



Full wwPDB EM Validation Report ⓘ

Mar 12, 2026 – 07:28 AM UTC

PDB ID : 6RXV / pdb_00006rxv
EMDB ID : EMD-10053
Title : Cryo-EM structure of the 90S pre-ribosome (Kre33-Noc4) from *Chaetomium thermophilum*, state B2
Authors : Cheng, J.; Kellner, N.; Griesel, S.; Berninghausen, O.; Beckmann, R.; Hurt, E.
Deposited on : 2019-06-10
Resolution : 4.00 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

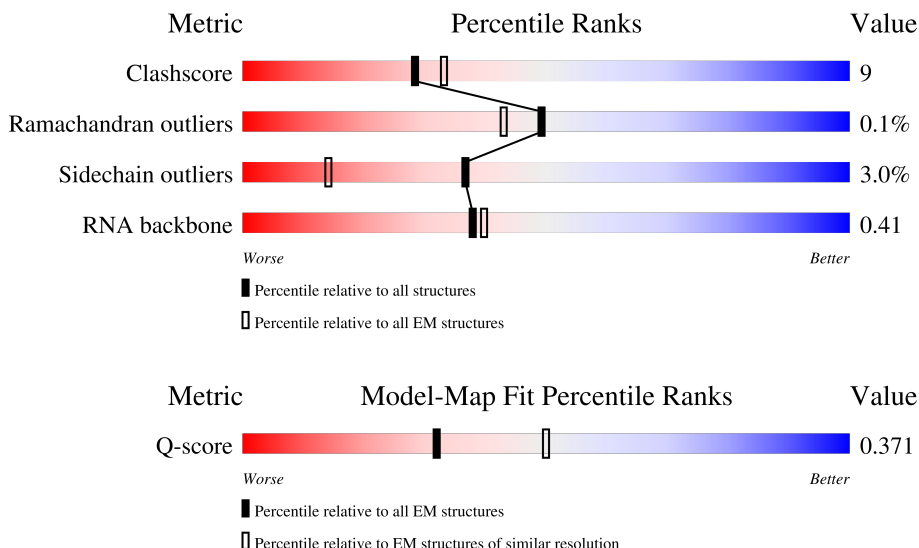
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.00 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.



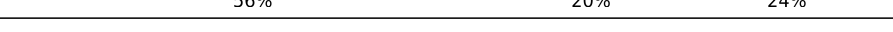
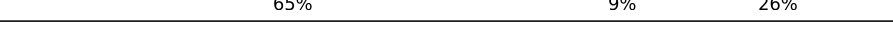
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	7587 (3.50 - 4.50)

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	UA	904	
2	UB	907	
3	UC	648	

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Mol	Chain	Length	Quality of chain
4	UD	884	
5	UF	414	
6	UG	558	
7	UJ	1802	
8	UK	270	
9	UL	962	
10	UM	912	
11	UN	938	
12	UO	557	
13	UQ	960	
14	UR	618	
15	UU	1049	
16	UX	193	
17	UZ	391	
18	CA	313	
18	CB	313	
19	CC	523	
20	CD	582	
21	CE	127	
21	CF	127	
22	CG	630	
23	CH	411	
24	CI	1163	
25	CJ	183	
26	CK	297	

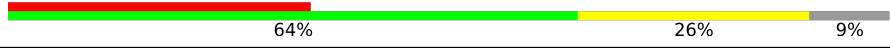
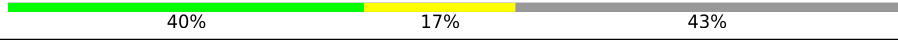
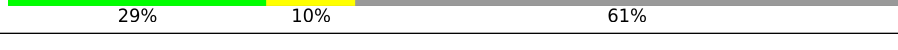
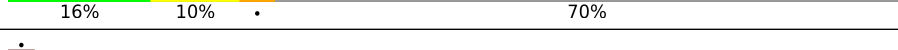
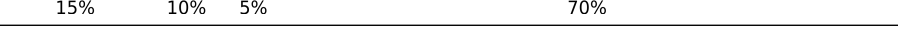
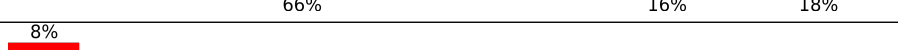
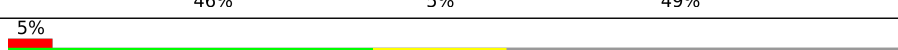
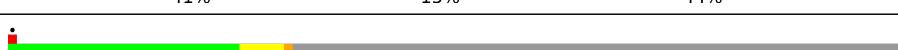
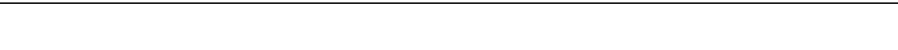
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Mol	Chain	Length	Quality of chain
27	CL	785	
28	CM	446	
29	CN	252	
29	CO	252	
30	CP	322	
31	CQ	259	
32	CR	1073	
32	CS	1073	
33	CT	203	
34	Ca	255	
35	Cb	264	
36	Cc	212	
37	Cd	239	
38	Ce	203	
39	Cf	202	
40	Cg	190	
41	Ch	151	
42	Ci	150	
43	Cj	143	
44	Ck	161	
45	Cm	130	
46	Cn	145	
47	Co	136	
48	Cp	68	
49	CU	311	

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Mol	Chain	Length	Quality of chain
50	C1	2352	
51	C2	230	
52	UV	1171	
53	CV	322	
54	CW	668	
55	UT	2612	
56	UH	930	
57	UE	410	
57	UI	410	
58	US	549	
59	Cl	156	
60	CX	480	
61	CY	381	
62	CZ	609	
63	UP	364	

2 Entry composition

There are 66 unique types of molecules in this entry. The entry contains 221395 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Periodic tryptophan protein 2-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	UA	839	Total	C	N	O	S	0	0
			6366	4101	1136	1105	24		

- Molecule 2 is a protein called Utp2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	UB	512	Total	C	N	O	S	0	0
			4079	2576	781	711	11		

- Molecule 3 is a protein called Utp3.

Mol	Chain	Residues	Atoms				AltConf	Trace
3	UC	74	Total	C	N	O	0	0
			588	371	120	97		

- Molecule 4 is a protein called Utp4.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	UD	772	Total	C	N	O	S	0	0
			6071	3851	1093	1103	24		

- Molecule 5 is a protein called Utp6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	UF	331	Total	C	N	O	S	0	0
			2591	1674	504	399	14		

- Molecule 6 is a protein called Utp7.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	UG	479	Total	C	N	O	S	0	0
			3717	2369	700	636	12		

- Molecule 7 is a protein called UTP10.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	UJ	1090	Total	C	N	O	S	0	0
			8416	5408	1452	1525	31		

- Molecule 8 is a protein called U3 small nucleolar RNA-associated protein 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	UK	217	Total	C	N	O	S	0	0
			1687	1062	351	269	5		

- Molecule 9 is a protein called Utp12.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	UL	785	Total	C	N	O	S	0	0
			6175	3940	1088	1130	17		

- Molecule 10 is a protein called Utp13.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	UM	729	Total	C	N	O	S	0	0
			5643	3590	995	1045	13		

- Molecule 11 is a protein called Utp14.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	UN	177	Total	C	N	O	S	0	0
			1401	892	263	239	7		

- Molecule 12 is a protein called Utp15.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	UO	504	Total	C	N	O	S	0	0
			3819	2422	699	684	14		

- Molecule 13 is a protein called Utp17.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	UQ	789	Total	C	N	O	S	0	0
			6008	3831	1037	1119	21		

- Molecule 14 is a protein called Utp18.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	UR	447	Total	C	N	O	S	0	0
			3491	2209	656	616	10		

- Molecule 15 is a protein called Utp21.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	UU	902	Total	C	N	O	S	0	0
			6734	4336	1236	1136	26		

- Molecule 16 is a protein called Utp24.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	UX	190	Total	C	N	O	S	0	0
			1470	932	282	246	10		

- Molecule 17 is a protein called Utp30.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	UZ	235	Total	C	N	O	S	0	0
			1815	1184	330	298	3		

- Molecule 18 is a protein called Nop1.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	CA	242	Total	C	N	O	S	0	0
			1778	1149	327	293	9		
18	CB	237	Total	C	N	O	S	0	0
			1816	1154	318	335	9		

- Molecule 19 is a protein called Nop56.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	CC	387	Total	C	N	O	S	0	0
			2866	1836	527	492	11		

- Molecule 20 is a protein called Nop58.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	CD	420	Total	C	N	O	S	0	0
			3150	2023	560	557	10		

- Molecule 21 is a protein called Snu13.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	CE	121	Total	C	N	O	S	0	0
			879	557	165	154	3		
21	CF	120	Total	C	N	O	S	0	0
			864	550	161	150	3		

- Molecule 22 is a protein called Rrp9.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	CG	416	Total	C	N	O	S	0	0
			3245	2065	587	580	13		

- Molecule 23 is a protein called RNA 3'-terminal phosphate cyclase-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	CH	389	Total	C	N	O	S	0	0
			2888	1827	526	525	10		

- Molecule 24 is a protein called Bms1.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	CI	822	Total	C	N	O	S	0	0
			6486	4169	1213	1077	27		

- Molecule 25 is a protein called Imp3.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	CJ	179	Total	C	N	O	S	0	0
			1434	918	283	226	7		

- Molecule 26 is a protein called Imp4.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	CK	297	Total	C	N	O	S	0	0
			2329	1476	445	400	8		

- Molecule 27 is a protein called Mpp10.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	CL	231	Total	C	N	O	S	0	0
			1786	1114	339	327	6		

- Molecule 28 is a protein called Sof1.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	CM	445	Total	C	N	O	S	0	0
			3501	2195	672	619	15		

- Molecule 29 is a protein called Emg1.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	CN	226	Total	C	N	O	S	0	0
			1762	1119	306	327	10		
29	CO	215	Total	C	N	O	S	0	0
			1683	1067	293	313	10		

- Molecule 30 is a protein called KRR1 small subunit processome component.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	CP	233	Total	C	N	O	S	0	0
			1893	1209	340	335	9		

- Molecule 31 is a protein called Pre-rRNA-processing protein PNO1.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	CQ	175	Total	C	N	O	S	0	0
			1361	862	250	242	7		

- Molecule 32 is a protein called Kre33.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	CR	760	Total	C	N	O	S	0	0
			5989	3851	1024	1087	27		
32	CS	760	Total	C	N	O	S	0	0
			5989	3851	1024	1087	27		

- Molecule 33 is a protein called Fcf2.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	CT	131	Total	C	N	O	S	0	0
			1035	656	197	178	4		

- Molecule 34 is a protein called 40S ribosomal protein S1.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Ca	225	Total	C	N	O	S	0	0
			1821	1160	341	315	5		

- Molecule 35 is a protein called 40S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Cb	232	Total	C	N	O	S	0	0
			1851	1179	340	325	7		

- Molecule 36 is a protein called 40S ribosomal protein s5-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Cc	192	Total	C	N	O	S	0	0
			1464	926	278	253	7		

- Molecule 37 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Cd	226	Total	C	N	O	S	0	0
			1819	1138	363	313	5		

- Molecule 38 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Ce	159	Total	C	N	O	S	0	0
			1279	810	237	232			

- Molecule 39 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Cf	174	Total	C	N	O	S	0	0
			1398	872	283	242	1		

- Molecule 40 is a protein called 40S ribosomal protein s9-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Cg	159	Total	C	N	O	S	0	0
			1242	801	255	184	2		

- Molecule 41 is a protein called 40S ribosomal protein S13-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Ch	66	Total	C	N	O		0	0
			546	355	101	90			

- Molecule 42 is a protein called 40S ribosomal protein S14-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Ci	115	Total	C	N	O	S	0	0
			808	506	156	141	5		

- Molecule 43 is a protein called 40S ribosomal protein S16-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Cj	126	Total	C	N	O	S	0	0
			943	613	177	151	2		

- Molecule 44 is a protein called 40S ribosomal protein S11-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Ck	140	Total	C	N	O	S	0	0
			1163	750	224	184	5		

- Molecule 45 is a protein called 40S ribosomal protein S22-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Cm	126	Total	C	N	O	S	0	0
			985	632	184	164	5		

- Molecule 46 is a protein called 40S ribosomal protein s23-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	Cn	96	Total	C	N	O	S	0	0
			702	456	134	110	2		

- Molecule 47 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Co	92	Total	C	N	O	S	0	0
			741	474	139	126	2		

- Molecule 48 is a protein called 40S ribosomal protein S28-like protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
48	Cp	61	Total	C	N	O	0	0
			455	284	97	74		

- Molecule 49 is a protein called Faf1.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	CU	176	Total	C	N	O	S	0	0
			1337	822	265	244	6		

- Molecule 50 is a RNA chain called 35S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	C1	1575	Total	C	N	O	P	0	0
			33604	14992	6023	11014	1575		

- Molecule 51 is a RNA chain called U3 snoRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	C2	230	Total	C	N	O	P	0	0
			4891	2182	856	1623	230		

- Molecule 52 is a protein called U3 small nucleolar RNA-associated protein 22.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	UV	1061	Total	C	N	O	S	0	0
			8424	5399	1480	1523	22		

- Molecule 53 is a protein called Rrp7.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	CV	148	Total	C	N	O	S	0	0
			1145	729	198	216	2		

- Molecule 54 is a protein called Ribosome biogenesis protein ENP2.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	CW	382	Total	C	N	O	S	0	0
			2924	1857	530	524	13		

- Molecule 55 is a protein called Utp20.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	UT	2033	Total	C	N	O	S	0	0
			16049	10336	2819	2826	68		

- Molecule 56 is a protein called Utp8.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	UH	359	Total	C	N	O	S	0	0
			2809	1773	496	527	13		

- Molecule 57 is a protein called Utp5.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	UE	125	Total	C	N	O	S	0	0
			972	608	183	175	6		
57	UI	125	Total	C	N	O	S	0	0
			972	608	183	175	6		

- Molecule 58 is a protein called Noc4.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	US	451	Total	C	N	O	S	0	0
			3672	2389	608	660	15		

- Molecule 59 is a protein called Rps18.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	Cl	80	Total	C	N	O	S	0	0
			633	400	115	117	1		

- Molecule 60 is a protein called Enp1.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	CX	267	Total	C	N	O	S	0	0
			2130	1384	374	362	10		

- Molecule 61 is a protein called U3 small nucleolar ribonucleoprotein protein lcp5-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	CY	123	Total	C	N	O	S	0	0
			979	592	195	189	3		

- Molecule 62 is a protein called Bfr2.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	CZ	44	Total	C	N	O	S	0	0
			376	235	76	64	1		

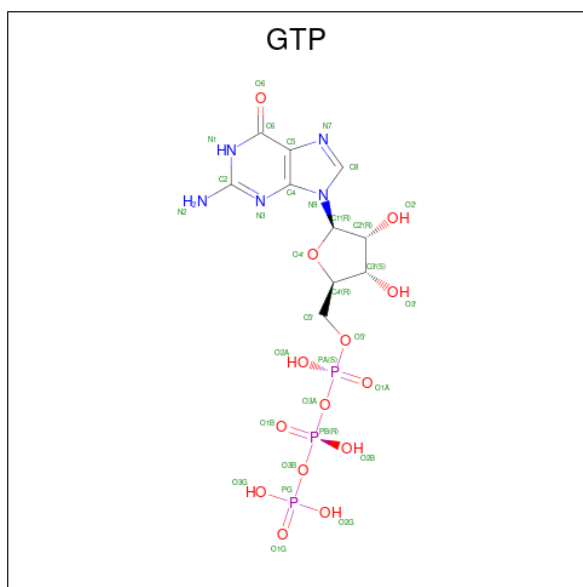
- Molecule 63 is a protein called Utp16.

Mol	Chain	Residues	Atoms				AltConf	Trace
63	UP	54	Total	C	N	O	0	0
			422	264	88	70		

- Molecule 64 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
64	UX	1	Total	Zn	0
			1	1	

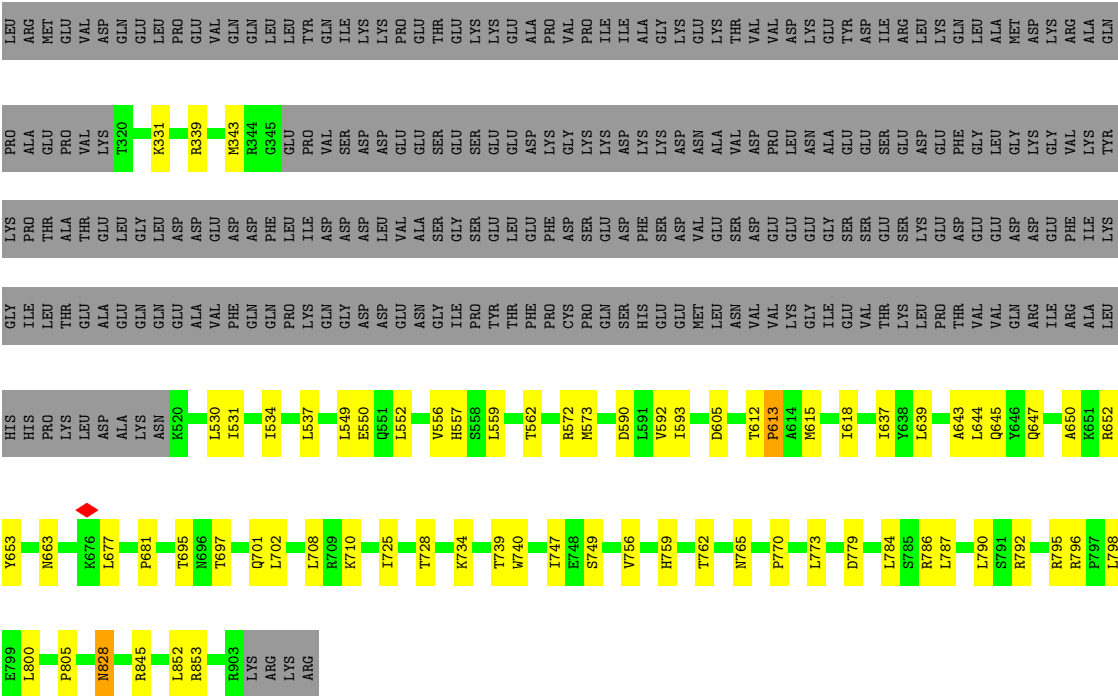
- Molecule 65 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: C₁₀H₁₆N₅O₁₄P₃).



Mol	Chain	Residues	Atoms					AltConf
65	CI	1	Total	C	N	O	P	0
			32	10	5	14	3	

- Molecule 66 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
66	CI	1	Total	Mg	0
			1	1	



• Molecule 3: Utp3



• Molecule 4: Utp4

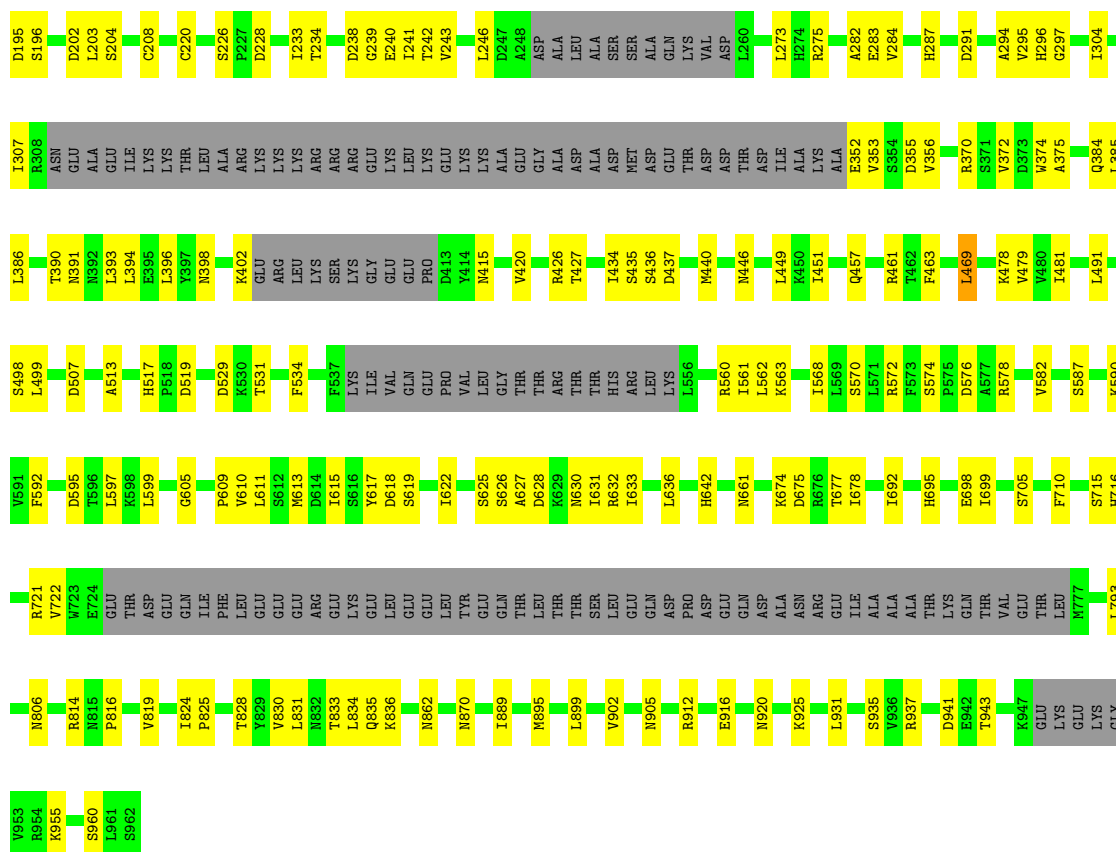
Device Type	Percentage
Smartphone	67%
Tablet	20%
Feature phone	13%



Response	Percentage
Yes, the U.S. is a democracy	67%
No, the U.S. is not a democracy	13%
Don't know	20%

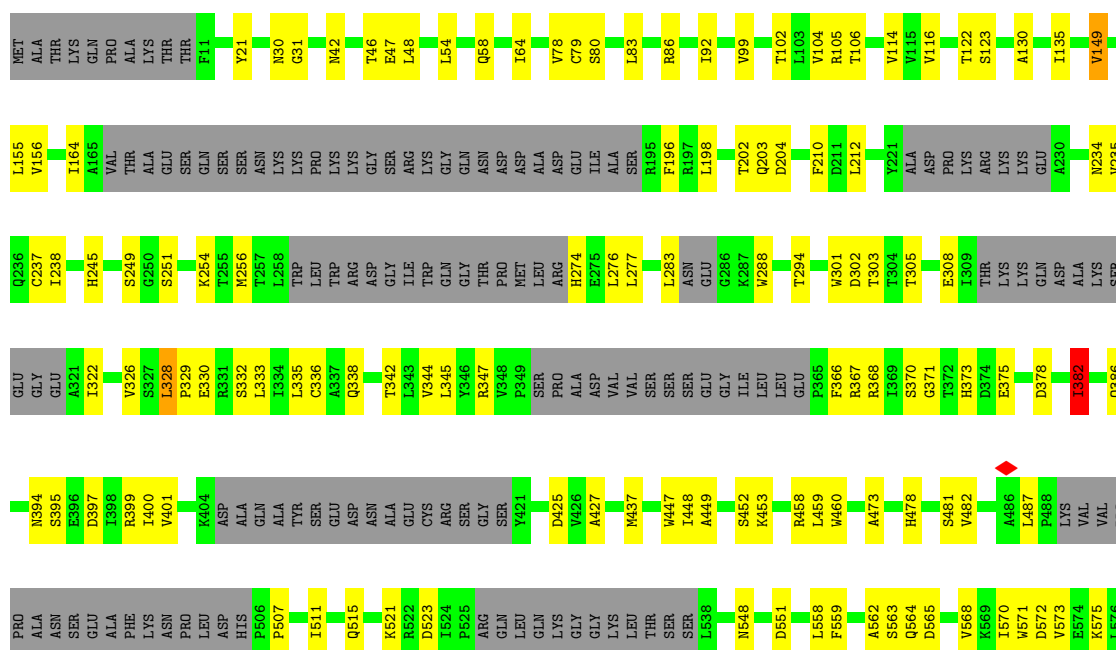


69% 16% 14%



• Molecule 10: Utp13

Chain UM: 57% 22% 20%



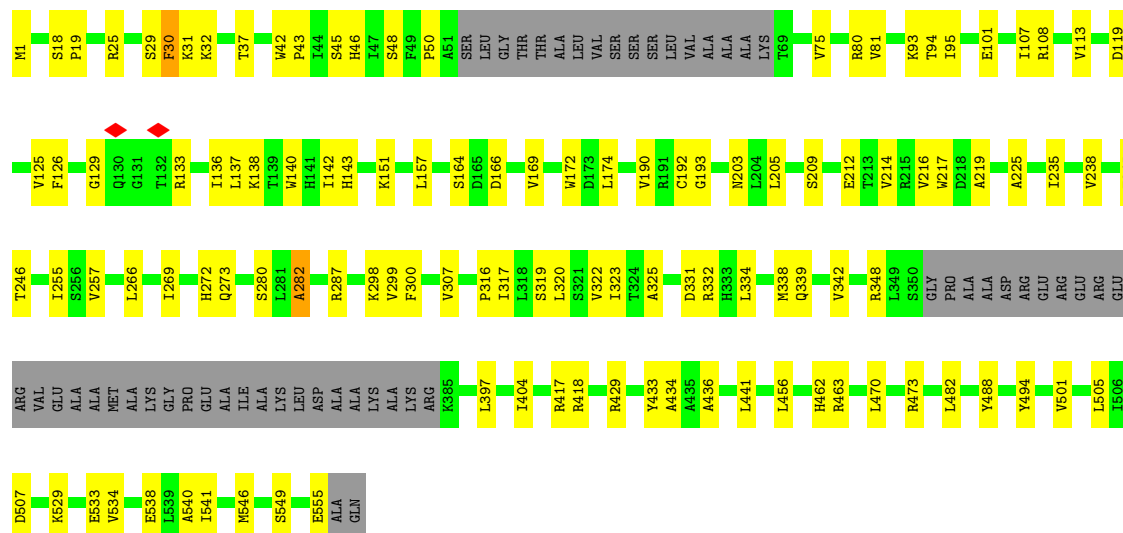
- Molecule 11: Utp14





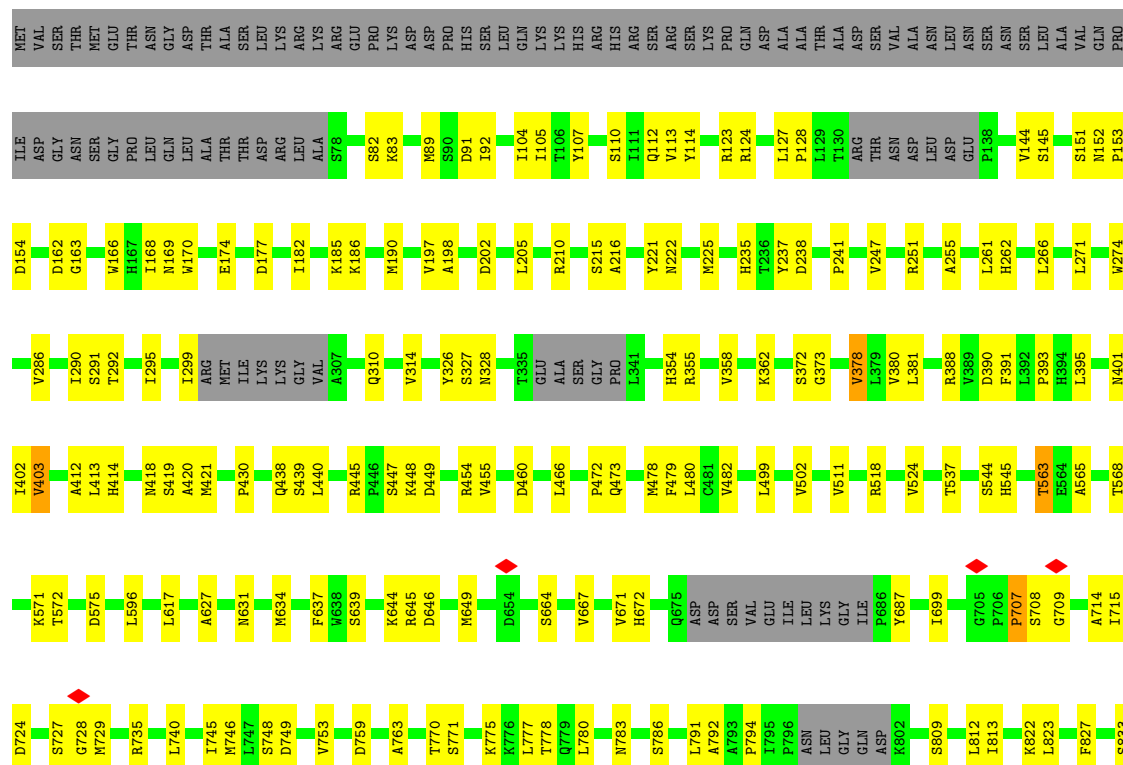
• Molecule 12: Utp15

Chain UO: 70% 20% 10%

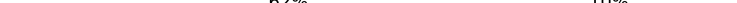


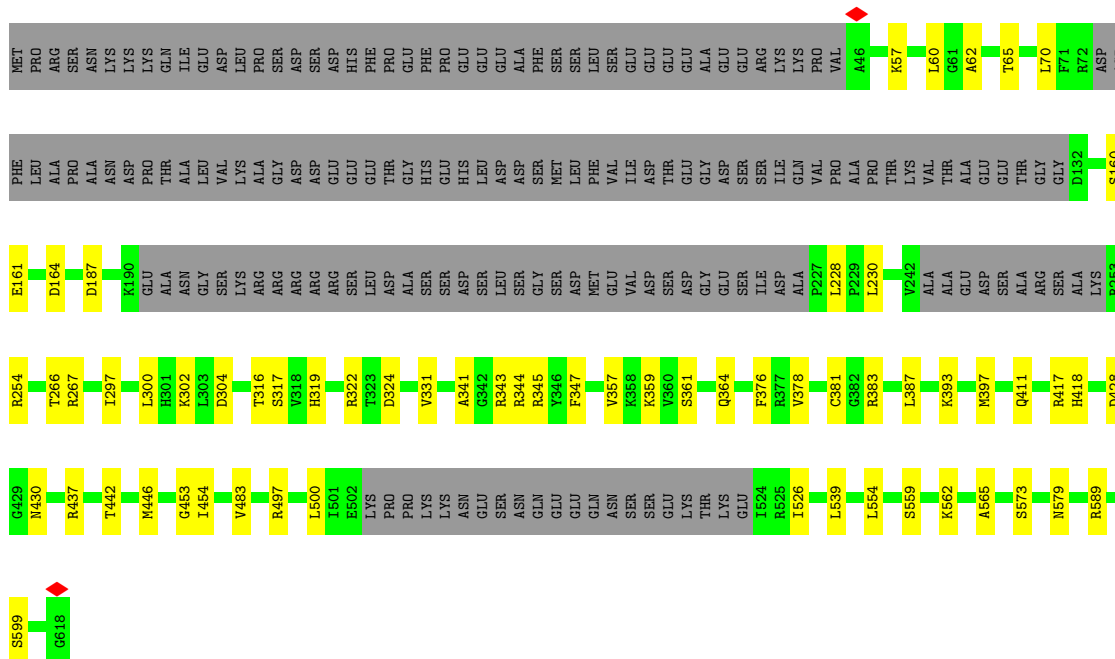
• Molecule 13: Utp17

Chain UQ: 62% 19% 18%

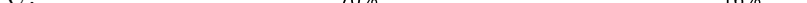


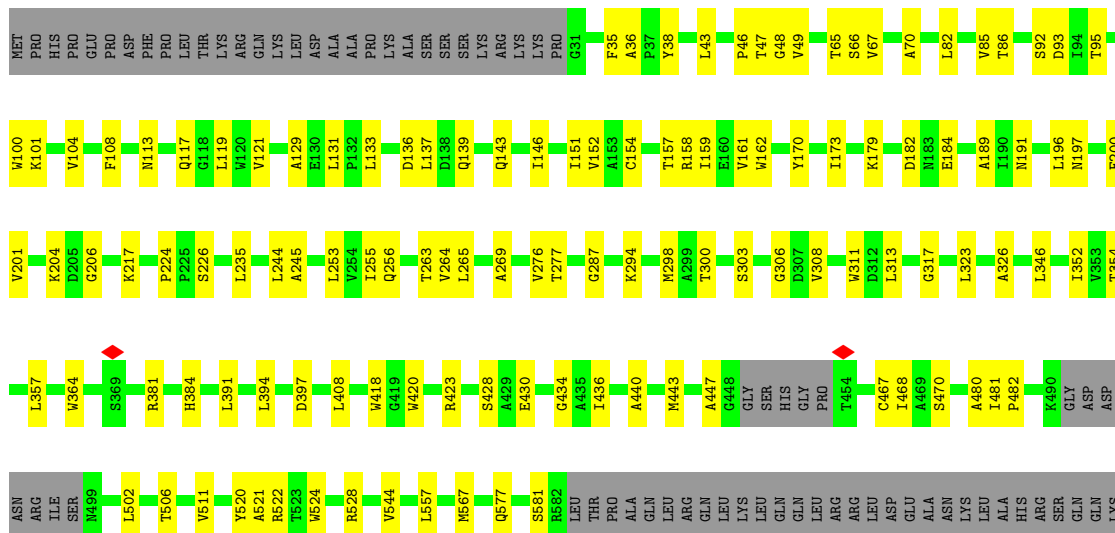
- Molecule 14: Utp18

Chain UR: 

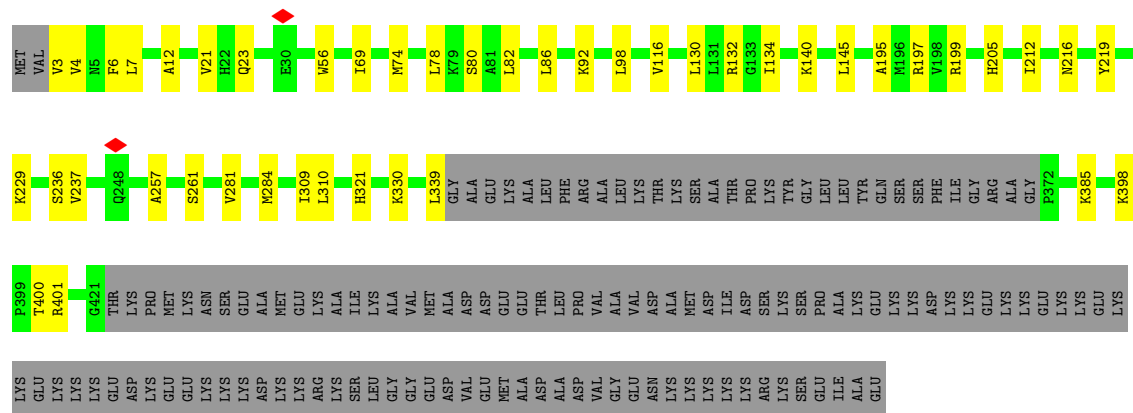


- Molecule 15: Utp21

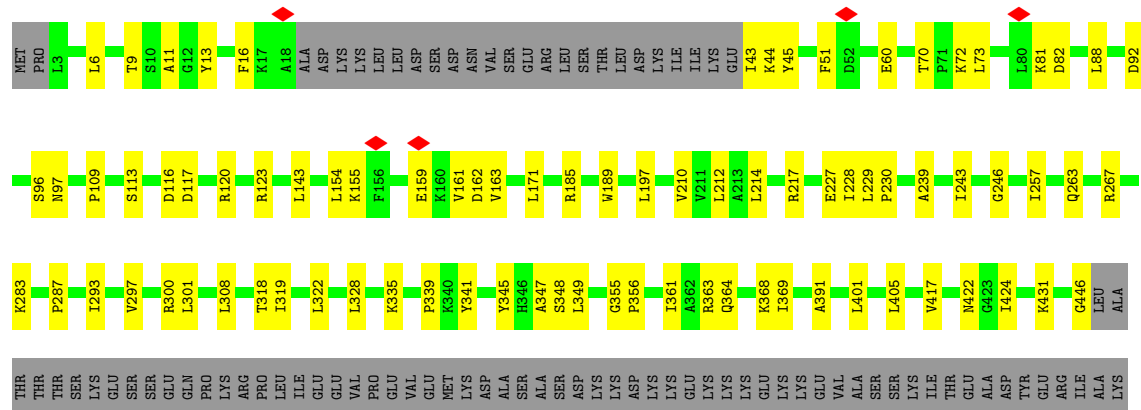
Chain UU: 

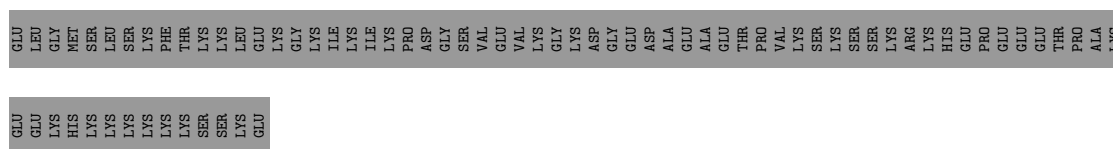


Chain CB:

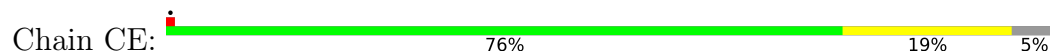


Chain CD:





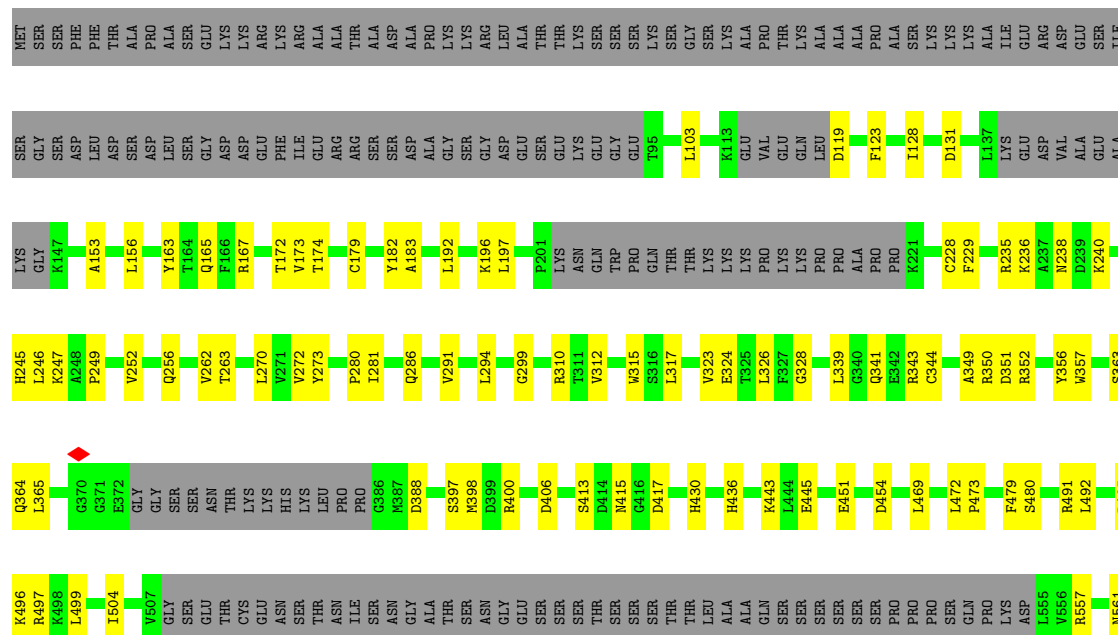
• Molecule 21: Snu13



• Molecule 21: Snu13

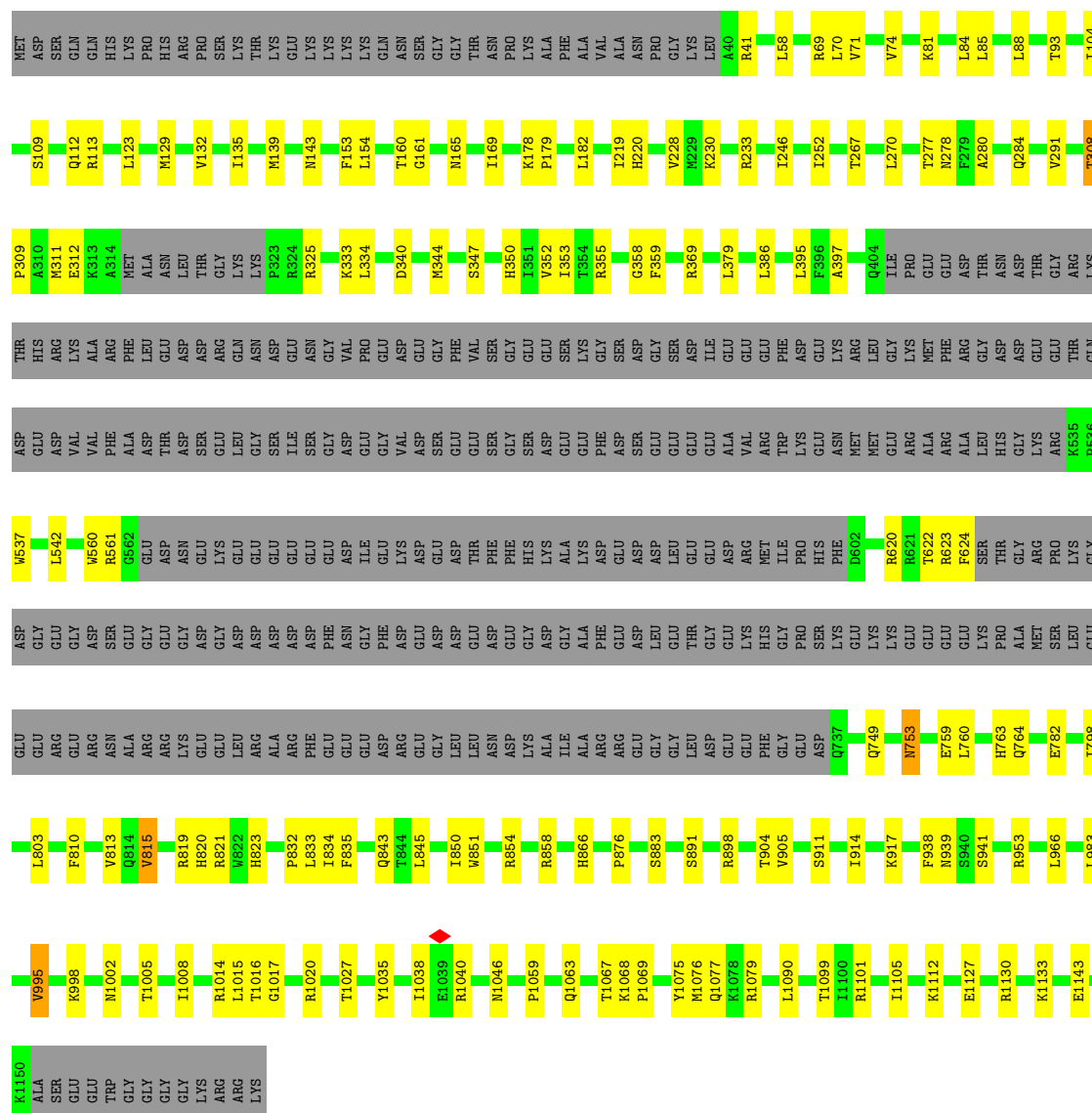


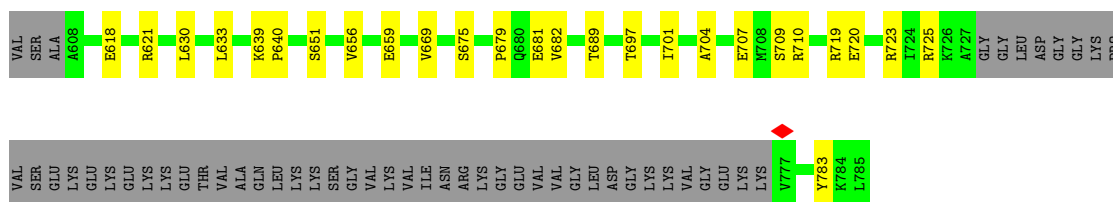
• Molecule 22: Rrp9



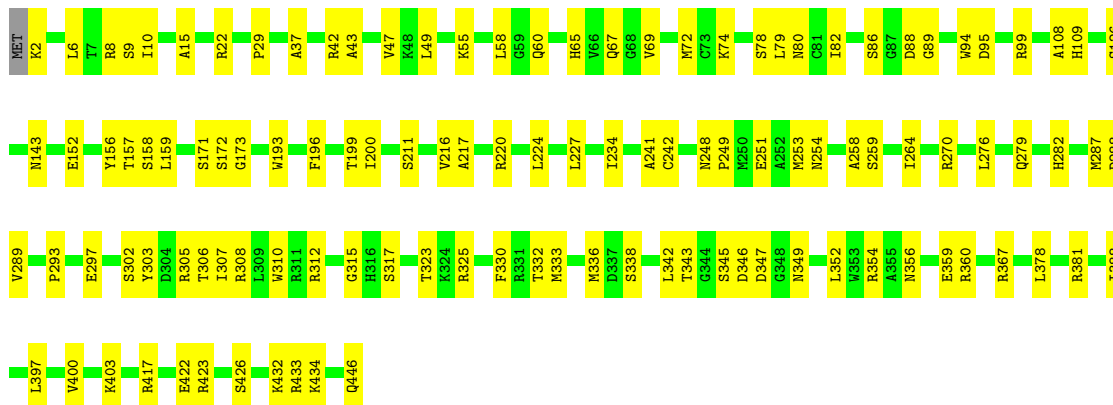
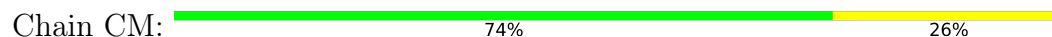
• Molecule 23: RNA 3'-terminal phosphate cyclase-like protein



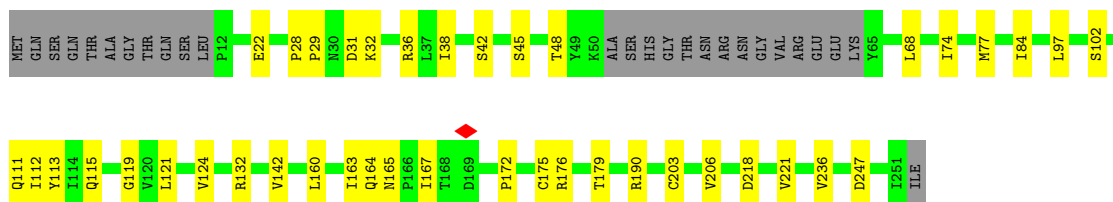
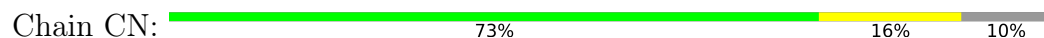




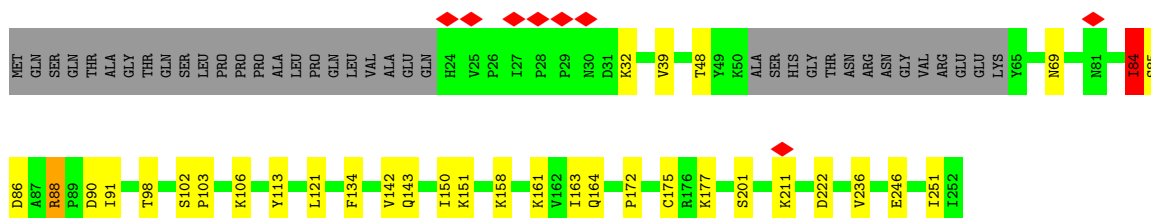
• Molecule 28: Sof1



• Molecule 29: Emg1



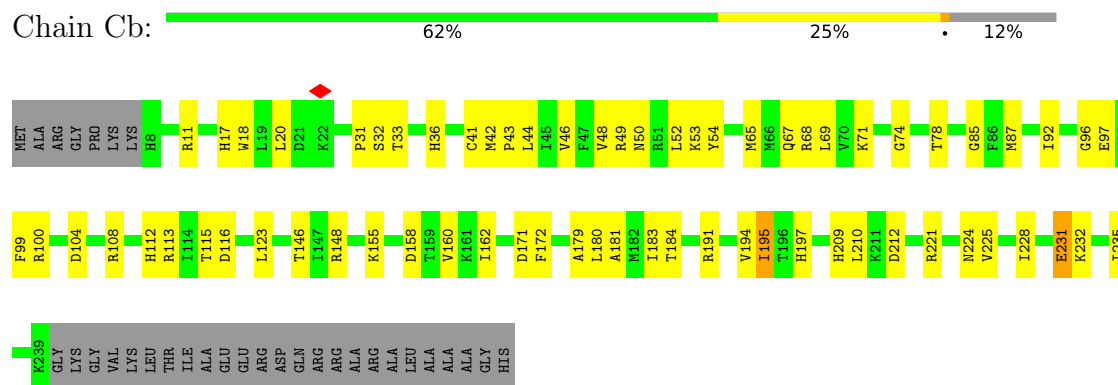
• Molecule 29: Emg1



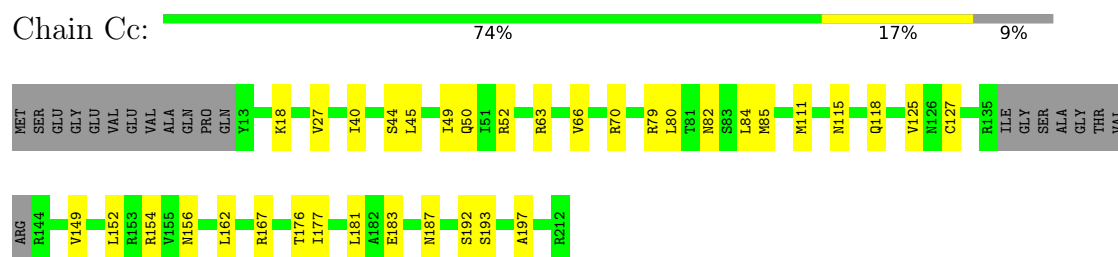
• Molecule 30: KRR1 small subunit processome component



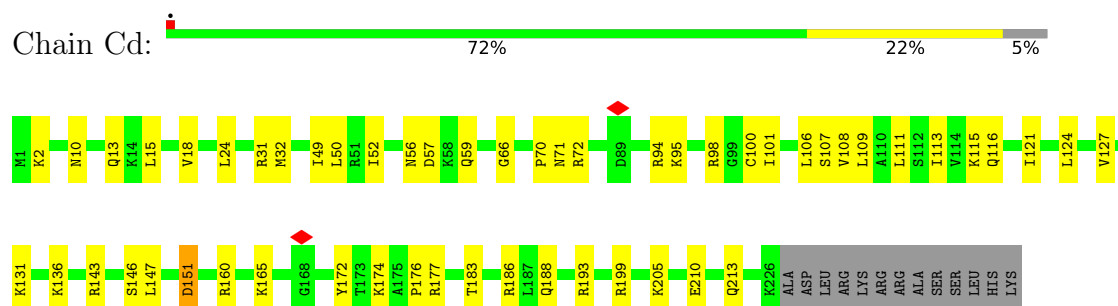
- Molecule 35: 40S ribosomal protein S4



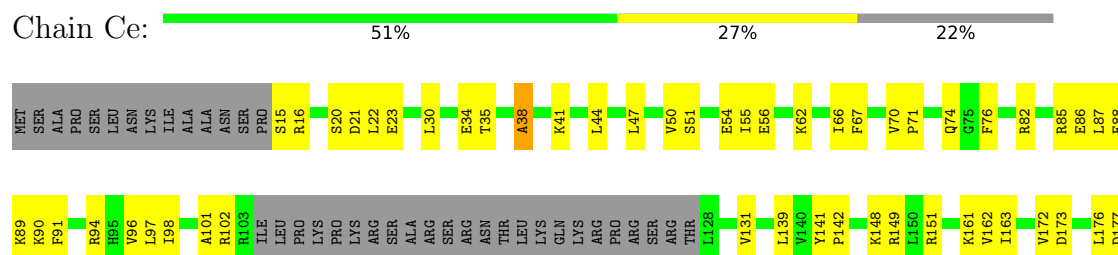
- Molecule 36: 40S ribosomal protein s5-like protein



- Molecule 37: 40S ribosomal protein S6



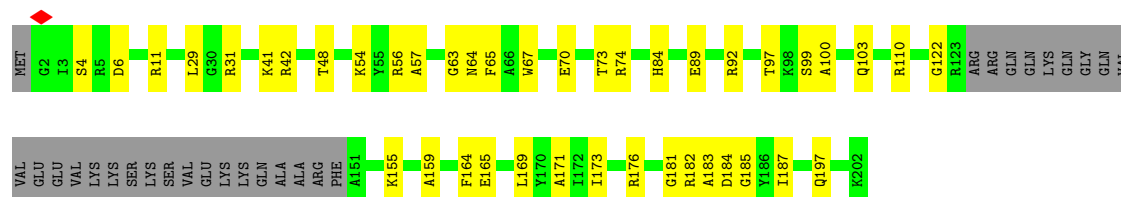
- Molecule 38: 40S ribosomal protein S7





- Molecule 39: 40S ribosomal protein S8

Chain Cf: 65% 21% 14%



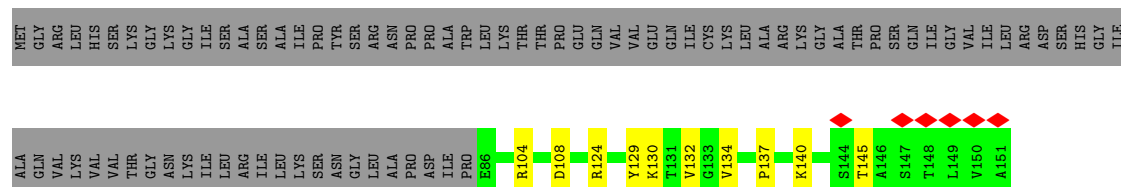
- Molecule 40: 40S ribosomal protein s9-like protein

Chain Cg: 69% 15% 16%



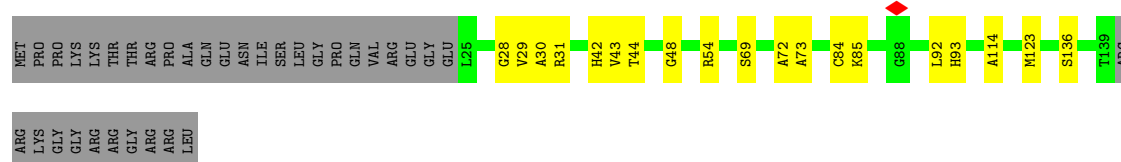
- Molecule 41: 40S ribosomal protein S13-like protein

Chain Ch: 37% 7% 56%



- Molecule 42: 40S ribosomal protein S14-like protein

Chain Ci: 64% 13% 23%

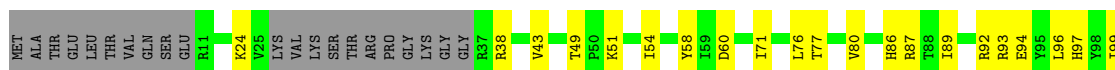


- Molecule 43: 40S ribosomal protein S16-like protein

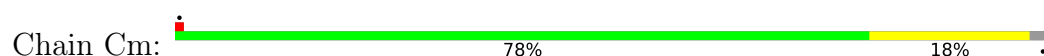
Chain Cj: 78% 10% 12%



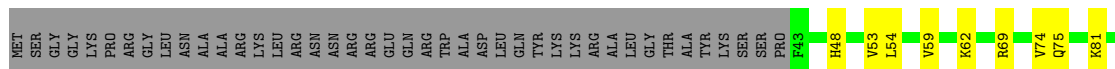
- Molecule 44: 40S ribosomal protein S11-like protein



- Molecule 45: 40S ribosomal protein S22-like protein



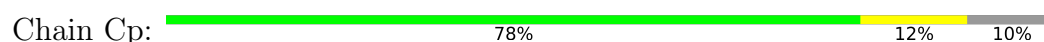
- Molecule 46: 40S ribosomal protein s23-like protein



- Molecule 47: 40S ribosomal protein S24

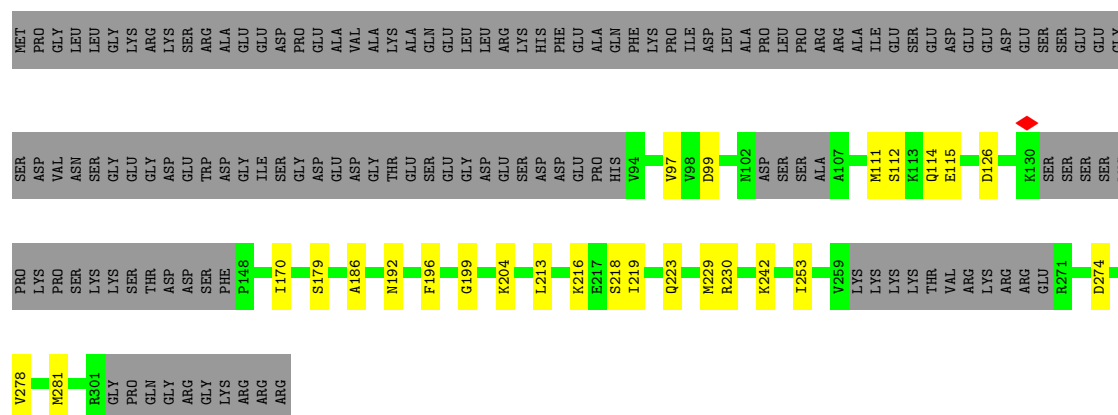


- Molecule 48: 40S ribosomal protein S28-like protein

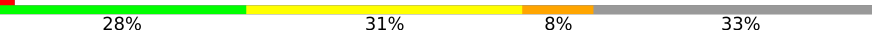


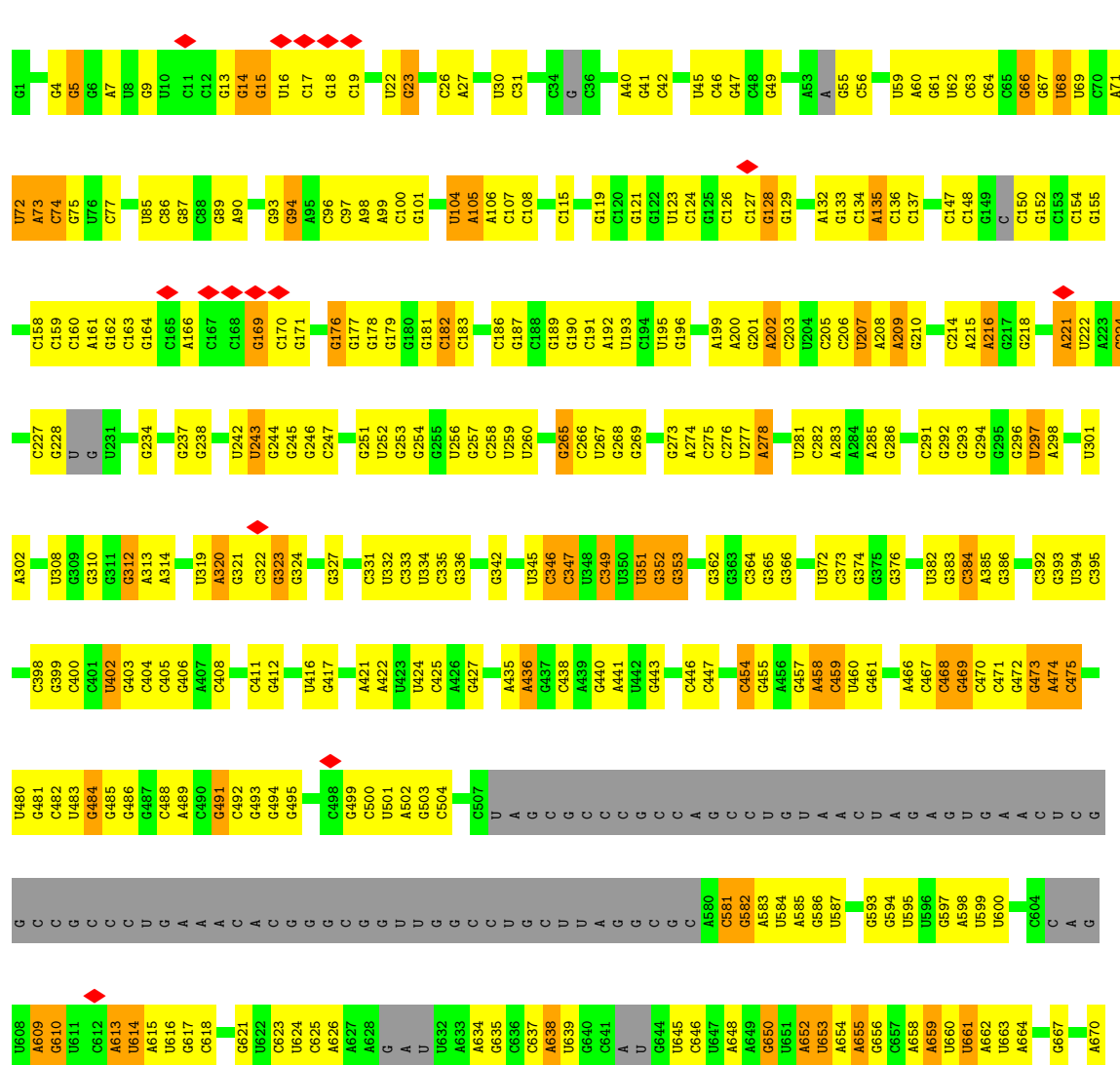
- Molecule 49: Faf1

Chain CU: 

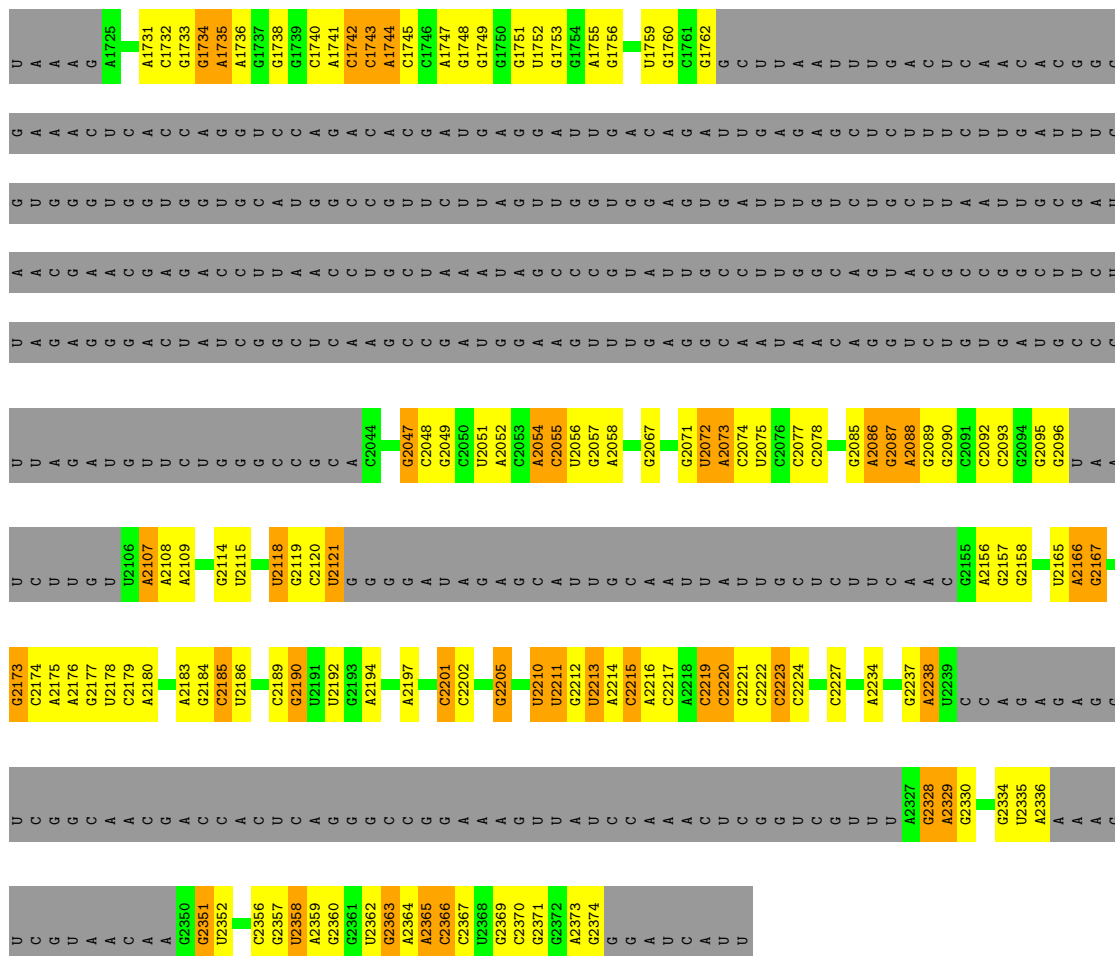


• Molecule 50: 35S ribosomal RNA

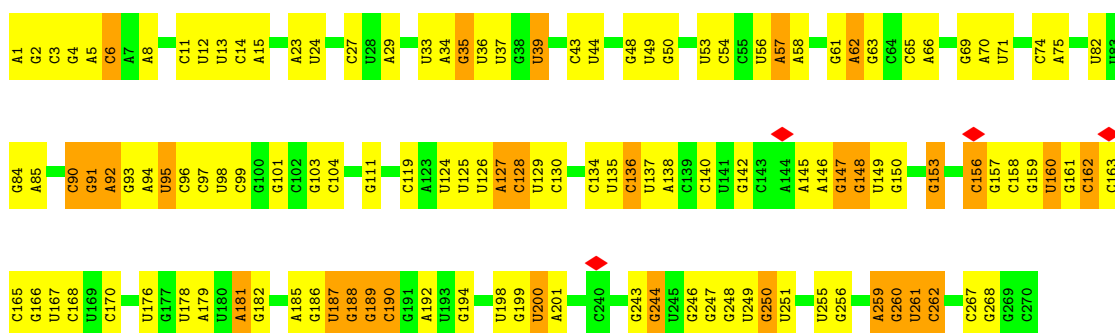
Chain C1: 



