Full wwPDB EM Validation Report ⓘ

May 1, 2025 – 01:18 pm BST

PDB ID	:	9G30 / pdb_00009g30
EMDB ID	:	EMD-50990
Title	:	The structure of the Candida albicans ribosome with tRNA-fMet, mRNA, and compounds (GEN and MFQ) shows strong density for the A site tRNA
Authors	:	Kolosova, O.; Zgadzay, Y.; Jenner, L.B.; Guskov, A.; Yusupov, M.
Deposited on	:	2024-07-11
Resolution	:	2.35 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:

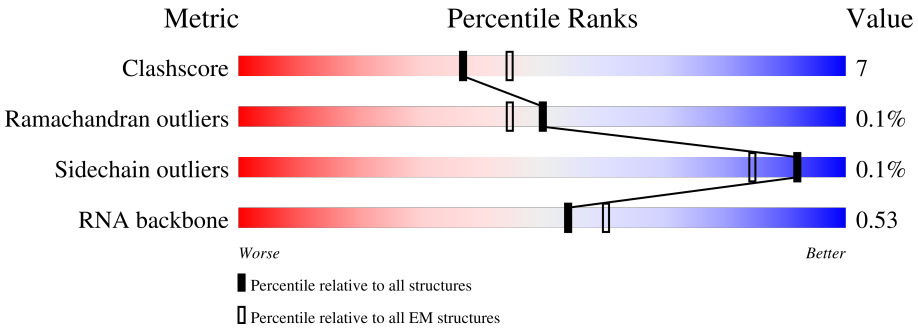
EMDB validation analysis	:	0.0.1.dev118
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

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 2.35 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.



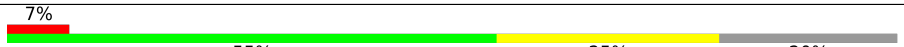
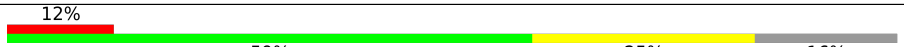
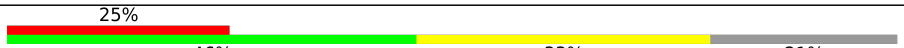
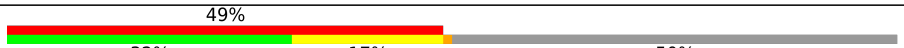
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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 <=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	0	172	83% 16%
2	1	3359	61% 26% 5% 9%
3	2	160	86% 13%
4	3	121	74% 23%
5	4	158	65% 30%
6	6	137	78% 18%
7	7	155	34% 6% 60%

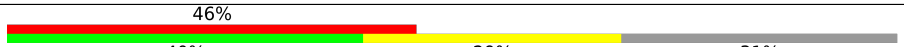
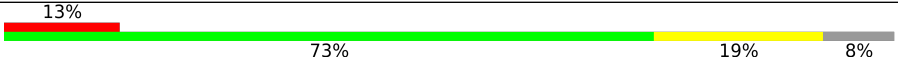
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
8	8	142	
9	9	127	
10	A	1787	
11	B	261	
12	C	256	
13	D	249	
14	E	251	
15	F	262	
16	G	225	
17	H	236	
18	I	186	
19	J	206	
20	K	189	
21	L	118	
22	M	155	
23	N	143	
24	O	151	
25	P	132	
26	Q	142	
27	T	145	
28	R	142	
29	S	137	
30	U	145	
31	V	119	
32	W	87	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
33	X	130	
34	Y	145	
35	Z	135	
36	a	105	
37	b	119	
38	c	82	
39	d	67	
40	e	56	
41	f	63	
42	g	193	
43	h	317	
44	j	254	
45	k	389	
46	l	363	
47	m	298	
48	n	176	
49	o	241	
50	p	262	
51	q	191	
52	r	220	
53	s	174	
54	t	202	
55	u	131	
56	v	204	
57	w	200	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
58	x	185	76% 17% 7%
59	y	186	87% 13%
60	z	190	82% 13% 5%
61	AA	136	82% 17%
62	AB	149	85% 14%
63	AC	63	86% 10% 5%
64	AD	106	77% 13% 9%
65	AE	112	82% 14%
66	AF	131	82% 12% 5%
67	AG	107	86% 13%
68	AH	122	80% 11% 8%
69	AI	120	84% 15%
70	AJ	99	80% 18%
71	AK	90	81% 14%
72	AL	78	6% 76% 22%
73	AM	51	92% 6%
74	AN	52	94% 6%
75	AO	25	88% 12%
76	AP	106	83% 16%
77	AQ	92	91% 8%
78	AT	77	19% 44% 42% 13%
78	PT	77	23% 56% 35% 8%
79	MR	39	18% 10% 72%

2 Entry composition

There are 82 unique types of molecules in this entry. The entry contains 197420 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 60S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	0	171	1442	933	262	244	3	2	0

- Molecule 2 is a RNA chain called 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	1	3066	65536	29280	11774	21416	3066	0	0

- Molecule 3 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	159	1276	807	244	223	2	2	0

- Molecule 4 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	3	121	2579	1153	463	842	121	0	0

- Molecule 5 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	4	156	3313	1482	581	1094	156	0	0

- Molecule 6 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	6	131	986	621	186	171	8	1	0

- Molecule 7 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	7	62	Total	C	N	O	S	0	0
			516	328	102	85	1		

- Molecule 8 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	8	119	Total	C	N	O	S	0	0
			960	613	172	174	1		

- Molecule 9 is a protein called Ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
9	9	125	Total	C	N	O	0	0
			980	613	189	178		

- Molecule 10 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	A	1692	Total	C	N	O	P	0	0
			36083	16130	6412	11849	1692		

- Molecule 11 is a protein called 40S ribosomal protein S0.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	B	208	Total	C	N	O	S	0	0
			1627	1041	284	297	5		

- Molecule 12 is a protein called 40S ribosomal protein S1.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	C	214	Total	C	N	O	S	0	0
			1724	1094	313	313	4		

- Molecule 13 is a protein called Ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	D	216	Total	C	N	O	S	0	0
			1620	1033	287	295	5		

- Molecule 14 is a protein called Ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	E	222	Total	C	N	O	S	0	0
			1701	1084	310	303	4		

- Molecule 15 is a protein called 40S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	F	260	Total	C	N	O	S	0	0
			2055	1306	386	358	5		

- Molecule 16 is a protein called Ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	G	199	Total	C	N	O	S	0	0
			1572	983	294	291	4		

- Molecule 17 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	H	226	Total	C	N	O	S	0	0
			1820	1133	351	330	6		

- Molecule 18 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	I	182	Total	C	N	O	0	0
			1466	939	264	263		

- Molecule 19 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	J	203	Total	C	N	O	S	0	0
			1579	973	322	283	1		

- Molecule 20 is a protein called Ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	K	178	Total	C	N	O	S	0	0
			1453	918	286	248	1		

- Molecule 21 is a protein called 40S ribosomal protein S10-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	L	93	Total	C	N	O	S	0	0
			783	511	129	142	1		

- Molecule 22 is a protein called 40S ribosomal protein S11A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	M	141	Total	C	N	O	S	0	0
			1129	722	212	192	3		

- Molecule 23 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	N	71	Total	C	N	O	S	0	0
			539	341	95	99	4		

- Molecule 24 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	O	150	Total	C	N	O	S	0	0
			1187	757	219	210	1		

- Molecule 25 is a protein called 40S ribosomal protein S14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	P	127	Total	C	N	O	S	0	0
			942	579	186	174	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
P	119	IAS	ASP	conflict	UNP A0A8H6F0V4

- Molecule 26 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Q	115	Total	C	N	O	S	0	0
			906	578	164	158	6		

- Molecule 27 is a protein called 40S ribosomal protein S18-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	T	142	Total	C	N	O	S	0	0
			1169	733	228	205	3		

- Molecule 28 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	R	141	Total	C	N	O	S	0	0
			1102	706	202	193	1		

- Molecule 29 is a protein called 40S ribosomal protein S17-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	S	118	Total	C	N	O	S	0	0
			954	602	176	175	1		

- Molecule 30 is a protein called 40S ribosomal protein S19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	U	141	Total	C	N	O	S	0	0
			1100	689	210	200	1		

- Molecule 31 is a protein called Ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	V	100	Total	C	N	O	S	0	0
			790	499	146	143	2		

- Molecule 32 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	W	87	Total	C	N	O	S	0	0
			676	415	126	133	2		

- Molecule 33 is a protein called 40S ribosomal protein S22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	X	129	Total	C	N	O	S	0	0
			1032	655	191	183	3		

- Molecule 34 is a protein called Ribosomal protein S23 (S12).

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Y	143	Total	C	N	O	S	0	0
			1110	701	219	188	2		

- Molecule 35 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms				AltConf	Trace
35	Z	132	Total	C	N	O	0	0
			1072	670	216	186		

- Molecule 36 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms				AltConf	Trace
36	a	72	Total	C	N	O	0	0
			578	369	103	106		

- Molecule 37 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	b	98	Total	C	N	O	S	0	0
			779	482	163	128	6		

- Molecule 38 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	c	81	Total	C	N	O	S	0	0
			614	383	110	114	7		

- Molecule 39 is a protein called 40S ribosomal protein S28-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	d	62	Total	C	N	O	S	0	0
			487	299	98	88	2		

- Molecule 40 is a protein called 40S ribosomal protein S29A.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	e	55	Total	C	N	O	S	0	0
			454	281	94	75	4		

- Molecule 41 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	f	58	Total	C	N	O	S	0	0
			461	289	93	77	2		

- Molecule 42 is a protein called Ubiquitin-40S ribosomal protein S31 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	g	70	Total	C	N	O	S	0	0
			565	358	111	90	6		

- Molecule 43 is a protein called Guanine nucleotide-binding protein subunit beta-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	h	241	Total	C	N	O	S	0	0
			1854	1176	319	355	4		

- Molecule 44 is a protein called 60S ribosomal protein L2-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	j	249	Total	C	N	O	S	1	0
			1894	1185	377	330	2		

- Molecule 45 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	k	386	Total	C	N	O	S	1	0
			3084	1955	584	538	7		

- Molecule 46 is a protein called 60S ribosomal protein L4-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	l	361	Total	C	N	O	S	0	0
			2751	1729	529	490	3		

- Molecule 47 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	m	292	Total	C	N	O	S	0	0
			2394	1526	416	450	2		

- Molecule 48 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms				AltConf	Trace
48	n	155	Total	C	N	O	1	0
			1237	794	226	217		

- Molecule 49 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	o	230	Total	C	N	O	S	1	0
			1860	1193	343	323	1		

- Molecule 50 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	p	231	Total	C	N	O	S	0	0
			1795	1150	319	323	3		

- Molecule 51 is a protein called 60S ribosomal protein L9-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	q	189	Total	C	N	O	S	0	0
			1510	953	275	278	4		

- Molecule 52 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	r	218	Total	C	N	O	S	0	0
			1759	1110	336	305	8		

- Molecule 53 is a protein called 60S ribosomal protein L11-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	s	172	Total	C	N	O	S	1	0
			1385	864	262	255	4		

- Molecule 54 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms				AltConf	Trace
54	t	195	Total	C	N	O	0	0
			1573	986	311	276		

- Molecule 55 is a protein called 60S ribosomal protein L14-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	u	130	Total	C	N	O	S	0	0
			1029	660	193	175	1		

- Molecule 56 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	v	203	Total	C	N	O	S	0	0
			1713	1075	356	280	2		

- Molecule 57 is a protein called Ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	w	199	Total	C	N	O	S	0	0
			1590	1025	294	269	2		

- Molecule 58 is a protein called Ribosomal protein L22.

Mol	Chain	Residues	Atoms				AltConf	Trace
58	x	172	Total	C	N	O	0	0
			1375	850	279	246		

- Molecule 59 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
59	y	185	Total	C	N	O	3	0
			1478	930	302	246		

- Molecule 60 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	z	180	Total	C	N	O	S	1	0
			1471	910	313	245	3		

- Molecule 61 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	AA	135	Total	C	N	O	S	0	0
			1087	705	197	183	2		

- Molecule 62 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	AB	148	Total	C	N	O	S	0	0
			1170	741	231	197	1		

- Molecule 63 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	AC	60	Total	C	N	O	S	1	0
			489	305	105	78	1		

- Molecule 64 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	AD	96	Total	C	N	O	S	0	0
			729	469	121	137	2		

- Molecule 65 is a protein called 60S ribosomal protein L31-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	AE	108	Total	C	N	O	S	0	0
			881	558	166	155	2		

- Molecule 66 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	AF	125	Total	C	N	O	S	1	0
			1015	649	197	168	1		

- Molecule 67 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	AG	106	Total	C	N	O	S	3	0
			867	558	166	142	1		

- Molecule 68 is a protein called 60S ribosomal protein L34-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	AH	112	Total	C	N	O	S	4	0
			913	567	188	154	4		

- Molecule 69 is a protein called Ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
69	AI	119	Total 990	C 629	N 195	O 166	1	0

- Molecule 70 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	AJ	97	Total 764	C 476	N 157	O 130	S 1	1	0

- Molecule 71 is a protein called 60S ribosomal protein L37-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	AK	86	Total 677	C 413	N 148	O 110	S 6	0	0

- Molecule 72 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
72	AL	77	Total 623	C 398	N 116	O 109	1	0

- Molecule 73 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms				AltConf	Trace
73	AM	50	Total 446	C 280	N 100	O 66	1	0

- Molecule 74 is a protein called 60S ribosomal protein L40-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	AN	52	Total 427	C 265	N 89	O 67	S 6	1	0

- Molecule 75 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	AO	25	Total 236	C 144	N 63	O 28	S 1	0	0

- Molecule 76 is a protein called 60S ribosomal protein L42-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	AP	105	Total	C	N	O	S	2	0
			863	547	171	140	5		

- Molecule 77 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	AQ	91	Total	C	N	O	S	0	0
			698	430	140	124	4		

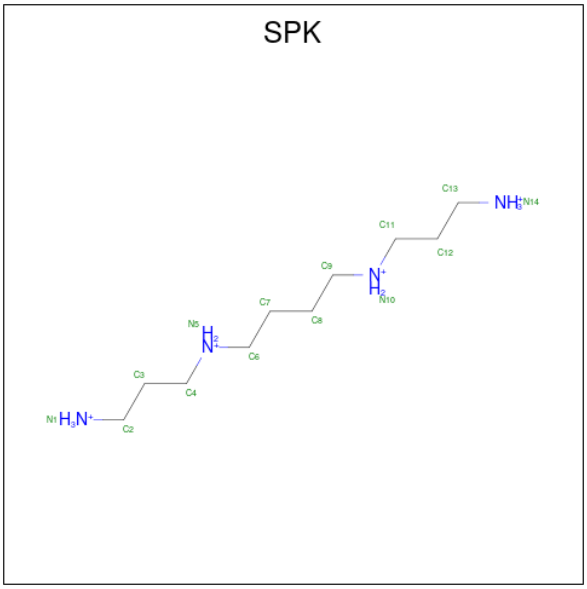
- Molecule 78 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	PT	76	Total	C	N	O	P	0	0
			1623	723	294	530	76		
78	AT	76	Total	C	N	O	P	0	0
			1623	723	294	530	76		

- Molecule 79 is a RNA chain called mRNA.

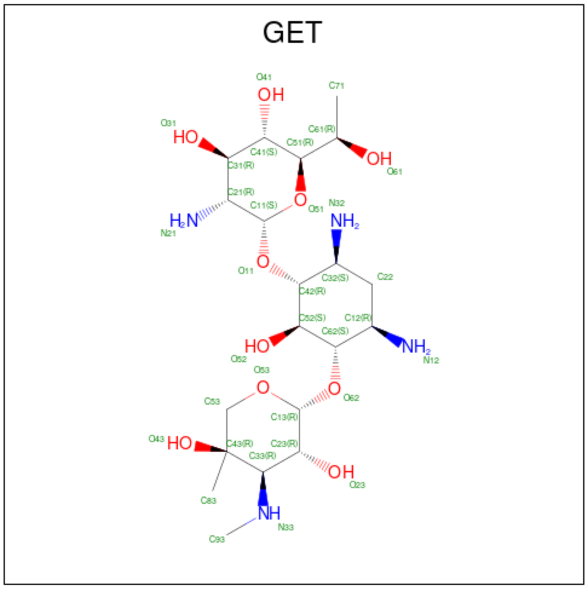
Mol	Chain	Residues	Atoms					AltConf	Trace
79	MR	11	Total	C	N	O	P	0	0
			231	104	39	77	11		

- Molecule 80 is SPERMINE (FULLY PROTONATED FORM) (CCD ID: SPK) (formula: $C_{10}H_{30}N_4$).



Mol	Chain	Residues	Atoms	AltConf
80	1	1	Total C N 14 10 4	0

- Molecule 81 is GENETICIN (CCD ID: GET) (formula: $C_{20}H_{40}N_4O_{10}$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	AltConf
81	1	1	Total C N O 34 20 4 10	0
81	1	1	Total C N O 34 20 4 10	0
81	1	1	Total C N O 34 20 4 10	0
81	1	1	Total C N O 34 20 4 10	0
81	1	1	Total C N O 34 20 4 10	0
81	1	1	Total C N O 34 20 4 10	0
81	1	1	Total C N O 34 20 4 10	0
81	1	1	Total C N O 34 20 4 10	0
81	1	1	Total C N O 34 20 4 10	0
81	1	1	Total C N O 34 20 4 10	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
81	1	1	Total C N O 34 20 4 10	0
81	1	1	Total C N O 34 20 4 10	0
81	A	1	Total C N O 34 20 4 10	0
81	A	1	Total C N O 34 20 4 10	0
81	A	1	Total C N O 34 20 4 10	0
81	A	1	Total C N O 34 20 4 10	0
81	AT	1	Total C N O 34 20 4 10	0

- Molecule 82 is ZINC ION (CCD ID: ZN) (formula: Zn).

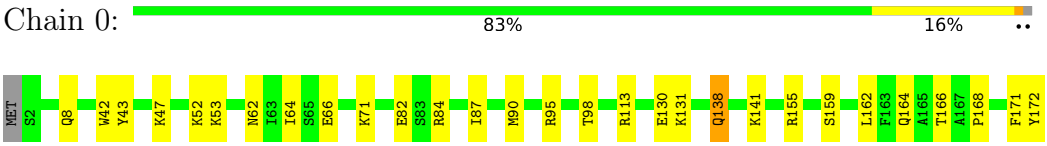
Mol	Chain	Residues	Atoms	AltConf
82	b	1	Total Zn 1 1	0
82	e	1	Total Zn 1 1	0
82	AH	1	Total Zn 1 1	0
82	AK	1	Total Zn 1 1	0
82	AN	1	Total Zn 1 1	0
82	AP	1	Total Zn 1 1	0
82	AQ	1	Total Zn 1 1	0

3 Residue-property plots (i)

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

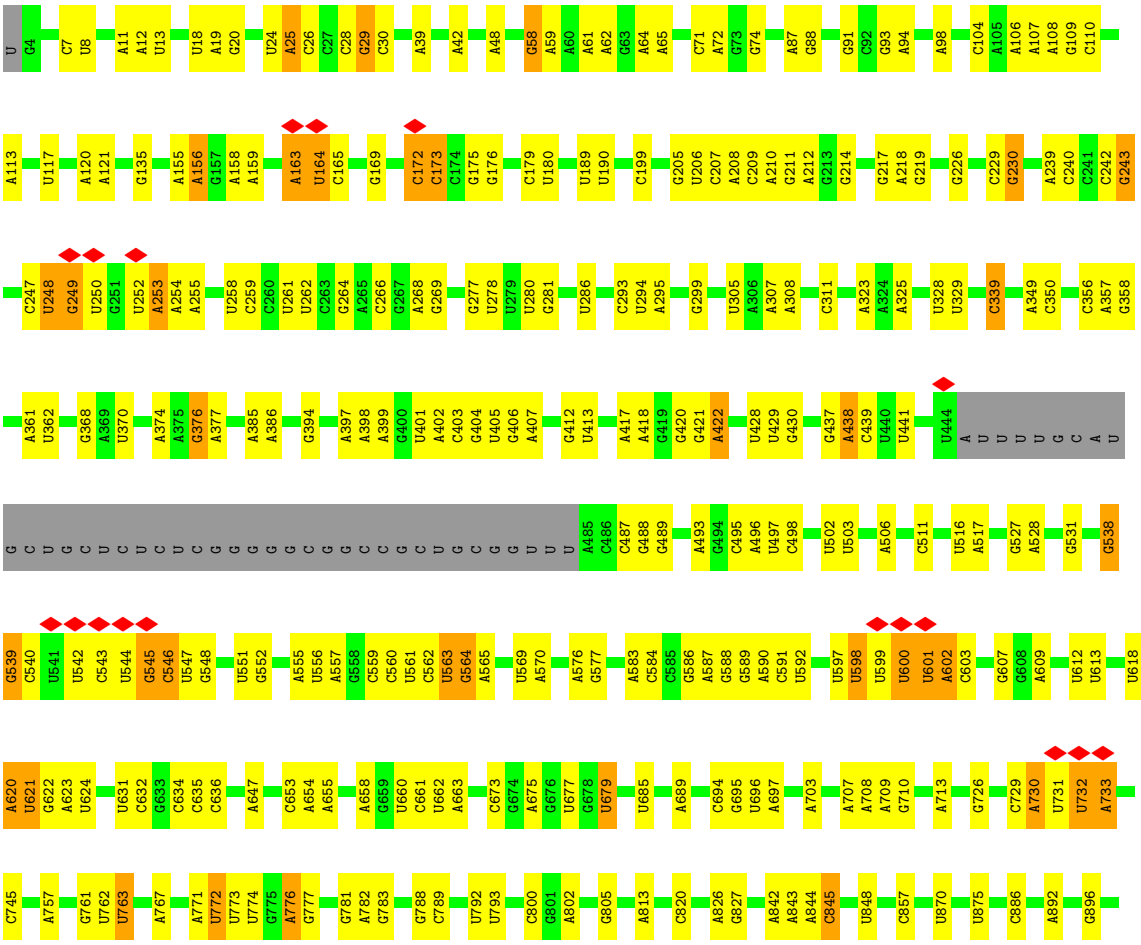
- Molecule 1: 60S ribosomal protein L20

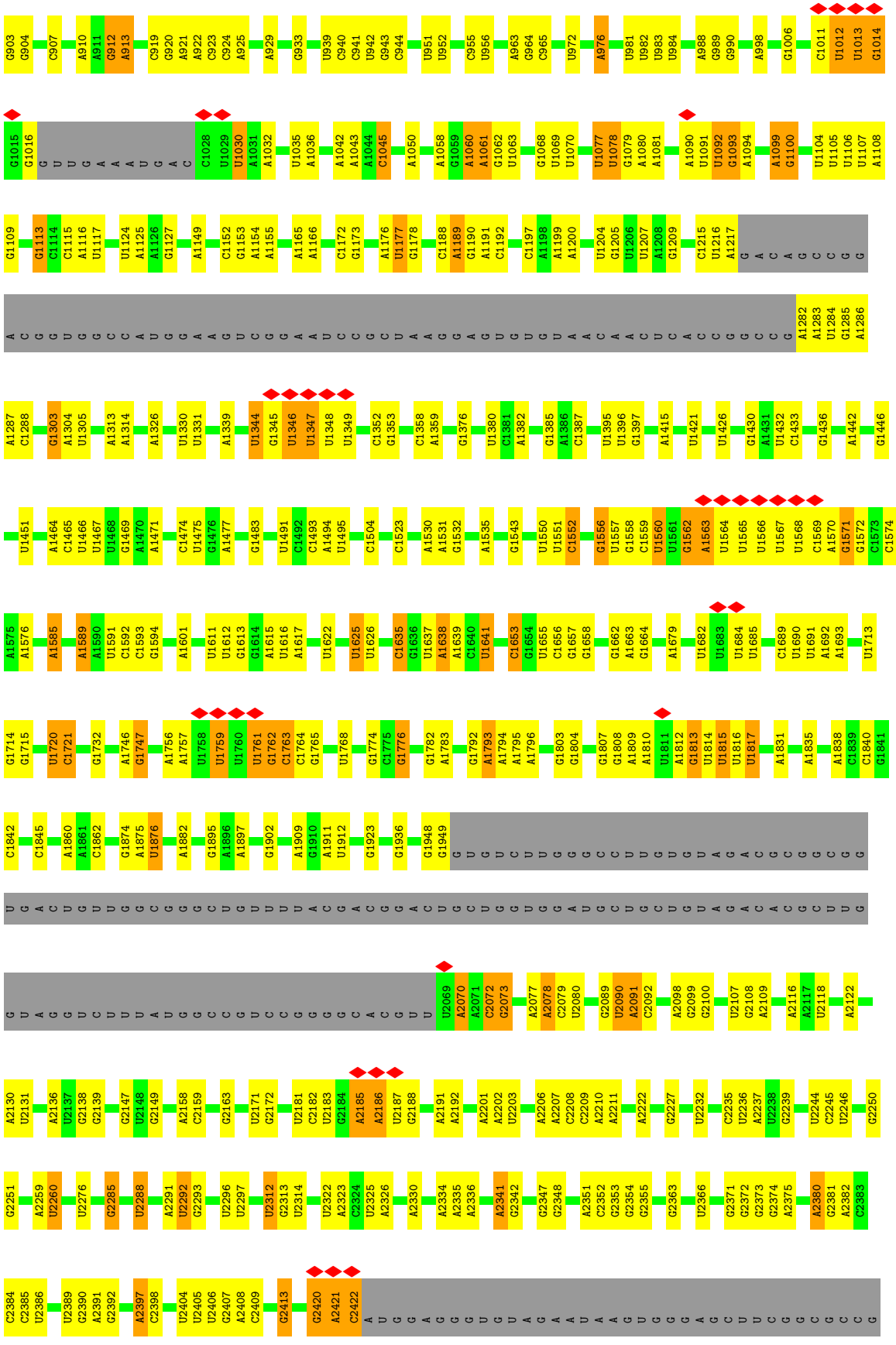
Chain 0:

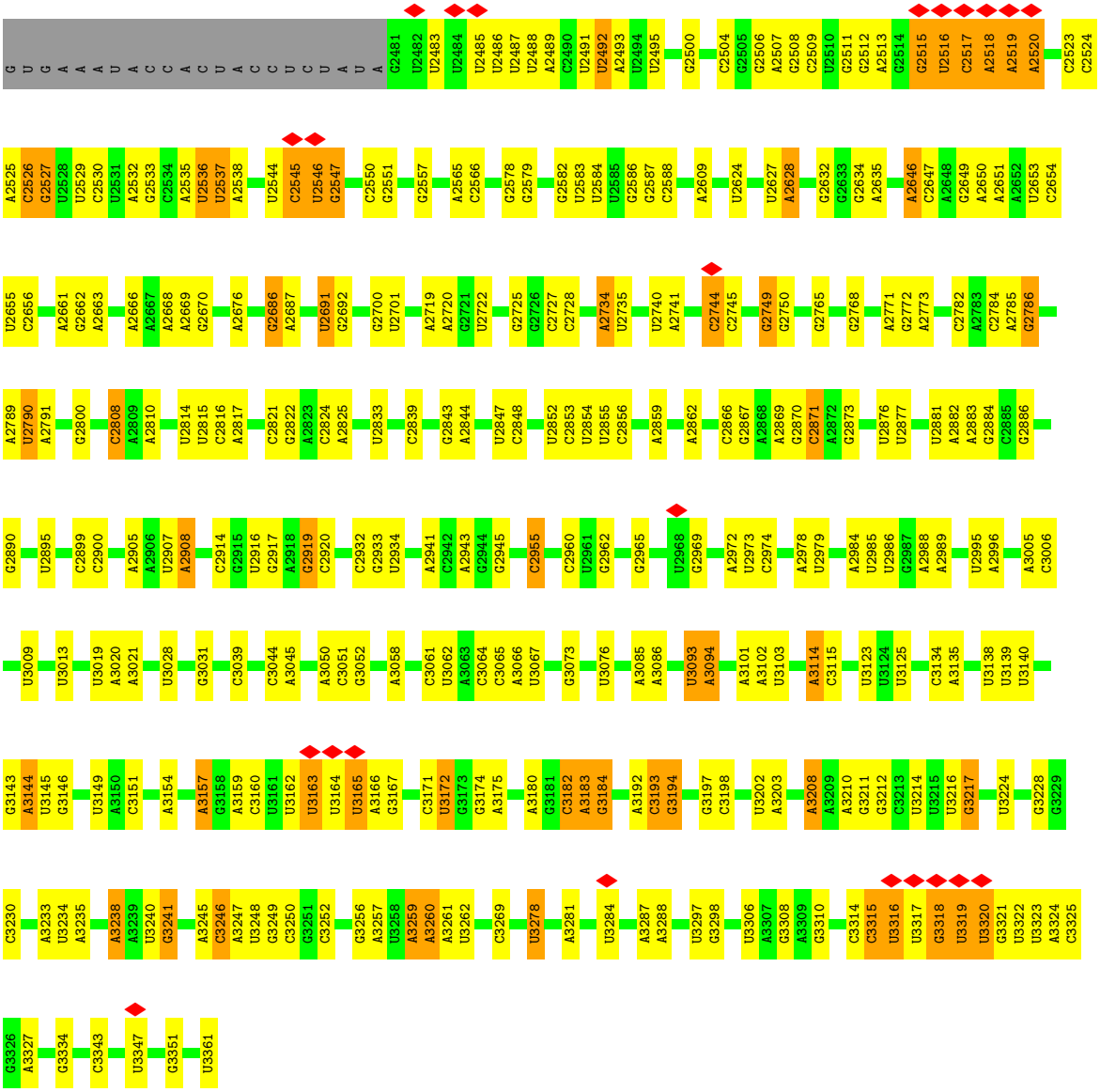


- Molecule 2: 25S rRNA

Chain 1:

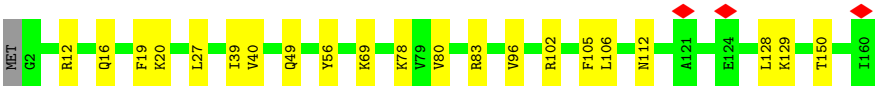






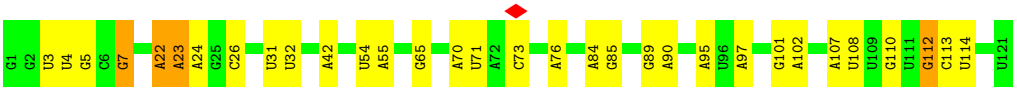
• Molecule 3: 60S ribosomal protein L21-A

Chain 2:



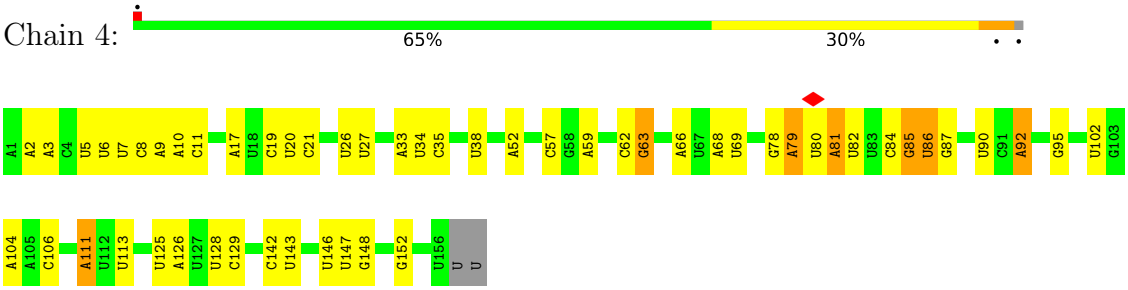
• Molecule 4: 5S rRNA

Chain 3:



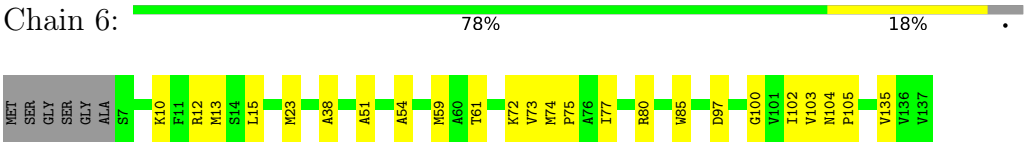
• Molecule 5: 5.8S rRNA

Chain 4:



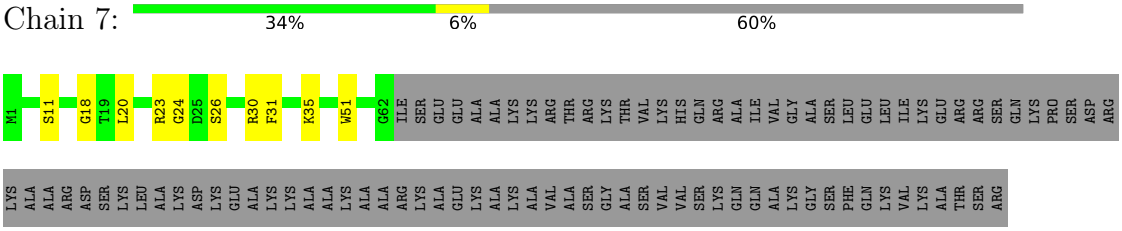
• Molecule 6: 60S ribosomal protein L23-A

Chain 6:



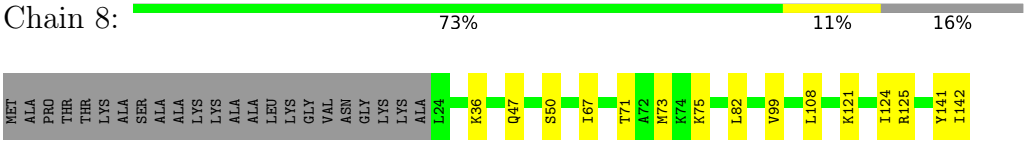
• Molecule 7: 60S ribosomal protein L24-A

Chain 7:



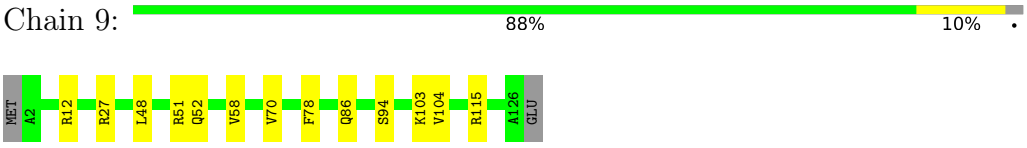
• Molecule 8: 60S ribosomal protein L25

Chain 8:



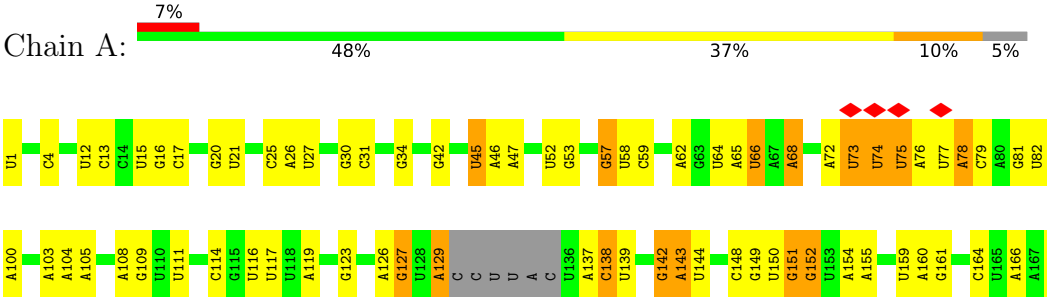
• Molecule 9: Ribosomal protein L24

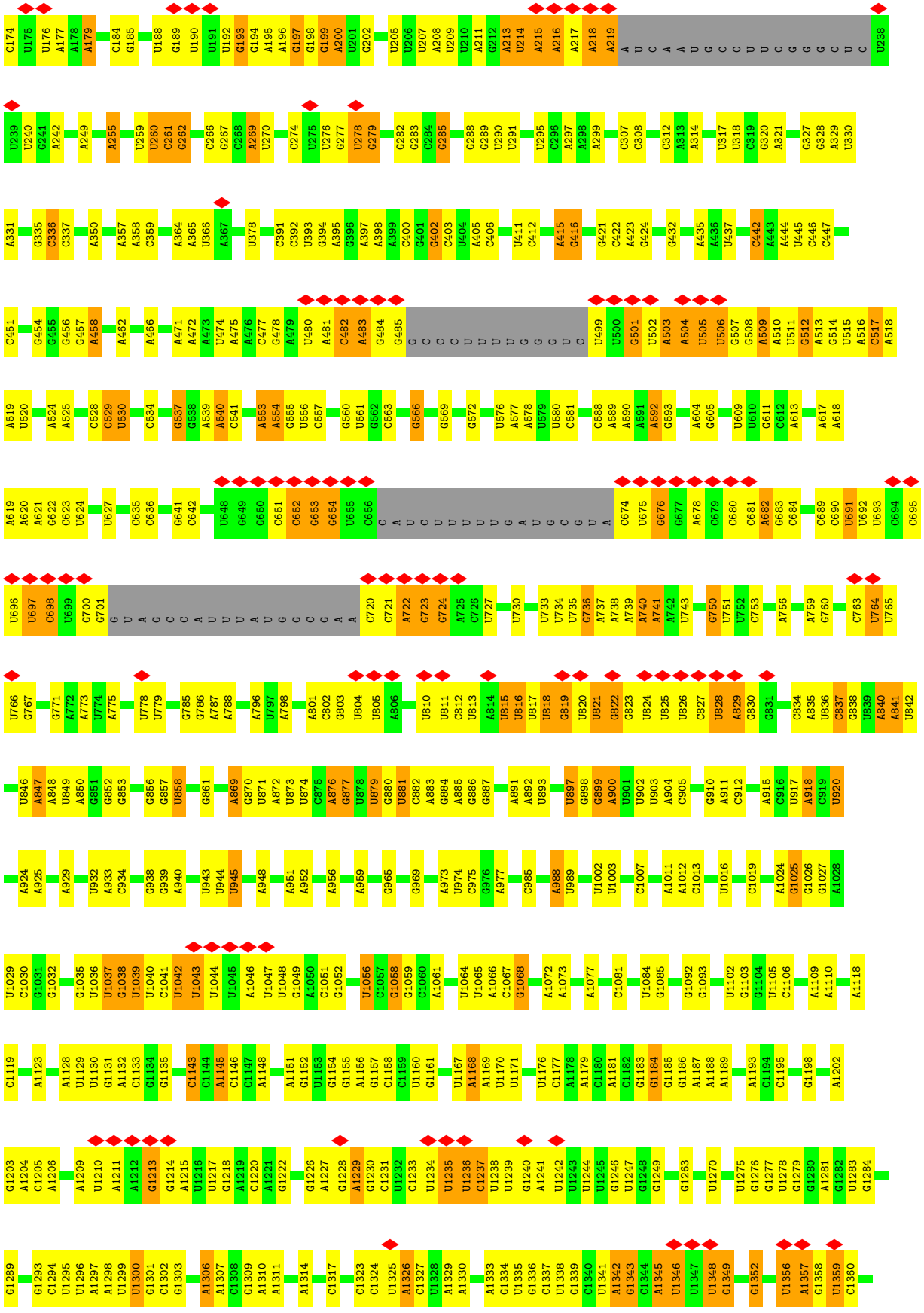
Chain 9:

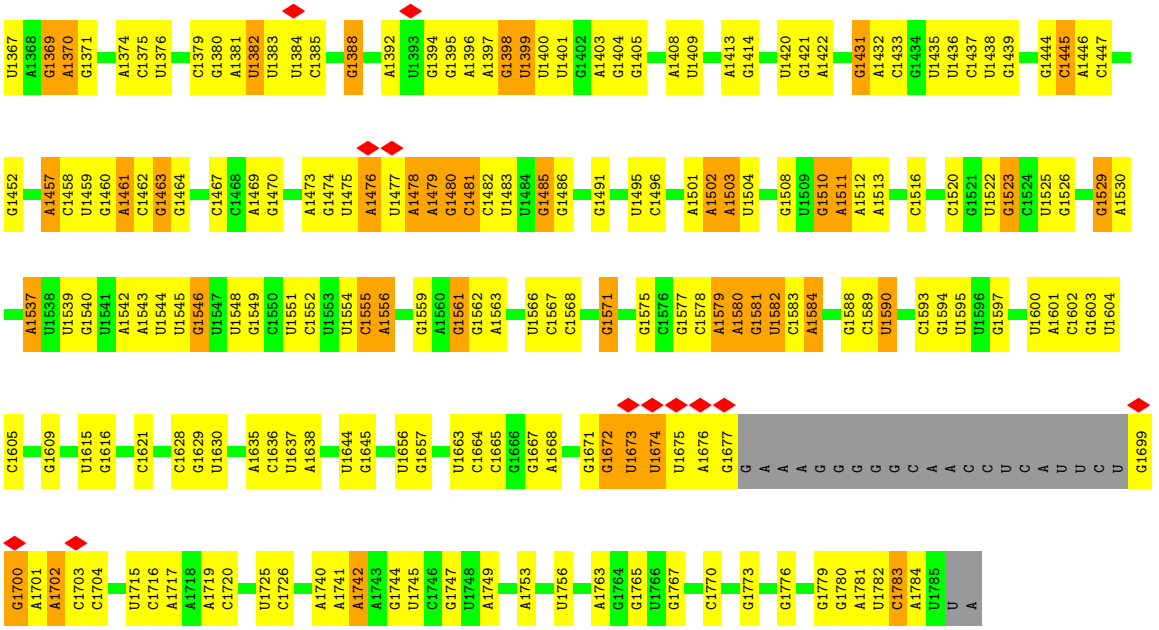


• Molecule 10: 18S rRNA

Chain A:

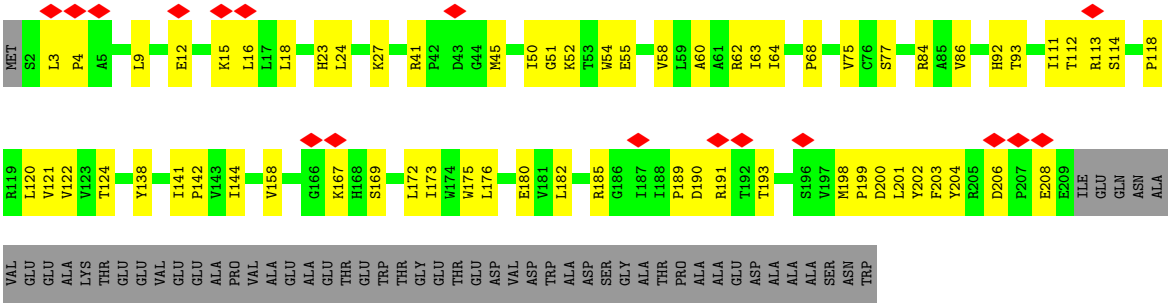






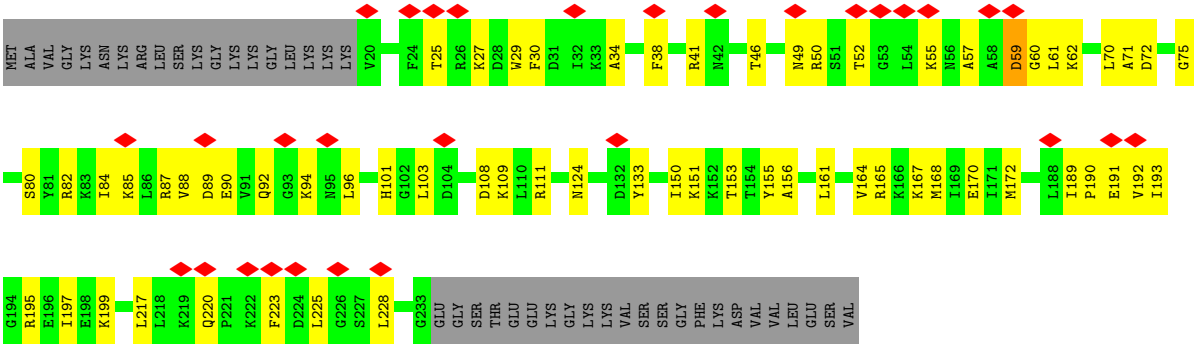
• Molecule 11: 40S ribosomal protein S0

Chain B:



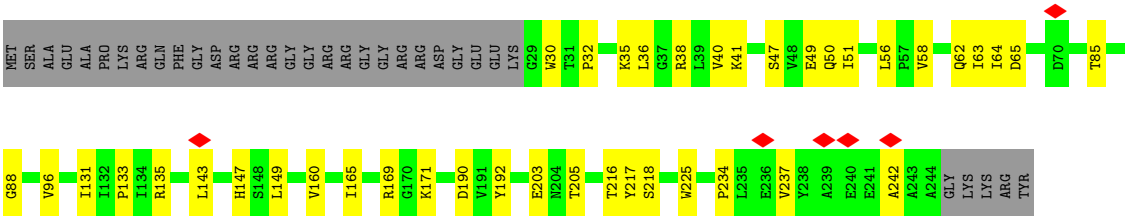
• Molecule 12: 40S ribosomal protein S1

Chain C:



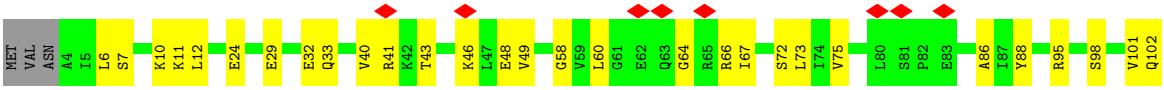
• Molecule 13: Ribosomal protein S5

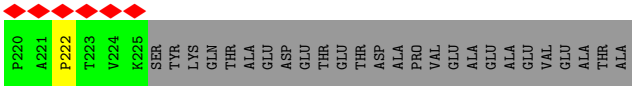
Chain D:



• Molecule 14: Ribosomal protein S3

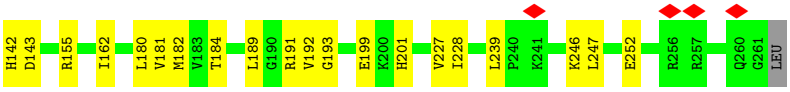
Chain E:





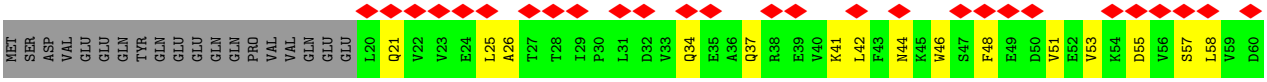
• Molecule 15: 40S ribosomal protein S4

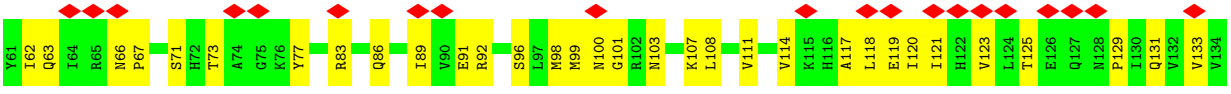
Chain F:

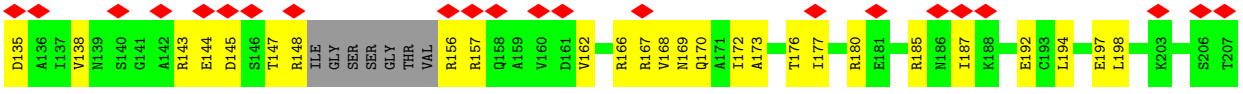


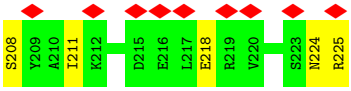
• Molecule 16: Ribosomal protein S7

Chain G:



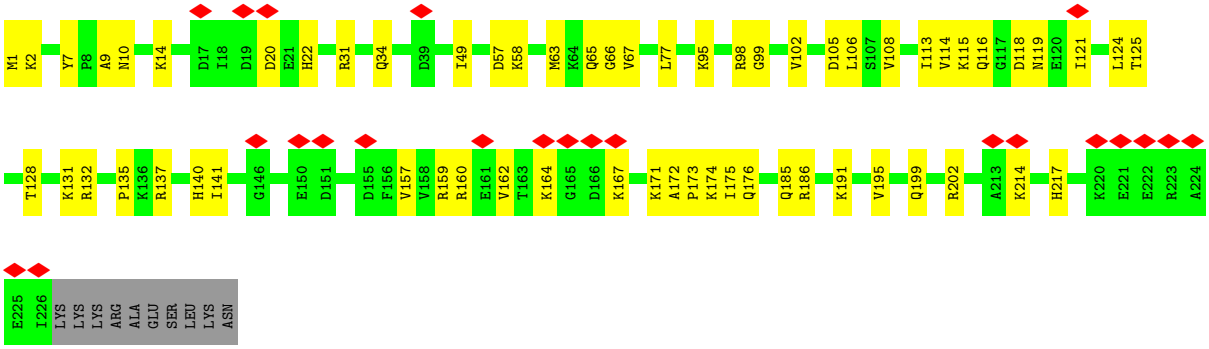






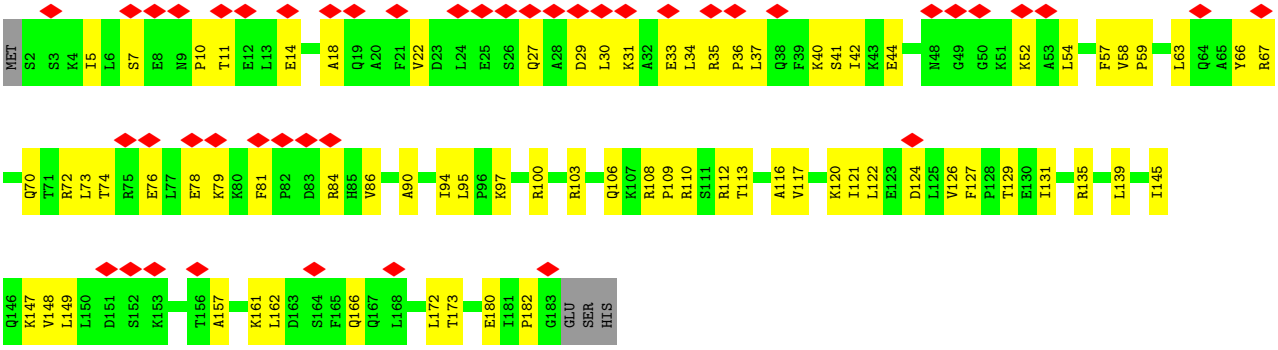
• Molecule 17: 40S ribosomal protein S6

Chain H:



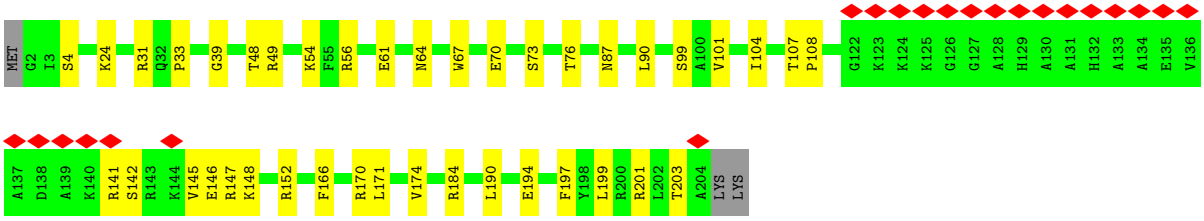
• Molecule 18: 40S ribosomal protein S7

Chain I:



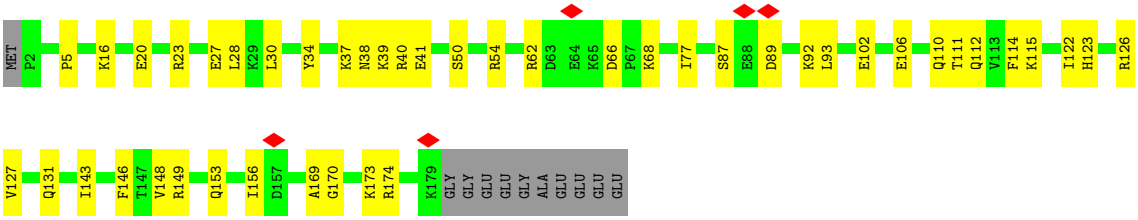
• Molecule 19: 40S ribosomal protein S8

Chain J:



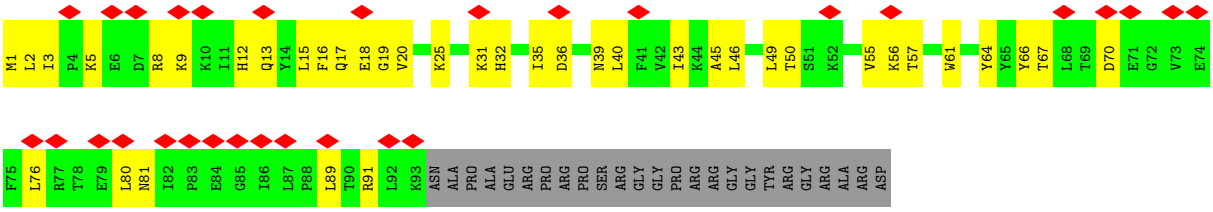
• Molecule 20: Ribosomal protein S4

Chain K:



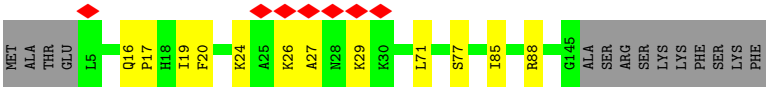
• Molecule 21: 40S ribosomal protein S10-A

Chain L:



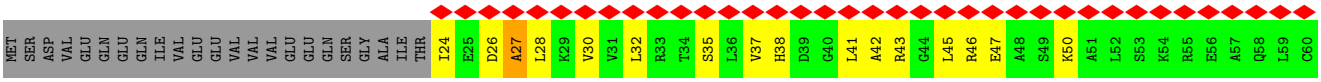
• Molecule 22: 40S ribosomal protein S11A

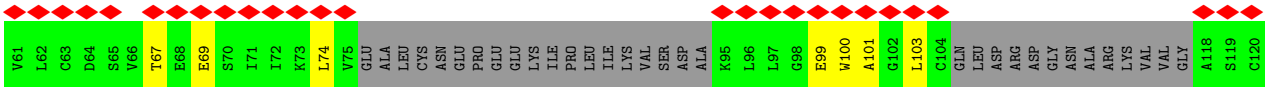
Chain M:

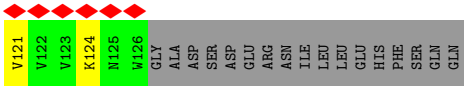


• Molecule 23: 40S ribosomal protein S12

Chain N:

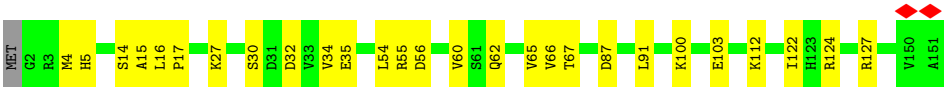






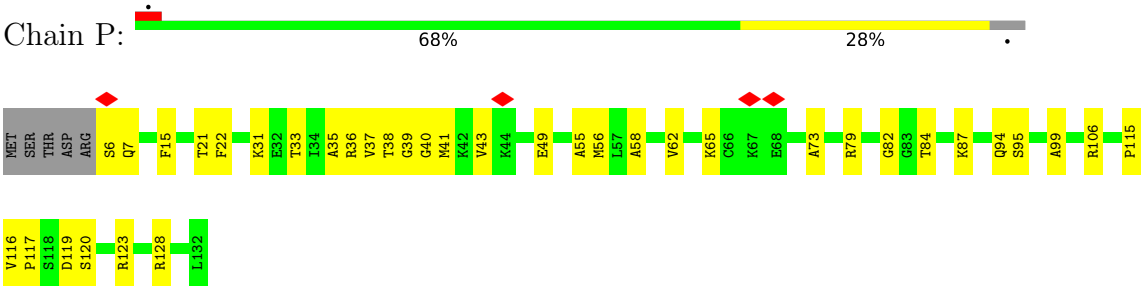
• Molecule 24: 40S ribosomal protein S13

Chain O:



