Full wwPDB EM Validation Report ⓘ

Mar 20, 2024 – 08:49 AM JST

PDB ID	:	6LQT
EMDB ID	:	EMD-0953
Title	:	Cryo-EM structure of 90S small subunit preribosomes in transition states (State E)
Authors	:	Du, Y.; Ye, K.
Deposited on	:	2020-01-14
Resolution	:	4.90 Å(reported)
Based on initial model	:	6LQS

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:

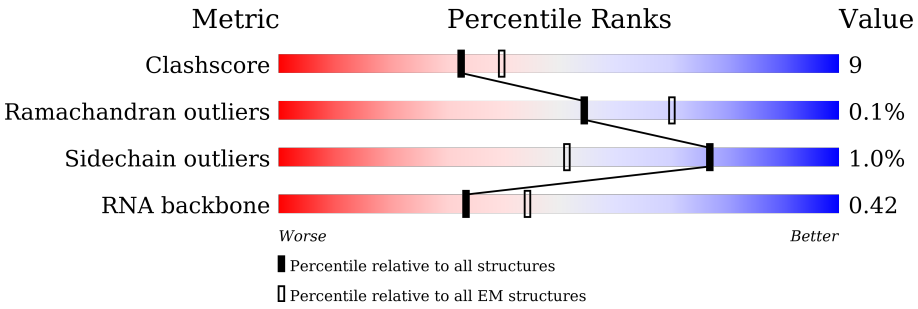
EMDB validation analysis	:	0.0.1.dev70
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance

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

The reported resolution of this entry is 4.90 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	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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	3A	333	10% 25% 25% 8% · 42%
2	5A	700	10% 8% 11% · 78%
3	SA	1809	8% 27% 27% 9% · 36%
4	SC	255	· 66% 24% · 9%
5	SF	261	28% 76% 20% ·
6	SG	225	· 82% 12% 5%
7	SH	236	44% 55% 22% 23%

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Mol	Chain	Length	Quality of chain
8	SI	190	5% 57% 27% 14%
9	SJ	200	38% 52% 18% 30%
10	SK	197	68% 19% 13%
11	SM	156	60% 61% 27% 12%
12	SO	151	68% 20% 11%
13	SP	137	6% 69% 18% 14%
14	SR	143	69% 17% 13%
15	SX	130	71% 27%
16	SY	145	28% 59% 13% 27%
17	SZ	135	7% 67% 21% 9%
18	Sc	82	90% 7%
19	Sd	67	91% 6%
20	3B	327	54% 20% 27%
20	3C	327	50% 48% 20% 31%
21	3D	504	7% 60% 14% 25%
22	3E	511	36% 66% 18% 15%
23	3F	572	7% 56% 20% 24%
24	3G	126	33% 74% 22%
24	3H	126	70% 26%
25	A4	776	83% 55% 31% 14%
26	A5	643	18% 43% 15% 42%
27	A9	575	6% 5% 94%
28	AE	1769	19% 6% 76%
29	AF	513	91% 66% 27% 7%
30	AG	896	80% 62% 29% 8%

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Mol	Chain	Length	Quality of chain
31	B1	923	67% 20% 13%
32	B2	943	62% 25% 13%
33	B3	817	65% 27% 7%
34	B8	594	16% 59% 21% 20%
35	BE	939	63% 24% 12%
36	B6	440	7% 71% 14% 15%
37	5C	554	67% 16% 17%
38	5D	250	13% 24% 72%
39	5E	593	24% 8% 67%
40	5F	183	75% 24%
41	5G	290	18% 57% 17% 26%
42	5H	610	11% 88%
43	5I	489	69% 25% 6%
44	5J	217	26% 50% 12% 38%
45	5K	189	71% 16% 12%
46	RD	1729	16% 16% 82%
47	RE	1237	7% 63% 25% 12%
48	RF	297	8% 59% 21% 19%
49	RH	252	83% 64% 23% 13%
50	RJ	1183	11% 46% 16% 38%
51	RK	367	14% 65% 32%
52	RN	810	6% 6% 93%
53	RP	2493	34% 81% 6% 13%
54	RQ	899	5% 22% 75%
55	RT	326	12% 40% 12% 48%

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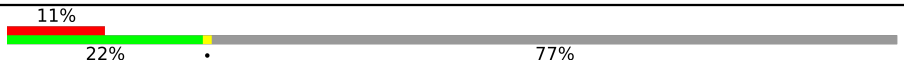
Mol	Chain	Length	Quality of chain
56	X1	347	

2 Entry composition

There are 59 unique types of molecules in this entry. The entry contains 175869 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called U3 snoRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	3A	194	4114	1841	716	1363	194	0	0

- Molecule 2 is a RNA chain called 5' ETS.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	5A	152	3260	1455	593	1060	152	0	0

- Molecule 3 is a RNA chain called 18S pre-rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	SA	1155	24609	11001	4356	8097	1155	0	0

- Molecule 4 is a protein called 40S ribosomal protein S1-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	SC	232	1848	1168	339	337	4	0	0

- Molecule 5 is a protein called 40S ribosomal protein S4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	SF	250	1930	1232	354	341	3	0	0

- Molecule 6 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	SG	213	1669	1045	307	314	3	0	0

- Molecule 7 is a protein called 40S ribosomal protein S6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	SH	182	Total	C	N	O	S	0	0
			1457	917	273	266	1		

- Molecule 8 is a protein called 40S ribosomal protein S7-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
8	SI	164	Total	C	N	O	0	0
			1310	847	222	241		

- Molecule 9 is a protein called 40S ribosomal protein S8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	SJ	140	Total	C	N	O	S	0	0
			1104	689	211	202	2		

- Molecule 10 is a protein called 40S ribosomal protein S9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	SK	171	Total	C	N	O	S	0	0
			1388	879	268	240	1		

- Molecule 11 is a protein called 40S ribosomal protein S11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	SM	137	Total	C	N	O	S	0	0
			1113	715	212	183	3		

- Molecule 12 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	SO	134	Total	C	N	O	S	0	0
			1087	698	202	186	1		

- Molecule 13 is a protein called 40S ribosomal protein S14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	SP	118	Total	C	N	O	S	0	0
			868	536	164	165	3		

- Molecule 14 is a protein called 40S ribosomal protein S16-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	SR	125	Total 973	C 625	N 174	O 174	0	0

- Molecule 15 is a protein called 40S ribosomal protein S22-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	SX	127	Total 1003	C 640	N 183	O 177	S 3	0	0

- Molecule 16 is a protein called 40S ribosomal protein S23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	SY	106	Total 807	C 515	N 148	O 142	S 2	0	0

- Molecule 17 is a protein called 40S ribosomal protein S24-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	SZ	123	Total 986	C 626	N 188	O 172	0	0

- Molecule 18 is a protein called 40S ribosomal protein S27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	Sc	80	Total 603	C 377	N 109	O 112	S 5	0	0

- Molecule 19 is a protein called 40S ribosomal protein S28-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	Sd	63	Total 497	C 306	N 99	O 91	S 1	0	0

- Molecule 20 is a protein called rRNA 2'-O-methyltransferase fibrillarin.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	3B	240	Total 1865	C 1184	N 333	O 338	S 10	0	0
20	3C	225	Total 1763	C 1120	N 316	O 317	S 10	0	0

- Molecule 21 is a protein called Nucleolar protein 56.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	3D	378	Total	C	N	O	S	0	0
			2974	1886	511	568	9		

- Molecule 22 is a protein called Nucleolar protein 58.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	3E	432	Total	C	N	O	S	0	0
			3041	1895	545	592	9		

- Molecule 23 is a protein called Ribosomal RNA-processing protein 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	3F	437	Total	C	N	O	S	0	0
			3498	2227	609	652	10		

- Molecule 24 is a protein called 13 kDa ribonucleoprotein-associated protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	3G	121	Total	C	N	O	S	0	0
			916	583	158	171	4		
24	3H	121	Total	C	N	O	S	0	0
			916	583	158	171	4		

- Molecule 25 is a protein called U3 small nucleolar RNA-associated protein 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	A4	664	Total	C	N	O	S	0	0
			5243	3320	912	990	21		

- Molecule 26 is a protein called U3 small nucleolar RNA-associated protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	A5	372	Total	C	N	O	S	0	0
			2943	1869	494	569	11		

- Molecule 27 is a protein called U3 small nucleolar RNA-associated protein 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	A9	37	Total	C	N	O	S	0	0
			299	186	60	51	2		

- Molecule 28 is a protein called U3 small nucleolar RNA-associated protein 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	AE	431	Total	C	N	O	S	0	0
			3443	2224	566	641	12		

- Molecule 29 is a protein called U3 small nucleolar RNA-associated protein 15.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	AF	479	Total	C	N	O	S	0	0
			3807	2395	685	715	12		

- Molecule 30 is a protein called NET1-associated nuclear protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	AG	826	Total	C	N	O	S	0	0
			6570	4181	1111	1259	19		

- Molecule 31 is a protein called Periodic tryptophan protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	B1	806	Total	C	N	O	S	0	0
			6427	4104	1099	1205	19		

- Molecule 32 is a protein called U3 small nucleolar RNA-associated protein 12.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	B2	825	Total	C	N	O	S	0	0
			6502	4156	1096	1223	27		

- Molecule 33 is a protein called U3 small nucleolar RNA-associated protein 13.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	B3	757	Total	C	N	O	S	0	0
			5919	3769	993	1130	27		

- Molecule 34 is a protein called U3 small nucleolar RNA-associated protein 18.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	B8	477	Total	C	N	O	S	0	0
			3764	2387	662	705	10		

- Molecule 35 is a protein called U3 small nucleolar RNA-associated protein 21.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	BE	823	Total	C	N	O	S	0	0
			6475	4107	1119	1228	21		

- Molecule 36 is a protein called U3 small nucleolar RNA-associated protein 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	B6	374	Total	C	N	O	S	0	0
			2800	1782	501	505	12		

- Molecule 37 is a protein called U3 small nucleolar RNA-associated protein 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	5C	458	Total	C	N	O	S	0	0
			3612	2276	636	689	11		

- Molecule 38 is a protein called U3 small nucleolar RNA-associated protein 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	5D	70	Total	C	N	O	S	0	0
			609	377	126	105	1		

- Molecule 39 is a protein called U3 small nucleolar RNA-associated protein MPP10.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	5E	193	Total	C	N	O	S	0	0
			1564	970	280	310	4		

- Molecule 40 is a protein called U3 small nucleolar ribonucleoprotein protein IMP3.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	5F	182	Total	C	N	O	S	0	0
			1530	967	287	269	7		

- Molecule 41 is a protein called U3 small nucleolar ribonucleoprotein protein IMP4.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	5G	216	Total	C	N	O	S	0	0
			1732	1093	321	312	6		

- Molecule 42 is a protein called Something about silencing protein 10.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	5H	74	Total	C	N	O	0	0
			596	373	122	101		

- Molecule 43 is a protein called Protein SOF1.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	5I	460	Total	C	N	O	S	0	0
			3756	2349	685	706	16		

- Molecule 44 is a protein called rRNA-processing protein FCF2.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	5J	134	Total	C	N	O	S	0	0
			1127	712	205	207	3		

- Molecule 45 is a protein called rRNA-processing protein FCF1.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	5K	166	Total	C	N	O	S	0	0
			1323	849	238	226	10		

- Molecule 46 is a protein called rRNA biogenesis protein RRP5.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	RD	316	Total	C	N	O	S	0	0
			2413	1541	415	452	5		

- Molecule 47 is a protein called U3 small nucleolar RNA-associated protein 22.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	RE	1090	Total	C	N	O	S	0	0
			8805	5720	1452	1609	24		

- Molecule 48 is a protein called Ribosomal RNA-processing protein 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	RF	241	Total	C	N	O	S	0	0
			1963	1253	335	367	8		

- Molecule 49 is a protein called Ribosomal RNA small subunit methyltransferase NEP1.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	RH	219	Total	C	N	O	S	0	0
			1719	1090	299	319	11		

- Molecule 50 is a protein called Ribosome biogenesis protein BMS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	RJ	731	Total	C	N	O	S	0	0
			5935	3812	1051	1046	26		

- Molecule 51 is a protein called RNA 3'-terminal phosphate cyclase-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	RK	360	Total	C	N	O	S	0	0
			2781	1781	473	516	11		

- Molecule 52 is a protein called Nucleolar complex protein 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	RN	53	Total	C	N	O	S	0	0
			450	273	88	88	1		

- Molecule 53 is a protein called U3 small nucleolar RNA-associated protein 20.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	RP	2180	Total	C	N	O	S	0	0
			12716	7827	2389	2484	16		

- Molecule 54 is a protein called U3 small nucleolar RNA-associated protein 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	RQ	226	Total	C	N	O	S	0	0
			1655	1026	314	313	2		

- Molecule 55 is a protein called Pno1.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	RT	171	Total	C	N	O	S	0	0
			1357	864	249	240	4		

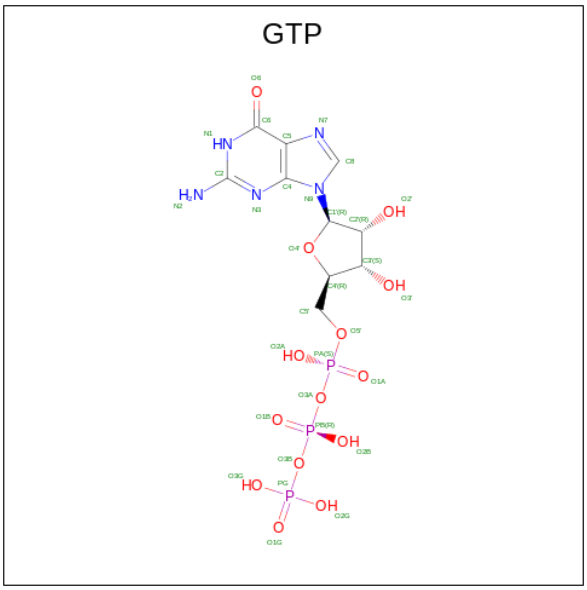
- Molecule 56 is a protein called Unassigned helices.

Mol	Chain	Residues	Atoms				AltConf	Trace
56	X1	80	Total	C	N	O	0	0
			400	240	80	80		

- Molecule 57 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
57	Sc	1	Total	Zn	0
			1	1	
57	5K	1	Total	Zn	0
			1	1	

- Molecule 58 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).



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

- Molecule 59 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

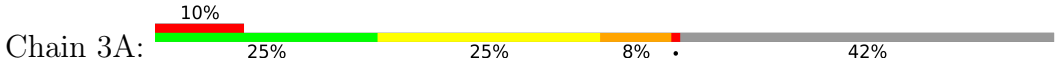
Mol	Chain	Residues	Atoms		AltConf
59	RJ	1	Total	Mg	0
			1	1	

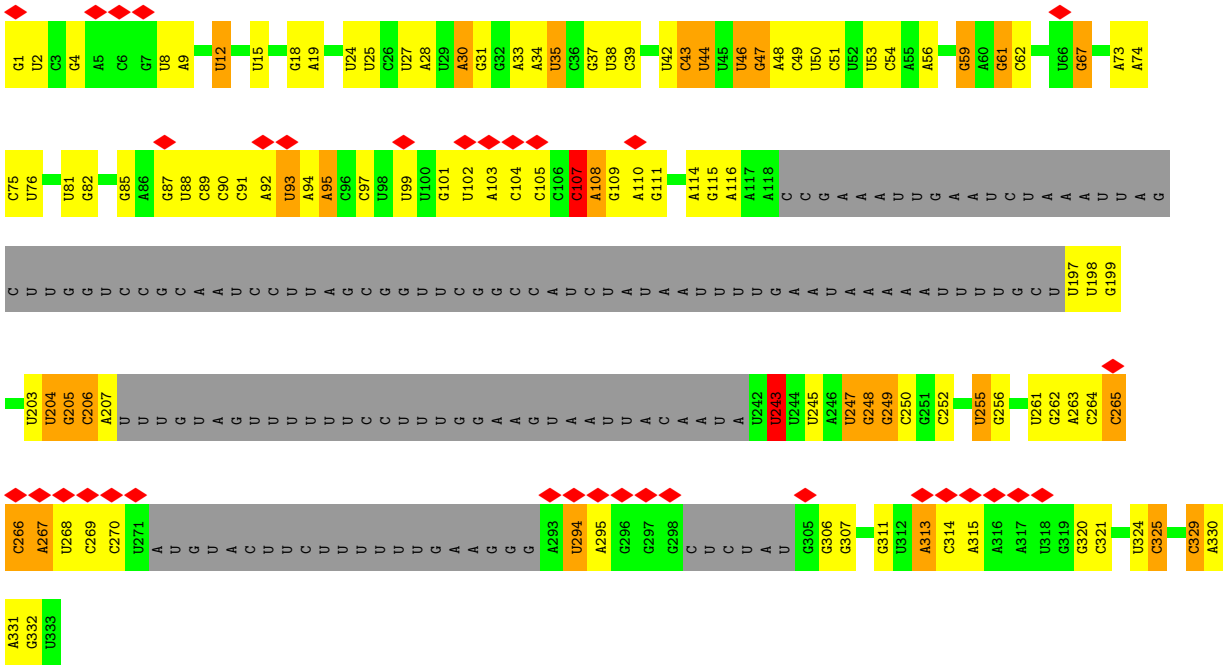
3 Residue-property plots (i)

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: U3 snoRNA

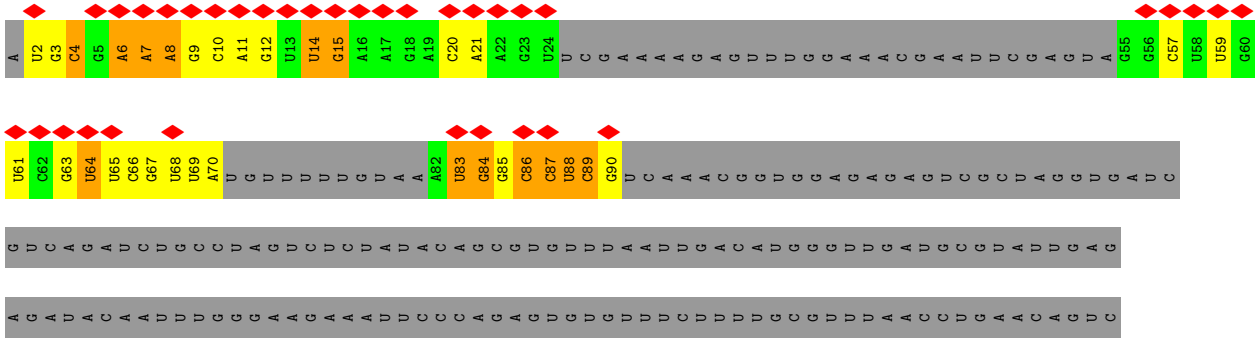
Chain 3A:

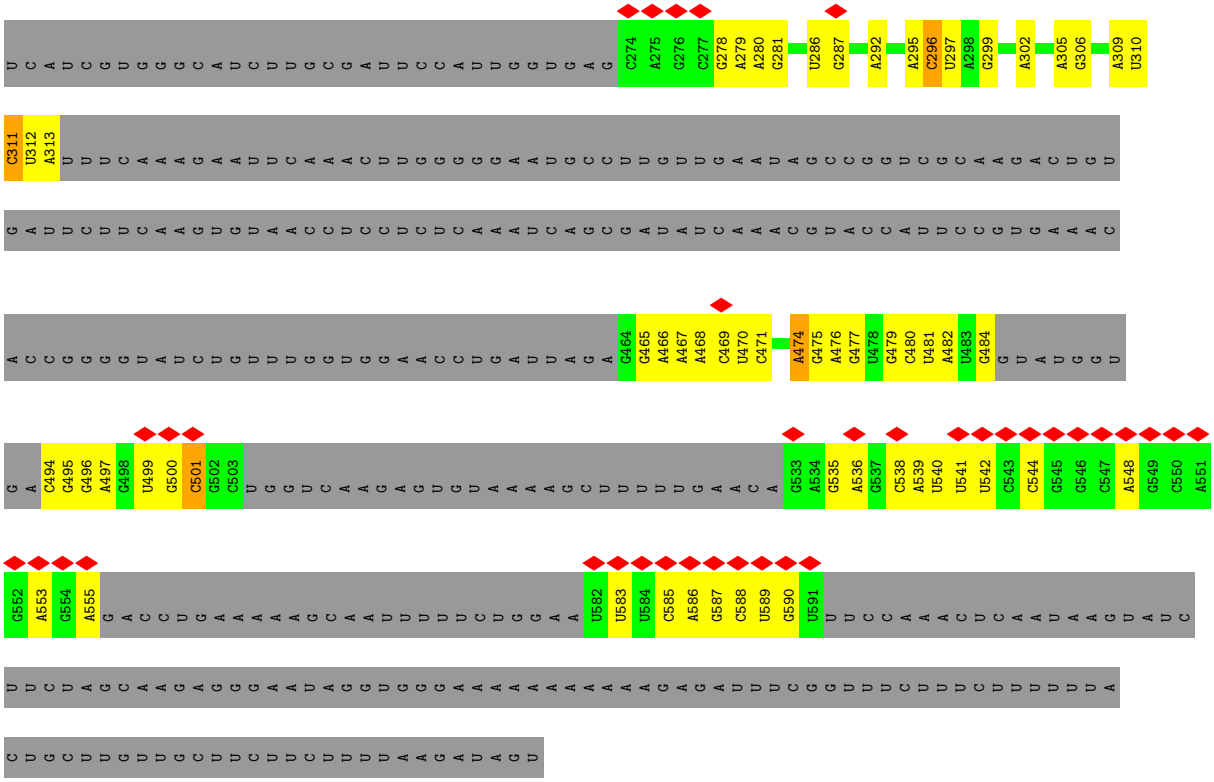




• Molecule 2: 5' ETS

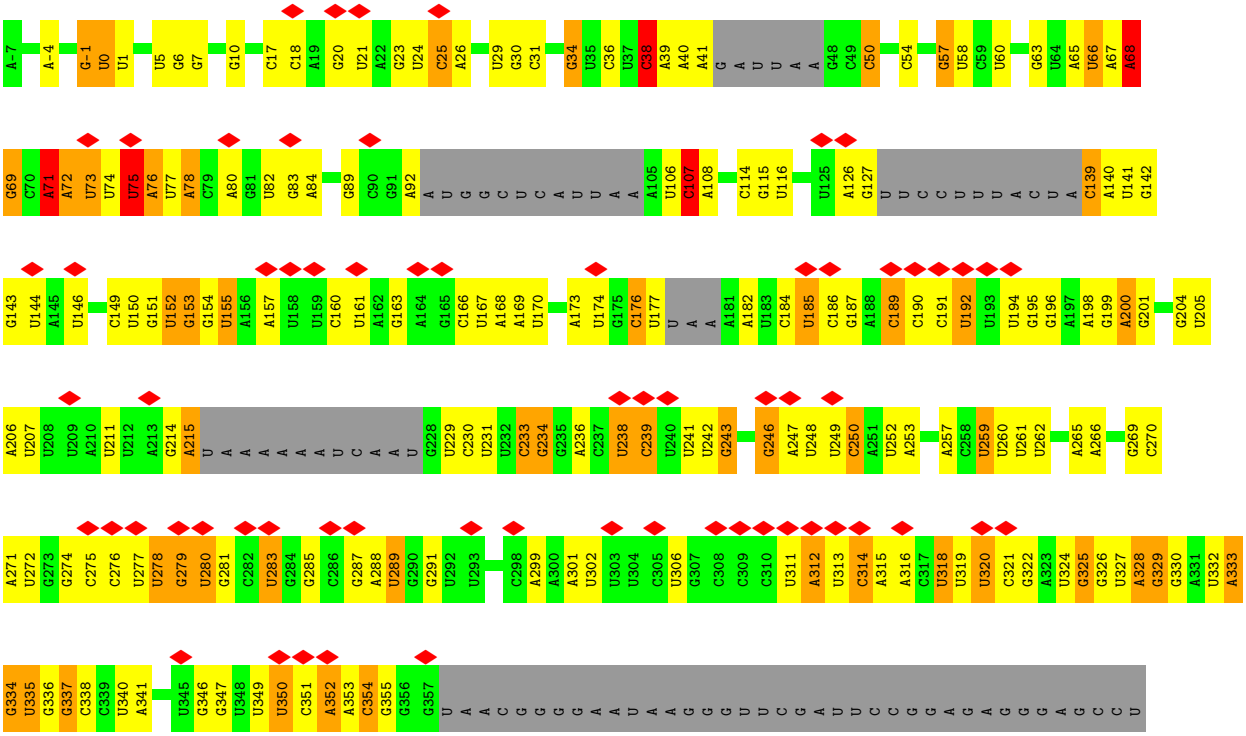
Chain 5A:

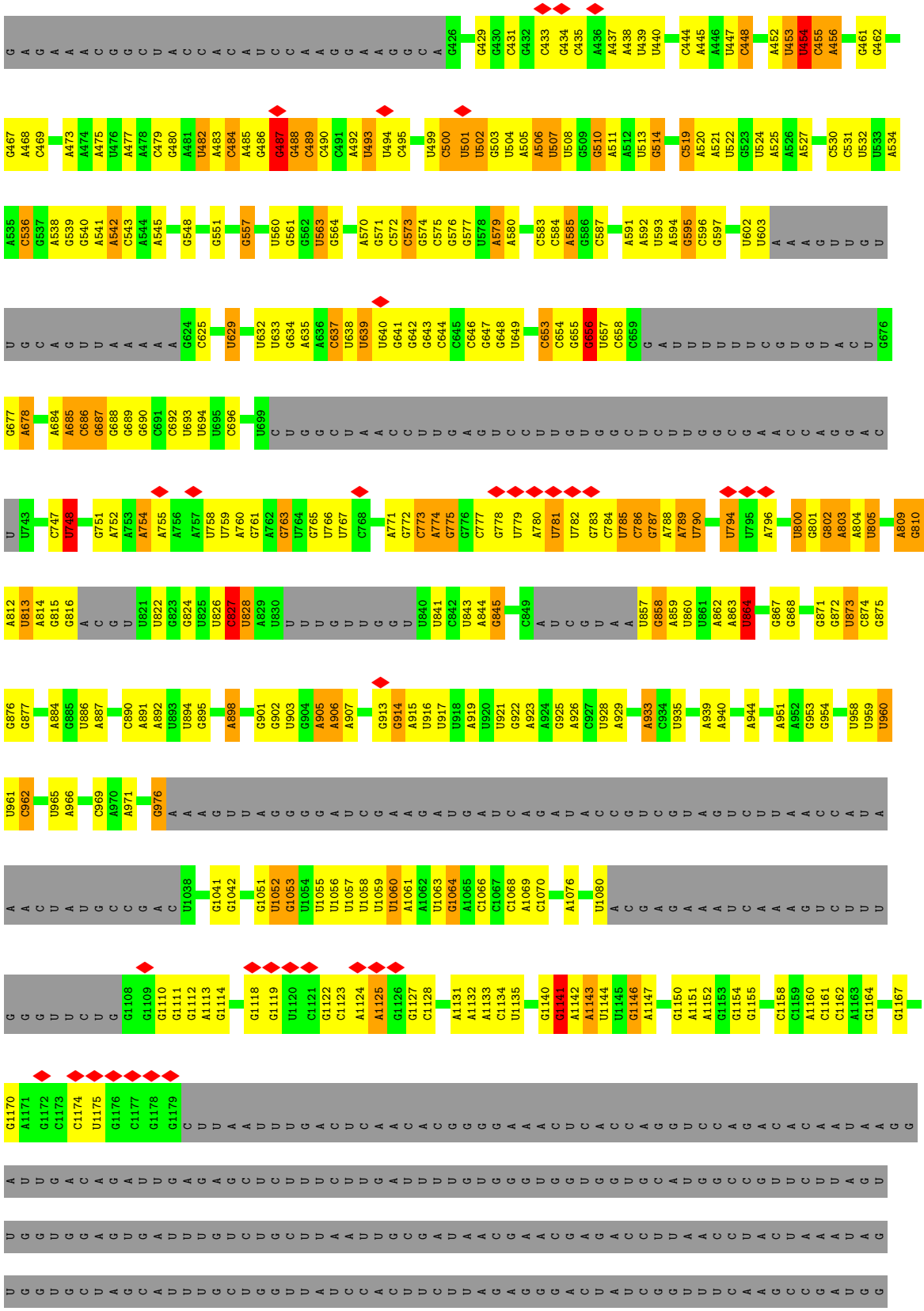


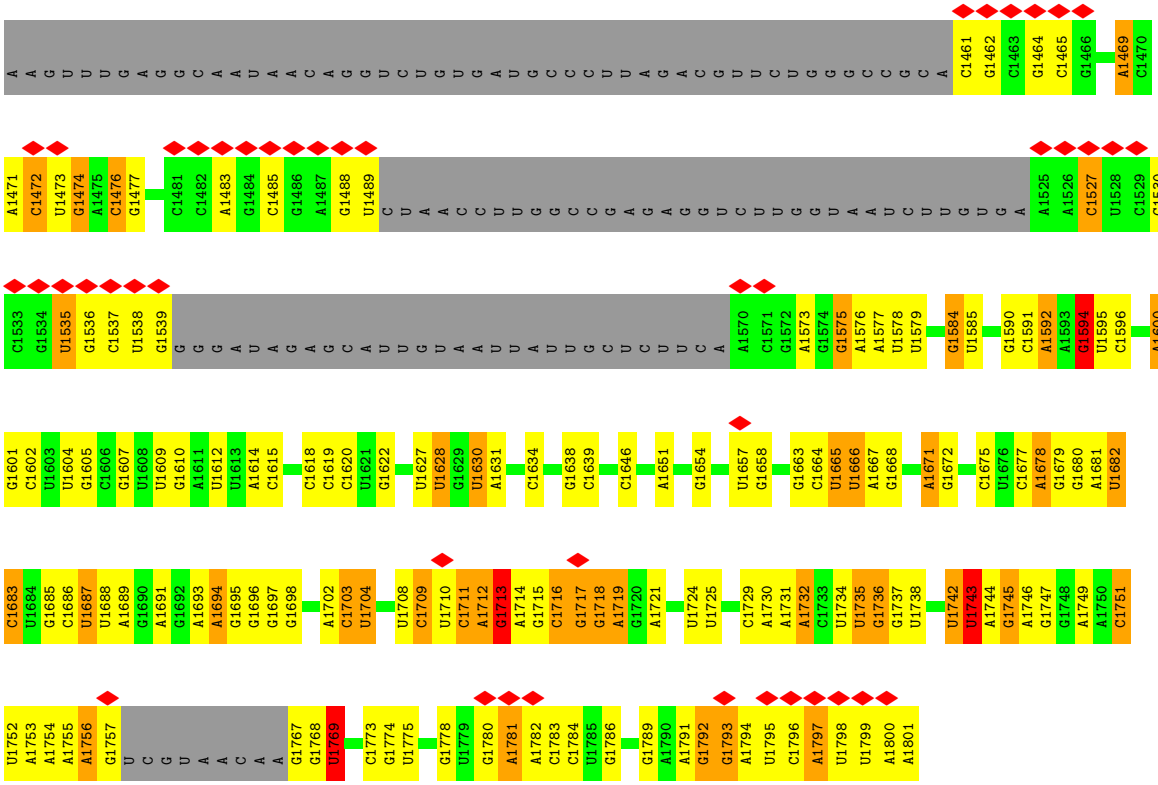


• Molecule 3: 18S pre-rRNA

Chain SA:

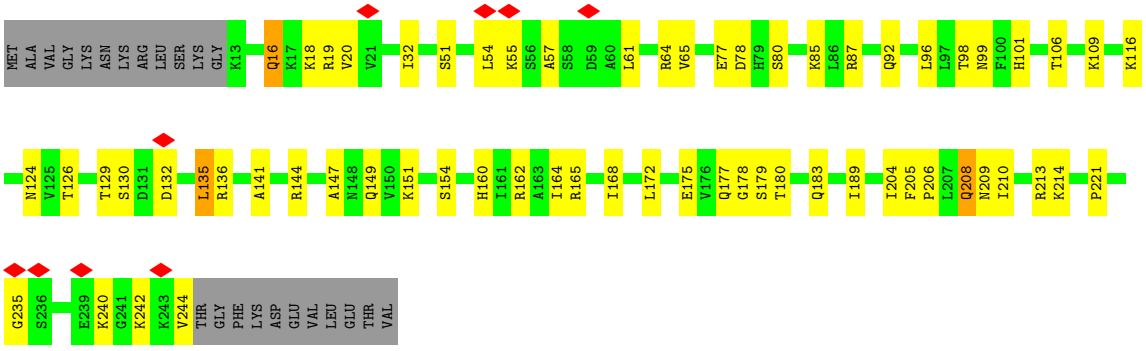






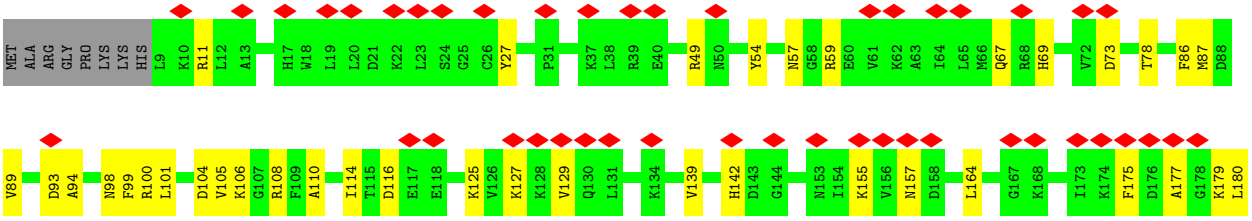
• Molecule 4: 40S ribosomal protein S1-A

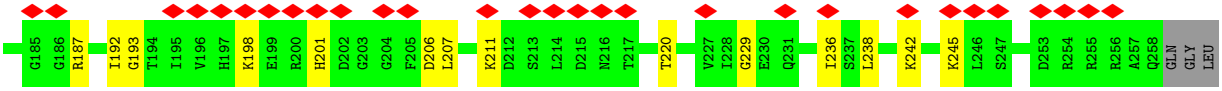
Chain SC:



• Molecule 5: 40S ribosomal protein S4-A

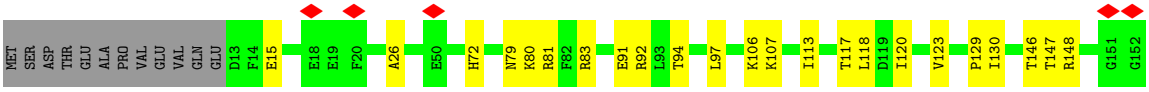
Chain SF:





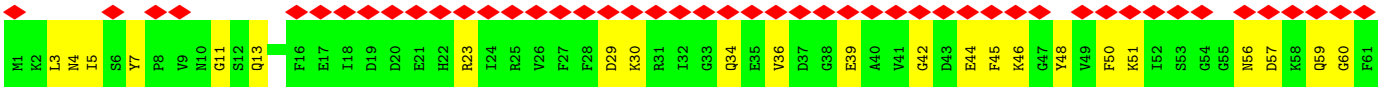
• Molecule 6: 40S ribosomal protein S5

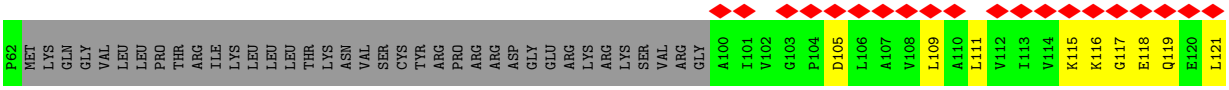
Chain SG:

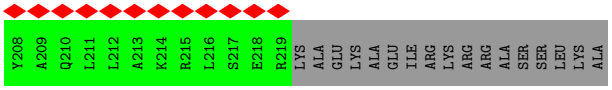


• Molecule 7: 40S ribosomal protein S6-A

Chain SH:

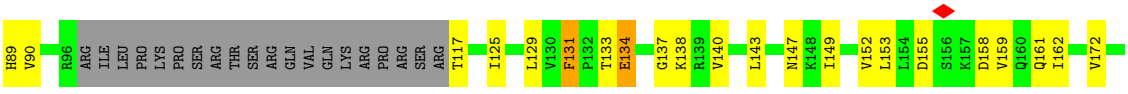






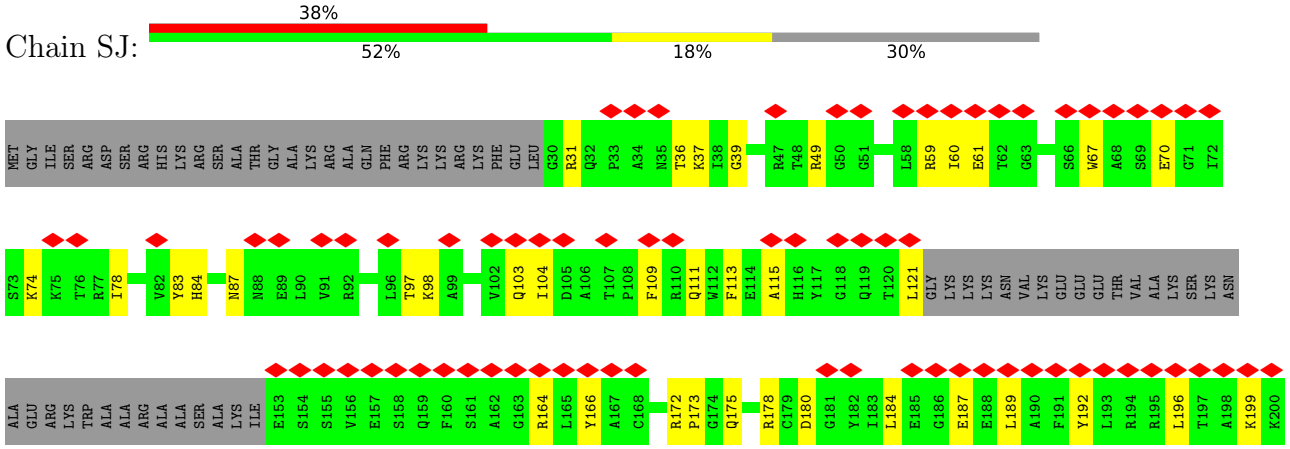
• Molecule 8: 40S ribosomal protein S7-A

Chain SI:



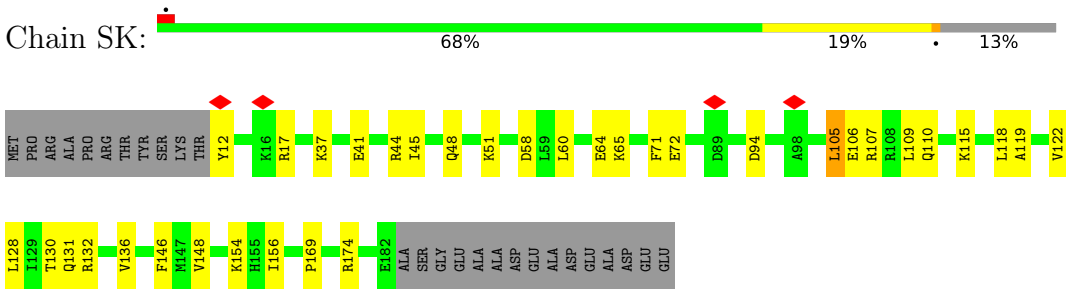
• Molecule 9: 40S ribosomal protein S8-A

Chain SJ:



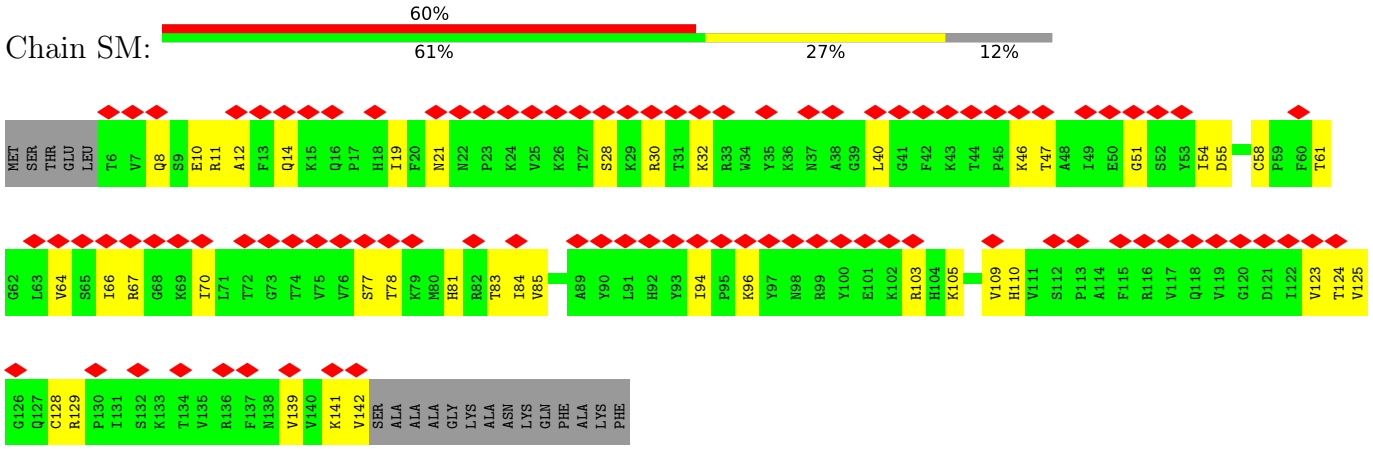
• Molecule 10: 40S ribosomal protein S9-A

Chain SK:



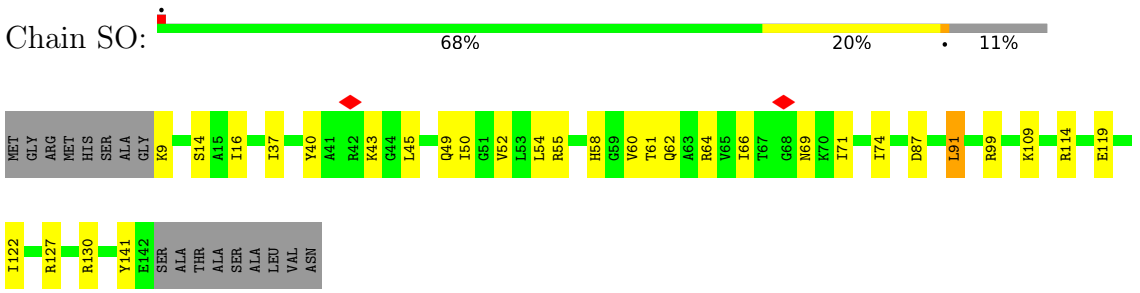
• Molecule 11: 40S ribosomal protein S11-A

Chain SM:



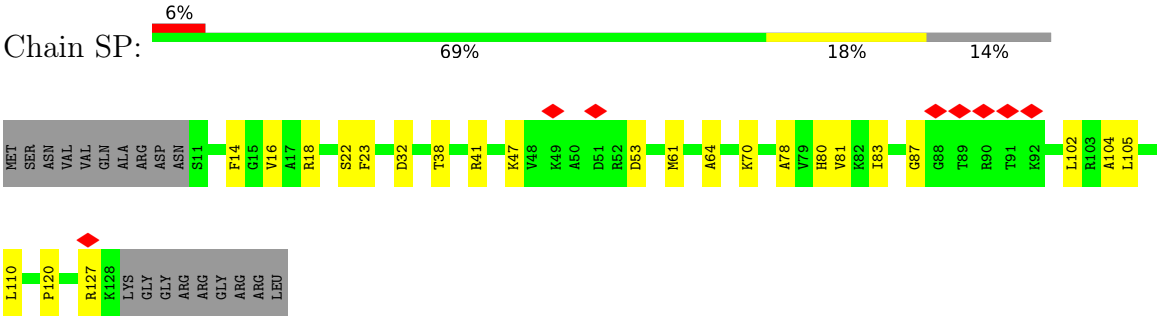
• Molecule 12: 40S ribosomal protein S13

Chain SO:



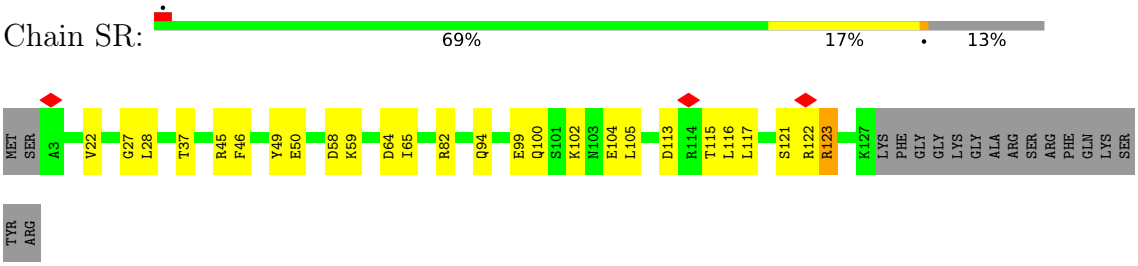
• Molecule 13: 40S ribosomal protein S14-A

Chain SP:



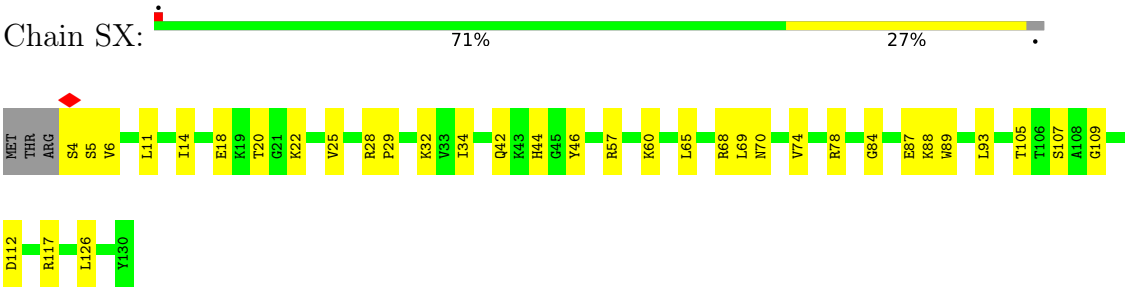
• Molecule 14: 40S ribosomal protein S16-A

Chain SR:



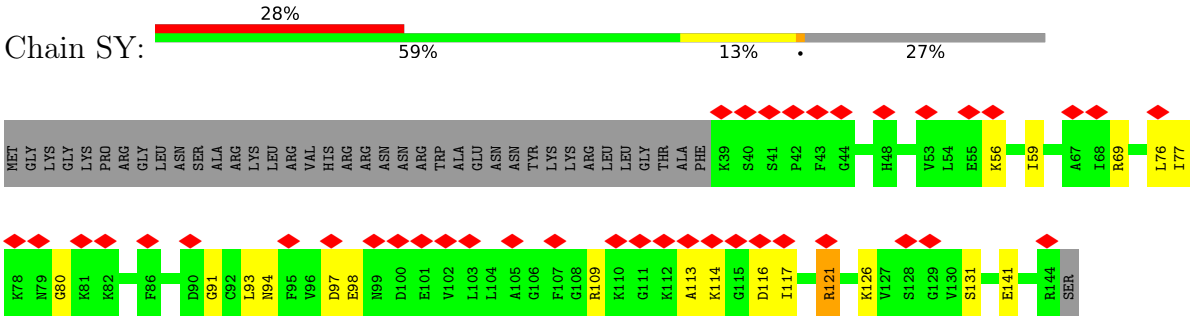
• Molecule 15: 40S ribosomal protein S22-B

Chain SX:



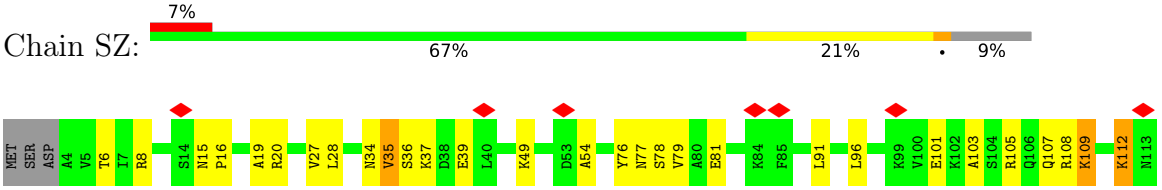
• Molecule 16: 40S ribosomal protein S23-A

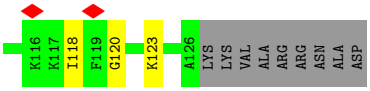
Chain SY:



• Molecule 17: 40S ribosomal protein S24-A

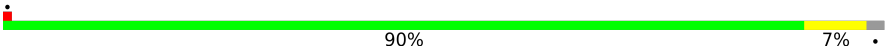
Chain SZ:

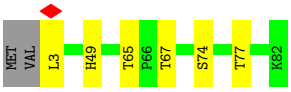




• Molecule 18: 40S ribosomal protein S27-A

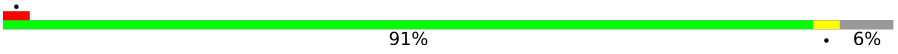
Chain Sc:

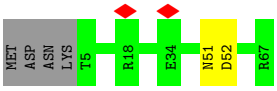




• Molecule 19: 40S ribosomal protein S28-A

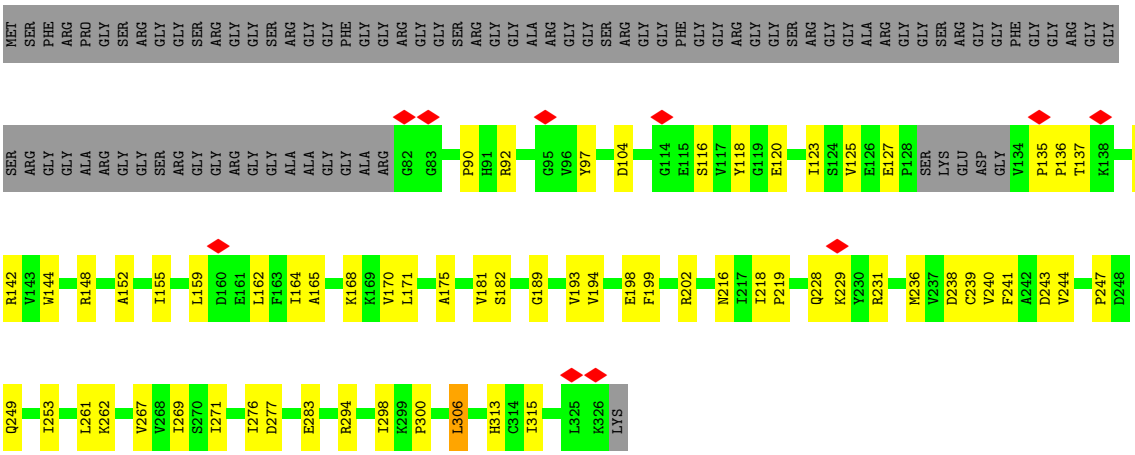
Chain Sd:





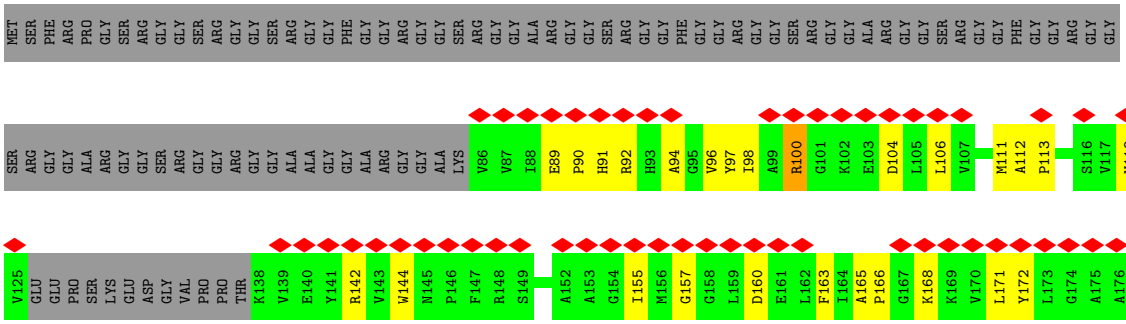
• Molecule 20: rRNA 2'-O-methyltransferase fibrillarin

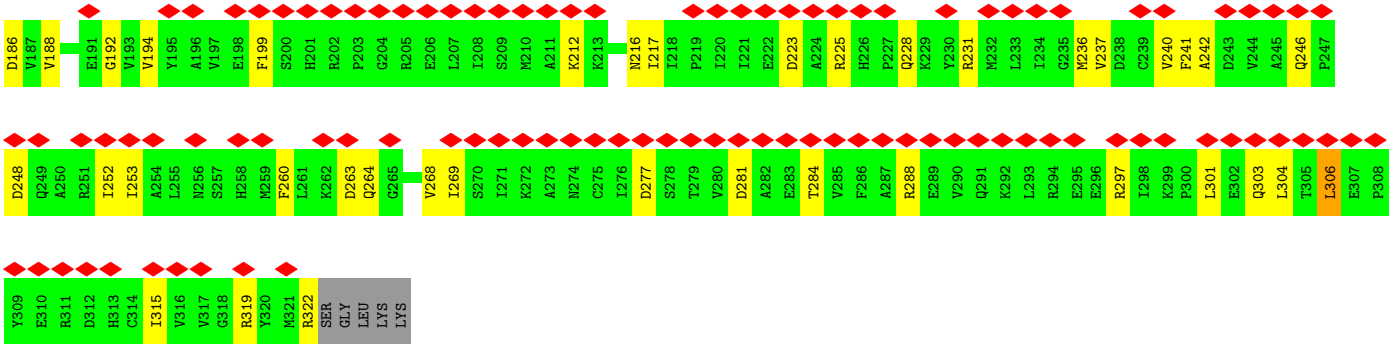
Chain 3B:



• Molecule 20: rRNA 2'-O-methyltransferase fibrillarin

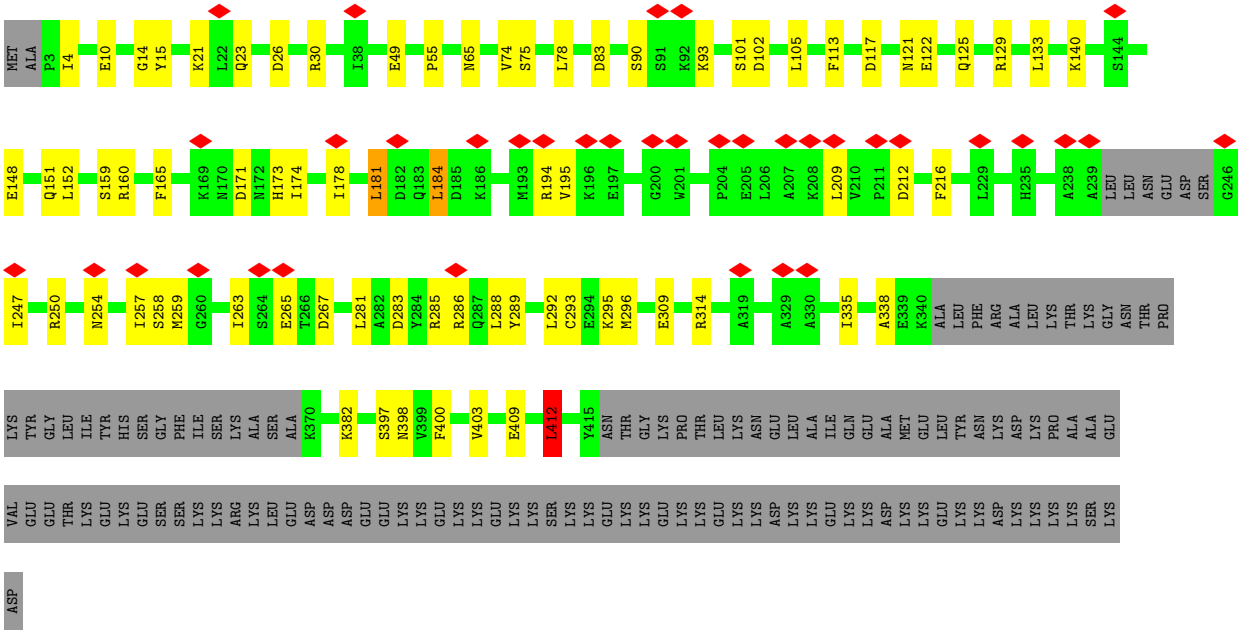
Chain 3C:





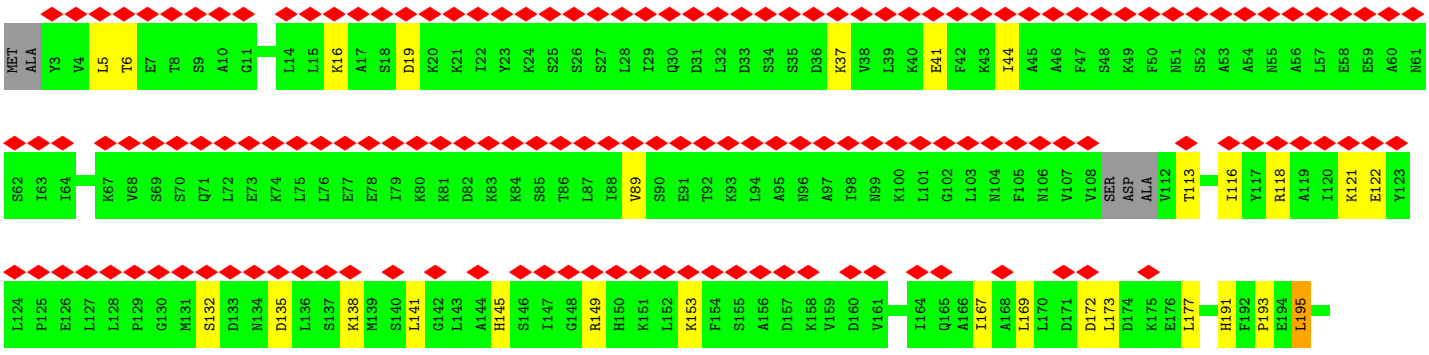
• Molecule 21: Nucleolar protein 56

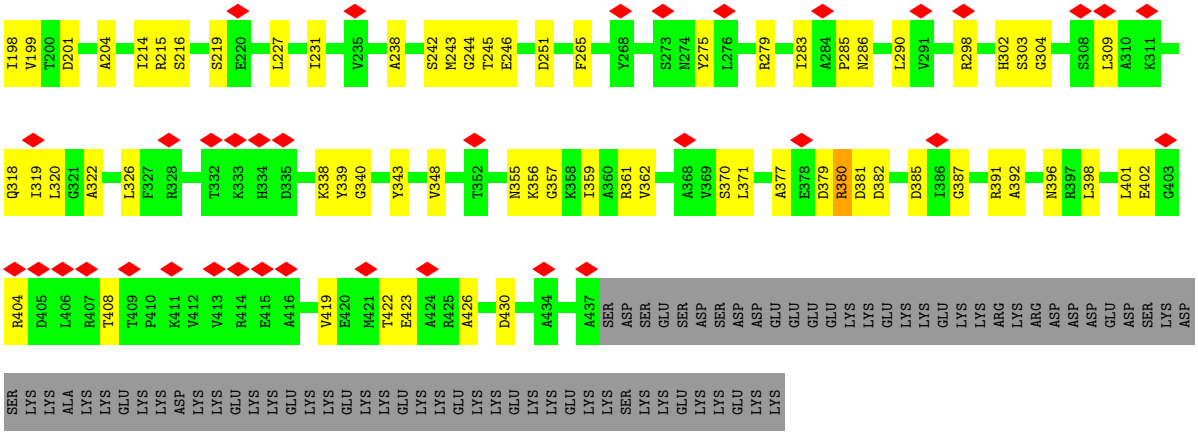
Chain 3D:



• Molecule 22: Nucleolar protein 58

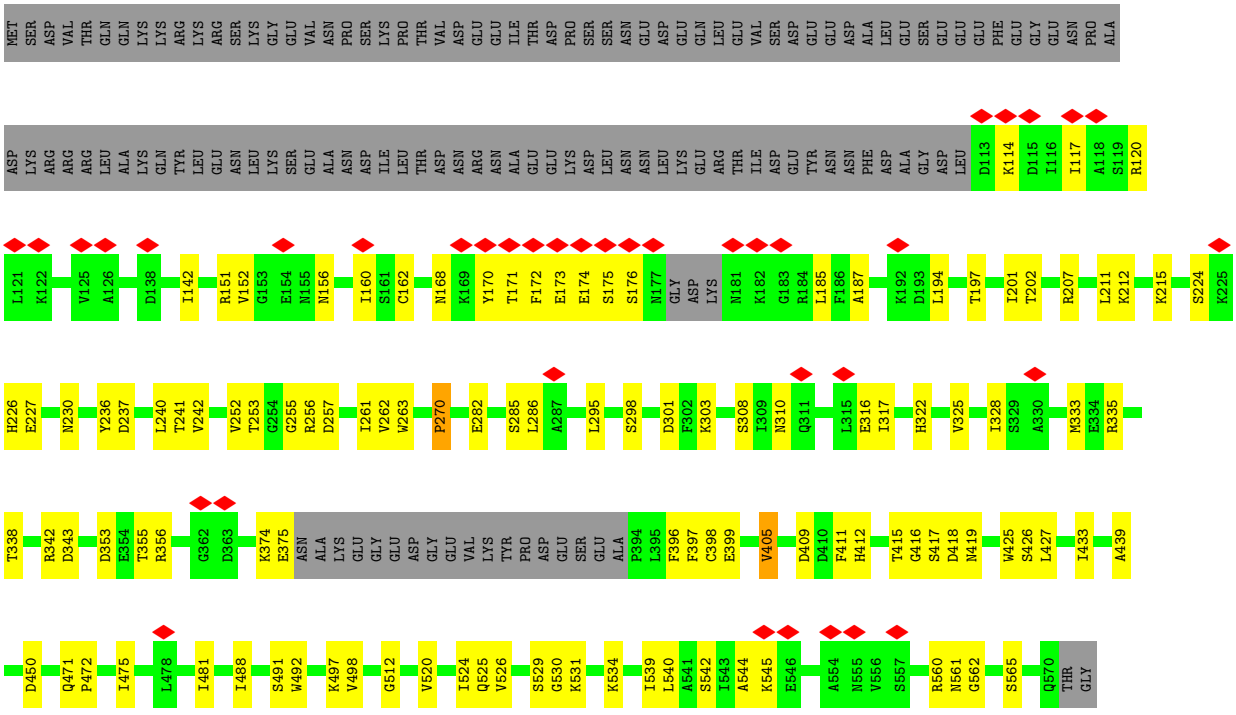
Chain 3E:





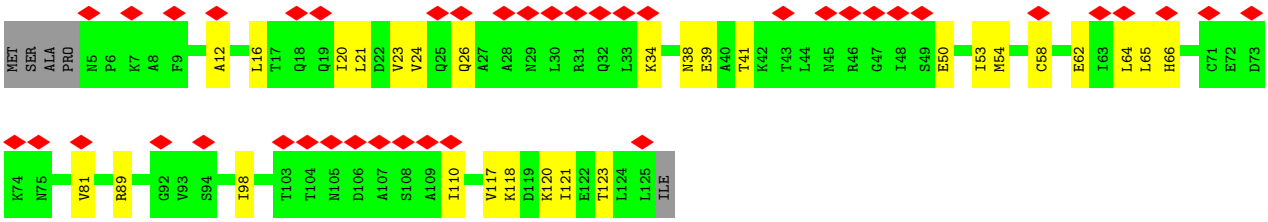
• Molecule 23: Ribosomal RNA-processing protein 9

Chain 3F:



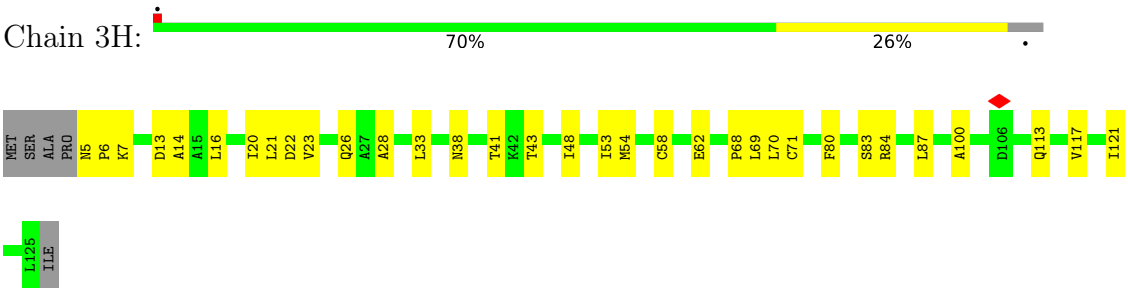
• Molecule 24: 13 kDa ribonucleoprotein-associated protein

Chain 3G:



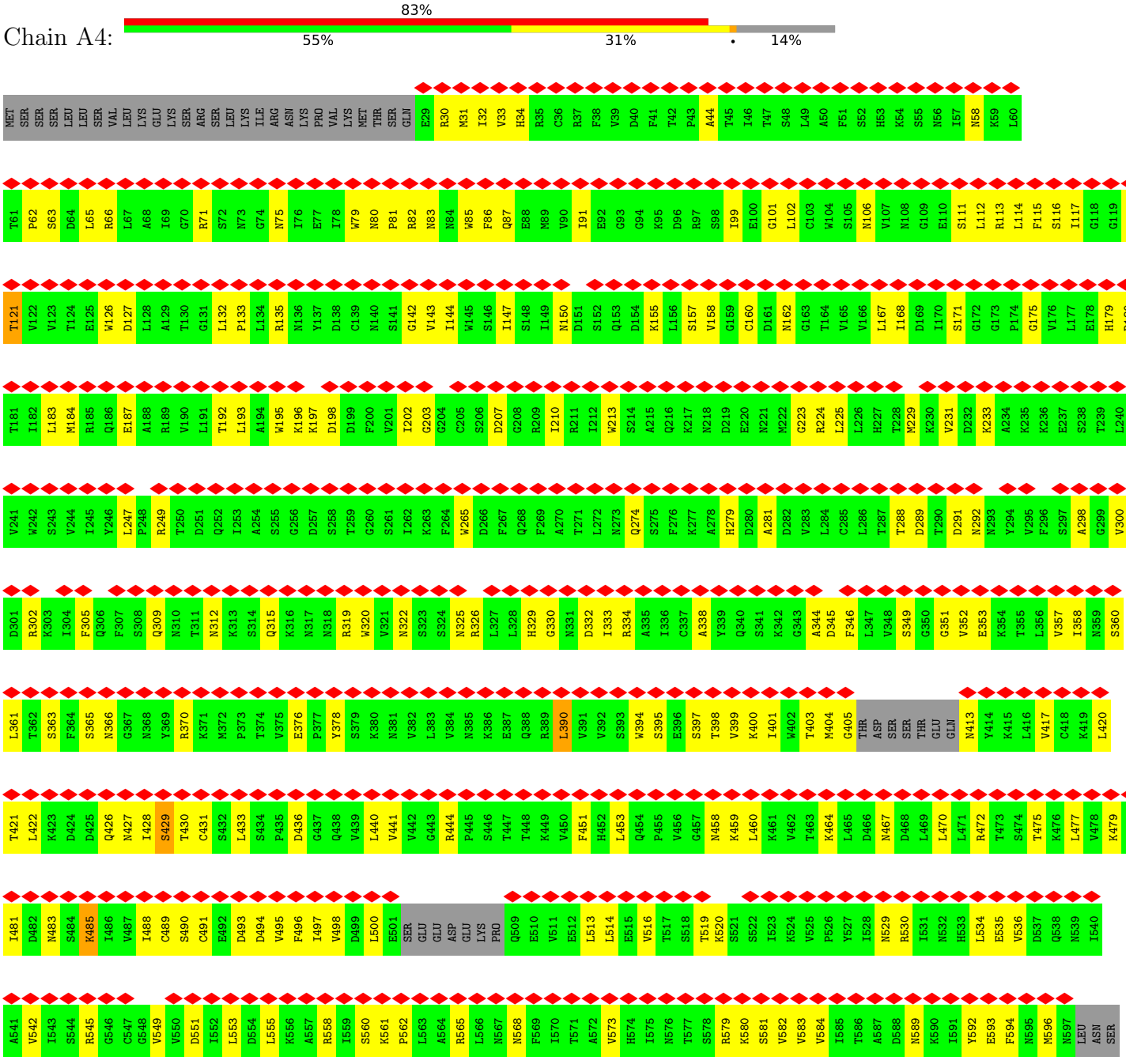
• Molecule 24: 13 kDa ribonucleoprotein-associated protein