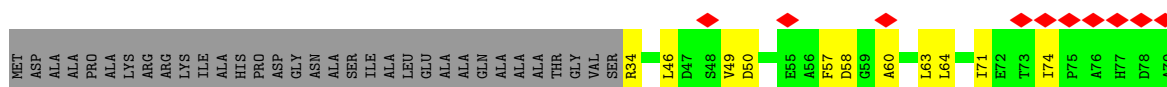




• Molecule 51: U3 snoRNA



• Molecule 52: U3 small nucleolar RNA-associated protein 22



K1003	S1004	A1005	L1006	R1007	T1008	Y1009	I1010	T1011	V1012	D1013	P1014	A1015	T1016	E1017	M1018	N1019	G1020	G1021	K1022	G1023	E1025	I1026	K1027	F1028	K1029	M1030	L1031	A1032	P1033	E1034	L1040	P1041	V1042	A1043	Q1044	H1045	P1046	V1047	D1048	V1049	L1050	L1051	K1052	Q1053	L1054	S1055	A1056	V1057	Y1058	D1059	S1060	A1061	A1062	A1064	T1067																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
A935	H936	E937	G940	T944	S945	V946	H949	P950	R951	P952	S953	K954	V955	A956	A957	A958	R959	M960	L963	S966	V970	I971	R972	Q973	Q974	G975	V976	D977	L978	D979	V980	R981	R982	L983	F984	V985	P986	S987	L988	K989	E990	Y991	D992	V993	L994	L995	A1005	V1007	Y1008	D1009	S1010	A1011	A1012	A1013	A1014	A1015	A1016	A1017	A1018	A1019	A1020	A1021	A1022	A1023	A1024	A1025	A1026	A1027	A1028	A1029	A1030	A1031	A1032	A1033	A1034	A1035	A1036	A1037	A1038	A1039	A1040	A1041	A1042	A1043	A1044	A1045	A1046	A1047	A1048	A1049	A1050	A1051	A1052	A1053	A1054	A1055	A1056	A1057	A1058	A1059	A1060	A1061	A1062	A1063	A1064	A1065	A1066	A1067	A1068	A1069	A1070	A1071	A1072	A1073	A1074	A1075	A1076	A1077	A1078	A1079	A1080	A1081	A1082	A1083	A1084	A1085	A1086	A1087	A1088	A1089	A1090	A1091	A1092	A1093	A1094	A1095	A1096	A1097	A1098	A1099	A1100	A1101	A1102	A1103	A1104	A1105	A1106	A1107	A1108	A1109	A1110	A1111	A1112	A1113	A1114	A1115	A1116	A1117	A1118	A1119	A1120	A1121	A1122	A1123	A1124	A1125	A1126	A1127	A1128	A1129	A1130	A1131	A1132	A1133	A1134	A1135	A1136	A1137	A1138	A1139	A1140	A1141	A1142	A1143	A1144	A1145	A1146	A1147	A1148	A1149	A1150	A1151	A1152	A1153	A1154	A1155	A1156	A1157	A1158	A1159	A1160	A1161	A1162	A1163	A1164	A1165	A1166	A1167	A1168	A1169	A1170	A1171	A1172	A1173	A1174	A1175	A1176	A1177	A1178	A1179	A1180	A1181	A1182	A1183	A1184	A1185	A1186	A1187	A1188	A1189	A1190	A1191	A1192	A1193	A1194	A1195	A1196	A1197	A1198	A1199	A1200	A1201	A1202	A1203	A1204	A1205	A1206	A1207	A1208	A1209	A1210	A1211	A1212	A1213	A1214	A1215	A1216	A1217	A1218	A1219	A1220	A1221	A1222	A1223	A1224	A1225	A1226	A1227	A1228	A1229	A1230	A1231	A1232	A1233	A1234	A1235	A1236	A1237	A1238	A1239	A1240	A1241	A1242	A1243	A1244	A1245	A1246	A1247	A1248	A1249	A1250	A1251	A1252	A1253	A1254	A1255	A1256	A1257	A1258	A1259	A1260	A1261	A1262	A1263	A1264	A1265	A1266	A1267	A1268	A1269	A1270	A1271	A1272	A1273	A1274	A1275	A1276	A1277	A1278	A1279	A1280	A1281	A1282	A1283	A1284	A1285	A1286	A1287	A1288	A1289	A1290	A1291	A1292	A1293	A1294	A1295	A1296	A1297	A1298	A1299	A1300	A1301	A1302	A1303	A1304	A1305	A1306	A1307	A1308	A1309	A1310	A1311	A1312	A1313	A1314	A1315	A1316	A1317	A1318	A1319	A1320	A1321	A1322	A1323	A1324	A1325	A1326	A1327	A1328	A1329	A1330	A1331	A1332	A1333	A1334	A1335	A1336	A1337	A1338	A1339	A1340	A1341	A1342	A1343	A1344	A1345	A1346	A1347	A1348	A1349	A1350	A1351	A1352	A1353	A1354	A1355	A1356	A1357	A1358	A1359	A1360	A1361	A1362	A1363	A1364	A1365	A1366	A1367	A1368	A1369	A1370	A1371	A1372	A1373	A1374	A1375	A1376	A1377	A1378	A1379	A1380	A1381	A1382	A1383	A1384	A1385	A1386	A1387	A1388	A1389	A1390	A1391	A1392	A1393	A1394	A1395	A1396	A1397	A1398	A1399	A1400	A1401	A1402	A1403	A1404	A1405	A1406	A1407	A1408	A1409	A1410	A1411	A1412	A1413	A1414	A1415	A1416	A1417	A1418	A1419	A1420	A1421	A1422	A1423	A1424	A1425	A1426	A1427	A1428	A1429	A1430	A1431	A1432	A1433	A1434	A1435	A1436	A1437	A1438	A1439	A1440	A1441	A1442	A1443	A1444	A1445	A1446	A1447	A1448	A1449	A1450	A1451	A1452	A1453	A1454	A1455	A1456	A1457	A1458	A1459	A1460	A1461	A1462	A1463	A1464	A1465	A1466	A1467	A1468	A1469	A1470	A1471	A1472	A1473	A1474	A1475	A1476	A1477	A1478	A1479	A1480	A1481	A1482	A1483	A1484	A1485	A1486	A1487	A1488	A1489	A1490	A1491	A1492	A1493	A1494	A1495	A1496	A1497	A1498	A1499	A1500	A1501	A1502	A1503	A1504	A1505	A1506	A1507	A1508	A1509	A1510	A1511	A1512	A1513	A1514	A1515	A1516	A1517	A1518	A1519	A1520	A1521	A1522	A1523	A1524	A1525	A1526	A1527	A1528	A1529	A1530	A1531	A1532	A1533	A1534	A1535	A1536	A1537	A1538	A1539	A1540	A1541	A1542	A1543	A1544	A1545	A1546	A1547	A1548	A1549	A1550	A1551	A1552	A1553	A1554	A1555	A1556	A1557	A1558	A1559	A1560	A1561	A1562	A1563	A1564	A1565	A1566	A1567	A1568	A1569	A1570	A1571	A1572	A1573	A1574	A1575	A1576	A1577	A1578	A1579	A1580	A1581	A1582	A1583	A1584	A1585	A1586	A1587	A1588	A1589	A1590	A1591	A1592	A1593	A1594	A1595	A1596	A1597	A1598	A1599	A1600	A1601	A1602	A1603	A1604	A1605	A1606	A1607	A1608	A1609	A1610	A1611	A1612	A1613	A1614	A1615	A1616	A1617	A1618	A1619	A1620	A1621	A1622	A1623	A1624	A1625	A1626	A1627	A1628	A1629	A1630	A1631	A1632	A1633	A1634	A1635	A1636	A1637	A1638	A1639	A1640	A1641	A1642	A1643	A1644	A1645	A1646	A1647	A1648	A1649	A1650	A1651	A1652	A1653	A1654	A1655	A1656	A1657	A1658	A1659	A1660	A1661	A1662	A1663	A1664	A1665	A1666	A1667	A1668	A1669	A1670	A1671	A1672	A1673	A1674	A1675	A1676	A1677	A1678	A1679	A1680	A1681	A1682	A1683	A1684	A1685	A1686	A1687	A1688	A1689	A1690	A1691	A1692	A1693	A1694	A1695	A1696	A1697	A1698	A1699	A1700	A1701	A1702	A1703	A1704	A1705	A1706	A1707	A1708	A1709	A1710	A1711	A1712	A1713	A1714	A1715	A1716	A1717	A1718	A1719	A1720	A1721	A1722	A1723	A1724	A1725	A1726	A1727	A1728	A1729	A1730	A1731	A1732	A1733	A1734	A1735	A1736	A1737	A1738	A1739	A1740	A1741	A1742	A1743	A1744	A1745	A1746	A1747	A1748	A1749	A1750	A1751	A1752	A1753	A1754	A1755	A1756	A1757	A1758	A1759	A1760	A1761	A1762	A1763	A1764	A1765	A1766	A1767	A1768	A1769	A1770	A1771	A1772	A1773	A1774	A1775	A1776	A1777	A1778	A1779	A1780	A1781	A1782	A1783	A1784	A1785	A1786	A1787	A1788	A1789	A1790	A1791	A1792	A1793	A1794	A1795	A1796	A1797	A1798	A1799	A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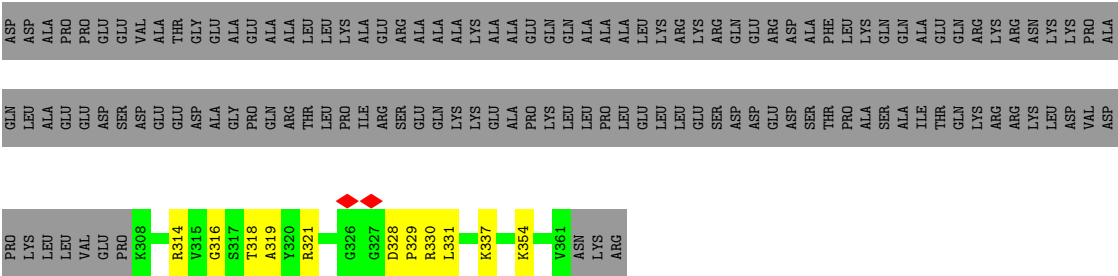
- Molecule 55: Utp20

L1375	Q1274	SER	E841	Q692	L865	R1013	R1275	E842	K590	Q495	L388	G134
R1381	S1275	GLY	R842	T693	L865	R1013	S1275	R842	K590	Q495	L388	G134
E1382	D1276	GLY	R844	E694	L865	R1013	D1276	E694	L595	V499	L371	R136
VAL	V1286	GLN	L865	R704	L865	R1013	V1286	R704	D596	E506	Q377	E138
W1368	D1287	ILE	L865	R704	L865	R1013	D1287	R704	R609	D507	I378	K139
E1387	T1288	ILE	F870	H709	L865	R1013	T1288	H709	R612	F508	E379	H140
V1388	F1292	N1126	D874	R711	L865	R1013	F1292	R711	R612	PHE	M263	Y141
S1389	M1295	L1129	ASP	R711	L865	R1013	M1295	R711	R612	PRO	K264	
D1390	M1302	R1134	SER	R711	L865	R1013	M1302	R711	R612	PRO	R385	R14
R1393	T1310	T1135	GLU	R711	L865	R1013	T1310	R711	R612	GLU	R385	G15
S1397	W1311	M1032	THR	R711	L865	R1013	W1311	R711	R612	SER	R385	
E1400	L1312	M1032	THR	R711	L865	R1013	L1312	R711	R612	GLY	R385	
GLN	L1313	M1032	THR	R711	L865	R1013	L1313	R711	R612	GLY	R385	
ARG	N1314	M1032	THR	R711	L865	R1013	N1314	R711	R612	GLY	R385	
LEU	Q1315	M1032	THR	R711	L865	R1013	Q1315	R711	R612	GLY	R385	
ASP	P1316	M1032	THR	R711	L865	R1013	P1316	R711	R612	GLY	R385	
GLY	L1317	M1032	THR	R711	L865	R1013	L1317	R711	R612	GLY	R385	
PRO	N1321	M1032	THR	R711	L865	R1013	N1321	R711	R612	GLY	R385	
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	V1324	M1032	THR	R711	L865	R1013	V1324	R711	R612	GLY	R385	
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F1415	L1332	M1032	THR	R711	L865	R1013	L1332	R711	R612	GLY	R385	
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ASP	F1335	M1032	THR	R711	L865	R1013	F1335	R711	R612	GLY	R385	
ARG	L1338	M1032	THR	R711	L865	R1013	L1338	R711	R612	GLY	R385	
ASP	D1339	M1032	THR	R711	L865	R1013	D1339	R711	R612	GLY	R385	
LYS	D1340	M1032	THR	R711	L865	R1013	D1340	R711	R612	GLY	R385	
PRO	L1341	M1032	THR	R711	L865	R1013	L1341	R711	R612	GLY	R385	
PHE	Q1348	M1032	THR	R711	L865	R1013	Q1348	R711	R612	GLY	R385	
T1427	R1349	M1032	THR	R711	L865	R1013	R1349	R711	R612	GLY	R385	
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D1429	L1428	M1032	THR	R711	L865	R1013	L1428	R711	R612	GLY	R385	
Q1430	Y1352	M1032	THR	R711	L865	R1013	Y1352	R711	R612	GLY	R385	
P1433	A1357	M1032	THR	R711	L865	R1013	A1357	R711	R612	GLY	R385	
L1434	L1358	M1032	THR	R711	L865	R1013	L1358	R711	R612	GLY	R385	
W1435	F1359	M1032	THR	R711	L865	R1013	F1359	R711	R612	GLY	R385	
H1436	F1360	M1032	THR	R711	L865	R						









4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	48335	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 ($e^-/\text{\AA}^2$)	28	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	0.418	Depositor
Minimum map value	-0.315	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.014	Depositor
Recommended contour level	0.03	Depositor
Map size (Å)	520.32, 520.32, 520.32	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.084, 1.084, 1.084	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, GTP, MG

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	UA	0.49	0/6521	0.67	3/8867 (0.0%)
2	UB	0.31	0/4154	0.54	0/5583
3	UC	0.40	0/595	0.56	0/786
4	UD	0.39	0/6211	0.59	2/8408 (0.0%)
5	UF	0.36	0/2657	0.57	0/3596
6	UG	0.48	0/3790	0.65	2/5120 (0.0%)
7	UJ	0.32	0/8567	0.61	0/11619
8	UK	0.38	0/1701	0.51	0/2251
9	UL	0.37	0/6299	0.64	0/8531
10	UM	0.33	0/5755	0.62	4/7827 (0.1%)
11	UN	0.39	0/1425	0.56	0/1913
12	UO	0.41	0/3903	0.63	0/5312
13	UQ	0.40	0/6136	0.64	0/8348
14	UR	0.47	0/3564	0.62	0/4816
15	UU	0.47	1/6903 (0.0%)	0.63	0/9392
16	UX	0.43	0/1493	0.59	1/2011 (0.0%)
17	UZ	0.32	0/1857	0.70	6/2526 (0.2%)
18	CA	0.45	0/1814	0.63	0/2456
18	CB	0.32	0/1853	0.56	0/2511
19	CC	0.36	0/2911	0.54	0/3937
20	CD	0.34	0/3205	0.59	0/4338
21	CE	0.42	0/891	0.66	2/1214 (0.2%)
21	CF	0.39	0/876	0.63	0/1195
22	CG	0.36	0/3307	0.61	0/4462
23	CH	0.40	0/2939	0.57	0/3988
24	CI	0.42	0/6631	0.62	4/8943 (0.0%)
25	CJ	0.50	0/1462	0.63	0/1967
26	CK	0.45	0/2376	0.61	2/3214 (0.1%)
27	CL	0.38	0/1812	0.56	0/2437
28	CM	0.49	0/3573	0.63	0/4829
29	CN	0.36	0/1797	0.59	0/2443
29	CO	0.32	0/1714	0.66	2/2325 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
30	CP	0.37	0/1923	0.56	0/2577
31	CQ	0.32	0/1379	0.57	0/1850
32	CR	0.36	0/6108	0.80	9/8266 (0.1%)
32	CS	0.36	0/6108	0.80	9/8266 (0.1%)
33	CT	0.36	0/1053	0.57	0/1413
34	Ca	0.37	0/1850	0.61	0/2486
35	Cb	0.33	0/1890	0.60	0/2548
36	Cc	0.40	0/1485	0.56	0/2008
37	Cd	0.32	0/1850	0.56	0/2474
38	Ce	0.35	0/1298	0.71	2/1750 (0.1%)
39	Cf	0.34	0/1429	0.57	0/1915
40	Cg	0.41	0/1259	0.53	0/1687
41	Ch	0.27	0/557	0.46	0/749
42	Ci	0.38	0/819	0.60	0/1107
43	Cj	0.44	0/958	0.59	0/1293
44	Ck	0.28	0/1190	0.56	0/1592
45	Cm	0.37	0/1001	0.55	0/1345
46	Cn	0.46	0/712	0.57	0/954
47	Co	0.32	0/754	0.64	0/1011
48	Cp	0.40	0/458	0.64	0/617
49	CU	0.34	0/1350	0.61	0/1810
50	C1	0.35	0/37546	0.47	4/58475 (0.0%)
51	C2	0.36	0/5459	0.54	5/8498 (0.1%)
52	UV	0.30	2/8638 (0.0%)	0.66	3/11725 (0.0%)
53	CV	0.37	1/1172 (0.1%)	0.73	4/1592 (0.3%)
54	CW	0.35	0/2996	0.67	2/4075 (0.0%)
55	UT	0.31	2/16367 (0.0%)	0.61	2/22149 (0.0%)
56	UH	0.33	0/2852	0.60	2/3846 (0.1%)
57	UE	0.38	0/980	0.86	5/1316 (0.4%)
57	UI	0.38	0/980	0.86	5/1316 (0.4%)
58	US	0.33	0/3765	0.59	0/5100
59	Cl	0.28	0/638	0.65	0/857
60	CX	0.27	0/2180	0.63	0/2956
61	CY	0.40	0/986	0.69	0/1303
62	CZ	0.29	0/384	0.68	0/511
63	UP	0.32	0/428	0.53	0/570
All	All	0.37	6/229494 (0.0%)	0.60	80/319172 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	UA	0	1
5	UF	0	1
6	UG	0	1
10	UM	0	2
12	UO	0	2
13	UQ	0	3
15	UU	0	3
18	CB	0	1
21	CF	0	1
24	CI	0	1
29	CO	0	2
31	CQ	0	1
32	CR	0	3
32	CS	0	3
35	Cb	0	1
37	Cd	0	1
38	Ce	0	1
52	UV	0	4
53	CV	0	1
54	CW	0	1
55	UT	0	9
58	US	0	1
61	CY	0	1
All	All	0	45

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
52	UV	1058	TYR	N-CA	6.82	1.54	1.46
15	UU	191	ASN	C-N	-5.86	1.24	1.33
52	UV	372	LYS	C-N	5.65	1.38	1.33
55	UT	1732	LEU	C-N	5.61	1.39	1.34
53	CV	91	HIS	N-CA	5.22	1.52	1.46
55	UT	180	VAL	C-N	5.15	1.40	1.34

All (80) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
51	C2	2	G	OP1-P-OP2	-13.25	79.84	119.60
52	UV	1058	TYR	CA-CB-CG	11.26	134.17	113.90
51	C2	1	A	OP2-P-O3'	-11.19	74.43	108.00
51	C2	2	G	O5'-P-OP1	-11.11	74.66	108.00
29	CO	164	GLN	CA-C-N	10.37	134.81	120.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	CO	164	GLN	C-N-CA	10.37	134.81	120.39
17	UZ	216	PRO	CA-C-N	9.73	126.37	120.24
17	UZ	216	PRO	C-N-CA	9.73	126.37	120.24
50	C1	55	G	OP1-P-O3'	-9.61	79.16	108.00
50	C1	45	U	OP1-P-O3'	-9.40	79.81	108.00
51	C2	1	A	OP1-P-O3'	9.07	135.22	108.00
54	CW	24	PRO	CA-N-CD	-8.49	100.11	112.00
52	UV	1058	TYR	CB-CA-C	-8.37	97.06	110.86
24	CI	995	VAL	CA-C-N	8.28	141.68	122.31
24	CI	995	VAL	C-N-CA	8.28	141.68	122.31
51	C2	2	G	O5'-P-OP2	8.26	132.78	108.00
52	UV	1058	TYR	N-CA-C	8.02	121.58	111.24
32	CR	806	GLU	CA-CB-CG	7.55	129.21	114.10
32	CS	806	GLU	CA-CB-CG	7.55	129.20	114.10
50	C1	45	U	OP2-P-O3'	-7.50	85.51	108.00
32	CS	517	GLU	CA-CB-CG	7.06	128.22	114.10
32	CR	517	GLU	CA-CB-CG	7.06	128.22	114.10
38	Ce	38	ALA	CA-C-N	6.74	133.82	121.70
38	Ce	38	ALA	C-N-CA	6.74	133.82	121.70
53	CV	91	HIS	N-CA-C	6.52	124.69	110.80
57	UE	204	MET	CB-CG-SD	6.39	131.88	112.70
53	CV	92	SER	CB-CA-C	-6.39	99.03	110.03
57	UI	204	MET	CB-CG-SD	6.39	131.88	112.70
32	CS	257	ARG	CG-CD-NE	6.18	125.60	112.00
32	CR	257	ARG	CG-CD-NE	6.17	125.58	112.00
53	CV	92	SER	N-CA-C	6.17	117.87	108.07
21	CE	67	HIS	CA-C-N	5.93	123.98	120.24
21	CE	67	HIS	C-N-CA	5.93	123.98	120.24
50	C1	55	G	OP2-P-O3'	-5.91	90.28	108.00
57	UE	244	ARG	CG-CD-NE	5.83	124.82	112.00
57	UI	244	ARG	CG-CD-NE	5.80	124.76	112.00
4	UD	838	ILE	CA-C-N	-5.62	117.97	122.85
4	UD	838	ILE	C-N-CA	-5.62	117.97	122.85
16	UX	53	VAL	N-CA-C	-5.58	104.62	109.19
32	CR	471	GLU	CA-CB-CG	5.54	125.18	114.10
32	CS	471	GLU	CA-CB-CG	5.53	125.17	114.10
26	CK	110	MET	CA-C-N	-5.53	113.92	121.61
26	CK	110	MET	C-N-CA	-5.53	113.92	121.61
1	UA	704	VAL	N-CA-C	-5.51	107.61	112.90
32	CS	51	ARG	CG-CD-NE	5.49	124.08	112.00
32	CR	51	ARG	CG-CD-NE	5.48	124.05	112.00
17	UZ	18	VAL	CA-C-N	-5.45	111.90	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	UZ	18	VAL	C-N-CA	-5.45	111.90	122.70
57	UE	206	ARG	CA-C-N	-5.45	115.83	122.64
57	UE	206	ARG	C-N-CA	-5.45	115.83	122.64
32	CS	375	GLN	CA-CB-CG	5.44	124.97	114.10
32	CR	375	GLN	CA-CB-CG	5.43	124.96	114.10
57	UI	206	ARG	CA-C-N	-5.42	115.86	122.64
57	UI	206	ARG	C-N-CA	-5.42	115.86	122.64
1	UA	676	SER	CA-C-N	-5.40	116.33	121.46
1	UA	676	SER	C-N-CA	-5.40	116.33	121.46
32	CR	806	GLU	CB-CG-CD	5.38	121.75	112.60
24	CI	753	ASN	CA-C-N	5.38	131.81	121.54
24	CI	753	ASN	C-N-CA	5.38	131.81	121.54
32	CS	806	GLU	CB-CG-CD	5.37	121.73	112.60
17	UZ	115	GLU	CA-C-N	-5.35	115.96	122.64
17	UZ	115	GLU	C-N-CA	-5.35	115.96	122.64
55	UT	865	LEU	CA-C-N	5.29	123.57	120.24
55	UT	865	LEU	C-N-CA	5.29	123.57	120.24
54	CW	75	TYR	CA-CB-CG	-5.27	104.41	113.90
6	UG	575	LYS	CA-C-N	5.24	131.14	121.70
6	UG	575	LYS	C-N-CA	5.24	131.14	121.70
56	UH	753	THR	CA-C-N	5.24	128.52	120.82
56	UH	753	THR	C-N-CA	5.24	128.52	120.82
32	CS	82	ILE	CG1-CB-CG2	-5.16	95.23	110.70
32	CR	82	ILE	CG1-CB-CG2	-5.15	95.24	110.70
57	UI	244	ARG	CD-NE-CZ	5.13	131.58	124.40
53	CV	90	GLU	CA-C-O	-5.12	115.95	121.38
57	UE	244	ARG	CD-NE-CZ	5.11	131.55	124.40
10	UM	338	GLN	CA-C-N	5.09	130.46	120.99
10	UM	338	GLN	C-N-CA	5.09	130.46	120.99
32	CR	732	GLN	CB-CG-CD	5.07	121.22	112.60
32	CS	732	GLN	CB-CG-CD	5.07	121.21	112.60
10	UM	382	ILE	CA-C-N	5.06	134.14	121.80
10	UM	382	ILE	C-N-CA	5.06	134.14	121.80

There are no chirality outliers.

All (45) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
18	CB	293	GLU	Peptide
21	CF	60	GLN	Peptide
24	CI	851	TRP	Peptide
29	CO	84	ILE	Peptide

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Mol	Chain	Res	Type	Group
29	CO	88	ARG	Peptide
31	CQ	173	ASP	Peptide
32	CR	830	ASP	Peptide
32	CR	866	PHE	Peptide
32	CR	876	LEU	Peptide
32	CS	830	ASP	Peptide
32	CS	866	PHE	Peptide
32	CS	876	LEU	Peptide
53	CV	88	LYS	Peptide
54	CW	298	THR	Peptide
61	CY	374	ARG	Sidechain
35	Cb	231	GLU	Peptide
37	Cd	151	ASP	Peptide
38	Ce	38	ALA	Peptide
1	UA	386	THR	Peptide
5	UF	120	VAL	Peptide
6	UG	227	TYR	Peptide
10	UM	328	LEU	Peptide
10	UM	382	ILE	Peptide
12	UO	282	ALA	Peptide
12	UO	30	PHE	Peptide
13	UQ	237	TYR	Peptide
13	UQ	707	PRO	Peptide
13	UQ	849	ALA	Peptide
58	US	510	LYS	Peptide
55	UT	141	TYR	Peptide
55	UT	1516	LEU	Peptide
55	UT	1566	GLU	Peptide
55	UT	348	VAL	Peptide
55	UT	408	PRO	Peptide
55	UT	420	GLU	Peptide
55	UT	486	GLU	Peptide
55	UT	487	ILE	Peptide
55	UT	781	TRP	Peptide
15	UU	397	ASP	Peptide
15	UU	685	ASP	Peptide
15	UU	857	ILE	Peptide
52	UV	1058	TYR	Peptide
52	UV	1104	LEU	Peptide
52	UV	366	VAL	Peptide
52	UV	686	GLY	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	UA	6366	0	6273	124	0
2	UB	4079	0	4201	63	0
3	UC	588	0	647	11	0
4	UD	6071	0	6080	118	0
5	UF	2591	0	2642	37	0
6	UG	3717	0	3756	75	0
7	UJ	8416	0	8591	151	0
8	UK	1687	0	1820	31	0
9	UL	6175	0	6188	143	0
10	UM	5643	0	5643	141	0
11	UN	1401	0	1455	29	0
12	UO	3819	0	3873	78	0
13	UQ	6008	0	6033	132	0
14	UR	3491	0	3507	51	0
15	UU	6734	0	6745	110	0
16	UX	1470	0	1532	34	0
17	UZ	1815	0	1896	25	0
18	CA	1778	0	1830	27	0
18	CB	1816	0	1847	41	0
19	CC	2866	0	2960	32	0
20	CD	3150	0	3262	58	0
21	CE	879	0	918	19	0
21	CF	864	0	900	16	0
22	CG	3245	0	3262	66	0
23	CH	2888	0	2979	63	0
24	CI	6486	0	6648	115	0
25	CJ	1434	0	1482	30	0
26	CK	2329	0	2373	51	0
27	CL	1786	0	1826	39	0
28	CM	3501	0	3498	87	0
29	CN	1762	0	1807	29	0
29	CO	1683	0	1726	21	0
30	CP	1893	0	1993	29	0
31	CQ	1361	0	1431	27	0
32	CR	5989	0	6130	163	0
32	CS	5989	0	6130	157	0
33	CT	1035	0	1063	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
34	Ca	1821	0	1936	40	0
35	Cb	1851	0	1905	44	0
36	Cc	1464	0	1504	24	0
37	Cd	1819	0	1920	46	0
38	Ce	1279	0	1322	33	0
39	Cf	1398	0	1401	32	0
40	Cg	1242	0	1354	26	0
41	Ch	546	0	580	7	0
42	Ci	808	0	831	11	0
43	Cj	943	0	1002	13	0
44	Ck	1163	0	1230	26	0
45	Cm	985	0	1021	15	0
46	Cn	702	0	750	11	0
47	Co	741	0	785	26	0
48	Cp	455	0	482	5	0
49	CU	1337	0	1376	23	0
50	C1	33604	0	17014	582	0
51	C2	4891	0	2476	81	0
52	UV	8424	0	8502	211	0
53	CV	1145	0	1155	28	0
54	CW	2924	0	2854	92	0
55	UT	16049	0	16453	344	0
56	UH	2809	0	2843	83	0
57	UE	972	0	1032	30	0
57	UI	972	0	1032	48	0
58	US	3672	0	3679	67	0
59	Cl	633	0	676	7	0
60	CX	2130	0	2219	44	0
61	CY	979	0	995	40	0
62	CZ	376	0	371	5	0
63	UP	422	0	457	10	0
64	UX	1	0	0	0	0
65	CI	32	0	12	1	0
66	CI	1	0	0	0	0
All	All	221395	0	206116	4006	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 9.