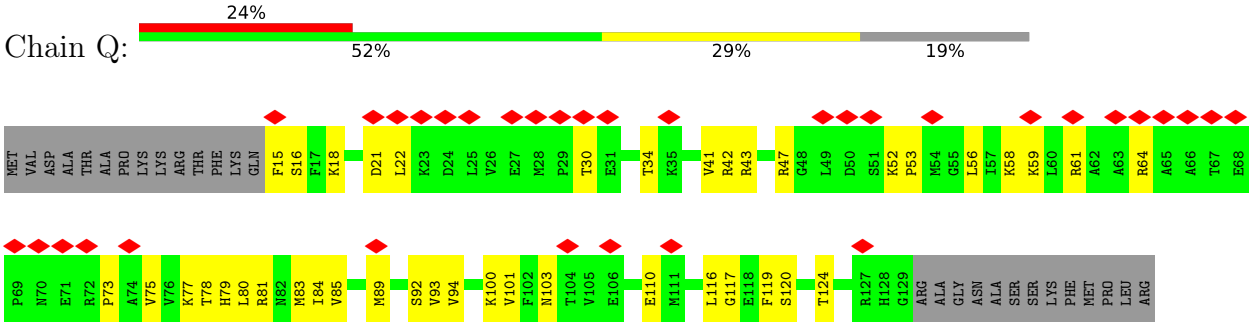
• Molecule 25: 40S ribosomal protein S14-A

Chain P:



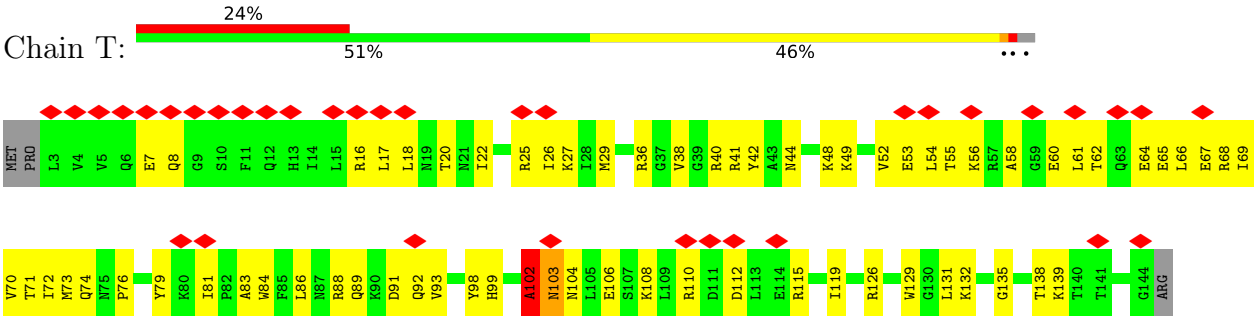
• Molecule 26: 40S ribosomal protein S15

Chain Q:



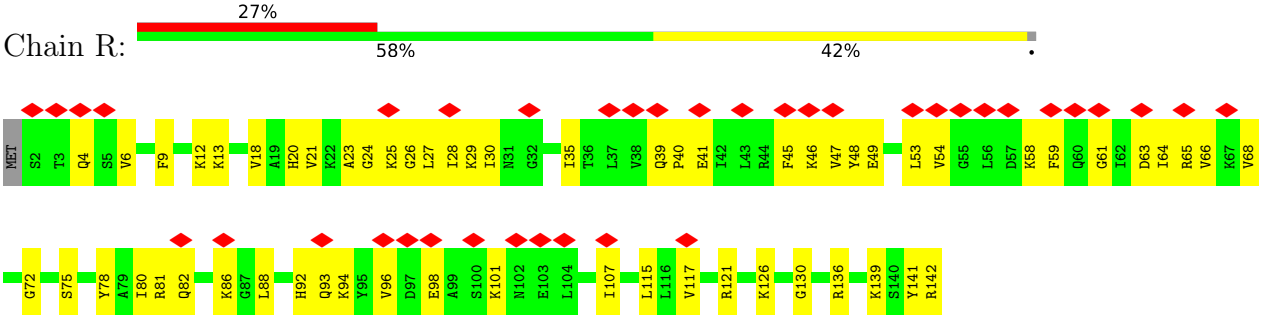
• Molecule 27: 40S ribosomal protein S18-B

Chain T:



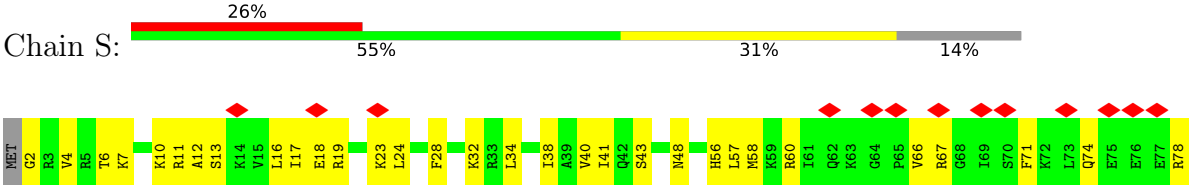
• Molecule 28: 40S ribosomal protein S16

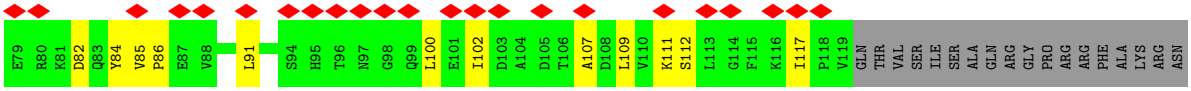
Chain R:



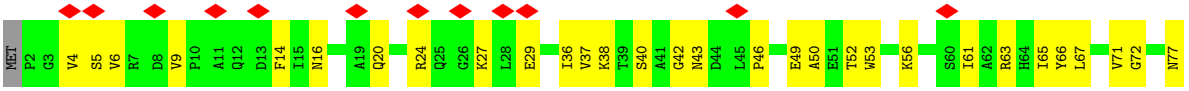
• Molecule 29: 40S ribosomal protein S17-B

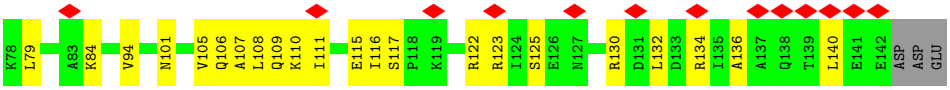
Chain S:



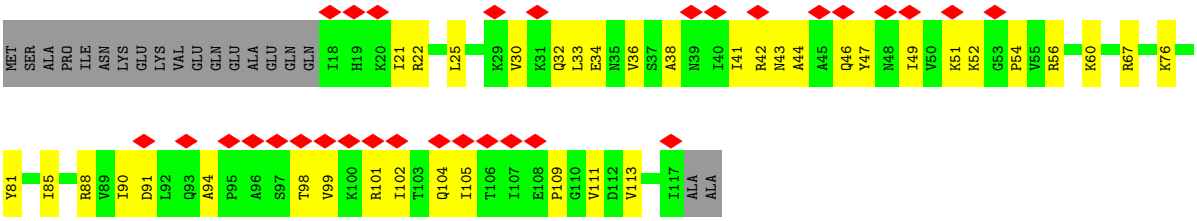


• Molecule 30: 40S ribosomal protein S19-A

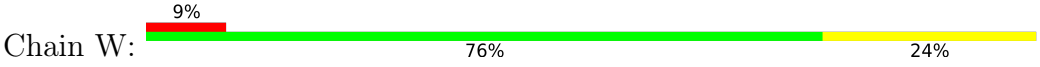


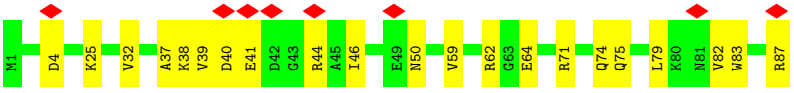


• Molecule 31: Ribosomal protein S10

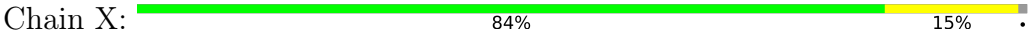


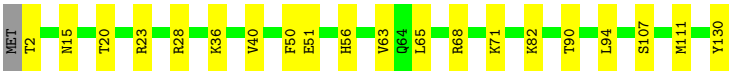
• Molecule 32: 40S ribosomal protein S21



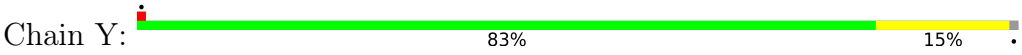


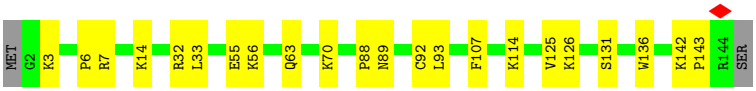
• Molecule 33: 40S ribosomal protein S22-A





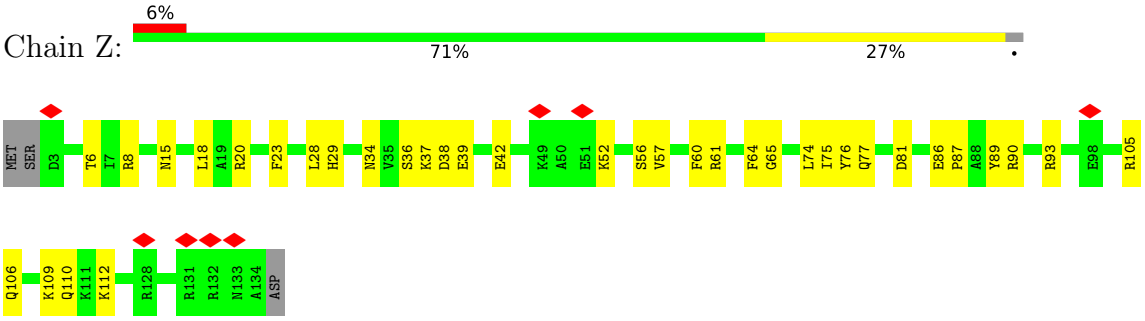
• Molecule 34: Ribosomal protein S23 (S12)





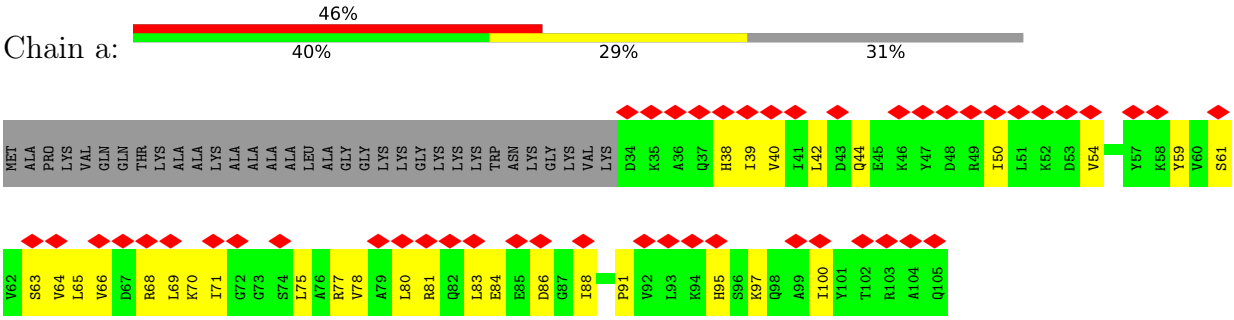
• Molecule 35: 40S ribosomal protein S24

Chain Z:



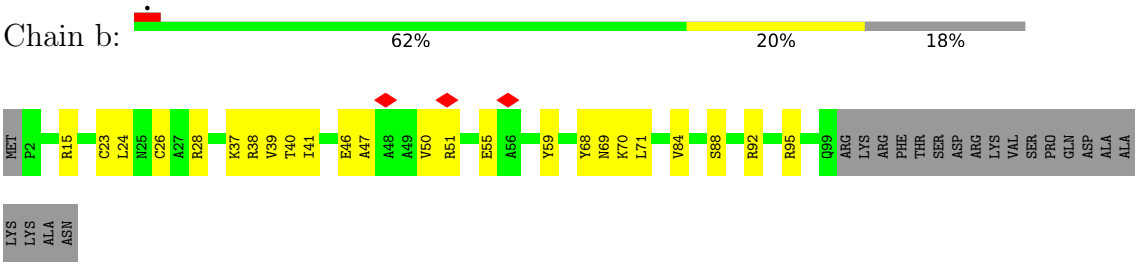
• Molecule 36: 40S ribosomal protein S25

Chain a:



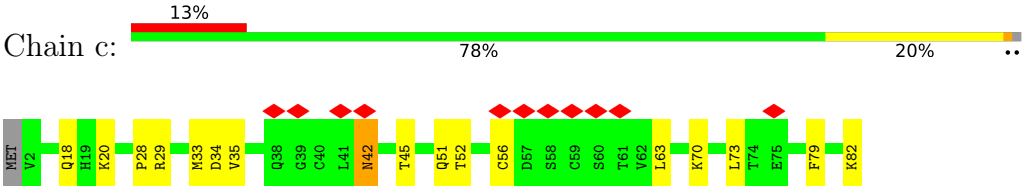
• Molecule 37: 40S ribosomal protein S26

Chain b:



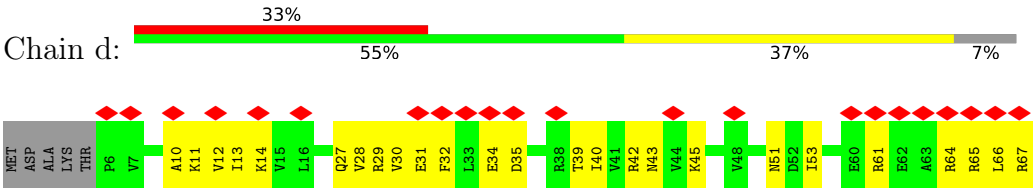
• Molecule 38: 40S ribosomal protein S27

Chain c:



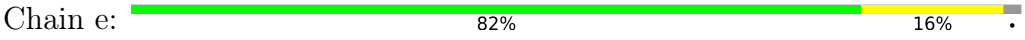
• Molecule 39: 40S ribosomal protein S28-B

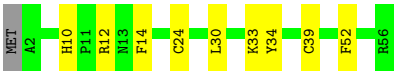
Chain d:



• Molecule 40: 40S ribosomal protein S29A

Chain e:



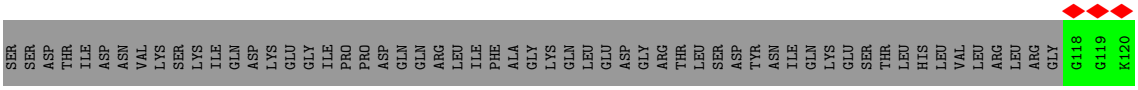


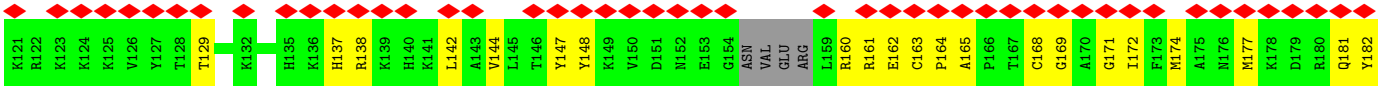
• Molecule 41: 40S ribosomal protein S30

Chain f:

• Molecule 42: Ubiquitin-40S ribosomal protein S31 fusion protein

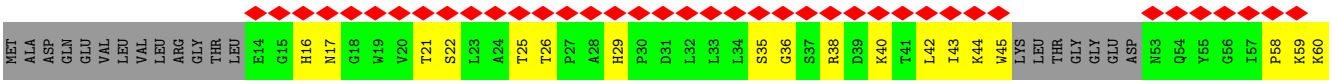
Chain g:

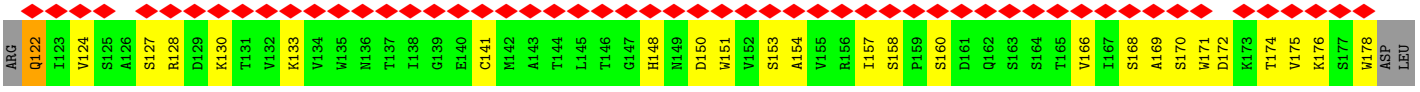


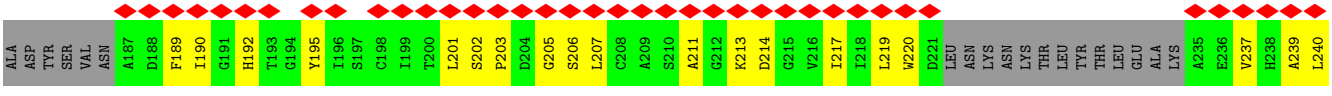


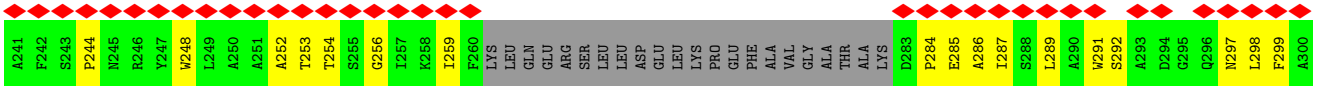
• Molecule 43: Guanine nucleotide-binding protein subunit beta-like protein

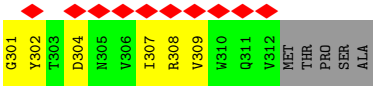
Chain h:





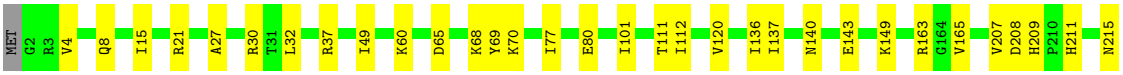


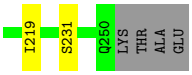




• Molecule 44: 60S ribosomal protein L2-B

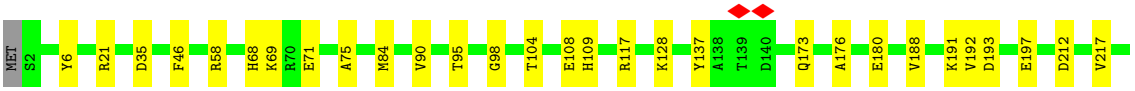
Chain j:





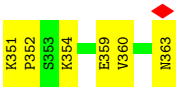
• Molecule 45: 60S ribosomal protein L3

Chain k:



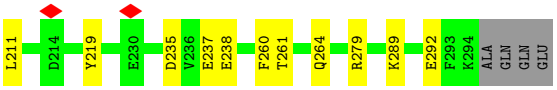
• Molecule 46: 60S ribosomal protein L4-B

Chain l:



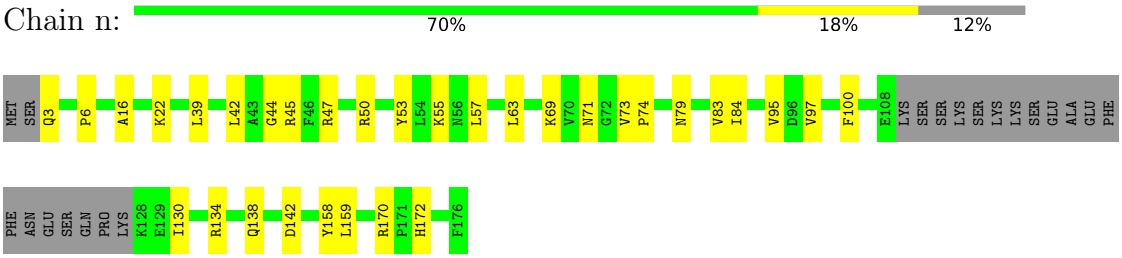
• Molecule 47: 60S ribosomal protein L5

Chain m:



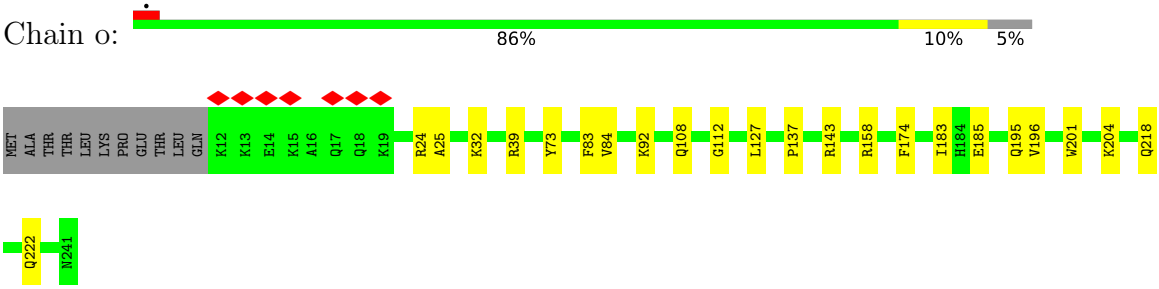
• Molecule 48: 60S ribosomal protein L6

Chain n:



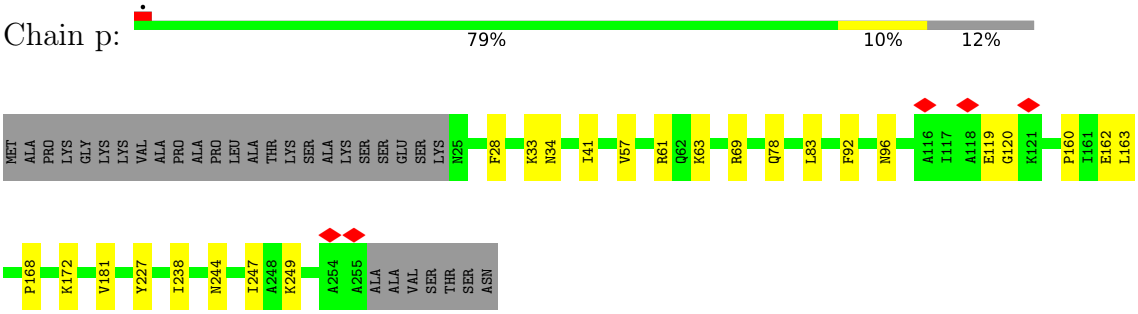
• Molecule 49: 60S ribosomal protein L7-A

Chain o:



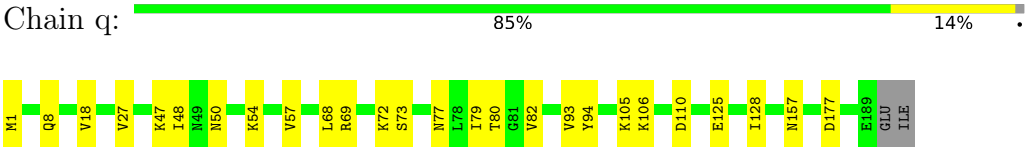
• Molecule 50: 60S ribosomal protein L8

Chain p:



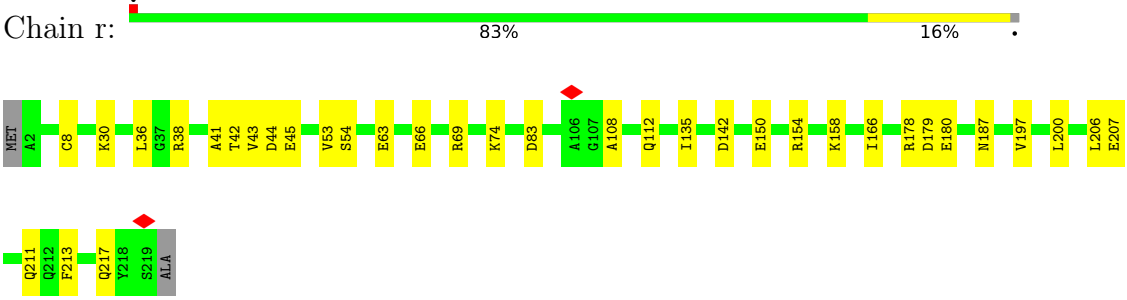
• Molecule 51: 60S ribosomal protein L9-B

Chain q:



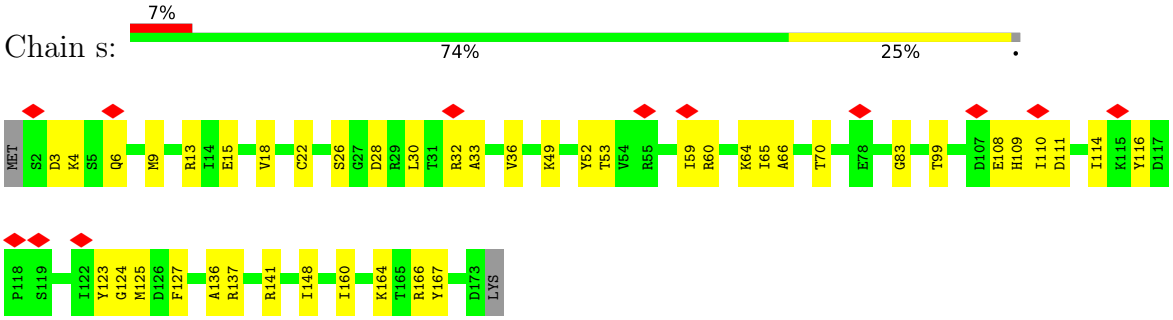
• Molecule 52: 60S ribosomal protein L10

Chain r:



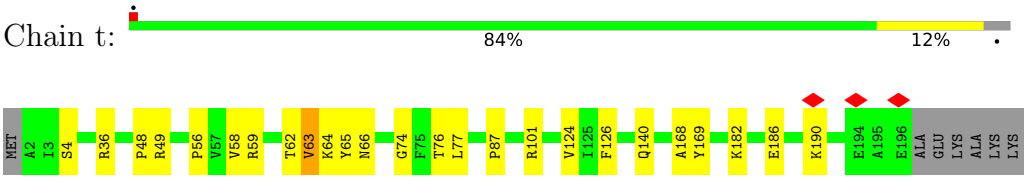
• Molecule 53: 60S ribosomal protein L11-B

Chain s:



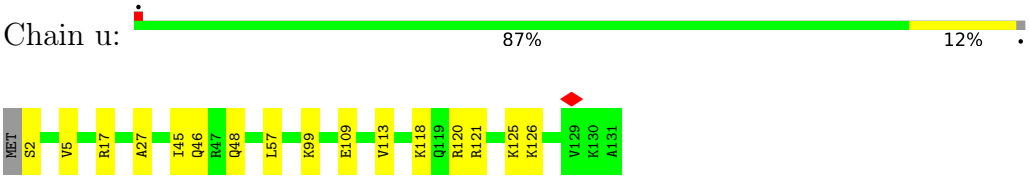
• Molecule 54: 60S ribosomal protein L13

Chain t:



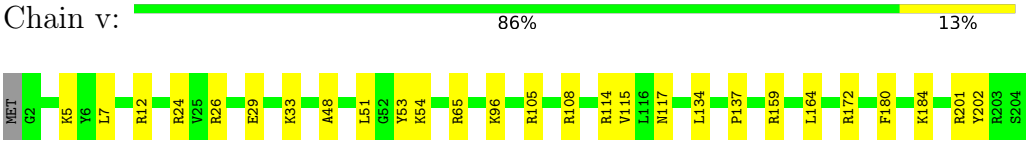
• Molecule 55: 60S ribosomal protein L14-B

Chain u:



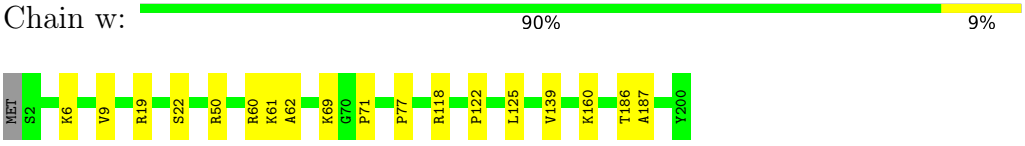
• Molecule 56: 60S ribosomal protein L15-A

Chain v:



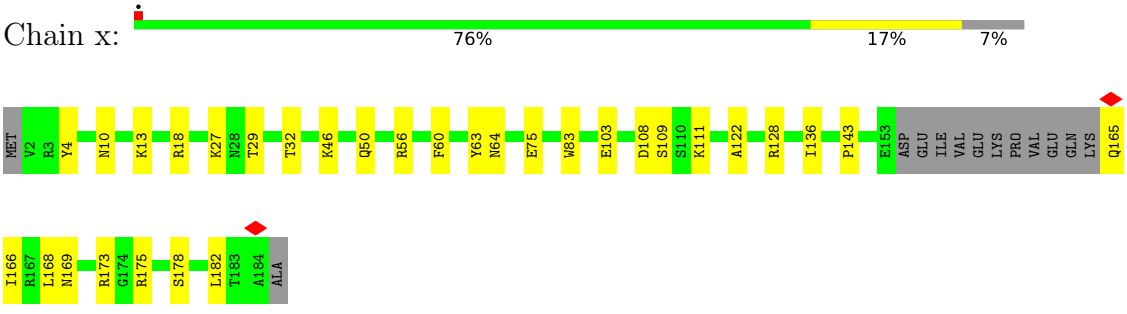
• Molecule 57: Ribosomal protein L13

Chain w:



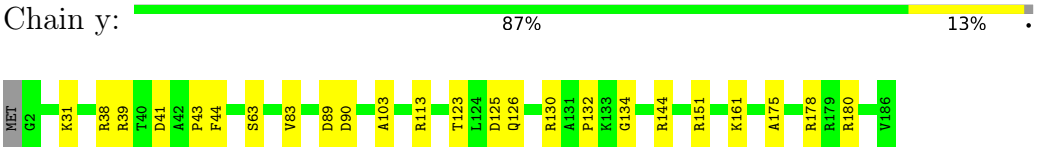
• Molecule 58: Ribosomal protein L22

Chain x:



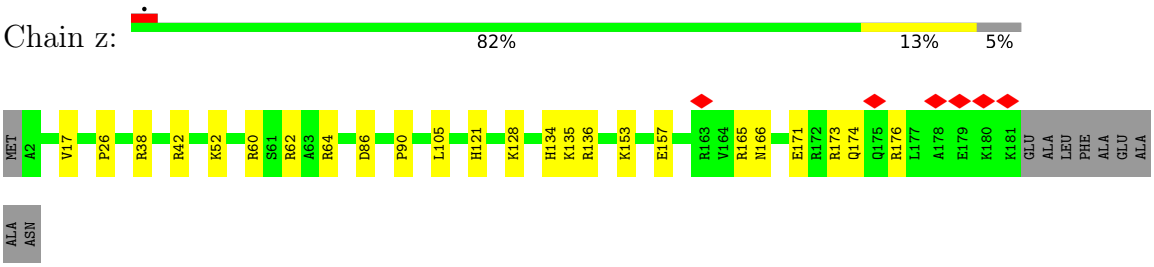
• Molecule 59: 60S ribosomal protein L18-A

Chain y:



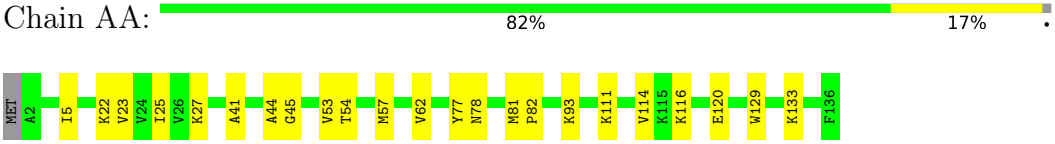
• Molecule 60: 60S ribosomal protein L19-A

Chain z:



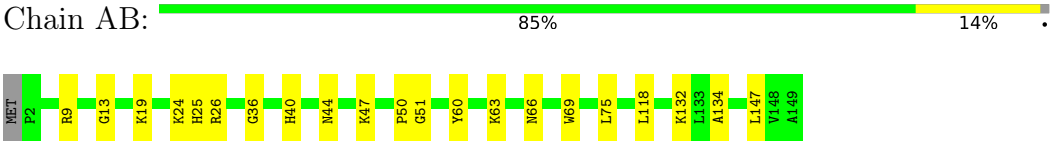
• Molecule 61: 60S ribosomal protein L27

Chain AA:



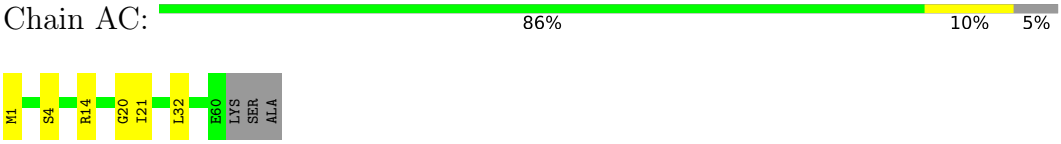
• Molecule 62: 60S ribosomal protein L28

Chain AB:



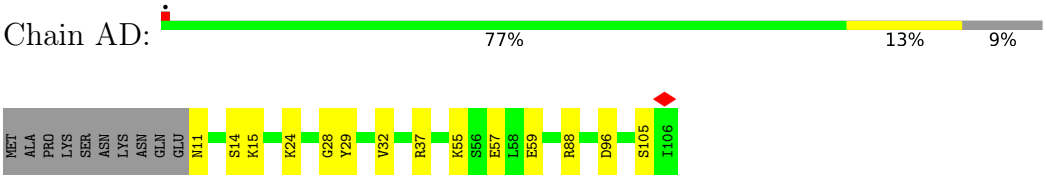
• Molecule 63: 60S ribosomal protein L29

Chain AC:



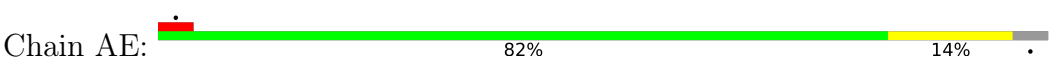
• Molecule 64: 60S ribosomal protein L30

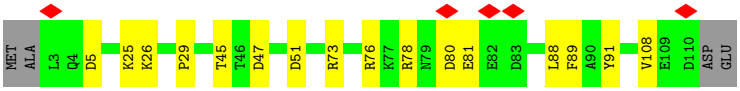
Chain AD:



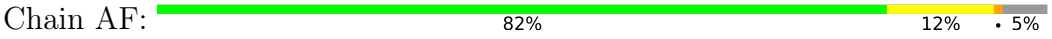
• Molecule 65: 60S ribosomal protein L31-B

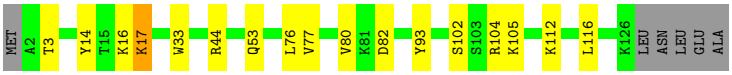
Chain AE:



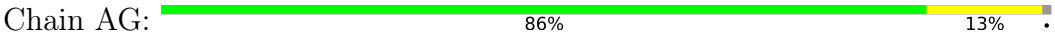


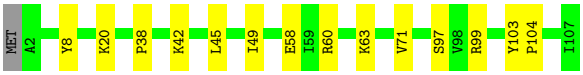
• Molecule 66: 60S ribosomal protein L32



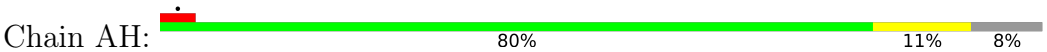


• Molecule 67: 60S ribosomal protein L33-A

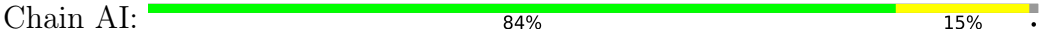


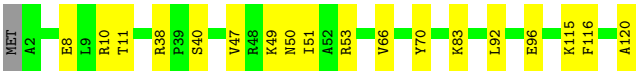


• Molecule 68: 60S ribosomal protein L34-B

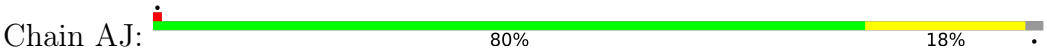


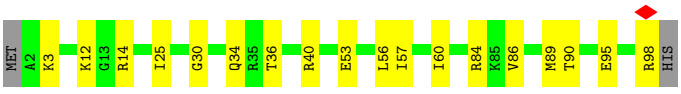
• Molecule 69: Ribosomal protein L29



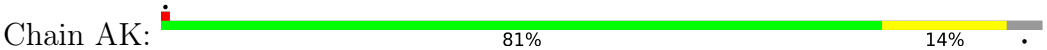


• Molecule 70: 60S ribosomal protein L36



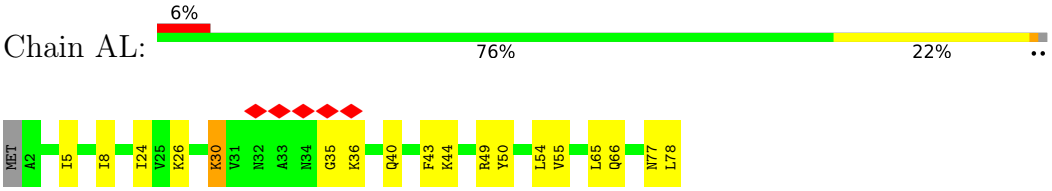


• Molecule 71: 60S ribosomal protein L37-B



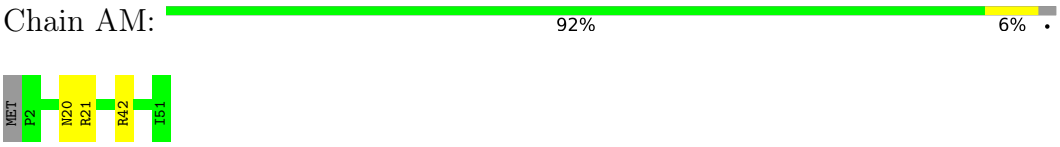
• Molecule 72: 60S ribosomal protein L38

Chain AL:



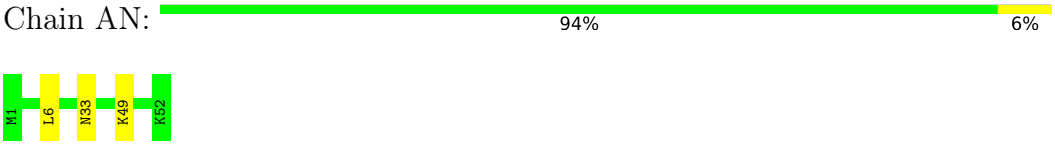
• Molecule 73: 60S ribosomal protein L39

Chain AM:



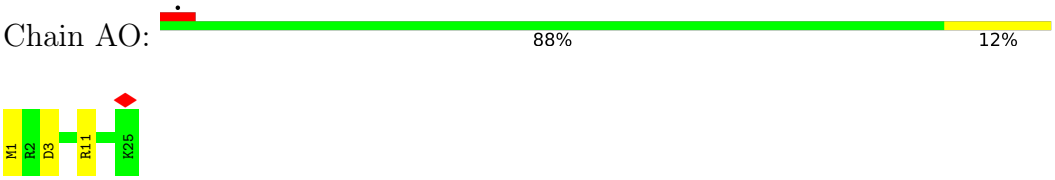
• Molecule 74: 60S ribosomal protein L40-B

Chain AN:



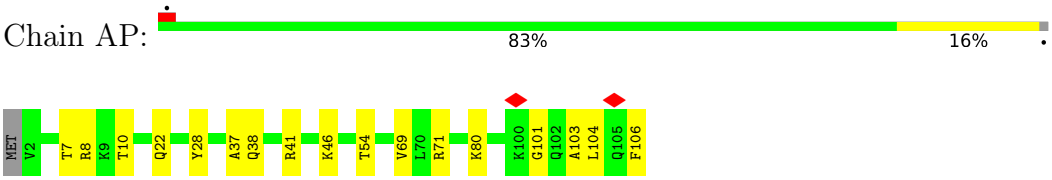
• Molecule 75: 60S ribosomal protein L41

Chain AO:



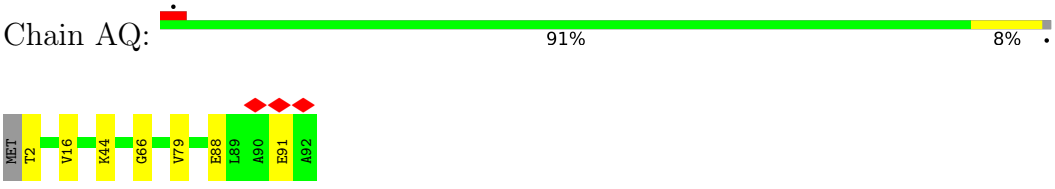
• Molecule 76: 60S ribosomal protein L42-B

Chain AP:



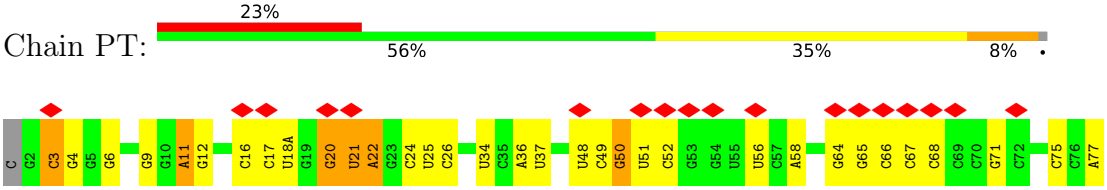
• Molecule 77: 60S ribosomal protein L43-A

Chain AQ:



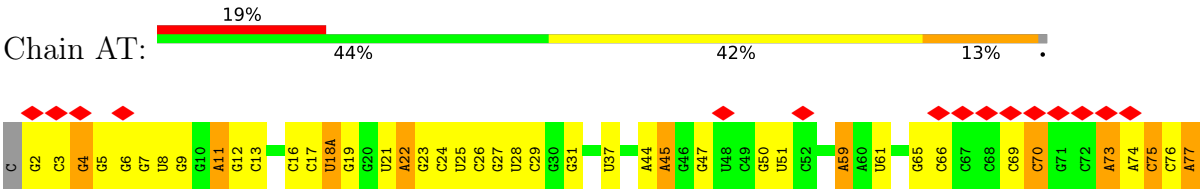
• Molecule 78: tRNA

Chain PT:



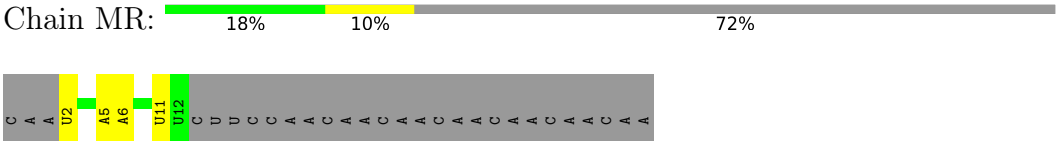
• Molecule 78: tRNA

Chain AT:



• Molecule 79: mRNA

Chain MR:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	44555	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 ($e^-/Å^2$)	29.7	Depositor
Minimum defocus (nm)	200	Depositor
Maximum defocus (nm)	1200	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	1.915	Depositor
Minimum map value	-0.740	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.055	Depositor
Recommended contour level	0.168	Depositor
Map size (Å)	510.3, 510.3, 510.3	wwPDB
Map dimensions	700, 700, 700	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.729, 0.729, 0.729	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MLZ, GET, SPK, OMG, OMC, IAS, ZN

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	0	0.25	0/1483	0.40	0/1997
2	1	0.32	0/73296	0.36	0/114257
3	2	0.26	0/1305	0.39	0/1749
4	3	0.26	0/2884	0.29	0/4492
5	4	0.31	0/3702	0.34	0/5764
6	6	0.25	0/994	0.41	0/1339
7	7	0.25	0/528	0.41	0/701
8	8	0.25	0/976	0.39	0/1319
9	9	0.24	0/990	0.40	0/1322
10	A	0.24	0/40362	0.35	0/62888
11	B	0.20	0/1666	0.41	0/2273
12	C	0.17	0/1750	0.41	0/2354
13	D	0.20	0/1648	0.36	0/2237
14	E	0.18	0/1725	0.38	0/2316
15	F	0.20	0/2096	0.38	0/2822
16	G	0.18	0/1588	0.42	0/2139
17	H	0.18	0/1845	0.35	0/2464
18	I	0.19	0/1490	0.40	0/2004
19	J	0.21	0/1606	0.36	0/2150
20	K	0.20	0/1478	0.39	0/1978
21	L	0.19	0/801	0.41	0/1081
22	M	0.22	0/1154	0.40	0/1553
23	N	0.19	0/541	0.52	0/726
24	O	0.20	0/1210	0.32	0/1631
25	P	0.16	0/944	0.34	0/1265
26	Q	0.17	0/924	0.40	0/1243
27	T	0.18	0/1186	0.43	0/1590
28	R	0.18	0/1120	0.46	0/1500
29	S	0.17	0/966	0.40	0/1295
30	U	0.17	0/1120	0.36	0/1508
31	V	0.17	0/800	0.42	0/1082
32	W	0.19	0/683	0.38	0/918

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	X	0.23	0/1049	0.37	0/1412
34	Y	0.23	0/1128	0.41	0/1505
35	Z	0.17	0/1086	0.40	0/1447
36	a	0.19	0/585	0.49	0/789
37	b	0.20	0/791	0.39	0/1060
38	c	0.18	0/624	0.38	0/843
39	d	0.16	0/489	0.41	0/654
40	e	0.17	0/466	0.37	0/620
41	f	0.19	0/469	0.39	0/626
42	g	0.23	0/575	0.66	3/760 (0.4%)
43	h	0.15	0/1898	0.39	0/2584
44	j	0.29	0/1931	0.43	0/2592
45	k	0.27	0/3156	0.41	0/4246
46	l	0.25	0/2799	0.41	0/3777
47	m	0.21	0/2447	0.37	0/3294
48	n	0.23	0/1258	0.39	0/1696
49	o	0.25	0/1896	0.42	0/2544
50	p	0.25	0/1825	0.40	0/2458
51	q	0.23	0/1528	0.37	0/2055
52	r	0.22	0/1795	0.34	0/2411
53	s	0.19	0/1404	0.38	0/1880
54	t	0.26	0/1600	0.43	0/2147
55	u	0.25	0/1044	0.41	0/1407
56	v	0.28	0/1753	0.41	0/2347
57	w	0.26	0/1620	0.39	0/2167
58	x	0.26	0/1398	0.39	0/1879
59	y	0.26	0/1511	0.44	0/2022
60	z	0.24	0/1492	0.40	0/1983
61	AA	0.23	0/1112	0.32	0/1488
62	AB	0.26	0/1199	0.41	0/1607
63	AC	0.23	0/502	0.36	0/666
64	AD	0.21	0/738	0.31	0/994
65	AE	0.24	0/894	0.38	0/1201
66	AF	0.26	0/1039	0.41	0/1390
67	AG	0.27	0/895	0.36	0/1201
68	AH	0.25	0/934	0.42	0/1242
69	AI	0.24	0/1004	0.43	0/1337
70	AJ	0.23	0/772	0.36	0/1023
71	AK	0.30	0/690	0.48	0/916
72	AL	0.24	0/632	0.38	0/842
73	AM	0.24	0/458	0.37	0/609
74	AN	0.22	0/436	0.35	0/577
75	AO	0.14	0/237	0.43	0/304

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
76	AP	0.23	0/861	0.36	0/1136
77	AQ	0.25	0/705	0.36	0/940
78	AT	0.17	0/1813	0.31	0/2825
78	PT	0.15	0/1813	0.27	0/2825
79	MR	0.43	1/257 (0.4%)	0.32	0/397
All	All	0.26	1/211469 (0.0%)	0.37	3/310682 (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
12	C	0	1
27	T	0	1
34	Y	0	1
All	All	0	3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
79	MR	2	U	C1'-N1	5.83	1.57	1.48

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
42	g	187	HIS	N-CA-C	6.40	121.34	109.56
42	g	186	CYS	CA-C-N	-5.24	114.96	122.67
42	g	186	CYS	C-N-CA	-5.24	114.96	122.67

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
12	C	59	ASP	Peptide
27	T	102	ALA	Peptide
34	Y	88	PRO	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	1442	0	1500	25	0
2	1	65536	0	32944	575	0
3	2	1276	0	1333	18	0
4	3	2579	0	1304	20	0
5	4	3313	0	1674	26	0
6	6	986	0	1040	16	0
7	7	516	0	534	11	0
8	8	960	0	1014	10	0
9	9	980	0	1058	9	0
10	A	36083	0	18151	579	0
11	B	1627	0	1644	58	0
12	C	1724	0	1805	43	0
13	D	1620	0	1715	34	0
14	E	1701	0	1802	44	0
15	F	2055	0	2137	36	0
16	G	1572	0	1644	61	0
17	H	1820	0	1896	49	0
18	I	1466	0	1561	54	0
19	J	1579	0	1602	32	0
20	K	1453	0	1532	39	0
21	L	783	0	799	32	0
22	M	1129	0	1183	8	0
23	N	539	0	573	22	0
24	O	1187	0	1249	21	0
25	P	942	0	980	29	0
26	Q	906	0	940	36	0
27	T	1169	0	1216	56	0
28	R	1102	0	1168	61	0
29	S	954	0	1008	36	0
30	U	1100	0	1114	40	0
31	V	790	0	855	24	0
32	W	676	0	677	15	0
33	X	1032	0	1066	20	0
34	Y	1110	0	1182	15	0
35	Z	1072	0	1123	32	0
36	a	578	0	613	28	0
37	b	779	0	832	19	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	c	614	0	630	15	0
39	d	487	0	523	24	0
40	e	454	0	430	12	0
41	f	461	0	499	11	0
42	g	565	0	607	33	0
43	h	1854	0	1793	83	0
44	j	1894	0	1975	26	0
45	k	3084	0	3173	40	0
46	l	2751	0	2879	36	0
47	m	2394	0	2362	29	0
48	n	1237	0	1316	23	0
49	o	1860	0	1958	18	0
50	p	1795	0	1915	20	0
51	q	1510	0	1582	16	0
52	r	1759	0	1802	22	0
53	s	1385	0	1418	34	0
54	t	1573	0	1644	23	0
55	u	1029	0	1116	14	0
56	v	1713	0	1764	24	0
57	w	1590	0	1705	16	0
58	x	1375	0	1403	18	0
59	y	1478	0	1590	20	0
60	z	1471	0	1583	16	0
61	AA	1087	0	1154	15	0
62	AB	1170	0	1203	20	0
63	AC	489	0	522	5	0
64	AD	729	0	775	9	0
65	AE	881	0	932	11	0
66	AF	1015	0	1095	14	0
67	AG	867	0	932	11	0
68	AH	913	0	998	12	0
69	AI	990	0	1094	14	0
70	AJ	764	0	851	13	0
71	AK	677	0	697	9	0
72	AL	623	0	688	11	0
73	AM	446	0	488	2	0
74	AN	427	0	473	3	0
75	AO	236	0	285	2	0
76	AP	863	0	931	13	0
77	AQ	698	0	734	6	0
78	AT	1623	0	825	24	0
78	PT	1623	0	825	19	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
79	MR	231	0	118	3	0
80	1	14	0	30	1	0
81	1	408	0	480	21	0
81	A	136	0	160	7	0
81	AT	34	0	40	1	0
82	AH	1	0	0	0	0
82	AK	1	0	0	0	0
82	AN	1	0	0	0	0
82	AP	1	0	0	0	0
82	AQ	1	0	0	0	0
82	b	1	0	0	0	0
82	e	1	0	0	0	0
All	All	197420	0	146465	2539	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 7.

