	0.48
31:BA:1820:U:H5''	33:BD:158:ALA:H	1.78	0.48
31:BA:1873:U:OP2	31:BA:1875:A:N6	2.43	0.48
32:BB:4:G:H2'	32:BB:5:G:H8	1.78	0.48
32:BB:26:U:OP1	43:BR:58:SER:OG	2.31	0.48
35:BF:93:ASN:HD21	35:BF:95:ARG:HE	1.62	0.48
35:BF:156:LEU:O	35:BF:202:GLN:NE2	2.39	0.48
38:BM:90:THR:OG1	38:BM:91:ALA:N	2.41	0.48
51:A:43:ASN:HB3	51:A:45:LYS:NZ	2.28	0.48
1:AA:369:G:H2'	1:AA:370:G:C8	2.49	0.48
1:AA:565:C:N4	1:AA:566:G:O6	2.47	0.48
1:AA:1197:G:H4'	3:AC:175:HIS:HE1	1.77	0.48
1:AA:1451:C:HO2'	1:AA:1465:G:H22	1.60	0.48
4:AD:21:GLY:O	4:AD:107:THR:OG1	2.28	0.48
5:AE:87:GLU:HG3	5:AE:100:LYS:HA	1.95	0.48
5:AE:136:PRO:HA	5:AE:139:VAL:HB	1.96	0.48
7:AG:50:GLU:HA	7:AG:54:GLY:HA2	1.95	0.48
31:BA:799:A:OP2	33:BD:207:LYS:NZ	2.46	0.48
31:BA:1245:G:O6	31:BA:1264:U:O4	2.30	0.48
31:BA:1643:A:OP1	31:BA:1646:C:N4	2.41	0.48
31:BA:2641:U:H4'	34:BE:46:TYR:HB3	1.96	0.48
43:BR:55:SER:HB2	43:BR:61:LEU:HB3	1.95	0.48
1:AA:445:U:H5'	4:AD:149:VAL:HG22	1.95	0.48
1:AA:510:G:H2'	1:AA:511:G:H8	1.78	0.48
31:BA:105:C:O2'	31:BA:327:G:OP1	2.32	0.48
31:BA:181:A:H2	31:BA:214:G:H1	1.53	0.48
31:BA:906:G:C2	31:BA:945:U:O2	2.67	0.48
31:BA:986:C:H2'	31:BA:987:G:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1441:G:N2	31:BA:1615:A:N6	2.41	0.48
31:BA:1849:A:H2	31:BA:1850:A:H62	1.61	0.48
31:BA:2679:A:N6	31:BA:2736:G:C6	2.74	0.48
36:BG:105:VAL:HG11	36:BG:174:LEU:HD12	1.96	0.48
41:BP:64:VAL:HG22	41:BP:107:GLY:H	1.77	0.48
48:BW:63:LYS:O	48:BW:70:GLY:N	2.47	0.48
1:AA:1283:G:N3	1:AA:1289:C:O2'	2.40	0.47
1:AA:1419:C:H2'	1:AA:1420:A:C8	2.49	0.47
17:AQ:58:ASP:OD1	17:AQ:83:ALA:N	2.42	0.47
22:B0:51:ALA:HA	22:B0:54:LEU:HB2	1.95	0.47
25:B3:30:GLY:HA3	36:BG:103:LYS:HE3	1.96	0.47
31:BA:185:A:H2'	31:BA:186:G:C8	2.49	0.47
31:BA:273:C:H2'	31:BA:274:A:H8	1.79	0.47
31:BA:279:G:O6	31:BA:284:C:O2'	2.32	0.47
31:BA:541:C:H5''	31:BA:543:C:H5'	1.95	0.47
31:BA:738:U:C2	31:BA:763:G:O6	2.67	0.47
31:BA:948:A:N6	41:BP:11:ARG:O	2.47	0.47
31:BA:1201:U:H2'	31:BA:1202:G:C8	2.48	0.47
31:BA:1289:G:H2'	31:BA:1290:G:H8	1.79	0.47
31:BA:1487:A:H2	31:BA:2706:G:C2	2.26	0.47
31:BA:2164:G:N2	31:BA:2166:G:O4'	2.47	0.47
35:BF:110:LEU:O	35:BF:114:TYR:CB	2.60	0.47
39:BN:101:PRO:HD3	44:BS:65:ASN:HB3	1.95	0.47
41:BP:121:ALA:HA	41:BP:124:LYS:HB2	1.95	0.47
1:AA:1079:C:H2'	1:AA:1080:G:C8	2.49	0.47
2:AB:114:LEU:HA	2:AB:144:LEU:HG	1.96	0.47
4:AD:54:LYS:O	4:AD:58:ARG:HB2	2.14	0.47
19:AS:35:SER:H	19:AS:71:LEU:HD22	1.79	0.47
21:AU:11:SER:H	21:AU:14:ASP:HB3	1.79	0.47
25:B3:59:THR:H	25:B3:62:GLN:N	2.12	0.47
31:BA:756:C:H2'	31:BA:757:A:C8	2.47	0.47
31:BA:914:G:N1	31:BA:937:A:OP1	2.47	0.47
31:BA:1459:C:H2'	31:BA:1460:A:H8	1.79	0.47
31:BA:1498:A:H61	31:BA:1550:G:H1'	1.79	0.47
31:BA:1815:U:H5''	33:BD:40:THR:HG21	1.97	0.47
31:BA:1931:A:H2'	31:BA:1932:A:C8	2.48	0.47
31:BA:2401:G:O6	31:BA:2423:U:C2	2.66	0.47
31:BA:2610:C:H2'	31:BA:2611:G:C8	2.49	0.47
31:BA:2720:U:H2'	31:BA:2721:G:H8	1.78	0.47
31:BA:2788:U:H2'	31:BA:2789:U:H6	1.79	0.47
31:BA:2861:C:O5'	44:BS:114:ARG:NH2	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:BD:129:ALA:CA	33:BD:190:ALA:O	2.53	0.47
34:BE:6:LEU:HD22	34:BE:33:ASN:HA	1.96	0.47
36:BG:33:ASP:HB2	36:BG:158:VAL:HG13	1.96	0.47
40:BO:126:VAL:HB	40:BO:146:GLU:HG2	1.95	0.47
47:BV:53:ASN:O	47:BV:57:SER:CB	2.62	0.47
1:AA:112:G:O2'	1:AA:362:G:O2'	2.31	0.47
1:AA:114:U:H2'	1:AA:115:G:C8	2.49	0.47
1:AA:413:U:OP1	1:AA:414:G:O2'	2.29	0.47
1:AA:1053:C:O2'	1:AA:1054:A:O4'	2.32	0.47
1:AA:1429:G:H5'	39:BN:48:PRO:HG3	1.95	0.47
1:AA:1502:U:H5''	51:A:27:LYS:HZ1	1.79	0.47
5:AE:86:HIS:HB3	8:AH:101:LEU:HD12	1.96	0.47
7:AG:57:PRO:O	7:AG:61:PHE:HB2	2.14	0.47
16:AP:8:THR:HB	16:AP:19:ARG:HB3	1.95	0.47
16:AP:67:SER:H	16:AP:70:VAL:HB	1.79	0.47
25:B3:29:LYS:N	25:B3:33:GLU:OE2	2.47	0.47
29:B7:14:PHE:HB3	29:B7:22:LEU:HD11	1.95	0.47
31:BA:601:U:H2'	31:BA:602:G:C8	2.48	0.47
33:BD:142:HIS:HB2	33:BD:156:ARG:HA	1.95	0.47
1:AA:343:C:O2'	1:AA:1440:A:N3	2.38	0.47
1:AA:632:C:H2'	1:AA:633:C:C6	2.50	0.47
1:AA:701:G:H2'	1:AA:702:A:C5	2.49	0.47
1:AA:819:C:O2'	1:AA:909:A:N1	2.42	0.47
1:AA:842:A:N7	1:AA:861:G:N1	2.62	0.47
1:AA:896:G:N2	1:AA:917:A:H62	2.11	0.47
1:AA:1167:G:O6	1:AA:1189:G:O6	2.31	0.47
1:AA:1245:A:N6	1:AA:1308:U:O2'	2.43	0.47
1:AA:1311:G:N2	1:AA:1340:A:OP2	2.48	0.47
6:AF:4:TYR:CZ	6:AF:74:LEU:HD12	2.49	0.47
12:AL:36:THR:HA	12:AL:37:LYS:HA	1.65	0.47
31:BA:58:G:OP1	48:BW:73:SER:OG	2.27	0.47
31:BA:496:C:H2'	31:BA:497:C:H6	1.79	0.47
31:BA:752:G:H3'	31:BA:753:A:H8	1.79	0.47
31:BA:793:U:H2'	31:BA:794:G:H8	1.79	0.47
31:BA:1602:A:H2'	31:BA:1603:G:H8	1.78	0.47
31:BA:2017:A:H2'	31:BA:2018:A:C8	2.49	0.47
31:BA:2310:U:H5''	31:BA:2311:G:H2'	1.96	0.47
31:BA:2472:A:H2'	31:BA:2485:G:H22	1.80	0.47
31:BA:2747:C:O5'	31:BA:2759:C:N4	2.45	0.47
31:BA:2789:U:H4'	34:BE:71:LYS:HG2	1.96	0.47
34:BE:6:LEU:HD11	34:BE:51:VAL:HG21	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:BE:117:PHE:HA	34:BE:161:ARG:HA	1.95	0.47
37:BH:160:LYS:O	37:BH:163:ARG:NH2	2.41	0.47
41:BP:70:PRO:HA	41:BP:95:ALA:HB2	1.96	0.47
45:BT:53:LYS:O	45:BT:57:PHE:HB2	2.14	0.47
45:BT:59:LYS:O	45:BT:63:ALA:CB	2.62	0.47
48:BW:31:SER:HA	48:BW:76:LYS:HE3	1.96	0.47
1:AA:72:U:O2	1:AA:98:A:N1	2.47	0.47
1:AA:1037:U:O2	1:AA:1041:G:N1	2.47	0.47
1:AA:1431:G:H2'	1:AA:1432:A:C8	2.49	0.47
5:AE:17:ARG:HB2	5:AE:41:VAL:HG23	1.97	0.47
12:AL:11:PRO:HG2	12:AL:13:ARG:HB3	1.96	0.47
21:AU:31:GLU:O	21:AU:35:ARG:HB2	2.13	0.47
25:B3:2:LYS:HD2	32:BB:40:U:H4'	1.96	0.47
26:B4:38:HIS:HB2	26:B4:41:ARG:HB2	1.96	0.47
26:B4:45:LYS:HE2	26:B4:45:LYS:HB2	1.64	0.47
30:B8:25:VAL:HG21	30:B8:35:GLN:HB3	1.97	0.47
31:BA:832:G:H2'	31:BA:833:G:C8	2.50	0.47
31:BA:841:C:H3'	40:BO:41:ARG:NH2	2.29	0.47
31:BA:1293:U:H2'	31:BA:1294:G:C4	2.50	0.47
31:BA:1497:A:H2'	31:BA:1498:A:C8	2.45	0.47
31:BA:1500:C:H2'	31:BA:1501:A:C8	2.49	0.47
31:BA:1629:C:H2'	31:BA:1630:G:H8	1.80	0.47
31:BA:1929:C:O2	31:BA:1933:G:C6	2.67	0.47
31:BA:2055:A:OP1	34:BE:140:ARG:NE	2.45	0.47
32:BB:22:G:H4'	32:BB:23:A:C4	2.48	0.47
33:BD:68:LYS:HB3	33:BD:70:THR:HG23	1.96	0.47
47:BV:59:ILE:O	47:BV:70:LYS:NZ	2.46	0.47
49:BX:43:LYS:HD2	49:BX:57:LEU:HD12	1.95	0.47
51:A:38:VAL:HG12	51:A:58:LEU:HD13	1.96	0.47
1:AA:683:A:H1'	11:AK:116:HIS:CD2	2.50	0.47
1:AA:774:A:H3'	1:AA:775:A:H8	1.79	0.47
1:AA:925:G:H2'	1:AA:926:A:C8	2.50	0.47
1:AA:1064:U:O2'	3:AC:155:ARG:NE	2.47	0.47
1:AA:1446:G:OP2	20:AT:29:ARG:NH1	2.47	0.47
7:AG:57:PRO:O	7:AG:61:PHE:CB	2.62	0.47
9:AI:49:ASN:O	9:AI:54:ALA:N	2.48	0.47
31:BA:15:G:O6	31:BA:559:U:O4	2.33	0.47
31:BA:24:G:H1'	47:BV:81:ASN:HD22	1.80	0.47
31:BA:135:U:O2	31:BA:141:G:N2	2.48	0.47
31:BA:481:G:C2	31:BA:489:A:N6	2.83	0.47
31:BA:842:U:O2	35:BF:74:ARG:NH2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1375:G:H2'	31:BA:1376:G:H8	1.80	0.47
31:BA:2336:U:OP1	50:BZ:83:LYS:NZ	2.47	0.47
43:BR:6:ASP:OD2	43:BR:9:LYS:NZ	2.37	0.47
43:BR:113:LEU:HD22	43:BR:114:LYS:H	1.79	0.47
1:AA:67:A:O2'	1:AA:174:U:O4	2.31	0.47
1:AA:186:A:H2'	1:AA:187:C:C6	2.50	0.47
1:AA:325:U:OP1	1:AA:361:A:N6	2.46	0.47
1:AA:353:C:OP1	44:BS:38:ARG:NE	2.48	0.47
1:AA:788:A:H4'	11:AK:123:LYS:HZ3	1.80	0.47
1:AA:1098:U:O2'	1:AA:1178:A:O2'	2.26	0.47
3:AC:189:ASP:HA	3:AC:194:LYS:HG2	1.97	0.47
4:AD:66:ARG:O	4:AD:70:ASN:ND2	2.48	0.47
5:AE:84:LEU:HB2	5:AE:101:PRO:HB3	1.97	0.47
5:AE:118:LEU:HD13	5:AE:126:VAL:HG13	1.96	0.47
5:AE:153:ALA:HA	5:AE:156:VAL:HG22	1.96	0.47
6:AF:37:ASN:HD21	6:AF:40:SER:HA	1.80	0.47
16:AP:19:ARG:HG3	16:AP:39:THR:HG22	1.96	0.47
20:AT:44:TYR:O	20:AT:48:SER:CB	2.63	0.47
25:B3:17:THR:HG21	25:B3:46:ILE:H	1.79	0.47
26:B4:14:ASN:HA	26:B4:17:ARG:HB2	1.97	0.47
31:BA:638:U:H2'	31:BA:654:G:H22	1.80	0.47
31:BA:897:U:H2'	31:BA:898:A:C8	2.50	0.47
31:BA:1199:A:H2'	31:BA:1200:U:C6	2.50	0.47
31:BA:1505:A:H2'	31:BA:1506:G:C8	2.50	0.47
31:BA:1693:A:N6	31:BA:2000:C:N4	2.42	0.47
31:BA:1814:G:H2'	31:BA:1815:U:H6	1.79	0.47
31:BA:1916:A:OP2	31:BA:1922:A:N6	2.40	0.47
31:BA:1946:C:H5'	31:BA:1947:U:H2'	1.96	0.47
31:BA:2649:U:O3'	31:BA:2736:G:O2'	2.31	0.47
31:BA:2725:A:H3'	31:BA:2726:G:H8	1.79	0.47
35:BF:66:ARG:HH11	35:BF:67:GLN:H	1.62	0.47
42:BQ:10:SER:HA	42:BQ:13:ARG:HE	1.79	0.47
44:BS:16:ILE:HG12	44:BS:75:VAL:HB	1.96	0.47
48:BW:61:LYS:N	48:BW:72:LYS:O	2.48	0.47
50:BZ:48:GLN:NE2	50:BZ:53:ILE:H	2.12	0.47
50:BZ:75:VAL:HG23	50:BZ:88:VAL:HG22	1.97	0.47
51:A:8:GLY:HA2	51:A:42:VAL:HG22	1.95	0.47
1:AA:130:A:H1'	1:AA:198:A:H61	1.80	0.47
1:AA:824:A:H5'	1:AA:825:C:H2'	1.96	0.47
1:AA:840:G:O6	1:AA:862:U:O4	2.29	0.47
1:AA:1402:C:H2'	1:AA:1403:A:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1455:C:N4	1:AA:1459:A:N1	2.63	0.47
7:AG:101:ARG:O	7:AG:105:THR:OG1	2.25	0.47
18:AR:46:PRO:O	18:AR:50:THR:HB	2.15	0.47
31:BA:29:U:OP1	45:BT:5:LYS:NZ	2.42	0.47
31:BA:1307:U:H2'	31:BA:1308:A:C8	2.50	0.47
31:BA:2482:A:N3	31:BA:2533:G:O2'	2.46	0.47
31:BA:2829:G:H1'	31:BA:2881:A:H2'	1.96	0.47
38:BM:90:THR:HG23	38:BM:93:GLU:HB2	1.96	0.47
42:BQ:48:ILE:HD12	42:BQ:48:ILE:HA	1.84	0.47
48:BW:11:ILE:HD11	48:BW:28:GLU:HB2	1.95	0.47
1:AA:10:A:O2'	1:AA:11:G:O4'	2.33	0.47
1:AA:602:U:O4	1:AA:654:G:O6	2.33	0.47
1:AA:682:G:H2'	1:AA:683:A:C8	2.50	0.47
1:AA:761:A:OP1	15:AO:69:TYR:OH	2.28	0.47
1:AA:1399:G:O2'	1:AA:1509:A:OP1	2.30	0.47
4:AD:11:GLN:HA	4:AD:15:TYR:HD2	1.80	0.47
5:AE:62:ALA:O	5:AE:66:ALA:CB	2.61	0.47
9:AI:83:ILE:HA	9:AI:86:ALA:HB3	1.97	0.47
10:AJ:8:ILE:HG12	10:AJ:100:ILE:HG12	1.96	0.47
15:AO:35:GLU:HG3	15:AO:38:HIS:HB3	1.96	0.47
26:B4:35:ASP:HB2	26:B4:45:LYS:HZ2	1.80	0.47
31:BA:99:U:OP2	31:BA:100:U:N3	2.48	0.47
31:BA:139:U:O4	31:BA:1436:G:N2	2.48	0.47
31:BA:481:G:N2	31:BA:489:A:H61	2.12	0.47
31:BA:537:A:N3	31:BA:539:A:O2'	2.38	0.47
31:BA:842:U:H2'	31:BA:843:G:C8	2.50	0.47
31:BA:1295:A:N6	31:BA:2018:A:OP2	2.44	0.47
31:BA:2139:A:H3'	31:BA:2140:A:C8	2.50	0.47
31:BA:2282:A:OP2	50:BZ:20:ASN:ND2	2.43	0.47
34:BE:107:ASP:C	34:BE:169:VAL:O	2.58	0.47
35:BF:157:PRO:HD3	35:BF:196:VAL:HG21	1.97	0.47
46:BU:6:ILE:HD13	46:BU:42:PHE:HD2	1.80	0.47
1:AA:457:A:O4'	1:AA:496:A:N6	2.48	0.47
1:AA:509:G:H2'	1:AA:510:G:H8	1.80	0.47
1:AA:803:C:O2'	11:AK:125:ARG:NH2	2.41	0.47
4:AD:182:GLU:HG3	4:AD:184:ASP:H	1.80	0.47
7:AG:22:VAL:HG13	7:AG:42:VAL:HG11	1.97	0.47
15:AO:2:ALA:HB3	15:AO:35:GLU:HG2	1.97	0.47
27:B5:36:CYS:SG	27:B5:38:THR:OG1	2.66	0.47
31:BA:1273:A:H2'	31:BA:1274:A:C8	2.50	0.47
31:BA:1613:U:OP2	31:BA:1614:A:N6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2567:U:N3	31:BA:2570:A:OP2	2.37	0.47
38:BM:99:ALA:HA	38:BM:102:LEU:HD23	1.96	0.47
43:BR:69:ALA:HB3	43:BR:72:VAL:HG22	1.97	0.47
47:BV:90:ARG:O	47:BV:97:ALA:CA	2.62	0.47
1:AA:37:G:O2'	12:AL:128:SER:O	2.32	0.46
1:AA:97:G:N7	1:AA:100:G:N2	2.63	0.46
1:AA:172:A:H2'	1:AA:173:A:C8	2.50	0.46
1:AA:984:G:N1	1:AA:1370:A:OP2	2.35	0.46
1:AA:1001:G:H21	1:AA:1054:A:H62	1.63	0.46
1:AA:1096:G:N1	1:AA:1105:C:O2	2.48	0.46
1:AA:1141:A:N1	1:AA:1143:U:N3	2.62	0.46
1:AA:1262:G:O2'	1:AA:1265:G:N3	2.49	0.46
1:AA:1310:C:H3'	1:AA:1311:G:C8	2.50	0.46
4:AD:49:LEU:HA	4:AD:52:ALA:HB3	1.96	0.46
4:AD:85:TYR:O	4:AD:89:THR:CB	2.63	0.46
9:AI:79:ILE:HG23	9:AI:83:ILE:HD12	1.96	0.46
13:AM:84:GLY:HA3	13:AM:86:TYR:HD1	1.80	0.46
14:AN:2:ALA:O	14:AN:6:MET:HB3	2.15	0.46
26:B4:42:VAL:HG22	26:B4:48:TYR:HB2	1.97	0.46
31:BA:478:A:N3	31:BA:1231:U:O2'	2.46	0.46
31:BA:1441:G:N1	31:BA:1620:A:N7	2.64	0.46
31:BA:1802:C:OP2	33:BD:182:ARG:NH2	2.48	0.46
31:BA:1864:G:N1	31:BA:1884:U:N3	2.47	0.46
31:BA:2583:C:H2'	31:BA:2584:U:H6	1.80	0.46
33:BD:206:GLY:H	33:BD:210:ARG:HH11	1.61	0.46
35:BF:53:ASN:OD1	35:BF:54:ARG:N	2.48	0.46
45:BT:22:LYS:HZ3	45:BT:29:HIS:HB2	1.79	0.46
1:AA:308:A:O2'	1:AA:573:U:O4	2.28	0.46
1:AA:523:C:O2'	1:AA:546:G:N1	2.36	0.46
1:AA:545:C:H2'	1:AA:546:G:C8	2.50	0.46
1:AA:667:C:H2'	1:AA:668:A:H8	1.79	0.46
1:AA:728:C:H2'	1:AA:729:G:C4	2.50	0.46
1:AA:1099:U:O2'	1:AA:1101:A:N7	2.36	0.46
1:AA:1366:C:O2'	1:AA:1369:C:N4	2.44	0.46
4:AD:56:LYS:O	4:AD:60:THR:HB	2.14	0.46
5:AE:94:GLY:O	5:AE:133:SER:N	2.41	0.46
11:AK:17:GLY:O	11:AK:81:SER:CB	2.63	0.46
13:AM:34:LEU:O	13:AM:39:VAL:N	2.44	0.46
18:AR:26:VAL:HB	18:AR:28:TYR:H	1.80	0.46
31:BA:748:G:O2'	31:BA:753:A:N6	2.48	0.46
31:BA:1544:A:H3'	31:BA:1545:G:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2814:C:O2	31:BA:2881:A:O2'	2.28	0.46
33:BD:132:LEU:HA	33:BD:135:ILE:HB	1.96	0.46
41:BP:36:ALA:O	41:BP:100:GLY:N	2.45	0.46
41:BP:115:ARG:O	41:BP:119:ARG:CB	2.57	0.46
46:BU:24:VAL:O	46:BU:95:THR:CB	2.57	0.46
49:BX:4:LYS:NZ	49:BX:24:ILE:O	2.42	0.46
1:AA:384:G:H2'	1:AA:385:G:C8	2.50	0.46
1:AA:444:C:O2'	4:AD:151:ALA:N	2.47	0.46
1:AA:619:G:O6	1:AA:639:A:N1	2.49	0.46
1:AA:946:A:N6	1:AA:947:G:O6	2.48	0.46
1:AA:1116:G:N7	1:AA:1118:A:N6	2.64	0.46
6:AF:53:ASN:HD21	6:AF:89:ARG:HB2	1.80	0.46
31:BA:51:G:N2	31:BA:117:A:H62	2.12	0.46
31:BA:185:A:H2'	31:BA:186:G:H8	1.79	0.46
31:BA:875:C:H2'	31:BA:876:G:C8	2.51	0.46
31:BA:996:G:N2	31:BA:2034:A:OP1	2.41	0.46
31:BA:1301:G:O6	31:BA:1644:C:O2	2.34	0.46
31:BA:2488:G:H1'	41:BP:124:LYS:HE2	1.97	0.46
31:BA:2551:U:H2'	31:BA:2552:G:C8	2.49	0.46
31:BA:2748:G:N1	31:BA:2764:U:N3	2.60	0.46
35:BF:3:LYS:NZ	35:BF:15:GLY:O	2.48	0.46
1:AA:152:A:N6	1:AA:171:U:C2	2.83	0.46
1:AA:179:C:N4	1:AA:210:G:OP1	2.48	0.46
1:AA:445:U:O3'	4:AD:119:HIS:NE2	2.46	0.46
1:AA:557:G:H2'	1:AA:558:C:H6	1.78	0.46
1:AA:1391:C:H2'	1:AA:1392:G:C8	2.50	0.46
1:AA:1509:A:H62	1:AA:1512:G:H22	1.63	0.46
2:AB:46:THR:HA	2:AB:49:LEU:HB3	1.96	0.46
11:AK:22:GLN:HE22	11:AK:86:GLY:HA3	1.80	0.46
12:AL:22:PRO:O	12:AL:108:TYR:OH	2.33	0.46
15:AO:4:SER:O	15:AO:8:LYS:HB2	2.15	0.46
16:AP:21:ASN:HA	16:AP:36:THR:HA	1.97	0.46
31:BA:449:C:H2'	31:BA:450:A:H8	1.81	0.46
31:BA:881:G:H5''	31:BA:884:A:H2	1.80	0.46
31:BA:1011:G:H5'	31:BA:1191:A:H62	1.80	0.46
31:BA:1054:U:OP1	31:BA:1070:U:O2'	2.33	0.46
31:BA:1256:A:OP1	46:BU:87:LYS:NZ	2.49	0.46
31:BA:1307:U:H2'	31:BA:1308:A:H8	1.81	0.46
31:BA:1376:G:H2'	31:BA:1377:G:H8	1.81	0.46
31:BA:1988:U:H2'	31:BA:1989:G:H8	1.80	0.46
31:BA:2070:C:H2'	31:BA:2071:A:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2079:U:OP2	31:BA:2242:G:O2'	2.31	0.46
31:BA:2829:G:OP1	34:BE:57:ARG:NH2	2.48	0.46
36:BG:58:LEU:HD21	36:BG:90:VAL:HG12	1.97	0.46
51:A:89:ILE:HG22	51:A:93:LYS:HZ1	1.81	0.46
1:AA:47:U:H2'	1:AA:48:G:C8	2.50	0.46
1:AA:152:A:H3'	1:AA:153:A:H8	1.80	0.46
1:AA:545:C:H2'	1:AA:546:G:H8	1.80	0.46
1:AA:697:C:N4	1:AA:698:G:O6	2.49	0.46
1:AA:1159:A:O4'	10:AJ:72:ARG:NH2	2.49	0.46
1:AA:1416:C:H2'	1:AA:1417:A:H8	1.80	0.46
2:AB:38:ILE:HD13	51:A:140:PRO:O	2.15	0.46
3:AC:41:LEU:HD13	3:AC:93:LEU:HD13	1.98	0.46
3:AC:57:GLU:CB	3:AC:64:ILE:O	2.54	0.46
10:AJ:6:ILE:HA	10:AJ:101:LYS:O	2.15	0.46
24:B2:41:PRO:HA	24:B2:44:LEU:HD13	1.98	0.46
31:BA:316:U:O4	31:BA:388:A:N6	2.48	0.46
31:BA:983:C:H2'	31:BA:984:U:C6	2.51	0.46
31:BA:1826:G:H2'	31:BA:1827:G:H8	1.80	0.46
31:BA:2814:C:H2'	31:BA:2815:A:H8	1.81	0.46
32:BB:47:C:OP1	43:BR:100:ARG:N	2.48	0.46
32:BB:75:U:H2'	32:BB:76:A:C8	2.51	0.46
34:BE:48:ALA:HA	34:BE:86:LEU:HD11	1.97	0.46
37:BH:89:MET:HG2	37:BH:94:TYR:HB3	1.96	0.46
45:BT:69:ALA:HB1	45:BT:74:LEU:HB2	1.98	0.46
45:BT:88:ILE:HD13	46:BU:54:LEU:HB2	1.97	0.46
48:BW:64:ARG:HA	48:BW:69:THR:HA	1.97	0.46
1:AA:43:G:H2'	1:AA:44:G:C8	2.50	0.46
1:AA:414:G:H2'	1:AA:415:A:H8	1.81	0.46
1:AA:505:G:H21	1:AA:506:A:H3'	1.81	0.46
1:AA:758:C:H4'	15:AO:21:ASP:HA	1.98	0.46
1:AA:791:C:OP1	1:AA:1522:C:O2'	2.26	0.46
13:AM:89:MET:O	13:AM:93:ARG:HB2	2.15	0.46
14:AN:2:ALA:O	14:AN:6:MET:CB	2.64	0.46
25:B3:51:SER:O	25:B3:54:SER:CB	2.62	0.46
31:BA:986:C:H2'	31:BA:987:G:H8	1.79	0.46
31:BA:1802:C:C2	31:BA:1819:G:N2	2.83	0.46
31:BA:1951:C:H2'	31:BA:1952:G:C8	2.51	0.46
31:BA:2819:A:OP1	34:BE:114:GLY:N	2.48	0.46
32:BB:83:G:H2'	32:BB:84:G:C8	2.50	0.46
33:BD:53:HIS:CE1	33:BD:219:THR:HA	2.51	0.46
33:BD:166:GLY:O	33:BD:173:LEU:N	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:BD:241:VAL:HG22	33:BD:243:ARG:HH21	1.81	0.46
38:BM:63:LYS:HA	38:BM:95:ARG:HH11	1.80	0.46
41:BP:28:SER:OG	41:BP:105:GLU:OE2	2.34	0.46
44:BS:74:PRO:HB2	44:BS:77:THR:HG23	1.97	0.46
47:BV:52:GLU:O	47:BV:56:ASN:HB3	2.16	0.46
51:A:55:GLU:OE2	51:A:66:ARG:HB2	2.15	0.46
1:AA:1193:G:H2'	1:AA:1194:G:H8	1.81	0.46
1:AA:1267:G:O2'	1:AA:1282:A:N6	2.49	0.46
6:AF:11:ARG:HD2	6:AF:13:ASN:H	1.81	0.46
7:AG:144:ALA:HA	7:AG:147:ASN:HB2	1.98	0.46
9:AI:56:GLN:HE21	9:AI:97:ALA:HB2	1.80	0.46
13:AM:83:ILE:HG13	19:AS:66:MET:HA	1.98	0.46
19:AS:26:GLU:OE2	19:AS:28:LYS:NZ	2.48	0.46
28:B6:4:THR:OG1	28:B6:5:TYR:N	2.49	0.46
31:BA:586:U:H3'	31:BA:587:G:C8	2.51	0.46
31:BA:634:G:N2	31:BA:690:A:N3	2.53	0.46
31:BA:782:U:OP1	31:BA:2615:C:O2'	2.33	0.46
31:BA:897:U:H2'	31:BA:898:A:H8	1.81	0.46
31:BA:1140:U:H2'	31:BA:1141:A:C8	2.51	0.46
31:BA:1761:A:O2'	31:BA:1762:A:O4'	2.33	0.46
31:BA:2317:C:H2'	31:BA:2318:A:C8	2.51	0.46
31:BA:2474:G:H2'	31:BA:2475:A:C8	2.50	0.46
37:BH:102:LYS:HG2	37:BH:114:GLU:HB3	1.98	0.46
37:BH:125:VAL:HG22	37:BH:131:ILE:HD12	1.98	0.46
44:BS:60:VAL:H	44:BS:71:ARG:H	1.64	0.46
44:BS:103:THR:O	44:BS:107:ALA:HB2	2.16	0.46
45:BT:41:ASN:HA	45:BT:44:TYR:HD2	1.80	0.46
47:BV:25:ILE:HA	47:BV:28:ILE:HD12	1.98	0.46
50:BZ:18:THR:HB	50:BZ:20:ASN:HD22	1.80	0.46
1:AA:28:A:N6	1:AA:567:G:H21	2.09	0.46
1:AA:1132:G:N1	1:AA:1155:U:O4	2.49	0.46
1:AA:1416:C:H2'	1:AA:1417:A:C8	2.50	0.46
3:AC:35:ASP:OD2	3:AC:58:ARG:NE	2.48	0.46
4:AD:181:PRO:HA	4:AD:185:GLU:HG3	1.98	0.46
10:AJ:66:GLU:OE1	10:AJ:68:ARG:NH2	2.49	0.46
13:AM:14:ARG:HE	13:AM:16:VAL:HB	1.80	0.46
30:B8:19:ARG:NH2	31:BA:2760:U:OP2	2.49	0.46
31:BA:158:A:N6	31:BA:164:U:C2	2.84	0.46
31:BA:586:U:H3'	31:BA:587:G:H8	1.80	0.46
31:BA:678:A:H4'	31:BA:679:U:C4	2.51	0.46
31:BA:2056:G:H2'	31:BA:2057:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2743:U:H3'	31:BA:2767:G:H1	1.79	0.46
35:BF:72:ARG:H	35:BF:72:ARG:HD2	1.81	0.46
37:BH:18:GLU:OE1	37:BH:25:THR:OG1	2.34	0.46
39:BN:93:PRO:HG2	39:BN:117:LEU:HD22	1.98	0.46
1:AA:481:U:H5''	1:AA:482:C:H5	1.81	0.46
1:AA:843:G:N2	1:AA:860:U:H3	2.14	0.46
1:AA:957:A:H1'	1:AA:1371:C:H42	1.81	0.46
1:AA:1070:U:OP2	3:AC:3:GLN:NE2	2.49	0.46
1:AA:1167:G:N7	1:AA:1189:G:N1	2.64	0.46
2:AB:49:LEU:HD11	2:AB:199:VAL:HB	1.98	0.46
7:AG:112:GLU:HB2	7:AG:118:ARG:HB3	1.98	0.46
13:AM:34:LEU:HD12	13:AM:39:VAL:HB	1.98	0.46
19:AS:81:ARG:HA	19:AS:82:GLY:HA3	1.66	0.46
20:AT:15:LYS:O	20:AT:19:GLU:CB	2.63	0.46
31:BA:353:A:O3'	35:BF:169:ARG:NH2	2.49	0.46
31:BA:2041:A:H2'	31:BA:2042:G:C8	2.51	0.46
31:BA:2210:G:H2'	31:BA:2211:G:H8	1.81	0.46
31:BA:2839:U:H2'	31:BA:2840:G:C8	2.51	0.46
33:BD:65:ILE:HD13	33:BD:105:LEU:HG	1.98	0.46
40:BO:57:LEU:H	40:BO:57:LEU:HG	1.56	0.46
49:BX:10:LYS:HB2	49:BX:69:GLN:HB2	1.96	0.46
51:A:45:LYS:HB2	51:A:51:ARG:HD3	1.98	0.46
1:AA:329:A:H2	1:AA:340:G:H1	1.52	0.46
1:AA:446:G:OP1	4:AD:145:LYS:NZ	2.49	0.46
1:AA:699:G:H2'	1:AA:700:U:C2	2.50	0.46
3:AC:19:ASP:O	3:AC:39:ARG:NH2	2.49	0.46
5:AE:139:VAL:O	5:AE:143:THR:OG1	2.27	0.46
18:AR:39:SER:N	18:AR:43:LYS:O	2.35	0.46
31:BA:480:C:H2'	31:BA:481:G:C8	2.51	0.46
31:BA:991:G:OP1	41:BP:77:LYS:NZ	2.49	0.46
31:BA:1128:G:O2'	31:BA:1133:A:N6	2.39	0.46
31:BA:1436:G:H2'	31:BA:1437:A:H8	1.80	0.46
31:BA:1861:A:OP2	31:BA:1887:G:N2	2.32	0.46
31:BA:2748:G:H2'	31:BA:2749:C:C6	2.51	0.46
35:BF:3:LYS:HG2	35:BF:16:GLU:HA	1.98	0.46
35:BF:140:ALA:O	35:BF:144:SER:CB	2.64	0.46
40:BO:37:GLY:N	40:BO:40:SER:OG	2.43	0.46
1:AA:17:G:O6	1:AA:928:U:C4	2.69	0.45
1:AA:384:G:C2	1:AA:395:U:O2	2.69	0.45
1:AA:388:G:N2	1:AA:391:A:OP2	2.37	0.45
1:AA:444:C:H4'	4:AD:150:PRO:HB2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:604:A:O2'	1:AA:648:A:N6	2.49	0.45
1:AA:1012:G:OP1	1:AA:1034:U:O2'	2.34	0.45
2:AB:166:PRO:HB3	2:AB:173:VAL:HG21	1.98	0.45
9:AI:50:GLN:O	9:AI:55:THR:OG1	2.33	0.45
18:AR:25:VAL:HA	18:AR:26:VAL:HA	1.69	0.45
23:B1:47:THR:OG1	31:BA:95:C:O2	2.33	0.45
29:B7:24:ARG:HH22	29:B7:27:ALA:HB2	1.81	0.45
31:BA:183:G:O2'	31:BA:216:A:N3	2.50	0.45
31:BA:1312:G:O2'	31:BA:1314:G:N7	2.47	0.45
31:BA:1739:G:N1	31:BA:1751:A:N1	2.64	0.45
31:BA:2692:G:N1	31:BA:2724:U:OP2	2.35	0.45
33:BD:207:LYS:O	33:BD:210:ARG:HG2	2.16	0.45
37:BH:107:VAL:HG11	37:BH:152:ARG:HH21	1.80	0.45
45:BT:82:GLY:O	45:BT:86:ALA:HB2	2.15	0.45
1:AA:248:U:H2'	1:AA:249:G:C8	2.51	0.45
1:AA:348:U:H2'	1:AA:349:C:C6	2.51	0.45
1:AA:454:A:H3'	1:AA:455:G:H8	1.81	0.45
1:AA:516:C:H2'	1:AA:517:U:H5	1.82	0.45
2:AB:137:LEU:HA	2:AB:140:GLU:HB3	1.98	0.45
4:AD:36:HIS:HD2	4:AD:39:ASN:HD22	1.64	0.45
6:AF:10:ILE:HD13	6:AF:22:LEU:HD13	1.99	0.45
6:AF:37:ASN:HB3	6:AF:66:GLU:N	2.29	0.45
6:AF:89:ARG:NH2	18:AR:69:VAL:O	2.49	0.45
8:AH:67:GLY:HA3	8:AH:71:GLU:HB3	1.98	0.45
9:AI:81:HIS:O	9:AI:85:ARG:CB	2.63	0.45
25:B3:8:ASN:ND2	36:BG:62:SER:OG	2.47	0.45
31:BA:80:G:H1'	31:BA:378:A:H62	1.81	0.45
31:BA:148:U:H2'	31:BA:149:U:C6	2.52	0.45
31:BA:300:G:H2'	31:BA:301:A:H8	1.81	0.45
31:BA:548:A:H2'	31:BA:549:A:C4	2.51	0.45
31:BA:663:G:H1'	31:BA:673:U:H1'	1.97	0.45
31:BA:981:G:O6	31:BA:1007:G:N2	2.49	0.45
31:BA:1609:A:H3'	31:BA:1610:G:C8	2.51	0.45
31:BA:2584:U:H3'	31:BA:2585:G:C2	2.51	0.45
31:BA:2595:C:H2'	31:BA:2596:G:C8	2.50	0.45
31:BA:2807:A:OP2	31:BA:2888:G:N1	2.38	0.45
37:BH:68:THR:HA	37:BH:71:LEU:HB2	1.97	0.45
1:AA:364:A:O2'	1:AA:396:G:N1	2.49	0.45
1:AA:725:C:H4'	11:AK:117:ASN:HB2	1.98	0.45
1:AA:899:U:O2	1:AA:915:A:C5	2.68	0.45
1:AA:1183:A:H3'	1:AA:1184:G:H8	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:66:VAL:HB	2:AB:158:PRO:HA	1.97	0.45
2:AB:145:GLU:HA	2:AB:148:ILE:HB	1.97	0.45
5:AE:26:LYS:HB3	5:AE:33:ARG:HB3	1.97	0.45
5:AE:87:GLU:HG3	5:AE:101:PRO:HD2	1.98	0.45
17:AQ:61:ARG:HB2	17:AQ:78:GLU:HG2	1.99	0.45
31:BA:310:U:C4	31:BA:313:A:C5	3.05	0.45
31:BA:1138:A:OP2	31:BA:1139:C:N4	2.37	0.45
31:BA:1370:U:OP1	31:BA:1631:U:O2'	2.30	0.45
31:BA:2247:U:H2'	31:BA:2248:U:C6	2.51	0.45
31:BA:2563:C:H2'	31:BA:2564:C:H6	1.82	0.45
38:BM:22:ALA:HB3	38:BM:25:VAL:HB	1.98	0.45
47:BV:37:ILE:HA	47:BV:40:LEU:HB3	1.96	0.45
49:BX:64:HIS:CD2	49:BX:66:SER:H	2.34	0.45
1:AA:254:A:N6	1:AA:289:G:H21	2.05	0.45
1:AA:293:C:H2'	1:AA:294:A:C8	2.52	0.45
1:AA:657:G:H2'	1:AA:658:A:H8	1.81	0.45
1:AA:1096:G:H2'	1:AA:1097:G:C8	2.51	0.45
1:AA:1307:G:H22	1:AA:1341:G:H2'	1.81	0.45
1:AA:1538:A:H8	1:AA:1540:C:H42	1.64	0.45
4:AD:84:GLY:HA2	4:AD:87:PHE:HD2	1.80	0.45
4:AD:152:ILE:HG23	4:AD:156:VAL:HB	1.98	0.45
7:AG:47:LYS:NZ	7:AG:51:GLU:OE2	2.41	0.45
11:AK:19:VAL:HB	11:AK:82:VAL:HA	1.99	0.45
11:AK:85:LYS:HG3	11:AK:112:THR:HA	1.99	0.45
15:AO:12:ILE:O	15:AO:16:ALA:CB	2.64	0.45
16:AP:4:LYS:HA	16:AP:65:GLN:H	1.80	0.45
16:AP:69:THR:O	16:AP:73:LEU:HB2	2.17	0.45
25:B3:23:PHE:H	25:B3:34:THR:H	1.64	0.45
31:BA:584:G:H2'	31:BA:585:G:H8	1.82	0.45
31:BA:624:G:C2	31:BA:700:U:O2	2.69	0.45
31:BA:846:U:C5	31:BA:1280:G:H5'	2.51	0.45
31:BA:2196:U:H2'	31:BA:2197:A:C8	2.52	0.45
31:BA:2553:G:H2'	31:BA:2554:G:H8	1.82	0.45
31:BA:2702:U:H2'	31:BA:2703:U:C6	2.51	0.45
35:BF:70:THR:O	35:BF:72:ARG:NH1	2.47	0.45
37:BH:45:ILE:HA	37:BH:50:ILE:HG13	1.99	0.45
38:BM:132:HIS:ND1	38:BM:133:THR:O	2.49	0.45
40:BO:102:VAL:HG23	40:BO:105:VAL:HG12	1.97	0.45
41:BP:65:TRP:N	41:BP:105:GLU:O	2.45	0.45
43:BR:81:LYS:NZ	43:BR:111:ALA:O	2.40	0.45
1:AA:609:U:C2	1:AA:646:G:N1	2.61	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1302:U:H2'	1:AA:1303:C:C6	2.52	0.45
4:AD:13:ARG:HE	4:AD:26:ILE:HD13	1.80	0.45
7:AG:114:THR:O	7:AG:118:ARG:NE	2.42	0.45
10:AJ:25:ILE:O	10:AJ:28:THR:OG1	2.27	0.45
13:AM:68:ASP:O	13:AM:72:GLU:CB	2.50	0.45
29:B7:60:ARG:HG3	29:B7:63:ALA:HB2	1.98	0.45
31:BA:676:G:N1	31:BA:679:U:OP1	2.42	0.45
31:BA:999:C:O2'	31:BA:2277:A:N3	2.50	0.45
31:BA:1006:C:OP1	31:BA:1009:A:O2'	2.31	0.45
31:BA:1775:A:N6	31:BA:1831:A:N3	2.65	0.45
31:BA:2409:G:N1	31:BA:2415:A:OP2	2.50	0.45
31:BA:2645:A:HO2'	38:BM:82:HIS:HE2	1.55	0.45
38:BM:39:ARG:HE	38:BM:41:LYS:HE2	1.82	0.45
40:BO:85:LEU:HD23	40:BO:85:LEU:HA	1.83	0.45
51:A:87:ARG:HA	51:A:90:ARG:HD2	1.98	0.45
1:AA:147:G:H2'	1:AA:148:G:C8	2.52	0.45
1:AA:327:G:H2'	1:AA:328:G:C8	2.51	0.45
1:AA:573:U:O4	12:AL:12:ARG:NH2	2.49	0.45
1:AA:1302:U:O3'	13:AM:44:ARG:NE	2.50	0.45
1:AA:1370:A:H1'	1:AA:1373:C:H42	1.82	0.45
1:AA:1504:G:H1'	1:AA:1525:A:H2	1.82	0.45
4:AD:64:SER:O	4:AD:68:PHE:CB	2.63	0.45
5:AE:104:GLU:HA	5:AE:125:ASP:HB2	1.98	0.45
6:AF:46:ARG:NH2	18:AR:29:LYS:O	2.50	0.45
8:AH:11:LEU:HD23	8:AH:14:ILE:HD12	1.99	0.45
10:AJ:17:ILE:HG22	10:AJ:18:LEU:H	1.81	0.45
10:AJ:47:SER:HB3	10:AJ:67:MET:HB2	1.98	0.45
15:AO:88:ARG:NH1	31:BA:749:U:OP2	2.50	0.45
23:B1:54:LYS:O	23:B1:58:ALA:HB2	2.17	0.45
24:B2:8:LEU:N	24:B2:32:ASN:OD1	2.44	0.45
30:B8:24:MET:HE1	30:B8:36:ARG:HA	1.99	0.45
31:BA:624:G:N1	31:BA:700:U:N3	2.64	0.45
31:BA:875:C:H2'	31:BA:876:G:H8	1.80	0.45
31:BA:1080:C:OP1	31:BA:1081:A:O2'	2.29	0.45
31:BA:1220:G:H5''	40:BO:32:GLY:HA2	1.99	0.45
31:BA:1478:A:H2'	31:BA:1479:G:H8	1.82	0.45
31:BA:2319:A:H5''	43:BR:1:MET:H1	1.81	0.45
31:BA:2371:G:H2'	31:BA:2372:C:H6	1.82	0.45
31:BA:2659:G:N1	31:BA:2669:A:OP2	2.42	0.45
31:BA:2725:A:O2'	31:BA:2872:C:OP1	2.34	0.45
34:BE:63:LYS:O	34:BE:67:GLY:CA	2.58	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:BE:120:PRO:HG2	34:BE:121:ILE:HD12	1.99	0.45
42:BQ:55:ASP:HB3	42:BQ:58:ALA:HB3	1.98	0.45
1:AA:30:G:O2'	1:AA:304:U:OP1	2.35	0.45
1:AA:52:A:N6	1:AA:369:G:O5'	2.49	0.45
1:AA:308:A:C5	1:AA:309:G:H1'	2.52	0.45
10:AJ:67:MET:HB3	14:AN:54:PRO:HG2	1.99	0.45
13:AM:82:GLU:HG2	13:AM:85:SER:HB2	1.98	0.45
31:BA:216:A:H3'	31:BA:217:G:H8	1.81	0.45
31:BA:323:U:H2'	31:BA:324:A:C8	2.51	0.45
31:BA:764:G:H22	31:BA:799:A:H62	1.64	0.45
31:BA:1082:G:N2	31:BA:1146:A:C5	2.81	0.45
31:BA:1082:G:H22	31:BA:1145:G:HO2'	1.58	0.45
31:BA:1747:A:H2'	31:BA:1748:G:O4'	2.16	0.45
37:BH:38:ASN:HB2	37:BH:43:LEU:HD21	1.99	0.45
45:BT:103:ALA:O	45:BT:107:THR:OG1	2.19	0.45
47:BV:79:PHE:O	47:BV:108:THR:OG1	2.32	0.45
1:AA:471:A:H2	1:AA:479:G:H22	1.65	0.45
1:AA:1054:A:H3'	1:AA:1055:G:C8	2.52	0.45
1:AA:1282:A:H3'	1:AA:1283:G:H8	1.80	0.45
3:AC:180:ASP:HA	3:AC:207:LEU:HD22	1.98	0.45
4:AD:165:PHE:O	4:AD:178:VAL:N	2.42	0.45
5:AE:154:GLU:O	5:AE:158:ALA:HB3	2.17	0.45
7:AG:148:ARG:HD3	11:AK:59:PHE:HB2	1.99	0.45
11:AK:18:ILE:O	11:AK:33:THR:HB	2.17	0.45
15:AO:6:GLU:O	15:AO:10:GLU:CB	2.63	0.45
24:B2:37:LYS:HG3	24:B2:38:GLU:HG2	1.99	0.45
25:B3:47:ARG:HD3	36:BG:111:ARG:HH12	1.82	0.45
26:B4:22:LEU:HD22	26:B4:23:THR:H	1.82	0.45
31:BA:778:A:O2'	31:BA:1688:U:OP1	2.34	0.45
31:BA:1071:G:C6	31:BA:1154:U:O2	2.69	0.45
31:BA:1232:U:H3	31:BA:1233:A:HO2'	1.63	0.45
31:BA:1275:G:H2'	31:BA:1276:A:C8	2.51	0.45
31:BA:1485:G:N1	31:BA:2708:C:C2	2.85	0.45
31:BA:1587:C:OP2	31:BA:1588:A:O2'	2.32	0.45
31:BA:1740:G:N1	31:BA:1750:C:C2	2.85	0.45
31:BA:2104:U:C5	31:BA:2193:G:N1	2.84	0.45
40:BO:75:ALA:HB2	40:BO:106:LYS:H	1.81	0.45
41:BP:77:LYS:HZ1	41:BP:88:GLY:H	1.64	0.45
44:BS:32:VAL:HG21	44:BS:36:ARG:H	1.81	0.45
1:AA:87:G:O2'	1:AA:88:C:O4'	2.34	0.45
1:AA:187:C:N3	1:AA:207:U:C4	2.85	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:377:C:H2'	1:AA:378:G:C8	2.52	0.45
1:AA:384:G:C6	1:AA:395:U:N3	2.82	0.45
1:AA:410:G:H2'	1:AA:411:C:C6	2.51	0.45
1:AA:586:G:H2'	1:AA:587:A:H8	1.82	0.45
1:AA:727:C:H2'	18:AR:44:ILE:HG22	1.99	0.45
1:AA:1002:A:C6	1:AA:1223:A:H4'	2.52	0.45
4:AD:46:GLU:OE2	5:AE:17:ARG:NH2	2.47	0.45
5:AE:118:LEU:HB2	5:AE:123:VAL:HB	1.99	0.45
8:AH:104:ALA:HB3	8:AH:115:ASP:HB3	1.99	0.45
9:AI:3:GLN:HE22	9:AI:22:VAL:HG13	1.82	0.45
13:AM:80:LEU:HD21	25:B3:73:ARG:HG3	1.98	0.45
13:AM:106:ALA:O	13:AM:110:LYS:HB3	2.17	0.45
14:AN:40:CYS:O	14:AN:44:LEU:HB3	2.17	0.45
31:BA:1516:G:N1	31:BA:1527:A:C6	2.85	0.45
31:BA:1609:A:H3'	31:BA:1610:G:H8	1.82	0.45
31:BA:1936:A:H3'	31:BA:1937:G:H8	1.82	0.45
31:BA:1951:C:H2'	31:BA:1952:G:H8	1.82	0.45
31:BA:1957:A:O3'	31:BA:2563:C:O2'	2.34	0.45
31:BA:2254:G:O2'	31:BA:2500:C:OP1	2.33	0.45
31:BA:2318:A:H2'	31:BA:2319:A:C8	2.52	0.45
31:BA:2378:G:H3'	31:BA:2379:G:H8	1.82	0.45
