Full wwPDB EM Validation Report ⓘ

Mar 20, 2024 – 09:01 AM JST

PDB ID	:	6LQV
EMDB ID	:	EMD-0955
Title	:	Cryo-EM structure of 90S small subunit preribosomes in transition states (State C1)
Authors	:	Du, Y.; Ye, K.
Deposited on	:	2020-01-14
Resolution	:	4.80 Å(reported)
Based on initial model	:	6LQR

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 ①) were used in the production of this report:

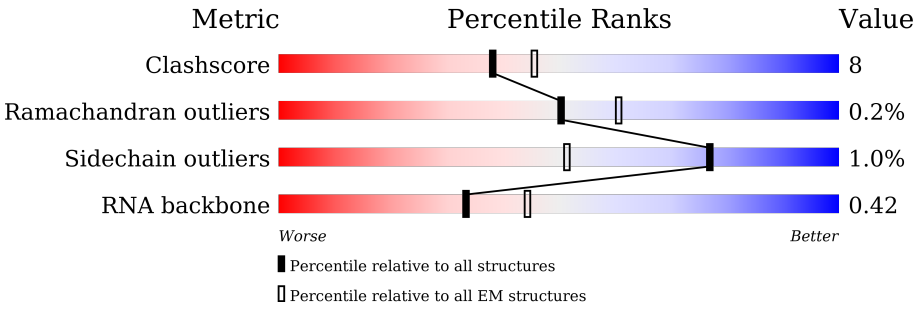
EMDB validation analysis	:	0.0.1.dev70
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry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

1 Overall quality at a glance

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

The reported resolution of this entry is 4.80 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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

Mol	Chain	Length	Quality of chain
1	3A	333	5% 28% 18% 5% • 47%
2	5A	700	13% 14% 8% • 76%
3	SA	1808	18% 23% 22% 6% • 47%
4	SF	261	25% 62% 25% • 12%
5	SG	225	6% 82% 13% 5%
6	SH	236	39% 56% 15% 29%
7	SJ	200	39% 55% 27% • 17%

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Mol	Chain	Length	Quality of chain
8	SK	197	8% 76% 11% 13%
9	SM	156	32% 53% 26% 21%
10	SR	143	71% 16% 13%
11	SY	145	10% 63% 7% 29%
12	SZ	135	10% 59% 15% 24%
13	Sd	67	7% 94% 6%
14	3B	327	11% 61% 13% 27%
14	3C	327	41% 51% 17% 31%
15	3D	504	9% 60% 13% 27%
16	3E	511	35% 67% 17% 16%
17	3F	573	7% 61% 18% 21%
18	3G	126	28% 80% 16%
18	3H	126	76% 19%
19	A4	776	43% 65% 19% 15%
20	A5	643	31% 65% 14% 20%
21	A8	713	56% 62% 10% 25%
22	A9	575	16% 17% 5% 78%
23	AE	1769	63% 77% 9% 13%
24	AF	513	53% 75% 21%
25	AG	896	47% 71% 20% 8%
26	B1	923	9% 70% 15% 14%
27	B2	943	15% 66% 21% 13%
28	B3	817	72% 66% 25% 7%
29	B8	594	10% 66% 14% 20%
30	BE	939	6% 73% 14% 13%

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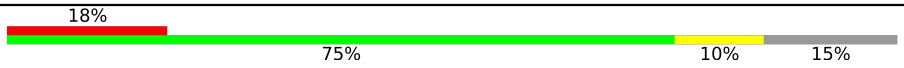
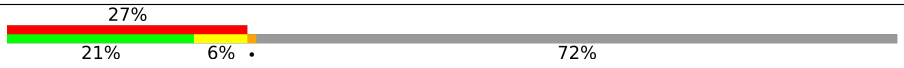
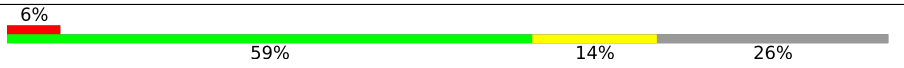
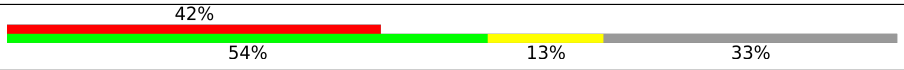
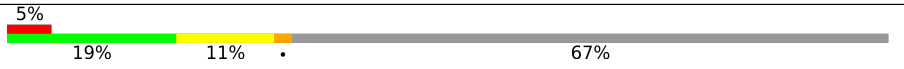
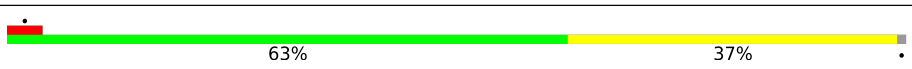
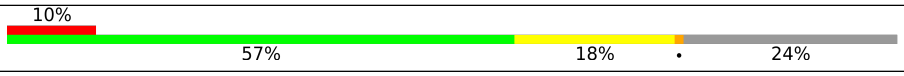
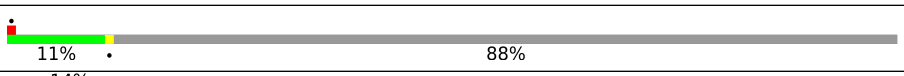
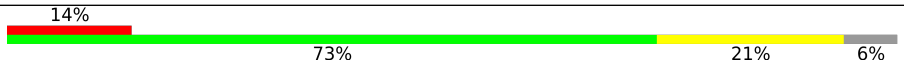
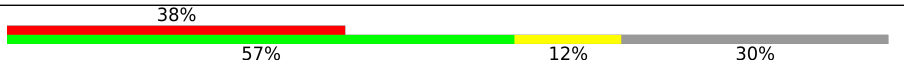
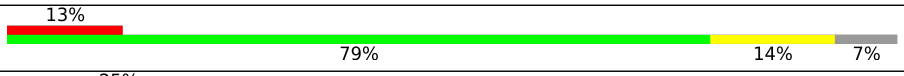
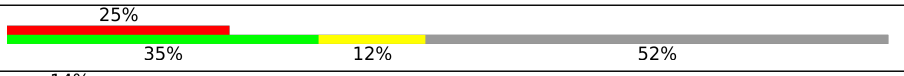
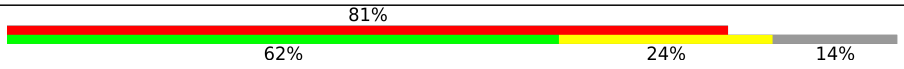
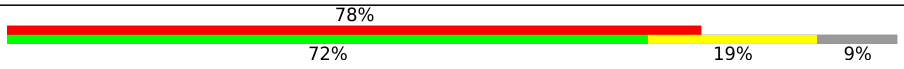
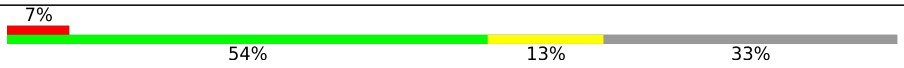
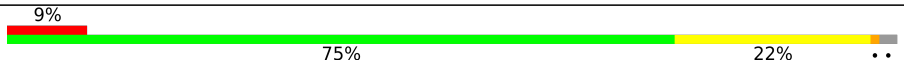
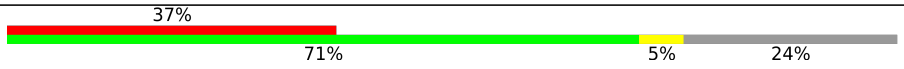
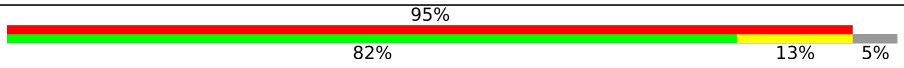
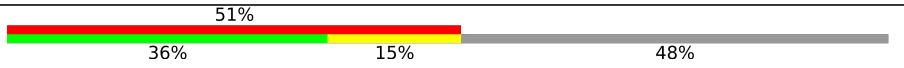
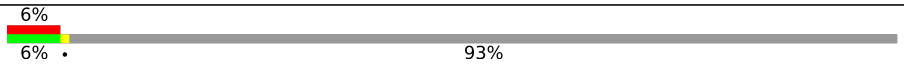
Mol	Chain	Length	Quality of chain
31	B6	440	
32	5B	214	
33	5C	554	
34	5D	250	
35	5E	593	
36	5F	183	
37	5G	290	
38	5H	610	
39	5I	489	
40	5J	217	
41	5K	189	
42	RA	707	
43	RB	357	
44	RG	252	
44	RH	252	
45	RJ	1183	
46	RK	367	
47	RL	1056	
47	RM	1056	
48	RN	810	
49	RO	552	
50	RP	2493	
51	RQ	899	
52	RS	483	
53	RY	534	

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Mol	Chain	Length	Quality of chain
54	X1	347	98%

2 Entry composition

There are 57 unique types of molecules in this entry. The entry contains 181752 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called U3 snoRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	3A	175	3711	1661	648	1227	175	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	5A	171	3668	1637	666	1194	171	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	SA	950	20256	9055	3612	6639	950	0	0

- Molecule 4 is a protein called 40S ribosomal protein S4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	SF	229	1815	1161	331	320	3	0	0

- Molecule 5 is a protein called 40S ribosomal protein S5.

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

- Molecule 6 is a protein called 40S ribosomal protein S6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	SH	167	1327	834	256	235	2	0	0

- Molecule 7 is a protein called 40S ribosomal protein S8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	SJ	166	Total	C	N	O	S	0	0
			1324	824	262	236	2		

- Molecule 8 is a protein called 40S ribosomal protein S9-A.

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

- Molecule 9 is a protein called 40S ribosomal protein S11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	SM	123	Total	C	N	O	S	0	0
			997	641	189	164	3		

- Molecule 10 is a protein called 40S ribosomal protein S16-A.

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

- Molecule 11 is a protein called 40S ribosomal protein S23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	SY	103	Total	C	N	O	S	0	0
			786	503	144	137	2		

- Molecule 12 is a protein called 40S ribosomal protein S24-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
12	SZ	102	Total	C	N	O	0	0
			809	517	148	144		

- Molecule 13 is a protein called 40S ribosomal protein S28-A.

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

- Molecule 14 is a protein called rRNA 2'-O-methyltransferase fibrillarin.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	3B	240	Total	C	N	O	S	0	0
			1865	1184	333	338	10		
14	3C	225	Total	C	N	O	S	0	0
			1763	1120	316	317	10		

- Molecule 15 is a protein called Nucleolar protein 56.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	3D	369	Total	C	N	O	S	0	0
			2848	1811	489	540	8		

- Molecule 16 is a protein called Nucleolar protein 58.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	3E	431	Total	C	N	O	S	0	0
			3028	1888	543	588	9		

- Molecule 17 is a protein called Ribosomal RNA-processing protein 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	3F	454	Total	C	N	O	S	0	0
			3643	2315	638	680	10		

- Molecule 18 is a protein called 13 kDa ribonucleoprotein-associated protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	3G	121	Total	C	N	O	S	0	0
			916	583	158	171	4		
18	3H	121	Total	C	N	O	S	0	0
			916	583	158	171	4		

- Molecule 19 is a protein called U3 small nucleolar RNA-associated protein 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	A4	662	Total	C	N	O	S	0	0
			5226	3309	910	986	21		

- Molecule 20 is a protein called U3 small nucleolar RNA-associated protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	A5	514	Total	C	N	O	S	0	0
			3976	2520	688	755	13		

- Molecule 21 is a protein called U3 small nucleolar RNA-associated protein 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	A8	532	Total	C	N	O	S	0	0
			3229	2008	592	626	3		

- Molecule 22 is a protein called U3 small nucleolar RNA-associated protein 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	A9	128	Total	C	N	O	S	0	0
			939	594	173	170	2		

- Molecule 23 is a protein called U3 small nucleolar RNA-associated protein 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	AE	1534	Total	C	N	O	S	0	0
			9955	6242	1771	1923	19		

- Molecule 24 is a protein called U3 small nucleolar RNA-associated protein 15.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	AF	493	Total	C	N	O	S	0	0
			3911	2462	702	735	12		

- Molecule 25 is a protein called NET1-associated nuclear protein 1.

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

- Molecule 26 is a protein called Periodic tryptophan protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	B1	793	Total	C	N	O	S	0	0
			6331	4046	1085	1182	18		

- Molecule 27 is a protein called U3 small nucleolar RNA-associated protein 12.

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

- Molecule 28 is a protein called U3 small nucleolar RNA-associated protein 13.

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

- Molecule 29 is a protein called U3 small nucleolar RNA-associated protein 18.

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

- Molecule 30 is a protein called U3 small nucleolar RNA-associated protein 21.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	BE	820	Total	C	N	O	S	0	0
			6450	4090	1114	1225	21		

- Molecule 31 is a protein called U3 small nucleolar RNA-associated protein 6.