All (2539) 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)
2:1:2420:G:H1	2:1:2483:U:H3	1.01	0.96
10:A:1341:U:H3	10:A:1352:G:H1	1.06	0.93
10:A:478:G:H1	10:A:506:U:H3	1.15	0.92
23:N:43:ARG:HH12	23:N:103:LEU:H	1.18	0.90
2:1:2651:A:HO2'	53:s:52:TYR:HH	1.13	0.89
78:AT:51:U:H3	78:AT:65:G:H1	0.91	0.88
14:E:209:ILE:HD12	29:S:16:LEU:HD23	1.53	0.88
10:A:1276:G:H1	10:A:1309:G:H22	1.16	0.87
2:1:1560:U:H3	2:1:1571:G:H1	1.23	0.86
10:A:1278:U:H3	10:A:1307:A:H62	1.24	0.86
25:P:35:ALA:HB2	25:P:65:LYS:HG2	1.58	0.85
2:1:2790:U:H5"	63:AC:1:MET:HA	1.57	0.85
2:1:71:C:O2'	54:t:66:ASN:ND2	2.10	0.84
46:l:111:ASN:HD22	56:v:201:ARG:HB3	1.40	0.84
2:1:1756:A:N6	2:1:1762:G:C5	2.46	0.84
2:1:3013:U:OP1	6:6:12:ARG:NH1	2.09	0.83
2:1:1756:A:N6	2:1:1762:G:C6	2.47	0.83
2:1:1436:G:OP1	46:l:84:HIS:NE2	2.12	0.82
16:G:145:ASP:HB3	39:d:45:LYS:HE3	1.59	0.82
10:A:1019:C:HO2'	33:X:2:THR:N	1.78	0.82
10:A:869:A:O2'	12:C:124:ASN:ND2	2.13	0.82

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:512:G:H1	10:A:541:C:H5	1.28	0.81
28:R:12:LYS:HG3	28:R:13:LYS:H	1.43	0.81
43:h:284:PRO:HB2	43:h:302:TYR:HB3	1.63	0.80
2:1:1014:G:H22	2:1:1030:U:H3	1.28	0.80
10:A:188:U:O2	10:A:193:G:N2	2.13	0.80
11:B:23:HIS:HB3	11:B:50:ILE:HD11	1.61	0.80
2:1:2380:A:H2'	46:l:68:THR:HG21	1.61	0.80
10:A:1537:A:OP2	26:Q:42:ARG:NH2	2.16	0.79
10:A:1324:C:O2'	10:A:1326:A:N7	2.15	0.78
10:A:853:G:H1	10:A:945:U:H3	1.30	0.78
20:K:127:VAL:O	20:K:131:GLN:NE2	2.17	0.78
43:h:299:PHE:HB3	43:h:309:VAL:HA	1.66	0.78
20:K:23:ARG:NH2	20:K:27:GLU:OE2	2.17	0.78
16:G:83:ARG:NH2	16:G:86:GLN:OE1	2.16	0.78
2:1:2334:A:H61	2:1:2955:C:H5	1.31	0.78
43:h:122:GLN:N	43:h:122:GLN:HE21	1.82	0.78
10:A:652:C:O2	10:A:678:A:N6	2.18	0.77
27:T:84:TRP:HA	27:T:89:GLN:HE22	1.49	0.77
65:AE:80:ASP:OD1	65:AE:81:GLU:N	2.16	0.77
2:1:619:A:H2'	2:1:620:A:C8	2.20	0.77
10:A:1575:G:H1	10:A:1595:U:H3	0.84	0.77
2:1:1556:G:N7	8:8:36:LYS:NZ	2.31	0.77
10:A:847:A:O2'	10:A:948:A:N1	2.18	0.77
26:Q:58:LYS:HG2	26:Q:61:ARG:HH21	1.50	0.76
51:q:8:GLN:HB3	51:q:72:LYS:HD3	1.67	0.76
10:A:1156:A:H2'	10:A:1157:G:C8	2.21	0.76
2:1:3139:U:OP2	67:AG:63:LYS:NZ	2.19	0.76
13:D:30:TRP:O	13:D:41:LYS:NZ	2.18	0.76
18:I:147:LYS:NZ	18:I:180:GLU:OE1	2.18	0.76
47:m:182:GLY:HA2	47:m:194:LEU:HD23	1.66	0.76
53:s:4:LYS:HG3	53:s:6:GLN:H	1.50	0.76
10:A:803:G:H5'	10:A:804:U:H5'	1.68	0.76
2:1:3192:A:O2'	55:u:126:LYS:NZ	2.19	0.75
10:A:827:C:H3'	10:A:828:U:H5"	1.66	0.75
2:1:2163:G:O2'	2:1:2292:U:OP2	2.02	0.75
44:j:209:HIS:CE1	44:j:211:HIS:HD2	2.04	0.75
61:AA:54:THR:H	61:AA:57:MET:HE2	1.51	0.75
38:c:18:GLN:O	38:c:29:ARG:NH1	2.20	0.75
16:G:48:PHE:HB2	16:G:67:PRO:HB3	1.68	0.75
10:A:838:G:OP2	60:z:173:ARG:NH1	2.20	0.75
5:4:66:A:OP1	69:AI:10:ARG:NH2	2.20	0.75

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:H:116:GLN:NE2	17:H:119:ASN:O	2.19	0.75
30:U:16:ASN:OD1	30:U:56:LYS:NZ	2.20	0.74
2:1:1682:U:O2	2:1:1684:U:O2'	2.05	0.74
26:Q:56:LEU:HD22	26:Q:80:LEU:HD21	1.70	0.74
27:T:41:ARG:NH2	30:U:36:ILE:O	2.21	0.74
17:H:14:LYS:HB3	17:H:124:LEU:HD11	1.66	0.74
25:P:84:THR:HB	25:P:123:ARG:HG2	1.69	0.74
2:1:3319:U:H3	19:J:107:THR:HG1	1.35	0.74
10:A:78:A:H2	17:H:174:LYS:HG3	1.53	0.74
10:A:1303:G:H5'	29:S:67:ARG:HH22	1.50	0.74
16:G:55:ASP:OD2	16:G:57:SER:OG	2.04	0.74
16:G:187:ILE:HD13	36:a:66:VAL:HG11	1.69	0.74
36:a:59:TYR:HE1	36:a:100:ILE:HG23	1.53	0.74
68:AH:38:ALA:O	68:AH:58:ARG:NH2	2.20	0.74
52:r:36:LEU:HD21	52:r:69:ARG:HH11	1.53	0.73
43:h:301:GLY:HA2	43:h:307:ILE:HA	1.69	0.73
20:K:77:ILE:HD11	20:K:93:LEU:HD12	1.70	0.73
53:s:49:LYS:NZ	76:AP:101:GLY:O	2.17	0.73
2:1:437:G:H22	2:1:620:A:H61	1.36	0.73
21:L:18:GLU:H	21:L:89:LEU:HB2	1.53	0.73
45:k:35:ASP:OD2	45:k:191:LYS:NZ	2.21	0.73
19:J:87:ASN:HB3	19:J:90:LEU:HD13	1.70	0.73
11:B:93:THR:HB	11:B:185:ARG:HH22	1.52	0.72
26:Q:81:ARG:NH2	26:Q:120:SER:O	2.21	0.72
68:AH:58:ARG:HD3	68:AH:59:PRO:HD2	1.70	0.72
23:N:35:SER:HA	23:N:38:HIS:HB2	1.70	0.72
43:h:130:LYS:HG2	43:h:151:TRP:H	1.53	0.72
10:A:1469:A:N3	10:A:1594:G:O2'	2.21	0.72
30:U:130:ARG:HG2	30:U:134:ARG:HE	1.54	0.72
10:A:835:A:H5'	60:z:165:ARG:HD3	1.69	0.72
50:p:83:LEU:HD12	50:p:181:VAL:HG12	1.69	0.72
46:l:139:ARG:HH21	46:l:241:PRO:HG2	1.55	0.72
53:s:108:GLU:HG3	53:s:111:ASP:HB2	1.72	0.72
2:1:538:G:H2'	2:1:539:G:C8	2.25	0.71
44:j:209:HIS:HE1	44:j:211:HIS:HD2	1.35	0.71
49:o:218:GLN:NE2	49:o:222:GLN:OE1	2.24	0.71
54:t:63:VAL:HA	54:t:66:ASN:OD1	1.91	0.71
69:AI:38:ARG:NH1	69:AI:40:SER:O	2.24	0.71
27:T:88:ARG:NH2	27:T:91:ASP:OD1	2.23	0.71
48:n:3:GLN:HG2	66:AF:76:LEU:H	1.54	0.71
2:1:280:U:OP2	80:1:3401:SPK:N5	2.24	0.71

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:D:51:ILE:HG23	13:D:56:LEU:HB2	1.72	0.71
2:1:800:C:OP1	46:l:99:ARG:NH2	2.23	0.71
16:G:62:ILE:HD11	16:G:89:ILE:HB	1.72	0.71
2:1:564:G:H2'	2:1:565:A:C8	2.27	0.70
10:A:1040:U:H3	10:A:1049:G:H1	1.38	0.70
2:1:2420:G:N2	2:1:2483:U:O2	2.22	0.70
14:E:29:GLU:OE2	21:L:56:LYS:NZ	2.24	0.70
14:E:211:GLU:HA	29:S:19:ARG:HD3	1.73	0.70
17:H:2:LYS:HB2	17:H:108:VAL:HG12	1.71	0.70
15:F:191:ARG:HD2	15:F:246:LYS:HB2	1.74	0.70
47:m:119:TYR:OH	47:m:139:PRO:O	2.08	0.70
12:C:27:LYS:NZ	12:C:49:ASN:OD1	2.17	0.69
35:Z:77:GLN:NE2	35:Z:81:ASP:OD2	2.19	0.69
43:h:174:THR:HA	43:h:190:ILE:HG22	1.73	0.69
15:F:35:PRO:HD2	15:F:83:PRO:HG2	1.74	0.69
18:I:135:ARG:HB2	18:I:147:LYS:HB3	1.72	0.69
30:U:29:GLU:H	30:U:110:LYS:HZ1	1.40	0.69
53:s:26:SER:OG	53:s:64:LYS:O	2.10	0.69
35:Z:74:LEU:HD12	35:Z:90:ARG:HH22	1.57	0.69
46:l:299:VAL:HG21	59:y:132:PRO:HB2	1.74	0.69
10:A:1024:A:O2'	10:A:1025:G:O5'	2.10	0.69
12:C:190:PRO:O	12:C:195:ARG:NH2	2.26	0.69
16:G:26:ALA:HB2	28:R:25:LYS:HG3	1.74	0.69
18:I:95:LEU:O	18:I:108:ARG:NH1	2.26	0.69
26:Q:100:LYS:HG3	26:Q:101:VAL:HG13	1.72	0.69
2:1:1657:G:H2'	2:1:1658:G:C8	2.28	0.69
18:I:149:LEU:HD12	18:I:182:PRO:HG3	1.75	0.69
10:A:205:U:O2	19:J:184:ARG:NH1	2.24	0.69
10:A:801:A:O4'	18:I:106:GLN:NE2	2.26	0.69
62:AB:24:LYS:O	62:AB:26:ARG:HG2	1.93	0.68
10:A:1742:A:O4'	34:Y:63:GLN:NE2	2.25	0.68
1:0:130:GLU:HG2	1:0:131:LYS:HG3	1.73	0.68
2:1:1949:G:H1	2:1:2070:A:H2'	1.58	0.68
10:A:1784:A:H5'	37:b:95:ARG:HG2	1.75	0.68
43:h:80:TYR:HD1	43:h:94:ASP:HA	1.58	0.68
11:B:60:ALA:HA	11:B:63:ILE:HD12	1.75	0.68
18:I:67:ARG:NH2	18:I:124:ASP:OD1	2.27	0.68
2:1:62:A:OP1	56:v:172:ARG:NH2	2.27	0.68
76:AP:38:GLN:OE1	76:AP:41:ARG:NH2	2.26	0.68
10:A:592:A:OP1	20:K:40:ARG:NH2	2.24	0.68
14:E:116:ILE:HD13	14:E:143:LEU:HD22	1.76	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:G:53:VAL:HG13	16:G:138:VAL:HG11	1.76	0.68
27:T:25:ARG:HG2	36:a:40:VAL:HG11	1.76	0.68
10:A:1309:G:H4'	11:B:113:ARG:HH12	1.58	0.68
2:1:1303:G:OP2	57:w:60:ARG:NH1	2.27	0.68
14:E:73:LEU:HD23	21:L:20:VAL:HG13	1.76	0.68
10:A:1275:U:H2'	10:A:1276:G:C8	2.28	0.67
10:A:4:C:H5	10:A:20:G:H1	1.41	0.67
10:A:821:U:H2'	10:A:822:G:H8	1.59	0.67
10:A:1338:U:H2'	10:A:1339:G:H8	1.59	0.67
22:M:26:LYS:HG2	22:M:27:ALA:H	1.58	0.67
10:A:184:C:OP1	19:J:152:ARG:NH2	2.26	0.67
10:A:1026:G:H2'	10:A:1027:G:C8	2.29	0.67
10:A:1067:C:O2'	32:W:62:ARG:NH1	2.28	0.67
52:r:53:VAL:HG21	52:r:166:ILE:HD12	1.77	0.67
22:M:77:SER:HB3	22:M:85:ILE:HG12	1.76	0.67
10:A:1485:G:H5'	30:U:72:GLY:HA3	1.77	0.67
10:A:1597:G:H4'	16:G:98:MET:HE1	1.77	0.67
27:T:29:MET:HB2	27:T:54:LEU:HD12	1.77	0.67
29:S:60:ARG:HH22	29:S:66:VAL:HG21	1.59	0.67
43:h:207:LEU:HD12	43:h:219:LEU:HD21	1.74	0.67
16:G:133:VAL:HG22	16:G:198:LEU:HD13	1.77	0.67
51:q:105:LYS:NZ	51:q:110:ASP:OD1	2.27	0.67
70:AJ:56:LEU:HD22	70:AJ:89:MET:HG3	1.76	0.67
2:1:2740:U:H2'	2:1:2741:A:H8	1.60	0.67
15:F:31:PRO:HG2	15:F:38:LEU:HG	1.76	0.67
18:I:172:LEU:HD12	18:I:173:THR:HG23	1.77	0.67
39:d:11:LYS:HA	39:d:53:ILE:HA	1.77	0.67
10:A:1037:U:O2	10:A:1052:G:N2	2.28	0.67
16:G:143:ARG:N	16:G:218:GLU:OE2	2.28	0.66
35:Z:56:SER:HB3	35:Z:74:LEU:HB2	1.75	0.66
10:A:444:A:H5"	15:F:57:ASN:HD22	1.59	0.66
10:A:691:U:H5'	10:A:692:U:H5"	1.77	0.66
2:1:438:A:N1	2:1:489:G:O2'	2.21	0.66
72:AL:40:GLN:HE21	72:AL:55:VAL:HG13	1.60	0.66
2:1:2191:A:H2'	2:1:2192:A:C8	2.30	0.66
29:S:41:ILE:HG22	29:S:43:SER:H	1.61	0.66
2:1:1936:G:H21	2:1:3327:A:H8	1.42	0.66
2:1:2808:OMC:H5	2:1:2824:C:H42	1.43	0.66
18:I:40:LYS:HE3	18:I:59:PRO:HG3	1.77	0.66
48:n:71:ASN:ND2	48:n:159:LEU:O	2.22	0.66
2:1:1345:G:N2	46:l:292:ASN:O	2.29	0.66

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:3278:U:H4'	45:k:173:GLN:HG3	1.78	0.66
10:A:1300:U:HO2'	10:A:1301:G:H8	1.43	0.66
10:A:1579:A:H2'	10:A:1580:A:H8	1.60	0.66
11:B:189:PRO:HD2	11:B:193:THR:HG21	1.77	0.66
30:U:42:GLY:HA3	30:U:94:VAL:HG21	1.77	0.66
26:Q:56:LEU:HD13	26:Q:78:THR:HG21	1.77	0.66
45:k:108:GLU:OE1	45:k:109:HIS:NE2	2.28	0.66
49:o:108:GLN:HE22	49:o:204:LYS:HG2	1.59	0.66
11:B:112:THR:HG22	11:B:114:SER:H	1.60	0.66
16:G:34:GLN:HA	16:G:37:GLN:HE22	1.61	0.66
29:S:23:LYS:HB3	29:S:34:LEU:HD11	1.76	0.66
2:1:1091:U:H4'	2:1:1092:U:H5'	1.77	0.66
10:A:856:G:H2'	10:A:857:G:C8	2.30	0.66
27:T:25:ARG:NH2	36:a:38:HIS:O	2.29	0.66
30:U:66:TYR:HD1	30:U:67:LEU:HD22	1.61	0.66
43:h:44:LYS:HZ3	43:h:95:LEU:HB3	1.59	0.66
61:AA:111:LYS:HA	61:AA:114:VAL:HG12	1.76	0.66
10:A:45:U:O2'	10:A:46:A:H2'	1.96	0.65
27:T:70:VAL:O	27:T:74:GLN:NE2	2.29	0.65
2:1:339:C:OP1	2:1:1376:G:O2'	2.14	0.65
14:E:95:ARG:HB3	14:E:101:VAL:HG11	1.77	0.65
10:A:1156:A:H2'	10:A:1157:G:H8	1.59	0.65
10:A:1459:U:O4	16:G:180:ARG:NH1	2.29	0.65
10:A:1578:C:H2'	10:A:1579:A:H8	1.62	0.65
27:T:88:ARG:HD3	27:T:108:LYS:HE2	1.78	0.65
28:R:82:GLN:HE22	28:R:86:LYS:HD2	1.62	0.65
10:A:62:A:H8	10:A:285:G:H21	1.42	0.65
23:N:43:ARG:NH1	23:N:101:ALA:O	2.28	0.65
6:6:13:MET:HE1	6:6:54:ALA:HB3	1.78	0.65
10:A:330:U:OP1	19:J:56:ARG:NH2	2.29	0.65
25:P:15:PHE:HB3	25:P:22:PHE:HB2	1.79	0.65
43:h:174:THR:HG23	43:h:176:LYS:HG3	1.78	0.65
54:t:124:VAL:HG21	69:AI:120:ALA:HB3	1.78	0.65
10:A:64:U:O2'	10:A:166:A:N3	2.28	0.65
10:A:1226:G:H5"	26:Q:77:LYS:HG3	1.78	0.65
18:I:5:ILE:HG22	18:I:7:SER:H	1.62	0.65
11:B:198:MET:HE1	11:B:200:ASP:HB2	1.79	0.65
28:R:45:PHE:HA	28:R:48:TYR:HB2	1.79	0.65
10:A:932:U:OP1	12:C:165:ARG:NH1	2.29	0.65
15:F:199:GLU:OE2	15:F:201:HIS:NE2	2.25	0.65
16:G:100:ASN:HB2	16:G:180:ARG:HD3	1.79	0.65

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:R:6:VAL:HG12	28:R:94:LYS:HD3	1.78	0.65
30:U:14:PHE:HE1	30:U:136:ALA:HB2	1.62	0.65
10:A:838:G:OP2	60:z:176:ARG:NH2	2.30	0.64
43:h:203:PRO:HG3	43:h:244:PRO:HA	1.78	0.64
20:K:87:SER:OG	20:K:89:ASP:OD1	2.15	0.64
25:P:21:THR:HG21	25:P:55:ALA:HB2	1.78	0.64
55:u:120:ARG:NH1	57:w:186:THR:O	2.30	0.64
27:T:53:GLU:HG2	27:T:55:THR:HG22	1.79	0.64
30:U:4:VAL:HG21	30:U:140:LEU:HG	1.80	0.64
53:s:109:HIS:HB2	53:s:114:ILE:HD12	1.78	0.64
2:1:976:A:N6	2:1:1100:G:O2'	2.31	0.64
14:E:173:ILE:HG12	14:E:186:LYS:HG2	1.78	0.64
48:n:39:LEU:HD13	48:n:83:VAL:HG11	1.79	0.64
2:1:3039:C:H3'	60:z:62:ARG:HH22	1.62	0.64
51:q:47:LYS:HB2	55:u:5:VAL:HG22	1.80	0.64
2:1:591:C:O2	49:o:24:ARG:NH1	2.31	0.64
2:1:226:G:H5'	81:1:3410:GET:H831	1.79	0.64
2:1:266:C:OP1	56:v:5:LYS:NZ	2.28	0.64
10:A:1204:A:H62	10:A:1249:G:H21	1.46	0.64
65:AE:45:THR:HG22	65:AE:47:ASP:H	1.63	0.64
10:A:636:C:O2'	18:I:97:LYS:NZ	2.30	0.64
10:A:1222:G:N1	10:A:1234:U:O4	2.30	0.64
10:A:1168:A:N3	10:A:1195:C:O2'	2.27	0.63
57:w:122:PRO:HA	57:w:125:LEU:HD12	1.79	0.63
2:1:1720:U:H1'	2:1:1721:C:C6	2.33	0.63
10:A:1458:C:H41	10:A:1523:G:H1	1.47	0.63
27:T:102:ALA:O	27:T:104:ASN:N	2.31	0.63
61:AA:53:VAL:HG11	61:AA:62:VAL:HG13	1.81	0.63
21:L:12:HIS:HB3	21:L:80:LEU:HD11	1.80	0.63
25:P:87:LYS:NZ	25:P:115:PRO:O	2.32	0.63
10:A:405:A:H2'	10:A:406:C:C6	2.34	0.63
1:0:52:LYS:NZ	4:3:101:G:N7	2.40	0.63
39:d:10:ALA:HB1	39:d:30:VAL:HB	1.80	0.63
43:h:22:SER:HB3	43:h:36:GLY:HA3	1.78	0.63
45:k:313:ARG:O	45:k:333:LYS:NZ	2.28	0.63
56:v:33:LYS:O	56:v:65:ARG:NH2	2.32	0.63
2:1:1491:U:H5	2:1:1831:A:N1	1.97	0.63
10:A:883:A:H61	10:A:899:G:H1'	1.62	0.63
31:V:32:GLN:NE2	31:V:109:PRO:O	2.31	0.63
52:r:207:GLU:OE2	52:r:211:GLN:NE2	2.31	0.63
10:A:1584:A:C8	40:e:14:PHE:HB2	2.33	0.63

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:T:17:LEU:HG	27:T:18:LEU:H	1.64	0.63
45:k:372:THR:HG22	45:k:374:ALA:H	1.62	0.63
1:0:82:GLU:HG2	1:0:87:ILE:HG12	1.81	0.63
18:I:121:ILE:HG21	18:I:172:LEU:HD11	1.80	0.63
26:Q:94:VAL:HG11	26:Q:116:LEU:HD11	1.80	0.63
36:a:65:LEU:HB3	36:a:69:LEU:HD12	1.81	0.63
43:h:113:SER:HB2	43:h:154:ALA:HA	1.81	0.63
10:A:1276:G:H22	10:A:1309:G:N2	1.95	0.62
12:C:90:GLU:OE2	12:C:92:GLN:NE2	2.32	0.62
76:AP:8:ARG:NH1	76:AP:10:THR:HG21	2.14	0.62
10:A:1342:A:H2'	10:A:1343:G:H8	1.65	0.62
27:T:16:ARG:NH1	27:T:17:LEU:O	2.31	0.62
2:1:2504:C:OP1	44:j:37:ARG:NH2	2.29	0.62
2:1:2932:C:H2'	2:1:2933:G:C8	2.34	0.62
10:A:126:A:H62	10:A:289:G:H21	1.46	0.62
10:A:261:C:O2'	10:A:262:G:N2	2.25	0.62
10:A:530:U:OP1	35:Z:64:PHE:HA	1.99	0.62
39:d:31:GLU:HG2	39:d:32:PHE:H	1.64	0.62
44:j:101:ILE:HG13	44:j:165:VAL:HG22	1.82	0.62
10:A:821:U:H2'	10:A:822:G:C8	2.34	0.62
21:L:81:ASN:HB2	23:N:37:VAL:HG21	1.81	0.62
23:N:43:ARG:HG2	23:N:121:VAL:HB	1.81	0.62
10:A:65:A:OP1	17:H:176:GLN:NE2	2.31	0.62
10:A:193:G:N7	19:J:147:ARG:NH2	2.47	0.62
10:A:1578:C:H2'	10:A:1579:A:C8	2.35	0.62
14:E:40:VAL:HG12	14:E:49:VAL:HG22	1.82	0.62
37:b:23:CYS:HB3	37:b:28:ARG:H	1.65	0.62
1:0:155:ARG:HD3	1:0:172:TYR:CD1	2.34	0.62
10:A:1579:A:H2'	10:A:1580:A:C8	2.34	0.62
27:T:68:ARG:O	27:T:72:ILE:HG13	1.99	0.62
42:g:182:TYR:OH	42:g:187:HIS:ND1	2.28	0.62
45:k:95:THR:OG1	45:k:98:GLY:O	2.15	0.62
65:AE:76:ARG:HD3	65:AE:88:LEU:HD13	1.82	0.62
12:C:59:ASP:OD1	12:C:60:GLY:N	2.32	0.62
22:M:16:GLN:HB3	22:M:19:ILE:HD13	1.82	0.62
24:O:91:LEU:HB3	24:O:122:ILE:HG12	1.82	0.62
10:A:511:U:H2'	10:A:512:G:C8	2.35	0.62
14:E:107:LYS:HG3	14:E:176:VAL:HG22	1.81	0.62
26:Q:75:VAL:HA	26:Q:93:VAL:HG13	1.82	0.62
28:R:93:GLN:NE2	43:h:61:SER:O	2.33	0.62
47:m:60:ILE:HB	47:m:80:ALA:HB2	1.82	0.62