31:BA:2565:A:H5''	39:BN:57:VAL:HG21	1.99	0.45
31:BA:2637:A:H5''	31:BA:2810:A:H5'	1.99	0.45
31:BA:2642:G:N1	31:BA:2780:A:OP2	2.46	0.45
33:BD:48:ARG:HG3	33:BD:49:ILE:H	1.82	0.45
33:BD:182:ARG:HG3	33:BD:269:LEU:HB3	1.97	0.45
43:BR:34:PHE:HD2	43:BR:40:ILE:HA	1.81	0.45
43:BR:35:ARG:N	43:BR:95:TYR:OH	2.49	0.45
49:BX:91:ARG:HH21	49:BX:100:LEU:HD11	1.81	0.45
1:AA:241:C:H2'	1:AA:242:C:C6	2.51	0.45
1:AA:370:G:H4'	12:AL:26:VAL:HB	1.99	0.45
1:AA:431:G:H3'	1:AA:432:G:H8	1.82	0.45
1:AA:604:A:OP2	1:AA:649:A:N6	2.50	0.45
1:AA:613:G:H21	1:AA:642:C:H2'	1.82	0.45
1:AA:630:A:H8	1:AA:631:A:C8	2.35	0.45
1:AA:765:U:H3'	1:AA:766:G:C8	2.52	0.45
8:AH:96:LYS:HD3	8:AH:99:ASN:HA	1.99	0.45
9:AI:40:PRO:HA	9:AI:41:HIS:HA	1.50	0.45
10:AJ:42:LEU:HD11	10:AJ:73:LEU:HD12	1.98	0.45
13:AM:53:GLU:HA	13:AM:56:ILE:HG22	1.98	0.45
26:B4:12:LYS:HD3	26:B4:15:ARG:HD2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:107:U:H2'	31:BA:108:A:C8	2.51	0.45
31:BA:698:G:OP1	40:BO:17:ASN:N	2.50	0.45
31:BA:1345:A:H2'	31:BA:1346:G:C8	2.52	0.45
31:BA:1743:U:H2'	31:BA:1746:A:C8	2.51	0.45
31:BA:1803:U:H1'	31:BA:2207:G:C8	2.52	0.45
36:BG:108:SER:OG	36:BG:109:LEU:N	2.48	0.45
37:BH:26:VAL:O	37:BH:32:GLU:HA	2.17	0.45
38:BM:66:LEU:HG	38:BM:70:LYS:HB3	1.98	0.45
47:BV:29:ARG:NH1	47:BV:78:THR:O	2.48	0.45
48:BW:23:LYS:HE2	48:BW:88:THR:HB	1.98	0.45
50:BZ:83:LYS:HB3	50:BZ:85:HIS:HE2	1.81	0.45
1:AA:60:C:O2'	1:AA:396:G:OP1	2.35	0.44
1:AA:503:C:N4	1:AA:506:A:H62	2.14	0.44
1:AA:555:G:OP1	4:AD:65:GLU:N	2.49	0.44
1:AA:594:G:O2'	1:AA:887:C:OP1	2.35	0.44
1:AA:673:A:H1'	1:AA:740:C:H2'	2.00	0.44
1:AA:802:A:O2'	1:AA:1513:U:O4	2.31	0.44
1:AA:1354:G:N2	1:AA:1355:U:O4	2.41	0.44
1:AA:1368:G:O6	14:AN:21:TYR:OH	2.29	0.44
1:AA:1445:G:H2'	1:AA:1446:G:C8	2.52	0.44
3:AC:58:ARG:HH11	3:AC:63:VAL:HB	1.82	0.44
5:AE:26:LYS:HG2	5:AE:33:ARG:HD3	1.98	0.44
10:AJ:44:THR:OG1	10:AJ:70:HIS:ND1	2.50	0.44
11:AK:18:ILE:O	11:AK:33:THR:OG1	2.34	0.44
13:AM:54:ASP:OD1	13:AM:57:ARG:NH1	2.49	0.44
31:BA:487:G:N2	31:BA:492:A:O2'	2.50	0.44
31:BA:697:U:OP1	40:BO:16:ARG:NE	2.44	0.44
31:BA:777:C:H2'	31:BA:778:A:H8	1.83	0.44
31:BA:1318:C:H2'	31:BA:1319:U:H6	1.82	0.44
31:BA:1474:U:H3	31:BA:1493:G:N2	2.15	0.44
31:BA:1568:G:H2'	31:BA:1569:U:C6	2.52	0.44
31:BA:2315:A:C6	36:BG:42:GLY:HA3	2.52	0.44
31:BA:2320:U:H5''	43:BR:2:ILE:HD11	2.00	0.44
41:BP:45:ARG:O	41:BP:49:ALA:CB	2.65	0.44
1:AA:699:G:OP2	11:AK:26:ASN:ND2	2.48	0.44
1:AA:1037:U:H3	1:AA:1039:C:H1'	1.83	0.44
1:AA:1226:U:H2'	1:AA:1227:G:C8	2.53	0.44
4:AD:32:VAL:HA	4:AD:33:PRO:HD3	1.83	0.44
7:AG:28:ARG:HG3	7:AG:100:LEU:HB3	2.00	0.44
12:AL:75:GLU:HB2	12:AL:77:THR:HG22	1.99	0.44
31:BA:76:C:H2'	31:BA:77:U:H6	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:212:A:H2'	31:BA:213:G:C8	2.52	0.44
31:BA:696:A:H2'	31:BA:697:U:C6	2.52	0.44
31:BA:761:G:OP1	31:BA:1461:G:O2'	2.34	0.44
31:BA:1961:C:H2'	31:BA:1962:C:H6	1.82	0.44
31:BA:2044:U:C2	31:BA:2045:U:N3	2.84	0.44
31:BA:2401:G:C6	31:BA:2423:U:O2	2.69	0.44
31:BA:2418:G:H2'	31:BA:2419:G:H8	1.81	0.44
31:BA:2696:C:H2'	31:BA:2697:A:H8	1.81	0.44
31:BA:2815:A:OP1	42:BQ:109:LYS:NZ	2.37	0.44
35:BF:154:VAL:HG21	35:BF:174:VAL:HG13	1.99	0.44
39:BN:4:THR:OG1	39:BN:5:GLU:OE1	2.28	0.44
42:BQ:41:ARG:HH11	42:BQ:105:THR:HG22	1.81	0.44
46:BU:17:GLU:HB3	46:BU:20:SER:HB2	1.98	0.44
47:BV:33:VAL:HG21	47:BV:59:ILE:HD11	1.99	0.44
49:BX:3:VAL:HG11	49:BX:89:LYS:HE2	1.99	0.44
1:AA:43:G:H2'	1:AA:44:G:H8	1.82	0.44
1:AA:447:U:H5'	4:AD:117:HIS:HA	1.99	0.44
1:AA:493:G:H4'	1:AA:494:G:H5'	1.99	0.44
1:AA:675:G:OP1	1:AA:740:C:O2'	2.29	0.44
1:AA:1295:A:N6	1:AA:1378:G:O2'	2.43	0.44
1:AA:1323:G:O6	19:AS:6:LYS:NZ	2.37	0.44
3:AC:11:ARG:HH21	3:AC:179:ALA:H	1.65	0.44
4:AD:121:LEU:O	4:AD:141:SER:OG	2.32	0.44
5:AE:84:LEU:HD11	5:AE:126:VAL:HG12	2.00	0.44
7:AG:110:ARG:HB2	7:AG:118:ARG:HB2	1.99	0.44
8:AH:33:LYS:HA	8:AH:36:ILE:HD12	2.00	0.44
18:AR:61:VAL:HA	18:AR:64:ILE:HB	1.98	0.44
31:BA:1462:U:H2'	31:BA:1463:A:H8	1.82	0.44
31:BA:1496:U:H2'	31:BA:1497:A:C4	2.52	0.44
31:BA:1741:U:H3	31:BA:1748:G:H1	1.65	0.44
31:BA:1940:A:N6	31:BA:1967:C:N4	2.64	0.44
31:BA:2861:C:H2'	31:BA:2862:U:C6	2.52	0.44
33:BD:119:GLY:N	33:BD:121:ASP:OD1	2.50	0.44
37:BH:69:ARG:O	37:BH:73:ALA:HB2	2.18	0.44
45:BT:102:ASP:HB3	45:BT:105:ALA:HB3	1.99	0.44
1:AA:36:C:H2'	1:AA:37:G:C8	2.52	0.44
1:AA:40:G:O2'	1:AA:405:A:N6	2.50	0.44
18:AR:79:ASP:HB3	21:AU:18:ARG:HH12	1.83	0.44
23:B1:12:ASP:OD1	23:B1:24:ARG:NH1	2.51	0.44
23:B1:17:SER:OG	23:B1:18:VAL:N	2.45	0.44
31:BA:295:U:H1'	31:BA:299:G:H1'	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:686:A:H5''	31:BA:687:C:H5	1.83	0.44
31:BA:853:G:N1	31:BA:1218:U:OP2	2.50	0.44
31:BA:1242:G:O2'	31:BA:1266:G:N1	2.38	0.44
31:BA:1665:G:HO2'	31:BA:1762:A:HO2'	1.63	0.44
31:BA:1815:U:O2'	33:BD:42:GLY:O	2.35	0.44
31:BA:1825:G:H2'	31:BA:1826:G:C8	2.52	0.44
31:BA:1988:U:H2'	31:BA:1989:G:C8	2.53	0.44
31:BA:2582:G:N7	34:BE:143:SER:OG	2.50	0.44
31:BA:2794:A:O2'	31:BA:2890:G:O2'	2.29	0.44
32:BB:28:C:OP1	43:BR:7:LYS:NZ	2.39	0.44
40:BO:136:ALA:O	40:BO:140:ALA:CB	2.66	0.44
1:AA:17:G:O4'	1:AA:1403:A:O2'	2.30	0.44
1:AA:528:C:H2'	1:AA:529:A:C8	2.52	0.44
1:AA:1108:C:OP2	2:AB:95:ARG:NH2	2.40	0.44
1:AA:1132:G:N7	1:AA:1154:C:N4	2.65	0.44
1:AA:1254:U:C2	1:AA:1298:C:N3	2.85	0.44
2:AB:17:GLY:HA3	2:AB:39:HIS:HB2	1.99	0.44
5:AE:154:GLU:O	5:AE:158:ALA:CB	2.65	0.44
7:AG:21:VAL:O	7:AG:25:LEU:HB2	2.17	0.44
16:AP:44:VAL:HA	16:AP:45:THR:HA	1.73	0.44
26:B4:17:ARG:HH12	47:BV:19:ARG:HE	1.64	0.44
31:BA:236:C:H2'	31:BA:237:G:H8	1.82	0.44
31:BA:274:A:H2'	31:BA:275:A:H8	1.83	0.44
31:BA:664:G:N2	31:BA:667:A:OP2	2.44	0.44
31:BA:1275:G:H2'	31:BA:1276:A:H8	1.83	0.44
31:BA:1619:C:H2'	31:BA:1620:A:H8	1.83	0.44
31:BA:1802:C:C6	31:BA:1804:A:H1'	2.52	0.44
31:BA:1934:G:H4'	31:BA:1935:U:H5'	1.99	0.44
31:BA:1943:U:H3	31:BA:1971:C:HO2'	1.62	0.44
31:BA:2318:A:H2'	31:BA:2319:A:H8	1.82	0.44
31:BA:2699:U:O2	31:BA:2718:G:O6	2.35	0.44
31:BA:2854:U:C4	31:BA:2859:G:O6	2.71	0.44
1:AA:67:A:N3	1:AA:215:A:O2'	2.48	0.44
1:AA:73:G:N2	1:AA:98:A:OP1	2.50	0.44
1:AA:502:C:N3	1:AA:503:C:N4	2.65	0.44
1:AA:744:U:O2'	6:AF:92:ILE:O	2.32	0.44
1:AA:792:A:H2'	1:AA:793:G:H8	1.83	0.44
1:AA:1163:G:H21	1:AA:1186:A:H61	1.66	0.44
1:AA:1470:U:OP2	44:BS:108:ARG:NE	2.50	0.44
4:AD:20:THR:HB	4:AD:100:TYR:HE2	1.83	0.44
4:AD:105:ALA:HA	4:AD:156:VAL:HG22	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:AE:22:ASN:N	5:AE:37:ALA:O	2.45	0.44
8:AH:67:GLY:N	8:AH:71:GLU:O	2.51	0.44
29:B7:11:ALA:HB1	29:B7:65:MET:HG2	1.99	0.44
29:B7:32:ARG:HB3	31:BA:2426:C:N4	2.33	0.44
31:BA:10:A:H2'	31:BA:11:A:C4	2.52	0.44
31:BA:624:G:N1	31:BA:700:U:C2	2.82	0.44
31:BA:626:U:H2'	31:BA:627:A:H8	1.81	0.44
31:BA:1899:C:H2'	31:BA:1900:A:C8	2.53	0.44
31:BA:2154:U:H3'	31:BA:2155:U:H4'	1.98	0.44
31:BA:2681:U:H2'	31:BA:2682:U:C6	2.53	0.44
31:BA:2704:C:H2'	31:BA:2705:C:H6	1.83	0.44
38:BM:19:VAL:HA	38:BM:57:ILE:HB	2.00	0.44
42:BQ:41:ARG:HB2	42:BQ:107:ILE:HD11	2.00	0.44
43:BR:87:GLU:HG2	43:BR:114:LYS:HE3	2.00	0.44
47:BV:9:ALA:O	47:BV:108:THR:HA	2.18	0.44
1:AA:146:G:H2'	1:AA:147:G:C8	2.53	0.44
1:AA:557:G:H2'	1:AA:558:C:C6	2.52	0.44
1:AA:589:C:O2'	1:AA:590:G:O5'	2.33	0.44
1:AA:753:U:O2'	1:AA:844:G:N3	2.47	0.44
1:AA:853:A:O2'	1:AA:854:G:O4'	2.36	0.44
1:AA:1259:C:H1'	1:AA:1292:U:C4	2.52	0.44
1:AA:1309:U:H3'	1:AA:1310:C:H4'	2.00	0.44
1:AA:1519:U:H2'	1:AA:1520:A:C8	2.52	0.44
1:AA:1532:G:H2'	1:AA:1533:G:C8	2.53	0.44
2:AB:67:VAL:HG21	2:AB:221:ILE:HD13	1.99	0.44
15:AO:76:GLN:HA	15:AO:79:ARG:HB3	1.99	0.44
26:B4:15:ARG:HH21	31:BA:16:G:H1'	1.82	0.44
29:B7:57:ARG:H	29:B7:57:ARG:HD2	1.82	0.44
31:BA:20:C:H2'	31:BA:21:A:H8	1.83	0.44
31:BA:30:G:H2'	31:BA:31:C:C6	2.53	0.44
31:BA:449:C:H1'	31:BA:1866:U:H1'	1.99	0.44
31:BA:766:C:H2'	31:BA:767:C:H6	1.82	0.44
31:BA:1846:U:H2'	31:BA:1847:G:C8	2.52	0.44
31:BA:2132:C:H2'	31:BA:2133:C:C6	2.53	0.44
33:BD:120:PRO:HB2	33:BD:134:ASN:HD22	1.83	0.44
33:BD:132:LEU:HD11	33:BD:164:VAL:HG21	1.99	0.44
36:BG:69:THR:HG23	36:BG:89:LYS:HG3	2.00	0.44
43:BR:102:ALA:O	43:BR:106:THR:OG1	2.25	0.44
1:AA:115:G:H4'	1:AA:116:A:H5'	2.00	0.44
1:AA:999:U:O2	1:AA:1220:A:C6	2.71	0.44
1:AA:1163:G:N2	1:AA:1186:A:H61	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1212:U:H2'	1:AA:1213:G:H8	1.83	0.44
4:AD:107:THR:HG23	4:AD:110:GLN:H	1.83	0.44
7:AG:108:ARG:NH1	7:AG:115:MET:SD	2.89	0.44
9:AI:12:ARG:HG2	9:AI:13:LYS:HB2	1.98	0.44
13:AM:42:ASP:HA	13:AM:43:ILE:HA	1.46	0.44
25:B3:17:THR:HG21	25:B3:46:ILE:N	2.33	0.44
25:B3:52:SER:HB3	36:BG:106:THR:HA	1.99	0.44
31:BA:16:G:H2'	31:BA:17:G:H8	1.82	0.44
31:BA:174:A:O2'	31:BA:175:A:O5'	2.36	0.44
31:BA:274:A:H2'	31:BA:275:A:C8	2.53	0.44
31:BA:596:C:N4	31:BA:605:G:OP1	2.50	0.44
31:BA:1249:U:O2	31:BA:1260:G:O6	2.35	0.44
31:BA:1667:C:H2'	31:BA:1668:U:C6	2.53	0.44
31:BA:1934:G:H22	31:BA:1972:G:H2'	1.81	0.44
31:BA:2144:G:N1	31:BA:2154:U:O4	2.51	0.44
31:BA:2154:U:H5	31:BA:2155:U:H1'	1.83	0.44
31:BA:2529:G:H2'	31:BA:2530:G:C8	2.51	0.44
31:BA:2751:G:H21	31:BA:2761:A:N6	1.99	0.44
33:BD:107:ALA:HB1	33:BD:194:VAL:HG13	2.00	0.44
35:BF:186:ASP:O	35:BF:189:SER:OG	2.35	0.44
41:BP:42:ILE:H	41:BP:42:ILE:HG13	1.46	0.44
46:BU:34:THR:HB	46:BU:63:GLU:HA	1.98	0.44
49:BX:39:ALA:HB1	49:BX:61:ALA:HB3	2.00	0.44
50:BZ:74:THR:N	50:BZ:89:TYR:O	2.51	0.44
1:AA:149:G:C6	1:AA:175:A:N6	2.84	0.44
1:AA:284:G:O2'	17:AQ:46:LYS:NZ	2.51	0.44
1:AA:526:G:N2	1:AA:538:G:O3'	2.50	0.44
1:AA:789:A:OP1	1:AA:1529:U:O2'	2.35	0.44
1:AA:986:A:N6	1:AA:1325:A:N7	2.65	0.44
1:AA:1093:U:H5'	1:AA:1102:G:C4	2.52	0.44
2:AB:83:GLU:O	2:AB:87:ALA:CB	2.66	0.44
3:AC:3:GLN:HE22	10:AJ:53:ARG:HH22	1.65	0.44
8:AH:83:PRO:HA	8:AH:86:ARG:HH12	1.83	0.44
16:AP:11:GLY:HA3	16:AP:16:PRO:HA	1.98	0.44
31:BA:1093:U:O2'	31:BA:1114:C:N4	2.50	0.44
31:BA:1335:U:O2	31:BA:1652:G:N1	2.51	0.44
31:BA:1428:C:H2'	31:BA:1429:A:C8	2.53	0.44
31:BA:1523:A:N3	31:BA:1607:C:O2'	2.40	0.44
31:BA:1598:G:H5''	33:BD:61:LYS:H	1.83	0.44
31:BA:1825:G:OP2	33:BD:52:ARG:NH2	2.45	0.44
31:BA:1847:G:H2'	31:BA:1848:G:H8	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2206:C:H2'	31:BA:2208:C:C6	2.53	0.44
32:BB:110:G:H21	43:BR:48:VAL:HG13	1.82	0.44
33:BD:44:ASN:OD1	33:BD:45:ASN:N	2.49	0.44
37:BH:3:ARG:HA	37:BH:6:ASN:HD21	1.82	0.44
46:BU:6:ILE:HG13	46:BU:15:LYS:HA	2.00	0.44
1:AA:258:A:N7	1:AA:282:A:C6	2.86	0.43
1:AA:382:A:HO2'	16:AP:18:TYR:HH	1.57	0.43
1:AA:593:G:H2'	1:AA:594:G:H8	1.83	0.43
1:AA:943:A:H2'	1:AA:944:C:H6	1.81	0.43
1:AA:995:G:H2'	1:AA:996:G:C8	2.53	0.43
1:AA:1012:G:C2	1:AA:1044:C:N3	2.86	0.43
11:AK:20:HIS:HA	11:AK:83:THR:HG23	2.00	0.43
11:AK:40:LEU:HB2	11:AK:75:GLN:NE2	2.33	0.43
11:AK:58:PRO:HB2	11:AK:93:SER:HB2	1.99	0.43
13:AM:26:GLY:O	13:AM:30:SER:N	2.33	0.43
15:AO:5:LYS:HA	15:AO:8:LYS:HB3	2.00	0.43
25:B3:4:ASN:O	25:B3:6:HIS:ND1	2.52	0.43
25:B3:55:HIS:CE1	36:BG:116:HIS:H	2.36	0.43
31:BA:1487:A:C2	31:BA:2706:G:C2	2.99	0.43
31:BA:1544:A:O2'	31:BA:1586:U:O2'	2.22	0.43
31:BA:1657:G:H2'	31:BA:1658:G:C8	2.53	0.43
31:BA:1805:A:H3'	31:BA:1806:A:H8	1.83	0.43
31:BA:2168:U:OP2	31:BA:2169:G:N1	2.50	0.43
32:BB:91:C:H2'	32:BB:92:C:H6	1.82	0.43
43:BR:19:ARG:HH22	43:BR:30:ARG:HH21	1.65	0.43
47:BV:75:VAL:HA	47:BV:111:VAL:HG12	1.99	0.43
51:A:21:VAL:HG13	51:A:82:GLU:OE2	2.18	0.43
1:AA:145:G:OP1	1:AA:211:A:N6	2.50	0.43
1:AA:419:A:N6	1:AA:436:G:O5'	2.51	0.43
1:AA:469:A:H2'	1:AA:470:G:H8	1.82	0.43
1:AA:699:G:N2	1:AA:704:A:OP2	2.51	0.43
1:AA:958:U:O2	1:AA:1238:G:N2	2.52	0.43
1:AA:1169:C:H2'	1:AA:1170:G:C8	2.54	0.43
1:AA:1326:A:O2'	1:AA:1330:G:N7	2.45	0.43
1:AA:1445:G:H2'	1:AA:1446:G:H8	1.82	0.43
19:AS:32:LYS:HA	19:AS:57:HIS:CD2	2.53	0.43
26:B4:38:HIS:HB2	26:B4:41:ARG:HD2	1.99	0.43
31:BA:352:A:O2'	35:BF:136:THR:N	2.48	0.43
31:BA:514:A:H1'	31:BA:515:A:H5''	1.99	0.43
31:BA:605:G:O2'	31:BA:607:A:OP1	2.37	0.43
31:BA:1051:U:H2'	31:BA:1052:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1118:C:H1'	31:BA:1120:A:H8	1.81	0.43
31:BA:1173:G:O2'	38:BM:106:SER:O	2.36	0.43
31:BA:1363:C:H2'	31:BA:1364:C:C6	2.53	0.43
31:BA:1393:G:N2	31:BA:1396:A:OP2	2.35	0.43
31:BA:1394:A:H3'	31:BA:1395:A:H8	1.83	0.43
31:BA:1869:G:H2'	31:BA:1870:A:C8	2.53	0.43
31:BA:2104:U:C4	31:BA:2193:G:C6	3.06	0.43
31:BA:2312:G:O2'	31:BA:2314:A:OP2	2.36	0.43
31:BA:2412:U:H2'	31:BA:2413:G:C8	2.53	0.43
31:BA:2820:G:H5'	34:BE:161:ARG:HD3	2.00	0.43
32:BB:19:G:H2'	32:BB:20:G:C8	2.53	0.43
37:BH:16:SER:O	37:BH:25:THR:OG1	2.31	0.43
39:BN:86:LEU:HB3	39:BN:94:ARG:HG3	1.99	0.43
42:BQ:3:ASN:OD1	42:BQ:42:ARG:NH1	2.51	0.43
44:BS:86:ILE:HG22	44:BS:87:ARG:HG2	2.00	0.43
44:BS:96:LEU:O	44:BS:99:LEU:HB3	2.18	0.43
47:BV:90:ARG:HD2	47:BV:91:PRO:HD2	1.99	0.43
49:BX:39:ALA:HB2	49:BX:63:ILE:HD11	1.99	0.43
51:A:73:ASP:OD1	51:A:74:MET:N	2.51	0.43
1:AA:96:U:H5''	1:AA:97:G:H4'	2.00	0.43
1:AA:404:A:O2'	1:AA:406:C:OP1	2.26	0.43
1:AA:685:U:O2	1:AA:785:A:O2'	2.36	0.43
1:AA:725:C:H4'	11:AK:117:ASN:HD22	1.82	0.43
1:AA:1327:C:H2'	1:AA:1328:U:C6	2.54	0.43
1:AA:1502:U:H5''	51:A:27:LYS:NZ	2.34	0.43
9:AI:51:PRO:HG2	9:AI:79:ILE:HG22	2.01	0.43
13:AM:71:ARG:O	13:AM:75:LEU:HB3	2.17	0.43
15:AO:11:ILE:HG12	15:AO:30:ALA:HB1	2.00	0.43
27:B5:3:ARG:HA	27:B5:23:SER:HB2	1.99	0.43
29:B7:41:ARG:NE	31:BA:2423:U:OP1	2.51	0.43
31:BA:606:A:H61	31:BA:2037:A:H4'	1.83	0.43
31:BA:678:A:H2'	31:BA:680:A:C8	2.54	0.43
31:BA:832:G:H2'	31:BA:833:G:H8	1.83	0.43
31:BA:1874:A:C5	31:BA:1875:A:H1'	2.53	0.43
31:BA:1940:A:H4'	31:BA:1941:A:H5''	1.99	0.43
31:BA:2593:A:H2'	31:BA:2594:A:H8	1.84	0.43
31:BA:2678:G:O2'	39:BN:26:GLY:O	2.33	0.43
33:BD:93:LEU:HD22	33:BD:94:ILE:H	1.82	0.43
34:BE:35:VAL:HB	34:BE:94:GLU:HB2	1.99	0.43
36:BG:75:VAL:HG12	36:BG:77:ALA:H	1.83	0.43
38:BM:14:ASP:OD2	38:BM:16:LYS:NZ	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:BS:28:HIS:CG	44:BS:82:LYS:HB3	2.53	0.43
47:BV:53:ASN:O	47:BV:57:SER:HB2	2.19	0.43
1:AA:309:G:H4'	12:AL:12:ARG:HH12	1.84	0.43
1:AA:451:U:H2'	1:AA:452:A:H8	1.84	0.43
1:AA:599:U:O2	1:AA:657:G:C2	2.71	0.43
1:AA:1365:U:H5''	14:AN:33:VAL:H	1.83	0.43
6:AF:21:ALA:HA	6:AF:24:GLU:HG2	2.00	0.43
8:AH:105:ILE:HG23	8:AH:128:ILE:HB	1.99	0.43
13:AM:54:ASP:HA	13:AM:57:ARG:HD3	2.00	0.43
19:AS:50:ALA:HB1	19:AS:57:HIS:HB3	1.99	0.43
22:B0:32:ASN:HB2	22:B0:51:ALA:H	1.84	0.43
25:B3:2:LYS:HG3	32:BB:41:C:P	2.58	0.43
28:B6:9:LYS:N	31:BA:1338:G:OP1	2.52	0.43
31:BA:157:G:N1	31:BA:164:U:OP2	2.51	0.43
31:BA:427:U:H2'	31:BA:428:C:H6	1.82	0.43
31:BA:645:G:H1'	31:BA:649:A:H62	1.83	0.43
31:BA:744:U:H2'	31:BA:745:G:C8	2.53	0.43
31:BA:1328:G:N1	31:BA:1669:C:OP2	2.44	0.43
31:BA:1474:U:H3	31:BA:1493:G:H22	1.66	0.43
31:BA:1801:G:H3'	33:BD:182:ARG:HH21	1.83	0.43
31:BA:1945:C:N4	31:BA:1969:C:N3	2.56	0.43
31:BA:2373:A:H2'	31:BA:2374:G:C8	2.54	0.43
31:BA:2833:A:OP2	34:BE:57:ARG:NH1	2.52	0.43
35:BF:134:PRO:HA	35:BF:163:PHE:HB3	2.00	0.43
39:BN:54:LYS:N	39:BN:56:GLU:OE2	2.51	0.43
40:BO:27:ASN:C	40:BO:31:SER:H	2.27	0.43
41:BP:42:ILE:HD11	41:BP:95:ALA:HB3	2.00	0.43
42:BQ:45:GLU:CD	42:BQ:104:TYR:H	2.26	0.43
1:AA:258:A:C6	1:AA:282:A:C2	3.06	0.43
1:AA:272:A:H3'	1:AA:273:G:H8	1.84	0.43
1:AA:525:U:H2'	1:AA:526:G:C5	2.53	0.43
1:AA:593:G:H2'	1:AA:594:G:C8	2.53	0.43
1:AA:1133:U:O2'	1:AA:1135:G:N7	2.43	0.43
9:AI:19:VAL:HG13	9:AI:65:VAL:HG22	2.00	0.43
13:AM:43:ILE:HG21	13:AM:48:LEU:HA	1.99	0.43
30:B8:32:LYS:HE2	31:BA:2532:U:H5''	2.00	0.43
31:BA:433:U:H2'	31:BA:434:U:C6	2.54	0.43
31:BA:865:G:H1	31:BA:2450:G:H4'	1.84	0.43
31:BA:908:U:OP1	41:BP:5:LYS:NZ	2.41	0.43
31:BA:1715:C:H3'	31:BA:1716:G:H8	1.84	0.43
31:BA:2091:G:H2'	31:BA:2092:A:C8	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2316:U:H4'	36:BG:86:ILE:HG21	2.01	0.43
31:BA:2517:G:H2'	31:BA:2518:U:C6	2.52	0.43
34:BE:30:ALA:HB1	34:BE:97:VAL:HG21	2.01	0.43
40:BO:91:VAL:HB	40:BO:124:VAL:HG13	2.00	0.43
40:BO:137:ILE:HG22	40:BO:142:GLY:HA3	2.01	0.43
1:AA:263:G:H2'	1:AA:264:U:C6	2.54	0.43
10:AJ:15:HIS:NE2	10:AJ:23:GLU:OE2	2.51	0.43
15:AO:79:ARG:HD3	17:AQ:86:ILE:HG22	1.99	0.43
31:BA:730:G:H2'	31:BA:731:A:C8	2.53	0.43
31:BA:1152:C:H2'	31:BA:1153:C:C6	2.54	0.43
31:BA:1344:C:H2'	31:BA:1345:A:C8	2.53	0.43
31:BA:1792:C:H3'	31:BA:1830:G:H22	1.84	0.43
31:BA:1794:G:C2	31:BA:1829:U:O2	2.72	0.43
31:BA:1872:G:H2'	31:BA:1873:U:C2	2.53	0.43
31:BA:1911:G:O6	31:BA:1927:U:O4	2.37	0.43
31:BA:2041:A:H2'	31:BA:2042:G:H8	1.83	0.43
31:BA:2057:G:H4'	34:BE:150:ASN:HD22	1.83	0.43
31:BA:2587:G:O2'	31:BA:2606:A:N6	2.52	0.43
33:BD:69:ARG:HH21	33:BD:191:THR:HG22	1.84	0.43
34:BE:38:VAL:HG13	34:BE:86:LEU:HD22	2.01	0.43
1:AA:228:A:O2'	1:AA:229:C:O4'	2.34	0.43
1:AA:264:U:O4	1:AA:274:G:N2	2.51	0.43
1:AA:588:G:H4'	15:AO:54:ARG:HH21	1.84	0.43
1:AA:691:G:N3	11:AK:38:ASN:ND2	2.67	0.43
1:AA:1037:U:H1'	1:AA:1041:G:H1	1.83	0.43
1:AA:1056:G:H2'	1:AA:1058:G:C8	2.53	0.43
1:AA:1133:U:H5	10:AJ:40:ILE:HD13	1.82	0.43
1:AA:1255:A:H2	1:AA:1296:A:H62	1.66	0.43
3:AC:32:LEU:HD21	14:AN:52:GLN:HB2	2.00	0.43
13:AM:25:VAL:HG22	13:AM:30:SER:HB2	1.99	0.43
31:BA:341:G:H21	31:BA:361:A:H1'	1.83	0.43
31:BA:361:A:H61	49:BX:15:LYS:HE3	1.82	0.43
31:BA:561:C:O2	31:BA:562:A:N6	2.51	0.43
31:BA:603:U:O2'	31:BA:605:G:OP2	2.30	0.43
31:BA:607:A:H2'	31:BA:608:U:H6	1.83	0.43
31:BA:764:G:C6	33:BD:207:LYS:HA	2.53	0.43
31:BA:889:A:H2'	31:BA:890:U:C6	2.54	0.43
31:BA:1012:G:H2'	31:BA:1013:G:H8	1.82	0.43
31:BA:1244:A:H4'	31:BA:1269:C:H4'	2.00	0.43
31:BA:1247:U:H2'	31:BA:1248:A:C8	2.53	0.43
31:BA:1255:G:H2'	31:BA:1256:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1300:C:O2'	31:BA:1677:C:OP1	2.33	0.43
31:BA:1325:A:H2'	31:BA:1326:C:C6	2.54	0.43
31:BA:1602:A:H2'	31:BA:1603:G:C8	2.52	0.43
31:BA:1884:U:H2'	31:BA:1885:A:C8	2.53	0.43
31:BA:2027:A:H2'	31:BA:2028:C:H6	1.84	0.43
32:BB:13:U:OP1	32:BB:105:A:O2'	2.35	0.43
33:BD:4:LYS:HG3	33:BD:18:GLY:HA3	1.99	0.43
35:BF:63:LYS:HA	35:BF:64:PRO:HD3	1.82	0.43
44:BS:60:VAL:HB	44:BS:71:ARG:HB3	1.99	0.43
51:A:50:LYS:HB2	51:A:51:ARG:NH1	2.33	0.43
1:AA:261:U:H2'	1:AA:262:G:H8	1.83	0.43
1:AA:513:C:O2'	1:AA:520:C:OP2	2.31	0.43
1:AA:920:C:H2'	1:AA:921:A:C8	2.54	0.43
1:AA:954:A:H2'	1:AA:955:G:C8	2.54	0.43
1:AA:954:A:O5'	13:AM:107:ARG:NH2	2.51	0.43
1:AA:1456:C:H5''	1:AA:1458:C:H41	1.82	0.43
8:AH:115:ASP:OD1	8:AH:115:ASP:N	2.45	0.43
9:AI:115:LYS:NZ	10:AJ:60:ASP:O	2.48	0.43
10:AJ:53:ARG:HE	10:AJ:61:SER:HB3	1.83	0.43
19:AS:51:VAL:HG13	19:AS:71:LEU:HG	2.00	0.43
22:B0:34:GLN:O	22:B0:49:ALA:N	2.51	0.43
24:B2:16:ILE:HD12	24:B2:17:PRO:HD2	1.99	0.43
27:B5:19:LEU:HD23	27:B5:20:ASN:H	1.83	0.43
27:B5:22:SER:HB3	27:B5:25:ALA:HB3	2.01	0.43
28:B6:24:THR:HG23	28:B6:26:ASN:HB3	1.99	0.43
31:BA:715:U:H2'	31:BA:716:A:C8	2.54	0.43
31:BA:730:G:H2'	31:BA:731:A:H8	1.82	0.43
31:BA:863:U:H4'	31:BA:866:G:C6	2.54	0.43
31:BA:959:U:H2'	31:BA:960:A:C8	2.52	0.43
31:BA:1301:G:C6	31:BA:1644:C:O2	2.72	0.43
31:BA:1457:C:N4	31:BA:1600:A:OP2	2.35	0.43
31:BA:1934:G:N2	31:BA:1972:G:H2'	2.33	0.43
32:BB:100:U:H3'	32:BB:101:A:H8	1.84	0.43
48:BW:28:GLU:OE2	48:BW:76:LYS:N	2.51	0.43
1:AA:19:U:H2'	1:AA:20:C:C6	2.53	0.43
1:AA:221:U:H2'	1:AA:474:G:C4	2.54	0.43
1:AA:632:C:H2'	1:AA:633:C:H6	1.84	0.43
1:AA:728:C:H3'	1:AA:729:G:H2'	2.01	0.43
1:AA:840:G:O6	1:AA:862:U:C5	2.67	0.43
1:AA:1008:U:O4	1:AA:1048:G:O6	2.37	0.43
1:AA:1123:C:H2'	1:AA:1124:U:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1212:U:O2'	3:AC:191:THR:O	2.35	0.43
1:AA:1228:G:H3'	1:AA:1329:C:N4	2.34	0.43
3:AC:28:TYR:O	3:AC:32:LEU:CB	2.66	0.43
5:AE:90:GLY:O	5:AE:96:LYS:HA	2.18	0.43
12:AL:55:PRO:HG2	12:AL:61:ALA:HB3	2.00	0.43
15:AO:63:ARG:HA	15:AO:66:LEU:HB3	2.01	0.43
29:B7:31:HIS:CE1	31:BA:2398:C:H41	2.37	0.43
30:B8:8:LYS:NZ	31:BA:2471:C:OP1	2.41	0.43
31:BA:88:G:H3'	31:BA:89:U:H6	1.84	0.43
31:BA:880:U:O2	31:BA:969:G:C6	2.72	0.43
31:BA:991:G:N2	31:BA:995:A:OP2	2.45	0.43
31:BA:1149:G:H2'	31:BA:1150:A:H8	1.83	0.43
31:BA:1158:C:H2'	31:BA:1159:C:C6	2.54	0.43
31:BA:1297:U:H2'	31:BA:1298:A:C8	2.46	0.43
31:BA:1771:A:H2'	31:BA:1772:G:C8	2.48	0.43
31:BA:1961:C:H2'	31:BA:1962:C:C6	2.54	0.43
31:BA:2201:U:C2	31:BA:2229:A:N7	2.87	0.43
31:BA:2370:A:H4'	50:BZ:70:LYS:HG2	2.01	0.43
31:BA:2594:A:H2'	31:BA:2595:C:C6	2.54	0.43
35:BF:3:LYS:HA	35:BF:16:GLU:HA	2.01	0.43
37:BH:123:PHE:HE2	37:BH:125:VAL:HG23	1.83	0.43
38:BM:78:SER:OG	38:BM:87:LYS:O	2.31	0.43
40:BO:24:SER:OG	40:BO:25:SER:N	2.51	0.43
40:BO:124:VAL:HG12	40:BO:126:VAL:HG22	2.01	0.43
1:AA:509:G:H2'	1:AA:510:G:C8	2.53	0.43
1:AA:527:C:H5	1:AA:538:G:H3'	1.84	0.43
1:AA:531:C:OP1	12:AL:82:GLY:N	2.52	0.43
1:AA:842:A:N6	1:AA:860:U:C4	2.85	0.43
1:AA:913:U:H3'	1:AA:914:G:H8	1.84	0.43
10:AJ:47:SER:CB	10:AJ:67:MET:O	2.63	0.43
19:AS:18:LYS:HG3	19:AS:31:ILE:HD12	2.00	0.43
20:AT:15:LYS:O	20:AT:19:GLU:HB2	2.18	0.43
31:BA:408:U:H2'	31:BA:409:A:C8	2.54	0.43
31:BA:824:A:N6	31:BA:1643:A:OP2	2.35	0.43
31:BA:1011:G:H2'	31:BA:1012:G:H8	1.84	0.43
31:BA:1680:G:H3'	31:BA:1681:A:H8	1.83	0.43
31:BA:1755:G:OP1	44:BS:92:ARG:NE	2.35	0.43
31:BA:1803:U:O4	31:BA:2206:C:O2'	2.26	0.43
31:BA:2601:G:H4'	33:BD:243:ARG:HH11	1.84	0.43
31:BA:2776:C:OP1	34:BE:201:LYS:NZ	2.51	0.43
31:BA:2839:U:H2'	31:BA:2840:G:H8	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:BB:71:G:C2	32:BB:72:A:H1'	2.54	0.43
36:BG:58:LEU:HA	36:BG:61:ILE:HG22	2.01	0.43
51:A:98:ARG:HD3	51:A:98:ARG:HA	1.84	0.43
1:AA:16:U:O2'	5:AE:23:ARG:NH1	2.51	0.42
1:AA:485:C:H2'	1:AA:486:A:C8	2.53	0.42
1:AA:842:A:C6	1:AA:860:U:C4	3.07	0.42
1:AA:969:U:H2'	1:AA:970:C:C6	2.54	0.42
1:AA:1012:G:C6	1:AA:1044:C:C2	3.07	0.42
1:AA:1457:G:H22	1:AA:1459:A:H4'	1.84	0.42
10:AJ:44:THR:HG23	10:AJ:69:THR:H	1.84	0.42
13:AM:65:LEU:H	13:AM:68:ASP:HB2	1.84	0.42
18:AR:22:LYS:HA	18:AR:23:ILE:HA	1.75	0.42
26:B4:4:PRO:HA	31:BA:2619:U:C2	2.54	0.42
31:BA:76:C:H2'	31:BA:77:U:C6	2.54	0.42
31:BA:630:A:H4'	40:BO:10:GLU:HG2	2.01	0.42
31:BA:1477:C:N3	31:BA:1492:G:N2	2.67	0.42
31:BA:1529:U:H5'	33:BD:77:LYS:HE2	2.00	0.42
31:BA:1578:C:H2'	31:BA:1579:U:H6	1.84	0.42
31:BA:1612:G:H1'	31:BA:1613:U:H5''	2.01	0.42
31:BA:1835:C:H2'	31:BA:1836:U:C6	2.54	0.42
31:BA:1862:G:N2	31:BA:1886:U:O2	2.52	0.42
31:BA:2338:A:C6	43:BR:20:GLY:HA3	2.54	0.42
31:BA:2619:U:H2'	31:BA:2620:C:C6	2.53	0.42
32:BB:86:U:H1'	32:BB:88:C:C2	2.55	0.42
32:BB:112:C:H2'	32:BB:113:A:C8	2.54	0.42
33:BD:165:LEU:HD22	33:BD:173:LEU:HD12	2.00	0.42
33:BD:210:ARG:HA	33:BD:213:HIS:CD2	2.54	0.42
34:BE:53:PHE:N	34:BE:79:PHE:O	2.52	0.42
35:BF:64:PRO:HB2	35:BF:65:TRP:CE3	2.54	0.42
37:BH:127:THR:HG23	37:BH:129:THR:H	1.83	0.42
38:BM:66:LEU:HG	38:BM:70:LYS:HE2	2.00	0.42
48:BW:31:SER:O	48:BW:76:LYS:NZ	2.43	0.42
51:A:7:ARG:HB3	51:A:9:GLU:OE2	2.19	0.42
1:AA:506:A:H2'	1:AA:507:A:H8	1.82	0.42
1:AA:958:U:OP1	13:AM:101:ASN:ND2	2.48	0.42
1:AA:1364:A:O2'	14:AN:41:ARG:NH2	2.52	0.42
1:AA:1400:U:H2'	1:AA:1402:C:H5	1.84	0.42
4:AD:11:GLN:OE1	4:AD:60:THR:OG1	2.37	0.42
4:AD:76:THR:HG23	4:AD:87:PHE:HZ	1.84	0.42
11:AK:40:LEU:HB2	11:AK:75:GLN:HE21	1.83	0.42
23:B1:51:ASP:O	23:B1:55:LYS:CB	2.66	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:B2:13:ILE:HA	24:B2:20:ARG:NH2	2.35	0.42
24:B2:16:ILE:HG23	24:B2:19:GLN:N	2.35	0.42
25:B3:29:LYS:HB3	36:BG:142:ILE:HG13	2.01	0.42
28:B6:10:LYS:HD3	28:B6:13:LYS:HZ1	1.83	0.42
31:BA:25:U:H2'	31:BA:26:G:C4	2.54	0.42
31:BA:685:G:N2	31:BA:686:A:N7	2.67	0.42
31:BA:807:A:H2'	31:BA:808:U:C6	2.54	0.42
31:BA:1285:U:H5''	35:BF:73:ALA:HB2	2.00	0.42
31:BA:1701:C:H2'	31:BA:1702:G:C8	2.54	0.42
31:BA:1952:G:H2'	31:BA:1953:G:C8	2.54	0.42
31:BA:2319:A:H4'	43:BR:1:MET:HB3	2.00	0.42
31:BA:2523:U:H5'	31:BA:2546:A:H61	1.84	0.42
33:BD:145:GLU:HG2	33:BD:153:GLN:H	1.83	0.42
37:BH:123:PHE:HE1	37:BH:133:VAL:HG22	1.84	0.42
42:BQ:18:ARG:HH12	42:BQ:67:ARG:HB3	1.83	0.42
49:BX:9:VAL:H	49:BX:21:GLY:H	1.66	0.42
1:AA:1257:A:H4'	9:AI:14:ASN:HB3	1.99	0.42
4:AD:71:LEU:HA	4:AD:74:ALA:HB3	2.00	0.42
8:AH:6:PRO:HA	8:AH:9:ASP:HB3	2.01	0.42
31:BA:40:U:H2'	31:BA:41:A:H8	1.84	0.42
31:BA:881:G:O6	31:BA:884:A:O2'	2.31	0.42
31:BA:1059:G:H3'	31:BA:1060:G:H2'	2.01	0.42
31:BA:1097:A:N7	31:BA:1099:C:N4	2.68	0.42
31:BA:1149:G:H2'	31:BA:1150:A:C8	2.54	0.42
31:BA:1316:A:O2'	31:BA:1317:U:O2	2.30	0.42
31:BA:2111:C:H2'	31:BA:2112:A:C8	2.54	0.42
31:BA:2356:A:OP2	31:BA:2369:G:N2	2.51	0.42
31:BA:2593:A:H2'	31:BA:2594:A:C8	2.55	0.42
31:BA:2625:G:H2'	31:BA:2626:C:C6	2.54	0.42
31:BA:2641:U:H3'	31:BA:2642:G:C8	2.53	0.42
31:BA:2752:A:OP2	31:BA:2757:A:N6	2.51	0.42
32:BB:27:A:P	43:BR:36:SER:HG	2.41	0.42
37:BH:105:LEU:O	37:BH:113:ASP:CB	2.58	0.42
42:BQ:33:THR:HA	42:BQ:120:MET:HA	2.01	0.42
45:BT:65:ILE:HD12	45:BT:65:ILE:HA	1.83	0.42
49:BX:65:VAL:HA	49:BX:68:VAL:HG22	2.00	0.42
1:AA:192:A:H2	1:AA:193:A:H62	1.67	0.42
1:AA:426:U:O2'	4:AD:35:GLN:NE2	2.53	0.42
1:AA:505:G:N2	1:AA:507:A:N7	2.59	0.42
1:AA:648:A:H2'	1:AA:650:A:H62	1.84	0.42
1:AA:652:U:H2'	1:AA:653:G:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1470:U:H2'	1:AA:1471:U:C6	2.55	0.42
11:AK:22:GLN:HB3	11:AK:29:ILE:HG13	2.00	0.42
15:AO:4:SER:O	15:AO:8:LYS:CB	2.68	0.42
25:B3:1:MET:SD	36:BG:96:ARG:NH2	2.91	0.42
26:B4:13:LYS:NZ	31:BA:1293:U:OP1	2.39	0.42
26:B4:15:ARG:HA	26:B4:18:THR:HG23	2.01	0.42
31:BA:39:C:H2'	31:BA:40:U:H6	1.84	0.42
31:BA:84:A:H3'	49:BX:4:LYS:HB2	2.01	0.42
31:BA:156:U:O2	31:BA:166:G:C2	2.72	0.42
31:BA:169:C:H2'	31:BA:170:A:C8	2.55	0.42
31:BA:445:G:H5''	31:BA:446:G:H5''	2.00	0.42
31:BA:1294:G:H2'	31:BA:1295:A:C8	2.55	0.42
31:BA:1461:G:H2'	31:BA:1462:U:H6	1.84	0.42
31:BA:1516:G:C6	31:BA:1527:A:N6	2.87	0.42
31:BA:2571:G:H2'	31:BA:2572:C:C6	2.55	0.42
33:BD:49:ILE:HD13	33:BD:49:ILE:HA	1.86	0.42
35:BF:77:SER:OG	35:BF:80:SER:N	2.48	0.42
45:BT:55:ARG:HA	45:BT:58:ARG:HG2	2.01	0.42
47:BV:25:ILE:H	47:BV:25:ILE:HG13	1.66	0.42
51:A:14:THR:C	51:A:18:ARG:HE	2.27	0.42
1:AA:90:C:H2'	1:AA:91:C:C6	2.55	0.42
1:AA:248:U:H2'	1:AA:249:G:H8	1.84	0.42
1:AA:258:A:C6	1:AA:282:A:N1	2.88	0.42
1:AA:506:A:H2'	1:AA:507:A:C8	2.53	0.42
1:AA:591:C:O3'	15:AO:64:ARG:NH1	2.52	0.42
1:AA:699:G:N7	11:AK:55:LYS:NZ	2.68	0.42
1:AA:843:G:H2'	1:AA:844:G:H8	1.84	0.42
1:AA:965:U:H5'	19:AS:81:ARG:HD2	2.02	0.42
1:AA:1227:G:H5'	19:AS:36:ARG:HB2	2.02	0.42
1:AA:1314:U:H2'	1:AA:1315:U:O4'	2.19	0.42
1:AA:1317:U:O4	1:AA:1334:A:N7	2.53	0.42
1:AA:1353:A:H2'	7:AG:9:ARG:HH21	1.84	0.42
1:AA:1379:U:H5''	9:AI:72:VAL:H	1.84	0.42
15:AO:29:ILE:HG13	15:AO:66:LEU:HD11	2.01	0.42
17:AQ:32:HIS:CE1	17:AQ:34:VAL:HB	2.54	0.42
18:AR:47:ARG:O	18:AR:51:GLY:CA	2.68	0.42
24:B2:8:LEU:HD13	24:B2:31:LEU:HA	2.01	0.42
28:B6:26:ASN:ND2	31:BA:717:G:H5''	2.34	0.42
31:BA:36:G:H2'	31:BA:37:C:H6	1.85	0.42
31:BA:306:A:O2'	31:BA:394:A:N6	2.52	0.42
31:BA:336:C:OP2	49:BX:17:ARG:NH1	2.51	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:579:U:OP1	31:BA:1249:U:O2'	2.36	0.42
31:BA:619:G:OP1	40:BO:21:ARG:NH2	2.52	0.42
31:BA:1478:A:H2'	31:BA:1479:G:C8	2.54	0.42
31:BA:1927:U:H2'	31:BA:1928:C:C6	2.55	0.42
31:BA:2076:G:H1'	31:BA:2444:C:H42	1.84	0.42
31:BA:2093:U:H2'	31:BA:2094:A:C8	2.55	0.42
31:BA:2351:C:H2'	31:BA:2352:U:C6	2.53	0.42
31:BA:2446:C:H2'	31:BA:2447:U:C6	2.54	0.42
31:BA:2887:C:H2'	31:BA:2888:G:O4'	2.19	0.42
32:BB:6:U:H2'	32:BB:7:A:C8	2.54	0.42
36:BG:59:ALA:O	36:BG:62:SER:OG	2.31	0.42
39:BN:65:THR:HA	39:BN:82:ASN:HD22	1.85	0.42
41:BP:36:ALA:HB3	41:BP:101:VAL:HB	2.02	0.42
47:BV:8:LYS:HB2	47:BV:110:VAL:HG22	2.00	0.42
1:AA:173:A:H2'	1:AA:175:A:H8	1.85	0.42
1:AA:269:U:OP1	20:AT:67:ARG:NH1	2.52	0.42
1:AA:732:G:H2'	1:AA:733:G:H8	1.85	0.42
1:AA:1531:C:N4	1:AA:1532:G:O6	2.53	0.42
4:AD:19:LEU:HB2	4:AD:60:THR:HG21	2.02	0.42
5:AE:44:ASP:OD1	5:AE:44:ASP:N	2.43	0.42
7:AG:13:ALA:HA	7:AG:20:ILE:HA	2.01	0.42
24:B2:45:GLY:HA3	31:BA:889:A:H5'	2.01	0.42
31:BA:292:G:H2'	31:BA:293:G:C4	2.53	0.42
31:BA:300:G:H2'	31:BA:301:A:C8	2.54	0.42
31:BA:529:G:H2'	31:BA:530:G:H8	1.84	0.42
31:BA:714:C:H2'	31:BA:715:U:C6	2.55	0.42
31:BA:944:A:O5'	41:BP:24:GLY:N	2.53	0.42
31:BA:1279:U:O2'	31:BA:1280:G:O4'	2.31	0.42