All (4006) 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)
50:C1:471:C:N4	61:CY:377:ARG:O	1.74	1.18
54:CW:23:LEU:HB3	54:CW:24:PRO:CD	1.75	1.17
56:UH:555:GLY:O	56:UH:567:LEU:HA	1.44	1.16
50:C1:1029:A:H62	50:C1:1045:G:N2	1.43	1.15
56:UH:557:GLU:O	56:UH:565:GLY:HA2	1.53	1.08
50:C1:1029:A:N6	50:C1:1045:G:H21	1.50	1.08
50:C1:460:U:O4	61:CY:377:ARG:HD3	1.54	1.07
54:CW:23:LEU:HB3	54:CW:24:PRO:HD3	1.28	1.06
50:C1:734:C:N4	50:C1:748:A:H61	1.54	1.05
51:C2:103:G:O6	51:C2:250:G:C6	2.12	1.02
52:UV:997:LEU:O	52:UV:1085:LYS:HB2	1.60	1.01
50:C1:734:C:H42	50:C1:748:A:N6	1.57	1.01
50:C1:5:G:H1	50:C1:30:U:H3	1.02	0.99
14:UR:430:ASN:O	14:UR:446:MET:HB2	1.63	0.99
20:CD:210:VAL:O	20:CD:214:LEU:HB3	1.65	0.97
50:C1:994:A:H2	50:C1:1007:G:H1	1.10	0.95
51:C2:137:U:H3	51:C2:150:G:H1	1.15	0.94
14:UR:559:SER:O	14:UR:565:ALA:HB3	1.66	0.94
50:C1:758:U:N3	50:C1:850:A:N6	2.15	0.94
50:C1:2358:U:H3	50:C1:2369:G:H1	1.00	0.93
50:C1:1742:C:N4	50:C1:2165:U:N3	2.16	0.92
61:CY:377:ARG:HG3	61:CY:377:ARG:HH21	1.34	0.92
13:UQ:847:ASP:O	13:UQ:850:ALA:HA	1.70	0.91
50:C1:712:A:H62	50:C1:875:G:N2	1.68	0.90
50:C1:2238:A:N6	50:C1:2328:G:C2	2.39	0.89
50:C1:758:U:H3	50:C1:850:A:N6	1.70	0.89
5:UF:2:ALA:N	51:C2:39:U:HO2'	1.70	0.89
50:C1:994:A:C2	50:C1:1007:G:N1	2.41	0.89
10:UM:701:VAL:HA	10:UM:707:ILE:O	1.74	0.87
50:C1:1480:G:C6	50:C1:1503:U:N3	2.44	0.86
47:Co:346:ASN:HB3	47:Co:351:ARG:O	1.76	0.85
50:C1:1240:G:C2	50:C1:1260:U:O2	2.28	0.85
51:C2:103:G:C6	51:C2:250:G:C6	2.65	0.85
52:UV:1058:TYR:N	53:CV:90:GLU:O	2.10	0.83
50:C1:1247:U:H3	50:C1:1251:C:N4	1.75	0.82
52:UV:1058:TYR:HB2	53:CV:91:HIS:HA	1.60	0.82
39:Cf:84:HIS:HE2	39:Cf:97:THR:HG1	1.27	0.81
50:C1:2238:A:N6	50:C1:2328:G:N2	2.27	0.81
6:UG:158:GLY:O	6:UG:176:LEU:HB2	1.81	0.80
50:C1:994:A:H2	50:C1:1007:G:N1	1.78	0.78
15:UU:423:ARG:NH1	50:C1:258:C:N3	2.32	0.78
50:C1:460:U:O4	61:CY:377:ARG:CD	2.32	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:UZ:69:LYS:HB3	17:UZ:279:ARG:HE	1.48	0.77
27:CL:548:ARG:O	27:CL:552:GLY:HA2	1.84	0.77
50:C1:351:U:C4	50:C1:353:G:C6	2.73	0.77
61:CY:374:ARG:HH21	61:CY:374:ARG:HB3	1.48	0.77
50:C1:495:G:N7	50:C1:503:G:N1	2.32	0.77
50:C1:712:A:H62	50:C1:875:G:H21	1.31	0.77
55:UT:1434:LEU:O	55:UT:1438:LEU:HB2	1.85	0.76
40:Cg:142:PRO:HD2	50:C1:1058:A:H5''	1.67	0.76
61:CY:374:ARG:HH21	61:CY:374:ARG:CB	1.98	0.76
50:C1:495:G:H8	50:C1:503:G:H22	1.31	0.76
50:C1:895:U:H3	50:C1:939:G:H1	1.34	0.76
61:CY:377:ARG:HG3	61:CY:377:ARG:NH2	2.01	0.76
50:C1:461:G:N7	61:CY:377:ARG:NH1	2.35	0.75
55:UT:1555:LEU:HD12	55:UT:1603:THR:HG21	1.68	0.75
10:UM:386:GLN:HE22	10:UM:703:SER:H	1.34	0.75
13:UQ:482:VAL:O	13:UQ:499:LEU:HB2	1.86	0.75
10:UM:345:LEU:HB2	10:UM:367:ARG:O	1.88	0.74
13:UQ:418:ASN:HD22	13:UQ:438:GLN:H	1.34	0.74
56:UH:774:GLN:NE2	57:UI:254:SER:OG	2.21	0.74
50:C1:460:U:C4	61:CY:377:ARG:NE	2.55	0.74
50:C1:1247:U:N3	50:C1:1251:C:N4	2.36	0.74
50:C1:2237:G:H1	50:C1:2329:A:H61	1.34	0.74
9:UL:678:ILE:HB	9:UL:692:ILE:HB	1.67	0.74
9:UL:574:SER:HA	9:UL:615:ILE:HD11	1.70	0.73
50:C1:1742:C:C4	50:C1:2165:U:C4	2.76	0.73
52:UV:927:HIS:O	52:UV:951:ARG:NH2	2.21	0.73
32:CR:279:ASN:HB3	32:CR:407:LEU:HD13	1.69	0.73
10:UM:699:LEU:HA	10:UM:709:ALA:O	1.87	0.73
50:C1:712:A:N6	50:C1:875:G:H21	1.87	0.73
32:CS:279:ASN:HB3	32:CS:407:LEU:HD13	1.69	0.72
50:C1:2238:A:H62	50:C1:2328:G:N2	1.87	0.72
16:UX:74:PRO:HB3	45:Cm:97:ARG:HH22	1.53	0.72
39:Cf:63:GLY:HA3	39:Cf:183:ALA:O	1.89	0.72
54:CW:137:ARG:NH2	54:CW:156:VAL:O	2.23	0.72
10:UM:481:SER:HB2	10:UM:515:GLN:HG3	1.72	0.72
39:Cf:103:GLN:HA	39:Cf:169:LEU:O	1.89	0.72
32:CS:840:ARG:NH1	32:CS:856:ASP:OD2	2.22	0.72
24:CI:379:LEU:HB3	32:CR:211:ILE:HD11	1.72	0.72
40:Cg:136:LYS:H	61:CY:250:GLY:HA3	1.54	0.72
50:C1:746:A:H3'	50:C1:747:G:H21	1.53	0.72
50:C1:950:G:H1	50:C1:959:U:H3	1.35	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:C1:1759:U:O4	50:C1:2047:G:O6	2.08	0.72
18:CB:272:PHE:HB3	18:CB:289:GLN:HE22	1.55	0.72
54:CW:9:VAL:HG13	54:CW:361:ASN:HD22	1.55	0.72
51:C2:127:A:N7	51:C2:187:U:O4	2.23	0.71
52:UV:1054:LEU:HG	53:CV:90:GLU:HB3	1.72	0.71
21:CE:39:ASN:ND2	51:C2:84:G:N7	2.37	0.71
52:UV:1042:VAL:HA	53:CV:195:LEU:HD22	1.72	0.71
55:UT:1781:LEU:HB2	55:UT:1790:LEU:HD12	1.72	0.71
50:C1:1735:A:H2'	50:C1:1736:A:H8	1.54	0.71
56:UH:557:GLU:O	56:UH:565:GLY:CA	2.36	0.71
50:C1:1029:A:H62	50:C1:1045:G:H21	0.73	0.71
55:UT:539:LYS:HG2	55:UT:587:ARG:HH12	1.56	0.71
50:C1:1480:G:N1	50:C1:1503:U:C2	2.59	0.70
15:UU:36:ALA:HB2	15:UU:779:ARG:HH21	1.56	0.70
52:UV:951:ARG:HA	52:UV:955:VAL:HG21	1.74	0.70
12:UO:126:PHE:HB3	12:UO:136:ILE:HA	1.73	0.70
24:CI:914:ILE:HB	24:CI:995:VAL:O	1.91	0.70
2:UB:645:GLN:HE22	58:US:536:SER:HB3	1.56	0.70
15:UU:701:ARG:NH1	15:UU:736:LEU:O	2.24	0.70
24:CI:220:HIS:HE2	50:C1:639:U:HO2'	1.39	0.70
37:Cd:172:TYR:OH	50:C1:659:A:N6	2.25	0.70
50:C1:1742:C:N4	50:C1:2165:U:H3	1.90	0.70
6:UG:103:GLU:OE2	28:CM:2:LYS:N	2.25	0.70
2:UB:339:ARG:HH12	58:US:516:GLU:HG2	1.56	0.70
50:C1:712:A:N6	50:C1:875:G:N2	2.40	0.70
44:Ck:93:ARG:HB3	44:Ck:110:LYS:HB3	1.74	0.69
55:UT:271:HIS:HE2	55:UT:273:THR:HG1	1.41	0.69
14:UR:397:MET:HG3	14:UR:411:GLN:HE21	1.57	0.69
55:UT:1311:TRP:HD1	55:UT:1312:LEU:HD22	1.58	0.69
50:C1:1213:U:O2	50:C1:1555:A:N7	2.26	0.69
54:CW:249:ALA:HB1	54:CW:293:LEU:HD22	1.73	0.69
55:UT:1762:ALA:HB3	55:UT:1797:ILE:HD11	1.73	0.69
52:UV:843:LEU:HD13	52:UV:960:MET:HG2	1.74	0.69
4:UD:264:LYS:HG3	4:UD:265:THR:HG23	1.75	0.69
4:UD:417:ARG:HH12	56:UH:928:GLU:HG3	1.58	0.69
32:CR:566:GLU:OE2	32:CR:567:LEU:N	2.26	0.69
55:UT:1245:SER:HA	55:UT:1248:ASN:HB2	1.75	0.69
29:CN:102:SER:HA	29:CO:236:VAL:HG11	1.74	0.68
9:UL:562:LEU:HD12	9:UL:597:LEU:HD13	1.75	0.68
50:C1:1448:A:N6	50:C1:1549:U:C4	2.61	0.68
32:CR:840:ARG:NH1	32:CR:856:ASP:OD2	2.22	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:UV:119:GLN:HB3	52:UV:145:VAL:HB	1.74	0.68
15:UU:189:ALA:HA	15:UU:200:PHE:O	1.94	0.68
32:CR:865:TYR:HA	32:CR:870:LEU:HB2	1.73	0.68
32:CS:865:TYR:HA	32:CS:870:LEU:HB2	1.73	0.68
54:CW:23:LEU:CB	54:CW:24:PRO:CD	2.62	0.68
10:UM:869:ARG:HH21	27:CL:679:PRO:HG2	1.59	0.68
18:CB:188:ARG:HA	18:CB:191:ARG:HD2	1.76	0.68
29:CO:175:CYS:HA	29:CO:201:SER:O	1.94	0.68
50:C1:816:C:O2	50:C1:817:G:N2	2.26	0.68
27:CL:572:ARG:NH2	50:C1:2215:C:OP1	2.26	0.68
32:CS:27:PHE:HD2	32:CS:148:LEU:HD11	1.58	0.68
9:UL:282:ALA:H	9:UL:297:GLY:HA2	1.57	0.68
52:UV:1059:ASP:H	53:CV:92:SER:N	1.91	0.68
22:CG:344:CYS:HB2	22:CG:357:TRP:HB2	1.76	0.68
23:CH:339:MET:HB3	23:CH:398:VAL:HG21	1.76	0.68
14:UR:322:ARG:HH12	50:C1:133:G:H22	1.42	0.67
24:CI:355:ARG:HH21	24:CI:359:PHE:HA	1.58	0.67
32:CR:27:PHE:HD2	32:CR:148:LEU:HD11	1.58	0.67
35:Cb:146:THR:HG21	50:C1:709:G:H21	1.59	0.67
40:Cg:124:ARG:NH1	50:C1:1059:A:OP2	2.28	0.67
54:CW:137:ARG:NH2	54:CW:167:GLU:OE2	2.27	0.67
39:Cf:65:PHE:HA	39:Cf:185:GLY:O	1.93	0.67
32:CS:780:ALA:HB2	32:CS:819:ASN:HD21	1.59	0.67
1:UA:264:HIS:HB2	1:UA:305:ILE:HD13	1.76	0.67
1:UA:258:LEU:HA	1:UA:274:PHE:HA	1.77	0.67
52:UV:559:GLU:O	52:UV:563:CYS:HB3	1.94	0.67
54:CW:23:LEU:CB	54:CW:24:PRO:HD3	2.17	0.67
26:CK:139:ILE:HG22	26:CK:155:SER:HB3	1.77	0.67
52:UV:711:LEU:HD23	52:UV:752:ASN:HD21	1.59	0.67
53:CV:69:VAL:HA	53:CV:72:LEU:HD12	1.75	0.67
6:UG:267:ASN:ND2	6:UG:270:ASN:OD1	2.27	0.67
12:UO:282:ALA:HB3	12:UO:287:ARG:O	1.95	0.67
32:CS:430:LYS:O	32:CS:433:ARG:NH2	2.28	0.67
35:Cb:180:LEU:HA	35:Cb:194:VAL:HA	1.75	0.67
39:Cf:67:TRP:HD1	39:Cf:187:ILE:HG21	1.60	0.67
55:UT:1048:VAL:HG13	55:UT:1049:VAL:HG23	1.76	0.67
55:UT:1171:LYS:NZ	55:UT:1175:GLU:OE2	2.28	0.67
55:UT:1512:LEU:O	55:UT:1516:LEU:HB2	1.95	0.67
55:UT:474:VAL:HG21	55:UT:540:SER:HB3	1.76	0.67
55:UT:740:VAL:O	55:UT:746:TRP:NE1	2.28	0.67
10:UM:459:LEU:HB3	10:UM:473:ALA:HB3	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:C1:22:U:H2'	50:C1:23:G:H8	1.60	0.66
6:UG:284:LEU:HB2	6:UG:294:VAL:HG22	1.77	0.66
32:CS:566:GLU:OE2	32:CS:567:LEU:N	2.26	0.66
32:CR:743:VAL:HG21	32:CR:812:GLY:HA3	1.76	0.66
50:C1:1538:G:H2'	50:C1:1539:G:H8	1.59	0.66
4:UD:19:VAL:HG12	4:UD:46:ILE:HG12	1.78	0.66
22:CG:167:ARG:NH2	51:C2:188:G:O6	2.28	0.66
24:CI:69:ARG:NH1	24:CI:230:LYS:O	2.28	0.66
39:Cf:99:SER:N	39:Cf:173:ILE:O	2.29	0.66
1:UA:753:ILE:HD11	1:UA:793:TRP:HZ2	1.61	0.66
2:UB:759:HIS:O	2:UB:765:ASN:ND2	2.29	0.66
7:UJ:659:VAL:HG11	7:UJ:681:ALA:HB2	1.77	0.66
32:CS:743:VAL:HG21	32:CS:812:GLY:HA3	1.76	0.66
37:Cd:199:ARG:NH2	50:C1:869:G:OP1	2.28	0.66
47:Co:342:LYS:O	47:Co:354:MET:HA	1.96	0.66
54:CW:58:ASN:ND2	54:CW:99:ASN:O	2.29	0.66
1:UA:407:ARG:HG2	1:UA:419:THR:HG22	1.78	0.66
1:UA:626:ASN:HB3	50:C1:256:U:H2'	1.78	0.66
4:UD:29:VAL:HB	4:UD:33:LYS:HB2	1.78	0.66
4:UD:291:ILE:HB	4:UD:303:TYR:HB2	1.78	0.66
32:CR:780:ALA:HB2	32:CR:819:ASN:HD21	1.59	0.66
37:Cd:183:THR:HG23	37:Cd:186:ARG:H	1.60	0.66
50:C1:994:A:N1	50:C1:1007:G:O6	2.29	0.66
52:UV:699:ILE:HD13	52:UV:768:VAL:HG13	1.78	0.66
55:UT:2079:LEU:HD22	55:UT:2115:THR:HG21	1.78	0.66
1:UA:633:ALA:HB2	6:UG:175:GLN:HE21	1.60	0.66
22:CG:174:THR:HA	22:CG:561:ASN:HD22	1.61	0.66
50:C1:69:U:H3	56:UH:884:SER:HB2	1.60	0.66
8:UK:268:ARG:NH1	14:UR:539:LEU:O	2.28	0.66
43:Cj:126:PRO:HB3	50:C1:2166:A:H5''	1.78	0.66
51:C2:160:U:H2'	51:C2:161:G:H8	1.61	0.66
57:UE:208:PRO:HB2	57:UE:249:ARG:HH11	1.61	0.66
23:CH:152:THR:O	23:CH:156:ALA:HB3	1.96	0.65
24:CI:291:VAL:HG13	24:CI:1008:ILE:HD11	1.77	0.65
52:UV:710:SER:OG	53:CV:103:GLN:NE2	2.29	0.65
11:UN:312:ARG:NH1	28:CM:446:GLN:O	2.29	0.65
50:C1:1480:G:N1	50:C1:1503:U:N3	2.43	0.65
1:UA:55:ARG:NH1	1:UA:614:VAL:O	2.30	0.65
1:UA:844:LEU:HD13	15:UU:1006:ILE:HD11	1.78	0.65
13:UQ:770:THR:H	13:UQ:775:LYS:HZ1	1.44	0.65
31:CQ:87:ILE:HD11	31:CQ:117:ILE:HG23	1.75	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:Cd:98:ARG:NH2	37:Cd:101:ILE:O	2.29	0.65
52:UV:434:GLN:HG3	52:UV:435:PRO:HD3	1.77	0.65
61:CY:374:ARG:HB3	61:CY:374:ARG:NH2	2.11	0.65
1:UA:809:ARG:HH21	15:UU:1046:SER:HA	1.62	0.65
9:UL:40:ILE:HG12	9:UL:49:VAL:HG12	1.79	0.65
9:UL:912:ARG:HE	10:UM:828:ARG:HH12	1.43	0.65
24:CI:325:ARG:NH2	50:C1:637:C:OP2	2.29	0.65
28:CM:82:ILE:HD12	28:CM:342:LEU:HD13	1.78	0.65
57:UI:208:PRO:HB2	57:UI:249:ARG:HH11	1.61	0.65
50:C1:1652:C:H2'	50:C1:1653:G:H8	1.61	0.65
53:CV:33:LEU:HD21	53:CV:57:PRO:HD3	1.79	0.65
5:UF:169:ARG:HD3	19:CC:80:SER:HB3	1.79	0.65
9:UL:25:VAL:HG23	9:UL:40:ILE:HB	1.78	0.65
50:C1:1240:G:N1	50:C1:1260:U:C2	2.64	0.65
51:C2:103:G:C6	51:C2:250:G:N1	2.64	0.65
52:UV:540:PRO:HB2	52:UV:825:PRO:HG2	1.79	0.65
52:UV:548:ASP:HB3	52:UV:588:LEU:HB2	1.78	0.65
54:CW:333:LEU:HA	54:CW:349:ASN:HA	1.77	0.65
15:UU:481:ILE:O	15:UU:528:ARG:NH2	2.29	0.65
12:UO:298:LYS:NZ	57:UE:163:THR:O	2.30	0.65
25:CJ:102:THR:HG22	25:CJ:104:SER:H	1.61	0.65
37:Cd:176:PRO:HA	50:C1:653:U:H5'	1.78	0.65
38:Ce:41:LYS:HA	38:Ce:44:LEU:HD13	1.79	0.65
1:UA:519:ARG:NH1	1:UA:524:GLN:OE1	2.30	0.65
13:UQ:89:MET:HE1	13:UQ:420:ALA:HB2	1.79	0.65
18:CA:247:LEU:O	19:CC:132:ARG:NH2	2.30	0.65
2:UB:550:GLU:HG3	58:US:523:ILE:HB	1.79	0.64
7:UJ:524:ALA:HB1	7:UJ:530:ASP:HB3	1.79	0.64
26:CK:173:ARG:NH2	26:CK:182:GLY:O	2.30	0.64
26:CK:287:TYR:OH	50:C1:2180:A:OP1	2.15	0.64
33:CT:107:GLN:NE2	50:C1:402:U:OP2	2.30	0.64
54:CW:24:PRO:O	54:CW:24:PRO:HD2	1.97	0.64
53:CV:42:ILE:HD13	53:CV:48:SER:HA	1.78	0.64
55:UT:942:LEU:HD21	55:UT:960:LEU:HB3	1.77	0.64
12:UO:25:ARG:NH2	50:C1:85:U:OP2	2.31	0.64
28:CM:173:GLY:HA2	28:CM:199:THR:HG23	1.78	0.64
2:UB:762:THR:OG1	2:UB:765:ASN:ND2	2.31	0.64
2:UB:853:ARG:NH1	50:C1:1760:G:OP1	2.31	0.64
50:C1:1029:A:N6	50:C1:1045:G:N2	2.25	0.64
12:UO:273:GLN:HG3	57:UE:159:GLN:HG2	1.80	0.64
15:UU:136:ASP:O	15:UU:158:ARG:NH1	2.31	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:CI:1020:ARG:NH1	50:C1:1162:U:OP1	2.31	0.64
35:Cb:100:ARG:HG2	35:Cb:235:ILE:HD11	1.79	0.64
50:C1:1665:A:N3	50:C1:1666:C:N4	2.46	0.64
16:UX:178:LEU:HD23	16:UX:180:GLY:H	1.62	0.64
30:CP:75:GLU:O	34:Ca:115:ARG:NH2	2.31	0.64
40:Cg:77:ARG:NH1	61:CY:310:GLU:O	2.30	0.64
55:UT:1490:ILE:HA	55:UT:1505:ILE:HD11	1.79	0.64
24:CI:1112:LYS:NZ	50:C1:1074:U:O4	2.31	0.64
32:CS:295:MET:HE1	32:CS:387:VAL:HB	1.80	0.64
51:C2:137:U:O2	51:C2:150:G:N2	2.27	0.64
1:UA:500:ARG:NH1	50:C1:1740:C:OP2	2.30	0.63
50:C1:488:C:H2'	50:C1:489:A:H8	1.63	0.63
50:C1:1480:G:O6	50:C1:1503:U:C4	2.51	0.63
55:UT:1982:THR:OG1	55:UT:1985:ASN:ND2	2.31	0.63
1:UA:568:ASN:ND2	51:C2:61:G:OP1	2.29	0.63
1:UA:627:SER:HB3	16:UX:-5:LYS:HD2	1.80	0.63
32:CR:295:MET:HE1	32:CR:387:VAL:HB	1.80	0.63
32:CR:415:SER:O	32:CR:415:SER:OG	2.16	0.63
32:CS:424:LEU:HA	32:CS:427:LYS:HD2	1.80	0.63
55:UT:111:ILE:HB	55:UT:147:LEU:HD21	1.79	0.63
10:UM:347:ARG:HG2	10:UM:366:PHE:HB2	1.80	0.63
32:CR:548:HIS:ND1	32:CR:551:ASN:OD1	2.32	0.63
37:Cd:160:ARG:NH2	50:C1:655:A:OP1	2.32	0.63
10:UM:234:ASN:OD1	34:Ca:50:ARG:NH2	2.32	0.63
47:Co:343:PHE:HE1	47:Co:352:LYS:HB3	1.64	0.63
1:UA:86:ARG:HH22	15:UU:784:HIS:HB3	1.64	0.63
13:UQ:380:VAL:HA	13:UQ:391:PHE:HB3	1.80	0.63
23:CH:218:ILE:HB	23:CH:250:VAL:HG12	1.80	0.63
47:Co:345:ARG:O	47:Co:345:ARG:NH1	2.27	0.63
10:UM:624:ILE:HG23	10:UM:638:PHE:HB2	1.81	0.63
55:UT:1475:GLN:O	55:UT:1479:ILE:HB	1.98	0.63
58:US:302:MET:SD	58:US:302:MET:N	2.64	0.63
2:UB:572:ARG:NH1	58:US:509:VAL:O	2.32	0.63
13:UQ:544:SER:OG	13:UQ:545:HIS:N	2.31	0.63
50:C1:221:A:O2'	50:C1:224:C:N4	2.27	0.63
52:UV:667:HIS:HE1	52:UV:669:ASN:HB2	1.64	0.63
52:UV:732:PHE:HB3	52:UV:734:PRO:HD2	1.81	0.63
52:UV:1006:LEU:HD13	52:UV:1010:ILE:HD11	1.80	0.63
54:CW:349:ASN:HD21	54:CW:354:MET:HA	1.64	0.63
56:UH:836:ILE:HD12	57:UI:222:LEU:HD11	1.81	0.63
60:CX:243:THR:HG23	60:CX:246:ALA:H	1.64	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:UC:601:ARG:NH1	50:C1:1060:U:OP2	2.32	0.63
7:UJ:1633:LEU:HD22	7:UJ:1678:VAL:HB	1.81	0.63
12:UO:417:ARG:NH2	50:C1:129:G:O6	2.32	0.63
15:UU:161:VAL:HG23	15:UU:170:TYR:HB3	1.81	0.63
56:UH:753:THR:OG1	57:UI:207:ARG:NH1	2.32	0.63
4:UD:87:ASP:HB3	4:UD:95:ILE:HD11	1.81	0.63
4:UD:528:ARG:HH22	4:UD:547:ARG:HD3	1.64	0.63
6:UG:172:CYS:SG	6:UG:173:GLU:N	2.71	0.63
12:UO:203:ASN:HB2	12:UO:219:ALA:HB3	1.80	0.63
24:CI:1038:ILE:HD12	24:CI:1040:ARG:HE	1.64	0.63
37:CD:106:LEU:HD13	37:CD:109:LEU:HD21	1.80	0.63
55:UT:1470:TRP:O	55:UT:1475:GLN:NE2	2.32	0.63
56:UH:754:ARG:HB3	57:UI:210:ARG:HG2	1.81	0.63
57:UI:244:ARG:HG2	57:UI:244:ARG:HH11	1.63	0.63
6:UG:283:THR:OG1	6:UG:285:TRP:NE1	2.31	0.62
13:UQ:251:ARG:HA	13:UQ:266:LEU:HD22	1.81	0.62
29:CO:113:TYR:HD1	29:CO:121:LEU:HD21	1.64	0.62
32:CS:816:ASP:HB3	32:CS:819:ASN:HB2	1.81	0.62
50:C1:1457:G:N2	50:C1:1632:G:O2'	2.32	0.62
20:CD:116:ASP:O	20:CD:120:ARG:HB3	1.98	0.62
38:Ce:20:SER:H	38:Ce:23:GLU:HB3	1.63	0.62
38:Ce:94:ARG:NH2	55:UT:2127:ASP:OD2	2.31	0.62
13:UQ:455:VAL:HA	56:UH:888:ILE:HD11	1.81	0.62
24:CI:1016:THR:HG22	27:CL:494:LEU:HD21	1.80	0.62
32:CR:424:LEU:HA	32:CR:427:LYS:HD2	1.80	0.62
51:C2:153:G:O6	51:C2:176:U:O2	2.17	0.62
56:UH:883:ARG:NH2	56:UH:887:GLU:OE2	2.32	0.62
57:UE:156:VAL:HG21	58:US:301:GLU:HB3	1.81	0.62
10:UM:276:LEU:HB2	10:UM:294:THR:HG22	1.81	0.62
25:CJ:115:MET:HE1	25:CJ:136:VAL:HG21	1.82	0.62
28:CM:345:SER:OG	28:CM:346:ASP:N	2.32	0.62
32:CR:387:VAL:HG12	32:CR:409:PHE:HB2	1.81	0.62
21:CE:27:GLN:NE2	50:C1:199:A:O2'	2.33	0.62
3:UC:632:GLN:HB3	18:CA:64:GLY:HA3	1.80	0.62
4:UD:378:PRO:HB3	4:UD:841:ILE:HA	1.80	0.62
10:UM:777:VAL:HG21	10:UM:794:VAL:HG21	1.82	0.62
14:UR:345:ARG:NH1	50:C1:75:G:OP1	2.30	0.62
32:CS:548:HIS:ND1	32:CS:551:ASN:OD1	2.32	0.62
32:CS:755:THR:O	32:CS:755:THR:OG1	2.18	0.62
61:CY:374:ARG:H	61:CY:374:ARG:CD	2.12	0.62
9:UL:517:HIS:HD2	9:UL:519:ASP:H	1.47	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:UQ:403:VAL:HG23	13:UQ:412:ALA:HB3	1.82	0.62
27:CL:720:GLU:OE1	27:CL:723:ARG:NH1	2.33	0.62
28:CM:216:VAL:HG11	28:CM:242:CYS:HB2	1.81	0.62
32:CR:430:LYS:O	32:CR:433:ARG:NH2	2.28	0.62
38:Ce:87:LEU:HB3	38:Ce:96:VAL:HG11	1.82	0.62
54:CW:23:LEU:HB3	54:CW:24:PRO:HD2	1.78	0.62
55:UT:1227:ALA:HA	55:UT:1230:ILE:HD12	1.81	0.62
29:CN:38:ILE:O	29:CN:203:CYS:HA	1.99	0.62
35:Cb:197:HIS:HB3	35:Cb:209:HIS:HB2	1.82	0.62
37:Cd:188:GLN:OE1	50:C1:855:A:N6	2.33	0.62
50:C1:301:U:H2'	50:C1:302:A:H8	1.63	0.62
50:C1:723:A:N1	50:C1:762:G:C6	2.68	0.62
52:UV:200:LEU:HD23	52:UV:226:ILE:HD12	1.82	0.62
7:UJ:826:TYR:HA	7:UJ:865:ILE:HD11	1.81	0.62
25:CJ:96:ALA:O	25:CJ:100:ASN:HB3	1.99	0.62
32:CS:387:VAL:HG12	32:CS:409:PHE:HB2	1.81	0.62
40:Cg:29:VAL:O	40:Cg:33:GLY:HA2	2.00	0.62
57:UE:244:ARG:HG2	57:UE:244:ARG:HH11	1.63	0.62
18:CB:85:ARG:NH2	18:CB:90:ASP:OD1	2.32	0.61
22:CG:273:TYR:HB3	22:CG:281:ILE:H	1.64	0.61
27:CL:679:PRO:HA	27:CL:682:VAL:HG12	1.81	0.61
28:CM:211:SER:HB2	28:CM:227:LEU:HB3	1.81	0.61
4:UD:35:TYR:HA	4:UD:38:LYS:HD2	1.81	0.61
6:UG:579:ASP:O	6:UG:582:ARG:N	2.32	0.61
18:CB:156:VAL:HG12	18:CB:225:VAL:HB	1.81	0.61
21:CF:69:PRO:HA	21:CF:72:CYS:HB2	1.81	0.61
50:C1:1735:A:H2'	50:C1:1736:A:C8	2.34	0.61
6:UG:56:PRO:HG2	11:UN:899:ARG:HD3	1.83	0.61
53:CV:75:THR:HA	53:CV:160:GLN:HG3	1.81	0.61
55:UT:135:VAL:HA	55:UT:178:LEU:HD12	1.82	0.61
55:UT:1338:LEU:O	55:UT:1381:ARG:NH1	2.33	0.61
10:UM:155:LEU:HB3	10:UM:203:GLN:HB2	1.82	0.61
12:UO:434:ALA:HA	12:UO:473:ARG:HH22	1.66	0.61
18:CB:250:GLY:HA2	18:CB:306:TYR:O	2.01	0.61
23:CH:36:ILE:HG22	23:CH:37:ARG:HG2	1.83	0.61
50:C1:902:U:H3	50:C1:930:G:H1	1.45	0.61
55:UT:1781:LEU:HD12	55:UT:1786:GLN:HB3	1.82	0.61
55:UT:2065:ARG:O	55:UT:2105:ARG:NH2	2.30	0.61
2:UB:708:LEU:O	2:UB:710:LYS:NZ	2.33	0.61
8:UK:264:LYS:NZ	50:C1:200:A:OP1	2.33	0.61
9:UL:81:ASP:HA	9:UL:97:SER:HB3	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:UL:352:GLU:N	9:UL:355:ASP:OD2	2.33	0.61
12:UO:108:ARG:HD3	12:UO:113:VAL:HB	1.83	0.61
12:UO:245:THR:HG23	12:UO:246:THR:HG23	1.81	0.61
20:CD:70:THR:HB	20:CD:73:LEU:HB2	1.83	0.61
22:CG:323:VAL:HG22	22:CG:324:GLU:HG2	1.82	0.61
25:CJ:152:ARG:NH1	26:CK:11:ASP:OD2	2.34	0.61
38:Ce:67:PHE:HB3	38:Ce:101:ALA:HB2	1.82	0.61
55:UT:617:LEU:HA	55:UT:620:LEU:HD12	1.81	0.61
9:UL:134:ILE:HG13	9:UL:148:LEU:HB2	1.83	0.61
10:UM:64:ILE:HA	10:UM:80:SER:HA	1.82	0.61
32:CS:498:ALA:O	32:CS:502:ARG:NH1	2.33	0.61
33:CT:176:ARG:HH12	50:C1:1069:A:H5'	1.65	0.61
50:C1:902:U:O2	50:C1:930:G:N2	2.30	0.61
55:UT:215:VAL:O	55:UT:219:ALA:HB2	2.00	0.61
4:UD:521:SER:OG	4:UD:522:VAL:N	2.33	0.61
24:CI:123:LEU:HD22	24:CI:898:ARG:HD2	1.82	0.61
55:UT:1310:THR:O	55:UT:1314:ASN:ND2	2.33	0.61
5:UF:156:ASP:HB3	5:UF:159:ARG:HB2	1.83	0.61
7:UJ:1607:LEU:O	7:UJ:1611:PHE:HB3	1.99	0.61
10:UM:378:ASP:HA	10:UM:698:THR:HG21	1.81	0.61
10:UM:626:LEU:O	10:UM:635:ILE:N	2.32	0.61
30:CP:183:ARG:NH2	50:C1:1488:U:OP1	2.33	0.61
32:CS:16:ARG:NH2	32:CS:48:MET:SD	2.73	0.61
51:C2:5:A:O2'	51:C2:6:C:O5'	2.19	0.61
55:UT:480:PRO:HB3	55:UT:485:LYS:HE3	1.83	0.61
57:UE:171:SER:O	58:US:299:LYS:NZ	2.34	0.61
7:UJ:715:VAL:HA	7:UJ:748:LEU:HD13	1.82	0.61
9:UL:65:ASN:OD1	9:UL:93:ARG:NH2	2.33	0.61
29:CN:179:THR:HG22	29:CN:221:VAL:HG21	1.81	0.61
32:CR:71:ARG:NH1	32:CR:100:SER:O	2.34	0.61
50:C1:470:C:OP2	61:CY:376:THR:HB	2.01	0.61
52:UV:274:VAL:HG13	52:UV:400:LEU:HD12	1.81	0.61
2:UB:652:ARG:HD3	58:US:467:TYR:HA	1.81	0.61
4:UD:162:ASN:N	4:UD:162:ASN:OD1	2.29	0.61
6:UG:58:VAL:HG11	6:UG:72:LEU:HD12	1.83	0.61
7:UJ:1600:LEU:HA	7:UJ:1603:VAL:HG22	1.83	0.61
7:UJ:1600:LEU:HD21	7:UJ:1650:VAL:HB	1.83	0.61
12:UO:433:TYR:OH	12:UO:463:ARG:NH2	2.29	0.61
30:CP:104:ARG:HH12	30:CP:170:SER:HB2	1.66	0.61
32:CR:816:ASP:HB3	32:CR:819:ASN:HB2	1.81	0.61
32:CS:500:LEU:HD13	32:CS:539:GLN:HG2	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:C1:1480:G:C2	50:C1:1503:U:C2	2.89	0.61
4:UD:9:VAL:HG21	4:UD:863:ILE:HD13	1.82	0.60
9:UL:440:MET:N	9:UL:440:MET:SD	2.74	0.60
14:UR:589:ARG:NH1	50:C1:238:G:OP1	2.34	0.60
22:CG:173:VAL:HG13	22:CG:581:VAL:HG13	1.83	0.60
29:CO:32:LYS:HB3	29:CO:172:PRO:HB3	1.83	0.60
32:CS:895:ASP:O	32:CS:899:THR:OG1	2.18	0.60
60:CX:199:VAL:HA	60:CX:236:LEU:HD21	1.83	0.60
7:UJ:16:SER:O	7:UJ:159:ARG:NH2	2.34	0.60
25:CJ:110:ARG:NH2	25:CJ:146:PRO:O	2.33	0.60
32:CS:903:LEU:HD21	32:CS:907:GLN:HB2	1.82	0.60
37:CD:143:ARG:NH1	50:C1:728:G:OP1	2.34	0.60
38:CE:51:SER:HB3	38:CE:67:PHE:HB2	1.82	0.60
50:C1:115:C:OP2	57:UE:207:ARG:NH2	2.34	0.60
50:C1:460:U:C4	61:CY:377:ARG:HD3	2.34	0.60
32:CR:895:ASP:O	32:CR:899:THR:OG1	2.18	0.60
32:CS:71:ARG:NH1	32:CS:100:SER:O	2.34	0.60
50:C1:495:G:C8	50:C1:503:G:N2	2.59	0.60
50:C1:782:G:H2'	50:C1:783:G:H8	1.66	0.60
55:UT:1569:SER:HA	55:UT:1572:ILE:HD12	1.82	0.60
3:UC:637:GLY:O	33:CT:123:LYS:NZ	2.35	0.60
32:CR:188:ARG:NH1	32:CR:493:LEU:O	2.32	0.60
52:UV:633:ILE:HD12	52:UV:634:LYS:HA	1.83	0.60
52:UV:1057:VAL:N	53:CV:91:HIS:O	2.34	0.60
54:CW:183:GLN:O	54:CW:236:ARG:NH2	2.34	0.60
16:UX:100:GLU:OE2	16:UX:114:ARG:NH2	2.34	0.60
18:CB:92:LEU:HD23	18:CB:130:TRP:HD1	1.64	0.60
18:CB:245:LEU:O	20:CD:123:ARG:NH2	2.33	0.60
26:CK:88:VAL:O	26:CK:114:ALA:HA	2.02	0.60
32:CR:498:ALA:O	32:CR:502:ARG:NH1	2.33	0.60
32:CR:500:LEU:HD13	32:CR:539:GLN:HG2	1.82	0.60
36:Cc:63:ARG:NH2	50:C1:2167:G:OP2	2.35	0.60
51:C2:103:G:C5	51:C2:250:G:N1	2.70	0.60
52:UV:881:LEU:HD22	52:UV:885:ARG:HH22	1.65	0.60
55:UT:245:THR:HG23	55:UT:247:GLN:H	1.67	0.60
1:UA:418:ARG:NH2	1:UA:455:VAL:O	2.35	0.60
4:UD:549:VAL:HA	4:UD:565:ASP:HA	1.82	0.60
20:CD:88:LEU:O	20:CD:109:PRO:HA	2.01	0.60
28:CM:253:MET:N	28:CM:253:MET:SD	2.75	0.60
51:C2:134:C:O2'	51:C2:181:A:N6	2.35	0.60
58:US:455:SER:OG	58:US:456:CYS:N	2.33	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:UJ:1771:GLN:O	55:UT:173:LYS:NZ	2.35	0.60
12:UO:190:VAL:HA	12:UO:209:SER:HA	1.84	0.60
12:UO:404:ILE:HG23	14:UR:319:HIS:HD2	1.65	0.60
13:UQ:113:VAL:HG22	13:UQ:123:ARG:HB2	1.83	0.60
29:CO:84:ILE:O	29:CO:86:ASP:N	2.31	0.60
32:CR:903:LEU:HD21	32:CR:907:GLN:HB2	1.82	0.60
50:C1:1068:C:H2'	50:C1:1069:A:H8	1.65	0.60
5:UF:130:MET:HE1	5:UF:143:LEU:HD22	1.82	0.60
10:UM:196:PHE:HB2	10:UM:212:LEU:HD12	1.83	0.60
12:UO:164:SER:OG	12:UO:166:ASP:OD1	2.18	0.60
28:CM:251:GLU:OE1	28:CM:254:ASN:ND2	2.35	0.60
35:Cb:52:LEU:HB3	35:Cb:54:TYR:HD2	1.67	0.60
50:C1:1029:A:H61	50:C1:1046:G:H1'	1.67	0.60
55:UT:776:VAL:HG21	55:UT:843:ALA:HB3	1.83	0.60
55:UT:1274:GLN:HG3	55:UT:1276:ASP:H	1.67	0.60
60:CX:301:GLY:O	60:CX:305:GLY:N	2.35	0.60
1:UA:364:ILE:HG22	1:UA:385:VAL:HG11	1.82	0.60
1:UA:483:LEU:HB3	1:UA:495:TRP:HB2	1.84	0.60
14:UR:359:LYS:NZ	50:C1:75:G:O2'	2.27	0.60
32:CS:68:THR:OG1	32:CS:69:SER:N	2.32	0.60
52:UV:756:LEU:HB3	52:UV:768:VAL:HB	1.84	0.60
55:UT:506:GLU:HB2	55:UT:554:VAL:HG13	1.83	0.60
4:UD:374:VAL:HG11	4:UD:863:ILE:HD12	1.82	0.60
7:UJ:1614:LEU:HD13	7:UJ:1617:ILE:H	1.67	0.60
17:UZ:117:PRO:HA	17:UZ:121:ARG:HB2	1.84	0.60
22:CG:583:GLY:HA2	22:CG:599:CYS:HA	1.84	0.60
23:CH:172:GLU:OE2	23:CH:174:ARG:NH2	2.35	0.60
27:CL:725:ARG:NH2	50:C1:1731:A:OP2	2.35	0.60
38:Ce:148:LYS:HG2	38:Ce:162:VAL:HG12	1.84	0.60
43:Cj:14:LYS:NZ	50:C1:2192:U:OP2	2.29	0.60
50:C1:1626:G:H2'	50:C1:1627:G:C8	2.36	0.60
7:UJ:1667:GLN:HE22	7:UJ:1709:LEU:HB2	1.66	0.59
18:CB:194:ILE:HD12	20:CD:154:LEU:HD12	1.84	0.59
19:CC:257:ALA:O	19:CC:261:SER:HB2	2.02	0.59
32:CS:188:ARG:NH1	32:CS:493:LEU:O	2.32	0.59
36:Cc:183:GLU:OE1	36:Cc:187:ASN:ND2	2.35	0.59
55:UT:840:SER:OG	55:UT:841:GLU:N	2.34	0.59
60:CX:311:ALA:HA	60:CX:316:CYS:HB3	1.84	0.59
61:CY:276:GLU:O	61:CY:280:PHE:HA	2.02	0.59
61:CY:374:ARG:H	61:CY:374:ARG:HD2	1.65	0.59
4:UD:509:ALA:HB1	4:UD:516:ILE:HD11	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:UD:619:LYS:HA	4:UD:622:MET:HE2	1.83	0.59
9:UL:18:VAL:HG21	9:UL:24:LEU:HD11	1.84	0.59
10:UM:283:LEU:HD12	10:UM:288:TRP:HB2	1.84	0.59
11:UN:903:LEU:O	28:CM:381:ARG:NH2	2.35	0.59
18:CB:96:ASN:ND2	18:CB:98:VAL:O	2.35	0.59
55:UT:1783:LYS:O	55:UT:1787:LEU:N	2.29	0.59
61:CY:275:TYR:O	61:CY:278:THR:OG1	2.19	0.59
4:UD:383:ILE:HD12	4:UD:863:ILE:HD11	1.84	0.59
6:UG:195:ALA:HA	6:UG:200:VAL:HG12	1.84	0.59
29:CN:31:ASP:O	29:CN:36:ARG:NH2	2.34	0.59
47:Co:345:ARG:O	47:Co:351:ARG:O	2.21	0.59
47:Co:411:GLU:HA	47:Co:414:LYS:HD2	1.83	0.59
50:C1:2237:G:H1	50:C1:2329:A:N6	2.00	0.59
58:US:196:ILE:O	58:US:200:THR:OG1	2.18	0.59
57:UI:251:ARG:O	57:UI:254:SER:OG	2.21	0.59
1:UA:295:ILE:HD11	1:UA:300:ILE:HG12	1.84	0.59
6:UG:243:GLN:HA	6:UG:250:ILE:HA	1.84	0.59
23:CH:251:HIS:HB3	49:CU:111:MET:HG2	1.83	0.59
54:CW:60:VAL:HG23	54:CW:348:ALA:HB2	1.83	0.59
55:UT:2159:PHE:O	55:UT:2163:ASN:ND2	2.35	0.59
10:UM:592:VAL:HG12	10:UM:617:THR:HG22	1.85	0.59
13:UQ:222:ASN:HB2	13:UQ:225:MET:HG3	1.84	0.59
50:C1:972:A:N7	50:C1:1007:G:C6	2.70	0.59
4:UD:575:LEU:HD11	4:UD:612:GLU:HB3	1.84	0.59
7:UJ:1487:SER:HA	7:UJ:1490:LYS:HE2	1.84	0.59
20:CD:9:THR:HG23	20:CD:11:ALA:H	1.67	0.59
37:Cd:94:ARG:NE	50:C1:991:A:OP1	2.36	0.59
47:Co:381:ALA:HB1	47:Co:385:GLN:HE21	1.68	0.59
55:UT:1732:LEU:HD23	55:UT:1733:PRO:HD3	1.83	0.59
57:UI:179:LEU:N	57:UI:182:GLN:OE1	2.36	0.59
9:UL:59:SER:OG	9:UL:60:ARG:N	2.35	0.59
13:UQ:186:LYS:HB3	13:UQ:210:ARG:HD3	1.85	0.59
13:UQ:454:ARG:HA	56:UH:887:GLU:HA	1.84	0.59
13:UQ:644:LYS:HE2	13:UQ:649:MET:HE2	1.84	0.59
22:CG:495:ASP:HB3	22:CG:497:ARG:HG2	1.85	0.59
28:CM:251:GLU:OE2	28:CM:312:ARG:NH1	2.35	0.59
32:CR:585:VAL:HB	32:CR:639:ALA:HB3	1.83	0.59
32:CR:880:GLN:HE21	32:CR:915:ILE:HG12	1.68	0.59
32:CS:912:PHE:HA	32:CS:915:ILE:HD12	1.85	0.59
55:UT:797:THR:HG23	55:UT:799:PHE:H	1.67	0.59
55:UT:2092:ARG:NH2	55:UT:2130:ASP:OD2	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:UE:251:ARG:O	57:UE:254:SER:OG	2.21	0.59
2:UB:23:LYS:HB3	2:UB:27:GLN:HB2	1.84	0.59
23:CH:173:LEU:HD13	23:CH:194:MET:HE3	1.84	0.59
24:CI:622:THR:HG23	24:CI:623:ARG:HG2	1.84	0.59
32:CR:16:ARG:NH2	32:CR:48:MET:SD	2.73	0.59
32:CS:484:ASP:HB3	32:CS:487:GLU:HB3	1.84	0.59
52:UV:130:THR:O	52:UV:304:ARG:NH2	2.36	0.59
24:CI:815:VAL:HG13	24:CI:905:VAL:HA	1.85	0.59
32:CR:68:THR:OG1	32:CR:69:SER:N	2.32	0.59
32:CS:585:VAL:HB	32:CS:639:ALA:HB3	1.83	0.59
32:CS:855:LEU:HA	32:CS:858:MET:HG2	1.85	0.59
17:UZ:90:ASN:ND2	17:UZ:228:ILE:O	2.35	0.59
24:CI:1101:ARG:HD2	33:CT:111:MET:HG3	1.85	0.59
32:CR:429:ILE:HA	32:CR:469:LEU:HD13	1.84	0.59
32:CS:429:ILE:HA	32:CS:469:LEU:HD13	1.84	0.59
37:CD:2:LYS:NZ	50:C1:738:G:OP1	2.32	0.59
1:UA:415:ARG:NH1	50:C1:2215:C:O2	2.35	0.58
28:CM:279:GLN:HG3	28:CM:315:GLY:HA2	1.84	0.58
32:CR:484:ASP:HB3	32:CR:487:GLU:HB3	1.84	0.58
42:CI:136:SER:OG	50:C1:1470:G:N2	2.29	0.58
50:C1:758:U:OP1	54:CW:30:ARG:NH1	2.36	0.58
52:UV:719:ILE:HG12	52:UV:754:ALA:HB3	1.84	0.58
1:UA:209:THR:HG22	1:UA:223:LYS:HG2	1.85	0.58
1:UA:270:LEU:HD13	1:UA:284:MET:HE3	1.84	0.58
8:UK:22:ARG:NH2	24:CI:983:LEU:O	2.36	0.58
13:UQ:699:ILE:HD11	13:UQ:714:ALA:HB1	1.84	0.58
15:UU:157:THR:HG22	15:UU:184:GLU:HA	1.85	0.58
23:CH:374:SER:OG	23:CH:375:TRP:N	2.31	0.58
26:CK:173:ARG:HH12	26:CK:184:VAL:HB	1.67	0.58
30:CP:119:MET:HE1	49:CU:179:SER:HB3	1.84	0.58
31:CQ:87:ILE:HD13	31:CQ:95:LEU:HD13	1.84	0.58
32:CR:68:THR:HG21	32:CR:73:LYS:HE2	1.84	0.58
32:CS:880:GLN:HE21	32:CS:915:ILE:HG12	1.68	0.58
34:Ca:148:ASN:O	50:C1:1650:C:O2'	2.20	0.58
37:CD:66:GLY:N	37:CD:100:CYS:SG	2.74	0.58
50:C1:100:C:H2'	50:C1:101:G:H8	1.68	0.58
55:UT:1024:ILE:HG21	55:UT:1079:VAL:HA	1.85	0.58
55:UT:2075:LEU:HD11	55:UT:2107:LEU:HD13	1.85	0.58
6:UG:403:PHE:HB3	28:CM:8:ARG:HH12	1.68	0.58
10:UM:256:MET:HE3	10:UM:277:LEU:HD11	1.86	0.58
18:CB:211:ARG:HG2	18:CB:238:ILE:HG12	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:C1:625:C:N3	50:C1:626:A:N6	2.51	0.58
52:UV:96:LYS:HG3	52:UV:98:PRO:HD3	1.84	0.58
55:UT:1633:TRP:HB2	55:UT:1636:ARG:HB2	1.85	0.58
57:UE:179:LEU:N	57:UE:182:GLN:OE1	2.36	0.58
11:UN:280:LEU:HD21	55:UT:2200:ILE:HG12	1.85	0.58
19:CC:284:MET:HG2	20:CD:263:GLN:HE21	1.67	0.58
43:Cj:83:GLN:HE22	43:Cj:119:ALA:HB2	1.69	0.58
51:C2:49:U:H2'	51:C2:50:G:H8	1.67	0.58
9:UL:283:GLU:HB2	9:UL:296:HIS:CE1	2.38	0.58
22:CG:454:ASP:OD1	22:CG:454:ASP:N	2.34	0.58
31:CQ:167:GLN:OE1	31:CQ:229:ARG:NH2	2.36	0.58
52:UV:1033:PRO:HG3	52:UV:1040:LEU:HD13	1.85	0.58
55:UT:1729:ASN:HA	55:UT:1732:LEU:HD22	1.86	0.58
56:UH:585:HIS:O	56:UH:590:ASN:ND2	2.36	0.58
7:UJ:372:ILE:HD12	7:UJ:419:GLN:HG3	1.84	0.58
9:UL:572:ARG:NH2	9:UL:613:MET:O	2.37	0.58
9:UL:626:SER:OG	9:UL:627:ALA:N	2.37	0.58
15:UU:521:ALA:HB2	15:UU:544:VAL:HG11	1.85	0.58
24:CI:344:MET:HB3	24:CI:353:ILE:HG22	1.86	0.58
52:UV:146:LEU:HD12	52:UV:147:PRO:HD2	1.84	0.58
58:US:352:LEU:O	58:US:357:ARG:NH2	2.35	0.58
9:UL:816:PRO:HA	9:UL:819:VAL:HG22	1.84	0.58
9:UL:955:LYS:NZ	27:CL:651:SER:OG	2.36	0.58
20:CD:318:THR:OG1	51:C2:262:C:OP2	2.21	0.58
23:CH:151:ASP:OD1	23:CH:154:ARG:NH2	2.37	0.58
24:CI:953:ARG:NH2	50:C1:1141:G:OP1	2.37	0.58
50:C1:689:A:O3'	50:C1:892:C:N4	2.37	0.58
50:C1:2054:A:N6	50:C1:2121:U:C2	2.72	0.58
50:C1:2189:C:H2'	50:C1:2190:G:C8	2.38	0.58
52:UV:642:ASN:HA	52:UV:646:LYS:HB2	1.84	0.58
56:UH:830:VAL:HG12	57:UI:250:SER:HB3	1.85	0.58
4:UD:7:ARG:HH21	56:UH:904:ARG:HB3	1.68	0.58
9:UL:835:GLN:OE1	10:UM:821:ARG:NH1	2.37	0.58
13:UQ:759:ASP:O	56:UH:543:ARG:NH1	2.35	0.58
15:UU:197:ASN:HD21	20:CD:446:GLY:HA2	1.68	0.58
32:CR:855:LEU:HA	32:CR:858:MET:HG2	1.85	0.58
38:Ce:55:ILE:HG21	38:Ce:185:ARG:HG2	1.84	0.58
40:Cg:38:ARG:HH12	50:C1:1179:G:H5'	1.69	0.58
50:C1:925:G:OP1	54:CW:119:ARG:NH1	2.31	0.58
9:UL:716:HIS:HE2	50:C1:2237:G:HO2'	1.52	0.58
12:UO:331:ASP:N	12:UO:331:ASP:OD1	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:UZ:282:TYR:HB3	17:UZ:290:ALA:HB1	1.86	0.58
32:CS:68:THR:HG21	32:CS:73:LYS:HE2	1.84	0.58
50:C1:460:U:C4	61:CY:377:ARG:CD	2.87	0.58
50:C1:470:C:OP2	61:CY:376:THR:CB	2.52	0.58
50:C1:2167:G:N2	50:C1:2194:A:OP2	2.32	0.58
52:UV:718:LYS:HG3	52:UV:770:ILE:HB	1.85	0.58
61:CY:374:ARG:HD2	61:CY:374:ARG:N	2.18	0.58
4:UD:481:ALA:HA	4:UD:497:GLU:HA	1.86	0.58
5:UF:310:LEU:HB3	5:UF:313:HIS:HB3	1.85	0.58
7:UJ:1534:ARG:HA	7:UJ:1538:ALA:HB3	1.85	0.58
9:UL:239:GLY:HA2	9:UL:275:ARG:HE	1.69	0.58
24:CI:386:LEU:HB2	32:CR:211:ILE:HG22	1.86	0.58
32:CR:912:PHE:HA	32:CR:915:ILE:HD12	1.85	0.58
52:UV:929:VAL:HG12	52:UV:951:ARG:HE	1.68	0.58
19:CC:86:LEU:HD13	19:CC:116:VAL:HG21	1.86	0.57
44:Ck:77:THR:O	44:Ck:93:ARG:NH2	2.37	0.57
2:UB:88:PRO:HB3	50:C1:1762:G:H5'	1.85	0.57
7:UJ:1650:VAL:HA	7:UJ:1653:THR:HG22	1.86	0.57
10:UM:821:ARG:NH2	50:C1:2221:G:OP2	2.37	0.57
27:CL:618:GLU:OE2	27:CL:621:ARG:NH2	2.34	0.57
51:C2:243:G:H2'	51:C2:244:G:C8	2.39	0.57
51:C2:259:A:H1'	51:C2:260:G:C2	2.39	0.57
52:UV:450:LEU:HB3	52:UV:532:ILE:HB	1.86	0.57
54:CW:329:PRO:HB3	54:CW:355:HIS:HE2	1.69	0.57
9:UL:284:VAL:HG22	9:UL:295:VAL:HG22	1.86	0.57
15:UU:482:PRO:HD2	15:UU:502:LEU:HD21	1.87	0.57
21:CF:119:ARG:HA	21:CF:122:VAL:HG22	1.86	0.57
22:CG:172:THR:HG23	22:CG:583:GLY:HA3	1.86	0.57
29:CN:112:ILE:HG23	29:CN:124:VAL:HB	1.84	0.57
47:Co:382:GLN:HG3	47:Co:384:ASP:H	1.69	0.57
50:C1:1457:G:O6	50:C1:1540:A:N1	2.37	0.57
52:UV:92:LYS:HG2	52:UV:94:LYS:H	1.70	0.57
55:UT:1092:ASP:O	55:UT:1096:ASN:ND2	2.37	0.57
55:UT:1471:ALA:O	55:UT:1475:GLN:N	2.32	0.57
56:UH:555:GLY:HA2	56:UH:570:ARG:HH21	1.69	0.57
7:UJ:556:LEU:HD11	7:UJ:592:ILE:HG23	1.86	0.57
39:Cf:73:THR:O	39:Cf:74:ARG:NH1	2.32	0.57
44:Ck:76:LEU:HB3	44:Ck:93:ARG:HH22	1.70	0.57
47:Co:341:ARG:O	47:Co:342:LYS:C	2.47	0.57
52:UV:882:PHE:O	52:UV:886:TRP:HB2	2.03	0.57
55:UT:495:GLN:NE2	55:UT:547:THR:OG1	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:UL:434:ILE:HD11	9:UL:705:SER:HA	1.86	0.57
10:UM:645:VAL:HA	10:UM:670:GLY:HA2	1.86	0.57
10:UM:666:PHE:HE1	10:UM:680:ALA:HB2	1.68	0.57
13:UQ:439:SER:OG	13:UQ:440:LEU:N	2.37	0.57
15:UU:889:SER:HB2	31:CQ:258:ARG:HG3	1.87	0.57
21:CF:106:ASN:OD1	21:CF:112:ASN:ND2	2.37	0.57
23:CH:178:ARG:NH1	23:CH:255:GLN:OE1	2.38	0.57
43:Cj:126:PRO:HD2	43:Cj:128:LYS:HE3	1.86	0.57
50:C1:712:A:N6	50:C1:875:G:C2	2.72	0.57
55:UT:1348:GLN:NE2	55:UT:1382:GLU:OE2	2.37	0.57
28:CM:55:LYS:NZ	51:C2:35:G:OP2	2.37	0.57
55:UT:1559:GLU:OE2	55:UT:1599:GLN:NE2	2.38	0.57
8:UK:268:ARG:HD2	21:CE:95:SER:HB3	1.86	0.57
18:CA:111:VAL:HG23	18:CA:125:THR:HG23	1.86	0.57
22:CG:246:LEU:HG	22:CG:247:LYS:HG3	1.87	0.57
24:CI:129:MET:HA	24:CI:132:VAL:HG12	1.86	0.57
28:CM:264:ILE:HG13	28:CM:310:TRP:HZ3	1.68	0.57
37:Cd:59:GLN:OE1	37:Cd:72:ARG:NH1	2.37	0.57
55:UT:1752:GLU:HA	55:UT:1755:ARG:HD2	1.87	0.57
2:UB:845:ARG:NH1	24:CI:941:SER:OG	2.38	0.57
4:UD:278:ASP:N	4:UD:278:ASP:OD2	2.29	0.57
4:UD:545:TYR:O	4:UD:548:ASN:ND2	2.37	0.57
9:UL:394:LEU:HB2	9:UL:420:VAL:HB	1.87	0.57
12:UO:433:TYR:HH	12:UO:463:ARG:HH21	1.49	0.57
32:CS:865:TYR:OH	32:CS:881:GLN:NE2	2.38	0.57
50:C1:1045:G:H2'	50:C1:1046:G:C8	2.40	0.57
56:UH:575:SER:HA	56:UH:578:ILE:HG22	1.84	0.57
4:UD:865:ARG:NH2	4:UD:871:ASP:OD2	2.38	0.57
7:UJ:635:LYS:NZ	7:UJ:640:LYS:O	2.38	0.57
9:UL:23:ASN:ND2	9:UL:73:ILE:O	2.37	0.57
10:UM:328:LEU:HD12	10:UM:333:LEU:HB2	1.87	0.57
16:UX:56:TYR:HB2	16:UX:87:VAL:HG12	1.87	0.57
32:CS:58:TRP:HE1	32:CS:126:GLN:HE21	1.52	0.57
46:Cn:140:LYS:NZ	50:C1:618:C:OP1	2.37	0.57
50:C1:67:G:H5'	56:UH:895:GLN:HB2	1.87	0.57
10:UM:674:LEU:HD11	10:UM:688:THR:HB	1.85	0.57
12:UO:482:LEU:HD22	12:UO:505:LEU:HD13	1.87	0.57
13:UQ:314:VAL:HG22	13:UQ:326:TYR:HB2	1.86	0.57
24:CI:845:LEU:HD11	24:CI:998:LYS:HB2	1.87	0.57
27:CL:477:GLU:OE2	27:CL:478:ARG:NH2	2.38	0.57
31:CQ:127:SER:OG	31:CQ:128:LYS:N	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:CV:39:ALA:HA	53:CV:42:ILE:HD12	1.87	0.57
55:UT:499:VAL:HG22	55:UT:551:ILE:HD11	1.86	0.57
2:UB:663:ASN:ND2	2:UB:681:PRO:O	2.38	0.56
5:UF:128:ARG:NH2	50:C1:482:C:OP1	2.38	0.56
10:UM:114:VAL:HA	10:UM:130:ALA:HA	1.87	0.56
25:CJ:87:ILE:HG21	25:CJ:101:VAL:HG23	1.86	0.56
29:CO:88:ARG:O	29:CO:90:ASP:N	2.38	0.56
30:CP:56:PRO:HA	30:CP:59:THR:HG22	1.86	0.56
35:Cb:49:ARG:NH2	35:Cb:50:ASN:OD1	2.38	0.56
47:Co:342:LYS:HB2	47:Co:355:VAL:HG12	1.87	0.56
50:C1:191:C:O2'	50:C1:192:A:N7	2.32	0.56
50:C1:689:A:C8	50:C1:942:U:N3	2.73	0.56
50:C1:1122:A:H5'	50:C1:1127:C:H41	1.70	0.56
54:CW:344:MET:HE2	54:CW:366:PRO:HG2	1.87	0.56
55:UT:285:VAL:HG22	55:UT:298:TRP:CD1	2.40	0.56
55:UT:563:LEU:O	55:UT:609:ARG:NH2	2.37	0.56
55:UT:1173:PRO:HA	55:UT:1213:THR:HG22	1.87	0.56
55:UT:1997:VAL:O	55:UT:2005:LYS:NZ	2.32	0.56
1:UA:500:ARG:NH2	50:C1:2201:C:OP2	2.36	0.56
8:UK:164:PHE:HE1	63:UP:321:ARG:HH11	1.52	0.56
15:UU:511:VAL:HB	15:UU:524:TRP:HB2	1.87	0.56
18:CB:231:ALA:HA	18:CB:258:LYS:HD2	1.87	0.56
22:CG:270:LEU:HB2	22:CG:291:VAL:HG21	1.87	0.56
45:Cm:105:THR:HG23	45:Cm:126:ILE:HG21	1.87	0.56
50:C1:312:G:H2'	50:C1:327:G:H22	1.70	0.56
50:C1:1257:C:O2'	55:UT:2100:ARG:NH2	2.38	0.56
52:UV:817:ILE:O	52:UV:821:THR:OG1	2.19	0.56
55:UT:377:GLN:HA	55:UT:380:VAL:HG12	1.87	0.56
56:UH:485:LEU:HD11	56:UH:490:ASP:HB3	1.87	0.56
60:CX:275:ARG:O	60:CX:279:HIS:ND1	2.36	0.56
6:UG:289:SER:OG	6:UG:291:ASP:O	2.21	0.56
6:UG:309:ASP:HA	6:UG:350:ILE:HD11	1.86	0.56
7:UJ:1699:ILE:HG21	7:UJ:1740:ALA:HB1	1.87	0.56
9:UL:66:CYS:HB3	9:UL:93:ARG:HH22	1.70	0.56
10:UM:64:ILE:HD11	10:UM:78:VAL:HB	1.86	0.56
12:UO:31:LYS:HG3	12:UO:32:LYS:HG3	1.88	0.56
13:UQ:502:VAL:HG23	13:UQ:511:VAL:HB	1.87	0.56
18:CA:156:VAL:HG22	18:CA:225:VAL:HB	1.88	0.56
20:CD:229:LEU:HD12	20:CD:230:PRO:HD2	1.86	0.56
20:CD:318:THR:OG1	51:C2:261:U:O2'	2.23	0.56
22:CG:163:TYR:HB3	22:CG:604:PHE:HB3	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:CH:140:SER:OG	23:CH:141:ALA:N	2.38	0.56
25:CJ:90:THR:OG1	25:CJ:91:LYS:N	2.38	0.56
29:CN:164:GLN:HB3	50:C1:2158:G:H5'	1.88	0.56
32:CR:795:ARG:NH2	32:CS:891:ARG:O	2.37	0.56
34:Ca:115:ARG:NH1	34:Ca:118:GLN:OE1	2.37	0.56
34:Ca:142:PHE:O	34:Ca:208:GLN:N	2.38	0.56
37:Cd:174:LYS:NZ	50:C1:655:A:OP2	2.38	0.56
39:Cf:110:ARG:NH2	39:Cf:164:PHE:O	2.38	0.56
50:C1:1507:G:H2'	50:C1:1508:A:H8	1.69	0.56
51:C2:56:U:O4	51:C2:57:A:N6	2.35	0.56
52:UV:566:PHE:O	52:UV:569:PHE:N	2.38	0.56
52:UV:893:LEU:O	52:UV:932:VAL:HA	2.06	0.56
55:UT:667:ARG:NH1	55:UT:694:GLU:OE2	2.38	0.56
55:UT:1612:GLU:HB3	55:UT:1615:GLN:HE21	1.70	0.56
4:UD:401:GLN:OE1	56:UH:911:ARG:NH2	2.38	0.56
18:CA:230:VAL:O	18:CA:235:GLN:NE2	2.37	0.56
32:CR:145:GLY:N	32:CR:479:ARG:O	2.38	0.56
47:Co:336:VAL:N	47:Co:359:LEU:O	2.39	0.56
50:C1:2370:C:H2'	50:C1:2371:G:H8	1.70	0.56
7:UJ:862:THR:OG1	7:UJ:864:ASP:OD1	2.22	0.56
15:UU:152:VAL:HG22	15:UU:161:VAL:HG12	1.88	0.56
18:CB:180:VAL:O	18:CB:203:VAL:HA	2.04	0.56
20:CD:363:ARG:NH1	51:C2:85:A:OP2	2.39	0.56
28:CM:47:VAL:HG21	28:CM:388:ILE:HG23	1.87	0.56
32:CR:58:TRP:HE1	32:CR:126:GLN:HE21	1.52	0.56
32:CR:865:TYR:OH	32:CR:881:GLN:NE2	2.38	0.56
47:Co:349:LEU:HD13	47:Co:351:ARG:HE	1.70	0.56
49:CU:218:SER:OG	49:CU:219:ILE:N	2.38	0.56
50:C1:648:A:OP2	55:UT:26:ARG:NH1	2.34	0.56
50:C1:940:G:H2'	50:C1:941:G:H8	1.71	0.56
50:C1:994:A:N1	50:C1:1007:G:C6	2.74	0.56
50:C1:1609:U:H2'	50:C1:1610:A:H8	1.70	0.56
52:UV:1051:LEU:HD23	52:UV:1068:GLY:H	1.71	0.56
55:UT:655:LEU:HD13	55:UT:674:LEU:HD11	1.87	0.56
56:UH:699:LEU:O	56:UH:703:ARG:NH2	2.38	0.56
4:UD:158:THR:OG1	4:UD:159:VAL:N	2.39	0.56
10:UM:401:VAL:HA	10:UM:425:ASP:HA	1.87	0.56
15:UU:255:ILE:HD11	15:UU:265:LEU:HD13	1.87	0.56
24:CI:308:THR:OG1	24:CI:311:MET:SD	2.63	0.56
32:CR:56:VAL:HB	32:CR:104:ILE:HG23	1.88	0.56
35:Cb:87:MET:HE1	35:Cb:123:LEU:HB3	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Cf:171:ALA:HB2	39:Cf:187:ILE:HD12	1.86	0.56
42:Ci:73:ALA:HB1	42:Ci:114:ALA:HB2	1.87	0.56
51:C2:3:C:H2'	51:C2:4:G:H8	1.70	0.56
55:UT:126:VAL:HG12	55:UT:171:LEU:HD11	1.88	0.56
10:UM:702:HIS:HD2	10:UM:705:THR:H	1.53	0.56
13:UQ:89:MET:HE2	13:UQ:414:HIS:HD2	1.70	0.56
18:CA:123:THR:OG1	18:CA:124:LYS:N	2.37	0.56
19:CC:281:VAL:HA	19:CC:284:MET:HE3	1.88	0.56
32:CR:368:THR:HG22	32:CR:370:GLN:HE22	1.71	0.56
32:CS:56:VAL:HB	32:CS:104:ILE:HG23	1.88	0.56
39:Cf:182:ARG:HD2	50:C1:790:U:H1'	1.87	0.56
50:C1:787:U:O2	50:C1:847:C:N3	2.37	0.56
51:C2:103:G:O6	51:C2:250:G:O6	2.22	0.56
55:UT:290:LEU:HD11	55:UT:334:GLN:HB3	1.87	0.56
7:UJ:238:ALA:HB1	15:UU:447:ALA:HB3	1.88	0.56
14:UR:300:LEU:HB2	14:UR:316:THR:HG22	1.88	0.56
17:UZ:77:ARG:NH2	50:C1:373:C:O2'	2.39	0.56
23:CH:93:LEU:HB2	23:CH:96:ASP:HB2	1.86	0.56
27:CL:697:THR:HG22	27:CL:701:ILE:H	1.71	0.56
27:CL:719:ARG:NH2	50:C1:2224:C:OP2	2.37	0.56
50:C1:1182:U:H2'	50:C1:1183:A:H8	1.71	0.56
50:C1:1524:A:H2'	50:C1:1525:A:H8	1.70	0.56
50:C1:1742:C:C4	50:C1:2165:U:N3	2.73	0.56
52:UV:667:HIS:HB3	52:UV:700:SER:HB2	1.88	0.56
55:UT:1652:VAL:HG22	55:UT:1656:LYS:HE3	1.88	0.56
58:US:357:ARG:NH1	58:US:395:SER:OG	2.39	0.56
13:UQ:933:ALA:HB3	13:UQ:938:MET:HG3	1.87	0.56
22:CG:472:LEU:HD12	22:CG:473:PRO:HD2	1.88	0.56
24:CI:917:LYS:NZ	50:C1:1141:G:O3'	2.39	0.56
25:CJ:14:LYS:NZ	51:C2:27:C:OP2	2.36	0.56
28:CM:86:SER:OG	28:CM:88:ASP:OD1	2.23	0.56
30:CP:119:MET:HE3	30:CP:172:MET:HB3	1.86	0.56
32:CR:170:HIS:CG	32:CR:705:LEU:HD11	2.41	0.56
32:CR:518:LEU:HD12	32:CR:656:LEU:HB2	1.88	0.56
39:Cf:31:ARG:NH2	50:C1:917:A:OP2	2.39	0.56
50:C1:68:U:O4	56:UH:883:ARG:NE	2.38	0.56
50:C1:1261:G:H5''	55:UT:1975:LYS:HD2	1.88	0.56
52:UV:853:GLU:O	52:UV:857:LEU:HB2	2.06	0.56
4:UD:54:GLU:HG3	4:UD:68:ILE:HG12	1.88	0.56
13:UQ:572:THR:HG23	13:UQ:575:ASP:H	1.71	0.56
15:UU:277:THR:HG21	15:UU:303:SER:HB3	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:CM:288:ASP:OD1	28:CM:332:THR:N	2.34	0.56
31:CQ:112:GLN:HG3	31:CQ:125:ARG:HB3	1.87	0.56
32:CS:145:GLY:N	32:CS:479:ARG:O	2.38	0.56
32:CS:592:GLY:HA3	32:CS:631:SER:HA	1.87	0.56
50:C1:66:G:OP2	56:UH:894:ARG:NH1	2.38	0.56
50:C1:1240:G:C2	50:C1:1260:U:C2	2.94	0.56
52:UV:80:GLN:HB3	52:UV:84:ASP:HB3	1.87	0.56
54:CW:165:TYR:HD2	54:CW:183:GLN:HB3	1.71	0.56
55:UT:1028:ASP:O	55:UT:1032:MET:N	2.39	0.56
60:CX:301:GLY:O	60:CX:305:GLY:CA	2.54	0.56
1:UA:204:SER:OG	1:UA:205:LYS:N	2.39	0.55
7:UJ:150:THR:HG22	33:CT:74:PRO:HD3	1.87	0.55
9:UL:243:VAL:HG21	9:UL:353:VAL:HG11	1.87	0.55
10:UM:669:ALA:HB2	10:UM:699:LEU:HD11	1.88	0.55
15:UU:666:THR:OG1	15:UU:667:LYS:N	2.38	0.55
22:CG:196:LYS:NZ	22:CG:197:LEU:O	2.34	0.55
22:CG:349:ALA:HB1	22:CG:397:SER:HB2	1.88	0.55
29:CN:111:GLN:NE2	29:CN:113:TYR:OH	2.39	0.55
32:CR:755:THR:O	32:CR:755:THR:OG1	2.18	0.55
32:CS:415:SER:O	32:CS:415:SER:OG	2.16	0.55
35:Cb:97:GLU:OE2	35:Cb:113:ARG:NH2	2.37	0.55
40:Cg:35:ARG:NH2	50:C1:1060:U:O4	2.39	0.55
50:C1:484:G:H2'	50:C1:485:G:C8	2.41	0.55
51:C2:162:C:O2'	51:C2:164:U:OP2	2.23	0.55
56:UH:642:VAL:HG13	56:UH:729:LEU:HD23	1.88	0.55
62:CZ:566:GLU:HA	62:CZ:569:ILE:HG12	1.87	0.55
2:UB:701:GLN:HB3	58:US:543:ASP:HB2	1.89	0.55
9:UL:498:SER:OG	9:UL:499:LEU:N	2.39	0.55
23:CH:139:THR:HG22	23:CH:179:SER:H	1.71	0.55
32:CS:368:THR:HG22	32:CS:370:GLN:HE22	1.71	0.55
40:Cg:108:GLN:HE21	40:Cg:120:ILE:HG22	1.71	0.55
50:C1:1480:G:O6	50:C1:1503:U:O4	2.24	0.55
50:C1:1503:U:H2'	50:C1:1504:A:H8	1.71	0.55
54:CW:11:VAL:HG21	54:CW:327:VAL:HG22	1.87	0.55
1:UA:69:LEU:HD11	1:UA:127:THR:HG21	1.89	0.55
1:UA:505:GLU:HG3	36:Cc:66:VAL:HG11	1.89	0.55
8:UK:162:ILE:HG12	63:UP:319:ALA:HB3	1.89	0.55
22:CG:153:ALA:HB1	22:CG:491:ARG:HD2	1.89	0.55
26:CK:117:LEU:HD11	43:Cj:128:LYS:HE2	1.88	0.55
26:CK:229:THR:HG21	27:CL:545:ILE:HD11	1.88	0.55
28:CM:258:ALA:HA	28:CM:264:ILE:HD13	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:CR:592:GLY:HA3	32:CR:631:SER:HA	1.87	0.55
39:Cf:41:LYS:NZ	50:C1:844:U:OP2	2.38	0.55
49:CU:112:SER:OG	49:CU:114:GLN:OE1	2.24	0.55
58:US:114:LEU:HA	58:US:117:ARG:HD2	1.88	0.55
4:UD:104:SER:HB3	4:UD:114:TRP:HE1	1.72	0.55
12:UO:488:TYR:HB3	12:UO:494:TYR:HE2	1.72	0.55
13:UQ:735:ARG:NH2	13:UQ:778:THR:OG1	2.40	0.55
15:UU:119:LEU:HD22	15:UU:131:LEU:HD22	1.87	0.55
18:CB:153:GLY:HA2	18:CB:177:THR:HG23	1.87	0.55
22:CG:192:LEU:HD21	22:CG:263:THR:HG21	1.89	0.55
27:CL:548:ARG:NH1	27:CL:553:GLU:O	2.39	0.55
36:Cc:50:GLN:HE22	36:Cc:52:ARG:HH11	1.53	0.55
44:Ck:89:ILE:HG23	44:Ck:116:VAL:HG21	1.87	0.55
50:C1:493:G:H2'	50:C1:494:G:C8	2.41	0.55
50:C1:923:C:H2'	50:C1:924:A:H8	1.71	0.55
50:C1:1644:U:O2'	50:C1:1645:U:O2	2.24	0.55
52:UV:1059:ASP:HB2	53:CV:92:SER:O	2.06	0.55
55:UT:495:GLN:HE22	55:UT:544:HIS:H	1.53	0.55
55:UT:897:LEU:HA	55:UT:900:ARG:HD2	1.88	0.55
55:UT:1516:LEU:O	55:UT:1518:GLN:N	2.38	0.55
1:UA:254:ASN:O	50:C1:286:G:N2	2.39	0.55
7:UJ:1672:PHE:HA	7:UJ:1675:VAL:HG22	1.89	0.55
15:UU:858:ASP:N	15:UU:858:ASP:OD1	2.37	0.55
24:CI:347:SER:OG	24:CI:350:HIS:O	2.22	0.55
26:CK:89:LEU:HA	26:CK:115:ILE:O	2.07	0.55
32:CS:518:LEU:HD12	32:CS:656:LEU:HB2	1.88	0.55
50:C1:335:C:H2'	50:C1:336:G:H8	1.71	0.55
9:UL:94:LEU:HB2	9:UL:104:VAL:HG12	1.87	0.55
9:UL:622:ILE:HD11	9:UL:636:LEU:HD13	1.87	0.55
10:UM:697:TRP:HE1	10:UM:713:SER:HB2	1.71	0.55
16:UX:90:ILE:HG22	16:UX:119:GLN:HB2	1.89	0.55
28:CM:171:SER:OG	28:CM:200:ILE:O	2.24	0.55
35:Cb:31:PRO:HG3	35:Cb:43:PRO:HG3	1.87	0.55
37:Cd:177:ARG:NH1	50:C1:652:A:OP2	2.40	0.55
44:Ck:77:THR:HG22	44:Ck:129:VAL:HG22	1.88	0.55
52:UV:689:LYS:HG3	52:UV:1043:ALA:HB1	1.89	0.55
54:CW:224:GLY:HA2	54:CW:247:ILE:HG13	1.89	0.55
55:UT:1415:PHE:O	55:UT:1419:THR:OG1	2.19	0.55
56:UH:736:LEU:HD21	56:UH:792:TRP:HE1	1.70	0.55
1:UA:576:ASN:H	1:UA:591:GLY:HA2	1.72	0.55
4:UD:72:GLY:H	63:UP:331:LEU:HD21	1.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:UQ:327:SER:OG	13:UQ:328:ASN:N	2.40	0.55
18:CB:97:LEU:HD23	18:CB:98:VAL:HG13	1.87	0.55
18:CB:250:GLY:CA	18:CB:306:TYR:O	2.55	0.55
18:CB:265:THR:HG21	21:CE:124:ARG:HH11	1.70	0.55
20:CD:301:LEU:HD22	20:CD:322:LEU:HD12	1.88	0.55
27:CL:704:ALA:HB3	27:CL:707:GLU:HG2	1.88	0.55
29:CO:48:THR:HG22	29:CO:142:VAL:HG22	1.89	0.55
32:CR:782:PHE:HA	32:CR:785:ARG:HD2	1.89	0.55
32:CS:170:HIS:CG	32:CS:705:LEU:HD11	2.41	0.55
50:C1:323:G:H2'	50:C1:324:G:H8	1.72	0.55
50:C1:652:A:H2	50:C1:670:A:H62	1.55	0.55
1:UA:516:VAL:HG22	1:UA:527:ILE:HG22	1.87	0.55
6:UG:579:ASP:HA	30:CP:73:ILE:HD11	1.89	0.55
7:UJ:293:MET:HE3	7:UJ:315:LEU:HB3	1.89	0.55
7:UJ:1528:SER:HB3	7:UJ:1583:TRP:HZ2	1.71	0.55
7:UJ:1610:PHE:HA	7:UJ:1613:SER:HB2	1.87	0.55
8:UK:34:TYR:OH	50:C1:1149:C:O2	2.21	0.55
9:UL:233:ILE:HG22	9:UL:243:VAL:HG12	1.88	0.55
13:UQ:299:ILE:O	13:UQ:310:GLN:NE2	2.40	0.55
23:CH:172:GLU:HB3	23:CH:195:ARG:HB2	1.88	0.55
44:Ck:141:ARG:NH1	50:C1:888:U:OP1	2.40	0.55
50:C1:2335:U:H2'	50:C1:2336:A:H8	1.71	0.55
55:UT:1794:LEU:HD21	55:UT:1817:ILE:HG23	1.87	0.55
60:CX:285:ASN:H	60:CX:288:LEU:HD12	1.71	0.55
61:CY:379:LYS:NZ	61:CY:379:LYS:HB3	2.21	0.55
4:UD:387:TRP:NE1	4:UD:390:GLU:OE2	2.36	0.55
28:CM:220:ARG:HA	28:CM:241:ALA:HA	1.88	0.55
53:CV:195:LEU:HA	53:CV:198:HIS:HB2	1.89	0.55
55:UT:1759:SER:HB2	55:UT:1800:VAL:HG21	1.88	0.55
2:UB:643:ALA:O	2:UB:647:GLN:NE2	2.40	0.55
4:UD:453:VAL:HB	4:UD:472:VAL:HB	1.89	0.55
7:UJ:506:LEU:HD22	7:UJ:718:PRO:HG2	1.87	0.55
7:UJ:1784:ARG:NH2	55:UT:50:ASP:O	2.40	0.55
13:UQ:671:VAL:HG22	56:UH:718:PRO:HD3	1.88	0.55
24:CI:866:HIS:O	50:C1:1156:C:N4	2.39	0.55
41:Ch:108:ASP:OD1	41:Ch:108:ASP:N	2.40	0.55
50:C1:214:C:H2'	50:C1:215:A:H8	1.71	0.55
52:UV:141:ASP:OD2	52:UV:191:HIS:NE2	2.36	0.55
55:UT:1770:PHE:HA	55:UT:1773:ILE:HD12	1.89	0.55
2:UB:118:ASP:OD2	2:UB:120:ARG:NH1	2.38	0.54
6:UG:315:MET:HB2	6:UG:329:ILE:HD11	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:UO:30:PHE:HA	12:UO:348:ARG:HB2	1.89	0.54
20:CD:422:ASN:HD22	20:CD:424:ILE:HD12	1.72	0.54
26:CK:152:ILE:HG23	26:CK:167:LEU:HD11	1.89	0.54
29:CN:119:GLY:O	29:CN:165:ASN:ND2	2.38	0.54
32:CR:830:ASP:OD2	32:CR:830:ASP:N	2.40	0.54
45:Cm:92:LYS:HE3	49:CU:278:VAL:HG22	1.89	0.54
50:C1:786:G:C6	50:C1:848:G:C2	2.94	0.54
50:C1:2095:G:H2'	50:C1:2096:G:C8	2.42	0.54
52:UV:999:THR:OG1	52:UV:1045:HIS:NE2	2.40	0.54
52:UV:1055:SER:HA	53:CV:91:HIS:HB2	1.89	0.54
54:CW:298:THR:O	54:CW:300:THR:N	2.40	0.54
55:UT:1077:GLU:O	55:UT:1081:ASN:ND2	2.39	0.54
6:UG:466:ILE:HG23	11:UN:882:TYR:HB3	1.88	0.54
10:UM:755:ARG:HG3	10:UM:793:ALA:HB1	1.88	0.54
13:UQ:745:ILE:HG12	13:UQ:753:VAL:HG22	1.88	0.54
15:UU:46:PRO:HG2	15:UU:47:THR:HG23	1.89	0.54
15:UU:931:GLY:O	15:UU:934:LYS:C	2.50	0.54
18:CB:102:SER:OG	18:CB:108:ARG:NH1	2.39	0.54
24:CI:537:TRP:HB3	24:CI:561:ARG:HA	1.90	0.54
24:CI:843:GLN:OE1	24:CI:1002:ASN:ND2	2.37	0.54
30:CP:114:ILE:HA	30:CP:119:MET:HG2	1.90	0.54
36:Cc:127:CYS:SG	36:Cc:197:ALA:HB1	2.48	0.54
55:UT:1349:ARG:NH1	55:UT:1429:ASP:OD2	2.40	0.54
1:UA:160:SER:OG	1:UA:162:ASP:OD1	2.24	0.54
4:UD:552:ILE:HG22	4:UD:563:VAL:HG12	1.88	0.54
6:UG:404:GLU:HA	28:CM:6:LEU:HD11	1.89	0.54
13:UQ:291:SER:OG	13:UQ:292:THR:N	2.38	0.54
16:UX:62:THR:HG22	16:UX:95:VAL:HG13	1.90	0.54
20:CD:16:PHE:HA	20:CD:45:TYR:HA	1.89	0.54
21:CE:29:SER:HB2	21:CE:34:LEU:HD22	1.90	0.54
28:CM:302:SER:OG	28:CM:303:TYR:N	2.40	0.54
37:Cd:205:LYS:NZ	50:C1:768:C:OP1	2.40	0.54
47:Co:358:ILE:O	47:Co:400:THR:OG1	2.22	0.54
61:CY:276:GLU:OE1	61:CY:282:ARG:NH1	2.38	0.54
1:UA:345:SER:OG	1:UA:346:LEU:N	2.39	0.54
2:UB:734:LYS:NZ	2:UB:779:ASP:OD2	2.31	0.54
5:UF:32:GLU:HB3	14:UR:60:LEU:HD11	1.89	0.54
32:CS:646:SER:HB2	54:CW:257:LEU:HD11	1.89	0.54
37:Cd:210:GLU:OE2	37:Cd:213:GLN:NE2	2.41	0.54
50:C1:480:U:H2'	50:C1:481:G:H8	1.72	0.54
50:C1:710:A:N1	50:C1:878:C:N3	2.55	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:C1:839:U:H2'	50:C1:840:A:H8	1.73	0.54
51:C2:160:U:H2'	51:C2:161:G:C8	2.42	0.54
52:UV:698:VAL:HG11	52:UV:811:PRO:HG3	1.90	0.54
55:UT:261:GLU:HA	55:UT:264:LYS:HB2	1.90	0.54
55:UT:1252:LYS:NZ	55:UT:1295:MET:O	2.38	0.54
56:UH:840:ALA:O	57:UI:236:ILE:HD11	2.08	0.54
58:US:385:LEU:HB3	58:US:400:ILE:HD11	1.88	0.54
60:CX:274:VAL:HG23	60:CX:284:LEU:HD21	1.89	0.54
61:CY:374:ARG:HH21	61:CY:374:ARG:CG	2.20	0.54
5:UF:320:VAL:HG12	5:UF:324:MET:HE2	1.89	0.54
10:UM:328:LEU:O	10:UM:330:GLU:N	2.40	0.54
14:UR:562:LYS:NZ	50:C1:237:G:OP1	2.40	0.54
16:UX:135:VAL:HG11	16:UX:156:ARG:HE	1.72	0.54
23:CH:236:ILE:HD12	23:CH:252:ILE:HB	1.90	0.54
26:CK:237:ILE:HG23	26:CK:263:MET:HG3	1.88	0.54
32:CS:782:PHE:HA	32:CS:785:ARG:HD2	1.89	0.54
55:UT:192:PRO:HA	55:UT:196:LYS:HB2	1.88	0.54
60:CX:287:HIS:O	60:CX:291:CYS:HB2	2.07	0.54
1:UA:792:LEU:HD12	15:UU:840:MET:HE1	1.90	0.54
6:UG:234:LEU:HD22	6:UG:261:PRO:HG3	1.89	0.54
34:Ca:146:ARG:HD3	34:Ca:147:PRO:HD2	1.90	0.54
39:Cf:11:ARG:HB2	50:C1:907:A:H5''	1.90	0.54
50:C1:903:U:O2'	50:C1:907:A:N7	2.38	0.54
55:UT:438:ALA:HB1	55:UT:477:GLY:HA3	1.90	0.54
55:UT:1698:ILE:HG22	55:UT:1712:VAL:HG23	1.89	0.54
3:UC:640:THR:O	18:CA:77:ARG:NH1	2.41	0.54
4:UD:375:LEU:HD11	4:UD:384:LEU:HD22	1.90	0.54
9:UL:234:THR:OG1	9:UL:242:THR:OG1	2.25	0.54
13:UQ:916:THR:OG1	13:UQ:917:HIS:N	2.41	0.54
15:UU:82:LEU:HD21	15:UU:85:VAL:HG23	1.89	0.54
37:Cd:13:GLN:NE2	50:C1:735:G:N3	2.53	0.54
55:UT:682:ASP:HA	55:UT:726:LEU:HD11	1.89	0.54
1:UA:408:ALA:HB3	1:UA:418:ARG:HB2	1.89	0.54
1:UA:654:ARG:HH12	25:CJ:49:ARG:HD2	1.73	0.54
4:UD:116:LEU:HD11	4:UD:542:LEU:HB3	1.90	0.54
6:UG:270:ASN:HD22	6:UG:463:PRO:HD3	1.73	0.54
7:UJ:546:PRO:HB2	7:UJ:587:LYS:HD3	1.89	0.54
7:UJ:814:ALA:HB2	7:UJ:855:VAL:HG23	1.90	0.54
9:UL:291:ASP:HB3	9:UL:307:ILE:HB	1.90	0.54
12:UO:1:MET:HG3	13:UQ:430:PRO:HG3	1.90	0.54
24:CI:135:ILE:HA	24:CI:165:ASN:O	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:CQ:126:SER:HA	31:CQ:130:THR:HG21	1.89	0.54
50:C1:912:U:N3	50:C1:925:G:N1	2.55	0.54
55:UT:111:ILE:O	55:UT:114:HIS:ND1	2.40	0.54
55:UT:499:VAL:HG21	55:UT:547:THR:HB	1.89	0.54
62:CZ:576:LEU:HG	62:CZ:578:GLY:H	1.73	0.54
1:UA:450:ILE:HG23	1:UA:464:LEU:HB2	1.89	0.54
4:UD:557:ASP:OD1	4:UD:557:ASP:N	2.36	0.54
9:UL:568:ILE:HD13	9:UL:582:VAL:HB	1.90	0.54
20:CD:431:LYS:NZ	50:C1:253:G:OP2	2.40	0.54
32:CS:906:SER:O	32:CS:906:SER:OG	2.26	0.54
38:Ce:56:GLU:HA	38:Ce:62:LYS:HG2	1.90	0.54
54:CW:24:PRO:HD2	54:CW:27:LEU:HB2	1.90	0.54
1:UA:278:ILE:HA	1:UA:294:SER:HA	1.90	0.54
4:UD:153:LYS:HD2	4:UD:165:LEU:HD21	1.90	0.54
13:UQ:791:LEU:HD21	13:UQ:812:LEU:HD12	1.88	0.54
20:CD:81:LYS:HG3	20:CD:82:ASP:H	1.72	0.54
22:CG:312:VAL:HG13	22:CG:326:LEU:HB2	1.89	0.54
26:CK:103:PHE:HB2	26:CK:172:LEU:HD23	1.89	0.54
29:CO:246:GLU:HG2	29:CO:251:ILE:HB	1.89	0.54
32:CR:906:SER:O	32:CR:906:SER:OG	2.26	0.54
50:C1:1056:U:H2'	50:C1:1057:A:H8	1.72	0.54
55:UT:543:VAL:HG23	55:UT:548:ASN:HD21	1.73	0.54
56:UH:543:ARG:NH1	56:UH:593:SER:OG	2.41	0.54
2:UB:792:ARG:NH1	58:US:437:ASP:OD2	2.38	0.53
9:UL:628:ASP:O	9:UL:630:ASN:ND2	2.41	0.53
20:CD:263:GLN:HE22	20:CD:267:ARG:HH21	1.56	0.53
23:CH:150:ILE:HD11	23:CH:173:LEU:HD21	1.89	0.53
29:CN:48:THR:HG22	29:CN:142:VAL:HG22	1.89	0.53
38:Ce:15:SER:OG	38:Ce:16:ARG:N	2.40	0.53
1:UA:71:LEU:HD12	1:UA:81:LEU:HB3	1.91	0.53
1:UA:544:GLN:OE1	43:Cj:114:ARG:NH2	2.42	0.53
13:UQ:169:ASN:ND2	13:UQ:174:GLU:OE2	2.37	0.53
29:CO:88:ARG:HG3	29:CO:91:ILE:HG12	1.91	0.53
31:CQ:160:ARG:HG3	31:CQ:161:LEU:HD12	1.90	0.53
52:UV:718:LYS:NZ	52:UV:770:ILE:O	2.34	0.53
57:UE:175:THR:O	57:UE:175:THR:OG1	2.25	0.53
2:UB:805:PRO:HB3	29:CN:22:GLU:HB2	1.91	0.53
5:UF:20:ARG:HH21	6:UG:91:ILE:HD11	1.73	0.53
9:UL:574:SER:HG	9:UL:578:ARG:H	1.57	0.53
23:CH:166:ILE:HG22	23:CH:171:ILE:HD11	1.89	0.53
26:CK:131:ALA:HA	26:CK:136:LEU:HD12	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:CP:163:LEU:HD11	49:CU:253:ILE:HD13	1.91	0.53
52:UV:1051:LEU:HD12	52:UV:1054:LEU:HD22	1.90	0.53
54:CW:338:HIS:ND1	54:CW:339:VAL:O	2.41	0.53
55:UT:378:ILE:HG13	55:UT:425:TRP:HZ3	1.73	0.53
55:UT:1302:ILE:HD13	55:UT:1338:LEU:HD23	1.91	0.53
55:UT:1433:PRO:O	55:UT:1437:ASN:ND2	2.42	0.53
3:UC:586:ASN:ND2	46:Cn:139:LYS:O	2.39	0.53
7:UJ:736:ILE:O	7:UJ:739:THR:OG1	2.23	0.53
9:UL:208:CYS:SG	10:UM:743:GLN:NE2	2.74	0.53
24:CI:1127:GLU:OE1	24:CI:1130:ARG:NH2	2.41	0.53
32:CS:82:ILE:HD11	32:CS:89:PRO:HA	1.91	0.53
34:Ca:26:ARG:O	34:Ca:50:ARG:N	2.41	0.53
44:Ck:38:ARG:NH2	44:Ck:58:TYR:O	2.41	0.53
50:C1:616:U:H2'	50:C1:617:G:H8	1.73	0.53
50:C1:2055:C:N4	50:C1:2118:U:C2	2.76	0.53
55:UT:671:LEU:HD23	55:UT:674:LEU:HD22	1.91	0.53
55:UT:1645:VAL:HA	55:UT:1648:LEU:HD12	1.91	0.53
9:UL:24:LEU:HG	9:UL:41:VAL:HG12	1.91	0.53
10:UM:572:ASP:OD2	10:UM:575:LYS:NZ	2.39	0.53
18:CB:93:CYS:HB3	18:CB:129:ILE:HD13	1.90	0.53
24:CI:819:ARG:NH1	24:CI:823:HIS:O	2.41	0.53
29:CN:121:LEU:HD21	29:CN:167:ILE:HD12	1.89	0.53
32:CR:82:ILE:HD11	32:CR:89:PRO:HA	1.91	0.53
32:CS:570:LEU:HB3	32:CS:584:CYS:HB3	1.90	0.53
35:Cb:148:ARG:NH2	50:C1:711:U:O2'	2.42	0.53
37:Cd:52:ILE:HG22	37:Cd:111:LEU:HD22	1.90	0.53
50:C1:384:C:H3'	50:C1:385:A:H8	1.74	0.53
50:C1:681:G:O2'	50:C1:1044:A:OP1	2.26	0.53
55:UT:8:ARG:HE	55:UT:793:HIS:CE1	2.26	0.53
1:UA:54:HIS:NE2	1:UA:72:SER:OG	2.39	0.53
10:UM:42:ASN:ND2	10:UM:58:GLN:OE1	2.41	0.53
11:UN:361:THR:O	11:UN:365:SER:OG	2.26	0.53
47:Co:338:LEU:HD22	47:Co:378:MET:HE2	1.90	0.53
50:C1:685:C:O2	50:C1:686:A:N6	2.42	0.53
50:C1:1016:G:H5''	50:C1:1017:C:H5''	1.89	0.53
50:C1:1456:A:H2'	50:C1:1457:G:C8	2.43	0.53
54:CW:116:GLN:OE1	54:CW:117:CYS:N	2.41	0.53
56:UH:646:LYS:HB2	56:UH:730:PHE:HE1	1.73	0.53
57:UI:175:THR:O	57:UI:175:THR:OG1	2.25	0.53
24:CI:760:LEU:N	24:CI:764:GLN:OE1	2.41	0.53
30:CP:206:GLU:HG2	30:CP:209:LYS:HZ2	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:CR:570:LEU:HB3	32:CR:584:CYS:HB3	1.90	0.53
34:Ca:204:ILE:O	50:C1:1648:G:O2'	2.26	0.53
60:CX:267:GLU:HA	60:CX:271:LEU:HD23	1.89	0.53
1:UA:11:LEU:O	1:UA:695:LEU:HB3	2.08	0.53
4:UD:363:ARG:NH2	4:UD:686:ARG:O	2.42	0.53
9:UL:595:ASP:OD1	9:UL:595:ASP:N	2.41	0.53
12:UO:151:LYS:NZ	12:UO:193:GLY:O	2.42	0.53
14:UR:442:THR:HG22	14:UR:454:ILE:HG12	1.91	0.53
18:CA:107:LYS:HB2	18:CA:129:ILE:HD12	1.91	0.53
19:CC:6:PHE:O	19:CC:98:LEU:HA	2.08	0.53
21:CF:109:SER:OG	21:CF:110:ASP:N	2.40	0.53
22:CG:179:CYS:HB3	22:CG:182:TYR:HB2	1.91	0.53
36:Cc:79:ARG:NH2	36:Cc:156:ASN:OD1	2.41	0.53
46:Cn:103:LEU:HB3	46:Cn:126:LYS:HB2	1.91	0.53
50:C1:163:C:N4	50:C1:164:G:O6	2.42	0.53
50:C1:772:A:N6	50:C1:779:A:O2'	2.42	0.53
55:UT:1449:GLY:O	55:UT:1452:SER:OG	2.27	0.53
1:UA:426:LEU:HD21	1:UA:447:SER:HB3	1.90	0.53
1:UA:827:ARG:HG3	1:UA:831:ARG:HD3	1.90	0.53
7:UJ:500:PRO:HB3	7:UJ:539:VAL:HA	1.91	0.53
9:UL:587:SER:HA	9:UL:609:PRO:HA	1.91	0.53
14:UR:579:ASN:ND2	50:C1:243:U:O2'	2.42	0.53
24:CI:333:LYS:HA	32:CR:101:LEU:HD11	1.89	0.53
30:CP:127:ARG:NH1	30:CP:130:VAL:O	2.40	0.53
34:Ca:24:PHE:HA	34:Ca:27:LYS:HB2	1.90	0.53
4:UD:120:ARG:CZ	63:UP:330:ARG:HE	2.22	0.53
4:UD:381:ARG:NH1	4:UD:842:GLU:O	2.41	0.53
9:UL:920:ASN:ND2	10:UM:827:GLN:OE1	2.35	0.53
18:CA:82:PHE:HE2	18:CA:95:ALA:HB2	1.73	0.53
26:CK:132:GLN:O	26:CK:135:ARG:NH2	2.42	0.53
27:CL:507:THR:OG1	27:CL:508:ALA:N	2.42	0.53
30:CP:283:ARG:NH1	50:C1:934:A:N7	2.57	0.53
32:CS:739:ARG:HH12	54:CW:319:GLN:HE21	1.57	0.53
34:Ca:103:LEU:HB3	34:Ca:215:VAL:HB	1.91	0.53
37:Cd:10:ASN:ND2	37:Cd:127:VAL:O	2.42	0.53
41:Ch:124:ARG:NH1	50:C1:1551:A:OP1	2.41	0.53
50:C1:720:A:O2'	50:C1:722:U:OP2	2.26	0.53
50:C1:758:U:C2	50:C1:850:A:N6	2.77	0.53
50:C1:1613:C:H4'	50:C1:1614:U:H5'	1.90	0.53
51:C2:188:G:N1	51:C2:189:G:O6	2.42	0.53
52:UV:312:PHE:HE2	52:UV:410:SER:HB3	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:UD:366:PRO:HB3	4:UD:704:VAL:HG11	1.91	0.52
5:UF:398:ILE:HA	5:UF:401:VAL:HG22	1.90	0.52
6:UG:158:GLY:O	6:UG:175:GLN:C	2.52	0.52
9:UL:814:ARG:NH2	9:UL:824:ILE:O	2.42	0.52
19:CC:195:ALA:HB1	19:CC:216:ASN:HB2	1.90	0.52
23:CH:40:SER:O	23:CH:40:SER:OG	2.27	0.52
32:CS:764:ARG:HE	32:CS:766:LEU:HD11	1.75	0.52
32:CS:830:ASP:N	32:CS:830:ASP:OD2	2.40	0.52
46:Cn:75:GLN:HA	46:Cn:81:LYS:O	2.08	0.52
50:C1:923:C:H2'	50:C1:924:A:C8	2.43	0.52
50:C1:1231:A:H2'	50:C1:1232:G:C8	2.43	0.52
50:C1:1524:A:H2'	50:C1:1525:A:C8	2.43	0.52
50:C1:1629:U:H2'	50:C1:1630:C:C6	2.44	0.52
9:UL:202:ASP:OD1	9:UL:203:LEU:N	2.42	0.52
9:UL:202:ASP:OD1	9:UL:204:SER:N	2.42	0.52
13:UQ:637:PHE:O	13:UQ:664:SER:N	2.38	0.52
20:CD:319:ILE:HA	20:CD:322:LEU:HG	1.92	0.52
24:CI:340:ASP:OD1	24:CI:340:ASP:N	2.43	0.52
32:CR:764:ARG:HE	32:CR:766:LEU:HD11	1.75	0.52
50:C1:734:C:H42	50:C1:748:A:H61	0.73	0.52
52:UV:695:MET:HE3	52:UV:766:PHE:CD2	2.44	0.52
57:UE:268:ALA:HA	57:UE:271:LYS:HB2	1.91	0.52
4:UD:162:ASN:HB3	4:UD:181:ARG:HB3	1.92	0.52
7:UJ:380:SER:O	7:UJ:384:SER:HB3	2.09	0.52
7:UJ:771:VAL:HG13	7:UJ:772:PRO:HD3	1.92	0.52
7:UJ:1699:ILE:HA	7:UJ:1702:VAL:HG12	1.92	0.52
23:CH:323:GLN:HG3	23:CH:354:ARG:HB2	1.91	0.52
29:CO:143:GLN:HG3	29:CO:150:ILE:HD11	1.91	0.52
50:C1:472:G:H2'	50:C1:473:G:H8	1.74	0.52
52:UV:676:ARG:NH2	52:UV:853:GLU:OE2	2.42	0.52
52:UV:843:LEU:HB3	52:UV:960:MET:HE3	1.92	0.52
55:UT:1024:ILE:HD12	55:UT:1032:MET:HE1	1.89	0.52
55:UT:1341:LEU:H	55:UT:1381:ARG:HH22	1.56	0.52
55:UT:1646:ASP:OD1	55:UT:1718:LYS:NZ	2.39	0.52
55:UT:2035:GLU:OE1	55:UT:2038:LYS:NZ	2.38	0.52
56:UH:586:LEU:HD22	56:UH:613:LEU:HD11	1.90	0.52
58:US:332:ARG:O	58:US:334:LEU:N	2.36	0.52
60:CX:285:ASN:HB2	60:CX:288:LEU:HG	1.91	0.52
1:UA:327:TRP:HZ2	15:UU:883:VAL:HG11	1.74	0.52
7:UJ:1725:ALA:O	7:UJ:1729:HIS:ND1	2.40	0.52
7:UJ:1748:ILE:HG23	7:UJ:1752:LEU:HD12	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:UM:478:HIS:CE1	10:UM:482:VAL:HG12	2.44	0.52
13:UQ:813:ILE:HD12	13:UQ:823:LEU:HB3	1.92	0.52
23:CH:128:LEU:O	23:CH:195:ARG:HA	2.09	0.52
24:CI:93:THR:HG21	24:CI:334:LEU:HD22	1.90	0.52
33:CT:187:SER:OG	33:CT:188:GLY:N	2.42	0.52
50:C1:645:U:OP1	50:C1:1040:G:O2'	2.28	0.52
52:UV:332:LEU:HA	52:UV:335:GLN:HG2	1.91	0.52
54:CW:183:GLN:O	54:CW:229:TYR:OH	2.28	0.52
60:CX:244:PRO:HB2	60:CX:287:HIS:HB2	1.91	0.52
12:UO:470:LEU:HD11	12:UO:501:VAL:HG23	1.91	0.52
13:UQ:92:ILE:HG12	13:UQ:145:SER:HA	1.91	0.52
15:UU:92:SER:OG	15:UU:93:ASP:N	2.43	0.52
18:CB:106:GLU:OE2	18:CB:128:ARG:NH1	2.38	0.52
23:CH:209:ASN:O	23:CH:350:ARG:NH1	2.41	0.52
24:CI:178:LYS:NZ	50:C1:1102:A:OP2	2.40	0.52
32:CR:620:GLN:HE21	32:CS:849:LEU:HB3	1.74	0.52
32:CR:794:PHE:HB2	32:CR:797:PHE:CD1	2.45	0.52
34:Ca:180:THR:H	34:Ca:183:GLN:HE21	1.57	0.52
50:C1:654:A:O2'	50:C1:656:G:OP1	2.26	0.52
50:C1:785:U:OP1	55:UT:1013:ARG:NH1	2.42	0.52
50:C1:1507:G:H2'	50:C1:1508:A:C8	2.44	0.52
50:C1:1742:C:N4	50:C1:2165:U:C2	2.77	0.52
51:C2:134:C:H4'	51:C2:181:A:H61	1.74	0.52
55:UT:315:THR:HB	55:UT:353:ARG:HA	1.90	0.52
56:UH:555:GLY:O	56:UH:567:LEU:CA	2.38	0.52
56:UH:864:SER:OG	56:UH:866:GLU:OE1	2.26	0.52
57:UE:180:ILE:O	57:UE:184:THR:OG1	2.26	0.52
10:UM:42:ASN:ND2	10:UM:58:GLN:O	2.41	0.52
11:UN:895:GLN:O	11:UN:899:ARG:HB2	2.09	0.52
15:UU:577:GLN:HE22	15:UU:581:SER:HB3	1.75	0.52
24:CI:353:ILE:HD11	32:CR:5:LYS:HD3	1.91	0.52
24:CI:854:ARG:NH1	46:Cn:62:LYS:O	2.42	0.52
36:Cc:84:LEU:O	36:Cc:167:ARG:NH2	2.42	0.52
50:C1:1247:U:O2	50:C1:1251:C:N3	2.43	0.52
52:UV:271:SER:HA	52:UV:274:VAL:HG12	1.92	0.52
55:UT:149:VAL:HG22	55:UT:193:LEU:HG	1.90	0.52
60:CX:293:LYS:HG2	60:CX:331:ILE:HD11	1.90	0.52
60:CX:355:GLN:NE2	60:CX:391:ARG:O	2.40	0.52
5:UF:278:ILE:HG13	5:UF:279:PRO:HD3	1.91	0.52
15:UU:206:GLY:HA3	15:UU:224:PRO:HG3	1.91	0.52
32:CR:38:ILE:HA	32:CR:41:LEU:HD12	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Cf:64:ASN:O	39:Cf:184:ASP:HA	2.09	0.52
50:C1:1532:C:H2'	50:C1:1533:G:H8	1.75	0.52
55:UT:612:ARG:HH22	55:UT:838:LEU:HD23	1.74	0.52
22:CG:165:GLN:HA	22:CG:602:VAL:HG22	1.92	0.52
25:CJ:63:LEU:HG	49:CU:199:GLY:HA3	1.91	0.52
32:CR:191:LEU:O	32:CR:195:SER:OG	2.27	0.52
32:CR:593:LYS:H	32:CR:631:SER:HB2	1.74	0.52
50:C1:253:G:H2'	50:C1:254:G:H8	1.74	0.52
1:UA:118:LYS:HE2	1:UA:148:MET:HE2	1.92	0.52
4:UD:5:ARG:HG2	4:UD:862:LEU:HD22	1.90	0.52
6:UG:137:LEU:HD13	6:UG:159:HIS:HB2	1.91	0.52
7:UJ:196:ILE:HG22	7:UJ:217:TRP:HD1	1.75	0.52
9:UL:116:LEU:HD12	9:UL:125:LEU:HD11	1.92	0.52
13:UQ:89:MET:HE3	13:UQ:105:ILE:HG21	1.90	0.52
22:CG:286:GLN:HG3	22:CG:315:TRP:HH2	1.75	0.52
28:CM:193:TRP:HB3	28:CM:196:PHE:HB2	1.92	0.52
32:CR:281:VAL:HB	32:CR:409:PHE:HD1	1.75	0.52
38:Ce:102:ARG:HD2	38:Ce:131:VAL:HG13	1.91	0.52
39:Cf:6:ASP:OD1	39:Cf:6:ASP:N	2.40	0.52
47:Co:345:ARG:NE	55:UT:73:LEU:O	2.40	0.52
50:C1:320:A:H1'	50:C1:321:G:C2	2.45	0.52
50:C1:373:C:H2'	50:C1:374:G:H8	1.75	0.52
55:UT:1496:ASP:O	55:UT:1502:ARG:NE	2.43	0.52
60:CX:348:ILE:HG13	60:CX:351:GLU:HA	1.91	0.52
61:CY:379:LYS:NZ	61:CY:379:LYS:CB	2.73	0.52
6:UG:310:ARG:HD3	6:UG:352:ASP:HA	1.91	0.52
10:UM:301:TRP:HA	10:UM:308:GLU:HA	1.92	0.52
15:UU:863:ARG:HH11	27:CL:659:GLU:HB2	1.75	0.52
24:CI:1077:GLN:NE2	50:C1:366:G:OP1	2.43	0.52
26:CK:183:THR:HG22	50:C1:1743:C:H2'	1.90	0.52
32:CS:281:VAL:HB	32:CS:409:PHE:HD1	1.75	0.52
35:Cb:183:ILE:HD12	35:Cb:191:ARG:HB2	1.92	0.52
44:Ck:60:ASP:OD1	44:Ck:60:ASP:N	2.41	0.52
50:C1:207:U:OP1	50:C1:208:A:N6	2.42	0.52
50:C1:955:G:H2'	50:C1:956:G:C4	2.45	0.52
52:UV:409:TRP:CD1	52:UV:410:SER:HG	2.28	0.52
52:UV:929:VAL:HG13	52:UV:930:LEU:HG	1.92	0.52
56:UH:811:PHE:HA	56:UH:814:GLN:HE21	1.75	0.52
2:UB:653:TYR:HH	2:UB:749:SER:HG	1.54	0.51
4:UD:218:THR:OG1	4:UD:219:MET:N	2.43	0.51
13:UQ:355:ARG:HB3	56:UH:885:GLY:HA3	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:UQ:778:THR:HA	13:UQ:792:ALA:O	2.10	0.51
15:UU:49:VAL:HG11	15:UU:95:THR:HA	1.91	0.51
32:CS:794:PHE:HB2	32:CS:797:PHE:CD1	2.45	0.51
35:Cb:155:LYS:N	35:Cb:158:ASP:OD2	2.43	0.51
39:Cf:155:LYS:O	44:Ck:24:LYS:NZ	2.33	0.51
50:C1:446:C:H2'	50:C1:447:C:C6	2.45	0.51
52:UV:695:MET:HB3	52:UV:766:PHE:HD2	1.75	0.51
55:UT:729:ALA:O	55:UT:732:SER:OG	2.21	0.51
55:UT:999:LEU:HD22	55:UT:1023:ILE:HD12	1.92	0.51
55:UT:1784:GLY:O	55:UT:1788:HIS:ND1	2.39	0.51
56:UH:621:ASP:OD1	56:UH:623:THR:OG1	2.28	0.51
60:CX:307:LEU:HA	60:CX:310:LEU:HD12	1.91	0.51
4:UD:686:ARG:NH1	50:C1:63:C:O2	2.43	0.51
4:UD:690:LYS:H	4:UD:703:GLY:HA2	1.75	0.51
9:UL:529:ASP:OD2	9:UL:531:THR:OG1	2.28	0.51
10:UM:449:ALA:HB3	10:UM:487:LEU:HD11	1.92	0.51
18:CB:155:LYS:NZ	18:CB:181:TYR:OH	2.38	0.51
22:CG:413:SER:OG	22:CG:415:ASN:OD1	2.23	0.51
23:CH:216:ARG:HE	23:CH:286:SER:HB2	1.75	0.51
28:CM:264:ILE:HG13	28:CM:310:TRP:CZ3	2.45	0.51
31:CQ:82:THR:HG22	31:CQ:125:ARG:HA	1.92	0.51
32:CS:828:GLU:OE1	32:CS:831:GLN:NE2	2.43	0.51
32:CS:850:ASP:OD1	32:CS:851:TYR:N	2.39	0.51
51:C2:147:G:H2'	51:C2:148:G:C8	2.46	0.51
55:UT:223:HIS:ND1	55:UT:223:HIS:O	2.44	0.51
55:UT:2144:ARG:HH21	55:UT:2145:GLU:HG2	1.75	0.51
7:UJ:126:ARG:NH2	7:UJ:129:GLU:OE1	2.43	0.51
7:UJ:545:ALA:O	7:UJ:578:ARG:NH2	2.37	0.51
7:UJ:1524:SER:OG	7:UJ:1579:LYS:NZ	2.41	0.51
19:CC:284:MET:SD	20:CD:267:ARG:NH2	2.84	0.51
31:CQ:111:LEU:HD22	31:CQ:136:LEU:HD13	1.92	0.51
32:CR:752:ASN:HD21	32:CR:755:THR:HG23	1.76	0.51
32:CR:850:ASP:OD1	32:CR:851:TYR:N	2.39	0.51
32:CS:593:LYS:H	32:CS:631:SER:HB2	1.74	0.51
50:C1:214:C:H2'	50:C1:215:A:C8	2.45	0.51
51:C2:3:C:H2'	51:C2:4:G:C8	2.45	0.51
52:UV:1041:PRO:HG2	53:CV:199:ASN:HD22	1.75	0.51
55:UT:212:SER:HA	55:UT:262:ALA:HB2	1.93	0.51
55:UT:303:CYS:HB3	55:UT:344:THR:HG21	1.92	0.51
55:UT:310:ILE:HD13	55:UT:348:VAL:HG21	1.92	0.51
61:CY:374:ARG:NH2	61:CY:374:ARG:CG	2.73	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:UI:180:ILE:O	57:UI:184:THR:OG1	2.26	0.51
7:UJ:295:GLN:HE21	14:UR:228:LEU:HD12	1.75	0.51
7:UJ:1703:VAL:HG12	7:UJ:1744:CYS:HB3	1.91	0.51
8:UK:250:THR:OG1	8:UK:251:ALA:N	2.44	0.51
9:UL:633:ILE:O	9:UL:642:HIS:N	2.44	0.51
12:UO:462:HIS:HD2	13:UQ:518:ARG:NE	2.09	0.51
13:UQ:727:SER:OG	13:UQ:728:GLY:N	2.43	0.51
15:UU:253:LEU:HD23	15:UU:269:ALA:HB3	1.92	0.51
15:UU:423:ARG:HD3	50:C1:258:C:C2	2.45	0.51
20:CD:227:GLU:HG3	20:CD:228:ILE:HG23	1.91	0.51
29:CO:158:LYS:HD2	29:CO:161:LYS:HG2	1.93	0.51
32:CR:890:GLN:HB3	32:CR:892:LYS:HG3	1.93	0.51
32:CS:41:LEU:HA	32:CS:44:ILE:HD12	1.93	0.51
41:Ch:130:LYS:HD2	41:Ch:137:PRO:HA	1.92	0.51
50:C1:720:A:OP1	55:UT:932:ASN:ND2	2.43	0.51
50:C1:1461:G:O6	50:C1:1520:U:O4	2.28	0.51
50:C1:2089:G:H2'	50:C1:2090:G:C8	2.44	0.51
55:UT:1389:SER:OG	55:UT:1393:ARG:NH2	2.44	0.51
55:UT:1505:ILE:HA	55:UT:1508:VAL:HG12	1.93	0.51
9:UL:238:ASP:HB3	9:UL:240:GLU:HG2	1.93	0.51
9:UL:605:GLY:O	9:UL:632:ARG:NH2	2.44	0.51
9:UL:862:ASN:OD1	9:UL:905:ASN:ND2	2.43	0.51
10:UM:375:GLU:HB3	10:UM:394:ASN:HD21	1.76	0.51
12:UO:463:ARG:HH12	13:UQ:524:VAL:HB	1.74	0.51
13:UQ:479:PHE:HE2	13:UQ:596:LEU:HD11	1.75	0.51
13:UQ:667:VAL:HG11	13:UQ:715:ILE:HD13	1.92	0.51
15:UU:256:GLN:HG2	15:UU:263:THR:HA	1.93	0.51
23:CH:128:LEU:HB2	23:CH:196:PHE:HB2	1.92	0.51
29:CN:190:ARG:NH1	29:CN:247:ASP:OD1	2.44	0.51
32:CR:183:ALA:HB1	32:CR:186:ASN:HB2	1.93	0.51
32:CS:183:ALA:HB1	32:CS:186:ASN:HB2	1.93	0.51
32:CS:549:TYR:H	32:CS:549:TYR:HD1	1.59	0.51
52:UV:237:ARG:HA	52:UV:240:LEU:HB2	1.93	0.51
54:CW:88:SER:OG	54:CW:89:LEU:N	2.40	0.51