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:AT:4:G:H1	78:AT:70:C:H42	1.48	0.62
43:h:70:GLN:OE1	43:h:86:TRP:NE1	2.26	0.61
10:A:1672:G:H2'	10:A:1674:U:C4	2.35	0.61
14:E:46:LYS:HE3	14:E:86:ALA:HB2	1.82	0.61
18:I:34:LEU:HD21	18:I:73:LEU:HD21	1.81	0.61
23:N:45:LEU:HD11	42:g:142:LEU:HG	1.82	0.61
2:1:511:C:OP1	46:l:344:LYS:NZ	2.24	0.61
2:1:2210:A:H2'	2:1:2211:A:C8	2.36	0.61
81:A:1804:GET:N32	79:MR:11:U:OP1	2.32	0.61
11:B:172:LEU:O	11:B:176:LEU:HG	2.00	0.61
21:L:70:ASP:OD1	21:L:91:ARG:NH2	2.34	0.61
2:1:1091:U:O4'	3:2:129:LYS:NZ	2.33	0.61
15:F:50:ASN:O	15:F:53:LYS:NZ	2.32	0.61
16:G:41:LYS:HB2	16:G:44:ASN:HA	1.80	0.61
22:M:27:ALA:HA	22:M:29:LYS:HE3	1.82	0.61
10:A:920:U:O4	37:b:15:ARG:NH1	2.33	0.61
17:H:77:LEU:HD12	17:H:95:LYS:HD3	1.82	0.61
31:V:52:LYS:HB3	31:V:91:ASP:HB2	1.83	0.61
28:R:68:VAL:HG11	28:R:80:ILE:HD11	1.81	0.61
50:p:63:LYS:NZ	56:v:29:GLU:OE1	2.30	0.61
2:1:732:U:H3'	2:1:733:A:H8	1.65	0.61
2:1:1099:A:N6	2:1:1359:A:H1'	2.15	0.61
2:1:3287:A:H2'	2:1:3288:A:C8	2.34	0.61
27:T:56:LYS:HB2	27:T:60:GLU:HG3	1.82	0.61
31:V:36:VAL:HG11	31:V:111:VAL:HG11	1.83	0.61
46:l:301:ARG:NH1	59:y:38:ARG:O	2.33	0.61
77:AQ:88:GLU:HA	77:AQ:91:GLU:HG2	1.82	0.61
2:1:437:G:N2	2:1:620:A:H61	1.99	0.61
10:A:917:U:OP2	12:C:155:TYR:OH	2.14	0.61
13:D:32:PRO:HB2	13:D:38:ARG:HG3	1.82	0.61
38:c:56:CYS:HB2	38:c:63:LEU:HD21	1.83	0.61
10:A:1463:G:H2'	10:A:1464:G:C8	2.35	0.61
12:C:25:THR:O	12:C:50:ARG:NH2	2.33	0.61
18:I:11:THR:HG22	18:I:14:GLU:HG2	1.83	0.61
18:I:66:TYR:O	18:I:70:GLN:HB2	2.01	0.61
66:AF:112:LYS:HE2	66:AF:116:LEU:HD11	1.82	0.61
10:A:1242:U:H2'	21:L:2:LEU:HA	1.82	0.60
10:A:1559:G:O2'	16:G:185:ARG:NH2	2.34	0.60
30:U:27:LYS:HE2	30:U:111:ILE:HG23	1.83	0.60
43:h:133:LYS:HE2	43:h:141:CYS:SG	2.41	0.60
69:AI:92:LEU:HD22	69:AI:96:GLU:HB3	1.81	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2244:U:OP1	78:PT:25:U:O2'	2.20	0.60
28:R:21:VAL:HG13	28:R:64:ILE:HG22	1.83	0.60
58:x:169:ASN:OD1	67:AG:60:ARG:NH1	2.33	0.60
62:AB:60:TYR:CE2	62:AB:63:LYS:HA	2.36	0.60
10:A:482:C:H3'	10:A:483:A:H5"	1.82	0.60
10:A:1474:G:O2'	10:A:1481:C:O2	2.18	0.60
2:1:1949:G:N2	2:1:2070:A:O2'	2.33	0.60
10:A:1183:G:OP1	10:A:1184:G:O2'	2.13	0.60
10:A:1420:U:H4'	40:e:24:CYS:HB2	1.83	0.60
37:b:40:THR:OG1	37:b:69:ASN:OD1	2.20	0.60
43:h:64:GLY:O	43:h:91:ARG:NH1	2.30	0.60
50:p:28:PHE:HE1	61:AA:53:VAL:HG12	1.65	0.60
10:A:1395:G:N2	10:A:1398:G:OP2	2.32	0.60
10:A:1460:G:H2'	10:A:1461:A:H8	1.66	0.60
10:A:1668:A:H1'	17:H:66:GLY:HA2	1.83	0.60
29:S:74:GLN:HB3	29:S:78:ARG:HE	1.66	0.60
31:V:60:LYS:HB2	31:V:85:ILE:HB	1.84	0.60
10:A:915:A:N3	12:C:111:ARG:NH2	2.49	0.60
10:A:1145:A:H2'	10:A:1146:C:C6	2.36	0.60
13:D:147:HIS:ND1	13:D:190:ASP:OD2	2.34	0.60
26:Q:56:LEU:HA	26:Q:59:LYS:HE2	1.83	0.60
10:A:1567:C:H4'	28:R:136:ARG:HB2	1.84	0.60
38:c:42:ASN:C	38:c:42:ASN:HD22	2.09	0.60
2:1:1099:A:H61	2:1:1359:A:H1'	1.66	0.60
2:1:3208:A:H4'	45:k:95:THR:HG22	1.84	0.60
10:A:589:A:H2'	10:A:590:A:C8	2.36	0.60
11:B:84:ARG:HD3	11:B:204:TYR:HA	1.84	0.60
2:1:1611:U:H2'	2:1:1612:U:C6	2.35	0.60
29:S:7:LYS:HD2	29:S:11:ARG:HH21	1.65	0.60
10:A:1630:U:OP1	81:A:1802:GET:N21	2.35	0.60
28:R:98:GLU:OE2	43:h:58:PRO:HB2	2.02	0.60
2:1:1012:U:O2'	2:1:1013:U:O5'	2.20	0.59
10:A:627:U:OP1	24:O:127:ARG:NH2	2.35	0.59
12:C:151:LYS:NZ	12:C:153:THR:O	2.30	0.59
51:q:57:VAL:HG23	51:q:68:LEU:HD13	1.82	0.59
1:0:71:LYS:NZ	2:1:561:U:OP1	2.35	0.59
2:1:437:G:H22	2:1:620:A:N6	2.00	0.59
10:A:764:U:C2	35:Z:8:ARG:HD3	2.37	0.59
18:I:94:ILE:HG12	18:I:117:VAL:HG21	1.84	0.59
2:1:1115:C:H2'	2:1:1116:A:H8	1.68	0.59
10:A:1342:A:H2'	10:A:1343:G:C8	2.37	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2740:U:H2'	2:1:2741:A:C8	2.38	0.59
6:6:135:VAL:HG11	7:7:26:SER:HB3	1.84	0.59
26:Q:21:ASP:OD1	26:Q:22:LEU:N	2.34	0.59
43:h:253:THR:OG1	43:h:256:GLY:O	2.14	0.59
2:1:2285:G:O2'	2:1:2288:U:OP2	2.17	0.59
18:I:95:LEU:HB2	18:I:112:ARG:HB3	1.84	0.59
2:1:3308:G:H21	2:1:3327:A:H2	1.47	0.59
9:9:52:GLN:O	9:9:70:VAL:HB	2.03	0.59
21:L:15:LEU:O	21:L:19:GLY:HA2	2.03	0.59
29:S:17:ILE:HG12	29:S:58:MET:HE2	1.85	0.59
44:j:211:HIS:ND1	44:j:219:ILE:HG23	2.18	0.59
1:0:168:PRO:HG3	57:w:125:LEU:HD13	1.84	0.59
10:A:1554:U:H4'	27:T:36:ARG:HE	1.67	0.59
10:A:1575:G:O6	10:A:1595:U:O4	2.20	0.59
30:U:5:SER:OG	30:U:6:VAL:N	2.33	0.59
2:1:654:A:H2'	2:1:655:A:C8	2.38	0.59
10:A:188:U:H3	10:A:193:G:H1	1.51	0.59
10:A:945:U:H5'	24:O:55:ARG:HD3	1.85	0.59
14:E:43:THR:OG1	14:E:46:LYS:O	2.21	0.59
2:1:93:G:H2'	2:1:94:A:C8	2.38	0.59
2:1:2506:G:H5"	50:p:249:LYS:HE3	1.85	0.59
10:A:1546:G:H5"	27:T:135:GLY:HA3	1.85	0.59
13:D:218:SER:HB3	32:W:25:LYS:HD3	1.83	0.59
24:O:17:PRO:HG3	38:c:28:PRO:HG3	1.85	0.59
52:r:30:LYS:HG3	52:r:63:GLU:HG3	1.83	0.59
10:A:811:U:H2'	10:A:812:C:H6	1.68	0.58
10:A:1041:C:N3	10:A:1048:U:O4	2.36	0.58
2:1:896:G:H1'	2:1:1585:A:N6	2.18	0.58
2:1:3260:A:H2'	2:1:3261:A:C8	2.38	0.58
10:A:883:A:N6	10:A:899:G:H1'	2.17	0.58
11:B:180:GLU:CD	11:B:191:ARG:HH12	2.10	0.58
15:F:105:VAL:HG23	15:F:191:ARG:HG2	1.85	0.58
20:K:148:VAL:HG11	20:K:156:ILE:HD11	1.85	0.58
30:U:40:SER:HB3	30:U:43:ASN:HB2	1.85	0.58
42:g:162:GLU:OE1	42:g:171:GLY:N	2.35	0.58
2:1:1344:U:OP1	59:y:39:ARG:NH1	2.36	0.58
4:3:112:G:H2'	4:3:113:C:C6	2.39	0.58
10:A:151:G:H2'	10:A:152:G:C8	2.38	0.58
10:A:811:U:H2'	10:A:812:C:C6	2.38	0.58
10:A:1526:G:H4'	27:T:40:ARG:HH22	1.66	0.58
18:I:31:LYS:HD3	18:I:35:ARG:HH21	1.67	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:O:4:MET:HG2	24:O:5:HIS:CD2	2.39	0.58
50:p:92:PHE:O	50:p:96:ASN:ND2	2.36	0.58
2:1:2653:U:H5'	53:s:65:ILE:HD11	1.86	0.58
10:A:478:G:N2	10:A:506:U:O2	2.32	0.58
10:A:892:A:H2'	10:A:893:U:H6	1.67	0.58
36:a:78:VAL:HA	36:a:81:ARG:HD2	1.84	0.58
45:k:58:ARG:HD2	45:k:354:VAL:HB	1.85	0.58
2:1:653:C:H2'	2:1:654:A:C8	2.38	0.58
2:1:827:G:O2'	2:1:1860:A:N3	2.34	0.58
10:A:697:U:H3	10:A:724:G:H1	1.52	0.58
10:A:1520:C:OP1	27:T:27:LYS:NZ	2.25	0.58
2:1:25:A:N3	2:1:328:U:O2'	2.36	0.58
2:1:2941:A:N7	44:j:215:ASN:ND2	2.52	0.58
10:A:219:A:N1	10:A:827:C:N4	2.52	0.58
10:A:516:A:H2'	10:A:517:C:H5"	1.86	0.58
50:p:160:PRO:HB2	50:p:162:GLU:OE1	2.04	0.58
29:S:12:ALA:O	29:S:16:LEU:HG	2.04	0.58
36:a:65:LEU:O	36:a:69:LEU:HB2	2.03	0.58
53:s:59:ILE:HD11	53:s:65:ILE:HD13	1.85	0.58
10:A:1676:A:H1'	10:A:1701:A:C2	2.39	0.58
30:U:84:LYS:HE2	30:U:94:VAL:HG11	1.86	0.58
2:1:1713:U:H2'	2:1:1714:G:C8	2.39	0.57
10:A:635:C:O2	18:I:110:ARG:NH1	2.37	0.57
12:C:62:LYS:HE3	12:C:89:ASP:C	2.28	0.57
12:C:195:ARG:O	12:C:199:LYS:HG2	2.04	0.57
41:f:4:VAL:HG11	78:AT:37:U:H4'	1.85	0.57
43:h:90:LEU:HB2	43:h:104:PHE:HB2	1.85	0.57
17:H:195:VAL:O	17:H:199:GLN:HG2	2.04	0.57
35:Z:57:VAL:HB	35:Z:60:PHE:HE2	1.67	0.57
46:l:351:LYS:O	46:l:354:LYS:NZ	2.28	0.57
2:1:660:U:H2'	2:1:661:C:C6	2.39	0.57
13:D:47:SER:OG	13:D:49:GLU:OE1	2.23	0.57
16:G:111:VAL:HA	16:G:114:VAL:HG22	1.85	0.57
21:L:32:HIS:HD2	21:L:35:ILE:HB	1.70	0.57
44:j:111:THR:HB	44:j:136:ILE:HD12	1.85	0.57
67:AG:49:ILE:HD11	67:AG:71:VAL:HG22	1.85	0.57
2:1:2669:A:H2'	2:1:2670:G:C8	2.39	0.57
2:1:2873:G:O2'	2:1:2996:A:N1	2.37	0.57
2:1:3144:A:O2'	57:w:6:LYS:NZ	2.36	0.57
10:A:1263:G:OP1	14:E:186:LYS:NZ	2.37	0.57
10:A:1445:C:OP2	27:T:138:THR:OG1	2.22	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:T:16:ARG:HB2	53:s:116:TYR:HB3	1.86	0.57
43:h:122:GLN:N	43:h:122:GLN:NE2	2.52	0.57
54:t:168:ALA:HB1	62:AB:147:LEU:HD21	1.87	0.57
58:x:122:ALA:HB3	58:x:143:PRO:HB2	1.85	0.57
30:U:117:SER:HB3	30:U:123:ARG:HG3	1.87	0.57
54:t:59:ARG:NH2	54:t:66:ASN:O	2.35	0.57
78:AT:23:G:OP2	81:AT:101:GET:O31	2.14	0.57
78:AT:51:U:O4	78:AT:65:G:O6	2.22	0.57
2:1:1897:A:O2'	2:1:2890:G:OP1	2.18	0.57
31:V:81:TYR:HB3	40:e:52:PHE:HB3	1.87	0.57
2:1:1635:C:OP2	68:AH:74:ARG:NH1	2.34	0.57
2:1:2380:A:H5"	46:l:68:THR:HG22	1.86	0.57
2:1:3123:U:OP1	45:k:128:LYS:NZ	2.30	0.57
5:4:8:C:H2'	5:4:9:A:H8	1.69	0.57
10:A:12:U:H2'	10:A:13:C:C6	2.40	0.57
10:A:378:U:C4	20:K:5:PRO:HB3	2.39	0.57
10:A:903:U:H2'	10:A:904:A:C8	2.39	0.57
17:H:7:TYR:HD1	17:H:113:ILE:HB	1.70	0.57
35:Z:42:GLU:HG3	35:Z:52:LYS:HE3	1.86	0.57
51:q:94:TYR:HA	51:q:177:ASP:OD1	2.05	0.57
37:b:24:LEU:HD22	37:b:71:LEU:HD22	1.87	0.57
43:h:189:PHE:HB3	43:h:220:TRP:CE2	2.40	0.57
78:AT:69:C:H2'	78:AT:70:C:C6	2.40	0.57
11:B:189:PRO:O	32:W:44:ARG:NH2	2.38	0.57
20:K:106:GLU:OE1	20:K:115:LYS:NZ	2.37	0.57
43:h:211:ALA:HB2	43:h:217:ILE:HG13	1.87	0.57
65:AE:51:ASP:OD1	65:AE:91:TYR:OH	2.23	0.57
9:9:51:ARG:HG2	9:9:52:GLN:H	1.70	0.57
19:J:76:THR:HG21	19:J:104:ILE:HD12	1.86	0.57
20:K:169:ALA:O	20:K:174:ARG:NH1	2.34	0.57
49:o:108:GLN:NE2	49:o:204:LYS:HG2	2.20	0.57
58:x:56:ARG:NH2	58:x:75:GLU:OE2	2.28	0.57
72:AL:8:ILE:HD11	72:AL:65:LEU:HD13	1.87	0.57
2:1:252:U:H5'	2:1:253:A:H8	1.70	0.56
2:1:428:U:H2'	2:1:429:U:C6	2.39	0.56
5:4:8:C:H2'	5:4:9:A:C8	2.40	0.56
10:A:397:A:H4'	15:F:3:ARG:HG2	1.86	0.56
13:D:32:PRO:HD3	13:D:41:LYS:NZ	2.20	0.56
2:1:653:C:H2'	2:1:654:A:H8	1.69	0.56
2:1:1106:U:H2'	2:1:1107:U:C6	2.40	0.56
10:A:572:G:H4'	81:A:1804:GET:H231	1.87	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:850:A:OP1	33:X:28:ARG:NH2	2.33	0.56
10:A:1593:C:H2'	10:A:1594:G:C8	2.40	0.56
10:A:1745:U:O4	81:A:1801:GET:N12	2.38	0.56
28:R:93:GLN:HE22	43:h:61:SER:HB2	1.69	0.56
52:r:43:VAL:HG21	52:r:197:VAL:HG13	1.86	0.56
66:AF:80:VAL:HG13	66:AF:112:LYS:HD2	1.87	0.56
2:1:1692:A:H2'	2:1:1693:A:C8	2.40	0.56
2:1:2421:A:O2'	2:1:2422:C:O5'	2.18	0.56
2:1:2512:G:H2'	2:1:2513:A:C8	2.41	0.56
2:1:3166:A:H2'	2:1:3167:G:C8	2.40	0.56
10:A:215:A:H1'	10:A:216:A:N7	2.20	0.56
10:A:317:U:H4'	10:A:321:A:C8	2.40	0.56
10:A:1600:U:OP1	16:G:92:ARG:NH2	2.33	0.56
11:B:60:ALA:O	11:B:64:ILE:HD12	2.05	0.56
12:C:34:ALA:HB3	12:C:41:ARG:HA	1.86	0.56
14:E:208:LYS:HB3	29:S:40:VAL:HB	1.86	0.56
27:T:72:ILE:HG12	27:T:79:TYR:CD2	2.40	0.56
28:R:81:ARG:HH11	28:R:115:LEU:HD23	1.71	0.56
50:p:162:GLU:OE2	56:v:26:ARG:NH1	2.38	0.56
76:AP:28:TYR:HB3	76:AP:69:VAL:HB	1.86	0.56
10:A:219:A:H3'	10:A:818:U:N3	2.19	0.56
26:Q:81:ARG:HB3	26:Q:117:GLY:HA3	1.88	0.56
2:1:547:U:H2'	2:1:548:G:C8	2.40	0.56
2:1:2810:A:N6	2:1:2822:G:O2'	2.39	0.56
2:1:3144:A:OP1	67:AG:97:SER:OG	2.23	0.56
17:H:49:ILE:HG13	17:H:114:VAL:HB	1.88	0.56
42:g:161:ARG:NH1	42:g:181:GLN:OE1	2.39	0.56
2:1:113:A:OP1	56:v:54:LYS:NZ	2.37	0.56
2:1:1115:C:H2'	2:1:1116:A:C8	2.41	0.56
6:6:38:ALA:HB3	6:6:59:MET:HB2	1.87	0.56
10:A:1242:U:HO2'	21:L:8:ARG:HH21	1.54	0.56
43:h:111:VAL:HG12	43:h:127:SER:HB2	1.86	0.56
2:1:1653:C:O2'	2:1:1793:A:OP2	2.16	0.56
2:1:2116:A:HO2'	71:AK:2:GLY:N	2.04	0.56
4:3:23:A:H2'	4:3:24:A:C8	2.41	0.56
10:A:277:G:H8	10:A:278:U:H5"	1.70	0.56
10:A:826:U:H2'	10:A:827:C:C6	2.41	0.56
10:A:1421:G:O6	21:L:64:TYR:OH	2.19	0.56
10:A:1469:A:H2'	10:A:1470:G:C8	2.41	0.56
43:h:94:ASP:N	43:h:99:GLU:O	2.38	0.56
2:1:3248:U:H2'	2:1:3249:G:C8	2.41	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:I:14:GLU:OE2	18:I:42:ILE:N	2.38	0.56
18:I:44:GLU:OE2	18:I:52:LYS:HE2	2.06	0.56
37:b:26:CYS:SG	37:b:28:ARG:HB2	2.46	0.56
42:g:182:TYR:HH	42:g:187:HIS:CG	2.24	0.56
47:m:261:THR:OG1	47:m:264:GLN:OE1	2.15	0.56
81:1:3409:GET:N33	4:3:90:A:OP1	2.39	0.56
7:7:23:ARG:HG2	7:7:24:GLY:N	2.21	0.56
10:A:1205:C:H2'	10:A:1206:A:C8	2.40	0.56
11:B:198:MET:HG2	11:B:199:PRO:HD2	1.87	0.56
12:C:223:PHE:HZ	12:C:228:LEU:HD22	1.70	0.56
26:Q:103:ASN:HD22	26:Q:120:SER:HA	1.70	0.56
51:q:93:VAL:HG22	74:AN:6:LEU:HD13	1.88	0.56
53:s:18:VAL:HG22	53:s:70:THR:HG22	1.87	0.56
3:2:56:TYR:CZ	3:2:78:LYS:HG3	2.41	0.56
18:I:76:GLU:HA	18:I:79:LYS:HG2	1.87	0.56
18:I:157:ALA:O	18:I:161:LYS:NZ	2.35	0.56
41:f:29:LYS:HD3	41:f:30:PRO:HD2	1.87	0.56
60:z:153:LYS:O	60:z:157:GLU:HG2	2.05	0.56
2:1:2492:U:OP2	81:1:3413:GET:O41	2.24	0.55
10:A:458:A:O2'	15:F:27:TYR:OH	2.19	0.55
10:A:1155:G:C2	10:A:1156:A:C8	2.94	0.55
10:A:1460:G:H2'	10:A:1461:A:C8	2.40	0.55
13:D:58:VAL:HG11	13:D:64:ILE:HD11	1.89	0.55
16:G:192:GLU:OE1	36:a:63:SER:OG	2.24	0.55
35:Z:36:SER:HB3	35:Z:39:GLU:HG3	1.86	0.55
43:h:237:VAL:HG22	43:h:253:THR:HG22	1.87	0.55
78:AT:51:U:O2	78:AT:65:G:N2	2.34	0.55
2:1:3319:U:N3	19:J:107:THR:OG1	2.26	0.55
10:A:852:G:N2	24:O:87:ASP:OD1	2.37	0.55
20:K:39:LYS:HD3	41:f:36:MET:HE1	1.87	0.55
34:Y:70:LYS:HB3	34:Y:93:LEU:HD22	1.88	0.55
46:l:6:GLN:HB3	46:l:20:GLN:HB3	1.88	0.55
2:1:726:G:H5"	59:y:43:PRO:HB2	1.89	0.55
2:1:820:C:H5"	44:j:21:ARG:HD3	1.88	0.55
2:1:2420:G:H2'	2:1:2421:A:H5'	1.89	0.55
10:A:1297:A:OP1	29:S:2:GLY:N	2.39	0.55
10:A:1529:G:H22	10:A:1555:C:H1'	1.71	0.55
16:G:58:LEU:HD11	16:G:167:ARG:NH1	2.22	0.55
58:x:46:LYS:O	58:x:50:GLN:HG3	2.06	0.55
10:A:933:A:H2'	10:A:934:C:C6	2.41	0.55
10:A:1474:G:H3'	10:A:1502:A:H61	1.71	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:N:43:ARG:HB3	23:N:121:VAL:HG12	1.89	0.55
34:Y:6:PRO:HG3	34:Y:14:LYS:HG2	1.89	0.55
2:1:662:U:H2'	2:1:663:A:C8	2.41	0.55
10:A:269:A:H61	17:H:185:GLN:HE22	1.54	0.55
10:A:933:A:H2'	10:A:934:C:H6	1.71	0.55
10:A:1167:U:H4'	26:Q:124:THR:HB	1.87	0.55
15:F:107:GLY:HA2	15:F:189:LEU:HD23	1.89	0.55
49:o:83:PHE:HB2	49:o:137:PRO:HG3	1.87	0.55
49:o:185:GLU:HG2	49:o:196:VAL:HG21	1.87	0.55
58:x:4:TYR:OH	58:x:18:ARG:HG3	2.06	0.55
2:1:1762:G:O2'	2:1:1763:C:OP1	2.22	0.55
2:1:2090:U:H4'	2:1:2091:A:O5'	2.07	0.55
36:a:39:ILE:HB	36:a:71:ILE:HA	1.88	0.55
43:h:239:ALA:HB3	43:h:252:ALA:HB3	1.89	0.55
59:y:89:ASP:OD1	59:y:113[B]:ARG:NH1	2.39	0.55
2:1:1589:A:OP1	68:AH:60:ARG:NH1	2.40	0.55
10:A:160:A:H3'	10:A:161:G:H21	1.71	0.55
10:A:723:G:H2'	10:A:724:G:H8	1.72	0.55
10:A:1278:U:H3	10:A:1307:A:N6	1.99	0.55
10:A:1773:G:OP2	25:P:128:ARG:NH2	2.39	0.55
11:B:120:LEU:HD21	11:B:144:ILE:HD12	1.88	0.55
12:C:133:TYR:HD2	12:C:217:LEU:HD11	1.72	0.55
13:D:51:ILE:HA	13:D:56:LEU:HD12	1.88	0.55
47:m:107:ARG:NH1	47:m:120:THR:O	2.39	0.55
10:A:1239:U:H2'	10:A:1240:G:C8	2.41	0.55
2:1:1530:A:H2'	2:1:1531:A:C8	2.42	0.55
2:1:2527:G:N7	50:p:34:ASN:ND2	2.55	0.55
2:1:3180:A:OP2	55:u:118:LYS:NZ	2.36	0.55
13:D:165:ILE:HB	13:D:192:TYR:HB2	1.89	0.55
16:G:156:ARG:CZ	39:d:67:ARG:HE	2.19	0.55
20:K:106:GLU:HA	20:K:111:THR:HG21	1.87	0.55
62:AB:60:TYR:HE2	62:AB:63:LYS:HA	1.72	0.55
2:1:2852:U:H1'	45:k:250:ALA:HB3	1.89	0.55
2:1:3193:C:H4'	2:1:3194:G:O5'	2.07	0.55
2:1:3323:U:H2'	2:1:3324:A:H8	1.71	0.55
5:4:21:C:OP1	46:l:194:LYS:NZ	2.34	0.55
12:C:193:ILE:O	12:C:197:ILE:HG12	2.07	0.55
27:T:76:PRO:HB2	27:T:86:LEU:HD21	1.88	0.55
58:x:168:LEU:O	58:x:173:ARG:NH1	2.40	0.55
2:1:2519:A:H1'	2:1:2520:A:OP2	2.07	0.54
16:G:71:SER:O	16:G:91:GLU:HG2	2.07	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:T:38:VAL:HG13	27:T:42:TYR:HD2	1.71	0.54
42:g:164:PRO:HD2	42:g:188:LEU:HD11	1.88	0.54
46:l:301:ARG:HH21	59:y:41:ASP:HB3	1.72	0.54
54:t:4:SER:O	62:AB:44:ASN:ND2	2.39	0.54
59:y:178:ARG:HH21	62:AB:50:PRO:HG2	1.72	0.54
2:1:3256:G:H2'	2:1:3257:A:H8	1.72	0.54
10:A:308:C:H4'	34:Y:33:LEU:HD23	1.89	0.54
13:D:40:VAL:HG21	13:D:63:ILE:HG23	1.89	0.54
37:b:37:LYS:O	37:b:38:ARG:NH1	2.41	0.54
38:c:35:VAL:HG11	38:c:63:LEU:HD13	1.88	0.54
43:h:62:PHE:HZ	43:h:95:LEU:HA	1.72	0.54
47:m:85:ARG:NH2	47:m:86:TYR:OH	2.41	0.54
52:r:142:ASP:OD1	52:r:178:ARG:NH2	2.40	0.54
56:v:105:ARG:HG2	56:v:108:ARG:HH21	1.73	0.54
78:PT:64:G:H2'	78:PT:65:G:H8	1.72	0.54
2:1:179:C:H2'	2:1:180:U:C6	2.42	0.54
2:1:538:G:O2'	2:1:539:G:OP1	2.25	0.54
2:1:1803:G:OP1	61:AA:133:LYS:NZ	2.38	0.54
3:2:27:LEU:HD11	47:m:34:LYS:HA	1.90	0.54
10:A:903:U:H2'	10:A:904:A:H8	1.71	0.54
11:B:9:LEU:HD21	11:B:50:ILE:HG22	1.89	0.54
30:U:29:GLU:N	30:U:110:LYS:HZ1	2.05	0.54
44:j:80:GLU:HG3	77:AQ:66:GLY:HA2	1.88	0.54
69:AI:50:ASN:OD1	69:AI:53:ARG:NH2	2.41	0.54
10:A:215:A:H62	10:A:830:G:H1'	1.73	0.54
10:A:529:C:O2'	10:A:530:U:OP1	2.24	0.54
10:A:1512:A:H2'	10:A:1513:A:C8	2.42	0.54
27:T:106:GLU:O	27:T:110:ARG:HG3	2.07	0.54
46:l:93:ASN:HD22	46:l:101:PHE:HB2	1.72	0.54
54:t:49:ARG:O	54:t:140:GLN:NE2	2.38	0.54
2:1:2808:OMC:H5	2:1:2824:C:N4	2.06	0.54
43:h:148:HIS:ND1	43:h:170:SER:HB2	2.23	0.54
2:1:1493:C:H2'	2:1:1494:A:C8	2.43	0.54
2:1:1592:C:H2'	2:1:1593:C:C6	2.42	0.54
10:A:330:U:P	19:J:56:ARG:HH21	2.31	0.54
10:A:1198:G:O2'	10:A:1229:A:N7	2.40	0.54
10:A:1457:A:H2	10:A:1460:G:N3	2.05	0.54
43:h:92:LEU:HD22	43:h:101:THR:HB	1.90	0.54
60:z:105:LEU:HD22	60:z:135:LYS:HG3	1.90	0.54
2:1:1204:U:H2'	74:AN:33:ASN:ND2	2.22	0.54
2:1:3216:U:H2'	2:1:3217:G:C8	2.43	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:1511:A:H2'	10:A:1512:A:C8	2.43	0.54
10:A:1529:G:N2	10:A:1556:A:OP2	2.39	0.54
10:A:1784:A:N6	37:b:84:VAL:HB	2.23	0.54
16:G:148:ARG:HA	16:G:157:ARG:HA	1.89	0.54
20:K:126:ARG:HD3	41:f:33:ARG:HD3	1.90	0.54
27:T:91:ASP:OD1	27:T:92:GLN:N	2.40	0.54
36:a:83:LEU:HA	36:a:86:ASP:HB2	1.89	0.54
52:r:38:ARG:NH1	52:r:83:ASP:O	2.40	0.54
2:1:732:U:H3'	2:1:733:A:C8	2.42	0.54
14:E:24:GLU:HG2	21:L:61:TRP:CD1	2.42	0.54
46:l:218:LYS:HA	46:l:221:ARG:HG3	1.90	0.54
6:6:77:ILE:HD12	6:6:103:VAL:HG11	1.90	0.54
10:A:45:U:HO2'	10:A:46:A:H2'	1.71	0.54
10:A:1311:A:H4'	14:E:157:PHE:CD1	2.43	0.54
11:B:52:LYS:HG2	32:W:82:VAL:HG22	1.90	0.54
27:T:52:VAL:HG11	27:T:61:LEU:HD11	1.89	0.54
47:m:289:LYS:HA	47:m:292:GLU:HG2	1.91	0.54
53:s:109:HIS:CD2	53:s:123:TYR:H	2.26	0.54
1:0:90:MET:HE3	2:1:1209:G:H4'	1.90	0.53
2:1:307:A:H2'	2:1:308:A:C8	2.43	0.53
2:1:2974:C:O2'	45:k:180:GLU:OE2	2.24	0.53
10:A:1314:A:OP2	14:E:161:SER:OG	2.18	0.53
13:D:149:LEU:HD22	13:D:216:THR:HG21	1.91	0.53
27:T:44:ASN:HD21	27:T:48:LYS:HE3	1.73	0.53
32:W:71:ARG:O	32:W:75:GLN:HG3	2.08	0.53
54:t:77:LEU:HD22	54:t:87:PRO:HG3	1.89	0.53
76:AP:8:ARG:HG2	76:AP:10:THR:HG23	1.89	0.53
2:1:1014:G:N2	2:1:1030:U:H3	2.01	0.53
2:1:2347:G:H2'	2:1:2348:G:C8	2.42	0.53
10:A:445:U:H2'	10:A:446:C:O4'	2.08	0.53
12:C:87:ARG:HD2	12:C:101:HIS:HB2	1.89	0.53
15:F:182:MET:HB2	15:F:228:ILE:HD13	1.91	0.53
48:n:57:LEU:HD11	48:n:63:LEU:HB2	1.90	0.53
10:A:189:G:H2'	10:A:190:U:H4'	1.90	0.53
10:A:736:G:H2'	10:A:737:A:C8	2.43	0.53
10:A:1571:G:C5	28:R:13:LYS:HE2	2.44	0.53
10:A:1579:A:O2'	10:A:1580:A:OP1	2.25	0.53
18:I:63:LEU:HD12	18:I:66:TYR:HB2	1.91	0.53
28:R:47:VAL:HG12	28:R:81:ARG:HB3	1.90	0.53
2:1:1113:G:OP1	63:AC:4:SER:HB2	2.08	0.53
2:1:2985:U:H2'	2:1:2986:U:C6	2.44	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:1699:G:H22	10:A:1700:G:N2	2.06	0.53
27:T:83:ALA:O	27:T:89:GLN:NE2	2.41	0.53
2:1:782:A:H4'	2:1:783:G:H5'	1.91	0.53
2:1:1662:G:H2'	2:1:1663:A:C8	2.43	0.53
6:6:10:LYS:NZ	6:6:54:ALA:O	2.41	0.53
10:A:483:A:H2'	10:A:484:G:H8	1.72	0.53
10:A:1233:C:H2'	10:A:1234:U:C5	2.43	0.53
10:A:1571:G:O6	28:R:12:LYS:NZ	2.29	0.53
16:G:77:TYR:HA	16:G:83:ARG:HG3	1.89	0.53
43:h:21:THR:HA	43:h:287:ILE:HB	1.89	0.53
43:h:67:HIS:CG	43:h:68:ILE:H	2.26	0.53
53:s:109:HIS:HD2	53:s:123:TYR:H	1.56	0.53
2:1:1663:A:H2'	2:1:1664:G:C8	2.44	0.53
10:A:484:G:H1	10:A:499:U:H3	1.56	0.53
10:A:1064:U:H2'	10:A:1065:U:C6	2.44	0.53
16:G:197:GLU:OE2	16:G:208:SER:OG	2.22	0.53
26:Q:30:THR:O	26:Q:34:THR:HG23	2.09	0.53
26:Q:43:ARG:HE	26:Q:47:ARG:HD2	1.74	0.53
43:h:292:SER:HB2	43:h:297:ASN:HB2	1.91	0.53
51:q:69:ARG:NH1	51:q:73:SER:OG	2.41	0.53
2:1:487:C:H2'	2:1:488:G:O4'	2.08	0.53
2:1:972:U:OP1	59:y:144:ARG:NH2	2.37	0.53
2:1:1189:A:OP1	57:w:50:ARG:NH2	2.33	0.53
2:1:1782:G:H2'	2:1:1783:A:C8	2.44	0.53
2:1:3287:A:H2'	2:1:3288:A:H8	1.74	0.53
10:A:1042:U:H3'	10:A:1043:U:H3'	1.91	0.53
10:A:1580:A:H2'	10:A:1581:G:C8	2.44	0.53
2:1:437:G:O2'	2:1:438:A:OP1	2.27	0.53
2:1:1173:G:C6	67:AG:20:LYS:HE2	2.44	0.53
2:1:1774:G:O2'	2:1:1776:G:OP2	2.22	0.53
2:1:2492:U:H5'	50:p:69:ARG:HG3	1.90	0.53
2:1:2515:G:H4'	2:1:2516:U:OP1	2.09	0.53
2:1:2749:G:C2	62:AB:60:TYR:CE1	2.97	0.53
2:1:2869:A:H2'	2:1:2871:C:H5"	1.90	0.53
10:A:405:A:H2'	10:A:406:C:H6	1.73	0.53
14:E:124:LEU:HD23	14:E:155:ASP:HB2	1.90	0.53
30:U:61:ILE:O	30:U:65:ILE:HD12	2.08	0.53
45:k:284:ARG:NH1	45:k:293:ASN:O	2.42	0.53
58:x:103:GLU:OE2	58:x:109:SER:OG	2.22	0.53
2:1:2525:A:H2'	2:1:2526:C:O4'	2.09	0.53
10:A:365:A:H2'	10:A:366:U:O4'	2.09	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:1160:U:H2'	10:A:1161:G:C8	2.44	0.53
10:A:1367:U:H1'	10:A:1503:A:N6	2.23	0.53
10:A:1473:A:OP1	40:e:34:TYR:OH	2.13	0.53
10:A:1699:G:H22	10:A:1700:G:H21	1.55	0.53
29:S:84:TYR:HE1	29:S:86:PRO:HG3	1.74	0.53
34:Y:3:LYS:HG3	34:Y:7:ARG:NH2	2.24	0.53
34:Y:32:ARG:HG3	34:Y:33:LEU:HD12	1.91	0.53
43:h:153:SER:HB3	43:h:171:TRP:CD1	2.44	0.53
49:o:174:PHE:CZ	49:o:195:GLN:HG2	2.43	0.53
58:x:165:GLN:OE1	58:x:166:ILE:N	2.40	0.53
70:AJ:57:ILE:HD13	70:AJ:89:MET:HB3	1.90	0.53
2:1:3315:C:O2'	2:1:3316:U:OP1	2.26	0.53
6:6:75:PRO:HG2	6:6:105:PRO:HD3	1.91	0.53
10:A:209:U:H5"	22:M:20:PHE:CG	2.44	0.53
10:A:1226:G:H1'	26:Q:79:HIS:CD2	2.43	0.53
13:D:64:ILE:HG21	13:D:131:ILE:HD12	1.91	0.53
16:G:119:GLU:O	16:G:123:VAL:HG23	2.09	0.53
19:J:142:SER:O	19:J:146:GLU:HG2	2.09	0.53
27:T:18:LEU:HD13	27:T:66:LEU:HD12	1.89	0.53
35:Z:89:TYR:CE2	35:Z:90:ARG:HG3	2.44	0.53
36:a:95:HIS:CE1	36:a:97:LYS:HB2	2.44	0.53
48:n:170:ARG:HB3	48:n:172:HIS:CE1	2.44	0.53
60:z:60:ARG:O	60:z:64:ARG:HG3	2.09	0.53
2:1:2536:U:H5"	50:p:41:ILE:HD12	1.90	0.52
10:A:1131:G:H2'	10:A:1132:A:C8	2.43	0.52
10:A:1240:G:H2'	23:N:47:GLU:OE2	2.09	0.52
10:A:1281:A:OP1	11:B:138:TYR:OH	2.22	0.52
10:A:1701:A:N1	10:A:1702:A:N6	2.58	0.52
18:I:37:LEU:HD23	18:I:66:TYR:CD1	2.45	0.52
18:I:135:ARG:HB3	33:X:51:GLU:OE2	2.09	0.52
25:P:56:MET:HG2	25:P:99:ALA:HB2	1.90	0.52
45:k:193:ASP:O	45:k:197:GLU:HG2	2.09	0.52
46:l:42:ARG:HG2	46:l:112:VAL:HG11	1.90	0.52
47:m:196:ARG:NH2	47:m:237:GLU:OE2	2.42	0.52
2:1:252:U:H5'	2:1:253:A:C8	2.43	0.52
10:A:1145:A:H2'	10:A:1146:C:H6	1.74	0.52
10:A:1233:C:H2'	10:A:1234:U:H5	1.74	0.52
54:t:76:THR:HG22	54:t:101:ARG:HB3	1.92	0.52
2:1:1380:U:H5'	46:l:139:ARG:NH1	2.25	0.52
2:1:1552:C:C5	81:1:3406:GET:H131	2.44	0.52
3:2:112:ASN:OD1	3:2:128:LEU:HD13	2.09	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:22:A:H2'	4:3:23:A:C8	2.44	0.52
10:A:553:A:N3	10:A:588:C:O2'	2.41	0.52
28:R:28:ILE:HD12	28:R:35:ILE:HG13	1.91	0.52
52:r:66:GLU:OE2	52:r:69:ARG:NH2	2.36	0.52
66:AF:77:VAL:HG13	66:AF:82:ASP:HB2	1.90	0.52
2:1:805:G:OP1	81:1:3412:GET:N12	2.43	0.52
2:1:2932:C:H2'	2:1:2933:G:H8	1.73	0.52
2:1:3259:A:H2'	2:1:3260:A:O4'	2.09	0.52
7:7:23:ARG:HG2	7:7:24:GLY:H	1.74	0.52
10:A:561:U:H5	10:A:578:A:N7	2.07	0.52
11:B:84:ARG:NH1	29:S:82:ASP:OD1	2.42	0.52
12:C:168:MET:O	12:C:172:MET:HG3	2.10	0.52
43:h:248:TRP:HZ3	43:h:259:ILE:HB	1.73	0.52
48:n:44:GLY:O	48:n:47:ARG:NH1	2.34	0.52
54:t:62:THR:HG23	62:AB:66:ASN:HB3	1.91	0.52
2:1:1949:G:N1	2:1:2070:A:H2'	2.23	0.52
2:1:2488:U:O2'	2:1:2489:A:H5"	2.10	0.52
10:A:1242:U:O2'	21:L:8:ARG:NH2	2.34	0.52
10:A:1540:G:N2	10:A:1542:A:H3'	2.24	0.52
11:B:121:VAL:HG23	11:B:141:ILE:HG21	1.90	0.52
13:D:50:GLN:HG3	13:D:234:PRO:HG3	1.91	0.52
43:h:195:TYR:O	43:h:213:LYS:HB3	2.09	0.52
2:1:368:G:H3'	81:1:3403:GET:H212	1.74	0.52
2:1:2515:G:H1'	2:1:2516:U:O5'	2.09	0.52
2:1:3248:U:H2'	2:1:3249:G:H8	1.75	0.52
10:A:504:A:O2'	10:A:505:U:OP1	2.26	0.52
10:A:675:U:H2'	10:A:676:G:C2	2.45	0.52
11:B:190:ASP:OD1	11:B:191:ARG:N	2.39	0.52
60:z:38:ARG:O	60:z:42:ARG:HG3	2.09	0.52
61:AA:78:ASN:HA	64:AD:37:ARG:HH22	1.75	0.52
2:1:1432:U:O4	46:l:68:THR:HG23	2.09	0.52
2:1:2535:A:OP1	44:j:69:TYR:OH	2.24	0.52
10:A:1463:G:H2'	10:A:1464:G:H8	1.74	0.52
14:E:58:GLY:O	14:E:66:ARG:NH1	2.43	0.52
14:E:60:LEU:HG	14:E:67:ILE:HD12	1.91	0.52
26:Q:15:PHE:CE1	26:Q:110:GLU:HG3	2.45	0.52
28:R:139:LYS:HE2	28:R:141:TYR:CE1	2.45	0.52
42:g:163:CYS:HB3	42:g:168:CYS:SG	2.49	0.52
2:1:163:A:H2'	2:1:164:U:H1'	1.92	0.52
10:A:474:U:O4	20:K:37:LYS:NZ	2.43	0.52
10:A:1246:G:H2'	10:A:1247:U:C6	2.45	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:P:73:ALA:HB2	25:P:106:ARG:HB2	1.92	0.52
35:Z:29:HIS:NE2	35:Z:34:ASN:HA	2.25	0.52
2:1:498:C:O2	48:n:22:LYS:HE3	2.10	0.52
7:7:11:SER:HB2	45:k:369:ARG:HD2	1.92	0.52
10:A:1348:U:H3'	10:A:1349:G:H8	1.75	0.52
11:B:51:GLY:O	11:B:55:GLU:HG2	2.10	0.52
14:E:6:LEU:HD12	14:E:10:LYS:HB3	1.92	0.52
19:J:70:GLU:OE2	22:M:24:LYS:NZ	2.43	0.52
44:j:4:VAL:HG13	44:j:8:GLN:OE1	2.10	0.52
2:1:2917:G:O2'	2:1:2920:C:OP2	2.21	0.52
10:A:1072:A:H2'	10:A:1073:A:C8	2.44	0.52
10:A:1277:G:H21	11:B:111:ILE:HD11	1.74	0.52
10:A:1566:U:H2'	10:A:1567:C:C6	2.45	0.52
11:B:77:SER:HB2	11:B:124:THR:OG1	2.10	0.52
16:G:166:ARG:HA	16:G:169:ASN:ND2	2.25	0.52
27:T:103:ASN:HA	27:T:106:GLU:OE1	2.10	0.52
38:c:45:THR:OG1	38:c:82:LYS:NZ	2.43	0.52
79:MR:5:A:H2'	79:MR:6:A:C8	2.45	0.52
2:1:299:G:H5"	70:AJ:84:ARG:NH2	2.25	0.51
2:1:1199:A:H2'	2:1:1200:A:C8	2.45	0.51
10:A:1129:U:H2'	10:A:1130:U:C6	2.45	0.51
10:A:1209:A:H2'	10:A:1210:U:O4'	2.11	0.51
17:H:98:ARG:NH2	17:H:105:ASP:OD1	2.39	0.51
17:H:137:ARG:HB3	17:H:140:HIS:ND1	2.25	0.51
28:R:20:HIS:HB2	28:R:65:ARG:HB2	1.91	0.51
28:R:45:PHE:O	28:R:49:GLU:HG3	2.10	0.51
47:m:194:LEU:HD12	47:m:197:LYS:HE3	1.92	0.51
47:m:289:LYS:HD3	52:r:206:LEU:HD23	1.92	0.51
61:AA:27:LYS:NZ	61:AA:93:LYS:O	2.43	0.51
2:1:179:C:H2'	2:1:180:U:H6	1.75	0.51
2:1:2384:C:H2'	2:1:2385:C:C6	2.45	0.51
10:A:681:C:H2'	10:A:682:A:O4'	2.10	0.51
10:A:1218:G:H22	10:A:1237:C:H5	1.58	0.51
10:A:1369:G:O2'	10:A:1370:A:H8	1.92	0.51
23:N:41:LEU:HD13	23:N:43:ARG:HD3	1.93	0.51
27:T:84:TRP:HA	27:T:89:GLN:NE2	2.22	0.51
28:R:12:LYS:CG	28:R:13:LYS:H	2.21	0.51
28:R:98:GLU:HG2	43:h:60:LYS:HA	1.91	0.51
35:Z:86:GLU:OE2	35:Z:90:ARG:NE	2.43	0.51
43:h:172:ASP:OD1	43:h:174:THR:HB	2.09	0.51
1:0:84:ARG:HD3	4:3:89:G:H4'	1.92	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:229:C:H2'	2:1:230:G:O4'	2.10	0.51
2:1:1216:U:O4	2:1:1282:A:O2'	2.24	0.51
10:A:871:U:O2'	25:P:116:VAL:O	2.27	0.51
10:A:1102:U:H2'	10:A:1103:G:C8	2.45	0.51
10:A:1548:U:H2'	10:A:1549:G:H8	1.75	0.51
11:B:144:ILE:HG12	11:B:158:VAL:HB	1.92	0.51
42:g:186:CYS:O	42:g:187:HIS:ND1	2.44	0.51
2:1:370:U:H4'	2:1:404:G:H5'	1.93	0.51
2:1:599:U:C6	2:1:600:U:H5	2.28	0.51
2:1:601:U:H3	49:o:25:ALA:HB1	1.75	0.51
10:A:457:G:OP2	35:Z:105:ARG:NH2	2.43	0.51
10:A:1289:G:H1'	10:A:1307:A:C2	2.45	0.51
10:A:1431:G:N2	42:g:129:THR:OG1	2.42	0.51
26:Q:81:ARG:NH2	26:Q:117:GLY:O	2.44	0.51
31:V:33:LEU:HD21	31:V:88:ARG:HD3	1.92	0.51
35:Z:23:PHE:CE1	35:Z:75:ILE:HG12	2.45	0.51
42:g:147:TYR:HA	42:g:160:ARG:HH12	1.75	0.51
67:AG:58:GLU:HG2	67:AG:63:LYS:HG3	1.93	0.51
72:AL:49:ARG:HD3	72:AL:50:TYR:CE2	2.46	0.51
2:1:406:G:O6	81:1:3403:GET:N32	2.39	0.51
2:1:623:A:H2'	2:1:624:U:C6	2.45	0.51
10:A:518:A:H2'	10:A:519:A:C8	2.45	0.51
43:h:168:SER:OG	43:h:176:LYS:O	2.21	0.51
61:AA:44:ALA:HB1	61:AA:114:VAL:HG21	1.92	0.51
65:AE:5:ASP:O	65:AE:76:ARG:HD2	2.11	0.51
2:1:3261:A:H2'	2:1:3262:U:H6	1.76	0.51
10:A:897:U:H5"	10:A:899:G:O4'	2.11	0.51
10:A:944:U:H5'	24:O:15:ALA:O	2.10	0.51
10:A:1475:U:O2'	10:A:1501:A:N6	2.44	0.51
10:A:1522:U:C4	16:G:187:ILE:HA	2.46	0.51
27:T:129:TRP:HE3	27:T:131:LEU:HD12	1.75	0.51
28:R:126:LYS:HE2	28:R:130:GLY:O	2.11	0.51
28:R:141:TYR:O	28:R:142:ARG:HG2	2.11	0.51
43:h:153:SER:H	43:h:170:SER:HA	1.76	0.51
64:AD:29:TYR:OH	64:AD:57:GLU:OE2	2.29	0.51
2:1:729:C:H3'	2:1:730:A:H5"	1.93	0.51
2:1:1464:A:N1	2:1:1876:U:O2'	2.40	0.51
7:7:11:SER:HB3	45:k:369:ARG:HH11	1.76	0.51
10:A:1740:A:H2'	10:A:1741:A:C8	2.46	0.51
12:C:164:VAL:O	12:C:168:MET:HG3	2.10	0.51
43:h:25:THR:HG21	43:h:292:SER:HA	1.92	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:y:83:VAL:O	59:y:103:ALA:HA	2.11	0.51
71:AK:76:ASN:O	71:AK:79:GLN:HG3	2.09	0.51
78:AT:26:C:H2'	78:AT:27:G:O4'	2.11	0.51
2:1:1104:U:H2'	2:1:1105:U:C6	2.45	0.51
2:1:1344:U:O2	2:1:1347:U:O2'	2.26	0.51
2:1:2790:U:H5'	2:1:2790:U:H6	1.75	0.51
10:A:79:C:H5'	17:H:172:ALA:HB3	1.92	0.51
10:A:857:G:H2'	10:A:858:U:O4'	2.11	0.51
10:A:1436:U:H2'	10:A:1437:C:H6	1.76	0.51
14:E:73:LEU:HA	21:L:20:VAL:HG11	1.92	0.51
15:F:100:ARG:HH21	15:F:118:GLU:HG2	1.75	0.51
17:H:164:LYS:HG3	17:H:167:LYS:HG3	1.93	0.51
27:T:126:ARG:NH2	27:T:131:LEU:HB3	2.26	0.51
28:R:12:LYS:HG2	28:R:75:SER:HA	1.93	0.51
37:b:47:ALA:HA	37:b:50:VAL:HG23	1.93	0.51
42:g:182:TYR:OH	42:g:187:HIS:CG	2.63	0.51
2:1:941:C:H2'	2:1:942:U:C6	2.45	0.51
2:1:2404:U:H2'	2:1:2405:U:C6	2.46	0.51
10:A:810:U:H2'	10:A:811:U:C6	2.45	0.51
10:A:924:A:H2'	10:A:925:A:C8	2.44	0.51
10:A:1475:U:O2'	10:A:1476:A:H5"	2.09	0.51
11:B:93:THR:HA	11:B:185:ARG:HH12	1.75	0.51
14:E:114:LEU:HD22	14:E:119:ALA:HB2	1.92	0.51
17:H:121:ILE:N	17:H:125:THR:OG1	2.39	0.51
20:K:106:GLU:O	20:K:112:GLN:NE2	2.35	0.51
27:T:65:GLU:O	27:T:69:ILE:HG12	2.11	0.51
45:k:212:ASP:OD1	45:k:354:VAL:HG22	2.11	0.51
2:1:1344:U:OP2	59:y:38:ARG:NH2	2.36	0.51
2:1:2322:U:H2'	2:1:2323:A:C8	2.46	0.51
10:A:108:A:H2'	10:A:109:G:C8	2.45	0.51
10:A:723:G:H2'	10:A:724:G:C8	2.45	0.51
10:A:840:A:H3'	10:A:841:A:H5"	1.93	0.51
10:A:852:G:H21	24:O:87:ASP:CG	2.19	0.51
10:A:1481:C:H2'	10:A:1482:C:C6	2.45	0.51
10:A:1551:U:H2'	10:A:1552:C:C6	2.46	0.51
10:A:1551:U:OP1	30:U:38:LYS:NZ	2.41	0.51
42:g:185:LYS:O	42:g:186:CYS:HB3	2.11	0.51
45:k:117:ARG:HD3	45:k:176:ALA:O	2.11	0.51
2:1:2407:G:H2'	2:1:2408:A:C8	2.46	0.50
10:A:119:A:H1'	10:A:395:A:C4	2.47	0.50
10:A:184:C:H2'	10:A:185:G:O4'	2.10	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:1551:U:H2'	10:A:1552:C:H6	1.76	0.50
10:A:1582:U:H5'	10:A:1583:C:OP2	2.11	0.50
19:J:197:PHE:O	19:J:201:ARG:HG2	2.11	0.50
30:U:29:GLU:H	30:U:110:LYS:NZ	2.07	0.50
32:W:38:LYS:HG3	32:W:46:ILE:HD12	1.93	0.50
54:t:64:LYS:HE3	62:AB:69:TRP:CD1	2.47	0.50
73:AM:20:ASN:ND2	73:AM:42:ARG:O	2.38	0.50
2:1:1794:A:H2'	2:1:1795:A:C8	2.47	0.50
2:1:2171:U:H5'	2:1:2172:G:H5'	1.93	0.50
2:1:3247:A:H2'	2:1:3248:U:C6	2.46	0.50
10:A:1066:A:H1'	10:A:1067:C:O2	2.12	0.50
10:A:1637:U:H2'	10:A:1638:A:C8	2.46	0.50
11:B:84:ARG:NH1	29:S:82:ASP:O	2.45	0.50
18:I:122:LEU:HD11	18:I:148:VAL:HG21	1.93	0.50
20:K:62:ARG:HD3	20:K:66:ASP:OD2	2.11	0.50
21:L:45:ALA:O	21:L:49:LEU:HG	2.11	0.50
36:a:39:ILE:HG12	36:a:70:LYS:O	2.11	0.50
43:h:70:GLN:HG2	43:h:112:LEU:HB2	1.92	0.50
2:1:597:U:H2'	2:1:598:U:O4'	2.11	0.50
10:A:1334:G:H2'	10:A:1335:U:C6	2.46	0.50
13:D:135:ARG:HB2	13:D:217:TYR:CE1	2.47	0.50
24:O:54:LEU:HB3	24:O:60:VAL:HB	1.92	0.50
30:U:115:GLU:HG3	30:U:125:SER:HB3	1.93	0.50
51:q:110:ASP:HB3	51:q:128:ILE:HD12	1.93	0.50
78:AT:69:C:H2'	78:AT:70:C:H6	1.75	0.50
10:A:207:U:H2'	10:A:208:A:C8	2.47	0.50
10:A:884:G:O5'	25:P:41:MET:HG2	2.11	0.50
11:B:18:LEU:HD12	11:B:23:HIS:CE1	2.47	0.50
14:E:33:GLN:HG2	14:E:58:GLY:HA3	1.93	0.50
16:G:135:ASP:HA	16:G:138:VAL:HG22	1.94	0.50
17:H:164:LYS:HE3	17:H:167:LYS:HG3	1.94	0.50
47:m:180:PHE:HB3	47:m:195:LEU:HD13	1.92	0.50
2:1:1556:G:O2'	2:1:1557:U:H5'	2.11	0.50
2:1:2405:U:H2'	2:1:2406:U:C6	2.46	0.50
2:1:3323:U:H2'	2:1:3324:A:C8	2.45	0.50
8:8:50:SER:HB2	69:AI:66:VAL:HG11	1.92	0.50
10:A:753:C:H1'	20:K:143:ILE:HG21	1.94	0.50
28:R:30:ILE:HG12	28:R:35:ILE:HD13	1.93	0.50
43:h:16:HIS:NE2	43:h:35:SER:OG	2.30	0.50
2:1:28:C:H4'	2:1:61:A:H4'	1.94	0.50
2:1:429:U:H2'	2:1:430:G:H8	1.76	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:495:C:H4'	48:n:79:ASN:HD21	1.77	0.50
2:1:496:A:H2'	2:1:497:U:C6	2.47	0.50
2:1:1684:U:H2'	2:1:1685:U:C5	2.47	0.50
2:1:3245:A:O2'	2:1:3246:C:H6	1.95	0.50
10:A:415:A:H4'	10:A:416:G:O5'	2.11	0.50
10:A:1334:G:H2'	10:A:1335:U:H6	1.77	0.50
10:A:1719:A:H2'	10:A:1720:C:C6	2.46	0.50
43:h:93:TRP:HA	43:h:100:THR:HA	1.94	0.50
2:1:907:C:H5"	44:j:15:ILE:HD13	1.93	0.50
2:1:2158:A:H2'	2:1:2159:C:C6	2.46	0.50
2:1:2734:A:H2'	2:1:2735:U:H6	1.77	0.50
2:1:3019:U:O2'	2:1:3020:A:H5'	2.11	0.50
24:O:100:LYS:O	24:O:103:GLU:HG2	2.12	0.50
29:S:28:PHE:CE2	29:S:32:LYS:HD2	2.47	0.50
31:V:47:TYR:HB2	31:V:49:ILE:HD12	1.93	0.50
47:m:178:ASN:HA	47:m:183:TRP:CD2	2.47	0.50
51:q:106:LYS:NZ	51:q:125:GLU:OE1	2.36	0.50
59:y:89:ASP:OD1	59:y:113[A]:ARG:NH1	2.40	0.50
69:AI:47:VAL:O	69:AI:51:ILE:HG13	2.12	0.50
78:PT:24:C:H2'	78:PT:25:U:C6	2.46	0.50
2:1:158:A:H2'	2:1:159:A:C8	2.47	0.50
2:1:362:U:O4	71:AK:24:ARG:NH2	2.45	0.50
2:1:1385:G:H5"	66:AF:102:SER:HB3	1.94	0.50
2:1:2516:U:H5"	2:1:2517:C:C5	2.47	0.50
2:1:2651:A:O2'	53:s:52:TYR:OH	2.05	0.50
2:1:3182:C:C6	58:x:182:LEU:HD22	2.47	0.50
10:A:391:C:H2'	10:A:392:C:C6	2.47	0.50
10:A:1132:A:H2'	10:A:1133:C:C6	2.47	0.50
48:n:50:ARG:HD3	48:n:158:TYR:CZ	2.47	0.50
2:1:545:G:N2	2:1:546:C:O2'	2.45	0.50
5:4:81:A:H2'	5:4:82:U:C6	2.47	0.50
8:8:73:MET:HE1	8:8:142:ILE:HB	1.94	0.50
10:A:72:A:H62	17:H:164:LYS:NZ	2.09	0.50
10:A:503:A:H4'	10:A:504:A:OP1	2.11	0.50
10:A:1699:G:N2	10:A:1700:G:N3	2.60	0.50
11:B:167:LYS:HE2	11:B:203:PHE:HB3	1.94	0.50
12:C:85:LYS:HG2	12:C:101:HIS:HB3	1.94	0.50
12:C:88:VAL:HG21	12:C:96:LEU:HB2	1.94	0.50
14:E:32:GLU:CD	14:E:32:GLU:H	2.19	0.50
28:R:92:HIS:HA	28:R:96:VAL:HB	1.93	0.50
35:Z:37:LYS:HD2	35:Z:57:VAL:HG23	1.93	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1662:G:H2'	2:1:1663:A:H8	1.77	0.49
2:1:2784:C:H2'	2:1:2785:A:H8	1.77	0.49
81:1:3405:GET:H511	81:1:3405:GET:H322	1.77	0.49
10:A:445:U:O2'	15:F:27:TYR:O	2.30	0.49
10:A:520:U:H5"	35:Z:37:LYS:HG3	1.94	0.49
10:A:1615:U:H2'	10:A:1616:G:C8	2.47	0.49
13:D:234:PRO:HA	13:D:237:VAL:HG22	1.94	0.49
15:F:103:TYR:HB2	15:F:182:MET:HE2	1.94	0.49
18:I:27:GLN:O	18:I:31:LYS:HB2	2.12	0.49
28:R:39:GLN:HB2	28:R:40:PRO:HD3	1.93	0.49
2:1:11:A:H2'	2:1:12:A:C8	2.47	0.49
2:1:2876:U:H2'	2:1:2877:U:C6	2.48	0.49
2:1:3138:U:H2'	2:1:3139:U:C6	2.47	0.49
2:1:3159:A:H2'	2:1:3160:C:C6	2.47	0.49
10:A:1217:U:O4	42:g:137:HIS:NE2	2.40	0.49
11:B:198:MET:HE3	29:S:85:VAL:HG13	1.94	0.49
18:I:116:ALA:O	18:I:120:LYS:HG2	2.11	0.49
20:K:110:GLN:NE2	20:K:126:ARG:HB2	2.26	0.49
31:V:67:ARG:NH2	31:V:76:LYS:HD3	2.27	0.49
2:1:563:U:H2'	2:1:564:G:C8	2.47	0.49
2:1:1615:A:H2'	2:1:1616:U:O4'	2.12	0.49
2:1:2544:U:H1'	2:1:2545:C:H6	1.77	0.49
2:1:2784:C:H2'	2:1:2785:A:C8	2.48	0.49
2:1:3261:A:H2'	2:1:3262:U:C6	2.48	0.49
10:A:456:G:OP1	35:Z:109:LYS:NZ	2.44	0.49
10:A:1309:G:H5'	11:B:113:ARG:HH22	1.77	0.49
15:F:99:PHE:HE1	15:F:113:ARG:HE	1.59	0.49
19:J:101:VAL:HG22	19:J:174:VAL:HG22	1.94	0.49
31:V:44:ALA:HB3	31:V:51:LYS:HE3	1.93	0.49
39:d:64:ARG:C	39:d:65:ARG:HD2	2.38	0.49
78:PT:34:U:N3	78:PT:37:U:OP2	2.35	0.49
2:1:72:A:N7	54:t:66:ASN:HB3	2.27	0.49
2:1:694:C:H2'	2:1:695:G:C8	2.48	0.49
6:6:15:LEU:HD13	6:6:51:ALA:HB3	1.94	0.49
10:A:144:U:H5	10:A:166:A:N7	2.10	0.49
10:A:1189:A:N3	40:e:10:HIS:NE2	2.53	0.49
10:A:1604:U:H2'	10:A:1605:C:C6	2.47	0.49
28:R:12:LYS:HG3	28:R:13:LYS:N	2.22	0.49
39:d:28:VAL:N	39:d:42:ARG:O	2.31	0.49
65:AE:45:THR:HG21	65:AE:89:PHE:HA	1.94	0.49
2:1:1795:A:H2'	2:1:1796:A:C8	2.47	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2583:U:H2'	2:1:2584:U:C6	2.47	0.49
2:1:2933:G:H2'	2:1:2934:U:C6	2.47	0.49
2:1:3318:G:H3'	2:1:3319:U:H4'	1.95	0.49
10:A:151:G:H2'	10:A:152:G:H8	1.76	0.49
10:A:683:G:H2'	10:A:684:C:C6	2.46	0.49
10:A:1741:A:C5	81:A:1801:GET:H21	2.48	0.49
19:J:145:VAL:O	19:J:148:LYS:HG2	2.12	0.49
20:K:127:VAL:CG1	20:K:131:GLN:HE22	2.26	0.49
30:U:20:GLN:O	30:U:24:ARG:HG2	2.12	0.49
30:U:107:ALA:O	30:U:111:ILE:HG12	2.12	0.49
36:a:71:ILE:HB	36:a:75:LEU:HD22	1.95	0.49
43:h:160:SER:HB3	43:h:205:GLY:HA3	1.93	0.49
58:x:29:THR:HA	58:x:32:THR:HG22	1.94	0.49
2:1:772:U:H5	2:1:2691:U:O2	1.95	0.49
2:1:1543:G:H5"	56:v:108:ARG:NH1	2.27	0.49
2:1:2741:A:O3'	76:AP:80:LYS:HB2	2.13	0.49
2:1:3320:U:OP2	19:J:170:ARG:NH2	2.25	0.49
5:4:26:U:H2'	5:4:27:U:C6	2.47	0.49
10:A:116:U:H2'	10:A:117:U:C6	2.48	0.49
10:A:194:G:H2'	10:A:195:A:O4'	2.13	0.49
14:E:209:ILE:HG13	29:S:38:ILE:HG22	1.95	0.49
25:P:37:VAL:HA	25:P:41:MET:CE	2.42	0.49
25:P:117:PRO:HB3	25:P:120:SER:HB3	1.94	0.49
27:T:88:ARG:HB3	27:T:98:TYR:O	2.12	0.49
44:j:8:GLN:HE21	44:j:231:SER:C	2.20	0.49
44:j:209:HIS:CE1	44:j:211:HIS:CD2	2.93	0.49
2:1:437:G:H1	2:1:620:A:H62	1.59	0.49
2:1:2072:C:H2'	2:1:2073:G:C8	2.48	0.49
2:1:2870:G:N7	74:AN:49:LYS:HE3	2.27	0.49
10:A:733:U:OP1	33:X:82:LYS:NZ	2.41	0.49
10:A:892:A:H2'	10:A:893:U:C6	2.48	0.49
11:B:169:SER:O	11:B:173:ILE:HG12	2.12	0.49
13:D:133:PRO:HB2	13:D:217:TYR:HE2	1.78	0.49
24:O:32:ASP:O	24:O:35:GLU:HG3	2.12	0.49
30:U:116:ILE:HD13	30:U:122:ARG:HG2	1.95	0.49
58:x:108:ASP:OD2	58:x:111:LYS:NZ	2.46	0.49
1:0:138[A]:GLN:HG2	51:q:1:MET:HE1	1.95	0.49
2:1:172:C:O2'	2:1:173:C:OP1	2.26	0.49
2:1:261:U:H2'	2:1:262:U:C6	2.48	0.49
9:9:27:ARG:HG2	9:9:78:PHE:CE1	2.48	0.49
10:A:65:A:H2	10:A:84:A:H62	1.61	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:327:G:H5'	19:J:99:SER:HB2	1.95	0.49
10:A:965:G:H4'	10:A:1763:A:H4'	1.95	0.49
17:H:57:ASP:HA	17:H:106:LEU:HA	1.95	0.49
23:N:32:LEU:HA	23:N:41:LEU:HD21	1.93	0.49
26:Q:16:SER:O	27:T:93:VAL:HA	2.13	0.49
43:h:91:ARG:HH21	43:h:100:THR:HG21	1.77	0.49
52:r:42:THR:HG22	52:r:44:ASP:H	1.78	0.49
54:t:126:PHE:HD2	69:AI:115:LYS:HG3	1.78	0.49
1:0:164:GLN:HG2	1:0:166:THR:H	1.77	0.49
2:1:842:A:N6	10:A:956:A:N1	2.61	0.49
2:1:2079:C:HO2'	2:1:2080:U:H6	1.59	0.49
10:A:82:U:H2'	10:A:83:G:O4'	2.12	0.49
10:A:242:A:OP1	15:F:155:ARG:NE	2.46	0.49
10:A:641:G:H2'	10:A:642:C:C6	2.48	0.49
10:A:1479:A:H4'	10:A:1480:G:O5'	2.12	0.49
12:C:225:LEU:HA	12:C:228:LEU:HB3	1.95	0.49
28:R:98:GLU:O	28:R:101:LYS:HG2	2.13	0.49
76:AP:7:THR:HB	76:AP:22:GLN:OE1	2.13	0.49
78:PT:11:A:H2'	78:PT:12:G:C8	2.48	0.49
1:0:42:TRP:CD1	1:0:53:LYS:HE2	2.48	0.49
2:1:1286:A:H2'	2:1:1287:A:C8	2.48	0.49
2:1:2130:A:H2'	2:1:2131:U:H6	1.78	0.49
2:1:2655:U:H2'	2:1:2656:C:C6	2.47	0.49
4:3:7:G:OP1	47:m:33:ARG:NH1	2.46	0.49
4:3:97:A:O4'	49:o:222:GLN:NE2	2.46	0.49
10:A:825:U:H1'	10:A:826:U:C2	2.48	0.49
10:A:828:U:H2'	10:A:829:A:C8	2.48	0.49
15:F:141:THR:OG1	15:F:143:ASP:OD1	2.26	0.49
16:G:225:ARG:HG2	39:d:61:ARG:HH12	1.77	0.49
17:H:63:MET:HE1	17:H:102:VAL:HG22	1.93	0.49
17:H:162:VAL:HG21	17:H:171:LYS:HD2	1.95	0.49
18:I:58:VAL:HG12	18:I:59:PRO:O	2.13	0.49
2:1:25:A:H2'	2:1:26:C:H6	1.78	0.48
2:1:248:U:H3'	2:1:249:G:H4'	1.94	0.48
2:1:1172:C:H2'	2:1:1173:G:N2	2.28	0.48
2:1:2669:A:H2'	2:1:2670:G:H8	1.78	0.48
27:T:42:TYR:OH	27:T:73:MET:HA	2.12	0.48
30:U:77:ASN:OD1	30:U:101:ASN:ND2	2.35	0.48
36:a:63:SER:HA	36:a:66:VAL:HB	1.95	0.48
2:1:58:G:H2'	5:4:33:A:O2'	2.13	0.48
2:1:164:U:O2'	2:1:165:C:O5'	2.31	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1909:A:N3	2:1:2098:A:H2'	2.28	0.48
2:1:2495:U:OP2	81:1:3406:GET:H932	2.14	0.48
2:1:2653:U:H2'	2:1:2654:C:H6	1.78	0.48
10:A:891:A:H2'	10:A:892:A:C8	2.48	0.48
10:A:1343:G:H4'	30:U:130:ARG:HB2	1.95	0.48
10:A:1375:C:H6	29:S:28:PHE:CE2	2.31	0.48
10:A:1628:C:H2'	10:A:1629:G:C8	2.48	0.48
11:B:62:ARG:HH21	32:W:38:LYS:HA	1.77	0.48
17:H:10:ASN:HB3	17:H:128:THR:HA	1.94	0.48
23:N:43:ARG:NH1	23:N:103:LEU:H	1.99	0.48
54:t:169:TYR:CD2	62:AB:132:LYS:HG3	2.48	0.48
2:1:538:G:N2	2:1:547:U:O2	2.45	0.48
2:1:1493:C:H2'	2:1:1494:A:H8	1.78	0.48
2:1:1616:U:H2'	2:1:1617:A:C8	2.48	0.48
2:1:1684:U:H2'	2:1:1685:U:C6	2.49	0.48
2:1:3183:A:H5"	2:1:3184:G:C5	2.48	0.48
10:A:560:G:H2'	10:A:561:U:O2	2.13	0.48
10:A:1238:U:O3'	42:g:185:LYS:HB2	2.13	0.48
10:A:1580:A:H2'	10:A:1581:G:H8	1.79	0.48
12:C:192:VAL:HA	12:C:195:ARG:HG2	1.96	0.48
19:J:48:THR:HG21	19:J:54:LYS:HG3	1.95	0.48
34:Y:107:PHE:CE2	34:Y:114:LYS:HB3	2.48	0.48
36:a:64:VAL:HG13	36:a:68:ARG:HH11	1.78	0.48
43:h:169:ALA:HA	43:h:175:VAL:HA	1.96	0.48
47:m:153:THR:HG23	47:m:160:PHE:CZ	2.49	0.48
53:s:136:ALA:HA	53:s:148:ILE:HD11	1.95	0.48
75:AO:1:MET:O	75:AO:1:MET:HG2	2.13	0.48
2:1:3165:U:H2'	2:1:3166:A:O4'	2.14	0.48
10:A:697:U:H2'	10:A:698:C:C6	2.48	0.48
10:A:787:A:C8	18:I:100:ARG:HG3	2.49	0.48
10:A:1539:U:OP2	26:Q:43:ARG:NH2	2.34	0.48
11:B:12:GLU:O	11:B:15:LYS:HB2	2.13	0.48
11:B:16:LEU:HD13	11:B:175:TRP:HZ3	1.78	0.48
2:1:583:A:H2'	2:1:584:C:C6	2.48	0.48
2:1:2491:U:OP2	81:1:3413:GET:N32	2.47	0.48
2:1:3183:A:H5"	2:1:3184:G:C4	2.49	0.48
10:A:216:A:N1	10:A:829:A:H1'	2.28	0.48
10:A:817:U:H3'	10:A:819:G:N7	2.29	0.48
10:A:1048:U:H2'	10:A:1049:G:C8	2.49	0.48
10:A:1566:U:H2'	10:A:1567:C:H6	1.79	0.48
36:a:59:TYR:OH	36:a:61:SER:HB3	2.13	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:939:U:H3'	62:AB:13:GLY:HA2	1.96	0.48
2:1:3230:C:OP2	48:n:69:LYS:NZ	2.38	0.48
3:2:80:VAL:HB	3:2:83:ARG:NH1	2.27	0.48
10:A:30:G:H2'	10:A:31:C:C6	2.48	0.48
16:G:168:VAL:O	16:G:172:ILE:HD12	2.14	0.48
43:h:22:SER:HB2	43:h:71:ASP:HA	1.95	0.48
53:s:33:ALA:HA	53:s:36:VAL:HG12	1.95	0.48
81:1:3413:GET:H111	81:1:3413:GET:O52	2.12	0.48
10:A:199:G:O6	10:A:200:A:N6	2.46	0.48
10:A:1495:U:H2'	10:A:1496:C:C6	2.48	0.48
10:A:1668:A:H8	17:H:65:GLN:HG3	1.78	0.48
11:B:84:ARG:NH2	11:B:201:LEU:HD12	2.29	0.48
12:C:191:GLU:O	12:C:195:ARG:NE	2.45	0.48
16:G:157:ARG:O	16:G:224:ASN:HB3	2.14	0.48
26:Q:41:VAL:HG13	26:Q:84:ILE:HD13	1.95	0.48
36:a:65:LEU:H	36:a:65:LEU:HD12	1.79	0.48
59:y:123:THR:OG1	59:y:125:ASP:OD1	2.27	0.48
2:1:29:G:OP1	56:v:172:ARG:HD2	2.13	0.48
2:1:761:G:O6	54:t:182:LYS:NZ	2.34	0.48
2:1:1093:G:H2'	2:1:1093:G:N3	2.29	0.48
2:1:2634:G:H2'	2:1:2635:A:C8	2.48	0.48
3:2:12:ARG:O	3:2:16:GLN:HG3	2.14	0.48
10:A:193:G:H2'	10:A:194:G:C8	2.48	0.48
10:A:446:C:H2'	10:A:447:C:C6	2.49	0.48
10:A:1341:U:H2'	10:A:1342:A:C8	2.48	0.48
81:A:1804:GET:H32	81:A:1804:GET:H111	1.57	0.48
12:C:87:ARG:NH2	12:C:220:GLN:OE1	2.46	0.48
18:I:30:LEU:HD13	18:I:72:ARG:HE	1.79	0.48
19:J:67:TRP:CD2	19:J:70:GLU:HG3	2.49	0.48
31:V:30:VAL:O	31:V:34:GLU:HG2	2.13	0.48
39:d:64:ARG:HG2	39:d:65:ARG:N	2.27	0.48
66:AF:14:TYR:CE2	66:AF:16:LYS:HB2	2.49	0.48
2:1:2916:U:H1'	45:k:251:CYS:SG	2.54	0.48
3:2:150:THR:OG1	46:l:363:ASN:HB2	2.13	0.48
10:A:1589:C:H2'	10:A:1590:U:C6	2.49	0.48
2:1:1380:U:H5'	46:l:139:ARG:HH12	1.78	0.48
2:1:2260:U:OP1	2:1:2945:G:O2'	2.31	0.48
2:1:2485:U:H2'	2:1:2486:U:C6	2.48	0.48
10:A:1295:U:H2'	10:A:1296:U:C6	2.49	0.48
11:B:201:LEU:O	11:B:202:TYR:HB2	2.14	0.48
20:K:114:PHE:CE1	20:K:122:ILE:HD12	2.49	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Q:56:LEU:HD23	26:Q:83:MET:HE3	1.96	0.48
29:S:60:ARG:NH2	29:S:66:VAL:HG21	2.28	0.48
31:V:21:ILE:HG13	31:V:99:VAL:HG21	1.96	0.48
35:Z:105:ARG:HG2	35:Z:109:LYS:HE2	1.96	0.48
52:r:54:SER:HB2	52:r:135:ILE:HD11	1.94	0.48
72:AL:77:ASN:C	72:AL:78:LEU:HD12	2.38	0.48
2:1:1543:G:OP1	56:v:108:ARG:NH2	2.47	0.47
2:1:2668:A:H2'	2:1:2669:A:C8	2.48	0.47
2:1:2965:G:H2'	2:1:3114:A:N6	2.29	0.47
5:4:63:G:O2'	69:AI:49:LYS:HE3	2.14	0.47
7:7:35:LYS:HE3	7:7:51:TRP:CZ2	2.49	0.47
10:A:74:U:O2'	10:A:75:U:O5'	2.32	0.47
10:A:674:C:H2'	10:A:675:U:C6	2.48	0.47
10:A:721:C:O2'	10:A:722:A:H5'	2.14	0.47
10:A:829:A:H2'	10:A:830:G:C8	2.49	0.47
10:A:899:G:O2'	10:A:900:A:N7	2.46	0.47
15:F:45:VAL:HB	15:F:80:THR:HG22	1.95	0.47
17:H:49:ILE:HG12	17:H:115:LYS:HB3	1.96	0.47
39:d:27:GLN:OE1	39:d:43:ASN:HB3	2.13	0.47
43:h:175:VAL:HB	43:h:189:PHE:HB2	1.96	0.47
50:p:57:VAL:O	50:p:61:ARG:HG3	2.14	0.47
51:q:48:ILE:HD11	51:q:54:LYS:HE3	1.94	0.47
64:AD:28:GLY:O	64:AD:32:VAL:HG23	2.14	0.47
70:AJ:3:LYS:HD2	70:AJ:12:LYS:O	2.14	0.47
78:AT:44:A:H2'	78:AT:45:A:C8	2.49	0.47
2:1:774:U:O4	81:1:3404:GET:N12	2.44	0.47
2:1:2485:U:H2'	2:1:2486:U:H6	1.79	0.47
10:A:1072:A:H5'	10:A:1283:U:C5	2.49	0.47
10:A:1323:C:H1'	10:A:1396:A:C5	2.50	0.47
13:D:143:LEU:O	13:D:169:ARG:NH2	2.45	0.47
43:h:248:TRP:CZ3	43:h:259:ILE:HB	2.49	0.47
55:u:27:ALA:HB2	55:u:45:ILE:HD13	1.96	0.47
2:1:412:G:H2'	2:1:413:U:C6	2.49	0.47
2:1:2899:C:H2'	2:1:2900:C:C6	2.49	0.47
5:4:5:U:H2'	5:4:6:U:C6	2.48	0.47
5:4:85:G:H4'	5:4:86:U:OP1	2.14	0.47
10:A:16:G:H2'	10:A:17:C:C6	2.48	0.47
10:A:932:U:H2'	10:A:933:A:C8	2.50	0.47
10:A:944:U:H5"	24:O:14:SER:OG	2.14	0.47
10:A:1007:C:O2'	10:A:1110:A:N1	2.45	0.47
10:A:1431:G:N1	42:g:129:THR:O	2.34	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:G:121:ILE:O	16:G:125:THR:HG22	2.14	0.47
30:U:38:LYS:HE3	30:U:40:SER:O	2.14	0.47
41:f:13:LYS:O	41:f:17:GLN:HG2	2.14	0.47
44:j:30:ARG:O	44:j:163:ARG:NH1	2.42	0.47
70:AJ:95:GLU:HA	70:AJ:98:ARG:HG2	1.97	0.47
2:1:208:A:H4'	2:1:210:A:N7	2.30	0.47
10:A:103:A:H4'	10:A:105:A:C8	2.49	0.47
10:A:214:U:O2'	10:A:215:A:OP1	2.28	0.47
10:A:836:U:H2'	10:A:837:C:O4'	2.14	0.47
11:B:41:ARG:CZ	11:B:45:MET:HB2	2.45	0.47
17:H:31:ARG:HB3	17:H:34:GLN:HG3	1.95	0.47
20:K:20:GLU:HB2	20:K:23:ARG:HG2	1.97	0.47
22:M:17:PRO:O	22:M:19:ILE:HD12	2.14	0.47
42:g:182:TYR:CE1	42:g:187:HIS:HB3	2.49	0.47
70:AJ:60:ILE:HG21	70:AJ:90:THR:HG22	1.95	0.47
2:1:589:G:O2'	48:n:16:ALA:O	2.31	0.47
2:1:2397:A:H2'	2:1:2398:C:C6	2.50	0.47
2:1:2546:U:H5'	2:1:2547:G:C8	2.48	0.47
2:1:2646:A:C2	53:s:124:GLY:HA3	2.49	0.47
10:A:393:U:H2'	10:A:394:G:O4'	2.15	0.47
10:A:1311:A:H4'	14:E:157:PHE:CE1	2.49	0.47
10:A:1719:A:H2'	10:A:1720:C:H6	1.78	0.47
11:B:75:VAL:HG12	11:B:122:VAL:HB	1.97	0.47
12:C:72:ASP:OD1	37:b:59:TYR:OH	2.24	0.47
16:G:21:GLN:HG2	16:G:21:GLN:O	2.15	0.47
16:G:51:VAL:HG22	16:G:131:GLN:HB2	1.95	0.47
48:n:57:LEU:CD1	48:n:63:LEU:HB2	2.45	0.47
49:o:32:LYS:HE2	49:o:32:LYS:HB2	1.59	0.47
60:z:86:ASP:OD1	60:z:90:PRO:HA	2.14	0.47
2:1:2527:G:C5	50:p:34:ASN:ND2	2.82	0.47
2:1:2862:A:O2'	2:1:2905:A:N3	2.45	0.47
2:1:3256:G:H2'	2:1:3257:A:C8	2.50	0.47
9:9:58:VAL:HA	9:9:104:VAL:HG12	1.96	0.47
10:A:485:G:N1	10:A:499:U:O4	2.46	0.47
10:A:952:A:OP2	24:O:124:ARG:NH2	2.36	0.47
10:A:1635:A:H2'	10:A:1636:C:C6	2.49	0.47
13:D:135:ARG:HD2	13:D:217:TYR:CE1	2.49	0.47
20:K:34:TYR:HA	20:K:122:ILE:HD13	1.96	0.47
27:T:67:GLU:O	27:T:71:THR:HG23	2.14	0.47
32:W:39:VAL:HG12	32:W:40:ASP:O	2.14	0.47
55:u:17:ARG:HG2	55:u:57:LEU:HD22	1.97	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:AB:19:LYS:HB3	62:AB:25:HIS:HB2	1.96	0.47
65:AE:78:ARG:HA	65:AE:88:LEU:HD23	1.96	0.47
72:AL:43:PHE:HE1	72:AL:66:GLN:HG2	1.79	0.47
2:1:602:A:OP2	2:1:602:A:H8	1.98	0.47
2:1:1058:A:H4'	3:2:105:PHE:CE1	2.49	0.47
2:1:1080:A:H2'	2:1:1081:A:C8	2.49	0.47
2:1:1190:G:H2'	2:1:1191:A:C8	2.49	0.47
2:1:1655:U:H2'	2:1:1656:C:C6	2.49	0.47
2:1:1911:A:H2'	2:1:1912:U:C6	2.50	0.47
2:1:2116:A:C4	71:AK:3:LYS:HB3	2.49	0.47
2:1:2385:C:H2'	2:1:2386:U:C6	2.50	0.47
2:1:2527:G:C8	50:p:34:ASN:ND2	2.82	0.47
2:1:2876:U:H2'	2:1:2877:U:H6	1.80	0.47
2:1:3260:A:H2'	2:1:3261:A:H8	1.79	0.47
3:2:39:ILE:HD12	3:2:102:ARG:CD	2.45	0.47
10:A:653:G:H4'	10:A:654:G:H5'	1.95	0.47
10:A:876:A:O2'	10:A:877:G:OP1	2.24	0.47
10:A:1205:C:H2'	10:A:1206:A:H8	1.77	0.47
10:A:1374:A:H61	10:A:1395:G:H21	1.62	0.47
16:G:166:ARG:HG2	16:G:170:GLN:OE1	2.14	0.47
16:G:194:LEU:O	16:G:198:LEU:HG	2.13	0.47
17:H:20:ASP:OD1	17:H:22:HIS:ND1	2.47	0.47
26:Q:119:PHE:HE1	27:T:119:ILE:HD12	1.80	0.47
27:T:20:THR:O	27:T:22:ILE:N	2.48	0.47
27:T:41:ARG:HH11	30:U:46:PRO:HD3	1.79	0.47
27:T:58:ALA:HA	27:T:61:LEU:HD23	1.97	0.47
28:R:20:HIS:N	28:R:65:ARG:O	2.47	0.47
30:U:14:PHE:HZ	30:U:132:LEU:HD12	1.80	0.47
31:V:98:THR:O	31:V:102:ILE:HG12	2.14	0.47
46:l:301:ARG:NH2	59:y:41:ASP:HB3	2.29	0.47
53:s:83:GLY:HA3	53:s:127:PHE:HE2	1.80	0.47
60:z:134:HIS:CD2	60:z:136:ARG:HB3	2.50	0.47
2:1:2260:U:O2	2:1:2288:U:H4'	2.15	0.47
2:1:2825:A:H1'	52:r:158:LYS:HD2	1.96	0.47
10:A:1575:G:N2	10:A:1595:U:O2	2.33	0.47
17:H:157:VAL:HG21	17:H:175:ILE:HD11	1.96	0.47
18:I:113:THR:O	18:I:117:VAL:HG23	2.15	0.47
21:L:46:LEU:O	21:L:50:THR:HG23	2.14	0.47
33:X:15:ASN:ND2	33:X:71:LYS:HD2	2.30	0.47
43:h:304:ASP:CG	43:h:308:ARG:HH12	2.23	0.47
53:s:137:ARG:O	53:s:141:ARG:HG2	2.15	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1625:U:O4	61:AA:111:LYS:HE3	2.15	0.47
2:1:1756:A:C6	2:1:1762:G:C6	3.03	0.47
2:1:2421:A:HO2'	2:1:2422:C:P	2.37	0.47
2:1:2647:C:H42	53:s:22:CYS:HB3	1.79	0.47
2:1:2686:G:H4'	2:1:2687:A:H5"	1.95	0.47
2:1:3009:U:H5"	45:k:348:ARG:HE	1.79	0.47
16:G:46:TRP:CZ2	16:G:118:LEU:HB3	2.50	0.47
16:G:162:VAL:HG13	16:G:166:ARG:HD3	1.96	0.47
17:H:159:ARG:HG2	17:H:172:ALA:HB2	1.97	0.47
17:H:191:LYS:O	17:H:195:VAL:HG23	2.15	0.47
38:c:33:MET:HB2	38:c:79:PHE:HB2	1.97	0.47
53:s:60:ARG:HE	76:AP:103:ALA:HB1	1.80	0.47
56:v:115:VAL:HA	56:v:134:LEU:HD23	1.97	0.47
2:1:612:U:H2'	2:1:613:U:C6	2.50	0.47
2:1:631:U:H2'	2:1:632:C:C6	2.50	0.47
2:1:2995:U:H2'	2:1:2996:A:H8	1.79	0.47
10:A:1437:C:H2'	10:A:1438:U:H6	1.80	0.47
13:D:85:THR:OG1	13:D:88:GLY:O	2.23	0.47
13:D:135:ARG:HB3	13:D:216:THR:HB	1.96	0.47
21:L:1:MET:HE1	21:L:40:LEU:HG	1.97	0.47
27:T:41:ARG:HH22	30:U:37:VAL:C	2.23	0.47
37:b:39:VAL:HG22	37:b:70:LYS:HG3	1.97	0.47
43:h:254:THR:HA	43:h:285:GLU:CD	2.40	0.47
49:o:158:ARG:HG3	49:o:201:TRP:CD2	2.49	0.47
2:1:2960:C:OP1	57:w:69:LYS:HE2	2.14	0.46
3:2:40:VAL:HB	3:2:96:VAL:HG13	1.97	0.46
10:A:260:U:C2'	10:A:261:C:H5'	2.44	0.46
10:A:1357:A:C2	10:A:1359:U:H1'	2.51	0.46
10:A:1673:U:C6	10:A:1704:C:H1'	2.49	0.46
12:C:156:ALA:HB3	12:C:161:LEU:HD21	1.97	0.46
18:I:126:VAL:HB	18:I:129:THR:OG1	2.14	0.46
26:Q:18:LYS:HD3	27:T:91:ASP:O	2.16	0.46
39:d:42:ARG:HG3	39:d:43:ASN:H	1.80	0.46
42:g:163:CYS:SG	42:g:186:CYS:SG	3.09	0.46
65:AE:73:ARG:NH1	65:AE:108:VAL:HG11	2.30	0.46
2:1:72:A:C4	70:AJ:14:ARG:HD2	2.51	0.46
2:1:2181:U:H2'	2:1:2182:C:C6	2.50	0.46
2:1:3202:U:H2'	2:1:3203:A:C8	2.50	0.46
5:4:78:G:H2'	5:4:79:A:C2	2.49	0.46
10:A:691:U:H5'	10:A:692:U:C5'	2.43	0.46
20:K:112:GLN:HB3	20:K:153:GLN:HE22	1.80	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:h:286:ALA:HB2	43:h:302:TYR:CD1	2.50	0.46
68:AH:106[B]:LYS:HB3	68:AH:106[B]:LYS:HE3	1.61	0.46
78:PT:67:C:H2'	78:PT:68:C:H6	1.79	0.46
2:1:1762:G:HO2'	2:1:1763:C:P	2.38	0.46
10:A:528:C:O2	35:Z:61:ARG:NH1	2.32	0.46
10:A:530:U:P	35:Z:65:GLY:H	2.39	0.46
10:A:1512:A:H2'	10:A:1513:A:H8	1.79	0.46
16:G:58:LEU:HD11	16:G:167:ARG:HH12	1.79	0.46
20:K:110:GLN:NE2	20:K:122:ILE:HG12	2.30	0.46
29:S:24:LEU:HB2	29:S:58:MET:HE3	1.97	0.46
30:U:105:VAL:O	30:U:109:GLN:HG2	2.16	0.46
66:AF:17[A]:LYS:HB3	66:AF:17[A]:LYS:HE3	1.55	0.46
2:1:293:C:H2'	2:1:294:U:O4'	2.16	0.46
2:1:3322:U:H2'	2:1:3323:U:C6	2.50	0.46
10:A:1039:U:H2'	10:A:1040:U:C6	2.50	0.46
10:A:1300:U:O2'	10:A:1301:G:H8	1.99	0.46
10:A:1302:C:H2'	10:A:1303:G:O4'	2.15	0.46
10:A:1317:C:O2'	14:E:163:GLN:HB3	2.16	0.46
26:Q:94:VAL:HG21	26:Q:116:LEU:HD21	1.97	0.46
30:U:14:PHE:CZ	30:U:132:LEU:HD12	2.50	0.46
44:j:32:LEU:HD11	44:j:120:VAL:HG22	1.98	0.46
45:k:283:TYR:OH	45:k:325:LYS:HD2	2.15	0.46
51:q:18:VAL:HG22	51:q:27:VAL:HG13	1.96	0.46
72:AL:24:ILE:HB	72:AL:44:LYS:HB2	1.97	0.46
1:0:43:TYR:CZ	1:0:47:LYS:HE2	2.50	0.46
2:1:264:G:OP1	70:AJ:34:GLN:HG2	2.16	0.46
2:1:2335:A:H2'	2:1:2336:A:C8	2.50	0.46
2:1:2988:A:H2'	2:1:2989:A:C8	2.51	0.46
5:4:5:U:H2'	5:4:6:U:H6	1.80	0.46
10:A:1235:U:O2'	42:g:177:MET:HE2	2.16	0.46
10:A:1520:C:OP2	36:a:77:ARG:NH2	2.48	0.46
10:A:1584:A:C8	40:e:14:PHE:HD2	2.32	0.46
18:I:63:LEU:O	18:I:67:ARG:HG2	2.15	0.46
33:X:71:LYS:HB3	33:X:130:TYR:CZ	2.49	0.46
39:d:12:VAL:HG22	39:d:30:VAL:HG12	1.98	0.46
43:h:42:LEU:HD23	43:h:42:LEU:H	1.81	0.46
43:h:192:HIS:HB3	43:h:214:ASP:OD2	2.16	0.46
57:w:9:VAL:HG12	57:w:118:ARG:HG3	1.96	0.46
2:1:422:A:C2	2:1:2341:A:H4'	2.50	0.46
2:1:685:U:OP2	54:t:36:ARG:NH2	2.40	0.46
2:1:788:G:H2'	2:1:789:C:C6	2.50	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:981:U:H2'	2:1:982:U:H6	1.81	0.46
2:1:1817:U:O4	68:AH:67:LYS:NZ	2.46	0.46
2:1:2385:C:H2'	2:1:2386:U:H6	1.80	0.46
2:1:2488:U:O2'	2:1:2489:A:H8	1.99	0.46
10:A:68:A:C6	17:H:132:ARG:HD2	2.51	0.46
10:A:641:G:H2'	10:A:642:C:H6	1.80	0.46
10:A:886:G:H2'	10:A:887:G:C8	2.50	0.46
10:A:1052:G:H5"	12:C:150:ILE:HG12	1.98	0.46
10:A:1763:A:OP2	75:AO:11:ARG:NH2	2.49	0.46
15:F:15:PRO:HG2	15:F:18:TRP:CE2	2.51	0.46
15:F:103:TYR:HE2	15:F:184:THR:HG23	1.78	0.46
17:H:118:ASP:OD1	17:H:119:ASN:N	2.49	0.46
28:R:139:LYS:HE2	28:R:141:TYR:HE1	1.80	0.46
35:Z:74:LEU:HD12	35:Z:90:ARG:NH2	2.28	0.46
64:AD:88:ARG:CZ	77:AQ:44:LYS:HG2	2.46	0.46
1:0:64:ILE:HG12	46:l:360:VAL:HG22	1.98	0.46
1:0:66:GLU:HG2	1:0:98:THR:HG22	1.98	0.46
2:1:493:A:O2'	2:1:3238:A:N1	2.45	0.46
2:1:963:A:OP1	62:AB:47:LYS:NZ	2.45	0.46
2:1:1474:C:H2'	2:1:1475:U:C6	2.51	0.46
2:1:1747:G:H5'	72:AL:26:LYS:HE2	1.98	0.46
2:1:2855:U:H2'	2:1:2856:C:C6	2.51	0.46
4:3:110:G:P	47:m:279:ARG:HD3	2.56	0.46
10:A:846:U:O2'	33:X:56:HIS:O	2.34	0.46
10:A:1338:U:C2	10:A:1339:G:C8	3.04	0.46
10:A:1783:C:O2	37:b:92:ARG:HB3	2.16	0.46
37:b:88:SER:O	37:b:92:ARG:HG3	2.16	0.46
53:s:160:ILE:HG22	53:s:164:LYS:HE2	1.97	0.46
2:1:397:A:H5'	2:1:399:A:OP1	2.16	0.46
2:1:1761:U:H2'	2:1:1762:G:H4'	1.97	0.46
2:1:1948:G:H2'	2:1:2070:A:H61	1.80	0.46
10:A:899:G:H5"	10:A:900:A:OP1	2.16	0.46
10:A:912:C:O2'	25:P:119:IAS:OD1	2.34	0.46
10:A:974:U:H2'	10:A:975:C:C6	2.51	0.46
10:A:1545:U:H5"	10:A:1546:G:H4'	1.98	0.46
10:A:1668:A:C8	17:H:65:GLN:HG3	2.51	0.46
10:A:1675:U:H2'	10:A:1676:A:N3	2.31	0.46
23:N:43:ARG:HH12	23:N:103:LEU:N	2.00	0.46
28:R:54:VAL:O	28:R:58:LYS:NZ	2.34	0.46
36:a:64:VAL:HG13	36:a:68:ARG:NH1	2.31	0.46
43:h:202:SER:HG	43:h:206:SER:H	1.64	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:u:121:ARG:O	55:u:125:LYS:HG2	2.16	0.46
58:x:128:ARG:HD2	58:x:136:ILE:HG21	1.98	0.46
2:1:374:A:N3	2:1:376:G:H5"	2.31	0.46
2:1:983:U:H2'	2:1:984:U:C6	2.51	0.46
2:1:2138:G:H2'	2:1:2139:G:C8	2.50	0.46
2:1:2824:C:N3	52:r:158:LYS:HE3	2.30	0.46
2:1:3005:A:H2'	2:1:3006:C:H6	1.81	0.46
2:1:3139:U:H2'	2:1:3140:U:C6	2.51	0.46
8:8:99:VAL:HG11	8:8:124:ILE:HD13	1.98	0.46
10:A:68:A:C5	17:H:160:ARG:NH1	2.84	0.46
10:A:1226:G:H4'	26:Q:78:THR:HA	1.98	0.46
10:A:1478:A:H1'	10:A:1480:G:C4	2.50	0.46
10:A:1562:G:H2'	10:A:1563:A:C8	2.51	0.46
16:G:73:THR:N	16:G:91:GLU:OE2	2.45	0.46
16:G:173:ALA:O	16:G:177:ILE:HG12	2.15	0.46
36:a:65:LEU:HD13	36:a:80:LEU:HD11	1.96	0.46
40:e:33:LYS:HE2	40:e:34:TYR:CZ	2.50	0.46
78:PT:67:C:H2'	78:PT:68:C:C6	2.51	0.46
2:1:74:G:H5'	54:t:58:VAL:HB	1.98	0.46
2:1:1079:G:H2'	2:1:1080:A:C8	2.51	0.46
2:1:1284:U:H2'	2:1:1285:G:H8	1.81	0.46
2:1:2330:A:H5"	58:x:83:TRP:O	2.16	0.46
10:A:261:C:O2'	10:A:262:G:H5'	2.16	0.46
10:A:290:U:H2'	10:A:291:U:C6	2.51	0.46
10:A:471:A:H2'	10:A:472:A:O4'	2.15	0.46
10:A:1002:U:H2'	10:A:1003:U:C6	2.50	0.46
10:A:1571:G:O4'	28:R:121:ARG:NH2	2.49	0.46
13:D:135:ARG:HB2	13:D:217:TYR:CD1	2.51	0.46
21:L:39:ASN:O	21:L:43:ILE:HG12	2.16	0.46
23:N:24:ILE:HB	23:N:28:LEU:HD21	1.97	0.46
29:S:24:LEU:CB	29:S:58:MET:HE3	2.46	0.46
61:AA:22:LYS:NZ	61:AA:129:TRP:O	2.46	0.46
78:AT:65:G:C4	78:AT:66:C:C5	3.04	0.46
2:1:730:A:H4'	2:1:730:A:OP1	2.15	0.45
2:1:1050:A:H5"	2:1:2609:A:H61	1.80	0.45
2:1:1764:C:H2'	2:1:1765:G:H8	1.81	0.45
5:4:10:A:H2'	5:4:11:C:C6	2.50	0.45
10:A:15:U:H2'	10:A:16:G:O4'	2.16	0.45
10:A:569:G:H4'	34:Y:114:LYS:HD2	1.98	0.45
10:A:803:G:C6	10:A:838:G:C6	3.04	0.45
10:A:1674:U:H2'	10:A:1675:U:C6	2.51	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:B:118:PRO:HG2	11:B:141:ILE:HD13	1.98	0.45
14:E:41:ARG:HB2	14:E:48:GLU:HB2	1.98	0.45
31:V:43:ASN:O	31:V:46:GLN:HG2	2.15	0.45
44:j:207:VAL:HG23	44:j:208:ASP:OD1	2.17	0.45
47:m:260:PHE:HB3	47:m:264:GLN:HB2	1.98	0.45
54:t:62:THR:CG2	62:AB:66:ASN:HB3	2.46	0.45
2:1:169:G:O6	2:1:249:G:H1'	2.16	0.45
2:1:1563:A:H2'	2:1:1564:U:C6	2.50	0.45
2:1:2407:G:H2'	2:1:2408:A:H8	1.81	0.45
2:1:2908:A:OP2	81:1:3408:GET:N32	2.49	0.45
10:A:21:U:O2'	20:K:16:LYS:O	2.33	0.45
10:A:154:A:H2'	10:A:155:A:O4'	2.16	0.45
10:A:940:A:H4'	10:A:1058:G:O2'	2.15	0.45
10:A:1035:G:OP1	38:c:70:LYS:NZ	2.37	0.45
26:Q:64:ARG:HD3	26:Q:92:SER:HB2	1.98	0.45
28:R:4:GLN:HB2	28:R:23:ALA:HB2	1.98	0.45
28:R:58:LYS:HB3	28:R:88:LEU:HD11	1.98	0.45
32:W:74:GLN:HB2	32:W:79:LEU:HB3	1.98	0.45
53:s:65:ILE:HG13	53:s:66:ALA:N	2.31	0.45
62:AB:36:GLY:HA3	62:AB:40:HIS:CE1	2.51	0.45
78:AT:17:C:OP2	78:AT:18(A):U:O2'	2.33	0.45
2:1:1069:U:H2'	2:1:1070:U:C6	2.51	0.45
2:1:2656:C:O2'	53:s:99:THR:HG21	2.15	0.45
4:3:113:C:H2'	4:3:114:U:O4'	2.16	0.45
10:A:415:A:H5'	10:A:416:G:C4	2.52	0.45
10:A:1154:G:N1	10:A:1562:G:OP2	2.38	0.45
18:I:67:ARG:HD2	18:I:127:PHE:CE1	2.51	0.45
19:J:4:SER:HB2	19:J:24:LYS:HD3	1.97	0.45
27:T:49:LYS:HG3	27:T:81:ILE:HD11	1.98	0.45
28:R:12:LYS:O	28:R:13:LYS:C	2.59	0.45
45:k:217:VAL:HG11	45:k:328:ILE:HD12	1.97	0.45
47:m:91:GLY:O	47:m:94:ASN:ND2	2.49	0.45
54:t:62:THR:O	54:t:65:TYR:N	2.35	0.45
1:0:82:GLU:OE1	4:3:95:A:H4'	2.17	0.45
2:1:2107:U:H2'	2:1:2108:G:C8	2.51	0.45
2:1:2587:G:H2'	2:1:2588:C:H6	1.80	0.45
16:G:117:ALA:O	16:G:120:ILE:HG22	2.17	0.45
16:G:147:THR:HG23	39:d:45:LYS:NZ	2.31	0.45
23:N:50:LYS:HZ2	42:g:144:VAL:HG22	1.82	0.45
34:Y:126:LYS:HG2	34:Y:131:SER:HA	1.99	0.45
43:h:110:ASP:HB2	43:h:128:ARG:HD3	1.98	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:s:13:ARG:HH12	53:s:15:GLU:HG2	1.81	0.45
64:AD:11:ASN:O	64:AD:14:SER:OG	2.29	0.45
78:PT:64:G:H2'	78:PT:65:G:C8	2.50	0.45
2:1:922:A:H2'	2:1:923:C:C6	2.52	0.45
5:4:90:U:O2'	5:4:92:A:OP1	2.30	0.45
10:A:504:A:HO2'	10:A:505:U:P	2.39	0.45
10:A:720:C:H1'	10:A:721:C:C5	2.52	0.45
10:A:1235:U:H2'	10:A:1236:U:C2	2.51	0.45
10:A:1246:G:H2'	10:A:1247:U:H6	1.82	0.45
10:A:1452:G:O2'	10:A:1589:C:OP1	2.33	0.45
13:D:35:LYS:HB3	13:D:242:ALA:HB1	1.97	0.45
29:S:109:LEU:O	29:S:112:SER:OG	2.31	0.45
31:V:49:ILE:HG23	31:V:94:ALA:HB2	1.99	0.45
2:1:405:U:O4	81:1:3403:GET:O61	2.15	0.45
2:1:2191:A:H2'	2:1:2192:A:H8	1.80	0.45
2:1:2201:A:H2'	2:1:2202:A:C8	2.52	0.45
5:4:2:A:C4	5:4:3:A:C8	3.05	0.45
5:4:19:C:H2'	5:4:20:U:C6	2.52	0.45
10:A:249:A:C2	15:F:131:LEU:HD12	2.51	0.45
11:B:18:LEU:HD23	29:S:100:LEU:HG	1.98	0.45
13:D:96:VAL:HG21	13:D:203:GLU:HG3	1.98	0.45
14:E:138:VAL:HG22	14:E:152:LYS:HG2	1.98	0.45
16:G:99:MET:O	16:G:103:ASN:HB2	2.17	0.45
18:I:74:THR:O	18:I:78:GLU:HG2	2.16	0.45
39:d:30:VAL:HG22	39:d:40:ILE:O	2.17	0.45
48:n:55:LYS:NZ	48:n:100:PHE:O	2.37	0.45
57:w:77:PRO:HB3	57:w:139:VAL:HG12	1.98	0.45
2:1:247:C:H2'	2:1:248:U:C6	2.51	0.45
2:1:546:C:H2'	2:1:547:U:O4'	2.17	0.45
2:1:3135:A:H61	2:1:3250:C:H42	1.63	0.45
2:1:3154:A:N3	2:1:3157:A:O2'	2.47	0.45
10:A:52:U:H2'	10:A:53:G:C8	2.52	0.45
10:A:193:G:C2	10:A:194:G:C5	3.05	0.45
10:A:364:A:OP1	10:A:743:U:O2'	2.28	0.45
10:A:1012:A:OP1	10:A:1776:G:O2'	2.24	0.45
10:A:1213:G:H22	23:N:67:THR:HG23	1.82	0.45
10:A:1663:U:H2'	10:A:1664:C:C6	2.51	0.45
14:E:12:LEU:HD22	31:V:85:ILE:HG12	1.98	0.45
28:R:26:GLY:HA2	28:R:59:PHE:O	2.17	0.45
29:S:56:HIS:CE1	29:S:60:ARG:HD3	2.52	0.45
39:d:34:GLU:OE1	39:d:34:GLU:N	2.50	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:g:182:TYR:HD1	42:g:189:THR:HB	1.81	0.45
45:k:256:HIS:HA	45:k:257:PRO:C	2.40	0.45
48:n:95:VAL:HG12	48:n:97:VAL:HG13	1.98	0.45
72:AL:5:ILE:O	72:AL:54:LEU:HD12	2.17	0.45
2:1:843:A:H2'	2:1:844:A:C8	2.52	0.45
2:1:1715:G:N7	60:z:121:HIS:HE1	2.14	0.45
2:1:3324:A:H2'	2:1:3325:C:C6	2.52	0.45
10:A:142:G:H1	10:A:169:A:H61	1.64	0.45
10:A:871:U:C2	10:A:872:A:C8	3.05	0.45
10:A:1188:A:C2	10:A:1543:A:C4	3.05	0.45
10:A:1341:U:O2	10:A:1352:G:N2	2.36	0.45
10:A:1437:C:OP1	40:e:12:ARG:NH1	2.41	0.45
11:B:142:PRO:HG3	32:W:32:VAL:HB	1.99	0.45
15:F:181:VAL:HG12	15:F:227:VAL:HA	1.98	0.45
16:G:123:VAL:HG11	36:a:59:TYR:HD1	1.82	0.45
17:H:102:VAL:HG13	17:H:106:LEU:HD12	1.98	0.45
18:I:108:ARG:HD2	18:I:109:PRO:O	2.17	0.45
28:R:6:VAL:HG22	28:R:21:VAL:HB	1.99	0.45
46:l:111:ASN:ND2	56:v:201:ARG:HB3	2.20	0.45
47:m:55:PHE:CE2	47:m:60:ILE:HG12	2.52	0.45
61:AA:81:MET:HE3	61:AA:82:PRO:HD2	1.99	0.45
67:AG:8:TYR:CE1	67:AG:99:ARG:HG2	2.52	0.45
2:1:502:U:H2'	2:1:503:U:C6	2.52	0.45
2:1:1569:C:H3'	2:1:1570:A:H8	1.82	0.45
2:1:2519:A:H4'	2:1:2520:A:O5'	2.16	0.45
2:1:2978:A:H2'	2:1:2979:U:O4'	2.16	0.45
9:9:48:LEU:HD13	9:9:115:ARG:HH21	1.82	0.45
10:A:683:G:H2'	10:A:684:C:H6	1.81	0.45
10:A:727:U:H1'	18:I:103:ARG:NH1	2.31	0.45
10:A:1702:A:H2'	10:A:1703:C:H5'	1.99	0.45
11:B:24:LEU:HD12	11:B:41:ARG:NH2	2.31	0.45
21:L:13:GLN:OE1	21:L:80:LEU:HD13	2.17	0.45
27:T:42:TYR:CZ	27:T:99:HIS:CD2	3.05	0.45
28:R:93:GLN:O	43:h:60:LYS:HE3	2.17	0.45
30:U:106:GLN:O	30:U:109:GLN:HB2	2.17	0.45
33:X:23:ARG:HD3	33:X:65:LEU:O	2.16	0.45
52:r:187:ASN:OD1	52:r:217:GLN:HB2	2.17	0.45
52:r:200:LEU:N	52:r:213:PHE:HE2	2.14	0.45
53:s:166:ARG:HD2	53:s:167:TYR:CE1	2.51	0.45
78:PT:50:G:H2'	78:PT:51:U:C6	2.52	0.45
2:1:357:A:O4'	46:l:82:GLY:HA3	2.17	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:407:A:C2	5:4:17:A:H1'	2.52	0.45
2:1:2988:A:H2'	2:1:2989:A:H8	1.81	0.45
3:2:80:VAL:HB	3:2:83:ARG:HH12	1.81	0.45
10:A:74:U:O2'	10:A:75:U:H3'	2.17	0.45
10:A:442:C:H5	35:Z:105:ARG:HH22	1.63	0.45
10:A:932:U:H2'	10:A:933:A:H8	1.82	0.45
10:A:1394:G:O3'	43:h:17:ASN:ND2	2.46	0.45
10:A:1629:G:N7	81:A:1801:GET:N33	2.63	0.45
15:F:22:LYS:HB3	15:F:23:LEU:HD12	1.99	0.45
28:R:72:GLY:N	28:R:75:SER:OG	2.31	0.45
45:k:68:HIS:CD2	45:k:69:LYS:HE2	2.52	0.45
52:r:38:ARG:HG2	52:r:41:ALA:HB2	1.99	0.45
54:t:48:PRO:HD2	69:AI:115:LYS:HE2	1.99	0.45
71:AK:64:MET:O	71:AK:68:LYS:HB2	2.17	0.45
1:0:95:ARG:HG2	1:0:95:ARG:HH11	1.81	0.44
2:1:848:U:C6	77:AQ:2:THR:HG22	2.53	0.44
2:1:1895:G:O2'	2:1:2312:U:O4	2.27	0.44
2:1:2587:G:H2'	2:1:2588:C:C6	2.53	0.44
2:1:3139:U:H2'	2:1:3140:U:H6	1.82	0.44
81:1:3408:GET:H833	45:k:6:TYR:OH	2.17	0.44
10:A:119:A:H1'	10:A:395:A:C5	2.51	0.44
10:A:524:A:OP2	35:Z:93:ARG:NH2	2.38	0.44
10:A:881:U:H2'	10:A:882:C:C6	2.52	0.44
10:A:1327:C:H4'	43:h:103:ARG:HH21	1.82	0.44
13:D:225:TRP:CG	33:X:68:ARG:HD3	2.52	0.44
16:G:63:GLN:OE1	16:G:66:ASN:HB2	2.17	0.44
18:I:81:PHE:HB3	18:I:84:ARG:CZ	2.47	0.44
45:k:21:ARG:HE	45:k:269:GLN:HG3	1.81	0.44
56:v:51:LEU:HD22	56:v:117:ASN:ND2	2.32	0.44
58:x:27:LYS:HE2	58:x:63:TYR:CD1	2.52	0.44
78:PT:56:U:O2'	78:PT:58:A:N7	2.48	0.44
1:0:171:PHE:O	1:0:172:TYR:HB2	2.17	0.44
2:1:211:G:H2'	46:l:222:ASN:OD1	2.16	0.44
2:1:527:G:H2'	2:1:528:A:C8	2.52	0.44
2:1:912:G:H5'	2:1:913:A:OP1	2.17	0.44
4:3:55:A:P	53:s:3:ASP:H	2.40	0.44
10:A:218:A:OP2	10:A:816:U:O2'	2.29	0.44
10:A:329:A:H5'	19:J:33:PRO:HA	1.99	0.44
10:A:870:G:H2'	10:A:871:U:C6	2.53	0.44
10:A:902:U:O2	25:P:36:ARG:NH1	2.49	0.44
10:A:1239:U:OP2	23:N:46:ARG:NH1	2.49	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:B:92:HIS:O	11:B:182:LEU:HD21	2.17	0.44
12:C:30:PHE:HD1	12:C:94:LYS:HA	1.82	0.44
14:E:72:SER:HA	14:E:75:VAL:HG22	1.99	0.44
36:a:50:ILE:O	36:a:54:VAL:HG22	2.16	0.44
59:y:126:GLN:O	59:y:130:ARG:HG2	2.18	0.44
2:1:30:C:H4'	56:v:96:LYS:HE2	1.99	0.44
2:1:587:A:H8	2:1:588:G:C8	2.35	0.44
2:1:708:A:H2'	2:1:709:A:C8	2.51	0.44
2:1:988:A:O2'	2:1:989:G:H5'	2.17	0.44
4:3:3:U:H2'	4:3:4:U:H6	1.81	0.44
10:A:129:A:N1	10:A:179:A:N6	2.66	0.44
10:A:1279:G:O2'	10:A:1306:A:N1	2.50	0.44
19:J:199:LEU:O	19:J:203:THR:HG23	2.18	0.44
27:T:8:GLN:HB3	36:a:44:GLN:HG2	2.00	0.44
35:Z:15:ASN:HD21	35:Z:18:LEU:HD12	1.83	0.44
43:h:166:VAL:N	43:h:178:TRP:O	2.42	0.44
45:k:117:ARG:HA	45:k:117:ARG:HD2	1.84	0.44
48:n:42:LEU:HD21	48:n:84:ILE:HG13	1.98	0.44
70:AJ:86:VAL:O	70:AJ:90:THR:HG23	2.18	0.44
78:AT:59:A:O2'	78:AT:61:U:OP2	2.26	0.44
2:1:258:U:H2'	2:1:259:C:C6	2.52	0.44
2:1:3297:U:OP1	7:7:35:LYS:HD3	2.16	0.44
81:1:3404:GET:H712	81:1:3404:GET:H322	1.82	0.44
10:A:1067:C:H5"	10:A:1068:G:H8	1.83	0.44
10:A:1226:G:C4	26:Q:79:HIS:CD2	3.06	0.44
10:A:1398:G:H4'	10:A:1399:U:O5'	2.17	0.44
14:E:7:SER:O	14:E:11:LYS:N	2.36	0.44
21:L:56:LYS:HE3	21:L:67:THR:HB	2.00	0.44
24:O:66:VAL:HG23	24:O:67:THR:HG23	1.99	0.44
28:R:27:LEU:HD11	28:R:29:LYS:HD3	1.99	0.44
28:R:53:LEU:HD23	28:R:107:ILE:HG22	1.99	0.44
42:g:144:VAL:HG13	42:g:148:TYR:CE1	2.53	0.44
43:h:38:ARG:HB3	43:h:68:ILE:HG12	1.99	0.44
51:q:50:ASN:OD1	55:u:2:SER:HA	2.18	0.44
53:s:28:ASP:CG	53:s:32:ARG:HH21	2.25	0.44
53:s:125:MET:SD	53:s:127:PHE:HE1	2.41	0.44
2:1:1093:G:H8	3:2:112:ASN:HD21	1.64	0.44
2:1:1124:U:H2'	2:1:1125:A:O4'	2.17	0.44
2:1:2182:C:H2'	2:1:2183:U:C6	2.52	0.44
2:1:2632:G:OP1	2:1:2722:U:O2'	2.29	0.44
2:1:3162:U:H2'	2:1:3163:U:O4'	2.17	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:3249:G:H2'	2:1:3250:C:C6	2.53	0.44
6:6:135:VAL:HG11	7:7:26:SER:CB	2.46	0.44
10:A:1092:G:O2'	10:A:1093:G:H5'	2.16	0.44
15:F:192:VAL:HG21	15:F:239:LEU:HD11	2.00	0.44
17:H:115:LYS:HB3	17:H:115:LYS:HE2	1.83	0.44
18:I:135:ARG:HD2	33:X:51:GLU:OE2	2.18	0.44
26:Q:52:LYS:HE2	26:Q:80:LEU:HD13	1.98	0.44
28:R:72:GLY:H	28:R:75:SER:HG	1.60	0.44
45:k:188:VAL:O	45:k:192:VAL:HG23	2.18	0.44
48:n:130:ILE:HG23	48:n:134:ARG:HD2	1.99	0.44
71:AK:52:LYS:HE2	71:AK:55:ARG:NH2	2.32	0.44
2:1:673:C:O2'	2:1:677:U:OP1	2.27	0.44
2:1:951:U:H2'	2:1:952:U:C6	2.52	0.44
2:1:2386:U:H5'	63:AC:1:MET:SD	2.58	0.44
10:A:213:A:N6	10:A:240:U:OP2	2.49	0.44
10:A:1109:A:H2'	10:A:1110:A:C8	2.53	0.44
10:A:1671:G:H2'	10:A:1672:G:O4'	2.17	0.44
11:B:167:LYS:NZ	11:B:203:PHE:HB3	2.33	0.44
13:D:171:LYS:HE2	13:D:192:TYR:CE1	2.53	0.44
27:T:62:THR:OG1	27:T:65:GLU:OE1	2.28	0.44
31:V:101:ARG:O	31:V:105:ILE:HG12	2.17	0.44
47:m:153:THR:HG23	47:m:160:PHE:HZ	1.83	0.44
55:u:46:GLN:O	55:u:48:GLN:NE2	2.40	0.44
61:AA:116:LYS:O	61:AA:120:GLU:HG3	2.17	0.44
72:AL:35:GLY:O	72:AL:36:LYS:HE2	2.17	0.44
78:AT:17:C:H3'	78:AT:18(A):U:H2'	1.99	0.44
2:1:3061:C:H2'	2:1:3062:U:O4'	2.18	0.44
2:1:3134:C:H2'	2:1:3135:A:C8	2.52	0.44
10:A:93:A:H1'	15:F:3:ARG:HB3	1.99	0.44
10:A:213:A:N6	10:A:240:U:H5"	2.32	0.44
10:A:721:C:O2'	10:A:722:A:H8	2.00	0.44
11:B:9:LEU:HD13	11:B:54:TRP:CG	2.53	0.44
13:D:143:LEU:HD13	32:W:4:ASP:OD2	2.17	0.44
23:N:69:GLU:OE1	23:N:69:GLU:N	2.51	0.44
35:Z:6:THR:HB	35:Z:28:LEU:HB2	1.99	0.44
43:h:211:ALA:HB3	43:h:240:LEU:HD13	2.00	0.44
52:r:179:ASP:OD1	52:r:180:GLU:N	2.51	0.44
2:1:18:U:H2'	2:1:19:A:C8	2.52	0.44
2:1:1042:A:H2'	2:1:1045:C:C5	2.52	0.44
2:1:2486:U:H2'	2:1:2487:U:C6	2.53	0.44
2:1:3159:A:H2'	2:1:3160:C:H6	1.82	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:402:G:H2'	10:A:403:C:C6	2.53	0.44
10:A:623:C:H2'	10:A:624:U:C6	2.53	0.44
10:A:880:G:N2	25:P:33:THR:OG1	2.45	0.44
10:A:1222:G:C2	10:A:1234:U:O4	2.71	0.44
10:A:1473:A:H2'	10:A:1474:G:C8	2.52	0.44
13:D:32:PRO:HD3	13:D:41:LYS:HZ1	1.83	0.44
15:F:47:PHE:CE1	15:F:52:LEU:HD11	2.53	0.44
15:F:124:GLY:HA2	15:F:142:HIS:CE1	2.52	0.44
16:G:98:MET:SD	16:G:107:LYS:HG3	2.57	0.44
18:I:54:LEU:O	18:I:86:VAL:HA	2.18	0.44
43:h:40:LYS:O	43:h:65:HIS:HB2	2.17	0.44
43:h:80:TYR:CD1	43:h:94:ASP:HA	2.45	0.44
43:h:158:SER:HA	43:h:201:LEU:HD13	1.99	0.44
45:k:283:TYR:CD1	45:k:354:VAL:HG21	2.52	0.44
61:AA:41:ALA:HB2	61:AA:77:TYR:HE1	1.83	0.44
68:AH:22:VAL:HG12	68:AH:30:LEU:HD11	2.00	0.44
2:1:88:G:H21	2:1:281:G:H4'	1.83	0.44
2:1:206:U:H2'	2:1:207:C:C6	2.53	0.44
2:1:214:G:H5"	9:9:12:ARG:HG3	2.00	0.44
2:1:1116:A:H2'	2:1:1117:U:H6	1.83	0.44
2:1:2919:G:OP2	2:1:2919:G:H4'	2.17	0.44
10:A:1:U:H5"	13:D:171:LYS:HZ2	1.83	0.44
10:A:738:A:H2'	10:A:739:A:O4'	2.18	0.44
10:A:1160:U:H2'	10:A:1161:G:H8	1.82	0.44
10:A:1341:U:H2'	10:A:1342:A:H8	1.82	0.44
19:J:190:LEU:HD22	19:J:194:GLU:HG2	2.00	0.44
21:L:55:VAL:HG11	21:L:66:TYR:HB3	1.99	0.44
36:a:84:GLU:HG2	36:a:91:PRO:HD3	2.00	0.44
39:d:43:ASN:HD22	39:d:66:LEU:HD22	1.83	0.44
44:j:209:HIS:HE1	44:j:211:HIS:CD2	2.25	0.44
53:s:109:HIS:CD2	53:s:109:HIS:H	2.36	0.44
59:y:151:ARG:O	59:y:161:LYS:HE3	2.18	0.44
78:AT:73:A:H2'	78:AT:74:A:O4'	2.18	0.44
1:0:172:TYR:OH	55:u:57:LEU:HG	2.18	0.43
2:1:1591:U:C2	2:1:1592:C:C5	3.06	0.43
2:1:1637:U:O2'	2:1:1638:A:H3'	2.17	0.43
2:1:3197:G:H2'	2:1:3198:C:C6	2.52	0.43
3:2:19:PHE:CE2	3:2:20:LYS:HE2	2.53	0.43
9:9:86:GLN:HB3	9:9:94:SER:OG	2.18	0.43
10:A:1039:U:H2'	10:A:1040:U:H6	1.82	0.43
10:A:1476:A:H8	10:A:1501:A:H61	1.66	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:1510:G:C8	30:U:79:LEU:HD13	2.53	0.43
12:C:167:LYS:HA	12:C:170:GLU:HG2	1.99	0.43
18:I:29:ASP:OD1	18:I:30:LEU:N	2.45	0.43
28:R:98:GLU:HA	28:R:101:LYS:HG2	2.00	0.43
45:k:292:ALA:HB1	45:k:295:ALA:HB3	2.00	0.43
53:s:53:THR:HG23	53:s:60:ARG:HA	1.99	0.43
53:s:108:GLU:CG	53:s:111:ASP:HB2	2.43	0.43
56:v:159:ARG:HB2	56:v:164:LEU:HB2	1.99	0.43
76:AP:104:LEU:HD23	76:AP:106:PHE:H	1.83	0.43
2:1:117:U:O2	2:1:120:A:H5"	2.18	0.43
2:1:385:A:H2'	2:1:386:A:C8	2.53	0.43
3:2:102:ARG:O	3:2:106:LEU:HG	2.18	0.43
5:4:6:U:H2'	5:4:7:U:C6	2.53	0.43
9:9:51:ARG:HG2	9:9:52:GLN:N	2.34	0.43
10:A:415:A:H5'	10:A:416:G:C5	2.52	0.43
10:A:519:A:N3	35:Z:34:ASN:ND2	2.57	0.43
10:A:1234:U:OP2	42:g:138:ARG:NH2	2.51	0.43
10:A:1356:U:OP1	10:A:1356:U:H3'	2.18	0.43
23:N:99:GLU:HB3	23:N:100:TRP:CE3	2.53	0.43
39:d:11:LYS:HB2	39:d:53:ILE:HG12	1.99	0.43
39:d:30:VAL:O	39:d:39:THR:HA	2.18	0.43
46:l:139:ARG:NH2	46:l:241:PRO:HG2	2.26	0.43
51:q:77:ASN:HA	51:q:80:THR:HG22	1.99	0.43
53:s:30:LEU:HD13	53:s:65:ILE:O	2.18	0.43
69:AI:8:GLU:O	69:AI:11:THR:OG1	2.36	0.43
2:1:1626:U:O2'	2:1:1808:G:N2	2.44	0.43
10:A:164:C:H4'	17:H:131:LYS:HE3	1.99	0.43
10:A:510:A:H2'	10:A:511:U:O4'	2.18	0.43
10:A:829:A:H2'	10:A:830:G:H8	1.83	0.43
11:B:199:PRO:HB2	29:S:91:LEU:HD12	2.00	0.43
15:F:141:THR:HG21	15:F:162:ILE:HD11	2.00	0.43
25:P:58:ALA:O	25:P:62:VAL:HG23	2.18	0.43
28:R:24:GLY:H	28:R:61:GLY:C	2.22	0.43
28:R:142:ARG:NH1	78:PT:34:U:C5	2.87	0.43
34:Y:92:CYS:HG	34:Y:136:TRP:CD1	2.36	0.43
39:d:64:ARG:HG2	39:d:65:ARG:H	1.83	0.43
43:h:88:ARG:HG2	43:h:109:GLY:C	2.44	0.43
58:x:60:PHE:HB3	58:x:64:ASN:HB3	2.00	0.43
64:AD:15:LYS:NZ	64:AD:105:SER:HB2	2.33	0.43
68:AH:108:GLN:O	68:AH:112:GLU:HG2	2.18	0.43
1:0:138[A]:GLN:HA	1:0:141:LYS:HB3	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:7:C:H2'	2:1:8:U:C6	2.53	0.43
2:1:924:C:H2'	2:1:925:A:C8	2.53	0.43
2:1:1345:G:H5"	2:1:1346:U:H5"	2.00	0.43
2:1:1593:C:H2'	2:1:1594:G:C8	2.53	0.43
2:1:1663:A:H2'	2:1:1664:G:H8	1.83	0.43
2:1:2744:C:H1'	2:1:2745:C:H5	1.83	0.43
7:7:20:LEU:HD13	7:7:30:ARG:HG2	2.01	0.43
10:A:904:A:N3	25:P:31:LYS:NZ	2.56	0.43
10:A:1026:G:H2'	10:A:1027:G:H8	1.77	0.43
11:B:200:ASP:HA	11:B:203:PHE:CD2	2.53	0.43
13:D:160:VAL:HG11	13:D:205:THR:HA	2.00	0.43
14:E:139:ILE:HG22	14:E:143:LEU:HD21	2.00	0.43
15:F:131:LEU:HA	15:F:137:PRO:HA	2.00	0.43
17:H:135:PRO:HB2	17:H:141:ILE:HG13	2.00	0.43
18:I:18:ALA:O	18:I:22:VAL:HG23	2.18	0.43
19:J:145:VAL:HA	19:J:148:LYS:HG2	2.00	0.43
28:R:24:GLY:HA3	28:R:63:ASP:HB2	2.01	0.43
28:R:28:ILE:HA	28:R:64:ILE:HG12	2.00	0.43
33:X:50:PHE:HB3	33:X:63:VAL:HG13	2.00	0.43
76:AP:71:ARG:NH2	76:AP:80:LYS:HE2	2.33	0.43
2:1:242:C:O2'	2:1:243:G:H5'	2.18	0.43
6:6:13:MET:HE3	6:6:85:TRP:CE2	2.54	0.43
10:A:861:G:H1'	10:A:929:A:O4'	2.18	0.43
10:A:920:U:C4	37:b:15:ARG:NH1	2.82	0.43
10:A:1143:C:O2'	10:A:1568:C:OP2	2.35	0.43
10:A:1375:C:H6	29:S:28:PHE:CZ	2.36	0.43
33:X:111:MET:HE2	33:X:111:MET:HB3	1.87	0.43
40:e:30:LEU:HA	40:e:39:CYS:HA	2.00	0.43
45:k:299:ASP:OD2	45:k:301:THR:HG22	2.19	0.43
52:r:42:THR:HB	52:r:45:GLU:HG3	2.01	0.43
58:x:178:SER:O	58:x:182:LEU:HG	2.19	0.43
67:AG:8:TYR:CD1	67:AG:99:ARG:HG2	2.54	0.43
78:AT:28:U:H2'	78:AT:29:C:H6	1.83	0.43
2:1:19:A:H2'	2:1:20:G:C8	2.54	0.43
2:1:1466:U:H2'	2:1:1467:U:C6	2.54	0.43
2:1:1807:G:H2'	2:1:1808:G:O4'	2.19	0.43
2:1:3044:C:H2'	2:1:3045:A:O4'	2.18	0.43
3:2:69:LYS:HA	47:m:40:HIS:CE1	2.54	0.43
4:3:70:A:H2'	4:3:71:U:C6	2.53	0.43
10:A:152:G:H5'	17:H:108:VAL:HG11	2.01	0.43
10:A:451:C:O2	10:A:451:C:H2'	2.19	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:537:G:OP2	10:A:537:G:N2	2.44	0.43
21:L:9:LYS:O	21:L:13:GLN:HG2	2.19	0.43
21:L:16:PHE:CD1	21:L:76:LEU:HD22	2.54	0.43
21:L:31:LYS:NZ	21:L:36:ASP:OD1	2.41	0.43
37:b:41:ILE:HD12	37:b:68:TYR:CD2	2.54	0.43
39:d:32:PHE:HB2	39:d:35:ASP:O	2.18	0.43
43:h:211:ALA:HB1	43:h:237:VAL:HG21	2.00	0.43
46:l:359:GLU:OE2	49:o:73:TYR:OH	2.37	0.43
47:m:211:LEU:HD23	47:m:219:TYR:HA	2.01	0.43
2:1:1303:G:C4	57:w:61:LYS:HD3	2.54	0.43
2:1:1720:U:OP2	60:z:128:LYS:NZ	2.45	0.43
2:1:1761:U:H2'	2:1:1762:G:C4'	2.48	0.43
2:1:2206:A:H2'	2:1:2207:A:C8	2.53	0.43
2:1:2236:U:H2'	2:1:2237:A:O4'	2.19	0.43
3:2:69:LYS:HG3	47:m:40:HIS:CD2	2.54	0.43
10:A:786:G:H21	33:X:107:SER:HB3	1.84	0.43
10:A:847:A:H5'	24:O:16:LEU:HD22	1.99	0.43
10:A:1029:U:H2'	10:A:1030:C:C6	2.53	0.43
10:A:1408:A:H2'	10:A:1409:U:C6	2.53	0.43
10:A:1539:U:H2'	10:A:1540:G:C8	2.54	0.43
10:A:1584:A:H8	40:e:14:PHE:HB2	1.82	0.43
17:H:67:VAL:HB	17:H:99:GLY:HA2	2.00	0.43
28:R:35:ILE:HG22	28:R:48:TYR:CE1	2.52	0.43
31:V:44:ALA:HB1	31:V:49:ILE:HB	2.01	0.43
43:h:252:ALA:HB2	43:h:289:LEU:HD13	2.00	0.43
44:j:65:ASP:OD2	44:j:68:LYS:HG2	2.19	0.43
56:v:114:ARG:HG2	56:v:137:PRO:HG3	2.00	0.43
78:PT:3:C:H2'	78:PT:4:G:C8	2.54	0.43
78:AT:11:A:H2'	78:AT:12:G:C8	2.53	0.43
2:1:592:U:H2'	2:1:607:G:O6	2.19	0.43
2:1:623:A:H2'	2:1:624:U:H6	1.84	0.43
2:1:776:A:N7	59:y:178:ARG:NH1	2.65	0.43
2:1:1387:C:C2	66:AF:104:ARG:HD3	2.53	0.43
2:1:2537:U:OP1	50:p:33:LYS:NZ	2.49	0.43
2:1:3174:G:O2'	55:u:99:LYS:HE2	2.18	0.43
2:1:3208:A:OP1	57:w:160:LYS:NZ	2.44	0.43
8:8:142:ILE:HD12	8:8:142:ILE:HA	1.84	0.43
10:A:73:U:H4'	10:A:74:U:H5'	2.00	0.43
10:A:592:A:OP2	20:K:37:LYS:HE3	2.19	0.43
10:A:1516:C:H5'	28:R:41:GLU:OE2	2.18	0.43
15:F:131:LEU:HD23	15:F:137:PRO:HB3	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:G:25:LEU:HD22	28:R:26:GLY:HA3	2.00	0.43
17:H:58:LYS:HG2	17:H:105:ASP:O	2.19	0.43
33:X:36:LYS:O	33:X:40:VAL:HG23	2.19	0.43
51:q:157:ASN:C	51:q:157:ASN:HD22	2.26	0.43
53:s:108:GLU:HB2	53:s:110:ILE:HG12	2.00	0.43
60:z:171:GLU:O	60:z:174:GLN:HB3	2.18	0.43
2:1:268:A:C4	56:v:12:ARG:HG2	2.53	0.43
2:1:417:A:H2'	2:1:418:A:C8	2.54	0.43
2:1:762:U:H4'	2:1:763:U:O4'	2.18	0.43
2:1:792:U:H2'	2:1:793:U:C6	2.54	0.43
2:1:964:G:H2'	2:1:965:C:C6	2.54	0.43
2:1:1347:U:O2	2:1:1347:U:H2'	2.18	0.43
2:1:1641:U:O2'	2:1:1815:U:OP1	2.33	0.43
2:1:2582:G:OP1	81:1:3412:GET:H531	2.18	0.43
2:1:2919:G:C2	45:k:250:ALA:HB1	2.54	0.43
4:3:3:U:H2'	4:3:4:U:C6	2.53	0.43
10:A:138:C:N4	10:A:279:G:OP1	2.52	0.43
10:A:207:U:H2'	10:A:208:A:H8	1.84	0.43
10:A:1437:C:C2	10:A:1438:U:C5	3.06	0.43
12:C:57:ALA:O	12:C:61:LEU:HD13	2.19	0.43
12:C:108:ASP:OD1	12:C:109:LYS:N	2.51	0.43
18:I:95:LEU:HD23	18:I:95:LEU:HA	1.91	0.43
25:P:39:GLY:O	25:P:43:VAL:HG22	2.19	0.43
27:T:64:GLU:HG2	27:T:65:GLU:N	2.34	0.43
28:R:9:PHE:O	28:R:86:LYS:HD3	2.19	0.43
28:R:49:GLU:O	28:R:53:LEU:HD13	2.18	0.43
44:j:211:HIS:CE1	44:j:219:ILE:HG23	2.54	0.43
49:o:39:ARG:HG2	49:o:39:ARG:HH11	1.84	0.43
70:AJ:36:THR:O	70:AJ:40:ARG:HG3	2.19	0.43
76:AP:37:ALA:O	76:AP:41:ARG:HG3	2.18	0.43
2:1:561:U:H2'	2:1:562:C:C6	2.53	0.43
2:1:1153:G:H2'	2:1:1154:A:O4'	2.19	0.43
2:1:1560:U:O4	2:1:1571:G:O6	2.37	0.43
6:6:74:MET:SD	6:6:102:ILE:HD13	2.59	0.43
10:A:613:A:O2'	10:A:619:A:N1	2.47	0.43
10:A:1118:A:H2'	10:A:1119:C:O4'	2.19	0.43
10:A:1716:C:H2'	10:A:1717:A:O4'	2.18	0.43
11:B:27:LYS:HA	11:B:45:MET:HA	2.01	0.43
21:L:18:GLU:O	21:L:20:VAL:N	2.51	0.43
23:N:26:ASP:O	23:N:28:LEU:N	2.52	0.43
30:U:9:VAL:HG11	30:U:14:PHE:CD1	2.54	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:Z:36:SER:OG	35:Z:38:ASP:OD1	2.37	0.43
52:r:108:ALA:O	52:r:112:GLN:HG2	2.18	0.43
65:AE:80:ASP:N	65:AE:81:GLU:OE1	2.51	0.43
66:AF:105:LYS:HB2	66:AF:105:LYS:HE3	1.83	0.43
2:1:1165:A:H2'	2:1:1166:A:C8	2.54	0.42
2:1:1622:U:O2	2:1:1813:G:O6	2.37	0.42
2:1:2719:A:H5'	47:m:175:HIS:HA	2.00	0.42
8:8:82:LEU:HD22	8:8:141:TYR:OH	2.18	0.42
10:A:516:A:C2'	10:A:517:C:H5"	2.48	0.42
10:A:873:U:H2'	10:A:874:U:C6	2.54	0.42
10:A:1561:G:H5"	10:A:1562:G:OP1	2.19	0.42
19:J:141:ARG:HD2	19:J:146:GLU:OE2	2.19	0.42
32:W:59:VAL:HG23	32:W:64:GLU:HB2	2.00	0.42
42:g:171:GLY:O	42:g:172:ILE:HD13	2.19	0.42
42:g:181:GLN:HE21	42:g:190:LEU:HB2	1.84	0.42
56:v:114:ARG:CG	56:v:137:PRO:HG3	2.49	0.42
2:1:1062:G:H2'	2:1:1063:U:H6	1.84	0.42
2:1:1689:C:O2'	2:1:1768:U:O2'	2.26	0.42
2:1:3085:A:H2'	2:1:3086:A:O4'	2.19	0.42
10:A:127:G:N7	17:H:202:ARG:NH2	2.67	0.42
10:A:149:G:H2'	10:A:150:U:C6	2.54	0.42
10:A:481:A:H2'	10:A:482:C:H4'	2.01	0.42
10:A:1396:A:H5"	28:R:117:VAL:HG13	2.01	0.42
13:D:36:LEU:O	13:D:40:VAL:HG23	2.19	0.42
16:G:117:ALA:O	16:G:118:LEU:C	2.62	0.42
20:K:50:SER:O	20:K:54:ARG:HG3	2.19	0.42
20:K:123:HIS:O	20:K:127:VAL:HG23	2.20	0.42
26:Q:52:LYS:N	26:Q:53:PRO:HD2	2.35	0.42
42:g:181:GLN:NE2	42:g:190:LEU:HB2	2.33	0.42
42:g:182:TYR:HE1	42:g:187:HIS:HB3	1.84	0.42
44:j:137:ILE:HD11	44:j:149:LYS:HB2	2.01	0.42
70:AJ:53:GLU:O	70:AJ:57:ILE:HG12	2.19	0.42
2:1:912:G:N1	44:j:207:VAL:HG11	2.34	0.42
2:1:1108:A:H2'	2:1:1109:G:C8	2.53	0.42
2:1:2408:A:H2'	2:1:2409:C:C6	2.53	0.42
2:1:2749:G:C2	62:AB:60:TYR:HE1	2.36	0.42
2:1:2848:C:O4'	78:AT:77:A:H1'	2.19	0.42
2:1:2972:A:H2'	2:1:2973:U:C6	2.54	0.42
10:A:446:C:H2'	10:A:447:C:H6	1.82	0.42
16:G:118:LEU:HD13	16:G:129:PRO:HB2	2.01	0.42
24:O:55:ARG:HH22	38:c:51:GLN:NE2	2.18	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:b:51:ARG:O	37:b:55:GLU:HG2	2.18	0.42
43:h:62:PHE:HD2	43:h:93:TRP:CE3	2.37	0.42
1:0:162:LEU:HD23	1:0:162:LEU:HA	1.87	0.42
2:1:254:A:H2'	2:1:255:A:O4'	2.19	0.42
2:1:1451:U:H1'	65:AE:25:LYS:HE3	2.01	0.42
2:1:1494:A:H2'	2:1:1495:U:C6	2.54	0.42
2:1:1690:U:O2'	2:1:1691:U:H5'	2.19	0.42
2:1:2077:A:O2'	2:1:2078:A:H5'	2.20	0.42
2:1:2965:G:H2'	2:1:3114:A:H61	1.83	0.42
2:1:3066:A:H2'	2:1:3067:U:C6	2.54	0.42
6:6:104:ASN:OD1	6:6:105:PRO:HD2	2.19	0.42
10:A:213:A:H2'	10:A:214:U:C6	2.54	0.42
10:A:959:A:H4'	24:O:112:LYS:NZ	2.34	0.42
10:A:1370:A:H2'	10:A:1371:G:O4'	2.20	0.42
13:D:62:GLN:HA	13:D:65:ASP:OD1	2.19	0.42
16:G:208:SER:HB3	16:G:211:ILE:HG12	2.01	0.42
18:I:33:GLU:OE1	18:I:33:GLU:N	2.53	0.42
18:I:147:LYS:HE3	18:I:149:LEU:HD21	2.02	0.42
26:Q:58:LYS:HG2	26:Q:61:ARG:NH2	2.28	0.42
58:x:10:ASN:ND2	58:x:13:LYS:HG3	2.35	0.42
59:y:175:ALA:O	62:AB:51:GLY:HA2	2.20	0.42
2:1:551:U:H2'	2:1:552:G:O4'	2.19	0.42
2:1:635:C:C2	2:1:636:C:C5	3.07	0.42
2:1:771:A:H62	81:1:3407:GET:H531	1.84	0.42
2:1:1287:A:H2'	2:1:1288:C:O4'	2.19	0.42
2:1:1344:U:H5'	2:1:1347:U:OP1	2.19	0.42
5:4:6:U:H2'	5:4:7:U:H6	1.85	0.42
5:4:68:A:H2'	5:4:69:U:O4'	2.19	0.42
6:6:23:MET:HE3	6:6:100:GLY:HA3	2.02	0.42
10:A:295:U:OP1	15:F:37:LYS:HE3	2.20	0.42
10:A:553:A:H2'	10:A:554:A:C8	2.55	0.42
13:D:225:TRP:CD2	33:X:68:ARG:HD3	2.54	0.42
18:I:110:ARG:HA	18:I:113:THR:HG23	2.02	0.42
39:d:14:LYS:HD2	39:d:29:ARG:HH12	1.83	0.42
54:t:49:ARG:HD2	69:AI:116:PHE:CE2	2.54	0.42
78:PT:11:A:H2'	78:PT:12:G:H8	1.85	0.42
78:PT:65:G:H2'	78:PT:66:C:H6	1.84	0.42
78:AT:24:C:H2'	78:AT:25:U:C6	2.55	0.42
2:1:621:U:H2'	2:1:622:G:C8	2.55	0.42
2:1:771:A:N6	81:1:3407:GET:H531	2.35	0.42
2:1:844:A:C5	2:1:845:C:H1'	2.54	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:929:A:C2	46:l:99:ARG:NH2	2.87	0.42
2:1:1093:G:H4'	3:2:129:LYS:HG2	2.01	0.42
2:1:1757:A:O2'	2:1:1759:U:OP2	2.29	0.42
2:1:1923:G:C8	77:AQ:16:VAL:HG12	2.55	0.42
2:1:2325:U:H2'	2:1:2326:A:O4'	2.18	0.42
2:1:2800:G:H5'	52:r:8:CYS:SG	2.59	0.42
10:A:1379:C:H2'	10:A:1380:G:H8	1.84	0.42
10:A:1388:G:OP1	29:S:4:VAL:HA	2.19	0.42
10:A:1526:G:H1	27:T:26:ILE:HG23	1.84	0.42
27:T:44:ASN:ND2	27:T:48:LYS:HE3	2.34	0.42
29:S:32:LYS:HE3	29:S:48:ASN:HD21	1.83	0.42
34:Y:142:LYS:HD2	34:Y:143:PRO:HD2	2.01	0.42
45:k:292:ALA:HB2	45:k:302:LYS:HD2	2.01	0.42
47:m:97:ALA:O	47:m:101:VAL:HG23	2.19	0.42
52:r:150:GLU:O	52:r:154:ARG:HG3	2.19	0.42
55:u:109:GLU:O	55:u:113:VAL:HG23	2.19	0.42
57:w:62:ALA:HA	57:w:71:PRO:HD2	2.02	0.42
64:AD:15:LYS:HZ3	64:AD:105:SER:HB2	1.84	0.42
67:AG:38:PRO:O	67:AG:42:LYS:HG3	2.19	0.42
1:0:8:GLN:HG2	1:0:62:ASN:HB2	2.01	0.42
2:1:621:U:H2'	2:1:622:G:H8	1.85	0.42
2:1:1330:U:H2'	2:1:1331:U:C6	2.55	0.42
2:1:2072:C:H2'	2:1:2073:G:H8	1.85	0.42
2:1:2130:A:H2'	2:1:2131:U:C6	2.55	0.42
2:1:2507:A:H2'	2:1:2508:G:O4'	2.19	0.42
2:1:2550:C:H2'	2:1:2551:G:O4'	2.20	0.42
2:1:2627:U:H4'	2:1:2628:A:O4'	2.20	0.42
4:3:107:A:H2'	4:3:108:U:C6	2.55	0.42
7:7:18:GLY:HA3	7:7:31:PHE:O	2.19	0.42
10:A:938:G:H2'	10:A:939:G:C8	2.54	0.42
10:A:1084:U:OP1	33:X:71:LYS:NZ	2.51	0.42
10:A:1226:G:H2'	10:A:1227:A:C8	2.54	0.42
11:B:18:LEU:HD11	29:S:102:ILE:HG21	2.01	0.42
14:E:114:LEU:HD23	14:E:115:PRO:O	2.20	0.42
14:E:134:GLY:HA3	14:E:157:PHE:O	2.20	0.42
19:J:31:ARG:HD2	19:J:56:ARG:HH22	1.84	0.42
24:O:30:SER:O	24:O:34:VAL:HG23	2.20	0.42
31:V:56:ARG:HG2	31:V:88:ARG:CZ	2.50	0.42
38:c:73:LEU:HD21	38:c:79:PHE:HB3	2.01	0.42
46:l:326:LEU:HD23	46:l:326:LEU:HA	1.85	0.42
48:n:138:GLN:HE21	48:n:142:ASP:CG	2.28	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:t:186:GLU:O	54:t:190:LYS:HG2	2.19	0.42
2:1:569:U:H2'	2:1:570:A:H8	1.85	0.42
2:1:1396:U:H2'	2:1:1397:G:O4'	2.20	0.42
2:1:1562:G:H2'	2:1:1563:A:O4'	2.19	0.42
2:1:2810:A:H4'	52:r:74:LYS:HD2	2.00	0.42
2:1:2853:C:H2'	2:1:2854:U:C6	2.55	0.42
2:1:3297:U:H2'	2:1:3298:G:O4'	2.20	0.42
2:1:3318:G:H5"	2:1:3319:U:H4'	2.02	0.42
5:4:57:C:H4'	5:4:63:G:N7	2.35	0.42
8:8:71:THR:O	8:8:75:LYS:HG3	2.19	0.42
10:A:58:U:OP1	10:A:454:G:O2'	2.35	0.42
10:A:260:U:O2'	10:A:261:C:H5'	2.20	0.42
10:A:788:A:C8	33:X:107:SER:HA	2.55	0.42
14:E:60:LEU:HA	14:E:64:GLY:HA2	2.02	0.42
26:Q:15:PHE:HD2	26:Q:22:LEU:HD21	1.84	0.42
42:g:163:CYS:O	42:g:165:ALA:N	2.52	0.42
43:h:150:ASP:O	43:h:170:SER:OG	2.38	0.42
45:k:46:PHE:CZ	45:k:84:MET:HG3	2.55	0.42
50:p:172:LYS:HG2	50:p:227:TYR:CD2	2.54	0.42
55:u:120:ARG:HH12	57:w:187:ALA:HA	1.84	0.42
67:AG:42:LYS:HA	67:AG:45:LEU:HG	2.01	0.42
78:AT:2:G:H2'	78:AT:3:C:O4'	2.19	0.42
2:1:441:U:OP1	66:AF:3:THR:HG21	2.19	0.42
2:1:696:U:H2'	2:1:697:A:O4'	2.20	0.42
2:1:2785:A:H2'	2:1:2786:G:O4'	2.20	0.42
10:A:402:G:H2'	10:A:403:C:H6	1.85	0.42
10:A:885:A:OP1	25:P:38:THR:OG1	2.35	0.42
10:A:943:U:OP2	38:c:20:LYS:NZ	2.40	0.42
10:A:1715:U:H2'	10:A:1716:C:C6	2.54	0.42
11:B:4:PRO:HB3	32:W:41:GLU:OE1	2.19	0.42
11:B:206:ASP:HB2	11:B:208:GLU:CD	2.45	0.42
12:C:71:ALA:HB2	12:C:80:SER:HA	2.02	0.42
25:P:82:GLY:HA3	25:P:115:PRO:HD2	2.02	0.42
28:R:45:PHE:CD1	28:R:48:TYR:HD2	2.38	0.42
38:c:34:ASP:O	38:c:79:PHE:HA	2.20	0.42
43:h:70:GLN:HG2	43:h:112:LEU:CB	2.49	0.42
48:n:39:LEU:HD11	48:n:53:TYR:HB2	2.02	0.42
50:p:69:ARG:HD3	50:p:238:ILE:O	2.20	0.42
78:PT:21:U:H2'	78:PT:22:A:H5'	2.02	0.42
78:AT:28:U:H2'	78:AT:29:C:C6	2.55	0.42
2:1:1612:U:H2'	2:1:1613:G:C8	2.55	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2373:G:H5”	45:k:255:TRP:CD1	2.55	0.42
10:A:160:A:H2’	10:A:161:G:N3	2.35	0.42
10:A:255:A:N3	19:J:64:ASN:ND2	2.67	0.42
10:A:1151:A:H5”	16:G:101:GLY:HA2	2.02	0.42
10:A:1502:A:O2’	10:A:1504:U:OP2	2.23	0.42
11:B:15:LYS:HZ1	29:S:117:ILE:HD11	1.84	0.42
11:B:198:MET:CE	11:B:200:ASP:HB2	2.48	0.42
14:E:171:ILE:HG12	14:E:188:LYS:HG2	2.02	0.42
18:I:36:PRO:HG2	18:I:37:LEU:HD12	2.02	0.42
20:K:62:ARG:CZ	20:K:68:LYS:HD3	2.49	0.42
21:L:17:GLN:HA	21:L:89:LEU:HD13	2.01	0.42
22:M:71:LEU:HD22	22:M:88:ARG:CZ	2.49	0.42
26:Q:73:PRO:HG2	26:Q:93:VAL:HG12	2.02	0.42
30:U:49:GLU:HG3	30:U:52:THR:HG22	2.01	0.42
43:h:130:LYS:HG2	43:h:151:TRP:N	2.27	0.42
61:AA:5:ILE:HG23	61:AA:25:ILE:HD13	2.01	0.42
68:AH:58:ARG:HD3	68:AH:59:PRO:CD	2.45	0.42
68:AH:58:ARG:CD	68:AH:59:PRO:HD2	2.43	0.42
2:1:156:A:N7	70:AJ:25:ILE:HG12	2.35	0.41
2:1:358:G:N2	2:1:361:A:OP2	2.51	0.41
2:1:1062:G:H2’	2:1:1063:U:C6	2.55	0.41
2:1:2354:G:H2’	2:1:2355:G:C8	2.55	0.41
2:1:2692:G:OP1	59:y:180:ARG:NH1	2.50	0.41
2:1:3241:G:O2’	58:x:175:ARG:HD2	2.20	0.41
4:3:4:U:H2’	4:3:5:G:H8	1.85	0.41
8:8:67:ILE:HD12	8:8:121:LYS:HG3	2.00	0.41
8:8:108:LEU:HD23	8:8:125:ARG:HD3	2.02	0.41
10:A:196:A:C2’	10:A:197:G:H5’	2.50	0.41
10:A:561:U:H4’	41:f:17:GLN:OE1	2.20	0.41
10:A:1403:A:H2’	10:A:1404:G:O4’	2.20	0.41
10:A:1555:C:H1’	10:A:1556:A:OP2	2.20	0.41
15:F:42:LEU:N	15:F:84:ALA:O	2.47	0.41
17:H:7:TYR:CE2	17:H:9:ALA:HB3	2.55	0.41
27:T:7:GLU:HG3	36:a:42:LEU:O	2.20	0.41
31:V:22:ARG:NH1	31:V:91:ASP:OD1	2.53	0.41
34:Y:55:GLU:HG2	34:Y:56:LYS:N	2.34	0.41
36:a:65:LEU:HD11	36:a:80:LEU:HD21	2.02	0.41
38:c:42:ASN:C	38:c:42:ASN:ND2	2.73	0.41
41:f:41:THR:HA	41:f:45:VAL:HB	2.01	0.41
44:j:49:ILE:HD11	44:j:60:LYS:HE2	2.02	0.41
2:1:559:C:H2’	2:1:560:C:H6	1.85	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:563:U:H2'	2:1:564:G:H8	1.85	0.41
2:1:924:C:H41	81:1:3412:GET:H713	1.85	0.41
2:1:3021:A:C5	45:k:75:ALA:HB2	2.54	0.41
4:3:84:A:H2'	4:3:85:G:C8	2.55	0.41
8:8:47:GLN:HG2	69:AI:70:TYR:OH	2.20	0.41
10:A:720:C:H1'	10:A:721:C:H5	1.85	0.41
10:A:1204:A:H62	10:A:1249:G:N2	2.15	0.41
10:A:1241:A:H5"	21:L:5:LYS:NZ	2.35	0.41
10:A:1725:U:H2'	10:A:1726:C:C6	2.55	0.41
11:B:75:VAL:HG23	11:B:86:VAL:HB	2.02	0.41
16:G:144:GLU:HB2	16:G:218:GLU:HG3	2.02	0.41
24:O:62:GLN:O	24:O:65:VAL:HG22	2.20	0.41
31:V:25:LEU:HB2	31:V:113:VAL:HG12	2.01	0.41
31:V:41:ILE:HG23	31:V:51:LYS:HE2	2.02	0.41
44:j:27:ALA:HB1	44:j:77:ILE:HG13	2.02	0.41
46:l:227:GLU:OE1	46:l:238:GLN:HG2	2.20	0.41
1:0:113:ARG:NH1	2:1:1207:U:O2'	2.52	0.41
2:1:679:U:C6	46:l:116:HIS:HB2	2.55	0.41
2:1:1116:A:H2'	2:1:1117:U:C6	2.55	0.41
5:4:38:U:O2'	69:AI:83:LYS:HE2	2.21	0.41
10:A:57:G:OP1	35:Z:112:LYS:NZ	2.35	0.41
10:A:66:U:H5'	17:H:173:PRO:HA	2.02	0.41
10:A:336:C:H2'	10:A:337:C:C6	2.54	0.41
10:A:904:A:H2'	10:A:905:C:C6	2.55	0.41
10:A:1218:G:H1	10:A:1237:C:H5	1.68	0.41
10:A:1382:U:H2'	10:A:1383:U:C6	2.56	0.41
10:A:1503:A:O2'	10:A:1504:U:H5'	2.19	0.41
10:A:1522:U:O4	16:G:187:ILE:HA	2.20	0.41
12:C:38:PHE:CE1	12:C:189:ILE:HD11	2.54	0.41
12:C:82:ARG:HD2	12:C:103:LEU:HD11	2.02	0.41
20:K:30:LEU:HD21	20:K:102:GLU:HG3	2.03	0.41
23:N:42:ALA:HB2	23:N:124:LYS:HD3	2.02	0.41
24:O:56:ASP:OD2	38:c:52:THR:HG22	2.20	0.41
30:U:50:ALA:HA	30:U:53:TRP:HD1	1.85	0.41
34:Y:89:ASN:HB2	34:Y:92:CYS:SG	2.61	0.41
43:h:44:LYS:O	43:h:59:LYS:N	2.42	0.41
45:k:108:GLU:HG3	45:k:137:TYR:CG	2.56	0.41
68:AH:103:ARG:O	68:AH:107:GLU:HG3	2.20	0.41
72:AL:30[B]:LYS:HB3	72:AL:30[B]:LYS:HE3	1.75	0.41
78:PT:51:U:H2'	78:PT:52:C:C6	2.55	0.41
2:1:707:A:H2'	2:1:708:A:O4'	2.21	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1177:U:O4	57:w:19:ARG:HA	2.19	0.41
2:1:2881:U:H2'	2:1:2882:A:O4'	2.21	0.41
10:A:1:U:H5"	13:D:171:LYS:NZ	2.36	0.41
10:A:148:C:H4'	17:H:132:ARG:HH22	1.85	0.41
10:A:750:G:C6	20:K:146:PHE:CZ	3.08	0.41
10:A:1037:U:O2'	10:A:1038:G:N2	2.54	0.41
10:A:1051:C:H5"	12:C:151:LYS:HE3	2.02	0.41
10:A:1475:U:OP1	14:E:10:LYS:HE3	2.21	0.41
12:C:52:THR:HG22	12:C:55:LYS:HB3	2.03	0.41
16:G:42:LEU:HB2	16:G:48:PHE:HE2	1.86	0.41
20:K:169:ALA:HB1	20:K:173:LYS:HB3	2.02	0.41
30:U:6:VAL:HB	30:U:66:TYR:CE1	2.56	0.41
35:Z:23:PHE:HE1	35:Z:75:ILE:HG12	1.84	0.41
44:j:140:ASN:ND2	44:j:143:GLU:OE1	2.53	0.41
46:l:113:LYS:CG	56:v:202:TYR:HB3	2.50	0.41
47:m:83:LEU:HB3	47:m:88:ILE:HB	2.01	0.41
49:o:84:VAL:O	49:o:112:GLY:HA2	2.20	0.41
59:y:63:SER:OG	59:y:90:ASP:HB2	2.20	0.41
60:z:17:VAL:HG11	60:z:52:LYS:HD2	2.02	0.41
60:z:166:ASN:C	60:z:166:ASN:HD22	2.26	0.41
62:AB:75:LEU:HD11	62:AB:134:ALA:HA	2.03	0.41
71:AK:54:LYS:O	71:AK:58:THR:HB	2.21	0.41
2:1:602:A:H2'	2:1:603:C:C6	2.55	0.41
2:1:1426:U:H2'	62:AB:9:ARG:HH22	1.84	0.41
2:1:2181:U:H2'	2:1:2182:C:H6	1.85	0.41
10:A:142:G:O2'	10:A:143:A:O5'	2.35	0.41
10:A:508:G:H2'	10:A:509:A:O4'	2.20	0.41
10:A:605:G:H5'	10:A:611:G:N2	2.35	0.41
10:A:680:C:C2	10:A:681:C:C5	3.08	0.41
10:A:918:A:OP2	37:b:37:LYS:HE3	2.20	0.41
10:A:1293:G:H2'	10:A:1294:C:C6	2.55	0.41
14:E:219:ILE:HG23	14:E:222:PRO:HG3	2.03	0.41
20:K:92:LYS:O	20:K:93:LEU:HB2	2.20	0.41
25:P:94:GLN:CD	37:b:46:GLU:H	2.28	0.41
28:R:46:LYS:HE2	28:R:78:TYR:CZ	2.54	0.41
28:R:59:PHE:CZ	28:R:88:LEU:HD13	2.56	0.41
29:S:84:TYR:CE1	29:S:86:PRO:HG3	2.54	0.41
31:V:101:ARG:HA	31:V:104:GLN:HG3	2.01	0.41
33:X:20:THR:O	33:X:20:THR:HG22	2.20	0.41
42:g:168:CYS:SG	42:g:169:GLY:N	2.94	0.41
43:h:124:VAL:HG22	43:h:157:ILE:HD11	2.03	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:k:90:VAL:HG22	45:k:104:THR:HG23	2.01	0.41
46:l:36:VAL:HG21	46:l:245:LEU:HD21	2.03	0.41
65:AE:26:LYS:HA	65:AE:29:PRO:HG2	2.01	0.41
1:0:95:ARG:HG2	1:0:95:ARG:NH1	2.35	0.41
2:1:1077:U:H5'	2:1:1078:U:C5	2.55	0.41
2:1:2391:A:H2'	2:1:2392:G:H8	1.86	0.41
10:A:197:G:H2'	10:A:198:G:O4'	2.21	0.41
10:A:411:U:H2'	10:A:412:C:H6	1.86	0.41
10:A:483:A:H2'	10:A:484:G:C8	2.54	0.41
10:A:507:G:H2'	10:A:508:G:C8	2.55	0.41
10:A:734:U:H2'	10:A:735:U:H6	1.86	0.41
10:A:740:A:O2'	10:A:741:A:OP1	2.36	0.41
10:A:1211:A:O2'	10:A:1241:A:N1	2.39	0.41
10:A:1381:A:H2'	10:A:1382:U:C6	2.55	0.41
10:A:1435:U:H2'	10:A:1436:U:C6	2.55	0.41
11:B:58:VAL:O	11:B:62:ARG:HG3	2.21	0.41
15:F:107:GLY:CA	15:F:189:LEU:HD23	2.50	0.41
18:I:162:LEU:O	18:I:166:GLN:HG3	2.21	0.41
19:J:166:PHE:CZ	19:J:171:LEU:HD11	2.56	0.41
20:K:30:LEU:HA	20:K:30:LEU:HD23	1.84	0.41
20:K:38:ASN:OD1	20:K:41:GLU:HG3	2.21	0.41
21:L:50:THR:HG21	21:L:57:THR:OG1	2.20	0.41
28:R:41:GLU:OE1	28:R:41:GLU:N	2.54	0.41
29:S:107:ALA:O	29:S:111:LYS:HG2	2.21	0.41
32:W:37:ALA:HA	32:W:50:ASN:OD1	2.21	0.41
43:h:26:THR:HG23	43:h:29:HIS:H	1.85	0.41
43:h:84:ALA:HB1	43:h:111:VAL:HG23	2.02	0.41
54:t:56:PRO:HG3	54:t:74:GLY:C	2.46	0.41
76:AP:104:LEU:HD22	76:AP:106:PHE:HD1	1.86	0.41
2:1:516:U:OP1	46:l:352:PRO:HD2	2.19	0.41
2:1:1313:A:O2'	2:1:1314:A:H3'	2.20	0.41
2:1:1593:C:H5'	2:1:1692:A:H1'	2.02	0.41
2:1:2208:C:H2'	2:1:2209:C:O4'	2.21	0.41
2:1:2245:C:H2'	2:1:2246:U:O4'	2.20	0.41
2:1:2719:A:H2'	2:1:2720:A:C8	2.55	0.41
10:A:477:C:H2'	10:A:478:G:H8	1.85	0.41
10:A:736:G:H2'	10:A:737:A:H8	1.84	0.41
10:A:849:U:H3'	33:X:28:ARG:HH22	1.86	0.41
10:A:1176:U:H2'	10:A:1177:C:C6	2.55	0.41
10:A:1369:G:H1'	10:A:1370:A:O5'	2.20	0.41
11:B:167:LYS:CE	11:B:203:PHE:HB3	2.50	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:L:76:LEU:HD21	21:L:80:LEU:HD12	2.02	0.41
25:P:123:ARG:NH1	37:b:23:CYS:O	2.54	0.41
39:d:11:LYS:NZ	39:d:51:ASN:OD1	2.48	0.41
42:g:183:CYS:HB3	42:g:186:CYS:SG	2.60	0.41
56:v:180:PHE:O	56:v:184:LYS:HB2	2.21	0.41
62:AB:75:LEU:HD22	62:AB:118:LEU:HD11	2.03	0.41
72:AL:40:GLN:HE21	72:AL:55:VAL:CG1	2.30	0.41
76:AP:46:LYS:HE3	76:AP:54:THR:HB	2.03	0.41
78:PT:36:A:N1	79:MR:6:A:N1	2.69	0.41
2:1:106:A:H1'	2:1:325:A:N3	2.36	0.41
2:1:299:G:C8	70:AJ:30:GLY:HA3	2.56	0.41
2:1:1691:U:O2	68:AH:26:PRO:HB3	2.21	0.41
2:1:2232:U:H2'	2:1:2239:G:N2	2.36	0.41
2:1:2296:U:H2'	2:1:2297:U:O4'	2.21	0.41
10:A:734:U:H2'	10:A:735:U:C6	2.55	0.41
10:A:1459:U:O4	16:G:180:ARG:HG3	2.21	0.41
10:A:1600:U:C4	10:A:1601:A:N1	2.89	0.41
14:E:102:GLN:HB3	14:E:123:VAL:HG13	2.01	0.41
16:G:25:LEU:HD23	16:G:25:LEU:HA	1.90	0.41
23:N:27:ALA:O	23:N:30:VAL:HG13	2.21	0.41
27:T:25:ARG:HE	36:a:40:VAL:HB	1.86	0.41
43:h:291:TRP:CZ3	43:h:298:LEU:HD13	2.56	0.41
2:1:356:C:O2'	46:l:82:GLY:O	2.28	0.41
2:1:982:U:H5'	49:o:127:LEU:HD11	2.02	0.41
2:1:989:G:N3	2:1:2609:A:H2'	2.35	0.41
2:1:1035:U:H2'	2:1:1036:A:C8	2.56	0.41
2:1:1469:G:C4'	60:z:26:PRO:HG3	2.50	0.41
2:1:2523:C:H2'	2:1:2524:C:C6	2.56	0.41
2:1:2854:U:H2'	2:1:2855:U:C6	2.56	0.41
2:1:2866:C:H2'	2:1:2867:G:H8	1.86	0.41
2:1:3233:A:OP1	48:n:45:ARG:NH2	2.48	0.41
2:1:3233:A:H5"	48:n:45:ARG:NH1	2.36	0.41
2:1:3245:A:O2'	2:1:3246:C:O5'	2.35	0.41
4:3:26:C:H5"	47:m:56:THR:HG21	2.02	0.41
6:6:61:THR:HG22	6:6:72:LYS:O	2.20	0.41
10:A:255:A:H1'	19:J:73:SER:OG	2.21	0.41
10:A:566:G:OP2	34:Y:70:LYS:NZ	2.38	0.41
10:A:750:G:C6	20:K:149:ARG:NE	2.88	0.41
10:A:812:C:H2'	10:A:813:U:C6	2.56	0.41
10:A:1238:U:H4'	42:g:185:LYS:HB2	2.03	0.41
10:A:1396:A:H2'	10:A:1397:A:O4'	2.19	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:B:201:LEU:HG	11:B:202:TYR:H	1.86	0.41
12:C:71:ALA:O	12:C:75:GLY:N	2.54	0.41
15:F:247:LEU:HB2	15:F:252:GLU:HG2	2.03	0.41
18:I:63:LEU:HD22	18:I:90:ALA:HB2	2.01	0.41
18:I:131:ILE:HG23	18:I:148:VAL:HG13	2.03	0.41
19:J:39:GLY:O	19:J:61:GLU:HG2	2.21	0.41
21:L:17:GLN:O	21:L:18:GLU:HG3	2.20	0.41
25:P:7:GLN:OE1	25:P:106:ARG:HG3	2.21	0.41
25:P:79:ARG:HH21	25:P:115:PRO:HG2	1.85	0.41
30:U:27:LYS:HG3	30:U:111:ILE:HD12	2.03	0.41
30:U:65:ILE:HG13	30:U:71:VAL:CG2	2.50	0.41
31:V:54:PRO:HA	31:V:90:ILE:HG13	2.02	0.41
39:d:11:LYS:NZ	39:d:13:ILE:HG22	2.36	0.41
43:h:87:ASP:OD1	43:h:89:THR:HG22	2.21	0.41
43:h:175:VAL:O	43:h:175:VAL:HG12	2.20	0.41
47:m:235:ASP:HA	47:m:238:GLU:OE2	2.21	0.41
48:n:73:VAL:HA	48:n:74:PRO:HD3	1.93	0.41
49:o:158:ARG:HG3	49:o:201:TRP:CG	2.56	0.41
56:v:48:ALA:O	56:v:53:TYR:HB3	2.21	0.41
61:AA:23:VAL:HG12	61:AA:45:GLY:HA3	2.03	0.41
2:1:106:A:H2'	2:1:107:A:O4'	2.21	0.41
2:1:745:C:H5"	63:AC:32:LEU:HD12	2.03	0.41
10:A:815:U:C2	10:A:816:U:C6	3.09	0.41
10:A:985:C:H5	10:A:988:A:OP2	2.03	0.41
10:A:1110:A:O2'	10:A:1763:A:OP1	2.33	0.41
10:A:1581:G:H5'	40:e:33:LYS:HD2	2.03	0.41
12:C:168:MET:HA	12:C:197:ILE:HD12	2.01	0.41
14:E:124:LEU:O	14:E:128:MET:HG2	2.21	0.41
19:J:107:THR:HB	19:J:108:PRO:HD3	2.02	0.41
25:P:6:SER:OG	25:P:7:GLN:N	2.54	0.41
25:P:56:MET:HB2	25:P:95:SER:OG	2.21	0.41
32:W:83:TRP:NE1	32:W:87:ARG:HH22	2.18	0.41
33:X:90:THR:O	33:X:94:LEU:HB2	2.21	0.41
35:Z:20:ARG:HB3	35:Z:76:TYR:CD1	2.56	0.41
35:Z:87:PRO:HG2	35:Z:90:ARG:HD3	2.03	0.41
35:Z:90:ARG:HA	35:Z:93:ARG:HD2	2.03	0.41
42:g:174:MET:HG2	42:g:182:TYR:O	2.21	0.41
43:h:289:LEU:O	43:h:289:LEU:HD23	2.20	0.41
48:n:39:LEU:HB3	48:n:83:VAL:HG13	2.03	0.41
50:p:244:ASN:HA	50:p:247:ILE:HD12	2.02	0.41
1:0:159:SER:HB2	2:1:3172:U:O4	2.22	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:564:G:H2'	2:1:565:A:H8	1.82	0.40
2:1:1358:C:H2'	2:1:1359:A:C8	2.56	0.40
2:1:2413:G:H4'	56:v:24:ARG:HH22	1.86	0.40
2:1:2728:C:O4'	3:2:49:GLN:HG2	2.21	0.40
2:1:2854:U:H2'	2:1:2855:U:O4'	2.21	0.40
2:1:3166:A:H2'	2:1:3167:G:H8	1.82	0.40
5:4:146:U:H2'	5:4:147:U:C6	2.57	0.40
10:A:484:G:N2	10:A:501:G:O6	2.42	0.40
10:A:872:A:H5"	25:P:115:PRO:HB3	2.02	0.40
10:A:1158:C:OP1	27:T:132:LYS:NZ	2.50	0.40
10:A:1329:A:H2'	10:A:1330:A:C8	2.56	0.40
10:A:1345:A:H2'	10:A:1346:U:O4'	2.21	0.40
10:A:1656:U:H2'	10:A:1657:G:O4'	2.21	0.40
11:B:3:LEU:HD12	11:B:4:PRO:HD2	2.02	0.40
18:I:139:LEU:HD11	18:I:145:ILE:HD12	2.03	0.40
20:K:28:LEU:HB3	41:f:44:PHE:HE2	1.85	0.40
25:P:40:GLY:HA2	25:P:49:GLU:HG2	2.03	0.40
26:Q:15:PHE:CZ	26:Q:110:GLU:HG3	2.56	0.40
28:R:21:VAL:HG22	28:R:64:ILE:HG22	2.03	0.40
29:S:13:SER:OG	29:S:57:LEU:HD12	2.21	0.40
30:U:105:VAL:HA	30:U:108:LEU:HD12	2.03	0.40
38:c:42:ASN:OD1	38:c:56:CYS:SG	2.73	0.40
39:d:64:ARG:O	39:d:65:ARG:HD2	2.21	0.40
43:h:43:ILE:HB	43:h:45:TRP:HE1	1.86	0.40
50:p:119:GLU:CD	50:p:120:GLY:H	2.27	0.40
50:p:163:LEU:HA	56:v:7:LEU:HD11	2.03	0.40
55:u:120:ARG:NH1	57:w:186:THR:HG23	2.35	0.40
64:AD:24:LYS:HB2	64:AD:96:ASP:HB3	2.04	0.40
2:1:277:G:H2'	2:1:278:U:C6	2.56	0.40
2:1:757:A:C2	2:1:767:A:H1'	2.56	0.40
2:1:943:G:H2'	2:1:944:C:C6	2.56	0.40
2:1:1152:C:OP2	49:o:92:LYS:NZ	2.53	0.40
2:1:1352:C:H5"	2:1:1353:G:C8	2.56	0.40
2:1:1840:C:O2	71:AK:9:GLY:HA2	2.22	0.40
2:1:2185:A:C8	2:1:2186:A:H2	2.39	0.40
2:1:2342:G:H22	2:1:2374:G:H1'	1.85	0.40
2:1:2517:C:H4'	2:1:2518:A:H5'	2.04	0.40
5:4:52:A:OP1	73:AM:21[B]:ARG:NH1	2.39	0.40
6:6:59:MET:HE3	6:6:73:VAL:HG12	2.03	0.40
6:6:80:ARG:HD2	6:6:97:ASP:OD1	2.22	0.40
10:A:266:C:O2'	10:A:267:G:H5'	2.21	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:328:G:O2'	19:J:33:PRO:HB3	2.21	0.40
10:A:873:U:H2'	10:A:874:U:H6	1.86	0.40
10:A:1105:U:H2'	10:A:1106:C:C6	2.56	0.40
10:A:1374:A:N6	10:A:1397:A:N7	2.69	0.40
10:A:1437:C:P	40:e:12:ARG:HH22	2.43	0.40
12:C:101:HIS:ND1	12:C:217:LEU:HD23	2.37	0.40
18:I:41:SER:O	18:I:57:PHE:HB2	2.20	0.40
23:N:74:LEU:HD11	42:g:148:TYR:HB2	2.03	0.40
44:j:112:ILE:HG13	77:AQ:79:VAL:HG22	2.03	0.40
47:m:197:LYS:HG3	47:m:202:GLY:HA3	2.02	0.40
49:o:143[B]:ARG:HG3	49:o:183:ILE:HG21	2.04	0.40
51:q:79:ILE:O	51:q:82:VAL:HG12	2.21	0.40
1:0:138[B]:GLN:HA	1:0:141:LYS:HB3	2.02	0.40
2:1:88:G:H21	2:1:281:G:C4'	2.34	0.40
2:1:394:G:N1	2:1:397:A:OP2	2.54	0.40
2:1:1177:U:O4	57:w:22:SER:OG	2.36	0.40
2:1:2855:U:H2'	2:1:2856:C:H6	1.85	0.40
81:1:3404:GET:H712	81:1:3404:GET:N32	2.36	0.40
7:7:35:LYS:HE3	7:7:51:TRP:CH2	2.57	0.40
10:A:74:U:O2'	10:A:76:A:OP2	2.28	0.40
10:A:216:A:H61	10:A:829:A:H1'	1.87	0.40
10:A:331:A:N7	19:J:49:ARG:HD3	2.36	0.40
10:A:879:U:H2'	25:P:31:LYS:HD2	2.03	0.40
10:A:1330:A:H3'	10:A:1333:A:H62	1.86	0.40
10:A:1438:U:C2	10:A:1439:G:C8	3.10	0.40
10:A:1444:G:OP2	27:T:139:LYS:HB2	2.21	0.40
12:C:29:TRP:HA	12:C:46:THR:O	2.21	0.40
12:C:30:PHE:CG	12:C:61:LEU:HD21	2.57	0.40
14:E:49:VAL:O	14:E:88:TYR:N	2.46	0.40
15:F:180:LEU:HD12	15:F:193:GLY:O	2.21	0.40
16:G:108:LEU:HA	16:G:111:VAL:HG12	2.03	0.40
17:H:1:MET:HE2	17:H:1:MET:HB3	1.87	0.40
17:H:160:ARG:HH21	17:H:171:LYS:HD3	1.86	0.40
20:K:123:HIS:CE1	41:f:37:ARG:HB2	2.56	0.40
20:K:170:GLY:O	20:K:174:ARG:HG3	2.21	0.40
24:O:27:LYS:O	24:O:27:LYS:HG3	2.21	0.40
27:T:112:ASP:O	27:T:115:ARG:HG2	2.21	0.40
29:S:6:THR:O	29:S:10:LYS:HG3	2.21	0.40
31:V:38:ALA:O	31:V:42:ARG:HG2	2.20	0.40
36:a:54:VAL:HG23	36:a:88:ILE:HG21	2.02	0.40
41:f:4:VAL:HG21	78:AT:37:U:O2'	2.21	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:g:182:TYR:OH	42:g:187:HIS:HB3	2.21	0.40
45:k:262:TRP:CD1	45:k:262:TRP:H	2.39	0.40
53:s:9:MET:HE3	53:s:9:MET:HB3	1.98	0.40
59:y:44:PHE:CD2	59:y:134:GLY:HA3	2.56	0.40
66:AF:80:VAL:HG13	66:AF:112:LYS:CD	2.49	0.40
67:AG:103:TYR:HA	67:AG:104:PRO:C	2.46	0.40
78:PT:20:G:N2	78:PT:58:A:H1'	2.36	0.40
78:AT:75:C:H2'	78:AT:76:C:O4'	2.21	0.40
2:1:206:U:H2'	2:1:207:C:H6	1.85	0.40
2:1:1060:A:H4'	2:1:1061:A:O5'	2.21	0.40
2:1:1286:A:H2'	2:1:1287:A:H8	1.87	0.40
2:1:1491:U:C5	2:1:1831:A:N1	2.83	0.40
2:1:2883:A:H4'	2:1:2884:G:C8	2.57	0.40
2:1:2919:G:N3	45:k:250:ALA:HB1	2.37	0.40
5:4:111:A:N6	71:AK:29:VAL:HG11	2.36	0.40
10:A:72:A:N7	17:H:164:LYS:NZ	2.68	0.40
10:A:540:A:OP1	41:f:28:LYS:NZ	2.42	0.40
10:A:1032:G:H1	10:A:1056:U:H3	1.68	0.40
10:A:1132:A:H2'	10:A:1133:C:H6	1.86	0.40
10:A:1276:G:H1	10:A:1309:G:N2	1.99	0.40
10:A:1421:G:N7	21:L:25:LYS:NZ	2.64	0.40
12:C:70:LEU:HD13	12:C:84:ILE:HG13	2.02	0.40
14:E:177:LEU:HD23	14:E:182:VAL:HG22	2.03	0.40
16:G:58:LEU:HD22	16:G:138:VAL:HA	2.04	0.40
16:G:96:SER:OG	16:G:176:THR:HG21	2.21	0.40
21:L:3:ILE:HG22	21:L:8:ARG:HB2	2.04	0.40
26:Q:85:VAL:HA	26:Q:89:MET:SD	2.61	0.40
28:R:18:VAL:O	28:R:66:VAL:HA	2.22	0.40
29:S:18:GLU:HA	29:S:71:PHE:HB3	2.02	0.40
30:U:14:PHE:CD2	30:U:63:ARG:HD2	2.57	0.40
34:Y:125:VAL:HG12	34:Y:126:LYS:HG3	2.03	0.40
35:Z:106:GLN:O	35:Z:110:GLN:HG3	2.21	0.40
45:k:58:ARG:O	45:k:71:GLU:HA	2.21	0.40
48:n:6:PRO:HB3	66:AF:93:TYR:CE1	2.56	0.40
66:AF:33:TRP:CH2	66:AF:53:GLN:HG2	2.56	0.40
78:AT:22:A:H61	78:AT:47:G:H2'	1.86	0.40
2:1:87:A:H2'	2:1:88:G:O4'	2.21	0.40
2:1:922:A:H2'	2:1:923:C:H6	1.87	0.40
2:1:3093:U:H1'	2:1:3094:A:H5"	2.02	0.40
4:3:31:U:O2'	4:3:32:U:H5'	2.21	0.40
5:4:142:C:H2'	5:4:143:U:C6	2.57	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:9:103:LYS:HA	9:9:103:LYS:HD3	1.92	0.40
10:A:126:A:H62	10:A:289:G:N2	2.14	0.40
10:A:267:G:N7	17:H:186:ARG:NH2	2.67	0.40
10:A:505:U:O2'	10:A:506:U:O5'	2.37	0.40
10:A:1155:G:H2'	10:A:1155:G:N3	2.36	0.40
10:A:1529:G:N2	10:A:1555:C:H1'	2.34	0.40
14:E:98:SER:O	14:E:102:GLN:HG2	2.21	0.40
15:F:15:PRO:HG2	15:F:18:TRP:CZ2	2.57	0.40
17:H:214:LYS:O	17:H:217:HIS:ND1	2.54	0.40
18:I:10:PRO:HB2	18:I:14:GLU:HB2	2.04	0.40
20:K:111:THR:O	20:K:115:LYS:HG2	2.21	0.40
28:R:47:VAL:HA	28:R:81:ARG:HB3	2.04	0.40
50:p:78:GLN:OE1	50:p:168:PRO:HG2	2.21	0.40
63:AC:20:GLY:HA3	63:AC:21:ILE:HA	1.81	0.40
64:AD:55:LYS:O	64:AD:59:GLU:HG2	2.22	0.40
66:AF:44:ARG:HG2	66:AF:44:ARG:HH11	1.86	0.40
78:PT:25:U:H2'	78:PT:26:C:O4'	2.22	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	0	171/172 (99%)	169 (99%)	2 (1%)	0	100	100
3	2	159/160 (99%)	157 (99%)	2 (1%)	0	100	100
6	6	129/137 (94%)	127 (98%)	2 (2%)	0	100	100
7	7	60/155 (39%)	60 (100%)	0	0	100	100
8	8	117/142 (82%)	114 (97%)	3 (3%)	0	100	100
9	9	123/127 (97%)	119 (97%)	4 (3%)	0	100	100
11	B	206/261 (79%)	191 (93%)	14 (7%)	1 (0%)	25	28