31:BA:1454:G:H2'	31:BA:1455:G:C8	2.54	0.42
31:BA:1465:G:N1	31:BA:1586:U:N3	2.67	0.42
31:BA:1862:G:O6	31:BA:1886:U:O4	2.37	0.42
31:BA:1976:G:OP2	33:BD:238:ARG:NE	2.52	0.42
31:BA:2128:G:C6	31:BA:2129:G:H1'	2.53	0.42
31:BA:2210:G:H2'	31:BA:2211:G:C8	2.54	0.42
31:BA:2349:G:O6	31:BA:2375:G:C2	2.71	0.42
31:BA:2376:U:H2'	31:BA:2377:A:C8	2.54	0.42
31:BA:2480:A:O2'	31:BA:2481:C:O4'	2.31	0.42
31:BA:2640:U:H2'	31:BA:2641:U:C6	2.54	0.42
31:BA:2886:U:H2'	31:BA:2887:C:C6	2.55	0.42
33:BD:69:ARG:HE	33:BD:129:ALA:HB2	1.85	0.42
40:BO:47:ARG:HD3	40:BO:50:PHE:CD1	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:BO:92:SER:HB3	40:BO:125:LYS:HB3	2.02	0.42
40:BO:137:ILE:HA	40:BO:140:ALA:HB3	2.02	0.42
47:BV:80:ILE:HG23	47:BV:107:ILE:HG13	2.02	0.42
1:AA:242:C:H2'	1:AA:243:C:C6	2.54	0.42
1:AA:953:G:C6	1:AA:1243:A:N1	2.88	0.42
1:AA:1247:U:H3'	1:AA:1248:G:C8	2.54	0.42
12:AL:100:VAL:HG23	12:AL:109:HIS:CE1	2.55	0.42
13:AM:43:ILE:HB	13:AM:45:THR:HB	2.02	0.42
26:B4:7:HIS:HE1	31:BA:611:A:H1'	1.84	0.42
26:B4:10:SER:HA	26:B4:13:LYS:HE2	2.02	0.42
31:BA:351:C:H2'	31:BA:352:A:C8	2.55	0.42
31:BA:1363:C:O3'	48:BW:64:ARG:NH2	2.53	0.42
31:BA:2144:G:N3	31:BA:2156:C:N4	2.68	0.42
31:BA:2755:G:H3'	31:BA:2756:C:H6	1.84	0.42
31:BA:2795:U:H5	31:BA:2890:G:H2'	1.84	0.42
32:BB:82:G:H2'	32:BB:83:G:H8	1.85	0.42
33:BD:79:ALA:HA	33:BD:112:VAL:HG23	2.01	0.42
34:BE:65:ALA:C	34:BE:68:HIS:H	2.28	0.42
36:BG:39:MET:HE1	36:BG:153:MET:HE2	2.02	0.42
38:BM:54:ASP:O	38:BM:120:GLN:NE2	2.53	0.42
41:BP:41:TRP:HB3	41:BP:94:VAL:HG11	2.01	0.42
48:BW:13:THR:H	48:BW:16:SER:HB3	1.83	0.42
1:AA:177:C:H2'	1:AA:178:G:C8	2.52	0.42
1:AA:187:C:N3	1:AA:207:U:O4	2.53	0.42
1:AA:262:G:H5'	17:AQ:72:LYS:HD3	2.01	0.42
1:AA:304:U:O2'	1:AA:565:C:O2	2.32	0.42
1:AA:316:C:H2'	1:AA:317:G:H8	1.84	0.42
1:AA:321:A:H2'	1:AA:322:C:C6	2.54	0.42
1:AA:650:A:H2'	1:AA:651:C:C6	2.55	0.42
1:AA:1011:U:C2	1:AA:1046:C:N3	2.88	0.42
1:AA:1051:U:H3'	1:AA:1052:A:H8	1.85	0.42
1:AA:1088:A:H5''	1:AA:1089:G:C8	2.55	0.42
1:AA:1134:U:H3	1:AA:1286:A:H4'	1.85	0.42
1:AA:1401:A:C6	1:AA:1508:C:H4'	2.55	0.42
6:AF:52:ILE:HB	18:AR:71:ALA:HB2	2.01	0.42
10:AJ:50:THR:HA	10:AJ:63:GLU:O	2.20	0.42
17:AQ:62:ILE:HA	17:AQ:76:LEU:HD22	2.01	0.42
31:BA:158:A:H2'	31:BA:159:A:C8	2.55	0.42
31:BA:310:U:O4	31:BA:313:A:N6	2.53	0.42
31:BA:316:U:H1'	31:BA:390:A:H1'	2.02	0.42
31:BA:760:G:H2'	31:BA:761:G:C4	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:764:G:O2'	31:BA:1777:U:O2'	2.31	0.42
31:BA:1031:A:H2'	31:BA:1032:G:H8	1.84	0.42
31:BA:1304:A:O4'	42:BQ:8:ARG:NH2	2.53	0.42
31:BA:1320:U:H2'	31:BA:1321:A:H8	1.85	0.42
31:BA:1687:C:H2'	31:BA:1688:U:H6	1.85	0.42
31:BA:1737:C:H2'	31:BA:1738:U:H6	1.85	0.42
31:BA:1804:A:N6	31:BA:1824:G:O2'	2.46	0.42
31:BA:2307:G:H2'	31:BA:2308:G:H8	1.85	0.42
31:BA:2711:G:H2'	31:BA:2712:A:H8	1.85	0.42
31:BA:2789:U:H2'	31:BA:2790:A:C8	2.54	0.42
32:BB:83:G:H2'	32:BB:84:G:H8	1.84	0.42
32:BB:103:A:H2'	32:BB:104:G:H8	1.83	0.42
33:BD:44:ASN:H	33:BD:47:GLY:HA2	1.84	0.42
34:BE:120:PRO:C	34:BE:126:GLN:HE22	2.28	0.42
35:BF:10:ASP:N	35:BF:10:ASP:OD1	2.52	0.42
37:BH:120:ASN:HD22	37:BH:136:ILE:HD12	1.84	0.42
39:BN:33:ALA:HB1	39:BN:62:ILE:HD13	2.01	0.42
42:BQ:76:ASN:ND2	42:BQ:83:PRO:O	2.52	0.42
1:AA:64:U:H5''	1:AA:393:U:H1'	2.02	0.42
1:AA:473:U:O2	1:AA:478:A:N6	2.53	0.42
1:AA:1184:G:H3'	1:AA:1185:G:H8	1.85	0.42
1:AA:1243:A:H4'	1:AA:1311:G:H4'	2.02	0.42
2:AB:217:MET:HE2	2:AB:217:MET:HB3	1.86	0.42
8:AH:11:LEU:HD22	8:AH:77:LEU:HD11	2.01	0.42
12:AL:63:ARG:HB3	12:AL:79:TYR:HE1	1.85	0.42
29:B7:13:ARG:HD3	40:BO:61:MET:HB2	2.00	0.42
31:BA:246:G:H4'	31:BA:421:G:C4	2.55	0.42
31:BA:609:G:H2'	31:BA:610:A:C8	2.55	0.42
31:BA:645:G:N1	31:BA:648:G:OP1	2.53	0.42
31:BA:673:U:H2'	31:BA:674:C:H6	1.85	0.42
31:BA:697:U:H2'	31:BA:698:G:C8	2.53	0.42
31:BA:1165:U:H3	34:BE:151:LYS:HE2	1.85	0.42
31:BA:1296:G:O2'	31:BA:2016:G:O6	2.33	0.42
31:BA:1347:G:H2'	31:BA:1348:G:H8	1.85	0.42
31:BA:1383:A:H62	31:BA:1406:G:N2	2.17	0.42
31:BA:1802:C:O2	31:BA:1819:G:N2	2.53	0.42
31:BA:2509:G:N1	31:BA:2580:G:N7	2.68	0.42
31:BA:2537:U:OP1	31:BA:2669:A:O2'	2.37	0.42
32:BB:2:U:H2'	32:BB:3:U:O4'	2.19	0.42
32:BB:27:A:P	43:BR:37:ASN:H	2.43	0.42
36:BG:29:VAL:HG12	36:BG:30:PRO:HD2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:BG:122:ALA:HB1	36:BG:130:THR:H	1.83	0.42
39:BN:76:TYR:HD1	39:BN:76:TYR:HA	1.69	0.42
41:BP:106:LEU:HD23	41:BP:109:VAL:HG11	2.01	0.42
47:BV:85:THR:HA	47:BV:102:LYS:O	2.20	0.42
1:AA:22:U:O2'	1:AA:582:A:N6	2.43	0.42
1:AA:635:U:H5'	16:AP:17:PHE:CE2	2.55	0.42
1:AA:1108:C:H5	2:AB:95:ARG:HH22	1.68	0.42
1:AA:1145:A:H2'	1:AA:1147:U:C6	2.55	0.42
2:AB:114:LEU:HD11	2:AB:148:ILE:HD12	2.01	0.42
3:AC:123:LEU:HD13	3:AC:195:LEU:HD13	2.01	0.42
4:AD:54:LYS:O	4:AD:58:ARG:CB	2.68	0.42
11:AK:82:VAL:HB	11:AK:108:ILE:HA	2.01	0.42
12:AL:114:ALA:H	12:AL:117:THR:HB	1.84	0.42
25:B3:24:LEU:O	25:B3:34:THR:OG1	2.38	0.42
31:BA:128:C:H2'	31:BA:129:C:C6	2.55	0.42
31:BA:407:G:N2	31:BA:408:U:O4	2.53	0.42
31:BA:570:C:H2'	31:BA:571:G:O4'	2.20	0.42
31:BA:666:A:H2'	31:BA:667:A:C8	2.55	0.42
31:BA:991:G:O6	31:BA:993:U:O2'	2.38	0.42
31:BA:1227:G:H5'	31:BA:1257:G:H4'	2.02	0.42
31:BA:1455:G:H2'	31:BA:1456:A:H8	1.84	0.42
31:BA:2663:G:N2	31:BA:2667:G:O6	2.53	0.42
31:BA:2753:A:C8	37:BH:59:LYS:HD3	2.54	0.42
31:BA:2780:A:C2	31:BA:2786:G:H1'	2.55	0.42
31:BA:2892:A:H2'	31:BA:2893:C:H6	1.85	0.42
35:BF:123:LEU:HA	35:BF:193:LEU:O	2.20	0.42
41:BP:18:ARG:H	41:BP:98:LYS:NZ	2.17	0.42
45:BT:44:TYR:CZ	46:BU:79:LYS:HG2	2.55	0.42
51:A:87:ARG:NH1	51:A:91:LYS:NZ	2.68	0.42
1:AA:458:G:H2'	1:AA:459:A:H4'	2.02	0.41
1:AA:680:U:C4	1:AA:742:G:O6	2.73	0.41
1:AA:1374:C:O2'	10:AJ:64:GLN:NE2	2.53	0.41
2:AB:66:VAL:O	2:AB:159:ASP:N	2.40	0.41
5:AE:14:PHE:HE1	5:AE:48:ARG:HH12	1.67	0.41
7:AG:23:THR:HA	7:AG:26:ILE:HD12	2.02	0.41
7:AG:101:ARG:HA	7:AG:104:VAL:HG12	2.01	0.41
27:B5:32:VAL:HG12	27:B5:34:LYS:HG2	2.02	0.41
28:B6:34:ARG:HH21	28:B6:39:ARG:NE	2.17	0.41
29:B7:42:ARG:HD2	31:BA:2386:G:H21	1.85	0.41
31:BA:5:A:H2'	31:BA:6:A:C8	2.55	0.41
31:BA:138:C:O2'	31:BA:140:A:O4'	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:671:A:OP1	40:BO:113:ALA:N	2.39	0.41
31:BA:818:A:H2'	31:BA:819:U:H4'	2.02	0.41
31:BA:934:C:C4	31:BA:935:C:N4	2.87	0.41
31:BA:1202:G:H2'	31:BA:1203:A:H8	1.85	0.41
31:BA:1367:G:H5'	48:BW:13:THR:HG22	2.02	0.41
31:BA:1407:A:O2'	31:BA:1409:G:N7	2.49	0.41
31:BA:2193:G:H2'	31:BA:2194:G:C8	2.55	0.41
31:BA:2198:C:H2'	31:BA:2199:U:H6	1.85	0.41
31:BA:2542:C:H2'	31:BA:2543:C:H6	1.85	0.41
33:BD:182:ARG:HH11	33:BD:269:LEU:HD22	1.85	0.41
41:BP:40:HIS:HD2	41:BP:127:VAL:HG12	1.84	0.41
47:BV:62:ALA:O	47:BV:66:PHE:CB	2.59	0.41
49:BX:85:VAL:HB	49:BX:90:VAL:HG21	2.02	0.41
1:AA:109:A:N6	1:AA:332:G:H21	2.14	0.41
1:AA:412:G:N3	1:AA:413:U:N3	2.67	0.41
1:AA:503:C:H42	1:AA:506:A:H62	1.68	0.41
1:AA:592:A:H3'	1:AA:593:G:H8	1.84	0.41
1:AA:1100:A:H2'	1:AA:1101:A:C8	2.55	0.41
1:AA:1120:C:O2'	3:AC:178:ARG:NE	2.35	0.41
1:AA:1349:C:H2'	1:AA:1350:G:C8	2.55	0.41
2:AB:38:ILE:HG23	51:A:140:PRO:CA	2.49	0.41
5:AE:80:VAL:O	5:AE:83:THR:OG1	2.26	0.41
8:AH:5:ASP:O	8:AH:9:ASP:CB	2.67	0.41
17:AQ:61:ARG:N	17:AQ:78:GLU:O	2.48	0.41
22:B0:10:ARG:HD2	31:BA:431:G:H5'	2.02	0.41
31:BA:68:A:H2'	31:BA:69:C:C6	2.55	0.41
31:BA:91:A:H3'	31:BA:92:G:H2'	2.01	0.41
31:BA:621:U:H2'	31:BA:622:A:H8	1.86	0.41
31:BA:863:U:H4'	31:BA:866:G:N1	2.35	0.41
31:BA:934:C:N4	31:BA:935:C:N4	2.68	0.41
31:BA:1089:A:O2'	31:BA:1090:G:O4'	2.32	0.41
31:BA:1477:C:H2'	31:BA:1478:A:C8	2.56	0.41
31:BA:2127:A:H2'	31:BA:2128:G:C8	2.55	0.41
31:BA:2208:C:H4'	33:BD:147:LYS:HD3	2.01	0.41
31:BA:2583:C:O2'	34:BE:135:SER:OG	2.28	0.41
31:BA:2695:C:H2'	31:BA:2696:C:C6	2.55	0.41
31:BA:2735:G:O2'	34:BE:205:LYS:NZ	2.53	0.41
31:BA:2743:U:H2'	31:BA:2744:A:H8	1.85	0.41
35:BF:78:THR:HA	35:BF:83:TRP:CG	2.55	0.41
37:BH:19:VAL:HG23	37:BH:45:ILE:HB	2.02	0.41
37:BH:155:GLU:HG3	37:BH:160:LYS:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:BR:47:ASP:O	43:BR:49:THR:N	2.52	0.41
1:AA:145:G:H3'	1:AA:146:G:H8	1.86	0.41
1:AA:304:U:H2'	1:AA:305:G:C8	2.55	0.41
1:AA:383:U:O2	16:AP:29:ARG:NH2	2.35	0.41
1:AA:481:U:H2'	16:AP:84:HIS:HE2	1.84	0.41
1:AA:561:U:H2'	1:AA:562:G:C8	2.51	0.41
2:AB:2:SER:HB2	2:AB:58:LYS:HZ3	1.85	0.41
19:AS:12:ASP:OD1	19:AS:12:ASP:N	2.51	0.41
19:AS:53:ASP:OD1	19:AS:54:GLY:N	2.52	0.41
25:B3:63:LYS:HD3	25:B3:63:LYS:HA	1.88	0.41
27:B5:4:LYS:HD3	27:B5:4:LYS:HA	1.89	0.41
31:BA:227:A:N3	31:BA:229:A:H5''	2.34	0.41
31:BA:989:G:O6	31:BA:998:U:O4	2.39	0.41
31:BA:1107:C:H3'	31:BA:1129:U:H5	1.84	0.41
31:BA:1345:A:H2'	31:BA:1346:G:H8	1.85	0.41
31:BA:1511:G:N1	31:BA:1533:C:O2	2.53	0.41
31:BA:2148:G:C2	31:BA:2151:A:N7	2.87	0.41
31:BA:2410:C:C2	40:BO:69:VAL:HG21	2.55	0.41
36:BG:75:VAL:HB	36:BG:78:PHE:HB2	2.02	0.41
44:BS:2:ASN:O	44:BS:5:GLU:HG2	2.20	0.41
49:BX:26:ALA:HA	49:BX:33:VAL:HG13	2.03	0.41
1:AA:490:G:H21	1:AA:491:A:N6	2.18	0.41
1:AA:564:C:H2'	1:AA:565:C:C6	2.56	0.41
1:AA:692:U:O2'	1:AA:693:G:O4'	2.36	0.41
1:AA:792:A:H2'	1:AA:793:G:C8	2.56	0.41
1:AA:882:G:H2'	1:AA:883:C:C6	2.55	0.41
1:AA:929:U:H5'	1:AA:1089:G:H4'	2.01	0.41
1:AA:1256:C:O2	1:AA:1295:A:N6	2.54	0.41
1:AA:1337:U:O4	1:AA:1338:G:N1	2.53	0.41
3:AC:171:THR:HG22	3:AC:173:PRO:HD3	2.02	0.41
9:AI:95:ARG:HG2	9:AI:98:LEU:HD12	2.03	0.41
31:BA:387:U:H2'	31:BA:388:A:C5	2.55	0.41
31:BA:746:U:H2'	31:BA:747:G:C8	2.54	0.41
31:BA:831:U:H2'	31:BA:832:G:C8	2.55	0.41
31:BA:1229:U:H2'	31:BA:1230:C:C6	2.55	0.41
31:BA:1295:A:H61	31:BA:2017:A:H3'	1.85	0.41
31:BA:2073:G:H2'	31:BA:2074:G:H8	1.86	0.41
31:BA:2672:G:H2'	31:BA:2673:G:H8	1.85	0.41
34:BE:15:ILE:HD12	34:BE:15:ILE:HA	1.95	0.41
37:BH:52:VAL:H	37:BH:69:ARG:NH1	2.18	0.41
38:BM:115:THR:HA	38:BM:118:ARG:HG2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:BN:4:THR:HG21	39:BN:23:ARG:HA	2.02	0.41
47:BV:36:ALA:O	47:BV:40:LEU:CB	2.60	0.41
1:AA:421:G:O2'	1:AA:434:U:OP2	2.30	0.41
1:AA:433:A:O2'	4:AD:34:GLY:N	2.39	0.41
1:AA:491:A:H2'	1:AA:492:C:C6	2.56	0.41
1:AA:531:C:H41	12:AL:63:ARG:NH2	2.18	0.41
1:AA:943:A:H2'	1:AA:944:C:C6	2.56	0.41
1:AA:1002:A:N1	14:AN:5:SER:OG	2.47	0.41
1:AA:1132:G:O6	1:AA:1154:C:N4	2.54	0.41
1:AA:1156:C:OP1	9:AI:11:ARG:NH1	2.54	0.41
1:AA:1451:C:HO2'	1:AA:1466:G:H1	1.66	0.41
4:AD:19:LEU:O	4:AD:23:GLY:N	2.51	0.41
4:AD:102:LEU:HD22	4:AD:168:PHE:HD1	1.85	0.41
8:AH:107:SER:HA	8:AH:112:VAL:HA	2.02	0.41
18:AR:47:ARG:HA	18:AR:52:THR:HG23	2.03	0.41
23:B1:16:LEU:HB2	23:B1:21:LEU:HD22	2.01	0.41
28:B6:34:ARG:HH21	28:B6:39:ARG:HE	1.69	0.41
28:B6:35:ARG:NH2	31:BA:53:A:N3	2.67	0.41
31:BA:51:G:H21	31:BA:117:A:H62	1.68	0.41
31:BA:309:G:H1'	31:BA:310:U:H2'	2.02	0.41
31:BA:452:C:H2'	31:BA:453:U:C6	2.54	0.41
31:BA:613:C:H2'	31:BA:614:G:H8	1.84	0.41
31:BA:740:A:N7	31:BA:761:G:N3	2.68	0.41
31:BA:830:C:H2'	31:BA:831:U:C6	2.56	0.41
31:BA:831:U:H2'	31:BA:832:G:H8	1.85	0.41
31:BA:1081:A:H3'	31:BA:1082:G:H8	1.84	0.41
31:BA:1380:C:H2'	31:BA:1381:U:C6	2.55	0.41
31:BA:1466:C:H2'	31:BA:1467:U:C6	2.55	0.41
31:BA:1551:A:N3	31:BA:1553:G:N1	2.68	0.41
31:BA:1597:A:H2'	33:BD:85:PRO:HG3	2.01	0.41
31:BA:1793:A:OP2	31:BA:1830:G:N2	2.53	0.41
31:BA:2240:C:H2'	31:BA:2241:G:O4'	2.20	0.41
31:BA:2284:G:O2'	31:BA:2392:A:N1	2.51	0.41
31:BA:2384:U:H2'	31:BA:2385:A:C8	2.55	0.41
31:BA:2672:G:H2'	31:BA:2673:G:C8	2.55	0.41
34:BE:68:HIS:O	34:BE:72:ALA:CB	2.68	0.41
35:BF:111:LYS:HA	35:BF:114:TYR:HB3	2.03	0.41
35:BF:164:ALA:N	35:BF:165:GLU:OE1	2.54	0.41
37:BH:58:THR:O	37:BH:61:MET:N	2.51	0.41
48:BW:8:ARG:N	48:BW:28:GLU:O	2.42	0.41
1:AA:63:G:OP1	1:AA:394:C:O2'	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:78:U:O2'	1:AA:82:U:N3	2.49	0.41
1:AA:657:G:H2'	1:AA:658:A:C8	2.56	0.41
1:AA:726:A:H3'	1:AA:728:C:H42	1.85	0.41
1:AA:797:U:O2'	1:AA:799:G:N7	2.46	0.41
1:AA:888:C:H5''	12:AL:3:THR:HG21	2.03	0.41
7:AG:125:ASP:OD1	7:AG:128:ASN:ND2	2.41	0.41
8:AH:105:ILE:O	8:AH:128:ILE:HB	2.21	0.41
12:AL:2:PRO:HB3	12:AL:7:LEU:HD21	2.03	0.41
15:AO:11:ILE:O	15:AO:15:TYR:HB2	2.20	0.41
15:AO:44:LYS:HA	15:AO:47:LYS:HE2	2.03	0.41
16:AP:82:LYS:HE3	16:AP:82:LYS:HB3	1.79	0.41
28:B6:10:LYS:HA	28:B6:13:LYS:HE3	2.02	0.41
31:BA:4:A:H2'	31:BA:5:A:C8	2.56	0.41
31:BA:203:A:H1'	31:BA:204:G:H4'	2.03	0.41
31:BA:386:U:H2'	31:BA:387:U:C6	2.55	0.41
31:BA:526:A:H3'	31:BA:527:G:H8	1.85	0.41
31:BA:566:A:N6	31:BA:2024:A:N3	2.68	0.41
31:BA:694:U:H2'	31:BA:695:C:C6	2.56	0.41
31:BA:717:G:H2'	31:BA:718:U:C6	2.55	0.41
31:BA:1358:U:OP2	31:BA:1359:C:N4	2.34	0.41
31:BA:1745:A:H2'	31:BA:1746:A:C4	2.56	0.41
31:BA:1893:A:H3'	31:BA:1894:A:H8	1.85	0.41
31:BA:2203:A:N1	31:BA:2230:C:N4	2.68	0.41
31:BA:2332:A:H2'	31:BA:2333:A:H8	1.83	0.41
31:BA:2753:A:H5'	31:BA:2754:A:H2'	2.01	0.41
31:BA:2821:A:OP1	34:BE:161:ARG:NE	2.47	0.41
35:BF:136:THR:HB	35:BF:171:LEU:HD11	2.02	0.41
36:BG:46:ASN:OD1	36:BG:47:ASN:N	2.47	0.41
38:BM:70:LYS:O	38:BM:74:LYS:CB	2.63	0.41
46:BU:67:HIS:HA	46:BU:95:THR:HA	2.02	0.41
1:AA:125:U:C4	1:AA:244:G:O6	2.73	0.41
1:AA:628:U:O2'	4:AD:125:LYS:NZ	2.44	0.41
1:AA:673:A:O5'	1:AA:741:G:N2	2.53	0.41
1:AA:999:U:O2'	1:AA:1219:U:OP1	2.34	0.41
1:AA:1065:G:H1'	3:AC:194:LYS:HD2	2.02	0.41
1:AA:1435:A:H2'	1:AA:1436:C:C6	2.55	0.41
3:AC:31:TYR:HB3	3:AC:58:ARG:HE	1.86	0.41
24:B2:3:GLN:HE22	24:B2:38:GLU:N	2.18	0.41
24:B2:5:LYS:HB3	24:B2:59:ALA:HB2	2.02	0.41
29:B7:13:ARG:NH2	40:BO:63:LYS:HG2	2.34	0.41
30:B8:13:TYR:HE2	30:B8:28:PRO:HG2	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1056:A:H61	31:BA:1177:A:H61	1.67	0.41
31:BA:1094:G:O4'	31:BA:1115:A:N6	2.45	0.41
31:BA:1484:U:H6	42:BQ:60:ARG:HH22	1.67	0.41
31:BA:1495:C:O2'	31:BA:1496:U:O2	2.34	0.41
31:BA:1940:A:H62	31:BA:1967:C:N4	2.19	0.41
31:BA:2314:A:H2'	31:BA:2315:A:H4'	2.02	0.41
36:BG:20:GLN:HE21	36:BG:166:GLU:HB2	1.85	0.41
38:BM:24:ASP:HA	38:BM:63:LYS:HB2	2.01	0.41
1:AA:23:G:H2'	1:AA:24:G:C8	2.56	0.41
1:AA:65:U:H3	1:AA:105:G:H1	1.68	0.41
1:AA:283:G:O2'	17:AQ:18:MET:SD	2.78	0.41
1:AA:791:C:H2'	1:AA:792:A:C8	2.53	0.41
1:AA:847:G:C2	1:AA:856:U:O2	2.74	0.41
1:AA:903:A:H2'	1:AA:904:C:C6	2.55	0.41
1:AA:1227:G:H2'	1:AA:1228:G:H8	1.86	0.41
7:AG:92:PRO:O	7:AG:96:THR:OG1	2.28	0.41
9:AI:30:VAL:HG22	9:AI:65:VAL:HB	2.02	0.41
12:AL:123:ARG:H	12:AL:127:ARG:HA	1.85	0.41
13:AM:68:ASP:OD2	25:B3:65:GLN:NE2	2.54	0.41
19:AS:47:LEU:O	19:AS:61:TYR:HA	2.21	0.41
22:B0:56:LYS:HG3	31:BA:407:G:H2'	2.03	0.41
31:BA:169:C:H2'	31:BA:170:A:H8	1.84	0.41
31:BA:416:G:H2'	31:BA:417:A:H8	1.85	0.41
31:BA:1152:C:H2'	31:BA:1153:C:H6	1.85	0.41
31:BA:1160:G:H3'	31:BA:1161:A:H2'	2.03	0.41
31:BA:1171:G:H2'	31:BA:1172:G:C8	2.56	0.41
31:BA:1187:C:H2'	31:BA:1188:C:H6	1.86	0.41
31:BA:1346:G:H2'	31:BA:1347:G:H8	1.85	0.41
31:BA:1445:G:H1'	31:BA:1616:A:N1	2.35	0.41
31:BA:1462:U:H2'	31:BA:1463:A:C8	2.56	0.41
31:BA:1781:U:O5'	31:BA:1786:A:N6	2.49	0.41
31:BA:2517:G:H2'	31:BA:2518:U:H6	1.86	0.41
31:BA:2562:C:H2'	31:BA:2563:C:H6	1.85	0.41
31:BA:2799:U:H1'	31:BA:2801:A:H62	1.86	0.41
32:BB:12:U:H1'	32:BB:104:G:H21	1.86	0.41
32:BB:27:A:H3'	43:BR:37:ASN:HD21	1.86	0.41
34:BE:2:SER:HB2	34:BE:101:ALA:HB3	2.03	0.41
34:BE:18:ASP:N	34:BE:18:ASP:OD1	2.52	0.41
37:BH:46:ALA:HB3	37:BH:50:ILE:HA	2.03	0.41
41:BP:67:LYS:N	41:BP:103:MET:O	2.53	0.41
42:BQ:45:GLU:O	42:BQ:49:THR:OG1	2.31	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:BQ:94:ALA:HA	42:BQ:97:TYR:HB2	2.02	0.41
43:BR:24:GLY:O	43:BR:28:THR:OG1	2.37	0.41
47:BV:53:ASN:O	47:BV:57:SER:OG	2.33	0.41
1:AA:62:A:H62	1:AA:108:A:H4'	1.85	0.41
1:AA:152:A:N6	1:AA:171:U:N3	2.46	0.41
1:AA:293:C:H2'	1:AA:294:A:H8	1.85	0.41
1:AA:445:U:H1'	4:AD:114:PHE:HE1	1.86	0.41
1:AA:598:U:H1'	8:AH:56:LYS:HB3	2.02	0.41
1:AA:619:G:C6	1:AA:639:A:N1	2.89	0.41
1:AA:728:C:H1'	18:AR:65:LYS:HE2	2.02	0.41
1:AA:752:C:O2'	1:AA:860:U:O2	2.29	0.41
1:AA:886:U:H2'	1:AA:887:C:H6	1.85	0.41
1:AA:1244:C:H5''	1:AA:1245:A:C8	2.56	0.41
1:AA:1255:A:H2'	1:AA:1256:C:C6	2.55	0.41
1:AA:1280:U:C2	1:AA:1281:U:H1'	2.56	0.41
1:AA:1398:U:H2'	1:AA:1399:G:C8	2.56	0.41
2:AB:83:GLU:CD	2:AB:215:ALA:HA	2.46	0.41
3:AC:46:LEU:HD12	3:AC:51:VAL:HG22	2.02	0.41
3:AC:146:LYS:N	3:AC:202:TYR:O	2.54	0.41
3:AC:185:TRP:CA	3:AC:197:VAL:O	2.60	0.41
5:AE:78:PRO:HB3	5:AE:152:ARG:HH11	1.85	0.41
5:AE:79:MET:HE3	5:AE:79:MET:HB3	1.90	0.41
7:AG:116:GLN:O	7:AG:120:ALA:CB	2.65	0.41
8:AH:114:THR:O	8:AH:118:ALA:CB	2.69	0.41
13:AM:81:MET:HG2	31:BA:925:C:N4	2.36	0.41
15:AO:24:SER:O	15:AO:28:GLN:HG2	2.20	0.41
18:AR:30:ASP:HB2	18:AR:35:LYS:HZ3	1.85	0.41
29:B7:59:ARG:HA	29:B7:60:ARG:HA	1.64	0.41
31:BA:184:C:H2'	31:BA:185:A:H8	1.86	0.41
31:BA:548:A:O2'	31:BA:613:C:O2'	2.30	0.41
31:BA:693:A:H2'	31:BA:694:U:C6	2.56	0.41
31:BA:838:U:H2'	31:BA:839:A:C8	2.55	0.41
31:BA:1012:G:H2'	31:BA:1013:G:C8	2.56	0.41
31:BA:1322:U:H2'	31:BA:1323:C:C6	2.56	0.41
31:BA:1326:C:H2'	31:BA:1327:C:C6	2.56	0.41
31:BA:1397:G:H3'	31:BA:1398:G:H8	1.85	0.41
31:BA:1417:G:H2'	31:BA:1418:G:C8	2.56	0.41
31:BA:1522:A:H2'	31:BA:1523:A:C8	2.55	0.41
31:BA:1661:A:H3'	31:BA:1662:G:H8	1.86	0.41
31:BA:2005:A:H2'	31:BA:2006:G:H8	1.86	0.41
31:BA:2138:A:H5'	31:BA:2160:U:C4	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2161:G:H5'	31:BA:2162:A:H5'	2.03	0.41
31:BA:2275:G:H2'	31:BA:2276:U:C2	2.56	0.41
31:BA:2300:U:N3	31:BA:2339:A:N6	2.50	0.41
31:BA:2303:G:H2'	31:BA:2304:A:C8	2.53	0.41
31:BA:2331:A:H2'	31:BA:2332:A:C8	2.56	0.41
31:BA:2356:A:N1	50:BZ:42:GLY:HA3	2.36	0.41
31:BA:2357:G:O2'	50:BZ:41:GLY:O	2.35	0.41
31:BA:2465:C:H1'	31:BA:2496:U:N3	2.36	0.41
32:BB:44:A:H5''	43:BR:4:LYS:HD2	2.03	0.41
33:BD:141:ILE:HG21	33:BD:190:ALA:HB1	2.02	0.41
33:BD:262:LYS:HG3	33:BD:263:LYS:HD3	2.03	0.41
34:BE:83:PHE:HZ	34:BE:199:VAL:HB	1.85	0.41
36:BG:105:VAL:HG23	36:BG:106:THR:HG23	2.02	0.41
37:BH:117:ALA:HB3	37:BH:121:ILE:HG23	2.03	0.41
38:BM:98:ASN:O	38:BM:101:ARG:NH1	2.54	0.41
40:BO:86:GLU:HA	40:BO:87:ASP:HA	1.74	0.41
41:BP:2:LEU:HG	41:BP:44:ASN:HD21	1.85	0.41
49:BX:63:ILE:HD13	49:BX:63:ILE:HG21	1.87	0.41
50:BZ:29:LEU:HD13	50:BZ:29:LEU:HA	1.97	0.41
50:BZ:80:LYS:HB2	50:BZ:85:HIS:CD2	2.56	0.41
1:AA:317:G:H2'	1:AA:318:G:H8	1.85	0.41
1:AA:330:C:P	1:AA:336:C:H42	2.44	0.41
1:AA:1134:U:N3	1:AA:1286:A:H4'	2.36	0.41
3:AC:110:LEU:HD13	3:AC:203:ARG:HD2	2.02	0.41
4:AD:54:LYS:HD3	4:AD:199:TYR:OH	2.20	0.41
12:AL:63:ARG:HB3	12:AL:79:TYR:CE1	2.56	0.41
14:AN:15:LYS:HB3	14:AN:16:PHE:CD2	2.56	0.41
16:AP:5:ILE:HB	16:AP:66:PRO:HA	2.03	0.41
22:B0:35:LYS:HA	22:B0:48:TRP:HA	2.03	0.41
31:BA:296:G:N3	31:BA:298:A:H1'	2.36	0.41
31:BA:353:A:C4	31:BA:373:G:H4'	2.56	0.41
31:BA:726:C:H2'	31:BA:727:C:C6	2.56	0.41
31:BA:729:U:C4	31:BA:803:G:O6	2.74	0.41
31:BA:822:C:H5''	31:BA:823:A:H5''	2.02	0.41
31:BA:1288:C:H2'	31:BA:1289:G:C8	2.56	0.41
31:BA:1666:C:H2'	31:BA:1667:C:C6	2.55	0.41
31:BA:1793:A:H5'	33:BD:211:THR:HG21	2.03	0.41
31:BA:2359:G:H1'	50:BZ:44:ILE:HG13	2.02	0.41
31:BA:2468:C:H2'	31:BA:2469:C:H6	1.86	0.41
31:BA:2472:A:H3'	31:BA:2480:A:C2	2.56	0.41
31:BA:2604:A:H62	33:BD:236:GLU:HG3	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2642:G:H1'	31:BA:2782:A:N6	2.37	0.41
35:BF:23:VAL:H	35:BF:23:VAL:HG23	1.55	0.41
45:BT:24:TYR:N	45:BT:28:LYS:HE2	2.36	0.41
47:BV:77:GLU:HG2	47:BV:110:VAL:HB	2.03	0.41
50:BZ:74:THR:O	50:BZ:89:TYR:N	2.54	0.41
1:AA:8:U:H1'	1:AA:306:A:C4	2.56	0.40
1:AA:106:C:O2'	1:AA:387:C:OP1	2.35	0.40
1:AA:119:A:O2'	1:AA:248:U:O4	2.35	0.40
1:AA:668:A:H2'	1:AA:669:G:C8	2.56	0.40
1:AA:729:G:H5'	1:AA:730:G:C8	2.57	0.40
1:AA:1133:U:H5''	10:AJ:7:ARG:CZ	2.51	0.40
3:AC:147:GLY:O	3:AC:202:TYR:CB	2.64	0.40
7:AG:132:ALA:O	7:AG:136:LYS:CB	2.64	0.40
13:AM:2:ALA:O	25:B3:54:SER:OG	2.39	0.40
20:AT:69:LYS:O	20:AT:73:ALA:CB	2.69	0.40
31:BA:271:A:N6	31:BA:292:G:N2	2.69	0.40
31:BA:637:G:N3	31:BA:692:U:O2'	2.54	0.40
31:BA:788:G:H2'	31:BA:789:U:C6	2.56	0.40
31:BA:846:U:O5'	40:BO:22:GLY:N	2.54	0.40
31:BA:1074:G:N1	31:BA:1152:C:N3	2.69	0.40
31:BA:1290:G:H2'	31:BA:1291:U:C6	2.56	0.40
31:BA:1411:A:O2'	31:BA:1603:G:N3	2.52	0.40
31:BA:1433:C:H2'	31:BA:1434:U:H6	1.85	0.40
31:BA:1599:A:H2'	31:BA:1600:A:C8	2.57	0.40
31:BA:2011:U:H5'	31:BA:2822:U:H1'	2.03	0.40
31:BA:2148:G:O2'	31:BA:2151:A:N6	2.54	0.40
34:BE:17:THR:OG1	34:BE:18:ASP:OD1	2.34	0.40
36:BG:107:VAL:HG13	36:BG:111:ARG:HH11	1.85	0.40
38:BM:137:GLN:H	38:BM:137:GLN:HG3	1.70	0.40
47:BV:70:LYS:HA	47:BV:73:LEU:HD23	2.02	0.40
1:AA:691:G:H22	1:AA:715:U:H2'	1.86	0.40
1:AA:1024:G:H2'	1:AA:1025:A:O4'	2.21	0.40
1:AA:1315:U:H2'	1:AA:1316:G:C8	2.56	0.40
6:AF:6:ILE:HD11	6:AF:92:ILE:HD12	2.03	0.40
23:B1:46:ASN:OD1	31:BA:95:C:O2'	2.26	0.40
27:B5:19:LEU:HD21	31:BA:2350:A:H2	1.86	0.40
31:BA:340:G:H2'	31:BA:341:G:C8	2.56	0.40
31:BA:388:A:H2'	31:BA:389:U:O4'	2.21	0.40
31:BA:635:A:N6	31:BA:690:A:O4'	2.55	0.40
31:BA:1176:U:H2'	38:BM:67:THR:HB	2.03	0.40
31:BA:1326:C:H2'	31:BA:1327:C:H6	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2775:C:H2'	31:BA:2776:C:H6	1.85	0.40
37:BH:56:ASN:HB3	37:BH:61:MET:HG3	2.03	0.40
44:BS:57:THR:HG21	44:BS:75:VAL:H	1.86	0.40
47:BV:12:LYS:HD3	47:BV:106:HIS:CD2	2.56	0.40
48:BW:57:SER:OG	48:BW:58:VAL:N	2.55	0.40
1:AA:316:C:H2'	1:AA:317:G:C8	2.56	0.40
1:AA:569:U:H5''	1:AA:570:U:H3'	2.02	0.40
1:AA:995:G:H2'	1:AA:996:G:H8	1.85	0.40
1:AA:1389:C:H2'	1:AA:1390:C:H6	1.86	0.40
4:AD:8:SER:HB2	4:AD:11:GLN:HB2	2.03	0.40
7:AG:78:ARG:HD2	7:AG:81:GLY:HA2	2.03	0.40
19:AS:67:VAL:O	19:AS:69:HIS:N	2.48	0.40
28:B6:8:HIS:H	28:B6:11:SER:HB3	1.86	0.40
31:BA:241:G:H1	31:BA:253:G:H3'	1.86	0.40
31:BA:405:G:OP2	31:BA:458:A:N6	2.54	0.40
31:BA:604:A:H3'	31:BA:605:G:H8	1.85	0.40
31:BA:648:G:H22	35:BF:181:SER:HA	1.87	0.40
31:BA:727:C:H2'	31:BA:728:A:C8	2.57	0.40
31:BA:967:A:O2'	31:BA:968:U:O4'	2.32	0.40
31:BA:997:A:H2'	31:BA:998:U:H6	1.87	0.40
31:BA:1253:G:N2	31:BA:1256:A:OP2	2.39	0.40
31:BA:1421:G:H2'	31:BA:1422:A:C8	2.56	0.40
31:BA:1435:A:H2'	31:BA:1436:G:C8	2.57	0.40
31:BA:1606:U:H2'	31:BA:1607:C:C6	2.56	0.40
31:BA:1720:C:H2'	31:BA:1721:U:O4'	2.21	0.40
31:BA:1753:C:O3'	31:BA:2859:G:O2'	2.39	0.40
31:BA:2127:A:H2'	31:BA:2128:G:H8	1.86	0.40
31:BA:2565:A:H2	39:BN:23:ARG:HH12	1.69	0.40
31:BA:2857:G:H2'	31:BA:2858:A:C8	2.57	0.40
32:BB:10:A:N6	50:BZ:81:ARG:HD2	2.35	0.40
32:BB:27:A:O2'	32:BB:56:A:N1	2.53	0.40
33:BD:67:PHE:HD1	33:BD:156:ARG:HH12	1.69	0.40
37:BH:2:SER:OG	37:BH:3:ARG:N	2.54	0.40
37:BH:54:ARG:NH2	37:BH:62:LYS:HE3	2.36	0.40
39:BN:93:PRO:HB3	39:BN:114:ILE:HG12	2.02	0.40
41:BP:68:ILE:H	41:BP:68:ILE:HG13	1.71	0.40
42:BQ:63:ALA:HA	42:BQ:66:VAL:HG22	2.02	0.40
45:BT:59:LYS:O	45:BT:63:ALA:HB2	2.22	0.40
49:BX:11:VAL:HG13	49:BX:67:ASN:HB3	2.04	0.40
49:BX:64:HIS:HD2	49:BX:66:SER:H	1.70	0.40
50:BZ:67:LEU:HA	50:BZ:67:LEU:HD23	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:382:A:OP2	1:AA:461:C:N4	2.55	0.40
1:AA:527:C:H2'	1:AA:539:G:C4	2.56	0.40
1:AA:636:U:H2'	1:AA:637:G:C8	2.56	0.40
1:AA:1238:G:OP1	9:AI:126:GLN:NE2	2.54	0.40
2:AB:210:VAL:O	2:AB:214:THR:CB	2.69	0.40
8:AH:23:ASP:OD1	8:AH:23:ASP:N	2.50	0.40
9:AI:36:GLU:HG3	9:AI:45:ARG:HD3	2.02	0.40
9:AI:88:LEU:HD12	9:AI:92:PRO:HA	2.02	0.40
9:AI:118:LEU:HB3	9:AI:121:ALA:HA	2.03	0.40
16:AP:51:LEU:HD21	16:AP:73:LEU:HD21	2.02	0.40
18:AR:66:ARG:O	18:AR:70:MET:HG2	2.21	0.40
29:B7:8:ARG:NH2	31:BA:253:G:H1	2.19	0.40
30:B8:15:LYS:HD2	30:B8:26:ILE:HD13	2.02	0.40
30:B8:30:ASN:HB2	30:B8:33:HIS:CE1	2.56	0.40
31:BA:521:C:H2'	31:BA:522:C:H6	1.86	0.40
31:BA:868:C:H2'	31:BA:869:U:C6	2.56	0.40
31:BA:1071:G:C5	31:BA:1155:G:C6	3.10	0.40
31:BA:1315:A:H5''	42:BQ:114:ARG:HD3	2.03	0.40
31:BA:1732:G:H2'	31:BA:1733:G:C8	2.56	0.40
31:BA:2408:C:N4	31:BA:2418:G:O6	2.54	0.40
31:BA:2646:G:H5'	38:BM:82:HIS:CG	2.57	0.40
31:BA:2674:G:H2'	31:BA:2675:A:C8	2.56	0.40
31:BA:2752:A:O2'	37:BH:63:MET:HB3	2.21	0.40
31:BA:2834:U:H2'	31:BA:2835:A:H8	1.86	0.40
36:BG:45:VAL:HG22	36:BG:80:LEU:HD23	2.04	0.40
38:BM:61:ALA:HB3	38:BM:128:VAL:HA	2.04	0.40
43:BR:10:LEU:HD23	43:BR:10:LEU:HA	1.94	0.40
46:BU:42:PHE:HD1	46:BU:42:PHE:HA	1.68	0.40
46:BU:79:LYS:HA	46:BU:79:LYS:HD2	1.79	0.40
48:BW:13:THR:O	48:BW:16:SER:OG	2.32	0.40
1:AA:77:A:N6	1:AA:95:U:OP1	2.55	0.40
1:AA:132:U:H2'	1:AA:133:C:C6	2.56	0.40
1:AA:309:G:H2'	1:AA:310:G:C8	2.56	0.40
1:AA:414:G:O2'	4:AD:113:GLN:NE2	2.55	0.40
1:AA:869:G:O2'	1:AA:882:G:O2'	2.24	0.40
1:AA:888:C:H3'	12:AL:6:GLN:NE2	2.37	0.40
1:AA:932:C:H2'	1:AA:933:G:H8	1.85	0.40
5:AE:86:HIS:CD2	8:AH:98:LEU:HD22	2.56	0.40
7:AG:114:THR:OG1	7:AG:117:ASP:N	2.54	0.40
9:AI:23:PRO:HA	9:AI:61:TYR:HD1	1.86	0.40
9:AI:24:GLY:H	9:AI:61:TYR:HA	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:B2:28:LEU:O	24:B2:33:SER:OG	2.32	0.40
29:B7:4:GLN:NE2	31:BA:701:G:O2'	2.50	0.40
29:B7:24:ARG:NH2	31:BA:2364:A:O3'	2.55	0.40
31:BA:16:G:H2'	31:BA:17:G:C8	2.55	0.40
31:BA:449:C:H5'	31:BA:1883:G:H1'	2.03	0.40
31:BA:641:A:H62	31:BA:653:G:N2	2.20	0.40
31:BA:645:G:N2	31:BA:649:A:OP2	2.52	0.40
31:BA:734:A:H2'	31:BA:735:G:O4'	2.22	0.40
31:BA:1068:U:C4	31:BA:2754:A:C6	3.07	0.40
31:BA:1359:C:H2'	31:BA:1360:C:C6	2.56	0.40
31:BA:1900:A:H2'	31:BA:1901:G:C8	2.57	0.40
31:BA:1962:C:H2'	31:BA:1963:G:H8	1.87	0.40
31:BA:2751:G:H2'	31:BA:2761:A:H61	1.85	0.40
31:BA:2777:U:H2'	31:BA:2778:C:H6	1.87	0.40
32:BB:59:C:H2'	32:BB:60:C:C6	2.56	0.40
48:BW:14:GLU:HA	48:BW:17:MET:HE3	2.04	0.40
50:BZ:23:ASP:OD1	50:BZ:24:SER:N	2.54	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	222/255 (87%)	194 (87%)	28 (13%)	0	100	100
3	AC	209/217 (96%)	177 (85%)	32 (15%)	0	100	100
4	AD	198/203 (98%)	163 (82%)	34 (17%)	1 (0%)	24	63
5	AE	154/168 (92%)	138 (90%)	16 (10%)	0	100	100
6	AF	95/97 (98%)	73 (77%)	22 (23%)	0	100	100
7	AG	150/155 (97%)	136 (91%)	14 (9%)	0	100	100
8	AH	128/132 (97%)	110 (86%)	18 (14%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	AI	127/130 (98%)	104 (82%)	23 (18%)	0	100	100
10	AJ	96/102 (94%)	82 (85%)	14 (15%)	0	100	100
11	AK	116/127 (91%)	102 (88%)	14 (12%)	0	100	100
12	AL	134/137 (98%)	110 (82%)	24 (18%)	0	100	100
13	AM	109/121 (90%)	82 (75%)	27 (25%)	0	100	100
14	AN	57/61 (93%)	44 (77%)	13 (23%)	0	100	100
15	AO	85/89 (96%)	72 (85%)	13 (15%)	0	100	100
16	AP	84/90 (93%)	74 (88%)	10 (12%)	0	100	100
17	AQ	80/86 (93%)	65 (81%)	15 (19%)	0	100	100
18	AR	66/81 (82%)	53 (80%)	13 (20%)	0	100	100
19	AS	80/92 (87%)	61 (76%)	19 (24%)	0	100	100
20	AT	69/77 (90%)	57 (83%)	12 (17%)	0	100	100
21	AU	54/58 (93%)	46 (85%)	8 (15%)	0	100	100
22	B0	59/64 (92%)	45 (76%)	14 (24%)	0	100	100
23	B1	65/69 (94%)	51 (78%)	14 (22%)	0	100	100
24	B2	56/59 (95%)	45 (80%)	11 (20%)	0	100	100
25	B3	77/81 (95%)	52 (68%)	25 (32%)	0	100	100
26	B4	51/57 (90%)	43 (84%)	8 (16%)	0	100	100
27	B5	45/49 (92%)	32 (71%)	12 (27%)	1 (2%)	5	28
28	B6	42/44 (96%)	35 (83%)	7 (17%)	0	100	100
29	B7	62/66 (94%)	51 (82%)	11 (18%)	0	100	100
30	B8	34/38 (90%)	32 (94%)	2 (6%)	0	100	100
33	BD	270/276 (98%)	193 (72%)	77 (28%)	0	100	100
34	BE	203/207 (98%)	164 (81%)	39 (19%)	0	100	100
35	BF	204/208 (98%)	157 (77%)	46 (22%)	1 (0%)	24	63
36	BG	174/180 (97%)	137 (79%)	36 (21%)	1 (1%)	21	59
37	BH	172/178 (97%)	144 (84%)	28 (16%)	0	100	100
38	BM	145/148 (98%)	119 (82%)	25 (17%)	1 (1%)	18	55
39	BN	119/122 (98%)	99 (83%)	20 (17%)	0	100	100
40	BO	144/147 (98%)	117 (81%)	27 (19%)	0	100	100
41	BP	132/137 (96%)	120 (91%)	12 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	BQ	123/126 (98%)	109 (89%)	14 (11%)	0	100	100
43	BR	113/115 (98%)	90 (80%)	22 (20%)	1 (1%)	14	50
44	BS	112/114 (98%)	95 (85%)	17 (15%)	0	100	100
45	BT	115/119 (97%)	103 (90%)	12 (10%)	0	100	100
46	BU	99/104 (95%)	67 (68%)	32 (32%)	0	100	100
47	BV	110/115 (96%)	99 (90%)	11 (10%)	0	100	100
48	BW	86/97 (89%)	78 (91%)	8 (9%)	0	100	100
49	BX	97/101 (96%)	73 (75%)	24 (25%)	0	100	100
50	BZ	73/94 (78%)	64 (88%)	9 (12%)	0	100	100
51	A	155/185 (84%)	130 (84%)	25 (16%)	0	100	100
All	All	5450/5778 (94%)	4487 (82%)	957 (18%)	6 (0%)	49	83

