Full wwPDB EM Validation Report ⓘ

Jun 26, 2025 – 10:05 PM JST

PDB ID	:	7W5B / pdb_00007w5b
EMDB ID	:	EMD-32321
Title	:	The cryo-EM structure of human C* complex
Authors	:	Zhan, X.; Lu, Y.; Shi, Y.
Deposited on	:	2021-11-29
Resolution	:	4.30 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

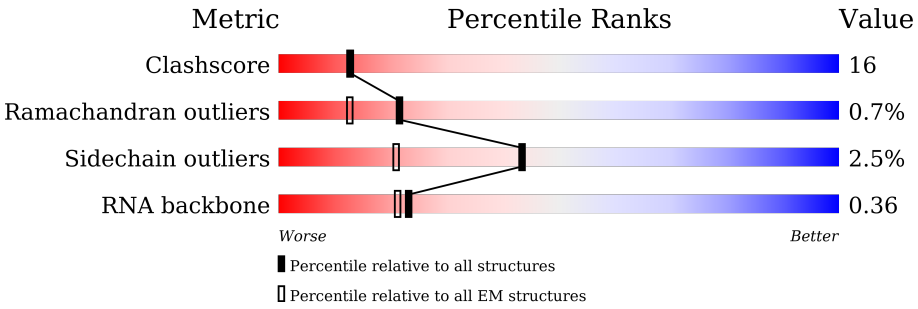
EMDB validation analysis	:	0.0.1.dev118
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 4.30 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	2335	6% 69% 24%
2	B	117	36% 22% 10% 28%
3	C	972	71% 17% 11%
4	D	2136	59% 79% 19%
5	E	357	61% 22% 16%
6	F	107	31% 23% 35% 9%
7	4	46	7% 11% 7% 72%

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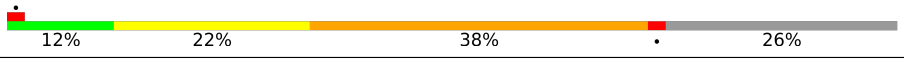
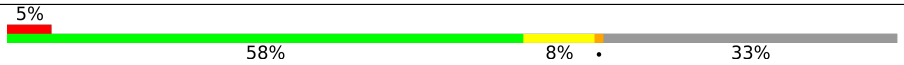
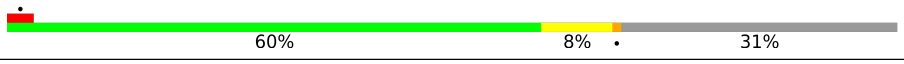
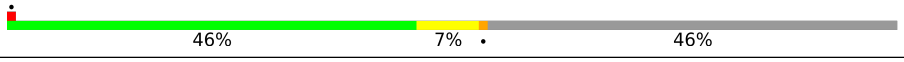
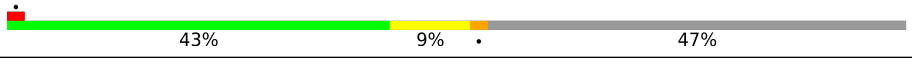
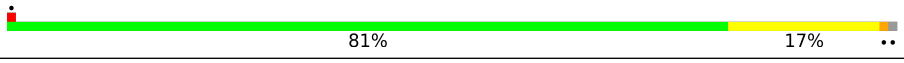
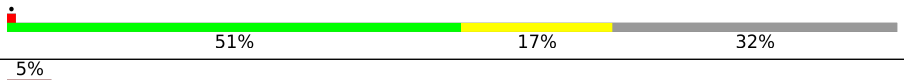
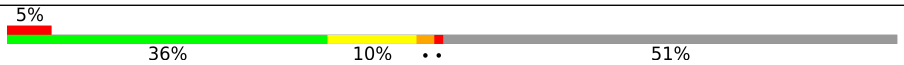
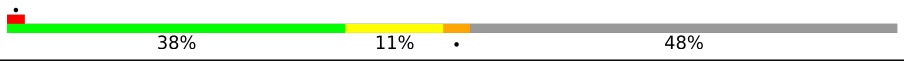
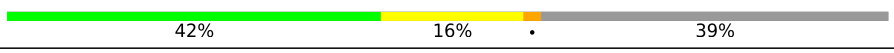
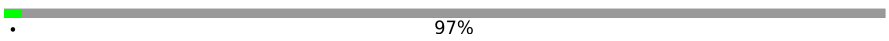
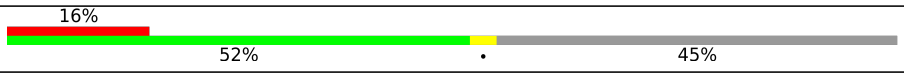
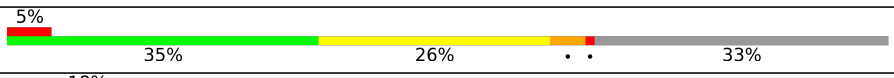
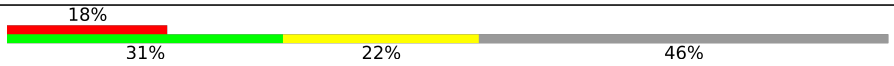
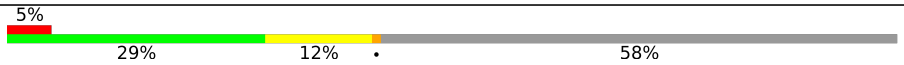
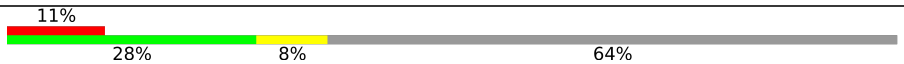
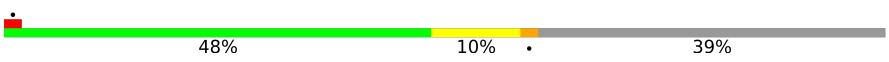
Mol	Chain	Length	Quality of chain
8	G	174	
9	H	188	
10	I	855	
11	J	848	
12	K	225	
13	L	802	
14	M	243	
15	N	144	
16	O	420	
17	P	229	
18	Q	1485	
19	R	536	
20	S	166	
21	T	514	
22	U	2752	
23	V	908	
24	W	579	
25	Y	1220	
26	Z	758	
27	2	184	
28	z	112	
29	b	240	
29	i	240	
30	y	301	
31	a	126	

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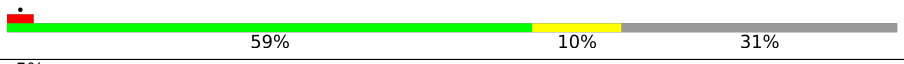
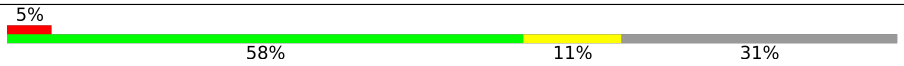
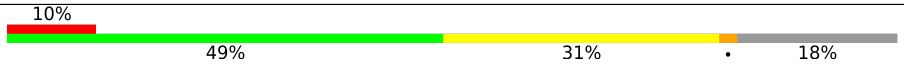
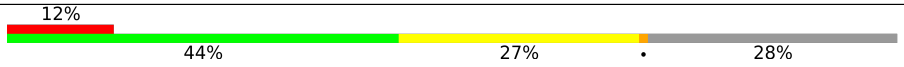
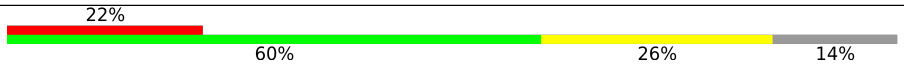
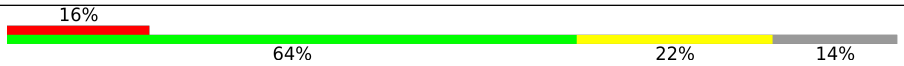
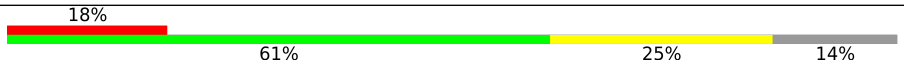
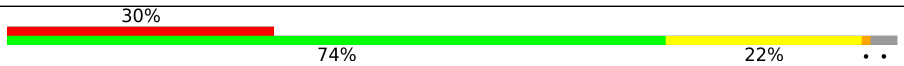
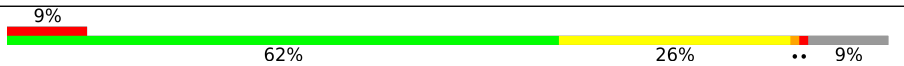
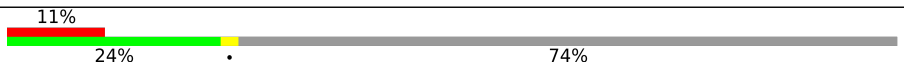
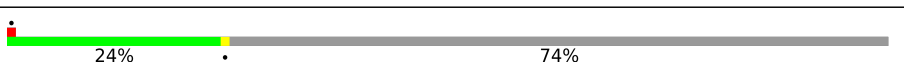
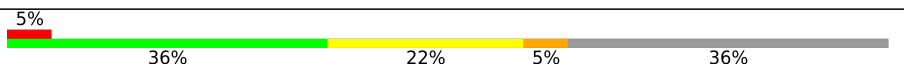
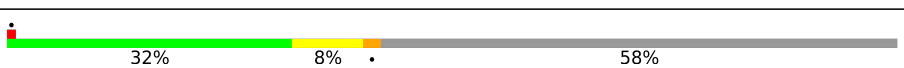
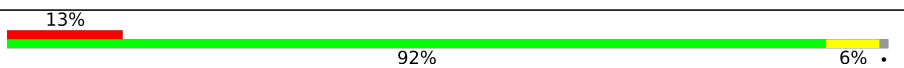
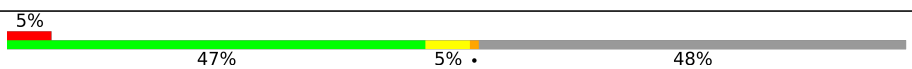
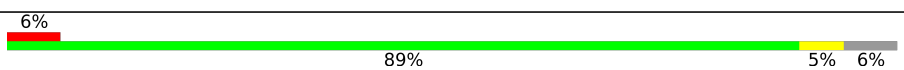
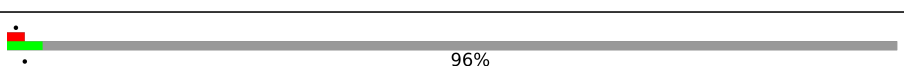
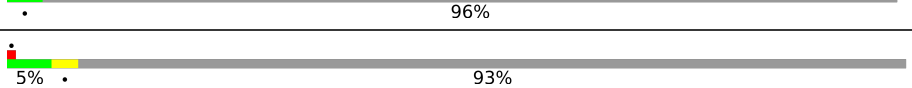
Mol	Chain	Length	Quality of chain
31	h	126	
32	c	119	
32	j	119	
33	d	118	
33	k	118	
34	f	86	
34	m	86	
35	e	92	
35	l	92	
36	g	76	
36	n	76	
37	q	504	
37	r	504	
37	s	504	
37	t	504	
38	o	255	
39	p	225	
40	1	586	
41	v	146	
42	w	174	
43	u	411	
44	x	703	
45	3	415	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
46	IHP	A	3000	-	-	X	-

2 Entry composition

There are 50 unique types of molecules in this entry. The entry contains 106538 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Pre-mRNA-processing-splicing factor 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2253	17748	11367	3144	3167	70	0	0

- Molecule 2 is a RNA chain called U5 snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	B	84	1768	792	295	597	84	0	0

- Molecule 3 is a protein called 116 kDa U5 small nuclear ribonucleoprotein component.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	862	6787	4339	1136	1281	31	0	0

- Molecule 4 is a protein called U5 small nuclear ribonucleoprotein 200 kDa helicase.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
4	D	1722	8530	5086	1722	1722	0	0

- Molecule 5 is a protein called U5 small nuclear ribonucleoprotein 40 kDa protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	299	2338	1470	410	445	13	0	0

- Molecule 6 is a RNA chain called U6 snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	F	97	2075	928	381	669	97	0	0

- Molecule 7 is a RNA chain called Pre-mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	4	13	Total	C	N	O	P	0	0
			276	123	50	90	13		

- Molecule 8 is a RNA chain called Pre-mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	G	82	Total	C	N	O	P	0	0
			1510	666	210	552	82		

- Molecule 9 is a RNA chain called U2 snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	H	140	Total	C	N	O	P	0	0
			2966	1326	510	990	140		

- Molecule 10 is a protein called Pre-mRNA-splicing factor SYF1.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	I	618	Total	C	N	O	S	0	0
			3857	2389	722	735	11		

- Molecule 11 is a protein called Crooked neck-like protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	J	569	Total	C	N	O	S	0	0
			3819	2379	718	716	6		

- Molecule 12 is a protein called Pre-mRNA-splicing factor SPF27.

Mol	Chain	Residues	Atoms				AltConf	Trace
12	K	155	Total	C	N	O	0	0
			772	462	155	155		

- Molecule 13 is a protein called Cell division cycle 5-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	L	437	Total	C	N	O	S	0	0
			3015	1859	584	565	7		

- Molecule 14 is a protein called Pre-mRNA-splicing factor SYF2.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	M	130	Total	C	N	O	S	0	0
			1098	684	204	208	2		

- Molecule 15 is a protein called Protein BUD31 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	N	143	Total	C	N	O	S	0	0
			1184	746	217	209	12		

- Molecule 16 is a protein called Pre-mRNA-splicing factor RBM22.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	O	285	Total	C	N	O	S	0	0
			2296	1442	408	426	20		

- Molecule 17 is a protein called Spliceosome-associated protein CWC15 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	P	113	Total	C	N	O	S	0	0
			953	583	189	179	2		

- Molecule 18 is a protein called RNA helicase aquarius.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	Q	1322	Total	C	N	O	4	0
			6562	3918	1322	1322		

- Molecule 19 is a protein called SNW domain-containing protein 1.

Mol	Chain	Residues	Atoms						AltConf	Trace
19	R	280	Total	C	N	O	P	S	0	0
			2243	1401	411	416	2	13		

- Molecule 20 is a protein called Peptidyl-prolyl cis-trans isomerase-like 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	S	159	Total	C	N	O	S	0	0
			1236	787	215	227	7		

- Molecule 21 is a protein called Pleiotropic regulator 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	T	312	Total	C	N	O	S	0	0
			2454	1550	446	450	8		

- Molecule 22 is a protein called Serine/arginine repetitive matrix protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	U	72	Total	C	N	O	S	0	0
			422	257	82	82	1		

- Molecule 23 is a protein called Pre-mRNA-splicing factor CWC22 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	V	452	Total	C	N	O	S	0	0
			2632	1639	492	495	6		

- Molecule 24 is a protein called Pre-mRNA-processing factor 17.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	W	509	Total	C	N	O	S	0	0
			4129	2628	715	762	24		

- Molecule 25 is a protein called ATP-dependent RNA helicase DHX8.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Y	667	Total	C	N	O	S	4	0
			3431	2057	680	693	1		

- Molecule 26 is a protein called Cactin.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Z	122	Total	C	N	O	S	0	0
			1084	712	197	173	2		

- Molecule 27 is a protein called PRKR-interacting protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	2	123	Total	C	N	O	S	0	0
			1013	635	193	180	5		

- Molecule 28 is a protein called Protein FAM32A.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	z	60	Total	C	N	O	S	0	0
			496	306	96	92	2		

- Molecule 29 is a protein called Small nuclear ribonucleoprotein-associated proteins B and B'.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	b	102	Total	C	N	O	S	0	0
			786	492	148	139	7		
29	i	86	Total	C	N	O	S	0	0
			690	434	126	123	7		

- Molecule 30 is a protein called Peptidyl-prolyl cis-trans isomerase E.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	y	79	Total	C	N	O	0	0
			390	232	79	79		

- Molecule 31 is a protein called Small nuclear ribonucleoprotein Sm D3.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	a	77	Total	C	N	O	S	0	0
			609	381	108	115	5		
31	h	81	Total	C	N	O	S	0	0
			633	397	112	118	6		

- Molecule 32 is a protein called Small nuclear ribonucleoprotein Sm D1.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	c	82	Total	C	N	O	S	0	0
			649	413	113	119	4		
32	j	82	Total	C	N	O	S	0	0
			649	413	113	119	4		

- Molecule 33 is a protein called Small nuclear ribonucleoprotein Sm D2.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	d	97	Total	C	N	O	S	0	0
			776	488	143	140	5		
33	k	85	Total	C	N	O	S	0	0
			688	432	125	126	5		

- Molecule 34 is a protein called Small nuclear ribonucleoprotein F.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	f	74	Total	C	N	O	S	0	0
			576	373	95	103	5		
34	m	73	Total	C	N	O	S	0	0
			566	367	93	101	5		

- Molecule 35 is a protein called Small nuclear ribonucleoprotein E.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	e	79	Total	C	N	O	S	0	0
			652	412	116	119	5		
35	l	79	Total	C	N	O	S	0	0
			652	412	116	119	5		

- Molecule 36 is a protein called Small nuclear ribonucleoprotein G.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	g	74	Total	C	N	O	S	0	0
			577	364	104	103	6		
36	n	69	Total	C	N	O	S	0	0
			542	345	97	94	6		

- Molecule 37 is a protein called Pre-mRNA-processing factor 19.

Mol	Chain	Residues	Atoms				AltConf	Trace
37	q	132	Total	C	N	O	0	0
			659	395	132	132		
37	r	131	Total	C	N	O	0	0
			654	392	131	131		
37	s	132	Total	C	N	O	0	0
			659	395	132	132		
37	t	131	Total	C	N	O	0	0
			654	392	131	131		

- Molecule 38 is a protein called U2 small nuclear ribonucleoprotein A'.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	o	162	Total	C	N	O	S	0	0
			1282	820	219	240	3		

- Molecule 39 is a protein called U2 small nuclear ribonucleoprotein B".

Mol	Chain	Residues	Atoms					AltConf	Trace
39	p	94	Total	C	N	O	S	0	0
			760	488	135	132	5		

- Molecule 40 is a protein called Pre-mRNA-splicing factor SLU7.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	1	269	Total	C	N	O	S	0	0
			2209	1389	394	418	8		

- Molecule 41 is a protein called Protein mago nashi homolog.

Mol	Chain	Residues	Atoms				AltConf	Trace
41	v	144	Total	C	N	O	0	0
			711	423	144	144		

- Molecule 42 is a protein called RNA-binding protein 8A.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	w	91	Total	C	N	O	0	0
			445	263	91	91		

- Molecule 43 is a protein called Eukaryotic initiation factor 4A-III.

Mol	Chain	Residues	Atoms				AltConf	Trace
43	u	386	Total	C	N	O	0	0
			1907	1135	386	386		

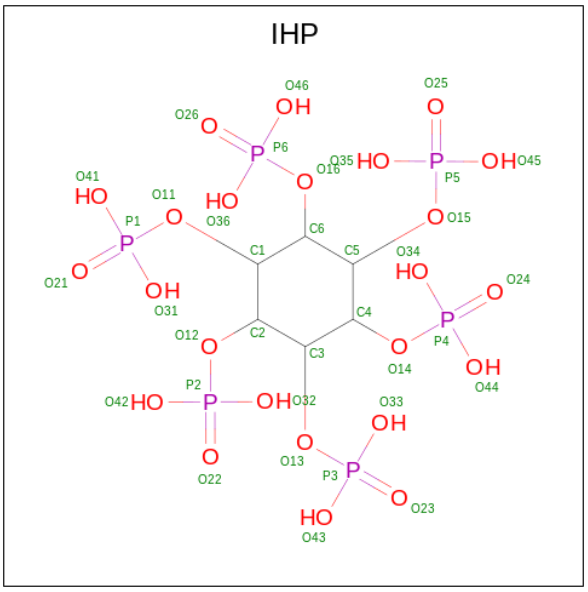
- Molecule 44 is a protein called Protein CASC3.

Mol	Chain	Residues	Atoms				AltConf	Trace
44	x	25	Total	C	N	O	0	0
			124	74	25	25		

- Molecule 45 is a protein called NF-kappa-B-activating protein.

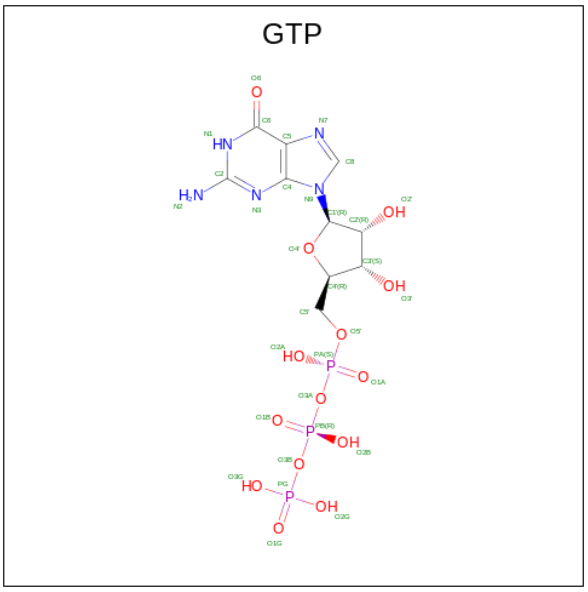
Mol	Chain	Residues	Atoms					AltConf	Trace
45	3	30	Total	C	N	O	S	0	0
			230	140	43	45	2		

- Molecule 46 is INOSITOL HEXAKISPHOSPHATE (CCD ID: IHP) (formula: $C_6H_{18}O_{24}P_6$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
46	A	1	36	6	24	6	0

- Molecule 47 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$) (labeled as "Ligand of Interest" by depositor).



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

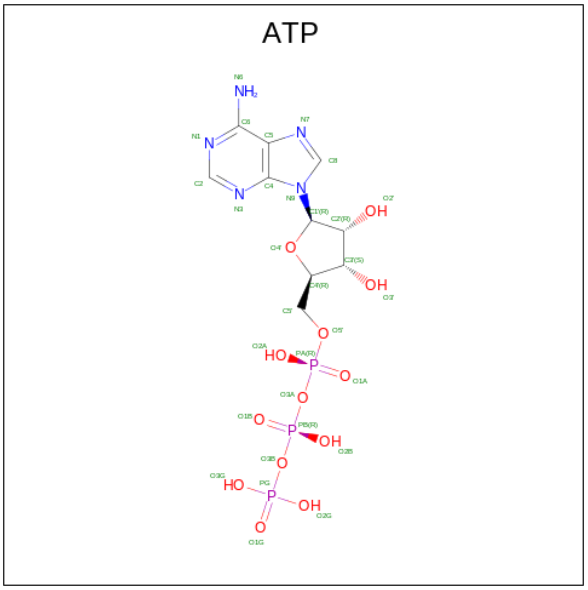
- Molecule 48 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	AltConf
48	C	1	Total Mg 1 1	0
48	F	6	Total Mg 6 6	0
48	Q	2	Total Mg 2 2	0

- Molecule 49 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	AltConf
49	N	3	Total Zn 3 3	0
49	O	3	Total Zn 3 3	0
49	1	1	Total Zn 1 1	0

- Molecule 50 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



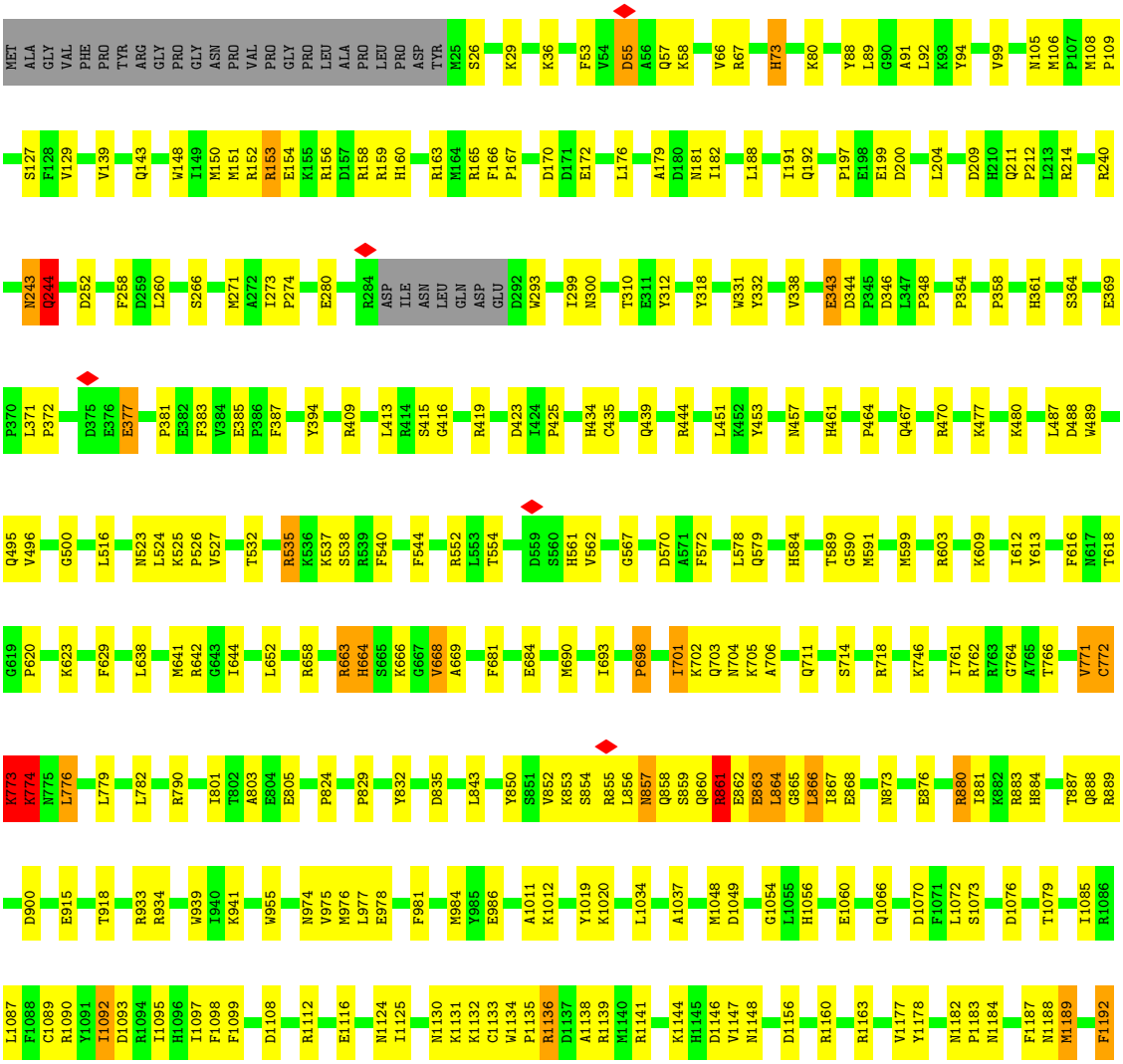
Mol	Chain	Residues	Atoms	AltConf
50	Q	1	Total C N O P 31 10 5 13 3	0

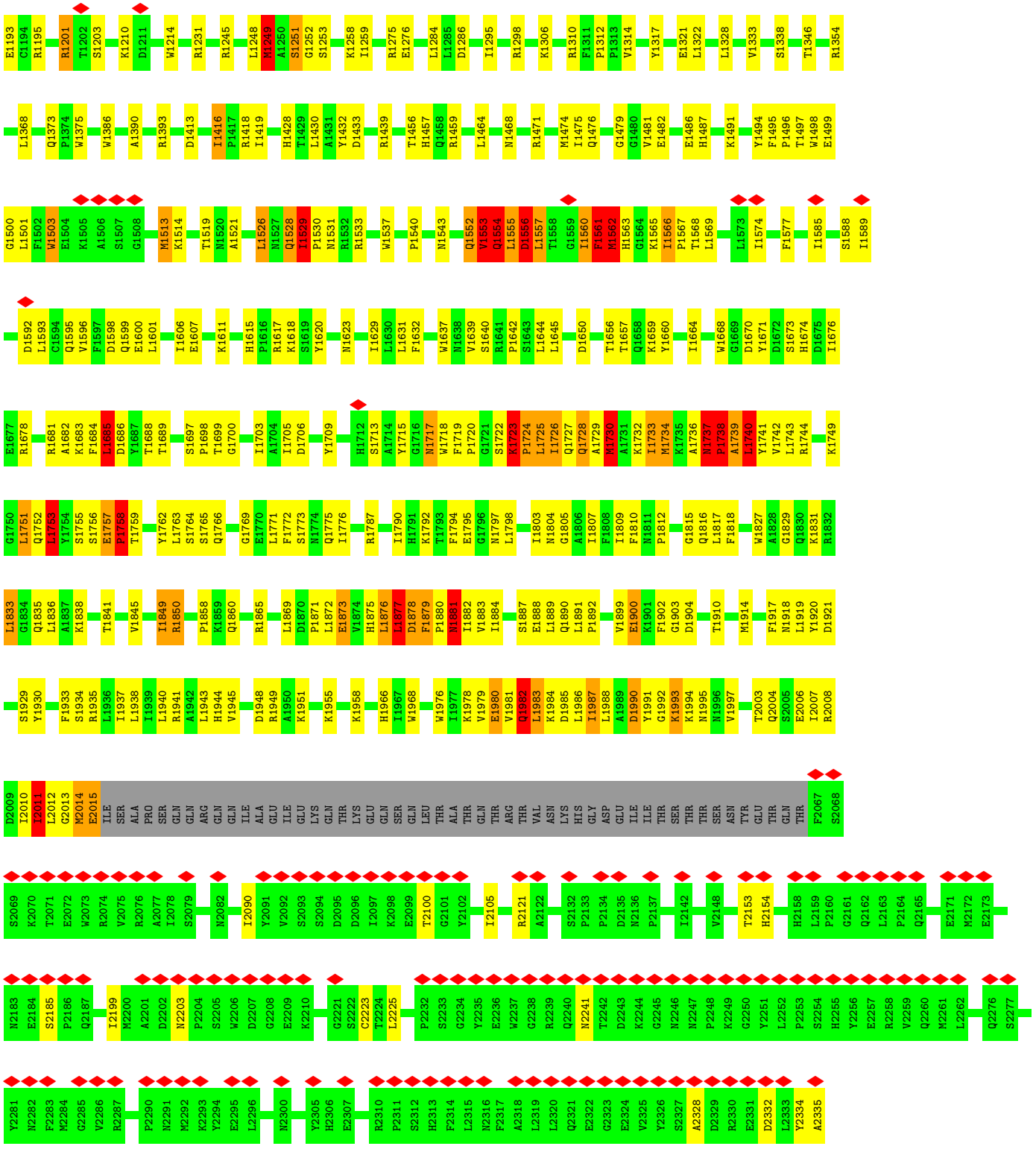
3 Residue-property plots (i)

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

• Molecule 1: Pre-mRNA-processing-splicing factor 8

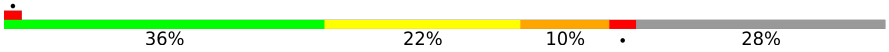
Chain A:

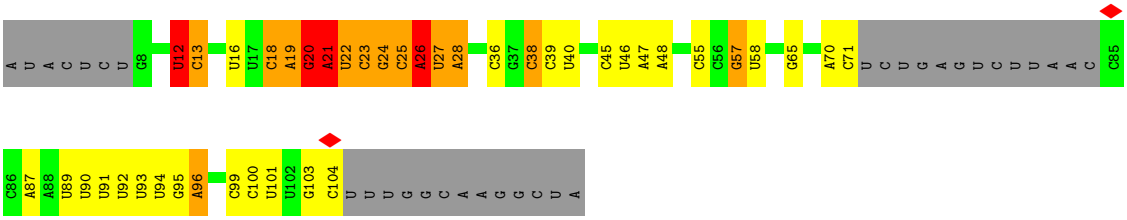




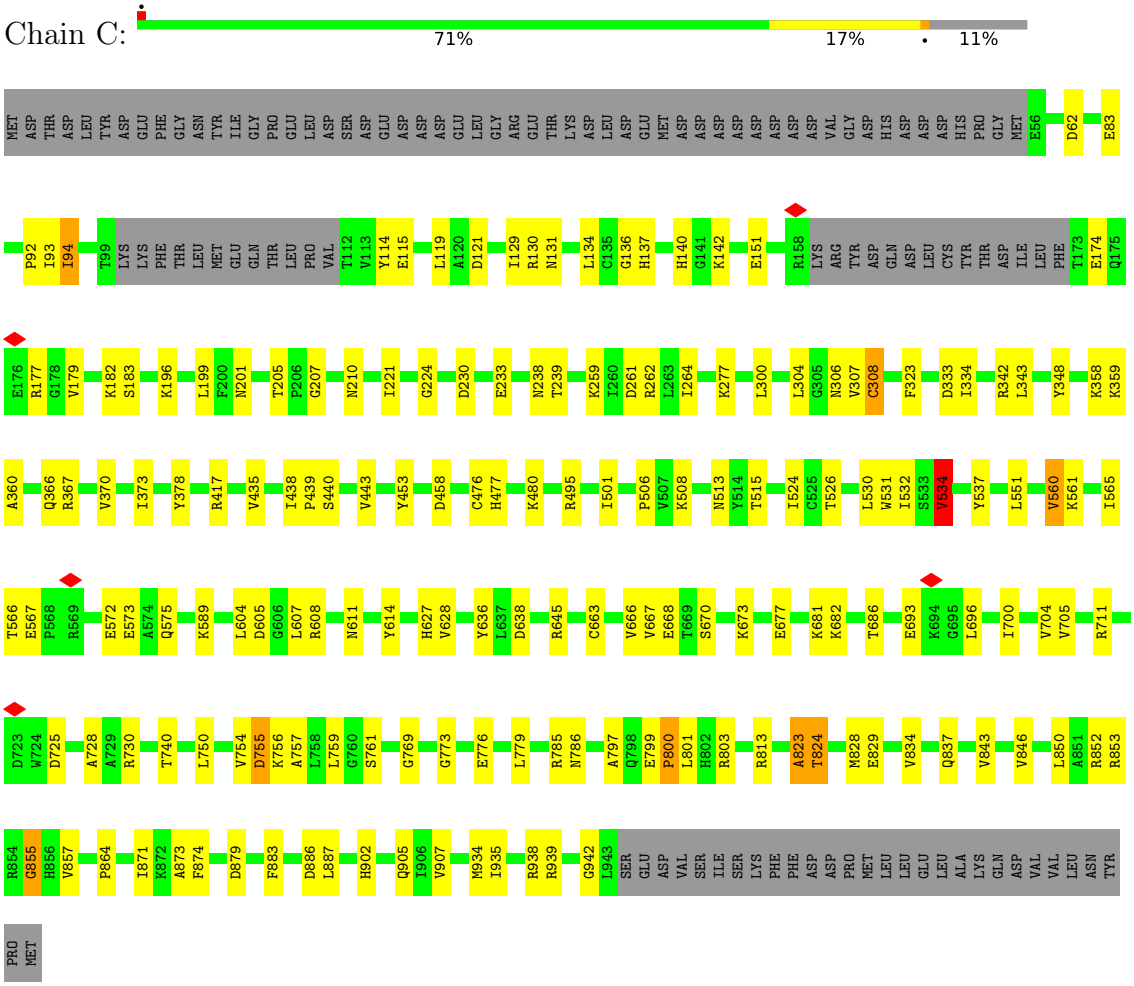
• Molecule 2: U5 snRNA

Chain B:

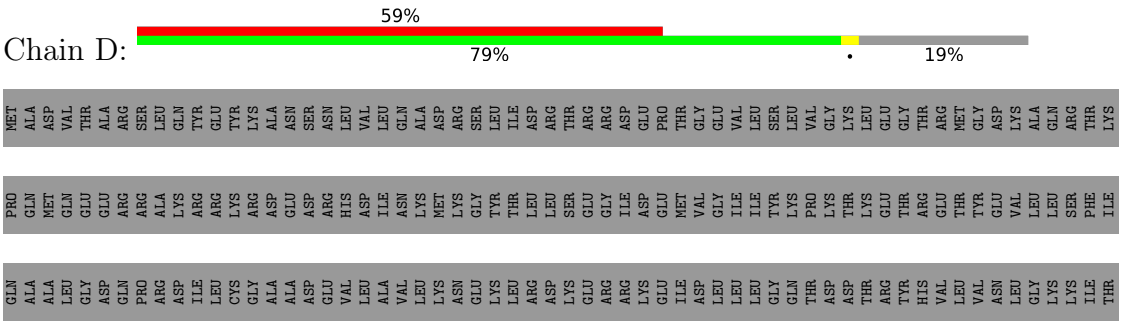


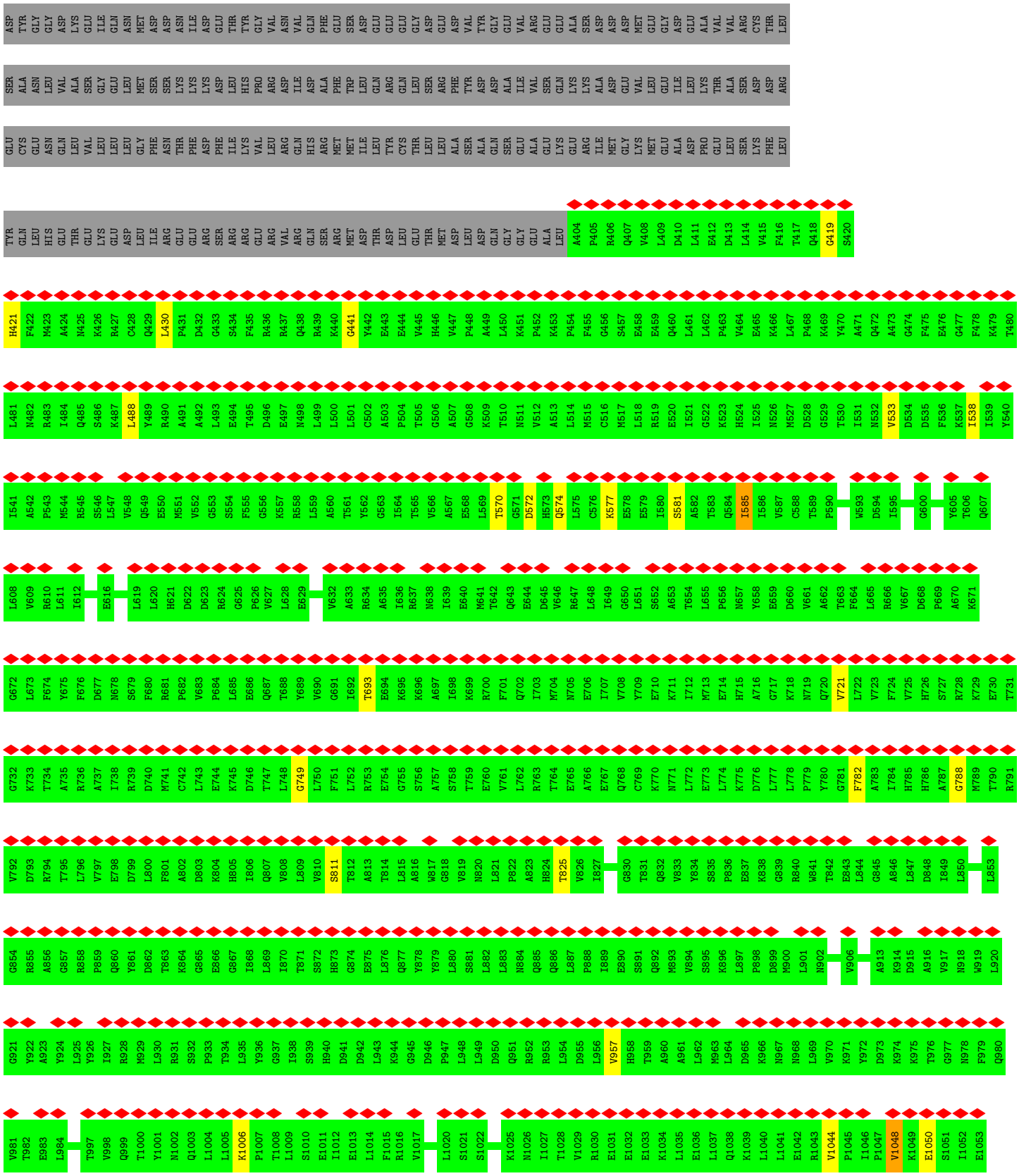


• Molecule 3: 116 kDa U5 small nuclear ribonucleoprotein component



• Molecule 4: U5 small nuclear ribonucleoprotein 200 kDa helicase

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SER ALA ASN LEU VAL ALA SER GLY GLU LEU MET SER SER LYS LYS LYS ASP LEU HIS PRO ARG ASP PHE ILE LYS VAL LEU ARG GLN GLU GLU ARG SER ARG ARG GLU ARG VAL ARG GLN SER ARG MET ASP THR ASP LEU GLU THR MET ASP LEU ASP GLN GLY GLY GLU ALA GLU LYS GLU ARG ILE MET GLY LYS MET GLU ALA ASP PRO GLU LEU SER LYS PHE LEU
GLU CYS GLU ASN GLN LEU VAL LEU LEU LEU GLY PHE ASN THR PHE ASP PHE ILE LYS VAL LEU ARG GLN GLU ARG GLU ARG GLU ARG VAL ARG GLN SER ARG MET ASP THR ASP LEU GLU THR MET ASP LEU ASP GLN GLY GLY GLU ALA GLU LYS GLU ILE MET GLY LYS MET GLU ALA ASP PRO GLU LEU SER LYS PHE LEU
TYR GLN LEU HIS GLU THR GLU LYS GLU ASP LEU ILE ARG GLU GLU ARG SER ARG ARG GLU ARG VAL ARG GLN SER ARG MET ASP THR ASP LEU GLU THR MET ASP LEU ASP GLN GLY GLY GLU ALA LEU A404 P405 R406 Q407 V408 L409 D410 L411 E412 D413 L414 V415 F416 T417 Q418 G419 S420
H421 F422 M423 A424 N425 K426 R427 C428 Q429 L430 P431 D432 G433 S434 F435 R436 R437 Q438 R439 K440 G441 Y442 E443 E444 V445 H446 V447 P448 A449 L450 K451 P452 K453 P454 F455 G456 S457 E458 E459 Q460 L461 L462 P463 V464 E465 K466 L467 P468 K469 Y470 A471 Q472 A473 G474 F475 E476 G477 F478 K479 T480
L481 N482 R483 I484 Q485 S486 K487 L488 Y489 R490 A491 A492 L493 E494 T495 D496 E497 N498 L499 L500 L501 C502 A503 P504 T505 G506 A507 G508 K509 T510 N511 V512 A513 L514 M515 C516 M517 L518 R519 E520 I521 G522 K523 H524 I525 N526 M527 D528 G529 T530 I531 N532 V533 D534 D535 F536 K537 I538 I539 Y540
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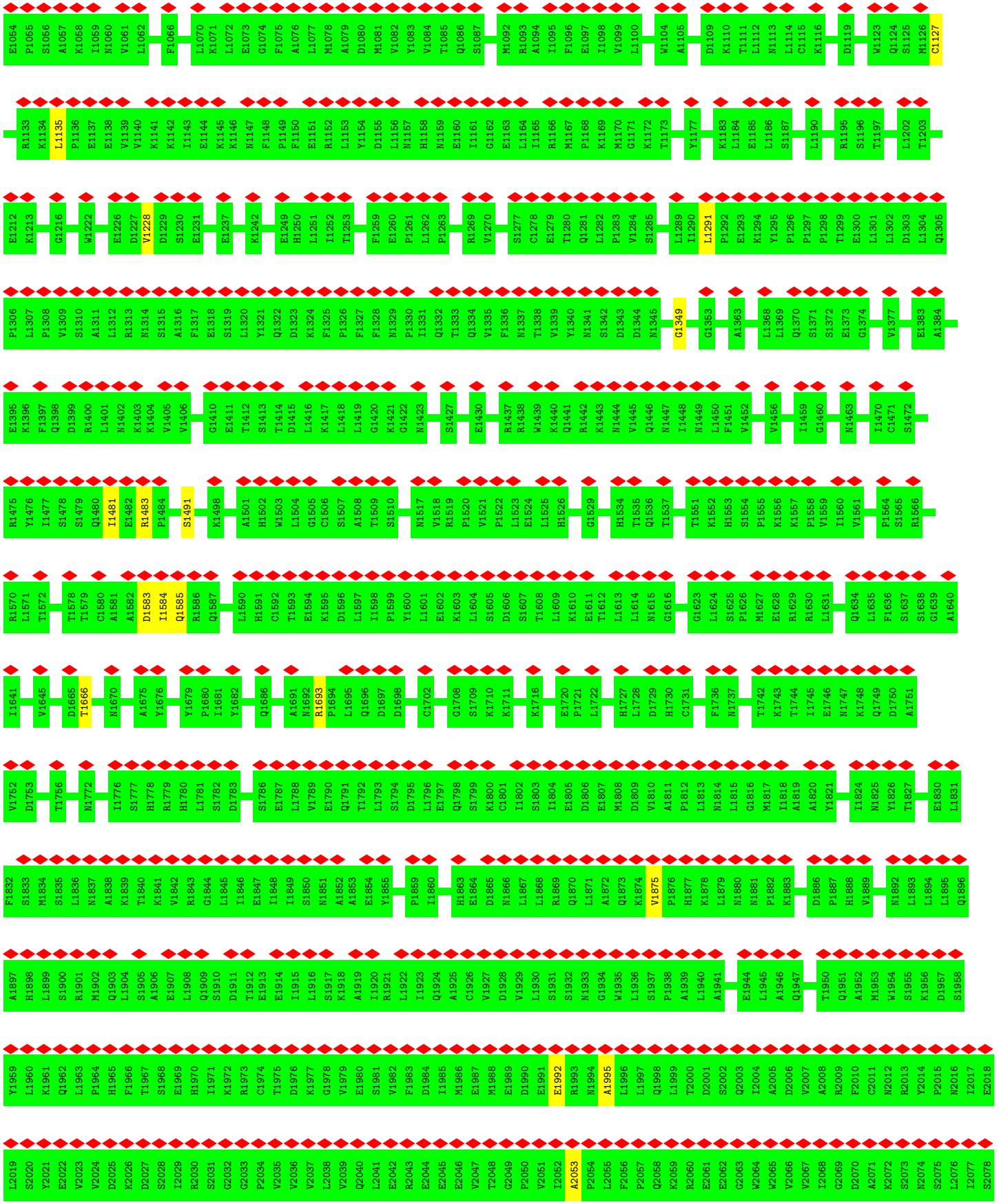
L608 V609 R610 L611 I612 E616 L619 L620 H621 D622 D623 R624 G625 P626 V627 L628 E629 V632 A633 R634 A635 I636 R637 N638 I639 E640 M641 T642 Q643 E644 D645 V646 R647 L648 I649 G650 L651 S652 A653 T654 L655 P656 N657 Y658 E659 D660 V661 A662 T663 F664 L665 R666 V667 D668 P669 A670 K671
G672 L673 F674 Y675 F676 D677 N678 S679 F680 R681 P682 V683 P684 L685 E686 Q687 T688 Y689 V690 G691 I692 T693 E694 K695 K696 A697 I698 K699 R700 F701 Q702 I703 M704 N705 E706 I707 V708 Y709 E710 K711 I712 M713 E714 H715 A716 G717 K718 N719 Q720 V721 L722 V723 F724 V725 H726 S727 R728 K729 E730 T731
G732 K733 T734 A735 R736 A737 I738 R739 D740 M741 C742 L743 E744 K745 D746 T747 L748 G749 L750 F751 L752 R753 E754 G755 S756 A757 S758 T759 E760 V761 L762 R763 T764 E765 A766 E767 Q768 C769 K770 N771 L772 E773 L774 K775 D776 L777 L778 P779 Y780 G781 F782 A783 I784 H785 H786 A787 G788 M789 T790 R791
V792 D793 R794 T795 L796 V797 E798 D799 L800 F801 A802 D803 K804 H805 I806 Q807 V808 L809 V810 S811 T812 A813 T814 L815 A816 W817 G818 V819 N820 L821 P822 A823 H824 T825 V826 I827 G830 T831 Q832 V833 Y834 S835 P836 E837 K838 G839 R840 W841 T842 E843 L844 G845 A846 L847 D848 I849 L850 L853
G854 R855 A856 C857 R858 P859 Q860 Y861 D862 T863 K864 G865 E866 G867 I868 L869 I870 T871 S872 H873 G874 E875 L876 Q877 Y878 Y879 L880 S881 L882 L883 N884 Q885 Q886 L887 P888 I889 E890 S891 Q892 M893 V894 S895 K896 L897 P898 D899 N900 L901 N902 V906 A913 K914 D915 A916 V917 N918 W919 L920
G921 Y922 A923 Y924 L925 Y926 I927 R928 M929 L930 R931 S932 P933 T934 L935 Y936 G937 I938 S939 H940 D941 D942 L943 K944 G945 D946 P947 L948 L949 D950 Q951 R952 R953 L954 D955 L956 V957 H958 T959 A960 A961 L962 M963 L964 D965 K966 N967 N968 L969 V970 K971 Y972 D973 K974 K975 T976 G977 N978 F979 Q980
V981 T982 E983 L984 T997 V998 Q999 T1000 Y1001 N1002 Q1003 L1004 L1005 K1006 P1007 T1008 L1009 S1010 E1011 I1012 E1013 L1014 F1015 R1016 V1017 L1020 S1021 S1022 K1025 N1026 I1027 T1028 V1029 R1030 E1031 E1032 E1033 K1034 L1035 E1036 L1037 Q1038 K1039 L1040 L1041 E1042 R1043 V1044 P1045 I1046 P1047 V1048 K1049 E1050 S1051 I1052 E1053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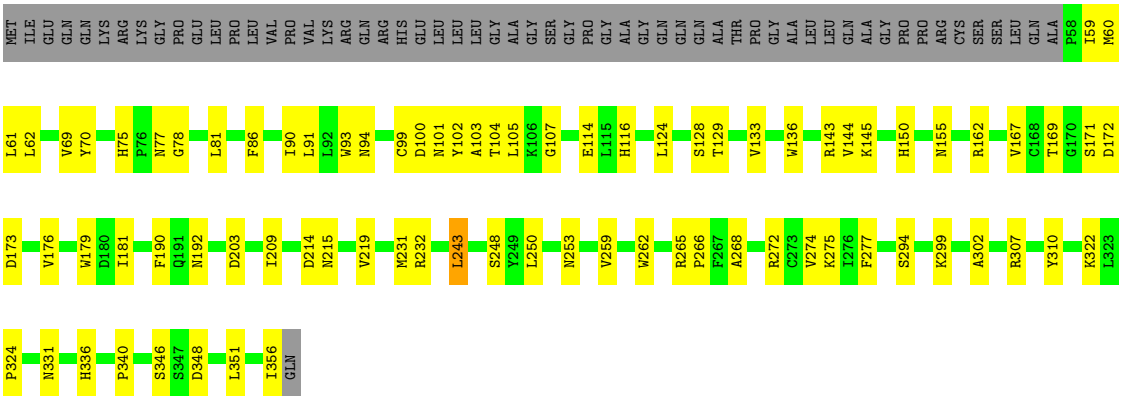
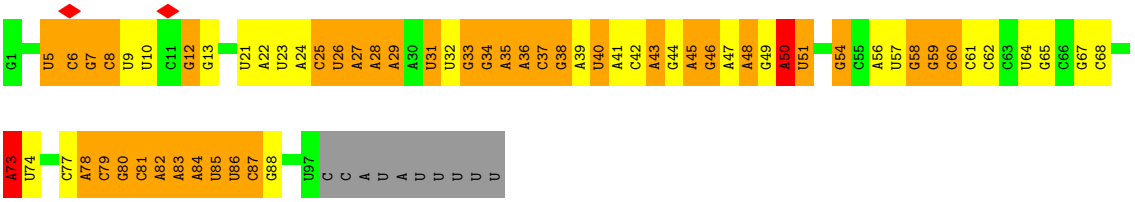
• Molecule 5: U5 small nuclear ribonucleoprotein 40 kDa protein

Chain E:



• Molecule 6: U6 snRNA

Chain F:

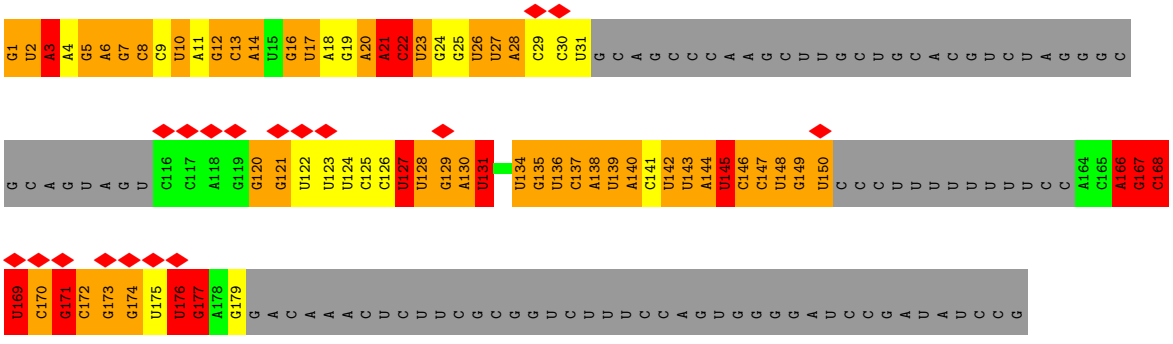


• Molecule 7: Pre-mRNA

Chain 4:

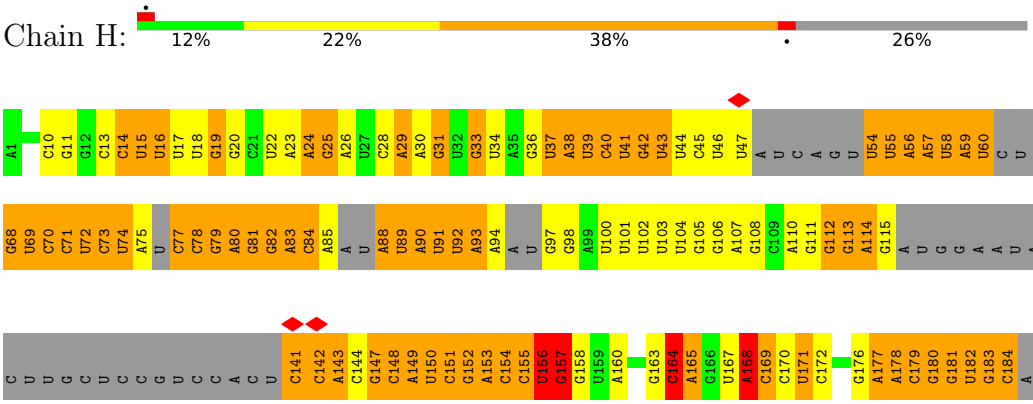
• Molecule 8: Pre-mRNA

Chain G:



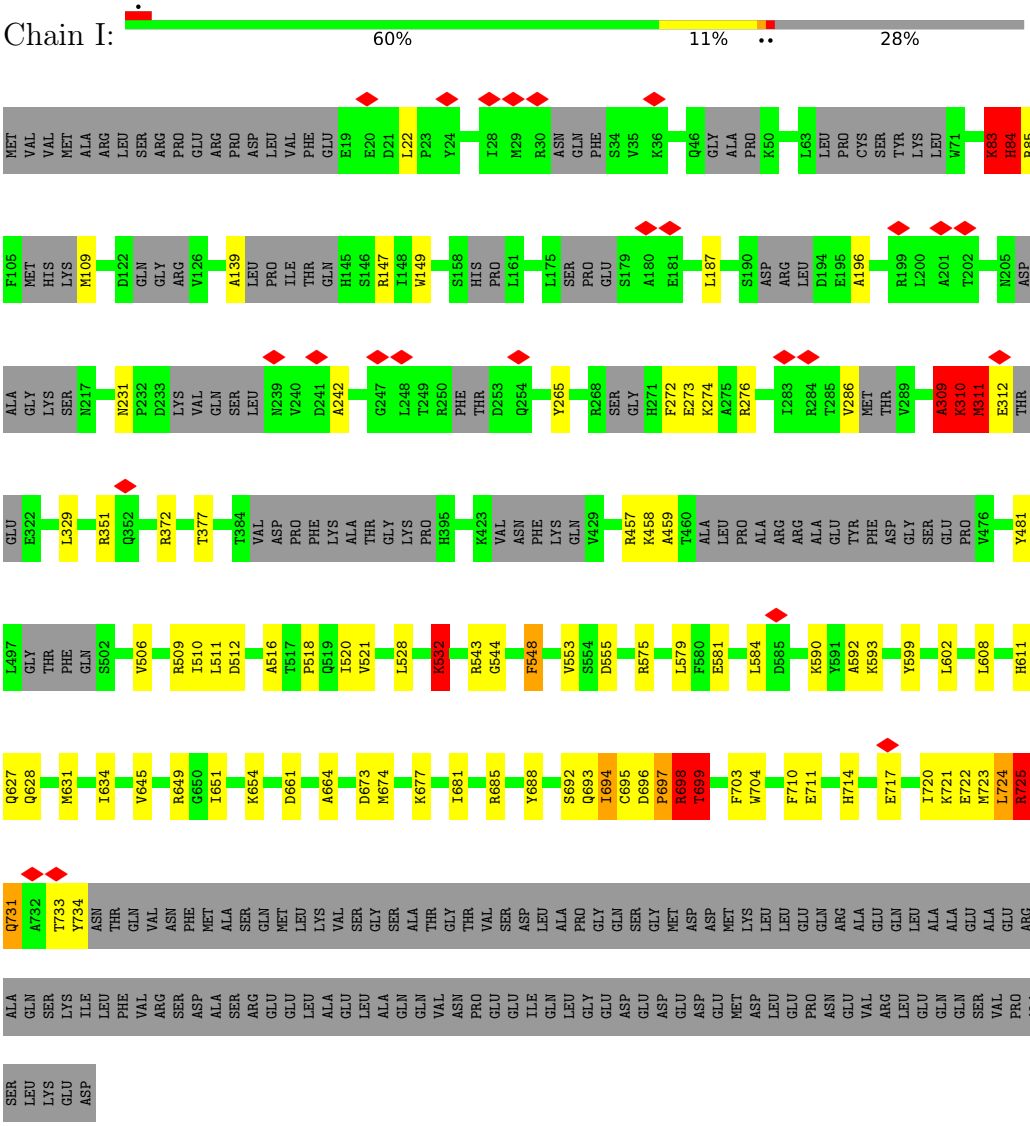
• Molecule 9: U2 snRNA

Chain H:



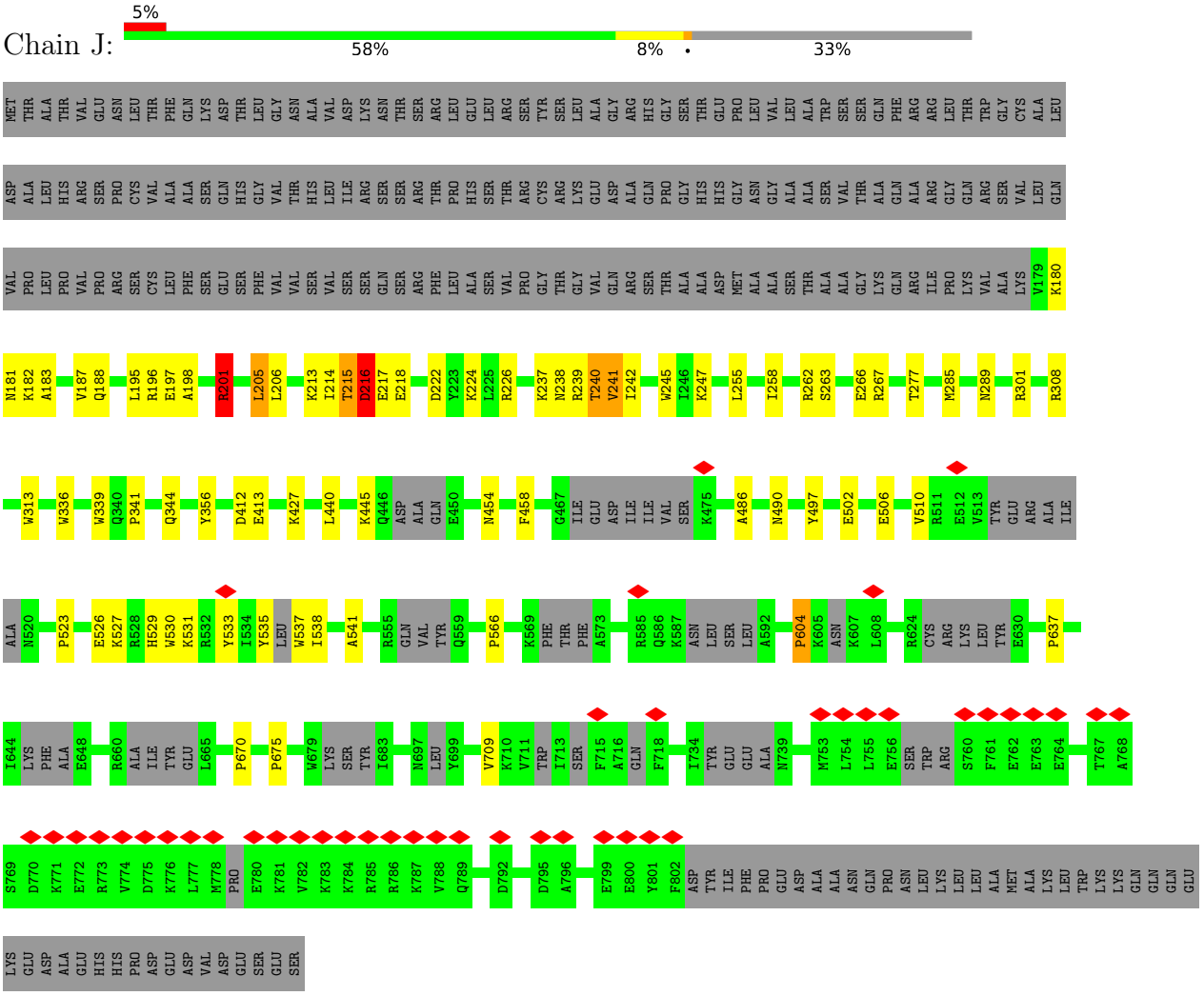
• Molecule 10: Pre-mRNA-splicing factor SYF1

Chain I:



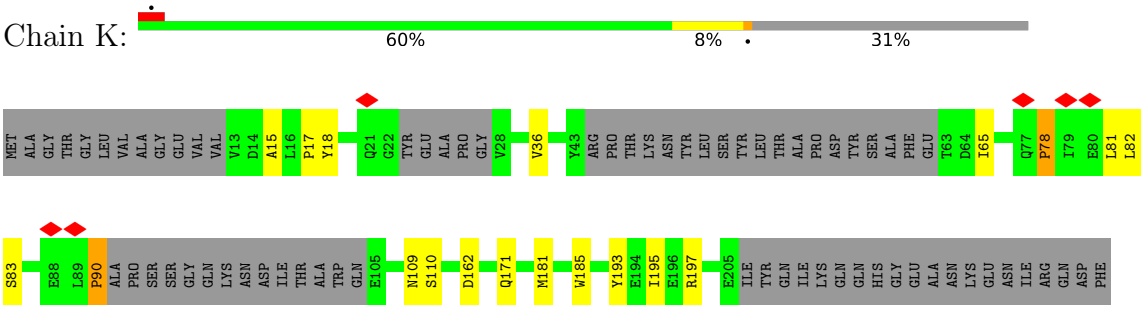
• Molecule 11: Crooked neck-like protein 1

Chain J:



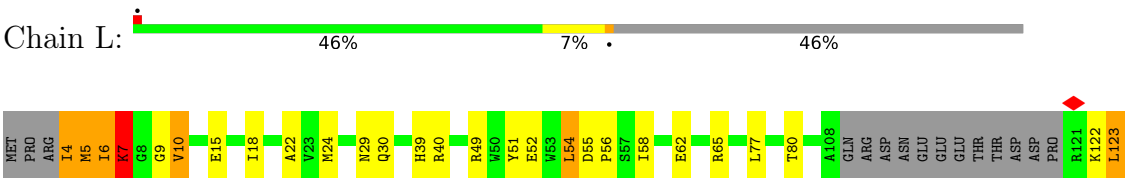
• Molecule 12: Pre-mRNA-splicing factor SPF27

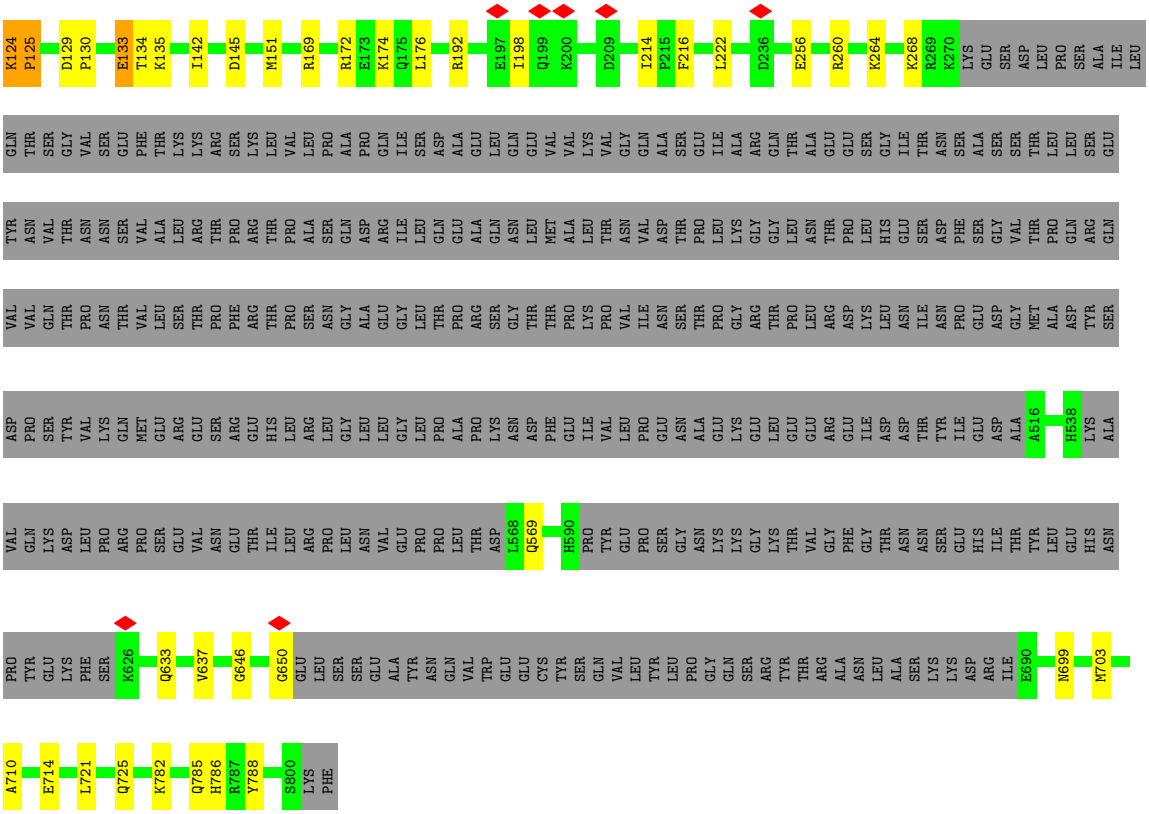
Chain K:



• Molecule 13: Cell division cycle 5-like protein

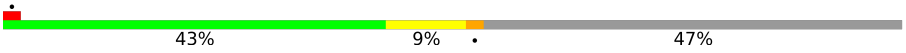
Chain L:

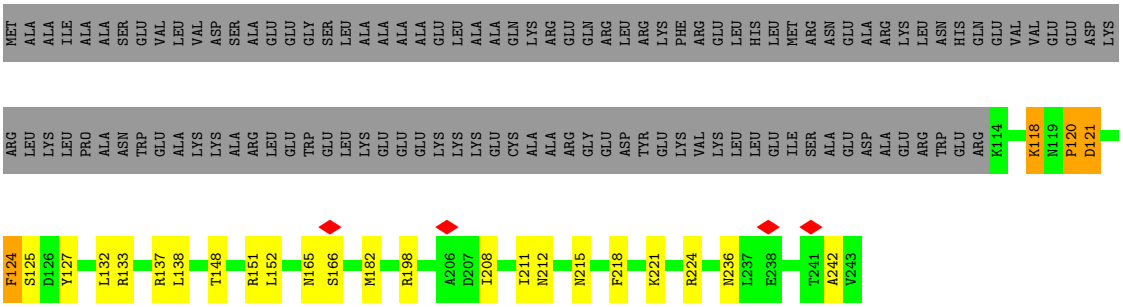




• Molecule 14: Pre-mRNA-splicing factor SYF2

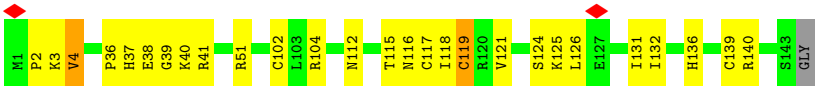
Chain M:





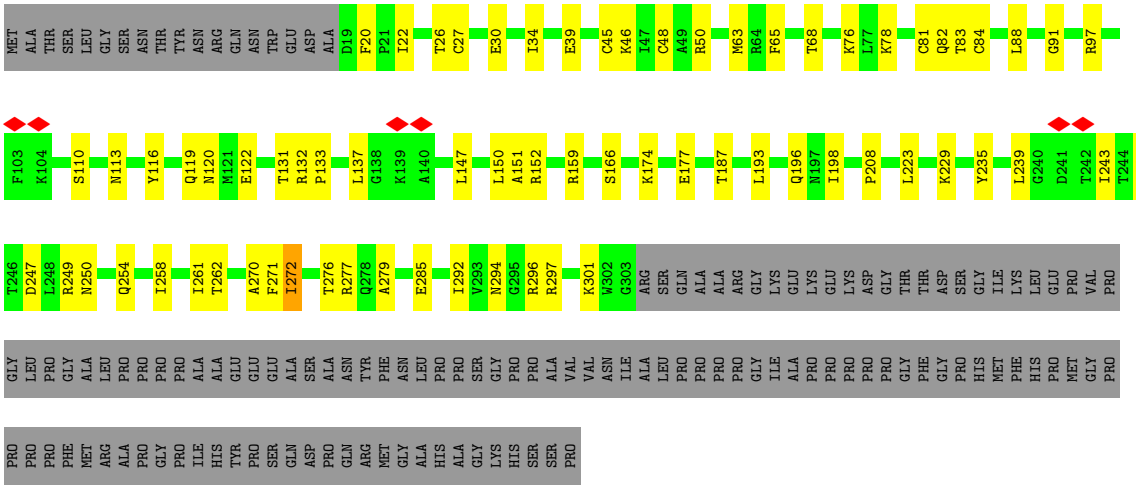
• Molecule 15: Protein BUD31 homolog

Chain N:



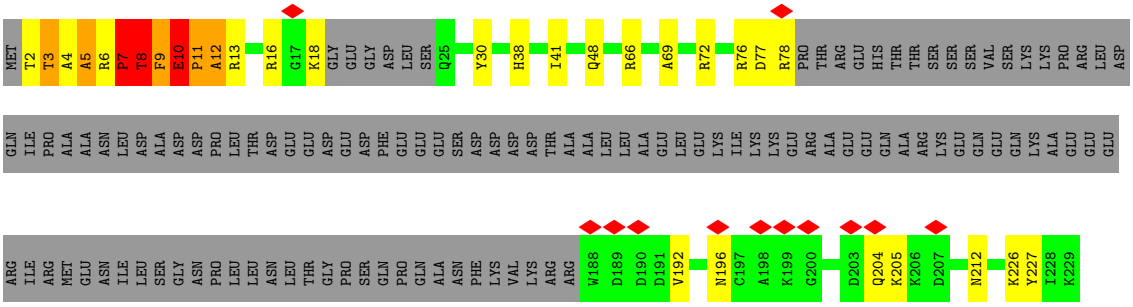
• Molecule 16: Pre-mRNA-splicing factor RBM22

Chain O:



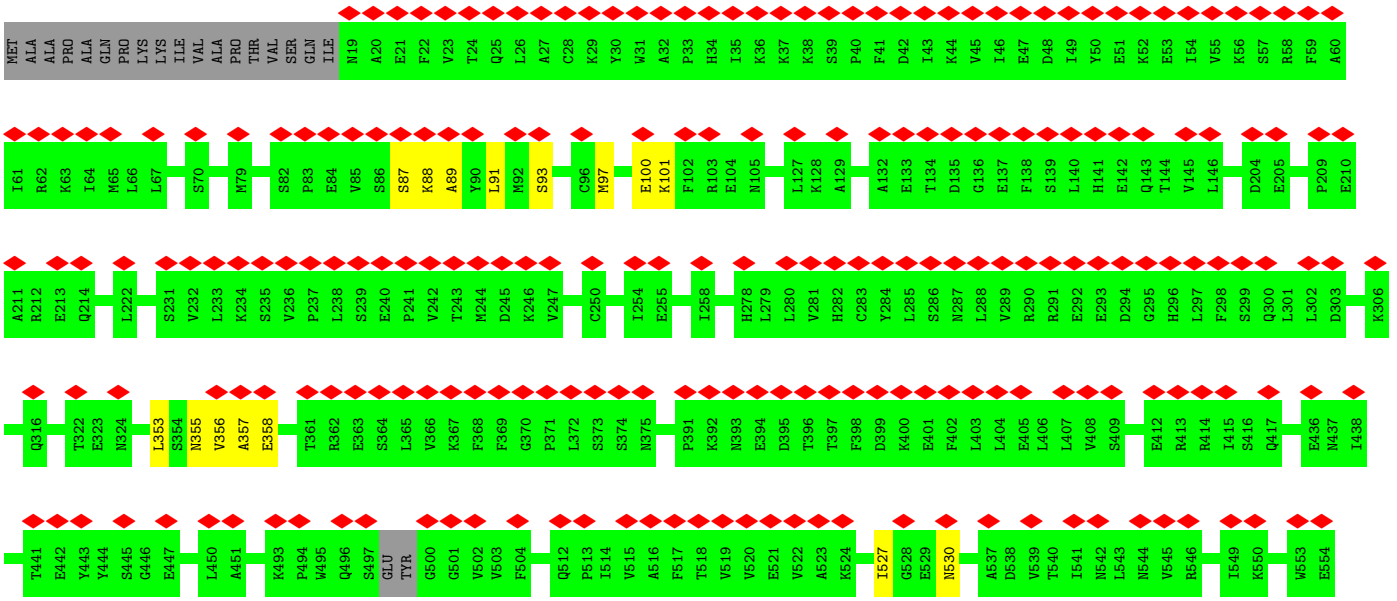
• Molecule 17: Spliceosome-associated protein CWC15 homolog

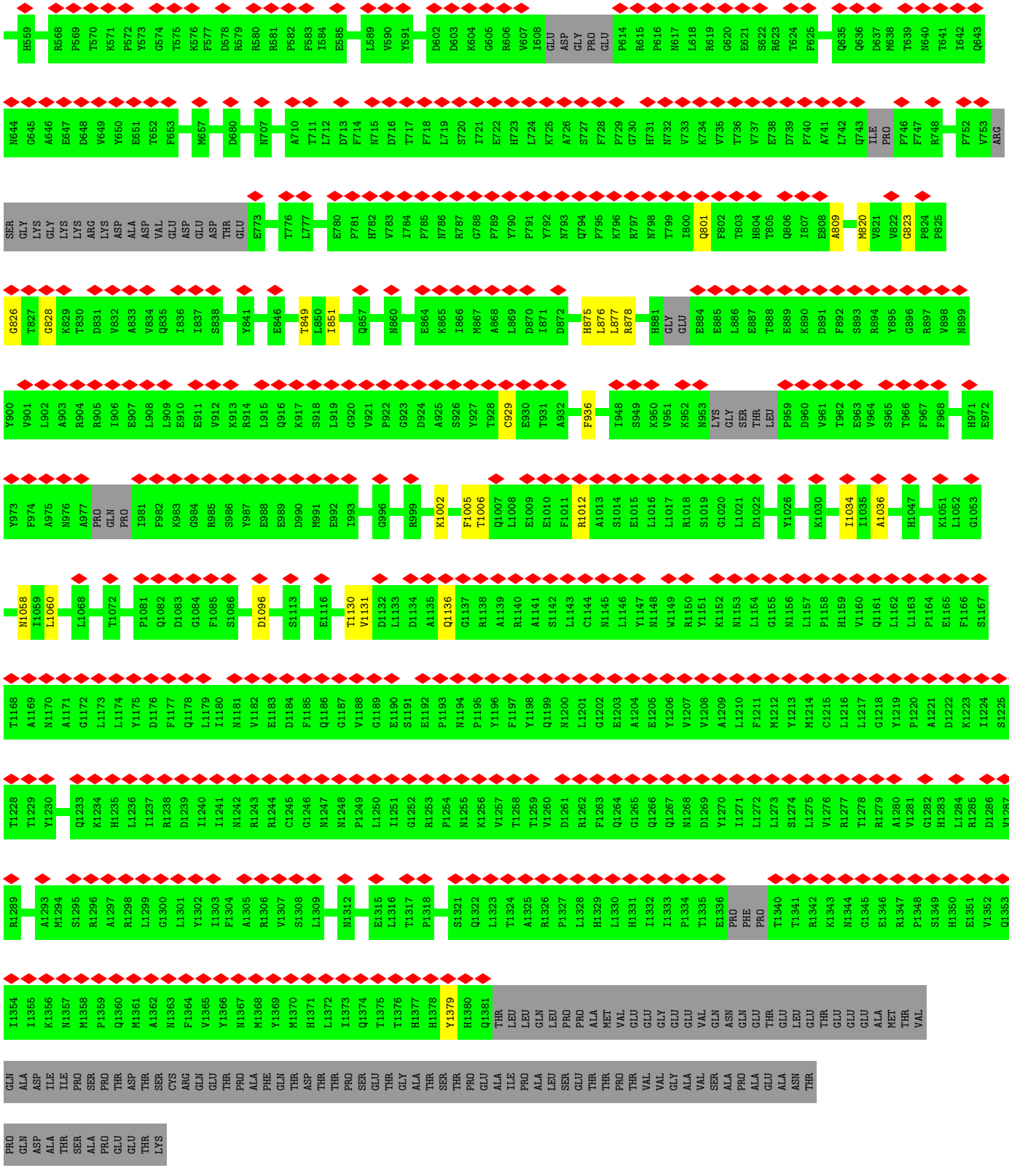
Chain P:



• Molecule 18: RNA helicase aquarius

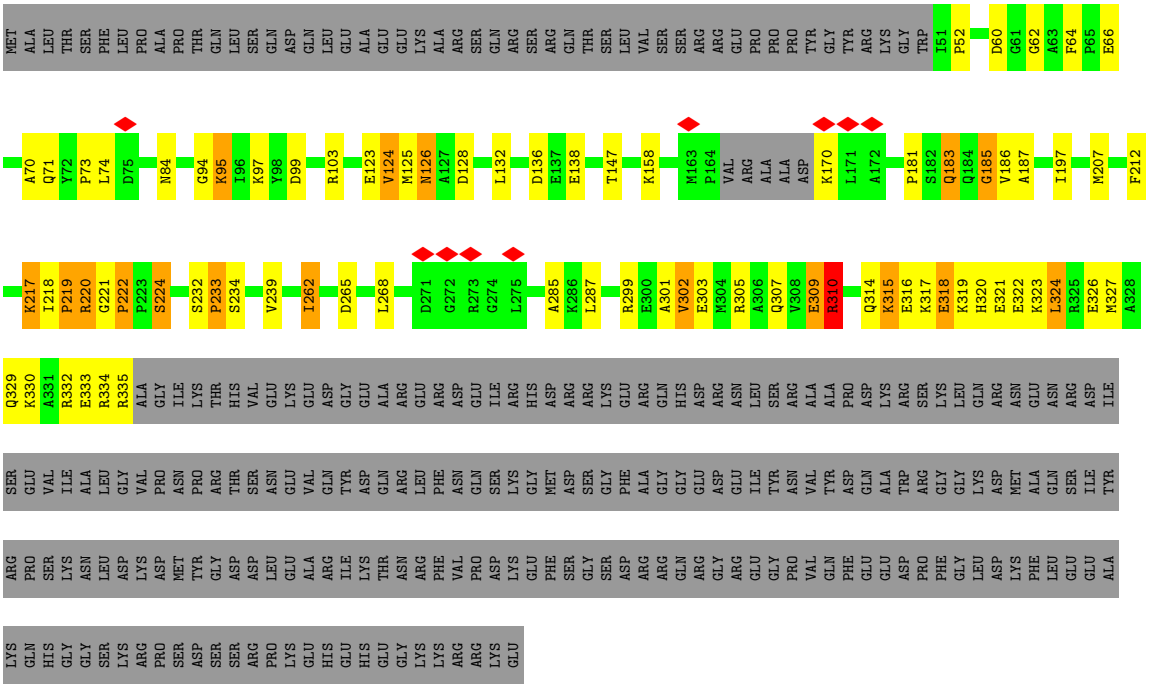
Chain Q:





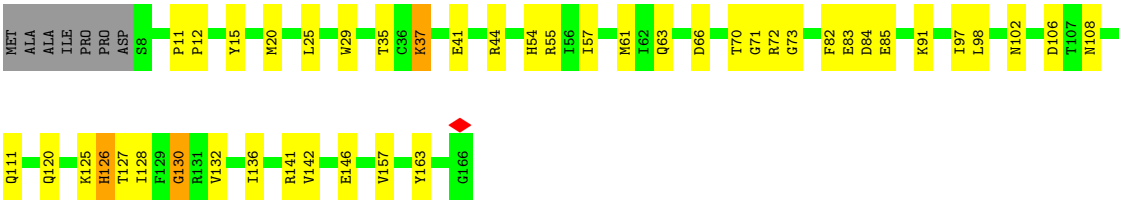
• Molecule 19: SNW domain-containing protein 1

Chain R:



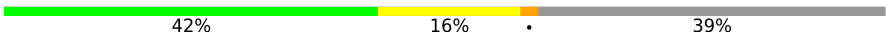
• Molecule 20: Peptidyl-prolyl cis-trans isomerase-like 1

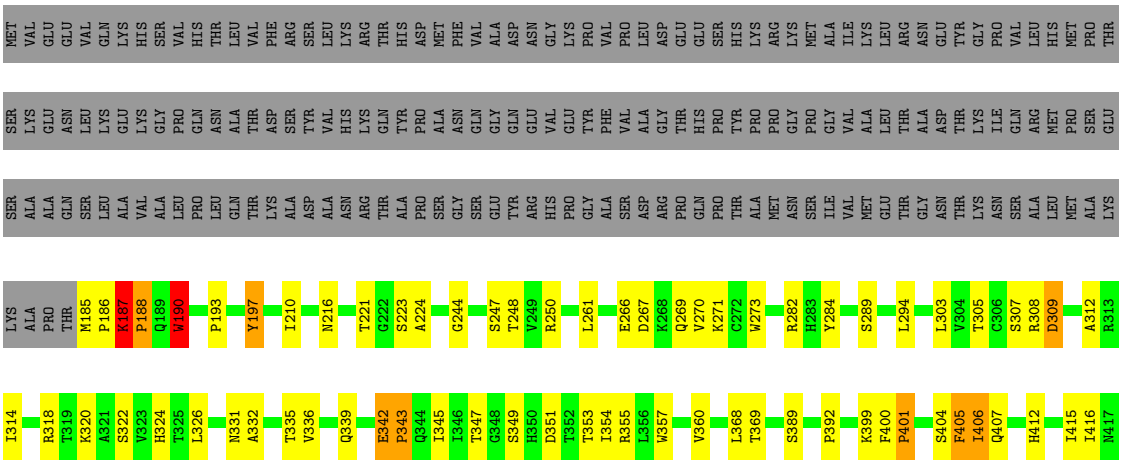
Chain S:

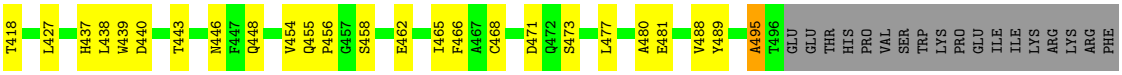


• Molecule 21: Pleiotropic regulator 1

Chain T:

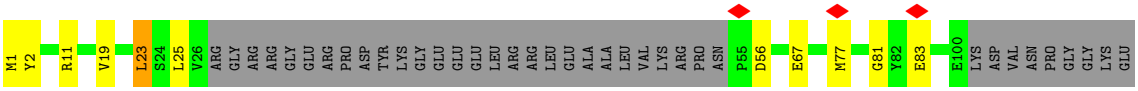


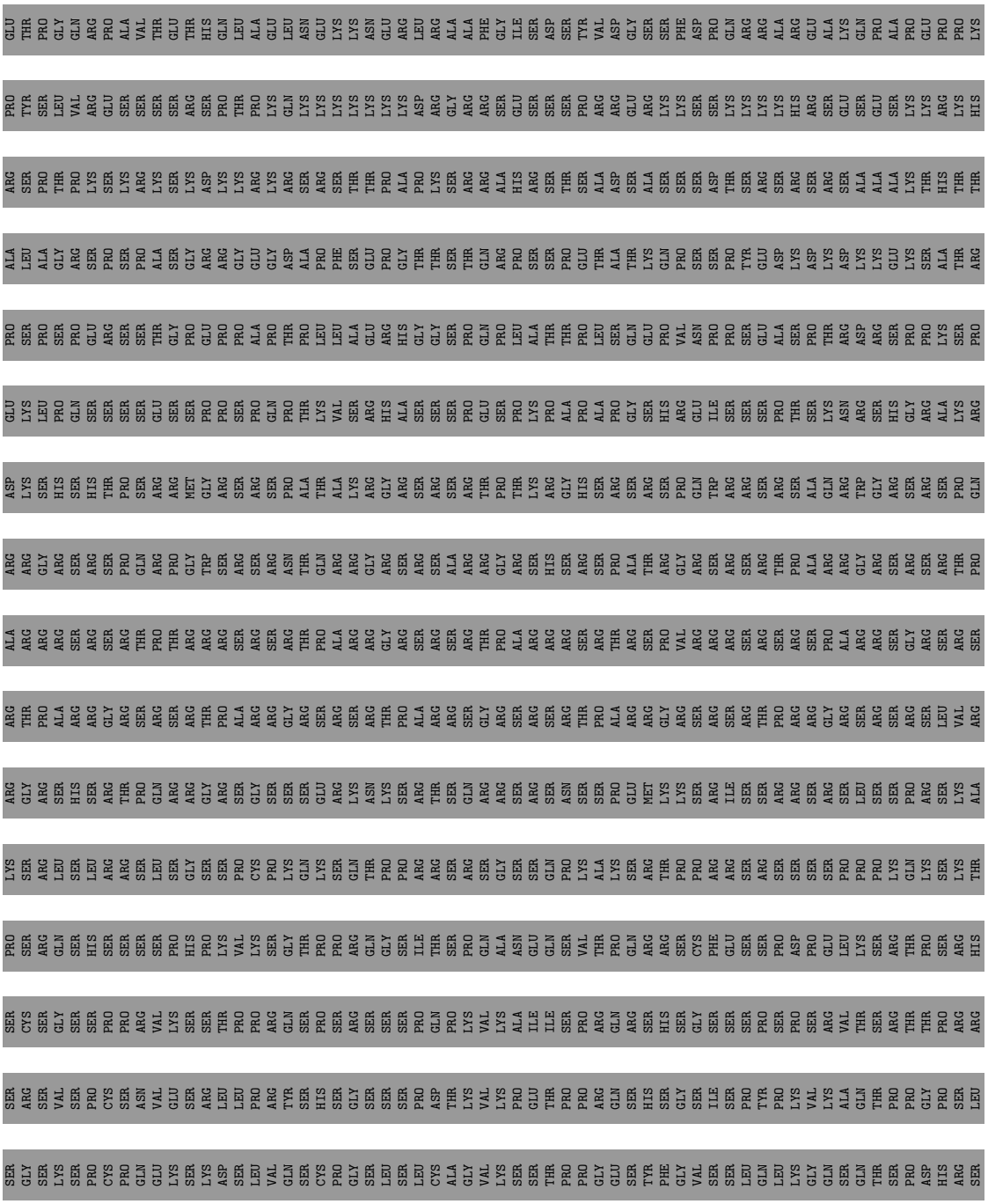




• Molecule 22: Serine/arginine repetitive matrix protein 2

Chain U:





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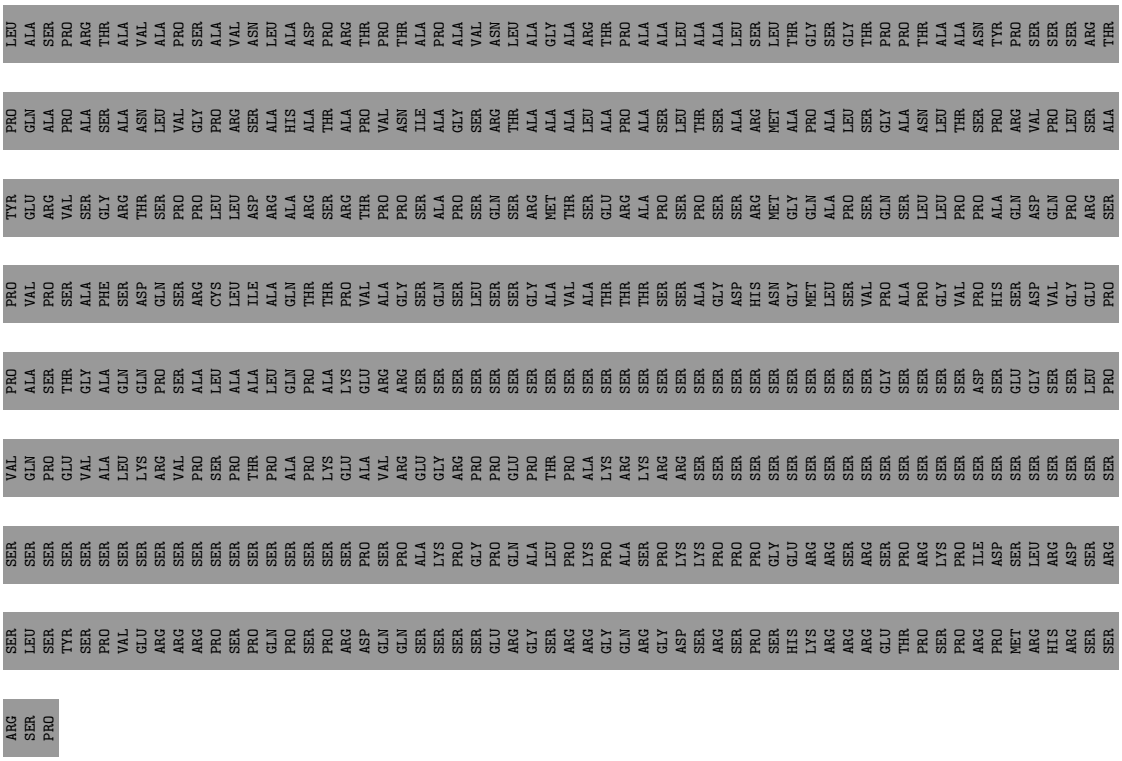
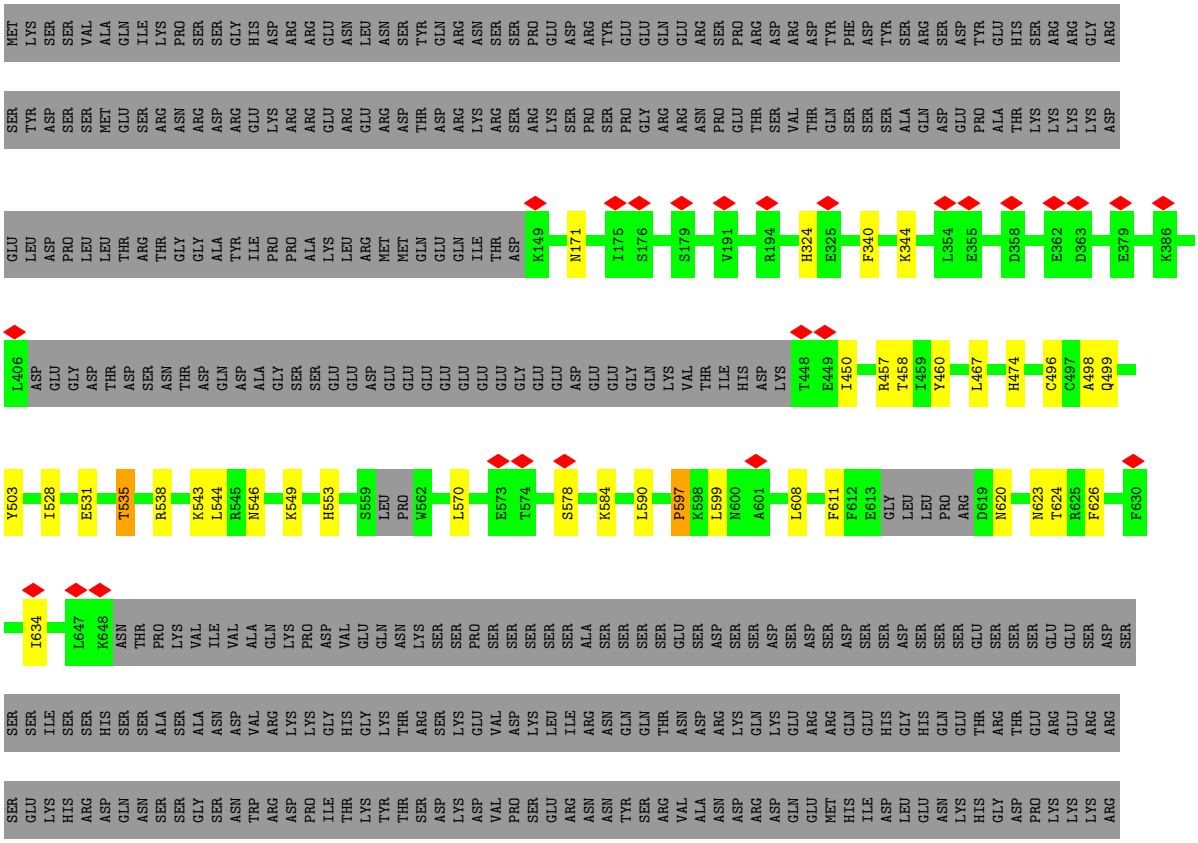
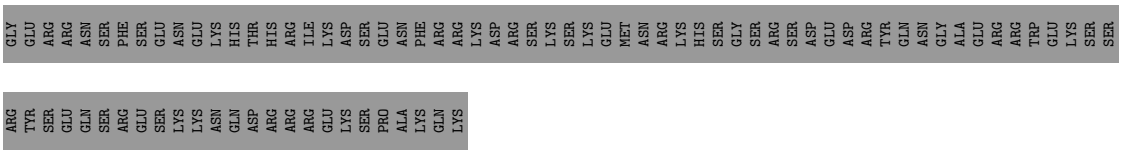


• Molecule 23: Pre-mRNA-splicing factor CWC22 homolog

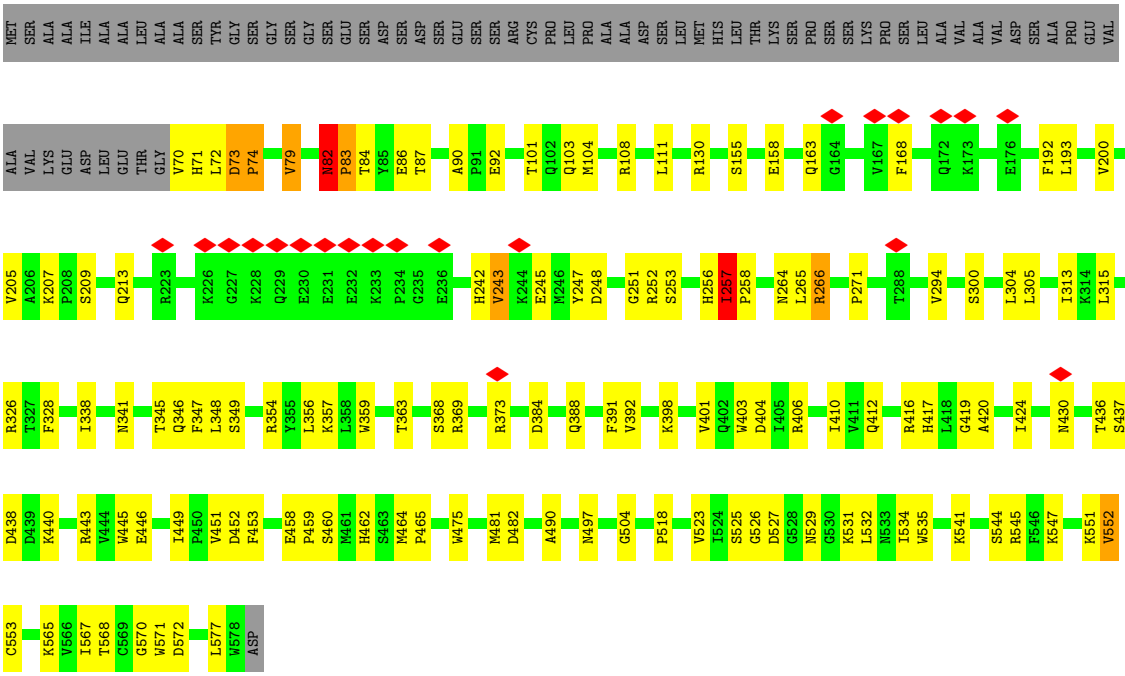
Chain V:





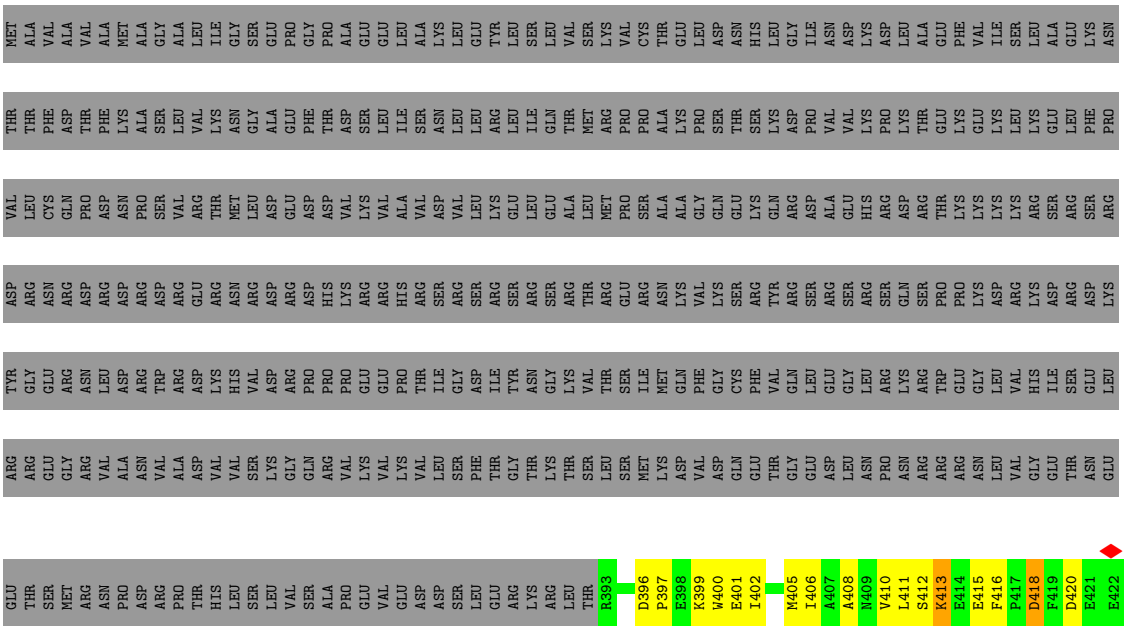
• Molecule 24: Pre-mRNA-processing factor 17

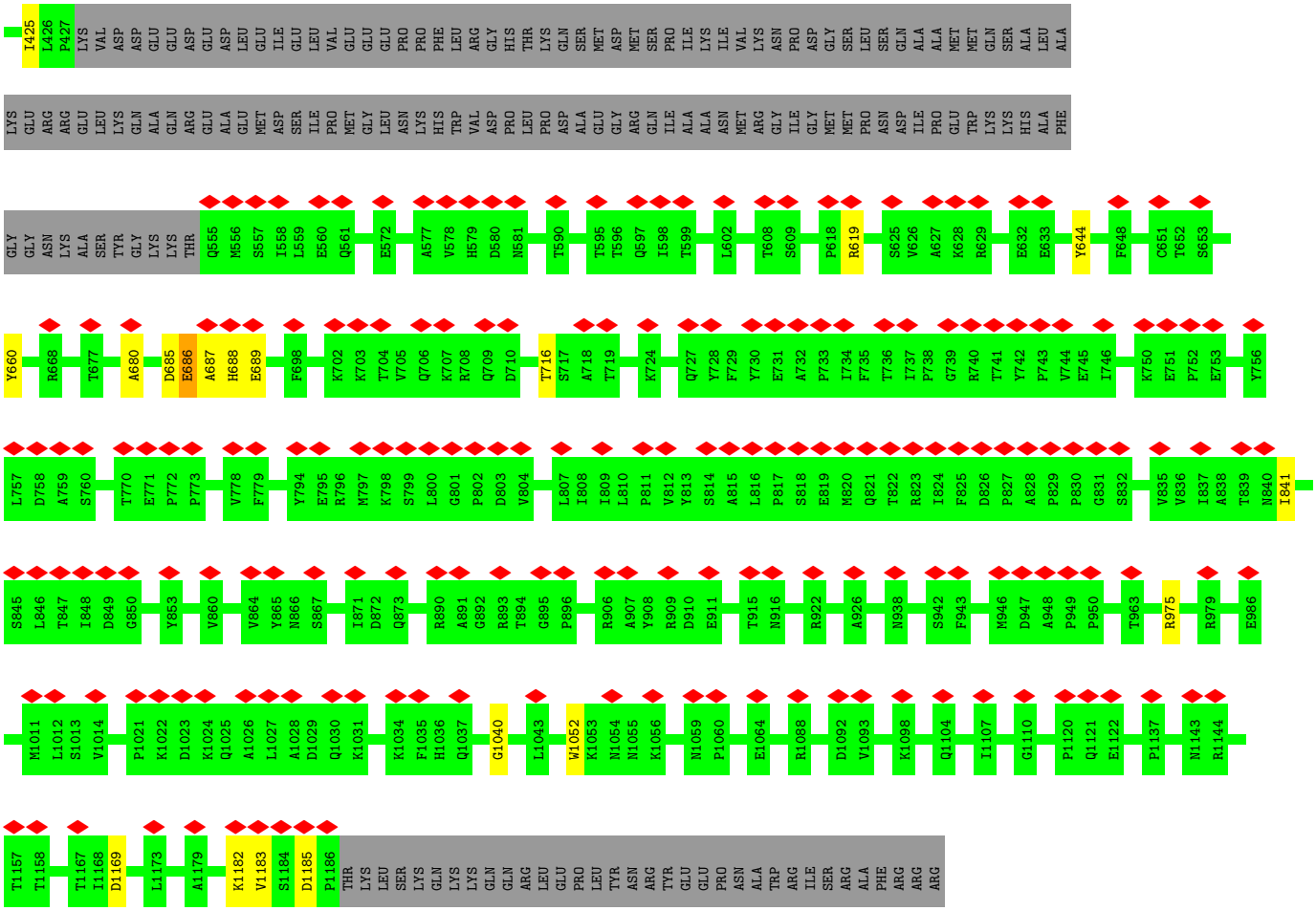
Chain W:



• Molecule 25: ATP-dependent RNA helicase DHX8

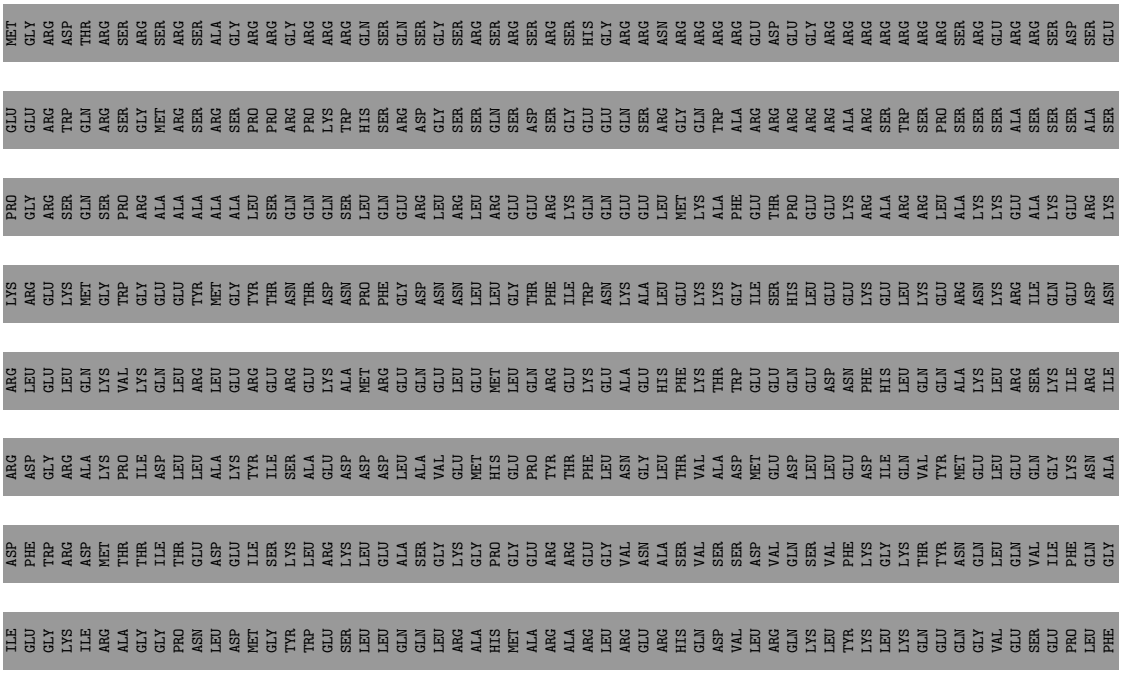
Chain Y:

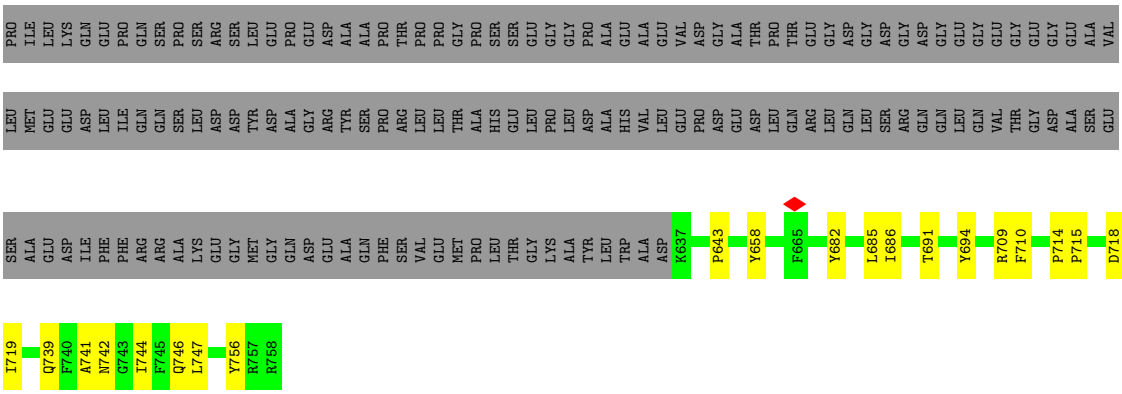




• Molecule 26: Cactin

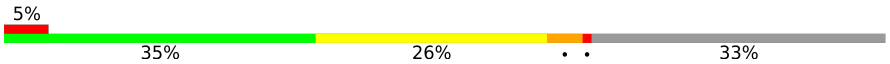
Chain Z: 13% 84%

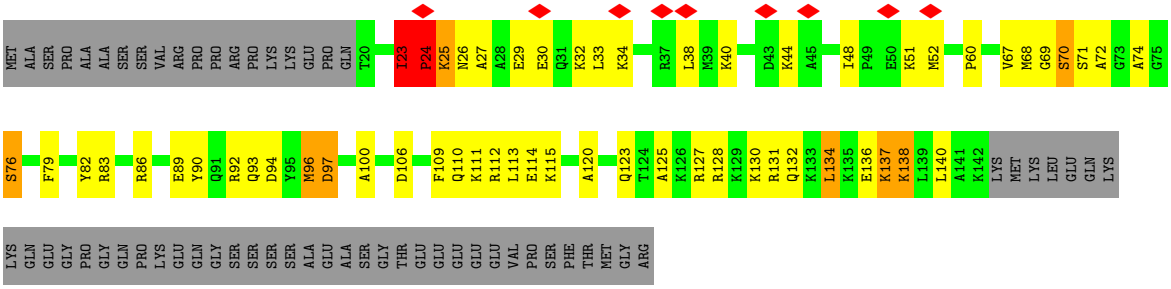




• Molecule 27: PRKR-interacting protein 1

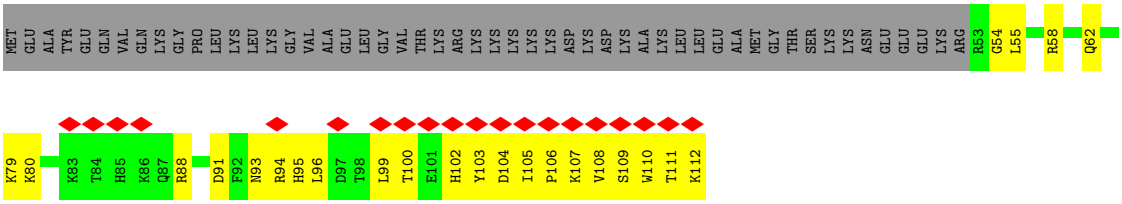
Chain 2:





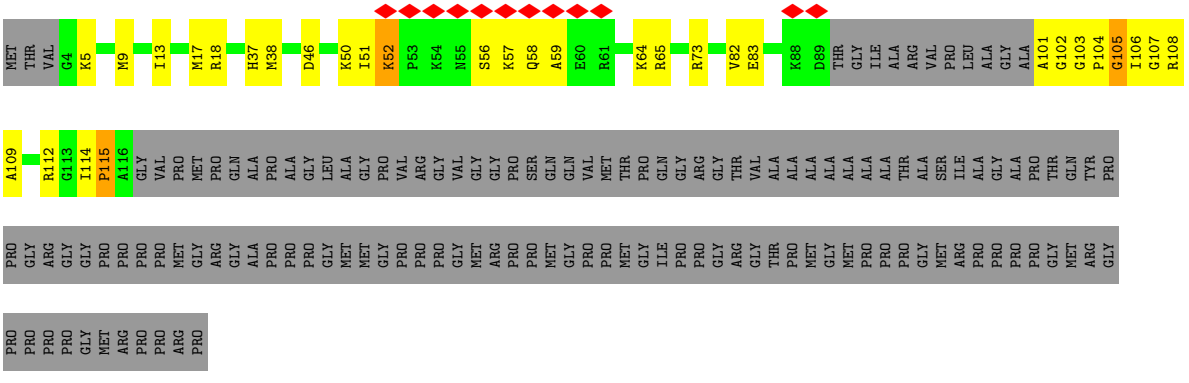
• Molecule 28: Protein FAM32A

Chain z:



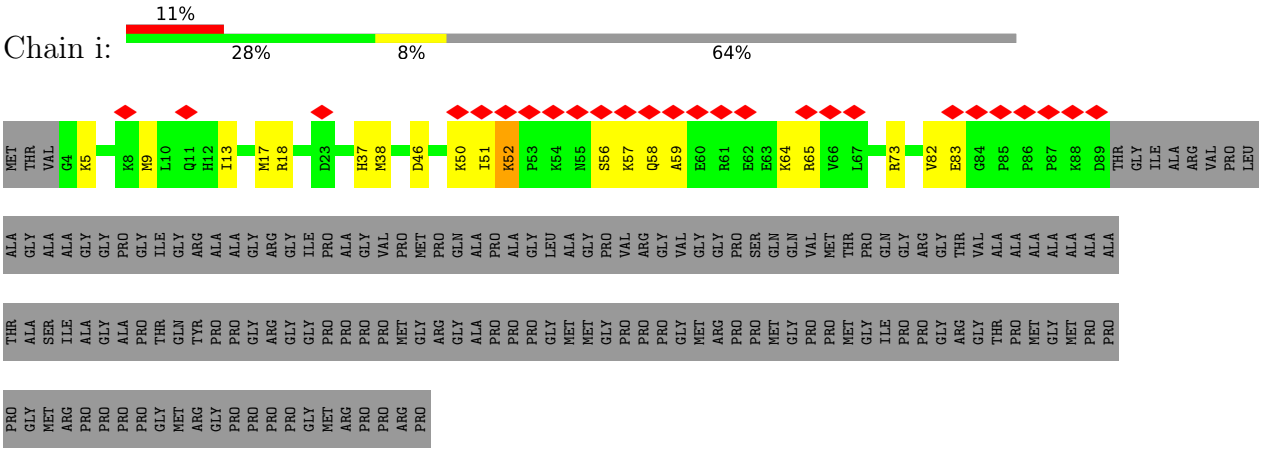
• Molecule 29: Small nuclear ribonucleoprotein-associated proteins B and B'

Chain b:



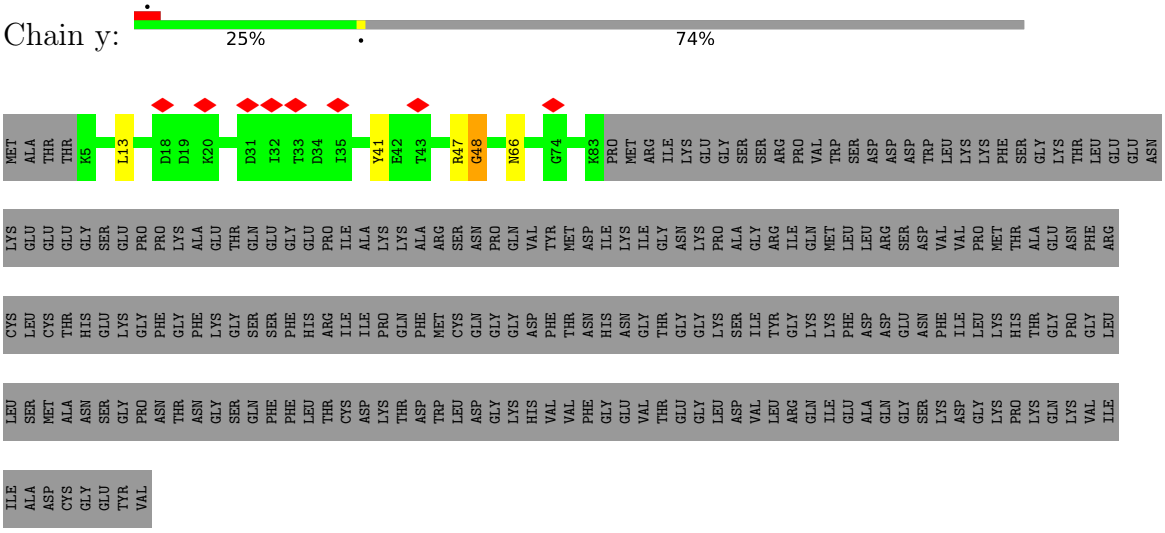
• Molecule 29: Small nuclear ribonucleoprotein-associated proteins B and B'

Chain i:



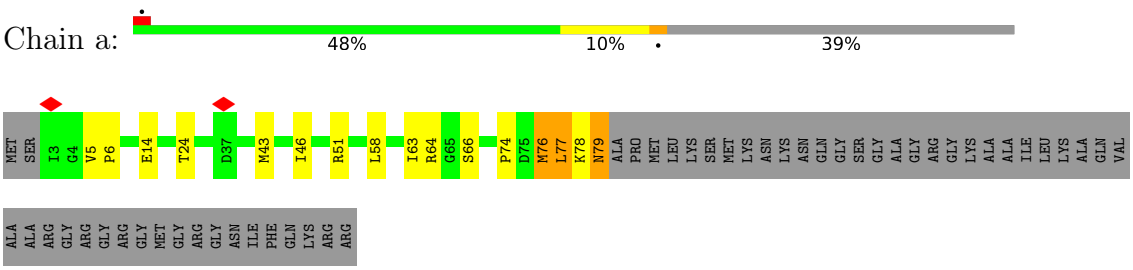
• Molecule 30: Peptidyl-prolyl cis-trans isomerase E

Chain y:



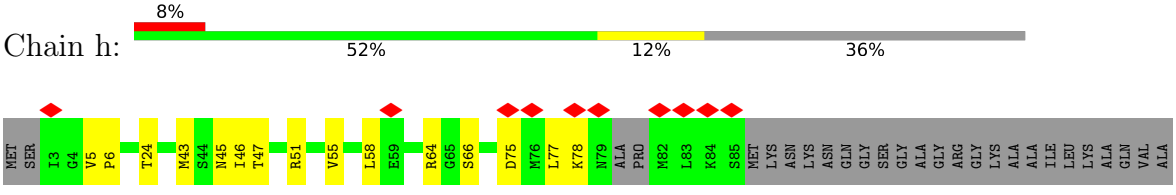
• Molecule 31: Small nuclear ribonucleoprotein Sm D3

Chain a:

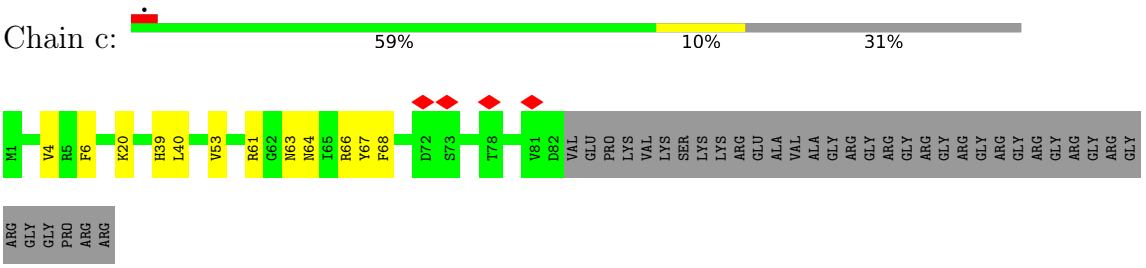


• Molecule 31: Small nuclear ribonucleoprotein Sm D3

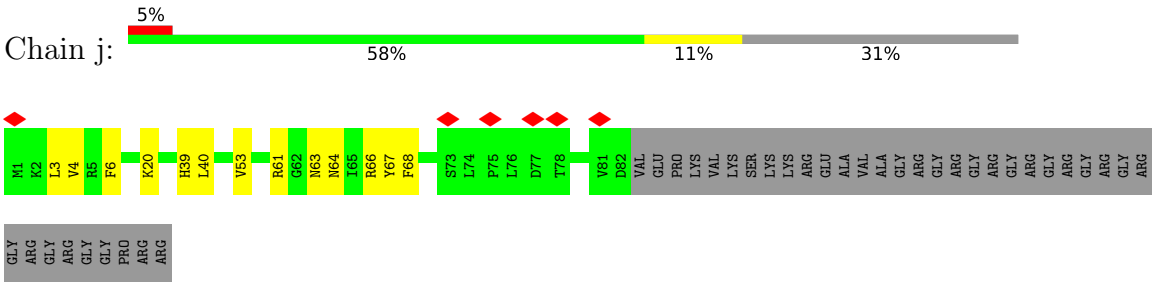
Chain h:



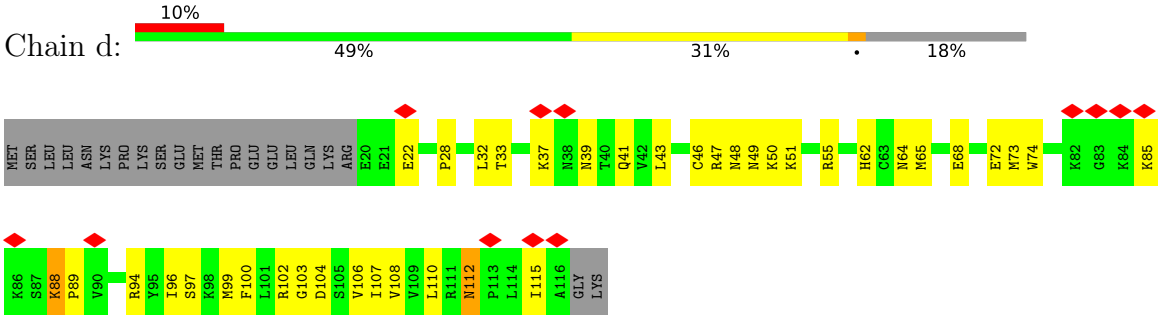
• Molecule 32: Small nuclear ribonucleoprotein Sm D1



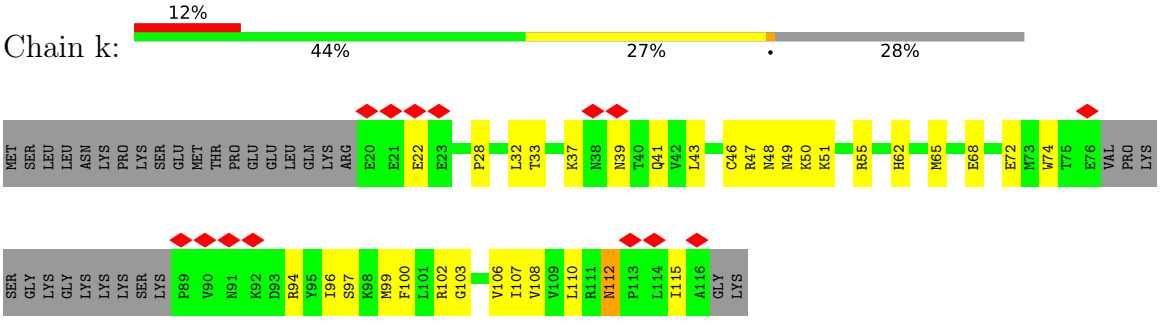
• Molecule 32: Small nuclear ribonucleoprotein Sm D1



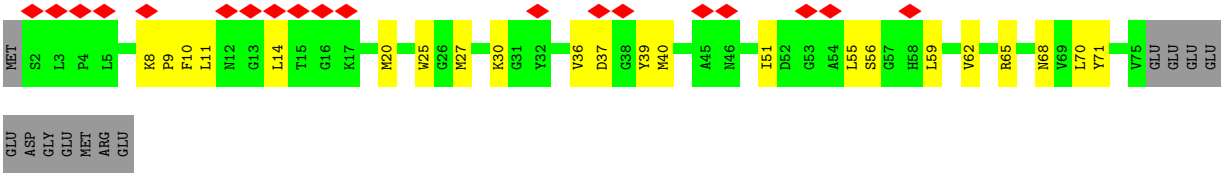
• Molecule 33: Small nuclear ribonucleoprotein Sm D2



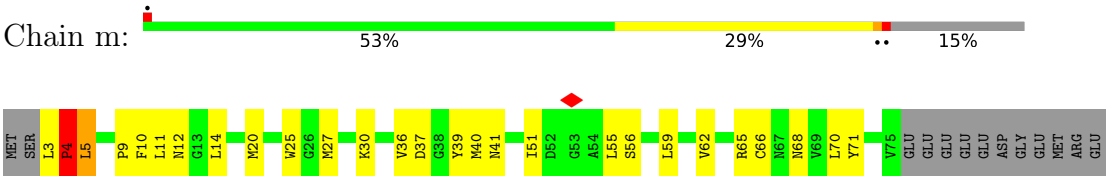
• Molecule 33: Small nuclear ribonucleoprotein Sm D2



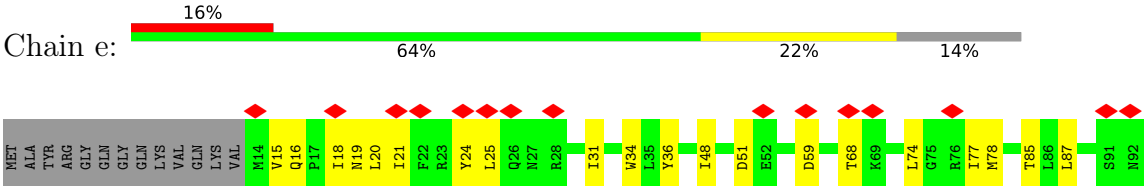
• Molecule 34: Small nuclear ribonucleoprotein F



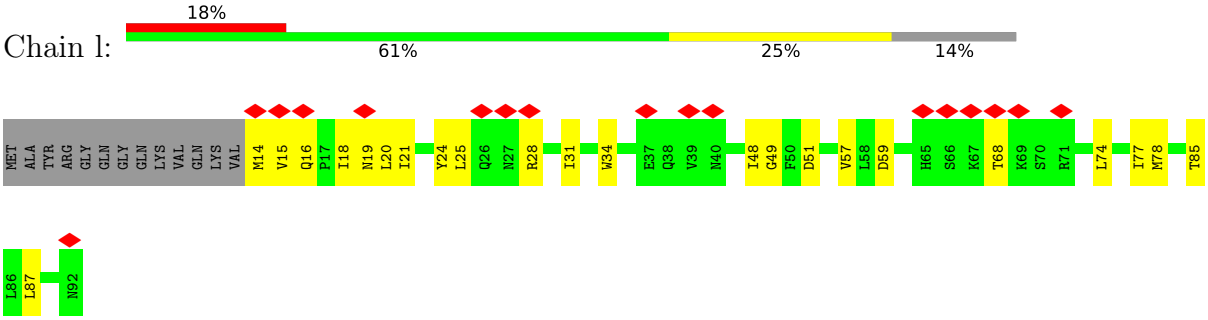
• Molecule 34: Small nuclear ribonucleoprotein F



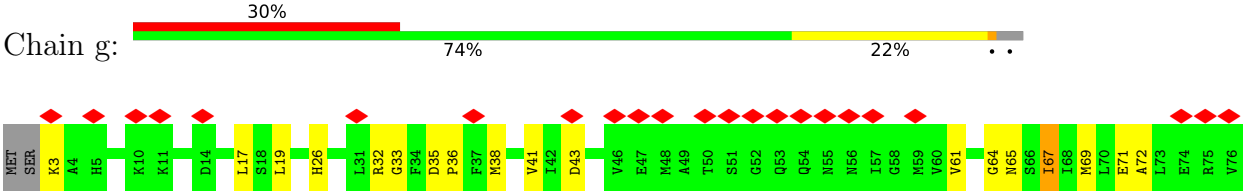
• Molecule 35: Small nuclear ribonucleoprotein E



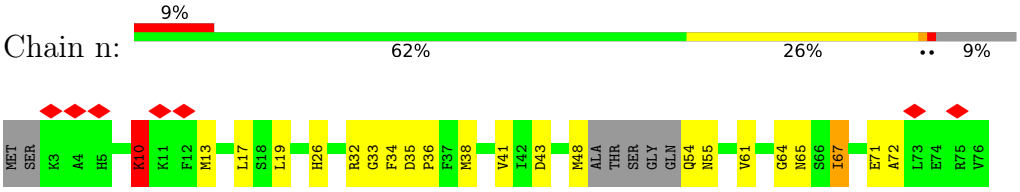
• Molecule 35: Small nuclear ribonucleoprotein E



• Molecule 36: Small nuclear ribonucleoprotein G

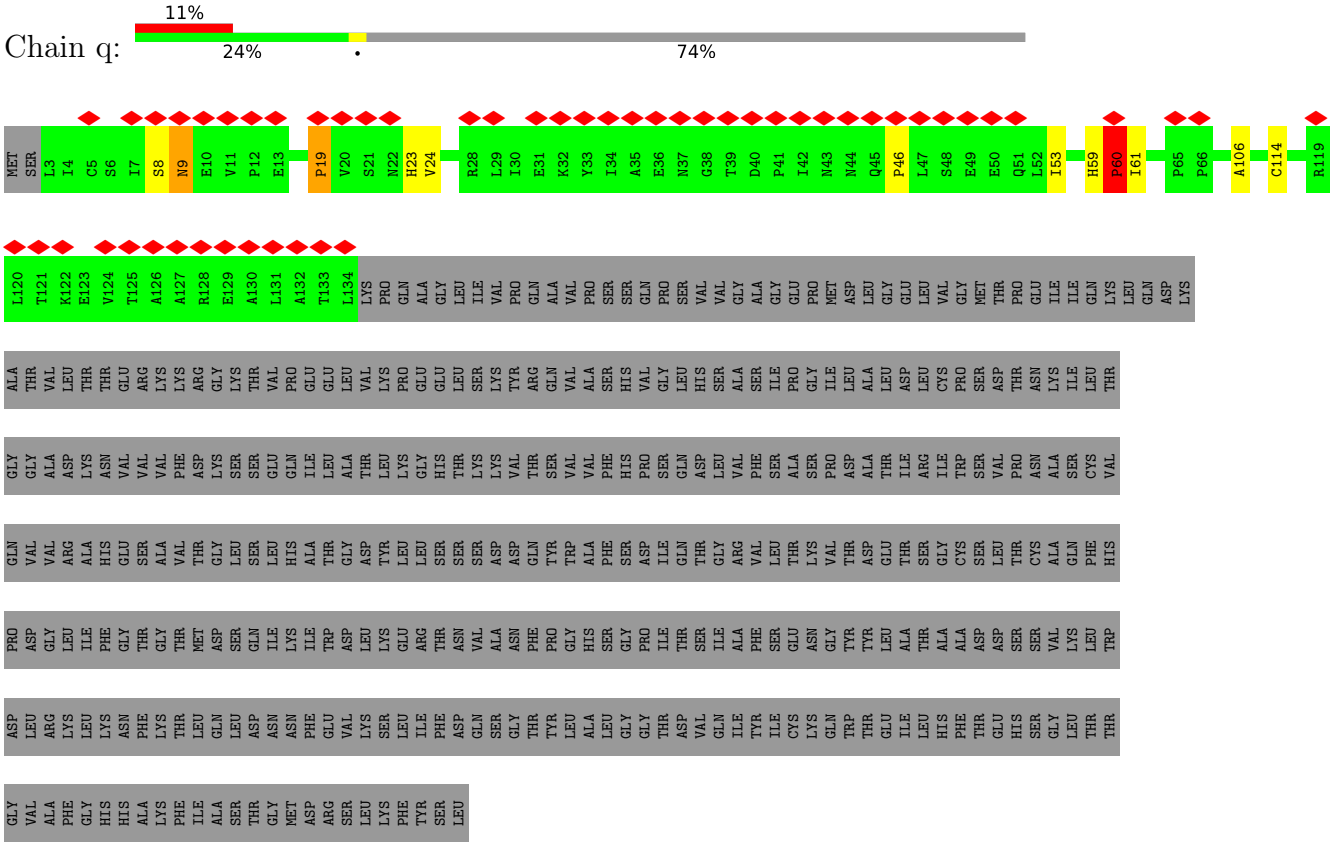


• Molecule 36: Small nuclear ribonucleoprotein G



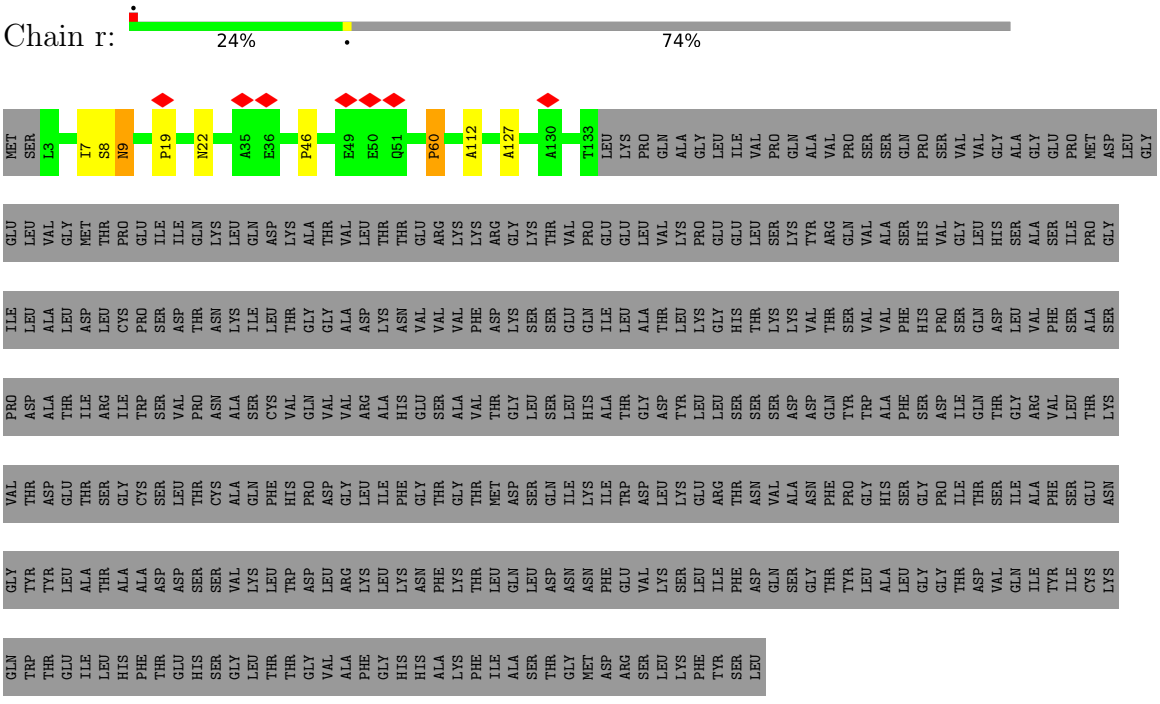
• Molecule 37: Pre-mRNA-processing factor 19