56:UH:756:LEU:HG	57:UI:170:GLU:OE1	2.11	0.51
57:UI:268:ALA:HA	57:UI:271:LYS:HB2	1.91	0.51
16:UX:114:ARG:NH1	28:CM:347:ASP:O	2.44	0.51
50:C1:2051:U:H2'	50:C1:2052:A:H8	1.76	0.51
52:UV:810:LEU:HA	52:UV:813:HIS:HB3	1.93	0.51
55:UT:1340:ASP:H	55:UT:1381:ARG:HH12	1.59	0.51
60:CX:349:ALA:HB2	60:CX:358:GLU:HG3	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:UR:417:ARG:HH11	21:CE:19:GLN:HB3	1.75	0.51
19:CC:3:VAL:HG13	19:CC:23:GLN:HE22	1.75	0.51
20:CD:217:ARG:NH2	20:CD:246:GLY:O	2.44	0.51
21:CE:6:SER:OG	21:CE:7:ALA:N	2.43	0.51
28:CM:43:ALA:HB2	28:CM:378:LEU:HG	1.91	0.51
28:CM:60:GLN:NE2	28:CM:349:ASN:OD1	2.43	0.51
28:CM:308:ARG:NH1	28:CM:317:SER:OG	2.44	0.51
32:CR:549:TYR:HD1	32:CR:549:TYR:H	1.59	0.51
32:CS:191:LEU:O	32:CS:195:SER:OG	2.26	0.51
32:CS:523:ARG:NH1	32:CS:559:MET:O	2.43	0.51
54:CW:2:LYS:HE3	54:CW:375:LEU:HB3	1.93	0.51
55:UT:897:LEU:HD12	55:UT:900:ARG:HD2	1.92	0.51
55:UT:1167:PRO:HG2	55:UT:1168:ARG:HG2	1.92	0.51
2:UB:531:ILE:HA	2:UB:534:ILE:HD12	1.93	0.51
7:UJ:501:THR:HG22	7:UJ:503:THR:H	1.76	0.51
7:UJ:1667:GLN:HG3	7:UJ:1672:PHE:HB2	1.93	0.51
10:UM:815:ASP:O	10:UM:818:THR:OG1	2.24	0.51
13:UQ:235:HIS:HE1	13:UQ:262:HIS:HD2	1.58	0.51
25:CJ:54:LEU:HD11	25:CJ:78:LEU:HD11	1.93	0.51
32:CS:752:ASN:HD21	32:CS:755:THR:HG23	1.76	0.51
50:C1:346:C:O2'	50:C1:347:C:O5'	2.26	0.51
50:C1:1508:A:H2'	50:C1:1509:A:H8	1.75	0.51
55:UT:1400:GLU:O	55:UT:1411:ARG:NE	2.44	0.51
1:UA:21:LEU:HD12	1:UA:61:ILE:HG22	1.93	0.51
1:UA:413:ARG:NH1	50:C1:2217:C:OP1	2.40	0.51
12:UO:25:ARG:O	12:UO:29:SER:HB3	2.11	0.51
12:UO:137:LEU:HD23	36:Cc:111:MET:HG3	1.93	0.51
22:CG:256:GLN:OE1	22:CG:299:GLY:N	2.43	0.51
22:CG:262:VAL:HG22	22:CG:294:LEU:HD21	1.92	0.51
26:CK:137:SER:OG	26:CK:138:ASP:OD1	2.20	0.51
29:CO:69:ASN:HD22	29:CO:134:PHE:HE2	1.58	0.51
32:CR:523:ARG:NH1	32:CR:559:MET:O	2.43	0.51
37:Cd:121:ILE:HB	37:Cd:124:LEU:HB3	1.92	0.51
55:UT:1391:ILE:HD11	55:UT:1430:GLN:HA	1.92	0.51
56:UH:832:LEU:HB2	57:UI:215:MET:HE3	1.93	0.51
7:UJ:851:GLU:HA	7:UJ:854:GLU:HB2	1.93	0.51
7:UJ:1534:ARG:HG3	7:UJ:1598:TYR:HB3	1.92	0.51
9:UL:674:LYS:HG2	9:UL:698:GLU:HB3	1.91	0.51
10:UM:628:ASN:ND2	10:UM:631:ASP:OD2	2.44	0.51
23:CH:328:MET:HE3	23:CH:330:ALA:HB3	1.93	0.51
24:CI:620:ARG:HA	24:CI:624:PHE:HD2	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:CI:749:GLN:O	24:CI:753:ASN:ND2	2.44	0.51
44:Ck:92:ARG:NE	44:Ck:94:GLU:OE2	2.32	0.51
54:CW:160:SER:OG	54:CW:161:ASP:N	2.43	0.51
56:UH:756:LEU:HD22	57:UI:173:LEU:HD23	1.93	0.51
60:CX:445:ILE:HG22	60:CX:449:ILE:HD11	1.93	0.51
1:UA:509:LEU:HD11	1:UA:527:ILE:HD12	1.92	0.50
5:UF:330:ASN:OD1	5:UF:335:TRP:NE1	2.39	0.50
7:UJ:782:VAL:O	7:UJ:812:ARG:NH2	2.44	0.50
9:UL:13:SER:HB2	9:UL:721:ARG:HG2	1.92	0.50
13:UQ:177:ASP:N	13:UQ:177:ASP:OD1	2.35	0.50
13:UQ:786:SER:OG	13:UQ:857:GLU:OE2	2.27	0.50
16:UX:17:GLU:HA	16:UX:20:LYS:HD3	1.91	0.50
17:UZ:215:ARG:HB3	17:UZ:220:ILE:HD11	1.93	0.50
22:CG:388:ASP:OD1	22:CG:388:ASP:N	2.37	0.50
26:CK:272:THR:OG1	26:CK:273:LEU:N	2.43	0.50
32:CR:427:LYS:HA	32:CR:430:LYS:HE3	1.94	0.50
45:Cm:10:ALA:HB1	45:Cm:27:ILE:HD13	1.92	0.50
50:C1:1509:A:H2'	50:C1:1510:G:C8	2.46	0.50
52:UV:381:PRO:HG3	52:UV:396:SER:H	1.77	0.50
52:UV:445:THR:HG21	52:UV:873:THR:HB	1.93	0.50
58:US:113:TRP:HA	58:US:116:ASP:HB2	1.93	0.50
60:CX:278:ILE:HD13	60:CX:320:GLU:HG3	1.92	0.50
1:UA:8:SER:OG	1:UA:9:ASN:N	2.42	0.50
6:UG:466:ILE:HD12	28:CM:37:ALA:HA	1.94	0.50
7:UJ:752:TRP:HA	7:UJ:755:LEU:HD12	1.93	0.50
9:UL:283:GLU:HB2	9:UL:296:HIS:HE1	1.74	0.50
20:CD:92:ASP:OD2	20:CD:92:ASP:N	2.45	0.50
20:CD:335:LYS:NZ	24:CI:1079:ARG:O	2.44	0.50
24:CI:84:LEU:HD22	24:CI:139:MET:HE3	1.93	0.50
27:CL:575:LEU:HD11	27:CL:681:GLU:HG2	1.94	0.50
32:CR:828:GLU:OE1	32:CR:831:GLN:NE2	2.43	0.50
50:C1:723:A:H2'	50:C1:724:C:C6	2.45	0.50
50:C1:1508:A:H2'	50:C1:1509:A:C8	2.47	0.50
52:UV:576:LEU:HD11	52:UV:584:ILE:HB	1.93	0.50
55:UT:285:VAL:HG22	55:UT:298:TRP:HD1	1.76	0.50
1:UA:643:GLY:HA3	6:UG:179:THR:HG21	1.93	0.50
14:UR:164:ASP:OD1	14:UR:164:ASP:N	2.43	0.50
15:UU:308:VAL:HG22	15:UU:323:LEU:HB3	1.92	0.50
15:UU:1010:GLU:HA	15:UU:1013:LEU:HB2	1.93	0.50
17:UZ:60:THR:HB	17:UZ:286:PRO:HG3	1.94	0.50
17:UZ:116:PHE:HB3	17:UZ:120:LEU:HB2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:CB:112:GLU:HG3	18:CB:124:LYS:HG3	1.93	0.50
19:CC:4:VAL:O	19:CC:23:GLN:NE2	2.44	0.50
21:CE:40:GLU:OE2	51:C2:84:G:N1	2.44	0.50
23:CH:67:ASP:HB3	23:CH:76:THR:HG22	1.94	0.50
30:CP:296:ARG:O	30:CP:300:LYS:HG2	2.11	0.50
32:CR:620:GLN:HE22	32:CS:848:LEU:HB3	1.76	0.50
32:CS:38:ILE:HA	32:CS:41:LEU:HD12	1.91	0.50
50:C1:274:A:H2'	50:C1:275:C:C6	2.47	0.50
50:C1:293:G:H2'	50:C1:294:G:C8	2.46	0.50
50:C1:454:C:H3'	50:C1:455:G:H8	1.76	0.50
50:C1:1262:G:OP2	55:UT:1975:LYS:NZ	2.44	0.50
52:UV:150:ILE:HG23	52:UV:151:LEU:HG	1.94	0.50
54:CW:24:PRO:HG2	54:CW:27:LEU:HG	1.93	0.50
54:CW:268:ILE:HD13	54:CW:306:LEU:HD12	1.94	0.50
55:UT:215:VAL:O	55:UT:219:ALA:CB	2.60	0.50
55:UT:614:PRO:HB3	55:UT:666:LEU:HB2	1.92	0.50
55:UT:621:LEU:HD13	55:UT:673:ILE:HG13	1.92	0.50
58:US:461:VAL:HA	58:US:464:GLN:HG3	1.94	0.50
60:CX:202:PHE:HA	60:CX:205:ILE:HB	1.93	0.50
1:UA:467:HIS:O	26:CK:135:ARG:NH1	2.44	0.50
2:UB:677:LEU:HD22	2:UB:756:VAL:HG12	1.94	0.50
10:UM:425:ASP:OD1	10:UM:425:ASP:N	2.45	0.50
11:UN:908:GLU:OE2	28:CM:42:ARG:NH2	2.41	0.50
12:UO:317:ILE:HA	12:UO:338:MET:HA	1.92	0.50
16:UX:152:ASP:OD1	16:UX:152:ASP:N	2.42	0.50
20:CD:117:ASP:N	20:CD:117:ASP:OD1	2.44	0.50
22:CG:341:GLN:NE2	22:CG:406:ASP:OD2	2.44	0.50
32:CR:41:LEU:HA	32:CR:44:ILE:HD12	1.93	0.50
50:C1:1480:G:C6	50:C1:1503:U:C4	3.00	0.50
52:UV:521:GLU:HG3	52:UV:525:PRO:HD3	1.94	0.50
52:UV:1051:LEU:HA	52:UV:1054:LEU:HD13	1.94	0.50
54:CW:47:LEU:HG	54:CW:48:ILE:HG13	1.93	0.50
54:CW:269:ARG:HD2	54:CW:281:LYS:HG2	1.94	0.50
55:UT:282:MET:HE1	55:UT:341:VAL:HG21	1.94	0.50
55:UT:1794:LEU:HA	55:UT:1797:ILE:HG22	1.92	0.50
1:UA:619:SER:OG	1:UA:620:GLY:N	2.43	0.50
7:UJ:1502:ILE:HA	7:UJ:1505:ILE:HD12	1.93	0.50
7:UJ:1582:GLU:O	7:UJ:1586:THR:OG1	2.22	0.50
9:UL:353:VAL:HA	9:UL:356:VAL:HG12	1.94	0.50
10:UM:86:ARG:HG2	10:UM:106:THR:HG22	1.92	0.50
10:UM:164:ILE:HD12	10:UM:245:HIS:HE1	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:UM:568:VAL:HB	10:UM:582:LEU:HB2	1.93	0.50
12:UO:546:MET:O	12:UO:549:SER:OG	2.24	0.50
22:CG:273:TYR:HA	22:CG:281:ILE:HG22	1.94	0.50
46:Cn:53:VAL:HA	46:Cn:74:VAL:HG12	1.94	0.50
50:C1:1459:C:H2'	50:C1:1460:G:C8	2.46	0.50
54:CW:349:ASN:HB3	54:CW:355:HIS:HE1	1.77	0.50
56:UH:867:LEU:O	57:UE:273:ARG:NH2	2.45	0.50
1:UA:511:SER:OG	1:UA:529:THR:OG1	2.26	0.50
2:UB:747:ILE:HD12	2:UB:795:ARG:HE	1.76	0.50
9:UL:610:VAL:HA	9:UL:626:SER:HA	1.92	0.50
9:UL:830:VAL:HA	9:UL:833:THR:HG22	1.93	0.50
10:UM:122:THR:OG1	10:UM:123:SER:N	2.44	0.50
13:UQ:225:MET:SD	13:UQ:274:TRP:NE1	2.84	0.50
16:UX:8:GLY:O	16:UX:14:ARG:NH1	2.45	0.50
18:CA:250:GLY:HA2	18:CA:306:TYR:O	2.12	0.50
28:CM:156:TYR:HA	28:CM:172:SER:HA	1.94	0.50
32:CS:890:GLN:HB3	32:CS:892:LYS:HG3	1.93	0.50
50:C1:884:A:H2'	50:C1:885:A:H8	1.77	0.50
51:C2:101:G:O6	51:C2:251:U:O4	2.30	0.50
52:UV:104:PRO:HG2	52:UV:106:GLN:HE21	1.76	0.50
54:CW:307:SER:HA	54:CW:313:ILE:HG22	1.93	0.50
55:UT:870:PHE:HE2	55:UT:918:LEU:HD12	1.77	0.50
55:UT:2149:LYS:HG2	55:UT:2151:ASN:HB3	1.94	0.50
57:UI:237:ASN:HA	57:UI:240:THR:HG22	1.94	0.50
1:UA:172:ASP:OD1	1:UA:174:THR:OG1	2.29	0.50
1:UA:561:THR:HG22	1:UA:638:LEU:HD11	1.94	0.50
2:UB:739:THR:HG23	2:UB:740:TRP:CD1	2.47	0.50
9:UL:960:SER:OG	50:C1:2215:C:N4	2.45	0.50
10:UM:336:CYS:HB3	10:UM:344:VAL:HG23	1.94	0.50
24:CI:179:PRO:HA	24:CI:182:LEU:HB3	1.94	0.50
28:CM:417:ARG:NH1	50:C1:1627:G:OP1	2.44	0.50
30:CP:51:LEU:O	30:CP:55:TRP:HB2	2.11	0.50
31:CQ:233:VAL:HA	31:CQ:236:VAL:HG12	1.93	0.50
50:C1:466:A:OP1	50:C1:467:C:N4	2.45	0.50
50:C1:941:G:O2'	50:C1:943:A:N6	2.45	0.50
51:C2:49:U:H2'	51:C2:50:G:C8	2.46	0.50
52:UV:132:VAL:HG22	52:UV:304:ARG:HH12	1.77	0.50
52:UV:761:ALA:O	52:UV:1029:LYS:NZ	2.44	0.50
58:US:444:GLU:HB3	58:US:450:THR:HG22	1.94	0.50
1:UA:21:LEU:HD13	1:UA:63:LEU:HB2	1.92	0.50
2:UB:4:SER:OG	2:UB:5:GLN:N	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:UK:63:PHE:HB2	25:CJ:170:ILE:HD11	1.93	0.50
9:UL:833:THR:HA	9:UL:836:LYS:HE2	1.92	0.50
12:UO:140:TRP:HH2	12:UO:174:LEU:HD12	1.76	0.50
12:UO:317:ILE:HG22	12:UO:338:MET:HG2	1.94	0.50
16:UX:150:ASP:OD2	16:UX:150:ASP:N	2.36	0.50
20:CD:287:PRO:HB2	20:CD:391:ALA:HB2	1.94	0.50
23:CH:110:ILE:O	23:CH:114:LEU:HB2	2.10	0.50
32:CS:427:LYS:HA	32:CS:430:LYS:HE3	1.94	0.50
47:Co:359:LEU:HG	47:Co:399:LYS:HA	1.94	0.50
50:C1:335:C:H2'	50:C1:336:G:C8	2.47	0.50
50:C1:1744:A:H2'	50:C1:1745:C:C6	2.47	0.50
50:C1:1753:G:N1	50:C1:2158:G:OP2	2.43	0.50
50:C1:2356:C:H2'	50:C1:2357:G:H8	1.77	0.50
55:UT:349:ARG:HH22	55:UT:801:CYS:HB3	1.77	0.50
56:UH:774:GLN:NE2	57:UI:251:ARG:O	2.45	0.50
1:UA:743:ALA:HA	1:UA:746:ILE:HD12	1.94	0.50
4:UD:16:ILE:HG12	4:UD:48:ARG:HG2	1.92	0.50
4:UD:115:ASP:HB2	4:UD:122:LYS:HB2	1.92	0.50
10:UM:571:TRP:HA	10:UM:579:GLN:H	1.76	0.50
12:UO:436:ALA:HB1	12:UO:456:LEU:HD11	1.92	0.50
15:UU:154:CYS:HA	15:UU:159:ILE:HG12	1.93	0.50
22:CG:363:SER:OG	22:CG:364:GLN:N	2.45	0.50
26:CK:94:ARG:NH2	50:C1:2189:C:OP2	2.36	0.50
32:CR:884:LEU:HD12	32:CR:915:ILE:HG21	1.94	0.50
32:CS:51:ARG:HH11	32:CS:51:ARG:HG3	1.77	0.50
35:Cb:32:SER:OG	35:Cb:33:THR:N	2.42	0.50
37:Cd:56:ASN:O	37:Cd:107:SER:OG	2.27	0.50
40:Cg:150:SER:HA	61:CY:249:ILE:HD13	1.93	0.50
50:C1:100:C:H2'	50:C1:101:G:C8	2.47	0.50
50:C1:468:C:O2'	50:C1:469:G:O4'	2.30	0.50
50:C1:1017:C:N4	50:C1:1020:A:OP1	2.40	0.50
50:C1:2189:C:H2'	50:C1:2190:G:H8	1.77	0.50
51:C2:153:G:C6	51:C2:176:U:O2	2.65	0.50
52:UV:970:VAL:HG21	52:UV:982:ARG:HD2	1.94	0.50
54:CW:318:GLU:OE1	54:CW:319:GLN:NE2	2.44	0.50
55:UT:20:PRO:O	55:UT:22:GLN:NE2	2.45	0.50
58:US:135:ALA:HB1	58:US:181:LEU:HD12	1.93	0.50
60:CX:371:LEU:HD21	60:CX:417:PHE:HB2	1.94	0.50
4:UD:577:GLY:HA2	4:UD:612:GLU:HA	1.93	0.49
6:UG:340:PHE:HB3	50:C1:278:A:C6	2.47	0.49
18:CB:157:LEU:HB3	18:CB:226:ILE:HD13	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:CK:76:GLU:N	26:CK:76:GLU:OE1	2.45	0.49
26:CK:183:THR:OG1	50:C1:2205:G:O2'	2.28	0.49
28:CM:143:ASN:OD1	28:CM:143:ASN:N	2.45	0.49
32:CS:281:VAL:HB	32:CS:409:PHE:CD1	2.47	0.49
32:CS:884:LEU:HD12	32:CS:915:ILE:HG21	1.94	0.49
54:CW:241:GLY:O	54:CW:243:GLN:NE2	2.45	0.49
2:UB:645:GLN:NE2	58:US:538:LEU:H	2.10	0.49
4:UD:285:SER:OG	4:UD:289:SER:N	2.44	0.49
5:UF:285:VAL:HG21	11:UN:369:LEU:HD12	1.94	0.49
6:UG:578:ILE:HA	6:UG:582:ARG:HH21	1.77	0.49
7:UJ:703:ARG:HH21	7:UJ:736:ILE:HG22	1.78	0.49
9:UL:716:HIS:NE2	50:C1:2237:G:O2'	2.29	0.49
13:UQ:617:LEU:HA	13:UQ:627:ALA:O	2.11	0.49
16:UX:13:ARG:HB3	25:CJ:19:ILE:HG13	1.93	0.49
24:CI:858:ARG:NH1	50:C1:1157:C:O3'	2.44	0.49
32:CS:849:LEU:HD12	32:CS:853:VAL:HB	1.94	0.49
35:Cb:33:THR:O	50:C1:707:U:O2'	2.29	0.49
35:Cb:115:THR:OG1	35:Cb:116:ASP:N	2.43	0.49
50:C1:717:C:P	55:UT:1067:ARG:HH11	2.35	0.49
50:C1:1752:U:O2'	50:C1:2048:C:OP2	2.22	0.49
50:C1:2067:G:H1	50:C1:2174:C:H1'	1.76	0.49
52:UV:723:LEU:HD11	53:CV:210:GLN:HG2	1.95	0.49
52:UV:949:HIS:HB3	52:UV:951:ARG:CZ	2.42	0.49
55:UT:1000:TYR:HB2	55:UT:1035:PHE:HE1	1.77	0.49
55:UT:1856:LEU:O	55:UT:1860:THR:OG1	2.28	0.49
55:UT:1877:LEU:HD12	55:UT:1958:HIS:HB2	1.92	0.49
58:US:538:LEU:O	58:US:542:TRP:HB2	2.11	0.49
57:UI:166:SER:O	57:UI:170:GLU:HG2	2.12	0.49
4:UD:832:PHE:HB2	4:UD:835:ILE:HD11	1.93	0.49
7:UJ:802:ARG:HE	7:UJ:805:LEU:HD12	1.76	0.49
9:UL:825:PRO:O	9:UL:828:THR:OG1	2.28	0.49
10:UM:155:LEU:O	10:UM:203:GLN:N	2.42	0.49
10:UM:395:SER:OG	10:UM:397:ASP:OD1	2.25	0.49
10:UM:588:GLY:O	10:UM:620:GLY:N	2.43	0.49
24:CI:939:ASN:HD22	27:CL:513:VAL:HA	1.76	0.49
29:CN:218:ASP:HA	29:CN:221:VAL:HG12	1.94	0.49
51:C2:90:C:H1'	51:C2:91:G:H5'	1.93	0.49
55:UT:683:SER:OG	55:UT:684:ASN:OD1	2.26	0.49
1:UA:448:PHE:HB2	26:CK:135:ARG:HH11	1.77	0.49
4:UD:437:SER:OG	4:UD:438:GLU:N	2.44	0.49
9:UL:138:ASP:OD1	9:UL:141:ALA:N	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:UM:254:LYS:HB3	10:UM:274:HIS:HB2	1.93	0.49
10:UM:452:SER:OG	10:UM:453:LYS:N	2.43	0.49
12:UO:507:ASP:O	56:UH:872:LYS:NZ	2.36	0.49
13:UQ:162:ASP:N	13:UQ:162:ASP:OD1	2.46	0.49
13:UQ:166:TRP:HB3	13:UQ:168:ILE:HG23	1.94	0.49
13:UQ:202:ASP:OD1	13:UQ:202:ASP:N	2.44	0.49
13:UQ:917:HIS:NE2	14:UR:573:SER:OG	2.45	0.49
15:UU:189:ALA:HB2	15:UU:201:VAL:HG12	1.95	0.49
23:CH:181:ALA:HB3	23:CH:300:PRO:HB3	1.93	0.49
24:CI:358:GLY:HA2	32:CR:3:VAL:HG11	1.94	0.49
26:CK:75:ASP:OD1	26:CK:206:LYS:NZ	2.37	0.49
31:CQ:227:MET:HE1	31:CQ:252:ALA:HA	1.93	0.49
50:C1:86:C:H2'	50:C1:87:G:H8	1.78	0.49
50:C1:485:G:H2'	50:C1:486:G:H8	1.77	0.49
50:C1:1011:C:H2'	50:C1:1012:A:H8	1.78	0.49
52:UV:712:ILE:HA	52:UV:752:ASN:HD22	1.76	0.49
55:UT:1889:ILE:HB	55:UT:1961:LYS:HZ3	1.76	0.49
57:UE:165:ASP:OD1	57:UE:166:SER:N	2.46	0.49
1:UA:52:PHE:HB3	1:UA:89:VAL:HG22	1.94	0.49
2:UB:695:THR:HA	2:UB:770:PRO:HG3	1.95	0.49
7:UJ:492:PHE:HB3	7:UJ:533:ARG:HH21	1.78	0.49
7:UJ:717:THR:O	7:UJ:723:LYS:NZ	2.37	0.49
11:UN:934:SER:OG	11:UN:935:LYS:N	2.45	0.49
13:UQ:104:ILE:HG23	13:UQ:113:VAL:HG12	1.93	0.49
24:CI:1005:THR:O	24:CI:1005:THR:OG1	2.28	0.49
32:CR:635:ILE:HB	32:CR:725:VAL:HG12	1.94	0.49
48:Cp:11:VAL:HG23	48:Cp:33:PHE:HD1	1.76	0.49
50:C1:421:A:H2'	50:C1:422:A:H8	1.76	0.49
50:C1:720:A:H1'	50:C1:722:U:C6	2.47	0.49
50:C1:2363:G:N7	50:C1:2365:A:N6	2.60	0.49
52:UV:667:HIS:CE1	52:UV:669:ASN:HB2	2.45	0.49
52:UV:758:VAL:O	52:UV:765:CYS:HA	2.12	0.49
56:UH:598:ASP:N	56:UH:598:ASP:OD1	2.40	0.49
2:UB:590:ASP:HA	2:UB:593:ILE:HG22	1.94	0.49
4:UD:244:LEU:HD21	4:UD:291:ILE:HD11	1.94	0.49
7:UJ:586:ASP:OD1	7:UJ:586:ASP:N	2.45	0.49
9:UL:435:SER:OG	9:UL:436:SER:N	2.43	0.49
10:UM:198:LEU:HD23	10:UM:210:PHE:HE1	1.78	0.49
30:CP:272:LYS:HA	30:CP:275:LYS:HE2	1.95	0.49
31:CQ:210:VAL:HG22	31:CQ:217:HIS:HB2	1.94	0.49
36:Cc:84:LEU:HD11	36:Cc:181:LEU:HD22	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:Cn:59:VAL:O	46:Cn:69:ARG:NH2	2.45	0.49
50:C1:1734:G:H2'	50:C1:1735:A:H8	1.77	0.49
50:C1:2174:C:H2'	50:C1:2175:A:H8	1.77	0.49
58:US:352:LEU:HD11	58:US:388:LEU:HB3	1.93	0.49
4:UD:839:VAL:HG23	4:UD:861:ALA:HB3	1.95	0.49
10:UM:551:ASP:N	10:UM:551:ASP:OD1	2.43	0.49
16:UX:55:PRO:HA	16:UX:86:SER:O	2.13	0.49
24:CI:353:ILE:HG13	32:CR:5:LYS:HG2	1.94	0.49
24:CI:813:VAL:HG12	24:CI:815:VAL:HG22	1.94	0.49
30:CP:207:LEU:HD22	30:CP:213:LEU:HD23	1.95	0.49
32:CR:633:ALA:HB3	32:CR:723:VAL:HG12	1.95	0.49
50:C1:661:U:H3	55:UT:349:ARG:HH11	1.60	0.49
50:C1:1182:U:H2'	50:C1:1183:A:C8	2.48	0.49
52:UV:546:THR:OG1	52:UV:590:TRP:O	2.23	0.49
55:UT:1758:LEU:HA	55:UT:1761:ILE:HG22	1.93	0.49
55:UT:2173:LEU:O	55:UT:2177:GLU:HG2	2.13	0.49
56:UH:835:VAL:HG12	57:UI:222:LEU:HD12	1.95	0.49
57:UE:159:GLN:NE2	58:US:334:LEU:HA	2.27	0.49
57:UE:166:SER:O	57:UE:170:GLU:HG2	2.12	0.49
1:UA:295:ILE:HD12	1:UA:323:LEU:HD21	1.94	0.49
1:UA:320:GLY:HA3	1:UA:338:GLY:H	1.78	0.49
1:UA:558:ARG:NH1	51:C2:62:A:OP2	2.46	0.49
2:UB:111:ASN:OD1	2:UB:111:ASN:N	2.44	0.49
5:UF:53:LYS:HE2	5:UF:54:PRO:HD2	1.94	0.49
7:UJ:636:ASP:OD1	7:UJ:636:ASP:N	2.46	0.49
8:UK:47:VAL:HG13	50:C1:408:C:H1'	1.95	0.49
9:UL:47:VAL:HG21	9:UL:85:VAL:HG11	1.95	0.49
9:UL:427:THR:OG1	9:UL:446:ASN:O	2.27	0.49
11:UN:337:GLU:O	11:UN:338:HIS:ND1	2.45	0.49
28:CM:78:SER:OG	28:CM:79:LEU:N	2.45	0.49
30:CP:127:ARG:NH1	30:CP:127:ARG:O	2.41	0.49
34:Ca:90:GLU:HB3	34:Ca:97:LEU:HB2	1.95	0.49
50:C1:1240:G:N1	50:C1:1260:U:N3	2.60	0.49
54:CW:345:ILE:O	54:CW:356:CYS:HA	2.13	0.49
56:UH:755:TYR:HA	57:UI:207:ARG:O	2.11	0.49
60:CX:301:GLY:O	60:CX:305:GLY:HA3	2.13	0.49
4:UD:486:ILE:HD12	4:UD:493:ILE:HG12	1.93	0.49
5:UF:7:LYS:NZ	50:C1:438:C:OP2	2.38	0.49
7:UJ:541:SER:HB3	7:UJ:544:LYS:HE2	1.94	0.49
8:UK:75:SER:OG	8:UK:76:ALA:N	2.46	0.49
10:UM:458:ARG:HG3	10:UM:460:TRP:HE1	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:UQ:749:ASP:OD1	13:UQ:749:ASP:N	2.45	0.49
18:CA:128:ARG:HH22	18:CA:169:HIS:HA	1.78	0.49
18:CB:150:MET:HE2	18:CB:156:VAL:HG11	1.94	0.49
18:CB:228:ALA:HB3	18:CB:255:ILE:HG13	1.94	0.49
23:CH:375:TRP:CD1	23:CH:398:VAL:HG12	2.47	0.49
24:CI:88:LEU:HG	24:CI:219:ILE:HD11	1.94	0.49
24:CI:280:ALA:H	24:CI:284:GLN:HE21	1.60	0.49
32:CR:621:GLN:O	32:CS:839:LYS:NZ	2.45	0.49
36:Cc:152:LEU:HD23	48:Cp:48:PRO:HG2	1.94	0.49
37:Cd:57:ASP:HA	37:Cd:106:LEU:HA	1.95	0.49
46:Cn:48:HIS:HB3	46:Cn:103:LEU:HD11	1.93	0.49
50:C1:421:A:H2'	50:C1:422:A:C8	2.47	0.49
50:C1:782:G:H2'	50:C1:783:G:C8	2.47	0.49
50:C1:990:U:H2'	50:C1:991:A:C8	2.48	0.49
52:UV:676:ARG:HD3	52:UV:814:THR:HA	1.95	0.49
52:UV:1094:THR:HG23	52:UV:1095:LEU:HD12	1.95	0.49
55:UT:1312:LEU:HA	55:UT:1315:GLN:HG2	1.95	0.49
55:UT:2039:SER:HB2	55:UT:2050:LEU:HD21	1.95	0.49
60:CX:433:LEU:HD13	60:CX:436:LEU:HD23	1.95	0.49
4:UD:138:GLN:NE2	4:UD:197:HIS:O	2.43	0.49
7:UJ:565:THR:HA	7:UJ:568:LYS:HE3	1.95	0.49
9:UL:99:ILE:HG23	9:UL:101:THR:HG22	1.95	0.49
9:UL:138:ASP:HB2	9:UL:145:GLN:HE21	1.77	0.49
10:UM:675:VAL:HG13	10:UM:689:LEU:HB2	1.94	0.49
10:UM:788:LEU:HD23	10:UM:832:ALA:HA	1.94	0.49
13:UQ:783:ASN:HD21	13:UQ:841:SER:HA	1.78	0.49
15:UU:440:ALA:O	15:UU:443:MET:C	2.56	0.49
22:CG:492:LEU:HD22	22:CG:496:LYS:HA	1.94	0.49
23:CH:217:ARG:NE	23:CH:284:GLU:OE1	2.38	0.49
32:CR:281:VAL:HB	32:CR:409:PHE:CD1	2.47	0.49
32:CS:633:ALA:HB3	32:CS:723:VAL:HG12	1.95	0.49
50:C1:252:U:H2'	50:C1:253:G:H8	1.78	0.49
50:C1:483:U:H4'	50:C1:484:G:H5''	1.94	0.49
50:C1:700:C:N4	50:C1:831:A:N7	2.61	0.49
50:C1:776:C:N3	50:C1:777:G:O2'	2.46	0.49
50:C1:1538:G:H2'	50:C1:1539:G:C8	2.44	0.49
50:C1:1539:G:H2'	50:C1:1540:A:C8	2.47	0.49
50:C1:1641:U:H3'	50:C1:1642:A:H2'	1.94	0.49
51:C2:70:A:H2'	51:C2:71:U:H6	1.78	0.49
55:UT:1744:ARG:HH21	55:UT:1780:SER:HA	1.78	0.49
57:UE:237:ASN:HA	57:UE:240:THR:HG22	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:UM:568:VAL:HG22	10:UM:589:VAL:HG11	1.95	0.48
11:UN:932:PRO:HG3	28:CM:249:PRO:HB3	1.95	0.48
14:UR:62:ALA:HB1	14:UR:65:THR:HG22	1.95	0.48
15:UU:418:TRP:CE2	15:UU:430:GLU:HB2	2.48	0.48
32:CR:207:ASN:OD1	32:CR:207:ASN:N	2.44	0.48
32:CR:849:LEU:HD12	32:CR:853:VAL:HB	1.94	0.48
34:Ca:28:ASP:HB2	34:Ca:50:ARG:HE	1.78	0.48
35:Cb:116:ASP:N	35:Cb:116:ASP:OD2	2.45	0.48
35:Cb:181:ALA:HB3	35:Cb:210:LEU:HD11	1.95	0.48
50:C1:1144:U:H2'	50:C1:1145:G:H8	1.77	0.48
55:UT:1725:ASP:O	55:UT:1729:ASN:ND2	2.45	0.48
59:Cl:53:ASP:OD2	59:Cl:53:ASP:N	2.42	0.48
60:CX:342:ILE:HB	60:CX:370:LEU:HD23	1.94	0.48
6:UG:578:ILE:HB	30:CP:72:ASP:HA	1.95	0.48
9:UL:899:LEU:HA	9:UL:902:VAL:HG12	1.95	0.48
10:UM:235:VAL:HA	10:UM:251:SER:HB2	1.95	0.48
13:UQ:186:LYS:HD2	50:C1:46:C:H4'	1.93	0.48
14:UR:187:ASP:OD1	14:UR:187:ASP:N	2.41	0.48
15:UU:287:GLY:N	15:UU:294:LYS:O	2.45	0.48
18:CA:235:GLN:HG2	18:CA:255:ILE:HD11	1.94	0.48
21:CF:65:VAL:O	21:CF:81:TYR:OH	2.25	0.48
23:CH:85:THR:O	23:CH:85:THR:OG1	2.31	0.48
24:Cl:1099:THR:HG22	50:C1:400:C:H5'	1.94	0.48
32:CR:51:ARG:HH11	32:CR:51:ARG:HG3	1.77	0.48
45:Cm:103:ILE:HD11	45:Cm:129:PHE:HE1	1.77	0.48
50:C1:786:G:C5	50:C1:848:G:N2	2.81	0.48
50:C1:1242:C:N3	50:C1:1258:A:N6	2.61	0.48
52:UV:320:GLY:HA3	52:UV:405:LYS:HB2	1.94	0.48
55:UT:1572:ILE:HG23	55:UT:1607:LEU:HD12	1.95	0.48
58:US:139:LEU:HD23	58:US:184:HIS:HD2	1.77	0.48
4:UD:11:TYR:H	4:UD:865:ARG:HE	1.61	0.48
4:UD:322:HIS:NE2	4:UD:342:SER:OG	2.31	0.48
7:UJ:37:PRO:HA	7:UJ:40:ALA:HB3	1.95	0.48
7:UJ:705:SER:HA	7:UJ:708:LYS:HE3	1.95	0.48
7:UJ:833:PHE:HA	7:UJ:836:THR:HG22	1.95	0.48
8:UK:61:ASP:OD1	25:CJ:167:LYS:NZ	2.40	0.48
9:UL:189:LEU:HB2	9:UL:203:LEU:HD11	1.94	0.48
21:CE:51:GLU:H	21:CE:104:THR:HA	1.76	0.48
49:CU:111:MET:HE2	49:CU:115:GLU:HB3	1.94	0.48
50:C1:128:G:H2'	50:C1:129:G:C8	2.48	0.48
50:C1:839:U:H2'	50:C1:840:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:UV:889:ARG:HA	52:UV:925:MET:HE1	1.95	0.48
55:UT:228:LEU:HD11	55:UT:277:LEU:HD11	1.95	0.48
10:UM:563:SER:OG	10:UM:565:ASP:OD1	2.25	0.48
13:UQ:247:VAL:HG22	13:UQ:295:ILE:HD12	1.96	0.48
15:UU:235:LEU:HA	15:UU:245:ALA:O	2.13	0.48
18:CA:66:LYS:HE2	18:CA:66:LYS:HB3	1.58	0.48
24:CI:537:TRP:HB2	24:CI:560:TRP:CE2	2.48	0.48
35:Cb:179:ALA:O	35:Cb:195:ILE:N	2.43	0.48
36:Cc:115:ASN:HB3	36:Cc:118:GLN:HB3	1.95	0.48
41:Ch:104:ARG:NH2	50:C1:1535:C:O2'	2.47	0.48
50:C1:345:U:H2'	50:C1:346:C:C6	2.49	0.48
50:C1:723:A:C6	50:C1:762:G:O6	2.66	0.48
55:UT:1482:VAL:O	55:UT:1486:ILE:HB	2.14	0.48
55:UT:1637:VAL:O	55:UT:1641:LEU:HG	2.14	0.48
60:CX:374:ARG:HH11	60:CX:416:VAL:HG13	1.79	0.48
60:CX:393:ALA:HB1	60:CX:395:MET:HE3	1.95	0.48
1:UA:73:ILE:HD13	1:UA:99:VAL:HG21	1.95	0.48
7:UJ:1682:GLN:OE1	7:UJ:1685:ARG:NE	2.36	0.48
8:UK:22:ARG:HE	8:UK:25:LEU:HD12	1.78	0.48
13:UQ:634:MET:N	13:UQ:634:MET:SD	2.86	0.48
14:UR:317:SER:O	14:UR:317:SER:OG	2.26	0.48
15:UU:470:SER:HB3	15:UU:511:VAL:HG22	1.94	0.48
15:UU:557:LEU:HD11	15:UU:567:MET:HE2	1.96	0.48
24:CI:246:ILE:HD12	24:CI:270:LEU:HB3	1.95	0.48
25:CJ:149:LEU:HD13	27:CL:633:LEU:HD21	1.94	0.48
28:CM:67:GLN:HG3	28:CM:88:ASP:HB3	1.96	0.48
50:C1:123:U:H2'	50:C1:124:C:C6	2.48	0.48
50:C1:178:G:H2'	50:C1:179:G:C8	2.49	0.48
50:C1:495:G:O6	50:C1:503:G:O6	2.30	0.48
51:C2:93:G:H2'	51:C2:94:A:H4'	1.94	0.48
55:UT:470:ILE:HG21	55:UT:537:VAL:HG13	1.94	0.48
55:UT:1464:SER:O	55:UT:1468:SER:OG	2.23	0.48
56:UH:641:LEU:HD11	56:UH:713:LYS:HB3	1.94	0.48
58:US:347:LEU:HA	58:US:351:ILE:HD13	1.95	0.48
58:US:474:ILE:HA	58:US:477:ILE:HG23	1.95	0.48
57:UI:165:ASP:OD1	57:UI:166:SER:N	2.46	0.48
9:UL:699:ILE:HA	9:UL:715:SER:HA	1.95	0.48
13:UQ:216:ALA:HB3	13:UQ:241:PRO:HG2	1.96	0.48
13:UQ:478:MET:HG2	13:UQ:480:LEU:HD23	1.95	0.48
13:UQ:740:LEU:HD12	13:UQ:745:ILE:HD11	1.95	0.48
26:CK:140:ILE:HG12	26:CK:154:ILE:HD13	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:CR:28:VAL:HG21	32:CR:193:LEU:HD11	1.96	0.48
34:Ca:187:LYS:HD3	52:UV:666:ARG:HH22	1.78	0.48
34:Ca:224:ASP:OD1	34:Ca:224:ASP:N	2.46	0.48
39:Cf:42:ARG:HH12	54:CW:22:PRO:HD2	1.78	0.48
50:C1:467:C:H4'	50:C1:468:C:H5'	1.96	0.48
50:C1:1472:A:H2	50:C1:1510:G:H22	1.62	0.48
50:C1:2055:C:C4	50:C1:2118:U:C2	3.02	0.48
51:C2:127:A:HO2'	51:C2:128:C:C5'	2.26	0.48
52:UV:517:TRP:HD1	52:UV:521:GLU:HG2	1.78	0.48
52:UV:594:THR:HG21	52:UV:627:LEU:HD21	1.95	0.48
54:CW:296:LEU:HD11	54:CW:362:LEU:HD11	1.94	0.48
55:UT:1743:LEU:HD21	55:UT:1793:THR:HG21	1.95	0.48
7:UJ:713:HIS:O	7:UJ:717:THR:OG1	2.25	0.48
11:UN:276:MET:HG3	55:UT:2196:ALA:HB1	1.95	0.48
15:UU:480:ALA:O	15:UU:506:THR:OG1	2.21	0.48
18:CB:103:VAL:HG21	18:CB:200:ARG:HH12	1.78	0.48
24:CI:1090:LEU:HD22	33:CT:162:VAL:HG22	1.94	0.48
32:CS:635:ILE:HB	32:CS:725:VAL:HG12	1.94	0.48
35:Cb:36:HIS:CD2	35:Cb:85:GLY:H	2.32	0.48
37:Cd:147:LEU:HB3	37:Cd:151:ASP:HB3	1.95	0.48
50:C1:1480:G:O6	50:C1:1502:U:O4	2.32	0.48
50:C1:2086:A:H5''	50:C1:2087:G:C8	2.48	0.48
50:C1:2175:A:H2'	50:C1:2176:A:H8	1.79	0.48
50:C1:2356:C:H2'	50:C1:2357:G:C8	2.49	0.48
51:C2:65:C:H2'	51:C2:66:A:H8	1.79	0.48
52:UV:34:ARG:HH22	52:UV:431:ASP:HA	1.79	0.48
55:UT:422:TRP:HB2	55:UT:425:TRP:HB2	1.96	0.48
55:UT:2169:GLU:HA	55:UT:2172:ARG:HD2	1.96	0.48
61:CY:374:ARG:CD	61:CY:374:ARG:N	2.75	0.48
1:UA:279:PHE:HE2	1:UA:281:LEU:HD23	1.78	0.48
2:UB:530:LEU:HD21	2:UB:556:VAL:HG22	1.95	0.48
7:UJ:205:ARG:NH2	7:UJ:257:GLU:OE1	2.45	0.48
7:UJ:455:LYS:HD3	7:UJ:456:LEU:HD22	1.96	0.48
7:UJ:656:ILE:HD13	7:UJ:660:LEU:HD12	1.95	0.48
9:UL:12:LYS:HD3	9:UL:457:GLN:HB3	1.95	0.48
9:UL:806:ASN:N	9:UL:806:ASN:OD1	2.47	0.48
10:UM:345:LEU:O	10:UM:366:PHE:N	2.47	0.48
10:UM:676:LYS:HB3	10:UM:688:THR:HG22	1.96	0.48
11:UN:278:ARG:NH1	55:UT:2154:GLU:OE2	2.47	0.48
13:UQ:753:VAL:HB	13:UQ:763:ALA:HB3	1.96	0.48
13:UQ:809:SER:O	13:UQ:827:PHE:N	2.42	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:UU:644:GLY:HA2	15:UU:663:ALA:HA	1.94	0.48
16:UX:41:PRO:HG2	16:UX:44:MET:HG3	1.95	0.48
24:CI:41:ARG:NH1	50:C1:613:A:OP1	2.47	0.48
24:CI:832:PRO:HD2	24:CI:1015:LEU:HD23	1.94	0.48
29:CO:177:LYS:O	29:CO:222:ASP:N	2.34	0.48
31:CQ:165:TYR:HD2	31:CQ:222:PHE:HB3	1.78	0.48
32:CR:520:HIS:ND1	32:CR:710:SER:HB2	2.29	0.48
34:Ca:143:THR:HG23	34:Ca:205:TYR:HE2	1.78	0.48
50:C1:62:U:O2'	50:C1:64:C:OP2	2.31	0.48
50:C1:2370:C:H2'	50:C1:2371:G:C8	2.47	0.48
56:UH:829:ALA:HB1	57:UI:249:ARG:HB3	1.95	0.48
4:UD:666:LEU:HD23	4:UD:670:SER:HB3	1.96	0.48
7:UJ:1555:THR:HA	7:UJ:1558:HIS:NE2	2.28	0.48
14:UR:160:SER:OG	14:UR:161:GLU:N	2.47	0.48
15:UU:151:ILE:HG12	15:UU:162:TRP:HB2	1.96	0.48
18:CB:131:ASN:OD1	18:CB:131:ASN:N	2.47	0.48
19:CC:7:LEU:HD11	19:CC:134:ILE:HD12	1.96	0.48
21:CE:110:ASP:N	21:CE:110:ASP:OD1	2.46	0.48
25:CJ:96:ALA:O	25:CJ:100:ASN:CB	2.61	0.48
27:CL:477:GLU:HG2	27:CL:478:ARG:HD2	1.95	0.48
28:CM:323:THR:HG22	28:CM:325:ARG:H	1.79	0.48
32:CR:220:LEU:HD23	32:CR:221:PRO:HD2	1.96	0.48
32:CS:10:ARG:NH2	32:CS:208:VAL:HG11	2.29	0.48
36:Cc:149:VAL:HG12	48:Cp:46:LYS:HG2	1.94	0.48
38:Ce:141:TYR:CG	38:Ce:142:PRO:HD3	2.49	0.48
38:Ce:149:ARG:HD2	38:Ce:161:LYS:HE3	1.95	0.48
39:Cf:4:SER:OG	39:Cf:6:ASP:OD1	2.26	0.48
44:Ck:43:VAL:HG21	44:Ck:71:ILE:HD12	1.96	0.48
44:Ck:137:SER:OG	44:Ck:138:LYS:N	2.47	0.48
44:Ck:153:LYS:H	44:Ck:157:LYS:HE2	1.79	0.48
51:C2:53:U:H2'	51:C2:54:C:C6	2.49	0.48
52:UV:993:VAL:HG13	52:UV:1089:ALA:HB3	1.95	0.48
55:UT:197:ALA:C	55:UT:247:GLN:HE22	2.20	0.48
58:US:383:LYS:HZ2	58:US:455:SER:HG	1.54	0.48
60:CX:262:VAL:HG12	60:CX:266:MET:HE3	1.95	0.48
62:CZ:564:TRP:HE3	62:CZ:569:ILE:HG22	1.78	0.48
2:UB:8:ARG:NH2	26:CK:180:ILE:O	2.47	0.48
6:UG:216:HIS:NE2	6:UG:243:GLN:OE1	2.47	0.48
7:UJ:236:ARG:HD2	7:UJ:239:ILE:HD12	1.95	0.48
9:UL:375:ALA:O	9:UL:384:GLN:HB2	2.14	0.48
13:UQ:152:ASN:ND2	13:UQ:153:PRO:O	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:UU:117:GLN:HE22	15:UU:137:LEU:HD22	1.79	0.48
32:CR:749:GLN:HB2	32:CR:793:LYS:HB3	1.95	0.48
32:CS:749:GLN:HB2	32:CS:793:LYS:HB3	1.95	0.48
35:Cb:41:CYS:SG	35:Cb:42:MET:N	2.87	0.48
37:Cd:131:LYS:HD2	50:C1:750:C:H4'	1.96	0.48
50:C1:807:A:N1	55:UT:1622:ARG:NH1	2.61	0.48
50:C1:1625:G:H2'	50:C1:1626:G:C8	2.47	0.48
54:CW:313:ILE:HG13	54:CW:327:VAL:HB	1.95	0.48
55:UT:1900:LEU:HD13	55:UT:1969:ILE:HD13	1.95	0.48
1:UA:401:SER:OG	1:UA:403:ASP:OD2	2.28	0.47
1:UA:540:SER:OG	1:UA:541:GLU:N	2.47	0.47
10:UM:104:VAL:HG12	10:UM:105:ARG:HG2	1.96	0.47
10:UM:774:PHE:HA	10:UM:777:VAL:HG12	1.96	0.47
12:UO:339:GLN:NE2	59:C1:5:SER:OG	2.47	0.47
12:UO:433:TYR:HH	12:UO:463:ARG:NH2	2.10	0.47
13:UQ:447:SER:OG	13:UQ:449:ASP:OD1	2.32	0.47
14:UR:266:THR:OG1	14:UR:267:ARG:N	2.47	0.47
18:CA:167:VAL:HG11	18:CA:182:ALA:HB2	1.95	0.47
24:CI:1075:TYR:N	50:C1:216:A:OP2	2.34	0.47
28:CM:80:ASN:O	28:CM:95:ASP:HA	2.14	0.47
32:CR:877:SER:HA	32:CR:881:GLN:HG3	1.96	0.47
32:CS:28:VAL:HG21	32:CS:193:LEU:HD11	1.96	0.47
34:Ca:88:VAL:HB	34:Ca:98:THR:HG22	1.96	0.47
50:C1:997:U:H2'	50:C1:998:C:H6	1.78	0.47
50:C1:2175:A:H2'	50:C1:2176:A:C8	2.49	0.47
54:CW:24:PRO:CD	54:CW:24:PRO:O	2.62	0.47
55:UT:1712:VAL:HA	55:UT:1715:ILE:HG22	1.96	0.47
55:UT:1744:ARG:NE	55:UT:1780:SER:O	2.44	0.47
9:UL:481:ILE:HD12	9:UL:491:LEU:HD22	1.95	0.47
15:UU:1003:PHE:HA	15:UU:1006:ILE:HG12	1.94	0.47
27:CL:709:SER:OG	27:CL:710:ARG:N	2.44	0.47
32:CR:23:LYS:O	32:CR:146:GLY:N	2.47	0.47
35:Cb:99:PHE:HA	35:Cb:112:HIS:O	2.14	0.47
39:Cf:57:ALA:HB2	39:Cf:181:GLY:HA2	1.96	0.47
50:C1:711:U:O4	50:C1:875:G:N1	2.47	0.47
50:C1:834:C:H2'	50:C1:835:A:H8	1.79	0.47
50:C1:1476:A:H2'	50:C1:1477:A:H8	1.79	0.47
50:C1:1701:U:H2'	50:C1:1702:G:C8	2.50	0.47
54:CW:103:LEU:HD23	54:CW:142:LEU:HD23	1.96	0.47
55:UT:528:LEU:HD12	55:UT:577:ILE:HG12	1.95	0.47
55:UT:932:ASN:OD1	55:UT:933:GLY:N	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:US:128:MET:O	58:US:131:SER:OG	2.24	0.47
4:UD:129:HIS:CD2	4:UD:164:VAL:HG11	2.50	0.47
4:UD:647:LEU:HB3	4:UD:659:PHE:HB2	1.95	0.47
7:UJ:146:PRO:O	7:UJ:150:THR:HG23	2.15	0.47
10:UM:787:SER:OG	10:UM:788:LEU:N	2.48	0.47
12:UO:143:HIS:CE1	12:UO:164:SER:HB3	2.50	0.47
15:UU:619:GLY:O	15:UU:647:LYS:NZ	2.37	0.47
15:UU:698:ASN:N	15:UU:698:ASN:OD1	2.47	0.47
19:CC:197:ARG:HG2	20:CD:171:LEU:HD12	1.97	0.47
22:CG:156:LEU:HB3	22:CG:606:VAL:HG11	1.96	0.47
22:CG:469:LEU:HA	22:CG:479:PHE:O	2.14	0.47
23:CH:336:LEU:HD23	23:CH:336:LEU:HA	1.68	0.47
23:CH:393:ASP:OD1	23:CH:393:ASP:N	2.47	0.47
24:CI:113:ARG:HH21	24:CI:308:THR:HG21	1.78	0.47
27:CL:489:LYS:HB2	27:CL:489:LYS:HE3	1.66	0.47
32:CS:744:PRO:HA	32:CS:762:MET:HG2	1.97	0.47
37:Cd:70:PRO:HA	37:Cd:101:ILE:HB	1.96	0.47
56:UH:781:SER:C	57:UI:262:LYS:HZ1	2.23	0.47
2:UB:759:HIS:O	2:UB:762:THR:OG1	2.25	0.47
5:UF:333:CYS:SG	5:UF:334:THR:N	2.88	0.47
9:UL:675:ASP:OD2	9:UL:677:THR:OG1	2.28	0.47
12:UO:45:SER:O	12:UO:319:SER:OG	2.32	0.47
14:UR:453:GLY:HA3	14:UR:526:ILE:HG13	1.96	0.47
18:CB:76:HIS:HB3	18:CB:81:VAL:HG13	1.95	0.47
20:CD:162:ASP:OD2	20:CD:308:LEU:N	2.46	0.47
32:CR:10:ARG:NH2	32:CR:208:VAL:HG11	2.29	0.47
32:CR:320:LEU:HD23	32:CR:323:LEU:HD21	1.95	0.47
32:CR:891:ARG:HD2	32:CS:792:TYR:OH	2.14	0.47
44:Ck:138:LYS:O	44:Ck:141:ARG:NH2	2.46	0.47
50:C1:2237:G:H2'	50:C1:2238:A:H8	1.79	0.47
52:UV:365:SER:HB2	52:UV:419:ARG:HA	1.96	0.47
52:UV:450:LEU:HD23	52:UV:532:ILE:HD12	1.95	0.47
54:CW:349:ASN:ND2	54:CW:354:MET:HA	2.27	0.47
7:UJ:513:LEU:O	7:UJ:517:LEU:HG	2.14	0.47
7:UJ:657:ARG:HH22	7:UJ:661:ILE:HG13	1.80	0.47
7:UJ:752:TRP:NE1	7:UJ:775:ASP:OD2	2.40	0.47
8:UK:70:ARG:NH1	24:CI:1063:GLN:OE1	2.48	0.47
18:CA:253:LEU:HD21	18:CA:304:CYS:HB2	1.96	0.47
22:CG:245:HIS:CE1	22:CG:249:PRO:HB3	2.50	0.47
23:CH:336:LEU:HD12	23:CH:360:LEU:HD11	1.95	0.47
26:CK:11:ASP:OD1	50:C1:352:G:N1	2.43	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:CS:520:HIS:ND1	32:CS:710:SER:HB2	2.29	0.47
32:CS:615:PRO:O	32:CS:619:SER:HB3	2.15	0.47
35:Cb:155:LYS:NZ	50:C1:828:G:OP1	2.42	0.47
38:Ce:163:ILE:HA	38:Ce:194:GLU:O	2.14	0.47
39:Cf:11:ARG:NH2	50:C1:903:U:OP1	2.47	0.47
40:Cg:105:ARG:NH2	40:Cg:151:GLN:OE1	2.35	0.47
44:Ck:127:MET:O	44:Ck:148:LEU:N	2.44	0.47
50:C1:331:C:N4	50:C1:332:U:O4	2.47	0.47
50:C1:680:U:H2'	50:C1:681:G:H8	1.79	0.47
50:C1:1539:G:H2'	50:C1:1540:A:H8	1.79	0.47
51:C2:158:C:H2'	51:C2:159:G:C8	2.49	0.47
52:UV:409:TRP:CD1	52:UV:483:TYR:HH	2.32	0.47
55:UT:149:VAL:HA	55:UT:193:LEU:HD21	1.95	0.47
55:UT:194:MET:SD	55:UT:195:GLY:N	2.87	0.47
55:UT:837:ASP:OD1	55:UT:837:ASP:N	2.47	0.47
55:UT:1095:VAL:HG12	55:UT:1144:LEU:HD21	1.96	0.47
55:UT:1390:ASP:HA	55:UT:1393:ARG:HE	1.78	0.47
56:UH:532:PRO:HG2	56:UH:538:TYR:HE1	1.79	0.47
56:UH:591:VAL:HG21	56:UH:609:ILE:HG21	1.97	0.47
56:UH:781:SER:HB3	57:UI:262:LYS:HZ3	1.79	0.47
58:US:227:LEU:HB3	58:US:269:TRP:CZ2	2.49	0.47
57:UI:228:ALA:O	57:UI:232:GLN:HB2	2.15	0.47
5:UF:287:ARG:HA	5:UF:292:TRP:CD2	2.50	0.47
10:UM:559:PHE:HB2	10:UM:573:VAL:HG12	1.95	0.47
11:UN:901:LEU:O	11:UN:903:LEU:N	2.48	0.47
16:UX:16:ALA:HB3	16:UX:19:VAL:HG23	1.95	0.47
16:UX:80:MET:HE2	16:UX:86:SER:HA	1.97	0.47
17:UZ:266:LEU:HD23	17:UZ:270:PHE:HD2	1.79	0.47
24:CI:369:ARG:HD3	24:CI:369:ARG:HA	1.59	0.47
24:CI:810:PHE:HE1	24:CI:876:PRO:HG3	1.80	0.47
40:Cg:161:PRO:HG2	50:C1:1096:A:H5''	1.97	0.47
54:CW:53:PHE:HD2	54:CW:78:GLN:HE21	1.62	0.47
55:UT:1109:LEU:HD11	55:UT:1134:ARG:HD2	1.96	0.47
60:CX:430:ARG:NH1	60:CX:457:ARG:O	2.47	0.47
3:UC:593:ARG:NH1	50:C1:1130:U:OP2	2.48	0.47
5:UF:161:ARG:O	5:UF:165:LEU:HG	2.14	0.47
6:UG:265:THR:OG1	6:UG:266:GLN:N	2.45	0.47
7:UJ:172:LYS:HB2	7:UJ:172:LYS:HE2	1.76	0.47
7:UJ:1680:VAL:HG13	7:UJ:1729:HIS:CE1	2.50	0.47
9:UL:563:LYS:HB3	49:CU:99:ASP:HA	1.96	0.47
13:UQ:770:THR:OG1	13:UQ:771:SER:N	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:UR:341:ALA:HB2	14:UR:347:PHE:HB3	1.96	0.47
15:UU:70:ALA:HB1	15:UU:86:THR:HB	1.97	0.47
15:UU:143:GLN:NE2	15:UU:189:ALA:O	2.47	0.47
15:UU:846:VAL:HG21	15:UU:990:LEU:HD21	1.97	0.47
21:CF:110:ASP:O	21:CF:113:SER:OG	2.27	0.47
28:CM:305:ARG:HH21	28:CM:400:VAL:HG21	1.79	0.47
28:CM:338:SER:O	28:CM:338:SER:OG	2.25	0.47
32:CR:10:ARG:HG3	32:CR:217:VAL:HG22	1.96	0.47
32:CR:615:PRO:O	32:CR:619:SER:HB3	2.15	0.47
32:CS:23:LYS:O	32:CS:146:GLY:N	2.47	0.47
32:CS:877:SER:HA	32:CS:881:GLN:HG3	1.96	0.47
34:Ca:56:ASN:ND2	52:UV:496:GLU:OE1	2.47	0.47
34:Ca:101:HIS:HA	34:Ca:217:LEU:HD12	1.97	0.47
38:Ce:22:LEU:HD22	38:Ce:54:GLU:HG3	1.96	0.47
39:Cf:182:ARG:HH22	50:C1:843:U:H1'	1.80	0.47
43:Cj:13:LYS:HA	43:Cj:13:LYS:HD2	1.71	0.47
44:Ck:93:ARG:N	44:Ck:110:LYS:O	2.37	0.47
48:Cp:12:LYS:NZ	48:Cp:52:ASN:OD1	2.46	0.47
49:CU:223:GLN:O	49:CU:230:ARG:NH2	2.46	0.47
50:C1:399:G:H2'	50:C1:400:C:C6	2.49	0.47
50:C1:650:G:O2'	50:C1:754:U:OP1	2.32	0.47
50:C1:723:A:N1	50:C1:762:G:O6	2.48	0.47
51:C2:65:C:H2'	51:C2:66:A:C8	2.50	0.47
52:UV:482:VAL:O	52:UV:486:LEU:HG	2.14	0.47
54:CW:344:MET:HA	54:CW:357:PHE:O	2.14	0.47
55:UT:1066:PRO:HB2	55:UT:1129:LEU:HD23	1.97	0.47
55:UT:1486:ILE:O	55:UT:1490:ILE:HG13	2.14	0.47
58:US:477:ILE:HD12	58:US:487:TYR:HE2	1.79	0.47
60:CX:275:ARG:NE	60:CX:315:THR:HG21	2.30	0.47
61:CY:379:LYS:HB3	61:CY:379:LYS:HZ2	1.79	0.47
1:UA:626:ASN:OD1	1:UA:626:ASN:N	2.43	0.47
4:UD:626:LEU:HD11	4:UD:657:LEU:HD21	1.96	0.47
6:UG:139:PRO:HA	6:UG:412:ASN:HA	1.96	0.47
6:UG:580:GLU:HA	6:UG:583:LEU:HB2	1.97	0.47
7:UJ:78:SER:HA	7:UJ:81:VAL:HG12	1.96	0.47
9:UL:115:VAL:HB	9:UL:158:LEU:HD13	1.96	0.47
9:UL:831:LEU:HD21	9:UL:870:ASN:HD22	1.80	0.47
20:CD:189:TRP:HE1	20:CD:257:ILE:HA	1.80	0.47
23:CH:152:THR:O	23:CH:156:ALA:CB	2.62	0.47
33:CT:130:PHE:HE1	50:C1:402:U:H5'	1.79	0.47
34:Ca:52:THR:OG1	34:Ca:53:GLY:N	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:Ce:88:GLU:HG3	38:Ce:96:VAL:HG22	1.96	0.47
42:Cl:48:GLY:O	50:C1:1503:U:O2'	2.28	0.47
50:C1:5:G:N2	50:C1:30:U:O2	2.35	0.47
50:C1:918:U:H2'	50:C1:919:U:H6	1.79	0.47
50:C1:1253:C:H2'	50:C1:1254:G:C8	2.49	0.47
51:C2:103:G:O6	51:C2:250:G:C5	2.67	0.47
52:UV:57:PHE:HA	52:UV:58:ASP:HA	1.47	0.47
57:UE:278:MET:H	57:UE:278:MET:HG2	1.46	0.47
58:US:503:ALA:HA	58:US:506:THR:HG22	1.95	0.47
61:CY:252:ASN:HA	61:CY:261:LYS:HE2	1.96	0.47
61:CY:374:ARG:H	61:CY:374:ARG:NE	2.13	0.47
1:UA:220:PHE:HD1	1:UA:245:ILE:HD11	1.79	0.47
2:UB:331:LYS:HA	2:UB:331:LYS:HD3	1.55	0.47
6:UG:205:HIS:HE1	16:UX:13:ARG:HH22	1.63	0.47
7:UJ:47:GLU:O	7:UJ:51:GLN:HG2	2.15	0.47
10:UM:382:ILE:HG21	10:UM:448:ILE:HD13	1.96	0.47
10:UM:647:LYS:HG2	10:UM:698:THR:HA	1.97	0.47
12:UO:534:VAL:O	12:UO:538:GLU:N	2.48	0.47
13:UQ:255:ALA:HB3	13:UQ:262:HIS:HB2	1.96	0.47
21:CF:53:VAL:O	21:CF:79:TYR:HA	2.15	0.47
23:CH:156:ALA:HA	23:CH:291:ILE:HD12	1.95	0.47
28:CM:9:SER:OG	28:CM:10:ILE:N	2.47	0.47
28:CM:200:ILE:HA	28:CM:217:ALA:HA	1.97	0.47
32:CR:27:PHE:CD2	32:CR:148:LEU:HD11	2.45	0.47
37:Cd:2:LYS:O	37:Cd:108:VAL:HA	2.15	0.47
50:C1:253:G:H2'	50:C1:254:G:C8	2.50	0.47
52:UV:312:PHE:HA	52:UV:318:LYS:HG3	1.96	0.47
52:UV:934:THR:HG22	52:UV:936:HIS:H	1.78	0.47
52:UV:1053:GLN:O	52:UV:1057:VAL:HG23	2.15	0.47
55:UT:417:MET:HB2	55:UT:417:MET:HE3	1.82	0.47
55:UT:1927:LYS:HB2	55:UT:1930:GLU:HG2	1.96	0.47
57:UE:274:LYS:O	57:UE:278:MET:HE2	2.15	0.47
57:UI:244:ARG:O	57:UI:248:GLU:HG2	2.15	0.47
57:UI:274:LYS:O	57:UI:278:MET:HE2	2.15	0.47
1:UA:717:PRO:HD2	15:UU:738:THR:HA	1.97	0.47
4:UD:773:MET:HE2	4:UD:773:MET:HB3	1.79	0.47
5:UF:14:ARG:HA	5:UF:14:ARG:HD2	1.67	0.47
6:UG:274:HIS:CD2	6:UG:284:LEU:HD21	2.50	0.47
6:UG:295:LYS:HG3	11:UN:870:ILE:HB	1.97	0.47
7:UJ:165:ARG:HD2	7:UJ:165:ARG:HA	1.63	0.47
7:UJ:1527:LEU:HB3	7:UJ:1583:TRP:HE1	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:UL:372:VAL:HB	9:UL:385:LEU:HD11	1.96	0.47
13:UQ:127:LEU:HD12	13:UQ:128:PRO:HD2	1.97	0.47
13:UQ:355:ARG:HH22	13:UQ:524:VAL:HG11	1.80	0.47
16:UX:5:ARG:HD3	16:UX:5:ARG:HA	1.72	0.47
19:CC:130:LEU:HD12	19:CC:130:LEU:HA	1.79	0.47
23:CH:12:THR:O	23:CH:20:ARG:NH1	2.32	0.47
25:CJ:151:THR:OG1	25:CJ:152:ARG:N	2.46	0.47
32:CR:744:PRO:HA	32:CR:762:MET:HG2	1.97	0.47
32:CS:133:PRO:HB3	32:CS:494:LEU:HD21	1.97	0.47
50:C1:297:U:O2'	50:C1:298:A:N7	2.41	0.47
50:C1:384:C:H3'	50:C1:385:A:C8	2.50	0.47
50:C1:848:G:H5''	50:C1:849:A:H5'	1.97	0.47
53:CV:155:GLU:HA	53:CV:158:VAL:HG12	1.96	0.47
54:CW:113:VAL:HG13	54:CW:142:LEU:HD21	1.97	0.47
54:CW:137:ARG:NH1	54:CW:195:LEU:O	2.46	0.47
55:UT:107:LEU:HD21	55:UT:126:VAL:HG22	1.97	0.47
55:UT:1219:ALA:HB3	55:UT:1224:LYS:HE3	1.96	0.47
56:UH:614:PRO:HG3	56:UH:643:SER:OG	2.14	0.47
1:UA:645:ALA:O	1:UA:651:ARG:NH1	2.48	0.46
9:UL:912:ARG:NE	10:UM:828:ARG:HH12	2.12	0.46
10:UM:702:HIS:CD2	10:UM:705:THR:HG22	2.50	0.46
12:UO:174:LEU:HD23	36:Cc:111:MET:HA	1.96	0.46
12:UO:325:ALA:HB2	12:UO:332:ARG:HB2	1.97	0.46
13:UQ:402:ILE:HG22	13:UQ:413:LEU:HD23	1.97	0.46
13:UQ:563:THR:O	13:UQ:565:ALA:N	2.48	0.46
13:UQ:748:SER:OG	13:UQ:749:ASP:N	2.46	0.46
16:UX:54:PRO:HB3	16:UX:85:ALA:HB1	1.97	0.46
18:CA:65:ALA:O	18:CA:107:LYS:NZ	2.46	0.46
32:CS:10:ARG:HG3	32:CS:217:VAL:HG22	1.96	0.46
35:Cb:113:ARG:HH22	55:UT:77:ARG:HH21	1.62	0.46
39:Cf:56:ARG:NH2	50:C1:916:U:OP1	2.48	0.46
49:CU:186:ALA:O	49:CU:192:ASN:ND2	2.47	0.46
50:C1:105:A:H2'	50:C1:106:A:C8	2.50	0.46
55:UT:1397:SER:OG	55:UT:1414:ALA:HB2	2.14	0.46
55:UT:1487:LEU:HA	55:UT:1490:ILE:HD12	1.97	0.46
55:UT:2078:LEU:HD23	55:UT:2078:LEU:HA	1.81	0.46
57:UE:228:ALA:O	57:UE:232:GLN:HB2	2.14	0.46
2:UB:786:ARG:HH22	2:UB:790:LEU:HB2	1.81	0.46
4:UD:368:LEU:HD13	4:UD:836:MET:HB3	1.98	0.46
4:UD:420:LEU:HD21	4:UD:467:LEU:HD21	1.97	0.46
7:UJ:332:VAL:HA	7:UJ:335:VAL:HG23	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:UM:400:ILE:HD11	10:UM:427:ALA:HB3	1.98	0.46
12:UO:529:LYS:O	12:UO:533:GLU:N	2.46	0.46
15:UU:196:LEU:HD12	15:UU:196:LEU:HA	1.82	0.46
22:CG:328:GLY:H	40:Cg:153:HIS:CE1	2.33	0.46
23:CH:350:ARG:NE	23:CH:393:ASP:OD2	2.48	0.46
32:CS:813:ALA:O	32:CS:819:ASN:ND2	2.49	0.46
36:Cc:50:GLN:NE2	36:Cc:52:ARG:HH11	2.12	0.46
50:C1:791:U:H2'	50:C1:792:A:C8	2.50	0.46
51:C2:74:C:H2'	51:C2:75:A:H8	1.80	0.46
54:CW:184:VAL:HG21	54:CW:219:PHE:HD2	1.79	0.46
5:UF:175:PRO:HB3	5:UF:291:PHE:CD1	2.51	0.46
7:UJ:48:ILE:HD11	7:UJ:123:ARG:HH21	1.80	0.46
9:UL:234:THR:HG1	9:UL:242:THR:HG1	1.59	0.46
10:UM:135:ILE:HG13	10:UM:149:VAL:HG13	1.98	0.46
13:UQ:381:LEU:HB2	13:UQ:390:ASP:O	2.14	0.46
14:UR:57:LYS:HG3	14:UR:62:ALA:HB2	1.97	0.46
15:UU:113:ASN:OD1	15:UU:113:ASN:N	2.48	0.46
22:CG:310:ARG:NH1	40:Cg:152:LYS:O	2.48	0.46
22:CG:593:TYR:HH	51:C2:189:G:HO2'	1.59	0.46
26:CK:158:PRO:HG2	26:CK:159:HIS:CD2	2.51	0.46
29:CN:97:LEU:HD11	29:CN:132:ARG:HD3	1.98	0.46
29:CN:121:LEU:HB3	29:CN:163:ILE:HG13	1.97	0.46
32:CR:722:TYR:HA	32:CR:765:PRO:HA	1.97	0.46
34:Ca:178:SER:OG	34:Ca:179:CYS:SG	2.72	0.46
41:Ch:129:TYR:HA	41:Ch:132:VAL:HG12	1.97	0.46
45:Cm:81:VAL:HG21	45:Cm:125:ILE:HD12	1.97	0.46
50:C1:786:G:C6	50:C1:848:G:N1	2.83	0.46
52:UV:60:ALA:O	52:UV:64:LEU:HB2	2.14	0.46
52:UV:448:TYR:HB2	52:UV:534:ILE:HB	1.98	0.46
55:UT:1352:TYR:OH	55:UT:1429:ASP:O	2.29	0.46
1:UA:533:GLN:HB3	1:UA:549:ASP:HA	1.97	0.46
2:UB:559:LEU:HA	2:UB:562:THR:HG22	1.96	0.46
2:UB:615:MET:HA	2:UB:618:ILE:HD12	1.97	0.46
13:UQ:777:LEU:HD23	13:UQ:794:PRO:HG3	1.97	0.46
16:UX:74:PRO:O	16:UX:78:SER:HB3	2.14	0.46
17:UZ:68:THR:OG1	17:UZ:69:LYS:N	2.49	0.46
18:CA:163:SER:N	18:CA:189:SER:OG	2.49	0.46
22:CG:123:PHE:HD2	35:Cb:104:ASP:HA	1.80	0.46
23:CH:179:SER:OG	23:CH:190:GLY:N	2.48	0.46
26:CK:187:SER:H	26:CK:226:ARG:HH11	1.64	0.46
32:CR:45:MET:HE1	32:CR:122:MET:HG2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:CS:45:MET:HE1	32:CS:122:MET:HG2	1.98	0.46
32:CS:722:TYR:HA	32:CS:765:PRO:HA	1.97	0.46
52:UV:856:VAL:HA	52:UV:859:THR:HG22	1.97	0.46
54:CW:100:VAL:HG12	54:CW:101:THR:HG23	1.96	0.46
54:CW:354:MET:HE3	54:CW:354:MET:HB2	1.80	0.46
55:UT:1228:LEU:HG	55:UT:1288:THR:HG21	1.97	0.46
56:UH:700:ASP:OD1	56:UH:700:ASP:N	2.47	0.46
56:UH:867:LEU:HG	57:UI:227:GLY:N	2.30	0.46
60:CX:250:ALA:O	60:CX:254:PHE:HB2	2.16	0.46
5:UF:385:MET:HA	5:UF:388:ILE:HD12	1.97	0.46
12:UO:46:HIS:HE1	12:UO:48:SER:HB3	1.81	0.46
13:UQ:197:VAL:HA	13:UQ:271:LEU:HD22	1.97	0.46
14:UR:437:ARG:H	14:UR:437:ARG:HG3	1.50	0.46
15:UU:391:LEU:HD22	15:UU:408:LEU:HD21	1.98	0.46
15:UU:420:TRP:HA	15:UU:428:SER:HB2	1.97	0.46
24:CI:143:ASN:OD1	24:CI:143:ASN:N	2.47	0.46
26:CK:229:THR:O	26:CK:239:VAL:HA	2.14	0.46
32:CS:220:LEU:HD23	32:CS:221:PRO:HD2	1.97	0.46
50:C1:695:G:N1	50:C1:890:U:N3	2.64	0.46
50:C1:712:A:N6	50:C1:876:U:C5	2.83	0.46
50:C1:2072:U:H4'	50:C1:2073:A:H5'	1.97	0.46
52:UV:966:SER:HB2	52:UV:982:ARG:HH12	1.81	0.46
52:UV:1062:ALA:HB2	52:UV:1091:TRP:CD1	2.51	0.46
54:CW:76:LYS:HB3	54:CW:94:HIS:CD2	2.51	0.46
55:UT:1073:LEU:HD21	55:UT:1137:ALA:HB2	1.98	0.46
57:UE:244:ARG:O	57:UE:248:GLU:HG2	2.15	0.46
1:UA:593:SER:OG	1:UA:594:LYS:N	2.48	0.46
2:UB:605:ASP:OD1	2:UB:605:ASP:N	2.38	0.46
6:UG:267:ASN:HA	6:UG:308:VAL:HG21	1.95	0.46
6:UG:336:VAL:HG13	6:UG:378:GLN:HB2	1.96	0.46
9:UL:513:ALA:HB2	9:UL:570:SER:HA	1.96	0.46
10:UM:202:THR:OG1	10:UM:204:ASP:O	2.33	0.46
11:UN:316:TYR:OH	28:CM:270:ARG:O	2.33	0.46
12:UO:316:PRO:HG2	12:UO:339:GLN:HB3	1.97	0.46
24:CI:58:LEU:HD23	24:CI:58:LEU:HA	1.79	0.46
28:CM:282:HIS:CD2	28:CM:302:SER:HB2	2.51	0.46
31:CQ:137:GLN:NE2	31:CQ:141:ASP:OD1	2.48	0.46
32:CS:320:LEU:HD23	32:CS:323:LEU:HD21	1.95	0.46
36:Cc:45:LEU:HD12	36:Cc:125:VAL:HG23	1.97	0.46
42:Ci:31:ARG:NH1	42:Ci:44:THR:OG1	2.48	0.46
45:Cm:8:HIS:HB2	45:Cm:74:VAL:HG11	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:C1:246:G:H2'	50:C1:247:C:H6	1.81	0.46
50:C1:278:A:OP2	50:C1:278:A:H8	1.98	0.46
50:C1:787:U:H2'	50:C1:788:A:H8	1.81	0.46
50:C1:1152:G:H2'	50:C1:1153:C:C6	2.51	0.46
50:C1:1469:A:H2'	50:C1:1470:G:H8	1.81	0.46
51:C2:149:U:H2'	51:C2:150:G:H8	1.79	0.46
52:UV:329:LEU:HD21	52:UV:393:LEU:HD21	1.98	0.46
52:UV:447:THR:HA	52:UV:534:ILE:O	2.16	0.46
54:CW:54:GLU:HA	54:CW:352:LYS:HE2	1.98	0.46
56:UH:783:CYS:SG	56:UH:784:ILE:N	2.89	0.46
57:UI:249:ARG:HD3	57:UI:249:ARG:HA	1.79	0.46
6:UG:425:GLU:O	28:CM:8:ARG:NH2	2.49	0.46
9:UL:226:SER:OG	9:UL:228:ASP:OD1	2.28	0.46
11:UN:903:LEU:HD23	11:UN:903:LEU:HA	1.82	0.46
12:UO:37:THR:HA	12:UO:342:VAL:HG12	1.97	0.46
13:UQ:91:ASP:O	13:UQ:401:ASN:ND2	2.48	0.46
18:CB:77:ARG:HH22	18:CB:146:GLU:HA	1.80	0.46
19:CC:140:LYS:NZ	50:C1:436:A:H62	2.13	0.46
24:CI:1020:ARG:HD3	24:CI:1027:THR:HG22	1.97	0.46
28:CM:89:GLY:O	28:CM:108:ALA:N	2.48	0.46
30:CP:96:ARG:NH2	30:CP:97:ASP:OD2	2.49	0.46
36:Cc:40:ILE:HD11	36:Cc:49:ILE:HD12	1.98	0.46
50:C1:94:G:O2'	57:UE:174:GLN:NE2	2.49	0.46
50:C1:176:G:H2'	50:C1:177:G:H8	1.81	0.46
52:UV:740:HIS:CD2	52:UV:757:ASP:HB3	2.50	0.46
55:UT:1802:ILE:HD11	55:UT:1856:LEU:HB3	1.98	0.46
58:US:149:GLN:HG2	58:US:153:LEU:HD12	1.96	0.46
4:UD:220:LEU:HA	4:UD:220:LEU:HD23	1.81	0.46
4:UD:485:GLN:HB2	4:UD:552:ILE:HG13	1.97	0.46
6:UG:158:GLY:O	6:UG:175:GLN:O	2.34	0.46
6:UG:267:ASN:HB2	6:UG:274:HIS:CD2	2.50	0.46
6:UG:567:LYS:HA	6:UG:570:ARG:HD2	1.98	0.46
9:UL:304:ILE:HD11	9:UL:385:LEU:HD22	1.98	0.46
10:UM:814:ARG:O	10:UM:818:THR:HG23	2.16	0.46
12:UO:217:TRP:CD1	12:UO:225:ALA:HA	2.51	0.46
12:UO:322:VAL:HA	12:UO:334:LEU:HA	1.98	0.46
18:CA:110:SER:HB3	33:CT:141:ILE:HD11	1.97	0.46
22:CG:351:ASP:OD1	22:CG:351:ASP:N	2.43	0.46
32:CR:133:PRO:HB3	32:CR:494:LEU:HD21	1.97	0.46
32:CS:10:ARG:NH1	32:CS:215:LYS:O	2.49	0.46
32:CS:36:GLU:H	32:CS:36:GLU:HG3	1.55	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:Ca:113:LEU:HD23	34:Ca:113:LEU:HA	1.81	0.46
50:C1:1240:G:C6	50:C1:1260:U:N3	2.83	0.46
50:C1:2328:G:H2'	50:C1:2329:A:C8	2.51	0.46
51:C2:98:U:H2'	51:C2:99:C:C6	2.51	0.46
52:UV:857:LEU:O	52:UV:861:LEU:HB2	2.16	0.46
54:CW:114:HIS:HD2	54:CW:116:GLN:HB2	1.81	0.46
7:UJ:330:LYS:HA	7:UJ:333:ILE:HD12	1.98	0.46
7:UJ:1477:LEU:O	7:UJ:1481:LEU:HB2	2.15	0.46
10:UM:762:LEU:HD23	10:UM:762:LEU:HA	1.81	0.46
12:UO:280:SER:OG	12:UO:320:LEU:O	2.34	0.46
20:CD:185:ARG:O	20:CD:189:TRP:HB3	2.16	0.46
22:CG:436:HIS:HE1	22:CG:480:SER:HB2	1.81	0.46
29:CO:121:LEU:HD22	29:CO:163:ILE:HG13	1.97	0.46
32:CR:112:THR:HG21	32:CR:135:ILE:HB	1.98	0.46
39:Cf:159:ALA:HB1	39:Cf:197:GLN:HE22	1.81	0.46
41:Ch:140:LYS:O	41:Ch:145:THR:OG1	2.31	0.46
42:Ci:30:ALA:HA	42:Ci:42:HIS:O	2.16	0.46
45:Cm:70:ASN:ND2	45:Cm:130:TYR:O	2.34	0.46
47:Co:393:THR:HA	47:Co:400:THR:HG22	1.98	0.46
47:Co:412:ALA:O	47:Co:416:PHE:HB2	2.16	0.46
50:C1:104:U:H3'	50:C1:105:A:C8	2.51	0.46
50:C1:972:A:C5	50:C1:1007:G:C6	3.03	0.46
50:C1:1067:A:H2'	50:C1:1068:C:C6	2.51	0.46
50:C1:1709:A:H4'	50:C1:1710:G:H5'	1.98	0.46
50:C1:1744:A:H2'	50:C1:1745:C:H6	1.79	0.46
52:UV:267:PRO:O	52:UV:271:SER:OG	2.34	0.46
52:UV:494:ASN:HD22	52:UV:500:ARG:HH12	1.64	0.46
52:UV:722:LEU:HA	52:UV:725:ILE:HD12	1.98	0.46
54:CW:155:ALA:HB3	54:CW:167:GLU:HG2	1.98	0.46
55:UT:927:LEU:HD23	55:UT:927:LEU:HA	1.75	0.46
55:UT:939:LYS:HA	55:UT:964:LEU:HD21	1.96	0.46
56:UH:711:PHE:HB3	56:UH:775:LEU:HD12	1.98	0.46
56:UH:836:ILE:HG12	57:UI:242:LEU:HD22	1.96	0.46
1:UA:15:TYR:OH	1:UA:18:GLY:O	2.21	0.46
7:UJ:1752:LEU:O	7:UJ:1792:LYS:NZ	2.36	0.46
8:UK:126:LEU:HD23	8:UK:126:LEU:HA	1.83	0.46
12:UO:257:VAL:HG23	12:UO:266:LEU:HB2	1.98	0.46
13:UQ:144:VAL:O	13:UQ:445:ARG:NH2	2.49	0.46
13:UQ:145:SER:HB2	13:UQ:190:MET:HG3	1.98	0.46
15:UU:35:PHE:HB3	15:UU:776:TRP:HB3	1.98	0.46
16:UX:60:VAL:HB	16:UX:91:ILE:HG22	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:CD:161:VAL:HG12	20:CD:163:VAL:HG12	1.97	0.46
20:CD:212:LEU:HA	20:CD:212:LEU:HD23	1.73	0.46
22:CG:272:VAL:HG21	22:CG:317:LEU:HD21	1.98	0.46
23:CH:235:MET:HB3	23:CH:279:LEU:HD12	1.98	0.46
23:CH:405:ASN:OD1	23:CH:405:ASN:N	2.47	0.46
32:CS:57:LEU:HD13	32:CS:120:TYR:CZ	2.51	0.46
34:Ca:62:LYS:HB2	34:Ca:62:LYS:HE2	1.73	0.46
49:CU:126:ASP:OD2	49:CU:126:ASP:N	2.47	0.46
50:C1:373:C:H2'	50:C1:374:G:C8	2.50	0.46
50:C1:1511:A:H2'	50:C1:1512:C:C6	2.51	0.46
55:UT:330:MET:O	55:UT:366:GLN:NE2	2.49	0.46
55:UT:717:TYR:HE1	55:UT:727:ALA:HA	1.81	0.46
55:UT:1252:LYS:HD3	55:UT:1295:MET:HE1	1.98	0.46
55:UT:1352:TYR:HE2	55:UT:1429:ASP:HB3	1.80	0.46
55:UT:1874:GLN:HG2	55:UT:1962:MET:HE3	1.96	0.46
1:UA:324:VAL:HG12	1:UA:333:ILE:HB	1.98	0.45
2:UB:612:THR:HG23	2:UB:613:PRO:HD3	1.98	0.45
14:UR:418:HIS:HB2	14:UR:437:ARG:HD3	1.98	0.45
15:UU:121:VAL:HB	15:UU:129:ALA:HB3	1.98	0.45
16:UX:67:ARG:HD3	16:UX:149:ASN:HD22	1.79	0.45
17:UZ:61:PRO:HG2	17:UZ:63:TRP:HZ3	1.80	0.45
28:CM:310:TRP:HE1	28:CM:317:SER:HA	1.81	0.45
32:CR:10:ARG:NH1	32:CR:215:LYS:O	2.49	0.45
50:C1:365:G:H2'	50:C1:366:G:C8	2.51	0.45
50:C1:2051:U:H2'	50:C1:2052:A:C8	2.52	0.45
51:C2:13:U:H2'	51:C2:14:C:C6	2.51	0.45
52:UV:645:ARG:HH12	52:UV:648:PHE:HD1	1.64	0.45
54:CW:277:ARG:HD3	54:CW:278:PRO:HD2	1.98	0.45
55:UT:441:PHE:HE2	55:UT:485:LYS:HD2	1.81	0.45
55:UT:1359:PHE:CE2	55:UT:1433:PRO:HB3	2.51	0.45
1:UA:409:TRP:HA	1:UA:416:ASN:HA	1.97	0.45
4:UD:72:GLY:N	63:UP:331:LEU:HD21	2.31	0.45
9:UL:478:LYS:HG3	9:UL:479:VAL:HG13	1.97	0.45
13:UQ:783:ASN:ND2	13:UQ:786:SER:H	2.14	0.45
15:UU:48:GLY:HA2	15:UU:357:LEU:HD21	1.99	0.45
18:CA:82:PHE:HE1	33:CT:90:TRP:HB3	1.81	0.45
24:CI:820:HIS:HE1	24:CI:821:ARG:HH21	1.64	0.45
26:CK:223:SER:OG	26:CK:224:GLY:N	2.49	0.45
27:CL:630:LEU:HD23	27:CL:630:LEU:HA	1.83	0.45
32:CR:845:ALA:HA	32:CR:913:MET:HE1	1.98	0.45
34:Ca:67:GLU:OE2	34:Ca:83:LYS:HB2	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:Co:391:LEU:H	47:Co:402:GLY:HA2	1.80	0.45
50:C1:181:G:H3'	50:C1:182:C:H4'	1.97	0.45
50:C1:1448:A:C6	50:C1:1549:U:O4	2.69	0.45
52:UV:169:LEU:HB3	52:UV:228:PRO:HG2	1.97	0.45
52:UV:849:PRO:HD3	52:UV:1071:VAL:HG21	1.99	0.45
53:CV:79:GLU:HG2	53:CV:80:LYS:HD3	1.99	0.45
55:UT:208:ALA:HA	55:UT:258:MET:HG2	1.98	0.45
55:UT:454:VAL:HA	55:UT:491:PRO:HG3	1.97	0.45
55:UT:1502:ARG:HA	55:UT:1505:ILE:HG22	1.98	0.45
55:UT:1634:GLN:HG2	55:UT:1708:ALA:HB1	1.98	0.45
56:UH:608:LEU:HD23	56:UH:608:LEU:HA	1.84	0.45
2:UB:796:ARG:NH1	58:US:431:LEU:O	2.47	0.45
6:UG:65:ASP:OD2	50:C1:582:G:N2	2.49	0.45
7:UJ:289:LEU:HD12	7:UJ:319:ARG:HA	1.98	0.45
7:UJ:1645:ASN:HA	7:UJ:1648:LYS:HD3	1.98	0.45
10:UM:558:LEU:HB3	10:UM:570:ILE:HD11	1.99	0.45
17:UZ:63:TRP:HB3	17:UZ:244:LYS:HA	1.98	0.45
17:UZ:272:PRO:HB2	50:C1:373:C:H5''	1.97	0.45
32:CR:429:ILE:HD13	32:CR:469:LEU:HD22	1.98	0.45
32:CS:429:ILE:HD13	32:CS:469:LEU:HD22	1.98	0.45
32:CS:738:LYS:HD2	32:CS:738:LYS:HA	1.67	0.45
37:Cd:32:MET:HA	37:Cd:52:ILE:HG13	1.99	0.45
43:Cj:3:SER:OG	43:Cj:4:VAL:N	2.49	0.45
50:C1:246:G:H2'	50:C1:247:C:C6	2.51	0.45
50:C1:597:G:H2'	50:C1:598:A:C8	2.51	0.45
50:C1:924:A:OP1	54:CW:134:ARG:NH1	2.49	0.45
50:C1:1213:U:C2	50:C1:1555:A:N7	2.84	0.45
50:C1:1662:C:H2'	50:C1:1663:U:C6	2.51	0.45
51:C2:200:U:H3	51:C2:246:G:H1	1.64	0.45
52:UV:454:MET:HE1	52:UV:611:LEU:HD21	1.98	0.45
52:UV:757:ASP:HA	52:UV:766:PHE:O	2.16	0.45
52:UV:1054:LEU:HA	53:CV:90:GLU:HB2	1.99	0.45
53:CV:66:ARG:HA	53:CV:69:VAL:HG22	1.98	0.45
54:CW:227:GLU:HG3	54:CW:239:VAL:HG22	1.98	0.45
55:UT:1873:LEU:O	55:UT:1877:LEU:HD23	2.16	0.45
60:CX:422:ARG:HH21	60:CX:423:ASN:HB2	1.81	0.45
61:CY:304:MET:N	61:CY:304:MET:SD	2.90	0.45
1:UA:206:ASP:O	1:UA:208:GLU:N	2.45	0.45
3:UC:582:GLN:O	3:UC:585:LYS:O	2.35	0.45
7:UJ:704:LEU:HD23	7:UJ:736:ILE:HD12	1.98	0.45
7:UJ:1614:LEU:HD11	7:UJ:1618:VAL:HB	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:UL:793:LEU:HD23	9:UL:793:LEU:HA	1.78	0.45
10:UM:481:SER:O	10:UM:515:GLN:N	2.46	0.45
13:UQ:82:SER:OG	13:UQ:83:LYS:N	2.48	0.45
13:UQ:381:LEU:HD22	14:UR:364:GLN:HE22	1.80	0.45
19:CC:74:MET:HB2	19:CC:78:LEU:HD23	1.98	0.45
21:CE:34:LEU:HD12	21:CE:103:LEU:HB3	1.97	0.45
22:CG:119:ASP:OD2	22:CG:119:ASP:N	2.49	0.45
32:CS:879:LEU:HD21	54:CW:299:PRO:HD2	1.98	0.45
38:Ce:66:ILE:HD11	38:Ce:98:ILE:HD12	1.97	0.45
50:C1:991:A:H2'	50:C1:992:C:H6	1.81	0.45
50:C1:1480:G:C2	50:C1:1503:U:O2	2.70	0.45
51:C2:70:A:H2'	51:C2:71:U:C6	2.51	0.45
6:UG:181:ARG:N	6:UG:195:ALA:O	2.46	0.45
8:UK:14:LYS:N	50:C1:1158:G:O6	2.48	0.45
8:UK:266:ARG:HD2	50:C1:202:A:C5	2.52	0.45
9:UL:386:LEU:HD12	9:UL:396:LEU:HD12	1.98	0.45
9:UL:935:SER:O	9:UL:935:SER:OG	2.30	0.45
10:UM:571:TRP:HB2	10:UM:577:GLU:O	2.17	0.45
10:UM:635:ILE:HG22	10:UM:636:ARG:HD2	1.98	0.45
10:UM:813:LEU:HA	10:UM:813:LEU:HD23	1.70	0.45
13:UQ:449:ASP:HB2	13:UQ:454:ARG:HE	1.81	0.45
15:UU:638:VAL:HG21	15:UU:680:ILE:HD13	1.97	0.45
18:CB:165:THR:O	18:CB:168:SER:OG	2.32	0.45
20:CD:13:TYR:OH	20:CD:60:GLU:OE1	2.20	0.45
20:CD:361:ILE:HG13	20:CD:405:LEU:HD13	1.98	0.45
22:CG:252:VAL:HG12	22:CG:263:THR:HG22	1.97	0.45
25:CJ:61:LEU:HA	25:CJ:61:LEU:HD23	1.70	0.45
28:CM:157:THR:OG1	28:CM:171:SER:O	2.34	0.45
28:CM:307:ILE:HD11	28:CM:343:THR:HG21	1.98	0.45
31:CQ:198:LYS:NZ	50:C1:2352:U:O2	2.36	0.45
32:CS:210:PRO:HB3	32:CS:215:LYS:HE2	1.99	0.45
45:Cm:128:PHE:HZ	49:CU:281:MET:HE1	1.82	0.45
50:C1:1004:A:H2'	50:C1:1005:A:C8	2.51	0.45
50:C1:1068:C:H2'	50:C1:1069:A:C8	2.47	0.45
50:C1:1503:U:H2'	50:C1:1504:A:C8	2.51	0.45
51:C2:127:A:O2'	51:C2:128:C:H6	2.00	0.45
52:UV:63:LEU:HD12	52:UV:63:LEU:HA	1.76	0.45
52:UV:71:ILE:HA	52:UV:74:ILE:HG12	1.98	0.45
55:UT:64:ARG:NH1	55:UT:87:ASN:OD1	2.49	0.45
55:UT:801:CYS:HB2	55:UT:804:LEU:H	1.82	0.45
55:UT:1260:THR:HG22	55:UT:1292:PHE:HZ	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:UP:318:THR:OG1	63:UP:319:ALA:N	2.49	0.45
1:UA:326:GLU:OE2	31:CQ:258:ARG:N	2.45	0.45
2:UB:537:LEU:HD11	2:UB:549:LEU:HD13	1.99	0.45
2:UB:618:ILE:HG12	2:UB:639:LEU:HD22	1.99	0.45
4:UD:129:HIS:ND1	4:UD:130:GLY:O	2.41	0.45
4:UD:697:GLN:HE21	4:UD:713:SER:HB3	1.81	0.45
5:UF:44:GLU:OE1	5:UF:98:ARG:NH2	2.49	0.45
6:UG:228:HIS:HB3	6:UG:230:LEU:HD13	1.99	0.45
6:UG:473:SER:OG	11:UN:885:THR:O	2.33	0.45
12:UO:300:PHE:CE1	12:UO:307:VAL:HG22	2.52	0.45
13:UQ:391:PHE:HE2	50:C1:72:U:H4'	1.81	0.45
15:UU:35:PHE:HE2	15:UU:733:VAL:HG21	1.82	0.45
15:UU:226:SER:O	15:UU:226:SER:OG	2.31	0.45
18:CB:191:ARG:HE	20:CD:159:GLU:CD	2.24	0.45
18:CB:230:VAL:HG12	18:CB:235:GLN:HE21	1.82	0.45
19:CC:385:LYS:NZ	51:C2:194:G:OP1	2.34	0.45
19:CC:398:LYS:O	22:CG:451:GLU:N	2.49	0.45
20:CD:189:TRP:NE1	20:CD:257:ILE:HG12	2.32	0.45
32:CR:57:LEU:HD13	32:CR:120:TYR:CZ	2.51	0.45
32:CR:813:ALA:O	32:CR:819:ASN:ND2	2.49	0.45
52:UV:645:ARG:HE	52:UV:649:THR:HG23	1.81	0.45
52:UV:840:VAL:HG23	52:UV:841:HIS:ND1	2.32	0.45
58:US:125:LEU:HD21	58:US:142:ALA:HA	1.99	0.45
61:CY:374:ARG:NH2	61:CY:374:ARG:HG3	2.30	0.45
57:UI:161:LEU:HA	57:UI:161:LEU:HD13	1.78	0.45
1:UA:774:LEU:HD22	1:UA:819:VAL:HG21	1.97	0.45
2:UB:552:LEU:O	2:UB:556:VAL:HG23	2.17	0.45
6:UG:100:LEU:HD23	6:UG:421:PRO:HG2	1.98	0.45
7:UJ:817:TRP:HA	7:UJ:820:MET:HG2	1.98	0.45
13:UQ:190:MET:HB2	13:UQ:205:LEU:HD11	1.97	0.45
14:UR:376:PHE:HB3	14:UR:387:LEU:HD23	1.98	0.45
20:CD:297:VAL:HG21	20:CD:347:ALA:HA	1.97	0.45
21:CE:53:VAL:O	21:CE:79:TYR:HA	2.17	0.45
23:CH:98:ILE:HG23	23:CH:130:VAL:HA	1.98	0.45
23:CH:232:ASN:O	23:CH:236:ILE:HG12	2.17	0.45
24:CI:542:LEU:HB2	24:CI:560:TRP:CE2	2.51	0.45
34:Ca:16:LEU:HD22	50:C1:1497:U:C6	2.52	0.45
34:Ca:126:THR:HG22	34:Ca:136:ARG:HG2	1.99	0.45
35:Cb:181:ALA:HB2	35:Cb:195:ILE:HD11	1.97	0.45
45:Cm:81:VAL:O	45:Cm:122:ALA:HB1	2.17	0.45
50:C1:812:C:H2'	50:C1:813:C:H6	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:C1:884:A:H2'	50:C1:885:A:C8	2.51	0.45
52:UV:1059:ASP:CG	53:CV:92:SER:H	2.24	0.45
54:CW:24:PRO:HG2	54:CW:27:LEU:HB2	1.99	0.45
54:CW:154:PRO:HA	54:CW:168:VAL:HG22	1.99	0.45
55:UT:26:ARG:HD3	55:UT:26:ARG:HA	1.71	0.45
55:UT:275:PRO:HA	55:UT:321:VAL:HG13	1.98	0.45
55:UT:1486:ILE:HG22	55:UT:1490:ILE:HD11	1.99	0.45
56:UH:893:SER:HA	56:UH:896:ILE:HD12	1.99	0.45
60:CX:364:ASN:HD21	60:CX:410:PHE:HB2	1.82	0.45
1:UA:220:PHE:CD1	1:UA:245:ILE:HD11	2.52	0.45
6:UG:250:ILE:HD11	50:C1:342:G:H4'	1.99	0.45
9:UL:375:ALA:HB3	9:UL:384:GLN:HB2	1.98	0.45
13:UQ:89:MET:HE2	13:UQ:414:HIS:CD2	2.50	0.45
19:CC:216:ASN:N	19:CC:216:ASN:OD1	2.49	0.45
22:CG:228:CYS:SG	22:CG:229:PHE:N	2.90	0.45
22:CG:443:LYS:HB3	22:CG:445:GLU:HG2	1.99	0.45
23:CH:168:PRO:HA	23:CH:171:ILE:HG12	1.99	0.45
27:CL:656:VAL:HA	27:CL:659:GLU:HG2	1.97	0.45
32:CR:549:TYR:HE2	32:CR:755:THR:HG21	1.82	0.45
32:CR:562:ALA:HB3	32:CR:565:HIS:CD2	2.52	0.45
32:CR:843:SER:HB2	32:CR:849:LEU:HD22	1.99	0.45
32:CS:375:GLN:OE1	32:CS:375:GLN:N	2.37	0.45
32:CS:845:ALA:HA	32:CS:913:MET:HE1	1.98	0.45
35:Cb:48:VAL:O	35:Cb:53:LYS:N	2.50	0.45
36:Cc:192:SER:OG	36:Cc:193:SER:N	2.50	0.45
39:Cf:92:ARG:NH1	54:CW:198:SER:O	2.46	0.45
45:Cm:130:TYR:OH	49:CU:274:ASP:O	2.22	0.45
47:Co:386:VAL:HG12	47:Co:406:ILE:HG23	1.97	0.45
50:C1:195:U:H2'	50:C1:196:G:H8	1.81	0.45
50:C1:1450:A:C2	50:C1:1451:G:H1'	2.52	0.45
52:UV:146:LEU:HD11	52:UV:150:ILE:HG21	1.99	0.45
55:UT:999:LEU:HA	55:UT:999:LEU:HD23	1.82	0.45
58:US:217:GLU:O	58:US:221:ASN:ND2	2.50	0.45
58:US:488:ASN:N	58:US:488:ASN:OD1	2.48	0.45
4:UD:711:ASP:HB2	4:UD:825:LYS:HB3	1.99	0.45
4:UD:877:PHE:HE2	63:UP:354:LYS:HD2	1.82	0.45
9:UL:599:LEU:O	23:CH:234:ARG:NH2	2.50	0.45
10:UM:21:TYR:HB3	10:UM:371:GLY:HA3	1.98	0.45
10:UM:702:HIS:CD2	10:UM:705:THR:H	2.33	0.45
14:UR:322:ARG:HH11	50:C1:133:G:H1	1.64	0.45
15:UU:95:THR:HG22	15:UU:108:PHE:HA	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:UU:313:LEU:HA	15:UU:317:GLY:HA2	1.99	0.45
22:CG:430:HIS:CD2	22:CG:499:LEU:H	2.35	0.45
32:CS:380:LEU:HD13	32:CS:386:VAL:HG21	1.99	0.45
35:Cb:17:HIS:HB2	35:Cb:108:ARG:HA	1.99	0.45
37:Cd:50:LEU:HB3	37:Cd:113:ILE:HD13	1.99	0.45
37:Cd:71:ASN:HD21	54:CW:85:ARG:HH22	1.63	0.45
43:Cj:48:LEU:HD23	43:Cj:48:LEU:HA	1.78	0.45
50:C1:485:G:H2'	50:C1:486:G:C8	2.51	0.45
50:C1:2057:G:H2'	50:C1:2058:A:H8	1.82	0.45
54:CW:53:PHE:CG	54:CW:73:GLY:HA3	2.52	0.45
55:UT:108:VAL:HG13	55:UT:147:LEU:HD22	1.99	0.45
57:UE:173:LEU:HD21	57:UE:214:LEU:HD11	1.99	0.45
58:US:299:LYS:HB2	58:US:299:LYS:HE3	1.67	0.45
4:UD:564:ALA:HB2	4:UD:633:LEU:HD13	1.97	0.45
5:UF:105:GLY:HA3	19:CC:145:LEU:HB3	1.99	0.45
6:UG:439:LYS:HB2	6:UG:439:LYS:HE3	1.65	0.45
6:UG:583:LEU:HD23	6:UG:583:LEU:HA	1.84	0.45
8:UK:1:MET:HB2	8:UK:4:LEU:HG	1.99	0.45
10:UM:79:CYS:SG	10:UM:114:VAL:HG22	2.57	0.45
12:UO:101:GLU:HB2	12:UO:119:ASP:HB2	1.99	0.45
14:UR:599:SER:O	14:UR:599:SER:OG	2.32	0.45
18:CB:279:LEU:HD23	18:CB:279:LEU:HA	1.83	0.45
26:CK:162:THR:O	26:CK:268:ILE:HA	2.17	0.45
34:Ca:129:THR:OG1	34:Ca:179:CYS:O	2.34	0.45
38:Ce:97:LEU:HD21	38:Ce:139:LEU:HD23	1.99	0.45
47:Co:346:ASN:CB	47:Co:351:ARG:O	2.55	0.45
50:C1:132:A:H2'	50:C1:133:G:C8	2.51	0.45
50:C1:790:U:H2'	50:C1:791:U:C6	2.52	0.45
50:C1:791:U:H2'	50:C1:792:A:H8	1.82	0.45
52:UV:249:LYS:HE3	52:UV:468:ALA:HA	1.99	0.45
54:CW:156:VAL:HA	54:CW:203:ALA:HA	1.98	0.45
54:CW:253:SER:OG	54:CW:255:ASP:OD1	2.32	0.45
55:UT:670:SER:HA	55:UT:673:ILE:HD12	1.99	0.45
55:UT:1562:ASN:OD1	55:UT:1610:SER:OG	2.34	0.45
59:Cl:2:SER:O	59:Cl:2:SER:OG	2.33	0.45
4:UD:572:THR:OG1	4:UD:573:TRP:N	2.50	0.44
4:UD:690:LYS:HD2	4:UD:704:VAL:HG22	1.99	0.44
5:UF:406:LYS:HE2	5:UF:406:LYS:HB3	1.83	0.44
7:UJ:174:LEU:HD23	33:CT:74:PRO:HG2	1.99	0.44
13:UQ:89:MET:HG2	13:UQ:107:TYR:CE1	2.52	0.44
22:CG:415:ASN:ND2	22:CG:417:ASP:OD2	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:CH:82:ILE:HD12	23:CH:120:LEU:HD21	1.98	0.44
24:CI:85:LEU:HD11	24:CI:104:ILE:HD12	1.99	0.44
28:CM:293:PRO:HG2	28:CM:338:SER:HB2	1.99	0.44
32:CS:72:LYS:HA	32:CS:72:LYS:HD3	1.73	0.44
32:CS:112:THR:HG21	32:CS:135:ILE:HB	1.98	0.44
32:CS:523:ARG:HA	32:CS:526:LEU:HB2	1.98	0.44
35:Cb:68:ARG:HH22	35:Cb:78:THR:HG23	1.81	0.44
44:Ck:71:ILE:HD13	44:Ck:145:LEU:HD21	1.99	0.44
52:UV:230:ALA:H	52:UV:276:GLU:HG2	1.82	0.44
52:UV:268:PHE:O	52:UV:272:THR:HG23	2.18	0.44
52:UV:306:TRP:HH2	52:UV:414:LEU:HD22	1.83	0.44
52:UV:326:TRP:CZ2	52:UV:360:LEU:HD22	2.52	0.44
52:UV:469:HIS:CE1	52:UV:477:GLN:HB3	2.53	0.44
52:UV:490:LEU:HA	52:UV:502:ARG:HH21	1.82	0.44
52:UV:796:ALA:HA	52:UV:799:GLN:HE21	1.82	0.44
55:UT:1034:SER:O	55:UT:1038:ILE:HG12	2.18	0.44
55:UT:1893:LEU:HD23	55:UT:1896:ILE:HD12	1.98	0.44
55:UT:2010:LYS:O	55:UT:2013:THR:OG1	2.30	0.44
1:UA:541:GLU:O	1:UA:543:GLN:N	2.50	0.44
2:UB:573:MET:HE2	2:UB:573:MET:HB3	1.86	0.44
6:UG:133:LYS:NZ	6:UG:413:GLU:OE1	2.48	0.44
7:UJ:237:ARG:HE	14:UR:254:ARG:NH2	2.15	0.44
7:UJ:301:THR:OG1	7:UJ:302:VAL:N	2.51	0.44
10:UM:332:SER:O	10:UM:332:SER:OG	2.29	0.44
15:UU:82:LEU:O	50:C1:259:U:O2'	2.36	0.44
19:CC:199:ARG:HA	19:CC:219:TYR:CZ	2.53	0.44
22:CG:235:ARG:HH12	51:C2:119:C:H2'	1.82	0.44
23:CH:346:VAL:HA	23:CH:398:VAL:O	2.17	0.44
28:CM:224:LEU:HB2	28:CM:234:ILE:HG22	1.98	0.44
32:CR:122:MET:HE2	32:CR:122:MET:HB2	1.86	0.44
32:CR:165:MET:HE2	32:CR:165:MET:HB3	1.88	0.44
32:CS:828:GLU:HA	32:CS:831:GLN:HE21	1.83	0.44
35:Cb:87:MET:HB3	35:Cb:87:MET:HE2	1.70	0.44
39:Cf:176:ARG:NE	50:C1:914:G:OP2	2.42	0.44
46:Cn:54:LEU:HD23	46:Cn:54:LEU:HA	1.83	0.44
50:C1:392:C:H2'	50:C1:393:G:H8	1.83	0.44
50:C1:459:C:N3	50:C1:474:A:N1	2.65	0.44
50:C1:1268:C:H2'	50:C1:1269:U:C6	2.51	0.44
50:C1:1448:A:N6	50:C1:1549:U:N3	2.65	0.44
50:C1:2358:U:O4	50:C1:2369:G:O6	2.35	0.44
52:UV:34:ARG:NH2	52:UV:430:VAL:O	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:CW:21:ARG:O	55:UT:968:ARG:NH1	2.51	0.44
54:CW:375:LEU:HD23	54:CW:375:LEU:HA	1.71	0.44
58:US:373:LEU:HD22	58:US:377:LEU:HD22	1.99	0.44
58:US:425:LYS:HA	58:US:425:LYS:HD3	1.73	0.44
57:UI:180:ILE:HD12	57:UI:180:ILE:HA	1.85	0.44
1:UA:293:LEU:HD23	15:UU:870:PRO:HB3	1.99	0.44
4:UD:195:GLN:HE22	4:UD:263:GLY:HA3	1.83	0.44
7:UJ:493:GLU:O	7:UJ:497:LYS:HG2	2.17	0.44
7:UJ:656:ILE:HA	7:UJ:660:LEU:HB2	1.98	0.44
8:UK:6:HIS:H	8:UK:9:GLN:HG3	1.81	0.44
9:UL:195:ASP:OD1	9:UL:195:ASP:N	2.49	0.44
9:UL:241:ILE:HG13	9:UL:273:LEU:HB2	1.99	0.44
9:UL:925:LYS:HG2	10:UM:864:LYS:HE2	1.98	0.44
12:UO:166:ASP:OD1	12:UO:166:ASP:N	2.45	0.44
13:UQ:472:PRO:O	13:UQ:473:GLN:HG3	2.17	0.44
15:UU:100:TRP:CG	15:UU:101:LYS:H	2.35	0.44
15:UU:264:VAL:HG12	15:UU:265:LEU:HD12	1.98	0.44
24:CI:1133:LYS:HD3	24:CI:1133:LYS:HA	1.84	0.44
26:CK:153:THR:O	26:CK:153:THR:OG1	2.35	0.44
29:CO:151:LYS:HA	29:CO:158:LYS:HA	1.99	0.44
37:Cd:57:ASP:HB3	37:Cd:106:LEU:HD23	1.99	0.44
50:C1:30:U:H2'	50:C1:31:C:C6	2.52	0.44
50:C1:345:U:N3	50:C1:346:C:N4	2.66	0.44
50:C1:597:G:H2'	50:C1:598:A:H8	1.81	0.44
52:UV:1045:HIS:NE2	52:UV:1085:LYS:HE2	2.32	0.44
55:UT:664:HIS:ND1	55:UT:694:GLU:OE2	2.49	0.44
55:UT:1760:LYS:HA	55:UT:1760:LYS:HD2	1.70	0.44
56:UH:900:ILE:HD13	56:UH:900:ILE:HA	1.79	0.44
60:CX:270:ILE:HB	60:CX:306:PHE:HE1	1.82	0.44
63:UP:314:ARG:HG2	63:UP:316:GLY:H	1.82	0.44
1:UA:21:LEU:HD23	1:UA:21:LEU:HA	1.79	0.44
1:UA:364:ILE:HD13	1:UA:399:THR:HG21	1.99	0.44
2:UB:111:ASN:O	23:CH:89:MET:HG3	2.18	0.44
4:UD:442:LEU:HD12	4:UD:442:LEU:HA	1.78	0.44
6:UG:196:GLN:HG3	6:UG:201:TYR:CD1	2.52	0.44
7:UJ:32:SER:HB2	7:UJ:123:ARG:HH11	1.81	0.44
7:UJ:1610:PHE:O	7:UJ:1614:LEU:HG	2.17	0.44
9:UL:192:THR:OG1	9:UL:220:CYS:SG	2.60	0.44
13:UQ:197:VAL:HG23	13:UQ:198:ALA:H	1.82	0.44
13:UQ:568:THR:OG1	13:UQ:571:LYS:NZ	2.45	0.44
14:UR:331:VAL:HG13	14:UR:378:VAL:HG11	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:UR:343:ARG:HB2	14:UR:344:ARG:HH11	1.82	0.44
24:CI:759:GLU:HB2	24:CI:764:GLN:HE22	1.83	0.44
32:CR:69:SER:HB2	50:C1:1000:A:H62	1.81	0.44
42:CI:54:ARG:NH1	50:C1:1502:U:O2	2.50	0.44
44:Ck:99:ILE:HG23	44:Ck:102:TYR:HB2	1.99	0.44
49:CU:213:LEU:HD23	49:CU:213:LEU:HA	1.88	0.44
50:C1:1532:C:H2'	50:C1:1533:G:C8	2.52	0.44
52:UV:508:VAL:HG13	52:UV:532:ILE:HG23	1.99	0.44
54:CW:24:PRO:CD	54:CW:27:LEU:HB2	2.47	0.44
54:CW:306:LEU:O	54:CW:313:ILE:HA	2.17	0.44
55:UT:414:GLN:NE2	55:UT:418:THR:OG1	2.51	0.44
55:UT:590:LYS:HD2	55:UT:595:ILE:HD11	1.99	0.44
57:UI:173:LEU:HD21	57:UI:214:LEU:HD11	1.99	0.44
4:UD:182:THR:O	21:CE:124:ARG:NH2	2.38	0.44
7:UJ:542:ARG:NH2	7:UJ:551:TYR:OH	2.43	0.44
10:UM:326:VAL:HG22	10:UM:335:LEU:HB3	1.98	0.44
10:UM:819:ASN:OD1	10:UM:820:ALA:N	2.48	0.44
11:UN:901:LEU:HD12	11:UN:902:ARG:H	1.82	0.44
13:UQ:154:ASP:HA	13:UQ:170:TRP:NE1	2.33	0.44
13:UQ:466:LEU:HB3	13:UQ:833:SER:HB2	2.00	0.44
24:CI:833:LEU:HB3	24:CI:835:PHE:HE1	1.83	0.44
25:CJ:114:VAL:HG23	25:CJ:117:ARG:HH12	1.82	0.44
32:CR:380:LEU:HD13	32:CR:386:VAL:HG21	1.99	0.44
32:CS:549:TYR:HE2	32:CS:755:THR:HG21	1.82	0.44
34:Ca:180:THR:HG23	34:Ca:183:GLN:H	1.83	0.44
35:Cb:212:ASP:OD1	35:Cb:212:ASP:N	2.50	0.44
50:C1:1267:G:H2'	50:C1:1268:C:C6	2.53	0.44
50:C1:2087:G:H2'	50:C1:2088:A:C8	2.53	0.44
54:CW:97:SER:O	54:CW:116:GLN:NE2	2.51	0.44
54:CW:298:THR:O	54:CW:301:GLU:N	2.44	0.44
55:UT:294:GLU:HA	55:UT:385:ARG:HD3	2.00	0.44
55:UT:1013:ARG:O	55:UT:1017:HIS:HB3	2.18	0.44
55:UT:1091:MET:HE2	55:UT:1091:MET:HB2	1.81	0.44
55:UT:1286:VAL:HG11	55:UT:1324:VAL:HG13	1.98	0.44
55:UT:1331:ILE:O	55:UT:1335:PHE:HB2	2.17	0.44
55:UT:2092:ARG:NH1	55:UT:2131:THR:OG1	2.48	0.44
1:UA:163:SER:O	1:UA:163:SER:OG	2.32	0.44
1:UA:195:ARG:O	6:UG:278:GLN:NE2	2.51	0.44
1:UA:525:ILE:HG23	1:UA:537:TRP:HB2	1.98	0.44
5:UF:140:ASN:HB3	5:UF:143:LEU:HB2	1.99	0.44
6:UG:575:LYS:H	6:UG:576:ASN:HA	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:UJ:713:HIS:O	7:UJ:717:THR:CB	2.65	0.44
9:UL:87:TYR:HE1	9:UL:93:ARG:HD3	1.83	0.44
9:UL:615:ILE:HG22	9:UL:622:ILE:HG23	1.99	0.44
10:UM:585:HIS:NE2	10:UM:623:THR:OG1	2.40	0.44
13:UQ:286:VAL:HG11	13:UQ:290:ILE:HD11	1.99	0.44
13:UQ:419:SER:OG	13:UQ:420:ALA:N	2.51	0.44
16:UX:-1:LYS:HD2	16:UX:-1:LYS:HA	1.78	0.44
20:CD:197:LEU:HD11	20:CD:210:VAL:HG11	2.00	0.44
21:CE:51:GLU:O	21:CE:119:ARG:NH2	2.51	0.44
23:CH:48:PRO:HA	23:CH:51:ILE:HG22	1.99	0.44
26:CK:81:SER:OG	26:CK:82:GLY:N	2.50	0.44
26:CK:129:MET:HE2	26:CK:129:MET:HB2	1.74	0.44
28:CM:58:LEU:HD21	28:CM:354:ARG:HH11	1.83	0.44
28:CM:356:ASN:HB3	28:CM:359:GLU:HG3	1.99	0.44
29:CN:42:SER:HA	29:CN:115:GLN:HB2	2.00	0.44
31:CQ:187:ILE:HD11	50:C1:2351:G:C6	2.53	0.44
32:CR:523:ARG:HA	32:CR:526:LEU:HB2	1.98	0.44
32:CR:541:VAL:O	32:CR:545:VAL:HG13	2.18	0.44
32:CS:562:ALA:HB3	32:CS:565:HIS:CD2	2.52	0.44
32:CS:658:VAL:O	32:CS:662:GLU:HB2	2.18	0.44
37:Cd:116:GLN:NE2	55:UT:711:ARG:HD2	2.33	0.44
51:C2:128:C:H2'	51:C2:129:U:C6	2.53	0.44
52:UV:180:LEU:HD21	52:UV:184:ALA:HB3	2.00	0.44
55:UT:123:LEU:HD23	55:UT:123:LEU:HA	1.76	0.44
55:UT:488:PHE:O	55:UT:542:THR:OG1	2.30	0.44
55:UT:772:ASP:CG	55:UT:839:ARG:HH21	2.25	0.44
57:UE:182:GLN:HE22	57:UE:216:ARG:NH1	2.16	0.44
57:UI:182:GLN:HE22	57:UI:216:ARG:NH1	2.16	0.44
57:UI:234:ASP:OD1	57:UI:234:ASP:N	2.50	0.44