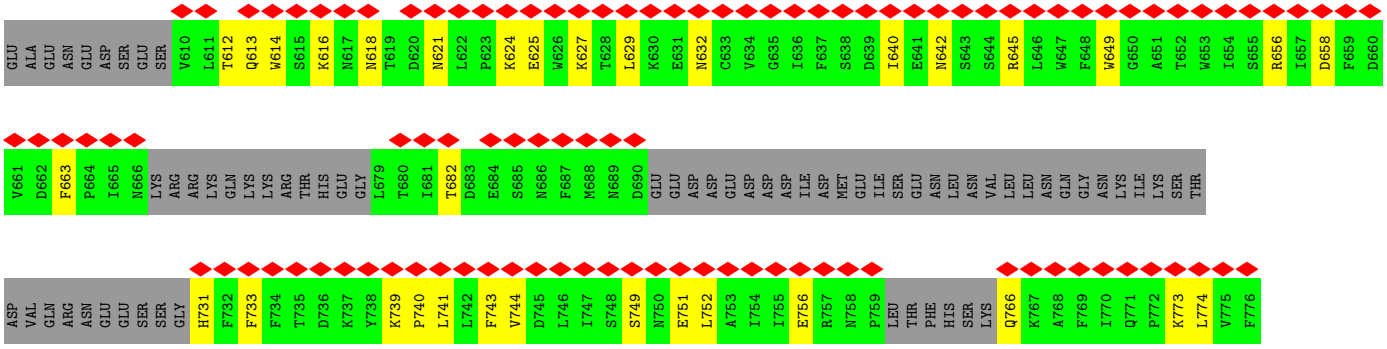
Chain 3H:



• Molecule 25: U3 small nucleolar RNA-associated protein 4

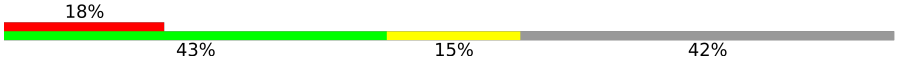
Chain A4:

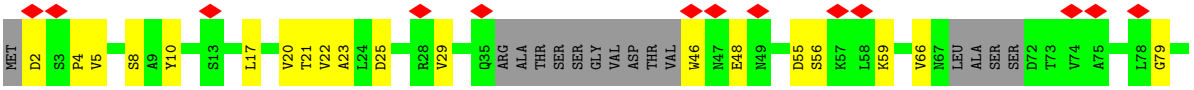


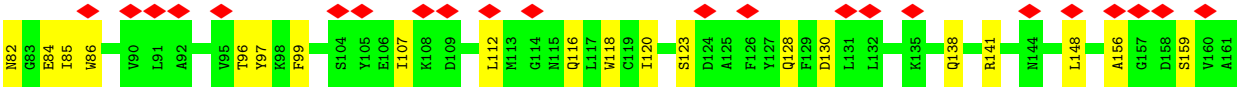


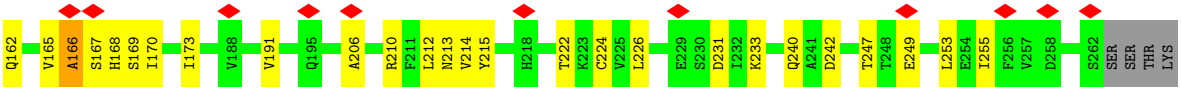
• Molecule 26: U3 small nucleolar RNA-associated protein 5

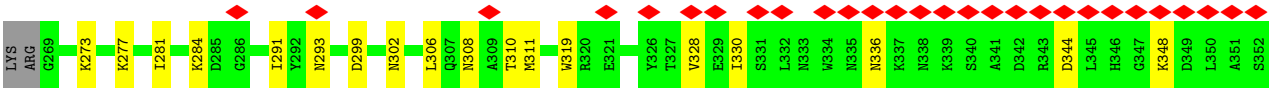
Chain A5:

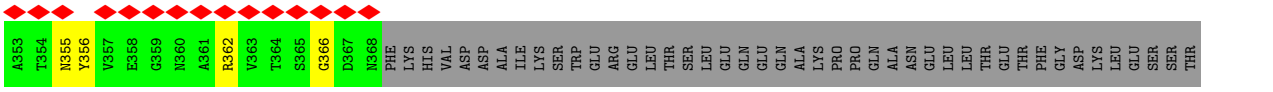


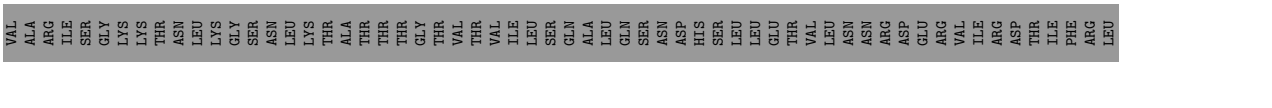


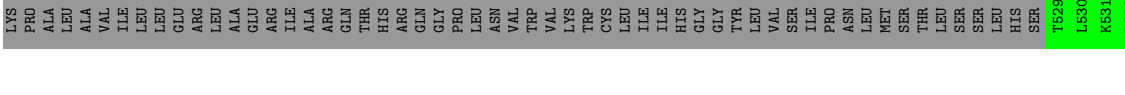


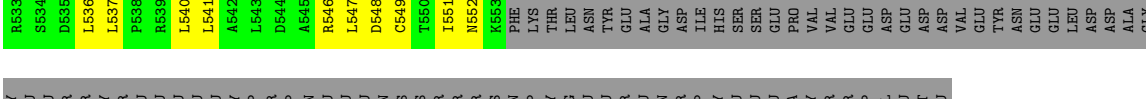






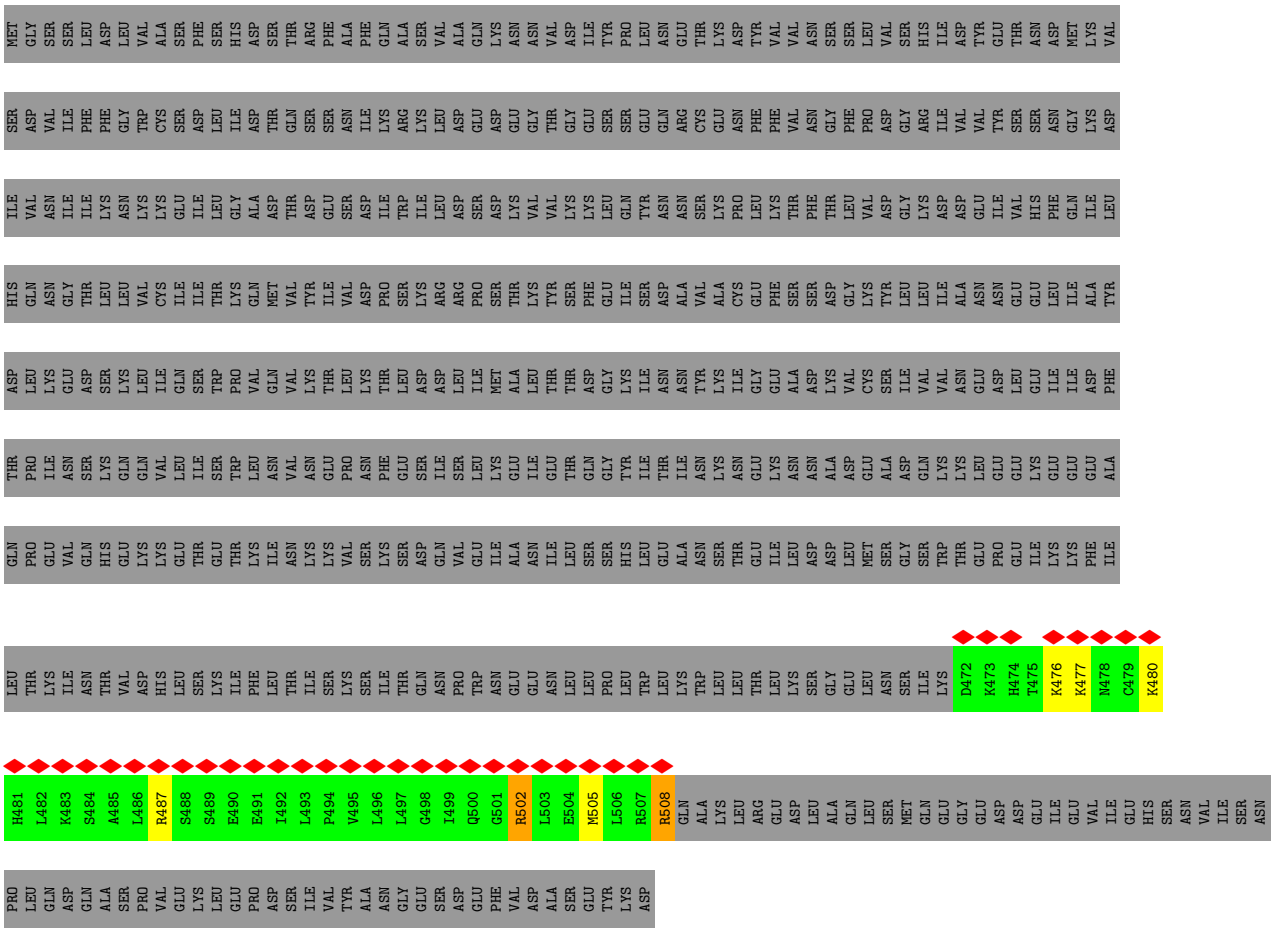






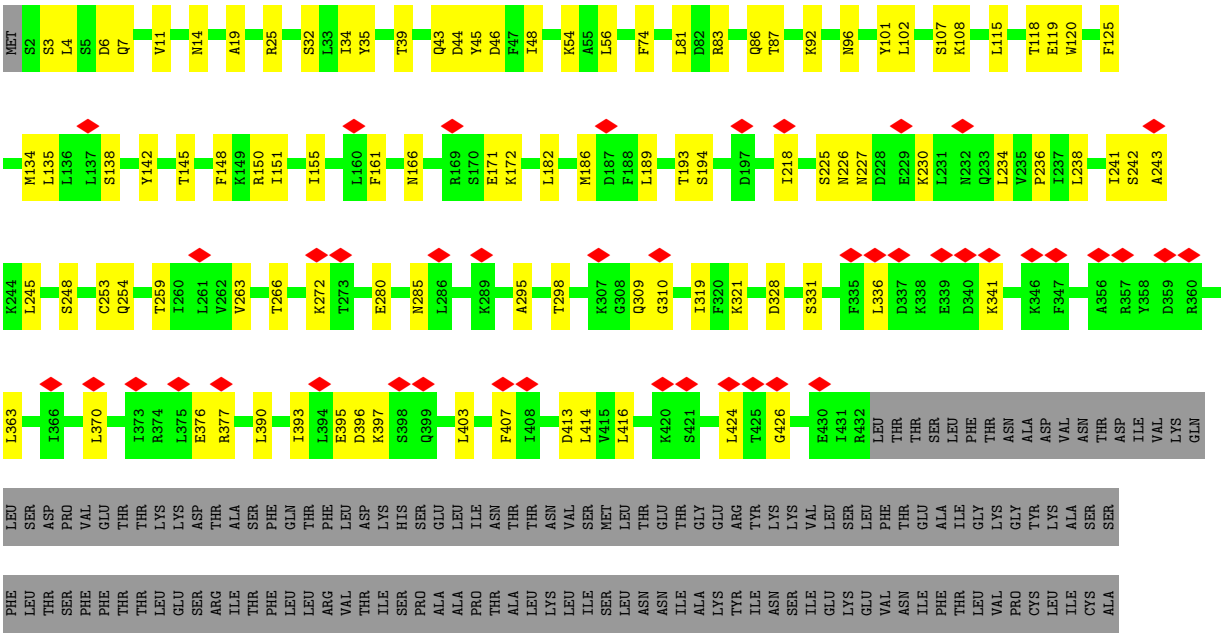
• Molecule 27: U3 small nucleolar RNA-associated protein 9

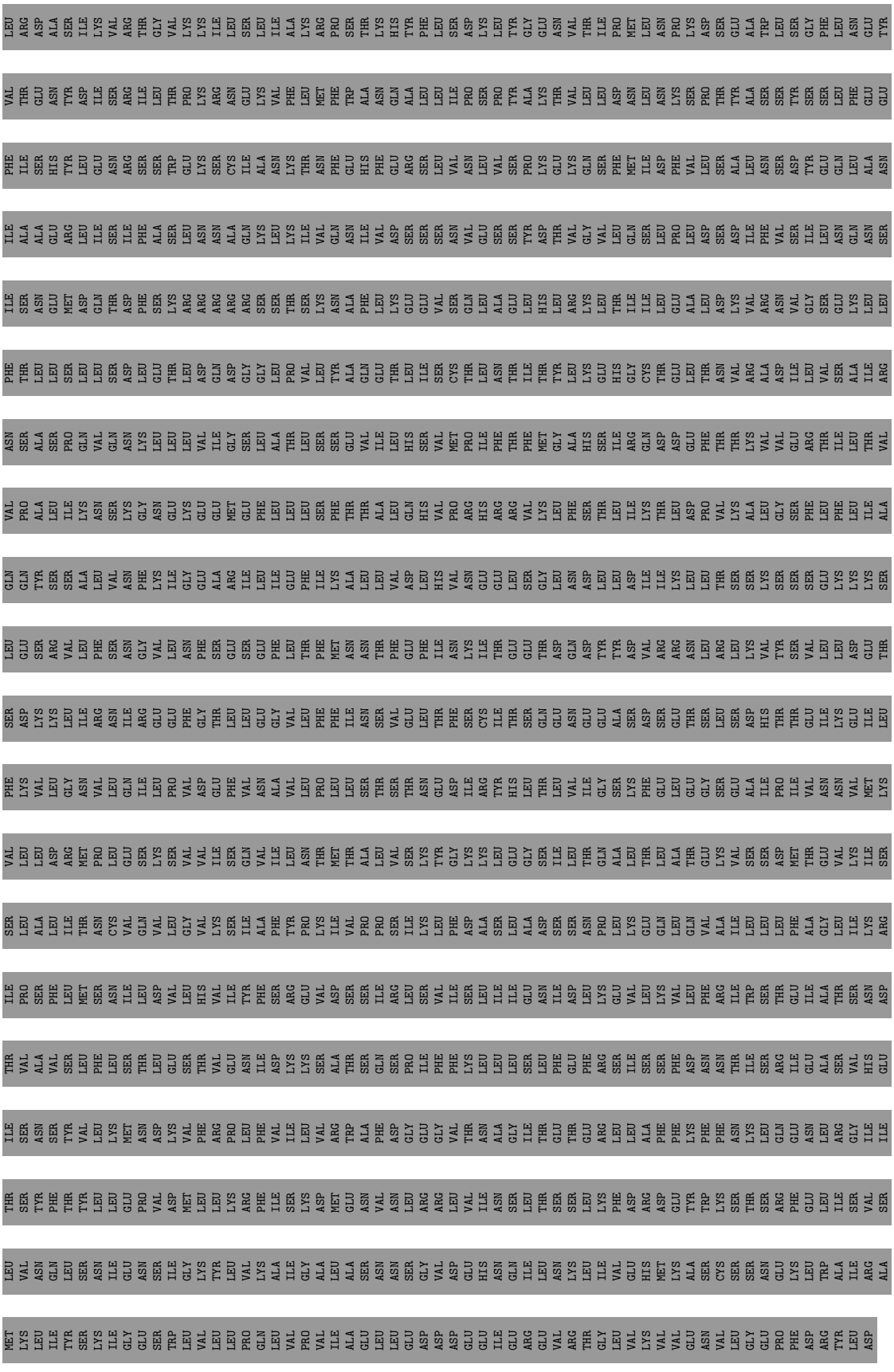
Chain A9:



• Molecule 28: U3 small nucleolar RNA-associated protein 10

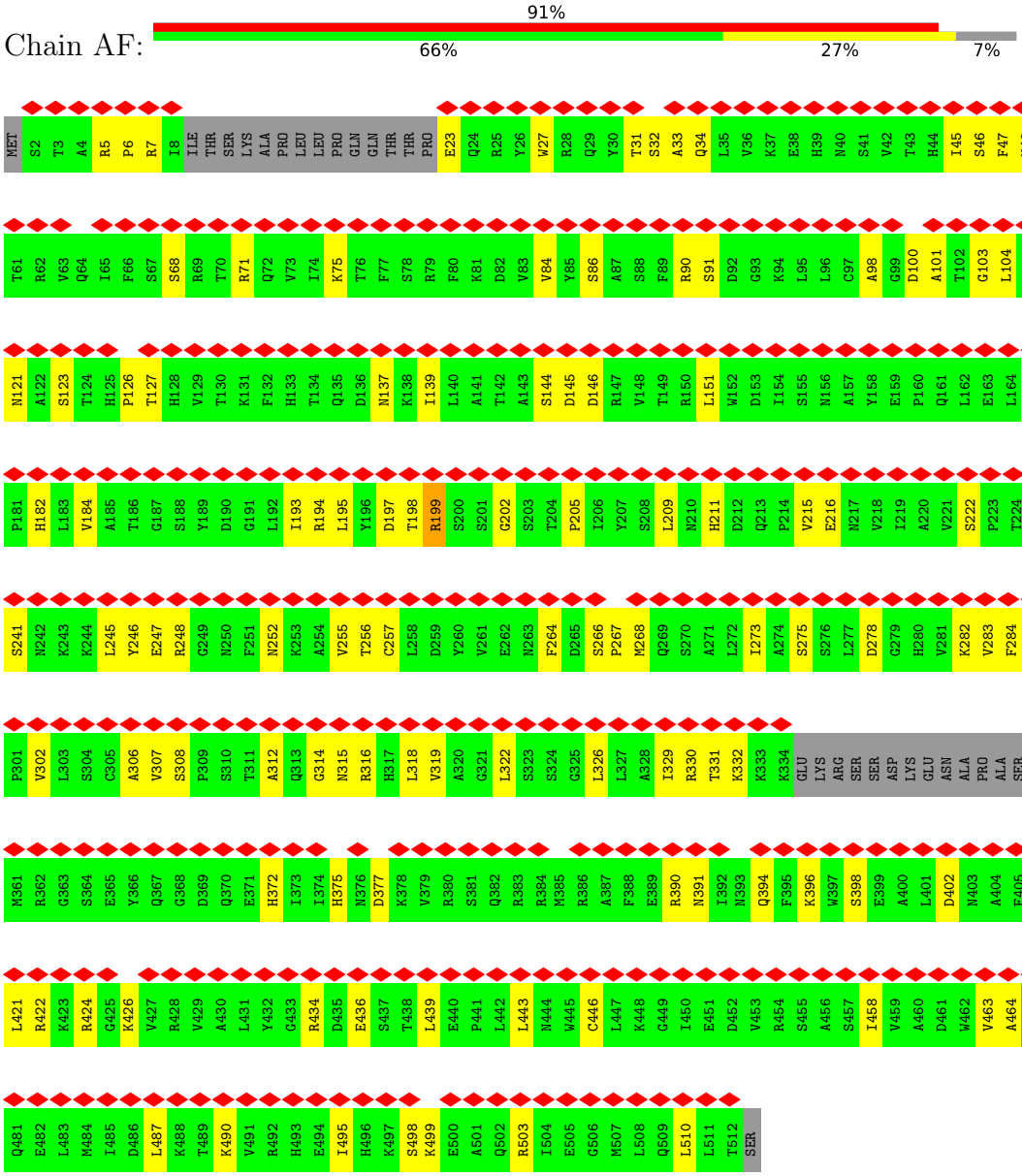
Chain AE:





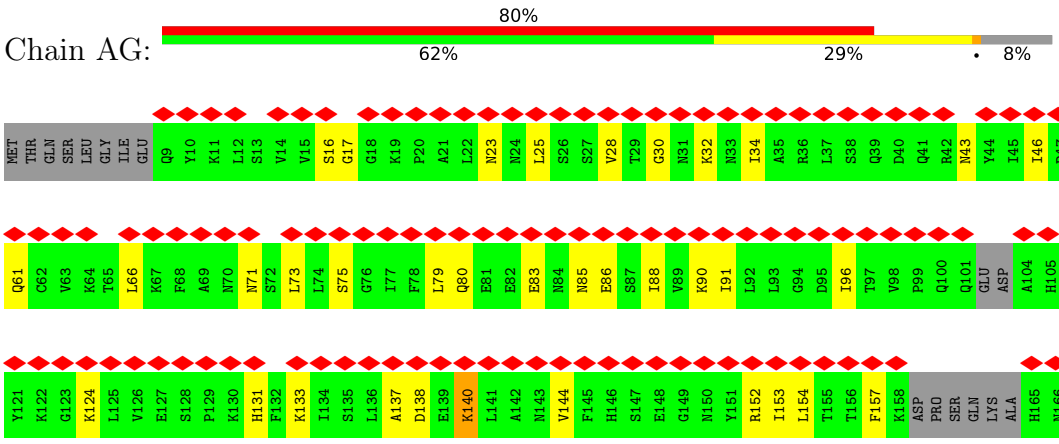
• Molecule 29: U3 small nucleolar RNA-associated protein 15

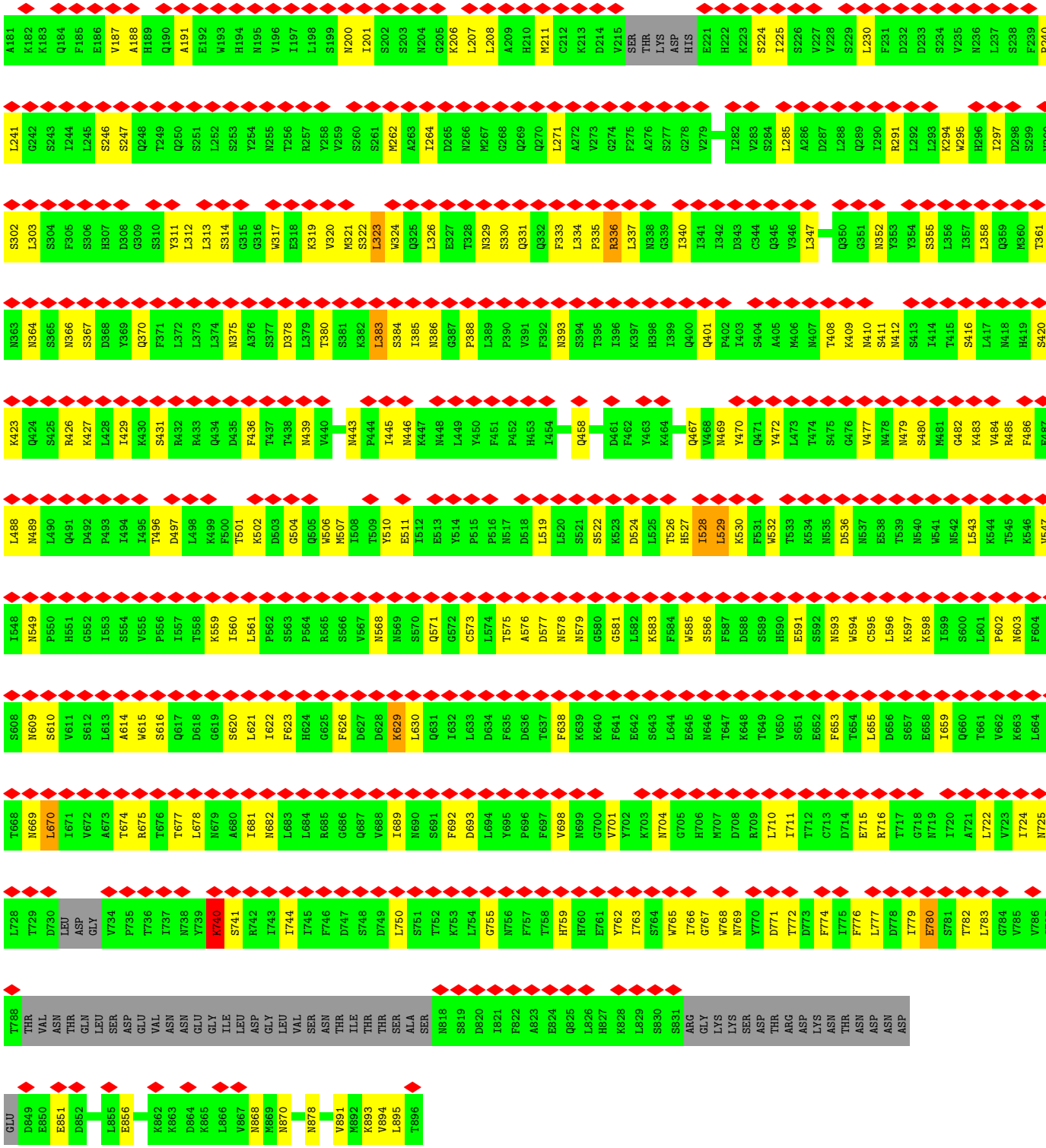
Chain AF:



• Molecule 30: NET1-associated nuclear protein 1

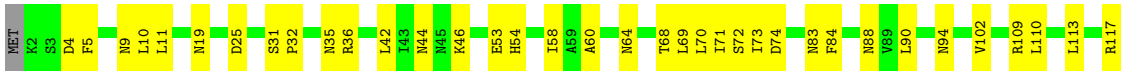
Chain AG:

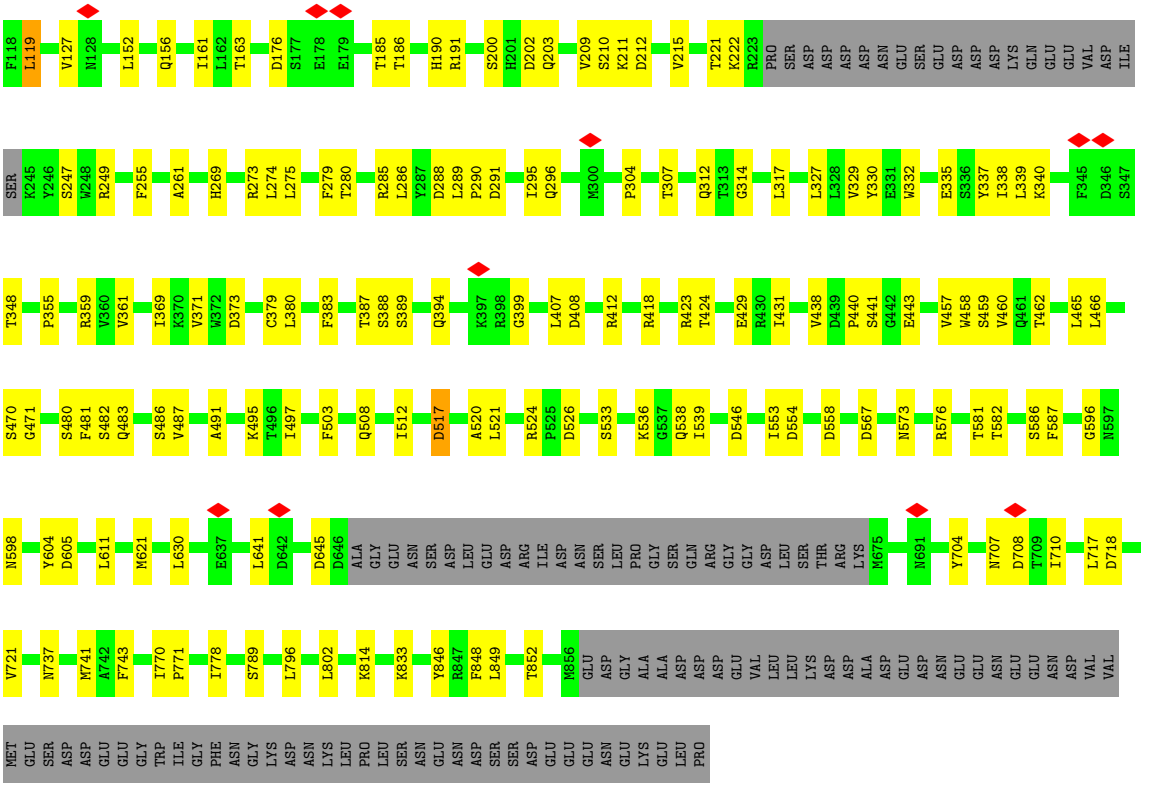




• Molecule 31: Periodic tryptophan protein 2

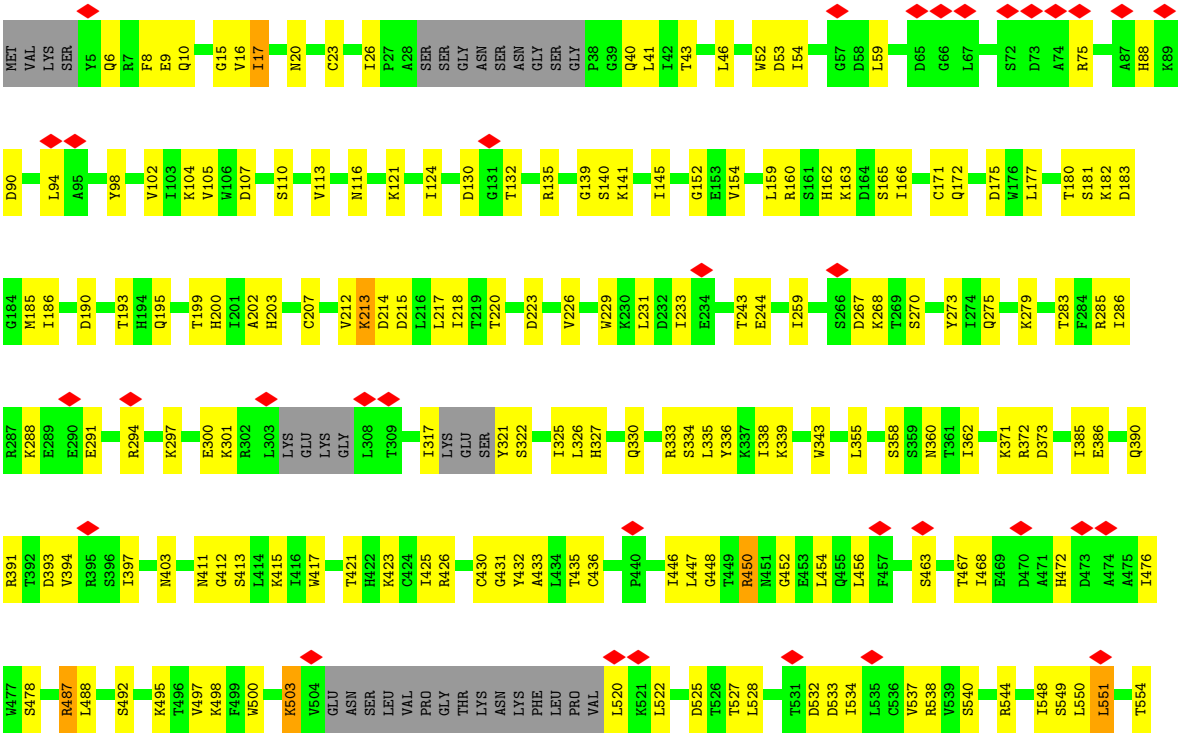
Chain B1:

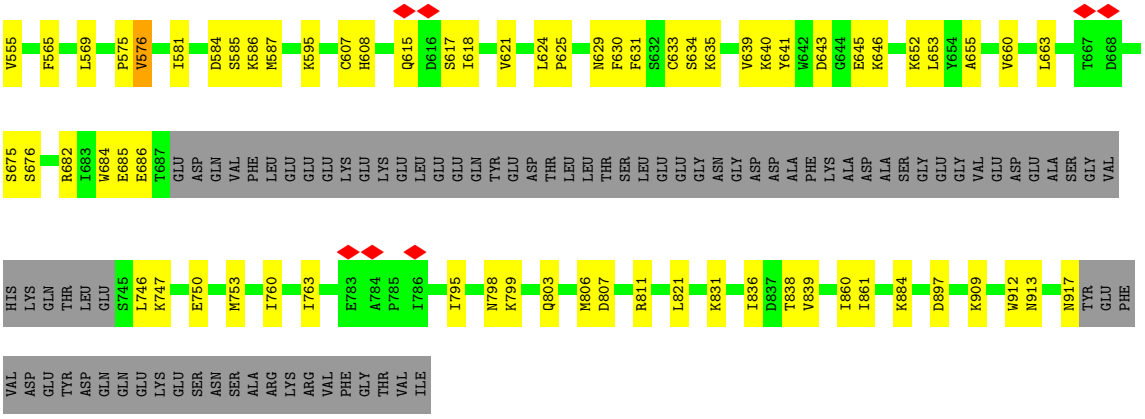




• Molecule 32: U3 small nucleolar RNA-associated protein 12

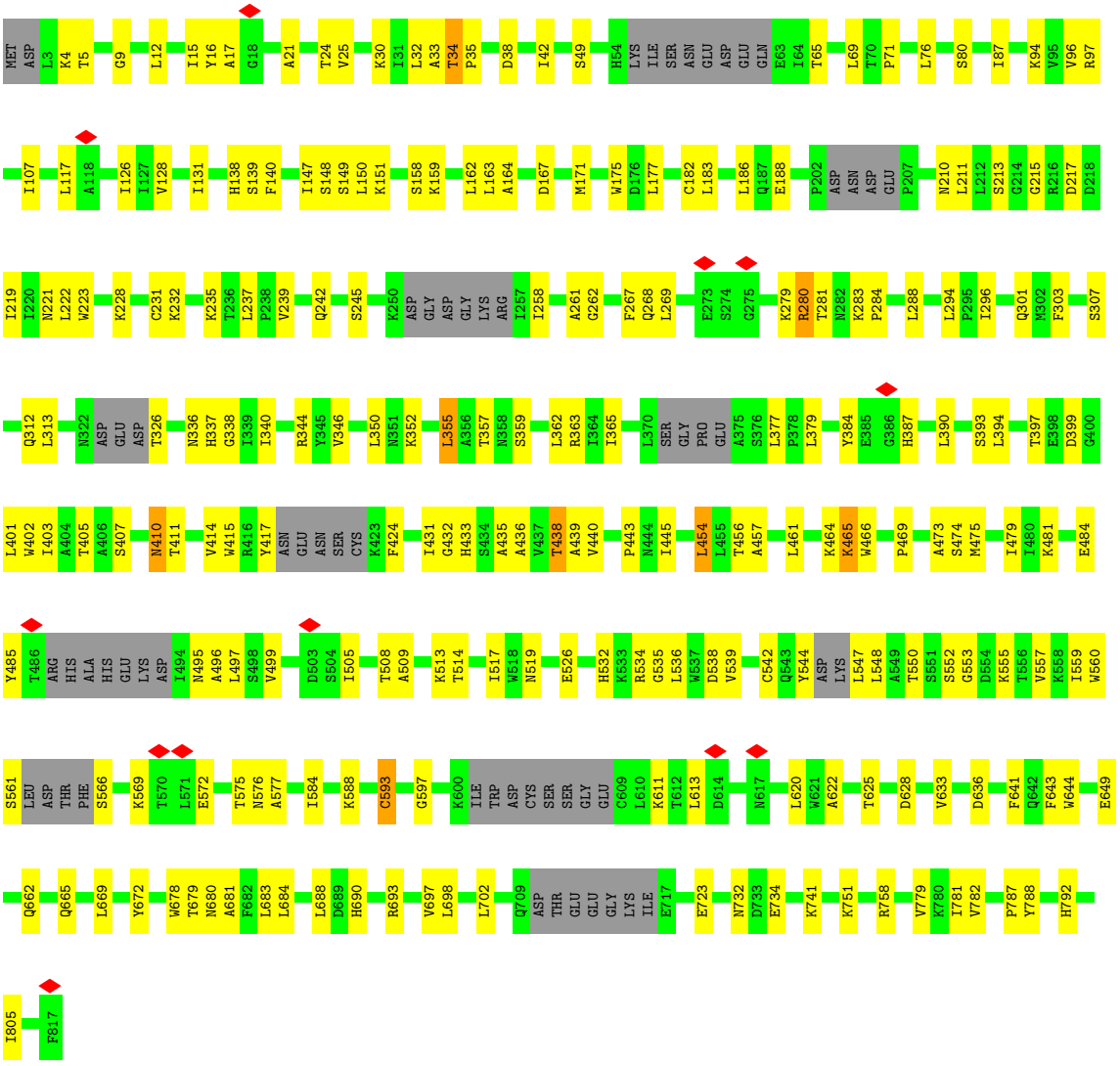
Chain B2:





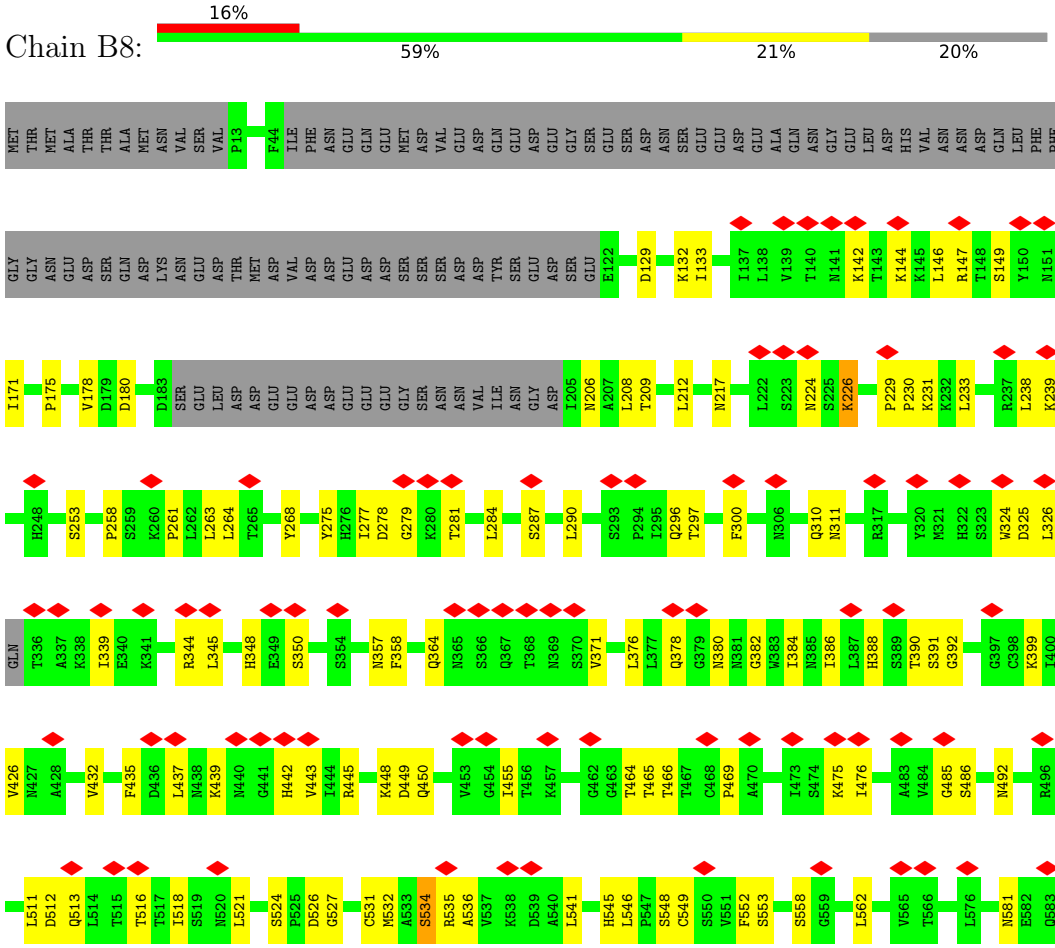
• Molecule 33: U3 small nucleolar RNA-associated protein 13

Chain B3:



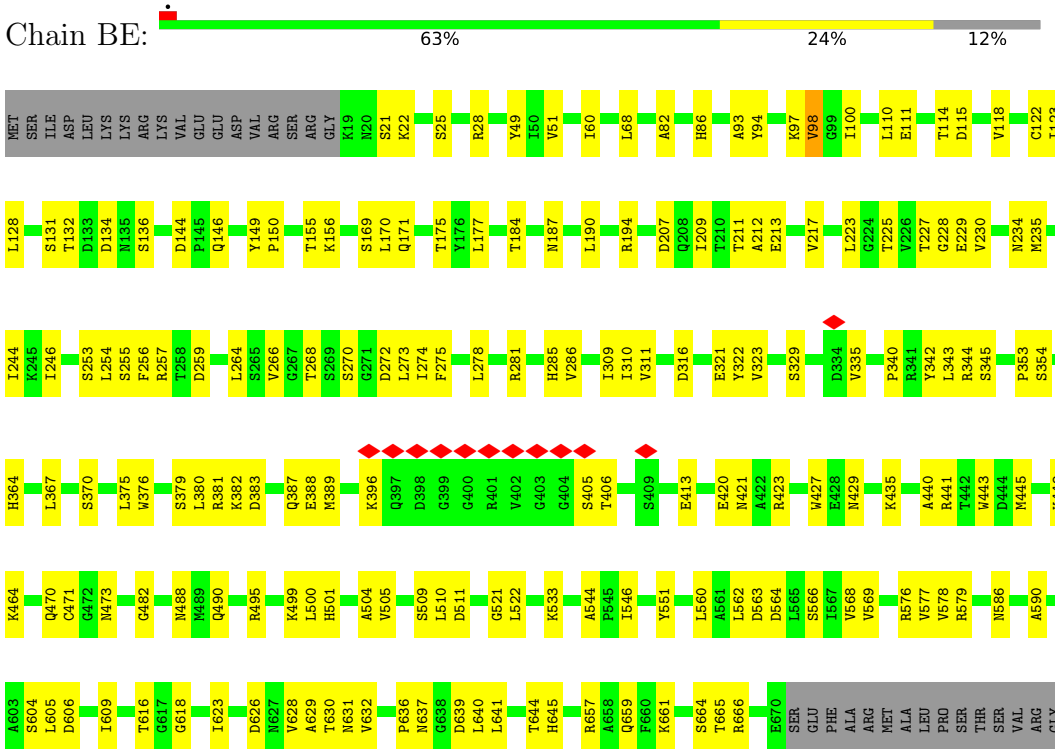
• Molecule 34: U3 small nucleolar RNA-associated protein 18

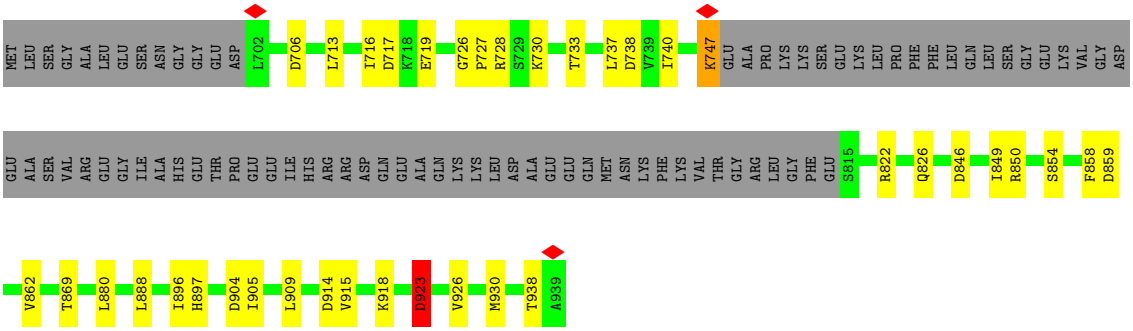
Chain B8:



• Molecule 35: U3 small nucleolar RNA-associated protein 21

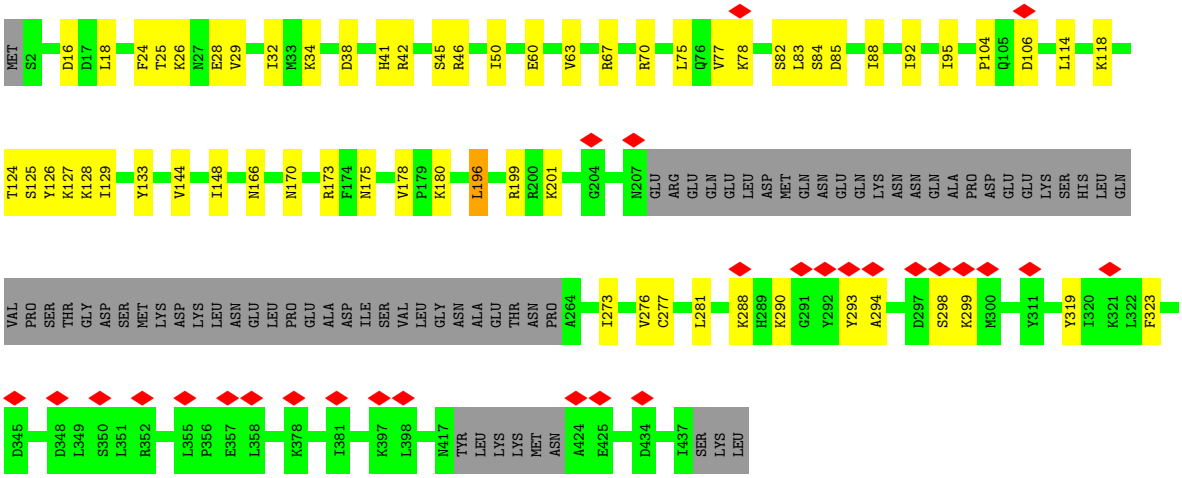
Chain BE:





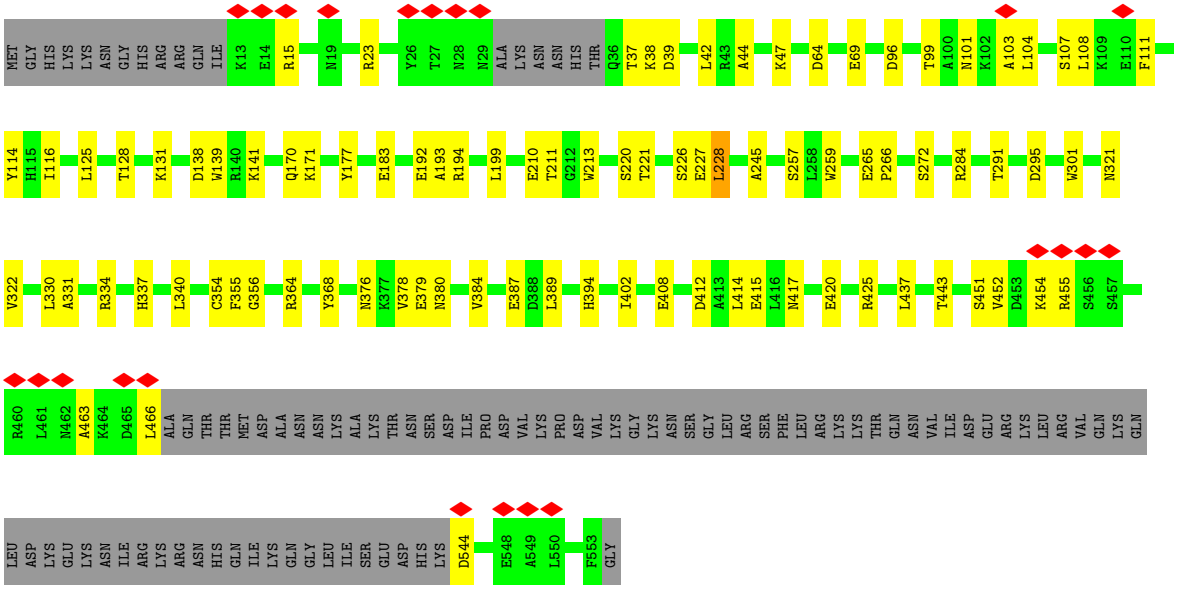
• Molecule 36: U3 small nucleolar RNA-associated protein 6

Chain B6:



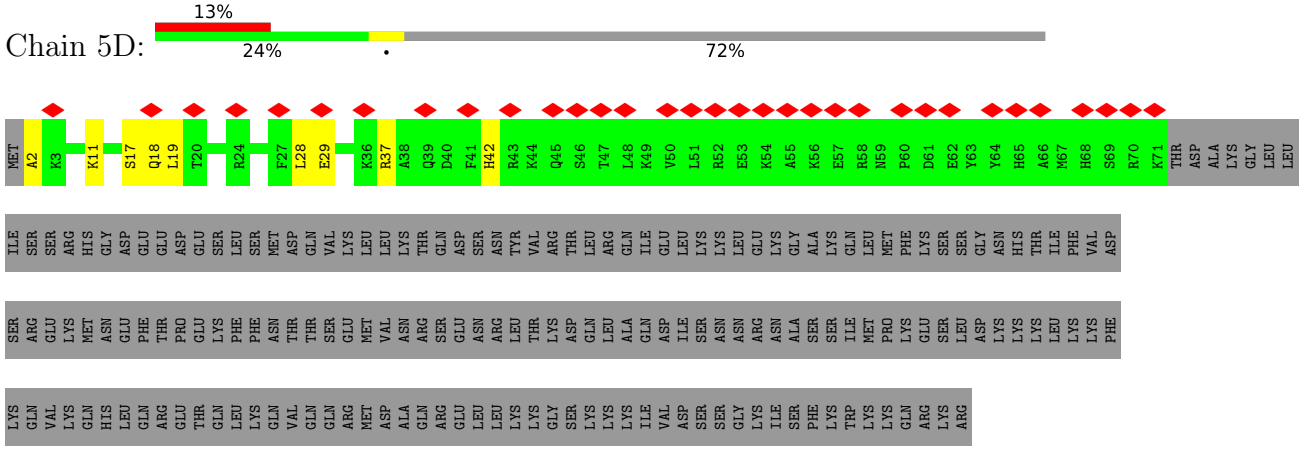
• Molecule 37: U3 small nucleolar RNA-associated protein 7

Chain 5C:



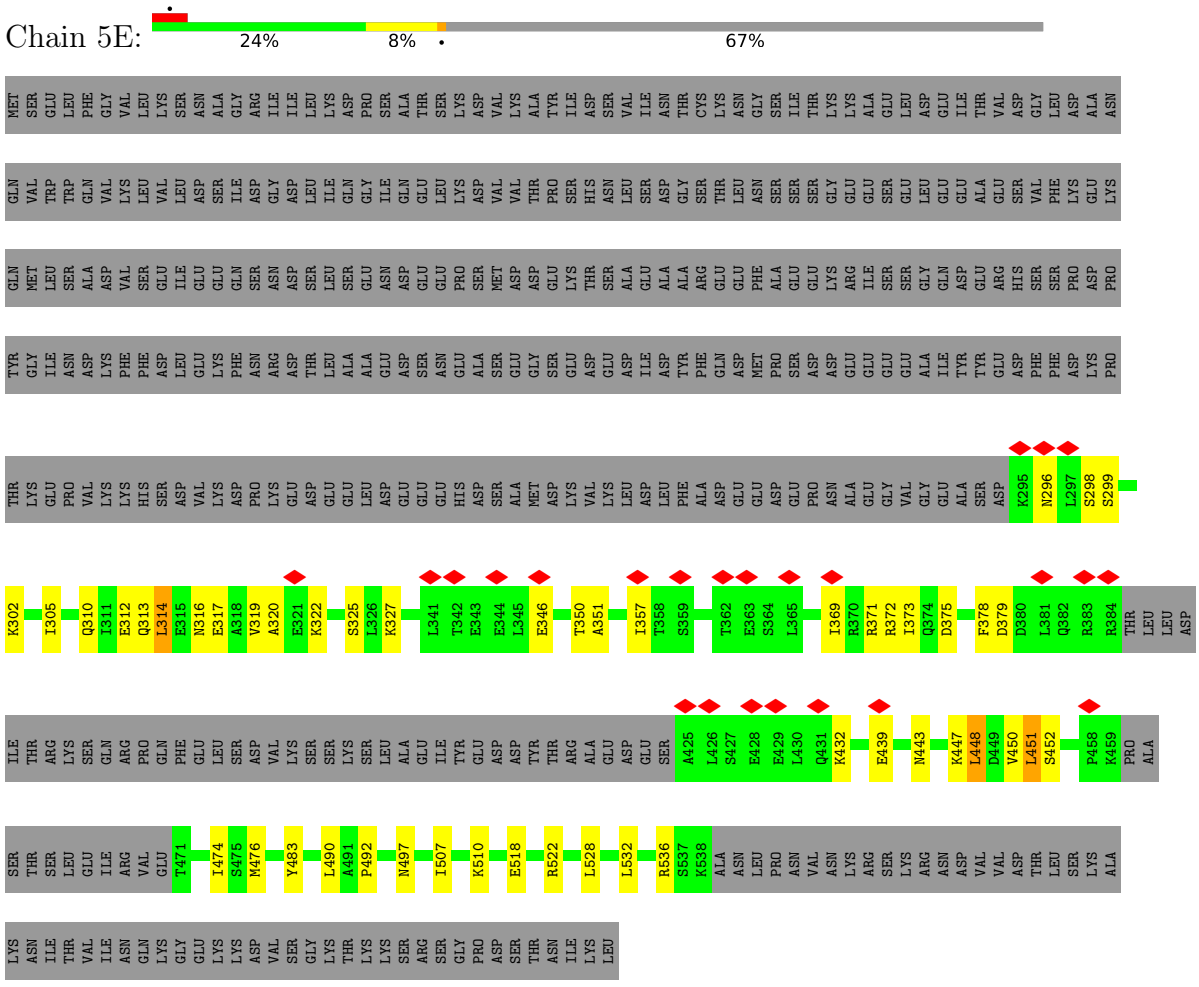
• Molecule 38: U3 small nucleolar RNA-associated protein 11

Chain 5D:



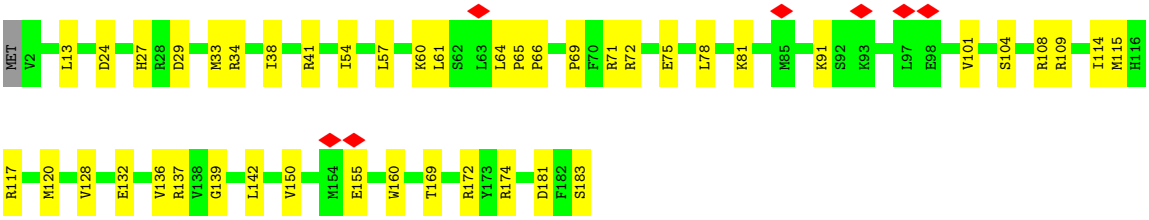
• Molecule 39: U3 small nucleolar RNA-associated protein MPP10

Chain 5E:

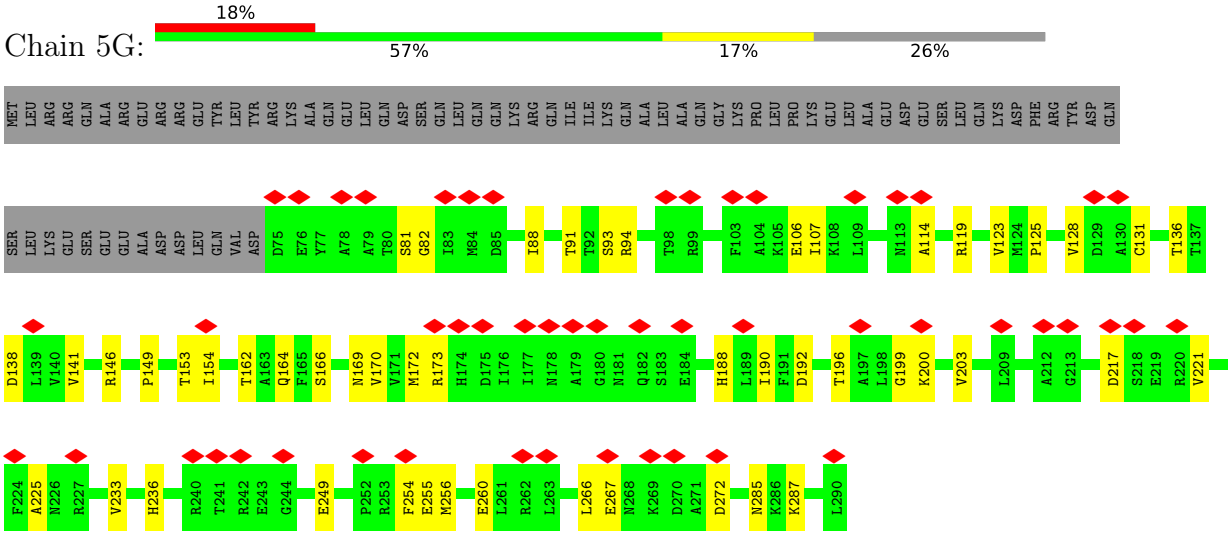


• Molecule 40: U3 small nucleolar ribonucleoprotein protein IMP3

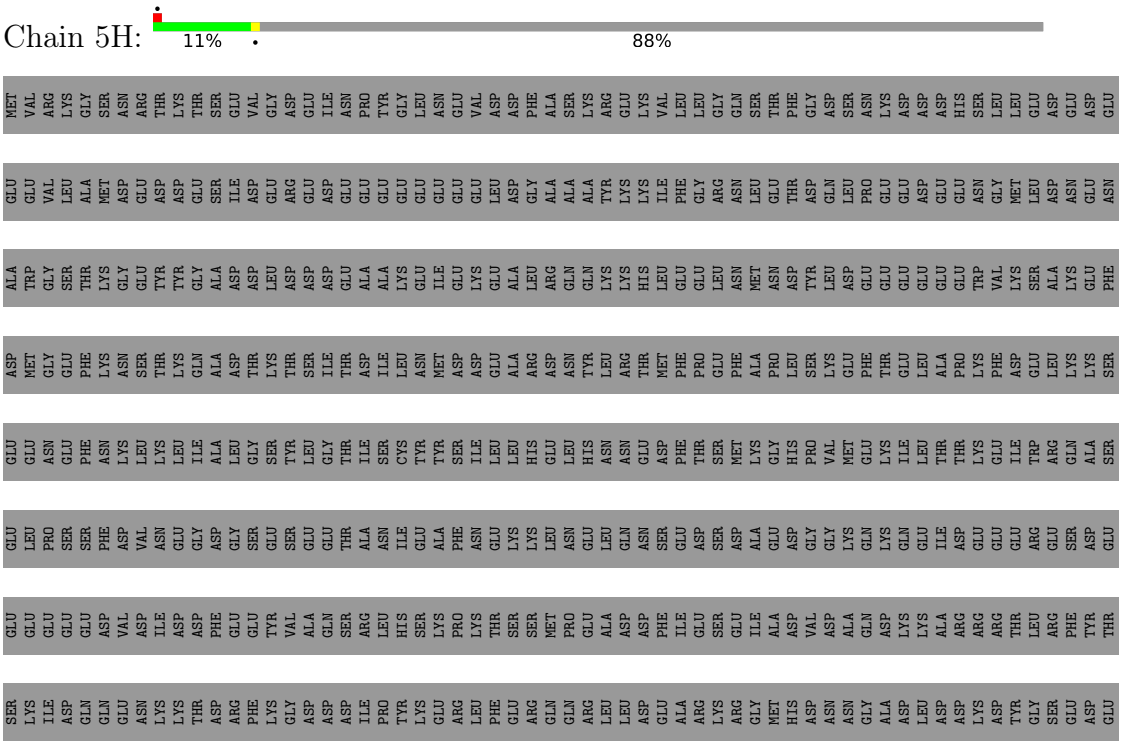
Chain 5F:

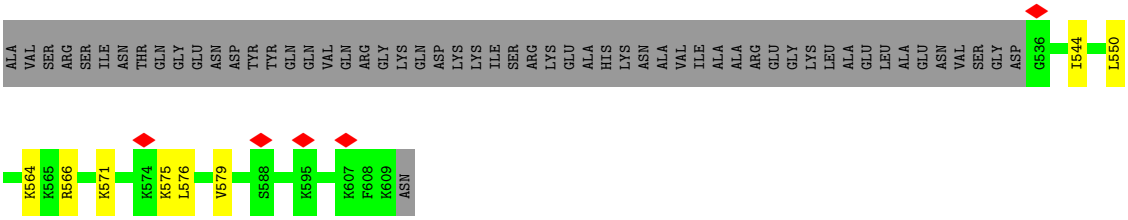


• Molecule 41: U3 small nucleolar ribonucleoprotein protein IMP4



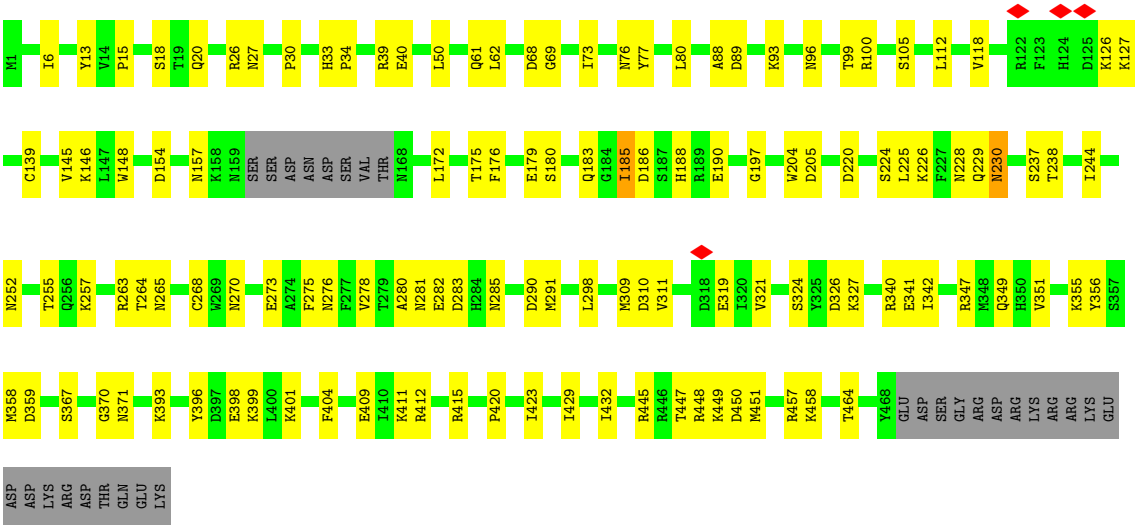
• Molecule 42: Something about silencing protein 10





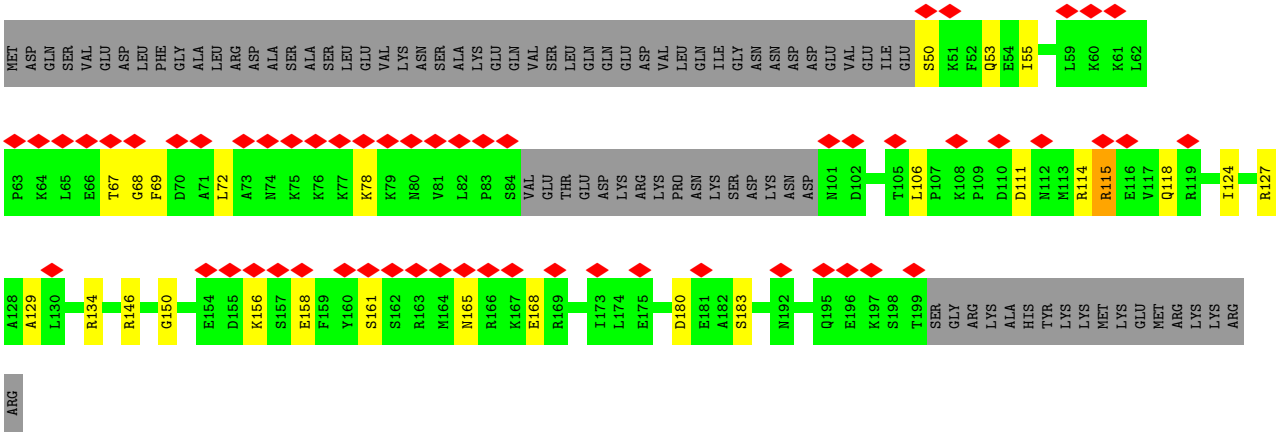
• Molecule 43: Protein SOF1

Chain 5I:



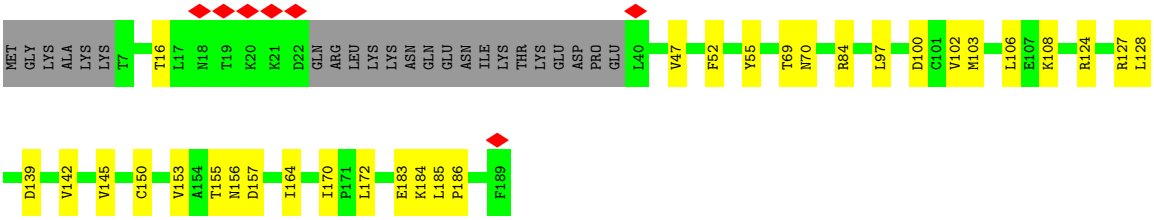
• Molecule 44: rRNA-processing protein FCF2

Chain 5J:

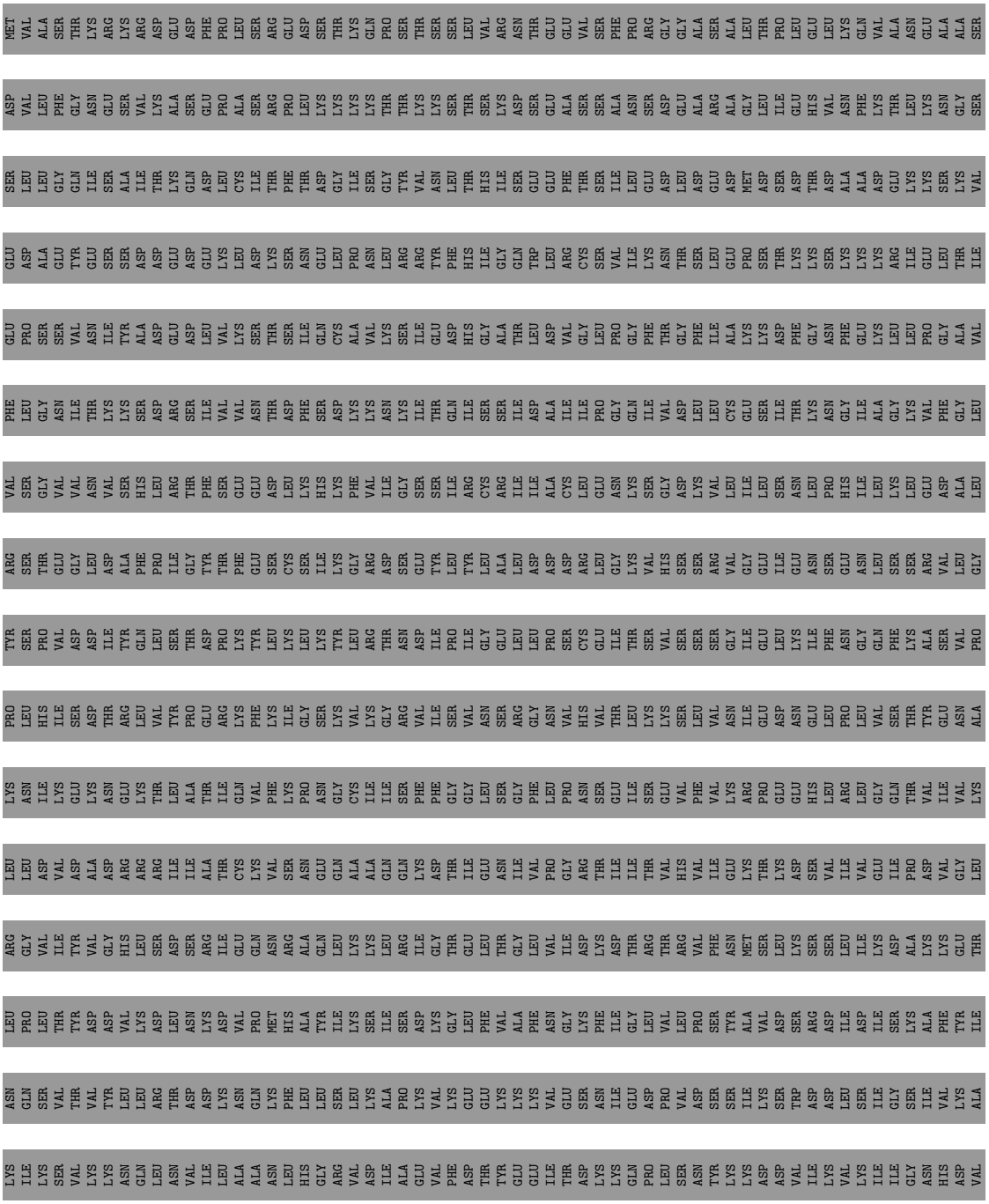


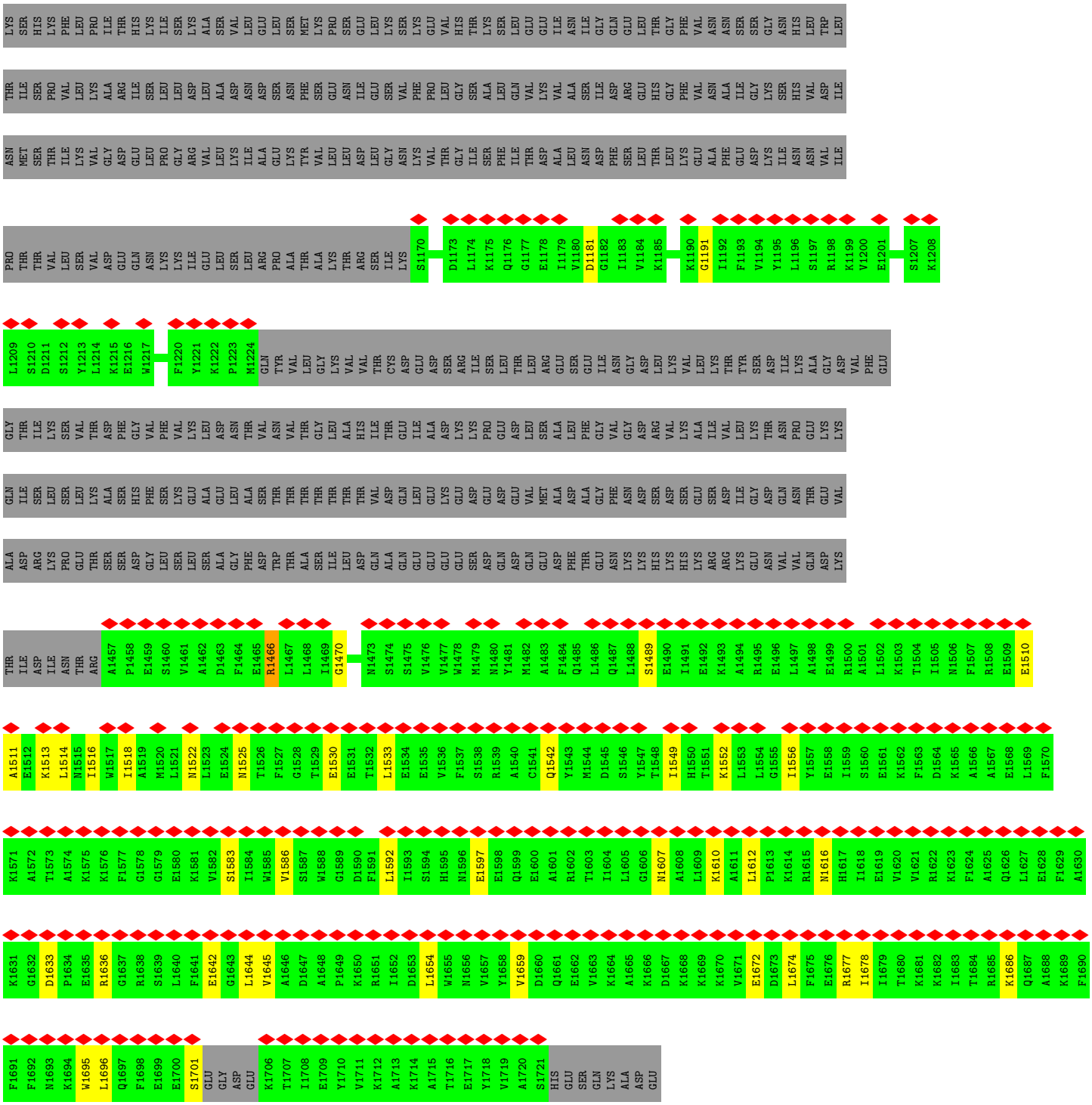
• Molecule 45: rRNA-processing protein FCF1

Chain 5K:

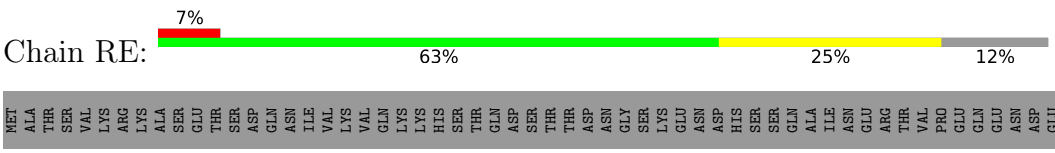


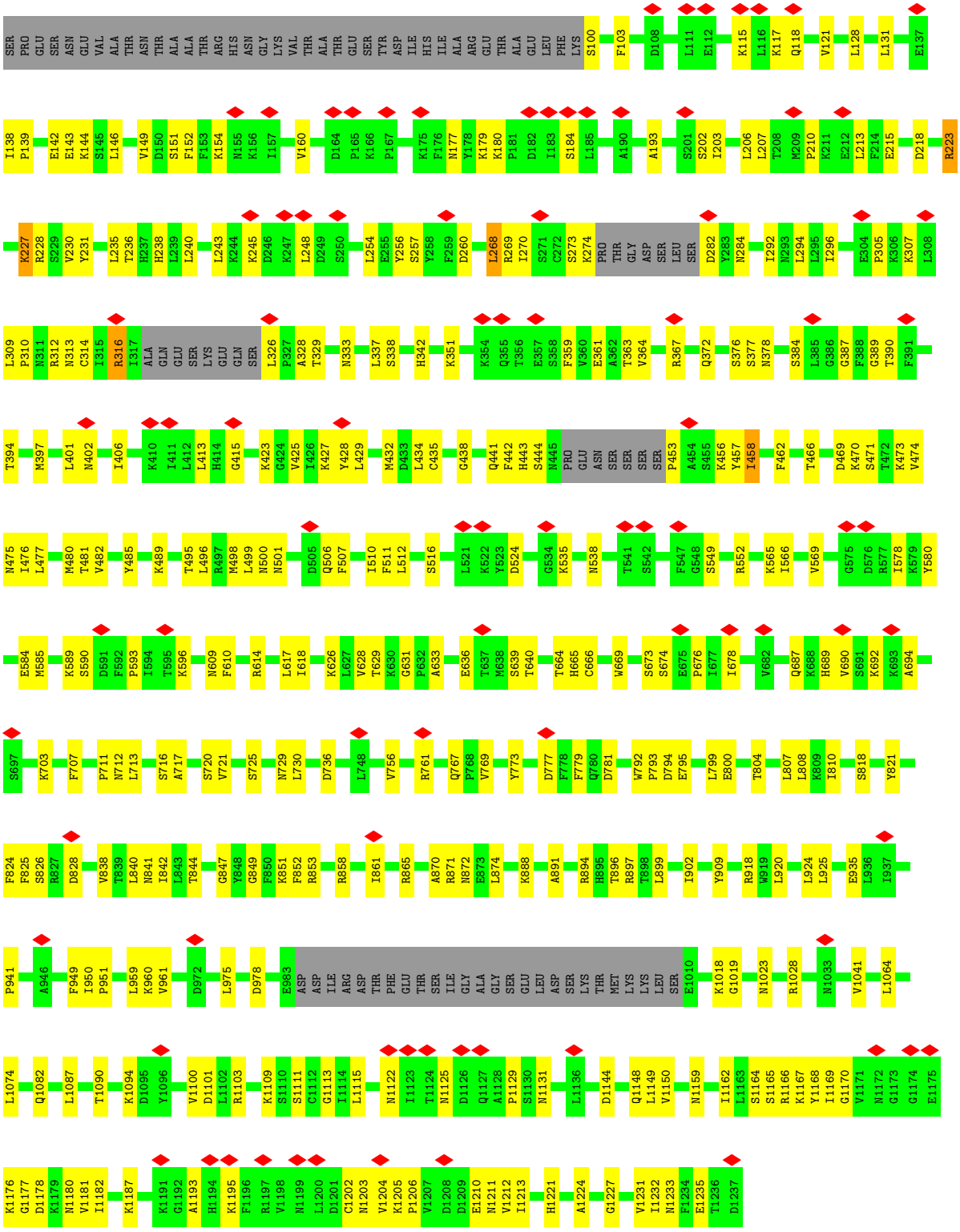
• Molecule 46: rRNA biogenesis protein RRP5



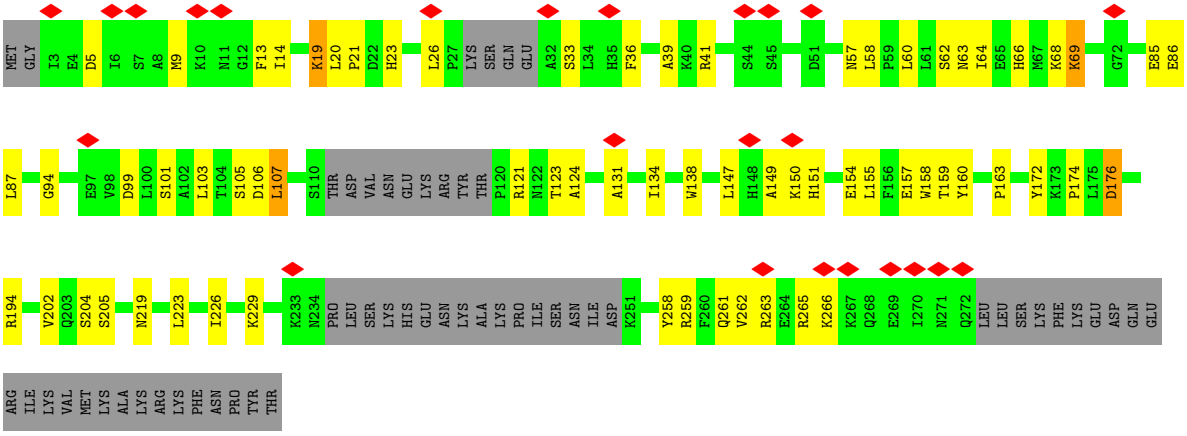


• Molecule 47: U3 small nucleolar RNA-associated protein 22





• Molecule 48: Ribosomal RNA-processing protein 7

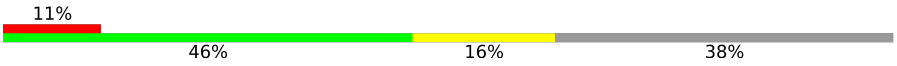


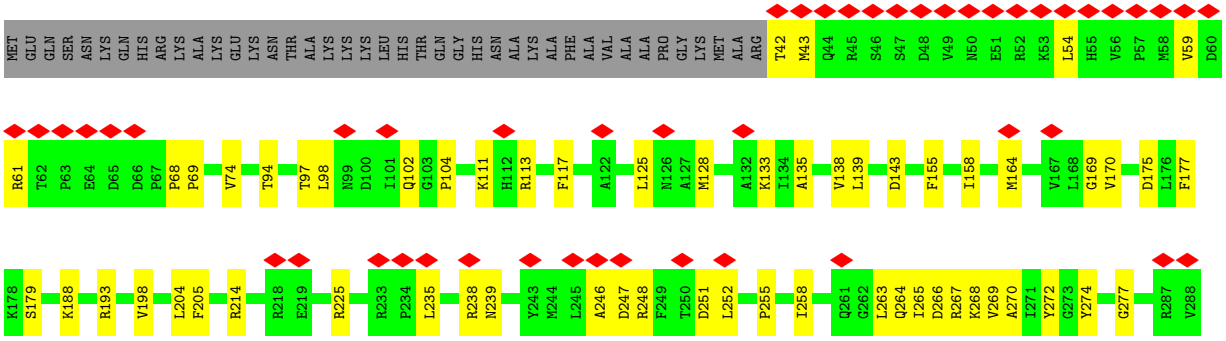
• Molecule 49: Ribosomal RNA small subunit methyltransferase NEP1

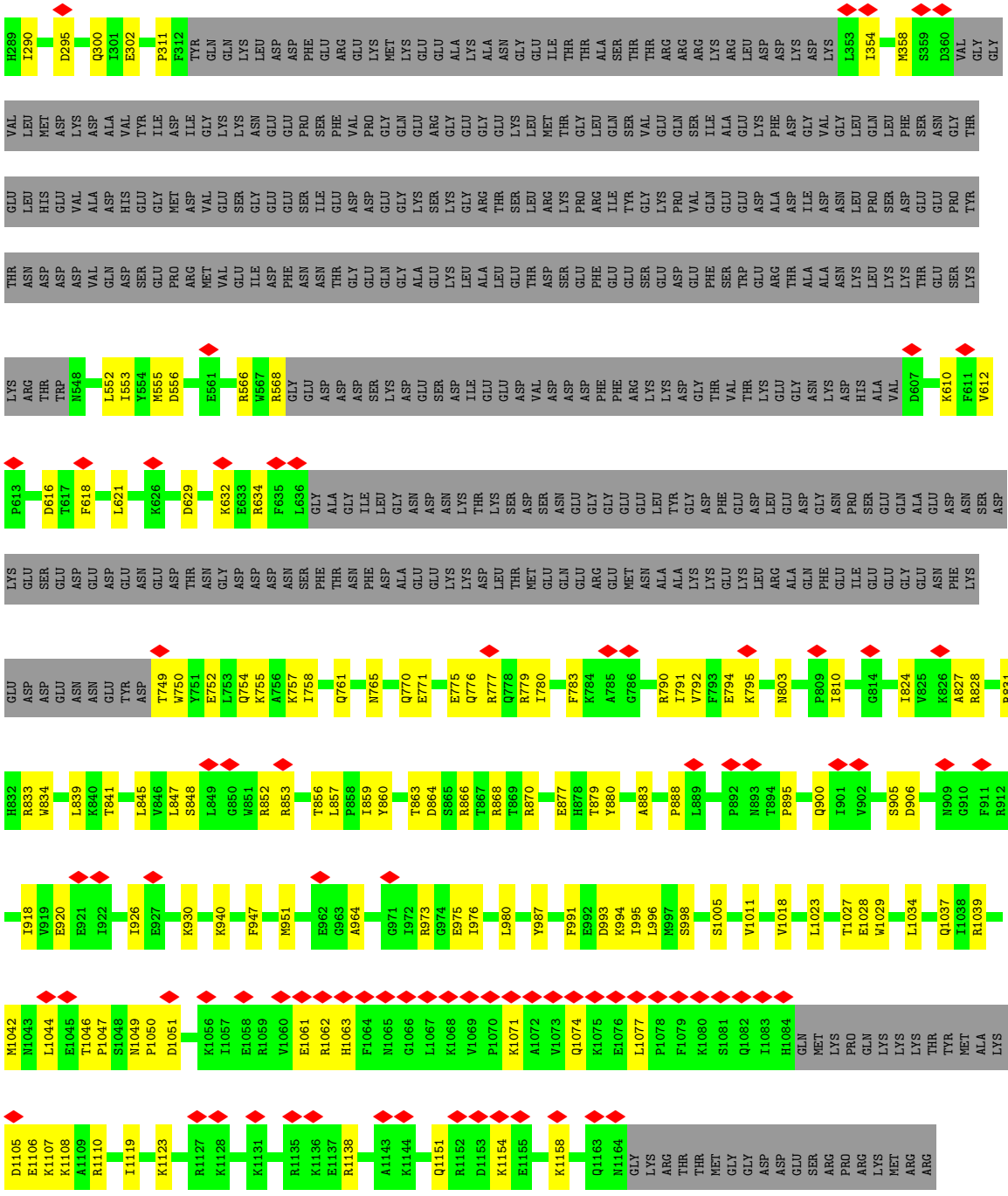
Chain RH:

• Molecule 50: Ribosome biogenesis protein BMS1

Chain RJ:

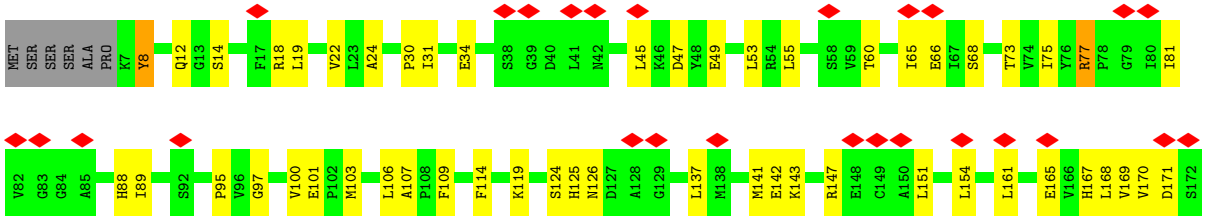


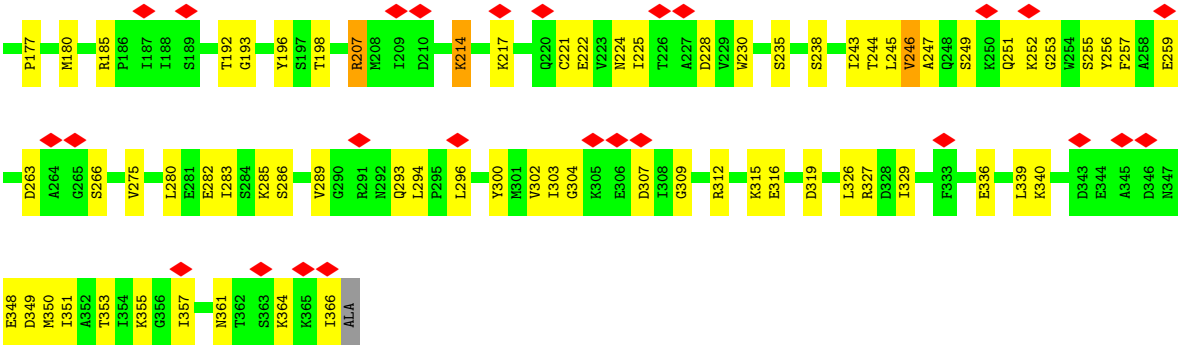




• Molecule 51: RNA 3'-terminal phosphate cyclase-like protein

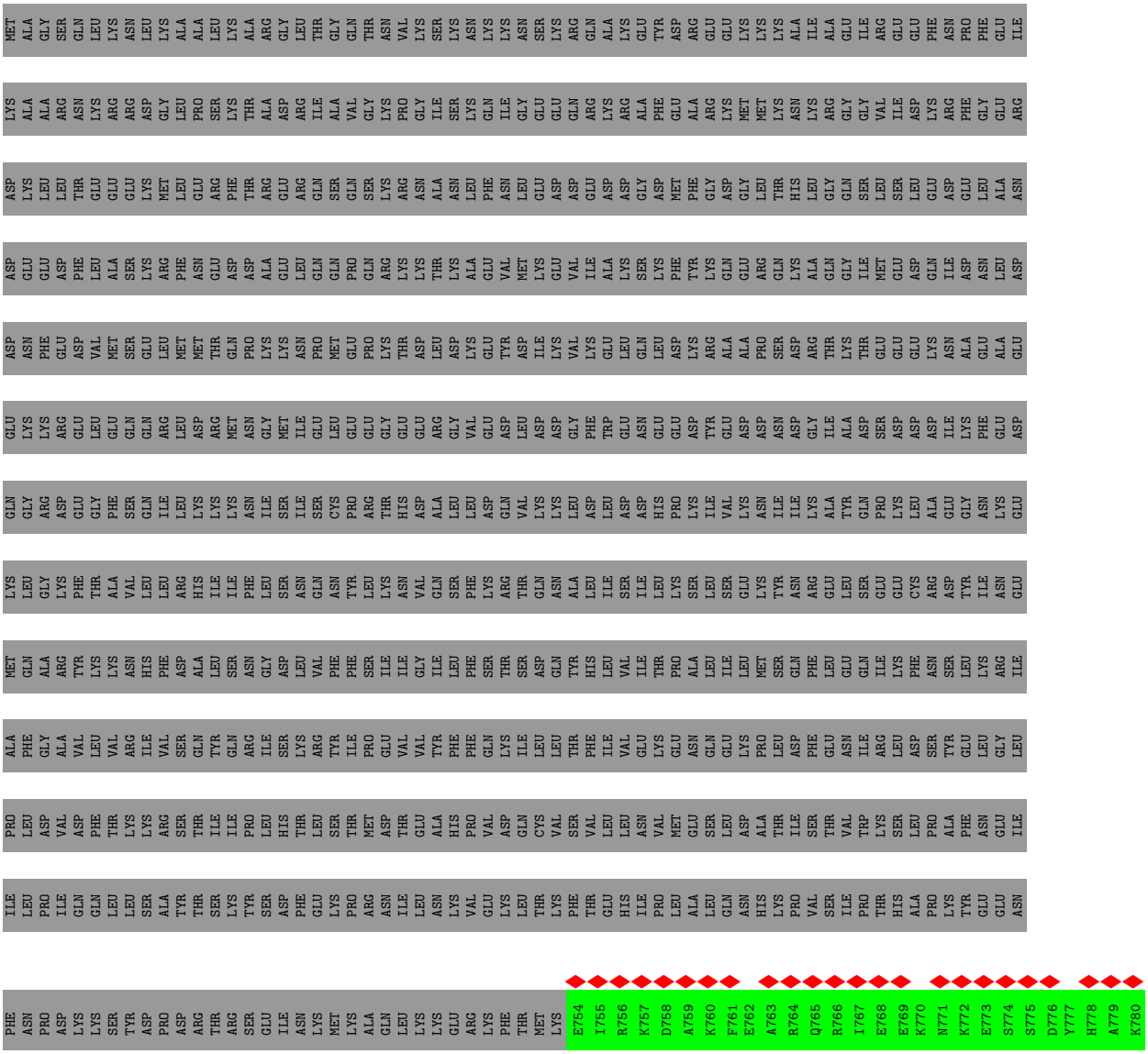
Chain RK:

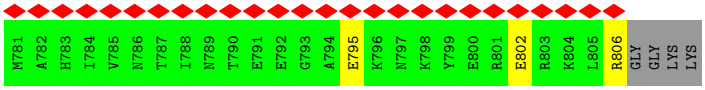




• Molecule 52: Nucleolar complex protein 14

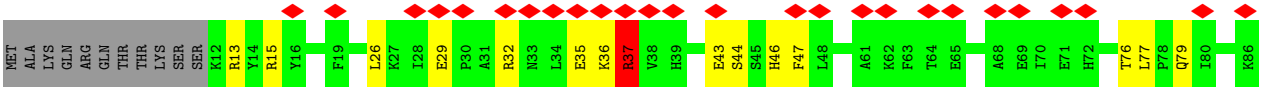
Chain RN:

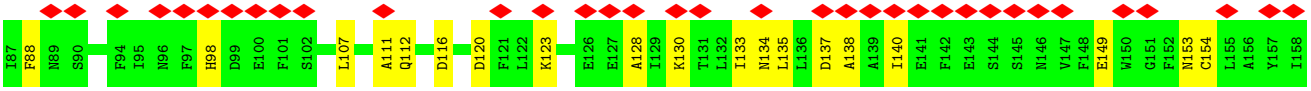


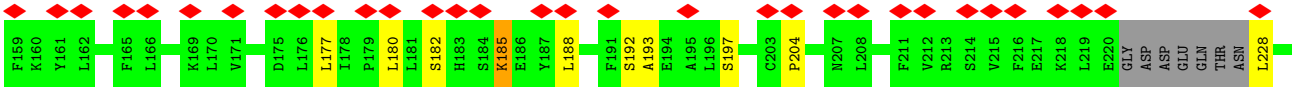


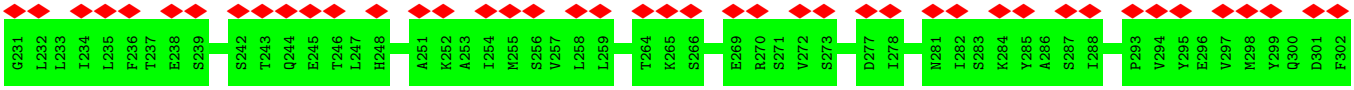
• Molecule 53: U3 small nucleolar RNA-associated protein 20

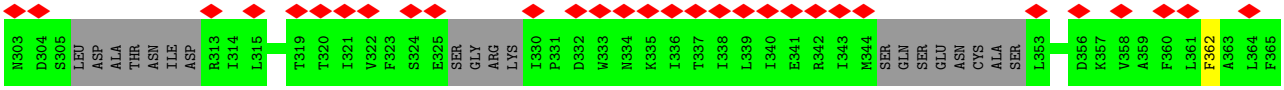
Chain RP:

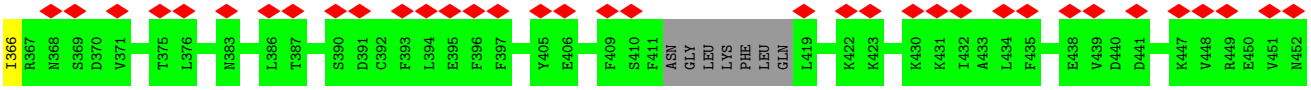


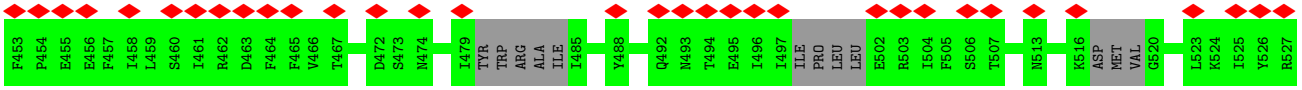


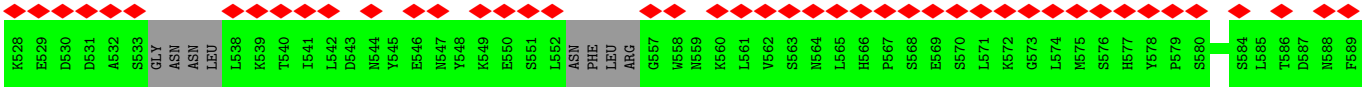


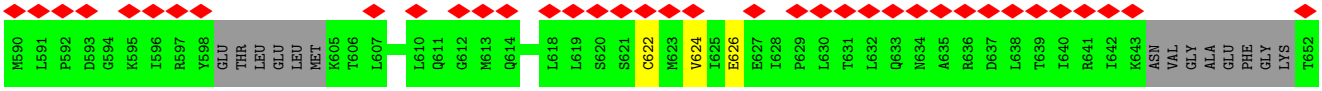


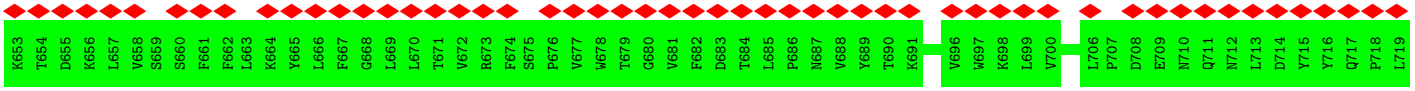


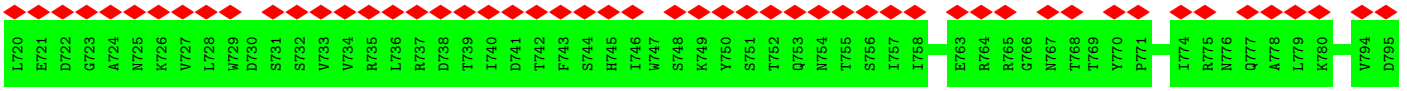


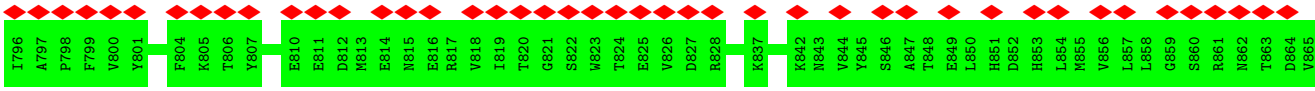


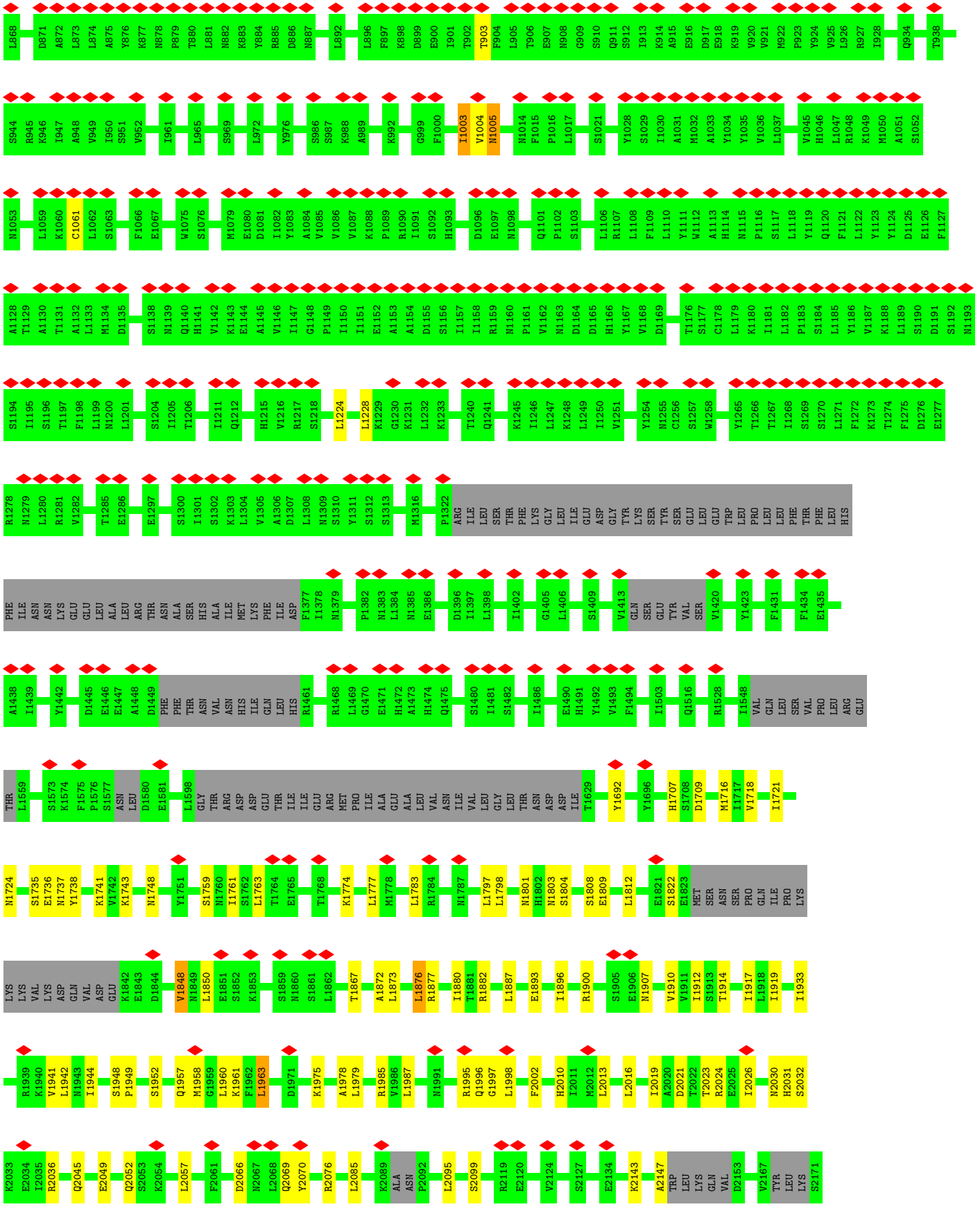


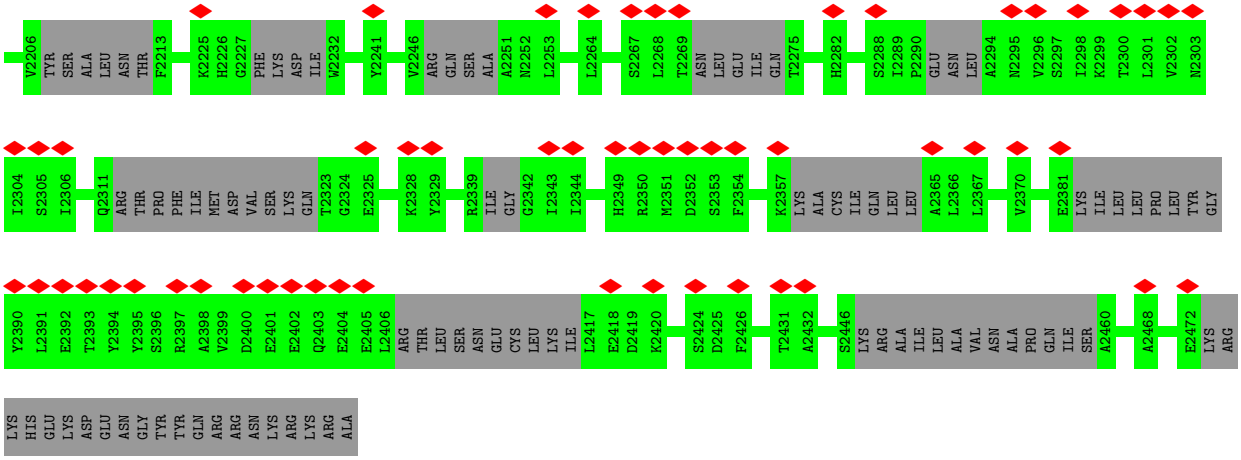






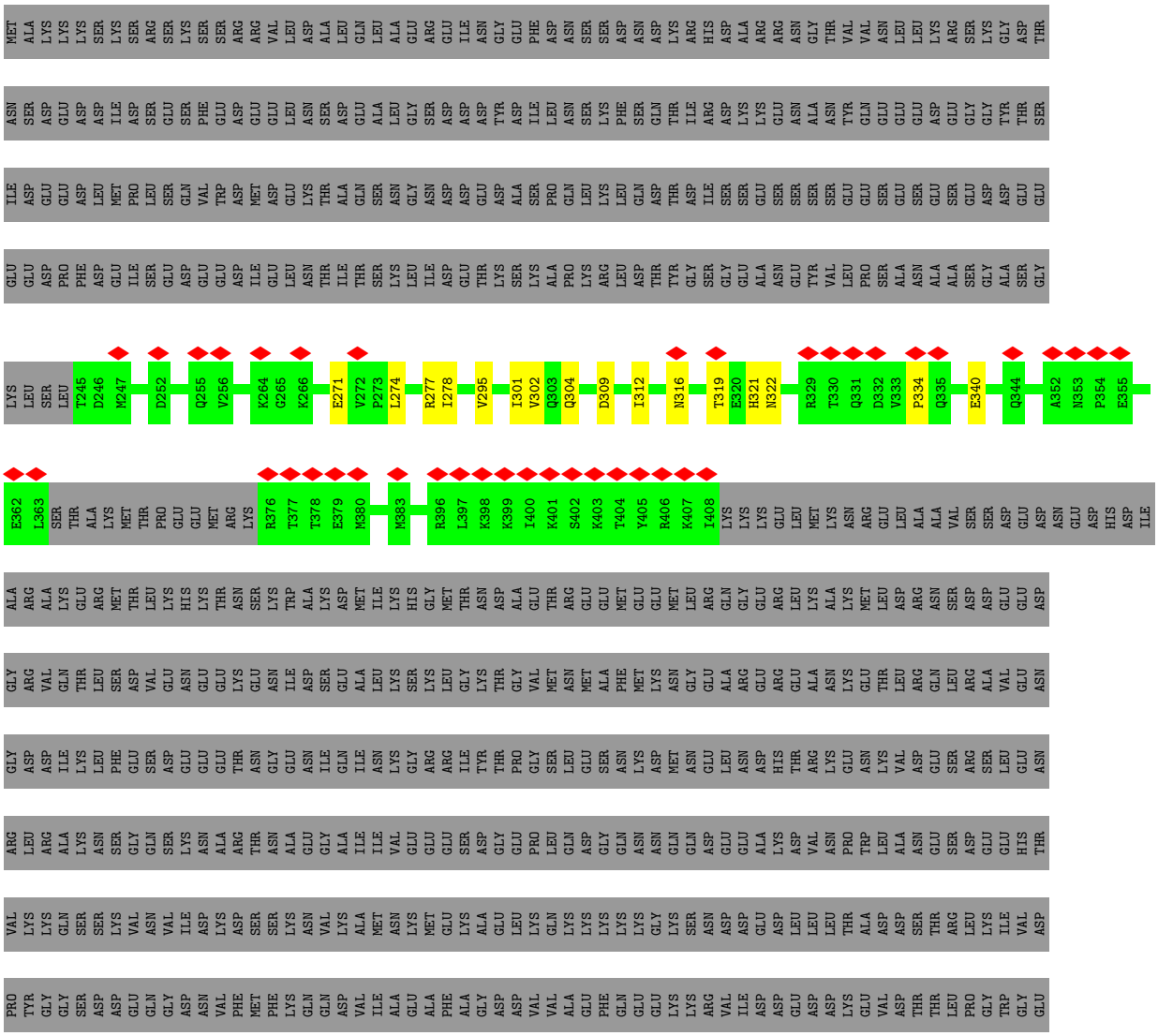


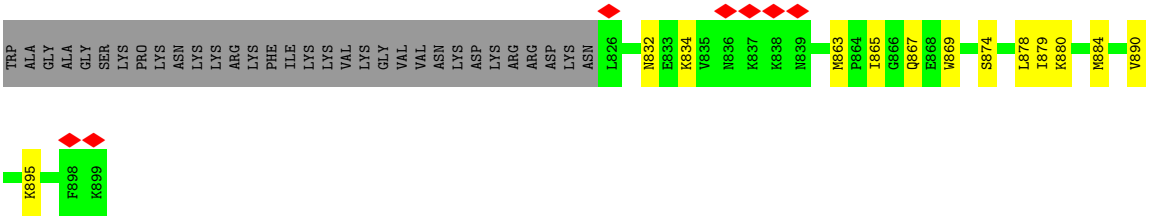

L868 D871 A872 L873 L874 A875 Y876 K877 N878 P879 T880 L881 N882 K883 Y884 R885 D886 N887 L892 L896 F897 K898 D899 E900 I901 T902 T903 F904 L905 T906 E907 N908 G909 S910 Q911 S912 I913 K914 A915 E916 D917 E918 K919 V920 V921 M922 P923 Y924 V925 L926 R927 I928 Q934 T938
S944 R945 K946 I947 A948 V949 I950 S951 V952 I961 L965 S969 L972 Y976 S986 S987 K988 A989 K992 G999 F1000 I1003 V1004 N1005 N1014 F1015 P1016 L1017 S1021 Y1028 S1029 I1030 A1031 M1032 A1033 Y1034 Y1035 V1036 L1037 V1045 H1046 L1047 R1048 K1049 M1050 A1051 S1052
N1053 L1059 K1060 C1061 L1062 S1063 F1066 E1067 W1075 S1076 M1079 E1080 D1081 I1082 Y1083 A1084 V1085 V1086 V1087 K1088 P1089 R1090 I1091 S1092 H1093 D1096 E1097 N1098 Q1101 P1102 S1103 L1106 R1107 L1108 F1109 L1110 Y1111 W1112 A1113 H1114 N1115 P1116 S1117 L1118 Y1119 Q1120 F1121 L1122 Y1123 Y1124 D1125 E1126 F1127
A1128 T1129 A1130 T1131 A1132 L1133 M1134 D1135 S1138 N1139 Q1140 H1141 V1142 K1143 E1144 A1145 V1146 I1147 G1148 P1149 I1150 I1151 E1152 A1153 A1154 D1155 S1156 I1157 I1158 R1159 N1160 P1161 V1162 N1163 D1164 D1165 H1166 Y1167 V1168 D1169 T1176 S1177 C1178 L1179 K1180 I1181 L1182 P1183 S1184 L1185 Y1186 V1187 K1188 L1189 S1190 D1191 S1192 N1193
S1194 I1195 S1196 T1197 F1198 L1199 N1200 L1201 S1204 I1205 T1206 I1211 Q1212 H1215 V1216 R1217 S1218 L1224 L1228 K1229 G1230 K1231 L1232 K1233 T1240 Q1241 K1245 I1246 L1247 K1248 L1249 I1250 V1251 Y1254 N1255 C1256 S1257 W1258 Y1265 T1266 T1267 I1268 S1269 S1270 L1271 F1272 K1273 T1274 F1275 D1276 E1277
R1278 N1279 L1280 R1281 V1282 T1285 E1286 E1297 S1300 I1301 S1302 K1303 L1304 V1305 A1306 D1307 L1308 N1309 S1310 Y1311 S1312 S1313 M1316 P1322 ARG ILE LEU SER THR PHE LYS GLY LEU ILE GLU ASP GLY TYR LYS SER TYR SER GLU LEU GLU TRP LEU PRO LEU LEU LEU PHE THR PHE LEU HIS
PHE ILE ASN ASN LYS GLU GLU LEU ALA LEU ARG THR ASN ALA SER HIS ALA ALA ILE MET LYS PHE ILE ASP F1377 I1378 N1379 P1382 N1383 L1384 N1385 E1386 D1396 I1397 L1398 I1402 G1405 L1406 S1409 V1413 GLN SER GLU TYR VAL SER V1420 Y1423 F1431 F1434 E1435
A1438 I1439 Y1442 D1445 E1446 E1447 A1448 D1449 PHE PHE THR ASN VAL ASN HIS ILE GLN LEU HIS R1461 R1468 L1469 G1470 E1471 H1472 A1473 H1474 Q1475 S1480 I1481 S1482 I1486 E1490 H1491 Y1492 V1493 F1494 I1503 Q1516 R1528 I1548 VAL GLN LEU SER VAL PRO LEU ARG GLU
THR L1559 S1573 K1574 F1575 P1576 S1577 ASN LEU D1580 E1581 L1598 GLY THR ARG ASP ASP GLU THR ILE ILE GLU ARG MET PRO ILE ALA GLU ALA LEU VAL ASN ILE VAL LEU GLY LEU THR ASN ASP ASP ILE T1629 Y1692 Y1696 H1707 S1708 D1709 M1716 I1717 V1718 I1721
N1724 S1735 E1736 N1737 Y1738 K1741 V1742 K1743 N1748 Y1751 S1759 N1760 I1761 S1762 L1763 T1764 E1765 T1768 K1774 L1777 M1778 L1783 R1784 N1787 L1797 L1798 N1801 H1802 N1803 S1804 S1808 E1809 L1812 E1821 S1822 E1823 MET SER ASN SER PRO GLN ILE PRO LYS
LYS LYS VAL LYS ASP GLN VAL ASP GLU K1842 E1843 D1844 V1848 N1849 L1850 E1851 S1852 K1853 S1859 N1860 S1861 L1862 T1867 A1872 L1873 L1876 R1877 I1880 T1881 R1882 L1887 E1893 I1896 R1900 S1905 E1906 N1907 V1910 V1911 I1912 S1913 T1914 I1917 L1918 I1919 I1933
R1939 K1940 V1941 L1942 N1943 I1944 S1948 P1949 S1952 Q1957 M1958 G1959 L1960 K1961 F1962 L1963 D1971 K1975 A1978 L1979 R1985 V1986 L1987 N1991 R1995 Q1996 G1997 L1998 F2002 H2010 I2011 M2012 L2013 L2016 I2019 A2020 D2021 T2022 T2023 R2024 E2025 I2026 N2030 H2031 S2032
K2033 E2034 I2035 R2036 Q2045 E2049 Q2052 S2053 K2054 L2057 F2061 D2066 N2067 L2068 Q2069 Y2070 R2076 L2085 K2089 ALA ASN P2092 L2095 S2099 R2119 E2120 V2124 S2127 E2134 K2143 A2147 TRP LEU LYS GLN VAL D2153 V2167 TYR LEU LYS S2171



• Molecule 54: U3 small nucleolar RNA-associated protein 14

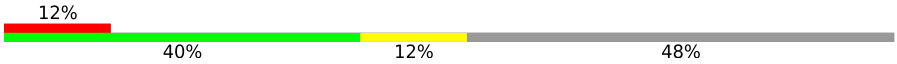
Chain RQ:

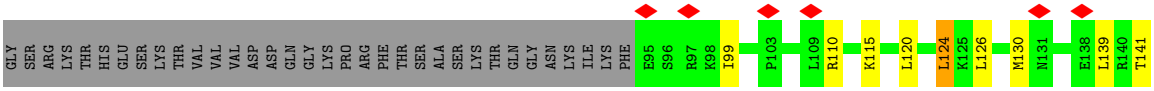


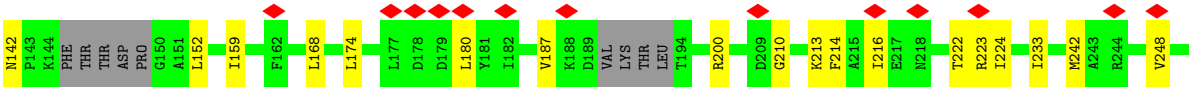


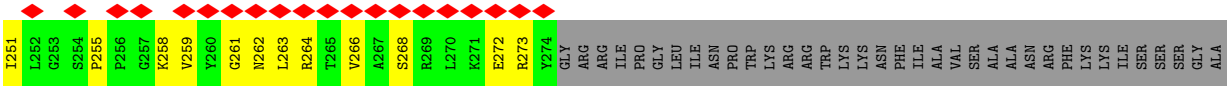
• Molecule 55: Pno1

Chain RT:



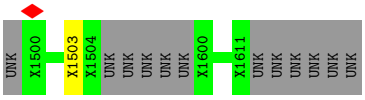






• Molecule 56: Unassigned helices

Chain X1:


UNK
X1500
X1503
X1504
UNK
UNK
UNK
UNK
UNK
X1600
X1611
UNK
UNK
UNK
UNK
UNK

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	14475	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 ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.086	Depositor
Minimum map value	-0.035	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.018	Depositor
Map size (Å)	597.632, 597.632, 597.632	wwPDB
Map dimensions	448, 448, 448	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.334, 1.334, 1.334	Depositor

5 Model quality

5.1 Standard geometry

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

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	3A	0.71	0/4592	1.24	28/7138 (0.4%)
2	5A	0.52	0/3643	1.20	23/5663 (0.4%)
3	SA	0.67	0/27506	1.18	201/42818 (0.5%)
4	SC	0.46	0/1874	0.71	3/2512 (0.1%)
5	SF	0.41	0/1969	0.70	3/2661 (0.1%)
6	SG	0.44	0/1690	0.63	0/2285
7	SH	0.31	0/1477	0.58	1/1977 (0.1%)
8	SI	0.41	0/1330	0.71	1/1792 (0.1%)
9	SJ	0.31	0/1124	0.61	0/1510
10	SK	0.51	0/1410	0.66	2/1888 (0.1%)
11	SM	0.31	0/1139	0.57	0/1535
12	SO	0.44	0/1109	0.64	0/1495
13	SP	0.42	0/879	0.63	0/1186
14	SR	0.53	0/990	0.69	1/1335 (0.1%)
15	SX	0.49	0/1020	0.66	0/1371
16	SY	0.42	0/819	0.60	0/1093
17	SZ	0.52	0/1000	0.65	0/1334
18	Sc	0.45	0/613	0.73	1/828 (0.1%)
19	Sd	0.49	0/499	0.71	1/670 (0.1%)
20	3B	0.56	0/1901	0.66	1/2567 (0.0%)
20	3C	0.36	0/1796	0.63	1/2424 (0.0%)
21	3D	0.45	0/3020	0.66	4/4066 (0.1%)
22	3E	0.38	0/3072	0.61	2/4169 (0.0%)
23	3F	0.50	0/3569	0.67	0/4806
24	3G	0.40	0/928	0.72	0/1262
24	3H	0.53	0/928	0.68	1/1262 (0.1%)
25	A4	0.36	0/5338	0.64	1/7230 (0.0%)
26	A5	0.49	0/2995	0.64	1/4060 (0.0%)
27	A9	0.28	0/301	0.69	0/398
28	AE	0.44	0/3500	0.63	1/4736 (0.0%)
29	AF	0.32	0/3885	0.61	2/5261 (0.0%)
30	AG	0.34	0/6699	0.64	5/9077 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
31	B1	0.56	0/6570	0.67	1/8892 (0.0%)
32	B2	0.42	0/6628	0.67	1/8954 (0.0%)
33	B3	0.37	0/6014	0.71	4/8137 (0.0%)
34	B8	0.43	0/3848	0.65	2/5218 (0.0%)
35	BE	0.55	0/6606	0.66	1/8935 (0.0%)
36	B6	0.45	0/2849	0.56	0/3853
37	5C	0.53	0/3690	0.65	0/4991
38	5D	0.36	0/621	0.52	0/823
39	5E	0.40	0/1580	0.67	2/2115 (0.1%)
40	5F	0.50	0/1559	0.66	1/2097 (0.0%)
41	5G	0.51	0/1768	0.66	0/2392
42	5H	0.45	0/601	0.63	1/789 (0.1%)
43	5I	0.64	0/3835	0.67	2/5162 (0.0%)
44	5J	0.35	0/1147	0.57	0/1531
45	5K	0.51	0/1346	0.63	0/1812
46	RD	0.31	0/2454	0.59	0/3310
47	RE	0.37	0/9015	0.63	7/12195 (0.1%)
48	RF	0.37	0/2004	0.64	2/2697 (0.1%)
49	RH	0.28	0/1746	0.61	0/2357
50	RJ	0.45	0/6067	0.62	2/8170 (0.0%)
51	RK	0.41	0/2832	0.63	0/3825
52	RN	0.33	0/454	0.51	0/600
53	RP	0.31	0/12777	0.51	4/17558 (0.0%)
54	RQ	0.44	0/1682	0.60	0/2286
55	RT	0.33	0/1379	0.62	0/1853
All	All	0.48	0/181687	0.79	314/252961 (0.1%)

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
4	SC	0	4
7	SH	0	1
8	SI	0	4
12	SO	0	1
18	Sc	0	2
19	Sd	0	1
20	3C	0	1
23	3F	0	1
26	A5	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
29	AF	0	1
30	AG	0	5
31	B1	0	1
32	B2	0	2
33	B3	0	5
39	5E	0	1
43	5I	0	3
47	RE	0	3
48	RF	0	3
49	RH	0	1
50	RJ	0	1
51	RK	0	1
53	RP	0	11
54	RQ	0	2
55	RT	0	1
All	All	0	57

There are no bond length outliers.

All (314) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	3A	27	U	C2-N1-C1'	11.58	131.59	117.70
1	3A	27	U	N1-C2-O2	11.42	130.79	122.80
1	3A	27	U	N3-C2-O2	-10.83	114.62	122.20
3	SA	453	U	N3-C2-O2	-10.59	114.79	122.20
3	SA	453	U	N1-C2-O2	9.83	129.68	122.80
3	SA	287	G	O4'-C1'-N9	9.66	115.92	108.20
3	SA	453	U	C2-N1-C1'	9.57	129.19	117.70
3	SA	73	U	N3-C2-O2	-9.43	115.60	122.20
3	SA	1743	U	N1-C2-O2	9.02	129.12	122.80
3	SA	73	U	N1-C2-O2	8.87	129.01	122.80
3	SA	1743	U	C2-N1-C1'	8.62	128.04	117.70
3	SA	1729	C	N3-C2-O2	-8.22	116.14	121.90
30	AG	383	LEU	CA-CB-CG	8.21	134.18	115.30
3	SA	507	U	C2-N1-C1'	8.16	127.49	117.70
1	3A	27	U	C6-N1-C1'	-7.96	110.06	121.20
3	SA	484	C	C5-C6-N1	7.93	124.97	121.00
3	SA	1053	G	C8-N9-C4	-7.88	103.25	106.40
3	SA	1743	U	N3-C2-O2	-7.85	116.70	122.20
26	A5	25	ASP	CB-CG-OD1	7.82	125.34	118.30
3	SA	1717	G	C4-N9-C1'	7.77	136.60	126.50
3	SA	1174	C	N1-C2-O2	7.76	123.56	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	SA	800	U	N3-C2-O2	-7.72	116.79	122.20
1	3A	75	C	C5-C6-N1	7.72	124.86	121.00
3	SA	1769	U	N1-C2-O2	7.71	128.20	122.80
3	SA	190	C	N3-C2-O2	-7.70	116.51	121.90
21	3D	184	LEU	CA-CB-CG	7.67	132.95	115.30
3	SA	229	U	N1-C2-O2	7.56	128.09	122.80
3	SA	279	G	N3-C4-N9	-7.53	121.48	126.00
3	SA	107	C	C6-N1-C2	-7.51	117.30	120.30
3	SA	767	U	C2-N1-C1'	7.46	126.65	117.70
3	SA	1769	U	N3-C2-O2	-7.43	117.00	122.20
3	SA	767	U	N3-C2-O2	-7.40	117.02	122.20
3	SA	767	U	N1-C2-O2	7.34	127.94	122.80
3	SA	1174	C	C2-N1-C1'	7.32	126.86	118.80
3	SA	482	U	N3-C2-O2	-7.32	117.08	122.20
3	SA	107	C	N1-C2-O2	7.27	123.26	118.90
3	SA	73	U	C6-N1-C2	-7.21	116.68	121.00
1	3A	75	C	C6-N1-C2	-7.14	117.44	120.30
2	5A	311	C	P-O3'-C3'	7.13	128.26	119.70
3	SA	484	C	C6-N1-C2	-7.13	117.45	120.30
3	SA	1066	C	N3-C2-O2	-7.13	116.91	121.90
3	SA	73	U	C5-C6-N1	7.11	126.25	122.70
3	SA	1053	G	O5'-P-OP1	-7.09	99.31	105.70
40	5F	13	LEU	CA-CB-CG	7.08	131.58	115.30
3	SA	1784	C	N3-C2-O2	-7.07	116.95	121.90
1	3A	269	C	N1-C2-O2	7.05	123.13	118.90
3	SA	962	C	N3-C2-O2	-7.05	116.97	121.90
1	3A	43	C	C6-N1-C2	-7.02	117.49	120.30
3	SA	800	U	N1-C2-O2	7.01	127.71	122.80
3	SA	502	U	N3-C2-O2	-7.00	117.30	122.20
3	SA	507	U	C6-N1-C1'	-6.97	111.45	121.20
21	3D	181	LEU	CA-CB-CG	6.94	131.27	115.30
3	SA	229	U	N3-C2-O2	-6.93	117.35	122.20
3	SA	864	U	N3-C2-O2	-6.92	117.36	122.20
3	SA	230	C	N1-C2-O2	6.88	123.03	118.90
3	SA	189	C	N1-C2-O2	6.88	123.03	118.90
1	3A	99	U	C5-C6-N1	6.87	126.13	122.70
3	SA	73	U	C2-N1-C1'	6.86	125.93	117.70
3	SA	579	A	P-O3'-C3'	6.86	127.93	119.70
3	SA	873	U	N1-C2-O2	6.81	127.56	122.80
3	SA	1174	C	C6-N1-C2	-6.79	117.58	120.30
3	SA	1742	U	N1-C2-O2	6.76	127.53	122.80
21	3D	292	LEU	CA-CB-CG	6.72	130.75	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	SA	1713	G	C4-N9-C1'	6.71	135.22	126.50
3	SA	107	C	N3-C2-O2	-6.66	117.24	121.90
3	SA	489	C	C6-N1-C2	-6.64	117.64	120.30
3	SA	653	C	N1-C2-O2	6.59	122.86	118.90
3	SA	507	U	N1-C2-O2	6.59	127.41	122.80
3	SA	1174	C	N3-C2-O2	-6.58	117.29	121.90
3	SA	1743	U	C6-N1-C1'	-6.57	112.00	121.20
3	SA	502	U	N1-C2-O2	6.56	127.39	122.80
3	SA	1709	C	N3-C2-O2	-6.55	117.31	121.90
47	RE	730	LEU	CA-CB-CG	6.54	130.35	115.30
33	B3	401	LEU	CA-CB-CG	6.54	130.34	115.30
3	SA	1717	G	N3-C4-C5	-6.50	125.35	128.60
3	SA	1717	G	C8-N9-C1'	-6.48	118.58	127.00
3	SA	686	C	C2-N1-C1'	6.47	125.92	118.80
3	SA	633	U	N3-C2-O2	-6.46	117.67	122.20
20	3B	306	LEU	CA-CB-CG	6.39	129.99	115.30
3	SA	1709	C	N1-C2-O2	6.38	122.73	118.90
30	AG	529	LEU	CA-CB-CG	6.38	129.97	115.30
3	SA	489	C	C5-C6-N1	6.34	124.17	121.00
3	SA	454	U	C6-N1-C2	-6.33	117.20	121.00
3	SA	36	C	N1-C2-O2	6.32	122.69	118.90
3	SA	519	C	N1-C2-O2	6.31	122.69	118.90
3	SA	1687	U	N1-C2-O2	6.29	127.20	122.80
3	SA	542	A	P-O3'-C3'	6.25	127.20	119.70
3	SA	777	C	N1-C2-O2	6.23	122.64	118.90
3	SA	1646	C	N1-C2-O2	6.23	122.64	118.90
2	5A	83	U	N1-C2-O2	6.20	127.14	122.80
3	SA	1717	G	N3-C4-N9	6.19	129.72	126.00
3	SA	189	C	C2-N1-C1'	6.18	125.60	118.80
3	SA	1729	C	N1-C2-O2	6.14	122.58	118.90
1	3A	313	A	C2-N3-C4	6.13	113.67	110.60
2	5A	64	U	N3-C2-O2	-6.13	117.91	122.20
3	SA	873	U	N3-C2-O2	-6.12	117.91	122.20
3	SA	484	C	C2-N1-C1'	6.12	125.53	118.80
53	RP	1887	LEU	CA-CB-CG	6.09	129.30	115.30
3	SA	1053	G	OP1-P-OP2	6.06	128.69	119.60
3	SA	1742	U	N3-C2-O2	-6.05	117.96	122.20
30	AG	670	LEU	CA-CB-CG	6.05	129.21	115.30
7	SH	29	ASP	CB-CG-OD1	6.05	123.74	118.30
2	5A	501	C	N1-C2-O2	6.04	122.53	118.90
3	SA	1687	U	N3-C2-O2	-6.04	117.97	122.20
3	SA	1620	C	N1-C2-O2	6.04	122.52	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	SA	50	C	C2-N1-C1'	6.02	125.42	118.80
3	SA	637	C	P-O3'-C3'	6.01	126.91	119.70
3	SA	648	G	N3-C4-N9	6.00	129.60	126.00
33	B3	162	LEU	CA-CB-CG	6.00	129.09	115.30
3	SA	637	C	OP1-P-O3'	5.99	118.38	105.20
1	3A	248	G	P-O3'-C3'	5.97	126.86	119.70
2	5A	65	U	C5-C6-N1	5.96	125.68	122.70
3	SA	230	C	C5-C6-N1	5.96	123.98	121.00
3	SA	149	C	C2-N1-C1'	5.96	125.35	118.80
1	3A	269	C	C2-N1-C1'	5.96	125.35	118.80
3	SA	536	C	C5-C6-N1	5.95	123.97	121.00
1	3A	294	U	C2-N1-C1'	5.95	124.84	117.70
3	SA	75	U	C2-N1-C1'	5.95	124.84	117.70
2	5A	4	C	C5-C6-N1	5.94	123.97	121.00
3	SA	0	U	P-O3'-C3'	5.93	126.82	119.70
3	SA	280	U	P-O3'-C3'	5.91	126.80	119.70
14	SR	116	LEU	CA-CB-CG	5.91	128.90	115.30
3	SA	230	C	C6-N1-C2	-5.91	117.94	120.30
3	SA	453	U	C6-N1-C1'	-5.90	112.94	121.20
3	SA	1070	C	C6-N1-C2	-5.90	117.94	120.30
43	5I	62	LEU	CA-CB-CG	5.90	128.87	115.30
34	B8	328	LEU	CA-CB-CG	5.89	128.86	115.30
3	SA	487	G	N3-C4-N9	5.89	129.53	126.00
4	SC	172	LEU	CA-CB-CG	5.88	128.83	115.30
3	SA	686	C	C5-C6-N1	5.88	123.94	121.00
19	Sd	52	ASP	CB-CG-OD1	5.88	123.59	118.30
1	3A	42	U	C5-C6-N1	5.87	125.64	122.70
2	5A	84	G	N3-C4-N9	5.86	129.52	126.00
3	SA	490	C	C6-N1-C2	-5.85	117.96	120.30
47	RE	213	LEU	CA-CB-CG	5.85	128.75	115.30
3	SA	777	C	C2-N1-C1'	5.84	125.23	118.80
1	3A	269	C	N3-C2-O2	-5.84	117.81	121.90
3	SA	36	C	N3-C2-O2	-5.84	117.81	121.90
3	SA	1769	U	C2-N1-C1'	5.82	124.68	117.70
20	3C	306	LEU	CA-CB-CG	5.82	128.69	115.30
3	SA	1066	C	N1-C2-O2	5.81	122.39	118.90
3	SA	279	G	C6-C5-N7	5.79	133.88	130.40
39	5E	314	LEU	CA-CB-CG	5.79	128.62	115.30
3	SA	107	C	C2-N1-C1'	5.78	125.16	118.80
3	SA	278	U	P-O3'-C3'	5.78	126.63	119.70
3	SA	75	U	N1-C2-O2	5.77	126.84	122.80
3	SA	656	G	O4'-C1'-N9	5.77	112.81	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	SA	139	C	P-O3'-C3'	5.75	126.60	119.70
2	5A	64	U	N1-C2-O2	5.75	126.83	122.80
47	RE	268	LEU	CA-CB-CG	5.75	128.52	115.30
3	SA	1594	G	P-O3'-C3'	5.74	126.58	119.70
25	A4	390	LEU	CA-CB-CG	5.73	128.48	115.30
3	SA	1053	G	N9-C4-C5	5.73	107.69	105.40
1	3A	44	U	C5-C6-N1	5.72	125.56	122.70
2	5A	494	C	C2-N1-C1'	5.72	125.09	118.80
1	3A	248	G	O4'-C1'-N9	5.69	112.75	108.20
3	SA	536	C	C6-N1-C2	-5.67	118.03	120.30
3	SA	786	C	C5-C6-N1	5.67	123.83	121.00
30	AG	670	LEU	CB-CG-CD1	-5.65	101.39	111.00
3	SA	800	U	C2-N1-C1'	5.65	124.47	117.70
5	SF	193	GLY	N-CA-C	5.64	127.21	113.10
2	5A	61	U	C2-N1-C1'	5.63	124.46	117.70
53	RP	1876	LEU	CA-CB-CG	-5.63	102.34	115.30
50	RJ	252	LEU	CA-CB-CG	5.63	128.25	115.30
3	SA	781	U	P-O3'-C3'	5.63	126.45	119.70
47	RE	240	LEU	CA-CB-CG	5.62	128.24	115.30
3	SA	773	C	P-O3'-C3'	5.62	126.44	119.70
3	SA	1055	U	N1-C2-O2	5.62	126.73	122.80
3	SA	283	U	C2-N1-C1'	5.62	124.44	117.70
3	SA	965	U	C2-N1-C1'	5.61	124.44	117.70
43	5I	310	ASP	CB-CG-OD1	5.61	123.35	118.30
10	SK	118	LEU	CA-CB-CG	5.60	128.18	115.30
3	SA	243	G	N3-C4-N9	-5.59	122.64	126.00
53	RP	1987	LEU	CA-CB-CG	5.59	128.15	115.30
3	SA	279	G	N9-C4-C5	5.58	107.63	105.40
3	SA	1646	C	N3-C2-O2	-5.57	118.00	121.90
35	BE	923	ASP	CB-CG-OD1	5.56	123.31	118.30
3	SA	827	C	C2-N1-C1'	5.56	124.92	118.80
3	SA	289	U	N3-C2-O2	-5.56	118.31	122.20
3	SA	873	U	C2-N1-C1'	5.55	124.36	117.70
47	RE	959	LEU	CA-CB-CG	5.54	128.05	115.30
3	SA	1784	C	N1-C2-O2	5.54	122.23	118.90
2	5A	84	G	C4-N9-C1'	5.53	133.69	126.50
2	5A	494	C	C6-N1-C2	-5.53	118.09	120.30
3	SA	71	A	O4'-C1'-N9	5.53	112.62	108.20
1	3A	62	C	C5-C6-N1	5.51	123.76	121.00
3	SA	274	G	C4-N9-C1'	5.51	133.66	126.50
3	SA	1620	C	N3-C2-O2	-5.49	118.06	121.90
3	SA	530	C	N1-C2-O2	5.49	122.19	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	SA	786	C	C6-N1-C2	-5.48	118.11	120.30
24	3H	22	ASP	CB-CG-OD1	5.48	123.23	118.30
3	SA	653	C	N3-C2-O2	-5.48	118.06	121.90
3	SA	1141	G	N3-C4-N9	5.47	129.28	126.00
30	AG	323	LEU	CA-CB-CG	5.47	127.89	115.30
3	SA	1713	G	C8-N9-C1'	-5.47	119.89	127.00
3	SA	230	C	C2-N1-C1'	5.46	124.80	118.80
33	B3	454	LEU	CA-CB-CG	5.45	127.83	115.30
3	SA	1713	G	N3-C4-N9	5.43	129.26	126.00
32	B2	551	LEU	CA-CB-CG	5.43	127.78	115.30
3	SA	454	U	C5-C6-N1	5.42	125.41	122.70
8	SI	67	LEU	CA-CB-CG	5.41	127.74	115.30
53	RP	107	LEU	CB-CG-CD2	-5.41	101.81	111.00
3	SA	484	C	P-O3'-C3'	5.40	126.19	119.70
3	SA	1174	C	C5-C6-N1	5.40	123.70	121.00
2	5A	499	U	N3-C2-O2	-5.40	118.42	122.20
3	SA	864	U	N1-C2-O2	5.40	126.58	122.80
2	5A	83	U	C2-N1-C1'	5.39	124.17	117.70
3	SA	802	G	N1-C2-N2	-5.38	111.36	116.20
3	SA	211	U	C2-N1-C1'	5.38	124.15	117.70
1	3A	97	C	C5-C6-N1	5.37	123.69	121.00
3	SA	1778	G	N3-C4-N9	-5.37	122.78	126.00
29	AF	326	LEU	CA-CB-CG	5.37	127.66	115.30
3	SA	185	U	N1-C2-O2	5.37	126.56	122.80
3	SA	1055	U	N3-C2-O2	-5.37	118.44	122.20
4	SC	147	ALA	C-N-CA	5.36	135.10	121.70
2	5A	57	C	C5-C6-N1	5.35	123.68	121.00
47	RE	1149	LEU	CA-CB-CG	5.35	127.60	115.30
3	SA	1064	G	C4-N9-C1'	5.34	133.44	126.50
3	SA	54	C	C6-N1-C2	-5.34	118.17	120.30
3	SA	1476	C	C2-N1-C1'	5.33	124.67	118.80
39	5E	448	LEU	CA-CB-CG	5.33	127.56	115.30
3	SA	279	G	C5-C6-O6	5.32	131.79	128.60
3	SA	211	U	N1-C2-O2	5.32	126.52	122.80
3	SA	506	A	C2-N3-C4	5.32	113.26	110.60
3	SA	230	C	N3-C2-O2	-5.31	118.18	121.90
3	SA	149	C	N1-C2-O2	5.30	122.08	118.90
28	AE	234	LEU	CA-CB-CG	5.30	127.48	115.30
47	RE	730	LEU	CB-CG-CD2	-5.29	102.01	111.00
33	B3	355	LEU	CA-CB-CG	5.28	127.45	115.30
3	SA	250	C	C6-N1-C2	-5.28	118.19	120.30
2	5A	57	C	C2-N1-C1'	5.28	124.61	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	3A	107	C	OP1-P-O3'	5.27	116.80	105.20
2	5A	7	A	O5'-P-OP1	-5.27	100.96	105.70
3	SA	302	U	N3-C2-O2	-5.27	118.51	122.20
3	SA	453	U	C6-N1-C2	-5.27	117.84	121.00
22	3E	195	LEU	CA-CB-CG	5.27	127.42	115.30
3	SA	536	C	N1-C2-O2	5.26	122.06	118.90
3	SA	502	U	C2-N1-C1'	5.26	124.02	117.70
1	3A	27	U	C5-C6-N1	5.26	125.33	122.70
2	5A	4	C	C6-N1-C2	-5.26	118.20	120.30
3	SA	279	G	C8-N9-C1'	5.25	133.83	127.00
3	SA	531	C	N1-C2-O2	5.25	122.05	118.90
3	SA	340	U	C5-C6-N1	5.24	125.32	122.70
3	SA	1476	C	C5-C6-N1	5.23	123.61	121.00
3	SA	658	C	C6-N1-C1'	5.23	127.07	120.80
3	SA	1609	U	N3-C2-O2	-5.22	118.55	122.20
48	RF	60	LEU	CA-CB-CG	5.22	127.31	115.30
3	SA	921	U	C2-N1-C1'	5.21	123.96	117.70
3	SA	50	C	N1-C2-O2	5.21	122.03	118.90
5	SF	11	ARG	C-N-CA	5.21	134.73	121.70
3	SA	190	C	C6-N1-C2	-5.21	118.22	120.30
21	3D	412	LEU	CA-CB-CG	5.21	127.28	115.30
3	SA	283	U	N1-C2-O2	5.20	126.44	122.80
3	SA	1675	C	N1-C2-O2	5.20	122.02	118.90
10	SK	105	LEU	CA-CB-CG	5.20	127.26	115.30
3	SA	767	U	C6-N1-C1'	-5.20	113.93	121.20
3	SA	176	C	C6-N1-C1'	5.19	127.03	120.80
1	3A	243	U	C2-N1-C1'	5.19	123.93	117.70
1	3A	243	U	N1-C2-O2	5.19	126.43	122.80
22	3E	371	LEU	CA-CB-CG	5.19	127.24	115.30
3	SA	1527	C	C5-C6-N1	5.19	123.59	121.00
3	SA	324	U	N3-C2-O2	-5.18	118.57	122.20
1	3A	243	U	N3-C2-O2	-5.18	118.57	122.20
1	3A	46	U	N1-C2-O2	5.18	126.43	122.80
5	SF	101	LEU	CA-CB-CG	5.18	127.21	115.30
3	SA	107	C	C5-C6-N1	5.17	123.59	121.00
4	SC	54	LEU	CA-CB-CG	5.17	127.20	115.30
48	RF	147	LEU	CA-CB-CG	5.17	127.20	115.30
3	SA	279	G	C4-N9-C1'	-5.16	119.79	126.50
3	SA	306	U	N1-C2-O2	5.16	126.41	122.80
2	5A	588	C	C2-N1-C1'	5.16	124.47	118.80
3	SA	487	G	C2-N3-C4	5.16	114.48	111.90
3	SA	1620	C	C6-N1-C2	-5.15	118.24	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	SA	276	C	C2-N1-C1'	-5.14	113.15	118.80
3	SA	802	G	N3-C2-N2	5.14	123.50	119.90
2	5A	538	C	N1-C2-O2	5.14	121.98	118.90
18	Sc	3	LEU	CA-CB-CG	5.14	127.11	115.30
3	SA	813	U	C2-N1-C1'	5.13	123.86	117.70
3	SA	335	U	N3-C2-O2	-5.13	118.61	122.20
3	SA	38	C	C6-N1-C2	-5.13	118.25	120.30
3	SA	75	U	N3-C2-O2	-5.13	118.61	122.20
3	SA	283	U	N3-C2-O2	-5.12	118.62	122.20
3	SA	685	A	P-O3'-C3'	5.12	125.84	119.70
34	B8	290	LEU	CA-CB-CG	5.12	127.07	115.30
1	3A	306	G	C4-N9-C1'	5.12	133.15	126.50
3	SA	579	A	OP2-P-O3'	5.11	116.44	105.20
3	SA	68	A	P-O3'-C3'	5.11	125.83	119.70
3	SA	658	C	C2-N1-C1'	-5.11	113.18	118.80
3	SA	1612	U	N3-C2-O2	-5.11	118.63	122.20
3	SA	1703	C	C6-N1-C2	-5.10	118.26	120.30
29	AF	421	LEU	CA-CB-CG	5.10	127.03	115.30
3	SA	1742	U	C5-C6-N1	5.09	125.24	122.70
3	SA	519	C	N3-C2-O2	-5.08	118.34	121.90
2	5A	84	G	C8-N9-C1'	-5.08	120.40	127.00
3	SA	50	C	C5-C6-N1	5.07	123.54	121.00
3	SA	629	U	C5-C6-N1	5.07	125.24	122.70
3	SA	1612	U	N1-C2-O2	5.07	126.35	122.80
3	SA	454	U	N3-C2-O2	-5.05	118.66	122.20
3	SA	827	C	N1-C2-O2	5.05	121.93	118.90
3	SA	192	U	C2-N1-C1'	5.05	123.76	117.70
3	SA	633	U	N1-C2-O2	5.05	126.34	122.80
3	SA	748	U	N1-C2-O2	5.05	126.34	122.80
3	SA	1742	U	C2-N1-C1'	5.05	123.76	117.70
50	RJ	845	LEU	CA-CB-CG	5.05	126.92	115.30
31	B1	327	LEU	CA-CB-CG	5.05	126.91	115.30
1	3A	243	U	C5-C6-N1	5.04	125.22	122.70
3	SA	632	U	N3-C2-O2	-5.04	118.67	122.20
42	5H	576	LEU	CA-CB-CG	5.04	126.89	115.30
2	5A	65	U	N1-C2-O2	5.04	126.32	122.80
3	SA	777	C	C6-N1-C2	-5.04	118.29	120.30
1	3A	107	C	P-O3'-C3'	5.03	125.74	119.70
3	SA	1585	U	N3-C2-O2	-5.03	118.68	122.20
3	SA	431	C	C6-N1-C2	-5.02	118.29	120.30
2	5A	589	U	C5-C6-N1	5.01	125.21	122.70

There are no chirality outliers.