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
12	C	212/256 (83%)	197 (93%)	15 (7%)	0	100	100
13	D	214/249 (86%)	204 (95%)	10 (5%)	0	100	100
14	E	220/251 (88%)	204 (93%)	16 (7%)	0	100	100
15	F	258/262 (98%)	248 (96%)	10 (4%)	0	100	100
16	G	195/225 (87%)	178 (91%)	17 (9%)	0	100	100
17	H	224/236 (95%)	217 (97%)	7 (3%)	0	100	100
18	I	180/186 (97%)	166 (92%)	14 (8%)	0	100	100
19	J	201/206 (98%)	196 (98%)	5 (2%)	0	100	100
20	K	176/189 (93%)	164 (93%)	12 (7%)	0	100	100
21	L	91/118 (77%)	81 (89%)	10 (11%)	0	100	100
22	M	139/155 (90%)	134 (96%)	5 (4%)	0	100	100
23	N	65/143 (46%)	46 (71%)	18 (28%)	1 (2%)	8	7
24	O	148/151 (98%)	146 (99%)	2 (1%)	0	100	100
25	P	124/132 (94%)	116 (94%)	8 (6%)	0	100	100
26	Q	113/142 (80%)	104 (92%)	9 (8%)	0	100	100
27	T	140/145 (97%)	117 (84%)	21 (15%)	2 (1%)	9	7
28	R	139/142 (98%)	126 (91%)	13 (9%)	0	100	100
29	S	116/137 (85%)	104 (90%)	12 (10%)	0	100	100
30	U	139/145 (96%)	133 (96%)	6 (4%)	0	100	100
31	V	98/119 (82%)	95 (97%)	3 (3%)	0	100	100
32	W	85/87 (98%)	79 (93%)	6 (7%)	0	100	100
33	X	127/130 (98%)	122 (96%)	5 (4%)	0	100	100
34	Y	141/145 (97%)	138 (98%)	3 (2%)	0	100	100
35	Z	130/135 (96%)	124 (95%)	6 (5%)	0	100	100
36	a	70/105 (67%)	64 (91%)	6 (9%)	0	100	100
37	b	96/119 (81%)	92 (96%)	4 (4%)	0	100	100
38	c	79/82 (96%)	73 (92%)	6 (8%)	0	100	100
39	d	60/67 (90%)	51 (85%)	9 (15%)	0	100	100
40	e	53/56 (95%)	50 (94%)	3 (6%)	0	100	100
41	f	56/63 (89%)	53 (95%)	3 (5%)	0	100	100
42	g	66/193 (34%)	48 (73%)	17 (26%)	1 (2%)	8	7