Chain q:



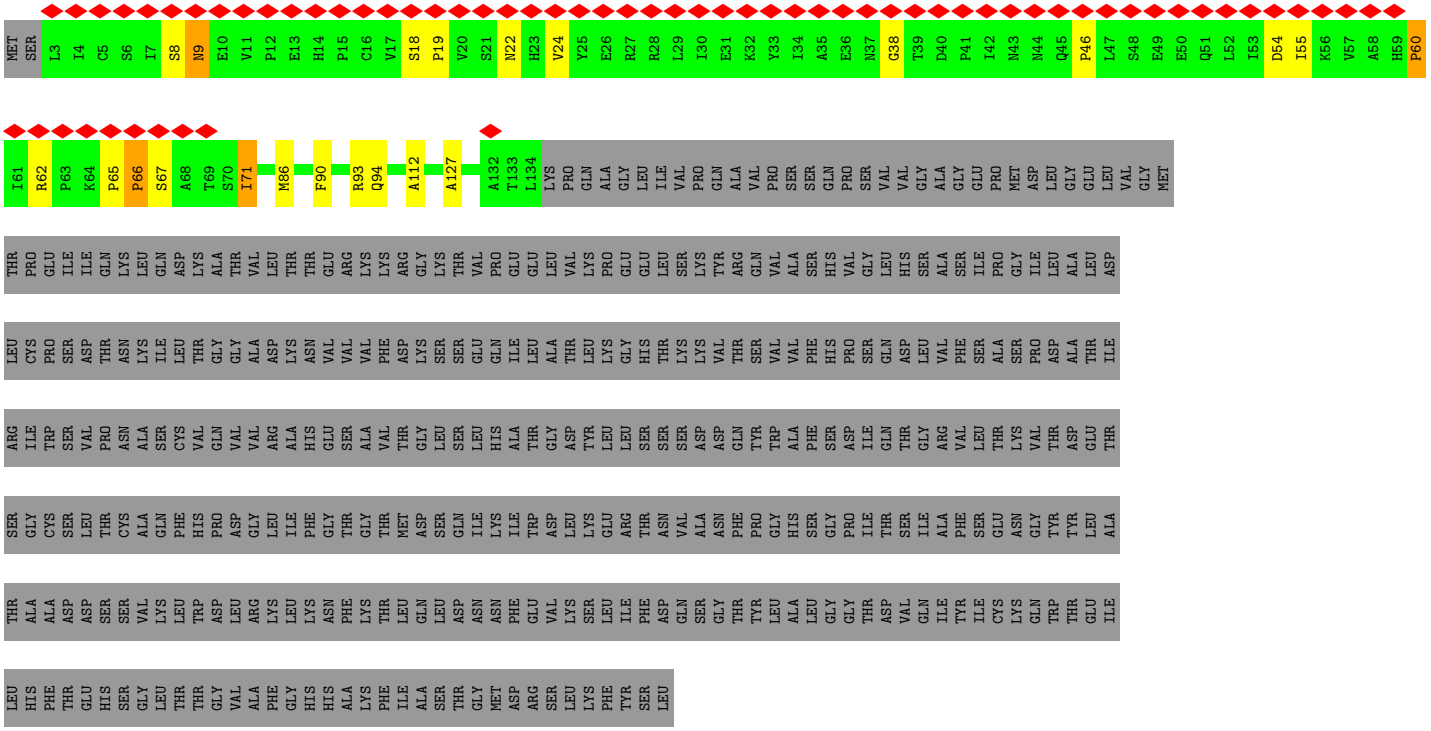
• Molecule 37: Pre-mRNA-processing factor 19

Chain r:



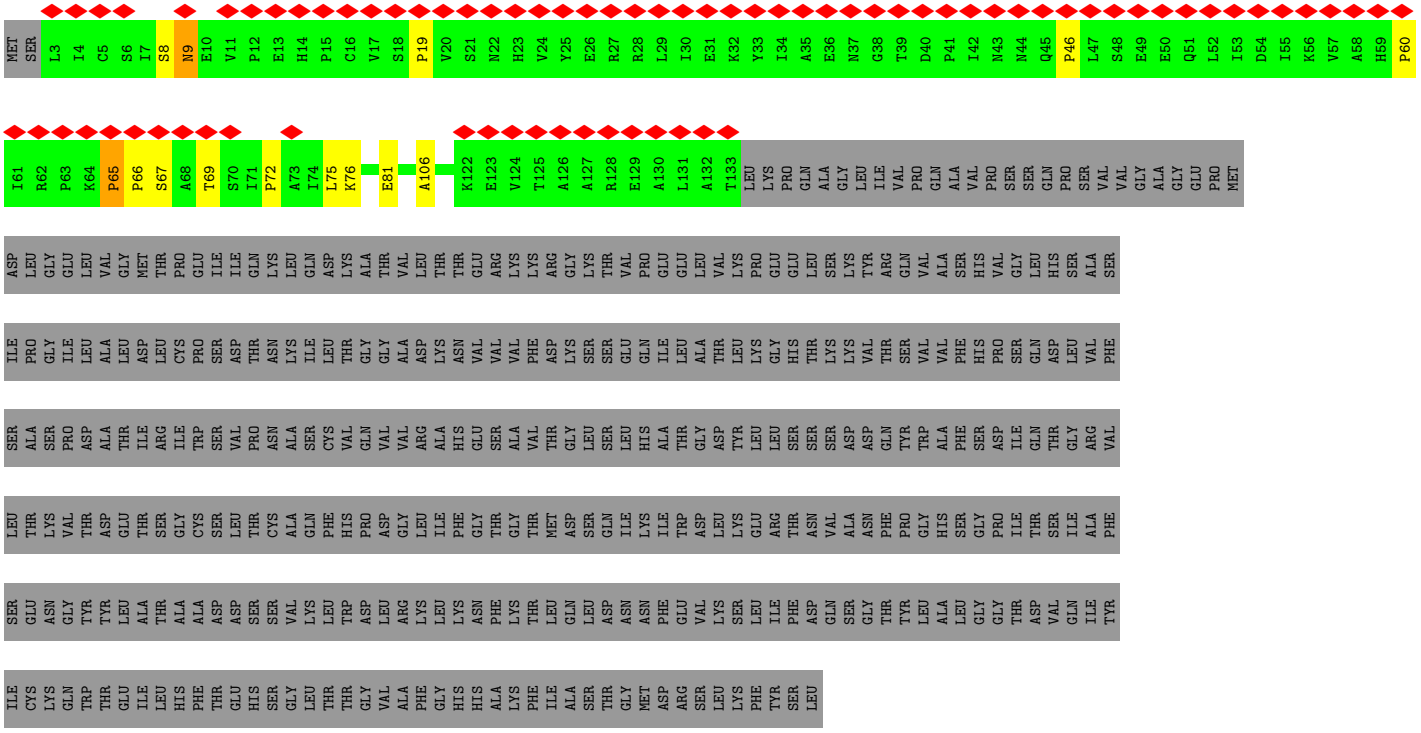
• Molecule 37: Pre-mRNA-processing factor 19

Chain s:



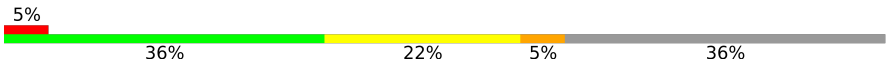
• Molecule 37: Pre-mRNA-processing factor 19

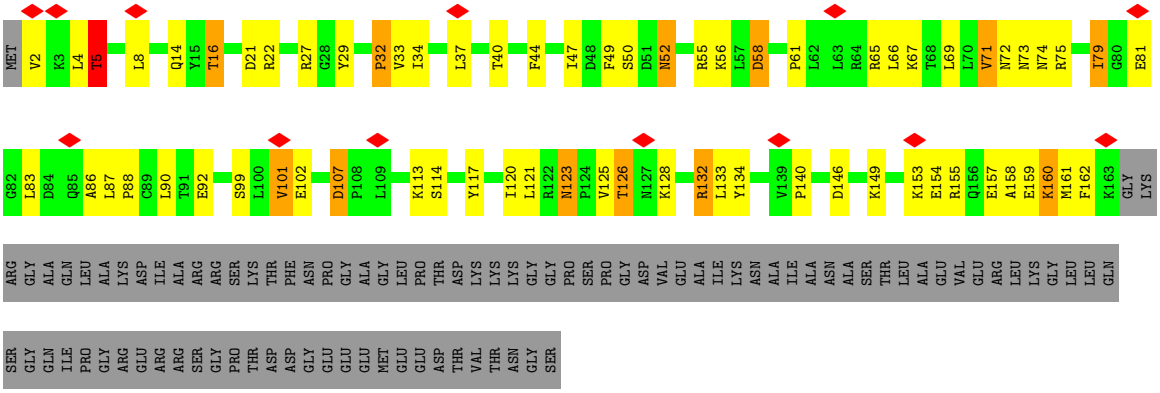
Chain t:



• Molecule 38: U2 small nuclear ribonucleoprotein A'

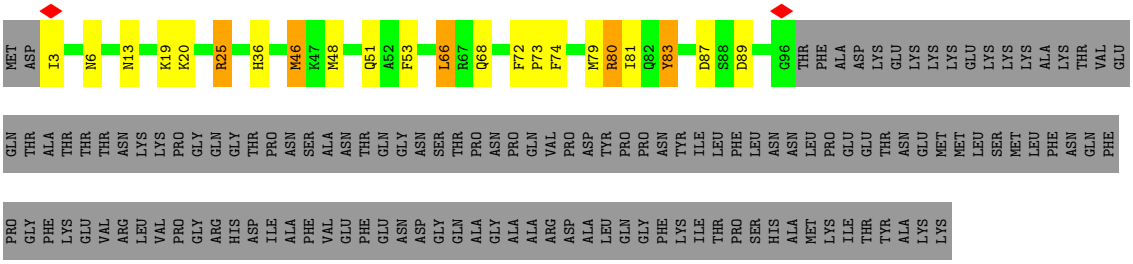
Chain o:





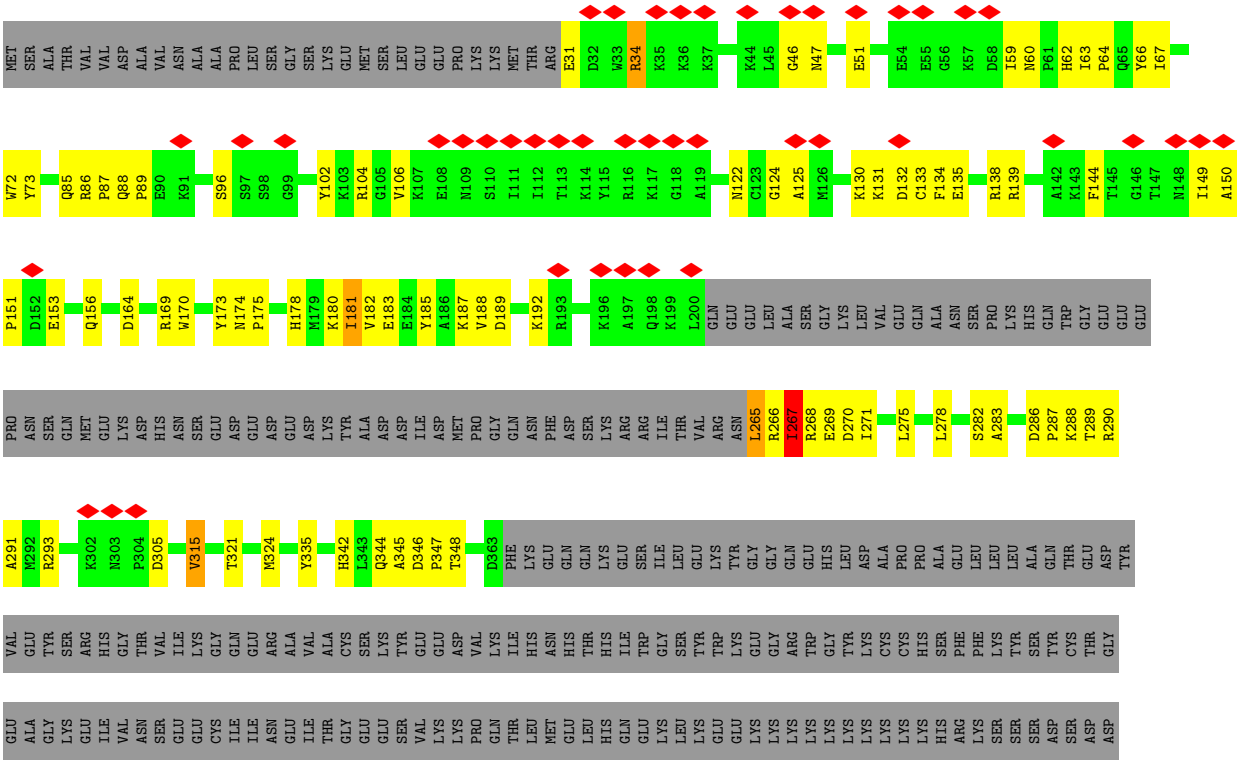
• Molecule 39: U2 small nuclear ribonucleoprotein B"

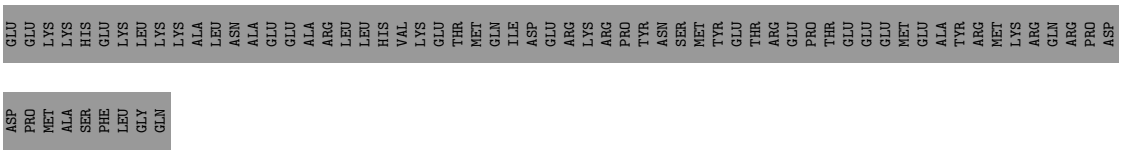
Chain p:



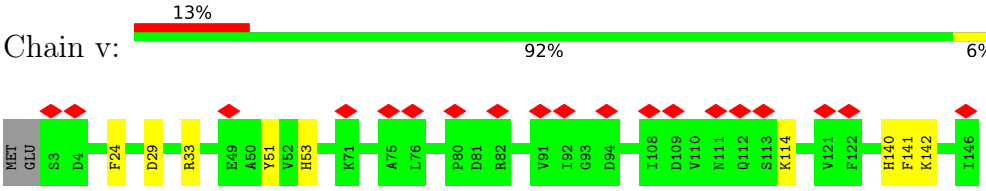
• Molecule 40: Pre-mRNA-splicing factor SLU7

Chain 1:

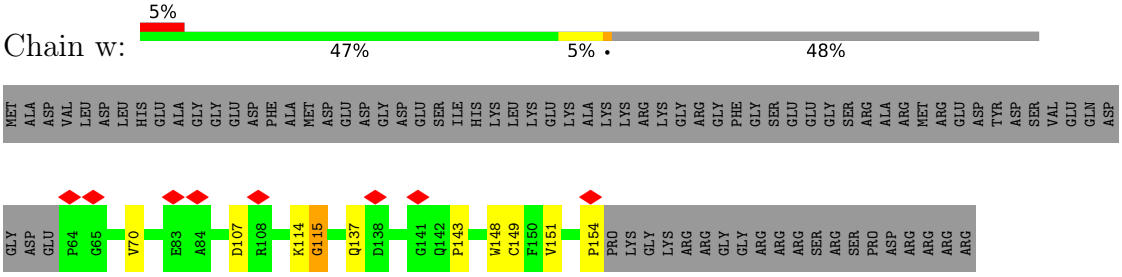




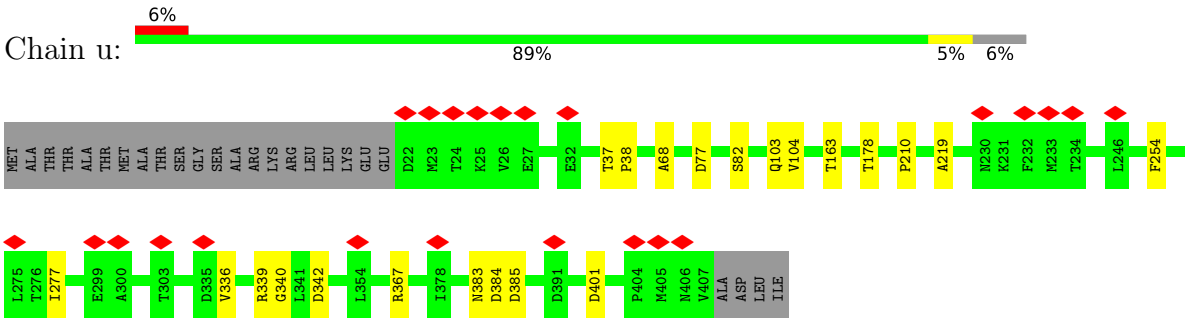
• Molecule 41: Protein mago nashi homolog



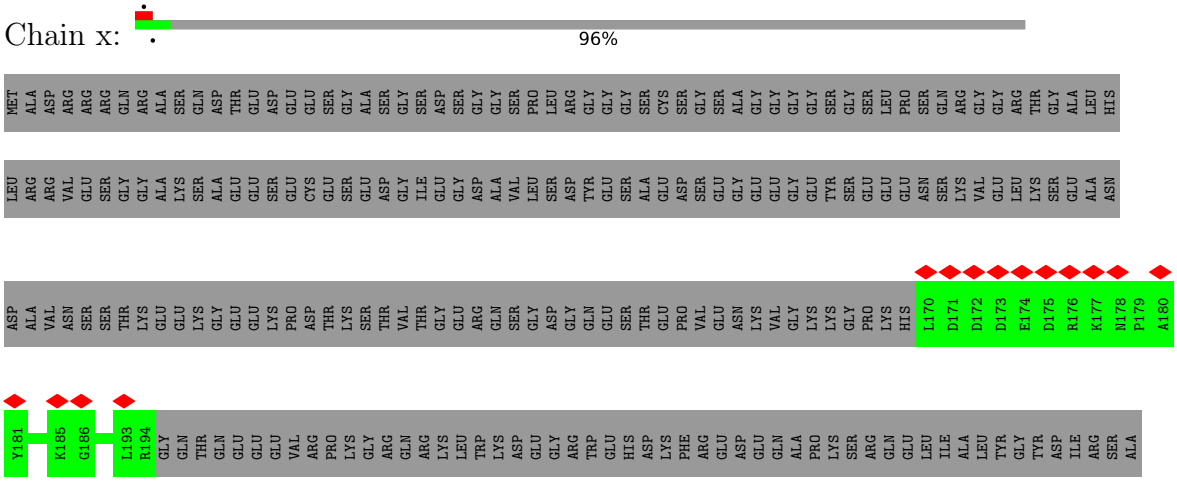
• Molecule 42: RNA-binding protein 8A

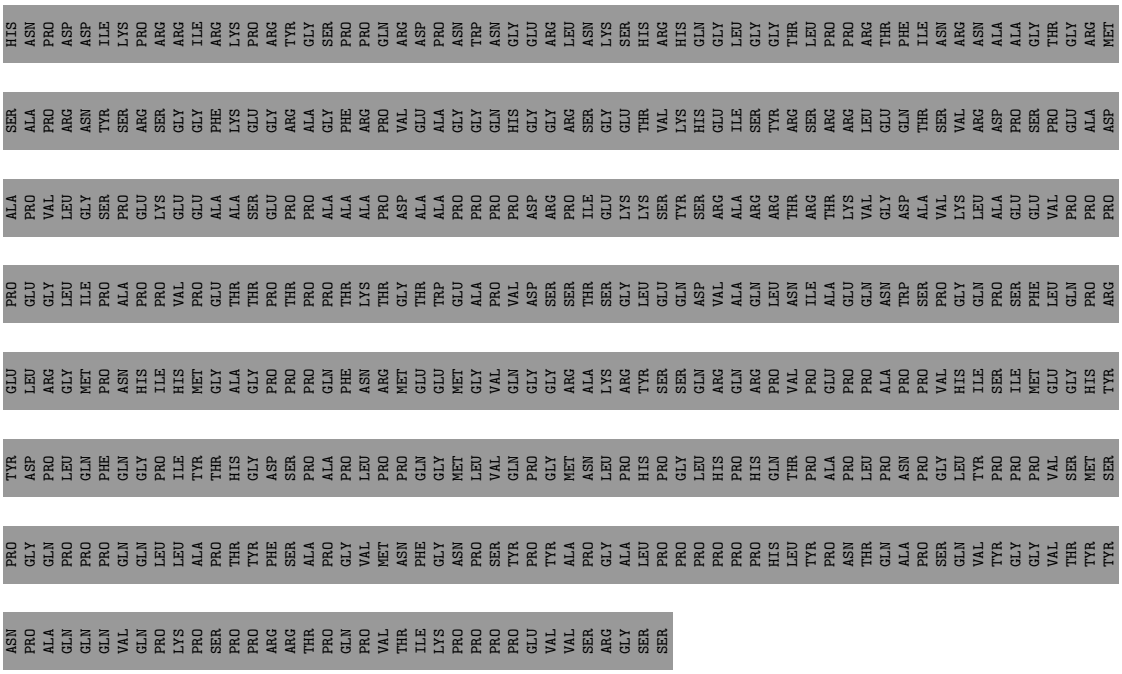


• Molecule 43: Eukaryotic initiation factor 4A-III



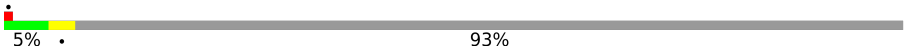
• Molecule 44: Protein CASC3

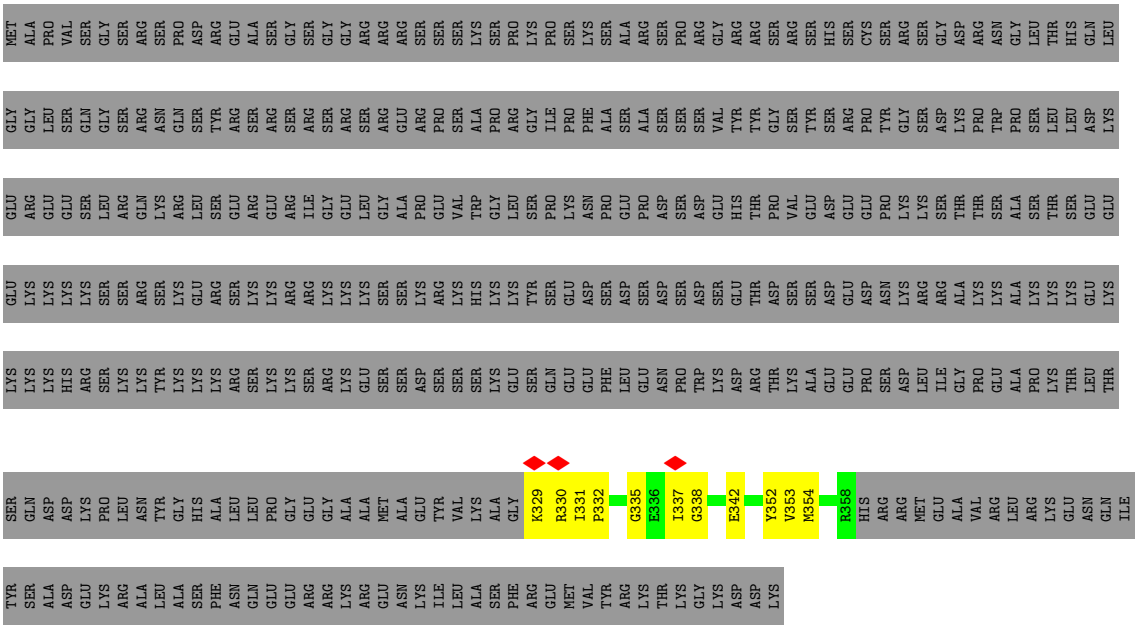




• Molecule 45: NF-kappa-B-activating protein

Chain 3:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	58374	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	2.144	Depositor
Minimum map value	-1.098	Depositor
Average map value	0.014	Depositor
Map value standard deviation	0.086	Depositor
Recommended contour level	0.37	Depositor
Map size (Å)	535.2, 535.2, 535.2	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.338, 1.338, 1.338	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

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	A	0.78	31/18191 (0.2%)	1.03	94/24720 (0.4%)
2	B	0.60	2/1970 (0.1%)	0.82	6/3060 (0.2%)
3	C	0.53	0/6938	0.83	13/9428 (0.1%)
4	D	0.55	0/8529	1.12	29/11891 (0.2%)
5	E	0.53	0/2392	0.73	0/3242
6	F	0.48	0/2323	0.82	3/3619 (0.1%)
7	4	0.72	0/307	1.00	3/476 (0.6%)
8	G	0.62	2/1674 (0.1%)	1.41	35/2594 (1.3%)
9	H	0.85	26/3305 (0.8%)	1.41	60/5130 (1.2%)
10	I	0.61	0/3884	1.42	24/5301 (0.5%)
11	J	0.54	0/3861	0.85	16/5241 (0.3%)
12	K	0.67	1/768 (0.1%)	1.08	3/1067 (0.3%)
13	L	0.50	0/3046	0.81	10/4115 (0.2%)
14	M	0.54	0/1119	0.90	6/1497 (0.4%)
15	N	0.66	0/1210	0.80	2/1622 (0.1%)
16	O	0.54	0/2344	0.83	4/3163 (0.1%)
17	P	0.74	1/967 (0.1%)	1.18	13/1285 (1.0%)
18	Q	0.41	0/6565	0.91	4/9143 (0.0%)
19	R	0.78	4/2262 (0.2%)	1.21	13/3031 (0.4%)
20	S	0.48	0/1268	0.75	1/1714 (0.1%)
21	T	0.78	0/2519	0.95	9/3433 (0.3%)
22	U	0.50	0/424	0.85	2/582 (0.3%)
23	V	0.43	0/2642	0.82	0/3602
24	W	0.43	0/4237	0.87	5/5723 (0.1%)
25	Y	0.98	0/3436	1.49	20/4774 (0.4%)
26	Z	0.31	1/1129 (0.1%)	0.55	0/1525
27	2	0.59	0/1030	1.02	6/1371 (0.4%)
28	z	0.24	0/505	0.58	0/672
29	b	0.77	0/797	1.05	4/1062 (0.4%)
29	i	0.73	0/700	1.03	4/933 (0.4%)
30	y	0.60	0/389	1.22	3/540 (0.6%)
31	a	0.67	0/616	0.97	2/830 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
31	h	0.66	0/639	0.86	0/857
32	c	0.74	0/657	0.98	0/888
32	j	0.74	0/657	0.98	0/888
33	d	0.94	1/786 (0.1%)	1.10	2/1053 (0.2%)
33	k	0.95	0/696	1.07	1/935 (0.1%)
34	f	1.04	1/588 (0.2%)	1.08	0/795
34	m	1.05	1/578 (0.2%)	1.15	1/783 (0.1%)
35	e	0.84	0/660	1.06	1/886 (0.1%)
35	l	0.85	0/660	1.06	1/886 (0.1%)
36	g	0.71	0/584	0.95	1/779 (0.1%)
36	n	0.70	0/548	1.00	2/729 (0.3%)
37	q	0.62	0/658	1.04	3/919 (0.3%)
37	r	0.57	0/653	1.00	3/912 (0.3%)
37	s	0.60	0/658	1.08	4/919 (0.4%)
37	t	0.62	0/653	0.94	3/912 (0.3%)
38	o	0.81	0/1299	2.06	54/1761 (3.1%)
39	p	0.78	0/774	1.71	12/1035 (1.2%)
40	1	0.34	0/2262	0.67	1/3045 (0.0%)
41	v	0.47	0/710	1.03	3/987 (0.3%)
42	w	0.47	0/444	1.21	4/614 (0.7%)
43	u	0.51	0/1906	1.20	13/2653 (0.5%)
44	x	0.53	0/123	1.12	0/170
45	3	0.25	0/232	0.60	0/307
All	All	0.65	71/108772 (0.1%)	1.05	503/150099 (0.3%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	19
3	C	0	9
4	D	0	1
5	E	0	1
10	I	0	6
11	J	0	5
15	N	0	4
16	O	0	1
17	P	0	3
19	R	0	7
21	T	0	3

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Mol	Chain	#Chirality outliers	#Planarity outliers
24	W	0	2
33	d	0	1
33	k	0	1
All	All	0	63

All (71) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1724	PRO	N-CA	16.49	1.68	1.47
19	R	219	PRO	C-O	-10.51	1.11	1.23
19	R	222	PRO	N-CA	10.35	1.68	1.46
1	A	771	VAL	C-O	-9.56	1.12	1.24
19	R	221	GLY	C-N	9.29	1.44	1.33
1	A	776	LEU	C-O	-9.08	1.12	1.24
1	A	773	LYS	C-O	-8.70	1.14	1.24
1	A	854	SER	C-O	-8.39	1.14	1.23
9	H	142	C	C1'-N1	7.68	1.59	1.48
9	H	77	C	C1'-N1	7.66	1.59	1.48
1	A	1553	VAL	C-O	-7.61	1.15	1.24
1	A	663	ARG	C-O	-7.45	1.14	1.23
1	A	1163	ARG	C-O	-7.42	1.15	1.24
2	B	103	G	C1'-N9	-7.25	1.37	1.48
9	H	72	U	C1'-N1	7.21	1.59	1.48
9	H	55	U	C1'-N1	7.20	1.59	1.48
9	H	74	U	C1'-N1	7.15	1.59	1.48
9	H	54	U	C1'-N1	7.14	1.59	1.48
9	H	89	U	C1'-N1	7.13	1.59	1.48
9	H	92	U	C1'-N1	7.13	1.59	1.48
9	H	69	U	C1'-N1	7.12	1.59	1.48
9	H	60	U	C1'-N1	7.10	1.59	1.48
9	H	58	U	C1'-N1	7.07	1.59	1.48
9	H	91	U	C1'-N1	7.05	1.59	1.48
9	H	150	U	C1'-N1	6.98	1.58	1.48
9	H	182	U	C1'-N1	6.95	1.58	1.48
1	A	1459	ARG	C-O	-6.72	1.15	1.24
8	G	21	A	O3'-P	-6.69	1.51	1.61
17	P	11	PRO	C-O	-6.67	1.16	1.23
1	A	772	CYS	C-O	-6.66	1.16	1.24
9	H	73	C	C1'-N1	6.66	1.58	1.48
9	H	151	C	C1'-N1	6.66	1.58	1.48
9	H	97	G	C1'-N9	-6.65	1.38	1.48
9	H	67	C	C1'-N1	6.64	1.58	1.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	H	141	C	C1'-N1	6.63	1.58	1.48
9	H	184	C	C1'-N1	6.59	1.58	1.48
9	H	71	C	C1'-N1	6.53	1.58	1.48
9	H	70	C	C1'-N1	6.52	1.58	1.48
9	H	148	C	C1'-N1	6.52	1.58	1.48
1	A	864	LEU	C-O	-6.48	1.16	1.24
1	A	1529	ILE	C-N	6.47	1.49	1.33
9	H	84	C	C1'-N1	6.46	1.58	1.48
9	H	78	C	C1'-N1	6.46	1.58	1.48
1	A	1730	MET	C-O	-6.39	1.16	1.24
1	A	860	GLN	C-O	-6.33	1.16	1.24
26	Z	714	PRO	C-N	6.31	1.39	1.33
1	A	863	GLU	C-O	-6.15	1.17	1.24
1	A	859	SER	C-O	-6.05	1.17	1.24
1	A	861	ARG	C-O	-5.92	1.17	1.24
8	G	145	U	O3'-P	-5.83	1.52	1.61
1	A	1562	MET	C-O	-5.79	1.17	1.24
1	A	669	ALA	C-O	-5.69	1.16	1.24
1	A	1726	ILE	C-O	-5.64	1.17	1.24
1	A	1753	LEU	C-O	-5.63	1.17	1.24
9	H	110	A	C1'-N9	-5.50	1.39	1.48
1	A	862	GLU	C-O	-5.47	1.17	1.24
1	A	1738	PRO	C-O	-5.43	1.17	1.24
1	A	1554	GLN	C-O	-5.40	1.17	1.23
1	A	668	VAL	C-O	-5.38	1.17	1.24
12	K	162	ASP	CA-CB	-5.32	1.44	1.53
1	A	866	LEU	C-O	-5.30	1.17	1.24
19	R	220	ARG	C-O	-5.25	1.17	1.23
1	A	859	SER	CA-CB	-5.23	1.45	1.53
1	A	1557	LEU	C-O	-5.19	1.17	1.24
34	f	14	LEU	CA-C	5.13	1.59	1.52
1	A	2105	ILE	CA-CB	-5.12	1.48	1.54
1	A	774	LYS	C-O	-5.12	1.18	1.24
1	A	1561	PHE	C-O	-5.06	1.17	1.23
34	m	14	LEU	CA-C	5.04	1.59	1.52
2	B	96	A	C1'-N9	-5.02	1.40	1.48
33	d	73	MET	CA-C	-5.00	1.46	1.52

All (503) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	R	221	GLY	CA-C-N	18.39	139.32	120.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	R	221	GLY	C-N-CA	18.39	139.32	120.38
1	A	535	ARG	CB-CA-C	18.06	139.35	109.56
8	G	1	G	C1'-C2'-O2'	-16.53	87.00	111.80
38	o	55	ARG	CD-NE-CZ	13.18	142.85	124.40
1	A	1723	LYS	CA-C-N	13.12	136.24	119.84
1	A	1723	LYS	C-N-CA	13.12	136.24	119.84
8	G	177	G	C4'-C3'-O3'	12.58	131.87	113.00
8	G	131	U	C2'-C3'-O3'	-12.13	95.51	113.70
10	I	84	HIS	O-C-N	-12.06	109.65	122.07
10	I	83	LYS	O-C-N	-12.04	109.66	122.07
10	I	311	MET	O-C-N	-12.02	109.69	122.07
10	I	310	LYS	O-C-N	-11.99	109.72	122.07
10	I	309	ALA	O-C-N	-11.88	109.84	122.07
1	A	1877	LEU	N-CA-C	-11.66	98.56	111.28
38	o	49	PHE	CA-CB-CG	11.38	125.18	113.80
19	R	222	PRO	N-CA-C	-11.13	97.12	110.70
1	A	772	CYS	CA-CB-SG	-11.01	89.09	114.40
43	u	37	THR	CA-C-N	10.67	130.44	119.56
43	u	37	THR	C-N-CA	10.67	130.44	119.56
42	w	114	LYS	N-CA-C	-10.46	93.67	110.20
1	A	1529	ILE	CA-C-N	10.18	132.57	119.84
1	A	1529	ILE	C-N-CA	10.18	132.57	119.84
8	G	145	U	C3'-C2'-O2'	10.00	125.69	110.70
2	B	104	C	C2'-C3'-O3'	-9.94	94.58	109.50
1	A	1850	ARG	N-CA-CB	9.80	124.28	110.07
10	I	458	LYS	O-C-N	9.75	132.11	122.07
10	I	459	ALA	O-C-N	9.69	132.05	122.07
10	I	457	ARG	O-C-N	9.59	131.94	122.07
8	G	171	G	C2'-C3'-O3'	9.56	123.84	109.50
1	A	1724	PRO	N-CA-C	-9.47	92.97	112.47
37	s	46	PRO	N-CA-CB	9.44	111.19	103.36
8	G	145	U	C2'-C3'-O3'	-9.32	99.72	113.70
8	G	174	G	C4'-C3'-O3'	9.28	126.92	113.00
38	o	58	ASP	CA-CB-CG	9.13	121.73	112.60
1	A	383	PHE	N-CA-C	-9.00	102.88	114.04
13	L	124	LYS	N-CA-C	8.90	124.28	112.35
8	G	172	C	C4'-C3'-O3'	8.81	122.62	109.40
3	C	855	GLY	N-CA-C	8.78	123.27	112.73
2	B	12	U	C4'-C3'-O3'	8.77	122.56	109.40
25	Y	687	ALA	CA-C-N	8.73	133.91	120.82
25	Y	687	ALA	C-N-CA	8.73	133.91	120.82
37	r	46	PRO	N-CA-CB	8.72	111.12	103.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
10	I	458	LYS	CA-C-O	-8.71	111.67	120.82
9	H	82	G	O3'-P-O5'	-8.69	90.97	104.00
9	H	183	G	O3'-P-O5'	-8.68	90.99	104.00
9	H	77	C	O3'-P-O5'	-8.64	91.03	104.00
10	I	459	ALA	CA-C-O	-8.64	111.75	120.82
9	H	68	G	O3'-P-O5'	-8.63	91.05	104.00
9	H	78	C	O3'-P-O5'	-8.63	91.05	104.00
9	H	141	C	O3'-P-O5'	-8.63	91.06	104.00
9	H	56	A	O3'-P-O5'	-8.63	91.06	104.00
9	H	113	G	O3'-P-O5'	-8.62	91.06	104.00
9	H	148	C	O3'-P-O5'	-8.62	91.07	104.00
9	H	59	A	O3'-P-O5'	-8.62	91.07	104.00
10	I	457	ARG	CA-C-O	-8.62	111.77	120.82
9	H	180	G	O3'-P-O5'	-8.61	91.09	104.00
9	H	54	U	O3'-P-O5'	-8.61	91.09	104.00
9	H	57	A	O3'-P-O5'	-8.60	91.10	104.00
9	H	182	U	O3'-P-O5'	-8.60	91.10	104.00
9	H	74	U	O3'-P-O5'	-8.60	91.11	104.00
9	H	72	U	O3'-P-O5'	-8.59	91.11	104.00
9	H	73	C	O3'-P-O5'	-8.59	91.11	104.00
8	G	177	G	N9-C1'-C2'	-8.59	99.12	112.00
9	H	91	U	O3'-P-O5'	-8.59	91.12	104.00
9	H	93	A	O3'-P-O5'	-8.59	91.12	104.00
9	H	150	U	O3'-P-O5'	-8.59	91.12	104.00
9	H	149	A	O3'-P-O5'	-8.58	91.13	104.00
9	H	81	G	O3'-P-O5'	-8.57	91.14	104.00
9	H	79	G	O3'-P-O5'	-8.57	91.14	104.00
9	H	90	A	O3'-P-O5'	-8.57	91.14	104.00
9	H	181	G	O3'-P-O5'	-8.57	91.14	104.00
9	H	55	U	O3'-P-O5'	-8.57	91.15	104.00
9	H	84	C	O3'-P-O5'	-8.57	91.15	104.00
9	H	80	A	O3'-P-O5'	-8.56	91.15	104.00
9	H	89	U	O3'-P-O5'	-8.56	91.16	104.00
9	H	92	U	O3'-P-O5'	-8.56	91.16	104.00
9	H	69	U	O3'-P-O5'	-8.54	91.18	104.00
9	H	67	C	O3'-P-O5'	-8.54	91.19	104.00
9	H	58	U	O3'-P-O5'	-8.54	91.19	104.00
9	H	71	C	O3'-P-O5'	-8.54	91.19	104.00
9	H	114	A	O3'-P-O5'	-8.54	91.19	104.00
38	o	5	THR	N-CA-CB	-8.54	98.25	111.05
9	H	83	A	O3'-P-O5'	-8.53	91.20	104.00
9	H	88	A	O3'-P-O5'	-8.52	91.21	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
13	L	9	GLY	CA-C-N	8.51	137.29	121.97
13	L	9	GLY	C-N-CA	8.51	137.29	121.97
9	H	70	C	O3'-P-O5'	-8.51	91.23	104.00
8	G	171	G	C3'-C2'-O2'	8.47	127.31	114.60
37	q	46	PRO	N-CA-CB	8.47	111.22	103.34
1	A	1980	GLU	N-CA-C	-8.45	101.76	110.97
10	I	725	ARG	N-CA-C	-8.36	102.17	111.28
39	p	80	ARG	CD-NE-CZ	8.30	136.02	124.40
8	G	1	G	C4'-C3'-O3'	8.29	121.83	109.40
1	A	1689	THR	CA-C-N	8.24	133.59	121.31
1	A	1689	THR	C-N-CA	8.24	133.59	121.31
7	4	-12	G	N9-C1'-C2'	-8.24	99.64	112.00
25	Y	1040	GLY	N-CA-C	8.17	122.85	111.25
37	s	60	PRO	N-CA-CB	8.16	111.81	103.25
8	G	1	G	N9-C1'-C2'	-8.11	101.83	114.00
38	o	16	THR	CA-C-O	-8.06	111.73	120.36
3	C	754	VAL	N-CA-C	-7.93	104.85	111.91
38	o	47	ILE	N-CA-CB	7.92	123.08	111.52
1	A	861	ARG	CG-CD-NE	-7.91	94.59	112.00
38	o	99	SER	N-CA-C	7.90	122.69	112.26
13	L	54	LEU	N-CA-C	7.87	119.86	111.28
17	P	7	PRO	CA-C-N	7.86	136.55	121.54
17	P	7	PRO	C-N-CA	7.86	136.55	121.54
21	T	187	LYS	CA-C-N	7.85	129.66	119.84
21	T	187	LYS	C-N-CA	7.85	129.66	119.84
16	O	119	GLN	CB-CA-C	7.83	124.17	110.85
1	A	1561	PHE	CB-CA-C	-7.77	93.14	109.38
8	G	21	A	O3'-P-O5'	7.77	115.66	104.00
38	o	117	TYR	CA-C-O	7.72	128.51	120.40
18	Q	1379	TYR	N-CA-C	7.68	122.75	112.30
19	R	222	PRO	CA-N-CD	-7.68	101.25	112.00
14	M	120	PRO	CB-CA-C	-7.66	99.41	110.75
8	G	177	G	C1'-C2'-O2'	-7.64	96.94	108.40
9	H	168	A	P-O5'-C5'	-7.61	109.48	120.90
1	A	343	GLU	N-CA-CB	-7.54	98.78	110.39
7	4	-12	G	C4'-C3'-O3'	7.52	124.28	113.00
1	A	866	LEU	CA-C-N	7.47	132.50	120.55
1	A	866	LEU	C-N-CA	7.47	132.50	120.55
37	q	60	PRO	N-CA-CB	7.43	111.05	103.25
1	A	664	HIS	CA-CB-CG	-7.43	106.37	113.80
3	C	823	ALA	N-CA-C	7.41	120.49	108.34
2	B	20	G	N9-C1'-C2'	7.36	125.05	114.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	863	GLU	CB-CG-CD	-7.35	100.11	112.60
12	K	90	PRO	N-CA-CB	7.33	111.06	103.00
1	A	1560	ILE	CA-C-N	-7.31	111.22	122.62
1	A	1560	ILE	C-N-CA	-7.31	111.22	122.62
8	G	171	G	C1'-C2'-O2'	7.29	122.74	111.80
1	A	1740	LEU	CA-C-O	-7.27	113.07	121.07
9	H	22	U	C2'-C3'-O3'	-7.27	102.80	113.70
8	G	166	A	C2'-C3'-O3'	-7.26	98.61	109.50
9	H	167	U	O3'-P-O5'	-7.25	93.12	104.00
4	D	1666	THR	N-CA-C	7.22	121.54	112.87
12	K	78	PRO	N-CA-CB	7.22	110.83	103.25
38	o	71	VAL	CA-C-N	7.22	131.65	120.75
38	o	71	VAL	C-N-CA	7.22	131.65	120.75
4	D	1044	VAL	CA-C-N	7.21	126.71	118.85
4	D	1044	VAL	C-N-CA	7.21	126.71	118.85
9	H	31	G	N9-C1'-C2'	-7.20	101.21	112.00
37	t	60	PRO	N-CA-CB	7.16	111.32	103.30
8	G	176	U	C3'-C2'-O2'	7.16	121.43	110.70
18	Q	93	SER	N-CA-C	-7.15	103.57	111.36
1	A	663	ARG	CG-CD-NE	-7.14	96.29	112.00
1	A	1556	ASP	CB-CA-C	-7.13	99.69	110.88
38	o	21	ASP	CA-CB-CG	7.07	119.67	112.60
43	u	77	ASP	N-CA-C	-7.06	99.83	110.28
8	G	167	G	C2'-C3'-O3'	7.06	120.09	109.50
12	K	195	ILE	N-CA-C	-7.06	102.95	110.36
17	P	8	THR	CA-CB-OG1	-7.03	99.05	109.60
19	R	301	ALA	N-CA-C	-7.02	104.34	113.12
9	H	170	C	C3'-C2'-O2'	-7.01	104.08	114.60
38	o	72	ASN	OD1-CG-ND2	7.00	129.60	122.60
4	D	533	VAL	N-CA-C	6.97	118.85	112.29
38	o	107	ASP	CA-CB-CG	6.95	119.55	112.60
1	A	1982	GLN	CB-CA-C	-6.93	99.91	110.92
8	G	167	G	O4'-C1'-N9	-6.92	97.83	108.20
38	o	4	LEU	N-CA-C	-6.92	97.95	108.67
25	Y	685	ASP	CA-C-N	6.91	134.74	121.54
25	Y	685	ASP	C-N-CA	6.91	134.74	121.54
38	o	121	LEU	CA-C-O	6.88	128.87	121.44
37	t	46	PRO	N-CA-CB	6.85	110.44	103.25
8	G	177	G	C2'-C3'-O3'	-6.84	103.44	113.70
38	o	75	ARG	NE-CZ-NH1	-6.82	114.68	121.50
1	A	1881	ASN	CA-CB-CG	-6.80	105.80	112.60
8	G	168	C	C1'-C2'-O2'	-6.78	98.22	108.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
25	Y	686	GLU	CA-C-N	6.78	134.49	121.54
25	Y	686	GLU	C-N-CA	6.78	134.49	121.54
21	T	309	ASP	O-C-N	6.77	131.12	122.39
10	I	697	PRO	CA-C-N	6.76	134.45	121.54
10	I	697	PRO	C-N-CA	6.76	134.45	121.54
11	J	675	PRO	N-CA-CB	6.76	110.34	103.25
17	P	10	GLU	CB-CA-C	6.75	121.67	111.14
11	J	604	PRO	N-CA-CB	6.74	110.33	103.25
37	r	19	PRO	N-CA-CB	6.73	110.30	102.76
38	o	58	ASP	N-CA-CB	-6.72	100.61	111.24
39	p	53	PHE	CA-C-O	-6.72	112.93	120.32
8	G	174	G	C1'-C2'-O2'	-6.71	98.33	108.40
31	a	76	MET	CA-C-N	-6.70	113.55	123.00
31	a	76	MET	C-N-CA	-6.70	113.55	123.00
37	q	19	PRO	N-CA-CB	6.67	110.26	103.25
9	H	164	C	C5'-C4'-O4'	-6.67	99.09	109.10
13	L	214	ILE	N-CA-C	-6.62	102.46	108.95
25	Y	689	GLU	N-CA-C	-6.62	97.28	108.26
30	y	47	ARG	CB-CA-C	-6.61	99.81	110.79
8	G	127	U	C2'-C3'-O3'	-6.60	103.81	113.70
43	u	38	PRO	N-CA-C	6.54	122.35	113.84
1	A	663	ARG	CB-CA-C	-6.53	98.49	109.65
37	t	19	PRO	N-CA-CB	6.52	110.10	103.25
11	J	239	ARG	CA-C-N	6.51	133.98	121.54
11	J	239	ARG	C-N-CA	6.51	133.98	121.54
1	A	1740	LEU	N-CA-C	-6.50	103.09	111.02
11	J	637	PRO	N-CA-CB	6.49	110.40	103.52
38	o	87	LEU	CA-C-N	6.49	126.25	119.05
38	o	87	LEU	C-N-CA	6.49	126.25	119.05
8	G	22	C	C4'-C3'-O3'	-6.47	103.30	113.00
2	B	12	U	C2'-C3'-O3'	-6.46	99.80	109.50
8	G	166	A	C3'-C2'-O2'	6.46	124.28	114.60
1	A	1556	ASP	N-CA-C	6.44	117.96	111.07
14	M	121	ASP	CA-CB-CG	-6.40	106.20	112.60
37	s	19	PRO	N-CA-CB	6.39	109.95	103.25
1	A	776	LEU	N-CA-C	-6.38	104.97	112.89
11	J	187	VAL	CA-C-N	6.37	133.71	121.54
11	J	187	VAL	C-N-CA	6.37	133.71	121.54
1	A	1753	LEU	N-CA-CB	-6.36	99.92	110.47
38	o	55	ARG	NE-CZ-NH1	6.36	127.86	121.50
38	o	40	THR	CA-C-N	6.32	131.57	122.40
38	o	40	THR	C-N-CA	6.32	131.57	122.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	774	LYS	CB-CA-C	-6.32	100.92	110.90
43	u	68	ALA	N-CA-C	6.30	119.44	111.69
19	R	124	VAL	CA-C-N	6.30	133.56	121.54
19	R	124	VAL	C-N-CA	6.30	133.56	121.54
17	P	7	PRO	CB-CA-C	-6.28	101.20	111.56
37	r	60	PRO	N-CA-CB	6.27	109.84	103.25
8	G	168	C	C3'-C2'-O2'	6.26	120.09	110.70
11	J	670	PRO	N-CA-CB	6.26	110.45	103.44
9	H	168	A	C5'-C4'-C3'	-6.25	106.62	116.00
8	G	144	A	C2'-C3'-O3'	6.25	118.88	109.50
8	G	1	G	C2'-C3'-O3'	6.25	118.87	109.50
9	H	169	C	P-O3'-C3'	6.25	129.57	120.20
2	B	26	A	P-O5'-C5'	-6.24	111.53	120.90
9	H	31	G	C4'-C3'-O3'	6.21	122.32	113.00
1	A	2011	ILE	N-CA-C	-6.21	104.46	110.42
17	P	9	PHE	CA-C-N	-6.20	115.64	123.15
17	P	9	PHE	C-N-CA	-6.20	115.64	123.15
1	A	1249	MET	N-CA-C	-6.17	103.71	111.11
27	2	70	SER	N-CA-C	-6.16	104.48	112.68
15	N	40	LYS	CA-C-N	6.15	133.29	121.54
15	N	40	LYS	C-N-CA	6.15	133.29	121.54
1	A	1849	ILE	CA-C-N	-6.15	112.08	120.44
1	A	1849	ILE	C-N-CA	-6.15	112.08	120.44
38	o	73	ASN	N-CA-C	6.13	119.82	111.17
11	J	412	ASP	CA-C-N	6.13	128.82	120.54
11	J	412	ASP	C-N-CA	6.13	128.82	120.54
30	y	48	GLY	CA-C-N	-6.12	112.09	123.05
30	y	48	GLY	C-N-CA	-6.12	112.09	123.05
43	u	339	ARG	N-CA-C	6.12	119.67	109.95
8	G	3	A	N9-C1'-C2'	-6.10	102.85	112.00
41	v	142	LYS	N-CA-C	6.10	118.58	109.25
1	A	1192	PHE	N-CA-C	6.08	119.07	110.50
10	I	377	THR	CB-CA-C	-6.08	101.34	110.88
4	D	1006	LYS	CA-C-N	6.07	126.24	119.32
4	D	1006	LYS	C-N-CA	6.07	126.24	119.32
38	o	52	ASN	CA-CB-CG	6.05	118.65	112.60
1	A	1736	ALA	CA-C-O	-6.05	112.73	119.08
11	J	566	PRO	N-CA-CB	6.04	110.21	103.44
17	P	5	ALA	N-CA-C	-6.01	104.64	111.14
1	A	1877	LEU	O-C-N	6.01	128.49	122.12
13	L	134	THR	N-CA-C	5.98	117.88	111.36
43	u	178	THR	N-CA-C	5.98	120.70	113.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1568	THR	CA-CB-OG1	-5.98	100.63	109.60
1	A	771	VAL	CA-C-O	-5.98	114.73	120.95
27	2	96	MET	O-C-N	5.97	130.69	122.46
1	A	1556	ASP	CA-C-O	-5.96	114.57	120.82
38	o	79	ILE	CA-C-N	5.95	125.75	120.10
38	o	79	ILE	C-N-CA	5.95	125.75	120.10
39	p	89	ASP	CA-CB-CG	5.95	118.55	112.60
38	o	75	ARG	N-CA-CB	-5.94	102.72	111.51
36	n	67	ILE	CB-CA-C	-5.93	104.82	111.23
8	G	172	C	P-O3'-C3'	5.93	129.10	120.20
19	R	217	LYS	CB-CA-C	-5.93	98.97	109.70
10	I	481	TYR	N-CA-C	5.93	118.69	111.82
9	H	163	G	O3'-P-O5'	-5.92	95.12	104.00
38	o	27	ARG	CB-CA-C	-5.92	98.65	109.54
36	g	67	ILE	CB-CA-C	-5.92	104.84	111.23
22	U	83	GLU	CA-C-N	5.91	132.83	121.54
22	U	83	GLU	C-N-CA	5.91	132.83	121.54
39	p	46	MET	N-CA-C	-5.91	104.75	111.07
11	J	413	GLU	N-CA-C	5.89	118.18	111.11
21	T	401	PRO	CA-C-N	5.89	136.58	126.32
21	T	401	PRO	C-N-CA	5.89	136.58	126.32
38	o	123	ASN	OD1-CG-ND2	5.88	128.48	122.60
1	A	1683	LYS	CA-C-N	5.87	132.75	121.54
1	A	1683	LYS	C-N-CA	5.87	132.75	121.54
1	A	1949	ARG	N-CA-C	-5.87	105.62	112.89
38	o	50	SER	CA-C-O	5.86	127.76	121.55
18	Q	100	GLU	N-CA-C	-5.85	105.64	112.89
1	A	1739	ALA	N-CA-C	-5.84	104.29	112.12
1	A	2199	ILE	CB-CA-C	-5.80	104.42	112.02
1	A	1982	GLN	CB-CG-CD	-5.79	102.76	112.60
1	A	773	LYS	CA-C-O	-5.78	114.42	120.55
1	A	1739	ALA	O-C-N	5.76	128.69	121.95
6	F	73	A	C2'-C3'-O3'	-5.75	100.87	109.50
4	D	1135	LEU	CA-C-N	5.73	125.67	119.76
4	D	1135	LEU	C-N-CA	5.73	125.67	119.76
43	u	336	VAL	N-CA-C	-5.73	104.02	112.04
1	A	1920	TYR	CA-C-N	5.73	130.30	121.19
1	A	1920	TYR	C-N-CA	5.73	130.30	121.19
38	o	27	ARG	CA-C-N	5.72	128.74	120.11
38	o	27	ARG	C-N-CA	5.72	128.74	120.11
1	A	1980	GLU	CB-CG-CD	5.71	122.31	112.60
1	A	1733	ILE	CB-CA-C	-5.71	104.43	112.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	D	782	PHE	N-CA-C	5.70	118.08	109.41
6	F	50	A	C1'-C2'-O2'	5.70	116.95	108.40
16	O	119	GLN	CB-CG-CD	-5.70	102.91	112.60
1	A	2153	THR	N-CA-C	-5.70	101.75	109.95
9	H	164	C	P-O3'-C3'	5.68	128.73	120.20
14	M	121	ASP	CA-C-N	5.68	132.12	122.12
14	M	121	ASP	C-N-CA	5.68	132.12	122.12
1	A	1732	LYS	CB-CA-C	-5.67	101.97	110.88
10	I	457	ARG	N-CA-C	5.67	117.14	111.07
29	i	52	LYS	CA-C-N	-5.65	114.11	119.76
29	i	52	LYS	C-N-CA	-5.65	114.11	119.76
4	D	1291	LEU	CA-C-N	5.64	125.96	119.92
4	D	1291	LEU	C-N-CA	5.64	125.96	119.92
1	A	1519	THR	CB-CA-C	-5.64	108.30	116.54
8	G	174	G	C2'-C3'-O3'	-5.63	105.25	113.70
38	o	71	VAL	O-C-N	-5.63	115.53	122.57
34	m	4	PRO	N-CA-C	5.63	124.06	112.47
38	o	149	LYS	CB-CA-C	-5.62	102.06	110.16
41	v	114	LYS	N-CA-C	-5.62	100.51	109.96
27	2	23	ILE	CA-C-N	5.62	126.86	119.84
27	2	23	ILE	C-N-CA	5.62	126.86	119.84
6	F	73	A	C3'-C2'-O2'	5.61	123.01	114.60
4	D	1048	VAL	N-CA-C	-5.60	106.33	113.22
19	R	219	PRO	CA-C-O	-5.60	114.96	121.34
38	o	16	THR	O-C-N	5.59	129.59	123.22
1	A	1683	LYS	O-C-N	5.59	130.49	122.28
9	H	157	G	P-O5'-C5'	-5.58	112.53	120.90
1	A	1553	VAL	CA-C-O	-5.58	114.58	120.39
1	A	2225	LEU	N-CA-C	5.58	117.88	109.23
13	L	9	GLY	O-C-N	5.58	129.36	122.78
13	L	7	LYS	CA-C-N	5.57	130.42	121.17
13	L	7	LYS	C-N-CA	5.57	130.42	121.17
43	u	384	ASP	N-CA-C	5.57	117.80	111.11
1	A	1758	PRO	N-CA-CB	-5.56	97.41	103.25
1	A	2241	ASN	N-CA-C	5.56	118.38	110.10
38	o	159	GLU	N-CA-C	-5.55	104.86	111.69
40	1	267	ILE	N-CA-C	-5.55	105.78	113.00
3	C	755	ASP	N-CA-C	-5.55	106.30	112.57
9	H	168	A	O4'-C1'-C2'	-5.55	102.05	107.60
1	A	1054	GLY	N-CA-C	-5.55	106.08	112.29
3	C	560	VAL	CA-C-N	5.55	130.01	121.19
3	C	560	VAL	C-N-CA	5.55	130.01	121.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
17	P	5	ALA	CA-C-O	-5.55	114.99	120.70
18	Q	88	LYS	O-C-N	5.54	127.80	122.03
9	H	165	A	N9-C1'-C2'	5.54	120.31	112.00
29	b	5	LYS	N-CA-C	5.53	118.23	111.82
38	o	32	PRO	CA-C-N	5.52	130.67	122.99
38	o	32	PRO	C-N-CA	5.52	130.67	122.99
38	o	40	THR	N-CA-C	-5.52	106.04	112.89
17	P	12	ALA	CA-C-O	-5.51	115.71	121.55
38	o	34	ILE	CA-C-O	-5.51	114.24	120.74
1	A	1092	ILE	N-CA-C	5.50	120.78	109.34
25	Y	688	HIS	CA-C-N	5.50	130.53	122.39
25	Y	688	HIS	C-N-CA	5.50	130.53	122.39
1	A	663	ARG	CA-C-O	-5.49	115.01	121.16
29	i	5	LYS	N-CA-C	5.49	118.18	111.82
25	Y	680	ALA	N-CA-C	-5.48	104.83	112.45
4	D	2053	ALA	CA-C-N	5.48	125.15	119.56
4	D	2053	ALA	C-N-CA	5.48	125.15	119.56
25	Y	1183	VAL	N-CA-C	5.48	114.25	106.53
3	C	800	PRO	CA-C-N	5.48	132.00	121.54
3	C	800	PRO	C-N-CA	5.48	132.00	121.54
1	A	1736	ALA	CA-C-N	-5.47	113.16	121.92
1	A	1736	ALA	C-N-CA	-5.47	113.16	121.92
1	A	2203	ASN	N-CA-C	5.47	120.77	109.11
21	T	190	TRP	N-CA-C	5.47	122.45	110.80
1	A	1552	GLN	CA-C-N	-5.47	115.83	123.10
1	A	1552	GLN	C-N-CA	-5.47	115.83	123.10
29	b	52	LYS	CA-C-N	-5.46	114.30	119.76
29	b	52	LYS	C-N-CA	-5.46	114.30	119.76
21	T	389	SER	CA-C-N	-5.46	118.41	122.18
21	T	389	SER	C-N-CA	-5.46	118.41	122.18
10	I	698	ARG	N-CA-CB	5.45	119.71	110.49
9	H	160	A	P-O5'-C5'	-5.45	112.72	120.90
1	A	1740	LEU	O-C-N	5.45	127.91	122.08
4	D	1228	VAL	CB-CA-C	-5.45	104.90	112.04
38	o	132	ARG	CD-NE-CZ	5.44	132.02	124.40
42	w	115	GLY	N-CA-C	5.44	126.08	113.18
3	C	534	VAL	N-CA-C	-5.43	101.90	109.45
17	P	4	ALA	N-CA-C	-5.40	106.28	112.92
1	A	1529	ILE	N-CA-CB	5.40	118.76	111.21
1	A	244	GLN	N-CA-C	-5.39	105.49	111.36
24	W	204	ASP	CA-C-N	5.38	130.18	121.95
24	W	204	ASP	C-N-CA	5.38	130.18	121.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1556	ASP	CA-C-N	-5.37	114.10	122.37
1	A	1556	ASP	C-N-CA	-5.37	114.10	122.37
27	2	24	PRO	N-CA-C	5.37	123.53	112.47
11	J	356	TYR	CA-C-N	-5.36	111.30	121.54
11	J	356	TYR	C-N-CA	-5.36	111.30	121.54
24	W	266	ARG	CA-C-N	5.35	128.45	120.90
24	W	266	ARG	C-N-CA	5.35	128.45	120.90
4	D	1127	CYS	CA-C-N	5.35	125.68	119.47
4	D	1127	CYS	C-N-CA	5.35	125.68	119.47
1	A	2100	THR	N-CA-C	-5.35	106.75	113.28
25	Y	975	ARG	CA-C-N	5.35	127.39	120.44
25	Y	975	ARG	C-N-CA	5.35	127.39	120.44
7	4	-13	C	C4'-C3'-O3'	5.34	117.42	109.40
1	A	1737	ASN	CB-CA-C	5.34	121.61	110.50
39	p	25	ARG	CD-NE-CZ	5.34	131.88	124.40
1	A	1685	LEU	CA-C-O	-5.34	114.89	120.55
1	A	1514	LYS	CB-CA-C	5.34	118.21	110.79
29	b	65	ARG	CB-CG-CD	5.34	123.57	111.30
25	Y	841	ILE	N-CA-CB	5.33	117.78	110.54
38	o	146	ASP	CA-C-N	5.33	130.12	122.40
38	o	146	ASP	C-N-CA	5.33	130.12	122.40
3	C	824	THR	N-CA-C	5.33	123.42	112.40
8	G	169	U	N1-C1'-C2'	-5.32	104.01	112.00
25	Y	1169	ASP	N-CA-C	-5.32	100.96	109.04
29	i	65	ARG	CB-CG-CD	5.32	123.53	111.30
1	A	1723	LYS	N-CA-C	-5.31	105.53	112.75
3	C	515	THR	CA-C-N	5.31	127.71	120.54
3	C	515	THR	C-N-CA	5.31	127.71	120.54
20	S	130	GLY	N-CA-C	5.31	118.87	110.96
38	o	33	VAL	N-CA-CB	-5.31	103.77	111.52
39	p	6	ASN	N-CA-CB	-5.31	101.66	111.53
38	o	125	VAL	CA-C-N	5.30	127.91	120.28
38	o	125	VAL	C-N-CA	5.30	127.91	120.28
4	D	811	SER	N-CA-C	5.30	115.12	108.45
4	D	1228	VAL	N-CA-C	5.29	116.66	110.62
16	O	30	GLU	CA-C-N	-5.29	114.25	121.61
16	O	30	GLU	C-N-CA	-5.29	114.25	121.61
4	D	749	GLY	N-CA-C	-5.29	108.40	114.69
1	A	862	GLU	O-C-N	5.29	127.72	122.12
37	s	54	ASP	N-CA-CB	-5.29	102.27	110.46
1	A	1730	MET	CA-C-O	-5.28	114.95	120.55
4	D	2096	ALA	CA-C-N	5.28	125.48	120.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	D	2096	ALA	C-N-CA	5.28	125.48	120.31
1	A	862	GLU	CA-C-O	-5.27	114.96	120.55
4	D	1693	ARG	CA-C-N	5.27	125.08	119.28
4	D	1693	ARG	C-N-CA	5.27	125.08	119.28
38	o	113	LYS	N-CA-C	5.25	118.48	111.75
1	A	1724	PRO	CA-N-CD	-5.25	104.65	112.00
1	A	1514	LYS	CA-C-N	5.25	127.31	120.28
1	A	1514	LYS	C-N-CA	5.25	127.31	120.28
9	H	171	U	C2'-C3'-O3'	-5.24	105.84	113.70
39	p	20	LYS	N-CA-C	5.23	117.38	111.11
17	P	5	ALA	O-C-N	5.22	127.73	122.09
17	P	11	PRO	CB-CA-C	-5.22	104.73	111.46
36	n	10	LYS	CB-CA-C	5.22	120.28	110.63
9	H	156	U	C4'-C3'-C2'	5.21	107.81	102.60
38	o	88	PRO	CB-CA-C	-5.21	104.03	112.62
4	D	488	LEU	N-CA-C	5.20	119.72	113.17
19	R	310	ARG	CB-CA-C	-5.19	102.73	110.88
13	L	52	GLU	N-CA-C	5.18	117.01	111.36
39	p	51	GLN	N-CA-C	5.18	117.55	109.52
39	p	68	GLN	OE1-CD-NE2	5.18	127.78	122.60
39	p	36	HIS	CA-CB-CG	-5.18	108.62	113.80
25	Y	1052	TRP	CA-C-N	5.17	127.16	120.44
25	Y	1052	TRP	C-N-CA	5.17	127.16	120.44
38	o	83	LEU	N-CA-C	5.17	117.58	111.33
10	I	231	ASN	O-C-N	5.16	125.08	120.48
3	C	359	LYS	CA-CB-CG	5.16	124.42	114.10
43	u	163	THR	N-CA-C	-5.16	103.68	110.39
10	I	22	LEU	O-C-N	5.15	125.07	120.48
25	Y	619	ARG	CA-C-N	5.15	127.50	120.54
25	Y	619	ARG	C-N-CA	5.15	127.50	120.54
4	D	572	ASP	N-CA-C	-5.15	103.34	110.35
42	w	148	TRP	N-CA-C	-5.14	103.25	110.50
10	I	487	TRP	N-CA-C	5.14	116.96	111.36
43	u	342	ASP	N-CA-C	5.14	117.08	107.99
27	2	97	ASP	O-C-N	5.13	129.42	122.59
39	p	48	MET	N-CA-C	5.13	119.54	113.28
43	u	367	ARG	N-CA-C	-5.13	106.28	112.54
2	B	21	A	C2'-C3'-O3'	-5.12	106.02	113.70
42	w	107	ASP	N-CA-C	-5.12	102.06	109.59
4	D	574	GLN	N-CA-C	5.11	117.98	111.69
33	k	99	MET	N-CA-C	5.11	116.84	108.76
9	H	22	U	C1'-C2'-O2'	-5.11	100.74	108.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
38	o	55	ARG	NE-CZ-NH2	-5.10	114.61	119.20
4	D	1875	VAL	CA-C-N	5.10	124.55	119.24
4	D	1875	VAL	C-N-CA	5.10	124.55	119.24
43	u	210	PRO	N-CA-C	5.10	121.35	113.75
33	d	99	MET	N-CA-C	5.10	116.82	108.76
33	d	88	LYS	CG-CD-CE	-5.10	99.57	111.30
38	o	90	LEU	CA-C-O	-5.10	113.22	120.51
8	G	172	C	C3'-C2'-O2'	5.09	122.24	114.60
39	p	83	TYR	CA-C-O	-5.09	115.25	121.05
14	M	124	PHE	CA-C-N	5.09	129.28	121.19
14	M	124	PHE	C-N-CA	5.09	129.28	121.19
41	v	141	PHE	N-CA-C	5.09	120.14	113.88
24	W	79	VAL	N-CA-C	5.08	114.10	106.42
1	A	1560	ILE	CA-C-O	-5.08	114.74	120.74
35	e	85	THR	N-CA-C	-5.08	105.93	112.68
10	I	149	TRP	O-C-N	5.08	125.00	120.48
9	H	155	C	P-O3'-C3'	5.08	127.81	120.20
19	R	181	PRO	N-CA-C	5.07	120.43	113.84
9	H	160	A	C4'-C3'-C2'	-5.06	97.54	102.60
38	o	90	LEU	O-C-N	5.05	129.31	122.59
10	I	728	ARG	CB-CG-CD	-5.05	99.68	111.30
8	G	1	G	C3'-C2'-O2'	5.05	122.17	114.60
11	J	201	ARG	CA-C-N	5.05	129.53	122.36
11	J	201	ARG	C-N-CA	5.05	129.53	122.36
1	A	243	ASN	CA-C-N	-5.04	113.13	120.29
1	A	243	ASN	C-N-CA	-5.04	113.13	120.29
9	H	170	C	O4'-C1'-C2'	-5.04	100.76	105.80
10	I	89	ASP	O-C-N	5.04	124.97	120.48
21	T	495	ALA	N-CA-C	5.04	117.55	111.40
1	A	2185	SER	CA-C-N	-5.03	116.57	121.65
1	A	2185	SER	C-N-CA	-5.03	116.57	121.65
19	R	70	ALA	CA-C-N	5.03	128.80	121.31
19	R	70	ALA	C-N-CA	5.03	128.80	121.31
9	H	160	A	N9-C1'-C2'	5.03	119.54	112.00
1	A	1738	PRO	N-CA-CB	-5.02	97.97	103.25
38	o	81	GLU	N-CA-C	5.02	118.55	112.23
35	l	85	THR	N-CA-C	-5.02	106.01	112.68
38	o	99	SER	N-CA-CB	-5.01	102.94	111.17
8	G	21	A	P-O3'-C3'	-5.01	112.69	120.20
1	A	772	CYS	CA-C-O	-5.00	115.12	120.42

There are no chirality outliers.