All (57) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
20	3C	246	GLN	Peptide
23	3F	173	GLU	Peptide
39	5E	483	TYR	Peptide
43	5I	185	ILE	Peptide
43	5I	230	ASN	Peptide
43	5I	283	ASP	Peptide
26	A5	166	ALA	Peptide
29	AF	289	ASN	Peptide
30	AG	140	LYS	Peptide
30	AG	386	ASN	Peptide
30	AG	502	LYS	Peptide
30	AG	740	LYS	Peptide
30	AG	780	GLU	Peptide
31	B1	348	THR	Peptide
32	B2	212	VAL	Peptide
32	B2	213	LYS	Peptide
33	B3	34	THR	Peptide
33	B3	410	ASN	Peptide
33	B3	445	ILE	Peptide
33	B3	473	ALA	Peptide
33	B3	593	CYS	Peptide
47	RE	1028	ARG	Peptide
47	RE	1168	TYR	Peptide
47	RE	458	ILE	Peptide
48	RF	107	LEU	Peptide
48	RF	155	LEU	Peptide
48	RF	157	GLU	Peptide
49	RH	232	LEU	Peptide
50	RJ	783	PHE	Peptide
51	RK	259	GLU	Peptide
53	RP	1003	ILE	Peptide
53	RP	1005	ASN	Peptide
53	RP	13	ARG	Peptide
53	RP	1707	HIS	Peptide
53	RP	1804	SER	Peptide
53	RP	1848	VAL	Peptide
53	RP	185	LYS	Peptide
53	RP	1907	ASN	Peptide
53	RP	1996	GLN	Peptide
53	RP	36	LYS	Peptide
53	RP	903	THR	Peptide
54	RQ	271	GLU	Peptide

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Mol	Chain	Res	Type	Group
54	RQ	312	ILE	Peptide
55	RT	124	LEU	Peptide
4	SC	135	LEU	Peptide
4	SC	16	GLN	Peptide
4	SC	177	GLN	Peptide
4	SC	208	GLN	Peptide
7	SH	152	ASP	Peptide
8	SI	131	PHE	Peptide
8	SI	134	GLU	Peptide
8	SI	31	SER	Peptide
8	SI	64	VAL	Peptide
12	SO	58	HIS	Peptide
18	Sc	49	HIS	Peptide
18	Sc	74	SER	Peptide
19	Sd	51	ASN	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	3A	4114	0	2083	43	0
2	5A	3260	0	1643	34	0
3	SA	24609	0	12403	299	0
4	SC	1848	0	1940	41	0
5	SF	1930	0	1950	30	0
6	SG	1669	0	1724	21	0
7	SH	1457	0	1504	39	0
8	SI	1310	0	1374	36	0
9	SJ	1104	0	1107	28	0
10	SK	1388	0	1467	28	0
11	SM	1113	0	1181	29	0
12	SO	1087	0	1152	26	0
13	SP	868	0	894	18	0
14	SR	973	0	1029	19	0
15	SX	1003	0	1040	24	0
16	SY	807	0	865	16	0
17	SZ	986	0	1042	19	0
18	Sc	603	0	621	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
19	Sd	497	0	535	0	0
20	3B	1865	0	1910	46	0
20	3C	1763	0	1805	42	0
21	3D	2974	0	3001	53	0
22	3E	3041	0	2831	67	0
23	3F	3498	0	3515	77	0
24	3G	916	0	964	17	0
24	3H	916	0	964	23	0
25	A4	5243	0	5216	184	0
26	A5	2943	0	2928	61	0
27	A9	299	0	328	6	0
28	AE	3443	0	3564	62	0
29	AF	3807	0	3791	89	0
30	AG	6570	0	6473	187	0
31	B1	6427	0	6329	127	0
32	B2	6502	0	6493	156	0
33	B3	5919	0	6007	146	0
34	B8	3764	0	3757	83	0
35	BE	6475	0	6453	156	0
36	B6	2800	0	2517	43	0
37	5C	3612	0	3578	66	0
38	5D	609	0	616	8	0
39	5E	1564	0	1592	41	0
40	5F	1530	0	1572	30	0
41	5G	1732	0	1744	35	0
42	5H	596	0	661	8	0
43	5I	3756	0	3708	86	0
44	5J	1127	0	1150	17	0
45	5K	1323	0	1401	20	0
46	RD	2413	0	2264	29	0
47	RE	8805	0	8911	192	0
48	RF	1963	0	1942	42	0
49	RH	1719	0	1783	39	0
50	RJ	5935	0	6100	130	0
51	RK	2781	0	2878	79	0
52	RN	450	0	447	2	0
53	RP	12716	0	8235	90	0
54	RQ	1655	0	1461	22	0
55	RT	1357	0	1426	23	0
56	X1	400	0	99	3	0
57	5K	1	0	0	0	0
57	Sc	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
58	RJ	32	0	12	0	0
59	RJ	1	0	0	0	0
All	All	175869	0	155980	3018	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 9.