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

- Molecule 32 is a protein called Bud site selection protein 21.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	5B	60	Total	C	N	O	0	0
			495	310	101	84		

- Molecule 33 is a protein called U3 small nucleolar RNA-associated protein 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	5C	409	Total	C	N	O	S	0	0
			3198	2020	559	608	11		

- Molecule 34 is a protein called U3 small nucleolar RNA-associated protein 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	5D	167	Total	C	N	O	S	0	0
			1396	862	266	263	5		

- Molecule 35 is a protein called U3 small nucleolar RNA-associated protein MPP10.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	5E	193	Total	C	N	O	S	0	0
			1564	970	280	310	4		

- Molecule 36 is a protein called U3 small nucleolar ribonucleoprotein protein IMP3.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	5F	182	Total	C	N	O	S	0	0
			1530	967	287	269	7		

- Molecule 37 is a protein called U3 small nucleolar ribonucleoprotein protein IMP4.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	5G	219	Total	C	N	O	S	0	0
			1756	1107	325	318	6		

- Molecule 38 is a protein called Something about silencing protein 10.

Mol	Chain	Residues	Atoms				AltConf	Trace
38	5H	74	Total	C	N	O	0	0
			596	373	122	101		

- Molecule 39 is a protein called Protein SOF1.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	5I	461	Total	C	N	O	S	0	0
			3765	2354	686	709	16		

- Molecule 40 is a protein called rRNA-processing protein FCF2.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	5J	151	Total	C	N	O	S	0	0
			1280	807	240	228	5		

- Molecule 41 is a protein called rRNA-processing protein FCF1.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	5K	175	Total	C	N	O	S	0	0
			1403	896	256	241	10		

- Molecule 42 is a protein called Ribosome biogenesis protein ENP2.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	RA	338	Total	C	N	O	S	0	0
			2709	1713	463	524	9		

- Molecule 43 is a protein called U3 small nucleolar ribonucleoprotein protein LCP5.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	RB	134	Total	C	N	O	S	0	0
			1108	664	227	214	3		

- Molecule 44 is a protein called Ribosomal RNA small subunit methyltransferase NEP1.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	RG	216	Total	C	N	O	S	0	0
			1701	1079	296	315	11		
44	RH	230	Total	C	N	O	S	0	0
			1799	1142	313	333	11		

- Molecule 45 is a protein called Ribosome biogenesis protein BMS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	RJ	796	Total	C	N	O	S	0	0
			6379	4086	1136	1128	29		

- Molecule 46 is a protein called RNA 3'-terminal phosphate cyclase-like protein.

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

- Molecule 47 is a protein called RNA cytidine acetyltransferase.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	RL	805	Total	C	N	O	S	0	0
			4539	2760	885	887	7		
47	RM	766	Total	C	N	O		0	0
			3779	2247	766	766			

- Molecule 48 is a protein called Nucleolar complex protein 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	RN	607	Total	C	N	O	S	0	0
			4529	2861	820	837	11		

- Molecule 49 is a protein called Nucleolar complex protein 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	RO	525	Total	C	N	O	S	0	0
			3766	2412	646	696	12		

- Molecule 50 is a protein called U3 small nucleolar RNA-associated protein 20.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	RP	1554	Total	C	N	O	S	0	0
			8510	5201	1624	1679	6		

- Molecule 51 is a protein called U3 small nucleolar RNA-associated protein 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	RQ	138	Total	C	N	O	S	0	0
			974	598	183	192	1		

- Molecule 52 is a protein called Essential nuclear protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	RS	251	Total	C	N	O	S	0	0
			2051	1340	349	359	3		

- Molecule 53 is a protein called Protein BFR2.

Mol	Chain	Residues	Atoms				AltConf	Trace
53	RY	37	Total	C	N	O	0	0
			299	191	48	60		

- Molecule 54 is a protein called Unassigned helices.

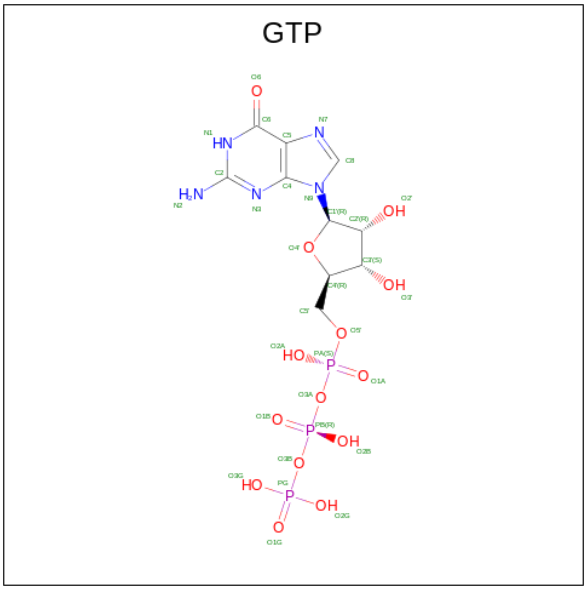
Mol	Chain	Residues	Atoms				AltConf	Trace
54	X1	8	Total	C	N	O	0	0
			40	24	8	8		

- Molecule 55 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
55	5K	1	Total	Zn	0
			1	1	

- Molecule 56 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula:

$C_{10}H_{16}N_5O_{14}P_3$).



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

- Molecule 57 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

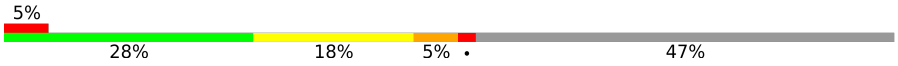
Mol	Chain	Residues	Atoms		AltConf
57	RJ	1	Total	Mg	0
			1	1	

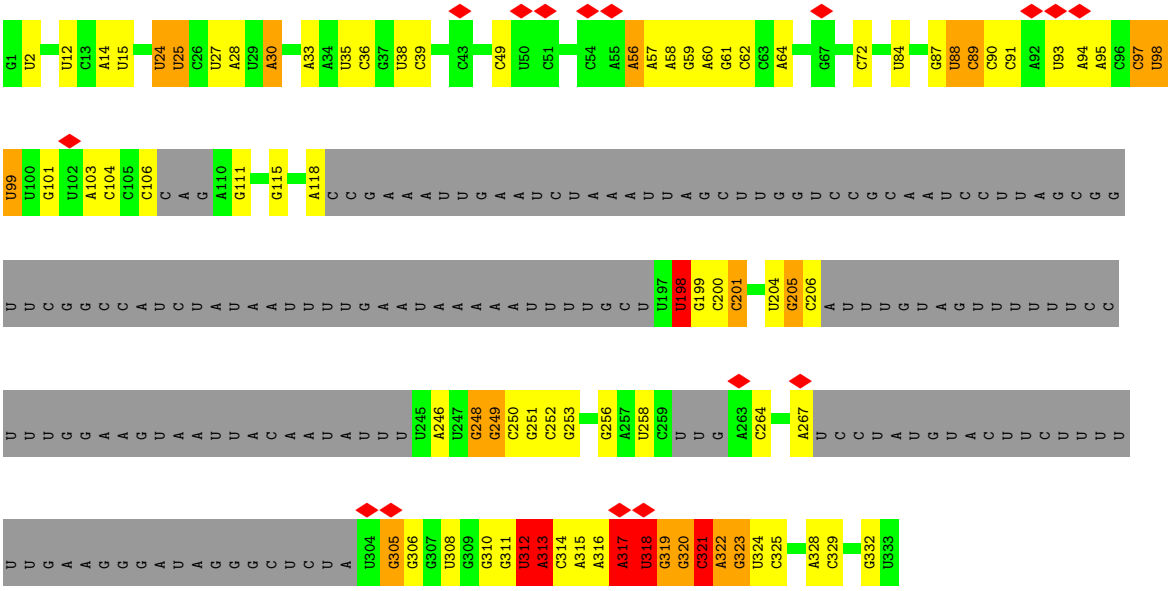
3 Residue-property plots (i)

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

• Molecule 1: U3 snoRNA

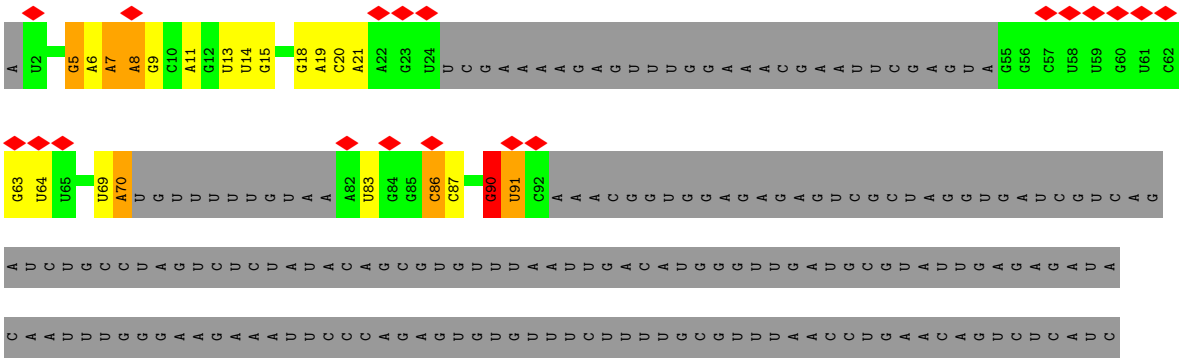
Chain 3A:

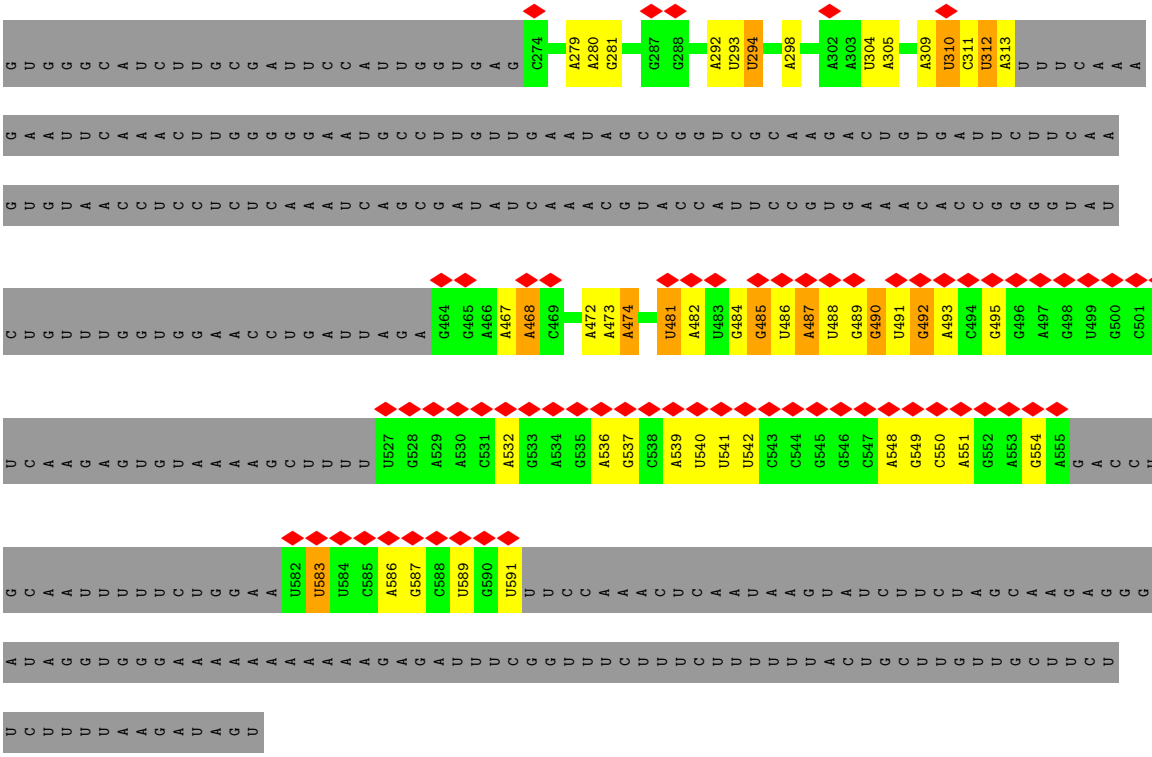




• Molecule 2: 5' ETS

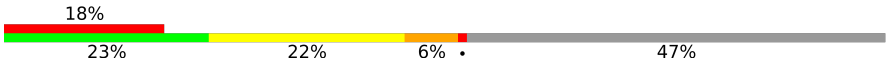
Chain 5A:

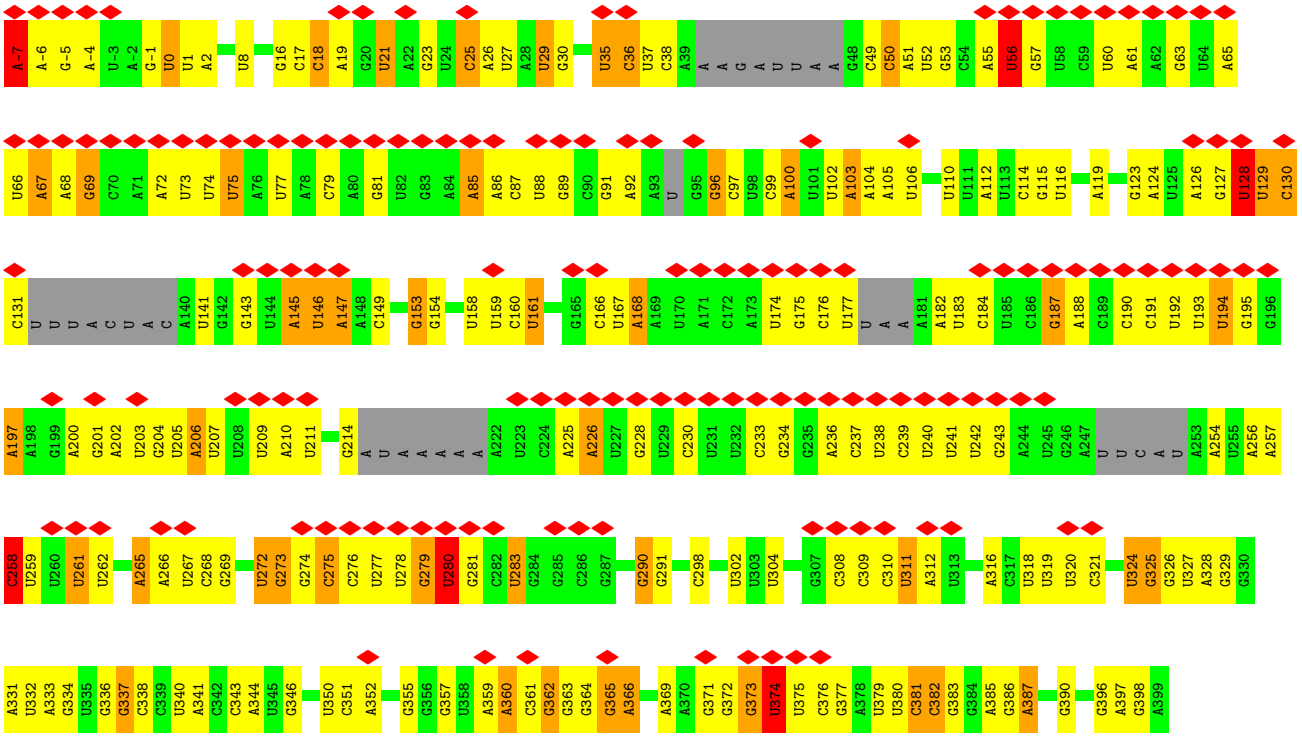


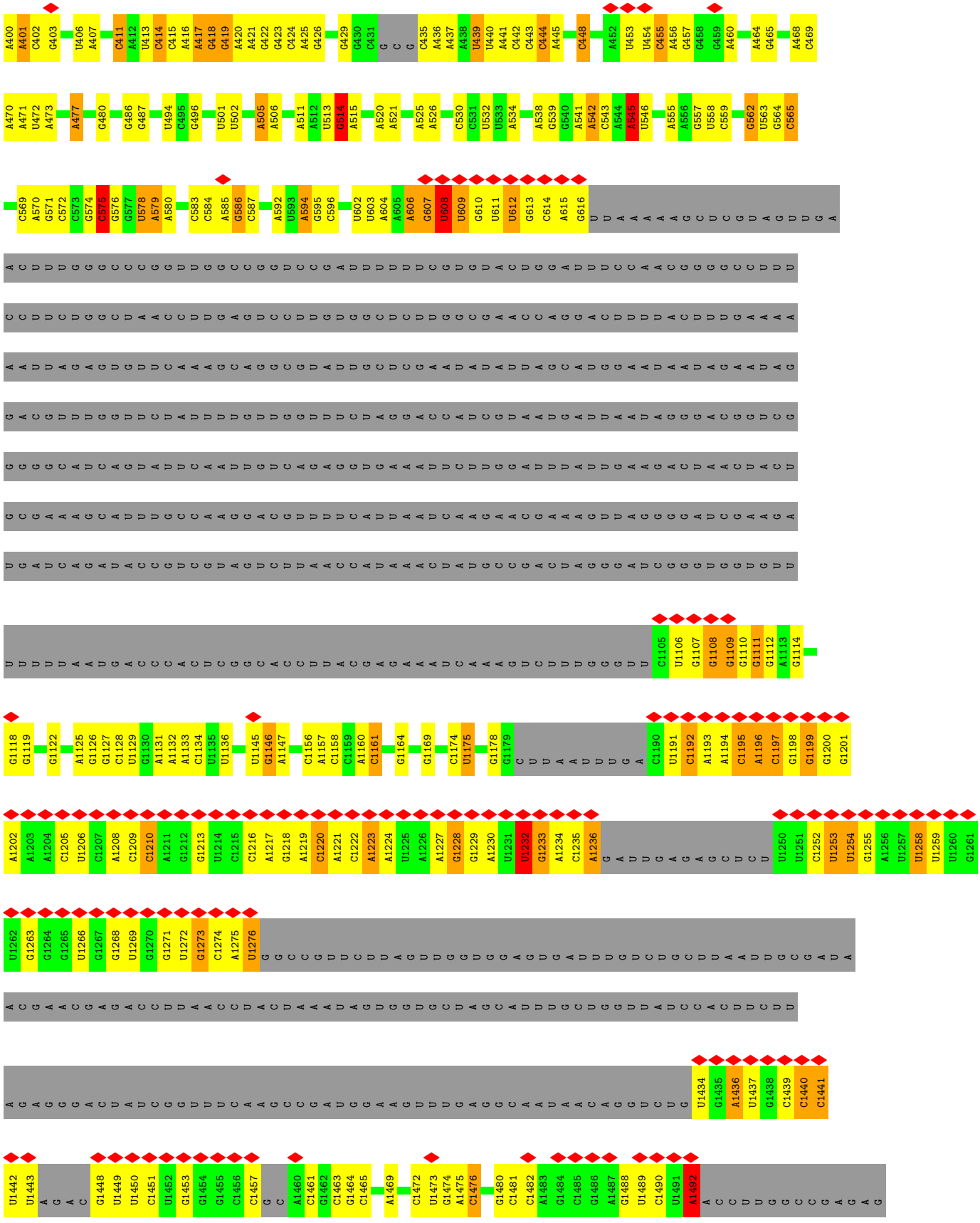


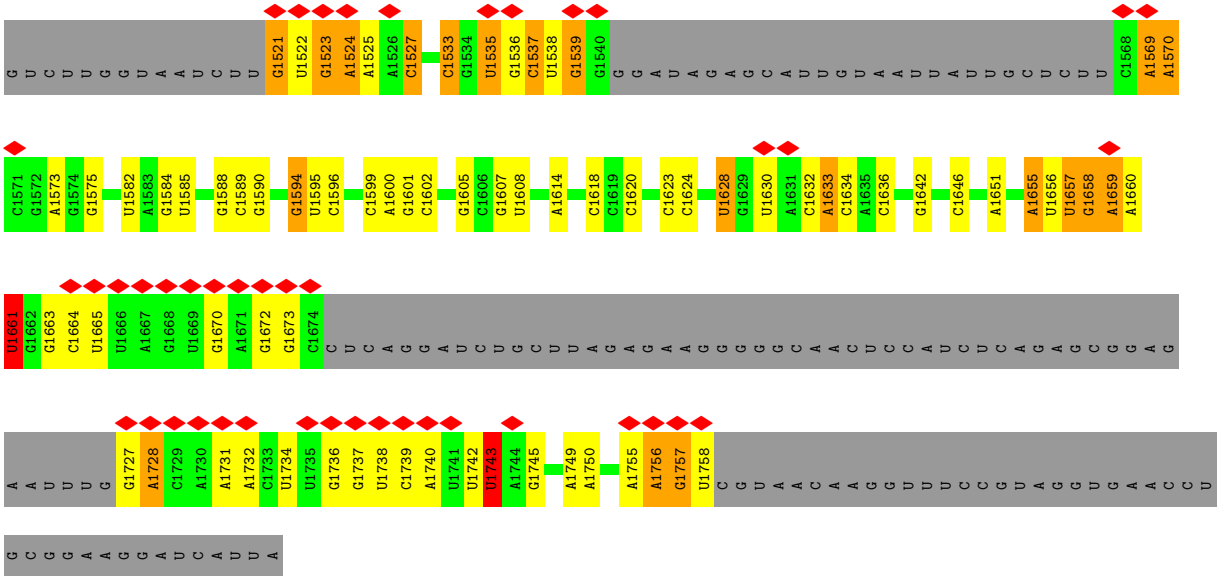
• Molecule 3: 18S pre-rRNA

Chain SA:



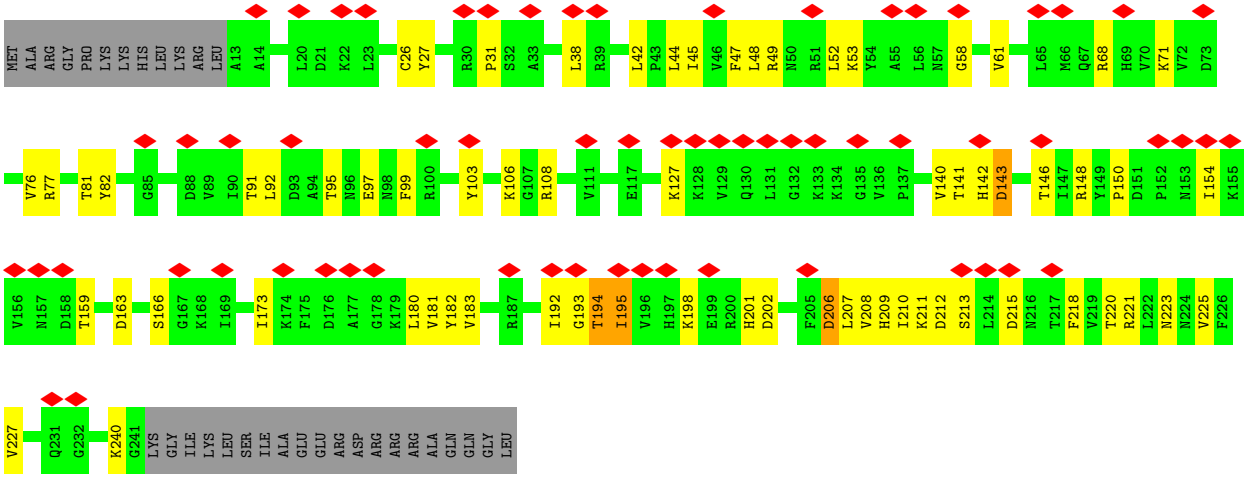






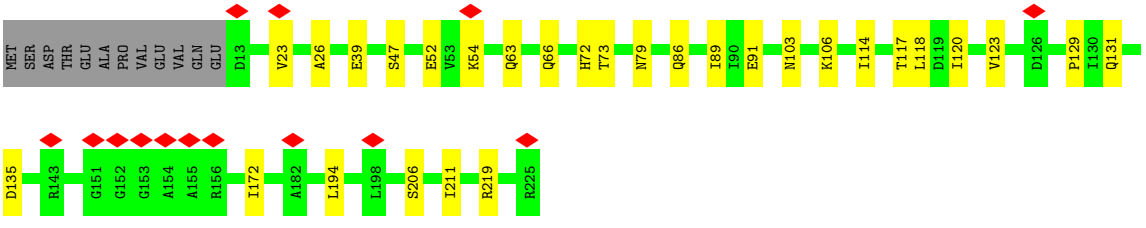
• Molecule 4: 40S ribosomal protein S4-A

Chain SF:



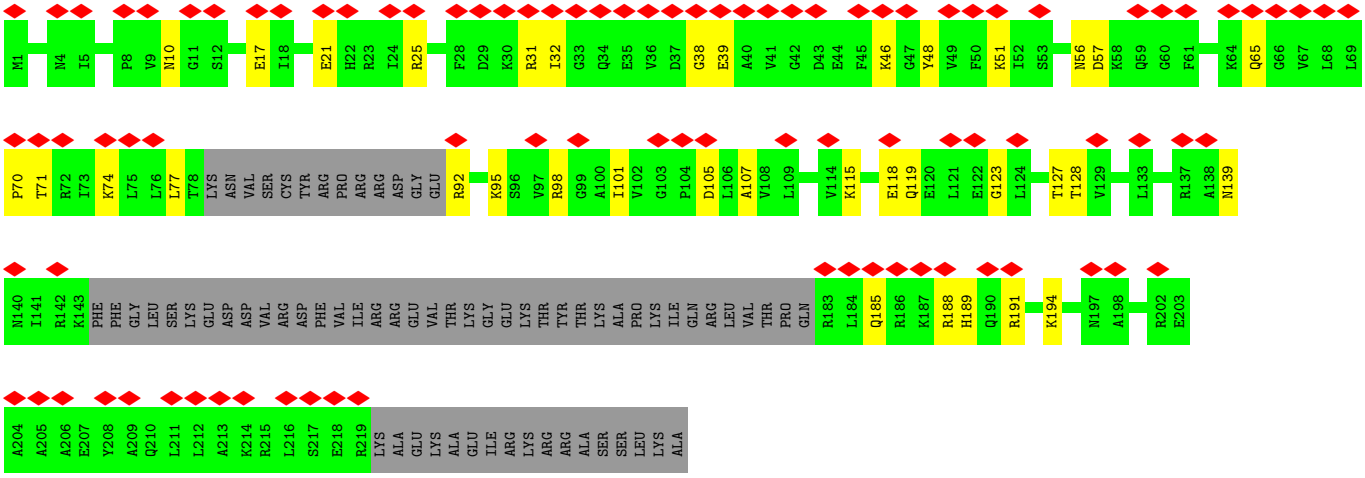
• Molecule 5: 40S ribosomal protein S5

Chain SG:



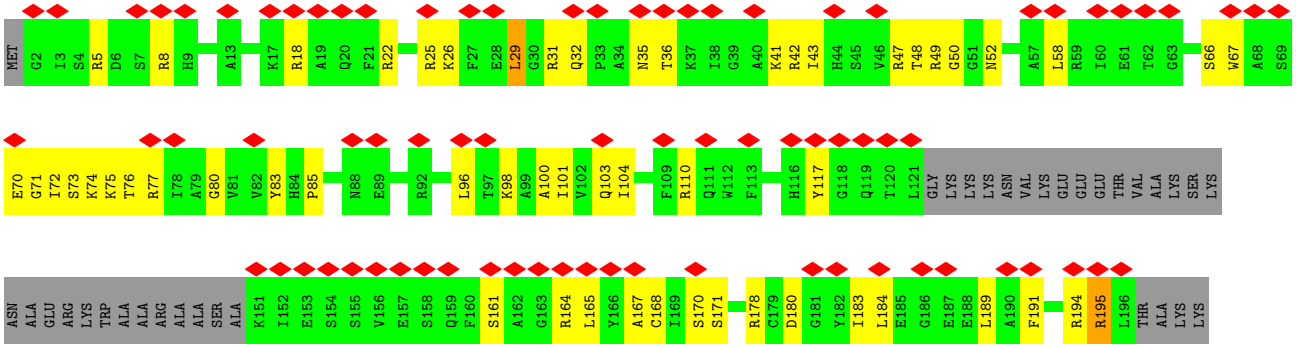
• Molecule 6: 40S ribosomal protein S6-A

Chain SH:



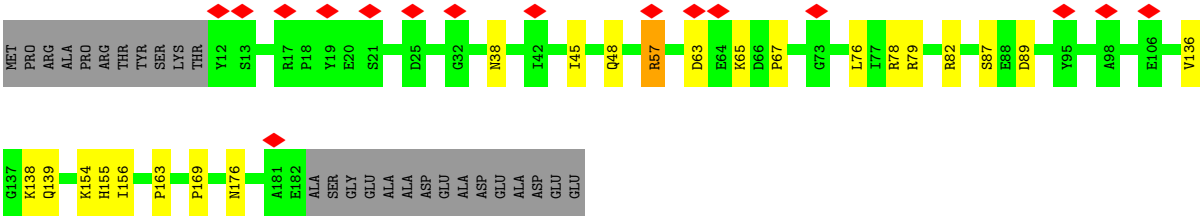
• Molecule 7: 40S ribosomal protein S8-A

Chain SJ:



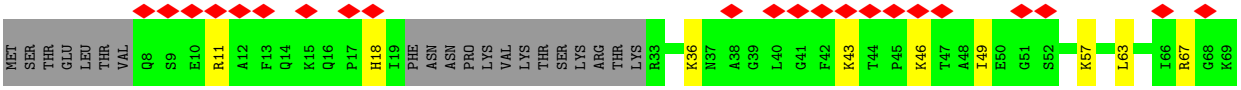
• Molecule 8: 40S ribosomal protein S9-A

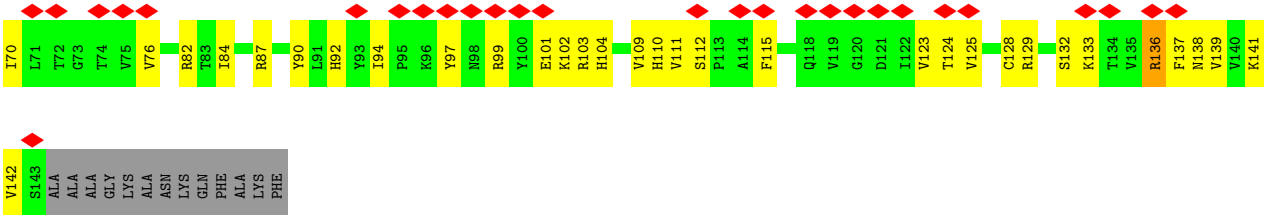
Chain SK:



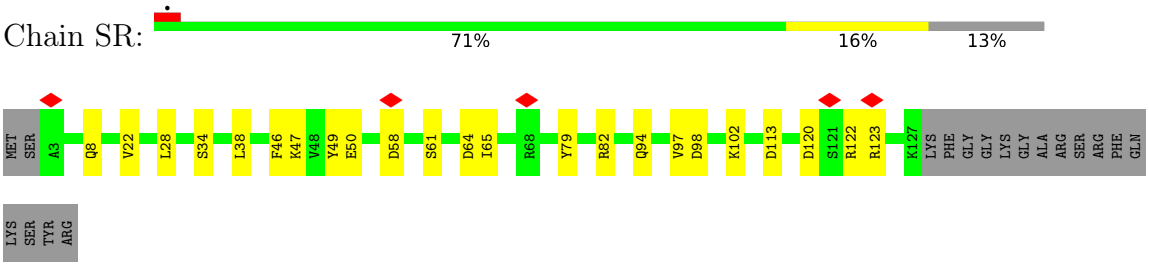
• Molecule 9: 40S ribosomal protein S11-A

Chain SM:

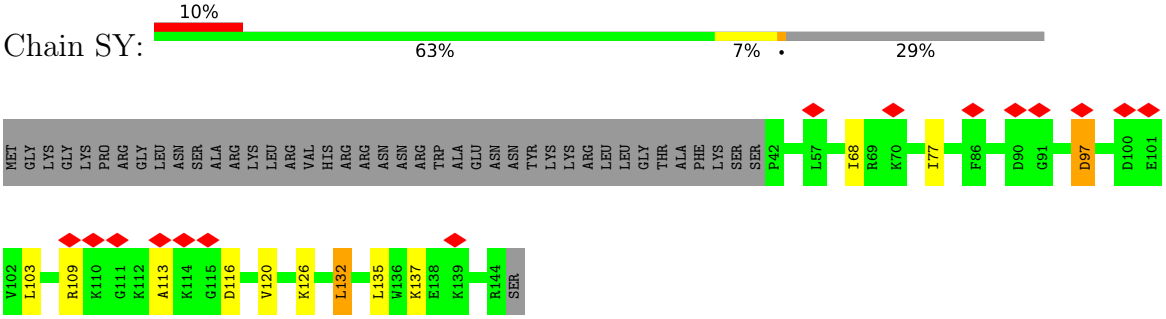




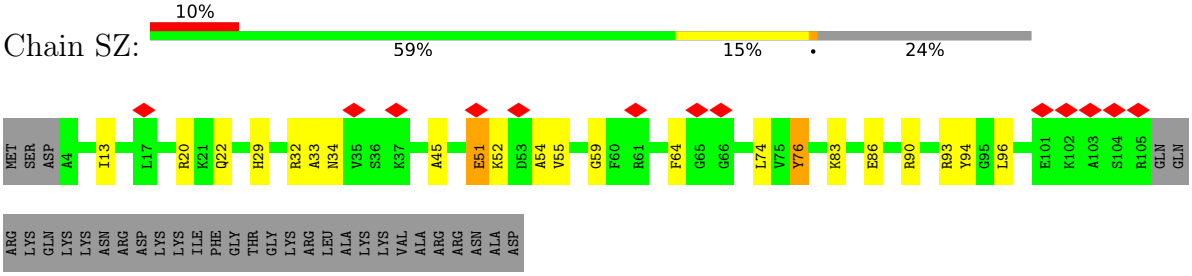
• Molecule 10: 40S ribosomal protein S16-A



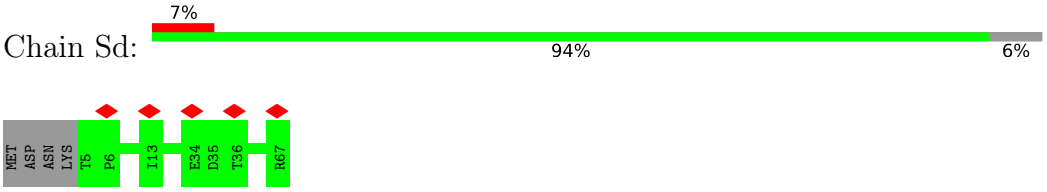
• Molecule 11: 40S ribosomal protein S23-A



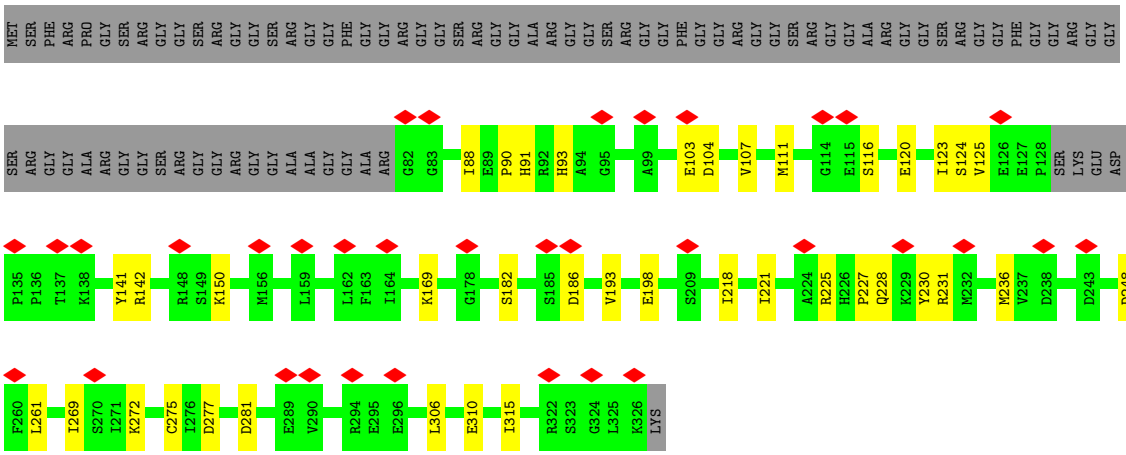
• Molecule 12: 40S ribosomal protein S24-A