All (63) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1019	TYR	Peptide
1	A	1201	ARG	Peptide
1	A	1210	LYS	Peptide
1	A	1338	SER	Peptide
1	A	1503	TRP	Peptide
1	A	1513	MET	Mainchain
1	A	1561	PHE	Mainchain
1	A	166	PHE	Peptide
1	A	1717	ASN	Mainchain
1	A	1749	LYS	Mainchain
1	A	1753	LEU	Mainchain
1	A	2010	ILE	Mainchain
1	A	346	ASP	Peptide
1	A	377	GLU	Peptide
1	A	385	GLU	Peptide
1	A	55	ASP	Peptide
1	A	698	PRO	Peptide
1	A	73	HIS	Peptide
1	A	941	LYS	Peptide
3	C	308	CYS	Peptide
3	C	358	LYS	Peptide
3	C	360	ALA	Peptide
3	C	534	VAL	Peptide
3	C	799	GLU	Peptide
3	C	800	PRO	Peptide
3	C	902	HIS	Peptide
3	C	92	PRO	Peptide
3	C	93	ILE	Peptide
4	D	430	LEU	Peptide
5	E	192	ASN	Peptide
10	I	309	ALA	Mainchain
10	I	310	LYS	Mainchain
10	I	311	MET	Mainchain
10	I	693	GLN	Mainchain
10	I	83	LYS	Mainchain
10	I	84	HIS	Mainchain
11	J	205	LEU	Peptide
11	J	215	THR	Peptide
11	J	216	ASP	Peptide
11	J	240	THR	Peptide
11	J	241	VAL	Peptide
15	N	136	HIS	Peptide

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Mol	Chain	Res	Type	Group
15	N	3	LYS	Peptide
15	N	36	PRO	Peptide
15	N	4	VAL	Peptide
16	O	63	MET	Peptide
17	P	204	GLN	Peptide
17	P	30	TYR	Peptide
17	P	48	GLN	Peptide
19	R	125	MET	Peptide
19	R	126	ASN	Peptide
19	R	183	GLN	Peptide
19	R	185	GLY	Peptide
19	R	212	PHE	Peptide
19	R	66	GLU	Peptide
19	R	94	GLY	Peptide
21	T	342	GLU	Peptide
21	T	400	PHE	Peptide
21	T	405	PHE	Peptide
24	W	257	ILE	Peptide
24	W	518	PRO	Peptide
33	d	112	ASN	Peptide
33	k	112	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	A	17748	0	16907	1068	0
2	B	1768	0	897	65	0
3	C	6787	0	6794	123	0
4	D	8530	0	3747	18	0
5	E	2338	0	2275	72	0
6	F	2075	0	1048	174	0
7	4	276	0	142	23	0
8	G	1510	0	760	205	0
9	H	2966	0	1505	289	0
10	I	3857	0	2738	166	0
11	J	3819	0	2904	54	0
12	K	772	0	342	20	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	L	3015	0	2570	81	0
14	M	1098	0	1082	39	0
15	N	1184	0	1190	27	0
16	O	2296	0	2284	78	0
17	P	953	0	939	37	0
18	Q	6562	0	2836	49	0
19	R	2243	0	2298	93	0
20	S	1236	0	1210	55	0
21	T	2454	0	2413	81	0
22	U	422	0	291	10	0
23	V	2632	0	1734	56	0
24	W	4129	0	4040	166	0
25	Y	3431	0	1662	35	0
26	Z	1084	0	1019	28	0
27	2	1013	0	1058	168	0
28	z	496	0	484	83	0
29	b	786	0	811	48	0
29	i	690	0	712	15	0
30	y	390	0	190	3	0
31	a	609	0	620	26	0
31	h	633	0	645	14	0
32	c	649	0	693	10	0
32	j	649	0	693	11	0
33	d	776	0	819	32	0
33	k	688	0	709	30	0
34	f	576	0	589	21	0
34	m	566	0	573	53	0
35	e	652	0	668	20	0
35	l	652	0	668	45	0
36	g	577	0	603	15	0
36	n	542	0	568	29	0
37	q	659	0	296	19	0
37	r	654	0	294	8	0
37	s	659	0	296	21	0
37	t	654	0	294	18	0
38	o	1282	0	1305	31	0
39	p	760	0	783	12	0
40	1	2209	0	2157	328	0
41	v	711	0	299	6	0
42	w	445	0	203	6	0
43	u	1907	0	845	5	0
44	x	124	0	51	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
45	3	230	0	229	48	0
46	A	36	0	6	9	0
47	C	32	0	12	2	0
48	C	1	0	0	0	0
48	F	6	0	0	0	0
48	Q	2	0	0	0	0
49	1	1	0	0	0	0
49	N	3	0	0	0	0
49	O	3	0	0	0	0
50	Q	31	0	12	5	0
All	All	106538	0	83812	3113	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 16.

All (3113) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1685:LEU:HD21	40:1:173:TYR:CZ	1.30	1.66
1:A:1496:PRO:HG2	45:3:338:GLY:CA	1.29	1.61
1:A:1498:TRP:CZ3	40:1:63:ILE:HG23	1.08	1.58
1:A:1698:PRO:CB	40:1:182:VAL:HG22	1.17	1.57
1:A:1496:PRO:CG	45:3:338:GLY:HA3	1.30	1.56
1:A:1955:LYS:CD	27:2:92:ARG:HH22	1.06	1.56
1:A:526:PRO:HG3	28:z:106:PRO:CD	1.11	1.54
10:I:723:MET:HA	10:I:726:ILE:CG2	1.30	1.54
1:A:1698:PRO:HB2	40:1:182:VAL:CG2	1.32	1.54
1:A:1498:TRP:CH2	40:1:63:ILE:CG2	1.88	1.53
10:I:265:TYR:CB	10:I:274:LYS:CB	1.84	1.52
34:m:5:LEU:CD2	35:l:57:VAL:HG11	1.38	1.51
1:A:2328:ALA:CB	4:D:788:GLY:HA2	1.35	1.50
1:A:1499:GLU:HG2	40:1:63:ILE:CG1	1.40	1.50
1:A:1685:LEU:HD11	40:1:173:TYR:CD2	1.48	1.47
1:A:1498:TRP:CH2	40:1:63:ILE:HG23	1.42	1.47
1:A:1495:PHE:CD1	45:3:337:ILE:CD1	1.94	1.46
1:A:1495:PHE:CD1	45:3:337:ILE:HD11	1.46	1.45
1:A:526:PRO:CG	28:z:106:PRO:HD3	1.47	1.44
34:m:3:LEU:CD1	34:m:4:PRO:HD2	1.45	1.44
1:A:1698:PRO:HG2	40:1:182:VAL:CA	1.43	1.44
1:A:2328:ALA:HB3	4:D:788:GLY:CA	1.49	1.42
1:A:1499:GLU:CD	40:1:63:ILE:CD1	1.90	1.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:G:129:G:H4'	24:W:541:LYS:NZ	1.27	1.41
1:A:1499:GLU:CG	40:1:63:ILE:HD11	1.48	1.41
1:A:1698:PRO:CB	40:1:182:VAL:CG2	1.90	1.40
1:A:1983:LEU:CD2	1:A:1987:ILE:HG12	1.50	1.40
1:A:1849:ILE:HG22	1:A:1879:PHE:CE1	1.56	1.39
1:A:240:ARG:NH1	40:1:139:ARG:HB3	1.33	1.38
1:A:1499:GLU:CD	40:1:63:ILE:HD11	0.95	1.37
10:I:723:MET:CA	10:I:726:ILE:CG2	2.02	1.36
1:A:1498:TRP:CZ3	40:1:63:ILE:CG2	2.03	1.35
1:A:1615:HIS:CE1	28:z:96:LEU:CB	2.08	1.35
1:A:1499:GLU:HG2	40:1:63:ILE:CD1	1.55	1.34
1:A:1644:LEU:HD21	1:A:1681:ARG:CD	1.57	1.34
1:A:1499:GLU:OE2	40:1:63:ILE:HD11	1.25	1.33
1:A:1499:GLU:CG	40:1:63:ILE:CD1	2.04	1.33
1:A:1945:VAL:HG11	1:A:1990:ASP:OD2	1.16	1.32
1:A:525:LYS:HD3	28:z:102:HIS:O	1.20	1.32
19:R:222:PRO:N	19:R:222:PRO:CA	1.67	1.31
21:T:188:PRO:HB3	21:T:440:ASP:OD2	1.13	1.31
1:A:1724:PRO:N	1:A:1724:PRO:CA	1.68	1.31
1:A:526:PRO:CG	28:z:106:PRO:CD	2.06	1.31
1:A:1685:LEU:HD21	40:1:173:TYR:CE2	1.67	1.30
1:A:1698:PRO:CG	40:1:182:VAL:HG22	1.59	1.30
1:A:1130:ASN:ND2	1:A:1139:ARG:HD3	1.43	1.29
19:R:319:LYS:O	19:R:323:LYS:HD2	1.26	1.29
1:A:1615:HIS:HE1	28:z:96:LEU:CB	1.45	1.29
10:I:273:GLU:HA	18:Q:357:ALA:CB	1.63	1.28
1:A:1499:GLU:CG	40:1:63:ILE:CG1	2.11	1.27
1:A:1685:LEU:CD2	40:1:173:TYR:CZ	2.19	1.26
1:A:1938:LEU:O	1:A:1983:LEU:HD11	1.11	1.25
8:G:120:G:O2'	8:G:121:G:O4'	1.54	1.25
24:W:72:LEU:HD11	24:W:83:PRO:CG	1.64	1.25
10:I:704:TRP:CZ3	10:I:727:ARG:HG3	1.71	1.25
1:A:1955:LYS:HD2	27:2:92:ARG:NH2	0.93	1.25
8:G:129:G:C4'	24:W:541:LYS:HZ3	1.47	1.25
10:I:722:GLU:O	10:I:726:ILE:HG22	1.19	1.25
18:Q:801:GLN:O	50:Q:1501:ATP:N6	1.66	1.25
34:m:3:LEU:HD12	34:m:4:PRO:CD	1.66	1.25
23:V:499:GLN:OE1	40:1:72:TRP:CE3	1.92	1.23
8:G:129:G:C4'	24:W:541:LYS:NZ	2.01	1.23
24:W:73:ASP:CB	24:W:74:PRO:HD3	1.66	1.23
24:W:83:PRO:HB3	24:W:87:THR:OG1	1.34	1.23

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:852:ARG:NH2	7:4:-13:C:H2'	1.50	1.22
11:J:535:TYR:CB	11:J:541:ALA:HB2	1.70	1.21
24:W:73:ASP:HB3	24:W:74:PRO:CD	1.69	1.21
34:m:5:LEU:HD21	35:l:57:VAL:CG1	1.68	1.21
5:E:266:PRO:HG2	13:L:785:GLN:CB	1.71	1.21
21:T:185:MET:HG3	21:T:186:PRO:CD	1.69	1.21
1:A:584:HIS:HE1	46:A:3000:IHP:O26	1.21	1.20
1:A:537:LYS:HD2	6:F:37:C:N4	1.54	1.20
1:A:1737:ASN:OD1	1:A:1738:PRO:HD2	1.42	1.20
21:T:185:MET:CG	21:T:186:PRO:HD3	1.72	1.20
12:K:83:SER:HA	37:t:75:LEU:CB	1.72	1.18
1:A:1758:PRO:HB2	45:3:352:TYR:HB3	1.25	1.18
1:A:1495:PHE:CG	45:3:337:ILE:HD11	1.79	1.17
1:A:1596:VAL:HG13	40:1:278:LEU:CD1	1.74	1.17
24:W:72:LEU:CD1	24:W:83:PRO:HG3	1.72	1.17
1:A:1321:GLU:HB2	40:1:66:TYR:OH	1.42	1.17
1:A:1698:PRO:CG	40:1:182:VAL:HA	1.73	1.17
1:A:199:GLU:CD	40:1:139:ARG:HG2	1.70	1.17
6:F:79:C:OP2	11:J:237:LYS:NZ	1.76	1.16
6:F:80:G:OP1	13:L:174:LYS:NZ	1.77	1.16
10:I:722:GLU:O	10:I:726:ILE:CG2	1.93	1.16
1:A:1705:ILE:HG21	1:A:1734:MET:CE	1.74	1.16
23:V:499:GLN:OE1	40:1:72:TRP:CZ3	1.98	1.16
20:S:72:ARG:NE	24:W:92:GLU:OE2	1.79	1.16
20:S:72:ARG:HB3	24:W:92:GLU:OE1	1.45	1.16
1:A:1495:PHE:CD1	45:3:337:ILE:HD13	1.74	1.15
18:Q:801:GLN:C	50:Q:1501:ATP:HN62	1.53	1.15
8:G:21:A:O2'	8:G:22:C:O5'	1.64	1.15
10:I:273:GLU:CA	18:Q:357:ALA:HB2	1.77	1.15
24:W:264:ASN:ND2	35:l:16:GLN:OE1	1.78	1.15
1:A:1705:ILE:HD13	1:A:1734:MET:HE2	1.23	1.14
1:A:1719:PHE:HB2	1:A:1720:PRO:HD2	1.26	1.14
1:A:199:GLU:OE1	40:1:139:ARG:HG2	1.48	1.14
1:A:1495:PHE:CG	45:3:337:ILE:CD1	2.30	1.14
1:A:1705:ILE:HG21	1:A:1734:MET:HE3	1.16	1.14
10:I:286:VAL:O	10:I:351:ARG:CB	1.96	1.14
34:m:3:LEU:CG	34:m:4:PRO:HD2	1.76	1.14
6:F:54:G:OP1	8:G:169:U:OP2	1.65	1.14
8:G:21:A:C1'	16:O:152:ARG:NH2	2.11	1.14
10:I:661:ASP:HB2	10:I:694:ILE:HG21	1.30	1.13
35:l:14:MET:HE1	36:n:10:LYS:CE	1.77	1.13