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
38	BM	132	HIS
4	AD	202	MET
27	B5	12	CYS
35	BF	23	VAL
36	BG	82	GLU
43	BR	48	VAL

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	AB	190/213 (89%)	188 (99%)	2 (1%)	65	75
3	AC	168/172 (98%)	167 (99%)	1 (1%)	78	82
4	AD	172/175 (98%)	172 (100%)	0	100	100
5	AE	115/126 (91%)	115 (100%)	0	100	100
6	AF	84/84 (100%)	84 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
7	AG	125/128 (98%)	125 (100%)	0	100	100
8	AH	111/113 (98%)	111 (100%)	0	100	100
9	AI	99/100 (99%)	99 (100%)	0	100	100
10	AJ	89/92 (97%)	89 (100%)	0	100	100
11	AK	89/97 (92%)	87 (98%)	2 (2%)	45	64
12	AL	113/114 (99%)	113 (100%)	0	100	100
13	AM	93/100 (93%)	93 (100%)	0	100	100
14	AN	50/53 (94%)	50 (100%)	0	100	100
15	AO	74/76 (97%)	74 (100%)	0	100	100
16	AP	77/81 (95%)	76 (99%)	1 (1%)	61	73
17	AQ	76/80 (95%)	75 (99%)	1 (1%)	61	73
18	AR	59/69 (86%)	58 (98%)	1 (2%)	53	68
19	AS	70/79 (89%)	67 (96%)	3 (4%)	26	47
20	AT	53/58 (91%)	53 (100%)	0	100	100
21	AU	42/53 (79%)	42 (100%)	0	100	100
22	B0	52/56 (93%)	51 (98%)	1 (2%)	50	66
23	B1	58/60 (97%)	57 (98%)	1 (2%)	53	68
24	B2	48/49 (98%)	47 (98%)	1 (2%)	47	65
25	B3	69/71 (97%)	68 (99%)	1 (1%)	59	71
26	B4	46/50 (92%)	46 (100%)	0	100	100
27	B5	41/43 (95%)	40 (98%)	1 (2%)	43	63
28	B6	37/37 (100%)	37 (100%)	0	100	100
29	B7	54/56 (96%)	53 (98%)	1 (2%)	50	66
30	B8	34/35 (97%)	34 (100%)	0	100	100
33	BD	219/223 (98%)	216 (99%)	3 (1%)	59	71
34	BE	162/164 (99%)	158 (98%)	4 (2%)	42	62
35	BF	170/171 (99%)	168 (99%)	2 (1%)	63	74
36	BG	150/154 (97%)	144 (96%)	6 (4%)	28	49
37	BH	140/147 (95%)	139 (99%)	1 (1%)	76	80
38	BM	122/123 (99%)	119 (98%)	3 (2%)	42	62
39	BN	93/95 (98%)	91 (98%)	2 (2%)	45	64