1:UA:6:LYS:HD3	1:UA:6:LYS:HA	1.82	0.44
4:UD:204:CYS:HB2	4:UD:208:THR:HB	2.00	0.44
4:UD:433:SER:OG	4:UD:482:THR:O	2.29	0.44
4:UD:514:ASP:N	4:UD:514:ASP:OD1	2.48	0.44
9:UL:625:SER:HA	9:UL:631:ILE:HG22	1.99	0.44
10:UM:249:SER:O	10:UM:256:MET:HA	2.18	0.44
10:UM:373:HIS:CE1	10:UM:399:ARG:HE	2.36	0.44
10:UM:447:TRP:CD2	10:UM:507:PRO:HD3	2.52	0.44
10:UM:644:ASN:O	10:UM:671:ALA:N	2.46	0.44
15:UU:133:LEU:HD23	15:UU:133:LEU:HA	1.84	0.44
19:CC:309:ILE:HG22	19:CC:310:LEU:HD22	2.00	0.44
24:CI:81:LYS:HG2	65:CI:1201:GTP:O2B	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:CI:834:ILE:HG12	24:CI:843:GLN:HB2	2.00	0.44
29:CO:211:LYS:HE3	29:CO:211:LYS:HB3	1.85	0.44
32:CR:210:PRO:HB3	32:CR:215:LYS:HE2	1.99	0.44
32:CR:828:GLU:HA	32:CR:831:GLN:HE21	1.83	0.44
32:CS:799:SER:HB2	32:CS:886:ALA:HB2	2.00	0.44
38:Ce:70:VAL:HG23	38:Ce:71:PRO:HD3	2.00	0.44
50:C1:623:C:H2'	50:C1:624:U:C6	2.53	0.44
52:UV:919:ARG:HD3	52:UV:919:ARG:HA	1.78	0.44
55:UT:1822:MET:HE1	55:UT:1892:LEU:HD13	2.00	0.44
58:US:504:GLU:HA	58:US:507:LYS:HD3	1.99	0.44
3:UC:605:ARG:HG3	40:Cg:121:HIS:CE1	2.52	0.44
4:UD:296:MET:HA	4:UD:325:ASP:HB2	1.99	0.44
4:UD:457:ASP:HB2	4:UD:468:TYR:HB3	2.00	0.44
6:UG:268:PRO:HG2	6:UG:310:ARG:HA	2.00	0.44
10:UM:453:LYS:HA	10:UM:481:SER:HB3	2.00	0.44
11:UN:324:ASP:HA	11:UN:327:ILE:HG13	1.98	0.44
13:UQ:295:ILE:HG22	13:UQ:314:VAL:HG12	2.00	0.44
13:UQ:927:ALA:O	13:UQ:931:ASN:HB2	2.17	0.44
14:UR:539:LEU:HD23	14:UR:539:LEU:HA	1.79	0.44
15:UU:346:LEU:HA	15:UU:346:LEU:HD23	1.74	0.44
22:CG:273:TYR:HB3	22:CG:280:PRO:HA	2.00	0.44
23:CH:295:ASP:OD1	23:CH:295:ASP:N	2.50	0.44
24:CI:220:HIS:NE2	50:C1:639:U:O2'	2.30	0.44
24:CI:246:ILE:HB	24:CI:798:ILE:HB	2.00	0.44
30:CP:83:THR:OG1	30:CP:84:ARG:N	2.50	0.44
32:CR:115:ILE:H	32:CR:115:ILE:HG13	1.69	0.44
32:CR:315:PRO:HB3	32:CR:394:ILE:HD11	2.00	0.44
34:Ca:87:ARG:HH22	34:Ca:220:GLN:HB2	1.83	0.44
35:Cb:231:GLU:H	35:Cb:232:LYS:HG2	1.83	0.44
37:Cd:199:ARG:HH22	50:C1:869:G:H5''	1.83	0.44
38:Ce:20:SER:OG	38:Ce:21:ASP:N	2.51	0.44
50:C1:658:A:N1	50:C1:659:A:N6	2.66	0.44
50:C1:680:U:H2'	50:C1:681:G:C8	2.52	0.44
52:UV:206:GLY:HA2	52:UV:215:LYS:HE3	1.99	0.44
52:UV:650:SER:HA	52:UV:651:PHE:HA	1.68	0.44
52:UV:671:ILE:HA	52:UV:814:THR:HG21	2.00	0.44
54:CW:372:LEU:HD12	54:CW:372:LEU:HA	1.79	0.44
55:UT:897:LEU:HG	55:UT:901:LYS:HE3	1.98	0.44
55:UT:1359:PHE:O	55:UT:1368:ARG:NH1	2.42	0.44
55:UT:2233:ARG:HE	55:UT:2236:ARG:HH21	1.65	0.44
56:UH:652:LEU:HD11	56:UH:703:ARG:HB3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:UE:234:ASP:OD1	57:UE:234:ASP:N	2.50	0.44
1:UA:386:THR:H	1:UA:401:SER:HA	1.83	0.44
2:UB:26:LYS:HB3	2:UB:26:LYS:HE2	1.79	0.44
4:UD:23:HIS:CE1	4:UD:40:ILE:HD11	2.53	0.44
6:UG:54:ARG:HH11	28:CM:29:PRO:HB3	1.83	0.44
8:UK:89:GLY:HA3	24:CI:1067:THR:HG22	2.00	0.44
10:UM:237:CYS:SG	10:UM:238:ILE:N	2.91	0.44
13:UQ:922:ALA:HB3	13:UQ:925:ARG:HD3	2.00	0.44
22:CG:240:LYS:HD2	22:CG:240:LYS:HA	1.77	0.44
24:CI:966:LEU:HD12	24:CI:966:LEU:HA	1.78	0.44
28:CM:297:GLU:N	28:CM:297:GLU:OE2	2.51	0.44
29:CN:124:VAL:HG22	29:CN:160:LEU:HD22	2.00	0.44
29:CO:98:THR:O	29:CO:102:SER:OG	2.34	0.44
31:CQ:96:LYS:HD3	31:CQ:96:LYS:HA	1.82	0.44
31:CQ:172:LYS:HE3	31:CQ:183:LEU:HD11	2.00	0.44
50:C1:30:U:H2'	50:C1:31:C:H6	1.82	0.44
50:C1:1657:G:H2'	50:C1:1658:G:C8	2.53	0.44
51:C2:156:C:H2'	51:C2:157:G:H8	1.83	0.44
52:UV:604:ARG:HA	52:UV:616:LEU:HD13	2.00	0.44
52:UV:886:TRP:CZ2	52:UV:893:LEU:HB2	2.52	0.44
52:UV:1056:ALA:C	53:CV:92:SER:HB3	2.43	0.44
55:UT:161:ILE:HD11	55:UT:203:ILE:HG12	2.00	0.44
4:UD:631:VAL:H	4:UD:651:THR:HA	1.83	0.43
7:UJ:583:ASP:N	7:UJ:583:ASP:OD1	2.49	0.43
7:UJ:1604:PHE:CD1	7:UJ:1653:THR:HB	2.52	0.43
12:UO:418:ARG:NH2	50:C1:75:G:N7	2.66	0.43
19:CC:205:HIS:CE1	19:CC:229:LYS:HB2	2.53	0.43
19:CC:236:SER:OG	19:CC:237:VAL:N	2.51	0.43
23:CH:110:ILE:HD12	23:CH:110:ILE:HA	1.86	0.43
24:CI:267:THR:HG22	24:CI:782:GLU:HA	2.00	0.43
24:CI:1143:GLU:HG2	50:C1:1695:G:C8	2.52	0.43
29:CN:74:ILE:HA	29:CN:84:ILE:HD11	2.00	0.43
32:CR:60:TYR:OH	50:C1:1000:A:N1	2.31	0.43
32:CR:765:PRO:HD2	32:CR:775:LEU:HD22	2.00	0.43
35:Cb:184:THR:OG1	35:Cb:224:ASN:O	2.34	0.43
48:Cp:16:VAL:HA	48:Cp:29:VAL:HG23	1.98	0.43
50:C1:128:G:H2'	50:C1:129:G:H8	1.83	0.43
50:C1:495:G:N7	50:C1:503:G:C2	2.85	0.43
50:C1:828:G:H2'	50:C1:829:U:C6	2.53	0.43
50:C1:1702:G:H2'	50:C1:1703:G:H8	1.82	0.43
52:UV:893:LEU:HB3	52:UV:932:VAL:HG22	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:UT:2038:LYS:HE3	55:UT:2042:MET:HE2	2.00	0.43
56:UH:753:THR:C	57:UI:209:GLY:HA3	2.43	0.43
60:CX:354:SER:O	60:CX:358:GLU:CB	2.66	0.43
57:UI:278:MET:H	57:UI:278:MET:HG2	1.46	0.43
1:UA:9:ASN:N	1:UA:9:ASN:OD1	2.46	0.43
4:UD:182:THR:HG21	4:UD:187:THR:HG21	2.00	0.43
7:UJ:1524:SER:O	7:UJ:1583:TRP:NE1	2.51	0.43
10:UM:302:ASP:OD2	10:UM:303:THR:N	2.48	0.43
14:UR:483:VAL:HB	14:UR:497:ARG:HD2	2.01	0.43
15:UU:701:ARG:HH12	15:UU:737:PRO:C	2.26	0.43
15:UU:848:ARG:HA	15:UU:851:TRP:NE1	2.33	0.43
18:CA:236:ALA:HB3	18:CA:278:LYS:HE2	2.00	0.43
20:CD:300:ARG:HG3	51:C2:92:A:C8	2.53	0.43
32:CS:541:VAL:O	32:CS:545:VAL:HG13	2.18	0.43
33:CT:97:ASN:OD1	33:CT:97:ASN:N	2.49	0.43
38:Ce:151:ARG:NE	45:Cm:49:GLU:OE2	2.51	0.43
39:Cf:48:THR:HG21	39:Cf:54:LYS:HD2	1.99	0.43
44:Ck:96:LEU:HD22	44:Ck:105:TYR:HB3	2.00	0.43
50:C1:208:A:O2'	50:C1:209:A:O4'	2.20	0.43
50:C1:227:C:H2'	50:C1:228:G:C8	2.53	0.43
50:C1:614:U:H2'	50:C1:615:A:H8	1.82	0.43
50:C1:1253:C:H2'	50:C1:1254:G:H8	1.83	0.43
50:C1:1755:A:H2'	50:C1:1756:G:H8	1.83	0.43
52:UV:712:ILE:HA	52:UV:752:ASN:ND2	2.32	0.43
55:UT:311:HIS:CE1	55:UT:349:ARG:HD2	2.53	0.43
55:UT:596:ASP:OD1	55:UT:596:ASP:N	2.46	0.43
56:UH:777:ALA:HA	57:UI:259:LEU:HD22	1.99	0.43
56:UH:823:LEU:HA	56:UH:826:VAL:HG22	2.00	0.43
1:UA:833:LEU:HA	1:UA:833:LEU:HD23	1.80	0.43
6:UG:284:LEU:HA	6:UG:284:LEU:HD23	1.71	0.43
6:UG:452:ASN:ND2	28:CM:42:ARG:HE	2.16	0.43
8:UK:10:ARG:NH1	50:C1:1136:G:O6	2.51	0.43
10:UM:30:ASN:OD1	10:UM:31:GLY:N	2.51	0.43
12:UO:429:ARG:HH22	50:C1:73:A:P	2.41	0.43
13:UQ:182:ILE:HD11	13:UQ:221:TYR:CE2	2.54	0.43
13:UQ:707:PRO:O	13:UQ:709:GLY:N	2.50	0.43
16:UX:75:LEU:HD23	16:UX:118:TRP:CH2	2.53	0.43
22:CG:339:LEU:HD23	22:CG:339:LEU:HA	1.79	0.43
25:CJ:28:ARG:NH2	50:C1:349:C:OP1	2.45	0.43
28:CM:310:TRP:NE1	28:CM:317:SER:HA	2.34	0.43
34:Ca:70:LEU:HD23	34:Ca:70:LEU:HA	1.78	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:Cm:82:ARG:O	45:Cm:86:LEU:N	2.48	0.43
50:C1:313:A:H3'	50:C1:314:A:H8	1.84	0.43
50:C1:614:U:H2'	50:C1:615:A:C8	2.54	0.43
50:C1:801:A:C5	55:UT:1323:LYS:HB2	2.53	0.43
50:C1:1623:U:H5''	50:C1:1624:A:H2'	2.00	0.43
51:C2:103:G:C5	51:C2:250:G:C2	3.07	0.43
51:C2:248:G:H2'	51:C2:249:U:O4'	2.17	0.43
52:UV:119:GLN:HE22	52:UV:280:LEU:HD22	1.82	0.43
53:CV:168:VAL:O	53:CV:171:THR:OG1	2.34	0.43
55:UT:200:PRO:HD2	55:UT:203:ILE:HD12	1.99	0.43
55:UT:236:LYS:HD2	55:UT:286:PRO:HG3	2.00	0.43
55:UT:371:LEU:HD23	55:UT:371:LEU:HA	1.84	0.43
55:UT:424:LYS:HE2	55:UT:425:TRP:CE2	2.53	0.43
55:UT:447:LYS:HB2	55:UT:447:LYS:HE2	1.84	0.43
55:UT:1919:ILE:HD13	55:UT:1992:VAL:HG11	2.00	0.43
56:UH:789:LEU:HD11	57:UI:269:GLN:NE2	2.33	0.43
60:CX:346:CYS:O	60:CX:388:HIS:ND1	2.52	0.43
3:UC:635:LEU:O	33:CT:120:GLN:NE2	2.42	0.43
4:UD:32:SER:O	4:UD:32:SER:OG	2.26	0.43
4:UD:391:ILE:HG13	4:UD:431:ILE:HD13	2.01	0.43
4:UD:865:ARG:HD2	4:UD:865:ARG:HA	1.78	0.43
5:UF:58:LEU:HD23	5:UF:58:LEU:HA	1.81	0.43
6:UG:274:HIS:ND1	6:UG:315:MET:SD	2.91	0.43
6:UG:403:PHE:O	28:CM:8:ARG:NH1	2.51	0.43
7:UJ:393:LYS:HG2	7:UJ:441:ALA:HB2	1.99	0.43
12:UO:540:ALA:HB1	57:UE:246:LEU:HG	2.00	0.43
13:UQ:438:GLN:HB3	13:UQ:482:VAL:HG11	2.01	0.43
18:CA:97:LEU:HD23	18:CA:200:ARG:HG2	2.00	0.43
19:CC:321:HIS:CD2	19:CC:339:LEU:HD22	2.53	0.43
21:CE:32:ARG:HD2	21:CE:32:ARG:HA	1.73	0.43
23:CH:214:LYS:HD3	23:CH:214:LYS:HA	1.64	0.43
23:CH:323:GLN:HE21	23:CH:355:VAL:HA	1.82	0.43
24:CI:233:ARG:HE	24:CI:233:ARG:HB2	1.54	0.43
26:CK:146:ARG:NH1	50:C1:2048:C:N3	2.66	0.43
27:CL:572:ARG:NH1	50:C1:2213:U:OP1	2.37	0.43
32:CR:115:ILE:HG22	32:CR:118:ASN:HB2	2.00	0.43
32:CR:805:ILE:O	32:CR:808:SER:OG	2.30	0.43
39:Cf:29:LEU:HD13	50:C1:984:A:H62	1.84	0.43
50:C1:693:C:H2'	50:C1:694:A:H8	1.83	0.43
50:C1:2048:C:H2'	50:C1:2049:G:C8	2.53	0.43
50:C1:2359:A:H2'	50:C1:2360:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:UV:310:ARG:HB3	52:UV:312:PHE:HD1	1.83	0.43
55:UT:652:ILE:HD13	55:UT:655:LEU:HD21	2.00	0.43
55:UT:1313:LEU:HD22	55:UT:1358:LEU:HD11	1.99	0.43
55:UT:1362:PHE:O	55:UT:1368:ARG:NH2	2.51	0.43
2:UB:618:ILE:HG23	2:UB:639:LEU:HB3	2.01	0.43
5:UF:310:LEU:HD23	5:UF:311:SER:H	1.83	0.43
7:UJ:232:MET:HA	7:UJ:243:ASN:HD22	1.82	0.43
7:UJ:1607:LEU:O	7:UJ:1611:PHE:CB	2.64	0.43
9:UL:590:LYS:HD2	9:UL:599:LEU:HD11	2.00	0.43
9:UL:941:ASP:CG	9:UL:943:THR:H	2.26	0.43
12:UO:541:ILE:HG21	57:UI:257:LEU:HD12	1.99	0.43
13:UQ:378:VAL:HG23	13:UQ:393:PRO:HA	2.01	0.43
13:UQ:395:LEU:HD13	13:UQ:395:LEU:HA	1.87	0.43
14:UR:430:ASN:O	14:UR:446:MET:CB	2.50	0.43
15:UU:179:LYS:HB2	15:UU:179:LYS:HE3	1.67	0.43
18:CB:145:LEU:HD23	18:CB:148:ILE:HG22	2.01	0.43
20:CD:355:GLY:HA3	20:CD:356:PRO:HD3	1.90	0.43
23:CH:22:VAL:HG21	23:CH:116:PRO:HB3	2.00	0.43
27:CL:675:SER:O	27:CL:675:SER:OG	2.29	0.43
31:CQ:253:SER:O	31:CQ:257:GLU:HG2	2.18	0.43
32:CR:275:LYS:HE2	32:CR:275:LYS:HB2	1.92	0.43
32:CS:315:PRO:HB3	32:CS:394:ILE:HD11	2.00	0.43
34:Ca:124:ASN:N	34:Ca:124:ASN:OD1	2.50	0.43
44:Ck:80:VAL:HG13	44:Ck:125:GLY:H	1.82	0.43
46:Cn:139:LYS:NZ	50:C1:618:C:O3'	2.51	0.43
50:C1:609:A:H2'	50:C1:610:G:H8	1.83	0.43
50:C1:912:U:N3	50:C1:925:G:C6	2.86	0.43
50:C1:1272:G:O3'	55:UT:1887:ARG:NH1	2.51	0.43
50:C1:1740:C:H2'	50:C1:1741:A:H8	1.83	0.43
55:UT:195:GLY:HA3	55:UT:251:TYR:HD2	1.82	0.43
55:UT:495:GLN:O	55:UT:499:VAL:HG23	2.18	0.43
60:CX:328:LEU:HD11	60:CX:333:ILE:HD13	2.00	0.43
1:UA:168:SER:OG	1:UA:178:TRP:NE1	2.41	0.43
1:UA:334:LEU:HD12	1:UA:336:GLN:HG2	2.01	0.43
4:UD:207:SER:HB3	4:UD:236:ILE:HG22	2.01	0.43
9:UL:449:LEU:HB2	9:UL:463:PHE:HB2	2.01	0.43
17:UZ:67:THR:O	17:UZ:279:ARG:HB3	2.18	0.43
17:UZ:267:VAL:HG11	17:UZ:275:TRP:CZ2	2.53	0.43
26:CK:252:VAL:HG21	27:CL:549:ILE:HG21	2.01	0.43
27:CL:521:MET:HE2	27:CL:521:MET:HB3	1.75	0.43
28:CM:276:LEU:HD12	28:CM:276:LEU:HA	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:CS:765:PRO:HD2	32:CS:775:LEU:HD22	2.00	0.43
32:CS:851:TYR:HA	32:CS:854:VAL:HG12	2.01	0.43
35:Cb:71:LYS:HE3	35:Cb:74:GLY:HA2	1.99	0.43
37:Cd:31:ARG:HD3	54:CW:375:LEU:HD21	2.00	0.43
42:Ci:85:LYS:HG3	42:Ci:123:MET:HE2	2.01	0.43
47:Co:354:MET:N	47:Co:354:MET:SD	2.92	0.43
50:C1:245:G:H2'	50:C1:246:G:H8	1.82	0.43
50:C1:457:G:H2'	50:C1:458:A:C8	2.54	0.43
50:C1:743:U:O2'	50:C1:745:U:OP2	2.34	0.43
50:C1:1469:A:H2'	50:C1:1470:G:C8	2.53	0.43
51:C2:53:U:H2'	51:C2:54:C:H6	1.82	0.43
52:UV:378:GLN:NE2	52:UV:389:ASN:O	2.33	0.43
52:UV:740:HIS:NE2	52:UV:757:ASP:HB3	2.33	0.43
52:UV:846:HIS:HD2	52:UV:956:VAL:HG21	1.82	0.43
52:UV:1047:VAL:O	52:UV:1051:LEU:HB2	2.19	0.43
55:UT:119:LEU:HD23	55:UT:160:VAL:HG13	2.00	0.43
55:UT:648:HIS:O	55:UT:651:LEU:HG	2.19	0.43
55:UT:659:LEU:HD21	55:UT:733:PHE:HB2	2.00	0.43
55:UT:916:LEU:HA	55:UT:916:LEU:HD23	1.79	0.43
55:UT:1472:THR:HG23	55:UT:1473:PRO:HD3	2.01	0.43
56:UH:832:LEU:HD21	57:UI:219:GLN:HG3	2.00	0.43
56:UH:869:LEU:HD23	56:UH:869:LEU:HA	1.83	0.43
58:US:333:ASN:OD1	58:US:333:ASN:N	2.52	0.43
58:US:379:ALA:HB2	58:US:414:THR:HG22	2.00	0.43
58:US:385:LEU:HA	58:US:385:LEU:HD23	1.73	0.43
1:UA:118:LYS:HG3	1:UA:148:MET:HG2	2.01	0.43
1:UA:787:MET:HE2	1:UA:787:MET:HB3	1.88	0.43
2:UB:637:ILE:HG13	2:UB:725:ILE:HG23	1.99	0.43
7:UJ:287:ASN:N	7:UJ:287:ASN:OD1	2.50	0.43
7:UJ:1522:LEU:HA	7:UJ:1525:ILE:HG12	2.00	0.43
7:UJ:1631:LYS:HD2	7:UJ:1631:LYS:HA	1.76	0.43
8:UK:20:LEU:HD23	8:UK:20:LEU:HA	1.91	0.43
8:UK:48:LEU:HA	8:UK:48:LEU:HD23	1.77	0.43
8:UK:268:ARG:HH21	21:CE:95:SER:HB3	1.84	0.43
9:UL:437:ASP:OD1	9:UL:437:ASP:N	2.38	0.43
9:UL:534:PHE:HB2	9:UL:560:ARG:O	2.18	0.43
10:UM:794:VAL:HA	10:UM:797:VAL:HG12	1.99	0.43
11:UN:319:THR:HA	11:UN:322:THR:HG22	2.01	0.43
12:UO:42:TRP:NE1	59:Cl:60:GLU:OE2	2.52	0.43
14:UR:361:SER:OG	50:C1:74:C:O2	2.36	0.43
15:UU:217:LYS:HE2	15:UU:217:LYS:HB2	1.76	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:CB:174:VAL:HB	18:CB:178:GLY:HA3	2.01	0.43
18:CB:181:TYR:HD1	18:CB:204:ILE:HG12	1.82	0.43
21:CE:63:SER:HA	21:CE:66:LEU:HD12	1.99	0.43
25:CJ:87:ILE:HG12	25:CJ:106:PHE:CE2	2.53	0.43
29:CN:236:VAL:HG21	29:CO:102:SER:HA	2.01	0.43
32:CR:375:GLN:OE1	32:CR:375:GLN:N	2.37	0.43
32:CS:27:PHE:CD2	32:CS:148:LEU:HD11	2.45	0.43
35:Cb:160:VAL:HG12	35:Cb:162:ILE:HG13	2.01	0.43
43:Cj:20:ALA:HB2	43:Cj:84:ALA:HB1	2.00	0.43
50:C1:1148:G:O4'	50:C1:2179:C:N4	2.52	0.43
52:UV:672:CYS:SG	52:UV:675:LEU:N	2.92	0.43
55:UT:275:PRO:HD3	55:UT:321:VAL:HG22	2.01	0.43
55:UT:539:LYS:HG2	55:UT:587:ARG:NH1	2.28	0.43
55:UT:929:LEU:HD12	55:UT:929:LEU:HA	1.73	0.43
55:UT:1752:GLU:HG2	55:UT:1755:ARG:HH11	1.83	0.43
58:US:431:LEU:HD12	58:US:436:LEU:HD13	2.01	0.43
60:CX:317:THR:OG1	60:CX:320:GLU:OE1	2.37	0.43
61:CY:230:THR:HG22	61:CY:312:ARG:HH21	1.83	0.43
2:UB:549:LEU:HD21	2:UB:592:VAL:HG21	2.01	0.43
6:UG:308:VAL:HG12	6:UG:315:MET:HB2	2.01	0.43
21:CF:118:LEU:HD12	21:CF:118:LEU:HA	1.88	0.43
23:CH:318:LEU:HA	23:CH:318:LEU:HD23	1.79	0.43
27:CL:564:MET:HE3	27:CL:564:MET:HB2	1.81	0.43
28:CM:242:CYS:HA	28:CM:259:SER:HA	2.01	0.43
30:CP:146:GLN:O	30:CP:149:THR:OG1	2.31	0.43
32:CR:575:GLN:OE1	32:CR:575:GLN:N	2.51	0.43
32:CS:843:SER:HB2	32:CS:849:LEU:HD22	1.99	0.43
40:Cg:66:LYS:HG3	61:CY:318:ALA:HB1	2.00	0.43
50:C1:365:G:H2'	50:C1:366:G:H8	1.83	0.43
50:C1:689:A:H1'	50:C1:892:C:N3	2.33	0.43
50:C1:1230:U:H2'	50:C1:1231:A:C8	2.53	0.43
50:C1:1695:G:H2'	50:C1:1696:G:H8	1.84	0.43
52:UV:46:LEU:O	52:UV:50:ASP:HB3	2.19	0.43
52:UV:46:LEU:HA	52:UV:49:VAL:HG12	2.01	0.43
52:UV:183:GLU:OE2	52:UV:213:LYS:NZ	2.52	0.43
52:UV:482:VAL:HA	52:UV:485:ILE:HG22	2.00	0.43
52:UV:490:LEU:HB2	52:UV:503:LEU:HD22	2.00	0.43
55:UT:423:MET:O	55:UT:427:ILE:HG13	2.19	0.43
55:UT:715:LEU:O	55:UT:718:SER:OG	2.30	0.43
55:UT:937:LEU:HA	55:UT:937:LEU:HD12	1.87	0.43
55:UT:1209:LYS:O	55:UT:1213:THR:HG23	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:US:397:ILE:HA	58:US:400:ILE:HG22	2.01	0.43
61:CY:282:ARG:HD3	61:CY:282:ARG:HA	1.76	0.43
1:UA:56:LYS:HE3	1:UA:56:LYS:HB3	1.74	0.43
2:UB:43:GLN:HG3	2:UB:44:LYS:H	1.83	0.43
4:UD:702:TYR:CE1	4:UD:838:ILE:HB	2.54	0.43
7:UJ:49:TYR:OH	7:UJ:74:PHE:O	2.24	0.43
7:UJ:776:ASP:HA	7:UJ:779:VAL:HG12	2.00	0.43
7:UJ:1680:VAL:HG22	7:UJ:1729:HIS:HE1	1.83	0.43
9:UL:618:ASP:OD1	9:UL:618:ASP:N	2.34	0.43
10:UM:592:VAL:HA	10:UM:616:LEU:O	2.19	0.43
13:UQ:151:SER:OG	13:UQ:152:ASN:N	2.51	0.43
18:CB:92:LEU:HD23	18:CB:130:TRP:CD1	2.50	0.43
18:CB:235:GLN:HA	18:CB:238:ILE:HD12	2.01	0.43
22:CG:443:LYS:HE2	22:CG:443:LYS:HB2	1.86	0.43
28:CM:248:ASN:ND2	28:CM:251:GLU:H	2.16	0.43
28:CM:258:ALA:HB2	28:CM:289:VAL:HB	2.00	0.43
28:CM:403:LYS:HD2	50:C1:1664:U:H4'	2.01	0.43
30:CP:62:LEU:HD22	30:CP:67:ILE:HB	1.99	0.43
31:CQ:218:ILE:HG22	31:CQ:225:ILE:HG12	2.00	0.43
32:CR:799:SER:HB2	32:CR:886:ALA:HB2	2.00	0.43
35:Cb:18:TRP:HE3	35:Cb:46:VAL:HG11	1.84	0.43
35:Cb:171:ASP:OD1	35:Cb:172:PHE:N	2.52	0.43
45:Cm:98:GLN:OE1	45:Cm:98:GLN:N	2.52	0.43
49:CU:229:MET:HG2	50:C1:298:A:C5	2.54	0.43
50:C1:2351:G:H1'	50:C1:2352:U:H5	1.84	0.43
52:UV:100:PRO:HA	52:UV:101:SER:HA	1.59	0.43
52:UV:352:SER:OG	52:UV:353:SER:N	2.50	0.43
55:UT:419:LYS:HD3	55:UT:419:LYS:HA	1.83	0.43
55:UT:1037:ASP:O	55:UT:1044:ARG:NH2	2.47	0.43
55:UT:1317:LEU:HD11	55:UT:1322:PRO:HD3	2.01	0.43
55:UT:1725:ASP:OD1	55:UT:1725:ASP:N	2.52	0.43
55:UT:1855:GLU:HG3	55:UT:1895:ARG:HB3	1.99	0.43
55:UT:1993:LEU:HD11	55:UT:2011:MET:HG2	2.01	0.43
55:UT:2126:ASN:OD1	55:UT:2127:ASP:N	2.44	0.43
58:US:270:LEU:HD21	58:US:302:MET:HG3	2.00	0.43
59:Cl:17:LEU:HD23	59:Cl:17:LEU:HA	1.74	0.43
60:CX:442:HIS:H	60:CX:446:ALA:HB2	1.84	0.43
4:UD:399:SER:OG	4:UD:400:ALA:N	2.50	0.43
4:UD:528:ARG:NH2	4:UD:547:ARG:HD3	2.32	0.43
5:UF:92:THR:HA	5:UF:95:ILE:HD12	2.00	0.43
9:UL:17:VAL:HG23	9:UL:50:TRP:CE2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:UL:119:ASP:HB3	9:UL:122:GLY:H	1.83	0.43
9:UL:440:MET:HE3	9:UL:440:MET:HB3	1.90	0.43
9:UL:931:LEU:HD12	9:UL:931:LEU:HA	1.86	0.43
10:UM:344:VAL:HG12	10:UM:368:ARG:HB2	2.01	0.43
13:UQ:413:LEU:HB2	13:UQ:421:MET:HG3	2.01	0.43
13:UQ:729:MET:HB3	13:UQ:729:MET:HE2	1.78	0.43
17:UZ:79:GLN:NE2	17:UZ:161:ASN:OD1	2.52	0.43
20:CD:348:SER:OG	20:CD:349:LEU:N	2.51	0.43
20:CD:368:LYS:NZ	51:C2:84:G:OP1	2.36	0.43
24:CI:109:SER:HG	24:CI:112:GLN:H	1.63	0.43
29:CN:74:ILE:HG13	29:CN:84:ILE:HD11	2.01	0.43
32:CR:658:VAL:O	32:CR:662:GLU:HB2	2.18	0.43
32:CS:207:ASN:OD1	32:CS:207:ASN:N	2.44	0.43
32:CS:711:LYS:HD3	32:CS:711:LYS:HA	1.50	0.43
34:Ca:187:LYS:HD3	52:UV:666:ARG:NH2	2.34	0.43
35:Cb:228:ILE:HD11	35:Cb:235:ILE:HG22	2.01	0.43
44:Ck:86:HIS:HD2	44:Ck:87:ARG:HG3	1.83	0.43
50:C1:411:C:H2'	50:C1:412:G:H8	1.83	0.43
50:C1:802:A:H4'	50:C1:803:A:H3'	2.00	0.43
50:C1:906:G:O6	62:CZ:537:ARG:NH2	2.39	0.43
52:UV:156:TYR:HB3	52:UV:235:PHE:CG	2.54	0.43
52:UV:640:LEU:HD23	52:UV:640:LEU:HA	1.86	0.43
54:CW:152:LEU:HA	54:CW:169:PHE:O	2.18	0.43
55:UT:1359:PHE:HD1	55:UT:1371:LEU:HD13	1.83	0.43
1:UA:583:ASP:OD2	1:UA:584:GLY:N	2.52	0.42
4:UD:51:GLY:HA2	4:UD:77:VAL:HG23	2.01	0.42
7:UJ:273:MET:HB2	13:UQ:945:PHE:HD1	1.84	0.42
9:UL:398:ASN:HD22	9:UL:415:ASN:HD21	1.65	0.42
10:UM:342:THR:HG22	10:UM:370:SER:HA	2.01	0.42
10:UM:791:LEU:HB2	10:UM:794:VAL:HG23	2.00	0.42
13:UQ:780:LEU:HA	13:UQ:791:LEU:HA	2.01	0.42
15:UU:434:GLY:O	15:UU:436:ILE:N	2.52	0.42
18:CB:130:TRP:CE2	18:CB:138:ALA:HB2	2.53	0.42
18:CB:204:ILE:HG22	20:CD:143:LEU:HG	2.00	0.42
20:CD:6:LEU:HA	20:CD:6:LEU:HD12	1.81	0.42
21:CF:52:LEU:HD12	21:CF:119:ARG:HB3	2.01	0.42
24:CI:883:SER:HA	24:CI:904:THR:HA	2.01	0.42
26:CK:53:ARG:HB3	49:CU:219:ILE:HD12	2.00	0.42
32:CR:590:LEU:HD21	32:CR:594:ILE:HB	2.01	0.42
50:C1:494:G:H3'	50:C1:495:G:H21	1.84	0.42
50:C1:1010:G:H2'	50:C1:1011:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:C1:1734:G:H2'	50:C1:1735:A:C8	2.54	0.42
50:C1:2185:C:H2'	50:C1:2186:U:C6	2.54	0.42
51:C2:34:A:H3'	51:C2:35:G:C8	2.54	0.42
52:UV:505:HIS:ND1	52:UV:537:LEU:HD23	2.34	0.42
52:UV:1041:PRO:HA	52:UV:1044:GLN:HE22	1.83	0.42
55:UT:1375:LEU:HD21	55:UT:1391:ILE:HG22	2.01	0.42
55:UT:1716:ILE:HA	55:UT:1719:LEU:HD12	2.00	0.42
60:CX:408:VAL:O	60:CX:412:GLN:HG3	2.19	0.42
1:UA:780:GLN:O	1:UA:784:SER:OG	2.27	0.42
4:UD:223:MET:HB3	4:UD:261:TRP:CZ3	2.54	0.42
4:UD:354:LEU:HD23	4:UD:354:LEU:HA	1.82	0.42
4:UD:760:ALA:HB2	4:UD:768:TRP:CZ3	2.54	0.42
6:UG:67:LYS:HG3	50:C1:581:C:H6	1.84	0.42
7:UJ:1656:LYS:HE2	7:UJ:1656:LYS:HB3	1.78	0.42
9:UL:246:LEU:HD23	9:UL:246:LEU:HA	1.86	0.42
9:UL:370:ARG:HB2	9:UL:390:THR:HG22	2.00	0.42
10:UM:92:ILE:HG13	10:UM:99:VAL:HG23	2.01	0.42
12:UO:108:ARG:HH21	12:UO:157:LEU:HB3	1.84	0.42
12:UO:214:VAL:HG23	12:UO:235:ILE:HD13	2.00	0.42
12:UO:272:HIS:CE1	12:UO:298:LYS:HD2	2.54	0.42
12:UO:397:LEU:HB3	14:UR:297:ILE:HD11	2.01	0.42
13:UQ:714:ALA:HB3	13:UQ:724:ASP:HB3	2.02	0.42
15:UU:298:MET:HE2	15:UU:313:LEU:HD11	2.00	0.42
16:UX:145:ILE:HG23	16:UX:164:PRO:HB2	2.01	0.42
21:CF:18:VAL:HG13	21:CF:19:GLN:HE21	1.83	0.42
22:CG:343:ARG:HA	22:CG:343:ARG:HD3	1.91	0.42
22:CG:557:ARG:HD2	22:CG:598:ARG:HH11	1.83	0.42
23:CH:215:VAL:HG21	23:CH:321:ILE:HD12	2.01	0.42
25:CJ:85:MET:HE2	25:CJ:85:MET:HB3	1.80	0.42
28:CM:152:GLU:O	28:CM:156:TYR:OH	2.24	0.42
29:CN:36:ARG:NH1	29:CN:172:PRO:HG3	2.34	0.42
29:CN:77:MET:HE2	29:CN:84:ILE:HA	2.00	0.42
32:CR:623:GLN:HG2	32:CS:839:LYS:HD2	2.01	0.42
32:CR:792:TYR:CE1	32:CS:891:ARG:HD2	2.55	0.42
32:CS:43:TYR:HA	32:CS:46:SER:HB2	2.02	0.42
36:Cc:176:THR:OG1	36:Cc:177:ILE:N	2.52	0.42
38:Cc:173:ASP:HA	38:Cc:176:LEU:HG	2.00	0.42
50:C1:67:G:H2'	56:UH:894:ARG:HH12	1.83	0.42
50:C1:364:C:H2'	50:C1:365:G:H8	1.83	0.42
50:C1:689:A:N7	50:C1:942:U:C2	2.87	0.42
50:C1:1461:G:O6	50:C1:1520:U:C4	2.72	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:C1:1748:G:H2'	50:C1:1749:G:H8	1.84	0.42
50:C1:2366:C:H2'	50:C1:2367:C:C6	2.54	0.42
52:UV:708:PRO:HG2	52:UV:713:ALA:HB1	2.01	0.42
52:UV:857:LEU:HD12	52:UV:861:LEU:HD13	2.01	0.42
54:CW:146:ARG:HD3	62:CZ:561:ARG:HH11	1.84	0.42
54:CW:346:LEU:HD13	54:CW:356:CYS:HB3	1.99	0.42
55:UT:1497:PRO:HA	55:UT:1502:ARG:HE	1.84	0.42
2:UB:343:MET:HE1	2:UB:650:ALA:HA	2.01	0.42
4:UD:141:PRO:HG3	4:UD:197:HIS:CE1	2.54	0.42
7:UJ:1489:ALA:HA	7:UJ:1499:TYR:CE2	2.54	0.42
9:UL:17:VAL:HG22	9:UL:18:VAL:H	1.84	0.42
9:UL:698:GLU:H	9:UL:698:GLU:HG3	1.65	0.42
12:UO:18:SER:O	12:UO:18:SER:OG	2.26	0.42
17:UZ:109:LYS:HA	17:UZ:112:VAL:HG12	2.00	0.42
21:CE:69:PRO:HA	21:CE:72:CYS:HB2	2.02	0.42
28:CM:82:ILE:HG23	28:CM:94:TRP:HB2	2.01	0.42
28:CM:158:SER:OG	28:CM:159:LEU:N	2.52	0.42
32:CR:586:ILE:HG23	32:CR:638:ILE:HD13	2.01	0.42
32:CR:737:TRP:HA	32:CR:740:ALA:HB3	2.01	0.42
32:CR:803:LEU:O	32:CR:807:GLU:HG3	2.19	0.42
32:CS:495:CYS:SG	32:CS:556:LEU:HD21	2.59	0.42
32:CS:647:MET:SD	54:CW:274:ARG:HD2	2.60	0.42
32:CS:803:LEU:O	32:CS:807:GLU:HG3	2.20	0.42
34:Ca:17:LYS:HE2	34:Ca:17:LYS:HB3	1.88	0.42
34:Ca:40:VAL:HG21	34:Ca:75:LYS:HD3	2.02	0.42
37:Cd:50:LEU:HD13	37:Cd:111:LEU:HB3	2.00	0.42
38:Ce:173:ASP:OD1	38:Ce:173:ASP:N	2.50	0.42
50:C1:189:G:H2'	50:C1:190:G:C8	2.55	0.42
50:C1:1269:U:H2'	50:C1:1270:G:H8	1.84	0.42
52:UV:601:GLU:OE1	52:UV:604:ARG:NH1	2.51	0.42
52:UV:716:ARG:HA	52:UV:719:ILE:HD12	2.01	0.42
55:UT:285:VAL:HG21	55:UT:337:LEU:HD21	2.00	0.42
55:UT:403:MET:SD	55:UT:403:MET:N	2.90	0.42
55:UT:1209:LYS:HA	55:UT:1209:LYS:HD2	1.79	0.42
55:UT:1242:GLU:HA	55:UT:1245:SER:OG	2.19	0.42
55:UT:1333:LYS:HA	55:UT:1374:VAL:HG23	2.02	0.42
1:UA:162:ASP:H	1:UA:207:GLN:HE22	1.68	0.42
1:UA:333:ILE:HD13	1:UA:333:ILE:HA	1.90	0.42
7:UJ:67:VAL:HG23	7:UJ:68:PRO:HD3	2.01	0.42
7:UJ:503:THR:HG21	7:UJ:509:ASP:HB2	2.00	0.42
9:UL:576:ASP:O	9:UL:578:ARG:N	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:UL:695:HIS:CE1	9:UL:721:ARG:HH11	2.37	0.42
9:UL:899:LEU:HB3	10:UM:888:LEU:HD11	2.01	0.42
10:UM:694:ASP:N	10:UM:694:ASP:OD1	2.51	0.42
12:UO:19:PRO:HD2	13:UQ:645:ARG:HE	1.84	0.42
15:UU:159:ILE:HB	15:UU:173:ILE:HB	2.01	0.42
20:CD:51:PHE:HB2	20:CD:72:LYS:HE2	2.00	0.42
20:CD:155:LYS:HA	20:CD:155:LYS:HD2	1.83	0.42
20:CD:283:LYS:HE3	20:CD:283:LYS:HB3	1.88	0.42
21:CF:25:VAL:HG13	21:CF:34:LEU:HD11	1.99	0.42
22:CG:400:ARG:HE	22:CG:400:ARG:HB3	1.69	0.42
22:CG:561:ASN:N	22:CG:581:VAL:O	2.47	0.42
24:CI:760:LEU:HD22	24:CI:763:HIS:H	1.85	0.42
24:CI:821:ARG:NH1	46:Cn:139:LYS:O	2.52	0.42
26:CK:117:LEU:HD23	26:CK:117:LEU:HA	1.84	0.42
29:CN:45:SER:O	29:CN:45:SER:OG	2.30	0.42
30:CP:142:ARG:NH1	30:CP:191:ASN:OD1	2.51	0.42
32:CS:652:LYS:O	32:CS:656:LEU:HG	2.19	0.42
32:CS:737:TRP:HA	32:CS:740:ALA:HB3	2.01	0.42
35:Cb:44:LEU:HB3	35:Cb:65:MET:HE3	2.01	0.42
36:Cc:18:LYS:HA	36:Cc:18:LYS:HD2	1.83	0.42
50:C1:599:U:H2'	50:C1:600:U:H6	1.84	0.42
50:C1:978:C:N4	50:C1:985:A:C2	2.87	0.42
50:C1:1455:C:H2'	50:C1:1456:A:C8	2.54	0.42
50:C1:2054:A:N7	50:C1:2119:G:N2	2.68	0.42
51:C2:95:U:H2'	51:C2:96:C:C6	2.54	0.42
55:UT:270:LEU:HD13	55:UT:313:SER:HB2	2.02	0.42
55:UT:896:ASN:O	55:UT:900:ARG:HG3	2.20	0.42
55:UT:1321:ASN:HB2	55:UT:1324:VAL:HG23	2.01	0.42
55:UT:1387:GLU:HB3	55:UT:1430:GLN:HG2	2.00	0.42
55:UT:1748:TRP:NE1	55:UT:1752:GLU:OE2	2.53	0.42
60:CX:415:LEU:HD22	60:CX:445:ILE:HG23	2.02	0.42
1:UA:535:THR:OG1	1:UA:537:TRP:NE1	2.50	0.42
4:UD:381:ARG:NH2	4:UD:398:ASN:O	2.52	0.42
6:UG:282:VAL:HG11	6:UG:306:LEU:HD21	2.02	0.42
10:UM:203:GLN:HE22	34:Ca:29:TRP:HE1	1.67	0.42
11:UN:929:ILE:HD11	28:CM:79:LEU:HB2	2.00	0.42
15:UU:863:ARG:HD3	27:CL:656:VAL:O	2.19	0.42
18:CA:165:THR:OG1	18:CA:166:SER:N	2.50	0.42
19:CC:330:LYS:HE2	21:CF:70:LEU:HB3	2.02	0.42
20:CD:96:SER:OG	20:CD:97:ASN:OD1	2.37	0.42
28:CM:434:LYS:HA	28:CM:434:LYS:HD3	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:CP:40:MET:HG3	30:CP:79:THR:HG22	2.02	0.42
30:CP:102:LEU:HD23	30:CP:102:LEU:HA	1.79	0.42
32:CR:851:TYR:O	32:CR:855:LEU:HB2	2.19	0.42
32:CS:773:SER:HA	32:CS:815:LEU:HD11	2.02	0.42
40:Cg:110:LEU:HD23	40:Cg:110:LEU:HA	1.78	0.42
41:Ch:132:VAL:HG13	41:Ch:134:VAL:HG13	2.02	0.42
43:Cj:104:LEU:HD12	43:Cj:104:LEU:HA	1.86	0.42
50:C1:827:G:H2'	50:C1:828:G:C8	2.55	0.42
50:C1:970:G:H2'	50:C1:971:A:C8	2.55	0.42
50:C1:2057:G:H2'	50:C1:2058:A:C8	2.54	0.42
54:CW:53:PHE:HE1	54:CW:354:MET:HE1	1.84	0.42
55:UT:1162:LYS:HA	55:UT:1162:LYS:HD3	1.82	0.42
55:UT:1313:LEU:HA	55:UT:1313:LEU:HD23	1.79	0.42
55:UT:1580:PHE:HA	55:UT:1583:PHE:HB2	2.01	0.42
56:UH:823:LEU:HD13	57:UI:260:LYS:HD3	2.02	0.42
58:US:368:LEU:HD23	58:US:373:LEU:HD13	2.02	0.42
58:US:368:LEU:HD22	58:US:378:VAL:HG23	2.02	0.42
1:UA:607:LEU:HD23	1:UA:607:LEU:HA	1.88	0.42
7:UJ:21:ASN:N	7:UJ:21:ASN:OD1	2.49	0.42
7:UJ:102:LEU:HD23	7:UJ:102:LEU:HA	1.80	0.42
7:UJ:1561:ALA:HA	7:UJ:1564:MET:HG2	2.02	0.42
7:UJ:1601:TYR:HE1	7:UJ:1649:ARG:HH21	1.67	0.42
12:UO:205:LEU:O	12:UO:216:VAL:HA	2.19	0.42
15:UU:624:ALA:HB3	15:UU:642:LEU:HB2	2.01	0.42
21:CF:11:LYS:HB2	21:CF:11:LYS:HE3	1.87	0.42
24:CI:850:ILE:HD12	24:CI:850:ILE:HA	1.86	0.42
28:CM:58:LEU:HD23	28:CM:58:LEU:HA	1.90	0.42
32:CS:115:ILE:HG22	32:CS:118:ASN:HB2	2.01	0.42
32:CS:590:LEU:HD21	32:CS:594:ILE:HB	2.01	0.42
34:Ca:221:PRO:C	34:Ca:222:LYS:HZ2	2.27	0.42
44:Ck:51:LYS:HD2	44:Ck:54:ILE:HD12	2.01	0.42
50:C1:14:G:H2'	50:C1:15:G:C8	2.54	0.42
50:C1:107:C:H2'	50:C1:108:C:H6	1.83	0.42
50:C1:186:C:H2'	50:C1:187:G:H8	1.85	0.42
50:C1:351:U:C4	50:C1:353:G:O6	2.71	0.42
50:C1:781:G:HO2'	50:C1:782:G:H8	1.66	0.42
50:C1:784:A:H2'	50:C1:785:U:C6	2.54	0.42
50:C1:972:A:N1	50:C1:973:G:C6	2.87	0.42
50:C1:1541:U:H2'	50:C1:1542:G:C8	2.55	0.42
52:UV:949:HIS:HE1	52:UV:957:ALA:H	1.66	0.42
55:UT:465:LEU:HD13	55:UT:465:LEU:HA	1.95	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:UT:1360:GLY:HA2	55:UT:1440:TYR:HB2	2.01	0.42
56:UH:498:MET:HE2	56:UH:498:MET:HB3	1.77	0.42
1:UA:484:VAL:HG11	1:UA:525:ILE:HD11	2.00	0.42
7:UJ:590:GLN:NE2	7:UJ:647:LEU:H	2.18	0.42
7:UJ:1763:MET:HE2	7:UJ:1763:MET:HB2	1.94	0.42
9:UL:284:VAL:HA	9:UL:294:ALA:O	2.19	0.42
9:UL:393:LEU:HD23	9:UL:426:ARG:HE	1.85	0.42
9:UL:451:ILE:HG12	9:UL:461:ARG:HB2	2.02	0.42
10:UM:48:LEU:HD23	10:UM:48:LEU:HA	1.90	0.42
10:UM:116:VAL:HG21	10:UM:156:VAL:HG12	2.01	0.42
10:UM:579:GLN:O	10:UM:632:TYR:OH	2.26	0.42
13:UQ:110:SER:OG	13:UQ:124:ARG:NH2	2.52	0.42
13:UQ:372:SER:OG	13:UQ:373:GLY:N	2.53	0.42
13:UQ:631:ASN:O	13:UQ:687:TYR:OH	2.24	0.42
13:UQ:646:ASP:OD1	13:UQ:646:ASP:N	2.49	0.42
20:CD:328:LEU:HA	20:CD:339:PRO:HD2	2.02	0.42
25:CJ:77:LEU:HD23	25:CJ:77:LEU:HA	1.80	0.42
25:CJ:167:LYS:HD2	25:CJ:167:LYS:HA	1.86	0.42
26:CK:139:ILE:HB	26:CK:157:PHE:HE2	1.84	0.42
28:CM:360:ARG:NH2	51:C2:35:G:OP1	2.42	0.42
32:CR:148:LEU:HD12	32:CR:148:LEU:HA	1.84	0.42
32:CR:801:LEU:HD13	32:CR:801:LEU:HA	1.89	0.42
32:CS:851:TYR:O	32:CS:855:LEU:HB2	2.19	0.42
37:Cd:31:ARG:NH2	54:CW:42:LEU:O	2.37	0.42
37:Cd:165:LYS:HD3	37:Cd:165:LYS:HA	1.62	0.42
38:Ce:86:GLU:HB3	38:Ce:90:LYS:HE3	2.02	0.42
42:Ci:69:SER:OG	42:Ci:72:ALA:N	2.38	0.42
43:Cj:59:LYS:HD3	43:Cj:59:LYS:HA	1.82	0.42
50:C1:186:C:H2'	50:C1:187:G:C8	2.54	0.42
50:C1:392:C:H2'	50:C1:393:G:C8	2.54	0.42
50:C1:616:U:H2'	50:C1:617:G:C8	2.52	0.42
50:C1:752:A:H2'	50:C1:753:A:C8	2.55	0.42
50:C1:2092:C:H2'	50:C1:2093:C:C6	2.54	0.42
51:C2:267:C:H2'	51:C2:268:G:H8	1.85	0.42
52:UV:146:LEU:HD21	52:UV:151:LEU:HD21	2.01	0.42
52:UV:208:LYS:HD2	52:UV:213:LYS:HB2	2.02	0.42
54:CW:209:VAL:HG22	54:CW:217:CYS:HA	2.01	0.42
54:CW:266:GLY:HA2	54:CW:290:ILE:HG23	2.02	0.42
55:UT:141:TYR:CZ	55:UT:145:LEU:HD21	2.54	0.42
55:UT:778:SER:HB2	55:UT:844:ARG:HD2	2.02	0.42
55:UT:996:LEU:HA	55:UT:996:LEU:HD23	1.71	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:UT:1040:LEU:HD21	55:UT:1097:SER:HB3	2.02	0.42
55:UT:1642:GLU:HA	55:UT:1715:ILE:HD13	2.00	0.42
55:UT:1878:MET:SD	55:UT:1925:SER:OG	2.77	0.42
58:US:191:LYS:NZ	58:US:232:ASP:H	2.17	0.42
60:CX:414:LEU:HB3	60:CX:449:ILE:HD13	2.00	0.42
2:UB:99:ARG:HA	2:UB:99:ARG:HD3	1.79	0.42
4:UD:700:TRP:CD2	4:UD:709:MET:HB3	2.54	0.42
6:UG:574:LYS:NZ	50:C1:327:G:OP1	2.52	0.42
10:UM:511:ILE:HG12	10:UM:521:LYS:HG3	2.02	0.42
11:UN:866:LEU:HG	11:UN:867:LYS:HG3	2.01	0.42
12:UO:42:TRP:HE3	12:UO:43:PRO:HD2	1.84	0.42
15:UU:300:THR:HG21	15:UU:311:TRP:HE1	1.85	0.42
18:CA:161:ALA:HB1	18:CA:167:VAL:HG21	2.01	0.42
19:CC:69:ILE:HD13	19:CC:69:ILE:HA	1.89	0.42
20:CD:341:TYR:CD2	20:CD:345:TYR:HB2	2.55	0.42
20:CD:364:GLN:HB3	20:CD:401:LEU:HD11	2.02	0.42
22:CG:103:LEU:HD22	61:CY:325:THR:HG22	2.00	0.42
22:CG:398:MET:HE3	22:CG:398:MET:HB2	1.90	0.42
24:CI:749:GLN:HE21	24:CI:753:ASN:HD22	1.67	0.42
24:CI:1069:PRO:HB3	50:C1:364:C:H5"	2.02	0.42
26:CK:123:ILE:HG23	26:CK:126:ASP:HB2	2.02	0.42
26:CK:200:LEU:HA	26:CK:200:LEU:HD12	1.79	0.42
28:CM:342:LEU:HD21	28:CM:352:LEU:HD12	2.02	0.42
28:CM:367:ARG:HD2	28:CM:367:ARG:HA	1.76	0.42
28:CM:403:LYS:HB3	28:CM:403:LYS:HE3	1.77	0.42
32:CS:35:LYS:HE3	32:CS:35:LYS:HB2	1.77	0.42
32:CS:551:ASN:ND2	32:CS:637:ARG:HH22	2.18	0.42
32:CS:586:ILE:HG23	32:CS:638:ILE:HD13	2.01	0.42
35:Cb:11:ARG:HG3	35:Cb:20:LEU:HD22	2.00	0.42
37:Cd:193:ARG:NH2	50:C1:851:U:OP2	2.52	0.42
38:Ce:71:PRO:O	38:Ce:74:GLN:HG3	2.20	0.42
38:Ce:87:LEU:O	38:Ce:91:PHE:HB3	2.20	0.42
50:C1:803:A:C4	55:UT:1363:LYS:HD2	2.54	0.42
52:UV:112:VAL:HG22	52:UV:164:LYS:HG2	2.02	0.42
52:UV:741:VAL:O	53:CV:204:PRO:HD2	2.20	0.42
52:UV:805:ARG:HH11	52:UV:946:VAL:HG12	1.84	0.42
52:UV:876:PHE:O	52:UV:879:THR:OG1	2.28	0.42
56:UH:556:TRP:CE2	56:UH:565:GLY:HA3	2.55	0.42
58:US:425:LYS:HA	58:US:428:ARG:HD2	2.02	0.42
1:UA:173:LEU:HA	1:UA:197:GLY:HA2	2.02	0.42
4:UD:804:ARG:HD3	4:UD:804:ARG:HA	1.91	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:UF:10:PHE:HB2	11:UN:912:LYS:HD3	2.01	0.42
7:UJ:597:ILE:HD13	7:UJ:597:ILE:HA	1.91	0.42
9:UL:563:LYS:HE3	9:UL:563:LYS:HB2	1.86	0.42
12:UO:323:ILE:O	12:UO:332:ARG:N	2.53	0.42
14:UR:70:LEU:HA	14:UR:70:LEU:HD23	1.83	0.42
14:UR:381:CYS:SG	14:UR:383:ARG:NE	2.85	0.42
15:UU:255:ILE:HG12	15:UU:265:LEU:HB2	2.01	0.42
15:UU:761:GLU:OE1	15:UU:761:GLU:N	2.52	0.42
15:UU:1006:ILE:HA	15:UU:1012:LEU:HD11	2.01	0.42
17:UZ:35:LYS:HA	17:UZ:35:LYS:HD2	1.81	0.42
22:CG:236:LYS:HE2	22:CG:236:LYS:HB3	1.87	0.42
24:CI:74:VAL:HG21	24:CI:153:PHE:CZ	2.54	0.42
24:CI:891:SER:O	24:CI:898:ARG:NE	2.51	0.42
28:CM:287:MET:HE2	28:CM:330:PHE:HE1	1.85	0.42
30:CP:72:ASP:OD2	30:CP:75:GLU:N	2.42	0.42
32:CR:495:CYS:SG	32:CR:556:LEU:HD21	2.59	0.42
32:CR:551:ASN:ND2	32:CR:637:ARG:HH22	2.18	0.42
32:CR:652:LYS:O	32:CR:656:LEU:HG	2.19	0.42
32:CR:807:GLU:HA	32:CR:810:ASN:ND2	2.35	0.42
32:CS:575:GLN:N	32:CS:575:GLN:OE1	2.51	0.42
36:Cc:80:LEU:HD12	36:Cc:80:LEU:HA	1.86	0.42
39:Cf:100:ALA:HB3	39:Cf:173:ILE:HD12	2.01	0.42
40:Cg:38:ARG:HE	40:Cg:38:ARG:HB2	1.65	0.42
43:Cj:110:ILE:HD13	43:Cj:110:ILE:HA	1.90	0.42
47:Co:360:HIS:CE1	47:Co:365:ASN:HA	2.55	0.42
50:C1:749:G:O3'	55:UT:704:ARG:NH2	2.52	0.42
50:C1:881:U:H2'	50:C1:882:C:C6	2.55	0.42
50:C1:970:G:H2'	50:C1:971:A:H8	1.85	0.42
51:C2:156:C:H2'	51:C2:157:G:C8	2.54	0.42
52:UV:573:LYS:HD2	52:UV:573:LYS:HA	1.89	0.42
52:UV:737:ILE:HG12	52:UV:760:TYR:HD2	1.84	0.42
52:UV:981:ARG:HE	52:UV:985:VAL:HG23	1.85	0.42
55:UT:1366:GLN:HE21	55:UT:1370:THR:HG23	1.85	0.42
57:UE:185:ILE:HA	57:UE:188:MET:HE2	2.02	0.42
1:UA:507:LEU:HD21	1:UA:542:ALA:HB1	2.01	0.42
6:UG:342:ARG:HD3	50:C1:265:G:H1'	2.01	0.42
7:UJ:664:LEU:O	7:UJ:667:SER:OG	2.31	0.42
9:UL:507:ASP:OD1	9:UL:507:ASP:N	2.48	0.42
9:UL:705:SER:OG	9:UL:710:PHE:O	2.30	0.42
9:UL:937:ARG:HA	9:UL:937:ARG:HD3	1.75	0.42
10:UM:558:LEU:HD12	10:UM:570:ILE:HD11	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:UM:616:LEU:HD13	10:UM:648:VAL:HG11	2.02	0.42
11:UN:297:LYS:NZ	11:UN:298:LEU:O	2.53	0.42
12:UO:81:VAL:HG22	12:UO:95:ILE:HB	2.01	0.42
13:UQ:112:GLN:NE2	13:UQ:114:TYR:OH	2.53	0.42
14:UR:331:VAL:HG22	14:UR:378:VAL:HG11	2.01	0.42
15:UU:703:PHE:HB3	15:UU:734:TRP:CE2	2.55	0.42
16:UX:73:LEU:HD21	16:UX:172:LYS:HA	2.02	0.42
19:CC:12:ALA:O	19:CC:56:TRP:NE1	2.42	0.42
21:CF:66:LEU:HA	21:CF:66:LEU:HD23	1.89	0.42
22:CG:350:ARG:O	22:CG:352:ARG:NH1	2.52	0.42
24:CI:70:LEU:HD23	24:CI:70:LEU:HA	1.91	0.42
24:CI:71:VAL:HG22	24:CI:135:ILE:HD11	2.01	0.42
32:CR:15:ILE:HG22	32:CR:19:LEU:HD12	2.02	0.42
32:CS:15:ILE:HG22	32:CS:19:LEU:HD12	2.02	0.42
34:Ca:144:LYS:HD3	34:Ca:208:GLN:HA	2.02	0.42
40:Cg:78:LEU:HD23	40:Cg:78:LEU:HA	1.91	0.42
50:C1:1747:A:H2'	50:C1:1748:G:C8	2.55	0.42
50:C1:2048:C:H2'	50:C1:2049:G:H8	1.85	0.42
50:C1:2107:A:H2'	50:C1:2108:A:C8	2.55	0.42
52:UV:409:TRP:CD1	52:UV:507:LYS:HE3	2.55	0.42
52:UV:1019:ASN:OD1	52:UV:1019:ASN:N	2.53	0.42
54:CW:115:LEU:HD11	54:CW:139:GLY:HA3	2.02	0.42
55:UT:652:ILE:HA	55:UT:655:LEU:HG	2.02	0.42
55:UT:1341:LEU:N	55:UT:1381:ARG:HH22	2.17	0.42
1:UA:485:SER:HG	1:UA:493:ARG:HB2	1.84	0.41
2:UB:702:LEU:HD23	2:UB:728:THR:HG21	2.02	0.41
4:UD:482:THR:N	4:UD:496:ALA:O	2.47	0.41
4:UD:690:LYS:NZ	4:UD:836:MET:O	2.50	0.41
7:UJ:232:MET:SD	7:UJ:243:ASN:ND2	2.94	0.41
8:UK:58:ARG:HG3	24:CI:1059:PRO:HB3	2.02	0.41
9:UL:66:CYS:HB3	9:UL:93:ARG:NH2	2.34	0.41
9:UL:76:SER:OG	9:UL:79:ASP:O	2.34	0.41
10:UM:589:VAL:HA	10:UM:619:SER:HA	2.01	0.41
10:UM:695:ARG:HB2	10:UM:713:SER:HB3	2.02	0.41
15:UU:298:MET:HE3	15:UU:311:TRP:CD1	2.55	0.41
15:UU:969:ASN:OD1	15:UU:969:ASN:N	2.46	0.41
19:CC:212:ILE:HD12	19:CC:212:ILE:HA	1.95	0.41
20:CD:113:SER:O	20:CD:113:SER:OG	2.35	0.41
20:CD:293:ILE:HD12	20:CD:297:VAL:HB	2.02	0.41
25:CJ:63:LEU:HD12	25:CJ:63:LEU:HA	1.73	0.41
29:CN:121:LEU:HA	29:CN:121:LEU:HD12	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:CS:165:MET:HE2	32:CS:165:MET:HB3	1.88	0.41
32:CS:807:GLU:HA	32:CS:810:ASN:ND2	2.35	0.41
37:Cd:18:VAL:HG11	37:Cd:24:LEU:HD13	2.02	0.41
38:Ce:82:ARG:HA	38:Ce:85:ARG:HB2	2.02	0.41
38:Ce:85:ARG:O	38:Ce:89:LYS:HG2	2.20	0.41
50:C1:135:A:C8	50:C1:137:C:C2	3.08	0.41
50:C1:2210:U:O2	50:C1:2223:C:N4	2.51	0.41
52:UV:181:LYS:HE3	52:UV:183:GLU:HB3	2.00	0.41
52:UV:1076:ASP:OD2	52:UV:1076:ASP:N	2.51	0.41
54:CW:270:ILE:HD12	54:CW:280:LEU:HB2	2.01	0.41
55:UT:1863:ILE:H	55:UT:1863:ILE:HG12	1.66	0.41
56:UH:866:GLU:C	57:UI:227:GLY:HA3	2.45	0.41
57:UE:161:LEU:HA	57:UE:161:LEU:HD13	1.78	0.41
57:UE:197:LEU:HA	57:UE:200:LEU:HD12	2.02	0.41
63:UP:337:LYS:HE3	63:UP:337:LYS:HB3	1.86	0.41
4:UD:5:ARG:N	56:UH:908:SER:O	2.44	0.41
4:UD:122:LYS:HG2	4:UD:123:LYS:HG3	2.01	0.41
8:UK:91:ARG:HH22	50:C1:218:G:P	2.44	0.41
10:UM:47:GLU:H	10:UM:54:LEU:HD23	1.86	0.41
10:UM:741:GLN:HB3	10:UM:764:LEU:HD11	2.02	0.41
12:UO:93:LYS:HD3	12:UO:94:THR:H	1.86	0.41
13:UQ:460:ASP:OD1	13:UQ:460:ASP:N	2.53	0.41
14:UR:331:VAL:HG22	14:UR:378:VAL:HG21	2.01	0.41
15:UU:244:LEU:O	15:UU:255:ILE:HA	2.20	0.41
20:CD:43:ILE:HG22	20:CD:44:LYS:HG2	2.02	0.41
23:CH:168:PRO:HG2	49:CU:126:ASP:HB3	2.02	0.41
26:CK:66:LYS:HG3	26:CK:71:ILE:HD11	2.02	0.41
28:CM:49:LEU:HD23	28:CM:49:LEU:HA	1.83	0.41
28:CM:422:GLU:O	28:CM:426:SER:CB	2.68	0.41
29:CO:103:PRO:HA	29:CO:106:LYS:HB2	2.01	0.41
31:CQ:171:ILE:HD12	31:CQ:171:ILE:HA	1.92	0.41
32:CR:620:GLN:O	32:CR:623:GLN:NE2	2.53	0.41
32:CR:806:GLU:OE1	32:CR:807:GLU:N	2.54	0.41
32:CS:620:GLN:O	32:CS:623:GLN:NE2	2.53	0.41
33:CT:109:LEU:HD23	33:CT:109:LEU:HA	1.83	0.41
35:Cb:224:ASN:OD1	35:Cb:224:ASN:N	2.52	0.41
39:Cf:122:GLY:HA2	39:Cf:165:GLU:HG2	2.01	0.41
50:C1:834:C:H2'	50:C1:835:A:C8	2.55	0.41
50:C1:985:A:C6	50:C1:987:G:N1	2.89	0.41
50:C1:1479:U:H2'	50:C1:1480:G:H8	1.85	0.41
50:C1:1541:U:H2'	50:C1:1542:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:C1:2055:C:C4	50:C1:2118:U:N3	2.88	0.41
51:C2:96:C:H2'	51:C2:97:C:C6	2.56	0.41
52:UV:672:CYS:O	52:UV:676:ARG:HG2	2.20	0.41
55:UT:232:ILE:HA	55:UT:235:VAL:HG22	2.01	0.41
55:UT:2165:LYS:HA	55:UT:2165:LYS:HD2	1.92	0.41
58:US:403:TRP:HB2	58:US:489:LEU:HD11	2.02	0.41
57:UI:185:ILE:HA	57:UI:188:MET:HE2	2.02	0.41
4:UD:709:MET:HE2	4:UD:709:MET:HB2	1.97	0.41
6:UG:182:ASP:H	6:UG:195:ALA:HB3	1.84	0.41
6:UG:342:ARG:NH1	50:C1:265:G:N3	2.68	0.41
7:UJ:73:LEU:HD23	7:UJ:73:LEU:HA	1.91	0.41
9:UL:561:ILE:HD11	49:CU:97:VAL:HG12	2.03	0.41
10:UM:164:ILE:HD12	10:UM:245:HIS:CE1	2.55	0.41
10:UM:651:LEU:HG	10:UM:666:PHE:HA	2.02	0.41
12:UO:212:GLU:HA	12:UO:235:ILE:HG13	2.03	0.41
13:UQ:568:THR:HG1	13:UQ:571:LYS:HZ3	1.67	0.41
15:UU:467:CYS:SG	15:UU:468:ILE:N	2.93	0.41
23:CH:288:GLU:HG3	23:CH:290:VAL:HG23	2.02	0.41
24:CI:1016:THR:OG1	24:CI:1017:GLY:N	2.52	0.41
27:CL:689:THR:O	27:CL:689:THR:OG1	2.35	0.41
32:CR:494:LEU:HA	32:CR:494:LEU:HD23	1.84	0.41
32:CR:807:GLU:HA	32:CR:810:ASN:HD21	1.86	0.41
32:CR:851:TYR:HA	32:CR:854:VAL:HG12	2.01	0.41
32:CS:839:LYS:HA	32:CS:842:GLU:HG2	2.02	0.41
33:CT:108:LEU:HD21	33:CT:165:VAL:HG21	2.01	0.41
34:Ca:16:LEU:HD23	34:Ca:16:LEU:HA	1.91	0.41
36:Cc:82:ASN:O	50:C1:2194:A:O2'	2.33	0.41
37:Cd:49:ILE:HG22	37:Cd:115:LYS:HB2	2.02	0.41
44:Ck:152:GLY:HA2	44:Ck:157:LYS:NZ	2.35	0.41
47:Co:391:LEU:HD12	47:Co:391:LEU:HA	1.89	0.41
50:C1:59:U:H2'	50:C1:60:A:C8	2.56	0.41
53:CV:174:TYR:HA	53:CV:175:PRO:HD3	1.94	0.41
55:UT:133:LEU:HD23	55:UT:137:PHE:HD1	1.85	0.41
55:UT:1062:GLU:N	55:UT:1062:GLU:OE1	2.53	0.41
55:UT:1340:ASP:H	55:UT:1381:ARG:NH1	2.17	0.41
55:UT:1519:TRP:CE2	55:UT:1521:LEU:HB2	2.55	0.41
55:UT:1641:LEU:O	55:UT:1644:GLU:HG2	2.20	0.41
56:UH:628:VAL:HG22	56:UH:706:GLY:HA3	2.02	0.41
58:US:149:GLN:OE1	58:US:162:PRO:HD3	2.20	0.41
1:UA:574:ASN:OD1	1:UA:574:ASN:N	2.52	0.41
2:UB:653:TYR:OH	2:UB:749:SER:OG	2.30	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:UG:244:ASP:OD1	6:UG:246:SER:N	2.53	0.41
7:UJ:75:SER:N	7:UJ:78:SER:OG	2.53	0.41
7:UJ:542:ARG:HH11	7:UJ:578:ARG:HD3	1.85	0.41
7:UJ:1534:ARG:NH1	7:UJ:1589:PRO:HB3	2.36	0.41
9:UL:12:LYS:HB2	9:UL:722:VAL:HB	2.02	0.41
10:UM:449:ALA:HB2	10:UM:459:LEU:HG	2.01	0.41
10:UM:548:ASN:HD21	10:UM:564:GLN:HE21	1.68	0.41
10:UM:642:SER:N	10:UM:672:ASP:OD1	2.51	0.41
15:UU:352:ILE:HG23	15:UU:364:TRP:HB2	2.02	0.41
16:UX:99:LEU:HD23	16:UX:99:LEU:HA	1.91	0.41
22:CG:356:TYR:HD2	22:CG:365:LEU:HD12	1.85	0.41
24:CI:123:LEU:HD12	24:CI:123:LEU:HA	1.94	0.41
24:CI:139:MET:HA	24:CI:169:ILE:HG23	2.02	0.41
24:CI:911:SER:O	24:CI:911:SER:OG	2.34	0.41
24:CI:938:PHE:HA	27:CL:511:ARG:HH22	1.85	0.41
24:CI:1014:ARG:NH2	27:CL:491:GLU:OE1	2.42	0.41
28:CM:423:ARG:NE	28:CM:433:ARG:HE	2.18	0.41
30:CP:195:ILE:HA	30:CP:198:ILE:HG22	2.02	0.41
32:CR:773:SER:HA	32:CR:815:LEU:HD11	2.02	0.41
32:CS:170:HIS:CD2	32:CS:705:LEU:HD11	2.55	0.41
32:CS:536:PHE:CZ	32:CS:582:PRO:HG3	2.56	0.41
40:Cg:73:ALA:O	40:Cg:77:ARG:HG2	2.20	0.41
40:Cg:76:ARG:HA	40:Cg:76:ARG:HD2	1.91	0.41
42:CI:29:VAL:HA	42:CI:93:HIS:O	2.20	0.41
50:C1:394:U:H2'	50:C1:395:C:C6	2.56	0.41
50:C1:1176:A:H2'	50:C1:1177:U:O4'	2.20	0.41
50:C1:1261:G:H2'	50:C1:1262:G:H8	1.85	0.41
50:C1:1485:A:C5	50:C1:1486:G:H8	2.38	0.41
50:C1:2219:C:H2'	50:C1:2220:C:C6	2.55	0.41
51:C2:69:G:H2'	51:C2:70:A:C8	2.55	0.41
51:C2:185:A:H2'	51:C2:186:G:C8	2.56	0.41
52:UV:629:ALA:HB3	52:UV:1011:THR:HB	2.02	0.41
55:UT:1218:LYS:HZ3	55:UT:1218:LYS:HG3	1.72	0.41
55:UT:1357:ALA:HA	55:UT:1436:HIS:CE1	2.55	0.41
58:US:448:MET:HE2	58:US:448:MET:HB2	1.84	0.41
1:UA:619:SER:OG	1:UA:672:GLU:HA	2.20	0.41
3:UC:608:TYR:CG	40:Cg:30:GLY:HA3	2.56	0.41
4:UD:34:LYS:HA	4:UD:34:LYS:HD3	1.70	0.41
4:UD:219:MET:HE2	4:UD:222:GLN:HB2	2.02	0.41
5:UF:81:ARG:NE	50:C1:491:G:N7	2.68	0.41
5:UF:330:ASN:ND2	5:UF:371:THR:O	2.40	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:UJ:1532:LEU:O	7:UJ:1536:VAL:HG12	2.20	0.41
8:UK:44:LYS:NZ	24:CI:1046:ASN:O	2.37	0.41
9:UL:469:LEU:HD13	9:UL:469:LEU:HA	1.82	0.41
9:UL:611:LEU:HD21	27:CL:783:TYR:HB3	2.02	0.41
10:UM:83:LEU:HD23	10:UM:83:LEU:H	1.85	0.41
14:UR:554:LEU:HA	14:UR:554:LEU:HD23	1.81	0.41
15:UU:43:LEU:HD21	15:UU:46:PRO:HG3	2.02	0.41
17:UZ:30:LEU:HD12	17:UZ:30:LEU:HA	1.88	0.41
20:CD:44:LYS:HD3	20:CD:44:LYS:HA	1.82	0.41
22:CG:183:ALA:HB2	22:CG:197:LEU:HD21	2.01	0.41
26:CK:186:GLU:HA	26:CK:226:ARG:HH12	1.86	0.41
28:CM:74:LYS:NZ	28:CM:336:MET:SD	2.74	0.41
28:CM:397:LEU:HA	28:CM:397:LEU:HD23	1.78	0.41
30:CP:64:LYS:HA	30:CP:64:LYS:HD2	1.88	0.41
32:CR:170:HIS:CD2	32:CR:705:LEU:HD11	2.55	0.41
32:CR:536:PHE:CZ	32:CR:582:PRO:HG3	2.56	0.41
32:CS:313:THR:OG1	32:CS:388:ILE:HG22	2.21	0.41
35:Cb:113:ARG:HH22	55:UT:77:ARG:NH2	2.18	0.41
36:Cc:162:LEU:HD23	36:Cc:162:LEU:HA	1.87	0.41
38:Ce:47:LEU:HD22	38:Ce:76:PHE:HZ	1.84	0.41
42:Ci:28:GLY:O	42:Ci:92:LEU:HA	2.20	0.41
42:Ci:43:VAL:HG11	42:Ci:84:CYS:SG	2.61	0.41
49:CU:170:ILE:HD13	49:CU:204:LYS:HB3	2.02	0.41
49:CU:242:LYS:HB3	49:CU:242:LYS:HE3	1.89	0.41
50:C1:993:U:H2'	50:C1:994:A:H8	1.85	0.41
52:UV:94:LYS:HE2	52:UV:188:TYR:HE1	1.84	0.41
52:UV:439:LEU:HG	52:UV:442:ASP:HB2	2.02	0.41
52:UV:845:ASN:N	52:UV:1070:LEU:HD12	2.35	0.41
52:UV:1059:ASP:H	53:CV:92:SER:H	1.62	0.41
52:UV:1097:LYS:HD2	52:UV:1098:ARG:H	1.84	0.41
52:UV:1101:ARG:O	52:UV:1104:LEU:HB2	2.21	0.41
55:UT:421:PRO:HB2	55:UT:422:TRP:CE3	2.56	0.41
55:UT:1710:VAL:HG21	55:UT:1753:MET:HG3	2.02	0.41
55:UT:1858:ALA:HB3	55:UT:1899:GLY:HA3	2.02	0.41
55:UT:2200:ILE:HG23	55:UT:2201:PRO:HD3	2.02	0.41
57:UE:249:ARG:HD3	57:UE:249:ARG:HA	1.79	0.41
1:UA:117:ARG:NH2	1:UA:148:MET:HB3	2.36	0.41
3:UC:594:LYS:HE2	3:UC:594:LYS:HB3	1.94	0.41
4:UD:179:LEU:HA	4:UD:179:LEU:HD23	1.85	0.41
4:UD:271:ARG:HH21	13:UQ:388:ARG:HH22	1.68	0.41
7:UJ:121:LEU:HD23	7:UJ:121:LEU:HA	1.75	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:UJ:297:VAL:HG21	7:UJ:328:VAL:HA	2.02	0.41
7:UJ:382:LEU:HD23	7:UJ:382:LEU:HA	1.83	0.41
7:UJ:546:PRO:HB3	7:UJ:589:PHE:HZ	1.85	0.41
7:UJ:1614:LEU:HD13	7:UJ:1617:ILE:N	2.33	0.41
7:UJ:1666:TRP:O	7:UJ:1671:HIS:HB2	2.19	0.41
9:UL:517:HIS:CD2	9:UL:519:ASP:H	2.33	0.41
9:UL:592:PHE:HD1	9:UL:599:LEU:HA	1.86	0.41
9:UL:916:GLU:OE2	10:UM:828:ARG:NH1	2.53	0.41
13:UQ:215:SER:OG	13:UQ:216:ALA:N	2.53	0.41
13:UQ:639:SER:OG	13:UQ:664:SER:HB2	2.21	0.41
15:UU:65:THR:OG1	15:UU:66:SER:N	2.54	0.41
18:CA:136:LYS:HE2	18:CA:299:HIS:HE1	1.85	0.41
21:CF:21:LEU:HD22	21:CF:54:ILE:HG12	2.02	0.41
22:CG:590:ARG:NH1	51:C2:190:C:OP2	2.54	0.41
24:CI:160:THR:OG1	24:CI:161:GLY:N	2.53	0.41
24:CI:983:LEU:HD23	24:CI:983:LEU:HA	1.86	0.41
26:CK:18:LEU:HD23	26:CK:18:LEU:HA	1.85	0.41
28:CM:432:LYS:HD3	28:CM:432:LYS:HA	1.79	0.41
29:CN:97:LEU:HA	29:CN:97:LEU:HD13	1.82	0.41
31:CQ:89:PRO:HB3	31:CQ:120:LYS:HE3	2.03	0.41
32:CR:284:THR:HG23	32:CR:473:THR:HG23	2.02	0.41
32:CS:60:TYR:HE1	32:CS:106:TYR:HB3	1.86	0.41
32:CS:908:VAL:HG23	32:CS:909:LEU:HD22	2.03	0.41
33:CT:87:LEU:HD23	33:CT:87:LEU:HA	1.84	0.41
50:C1:169:G:H2'	50:C1:170:C:C6	2.55	0.41
50:C1:1144:U:H2'	50:C1:1145:G:C8	2.54	0.41
50:C1:2173:G:H2'	50:C1:2174:C:C6	2.56	0.41
52:UV:550:GLY:HA2	52:UV:566:PHE:CE1	2.55	0.41
52:UV:570:TRP:CD2	52:UV:588:LEU:HD21	2.56	0.41
52:UV:676:ARG:HB2	52:UV:817:ILE:HG22	2.03	0.41
52:UV:692:PRO:HB3	52:UV:1072:PHE:HB3	2.02	0.41
52:UV:722:LEU:HD21	52:UV:756:LEU:N	2.35	0.41
53:CV:87:SER:HB2	53:CV:146:SER:HB2	2.03	0.41
54:CW:292:ASN:OD1	54:CW:293:LEU:N	2.54	0.41
54:CW:349:ASN:HB3	54:CW:355:HIS:CE1	2.55	0.41
55:UT:1993:LEU:HD23	55:UT:1993:LEU:HA	1.93	0.41
2:UB:557:HIS:CD2	58:US:519:ILE:HG21	2.56	0.41
2:UB:784:LEU:HD23	2:UB:784:LEU:HA	1.90	0.41
6:UG:343:ALA:HB3	6:UG:360:TRP:HE3	1.86	0.41
6:UG:420:VAL:HA	6:UG:421:PRO:HD3	1.91	0.41
7:UJ:552:LEU:HD13	7:UJ:632:TRP:CZ2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:UL:196:SER:HA	9:UL:220:CYS:H	1.86	0.41
9:UL:619:SER:O	9:UL:619:SER:OG	2.36	0.41
13:UQ:261:LEU:HD12	13:UQ:261:LEU:HA	1.87	0.41
15:UU:146:ILE:HG23	15:UU:151:ILE:HG22	2.02	0.41
17:UZ:31:LEU:HD23	17:UZ:31:LEU:HA	1.84	0.41
21:CF:33:GLN:NE2	21:CF:111:LEU:HD23	2.35	0.41
23:CH:202:LEU:HD23	23:CH:202:LEU:HA	1.91	0.41
24:CI:1105:ILE:HD12	24:CI:1105:ILE:HA	1.91	0.41
26:CK:141:LEU:HD23	26:CK:141:LEU:HA	1.90	0.41
28:CM:310:TRP:CD1	28:CM:317:SER:HA	2.55	0.41
32:CR:196:CYS:O	32:CR:213:GLY:HA2	2.21	0.41
32:CR:839:LYS:HA	32:CR:842:GLU:HG2	2.02	0.41
32:CS:70:HIS:HD2	32:CS:72:LYS:HB2	1.86	0.41
32:CS:401:LYS:HD2	32:CS:401:LYS:HA	1.67	0.41
37:Cd:109:LEU:HD23	37:Cd:109:LEU:HA	1.90	0.41
50:C1:5:G:O6	50:C1:30:U:O4	2.39	0.41
50:C1:910:G:H2'	50:C1:911:C:C6	2.55	0.41
50:C1:1665:A:H1'	50:C1:1666:C:C4	2.54	0.41
50:C1:1706:G:H2'	50:C1:1707:C:C6	2.55	0.41
50:C1:1747:A:H2'	50:C1:1748:G:H8	1.85	0.41
50:C1:2211:U:H2'	50:C1:2212:G:O4'	2.21	0.41
51:C2:135:U:H4'	51:C2:136:C:H4'	2.01	0.41
55:UT:692:GLN:HE22	55:UT:709:HIS:CE1	2.39	0.41
55:UT:1251:ILE:HG23	55:UT:1255:LEU:HD22	2.02	0.41
58:US:342:LYS:HD2	58:US:342:LYS:HA	1.79	0.41
58:US:455:SER:HG	58:US:456:CYS:H	1.65	0.41
61:CY:285:LYS:H	61:CY:285:LYS:HD2	1.86	0.41
1:UA:365:LYS:HE2	1:UA:365:LYS:HB3	1.80	0.41
1:UA:445:ILE:HA	1:UA:470:PRO:HB3	2.03	0.41
1:UA:581:SER:OG	1:UA:582:MET:N	2.54	0.41
2:UB:30:GLN:NE2	2:UB:34:ASP:OD2	2.54	0.41
2:UB:644:LEU:HD23	2:UB:644:LEU:HA	1.86	0.41
2:UB:800:LEU:HD23	58:US:479:SER:HA	2.01	0.41
4:UD:373:THR:HA	4:UD:386:TRP:CH2	2.56	0.41
4:UD:531:ARG:HD2	4:UD:531:ARG:HA	1.90	0.41
4:UD:689:VAL:HA	4:UD:703:GLY:HA2	2.03	0.41
5:UF:379:THR:HA	5:UF:382:VAL:HG22	2.02	0.41
7:UJ:830:LYS:HB2	7:UJ:830:LYS:HE3	1.90	0.41
9:UL:402:LYS:HZ3	9:UL:402:LYS:HG3	1.74	0.41
13:UQ:185:LYS:HE3	13:UQ:185:LYS:HB2	1.82	0.41
14:UR:302:LYS:NZ	14:UR:304:ASP:OD2	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:UU:381:ARG:HA	15:UU:381:ARG:HD3	1.85	0.41
15:UU:714:CYS:SG	15:UU:756:PHE:HB2	2.61	0.41
16:UX:53:VAL:HG23	40:Cg:98:LYS:NZ	2.36	0.41
16:UX:96:MET:HE2	16:UX:96:MET:HB2	1.75	0.41
18:CA:250:GLY:CA	18:CA:306:TYR:O	2.69	0.41
24:CI:803:LEU:HD23	24:CI:803:LEU:HA	1.91	0.41
25:CJ:125:GLN:NE2	50:C1:417:G:H5'	2.36	0.41
28:CM:72:MET:HE2	28:CM:333:MET:HE2	2.03	0.41
32:CR:43:TYR:HA	32:CR:46:SER:HB2	2.01	0.41
32:CR:313:THR:OG1	32:CR:388:ILE:HG22	2.21	0.41
32:CR:735:LYS:HE3	32:CR:739:ARG:HD3	2.03	0.41
32:CR:783:HIS:HB2	32:CR:809:ALA:HB1	2.02	0.41
32:CS:249:ILE:O	32:CS:253:ILE:HG23	2.21	0.41
32:CS:783:HIS:HB2	32:CS:809:ALA:HB1	2.02	0.41
32:CS:806:GLU:OE1	32:CS:807:GLU:N	2.53	0.41
33:CT:69:LEU:HD12	33:CT:69:LEU:HA	1.90	0.41
38:Ce:50:VAL:HG23	38:Ce:51:SER:H	1.86	0.41
38:Ce:90:LYS:HE2	38:Ce:90:LYS:HB3	1.94	0.41
38:Ce:177:ASP:N	38:Ce:177:ASP:OD1	2.53	0.41
50:C1:812:C:H2'	50:C1:813:C:C6	2.56	0.41
51:C2:95:U:H2'	51:C2:96:C:H6	1.86	0.41
51:C2:96:C:H2'	51:C2:97:C:H6	1.86	0.41
52:UV:298:ASN:HB2	52:UV:353:SER:OG	2.19	0.41
55:UT:1635:LYS:HA	55:UT:1638:VAL:HG12	2.03	0.41
55:UT:1785:TYR:O	55:UT:1789:VAL:HG23	2.21	0.41
58:US:327:TYR:CZ	58:US:331:GLU:HG3	2.55	0.41
57:UI:197:LEU:HA	57:UI:200:LEU:HD12	2.01	0.41
1:UA:454:SER:HG	1:UA:457:THR:HG1	1.69	0.41
1:UA:532:GLY:HA2	1:UA:574:ASN:HA	2.01	0.41
1:UA:635:PRO:HD2	1:UA:638:LEU:HD12	2.03	0.41
2:UB:798:LEU:HD23	2:UB:798:LEU:HA	1.82	0.41
2:UB:852:LEU:HD23	2:UB:852:LEU:HA	1.84	0.41
4:UD:65:GLN:HB3	4:UD:370:GLN:HB2	2.01	0.41
4:UD:191:SER:OG	4:UD:192:ILE:N	2.53	0.41
5:UF:186:MET:HE1	5:UF:304:PHE:HA	2.03	0.41
6:UG:205:HIS:CE1	16:UX:13:ARG:HH22	2.38	0.41
6:UG:337:ASN:HB2	6:UG:380:LYS:HD2	2.02	0.41
7:UJ:1550:LEU:HA	7:UJ:1553:ILE:HG22	2.03	0.41
7:UJ:1647:TRP:HZ3	7:UJ:1698:VAL:HB	1.86	0.41
8:UK:240:LEU:HA	8:UK:240:LEU:HD23	1.76	0.41
9:UL:287:HIS:CE1	9:UL:374:TRP:HE1	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:UM:46:THR:HA	10:UM:54:LEU:HB2	2.01	0.41
10:UM:651:LEU:HD23	10:UM:651:LEU:HA	1.86	0.41
10:UM:702:HIS:HE2	10:UM:704:LYS:HD2	1.86	0.41
10:UM:877:LEU:HA	10:UM:877:LEU:HD23	1.76	0.41
12:UO:80:ARG:HH22	59:CI:57:ARG:HG2	1.85	0.41
12:UO:138:LYS:HE3	12:UO:138:LYS:HB3	1.95	0.41
12:UO:192:CYS:SG	12:UO:238:VAL:N	2.94	0.41
12:UO:255:ILE:HG12	12:UO:269:ILE:HB	2.02	0.41
12:UO:441:LEU:HA	12:UO:441:LEU:HD23	1.82	0.41
13:UQ:672:HIS:HB3	56:UH:635:GLN:HB3	2.03	0.41
13:UQ:746:MET:HE2	13:UQ:746:MET:HB3	1.89	0.41
14:UR:428:ASP:N	14:UR:428:ASP:OD1	2.52	0.41
15:UU:384:HIS:O	15:UU:771:LEU:HD12	2.21	0.41
16:UX:28:LYS:HB2	16:UX:28:LYS:HE2	1.75	0.41
17:UZ:112:VAL:HG21	17:UZ:124:ILE:HG21	2.02	0.41
17:UZ:158:ARG:HH12	17:UZ:185:MET:HA	1.86	0.41
17:UZ:266:LEU:HD23	17:UZ:266:LEU:HA	1.96	0.41
19:CC:400:THR:HG22	19:CC:401:ARG:H	1.86	0.41
20:CD:239:ALA:O	20:CD:243:ILE:HD12	2.21	0.41
22:CG:479:PHE:HE2	22:CG:578:VAL:HG11	1.86	0.41
23:CH:123:PHE:HA	23:CH:405:ASN:HB3	2.02	0.41
24:CI:1076:MET:HE3	24:CI:1076:MET:HB3	1.81	0.41
25:CJ:88:LEU:HA	25:CJ:88:LEU:HD23	1.90	0.41
26:CK:48:ASN:HD21	49:CU:216:LYS:H	1.69	0.41
26:CK:176:ILE:H	26:CK:176:ILE:HG12	1.68	0.41
26:CK:270:MET:HE2	26:CK:270:MET:HB3	1.84	0.41
28:CM:99:ARG:HH11	28:CM:99:ARG:HD3	1.75	0.41
28:CM:109:HIS:NE2	28:CM:126:SER:OG	2.35	0.41
30:CP:197:LEU:HD13	30:CP:197:LEU:HA	1.88	0.41
31:CQ:163:SER:O	31:CQ:163:SER:OG	2.25	0.41
32:CR:24:ARG:NH2	32:CR:487:GLU:HB2	2.36	0.41
32:CR:70:HIS:HD2	32:CR:72:LYS:HB2	1.86	0.41
32:CR:138:ARG:O	32:CR:142:THR:HG22	2.21	0.41
32:CR:917:ARG:HA	32:CR:920:THR:HG22	2.02	0.41
32:CS:209:LEU:HA	32:CS:210:PRO:HD3	1.87	0.41
32:CS:737:TRP:HB3	32:CS:742:PHE:HB2	2.03	0.41
35:Cb:92:ILE:O	35:Cb:96:GLY:N	2.52	0.41
35:Cb:221:ARG:O	35:Cb:225:VAL:HG23	2.21	0.41
38:Ce:30:LEU:O	38:Ce:34:GLU:HG3	2.21	0.41
39:Cf:67:TRP:CD1	39:Cf:187:ILE:HG21	2.48	0.41
39:Cf:89:GLU:HA	39:Cf:92:ARG:HD2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:Ck:146:ARG:HE	44:Ck:146:ARG:HB2	1.71	0.41
47:Co:351:ARG:CZ	47:Co:353:GLN:HE21	2.34	0.41
50:C1:251:G:H2'	50:C1:252:U:C6	2.56	0.41
50:C1:394:U:H2'	50:C1:395:C:H6	1.85	0.41
50:C1:405:C:H2'	50:C1:406:G:O4'	2.21	0.41
50:C1:474:A:O2'	50:C1:475:C:H5''	2.20	0.41
50:C1:819:G:H2'	50:C1:820:G:H8	1.85	0.41
52:UV:176:LEU:HD23	52:UV:186:LEU:HD21	2.03	0.41
52:UV:838:PHE:CE1	52:UV:960:MET:HE2	2.56	0.41
52:UV:881:LEU:HD21	52:UV:972:ARG:HH22	1.85	0.41
55:UT:287:LYS:HD3	55:UT:287:LYS:HA	1.82	0.41
55:UT:368:LEU:HD12	55:UT:368:LEU:HA	1.92	0.41
55:UT:1076:LEU:HD23	55:UT:1076:LEU:HA	1.89	0.41
55:UT:1171:LYS:HD3	55:UT:1175:GLU:HB2	2.02	0.41
55:UT:1777:LEU:HD13	55:UT:1777:LEU:HA	1.93	0.41
55:UT:2203:VAL:HA	55:UT:2206:LEU:HB2	2.02	0.41
56:UH:714:LEU:HD12	56:UH:714:LEU:HA	1.88	0.41
56:UH:739:LEU:HD22	56:UH:811:PHE:HZ	1.84	0.41
56:UH:755:TYR:N	57:UI:210:ARG:H	2.19	0.41
56:UH:913:SER:OG	56:UH:914:GLU:N	2.54	0.41
58:US:313:SER:OG	58:US:314:GLY:N	2.54	0.41
60:CX:423:ASN:ND2	60:CX:457:ARG:HB2	2.35	0.41
61:CY:267:ARG:HD2	61:CY:267:ARG:HA	1.73	0.41
1:UA:226:ALA:HA	1:UA:241:MET:HA	2.03	0.41
1:UA:765:PHE:HA	1:UA:766:PRO:HD3	1.95	0.41
5:UF:272:PRO:O	5:UF:275:SER:OG	2.29	0.41
7:UJ:1619:THR:HB	7:UJ:1666:TRP:HH2	1.85	0.41
11:UN:363:LYS:HB2	11:UN:363:LYS:HE3	1.80	0.41
13:UQ:418:ASN:ND2	13:UQ:438:GLN:H	2.12	0.41
13:UQ:449:ASP:OD1	13:UQ:449:ASP:N	2.49	0.41
17:UZ:117:PRO:HB3	17:UZ:121:ARG:NH2	2.36	0.41
18:CA:175:GLY:O	18:CA:202:ASN:ND2	2.48	0.41
18:CB:98:VAL:HG11	18:CB:199:ARG:HG3	2.03	0.41
22:CG:397:SER:O	22:CG:413:SER:HB2	2.21	0.41
23:CH:175:VAL:HG12	23:CH:192:VAL:HG12	2.03	0.41
24:CI:395:LEU:O	24:CI:397:ALA:N	2.51	0.41
24:CI:833:LEU:HB3	24:CI:835:PHE:CE1	2.56	0.41
24:CI:938:PHE:HA	27:CL:511:ARG:NH2	2.35	0.41
27:CL:639:LYS:HE3	27:CL:639:LYS:HB3	1.91	0.41
29:CN:68:LEU:HD12	29:CN:68:LEU:HA	1.86	0.41
29:CN:175:CYS:SG	29:CN:176:ARG:N	2.93	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:CQ:175:ARG:HG3	31:CQ:177:THR:H	1.85	0.41
32:CR:249:ILE:O	32:CR:253:ILE:HG23	2.21	0.41
32:CR:751:ALA:HB2	32:CR:758:HIS:CE1	2.56	0.41
32:CR:908:VAL:HG23	32:CR:909:LEU:HD22	2.03	0.41
32:CS:494:LEU:HD23	32:CS:494:LEU:HA	1.84	0.41
32:CS:751:ALA:HB2	32:CS:758:HIS:CE1	2.56	0.41
37:Cd:136:LYS:NZ	50:C1:653:U:OP1	2.53	0.41
40:Cg:29:VAL:O	40:Cg:32:TYR:O	2.39	0.41
50:C1:638:A:N1	50:C1:1013:G:C2	2.89	0.41
50:C1:786:G:C4	50:C1:848:G:N2	2.89	0.41
50:C1:840:A:N6	50:C1:841:A:N6	2.68	0.41
51:C2:43:C:H2'	51:C2:44:U:C6	2.56	0.41
52:UV:417:HIS:O	52:UV:421:THR:OG1	2.29	0.41
52:UV:980:VAL:O	52:UV:983:LEU:N	2.53	0.41
52:UV:1046:PRO:O	52:UV:1050:LEU:HB2	2.21	0.41
52:UV:1050:LEU:O	52:UV:1054:LEU:HB2	2.20	0.41
55:UT:83:LYS:HA	55:UT:86:ILE:HG22	2.03	0.41
55:UT:1692:PRO:HA	55:UT:1695:LEU:HD12	2.03	0.41
58:US:92:LEU:HD23	58:US:92:LEU:HA	1.84	0.41
58:US:458:TRP:HA	58:US:461:VAL:HG12	2.02	0.41
58:US:474:ILE:O	58:US:477:ILE:HG12	2.21	0.41
60:CX:422:ARG:NH2	60:CX:423:ASN:HB2	2.36	0.41
1:UA:263:TYR:OH	1:UA:268:ASN:OD1	2.35	0.40
1:UA:505:GLU:OE2	36:Cc:70:ARG:NH2	2.51	0.40
1:UA:773:LEU:HD21	1:UA:793:TRP:HZ3	1.85	0.40
2:UB:787:LEU:HA	2:UB:787:LEU:HD23	1.80	0.40
4:UD:335:LYS:HE2	4:UD:335:LYS:HB3	1.90	0.40
4:UD:338:SER:O	4:UD:338:SER:OG	2.36	0.40
4:UD:528:ARG:HE	4:UD:528:ARG:HB3	1.56	0.40
4:UD:666:LEU:HD13	7:UJ:666:GLU:HG3	2.03	0.40
5:UF:408:SER:O	5:UF:408:SER:OG	2.31	0.40
7:UJ:241:LEU:HD23	7:UJ:241:LEU:HA	1.88	0.40
7:UJ:256:SER:HB2	14:UR:230:LEU:HD23	2.02	0.40
7:UJ:309:LEU:HA	7:UJ:309:LEU:HD23	1.82	0.40
7:UJ:1720:LYS:O	7:UJ:1724:THR:HG23	2.20	0.40
8:UK:32:LYS:HE3	8:UK:32:LYS:HB2	1.89	0.40
9:UL:119:ASP:OD2	9:UL:120:LYS:N	2.52	0.40
9:UL:889:ILE:HD12	9:UL:895:MET:HG3	2.03	0.40
10:UM:322:ILE:HD12	10:UM:336:CYS:SG	2.61	0.40
13:UQ:354:HIS:CG	13:UQ:358:VAL:HG12	2.56	0.40
15:UU:520:TYR:HB2	15:UU:522:ARG:NH1	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:CC:92:LYS:HE3	19:CC:92:LYS:HB3	1.93	0.40
22:CG:128:ILE:HD12	22:CG:131:ASP:HB2	2.03	0.40
23:CH:21:LEU:HD23	23:CH:21:LEU:HA	1.88	0.40
23:CH:279:LEU:HD22	23:CH:313:CYS:SG	2.62	0.40
24:CI:277:THR:OG1	24:CI:278:ASN:N	2.53	0.40
24:CI:309:PRO:HA	24:CI:312:GLU:HB2	2.02	0.40
25:CJ:104:SER:C	25:CJ:108:ARG:HH11	2.29	0.40
26:CK:80:LEU:HD23	26:CK:80:LEU:HA	1.76	0.40
28:CM:65:HIS:CD2	28:CM:69:VAL:HG22	2.56	0.40
29:CO:106:LYS:HA	29:CO:106:LYS:HD2	1.82	0.40
32:CR:633:ALA:HB2	32:CR:720:LEU:HD21	2.03	0.40
32:CS:284:THR:HG23	32:CS:473:THR:HG23	2.02	0.40
40:Cg:83:VAL:HG12	40:Cg:97:LEU:HD11	2.03	0.40
44:Ck:111:ASN:ND2	50:C1:932:U:H5'	2.36	0.40
45:Cm:38:LEU:HD23	45:Cm:50:PHE:CG	2.56	0.40
50:C1:147:C:H2'	50:C1:148:C:C6	2.56	0.40
50:C1:222:U:H5'	50:C1:224:C:N4	2.36	0.40
50:C1:634:A:C2	50:C1:635:G:H1'	2.56	0.40
50:C1:924:A:H2'	50:C1:925:G:H8	1.85	0.40
50:C1:1170:G:H5'	50:C1:1171:C:H5'	2.03	0.40
50:C1:2366:C:H2'	50:C1:2367:C:H6	1.86	0.40
51:C2:129:U:H2'	51:C2:130:C:H6	1.86	0.40
52:UV:609:LEU:HD23	52:UV:610:HIS:HB2	2.02	0.40
55:UT:271:HIS:CD2	55:UT:273:THR:H	2.39	0.40
55:UT:313:SER:OG	55:UT:314:ASN:O	2.39	0.40
55:UT:1552:LEU:HD21	55:UT:1596:LEU:HA	2.03	0.40
56:UH:714:LEU:HD23	56:UH:779:LEU:HD11	2.03	0.40
61:CY:374:ARG:HH21	61:CY:374:ARG:HG3	1.86	0.40
57:UI:235:LEU:HD23	57:UI:235:LEU:HA	1.88	0.40
1:UA:833:LEU:HD21	27:CL:669:VAL:HG21	2.04	0.40
4:UD:395:HIS:HB2	4:UD:420:LEU:HD22	2.02	0.40
8:UK:91:ARG:NH1	24:CI:1068:LYS:O	2.53	0.40
9:UL:899:LEU:HA	9:UL:899:LEU:HD12	1.85	0.40
10:UM:562:ALA:HB1	10:UM:589:VAL:HG13	2.03	0.40
10:UM:638:PHE:HE1	10:UM:683:GLY:HA2	1.86	0.40
10:UM:695:ARG:HE	10:UM:695:ARG:HB3	1.44	0.40
11:UN:877:LYS:HE3	11:UN:877:LYS:HB3	1.91	0.40
12:UO:429:ARG:NH1	50:C1:73:A:OP1	2.43	0.40
13:UQ:362:LYS:HB2	13:UQ:402:ILE:HD11	2.04	0.40
13:UQ:440:LEU:HD23	13:UQ:440:LEU:HA	1.91	0.40
15:UU:139:GLN:NE2	15:UU:157:THR:OG1	2.48	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:UU:480:ALA:HB3	15:UU:528:ARG:HD2	2.03	0.40
17:UZ:89:LEU:HD12	17:UZ:89:LEU:HA	1.95	0.40
18:CB:161:ALA:N	18:CB:184:GLU:OE1	2.55	0.40
19:CC:82:LEU:HD23	19:CC:82:LEU:HA	1.91	0.40
24:CI:308:THR:O	24:CI:311:MET:N	2.55	0.40
28:CM:15:ALA:HB2	28:CM:22:ARG:HH12	1.86	0.40
29:CN:32:LYS:HA	29:CN:36:ARG:HH22	1.85	0.40
32:CR:193:LEU:HG	32:CR:199:CYS:SG	2.61	0.40
32:CR:401:LYS:HD2	32:CR:401:LYS:HA	1.67	0.40
32:CS:735:LYS:HE3	32:CS:739:ARG:HD3	2.03	0.40
32:CS:801:LEU:HA	32:CS:801:LEU:HD13	1.89	0.40
32:CS:915:ILE:O	32:CS:919:VAL:HG22	2.21	0.40
37:Cd:136:LYS:HB2	37:Cd:136:LYS:HE2	1.97	0.40
50:C1:177:G:H2'	50:C1:178:G:C8	2.56	0.40
50:C1:459:C:N4	50:C1:474:A:H61	2.20	0.40
50:C1:625:C:H2'	50:C1:626:A:C8	2.56	0.40
50:C1:693:C:H2'	50:C1:694:A:C8	2.56	0.40
50:C1:1209:C:H2'	50:C1:1210:U:C6	2.56	0.40
50:C1:1732:C:H2'	50:C1:1733:G:O4'	2.22	0.40
51:C2:128:C:H2'	51:C2:129:U:H6	1.86	0.40
52:UV:86:ALA:O	52:UV:90:GLU:HG2	2.21	0.40
55:UT:145:LEU:O	55:UT:149:VAL:HG23	2.21	0.40
55:UT:160:VAL:O	55:UT:164:THR:HG23	2.22	0.40
56:UH:578:ILE:HG13	56:UH:626:LEU:HD13	2.03	0.40
58:US:320:LEU:HD23	58:US:320:LEU:HA	1.81	0.40
1:UA:180:LEU:HA	1:UA:180:LEU:HD23	1.83	0.40
1:UA:448:PHE:CZ	26:CK:4:LYS:HD3	2.56	0.40
1:UA:677:GLY:O	1:UA:689:ALA:HA	2.22	0.40
2:UB:773:LEU:HA	2:UB:773:LEU:HD13	1.87	0.40
5:UF:272:PRO:HB3	11:UN:380:SER:HA	2.04	0.40
6:UG:221:HIS:HB3	6:UG:264:LEU:HD23	2.03	0.40
7:UJ:136:LEU:HD13	7:UJ:155:LEU:HD11	2.02	0.40
7:UJ:803:PRO:HA	7:UJ:806:LEU:HB3	2.03	0.40
10:UM:767:PRO:HA	10:UM:770:LEU:HB3	2.02	0.40
10:UM:784:ASP:HA	10:UM:785:PRO:HD3	1.97	0.40
12:UO:129:GLY:H	12:UO:133:ARG:HB2	1.86	0.40
12:UO:555:GLU:HB2	56:UH:724:LYS:HZ2	1.86	0.40
13:UQ:91:ASP:OD2	13:UQ:448:LYS:NZ	2.54	0.40
14:UR:324:ASP:OD1	14:UR:344:ARG:NH1	2.54	0.40
14:UR:393:LYS:HD3	14:UR:393:LYS:HA	1.85	0.40
14:UR:500:LEU:HD23	14:UR:500:LEU:HA	1.91	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:UU:182:ASP:HA	15:UU:204:LYS:HB3	2.03	0.40
15:UU:941:ILE:HG22	15:UU:945:LYS:HE3	2.02	0.40
21:CE:90:ARG:HE	21:CE:90:ARG:HB3	1.45	0.40
24:CI:252:ILE:O	24:CI:267:THR:OG1	2.33	0.40
27:CL:498:ARG:H	27:CL:498:ARG:HG2	1.62	0.40
32:CR:623:GLN:H	32:CS:839:LYS:HZ2	1.69	0.40
32:CR:891:ARG:HH22	32:CS:891:ARG:HH22	1.69	0.40
32:CS:193:LEU:HG	32:CS:199:CYS:SG	2.61	0.40
33:CT:175:LYS:HB2	33:CT:175:LYS:HE3	1.89	0.40
34:Ca:89:ASP:HB3	34:Ca:223:PHE:CE1	2.57	0.40
40:Cg:66:LYS:HB2	40:Cg:66:LYS:HE3	1.81	0.40
44:Ck:97:HIS:O	44:Ck:106:GLU:N	2.46	0.40
47:Co:343:PHE:CE1	47:Co:352:LYS:HB3	2.51	0.40
50:C1:809:U:O4	55:UT:1622:ARG:NE	2.54	0.40
50:C1:950:G:H2'	50:C1:951:G:C8	2.56	0.40
52:UV:339:ALA:HB2	52:UV:386:PHE:HD2	1.85	0.40
52:UV:577:ARG:HA	52:UV:577:ARG:HD2	1.94	0.40
52:UV:847:PHE:HA	52:UV:848:PRO:HD3	1.97	0.40
52:UV:1067:THR:HG22	52:UV:1073:PHE:HE2	1.87	0.40
54:CW:352:LYS:HB2	54:CW:352:LYS:HE3	1.84	0.40
55:UT:387:TRP:CZ2	55:UT:428:PRO:HB2	2.56	0.40
55:UT:487:ILE:HD12	55:UT:487:ILE:HA	1.85	0.40
55:UT:1073:LEU:HG	55:UT:1136:THR:HG23	2.04	0.40
55:UT:1640:LEU:HD12	55:UT:1640:LEU:HA	1.89	0.40
55:UT:2082:LEU:O	55:UT:2086:LEU:HG	2.21	0.40
58:US:373:LEU:HD23	58:US:373:LEU:HA	1.83	0.40
59:Cl:25:LYS:HE3	59:Cl:25:LYS:HB3	1.79	0.40
60:CX:240:ASP:OD1	60:CX:240:ASP:N	2.53	0.40
1:UA:578:ILE:HD12	1:UA:587:LEU:HD11	2.04	0.40
1:UA:632:GLU:OE1	6:UG:175:GLN:NE2	2.54	0.40
5:UF:316:ILE:O	5:UF:320:VAL:HG23	2.22	0.40
7:UJ:854:GLU:O	7:UJ:858:LYS:HG2	2.21	0.40
8:UK:14:LYS:HD2	24:CI:1035:TYR:CD2	2.57	0.40
10:UM:437:MET:HE2	10:UM:437:MET:HB3	1.78	0.40
12:UO:142:ILE:HD13	12:UO:172:TRP:HH2	1.85	0.40
13:UQ:163:GLY:HA3	13:UQ:182:ILE:HG22	2.03	0.40
13:UQ:215:SER:HB2	13:UQ:238:ASP:HA	2.02	0.40
13:UQ:822:LYS:HD3	13:UQ:822:LYS:HA	1.88	0.40
15:UU:143:GLN:NE2	15:UU:189:ALA:H	2.20	0.40
15:UU:306:GLY:O	15:UU:326:ALA:N	2.47	0.40
15:UU:944:LEU:HD12	15:UU:944:LEU:HA	1.92	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:CA:294:PRO:HG2	18:CA:295:TYR:CE2	2.57	0.40
24:CI:154:LEU:HA	24:CI:154:LEU:HD23	1.90	0.40
29:CN:28:PRO:HA	29:CN:29:PRO:HD3	1.96	0.40
29:CO:150:ILE:HD13	29:CO:150:ILE:HA	1.86	0.40
32:CR:614:ILE:O	32:CR:618:VAL:HG12	2.21	0.40
32:CR:738:LYS:HD2	32:CR:738:LYS:HA	1.67	0.40
32:CS:24:ARG:NH2	32:CS:487:GLU:HB2	2.36	0.40
32:CS:64:LEU:HD13	32:CS:126:GLN:HE22	1.86	0.40
35:Cb:67:GLN:HG3	35:Cb:69:LEU:HG	2.02	0.40
37:Cd:15:LEU:HD13	50:C1:737:G:H4'	2.02	0.40
37:Cd:95:LYS:HE2	37:Cd:95:LYS:HB3	1.99	0.40
50:C1:98:A:H2'	50:C1:99:A:C8	2.56	0.40
50:C1:296:G:H2'	50:C1:297:U:O4'	2.22	0.40
50:C1:704:U:H3	50:C1:882:C:H42	1.69	0.40
50:C1:732:A:H62	50:C1:750:C:N4	2.19	0.40
51:C2:91:G:OP1	51:C2:91:G:N2	2.45	0.40
52:UV:566:PHE:HA	52:UV:570:TRP:HD1	1.86	0.40
54:CW:311:ARG:C	54:CW:329:PRO:HD2	2.46	0.40
55:UT:209:GLU:O	55:UT:212:SER:HB3	2.22	0.40
55:UT:1161:VAL:O	55:UT:1165:ILE:HG22	2.21	0.40
58:US:136:VAL:HG23	58:US:184:HIS:CD2	2.57	0.40
1:UA:816:LEU:HD23	1:UA:816:LEU:HA	1.87	0.40
2:UB:828:ASN:OD1	2:UB:828:ASN:N	2.45	0.40
7:UJ:264:VAL:HA	7:UJ:265:PRO:HD2	1.99	0.40
7:UJ:433:ASP:N	7:UJ:433:ASP:OD2	2.54	0.40
7:UJ:644:THR:OG1	7:UJ:645:SER:N	2.54	0.40
9:UL:391:ASN:OD1	9:UL:391:ASN:N	2.54	0.40
9:UL:531:THR:HG22	9:UL:563:LYS:HA	2.03	0.40
9:UL:617:TYR:OH	9:UL:661:ASN:ND2	2.46	0.40
9:UL:834:LEU:HD23	9:UL:834:LEU:HA	1.89	0.40
10:UM:302:ASP:HB3	10:UM:305:THR:O	2.22	0.40
10:UM:818:THR:HG22	10:UM:866:TYR:CE2	2.57	0.40
12:UO:50:PRO:HD3	12:UO:107:ILE:HD11	2.02	0.40
15:UU:38:TYR:HB2	15:UU:777:THR:HG23	2.03	0.40
15:UU:394:LEU:HD12	15:UU:394:LEU:HA	1.89	0.40
16:UX:108:VAL:O	16:UX:112:ILE:HG12	2.22	0.40
20:CD:293:ILE:HG21	20:CD:369:ILE:HD11	2.03	0.40
23:CH:158:LEU:HA	23:CH:161:TYR:HD2	1.86	0.40
25:CJ:60:ARG:HG2	49:CU:196:PHE:CE2	2.56	0.40
25:CJ:81:LYS:HB2	25:CJ:81:LYS:HE3	1.94	0.40
26:CK:238:GLU:HA	26:CK:262:THR:HA	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:CQ:186:ALA:HB1	31:CQ:236:VAL:HG23	2.03	0.40
32:CR:915:ILE:O	32:CR:919:VAL:HG22	2.21	0.40
32:CS:917:ARG:HA	32:CS:920:THR:HG22	2.02	0.40
33:CT:107:GLN:O	33:CT:111:MET:HB2	2.21	0.40
34:Ca:111:ARG:HD3	34:Ca:111:ARG:HA	1.76	0.40
36:Cc:44:SER:OG	36:Cc:154:ARG:NH1	2.54	0.40
37:Cd:146:SER:O	37:Cd:146:SER:OG	2.37	0.40
39:Cf:70:GLU:OE2	39:Cf:70:GLU:N	2.54	0.40
40:Cg:81:ILE:HG13	40:Cg:83:VAL:HG23	2.03	0.40
50:C1:9:G:N1	50:C1:27:A:N6	2.69	0.40
50:C1:364:C:H2'	50:C1:365:G:C8	2.56	0.40
50:C1:939:G:H2'	50:C1:940:G:H8	1.85	0.40
50:C1:2334:G:H2'	50:C1:2335:U:C6	2.57	0.40
51:C2:11:C:H2'	51:C2:12:U:C6	2.57	0.40
51:C2:137:U:H2'	51:C2:138:A:C8	2.57	0.40
52:UV:237:ARG:HB3	52:UV:399:GLN:HB2	2.03	0.40
52:UV:777:SER:HA	52:UV:780:GLU:HB2	2.02	0.40
52:UV:829:PRO:HB2	52:UV:872:PRO:HB3	2.04	0.40
54:CW:349:ASN:OD1	54:CW:351:GLY:N	2.55	0.40
55:UT:32:GLN:O	55:UT:36:LYS:HG2	2.22	0.40
55:UT:717:TYR:HA	55:UT:720:ILE:HG12	2.03	0.40
55:UT:996:LEU:HD21	55:UT:1027:LEU:HD21	2.03	0.40
55:UT:1479:ILE:HA	55:UT:1482:VAL:HG12	2.04	0.40
55:UT:1562:ASN:O	55:UT:1565:ARG:C	2.64	0.40
55:UT:1753:MET:O	55:UT:1757:THR:OG1	2.29	0.40
55:UT:1970:LEU:HA	55:UT:1970:LEU:HD12	1.91	0.40
56:UH:624:MET:SD	56:UH:703:ARG:NH1	2.85	0.40
63:UP:328:ASP:OD1	63:UP:328:ASP:N	2.48	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	UA	835/904 (92%)	753 (90%)	82 (10%)	0	100	100
2	UB	502/907 (55%)	469 (93%)	33 (7%)	0	100	100
3	UC	72/648 (11%)	67 (93%)	5 (7%)	0	100	100
4	UD	754/884 (85%)	705 (94%)	49 (6%)	0	100	100
5	UF	325/414 (78%)	309 (95%)	16 (5%)	0	100	100
6	UG	475/558 (85%)	439 (92%)	33 (7%)	3 (1%)	21	57
7	UJ	1062/1802 (59%)	1007 (95%)	55 (5%)	0	100	100
8	UK	211/270 (78%)	207 (98%)	4 (2%)	0	100	100
9	UL	767/962 (80%)	694 (90%)	73 (10%)	0	100	100
10	UM	705/912 (77%)	645 (92%)	59 (8%)	1 (0%)	48	81
11	UN	171/938 (18%)	161 (94%)	9 (5%)	1 (1%)	21	57
12	UO	498/557 (89%)	465 (93%)	33 (7%)	0	100	100
13	UQ	775/960 (81%)	707 (91%)	67 (9%)	1 (0%)	48	81
14	UR	437/618 (71%)	407 (93%)	30 (7%)	0	100	100
15	UU	890/1049 (85%)	814 (92%)	76 (8%)	0	100	100
16	UX	188/193 (97%)	176 (94%)	12 (6%)	0	100	100
17	UZ	229/391 (59%)	213 (93%)	16 (7%)	0	100	100
18	CA	238/313 (76%)	221 (93%)	17 (7%)	0	100	100
18	CB	235/313 (75%)	217 (92%)	18 (8%)	0	100	100
19	CC	383/523 (73%)	362 (94%)	21 (6%)	0	100	100
20	CD	416/582 (72%)	385 (92%)	31 (8%)	0	100	100
21	CE	119/127 (94%)	112 (94%)	7 (6%)	0	100	100
21	CF	118/127 (93%)	110 (93%)	8 (7%)	0	100	100
22	CG	402/630 (64%)	369 (92%)	33 (8%)	0	100	100
23	CH	383/411 (93%)	351 (92%)	31 (8%)	1 (0%)	36	70
24	CI	812/1163 (70%)	742 (91%)	69 (8%)	1 (0%)	48	81
25	CJ	177/183 (97%)	169 (96%)	8 (4%)	0	100	100
26	CK	295/297 (99%)	272 (92%)	23 (8%)	0	100	100
27	CL	225/785 (29%)	209 (93%)	15 (7%)	1 (0%)	30	65
28	CM	443/446 (99%)	406 (92%)	37 (8%)	0	100	100
29	CN	222/252 (88%)	207 (93%)	15 (7%)	0	100	100
29	CO	211/252 (84%)	192 (91%)	17 (8%)	2 (1%)	14	48