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1496:PRO:HD2	45:3:337:ILE:HG13	1.31	1.13
1:A:2004:GLN:HE22	40:1:335:TYR:HB2	1.03	1.13
1:A:172:GLU:OE1	28:z:99:LEU:HA	1.49	1.13
21:T:188:PRO:CB	21:T:440:ASP:OD2	1.97	1.12
1:A:1498:TRP:CH2	40:1:63:ILE:HG21	1.69	1.11
10:I:273:GLU:HA	18:Q:357:ALA:HB2	1.11	1.11
21:T:188:PRO:HG3	21:T:443:THR:OG1	1.47	1.11
24:W:73:ASP:HB3	24:W:74:PRO:HD3	1.17	1.11
1:A:1596:VAL:HG13	40:1:278:LEU:HD11	1.28	1.11
9:H:36:G:H2'	9:H:37:U:H5'	1.31	1.11
1:A:584:HIS:CE1	46:A:3000:IHP:O26	2.02	1.10
1:A:1471:ARG:HD3	40:1:66:TYR:CD1	1.86	1.10
1:A:1698:PRO:HG2	40:1:182:VAL:CB	1.79	1.10
9:H:47:U:OP1	27:2:40:LYS:NZ	1.84	1.10
13:L:129:ASP:OD2	13:L:130:PRO:HD2	1.51	1.10
9:H:168:A:H1'	36:n:48:MET:HE1	1.19	1.10
1:A:526:PRO:HD3	28:z:105:ILE:CA	1.80	1.10
5:E:93:TRP:HZ3	29:b:105:GLY:O	1.33	1.10
10:I:721:LYS:NZ	13:L:65:ARG:NH2	2.00	1.10
1:A:1499:GLU:OE2	40:1:63:ILE:CD1	1.92	1.10
10:I:84:HIS:CB	10:I:90:PRO:HA	1.82	1.10
1:A:2004:GLN:NE2	40:1:335:TYR:HB2	1.66	1.09
1:A:1481:VAL:HG23	40:1:85:GLN:NE2	1.66	1.09
18:Q:801:GLN:C	50:Q:1501:ATP:N6	2.08	1.09
21:T:455:GLN:HG2	21:T:456:PRO:HD2	1.15	1.09
6:F:45:A:N6	8:G:2:U:O2	1.85	1.09
17:P:212:ASN:HB3	21:T:458:SER:N	1.67	1.09
23:V:499:GLN:CD	40:1:72:TRP:CE3	2.30	1.09
35:l:14:MET:CE	36:n:10:LYS:HE3	1.83	1.09
1:A:526:PRO:HG3	28:z:106:PRO:HD2	1.24	1.09
1:A:1471:ARG:HD3	40:1:66:TYR:CE1	1.88	1.09
9:H:36:G:C2'	9:H:37:U:H5'	1.83	1.09
1:A:525:LYS:HE2	28:z:103:TYR:HA	1.27	1.08
34:m:5:LEU:CD2	35:l:57:VAL:CG1	2.26	1.08
1:A:1955:LYS:HD2	27:2:92:ARG:CZ	1.83	1.08
9:H:154:C:OP2	39:p:19:LYS:HG2	1.49	1.08
10:I:681:ILE:HG23	10:I:710:PHE:CZ	1.88	1.08
6:F:39:A:C2'	6:F:40:U:H5'	1.82	1.08
8:G:21:A:H1'	16:O:152:ARG:HH21	1.05	1.08
6:F:34:G:H2'	6:F:35:A:H5"	1.29	1.07
27:2:120:ALA:HB1	36:n:55:ASN:OD1	1.52	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1499:GLU:CG	40:1:63:ILE:HG12	1.77	1.07
1:A:1938:LEU:HB3	1:A:1983:LEU:HD13	1.12	1.07
9:H:156:U:H6	9:H:156:U:H5"	1.09	1.07
1:A:1938:LEU:O	1:A:1983:LEU:CD1	2.03	1.07
8:G:21:A:OP2	16:O:193:LEU:HD21	1.51	1.07
1:A:1739:ALA:O	1:A:1742:VAL:HB	1.55	1.07
27:2:138:LYS:HE2	27:2:138:LYS:HA	1.34	1.07
24:W:73:ASP:CG	24:W:74:PRO:HD3	1.79	1.06
1:A:1495:PHE:HB3	45:3:337:ILE:CD1	1.85	1.06
1:A:1499:GLU:HB3	40:1:60:ASN:HB3	1.30	1.06
8:G:129:G:C5'	24:W:541:LYS:HZ1	1.68	1.06
14:M:118:LYS:H	14:M:118:LYS:HD3	1.18	1.06
9:H:105:G:H2'	9:H:106:G:H5"	1.37	1.06
23:V:457:ARG:HH12	40:1:88:GLN:HG2	1.14	1.06
1:A:1495:PHE:CB	45:3:337:ILE:HD11	1.86	1.06
1:A:1849:ILE:CG2	1:A:1879:PHE:CE1	2.39	1.05
1:A:1945:VAL:CG1	1:A:1990:ASP:OD2	2.03	1.05
1:A:1983:LEU:CD2	1:A:1987:ILE:CG1	2.33	1.05
5:E:59:ILE:HD11	24:W:82:ASN:HD21	1.10	1.05
9:H:177:A:OP2	27:2:137:LYS:HG3	1.55	1.05
10:I:722:GLU:C	10:I:726:ILE:HG22	1.81	1.04
1:A:199:GLU:HB3	40:1:139:ARG:HD2	1.39	1.04
1:A:1644:LEU:HD21	1:A:1681:ARG:HD3	1.07	1.04
1:A:1979:VAL:HA	1:A:1982:GLN:HB2	1.33	1.04
11:J:535:TYR:O	11:J:538:ILE:N	1.90	1.04
1:A:1501:LEU:HD21	45:3:337:ILE:HD13	1.35	1.04
19:R:319:LYS:O	19:R:323:LYS:CD	2.03	1.04
24:W:79:VAL:HG21	29:b:114:ILE:HD11	1.05	1.04
1:A:1644:LEU:CD2	1:A:1681:ARG:HD3	1.87	1.04
1:A:1685:LEU:CD1	40:1:173:TYR:CD2	2.41	1.04
37:q:60:PRO:CB	37:s:93:ARG:C	2.30	1.04
23:V:499:GLN:NE2	40:1:72:TRP:CE3	2.26	1.03
37:s:71:ILE:CB	37:t:81:GLU:CB	2.35	1.03
35:l:14:MET:HE1	36:n:10:LYS:HE3	1.04	1.03
1:A:1698:PRO:CG	40:1:182:VAL:CG2	2.28	1.03
10:I:723:MET:O	10:I:726:ILE:HG23	1.55	1.03
8:G:129:G:C5'	24:W:541:LYS:NZ	2.21	1.03
9:H:40:C:H4'	9:H:41:U:OP1	1.56	1.03
1:A:1739:ALA:O	1:A:1742:VAL:CB	2.08	1.02
8:G:147:C:H2'	8:G:148:U:C6	1.93	1.02
1:A:1495:PHE:HB3	45:3:337:ILE:HD12	1.39	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:m:3:LEU:HD12	34:m:4:PRO:HD2	1.12	1.02
10:I:698:ARG:HA	10:I:698:ARG:HE	1.23	1.02
23:V:499:GLN:NE2	40:1:72:TRP:CD2	2.27	1.02
23:V:499:GLN:NE2	40:1:72:TRP:HB2	1.74	1.02
9:H:39:U:H6	9:H:39:U:H5"	1.23	1.01
10:I:187:LEU:HA	10:I:196:ALA:HB1	1.38	1.01
6:F:86:U:O2'	6:F:87:C:O5'	1.78	1.01
13:L:124:LYS:CE	13:L:129:ASP:OD2	2.08	1.01
1:A:1698:PRO:CG	40:1:182:VAL:CA	2.32	1.01
1:A:1955:LYS:NZ	27:2:89:GLU:OE2	1.94	1.01
1:A:526:PRO:CD	28:z:105:ILE:HA	1.90	1.01
12:K:15:ALA:HB1	37:s:112:ALA:O	1.60	1.01
34:m:3:LEU:CD1	34:m:4:PRO:CD	2.31	1.01
1:A:1589:ILE:CG2	1:A:1730:MET:HE1	1.91	1.00
1:A:1698:PRO:HG2	40:1:182:VAL:CG2	1.90	1.00
1:A:526:PRO:HD2	28:z:104:ASP:O	1.61	1.00
27:2:51:LYS:HZ3	35:l:28:ARG:HD3	1.27	1.00
8:G:20:A:HO2'	16:O:193:LEU:HD21	1.20	1.00
40:1:46:GLY:HA2	45:3:331:ILE:CG2	1.92	1.00
6:F:8:C:H6	6:F:8:C:H5"	1.23	1.00
1:A:106:MET:HE3	1:A:561:HIS:NE2	1.76	1.00
1:A:887:THR:HB	13:L:122:LYS:HE2	1.43	1.00
1:A:1596:VAL:CG1	40:1:278:LEU:CD1	2.39	1.00
21:T:455:GLN:HG2	21:T:456:PRO:CD	1.91	1.00
1:A:1910:THR:HG22	24:W:412:GLN:OE1	1.62	1.00
1:A:2014:MET:N	1:A:2014:MET:SD	2.31	1.00
8:G:138:A:C2	9:H:39:U:O2	2.14	1.00
27:2:52:MET:HB2	35:l:28:ARG:NH2	1.75	1.00
1:A:148:TRP:O	1:A:152:ARG:HG3	1.62	1.00
1:A:1596:VAL:CG1	40:1:278:LEU:HD11	1.90	0.99
1:A:1759:THR:HG21	40:1:288:LYS:HD3	1.41	0.99
40:1:46:GLY:HA2	45:3:331:ILE:HG21	1.39	0.99
24:W:79:VAL:CG2	29:b:114:ILE:HD11	1.92	0.99
1:A:1955:LYS:HZ2	27:2:89:GLU:CD	1.71	0.99
1:A:1258:LYS:CE	8:G:173:G:H4'	1.91	0.99
1:A:1495:PHE:CB	45:3:337:ILE:CD1	2.40	0.99
10:I:704:TRP:CE3	10:I:727:ARG:HG3	1.97	0.99
1:A:1386:TRP:HB3	25:Y:410:VAL:CG2	1.92	0.99
1:A:1593:LEU:HD21	1:A:1729:ALA:HB1	1.44	0.99
1:A:1938:LEU:C	1:A:1983:LEU:HD11	1.88	0.99
24:W:83:PRO:HB3	24:W:87:THR:HG1	1.20	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1794:PHE:HB2	24:W:459:PRO:HD3	1.45	0.98
27:2:29:GLU:O	27:2:33:LEU:HD12	1.63	0.98
11:J:535:TYR:C	11:J:538:ILE:HA	1.88	0.98
24:W:79:VAL:HG21	29:b:114:ILE:CD1	1.93	0.98
10:I:723:MET:C	10:I:726:ILE:CG2	2.35	0.98
1:A:526:PRO:HD3	28:z:105:ILE:HA	0.99	0.98
9:H:168:A:H5"	9:H:168:A:C8	1.98	0.98
11:J:535:TYR:C	11:J:538:ILE:CA	2.37	0.98
11:J:535:TYR:CB	11:J:541:ALA:CB	2.41	0.98
1:A:1130:ASN:HD22	1:A:1139:ARG:HD3	1.16	0.98
6:F:41:A:N1	8:G:6:A:N1	2.11	0.98
23:V:496:CYS:SG	40:1:72:TRP:HH2	1.85	0.98
10:I:721:LYS:HZ2	13:L:65:ARG:NH2	1.58	0.98
41:v:29:ASP:CB	42:w:154:PRO:CB	2.42	0.98
1:A:1739:ALA:O	1:A:1742:VAL:N	1.96	0.98
6:F:34:G:C2'	6:F:35:A:H5"	1.94	0.98
1:A:525:LYS:CD	28:z:102:HIS:O	2.11	0.97
8:G:21:A:H1'	16:O:152:ARG:NH2	1.73	0.97
8:G:21:A:H4'	8:G:22:C:OP1	1.60	0.97
1:A:1890:GLN:HB3	27:2:70:SER:OG	1.62	0.97
8:G:129:G:H4'	24:W:541:LYS:CE	1.93	0.97
9:H:40:C:O2'	9:H:41:U:H5"	1.64	0.97
1:A:1499:GLU:HG2	40:1:63:ILE:HG12	1.01	0.97
1:A:1955:LYS:CD	27:2:92:ARG:NH2	1.81	0.97
8:G:21:A:N9	16:O:152:ARG:NH2	2.11	0.97
1:A:1698:PRO:HG2	40:1:182:VAL:HA	1.00	0.97
10:I:723:MET:C	10:I:726:ILE:HG23	1.89	0.97
1:A:1983:LEU:HD23	1:A:1987:ILE:HG12	1.00	0.97
27:2:48:ILE:HG23	34:m:5:LEU:HD12	1.43	0.97
1:A:1955:LYS:NZ	27:2:89:GLU:CD	2.22	0.96
3:C:673:LYS:NZ	22:U:56:ASP:CB	2.28	0.96
3:C:852:ARG:NH2	7:4:-13:C:C6	2.32	0.96
1:A:240:ARG:NH1	40:1:139:ARG:CB	2.28	0.96
1:A:1833:LEU:HD22	1:A:1833:LEU:H	1.27	0.96
6:F:39:A:H2'	6:F:40:U:H5'	1.45	0.96
8:G:142:U:O2'	8:G:143:U:H5'	1.64	0.96
27:2:38:LEU:HD23	34:m:12:ASN:HD22	1.31	0.96
1:A:1498:TRP:HH2	40:1:63:ILE:HG21	1.12	0.96
1:A:1617:ARG:HG2	1:A:1620:TYR:OH	1.64	0.96
1:A:1499:GLU:OE1	40:1:60:ASN:HB2	1.66	0.95
23:V:450:ILE:CG1	40:1:89:PRO:HG2	1.96	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1678:ARG:NH2	40:1:96:SER:O	1.99	0.95
1:A:1684:PHE:CB	1:A:1715:TYR:CD2	2.49	0.95
23:V:457:ARG:HG3	40:1:73:TYR:CD2	2.01	0.95
1:A:525:LYS:HG2	28:z:103:TYR:C	1.91	0.95
37:q:60:PRO:C	37:s:93:ARG:CB	2.39	0.95
1:A:1685:LEU:HD11	40:1:173:TYR:CG	2.01	0.95
1:A:1386:TRP:HB3	25:Y:410:VAL:HG21	1.47	0.95
1:A:1955:LYS:NZ	27:2:93:GLN:NE2	2.15	0.95
10:I:723:MET:HA	10:I:726:ILE:HG21	0.97	0.95
10:I:723:MET:HA	10:I:726:ILE:HG23	1.48	0.94
9:H:156:U:H5"	9:H:156:U:C6	2.02	0.94
23:V:499:GLN:NE2	40:1:72:TRP:CG	2.35	0.94
31:a:74:PRO:HB2	31:a:77:LEU:HD11	1.49	0.94
10:I:721:LYS:HZ2	13:L:65:ARG:HH21	1.05	0.94
27:2:120:ALA:CB	36:n:55:ASN:OD1	2.14	0.94
1:A:160:HIS:HE1	40:1:170:TRP:HA	1.31	0.94
1:A:1883:VAL:HG22	40:1:290:ARG:O	1.66	0.94
1:A:1498:TRP:HH2	40:1:63:ILE:CG2	1.53	0.94
5:E:93:TRP:CZ3	29:b:105:GLY:O	2.20	0.94
8:G:167:G:H8	8:G:167:G:H5'	1.33	0.94
2:B:95:G:H5'	34:f:25:TRP:HH2	1.28	0.94
10:I:723:MET:CA	10:I:726:ILE:HG22	1.85	0.94
13:L:124:LYS:HE2	13:L:129:ASP:OD2	1.68	0.94
1:A:1258:LYS:HE2	8:G:173:G:H4'	1.49	0.93
1:A:1554:GLN:HA	1:A:1561:PHE:HB3	1.50	0.93
1:A:1644:LEU:CD2	1:A:1681:ARG:CD	2.44	0.93
24:W:83:PRO:CB	24:W:87:THR:OG1	2.16	0.93
1:A:537:LYS:CD	6:F:37:C:N4	2.30	0.93
1:A:1983:LEU:HD21	1:A:1987:ILE:HG12	1.49	0.93
8:G:20:A:O2'	16:O:193:LEU:HD21	1.68	0.93
1:A:1471:ARG:CD	40:1:66:TYR:CD1	2.52	0.93
9:H:40:C:O2'	9:H:41:U:C5'	2.16	0.93
1:A:1698:PRO:CB	40:1:182:VAL:HG23	1.97	0.93
1:A:1849:ILE:HG22	1:A:1879:PHE:HE1	1.29	0.93
8:G:27:U:O2'	8:G:28:A:O5'	1.84	0.93
1:A:158:ARG:HH12	28:z:62:GLN:CG	1.82	0.93
1:A:1719:PHE:CB	1:A:1720:PRO:HD2	1.99	0.93
12:K:83:SER:CA	37:t:75:LEU:CB	2.47	0.93
1:A:1769:GLY:CA	40:1:324:MET:SD	2.57	0.92
1:A:1955:LYS:HE3	27:2:89:GLU:OE2	1.68	0.92
1:A:1955:LYS:CE	27:2:89:GLU:OE2	2.16	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1994:LYS:NZ	27:2:67:VAL:HG22	1.85	0.92
8:G:147:C:H2'	8:G:148:U:H6	1.29	0.92
1:A:1684:PHE:CB	1:A:1715:TYR:HD2	1.81	0.92
27:2:137:LYS:HE2	27:2:137:LYS:HA	1.49	0.92
1:A:1615:HIS:HD2	28:z:93:ASN:OD1	1.52	0.92
8:G:27:U:C2'	8:G:28:A:O5'	2.15	0.92
27:2:127:ARG:HB3	27:2:131:ARG:HH22	1.33	0.92
1:A:1719:PHE:HB2	1:A:1720:PRO:CD	1.98	0.92
1:A:1865:ARG:NH1	8:G:147:C:OP1	2.03	0.92
1:A:172:GLU:CD	28:z:99:LEU:HA	1.94	0.92
3:C:667:VAL:H	3:C:824:THR:HG23	1.35	0.91
1:A:1944:HIS:CE1	27:2:69:GLY:O	2.24	0.91
1:A:2008:ARG:O	1:A:2011:ILE:HB	1.70	0.91
12:K:15:ALA:CB	37:s:112:ALA:O	2.18	0.91
9:H:40:C:O2'	9:H:41:U:O4'	1.87	0.91
27:2:127:ARG:HB3	27:2:131:ARG:NH2	1.85	0.91
3:C:666:VAL:HG13	3:C:823:ALA:O	1.70	0.91
10:I:698:ARG:HA	10:I:698:ARG:NE	1.79	0.91
23:V:457:ARG:HH12	40:1:88:GLN:CG	1.84	0.91
9:H:168:A:C1'	36:n:48:MET:HE1	2.00	0.91
1:A:1705:ILE:CG2	1:A:1734:MET:HE3	2.01	0.91
1:A:1889:LEU:HD11	1:A:2012:LEU:HB3	1.48	0.91
1:A:1997:VAL:HG22	26:Z:658:TYR:CD2	2.06	0.91
1:A:153:ARG:HG2	1:A:153:ARG:HH21	1.33	0.90
1:A:1130:ASN:ND2	1:A:1139:ARG:CD	2.31	0.90
18:Q:878:ARG:HA	18:Q:1036:ALA:O	1.70	0.90
1:A:1903:GLY:C	27:2:82:TYR:OH	2.14	0.90
1:A:1983:LEU:HD21	1:A:1987:ILE:CG1	2.01	0.90
1:A:525:LYS:CE	28:z:103:TYR:HA	2.00	0.90
1:A:2004:GLN:NE2	40:1:335:TYR:CB	2.35	0.90
9:H:39:U:O2'	9:H:40:C:OP1	1.87	0.90
1:A:1499:GLU:OE1	40:1:60:ASN:CB	2.20	0.90
1:A:613:TYR:HE2	46:A:3000:IHP:O45	1.52	0.90
1:A:1685:LEU:HD21	40:1:173:TYR:CE1	2.04	0.90
23:V:499:GLN:CD	40:1:72:TRP:CD2	2.49	0.90
13:L:5:MET:N	13:L:5:MET:SD	2.45	0.90
1:A:1685:LEU:CD2	40:1:173:TYR:CE1	2.54	0.90
1:A:1938:LEU:CB	1:A:1983:LEU:HD13	2.00	0.90
1:A:1501:LEU:HD21	45:3:337:ILE:CD1	2.01	0.90
1:A:1997:VAL:HG21	26:Z:658:TYR:CG	2.06	0.90
3:C:852:ARG:NH2	7:4:-13:C:C2'	2.34	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:168:A:H1'	36:n:48:MET:CE	2.01	0.90
17:P:16:ARG:HH12	19:R:220:ARG:HA	1.37	0.89
1:A:158:ARG:NH1	28:z:62:GLN:CG	2.34	0.89
10:I:187:LEU:HA	10:I:196:ALA:CB	2.02	0.89
1:A:1938:LEU:HB3	1:A:1983:LEU:CD1	2.01	0.89
9:H:20:G:O4'	17:P:7:PRO:HB3	1.72	0.89
17:P:212:ASN:HB3	21:T:458:SER:H	1.31	0.89
8:G:21:A:C1'	16:O:152:ARG:HH21	1.75	0.89
8:G:142:U:H2'	8:G:143:U:C5	2.07	0.89
3:C:852:ARG:HH22	7:4:-13:C:H6	1.13	0.89
6:F:88:G:H5"	14:M:133:ARG:HH22	1.37	0.89
8:G:20:A:O2'	8:G:21:A:OP2	1.91	0.88
8:G:147:C:C2	8:G:148:U:C5	2.61	0.88
9:H:39:U:H5"	9:H:39:U:C6	2.07	0.88
9:H:77:C:P	24:W:242:HIS:CE1	2.65	0.88
9:H:168:A:H5"	9:H:168:A:H8	1.37	0.88
8:G:171:G:N3	8:G:171:G:O2'	2.05	0.88
1:A:354:PRO:O	23:V:344:LYS:CB	2.21	0.88
1:A:537:LYS:HD2	6:F:37:C:H42	1.39	0.88
3:C:852:ARG:CZ	7:4:-13:C:H2'	2.02	0.88
1:A:1737:ASN:OD1	1:A:1738:PRO:CD	2.20	0.88
1:A:1991:TYR:HE2	1:A:1997:VAL:HB	1.38	0.88
6:F:88:G:C5'	14:M:133:ARG:HH22	1.86	0.88
18:Q:849:THR:HA	18:Q:1058:ASN:O	1.73	0.88
1:A:1471:ARG:HD3	40:1:66:TYR:CG	2.08	0.88
1:A:1528:GLN:O	1:A:1528:GLN:NE2	2.06	0.88
10:I:688:TYR:O	10:I:703:PHE:HZ	1.56	0.88
10:I:731:GLN:O	10:I:731:GLN:NE2	2.07	0.88
1:A:1136:ARG:HG2	1:A:1136:ARG:HH11	1.35	0.88
6:F:45:A:O2'	6:F:73:A:N3	2.05	0.88
1:A:1997:VAL:HG21	26:Z:658:TYR:CD1	2.09	0.87
1:A:1876:LEU:HD21	1:A:1882:ILE:HD12	1.57	0.87
2:B:95:G:H5"	33:d:47:ARG:HH22	1.38	0.87
34:m:3:LEU:HG	34:m:4:PRO:HD2	1.54	0.87
1:A:857:ASN:N	1:A:857:ASN:OD1	2.06	0.87
1:A:1471:ARG:HD3	40:1:66:TYR:CZ	2.09	0.87
1:A:1985:ASP:HA	1:A:1988:LEU:HD12	1.55	0.87
29:b:46:ASP:OD2	29:b:64:LYS:HE3	1.75	0.87
1:A:240:ARG:HH11	40:1:139:ARG:HB3	1.36	0.87
1:A:1475:ILE:HD11	40:1:66:TYR:HE2	1.38	0.87
9:H:156:U:H6	9:H:156:U:C5'	1.88	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:276:ARG:CB	18:Q:357:ALA:HB3	2.04	0.87
1:A:1471:ARG:CD	40:1:66:TYR:CG	2.58	0.86
8:G:167:G:H5'	8:G:167:G:C8	2.09	0.86
9:H:154:C:O2	9:H:176:G:N2	2.07	0.86
1:A:1498:TRP:CH2	40:1:67:ILE:CG2	2.58	0.86
8:G:22:C:O2'	8:G:23:U:OP1	1.91	0.86
1:A:1130:ASN:HD22	1:A:1139:ARG:CD	1.87	0.86
29:i:46:ASP:OD2	29:i:64:LYS:HE3	1.75	0.86
1:A:165:ARG:NH1	1:A:1623:ASN:OD1	2.07	0.86
1:A:2004:GLN:NE2	40:1:335:TYR:CG	2.44	0.86
23:V:499:GLN:NE2	40:1:72:TRP:CB	2.37	0.86
5:E:59:ILE:HD11	24:W:82:ASN:ND2	1.89	0.86
12:K:83:SER:O	37:t:76:LYS:HA	1.75	0.86
1:A:1560:ILE:HD11	1:A:1577:PHE:CE2	2.09	0.86
1:A:1849:ILE:HG22	1:A:1879:PHE:CD1	2.09	0.86
27:2:52:MET:HB2	35:l:28:ARG:HH21	1.35	0.86
1:A:1644:LEU:CD2	1:A:1681:ARG:CG	2.53	0.86
1:A:1725:LEU:O	1:A:1725:LEU:HD12	1.74	0.86
20:S:85:GLU:O	20:S:127:THR:HG23	1.74	0.86
40:1:178:HIS:HE1	40:1:181:ILE:HD11	1.41	0.86
10:I:692:SER:HA	10:I:695:CYS:HB2	1.57	0.86
1:A:199:GLU:CD	40:1:139:ARG:CG	2.49	0.86
1:A:158:ARG:NH1	28:z:62:GLN:HG3	1.91	0.85
11:J:198:ALA:O	11:J:201:ARG:HB2	1.76	0.85
6:F:33:G:H5"	6:F:33:G:H8	1.41	0.85
1:A:1724:PRO:N	1:A:1724:PRO:C	2.32	0.85
8:G:146:C:H2'	8:G:147:C:H5"	1.57	0.85
1:A:1499:GLU:CB	40:1:60:ASN:HB3	2.06	0.85
1:A:1499:GLU:CB	40:1:63:ILE:CG1	2.55	0.85
1:A:1955:LYS:HZ1	27:2:93:GLN:NE2	1.72	0.85
18:Q:851:ILE:HA	18:Q:1060:LEU:O	1.76	0.85
1:A:1481:VAL:HG21	40:1:67:ILE:HG23	1.57	0.85
1:A:1596:VAL:HG22	40:1:278:LEU:HD11	1.58	0.85
1:A:1769:GLY:HA3	40:1:324:MET:SD	2.17	0.85
1:A:1958:LYS:HD3	27:2:96:MET:O	1.77	0.85
2:B:95:G:H4'	2:B:96:A:O4'	1.77	0.85
9:H:98:G:N2	34:m:66:CYS:SG	2.50	0.85
1:A:526:PRO:CG	28:z:106:PRO:HD2	1.90	0.84
19:R:324:LEU:O	19:R:324:LEU:HD12	1.77	0.84
1:A:524:LEU:O	28:z:105:ILE:N	2.10	0.84
10:I:726:ILE:O	10:I:726:ILE:HD12	1.76	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:Q:820:MET:O	18:Q:1130:THR:HA	1.76	0.84
31:a:74:PRO:CB	31:a:77:LEU:HD11	2.07	0.84
20:S:37:LYS:NZ	20:S:37:LYS:HB2	1.92	0.84
1:A:1498:TRP:HZ3	40:1:63:ILE:HG23	1.02	0.84
1:A:1797:ASN:OD1	8:G:143:U:H5"	1.78	0.84
10:I:273:GLU:CA	18:Q:357:ALA:CB	2.45	0.84
1:A:1983:LEU:HD23	1:A:1987:ILE:CG1	1.96	0.84
1:A:1758:PRO:HB2	45:3:352:TYR:CB	2.08	0.84
10:I:187:LEU:CA	10:I:196:ALA:HB1	2.08	0.84
21:T:455:GLN:CG	21:T:456:PRO:HD2	2.05	0.84
1:A:1495:PHE:HD1	45:3:337:ILE:HD11	1.04	0.84
1:A:1935:ARG:HH21	40:1:348:THR:HG21	1.42	0.84
9:H:18:U:OP2	14:M:221:LYS:NZ	2.10	0.84
1:A:243:ASN:O	40:1:131:LYS:NZ	2.11	0.84
3:C:750:LEU:CB	22:U:67:GLU:CB	2.56	0.84
10:I:272:PHE:CB	18:Q:356:VAL:H	1.91	0.84
9:H:154:C:OP2	39:p:19:LYS:CG	2.24	0.84
27:2:48:ILE:HG23	34:m:5:LEU:CD1	2.07	0.84
1:A:1803:ILE:HG22	24:W:451:VAL:HG22	1.60	0.83
18:Q:877:LEU:O	18:Q:1036:ALA:N	2.09	0.83
1:A:293:TRP:NE1	1:A:1136:ARG:NH1	2.26	0.83
2:B:18:C:O2'	2:B:19:A:O5'	1.96	0.83
1:A:1792:LYS:HZ1	9:H:37:U:C1'	1.91	0.83
1:A:172:GLU:OE1	28:z:99:LEU:CA	2.26	0.83
1:A:1875:HIS:O	1:A:1878:ASP:OD1	1.96	0.83
1:A:1258:LYS:HE2	8:G:173:G:C4'	2.09	0.83
1:A:2328:ALA:CB	4:D:788:GLY:CA	2.28	0.83
5:E:266:PRO:CG	13:L:785:GLN:CB	2.54	0.83
6:F:8:C:H5"	6:F:8:C:C6	2.11	0.83
1:A:1792:LYS:HZ1	9:H:37:U:H1'	1.42	0.83
3:C:852:ARG:HH22	7:4:-13:C:H2'	1.18	0.83
3:C:855:GLY:O	3:C:874:PHE:O	1.96	0.83
14:M:118:LYS:HD3	14:M:118:LYS:N	1.86	0.83
1:A:1904:ASP:OD2	27:2:90:TYR:OH	1.95	0.83
9:H:154:C:P	39:p:19:LYS:HD3	2.19	0.83
17:P:16:ARG:NH1	19:R:220:ARG:HA	1.94	0.83
1:A:526:PRO:CD	28:z:104:ASP:O	2.26	0.83
40:1:178:HIS:CE1	40:1:181:ILE:HD11	2.13	0.82
1:A:1321:GLU:CB	40:1:66:TYR:OH	2.26	0.82
1:A:2007:ILE:O	1:A:2011:ILE:HD13	1.77	0.82
1:A:861:ARG:HB3	1:A:861:ARG:NH1	1.93	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2328:ALA:HB1	4:D:788:GLY:HA2	1.56	0.82
21:T:197:TYR:CD2	21:T:488:VAL:HG12	2.13	0.82
5:E:93:TRP:CH2	29:b:105:GLY:CA	2.63	0.82
13:L:124:LYS:HE2	13:L:129:ASP:CG	2.04	0.82
1:A:158:ARG:HH12	28:z:62:GLN:HG3	1.42	0.82
9:H:40:C:O2'	9:H:41:U:C6	2.33	0.82
9:H:105:G:C2'	9:H:106:G:H5"	2.10	0.82
9:H:152:G:N2	9:H:153:A:N7	2.27	0.82
10:I:727:ARG:HH21	10:I:727:ARG:CB	1.92	0.82
20:S:72:ARG:HB3	24:W:92:GLU:CD	2.04	0.82
1:A:1673:SER:HB2	40:1:164:ASP:OD2	1.80	0.82
1:A:1769:GLY:HA2	40:1:324:MET:SD	2.19	0.82
3:C:668:GLU:N	3:C:824:THR:HG21	1.94	0.82
10:I:725:ARG:O	10:I:725:ARG:HD2	1.79	0.82
40:1:46:GLY:O	45:3:331:ILE:HB	1.80	0.82
6:F:22:A:N7	24:W:130:ARG:HD3	1.94	0.82
9:H:152:G:H5"	9:H:153:A:OP2	1.80	0.82
9:H:152:G:OP2	27:2:127:ARG:HD3	1.79	0.82
10:I:728:ARG:NH2	13:L:62:GLU:OE2	2.12	0.82
1:A:1589:ILE:HG21	1:A:1730:MET:HE1	1.62	0.81
1:A:1698:PRO:HB2	40:1:182:VAL:HG21	1.60	0.81
1:A:1938:LEU:C	1:A:1983:LEU:CD1	2.50	0.81
1:A:1955:LYS:HZ3	27:2:93:GLN:HG3	1.45	0.81
10:I:84:HIS:CB	10:I:90:PRO:CA	2.56	0.81
10:I:704:TRP:CZ3	10:I:727:ARG:CG	2.62	0.81
1:A:532:THR:OG1	8:G:3:A:O5'	1.98	0.81
1:A:1881:ASN:ND2	40:1:270:ASP:HB3	1.94	0.81
10:I:728:ARG:HH21	10:I:728:ARG:HG2	1.43	0.81
12:K:36:VAL:O	37:r:112:ALA:HB1	1.79	0.81
1:A:1596:VAL:CG2	40:1:278:LEU:HD11	2.10	0.81
27:2:106:ASP:O	27:2:110:GLN:HG3	1.81	0.81
8:G:173:G:N3	8:G:173:G:H2'	1.96	0.81
6:F:80:G:H5"	6:F:81:C:OP2	1.81	0.81
1:A:1958:LYS:CD	27:2:96:MET:O	2.29	0.81
8:G:167:G:H3'	8:G:167:G:OP2	1.81	0.81
8:G:20:A:C2	16:O:187:THR:OG1	2.33	0.81
9:H:40:C:C4'	9:H:41:U:OP1	2.27	0.81
1:A:1481:VAL:CG2	40:1:85:GLN:NE2	2.44	0.81
1:A:1498:TRP:CH2	40:1:67:ILE:HG22	2.16	0.80
1:A:1775:GLN:HE21	40:1:315:VAL:HB	1.45	0.80
1:A:1889:LEU:CD1	1:A:2013:GLY:H	1.94	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1955:LYS:HZ2	27:2:89:GLU:CG	1.94	0.80
1:A:1994:LYS:HZ3	27:2:67:VAL:HG22	1.44	0.80
27:2:48:ILE:CG2	34:m:5:LEU:HD12	2.11	0.80
9:H:39:U:H3'	9:H:40:C:C5	2.16	0.80
24:W:84:THR:HG22	24:W:86:GLU:H	1.46	0.80
1:A:1685:LEU:CD1	40:1:173:TYR:CG	2.61	0.80
6:F:83:A:OP2	11:J:247:LYS:HD2	1.81	0.80
6:F:45:A:N3	6:F:73:A:H1'	1.97	0.80
8:G:130:A:O2'	8:G:131:U:OP2	1.99	0.80
10:I:276:ARG:CB	18:Q:358:GLU:N	2.44	0.80
27:2:51:LYS:NZ	35:l:28:ARG:HD3	1.96	0.80
6:F:45:A:N6	8:G:167:G:C5	2.49	0.80
1:A:1955:LYS:CE	27:2:92:ARG:NH2	2.45	0.80
10:I:681:ILE:HD13	10:I:714:HIS:HB3	1.63	0.80
1:A:1955:LYS:CE	27:2:93:GLN:HE21	1.94	0.79
1:A:152:ARG:NH1	40:1:133:CYS:O	2.15	0.79
19:R:305:ARG:NH1	19:R:305:ARG:HG2	1.96	0.79
3:C:673:LYS:HZ2	22:U:56:ASP:CB	1.92	0.79
9:H:40:C:H2'	9:H:41:U:C6	2.17	0.79
9:H:46:U:OP1	27:2:44:LYS:HE2	1.83	0.79
6:F:86:U:HO2'	6:F:87:C:P	2.03	0.79
18:Q:87:SER:O	18:Q:91:LEU:CB	2.30	0.79
19:R:222:PRO:N	19:R:222:PRO:C	2.40	0.79
1:A:1644:LEU:HD21	1:A:1681:ARG:CG	2.10	0.79
1:A:1850:ARG:NH1	40:1:265:LEU:HD11	1.98	0.79
35:e:20:LEU:HD22	35:e:24:TYR:CE2	2.18	0.79
1:A:240:ARG:HH12	40:1:139:ARG:HB3	1.41	0.79
6:F:43:A:H2	8:G:4:A:H61	1.31	0.79
21:T:197:TYR:CE2	21:T:488:VAL:HG11	2.18	0.79
8:G:21:A:OP2	16:O:193:LEU:CD2	2.30	0.79
13:L:124:LYS:HE3	13:L:129:ASP:OD2	1.83	0.79
1:A:1556:ASP:N	1:A:1556:ASP:OD1	2.14	0.79
10:I:692:SER:HB2	10:I:703:PHE:CE2	2.17	0.79
34:m:3:LEU:HD12	34:m:4:PRO:HD3	1.62	0.79
1:A:613:TYR:CE2	46:A:3000:IHP:O45	2.35	0.78
1:A:1615:HIS:H	1:A:1618:LYS:HE3	1.46	0.78
9:H:101:U:H5"	9:H:102:U:H5'	1.64	0.78
1:A:1495:PHE:HE1	1:A:1755:SER:CB	1.96	0.78
1:A:1955:LYS:HE2	27:2:93:GLN:HE21	1.48	0.78
9:H:153:A:H2'	9:H:154:C:H5'	1.65	0.78
17:P:212:ASN:HB3	21:T:458:SER:CA	2.13	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:z:55:LEU:CD2	40:1:180:LYS:NZ	2.47	0.78
1:A:156:ARG:NH1	40:1:134:PHE:CD2	2.52	0.78
1:A:1792:LYS:NZ	9:H:37:U:H1'	1.98	0.78
1:A:620:PRO:HD2	40:1:134:PHE:CZ	2.19	0.78
1:A:1499:GLU:HB3	40:1:63:ILE:HG13	1.64	0.78
1:A:1593:LEU:CD2	1:A:1729:ALA:HB1	2.13	0.78
6:F:29:A:N6	8:G:16:G:O2'	2.16	0.78
35:l:20:LEU:HD22	35:l:24:TYR:CE2	2.18	0.78
9:H:177:A:H5"	9:H:178:A:OP1	1.84	0.78
31:h:47:THR:CB	38:o:65:ARG:NH2	2.47	0.78
17:P:16:ARG:HH21	17:P:16:ARG:HG3	1.49	0.78
27:2:25:LYS:HZ3	27:2:25:LYS:HA	1.48	0.78
27:2:138:LYS:HA	27:2:138:LYS:CE	2.13	0.78
37:q:60:PRO:CB	37:s:93:ARG:O	2.32	0.78
1:A:2328:ALA:HB3	4:D:788:GLY:HA3	1.65	0.78
6:F:36:A:H2'	6:F:37:C:O5'	1.84	0.78
12:K:83:SER:CB	37:t:75:LEU:CB	2.62	0.78
37:q:106:ALA:HB1	37:t:106:ALA:CB	2.14	0.78
37:t:8:SER:O	37:t:9:ASN:CB	2.32	0.78
1:A:106:MET:CE	1:A:561:HIS:NE2	2.47	0.77
1:A:158:ARG:NH1	28:z:62:GLN:CD	2.42	0.77
40:1:34:ARG:CB	40:1:34:ARG:HH11	1.96	0.77
1:A:1495:PHE:CE2	1:A:1753:LEU:HD13	2.20	0.77
10:I:109:MET:N	30:y:66:ASN:CB	2.47	0.77
27:2:51:LYS:NZ	35:l:28:ARG:CD	2.48	0.77
34:f:70:LEU:HD22	34:f:71:TYR:HD2	1.50	0.77
34:m:5:LEU:O	34:m:5:LEU:HD23	1.85	0.77
1:A:525:LYS:HG2	28:z:103:TYR:CA	2.13	0.77
1:A:1997:VAL:CG2	26:Z:658:TYR:CG	2.66	0.77
3:C:121:ASP:OD2	31:a:76:MET:HB3	1.85	0.77
7:4:-2:C:P	28:z:107:LYS:HE2	2.25	0.77
23:V:499:GLN:HE22	40:1:72:TRP:HB2	1.48	0.77
37:q:60:PRO:O	37:s:93:ARG:CB	2.32	0.77
8:G:129:G:H4'	24:W:541:LYS:HZ3	0.66	0.77
9:H:33:G:O2'	27:2:68:MET:HE3	1.85	0.77
23:V:460:TYR:CE1	40:1:72:TRP:HZ2	2.02	0.77
27:2:27:ALA:O	27:2:30:GLU:HG3	1.84	0.77
1:A:165:ARG:HH11	1:A:1623:ASN:CG	1.93	0.76
2:B:90:U:H5"	2:B:91:U:H5'	1.65	0.76
6:F:45:A:O2'	6:F:73:A:C2	2.38	0.76
27:2:131:ARG:O	27:2:134:LEU:HB3	1.84	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:e:48:ILE:HD11	35:e:59:ASP:HB2	1.66	0.76
1:A:160:HIS:CE1	40:1:170:TRP:HA	2.19	0.76
9:H:39:U:H2'	9:H:40:C:C6	2.21	0.76
31:h:45:ASN:OD1	38:o:16:THR:CB	2.34	0.76
1:A:1615:HIS:NE2	28:z:96:LEU:CB	2.48	0.76
1:A:159:ARG:HG2	40:1:104:ARG:HB2	1.67	0.76
1:A:199:GLU:HG2	40:1:139:ARG:HD3	1.66	0.76
1:A:1499:GLU:CB	40:1:63:ILE:HG12	2.16	0.76
5:E:266:PRO:HG2	13:L:785:GLN:CA	2.15	0.76
37:q:106:ALA:HB1	37:t:106:ALA:HB1	1.64	0.76
1:A:1595:GLN:NE2	40:1:268:ARG:O	2.19	0.76
1:A:1955:LYS:HZ3	27:2:93:GLN:CG	1.98	0.76
6:F:22:A:C8	24:W:130:ARG:NE	2.53	0.76
1:A:1499:GLU:OE1	40:1:60:ASN:N	2.18	0.76
1:A:1685:LEU:CD2	40:1:173:TYR:CE2	2.57	0.76
13:L:49:ARG:NH1	13:L:133:GLU:O	2.19	0.76
27:2:68:MET:HG3	27:2:68:MET:O	1.85	0.76
28:z:54:GLY:O	40:1:174:ASN:ND2	2.18	0.76
9:H:98:G:H1	34:m:41:ASN:HD21	1.33	0.76
34:m:70:LEU:HD22	34:m:71:TYR:HD2	1.49	0.76
9:H:143:A:H3'	9:H:143:A:N3	2.00	0.76
33:d:50:LYS:HG2	33:d:74:TRP:HB3	1.68	0.76
37:q:8:SER:O	37:q:9:ASN:CB	2.34	0.76
1:A:1876:LEU:O	1:A:1876:LEU:HD22	1.86	0.76
3:C:670:SER:HA	3:C:823:ALA:HB2	1.66	0.76
11:J:535:TYR:O	11:J:538:ILE:CA	2.31	0.76
35:l:48:ILE:HD11	35:l:59:ASP:HB2	1.66	0.76
1:A:2328:ALA:HB3	4:D:788:GLY:HA2	0.76	0.75
31:a:74:PRO:O	31:a:77:LEU:CD1	2.34	0.75
1:A:1878:ASP:OD1	1:A:1878:ASP:N	2.15	0.75
8:G:21:A:C1'	16:O:152:ARG:HH22	1.97	0.75
27:2:52:MET:HE2	34:m:3:LEU:HD22	1.68	0.75
36:g:35:ASP:HB2	36:g:36:PRO:HD2	1.68	0.75
8:G:147:C:C2'	8:G:148:U:H6	1.98	0.75
1:A:165:ARG:NH1	1:A:1623:ASN:CG	2.44	0.75
1:A:1741:TYR:CG	40:1:287:PRO:HG2	2.21	0.75
3:C:670:SER:HA	3:C:823:ALA:CB	2.16	0.75
1:A:470:ARG:HH21	1:A:470:ARG:HG2	1.52	0.75
27:2:132:GLN:O	27:2:136:GLU:HG3	1.85	0.75
40:1:178:HIS:CE1	40:1:181:ILE:CD1	2.68	0.75
1:A:1495:PHE:CE1	1:A:1755:SER:CB	2.70	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:435:CYS:CB	7:4:-11:G:H22	1.99	0.75
6:F:5:U:H3'	6:F:7:G:H5"	1.68	0.75
1:A:354:PRO:O	23:V:344:LYS:HA	1.86	0.75
40:1:46:GLY:O	45:3:331:ILE:HD13	1.87	0.75
1:A:1685:LEU:HD11	40:1:173:TYR:CE2	2.18	0.75
8:G:27:U:H2'	8:G:28:A:O5'	1.86	0.75
12:K:90:PRO:CB	12:K:109:ASN:CB	2.64	0.75
1:A:1498:TRP:CH2	40:1:67:ILE:HG21	2.21	0.74
1:A:1739:ALA:O	1:A:1742:VAL:CA	2.35	0.74
10:I:273:GLU:HA	18:Q:357:ALA:HB3	1.67	0.74
33:d:110:LEU:HD11	34:f:59:LEU:HB3	1.69	0.74
37:s:8:SER:O	37:s:9:ASN:CB	2.34	0.74
1:A:705:LYS:HG2	9:H:15:U:C5	2.22	0.74
1:A:1685:LEU:HD22	40:1:173:TYR:CE1	2.23	0.74
10:I:329:LEU:CB	18:Q:353:LEU:HA	2.16	0.74
23:V:457:ARG:HG3	40:1:73:TYR:HD2	1.52	0.74
1:A:1501:LEU:HD23	45:3:337:ILE:HG21	1.69	0.74
34:m:70:LEU:HD22	34:m:71:TYR:CD2	2.23	0.74
1:A:106:MET:HE1	1:A:578:LEU:HD13	1.69	0.74
1:A:1991:TYR:CZ	1:A:1995:ASN:HB2	2.23	0.74
9:H:152:G:P	27:2:127:ARG:HD3	2.28	0.74
1:A:1997:VAL:CG2	26:Z:658:TYR:CD2	2.70	0.74
33:k:107:ILE:HG22	33:k:108:VAL:HG23	1.69	0.74
1:A:1792:LYS:HD3	9:H:36:G:H21	1.51	0.74
10:I:721:LYS:HZ1	13:L:65:ARG:NH2	1.84	0.74
12:K:83:SER:O	37:t:76:LYS:CA	2.35	0.74
36:n:35:ASP:HB2	36:n:36:PRO:HD2	1.68	0.74
8:G:26:U:H2'	8:G:27:U:H5"	1.69	0.74
20:S:85:GLU:O	20:S:127:THR:CG2	2.36	0.74
2:B:19:A:O2'	2:B:20:G:OP1	2.04	0.74
9:H:40:C:C2'	9:H:41:U:C6	2.71	0.74
9:H:106:G:H4'	9:H:107:A:O4'	1.88	0.74
1:A:1496:PRO:HD2	45:3:337:ILE:CG1	2.16	0.74
1:A:1644:LEU:CD2	1:A:1681:ARG:HG2	2.18	0.73
33:k:50:LYS:HG2	33:k:74:TRP:HB3	1.68	0.73
1:A:1560:ILE:CD1	1:A:1577:PHE:CE2	2.70	0.73
1:A:1872:LEU:O	1:A:1876:LEU:HB2	1.89	0.73
5:E:93:TRP:CH2	29:b:105:GLY:HA3	2.23	0.73
10:I:728:ARG:O	10:I:731:GLN:HB3	1.88	0.73
1:A:1491:LYS:HD2	1:A:1709:TYR:HD1	1.52	0.73
10:I:723:MET:CA	10:I:726:ILE:HG21	1.91	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1698:PRO:HB2	40:1:182:VAL:HG22	0.76	0.73
1:A:1798:LEU:O	8:G:143:U:H4'	1.87	0.73
8:G:146:C:C2'	8:G:147:C:H5"	2.19	0.73
33:d:107:ILE:HG22	33:d:108:VAL:HG23	1.69	0.73
33:k:110:LEU:HD11	34:m:59:LEU:HB3	1.70	0.73
1:A:1495:PHE:CE1	1:A:1755:SER:HB3	2.23	0.73
2:B:46:U:O2	22:U:11:ARG:NH2	2.20	0.73
10:I:276:ARG:CB	18:Q:357:ALA:C	2.61	0.73
19:R:317:LYS:HE3	19:R:321:GLU:OE2	1.89	0.73
1:A:1566:ILE:HD11	1:A:1569:LEU:H	1.54	0.73
1:A:1642:PRO:HB2	40:1:175:PRO:HB3	1.71	0.73
1:A:1979:VAL:CA	1:A:1982:GLN:HB2	2.16	0.73
1:A:1994:LYS:NZ	27:2:67:VAL:CG2	2.52	0.73
10:I:661:ASP:HB2	10:I:694:ILE:CG2	2.13	0.73
1:A:1719:PHE:CD2	1:A:1720:PRO:HD2	2.24	0.73
1:A:1810:PHE:CE1	1:A:1919:LEU:HD12	2.23	0.73
1:A:1910:THR:CG2	24:W:412:GLN:OE1	2.36	0.73
6:F:57:U:O2'	17:P:8:THR:OG1	2.02	0.73
10:I:276:ARG:CB	18:Q:357:ALA:CB	2.67	0.73
1:A:1526:LEU:HB3	8:G:171:G:O6	1.88	0.73
8:G:13:C:H2'	8:G:14:A:C8	2.24	0.73
9:H:179:C:H2'	9:H:180:G:H8	1.53	0.73
35:l:14:MET:HE1	36:n:10:LYS:CD	2.19	0.73
1:A:1833:LEU:HD22	1:A:1833:LEU:N	2.01	0.73
1:A:1986:LEU:HD23	1:A:1986:LEU:C	2.13	0.73
8:G:149:G:H2'	8:G:150:U:H5'	1.70	0.73
31:h:47:THR:CB	38:o:65:ARG:HH22	2.02	0.73
8:G:147:C:H5'	8:G:147:C:H6	1.53	0.72
8:G:149:G:C2'	8:G:150:U:H5'	2.19	0.72
9:H:11:G:N7	14:M:198:ARG:NH2	2.36	0.72
9:H:153:A:C2'	9:H:154:C:H5'	2.17	0.72
10:I:685:ARG:NE	10:I:711:GLU:OE2	2.19	0.72
10:I:725:ARG:HD2	10:I:725:ARG:C	2.12	0.72
27:2:111:LYS:HA	27:2:114:GLU:HG2	1.70	0.72
1:A:620:PRO:HD2	40:1:134:PHE:HZ	1.54	0.72
1:A:1521:ALA:CB	8:G:166:A:H1'	2.18	0.72
1:A:1955:LYS:NZ	27:2:93:GLN:HE21	1.86	0.72
1:A:1991:TYR:OH	1:A:1995:ASN:HB2	1.88	0.72
1:A:1495:PHE:HD1	45:3:337:ILE:CD1	1.62	0.72
6:F:28:A:O2'	15:N:39:GLY:CA	2.37	0.72
30:y:13:LEU:CB	30:y:48:GLY:O	2.37	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:f:70:LEU:HD22	34:f:71:TYR:CD2	2.23	0.72
1:A:1849:ILE:CG2	1:A:1879:PHE:CD1	2.70	0.72
1:A:1944:HIS:HE1	27:2:69:GLY:O	1.73	0.72
7:4:-12:G:O2'	7:4:-11:G:O5'	2.07	0.72
10:I:575:ARG:O	10:I:579:LEU:HB2	1.90	0.72
21:T:455:GLN:CG	21:T:456:PRO:CD	2.64	0.72
1:A:1698:PRO:HB3	40:1:182:VAL:CG2	2.17	0.72
20:S:72:ARG:HD3	24:W:90:ALA:O	1.87	0.72
21:T:197:TYR:HD2	21:T:488:VAL:HG12	1.53	0.72
27:2:51:LYS:HZ3	35:l:28:ARG:CD	2.03	0.72
1:A:1758:PRO:HA	45:3:353:VAL:O	1.90	0.72
6:F:41:A:C2	8:G:6:A:C2	2.78	0.72
8:G:138:A:H2	9:H:39:U:O2	1.71	0.72
6:F:59:G:O2'	6:F:60:C:OP1	2.07	0.72
9:H:153:A:H2'	9:H:154:C:C5'	2.19	0.72
24:W:82:ASN:N	24:W:83:PRO:HD2	2.05	0.72
1:A:609:LYS:NZ	46:A:3000:IHP:O31	2.23	0.72
9:H:40:C:O2'	9:H:41:U:H6	1.73	0.72
8:G:7:G:O2'	8:G:8:C:H5'	1.90	0.72
8:G:137:C:C5	8:G:137:C:OP2	2.43	0.72
10:I:723:MET:O	10:I:727:ARG:N	2.23	0.72
39:p:66:LEU:HD12	39:p:81:ILE:HG22	1.70	0.72
6:F:31:U:C2'	6:F:32:U:H5'	2.19	0.71
13:L:6:ILE:HD13	13:L:6:ILE:C	2.15	0.71
21:T:282:ARG:HB2	21:T:320:LYS:HD3	1.72	0.71
1:A:1496:PRO:CB	45:3:338:GLY:CA	2.68	0.71
6:F:36:A:C2'	6:F:37:C:O5'	2.38	0.71
19:R:315:LYS:HA	19:R:315:LYS:HZ2	1.54	0.71
19:R:332:ARG:NH1	19:R:332:ARG:HB2	2.04	0.71
8:G:20:A:H2	16:O:187:THR:HG1	1.30	0.71
9:H:106:G:H21	9:H:107:A:N6	1.87	0.71
1:A:1740:LEU:O	1:A:1743:LEU:N	2.23	0.71
8:G:21:A:C4	16:O:152:ARG:NH2	2.59	0.71
13:L:7:LYS:HB3	13:L:40:ARG:C	2.15	0.71
8:G:20:A:HO2'	8:G:21:A:P	2.12	0.71
28:z:55:LEU:HD21	40:1:180:LYS:HG3	1.71	0.71
1:A:1705:ILE:CD1	1:A:1734:MET:HE2	2.14	0.71
6:F:34:G:C5'	6:F:34:G:H8	2.03	0.71
6:F:35:A:C5'	6:F:35:A:H8	2.03	0.71
6:F:45:A:H2	6:F:73:A:O4'	1.72	0.71
25:Y:413:LYS:H	25:Y:413:LYS:HD2	1.55	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:981:PHE:CE2	1:A:1095:ILE:HD11	2.26	0.71
1:A:1555:LEU:HD21	1:A:1574:ILE:HG13	1.72	0.71
6:F:84:A:N3	11:J:277:THR:HG21	2.06	0.71
10:I:727:ARG:HH21	10:I:727:ARG:CG	2.04	0.71
20:S:98:LEU:HB3	20:S:130:GLY:CA	2.20	0.71
21:T:437:HIS:HD2	21:T:446:ASN:HD21	1.37	0.71
6:F:45:A:C2	6:F:73:A:H1'	2.26	0.71
40:1:34:ARG:HH11	40:1:34:ARG:CA	2.04	0.71
1:A:526:PRO:CB	28:z:106:PRO:HD2	2.21	0.70
13:L:4:ILE:O	13:L:4:ILE:HD13	1.90	0.70
19:R:310:ARG:HA	19:R:310:ARG:NE	2.06	0.70
1:A:1499:GLU:CB	40:1:63:ILE:HG13	2.21	0.70
8:G:145:U:O2'	8:G:146:C:H6	1.73	0.70
10:I:723:MET:C	10:I:726:ILE:HG22	2.08	0.70
1:A:1958:LYS:HG2	27:2:100:ALA:HB2	1.73	0.70
7:4:-2:C:OP2	28:z:107:LYS:CE	2.39	0.70
20:S:72:ARG:CZ	24:W:92:GLU:OE2	2.39	0.70
27:2:113:LEU:HD13	27:2:113:LEU:C	2.16	0.70
1:A:358:PRO:HG3	23:V:340:PHE:CB	2.21	0.70
1:A:1471:ARG:HD3	40:1:66:TYR:CD2	2.26	0.70
1:A:1997:VAL:HG22	26:Z:658:TYR:CE2	2.27	0.70
6:F:41:A:H2	8:G:6:A:H2	1.38	0.70
27:2:38:LEU:HD23	34:m:12:ASN:ND2	2.05	0.70
1:A:163:ARG:NH2	46:A:3000:IHP:O35	2.22	0.70
10:I:272:PHE:CA	18:Q:355:ASN:CB	2.69	0.70
1:A:1475:ILE:HD11	40:1:66:TYR:CE2	2.25	0.70
9:H:154:C:H2'	9:H:155:C:C6	2.27	0.70
13:L:7:LYS:CG	13:L:40:ARG:HA	2.22	0.70
31:a:77:LEU:HD12	31:a:77:LEU:N	2.07	0.70
34:m:5:LEU:HD21	35:l:57:VAL:HG11	0.72	0.70
1:A:172:GLU:OE2	28:z:100:THR:HG23	1.92	0.70
1:A:1958:LYS:HE2	27:2:97:ASP:HA	1.74	0.70
8:G:137:C:O2'	8:G:138:A:OP1	2.10	0.70
19:R:332:ARG:HB2	19:R:332:ARG:HH11	1.56	0.70
28:z:55:LEU:CD2	40:1:180:LYS:HZ2	2.04	0.70
1:A:684:GLU:HG2	21:T:308:ARG:HH12	1.56	0.70
1:A:354:PRO:O	23:V:344:LYS:CA	2.40	0.70
1:A:1428:HIS:HB2	25:Y:396:ASP:HB3	1.73	0.70
1:A:1684:PHE:CB	1:A:1715:TYR:CE2	2.74	0.70
6:F:21:U:O2	24:W:168:PHE:CE1	2.44	0.70
9:H:106:G:C5'	33:k:47:ARG:HH22	2.05	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:L:7:LYS:HB3	13:L:40:ARG:O	1.92	0.70
1:A:1673:SER:HB2	40:1:164:ASP:CG	2.17	0.69
8:G:145:U:O2'	8:G:146:C:C6	2.44	0.69
9:H:153:A:N6	9:H:177:A:C2	2.60	0.69
3:C:666:VAL:CG1	3:C:823:ALA:O	2.39	0.69
3:C:850:LEU:HB3	3:C:855:GLY:HA3	1.74	0.69
10:I:187:LEU:CB	10:I:196:ALA:HB1	2.22	0.69
10:I:272:PHE:HA	18:Q:355:ASN:CB	2.23	0.69
16:O:262:THR:HB	16:O:271:PHE:HB2	1.74	0.69
20:S:98:LEU:HD23	20:S:130:GLY:HA3	1.75	0.69
24:W:83:PRO:CB	24:W:87:THR:HG1	1.98	0.69
6:F:31:U:O2'	6:F:32:U:H5'	1.92	0.69
6:F:42:C:H3'	6:F:43:A:C8	2.28	0.69
1:A:1615:HIS:CD2	28:z:93:ASN:OD1	2.41	0.69
1:A:1705:ILE:HD13	1:A:1734:MET:CE	2.14	0.69
1:A:1725:LEU:HD12	1:A:1725:LEU:C	2.15	0.69
9:H:150:U:H3	9:H:181:G:H1	1.41	0.69
8:G:137:C:O2'	8:G:138:A:P	2.50	0.69
8:G:137:C:H6	8:G:137:C:C5'	2.04	0.69
9:H:10:C:N4	14:M:198:ARG:HH12	1.91	0.69
17:P:16:ARG:HG3	17:P:16:ARG:NH2	2.02	0.69
19:R:305:ARG:HG2	19:R:305:ARG:HH11	1.57	0.69
1:A:1876:LEU:HD12	1:A:1884:ILE:HD11	1.75	0.69
2:B:21:A:O3'	2:B:22:U:H4'	1.93	0.69
6:F:85:U:H3'	6:F:86:U:H5'	1.75	0.69
20:S:72:ARG:HG3	24:W:71:HIS:CE1	2.27	0.69
27:2:137:LYS:HE2	27:2:137:LYS:CA	2.22	0.69
1:A:1589:ILE:HG21	1:A:1730:MET:CE	2.22	0.69
1:A:1698:PRO:HG3	40:1:181:ILE:HG13	1.75	0.69
1:A:1958:LYS:HD3	27:2:96:MET:C	2.17	0.69
1:A:1991:TYR:OH	1:A:1995:ASN:CB	2.41	0.69
2:B:90:U:O4'	31:a:66:SER:HB3	1.92	0.69
6:F:7:G:H5'	6:F:7:G:H8	1.58	0.69
13:L:6:ILE:HD13	13:L:6:ILE:O	1.93	0.69
20:S:37:LYS:HB2	20:S:37:LYS:HZ2	1.54	0.69
1:A:1889:LEU:HD11	1:A:2013:GLY:H	1.58	0.69
9:H:10:C:N4	14:M:198:ARG:NH1	2.40	0.69
19:R:332:ARG:HH11	19:R:332:ARG:CB	2.06	0.69
27:2:25:LYS:HA	27:2:25:LYS:NZ	2.07	0.69
3:C:852:ARG:HH22	7:4:-13:C:C2'	2.01	0.69
9:H:101:U:O4'	31:h:66:SER:HB3	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:723:MET:N	10:I:726:ILE:HG22	2.07	0.69
10:I:724:LEU:HA	10:I:727:ARG:HB2	1.73	0.69
21:T:197:TYR:CE2	21:T:488:VAL:CG1	2.76	0.69
31:a:77:LEU:HD12	31:a:77:LEU:H	1.57	0.69
6:F:45:A:C6	8:G:167:G:C6	2.82	0.68
1:A:880:ARG:O	1:A:883:ARG:HB2	1.93	0.68
1:A:1645:LEU:HD22	1:A:1713:SER:HA	1.74	0.68
1:A:1130:ASN:CG	1:A:1139:ARG:HD3	2.18	0.68
6:F:24:A:C6	16:O:65:PHE:HE2	2.11	0.68
1:A:1496:PRO:CG	45:3:338:GLY:CA	2.17	0.68
6:F:39:A:O2'	6:F:40:U:H5'	1.93	0.68
1:A:663:ARG:NH2	1:A:663:ARG:HG3	2.08	0.68
1:A:1471:ARG:HD3	40:1:66:TYR:CE2	2.28	0.68
1:A:1751:LEU:N	1:A:1751:LEU:HD23	2.08	0.68
12:K:83:SER:O	37:t:75:LEU:C	2.37	0.68
20:S:71:GLY:C	20:S:111:GLN:HE22	2.00	0.68
1:A:156:ARG:NH1	40:1:153:GLU:OE2	2.27	0.68
1:A:1809:ILE:HB	1:A:1818:PHE:HB2	1.76	0.68
25:Y:402:ILE:HG23	25:Y:411:LEU:HD11	1.74	0.68
1:A:1599:GLN:NE2	40:1:271:ILE:HD13	2.09	0.68
1:A:1739:ALA:C	1:A:1742:VAL:H	2.01	0.68
9:H:143:A:H2'	9:H:144:C:H6	1.58	0.68
10:I:722:GLU:O	10:I:726:ILE:CB	2.41	0.68
10:I:727:ARG:HH21	10:I:727:ARG:HB3	1.58	0.68
1:A:1890:GLN:H	1:A:2013:GLY:HA3	1.58	0.68
6:F:88:G:C5'	14:M:133:ARG:NH2	2.56	0.68
1:A:526:PRO:O	28:z:102:HIS:CD2	2.47	0.68
1:A:1958:LYS:HG2	27:2:100:ALA:CB	2.24	0.68
1:A:1997:VAL:HG11	26:Z:658:TYR:CE1	2.28	0.68
6:F:45:A:C2	6:F:73:A:C1'	2.76	0.68
9:H:40:C:H2'	9:H:41:U:C5	2.29	0.68
19:R:218:ILE:HG13	19:R:218:ILE:O	1.92	0.68
20:S:72:ARG:CB	24:W:92:GLU:OE1	2.34	0.68
1:A:105:ASN:HD22	1:A:129:VAL:HG11	1.59	0.68
11:J:201:ARG:HG2	11:J:201:ARG:HH21	1.57	0.68
1:A:1600:GLU:HG3	1:A:1725:LEU:CD2	2.24	0.67
8:G:16:G:O2'	8:G:17:U:OP2	2.10	0.67
9:H:152:G:O3'	9:H:153:A:O4'	2.11	0.67
9:H:178:A:OP1	27:2:138:LYS:NZ	2.23	0.67
10:I:721:LYS:NZ	13:L:65:ARG:HH21	1.77	0.67
23:V:499:GLN:HE21	40:1:72:TRP:HB2	1.56	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:199:GLU:CB	40:1:139:ARG:HD2	2.19	0.67
1:A:1482:GLU:OE1	40:1:87:PRO:HD3	1.93	0.67
8:G:20:A:C2	16:O:187:THR:HG21	2.29	0.67
9:H:168:A:C8	9:H:168:A:C5'	2.76	0.67
10:I:728:ARG:NH2	10:I:728:ARG:HG2	2.06	0.67
27:2:132:GLN:O	27:2:136:GLU:CG	2.42	0.67
1:A:1085:ILE:HG12	1:A:1099:PHE:HE1	1.59	0.67
3:C:673:LYS:HZ3	22:U:56:ASP:CB	2.05	0.67
27:2:25:LYS:HA	27:2:25:LYS:CE	2.24	0.67
37:q:53:ILE:CB	37:r:22:ASN:CB	2.73	0.67
33:k:33:THR:HG22	33:k:37:LYS:HE2	1.76	0.67
18:Q:1002:LYS:O	18:Q:1006:THR:N	2.26	0.67
1:A:1141:ARG:NH1	1:A:1183:PRO:HD2	2.09	0.67
1:A:1883:VAL:CG2	40:1:290:ARG:O	2.41	0.67
1:A:1889:LEU:HD12	1:A:2013:GLY:H	1.59	0.67
6:F:79:C:C2	17:P:3:THR:HG23	2.28	0.67
20:S:98:LEU:HB3	20:S:130:GLY:HA3	1.76	0.67
29:b:18:ARG:NH1	29:b:52:LYS:HB2	2.09	0.67
37:q:60:PRO:CB	37:s:94:GLN:N	2.57	0.67
1:A:1585:ILE:HG21	1:A:1740:LEU:HD21	1.77	0.67
11:J:535:TYR:C	11:J:538:ILE:CB	2.67	0.67
19:R:324:LEU:HD12	19:R:324:LEU:C	2.20	0.67
1:A:1737:ASN:CG	1:A:1738:PRO:HD2	2.20	0.67
1:A:1934:SER:HB3	40:1:347:PRO:HB3	1.74	0.67
8:G:17:U:H1'	16:O:46:LYS:NZ	2.10	0.67
8:G:26:U:H2'	8:G:27:U:C5'	2.24	0.67
9:H:151:C:O2	9:H:152:G:C8	2.48	0.67
9:H:151:C:H2'	9:H:152:G:H8	1.60	0.67
11:J:535:TYR:C	11:J:538:ILE:N	2.53	0.67
21:T:261:LEU:HB2	21:T:273:TRP:HB2	1.77	0.67
22:U:23:LEU:H	23:V:474:HIS:HD2	1.42	0.67
35:e:20:LEU:HD12	36:g:41:VAL:HG13	1.77	0.67
1:A:1991:TYR:CE1	1:A:1995:ASN:HB2	2.30	0.67
9:H:151:C:C2	9:H:152:G:C8	2.83	0.67
10:I:726:ILE:HD12	10:I:726:ILE:C	2.19	0.67
16:O:243:ILE:HG12	16:O:294:ASN:HD22	1.60	0.67
1:A:2004:GLN:NE2	40:1:335:TYR:CD1	2.63	0.67
24:W:73:ASP:OD2	24:W:74:PRO:HD3	1.94	0.67
1:A:1471:ARG:HG2	40:1:66:TYR:CD2	2.30	0.66
1:A:1872:LEU:O	1:A:1876:LEU:CB	2.42	0.66
6:F:21:U:O2	24:W:168:PHE:HE1	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:G:138:A:N1	9:H:39:U:O2	2.27	0.66
21:T:188:PRO:CG	21:T:443:THR:OG1	2.35	0.66
23:V:496:CYS:HG	40:1:72:TRP:HH2	0.74	0.66
27:2:134:LEU:C	27:2:134:LEU:HD12	2.20	0.66
38:o:5:THR:HG22	38:o:8:LEU:H	1.60	0.66
1:A:698:PRO:HG2	1:A:701:ILE:HD13	1.75	0.66
1:A:934:ARG:NH1	25:Y:425:ILE:HG21	2.09	0.66
1:A:1676:ILE:HD13	1:A:1706:ASP:HB2	1.77	0.66
1:A:1833:LEU:H	1:A:1833:LEU:CD2	2.02	0.66
6:F:33:G:H5"	6:F:33:G:C8	2.28	0.66
6:F:45:A:N6	8:G:167:G:N7	2.43	0.66
8:G:142:U:H2'	8:G:143:U:C6	2.30	0.66
25:Y:402:ILE:HG23	25:Y:411:LEU:CD1	2.25	0.66
29:i:18:ARG:NH1	29:i:52:LYS:HB2	2.09	0.66
6:F:85:U:H3'	6:F:86:U:C5'	2.26	0.66
8:G:17:U:O2'	16:O:46:LYS:NZ	2.27	0.66
10:I:681:ILE:HG23	10:I:710:PHE:CE2	2.30	0.66
1:A:1486:GLU:OE1	1:A:1674:HIS:NE2	2.29	0.66
1:A:1596:VAL:HG13	40:1:278:LEU:HD12	1.71	0.66
35:l:20:LEU:HD12	36:n:41:VAL:HG13	1.77	0.66
1:A:1875:HIS:O	1:A:1878:ASP:CG	2.38	0.66
9:H:67:C:H42	9:H:85:A:H61	1.44	0.66
29:i:18:ARG:NH1	29:i:52:LYS:CB	2.58	0.66
1:A:1418:ARG:HE	1:A:1464:LEU:HD23	1.60	0.66
9:H:75:A:H61	9:H:77:C:H42	1.44	0.66
9:H:153:A:C3'	9:H:154:C:H5'	2.25	0.66
40:1:47:ASN:HA	45:3:331:ILE:HD13	1.77	0.66
1:A:658:ARG:NH2	6:F:65:G:OP2	2.29	0.66
1:A:1552:GLN:CD	1:A:1563:HIS:NE2	2.54	0.66
1:A:1596:VAL:HG22	40:1:278:LEU:HD21	1.78	0.66
8:G:138:A:N1	9:H:39:U:C2	2.64	0.66
27:2:109:PHE:HA	27:2:112:ARG:NH1	2.11	0.66
1:A:109:PRO:HB2	1:A:191:ILE:HD12	1.77	0.66
1:A:381:PRO:HD2	3:C:334:ILE:HG22	1.78	0.66
10:I:273:GLU:O	18:Q:357:ALA:CB	2.44	0.66
16:O:223:LEU:HD22	16:O:285:GLU:HG2	1.78	0.66
29:b:18:ARG:NH1	29:b:52:LYS:CB	2.58	0.66
1:A:1135:PRO:O	1:A:1138:ALA:N	2.26	0.65
6:F:45:A:C6	8:G:167:G:C5	2.85	0.65
7:4:-2:C:P	28:z:107:LYS:CE	2.84	0.65
8:G:17:U:H1'	16:O:46:LYS:HZ3	1.61	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:40:C:O2'	9:H:41:U:C4'	2.44	0.65
9:H:41:U:H5"	9:H:41:U:H6	1.60	0.65
10:I:721:LYS:HZ1	13:L:65:ARG:HH22	1.44	0.65
1:A:1585:ILE:CG2	1:A:1740:LEU:HD21	2.27	0.65
2:B:95:G:H5'	34:f:25:TRP:CH2	2.21	0.65
12:K:83:SER:O	37:t:76:LYS:N	2.29	0.65
33:d:33:THR:HG22	33:d:37:LYS:HE2	1.76	0.65
1:A:1487:HIS:CE1	1:A:1671:TYR:CZ	2.85	0.65
6:F:6:C:OP2	6:F:6:C:H4'	1.95	0.65
19:R:64:PHE:O	19:R:71:GLN:NE2	2.29	0.65
1:A:170:ASP:OD2	28:z:95:HIS:CE1	2.49	0.65
1:A:1193:GLU:HB3	1:A:1231:ARG:HB3	1.78	0.65
1:A:1816:GLN:HG3	1:A:1917:PHE:O	1.96	0.65
3:C:121:ASP:CG	31:a:76:MET:SD	2.79	0.65
3:C:476:CYS:HB3	3:C:565:ILE:HB	1.77	0.65
8:G:137:C:OP2	8:G:137:C:H5	1.78	0.65
9:H:114:A:H61	9:H:142:C:H42	1.44	0.65
10:I:532:LYS:HD2	10:I:532:LYS:C	2.20	0.65
19:R:136:ASP:HB3	19:R:138:GLU:H	1.60	0.65
1:A:1501:LEU:CD2	45:3:337:ILE:HD13	2.20	0.65
21:T:314:ILE:HD12	21:T:324:HIS:HB2	1.78	0.65
1:A:1883:VAL:HA	40:1:289:THR:O	1.96	0.65
3:C:333:ASP:OD1	36:g:3:LYS:HB2	1.96	0.65
16:O:250:ASN:OD1	20:S:91:LYS:NZ	2.26	0.65
20:S:72:ARG:HG3	24:W:71:HIS:ND1	2.10	0.65
1:A:1258:LYS:HE3	8:G:173:G:H4'	1.79	0.65
1:A:419:ARG:NH2	1:A:423:ASP:O	2.30	0.65
1:A:690:MET:HE1	17:P:9:PHE:HB3	1.79	0.65
1:A:1600:GLU:HG3	1:A:1725:LEU:HD21	1.78	0.65
3:C:667:VAL:N	3:C:824:THR:HG23	2.09	0.65
24:W:341:ASN:OD1	24:W:388:GLN:NE2	2.29	0.65
9:H:33:G:H1'	27:2:68:MET:HE1	1.79	0.65
20:S:125:LYS:CB	20:S:126:HIS:CD2	2.80	0.65
25:Y:413:LYS:HA	25:Y:416:PHE:CD2	2.32	0.65
9:H:147:G:H2'	9:H:148:C:H6	1.62	0.64
1:A:537:LYS:HB2	6:F:37:C:H41	1.60	0.64
5:E:307:ARG:HH22	29:b:115:PRO:HB3	1.61	0.64
6:F:45:A:C2	6:F:73:A:O4'	2.51	0.64
8:G:148:U:O2	8:G:148:U:H2'	1.95	0.64
1:A:1141:ARG:HB2	1:A:1182:ASN:OD1	1.98	0.64
1:A:1494:TYR:CB	1:A:1744:ARG:HE	2.09	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1521:ALA:HB3	8:G:166:A:H1'	1.78	0.64
8:G:129:G:C4'	24:W:541:LYS:CE	2.66	0.64
9:H:153:A:H3'	9:H:154:C:H5'	1.79	0.64
34:m:5:LEU:HD22	35:l:48:ILE:HB	1.80	0.64
6:F:28:A:H1'	15:N:39:GLY:O	1.97	0.64
33:d:32:LEU:HD22	33:d:65:MET:HE3	1.80	0.64
1:A:1877:LEU:O	1:A:1880:PRO:HD3	1.98	0.64
1:A:1880:PRO:C	1:A:1882:ILE:H	2.06	0.64
1:A:1994:LYS:HB3	26:Z:756:TYR:HB2	1.79	0.64
3:C:129:ILE:HG22	3:C:199:LEU:HB3	1.79	0.64
5:E:93:TRP:HH2	29:b:105:GLY:CA	2.10	0.64
9:H:154:C:H2'	9:H:155:C:H6	1.62	0.64
1:A:523:ASN:OD1	1:A:552:ARG:NH2	2.31	0.64
1:A:1310:ARG:NH2	1:A:1563:HIS:O	2.30	0.64
1:A:1835:GLN:OE1	1:A:1835:GLN:HA	1.97	0.64
1:A:1869:LEU:O	1:A:1873:GLU:HB3	1.97	0.64
3:C:137:HIS:HD2	3:C:238:ASN:H	1.44	0.64
6:F:22:A:H2'	24:W:130:ARG:HH21	1.62	0.64
9:H:41:U:H2'	9:H:42:G:C8	2.33	0.64
16:O:133:PRO:HG2	16:O:137:LEU:HB2	1.80	0.64
20:S:102:ASN:ND2	20:S:108:ASN:OD1	2.30	0.64
24:W:534:ILE:HD12	24:W:544:SER:HB3	1.79	0.64
2:B:23:C:O2'	2:B:24:G:O5'	2.15	0.64
9:H:164:C:H6	9:H:164:C:H5'	1.63	0.64
10:I:704:TRP:CH2	10:I:727:ARG:HG3	2.32	0.64
23:V:544:LEU:HD11	23:V:578:SER:HB3	1.79	0.64
6:F:88:G:H5'	14:M:133:ARG:NH2	2.13	0.64
8:G:147:C:C2	8:G:148:U:C6	2.86	0.64
10:I:681:ILE:HG23	10:I:710:PHE:HZ	1.56	0.64
33:k:32:LEU:HD22	33:k:65:MET:HE3	1.79	0.64
1:A:1773:SER:HB3	40:1:321:THR:OG1	1.98	0.64
9:H:39:U:H2'	9:H:40:C:C5	2.32	0.64
6:F:42:C:H5"	6:F:43:A:OP2	1.97	0.63
8:G:21:A:OP2	16:O:193:LEU:HD11	1.98	0.63
23:V:499:GLN:HE22	40:1:72:TRP:HE3	1.40	0.63
1:A:1644:LEU:HD21	1:A:1681:ARG:HD2	1.74	0.63
5:E:93:TRP:HH2	29:b:105:GLY:HA2	1.63	0.63
5:E:307:ARG:NH2	29:b:115:PRO:HB3	2.12	0.63
37:r:8:SER:CB	37:s:86:MET:CB	2.77	0.63
1:A:1803:ILE:HG22	24:W:451:VAL:CG2	2.28	0.63
4:D:1992:GLU:HA	4:D:1995:ALA:HB3	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:T:250:ARG:NH1	21:T:266:GLU:OE2	2.30	0.63
1:A:1471:ARG:HD2	40:1:66:TYR:CG	2.33	0.63
1:A:1955:LYS:HZ1	27:2:89:GLU:CD	2.04	0.63
9:H:77:C:H5'	24:W:242:HIS:CE1	2.34	0.63
28:z:107:LYS:NZ	28:z:109:SER:OG	2.29	0.63
1:A:1934:SER:OG	40:1:344:GLN:HA	1.98	0.63
21:T:197:TYR:CD2	21:T:488:VAL:CG1	2.81	0.63
1:A:159:ARG:HA	40:1:104:ARG:HG3	1.80	0.63
1:A:1948:ASP:HB3	27:2:60:PRO:HB3	1.81	0.63
6:F:29:A:N3	16:O:166:SER:OG	2.29	0.63
8:G:18:A:C2	16:O:196:GLN:O	2.52	0.63
1:A:1955:LYS:HZ2	27:2:89:GLU:HG2	1.61	0.63
9:H:152:G:C2	9:H:153:A:C5	2.87	0.63
24:W:70:VAL:HG22	24:W:71:HIS:CD2	2.34	0.63
1:A:526:PRO:HG3	28:z:106:PRO:HD3	0.63	0.63
1:A:1020:LYS:NZ	9:H:26:A:OP1	2.32	0.63
24:W:72:LEU:HD11	24:W:83:PRO:HG3	0.76	0.63
1:A:1615:HIS:HE2	28:z:93:ASN:HA	1.64	0.63
6:F:41:A:H2	8:G:6:A:C2	2.16	0.63
25:Y:413:LYS:HA	25:Y:416:PHE:HD2	1.64	0.63
1:A:199:GLU:CG	40:1:139:ARG:CD	2.77	0.62
1:A:1792:LYS:NZ	9:H:37:U:C1'	2.60	0.62
2:B:95:G:C5'	33:d:47:ARG:HH22	2.12	0.62
3:C:531:TRP:HB2	3:C:551:LEU:HB2	1.80	0.62
8:G:142:U:H4'	8:G:143:U:OP1	1.98	0.62
16:O:27:CYS:SG	16:O:83:THR:OG1	2.57	0.62
20:S:125:LYS:HB3	20:S:126:HIS:CD2	2.33	0.62
21:T:307:SER:OG	21:T:308:ARG:N	2.29	0.62
1:A:1798:LEU:HB2	8:G:143:U:O4'	1.98	0.62
11:J:242:ILE:HA	11:J:245:TRP:HD1	1.64	0.62
15:N:139:CYS:SG	15:N:140:ARG:N	2.72	0.62
1:A:1589:ILE:HG12	1:A:1733:ILE:HG21	1.80	0.62
1:A:2004:GLN:C	40:1:342:HIS:HE2	2.07	0.62
3:C:668:GLU:H	3:C:824:THR:HG21	1.64	0.62
6:F:27:A:O2'	6:F:28:A:C8	2.51	0.62
8:G:5:G:O5'	8:G:5:G:H8	1.81	0.62
9:H:33:G:O2'	27:2:68:MET:CE	2.46	0.62
8:G:20:A:H2	16:O:187:THR:HG21	1.64	0.62
8:G:120:G:C2'	8:G:121:G:O4'	2.46	0.62
8:G:147:C:H6	8:G:147:C:C5'	2.12	0.62
9:H:143:A:H2'	9:H:144:C:C6	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:156:U:C6	9:H:156:U:C5'	2.72	0.62
3:C:177:ARG:NH2	3:C:638:ASP:OD2	2.32	0.62
9:H:157:G:H5"	9:H:157:G:H8	1.65	0.62
11:J:535:TYR:O	11:J:537:TRP:C	2.43	0.62
13:L:123:LEU:HD22	13:L:125:PRO:HD2	1.81	0.62
40:1:51:GLU:HB2	40:1:59:ILE:HB	1.81	0.62
40:1:269:GLU:OE2	40:1:269:GLU:HA	1.98	0.62
1:A:934:ARG:HH12	25:Y:425:ILE:HG21	1.64	0.62
1:A:1984:LYS:HD2	40:1:345:ALA:HB1	1.81	0.62
8:G:18:A:N1	16:O:196:GLN:O	2.32	0.62
21:T:187:LYS:N	21:T:188:PRO:CD	2.63	0.62
37:r:8:SER:O	37:r:9:ASN:CB	2.47	0.62
38:o:123:ASN:O	38:o:126:THR:HB	1.99	0.62
1:A:525:LYS:CD	28:z:103:TYR:HA	2.28	0.62
1:A:1495:PHE:HE2	1:A:1753:LEU:HD13	1.64	0.62
1:A:1997:VAL:HG13	26:Z:658:TYR:CZ	2.34	0.62
19:R:310:ARG:HA	19:R:310:ARG:CZ	2.30	0.62
1:A:1589:ILE:CG2	1:A:1730:MET:CE	2.73	0.62
9:H:15:U:C2'	9:H:16:U:OP2	2.48	0.62
10:I:273:GLU:CB	18:Q:357:ALA:HB2	2.29	0.62
1:A:1809:ILE:HD11	1:A:1845:VAL:HG22	1.82	0.62
2:B:19:A:H2'	2:B:20:G:H5"	1.82	0.62
3:C:506:PRO:HA	3:C:526:THR:HA	1.82	0.62
25:Y:413:LYS:HB3	25:Y:425:ILE:HD11	1.80	0.62
1:A:1130:ASN:HD22	1:A:1139:ARG:HH11	1.46	0.62
1:A:1499:GLU:HB3	40:1:60:ASN:CB	2.20	0.62
5:E:274:VAL:HG12	5:E:275:LYS:HG3	1.82	0.62
20:S:61:MET:HE2	20:S:63:GLN:HB2	1.82	0.62
24:W:253:SER:HB3	24:W:256:HIS:HB2	1.80	0.62
1:A:1552:GLN:CG	1:A:1563:HIS:CD2	2.83	0.61
1:A:1739:ALA:HA	1:A:1742:VAL:HG23	1.82	0.61
3:C:711:ARG:NH2	3:C:730:ARG:O	2.33	0.61
6:F:35:A:H5"	6:F:35:A:H8	1.64	0.61
28:z:55:LEU:HD22	40:1:180:LYS:NZ	2.14	0.61
1:A:1433:ASP:OD1	1:A:1439:ARG:NH2	2.33	0.61
1:A:1566:ILE:C	1:A:1566:ILE:HD12	2.25	0.61
24:W:70:VAL:HG13	24:W:71:HIS:HD2	1.63	0.61
1:A:525:LYS:HE2	28:z:103:TYR:CA	2.17	0.61
1:A:1903:GLY:HA3	27:2:82:TYR:CZ	2.35	0.61
1:A:1983:LEU:HD21	1:A:1987:ILE:HG13	1.81	0.61
6:F:43:A:O5'	6:F:43:A:H8	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:O:78:LYS:O	16:O:97:ARG:NH2	2.32	0.61
25:Y:401:GLU:O	25:Y:405:MET:HG2	2.00	0.61
1:A:1475:ILE:CD1	40:1:66:TYR:HE2	2.12	0.61
1:A:1496:PRO:CB	45:3:338:GLY:HA2	2.30	0.61
16:O:26:THR:OG1	16:O:159:ARG:NH2	2.34	0.61
24:W:73:ASP:CB	24:W:74:PRO:CD	2.38	0.61
1:A:153:ARG:HB3	40:1:134:PHE:HB3	1.82	0.61
1:A:1258:LYS:CE	8:G:173:G:C4’	2.72	0.61
1:A:1639:VAL:H	1:A:1656:THR:HA	1.65	0.61
1:A:1757:GLU:OE1	1:A:1757:GLU:N	2.33	0.61
2:B:12:U:O2’	2:B:13:C:O5’	2.19	0.61
9:H:39:U:H6	9:H:39:U:C5’	2.07	0.61
1:A:1615:HIS:NE2	28:z:93:ASN:HA	2.14	0.61
1:A:1698:PRO:HG2	40:1:182:VAL:N	2.12	0.61
1:A:1698:PRO:HB3	40:1:182:VAL:HG23	1.76	0.61
3:C:853:ARG:NH1	3:C:879:ASP:O	2.33	0.61
5:E:104:THR:OG1	29:b:103:GLY:HA3	2.00	0.61
5:E:307:ARG:HH22	29:b:115:PRO:HG3	1.65	0.61
13:L:4:ILE:O	13:L:4:ILE:HG23	1.99	0.61
13:L:6:ILE:O	13:L:6:ILE:HG23	2.00	0.61
1:A:1719:PHE:HD2	1:A:1720:PRO:HD2	1.64	0.61
1:A:1775:GLN:NE2	40:1:315:VAL:HB	2.15	0.61
3:C:853:ARG:NH2	3:C:886:ASP:OD2	2.33	0.61
9:H:33:G:H2’	9:H:34:U:C6	2.35	0.61
8:G:13:C:H2’	8:G:14:A:H8	1.65	0.61
9:H:106:G:H5’	33:k:47:ARG:HH22	1.66	0.61
17:P:13:ARG:HG3	17:P:13:ARG:NH1	2.14	0.61
18:Q:823:GLY:O	18:Q:1096:ASP:CB	2.48	0.61
1:A:1475:ILE:CD1	40:1:66:TYR:CE2	2.83	0.61
1:A:1566:ILE:HG13	1:A:1566:ILE:O	1.99	0.61
9:H:142:C:C2’	9:H:143:A:H5’	2.30	0.61
24:W:247:TYR:HB3	24:W:251:GLY:HA2	1.83	0.61
24:W:384:ASP:OD2	24:W:430:ASN:ND2	2.34	0.61
1:A:1698:PRO:CG	40:1:182:VAL:N	2.63	0.61
3:C:779:LEU:HB3	3:C:934:MET:HE1	1.83	0.61
5:E:162:ARG:HH21	5:E:203:ASP:HB3	1.66	0.61
9:H:112:G:H2’	9:H:113:G:H8	1.65	0.61
9:H:153:A:N6	9:H:177:A:H2	1.98	0.61
10:I:721:LYS:NZ	13:L:65:ARG:HH22	1.93	0.61
21:T:187:LYS:N	21:T:188:PRO:HD2	2.16	0.61
1:A:1955:LYS:NZ	27:2:93:GLN:CD	2.58	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2004:GLN:O	40:1:342:HIS:NE2	2.31	0.60
21:T:312:ALA:HB3	21:T:326:LEU:HB2	1.83	0.60
24:W:565:LYS:HD2	24:W:577:LEU:HD21	1.83	0.60
35:e:74:LEU:HB3	35:e:77:ILE:HD11	1.81	0.60
35:l:74:LEU:HB3	35:l:77:ILE:HD11	1.81	0.60
1:A:526:PRO:O	28:z:102:HIS:CG	2.53	0.60
1:A:532:THR:HG1	8:G:3:A:P	2.24	0.60
1:A:1471:ARG:CD	40:1:66:TYR:CD2	2.84	0.60
1:A:1521:ALA:HB1	8:G:166:A:H1'	1.83	0.60
1:A:1882:ILE:O	40:1:290:ARG:HB2	2.01	0.60
3:C:693:GLU:H	3:C:696:LEU:HD12	1.65	0.60
8:G:21:A:O2'	8:G:22:C:P	2.59	0.60
20:S:98:LEU:HB3	20:S:130:GLY:C	2.26	0.60
3:C:668:GLU:H	3:C:824:THR:CG2	2.14	0.60
3:C:829:GLU:HB2	3:C:907:VAL:HG22	1.84	0.60
5:E:81:LEU:HB2	5:E:93:TRP:HB2	1.83	0.60
10:I:608:LEU:HB2	10:I:611:HIS:HB2	1.83	0.60
10:I:692:SER:HB2	10:I:703:PHE:HE2	1.65	0.60
1:A:172:GLU:OE2	28:z:99:LEU:HA	2.00	0.60
19:R:314:GLN:OE1	19:R:314:GLN:HA	2.01	0.60
23:V:457:ARG:HG3	40:1:73:TYR:CE2	2.36	0.60
40:1:34:ARG:HH11	40:1:34:ARG:CG	2.14	0.60
1:A:1136:ARG:HH11	1:A:1136:ARG:CG	2.10	0.60
1:A:1471:ARG:HD2	40:1:66:TYR:CD1	2.37	0.60
1:A:1593:LEU:HD21	1:A:1729:ALA:CB	2.27	0.60
1:A:1876:LEU:HD12	1:A:1884:ILE:CD1	2.31	0.60
1:A:1890:GLN:CD	27:2:71:SER:OG	2.45	0.60
3:C:221:ILE:HG23	3:C:495:ARG:HB2	1.82	0.60
8:G:137:C:H6	8:G:137:C:O5'	1.85	0.60
21:T:188:PRO:HG3	21:T:443:THR:HG1	1.63	0.60
23:V:460:TYR:CE1	40:1:72:TRP:CZ2	2.88	0.60
24:W:354:ARG:NH1	24:W:373:ARG:O	2.35	0.60
1:A:252:ASP:O	1:A:332:TYR:OH	2.19	0.60
1:A:1787:ARG:HH21	1:A:1805:GLY:HA2	1.67	0.60
8:G:130:A:O2'	8:G:131:U:P	2.60	0.60
3:C:277:LYS:NZ	3:C:864:PRO:O	2.35	0.60
6:F:34:G:C5'	6:F:34:G:C8	2.85	0.60
21:T:197:TYR:HE2	21:T:488:VAL:HG11	1.64	0.60
24:W:82:ASN:N	24:W:83:PRO:CD	2.65	0.60
40:1:46:GLY:CA	45:3:331:ILE:HG21	2.23	0.60
1:A:435:CYS:HB3	7:4:-11:G:H22	1.65	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1772:PHE:HZ	1:A:1933:PHE:HB2	1.67	0.60
10:I:272:PHE:CB	18:Q:356:VAL:N	2.64	0.60
10:I:725:ARG:HD3	13:L:62:GLU:OE1	2.01	0.60
21:T:339:GLN:NE2	21:T:342:GLU:O	2.35	0.60
6:F:85:U:O2'	6:F:86:U:H5"	2.02	0.59
8:G:23:U:C6	8:G:23:U:H5"	2.37	0.59
19:R:326:GLU:HB3	19:R:330:LYS:HE3	1.83	0.59
40:1:67:ILE:HG23	40:1:85:GLN:HE21	1.66	0.59
1:A:1723:LYS:HB3	1:A:1724:PRO:HD3	1.83	0.59
1:A:1765:SER:H	1:A:2014:MET:CE	2.15	0.59
8:G:6:A:H2'	8:G:7:G:C8	2.37	0.59
1:A:880:ARG:HA	1:A:883:ARG:HB2	1.84	0.59
1:A:1876:LEU:CD1	1:A:1884:ILE:HD11	2.32	0.59
1:A:1980:GLU:OE2	40:1:347:PRO:HD2	2.02	0.59
11:J:182:LYS:HB2	26:Z:741:ALA:HA	1.82	0.59
12:K:82:LEU:O	37:t:72:PRO:O	2.20	0.59
19:R:126:ASN:ND2	19:R:128:ASP:O	2.36	0.59
19:R:309:GLU:HA	19:R:309:GLU:OE2	2.01	0.59
21:T:438:LEU:HD12	21:T:448:GLN:HB3	1.83	0.59
1:A:293:TRP:CD1	1:A:1136:ARG:CZ	2.85	0.59
1:A:915:GLU:OE1	1:A:1012:LYS:NZ	2.36	0.59
1:A:1481:VAL:CG2	40:1:85:GLN:HE21	2.14	0.59
1:A:1498:TRP:CZ3	40:1:67:ILE:HG21	2.38	0.59
3:C:667:VAL:H	3:C:824:THR:CG2	2.12	0.59
5:E:248:SER:HB3	5:E:265:ARG:HE	1.67	0.59
6:F:58:G:O2'	6:F:59:G:OP1	2.20	0.59
10:I:688:TYR:O	10:I:703:PHE:CZ	2.47	0.59
11:J:535:TYR:O	11:J:538:ILE:CB	2.49	0.59
1:A:58:LYS:NZ	1:A:477:LYS:O	2.35	0.59
1:A:761:ILE:CD1	1:A:772:CYS:SG	2.90	0.59
21:T:345:ILE:HB	21:T:357:TRP:HB2	1.82	0.59
37:r:7:ILE:O	37:s:90:PHE:CB	2.50	0.59
1:A:293:TRP:NE1	1:A:1136:ARG:HH12	2.01	0.59
3:C:121:ASP:OD1	31:a:76:MET:SD	2.60	0.59
6:F:35:A:C5'	6:F:35:A:C8	2.85	0.59
6:F:85:U:O2'	6:F:86:U:OP1	2.20	0.59
9:H:106:G:N2	9:H:107:A:C6	2.68	0.59
9:H:154:C:OP1	39:p:19:LYS:HD3	2.03	0.59
19:R:315:LYS:HA	19:R:315:LYS:NZ	2.17	0.59
21:T:399:LYS:HB3	21:T:404:SER:HB3	1.84	0.59
1:A:977:LEU:HB3	1:A:1097:ILE:HB	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1552:GLN:CB	1:A:1563:HIS:HD2	2.14	0.59
1:A:1772:PHE:CD2	1:A:1930:TYR:HB3	2.38	0.59
6:F:27:A:O2'	6:F:28:A:N7	2.35	0.59
26:Z:682:TYR:HB3	26:Z:685:LEU:HD11	1.85	0.59
1:A:343:GLU:HB3	40:1:144:PHE:CZ	2.38	0.59
1:A:1829:GLY:HA3	6:F:40:U:OP1	2.02	0.59
8:G:19:G:H21	16:O:196:GLN:HG3	1.67	0.59
8:G:20:A:O2'	8:G:21:A:P	2.59	0.59
10:I:696:ASP:HB3	10:I:699:THR:HB	1.85	0.59
11:J:344:GLN:HG2	14:M:132:LEU:HD21	1.83	0.59
14:M:120:PRO:O	14:M:120:PRO:HG2	2.03	0.59
23:V:457:ARG:NH1	40:1:88:GLN:CG	2.62	0.59
24:W:347:PHE:HD2	24:W:359:TRP:HB2	1.68	0.59
31:a:74:PRO:HB2	31:a:77:LEU:CD1	2.28	0.59
31:a:74:PRO:C	31:a:77:LEU:CD1	2.75	0.59
1:A:154:GLU:HG2	1:A:572:PHE:CD1	2.38	0.59
1:A:1797:ASN:OD1	8:G:143:U:C5'	2.51	0.59
8:G:134:U:C5'	8:G:135:G:OP2	2.51	0.59
10:I:731:GLN:NE2	10:I:731:GLN:HA	2.18	0.59
34:m:5:LEU:HB3	35:l:48:ILE:HG22	1.85	0.59
5:E:102:TYR:O	29:b:102:GLY:HA2	2.03	0.59
21:T:244:GLY:O	21:T:271:LYS:NZ	2.34	0.59
23:V:503:TYR:HB2	23:V:546:ASN:HA	1.84	0.59
3:C:824:THR:HG23	3:C:824:THR:O	2.02	0.58
17:P:2:THR:O	17:P:2:THR:HG22	2.02	0.58
34:f:70:LEU:CD2	34:f:71:TYR:HD2	2.16	0.58
8:G:12:G:H2'	8:G:13:C:C5	2.38	0.58
1:A:864:LEU:C	1:A:864:LEU:HD23	2.28	0.58
1:A:934:ARG:NH1	25:Y:425:ILE:CG2	2.66	0.58
3:C:196:LYS:HD2	31:a:14:GLU:OE1	2.02	0.58
8:G:22:C:O2	8:G:22:C:H2'	2.02	0.58
10:I:272:PHE:CB	18:Q:355:ASN:CB	2.81	0.58
19:R:320:HIS:HA	19:R:323:LYS:HD3	1.85	0.58
20:S:72:ARG:CB	24:W:92:GLU:CD	2.77	0.58
1:A:1393:ARG:HH11	25:Y:405:MET:HE2	1.68	0.58
8:G:134:U:C5	8:G:135:G:N2	2.71	0.58
1:A:526:PRO:HB3	28:z:106:PRO:HD2	1.84	0.58
1:A:864:LEU:HD23	1:A:864:LEU:O	2.04	0.58
1:A:1496:PRO:HB2	45:3:338:GLY:HA2	1.85	0.58
3:C:224:GLY:HA3	3:C:438:ILE:HD12	1.84	0.58
8:G:22:C:HO2'	8:G:23:U:P	2.27	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:40:C:HO2'	9:H:41:U:C1'	2.17	0.58
9:H:152:G:OP1	27:2:127:ARG:CD	2.52	0.58
13:L:135:LYS:HD2	13:L:135:LYS:N	2.17	0.58
16:O:276:THR:HG23	16:O:279:ALA:H	1.67	0.58
18:Q:828:GLY:HA2	50:Q:1501:ATP:O1B	2.04	0.58
34:m:5:LEU:HD23	35:l:57:VAL:HG11	1.69	0.58
1:A:1471:ARG:CD	40:1:66:TYR:CE1	2.78	0.58
1:A:1705:ILE:HG21	1:A:1734:MET:HE2	1.78	0.58
1:A:1879:PHE:CD2	1:A:1879:PHE:N	2.72	0.58
7:4:-2:C:OP1	28:z:107:LYS:HE2	2.04	0.58
19:R:315:LYS:HZ3	19:R:315:LYS:HB2	1.68	0.58
21:T:185:MET:HG3	21:T:186:PRO:HD3	0.77	0.58
21:T:186:PRO:HG2	21:T:188:PRO:HD3	1.84	0.58
34:m:70:LEU:CD2	34:m:71:TYR:HD2	2.16	0.58
1:A:955:TRP:CD1	1:A:1189:MET:HE1	2.39	0.58
1:A:1494:TYR:HB2	1:A:1744:ARG:HE	1.67	0.58
3:C:776:GLU:OE1	3:C:813:ARG:NH2	2.37	0.58
5:E:93:TRP:CH2	29:b:105:GLY:HA2	2.38	0.58
25:Y:405:MET:HB3	25:Y:411:LEU:HG	1.84	0.58
1:A:1601:LEU:HA	1:A:1606:ILE:HD12	1.86	0.58
6:F:77:C:H2'	6:F:78:A:H5'	1.86	0.58
9:H:10:C:C4	14:M:198:ARG:NH2	2.72	0.58
11:J:266:GLU:OE2	11:J:301:ARG:NH1	2.31	0.58
13:L:5:MET:HE2	13:L:39:HIS:ND1	2.19	0.58
16:O:239:LEU:O	16:O:296:ARG:NH1	2.34	0.58
20:S:83:GLU:HA	20:S:106:ASP:HB2	1.84	0.58
1:A:300:ASN:HB3	3:C:939:ARG:HH22	1.69	0.58
1:A:1596:VAL:CB	40:1:278:LEU:HD11	2.34	0.58
1:A:1615:HIS:CD2	28:z:93:ASN:HA	2.39	0.58
1:A:1883:VAL:HG13	40:1:289:THR:O	2.03	0.58
5:E:209:ILE:HG12	5:E:219:VAL:HG22	1.85	0.58
9:H:24:A:H3'	9:H:25:G:H5"	1.86	0.58
11:J:285:MET:O	11:J:289:ASN:ND2	2.37	0.58
12:K:110:SER:CB	13:L:699:ASN:CB	2.81	0.58
18:Q:828:GLY:CA	50:Q:1501:ATP:O1B	2.52	0.58
1:A:73:HIS:ND1	1:A:88:TYR:OH	2.34	0.57
16:O:84:CYS:SG	16:O:159:ARG:NH2	2.77	0.57
23:V:608:LEU:HB3	23:V:611:PHE:HB3	1.86	0.57
38:o:133:LEU:HD12	38:o:158:ALA:HB2	1.84	0.57
1:A:344:ASP:OD1	1:A:344:ASP:N	2.37	0.57
1:A:873:ASN:ND2	1:A:876:GLU:OE1	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1253:SER:O	1:A:1253:SER:OG	2.07	0.57
1:A:1739:ALA:O	1:A:1742:VAL:CG2	2.52	0.57
1:A:1955:LYS:HE2	27:2:93:GLN:NE2	2.16	0.57
6:F:39:A:C3'	6:F:40:U:H5'	2.34	0.57
31:h:45:ASN:HB3	38:o:22:ARG:NH1	2.18	0.57
34:m:3:LEU:HG	34:m:4:PRO:CD	2.28	0.57
1:A:1553:VAL:HG13	1:A:1553:VAL:O	2.04	0.57
10:I:272:PHE:O	18:Q:355:ASN:CB	2.52	0.57
24:W:72:LEU:CD1	24:W:83:PRO:CG	2.55	0.57
1:A:1322:LEU:HD21	40:1:67:ILE:CD1	2.34	0.57
24:W:404:ASP:OD2	24:W:406:ARG:NH1	2.38	0.57
1:A:1955:LYS:CE	27:2:93:GLN:NE2	2.59	0.57
8:G:127:U:H4'	24:W:545:ARG:HH22	1.68	0.57
16:O:76:LYS:HG2	24:W:111:LEU:HD22	1.85	0.57
19:R:316:GLU:HA	19:R:319:LYS:HG2	1.87	0.57
21:T:223:SER:OG	21:T:224:ALA:N	2.37	0.57
23:V:457:ARG:NH1	40:1:88:GLN:CD	2.62	0.57
1:A:861:ARG:HB3	1:A:861:ARG:HH11	1.70	0.57
1:A:1981:VAL:O	1:A:1984:LYS:HB3	2.04	0.57
6:F:28:A:HO2'	15:N:39:GLY:CA	2.17	0.57
6:F:39:A:H2'	6:F:40:U:C5'	2.29	0.57
1:A:415:SER:OG	1:A:416:GLY:N	2.37	0.57
9:H:71:C:H2'	9:H:72:U:H6	1.70	0.57
9:H:179:C:H2'	9:H:180:G:C8	2.38	0.57
12:K:181:MET:O	12:K:185:TRP:N	2.37	0.57
28:z:55:LEU:CD2	40:1:180:LYS:HZ3	2.17	0.57
38:o:2:VAL:HG11	38:o:29:TYR:O	2.05	0.57
38:o:101:VAL:HG23	38:o:102:GLU:HG3	1.86	0.57
1:A:1596:VAL:HG11	40:1:278:LEU:CD1	2.34	0.57
1:A:1815:GLY:O	1:A:1919:LEU:N	2.31	0.57
6:F:45:A:C5	8:G:167:G:C6	2.93	0.57
8:G:136:U:OP2	8:G:136:U:H6	1.88	0.57
9:H:36:G:O2'	9:H:37:U:H5'	2.04	0.57
13:L:256:GLU:OE2	13:L:260:ARG:NH2	2.38	0.57
1:A:1900:GLU:OE2	27:2:86:ARG:HA	2.05	0.57
1:A:1875:HIS:C	1:A:1878:ASP:OD1	2.48	0.57
9:H:141:C:C2	9:H:142:C:C5	2.93	0.57
9:H:152:G:P	27:2:127:ARG:CD	2.93	0.57
11:J:180:LYS:HE3	13:L:145:ASP:HB3	1.86	0.57
1:A:480:LYS:NZ	15:N:112:ASN:OD1	2.37	0.56
9:H:39:U:C3'	9:H:40:C:C5	2.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:73:C:H2'	9:H:74:U:H6	1.70	0.56
9:H:154:C:O2'	9:H:155:C:H5'	2.04	0.56
20:S:11:PRO:O	20:S:29:TRP:NE1	2.36	0.56
21:T:343:PRO:HD3	21:T:401:PRO:HB3	1.86	0.56
27:2:127:ARG:HB2	27:2:131:ARG:HH12	1.69	0.56
1:A:153:ARG:HG2	1:A:153:ARG:NH2	2.11	0.56
1:A:761:ILE:HD13	1:A:772:CYS:SG	2.45	0.56
6:F:38:G:H2'	6:F:39:A:C8	2.40	0.56
8:G:130:A:HO2'	8:G:131:U:P	2.28	0.56
9:H:152:G:N2	9:H:153:A:C5	2.73	0.56
19:R:317:LYS:CE	19:R:321:GLU:OE2	2.52	0.56
31:a:79:ASN:OD1	31:a:79:ASN:N	2.36	0.56
34:m:11:LEU:CD1	34:m:40:MET:HE2	2.35	0.56
1:A:158:ARG:HH11	28:z:62:GLN:NE2	2.03	0.56
1:A:199:GLU:HG2	40:1:139:ARG:CD	2.36	0.56
1:A:535:ARG:CB	28:z:108:VAL:HA	2.35	0.56
1:A:623:LYS:HB3	46:A:3000:IHP:P4	2.45	0.56
1:A:852:VAL:O	1:A:852:VAL:HG12	2.05	0.56
1:A:978:GLU:OE2	1:A:1188:ASN:N	2.36	0.56
1:A:1499:GLU:CB	40:1:60:ASN:CB	2.80	0.56
1:A:1499:GLU:HA	40:1:63:ILE:HG12	1.88	0.56
1:A:1552:GLN:HG3	1:A:1563:HIS:CD2	2.41	0.56
1:A:1719:PHE:CB	1:A:1720:PRO:CD	2.65	0.56
1:A:1994:LYS:HZ1	27:2:67:VAL:HG22	1.68	0.56
1:A:1997:VAL:CG1	26:Z:658:TYR:CZ	2.89	0.56
2:B:47:A:O2'	2:B:48:A:H5"	2.06	0.56
5:E:307:ARG:HH22	29:b:115:PRO:CB	2.17	0.56
5:E:324:PRO:O	29:b:112:ARG:NH1	2.38	0.56
8:G:171:G:N3	8:G:171:G:C2'	2.68	0.56
9:H:68:G:H2'	9:H:69:U:H6	1.70	0.56
9:H:72:U:H2'	9:H:73:C:H6	1.71	0.56
9:H:77:C:P	24:W:242:HIS:HE1	2.27	0.56
23:V:457:ARG:NH1	40:1:88:GLN:HG2	2.00	0.56
27:2:127:ARG:CB	27:2:131:ARG:HH22	2.11	0.56
34:f:11:LEU:CD1	34:f:40:MET:HE2	2.35	0.56
36:n:10:LYS:HG3	36:n:13:MET:HG3	1.86	0.56
36:n:19:LEU:O	36:n:26:HIS:HD2	1.88	0.56
1:A:1496:PRO:HG2	45:3:338:GLY:N	2.10	0.56
5:E:91:LEU:HD22	5:E:101:ASN:HD21	1.70	0.56
9:H:40:C:H5"	9:H:41:U:OP1	2.05	0.56
9:H:54:U:H2'	9:H:55:U:H6	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:69:U:H2'	9:H:70:C:H6	1.71	0.56
9:H:149:A:H2'	9:H:150:U:H6	1.70	0.56
20:S:66:ASP:CG	20:S:73:GLY:O	2.48	0.56
35:l:20:LEU:HD22	35:l:24:TYR:CZ	2.40	0.56
9:H:77:C:C2	9:H:78:C:C5	2.93	0.56
29:i:52:LYS:HE3	32:j:53:VAL:HG21	1.88	0.56
1:A:153:ARG:HH21	1:A:153:ARG:CG	2.10	0.56
6:F:45:A:H5'	6:F:46:G:OP2	2.05	0.56
9:H:57:A:H2'	9:H:58:U:H6	1.71	0.56
9:H:181:G:H2'	9:H:182:U:H6	1.71	0.56
17:P:16:ARG:HH12	19:R:220:ARG:CA	2.16	0.56
24:W:532:LEU:HD11	24:W:568:THR:HG21	1.87	0.56
1:A:1501:LEU:CD2	45:3:337:ILE:HG21	2.36	0.56
1:A:1595:GLN:HA	1:A:1598:ASP:HB2	1.86	0.56
1:A:1903:GLY:CA	27:2:82:TYR:OH	2.54	0.56
1:A:1934:SER:C	40:1:347:PRO:HG3	2.30	0.56
3:C:196:LYS:HE3	31:a:14:GLU:HB2	1.87	0.56
7:4:-2:C:OP2	28:z:107:LYS:HE3	2.05	0.56
11:J:213:LYS:HZ1	24:W:529:ASN:HA	1.70	0.56
34:m:3:LEU:CG	34:m:4:PRO:CD	2.69	0.56
1:A:537:LYS:CB	6:F:37:C:H41	2.19	0.56
1:A:1328:LEU:HB3	1:A:1368:LEU:HD11	1.88	0.56
5:E:268:ALA:HB2	5:E:272:ARG:HH21	1.69	0.56
8:G:20:A:H2	16:O:187:THR:CB	2.19	0.56
9:H:70:C:C2	9:H:71:C:C5	2.93	0.56
9:H:77:C:H2'	9:H:78:C:H6	1.70	0.56
9:H:88:A:H2'	9:H:89:U:H6	1.70	0.56
29:b:52:LYS:HE3	32:c:53:VAL:HG21	1.88	0.56
36:g:19:LEU:O	36:g:26:HIS:HD2	1.88	0.56
1:A:425:PRO:HD3	2:B:26:A:H5'	1.86	0.56
1:A:1130:ASN:ND2	1:A:1139:ARG:NH1	2.54	0.56
6:F:34:G:H8	6:F:34:G:O5'	1.89	0.56
23:V:496:CYS:SG	40:1:72:TRP:CH2	2.75	0.56
27:2:137:LYS:HZ3	27:2:140:LEU:HB3	1.69	0.56
35:e:20:LEU:HD22	35:e:24:TYR:CZ	2.40	0.56
35:l:14:MET:CE	36:n:10:LYS:CE	2.58	0.56
1:A:1555:LEU:CD2	1:A:1574:ILE:HG13	2.36	0.56
5:E:307:ARG:HH22	29:b:115:PRO:CG	2.18	0.56
9:H:70:C:H2'	9:H:71:C:H6	1.71	0.56
9:H:91:U:H2'	9:H:92:U:H6	1.70	0.56
9:H:141:C:H2'	9:H:142:C:H6	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:152:G:N2	9:H:153:A:C8	2.73	0.56
9:H:183:G:C4	9:H:184:C:C5	2.94	0.56
9:H:183:G:H2'	9:H:184:C:H6	1.71	0.56
23:V:499:GLN:HE21	40:1:72:TRP:CB	2.15	0.56
24:W:70:VAL:HG13	24:W:71:HIS:CD2	2.41	0.56
25:Y:686:GLU:HA	25:Y:716:THR:O	2.05	0.56
40:1:189:ASP:HA	40:1:192:LYS:HB2	1.88	0.56
1:A:293:TRP:CD1	1:A:1136:ARG:NH1	2.74	0.55
1:A:1790:ILE:CB	27:2:76:SER:HB3	2.35	0.55
1:A:1983:LEU:HD23	1:A:1983:LEU:C	2.31	0.55
9:H:69:U:C2	9:H:70:C:C5	2.94	0.55
9:H:71:C:C2	9:H:72:U:C5	2.94	0.55
9:H:72:U:C2	9:H:73:C:C5	2.94	0.55
9:H:147:G:C4	9:H:148:C:C5	2.94	0.55
20:S:54:HIS:CD2	20:S:71:GLY:HA3	2.41	0.55
37:r:127:ALA:HB1	37:s:127:ALA:HB3	1.87	0.55
33:k:50:LYS:HG2	33:k:74:TRP:CB	2.36	0.55
5:E:101:ASN:ND2	29:b:104:PRO:O	2.39	0.55
5:E:101:ASN:HD22	29:b:104:PRO:C	2.13	0.55
9:H:54:U:C2	9:H:55:U:C5	2.94	0.55
9:H:68:G:C4	9:H:69:U:C5	2.94	0.55
9:H:90:A:H2'	9:H:91:U:H6	1.71	0.55
1:A:774:LYS:HD2	9:H:23:A:N7	2.21	0.55
1:A:865:GLY:O	1:A:868:GLU:N	2.38	0.55
1:A:1685:LEU:HD13	40:1:173:TYR:CG	2.41	0.55
3:C:62:ASP:OD1	3:C:62:ASP:N	2.35	0.55
3:C:233:GLU:OE1	3:C:837:GLN:NE2	2.39	0.55
8:G:129:G:C4'	24:W:541:LYS:HE2	2.36	0.55
1:A:1540:PRO:HB3	1:A:1670:ASP:HA	1.88	0.55
1:A:1881:ASN:HD22	40:1:270:ASP:HB3	1.66	0.55
2:B:94:U:H2'	2:B:95:G:H5"	1.89	0.55
6:F:25:C:H4'	6:F:26:U:O5'	2.05	0.55
9:H:73:C:C2	9:H:74:U:C5	2.94	0.55
16:O:45:CYS:SG	16:O:48:CYS:N	2.76	0.55
29:b:56:SER:HB2	29:b:59:ALA:O	2.07	0.55
33:d:94:ARG:HE	33:d:96:ILE:HD11	1.72	0.55
40:1:34:ARG:HH11	40:1:34:ARG:HA	1.70	0.55
1:A:377:GLU:O	3:C:342:ARG:NH2	2.38	0.55
1:A:525:LYS:HG2	28:z:103:TYR:HA	1.87	0.55
6:F:41:A:N1	8:G:6:A:C2	2.75	0.55
9:H:83:A:C4	9:H:84:C:C5	2.95	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:O:34:ILE:HB	19:R:197:ILE:HG12	1.89	0.55
20:S:84:ASP:OD1	20:S:108:ASN:ND2	2.38	0.55
28:z:80:LYS:HA	28:z:88:ARG:HH22	1.72	0.55
33:d:50:LYS:HG2	33:d:74:TRP:CB	2.36	0.55
33:k:94:ARG:HE	33:k:96:ILE:HD11	1.72	0.55
1:A:537:LYS:CD	6:F:37:C:H41	2.17	0.55
1:A:1787:ARG:HG2	27:2:74:ALA:CB	2.37	0.55
9:H:59:A:C4	9:H:60:U:C5	2.95	0.55
11:J:222:ASP:O	11:J:226:ARG:NH1	2.39	0.55
11:J:502:GLU:O	11:J:506:GLU:N	2.39	0.55
38:o:14:GLN:HG2	38:o:22:ARG:NH2	2.21	0.55
1:A:152:ARG:NH2	40:1:132:ASP:O	2.40	0.55
1:A:603:ARG:NH2	7:4:-6:C:O2	2.38	0.55
1:A:762:ARG:HH22	17:P:226:LYS:HZ3	1.55	0.55
1:A:861:ARG:CB	1:A:861:ARG:CZ	2.84	0.55
1:A:1184:ASN:OD1	1:A:1195:ARG:NH1	2.40	0.55
1:A:1482:GLU:HB2	40:1:85:GLN:O	2.07	0.55
1:A:1596:VAL:CG2	40:1:278:LEU:CD1	2.85	0.55
4:D:1048:VAL:O	4:D:1050:GLU:N	2.40	0.55
6:F:45:A:N3	6:F:73:A:C1'	2.68	0.55
8:G:167:G:C8	8:G:167:G:C5'	2.87	0.55
12:K:193:TYR:O	12:K:197:ARG:N	2.35	0.55
13:L:124:LYS:N	13:L:125:PRO:HD2	2.21	0.55
23:V:450:ILE:CB	40:1:89:PRO:HG2	2.36	0.55
1:A:1719:PHE:CG	1:A:1720:PRO:HD2	2.41	0.55
6:F:81:C:H4'	6:F:82:A:OP2	2.07	0.55
19:R:97:LYS:NZ	20:S:146:GLU:OE1	2.40	0.55
27:2:25:LYS:HA	27:2:25:LYS:HE2	1.89	0.55
1:A:36:LYS:NZ	24:W:163:GLN:O	2.40	0.55
1:A:470:ARG:HG2	1:A:470:ARG:NH2	2.20	0.55
1:A:981:PHE:CZ	1:A:1095:ILE:HD11	2.41	0.55
1:A:1553:VAL:O	1:A:1553:VAL:HG22	2.07	0.55
1:A:1685:LEU:HD21	40:1:173:TYR:OH	1.96	0.55
1:A:1798:LEU:HD13	8:G:142:U:O2'	2.06	0.55
3:C:561:LYS:NZ	3:C:614:TYR:O	2.40	0.55
9:H:59:A:H2'	9:H:60:U:H6	1.71	0.55
9:H:91:U:C2	9:H:92:U:C5	2.95	0.55
21:T:188:PRO:HG3	21:T:443:THR:CB	2.34	0.55
21:T:354:ILE:HB	21:T:368:LEU:HB2	1.89	0.55
27:2:120:ALA:HB2	36:n:55:ASN:OD1	2.06	0.55
34:f:70:LEU:HD23	34:f:70:LEU:C	2.31	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:776:LEU:HD12	1:A:776:LEU:O	2.07	0.55
1:A:1552:GLN:CG	1:A:1563:HIS:HD2	2.20	0.55
1:A:1838:LYS:HG2	1:A:1871:PRO:HG2	1.88	0.55
1:A:1934:SER:HB3	40:1:347:PRO:CB	2.36	0.55
3:C:846:VAL:HG22	3:C:887:LEU:HD11	1.88	0.55
8:G:22:C:O2'	8:G:23:U:P	2.66	0.55
9:H:57:A:C4	9:H:58:U:C5	2.95	0.55
9:H:150:U:H2'	9:H:151:C:H6	1.71	0.55
27:2:51:LYS:HZ2	35:l:28:ARG:CD	2.18	0.55
1:A:1883:VAL:HG22	40:1:290:ARG:C	2.31	0.54
6:F:34:G:H8	6:F:34:G:H5"	1.70	0.54
9:H:105:G:C6	32:j:20:LYS:HD3	2.42	0.54
9:H:150:U:C2	9:H:151:C:C5	2.94	0.54
24:W:71:HIS:H	24:W:87:THR:HG22	1.72	0.54
34:m:70:LEU:HD23	34:m:70:LEU:C	2.31	0.54
1:A:461:HIS:NE2	2:B:26:A:N6	2.55	0.54
1:A:1275:ARG:NH2	1:A:1464:LEU:O	2.39	0.54
1:A:1555:LEU:HD21	1:A:1574:ILE:CG1	2.37	0.54
1:A:1596:VAL:HG22	40:1:278:LEU:CD1	2.34	0.54
6:F:22:A:C2	15:N:126:LEU:CD2	2.90	0.54
21:T:210:ILE:HG12	21:T:221:THR:HG22	1.89	0.54
29:i:56:SER:HB2	29:i:59:ALA:O	2.07	0.54
1:A:105:ASN:HD22	1:A:129:VAL:CG1	2.20	0.54
1:A:579:GLN:HG3	1:A:629:PHE:H	1.73	0.54
1:A:939:TRP:NE1	1:A:1049:ASP:OD2	2.39	0.54
1:A:1479:GLY:C	40:1:88:GLN:NE2	2.66	0.54
9:H:90:A:C4	9:H:91:U:C5	2.95	0.54
11:J:201:ARG:HG2	11:J:201:ARG:NH2	2.21	0.54
1:A:453:TYR:O	1:A:457:ASN:ND2	2.40	0.54
1:A:714:SER:O	1:A:718:ARG:NH1	2.40	0.54
1:A:1533:ARG:HG3	1:A:1751:LEU:HA	1.90	0.54
6:F:88:G:H5'	14:M:133:ARG:NH1	2.23	0.54
9:H:149:A:C4	9:H:150:U:C5	2.95	0.54
10:I:704:TRP:CH2	10:I:727:ARG:CG	2.90	0.54
10:I:722:GLU:C	10:I:726:ILE:CG2	2.59	0.54
21:T:353:THR:HG22	21:T:369:THR:HG22	1.90	0.54
27:2:25:LYS:CE	27:2:25:LYS:CA	2.86	0.54
1:A:156:ARG:HH22	40:1:134:PHE:HB2	1.71	0.54
1:A:1252:GLY:HA3	8:G:169:U:O4	2.06	0.54
1:A:1787:ARG:NH2	1:A:1804:ASN:O	2.41	0.54
1:A:1827:TRP:HZ3	1:A:1836:LEU:HB3	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:G:17:U:O2	16:O:198:ILE:HD11	2.07	0.54
9:H:83:A:H2'	9:H:84:C:H6	1.71	0.54
9:H:88:A:C4	9:H:89:U:C5	2.95	0.54
10:I:624:GLU:O	10:I:628:GLN:N	2.41	0.54
24:W:326:ARG:NH1	24:W:363:THR:O	2.40	0.54
26:Z:739:GLN:NE2	26:Z:746:GLN:OE1	2.40	0.54
34:f:8:LYS:HB3	34:f:9:PRO:HD3	1.88	0.54
6:F:28:A:HO2'	15:N:39:GLY:C	2.16	0.54
9:H:181:G:C4	9:H:182:U:C5	2.95	0.54
10:I:273:GLU:C	18:Q:357:ALA:CB	2.80	0.54
10:I:704:TRP:CE3	10:I:727:ARG:CG	2.83	0.54
11:J:181:ASN:HB3	26:Z:691:THR:HG22	1.90	0.54
13:L:782:LYS:O	13:L:786:HIS:N	2.39	0.54
24:W:341:ASN:ND2	24:W:345:THR:OG1	2.37	0.54
1:A:67:ARG:HD3	1:A:179:ALA:HB2	1.89	0.54
1:A:108:MET:HB3	1:A:109:PRO:HD2	1.90	0.54
1:A:1560:ILE:HG12	1:A:1668:TRP:HB2	1.90	0.54
1:A:2004:GLN:HE22	40:1:335:TYR:CB	1.91	0.54
5:E:155:ASN:ND2	5:E:172:ASP:OD1	2.40	0.54
8:G:21:A:O2'	8:G:22:C:C5'	2.55	0.54
9:H:10:C:H41	14:M:198:ARG:HH12	1.54	0.54
10:I:723:MET:O	10:I:727:ARG:HB2	2.07	0.54
10:I:727:ARG:HB3	10:I:727:ARG:NH2	2.21	0.54
15:N:2:PRO:HG2	15:N:4:VAL:HA	1.90	0.54
1:A:425:PRO:CD	2:B:26:A:H5'	2.38	0.54
1:A:1499:GLU:CA	40:1:63:ILE:HG12	2.38	0.54
2:B:16:U:OP1	19:R:170:LYS:HE3	2.08	0.54
24:W:73:ASP:CG	24:W:74:PRO:CD	2.69	0.54
25:Y:402:ILE:O	25:Y:406:ILE:HD12	2.07	0.54
37:q:106:ALA:HB1	37:t:106:ALA:HB3	1.89	0.54
1:A:526:PRO:HD2	28:z:104:ASP:C	2.32	0.54
1:A:955:TRP:HE1	1:A:976:MET:HE1	1.73	0.54