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
40	BO	107/109 (98%)	104 (97%)	3 (3%)	38	59
41	BP	106/107 (99%)	103 (97%)	3 (3%)	38	59
42	BQ	104/105 (99%)	104 (100%)	0	100	100
43	BR	90/90 (100%)	88 (98%)	2 (2%)	45	64
44	BS	98/98 (100%)	94 (96%)	4 (4%)	27	48
45	BT	90/92 (98%)	88 (98%)	2 (2%)	45	64
46	BU	85/88 (97%)	84 (99%)	1 (1%)	63	74
47	BV	92/94 (98%)	90 (98%)	2 (2%)	45	64
48	BW	77/84 (92%)	77 (100%)	0	100	100
49	BX	83/85 (98%)	82 (99%)	1 (1%)	63	74
50	BZ	59/73 (81%)	59 (100%)	0	100	100
51	A	93/163 (57%)	92 (99%)	1 (1%)	65	75
All	All	4528/4785 (95%)	4471 (99%)	57 (1%)	59	73

All (57) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	AB	68	LEU
2	AB	216	LYS
3	AC	103	VAL
11	AK	85	LYS
11	AK	98	LEU
16	AP	44	VAL
17	AQ	22	ILE
18	AR	69	VAL
19	AS	15	LEU
19	AS	33	THR
19	AS	49	ILE
22	B0	39	LEU
23	B1	35	LEU
24	B2	54	VAL
25	B3	34	THR
27	B5	19	LEU
29	B7	58	ILE
33	BD	65	ILE
33	BD	78	VAL
33	BD	81	ILE
34	BE	26	THR