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	CP	227/322 (70%)	216 (95%)	11 (5%)	0	100	100
31	CQ	171/259 (66%)	164 (96%)	7 (4%)	0	100	100
32	CR	746/1073 (70%)	687 (92%)	58 (8%)	1 (0%)	48	81
32	CS	746/1073 (70%)	687 (92%)	58 (8%)	1 (0%)	48	81
33	CT	127/203 (63%)	113 (89%)	14 (11%)	0	100	100
34	Ca	223/255 (88%)	206 (92%)	17 (8%)	0	100	100
35	Cb	230/264 (87%)	209 (91%)	21 (9%)	0	100	100
36	Cc	188/212 (89%)	177 (94%)	11 (6%)	0	100	100
37	Cd	224/239 (94%)	209 (93%)	15 (7%)	0	100	100
38	Ce	155/203 (76%)	138 (89%)	17 (11%)	0	100	100
39	Cf	170/202 (84%)	162 (95%)	8 (5%)	0	100	100
40	Cg	157/190 (83%)	150 (96%)	7 (4%)	0	100	100
41	Ch	64/151 (42%)	62 (97%)	2 (3%)	0	100	100
42	Ci	113/150 (75%)	108 (96%)	5 (4%)	0	100	100
43	Cj	124/143 (87%)	117 (94%)	7 (6%)	0	100	100
44	Ck	136/161 (84%)	127 (93%)	9 (7%)	0	100	100
45	Cm	122/130 (94%)	114 (93%)	8 (7%)	0	100	100
46	Cn	92/145 (63%)	89 (97%)	3 (3%)	0	100	100
47	Co	90/136 (66%)	80 (89%)	10 (11%)	0	100	100
48	Cp	59/68 (87%)	53 (90%)	6 (10%)	0	100	100
49	CU	168/311 (54%)	154 (92%)	14 (8%)	0	100	100
52	UV	1057/1171 (90%)	966 (91%)	89 (8%)	2 (0%)	43	75
53	CV	144/322 (45%)	129 (90%)	14 (10%)	1 (1%)	18	54
54	CW	380/668 (57%)	337 (89%)	43 (11%)	0	100	100
55	UT	1987/2612 (76%)	1877 (94%)	103 (5%)	7 (0%)	30	65
56	UH	349/930 (38%)	328 (94%)	21 (6%)	0	100	100
57	UE	121/410 (30%)	113 (93%)	8 (7%)	0	100	100
57	UI	121/410 (30%)	113 (93%)	8 (7%)	0	100	100
58	US	443/549 (81%)	407 (92%)	36 (8%)	0	100	100
59	Cl	78/156 (50%)	74 (95%)	4 (5%)	0	100	100
60	CX	265/480 (55%)	251 (95%)	14 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
61	CY	119/381 (31%)	112 (94%)	6 (5%)	1 (1%)	16	52
62	CZ	42/609 (7%)	36 (86%)	6 (14%)	0	100	100
63	UP	52/364 (14%)	43 (83%)	8 (15%)	1 (2%)	6	34
All	All	23065/34323 (67%)	21370 (93%)	1670 (7%)	25 (0%)	49	81