1:A:1144:LYS:O	1:A:1148:ASN:ND2	2.41	0.54
1:A:1390:ALA:HB2	25:Y:410:VAL:CG1	2.38	0.54
5:E:62:LEU:HD23	29:b:107:GLY:HA2	1.88	0.54
33:d:88:LYS:HG3	33:d:89:PRO:HD2	1.89	0.54
1:A:176:LEU:HB3	1:A:181:ASN:HD22	1.73	0.54
5:E:128:SER:OG	5:E:129:THR:N	2.41	0.54
8:G:5:G:H2'	8:G:6:A:C8	2.43	0.54
10:I:723:MET:N	10:I:726:ILE:CG2	2.68	0.54
13:L:264:LYS:O	13:L:268:LYS:N	2.36	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:R:310:ARG:NE	19:R:310:ARG:CA	2.71	0.54
20:S:70:THR:HG22	24:W:73:ASP:HA	1.90	0.54
24:W:443:ARG:NH1	24:W:452:ASP:OD2	2.41	0.54
1:A:1481:VAL:HG21	40:1:67:ILE:CG2	2.35	0.53
1:A:1495:PHE:HE1	1:A:1755:SER:OG	1.91	0.53
1:A:1991:TYR:C	1:A:1991:TYR:CD2	2.83	0.53
3:C:259:LYS:HG2	47:C:1500:GTP:C6	2.43	0.53
3:C:704:VAL:HG23	3:C:705:VAL:HG13	1.89	0.53
6:F:80:G:H5"	6:F:81:C:P	2.48	0.53
8:G:129:G:H5'	24:W:541:LYS:NZ	2.18	0.53
9:H:40:C:C5'	9:H:41:U:OP1	2.56	0.53
34:m:3:LEU:O	34:m:5:LEU:N	2.41	0.53
1:A:156:ARG:NH2	40:1:134:PHE:CB	2.71	0.53
8:G:147:C:N1	8:G:148:U:C5	2.77	0.53
22:U:77:MET:O	22:U:81:GLY:N	2.40	0.53
24:W:103:GLN:O	24:W:108:ARG:NH2	2.39	0.53
24:W:465:PRO:HG2	24:W:481:MET:HE3	1.89	0.53
27:2:29:GLU:OE1	27:2:29:GLU:HA	2.07	0.53
27:2:30:GLU:O	27:2:34:LYS:HD2	2.08	0.53
27:2:113:LEU:HD13	27:2:113:LEU:O	2.09	0.53
1:A:1632:PHE:HE1	1:A:1659:LYS:HG2	1.73	0.53
1:A:1881:ASN:HD21	40:1:270:ASP:HB3	1.73	0.53
3:C:343:LEU:HD13	3:C:373:ILE:HD11	1.91	0.53
9:H:153:A:C3'	9:H:154:C:C5'	2.86	0.53
10:I:273:GLU:O	18:Q:357:ALA:HB3	2.07	0.53
24:W:453:PHE:HA	27:2:79:PHE:HE2	1.72	0.53
1:A:188:LEU:HD22	1:A:567:GLY:HA2	1.88	0.53
1:A:1322:LEU:HD21	40:1:67:ILE:HD11	1.90	0.53
1:A:1884:ILE:O	40:1:289:THR:HG22	2.08	0.53
1:A:1983:LEU:HD23	1:A:1983:LEU:O	2.08	0.53
3:C:137:HIS:HB2	3:C:239:THR:HG23	1.91	0.53
20:S:126:HIS:CD2	20:S:126:HIS:N	2.76	0.53
27:2:111:LYS:CA	27:2:114:GLU:HG2	2.36	0.53
1:A:1552:GLN:HB2	1:A:1563:HIS:HD2	1.74	0.53
1:A:2011:ILE:HG22	1:A:2012:LEU:HD23	1.88	0.53
5:E:133:VAL:HG21	5:E:169:THR:HG21	1.90	0.53
9:H:39:U:C2'	9:H:40:C:C6	2.92	0.53
10:I:310:LYS:O	10:I:311:MET:C	2.51	0.53
10:I:721:LYS:CE	13:L:65:ARG:NH2	2.70	0.53
21:T:185:MET:N	21:T:186:PRO:CD	2.71	0.53
24:W:449:ILE:HG22	24:W:451:VAL:H	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:z:91:ASP:OD1	28:z:94:ARG:NH2	2.41	0.53
31:a:74:PRO:CA	31:a:77:LEU:HD11	2.37	0.53
1:A:526:PRO:CD	28:z:104:ASP:C	2.81	0.53
9:H:15:U:H2'	9:H:16:U:OP2	2.08	0.53
13:L:569:GLN:HA	37:q:114:CYS:O	2.07	0.53
16:O:81:CYS:HB3	16:O:84:CYS:HB2	1.90	0.53
17:P:13:ARG:HG3	17:P:13:ARG:HH11	1.72	0.53
27:2:24:PRO:HA	27:2:29:GLU:HB2	1.91	0.53
32:j:68:PHE:HB2	33:k:100:PHE:HB3	1.91	0.53
1:A:158:ARG:HH11	28:z:62:GLN:CD	2.16	0.53
1:A:762:ARG:NH2	17:P:227:TYR:OH	2.42	0.53
1:A:1087:LEU:HB2	1:A:1098:PHE:HB3	1.89	0.53
1:A:1491:LYS:HD2	1:A:1709:TYR:CD1	2.37	0.53
1:A:1664:ILE:HD13	1:A:1703:ILE:HB	1.90	0.53
1:A:1803:ILE:CG2	24:W:451:VAL:CG2	2.87	0.53
20:S:70:THR:HA	24:W:73:ASP:OD1	2.09	0.53
1:A:1258:LYS:HE2	8:G:173:G:C3'	2.38	0.53
1:A:1592:ASP:O	1:A:1596:VAL:N	2.39	0.53
1:A:1976:TRP:O	1:A:1980:GLU:N	2.30	0.53
8:G:142:U:O2'	8:G:143:U:C5'	2.49	0.53
8:G:177:G:C2'	8:G:177:G:N3	2.72	0.53
21:T:270:VAL:HG21	21:T:305:THR:HG21	1.89	0.53
36:n:17:LEU:HD23	36:n:72:ALA:HA	1.91	0.53
1:A:974:ASN:HD22	1:A:1178:TYR:HD2	1.57	0.53
3:C:677:GLU:OE1	3:C:681:LYS:NZ	2.38	0.53
5:E:243:LEU:HD23	5:E:250:LEU:HD12	1.91	0.53
6:F:58:G:O2'	6:F:59:G:P	2.66	0.53
9:H:39:U:C4	9:H:40:C:N4	2.77	0.53
9:H:153:A:H3'	9:H:154:C:C5'	2.38	0.53
11:J:497:TYR:HA	11:J:537:TRP:N	2.24	0.53
24:W:209:SER:O	24:W:213:GLN:N	2.41	0.53
1:A:199:GLU:CG	40:1:139:ARG:HD3	2.35	0.53
1:A:1130:ASN:ND2	1:A:1139:ARG:HH11	2.07	0.53
1:A:1958:LYS:CG	27:2:96:MET:O	2.57	0.53
3:C:757:ALA:O	3:C:761:SER:OG	2.26	0.53
6:F:42:C:H2'	6:F:43:A:C1'	2.39	0.53
9:H:154:C:OP2	39:p:19:LYS:CD	2.56	0.53
9:H:154:C:OP2	39:p:19:LYS:HD3	2.09	0.53
9:H:177:A:C8	27:2:134:LEU:HD13	2.43	0.53
10:I:727:ARG:CG	10:I:727:ARG:NH2	2.70	0.53
19:R:60:ASP:N	19:R:60:ASP:OD1	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:S:125:LYS:C	20:S:126:HIS:CD2	2.87	0.53
6:F:40:U:H2'	6:F:41:A:C8	2.44	0.52
1:A:1703:ILE:HG21	1:A:1730:MET:HE2	1.91	0.52
10:I:84:HIS:O	10:I:85:ARG:C	2.51	0.52
20:S:72:ARG:CG	24:W:71:HIS:ND1	2.72	0.52
40:1:122:ASN:ND2	40:1:133:CYS:SG	2.71	0.52
1:A:158:ARG:HH12	28:z:62:GLN:HG2	1.73	0.52
1:A:1251:SER:O	1:A:1298:ARG:NH2	2.41	0.52
1:A:1994:LYS:CD	26:Z:756:TYR:HD1	2.22	0.52
6:F:26:U:O2'	6:F:27:A:P	2.67	0.52
10:I:592:ALA:HB3	10:I:623:VAL:HG12	1.91	0.52
27:2:123:GLN:O	27:2:127:ARG:NH1	2.42	0.52
1:A:94:TYR:HB2	19:R:207:MET:HE1	1.91	0.52
1:A:300:ASN:HB3	3:C:939:ARG:HH12	1.74	0.52
1:A:526:PRO:HD3	28:z:105:ILE:N	2.24	0.52
1:A:623:LYS:O	46:A:3000:IHP:O24	2.26	0.52
1:A:1593:LEU:HA	1:A:1596:VAL:HB	1.91	0.52
5:E:171:SER:OG	5:E:173:ASP:OD1	2.26	0.52
6:F:58:G:H2'	6:F:59:G:C8	2.44	0.52
9:H:39:U:H3'	9:H:40:C:H5	1.72	0.52
19:R:315:LYS:NZ	19:R:315:LYS:CA	2.73	0.52
23:V:584:LYS:HG3	23:V:634:ILE:HG12	1.91	0.52
9:H:164:C:H5'	9:H:164:C:C6	2.44	0.52
10:I:696:ASP:OD1	10:I:697:PRO:HD2	2.09	0.52
19:R:303:GLU:OE1	19:R:303:GLU:HA	2.08	0.52
27:2:52:MET:HB2	35:l:28:ARG:HH22	1.71	0.52
40:1:34:ARG:CG	40:1:34:ARG:NH1	2.73	0.52
1:A:1903:GLY:HA3	27:2:82:TYR:OH	2.10	0.52
2:B:27:U:O2'	2:B:28:A:O5'	2.25	0.52
3:C:938:ARG:O	3:C:942:GLY:N	2.42	0.52
8:G:20:A:H2	16:O:187:THR:CG2	2.21	0.52
9:H:33:G:H3'	9:H:33:G:OP2	2.10	0.52
10:I:309:ALA:O	10:I:310:LYS:C	2.52	0.52
27:2:90:TYR:O	27:2:94:ASP:N	2.42	0.52
32:c:68:PHE:HB2	33:d:100:PHE:HB3	1.90	0.52
35:l:14:MET:HE1	36:n:10:LYS:HD2	1.92	0.52
40:1:46:GLY:CA	45:3:331:ILE:CG2	2.79	0.52
40:1:282:SER:OG	40:1:283:ALA:N	2.42	0.52
1:A:1481:VAL:HG23	40:1:85:GLN:HE21	1.65	0.52
1:A:1890:GLN:HB3	27:2:70:SER:HG	1.70	0.52
6:F:79:C:O2	17:P:3:THR:HG23	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:G:20:A:O2'	16:O:193:LEU:CD2	2.50	0.52
8:G:128:U:O2'	8:G:129:G:OP2	2.24	0.52
13:L:7:LYS:CB	13:L:40:ARG:HA	2.39	0.52
20:S:15:TYR:HB3	20:S:163:TYR:HB2	1.91	0.52
1:A:527:VAL:O	28:z:102:HIS:CD2	2.62	0.52
1:A:863:GLU:C	1:A:863:GLU:CD	2.78	0.52
1:A:1471:ARG:CG	40:1:66:TYR:CD2	2.92	0.52
1:A:1723:LYS:N	1:A:1724:PRO:CD	2.73	0.52
8:G:21:A:HO2'	8:G:22:C:P	2.32	0.52
10:I:681:ILE:HD11	10:I:714:HIS:ND1	2.25	0.52
21:T:185:MET:N	21:T:186:PRO:HD2	2.25	0.52
21:T:294:LEU:HD12	21:T:303:LEU:HD11	1.92	0.52
24:W:243:VAL:HG13	24:W:245:GLU:H	1.74	0.52
35:l:87:LEU:HB2	36:n:61:VAL:HB	1.92	0.52
1:A:1056:HIS:NE2	1:A:1060:GLU:OE2	2.43	0.52
1:A:1354:ARG:HG3	22:U:19:VAL:HG22	1.92	0.52
2:B:18:C:C2'	2:B:19:A:O5'	2.58	0.52
3:C:207:GLY:O	3:C:238:ASN:ND2	2.42	0.52
6:F:5:U:H5'	6:F:6:C:OP2	2.10	0.52
19:R:315:LYS:NZ	19:R:315:LYS:CB	2.72	0.52
24:W:305:LEU:HD21	24:W:313:ILE:HG23	1.92	0.52
35:e:87:LEU:HB2	36:g:61:VAL:HB	1.92	0.52
36:g:17:LEU:HD23	36:g:72:ALA:HA	1.91	0.52
1:A:1938:LEU:HD22	1:A:1983:LEU:HD22	1.92	0.52
1:A:2011:ILE:N	1:A:2011:ILE:CD1	2.72	0.52
2:B:22:U:O2	2:B:22:U:H2'	2.09	0.52
2:B:89:U:O2'	31:a:64:ARG:NH2	2.43	0.52
6:F:88:G:H5'	14:M:133:ARG:CZ	2.40	0.52
8:G:147:C:C6	8:G:148:U:H5	2.28	0.52
9:H:147:G:H2'	9:H:148:C:C6	2.43	0.52
14:M:236:ASN:ND2	14:M:242:ALA:O	2.43	0.52
17:P:10:GLU:HG2	17:P:10:GLU:O	2.09	0.52
23:V:620:ASN:HB3	23:V:623:ASN:HB2	1.92	0.52
27:2:27:ALA:HA	27:2:30:GLU:CG	2.40	0.52
40:1:46:GLY:HA2	45:3:331:ILE:HG22	1.85	0.52
1:A:776:LEU:HD22	1:A:900:ASP:HB2	1.92	0.51
1:A:1501:LEU:HD13	1:A:1753:LEU:HD11	1.91	0.51
1:A:1983:LEU:CD2	1:A:1983:LEU:C	2.83	0.51
1:A:2090:ILE:HA	1:A:2223:CYS:O	2.10	0.51
3:C:114:TYR:CE2	31:a:78:LYS:HB2	2.45	0.51
6:F:77:C:C2'	6:F:78:A:H5'	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:512:ASP:OD2	11:J:427:LYS:HE2	2.10	0.51
17:P:66:ARG:O	17:P:69:ALA:N	2.43	0.51
23:V:590:LEU:HD22	23:V:599:LEU:HD13	1.90	0.51
33:d:85:LYS:HG2	33:d:85:LYS:O	2.09	0.51
1:A:525:LYS:CG	28:z:103:TYR:HA	2.41	0.51
1:A:620:PRO:HD2	40:1:134:PHE:CE2	2.46	0.51
1:A:976:MET:HG2	1:A:1187:PHE:HB3	1.92	0.51
5:E:93:TRP:CZ3	29:b:105:GLY:C	2.87	0.51
6:F:43:A:C6	6:F:44:G:O6	2.64	0.51
23:V:549:LYS:O	23:V:553:HIS:ND1	2.44	0.51
1:A:1413:ASP:O	1:A:1418:ARG:NH1	2.42	0.51
8:G:136:U:OP2	8:G:136:U:C6	2.62	0.51
9:H:14:C:N4	14:M:224:ARG:HD2	2.24	0.51
13:L:222:LEU:HD12	19:R:84:ASN:HB3	1.93	0.51
18:Q:809:ALA:HB2	18:Q:1131:VAL:CB	2.40	0.51
20:S:25:LEU:HD23	20:S:98:LEU:HD22	1.93	0.51
23:V:460:TYR:CD1	40:1:72:TRP:CZ2	2.98	0.51
1:A:312:TYR:OH	3:C:886:ASP:OD2	2.27	0.51
1:A:934:ARG:HH12	25:Y:425:ILE:CG2	2.23	0.51
1:A:977:LEU:HD23	1:A:1097:ILE:HD12	1.92	0.51
1:A:1070:ASP:OD1	1:A:1073:SER:OG	2.24	0.51
10:I:731:GLN:NE2	10:I:731:GLN:CA	2.71	0.51
21:T:418:THR:HG21	21:T:468:CYS:H	1.75	0.51
31:h:55:VAL:HG21	38:o:67:LYS:NZ	2.25	0.51
34:m:5:LEU:HB3	35:l:48:ILE:CG2	2.40	0.51
38:o:5:THR:CG2	38:o:8:LEU:H	2.23	0.51
38:o:102:GLU:HG2	38:o:128:LYS:HZ1	1.76	0.51
1:A:1321:GLU:HG3	40:1:66:TYR:HE1	1.76	0.51
1:A:1592:ASP:OD1	40:1:275:LEU:HD21	2.11	0.51
12:K:36:VAL:O	37:r:112:ALA:CB	2.55	0.51
1:A:461:HIS:CD2	2:B:26:A:N6	2.78	0.51
9:H:152:G:OP2	27:2:131:ARG:NH2	2.42	0.51
10:I:83:LYS:O	10:I:84:HIS:C	2.51	0.51
12:K:15:ALA:CB	37:s:112:ALA:C	2.82	0.51
1:A:1479:GLY:HA2	40:1:88:GLN:NE2	2.25	0.51
8:G:147:C:C2'	8:G:148:U:C6	2.77	0.51
12:K:90:PRO:CB	12:K:109:ASN:C	2.83	0.51
23:V:570:LEU:HD13	23:V:611:PHE:HA	1.93	0.51
37:q:106:ALA:CB	37:t:106:ALA:CB	2.87	0.51
1:A:888:GLN:O	1:A:889:ARG:NH1	2.39	0.51
1:A:1134:TRP:HB3	1:A:1138:ALA:HB3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1589:ILE:HG23	1:A:1730:MET:HE1	1.87	0.51
3:C:476:CYS:SG	3:C:477:HIS:N	2.83	0.51
6:F:28:A:O2'	15:N:39:GLY:C	2.53	0.51
8:G:177:G:N3	8:G:177:G:H2'	2.22	0.51
40:1:267:ILE:HD13	40:1:267:ILE:N	2.25	0.51
1:A:1688:THR:HB	40:1:178:HIS:NE2	2.26	0.51
3:C:136:GLY:O	3:C:142:LYS:NZ	2.38	0.51
23:V:457:ARG:HH12	40:1:88:GLN:CD	2.19	0.51
24:W:446:GLU:OE2	27:2:83:ARG:HD2	2.11	0.51
24:W:453:PHE:CB	27:2:79:PHE:HE2	2.23	0.51
33:k:41:GLN:H	33:k:115:ILE:HB	1.76	0.51
1:A:152:ARG:NH1	40:1:133:CYS:C	2.69	0.51
1:A:641:MET:HA	1:A:644:ILE:HG22	1.93	0.51
1:A:1312:PRO:HG2	1:A:1314:VAL:HG12	1.93	0.51
1:A:1528:GLN:HB2	1:A:1531:ASN:HD22	1.74	0.51
2:B:94:U:H5	33:d:104:ASP:O	1.94	0.51
10:I:727:ARG:HH21	10:I:727:ARG:C	2.18	0.51
16:O:235:TYR:HB3	16:O:301:LYS:HB2	1.93	0.51
17:P:16:ARG:NH1	19:R:220:ARG:CA	2.72	0.51
23:V:535:THR:HA	23:V:538:ARG:HB2	1.92	0.51
28:z:58:ARG:HH21	40:1:180:LYS:HE2	1.76	0.51
45:3:329:LYS:HE3	45:3:342:GLU:HG3	1.93	0.51
1:A:864:LEU:C	1:A:864:LEU:CD2	2.84	0.50
1:A:1090:ARG:HG3	1:A:1090:ARG:O	2.11	0.50
1:A:1739:ALA:HA	1:A:1742:VAL:CG2	2.41	0.50
5:E:124:LEU:HB3	5:E:136:TRP:HB2	1.94	0.50
16:O:50:ARG:NH1	16:O:122:GLU:OE1	2.44	0.50
17:P:38:HIS:HB3	21:T:282:ARG:HH21	1.75	0.50
1:A:861:ARG:NH1	1:A:861:ARG:CB	2.71	0.50
1:A:1740:LEU:C	1:A:1742:VAL:N	2.68	0.50
9:H:100:U:O2'	31:h:64:ARG:NH2	2.43	0.50
25:Y:413:LYS:H	25:Y:413:LYS:CD	2.18	0.50
34:m:5:LEU:O	35:l:49:GLY:HA3	2.10	0.50
1:A:766:THR:HG1	2:B:39:C:N4	2.09	0.50
1:A:1585:ILE:HD13	1:A:1740:LEU:CD2	2.40	0.50
1:A:1818:PHE:HB3	1:A:1914:MET:HE1	1.93	0.50
1:A:1994:LYS:HD2	26:Z:756:TYR:HD1	1.76	0.50
3:C:300:LEU:HA	3:C:306:ASN:HD22	1.76	0.50
6:F:50:A:O2'	6:F:51:U:P	2.69	0.50
8:G:7:G:H2'	8:G:8:C:C6	2.46	0.50
8:G:145:U:H2'	8:G:146:C:C6	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:N:51:ARG:NH2	24:W:192:PHE:O	2.45	0.50
20:S:55:ARG:HH21	20:S:57:ILE:HD11	1.77	0.50
28:z:107:LYS:O	28:z:110:TRP:HB3	2.11	0.50
29:b:50:LYS:HG2	29:b:51:ILE:HG13	1.93	0.50
40:1:34:ARG:HA	40:1:34:ARG:NH1	2.27	0.50
40:1:185:TYR:O	40:1:188:VAL:N	2.45	0.50
41:v:53:HIS:CB	42:w:149:CYS:O	2.58	0.50
1:A:92:LEU:HG	1:A:652:LEU:HD13	1.93	0.50
1:A:266:SER:OG	1:A:271:MET:O	2.28	0.50
1:A:618:THR:HG21	40:1:132:ASP:OD2	2.12	0.50
1:A:1700:GLY:H	1:A:1717:ASN:HB2	1.77	0.50
5:E:93:TRP:CZ3	29:b:105:GLY:HA3	2.46	0.50
6:F:22:A:N7	24:W:130:ARG:CD	2.72	0.50
6:F:41:A:C2	8:G:6:A:H2	2.16	0.50
6:F:45:A:C6	8:G:2:U:O2	2.61	0.50
6:F:85:U:C3'	6:F:86:U:C5'	2.90	0.50
8:G:20:A:C2	16:O:187:THR:CG2	2.94	0.50
9:H:111:G:O3'	9:H:112:G:O4'	2.29	0.50
12:K:18:TYR:CB	12:K:171:GLN:CB	2.90	0.50
25:Y:405:MET:HE1	25:Y:410:VAL:HG11	1.93	0.50
1:A:159:ARG:HG2	40:1:104:ARG:CB	2.39	0.50
1:A:705:LYS:HG2	9:H:15:U:C4	2.46	0.50
1:A:1955:LYS:HZ1	27:2:93:GLN:CD	2.18	0.50
1:A:2008:ARG:HB2	40:1:342:HIS:CE1	2.46	0.50
9:H:33:G:O2'	9:H:34:U:O4'	2.23	0.50
9:H:107:A:C6	9:H:108:G:C5	2.98	0.50
21:T:289:SER:OG	21:T:308:ARG:NH2	2.44	0.50
21:T:347:THR:HG21	21:T:357:TRP:HE1	1.76	0.50
24:W:70:VAL:HG22	24:W:71:HIS:HD2	1.74	0.50
1:A:139:VAL:O	1:A:143:GLN:N	2.40	0.50
1:A:1214:TRP:NE1	1:A:1276:GLU:OE1	2.45	0.50
1:A:1878:ASP:HB2	1:A:1879:PHE:CD2	2.46	0.50
2:B:100:C:H2'	2:B:101:U:C6	2.47	0.50
3:C:210:ASN:HB3	3:C:636:TYR:HB2	1.93	0.50
3:C:607:LEU:O	3:C:611:ASN:ND2	2.45	0.50
8:G:21:A:OP2	16:O:193:LEU:CG	2.58	0.50
10:I:511:LEU:HD12	10:I:543:ARG:HD2	1.92	0.50
34:f:20:MET:HE2	34:f:30:LYS:HB2	1.94	0.50
40:1:266:ARG:C	40:1:268:ARG:N	2.68	0.50
1:A:658:ARG:HD3	6:F:67:G:OP1	2.12	0.50
1:A:880:ARG:C	1:A:883:ARG:HB2	2.37	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:700:ILE:O	3:C:740:THR:OG1	2.28	0.50
35:l:15:VAL:O	36:n:33:GLY:HA3	2.12	0.50
1:A:1475:ILE:HD12	40:1:66:TYR:CD2	2.46	0.50
1:A:1476:GLN:NE2	40:1:85:GLN:OE1	2.44	0.50
1:A:1958:LYS:CE	27:2:97:ASP:HA	2.41	0.50
3:C:183:SER:OG	3:C:480:LYS:NZ	2.44	0.50
6:F:22:A:C5	24:W:130:ARG:HD3	2.46	0.50
6:F:43:A:N6	6:F:44:G:O6	2.44	0.50
6:F:45:A:H1'	6:F:73:A:C2	2.47	0.50
11:J:440:LEU:HG	11:J:445:LYS:HD2	1.93	0.50
13:L:145:ASP:OD1	13:L:145:ASP:N	2.40	0.50
16:O:116:TYR:O	16:O:120:ASN:ND2	2.45	0.50
1:A:1991:TYR:OH	1:A:1995:ASN:HB3	2.12	0.50
1:A:1997:VAL:CG1	26:Z:658:TYR:CE1	2.95	0.50
8:G:8:C:H2'	8:G:9:C:C6	2.46	0.50
8:G:168:C:H3'	8:G:168:C:OP2	2.12	0.50
10:I:265:TYR:CA	10:I:274:LYS:CB	2.80	0.50
10:I:311:MET:O	10:I:312:GLU:C	2.51	0.50
19:R:319:LYS:HG3	19:R:320:HIS:ND1	2.27	0.50
24:W:392:VAL:HG12	24:W:424:ILE:HD13	1.92	0.50
24:W:445:TRP:HE1	24:W:452:ASP:HB3	1.77	0.50
28:z:111:THR:O	28:z:112:LYS:OXT	2.30	0.50
40:1:31:GLU:O	40:1:34:ARG:HG3	2.12	0.50
1:A:148:TRP:CD1	1:A:152:ARG:HD2	2.47	0.49
1:A:1386:TRP:CB	25:Y:410:VAL:CG2	2.80	0.49
1:A:1479:GLY:HA2	40:1:88:GLN:HE22	1.77	0.49
1:A:1561:PHE:O	1:A:1561:PHE:HD2	1.95	0.49
1:A:1903:GLY:HA3	27:2:82:TYR:CE1	2.47	0.49
2:B:20:G:OP1	2:B:20:G:H4'	2.12	0.49
2:B:23:C:O2'	2:B:24:G:H3'	2.11	0.49
8:G:147:C:N1	8:G:148:U:H5	2.10	0.49
9:H:106:G:H5'	34:m:25:TRP:HH2	1.76	0.49
24:W:73:ASP:HB3	24:W:74:PRO:HD2	1.81	0.49
24:W:527:ASP:OD1	24:W:531:LYS:N	2.44	0.49
27:2:111:LYS:HA	27:2:114:GLU:CG	2.39	0.49
27:2:123:GLN:HB3	27:2:127:ARG:HH12	1.77	0.49
31:a:74:PRO:O	31:a:77:LEU:HD12	2.12	0.49
34:f:51:ILE:HG22	34:f:56:SER:HB2	1.93	0.49
1:A:435:CYS:HB3	7:4:-11:G:N2	2.27	0.49
1:A:855:ARG:NH2	9:H:29:A:H5"	2.27	0.49
1:A:880:ARG:HG3	1:A:884:HIS:CD2	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1719:PHE:CD2	1:A:1720:PRO:CD	2.95	0.49
5:E:107:GLY:O	5:E:143:ARG:NH1	2.45	0.49
5:E:253:ASN:HD21	5:E:302:ALA:HB1	1.76	0.49
5:E:340:PRO:HB2	5:E:356:ILE:HB	1.93	0.49
8:G:21:A:OP2	16:O:193:LEU:CD1	2.60	0.49
26:Z:694:TYR:HA	26:Z:709:ARG:O	2.12	0.49
27:2:111:LYS:HA	27:2:114:GLU:OE2	2.13	0.49
35:e:20:LEU:HD13	36:g:61:VAL:CG2	2.43	0.49
31:h:75:ASP:O	31:h:78:LYS:HG2	2.12	0.49
29:i:50:LYS:HG2	29:i:51:ILE:HG13	1.93	0.49
1:A:409:ARG:NH1	2:B:25:C:C6	2.81	0.49
1:A:467:GLN:CG	2:B:19:A:C5	2.95	0.49
1:A:790:ARG:NH1	1:A:986:GLU:O	2.44	0.49
1:A:1599:GLN:NE2	40:1:271:ILE:CD1	2.75	0.49
1:A:1880:PRO:C	1:A:1882:ILE:N	2.70	0.49
1:A:1980:GLU:OE2	40:1:347:PRO:CD	2.59	0.49
3:C:673:LYS:HG3	3:C:686:THR:HG23	1.95	0.49
6:F:83:A:OP2	11:J:247:LYS:CD	2.58	0.49
9:H:98:G:H2'	34:m:39:TYR:CE2	2.47	0.49
10:I:272:PHE:CB	18:Q:355:ASN:CA	2.90	0.49
16:O:22:ILE:HD13	24:W:111:LEU:HD23	1.94	0.49
27:2:113:LEU:C	27:2:113:LEU:CD1	2.86	0.49
40:1:125:ALA:HB2	40:1:150:ALA:HB3	1.94	0.49
1:A:1555:LEU:HD23	1:A:1556:ASP:H	1.76	0.49
6:F:45:A:H2	6:F:73:A:C1'	2.19	0.49
8:G:137:C:C5'	8:G:137:C:C6	2.90	0.49
9:H:104:U:O2'	34:m:65:ARG:NH2	2.45	0.49
9:H:153:A:C2'	9:H:154:C:C5'	2.86	0.49
10:I:696:ASP:HB3	10:I:699:THR:CG2	2.43	0.49
13:L:176:LEU:HD22	24:W:440:LYS:HE3	1.95	0.49
16:O:132:ARG:HD3	16:O:133:PRO:HD2	1.95	0.49
21:T:392:PRO:HG3	21:T:415:ILE:HA	1.93	0.49
25:Y:397:PRO:O	25:Y:400:TRP:HB3	2.13	0.49
33:d:41:GLN:H	33:d:115:ILE:HB	1.76	0.49
35:e:15:VAL:O	36:g:33:GLY:HA3	2.12	0.49
40:1:102:TYR:HB3	40:1:156:GLN:HE21	1.77	0.49
1:A:209:ASP:HB3	1:A:212:PRO:HA	1.93	0.49
1:A:425:PRO:HG3	2:B:26:A:H5"	1.94	0.49
1:A:1136:ARG:NH1	1:A:1136:ARG:CG	2.72	0.49
1:A:1286:ASP:OD1	1:A:1354:ARG:NH2	2.45	0.49
1:A:1765:SER:HB2	1:A:2014:MET:HE1	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1955:LYS:HB2	27:2:92:ARG:HH12	1.78	0.49
3:C:682:LYS:HB3	3:C:797:ALA:HB2	1.95	0.49
8:G:20:A:HO2'	16:O:193:LEU:CD2	2.09	0.49
27:2:89:GLU:O	27:2:93:GLN:N	2.40	0.49
2:B:93:U:O2'	34:f:65:ARG:NH2	2.45	0.49
6:F:8:C:C6	6:F:8:C:C5'	2.91	0.49
8:G:7:G:OP2	8:G:7:G:H8	1.94	0.49
10:I:681:ILE:CD1	10:I:714:HIS:ND1	2.76	0.49
11:J:263:SER:O	11:J:267:ARG:N	2.45	0.49
16:O:68:THR:HA	16:O:83:THR:HG22	1.93	0.49
24:W:103:GLN:NE2	24:W:111:LEU:O	2.46	0.49
24:W:547:LYS:HE2	24:W:547:LYS:O	2.13	0.49
37:q:60:PRO:CB	37:s:93:ARG:CB	2.91	0.49
38:o:66:LEU:HD21	38:o:69:LEU:HG	1.94	0.49
1:A:66:VAL:HG11	1:A:487:LEU:HD11	1.94	0.49
1:A:609:LYS:CE	46:A:3000:IHP:O31	2.60	0.49
1:A:1685:LEU:HD22	40:1:170:TRP:CZ3	2.47	0.49
1:A:1728:GLN:HE21	1:A:1728:GLN:C	2.20	0.49
1:A:1935:ARG:N	40:1:347:PRO:HG3	2.26	0.49
1:A:1935:ARG:NH2	40:1:348:THR:HG21	2.21	0.49
1:A:1994:LYS:HZ1	27:2:67:VAL:CG2	2.24	0.49
2:B:87:A:H2'	34:f:39:TYR:CE2	2.47	0.49
4:D:441:GLY:O	4:D:693:THR:N	2.36	0.49
6:F:34:G:C8	6:F:34:G:H5"	2.47	0.49
6:F:39:A:H61	8:G:8:C:H42	1.59	0.49
6:F:42:C:H2'	6:F:43:A:H1'	1.94	0.49
17:P:3:THR:O	17:P:3:THR:OG1	2.23	0.49
1:A:435:CYS:SG	7:4:-11:G:N2	2.78	0.49
1:A:1252:GLY:O	8:G:170:C:N4	2.46	0.49
1:A:1497:THR:HG23	1:A:1499:GLU:H	1.77	0.49
2:B:57:G:H2'	2:B:58:U:H5'	1.95	0.49
6:F:37:C:H3'	6:F:37:C:H6	1.77	0.49
6:F:79:C:P	11:J:237:LYS:NZ	2.84	0.49
10:I:273:GLU:C	18:Q:357:ALA:HB2	2.38	0.49
13:L:569:GLN:CB	37:q:114:CYS:C	2.86	0.49
23:V:528:ILE:HA	23:V:531:GLU:HB2	1.93	0.49
23:V:620:ASN:O	23:V:624:THR:N	2.43	0.49
27:2:137:LYS:HA	27:2:137:LYS:CE	2.32	0.49
1:A:1011:ALA:HB2	13:L:80:THR:HB	1.94	0.49
1:A:1321:GLU:HG3	40:1:66:TYR:CE1	2.48	0.49
1:A:1588:SER:O	1:A:1592:ASP:N	2.36	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1865:ARG:CZ	8:G:147:C:OP1	2.60	0.49
1:A:1891:LEU:HD22	1:A:1937:ILE:HD12	1.94	0.49
3:C:857:VAL:HG22	3:C:873:ALA:HB2	1.95	0.49
5:E:214:ASP:OD1	5:E:214:ASP:N	2.46	0.49
6:F:45:A:N6	8:G:167:G:C6	2.80	0.49
8:G:147:C:C2	8:G:148:U:H5	2.22	0.49
9:H:77:C:C5'	24:W:242:HIS:CE1	2.95	0.49
12:K:81:LEU:CB	37:t:72:PRO:CB	2.90	0.49
13:L:51:TYR:O	13:L:58:ILE:HD11	2.12	0.49
24:W:82:ASN:H	24:W:83:PRO:HD2	1.76	0.49
27:2:137:LYS:CE	27:2:140:LEU:HD23	2.43	0.49
33:d:107:ILE:HG22	33:d:108:VAL:CG2	2.39	0.49
40:1:267:ILE:HG22	40:1:267:ILE:O	2.12	0.49
1:A:156:ARG:HH22	40:1:134:PHE:CB	2.25	0.49
1:A:1201:ARG:O	1:A:1203:SER:N	2.45	0.49
1:A:1456:THR:OG1	1:A:1457:HIS:N	2.46	0.49
1:A:1552:GLN:CD	1:A:1563:HIS:CD2	2.91	0.49
1:A:1876:LEU:CG	1:A:1884:ILE:HD11	2.42	0.49
1:A:1903:GLY:CA	27:2:82:TYR:CZ	2.96	0.49
3:C:259:LYS:HD2	3:C:262:ARG:HD2	1.93	0.49
5:E:215:ASN:O	5:E:232:ARG:NH1	2.46	0.49
9:H:77:C:O5'	24:W:242:HIS:HE1	1.95	0.49
25:Y:412:SER:OG	25:Y:415:GLU:HG3	2.13	0.49
34:m:51:ILE:HG22	34:m:56:SER:HB2	1.93	0.49
40:1:169:ARG:HG3	40:1:170:TRP:CD1	2.47	0.49
1:A:1275:ARG:HD2	1:A:1375:TRP:CE2	2.47	0.48
1:A:1275:ARG:NH1	1:A:1373:GLN:O	2.40	0.48
1:A:2335:ALA:O	4:D:570:THR:CB	2.60	0.48
17:P:212:ASN:CB	21:T:458:SER:H	2.13	0.48
20:S:20:MET:HE2	20:S:141:ARG:HB3	1.95	0.48
26:Z:742:ASN:HB2	26:Z:744:ILE:HD12	1.94	0.48
35:l:20:LEU:HD13	36:n:61:VAL:CG2	2.42	0.48
1:A:1921:ASP:OD2	1:A:1968:TRP:N	2.46	0.48
3:C:440:SER:HB2	3:C:443:VAL:H	1.77	0.48
16:O:229:LYS:HD3	16:O:277:ARG:HH12	1.78	0.48
1:A:244:GLN:CD	1:A:244:GLN:N	2.70	0.48
1:A:642:ARG:NE	2:B:55:C:O2	2.31	0.48
1:A:1876:LEU:HG	1:A:1884:ILE:HD11	1.95	0.48
1:A:1986:LEU:HD23	1:A:1986:LEU:O	2.12	0.48
5:E:60:MET:HA	29:b:109:ALA:HA	1.94	0.48
6:F:50:A:O2'	6:F:51:U:OP1	2.27	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:L:192:ARG:NH2	13:L:198:ILE:O	2.46	0.48
21:T:427:LEU:HB3	21:T:439:TRP:HB2	1.95	0.48
9:H:24:A:H2	13:L:29:ASN:HB3	1.79	0.48
10:I:723:MET:CA	10:I:726:ILE:HG23	2.02	0.48
21:T:247:SER:OG	21:T:248:THR:N	2.46	0.48
34:m:20:MET:HE2	34:m:30:LYS:HB2	1.94	0.48
1:A:1699:THR:HA	1:A:1717:ASN:HD22	1.78	0.48
3:C:560:VAL:HG12	3:C:561:LYS:H	1.79	0.48
6:F:22:A:C2	15:N:126:LEU:HD23	2.48	0.48
6:F:41:A:C2	8:G:6:A:N1	2.79	0.48
10:I:681:ILE:CG2	10:I:710:PHE:CZ	2.80	0.48
13:L:55:ASP:HB3	13:L:58:ILE:HG13	1.95	0.48
40:1:135:GLU:OE1	40:1:138:ARG:NH1	2.46	0.48
1:A:975:VAL:HB	1:A:1099:PHE:HB2	1.96	0.48
1:A:1728:GLN:C	1:A:1728:GLN:NE2	2.71	0.48
1:A:1765:SER:HB2	1:A:2014:MET:CE	2.44	0.48
5:E:78:GLY:O	5:E:336:HIS:NE2	2.45	0.48
5:E:93:TRP:CZ3	29:b:105:GLY:CA	2.97	0.48
6:F:31:U:H2'	6:F:32:U:H5'	1.95	0.48
8:G:12:G:H2'	8:G:13:C:C6	2.49	0.48
9:H:143:A:N3	9:H:143:A:C3'	2.73	0.48
10:I:242:ALA:HA	18:Q:527:ILE:CB	2.43	0.48
10:I:727:ARG:NH2	10:I:727:ARG:C	2.71	0.48
13:L:18:ILE:O	13:L:22:ALA:N	2.47	0.48
17:P:13:ARG:HH11	17:P:13:ARG:CG	2.26	0.48
27:2:114:GLU:HG3	27:2:115:LYS:N	2.29	0.48
27:2:138:LYS:CE	27:2:138:LYS:CA	2.87	0.48
1:A:532:THR:CB	8:G:3:A:O5'	2.61	0.48
2:B:92:U:O4	29:b:38:MET:HG3	2.14	0.48
8:G:137:C:OP2	8:G:137:C:C6	2.66	0.48
10:I:728:ARG:O	10:I:731:GLN:CB	2.61	0.48
27:2:134:LEU:HD12	27:2:134:LEU:O	2.14	0.48
1:A:668:VAL:O	1:A:668:VAL:HG12	2.14	0.48
1:A:702:LYS:NZ	14:M:127:TYR:OH	2.47	0.48
1:A:1476:GLN:HG3	40:1:73:TYR:OH	2.14	0.48
1:A:1501:LEU:HB3	1:A:1753:LEU:HD21	1.95	0.48
9:H:44:U:H2'	9:H:45:C:C6	2.48	0.48
9:H:107:A:C2	9:H:108:G:C4	3.01	0.48
10:I:725:ARG:C	10:I:725:ARG:CD	2.85	0.48
13:L:6:ILE:C	13:L:6:ILE:CD1	2.82	0.48
16:O:245:GLU:OE1	16:O:249:ARG:NH1	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:V:457:ARG:CG	40:1:73:TYR:HD2	2.24	0.48
27:2:25:LYS:HE2	27:2:25:LYS:CA	2.44	0.48
1:A:199:GLU:CB	40:1:139:ARG:CD	2.90	0.48
1:A:681:PHE:HE2	1:A:746:LYS:HG3	1.78	0.48
1:A:1560:ILE:HG12	1:A:1668:TRP:CB	2.43	0.48
5:E:75:HIS:ND1	5:E:77:ASN:OD1	2.46	0.48
8:G:19:G:H21	16:O:196:GLN:CG	2.27	0.48
9:H:39:U:C2'	9:H:40:C:C5	2.97	0.48
27:2:38:LEU:CD2	34:m:12:ASN:HD22	2.13	0.48
37:q:60:PRO:CB	37:s:94:GLN:HA	2.43	0.48
37:r:127:ALA:HB1	37:s:127:ALA:CB	2.44	0.48
1:A:1131:LYS:HZ1	1:A:1188:ASN:HB2	1.78	0.48
1:A:1644:LEU:HD22	1:A:1681:ARG:CG	2.40	0.48
1:A:1890:GLN:CB	27:2:70:SER:OG	2.50	0.48
1:A:1958:LYS:HD3	27:2:96:MET:HB3	1.96	0.48
6:F:43:A:C6	6:F:44:G:C6	3.02	0.48
10:I:661:ASP:CB	10:I:694:ILE:HG21	2.20	0.48
11:J:183:ALA:HB3	13:L:142:ILE:HG12	1.96	0.48
11:J:201:ARG:NH2	11:J:201:ARG:CG	2.73	0.48
16:O:147:LEU:O	16:O:151:ALA:N	2.47	0.48
18:Q:936:PHE:CB	18:Q:1005:PHE:CB	2.92	0.48
36:g:35:ASP:HB2	36:g:36:PRO:CD	2.42	0.48
33:k:107:ILE:HG22	33:k:108:VAL:CG2	2.39	0.48
34:m:10:PHE:CE2	35:l:78:MET:HB2	2.49	0.48
1:A:151:MET:HA	1:A:154:GLU:HB3	1.95	0.47
10:I:661:ASP:HA	10:I:664:ALA:HB3	1.95	0.47
11:J:535:TYR:C	11:J:537:TRP:C	2.82	0.47
19:R:265:ASP:N	19:R:265:ASP:OD1	2.45	0.47
21:T:267:ASP:OD2	21:T:269:GLN:NE2	2.47	0.47
24:W:256:HIS:HB3	24:W:257:ILE:HD12	1.96	0.47
24:W:453:PHE:CB	27:2:79:PHE:CE2	2.97	0.47
41:v:140:HIS:O	42:w:70:VAL:CB	2.62	0.47
1:A:1495:PHE:CE1	1:A:1755:SER:OG	2.67	0.47
1:A:1537:TRP:HE3	1:A:1751:LEU:HD13	1.79	0.47
5:E:294:SER:HB3	5:E:299:LYS:HB2	1.96	0.47
6:F:50:A:HO2'	6:F:51:U:P	2.36	0.47
9:H:77:C:H2'	9:H:78:C:C6	2.49	0.47
9:H:151:C:C2	9:H:152:G:N7	2.82	0.47
10:I:555:ASP:OD1	10:I:555:ASP:N	2.46	0.47
37:q:61:ILE:N	37:s:93:ARG:CB	2.75	0.47
1:A:200:ASP:OD1	1:A:240:ARG:NH2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:361:HIS:CE1	23:V:324:HIS:HA	2.48	0.47
1:A:467:GLN:HG2	2:B:19:A:C5	2.49	0.47
1:A:824:PRO:O	1:A:933:ARG:NH1	2.45	0.47
1:A:1248:LEU:HD21	1:A:1295:ILE:HG22	1.95	0.47
1:A:1386:TRP:HB3	25:Y:410:VAL:HG23	1.88	0.47
1:A:1615:HIS:HD2	28:z:93:ASN:CG	2.20	0.47
1:A:1995:ASN:ND2	26:Z:756:TYR:CD2	2.82	0.47
9:H:42:G:H8	9:H:42:G:O5'	1.98	0.47
10:I:329:LEU:CB	18:Q:353:LEU:CA	2.90	0.47
15:N:51:ARG:HH21	24:W:193:LEU:HD23	1.78	0.47
16:O:88:LEU:O	19:R:183:GLN:NE2	2.47	0.47
19:R:314:GLN:CD	19:R:314:GLN:N	2.72	0.47
21:T:471:ASP:OD1	21:T:471:ASP:N	2.46	0.47
27:2:24:PRO:HA	27:2:29:GLU:CB	2.44	0.47
1:A:80:LYS:HD3	15:N:37:HIS:HE2	1.79	0.47
1:A:280:GLU:HG2	2:B:48:A:O4'	2.14	0.47
1:A:1482:GLU:OE1	40:1:86:ARG:HA	2.14	0.47
2:B:20:G:H1'	2:B:21:A:OP1	2.14	0.47
6:F:22:A:N1	15:N:126:LEU:HD23	2.29	0.47
9:H:69:U:H2'	9:H:70:C:C6	2.49	0.47
10:I:593:LYS:HE2	10:I:631:MET:HG3	1.95	0.47
19:R:318:GLU:O	19:R:322:GLU:HG3	2.14	0.47
19:R:326:GLU:HB3	19:R:330:LYS:CE	2.44	0.47
34:f:10:PHE:CE2	35:e:78:MET:HB2	2.49	0.47
41:v:24:PHE:HA	41:v:33:ARG:O	2.14	0.47
1:A:53:PHE:HE2	1:A:55:ASP:HB3	1.79	0.47
1:A:589:THR:OG1	1:A:590:GLY:N	2.46	0.47
1:A:761:ILE:HD11	1:A:772:CYS:SG	2.54	0.47
1:A:1657:THR:OG1	1:A:1659:LYS:O	2.28	0.47
5:E:176:VAL:HB	5:E:190:PHE:HB2	1.95	0.47
6:F:8:C:H6	6:F:8:C:C5'	2.09	0.47
10:I:272:PHE:C	18:Q:355:ASN:CB	2.88	0.47
10:I:727:ARG:HH21	10:I:727:ARG:HG2	1.76	0.47
25:Y:644:TYR:HA	25:Y:660:TYR:O	2.14	0.47
1:A:154:GLU:HG2	1:A:572:PHE:CE1	2.50	0.47
1:A:2011:ILE:HG22	1:A:2012:LEU:CD2	2.44	0.47
3:C:453:TYR:CZ	3:C:575:GLN:HB2	2.49	0.47
5:E:69:VAL:O	5:E:331:ASN:ND2	2.38	0.47
8:G:17:U:O2	16:O:198:ILE:CD1	2.63	0.47
9:H:39:U:C3'	9:H:40:C:C6	2.97	0.47
9:H:60:U:O2'	9:H:67:C:N4	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:153:A:C8	9:H:154:C:H5'	2.50	0.47
13:L:15:GLU:HG2	13:L:151:MET:HE1	1.96	0.47
14:M:211:ILE:HD12	14:M:212:ASN:HB2	1.95	0.47
19:R:316:GLU:HA	19:R:319:LYS:HE3	1.95	0.47
24:W:523:VAL:HB	24:W:535:TRP:HB2	1.96	0.47
34:m:36:VAL:HG12	34:m:37:ASP:N	2.29	0.47
1:A:127:SER:OG	1:A:495:GLN:NE2	2.45	0.47
1:A:244:GLN:OE1	1:A:244:GLN:HA	2.13	0.47
1:A:525:LYS:HE2	28:z:103:TYR:CD1	2.49	0.47
1:A:704:ASN:ND2	9:H:16:U:OP2	2.48	0.47
1:A:711:GLN:HE22	9:H:18:U:H3'	1.79	0.47
1:A:1108:ASP:OD2	1:A:1112:ARG:NH1	2.48	0.47
1:A:1596:VAL:HG11	40:1:278:LEU:HD13	1.96	0.47
1:A:1615:HIS:HB3	1:A:1618:LYS:HB2	1.96	0.47
1:A:1759:THR:HG22	40:1:286:ASP:OD2	2.15	0.47
1:A:1879:PHE:HB2	1:A:1882:ILE:HD12	1.96	0.47
6:F:28:A:O2'	15:N:39:GLY:HA2	2.13	0.47
9:H:103:U:O4	29:i:38:MET:HG3	2.14	0.47
9:H:141:C:H2'	9:H:142:C:C6	2.50	0.47
23:V:457:ARG:CG	40:1:73:TYR:CD2	2.88	0.47
32:c:20:LYS:HE2	32:c:63:ASN:O	2.15	0.47
33:d:108:VAL:CG1	34:f:62:VAL:HG13	2.44	0.47
31:h:45:ASN:HB3	38:o:22:ARG:HH11	1.79	0.47
38:o:153:LYS:O	38:o:157:GLU:HG3	2.14	0.47
1:A:150:MET:O	1:A:153:ARG:HG3	2.15	0.47
1:A:152:ARG:NH1	40:1:132:ASP:O	2.48	0.47
1:A:439:GLN:O	1:A:444:ARG:NH1	2.48	0.47
1:A:1555:LEU:CD2	1:A:1574:ILE:CG1	2.91	0.47
6:F:24:A:C6	16:O:65:PHE:CE2	2.97	0.47
6:F:25:C:O4'	6:F:26:U:OP2	2.33	0.47
9:H:57:A:H2'	9:H:58:U:C6	2.50	0.47
9:H:59:A:H2'	9:H:60:U:C6	2.50	0.47
9:H:71:C:H2'	9:H:72:U:C6	2.50	0.47
9:H:149:A:H2'	9:H:150:U:C6	2.50	0.47
10:I:139:ALA:HB2	10:I:147:ARG:CB	2.45	0.47
10:I:722:GLU:O	10:I:726:ILE:HB	2.15	0.47
10:I:722:GLU:O	10:I:726:ILE:N	2.43	0.47
16:O:196:GLN:HE21	16:O:208:PRO:HG2	1.80	0.47
21:T:335:THR:OG1	21:T:336:VAL:N	2.47	0.47
36:g:64:GLY:HA2	36:g:67:ILE:HD12	1.97	0.47
32:j:6:PHE:CD1	32:j:6:PHE:C	2.93	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:j:61:ARG:HB3	32:j:64:ASN:HD22	1.80	0.47
35:l:68:THR:HG22	35:l:68:THR:O	2.15	0.47
9:H:54:U:H2'	9:H:55:U:C6	2.50	0.47
13:L:135:LYS:N	13:L:135:LYS:CD	2.78	0.47
20:S:97:ILE:CG2	20:S:128:ILE:HG23	2.45	0.47
27:2:137:LYS:HE2	27:2:140:LEU:HB3	1.96	0.47
31:a:24:THR:O	31:a:51:ARG:NH1	2.46	0.47
38:o:2:VAL:O	38:o:2:VAL:HG13	2.13	0.47
38:o:14:GLN:HG3	38:o:44:PHE:HE1	1.80	0.47
1:A:153:ARG:NH2	1:A:153:ARG:CG	2.72	0.47
1:A:702:LYS:HD2	14:M:124:PHE:HE2	1.80	0.47
1:A:1034:LEU:HB2	1:A:1037:ALA:HB2	1.97	0.47
3:C:852:ARG:NH1	7:4:-13:C:H2'	2.27	0.47
5:E:145:LYS:NZ	5:E:181:ILE:O	2.39	0.47
8:G:27:U:HO2'	8:G:28:A:C4'	2.27	0.47
9:H:70:C:H2'	9:H:71:C:C6	2.50	0.47
9:H:72:U:H2'	9:H:73:C:C6	2.49	0.47
9:H:90:A:H2'	9:H:91:U:C6	2.50	0.47
9:H:150:U:H2'	9:H:151:C:C6	2.50	0.47
13:L:7:LYS:HG3	13:L:40:ARG:HA	1.96	0.47
13:L:54:LEU:O	13:L:55:ASP:C	2.58	0.47
13:L:123:LEU:HD22	13:L:125:PRO:CD	2.44	0.47
31:a:43:MET:HB3	31:a:46:ILE:HD11	1.97	0.47
34:f:36:VAL:HG12	34:f:37:ASP:N	2.29	0.47
32:j:20:LYS:HE2	32:j:63:ASN:O	2.15	0.47
36:n:64:GLY:HA2	36:n:67:ILE:HD12	1.97	0.47
40:1:178:HIS:CE1	40:1:181:ILE:HG12	2.50	0.47
1:A:1070:ASP:OD1	1:A:1070:ASP:N	2.39	0.46
1:A:1498:TRP:HZ3	40:1:63:ILE:CG2	1.82	0.46
1:A:1640:SER:CB	1:A:1718:TRP:O	2.63	0.46
1:A:1724:PRO:N	1:A:1725:LEU:N	2.63	0.46
1:A:2335:ALA:HA	4:D:570:THR:O	2.15	0.46
9:H:73:C:H2'	9:H:74:U:C6	2.50	0.46
19:R:324:LEU:HA	19:R:327:MET:CE	2.45	0.46
20:S:72:ARG:HD3	24:W:90:ALA:HB3	1.97	0.46
20:S:72:ARG:NH2	24:W:92:GLU:OE2	2.48	0.46
20:S:125:LYS:HB2	20:S:126:HIS:CD2	2.48	0.46
31:a:74:PRO:O	31:a:77:LEU:HD13	2.14	0.46
32:c:6:PHE:CD1	32:c:6:PHE:C	2.93	0.46
33:k:108:VAL:CG1	34:m:62:VAL:HG13	2.45	0.46
36:n:10:LYS:HD2	36:n:34:PHE:CE2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:o:61:PRO:O	38:o:86:ALA:HB1	2.15	0.46
1:A:832:TYR:HD2	1:A:835:ASP:HB3	1.79	0.46
1:A:1494:TYR:CG	1:A:1744:ARG:NE	2.84	0.46
1:A:1739:ALA:CA	1:A:1742:VAL:HG23	2.44	0.46
1:A:1872:LEU:O	1:A:1876:LEU:HB3	2.13	0.46
5:E:266:PRO:CB	13:L:788:TYR:CB	2.92	0.46
8:G:145:U:C2'	8:G:146:C:C6	2.98	0.46
9:H:83:A:H2'	9:H:84:C:C6	2.49	0.46
11:J:224:LYS:HE2	11:J:255:LEU:HD13	1.96	0.46
19:R:123:GLU:HG3	19:R:124:VAL:HG12	1.96	0.46
20:S:66:ASP:OD1	20:S:73:GLY:O	2.32	0.46
35:e:18:ILE:HA	35:e:21:ILE:HD12	1.98	0.46
37:s:65:PRO:O	37:s:66:PRO:C	2.59	0.46
38:o:56:LYS:HG2	38:o:58:ASP:HB2	1.97	0.46
1:A:58:LYS:HB2	1:A:477:LYS:HE2	1.97	0.46
1:A:663:ARG:NH1	6:F:64:U:OP2	2.49	0.46
1:A:1136:ARG:HG2	1:A:1136:ARG:NH1	2.13	0.46
1:A:1860:GLN:HG2	1:A:1883:VAL:HB	1.97	0.46
3:C:785:ARG:HG2	3:C:786:ASN:HB2	1.97	0.46
3:C:843:VAL:HG13	3:C:871:ILE:HD11	1.97	0.46
3:C:905:GLN:HE22	43:u:104:VAL:HA	1.80	0.46
10:I:728:ARG:NH2	10:I:728:ARG:CG	2.72	0.46
11:J:523:PRO:O	11:J:527:LYS:N	2.46	0.46
19:R:147:THR:HG23	21:T:360:VAL:HG12	1.96	0.46
19:R:318:GLU:CD	19:R:318:GLU:N	2.72	0.46
40:1:34:ARG:CA	40:1:34:ARG:NH1	2.76	0.46
1:A:53:PHE:CE1	2:B:65:G:C5'	2.98	0.46
1:A:372:PRO:HG2	3:C:342:ARG:HG2	1.97	0.46
1:A:435:CYS:CB	7:4:-11:G:N2	2.74	0.46
1:A:467:GLN:NE2	2:B:19:A:C6	2.84	0.46
3:C:221:ILE:O	3:C:495:ARG:NH1	2.48	0.46
6:F:36:A:O2'	6:F:37:C:P	2.74	0.46
8:G:7:G:H2'	8:G:8:C:H6	1.80	0.46
10:I:624:GLU:HB3	10:I:627:GLN:HB2	1.97	0.46
10:I:725:ARG:NH1	10:I:729:SER:HB2	2.30	0.46
11:J:195:LEU:HD22	13:L:24:MET:HE1	1.96	0.46
11:J:196:ARG:HA	14:M:208:ILE:HD11	1.98	0.46
11:J:454:ASN:O	11:J:458:PHE:N	2.46	0.46
13:L:216:PHE:CE1	19:R:219:PRO:HG3	2.51	0.46
19:R:315:LYS:HG3	19:R:319:LYS:HE2	1.98	0.46
19:R:332:ARG:HA	19:R:335:ARG:CD	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1543:ASN:HB2	1:A:1569:LEU:CD2	2.46	0.46
3:C:174:GLU:OE2	3:C:182:LYS:N	2.44	0.46
5:E:114:GLU:OE2	5:E:116:HIS:NE2	2.43	0.46
19:R:309:GLU:CD	19:R:309:GLU:N	2.71	0.46
32:c:61:ARG:HB3	32:c:64:ASN:HD22	1.80	0.46
1:A:182:ILE:HD11	1:A:562:VAL:HG13	1.97	0.46
1:A:880:ARG:O	1:A:883:ARG:CB	2.64	0.46
1:A:1698:PRO:CG	40:1:181:ILE:HG13	2.44	0.46
1:A:1771:LEU:HD22	1:A:1812:PRO:HG2	1.97	0.46
1:A:1816:GLN:HA	1:A:1918:ASN:HA	1.97	0.46
1:A:1889:LEU:CD1	1:A:2013:GLY:N	2.72	0.46
1:A:1940:LEU:HD23	1:A:1943:LEU:HD12	1.97	0.46
1:A:1955:LYS:HZ3	27:2:93:GLN:CD	2.22	0.46
9:H:68:G:H2'	9:H:69:U:C6	2.50	0.46
9:H:183:G:H2'	9:H:184:C:C6	2.50	0.46
23:V:498:ALA:HB1	23:V:543:LYS:HB3	1.97	0.46
27:2:48:ILE:HG12	34:m:5:LEU:HD12	1.98	0.46
27:2:97:ASP:O	27:2:100:ALA:N	2.48	0.46
33:k:46:CYS:HB3	33:k:48:ASN:OD1	2.15	0.46
35:l:18:ILE:HA	35:l:21:ILE:HD12	1.98	0.46
1:A:1066:GLN:OE1	1:A:1066:GLN:HA	2.15	0.46
1:A:1739:ALA:O	1:A:1742:VAL:HG23	2.14	0.46
1:A:1958:LYS:HG2	27:2:96:MET:O	2.15	0.46
6:F:88:G:H5'	14:M:133:ARG:HH12	1.81	0.46
9:H:182:U:H2'	9:H:183:G:H8	1.81	0.46
13:L:77:LEU:HD22	19:R:285:ALA:HA	1.98	0.46
20:S:125:LYS:HB2	20:S:126:HIS:HD2	1.80	0.46
35:e:16:GLN:HB3	35:e:19:ASN:OD1	2.16	0.46
31:h:24:THR:O	31:h:51:ARG:NH1	2.46	0.46
1:A:464:PRO:HD2	2:B:20:G:O2'	2.16	0.46
1:A:1552:GLN:HB2	1:A:1563:HIS:CD2	2.51	0.46
1:A:1700:GLY:O	1:A:1717:ASN:N	2.49	0.46
1:A:1849:ILE:HG21	1:A:1879:PHE:CD1	2.48	0.46
1:A:1883:VAL:CG2	40:1:291:ALA:HB2	2.46	0.46
3:C:508:LYS:HA	3:C:524:ILE:HG22	1.98	0.46
9:H:10:C:H41	14:M:198:ARG:NH1	2.10	0.46
9:H:39:U:N3	9:H:40:C:N4	2.63	0.46
9:H:107:A:C6	9:H:108:G:C6	3.04	0.46
9:H:152:G:O2'	9:H:153:A:H1'	2.16	0.46
10:I:516:ALA:HA	10:I:520:ILE:HD11	1.98	0.46
13:L:5:MET:HE2	13:L:39:HIS:CE1	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:T:210:ILE:HG13	21:T:480:ALA:HB2	1.97	0.46
24:W:420:ALA:O	24:W:438:ASP:N	2.48	0.46
27:2:27:ALA:HA	27:2:30:GLU:HG2	1.97	0.46
27:2:137:LYS:NZ	27:2:140:LEU:HB3	2.31	0.46
35:e:68:THR:O	35:e:68:THR:HG22	2.15	0.46
31:h:43:MET:HB3	31:h:46:ILE:HD11	1.97	0.46
40:1:124:GLY:HA3	40:1:149:ILE:HG23	1.97	0.46
1:A:1827:TRP:CE3	1:A:1833:LEU:HD12	2.51	0.46
1:A:1892:PRO:HD3	1:A:1941:ARG:HH21	1.81	0.46
2:B:93:U:O4	33:d:64:ASN:ND2	2.42	0.46
17:P:77:ASP:O	17:P:78:ARG:NE	2.47	0.46
19:R:329:GLN:CD	19:R:329:GLN:C	2.84	0.46
21:T:193:PRO:HD2	21:T:495:ALA:HB1	1.98	0.46
29:b:17:MET:HE1	29:b:82:VAL:HG22	1.98	0.46
1:A:843:LEU:HD22	1:A:867:ILE:HG23	1.97	0.46
1:A:1640:SER:HB2	1:A:1650:ASP:HB3	1.98	0.46
1:A:2015:GLU:C	1:A:2015:GLU:CD	2.84	0.46
1:A:2121:ARG:O	1:A:2154:HIS:HA	2.16	0.46
4:D:1349:GLY:HA2	4:D:1491:SER:O	2.16	0.46
5:E:90:ILE:HB	5:E:105:LEU:HB2	1.98	0.46
9:H:114:A:H2'	9:H:115:G:H8	1.81	0.46
24:W:155:SER:OG	24:W:158:GLU:OE1	2.25	0.46
40:1:102:TYR:HD1	40:1:156:GLN:HB3	1.81	0.46
1:A:773:LYS:HB3	9:H:23:A:N3	2.31	0.45
1:A:829:PRO:HG2	1:A:832:TYR:HB2	1.96	0.45
1:A:1251:SER:OG	1:A:1259:ILE:HD11	2.16	0.45
1:A:1705:ILE:HD11	1:A:1730:MET:CE	2.46	0.45
1:A:1705:ILE:HD11	1:A:1730:MET:HE3	1.97	0.45
1:A:1772:PHE:CZ	1:A:1933:PHE:HB2	2.49	0.45
8:G:134:U:H5"	8:G:135:G:OP2	2.15	0.45
9:H:113:G:H2'	9:H:114:A:H8	1.81	0.45
20:S:142:VAL:HG13	20:S:157:VAL:HG11	1.98	0.45
21:T:404:SER:OG	21:T:405:PHE:N	2.48	0.45
33:d:46:CYS:HB3	33:d:48:ASN:OD1	2.15	0.45
37:t:65:PRO:O	37:t:66:PRO:C	2.58	0.45
38:o:120:ILE:HG22	38:o:120:ILE:O	2.16	0.45
1:A:803:ALA:HB2	19:R:287:LEU:HA	1.98	0.45
1:A:1697:SER:OG	1:A:1699:THR:O	2.31	0.45
1:A:1882:ILE:O	40:1:290:ARG:CB	2.65	0.45
2:B:23:C:HO2'	2:B:24:G:P	2.38	0.45
9:H:78:C:H2'	9:H:79:G:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:79:G:H2'	9:H:80:A:H8	1.82	0.45
9:H:181:G:H2'	9:H:182:U:C6	2.50	0.45
16:O:131:THR:HG23	24:W:111:LEU:H	1.81	0.45
27:2:127:ARG:CB	27:2:131:ARG:NH2	2.68	0.45
36:n:38:MET:HE2	36:n:67:ILE:HG21	1.98	0.45
40:1:293:ARG:HB2	45:3:352:TYR:CZ	2.51	0.45
1:A:80:LYS:NZ	15:N:38:GLU:O	2.49	0.45
1:A:1116:GLU:OE2	17:P:196:ASN:ND2	2.48	0.45
1:A:1479:GLY:HA2	40:1:88:GLN:OE1	2.16	0.45
1:A:1876:LEU:CD2	1:A:1882:ILE:HD12	2.38	0.45
6:F:36:A:HO2'	6:F:37:C:P	2.40	0.45
9:H:180:G:H2'	9:H:181:G:H8	1.81	0.45
14:M:125:SER:HB3	19:R:239:VAL:HG22	1.97	0.45
19:R:233:PRO:HB2	19:R:234:SER:H	1.62	0.45
29:i:17:MET:HE1	29:i:82:VAL:HG22	1.98	0.45
33:k:72:GLU:HG2	33:k:74:TRP:CE3	2.52	0.45
1:A:53:PHE:CE1	2:B:65:G:H5"	2.52	0.45
1:A:537:LYS:HB2	6:F:37:C:N4	2.30	0.45
1:A:880:ARG:CA	1:A:883:ARG:HB2	2.47	0.45
1:A:1562:MET:HE2	1:A:1562:MET:HB2	1.54	0.45
3:C:121:ASP:OD2	31:a:76:MET:CB	2.61	0.45
9:H:58:U:H2'	9:H:59:A:H8	1.82	0.45
9:H:89:U:H2'	9:H:90:A:H8	1.82	0.45
10:I:599:TYR:HA	10:I:602:LEU:HG	1.99	0.45
11:J:197:GLU:O	11:J:201:ARG:HG2	2.17	0.45
11:J:267:ARG:HH11	13:L:216:PHE:HB2	1.82	0.45
13:L:699:ASN:O	13:L:703:MET:N	2.50	0.45
21:T:339:GLN:NE2	21:T:343:PRO:O	2.42	0.45
24:W:79:VAL:CG2	29:b:114:ILE:CD1	2.72	0.45
24:W:453:PHE:CA	27:2:79:PHE:HE2	2.30	0.45
33:d:72:GLU:HG2	33:d:74:TRP:CE3	2.51	0.45
1:A:26:SER:H	1:A:29:LYS:HD2	1.81	0.45
1:A:540:PHE:HB3	1:A:544:PHE:HB3	1.98	0.45
1:A:1430:LEU:HB2	25:Y:400:TRP:CZ3	2.52	0.45
1:A:1487:HIS:NE2	1:A:1671:TYR:CZ	2.84	0.45
3:C:725:ASP:HB3	3:C:728:ALA:HB3	1.98	0.45
8:G:137:C:O2'	8:G:138:A:O5'	2.35	0.45
9:H:81:G:H2'	9:H:82:G:H8	1.81	0.45
23:V:460:TYR:CD1	40:1:72:TRP:HZ2	2.33	0.45
24:W:70:VAL:CG1	24:W:71:HIS:HD2	2.29	0.45
24:W:436:THR:HG21	24:W:464:MET:HB2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:W:525:SER:OG	24:W:526:GLY:N	2.49	0.45
33:d:22:GLU:OE1	33:d:22:GLU:HA	2.17	0.45
37:s:65:PRO:O	37:s:67:SER:N	2.49	0.45
35:l:16:GLN:HB3	35:l:19:ASN:OD1	2.16	0.45
38:o:92:GLU:OE1	39:p:25:ARG:NE	2.39	0.45
1:A:1475:ILE:HD12	40:1:66:TYR:HD2	1.82	0.45
1:A:1495:PHE:CG	45:3:337:ILE:HD13	2.23	0.45
8:G:141:C:H2'	8:G:142:U:C6	2.51	0.45
9:H:14:C:N4	14:M:224:ARG:CD	2.79	0.45
9:H:80:A:H2'	9:H:81:G:H8	1.81	0.45
9:H:82:G:H2'	9:H:83:A:H8	1.81	0.45
9:H:93:A:H2'	9:H:94:A:H8	1.82	0.45
9:H:168:A:C2'	36:n:48:MET:HE1	2.46	0.45
11:J:308:ARG:HH21	11:J:339:TRP:HE3	1.64	0.45
16:O:258:ILE:HD13	16:O:261:ILE:HD11	1.99	0.45
19:R:62:GLY:N	20:S:132:VAL:O	2.41	0.45
36:n:32:ARG:HG3	36:n:43:ASP:HB2	1.99	0.45
43:u:82:SER:O	43:u:219:ALA:HA	2.17	0.45
1:A:240:ARG:HH12	40:1:139:ARG:CB	2.16	0.45
1:A:299:ILE:HG12	1:A:1346:THR:HG21	1.99	0.45
1:A:1321:GLU:CG	40:1:66:TYR:OH	2.65	0.45
1:A:1495:PHE:CA	45:3:337:ILE:HD11	2.42	0.45
8:G:23:U:H5"	8:G:23:U:H6	1.82	0.45
8:G:27:U:HO2'	8:G:28:A:C5'	2.26	0.45
9:H:142:C:H2'	9:H:143:A:H5'	1.97	0.45
19:R:224:SEP:O3P	21:T:355:ARG:NH1	2.38	0.45
19:R:318:GLU:HA	19:R:318:GLU:OE2	2.16	0.45
21:T:477:LEU:HB3	21:T:489:TYR:HB2	1.98	0.45
27:2:26:ASN:OD1	27:2:26:ASN:N	2.47	0.45
36:g:38:MET:HE2	36:g:67:ILE:HG21	1.98	0.45
33:k:48:ASN:O	33:k:49:ASN:HB2	2.17	0.45
1:A:53:PHE:HE1	2:B:65:G:H5"	1.81	0.45
1:A:73:HIS:HD1	1:A:88:TYR:HH	1.53	0.45
1:A:1146:ASP:OD2	1:A:1182:ASN:ND2	2.50	0.45
1:A:1955:LYS:HD3	27:2:96:MET:HE1	1.98	0.45
6:F:12:G:H2'	6:F:13:G:O4'	2.17	0.45
6:F:28:A:HO2'	15:N:39:GLY:HA3	1.82	0.45
10:I:272:PHE:CB	18:Q:355:ASN:HA	2.46	0.45
14:M:148:THR:HA	14:M:151:ARG:HB2	1.99	0.45
17:P:41:ILE:HD11	21:T:318:ARG:HB3	1.99	0.45
21:T:190:TRP:CE3	21:T:190:TRP:O	2.70	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:a:74:PRO:C	31:a:77:LEU:HD11	2.42	0.45
1:A:1756:SER:HB3	45:3:335:GLY:C	2.42	0.45
1:A:1955:LYS:NZ	27:2:93:GLN:HG3	2.25	0.45
3:C:348:TYR:HE1	3:C:367:ARG:HG2	1.82	0.45
3:C:663:CYS:HB2	3:C:828:MET:HB2	1.98	0.45
5:E:62:LEU:HB2	5:E:351:LEU:HB2	1.97	0.45
9:H:74:U:H2'	9:H:75:A:H8	1.81	0.45
9:H:78:C:H1'	30:y:41:TYR:CB	2.47	0.45
19:R:316:GLU:C	19:R:316:GLU:CD	2.85	0.45
26:Z:643:PRO:HD2	26:Z:719:ILE:HD11	1.99	0.45
33:d:48:ASN:O	33:d:49:ASN:HB2	2.17	0.45
1:A:211:GLN:OE1	1:A:214:ARG:NH1	2.48	0.45
1:A:984:MET:HG3	1:A:1048:MET:HE1	1.99	0.45
1:A:1495:PHE:HD1	45:3:337:ILE:CG1	2.26	0.45
1:A:1719:PHE:HD2	1:A:1720:PRO:CD	2.28	0.45
1:A:1921:ASP:HB3	1:A:1966:HIS:HB3	1.99	0.45
1:A:1934:SER:HG	40:1:344:GLN:HA	1.81	0.45
9:H:56:A:H2'	9:H:57:A:H8	1.82	0.45
9:H:67:C:H2'	9:H:68:G:H8	1.81	0.45
9:H:84:C:H2'	9:H:85:A:H8	1.82	0.45
9:H:148:C:H2'	9:H:149:A:H8	1.82	0.45
9:H:152:G:OP2	27:2:127:ARG:CD	2.58	0.45
20:S:41:GLU:OE2	20:S:44:ARG:NH2	2.38	0.45
21:T:197:TYR:O	21:T:197:TYR:CD1	2.70	0.45
24:W:84:THR:O	24:W:87:THR:N	2.50	0.45
24:W:313:ILE:HB	24:W:328:PHE:HB2	1.99	0.45
27:2:137:LYS:HE3	27:2:140:LEU:HD23	1.99	0.45
29:b:37:HIS:O	29:b:38:MET:HB2	2.17	0.45
36:n:35:ASP:HB2	36:n:36:PRO:CD	2.42	0.45
1:A:53:PHE:CE2	1:A:55:ASP:HB3	2.52	0.44
1:A:1499:GLU:OE1	40:1:60:ASN:CA	2.65	0.44
1:A:1890:GLN:CG	27:2:71:SER:OG	2.65	0.44
2:B:12:U:H3	2:B:65:G:H1	1.63	0.44
3:C:323:PHE:CD2	3:C:373:ILE:HG12	2.52	0.44
3:C:682:LYS:HG3	3:C:803:ARG:HD3	1.99	0.44
4:D:721:VAL:HA	4:D:825:THR:O	2.17	0.44
5:E:70:TYR:HE2	5:E:86:PHE:HB2	1.81	0.44
9:H:88:A:H2'	9:H:89:U:C6	2.50	0.44
10:I:692:SER:HA	10:I:695:CYS:H	1.82	0.44
18:Q:929:CYS:CB	18:Q:1012:ARG:HA	2.47	0.44
19:R:299:ARG:O	19:R:303:GLU:HG2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:W:341:ASN:HB3	24:W:345:THR:H	1.81	0.44
24:W:547:LYS:O	24:W:547:LYS:HD2	2.17	0.44
33:d:43:LEU:HD11	33:d:51:LYS:HB3	1.99	0.44
40:1:46:GLY:O	45:3:331:ILE:CD1	2.60	0.44
1:A:172:GLU:OE1	28:z:99:LEU:CB	2.65	0.44
1:A:1757:GLU:HB2	1:A:1758:PRO:CD	2.47	0.44
1:A:1772:PHE:CD1	1:A:1929:SER:HB2	2.51	0.44
1:A:1883:VAL:HG22	40:1:291:ALA:HB2	1.98	0.44
1:A:1991:TYR:CE2	1:A:1997:VAL:HB	2.31	0.44
3:C:834:VAL:HG11	3:C:883:PHE:HE2	1.82	0.44
9:H:92:U:H2'	9:H:93:A:H8	1.82	0.44
16:O:229:LYS:HA	16:O:277:ARG:HH12	1.82	0.44
20:S:35:THR:HG22	20:S:82:PHE:HE2	1.82	0.44
24:W:453:PHE:CD2	27:2:83:ARG:CD	3.00	0.44
25:Y:413:LYS:HD2	25:Y:413:LYS:N	2.27	0.44
35:e:25:LEU:C	35:e:25:LEU:HD23	2.42	0.44
31:h:5:VAL:HB	31:h:6:PRO:HD3	2.00	0.44
33:k:33:THR:CG2	33:k:37:LYS:HE2	2.45	0.44
1:A:526:PRO:HD3	28:z:104:ASP:C	2.42	0.44
1:A:1076:ASP:O	1:A:1079:THR:OG1	2.34	0.44
1:A:1306:LYS:NZ	2:B:38:C:O2'	2.49	0.44
1:A:1416:ILE:HD13	1:A:1416:ILE:HA	1.76	0.44
1:A:1557:LEU:HA	1:A:1557:LEU:HD23	1.80	0.44
1:A:1698:PRO:HB3	40:1:178:HIS:HD1	1.81	0.44
6:F:28:A:O2'	15:N:39:GLY:O	2.32	0.44
6:F:34:G:C3'	6:F:35:A:H5"	2.46	0.44
8:G:145:U:H2'	8:G:146:C:C5	2.52	0.44
19:R:185:GLY:O	19:R:187:ALA:N	2.51	0.44
35:l:25:LEU:HD23	35:l:25:LEU:C	2.42	0.44
1:A:1125:ILE:HG22	1:A:1147:VAL:HG21	1.99	0.44
1:A:1130:ASN:HD22	1:A:1139:ARG:NH1	2.10	0.44
1:A:1317:TYR:HB3	1:A:1474:MET:HE3	1.98	0.44
1:A:1526:LEU:HD23	1:A:1526:LEU:HA	1.75	0.44
3:C:605:ASP:OD1	3:C:608:ARG:NH1	2.41	0.44
4:D:419:GLY:C	4:D:421:HIS:H	2.25	0.44
6:F:35:A:H5"	6:F:35:A:C8	2.50	0.44
9:H:19:G:H21	17:P:8:THR:HA	1.82	0.44
9:H:112:G:H2'	9:H:113:G:C8	2.50	0.44
9:H:153:A:H2'	9:H:154:C:H5"	1.99	0.44
10:I:697:PRO:HD2	10:I:734:TYR:HD2	1.82	0.44
14:M:218:PHE:HE2	19:R:262:ILE:HD11	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:W:82:ASN:N	24:W:82:ASN:HD22	2.15	0.44
26:Z:686:ILE:HG12	26:Z:715:PRO:HB3	1.99	0.44
29:b:18:ARG:NH1	29:b:52:LYS:HB3	2.31	0.44
31:h:77:LEU:N	31:h:77:LEU:HD12	2.32	0.44
33:k:22:GLU:OE1	33:k:22:GLU:HA	2.16	0.44
40:1:346:ASP:N	40:1:346:ASP:OD1	2.50	0.44
1:A:318:TYR:O	3:C:645:ARG:NH1	2.49	0.44
1:A:1585:ILE:HG23	1:A:1740:LEU:HD21	2.00	0.44
1:A:1607:GLU:HB3	1:A:1632:PHE:HB3	1.99	0.44
3:C:130:ARG:HE	3:C:435:VAL:HA	1.83	0.44
6:F:58:G:O3'	17:P:12:ALA:HB2	2.17	0.44
8:G:120:G:O2'	8:G:121:G:C1'	2.59	0.44
10:I:649:ARG:HG2	10:I:674:MET:HE1	2.00	0.44
19:R:74:LEU:HD12	20:S:136:ILE:HG23	1.99	0.44
23:V:499:GLN:HE22	40:1:72:TRP:CB	2.16	0.44
28:z:79:LYS:O	28:z:88:ARG:NH2	2.50	0.44
29:b:52:LYS:HG3	29:b:52:LYS:O	2.18	0.44
35:e:20:LEU:CD2	35:e:24:TYR:CZ	3.00	0.44
1:A:197:PRO:HA	1:A:204:LEU:HD13	1.99	0.44
1:A:488:ASP:OD1	1:A:489:TRP:N	2.51	0.44
5:E:266:PRO:CD	13:L:785:GLN:CB	2.96	0.44
8:G:26:U:C2'	8:G:27:U:H5"	2.43	0.44
9:H:106:G:H5"	33:k:47:ARG:HH22	1.82	0.44
19:R:315:LYS:HZ3	19:R:315:LYS:CB	2.30	0.44
20:S:37:LYS:HB2	20:S:37:LYS:HZ3	1.78	0.44
21:T:399:LYS:HB2	21:T:406:ILE:HD11	1.99	0.44
24:W:79:VAL:HG23	29:b:114:ILE:HG12	2.00	0.44
31:a:5:VAL:HB	31:a:6:PRO:HD3	1.99	0.44
33:k:43:LEU:HD11	33:k:51:LYS:HB3	2.00	0.44
1:A:57:GLN:NE2	2:B:13:C:O2'	2.51	0.44
1:A:80:LYS:HD3	15:N:37:HIS:NE2	2.33	0.44
1:A:701:ILE:O	1:A:703:GLN:NE2	2.50	0.44
1:A:1776:ILE:HB	1:A:1858:PRO:HA	1.98	0.44
2:B:99:C:H2'	2:B:100:C:C6	2.53	0.44
6:F:22:A:O4'	15:N:121:VAL:HG21	2.18	0.44
6:F:58:G:HO2'	6:F:59:G:P	2.35	0.44
10:I:651:ILE:HD12	10:I:654:LYS:HE2	2.00	0.44
13:L:56:PRO:HG2	19:R:268:LEU:HD11	1.98	0.44
24:W:79:VAL:CG2	29:b:114:ILE:CG1	2.96	0.44
24:W:475:TRP:HA	24:W:490:ALA:H	1.82	0.44
29:i:18:ARG:NH1	29:i:52:LYS:HB3	2.31	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1955:LYS:NZ	27:2:92:ARG:NH2	2.64	0.44
3:C:115:GLU:O	3:C:119:LEU:N	2.50	0.44
3:C:756:LYS:HA	3:C:759:LEU:HB3	1.99	0.44
5:E:150:HIS:CG	5:E:171:SER:HG	2.34	0.44
6:F:40:U:O4	6:F:41:A:N6	2.50	0.44
10:I:548:PHE:HD1	10:I:553:VAL:HG22	1.82	0.44
11:J:506:GLU:O	11:J:510:VAL:N	2.47	0.44
15:N:115:THR:OG1	15:N:116:ASN:N	2.51	0.44
16:O:261:ILE:HG23	16:O:272:ILE:HG13	1.99	0.44
21:T:248:THR:HB	21:T:266:GLU:HG3	2.00	0.44
24:W:453:PHE:CD2	27:2:83:ARG:NE	2.86	0.44
24:W:497:ASN:OD1	24:W:497:ASN:N	2.49	0.44
40:1:266:ARG:C	40:1:268:ARG:H	2.23	0.44
1:A:1561:PHE:O	1:A:1561:PHE:CD2	2.70	0.44
1:A:1764:SER:OG	1:A:1766:GLN:NE2	2.49	0.44
1:A:1792:LYS:HG2	1:A:1798:LEU:HG	1.99	0.44
3:C:532:ILE:HD13	3:C:532:ILE:HA	1.87	0.44
6:F:26:U:H4'	6:F:27:A:OP2	2.18	0.44
6:F:87:C:OP1	14:M:137:ARG:NH2	2.42	0.44
8:G:5:G:C5'	8:G:5:G:C8	3.01	0.44
21:T:270:VAL:HB	21:T:284:TYR:HB2	1.98	0.44
24:W:338:ILE:HG22	24:W:349:SER:HA	1.99	0.44
24:W:391:PHE:HB2	24:W:403:TRP:HB2	1.99	0.44
29:i:37:HIS:O	29:i:38:MET:HB2	2.17	0.44
40:1:46:GLY:C	45:3:331:ILE:HB	2.41	0.44
1:A:644:ILE:HD12	1:A:644:ILE:HA	1.90	0.43
1:A:1192:PHE:CD2	1:A:1192:PHE:N	2.86	0.43
1:A:1529:ILE:HA	1:A:1529:ILE:HD13	1.40	0.43
1:A:1640:SER:OG	1:A:1718:TRP:O	2.31	0.43
1:A:1686:ASP:HA	40:1:170:TRP:CZ2	2.53	0.43
1:A:1738:PRO:HA	40:1:287:PRO:HB2	2.00	0.43
1:A:1986:LEU:C	1:A:1986:LEU:CD2	2.84	0.43
5:E:94:ASN:HB3	5:E:100:ASP:H	1.83	0.43
6:F:25:C:C4'	6:F:26:U:OP2	2.65	0.43
8:G:7:G:C8	8:G:7:G:OP2	2.71	0.43
19:R:95:LYS:H	19:R:95:LYS:HD2	1.83	0.43
19:R:158:LYS:NZ	21:T:322:SER:O	2.51	0.43
29:b:18:ARG:HB2	29:b:83:GLU:HG2	1.99	0.43
35:l:34:TRP:CD1	35:l:34:TRP:N	2.86	0.43
2:B:27:U:HO2'	2:B:28:A:P	2.41	0.43
9:H:55:U:H2'	9:H:56:A:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:143:A:OP2	9:H:143:A:C2	2.71	0.43
10:I:509:ARG:HD3	10:I:509:ARG:HA	1.79	0.43
19:R:302:VAL:HA	19:R:305:ARG:HD2	2.00	0.43
19:R:332:ARG:HA	19:R:335:ARG:HD2	1.99	0.43
1:A:293:TRP:HE1	1:A:1136:ARG:NH1	2.11	0.43
1:A:766:THR:OG1	2:B:39:C:N4	2.51	0.43
3:C:94:ILE:H	3:C:94:ILE:HG13	1.59	0.43
6:F:7:G:H5'	6:F:7:G:C8	2.45	0.43
6:F:35:A:H8	6:F:35:A:H5'	1.82	0.43
9:H:142:C:O2'	9:H:143:A:H5'	2.18	0.43
9:H:157:G:H2'	9:H:158:G:O4'	2.19	0.43
10:I:518:PRO:HA	10:I:521:VAL:HG12	2.00	0.43
16:O:254:GLN:NE2	20:S:120:GLN:OE1	2.51	0.43
19:R:123:GLU:HG3	19:R:124:VAL:H	1.84	0.43
19:R:222:PRO:O	19:R:222:PRO:HG2	2.18	0.43
21:T:407:GLN:HE22	21:T:443:THR:HA	1.83	0.43
35:e:20:LEU:HD13	36:g:61:VAL:HG22	2.00	0.43
29:i:18:ARG:HB2	29:i:83:GLU:HG2	1.99	0.43
38:o:37:LEU:HB2	38:o:61:PRO:HD3	2.00	0.43
41:v:51:TYR:CB	42:w:151:VAL:O	2.66	0.43
1:A:1187:PHE:CD2	1:A:1189:MET:HE3	2.53	0.43
1:A:1498:TRP:HZ3	40:1:64:PRO:HD2	1.81	0.43
1:A:1751:LEU:N	1:A:1751:LEU:CD2	2.73	0.43
1:A:1792:LYS:NZ	9:H:37:U:O4'	2.52	0.43
5:E:99:CYS:O	29:b:107:GLY:HA3	2.18	0.43
6:F:42:C:C5'	6:F:43:A:OP2	2.65	0.43
13:L:646:GLY:O	13:L:650:GLY:N	2.52	0.43
21:T:216:ASN:HD21	21:T:473:SER:H	1.67	0.43
27:2:48:ILE:CG1	34:m:5:LEU:HD12	2.48	0.43
27:2:130:LYS:HB2	27:2:130:LYS:HE2	1.83	0.43
32:c:67:TYR:HB2	33:d:100:PHE:O	2.19	0.43
36:g:32:ARG:HG3	36:g:43:ASP:HB2	1.99	0.43
1:A:693:ILE:HD12	1:A:706:ALA:HA	2.01	0.43
1:A:1890:GLN:HG2	27:2:71:SER:OG	2.18	0.43
1:A:1958:LYS:CE	27:2:96:MET:O	2.67	0.43
5:E:259:VAL:HB	5:E:277:PHE:HB2	1.99	0.43
6:F:39:A:H2'	6:F:40:U:O4'	2.18	0.43
13:L:7:LYS:HB3	13:L:40:ARG:HA	2.00	0.43
24:W:417:HIS:ND1	24:W:437:SER:HB3	2.34	0.43
41:v:53:HIS:N	42:w:149:CYS:O	2.34	0.43
43:u:254:PHE:HA	43:u:401:ASP:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1596:VAL:HG22	40:1:278:LEU:CD2	2.48	0.43
1:A:1685:LEU:HD13	40:1:170:TRP:CE3	2.53	0.43
1:A:1728:GLN:NE2	40:1:278:LEU:O	2.52	0.43
2:B:40:U:H6	2:B:40:U:O5'	2.01	0.43
6:F:45:A:C2'	6:F:73:A:C2	3.02	0.43
9:H:85:A:H2'	9:H:88:A:N6	2.33	0.43
9:H:154:C:O2'	9:H:155:C:C5'	2.66	0.43
10:I:692:SER:C	10:I:694:ILE:N	2.75	0.43
16:O:239:LEU:HD22	16:O:270:ALA:HB2	2.00	0.43
19:R:332:ARG:HA	19:R:335:ARG:HG3	2.00	0.43
26:Z:709:ARG:NH2	26:Z:718:ASP:OD2	2.51	0.43
32:j:67:TYR:HB2	33:k:100:PHE:O	2.19	0.43
34:m:5:LEU:HD22	35:l:57:VAL:CG1	2.40	0.43
1:A:856:LEU:N	9:H:29:A:N7	2.61	0.43
1:A:1873:GLU:HG3	40:1:290:ARG:HH22	1.84	0.43
5:E:266:PRO:HB3	13:L:788:TYR:CB	2.49	0.43
8:G:127:U:H4'	24:W:545:ARG:NH2	2.32	0.43
8:G:139:U:H2'	8:G:140:A:O4'	2.18	0.43
24:W:84:THR:N	24:W:87:THR:OG1	2.52	0.43
25:Y:412:SER:HG	25:Y:415:GLU:HG3	1.84	0.43
34:f:65:ARG:HH11	34:f:65:ARG:HG3	1.83	0.43
37:q:106:ALA:CB	37:t:106:ALA:HB1	2.43	0.43
35:l:20:LEU:CD2	35:l:24:TYR:CZ	3.00	0.43
40:1:46:GLY:O	45:3:331:ILE:CB	2.60	0.43
40:1:106:VAL:HB	40:1:151:PRO:HB2	2.00	0.43
1:A:1093:ASP:OD1	1:A:1093:ASP:N	2.51	0.43
1:A:1817:LEU:HD12	1:A:1817:LEU:HA	1.87	0.43
3:C:501:ILE:HG22	3:C:530:LEU:HD11	2.00	0.43
5:E:346:SER:OG	5:E:348:ASP:OD1	2.31	0.43
10:I:673:ASP:OD1	10:I:677:LYS:HE3	2.19	0.43
19:R:317:LYS:HB3	19:R:321:GLU:OE1	2.19	0.43
19:R:326:GLU:HB3	19:R:330:LYS:NZ	2.34	0.43
28:z:58:ARG:HD2	28:z:62:GLN:HB3	2.00	0.43
38:o:161:MET:O	38:o:162:PHE:HB2	2.19	0.43
45:3:330:ARG:HH11	45:3:332:PRO:HA	1.84	0.43
1:A:1393:ARG:NH1	25:Y:405:MET:HG3	2.33	0.43
1:A:1526:LEU:CD1	8:G:171:G:O6	2.67	0.43
1:A:1526:LEU:HD12	8:G:171:G:O6	2.18	0.43
8:G:21:A:N6	16:O:91:GLY:O	2.51	0.43
9:H:91:U:H2'	9:H:92:U:C6	2.50	0.43
9:H:178:A:N3	9:H:178:A:H2'	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:273:GLU:CA	18:Q:357:ALA:HB3	2.37	0.43
10:I:685:ARG:HH21	10:I:711:GLU:CD	2.26	0.43
19:R:305:ARG:HH11	19:R:305:ARG:CG	2.25	0.43
19:R:315:LYS:HG3	19:R:319:LYS:CE	2.48	0.43
23:V:450:ILE:CG1	40:1:89:PRO:CG	2.82	0.43
24:W:551:LYS:HB3	24:W:572:ASP:HB3	2.00	0.43
27:2:125:ALA:HA	27:2:128:ARG:HB2	2.01	0.43
37:q:106:ALA:CB	37:t:106:ALA:HB3	2.48	0.43
1:A:1543:ASN:HB2	1:A:1569:LEU:HD21	2.00	0.43
1:A:1995:ASN:ND2	26:Z:756:TYR:HB3	2.33	0.43
8:G:171:G:N3	8:G:171:G:H2'	2.32	0.43
9:H:98:G:H5'	9:H:104:U:OP2	2.19	0.43
18:Q:826:GLY:O	18:Q:1136:GLN:HA	2.18	0.43
27:2:71:SER:OG	27:2:71:SER:O	2.31	0.43
38:o:132:ARG:NE	38:o:154:GLU:OE1	2.43	0.43
42:w:137:GLN:O	42:w:143:PRO:HA	2.19	0.43
1:A:331:TRP:HZ3	3:C:179:VAL:HG11	1.83	0.42
1:A:369:GLU:O	1:A:371:LEU:N	2.51	0.42
1:A:1124:ASN:ND2	1:A:1148:ASN:OD1	2.52	0.42
1:A:1482:GLU:OE1	40:1:86:ARG:HD3	2.19	0.42
1:A:1500:GLY:HA2	40:1:62:HIS:HB2	2.00	0.42
1:A:1566:ILE:HD12	1:A:1567:PRO:N	2.34	0.42
1:A:1642:PRO:CB	40:1:175:PRO:HB3	2.46	0.42
1:A:1817:LEU:HB3	1:A:1917:PHE:HB2	2.01	0.42
1:A:1889:LEU:HD12	1:A:2013:GLY:N	2.28	0.42
2:B:94:U:O2'	2:B:95:G:H3'	2.18	0.42
3:C:769:GLY:O	3:C:773:GLY:N	2.52	0.42
5:E:307:ARG:HH12	29:b:115:PRO:CG	2.32	0.42
9:H:43:U:H2'	9:H:44:U:C6	2.54	0.42
24:W:266:ARG:HD3	35:l:14:MET:N	2.34	0.42
24:W:416:ARG:HB3	24:W:443:ARG:HH12	1.84	0.42
24:W:552:VAL:HG13	24:W:571:TRP:CD1	2.54	0.42
28:z:58:ARG:NH2	40:1:180:LYS:HE2	2.34	0.42
29:i:52:LYS:HG3	29:i:52:LYS:O	2.18	0.42
1:A:99:VAL:HG13	1:A:554:THR:HG21	2.00	0.42
1:A:1468:ASN:OD1	8:G:177:G:H5'	2.19	0.42
1:A:1560:ILE:CD1	1:A:1577:PHE:HE2	2.25	0.42
1:A:1611:LYS:HA	1:A:1629:ILE:HG12	2.01	0.42
1:A:1807:ILE:HG23	1:A:1841:THR:HG23	2.00	0.42
1:A:1976:TRP:HA	1:A:1979:VAL:HG22	2.00	0.42
3:C:874:PHE:CE2	43:u:103:GLN:CB	3.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:1583:ASP:C	4:D:1585:GLN:H	2.26	0.42
9:H:33:G:OP2	9:H:33:G:H8	2.01	0.42
9:H:77:C:H5'	24:W:242:HIS:ND1	2.33	0.42
11:J:206:LEU:HD23	11:J:206:LEU:HA	1.92	0.42
11:J:486:ALA:O	11:J:490:ASN:N	2.52	0.42
11:J:526:GLU:O	11:J:530:TRP:N	2.48	0.42
14:M:118:LYS:O	14:M:118:LYS:HE3	2.18	0.42
20:S:72:ARG:CD	24:W:90:ALA:O	2.62	0.42
24:W:248:ASP:HB2	24:W:252:ARG:HG2	2.00	0.42
24:W:341:ASN:HB2	24:W:346:GLN:H	1.84	0.42
24:W:398:LYS:HG2	24:W:419:GLY:H	1.84	0.42
37:s:18:SER:O	37:s:22:ASN:CB	2.67	0.42
40:1:305:ASP:OD1	40:1:305:ASP:N	2.52	0.42
1:A:934:ARG:CZ	25:Y:425:ILE:HG21	2.49	0.42
1:A:1072:LEU:HD22	1:A:1087:LEU:HD22	2.01	0.42
1:A:1698:PRO:HG3	40:1:181:ILE:C	2.44	0.42
3:C:566:THR:OG1	3:C:567:GLU:N	2.51	0.42
5:E:103:ALA:HA	29:b:101:ALA:O	2.20	0.42
8:G:134:U:H3'	8:G:135:G:H21	1.84	0.42
17:P:13:ARG:HA	21:T:309:ASP:O	2.19	0.42
33:d:33:THR:CG2	33:d:37:LYS:HE2	2.46	0.42
38:o:160:LYS:O	38:o:161:MET:C	2.63	0.42
1:A:199:GLU:CD	40:1:139:ARG:CD	2.92	0.42
1:A:772:CYS:SG	1:A:1249:MET:HE1	2.60	0.42
1:A:1934:SER:CB	40:1:347:PRO:HB3	2.46	0.42
9:H:155:C:H2'	9:H:156:U:H5"	2.02	0.42
10:I:491:ALA:HB2	10:I:510:ILE:HD11	2.00	0.42
11:J:216:ASP:O	11:J:218:GLU:N	2.53	0.42
17:P:9:PHE:CD2	17:P:9:PHE:N	2.88	0.42
21:T:465:ILE:HG12	21:T:481:GLU:HG2	2.02	0.42
29:b:9:MET:HE2	32:c:39:HIS:HE1	1.85	0.42
34:m:65:ARG:HG3	34:m:65:ARG:HH11	1.83	0.42
1:A:331:TRP:CZ3	3:C:179:VAL:HG21	2.54	0.42
1:A:1631:LEU:HB3	1:A:1637:TRP:HZ3	1.84	0.42
1:A:1955:LYS:HZ3	27:2:93:GLN:NE2	2.11	0.42
3:C:261:ASP:OD2	47:C:1500:GTP:N1	2.46	0.42
8:G:14:A:C8	8:G:14:A:OP2	2.72	0.42
9:H:101:U:H4'	29:i:73:ARG:NH2	2.35	0.42
9:H:107:A:N1	9:H:108:G:C5	2.88	0.42
10:I:84:HIS:CB	10:I:90:PRO:CB	2.97	0.42
10:I:696:ASP:HB3	10:I:699:THR:CB	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:M:212:ASN:HB3	14:M:215:ASN:H	1.84	0.42
27:2:48:ILE:CG2	34:m:5:LEU:CD1	2.83	0.42
35:e:51:ASP:C	35:e:51:ASP:OD1	2.61	0.42
33:k:68:GLU:HA	33:k:97:SER:O	2.19	0.42
35:l:51:ASP:C	35:l:51:ASP:OD1	2.61	0.42
38:o:56:LYS:HE2	38:o:58:ASP:CG	2.44	0.42
1:A:451:LEU:HD23	1:A:451:LEU:HA	1.84	0.42
1:A:663:ARG:HG3	1:A:663:ARG:HH21	1.81	0.42
1:A:1333:VAL:HG11	23:V:467:LEU:HD12	2.01	0.42
1:A:1737:ASN:OD1	1:A:1738:PRO:N	2.51	0.42
2:B:57:G:C2'	2:B:58:U:H5'	2.49	0.42
2:B:95:G:C6	35:e:36:TYR:O	2.71	0.42
8:G:147:C:N3	8:G:148:U:C5	2.88	0.42
10:I:590:LYS:HA	10:I:590:LYS:HD3	1.84	0.42
16:O:247:ASP:HA	16:O:250:ASN:HD22	1.84	0.42
19:R:324:LEU:HA	19:R:327:MET:HE2	2.01	0.42
19:R:329:GLN:HA	19:R:332:ARG:NH1	2.34	0.42
29:b:50:LYS:C	29:b:51:ILE:HG13	2.45	0.42
32:c:63:ASN:HA	33:d:102:ARG:CZ	2.50	0.42
1:A:310:THR:OG1	22:U:2:TYR:O	2.37	0.42
1:A:881:ILE:HG23	1:A:918:THR:HG23	2.02	0.42
1:A:1560:ILE:HD11	1:A:1577:PHE:HE2	1.74	0.42
2:B:87:A:H5'	2:B:93:U:OP2	2.18	0.42
3:C:264:ILE:HG12	3:C:378:TYR:CE1	2.55	0.42
3:C:534:VAL:HB	3:C:537:TYR:HB2	2.00	0.42
3:C:667:VAL:N	3:C:824:THR:CG2	2.78	0.42
6:F:43:A:O2'	6:F:44:G:H5'	2.19	0.42
10:I:727:ARG:NH2	10:I:727:ARG:HG2	2.33	0.42
13:L:5:MET:SD	13:L:5:MET:O	2.78	0.42
14:M:182:MET:HE2	14:M:182:MET:HB3	1.97	0.42
15:N:117:CYS:SG	15:N:119:CYS:HB3	2.60	0.42
24:W:84:THR:C	24:W:86:GLU:N	2.74	0.42
24:W:265:LEU:HD12	24:W:300:SER:HB2	2.02	0.42
24:W:504:GLY:H	24:W:535:TRP:HZ2	1.65	0.42
26:Z:710:PHE:HE1	26:Z:747:LEU:HD13	1.84	0.42
27:2:111:LYS:HG2	27:2:114:GLU:OE2	2.19	0.42
32:c:66:ARG:CZ	33:d:48:ASN:HB3	2.49	0.42
32:j:63:ASN:HA	33:k:102:ARG:CZ	2.49	0.42
34:m:65:ARG:HG3	34:m:65:ARG:NH1	2.35	0.42
1:A:258:PHE:CE2	1:A:434:HIS:HA	2.55	0.42
1:A:773:LYS:HA	1:A:773:LYS:HD2	1.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1160:ARG:HD3	17:P:192:VAL:HG11	2.01	0.42
1:A:1479:GLY:HA2	40:1:88:GLN:CD	2.44	0.42
1:A:1552:GLN:CB	1:A:1563:HIS:CD2	3.01	0.42
1:A:1994:LYS:HD2	26:Z:756:TYR:CD1	2.55	0.42
6:F:88:G:C4'	14:M:121:ASP:HB2	2.50	0.42
8:G:129:G:O4'	24:W:541:LYS:HE2	2.19	0.42
8:G:173:G:N3	8:G:173:G:C2'	2.72	0.42
9:H:43:U:OP2	9:H:43:U:C6	2.73	0.42
9:H:77:C:C5'	24:W:242:HIS:HE1	2.33	0.42
10:I:731:GLN:NE2	10:I:731:GLN:C	2.74	0.42
13:L:7:LYS:HB3	13:L:40:ARG:CA	2.49	0.42
21:T:418:THR:OG1	21:T:466:PHE:O	2.38	0.42
24:W:553:CYS:HA	24:W:570:GLY:HA2	2.01	0.42
1:A:1757:GLU:CB	1:A:1758:PRO:CD	2.98	0.42
3:C:589:LYS:HG3	3:C:628:VAL:HG13	2.02	0.42
5:E:266:PRO:HG2	13:L:785:GLN:HA	1.96	0.42
8:G:7:G:C2'	8:G:8:C:H5'	2.50	0.42
9:H:157:G:H5"	9:H:157:G:C8	2.50	0.42
11:J:313:TRP:CE3	11:J:336:TRP:HB2	2.55	0.42
24:W:462:HIS:ND1	24:W:482:ASP:HB3	2.35	0.42
33:d:28:PRO:HD2	34:f:37:ASP:HB3	2.02	0.42
33:k:28:PRO:HD2	34:m:37:ASP:HB3	2.02	0.42
33:k:103:GLY:O	33:k:106:VAL:HG23	2.20	0.42
35:l:20:LEU:HD13	36:n:61:VAL:HG22	2.00	0.42
1:A:612:ILE:O	1:A:616:PHE:N	2.46	0.42
1:A:975:VAL:HG22	1:A:1177:VAL:HG22	2.01	0.42
1:A:1430:LEU:CB	25:Y:400:TRP:CZ3	3.03	0.42
1:A:1615:HIS:HE2	28:z:96:LEU:CB	2.32	0.42
1:A:1631:LEU:HD23	1:A:1631:LEU:HA	1.85	0.42
1:A:2003:THR:H	1:A:2006:GLU:HB2	1.85	0.42
1:A:2014:MET:SD	1:A:2014:MET:C	3.01	0.42
1:A:2014:MET:SD	1:A:2014:MET:O	2.78	0.42
13:L:633:GLN:O	13:L:637:VAL:N	2.50	0.42
27:2:23:ILE:O	27:2:23:ILE:HG13	2.16	0.42
28:z:55:LEU:HD22	40:1:180:LYS:HZ2	1.76	0.42
35:e:34:TRP:N	35:e:34:TRP:CD1	2.86	0.42
31:h:58:LEU:HD22	36:n:71:GLU:CD	2.45	0.42
29:i:50:LYS:C	29:i:51:ILE:HG13	2.44	0.42
32:j:66:ARG:CZ	33:k:48:ASN:HB3	2.49	0.42
40:1:178:HIS:CE1	40:1:181:ILE:CG1	3.02	0.42
1:A:152:ARG:CZ	40:1:132:ASP:O	2.67	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:764:GLY:HA2	1:A:1245:ARG:NH1	2.35	0.41
1:A:1764:SER:HB2	1:A:1888:GLU:HB3	2.02	0.41
1:A:1995:ASN:HD21	26:Z:756:TYR:HB3	1.85	0.41
6:F:23:U:C6	15:N:118:ILE:HG23	2.55	0.41
6:F:37:C:C3'	6:F:37:C:C6	3.02	0.41
10:I:581:GLU:HA	10:I:584:LEU:HD12	2.01	0.41
14:M:138:LEU:HD23	14:M:138:LEU:HA	1.89	0.41
15:N:102:CYS:HB3	15:N:104:ARG:H	1.84	0.41
24:W:315:LEU:O	24:W:325:LEU:N	2.47	0.41
33:d:68:GLU:HA	33:d:97:SER:O	2.19	0.41
1:A:470:ARG:NH2	1:A:470:ARG:CG	2.81	0.41
1:A:1501:LEU:HD21	45:3:337:ILE:HD12	1.97	0.41
1:A:1660:TYR:OH	1:A:1717:ASN:O	2.30	0.41
1:A:2332:ASP:C	1:A:2334:TYR:H	2.28	0.41
2:B:90:U:H4'	29:b:73:ARG:NH2	2.35	0.41
6:F:22:A:C8	24:W:130:ARG:CD	3.03	0.41
6:F:25:C:N4	16:O:39:GLU:OE1	2.53	0.41
19:R:310:ARG:CZ	19:R:310:ARG:CA	2.97	0.41
29:i:9:MET:HE2	32:j:39:HIS:HE1	1.84	0.41
38:o:52:ASN:HB2	38:o:74:ASN:OD1	2.20	0.41
1:A:526:PRO:CB	28:z:106:PRO:CD	2.81	0.41
1:A:1251:SER:OG	1:A:1259:ILE:HG12	2.20	0.41
1:A:1850:ARG:NH1	40:1:265:LEU:CD1	2.75	0.41
3:C:140:HIS:CD2	3:C:230:ASP:HB2	2.56	0.41
5:E:61:LEU:O	29:b:108:ARG:O	2.38	0.41
5:E:266:PRO:HB3	13:L:788:TYR:C	2.46	0.41
6:F:48:A:H61	13:L:30:GLN:HE22	1.68	0.41
10:I:273:GLU:HA	18:Q:357:ALA:H	1.85	0.41
10:I:511:LEU:HD11	10:I:521:VAL:HG23	2.01	0.41
10:I:699:THR:CG2	10:I:699:THR:O	2.68	0.41
14:M:165:ASN:HB2	19:R:95:LYS:HA	2.02	0.41
24:W:304:LEU:HD11	24:W:567:ILE:HG21	2.02	0.41
37:q:60:PRO:CB	37:s:94:GLN:CA	2.97	0.41
2:B:20:G:C1'	2:B:21:A:OP1	2.68	0.41
8:G:129:G:C5'	24:W:541:LYS:HZ3	2.02	0.41
9:H:24:A:C2	13:L:29:ASN:HB3	2.53	0.41
11:J:527:LYS:O	11:J:531:LYS:N	2.48	0.41
15:N:124:SER:OG	15:N:125:LYS:NZ	2.47	0.41
15:N:132:ILE:HD13	15:N:132:ILE:HA	1.88	0.41
19:R:99:ASP:OD2	19:R:103:ARG:NE	2.42	0.41
35:e:24:TYR:CD1	35:e:31:ILE:HD11	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:j:3:LEU:O	32:j:6:PHE:HB3	2.21	0.41
1:A:274:PRO:HB3	7:4:-11:G:C8	2.56	0.41
1:A:599:MET:HE3	1:A:599:MET:HB3	1.89	0.41
1:A:858:GLN:C	1:A:858:GLN:CD	2.85	0.41
1:A:1156:ASP:OD2	1:A:1160:ARG:NH2	2.54	0.41
1:A:1682:ALA:O	40:1:170:TRP:CD1	2.74	0.41
1:A:1985:ASP:N	1:A:1985:ASP:OD1	2.52	0.41
5:E:310:TYR:CE1	5:E:322:LYS:HE2	2.55	0.41
6:F:43:A:N1	6:F:44:G:C6	2.89	0.41
8:G:21:A:C8	16:O:152:ARG:NH2	2.86	0.41
9:H:103:U:C3'	9:H:104:U:H5'	2.51	0.41
10:I:329:LEU:CB	18:Q:353:LEU:CB	2.98	0.41
10:I:729:SER:C	10:I:731:GLN:N	2.77	0.41
11:J:529:HIS:O	11:J:533:TYR:N	2.42	0.41
18:Q:97:MET:O	18:Q:101:LYS:N	2.53	0.41
34:f:65:ARG:HB3	34:f:68:ASN:HD22	1.85	0.41
34:m:65:ARG:HB3	34:m:68:ASN:HD22	1.85	0.41
1:A:591:MET:HE2	1:A:591:MET:HB3	1.84	0.41
1:A:1803:ILE:CG2	24:W:451:VAL:HG21	2.50	0.41
1:A:1930:TYR:HA	1:A:1933:PHE:HB3	2.02	0.41
1:A:1951:LYS:O	1:A:1955:LYS:N	2.52	0.41
1:A:1978:LYS:O	1:A:1982:GLN:N	2.53	0.41
1:A:2332:ASP:O	1:A:2334:TYR:N	2.54	0.41
2:B:92:U:C3'	2:B:93:U:H5'	2.50	0.41
8:G:147:C:C5'	8:G:147:C:C6	3.00	0.41
9:H:39:U:C6	9:H:39:U:C5'	2.90	0.41
10:I:717:GLU:HA	10:I:720:ILE:HB	2.02	0.41
17:P:72:ARG:O	17:P:76:ARG:N	2.54	0.41
24:W:82:ASN:ND2	24:W:82:ASN:N	2.69	0.41
28:z:107:LYS:O	28:z:110:TRP:CB	2.69	0.41
33:d:39:ASN:OD1	33:d:55:ARG:HD3	2.20	0.41
39:p:74:PHE:CG	39:p:79:MET:HE3	2.55	0.41
1:A:467:GLN:HG2	2:B:19:A:C4	2.55	0.41
1:A:1611:LYS:HA	1:A:1629:ILE:HA	2.03	0.41
1:A:1981:VAL:HA	1:A:1984:LYS:HB3	2.03	0.41
3:C:307:VAL:HG12	3:C:308:CYS:O	2.20	0.41
3:C:366:GLN:HB3	3:C:370:VAL:HB	2.02	0.41
5:E:231:MET:HB3	5:E:262:TRP:CZ3	2.55	0.41
9:H:24:A:H3'	9:H:25:G:C5'	2.50	0.41
9:H:152:G:H2'	9:H:153:A:C1'	2.51	0.41
10:I:699:THR:O	10:I:699:THR:HG23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:J:258:ILE:O	11:J:262:ARG:N	2.51	0.41
23:V:171:ASN:CB	43:u:277:ILE:HA	2.51	0.41
40:1:183:GLU:O	40:1:187:LYS:NZ	2.43	0.41
1:A:526:PRO:O	28:z:102:HIS:HB2	2.21	0.41
1:A:779:LEU:HD23	1:A:782:LEU:HD12	2.02	0.41
8:G:176:U:O2	8:G:176:U:C2'	2.67	0.41
10:I:681:ILE:HA	10:I:710:PHE:HZ	1.86	0.41
18:Q:875:HIS:O	18:Q:1034:ILE:N	2.49	0.41
33:d:103:GLY:O	33:d:106:VAL:HG23	2.20	0.41
1:A:273:ILE:H	1:A:273:ILE:HG13	1.56	0.41
1:A:461:HIS:CD2	2:B:26:A:H61	2.39	0.41
1:A:516:LEU:HD11	1:A:538:SER:HB2	2.03	0.41
1:A:1883:VAL:CA	40:1:289:THR:O	2.68	0.41
1:A:1955:LYS:CB	27:2:92:ARG:HH12	2.33	0.41
1:A:1991:TYR:O	1:A:1993:LYS:N	2.54	0.41
3:C:131:ASN:HA	3:C:201:ASN:HB2	2.03	0.41
3:C:151:GLU:OE1	3:C:417:ARG:NH2	2.53	0.41
3:C:604:LEU:HD21	3:C:627:HIS:CE1	2.56	0.41
3:C:666:VAL:CG1	3:C:824:THR:HG22	2.49	0.41
3:C:755:ASP:O	3:C:759:LEU:N	2.44	0.41
6:F:7:G:H4'	6:F:7:G:OP1	2.20	0.41
6:F:26:U:HO2'	6:F:27:A:P	2.42	0.41
8:G:20:A:OP2	16:O:159:ARG:HG3	2.21	0.41
8:G:139:U:H3	9:H:38:A:H61	1.69	0.41
9:H:20:G:N7	17:P:5:ALA:HB1	2.36	0.41
9:H:106:G:H5'	33:k:47:ARG:NH2	2.34	0.41
9:H:152:G:H2'	9:H:152:G:N3	2.36	0.41
11:J:238:ASN:C	11:J:240:THR:H	2.28	0.41
14:M:165:ASN:OD1	14:M:166:SER:N	2.54	0.41
16:O:81:CYS:SG	16:O:82:GLN:N	2.94	0.41
16:O:292:ILE:HG12	16:O:297:ARG:HA	2.03	0.41
19:R:318:GLU:OE2	19:R:318:GLU:CA	2.69	0.41
20:S:11:PRO:HA	20:S:12:PRO:HD3	1.89	0.41
20:S:70:THR:HG21	24:W:71:HIS:HB3	2.03	0.41
21:T:349:SER:OG	21:T:351:ASP:OD1	2.30	0.41
23:V:623:ASN:HA	23:V:626:PHE:HB3	2.03	0.41
24:W:79:VAL:HG21	29:b:114:ILE:CG1	2.49	0.41
24:W:458:GLU:HB3	24:W:460:SER:H	1.86	0.41
27:2:137:LYS:CE	27:2:140:LEU:HB3	2.50	0.41
31:a:58:LEU:HD22	36:g:71:GLU:CD	2.46	0.41
34:f:65:ARG:HG3	34:f:65:ARG:NH1	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:e:21:ILE:HA	35:e:24:TYR:HD2	1.86	0.41
35:l:18:ILE:H	35:l:18:ILE:HG13	1.70	0.41
35:l:24:TYR:CD1	35:l:31:ILE:HD11	2.56	0.41
38:o:140:PRO:O	38:o:155:ARG:NH1	2.48	0.41
39:p:13:ASN:HB2	39:p:80:ARG:HH21	1.86	0.41
1:A:89:LEU:HD23	1:A:89:LEU:HA	1.89	0.41
1:A:158:ARG:NH1	28:z:62:GLN:NE2	2.63	0.41
1:A:260:LEU:HA	1:A:260:LEU:HD23	1.91	0.41
1:A:274:PRO:HG3	22:U:1:MET:HB3	2.02	0.41
1:A:801:ILE:O	1:A:805:GLU:HB3	2.20	0.41
1:A:1555:LEU:HB2	1:A:1560:ILE:O	2.21	0.41
1:A:1565:LYS:HB3	7:4:-4:A:P	2.61	0.41
1:A:1758:PRO:HB3	45:3:354:MET:SD	2.61	0.41
1:A:1795:GLU:OE1	13:L:172:ARG:NH2	2.54	0.41
1:A:1899:VAL:HB	1:A:1902:PHE:HD2	1.86	0.41
10:I:631:MET:HA	10:I:634:ILE:HB	2.03	0.41
14:M:118:LYS:O	14:M:118:LYS:CE	2.69	0.41
16:O:120:ASN:OD1	19:R:222:PRO:HD2	2.21	0.41
19:R:132:LEU:HB3	21:T:399:LYS:HE3	2.02	0.41
27:2:38:LEU:CD2	34:m:9:PRO:HA	2.51	0.41
33:k:62:HIS:O	33:k:103:GLY:HA3	2.21	0.41
39:p:3:ILE:HG22	39:p:83:TYR:HB2	2.02	0.41
1:A:1728:GLN:NE2	1:A:1728:GLN:O	2.53	0.40
3:C:458:ASP:OD1	3:C:458:ASP:N	2.54	0.40
4:D:577:LYS:O	4:D:581:SER:N	2.54	0.40
5:E:144:VAL:HG12	5:E:145:LYS:HG3	2.02	0.40
14:M:118:LYS:O	14:M:118:LYS:CG	2.70	0.40
15:N:131:ILE:HG21	16:O:177:GLU:HG2	2.04	0.40
17:P:10:GLU:O	17:P:10:GLU:CG	2.69	0.40
21:T:427:LEU:O	21:T:439:TRP:N	2.50	0.40
33:d:110:LEU:CD1	34:f:59:LEU:HB3	2.46	0.40
33:k:110:LEU:CD1	34:m:59:LEU:HB3	2.46	0.40
38:o:107:ASP:OD1	38:o:134:TYR:OH	2.27	0.40
40:1:130:LYS:HB3	40:1:130:LYS:HE2	1.80	0.40
1:A:156:ARG:NH1	40:1:134:PHE:CE2	2.87	0.40
1:A:496:VAL:O	1:A:500:GLY:N	2.52	0.40
2:B:12:U:O2'	2:B:13:C:P	2.79	0.40
3:C:935:ILE:HG22	3:C:939:ARG:HE	1.87	0.40
4:D:538:ILE:O	4:D:585:ILE:HA	2.21	0.40
9:H:39:U:HO2'	9:H:40:C:P	2.28	0.40
9:H:40:C:C2'	9:H:41:U:H5"	2.47	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:168:A:C2	36:n:54:GLN:CB	3.04	0.40
9:H:171:U:H2'	9:H:172:C:O4'	2.21	0.40
11:J:215:THR:OG1	11:J:216:ASP:N	2.47	0.40
17:P:10:GLU:HA	17:P:11:PRO:HD2	1.88	0.40
20:S:71:GLY:O	20:S:111:GLN:NE2	2.50	0.40
24:W:368:SER:OG	24:W:369:ARG:N	2.55	0.40
27:2:111:LYS:HA	27:2:114:GLU:CD	2.47	0.40
32:c:20:LYS:O	32:c:66:ARG:NH2	2.55	0.40
33:k:39:ASN:OD1	33:k:55:ARG:HD3	2.21	0.40
1:A:638:LEU:HA	1:A:638:LEU:HD23	1.77	0.40
1:A:1386:TRP:CD1	25:Y:408:ALA:HB1	2.56	0.40
3:C:134:LEU:O	3:C:205:THR:OG1	2.29	0.40
6:F:28:A:C2	16:O:174:LYS:HB2	2.55	0.40
6:F:33:G:O2'	6:F:34:G:P	2.79	0.40
7:4:-12:G:HO2'	7:4:-11:G:C5'	2.32	0.40
8:G:9:C:H2'	8:G:10:U:O4'	2.22	0.40
8:G:176:U:O2	8:G:176:U:O2'	2.30	0.40
9:H:88:A:C6	9:H:89:U:C4	3.09	0.40
9:H:183:G:C6	9:H:184:C:N4	2.89	0.40
10:I:521:VAL:HG21	10:I:544:GLY:HA3	2.03	0.40
24:W:348:LEU:HD11	24:W:356:LEU:HD21	2.03	0.40
24:W:357:LYS:HE2	24:W:369:ARG:HD3	2.04	0.40
24:W:401:VAL:HG13	24:W:410:ILE:HG23	2.03	0.40
25:Y:418:ASP:OD1	25:Y:418:ASP:N	2.55	0.40
33:d:62:HIS:O	33:d:103:GLY:HA3	2.21	0.40
38:o:37:LEU:HB2	38:o:61:PRO:CD	2.51	0.40
1:A:91:ALA:HA	19:R:207:MET:HE3	2.04	0.40
1:A:192:GLN:H	1:A:192:GLN:HG2	1.73	0.40
1:A:641:MET:HE3	1:A:641:MET:HB3	1.94	0.40
1:A:1284:LEU:HA	1:A:1284:LEU:HD23	1.89	0.40
1:A:1432:TYR:OH	25:Y:399:LYS:NZ	2.49	0.40
1:A:1685:LEU:CG	40:1:173:TYR:CE2	3.05	0.40
1:A:1762:TYR:HB3	1:A:1887:SER:HA	2.04	0.40
1:A:1877:LEU:HA	1:A:1877:LEU:HD12	1.86	0.40
1:A:1997:VAL:CG2	26:Z:658:TYR:CD1	2.93	0.40
3:C:304:LEU:HD23	3:C:304:LEU:HA	1.90	0.40
4:D:1481:ILE:C	4:D:1483:ARG:H	2.28	0.40
5:E:167:VAL:HB	5:E:179:TRP:HB2	2.03	0.40
9:H:33:G:OP2	9:H:33:G:C8	2.73	0.40
14:M:118:LYS:O	14:M:118:LYS:CD	2.70	0.40
19:R:303:GLU:OE1	19:R:303:GLU:CA	2.68	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:R:318:GLU:O	19:R:322:GLU:CG	2.69	0.40
21:T:331:ASN:HB3	21:T:332:ALA:H	1.77	0.40
24:W:101:THR:HG23	24:W:104:MET:H	1.86	0.40
24:W:207:LYS:HE2	24:W:207:LYS:HB2	1.93	0.40
31:a:63:ILE:HG12	36:g:69:MET:HG3	2.03	0.40
39:p:72:PHE:HA	39:p:73:PRO:HD3	1.83	0.40
1:A:348:PRO:HB3	1:A:394:TYR:CZ	2.56	0.40
6:F:37:C:H3'	6:F:37:C:C6	2.56	0.40
6:F:45:A:H5'	13:L:169:ARG:HH22	1.85	0.40
9:H:36:G:C3'	9:H:37:U:H5'	2.48	0.40
10:I:491:ALA:HA	10:I:506:VAL:HG11	2.03	0.40
13:L:710:ALA:O	13:L:714:GLU:N	2.55	0.40
13:L:721:LEU:O	13:L:725:GLN:N	2.39	0.40
16:O:110:SER:OG	16:O:113:ASN:ND2	2.53	0.40
18:Q:876:LEU:HA	18:Q:1034:ILE:O	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	2247/2335 (96%)	2044 (91%)	191 (8%)	12 (0%)	25 63
3	C	856/972 (88%)	781 (91%)	71 (8%)	4 (0%)	25 63
4	D	1720/2136 (80%)	1632 (95%)	85 (5%)	3 (0%)	44 78
5	E	297/357 (83%)	275 (93%)	22 (7%)	0	100 100
10	I	576/855 (67%)	558 (97%)	14 (2%)	4 (1%)	19 56
11	J	530/848 (62%)	489 (92%)	33 (6%)	8 (2%)	8 39
12	K	147/225 (65%)	136 (92%)	8 (5%)	3 (2%)	6 32
13	L	425/802 (53%)	408 (96%)	15 (4%)	2 (0%)	25 63