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Mol	Chain	Res	Type
34	BE	144	MET
34	BE	174	ILE
34	BE	200	VAL
35	BF	26	ILE
35	BF	74	ARG
36	BG	29	VAL
36	BG	30	PRO
36	BG	45	VAL
36	BG	80	LEU
36	BG	109	LEU
36	BG	158	VAL
37	BH	121	ILE
38	BM	90	THR
38	BM	107	VAL
38	BM	138	LYS
39	BN	87	ILE
39	BN	122	LEU
40	BO	55	THR
40	BO	126	VAL
40	BO	129	VAL
41	BP	27	VAL
41	BP	42	ILE
41	BP	47	ILE
43	BR	59	LEU
43	BR	72	VAL
44	BS	83	ILE
44	BS	85	VAL
44	BS	86	ILE
44	BS	102	LEU
45	BT	93	LYS
45	BT	100	ILE
46	BU	6	ILE
47	BV	5	THR
47	BV	39	ILE
49	BX	76	VAL
51	A	6	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (84) such sidechains are listed below:

Mol	Chain	Res	Type
2	AB	36	ASN
2	AB	75	GLN

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Mol	Chain	Res	Type
2	AB	105	ASN
2	AB	138	ASN
2	AB	170	GLN
3	AC	3	GLN
3	AC	33	HIS
3	AC	101	ASN
4	AD	35	GLN
4	AD	36	HIS
4	AD	39	ASN
4	AD	70	ASN
4	AD	200	ASN
5	AE	22	ASN
5	AE	86	HIS
5	AE	138	ASN
6	AF	53	ASN
7	AG	27	ASN
7	AG	67	ASN
7	AG	116	GLN
9	AI	14	ASN
9	AI	50	GLN
9	AI	56	GLN
10	AJ	64	GLN
12	AL	29	ASN
13	AM	104	ASN
14	AN	10	ASN
15	AO	37	ASN
15	AO	38	HIS
15	AO	53	GLN
16	AP	72	ASN
19	AS	22	GLN
21	AU	9	ASN
23	B1	38	GLN
24	B2	3	GLN
24	B2	48	ASN
25	B3	65	GLN
26	B4	40	HIS
29	B7	4	GLN
29	B7	31	HIS
30	B8	30	ASN
33	BD	11	ASN
33	BD	45	ASN
33	BD	128	ASN

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Mol	Chain	Res	Type
33	BD	134	ASN
33	BD	213	HIS
34	BE	33	ASN
34	BE	150	ASN
34	BE	170	GLN
34	BE	182	ASN
36	BG	20	GLN
36	BG	38	ASN
37	BH	99	GLN
37	BH	112	GLN
38	BM	60	ASN
38	BM	120	GLN
39	BN	3	GLN
39	BN	82	ASN
40	BO	27	ASN
40	BO	38	GLN
41	BP	35	GLN
41	BP	40	HIS
41	BP	44	ASN
41	BP	63	GLN
41	BP	71	HIS
41	BP	123	HIS
42	BQ	76	ASN
43	BR	37	ASN
44	BS	2	ASN
44	BS	8	ASN
44	BS	28	HIS
44	BS	55	ASN
45	BT	72	ASN
46	BU	13	GLN
46	BU	67	HIS
46	BU	85	HIS
46	BU	103	ASN
47	BV	72	ASN
48	BW	22	GLN
49	BX	64	HIS
50	BZ	20	ASN
50	BZ	48	GLN
51	A	5	ASN
51	A	97	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	AA	1534/1535 (99%)	663 (43%)	8 (0%)
31	BA	2896/2897 (99%)	1094 (37%)	20 (0%)
32	BB	114/115 (99%)	45 (39%)	0
All	All	4544/4547 (99%)	1802 (39%)	28 (0%)

All (1802) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	AA	8	U
1	AA	9	G
1	AA	10	A
1	AA	11	G
1	AA	15	U
1	AA	16	U
1	AA	17	G
1	AA	18	A
1	AA	32	C
1	AA	33	G
1	AA	34	A
1	AA	35	A
1	AA	40	G
1	AA	41	G
1	AA	46	G
1	AA	49	C
1	AA	50	C
1	AA	51	U
1	AA	53	A
1	AA	54	U
1	AA	58	U
1	AA	61	A
1	AA	62	A
1	AA	63	G
1	AA	64	U
1	AA	67	A
1	AA	73	G
1	AA	75	A
1	AA	76	G
1	AA	77	A
1	AA	78	U
1	AA	79	U
1	AA	82	U
1	AA	83	G
1	AA	84	C

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Mol	Chain	Res	Type
1	AA	85	U
1	AA	86	U
1	AA	87	G
1	AA	88	C
1	AA	89	A
1	AA	90	C
1	AA	92	A
1	AA	93	A
1	AA	94	U
1	AA	95	U
1	AA	96	U
1	AA	97	G
1	AA	98	A
1	AA	99	A
1	AA	100	G
1	AA	101	A
1	AA	102	G
1	AA	103	C
1	AA	104	A
1	AA	108	A
1	AA	109	A
1	AA	113	G
1	AA	114	U
1	AA	116	A
1	AA	117	G
1	AA	120	A
1	AA	121	C
1	AA	122	G
1	AA	129	G
1	AA	130	A
1	AA	131	A
1	AA	132	U
1	AA	135	G
1	AA	143	G
1	AA	144	C
1	AA	145	G
1	AA	147	G
1	AA	149	G
1	AA	150	A
1	AA	151	C
1	AA	155	A
1	AA	156	U

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Mol	Chain	Res	Type
1	AA	158	U
1	AA	159	G
1	AA	165	G
1	AA	168	U
1	AA	169	G
1	AA	172	A
1	AA	174	U
1	AA	175	A
1	AA	178	G
1	AA	180	A
1	AA	182	A
1	AA	183	A
1	AA	184	U
1	AA	185	A
1	AA	186	A
1	AA	189	U
1	AA	196	U
1	AA	198	A
1	AA	199	G
1	AA	202	U
1	AA	203	U
1	AA	205	A
1	AA	211	A
1	AA	212	A
1	AA	213	A
1	AA	214	G
1	AA	215	A
1	AA	217	G
1	AA	219	A
1	AA	220	A
1	AA	222	U
1	AA	224	C
1	AA	225	A
1	AA	226	U
1	AA	227	C
1	AA	228	A
1	AA	230	U
1	AA	231	C
1	AA	232	A
1	AA	233	A
1	AA	234	A
1	AA	248	U

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Mol	Chain	Res	Type
1	AA	252	U
1	AA	254	A
1	AA	255	G
1	AA	258	A
1	AA	259	G
1	AA	269	U
1	AA	270	A
1	AA	271	A
1	AA	274	G
1	AA	275	C
1	AA	283	G
1	AA	288	U
1	AA	289	G
1	AA	290	A
1	AA	292	A
1	AA	297	G
1	AA	302	C
1	AA	303	C
1	AA	309	G
1	AA	310	G
1	AA	314	A
1	AA	315	U
1	AA	323	A
1	AA	324	U
1	AA	330	C
1	AA	336	C
1	AA	337	A
1	AA	338	C
1	AA	352	A
1	AA	353	C
1	AA	358	G
1	AA	360	C
1	AA	362	G
1	AA	364	A
1	AA	369	G
1	AA	372	A
1	AA	373	U
1	AA	374	C
1	AA	375	U
1	AA	376	U
1	AA	377	C
1	AA	381	A

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Mol	Chain	Res	Type
1	AA	382	A
1	AA	383	U
1	AA	384	G
1	AA	385	G
1	AA	387	C
1	AA	397	A
1	AA	400	G
1	AA	405	A
1	AA	406	C
1	AA	414	G
1	AA	420	A
1	AA	421	G
1	AA	422	A
1	AA	423	A
1	AA	424	G
1	AA	429	U
1	AA	430	C
1	AA	431	G
1	AA	433	A
1	AA	434	U
1	AA	435	C
1	AA	436	G
1	AA	438	A
1	AA	440	A
1	AA	445	U
1	AA	446	G
1	AA	449	G
1	AA	453	G
1	AA	455	G
1	AA	456	A
1	AA	457	A
1	AA	458	G
1	AA	459	A
1	AA	460	A
1	AA	461	C
1	AA	464	U
1	AA	472	G
1	AA	473	U
1	AA	474	G
1	AA	475	G
1	AA	477	A
1	AA	478	A

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Mol	Chain	Res	Type
1	AA	483	A
1	AA	488	G
1	AA	489	U
1	AA	490	G
1	AA	491	A
1	AA	493	G
1	AA	494	G
1	AA	501	C
1	AA	502	C
1	AA	503	C
1	AA	504	A
1	AA	505	G
1	AA	506	A
1	AA	508	A
1	AA	509	G
1	AA	516	C
1	AA	517	U
1	AA	519	A
1	AA	520	C
1	AA	521	U
1	AA	522	A
1	AA	523	C
1	AA	525	U
1	AA	526	G
1	AA	527	C
1	AA	528	C
1	AA	530	G
1	AA	536	G
1	AA	537	C
1	AA	540	U
1	AA	542	A
1	AA	543	U
1	AA	544	A
1	AA	550	G
1	AA	551	U
1	AA	552	C
1	AA	556	A
1	AA	568	A
1	AA	569	U
1	AA	571	U
1	AA	573	U
1	AA	575	G

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Mol	Chain	Res	Type
1	AA	576	G
1	AA	579	G
1	AA	582	A
1	AA	583	A
1	AA	584	G
1	AA	585	C
1	AA	586	G
1	AA	588	G
1	AA	590	G
1	AA	591	C
1	AA	596	G
1	AA	597	G
1	AA	604	A
1	AA	606	G
1	AA	614	U
1	AA	615	A
1	AA	616	A
1	AA	617	A
1	AA	620	G
1	AA	621	C
1	AA	623	G
1	AA	627	C
1	AA	628	U
1	AA	630	A
1	AA	631	A
1	AA	632	C
1	AA	637	G
1	AA	640	U
1	AA	641	G
1	AA	642	C
1	AA	643	A
1	AA	646	G
1	AA	649	A
1	AA	650	A
1	AA	654	G
1	AA	656	A
1	AA	661	U
1	AA	662	G
1	AA	665	U
1	AA	666	G
1	AA	667	C
1	AA	671	A

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Mol	Chain	Res	Type
1	AA	673	A
1	AA	677	G
1	AA	679	G
1	AA	688	C
1	AA	692	U
1	AA	695	A
1	AA	696	G
1	AA	705	U
1	AA	706	G
1	AA	711	G
1	AA	714	A
1	AA	716	A
1	AA	718	G
1	AA	723	A
1	AA	726	A
1	AA	727	C
1	AA	728	C
1	AA	729	G
1	AA	731	U
1	AA	739	G
1	AA	742	G
1	AA	747	C
1	AA	748	U
1	AA	749	G
1	AA	754	G
1	AA	756	A
1	AA	758	C
1	AA	760	G
1	AA	762	C
1	AA	763	A
1	AA	765	U
1	AA	766	G
1	AA	784	G
1	AA	785	A
1	AA	788	A
1	AA	790	A
1	AA	795	A
1	AA	800	A
1	AA	801	U
1	AA	802	A
1	AA	803	C
1	AA	807	G

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Mol	Chain	Res	Type
1	AA	813	C
1	AA	815	A
1	AA	817	G
1	AA	820	G
1	AA	821	U
1	AA	822	A
1	AA	823	A
1	AA	824	A
1	AA	825	C
1	AA	826	G
1	AA	828	U
1	AA	835	U
1	AA	836	A
1	AA	837	G
1	AA	839	U
1	AA	840	G
1	AA	843	G
1	AA	846	A
1	AA	847	G
1	AA	848	C
1	AA	849	U
1	AA	850	A
1	AA	852	A
1	AA	853	A
1	AA	854	G
1	AA	878	A
1	AA	879	U
1	AA	880	A
1	AA	881	A
1	AA	882	G
1	AA	886	U
1	AA	888	C
1	AA	889	G
1	AA	891	C
1	AA	892	U
1	AA	893	G
1	AA	895	G
1	AA	897	A
1	AA	898	G
1	AA	902	G
1	AA	903	A
1	AA	907	C

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Mol	Chain	Res	Type
1	AA	908	A
1	AA	910	G
1	AA	911	G
1	AA	914	G
1	AA	918	C
1	AA	921	A
1	AA	924	G
1	AA	930	G
1	AA	934	G
1	AA	936	G
1	AA	940	C
1	AA	942	C
1	AA	943	A
1	AA	945	A
1	AA	946	A
1	AA	948	C
1	AA	949	G
1	AA	953	G
1	AA	954	A
1	AA	955	G
1	AA	959	G
1	AA	965	U
1	AA	966	A
1	AA	967	A
1	AA	968	U
1	AA	969	U
1	AA	970	C
1	AA	971	G
1	AA	973	A
1	AA	977	A
1	AA	979	G
1	AA	981	G
1	AA	982	A
1	AA	983	A
1	AA	984	G
1	AA	985	A
1	AA	986	A
1	AA	987	C
1	AA	989	U
1	AA	990	U
1	AA	991	A
1	AA	992	C

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Mol	Chain	Res	Type
1	AA	995	G
1	AA	997	U
1	AA	1000	U
1	AA	1001	G
1	AA	1002	A
1	AA	1004	A
1	AA	1005	U
1	AA	1006	A
1	AA	1010	G
1	AA	1012	G
1	AA	1013	C
1	AA	1014	U
1	AA	1015	A
1	AA	1018	C
1	AA	1025	A
1	AA	1026	U
1	AA	1031	A
1	AA	1033	U
1	AA	1034	U
1	AA	1035	C
1	AA	1036	C
1	AA	1037	U
1	AA	1038	U
1	AA	1040	G
1	AA	1041	G
1	AA	1044	C
1	AA	1045	A
1	AA	1055	G
1	AA	1056	G
1	AA	1058	G
1	AA	1059	G
1	AA	1061	G
1	AA	1062	C
1	AA	1063	A
1	AA	1064	U
1	AA	1073	U
1	AA	1074	C
1	AA	1078	U
1	AA	1079	C
1	AA	1088	A
1	AA	1089	G
1	AA	1091	U

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Mol	Chain	Res	Type
1	AA	1093	U
1	AA	1094	U
1	AA	1096	G
1	AA	1097	G
1	AA	1100	A
1	AA	1102	G
1	AA	1103	U
1	AA	1104	C
1	AA	1105	C
1	AA	1108	C
1	AA	1109	A
1	AA	1110	A
1	AA	1111	C
1	AA	1116	G
1	AA	1119	A
1	AA	1126	U
1	AA	1128	G
1	AA	1130	U
1	AA	1131	A
1	AA	1132	G
1	AA	1133	U
1	AA	1134	U
1	AA	1138	A
1	AA	1140	C
1	AA	1141	A
1	AA	1142	U
1	AA	1143	U
1	AA	1144	A
1	AA	1146	G
1	AA	1147	U
1	AA	1148	U
1	AA	1149	G
1	AA	1151	G
1	AA	1153	A
1	AA	1154	C
1	AA	1156	C
1	AA	1157	U
1	AA	1158	A
1	AA	1159	A
1	AA	1164	A
1	AA	1165	C
1	AA	1166	U

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Mol	Chain	Res	Type
1	AA	1172	U
1	AA	1174	A
1	AA	1175	U
1	AA	1176	A
1	AA	1178	A
1	AA	1179	C
1	AA	1181	G
1	AA	1186	A
1	AA	1194	G
1	AA	1196	U
1	AA	1197	G
1	AA	1200	G
1	AA	1203	A
1	AA	1204	A
1	AA	1207	C
1	AA	1208	A
1	AA	1209	U
1	AA	1211	A
1	AA	1217	C
1	AA	1218	U
1	AA	1219	U
1	AA	1220	A
1	AA	1221	U
1	AA	1222	G
1	AA	1223	A
1	AA	1224	C
1	AA	1226	U
1	AA	1227	G
1	AA	1229	G
1	AA	1230	C
1	AA	1231	U
1	AA	1232	A
1	AA	1233	C
1	AA	1234	A
1	AA	1237	C
1	AA	1243	A
1	AA	1245	A
1	AA	1247	U
1	AA	1250	A
1	AA	1251	U
1	AA	1252	G
1	AA	1254	U

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Mol	Chain	Res	Type
1	AA	1255	A
1	AA	1258	A
1	AA	1259	C
1	AA	1263	U
1	AA	1264	C
1	AA	1267	G
1	AA	1268	A
1	AA	1269	G
1	AA	1271	C
1	AA	1272	A
1	AA	1273	G
1	AA	1277	U
1	AA	1280	U
1	AA	1286	A
1	AA	1287	A
1	AA	1288	U
1	AA	1289	C
1	AA	1290	U
1	AA	1292	U
1	AA	1293	U
1	AA	1297	A
1	AA	1299	C
1	AA	1303	C
1	AA	1304	U
1	AA	1305	C
1	AA	1306	A
1	AA	1307	G
1	AA	1308	U
1	AA	1309	U
1	AA	1310	C
1	AA	1311	G
1	AA	1312	G
1	AA	1313	A
1	AA	1314	U
1	AA	1316	G
1	AA	1317	U
1	AA	1326	A
1	AA	1327	C
1	AA	1329	C
1	AA	1330	G
1	AA	1331	C
1	AA	1332	C

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Mol	Chain	Res	Type
1	AA	1334	A
1	AA	1335	C
1	AA	1338	G
1	AA	1339	A
1	AA	1340	A
1	AA	1341	G
1	AA	1343	C
1	AA	1345	G
1	AA	1347	A
1	AA	1352	U
1	AA	1353	A
1	AA	1354	G
1	AA	1359	C
1	AA	1362	G
1	AA	1364	A
1	AA	1365	U
1	AA	1370	A
1	AA	1371	C
1	AA	1372	G
1	AA	1373	C
1	AA	1377	G
1	AA	1378	G
1	AA	1385	C
1	AA	1386	G
1	AA	1387	U
1	AA	1388	U
1	AA	1394	G
1	AA	1395	C
1	AA	1396	C
1	AA	1401	A
1	AA	1402	C
1	AA	1404	C
1	AA	1405	A
1	AA	1408	G
1	AA	1411	C
1	AA	1413	U
1	AA	1414	C
1	AA	1415	A
1	AA	1416	C
1	AA	1424	G
1	AA	1425	A
1	AA	1426	G

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Mol	Chain	Res	Type
1	AA	1430	G
1	AA	1431	G
1	AA	1434	U
1	AA	1439	G
1	AA	1440	A
1	AA	1445	G
1	AA	1448	U
1	AA	1449	G
1	AA	1450	C
1	AA	1451	C
1	AA	1452	U
1	AA	1453	A
1	AA	1454	A
1	AA	1455	C
1	AA	1457	G
1	AA	1459	A
1	AA	1460	A
1	AA	1469	C
1	AA	1475	A
1	AA	1477	G
1	AA	1480	A
1	AA	1481	A
1	AA	1482	G
1	AA	1494	G
1	AA	1500	A
1	AA	1501	G
1	AA	1505	U
1	AA	1506	A
1	AA	1507	A
1	AA	1508	C
1	AA	1509	A
1	AA	1510	A
1	AA	1511	G
1	AA	1515	G
1	AA	1526	A
1	AA	1527	G
1	AA	1534	C
1	AA	1536	G
1	AA	1537	G
1	AA	1540	C
31	BA	4	A
31	BA	5	A

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Mol	Chain	Res	Type
31	BA	7	G
31	BA	9	U
31	BA	13	A
31	BA	14	A
31	BA	15	G
31	BA	27	G
31	BA	28	A
31	BA	30	G
31	BA	34	U
31	BA	45	G
31	BA	46	C
31	BA	49	A
31	BA	51	G
31	BA	55	G
31	BA	56	A
31	BA	58	G
31	BA	61	A
31	BA	62	C
31	BA	63	U
31	BA	64	A
31	BA	71	A
31	BA	72	U
31	BA	73	A
31	BA	74	U
31	BA	75	U
31	BA	80	G
31	BA	83	G
31	BA	84	A
31	BA	88	G
31	BA	89	U
31	BA	90	A
31	BA	91	A
31	BA	92	G
31	BA	96	G
31	BA	99	U
31	BA	100	U
31	BA	101	G
31	BA	112	C
31	BA	114	C
31	BA	117	A
31	BA	118	A
31	BA	119	U