All (25) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
29	CO	85	SER
52	UV	1059	ASP
13	UQ	708	SER
55	UT	457	TRP
55	UT	487	ILE
6	UG	56	PRO
6	UG	176	LEU
55	UT	408	PRO
55	UT	782	SER
53	CV	89	GLN
55	UT	1566	GLU
55	UT	1567	PHE
10	UM	329	PRO
11	UN	902	ARG
52	UV	567	ARG
6	UG	580	GLU
24	CI	308	THR
32	CR	48	MET
32	CS	48	MET
61	CY	378	GLY
29	CO	84	ILE
55	UT	1445	PRO
23	CH	258	PRO
63	UP	329	PRO
27	CL	640	PRO

5.3.2 Protein sidechains ⓘ

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

The Analysed column shows the number of residues for which the sidechain conformation was

analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	UA	651/775 (84%)	648 (100%)	3 (0%)	81	82
2	UB	425/788 (54%)	422 (99%)	3 (1%)	76	79
3	UC	61/536 (11%)	61 (100%)	0	100	100
4	UD	653/738 (88%)	648 (99%)	5 (1%)	73	77
5	UF	248/341 (73%)	248 (100%)	0	100	100
6	UG	373/474 (79%)	368 (99%)	5 (1%)	61	72
7	UJ	898/1526 (59%)	897 (100%)	1 (0%)	88	89
8	UK	159/227 (70%)	158 (99%)	1 (1%)	78	81
9	UL	667/821 (81%)	665 (100%)	2 (0%)	86	85
10	UM	606/770 (79%)	603 (100%)	3 (0%)	81	82
11	UN	146/765 (19%)	145 (99%)	1 (1%)	76	79
12	UO	404/456 (89%)	400 (99%)	4 (1%)	68	76
13	UQ	650/817 (80%)	646 (99%)	4 (1%)	78	81
14	UR	360/524 (69%)	359 (100%)	1 (0%)	86	85
15	UU	672/863 (78%)	668 (99%)	4 (1%)	78	81
16	UX	150/167 (90%)	148 (99%)	2 (1%)	61	72
17	UZ	186/329 (56%)	184 (99%)	2 (1%)	65	74
18	CA	175/228 (77%)	174 (99%)	1 (1%)	78	81
18	CB	195/228 (86%)	195 (100%)	0	100	100
19	CC	287/435 (66%)	286 (100%)	1 (0%)	86	85
20	CD	319/489 (65%)	318 (100%)	1 (0%)	86	85
21	CE	91/108 (84%)	91 (100%)	0	100	100
21	CF	88/108 (82%)	86 (98%)	2 (2%)	44	64
22	CG	331/525 (63%)	328 (99%)	3 (1%)	70	76
23	CH	303/320 (95%)	300 (99%)	3 (1%)	68	76
24	CI	661/1009 (66%)	658 (100%)	3 (0%)	81	82
25	CJ	147/169 (87%)	145 (99%)	2 (1%)	59	71
26	CK	245/266 (92%)	243 (99%)	2 (1%)	73	77
27	CL	181/642 (28%)	181 (100%)	0	100	100
28	CM	364/383 (95%)	363 (100%)	1 (0%)	86	85
29	CN	202/223 (91%)	201 (100%)	1 (0%)	81	82

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
29	CO	193/223 (86%)	192 (100%)	1 (0%)	81	82
30	CP	202/287 (70%)	202 (100%)	0	100	100
31	CQ	145/215 (67%)	145 (100%)	0	100	100
32	CR	654/916 (71%)	445 (68%)	209 (32%)	0	2
32	CS	654/916 (71%)	445 (68%)	209 (32%)	0	2
33	CT	108/167 (65%)	108 (100%)	0	100	100
34	Ca	198/223 (89%)	197 (100%)	1 (0%)	81	82
35	Cb	199/221 (90%)	198 (100%)	1 (0%)	81	82
36	Cc	149/178 (84%)	147 (99%)	2 (1%)	61	72
37	Cd	192/204 (94%)	192 (100%)	0	100	100
38	Ce	137/177 (77%)	135 (98%)	2 (2%)	57	70
39	Cf	139/164 (85%)	139 (100%)	0	100	100
40	Cg	122/162 (75%)	122 (100%)	0	100	100
41	Ch	58/130 (45%)	58 (100%)	0	100	100
42	Ci	78/117 (67%)	78 (100%)	0	100	100
43	Cj	92/115 (80%)	92 (100%)	0	100	100
44	Ck	126/143 (88%)	125 (99%)	1 (1%)	73	77
45	Cm	103/113 (91%)	101 (98%)	2 (2%)	50	67
46	Cn	70/116 (60%)	70 (100%)	0	100	100
47	Co	79/115 (69%)	78 (99%)	1 (1%)	61	72
48	Cp	46/61 (75%)	46 (100%)	0	100	100
49	CU	137/260 (53%)	137 (100%)	0	100	100
52	UV	908/989 (92%)	906 (100%)	2 (0%)	87	87
53	CV	129/276 (47%)	127 (98%)	2 (2%)	55	70
54	CW	309/587 (53%)	308 (100%)	1 (0%)	86	85
55	UT	1731/2276 (76%)	1727 (100%)	4 (0%)	87	87
56	UH	301/788 (38%)	301 (100%)	0	100	100
57	UE	105/346 (30%)	69 (66%)	36 (34%)	0	2
57	UI	105/346 (30%)	69 (66%)	36 (34%)	0	2
58	US	404/493 (82%)	404 (100%)	0	100	100
59	Cl	71/135 (53%)	70 (99%)	1 (1%)	59	71

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
60	CX	227/411 (55%)	227 (100%)	0	100	100
61	CY	100/322 (31%)	95 (95%)	5 (5%)	22	45
62	CZ	38/519 (7%)	38 (100%)	0	100	100
63	UP	44/314 (14%)	44 (100%)	0	100	100
All	All	19251/29075 (66%)	18674 (97%)	577 (3%)	37	57

All (577) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	UA	278	ILE
1	UA	377	THR
1	UA	450	ILE
2	UB	613	PRO
2	UB	697	THR
2	UB	828	ASN
4	UD	83	VAL
4	UD	162	ASN
4	UD	278	ASP
4	UD	507	VAL
4	UD	689	VAL
6	UG	141	THR
6	UG	275	ILE
6	UG	356	THR
6	UG	407	LEU
6	UG	433	VAL
7	UJ	1617	ILE
8	UK	87	VAL
9	UL	16	VAL
9	UL	469	LEU
10	UM	102	THR
10	UM	149	VAL
10	UM	523	ASP
11	UN	300	VAL
12	UO	75	VAL
12	UO	125	VAL
12	UO	169	VAL
12	UO	299	VAL
13	UQ	378	VAL
13	UQ	403	VAL
13	UQ	537	THR
13	UQ	563	THR

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Mol	Chain	Res	Type
14	UR	357	VAL
15	UU	67	VAL
15	UU	104	VAL
15	UU	276	VAL
15	UU	354	THR
16	UX	37	VAL
16	UX	58	VAL
17	UZ	56	THR
17	UZ	65	THR
18	CA	292	LEU
19	CC	21	VAL
20	CD	417	VAL
21	CF	80	VAL
21	CF	101	VAL
22	CG	238	ASN
22	CG	504	ILE
22	CG	581	VAL
23	CH	157	VAL
23	CH	351	LEU
23	CH	406	VAL
24	CI	228	VAL
24	CI	352	VAL
24	CI	815	VAL
25	CJ	158	VAL
25	CJ	162	VAL
26	CK	148	THR
26	CK	229	THR
28	CM	306	THR
29	CN	206	VAL
29	CO	39	VAL
32	CR	2	THR
32	CR	3	VAL
32	CR	5	LYS
32	CR	7	VAL
32	CR	9	SER
32	CR	14	LEU
32	CR	19	LEU
32	CR	22	LYS
32	CR	25	SER
32	CR	26	PHE
32	CR	30	VAL
32	CR	36	GLU

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Mol	Chain	Res	Type
32	CR	38	ILE
32	CR	41	LEU
32	CR	46	SER
32	CR	47	SER
32	CR	49	ASP
32	CR	51	ARG
32	CR	55	SER
32	CR	68	THR
32	CR	69	SER
32	CR	70	HIS
32	CR	72	LYS
32	CR	75	GLU
32	CR	80	LYS
32	CR	82	ILE
32	CR	83	LYS
32	CR	84	ARG
32	CR	87	ARG
32	CR	88	GLU
32	CR	93	ASP
32	CR	96	GLU
32	CR	97	LEU
32	CR	99	ILE
32	CR	101	LEU
32	CR	103	ASP
32	CR	104	ILE
32	CR	105	ARG
32	CR	107	CYS
32	CR	114	LYS
32	CR	115	ILE
32	CR	122	MET
32	CR	124	ILE
32	CR	132	THR
32	CR	134	ASN
32	CR	136	LEU
32	CR	149	VAL
32	CR	150	VAL
32	CR	151	LEU
32	CR	152	LEU
32	CR	154	LYS
32	CR	156	MET
32	CR	162	LEU
32	CR	167	MET

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Mol	Chain	Res	Type
32	CR	181	VAL
32	CR	182	ILE
32	CR	187	GLU
32	CR	190	LEU
32	CR	195	SER
32	CR	196	CYS
32	CR	197	GLU
32	CR	199	CYS
32	CR	201	VAL
32	CR	202	ILE
32	CR	206	LEU
32	CR	208	VAL
32	CR	215	LYS
32	CR	220	LEU
32	CR	249	ILE
32	CR	253	ILE
32	CR	255	LEU
32	CR	257	ARG
32	CR	259	VAL
32	CR	265	LEU
32	CR	266	LEU
32	CR	272	ILE
32	CR	277	LEU
32	CR	280	THR
32	CR	282	THR
32	CR	283	LEU
32	CR	291	LYS
32	CR	297	VAL
32	CR	299	ILE
32	CR	308	SER
32	CR	310	ILE
32	CR	313	THR
32	CR	314	SER
32	CR	369	ILE
32	CR	373	ARG
32	CR	375	GLN
32	CR	376	ASP
32	CR	382	GLN
32	CR	389	ASP
32	CR	390	GLU
32	CR	394	ILE
32	CR	396	LEU

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Mol	Chain	Res	Type
32	CR	398	LEU
32	CR	401	LYS
32	CR	403	MET
32	CR	410	MET
32	CR	415	SER
32	CR	423	SER
32	CR	429	ILE
32	CR	430	LYS
32	CR	431	GLN
32	CR	432	LEU
32	CR	469	LEU
32	CR	470	LYS
32	CR	471	GLU
32	CR	473	THR
32	CR	474	LEU
32	CR	475	SER
32	CR	488	LYS
32	CR	499	THR
32	CR	517	GLU
32	CR	519	LEU
32	CR	525	THR
32	CR	526	LEU
32	CR	534	GLU
32	CR	537	LEU
32	CR	540	MET
32	CR	541	VAL
32	CR	545	VAL
32	CR	547	SER
32	CR	549	TYR
32	CR	550	LYS
32	CR	552	SER
32	CR	566	GLU
32	CR	569	VAL
32	CR	571	THR
32	CR	574	ILE
32	CR	575	GLN
32	CR	576	GLU
32	CR	579	LEU
32	CR	581	GLU
32	CR	586	ILE
32	CR	588	VAL
32	CR	589	SER

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Mol	Chain	Res	Type
32	CR	593	LYS
32	CR	595	SER
32	CR	614	ILE
32	CR	617	LEU
32	CR	619	SER
32	CR	624	ASP
32	CR	625	ASP
32	CR	631	SER
32	CR	634	ARG
32	CR	646	SER
32	CR	647	MET
32	CR	652	LYS
32	CR	654	LEU
32	CR	655	GLN
32	CR	657	LEU
32	CR	658	VAL
32	CR	659	ASP
32	CR	662	GLU
32	CR	705	LEU
32	CR	711	LYS
32	CR	713	SER
32	CR	719	LYS
32	CR	720	LEU
32	CR	721	ASP
32	CR	729	LEU
32	CR	731	GLN
32	CR	732	GLN
32	CR	738	LYS
32	CR	743	VAL
32	CR	747	LEU
32	CR	755	THR
32	CR	760	CYS
32	CR	761	VAL
32	CR	763	ILE
32	CR	767	GLN
32	CR	781	ASP
32	CR	784	LYS
32	CR	790	LEU
32	CR	799	SER
32	CR	803	LEU
32	CR	804	THR
32	CR	806	GLU

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Mol	Chain	Res	Type
32	CR	818	SER
32	CR	824	LEU
32	CR	825	THR
32	CR	829	LEU
32	CR	830	ASP
32	CR	831	GLN
32	CR	839	LYS
32	CR	841	LEU
32	CR	842	GLU
32	CR	843	SER
32	CR	846	ASN
32	CR	860	THR
32	CR	861	ILE
32	CR	864	LEU
32	CR	870	LEU
32	CR	872	GLU
32	CR	879	LEU
32	CR	885	LEU
32	CR	887	LEU
32	CR	897	LEU
32	CR	899	THR
32	CR	900	GLU
32	CR	901	LEU
32	CR	906	SER
32	CR	907	GLN
32	CR	911	ILE
32	CR	914	LYS
32	CR	917	ARG
32	CR	919	VAL
32	CS	2	THR
32	CS	3	VAL
32	CS	5	LYS
32	CS	7	VAL
32	CS	9	SER
32	CS	14	LEU
32	CS	19	LEU
32	CS	22	LYS
32	CS	25	SER
32	CS	26	PHE
32	CS	30	VAL
32	CS	36	GLU
32	CS	38	ILE

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Mol	Chain	Res	Type
32	CS	41	LEU
32	CS	46	SER
32	CS	47	SER
32	CS	49	ASP
32	CS	51	ARG
32	CS	55	SER
32	CS	68	THR
32	CS	69	SER
32	CS	70	HIS
32	CS	72	LYS
32	CS	75	GLU
32	CS	80	LYS
32	CS	82	ILE
32	CS	83	LYS
32	CS	84	ARG
32	CS	87	ARG
32	CS	88	GLU
32	CS	93	ASP
32	CS	96	GLU
32	CS	97	LEU
32	CS	99	ILE
32	CS	101	LEU
32	CS	103	ASP
32	CS	104	ILE
32	CS	105	ARG
32	CS	107	CYS
32	CS	114	LYS
32	CS	115	ILE
32	CS	122	MET
32	CS	124	ILE
32	CS	132	THR
32	CS	134	ASN
32	CS	136	LEU
32	CS	149	VAL
32	CS	150	VAL
32	CS	151	LEU
32	CS	152	LEU
32	CS	154	LYS
32	CS	156	MET
32	CS	162	LEU
32	CS	167	MET
32	CS	181	VAL

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Mol	Chain	Res	Type
32	CS	182	ILE
32	CS	187	GLU
32	CS	190	LEU
32	CS	195	SER
32	CS	196	CYS
32	CS	197	GLU
32	CS	199	CYS
32	CS	201	VAL
32	CS	202	ILE
32	CS	206	LEU
32	CS	208	VAL
32	CS	215	LYS
32	CS	220	LEU
32	CS	249	ILE
32	CS	253	ILE
32	CS	255	LEU
32	CS	257	ARG
32	CS	259	VAL
32	CS	265	LEU
32	CS	266	LEU
32	CS	272	ILE
32	CS	277	LEU
32	CS	280	THR
32	CS	282	THR
32	CS	283	LEU
32	CS	291	LYS
32	CS	297	VAL
32	CS	299	ILE
32	CS	308	SER
32	CS	310	ILE
32	CS	313	THR
32	CS	314	SER
32	CS	369	ILE
32	CS	373	ARG
32	CS	375	GLN
32	CS	376	ASP
32	CS	382	GLN
32	CS	389	ASP
32	CS	390	GLU
32	CS	394	ILE
32	CS	396	LEU
32	CS	398	LEU

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Mol	Chain	Res	Type
32	CS	401	LYS
32	CS	403	MET
32	CS	410	MET
32	CS	415	SER
32	CS	423	SER
32	CS	429	ILE
32	CS	430	LYS
32	CS	431	GLN
32	CS	432	LEU
32	CS	469	LEU
32	CS	470	LYS
32	CS	471	GLU
32	CS	473	THR
32	CS	474	LEU
32	CS	475	SER
32	CS	488	LYS
32	CS	499	THR
32	CS	517	GLU
32	CS	519	LEU
32	CS	525	THR
32	CS	526	LEU
32	CS	534	GLU
32	CS	537	LEU
32	CS	540	MET
32	CS	541	VAL
32	CS	545	VAL
32	CS	547	SER
32	CS	549	TYR
32	CS	550	LYS
32	CS	552	SER
32	CS	566	GLU
32	CS	569	VAL
32	CS	571	THR
32	CS	574	ILE
32	CS	575	GLN
32	CS	576	GLU
32	CS	579	LEU
32	CS	581	GLU
32	CS	586	ILE
32	CS	588	VAL
32	CS	589	SER
32	CS	593	LYS

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Mol	Chain	Res	Type
32	CS	595	SER
32	CS	614	ILE
32	CS	617	LEU
32	CS	619	SER
32	CS	624	ASP
32	CS	625	ASP
32	CS	631	SER
32	CS	634	ARG
32	CS	646	SER
32	CS	647	MET
32	CS	652	LYS
32	CS	654	LEU
32	CS	655	GLN
32	CS	657	LEU
32	CS	658	VAL
32	CS	659	ASP
32	CS	662	GLU
32	CS	705	LEU
32	CS	711	LYS
32	CS	713	SER
32	CS	719	LYS
32	CS	720	LEU
32	CS	721	ASP
32	CS	729	LEU
32	CS	731	GLN
32	CS	732	GLN
32	CS	738	LYS
32	CS	743	VAL
32	CS	747	LEU
32	CS	755	THR
32	CS	760	CYS
32	CS	761	VAL
32	CS	763	ILE
32	CS	767	GLN
32	CS	781	ASP
32	CS	784	LYS
32	CS	790	LEU
32	CS	799	SER
32	CS	803	LEU
32	CS	804	THR
32	CS	806	GLU
32	CS	818	SER