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
43	h	229/317 (72%)	204 (89%)	25 (11%)	0	100	100
44	j	248/254 (98%)	238 (96%)	10 (4%)	0	100	100
45	k	385/389 (99%)	374 (97%)	11 (3%)	0	100	100
46	l	359/363 (99%)	347 (97%)	12 (3%)	0	100	100
47	m	290/298 (97%)	283 (98%)	7 (2%)	0	100	100
48	n	152/176 (86%)	143 (94%)	9 (6%)	0	100	100
49	o	229/241 (95%)	222 (97%)	7 (3%)	0	100	100
50	p	229/262 (87%)	223 (97%)	6 (3%)	0	100	100
51	q	187/191 (98%)	181 (97%)	6 (3%)	0	100	100
52	r	216/220 (98%)	210 (97%)	6 (3%)	0	100	100
53	s	171/174 (98%)	164 (96%)	7 (4%)	0	100	100
54	t	193/202 (96%)	184 (95%)	8 (4%)	1 (0%)	25	28
55	u	128/131 (98%)	125 (98%)	3 (2%)	0	100	100
56	v	201/204 (98%)	196 (98%)	5 (2%)	0	100	100
57	w	197/200 (98%)	194 (98%)	3 (2%)	0	100	100
58	x	168/185 (91%)	163 (97%)	5 (3%)	0	100	100
59	y	186/186 (100%)	179 (96%)	7 (4%)	0	100	100
60	z	179/190 (94%)	178 (99%)	1 (1%)	0	100	100
61	AA	133/136 (98%)	131 (98%)	2 (2%)	0	100	100
62	AB	146/149 (98%)	141 (97%)	5 (3%)	0	100	100
63	AC	59/63 (94%)	58 (98%)	1 (2%)	0	100	100
64	AD	94/106 (89%)	93 (99%)	1 (1%)	0	100	100
65	AE	106/112 (95%)	102 (96%)	4 (4%)	0	100	100
66	AF	124/131 (95%)	123 (99%)	1 (1%)	0	100	100
67	AG	107/107 (100%)	105 (98%)	2 (2%)	0	100	100
68	AH	114/122 (93%)	112 (98%)	2 (2%)	0	100	100
69	AI	118/120 (98%)	113 (96%)	5 (4%)	0	100	100
70	AJ	96/99 (97%)	95 (99%)	1 (1%)	0	100	100
71	AK	84/90 (93%)	83 (99%)	1 (1%)	0	100	100
72	AL	76/78 (97%)	74 (97%)	2 (3%)	0	100	100
73	AM	49/51 (96%)	48 (98%)	1 (2%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
74	AN	51/52 (98%)	51 (100%)	0	0	100 100
75	AO	23/25 (92%)	21 (91%)	1 (4%)	1 (4%)	2 1
76	AP	103/106 (97%)	98 (95%)	5 (5%)	0	100 100
77	AQ	89/92 (97%)	85 (96%)	4 (4%)	0	100 100
All	All	10639/11747 (91%)	10148 (95%)	484 (4%)	7 (0%)	50 59

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
27	T	103	ASN
42	g	186	CYS
27	T	102	ALA
54	t	63	VAL
23	N	27	ALA
75	AO	3	ASP
11	B	68	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	0	158/157 (101%)	156 (99%)	2 (1%)	65 77
3	2	135/134 (101%)	135 (100%)	0	100 100
6	6	101/103 (98%)	101 (100%)	0	100 100
7	7	56/127 (44%)	56 (100%)	0	100 100
8	8	107/121 (88%)	107 (100%)	0	100 100
9	9	110/112 (98%)	110 (100%)	0	100 100
11	B	176/215 (82%)	176 (100%)	0	100 100
12	C	194/229 (85%)	194 (100%)	0	100 100
13	D	174/198 (88%)	174 (100%)	0	100 100
14	E	173/196 (88%)	173 (100%)	0	100 100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	F	218/220 (99%)	218 (100%)	0	100	100
16	G	173/197 (88%)	173 (100%)	0	100	100
17	H	195/204 (96%)	195 (100%)	0	100	100
18	I	163/167 (98%)	163 (100%)	0	100	100
19	J	157/160 (98%)	157 (100%)	0	100	100
20	K	153/160 (96%)	153 (100%)	0	100	100
21	L	87/104 (84%)	87 (100%)	0	100	100
22	M	122/134 (91%)	122 (100%)	0	100	100
23	N	60/123 (49%)	60 (100%)	0	100	100
24	O	129/130 (99%)	129 (100%)	0	100	100
25	P	96/101 (95%)	96 (100%)	0	100	100
26	Q	99/121 (82%)	99 (100%)	0	100	100
27	T	126/129 (98%)	126 (100%)	0	100	100
28	R	115/116 (99%)	115 (100%)	0	100	100
29	S	106/122 (87%)	106 (100%)	0	100	100
30	U	113/117 (97%)	113 (100%)	0	100	100
31	V	90/105 (86%)	90 (100%)	0	100	100
32	W	71/71 (100%)	71 (100%)	0	100	100
33	X	112/113 (99%)	112 (100%)	0	100	100
34	Y	116/118 (98%)	116 (100%)	0	100	100
35	Z	109/112 (97%)	109 (100%)	0	100	100
36	a	64/85 (75%)	64 (100%)	0	100	100
37	b	84/102 (82%)	84 (100%)	0	100	100
38	c	72/73 (99%)	71 (99%)	1 (1%)	62	75
39	d	54/58 (93%)	54 (100%)	0	100	100
40	e	47/48 (98%)	47 (100%)	0	100	100
41	f	50/54 (93%)	50 (100%)	0	100	100
42	g	60/175 (34%)	60 (100%)	0	100	100
43	h	199/263 (76%)	198 (100%)	1 (0%)	86	93
44	j	191/194 (98%)	189 (99%)	2 (1%)	73	84
45	k	326/328 (99%)	326 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
46	l	290/292 (99%)	290 (100%)	0	100	100
47	m	247/252 (98%)	247 (100%)	0	100	100
48	n	135/154 (88%)	135 (100%)	0	100	100
49	o	195/204 (96%)	195 (100%)	0	100	100
50	p	193/216 (89%)	193 (100%)	0	100	100
51	q	168/170 (99%)	168 (100%)	0	100	100
52	r	185/186 (100%)	185 (100%)	0	100	100
53	s	148/149 (99%)	148 (100%)	0	100	100
54	t	163/168 (97%)	163 (100%)	0	100	100
55	u	108/109 (99%)	108 (100%)	0	100	100
56	v	177/178 (99%)	177 (100%)	0	100	100
57	w	166/167 (99%)	166 (100%)	0	100	100
58	x	142/154 (92%)	142 (100%)	0	100	100
59	y	156/154 (101%)	154 (99%)	2 (1%)	65	77
60	z	148/153 (97%)	148 (100%)	0	100	100
61	AA	117/118 (99%)	117 (100%)	0	100	100
62	AB	120/121 (99%)	120 (100%)	0	100	100
63	AC	48/49 (98%)	46 (96%)	2 (4%)	25	32
64	AD	81/90 (90%)	81 (100%)	0	100	100
65	AE	97/100 (97%)	97 (100%)	0	100	100
66	AF	111/115 (96%)	109 (98%)	2 (2%)	54	67
67	AG	94/92 (102%)	94 (100%)	0	100	100
68	AH	99/102 (97%)	99 (100%)	0	100	100
69	AI	106/106 (100%)	106 (100%)	0	100	100
70	AJ	78/79 (99%)	78 (100%)	0	100	100
71	AK	70/73 (96%)	70 (100%)	0	100	100
72	AL	69/69 (100%)	67 (97%)	2 (3%)	37	48
73	AM	47/47 (100%)	47 (100%)	0	100	100
74	AN	48/47 (102%)	48 (100%)	0	100	100
75	AO	24/24 (100%)	24 (100%)	0	100	100
76	AP	90/89 (101%)	90 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
77	AQ	72/73 (99%)	72 (100%)	0	100 100
All	All	9133/9896 (92%)	9119 (100%)	14 (0%)	92 96

All (14) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	0	138[A]	GLN
1	0	138[B]	GLN
38	c	42	ASN
43	h	122	GLN
44	j	70[A]	LYS
44	j	70[B]	LYS
59	y	31[A]	LYS
59	y	31[B]	LYS
63	AC	14[A]	ARG
63	AC	14[B]	ARG
66	AF	17[A]	LYS
66	AF	17[B]	LYS
72	AL	30[A]	LYS
72	AL	30[B]	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (93) such sidechains are listed below:

Mol	Chain	Res	Type
3	2	16	GLN
9	9	86	GLN
11	B	30	GLN
12	C	124	ASN
13	D	84	GLN
13	D	89	GLN
13	D	145	GLN
15	F	36	HIS
15	F	50	ASN
15	F	188	ASN
16	G	224	ASN
17	H	56	ASN
17	H	69	HIS
18	I	27	GLN
18	I	38	GLN
20	K	131	GLN
20	K	176	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
22	M	14	GLN
24	O	49	GLN
25	P	19	ASN
27	T	19	ASN
27	T	75	ASN
27	T	89	GLN
27	T	137	HIS
28	R	93	GLN
28	R	138	GLN
29	S	42	GLN
29	S	56	HIS
30	U	12	GLN
31	V	19	HIS
31	V	46	GLN
34	Y	63	GLN
35	Z	15	ASN
35	Z	29	HIS
38	c	38	GLN
38	c	51	GLN
41	f	31	GLN
43	h	311	GLN
44	j	140	ASN
44	j	205	ASN
44	j	211	HIS
45	k	173	GLN
45	k	182	GLN
45	k	231	HIS
46	l	111	ASN
46	l	312	HIS
46	l	321	ASN
46	l	356	GLN
47	m	13	HIS
47	m	94	ASN
48	n	10	GLN
48	n	71	ASN
49	o	50	GLN
49	o	91	ASN
49	o	108	GLN
50	p	222	ASN
51	q	77	ASN
51	q	96	HIS
51	q	109	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
52	r	59	GLN
52	r	73	ASN
54	t	66	ASN
54	t	102	GLN
54	t	177	ASN
55	u	112	GLN
56	v	32	GLN
56	v	91	GLN
58	x	10	ASN
58	x	55	GLN
58	x	137	ASN
59	y	9	GLN
59	y	58	ASN
59	y	158	HIS
60	z	7	GLN
60	z	47	ASN
60	z	130	ASN
60	z	166	ASN
61	AA	29	HIS
62	AB	14	ASN
62	AB	49	HIS
64	AD	77	ASN
65	AE	14	ASN
65	AE	20	HIS
66	AF	21	HIS
66	AF	53	GLN
68	AH	69	HIS
69	AI	16	GLN
69	AI	59	ASN
69	AI	99	GLN
72	AL	40	GLN
72	AL	66	GLN
73	AM	17	GLN
73	AM	25	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
10	A	1685/1787 (94%)	379 (22%)	25 (1%)
2	1	3060/3359 (91%)	455 (14%)	27 (0%)
4	3	120/121 (99%)	10 (8%)	0

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
5	4	155/158 (98%)	23 (14%)	2 (1%)
78	AT	75/77 (97%)	21 (28%)	0
78	PT	75/77 (97%)	16 (21%)	0
79	MR	10/39 (25%)	0	0
All	All	5180/5618 (92%)	904 (17%)	54 (1%)