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
14	M	128/243 (53%)	117 (91%)	11 (9%)	0	100 100
15	N	141/144 (98%)	124 (88%)	16 (11%)	1 (1%)	19 56
16	O	283/420 (67%)	259 (92%)	23 (8%)	1 (0%)	30 67
17	P	107/229 (47%)	89 (83%)	15 (14%)	3 (3%)	4 25
18	Q	1308/1485 (88%)	1280 (98%)	26 (2%)	2 (0%)	44 78
19	R	274/536 (51%)	247 (90%)	23 (8%)	4 (2%)	8 39
20	S	157/166 (95%)	148 (94%)	9 (6%)	0	100 100
21	T	310/514 (60%)	275 (89%)	29 (9%)	6 (2%)	6 33
22	U	68/2752 (2%)	60 (88%)	8 (12%)	0	100 100
23	V	444/908 (49%)	431 (97%)	12 (3%)	1 (0%)	44 78
24	W	507/579 (88%)	432 (85%)	69 (14%)	6 (1%)	11 43
25	Y	667/1220 (55%)	642 (96%)	23 (3%)	2 (0%)	37 72
26	Z	120/758 (16%)	107 (89%)	13 (11%)	0	100 100
27	2	121/184 (66%)	110 (91%)	7 (6%)	4 (3%)	3 22
28	z	58/112 (52%)	56 (97%)	2 (3%)	0	100 100
29	b	98/240 (41%)	93 (95%)	2 (2%)	3 (3%)	3 23
29	i	84/240 (35%)	82 (98%)	2 (2%)	0	100 100
30	y	77/301 (26%)	75 (97%)	2 (3%)	0	100 100
31	a	75/126 (60%)	74 (99%)	1 (1%)	0	100 100
31	h	77/126 (61%)	76 (99%)	1 (1%)	0	100 100
32	c	80/119 (67%)	77 (96%)	3 (4%)	0	100 100
32	j	80/119 (67%)	77 (96%)	3 (4%)	0	100 100
33	d	95/118 (80%)	91 (96%)	4 (4%)	0	100 100
33	k	81/118 (69%)	78 (96%)	3 (4%)	0	100 100
34	f	72/86 (84%)	68 (94%)	4 (6%)	0	100 100
34	m	71/86 (83%)	67 (94%)	3 (4%)	1 (1%)	9 40
35	e	77/92 (84%)	76 (99%)	1 (1%)	0	100 100
35	l	77/92 (84%)	76 (99%)	1 (1%)	0	100 100
36	g	72/76 (95%)	70 (97%)	2 (3%)	0	100 100
36	n	65/76 (86%)	63 (97%)	2 (3%)	0	100 100
37	q	130/504 (26%)	117 (90%)	7 (5%)	6 (5%)	2 18