All (3018) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:A4:741:LEU:HD11	25:A4:744:VAL:CG2	1.48	1.42
25:A4:740:PRO:O	25:A4:756:GLU:HG2	1.44	1.16
25:A4:741:LEU:HD11	25:A4:744:VAL:HG21	1.16	1.13
25:A4:741:LEU:HD21	25:A4:744:VAL:HG23	1.39	1.04
25:A4:741:LEU:CD1	25:A4:744:VAL:CG2	2.39	1.00
3:SA:1170:G:H1	3:SA:1469:A:N6	1.62	0.97
3:SA:656:G:H1	3:SA:678:A:H2	1.00	0.96
3:SA:142:G:N1	3:SA:173:A:C2	2.33	0.96
3:SA:656:G:N1	3:SA:678:A:C2	2.34	0.94
3:SA:902:G:H21	3:SA:907:A:H62	1.01	0.93
3:SA:69:G:H1	3:SA:82:U:H3	1.12	0.91
3:SA:1697:G:H1	3:SA:1704:U:H3	0.98	0.90
49:RH:44:VAL:HA	49:RH:113:TYR:O	1.72	0.89
3:SA:142:G:H1	3:SA:173:A:H2	0.92	0.89
3:SA:1688:U:H3	3:SA:1713:G:H1	0.89	0.88
3:SA:1170:G:H1	3:SA:1469:A:H61	0.90	0.87
35:BE:360:ASP:O	35:BE:636:PRO:HG2	1.73	0.87
1:3A:12:U:H3	3:SA:1112:G:H1	0.89	0.87
3:SA:142:G:N1	3:SA:173:A:H2	1.68	0.87
25:A4:739:LYS:HB2	25:A4:740:PRO:HD3	1.54	0.86
51:RK:114:PHE:O	51:RK:169:VAL:HA	1.75	0.86
3:SA:902:G:N2	3:SA:907:A:H62	1.75	0.84
25:A4:739:LYS:HE2	25:A4:739:LYS:HA	1.60	0.82
25:A4:740:PRO:O	25:A4:756:GLU:CG	2.26	0.82
44:5J:114:ARG:O	44:5J:118:GLN:HB3	1.79	0.82
3:SA:656:G:N1	3:SA:678:A:H2	1.74	0.82
28:AE:3:SER:O	28:AE:7:GLN:HB2	1.79	0.82
25:A4:741:LEU:CD2	25:A4:744:VAL:HG23	2.09	0.81
12:SO:40:TYR:HB3	12:SO:45:LEU:HD12	1.62	0.81
32:B2:322:SER:O	32:B2:326:LEU:HB2	1.78	0.81
3:SA:902:G:H21	3:SA:907:A:N6	1.78	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:3F:263:TRP:HZ3	23:3F:270:PRO:HD3	1.45	0.81
25:A4:741:LEU:HD11	25:A4:744:VAL:HG22	1.61	0.80
36:B6:319:TYR:O	36:B6:323:PHE:HB2	1.81	0.80
34:B8:311:ASN:HA	34:B8:324:TRP:O	1.80	0.79
23:3F:263:TRP:CZ3	23:3F:270:PRO:HG3	2.18	0.79
47:RE:442:PHE:O	47:RE:469:ASP:HA	1.82	0.78
37:5C:116:ILE:H	37:5C:380:ASN:HD21	1.30	0.78
25:A4:741:LEU:CD1	25:A4:744:VAL:HG21	2.07	0.78
25:A4:739:LYS:HE2	25:A4:739:LYS:CA	2.15	0.76
32:B2:386:GLU:HA	32:B2:391:ARG:HH22	1.50	0.76
35:BE:361:SER:HA	35:BE:636:PRO:CB	2.15	0.76
29:AF:86:SER:O	29:AF:98:ALA:HA	1.85	0.76
28:AE:309:GLN:HG2	34:B8:224:ASN:HD22	1.51	0.76
41:5G:131:CYS:HG	41:5G:136:THR:HG1	1.34	0.75
34:B8:435:PHE:HB3	34:B8:443:VAL:HA	1.69	0.74
1:3A:67:G:H1	2:5A:286:U:H3	1.35	0.74
3:SA:311:U:H3	3:SA:355:G:H1	1.33	0.74
51:RK:103:MET:O	51:RK:107:ALA:HB2	1.88	0.74
37:5C:257:SER:HG	37:5C:259:TRP:HE1	1.34	0.73
47:RE:438:GLY:HA2	47:RE:458:ILE:O	1.88	0.73
34:B8:357:ASN:HB2	34:B8:378:GLN:HG2	1.71	0.72
3:SA:174:U:H3	3:SA:266:A:H62	1.38	0.72
50:RJ:1034:LEU:H	50:RJ:1037:GLN:HE21	1.37	0.71
37:5C:265:GLU:OE1	54:RQ:834:LYS:HD2	1.89	0.71
25:A4:741:LEU:HD11	25:A4:744:VAL:HG23	1.66	0.71
31:B1:71:ILE:HD11	31:B1:102:VAL:HG21	1.73	0.70
29:AF:222:SER:HB2	29:AF:225:GLN:H	1.57	0.70
16:SY:97:ASP:HB3	50:RJ:828:ARG:HH22	1.57	0.70
50:RJ:235:LEU:O	50:RJ:239:ASN:HB2	1.92	0.70
3:SA:1051:G:H21	43:5I:447:THR:HG21	1.57	0.69
30:AG:585:TRP:HB3	30:AG:594:TRP:HE1	1.57	0.69
25:A4:739:LYS:HB2	25:A4:740:PRO:CD	2.22	0.69
35:BE:209:ILE:HA	35:BE:225:THR:HA	1.73	0.69
23:3F:263:TRP:HZ3	23:3F:270:PRO:CD	2.05	0.69
23:3F:426:SER:HB3	23:3F:433:ILE:HD11	1.74	0.68
46:RD:1612:LEU:HD21	46:RD:1616:ASN:HB2	1.76	0.68
32:B2:10:GLN:HE22	32:B2:682:ARG:HB2	1.59	0.68
25:A4:353:GLU:HA	25:A4:766:GLN:HE22	1.59	0.68
33:B3:561:SER:HG	33:B3:566:SER:N	1.92	0.68
8:SI:58:LEU:HB2	8:SI:90:VAL:HG12	1.76	0.68
25:A4:741:LEU:HD21	25:A4:744:VAL:CG2	2.21	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:B3:496:ALA:O	33:B3:508:THR:HA	1.94	0.68
10:SK:127:VAL:HG22	10:SK:131:GLN:HE22	1.60	0.67
21:3D:254:ASN:HA	21:3D:257:ILE:HG22	1.75	0.67
3:SA:656:G:O6	3:SA:678:A:N1	2.27	0.67
22:3E:286:ASN:HD22	22:3E:387:GLY:H	1.40	0.67
24:3G:53:ILE:HD11	24:3G:81:VAL:HG13	1.75	0.67
3:SA:68:A:H5'	7:SH:160:ARG:HH22	1.60	0.67
23:3F:545:LYS:HG2	23:3F:561:ASN:HD21	1.60	0.67
26:A5:8:SER:HB2	26:A5:17:LEU:HD11	1.76	0.67
3:SA:1167:G:H1	3:SA:1578:U:H3	1.42	0.67
17:SZ:20:ARG:HA	17:SZ:76:TYR:HB3	1.77	0.66
34:B8:455:ILE:HA	34:B8:486:SER:HA	1.78	0.66
1:3A:250:C:H41	23:3F:560:ARG:HH12	1.42	0.66
53:RP:137:ASP:HA	53:RP:140:ILE:HD12	1.76	0.66
47:RE:584:GLU:O	47:RE:614:ARG:HB2	1.95	0.66
53:RP:2045:GLN:O	53:RP:2049:GLU:HB2	1.96	0.66
30:AG:682:ASN:HB2	30:AG:689:ILE:HD11	1.78	0.66
30:AG:715:GLU:HG3	30:AG:716:ARG:HG2	1.77	0.66
28:AE:248:SER:HG	28:AE:253:CYS:HG	1.43	0.66
33:B3:461:LEU:HB3	33:B3:484:GLU:HB3	1.78	0.66
43:5I:76:ASN:HA	43:5I:118:VAL:HG21	1.77	0.65
32:B2:217:LEU:HB3	32:B2:229:TRP:HB2	1.77	0.65
22:3E:6:THR:O	22:3E:16:LYS:HA	1.96	0.65
33:B3:548:LEU:O	33:B3:559:ILE:HA	1.96	0.65
3:SA:349:U:H4'	3:SA:353:A:H1'	1.78	0.65
32:B2:160:ARG:HH21	39:5E:522:ARG:HD2	1.62	0.65
33:B3:513:LYS:H	33:B3:535:GLY:HA2	1.59	0.65
47:RE:498:MET:O	47:RE:506:GLN:NE2	2.28	0.65
51:RK:114:PHE:HB2	51:RK:170:VAL:HG22	1.78	0.65
25:A4:614:TRP:O	25:A4:618:ASN:HB2	1.97	0.65
3:SA:1663:G:H1	3:SA:1738:U:H3	1.42	0.65
22:3E:149:ARG:O	22:3E:153:LYS:HB2	1.97	0.65
30:AG:741:SER:HB2	30:AG:759:HIS:HB3	1.77	0.65
47:RE:179:LYS:HB2	47:RE:210:PRO:HG2	1.79	0.65
3:SA:763:G:H21	3:SA:774:A:H62	1.44	0.65
24:3G:54:MET:HB3	24:3G:64:LEU:HD21	1.79	0.65
44:5J:111:ASP:O	44:5J:115:ARG:NH2	2.30	0.65
48:RF:5:ASP:HA	48:RF:149:ALA:HB1	1.79	0.64
3:SA:656:G:C6	3:SA:678:A:N1	2.66	0.64
20:3C:94:ALA:HB3	20:3C:166:PRO:HG3	1.78	0.64
35:BE:504:ALA:HB3	35:BE:522:LEU:HD12	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:RE:1101:ASP:HB2	47:RE:1233:ASN:HB3	1.80	0.64
25:A4:453:LEU:HB3	25:A4:460:LEU:HD22	1.78	0.64
3:SA:142:G:O6	3:SA:173:A:N1	2.31	0.64
33:B3:665:GLN:HE22	33:B3:688:LEU:HD21	1.62	0.64
34:B8:386:ILE:HD13	34:B8:437:LEU:HD12	1.79	0.64
47:RE:441:GLN:HE21	47:RE:456:LYS:HB2	1.61	0.64
30:AG:507:MET:HB2	30:AG:532:TRP:HB2	1.80	0.64
32:B2:338:ILE:HB	32:B2:355:LEU:HD11	1.78	0.64
3:SA:1688:U:O2	3:SA:1713:G:N2	2.28	0.64
22:3E:169:LEU:O	22:3E:173:LEU:HB2	1.98	0.64
23:3F:171:THR:OG1	23:3F:172:PHE:N	2.31	0.64
30:AG:320:VAL:HG12	30:AG:335:PRO:HA	1.79	0.64
55:RT:126:LEU:HB3	55:RT:139:LEU:HD12	1.80	0.64
3:SA:573:C:O2'	50:RJ:870:ARG:NH2	2.30	0.64
13:SP:87:GLY:HA3	13:SP:120:PRO:HD2	1.79	0.64
33:B3:443:PRO:HA	33:B3:499:VAL:HG11	1.79	0.63
25:A4:117:ILE:HD11	25:A4:147:ILE:HG12	1.79	0.63
47:RE:149:VAL:HA	47:RE:152:PHE:HB3	1.80	0.63
24:3H:33:LEU:HD11	24:3H:100:ALA:HB1	1.81	0.63
43:5I:148:TRP:HE1	43:5I:172:LEU:HD13	1.62	0.63
47:RE:1170:GLY:HA3	47:RE:1177:GLY:HA2	1.81	0.63
3:SA:205:U:H2'	3:SA:206:A:H8	1.64	0.63
34:B8:511:LEU:HB2	34:B8:513:GLN:HE22	1.64	0.63
5:SF:177:ALA:HA	5:SF:198:LYS:HE2	1.80	0.63
34:B8:521:LEU:HA	34:B8:531:CYS:O	1.99	0.63
35:BE:268:THR:HG22	35:BE:270:SER:H	1.64	0.63
49:RH:116:THR:HG22	49:RH:118:ARG:H	1.64	0.63
30:AG:581:GLY:HA2	30:AG:602:PRO:HD2	1.80	0.63
23:3F:211:LEU:HB3	23:3F:212:LYS:HD2	1.81	0.63
29:AF:84:VAL:HA	29:AF:100:ASP:HA	1.80	0.63
28:AE:241:ILE:O	28:AE:245:LEU:HB2	1.99	0.63
9:SJ:109:PHE:O	9:SJ:113:PHE:HB2	1.99	0.62
3:SA:1175:U:H3	3:SA:1464:G:H22	1.46	0.62
13:SP:16:VAL:HA	13:SP:80:HIS:O	1.97	0.62
32:B2:268:LYS:HG2	32:B2:288:LYS:HG2	1.81	0.62
53:RP:1724:ASN:HD22	53:RP:1748:ASN:HB2	1.64	0.62
29:AF:273:ILE:HD11	29:AF:306:ALA:HA	1.81	0.62
23:3F:230:ASN:ND2	23:3F:236:TYR:OH	2.32	0.62
23:3F:405:VAL:HG13	23:3F:415:THR:HG22	1.82	0.62
21:3D:4:ILE:H	21:3D:23:GLN:HE22	1.48	0.62
29:AF:45:ILE:HD11	29:AF:306:ALA:HB3	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:RF:202:VAL:HG22	48:RF:223:LEU:HD12	1.81	0.62
50:RJ:1071:LYS:HA	50:RJ:1074:GLN:HG2	1.81	0.62
50:RJ:1103:GLY:HA2	50:RJ:1107:LYS:HD3	1.82	0.62
8:SI:57:ALA:HA	8:SI:89:HIS:O	1.99	0.62
35:BE:28:ARG:NH2	35:BE:383:ASP:OD2	2.32	0.62
4:SC:144:ARG:HB2	4:SC:208:GLN:H	1.65	0.62
8:SI:125:ILE:O	8:SI:129:LEU:HB2	2.00	0.62
29:AF:6:PRO:HD2	30:AG:480:SER:HB3	1.82	0.62
32:B2:452:GLY:HA3	32:B2:472:HIS:H	1.65	0.62
3:SA:475:A:H5'	10:SK:130:THR:HG21	1.80	0.61
3:SA:487:G:H1	50:RJ:1119:ILE:HG23	1.64	0.61
20:3B:171:LEU:HB3	20:3B:240:VAL:HG12	1.81	0.61
30:AG:320:VAL:HA	30:AG:334:LEU:O	2.00	0.61
33:B3:669:LEU:HD13	33:B3:684:LEU:HB3	1.81	0.61
34:B8:585:LYS:HE3	34:B8:587:ARG:HH21	1.63	0.61
41:5G:188:HIS:HB2	41:5G:221:VAL:HG12	1.82	0.61
7:SH:56:ASN:HB3	7:SH:60:GLY:HA2	1.83	0.61
21:3D:160:ARG:HG3	21:3D:165:PHE:HB3	1.81	0.61
25:A4:656:ARG:HB3	25:A4:733:PHE:HB3	1.82	0.61
47:RE:307:LYS:HA	47:RE:312:ARG:HG3	1.83	0.61
50:RJ:616:ASP:N	50:RJ:616:ASP:OD1	2.31	0.61
53:RP:1761:ILE:HG22	53:RP:1763:LEU:H	1.63	0.61
1:3A:206:C:N3	1:3A:243:U:O4	2.33	0.61
20:3B:261:LEU:O	21:3D:129:ARG:NH1	2.33	0.61
20:3C:172:TYR:HH	20:3C:180:SER:HG	1.48	0.61
25:A4:398:THR:HG23	25:A4:421:THR:HG22	1.83	0.61
40:5F:115:MET:HG3	40:5F:120:MET:HB3	1.83	0.61
55:RT:110:ARG:NH1	55:RT:130:MET:SD	2.73	0.61
23:3F:398:CYS:SG	23:3F:399:GLU:N	2.72	0.61
34:B8:450:GLN:NE2	34:B8:505:PRO:O	2.33	0.61
35:BE:361:SER:HA	35:BE:636:PRO:CG	2.30	0.61
47:RE:1122:ASN:HA	47:RE:1125:ASN:HB2	1.82	0.61
48:RF:176:ASP:N	48:RF:176:ASP:OD1	2.33	0.61
3:SA:748:U:H3	3:SA:801:G:H1	1.46	0.61
3:SA:886:U:H2'	3:SA:887:A:H8	1.65	0.61
3:SA:1731:A:OP2	3:SA:1732:A:N6	2.32	0.61
30:AG:583:LYS:HD3	30:AG:596:LEU:HD13	1.82	0.61
31:B1:581:THR:HG22	31:B1:596:GLY:HA2	1.83	0.61
35:BE:321:GLU:OE1	35:BE:344:ARG:NH1	2.34	0.61
24:3G:23:VAL:HG11	24:3G:117:VAL:HG21	1.81	0.61
25:A4:279:HIS:HD2	25:A4:281:ALA:H	1.47	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:A4:589:ASN:HD21	25:A4:632:ASN:HA	1.66	0.61
30:AG:701:VAL:HG11	30:AG:724:ILE:HG21	1.82	0.61
32:B2:175:ASP:N	32:B2:175:ASP:OD1	2.33	0.61
33:B3:403:ILE:O	33:B3:414:VAL:HA	2.00	0.61
37:5C:265:GLU:OE2	54:RQ:832:ASN:ND2	2.33	0.61
47:RE:713:LEU:HB2	47:RE:716:SER:HB3	1.83	0.61
48:RF:258:TYR:HB2	48:RF:261:GLN:HG3	1.83	0.61
51:RK:60:THR:HG22	51:RK:81:ILE:HG22	1.81	0.61
7:SH:44:GLU:O	7:SH:119:GLN:NE2	2.34	0.61
14:SR:122:ARG:NH1	14:SR:123:ARG:O	2.34	0.61
25:A4:642:ASN:HB3	25:A4:645:ARG:HB2	1.83	0.61
32:B2:9:GLU:O	32:B2:684:TRP:HA	2.01	0.61
32:B2:537:VAL:HG12	32:B2:548:ILE:HG22	1.83	0.61
55:RT:259:VAL:HA	55:RT:262:ASN:HD22	1.64	0.61
28:AE:14:ASN:HB3	37:5C:101:ASN:HD21	1.66	0.61
32:B2:760:ILE:HG13	32:B2:831:LYS:HB2	1.83	0.61
35:BE:727:PRO:HG2	35:BE:730:LYS:HG3	1.83	0.61
51:RK:282:GLU:O	51:RK:286:SER:HB3	2.01	0.61
8:SI:172:VAL:O	8:SI:176:LEU:HB2	2.01	0.60
21:3D:65:ASN:ND2	21:3D:75:SER:OG	2.34	0.60
3:SA:647:G:H1	3:SA:687:G:H22	1.48	0.60
23:3F:201:ILE:HG12	23:3F:540:LEU:HD11	1.82	0.60
25:A4:656:ARG:NH1	25:A4:731:HIS:O	2.33	0.60
30:AG:630:LEU:HB3	30:AG:653:PHE:HB2	1.82	0.60
17:SZ:77:ASN:N	17:SZ:77:ASN:OD1	2.33	0.60
20:3B:238:ASP:HB3	20:3B:262:LYS:HD3	1.83	0.60
29:AF:248:ARG:NH1	29:AF:290:PHE:O	2.35	0.60
37:5C:226:SER:HB3	37:5C:228:LEU:HD13	1.83	0.60
46:RD:1518:ILE:HG12	46:RD:1552:LYS:HG2	1.82	0.60
3:SA:895:G:H22	3:SA:917:U:H3	1.48	0.60
29:AF:499:LYS:HB3	29:AF:503:ARG:HH21	1.67	0.60
30:AG:439:ASN:ND2	30:AG:496:THR:O	2.34	0.60
36:B6:148:ILE:HG22	44:5J:67:THR:HG22	1.82	0.60
43:5I:273:GLU:HA	54:RQ:302:VAL:HG21	1.83	0.60
33:B3:261:ALA:HB3	33:B3:268:GLN:HB2	1.83	0.60
4:SC:19:ARG:HG3	4:SC:20:VAL:HG12	1.84	0.60
15:SX:14:ILE:HG22	15:SX:25:VAL:HG21	1.84	0.60
23:3F:328:ILE:HG13	23:3F:338:THR:HG22	1.83	0.60
23:3F:417:SER:OG	23:3F:418:ASP:N	2.34	0.60
47:RE:466:THR:HG22	47:RE:475:ASN:HD21	1.65	0.60
3:SA:959:U:H5”	12:SO:14:SER:HB2	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:1691:A:N6	3:SA:1711:C:O2'	2.34	0.60
20:3C:253:ILE:HD12	20:3C:269:ILE:HG12	1.83	0.60
31:B1:423:ARG:NH2	31:B1:460:VAL:O	2.35	0.60
32:B2:607:CYS:SG	32:B2:608:HIS:N	2.75	0.60
41:5G:128:VAL:HG11	41:5G:267:GLU:HB2	1.83	0.60
53:RP:111:ALA:HB2	53:RP:154:CYS:HB2	1.83	0.60
3:SA:789:A:N6	10:SK:72:GLU:OE2	2.34	0.60
12:SO:16:ILE:O	15:SX:57:ARG:NH2	2.34	0.60
22:3E:5:LEU:O	22:3E:89:VAL:HA	2.00	0.60
25:A4:741:LEU:C	25:A4:741:LEU:HD23	2.21	0.60
36:B6:26:LYS:HA	36:B6:29:VAL:HG12	1.83	0.60
49:RH:75:GLY:HA2	49:RH:78:LYS:HE3	1.82	0.60
3:SA:327:U:H1'	11:SM:10:GLU:HG2	1.84	0.60
20:3C:225:ARG:NH1	20:3C:248:ASP:OD2	2.35	0.60
30:AG:598:LYS:HD2	30:AG:638:PHE:HB2	1.84	0.60
43:5I:61:GLN:OE1	43:5I:371:ASN:ND2	2.35	0.60
51:RK:141:MET:HG2	51:RK:300:TYR:HE2	1.67	0.60
3:SA:259:U:H1'	9:SJ:178:ARG:HH12	1.65	0.60
3:SA:1162:C:OP1	6:SG:148:ARG:NH2	2.35	0.60
30:AG:510:TYR:HB2	30:AG:529:LEU:HG	1.84	0.60
23:3F:263:TRP:CZ3	23:3F:270:PRO:CD	2.84	0.59
35:BE:309:ILE:HG22	35:BE:323:VAL:HG23	1.83	0.59
21:3D:293:CYS:HA	21:3D:309:GLU:HG2	1.85	0.59
26:A5:116:GLN:OE1	26:A5:118:TRP:NE1	2.36	0.59
30:AG:610:SER:HB3	30:AG:704:ASN:HB2	1.84	0.59
30:AG:766:ILE:HD11	30:AG:774:PHE:HB3	1.84	0.59
49:RH:32:THR:OG1	49:RH:125:ASN:ND2	2.35	0.59
3:SA:115:G:H5'	11:SM:129:ARG:HH11	1.67	0.59
30:AG:30:GLY:HA3	30:AG:200:ASN:HA	1.84	0.59
32:B2:629:ASN:HD22	32:B2:643:ASP:HA	1.66	0.59
20:3B:228:GLN:NE2	21:3D:101:SER:O	2.35	0.59
32:B2:362:ILE:HG12	32:B2:385:ILE:HB	1.85	0.59
35:BE:118:VAL:HA	35:BE:132:THR:HA	1.85	0.59
51:RK:24:ALA:HB2	51:RK:31:ILE:HD12	1.84	0.59
3:SA:551:G:N7	38:5D:2:ALA:N	2.50	0.59
31:B1:524:ARG:NH1	31:B1:526:ASP:OD2	2.36	0.59
47:RE:312:ARG:HH11	47:RE:314:CYS:H	1.50	0.59
47:RE:1148:GLN:NE2	48:RF:172:TYR:OH	2.35	0.59
49:RH:54:LYS:HA	49:RH:65:TYR:HA	1.85	0.59
52:RN:802:GLU:O	52:RN:806:ARG:NH1	2.35	0.59
55:RT:99:ILE:HD13	55:RT:159:ILE:HD11	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B2:203:HIS:NE2	32:B2:220:THR:O	2.36	0.59
32:B2:317:ILE:O	32:B2:321:TYR:N	2.36	0.59
33:B3:38:ASP:N	33:B3:38:ASP:OD1	2.35	0.59
43:5I:319:GLU:OE2	43:5I:340:ARG:NH1	2.35	0.59
53:RP:2066:ASP:O	53:RP:2069:GLN:NE2	2.34	0.59
30:AG:43:ASN:HA	30:AG:55:TYR:O	2.01	0.59
32:B2:446:ILE:HG21	32:B2:488:LEU:HD11	1.85	0.59
44:5J:106:LEU:O	44:5J:146:ARG:NH1	2.35	0.59
55:RT:268:SER:O	55:RT:272:GLU:HB2	2.03	0.59
4:SC:16:GLN:HB2	33:B3:390:LEU:HD21	1.84	0.59
13:SP:16:VAL:HG12	13:SP:80:HIS:HB2	1.84	0.59
21:3D:267:ASP:HB3	22:3E:275:TYR:HE1	1.68	0.59
30:AG:445:ILE:HG12	30:AG:504:GLY:HA3	1.85	0.59
31:B1:389:SER:HB3	31:B1:407:LEU:HD13	1.85	0.59
33:B3:702:LEU:HD21	33:B3:758:ARG:HD3	1.84	0.59
35:BE:747:LYS:H	39:5E:474:ILE:HD12	1.67	0.59
48:RF:23:HIS:HB3	48:RF:26:LEU:HB2	1.85	0.59
1:3A:76:U:O2'	30:AG:868:ASN:ND2	2.36	0.59
7:SH:23:ARG:HD3	7:SH:42:GLY:HA2	1.84	0.59
11:SM:125:VAL:HG12	11:SM:139:VAL:HA	1.85	0.59
22:3E:283:ILE:O	22:3E:380:ARG:NH2	2.36	0.59
29:AF:245:LEU:HD12	29:AF:246:TYR:HB2	1.85	0.59
32:B2:430:CYS:SG	32:B2:431:GLY:N	2.76	0.59
40:5F:69:PRO:HA	40:5F:72:ARG:HG2	1.84	0.59
47:RE:629:THR:HG22	47:RE:669:TRP:HE1	1.67	0.59
51:RK:89:ILE:HA	51:RK:119:LYS:HB2	1.85	0.59
3:SA:868:G:H1	3:SA:960:U:H3	1.49	0.59
15:SX:44:HIS:NE2	15:SX:112:ASP:OD2	2.36	0.59
25:A4:649:TRP:NE1	25:A4:744:VAL:O	2.35	0.59
26:A5:123:SER:O	26:A5:141:ARG:NH2	2.35	0.59
31:B1:440:PRO:HG3	31:B1:483:GLN:HA	1.85	0.59
35:BE:98:VAL:HG23	35:BE:110:LEU:HB2	1.84	0.59
47:RE:243:LEU:HD22	47:RE:248:LEU:HD21	1.84	0.59
51:RK:339:LEU:HD12	51:RK:350:MET:HB3	1.83	0.59
3:SA:532:U:OP1	10:SK:132:ARG:NH2	2.36	0.58
12:SO:40:TYR:CB	12:SO:45:LEU:HD12	2.31	0.58
20:3C:277:ASP:OD1	25:A4:162:ASN:ND2	2.36	0.58
30:AG:86:GLU:OE1	30:AG:113:ASN:ND2	2.35	0.58
33:B3:288:LEU:HB3	33:B3:307:SER:HB3	1.85	0.58
33:B3:355:LEU:HB3	33:B3:363:ARG:O	2.03	0.58
47:RE:363:THR:HG21	47:RE:394:THR:HG22	1.83	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:RH:175:CYS:HA	49:RH:201:SER:O	2.03	0.58
14:SR:50:GLU:OE2	14:SR:82:ARG:NH1	2.36	0.58
23:3F:263:TRP:CZ3	23:3F:270:PRO:CG	2.86	0.58
25:A4:426:GLN:H	25:A4:444:ARG:HH11	1.49	0.58
26:A5:281:ILE:HG12	26:A5:328:VAL:HB	1.84	0.58
26:A5:355:ASN:OD1	30:AG:479:ASN:ND2	2.36	0.58
30:AG:526:THR:HG22	30:AG:549:ASN:HD21	1.66	0.58
3:SA:151:G:N3	7:SH:13:GLN:NE2	2.51	0.58
3:SA:1627:U:H5"	3:SA:1628:U:H5'	1.85	0.58
25:A4:741:LEU:CD1	25:A4:744:VAL:HG23	2.29	0.58
30:AG:467:GLN:NE2	30:AG:469:ASN:O	2.36	0.58
3:SA:862:A:OP2	12:SO:64:ARG:NH2	2.37	0.58
3:SA:1775:U:O2	3:SA:1786:G:N2	2.35	0.58
11:SM:103:ARG:HH21	11:SM:105:LYS:HD3	1.69	0.58
22:3E:348:VAL:HG12	22:3E:359:ILE:HG23	1.85	0.58
26:A5:20:VAL:HG22	26:A5:29:VAL:HG22	1.84	0.58
33:B3:269:LEU:HB2	33:B3:279:LYS:HB2	1.86	0.58
15:SX:87:GLU:OE2	15:SX:117:ARG:NH2	2.37	0.58
16:SY:141:GLU:HB2	50:RJ:833:ARG:HH12	1.68	0.58
29:AF:216:GLU:N	29:AF:229:CYS:O	2.34	0.58
30:AG:527:HIS:O	30:AG:549:ASN:ND2	2.37	0.58
32:B2:26:ILE:HB	32:B2:40:GLN:HB2	1.85	0.58
47:RE:828:ASP:OD2	47:RE:888:LYS:NZ	2.37	0.58
50:RJ:1018:VAL:O	50:RJ:1029:TRP:NE1	2.36	0.58
51:RK:251:GLN:HE21	51:RK:252:LYS:HE3	1.68	0.58
5:SF:106:LYS:HD2	5:SF:108:ARG:HE	1.69	0.58
7:SH:36:VAL:HB	7:SH:50:PHE:HB2	1.86	0.58
28:AE:336:LEU:O	28:AE:341:LYS:NZ	2.36	0.58
33:B3:231:CYS:SG	33:B3:232:LYS:N	2.76	0.58
50:RJ:553:ILE:HG21	51:RK:326:LEU:HD23	1.86	0.58
20:3B:90:PRO:HD3	44:5J:106:LEU:HD12	1.85	0.58
22:3E:339:TYR:HB3	22:3E:343:TYR:HB2	1.84	0.58
33:B3:294:LEU:HB2	33:B3:303:PHE:HB2	1.84	0.58
47:RE:1205:LYS:O	47:RE:1212:VAL:HA	2.04	0.58
26:A5:168:HIS:H	26:A5:191:VAL:HG23	1.69	0.58
30:AG:88:ILE:HA	30:AG:111:THR:HA	1.85	0.58
32:B2:94:LEU:O	32:B2:105:VAL:HA	2.04	0.58
46:RD:1659:VAL:HG21	46:RD:1678:ILE:HD11	1.86	0.58
47:RE:429:LEU:O	47:RE:489:LYS:NZ	2.35	0.58
51:RK:68:SER:HB2	51:RK:73:THR:HG22	1.86	0.58
3:SA:57:G:OP1	17:SZ:112:LYS:NZ	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:3B:277:ASP:N	20:3B:277:ASP:OD1	2.37	0.58
29:AF:256:THR:N	29:AF:275:SER:O	2.37	0.58
47:RE:496:LEU:O	47:RE:500:ASN:ND2	2.37	0.58
47:RE:1205:LYS:HB2	47:RE:1213:ILE:O	2.03	0.58
3:SA:886:U:OP1	4:SC:214:LYS:NZ	2.37	0.58
8:SI:56:LYS:HB2	8:SI:88:ARG:HD3	1.86	0.58
32:B2:20:ASN:HA	32:B2:339:LYS:HD3	1.86	0.58
33:B3:559:ILE:HB	33:B3:569:LYS:HB2	1.85	0.58
34:B8:180:ASP:OD2	35:BE:281:ARG:NH2	2.36	0.58
47:RE:975:LEU:HD22	47:RE:1041:VAL:HG12	1.83	0.58
20:3B:165:ALA:HB3	20:3B:168:LYS:HG2	1.86	0.57
22:3E:199:VAL:HG11	22:3E:227:LEU:HD22	1.85	0.57
25:A4:312:ASN:HA	25:A4:315:GLN:HE21	1.68	0.57
32:B2:390:GLN:O	32:B2:411:ASN:ND2	2.37	0.57
47:RE:793:PRO:HG2	47:RE:799:LEU:HA	1.85	0.57
22:3E:430:ASP:HA	35:BE:125:GLY:HA2	1.86	0.57
29:AF:466:VAL:O	29:AF:470:TYR:HB2	2.04	0.57
33:B3:267:PHE:H	33:B3:281:THR:HG22	1.69	0.57
2:5A:86:C:O2'	29:AF:5:ARG:NH1	2.37	0.57
3:SA:332:U:OP1	9:SJ:31:ARG:NE	2.37	0.57
26:A5:55:ASP:N	26:A5:55:ASP:OD1	2.37	0.57
30:AG:321:MET:HB3	30:AG:334:LEU:HB3	1.86	0.57
31:B1:119:LEU:HD22	31:B1:163:THR:HG21	1.85	0.57
36:B6:38:ASP:OD2	36:B6:42:ARG:NH1	2.36	0.57
37:5C:183:GLU:OE2	40:5F:41:ARG:NH2	2.37	0.57
39:5E:351:ALA:HA	41:5G:285:ASN:HB3	1.86	0.57
53:RP:1948:SER:O	53:RP:1985:ARG:NH2	2.37	0.57
3:SA:318:U:O2	3:SA:346:G:O6	2.23	0.57
16:SY:121:ARG:NH2	52:RN:795:GLU:OE2	2.38	0.57
20:3B:125:VAL:HG12	44:5J:150:GLY:HA3	1.86	0.57
20:3B:253:ILE:HD13	20:3B:269:ILE:HD12	1.85	0.57
29:AF:283:VAL:H	29:AF:292:VAL:HG23	1.69	0.57
32:B2:448:GLY:HA3	32:B2:476:ILE:HD11	1.86	0.57
33:B3:30:LYS:HA	33:B3:42:ILE:O	2.04	0.57
33:B3:337:HIS:HD2	33:B3:363:ARG:HE	1.51	0.57
37:5C:114:TYR:HA	37:5C:128:THR:O	2.04	0.57
37:5C:415:GLU:OE2	43:5I:33:HIS:ND1	2.34	0.57
53:RP:182:SER:HG	53:RP:228:LEU:N	2.03	0.57
3:SA:5:U:O2	3:SA:7:G:N2	2.37	0.57
3:SA:901:G:H3'	3:SA:902:G:H8	1.70	0.57
10:SK:58:ASP:N	10:SK:58:ASP:OD1	2.36	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:3B:244:VAL:O	20:3B:249:GLN:NE2	2.37	0.57
23:3F:333:MET:SD	23:3F:335:ARG:NH1	2.76	0.57
26:A5:547:LEU:HD11	29:AF:487:LEU:HD21	1.87	0.57
45:5K:145:VAL:HG11	45:5K:170:ILE:HD13	1.87	0.57
47:RE:792:TRP:HE3	47:RE:793:PRO:HD2	1.69	0.57
48:RF:262:VAL:HA	48:RF:265:ARG:HG2	1.86	0.57
49:RH:168:THR:HA	49:RH:171:LEU:HG	1.84	0.57
20:3B:306:LEU:HD11	20:3B:313:HIS:HB2	1.86	0.57
21:3D:14:GLY:HA3	21:3D:55:PRO:HA	1.87	0.57
47:RE:218:ASP:HA	47:RE:223:ARG:HH12	1.70	0.57
54:RQ:316:ASN:HD21	54:RQ:895:LYS:H	1.52	0.57
22:3E:303:SER:HB2	22:3E:309:LEU:HB3	1.87	0.57
28:AE:424:LEU:HG	28:AE:426:GLY:H	1.69	0.57
29:AF:33:ALA:HA	29:AF:329:ILE:O	2.05	0.57
32:B2:17:ILE:HG12	32:B2:360:ASN:HB2	1.87	0.57
33:B3:15:ILE:HG21	33:B3:379:LEU:HD11	1.87	0.57
34:B8:311:ASN:ND2	34:B8:325:ASP:OD1	2.38	0.57
37:5C:356:GLY:O	37:5C:364:ARG:NH1	2.37	0.57
39:5E:302:LYS:HA	39:5E:305:ILE:HG12	1.87	0.57
2:5A:480:C:O2	36:B6:46:ARG:NH2	2.38	0.57
3:SA:953:G:H2'	3:SA:954:G:H8	1.69	0.57
8:SI:147:ASN:ND2	43:5I:180:SER:OG	2.37	0.57
26:A5:284:LYS:NZ	26:A5:330:ILE:O	2.37	0.57
28:AE:413:ASP:HA	28:AE:416:LEU:HB2	1.86	0.57
30:AG:616:SER:HB3	30:AG:621:LEU:HG	1.87	0.57
32:B2:259:ILE:HA	32:B2:273:TYR:O	2.04	0.57
36:B6:175:ASN:OD1	36:B6:175:ASN:N	2.37	0.57
51:RK:89:ILE:HG22	51:RK:119:LYS:HG3	1.86	0.57
20:3C:171:LEU:HB2	20:3C:237:VAL:HG11	1.87	0.57
22:3E:355:ASN:ND2	22:3E:402:GLU:OE2	2.38	0.57
31:B1:520:ALA:HB3	31:B1:533:SER:HB3	1.87	0.57
35:BE:429:ASN:HD22	35:BE:445:MET:HB3	1.69	0.57
46:RD:1674:LEU:HA	46:RD:1677:ARG:HG2	1.87	0.57
51:RK:361:ASN:O	51:RK:364:LYS:NZ	2.37	0.57
3:SA:67:A:N6	3:SA:83:G:O2'	2.37	0.57
3:SA:207:U:O2	9:SJ:178:ARG:NH1	2.38	0.57
8:SI:187:SER:OG	8:SI:188:GLU:N	2.38	0.57
23:3F:475:ILE:HA	23:3F:491:SER:HB3	1.87	0.57
25:A4:497:ILE:HD11	25:A4:555:LEU:HD12	1.86	0.57
25:A4:621:ASN:ND2	25:A4:663:PHE:O	2.37	0.57
38:5D:37:ARG:NH2	50:RJ:994:LYS:O	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:RE:202:SER:OG	47:RE:203:ILE:N	2.37	0.57
47:RE:756:VAL:O	47:RE:761:ARG:NH2	2.37	0.57
47:RE:1166:ARG:HG3	47:RE:1181:VAL:HG22	1.87	0.57
48:RF:85:GLU:HG2	48:RF:86:GLU:HG3	1.87	0.57
49:RH:50:LEU:O	49:RH:118:ARG:NH1	2.38	0.57
50:RJ:169:GLY:O	50:RJ:204:LEU:HA	2.05	0.57
51:RK:161:LEU:HB2	51:RK:238:SER:HB2	1.86	0.57
3:SA:283:U:H5"	7:SH:188:ARG:HD3	1.87	0.56
25:A4:75:ASN:HA	25:A4:91:ILE:O	2.05	0.56
31:B1:209:VAL:HG22	31:B1:215:VAL:HG22	1.87	0.56
31:B1:558:ASP:N	31:B1:558:ASP:OD1	2.37	0.56
32:B2:897:ASP:OD2	33:B3:758:ARG:NH1	2.38	0.56
1:3A:95:A:H61	1:3A:321:C:H42	1.52	0.56
25:A4:739:LYS:HE2	25:A4:739:LYS:N	2.20	0.56
30:AG:59:THR:O	30:AG:61:GLN:NE2	2.38	0.56
31:B1:737:ASN:O	31:B1:741:MET:HB2	2.04	0.56
46:RD:1583:SER:HA	46:RD:1586:VAL:HG22	1.86	0.56
47:RE:1162:ILE:HG23	47:RE:1187:LYS:HZ1	1.70	0.56
1:3A:329:C:H2'	1:3A:330:A:H8	1.70	0.56
3:SA:447:U:O2'	5:SF:27:TYR:O	2.23	0.56
5:SF:100:ARG:HH11	5:SF:236:ILE:HG23	1.70	0.56
32:B2:655:ALA:O	32:B2:682:ARG:NH1	2.39	0.56
46:RD:1607:ASN:HD22	46:RD:1610:LYS:HZ3	1.53	0.56
47:RE:423:LYS:HG2	47:RE:427:LYS:HE2	1.86	0.56
48:RF:14:ILE:HB	48:RF:39:ALA:HB3	1.87	0.56
50:RJ:864:ASP:OD2	50:RJ:868:ARG:NH2	2.38	0.56
11:SM:128:CYS:SG	11:SM:129:ARG:N	2.79	0.56
22:3E:430:ASP:OD2	34:B8:142:LYS:NZ	2.39	0.56
28:AE:218:ILE:HG22	28:AE:263:VAL:HG11	1.87	0.56
32:B2:795:ILE:O	32:B2:798:ASN:ND2	2.39	0.56
47:RE:377:SER:HB3	47:RE:389:GLY:HA3	1.86	0.56
3:SA:1170:G:N2	3:SA:1469:A:N1	2.51	0.56
23:3F:162:CYS:HA	23:3F:187:ALA:HA	1.88	0.56
30:AG:75:SER:HB2	30:AG:79:LEU:HG	1.88	0.56
54:RQ:874:SER:O	54:RQ:878:LEU:HB2	2.06	0.56
3:SA:564:G:O6	38:5D:42:HIS:NE2	2.39	0.56
25:A4:488:ILE:O	25:A4:495:VAL:HA	2.06	0.56
31:B1:379:CYS:SG	31:B1:380:LEU:N	2.78	0.56
32:B2:171:CYS:SG	32:B2:172:GLN:N	2.79	0.56
33:B3:9:GLY:HA2	33:B3:644:TRP:HA	1.87	0.56
50:RJ:831:ARG:NH1	50:RJ:877:GLU:O	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:RP:1798:LEU:HD12	53:RP:1801:ASN:HD22	1.70	0.56
2:5A:20:C:H2'	2:5A:21:A:H8	1.70	0.56
3:SA:505:A:OP1	3:SA:585:A:N6	2.39	0.56
25:A4:579:ARG:NH2	25:A4:612:THR:OG1	2.39	0.56
26:A5:253:LEU:HB2	26:A5:291:ILE:HD11	1.87	0.56
30:AG:154:LEU:HD11	30:AG:171:TYR:HB3	1.87	0.56
33:B3:42:ILE:HG22	33:B3:49:SER:HA	1.88	0.56
37:5C:378:VAL:HG12	37:5C:394:HIS:HB3	1.88	0.56
48:RF:101:SER:O	48:RF:105:SER:CB	2.54	0.56
50:RJ:300:GLN:HE21	50:RJ:792:VAL:HG21	1.70	0.56
26:A5:299:ASP:HA	26:A5:319:TRP:HE3	1.70	0.56
38:5D:29:GLU:OE2	38:5D:37:ARG:NH1	2.39	0.56
41:5G:93:SER:O	41:5G:119:ARG:NH2	2.38	0.56
50:RJ:135:ALA:O	50:RJ:238:ARG:NH1	2.39	0.56
3:SA:1688:U:O4	3:SA:1713:G:O6	2.23	0.56
10:SK:94:ASP:N	10:SK:94:ASP:OD1	2.37	0.56
10:SK:169:PRO:O	10:SK:174:ARG:NH2	2.39	0.56
20:3C:142:ARG:NH1	20:3C:186:ASP:OD2	2.39	0.56
26:A5:210:ARG:NH1	35:BE:563:ASP:OD2	2.37	0.56
31:B1:152:LEU:HD11	31:B1:161:ILE:HD11	1.88	0.56
31:B1:789:SER:O	35:BE:728:ARG:NH2	2.39	0.56
32:B2:162:HIS:O	39:5E:522:ARG:NH2	2.39	0.56
45:5K:103:MET:SD	45:5K:127:ARG:NH1	2.79	0.56
3:SA:246:G:N2	11:SM:66:ILE:O	2.38	0.56
3:SA:576:G:H4'	39:5E:327:LYS:HE2	1.87	0.56
3:SA:857:U:OP2	48:RF:259:ARG:NH2	2.39	0.56
25:A4:479:LYS:NZ	25:A4:535:GLU:OE1	2.39	0.56
26:A5:2:ASP:HB3	34:B8:281:THR:HG21	1.88	0.56
28:AE:35:TYR:O	28:AE:150:ARG:NH1	2.39	0.56
28:AE:171:GLU:OE2	28:AE:172:LYS:NZ	2.39	0.56
35:BE:733:THR:O	35:BE:737:LEU:HB3	2.06	0.56
39:5E:312:GLU:O	39:5E:316:ASN:ND2	2.38	0.56
47:RE:804:THR:HG22	47:RE:838:VAL:HG22	1.87	0.56
11:SM:47:THR:O	11:SM:51:GLY:HA3	2.06	0.55
20:3C:92:ARG:NH1	20:3C:160:ASP:O	2.39	0.55
29:AF:48:ASN:ND2	29:AF:51:HIS:O	2.39	0.55
47:RE:118:GLN:HA	47:RE:121:VAL:HG12	1.88	0.55
51:RK:109:PHE:HA	51:RK:361:ASN:HD22	1.70	0.55
3:SA:65:A:H2	3:SA:84:A:H62	1.54	0.55
21:3D:254:ASN:O	21:3D:258:SER:HB3	2.07	0.55
35:BE:738:ASP:N	35:BE:738:ASP:OD1	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:RJ:263:LEU:O	50:RJ:264:GLN:NE2	2.40	0.55
51:RK:340:LYS:HB2	51:RK:351:ILE:HB	1.89	0.55
3:SA:1472:C:N4	3:SA:1535:U:OP2	2.39	0.55
3:SA:1576:A:H5"	49:RH:165:ASN:HB2	1.89	0.55
22:3E:359:ILE:HA	22:3E:362:VAL:HG12	1.89	0.55
53:RP:149:GLU:O	53:RP:153:ASN:HB2	2.07	0.55
7:SH:3:LEU:HA	7:SH:109:LEU:O	2.06	0.55
10:SK:60:LEU:HD22	53:RP:1848:VAL:HG11	1.89	0.55
22:3E:385:ASP:N	22:3E:385:ASP:OD1	2.39	0.55
25:A4:491:CYS:O	25:A4:530:ARG:NH2	2.39	0.55
26:A5:85:ILE:HB	26:A5:99:PHE:HB2	1.88	0.55
26:A5:366:GLY:O	30:AG:583:LYS:NZ	2.39	0.55
26:A5:548:ASP:O	26:A5:552:ASN:ND2	2.40	0.55
34:B8:448:LYS:NZ	34:B8:449:ASP:O	2.37	0.55
40:5F:33:MET:HB2	40:5F:38:ILE:HB	1.88	0.55
53:RP:1721:ILE:HA	53:RP:1748:ASN:HD21	1.72	0.55
20:3C:199:PHE:HB2	20:3C:223:ASP:HA	1.87	0.55
21:3D:174:ILE:HD13	21:3D:296:MET:HG2	1.89	0.55
33:B3:94:LYS:HB2	55:RT:273:ARG:HH21	1.71	0.55
33:B3:466:TRP:HA	33:B3:479:ILE:HG12	1.88	0.55
33:B3:732:ASN:ND2	33:B3:734:GLU:OE2	2.40	0.55
41:5G:123:VAL:HG12	41:5G:125:PRO:HD2	1.87	0.55
50:RJ:255:PRO:HA	50:RJ:258:ILE:HG22	1.88	0.55
29:AF:184:VAL:O	29:AF:195:LEU:HA	2.07	0.55
30:AG:510:TYR:HE1	30:AG:527:HIS:HB3	1.72	0.55
47:RE:228:ARG:HG3	47:RE:296:ILE:HD11	1.88	0.55
50:RJ:133:LYS:O	50:RJ:238:ARG:NH2	2.40	0.55
33:B3:303:PHE:HA	33:B3:312:GLN:O	2.06	0.55
44:5J:124:ILE:HA	44:5J:127:ARG:HG3	1.88	0.55
4:SC:144:ARG:HB3	4:SC:206:PRO:HB2	1.89	0.55
9:SJ:78:ILE:HA	9:SJ:104:ILE:HG23	1.89	0.55
12:SO:71:ILE:HA	12:SO:74:ILE:HG12	1.89	0.55
23:3F:263:TRP:CH2	23:3F:270:PRO:HG3	2.42	0.55
24:3G:118:LYS:HA	24:3G:121:ILE:HD12	1.88	0.55
25:A4:274:GLN:HE22	25:A4:320:TRP:H	1.53	0.55
25:A4:583:VAL:HA	25:A4:592:TYR:O	2.05	0.55
25:A4:740:PRO:C	25:A4:756:GLU:HG2	2.24	0.55
39:5E:314:LEU:HA	39:5E:317:GLU:HB2	1.88	0.55
51:RK:18:ARG:NH2	51:RK:101:GLU:OE1	2.39	0.55
3:SA:215:A:N6	3:SA:242:U:OP2	2.39	0.55
3:SA:1663:G:N2	3:SA:1738:U:O2	2.29	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:1671:A:N6	3:SA:1730:A:O2'	2.40	0.55
13:SP:64:ALA:HB1	13:SP:105:LEU:HG	1.89	0.55
14:SR:99:GLU:HB3	35:BE:490:GLN:HE22	1.72	0.55
23:3F:471:GLN:HG3	24:3H:83:SER:HB2	1.88	0.55
28:AE:186:MET:N	28:AE:186:MET:SD	2.80	0.55
30:AG:561:LEU:O	30:AG:573:CYS:HA	2.07	0.55
35:BE:846:ASP:OD2	35:BE:850:ARG:NH2	2.40	0.55
36:B6:41:HIS:O	36:B6:45:SER:HB3	2.07	0.55
41:5G:88:ILE:O	41:5G:114:ALA:HA	2.07	0.55
41:5G:91:THR:O	41:5G:141:VAL:HA	2.06	0.55
50:RJ:634:ARG:NH2	51:RK:256:TYR:OH	2.40	0.55
2:5A:85:G:H21	2:5A:86:C:H41	1.55	0.55
3:SA:269:G:OP2	7:SH:186:ARG:NH2	2.37	0.55
6:SG:117:THR:HG21	6:SG:194:LEU:HD23	1.89	0.55
25:A4:111:SER:OG	25:A4:113:ARG:NH1	2.40	0.55
30:AG:388:PRO:HA	30:AG:458:GLN:HE22	1.72	0.55
32:B2:454:LEU:O	32:B2:467:THR:HA	2.07	0.55
47:RE:142:GLU:O	47:RE:144:LYS:NZ	2.40	0.55
51:RK:53:LEU:HD23	51:RK:65:ILE:HG21	1.89	0.55
3:SA:142:G:C6	3:SA:173:A:N1	2.74	0.54
11:SM:21:ASN:OD1	11:SM:30:ARG:NH2	2.40	0.54
26:A5:242:ASP:OD1	26:A5:242:ASP:N	2.34	0.54
31:B1:412:ARG:NH1	31:B1:424:THR:OG1	2.40	0.54
47:RE:376:SER:OG	47:RE:378:ASN:ND2	2.40	0.54
48:RF:226:ILE:HA	48:RF:229:LYS:HG2	1.89	0.54
3:SA:1634:C:OP1	31:B1:418:ARG:NH1	2.41	0.54
12:SO:99:ARG:NH2	12:SO:119:GLU:OE2	2.40	0.54
23:3F:303:LYS:HD3	23:3F:317:ILE:HD11	1.89	0.54
29:AF:233:ASN:ND2	29:AF:247:GLU:OE1	2.40	0.54
33:B3:454:LEU:O	33:B3:465:LYS:HA	2.07	0.54
37:5C:354:CYS:SG	37:5C:355:PHE:N	2.78	0.54
46:RD:1633:ASP:OD2	46:RD:1636:ARG:NH1	2.40	0.54
21:3D:335:ILE:HD12	21:3D:338:ALA:HB3	1.89	0.54
25:A4:116:SER:HB3	25:A4:126:TRP:HE1	1.72	0.54
29:AF:314:GLY:O	29:AF:332:LYS:NZ	2.40	0.54
34:B8:217:ASN:OD1	34:B8:217:ASN:N	2.41	0.54
36:B6:290:LYS:HD2	36:B6:294:ALA:HA	1.87	0.54
43:5I:228:ASN:ND2	43:5I:230:ASN:O	2.41	0.54
50:RJ:246:ALA:HB3	50:RJ:810:ILE:HG13	1.89	0.54
3:SA:152:U:O2	7:SH:4:ASN:ND2	2.41	0.54
3:SA:826:U:O2'	3:SA:827:C:O2	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:916:U:O4	13:SP:41:ARG:NH2	2.40	0.54
7:SH:50:PHE:HB3	7:SH:111:LEU:HD22	1.90	0.54
16:SY:76:LEU:O	16:SY:80:GLY:CA	2.55	0.54
20:3C:301:LEU:HD11	20:3C:319:ARG:HG2	1.87	0.54
25:A4:397:SER:H	25:A4:428:ILE:HB	1.71	0.54
30:AG:319:LYS:HG3	30:AG:482:GLY:HA2	1.90	0.54
33:B3:242:GLN:HE21	33:B3:245:SER:HB2	1.73	0.54
35:BE:209:ILE:HG22	35:BE:225:THR:HG22	1.90	0.54
35:BE:511:ASP:OD1	35:BE:551:TYR:OH	2.24	0.54
3:SA:454:U:OP1	3:SA:455:C:N4	2.41	0.54
3:SA:1665:U:O2	3:SA:1736:G:O6	2.25	0.54
5:SF:73:ASP:HB2	5:SF:164:LEU:HD11	1.89	0.54
8:SI:50:ASP:HA	8:SI:56:LYS:HA	1.89	0.54
20:3B:238:ASP:OD1	20:3B:238:ASP:N	2.40	0.54
22:3E:251:ASP:N	22:3E:251:ASP:OD1	2.39	0.54
26:A5:162:GLN:HA	26:A5:173:ILE:O	2.08	0.54
29:AF:227:VAL:HG12	29:AF:236:VAL:HG12	1.89	0.54
31:B1:708:ASP:OD1	31:B1:708:ASP:N	2.40	0.54
32:B2:334:SER:OG	32:B2:335:LEU:N	2.40	0.54
32:B2:540:SER:HB2	32:B2:544:ARG:H	1.72	0.54
32:B2:565:PHE:O	51:RK:207:ARG:NH2	2.36	0.54
47:RE:443:HIS:HB3	47:RE:470:LYS:HB2	1.88	0.54
53:RP:1797:LEU:HD13	53:RP:1877:ARG:HB3	1.90	0.54
3:SA:319:U:H5'	3:SA:320:U:H5"	1.88	0.54
8:SI:155:ASP:N	8:SI:155:ASP:OD1	2.36	0.54
25:A4:433:LEU:HD13	25:A4:440:LEU:HB2	1.90	0.54
26:A5:10:TYR:OH	26:A5:302:ASN:ND2	2.40	0.54
28:AE:396:ASP:OD1	28:AE:396:ASP:N	2.41	0.54
30:AG:370:GLN:HE22	30:AG:384:SER:HB2	1.72	0.54
32:B2:500:TRP:HB3	32:B2:522:LEU:HD12	1.90	0.54
33:B3:182:CYS:SG	33:B3:183:LEU:N	2.80	0.54
33:B3:336:ASN:O	33:B3:363:ARG:NH2	2.40	0.54
33:B3:411:THR:HG22	33:B3:431:ILE:HA	1.89	0.54
35:BE:342:TYR:OH	35:BE:345:SER:OG	2.24	0.54
37:5C:265:GLU:OE2	54:RQ:832:ASN:CG	2.46	0.54
47:RE:1193:ALA:HA	47:RE:1212:VAL:O	2.07	0.54
53:RP:1735:SER:OG	53:RP:1736:GLU:N	2.39	0.54
3:SA:71:A:H8	3:SA:72:A:H5"	1.72	0.54
7:SH:45:PHE:HA	7:SH:119:GLN:HG2	1.89	0.54
22:3E:392:ALA:O	22:3E:396:ASN:ND2	2.40	0.54
26:A5:255:ILE:HG23	26:A5:277:LYS:HB2	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:B1:279:PHE:HE2	31:B1:285:ARG:HG3	1.73	0.54
32:B2:98:TYR:HD2	32:B2:102:VAL:HG13	1.73	0.54
35:BE:82:ALA:O	35:BE:93:ALA:HB3	2.08	0.54
39:5E:316:ASN:O	39:5E:320:ALA:HB2	2.08	0.54
47:RE:160:VAL:HG21	47:RE:230:VAL:HG12	1.90	0.54
47:RE:313:ASN:HB2	47:RE:328:ALA:HA	1.89	0.54
47:RE:1195:LYS:HA	47:RE:1210:GLU:O	2.08	0.54
48:RF:69:LYS:NZ	48:RF:159:THR:OG1	2.39	0.54
53:RP:1873:LEU:HG	53:RP:1910:VAL:HG22	1.89	0.54
8:SI:15:GLU:HA	8:SI:18:LEU:HD12	1.89	0.54
9:SJ:113:PHE:HE2	9:SJ:121:LEU:HB3	1.72	0.54
25:A4:739:LYS:CA	25:A4:739:LYS:CE	2.85	0.54
32:B2:803:GLN:NE2	32:B2:807:ASP:OD1	2.40	0.54
35:BE:49:TYR:OH	35:BE:86:HIS:O	2.26	0.54
35:BE:375:LEU:HD22	35:BE:389:MET:HG3	1.90	0.54
50:RJ:270:ALA:HA	50:RJ:791:ILE:O	2.08	0.54
50:RJ:993:ASP:N	50:RJ:993:ASP:OD1	2.39	0.54
4:SC:19:ARG:HH11	33:B3:338:GLY:HA3	1.73	0.54
6:SG:91:GLU:HA	6:SG:94:THR:HG22	1.90	0.54
11:SM:8:GLN:NE2	11:SM:12:ALA:O	2.41	0.54
20:3C:264:GLN:OE1	20:3C:319:ARG:NH2	2.40	0.54
25:A4:329:HIS:ND1	25:A4:353:GLU:OE2	2.37	0.54
28:AE:395:GLU:OE2	28:AE:397:LYS:NZ	2.38	0.54
30:AG:302:SER:O	30:AG:314:SER:HA	2.08	0.54
31:B1:497:ILE:HG23	31:B1:512:ILE:HB	1.89	0.54
32:B2:181:SER:OG	32:B2:183:ASP:OD1	2.23	0.54
33:B3:213:SER:OG	33:B3:221:ASN:ND2	2.39	0.54
46:RD:1530:GLU:HA	46:RD:1533:LEU:HB2	1.90	0.54
53:RP:1692:TYR:HA	53:RP:1743:LYS:HD2	1.90	0.54
3:SA:141:U:O2'	3:SA:266:A:N3	2.36	0.54
3:SA:1483:A:HO2'	3:SA:1607:G:HO2'	1.56	0.54
7:SH:159:ARG:NH1	7:SH:170:THR:OG1	2.40	0.54
14:SR:59:LYS:HD3	14:SR:105:LEU:HD21	1.89	0.54
20:3B:104:ASP:OD1	20:3B:104:ASP:N	2.39	0.54
21:3D:117:ASP:OD1	43:5I:157:ASN:ND2	2.41	0.54
29:AF:5:ARG:O	29:AF:7:ARG:NH1	2.40	0.54
31:B1:247:SER:O	31:B1:249:ARG:NH1	2.41	0.54
34:B8:524:SER:OG	34:B8:527:GLY:N	2.38	0.54
34:B8:581:ASN:HD21	34:B8:585:LYS:HG3	1.73	0.54
3:SA:816:G:OP1	3:SA:858:G:N2	2.40	0.53
8:SI:158:ASP:OD2	8:SI:161:GLN:NE2	2.40	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:SR:99:GLU:HG2	14:SR:102:LYS:HE3	1.90	0.53
20:3C:96:VAL:HG21	20:3C:155:ILE:HG21	1.89	0.53
25:A4:99:ILE:HD11	25:A4:102:LEU:HB3	1.90	0.53
31:B1:25:ASP:OD1	31:B1:25:ASP:N	2.40	0.53
32:B2:426:ARG:NH1	32:B2:463:SER:OG	2.40	0.53
34:B8:445:ARG:HH11	34:B8:503:SER:H	1.57	0.53
35:BE:310:ILE:O	35:BE:321:GLU:HA	2.08	0.53
40:5F:136:VAL:HA	40:5F:160:TRP:HA	1.90	0.53
50:RJ:59:VAL:O	50:RJ:239:ASN:ND2	2.40	0.53
1:3A:2:U:O4	3:SA:1123:C:N3	2.40	0.53
23:3F:257:ASP:OD1	23:3F:257:ASP:N	2.36	0.53
25:A4:213:TRP:HA	25:A4:225:LEU:HA	1.90	0.53
25:A4:573:VAL:HG22	25:A4:584:VAL:HG23	1.90	0.53
28:AE:4:LEU:HD13	37:5C:108:LEU:HD11	1.90	0.53
28:AE:161:PHE:HD1	28:AE:182:LEU:HD11	1.73	0.53
30:AG:322:SER:OG	30:AG:331:GLN:NE2	2.39	0.53
32:B2:639:VAL:HG23	32:B2:653:LEU:HB2	1.90	0.53
41:5G:272:ASP:N	41:5G:272:ASP:OD1	2.41	0.53
50:RJ:841:THR:HG22	50:RJ:860:TYR:H	1.73	0.53
53:RP:1877:ARG:HA	53:RP:1880:ILE:HG13	1.89	0.53
2:5A:295:A:N7	35:BE:381:ARG:NH1	2.55	0.53
22:3E:290:LEU:O	22:3E:391:ARG:NH2	2.41	0.53
23:3F:194:LEU:HD21	23:3F:237:ASP:HA	1.90	0.53
30:AG:573:CYS:O	30:AG:585:TRP:HB2	2.08	0.53
35:BE:209:ILE:HD12	35:BE:223:LEU:HD12	1.90	0.53
36:B6:63:VAL:HG13	36:B6:88:ILE:HD11	1.89	0.53
41:5G:164:GLN:NE2	41:5G:260:GLU:OE1	2.41	0.53
1:3A:255:U:O4	24:3H:84:ARG:NH1	2.42	0.53
16:SY:141:GLU:OE1	50:RJ:833:ARG:NH2	2.41	0.53
17:SZ:54:ALA:HB2	17:SZ:79:VAL:HG12	1.90	0.53
21:3D:258:SER:OG	21:3D:259:MET:N	2.42	0.53
31:B1:645:ASP:OD1	31:B1:645:ASP:N	2.39	0.53
33:B3:223:TRP:HA	33:B3:232:LYS:HA	1.89	0.53
33:B3:505:ILE:HB	33:B3:517:ILE:HG22	1.90	0.53
33:B3:584:ILE:HG13	33:B3:588:LYS:HG3	1.91	0.53
35:BE:666:ARG:NH1	35:BE:706:ASP:OD2	2.41	0.53
43:5I:448:ARG:NH1	43:5I:451:MET:SD	2.81	0.53
1:3A:197:U:OP2	23:3F:207:ARG:NH1	2.42	0.53
3:SA:629:U:OP1	12:SO:127:ARG:NH2	2.34	0.53
3:SA:1781:A:O2'	3:SA:1783:C:N4	2.39	0.53
29:AF:285:ASP:N	29:AF:285:ASP:OD1	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B2:291:GLU:HA	32:B2:294:ARG:HG2	1.90	0.53
47:RE:807:LEU:HA	47:RE:810:ILE:HG22	1.91	0.53
53:RP:1876:LEU:HD13	53:RP:1914:THR:HG22	1.90	0.53
5:SF:93:ASP:N	5:SF:93:ASP:OD1	2.40	0.53
14:SR:94:GLN:HG3	14:SR:102:LYS:HE2	1.90	0.53
20:3C:163:PHE:HZ	20:3C:319:ARG:HD2	1.72	0.53
24:3G:20:ILE:HA	24:3G:23:VAL:HG12	1.91	0.53
26:A5:79:GLY:HA3	26:A5:107:ILE:HD11	1.89	0.53
32:B2:534:ILE:HD13	32:B2:548:ILE:HB	1.90	0.53
33:B3:107:ILE:HD11	33:B3:147:ILE:HG23	1.90	0.53
35:BE:144:ASP:C	35:BE:146:GLN:H	2.12	0.53
35:BE:364:HIS:HB2	35:BE:381:ARG:HH21	1.72	0.53
35:BE:440:ALA:HB2	35:BE:463:VAL:HG21	1.89	0.53
36:B6:82:SER:OG	36:B6:83:LEU:N	2.42	0.53
37:5C:284:ARG:NH1	37:5C:408:GLU:OE2	2.41	0.53
47:RE:707:PHE:O	47:RE:918:ARG:NH1	2.41	0.53
47:RE:1103:ARG:HB2	47:RE:1232:ILE:HD12	1.91	0.53
53:RP:1741:LYS:NZ	53:RP:1743:LYS:O	2.37	0.53
2:5A:535:G:H5"	36:B6:127:LYS:HE3	1.89	0.53
3:SA:493:U:H4'	50:RJ:1138:ARG:HH12	1.73	0.53
11:SM:94:ILE:HG12	11:SM:96:LYS:H	1.74	0.53
15:SX:89:TRP:O	15:SX:93:LEU:HB3	2.09	0.53
29:AF:71:ARG:HD3	29:AF:331:THR:HG21	1.91	0.53
30:AG:409:LYS:HG2	30:AG:489:ASN:HD22	1.74	0.53
33:B3:410:ASN:ND2	33:B3:433:HIS:O	2.42	0.53
40:5F:66:PRO:O	40:5F:72:ARG:NH2	2.42	0.53
51:RK:12:GLN:NE2	51:RK:34:GLU:OE1	2.32	0.53
3:SA:106:U:H3'	3:SA:107:C:H4'	1.91	0.53
3:SA:200:A:O2'	53:RP:1061:CYS:O	2.26	0.53
3:SA:906:A:H3'	3:SA:907:A:H8	1.74	0.53
4:SC:98:THR:OG1	4:SC:99:ASN:N	2.42	0.53
20:3C:277:ASP:OD2	20:3C:288:ARG:NH2	2.41	0.53
23:3F:531:LYS:HE2	23:3F:534:LYS:HB2	1.91	0.53
29:AF:101:ALA:HA	29:AF:126:PRO:HB3	1.91	0.53
30:AG:393:ASN:HB2	30:AG:436:PHE:HA	1.90	0.53
35:BE:609:ILE:HG23	35:BE:623:ILE:HB	1.90	0.53
3:SA:760:A:H2'	3:SA:761:G:H8	1.73	0.53
3:SA:805:U:OP1	15:SX:32:LYS:NZ	2.41	0.53
5:SF:98:ASN:ND2	5:SF:114:ILE:O	2.39	0.53
20:3B:271:ILE:O	20:3B:313:HIS:HA	2.09	0.53
21:3D:83:ASP:OD2	36:B6:173:ARG:NH2	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:AE:54:LYS:NZ	44:5J:78:LYS:O	2.42	0.53
30:AG:519:LEU:HB3	30:AG:522:SER:HB3	1.91	0.53
32:B2:175:ASP:O	32:B2:190:ASP:HA	2.09	0.53
32:B2:640:LYS:HE2	32:B2:652:LYS:HE2	1.90	0.53
47:RE:406:ILE:HG13	47:RE:457:TYR:HB3	1.91	0.53
50:RJ:125:LEU:HA	50:RJ:128:MET:HB3	1.91	0.53
53:RP:2143:LYS:O	53:RP:2147:ALA:HB2	2.09	0.53
16:SY:91:GLY:O	16:SY:94:ASN:ND2	2.42	0.53
23:3F:152:VAL:HG12	23:3F:562:GLY:HA2	1.89	0.53
24:3G:120:LYS:NZ	25:A4:187:GLU:OE1	2.42	0.53
29:AF:319:VAL:HG12	29:AF:329:ILE:HG12	1.90	0.53
29:AF:443:LEU:HG	29:AF:480:LEU:HD21	1.90	0.53
30:AG:16:SER:HB2	30:AG:783:LEU:HB2	1.91	0.53
31:B1:394:GLN:HE21	31:B1:438:VAL:HG12	1.74	0.53
32:B2:124:ILE:HA	32:B2:140:SER:HA	1.91	0.53
33:B3:65:THR:HA	33:B3:80:SER:HB2	1.91	0.53
34:B8:348:HIS:HD2	34:B8:350:SER:H	1.56	0.53
34:B8:545:HIS:HD2	34:B8:548:SER:HB3	1.73	0.53
41:5G:88:ILE:HG12	41:5G:138:ASP:HB2	1.90	0.53
43:5I:448:ARG:HD2	43:5I:451:MET:HG3	1.91	0.53
46:RD:1510:GLU:HA	46:RD:1513:LYS:HE3	1.89	0.53
47:RE:824:PHE:HB2	48:RF:174:PRO:HB3	1.91	0.53
50:RJ:749:THR:OG1	50:RJ:750:TRP:N	2.42	0.53
53:RP:116:ASP:N	53:RP:116:ASP:OD1	2.39	0.53
1:3A:93:U:O4	22:3E:298:ARG:NH1	2.40	0.52
23:3F:175:SER:OG	23:3F:176:SER:N	2.40	0.52
23:3F:439:ALA:O	23:3F:497:LYS:NZ	2.37	0.52
25:A4:399:VAL:HG12	25:A4:420:LEU:HB2	1.91	0.52
33:B3:352:LYS:HA	33:B3:365:ILE:O	2.08	0.52
37:5C:334:ARG:HB2	37:5C:337:HIS:HB2	1.91	0.52
53:RP:2070:TYR:O	53:RP:2076:ARG:NE	2.42	0.52
4:SC:78:ASP:OD1	4:SC:78:ASP:N	2.43	0.52
24:3G:62:GLU:HA	24:3G:65:LEU:HG	1.90	0.52
25:A4:773:LYS:NZ	25:A4:774:LEU:O	2.42	0.52
29:AF:463:VAL:HA	29:AF:466:VAL:HG12	1.91	0.52
32:B2:193:THR:O	32:B2:195:GLN:NE2	2.43	0.52
33:B3:24:THR:HG21	33:B3:69:LEU:HA	1.91	0.52
33:B3:96:VAL:O	33:B3:97:ARG:NH1	2.42	0.52
33:B3:779:VAL:HA	33:B3:782:VAL:HG12	1.91	0.52
35:BE:413:GLU:O	35:BE:435:LYS:N	2.43	0.52
47:RE:151:SER:HA	47:RE:154:LYS:HE2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:RK:47:ASP:OD1	51:RK:47:ASP:N	2.39	0.52
55:RT:187:VAL:HG13	55:RT:251:ILE:HD12	1.90	0.52
3:SA:1594:G:HO2'	3:SA:1600:A:H61	1.54	0.52
10:SK:106:GLU:OE2	10:SK:115:LYS:NZ	2.42	0.52
10:SK:119:ALA:O	10:SK:124:HIS:ND1	2.32	0.52
23:3F:114:LYS:HA	23:3F:117:ILE:HD12	1.89	0.52
23:3F:286:LEU:HB3	23:3F:295:LEU:HD11	1.91	0.52
23:3F:409:ASP:OD1	23:3F:412:HIS:N	2.41	0.52
28:AE:370:LEU:HD13	28:AE:407:PHE:HZ	1.74	0.52
35:BE:361:SER:HA	35:BE:636:PRO:HG2	1.90	0.52
37:5C:451:SER:OG	37:5C:452:VAL:N	2.42	0.52
47:RE:673:SER:N	47:RE:717:ALA:O	2.43	0.52
50:RJ:555:MET:O	51:RK:327:ARG:NH2	2.42	0.52
50:RJ:1105:ASP:HA	50:RJ:1108:LYS:HG2	1.91	0.52
51:RK:214:LYS:HA	51:RK:217:LYS:HE3	1.91	0.52
13:SP:14:PHE:HA	13:SP:78:ALA:O	2.09	0.52
20:3B:228:GLN:O	20:3B:231:ARG:NH2	2.41	0.52
20:3B:239:CYS:SG	20:3B:240:VAL:N	2.83	0.52
23:3F:241:THR:HG21	23:3F:285:SER:HA	1.91	0.52
33:B3:217:ASP:OD1	33:B3:217:ASP:N	2.42	0.52
34:B8:378:GLN:HA	34:B8:384:ILE:HG22	1.91	0.52
35:BE:859:ASP:OD1	35:BE:859:ASP:N	2.41	0.52
40:5F:104:SER:OG	40:5F:108:ARG:NH1	2.43	0.52
47:RE:511:PHE:HB2	47:RE:512:LEU:HD22	1.91	0.52
50:RJ:158:ILE:HG13	50:RJ:913:ILE:HD11	1.90	0.52
3:SA:871:G:H2'	3:SA:872:G:C8	2.44	0.52
5:SF:238:LEU:HD12	5:SF:242:LYS:HG3	1.92	0.52
8:SI:70:PHE:O	8:SI:74:GLN:NE2	2.42	0.52
14:SR:100:GLN:HB3	35:BE:488:ASN:HD21	1.74	0.52
23:3F:224:SER:O	23:3F:226:HIS:ND1	2.32	0.52
24:3H:58:CYS:HA	24:3H:84:ARG:HD3	1.90	0.52
37:5C:64:ASP:OD1	37:5C:64:ASP:N	2.42	0.52
39:5E:371:ARG:NH1	39:5E:375:ASP:OD2	2.39	0.52
43:5I:270:ASN:ND2	43:5I:273:GLU:OE1	2.42	0.52
47:RE:316:ARG:NH1	47:RE:549:SER:OG	2.42	0.52
53:RP:2010:HIS:NE2	53:RP:2049:GLU:O	2.39	0.52
3:SA:25:C:N4	10:SK:12:TYR:OH	2.43	0.52
14:SR:100:GLN:HE21	14:SR:104:GLU:HG3	1.74	0.52
25:A4:477:LEU:H	25:A4:489:CYS:HB3	1.73	0.52
33:B3:17:ALA:HB3	33:B3:35:PRO:HA	1.92	0.52
35:BE:904:ASP:N	35:BE:904:ASP:OD1	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:B6:85:ASP:N	36:B6:85:ASP:OD1	2.40	0.52
47:RE:589:LYS:O	47:RE:609:ASN:ND2	2.41	0.52
49:RH:49:SER:HA	49:RH:116:THR:HG23	1.92	0.52
3:SA:41:A:N6	3:SA:467:G:C2	2.78	0.52
3:SA:479:C:O2	3:SA:510:G:N2	2.42	0.52
23:3F:539:ILE:O	23:3F:565:SER:HA	2.10	0.52
25:A4:493:ASP:HB3	25:A4:513:LEU:HD11	1.92	0.52
26:A5:536:LEU:O	26:A5:540:LEU:N	2.36	0.52
31:B1:19:ASN:HA	31:B1:307:THR:HG21	1.92	0.52
31:B1:58:ILE:HA	31:B1:74:ASP:HA	1.91	0.52
35:BE:225:THR:OG1	35:BE:227:THR:O	2.28	0.52
47:RE:215:GLU:OE2	47:RE:223:ARG:NH1	2.42	0.52
47:RE:720:SER:OG	47:RE:721:VAL:N	2.41	0.52
47:RE:844:THR:O	47:RE:847:GLY:N	2.37	0.52
50:RJ:803:ASN:ND2	50:RJ:1023:LEU:O	2.43	0.52
50:RJ:905:SER:N	50:RJ:1028:GLU:OE2	2.43	0.52
3:SA:563:U:OP2	41:5G:287:LYS:NZ	2.38	0.52
3:SA:754:A:O4'	5:SF:187:ARG:NH2	2.43	0.52
9:SJ:180:ASP:N	9:SJ:180:ASP:OD1	2.43	0.52
14:SR:64:ASP:N	14:SR:64:ASP:OD1	2.43	0.52
20:3B:219:PRO:O	21:3D:159:SER:OG	2.28	0.52
21:3D:26:ASP:HB2	43:5I:80:LEU:HD23	1.91	0.52
21:3D:212:ASP:O	21:3D:216:PHE:HB2	2.09	0.52
29:AF:90:ARG:NH1	29:AF:137:ASN:O	2.42	0.52
32:B2:8:PHE:HA	32:B2:685:GLU:O	2.10	0.52
32:B2:633:CYS:HB3	32:B2:663:LEU:HD22	1.92	0.52
43:5I:226:LYS:HD3	43:5I:268:CYS:HA	1.91	0.52
46:RD:1466:ARG:HH12	46:RD:1470:GLY:HA3	1.73	0.52
46:RD:1525:ASN:HD22	46:RD:1556:ILE:HG12	1.73	0.52
47:RE:676:PRO:HB2	47:RE:678:ILE:HG22	1.92	0.52
49:RH:167:ILE:HG22	49:RH:171:LEU:HD23	1.91	0.52
51:RK:249:SER:O	51:RK:253:GLY:N	2.43	0.52
53:RP:2032:SER:O	53:RP:2036:ARG:NE	2.39	0.52
5:SF:175:PHE:HA	5:SF:179:LYS:HD2	1.91	0.52
14:SR:58:ASP:OD1	14:SR:58:ASP:N	2.40	0.52
20:3C:263:ASP:OD1	22:3E:118:ARG:NH2	2.42	0.52
21:3D:181:LEU:HA	21:3D:184:LEU:HG	1.91	0.52
25:A4:62:PRO:HG2	25:A4:65:LEU:HD21	1.92	0.52
26:A5:537:LEU:HD21	29:AF:498:SER:HB2	1.90	0.52
29:AF:194:ARG:HG3	29:AF:205:PRO:HG3	1.92	0.52
30:AG:324:TRP:HA	30:AG:330:SER:O	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:B3:438:THR:HG21	33:B3:495:ASN:HA	1.91	0.52
45:5K:69:THR:HG22	45:5K:106:LEU:HB2	1.91	0.52
47:RE:495:THR:O	47:RE:499:LEU:HB2	2.09	0.52
3:SA:939:A:OP1	12:SO:114:ARG:NH2	2.42	0.52
21:3D:102:ASP:OD2	21:3D:105:LEU:N	2.39	0.52
22:3E:145:HIS:O	22:3E:149:ARG:NE	2.35	0.52
25:A4:360:SER:HG	25:A4:363:SER:HG	1.55	0.52
30:AG:133:LYS:NZ	30:AG:137:ALA:O	2.36	0.52
30:AG:246:SER:OG	30:AG:247:SER:N	2.43	0.52
31:B1:586:SER:OG	31:B1:587:PHE:N	2.42	0.52
32:B2:397:ILE:HD12	32:B2:675:SER:HB3	1.92	0.52
33:B3:171:MET:HA	33:B3:186:LEU:O	2.08	0.52
33:B3:788:TYR:O	33:B3:792:HIS:ND1	2.43	0.52
35:BE:268:THR:HB	35:BE:272:ASP:HB2	1.92	0.52
37:5C:194:ARG:NE	37:5C:210:GLU:OE2	2.43	0.52
43:5I:96:ASN:ND2	43:5I:99:THR:OG1	2.43	0.52
50:RJ:251:ASP:HB2	50:RJ:267:ARG:HH21	1.73	0.52
50:RJ:1039:ARG:HH11	50:RJ:1046:THR:HG22	1.75	0.52
3:SA:34:G:N1	3:SA:475:A:C6	2.78	0.51
3:SA:152:U:N3	3:SA:163:G:N7	2.58	0.51
3:SA:522:U:H5”	17:SZ:37:LYS:HE3	1.92	0.51
10:SK:136:VAL:HG12	10:SK:156:ILE:HG12	1.91	0.51
25:A4:739:LYS:N	25:A4:739:LYS:CE	2.73	0.51
31:B1:718:ASP:N	31:B1:718:ASP:OD1	2.43	0.51
32:B2:285:ARG:NH2	32:B2:371:LYS:O	2.42	0.51
43:5I:220:ASP:N	43:5I:220:ASP:OD1	2.44	0.51
48:RF:9:MET:HB2	48:RF:13:PHE:HB2	1.93	0.51
1:3A:264:C:O2	1:3A:307:G:N2	2.39	0.51
5:SF:207:LEU:HD22	5:SF:220:THR:H	1.75	0.51
21:3D:171:ASP:OD1	21:3D:171:ASP:N	2.40	0.51
24:3G:38:ASN:N	24:3G:38:ASN:OD1	2.39	0.51
24:3H:43:THR:OG1	24:3H:48:ILE:O	2.29	0.51
25:A4:80:ASN:HD21	25:A4:82:ARG:HH11	1.58	0.51
25:A4:405:GLY:O	25:A4:413:ASN:N	2.43	0.51
30:AG:211:MET:HG2	30:AG:225:ILE:HG12	1.92	0.51
32:B2:166:ILE:HA	32:B2:181:SER:HA	1.91	0.51
33:B3:557:VAL:HB	33:B3:572:GLU:HB2	1.92	0.51
35:BE:228:GLY:O	35:BE:246:ILE:HB	2.11	0.51
35:BE:275:PHE:HE2	35:BE:340:PRO:HG3	1.75	0.51
36:B6:166:ASN:O	36:B6:170:ASN:ND2	2.42	0.51
41:5G:154:ILE:O	41:5G:162:THR:HA	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:5I:445:ARG:NH2	43:5I:451:MET:O	2.43	0.51
51:RK:66:GLU:H	51:RK:75:ILE:HG22	1.76	0.51
53:RP:46:HIS:O	53:RP:112:GLN:NE2	2.43	0.51
7:SH:30:LYS:HD3	7:SH:34:GLN:HB2	1.93	0.51
32:B2:285:ARG:HB3	32:B2:327:HIS:HB3	1.91	0.51
35:BE:144:ASP:HB3	35:BE:146:GLN:HG3	1.91	0.51
35:BE:316:ASP:OD1	35:BE:316:ASP:N	2.34	0.51
35:BE:630:THR:N	35:BE:644:THR:O	2.43	0.51
53:RP:1809:GLU:HA	53:RP:1812:LEU:HB2	1.92	0.51
3:SA:805:U:O3’	15:SX:78:ARG:NH2	2.42	0.51
7:SH:46:LYS:HG2	7:SH:119:GLN:HB2	1.93	0.51
25:A4:62:PRO:O	25:A4:82:ARG:NH2	2.43	0.51
28:AE:328:ASP:OD1	28:AE:328:ASP:N	2.43	0.51
30:AG:366:ASN:OD1	30:AG:366:ASN:N	2.43	0.51
30:AG:769:ASN:ND2	30:AG:771:ASP:OD1	2.43	0.51
32:B2:909:LYS:O	32:B2:913:ASN:ND2	2.44	0.51
33:B3:139:SER:OG	33:B3:140:PHE:N	2.44	0.51
33:B3:188:GLU:OE2	33:B3:221:ASN:ND2	2.43	0.51
33:B3:787:PRO:HB2	39:5E:492:PRO:HG3	1.92	0.51
35:BE:122:CYS:SG	35:BE:123:ILE:N	2.83	0.51
46:RD:1466:ARG:NH1	46:RD:1466:ARG:O	2.40	0.51
51:RK:22:VAL:HG23	51:RK:106:LEU:HD12	1.91	0.51
3:SA:326:G:O6	3:SA:337:G:O6	2.29	0.51
3:SA:500:C:H4’	3:SA:501:U:H3’	1.93	0.51
25:A4:63:SER:O	25:A4:82:ARG:NH1	2.43	0.51
25:A4:142:GLY:HA3	25:A4:160:CYS:HB3	1.92	0.51
25:A4:210:ILE:HG23	25:A4:229:MET:HB2	1.92	0.51
25:A4:249:ARG:NH2	25:A4:309:GLN:OE1	2.44	0.51
30:AG:511:GLU:HG2	30:AG:528:ILE:HG23	1.92	0.51
32:B2:621:VAL:HA	32:B2:631:PHE:O	2.11	0.51
35:BE:562:LEU:HD12	35:BE:566:SER:HB2	1.91	0.51
43:5I:183:GLN:N	43:5I:197:GLY:O	2.34	0.51
49:RH:215:ASN:ND2	49:RH:218:ASP:OD2	2.43	0.51
3:SA:521:A:N3	17:SZ:34:ASN:ND2	2.57	0.51
3:SA:557:G:N2	3:SA:571:G:O2’	2.43	0.51
20:3C:171:LEU:HB3	20:3C:240:VAL:HG12	1.92	0.51
25:A4:102:LEU:HD12	25:A4:114:LEU:HD12	1.92	0.51
28:AE:46:ASP:OD1	28:AE:46:ASP:N	2.44	0.51
28:AE:243:ALA:HB2	34:B8:208:LEU:HD23	1.91	0.51
29:AF:84:VAL:HG12	29:AF:100:ASP:HB3	1.92	0.51
31:B1:361:VAL:HG22	31:B1:371:VAL:HG22	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B2:104:LYS:HD2	32:B2:113:VAL:HG21	1.92	0.51
37:5C:193:ALA:O	37:5C:194:ARG:NH1	2.40	0.51
39:5E:372:ARG:HH11	39:5E:378:PHE:HA	1.75	0.51
50:RJ:1042:MET:HG3	50:RJ:1044:LEU:HD13	1.90	0.51
50:RJ:1049:ASN:ND2	50:RJ:1051:ASP:OD1	2.43	0.51
7:SH:46:LYS:NZ	7:SH:118:GLU:OE1	2.43	0.51
15:SX:84:GLY:O	15:SX:88:LYS:NZ	2.44	0.51
23:3F:151:ARG:HD2	23:3F:560:ARG:HE	1.74	0.51
25:A4:291:ASP:OD1	25:A4:291:ASP:N	2.39	0.51
25:A4:363:SER:HB2	25:A4:366:ASN:HB3	1.93	0.51
32:B2:165:SER:O	32:B2:182:LYS:N	2.44	0.51
34:B8:426:VAL:HG12	34:B8:432:VAL:HG12	1.93	0.51
43:5I:450:ASP:OD1	43:5I:450:ASP:N	2.44	0.51
4:SC:77:GLU:O	4:SC:80:SER:OG	2.29	0.51
20:3B:170:VAL:HB	20:3B:194:VAL:HG22	1.93	0.51
23:3F:343:ASP:OD1	23:3F:343:ASP:N	2.43	0.51
25:A4:302:ARG:NH2	25:A4:330:GLY:O	2.44	0.51
28:AE:34:ILE:HG12	28:AE:119:GLU:HG3	1.92	0.51
28:AE:83:ARG:NH1	28:AE:125:PHE:O	2.43	0.51
32:B2:180:THR:OG1	32:B2:207:CYS:SG	2.63	0.51
43:5I:324:SER:OG	43:5I:326:ASP:OD1	2.22	0.51
44:5J:158:GLU:OE2	44:5J:161:SER:OG	2.28	0.51
47:RE:139:PRO:HD2	47:RE:238:HIS:HE1	1.75	0.51
47:RE:565:LYS:HZ1	47:RE:689:HIS:HB3	1.76	0.51
47:RE:1019:GLY:O	47:RE:1023:ASN:ND2	2.44	0.51
48:RF:101:SER:O	48:RF:105:SER:HB2	2.11	0.51
5:SF:180:LEU:N	5:SF:229:GLY:O	2.44	0.51
25:A4:395:SER:HB2	25:A4:398:THR:HB	1.93	0.51
30:AG:173:LEU:HB2	30:AG:191:ALA:HB3	1.92	0.51
30:AG:677:THR:OG1	30:AG:678:LEU:N	2.44	0.51
31:B1:42:LEU:HD23	31:B1:338:ILE:HG21	1.93	0.51
33:B3:5:THR:HB	33:B3:611:LYS:HG2	1.93	0.51
33:B3:440:VAL:HG12	33:B3:456:THR:HG22	1.93	0.51
35:BE:726:GLY:O	35:BE:728:ARG:NH1	2.44	0.51
43:5I:154:ASP:N	43:5I:154:ASP:OD1	2.40	0.51
46:RD:1695:TRP:HD1	46:RD:1696:LEU:HD22	1.74	0.51
47:RE:139:PRO:HD2	47:RE:238:HIS:CE1	2.46	0.51
47:RE:236:THR:HG21	47:RE:256:TYR:HE1	1.75	0.51
47:RE:773:TYR:OH	47:RE:1131:ASN:O	2.29	0.51
50:RJ:266:ASP:HB3	50:RJ:795:LYS:HA	1.92	0.51
50:RJ:754:GLN:HA	50:RJ:757:LYS:HD2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5A:2:U:H2'	2:5A:3:G:H8	1.76	0.51
3:SA:1697:G:O6	3:SA:1704:U:O4	2.29	0.51
25:A4:207:ASP:O	25:A4:233:LYS:NZ	2.44	0.51
25:A4:394:TRP:HB3	25:A4:399:VAL:HG23	1.93	0.51
25:A4:582:VAL:O	25:A4:593:GLU:HA	2.11	0.51
26:A5:56:SER:O	26:A5:59:LYS:NZ	2.44	0.51
30:AG:96:ILE:HG12	30:AG:108:THR:HG21	1.93	0.51
33:B3:280:ARG:NH1	33:B3:281:THR:O	2.44	0.51
37:5C:322:VAL:HA	37:5C:331:ALA:O	2.11	0.51
47:RE:257:SER:OG	47:RE:269:ARG:NH1	2.44	0.51
49:RH:43:VAL:HG21	49:RH:99:LEU:HD13	1.92	0.51
10:SK:110:GLN:HE21	10:SK:122:VAL:HG12	1.75	0.50
15:SX:6:VAL:HG22	15:SX:34:ILE:HD11	1.93	0.50
25:A4:741:LEU:HD23	25:A4:743:PHE:N	2.25	0.50
30:AG:225:ILE:HG13	30:AG:241:LEU:HD22	1.92	0.50
30:AG:659:ILE:HA	30:AG:674:THR:HA	1.93	0.50
32:B2:140:SER:OG	32:B2:141:LYS:N	2.44	0.50
32:B2:497:VAL:HG13	32:B2:528:LEU:HB2	1.92	0.50
33:B3:279:LYS:NZ	33:B3:326:THR:OG1	2.44	0.50
33:B3:544:TYR:OH	33:B3:628:ASP:OD2	2.29	0.50
35:BE:155:THR:OG1	35:BE:156:LYS:N	2.44	0.50
37:5C:199:LEU:HD23	37:5C:245:ALA:HB1	1.92	0.50
37:5C:544:ASP:N	37:5C:544:ASP:OD1	2.43	0.50
47:RE:274:LYS:O	47:RE:284:ASN:ND2	2.44	0.50
47:RE:1109:LYS:HZ2	47:RE:1170:GLY:H	1.59	0.50
49:RH:112:VAL:HB	49:RH:124:VAL:HB	1.93	0.50
50:RJ:629:ASP:OD1	50:RJ:629:ASP:N	2.42	0.50
51:RK:30:PRO:HB3	51:RK:77:ARG:HG3	1.91	0.50
53:RP:120:ASP:O	53:RP:123:LYS:NZ	2.44	0.50
53:RP:1912:ILE:HG13	53:RP:1958:MET:HG2	1.93	0.50
3:SA:1483:A:O2'	3:SA:1607:G:O2'	2.27	0.50
15:SX:46:TYR:HB3	15:SX:69:LEU:HD12	1.93	0.50
24:3G:58:CYS:HB2	24:3G:98:ILE:HD12	1.92	0.50
25:A4:481:ILE:HD11	25:A4:536:VAL:HG22	1.93	0.50
28:AE:272:LYS:NZ	28:AE:310:GLY:O	2.44	0.50
29:AF:377:ASP:OD1	29:AF:377:ASP:N	2.44	0.50
30:AG:48:PHE:HB2	30:AG:51:GLN:H	1.75	0.50
31:B1:470:SER:OG	31:B1:471:GLY:N	2.45	0.50
32:B2:297:LYS:HA	32:B2:300:GLU:HB2	1.92	0.50
32:B2:425:ILE:HG22	32:B2:426:ARG:HG2	1.94	0.50
33:B3:553:GLY:HA2	33:B3:577:ALA:HA	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BE:234:ASN:O	35:BE:238:GLY:N	2.45	0.50
35:BE:380:LEU:HD11	35:BE:640:LEU:HD13	1.93	0.50
35:BE:606:ASP:OD1	35:BE:606:ASP:N	2.44	0.50
3:SA:154:G:H21	7:SH:60:GLY:HA3	1.76	0.50
20:3B:123:ILE:HG23	20:3B:141:TYR:HB2	1.94	0.50
26:A5:130:ASP:OD1	26:A5:130:ASP:N	2.45	0.50
29:AF:288:ASP:OD1	29:AF:288:ASP:N	2.45	0.50
31:B1:35:ASN:OD1	31:B1:35:ASN:N	2.37	0.50
33:B3:496:ALA:HB2	33:B3:538:ASP:HA	1.94	0.50
34:B8:382:GLY:O	34:B8:399:LYS:HA	2.10	0.50
43:5I:398:GLU:HA	43:5I:401:LYS:HE2	1.93	0.50
47:RE:578:ILE:HG21	47:RE:617:LEU:HD12	1.93	0.50
3:SA:238:U:O2'	3:SA:239:C:O4'	2.30	0.50
3:SA:312:A:H62	3:SA:352:A:H1'	1.77	0.50
3:SA:473:A:OP1	10:SK:44:ARG:NH1	2.38	0.50
3:SA:976:G:OP1	12:SO:109:LYS:NZ	2.45	0.50
21:3D:148:GLU:HA	21:3D:151:GLN:HE21	1.77	0.50
24:3H:7:LYS:NZ	24:3H:62:GLU:OE2	2.34	0.50
30:AG:765:TRP:HE1	30:AG:777:LEU:HD13	1.76	0.50
31:B1:275:LEU:HD13	31:B1:289:LEU:HD22	1.93	0.50
35:BE:94:TYR:HE1	35:BE:97:LYS:HE2	1.75	0.50
43:5I:290:ASP:OD1	43:5I:291:MET:N	2.41	0.50
47:RE:305:PRO:HB2	47:RE:473:LYS:HD2	1.92	0.50
47:RE:1074:LEU:HD11	47:RE:1087:LEU:HD23	1.93	0.50
50:RJ:895:PRO:HA	50:RJ:918:ILE:HA	1.94	0.50
51:RK:124:SER:OG	51:RK:125:HIS:N	2.43	0.50
51:RK:247:ALA:O	51:RK:255:SER:HA	2.12	0.50
3:SA:347:G:OP1	11:SM:77:SER:OG	2.29	0.50
9:SJ:39:GLY:HA2	9:SJ:61:GLU:HG3	1.93	0.50
16:SY:98:GLU:HG3	51:RK:366:ILE:HG23	1.94	0.50
17:SZ:103:ALA:O	17:SZ:108:ARG:NH1	2.45	0.50
28:AE:254:GLN:NE2	28:AE:285:ASN:O	2.41	0.50
29:AF:33:ALA:HB2	29:AF:330:ARG:HE	1.76	0.50
43:5I:263:ARG:NH2	43:5I:282:GLU:OE2	2.45	0.50
1:3A:18:G:H2'	1:3A:19:A:H8	1.76	0.50
5:SF:104:ASP:HB3	5:SF:110:ALA:HB2	1.94	0.50
7:SH:115:LYS:NZ	7:SH:116:LYS:O	2.42	0.50
8:SI:125:ILE:O	8:SI:129:LEU:CB	2.60	0.50
8:SI:138:LYS:HG2	8:SI:152:VAL:HG12	1.93	0.50
17:SZ:78:SER:OG	17:SZ:81:GLU:OE2	2.29	0.50
25:A4:127:ASP:OD1	25:A4:132:LEU:N	2.43	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:A4:642:ASN:HD22	25:A4:645:ARG:HG3	1.75	0.50
30:AG:17:GLY:HA2	30:AG:50:ASN:HD22	1.76	0.50
32:B2:54:ILE:HA	32:B2:385:ILE:HD11	1.94	0.50
33:B3:128:VAL:HB	33:B3:138:HIS:HB2	1.92	0.50
47:RE:402:ASN:ND2	47:RE:453:PRO:O	2.44	0.50
48:RF:99:ASP:O	48:RF:103:LEU:HB2	2.10	0.50
48:RF:105:SER:OG	48:RF:106:ASP:N	2.44	0.50
51:RK:185:ARG:HH11	51:RK:312:ARG:HH12	1.60	0.50
53:RP:1949:PRO:HA	53:RP:1985:ARG:HH21	1.76	0.50
55:RT:126:LEU:HD21	55:RT:152:LEU:HA	1.93	0.50
3:SA:925:G:H2'	3:SA:926:A:H8	1.75	0.50
3:SA:1738:U:H5"	32:B2:333:ARG:HH21	1.75	0.50
20:3B:155:ILE:HD11	20:3B:162:LEU:HD11	1.94	0.50
20:3C:236:MET:HG3	22:3E:122:GLU:HB3	1.94	0.50
20:3C:297:ARG:HH12	20:3C:322:ARG:HH21	1.60	0.50
22:3E:167:ILE:HD11	22:3E:298:ARG:HG3	1.94	0.50
25:A4:168:ILE:HA	25:A4:179:HIS:HA	1.94	0.50
26:A5:247:THR:HG21	26:A5:293:ASN:H	1.77	0.50
28:AE:92:LYS:O	28:AE:96:ASN:ND2	2.45	0.50
30:AG:744:ILE:HA	30:AG:755:GLY:O	2.12	0.50
31:B1:457:VAL:HG23	31:B1:466:LEU:HB3	1.94	0.50
32:B2:503:LYS:O	32:B2:520:LEU:N	2.44	0.50
35:BE:367:LEU:HD23	35:BE:375:LEU:HD21	1.94	0.50
39:5E:379:ASP:OD1	39:5E:379:ASP:N	2.42	0.50
40:5F:109:ARG:NH2	40:5F:155:GLU:OE2	2.44	0.50
42:5H:579:VAL:HG12	45:5K:47:VAL:HG21	1.93	0.50
51:RK:249:SER:O	51:RK:249:SER:OG	2.29	0.50
55:RT:222:THR:OG1	55:RT:223:ARG:N	2.45	0.50
6:SG:148:ARG:HA	6:SG:157:ARG:HG3	1.94	0.50
14:SR:113:ASP:N	14:SR:113:ASP:OD1	2.45	0.50
22:3E:201:ASP:HB3	22:3E:204:ALA:HB3	1.93	0.50
25:A4:553:LEU:HA	25:A4:560:SER:HA	1.93	0.50
30:AG:200:ASN:HD22	30:AG:262:MET:HG3	1.76	0.50
30:AG:313:LEU:HD23	30:AG:323:LEU:HB3	1.94	0.50
35:BE:637:ASN:ND2	35:BE:639:ASP:OD2	2.45	0.50
39:5E:296:ASN:O	50:RJ:264:GLN:NE2	2.45	0.50
43:5I:26:ARG:NH1	54:RQ:867:GLN:O	2.36	0.50
47:RE:428:TYR:O	47:RE:432:MET:HB2	2.12	0.50
51:RK:246:VAL:HA	51:RK:256:TYR:O	2.11	0.50
53:RP:1961:LYS:HB2	53:RP:1998:LEU:HD23	1.94	0.50
4:SC:242:LYS:HD2	33:B3:237:LEU:HD21	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:SF:127:LYS:HZ3	5:SF:142:HIS:HB3	1.77	0.50
8:SI:143:LEU:O	15:SX:42:GLN:NE2	2.45	0.50
15:SX:4:SER:OG	15:SX:5:SER:N	2.45	0.50
24:3G:21:LEU:HA	24:3G:24:VAL:HG12	1.93	0.50
25:A4:542:VAL:HA	25:A4:551:ASP:O	2.11	0.50
26:A5:128:GLN:HB2	26:A5:138:GLN:H	1.76	0.50
29:AF:390:ARG:HB2	29:AF:394:GLN:HE22	1.77	0.50
32:B2:645:GLU:HG2	32:B2:646:LYS:HG3	1.93	0.50
34:B8:384:ILE:HD12	34:B8:423:LEU:HD21	1.93	0.50
34:B8:516:THR:HG21	34:B8:536:ALA:HB3	1.94	0.50
36:B6:178:VAL:HG22	36:B6:180:LYS:H	1.77	0.50
39:5E:357:ILE:HG12	41:5G:169:ASN:HD22	1.77	0.50
51:RK:19:LEU:HA	51:RK:22:VAL:HG12	1.94	0.50
51:RK:285:LYS:HG3	51:RK:316:GLU:HB3	1.93	0.50
51:RK:289:VAL:HG21	51:RK:294:LEU:HD13	1.94	0.50
3:SA:315:A:N6	3:SA:350:U:O4’	2.44	0.49
4:SC:160:HIS:HD1	4:SC:205:PHE:HE2	1.59	0.49
12:SO:61:THR:OG1	12:SO:62:GLN:N	2.43	0.49
25:A4:288:THR:OG1	25:A4:289:ASP:N	2.44	0.49
31:B1:210:SER:OG	31:B1:211:LYS:N	2.45	0.49
32:B2:270:SER:HB3	32:B2:286:ILE:HG13	1.94	0.49
34:B8:358:PHE:HA	34:B8:376:LEU:O	2.12	0.49
34:B8:391:SER:OG	34:B8:392:GLY:N	2.44	0.49
35:BE:128:LEU:HB2	35:BE:150:PRO:HG2	1.93	0.49
47:RE:138:ILE:O	47:RE:180:LYS:NZ	2.44	0.49
47:RE:361:GLU:HA	47:RE:364:VAL:HG12	1.94	0.49
47:RE:481:THR:OG1	47:RE:482:VAL:N	2.41	0.49
50:RJ:74:VAL:HG22	50:RJ:139:LEU:HD21	1.94	0.49
2:5A:278:G:N2	34:B8:558:SER:O	2.44	0.49
3:SA:593:U:H4’	3:SA:595:G:H4’	1.94	0.49
25:A4:126:TRP:HA	25:A4:133:PRO:HA	1.94	0.49
25:A4:614:TRP:NE1	25:A4:658:ASP:O	2.44	0.49
27:A9:502:ARG:HH11	29:AF:510:LEU:HB2	1.77	0.49
32:B2:215:ASP:N	32:B2:215:ASP:OD1	2.45	0.49
32:B2:403:ASN:OD1	32:B2:403:ASN:N	2.44	0.49
32:B2:446:ILE:HD13	32:B2:456:LEU:HD12	1.94	0.49
34:B8:465:THR:OG1	34:B8:466:THR:N	2.45	0.49
35:BE:21:SER:OG	35:BE:22:LYS:N	2.43	0.49
35:BE:737:LEU:HA	35:BE:740:ILE:HB	1.94	0.49
45:5K:183:GLU:HG2	45:5K:184:LYS:HG3	1.94	0.49
47:RE:725:SER:O	47:RE:729:ASN:ND2	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:RK:300:TYR:HA	51:RK:303:ILE:HG22	1.93	0.49
53:RP:1774:LYS:HA	53:RP:1777:LEU:HB2	1.95	0.49
2:5A:474:A:OP2	37:5C:425:ARG:NH2	2.43	0.49
3:SA:919:A:H5'	13:SP:18:ARG:HH12	1.78	0.49
4:SC:129:THR:OG1	4:SC:130:SER:N	2.45	0.49
12:SO:91:LEU:HD22	12:SO:122:ILE:HG12	1.93	0.49
20:3C:96:VAL:HG23	20:3C:106:LEU:HD21	1.94	0.49
20:3C:165:ALA:HB3	20:3C:168:LYS:HB2	1.94	0.49
25:A4:444:ARG:O	25:A4:475:THR:OG1	2.30	0.49
25:A4:560:SER:OG	25:A4:561:LYS:N	2.45	0.49
37:5C:414:LEU:HB2	43:5I:26:ARG:HH22	1.78	0.49
43:5I:224:SER:OG	43:5I:225:LEU:N	2.44	0.49
50:RJ:94:THR:HG21	50:RJ:354:ILE:HB	1.94	0.49
54:RQ:322:ASN:N	54:RQ:322:ASN:OD1	2.45	0.49
7:SH:7:TYR:O	7:SH:11:GLY:CA	2.61	0.49
10:SK:109:LEU:HB2	10:SK:146:PHE:HB3	1.94	0.49
25:A4:485:LYS:HA	25:A4:498:VAL:O	2.12	0.49
29:AF:48:ASN:HB3	29:AF:52:PRO:HA	1.93	0.49
29:AF:312:ALA:HB3	29:AF:316:ARG:HE	1.76	0.49
29:AF:390:ARG:O	29:AF:394:GLN:NE2	2.45	0.49
32:B2:634:SER:OG	32:B2:635:LYS:N	2.45	0.49
33:B3:387:HIS:CG	33:B3:407:SER:HB3	2.46	0.49
35:BE:255:SER:OG	35:BE:256:PHE:N	2.45	0.49
49:RH:222:ASP:OD1	49:RH:222:ASP:N	2.44	0.49
53:RP:362:PHE:O	53:RP:366:ILE:CB	2.61	0.49
2:5A:87:C:N4	30:AG:333:PHE:O	2.45	0.49
7:SH:39:GLU:HG2	7:SH:46:LYS:HA	1.93	0.49
9:SJ:67:TRP:HD1	9:SJ:70:GLU:H	1.59	0.49
13:SP:53:ASP:OD1	13:SP:53:ASP:N	2.43	0.49
20:3B:127:GLU:OE1	20:3B:137:THR:OG1	2.29	0.49
22:3E:37:LYS:O	22:3E:41:GLU:CB	2.60	0.49
24:3H:26:GLN:NE2	24:3H:113:GLN:OE1	2.45	0.49
29:AF:308:SER:HB2	29:AF:316:ARG:HD3	1.94	0.49
30:AG:591:GLU:HG3	30:AG:593:ASN:HB3	1.93	0.49
32:B2:15:GLY:O	32:B2:360:ASN:ND2	2.46	0.49
33:B3:107:ILE:HD12	33:B3:150:LEU:HD22	1.93	0.49
33:B3:163:LEU:N	33:B3:175:TRP:O	2.45	0.49
37:5C:376:ASN:OD1	37:5C:376:ASN:N	2.43	0.49
43:5I:77:TYR:HE2	43:5I:229:GLN:HE21	1.59	0.49
48:RF:63:ASN:HD21	48:RF:163:PRO:HB2	1.78	0.49
48:RF:107:LEU:HD21	48:RF:194:ARG:HD3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:329:G:H2'	3:SA:330:G:H8	1.78	0.49
22:3E:245:THR:OG1	22:3E:246:GLU:N	2.45	0.49
31:B1:536:LYS:O	31:B1:538:GLN:N	2.46	0.49
33:B3:393:SER:OG	33:B3:394:LEU:N	2.45	0.49
33:B3:397:THR:HB	33:B3:399:ASP:H	1.78	0.49
47:RE:777:ASP:OD1	47:RE:777:ASP:N	2.39	0.49
47:RE:842:ILE:O	47:RE:849:GLY:HA2	2.13	0.49
50:RJ:258:ILE:HD13	50:RJ:265:ILE:HG12	1.93	0.49
50:RJ:295:ASP:OD1	50:RJ:295:ASP:N	2.44	0.49
50:RJ:779:ARG:NH1	51:RK:336:GLU:OE1	2.46	0.49
50:RJ:1105:ASP:N	50:RJ:1105:ASP:OD1	2.45	0.49
55:RT:216:ILE:HD13	55:RT:263:LEU:HD21	1.94	0.49
3:SA:315:A:N1	3:SA:349:U:O2'	2.39	0.49
11:SM:123:VAL:HG12	11:SM:142:VAL:HG23	1.93	0.49
29:AF:284:PHE:HB3	29:AF:290:PHE:HA	1.95	0.49
30:AG:207:LEU:HD23	30:AG:264:ILE:HD12	1.94	0.49
31:B1:69:LEU:HD23	31:B1:127:VAL:HG22	1.93	0.49
33:B3:158:SER:OG	33:B3:159:LYS:N	2.45	0.49
33:B3:509:ALA:HB1	33:B3:536:LEU:HB2	1.93	0.49
37:5C:37:THR:OG1	37:5C:38:LYS:N	2.44	0.49
43:5I:73:ILE:HG22	43:5I:355:LYS:HD2	1.94	0.49
47:RE:1100:VAL:HB	47:RE:1182:ILE:HB	1.95	0.49
51:RK:137:LEU:HD23	51:RK:296:LEU:HD13	1.95	0.49
2:5A:495:G:H2'	2:5A:496:G:C8	2.48	0.49
3:SA:29:U:H2'	3:SA:30:G:H8	1.78	0.49
3:SA:500:C:OP1	3:SA:501:U:N3	2.46	0.49
22:3E:303:SER:OG	22:3E:304:GLY:N	2.45	0.49
23:3F:374:LYS:HG3	23:3F:375:GLU:HG3	1.95	0.49
25:A4:394:TRP:HA	25:A4:399:VAL:HA	1.95	0.49
30:AG:586:SER:O	30:AG:597:LYS:NZ	2.46	0.49
31:B1:70:LEU:HD22	31:B1:84:PHE:HD1	1.77	0.49
40:5F:29:ASP:N	40:5F:29:ASP:OD1	2.46	0.49
47:RE:359:PHE:HZ	47:RE:401:LEU:HD11	1.77	0.49
47:RE:840:LEU:HD23	47:RE:852:PHE:HD2	1.77	0.49
47:RE:1150:VAL:HG21	47:RE:1165:SER:HB2	1.94	0.49
47:RE:1206:PRO:HD2	48:RF:36:PHE:HD2	1.77	0.49
49:RH:111:GLN:NE2	49:RH:123:GLU:OE1	2.45	0.49
1:3A:8:U:H2'	1:3A:9:A:H8	1.78	0.49
5:SF:57:ASN:N	5:SF:57:ASN:OD1	2.45	0.49
9:SJ:36:THR:OG1	9:SJ:59:ARG:N	2.45	0.49
20:3C:303:GLN:HA	20:3C:315:ILE:O	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:A4:397:SER:OG	25:A4:426:GLN:O	2.30	0.49
25:A4:514:LEU:HD21	25:A4:562:PRO:HG3	1.95	0.49
28:AE:186:MET:HA	28:AE:189:LEU:HB2	1.94	0.49
30:AG:559:LYS:O	30:AG:576:ALA:HB3	2.13	0.49
32:B2:763:ILE:HD13	32:B2:838:THR:HG21	1.95	0.49
32:B2:861:ILE:HD11	33:B3:805:ILE:HG13	1.94	0.49
35:BE:471:CYS:SG	35:BE:473:ASN:ND2	2.77	0.49
47:RE:1193:ALA:HB1	47:RE:1211:ASN:HB3	1.94	0.49
50:RJ:775:GLU:O	50:RJ:780:ILE:N	2.45	0.49
3:SA:688:G:H2'	3:SA:689:G:H8	1.78	0.49
11:SM:141:LYS:NZ	11:SM:142:VAL:O	2.46	0.49
17:SZ:103:ALA:HB1	17:SZ:107:GLN:HB2	1.95	0.49
20:3B:228:GLN:HE21	21:3D:102:ASP:HB3	1.78	0.49
21:3D:90:SER:H	54:RQ:321:HIS:CE1	2.31	0.49
22:3E:356:LYS:HA	22:3E:359:ILE:HG22	1.95	0.49
22:3E:408:THR:O	28:AE:166:ASN:ND2	2.46	0.49
26:A5:212:LEU:HB2	26:A5:226:LEU:HB2	1.95	0.49
29:AF:145:ASP:OD1	29:AF:172:ARG:NE	2.46	0.49
36:B6:29:VAL:HA	36:B6:32:ILE:HG12	1.95	0.49
41:5G:81:SER:OG	41:5G:82:GLY:N	2.46	0.49
43:5I:420:PRO:HD2	43:5I:423:ILE:HD12	1.95	0.49
47:RE:384:SER:HA	47:RE:584:GLU:HG3	1.95	0.49
47:RE:444:SER:N	47:RE:471:SER:OG	2.40	0.49
49:RH:47:MET:HG2	49:RH:117:SER:HB3	1.94	0.49
50:RJ:143:ASP:OD1	50:RJ:143:ASP:N	2.46	0.49
50:RJ:170:VAL:HG12	50:RJ:205:PHE:HB2	1.94	0.49
50:RJ:847:LEU:O	50:RJ:853:ARG:HA	2.13	0.49
3:SA:155:U:H4'	7:SH:59:GLN:HG3	1.96	0.48
3:SA:1665:U:O2	3:SA:1736:G:C6	2.66	0.48
4:SC:64:ARG:NH2	13:SP:32:ASP:OD2	2.46	0.48
21:3D:74:VAL:HG13	21:3D:78:LEU:HD22	1.93	0.48
22:3E:215:ARG:NH1	22:3E:242:SER:OG	2.46	0.48
22:3E:422:THR:OG1	22:3E:423:GLU:N	2.46	0.48
23:3F:355:THR:OG1	23:3F:356:ARG:N	2.43	0.48
26:A5:362:ARG:NH1	30:AG:591:GLU:OE2	2.46	0.48
30:AG:73:LEU:O	30:AG:131:HIS:NE2	2.46	0.48
30:AG:175:ALA:HB3	30:AG:188:ALA:HB3	1.95	0.48
30:AG:501:THR:OG1	30:AG:506:TRP:N	2.46	0.48
32:B2:279:LYS:HD3	32:B2:336:TYR:HA	1.95	0.48
33:B3:519:ASN:ND2	33:B3:526:GLU:OE2	2.45	0.48
34:B8:144:LYS:HB2	34:B8:147:ARG:HH21	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BE:329:SER:O	35:BE:329:SER:OG	2.31	0.48
35:BE:604:SER:OG	35:BE:606:ASP:OD1	2.31	0.48
41:5G:196:THR:HG23	41:5G:199:GLY:H	1.77	0.48
47:RE:397:MET:HG2	47:RE:425:VAL:HG21	1.95	0.48
49:RH:227:LEU:HD23	49:RH:240:LYS:HE2	1.95	0.48
51:RK:193:GLY:O	51:RK:225:ILE:HA	2.13	0.48
51:RK:315:LYS:HZ3	51:RK:348:GLU:H	1.60	0.48
6:SG:120:ILE:HA	6:SG:123:VAL:HG12	1.95	0.48
25:A4:147:ILE:HG22	25:A4:158:VAL:HA	1.94	0.48
34:B8:450:GLN:HE21	34:B8:507:PRO:HD3	1.78	0.48
39:5E:346:GLU:O	50:RJ:1005:SER:OG	2.29	0.48
43:5I:252:ASN:ND2	53:RP:1949:PRO:O	2.43	0.48
46:RD:1542:GLN:OE1	47:RE:872:ASN:ND2	2.45	0.48
50:RJ:300:GLN:HG2	50:RJ:792:VAL:HB	1.95	0.48
3:SA:142:G:C2	3:SA:173:A:H2	2.31	0.48
20:3B:189:GLY:O	20:3B:216:ASN:ND2	2.46	0.48
22:3E:138:LYS:HD3	22:3E:141:LEU:HD21	1.95	0.48
26:A5:66:VAL:HG12	26:A5:112:LEU:HD21	1.96	0.48
30:AG:427:LYS:O	30:AG:431:SER:OG	2.28	0.48
30:AG:763:ILE:HD11	30:AG:776:PHE:HB2	1.95	0.48
32:B2:6:GLN:NE2	32:B2:686:GLU:OE1	2.45	0.48
32:B2:435:THR:HG21	32:B2:478:SER:HA	1.94	0.48
34:B8:445:ARG:NH2	34:B8:499:ALA:O	2.42	0.48
35:BE:51:VAL:HG12	35:BE:60:ILE:HG12	1.95	0.48
35:BE:169:SER:OG	35:BE:170:LEU:N	2.46	0.48
37:5C:414:LEU:HD22	43:5I:26:ARG:HH12	1.76	0.48
43:5I:275:PHE:HB3	54:RQ:295:VAL:HG11	1.95	0.48
48:RF:66:HIS:HB2	48:RF:158:TRP:HE1	1.78	0.48
1:3A:85:G:N7	22:3E:361:ARG:NH1	2.61	0.48
3:SA:867:G:OP1	12:SO:9:LYS:NZ	2.36	0.48
5:SF:54:TYR:O	17:SZ:15:ASN:ND2	2.46	0.48
9:SJ:83:TYR:OH	11:SM:11:ARG:O	2.30	0.48
26:A5:5:VAL:HA	26:A5:21:THR:HG22	1.95	0.48
26:A5:84:GLU:OE1	26:A5:86:TRP:NE1	2.31	0.48
30:AG:595:CYS:SG	30:AG:596:LEU:N	2.86	0.48
43:5I:40:GLU:HG3	43:5I:404:PHE:HE2	1.78	0.48
46:RD:1518:ILE:HG23	46:RD:1552:LYS:HE2	1.95	0.48
47:RE:177:ASN:HB3	47:RE:179:LYS:HZ3	1.78	0.48
47:RE:794:ASP:OD1	47:RE:865:ARG:NH2	2.42	0.48
47:RE:1166:ARG:O	47:RE:1180:ASN:ND2	2.37	0.48
53:RP:185:LYS:HB3	53:RP:188:LEU:HD12	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5A:296:C:O2'	35:BE:68:LEU:O	2.24	0.48
3:SA:513:U:H2'	3:SA:514:G:C8	2.49	0.48
3:SA:1527:C:OP1	6:SG:106:LYS:NZ	2.37	0.48
23:3F:256:ARG:HD3	23:3F:282:GLU:HG2	1.94	0.48
25:A4:429:SER:OG	25:A4:430:THR:N	2.46	0.48
30:AG:762:TYR:HB3	30:AG:779:ILE:HG12	1.96	0.48
35:BE:569:VAL:HB	35:BE:579:ARG:HB2	1.95	0.48
37:5C:384:VAL:HB	37:5C:389:LEU:O	2.13	0.48
45:5K:153:VAL:O	45:5K:172:LEU:HA	2.13	0.48
51:RK:142:GLU:O	51:RK:147:ARG:NH2	2.40	0.48
53:RP:1919:ILE:HD13	53:RP:1961:LYS:HD3	1.96	0.48
3:SA:448:C:OP2	5:SF:49:ARG:NH1	2.47	0.48
4:SC:175:GLU:O	4:SC:179:SER:OG	2.29	0.48
8:SI:137:GLY:O	8:SI:153:LEU:HB2	2.14	0.48
22:3E:379:ASP:N	22:3E:379:ASP:OD1	2.46	0.48
26:A5:82:ASN:OD1	26:A5:82:ASN:N	2.46	0.48
31:B1:4:ASP:OD1	31:B1:4:ASP:N	2.42	0.48
31:B1:64:ASN:N	31:B1:64:ASN:OD1	2.46	0.48
32:B2:285:ARG:HH22	32:B2:372:ARG:HD2	1.79	0.48
33:B3:15:ILE:HG13	33:B3:33:ALA:HB3	1.96	0.48
33:B3:245:SER:OG	33:B3:262:GLY:N	2.41	0.48
33:B3:469:PRO:HG2	33:B3:475:MET:HB3	1.95	0.48
33:B3:513:LYS:HB2	33:B3:532:HIS:HB2	1.95	0.48
34:B8:364:GLN:HG3	34:B8:371:VAL:HG22	1.95	0.48
35:BE:207:ASP:N	35:BE:207:ASP:OD1	2.45	0.48
35:BE:270:SER:O	35:BE:270:SER:OG	2.31	0.48
43:5I:188:HIS:HD1	43:5I:190:GLU:H	1.60	0.48
50:RJ:776:GLN:HA	50:RJ:780:ILE:HG22	1.95	0.48
2:5A:495:G:H2'	2:5A:496:G:H8	1.78	0.48
3:SA:66:U:OP2	7:SH:136:LYS:NZ	2.46	0.48
3:SA:844:A:H2'	3:SA:845:G:H8	1.77	0.48
3:SA:874:C:H2'	3:SA:875:G:C8	2.49	0.48
3:SA:1041:G:H2'	3:SA:1042:G:C8	2.48	0.48
3:SA:1685:G:N2	3:SA:1716:C:O2'	2.45	0.48
6:SG:79:ASN:O	31:B1:508:GLN:NE2	2.46	0.48
6:SG:219:ARG:NH2	49:RH:222:ASP:OD2	2.43	0.48
13:SP:81:VAL:HG21	13:SP:102:LEU:HD12	1.94	0.48
21:3D:160:ARG:NH1	36:B6:293:TYR:OH	2.45	0.48
21:3D:194:ARG:NH2	22:3E:172:ASP:OD2	2.47	0.48
25:A4:192:THR:O	25:A4:203:GLY:HA2	2.14	0.48
30:AG:623:PHE:HE2	30:AG:670:LEU:HD11	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:5C:340:LEU:O	37:5C:368:TYR:N	2.46	0.48
40:5F:54:ILE:HD11	40:5F:101:VAL:HG21	1.95	0.48
40:5F:169:THR:HA	40:5F:172:ARG:HG2	1.96	0.48
46:RD:1489:SER:O	46:RD:1489:SER:OG	2.32	0.48
48:RF:204:SER:OG	48:RF:205:SER:N	2.47	0.48
2:5A:8:A:H5"	27:A9:487:ARG:HH22	1.79	0.48
3:SA:760:A:N1	3:SA:790:U:C4	2.82	0.48
7:SH:142:ARG:HA	7:SH:147:LEU:HD23	1.96	0.48
23:3F:168:ASN:N	23:3F:174:GLU:O	2.47	0.48
23:3F:398:CYS:H	24:3H:14:ALA:HB1	1.78	0.48
26:A5:156:ALA:HB3	26:A5:159:SER:HB2	1.96	0.48
30:AG:335:PRO:HB2	30:AG:336:ARG:HD3	1.95	0.48
33:B3:148:SER:OG	33:B3:149:SER:N	2.38	0.48
34:B8:512:ASP:OD1	34:B8:512:ASP:N	2.47	0.48
55:RT:210:GLY:O	55:RT:214:PHE:HB2	2.13	0.48
1:3A:266:C:O2'	1:3A:267:A:O4'	2.32	0.48
3:SA:65:A:N6	3:SA:84:A:OP2	2.46	0.48
3:SA:884:A:OP1	4:SC:136:ARG:NH2	2.47	0.48
4:SC:65:VAL:HG21	4:SC:85:LYS:HE2	1.95	0.48
17:SZ:91:LEU:HD22	17:SZ:96:LEU:HD21	1.96	0.48
20:3C:100:ARG:HA	20:3C:104:ASP:HA	1.95	0.48
22:3E:219:SER:OG	36:B6:288:LYS:NZ	2.40	0.48
25:A4:613:GLN:HA	25:A4:616:LYS:HB3	1.95	0.48
30:AG:710:LEU:HG	30:AG:711:ILE:HG23	1.96	0.48
31:B1:441:SER:O	31:B1:441:SER:OG	2.30	0.48
32:B2:476:ILE:HA	32:B2:492:SER:HA	1.95	0.48
43:5I:205:ASP:OD1	43:5I:205:ASP:N	2.43	0.48
45:5K:155:THR:OG1	45:5K:156:ASN:N	2.47	0.48
47:RE:826:SER:OG	47:RE:841:ASN:ND2	2.46	0.48
49:RH:189:VAL:HA	49:RH:192:TYR:HB3	1.95	0.48
53:RP:133:ILE:HD13	53:RP:180:LEU:HG	1.95	0.48
53:RP:193:ALA:O	53:RP:197:SER:HB3	2.13	0.48
8:SI:134:GLU:HB3	8:SI:155:ASP:HB3	1.96	0.48
16:SY:59:ILE:O	16:SY:69:ARG:NH2	2.42	0.48
20:3C:91:HIS:HB3	20:3C:96:VAL:HG13	1.95	0.48
22:3E:215:ARG:NH2	22:3E:244:GLY:O	2.47	0.48
24:3G:26:GLN:HB3	24:3G:110:ILE:HG21	1.95	0.48
25:A4:417:VAL:HG11	25:A4:460:LEU:HD12	1.96	0.48
29:AF:215:VAL:HA	29:AF:230:GLY:HA3	1.94	0.48
30:AG:378:ASP:O	34:B8:344:ARG:NH2	2.47	0.48
31:B1:261:ALA:HB1	31:B1:279:PHE:HB3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:B1:387:THR:OG1	31:B1:388:SER:N	2.47	0.48
31:B1:538:GLN:HG2	31:B1:554:ASP:HA	1.96	0.48
53:RP:43:GLU:HG3	53:RP:44:SER:H	1.79	0.48
1:3A:206:C:N3	1:3A:243:U:C4	2.82	0.47
2:5A:295:A:C6	35:BE:381:ARG:HD2	2.49	0.47
16:SY:76:LEU:O	16:SY:80:GLY:HA2	2.13	0.47
20:3B:236:MET:HG2	21:3D:133:LEU:HA	1.95	0.47
20:3C:118:TYR:OH	20:3C:178:GLY:O	2.30	0.47
24:3H:13:ASP:OD1	24:3H:13:ASP:N	2.46	0.47
25:A4:102:LEU:HA	25:A4:115:PHE:O	2.14	0.47
25:A4:305:PHE:HB3	25:A4:325:ASN:HA	1.96	0.47
30:AG:692:PHE:HE1	30:AG:750:LEU:HB3	1.79	0.47
33:B3:690:HIS:NE2	39:5E:518:GLU:OE2	2.47	0.47
35:BE:405:SER:OG	35:BE:406:THR:N	2.47	0.47
36:B6:67:ARG:NH1	36:B6:84:SER:OG	2.44	0.47
39:5E:316:ASN:O	39:5E:320:ALA:CB	2.62	0.47
41:5G:217:ASP:OD1	41:5G:217:ASP:N	2.44	0.47
41:5G:236:HIS:HA	41:5G:249:GLU:HA	1.95	0.47
43:5I:230:ASN:OD1	43:5I:230:ASN:N	2.43	0.47
50:RJ:268:LYS:HB3	50:RJ:794:GLU:HG3	1.94	0.47
1:3A:325:C:N4	22:3E:318:GLN:OE1	2.30	0.47
3:SA:486:G:N3	3:SA:500:C:N4	2.61	0.47
3:SA:524:U:N3	3:SA:527:A:OP2	2.46	0.47
3:SA:596:C:H2'	3:SA:597:G:H8	1.79	0.47
4:SC:92:GLN:NE2	4:SC:235:GLY:O	2.46	0.47
4:SC:209:ASN:OD1	4:SC:209:ASN:N	2.46	0.47
15:SX:6:VAL:HG23	15:SX:29:PRO:HD2	1.95	0.47
25:A4:62:PRO:HD2	25:A4:65:LEU:HD11	1.94	0.47
25:A4:378:TYR:OH	25:A4:632:ASN:ND2	2.47	0.47
26:A5:336:ASN:OD1	26:A5:336:ASN:N	2.47	0.47
26:A5:541:LEU:HG	29:AF:495:ILE:HD11	1.95	0.47
28:AE:56:LEU:HD22	28:AE:74:PHE:HD2	1.79	0.47
30:AG:138:ASP:OD1	30:AG:140:LYS:NZ	2.38	0.47
35:BE:134:ASP:OD1	35:BE:136:SER:OG	2.32	0.47
35:BE:323:VAL:HB	35:BE:343:LEU:HD22	1.96	0.47
37:5C:170:GLN:NE2	37:5C:177:TYR:OH	2.47	0.47
40:5F:137:ARG:NH2	40:5F:139:GLY:O	2.42	0.47
53:RP:1893:GLU:HA	53:RP:1896:ILE:HD12	1.96	0.47
53:RP:1957:GLN:NE2	53:RP:1995:ARG:O	2.47	0.47
53:RP:1998:LEU:H	53:RP:1998:LEU:HD12	1.79	0.47
3:SA:214:G:H4'	3:SA:242:U:H3	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:1744:A:N6	3:SA:1746:A:N7	2.62	0.47
23:3F:342:ARG:HH12	24:3H:21:LEU:HB3	1.79	0.47
23:3F:492:TRP:HB3	23:3F:520:VAL:HG22	1.96	0.47
29:AF:238:ASP:OD2	29:AF:241:SER:OG	2.32	0.47
31:B1:36:ARG:NH2	31:B1:53:GLU:OE2	2.46	0.47
32:B2:139:GLY:HA3	32:B2:166:ILE:HD11	1.96	0.47
33:B3:536:LEU:HA	33:B3:552:SER:HB2	1.95	0.47
35:BE:361:SER:HA	35:BE:636:PRO:HB3	1.95	0.47
39:5E:310:GLN:HA	39:5E:313:GLN:HG2	1.96	0.47
39:5E:474:ILE:HG12	39:5E:476:MET:H	1.79	0.47
41:5G:131:CYS:SG	41:5G:136:THR:OG1	2.58	0.47
43:5I:244:ILE:O	43:5I:257:LYS:HA	2.14	0.47
49:RH:77:LEU:HD21	49:RH:84:ILE:HA	1.96	0.47
53:RP:1808:SER:O	53:RP:1808:SER:OG	2.33	0.47
53:RP:1914:THR:HA	53:RP:1917:ILE:HD12	1.96	0.47
2:5A:84:G:H4'	30:AG:295:TRP:HA	1.95	0.47
30:AG:408:THR:HG21	30:AG:488:LEU:HD13	1.96	0.47
31:B1:369:ILE:HB	31:B1:383:PHE:HB2	1.96	0.47
35:BE:509:SER:OG	35:BE:510:LEU:N	2.47	0.47
38:5D:18:GLN:HB2	38:5D:28:LEU:H	1.80	0.47
53:RP:35:GLU:O	53:RP:37:ARG:NH2	2.48	0.47
1:3A:59:G:OP1	31:B1:573:ASN:ND2	2.46	0.47
2:5A:2:U:H2'	2:5A:3:G:C8	2.49	0.47
3:SA:29:U:H2'	3:SA:30:G:C8	2.49	0.47
4:SC:149:GLN:HE22	4:SC:154:SER:HB3	1.80	0.47
11:SM:64:VAL:HG12	11:SM:129:ARG:HE	1.79	0.47
16:SY:56:LYS:HE2	16:SY:97:ASP:HA	1.95	0.47
16:SY:76:LEU:O	16:SY:80:GLY:N	2.47	0.47
20:3C:166:PRO:HA	20:3C:188:VAL:HA	1.96	0.47
30:AG:317:TRP:HA	30:AG:340:ILE:HG23	1.97	0.47
31:B1:5:PHE:HB3	31:B1:704:TYR:HB3	1.97	0.47
33:B3:34:THR:OG1	33:B3:35:PRO:O	2.28	0.47
33:B3:741:LYS:HG2	33:B3:781:ILE:HD11	1.97	0.47
34:B8:129:ASP:HA	34:B8:132:LYS:HE3	1.97	0.47
34:B8:178:VAL:HG11	35:BE:217:VAL:HG11	1.96	0.47
35:BE:862:VAL:HG21	35:BE:904:ASP:HB2	1.95	0.47
49:RH:154:ASN:ND2	49:RH:156:GLU:OE2	2.48	0.47
3:SA:828:U:N3	3:SA:843:U:O2	2.48	0.47
3:SA:1756:A:H62	39:5E:532:LEU:HB2	1.78	0.47
5:SF:206:ASP:OD1	5:SF:206:ASP:N	2.47	0.47
6:SG:146:THR:OG1	6:SG:147:THR:N	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SI:48:GLU:HG2	8:SI:56:LYS:HB3	1.97	0.47
20:3C:90:PRO:HA	20:3C:97:TYR:HD1	1.80	0.47
21:3D:212:ASP:O	21:3D:216:PHE:CB	2.62	0.47
23:3F:411:PHE:HA	23:3F:427:LEU:HD23	1.97	0.47
24:3H:16:LEU:HD21	24:3H:121:ILE:HG22	1.96	0.47
25:A4:101:GLY:HA3	25:A4:117:ILE:HD12	1.96	0.47
32:B2:171:CYS:HB2	32:B2:177:LEU:HD12	1.95	0.47
32:B2:917:ASN:OD1	32:B2:917:ASN:N	2.46	0.47
33:B3:410:ASN:HA	33:B3:435:ALA:HA	1.97	0.47
33:B3:464:LYS:HZ2	33:B3:481:LYS:HB2	1.80	0.47
37:5C:265:GLU:HG3	37:5C:265:GLU:O	2.14	0.47
43:5I:411:LYS:O	43:5I:415:ARG:HB2	2.15	0.47
44:5J:165:ASN:ND2	44:5J:168:GLU:OE1	2.48	0.47
1:3A:30:A:N6	43:5I:342:ILE:O	2.36	0.47
3:SA:252:U:H2'	3:SA:253:A:H8	1.79	0.47
3:SA:1638:G:OP2	33:B3:751:LYS:NZ	2.37	0.47
4:SC:149:GLN:HE21	4:SC:151:LYS:HG2	1.79	0.47
16:SY:109:ARG:NH2	16:SY:117:ILE:O	2.43	0.47
20:3B:218:ILE:HD12	21:3D:152:LEU:HA	1.96	0.47
20:3B:283:GLU:HG2	45:5K:150:CYS:HB3	1.97	0.47
21:3D:286:ARG:HA	21:3D:289:TYR:HB3	1.97	0.47
23:3F:298:SER:OG	23:3F:325:VAL:O	2.24	0.47
25:A4:121:THR:HA	25:A4:144:ILE:HG22	1.97	0.47
28:AE:259:THR:HG23	30:AG:891:VAL:HG11	1.96	0.47
29:AF:307:VAL:HA	29:AF:318:LEU:HA	1.97	0.47
30:AG:529:LEU:HB2	30:AG:547:VAL:HG23	1.96	0.47
30:AG:768:TRP:HE1	30:AG:772:THR:HA	1.79	0.47
32:B2:218:ILE:HD11	32:B2:226:VAL:HB	1.95	0.47
32:B2:595:LYS:HD2	32:B2:615:GLN:HA	1.97	0.47
33:B3:12:LEU:HD23	33:B3:643:PHE:HE2	1.78	0.47
33:B3:151:LYS:H	33:B3:164:ALA:HB3	1.80	0.47
34:B8:253:SER:HB2	34:B8:297:THR:HA	1.96	0.47
35:BE:896:ILE:HG23	35:BE:905:ILE:HD12	1.95	0.47
36:B6:196:LEU:HA	36:B6:199:ARG:HB3	1.97	0.47
37:5C:69:GLU:OE1	43:5I:13:TYR:OH	2.32	0.47
37:5C:103:ALA:HB2	37:5C:402:ILE:HD11	1.96	0.47
37:5C:138:ASP:OD2	37:5C:141:LYS:NZ	2.44	0.47
44:5J:50:SER:O	44:5J:53:GLN:NE2	2.48	0.47
47:RE:891:ALA:HA	47:RE:894:ARG:HH11	1.80	0.47
47:RE:1087:LEU:O	47:RE:1090:THR:OG1	2.31	0.47
48:RF:64:ILE:HA	48:RF:87:LEU:HD13	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:RF:131:ALA:HA	48:RF:134:ILE:HG22	1.97	0.47
49:RH:191:ASP:HA	49:RH:194:GLU:HB3	1.97	0.47
50:RJ:164:MET:HE3	50:RJ:198:VAL:HG23	1.97	0.47
51:RK:302:VAL:HG11	51:RK:329:ILE:HD11	1.96	0.47
53:RP:47:PHE:HA	53:RP:112:GLN:HG2	1.97	0.47
3:SA:455:C:H5'	5:SF:59:ARG:HH22	1.79	0.47
3:SA:461:G:H2'	3:SA:462:G:H8	1.78	0.47
3:SA:867:G:N2	12:SO:87:ASP:OD2	2.48	0.47
3:SA:1060:U:H2'	3:SA:1061:A:H8	1.79	0.47
8:SI:56:LYS:HE2	53:RP:2031:HIS:HE1	1.80	0.47
14:SR:37:THR:O	14:SR:45:ARG:NE	2.47	0.47
23:3F:120:ARG:HH11	53:RP:79:GLN:HA	1.79	0.47
34:B8:149:SER:HB3	34:B8:152:GLU:HG2	1.96	0.47
43:5I:126:LYS:NZ	43:5I:127:LYS:O	2.38	0.47
46:RD:1701:SER:O	46:RD:1701:SER:OG	2.32	0.47
47:RE:639:SER:OG	47:RE:640:THR:N	2.47	0.47
50:RJ:552:LEU:HD21	50:RJ:566:ARG:HH11	1.80	0.47
51:RK:126:ASN:OD1	51:RK:126:ASN:N	2.47	0.47
3:SA:625:C:O2'	3:SA:939:A:N3	2.44	0.47
13:SP:22:SER:OG	13:SP:23:PHE:N	2.47	0.47
20:3B:144:TRP:CE2	20:3B:152:ALA:HB2	2.49	0.47
22:3E:227:LEU:HD13	22:3E:231:ILE:HB	1.97	0.47
25:A4:198:ASP:OD1	25:A4:198:ASP:N	2.43	0.47
25:A4:516:VAL:HG11	25:A4:529:ASN:HB3	1.96	0.47
26:A5:213:ASN:ND2	26:A5:215:TYR:OH	2.48	0.47
30:AG:352:ASN:OD1	30:AG:352:ASN:N	2.48	0.47
30:AG:420:SER:HA	30:AG:423:LYS:HE2	1.96	0.47
30:AG:443:ASN:ND2	30:AG:446:ASN:OD1	2.47	0.47
30:AG:868:ASN:N	30:AG:868:ASN:OD1	2.44	0.47
31:B1:314:GLY:O	31:B1:332:TRP:NE1	2.39	0.47
33:B3:25:VAL:HG12	33:B3:294:LEU:HD22	1.96	0.47
33:B3:340:ILE:HG12	33:B3:357:THR:HG22	1.97	0.47
33:B3:575:THR:OG1	33:B3:576:ASN:N	2.48	0.47
3:SA:763:G:H1'	3:SA:787:G:H1'	1.96	0.47
3:SA:1160:A:H2'	3:SA:1161:C:H6	1.80	0.47
3:SA:1751:C:H2'	3:SA:1752:U:C6	2.49	0.47
7:SH:130:PRO:HB3	53:RP:624:VAL:HA	1.97	0.47
28:AE:32:SER:OG	28:AE:35:TYR:O	2.32	0.47
32:B2:273:TYR:HE2	32:B2:275:GLN:HG3	1.80	0.47
32:B2:412:GLY:HA2	32:B2:431:GLY:H	1.80	0.47
33:B3:12:LEU:HG	33:B3:641:PHE:HB2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:B3:211:LEU:O	33:B3:222:LEU:HA	2.15	0.47
33:B3:219:ILE:HB	33:B3:235:LYS:HE3	1.96	0.47
36:B6:126:TYR:HA	36:B6:129:ILE:HB	1.96	0.47
41:5G:236:HIS:CE1	41:5G:249:GLU:HB3	2.50	0.47
47:RE:870:ALA:HB2	48:RF:103:LEU:HD21	1.96	0.47
50:RJ:771:GLU:O	50:RJ:777:ARG:NH2	2.47	0.47
50:RJ:1061:GLU:OE1	50:RJ:1063:HIS:NE2	2.47	0.47
51:RK:196:TYR:HA	51:RK:228:ASP:O	2.14	0.47
3:SA:252:U:H2'	3:SA:253:A:C8	2.51	0.46
3:SA:429:G:H21	50:RJ:225:ARG:HH12	1.63	0.46
3:SA:922:G:H2'	3:SA:923:A:H8	1.80	0.46
8:SI:48:GLU:HA	8:SI:57:ALA:O	2.15	0.46
22:3E:338:LYS:HD3	22:3E:357:GLY:HA3	1.96	0.46
22:3E:355:ASN:HB2	22:3E:401:LEU:HD13	1.97	0.46
25:A4:298:ALA:HB1	25:A4:333:ILE:HG13	1.97	0.46
25:A4:344:ALA:HB2	25:A4:682:THR:HA	1.97	0.46
25:A4:545:ARG:HG2	25:A4:549:VAL:HB	1.98	0.46
28:AE:39:THR:O	28:AE:43:GLN:NE2	2.40	0.46
29:AF:398:SER:O	29:AF:434:ARG:NH2	2.47	0.46
30:AG:524:ASP:OD1	30:AG:524:ASP:N	2.47	0.46
31:B1:295:ILE:HG22	31:B1:296:GLN:HG2	1.96	0.46
31:B1:605:ASP:OD1	31:B1:605:ASP:N	2.42	0.46
32:B2:186:ILE:HG12	32:B2:202:ALA:HB2	1.96	0.46
35:BE:171:GLN:NE2	35:BE:212:ALA:O	2.48	0.46
35:BE:376:TRP:NE1	35:BE:388:GLU:OE1	2.48	0.46
35:BE:664:SER:OG	35:BE:665:THR:N	2.48	0.46
37:5C:183:GLU:HG2	45:5K:16:THR:HG22	1.97	0.46
43:5I:88:ALA:HB1	43:5I:112:LEU:HD23	1.96	0.46
47:RE:184:SER:HB3	47:RE:206:LEU:HB3	1.97	0.46
49:RH:44:VAL:HG22	49:RH:113:TYR:HB2	1.96	0.46
50:RJ:991:PHE:CG	50:RJ:995:ILE:HD11	2.50	0.46
3:SA:170:U:H3	3:SA:289:U:HO2'	1.62	0.46
3:SA:903:U:O2'	3:SA:905:A:N7	2.43	0.46
25:A4:147:ILE:HA	25:A4:157:SER:O	2.15	0.46
31:B1:517:ASP:OD1	31:B1:517:ASP:N	2.35	0.46
31:B1:567:ASP:OD1	31:B1:567:ASP:N	2.47	0.46
32:B2:23:CYS:HB2	32:B2:43:THR:HG22	1.97	0.46
32:B2:373:ASP:N	32:B2:373:ASP:OD1	2.48	0.46
32:B2:584:ASP:N	32:B2:584:ASP:OD1	2.46	0.46
33:B3:215:GLY:N	33:B3:242:GLN:OE1	2.48	0.46
35:BE:914:ASP:O	35:BE:918:LYS:NZ	2.43	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:5I:359:ASP:N	43:5I:359:ASP:OD1	2.48	0.46
47:RE:692:LYS:HE2	47:RE:692:LYS:HB2	1.81	0.46
49:RH:192:TYR:HA	49:RH:195:LYS:HE2	1.96	0.46
1:3A:247:U:O4	23:3F:151:ARG:NH1	2.49	0.46
10:SK:107:ARG:NH2	10:SK:148:VAL:O	2.41	0.46
12:SO:43:LYS:HB2	12:SO:43:LYS:HE3	1.74	0.46
22:3E:355:ASN:OD1	22:3E:355:ASN:N	2.48	0.46
25:A4:274:GLN:HE22	25:A4:319:ARG:HA	1.79	0.46
26:A5:96:THR:OG1	26:A5:97:TYR:N	2.48	0.46
26:A5:231:ASP:O	26:A5:249:GLU:N	2.47	0.46
30:AG:291:ARG:NH1	30:AG:326:LEU:O	2.48	0.46
30:AG:579:ASN:HD21	30:AG:603:ASN:HA	1.80	0.46
30:AG:655:LEU:HD13	30:AG:659:ILE:HG21	1.95	0.46
32:B2:498:LYS:HG3	32:B2:527:THR:HA	1.96	0.46
34:B8:268:TYR:OH	34:B8:296:GLN:NE2	2.48	0.46
35:BE:322:TYR:HE1	35:BE:342:TYR:HD1	1.62	0.46
35:BE:353:PRO:HA	35:BE:370:SER:HA	1.97	0.46
35:BE:719:GLU:OE1	35:BE:719:GLU:N	2.48	0.46
36:B6:144:VAL:HG11	36:B6:178:VAL:HG11	1.97	0.46
51:RK:280:LEU:HD13	51:RK:283:ILE:HD11	1.96	0.46
53:RP:135:LEU:HD13	53:RP:138:ALA:HB3	1.97	0.46
8:SI:33:GLU:O	8:SI:35:LYS:NZ	2.39	0.46
23:3F:160:ILE:HG12	23:3F:542:SER:HB3	1.97	0.46
26:A5:344:ASP:OD1	26:A5:348:LYS:N	2.40	0.46
29:AF:104:LEU:HA	29:AF:121:ASN:HA	1.97	0.46
30:AG:57:VAL:HG12	30:AG:383:LEU:HD21	1.96	0.46
30:AG:358:LEU:HB3	30:AG:370:GLN:HB3	1.96	0.46
31:B1:329:VAL:HG13	31:B1:338:ILE:HB	1.97	0.46
32:B2:433:ALA:HB1	32:B2:447:LEU:HD11	1.97	0.46
34:B8:238:LEU:HD13	34:B8:279:GLY:HA2	1.97	0.46
35:BE:626:ASP:N	35:BE:626:ASP:OD1	2.47	0.46
37:5C:23:ARG:HH22	54:RQ:869:TRP:HB3	1.80	0.46
37:5C:387:GLU:HG3	43:5I:6:ILE:HD11	1.96	0.46
43:5I:311:VAL:HA	43:5I:321:VAL:O	2.15	0.46
45:5K:185:LEU:HD12	45:5K:186:PRO:HD2	1.98	0.46
47:RE:462:PHE:HB2	47:RE:466:THR:HG21	1.97	0.46
47:RE:870:ALA:HA	48:RF:103:LEU:HD11	1.98	0.46
47:RE:924:LEU:HG	47:RE:1164:SER:HB3	1.96	0.46
53:RP:2023:THR:HA	53:RP:2026:ILE:HG12	1.97	0.46
1:3A:35:U:O2	43:5I:393:LYS:NZ	2.48	0.46
3:SA:488:G:H1	3:SA:499:U:H3	1.62	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:592:A:O2'	3:SA:596:C:OP1	2.34	0.46
8:SI:72:LYS:O	8:SI:76:LYS:NZ	2.49	0.46
9:SJ:111:GLN:O	9:SJ:115:ALA:HB3	2.16	0.46
20:3C:111:MET:HG3	20:3C:216:ASN:HD22	1.81	0.46
22:3E:238:ALA:O	22:3E:242:SER:HB3	2.15	0.46
26:A5:23:ALA:HB1	34:B8:261:PRO:HG3	1.98	0.46
27:A9:477:LYS:HA	27:A9:480:LYS:HE2	1.96	0.46
30:AG:408:THR:OG1	30:AG:409:LYS:N	2.49	0.46
32:B2:495:LYS:HA	32:B2:533:ASP:HA	1.98	0.46
40:5F:24:ASP:OD2	40:5F:27:HIS:NE2	2.49	0.46
47:RE:1233:ASN:ND2	47:RE:1235:GLU:OE2	2.49	0.46
50:RJ:61:ARG:NE	50:RJ:277:GLY:O	2.49	0.46
50:RJ:951:MET:SD	50:RJ:987:TYR:OH	2.70	0.46
53:RP:1759:SER:O	53:RP:1759:SER:OG	2.33	0.46
55:RT:174:LEU:HA	55:RT:180:LEU:HD21	1.97	0.46
3:SA:862:A:H3'	12:SO:16:ILE:HD11	1.97	0.46
3:SA:898:A:H62	3:SA:914:G:N2	2.13	0.46
7:SH:157:VAL:HB	7:SH:175:ILE:HD11	1.98	0.46
12:SO:49:GLN:HA	12:SO:52:VAL:HG12	1.97	0.46
31:B1:191:ARG:HH12	31:B1:255:PHE:HE2	1.64	0.46
34:B8:426:VAL:HB	34:B8:455:ILE:HD11	1.98	0.46
35:BE:311:VAL:HG22	35:BE:321:GLU:HG2	1.98	0.46
45:5K:52:PHE:HB3	45:5K:55:TYR:HB3	1.96	0.46
50:RJ:138:VAL:HG11	50:RJ:155:PHE:HE2	1.79	0.46
53:RP:1876:LEU:HD23	53:RP:1876:LEU:HA	1.73	0.46
1:3A:18:G:H2'	1:3A:19:A:C8	2.51	0.46
2:5A:87:C:H41	30:AG:334:LEU:HA	1.81	0.46
3:SA:327:U:O3'	11:SM:14:GLN:NE2	2.48	0.46
6:SG:72:HIS:CE1	6:SG:107:LYS:HD3	2.51	0.46
12:SO:99:ARG:HH12	12:SO:141:TYR:HE2	1.64	0.46
21:3D:121:ASN:O	21:3D:125:GLN:NE2	2.49	0.46
29:AF:31:THR:OG1	29:AF:32:SER:N	2.45	0.46
30:AG:46:ILE:HD13	30:AG:385:ILE:HG21	1.96	0.46
30:AG:364:ASN:ND2	30:AG:409:LYS:O	2.49	0.46
30:AG:626:PHE:HB3	30:AG:629:LYS:HG3	1.96	0.46
32:B2:393:ASP:OD1	32:B2:393:ASP:N	2.46	0.46
39:5E:452:SER:O	39:5E:452:SER:OG	2.28	0.46
47:RE:1204:VAL:HG12	48:RF:57:ASN:HD22	1.79	0.46
21:3D:93:LYS:NZ	54:RQ:319:THR:OG1	2.40	0.46
22:3E:279:ARG:HA	22:3E:279:ARG:HD2	1.81	0.46
23:3F:240:LEU:HB2	23:3F:255:GLY:HA2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:A4:121:THR:HB	25:A4:143:VAL:HA	1.97	0.46
25:A4:180:ASP:OD1	25:A4:180:ASP:N	2.49	0.46
30:AG:201:ILE:HD12	30:AG:208:LEU:HB3	1.97	0.46
30:AG:722:LEU:HD13	30:AG:763:ILE:HD13	1.98	0.46
34:B8:206:ASN:O	34:B8:209:THR:OG1	2.30	0.46
36:B6:298:SER:OG	36:B6:299:LYS:N	2.45	0.46
46:RD:1644:LEU:HD21	46:RD:1654:LEU:HD22	1.97	0.46
50:RJ:618:PHE:HA	50:RJ:621:LEU:HD12	1.98	0.46
50:RJ:770:GLN:HA	50:RJ:777:ARG:HH12	1.80	0.46
1:3A:265:C:O2	1:3A:307:G:N2	2.49	0.46
3:SA:34:G:O6	3:SA:475:A:N6	2.48	0.46
3:SA:163:G:OP2	3:SA:163:G:N2	2.39	0.46
3:SA:482:U:H2'	3:SA:483:A:H8	1.81	0.46
3:SA:1731:A:H3'	3:SA:1732:A:H8	1.80	0.46
3:SA:1735:U:H2'	3:SA:1736:G:C8	2.51	0.46
8:SI:44:LYS:HG3	8:SI:63:PRO:HG3	1.98	0.46
21:3D:382:LYS:HD3	21:3D:382:LYS:HA	1.78	0.46
30:AG:34:ILE:HD12	30:AG:91:ILE:HG13	1.98	0.46
34:B8:464:THR:HG21	34:B8:476:ILE:HG13	1.98	0.46
43:5I:225:LEU:HA	43:5I:237:SER:HA	1.98	0.46
50:RJ:848:SER:O	50:RJ:848:SER:OG	2.34	0.46
53:RP:2095:LEU:O	53:RP:2099:SER:CB	2.64	0.46
3:SA:1530:C:N4	3:SA:1531:G:O6	2.49	0.46
8:SI:13:PRO:HB2	8:SI:17:GLU:HB3	1.98	0.46
13:SP:32:ASP:N	13:SP:32:ASP:OD1	2.45	0.46
25:A4:33:VAL:HG22	25:A4:752:LEU:HD13	1.98	0.46
25:A4:79:TRP:HA	25:A4:87:GLN:HA	1.98	0.46
25:A4:740:PRO:O	25:A4:756:GLU:CB	2.64	0.46
29:AF:68:SER:O	29:AF:315:ASN:ND2	2.40	0.46
31:B1:185:THR:OG1	31:B1:186:THR:N	2.49	0.46
31:B1:337:TYR:OH	39:5E:476:MET:SD	2.60	0.46
31:B1:482:SER:OG	31:B1:487:VAL:N	2.49	0.46
32:B2:555:VAL:HG23	32:B2:576:VAL:HG11	1.98	0.46
35:BE:211:THR:HG21	35:BE:253:SER:HA	1.97	0.46
36:B6:25:THR:OG1	36:B6:28:GLU:OE1	2.33	0.46
39:5E:439:GLU:O	39:5E:443:ASN:ND2	2.49	0.46
41:5G:169:ASN:HB2	41:5G:255:GLU:HG2	1.98	0.46
43:5I:265:ASN:N	43:5I:280:ALA:O	2.48	0.46
45:5K:100:ASP:OD1	45:5K:100:ASP:N	2.48	0.46
47:RE:631:GLY:N	47:RE:665:HIS:O	2.47	0.46
47:RE:711:PRO:HG3	47:RE:767:GLN:HB3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:RP:622:CYS:O	53:RP:626:GLU:N	2.41	0.46
53:RP:1900:ARG:HE	53:RP:1933:ILE:HG12	1.81	0.46
11:SM:83:THR:HA	11:SM:110:HIS:HA	1.97	0.45
20:3B:164:ILE:HG23	20:3B:170:VAL:HG21	1.98	0.45
25:A4:157:SER:HG	25:A4:195:TRP:HE1	1.64	0.45
29:AF:422:ARG:HD2	29:AF:458:ILE:HD11	1.97	0.45
30:AG:767:GLY:O	30:AG:774:PHE:HA	2.16	0.45
30:AG:771:ASP:OD1	30:AG:771:ASP:N	2.42	0.45
33:B3:97:ARG:HD3	33:B3:97:ARG:HA	1.73	0.45
34:B8:264:LEU:HB2	34:B8:300:PHE:HE1	1.81	0.45
50:RJ:755:LYS:HD3	50:RJ:758:ILE:HD11	1.98	0.45
3:SA:168:A:O3’	7:SH:176:GLN:NE2	2.39	0.45
3:SA:454:U:H5”	3:SA:455:C:C4	2.51	0.45
3:SA:629:U:H5”	12:SO:127:ARG:HH12	1.80	0.45
10:SK:123:HIS:CD2	42:5H:566:ARG:HD2	2.51	0.45
21:3D:30:ARG:HH11	21:3D:122:GLU:HG3	1.82	0.45
23:3F:308:SER:OG	23:3F:310:ASN:OD1	2.34	0.45
24:3H:38:ASN:HA	24:3H:41:THR:HG22	1.97	0.45
25:A4:106:ASN:HB3	25:A4:112:LEU:HG	1.97	0.45
25:A4:349:SER:HB3	25:A4:357:VAL:HG22	1.97	0.45
29:AF:139:ILE:HD11	29:AF:151:LEU:HB3	1.99	0.45
32:B2:163:LYS:HD3	32:B2:163:LYS:HA	1.69	0.45
32:B2:532:ASP:HB3	32:B2:550:LEU:HD23	1.97	0.45
37:5C:96:ASP:OD1	37:5C:96:ASP:N	2.49	0.45
48:RF:19:LYS:HE3	48:RF:160:TYR:H	1.81	0.45
2:5A:296:C:OP2	31:B1:94:ASN:ND2	2.46	0.45
3:SA:150:U:O4’	7:SH:132:ARG:NH1	2.49	0.45
9:SJ:111:GLN:O	9:SJ:115:ALA:CB	2.65	0.45
11:SM:28:SER:O	11:SM:28:SER:OG	2.33	0.45
25:A4:33:VAL:HA	25:A4:752:LEU:HB3	1.98	0.45
28:AE:266:THR:HG21	30:AG:895:LEU:HD11	1.99	0.45
30:AG:152:ARG:NH1	30:AG:230:LEU:O	2.49	0.45
30:AG:175:ALA:O	30:AG:187:VAL:HA	2.16	0.45
30:AG:496:THR:OG1	30:AG:497:ASP:N	2.49	0.45
32:B2:130:ASP:OD2	32:B2:135:ARG:NE	2.49	0.45
32:B2:421:THR:HG22	32:B2:423:LYS:HG2	1.99	0.45
33:B3:24:THR:HB	33:B3:32:LEU:HD13	1.98	0.45
33:B3:138:HIS:CE1	33:B3:177:LEU:HB2	2.51	0.45
33:B3:362:LEU:HD22	33:B3:405:THR:HG21	1.98	0.45
35:BE:546:ILE:HG21	35:BE:560:LEU:HD23	1.97	0.45
35:BE:616:THR:HG23	35:BE:618:GLY:H	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:5J:129:ALA:HB2	50:RJ:1123:LYS:HD3	1.99	0.45
47:RE:128:LEU:HA	47:RE:131:LEU:HB2	1.98	0.45
47:RE:795:GLU:OE2	48:RF:101:SER:OG	2.30	0.45
50:RJ:610:LYS:NZ	50:RJ:612:VAL:O	2.48	0.45
50:RJ:852:ARG:HD2	50:RJ:888:PRO:HG3	1.98	0.45
51:RK:312:ARG:NH2	51:RK:349:ASP:OD2	2.49	0.45
54:RQ:301:ILE:HA	54:RQ:304:GLN:HG2	1.99	0.45
3:SA:493:U:OP2	50:RJ:1138:ARG:NH1	2.49	0.45
7:SH:126:ASP:OD1	7:SH:126:ASP:N	2.41	0.45
9:SJ:74:LYS:HA	9:SJ:74:LYS:HD2	1.78	0.45
12:SO:69:ASN:OD1	12:SO:69:ASN:N	2.49	0.45
17:SZ:6:THR:HG23	17:SZ:28:LEU:HB2	1.98	0.45
17:SZ:118:ILE:HG22	17:SZ:120:GLY:H	1.81	0.45
24:3G:120:LYS:O	24:3G:123:THR:OG1	2.34	0.45
25:A4:120:SER:OG	25:A4:121:THR:N	2.49	0.45
25:A4:519:THR:OG1	25:A4:520:LYS:N	2.48	0.45
30:AG:85:ASN:O	30:AG:112:ASN:ND2	2.50	0.45
31:B1:459:SER:OG	31:B1:462:THR:O	2.28	0.45
32:B2:107:ASP:OD2	32:B2:110:SER:OG	2.32	0.45
33:B3:669:LEU:HD23	33:B3:693:ARG:HH21	1.82	0.45
35:BE:97:LYS:HG3	35:BE:111:GLU:HA	1.98	0.45
35:BE:854:SER:HB3	35:BE:858:PHE:HD1	1.81	0.45
39:5E:316:ASN:HA	39:5E:319:VAL:HG12	1.97	0.45
39:5E:350:THR:HG21	50:RJ:975:GLU:HB2	1.98	0.45
41:5G:233:VAL:HB	41:5G:254:PHE:HB2	1.97	0.45
51:RK:143:LYS:NZ	51:RK:180:MET:SD	2.89	0.45
1:3A:294:U:H2'	1:3A:295:A:C8	2.52	0.45
5:SF:201:HIS:H	5:SF:206:ASP:HB3	1.82	0.45
6:SG:118:LEU:HB2	6:SG:129:PRO:HB2	1.98	0.45
7:SH:46:LYS:H	7:SH:119:GLN:HB2	1.81	0.45
8:SI:49:ILE:HG12	8:SI:175:LYS:HE3	1.98	0.45
15:SX:18:GLU:HB3	15:SX:65:LEU:HD11	1.98	0.45
15:SX:68:ARG:NH1	43:5I:68:ASP:OD1	2.47	0.45
20:3B:269:ILE:O	20:3B:315:ILE:HA	2.17	0.45
21:3D:83:ASP:HB3	21:3D:113:PHE:HE1	1.81	0.45
23:3F:529:SER:OG	23:3F:530:GLY:N	2.50	0.45
25:A4:477:LEU:HD22	25:A4:534:LEU:H	1.82	0.45
25:A4:489:CYS:HB2	25:A4:534:LEU:HD23	1.98	0.45
32:B2:121:LYS:HD3	32:B2:121:LYS:HA	1.79	0.45
32:B2:806:MET:HE2	32:B2:806:MET:HB2	1.78	0.45
47:RE:282:ASP:N	47:RE:282:ASP:OD1	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:RJ:138:VAL:HG11	50:RJ:155:PHE:CE2	2.52	0.45
50:RJ:1051:ASP:OD1	50:RJ:1051:ASP:N	2.45	0.45
3:SA:126:A:H62	3:SA:291:G:H21	1.65	0.45
3:SA:794:U:H5"	3:SA:796:A:H62	1.80	0.45
15:SX:105:THR:O	15:SX:105:THR:OG1	2.31	0.45
25:A4:488:ILE:HB	25:A4:496:PHE:HB2	1.98	0.45
28:AE:295:ALA:HA	28:AE:298:THR:HG22	1.98	0.45
30:AG:110:PHE:HE1	30:AG:116:VAL:HG13	1.82	0.45
31:B1:802:LEU:HD23	31:B1:802:LEU:HA	1.79	0.45
33:B3:461:LEU:HD13	33:B3:485:TYR:HB2	1.99	0.45
35:BE:114:THR:OG1	35:BE:115:ASP:N	2.50	0.45
36:B6:201:LYS:HD2	44:5J:55:ILE:HG21	1.99	0.45
43:5I:18:SER:O	43:5I:18:SER:OG	2.29	0.45
43:5I:309:MET:H	43:5I:324:SER:HA	1.82	0.45
44:5J:134:ARG:HA	44:5J:134:ARG:HD2	1.86	0.45
47:RE:925:LEU:HD22	47:RE:1064:LEU:HD12	1.98	0.45
49:RH:186:VAL:HG23	49:RH:227:LEU:HA	1.99	0.45
50:RJ:761:GLN:O	50:RJ:765:ASN:HB2	2.16	0.45
50:RJ:1027:THR:OG1	50:RJ:1028:GLU:N	2.47	0.45
50:RJ:1106:GLU:HG3	50:RJ:1110:ARG:HH12	1.81	0.45
51:RK:97:GLY:HA2	51:RK:100:VAL:HG12	1.99	0.45
53:RP:1963:LEU:HD22	53:RP:2002:PHE:HE1	1.82	0.45
1:3A:329:C:H2'	1:3A:330:A:C8	2.49	0.45
2:5A:70:A:P	30:AG:426:ARG:HH22	2.40	0.45
3:SA:748:U:H3	3:SA:801:G:H22	1.64	0.45
7:SH:3:LEU:HB3	7:SH:5:ILE:HD11	1.97	0.45
9:SJ:60:ILE:HD11	9:SJ:173:PRO:HB3	1.99	0.45
20:3B:175:ALA:HB1	20:3B:181:VAL:HG21	1.99	0.45
20:3B:294:ARG:HH21	20:3B:300:PRO:HG2	1.82	0.45
20:3C:225:ARG:HG2	20:3C:252:ILE:HG12	1.99	0.45
25:A4:625:GLU:O	25:A4:629:LEU:HB2	2.17	0.45
31:B1:576:ARG:HG2	40:5F:142:LEU:HD22	1.99	0.45
31:B1:710:ILE:HG13	35:BE:596:GLU:HG2	1.98	0.45
32:B2:16:VAL:HG21	32:B2:46:LEU:HG	1.99	0.45
32:B2:487:ARG:HA	32:B2:500:TRP:O	2.16	0.45
33:B3:439:ALA:HB3	33:B3:497:LEU:HB3	1.98	0.45
33:B3:464:LYS:HZ3	33:B3:481:LYS:HD2	1.81	0.45
34:B8:390:THR:OG1	34:B8:391:SER:N	2.49	0.45
35:BE:421:ASN:ND2	35:BE:429:ASN:HD21	2.15	0.45
35:BE:590:ALA:O	35:BE:602:SER:HA	2.16	0.45
39:5E:298:SER:OG	39:5E:299:SER:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:RE:673:SER:OG	47:RE:674:SER:N	2.49	0.45
47:RE:1227:GLY:O	47:RE:1231:VAL:N	2.41	0.45
3:SA:677:G:H2'	3:SA:678:A:C8	2.52	0.45
3:SA:689:G:H2'	3:SA:690:G:H8	1.81	0.45
3:SA:960:U:H5'	12:SO:55:ARG:HD3	1.98	0.45
4:SC:178:GLY:HA2	47:RE:897:ARG:HH12	1.81	0.45
9:SJ:37:LYS:HB2	9:SJ:59:ARG:HG2	1.98	0.45
15:SX:70:ASN:N	15:SX:70:ASN:OD1	2.49	0.45
15:SX:89:TRP:O	15:SX:93:LEU:CB	2.64	0.45
20:3B:90:PRO:HA	20:3B:97:TYR:HD1	1.82	0.45
20:3B:92:ARG:NH1	20:3B:159:LEU:O	2.49	0.45
20:3C:242:ALA:HB3	20:3C:269:ILE:HG23	1.99	0.45
20:3C:281:ASP:O	20:3C:284:THR:OG1	2.27	0.45
21:3D:173:HIS:NE2	22:3E:251:ASP:OD2	2.50	0.45
22:3E:132:SER:HB2	22:3E:135:ASP:HB3	1.99	0.45
23:3F:156:ASN:HD21	23:3F:545:LYS:HG3	1.82	0.45
30:AG:80:GLN:NE2	30:AG:83:GLU:O	2.44	0.45
33:B3:175:TRP:HD1	33:B3:182:CYS:HA	1.80	0.45
35:BE:568:VAL:HG13	35:BE:577:VAL:HG13	1.99	0.45
37:5C:437:LEU:HD21	43:5I:39:ARG:HG3	1.98	0.45
43:5I:68:ASP:HB2	43:5I:89:ASP:HB3	1.99	0.45
44:5J:68:GLY:O	44:5J:72:LEU:HB2	2.15	0.45
47:RE:858:ARG:HD2	47:RE:861:ILE:HD11	1.99	0.45
50:RJ:864:ASP:OD1	50:RJ:864:ASP:N	2.45	0.45
51:RK:109:PHE:HB3	51:RK:361:ASN:HB3	1.99	0.45
53:RP:1952:SER:O	53:RP:1952:SER:OG	2.34	0.45
55:RT:224:ILE:HG22	55:RT:233:ILE:HG23	1.98	0.45
1:3A:12:U:O4	50:RJ:1158:LYS:NZ	2.39	0.45
1:3A:30:A:N6	43:5I:341:GLU:OE2	2.49	0.45
3:SA:1068:C:H2'	3:SA:1069:A:C8	2.52	0.45
22:3E:359:ILE:HD12	22:3E:398:LEU:HD13	1.99	0.45
24:3H:20:ILE:HD12	24:3H:53:ILE:HD12	1.99	0.45
24:3H:28:ALA:HB2	24:3H:33:LEU:HD23	1.99	0.45
25:A4:184:MET:HB2	25:A4:224:ARG:HA	1.99	0.45
30:AG:484:VAL:HG12	30:AG:485:ARG:H	1.82	0.45
30:AG:870:ASN:OD1	30:AG:870:ASN:N	2.50	0.45
32:B2:322:SER:HA	32:B2:325:ILE:HG12	1.98	0.45
33:B3:340:ILE:HG21	33:B3:355:LEU:HG	1.98	0.45
43:5I:93:LYS:HG2	43:5I:105:SER:HB2	1.98	0.45
43:5I:358:MET:HB3	54:RQ:890:VAL:HG23	1.99	0.45
43:5I:396:TYR:HE1	54:RQ:865:ILE:HG13	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:5I:409:GLU:HA	43:5I:412:ARG:HG2	1.98	0.45
43:5I:458:LYS:HE3	43:5I:458:LYS:HB2	1.81	0.45
47:RE:736:ASP:OD1	47:RE:821:TYR:OH	2.35	0.45
47:RE:1169:ILE:HG22	47:RE:1180:ASN:HD22	1.81	0.45
49:RH:189:VAL:HG13	49:RH:227:LEU:HD13	1.98	0.45
50:RJ:752:GLU:HA	50:RJ:755:LYS:HB2	1.99	0.45
53:RP:1822:SER:O	53:RP:1822:SER:OG	2.31	0.45
53:RP:1975:LYS:HB3	53:RP:1978:ALA:HB3	1.99	0.45
3:SA:-1:G:O6	43:5I:457:ARG:NE	2.40	0.45
3:SA:144:U:O4	7:SH:137:ARG:NH1	2.50	0.45
3:SA:890:C:H2'	3:SA:891:A:H8	1.82	0.45
20:3B:116:SER:OG	20:3B:120:GLU:OE1	2.35	0.45
20:3B:142:ARG:NH2	20:3B:182:SER:OG	2.47	0.45
23:3F:224:SER:OG	23:3F:227:GLU:OE1	2.35	0.45
25:A4:458:ASN:N	25:A4:458:ASN:OD1	2.50	0.45
28:AE:148:PHE:HA	28:AE:151:ILE:HG22	1.98	0.45
31:B1:83:ASN:H	31:B1:90:LEU:HD23	1.81	0.45
32:B2:152:GLY:HA3	32:B2:154:VAL:HG12	1.99	0.45
34:B8:532:MET:O	34:B8:541:LEU:HA	2.17	0.45
36:B6:24:PHE:HE1	36:B6:70:ARG:HD3	1.82	0.45
40:5F:174:ARG:NH2	50:RJ:1077:LEU:O	2.50	0.45
47:RE:434:LEU:O	47:RE:466:THR:OG1	2.34	0.45
47:RE:687:GLN:NE2	47:RE:694:ALA:O	2.40	0.45
48:RF:123:THR:O	48:RF:123:THR:OG1	2.35	0.45
48:RF:151:HIS:HD2	48:RF:154:GLU:H	1.65	0.45
49:RH:123:GLU:OE2	49:RH:161:LYS:NZ	2.39	0.45
51:RK:263:ASP:O	51:RK:266:SER:OG	2.31	0.45
3:SA:1677:C:H2'	3:SA:1678:A:C8	2.52	0.44
3:SA:1775:U:H3	3:SA:1786:G:H1	1.65	0.44
5:SF:89:VAL:HA	5:SF:99:PHE:O	2.18	0.44
5:SF:127:LYS:HD3	5:SF:127:LYS:HA	1.77	0.44
6:SG:97:LEU:HD21	6:SG:113:ILE:HD11	1.98	0.44
12:SO:60:VAL:HB	12:SO:66:ILE:HD12	1.98	0.44
20:3B:118:TYR:OH	20:3B:148:ARG:NH2	2.50	0.44
24:3G:12:ALA:HB1	24:3G:16:LEU:HG	1.99	0.44
25:A4:490:SER:HG	25:A4:494:ASP:H	1.65	0.44
29:AF:372:HIS:H	34:B8:287:SER:HG	1.64	0.44
31:B1:74:ASP:OD1	31:B1:74:ASP:N	2.38	0.44
35:BE:274:ILE:HG13	35:BE:286:VAL:HG23	1.99	0.44
35:BE:441:ARG:HA	35:BE:454:THR:HA	1.99	0.44
35:BE:495:ARG:HA	35:BE:495:ARG:HD3	1.75	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:5G:93:SER:OG	41:5G:94:ARG:N	2.50	0.44
43:5I:327:LYS:HE3	43:5I:349:GLN:HG2	1.99	0.44
43:5I:351:VAL:HA	43:5I:367:SER:HA	1.98	0.44
46:RD:1672:GLU:HG2	46:RD:1695:TRP:HH2	1.81	0.44
47:RE:337:LEU:HD12	47:RE:337:LEU:HA	1.85	0.44
53:RP:29:GLU:HB3	53:RP:32:ARG:HB2	1.98	0.44
53:RP:130:LYS:O	53:RP:134:ASN:ND2	2.50	0.44
55:RT:248:VAL:HA	55:RT:251:ILE:HG12	1.99	0.44
1:3A:331:A:H2'	1:3A:332:G:C8	2.52	0.44
2:5A:88:U:H2'	2:5A:89:C:C2	2.52	0.44
5:SF:69:HIS:HE1	5:SF:94:ALA:HB3	1.82	0.44
10:SK:48:GLN:HA	10:SK:51:LYS:HG2	1.99	0.44
23:3F:450:ASP:OD1	23:3F:450:ASP:N	2.50	0.44
24:3G:34:LYS:HB3	24:3G:39:GLU:HG2	1.98	0.44
24:3H:23:VAL:HA	24:3H:26:GLN:HE21	1.82	0.44
26:A5:226:LEU:HD13	26:A5:273:LYS:HB2	2.00	0.44
30:AG:669:ASN:HA	30:AG:681:ILE:O	2.17	0.44
33:B3:76:LEU:HG	33:B3:87:ILE:HB	1.99	0.44
33:B3:417:TYR:HA	33:B3:424:PHE:HD1	1.81	0.44
33:B3:433:HIS:HD2	33:B3:436:ALA:HB2	1.83	0.44
33:B3:542:CYS:HB3	33:B3:547:LEU:HB2	1.99	0.44
35:BE:100:ILE:HD13	35:BE:149:TYR:HB2	1.98	0.44
36:B6:34:LYS:HE3	36:B6:34:LYS:HB2	1.86	0.44
37:5C:111:PHE:HD1	37:5C:131:LYS:HB2	1.81	0.44
47:RE:507:PHE:HA	47:RE:510:ILE:HG22	2.00	0.44
49:RH:76:LEU:HA	49:RH:79:LYS:HG2	1.99	0.44
50:RJ:251:ASP:HA	50:RJ:269:VAL:HG22	1.98	0.44
2:5A:69:U:H2'	2:5A:70:A:C4	2.52	0.44
5:SF:129:VAL:HG12	5:SF:139:VAL:HA	2.00	0.44
11:SM:14:GLN:HB3	11:SM:54:ILE:HG21	1.99	0.44
23:3F:416:GLY:HA3	23:3F:475:ILE:HD11	1.99	0.44
25:A4:231:VAL:HG22	25:A4:265:TRP:HZ2	1.82	0.44
25:A4:326:ARG:HH11	25:A4:365:SER:HA	1.83	0.44
26:A5:356:TYR:HB2	30:AG:472:TYR:HB2	2.00	0.44
28:AE:142:TYR:O	28:AE:145:THR:OG1	2.24	0.44
29:AF:27:TRP:HH2	29:AF:268:MET:HB3	1.81	0.44
30:AG:206:LYS:HB3	30:AG:206:LYS:HE2	1.82	0.44
30:AG:401:GLN:HB3	30:AG:411:SER:HB2	1.99	0.44
31:B1:156:GLN:H	31:B1:203:GLN:HE21	1.65	0.44
31:B1:329:VAL:HG12	31:B1:339:LEU:HG	2.00	0.44
33:B3:622:ALA:HB3	33:B3:636:ASP:HB3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:5G:173:ARG:HE	41:5G:173:ARG:HB2	1.67	0.44
43:5I:15:PRO:HB3	43:5I:20:GLN:HG2	1.99	0.44
43:5I:69:GLY:HA2	43:5I:370:GLY:HA2	1.98	0.44
47:RE:218:ASP:O	47:RE:223:ARG:NH2	2.51	0.44
47:RE:309:LEU:HD12	47:RE:310:PRO:HD2	1.99	0.44
47:RE:549:SER:HA	47:RE:552:ARG:HG2	1.99	0.44
50:RJ:856:THR:OG1	50:RJ:857:LEU:N	2.47	0.44
53:RP:1960:LEU:HD23	53:RP:1960:LEU:HA	1.87	0.44
55:RT:261:GLY:HA2	55:RT:264:ARG:HE	1.82	0.44
4:SC:132:ASP:HB2	4:SC:221:PRO:HB3	1.99	0.44
5:SF:116:ASP:OD1	5:SF:116:ASP:N	2.50	0.44
7:SH:48:TYR:HD1	7:SH:117:GLY:H	1.64	0.44
9:SJ:97:THR:OG1	9:SJ:98:LYS:N	2.50	0.44
14:SR:22:VAL:HG22	14:SR:65:ILE:HG12	2.00	0.44
20:3B:267:VAL:HG21	20:3B:298:ILE:HD13	1.99	0.44
23:3F:263:TRP:CZ3	23:3F:270:PRO:HD3	2.36	0.44
29:AF:464:ALA:O	29:AF:468:GLU:HB2	2.17	0.44
31:B1:359:ARG:HA	31:B1:373:ASP:HA	1.98	0.44
32:B2:218:ILE:HG23	32:B2:259:ILE:HD12	1.99	0.44
33:B3:296:ILE:HB	33:B3:301:GLN:HB2	2.00	0.44
42:5H:564:LYS:HE3	42:5H:564:LYS:HB2	1.75	0.44
43:5I:278:VAL:HG11	43:5I:311:VAL:HG21	1.98	0.44
47:RE:151:SER:HA	47:RE:154:LYS:HB2	1.99	0.44
3:SA:1792:G:O2'	3:SA:1793:G:O4'	2.35	0.44
4:SC:51:SER:HA	4:SC:57:ALA:HB3	2.00	0.44
6:SG:26:ALA:N	14:SR:27:GLY:O	2.50	0.44
22:3E:377:ALA:HB3	22:3E:380:ARG:HD2	1.98	0.44
30:AG:427:LYS:O	30:AG:431:SER:CB	2.66	0.44
30:AG:725:ASN:H	30:AG:740:LYS:HE2	1.81	0.44
31:B1:60:ALA:HB3	31:B1:73:ILE:HB	2.00	0.44
31:B1:337:TYR:HD2	31:B1:340:LYS:HD3	1.82	0.44
32:B2:214:ASP:OD1	32:B2:214:ASP:N	2.50	0.44
32:B2:267:ASP:OD1	32:B2:267:ASP:N	2.44	0.44
33:B3:539:VAL:HG22	33:B3:550:THR:HA	1.99	0.44
33:B3:593:CYS:HB2	33:B3:620:LEU:HB2	2.00	0.44
33:B3:672:TYR:HB3	33:B3:681:ALA:HB2	1.99	0.44
35:BE:184:THR:HG1	35:BE:187:ASN:H	1.66	0.44
35:BE:379:SER:OG	35:BE:382:LYS:O	2.36	0.44
39:5E:373:ILE:HD12	39:5E:373:ILE:HA	1.86	0.44
40:5F:91:LYS:HE2	40:5F:91:LYS:HB2	1.90	0.44
50:RJ:906:ASP:OD1	50:RJ:906:ASP:N	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:RK:154:LEU:HD13	51:RK:165:GLU:HB3	1.98	0.44
51:RK:245:LEU:O	51:RK:257:PHE:HA	2.18	0.44
53:RP:177:LEU:HD22	53:RP:180:LEU:HD12	1.99	0.44
3:SA:689:G:H2'	3:SA:690:G:C8	2.53	0.44
3:SA:1052:U:H5"	43:5I:449:LYS:HE2	2.00	0.44
3:SA:1666:U:H2'	3:SA:1667:A:H8	1.83	0.44
7:SH:57:ASP:HB2	7:SH:105:ASP:HB3	2.00	0.44
21:3D:21:LYS:HD2	21:3D:49:GLU:HB2	1.98	0.44
25:A4:451:PHE:HD1	25:A4:464:LYS:HA	1.82	0.44
26:A5:213:ASN:OD1	26:A5:213:ASN:N	2.50	0.44
26:A5:222:THR:HG21	35:BE:586:ASN:HD21	1.82	0.44
31:B1:274:LEU:HD11	31:B1:286:LEU:HB2	2.00	0.44
33:B3:283:LYS:HD2	33:B3:284:PRO:HD2	2.00	0.44
34:B8:133:ILE:HD13	35:BE:194:ARG:HH22	1.82	0.44
34:B8:229:PRO:HA	34:B8:230:PRO:HD3	1.92	0.44
34:B8:310:GLN:HB3	34:B8:326:LEU:HG	2.00	0.44
35:BE:629:ALA:HA	35:BE:645:HIS:HA	1.99	0.44
35:BE:869:THR:HG23	35:BE:915:VAL:HG11	1.98	0.44
37:5C:23:ARG:NH1	54:RQ:863:MET:SD	2.91	0.44
40:5F:120:MET:HG3	40:5F:160:TRP:CZ2	2.52	0.44
47:RE:585:MET:HB3	47:RE:610:PHE:HB2	2.00	0.44
47:RE:756:VAL:HA	47:RE:896:THR:HG21	1.99	0.44
47:RE:1167:LYS:HB2	47:RE:1167:LYS:HE3	1.82	0.44
51:RK:8:TYR:CG	51:RK:30:PRO:HG2	2.52	0.44
1:3A:73:A:H2'	1:3A:74:A:C8	2.52	0.44
2:5A:20:C:H2'	2:5A:21:A:C8	2.52	0.44
3:SA:482:U:H2'	3:SA:483:A:C8	2.53	0.44
3:SA:961:U:H2'	3:SA:962:C:C6	2.53	0.44
4:SC:180:THR:O	4:SC:183:GLN:N	2.51	0.44
15:SX:11:LEU:HD22	15:SX:74:VAL:HG13	1.99	0.44
15:SX:28:ARG:HB3	15:SX:60:LYS:HG2	2.00	0.44
20:3C:194:VAL:HB	20:3C:217:ILE:HD13	1.99	0.44
22:3E:319:ILE:HD12	22:3E:326:LEU:HD22	2.00	0.44
23:3F:252:VAL:HA	23:3F:261:ILE:O	2.17	0.44
25:A4:167:LEU:HD23	25:A4:183:LEU:HD13	2.00	0.44
30:AG:140:LYS:HE2	30:AG:157:PHE:HE1	1.82	0.44
31:B1:102:VAL:HG23	31:B1:113:LEU:HB3	1.99	0.44
31:B1:796:LEU:HD23	31:B1:796:LEU:HA	1.82	0.44
34:B8:263:LEU:HB2	34:B8:277:ILE:HD13	2.00	0.44
35:BE:175:THR:O	35:BE:175:THR:OG1	2.32	0.44
35:BE:254:LEU:HG	35:BE:266:VAL:HG12	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BE:443:TRP:HA	35:BE:451:GLY:H	1.82	0.44
36:B6:124:THR:OG1	36:B6:125:SER:N	2.49	0.44
51:RK:141:MET:HG2	51:RK:300:TYR:CE2	2.50	0.44
51:RK:309:GLY:O	51:RK:353:THR:HA	2.18	0.44
55:RT:242:MET:HB3	55:RT:266:VAL:HG21	2.00	0.44
3:SA:58:U:OP1	3:SA:456:A:O2'	2.35	0.44
3:SA:82:U:OP1	53:RP:15:ARG:NH1	2.48	0.44
3:SA:1160:A:H2'	3:SA:1161:C:C6	2.52	0.44
4:SC:164:ILE:HD11	4:SC:204:ILE:HB	2.00	0.44
20:3C:157:GLY:HA3	20:3C:304:LEU:HD11	2.00	0.44
25:A4:427:ASN:OD1	25:A4:427:ASN:N	2.48	0.44
25:A4:490:SER:OG	25:A4:494:ASP:N	2.50	0.44
25:A4:741:LEU:CD2	25:A4:741:LEU:C	2.85	0.44
30:AG:46:ILE:HG23	30:AG:53:LYS:HB2	2.00	0.44
33:B3:680:ASN:N	33:B3:680:ASN:OD1	2.50	0.44
34:B8:388:HIS:HB3	34:B8:392:GLY:H	1.82	0.44
35:BE:190:LEU:HD12	35:BE:235:MET:HE2	1.99	0.44
39:5E:322:LYS:HD2	39:5E:327:LYS:HB2	2.00	0.44
40:5F:57:LEU:HD22	40:5F:78:LEU:HD22	1.98	0.44
40:5F:114:ILE:HD13	40:5F:150:VAL:HG21	1.99	0.44
41:5G:166:SER:O	41:5G:256:MET:HA	2.18	0.44
46:RD:1607:ASN:HD22	46:RD:1610:LYS:NZ	2.16	0.44
47:RE:535:LYS:H	47:RE:538:ASN:HB3	1.82	0.44
47:RE:1176:LYS:HD3	47:RE:1178:ASP:HB2	2.00	0.44
51:RK:192:THR:HA	51:RK:224:ASN:O	2.17	0.44
56:X1:707:UNK:O	56:X1:711:UNK:CB	2.66	0.44
3:SA:329:G:H2'	3:SA:330:G:C8	2.52	0.44
3:SA:1773:C:H2'	3:SA:1774:G:H8	1.83	0.44
14:SR:117:LEU:HD23	14:SR:117:LEU:HA	1.85	0.44
20:3C:231:ARG:HA	20:3C:260:PHE:HZ	1.83	0.44
23:3F:301:ASP:O	23:3F:303:LYS:NZ	2.44	0.44
25:A4:167:LEU:HD13	25:A4:167:LEU:HA	1.87	0.44
25:A4:431:CYS:HA	25:A4:441:VAL:O	2.18	0.44
25:A4:453:LEU:HD12	25:A4:460:LEU:HB3	2.00	0.44
28:AE:107:SER:HB2	28:AE:108:LYS:HZ2	1.83	0.44
29:AF:23:GLU:HG3	29:AF:267:PRO:HB2	1.99	0.44
31:B1:495:LYS:HA	31:B1:517:ASP:HA	2.00	0.44
31:B1:846:TYR:HE1	35:BE:909:LEU:HB3	1.82	0.44
32:B2:586:LYS:HG3	32:B2:587:MET:HB2	1.99	0.44
33:B3:239:VAL:HG12	47:RE:636:GLU:HG2	1.99	0.44
35:BE:713:LEU:HD11	35:BE:716:ILE:HG13	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:5E:325:SER:O	39:5E:325:SER:OG	2.36	0.44
47:RE:372:GLN:O	47:RE:516:SER:OG	2.33	0.44
51:RK:221:CYS:SG	51:RK:222:GLU:N	2.91	0.44
53:RP:1224:LEU:O	53:RP:1228:LEU:CB	2.66	0.44
3:SA:577:G:H5"	50:RJ:1047:PRO:HG2	2.00	0.43
3:SA:1140:G:H2'	3:SA:1141:G:H8	1.82	0.43
13:SP:61:MET:HB2	13:SP:104:ALA:HB2	2.00	0.43
16:SY:126:LYS:HG2	16:SY:131:SER:HA	2.00	0.43
20:3C:241:PHE:HA	20:3C:268:VAL:O	2.18	0.43
20:3C:252:ILE:HA	20:3C:252:ILE:HD12	1.75	0.43
23:3F:253:THR:HG22	23:3F:261:ILE:HB	2.00	0.43
25:A4:346:PHE:HA	25:A4:360:SER:HA	2.00	0.43
30:AG:337:LEU:HD23	30:AG:337:LEU:HA	1.87	0.43
32:B2:186:ILE:O	32:B2:199:THR:HA	2.17	0.43
35:BE:25:SER:HB2	35:BE:657:ARG:HH21	1.82	0.43
35:BE:132:THR:OG1	35:BE:136:SER:OG	2.35	0.43
39:5E:497:ASN:OD1	39:5E:497:ASN:N	2.49	0.43
46:RD:1181:ASP:HA	46:RD:1191:GLY:HA2	2.00	0.43
47:RE:949:PHE:O	47:RE:960:LYS:NZ	2.51	0.43
48:RF:58:LEU:HD21	48:RF:124:ALA:H	1.83	0.43
49:RH:174:LYS:HD2	49:RH:174:LYS:HA	1.74	0.43
50:RJ:998:SER:O	50:RJ:998:SER:OG	2.33	0.43
54:RQ:309:ASP:N	54:RQ:309:ASP:OD1	2.48	0.43
4:SC:136:ARG:HE	4:SC:136:ARG:HB3	1.61	0.43
5:SF:125:LYS:HE2	5:SF:157:ASN:HD22	1.83	0.43
9:SJ:166:TYR:HB3	9:SJ:184:LEU:HD21	2.00	0.43
9:SJ:172:ARG:HB2	9:SJ:175:GLN:HB2	1.99	0.43
11:SM:124:THR:O	11:SM:124:THR:OG1	2.37	0.43
25:A4:420:LEU:HB3	25:A4:422:LEU:HD23	1.99	0.43
29:AF:211:HIS:CE1	29:AF:235:LYS:HD3	2.53	0.43
30:AG:140:LYS:HE2	30:AG:157:PHE:CE1	2.53	0.43
30:AG:294:LYS:HB2	30:AG:294:LYS:HE3	1.79	0.43
31:B1:355:PRO:HD2	31:B1:399:GLY:HA2	2.00	0.43
32:B2:912:TRP:CD2	33:B3:779:VAL:HG21	2.53	0.43
33:B3:362:LEU:HG	33:B3:384:TYR:HB2	1.99	0.43
33:B3:662:GLN:HA	33:B3:665:GLN:HE21	1.83	0.43
34:B8:541:LEU:HD22	34:B8:562:LEU:HD21	2.00	0.43
35:BE:544:ALA:HB3	35:BE:562:LEU:HD22	1.99	0.43
36:B6:273:ILE:HA	36:B6:276:VAL:HG22	2.00	0.43
41:5G:107:ILE:HD11	41:5G:254:PHE:HZ	1.82	0.43
45:5K:97:LEU:HD23	45:5K:128:LEU:HD11	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:RD:1522:ASN:HD22	46:RD:1556:ILE:HD11	1.83	0.43
46:RD:1686:LYS:HB2	46:RD:1686:LYS:HE3	1.71	0.43
47:RE:1159:ASN:OD1	47:RE:1159:ASN:N	2.47	0.43
49:RH:130:ILE:HD12	49:RH:131:PRO:HD2	1.99	0.43
50:RJ:102:GLN:NE2	50:RJ:358:MET:O	2.47	0.43
53:RP:180:LEU:HD13	53:RP:192:SER:HB3	2.00	0.43
53:RP:1777:LEU:HB3	53:RP:1867:THR:HG22	2.00	0.43
1:3A:47:G:H2'	1:3A:48:A:C8	2.52	0.43
21:3D:15:TYR:CZ	21:3D:78:LEU:HD12	2.53	0.43
21:3D:263:ILE:HG22	21:3D:265:GLU:HB2	2.01	0.43
23:3F:162:CYS:N	23:3F:525:GLN:OE1	2.47	0.43
29:AF:302:VAL:HA	29:AF:322:LEU:HG	2.00	0.43
30:AG:71:ASN:HB3	30:AG:73:LEU:HB2	1.99	0.43
30:AG:501:THR:HG1	30:AG:506:TRP:HD1	1.66	0.43
32:B2:116:ASN:OD1	32:B2:116:ASN:N	2.50	0.43
33:B3:485:TYR:CZ	33:B3:514:THR:HB	2.53	0.43
35:BE:880:LEU:HA	35:BE:880:LEU:HD23	1.78	0.43
37:5C:114:TYR:N	37:5C:379:GLU:OE2	2.50	0.43
37:5C:295:ASP:OD1	37:5C:295:ASP:N	2.48	0.43
47:RE:703:LYS:HD3	47:RE:1082:GLN:HG2	1.99	0.43
50:RJ:104:PRO:HA	50:RJ:117:PHE:O	2.18	0.43
2:5A:286:U:H2'	2:5A:287:G:H8	1.83	0.43
3:SA:327:U:H2'	3:SA:328:A:C8	2.53	0.43
3:SA:591:A:H2'	3:SA:592:A:C8	2.53	0.43
3:SA:688:G:H2'	3:SA:689:G:C8	2.53	0.43
21:3D:173:HIS:HD2	21:3D:295:LYS:HE2	1.82	0.43
23:3F:185:LEU:H	23:3F:202:THR:HB	1.82	0.43
25:A4:400:LYS:NZ	25:A4:401:ILE:O	2.52	0.43
30:AG:616:SER:OG	30:AG:620:SER:N	2.39	0.43
30:AG:674:THR:OG1	30:AG:675:ARG:N	2.49	0.43
30:AG:851:GLU:OE1	34:B8:475:LYS:NZ	2.40	0.43
31:B1:60:ALA:HB1	31:B1:102:VAL:HG12	2.00	0.43
32:B2:185:MET:HA	32:B2:200:HIS:O	2.18	0.43
32:B2:231:LEU:HD12	32:B2:233:ILE:HD11	2.01	0.43
32:B2:633:CYS:HA	32:B2:639:VAL:HG12	2.00	0.43
33:B3:16:TYR:OH	33:B3:21:ALA:O	2.31	0.43
35:BE:822:ARG:O	35:BE:826:GLN:NE2	2.52	0.43
36:B6:106:ASP:OD1	36:B6:106:ASP:N	2.39	0.43
38:5D:29:GLU:OE1	50:RJ:1062:ARG:NH1	2.51	0.43
43:5I:146:LYS:HG2	43:5I:175:THR:HG23	2.00	0.43
47:RE:307:LYS:HG2	47:RE:312:ARG:HG3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:RE:909:TYR:OH	47:RE:935:GLU:O	2.36	0.43
49:RH:227:LEU:HB3	49:RH:240:LYS:HE2	2.00	0.43
50:RJ:97:THR:OG1	50:RJ:98:LEU:N	2.51	0.43
51:RK:45:LEU:HG	51:RK:49:GLU:HG3	2.00	0.43
51:RK:171:ASP:N	51:RK:171:ASP:OD1	2.49	0.43
2:5A:84:G:O2'	30:AG:295:TRP:O	2.36	0.43
3:SA:454:U:H2'	3:SA:455:C:C2	2.53	0.43
3:SA:488:G:H2'	3:SA:489:C:C6	2.53	0.43
4:SC:32:ILE:HG12	4:SC:96:LEU:HD12	2.00	0.43
8:SI:36:ALA:HA	8:SI:39:ARG:HH21	1.83	0.43
9:SJ:103:GLN:NE2	9:SJ:166:TYR:OH	2.52	0.43
23:3F:160:ILE:HD13	23:3F:160:ILE:HA	1.93	0.43
26:A5:231:ASP:HB3	26:A5:249:GLU:HB2	2.01	0.43
28:AE:48:ILE:HG13	28:AE:120:TRP:HD1	1.84	0.43
28:AE:194:SER:HB3	35:BE:335:VAL:HG11	2.00	0.43
28:AE:238:LEU:O	28:AE:242:SER:OG	2.33	0.43
31:B1:604:TYR:HD1	31:B1:611:LEU:HA	1.84	0.43
32:B2:339:LYS:HE3	32:B2:358:SER:HA	2.01	0.43
32:B2:390:GLN:HG2	32:B2:394:VAL:HB	2.01	0.43
32:B2:551:LEU:HA	32:B2:575:PRO:HB3	2.00	0.43
34:B8:146:LEU:HD12	34:B8:163:ARG:HB3	1.99	0.43
36:B6:92:ILE:HA	36:B6:95:ILE:HD12	2.00	0.43
37:5C:412:ASP:OD1	43:5I:27:ASN:N	2.50	0.43
37:5C:454:LYS:HD3	37:5C:454:LYS:HA	1.78	0.43
49:RH:100:LEU:O	49:RH:106:LYS:NZ	2.39	0.43
50:RJ:175:ASP:OD1	50:RJ:175:ASP:N	2.50	0.43
53:RP:1709:ASP:OD1	53:RP:1803:ASN:ND2	2.51	0.43
54:RQ:334:PRO:HB3	54:RQ:340:GLU:HB3	2.00	0.43
3:SA:803:A:O2'	15:SX:107:SER:O	2.37	0.43
3:SA:898:A:H62	3:SA:914:G:H21	1.65	0.43
3:SA:933:A:OP1	4:SC:116:LYS:NZ	2.49	0.43
3:SA:1068:C:H2'	3:SA:1069:A:H8	1.83	0.43
4:SC:165:ARG:HA	4:SC:168:ILE:HG22	2.00	0.43
11:SM:78:THR:HA	11:SM:84:ILE:HG22	2.01	0.43
22:3E:214:ILE:HG22	22:3E:216:SER:H	1.83	0.43
25:A4:32:ILE:HG23	25:A4:751:GLU:HA	2.00	0.43
25:A4:83:ASN:HB3	25:A4:86:PHE:HE2	1.83	0.43
25:A4:500:LEU:HD12	25:A4:500:LEU:HA	1.90	0.43
28:AE:101:TYR:HE2	28:AE:118:THR:HG23	1.83	0.43
28:AE:134:MET:O	28:AE:138:SER:HB3	2.19	0.43
30:AG:144:VAL:HA	30:AG:153:ILE:HA	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:B1:280:THR:HA	31:B1:304:PRO:HB3	2.01	0.43
32:B2:624:LEU:HA	32:B2:625:PRO:HD3	1.85	0.43
37:5C:23:ARG:HH21	43:5I:30:PRO:HG3	1.83	0.43
37:5C:417:ASN:HB3	37:5C:420:GLU:HB2	2.00	0.43
39:5E:448:LEU:HA	39:5E:451:LEU:HD23	2.00	0.43
51:RK:14:SER:O	51:RK:14:SER:OG	2.35	0.43
3:SA:1474:G:N2	3:SA:1535:U:O4	2.40	0.43
4:SC:18:LYS:HB3	4:SC:18:LYS:HE2	4.16	0.43
4:SC:240:LYS:HD2	4:SC:240:LYS:HA	1.75	0.43
10:SK:41:GLU:HA	10:SK:44:ARG:HE	1.82	0.43
10:SK:124:HIS:HA	10:SK:127:VAL:HG12	2.00	0.43
14:SR:121:SER:OG	14:SR:122:ARG:N	2.52	0.43
25:A4:433:LEU:HB2	25:A4:440:LEU:HD12	2.01	0.43
29:AF:266:SER:OG	29:AF:268:MET:O	2.36	0.43
30:AG:90:LYS:HE2	30:AG:144:VAL:HB	2.00	0.43
30:AG:271:LEU:HD23	30:AG:285:LEU:HD21	1.99	0.43
31:B1:190:HIS:HD2	31:B1:210:SER:HB2	1.84	0.43
31:B1:200:SER:OG	31:B1:202:ASP:O	2.30	0.43
31:B1:621:MET:N	31:B1:621:MET:SD	2.91	0.43
32:B2:415:LYS:HB2	32:B2:417:TRP:HE1	1.83	0.43
32:B2:746:LEU:HD12	32:B2:750:GLU:HG3	2.00	0.43
43:5I:265:ASN:HD22	43:5I:309:MET:HA	1.84	0.43
45:5K:69:THR:HG23	45:5K:102:VAL:HG22	2.01	0.43
47:RE:1018:LYS:HD3	47:RE:1018:LYS:HA	1.68	0.43
47:RE:1205:LYS:HA	47:RE:1205:LYS:HD2	1.78	0.43
50:RJ:863:THR:HB	50:RJ:866:ARG:HA	2.00	0.43
51:RK:95:PRO:HG3	51:RK:124:SER:HB3	2.00	0.43
3:SA:1630:U:O4	39:5E:510:LYS:NZ	2.40	0.43
11:SM:77:SER:HB3	11:SM:85:VAL:HB	1.99	0.43
20:3B:135:PRO:HA	20:3B:136:PRO:HD3	1.86	0.43
21:3D:209:LEU:HD22	21:3D:250:ARG:HH12	1.84	0.43
21:3D:281:LEU:HD12	21:3D:281:LEU:HA	1.87	0.43
30:AG:670:LEU:HB3	30:AG:681:ILE:HB	2.01	0.43
31:B1:203:GLN:HB2	56:X1:1503:UNK:HA	2.01	0.43
31:B1:330:TYR:OH	31:B1:335:GLU:OE2	2.33	0.43
31:B1:645:ASP:OD2	37:5C:171:LYS:NZ	2.44	0.43
32:B2:163:LYS:HD3	39:5E:522:ARG:HH21	1.83	0.43
34:B8:546:LEU:HA	34:B8:549:CYS:H	1.82	0.43
35:BE:257:ARG:NE	35:BE:259:ASP:OD1	2.51	0.43
37:5C:96:ASP:OD1	37:5C:99:THR:OG1	2.26	0.43
37:5C:321:ASN:ND2	37:5C:379:GLU:O	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:5I:399:LYS:HG2	54:RQ:879:ILE:HG22	2.01	0.43
47:RE:1202:CYS:SG	47:RE:1203:ASN:N	2.88	0.43
55:RT:115:LYS:HZ3	55:RT:168:LEU:HD22	1.84	0.43
1:3A:206:C:O2	1:3A:243:U:N3	2.52	0.43
2:5A:309:A:OP2	22:3E:426:ALA:N	2.45	0.43
3:SA:560:U:H2'	3:SA:561:G:H8	1.84	0.43
3:SA:891:A:H2'	3:SA:892:A:H8	1.83	0.43
3:SA:1615:C:N4	6:SG:80:LYS:O	2.52	0.43
9:SJ:84:HIS:ND1	9:SJ:87:ASN:O	2.39	0.43
14:SR:46:PHE:HA	14:SR:49:TYR:HB2	1.99	0.43
25:A4:171:SER:O	25:A4:171:SER:OG	2.30	0.43
26:A5:4:PRO:HD2	26:A5:306:LEU:HD22	2.01	0.43
28:AE:225:SER:OG	28:AE:226:ASN:N	2.52	0.43
31:B1:212:ASP:OD1	31:B1:212:ASP:N	2.52	0.43
33:B3:679:THR:HG21	33:B3:723:GLU:HB2	2.00	0.43
35:BE:423:ARG:HD3	35:BE:427:TRP:CZ2	2.54	0.43
35:BE:564:ASP:OD1	35:BE:564:ASP:N	2.47	0.43
37:5C:330:LEU:O	37:5C:340:LEU:HA	2.18	0.43
43:5I:290:ASP:HB2	43:5I:298:LEU:HD23	1.99	0.43
46:RD:1511:ALA:HA	46:RD:1514:LEU:HD12	2.00	0.43
47:RE:1144:ASP:OD1	47:RE:1144:ASP:N	2.51	0.43
50:RJ:68:PRO:HB3	50:RJ:274:TYR:HE1	1.83	0.43
50:RJ:964:ALA:HB3	50:RJ:976:ILE:HD11	2.00	0.43
2:5A:68:U:H3'	30:AG:426:ARG:HH12	1.84	0.43
3:SA:89:G:H21	3:SA:452:A:H5"	1.84	0.43
3:SA:953:G:H2'	3:SA:954:G:C8	2.52	0.43
3:SA:1615:C:OP1	6:SG:81:ARG:NH2	2.49	0.43
3:SA:1666:U:H2'	3:SA:1667:A:C8	2.53	0.43
17:SZ:8:ARG:NH2	23:3F:316:GLU:OE1	2.48	0.43
23:3F:168:ASN:H	23:3F:174:GLU:HA	1.84	0.43
25:A4:106:ASN:OD1	25:A4:106:ASN:N	2.51	0.43
25:A4:390:LEU:HB3	25:A4:403:THR:HG22	2.01	0.43
28:AE:102:LEU:HD23	28:AE:102:LEU:HA	1.89	0.43
28:AE:135:LEU:HD21	28:AE:151:ILE:HD11	2.01	0.43
30:AG:75:SER:O	30:AG:79:LEU:HB2	2.18	0.43
32:B2:549:SER:HA	32:B2:555:VAL:HG22	2.00	0.43
32:B2:630:PHE:O	32:B2:641:TYR:HA	2.19	0.43
37:5C:213:TRP:HZ3	37:5C:227:GLU:HB3	1.84	0.43
43:5I:50:LEU:HD23	43:5I:50:LEU:HA	1.86	0.43
43:5I:179:GLU:HB3	53:RP:1783:LEU:HD23	2.01	0.43
47:RE:260:ASP:HB3	47:RE:378:ASN:HA	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:RE:270:ILE:HB	47:RE:292:ILE:HG13	2.00	0.43
47:RE:580:TYR:HB2	47:RE:618:ILE:HD11	2.01	0.43
47:RE:871:ARG:HB3	47:RE:874:LEU:HD12	2.01	0.43
50:RJ:69:PRO:HD2	50:RJ:274:TYR:CE1	2.54	0.43
50:RJ:629:ASP:HA	50:RJ:632:LYS:HB2	2.01	0.43
51:RK:243:ILE:HG23	51:RK:275:VAL:HG21	1.99	0.43
3:SA:844:A:H2'	3:SA:845:G:C8	2.53	0.42
3:SA:895:G:H21	13:SP:38:THR:HG21	1.84	0.42
3:SA:1594:G:HO2'	3:SA:1600:A:N6	2.17	0.42
20:3B:241:PHE:HE2	20:3B:243:ASP:HB2	1.85	0.42
25:A4:135:ARG:NH1	25:A4:175:GLY:O	2.47	0.42
25:A4:338:ALA:HB1	25:A4:361:LEU:HD11	2.00	0.42
25:A4:645:ARG:NE	25:A4:656:ARG:HH21	2.17	0.42
26:A5:214:VAL:HG23	26:A5:224:CYS:H	1.83	0.42
26:A5:548:ASP:HA	26:A5:551:ILE:HG22	2.01	0.42
29:AF:252:ASN:HB2	29:AF:278:ASP:HB3	2.01	0.42
30:AG:52:ILE:HB	30:AG:66:LEU:HB2	2.00	0.42
30:AG:303:LEU:HD22	30:AG:312:LEU:HD11	2.00	0.42
30:AG:536:ASP:OD1	30:AG:536:ASP:N	2.50	0.42
31:B1:109:ARG:HG3	31:B1:110:LEU:HG	2.01	0.42
31:B1:743:PHE:HZ	31:B1:778:ILE:HD13	1.84	0.42
32:B2:525:ASP:OD1	32:B2:525:ASP:N	2.50	0.42
32:B2:821:LEU:HB2	32:B2:860:ILE:HD11	2.01	0.42
34:B8:485:GLY:HA3	34:B8:518:ILE:HD11	2.01	0.42
36:B6:50:ILE:HD13	36:B6:50:ILE:HA	1.84	0.42
41:5G:153:THR:HG21	41:5G:266:LEU:HD13	2.01	0.42
41:5G:200:LYS:HA	41:5G:203:VAL:HG12	2.00	0.42
43:5I:146:LYS:HB3	43:5I:148:TRP:NE1	2.34	0.42
43:5I:264:THR:HA	43:5I:281:ASN:HB3	2.01	0.42
47:RE:115:LYS:HD3	47:RE:117:LYS:HE3	2.01	0.42
47:RE:338:SER:O	47:RE:342:HIS:ND1	2.51	0.42
47:RE:818:SER:O	47:RE:818:SER:OG	2.30	0.42
50:RJ:940:LYS:HB3	50:RJ:947:PHE:HB2	2.01	0.42
51:RK:185:ARG:HD2	51:RK:312:ARG:HH12	1.82	0.42
51:RK:244:THR:OG1	51:RK:244:THR:O	2.36	0.42
51:RK:249:SER:HB2	51:RK:251:GLN:HE22	1.84	0.42
53:RP:88:PHE:HZ	53:RP:128:ALA:HB2	1.83	0.42
53:RP:1718:VAL:HA	53:RP:1721:ILE:HD12	2.01	0.42
53:RP:1797:LEU:HD23	53:RP:1797:LEU:HA	1.84	0.42
1:3A:47:G:H2'	1:3A:48:A:H8	1.84	0.42
1:3A:204:U:H3'	1:3A:205:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:233:C:O2	3:SA:234:G:N2	2.52	0.42
3:SA:429:G:H21	50:RJ:225:ARG:NH1	2.16	0.42
3:SA:1112:G:O6	50:RJ:1158:LYS:NZ	2.52	0.42
3:SA:1693:A:H3'	3:SA:1694:A:C8	2.54	0.42
20:3B:198:GLU:OE2	20:3B:199:PHE:N	2.52	0.42
25:A4:58:ASN:OD1	25:A4:58:ASN:N	2.42	0.42
26:A5:46:TRP:HE1	26:A5:48:GLU:HG3	1.83	0.42
28:AE:11:VAL:HA	28:AE:14:ASN:HB2	2.01	0.42
30:AG:423:LYS:O	30:AG:427:LYS:HB2	2.19	0.42
31:B1:190:HIS:CD2	31:B1:210:SER:HB2	2.54	0.42
33:B3:228:LYS:HA	33:B3:228:LYS:HD3	1.80	0.42
33:B3:303:PHE:HE1	33:B3:313:LEU:HD12	1.84	0.42
34:B8:175:PRO:HD2	35:BE:217:VAL:HG23	2.00	0.42
36:B6:78:LYS:HA	36:B6:78:LYS:HD3	1.80	0.42
36:B6:114:LEU:O	36:B6:118:LYS:HG2	2.19	0.42
36:B6:319:TYR:O	36:B6:323:PHE:CB	2.62	0.42
37:5C:272:SER:OG	37:5C:301:TRP:NE1	2.51	0.42
47:RE:254:LEU:HD11	47:RE:268:LEU:HB3	2.01	0.42
47:RE:593:PRO:HD2	47:RE:596:LYS:HB2	2.00	0.42
47:RE:633:ALA:HA	47:RE:664:THR:HA	2.00	0.42
49:RH:119:GLY:O	49:RH:165:ASN:ND2	2.47	0.42
50:RJ:1049:ASN:HA	50:RJ:1050:PRO:HD3	1.93	0.42
51:RK:255:SER:O	51:RK:293:GLN:NE2	2.50	0.42
9:SJ:187:GLU:H	11:SM:30:ARG:NE	2.17	0.42
21:3D:195:VAL:HG12	21:3D:216:PHE:HE2	1.84	0.42
21:3D:283:ASP:OD1	21:3D:286:ARG:NH1	2.51	0.42
22:3E:113:THR:HA	22:3E:116:ILE:HG12	2.01	0.42
23:3F:156:ASN:HD22	23:3F:544:ALA:HB1	1.84	0.42
25:A4:31:MET:HG2	25:A4:752:LEU:HD12	2.01	0.42
30:AG:347:LEU:HD22	30:AG:355:SER:HB3	2.00	0.42
30:AG:412:ASN:ND2	30:AG:416:SER:O	2.52	0.42
30:AG:878:ASN:OD1	30:AG:878:ASN:N	2.51	0.42
32:B2:436:CYS:HB3	32:B2:447:LEU:HD12	2.00	0.42
32:B2:468:ILE:HD11	32:B2:522:LEU:HB2	2.01	0.42
37:5C:107:SER:O	37:5C:107:SER:OG	2.37	0.42
40:5F:71:ARG:NH1	40:5F:75:GLU:OE2	2.52	0.42
46:RD:1592:LEU:HB3	46:RD:1597:GLU:HB2	2.00	0.42
47:RE:853:ARG:CZ	47:RE:888:LYS:HE2	2.49	0.42
48:RF:23:HIS:HD2	48:RF:26:LEU:HG	1.84	0.42
53:RP:2021:ASP:OD1	53:RP:2024:ARG:NH1	2.53	0.42
55:RT:141:THR:OG1	55:RT:142:ASN:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3A:50:U:O2'	2:5A:467:A:N6	2.46	0.42
3:SA:789:A:H61	10:SK:71:PHE:HB3	1.85	0.42
3:SA:1154:G:H2'	3:SA:1155:G:H8	1.84	0.42
3:SA:1695:G:H2'	3:SA:1696:G:H8	1.84	0.42
3:SA:1751:C:H2'	3:SA:1752:U:H6	1.83	0.42
10:SK:127:VAL:O	10:SK:131:GLN:NE2	2.52	0.42
22:3E:381:ASP:N	22:3E:381:ASP:OD1	2.50	0.42
23:3F:481:ILE:HD11	23:3F:526:VAL:HG21	2.02	0.42
29:AF:139:ILE:HG12	29:AF:151:LEU:HD22	2.01	0.42
30:AG:311:TYR:HD2	30:AG:323:LEU:HD12	1.83	0.42
31:B1:9:ASN:OD1	31:B1:10:LEU:N	2.53	0.42
33:B3:4:LYS:HA	33:B3:649:GLU:HG3	2.01	0.42
33:B3:126:ILE:HD11	33:B3:147:ILE:HG12	2.02	0.42
35:BE:343:LEU:HD12	35:BE:343:LEU:HA	1.87	0.42
35:BE:387:GLN:HE21	35:BE:448:LYS:HD2	1.84	0.42
39:5E:369:ILE:HD11	41:5G:190:ILE:HD13	2.02	0.42
39:5E:507:ILE:HD11	39:5E:528:LEU:HD13	2.01	0.42
40:5F:61:LEU:HD23	40:5F:61:LEU:HA	1.87	0.42
40:5F:114:ILE:HA	40:5F:117:ARG:HB3	2.01	0.42
43:5I:270:ASN:HB2	43:5I:276:ASN:O	2.19	0.42
1:3A:331:A:O2'	22:3E:404:ARG:NH2	2.52	0.42
2:5A:66:C:H2'	2:5A:67:G:H8	1.84	0.42
3:SA:914:G:H4'	3:SA:915:A:H8	1.84	0.42
3:SA:922:G:H2'	3:SA:923:A:C8	2.54	0.42
3:SA:1578:U:H2'	3:SA:1579:U:C6	2.54	0.42
3:SA:1796:C:H1'	3:SA:1797:A:H5'	2.01	0.42
5:SF:67:GLN:HB3	5:SF:69:HIS:HB2	2.02	0.42
8:SI:64:VAL:HB	8:SI:67:LEU:HD22	2.01	0.42
11:SM:58:CYS:SG	11:SM:61:THR:OG1	2.69	0.42
12:SO:45:LEU:HB2	12:SO:50:ILE:CG2	2.49	0.42
16:SY:114:LYS:HB2	16:SY:114:LYS:HE3	1.85	0.42
25:A4:568:ASN:OD1	25:A4:568:ASN:N	2.53	0.42
25:A4:624:LYS:HD3	25:A4:627:LYS:HD2	2.01	0.42
30:AG:224:SER:HA	30:AG:240:PRO:HA	2.01	0.42
31:B1:54:HIS:NE2	31:B1:72:SER:OG	2.45	0.42
32:B2:223:ASP:OD1	32:B2:223:ASP:N	2.52	0.42
33:B3:625:THR:HG22	33:B3:633:VAL:HG23	2.02	0.42
35:BE:171:GLN:HE22	35:BE:213:GLU:HA	1.84	0.42
43:5I:145:VAL:HB	43:5I:176:PHE:HB2	2.01	0.42
43:5I:185:ILE:HA	43:5I:185:ILE:HD13	1.84	0.42
50:RJ:824:ILE:HD13	50:RJ:926:ILE:HG12	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:RK:154:LEU:HD11	51:RK:167:HIS:HB2	2.00	0.42
53:RP:1942:LEU:HD21	53:RP:1978:ALA:HB1	2.02	0.42
3:SA:75:U:N3	3:SA:76:A:N3	2.47	0.42
3:SA:958:U:H2'	12:SO:14:SER:HB3	2.02	0.42
3:SA:1767:G:OP2	55:RT:200:ARG:NH1	2.53	0.42
6:SG:222:LYS:HE3	6:SG:222:LYS:HB3	1.84	0.42
10:SK:45:ILE:HD11	10:SK:105:LEU:HD23	2.02	0.42
12:SO:45:LEU:HB2	12:SO:50:ILE:HG22	2.01	0.42
20:3C:188:VAL:HG22	20:3C:192:GLY:HA3	2.01	0.42
23:3F:353:ASP:OD1	23:3F:353:ASP:N	2.49	0.42
24:3H:20:ILE:HG22	24:3H:117:VAL:HG13	2.01	0.42
24:3H:54:MET:O	24:3H:80:PHE:HA	2.19	0.42
26:A5:148:LEU:HD22	26:A5:165:VAL:HG12	2.01	0.42
28:AE:280:GLU:HB3	28:AE:319:ILE:HD12	2.01	0.42
30:AG:530:LYS:HB2	30:AG:543:LEU:HD11	2.02	0.42
32:B2:52:TRP:CD1	32:B2:59:LEU:HA	2.54	0.42
32:B2:180:THR:HB	32:B2:186:ILE:HD13	2.01	0.42
41:5G:107:ILE:HD13	41:5G:107:ILE:HA	1.87	0.42
47:RE:590:SER:O	47:RE:590:SER:OG	2.31	0.42
1:3A:8:U:H2'	1:3A:9:A:C8	2.54	0.42
3:SA:174:U:O4	3:SA:266:A:N7	2.53	0.42
3:SA:1736:G:H2'	3:SA:1737:G:C8	2.55	0.42
6:SG:92:ARG:NH1	6:SG:169:ASN:OD1	2.45	0.42
7:SH:121:LEU:HD23	7:SH:121:LEU:HA	1.85	0.42
8:SI:7:LYS:HG3	8:SI:41:LEU:HD21	2.02	0.42
8:SI:159:VAL:HA	8:SI:162:ILE:HB	2.02	0.42
25:A4:322:ASN:O	30:AG:329:ASN:ND2	2.53	0.42
25:A4:580:LYS:HG3	25:A4:596:MET:HB2	2.01	0.42
26:A5:166:ALA:HB2	26:A5:170:ILE:HG23	2.01	0.42
28:AE:44:ASP:OD1	28:AE:45:TYR:N	2.49	0.42
28:AE:236:PRO:HA	34:B8:212:LEU:HD21	2.01	0.42
29:AF:282:LYS:HZ2	29:AF:292:VAL:HG21	1.83	0.42
30:AG:408:THR:HG23	30:AG:411:SER:H	1.84	0.42
30:AG:669:ASN:OD1	30:AG:669:ASN:N	2.53	0.42
31:B1:273:ARG:HD2	31:B1:290:PRO:HG2	2.02	0.42
31:B1:849:LEU:HG	35:BE:897:HIS:HB2	2.02	0.42
32:B2:411:ASN:ND2	32:B2:413:SER:OG	2.53	0.42
33:B3:457:ALA:HB2	33:B3:497:LEU:HD22	2.01	0.42
36:B6:148:ILE:HD13	36:B6:148:ILE:HA	1.88	0.42
40:5F:64:LEU:HD23	40:5F:64:LEU:HA	1.85	0.42
42:5H:544:ILE:HD13	50:RJ:834:TRP:CD2	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:5I:285:ASN:N	43:5I:285:ASN:OD1	2.50	0.42
47:RE:899:LEU:HA	47:RE:902:ILE:HG22	2.02	0.42
47:RE:920:LEU:HG	47:RE:925:LEU:HB2	2.01	0.42
47:RE:1187:LYS:HA	47:RE:1187:LYS:HD3	1.80	0.42
50:RJ:302:GLU:HB2	50:RJ:790:ARG:HG2	2.01	0.42
50:RJ:827:ALA:HA	50:RJ:920:GLU:H	1.85	0.42
51:RK:55:LEU:HD12	51:RK:88:HIS:CD2	2.54	0.42
53:RP:2069:GLN:H	53:RP:2069:GLN:HG3	1.71	0.42
3:SA:890:C:H2'	3:SA:891:A:C8	2.55	0.42
3:SA:1146:G:H2'	3:SA:1147:A:C8	2.55	0.42
3:SA:1752:U:H2'	3:SA:1753:A:C8	2.55	0.42
4:SC:124:ASN:N	4:SC:124:ASN:OD1	2.51	0.42
5:SF:105:VAL:HG13	5:SF:245:LYS:HB3	2.02	0.42
10:SK:123:HIS:CD2	42:5H:566:ARG:HH21	2.38	0.42
11:SM:40:LEU:HD21	11:SM:70:ILE:HG12	2.02	0.42
13:SP:70:LYS:HA	13:SP:70:LYS:HD2	1.79	0.42
23:3F:310:ASN:OD1	23:3F:310:ASN:N	2.53	0.42
25:A4:167:LEU:HD11	25:A4:195:TRP:HZ2	1.85	0.42
25:A4:332:ASP:HB2	25:A4:352:VAL:HG12	2.02	0.42
26:A5:120:ILE:HD11	26:A5:148:LEU:HB3	2.00	0.42
30:AG:86:GLU:OE2	30:AG:111:THR:OG1	2.31	0.42
30:AG:408:THR:HG23	30:AG:410:ASN:H	1.85	0.42
30:AG:891:VAL:HA	30:AG:894:VAL:HG12	2.01	0.42
31:B1:848:PHE:O	31:B1:852:THR:OG1	2.32	0.42
34:B8:284:LEU:HD21	34:B8:287:SER:HB3	2.01	0.42
34:B8:526:ASP:OD1	34:B8:526:ASP:N	2.46	0.42
35:BE:132:THR:OG1	35:BE:134:ASP:OD1	2.32	0.42
35:BE:354:SER:O	35:BE:631:ASN:ND2	2.52	0.42
36:B6:75:LEU:HB3	36:B6:77:VAL:HG22	2.02	0.42
37:5C:463:ALA:HA	37:5C:466:LEU:HD23	2.01	0.42
45:5K:70:ASN:HD21	45:5K:157:ASP:HB2	1.85	0.42
45:5K:139:ASP:HA	45:5K:142:VAL:HG12	2.02	0.42
47:RE:524:ASP:HB3	47:RE:618:ILE:HA	2.02	0.42
50:RJ:879:THR:OG1	50:RJ:880:TYR:N	2.53	0.42
50:RJ:1104:GLY:H	50:RJ:1107:LYS:HG2	1.84	0.42
51:RK:319:ASP:N	51:RK:319:ASP:OD1	2.52	0.42
53:RP:98:HIS:CG	53:RP:135:LEU:HD11	2.55	0.42
3:SA:314:C:H42	3:SA:354:C:H42	1.68	0.42
3:SA:1465:C:O2	41:5G:146:ARG:NH2	2.53	0.42
4:SC:106:THR:HG23	4:SC:109:LYS:H	1.85	0.42
5:SF:155:LYS:HA	5:SF:155:LYS:HD3	1.87	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:SP:83:ILE:HD11	13:SP:102:LEU:HD13	2.02	0.42
22:3E:322:ALA:H	22:3E:340:GLY:HA2	1.85	0.42
25:A4:649:TRP:CD1	25:A4:744:VAL:HB	2.55	0.42
28:AE:328:ASP:O	28:AE:331:SER:OG	2.36	0.42
28:AE:390:LEU:HA	28:AE:393:ILE:HG22	2.02	0.42
29:AF:458:ILE:HD12	29:AF:458:ILE:HA	1.83	0.42
30:AG:615:TRP:CD1	30:AG:622:ILE:HG12	2.55	0.42
31:B1:718:ASP:O	35:BE:579:ARG:NH1	2.47	0.42
32:B2:799:LYS:HE2	32:B2:799:LYS:HB2	1.86	0.42
32:B2:836:ILE:HA	32:B2:839:VAL:HG12	2.01	0.42
34:B8:534:SER:OG	34:B8:535:ARG:N	2.53	0.42
35:BE:501:HIS:CD2	35:BE:521:GLY:HA3	2.55	0.42
37:5C:128:THR:O	37:5C:128:THR:OG1	2.32	0.42
47:RE:329:THR:O	47:RE:333:ASN:ND2	2.52	0.42
47:RE:413:LEU:HG	47:RE:415:GLY:H	1.85	0.42
47:RE:495:THR:HA	47:RE:498:MET:HG2	2.01	0.42
47:RE:808:LEU:HD12	47:RE:825:PHE:CZ	2.55	0.42
48:RF:219:ASN:OD1	48:RF:219:ASN:N	2.53	0.42
49:RH:105:ASN:HD22	49:RH:110:LEU:HD23	1.85	0.42
50:RJ:42:THR:OG1	50:RJ:43:MET:N	2.53	0.42
50:RJ:247:ASP:OD1	50:RJ:247:ASP:N	2.52	0.42
51:RK:228:ASP:OD2	51:RK:230:TRP:NE1	2.43	0.42
55:RT:255:PRO:HB2	55:RT:258:LYS:HD3	2.01	0.42
3:SA:34:G:C6	3:SA:475:A:C6	3.08	0.42
3:SA:333:A:OP1	9:SJ:49:ARG:NH1	2.52	0.42
3:SA:939:A:H2'	3:SA:940:A:C8	2.55	0.42
3:SA:1112:G:H2'	3:SA:1113:A:H8	1.85	0.42
3:SA:1150:G:H2'	3:SA:1151:A:C8	2.55	0.42
16:SY:77:ILE:HB	50:RJ:54:LEU:HD13	2.02	0.42
20:3B:229:LYS:HB3	20:3B:229:LYS:HE2	1.66	0.42
24:3H:20:ILE:HA	24:3H:23:VAL:HG12	2.01	0.42
24:3H:53:ILE:HG22	24:3H:87:LEU:HD11	2.02	0.42
24:3H:68:PRO:HA	24:3H:71:CYS:SG	2.60	0.42
25:A4:183:LEU:HG	25:A4:223:GLY:HA2	2.01	0.42
25:A4:581:SER:HA	25:A4:594:PHE:O	2.20	0.42
26:A5:233:LYS:HD3	26:A5:233:LYS:HA	1.85	0.42
28:AE:151:ILE:O	28:AE:155:ILE:HB	2.20	0.42
29:AF:123:SER:HG	29:AF:144:SER:HG	1.61	0.42
30:AG:559:LYS:HD2	30:AG:559:LYS:HA	1.75	0.42
33:B3:279:LYS:NZ	33:B3:326:THR:O	2.48	0.42
37:5C:39:ASP:HB3	37:5C:42:LEU:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:5E:432:LYS:HD2	39:5E:432:LYS:HA	1.81	0.42
46:RD:1513:LYS:HA	46:RD:1516:ILE:HG22	2.02	0.42
46:RD:1549:ILE:HD13	46:RD:1549:ILE:HA	1.91	0.42
47:RE:1224:ALA:HB1	47:RE:1231:VAL:HG11	2.02	0.42
49:RH:90:ASP:OD1	49:RH:90:ASP:N	2.49	0.42
53:RP:1003:ILE:O	53:RP:1005:ASN:N	2.53	0.42
3:SA:1731:A:H3'	3:SA:1732:A:C8	2.55	0.41
4:SC:141:ALA:HB2	4:SC:210:ILE:HG23	2.01	0.41
20:3B:202:ARG:HB3	24:3H:69:LEU:HD12	2.01	0.41
21:3D:247:ILE:HG12	21:3D:250:ARG:HH21	1.85	0.41
23:3F:194:LEU:O	23:3F:215:LYS:HA	2.20	0.41
23:3F:488:ILE:HG22	23:3F:498:VAL:HG22	2.02	0.41
25:A4:150:ASN:HD22	25:A4:155:LYS:HB2	1.84	0.41
25:A4:157:SER:OG	25:A4:195:TRP:NE1	2.51	0.41
25:A4:334:ARG:H	25:A4:351:GLY:HA2	1.84	0.41
29:AF:165:THR:N	29:AF:202:GLY:O	2.53	0.41
30:AG:506:TRP:HA	30:AG:532:TRP:O	2.18	0.41
30:AG:577:ASP:OD1	30:AG:578:ASN:N	2.53	0.41
31:B1:19:ASN:OD1	31:B1:19:ASN:N	2.53	0.41
31:B1:44:ASN:O	31:B1:46:LYS:N	2.53	0.41
32:B2:413:SER:OG	32:B2:413:SER:O	2.33	0.41
33:B3:258:ILE:HG23	33:B3:269:LEU:HD12	2.02	0.41
36:B6:277:CYS:O	36:B6:281:LEU:HB2	2.20	0.41
41:5G:106:GLU:OE1	41:5G:172:MET:HB2	2.20	0.41
47:RE:781:ASP:HA	47:RE:851:LYS:HB2	2.01	0.41
50:RJ:980:LEU:HD23	50:RJ:980:LEU:HA	1.88	0.41
3:SA:1712:A:H8	3:SA:1713:G:H4'	1.86	0.41
3:SA:1769:U:O2	55:RT:213:LYS:NZ	2.48	0.41
3:SA:1773:C:H2'	3:SA:1774:G:C8	2.55	0.41
8:SI:140:VAL:HA	8:SI:149:ILE:O	2.20	0.41
10:SK:154:LYS:HD3	23:3F:322:HIS:CE1	2.55	0.41
25:A4:345:ASP:N	25:A4:345:ASP:OD1	2.52	0.41
28:AE:19:ALA:HB3	28:AE:25:ARG:HH11	1.86	0.41
28:AE:363:LEU:HD23	28:AE:403:LEU:HD21	2.02	0.41
29:AF:34:GLN:OE1	29:AF:71:ARG:NH1	2.53	0.41
29:AF:49:PRO:HG2	29:AF:91:SER:HA	2.02	0.41
29:AF:182:HIS:ND1	29:AF:197:ASP:OD1	2.53	0.41
29:AF:193:ILE:HB	29:AF:209:LEU:HB2	2.02	0.41
30:AG:340:ILE:HG13	30:AG:361:THR:HG22	2.03	0.41
30:AG:698:VAL:HG12	30:AG:724:ILE:HB	2.02	0.41
31:B1:286:LEU:HG	31:B1:296:GLN:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:B1:441:SER:O	31:B1:443:GLU:N	2.53	0.41
32:B2:432:TYR:HB3	32:B2:450:ARG:HD2	2.01	0.41
32:B2:747:LYS:HE3	32:B2:747:LYS:HB2	1.80	0.41
47:RE:978:ASP:OD1	47:RE:978:ASP:N	2.48	0.41
48:RF:20:LEU:N	48:RF:33:SER:OG	2.52	0.41
50:RJ:556:ASP:OD1	50:RJ:556:ASP:N	2.43	0.41
3:SA:23:G:H2'	3:SA:24:U:C6	2.55	0.41
3:SA:925:G:H2'	3:SA:926:A:C8	2.54	0.41
4:SC:189:ILE:HD13	4:SC:189:ILE:HA	1.91	0.41
15:SX:105:THR:HG23	15:SX:126:LEU:HB2	2.01	0.41
21:3D:181:LEU:HB3	21:3D:288:LEU:HD23	2.01	0.41
22:3E:191:HIS:CE1	22:3E:246:GLU:HA	2.55	0.41
22:3E:279:ARG:O	22:3E:283:ILE:HG12	2.20	0.41
25:A4:81:PRO:HA	25:A4:85:TRP:HA	2.02	0.41
25:A4:85:TRP:HZ3	25:A4:376:GLU:HG2	1.86	0.41
25:A4:467:ASN:HB2	25:A4:470:LEU:HB3	2.02	0.41
25:A4:485:LYS:HD3	25:A4:497:ILE:HG23	2.02	0.41
26:A5:22:VAL:HG13	34:B8:278:ASP:HB2	2.01	0.41
28:AE:81:LEU:HD11	28:AE:86:GLN:HE22	1.85	0.41
30:AG:383:LEU:HD13	30:AG:385:ILE:HD11	2.02	0.41
30:AG:568:ASN:HB3	30:AG:571:GLN:HB2	2.02	0.41
30:AG:614:ALA:HB3	30:AG:623:PHE:HB2	2.01	0.41
31:B1:641:LEU:HD23	31:B1:641:LEU:HA	1.88	0.41
32:B2:41:LEU:HD13	32:B2:54:ILE:HG21	2.01	0.41
33:B3:147:ILE:HD12	33:B3:167:ASP:HA	2.01	0.41
36:B6:16:ASP:OD2	37:5C:15:ARG:NH1	2.43	0.41
43:5I:347:ARG:HG2	45:5K:108:LYS:HG3	2.00	0.41
47:RE:100:SER:HA	47:RE:103:PHE:HE1	1.85	0.41
47:RE:193:ALA:O	47:RE:367:ARG:NH2	2.54	0.41
48:RF:64:ILE:HD11	48:RF:68:LYS:HE3	2.03	0.41
50:RJ:996:LEU:HD23	50:RJ:996:LEU:HA	1.89	0.41
1:3A:61:G:O6	31:B1:630:LEU:N	2.43	0.41
2:5A:476:A:H2'	2:5A:477:G:C8	2.55	0.41
3:SA:142:G:N7	7:SH:177:ARG:NH1	2.68	0.41
3:SA:325:G:H21	11:SM:81:HIS:CD2	2.39	0.41
3:SA:334:G:C8	3:SA:335:U:H5	2.39	0.41
3:SA:656:G:C2	3:SA:678:A:H2	2.36	0.41
3:SA:800:U:H2'	3:SA:801:G:C8	2.56	0.41
8:SI:67:LEU:HD23	8:SI:68:ALA:H	1.85	0.41
17:SZ:105:ARG:O	17:SZ:109:LYS:HB2	2.20	0.41
20:3B:155:ILE:HD13	20:3B:155:ILE:HA	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:3D:140:LYS:HD2	36:B6:104:PRO:HD2	2.02	0.41
22:3E:285:PRO:HG3	22:3E:382:ASP:HA	2.01	0.41
25:A4:312:ASN:HA	25:A4:315:GLN:HG2	2.02	0.41
25:A4:741:LEU:CG	25:A4:744:VAL:CG2	2.98	0.41
28:AE:6:ASP:N	28:AE:6:ASP:OD1	2.41	0.41
28:AE:376:GLU:CD	28:AE:377:ARG:H	2.24	0.41
28:AE:377:ARG:HH11	30:AG:856:GLU:HG3	1.85	0.41
30:AG:124:LYS:HA	30:AG:124:LYS:HD2	1.72	0.41
31:B1:11:LEU:HA	31:B1:11:LEU:HD23	1.82	0.41
31:B1:291:ASP:N	31:B1:291:ASP:OD1	2.51	0.41
31:B1:598:ASN:OD1	31:B1:598:ASN:N	2.49	0.41
32:B2:159:LEU:HD12	32:B2:159:LEU:HA	1.88	0.41
34:B8:380:ASN:N	34:B8:380:ASN:OD1	2.52	0.41
37:5C:192:GLU:OE2	37:5C:211:THR:N	2.41	0.41
47:RE:628:VAL:HG13	47:RE:666:CYS:HB2	2.02	0.41
47:RE:800:GLU:O	47:RE:804:THR:HG23	2.21	0.41
47:RE:1094:LYS:HD3	56:X1:1304:UNK:HA	2.03	0.41
47:RE:1111:SER:HA	47:RE:1129:PRO:HD3	2.02	0.41
47:RE:1221:HIS:NE2	48:RF:21:PRO:O	2.52	0.41
48:RF:150:LYS:HE2	48:RF:150:LYS:HB3	1.74	0.41
49:RH:39:LYS:HB2	49:RH:198:ASP:HA	2.02	0.41
51:RK:151:LEU:HD13	51:RK:168:LEU:HB3	2.01	0.41
51:RK:177:PRO:HD2	51:RK:304:GLY:HA2	2.01	0.41
1:3A:204:U:N3	1:3A:245:U:O2	2.54	0.41
1:3A:249:G:H2'	1:3A:250:C:H6	1.84	0.41
3:SA:1461:C:H2'	3:SA:1462:G:H8	1.85	0.41
3:SA:1742:U:H2'	3:SA:1743:U:H4'	2.03	0.41
7:SH:139:ASN:HA	7:SH:142:ARG:HB2	2.03	0.41
11:SM:54:ILE:HG23	11:SM:55:ASP:H	1.85	0.41
22:3E:19:ASP:HA	22:3E:44:ILE:HA	2.02	0.41
30:AG:25:LEU:HB3	30:AG:28:VAL:HB	2.02	0.41
30:AG:483:LYS:HA	30:AG:483:LYS:HD3	1.85	0.41
31:B1:68:THR:HB	31:B1:127:VAL:HG21	2.02	0.41
31:B1:288:ASP:HB2	31:B1:295:ILE:HD11	2.02	0.41
32:B2:53:ASP:OD1	32:B2:53:ASP:N	2.50	0.41
32:B2:750:GLU:HA	32:B2:753:MET:HB3	2.03	0.41
33:B3:496:ALA:HB3	33:B3:509:ALA:HB3	2.03	0.41
33:B3:683:LEU:HD23	33:B3:683:LEU:HA	1.92	0.41
34:B8:168:PHE:HA	34:B8:171:ILE:HG22	2.02	0.41
34:B8:239:LYS:HE2	34:B8:243:ALA:HB3	2.03	0.41
34:B8:439:LYS:HG3	34:B8:442:HIS:HE1	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BE:632:VAL:HG13	35:BE:641:LEU:HD11	2.02	0.41
38:5D:17:SER:OG	38:5D:18:GLN:N	2.53	0.41
40:5F:34:ARG:NH2	45:5K:16:THR:O	2.50	0.41
47:RE:712:ASN:N	47:RE:1113:GLY:O	2.47	0.41
47:RE:769:VAL:HG11	47:RE:1113:GLY:HA3	2.03	0.41
48:RF:41:ARG:HD2	48:RF:138:TRP:HB2	2.02	0.41
50:RJ:839:LEU:HD23	50:RJ:839:LEU:HA	1.91	0.41
55:RT:120:LEU:HD12	55:RT:124:LEU:HB3	2.02	0.41
3:SA:153:G:H2'	3:SA:154:G:C8	2.56	0.41
3:SA:1575:G:H2'	3:SA:1576:A:C8	2.56	0.41
20:3C:89:GLU:HB3	20:3C:98:ILE:HB	2.03	0.41
20:3C:185:SER:HA	20:3C:188:VAL:HG12	2.03	0.41
21:3D:400:PHE:HA	21:3D:403:VAL:HG12	2.03	0.41
23:3F:419:ASN:HA	23:3F:472:PRO:HG3	2.02	0.41
24:3H:5:ASN:OD1	24:3H:5:ASN:N	2.52	0.41
24:3H:70:LEU:HA	24:3H:70:LEU:HD23	1.86	0.41
25:A4:87:GLN:HB3	25:A4:378:TYR:CD2	2.56	0.41
26:A5:169:SER:O	26:A5:169:SER:OG	2.38	0.41
29:AF:108:TYR:HE2	29:AF:113:PRO:HA	1.86	0.41
31:B1:458:TRP:CD1	31:B1:465:LEU:HA	2.55	0.41
32:B2:660:VAL:HA	32:B2:676:SER:HA	2.03	0.41
33:B3:210:ASN:HD22	33:B3:222:LEU:HD21	1.86	0.41
33:B3:280:ARG:HH12	33:B3:283:LYS:H	1.67	0.41
35:BE:420:GLU:HG3	35:BE:470:GLN:HA	2.01	0.41
35:BE:605:LEU:HD23	35:BE:628:VAL:HG11	2.02	0.41
36:B6:60:GLU:HA	36:B6:63:VAL:HG12	2.03	0.41
36:B6:75:LEU:HD12	36:B6:75:LEU:HA	1.94	0.41
45:5K:164:ILE:HD12	45:5K:170:ILE:HD11	2.02	0.41
47:RE:146:LEU:HD12	47:RE:146:LEU:HA	1.90	0.41
47:RE:207:LEU:HD11	47:RE:294:LEU:HD12	2.02	0.41
47:RE:227:LYS:O	47:RE:231:TYR:HB2	2.21	0.41
47:RE:950:ILE:HA	47:RE:951:PRO:HD3	1.93	0.41
50:RJ:930:LYS:HE3	50:RJ:930:LYS:HB2	1.87	0.41
3:SA:891:A:H2'	3:SA:892:A:C8	2.56	0.41
3:SA:1485:C:N3	3:SA:1592:A:H1'	2.36	0.41
3:SA:1745:G:O2'	3:SA:1746:A:O4'	2.39	0.41
9:SJ:184:LEU:HD22	9:SJ:192:TYR:HD2	1.86	0.41
20:3B:247:PRO:HA	20:3B:276:ILE:HD13	2.02	0.41
21:3D:409:GLU:HA	21:3D:412:LEU:HD22	2.03	0.41
22:3E:195:LEU:HA	22:3E:198:ILE:HG12	2.02	0.41
25:A4:44:ALA:HB3	25:A4:71:ARG:HB3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:A5:308:ASN:HB2	26:A5:311:MET:HG2	2.03	0.41
27:A9:502:ARG:HG2	29:AF:510:LEU:HD22	2.03	0.41
28:AE:414:LEU:HD23	28:AE:414:LEU:HA	1.88	0.41
29:AF:278:ASP:OD1	29:AF:278:ASP:N	2.53	0.41
30:AG:560:ILE:HD13	30:AG:575:THR:HG22	2.01	0.41
30:AG:678:LEU:HD12	30:AG:678:LEU:HA	1.91	0.41
33:B3:548:LEU:HB3	33:B3:560:TRP:HB2	2.02	0.41
33:B3:597:GLY:O	33:B3:613:LEU:HB2	2.20	0.41
33:B3:678:TRP:HB3	33:B3:697:VAL:HG22	2.01	0.41
35:BE:131:SER:HB3	35:BE:170:LEU:HD21	2.02	0.41
37:5C:220:SER:OG	37:5C:221:THR:N	2.54	0.41
38:5D:18:GLN:OE1	38:5D:19:LEU:N	2.53	0.41
47:RE:565:LYS:HD3	47:RE:690:VAL:HG12	2.02	0.41
50:RJ:860:TYR:HA	50:RJ:883:ALA:HA	2.02	0.41
3:SA:38:C:H2'	3:SA:39:A:C4	2.56	0.41
3:SA:1604:U:H2'	3:SA:1605:G:H8	1.86	0.41
6:SG:15:GLU:HG2	35:BE:499:LYS:HB3	2.03	0.41
11:SM:19:ILE:HG22	11:SM:32:LYS:HG3	2.03	0.41
12:SO:37:ILE:HG21	12:SO:74:ILE:HD11	2.02	0.41
14:SR:113:ASP:HB2	14:SR:115:THR:HG22	2.01	0.41
17:SZ:16:PRO:HA	17:SZ:19:ALA:HA	2.02	0.41
20:3C:228:GLN:O	20:3C:231:ARG:NE	2.34	0.41
29:AF:75:LYS:HE3	29:AF:75:LYS:HB3	1.93	0.41
31:B1:31:SER:HA	31:B1:32:PRO:HD3	1.91	0.41
31:B1:486:SER:HB3	31:B1:503:PHE:HE2	1.86	0.41
31:B1:539:ILE:HG23	31:B1:553:ILE:HB	2.02	0.41
31:B1:707:ASN:OD1	31:B1:707:ASN:N	2.52	0.41
31:B1:721:VAL:HG23	31:B1:741:MET:HG2	2.02	0.41
31:B1:814:LYS:NZ	35:BE:938:THR:O	2.53	0.41
31:B1:833:LYS:HG3	35:BE:930:MET:HE1	2.02	0.41
32:B2:88:HIS:CE1	32:B2:90:ASP:HB2	2.55	0.41
33:B3:377:LEU:O	33:B3:379:LEU:N	2.54	0.41
35:BE:229:GLU:HA	35:BE:244:ILE:O	2.21	0.41
40:5F:60:LYS:HA	40:5F:60:LYS:HD2	1.89	0.41
40:5F:128:VAL:O	40:5F:132:GLU:HB2	2.20	0.41
45:5K:84:ARG:HG2	53:RP:1850:LEU:HD11	2.03	0.41
47:RE:235:LEU:HA	47:RE:235:LEU:HD23	1.85	0.41
47:RE:1169:ILE:HG13	47:RE:1170:GLY:H	1.85	0.41
50:RJ:248:ARG:HB3	50:RJ:272:TYR:HB2	2.02	0.41
50:RJ:552:LEU:HD23	50:RJ:552:LEU:HA	1.84	0.41
50:RJ:775:GLU:HA	50:RJ:779:ARG:HG2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:RP:1979:LEU:HD12	53:RP:2013:LEU:HD11	2.02	0.41
53:RP:2085:LEU:HA	53:RP:2085:LEU:HD12	1.85	0.41
54:RQ:274:LEU:H	54:RQ:274:LEU:HG	1.70	0.41
2:5A:6:A:H5'	30:AG:609:ASN:HD21	1.85	0.41
3:SA:560:U:H2'	3:SA:561:G:C8	2.56	0.41
3:SA:639:U:OP1	8:SI:117:THR:N	2.54	0.41
3:SA:810:G:H2'	3:SA:811:A:C8	2.56	0.41
3:SA:864:U:H6	3:SA:864:U:H2'	1.74	0.41
3:SA:1718:G:H2'	3:SA:1719:A:C4	2.55	0.41
3:SA:1752:U:H2'	3:SA:1753:A:H8	1.85	0.41
4:SC:19:ARG:HH22	33:B3:359:SER:N	2.18	0.41
4:SC:55:LYS:HA	4:SC:55:LYS:HD2	1.96	0.41
9:SJ:39:GLY:O	9:SJ:59:ARG:HB3	2.21	0.41
9:SJ:164:ARG:HD3	9:SJ:164:ARG:HA	1.88	0.41
10:SK:64:GLU:HG3	10:SK:65:LYS:HG3	2.03	0.41
11:SM:109:VAL:HG21	11:SM:125:VAL:HG11	2.02	0.41
13:SP:110:LEU:HD12	13:SP:110:LEU:HA	1.91	0.41
15:SX:109:GLY:HA2	53:RP:1737:ASN:HD22	1.86	0.41
16:SY:113:ALA:HB3	16:SY:116:ASP:HB2	2.01	0.41
17:SZ:101:GLU:OE1	17:SZ:108:ARG:NH2	2.54	0.41
20:3C:236:MET:HG2	22:3E:121:LYS:HB3	2.02	0.41
23:3F:142:ILE:HD13	23:3F:142:ILE:HA	1.97	0.41
23:3F:342:ARG:HA	23:3F:342:ARG:HD3	1.84	0.41
24:3G:89:ARG:HH22	34:B8:492:ASN:HD21	1.69	0.41
25:A4:281:ALA:HB1	25:A4:300:VAL:HG23	2.03	0.41
25:A4:436:ASP:OD1	25:A4:483:ASN:ND2	2.54	0.41
25:A4:774:LEU:HD11	30:AG:297:ILE:HD12	2.03	0.41
26:A5:306:LEU:HD23	26:A5:310:THR:HA	2.03	0.41
26:A5:546:ARG:HA	26:A5:549:CYS:HB3	2.03	0.41
29:AF:46:SER:OG	29:AF:47:PHE:N	2.53	0.41
29:AF:103:GLY:HA2	29:AF:127:THR:HG22	2.03	0.41
29:AF:234:PHE:CE1	29:AF:248:ARG:HB2	2.55	0.41
29:AF:436:GLU:HA	29:AF:439:LEU:HB2	2.02	0.41
30:AG:90:LYS:HD2	30:AG:144:VAL:H	1.86	0.41
30:AG:426:ARG:HA	30:AG:429:ILE:HB	2.03	0.41
31:B1:480:SER:OG	31:B1:481:PHE:N	2.53	0.41
31:B1:491:ALA:HB2	31:B1:521:LEU:HD12	2.03	0.41
34:B8:231:LYS:O	34:B8:553:SER:OG	2.39	0.41
34:B8:233:LEU:HD23	34:B8:552:PHE:CG	2.56	0.41
34:B8:258:PRO:HB3	34:B8:469:PRO:HG2	2.01	0.41
35:BE:396:LYS:HE2	35:BE:396:LYS:HB3	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BE:918:LYS:HE2	35:BE:918:LYS:HB2	1.87	0.41
35:BE:923:ASP:HA	35:BE:926:VAL:HG12	2.03	0.41
36:B6:128:LYS:HB2	36:B6:128:LYS:HE2	1.89	0.41
39:5E:447:LYS:HA	39:5E:450:VAL:HG12	2.03	0.41
40:5F:183:SER:O	40:5F:183:SER:OG	2.33	0.41
46:RD:1642:GLU:HA	46:RD:1645:VAL:HG22	2.02	0.41
46:RD:1674:LEU:O	46:RD:1678:ILE:HG13	2.21	0.41
47:RE:387:GLY:HA3	47:RE:480:MET:HB3	2.03	0.41
47:RE:566:ILE:HA	47:RE:569:VAL:HG22	2.03	0.41
47:RE:712:ASN:HA	47:RE:1115:LEU:HD23	2.03	0.41
48:RF:62:SER:HA	48:RF:66:HIS:CE1	2.55	0.41
49:RH:35:ASP:OD1	49:RH:35:ASP:N	2.54	0.41
50:RJ:69:PRO:HD2	50:RJ:274:TYR:CZ	2.56	0.41
50:RJ:824:ILE:HD12	50:RJ:1011:VAL:HG11	2.03	0.41
50:RJ:1151:GLN:HA	50:RJ:1154:LYS:HE3	2.02	0.41
51:RK:307:ASP:O	51:RK:355:LYS:HA	2.20	0.41
51:RK:364:LYS:HB2	51:RK:364:LYS:HE2	1.82	0.41
53:RP:1738:TYR:HE2	53:RP:1741:LYS:HE3	1.86	0.41
53:RP:1941:VAL:HA	53:RP:1944:ILE:HD12	2.03	0.41
54:RQ:277:ARG:HG3	54:RQ:278:ILE:HD12	2.02	0.41
55:RT:263:LEU:HA	55:RT:266:VAL:HG12	2.03	0.41
1:3A:43:C:H2'	1:3A:44:U:H6	1.86	0.41
1:3A:107:C:HO2'	1:3A:108:A:P	2.44	0.41
3:SA:775:G:H1	3:SA:785:U:H2'	1.86	0.41
3:SA:1146:G:H2'	3:SA:1147:A:H8	1.86	0.41
4:SC:87:ARG:HH21	4:SC:101:HIS:HD2	1.69	0.41
4:SC:126:THR:HA	4:SC:135:LEU:O	2.21	0.41
5:SF:86:PHE:CE2	5:SF:87:MET:HG2	2.56	0.41
6:SG:83:ARG:HH12	31:B1:546:ASP:HA	1.85	0.41
7:SH:147:LEU:HG	7:SH:153:VAL:HG12	2.03	0.41
8:SI:175:LYS:HB2	8:SI:175:LYS:HE2	1.86	0.41
22:3E:193:PRO:HG2	22:3E:243:MET:HG3	2.03	0.41
25:A4:196:LYS:HG2	25:A4:197:LYS:HG3	2.03	0.41
25:A4:358:ILE:HB	25:A4:370:ARG:HB3	2.03	0.41
28:AE:193:THR:HG22	28:AE:241:ILE:HD13	2.03	0.41
29:AF:402:ASP:OD1	29:AF:434:ARG:NH2	2.43	0.41
29:AF:426:LYS:NZ	30:AG:486:PHE:O	2.43	0.41
30:AG:367:SER:O	30:AG:367:SER:OG	2.38	0.41
32:B2:181:SER:OG	32:B2:183:ASP:O	2.39	0.41
32:B2:550:LEU:HD13	32:B2:554:THR:HG23	2.03	0.41
33:B3:117:LEU:HB2	33:B3:131:ILE:HD11	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:BE:264:LEU:HB2	35:BE:278:LEU:HD11	2.02	0.41
39:5E:448:LEU:HD11	40:5F:81:LYS:HE3	2.03	0.41
41:5G:192:ASP:HB3	41:5G:225:ALA:HA	2.02	0.41
47:RE:858:ARG:HD2	47:RE:858:ARG:HA	1.94	0.41
50:RJ:111:LYS:HA	50:RJ:311:PRO:HG2	2.02	0.41
50:RJ:177:PHE:HB3	50:RJ:179:SER:H	1.86	0.41
50:RJ:568:ARG:HA	50:RJ:568:ARG:HD2	1.85	0.41
1:3A:1:G:N2	3:SA:1125:A:O3’	2.53	0.40
3:SA:1123:C:H2’	3:SA:1124:A:C8	2.56	0.40
3:SA:1584:G:O2’	3:SA:1610:G:O6	2.34	0.40
3:SA:1591:C:H2’	3:SA:1592:A:C8	2.56	0.40
8:SI:58:LEU:HD11	8:SI:85:PHE:HE2	1.86	0.40
8:SI:131:PHE:CD2	8:SI:133:THR:HG23	2.56	0.40
8:SI:162:ILE:HD13	8:SI:162:ILE:HA	1.88	0.40
15:SX:20:THR:OG1	15:SX:22:LYS:NZ	2.52	0.40
20:3B:193:VAL:HA	20:3B:216:ASN:O	2.21	0.40
22:3E:173:LEU:O	22:3E:177:LEU:HB2	2.21	0.40
23:3F:168:ASN:O	23:3F:170:TYR:N	2.54	0.40
24:3G:50:GLU:OE2	24:3G:118:LYS:NZ	2.41	0.40
25:A4:71:ARG:HB2	25:A4:75:ASN:OD1	2.21	0.40
27:A9:477:LYS:HA	27:A9:480:LYS:HB3	2.04	0.40
30:AG:666:ASN:OD1	30:AG:666:ASN:N	2.52	0.40
30:AG:780:GLU:O	30:AG:782:THR:N	2.54	0.40
31:B1:269:HIS:NE2	31:B1:312:GLN:O	2.37	0.40
31:B1:387:THR:OG1	31:B1:408:ASP:OD1	2.34	0.40
31:B1:418:ARG:NH2	39:5E:490:LEU:O	2.54	0.40
34:B8:226:LYS:HA	34:B8:226:LYS:HD2	1.83	0.40
34:B8:244:SER:OG	34:B8:245:HIS:N	2.54	0.40
34:B8:439:LYS:HB3	34:B8:439:LYS:HE2	1.75	0.40
35:BE:273:LEU:HD12	35:BE:273:LEU:HA	1.93	0.40
35:BE:285:HIS:ND1	35:BE:286:VAL:O	2.54	0.40
35:BE:464:LYS:HD2	35:BE:504:ALA:HB1	2.03	0.40
35:BE:533:LYS:HE2	35:BE:533:LYS:HB2	1.93	0.40
41:5G:149:PRO:HG2	41:5G:170:VAL:HG11	2.04	0.40
43:5I:449:LYS:HD3	43:5I:449:LYS:HA	1.82	0.40
47:RE:390:THR:O	47:RE:394:THR:HG23	2.21	0.40
47:RE:435:CYS:HB2	47:RE:485:TYR:CD2	2.56	0.40
53:RP:1872:ALA:HB3	53:RP:1910:VAL:HG21	2.02	0.40
53:RP:2052:GLN:HB3	53:RP:2057:LEU:HD12	2.02	0.40
53:RP:2070:TYR:HB3	53:RP:2076:ARG:HG3	2.03	0.40
2:5A:88:U:H3	34:B8:344:ARG:CZ	2.34	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:78:A:H1'	7:SH:175:ILE:HG12	2.03	0.40
3:SA:809:A:C6	3:SA:810:G:H1'	2.57	0.40
3:SA:1143:A:H2'	3:SA:1144:U:O4'	2.21	0.40
9:SJ:184:LEU:HD13	9:SJ:189:LEU:HA	2.03	0.40
9:SJ:196:LEU:HD23	9:SJ:199:LYS:HZ1	1.86	0.40
10:SK:17:ARG:HA	10:SK:17:ARG:HD2	1.88	0.40
10:SK:37:LYS:HE3	10:SK:37:LYS:HB2	1.76	0.40
22:3E:177:LEU:HD21	22:3E:265:PHE:HB3	2.04	0.40
23:3F:142:ILE:HG21	23:3F:512:GLY:HA3	2.03	0.40
25:A4:66:ARG:HH12	25:A4:82:ARG:HH12	1.68	0.40
25:A4:193:LEU:HA	25:A4:202:ILE:O	2.21	0.40
25:A4:247:LEU:HD12	25:A4:292:ASN:HB3	2.03	0.40
25:A4:640:ILE:HG21	25:A4:749:SER:HA	2.03	0.40
28:AE:227:ASN:HB3	28:AE:230:LYS:HB3	2.03	0.40
29:AF:198:THR:HG23	29:AF:199:ARG:HD3	2.04	0.40
30:AG:23:ASN:HB2	30:AG:32:LYS:HA	2.03	0.40
30:AG:693:ASP:OD1	30:AG:693:ASP:N	2.53	0.40
32:B2:145:ILE:O	32:B2:159:LEU:HB3	2.21	0.40
32:B2:268:LYS:HD3	32:B2:268:LYS:HA	1.94	0.40
32:B2:283:THR:OG1	32:B2:330:GLN:O	2.39	0.40
32:B2:538:ARG:HG2	32:B2:581:ILE:HD12	2.03	0.40
33:B3:350:LEU:HD12	33:B3:350:LEU:HA	1.84	0.40
33:B3:402:TRP:HA	33:B3:415:TRP:O	2.20	0.40
33:B3:432:GLY:O	33:B3:433:HIS:ND1	2.54	0.40
34:B8:545:HIS:HB2	34:B8:552:PHE:CZ	2.56	0.40
35:BE:230:VAL:O	35:BE:243:THR:HA	2.21	0.40
35:BE:482:GLY:HA2	35:BE:505:VAL:HG23	2.03	0.40
35:BE:846:ASP:HA	35:BE:849:ILE:HG22	2.03	0.40
37:5C:257:SER:OG	37:5C:259:TRP:NE1	2.33	0.40
42:5H:571:LYS:O	42:5H:575:LYS:N	2.55	0.40
43:5I:429:ILE:HA	43:5I:432:ILE:HG12	2.03	0.40
47:RE:273:SER:O	47:RE:284:ASN:ND2	2.45	0.40
47:RE:476:ILE:H	47:RE:476:ILE:HG13	1.57	0.40
47:RE:779:PHE:HB3	47:RE:851:LYS:HG3	2.03	0.40
53:RP:2026:ILE:O	53:RP:2030:ASN:HB2	2.20	0.40
3:SA:646:C:H2'	3:SA:647:G:C8	2.57	0.40
3:SA:1151:A:H2'	3:SA:1152:A:H8	1.85	0.40
20:3B:231:ARG:NE	21:3D:10:GLU:OE2	2.33	0.40
20:3C:112:ALA:HA	20:3C:113:PRO:HD3	1.93	0.40
20:3C:212:LYS:HE2	20:3C:212:LYS:HB2	1.85	0.40
21:3D:397:SER:OG	21:3D:398:ASN:N	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:3E:419:VAL:HG21	35:BE:323:VAL:HG21	2.03	0.40
25:A4:464:LYS:HB3	25:A4:464:LYS:HE2	1.82	0.40
29:AF:146:ASP:OD1	29:AF:146:ASP:N	2.39	0.40
29:AF:424:ARG:HA	30:AG:477:VAL:HG21	2.03	0.40
31:B1:176:ASP:OD1	31:B1:176:ASP:N	2.53	0.40
31:B1:221:THR:OG1	31:B1:222:LYS:N	2.52	0.40
31:B1:317:LEU:O	31:B1:329:VAL:HA	2.21	0.40
32:B2:884:LYS:HE3	32:B2:884:LYS:HB3	1.83	0.40
34:B8:245:HIS:O	34:B8:275:TYR:OH	2.38	0.40
34:B8:345:LEU:HD23	34:B8:345:LEU:HA	1.88	0.40
37:5C:104:LEU:HD21	37:5C:139:TRP:HB2	2.03	0.40
37:5C:116:ILE:HG23	37:5C:125:LEU:HD11	2.03	0.40
37:5C:259:TRP:CE2	37:5C:266:PRO:HB3	2.56	0.40
42:5H:544:ILE:O	50:RJ:193:ARG:NH1	2.33	0.40
47:RE:143:GLU:HB2	47:RE:177:ASN:ND2	2.36	0.40
47:RE:326:LEU:HD23	47:RE:326:LEU:HA	1.92	0.40
49:RH:240:LYS:O	49:RH:243:HIS:ND1	2.54	0.40
53:RP:177:LEU:HA	53:RP:177:LEU:HD23	1.90	0.40
53:RP:2016:LEU:HA	53:RP:2019:ILE:HB	2.02	0.40
2:5A:14:U:H5”	2:5A:15:G:H5”	2.02	0.40
3:SA:1682:U:O2’	3:SA:1683:C:O4’	2.31	0.40
3:SA:1756:A:C8	39:5E:536:ARG:HD3	2.56	0.40
4:SC:242:LYS:HG3	4:SC:244:VAL:HG12	2.03	0.40
6:SG:130:ILE:H	6:SG:130:ILE:HG12	1.65	0.40
7:SH:48:TYR:CZ	7:SH:119:GLN:HB3	2.57	0.40
17:SZ:27:VAL:HG21	17:SZ:35:VAL:HG21	2.04	0.40
21:3D:178:ILE:HG12	21:3D:314:ARG:HD2	2.03	0.40
24:3G:41:THR:HG21	24:3G:66:HIS:CE1	2.56	0.40
25:A4:34:HIS:ND1	25:A4:404:MET:SD	2.90	0.40
29:AF:27:TRP:HZ2	29:AF:264:PHE:HZ	1.69	0.40
29:AF:256:THR:OG1	29:AF:257:CYS:N	2.55	0.40
29:AF:375:HIS:CD2	34:B8:339:ILE:HD11	2.56	0.40
29:AF:391:ASN:O	29:AF:396:LYS:N	2.43	0.40
29:AF:474:LEU:HD12	29:AF:474:LEU:HA	1.90	0.40
30:AG:79:LEU:HA	30:AG:79:LEU:HD23	1.89	0.40
30:AG:375:ASN:OD1	30:AG:380:THR:N	2.54	0.40
30:AG:467:GLN:HE22	30:AG:470:TYR:HD2	1.70	0.40
30:AG:678:LEU:N	30:AG:692:PHE:O	2.54	0.40
31:B1:717:LEU:HD12	35:BE:578:VAL:HB	2.02	0.40
32:B2:243:THR:OG1	32:B2:244:GLU:N	2.54	0.40
32:B2:478:SER:HB3	32:B2:537:VAL:H	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B2:585:SER:O	32:B2:585:SER:OG	2.35	0.40
35:BE:717:ASP:OD1	35:BE:717:ASP:N	2.54	0.40
37:5C:44:ALA:HA	37:5C:47:LYS:HG2	2.04	0.40
40:5F:65:PRO:HA	40:5F:66:PRO:HD3	1.94	0.40
40:5F:181:ASP:OD1	40:5F:181:ASP:N	2.54	0.40
42:5H:550:LEU:HD12	42:5H:550:LEU:HA	1.95	0.40
43:5I:139:CYS:SG	43:5I:185:ILE:HG12	2.61	0.40
44:5J:111:ASP:OD1	44:5J:111:ASP:N	2.42	0.40
47:RE:941:PRO:HG3	47:RE:961:VAL:HG22	2.03	0.40
47:RE:1101:ASP:OD2	47:RE:1233:ASN:ND2	2.54	0.40
48:RF:94:GLY:HA3	48:RF:121:ARG:HH12	1.87	0.40
54:RQ:880:LYS:HD3	54:RQ:884:MET:HE1	2.03	0.40
3:SA:246:G:H2'	3:SA:247:A:C8	2.56	0.40
3:SA:1695:G:H2'	3:SA:1696:G:C8	2.57	0.40
4:SC:87:ARG:HD3	4:SC:101:HIS:CD2	2.57	0.40
6:SG:26:ALA:HB3	14:SR:28:LEU:HB3	2.03	0.40
13:SP:47:LYS:HA	13:SP:47:LYS:HD3	1.81	0.40
17:SZ:36:SER:O	17:SZ:39:GLU:N	2.55	0.40
22:3E:302:HIS:ND1	22:3E:320:LEU:O	2.54	0.40
26:A5:191:VAL:HA	26:A5:206:ALA:HA	2.03	0.40
27:A9:505:MET:HG2	27:A9:508:ARG:NH1	2.37	0.40
28:AE:115:LEU:HD12	28:AE:115:LEU:HA	1.86	0.40
29:AF:235:LYS:HG3	29:AF:247:GLU:HG2	2.03	0.40
31:B1:88:ASN:ND2	35:BE:659:GLN:HG2	2.36	0.40
31:B1:429:GLU:HG2	31:B1:431:ILE:HG23	2.02	0.40
31:B1:770:ILE:HA	31:B1:771:PRO:HD3	1.98	0.40
32:B2:88:HIS:NE2	32:B2:132:THR:OG1	2.42	0.40
32:B2:617:SER:OG	32:B2:618:ILE:O	2.38	0.40
33:B3:340:ILE:H	33:B3:340:ILE:HG13	1.46	0.40
41:5G:285:ASN:OD1	41:5G:285:ASN:N	2.50	0.40
44:5J:180:ASP:O	44:5J:183:SER:OG	2.37	0.40
47:RE:501:ASN:HD21	47:RE:506:GLN:HE22	1.69	0.40
50:RJ:841:THR:HB	50:RJ:859:ILE:HD12	2.04	0.40
51:RK:198:THR:OG1	51:RK:235:SER:O	2.40	0.40
51:RK:357:ILE:H	51:RK:357:ILE:HG12	1.70	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
4	SC	230/255 (90%)	190 (83%)	39 (17%)	1 (0%)	34 72
5	SF	248/261 (95%)	211 (85%)	37 (15%)	0	100 100
6	SG	211/225 (94%)	194 (92%)	17 (8%)	0	100 100
7	SH	178/236 (75%)	158 (89%)	17 (10%)	3 (2%)	9 43
8	SI	160/190 (84%)	136 (85%)	24 (15%)	0	100 100
9	SJ	136/200 (68%)	113 (83%)	23 (17%)	0	100 100
10	SK	169/197 (86%)	155 (92%)	14 (8%)	0	100 100
11	SM	135/156 (86%)	119 (88%)	16 (12%)	0	100 100
12	SO	132/151 (87%)	119 (90%)	13 (10%)	0	100 100
13	SP	116/137 (85%)	103 (89%)	13 (11%)	0	100 100
14	SR	123/143 (86%)	110 (89%)	13 (11%)	0	100 100
15	SX	125/130 (96%)	114 (91%)	11 (9%)	0	100 100
16	SY	104/145 (72%)	91 (88%)	13 (12%)	0	100 100
17	SZ	121/135 (90%)	104 (86%)	17 (14%)	0	100 100
18	Sc	78/82 (95%)	66 (85%)	12 (15%)	0	100 100
19	Sd	61/67 (91%)	56 (92%)	5 (8%)	0	100 100
20	3B	236/327 (72%)	222 (94%)	14 (6%)	0	100 100
20	3C	221/327 (68%)	204 (92%)	17 (8%)	0	100 100
21	3D	372/504 (74%)	343 (92%)	29 (8%)	0	100 100
22	3E	428/511 (84%)	389 (91%)	39 (9%)	0	100 100
23	3F	431/572 (75%)	365 (85%)	65 (15%)	1 (0%)	47 81
24	3G	119/126 (94%)	109 (92%)	10 (8%)	0	100 100
24	3H	119/126 (94%)	112 (94%)	6 (5%)	1 (1%)	19 60
25	A4	650/776 (84%)	583 (90%)	67 (10%)	0	100 100
26	A5	362/643 (56%)	333 (92%)	29 (8%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
27	A9	35/575 (6%)	34 (97%)	1 (3%)	0	100	100
28	AE	429/1769 (24%)	410 (96%)	19 (4%)	0	100	100
29	AF	473/513 (92%)	427 (90%)	46 (10%)	0	100	100
30	AG	812/896 (91%)	694 (86%)	118 (14%)	0	100	100
31	B1	800/923 (87%)	720 (90%)	80 (10%)	0	100	100
32	B2	813/943 (86%)	731 (90%)	82 (10%)	0	100	100
33	B3	733/817 (90%)	608 (83%)	123 (17%)	2 (0%)	41	76
34	B8	469/594 (79%)	423 (90%)	45 (10%)	1 (0%)	47	81
35	BE	817/939 (87%)	746 (91%)	71 (9%)	0	100	100
36	B6	368/440 (84%)	343 (93%)	25 (7%)	0	100	100
37	5C	452/554 (82%)	400 (88%)	52 (12%)	0	100	100
38	5D	68/250 (27%)	57 (84%)	10 (15%)	1 (2%)	10	46
39	5E	187/593 (32%)	173 (92%)	14 (8%)	0	100	100
40	5F	180/183 (98%)	165 (92%)	15 (8%)	0	100	100
41	5G	214/290 (74%)	196 (92%)	18 (8%)	0	100	100
42	5H	72/610 (12%)	63 (88%)	9 (12%)	0	100	100
43	5I	456/489 (93%)	422 (92%)	33 (7%)	1 (0%)	47	81
44	5J	130/217 (60%)	121 (93%)	9 (7%)	0	100	100
45	5K	162/189 (86%)	149 (92%)	13 (8%)	0	100	100
46	RD	310/1729 (18%)	278 (90%)	32 (10%)	0	100	100
47	RE	1080/1237 (87%)	996 (92%)	84 (8%)	0	100	100
48	RF	233/297 (78%)	203 (87%)	30 (13%)	0	100	100
49	RH	215/252 (85%)	198 (92%)	17 (8%)	0	100	100
50	RJ	719/1183 (61%)	649 (90%)	69 (10%)	1 (0%)	51	85
51	RK	358/367 (98%)	335 (94%)	23 (6%)	0	100	100
52	RN	51/810 (6%)	51 (100%)	0	0	100	100
53	RP	2112/2493 (85%)	1903 (90%)	203 (10%)	6 (0%)	41	76
54	RQ	220/899 (24%)	197 (90%)	23 (10%)	0	100	100
55	RT	165/326 (51%)	152 (92%)	13 (8%)	0	100	100
All	All	18398/27999 (66%)	16543 (90%)	1837 (10%)	18 (0%)	54	85