All (904) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	1	13	U
2	1	24	U
2	1	25	A
2	1	29	G
2	1	39	A
2	1	42	A
2	1	48	A
2	1	58	G
2	1	59	A
2	1	64	A
2	1	65	A
2	1	91	G
2	1	98	A
2	1	104	C
2	1	108	A
2	1	109	G
2	1	110	C
2	1	121	A
2	1	135	G
2	1	155	A
2	1	156	A
2	1	163	A
2	1	164	U
2	1	172	C
2	1	173	C
2	1	175	G
2	1	176	G
2	1	189	U
2	1	190	U
2	1	199	C
2	1	205	G
2	1	209	C
2	1	212	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	217	G
2	1	218	A
2	1	219	G
2	1	230	G
2	1	239	A
2	1	240	C
2	1	243	G
2	1	248	U
2	1	249	G
2	1	250	U
2	1	253	A
2	1	269	G
2	1	286	U
2	1	295	A
2	1	305	U
2	1	311	C
2	1	323	A
2	1	329	U
2	1	339	C
2	1	349	A
2	1	350	C
2	1	376	G
2	1	377	A
2	1	398	A
2	1	401	U
2	1	402	A
2	1	403	C
2	1	420	G
2	1	421	G
2	1	422	A
2	1	438	A
2	1	439	C
2	1	506	A
2	1	517	A
2	1	531	G
2	1	539	G
2	1	540	C
2	1	542	U
2	1	543	C
2	1	544	U
2	1	545	G
2	1	546	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	555	A
2	1	556	U
2	1	557	A
2	1	564	G
2	1	576	A
2	1	577	G
2	1	590	A
2	1	598	U
2	1	600	U
2	1	601	U
2	1	602	A
2	1	609	A
2	1	618	U
2	1	619	A
2	1	620	A
2	1	621	U
2	1	634	C
2	1	647	A
2	1	658	A
2	1	675	A
2	1	679	U
2	1	689	A
2	1	703	A
2	1	710	G
2	1	713	A
2	1	730	A
2	1	731	U
2	1	732	U
2	1	733	A
2	1	763	U
2	1	772	U
2	1	773	U
2	1	776	A
2	1	777	G
2	1	781	G
2	1	802	A
2	1	813	A
2	1	826	A
2	1	845	C
2	1	857	C
2	1	870	U
2	1	875	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	886	C
2	1	892	A
2	1	903	G
2	1	904	G
2	1	910	A
2	1	912	G
2	1	913	A
2	1	919	C
2	1	920	G
2	1	921	A
2	1	933	G
2	1	940	C
2	1	955	C
2	1	956	U
2	1	976	A
2	1	990	G
2	1	998	A
2	1	1006	G
2	1	1011	C
2	1	1012	U
2	1	1013	U
2	1	1014	G
2	1	1016	G
2	1	1030	U
2	1	1032	A
2	1	1043	A
2	1	1045	C
2	1	1060	A
2	1	1061	A
2	1	1068	G
2	1	1077	U
2	1	1078	U
2	1	1090	A
2	1	1092	U
2	1	1093	G
2	1	1094	A
2	1	1099	A
2	1	1100	G
2	1	1113	G
2	1	1127	G
2	1	1149	A
2	1	1155	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	1176	A
2	1	1177	U
2	1	1178	G
2	1	1188	C
2	1	1189	A
2	1	1192	C
2	1	1197	C
2	1	1205	G
2	1	1215	C
2	1	1217	A
2	1	1283	A
2	1	1303	G
2	1	1304	A
2	1	1305	U
2	1	1326	A
2	1	1339	A
2	1	1344	U
2	1	1346	U
2	1	1347	U
2	1	1348	U
2	1	1349	U
2	1	1382	A
2	1	1395	U
2	1	1415	A
2	1	1421	U
2	1	1430	G
2	1	1433	C
2	1	1442	A
2	1	1446	G
2	1	1465	C
2	1	1471	A
2	1	1477	A
2	1	1483	G
2	1	1504	C
2	1	1523	C
2	1	1532	G
2	1	1535	A
2	1	1550	U
2	1	1551	U
2	1	1552	C
2	1	1556	G
2	1	1558	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	1560	U
2	1	1562	G
2	1	1563	A
2	1	1565	U
2	1	1566	U
2	1	1567	U
2	1	1568	U
2	1	1571	G
2	1	1572	G
2	1	1574	C
2	1	1576	A
2	1	1585	A
2	1	1589	A
2	1	1601	A
2	1	1625	U
2	1	1635	C
2	1	1638	A
2	1	1639	A
2	1	1641	U
2	1	1653	C
2	1	1679	A
2	1	1720	U
2	1	1721	C
2	1	1732	G
2	1	1746	A
2	1	1747	G
2	1	1759	U
2	1	1761	U
2	1	1762	G
2	1	1763	C
2	1	1776	G
2	1	1792	G
2	1	1793	A
2	1	1804	G
2	1	1809	A
2	1	1810	A
2	1	1812	A
2	1	1813	G
2	1	1814	U
2	1	1815	U
2	1	1816	U
2	1	1817	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	1835	A
2	1	1838	A
2	1	1842	C
2	1	1845	C
2	1	1862	C
2	1	1874	G
2	1	1875	A
2	1	1876	U
2	1	1882	A
2	1	1902	G
2	1	2070	A
2	1	2072	C
2	1	2073	G
2	1	2078	A
2	1	2089	G
2	1	2090	U
2	1	2091	A
2	1	2092	C
2	1	2099	G
2	1	2100	G
2	1	2109	A
2	1	2118	U
2	1	2122	A
2	1	2136	A
2	1	2147	G
2	1	2149	G
2	1	2185	A
2	1	2186	A
2	1	2187	U
2	1	2188	G
2	1	2203	U
2	1	2222	A
2	1	2227	G
2	1	2235	C
2	1	2250	G
2	1	2251	G
2	1	2259	A
2	1	2260	U
2	1	2276	U
2	1	2285	G
2	1	2288	U
2	1	2291	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	2292	U
2	1	2293	G
2	1	2312	U
2	1	2313	G
2	1	2314	U
2	1	2341	A
2	1	2351	A
2	1	2352	C
2	1	2353	G
2	1	2363	G
2	1	2366	U
2	1	2371	G
2	1	2372	G
2	1	2375	A
2	1	2380	A
2	1	2381	G
2	1	2382	A
2	1	2389	U
2	1	2390	G
2	1	2397	A
2	1	2413	G
2	1	2420	G
2	1	2421	A
2	1	2422	C
2	1	2492	U
2	1	2493	A
2	1	2500	G
2	1	2509	C
2	1	2511	G
2	1	2516	U
2	1	2517	C
2	1	2518	A
2	1	2519	A
2	1	2520	A
2	1	2526	C
2	1	2527	G
2	1	2529	U
2	1	2530	C
2	1	2532	A
2	1	2533	G
2	1	2536	U
2	1	2537	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	2538	A
2	1	2545	C
2	1	2546	U
2	1	2547	G
2	1	2557	G
2	1	2565	A
2	1	2566	C
2	1	2578	G
2	1	2579	G
2	1	2586	G
2	1	2624	U
2	1	2628	A
2	1	2646	A
2	1	2649	G
2	1	2650	A
2	1	2661	A
2	1	2662	G
2	1	2663	A
2	1	2666	A
2	1	2676	A
2	1	2686	G
2	1	2691	U
2	1	2700	G
2	1	2701	U
2	1	2725	G
2	1	2727	C
2	1	2734	A
2	1	2744	C
2	1	2749	G
2	1	2750	G
2	1	2768	G
2	1	2771	A
2	1	2772	G
2	1	2773	A
2	1	2782	C
2	1	2786	G
2	1	2789	A
2	1	2790	U
2	1	2791	A
2	1	2814	U
2	1	2815	U
2	1	2816	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	2817	A
2	1	2821	C
2	1	2833	U
2	1	2839	C
2	1	2843	G
2	1	2844	A
2	1	2847	U
2	1	2859	A
2	1	2871	C
2	1	2886	G
2	1	2895	U
2	1	2907	U
2	1	2908	A
2	1	2914	C
2	1	2919	G
2	1	2943	A
2	1	2955	C
2	1	2962	G
2	1	2969	G
2	1	2984	A
2	1	3028	U
2	1	3031	G
2	1	3050	A
2	1	3051	C
2	1	3052	G
2	1	3058	A
2	1	3064	C
2	1	3065	C
2	1	3073	G
2	1	3076	U
2	1	3094	A
2	1	3101	A
2	1	3102	A
2	1	3103	U
2	1	3114	A
2	1	3115	C
2	1	3125	U
2	1	3143	G
2	1	3144	A
2	1	3145	U
2	1	3146	G
2	1	3149	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	3151	C
2	1	3157	A
2	1	3163	U
2	1	3164	U
2	1	3165	U
2	1	3171	C
2	1	3172	U
2	1	3175	A
2	1	3182	C
2	1	3183	A
2	1	3184	G
2	1	3194	G
2	1	3208	A
2	1	3210	A
2	1	3211	G
2	1	3212	G
2	1	3214	U
2	1	3217	G
2	1	3224	U
2	1	3228	G
2	1	3235	A
2	1	3238	A
2	1	3241	G
2	1	3246	C
2	1	3252	C
2	1	3259	A
2	1	3260	A
2	1	3269	C
2	1	3278	U
2	1	3281	A
2	1	3284	U
2	1	3306	U
2	1	3310	G
2	1	3314	C
2	1	3316	U
2	1	3318	G
2	1	3319	U
2	1	3320	U
2	1	3321	G
2	1	3334	G
2	1	3343	C
2	1	3347	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	3351	G
2	1	3361	U
4	3	7	G
4	3	22	A
4	3	23	A
4	3	42	A
4	3	54	U
4	3	65	G
4	3	73	C
4	3	76	A
4	3	102	A
4	3	112	G
5	4	34	U
5	4	35	C
5	4	59	A
5	4	62	C
5	4	63	G
5	4	80	U
5	4	81	A
5	4	84	C
5	4	86	U
5	4	87	G
5	4	92	A
5	4	95	G
5	4	102	U
5	4	104	A
5	4	106	C
5	4	111	A
5	4	113	U
5	4	125	U
5	4	126	A
5	4	128	U
5	4	129	C
5	4	148	G
5	4	152	G
10	A	25	C
10	A	26	A
10	A	27	U
10	A	34	G
10	A	42	G
10	A	45	U
10	A	47	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
10	A	57	G
10	A	59	C
10	A	66	U
10	A	68	A
10	A	73	U
10	A	74	U
10	A	75	U
10	A	77	U
10	A	78	A
10	A	81	G
10	A	84	A
10	A	100	A
10	A	104	A
10	A	111	U
10	A	114	C
10	A	123	G
10	A	127	G
10	A	129	A
10	A	138	C
10	A	139	U
10	A	142	G
10	A	143	A
10	A	151	G
10	A	152	G
10	A	159	U
10	A	168	U
10	A	173	G
10	A	174	C
10	A	176	U
10	A	177	A
10	A	179	A
10	A	192	U
10	A	193	G
10	A	197	G
10	A	199	G
10	A	200	A
10	A	202	G
10	A	211	A
10	A	213	A
10	A	214	U
10	A	215	A
10	A	216	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
10	A	217	A
10	A	218	A
10	A	219	A
10	A	255	A
10	A	259	U
10	A	260	U
10	A	261	C
10	A	262	G
10	A	269	A
10	A	270	U
10	A	274	C
10	A	276	U
10	A	278	U
10	A	279	G
10	A	282	G
10	A	283	G
10	A	285	G
10	A	288	G
10	A	297	A
10	A	299	A
10	A	307	C
10	A	312	C
10	A	314	A
10	A	318	U
10	A	320	G
10	A	335	G
10	A	336	C
10	A	350	A
10	A	357	A
10	A	358	A
10	A	359	C
10	A	398	A
10	A	400	C
10	A	402	G
10	A	416	G
10	A	421	G
10	A	422	C
10	A	423	A
10	A	424	G
10	A	432	G
10	A	435	A
10	A	437	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
10	A	442	C
10	A	458	A
10	A	462	A
10	A	466	A
10	A	475	A
10	A	480	U
10	A	482	C
10	A	483	A
10	A	501	G
10	A	502	U
10	A	503	A
10	A	504	A
10	A	505	U
10	A	506	U
10	A	509	A
10	A	512	G
10	A	513	A
10	A	515	U
10	A	517	C
10	A	525	A
10	A	530	U
10	A	534	C
10	A	537	G
10	A	539	A
10	A	540	A
10	A	553	A
10	A	554	A
10	A	555	G
10	A	556	U
10	A	557	C
10	A	563	C
10	A	566	G
10	A	576	U
10	A	577	A
10	A	580	U
10	A	581	C
10	A	592	A
10	A	593	G
10	A	604	A
10	A	609	U
10	A	617	A
10	A	618	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
10	A	620	A
10	A	621	A
10	A	622	G
10	A	651	C
10	A	652	C
10	A	653	G
10	A	654	G
10	A	676	G
10	A	682	A
10	A	689	C
10	A	690	C
10	A	691	U
10	A	693	U
10	A	695	C
10	A	696	U
10	A	697	U
10	A	698	C
10	A	700	G
10	A	701	G
10	A	722	A
10	A	723	G
10	A	724	G
10	A	730	U
10	A	736	G
10	A	740	A
10	A	741	A
10	A	750	G
10	A	751	U
10	A	756	A
10	A	759	A
10	A	760	G
10	A	763	C
10	A	764	U
10	A	765	U
10	A	766	U
10	A	767	G
10	A	771	G
10	A	773	A
10	A	775	A
10	A	778	U
10	A	779	U
10	A	785	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
10	A	796	A
10	A	798	A
10	A	802	C
10	A	805	U
10	A	815	U
10	A	816	U
10	A	818	U
10	A	819	G
10	A	820	U
10	A	821	U
10	A	822	G
10	A	823	G
10	A	824	U
10	A	828	U
10	A	829	A
10	A	834	C
10	A	837	C
10	A	840	A
10	A	841	A
10	A	842	U
10	A	847	A
10	A	848	A
10	A	858	U
10	A	869	A
10	A	877	G
10	A	879	U
10	A	881	U
10	A	897	U
10	A	898	G
10	A	899	G
10	A	900	A
10	A	910	G
10	A	911	A
10	A	918	A
10	A	920	U
10	A	945	U
10	A	951	A
10	A	969	G
10	A	973	A
10	A	977	A
10	A	988	A
10	A	989	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
10	A	1011	A
10	A	1013	C
10	A	1016	U
10	A	1025	G
10	A	1036	U
10	A	1037	U
10	A	1038	G
10	A	1039	U
10	A	1042	U
10	A	1043	U
10	A	1044	U
10	A	1046	A
10	A	1047	U
10	A	1056	U
10	A	1058	G
10	A	1059	G
10	A	1061	A
10	A	1068	G
10	A	1077	A
10	A	1081	C
10	A	1085	G
10	A	1123	A
10	A	1128	A
10	A	1135	G
10	A	1143	C
10	A	1145	A
10	A	1148	A
10	A	1152	G
10	A	1168	A
10	A	1169	A
10	A	1170	U
10	A	1171	U
10	A	1179	A
10	A	1181	A
10	A	1184	G
10	A	1185	G
10	A	1186	G
10	A	1187	A
10	A	1193	A
10	A	1202	A
10	A	1203	G
10	A	1213	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
10	A	1214	G
10	A	1215	A
10	A	1220	C
10	A	1228	G
10	A	1229	A
10	A	1230	G
10	A	1231	C
10	A	1235	U
10	A	1236	U
10	A	1237	C
10	A	1244	U
10	A	1270	U
10	A	1284	G
10	A	1298	A
10	A	1299	U
10	A	1300	U
10	A	1306	A
10	A	1310	A
10	A	1325	U
10	A	1326	A
10	A	1336	G
10	A	1337	C
10	A	1342	A
10	A	1343	G
10	A	1345	A
10	A	1346	U
10	A	1348	U
10	A	1349	G
10	A	1352	G
10	A	1356	U
10	A	1357	A
10	A	1358	G
10	A	1359	U
10	A	1360	C
10	A	1369	G
10	A	1370	A
10	A	1376	U
10	A	1382	U
10	A	1384	U
10	A	1385	C
10	A	1388	G
10	A	1392	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
10	A	1398	G
10	A	1399	U
10	A	1400	U
10	A	1401	U
10	A	1405	G
10	A	1413	A
10	A	1414	G
10	A	1422	A
10	A	1431	G
10	A	1432	A
10	A	1433	C
10	A	1445	C
10	A	1446	A
10	A	1447	C
10	A	1457	A
10	A	1461	A
10	A	1462	C
10	A	1463	G
10	A	1467	C
10	A	1476	A
10	A	1477	U
10	A	1478	A
10	A	1479	A
10	A	1480	G
10	A	1481	C
10	A	1483	U
10	A	1485	G
10	A	1486	G
10	A	1491	G
10	A	1502	A
10	A	1503	A
10	A	1508	G
10	A	1510	G
10	A	1511	A
10	A	1523	G
10	A	1525	U
10	A	1529	G
10	A	1530	A
10	A	1537	A
10	A	1544	U
10	A	1546	G
10	A	1556	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
10	A	1561	G
10	A	1571	G
10	A	1577	G
10	A	1580	A
10	A	1582	U
10	A	1584	A
10	A	1588	G
10	A	1590	U
10	A	1602	C
10	A	1603	G
10	A	1609	G
10	A	1621	C
10	A	1644	U
10	A	1645	G
10	A	1665	C
10	A	1667	G
10	A	1672	G
10	A	1673	U
10	A	1674	U
10	A	1677	G
10	A	1700	G
10	A	1702	A
10	A	1742	A
10	A	1744	G
10	A	1747	G
10	A	1749	A
10	A	1753	A
10	A	1756	U
10	A	1765	G
10	A	1767	G
10	A	1770	C
10	A	1779	G
10	A	1780	G
10	A	1781	A
10	A	1782	U
10	A	1783	C
78	PT	3	C
78	PT	6	G
78	PT	9	G
78	PT	11	A
78	PT	16	C
78	PT	17	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
78	PT	18(A)	U
78	PT	20	G
78	PT	21	U
78	PT	22	A
78	PT	48	U
78	PT	49	C
78	PT	50	G
78	PT	71	G
78	PT	75	C
78	PT	77	A
78	AT	4	G
78	AT	5	G
78	AT	6	G
78	AT	7	G
78	AT	8	U
78	AT	9	G
78	AT	11	A
78	AT	13	C
78	AT	16	C
78	AT	18(A)	U
78	AT	19	G
78	AT	21	U
78	AT	22	A
78	AT	31	G
78	AT	45	A
78	AT	50	G
78	AT	59	A
78	AT	70	C
78	AT	73	A
78	AT	75	C
78	AT	77	A

All (54) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	1	172	C
2	1	538	G
2	1	563	U
2	1	586	G
2	1	601	U
2	1	912	G
2	1	1012	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	1	1060	A
2	1	1099	A
2	1	1346	U
2	1	1347	U
2	1	1559	C
2	1	1762	G
2	1	1815	U
2	1	2090	U
2	1	2515	G
2	1	2519	A
2	1	2557	G
2	1	2789	A
2	1	2790	U
2	1	3093	U
2	1	3163	U
2	1	3193	C
2	1	3234	U
2	1	3240	U
2	1	3315	C
2	1	3317	U
5	4	79	A
5	4	85	G
10	A	137	A
10	A	151	G
10	A	176	U
10	A	214	U
10	A	218	A
10	A	259	U
10	A	415	A
10	A	503	A
10	A	504	A
10	A	505	U
10	A	514	G
10	A	529	C
10	A	553	A
10	A	740	A
10	A	763	C
10	A	765	U
10	A	820	U
10	A	876	A
10	A	1168	A
10	A	1369	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
10	A	1398	G
10	A	1479	A
10	A	1555	C
10	A	1579	A
10	A	1581	G

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	OMG	1	2765	2	18,26,27	2.39	8 (44%)	19,38,41	1.52	4 (21%)
6	MLZ	6	110	6	8,9,10	0.70	0	4,9,11	0.88	0
2	OMC	1	2808	2	19,22,23	2.88	8 (42%)	26,31,34	1.19	3 (11%)
76	MLZ	AP	40	76	8,9,10	0.66	0	4,9,11	0.89	0
25	IAS	P	119	25	6,7,8	1.08	0	5,8,10	1.26	0
76	MLZ	AP	55	76	8,9,10	0.67	0	4,9,11	0.81	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	OMG	1	2765	2	-	1/5/27/28	0/3/3/3
6	MLZ	6	110	6	-	3/7/8/10	-
2	OMC	1	2808	2	-	2/9/27/28	0/2/2/2
76	MLZ	AP	40	76	-	0/7/8/10	-
25	IAS	P	119	25	-	4/5/6/8	-
76	MLZ	AP	55	76	-	1/7/8/10	-

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	1	2808	OMC	C2-N3	5.90	1.48	1.36
2	1	2808	OMC	C6-C5	5.75	1.48	1.35
2	1	2765	OMG	C2-N3	5.25	1.46	1.33
2	1	2808	OMC	C4-N4	4.67	1.44	1.33
2	1	2808	OMC	C2-N1	4.60	1.50	1.40
2	1	2765	OMG	C4-N3	4.50	1.48	1.37
2	1	2808	OMC	C4-N3	4.47	1.43	1.34
2	1	2765	OMG	C2-N2	3.74	1.43	1.34
2	1	2765	OMG	C6-N1	3.40	1.42	1.37
2	1	2808	OMC	O2-C2	-3.18	1.17	1.23
2	1	2808	OMC	C6-N1	2.96	1.45	1.38
2	1	2765	OMG	C5-C4	-2.88	1.35	1.43
2	1	2765	OMG	C5-C6	2.74	1.53	1.47
2	1	2765	OMG	O6-C6	-2.73	1.17	1.23
2	1	2808	OMC	C5-C4	2.26	1.48	1.42
2	1	2765	OMG	C2-N1	2.19	1.43	1.37

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	1	2765	OMG	C5-C6-N1	3.51	120.15	113.95
2	1	2808	OMC	O2-C2-N3	-3.30	116.97	122.33
2	1	2765	OMG	C2-N1-C6	-2.82	119.90	125.10
2	1	2765	OMG	C8-N7-C5	2.81	108.35	102.99
2	1	2808	OMC	C1'-N1-C2	2.31	123.57	118.42
2	1	2808	OMC	C6-C5-C4	2.28	121.18	117.50
2	1	2765	OMG	O6-C6-C5	-2.08	120.31	124.37

There are no chirality outliers.

All (11) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	1	2808	OMC	O4'-C1'-N1-C2
2	1	2808	OMC	O4'-C1'-N1-C6
25	P	119	IAS	C-CA-CB-CG
76	AP	55	MLZ	CA-CB-CG-CD
25	P	119	IAS	N-CA-CB-CG
6	6	110	MLZ	CD-CE-NZ-CM
6	6	110	MLZ	C-CA-CB-CG
2	1	2765	OMG	C3'-C2'-O2'-CM2
25	P	119	IAS	CA-CB-CG-OD2
25	P	119	IAS	CA-CB-CG-OD1
6	6	110	MLZ	CE-CD-CG-CB

There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	1	2808	OMC	2	0
25	P	119	IAS	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 25 ligands modelled in this entry, 7 are monoatomic - leaving 18 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	$\#\|Z\| > 2$
81	GET	1	3409	-	33,36,36	0.51	0	43,55,55	0.74	1 (2%)
80	SPK	1	3401	-	13,13,13	0.38	0	12,12,12	0.79	0
81	GET	1	3410	-	33,36,36	0.43	0	43,55,55	0.83	2 (4%)
81	GET	A	1801	-	33,36,36	0.47	0	43,55,55	0.70	1 (2%)
81	GET	1	3407	-	33,36,36	0.46	0	43,55,55	0.84	2 (4%)
81	GET	1	3408	-	33,36,36	0.42	0	43,55,55	0.63	1 (2%)
81	GET	AT	101	-	33,36,36	0.48	0	43,55,55	0.52	0
81	GET	1	3411	-	33,36,36	0.50	0	43,55,55	0.90	1 (2%)
81	GET	1	3402	-	33,36,36	0.46	0	43,55,55	0.59	1 (2%)
81	GET	1	3404	-	33,36,36	0.49	0	43,55,55	0.72	1 (2%)
81	GET	1	3412	-	33,36,36	0.52	0	43,55,55	0.71	0
81	GET	A	1803	-	33,36,36	0.45	0	43,55,55	0.67	1 (2%)
81	GET	A	1804	-	33,36,36	0.54	0	43,55,55	0.78	0
81	GET	1	3406	-	33,36,36	0.46	0	43,55,55	0.80	2 (4%)
81	GET	1	3413	-	33,36,36	0.45	0	43,55,55	0.89	2 (4%)
81	GET	A	1802	-	33,36,36	0.45	0	43,55,55	0.82	1 (2%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
81	GET	1	3403	-	33,36,36	0.57	1 (3%)	43,55,55	0.92	2 (4%)
81	GET	1	3405	-	33,36,36	0.44	0	43,55,55	0.74	1 (2%)

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
81	GET	1	3409	-	-	3/13/74/74	0/3/3/3
80	SPK	1	3401	-	-	4/11/11/11	-
81	GET	1	3410	-	-	1/13/74/74	0/3/3/3
81	GET	A	1801	-	-	1/13/74/74	0/3/3/3
81	GET	1	3407	-	-	1/13/74/74	0/3/3/3
81	GET	1	3408	-	-	1/13/74/74	0/3/3/3
81	GET	AT	101	-	-	2/13/74/74	1/3/3/3
81	GET	1	3411	-	-	6/13/74/74	1/3/3/3
81	GET	1	3402	-	-	1/13/74/74	0/3/3/3
81	GET	1	3404	-	-	3/13/74/74	1/3/3/3
81	GET	1	3412	-	-	1/13/74/74	0/3/3/3
81	GET	A	1803	-	-	1/13/74/74	0/3/3/3
81	GET	A	1804	-	-	10/13/74/74	1/3/3/3
81	GET	1	3406	-	-	1/13/74/74	0/3/3/3
81	GET	1	3413	-	-	7/13/74/74	0/3/3/3
81	GET	A	1802	-	-	1/13/74/74	1/3/3/3
81	GET	1	3403	-	-	6/13/74/74	1/3/3/3
81	GET	1	3405	-	-	1/13/74/74	0/3/3/3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
81	1	3403	GET	C11-C21	-2.03	1.48	1.52

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
81	A	1802	GET	O11-C11-C21	4.07	115.22	108.22
81	1	3406	GET	O11-C11-C21	3.68	114.56	108.22
81	1	3410	GET	O11-C11-C21	3.61	114.44	108.22
81	1	3405	GET	O11-C11-C21	3.34	113.97	108.22

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
81	1	3407	GET	O62-C62-C12	-3.23	101.48	109.18
81	1	3408	GET	O11-C11-C21	3.15	113.64	108.22
81	A	1803	GET	O11-C11-C21	2.91	113.23	108.22
81	1	3407	GET	O11-C11-C21	2.84	113.11	108.22
81	1	3413	GET	O11-C42-C32	-2.77	102.58	109.18
81	1	3403	GET	O11-C11-C21	2.63	112.74	108.22
81	1	3402	GET	O11-C11-C21	2.51	112.54	108.22
81	1	3409	GET	O11-C11-C21	2.46	112.45	108.22
81	1	3411	GET	O11-C42-C52	-2.28	101.23	107.28
81	1	3403	GET	O62-C62-C52	-2.26	101.28	107.28
81	1	3404	GET	O62-C62-C12	-2.25	103.80	109.18
81	1	3413	GET	O11-C42-C52	2.22	113.20	107.28
81	1	3406	GET	O62-C62-C12	-2.22	103.89	109.18
81	A	1801	GET	O11-C11-C21	2.17	111.95	108.22
81	1	3410	GET	O62-C62-C12	-2.08	104.22	109.18

There are no chirality outliers.

All (51) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
81	1	3402	GET	C23-C33-N33-C93
81	1	3403	GET	C21-C11-O11-C42
81	1	3403	GET	C41-C51-C61-O61
81	1	3403	GET	C41-C51-C61-C71
81	1	3403	GET	O51-C51-C61-C71
81	1	3404	GET	C23-C33-N33-C93
81	1	3405	GET	C23-C33-N33-C93
81	1	3406	GET	C23-C33-N33-C93
81	1	3407	GET	C23-C33-N33-C93
81	1	3408	GET	C23-C33-N33-C93
81	1	3409	GET	C23-C33-N33-C93
81	1	3410	GET	C23-C33-N33-C93
81	1	3411	GET	C21-C11-O11-C42
81	1	3411	GET	C41-C51-C61-O61
81	1	3411	GET	O51-C51-C61-O61
81	1	3411	GET	O51-C51-C61-C71
81	1	3411	GET	C23-C33-N33-C93
81	1	3412	GET	C23-C33-N33-C93
81	1	3413	GET	C41-C51-C61-O61
81	1	3413	GET	C41-C51-C61-C71
81	1	3413	GET	O51-C51-C61-O61
81	1	3413	GET	O51-C51-C61-C71

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
81	1	3413	GET	C23-C33-N33-C93
81	A	1801	GET	C23-C33-N33-C93
81	A	1802	GET	C23-C33-N33-C93
81	A	1803	GET	C23-C33-N33-C93
81	A	1804	GET	C32-C42-O11-C11
81	A	1804	GET	C41-C51-C61-O61
81	A	1804	GET	C41-C51-C61-C71
81	A	1804	GET	O51-C51-C61-C71
81	A	1804	GET	C23-C33-N33-C93
81	AT	101	GET	C23-C33-N33-C93
81	1	3413	GET	C52-C42-O11-C11
80	1	3401	SPK	C7-C8-C9-N10
81	AT	101	GET	O51-C11-O11-C42
80	1	3401	SPK	C3-C4-N5-C6
81	1	3403	GET	O51-C11-O11-C42
81	A	1804	GET	O53-C13-O62-C62
81	A	1804	GET	C52-C62-O62-C13
81	1	3409	GET	O51-C11-O11-C42
81	A	1804	GET	O51-C51-C61-O61
80	1	3401	SPK	C6-C7-C8-C9
81	1	3411	GET	C41-C51-C61-C71
80	1	3401	SPK	C7-C6-N5-C4
81	1	3409	GET	C52-C42-O11-C11
81	1	3404	GET	O53-C13-O62-C62
81	A	1804	GET	C52-C42-O11-C11
81	A	1804	GET	C23-C13-O62-C62
81	1	3403	GET	O51-C51-C61-O61
81	1	3413	GET	C32-C42-O11-C11
81	1	3404	GET	C23-C13-O62-C62

All (6) ring outliers are listed below:

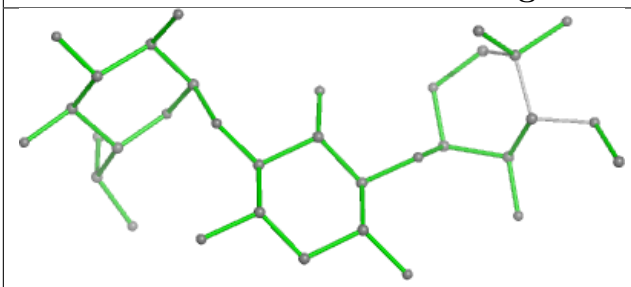
Mol	Chain	Res	Type	Atoms
81	1	3403	GET	C11-C21-C31-C41-C51-O51
81	1	3404	GET	C13-C23-C33-C43-C53-O53
81	A	1802	GET	C11-C21-C31-C41-C51-O51
81	A	1804	GET	C11-C21-C31-C41-C51-O51
81	AT	101	GET	C11-C21-C31-C41-C51-O51
81	1	3411	GET	C11-C21-C31-C41-C51-O51

15 monomers are involved in 30 short contacts:

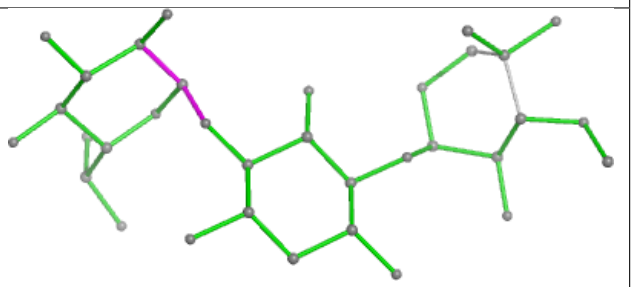
Mol	Chain	Res	Type	Clashes	Symm-Clashes
81	1	3409	GET	1	0
80	1	3401	SPK	1	0
81	1	3410	GET	1	0
81	A	1801	GET	3	0
81	1	3407	GET	2	0
81	1	3408	GET	2	0
81	AT	101	GET	1	0
81	1	3404	GET	3	0
81	1	3412	GET	3	0
81	A	1804	GET	3	0
81	1	3406	GET	2	0
81	1	3413	GET	3	0
81	A	1802	GET	1	0
81	1	3403	GET	3	0
81	1	3405	GET	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 then 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.