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Mol	Chain	Res	Type
32	CS	824	LEU
32	CS	825	THR
32	CS	829	LEU
32	CS	830	ASP
32	CS	831	GLN
32	CS	839	LYS
32	CS	841	LEU
32	CS	842	GLU
32	CS	843	SER
32	CS	846	ASN
32	CS	860	THR
32	CS	861	ILE
32	CS	864	LEU
32	CS	870	LEU
32	CS	872	GLU
32	CS	879	LEU
32	CS	885	LEU
32	CS	887	LEU
32	CS	897	LEU
32	CS	899	THR
32	CS	900	GLU
32	CS	901	LEU
32	CS	906	SER
32	CS	907	GLN
32	CS	911	ILE
32	CS	914	LYS
32	CS	917	ARG
32	CS	919	VAL
34	Ca	88	VAL
35	Cb	195	ILE
36	Cc	27	VAL
36	Cc	85	MET
38	Ce	35	THR
38	Ce	172	VAL
44	Ck	49	THR
45	Cm	25	VAL
45	Cm	47	ILE
47	Co	400	THR
52	UV	993	VAL
52	UV	1067	THR
53	CV	56	VAL
53	CV	201	LEU

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Mol	Chain	Res	Type
54	CW	95	THR
55	UT	776	VAL
55	UT	1218	LYS
55	UT	1479	ILE
55	UT	1732	LEU
57	UE	153	LEU
57	UE	159	GLN
57	UE	166	SER
57	UE	167	ASP
57	UE	168	LEU
57	UE	169	LEU
57	UE	173	LEU
57	UE	174	GLN
57	UE	175	THR
57	UE	179	LEU
57	UE	180	ILE
57	UE	184	THR
57	UE	188	MET
57	UE	189	ASP
57	UE	190	SER
57	UE	191	SER
57	UE	195	THR
57	UE	197	LEU
57	UE	198	SER
57	UE	204	MET
57	UE	214	LEU
57	UE	219	GLN
57	UE	222	LEU
57	UE	231	THR
57	UE	232	GLN
57	UE	236	ILE
57	UE	244	ARG
57	UE	245	VAL
57	UE	246	LEU
57	UE	249	ARG
57	UE	250	SER
57	UE	254	SER
57	UE	255	SER
57	UE	257	LEU
57	UE	274	LYS
57	UE	278	MET
59	Cl	22	VAL

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Mol	Chain	Res	Type
61	CY	254	VAL
61	CY	374	ARG
61	CY	376	THR
61	CY	377	ARG
61	CY	379	LYS
57	UI	153	LEU
57	UI	159	GLN
57	UI	166	SER
57	UI	167	ASP
57	UI	168	LEU
57	UI	169	LEU
57	UI	173	LEU
57	UI	174	GLN
57	UI	175	THR
57	UI	179	LEU
57	UI	180	ILE
57	UI	184	THR
57	UI	188	MET
57	UI	189	ASP
57	UI	190	SER
57	UI	191	SER
57	UI	195	THR
57	UI	197	LEU
57	UI	198	SER
57	UI	204	MET
57	UI	214	LEU
57	UI	219	GLN
57	UI	222	LEU
57	UI	231	THR
57	UI	232	GLN
57	UI	236	ILE
57	UI	244	ARG
57	UI	245	VAL
57	UI	246	LEU
57	UI	249	ARG
57	UI	250	SER
57	UI	254	SER
57	UI	255	SER
57	UI	257	LEU
57	UI	274	LYS
57	UI	278	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (328)

such sidechains are listed below:

Mol	Chain	Res	Type
1	UA	207	GLN
1	UA	336	GLN
1	UA	353	GLN
1	UA	381	HIS
2	UB	22	GLN
2	UB	27	GLN
2	UB	59	GLN
2	UB	333	GLN
2	UB	525	ASN
2	UB	533	HIS
2	UB	542	GLN
2	UB	581	HIS
2	UB	645	GLN
2	UB	663	ASN
2	UB	765	ASN
4	UD	508	HIS
4	UD	697	GLN
4	UD	750	HIS
5	UF	154	ASN
5	UF	319	HIS
6	UG	95	ASN
6	UG	114	GLN
6	UG	175	GLN
6	UG	206	ASN
6	UG	221	HIS
6	UG	267	ASN
6	UG	270	ASN
6	UG	322	ASN
6	UG	391	GLN
7	UJ	8	GLN
7	UJ	51	GLN
7	UJ	103	HIS
7	UJ	158	GLN
7	UJ	243	ASN
7	UJ	318	HIS
7	UJ	379	ASN
7	UJ	443	GLN
7	UJ	700	HIS
7	UJ	731	ASN
7	UJ	1482	HIS
7	UJ	1501	GLN
7	UJ	1645	ASN

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Mol	Chain	Res	Type
7	UJ	1782	ASN
8	UK	13	HIS
8	UK	23	GLN
8	UK	213	GLN
9	UL	145	GLN
9	UL	215	GLN
9	UL	359	GLN
9	UL	398	ASN
9	UL	446	ASN
9	UL	504	ASN
9	UL	517	HIS
9	UL	558	GLN
9	UL	630	ASN
9	UL	823	ASN
9	UL	870	ASN
10	UM	42	ASN
10	UM	203	GLN
10	UM	386	GLN
10	UM	394	ASN
10	UM	455	ASN
10	UM	478	HIS
10	UM	548	ASN
10	UM	643	HIS
10	UM	741	GLN
10	UM	743	GLN
10	UM	747	ASN
11	UN	306	GLN
11	UN	345	GLN
11	UN	872	ASN
11	UN	879	ASN
12	UO	46	HIS
12	UO	103	HIS
12	UO	143	HIS
12	UO	271	ASN
12	UO	272	HIS
12	UO	284	GLN
12	UO	306	ASN
12	UO	329	HIS
12	UO	333	HIS
12	UO	339	GLN
12	UO	391	ASN
12	UO	462	HIS

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Mol	Chain	Res	Type
12	UO	531	ASN
13	UQ	102	HIS
13	UQ	112	GLN
13	UQ	152	ASN
13	UQ	235	HIS
13	UQ	310	GLN
13	UQ	383	GLN
13	UQ	418	ASN
13	UQ	520	ASN
13	UQ	594	GLN
13	UQ	606	HIS
13	UQ	783	ASN
13	UQ	784	HIS
13	UQ	815	ASN
14	UR	364	GLN
14	UR	399	ASN
14	UR	411	GLN
14	UR	579	ASN
15	UU	197	ASN
15	UU	328	ASN
15	UU	485	GLN
15	UU	577	GLN
15	UU	621	HIS
15	UU	774	GLN
15	UU	963	ASN
15	UU	973	HIS
15	UU	1002	HIS
16	UX	39	GLN
16	UX	141	HIS
17	UZ	79	GLN
17	UZ	87	HIS
17	UZ	240	ASN
18	CA	78	HIS
18	CA	277	GLN
18	CB	78	HIS
18	CB	235	GLN
18	CB	277	GLN
18	CB	289	GLN
18	CB	299	HIS
19	CC	22	HIS
19	CC	67	ASN
19	CC	85	ASN

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Mol	Chain	Res	Type
19	CC	176	HIS
19	CC	264	GLN
19	CC	321	HIS
20	CD	125	HIS
20	CD	167	HIS
20	CD	219	ASN
20	CD	256	ASN
20	CD	263	GLN
20	CD	422	ASN
21	CE	27	GLN
21	CE	30	HIS
21	CF	19	GLN
21	CF	27	GLN
22	CG	165	GLN
22	CG	198	GLN
22	CG	243	GLN
22	CG	245	HIS
22	CG	302	GLN
22	CG	330	GLN
22	CG	430	HIS
22	CG	436	HIS
22	CG	561	ASN
23	CH	49	HIS
23	CH	100	HIS
23	CH	207	HIS
23	CH	231	HIS
23	CH	251	HIS
24	CI	121	ASN
24	CI	155	ASN
24	CI	282	GLN
24	CI	749	GLN
24	CI	853	ASN
24	CI	961	GLN
24	CI	1053	ASN
24	CI	1077	GLN
25	CJ	8	HIS
26	CK	48	ASN
26	CK	159	HIS
26	CK	210	HIS
26	CK	225	ASN
26	CK	295	ASN
28	CM	41	GLN

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Mol	Chain	Res	Type
28	CM	230	ASN
28	CM	248	ASN
28	CM	282	HIS
28	CM	327	GLN
29	CN	23	GLN
29	CN	94	GLN
29	CN	111	GLN
29	CN	154	ASN
29	CO	111	GLN
31	CQ	90	HIS
31	CQ	137	GLN
31	CQ	217	HIS
31	CQ	247	ASN
32	CR	70	HIS
32	CR	90	ASN
32	CR	126	GLN
32	CR	170	HIS
32	CR	186	ASN
32	CR	309	ASN
32	CR	370	GLN
32	CR	491	ASN
32	CR	522	ASN
32	CR	620	GLN
32	CR	641	ASN
32	CR	783	HIS
32	CR	810	ASN
32	CR	819	ASN
32	CR	846	ASN
32	CR	863	GLN
32	CR	881	GLN
32	CS	70	HIS
32	CS	126	GLN
32	CS	170	HIS
32	CS	186	ASN
32	CS	309	ASN
32	CS	370	GLN
32	CS	491	ASN
32	CS	522	ASN
32	CS	641	ASN
32	CS	810	ASN
32	CS	819	ASN
32	CS	846	ASN

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Mol	Chain	Res	Type
32	CS	863	GLN
32	CS	881	GLN
33	CT	92	ASN
33	CT	179	HIS
34	Ca	149	GLN
34	Ca	183	GLN
35	Cb	36	HIS
35	Cb	57	ASN
35	Cb	142	HIS
35	Cb	157	ASN
35	Cb	188	ASN
36	Cc	87	HIS
36	Cc	91	ASN
36	Cc	114	GLN
36	Cc	118	GLN
37	Cd	116	GLN
38	Ce	17	GLN
39	Cf	52	ASN
40	Cg	121	HIS
40	Cg	140	ASN
42	Ci	42	HIS
42	Ci	102	ASN
43	Cj	83	GLN
43	Cj	100	HIS
44	Ck	16	GLN
44	Ck	86	HIS
44	Ck	103	ASN
44	Ck	115	HIS
45	Cm	8	HIS
45	Cm	42	GLN
46	Cn	48	HIS
46	Cn	79	ASN
46	Cn	94	ASN
47	Co	353	GLN
47	Co	360	HIS
47	Co	385	GLN
47	Co	394	GLN
49	CU	169	HIS
52	UV	106	GLN
52	UV	119	GLN
52	UV	138	HIS
52	UV	192	ASN

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Mol	Chain	Res	Type
52	UV	241	HIS
52	UV	415	HIS
52	UV	477	GLN
52	UV	524	GLN
52	UV	617	GLN
52	UV	667	HIS
52	UV	669	ASN
52	UV	677	HIS
52	UV	752	ASN
52	UV	799	GLN
52	UV	846	HIS
52	UV	949	HIS
52	UV	1103	ASN
53	CV	31	HIS
53	CV	103	GLN
53	CV	199	ASN
54	CW	5	ASN
54	CW	43	ASN
54	CW	78	GLN
54	CW	94	HIS
54	CW	114	HIS
54	CW	130	HIS
54	CW	319	GLN
54	CW	361	ASN
55	UT	140	HIS
55	UT	202	HIS
55	UT	311	HIS
55	UT	366	GLN
55	UT	377	GLN
55	UT	389	HIS
55	UT	393	ASN
55	UT	414	GLN
55	UT	456	HIS
55	UT	462	ASN
55	UT	495	GLN
55	UT	709	HIS
55	UT	792	ASN
55	UT	793	HIS
55	UT	816	GLN
55	UT	981	ASN
55	UT	1074	ASN
55	UT	1272	HIS

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Mol	Chain	Res	Type
55	UT	1301	HIS
55	UT	1314	ASN
55	UT	1315	GLN
55	UT	1366	GLN
55	UT	1696	ASN
55	UT	1729	ASN
55	UT	1741	HIS
55	UT	2026	ASN
55	UT	2180	ASN
56	UH	477	ASN
56	UH	702	HIS
56	UH	740	ASN
56	UH	774	GLN
56	UH	814	GLN
56	UH	875	ASN
56	UH	910	HIS
56	UH	927	GLN
57	UE	159	GLN
57	UE	174	GLN
57	UE	205	HIS
57	UE	219	GLN
57	UE	269	GLN
58	US	137	HIS
58	US	151	GLN
58	US	152	HIS
58	US	184	HIS
58	US	222	ASN
58	US	225	ASN
58	US	237	ASN
58	US	261	HIS
58	US	470	ASN
59	C1	12	ASN
60	CX	235	GLN
60	CX	423	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
50	C1	1550/2352 (65%)	482 (31%)	31 (2%)
51	C2	226/230 (98%)	67 (29%)	3 (1%)
All	All	1776/2582 (68%)	549 (30%)	34 (1%)

All (549) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
50	C1	4	G
50	C1	5	G
50	C1	7	A
50	C1	13	G
50	C1	14	G
50	C1	15	G
50	C1	16	U
50	C1	17	C
50	C1	18	G
50	C1	19	C
50	C1	23	G
50	C1	26	C
50	C1	40	A
50	C1	41	G
50	C1	42	C
50	C1	47	G
50	C1	49	G
50	C1	56	C
50	C1	61	G
50	C1	66	G
50	C1	68	U
50	C1	71	A
50	C1	72	U
50	C1	73	A
50	C1	74	C
50	C1	77	C
50	C1	89	G
50	C1	90	A
50	C1	93	G
50	C1	94	G
50	C1	96	C
50	C1	97	C
50	C1	104	U
50	C1	105	A
50	C1	119	G
50	C1	121	G
50	C1	126	C
50	C1	127	C
50	C1	128	G
50	C1	134	C
50	C1	136	C
50	C1	150	C

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Mol	Chain	Res	Type
50	C1	152	G
50	C1	154	C
50	C1	155	G
50	C1	158	C
50	C1	159	C
50	C1	160	C
50	C1	161	A
50	C1	162	G
50	C1	166	A
50	C1	169	G
50	C1	171	G
50	C1	176	G
50	C1	182	C
50	C1	183	C
50	C1	193	U
50	C1	201	G
50	C1	202	A
50	C1	203	C
50	C1	205	C
50	C1	206	C
50	C1	207	U
50	C1	209	A
50	C1	210	G
50	C1	216	A
50	C1	221	A
50	C1	224	C
50	C1	234	G
50	C1	242	U
50	C1	243	U
50	C1	244	G
50	C1	257	G
50	C1	260	U
50	C1	265	G
50	C1	266	C
50	C1	267	U
50	C1	268	G
50	C1	269	G
50	C1	273	G
50	C1	276	C
50	C1	277	U
50	C1	278	A
50	C1	281	U

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Mol	Chain	Res	Type
50	C1	282	C
50	C1	283	A
50	C1	285	A
50	C1	291	C
50	C1	292	G
50	C1	297	U
50	C1	308	U
50	C1	310	G
50	C1	312	G
50	C1	319	U
50	C1	320	A
50	C1	322	C
50	C1	323	G
50	C1	333	C
50	C1	334	U
50	C1	346	C
50	C1	347	C
50	C1	349	C
50	C1	351	U
50	C1	352	G
50	C1	353	G
50	C1	362	G
50	C1	372	U
50	C1	376	G
50	C1	382	U
50	C1	383	G
50	C1	384	C
50	C1	386	G
50	C1	398	C
50	C1	402	U
50	C1	403	G
50	C1	404	C
50	C1	416	U
50	C1	425	C
50	C1	427	G
50	C1	435	A
50	C1	436	A
50	C1	440	G
50	C1	441	A
50	C1	443	G
50	C1	454	C
50	C1	458	A

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Mol	Chain	Res	Type
50	C1	459	C
50	C1	468	C
50	C1	469	G
50	C1	473	G
50	C1	474	A
50	C1	475	C
50	C1	484	G
50	C1	491	G
50	C1	492	C
50	C1	499	G
50	C1	500	C
50	C1	501	U
50	C1	502	A
50	C1	504	C
50	C1	581	C
50	C1	582	G
50	C1	583	A
50	C1	584	U
50	C1	585	A
50	C1	586	G
50	C1	587	U
50	C1	594	G
50	C1	595	U
50	C1	609	A
50	C1	610	G
50	C1	613	A
50	C1	614	U
50	C1	621	G
50	C1	638	A
50	C1	646	C
50	C1	650	G
50	C1	652	A
50	C1	653	U
50	C1	655	A
50	C1	659	A
50	C1	660	U
50	C1	661	U
50	C1	662	A
50	C1	663	U
50	C1	664	A
50	C1	667	G
50	C1	678	A

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Mol	Chain	Res	Type
50	C1	679	A
50	C1	680	U
50	C1	682	G
50	C1	683	C
50	C1	685	C
50	C1	686	A
50	C1	687	U
50	C1	688	U
50	C1	689	A
50	C1	690	A
50	C1	691	A
50	C1	692	U
50	C1	693	C
50	C1	697	U
50	C1	700	C
50	C1	702	U
50	C1	710	A
50	C1	711	U
50	C1	713	G
50	C1	715	A
50	C1	719	U
50	C1	720	A
50	C1	721	C
50	C1	722	U
50	C1	723	A
50	C1	725	A
50	C1	726	U
50	C1	728	G
50	C1	729	A
50	C1	730	U
50	C1	740	A
50	C1	742	U
50	C1	743	U
50	C1	744	C
50	C1	745	U
50	C1	757	A
50	C1	758	U
50	C1	760	C
50	C1	762	G
50	C1	763	A
50	C1	764	A
50	C1	769	C

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Mol	Chain	Res	Type
50	C1	770	C
50	C1	771	G
50	C1	772	A
50	C1	773	C
50	C1	774	U
50	C1	775	U
50	C1	776	C
50	C1	777	G
50	C1	778	G
50	C1	782	G
50	C1	786	G
50	C1	797	A
50	C1	798	U
50	C1	802	A
50	C1	803	A
50	C1	804	A
50	C1	806	C
50	C1	807	A
50	C1	808	A
50	C1	810	G
50	C1	811	C
50	C1	816	C
50	C1	830	G
50	C1	833	U
50	C1	841	A
50	C1	845	C
50	C1	849	A
50	C1	850	A
50	C1	851	U
50	C1	855	A
50	C1	856	C
50	C1	858	G
50	C1	860	C
50	C1	861	U
50	C1	862	U
50	C1	863	G
50	C1	879	A
50	C1	886	U
50	C1	889	C
50	C1	892	C
50	C1	893	C
50	C1	897	U

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Mol	Chain	Res	Type
50	C1	900	A
50	C1	903	U
50	C1	904	U
50	C1	907	A
50	C1	910	G
50	C1	913	G
50	C1	921	G
50	C1	922	C
50	C1	925	G
50	C1	930	G
50	C1	934	A
50	C1	935	C
50	C1	936	A
50	C1	942	U
50	C1	943	A
50	C1	944	A
50	C1	953	U
50	C1	971	A
50	C1	972	A
50	C1	984	A
50	C1	985	A
50	C1	986	C
50	C1	987	G
50	C1	988	G
50	C1	989	C
50	C1	1000	A
50	C1	1001	A
50	C1	1002	G
50	C1	1005	A
50	C1	1007	G
50	C1	1017	C
50	C1	1018	G
50	C1	1021	A
50	C1	1022	A
50	C1	1023	U
50	C1	1024	U
50	C1	1025	A
50	C1	1028	C
50	C1	1029	A
50	C1	1030	A
50	C1	1035	G
50	C1	1036	A

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Mol	Chain	Res	Type
50	C1	1037	C
50	C1	1038	A
50	C1	1039	C
50	C1	1043	G
50	C1	1044	A
50	C1	1045	G
50	C1	1054	A
50	C1	1059	A
50	C1	1061	A
50	C1	1064	G
50	C1	1069	A
50	C1	1076	U
50	C1	1077	U
50	C1	1078	U
50	C1	1079	C
50	C1	1085	U
50	C1	1086	U
50	C1	1088	U
50	C1	1089	A
50	C1	1094	G
50	C1	1095	A
50	C1	1097	U
50	C1	1098	G
50	C1	1099	A
50	C1	1103	C
50	C1	1104	A
50	C1	1109	A
50	C1	1116	U
50	C1	1120	C
50	C1	1122	A
50	C1	1123	G
50	C1	1124	G
50	C1	1125	A
50	C1	1126	A
50	C1	1127	C
50	C1	1128	A
50	C1	1129	A
50	C1	1141	G
50	C1	1147	U
50	C1	1148	G
50	C1	1150	C
50	C1	1154	A

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Mol	Chain	Res	Type
50	C1	1156	C
50	C1	1157	C
50	C1	1158	G
50	C1	1163	A
50	C1	1164	A
50	C1	1166	U
50	C1	1167	C
50	C1	1168	C
50	C1	1169	A
50	C1	1170	G
50	C1	1177	U
50	C1	1178	A
50	C1	1179	G
50	C1	1186	U
50	C1	1218	G
50	C1	1219	A
50	C1	1222	C
50	C1	1223	U
50	C1	1251	C
50	C1	1258	A
50	C1	1264	U
50	C1	1265	G
50	C1	1444	A
50	C1	1447	A
50	C1	1448	A
50	C1	1449	U
50	C1	1450	A
50	C1	1452	G
50	C1	1469	A
50	C1	1471	U
50	C1	1481	U
50	C1	1482	C
50	C1	1483	A
50	C1	1484	G
50	C1	1486	G
50	C1	1487	G
50	C1	1489	G
50	C1	1491	A
50	C1	1497	U
50	C1	1498	G
50	C1	1499	G
50	C1	1518	A

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Mol	Chain	Res	Type
50	C1	1519	C
50	C1	1520	U
50	C1	1525	A
50	C1	1527	G
50	C1	1529	A
50	C1	1536	A
50	C1	1544	U
50	C1	1545	U
50	C1	1546	U
50	C1	1549	U
50	C1	1550	U
50	C1	1551	A
50	C1	1554	C
50	C1	1555	A
50	C1	1613	C
50	C1	1614	U
50	C1	1624	A
50	C1	1625	G
50	C1	1636	G
50	C1	1637	C
50	C1	1639	U
50	C1	1642	A
50	C1	1643	U
50	C1	1644	U
50	C1	1645	U
50	C1	1646	U
50	C1	1647	U
50	C1	1665	A
50	C1	1667	G
50	C1	1668	A
50	C1	1670	A
50	C1	1701	U
50	C1	1709	A
50	C1	1710	G
50	C1	1711	G
50	C1	1712	C
50	C1	1713	U
50	C1	1735	A
50	C1	1738	G
50	C1	1742	C
50	C1	1743	C
50	C1	1744	A

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Mol	Chain	Res	Type
50	C1	1751	G
50	C1	2047	G
50	C1	2054	A
50	C1	2055	C
50	C1	2056	U
50	C1	2071	G
50	C1	2072	U
50	C1	2073	A
50	C1	2074	C
50	C1	2075	U
50	C1	2077	C
50	C1	2078	C
50	C1	2085	G
50	C1	2086	A
50	C1	2087	G
50	C1	2088	A
50	C1	2107	A
50	C1	2109	A
50	C1	2114	G
50	C1	2115	U
50	C1	2118	U
50	C1	2120	C
50	C1	2121	U
50	C1	2156	A
50	C1	2157	G
50	C1	2166	A
50	C1	2167	G
50	C1	2173	G
50	C1	2177	G
50	C1	2178	U
50	C1	2183	A
50	C1	2184	G
50	C1	2185	C
50	C1	2190	G
50	C1	2197	A
50	C1	2201	C
50	C1	2202	C
50	C1	2205	G
50	C1	2210	U
50	C1	2211	U
50	C1	2213	U
50	C1	2214	A

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Mol	Chain	Res	Type
50	C1	2215	C
50	C1	2216	A
50	C1	2220	C
50	C1	2222	C
50	C1	2223	C
50	C1	2227	C
50	C1	2234	A
50	C1	2238	A
50	C1	2328	G
50	C1	2329	A
50	C1	2330	G
50	C1	2351	G
50	C1	2358	U
50	C1	2362	U
50	C1	2363	G
50	C1	2364	A
50	C1	2365	A
50	C1	2366	C
50	C1	2373	A
50	C1	2374	G
51	C2	6	C
51	C2	8	A
51	C2	15	A
51	C2	23	A
51	C2	24	U
51	C2	29	A
51	C2	33	U
51	C2	36	U
51	C2	37	U
51	C2	39	U
51	C2	48	G
51	C2	57	A
51	C2	58	A
51	C2	62	A
51	C2	63	G
51	C2	82	U
51	C2	90	C
51	C2	91	G
51	C2	92	A
51	C2	95	U
51	C2	104	C
51	C2	111	G

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Mol	Chain	Res	Type
51	C2	124	U
51	C2	125	U
51	C2	126	U
51	C2	127	A
51	C2	128	C
51	C2	136	C
51	C2	140	C
51	C2	142	G
51	C2	145	A
51	C2	146	A
51	C2	147	G
51	C2	148	G
51	C2	153	G
51	C2	156	C
51	C2	160	U
51	C2	162	C
51	C2	163	C
51	C2	164	U
51	C2	165	C
51	C2	166	G
51	C2	167	U
51	C2	168	C
51	C2	170	C
51	C2	178	U
51	C2	179	A
51	C2	181	A
51	C2	182	G
51	C2	187	U
51	C2	188	G
51	C2	189	G
51	C2	190	C
51	C2	192	A
51	C2	198	U
51	C2	199	G
51	C2	200	U
51	C2	201	A
51	C2	244	G
51	C2	247	G
51	C2	250	G
51	C2	255	U
51	C2	256	G
51	C2	259	A

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Mol	Chain	Res	Type
51	C2	260	G
51	C2	261	U
51	C2	262	C

All (34) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
50	C1	89	G
50	C1	96	C
50	C1	135	A
50	C1	150	C
50	C1	205	C
50	C1	209	A
50	C1	277	U
50	C1	281	U
50	C1	424	U
50	C1	582	G
50	C1	593	G
50	C1	684	U
50	C1	771	G
50	C1	802	A
50	C1	906	G
50	C1	1001	A
50	C1	1017	C
50	C1	1068	C
50	C1	1077	U
50	C1	1085	U
50	C1	1087	G
50	C1	1163	A
50	C1	1485	A
50	C1	1638	G
50	C1	1712	C
50	C1	1734	G
50	C1	2054	A
50	C1	2077	C
50	C1	2156	A
50	C1	2177	G
50	C1	2219	C
51	C2	23	A
51	C2	35	G
51	C2	255	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](#)

Of 3 ligands modelled in this entry, 2 are monoatomic - leaving 1 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
65	GTP	CI	1201	-	33,34,34	1.01	3 (9%)	50,54,54	1.64	8 (16%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
65	GTP	CI	1201	-	-	4/22/38/38	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
65	CI	1201	GTP	C5-N7	-2.23	1.34	1.39
65	CI	1201	GTP	PA-O3A	2.13	1.61	1.59
65	CI	1201	GTP	C2-N3	2.11	1.38	1.33

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
65	CI	1201	GTP	C5-C4-N3	-5.15	120.19	128.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
65	CI	1201	GTP	C2-N3-C4	4.51	120.08	112.30
65	CI	1201	GTP	N9-C4-N3	3.48	132.91	125.95
65	CI	1201	GTP	C2-N1-C6	-3.33	119.08	125.11
65	CI	1201	GTP	C5-C6-N1	2.74	120.23	113.25
65	CI	1201	GTP	N9-C8-N7	-2.71	108.38	113.40
65	CI	1201	GTP	O6-C6-C5	-2.55	119.79	126.53
65	CI	1201	GTP	C8-N7-C5	2.40	108.54	104.26

There are no chirality outliers.

All (4) torsion outliers are listed below:

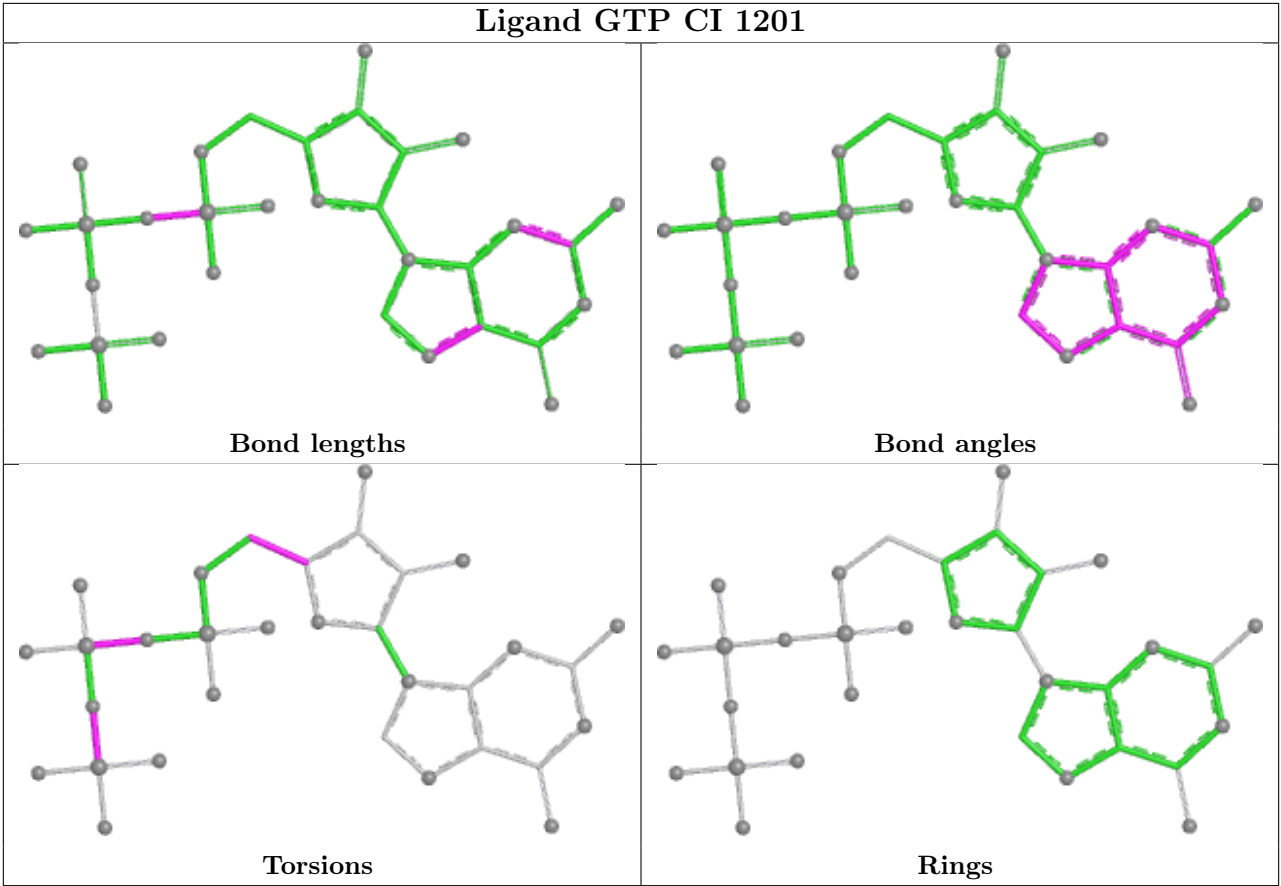
Mol	Chain	Res	Type	Atoms
65	CI	1201	GTP	PB-O3B-PG-O3G
65	CI	1201	GTP	PB-O3B-PG-O1G
65	CI	1201	GTP	PA-O3A-PB-O1B
65	CI	1201	GTP	O4'-C4'-C5'-O5'

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
65	CI	1201	GTP	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
51	C2	3

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	C2	206:G	O3'	240:C	P	19.22
1	C2	105:C	O3'	110:A	P	16.33
1	C2	119:C	O3'	123:A	P	11.75

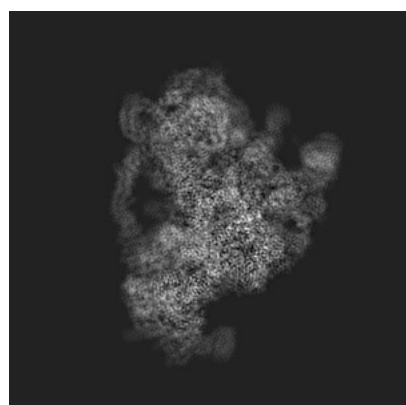
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-10053. These allow visual inspection of the internal detail of the map and identification of artifacts.

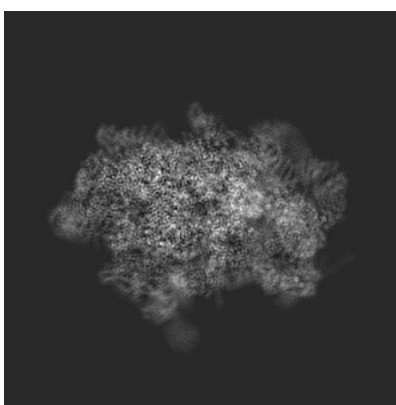
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

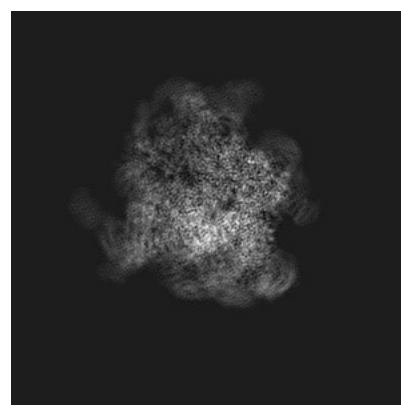
6.1.1 Primary map



X



Y

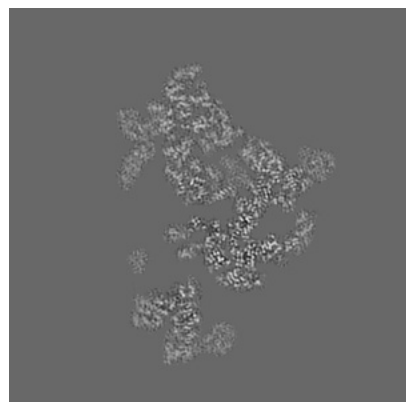


Z

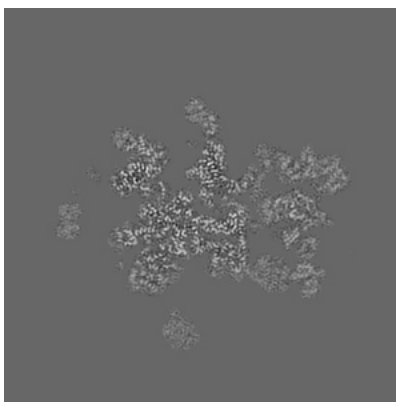
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

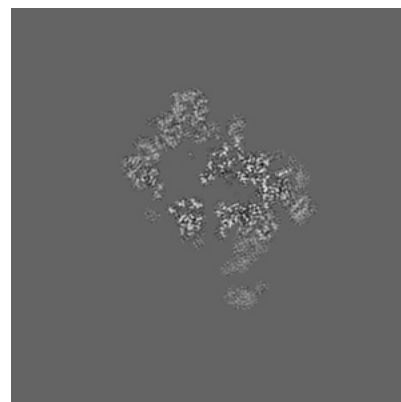
6.2.1 Primary map



X Index: 240



Y Index: 240

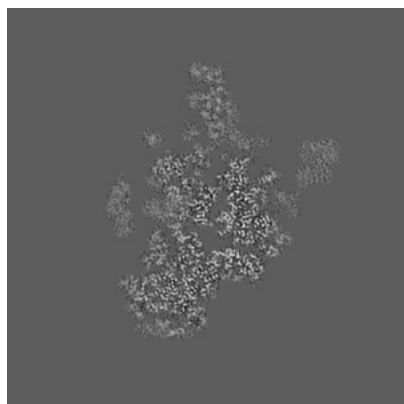


Z Index: 240

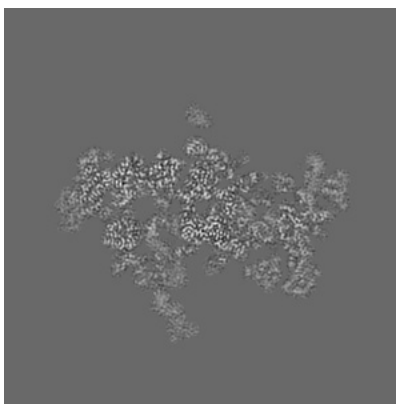
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

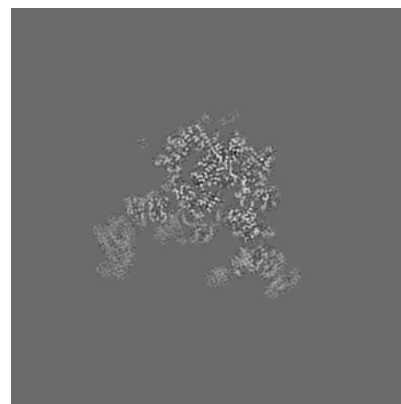
6.3.1 Primary map



X Index: 279



Y Index: 224

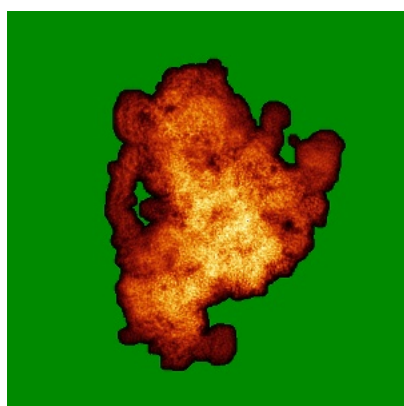


Z Index: 183

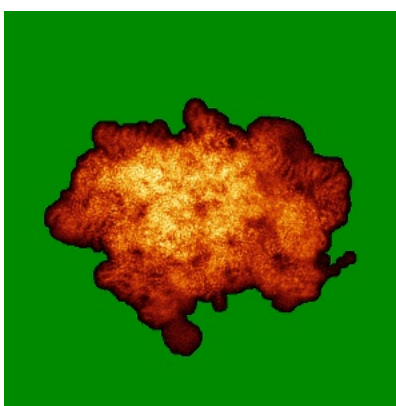
The images above show the largest variance slices of the map in three orthogonal directions.

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

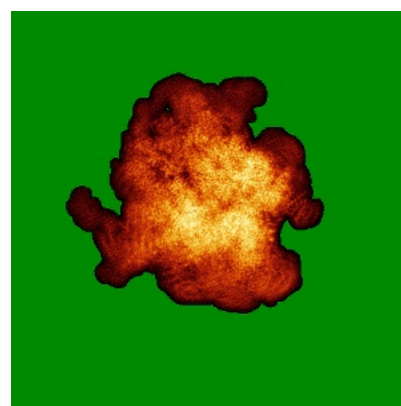
6.4.1 Primary map



X



Y

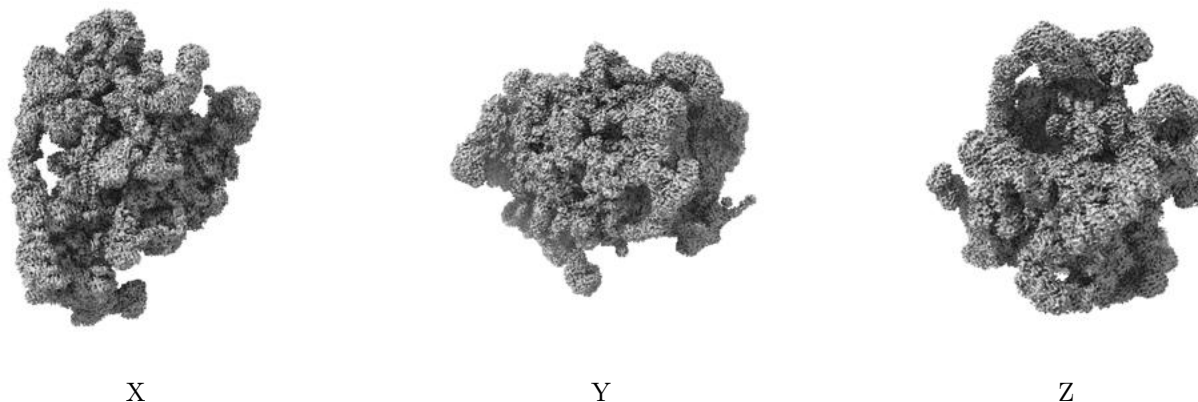


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.03. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

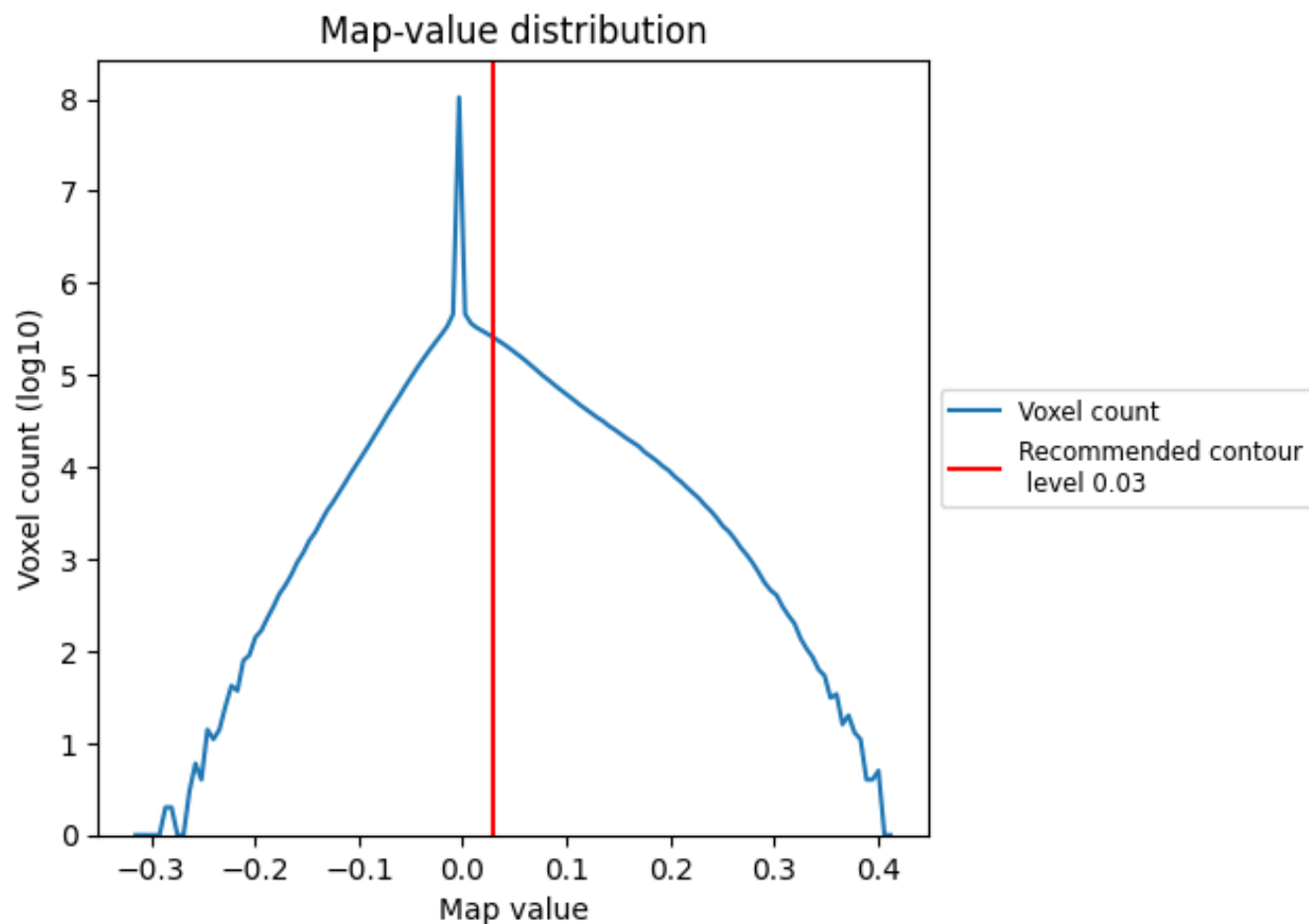
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

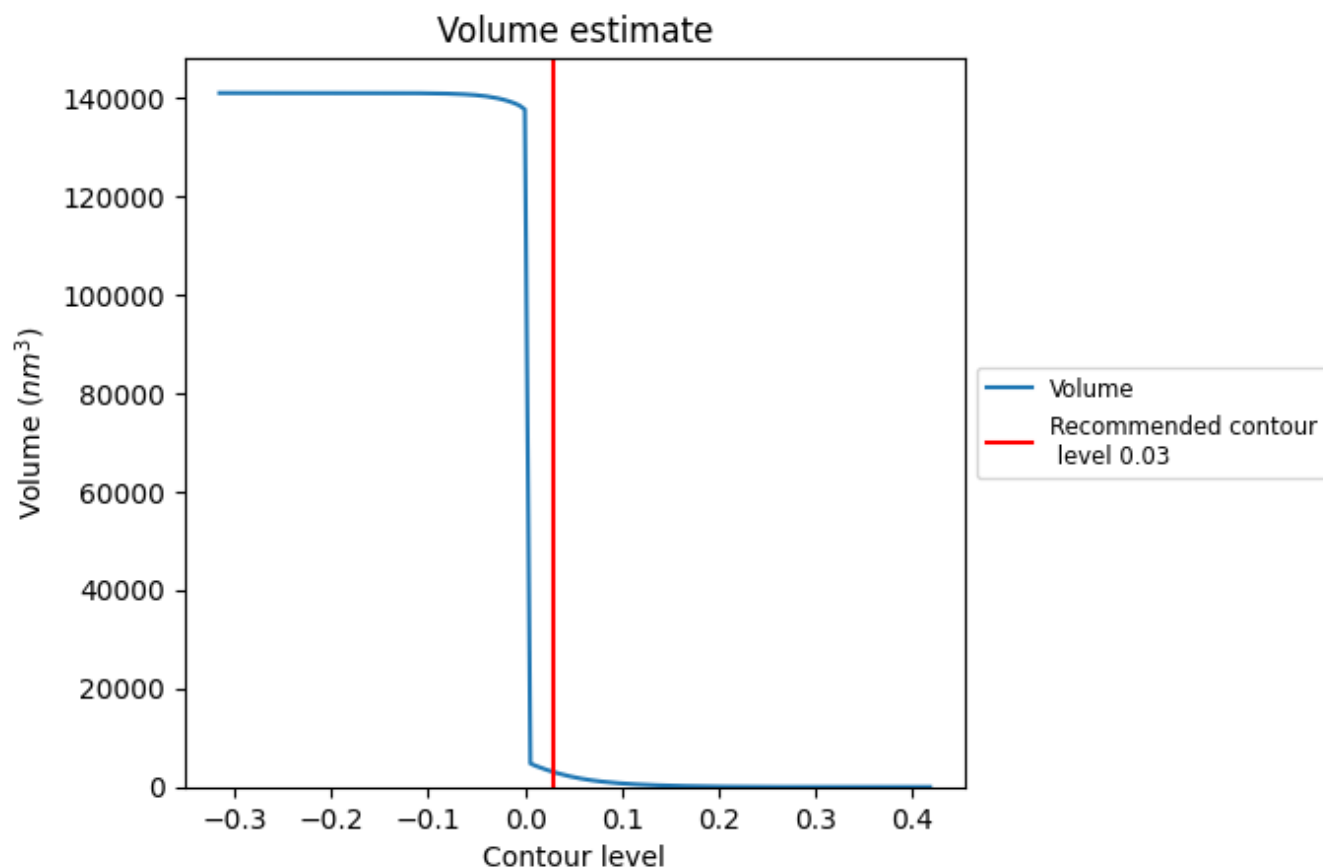
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

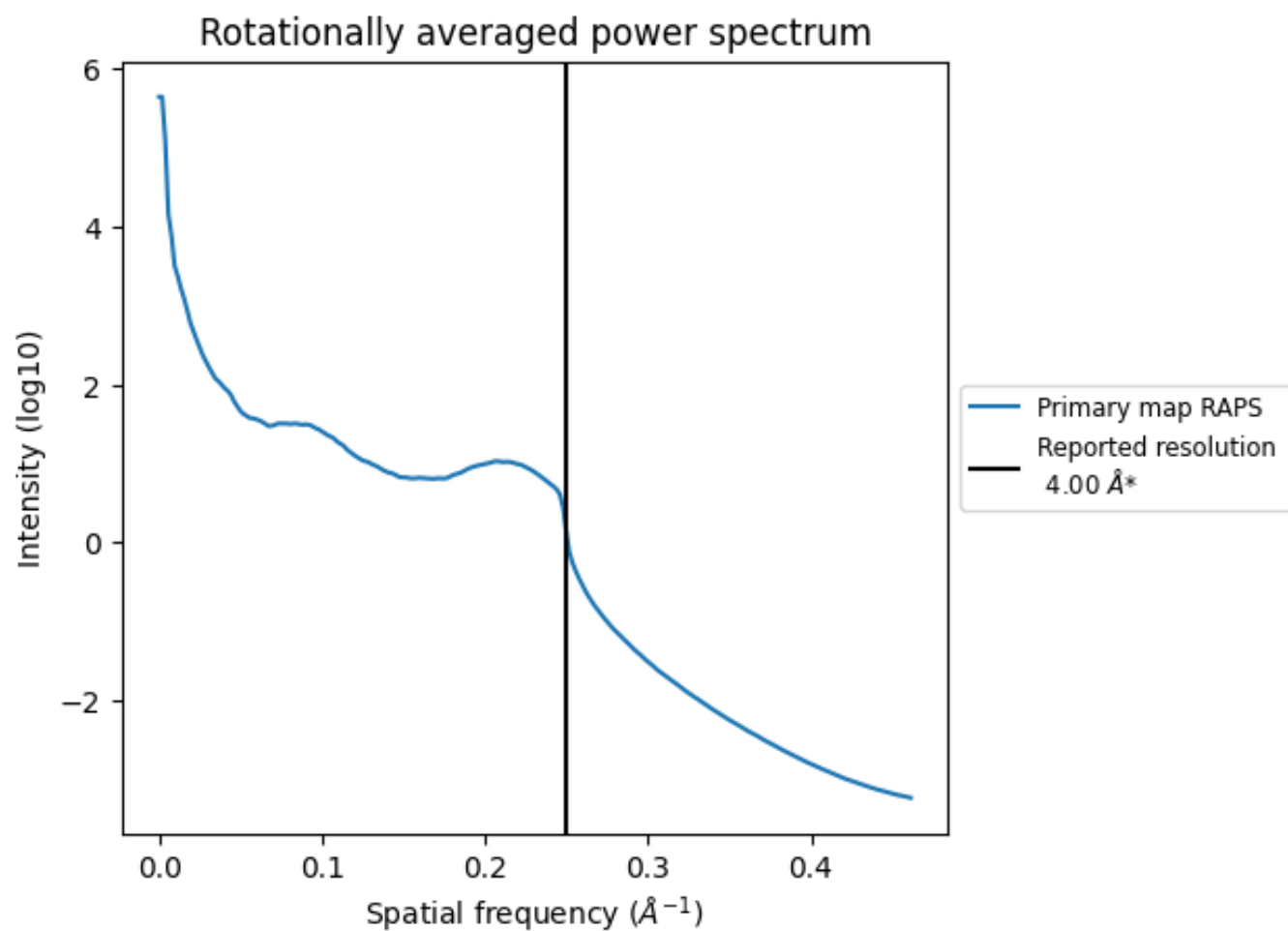
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 3004 nm^3 ; this corresponds to an approximate mass of 2713 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 ⓘ

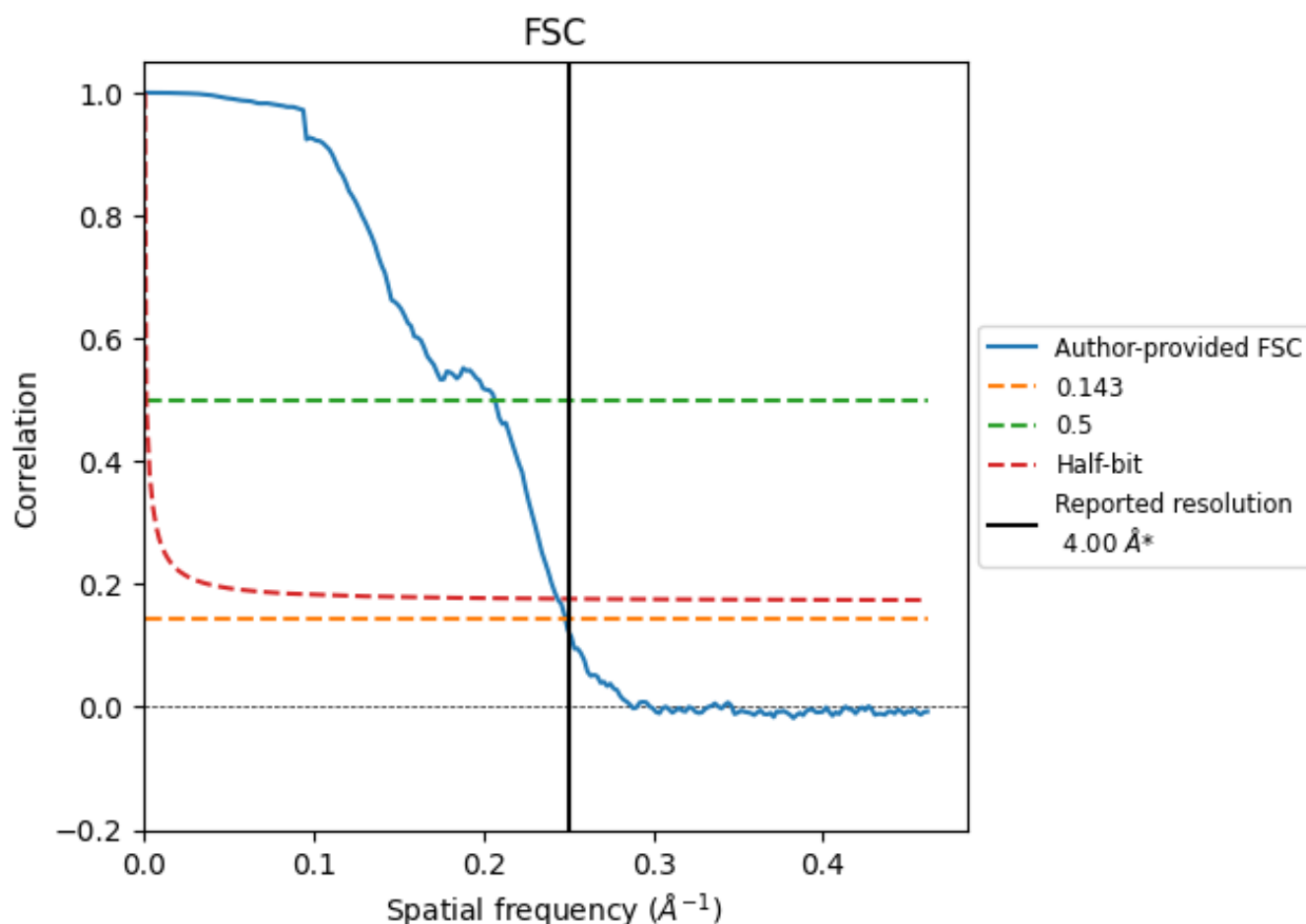


*Reported resolution corresponds to spatial frequency of 0.250 Å⁻¹

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 0.250 Å⁻¹

8.2 Resolution estimates [i](#)

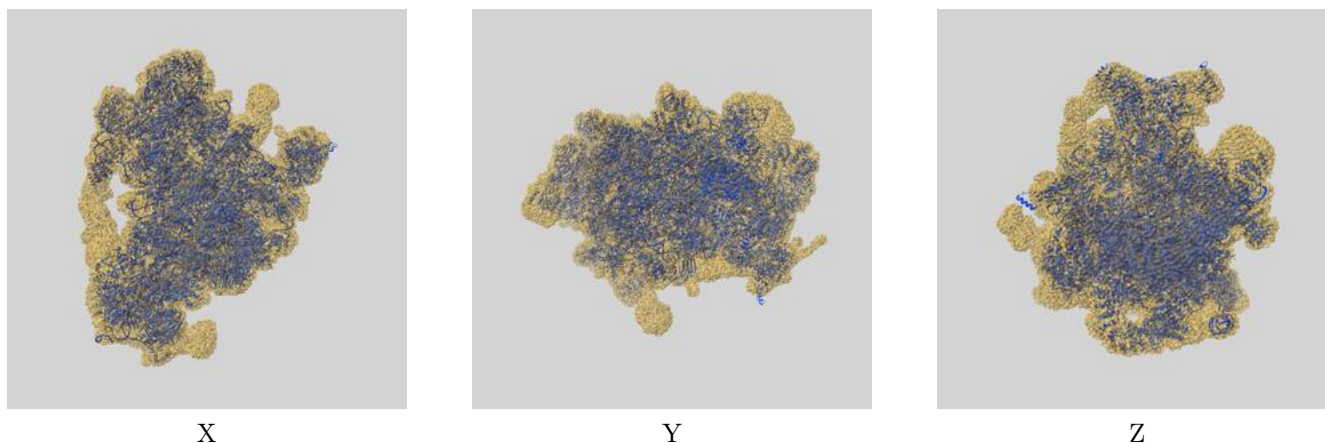
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.00	-	-
Author-provided FSC curve	4.03	4.84	4.10
Unmasked-calculated*	-	-	-

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

9 Map-model fit [i](#)

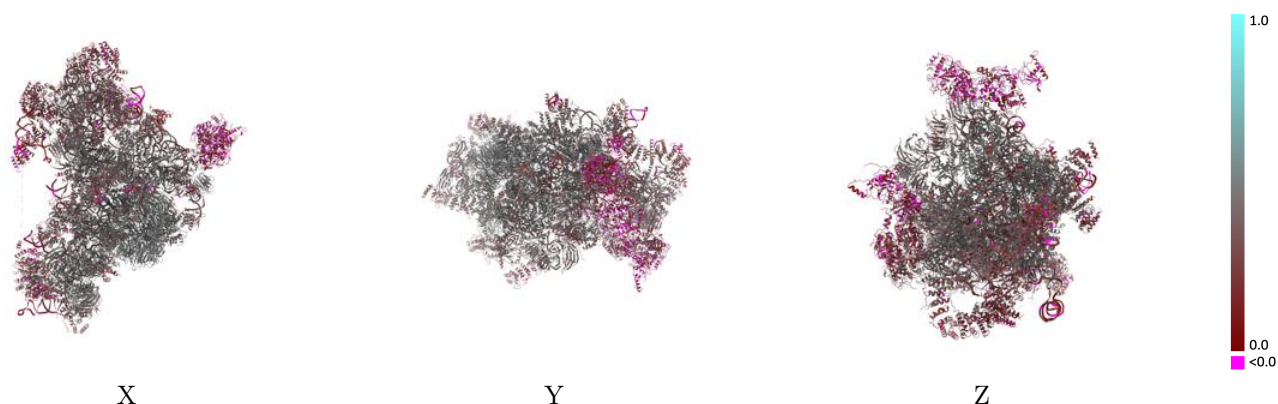
This section contains information regarding the fit between EMDB map EMD-10053 and PDB model 6RXV. Per-residue inclusion information can be found in section [3](#) on page [16](#).

9.1 Map-model overlay [i](#)



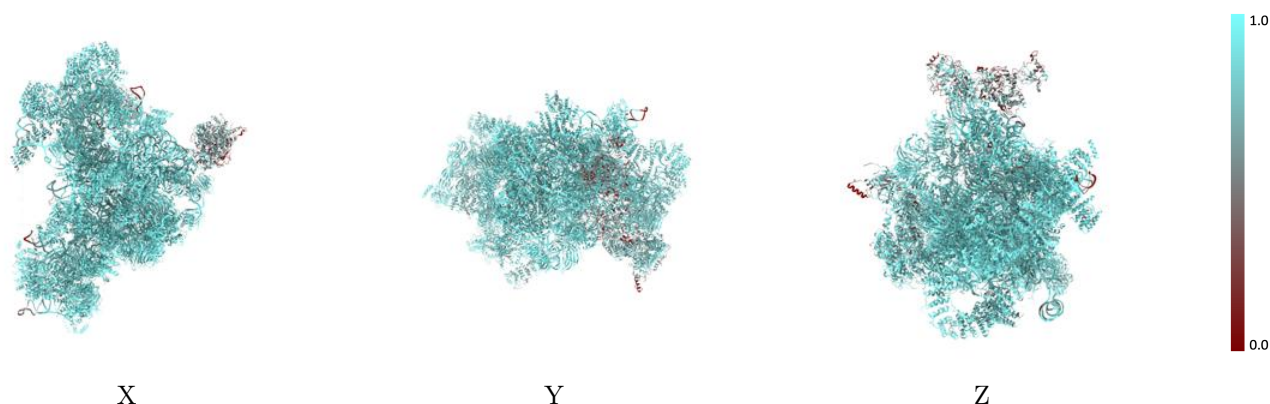
The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



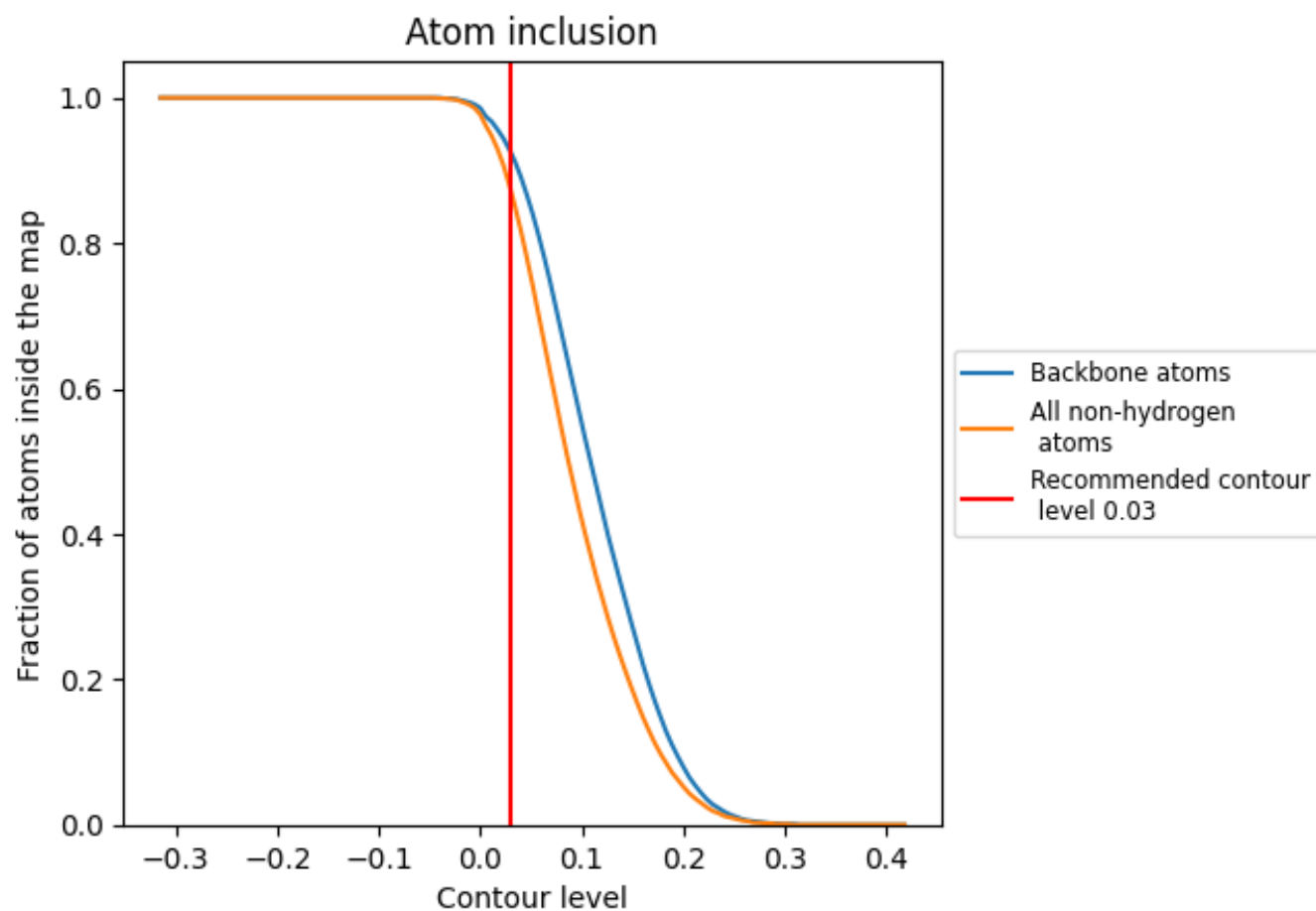
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.03).

9.4 Atom inclusion [i](#)



At the recommended contour level, 92% of all backbone atoms, 87% 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 (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8730	 0.3710
C1	 0.9240	 0.3580
C2	 0.8880	 0.3120
CA	 0.9110	 0.4790
CB	 0.8660	 0.4000
CC	 0.9000	 0.4040
CD	 0.8810	 0.3870
CE	 0.8970	 0.4530
CF	 0.8840	 0.4180
CG	 0.8980	 0.4110
CH	 0.8990	 0.4440
CI	 0.9140	 0.4450
CJ	 0.9220	 0.4780
CK	 0.8940	 0.4650
CL	 0.8870	 0.4480
CM	 0.9170	 0.4780
CN	 0.8720	 0.4190
CO	 0.8240	 0.3410
CP	 0.8690	 0.4140
CQ	 0.8740	 0.3620
CR	 0.8250	 0.2970
CS	 0.6750	 0.1460
CT	 0.8760	 0.4520
CU	 0.8770	 0.4340
CV	 0.5100	 0.1010
CW	 0.8810	 0.3900
CX	 0.7570	 0.1610
CY	 0.8340	 0.3890
CZ	 0.8420	 0.3030
Ca	 0.8810	 0.4080
Cb	 0.8750	 0.3870
Cc	 0.8970	 0.4520
Cd	 0.9020	 0.4070
Ce	 0.8620	 0.3540
Cf	 0.8940	 0.3970



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Chain	Atom inclusion	Q-score
Cg	 0.9150	 0.4580
Ch	 0.8460	 0.3570
Ci	 0.9330	 0.4560
Cj	 0.9160	 0.4800
Ck	 0.8270	 0.3540
Cl	 0.7020	 0.3080
Cm	 0.8720	 0.4330
Cn	 0.9130	 0.4790
Co	 0.8700	 0.3840
Cp	 0.9380	 0.4770
UA	 0.9200	 0.4790
UB	 0.9030	 0.3770
UC	 0.8930	 0.4820
UD	 0.9070	 0.4290
UE	 0.8270	 0.3370
UF	 0.9150	 0.3730
UG	 0.9240	 0.4680
UH	 0.9010	 0.3480
UI	 0.7320	 0.1790
UJ	 0.8560	 0.3080
UK	 0.9010	 0.4490
UL	 0.9120	 0.4210
UM	 0.9030	 0.3870
UN	 0.9230	 0.4390
UO	 0.9150	 0.4550
UP	 0.8720	 0.4220
UQ	 0.9200	 0.4420
UR	 0.9250	 0.4670
US	 0.8890	 0.3600
UT	 0.8750	 0.3070
UU	 0.9330	 0.4710
UV	 0.5090	 0.1100
UX	 0.8860	 0.4590
UZ	 0.8930	 0.3920