All (18) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
34	B8	226	LYS
24	3H	6	PRO
53	RP	37	ARG
53	RP	1004	VAL
4	SC	213	ARG
7	SH	173	PRO
23	3F	270	PRO
33	B3	71	PRO
33	B3	474	SER
53	RP	77	LEU
53	RP	204	PRO
7	SH	154	ARG
38	5D	11	LYS
50	RJ	900	GLN
53	RP	76	THR
53	RP	1997	GLY
7	SH	153	VAL
43	5I	34	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
4	SC	205/224 (92%)	203 (99%)	2 (1%)	76 86
5	SF	199/222 (90%)	196 (98%)	3 (2%)	65 80
6	SG	180/191 (94%)	179 (99%)	1 (1%)	86 92
7	SH	153/201 (76%)	152 (99%)	1 (1%)	84 90
8	SI	145/170 (85%)	144 (99%)	1 (1%)	84 90
9	SJ	114/161 (71%)	114 (100%)	0	100 100
10	SK	147/166 (89%)	146 (99%)	1 (1%)	84 90
11	SM	124/137 (90%)	122 (98%)	2 (2%)	62 79
12	SO	117/128 (91%)	114 (97%)	3 (3%)	46 67
13	SP	90/105 (86%)	89 (99%)	1 (1%)	73 85
14	SR	105/119 (88%)	104 (99%)	1 (1%)	76 86