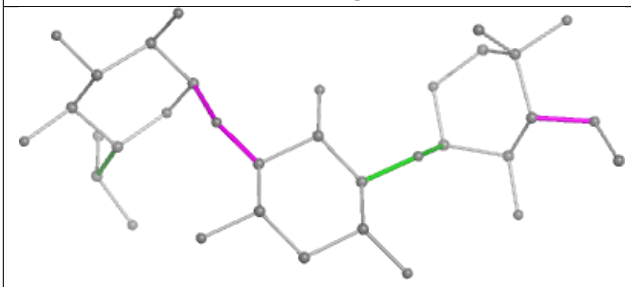
Ligand GET 1 3409



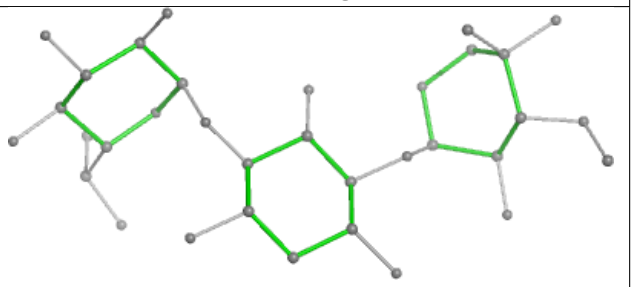
Bond lengths



Bond angles

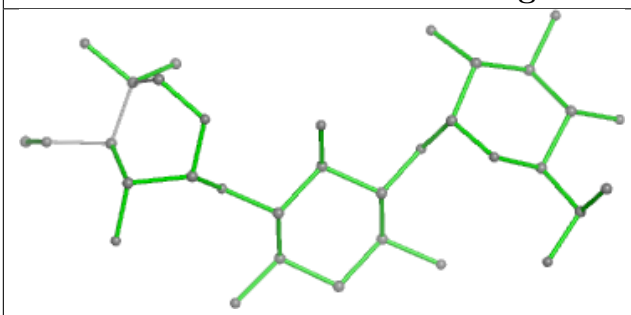


Torsions

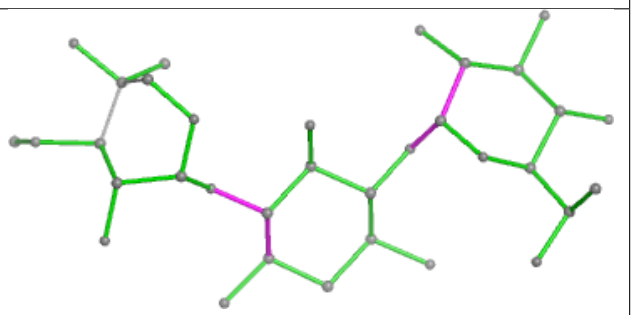


Rings

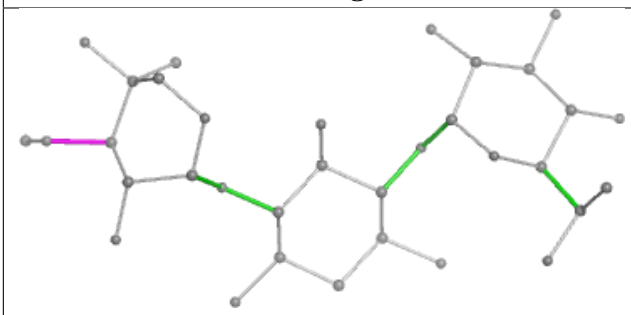
Ligand GET 1 3410



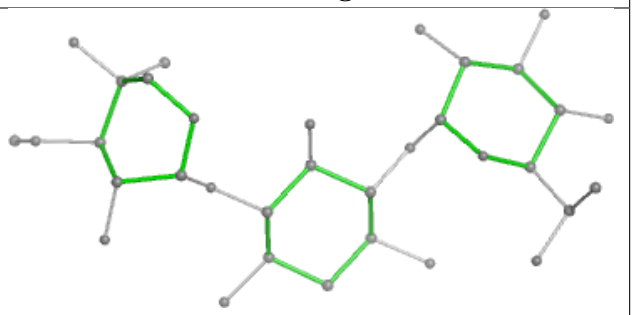
Bond lengths



Bond angles

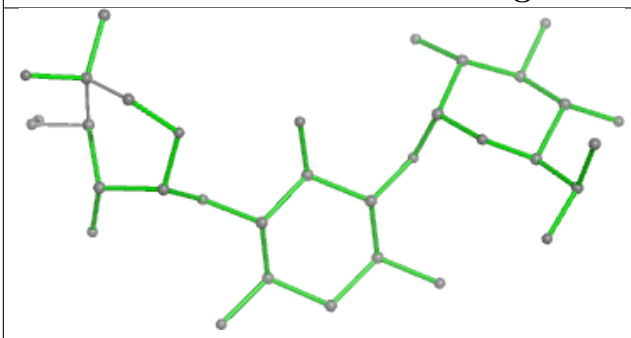


Torsions

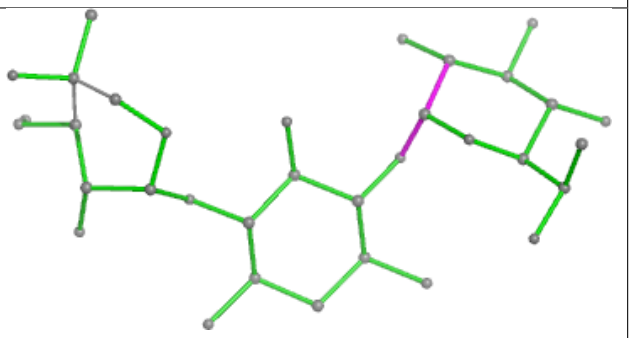


Rings

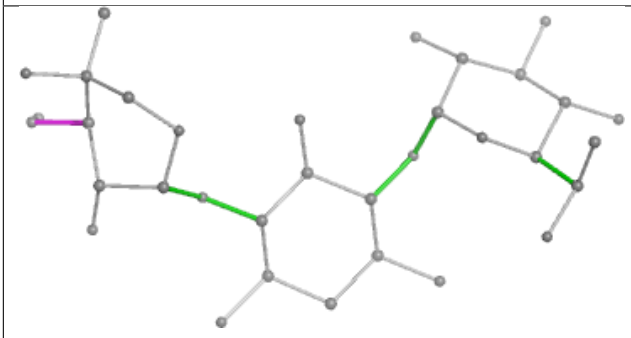
Ligand GET A 1801



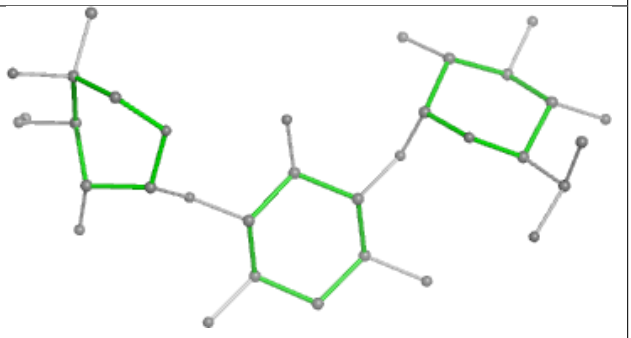
Bond lengths



Bond angles

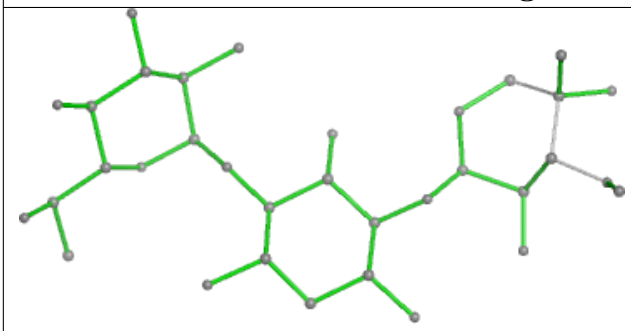


Torsions

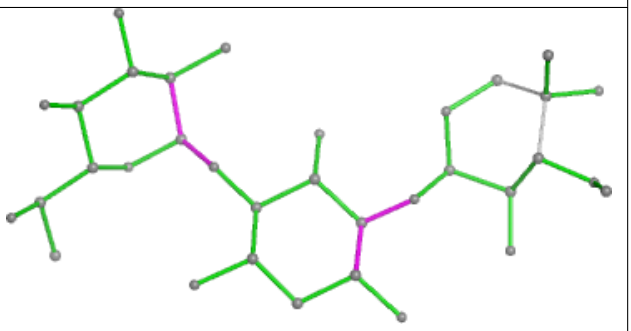


Rings

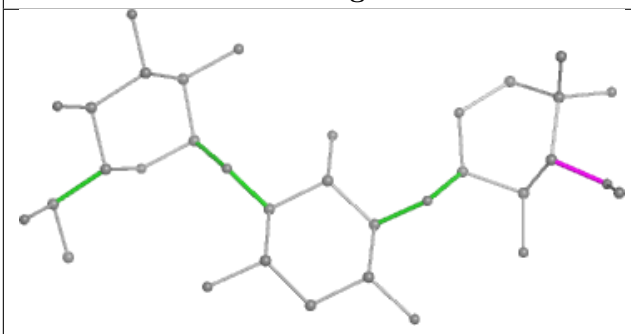
Ligand GET 1 3407



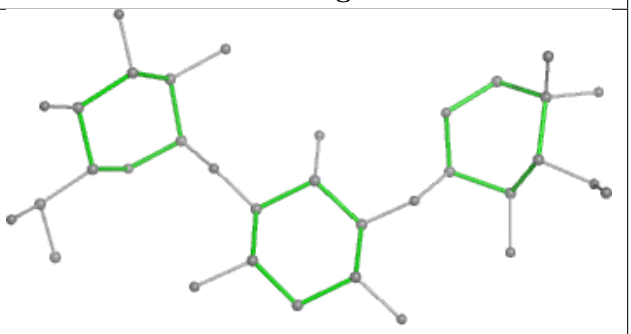
Bond lengths



Bond angles

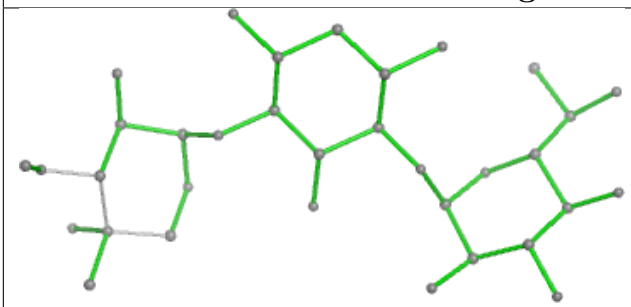


Torsions

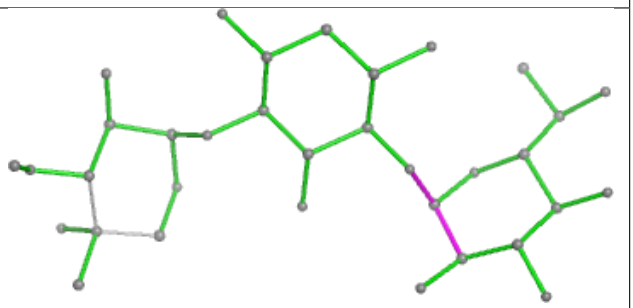


Rings

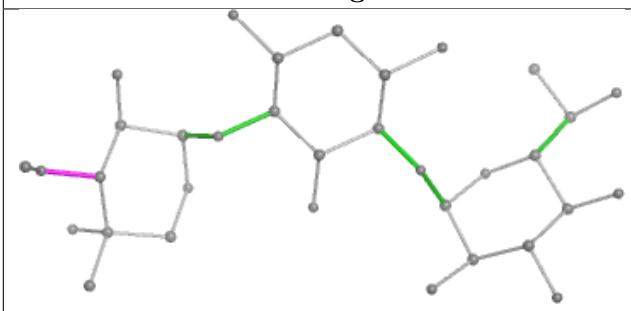
Ligand GET 1 3408



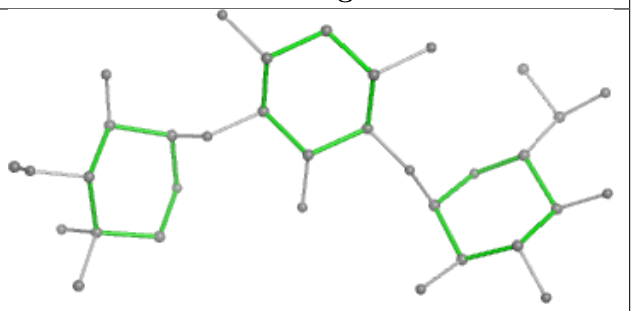
Bond lengths



Bond angles

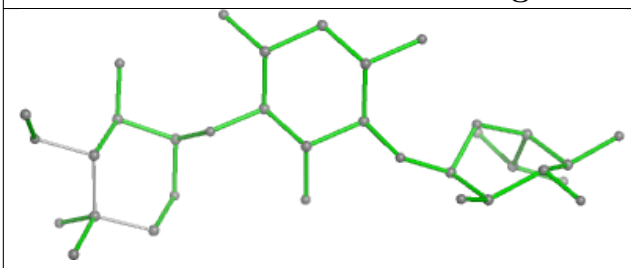


Torsions

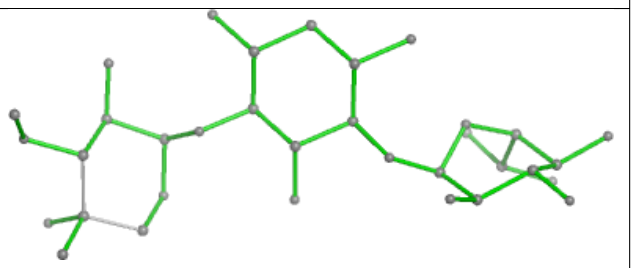


Rings

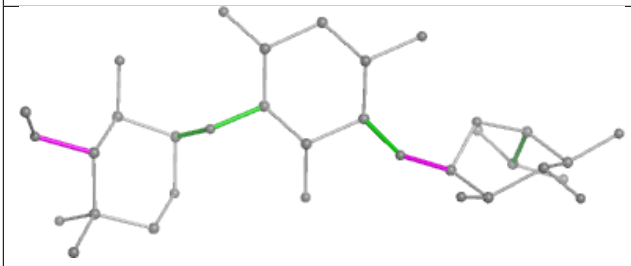
Ligand GET AT 101



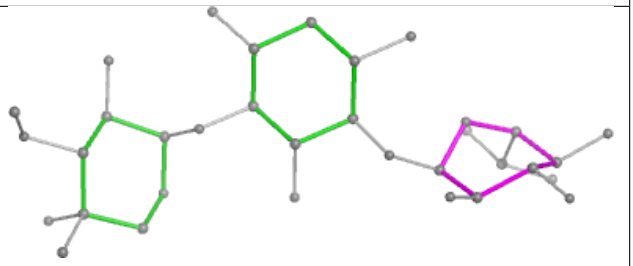
Bond lengths



Bond angles

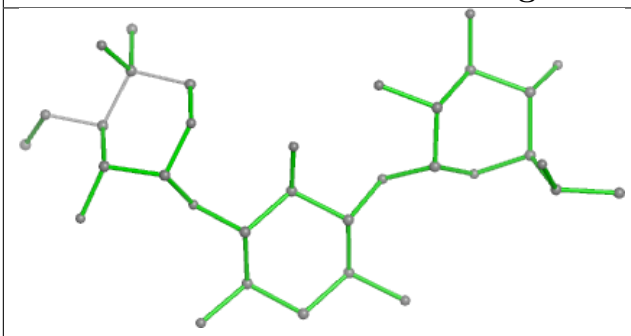


Torsions

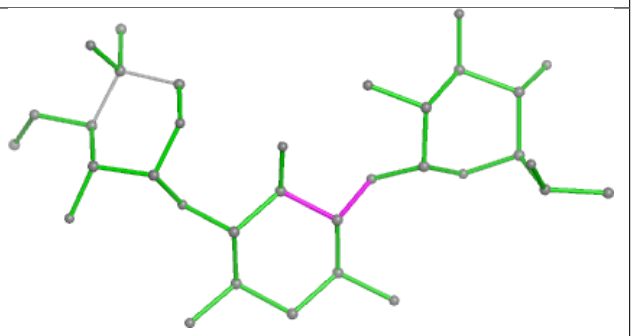


Rings

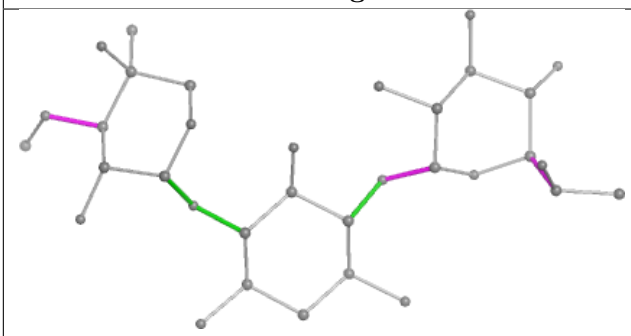
Ligand GET 1 3411



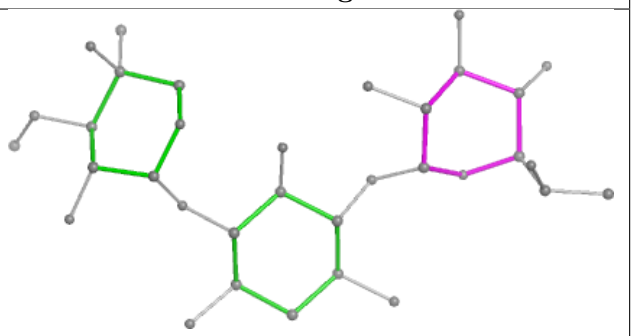
Bond lengths



Bond angles

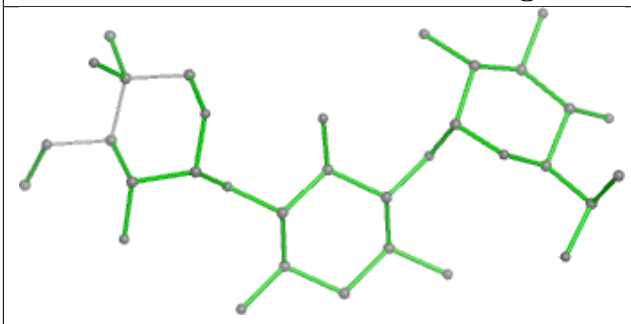


Torsions

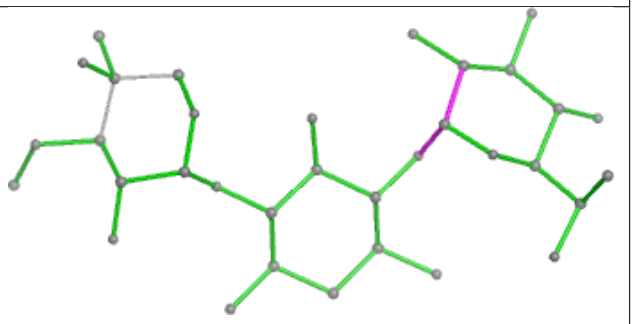


Rings

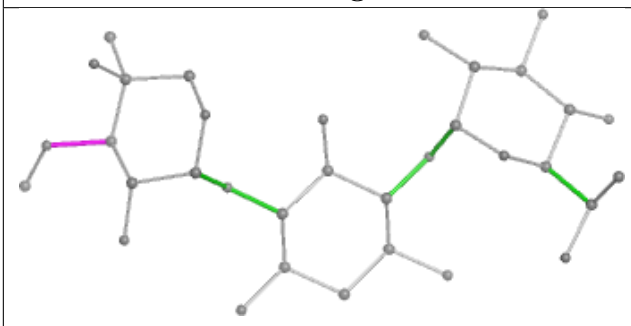
Ligand GET 1 3402



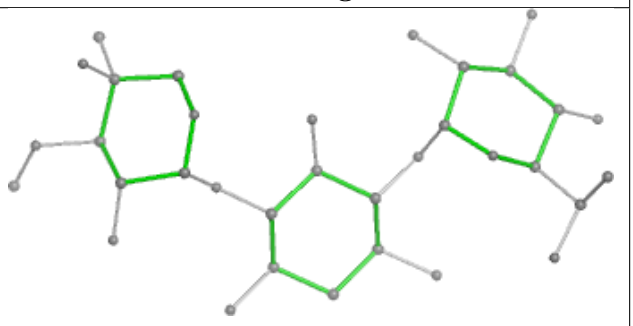
Bond lengths



Bond angles

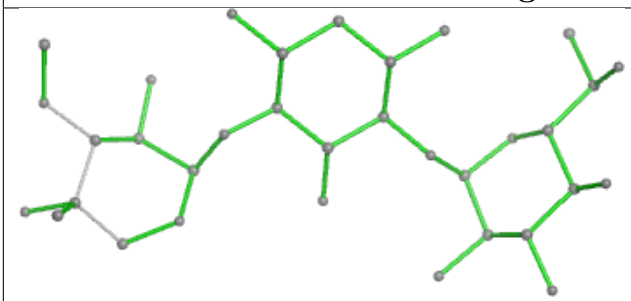


Torsions

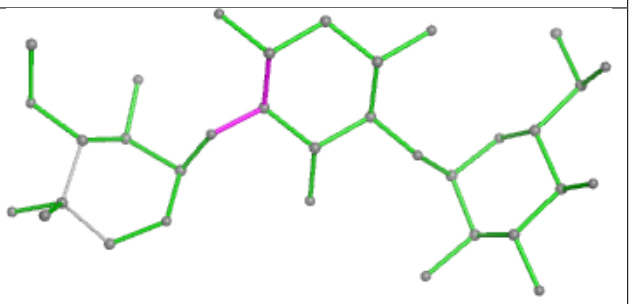


Rings

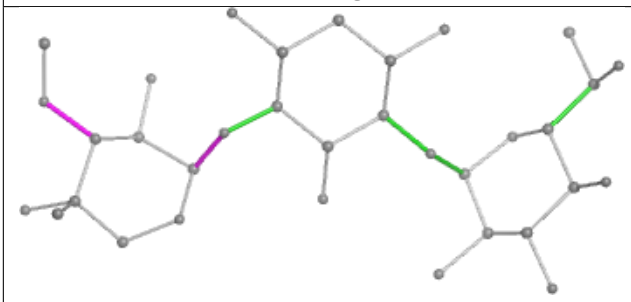
Ligand GET 1 3404



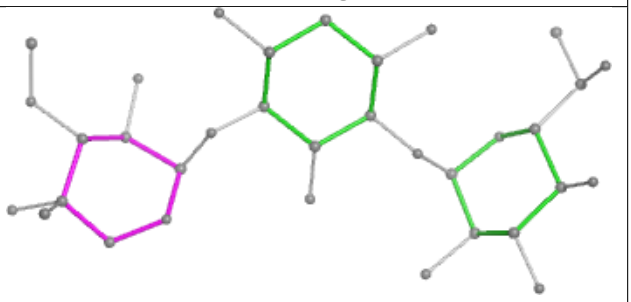
Bond lengths



Bond angles

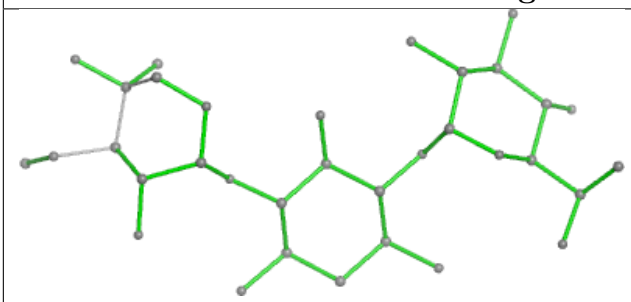


Torsions

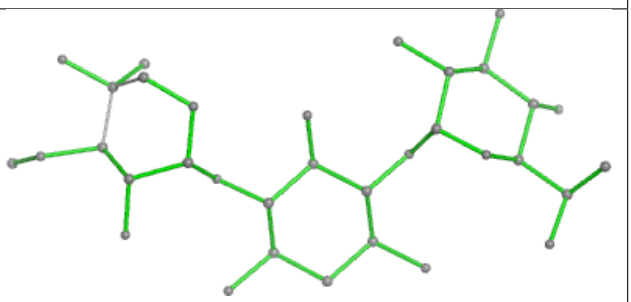


Rings

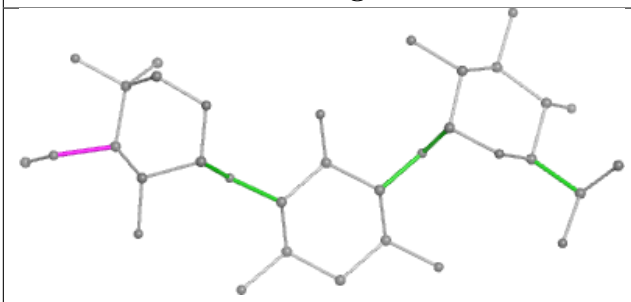
Ligand GET 1 3412



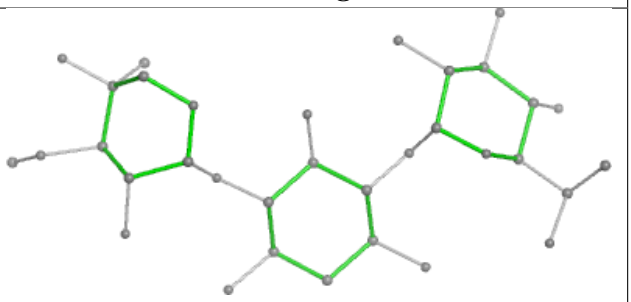
Bond lengths



Bond angles

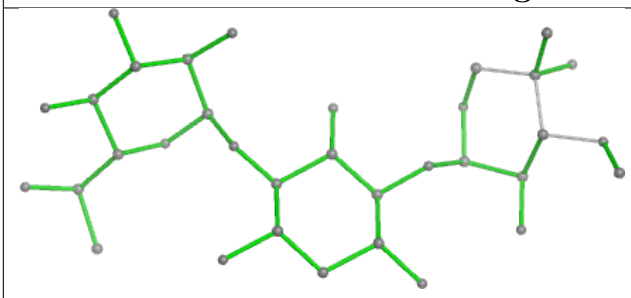


Torsions

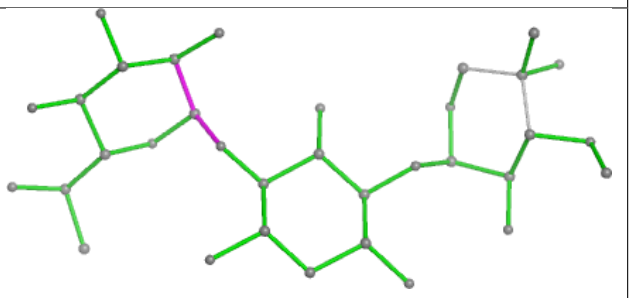


Rings

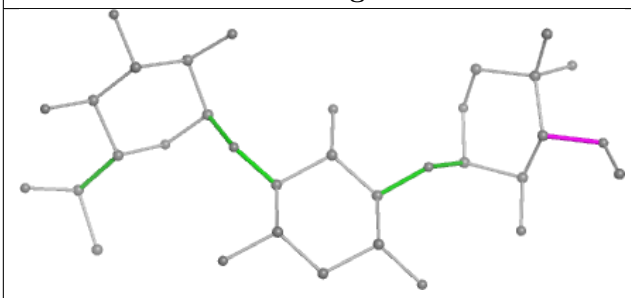
Ligand GET A 1803



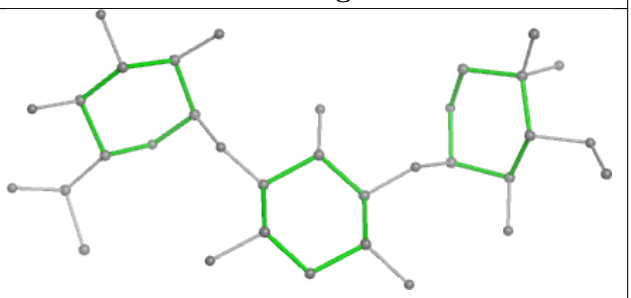
Bond lengths



Bond angles

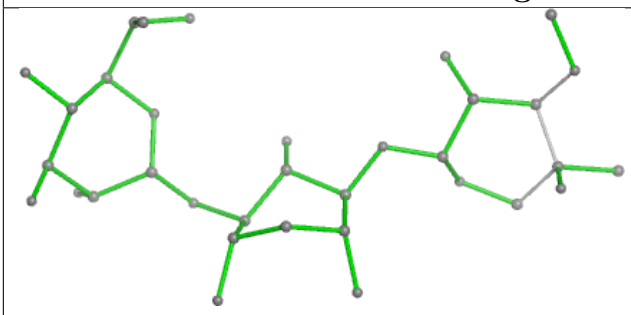


Torsions

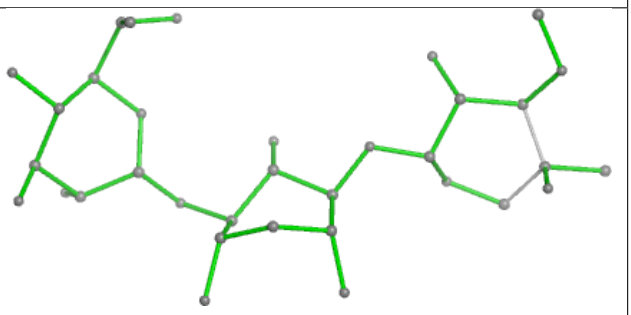


Rings

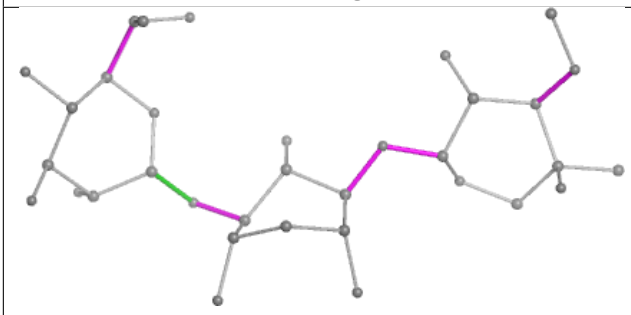
Ligand GET A 1804



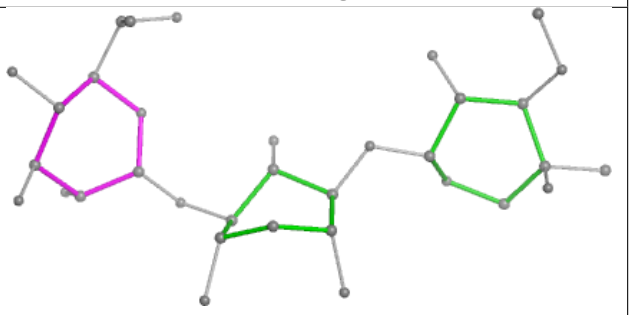
Bond lengths



Bond angles

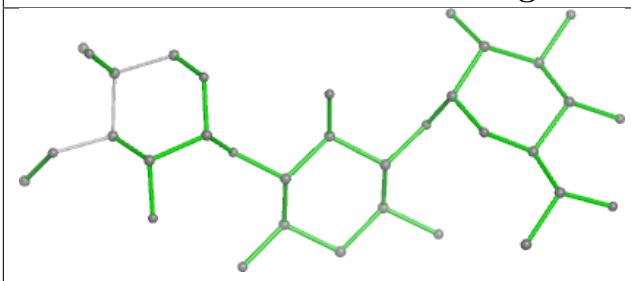


Torsions

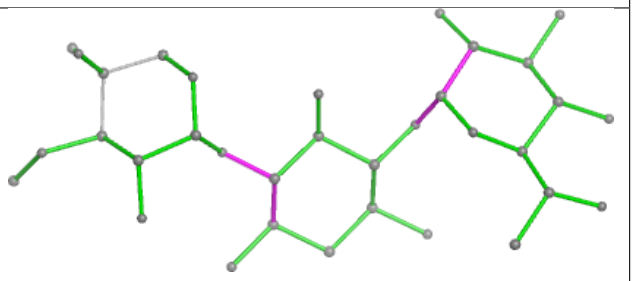


Rings

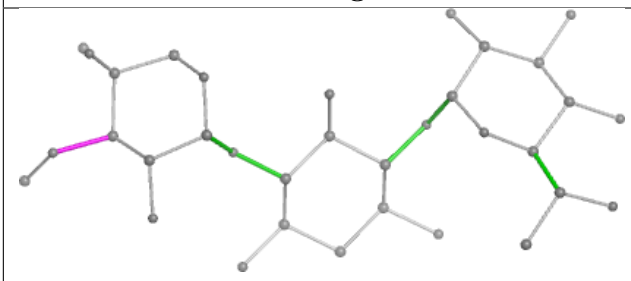
Ligand GET 1 3406



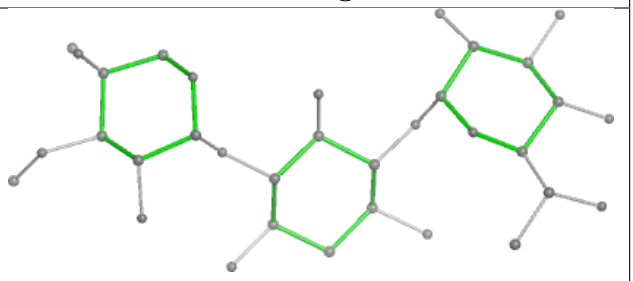
Bond lengths



Bond angles

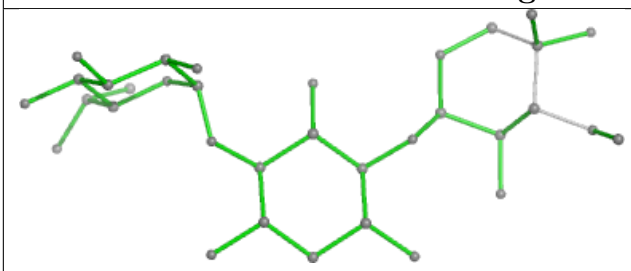


Torsions

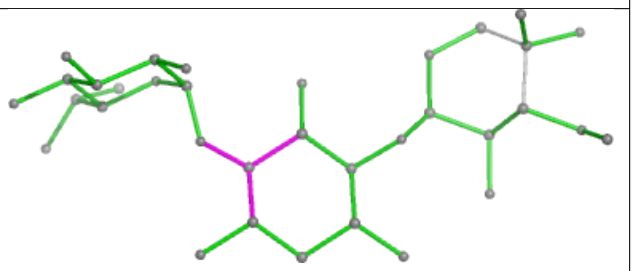


Rings

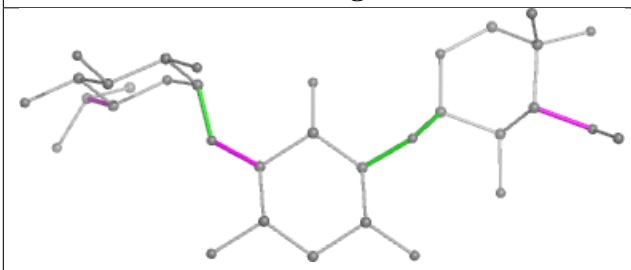
Ligand GET 1 3413



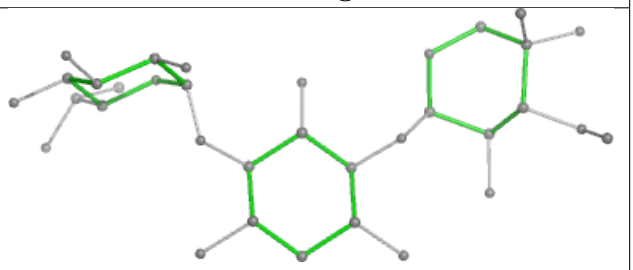
Bond lengths



Bond angles

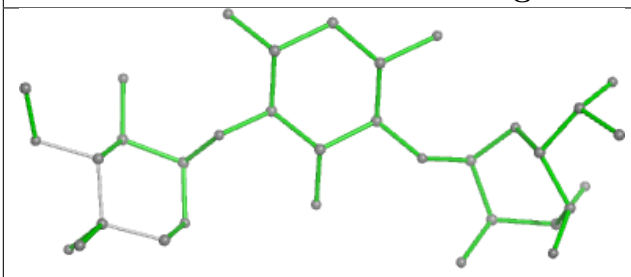


Torsions

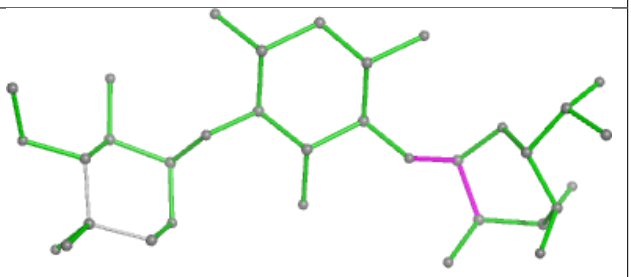


Rings

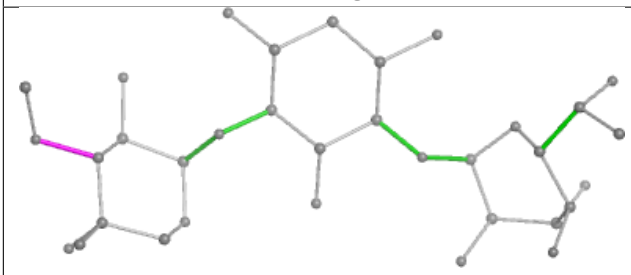
Ligand GET A 1802



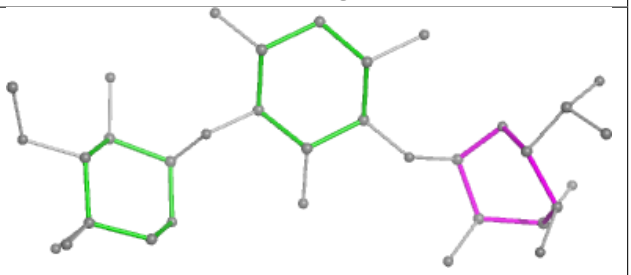
Bond lengths



Bond angles

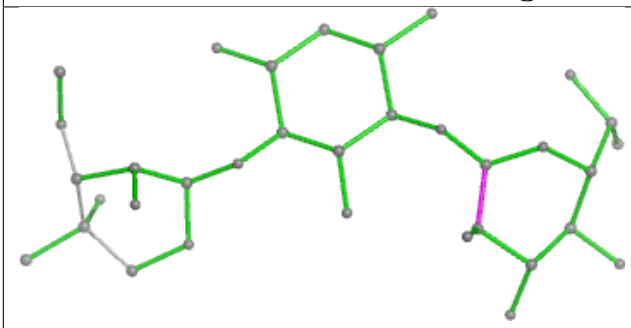


Torsions

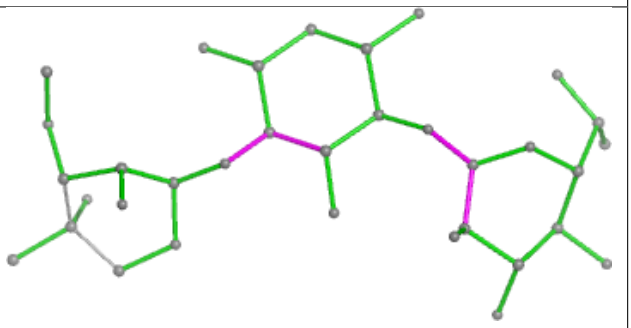


Rings

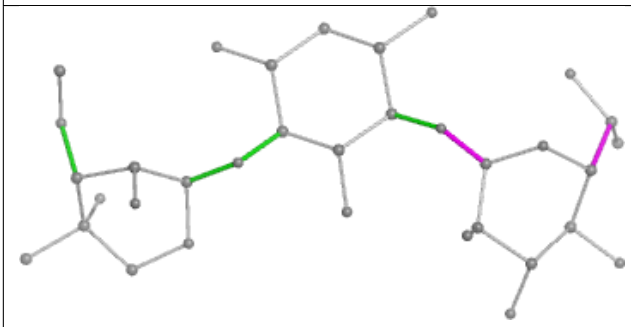
Ligand GET 1 3403



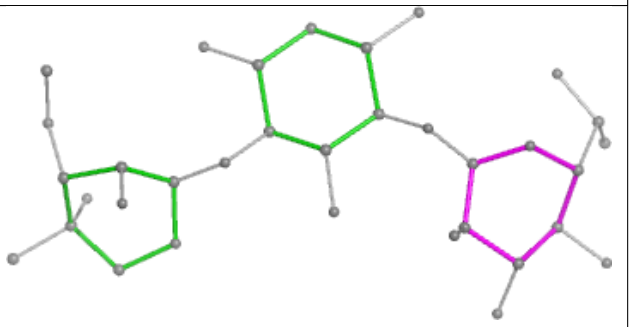
Bond lengths



Bond angles

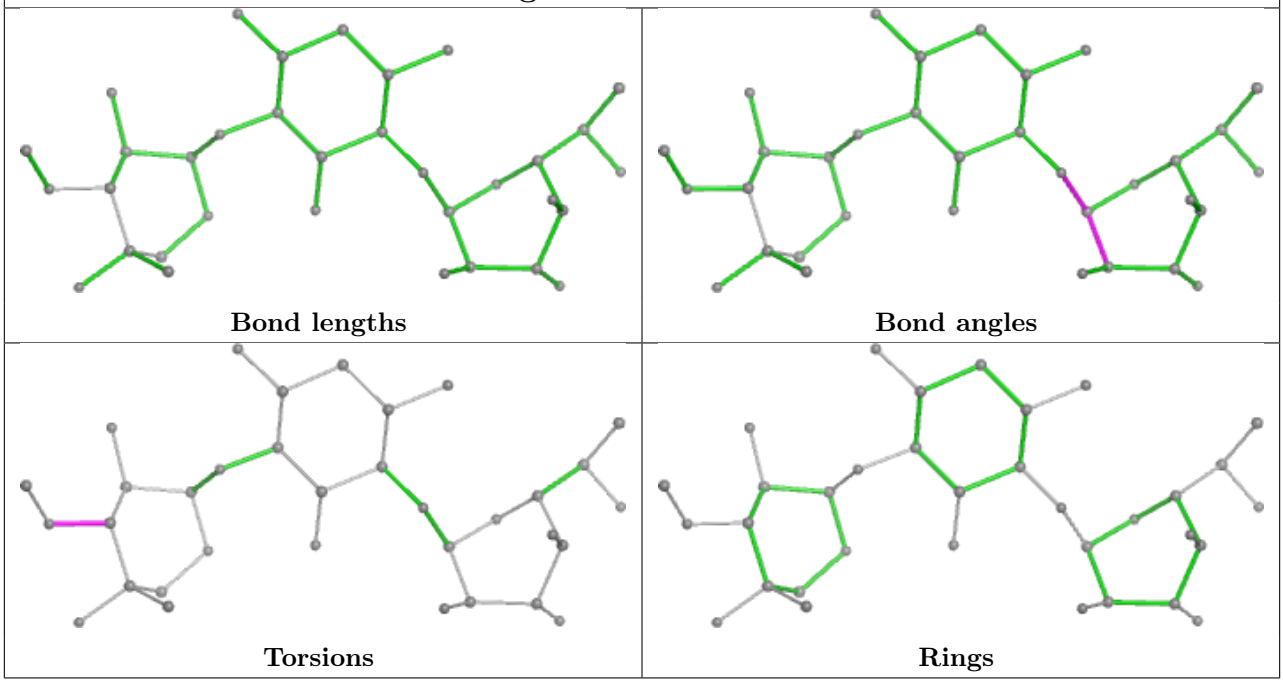


Torsions



Rings

Ligand GET 1 3405



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

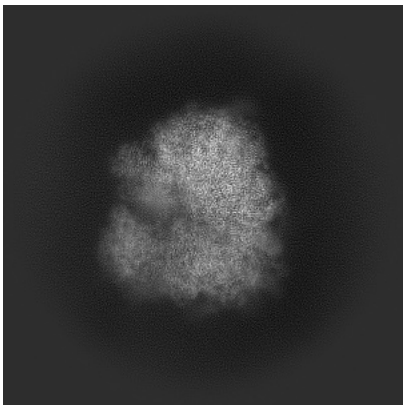
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-50990. These allow visual inspection of the internal detail of the map and identification of artifacts.

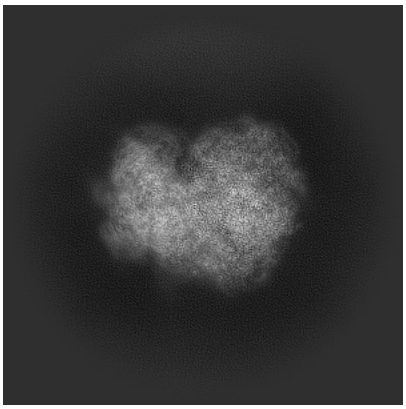
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

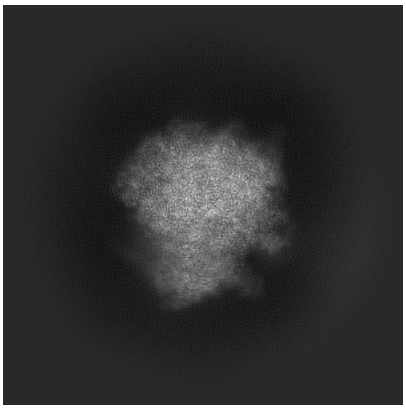
6.1.1 Primary map



X

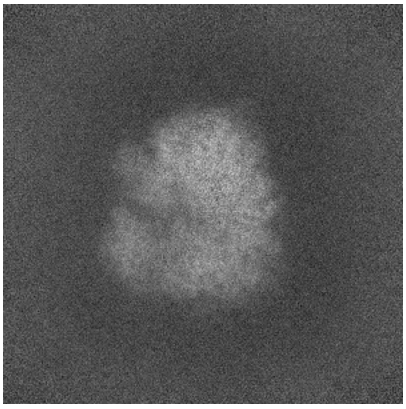


Y

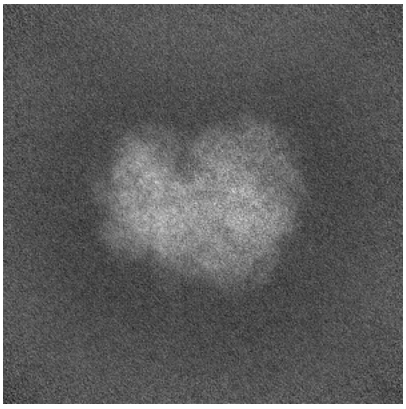


Z

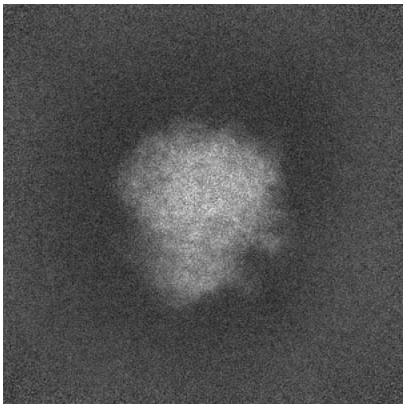
6.1.2 Raw map



X



Y

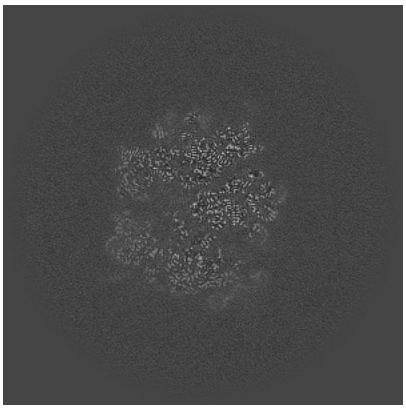


Z

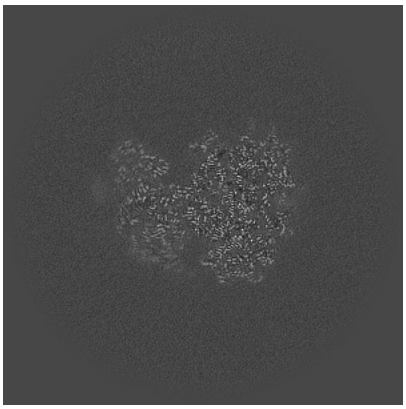
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

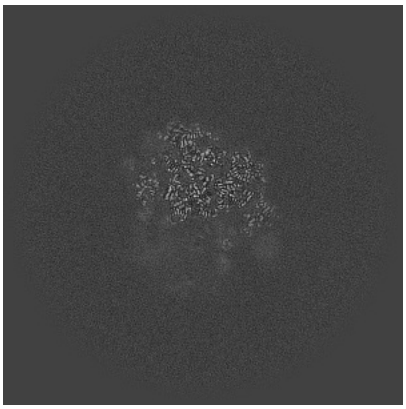
6.2.1 Primary map



X Index: 350

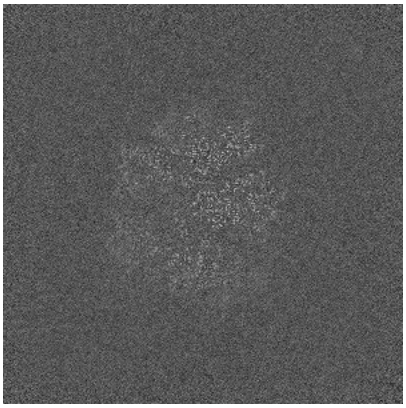


Y Index: 350

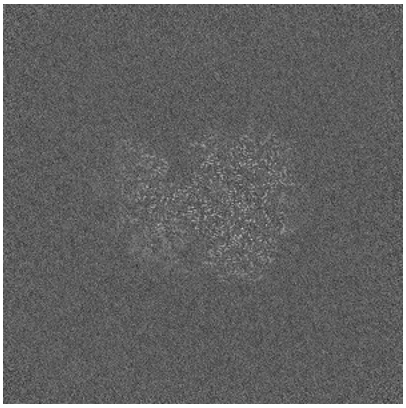


Z Index: 350

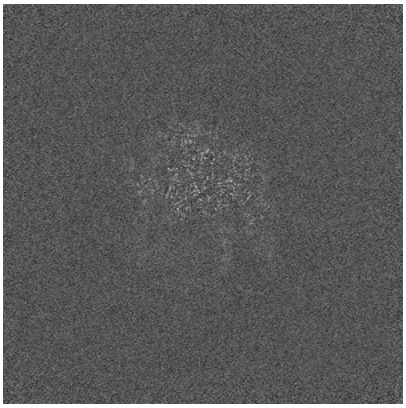
6.2.2 Raw map



X Index: 350



Y Index: 350

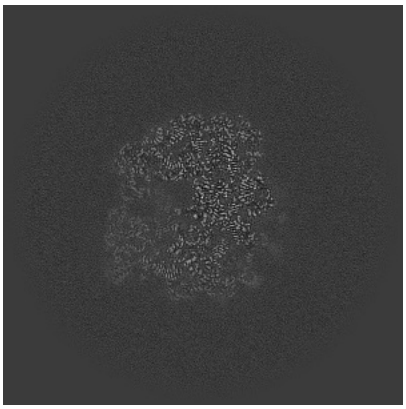


Z Index: 350

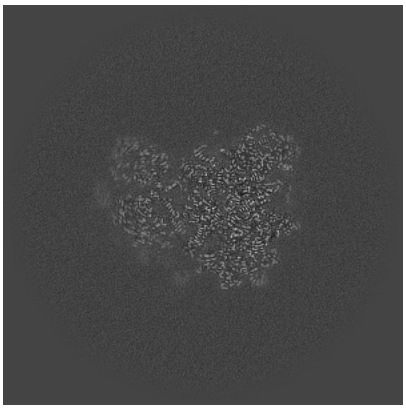
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

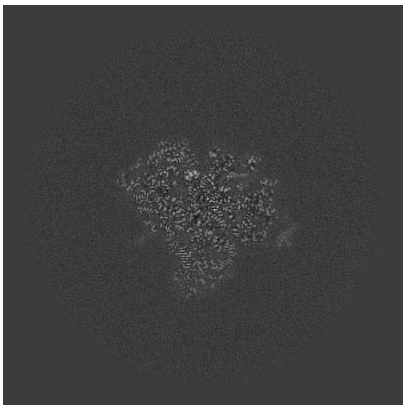
6.3.1 Primary map



X Index: 330

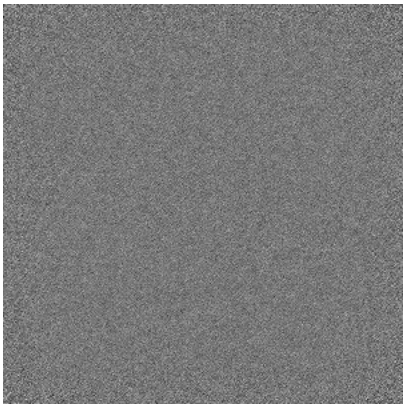


Y Index: 363

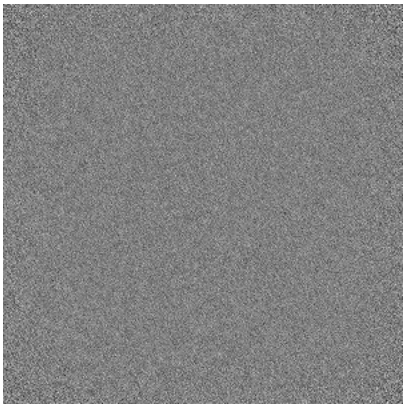


Z Index: 423

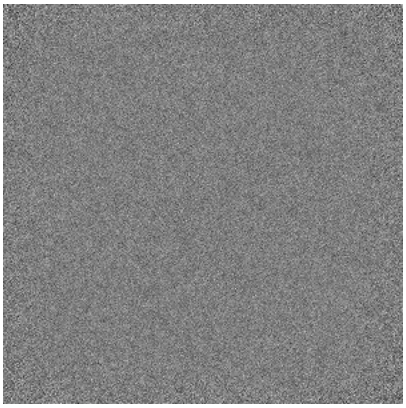
6.3.2 Raw map



X Index: 0



Y Index: 0

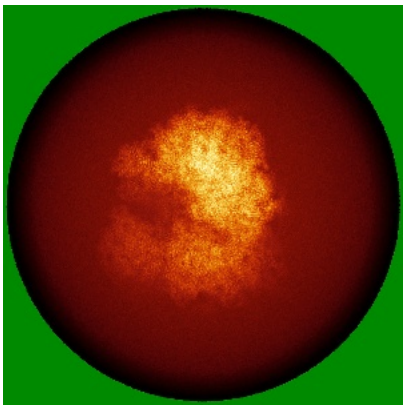


Z Index: 0

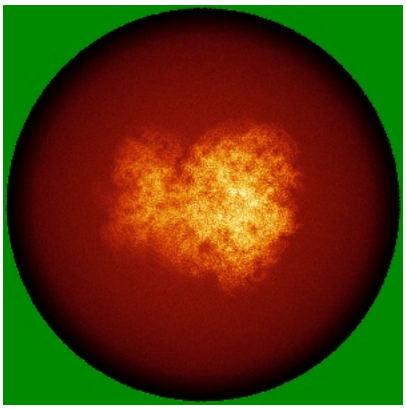
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

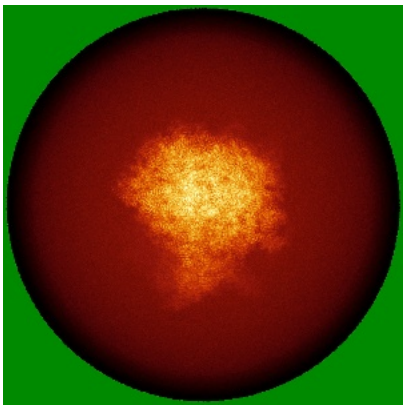
6.4.1 Primary map



X

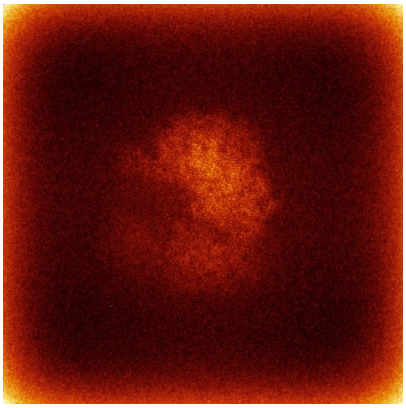


Y

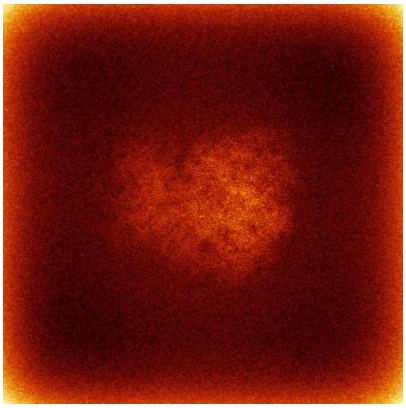


Z

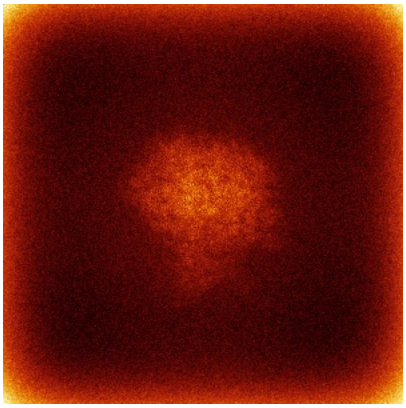
6.4.2 Raw map



X



Y

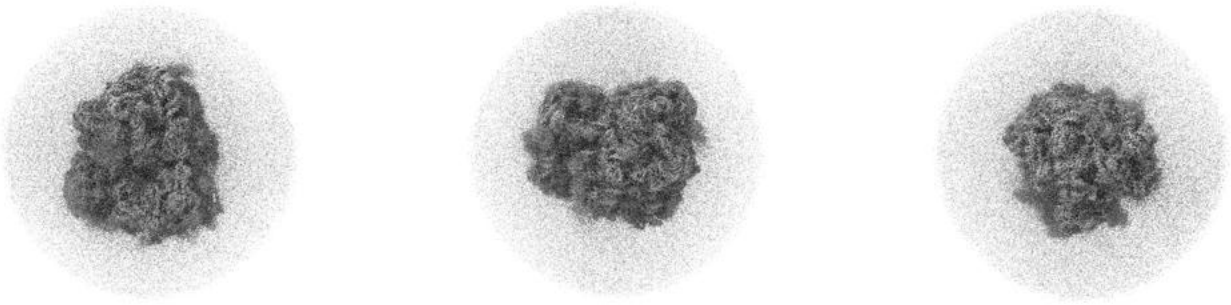


Z

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

6.5 Orthogonal surface views (i)

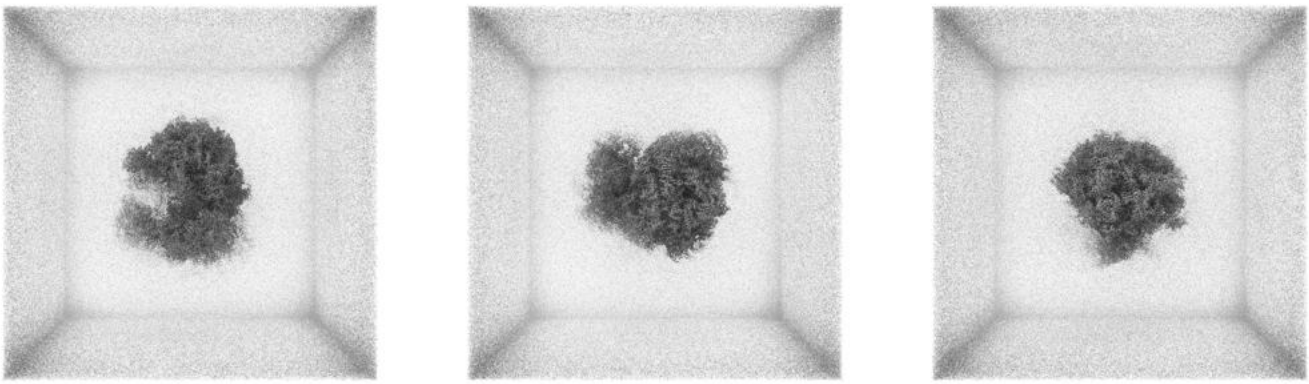
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.168. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

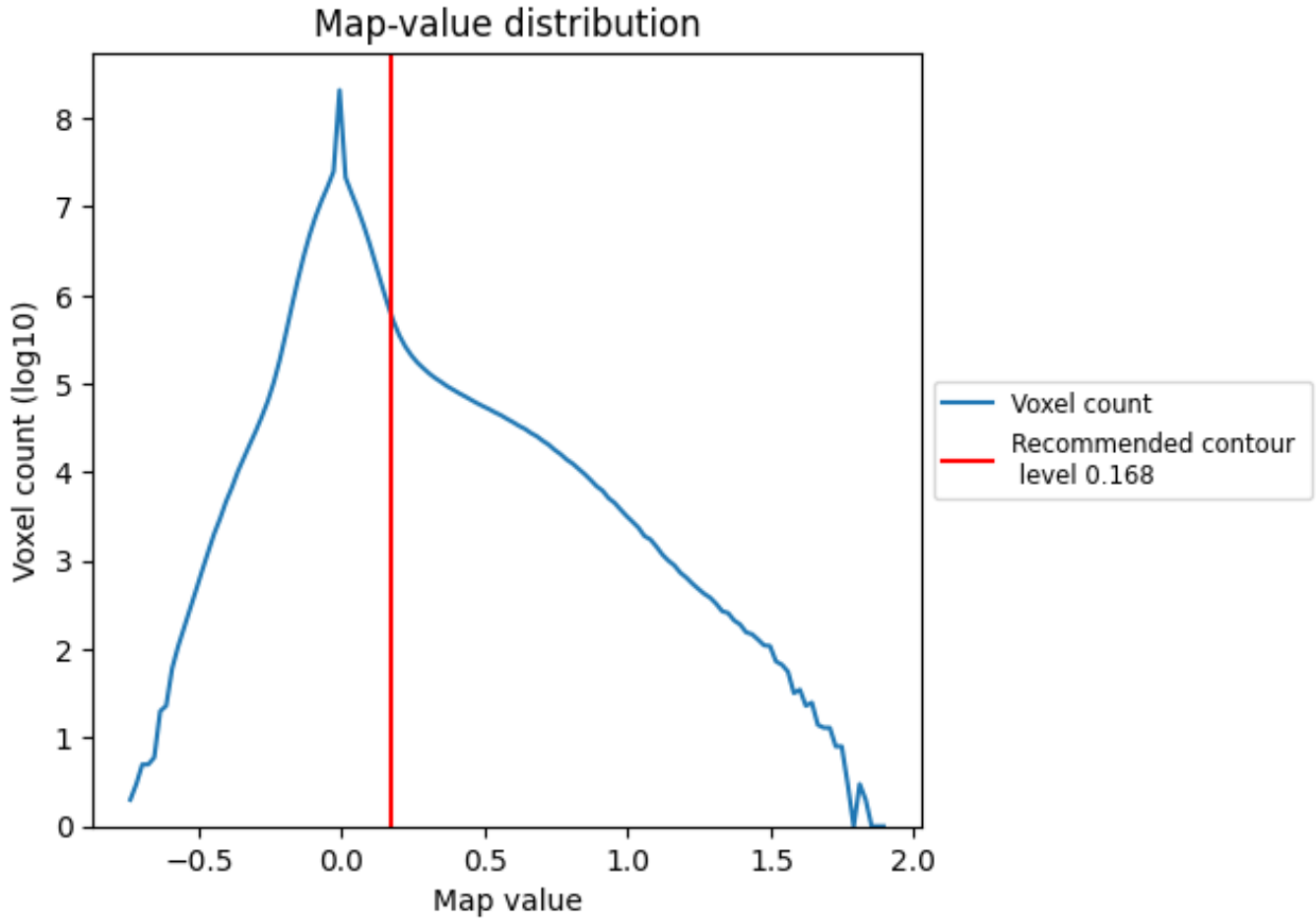
6.6 Mask visualisation (i)

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

7 Map analysis

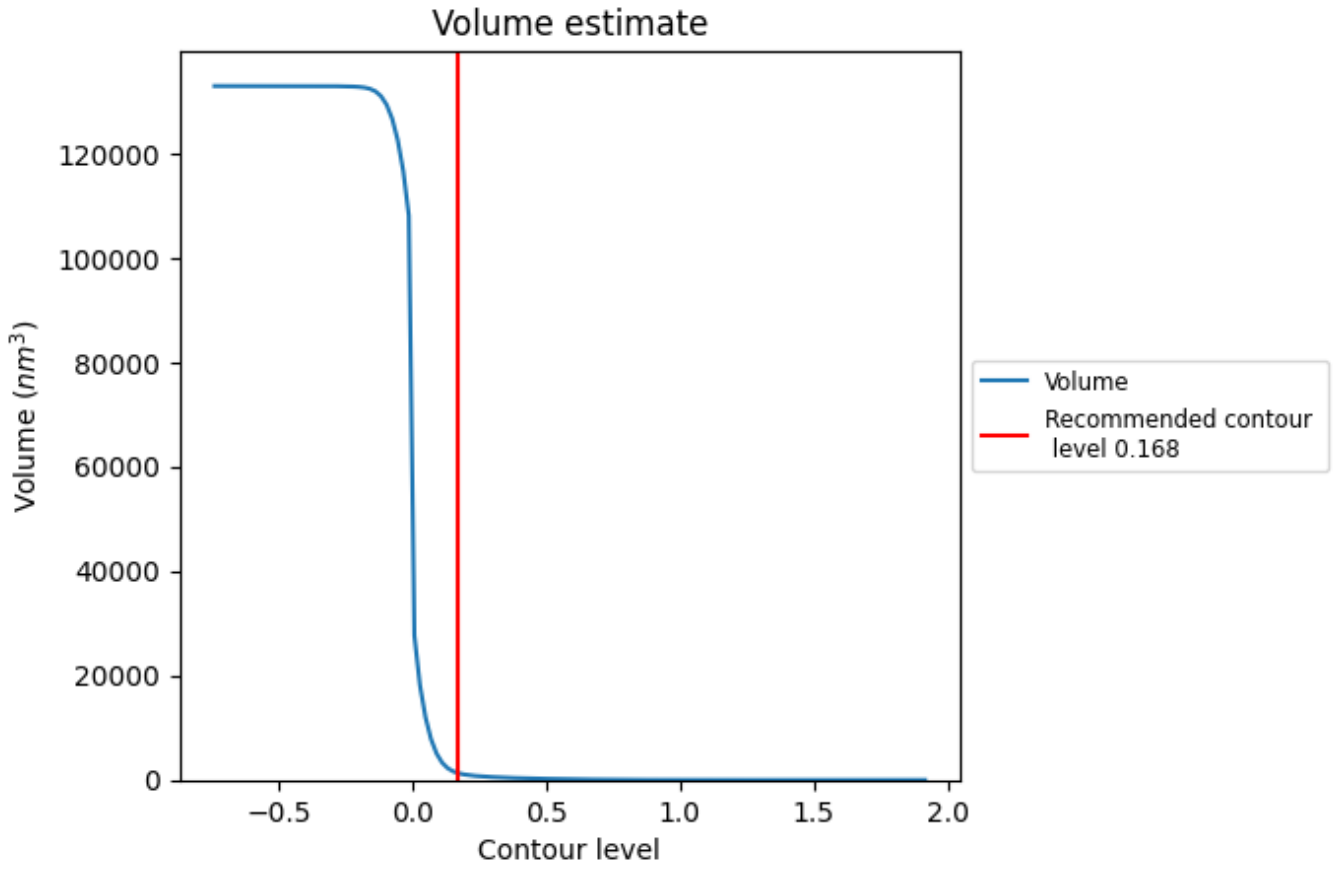
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

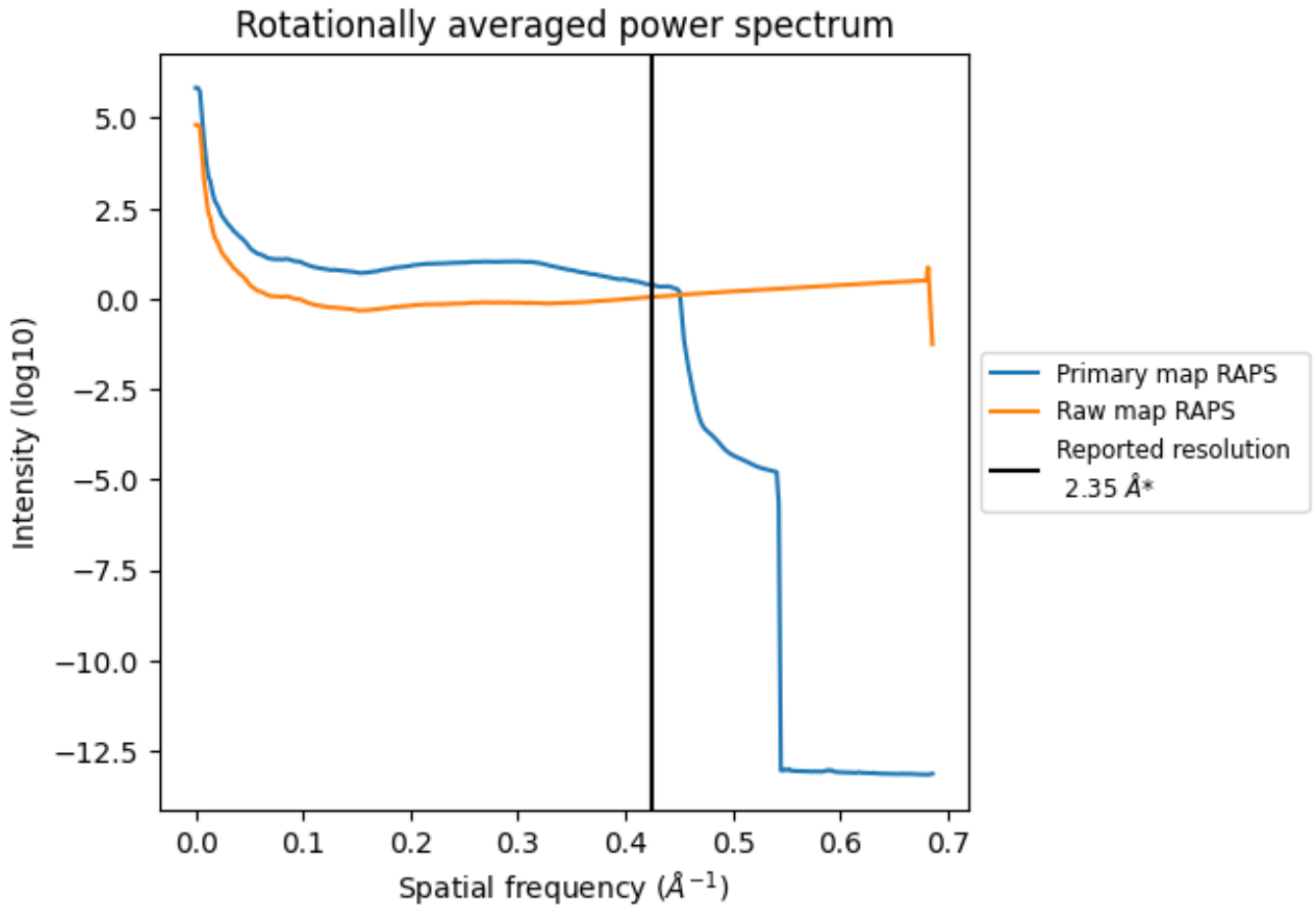
7.2 Volume estimate



The volume at the recommended contour level is 1357 nm^3; this corresponds to an approximate mass of 1225 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 (i)

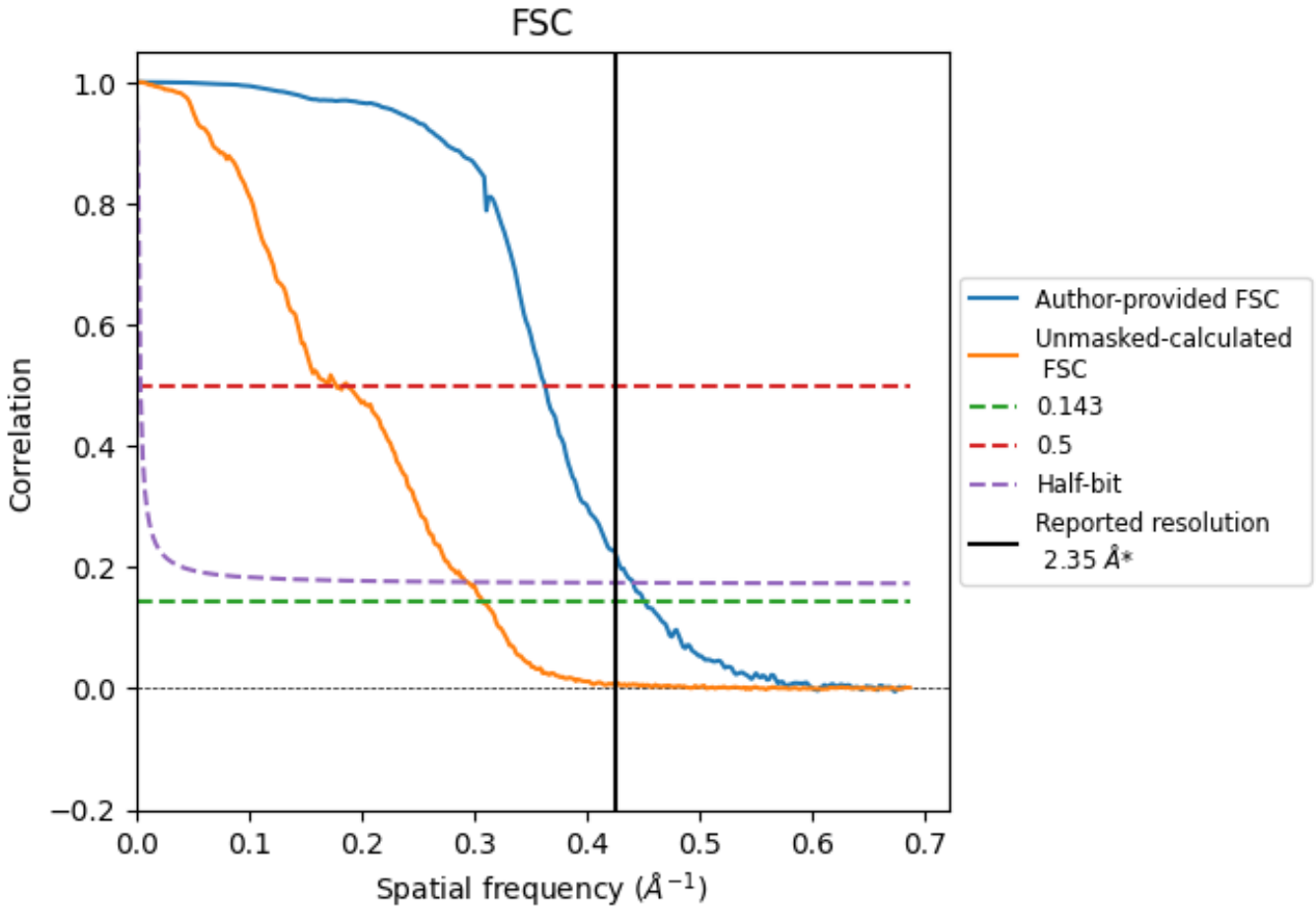


*Reported resolution corresponds to spatial frequency of 0.426 $Å^{-1}$

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.426 Å^{-1}

8.2 Resolution estimates (i)

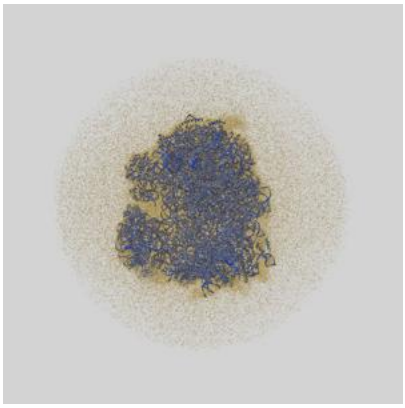
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.35	-	-
Author-provided FSC curve	2.22	2.76	2.27
Unmasked-calculated*	3.26	5.65	3.42

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.26 differs from the reported value 2.35 by more than 10 %

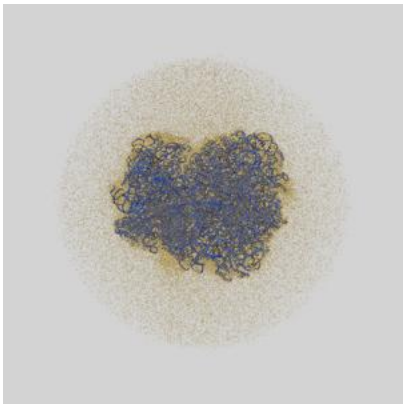
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-50990 and PDB model 9G30. Per-residue inclusion information can be found in section 3 on page 20.

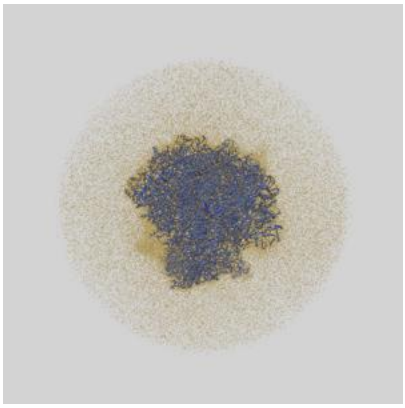
9.1 Map-model overlay



X



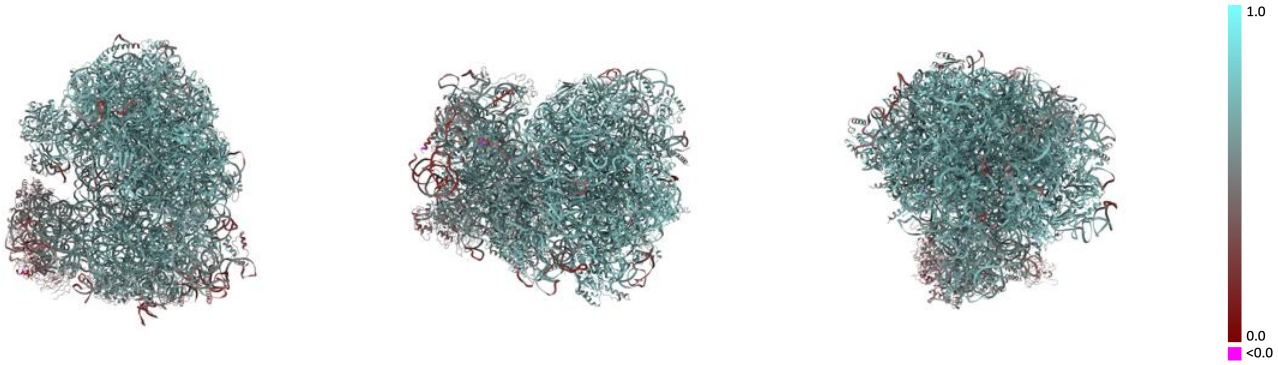
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.168 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.

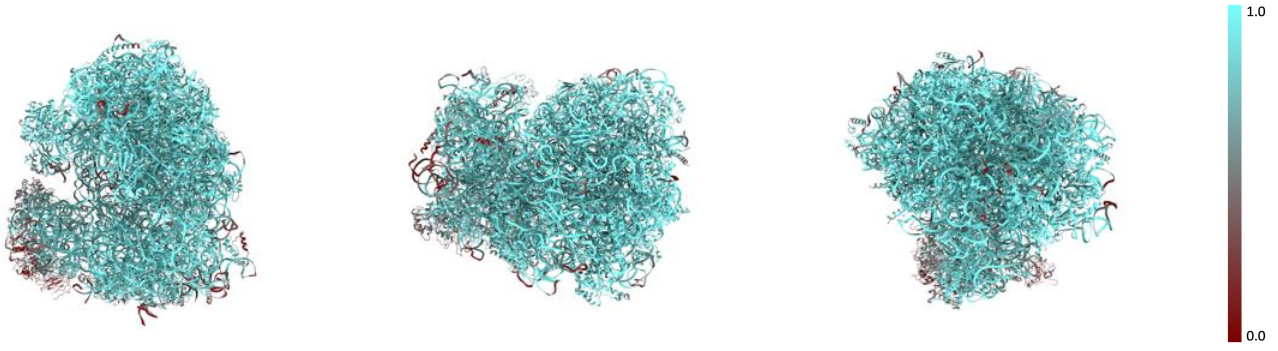
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

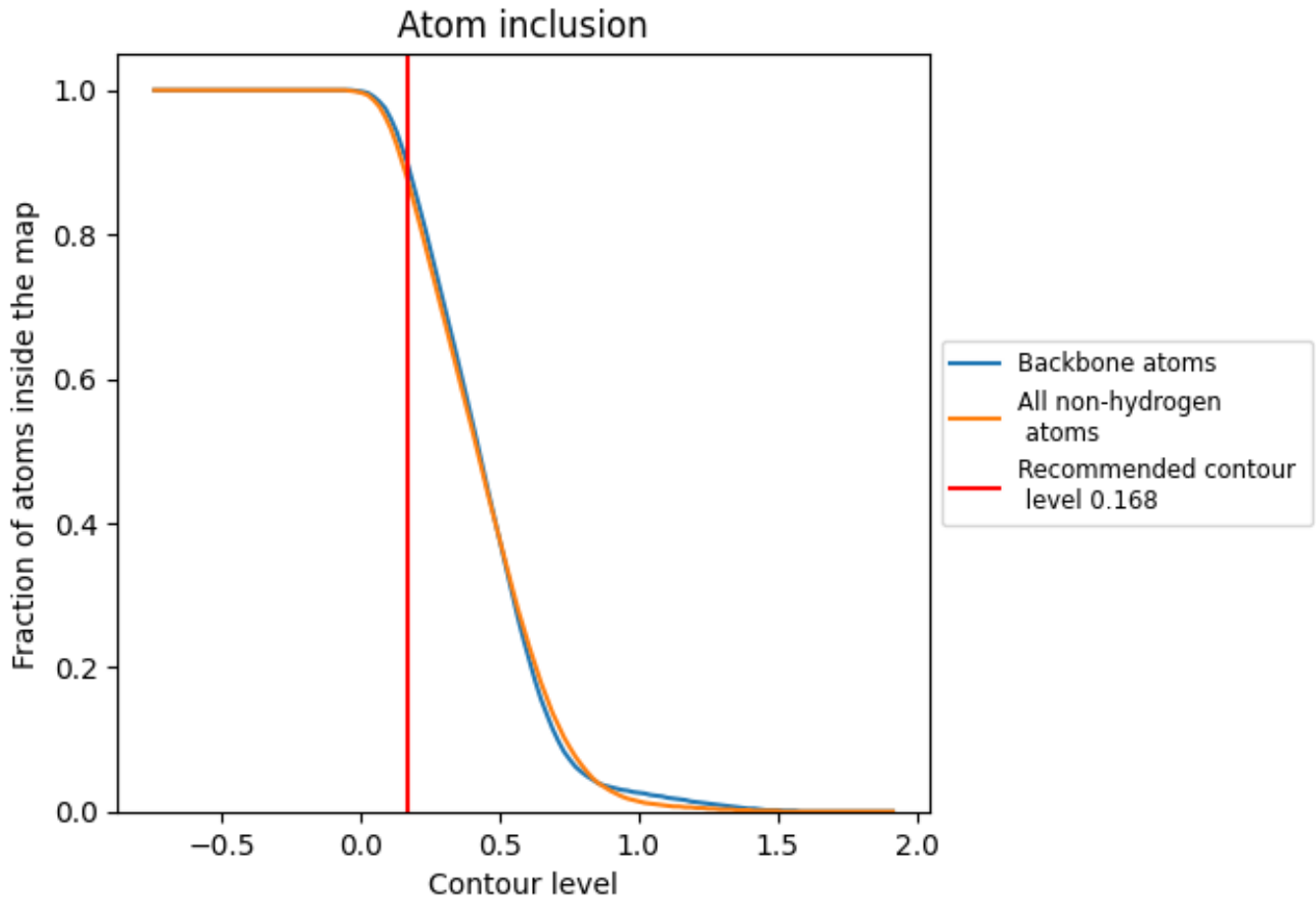
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.168).

9.4 Atom inclusion (i)



At the recommended contour level, 90% of all backbone atoms, 88% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.168) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8790	0.6160
0	0.9600	0.6850
1	0.9570	0.6650
2	0.9260	0.6640
3	0.9770	0.6540
4	0.9740	0.6740
6	0.9720	0.7010
7	0.9620	0.6850
8	0.9570	0.6810
9	0.9540	0.6790
A	0.8710	0.5700
AA	0.9130	0.6470
AB	0.9760	0.7070
AC	0.9290	0.6550
AD	0.9090	0.6490
AE	0.9140	0.6650
AF	0.9640	0.6940
AG	0.9730	0.7010
AH	0.9170	0.6570
AI	0.9330	0.6530
AJ	0.9050	0.6300
AK	0.9720	0.7060
AL	0.8080	0.5710
AM	0.9690	0.6850
AN	0.9210	0.6640
AO	0.7210	0.5730
AP	0.9030	0.6540
AQ	0.9200	0.6700
AT	0.6960	0.5050
B	0.7420	0.5250
C	0.6900	0.5010
D	0.9010	0.6200
E	0.7080	0.5160
F	0.8590	0.5750
G	0.4900	0.3920

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
H	0.7640	0.5380
I	0.6160	0.4840
J	0.8550	0.6120
K	0.8170	0.5610
L	0.5260	0.4090
M	0.9120	0.6440
MR	0.8010	0.5640
N	0.1660	0.3040
O	0.8790	0.6090
P	0.7570	0.5390
PT	0.5960	0.5180
Q	0.5650	0.4570
R	0.5670	0.4080
S	0.5630	0.4390
T	0.5750	0.4290
U	0.6230	0.4500
V	0.6050	0.4400
W	0.7960	0.5530
X	0.9310	0.6350
Y	0.9530	0.6720
Z	0.7830	0.5290
a	0.3350	0.3540
b	0.8330	0.5690
c	0.7430	0.5330
d	0.4480	0.3740
e	0.8970	0.6140
f	0.7230	0.5350
g	0.2610	0.3350
h	0.1540	0.3000
j	0.9720	0.7030
k	0.9590	0.6940
l	0.9400	0.6790
m	0.8780	0.6160
n	0.9090	0.6310
o	0.9410	0.6830
p	0.9130	0.6510
q	0.9210	0.6500
r	0.9210	0.6620
s	0.7320	0.5150
t	0.9280	0.6620
u	0.9410	0.6620
v	0.9900	0.7140

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
w	0.9550	0.6930
x	0.9490	0.6910
y	0.9700	0.6960
z	0.8940	0.6410