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Mol	Chain	Res	Type
31	BA	122	G
31	BA	123	G
31	BA	125	A
31	BA	126	A
31	BA	127	C
31	BA	130	A
31	BA	134	G
31	BA	137	A
31	BA	139	U
31	BA	140	A
31	BA	143	A
31	BA	144	G
31	BA	148	U
31	BA	153	G
31	BA	154	A
31	BA	157	G
31	BA	161	A
31	BA	173	U
31	BA	174	A
31	BA	180	A
31	BA	184	C
31	BA	187	A
31	BA	191	C
31	BA	192	U
31	BA	195	A
31	BA	198	A
31	BA	203	A
31	BA	204	G
31	BA	205	U
31	BA	207	C
31	BA	208	C
31	BA	215	A
31	BA	217	G
31	BA	218	A
31	BA	220	A
31	BA	221	A
31	BA	223	G
31	BA	227	A
31	BA	228	A
31	BA	230	C
31	BA	232	A
31	BA	233	U

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Mol	Chain	Res	Type
31	BA	240	A
31	BA	241	G
31	BA	242	U
31	BA	247	G
31	BA	249	G
31	BA	250	A
31	BA	264	A
31	BA	265	G
31	BA	277	A
31	BA	278	A
31	BA	279	G
31	BA	281	U
31	BA	283	G
31	BA	284	C
31	BA	285	U
31	BA	286	U
31	BA	291	G
31	BA	292	G
31	BA	297	U
31	BA	298	A
31	BA	299	G
31	BA	302	C
31	BA	304	G
31	BA	305	C
31	BA	306	A
31	BA	307	A
31	BA	308	C
31	BA	309	G
31	BA	310	U
31	BA	311	G
31	BA	312	G
31	BA	314	C
31	BA	315	U
31	BA	316	U
31	BA	317	A
31	BA	324	A
31	BA	326	A
31	BA	329	C
31	BA	333	U
31	BA	342	A
31	BA	348	A
31	BA	351	C

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Mol	Chain	Res	Type
31	BA	352	A
31	BA	353	A
31	BA	354	A
31	BA	355	G
31	BA	361	A
31	BA	362	A
31	BA	363	U
31	BA	366	U
31	BA	370	G
31	BA	378	A
31	BA	379	A
31	BA	380	U
31	BA	382	G
31	BA	391	C
31	BA	395	G
31	BA	404	U
31	BA	405	G
31	BA	406	A
31	BA	407	G
31	BA	408	U
31	BA	415	G
31	BA	416	G
31	BA	420	C
31	BA	421	G
31	BA	423	G
31	BA	425	A
31	BA	426	A
31	BA	431	G
31	BA	439	C
31	BA	441	G
31	BA	442	G
31	BA	447	A
31	BA	449	C
31	BA	450	A
31	BA	471	C
31	BA	473	U
31	BA	475	G
31	BA	478	A
31	BA	480	C
31	BA	482	A
31	BA	484	A
31	BA	486	U

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Mol	Chain	Res	Type
31	BA	488	A
31	BA	492	A
31	BA	493	G
31	BA	494	U
31	BA	497	C
31	BA	501	A
31	BA	502	G
31	BA	506	A
31	BA	508	G
31	BA	511	G
31	BA	514	A
31	BA	515	A
31	BA	516	G
31	BA	526	A
31	BA	530	G
31	BA	540	G
31	BA	542	A
31	BA	543	C
31	BA	544	C
31	BA	546	G
31	BA	547	A
31	BA	552	G
31	BA	553	U
31	BA	561	C
31	BA	562	A
31	BA	564	G
31	BA	565	A
31	BA	566	A
31	BA	569	U
31	BA	573	G
31	BA	574	C
31	BA	579	U
31	BA	580	A
31	BA	581	A
31	BA	582	U
31	BA	583	G
31	BA	586	U
31	BA	587	G
31	BA	588	A
31	BA	590	A
31	BA	591	G
31	BA	593	G

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Mol	Chain	Res	Type
31	BA	594	U
31	BA	595	G
31	BA	598	U
31	BA	601	U
31	BA	604	A
31	BA	609	G
31	BA	618	A
31	BA	621	U
31	BA	629	G
31	BA	630	A
31	BA	631	U
31	BA	634	G
31	BA	635	A
31	BA	636	G
31	BA	639	U
31	BA	647	A
31	BA	648	G
31	BA	651	A
31	BA	656	G
31	BA	660	U
31	BA	661	A
31	BA	668	C
31	BA	671	A
31	BA	677	A
31	BA	679	U
31	BA	680	A
31	BA	686	A
31	BA	687	C
31	BA	688	U
31	BA	689	U
31	BA	690	A
31	BA	696	A
31	BA	701	G
31	BA	705	A
31	BA	706	C
31	BA	710	A
31	BA	712	A
31	BA	721	C
31	BA	722	C
31	BA	726	C
31	BA	729	U
31	BA	730	G

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Mol	Chain	Res	Type
31	BA	733	C
31	BA	738	U
31	BA	739	G
31	BA	744	U
31	BA	745	G
31	BA	746	U
31	BA	747	G
31	BA	748	G
31	BA	752	G
31	BA	753	A
31	BA	754	C
31	BA	758	C
31	BA	760	G
31	BA	761	G
31	BA	762	A
31	BA	763	G
31	BA	764	G
31	BA	765	C
31	BA	766	C
31	BA	769	A
31	BA	775	G
31	BA	781	U
31	BA	782	U
31	BA	783	G
31	BA	787	A
31	BA	799	A
31	BA	800	C
31	BA	801	U
31	BA	805	G
31	BA	810	G
31	BA	811	C
31	BA	812	G
31	BA	814	A
31	BA	816	A
31	BA	817	A
31	BA	819	U
31	BA	820	U
31	BA	824	A
31	BA	825	A
31	BA	826	C
31	BA	827	G
31	BA	828	A

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Mol	Chain	Res	Type
31	BA	840	G
31	BA	845	U
31	BA	846	U
31	BA	847	C
31	BA	862	U
31	BA	863	U
31	BA	865	G
31	BA	869	U
31	BA	870	A
31	BA	873	G
31	BA	878	A
31	BA	879	A
31	BA	880	U
31	BA	881	G
31	BA	882	U
31	BA	886	U
31	BA	887	G
31	BA	888	U
31	BA	893	G
31	BA	896	G
31	BA	897	U
31	BA	900	A
31	BA	901	G
31	BA	902	C
31	BA	903	A
31	BA	907	U
31	BA	910	G
31	BA	911	G
31	BA	914	G
31	BA	918	G
31	BA	920	U
31	BA	924	U
31	BA	925	C
31	BA	926	U
31	BA	927	A
31	BA	930	A
31	BA	931	U
31	BA	932	U
31	BA	933	A
31	BA	934	C
31	BA	936	A
31	BA	937	A

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Mol	Chain	Res	Type
31	BA	938	U
31	BA	942	A
31	BA	944	A
31	BA	947	A
31	BA	949	C
31	BA	951	C
31	BA	952	C
31	BA	966	C
31	BA	968	U
31	BA	974	G
31	BA	976	A
31	BA	980	A
31	BA	981	G
31	BA	982	A
31	BA	988	A
31	BA	989	G
31	BA	993	U
31	BA	994	A
31	BA	996	G
31	BA	997	A
31	BA	1003	A
31	BA	1009	A
31	BA	1010	A
31	BA	1011	G
31	BA	1012	G
31	BA	1015	A
31	BA	1016	A
31	BA	1017	C
31	BA	1018	A
31	BA	1024	G
31	BA	1025	A
31	BA	1030	C
31	BA	1031	A
31	BA	1034	U
31	BA	1041	C
31	BA	1044	A
31	BA	1047	U
31	BA	1048	A
31	BA	1049	U
31	BA	1055	A
31	BA	1056	A
31	BA	1057	G

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Mol	Chain	Res	Type
31	BA	1059	G
31	BA	1061	A
31	BA	1062	A
31	BA	1068	U
31	BA	1079	A
31	BA	1080	C
31	BA	1081	A
31	BA	1084	C
31	BA	1087	C
31	BA	1089	A
31	BA	1092	A
31	BA	1093	U
31	BA	1096	U
31	BA	1097	A
31	BA	1099	C
31	BA	1101	C
31	BA	1103	G
31	BA	1104	A
31	BA	1105	A
31	BA	1106	G
31	BA	1107	C
31	BA	1108	A
31	BA	1109	G
31	BA	1110	C
31	BA	1112	A
31	BA	1114	C
31	BA	1115	A
31	BA	1117	U
31	BA	1118	C
31	BA	1119	A
31	BA	1120	A
31	BA	1121	A
31	BA	1122	G
31	BA	1123	A
31	BA	1124	G
31	BA	1125	U
31	BA	1126	G
31	BA	1129	U
31	BA	1130	A
31	BA	1131	A
31	BA	1132	U
31	BA	1133	A

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Mol	Chain	Res	Type
31	BA	1139	C
31	BA	1145	G
31	BA	1146	A
31	BA	1148	U
31	BA	1149	G
31	BA	1151	C
31	BA	1161	A
31	BA	1162	A
31	BA	1163	A
31	BA	1165	U
31	BA	1166	G
31	BA	1167	U
31	BA	1168	A
31	BA	1169	C
31	BA	1170	C
31	BA	1171	G
31	BA	1174	G
31	BA	1177	A
31	BA	1178	A
31	BA	1185	U
31	BA	1190	A
31	BA	1191	A
31	BA	1193	C
31	BA	1198	G
31	BA	1199	A
31	BA	1205	A
31	BA	1206	U
31	BA	1207	U
31	BA	1209	U
31	BA	1216	G
31	BA	1221	G
31	BA	1232	U
31	BA	1233	A
31	BA	1234	A
31	BA	1235	C
31	BA	1236	C
31	BA	1237	G
31	BA	1239	A
31	BA	1240	A
31	BA	1241	U
31	BA	1242	G
31	BA	1250	A

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Mol	Chain	Res	Type
31	BA	1251	C
31	BA	1255	G
31	BA	1257	G
31	BA	1259	A
31	BA	1266	G
31	BA	1267	A
31	BA	1272	U
31	BA	1277	A
31	BA	1279	U
31	BA	1280	G
31	BA	1281	A
31	BA	1282	G
31	BA	1283	A
31	BA	1285	U
31	BA	1286	G
31	BA	1301	G
31	BA	1302	C
31	BA	1303	A
31	BA	1304	A
31	BA	1305	G
31	BA	1313	A
31	BA	1314	G
31	BA	1317	U
31	BA	1326	C
31	BA	1329	U
31	BA	1330	A
31	BA	1332	G
31	BA	1334	C
31	BA	1335	U
31	BA	1340	U
31	BA	1354	C
31	BA	1355	U
31	BA	1362	C
31	BA	1370	U
31	BA	1371	A
31	BA	1373	U
31	BA	1374	C
31	BA	1375	G
31	BA	1379	C
31	BA	1388	A
31	BA	1389	G
31	BA	1390	G

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Mol	Chain	Res	Type
31	BA	1391	C
31	BA	1392	C
31	BA	1394	A
31	BA	1398	G
31	BA	1405	C
31	BA	1407	A
31	BA	1408	U
31	BA	1409	G
31	BA	1412	C
31	BA	1413	A
31	BA	1414	A
31	BA	1415	C
31	BA	1420	U
31	BA	1421	G
31	BA	1422	A
31	BA	1424	A
31	BA	1425	U
31	BA	1426	U
31	BA	1427	C
31	BA	1429	A
31	BA	1432	A
31	BA	1440	U
31	BA	1441	G
31	BA	1442	A
31	BA	1443	U
31	BA	1444	C
31	BA	1445	G
31	BA	1447	G
31	BA	1451	G
31	BA	1452	A
31	BA	1453	G
31	BA	1456	A
31	BA	1461	G
31	BA	1464	G
31	BA	1465	G
31	BA	1473	A
31	BA	1474	U
31	BA	1479	G
31	BA	1480	U
31	BA	1481	U
31	BA	1482	A
31	BA	1483	A

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Mol	Chain	Res	Type
31	BA	1484	U
31	BA	1486	G
31	BA	1487	A
31	BA	1488	U
31	BA	1489	C
31	BA	1490	C
31	BA	1491	U
31	BA	1493	G
31	BA	1494	U
31	BA	1495	C
31	BA	1496	U
31	BA	1500	C
31	BA	1502	G
31	BA	1504	G
31	BA	1505	A
31	BA	1509	G
31	BA	1510	U
31	BA	1511	G
31	BA	1516	G
31	BA	1517	U
31	BA	1518	G
31	BA	1520	C
31	BA	1524	U
31	BA	1528	U
31	BA	1530	U
31	BA	1531	C
31	BA	1532	U
31	BA	1533	C
31	BA	1535	C
31	BA	1536	U
31	BA	1537	A
31	BA	1538	A
31	BA	1540	A
31	BA	1544	A
31	BA	1548	G
31	BA	1551	A
31	BA	1552	U
31	BA	1553	G
31	BA	1554	G
31	BA	1555	G
31	BA	1559	G
31	BA	1561	A

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Mol	Chain	Res	Type
31	BA	1562	A
31	BA	1565	A
31	BA	1566	C
31	BA	1584	U
31	BA	1585	G
31	BA	1589	C
31	BA	1596	A
31	BA	1597	A
31	BA	1599	A
31	BA	1608	U
31	BA	1610	G
31	BA	1611	C
31	BA	1612	G
31	BA	1614	A
31	BA	1615	A
31	BA	1616	A
31	BA	1618	U
31	BA	1619	C
31	BA	1621	U
31	BA	1622	A
31	BA	1626	A
31	BA	1632	A
31	BA	1636	C
31	BA	1637	A
31	BA	1638	A
31	BA	1639	A
31	BA	1642	G
31	BA	1644	C
31	BA	1645	A
31	BA	1647	A
31	BA	1648	G
31	BA	1649	G
31	BA	1651	A
31	BA	1656	A
31	BA	1659	C
31	BA	1663	U
31	BA	1666	C
31	BA	1669	C
31	BA	1672	G
31	BA	1676	U
31	BA	1677	C
31	BA	1680	G

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Mol	Chain	Res	Type
31	BA	1681	A
31	BA	1682	G
31	BA	1683	A
31	BA	1691	U
31	BA	1692	U
31	BA	1693	A
31	BA	1696	G
31	BA	1697	A
31	BA	1698	A
31	BA	1699	C
31	BA	1701	C
31	BA	1703	G
31	BA	1704	C
31	BA	1706	A
31	BA	1708	A
31	BA	1710	A
31	BA	1711	G
31	BA	1713	C
31	BA	1722	U
31	BA	1724	G
31	BA	1725	G
31	BA	1727	A
31	BA	1728	G
31	BA	1740	G
31	BA	1741	U
31	BA	1742	G
31	BA	1743	U
31	BA	1744	A
31	BA	1745	A
31	BA	1746	A
31	BA	1749	C
31	BA	1751	A
31	BA	1753	C
31	BA	1754	C
31	BA	1755	G
31	BA	1756	C
31	BA	1758	G
31	BA	1760	G
31	BA	1761	A
31	BA	1762	A
31	BA	1763	U
31	BA	1764	A

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Mol	Chain	Res	Type
31	BA	1765	G
31	BA	1766	G
31	BA	1767	C
31	BA	1768	C
31	BA	1775	A
31	BA	1777	U
31	BA	1778	G
31	BA	1779	U
31	BA	1781	U
31	BA	1784	C
31	BA	1785	A
31	BA	1786	A
31	BA	1790	C
31	BA	1792	C
31	BA	1795	C
31	BA	1801	G
31	BA	1802	C
31	BA	1808	C
31	BA	1817	A
31	BA	1818	U
31	BA	1819	G
31	BA	1820	U
31	BA	1821	A
31	BA	1823	A
31	BA	1830	G
31	BA	1831	A
31	BA	1837	G
31	BA	1838	C
31	BA	1840	C
31	BA	1849	A
31	BA	1863	U
31	BA	1864	G
31	BA	1868	A
31	BA	1870	A
31	BA	1872	G
31	BA	1873	U
31	BA	1874	A
31	BA	1875	A
31	BA	1876	G
31	BA	1877	U
31	BA	1878	C
31	BA	1879	G

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Mol	Chain	Res	Type
31	BA	1880	A
31	BA	1884	U
31	BA	1887	G
31	BA	1888	A
31	BA	1891	U
31	BA	1893	A
31	BA	1903	A
31	BA	1904	A
31	BA	1910	G
31	BA	1916	A
31	BA	1918	C
31	BA	1919	U
31	BA	1921	U
31	BA	1922	A
31	BA	1923	A
31	BA	1924	C
31	BA	1926	G
31	BA	1928	C
31	BA	1931	A
31	BA	1933	G
31	BA	1934	G
31	BA	1935	U
31	BA	1938	C
31	BA	1940	A
31	BA	1941	A
31	BA	1944	U
31	BA	1946	C
31	BA	1947	U
31	BA	1949	G
31	BA	1950	U
31	BA	1957	A
31	BA	1958	G
31	BA	1959	U
31	BA	1964	A
31	BA	1965	C
31	BA	1966	C
31	BA	1967	C
31	BA	1968	G
31	BA	1970	A
31	BA	1971	C
31	BA	1974	A
31	BA	1976	G

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Mol	Chain	Res	Type
31	BA	1977	G
31	BA	1979	G
31	BA	1987	U
31	BA	1996	G
31	BA	1997	U
31	BA	1998	C
31	BA	1999	U
31	BA	2000	C
31	BA	2010	C
31	BA	2011	U
31	BA	2016	G
31	BA	2017	A
31	BA	2021	U
31	BA	2022	U
31	BA	2023	U
31	BA	2024	A
31	BA	2025	G
31	BA	2026	U
31	BA	2027	A
31	BA	2031	G
31	BA	2032	U
31	BA	2034	A
31	BA	2035	A
31	BA	2036	G
31	BA	2037	A
31	BA	2038	U
31	BA	2039	G
31	BA	2045	U
31	BA	2047	C
31	BA	2048	C
31	BA	2050	G
31	BA	2053	A
31	BA	2054	C
31	BA	2055	A
31	BA	2056	G
31	BA	2058	A
31	BA	2059	C
31	BA	2060	G
31	BA	2064	A
31	BA	2065	G
31	BA	2066	A
31	BA	2072	U

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Mol	Chain	Res	Type
31	BA	2073	G
31	BA	2084	G
31	BA	2091	G
31	BA	2094	A
31	BA	2096	U
31	BA	2097	G
31	BA	2099	G
31	BA	2104	U
31	BA	2105	G
31	BA	2112	A
31	BA	2114	G
31	BA	2115	U
31	BA	2116	A
31	BA	2117	C
31	BA	2119	G
31	BA	2120	G
31	BA	2121	A
31	BA	2122	U
31	BA	2123	A
31	BA	2126	U
31	BA	2129	G
31	BA	2130	A
31	BA	2131	G
31	BA	2132	C
31	BA	2134	A
31	BA	2136	U
31	BA	2137	G
31	BA	2138	A
31	BA	2139	A
31	BA	2140	A
31	BA	2143	G
31	BA	2144	G
31	BA	2145	G
31	BA	2146	A
31	BA	2147	C
31	BA	2148	G
31	BA	2149	C
31	BA	2151	A
31	BA	2152	G
31	BA	2153	U
31	BA	2155	U
31	BA	2158	A

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Mol	Chain	Res	Type
31	BA	2160	U
31	BA	2161	G
31	BA	2162	A
31	BA	2163	G
31	BA	2165	C
31	BA	2166	G
31	BA	2167	U
31	BA	2169	G
31	BA	2174	G
31	BA	2175	A
31	BA	2177	A
31	BA	2180	A
31	BA	2182	C
31	BA	2184	U
31	BA	2192	U
31	BA	2193	G
31	BA	2194	G
31	BA	2195	U
31	BA	2202	A
31	BA	2203	A
31	BA	2207	G
31	BA	2214	U
31	BA	2215	A
31	BA	2216	A
31	BA	2217	U
31	BA	2218	C
31	BA	2222	C
31	BA	2229	A
31	BA	2242	G
31	BA	2243	A
31	BA	2244	C
31	BA	2250	G
31	BA	2254	G
31	BA	2261	U
31	BA	2263	G
31	BA	2270	A
31	BA	2272	A
31	BA	2273	G
31	BA	2274	A
31	BA	2277	A
31	BA	2278	A
31	BA	2281	G

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Mol	Chain	Res	Type
31	BA	2283	G
31	BA	2284	G
31	BA	2286	G
31	BA	2287	C
31	BA	2289	C
31	BA	2290	A
31	BA	2291	A
31	BA	2293	G
31	BA	2309	U
31	BA	2311	G
31	BA	2312	G
31	BA	2313	A
31	BA	2315	A
31	BA	2320	U
31	BA	2323	U
31	BA	2324	A
31	BA	2326	A
31	BA	2329	G
31	BA	2331	A
31	BA	2337	A
31	BA	2338	A
31	BA	2339	A
31	BA	2340	A
31	BA	2341	G
31	BA	2348	U
31	BA	2349	G
31	BA	2351	C
31	BA	2354	C
31	BA	2358	A
31	BA	2362	A
31	BA	2365	A
31	BA	2366	C
31	BA	2373	A
31	BA	2375	G
31	BA	2376	U
31	BA	2377	A
31	BA	2378	G
31	BA	2386	G
31	BA	2387	G
31	BA	2389	C
31	BA	2390	U
31	BA	2392	A

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Mol	Chain	Res	Type
31	BA	2393	G
31	BA	2395	G
31	BA	2401	G
31	BA	2403	G
31	BA	2406	A
31	BA	2407	C
31	BA	2410	C
31	BA	2411	A
31	BA	2413	G
31	BA	2414	G
31	BA	2419	G
31	BA	2420	C
31	BA	2424	C
31	BA	2426	C
31	BA	2427	U
31	BA	2428	C
31	BA	2429	A
31	BA	2430	A
31	BA	2431	C
31	BA	2432	G
31	BA	2433	G
31	BA	2434	A
31	BA	2435	U
31	BA	2438	A
31	BA	2443	A
31	BA	2444	C
31	BA	2445	C
31	BA	2446	C
31	BA	2451	G
31	BA	2452	A
31	BA	2453	U
31	BA	2456	C
31	BA	2464	U
31	BA	2470	C
31	BA	2482	A
31	BA	2485	G
31	BA	2488	G
31	BA	2494	G
31	BA	2495	U
31	BA	2496	U
31	BA	2498	G
31	BA	2499	G

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Mol	Chain	Res	Type
31	BA	2501	A
31	BA	2502	C
31	BA	2505	C
31	BA	2506	G
31	BA	2507	A
31	BA	2508	U
31	BA	2509	G
31	BA	2510	U
31	BA	2517	G
31	BA	2533	G
31	BA	2534	U
31	BA	2535	A
31	BA	2536	G
31	BA	2539	G
31	BA	2546	A
31	BA	2557	G
31	BA	2568	A
31	BA	2570	A
31	BA	2571	G
31	BA	2576	A
31	BA	2577	C
31	BA	2578	G
31	BA	2581	A
31	BA	2582	G
31	BA	2588	U
31	BA	2589	U
31	BA	2590	C
31	BA	2591	A
31	BA	2595	C
31	BA	2602	A
31	BA	2606	A
31	BA	2607	G
31	BA	2613	U
31	BA	2614	C
31	BA	2617	U
31	BA	2618	A
31	BA	2619	U
31	BA	2623	U
31	BA	2625	G
31	BA	2628	G
31	BA	2633	A
31	BA	2636	U

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Mol	Chain	Res	Type
31	BA	2637	A
31	BA	2640	U
31	BA	2643	A
31	BA	2646	G
31	BA	2647	G
31	BA	2649	U
31	BA	2650	C
31	BA	2652	G
31	BA	2653	U
31	BA	2658	A
31	BA	2659	G
31	BA	2679	A
31	BA	2686	G
31	BA	2689	G
31	BA	2694	A
31	BA	2698	G
31	BA	2706	G
31	BA	2717	G
31	BA	2718	G
31	BA	2722	G
31	BA	2726	G
31	BA	2729	A
31	BA	2730	U
31	BA	2731	G
31	BA	2732	U
31	BA	2736	G
31	BA	2737	A
31	BA	2739	G
31	BA	2740	G
31	BA	2741	G
31	BA	2743	U
31	BA	2748	G
31	BA	2752	A
31	BA	2753	A
31	BA	2754	A
31	BA	2755	G
31	BA	2760	U
31	BA	2761	A
31	BA	2762	A
31	BA	2766	C
31	BA	2768	A
31	BA	2769	A

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Mol	Chain	Res	Type
31	BA	2770	G
31	BA	2771	C
31	BA	2782	A
31	BA	2783	U
31	BA	2784	G
31	BA	2786	G
31	BA	2793	C
31	BA	2795	U
31	BA	2799	U
31	BA	2800	A
31	BA	2802	G
31	BA	2809	G
31	BA	2816	G
31	BA	2819	A
31	BA	2821	A
31	BA	2822	U
31	BA	2828	G
31	BA	2830	U
31	BA	2831	A
31	BA	2832	G
31	BA	2833	A
31	BA	2834	U
31	BA	2835	A
31	BA	2841	G
31	BA	2843	A
31	BA	2848	A
31	BA	2859	G
31	BA	2860	A
31	BA	2861	C
31	BA	2866	A
31	BA	2867	G
31	BA	2870	G
31	BA	2872	C
31	BA	2874	A
31	BA	2878	C
31	BA	2881	A
31	BA	2882	U
31	BA	2889	A
31	BA	2890	G
31	BA	2891	G
31	BA	2894	U
31	BA	2899	C

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Mol	Chain	Res	Type
32	BB	3	U
32	BB	6	U
32	BB	7	A
32	BB	8	U
32	BB	10	A
32	BB	11	A
32	BB	12	U
32	BB	13	U
32	BB	14	G
32	BB	22	G
32	BB	23	A
32	BB	25	A
32	BB	28	C
32	BB	29	C
32	BB	33	U
32	BB	34	C
32	BB	35	C
32	BB	37	A
32	BB	38	U
32	BB	39	G
32	BB	40	U
32	BB	41	C
32	BB	42	G
32	BB	43	A
32	BB	54	C
32	BB	59	C
32	BB	64	U
32	BB	65	G
32	BB	69	U
32	BB	71	G
32	BB	72	A
32	BB	85	U
32	BB	86	U
32	BB	87	G
32	BB	88	C
32	BB	100	U
32	BB	101	A
32	BB	102	A
32	BB	107	G
32	BB	110	G
32	BB	112	C
32	BB	113	A

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Mol	Chain	Res	Type
32	BB	114	A
32	BB	115	G
32	BB	116	U

All (28) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	AA	100	G
1	AA	150	A
1	AA	590	G
1	AA	695	A
1	AA	1142	U
1	AA	1146	G
1	AA	1352	U
1	AA	1414	C
31	BA	8	U
31	BA	514	A
31	BA	762	A
31	BA	880	U
31	BA	932	U
31	BA	980	A
31	BA	1281	A
31	BA	1285	U
31	BA	1313	A
31	BA	1317	U
31	BA	1353	G
31	BA	1414	A
31	BA	1740	G
31	BA	1743	U
31	BA	1923	A
31	BA	2054	C
31	BA	2065	G
31	BA	2273	G
31	BA	2444	C
31	BA	2760	U

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

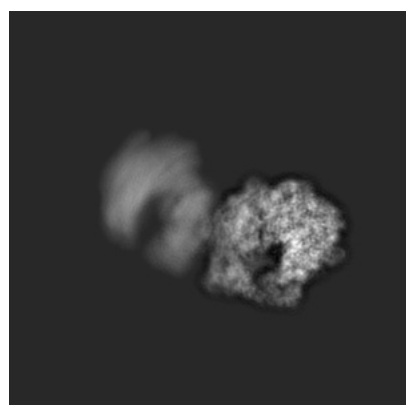
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-3581. These allow visual inspection of the internal detail of the map and identification of artifacts.