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
37	r	129/504 (26%)	118 (92%)	9 (7%)	2 (2%)	8 37
37	s	130/504 (26%)	116 (89%)	6 (5%)	8 (6%)	1 14
37	t	129/504 (26%)	116 (90%)	9 (7%)	4 (3%)	3 23
38	o	160/255 (63%)	146 (91%)	12 (8%)	2 (1%)	10 42
39	p	92/225 (41%)	90 (98%)	2 (2%)	0	100 100
40	1	265/586 (45%)	246 (93%)	19 (7%)	0	100 100
41	v	142/146 (97%)	138 (97%)	4 (3%)	0	100 100
42	w	89/174 (51%)	87 (98%)	1 (1%)	1 (1%)	12 46
43	u	384/411 (93%)	372 (97%)	9 (2%)	3 (1%)	16 53
44	x	23/703 (3%)	22 (96%)	1 (4%)	0	100 100
45	3	28/415 (7%)	27 (96%)	1 (4%)	0	100 100
All	All	14373/25726 (56%)	13438 (94%)	839 (6%)	96 (1%)	21 56

All (96) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1092	ILE
1	A	1831	LYS
1	A	1881	ASN
3	C	801	LEU
4	D	957	VAL
4	D	1584	ILE
10	I	698	ARG
11	J	217	GLU
11	J	241	VAL
12	K	78	PRO
13	L	10	VAL
13	L	125	PRO
17	P	8	THR
19	R	233	PRO
21	T	187	LYS
21	T	188	PRO
21	T	190	TRP
24	W	73	ASP
24	W	74	PRO
24	W	82	ASN
24	W	83	PRO
27	2	24	PRO

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Mol	Chain	Res	Type
27	2	76	SER
37	q	24	VAL
37	q	59	HIS
37	q	60	PRO
37	s	9	ASN
37	s	55	ILE
37	s	60	PRO
37	s	66	PRO
37	s	71	ILE
37	t	9	ASN
37	t	69	THR
34	m	4	PRO
43	u	383	ASN
1	A	1992	GLY
3	C	94	ILE
3	C	439	PRO
10	I	532	LYS
11	J	709	VAL
18	Q	530	ASN
21	T	406	ILE
25	Y	1185	ASP
37	q	9	ASN
37	q	19	PRO
38	o	160	LYS
42	w	115	GLY
43	u	340	GLY
43	u	385	ASP
1	A	167	PRO
1	A	1503	TRP
1	A	1513	MET
10	I	699	THR
11	J	188	GLN
11	J	205	LEU
17	P	6	ARG
19	R	52	PRO
23	V	597	PRO
24	W	258	PRO
27	2	32	LYS
27	2	72	ALA
37	q	23	HIS
37	r	9	ASN
37	s	24	VAL

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Mol	Chain	Res	Type
37	t	67	SER
1	A	570	ASP
3	C	83	GLU
11	J	341	PRO
11	J	604	PRO
12	K	65	ILE
15	N	41	ARG
17	P	205	LYS
19	R	73	PRO
19	R	186	VAL
25	Y	1182	LYS
37	t	65	PRO
38	o	32	PRO
1	A	364	SER
1	A	1530	PRO
18	Q	89	ALA
21	T	343	PRO
21	T	462	GLU
29	b	105	GLY
29	b	106	ILE
37	s	62	ARG
1	A	1758	PRO
10	I	372	ARG
11	J	216	ASP
16	O	20	PHE
29	b	115	PRO
1	A	1419	ILE
12	K	17	PRO
24	W	271	PRO
37	s	38	GLY
4	D	585	ILE
37	r	60	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	1775/2108 (84%)	1707 (96%)	68 (4%)	28 50
3	C	758/866 (88%)	755 (100%)	3 (0%)	89 91
5	E	256/300 (85%)	255 (100%)	1 (0%)	89 91
10	I	199/749 (27%)	185 (93%)	14 (7%)	12 33
11	J	241/751 (32%)	239 (99%)	2 (1%)	79 85
13	L	218/709 (31%)	211 (97%)	7 (3%)	34 55
14	M	117/209 (56%)	115 (98%)	2 (2%)	56 73
15	N	130/130 (100%)	129 (99%)	1 (1%)	79 85
16	O	255/361 (71%)	253 (99%)	2 (1%)	79 85
17	P	101/203 (50%)	97 (96%)	4 (4%)	27 49
19	R	236/457 (52%)	224 (95%)	12 (5%)	20 43
20	S	129/134 (96%)	127 (98%)	2 (2%)	58 74
21	T	268/441 (61%)	264 (98%)	4 (2%)	60 75
22	U	21/2432 (1%)	19 (90%)	2 (10%)	7 23
23	V	98/838 (12%)	95 (97%)	3 (3%)	35 56
24	W	448/502 (89%)	441 (98%)	7 (2%)	58 74
25	Y	32/1085 (3%)	29 (91%)	3 (9%)	7 23
26	Z	110/655 (17%)	110 (100%)	0	100 100
27	2	106/157 (68%)	101 (95%)	5 (5%)	22 45
28	z	51/99 (52%)	51 (100%)	0	100 100
29	b	83/177 (47%)	80 (96%)	3 (4%)	30 52
29	i	77/177 (44%)	74 (96%)	3 (4%)	27 50
31	a	68/101 (67%)	66 (97%)	2 (3%)	37 58
31	h	70/101 (69%)	70 (100%)	0	100 100
32	c	77/101 (76%)	75 (97%)	2 (3%)	41 61
32	j	77/101 (76%)	75 (97%)	2 (3%)	41 61
33	d	90/110 (82%)	89 (99%)	1 (1%)	70 80
33	k	80/110 (73%)	79 (99%)	1 (1%)	65 77
34	f	63/74 (85%)	61 (97%)	2 (3%)	34 55
34	m	61/74 (82%)	58 (95%)	3 (5%)	21 43
35	e	74/84 (88%)	74 (100%)	0	100 100
35	l	74/84 (88%)	74 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
36	g	64/66 (97%)	63 (98%)	1 (2%)	58 74
36	n	60/66 (91%)	58 (97%)	2 (3%)	33 55
38	o	139/218 (64%)	133 (96%)	6 (4%)	25 48
39	p	82/195 (42%)	79 (96%)	3 (4%)	29 51
40	1	235/520 (45%)	230 (98%)	5 (2%)	48 67
45	3	25/366 (7%)	25 (100%)	0	100 100
All	All	7048/15911 (44%)	6870 (98%)	178 (2%)	43 63

All (178) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	153	ARG
1	A	244	GLN
1	A	338	VAL
1	A	387	PHE
1	A	413	LEU
1	A	664	HIS
1	A	666	LYS
1	A	701	ILE
1	A	771	VAL
1	A	773	LYS
1	A	774	LYS
1	A	850	TYR
1	A	853	LYS
1	A	857	ASN
1	A	861	ARG
1	A	866	LEU
1	A	880	ARG
1	A	1089	CYS
1	A	1132	LYS
1	A	1133	CYS
1	A	1136	ARG
1	A	1189	MET
1	A	1249	MET
1	A	1251	SER
1	A	1416	ILE
1	A	1526	LEU
1	A	1528	GLN
1	A	1529	ILE
1	A	1553	VAL

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Mol	Chain	Res	Type
1	A	1554	GLN
1	A	1555	LEU
1	A	1556	ASP
1	A	1561	PHE
1	A	1562	MET
1	A	1566	ILE
1	A	1685	LEU
1	A	1722	SER
1	A	1723	LYS
1	A	1725	LEU
1	A	1726	ILE
1	A	1727	GLN
1	A	1728	GLN
1	A	1730	MET
1	A	1734	MET
1	A	1737	ASN
1	A	1738	PRO
1	A	1740	LEU
1	A	1751	LEU
1	A	1752	GLN
1	A	1753	LEU
1	A	1757	GLU
1	A	1758	PRO
1	A	1763	LEU
1	A	1833	LEU
1	A	1873	GLU
1	A	1876	LEU
1	A	1877	LEU
1	A	1878	ASP
1	A	1879	PHE
1	A	1900	GLU
1	A	1982	GLN
1	A	1983	LEU
1	A	1987	ILE
1	A	1990	ASP
1	A	1993	LYS
1	A	2011	ILE
1	A	2014	MET
1	A	2015	GLU
3	C	513	ASN
3	C	572	GLU
3	C	573	GLU

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Mol	Chain	Res	Type
5	E	243	LEU
10	I	528	LEU
10	I	532	LYS
10	I	548	PHE
10	I	645	VAL
10	I	694	ILE
10	I	698	ARG
10	I	699	THR
10	I	724	LEU
10	I	725	ARG
10	I	726	ILE
10	I	727	ARG
10	I	730	VAL
10	I	731	GLN
10	I	733	THR
11	J	201	ARG
11	J	214	ILE
13	L	4	ILE
13	L	5	MET
13	L	6	ILE
13	L	7	LYS
13	L	10	VAL
13	L	123	LEU
13	L	133	GLU
14	M	118	LYS
14	M	152	LEU
15	N	119	CYS
16	O	150	LEU
16	O	272	ILE
17	P	3	THR
17	P	7	PRO
17	P	10	GLU
17	P	18	LYS
19	R	95	LYS
19	R	217	LYS
19	R	262	ILE
19	R	302	VAL
19	R	307	GLN
19	R	309	GLU
19	R	310	ARG
19	R	315	LYS
19	R	318	GLU

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Mol	Chain	Res	Type
19	R	324	LEU
19	R	333	GLU
19	R	334	ARG
20	S	37	LYS
20	S	126	HIS
21	T	197	TYR
21	T	412	HIS
21	T	416	ILE
21	T	454	VAL
22	U	23	LEU
22	U	25	LEU
23	V	458	THR
23	V	535	THR
23	V	597	PRO
24	W	82	ASN
24	W	200	VAL
24	W	205	VAL
24	W	243	VAL
24	W	257	ILE
24	W	294	VAL
24	W	552	VAL
25	Y	413	LYS
25	Y	418	ASP
25	Y	420	ASP
27	2	23	ILE
27	2	25	LYS
27	2	134	LEU
27	2	137	LYS
27	2	138	LYS
29	b	13	ILE
29	b	57	LYS
29	b	58	GLN
31	a	77	LEU
31	a	79	ASN
32	c	4	VAL
32	c	40	LEU
33	d	112	ASN
34	f	27	MET
34	f	55	LEU
36	g	65	ASN
29	i	13	ILE
29	i	57	LYS

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Mol	Chain	Res	Type
29	i	58	GLN
32	j	4	VAL
32	j	40	LEU
33	k	112	ASN
34	m	5	LEU
34	m	27	MET
34	m	55	LEU
36	n	10	LYS
36	n	65	ASN
38	o	5	THR
38	o	71	VAL
38	o	79	ILE
38	o	101	VAL
38	o	114	SER
38	o	126	THR
39	p	46	MET
39	p	66	LEU
39	p	87	ASP
40	1	34	ARG
40	1	181	ILE
40	1	265	LEU
40	1	267	ILE
40	1	315	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (135) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	57	GLN
1	A	78	ASN
1	A	105	ASN
1	A	181	ASN
1	A	270	ASN
1	A	321	ASN
1	A	361	HIS
1	A	368	GLN
1	A	457	ASN
1	A	467	GLN
1	A	542	ASN
1	A	584	HIS
1	A	703	GLN
1	A	711	GLN
1	A	834	HIS

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Mol	Chain	Res	Type
1	A	904	HIS
1	A	974	ASN
1	A	994	ASN
1	A	1013	ASN
1	A	1014	ASN
1	A	1023	ASN
1	A	1024	HIS
1	A	1096	HIS
1	A	1117	HIS
1	A	1124	ASN
1	A	1130	ASN
1	A	1359	HIS
1	A	1373	GLN
1	A	1460	HIS
1	A	1476	GLN
1	A	1487	HIS
1	A	1531	ASN
1	A	1599	GLN
1	A	1615	HIS
1	A	1710	ASN
1	A	1717	ASN
1	A	1727	GLN
1	A	1728	GLN
1	A	1766	GLN
1	A	1775	GLN
1	A	1816	GLN
1	A	1830	GLN
1	A	1881	ASN
1	A	1944	HIS
1	A	1995	ASN
1	A	2004	GLN
3	C	137	HIS
3	C	154	HIS
3	C	208	HIS
3	C	245	HIS
3	C	280	HIS
3	C	297	ASN
3	C	411	ASN
3	C	451	HIS
3	C	513	ASN
3	C	538	HIS
3	C	702	ASN

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Mol	Chain	Res	Type
3	C	892	GLN
5	E	101	ASN
5	E	188	GLN
5	E	253	ASN
10	I	531	HIS
10	I	601	GLN
10	I	705	GLN
11	J	212	GLN
11	J	221	ASN
11	J	238	ASN
11	J	250	GLN
11	J	259	GLN
11	J	373	HIS
13	L	186	GLN
13	L	245	GLN
13	L	266	HIS
14	M	212	ASN
16	O	113	ASN
16	O	196	GLN
16	O	251	HIS
16	O	294	ASN
17	P	29	GLN
19	R	133	GLN
19	R	189	ASN
19	R	279	HIS
20	S	10	GLN
20	S	38	ASN
20	S	87	HIS
20	S	126	HIS
21	T	189	GLN
21	T	278	ASN
21	T	283	HIS
21	T	407	GLN
21	T	437	HIS
21	T	455	GLN
22	U	3	ASN
22	U	20	GLN
23	V	474	HIS
23	V	499	GLN
24	W	71	HIS
24	W	82	ASN
24	W	128	GLN

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Mol	Chain	Res	Type
24	W	147	GLN
24	W	242	HIS
24	W	492	ASN
24	W	529	ASN
26	Z	656	ASN
26	Z	662	HIS
27	2	93	GLN
27	2	116	ASN
28	z	62	GLN
28	z	95	HIS
28	z	102	HIS
29	b	22	GLN
29	b	76	ASN
31	a	60	GLN
32	c	64	ASN
33	d	34	GLN
34	f	58	HIS
35	e	65	HIS
36	g	65	ASN
31	h	60	GLN
29	i	22	GLN
29	i	76	ASN
32	j	64	ASN
33	k	34	GLN
34	m	12	ASN
34	m	58	HIS
35	l	65	HIS
36	n	65	ASN
38	o	156	GLN
39	p	7	HIS
40	1	85	GLN
40	1	92	GLN
40	1	154	HIS
40	1	156	GLN
40	1	171	ASN
40	1	328	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	B	82/117 (70%)	17 (20%)	4 (4%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
6	F	96/107 (89%)	46 (47%)	16 (16%)
7	4	13/46 (28%)	8 (61%)	3 (23%)
8	G	80/174 (45%)	63 (78%)	20 (25%)
9	H	133/188 (70%)	34 (25%)	10 (7%)
All	All	404/632 (63%)	168 (41%)	53 (13%)

All (168) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	B	12	U
2	B	13	C
2	B	19	A
2	B	20	G
2	B	21	A
2	B	22	U
2	B	23	C
2	B	24	G
2	B	25	C
2	B	26	A
2	B	28	A
2	B	36	C
2	B	38	C
2	B	45	C
2	B	57	G
2	B	70	A
2	B	71	C
6	F	5	U
6	F	6	C
6	F	7	G
6	F	8	C
6	F	9	U
6	F	10	U
6	F	12	G
6	F	25	C
6	F	26	U
6	F	27	A
6	F	28	A
6	F	29	A
6	F	31	U
6	F	33	G
6	F	34	G
6	F	35	A

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Mol	Chain	Res	Type
6	F	36	A
6	F	37	C
6	F	38	G
6	F	40	U
6	F	43	A
6	F	45	A
6	F	46	G
6	F	47	A
6	F	48	A
6	F	49	G
6	F	51	U
6	F	54	G
6	F	56	A
6	F	59	G
6	F	60	C
6	F	61	C
6	F	62	C
6	F	68	C
6	F	73	A
6	F	74	U
6	F	78	A
6	F	79	C
6	F	80	G
6	F	81	C
6	F	82	A
6	F	83	A
6	F	84	A
6	F	85	U
6	F	86	U
6	F	87	C
7	4	-12	G
7	4	-11	G
7	4	-10	C
7	4	-9	C
7	4	-7	C
7	4	-6	C
7	4	-4	A
7	4	-1	G
8	G	2	U
8	G	3	A
8	G	5	G
8	G	6	A

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Mol	Chain	Res	Type
8	G	7	G
8	G	8	C
8	G	10	U
8	G	11	A
8	G	12	G
8	G	13	C
8	G	14	A
8	G	17	U
8	G	21	A
8	G	22	C
8	G	23	U
8	G	24	G
8	G	25	G
8	G	26	U
8	G	27	U
8	G	28	A
8	G	29	C
8	G	30	C
8	G	31	U
8	G	120	G
8	G	121	G
8	G	122	U
8	G	123	U
8	G	124	U
8	G	125	C
8	G	126	C
8	G	127	U
8	G	128	U
8	G	129	G
8	G	130	A
8	G	131	U
8	G	134	U
8	G	135	G
8	G	136	U
8	G	137	C
8	G	138	A
8	G	139	U
8	G	140	A
8	G	143	U
8	G	144	A
8	G	145	U
8	G	146	C

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Mol	Chain	Res	Type
8	G	147	C
8	G	148	U
8	G	149	G
8	G	150	U
8	G	166	A
8	G	167	G
8	G	168	C
8	G	169	U
8	G	170	C
8	G	171	G
8	G	172	C
8	G	173	G
8	G	174	G
8	G	175	U
8	G	176	U
8	G	177	G
8	G	179	G
9	H	13	C
9	H	14	C
9	H	15	U
9	H	16	U
9	H	17	U
9	H	19	G
9	H	24	A
9	H	25	G
9	H	28	C
9	H	29	A
9	H	30	A
9	H	31	G
9	H	33	G
9	H	37	U
9	H	39	U
9	H	40	C
9	H	41	U
9	H	42	G
9	H	43	U
9	H	112	G
9	H	143	A
9	H	147	G
9	H	152	G
9	H	153	A
9	H	154	C

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Mol	Chain	Res	Type
9	H	156	U
9	H	157	G
9	H	164	C
9	H	165	A
9	H	168	A
9	H	169	C
9	H	177	A
9	H	178	A
9	H	179	C

All (53) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	B	18	C
2	B	19	A
2	B	20	G
2	B	27	U
6	F	5	U
6	F	7	G
6	F	25	C
6	F	26	U
6	F	33	G
6	F	34	G
6	F	35	A
6	F	36	A
6	F	45	A
6	F	50	A
6	F	58	G
6	F	59	G
6	F	73	A
6	F	81	C
6	F	84	A
6	F	86	U
7	4	-13	C
7	4	-12	G
7	4	-11	G
8	G	1	G
8	G	16	G
8	G	20	A
8	G	21	A
8	G	22	C
8	G	23	U

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Mol	Chain	Res	Type
8	G	137	C
8	G	142	U
8	G	143	U
8	G	144	A
8	G	145	U
8	G	147	C
8	G	166	A
8	G	167	G
8	G	168	C
8	G	171	G
8	G	172	C
8	G	173	G
8	G	175	U
8	G	176	U
9	H	15	U
9	H	28	C
9	H	29	A
9	H	30	A
9	H	38	A
9	H	39	U
9	H	40	C
9	H	156	U
9	H	164	C
9	H	168	A

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
19	SEP	R	224	19	8,9,10	1.00	0	8,12,14	1.53	1 (12%)
19	SEP	R	232	19	8,9,10	1.56	1 (12%)	8,12,14	1.71	2 (25%)

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
19	SEP	R	224	19	-	0/5/8/10	-
19	SEP	R	232	19	-	1/5/8/10	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
19	R	232	SEP	P-O1P	3.40	1.61	1.50

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	R	232	SEP	P-OG-CB	-4.04	107.16	118.30
19	R	224	SEP	OG-CB-CA	-2.66	105.55	108.14
19	R	232	SEP	OG-CB-CA	2.37	110.45	108.14

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
19	R	232	SEP	N-CA-CB-OG

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
19	R	224	SEP	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 19 ligands modelled in this entry, 16 are monoatomic - leaving 3 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	$\#\|Z\|>2$
47	GTP	C	1500	48	26,34,34	1.50	3 (11%)	32,54,54	1.95	7 (21%)
46	IHP	A	3000	-	36,36,36	0.72	0	54,60,60	1.05	0
50	ATP	Q	1501	48	26,33,33	1.72	8 (30%)	31,52,52	1.85	10 (32%)

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
47	GTP	C	1500	48	-	1/18/38/38	0/3/3/3
46	IHP	A	3000	-	-	3/30/54/54	0/1/1/1
50	ATP	Q	1501	48	-	4/18/38/38	0/3/3/3

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
47	C	1500	GTP	C5-C6	-4.83	1.37	1.47
50	Q	1501	ATP	C2'-C1'	-3.59	1.48	1.53
50	Q	1501	ATP	C4-N3	3.40	1.40	1.35
50	Q	1501	ATP	C6-N6	3.34	1.46	1.34
50	Q	1501	ATP	C2'-C3'	-2.74	1.45	1.53
47	C	1500	GTP	C5-C4	-2.42	1.36	1.43
50	Q	1501	ATP	O2'-C2'	-2.25	1.37	1.43
47	C	1500	GTP	O4'-C4'	-2.25	1.40	1.45
50	Q	1501	ATP	C2-N3	2.18	1.35	1.32
50	Q	1501	ATP	C3'-C4'	-2.18	1.47	1.53
50	Q	1501	ATP	O3'-C3'	-2.16	1.37	1.43

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	C	1500	GTP	PA-O3A-PB	-5.64	113.48	132.83
50	Q	1501	ATP	PB-O3B-PG	-5.47	114.07	132.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	C	1500	GTP	PB-O3B-PG	-4.37	117.84	132.83
50	Q	1501	ATP	N3-C2-N1	-4.18	122.14	128.68
47	C	1500	GTP	C5-C6-N1	3.72	120.52	113.95
47	C	1500	GTP	C2-N1-C6	-3.47	118.71	125.10
47	C	1500	GTP	C3'-C2'-C1'	3.21	105.81	100.98
47	C	1500	GTP	C8-N7-C5	2.82	108.36	102.99
50	Q	1501	ATP	PA-O3A-PB	-2.62	123.85	132.83
50	Q	1501	ATP	C1'-N9-C4	-2.50	122.25	126.64
50	Q	1501	ATP	O2G-PG-O1G	-2.41	101.23	110.68
50	Q	1501	ATP	O2A-PA-O1A	-2.35	100.65	112.24
50	Q	1501	ATP	O2G-PG-O3B	2.25	112.17	104.64
47	C	1500	GTP	O6-C6-C5	-2.22	120.04	124.37
50	Q	1501	ATP	O2B-PB-O1B	-2.08	101.97	112.24
50	Q	1501	ATP	O5'-C5'-C4'	2.07	116.12	108.99
50	Q	1501	ATP	O3G-PG-O3B	2.05	111.50	104.64

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
46	A	3000	IHP	C3-O13-P3-O43
47	C	1500	GTP	O4'-C4'-C5'-O5'
50	Q	1501	ATP	C5'-O5'-PA-O1A
50	Q	1501	ATP	C5'-O5'-PA-O2A
46	A	3000	IHP	C3-C4-O14-P4
50	Q	1501	ATP	PB-O3A-PA-O2A
46	A	3000	IHP	C4-O14-P4-O44
50	Q	1501	ATP	C5'-O5'-PA-O3A

There are no ring outliers.

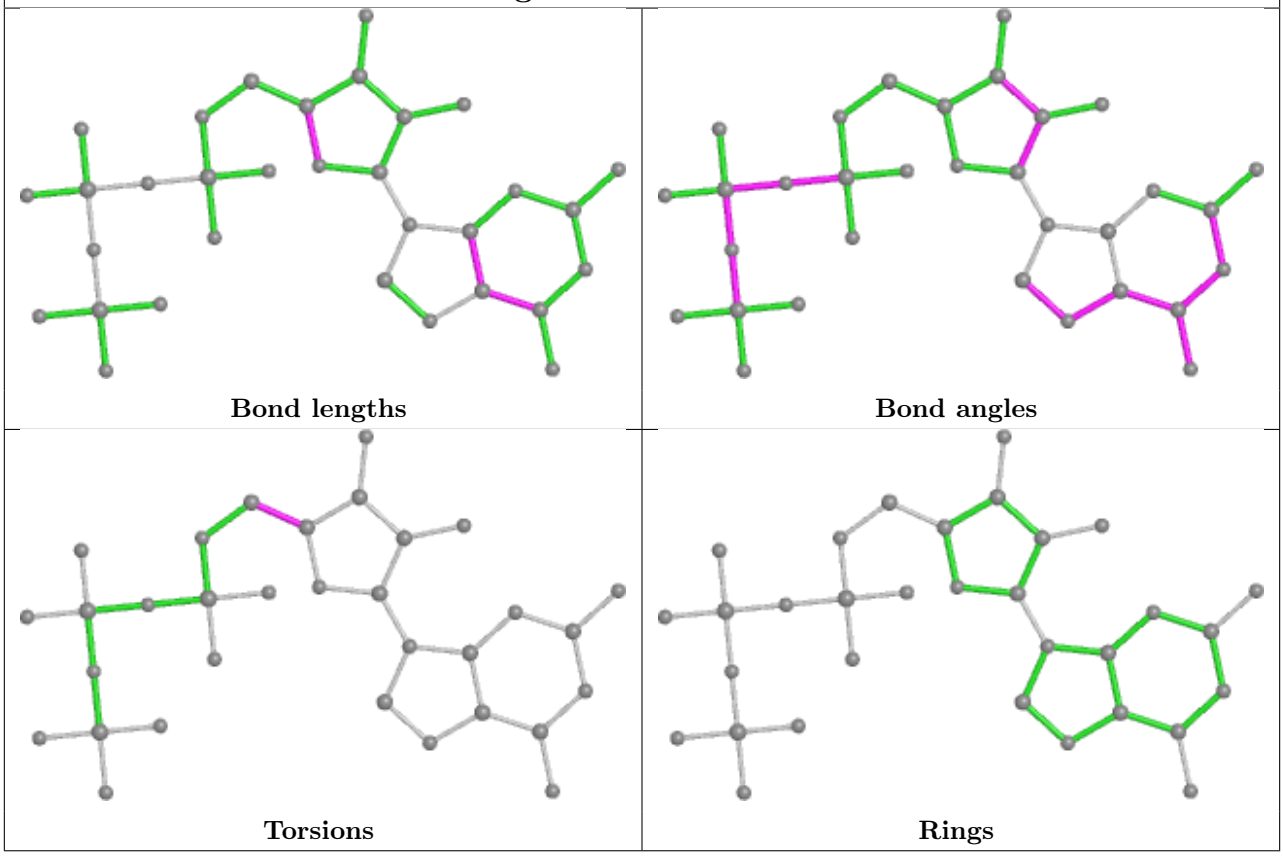
3 monomers are involved in 16 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
47	C	1500	GTP	2	0
46	A	3000	IHP	9	0
50	Q	1501	ATP	5	0

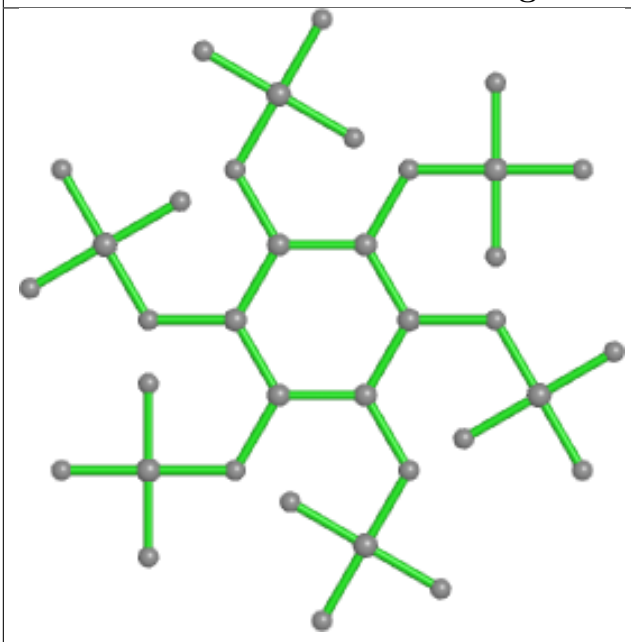
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier.

Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

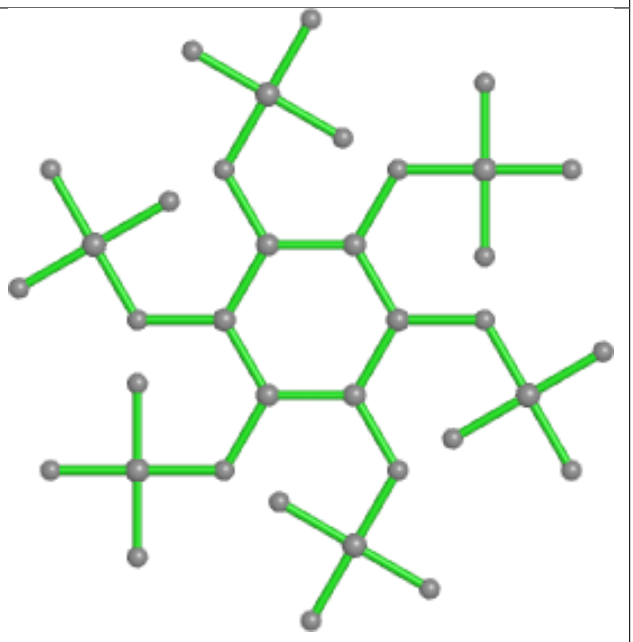
Ligand GTP C 1500



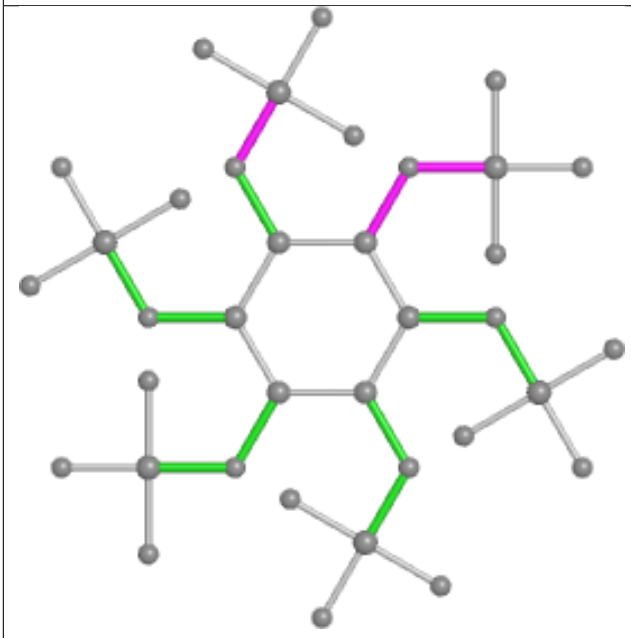
Ligand IHP A 3000



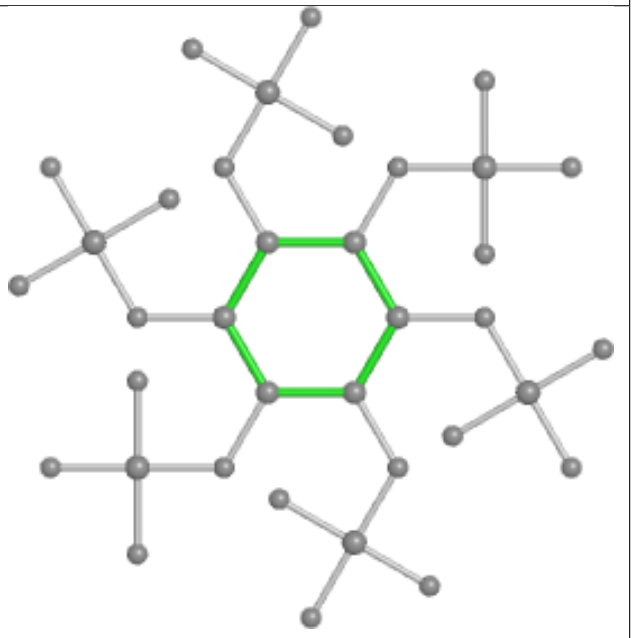
Bond lengths



Bond angles

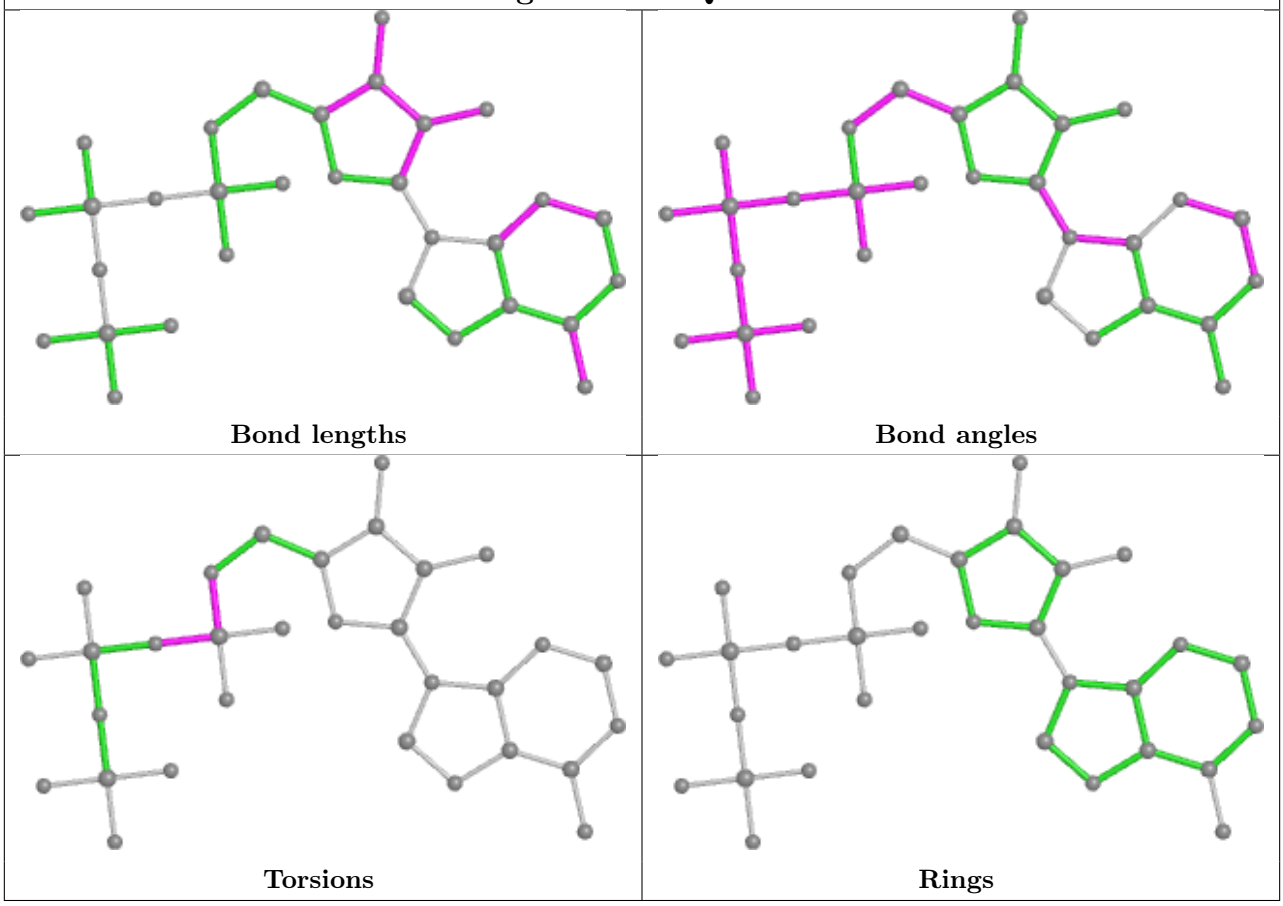


Torsions



Rings

Ligand ATP Q 1501



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

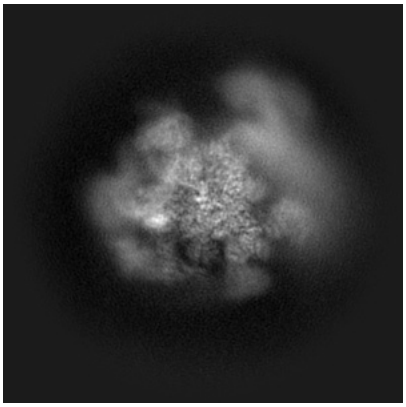
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-32321. These allow visual inspection of the internal detail of the map and identification of artifacts.

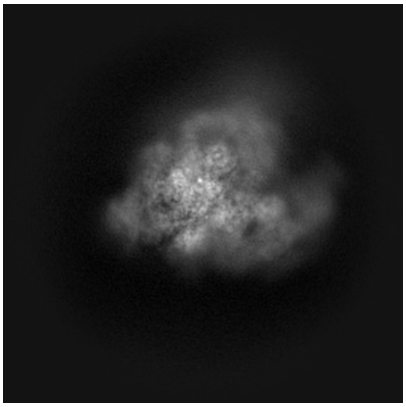
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

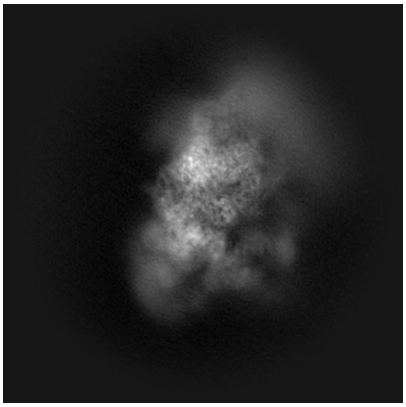
6.1.1 Primary map



X



Y

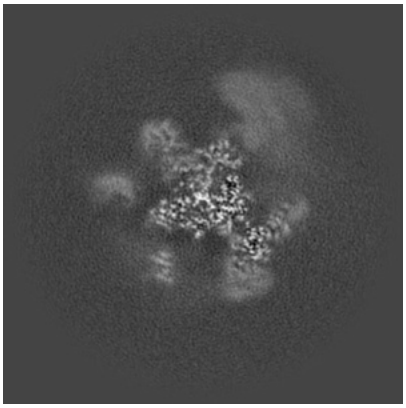


Z

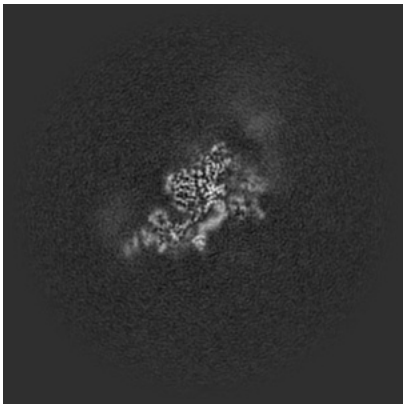
The images above show the map projected in three orthogonal directions.

6.2 Central slices

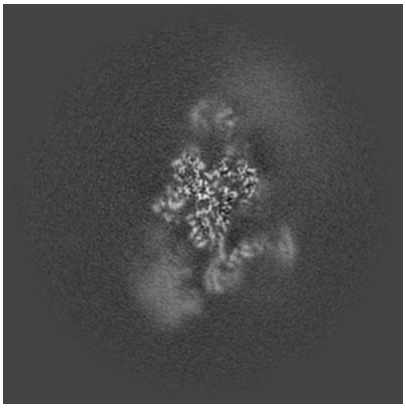
6.2.1 Primary map



X Index: 200



Y Index: 200

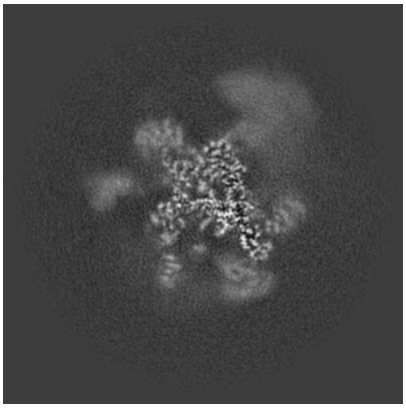


Z Index: 200

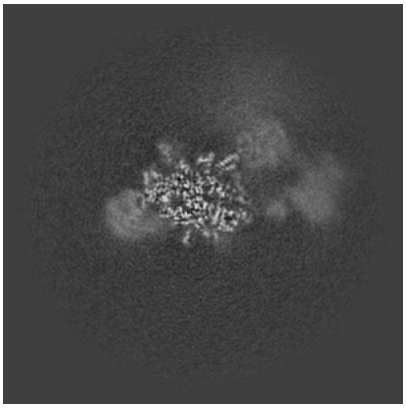
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

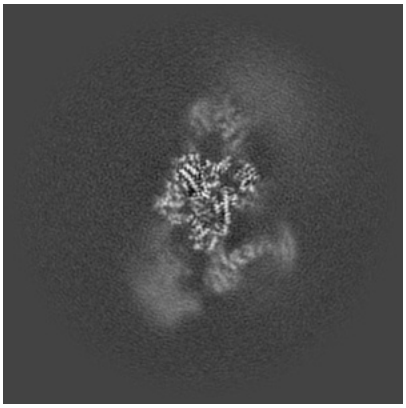
6.3.1 Primary map



X Index: 194



Y Index: 238

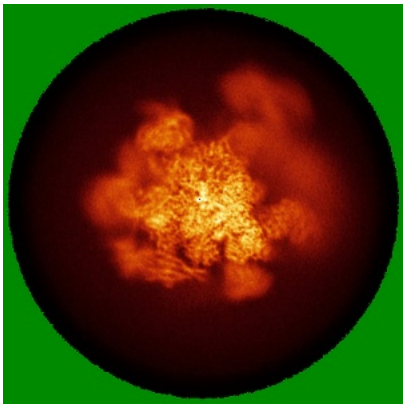


Z Index: 197

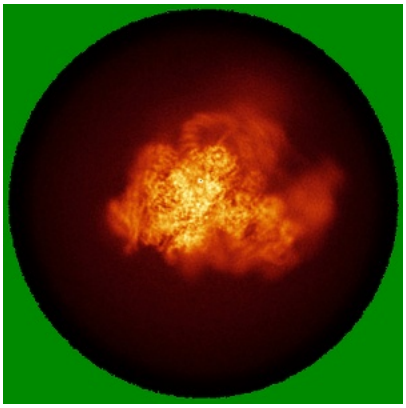
The images above show the largest variance slices of the map in three orthogonal directions.

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

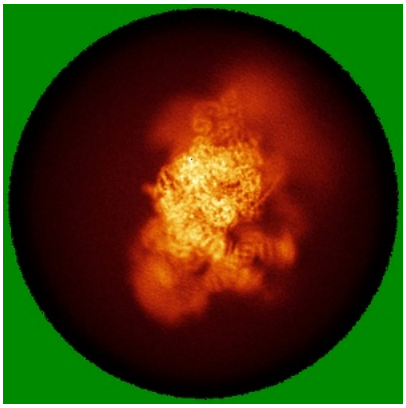
6.4.1 Primary map



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 0.37. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

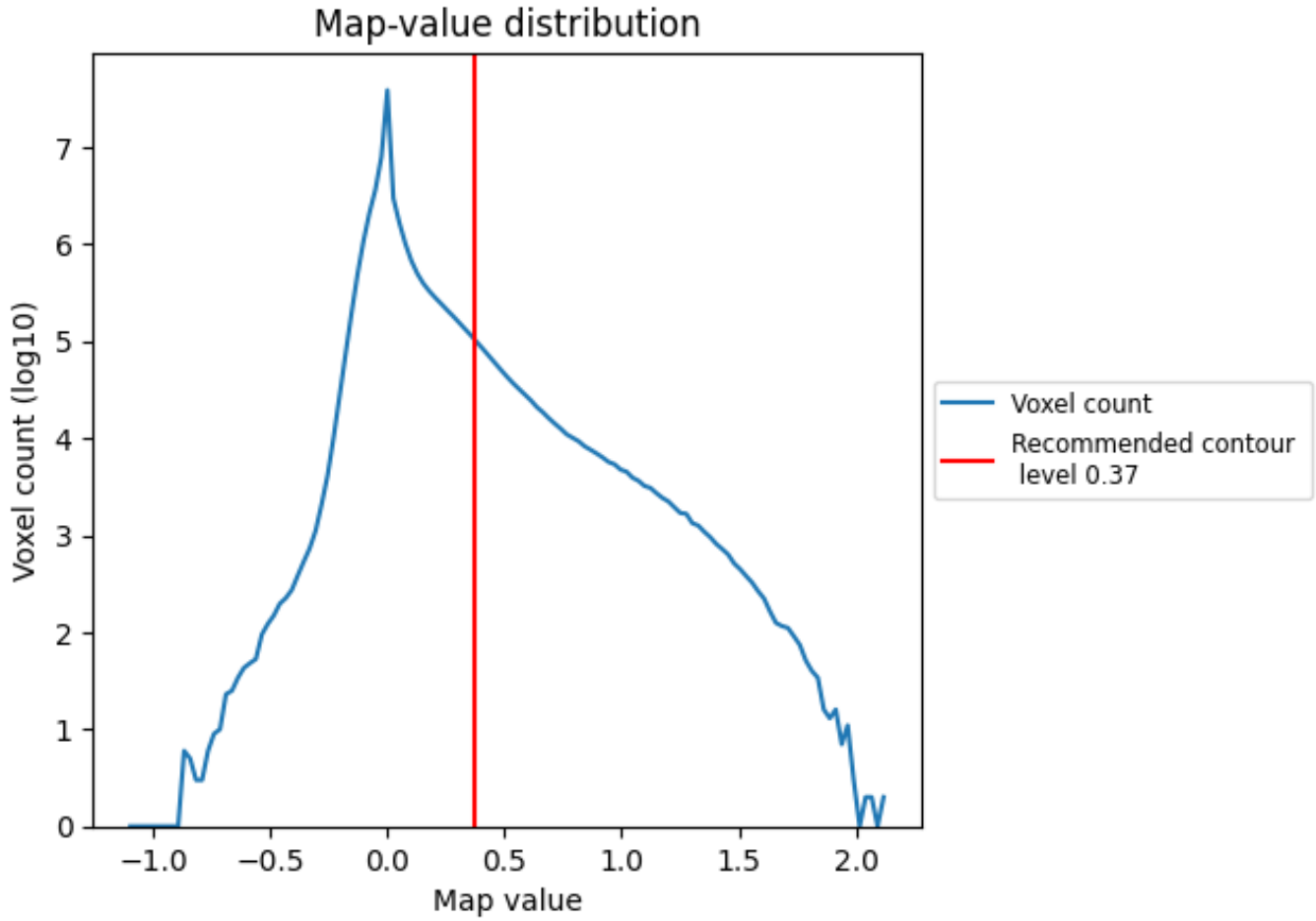
6.6 Mask visualisation (i)

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

7 Map analysis

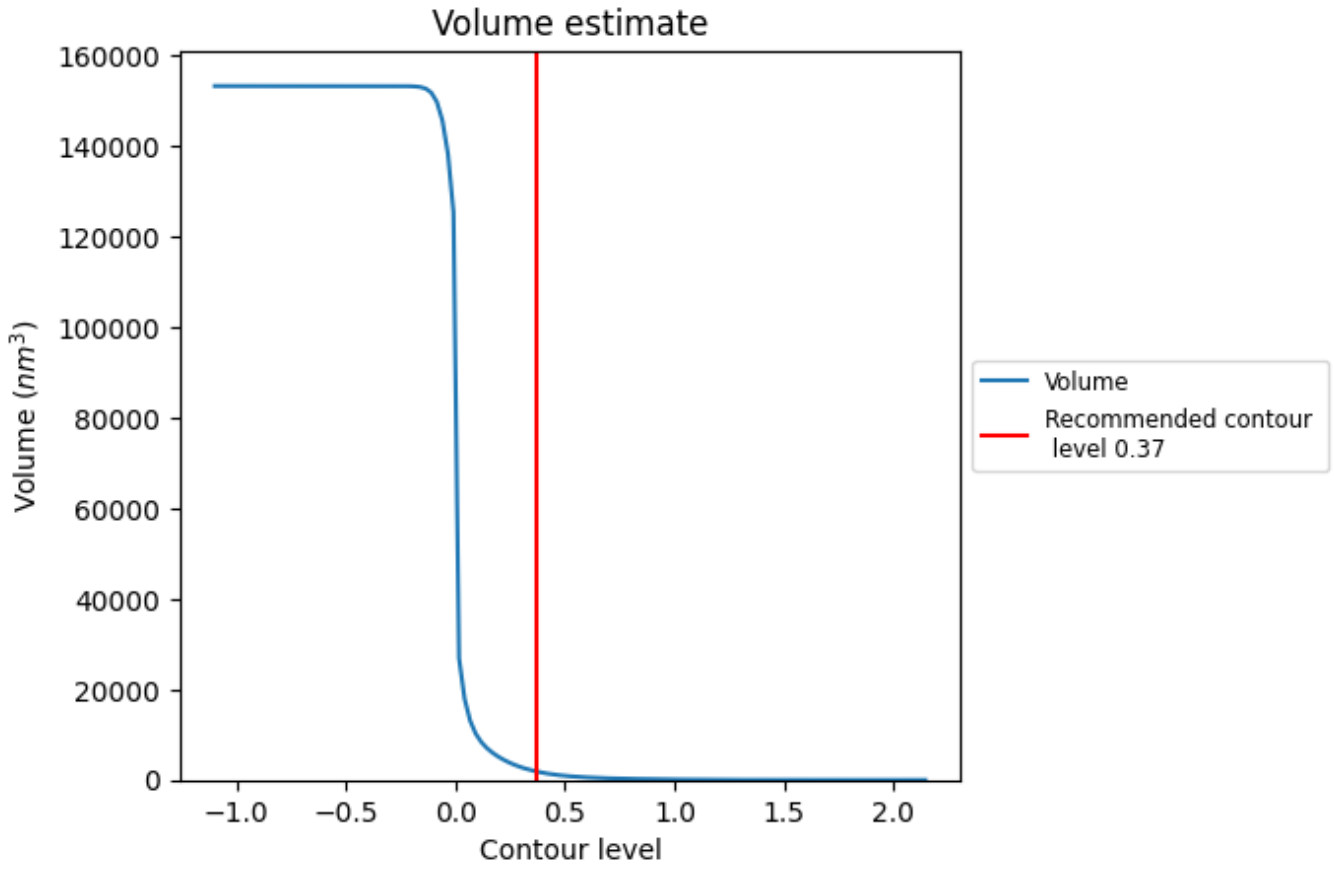
This section contains the results of statistical analysis of the map.

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.

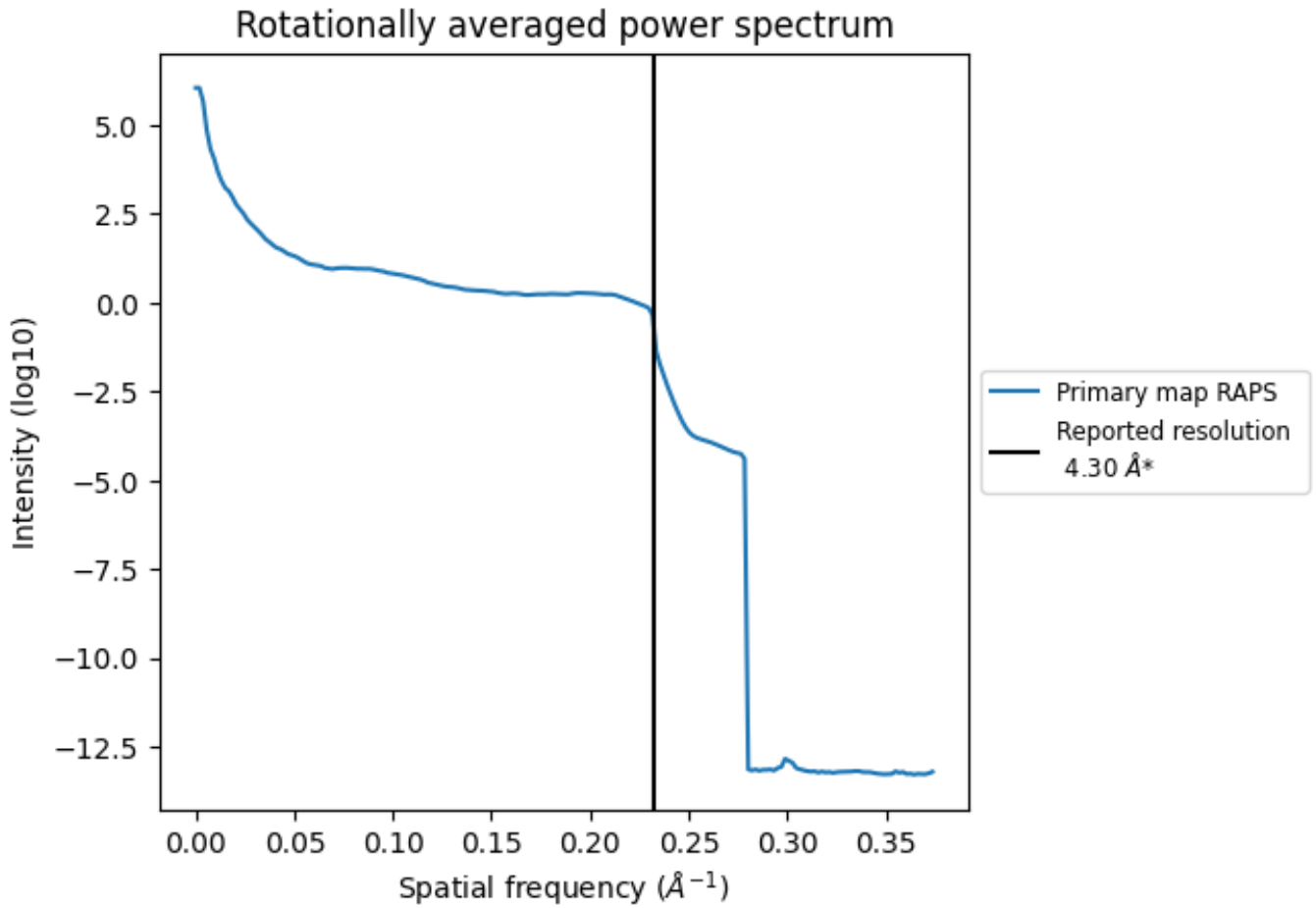
7.2 Volume estimate



The volume at the recommended contour level is 1869 nm^3; this corresponds to an approximate mass of 1688 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 0.233 $Å^{-1}$

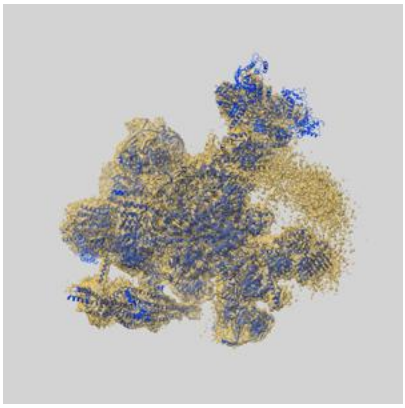
8 Fourier-Shell correlation (i)

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

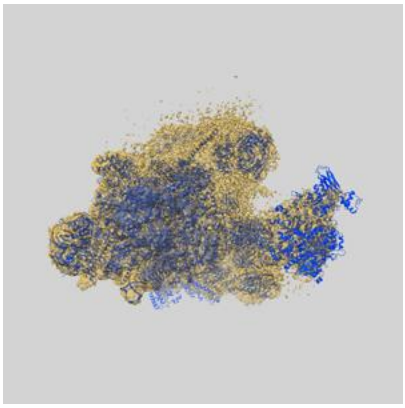
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-32321 and PDB model 7W5B. Per-residue inclusion information can be found in section 3 on page 15.

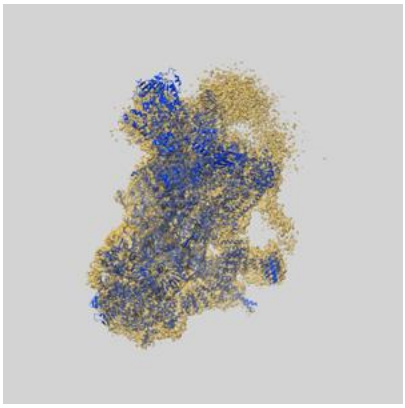
9.1 Map-model overlay



X



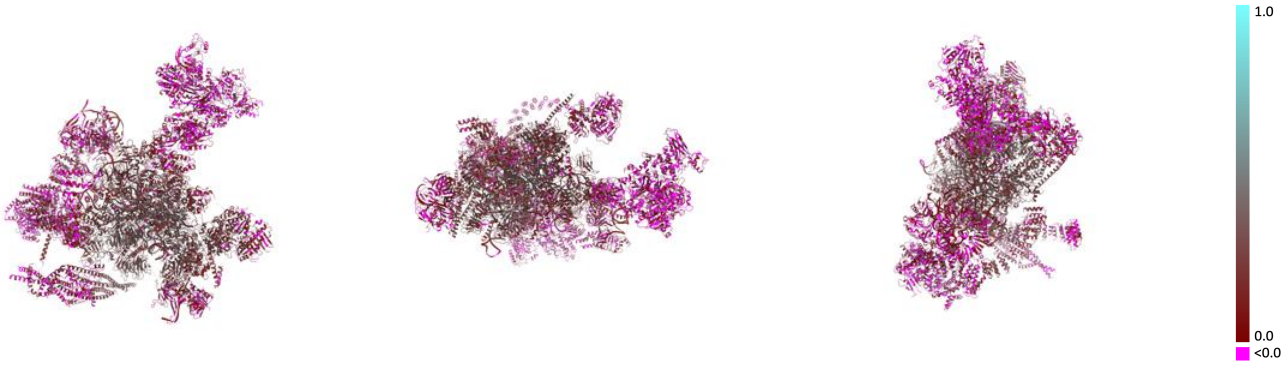
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.37 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

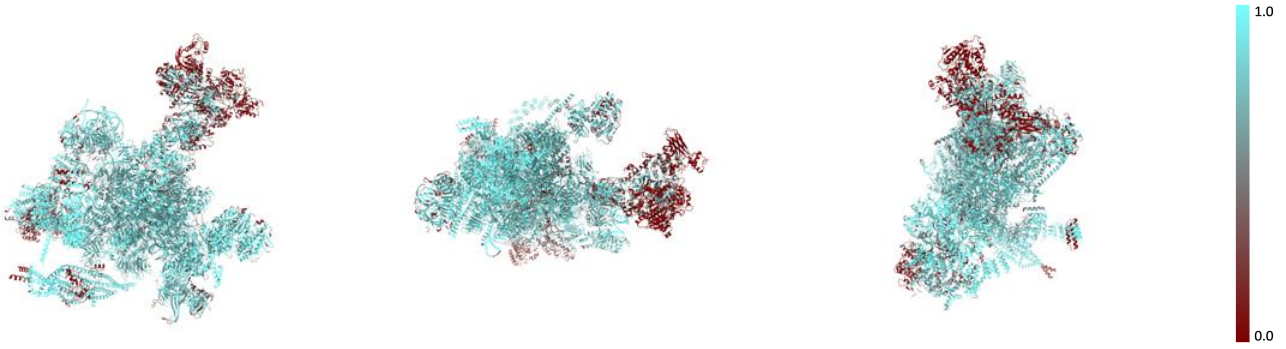
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

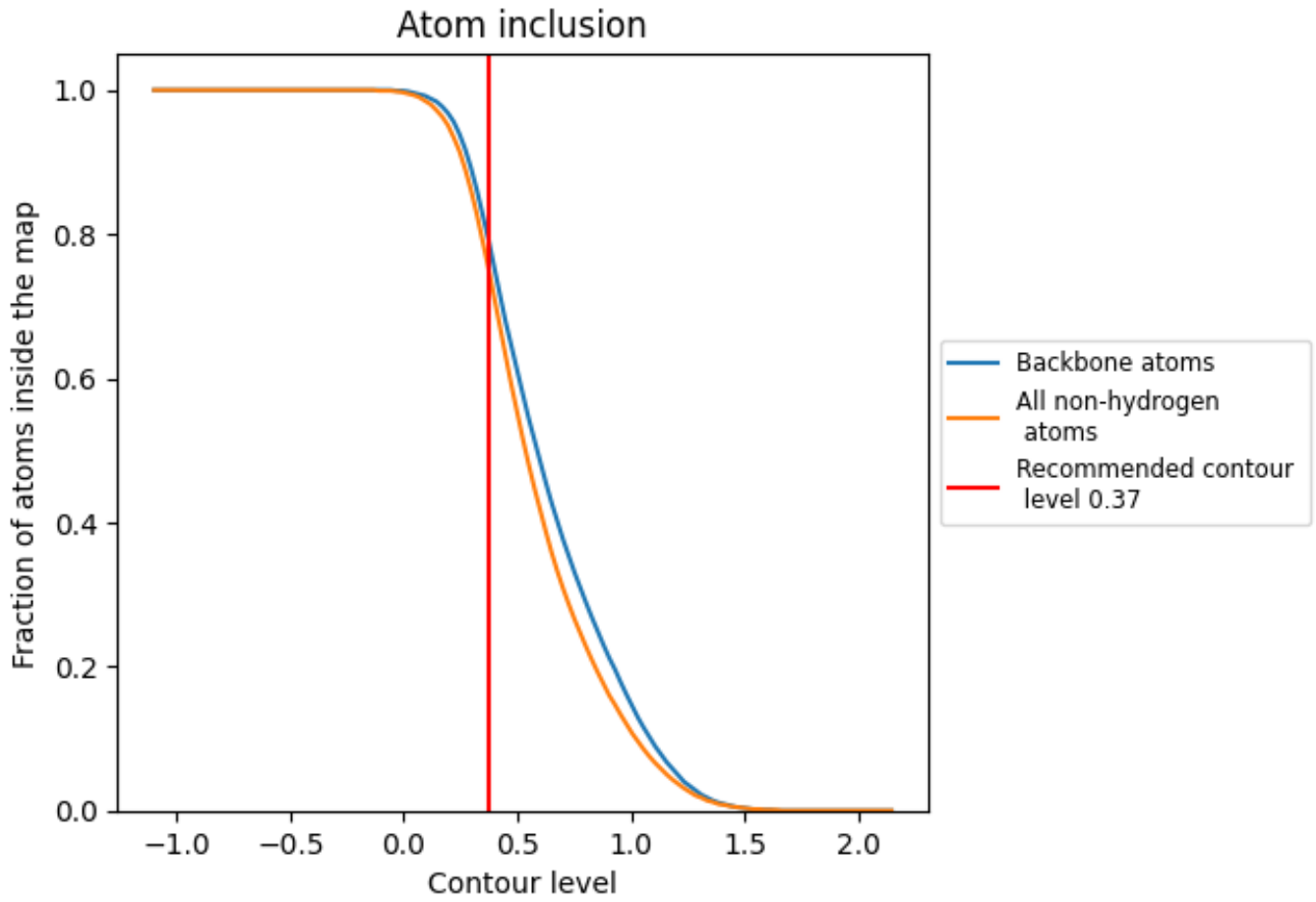
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.37).

9.4 Atom inclusion (i)



At the recommended contour level, 80% of all backbone atoms, 76% 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 (0.37) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7550	0.1920
1	0.6780	0.2120
2	0.7950	0.1810
3	0.6740	0.2640
4	0.9860	0.3870
A	0.8190	0.2900
B	0.9440	0.2580
C	0.8620	0.2950
D	0.2740	0.0240
E	0.9100	0.2900
F	0.9610	0.3000
G	0.7620	0.1640
H	0.9120	0.1490
I	0.8920	0.1500
J	0.8430	0.1950
K	0.9520	0.2010
L	0.8500	0.2470
M	0.8040	0.2660
N	0.8740	0.3000
O	0.8590	0.2530
P	0.7430	0.2680
Q	0.4580	0.0290
R	0.8280	0.3040
S	0.8900	0.2590
T	0.9120	0.3710
U	0.9180	0.2580
V	0.8400	0.2200
W	0.8180	0.2180
Y	0.6650	0.0970
Z	0.8400	0.2360
a	0.7800	0.1570
b	0.7990	0.1220
c	0.8970	0.0790
d	0.7990	0.0610
e	0.7010	0.0590

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Chain	Atom inclusion	Q-score
f	0.7170	0.0680
g	0.5610	0.0740
h	0.7390	0.0730
i	0.6150	0.0230
j	0.8330	0.0500
k	0.7490	0.0550
l	0.6900	0.0660
m	0.9190	0.1090
n	0.7640	0.0740
o	0.8050	0.0720
p	0.8980	0.0790
q	0.6060	0.0700
r	0.9400	0.1470
s	0.4960	0.1050
t	0.4110	0.0150
u	0.9030	0.2540
v	0.7860	0.1330
w	0.8720	0.1370
x	0.4110	0.0800
y	0.8210	0.0850
z	0.5410	0.1300