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
15	SX	108/111 (97%)	108 (100%)	0	100 100
16	SY	88/120 (73%)	86 (98%)	2 (2%)	50 70
17	SZ	103/113 (91%)	98 (95%)	5 (5%)	25 51
18	Sc	69/71 (97%)	66 (96%)	3 (4%)	29 54
19	Sd	56/60 (93%)	56 (100%)	0	100 100
20	3B	201/240 (84%)	201 (100%)	0	100 100
20	3C	190/240 (79%)	187 (98%)	3 (2%)	62 79
21	3D	322/435 (74%)	320 (99%)	2 (1%)	86 92
22	3E	265/433 (61%)	263 (99%)	2 (1%)	81 89
23	3F	382/502 (76%)	374 (98%)	8 (2%)	53 72
24	3G	100/104 (96%)	100 (100%)	0	100 100
24	3H	100/104 (96%)	100 (100%)	0	100 100
25	A4	593/713 (83%)	585 (99%)	8 (1%)	69 82
26	A5	334/574 (58%)	332 (99%)	2 (1%)	86 92
27	A9	34/533 (6%)	31 (91%)	3 (9%)	10 33
28	AE	391/1633 (24%)	389 (100%)	2 (0%)	88 93
29	AF	424/454 (93%)	420 (99%)	4 (1%)	78 88
30	AG	750/826 (91%)	744 (99%)	6 (1%)	81 89
31	B1	707/812 (87%)	703 (99%)	4 (1%)	86 92
32	B2	712/832 (86%)	701 (98%)	11 (2%)	65 80
33	B3	665/719 (92%)	657 (99%)	8 (1%)	71 84
34	B8	421/529 (80%)	419 (100%)	2 (0%)	88 93
35	BE	721/819 (88%)	713 (99%)	8 (1%)	73 85
36	B6	251/414 (61%)	248 (99%)	3 (1%)	71 84
37	5C	394/480 (82%)	390 (99%)	4 (1%)	76 86
38	5D	65/234 (28%)	65 (100%)	0	100 100
39	5E	175/535 (33%)	174 (99%)	1 (1%)	86 92
40	5F	171/172 (99%)	171 (100%)	0	100 100
41	5G	191/258 (74%)	191 (100%)	0	100 100
42	5H	63/538 (12%)	63 (100%)	0	100 100
43	5I	415/443 (94%)	408 (98%)	7 (2%)	60 78