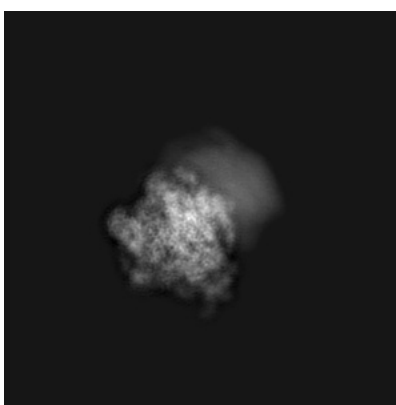
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

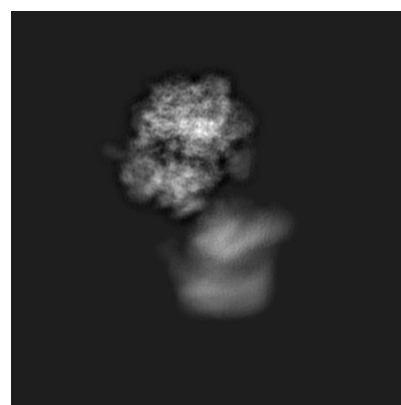
6.1.1 Primary map



X



Y

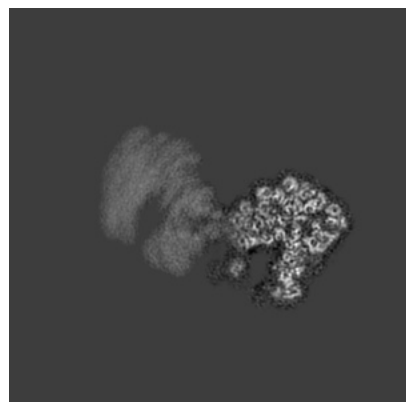


Z

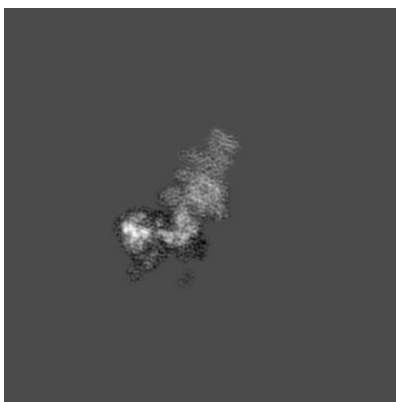
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

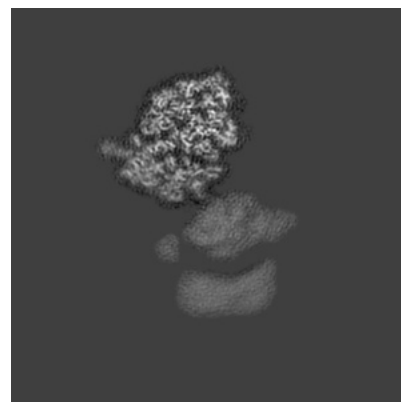
6.2.1 Primary map



X Index: 300



Y Index: 300

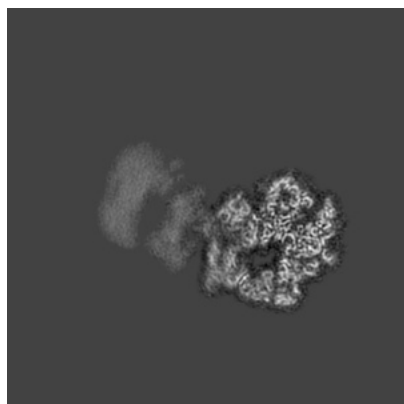


Z Index: 300

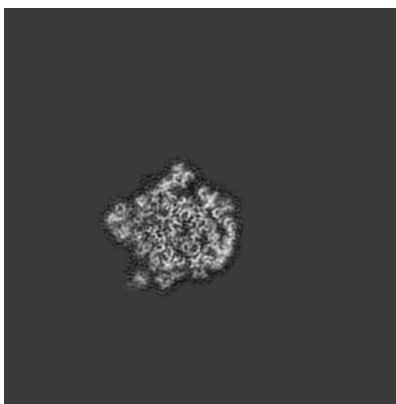
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

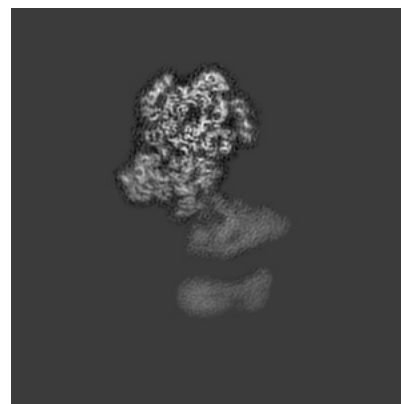
6.3.1 Primary map



X Index: 278



Y Index: 428

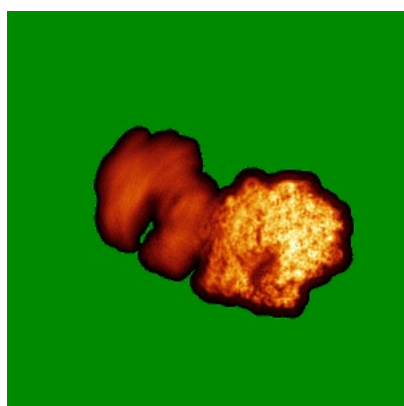


Z Index: 277

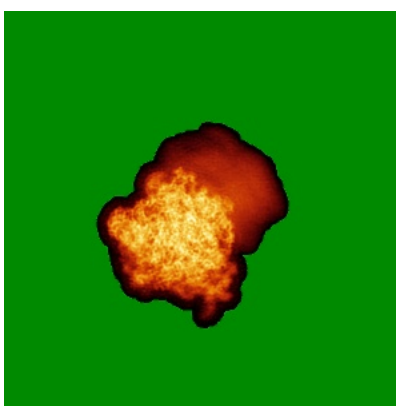
The images above show the largest variance slices of the map in three orthogonal directions.

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

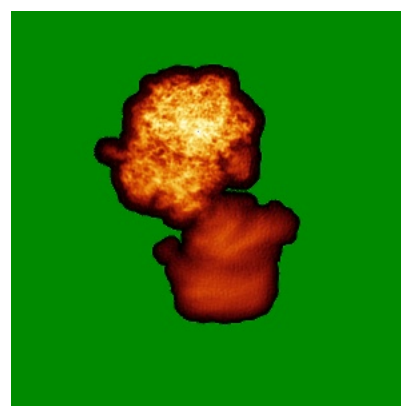
6.4.1 Primary map



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

This section was not generated.

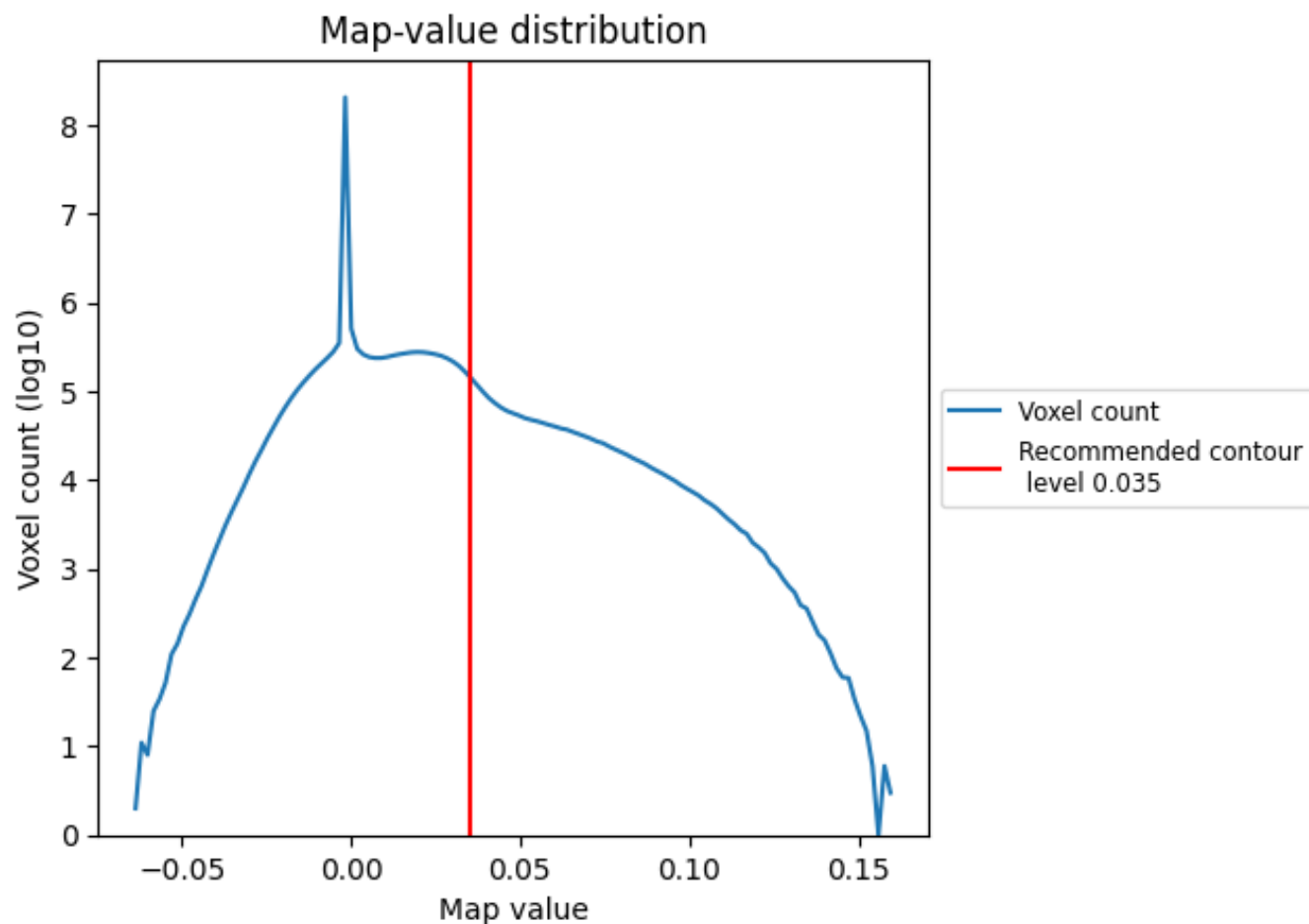
6.6 Mask visualisation

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

7 Map analysis [i](#)

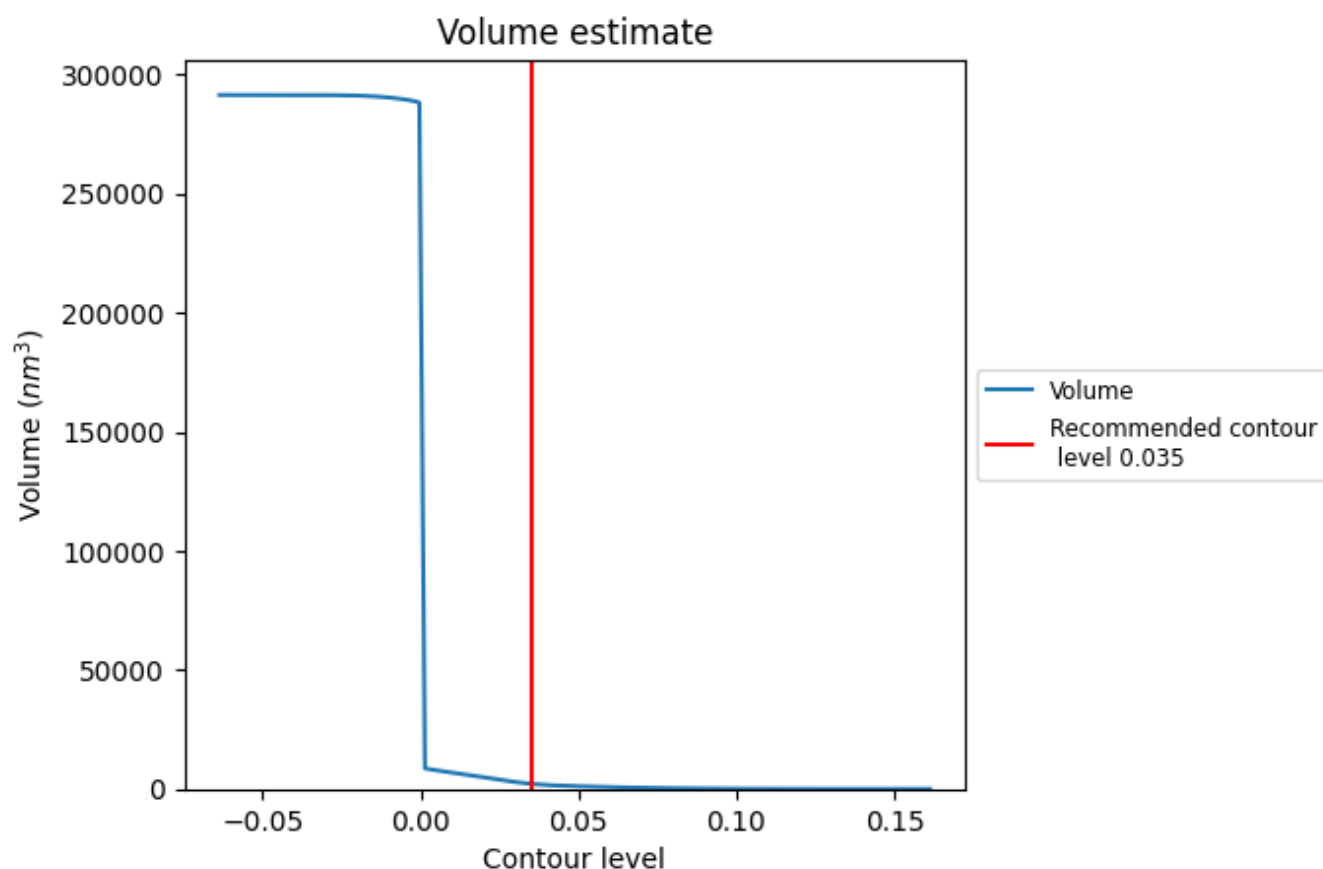
This section contains the results of statistical analysis of the map.

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.

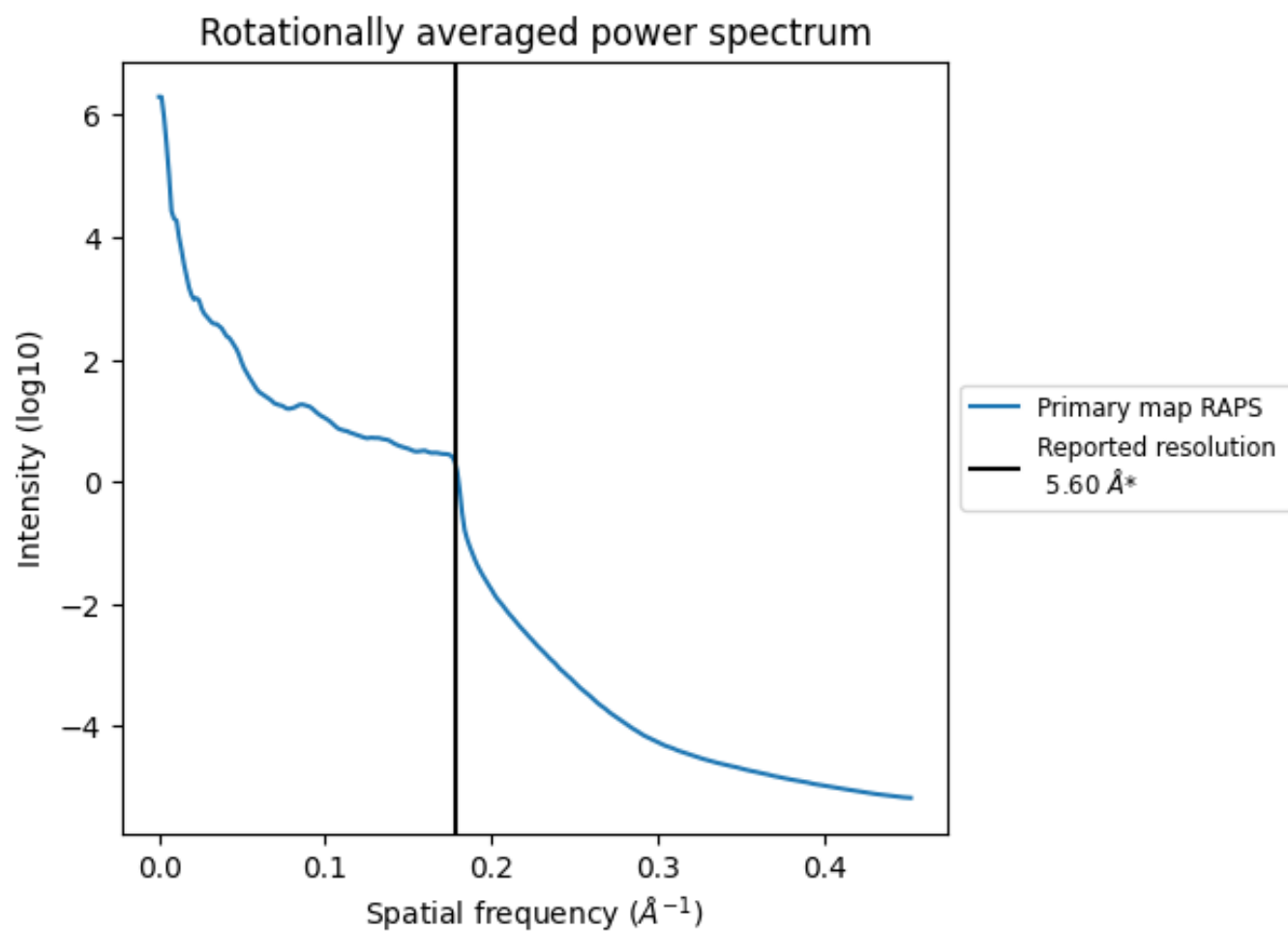
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2160 nm³; this corresponds to an approximate mass of 1951 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 ⓘ

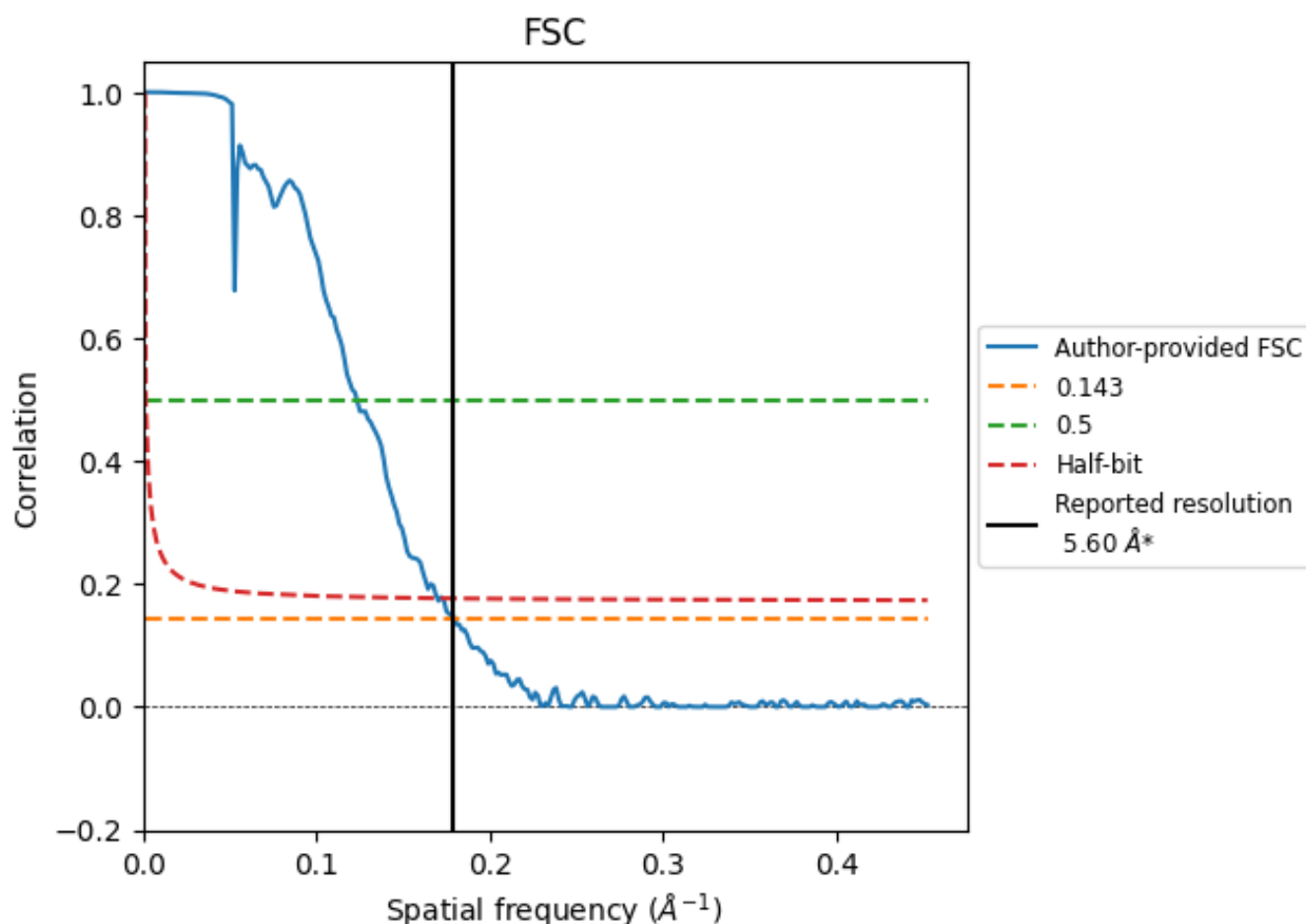


*Reported resolution corresponds to spatial frequency of 0.179 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.179 Å⁻¹

8.2 Resolution estimates [i](#)

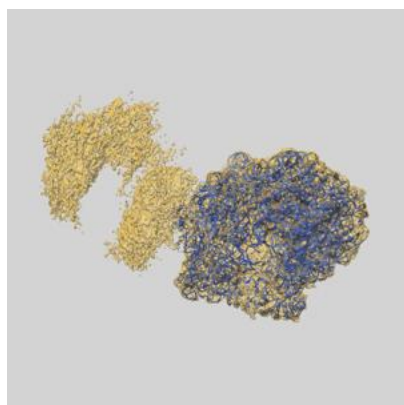
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	5.60	-	-
Author-provided FSC curve	5.56	8.11	5.89
Unmasked-calculated*	-	-	-

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

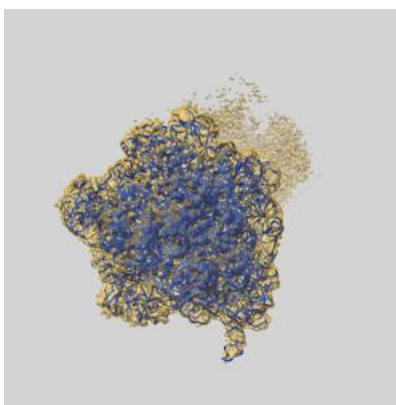
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-3581 and PDB model 5MYJ. Per-residue inclusion information can be found in section 3 on page 13.

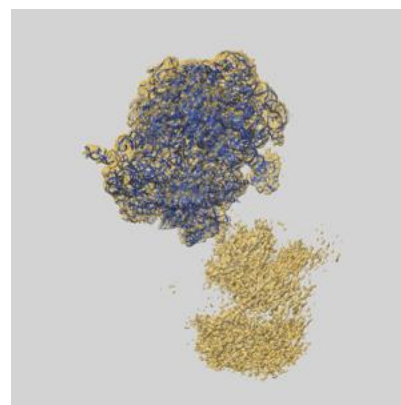
9.1 Map-model overlay [i](#)



X



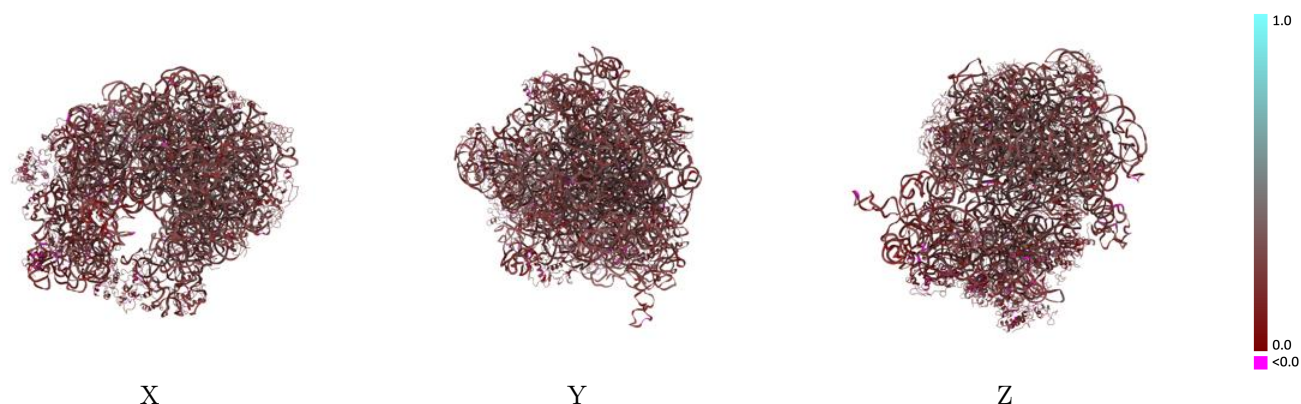
Y



Z

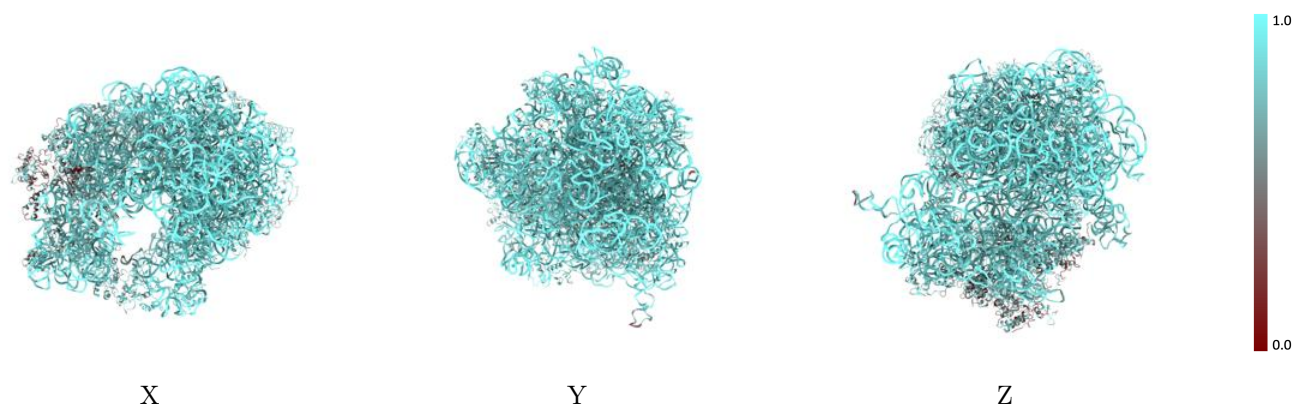
The images above show the 3D surface view of the map at the recommended contour level 0.035 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



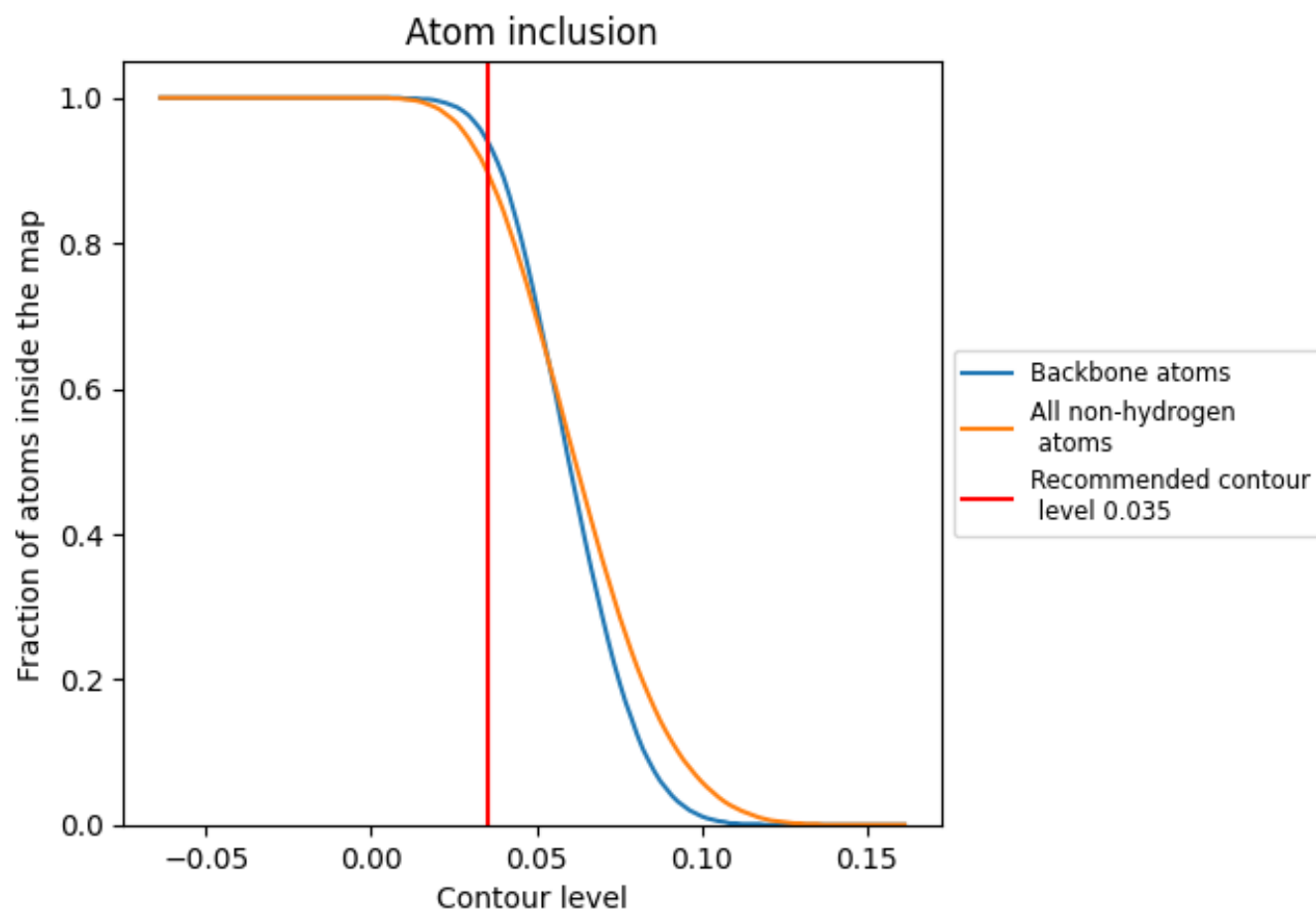
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.035).

9.4 Atom inclusion [i](#)



At the recommended contour level, 94% of all backbone atoms, 90% 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 (0.035) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9000	 0.2480
A	 0.5440	 0.2100
AA	 0.9500	 0.2270
AB	 0.4760	 0.2060
AC	 0.6560	 0.1880
AD	 0.7400	 0.1680
AE	 0.5600	 0.2170
AF	 0.6500	 0.2120
AG	 0.7110	 0.2150
AH	 0.6340	 0.1770
AI	 0.7760	 0.1630
AJ	 0.7060	 0.1710
AK	 0.6970	 0.2320
AL	 0.6410	 0.2190
AM	 0.8010	 0.2000
AN	 0.8500	 0.1690
AO	 0.7640	 0.2070
AP	 0.7780	 0.1640
AQ	 0.7170	 0.2110
AR	 0.6260	 0.2300
AS	 0.8070	 0.1760
AT	 0.7940	 0.1940
AU	 0.3920	 0.2390
B0	 0.7500	 0.2530
B1	 0.8070	 0.2010
B2	 0.8170	 0.2620
B3	 0.7750	 0.2060
B4	 0.8420	 0.2820
B5	 0.7950	 0.2340
B6	 0.8390	 0.2630
B7	 0.7940	 0.2500
B8	 0.8930	 0.2530
BA	 0.9730	 0.2760
BB	 0.9900	 0.2650
BD	 0.7660	 0.2590



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Chain	Atom inclusion	Q-score
BE	 0.8260	 0.2460
BF	 0.8280	 0.2400
BG	 0.8210	 0.2190
BH	 0.8580	 0.2290
BM	 0.8110	 0.2500
BN	 0.6980	 0.2490
BO	 0.8350	 0.2450
BP	 0.8350	 0.2580
BQ	 0.8010	 0.2240
BR	 0.9000	 0.2090
BS	 0.7350	 0.2520
BT	 0.7980	 0.1910
BU	 0.8230	 0.2520
BV	 0.7840	 0.2540
BW	 0.8230	 0.2550
BX	 0.8530	 0.2200
BZ	 0.8560	 0.2660