• Molecule 13: 40S ribosomal protein S28-A

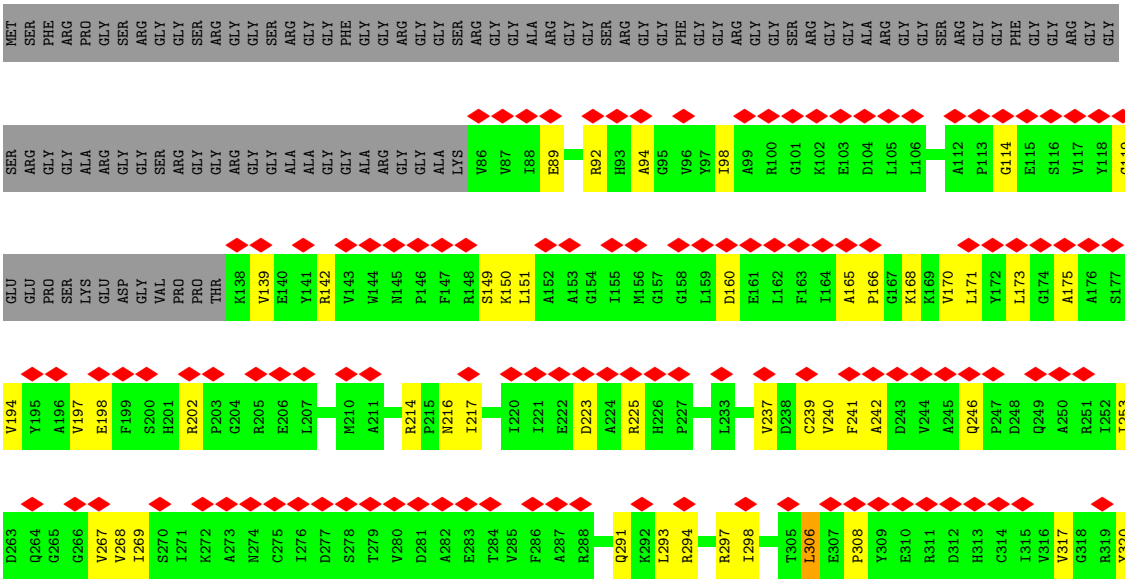


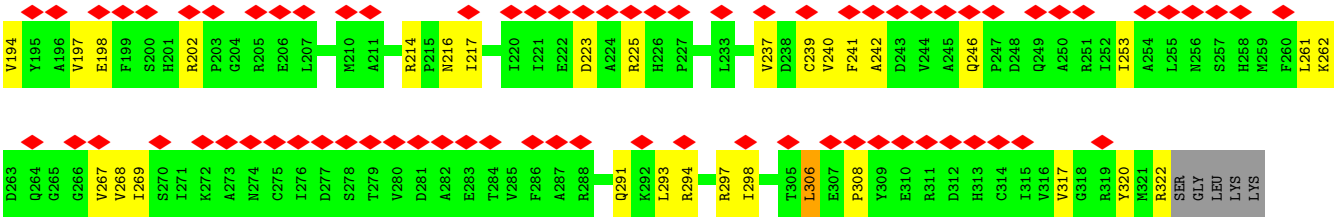
• Molecule 14: rRNA 2'-O-methyltransferase fibrillarin



• Molecule 14: rRNA 2'-O-methyltransferase fibrillarin

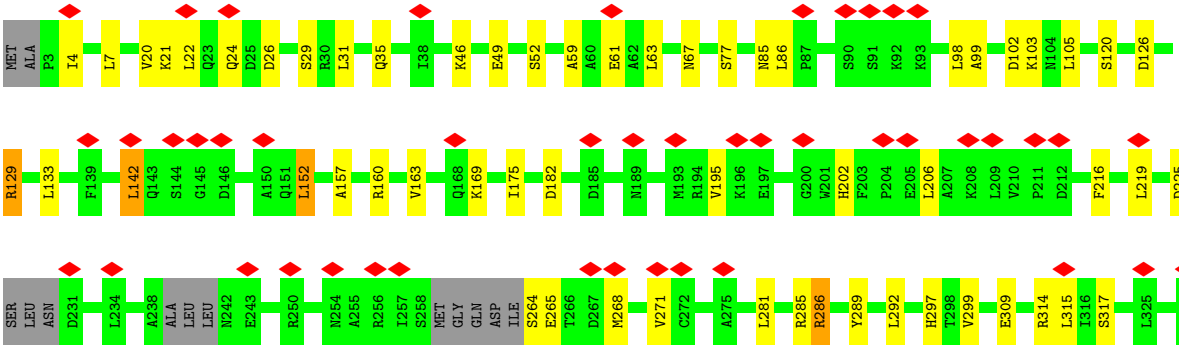
Chain 3C:

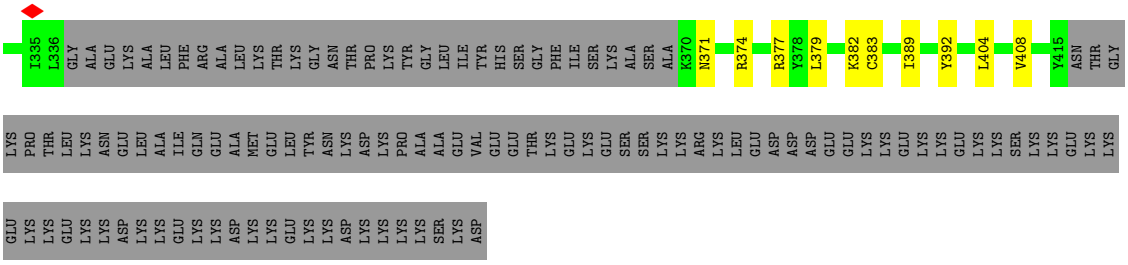




• Molecule 15: Nucleolar protein 56

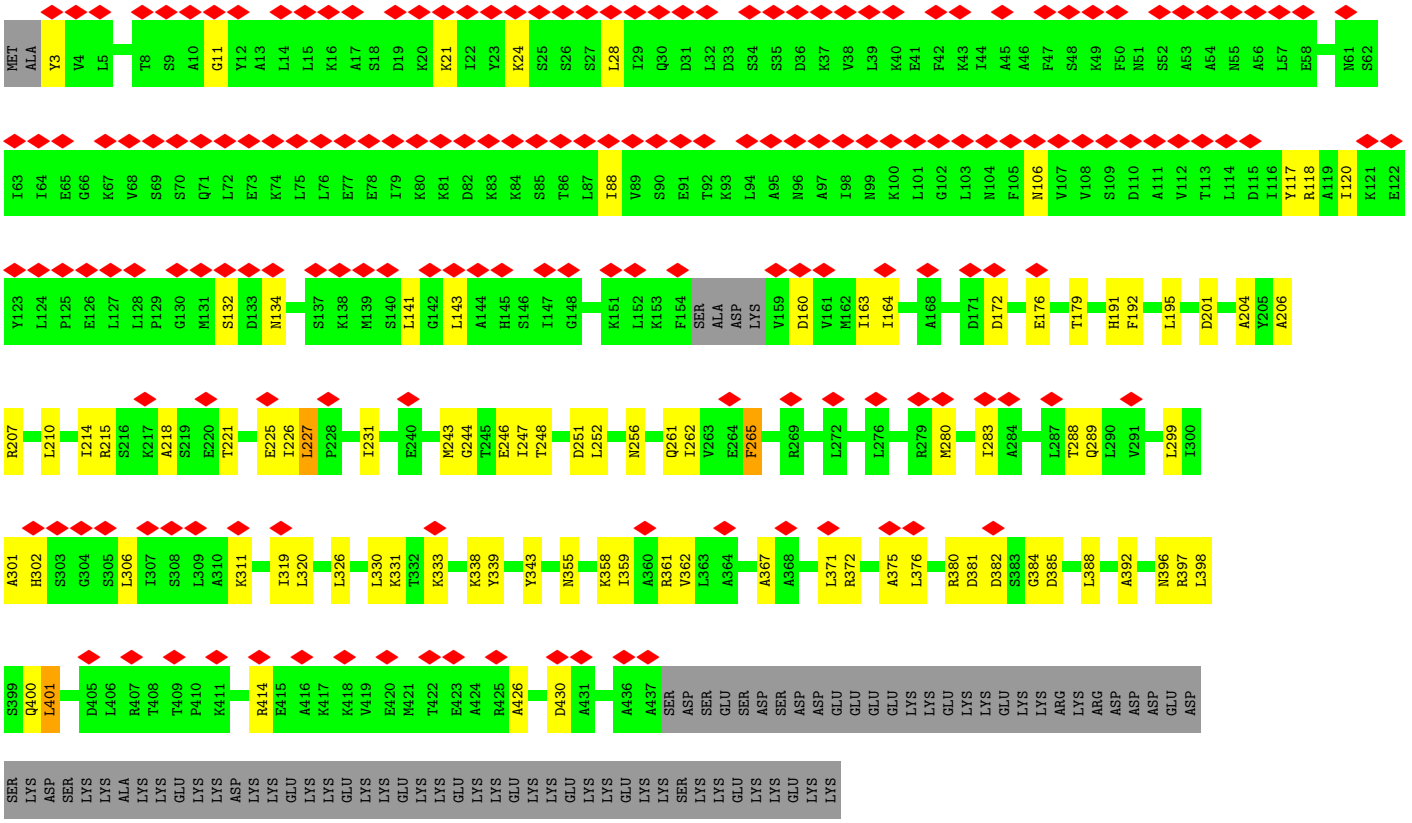
Chain 3D:





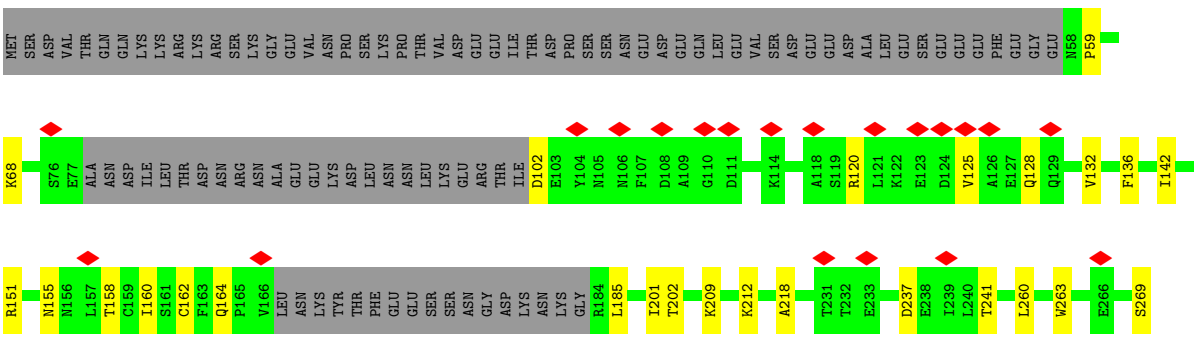
• Molecule 16: Nucleolar protein 58

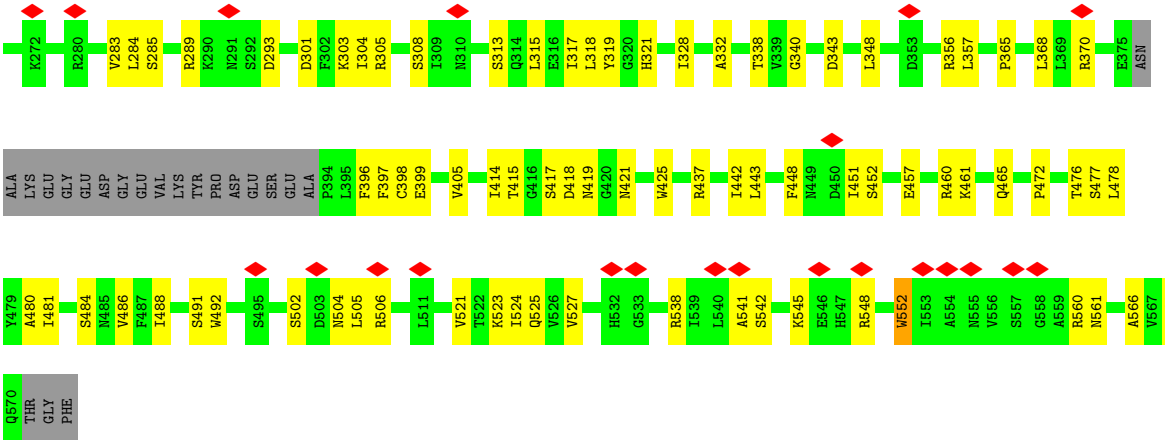
Chain 3E:



• Molecule 17: Ribosomal RNA-processing protein 9

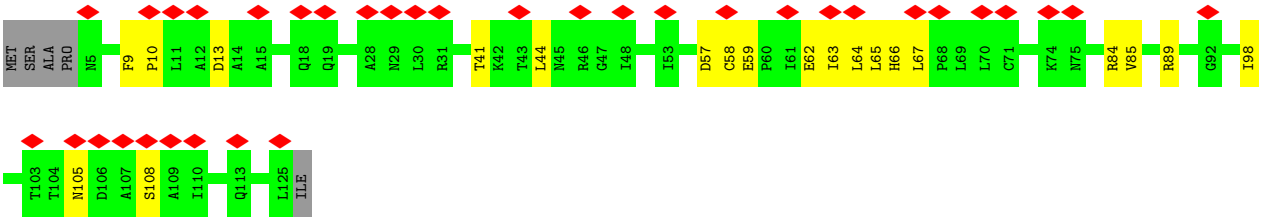
Chain 3F:





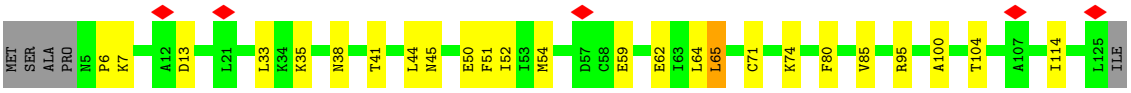
• Molecule 18: 13 kDa ribonucleoprotein-associated protein