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
44	5J	124/200 (62%)	121 (98%)	3 (2%)	49 69
45	5K	148/169 (88%)	147 (99%)	1 (1%)	84 90
46	RD	226/1544 (15%)	225 (100%)	1 (0%)	91 94
47	RE	994/1125 (88%)	986 (99%)	8 (1%)	81 89
48	RF	221/274 (81%)	216 (98%)	5 (2%)	50 70
49	RH	197/222 (89%)	197 (100%)	0	100 100
50	RJ	649/1039 (62%)	644 (99%)	5 (1%)	81 89
51	RK	307/312 (98%)	302 (98%)	5 (2%)	62 79
52	RN	47/732 (6%)	47 (100%)	0	100 100
53	RP	550/2307 (24%)	545 (99%)	5 (1%)	78 88
54	RQ	149/808 (18%)	149 (100%)	0	100 100
55	RT	148/282 (52%)	148 (100%)	0	100 100
All	All	14800/24889 (60%)	14653 (99%)	147 (1%)	77 86

All (147) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	SC	61	LEU
4	SC	162	ARG
5	SF	78	THR
5	SF	192	ILE
5	SF	211	LYS
6	SG	157	ARG
7	SH	51	LYS
8	SI	66	SER
10	SK	128	LEU
11	SM	46	LYS
11	SM	67	ARG
12	SO	54	LEU
12	SO	91	LEU
12	SO	130	ARG
13	SP	127	ARG
14	SR	123	ARG
16	SY	93	LEU
16	SY	121	ARG
17	SZ	35	VAL
17	SZ	49	LYS
17	SZ	109	LYS

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Mol	Chain	Res	Type
17	SZ	112	LYS
17	SZ	123	LYS
18	Sc	65	THR
18	Sc	67	THR
18	Sc	77	THR
20	3C	100	ARG
20	3C	144	TRP
20	3C	306	LEU
21	3D	285	ARG
21	3D	412	LEU
22	3E	370	SER
22	3E	380	ARG
23	3F	197	THR
23	3F	242	VAL
23	3F	262	VAL
23	3F	396	PHE
23	3F	397	PHE
23	3F	405	VAL
23	3F	425	TRP
23	3F	524	ILE
25	A4	30	ARG
25	A4	121	THR
25	A4	429	SER
25	A4	459	LYS
25	A4	472	ARG
25	A4	485	LYS
25	A4	558	ARG
25	A4	565	ARG
26	A5	167	SER
26	A5	240	GLN
27	A9	476	LYS
27	A9	502	ARG
27	A9	508	ARG
28	AE	87	THR
28	AE	321	LYS
29	AF	199	ARG
29	AF	255	VAL
29	AF	446	CYS
29	AF	490	LYS
30	AG	336	ARG
30	AG	421	LYS
30	AG	528	ILE

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Mol	Chain	Res	Type
30	AG	629	LYS
30	AG	740	LYS
30	AG	893	LYS
31	B1	117	ARG
31	B1	119	LEU
31	B1	517	ASP
31	B1	582	THR
32	B2	17	ILE
32	B2	75	ARG
32	B2	213	LYS
32	B2	301	LYS
32	B2	343	TRP
32	B2	450	ARG
32	B2	487	ARG
32	B2	503	LYS
32	B2	569	LEU
32	B2	576	VAL
32	B2	811	ARG
33	B3	280	ARG
33	B3	344	ARG
33	B3	346	VAL
33	B3	438	THR
33	B3	465	LYS
33	B3	534	ARG
33	B3	555	LYS
33	B3	698	LEU
34	B8	406	ASP
34	B8	534	SER
35	BE	98	VAL
35	BE	177	LEU
35	BE	500	LEU
35	BE	576	ARG
35	BE	661	LYS
35	BE	747	LYS
35	BE	888	LEU
35	BE	923	ASP
36	B6	18	LEU
36	B6	133	TYR
36	B6	196	LEU
37	5C	228	LEU
37	5C	291	THR
37	5C	443	THR

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Mol	Chain	Res	Type
37	5C	455	ARG
39	5E	451	LEU
43	5I	100	ARG
43	5I	186	ASP
43	5I	204	TRP
43	5I	238	THR
43	5I	255	THR
43	5I	356	TYR
43	5I	464	THR
44	5J	69	PHE
44	5J	115	ARG
44	5J	156	LYS
45	5K	124	ARG
46	RD	1466	ARG
47	RE	223	ARG
47	RE	227	LYS
47	RE	245	LYS
47	RE	316	ARG
47	RE	351	LYS
47	RE	474	VAL
47	RE	477	LEU
47	RE	626	LYS
48	RF	19	LYS
48	RF	69	LYS
48	RF	176	ASP
48	RF	263	ARG
48	RF	266	LYS
50	RJ	113	ARG
50	RJ	188	LYS
50	RJ	214	ARG
50	RJ	290	ILE
50	RJ	973	ARG
51	RK	8	TYR
51	RK	77	ARG
51	RK	207	ARG
51	RK	214	LYS
51	RK	246	VAL
53	RP	26	LEU
53	RP	37	ARG
53	RP	1716	MET
53	RP	1882	ARG
53	RP	1963	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (214) such sidechains are listed below:

Mol	Chain	Res	Type
4	SC	101	HIS
4	SC	199	ASN
5	SF	69	HIS
5	SF	157	ASN
6	SG	104	ASN
6	SG	131	GLN
7	SH	4	ASN
8	SI	11	GLN
8	SI	147	ASN
9	SJ	103	GLN
10	SK	123	HIS
10	SK	131	GLN
11	SM	81	HIS
12	SO	58	HIS
13	SP	29	HIS
14	SR	100	GLN
17	SZ	29	HIS
17	SZ	31	ASN
17	SZ	34	ASN
17	SZ	113	ASN
18	Sc	9	HIS
19	Sd	27	GLN
19	Sd	51	ASN
20	3B	228	GLN
20	3C	228	GLN
21	3D	39	ASN
21	3D	65	ASN
21	3D	85	ASN
21	3D	125	GLN
21	3D	151	GLN
21	3D	213	ASN
22	3E	261	GLN
22	3E	286	ASN
22	3E	396	ASN
23	3F	156	ASN
23	3F	230	ASN
23	3F	322	HIS
23	3F	561	ASN
24	3G	5	ASN
24	3H	5	ASN
24	3H	18	GLN

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Mol	Chain	Res	Type
24	3H	26	GLN
25	A4	53	HIS
25	A4	274	GLN
25	A4	315	GLN
25	A4	317	ASN
25	A4	340	GLN
25	A4	589	ASN
25	A4	632	ASN
25	A4	642	ASN
25	A4	766	GLN
26	A5	7	GLN
26	A5	302	ASN
26	A5	308	ASN
26	A5	316	ASN
26	A5	552	ASN
27	A9	474	HIS
28	AE	7	GLN
28	AE	10	GLN
28	AE	96	ASN
28	AE	208	ASN
28	AE	219	ASN
28	AE	258	HIS
29	AF	161	GLN
29	AF	263	ASN
29	AF	289	ASN
29	AF	394	GLN
29	AF	472	ASN
30	AG	50	ASN
30	AG	166	ASN
30	AG	236	ASN
30	AG	331	GLN
30	AG	370	GLN
30	AG	467	GLN
30	AG	489	ASN
30	AG	549	ASN
30	AG	569	ASN
30	AG	690	ASN
31	B1	88	ASN
31	B1	92	HIS
31	B1	120	GLN
31	B1	296	GLN
31	B1	394	GLN

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Mol	Chain	Res	Type
31	B1	400	GLN
31	B1	837	ASN
31	B1	842	ASN
32	B2	10	GLN
32	B2	195	GLN
32	B2	383	HIS
32	B2	455	GLN
32	B2	677	HIS
32	B2	798	ASN
32	B2	856	ASN
32	B2	881	ASN
32	B2	913	ASN
32	B2	916	HIS
33	B3	81	GLN
33	B3	337	HIS
33	B3	444	ASN
33	B3	579	GLN
33	B3	589	GLN
33	B3	665	GLN
33	B3	671	ASN
33	B3	749	ASN
33	B3	757	GLN
33	B3	767	HIS
34	B8	162	ASN
34	B8	167	GLN
34	B8	296	GLN
34	B8	308	ASN
34	B8	311	ASN
34	B8	348	HIS
34	B8	362	HIS
34	B8	385	ASN
34	B8	440	ASN
34	B8	450	GLN
34	B8	513	GLN
34	B8	545	HIS
34	B8	581	ASN
35	BE	67	HIS
35	BE	263	HIS
35	BE	421	ASN
35	BE	429	ASN
35	BE	473	ASN
35	BE	490	GLN

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Mol	Chain	Res	Type
35	BE	586	ASN
35	BE	826	GLN
35	BE	916	HIS
36	B6	10	GLN
36	B6	41	HIS
36	B6	115	ASN
36	B6	166	ASN
36	B6	287	ASN
37	5C	36	GLN
37	5C	78	ASN
37	5C	88	GLN
37	5C	151	ASN
37	5C	170	GLN
37	5C	321	ASN
37	5C	337	HIS
37	5C	394	HIS
37	5C	424	GLN
37	5C	435	ASN
38	5D	45	GLN
39	5E	316	ASN
39	5E	443	ASN
40	5F	39	GLN
40	5F	163	ASN
41	5G	118	ASN
41	5G	145	HIS
41	5G	193	ASN
43	5I	46	ASN
43	5I	96	ASN
43	5I	207	ASN
43	5I	242	ASN
43	5I	276	ASN
43	5I	293	ASN
43	5I	353	GLN
43	5I	371	ASN
43	5I	392	ASN
43	5I	431	ASN
44	5J	126	HIS
44	5J	165	ASN
45	5K	43	ASN
45	5K	148	HIS
45	5K	162	GLN
46	RD	1515	ASN

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Mol	Chain	Res	Type
46	RD	1522	ASN
46	RD	1525	ASN
46	RD	1542	GLN
46	RD	1607	ASN
47	RE	129	HIS
47	RE	261	ASN
47	RE	372	GLN
47	RE	441	GLN
47	RE	500	ASN
47	RE	588	GLN
47	RE	665	HIS
47	RE	743	GLN
47	RE	841	ASN
47	RE	872	ASN
47	RE	1023	ASN
47	RE	1125	ASN
47	RE	1148	GLN
48	RF	66	HIS
48	RF	122	ASN
48	RF	146	ASN
48	RF	187	HIS
48	RF	232	ASN
48	RF	268	GLN
49	RH	69	ASN
49	RH	105	ASN
49	RH	125	ASN
49	RH	215	ASN
50	RJ	99	ASN
50	RJ	126	ASN
50	RJ	300	GLN
50	RJ	1037	GLN
50	RJ	1049	ASN
51	RK	88	HIS
51	RK	234	ASN
51	RK	317	GLN
53	RP	112	GLN
53	RP	115	HIS
53	RP	134	ASN
53	RP	146	ASN
53	RP	1801	ASN
53	RP	1802	HIS
54	RQ	303	GLN

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Mol	Chain	Res	Type
54	RQ	316	ASN
54	RQ	836	ASN
54	RQ	856	GLN
55	RT	218	ASN
55	RT	262	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	3A	189/333 (56%)	77 (40%)	3 (1%)
2	5A	144/700 (20%)	62 (43%)	2 (1%)
3	SA	1137/1809 (62%)	413 (36%)	20 (1%)
All	All	1470/2842 (51%)	552 (37%)	25 (1%)

All (552) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	3A	4	G
1	3A	12	U
1	3A	15	U
1	3A	24	U
1	3A	25	U
1	3A	28	A
1	3A	30	A
1	3A	31	G
1	3A	33	A
1	3A	34	A
1	3A	35	U
1	3A	37	G
1	3A	38	U
1	3A	39	C
1	3A	46	U
1	3A	47	G
1	3A	49	C
1	3A	51	C
1	3A	53	U
1	3A	54	C
1	3A	56	A
1	3A	59	G
1	3A	61	G
1	3A	67	G

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Mol	Chain	Res	Type
1	3A	81	U
1	3A	82	G
1	3A	87	G
1	3A	88	U
1	3A	89	C
1	3A	90	C
1	3A	91	C
1	3A	92	A
1	3A	93	U
1	3A	94	A
1	3A	95	A
1	3A	101	G
1	3A	103	A
1	3A	104	C
1	3A	105	C
1	3A	107	C
1	3A	108	A
1	3A	109	G
1	3A	110	A
1	3A	111	G
1	3A	114	A
1	3A	115	G
1	3A	116	A
1	3A	198	U
1	3A	199	G
1	3A	203	U
1	3A	204	U
1	3A	205	G
1	3A	206	C
1	3A	207	A
1	3A	243	U
1	3A	247	U
1	3A	248	G
1	3A	249	G
1	3A	252	C
1	3A	255	U
1	3A	256	G
1	3A	261	U
1	3A	262	G
1	3A	263	A
1	3A	265	C
1	3A	266	C

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Mol	Chain	Res	Type
1	3A	267	A
1	3A	268	U
1	3A	270	C
1	3A	311	G
1	3A	313	A
1	3A	314	C
1	3A	315	A
1	3A	320	G
1	3A	324	U
1	3A	325	C
1	3A	329	C
2	5A	4	C
2	5A	6	A
2	5A	7	A
2	5A	8	A
2	5A	9	G
2	5A	10	C
2	5A	11	A
2	5A	12	G
2	5A	14	U
2	5A	15	G
2	5A	59	U
2	5A	63	G
2	5A	64	U
2	5A	83	U
2	5A	86	C
2	5A	87	C
2	5A	88	U
2	5A	89	C
2	5A	90	G
2	5A	279	A
2	5A	280	A
2	5A	281	G
2	5A	292	A
2	5A	296	C
2	5A	297	U
2	5A	299	G
2	5A	302	A
2	5A	305	A
2	5A	306	G
2	5A	310	U
2	5A	311	C

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Mol	Chain	Res	Type
2	5A	312	U
2	5A	313	A
2	5A	465	G
2	5A	466	A
2	5A	468	A
2	5A	469	C
2	5A	470	U
2	5A	471	C
2	5A	474	A
2	5A	475	G
2	5A	479	G
2	5A	481	U
2	5A	482	A
2	5A	484	G
2	5A	497	A
2	5A	500	G
2	5A	501	C
2	5A	536	A
2	5A	539	A
2	5A	540	U
2	5A	541	U
2	5A	542	U
2	5A	544	C
2	5A	548	A
2	5A	553	A
2	5A	555	A
2	5A	583	U
2	5A	585	C
2	5A	586	A
2	5A	587	G
2	5A	590	G
3	SA	-4	A
3	SA	-1	G
3	SA	0	U
3	SA	1	U
3	SA	6	G
3	SA	10	G
3	SA	17	C
3	SA	18	C
3	SA	20	G
3	SA	21	U
3	SA	25	C

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Mol	Chain	Res	Type
3	SA	26	A
3	SA	31	C
3	SA	34	G
3	SA	38	C
3	SA	40	A
3	SA	50	C
3	SA	57	G
3	SA	60	U
3	SA	63	G
3	SA	66	U
3	SA	68	A
3	SA	69	G
3	SA	71	A
3	SA	72	A
3	SA	73	U
3	SA	74	U
3	SA	75	U
3	SA	76	A
3	SA	77	U
3	SA	78	A
3	SA	80	A
3	SA	92	A
3	SA	107	C
3	SA	108	A
3	SA	114	C
3	SA	116	U
3	SA	127	G
3	SA	140	A
3	SA	143	G
3	SA	146	U
3	SA	152	U
3	SA	153	G
3	SA	155	U
3	SA	157	A
3	SA	160	C
3	SA	161	U
3	SA	166	C
3	SA	167	U
3	SA	169	A
3	SA	176	C
3	SA	177	U
3	SA	182	A

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Mol	Chain	Res	Type
3	SA	184	C
3	SA	185	U
3	SA	186	C
3	SA	187	G
3	SA	189	C
3	SA	191	C
3	SA	192	U
3	SA	194	U
3	SA	195	G
3	SA	196	G
3	SA	198	A
3	SA	199	G
3	SA	200	A
3	SA	201	G
3	SA	204	G
3	SA	215	A
3	SA	231	U
3	SA	233	C
3	SA	234	G
3	SA	236	A
3	SA	238	U
3	SA	239	C
3	SA	241	U
3	SA	243	G
3	SA	246	G
3	SA	248	U
3	SA	249	U
3	SA	250	C
3	SA	257	A
3	SA	259	U
3	SA	260	U
3	SA	261	U
3	SA	262	U
3	SA	265	A
3	SA	270	C
3	SA	271	A
3	SA	272	U
3	SA	275	C
3	SA	277	U
3	SA	278	U
3	SA	279	G
3	SA	281	G

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Mol	Chain	Res	Type
3	SA	285	G
3	SA	288	A
3	SA	299	A
3	SA	301	A
3	SA	312	A
3	SA	313	U
3	SA	314	C
3	SA	316	A
3	SA	318	U
3	SA	320	U
3	SA	321	C
3	SA	322	G
3	SA	325	G
3	SA	328	A
3	SA	329	G
3	SA	333	A
3	SA	334	G
3	SA	336	G
3	SA	337	G
3	SA	338	C
3	SA	341	A
3	SA	350	U
3	SA	351	C
3	SA	352	A
3	SA	354	C
3	SA	433	C
3	SA	434	G
3	SA	435	C
3	SA	437	A
3	SA	438	A
3	SA	439	U
3	SA	440	U
3	SA	444	C
3	SA	445	A
3	SA	448	C
3	SA	453	U
3	SA	454	U
3	SA	455	C
3	SA	456	A
3	SA	468	A
3	SA	469	C
3	SA	477	A

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Mol	Chain	Res	Type
3	SA	480	G
3	SA	484	C
3	SA	485	A
3	SA	487	G
3	SA	488	G
3	SA	492	A
3	SA	493	U
3	SA	494	U
3	SA	495	C
3	SA	500	C
3	SA	501	U
3	SA	502	U
3	SA	504	U
3	SA	506	A
3	SA	507	U
3	SA	508	U
3	SA	510	G
3	SA	511	A
3	SA	514	G
3	SA	519	C
3	SA	520	A
3	SA	525	A
3	SA	534	A
3	SA	536	C
3	SA	538	A
3	SA	539	G
3	SA	540	G
3	SA	541	A
3	SA	542	A
3	SA	543	C
3	SA	545	A
3	SA	548	G
3	SA	557	G
3	SA	563	U
3	SA	570	A
3	SA	572	C
3	SA	573	C
3	SA	574	G
3	SA	575	C
3	SA	579	A
3	SA	580	A
3	SA	583	C

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Mol	Chain	Res	Type
3	SA	584	C
3	SA	585	A
3	SA	587	C
3	SA	594	A
3	SA	595	G
3	SA	602	U
3	SA	603	U
3	SA	634	G
3	SA	635	A
3	SA	638	U
3	SA	639	U
3	SA	640	U
3	SA	641	G
3	SA	642	G
3	SA	643	G
3	SA	644	C
3	SA	649	U
3	SA	653	C
3	SA	654	C
3	SA	655	G
3	SA	656	G
3	SA	657	U
3	SA	678	A
3	SA	684	A
3	SA	685	A
3	SA	686	C
3	SA	687	G
3	SA	692	C
3	SA	693	U
3	SA	694	U
3	SA	696	C
3	SA	747	C
3	SA	748	U
3	SA	751	G
3	SA	752	A
3	SA	754	A
3	SA	755	A
3	SA	758	U
3	SA	759	U
3	SA	763	G
3	SA	765	G
3	SA	766	U

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Mol	Chain	Res	Type
3	SA	771	A
3	SA	772	G
3	SA	774	A
3	SA	775	G
3	SA	778	G
3	SA	779	U
3	SA	780	A
3	SA	781	U
3	SA	782	U
3	SA	783	G
3	SA	784	C
3	SA	785	U
3	SA	786	C
3	SA	787	G
3	SA	788	A
3	SA	789	A
3	SA	790	U
3	SA	794	U
3	SA	802	G
3	SA	803	A
3	SA	804	A
3	SA	805	U
3	SA	809	A
3	SA	810	G
3	SA	811	A
3	SA	812	A
3	SA	813	U
3	SA	814	A
3	SA	815	G
3	SA	822	U
3	SA	824	G
3	SA	827	C
3	SA	828	U
3	SA	841	U
3	SA	845	G
3	SA	858	G
3	SA	859	A
3	SA	860	U
3	SA	863	A
3	SA	864	U
3	SA	873	U
3	SA	876	G

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Mol	Chain	Res	Type
3	SA	877	G
3	SA	894	U
3	SA	898	A
3	SA	905	A
3	SA	906	A
3	SA	913	G
3	SA	914	G
3	SA	928	U
3	SA	929	A
3	SA	933	A
3	SA	935	U
3	SA	944	A
3	SA	951	A
3	SA	960	U
3	SA	966	A
3	SA	969	C
3	SA	971	A
3	SA	976	G
3	SA	1052	U
3	SA	1053	G
3	SA	1056	U
3	SA	1057	U
3	SA	1058	U
3	SA	1059	U
3	SA	1060	U
3	SA	1063	U
3	SA	1064	G
3	SA	1076	A
3	SA	1080	U
3	SA	1110	G
3	SA	1111	G
3	SA	1114	G
3	SA	1118	G
3	SA	1119	G
3	SA	1122	G
3	SA	1125	A
3	SA	1127	G
3	SA	1128	C
3	SA	1131	A
3	SA	1132	A
3	SA	1133	A
3	SA	1134	C

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Mol	Chain	Res	Type
3	SA	1135	U
3	SA	1141	G
3	SA	1142	A
3	SA	1143	A
3	SA	1146	G
3	SA	1158	C
3	SA	1164	G
3	SA	1469	A
3	SA	1471	A
3	SA	1472	C
3	SA	1473	U
3	SA	1474	G
3	SA	1476	C
3	SA	1477	G
3	SA	1488	G
3	SA	1489	U
3	SA	1531	G
3	SA	1535	U
3	SA	1536	G
3	SA	1537	C
3	SA	1538	U
3	SA	1539	G
3	SA	1573	A
3	SA	1575	G
3	SA	1577	A
3	SA	1584	G
3	SA	1590	G
3	SA	1592	A
3	SA	1595	U
3	SA	1596	C
3	SA	1600	A
3	SA	1601	G
3	SA	1602	C
3	SA	1614	A
3	SA	1618	C
3	SA	1619	C
3	SA	1622	G
3	SA	1628	U
3	SA	1630	U
3	SA	1631	A
3	SA	1639	C
3	SA	1651	A

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Mol	Chain	Res	Type
3	SA	1654	G
3	SA	1657	U
3	SA	1658	G
3	SA	1664	C
3	SA	1665	U
3	SA	1666	U
3	SA	1668	G
3	SA	1671	A
3	SA	1672	G
3	SA	1678	A
3	SA	1679	G
3	SA	1680	G
3	SA	1681	A
3	SA	1682	U
3	SA	1683	C
3	SA	1686	C
3	SA	1687	U
3	SA	1689	A
3	SA	1694	A
3	SA	1698	G
3	SA	1702	A
3	SA	1703	C
3	SA	1704	U
3	SA	1708	U
3	SA	1709	C
3	SA	1710	U
3	SA	1711	C
3	SA	1712	A
3	SA	1713	G
3	SA	1714	A
3	SA	1715	G
3	SA	1716	C
3	SA	1717	G
3	SA	1718	G
3	SA	1719	A
3	SA	1721	A
3	SA	1724	U
3	SA	1725	U
3	SA	1732	A
3	SA	1734	U
3	SA	1735	U
3	SA	1736	G

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Mol	Chain	Res	Type
3	SA	1743	U
3	SA	1745	G
3	SA	1747	G
3	SA	1749	A
3	SA	1751	C
3	SA	1755	A
3	SA	1756	A
3	SA	1757	G
3	SA	1768	G
3	SA	1769	U
3	SA	1780	G
3	SA	1781	A
3	SA	1782	A
3	SA	1789	G
3	SA	1791	A
3	SA	1792	G
3	SA	1793	G
3	SA	1794	A
3	SA	1795	U
3	SA	1797	A
3	SA	1798	U
3	SA	1799	U
3	SA	1800	A
3	SA	1801	A

All (25) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	3A	102	U
1	3A	107	C
1	3A	248	G
2	5A	6	A
2	5A	311	C
3	SA	0	U
3	SA	68	A
3	SA	139	C
3	SA	278	U
3	SA	280	U
3	SA	454	U
3	SA	484	C
3	SA	503	G
3	SA	542	A

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Mol	Chain	Res	Type
3	SA	579	A
3	SA	602	U
3	SA	637	C
3	SA	685	A
3	SA	773	C
3	SA	781	U
3	SA	1052	U
3	SA	1063	U
3	SA	1471	A
3	SA	1594	G
3	SA	1754	A

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

Of 4 ligands modelled in this entry, 3 are monoatomic - leaving 1 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
58	GTP	RJ	1201	59	26,34,34	1.18	2 (7%)	32,54,54	1.78	7 (21%)

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
58	GTP	RJ	1201	59	-	1/18/38/38	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
58	RJ	1201	GTP	C5-C6	-4.13	1.39	1.47
58	RJ	1201	GTP	C2-N3	2.02	1.38	1.33

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	RJ	1201	GTP	PA-O3A-PB	-5.07	115.43	132.83
58	RJ	1201	GTP	PB-O3B-PG	-3.88	119.52	132.83
58	RJ	1201	GTP	C5-C6-N1	3.52	120.16	113.95
58	RJ	1201	GTP	C8-N7-C5	3.16	109.02	102.99
58	RJ	1201	GTP	C2-N1-C6	-3.14	119.31	125.10
58	RJ	1201	GTP	C3'-C2'-C1'	2.88	105.32	100.98
58	RJ	1201	GTP	O6-C6-C5	-2.09	120.29	124.37

There are no chirality outliers.

All (1) torsion outliers are listed below:

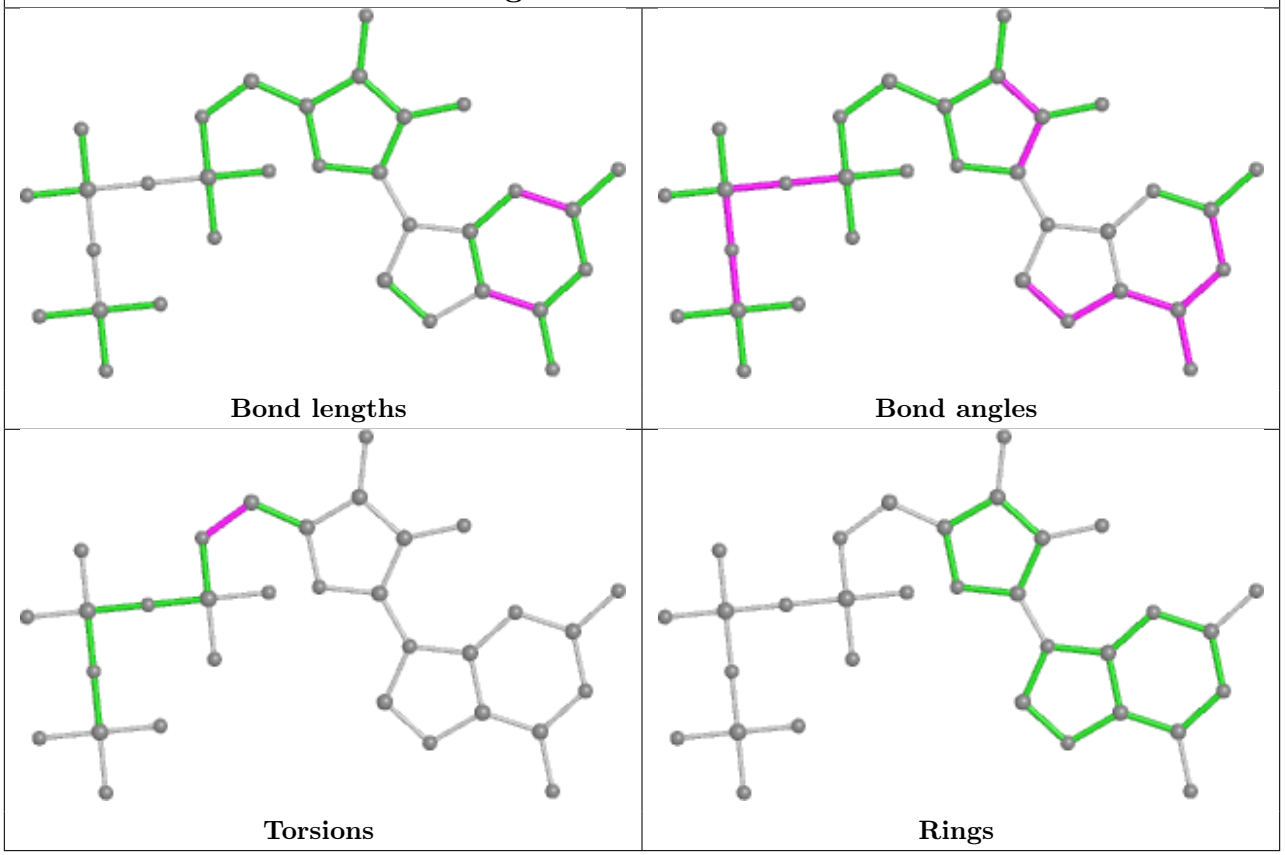
Mol	Chain	Res	Type	Atoms
58	RJ	1201	GTP	C4'-C5'-O5'-PA

There are no ring outliers.

No monomer is involved in short contacts.

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 GTP RJ 1201



5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

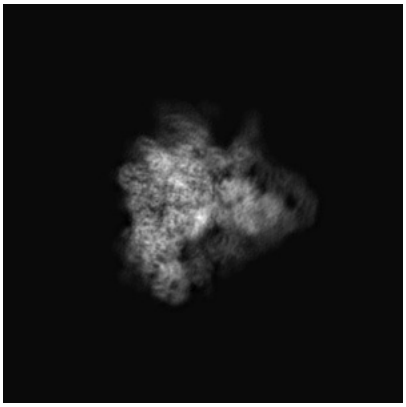
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-0953. These allow visual inspection of the internal detail of the map and identification of artifacts.

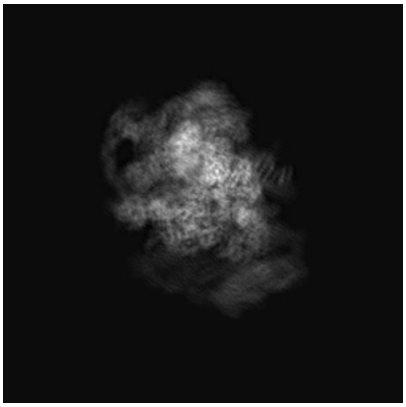
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

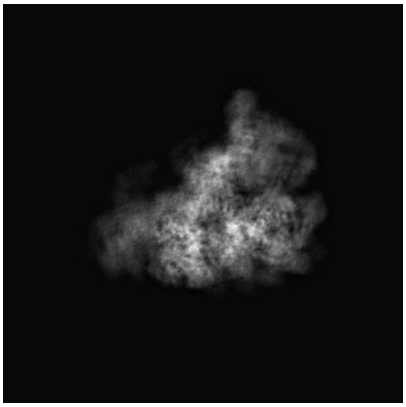
6.1.1 Primary map



X



Y

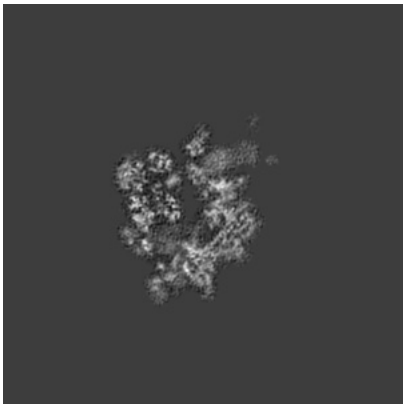


Z

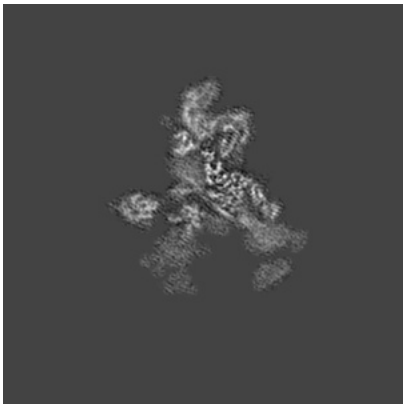
The images above show the map projected in three orthogonal directions.

6.2 Central slices

6.2.1 Primary map



X Index: 224



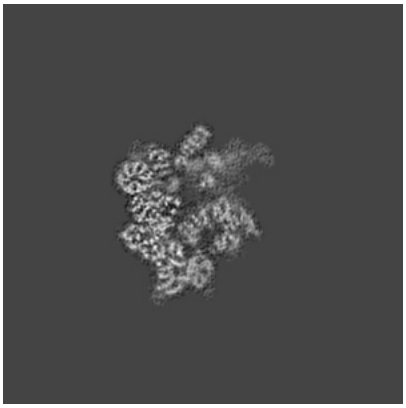
Y Index: 224

Z Index: 224

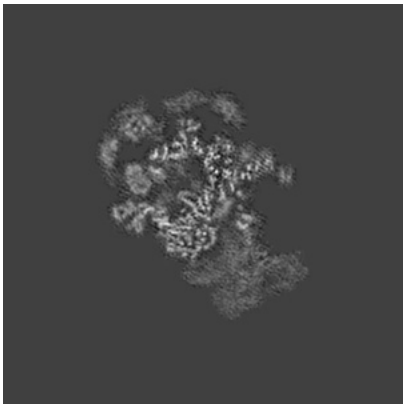
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

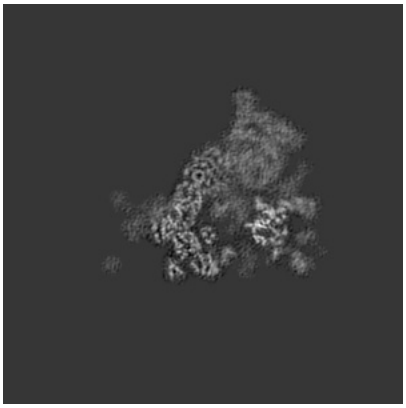
6.3.1 Primary map



X Index: 215



Y Index: 190

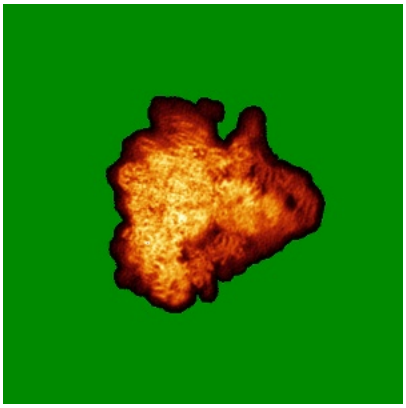


Z Index: 208

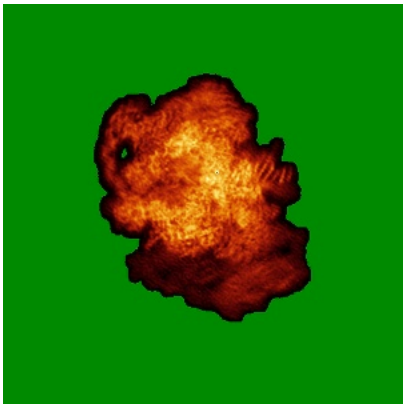
The images above show the largest variance slices of the map in three orthogonal directions.

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

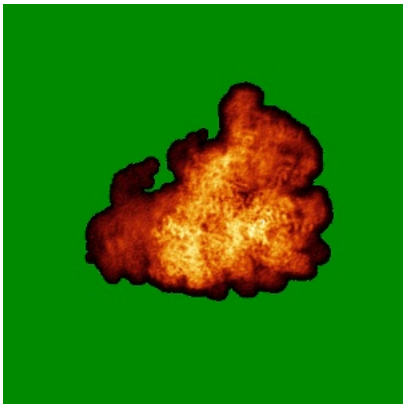
6.4.1 Primary map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.018. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

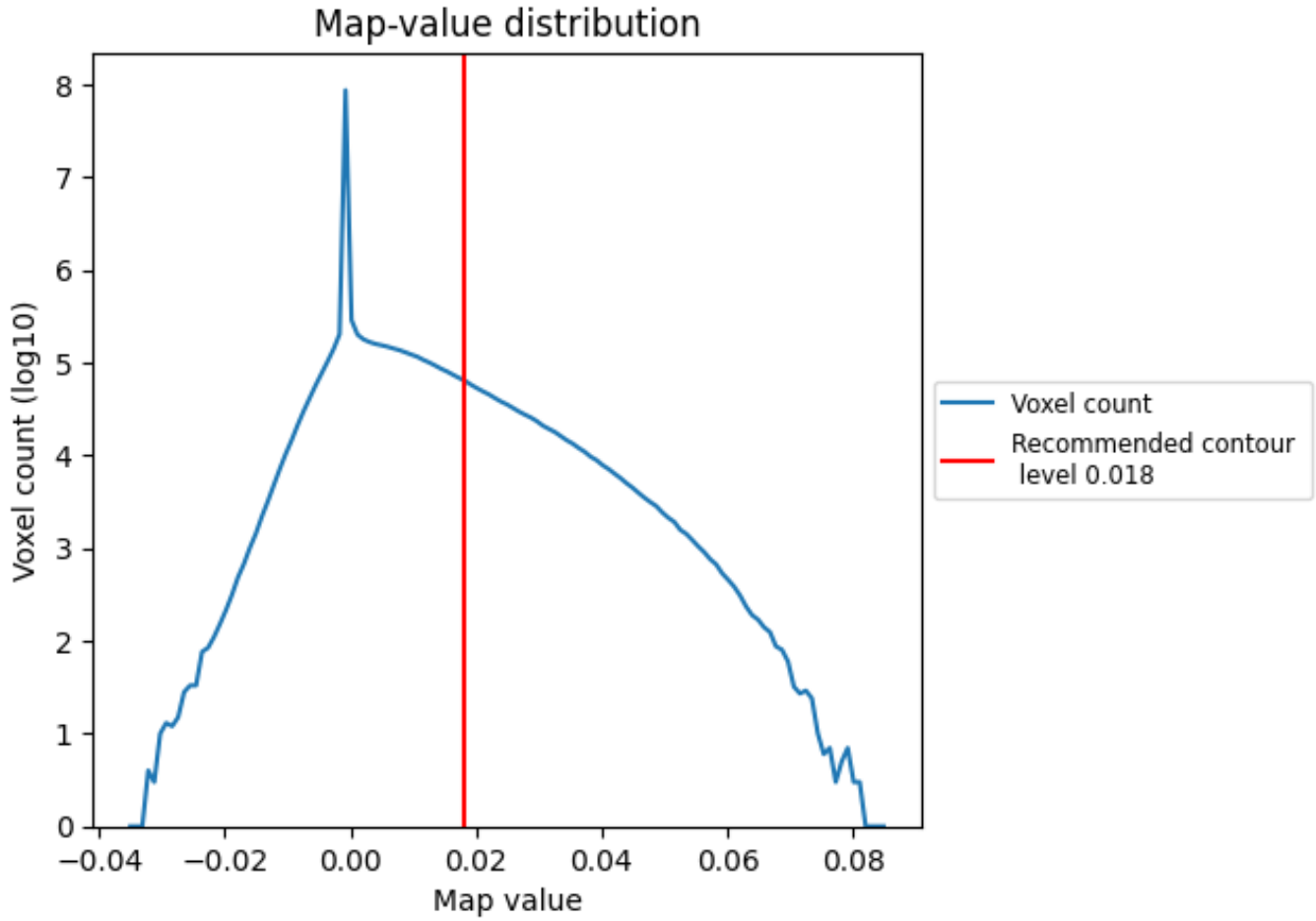
6.6 Mask visualisation (i)

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

7 Map analysis

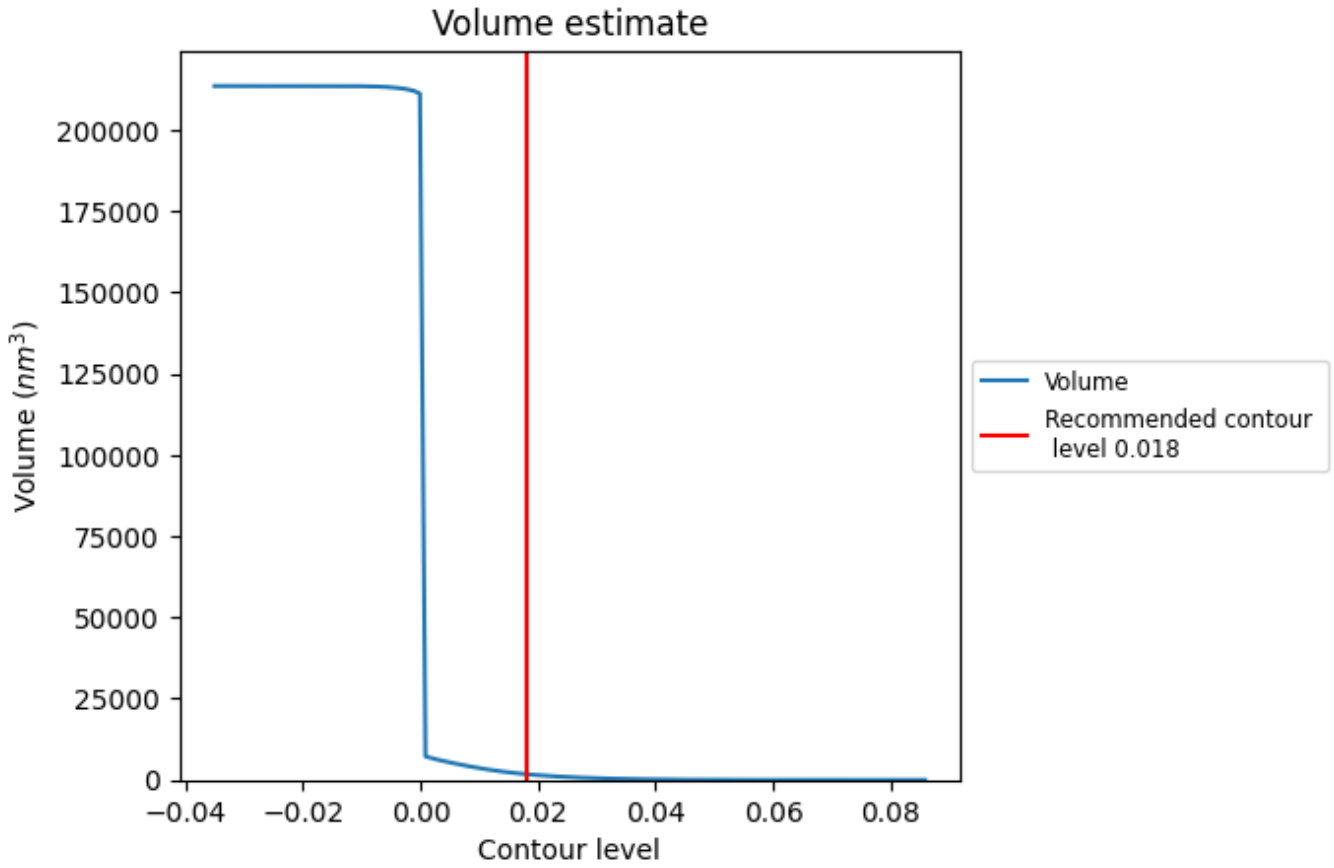
This section contains the results of statistical analysis of the map.

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.

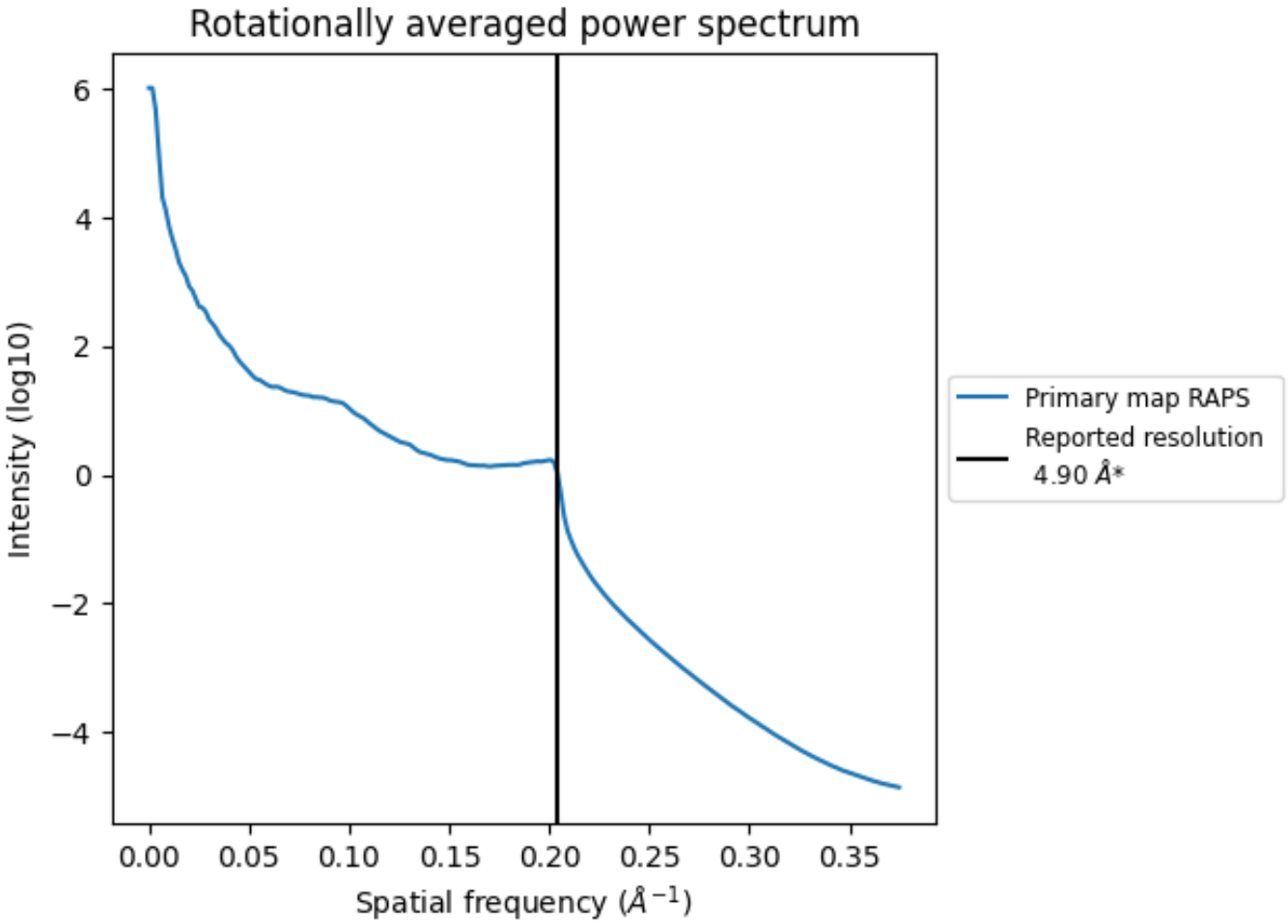
7.2 Volume estimate



The volume at the recommended contour level is 1775 nm^3; this corresponds to an approximate mass of 1603 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 0.204 Å^{-1}

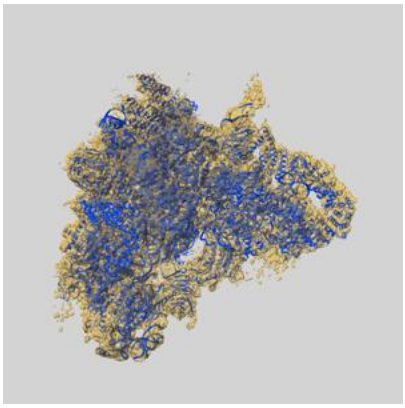
8 Fourier-Shell correlation

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

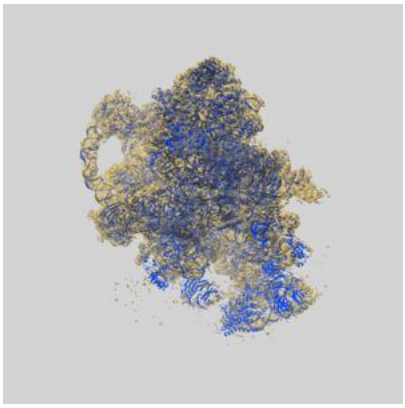
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-0953 and PDB model 6LQT. Per-residue inclusion information can be found in section 3 on page 15.

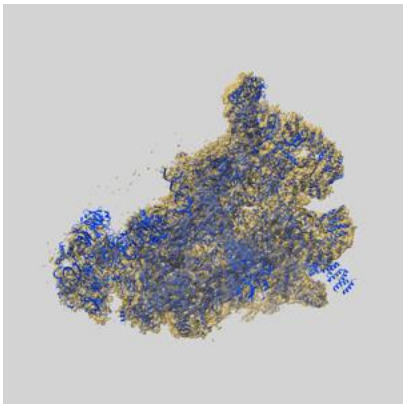
9.1 Map-model overlay



X



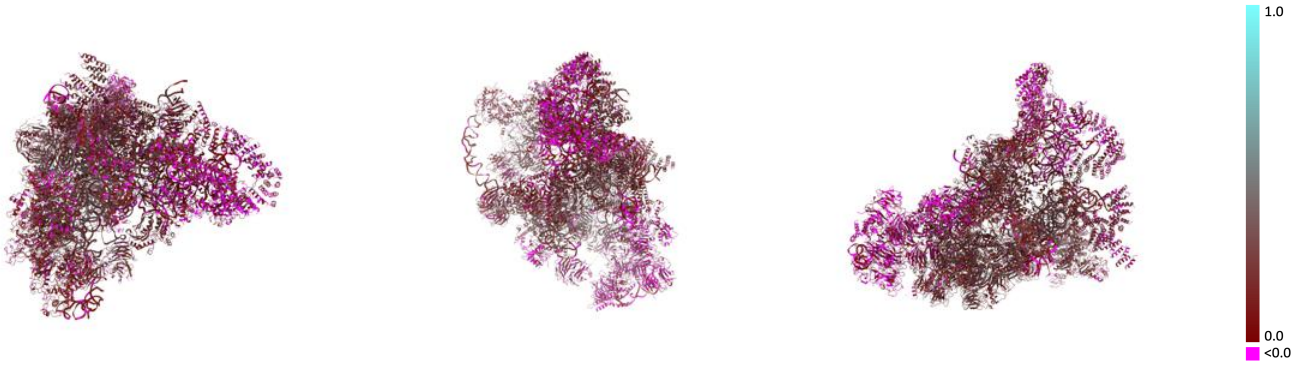
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.018 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.

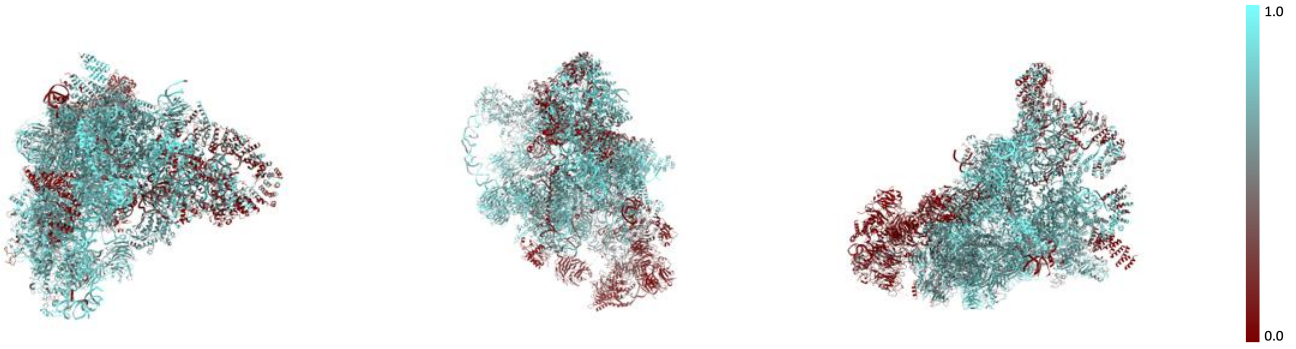
9.2 Q-score mapped to coordinate model



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.

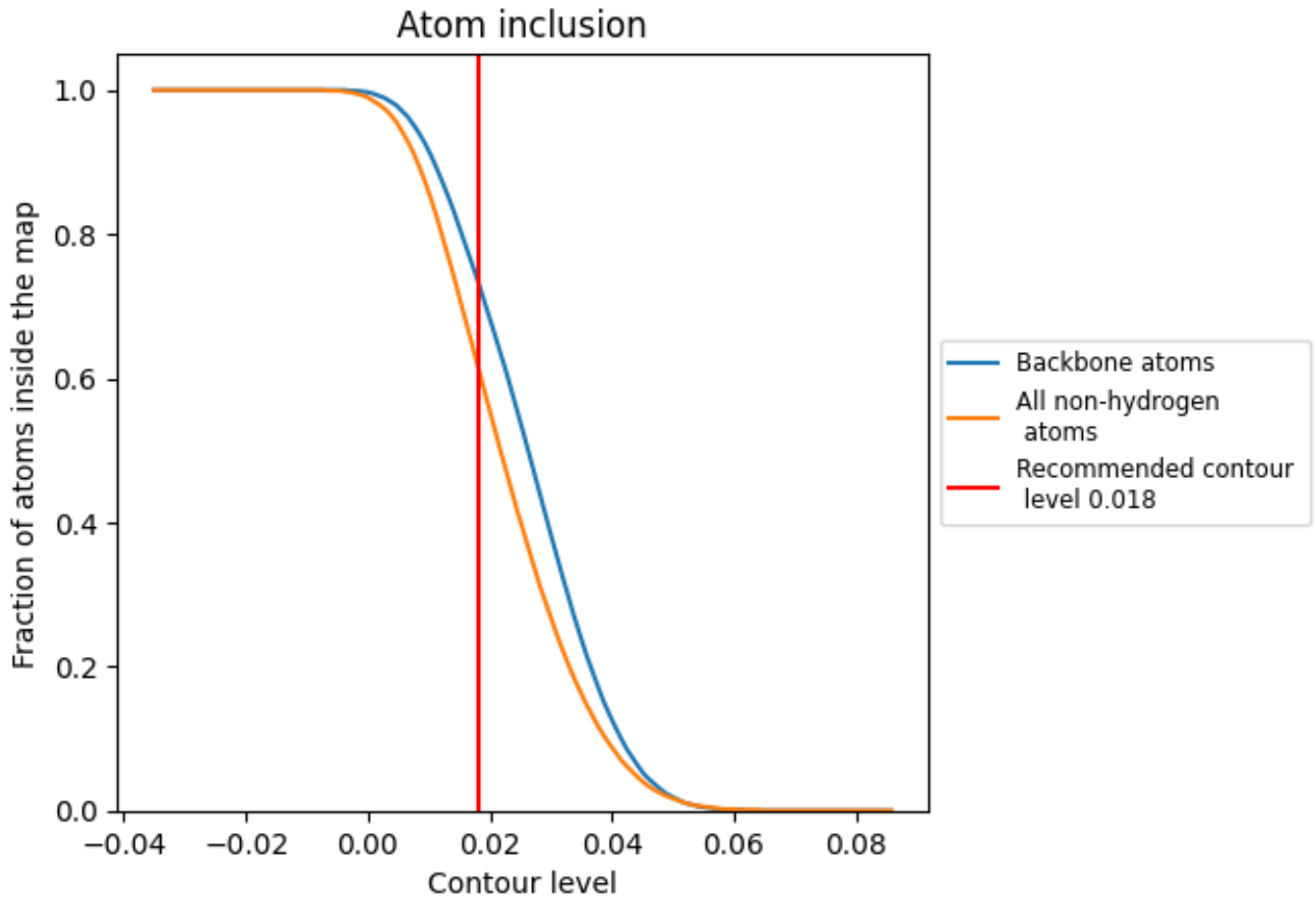
9.3 Atom inclusion mapped to coordinate model



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 (0.018).

9.4 Atom inclusion (i)



At the recommended contour level, 74% of all backbone atoms, 62% 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 (0.018) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6170	0.1760
3A	0.7220	0.1730
3B	0.7350	0.2510
3C	0.2290	0.0270
3D	0.7200	0.2100
3E	0.5210	0.1280
3F	0.7380	0.1990
3G	0.5690	0.0750
3H	0.7190	0.2500
5A	0.4470	0.1260
5C	0.7510	0.2720
5D	0.4040	0.1920
5E	0.6550	0.2140
5F	0.7150	0.2580
5G	0.5840	0.2170
5H	0.7250	0.2260
5I	0.7840	0.2810
5J	0.4590	0.1630
5K	0.7250	0.2770
A4	0.0530	0.0370
A5	0.5280	0.1980
A9	0.0340	-0.0100
AE	0.6560	0.2260
AF	0.0570	0.0650
AG	0.1490	0.0500
B1	0.7890	0.2790
B2	0.7740	0.1980
B3	0.8130	0.1990
B6	0.7470	0.2190
B8	0.6200	0.1640
BE	0.7970	0.2680
RD	0.1150	0.0930
RE	0.7000	0.1860
RF	0.6930	0.1820
RH	0.0450	0.0060

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Chain	Atom inclusion	Q-score
RJ	0.6150	0.1880
RK	0.6710	0.1890
RN	0.1260	0.1140
RP	0.5610	0.1180
RQ	0.6330	0.2320
RT	0.5970	0.1850
SA	0.7860	0.1830
SC	0.7430	0.2580
SF	0.5820	0.0960
SG	0.7470	0.2420
SH	0.3820	0.0560
SI	0.6830	0.2190
SJ	0.4120	0.0390
SK	0.7420	0.2280
SM	0.2760	0.0230
SO	0.7900	0.2440
SP	0.7420	0.2350
SR	0.7600	0.2490
SX	0.7770	0.2820
SY	0.4970	0.1920
SZ	0.7190	0.1340
Sc	0.7700	0.2800
Sd	0.7710	0.2780
X1	0.5020	0.1910