Chain 3G:



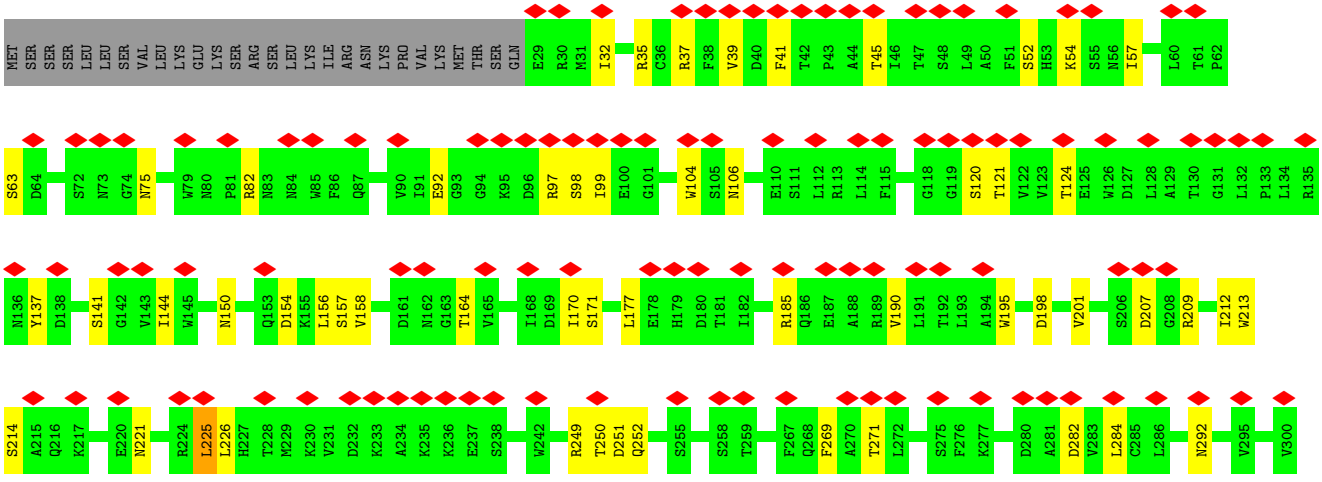
• Molecule 18: 13 kDa ribonucleoprotein-associated protein

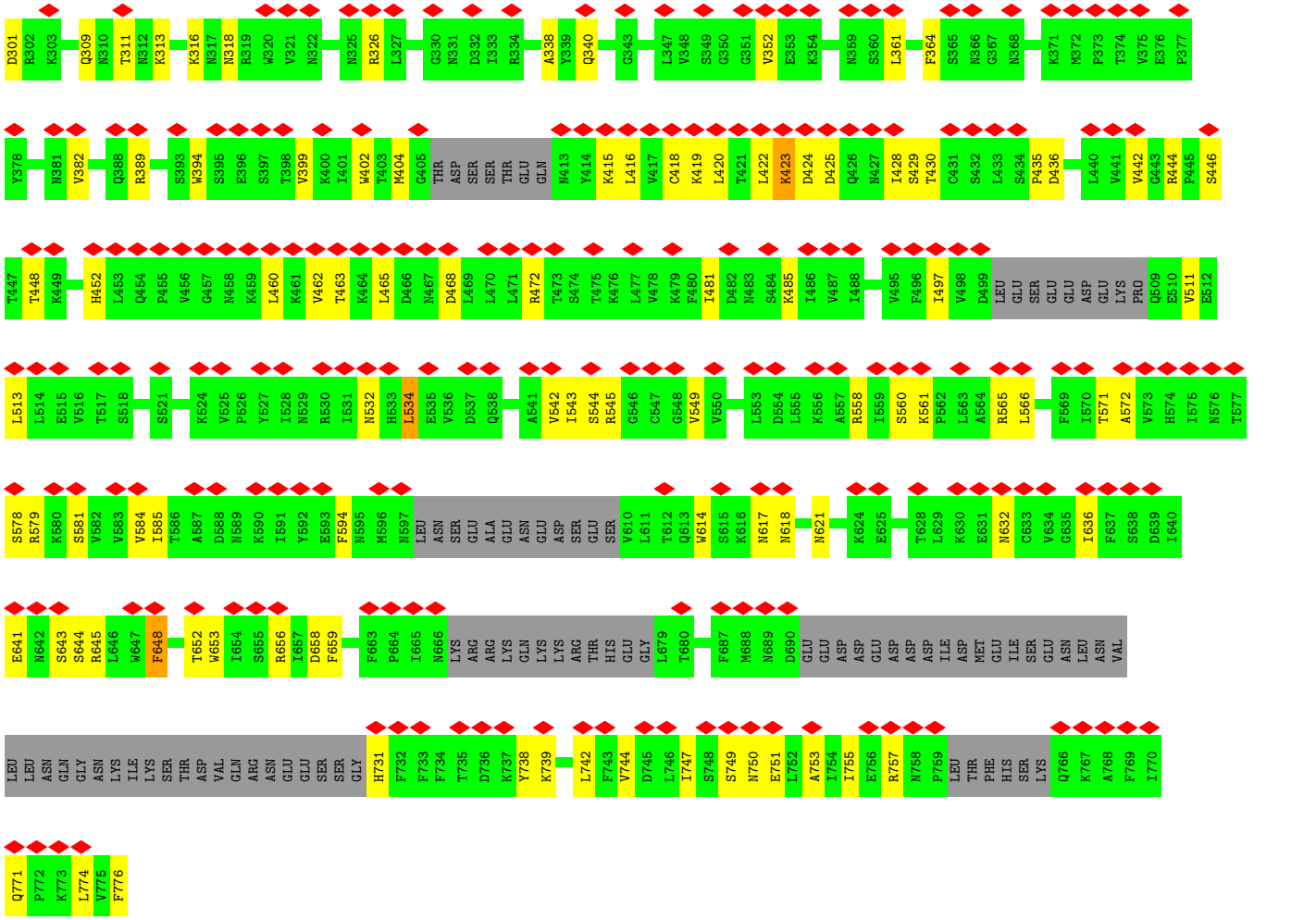
Chain 3H:



• Molecule 19: U3 small nucleolar RNA-associated protein 4

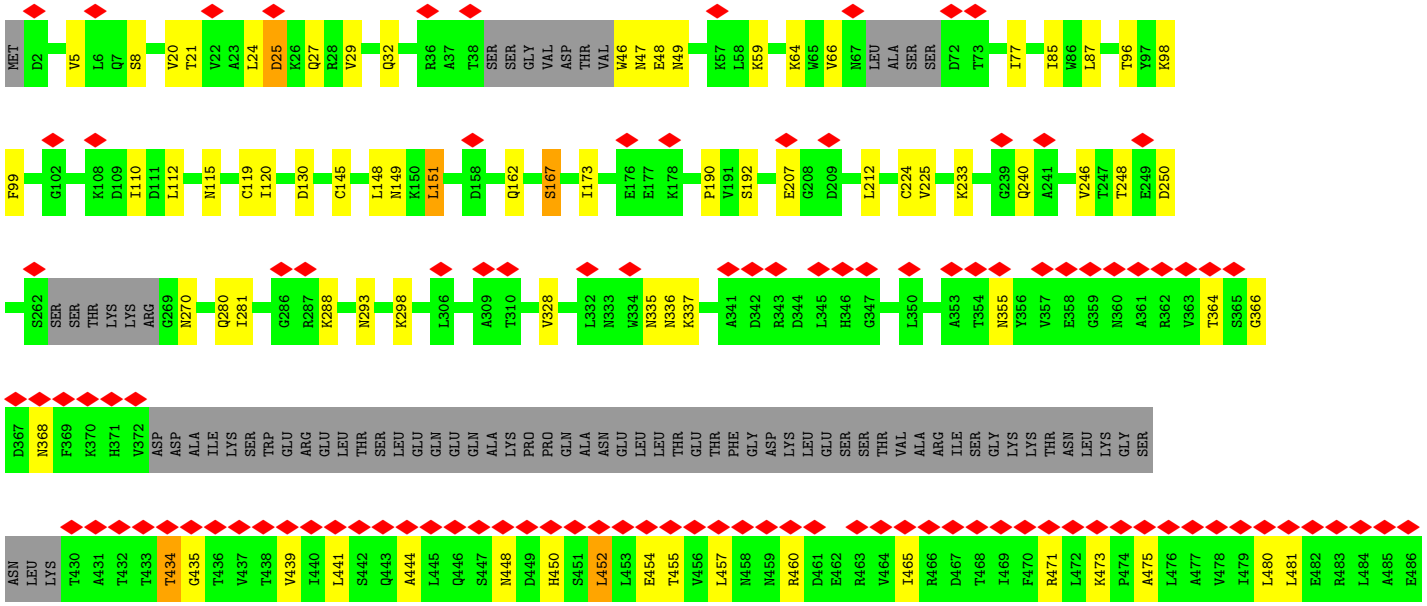
Chain A4:

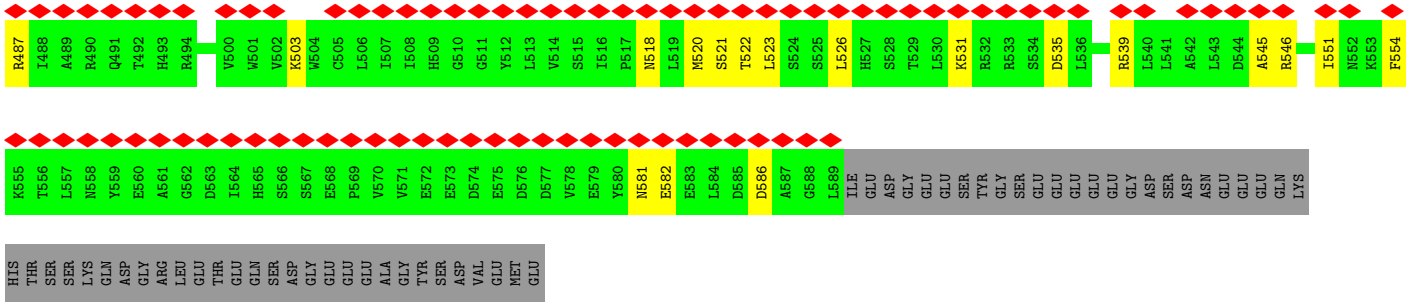




• Molecule 20: U3 small nucleolar RNA-associated protein 5

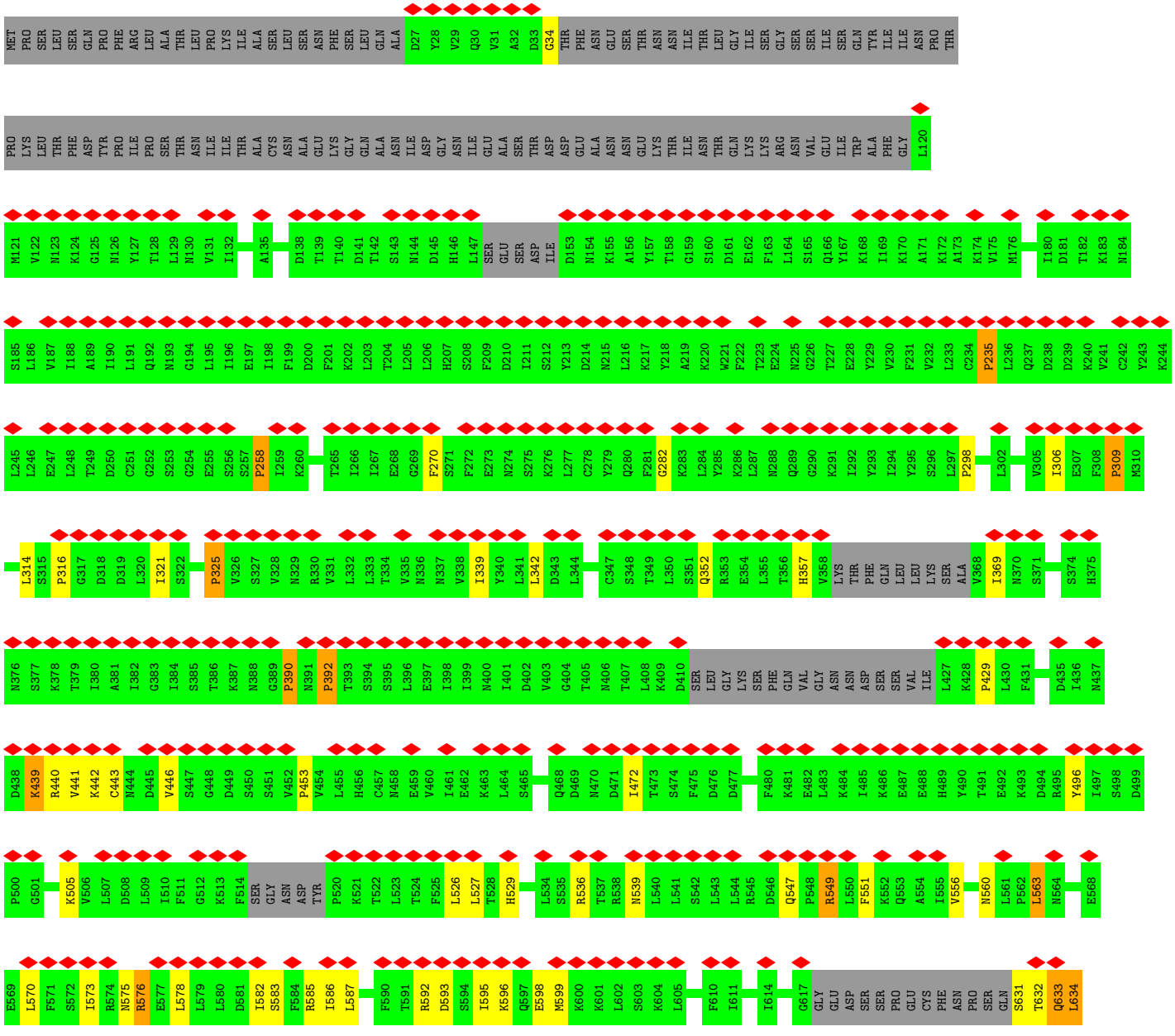
Chain A5:

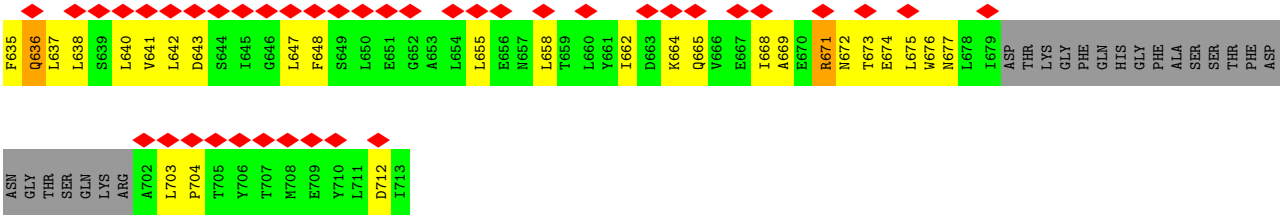




• Molecule 21: U3 small nucleolar RNA-associated protein 8

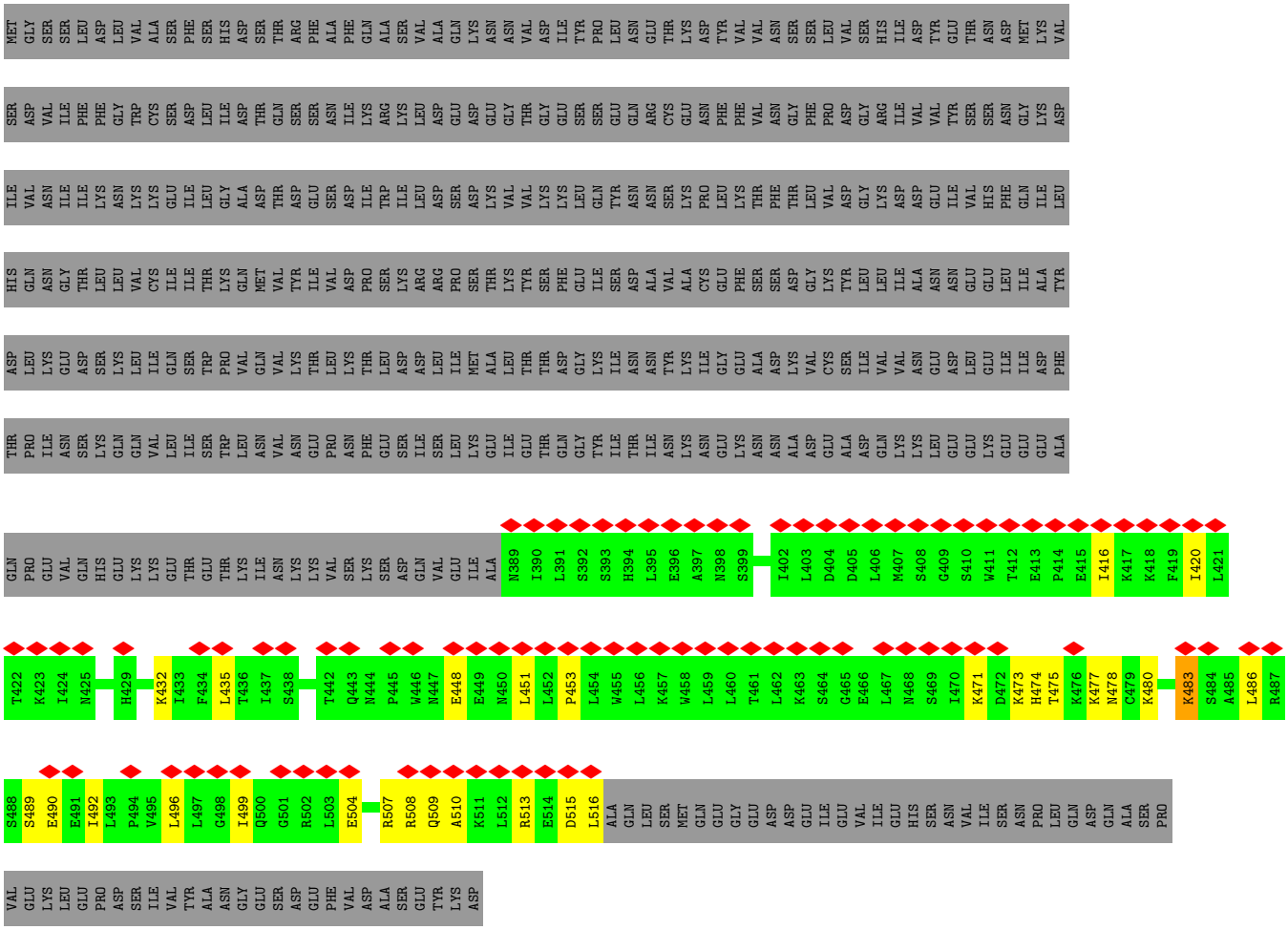
Chain A8:





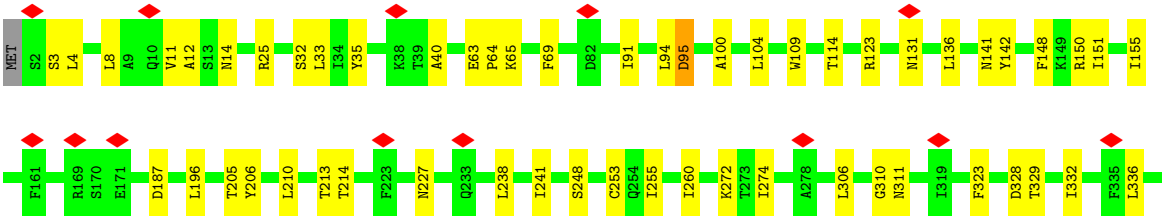
• Molecule 22: U3 small nucleolar RNA-associated protein 9

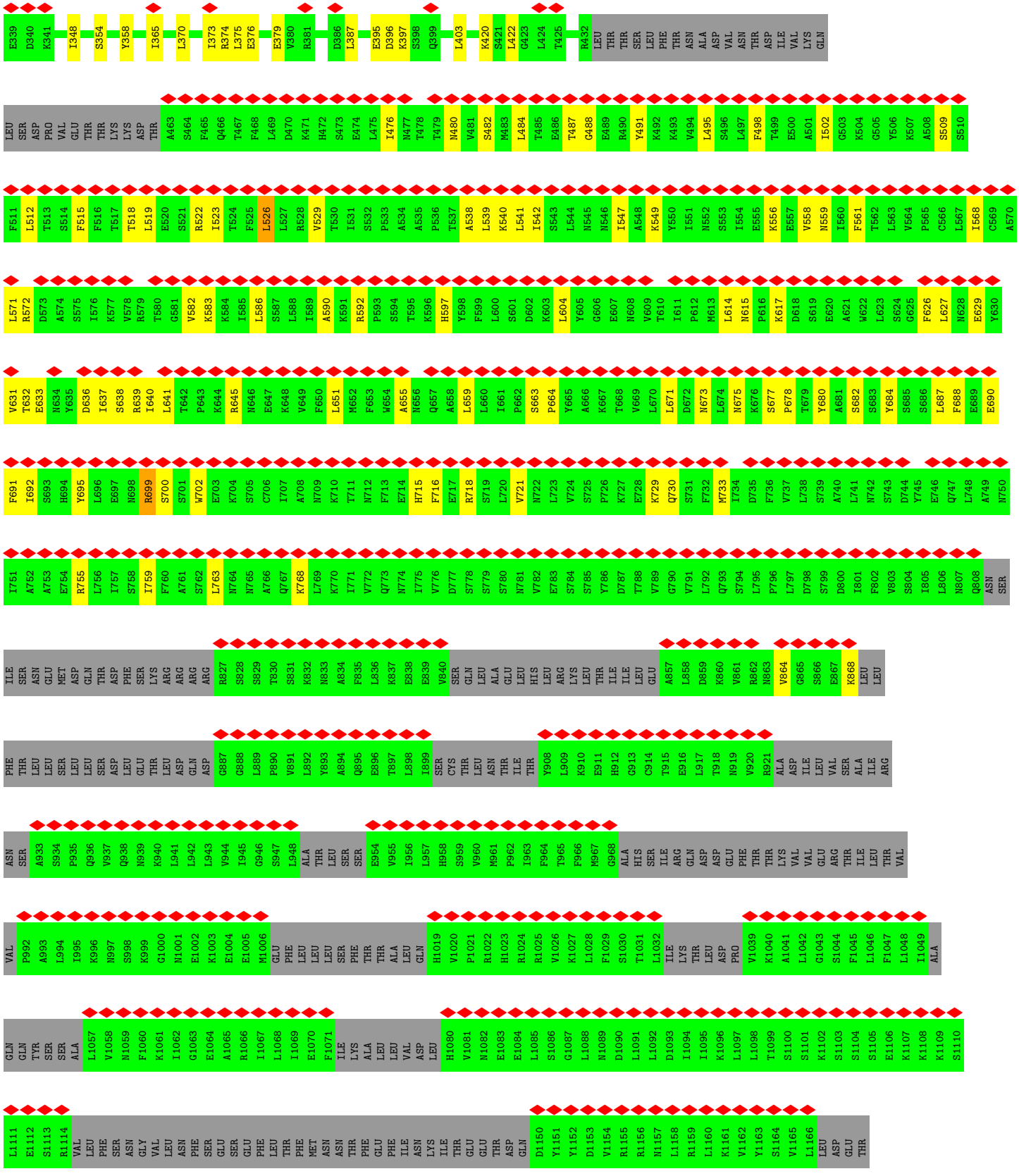
Chain A9:

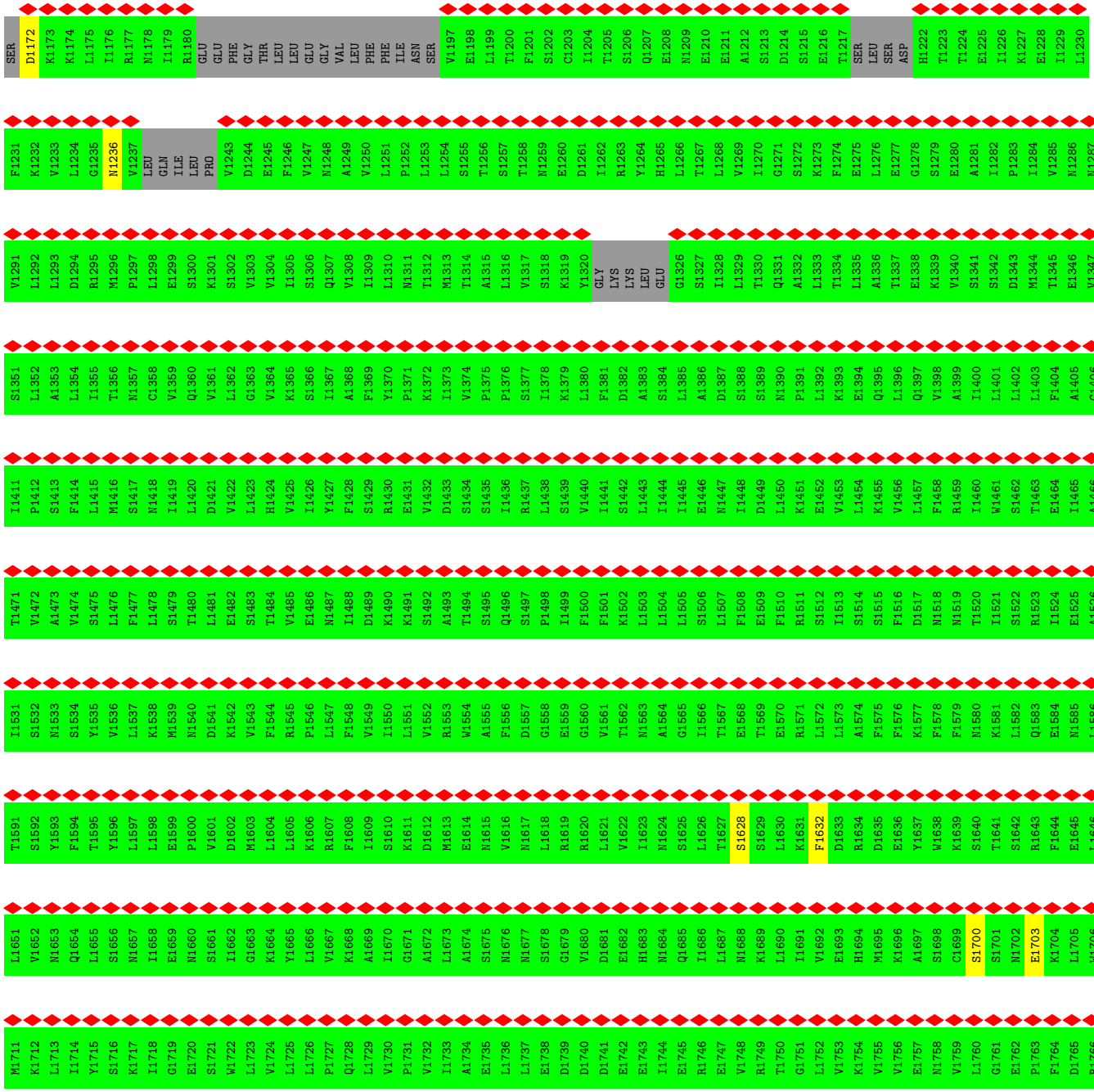


• Molecule 23: U3 small nucleolar RNA-associated protein 10

Chain AE:

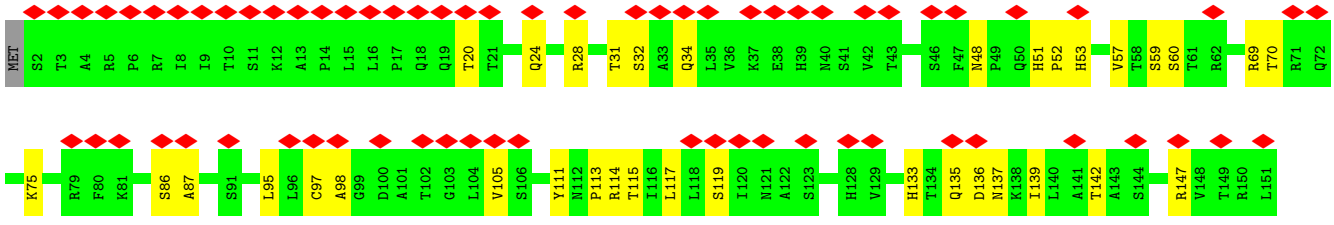


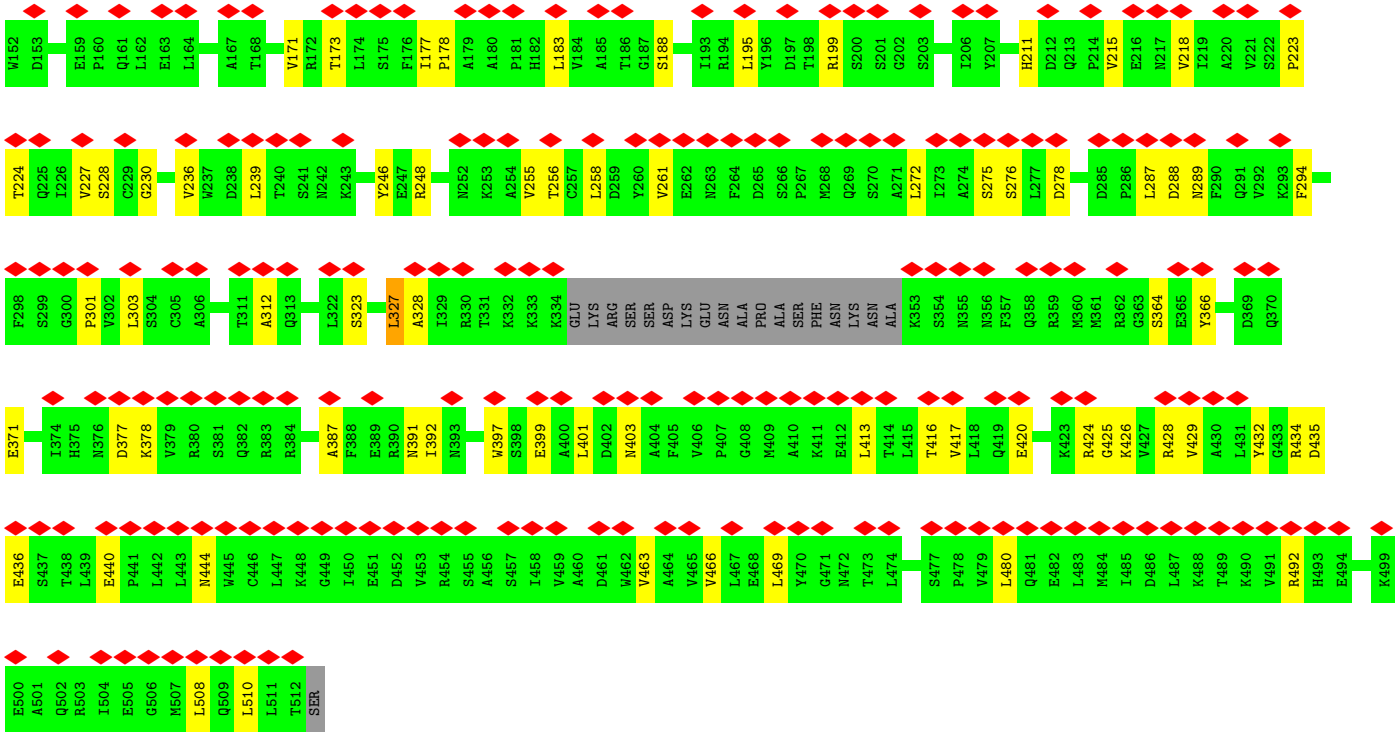

E339 D340 K341 I348 S354 Y358 I365 L370 I373 R374 L375 E376 E379 V380 R381 D386 L387 E395 D396 K397 S398 Q399 L403 K420 S421 L422 G423 L424 T425 R432 LEU THR THR SER LEU PHE THR ASN ALA ASP VAL ASN THR ASP ILE VAL LYS GLN
LEU SER ASP PRO VAL GLU THR THR LYS LYS ASP THR A463 S464 F465 Q466 T467 F468 L469 D470 K471 H472 S473 E474 L475 I476 N477 T478 T479 N480 V481 S482 M483 L484 T485 E486 T487 G488 E489 R490 Y491 K492 K493 V494 L495 S496 L497 F498 T499 E500 A501 I502 G503 K504 G505 Y506 K507 A508 S509 S510
F511 L512 T513 S514 F515 F516 T517 T518 L519 E520 S521 R522 I523 T524 F525 L526 L527 R528 V529 T530 I531 S532 P533 A534 A535 P536 T537 A538 L539 K540 L541 I542 S543 L544 N545 N546 I547 A548 K549 Y550 I551 N552 S553 I554 E555 K556 E557 V558 N559 I560 F561 T562 L563 V564 P565 C566 L567 I568 C569 A570
L571 R572 D573 A574 S575 I576 K577 V578 R579 T580 G581 V582 K583 K584 I585 L586 S587 L588 I589 A590 K591 R592 P593 S594 T595 K596 H597 Y598 F599 L600 S601 D602 K603 L604 Y605 G606 E607 N608 V609 T610 I611 P612 M613 L614 N615 P616 K617 D618 S619 E620 A621 W622 L623 S624 G625 F626 L627 N628 E629 Y630
V631 T632 E633 N634 Y635 D636 I637 S638 R639 I640 L641 T642 P643 K644 R645 N646 E647 K648 V649 F650 L651 M652 F653 W654 A655 N656 Q657 A658 L659 L660 I661 P662 S663 P664 Y665 A666 K667 T668 V669 L670 L671 D672 N673 L674 N675 K676 S677 P678 T679 Y680 A681 S682 S683 Y684 S685 S686 L687 F688 E689 E690
F691 I692 S693 H694 Y695 L696 E697 N698 R699 S700 S701 W702 E703 K704 S705 C706 I707 A708 N709 K710 T711 N712 F713 E714 H715 F716 E717 R718 S719 L720 V721 N722 L723 V724 S725 P726 K727 E728 K729 Q730 S731 F732 M733 I734 D735 F736 V737 L738 S739 A740 L741 N742 S743 D744 Y745 E746 Q747 L748 A749 N750
I751 A752 A753 E754 R755 L756 T757 S758 I759 F760 A761 S762 L763 N764 N765 A766 Q767 K768 L769 K770 I771 V772 Q773 N774 I775 V776 D777 S778 S779 S780 N781 V782 E783 S784 S785 Y786 D787 T788 V789 G790 V791 L792 Q793 S794 L795 P796 L797 D798 S799 D800 I801 F802 V803 S804 I805 L806 N807 Q808 ASN SER
ILE SER ASN GLU MET ASP GLN THR ASP PHE SER LYS ARG ARG ARG ARG R827 S828 S829 T830 S831 K832 N833 A834 F835 L836 K837 E838 E839 V840 SER GLN LEU ALA GLU LEU HIS LEU ARG LYS LEU THR ILE ILE LEU GLU A857 L858 D859 K860 V861 R862 N863 V864 G865 S866 E867 K868 LEU LEU
PHE THR LEU LEU SER LEU LEU SER ASP LEU GLU THR LEU ASP GLN ASP G887 G888 L889 P890 V891 L892 Y893 A894 Q895 E896 T897 L898 I899 SER CYS THR LEU ASN THR ILE THR Y908 L909 K910 E911 H912 G913 C914 T915 E916 L917 T918 N919 V920 R921 ALA ASP ILE LEU VAL SER ALA ILE ARG
ASN SER A933 S934 P935 Q936 V937 Q938 N939 K940 L941 L942 L943 V944 I945 G946 S947 L948 ALA THR LEU SER SER E954 V955 I956 L957 H958 S959 V960 M961 P962 I963 F964 T965 F966 M967 G968 ALA HIS SER ILE ARG GLN ASP ASP GLU PHE THR THR LYS VAL VAL GLU ARG THR ILE LEU THR VAL
VAL P992 A993 L994 I995 K996 N997 S998 K999 G1000 N1001 E1002 K1003 E1004 E1005 M1006 GLU PHE LEU LEU LEU SER PHE THR THR ALA LEU GLN H1019 V1020 P1021 R1022 H1023 R1024 R1025 V1026 K1027 L1028 F1029 S1030 T1031 L1032 ILE LYS THR LEU ASP PRO V1039 K1040 A1041 L1042 G1043 S1044 F1045 L1046 F1047 L1048 I1049 ALA
GLN GLN TYR SER SER ALA L1057 V1058 N1059 F1060 K1061 I1062 G1063 E1064 A1065 R1066 I1067 L1068 I1069 E1070 F1071 ILE LYS ALA LEU LEU VAL ASP LEU H1080 V1081 N1082 E1083 E1084 L1085 S1086 G1087 L1088 N1089 D1090 L1091 L1092 D1093 I1094 I1095 K1096 L1097 L1098 T1099 S1100 S1101 K1102 S1103 S1104 S1105 E1106 K1107 K1108 K1109 S1110
L1111 E1112 S1113 R1114 VAL LEU PHE SER ASN GLY VAL LEU ASN PHE SER GLU SER GLU PHE LEU THR PHE MET ASN ASN THR PHE GLU PHE ILE ASN LYS ILE THR GLU GLU THR ASP GLN D1150 Y1151 Y1152 D1153 V1154 R1155 R1156 N1157 L1158 R1159 L1160 K1161 V1162 Y1163 S1164 V1165 L1166 LEU ASP GLU THR



• Molecule 24: U3 small nucleolar RNA-associated protein 15

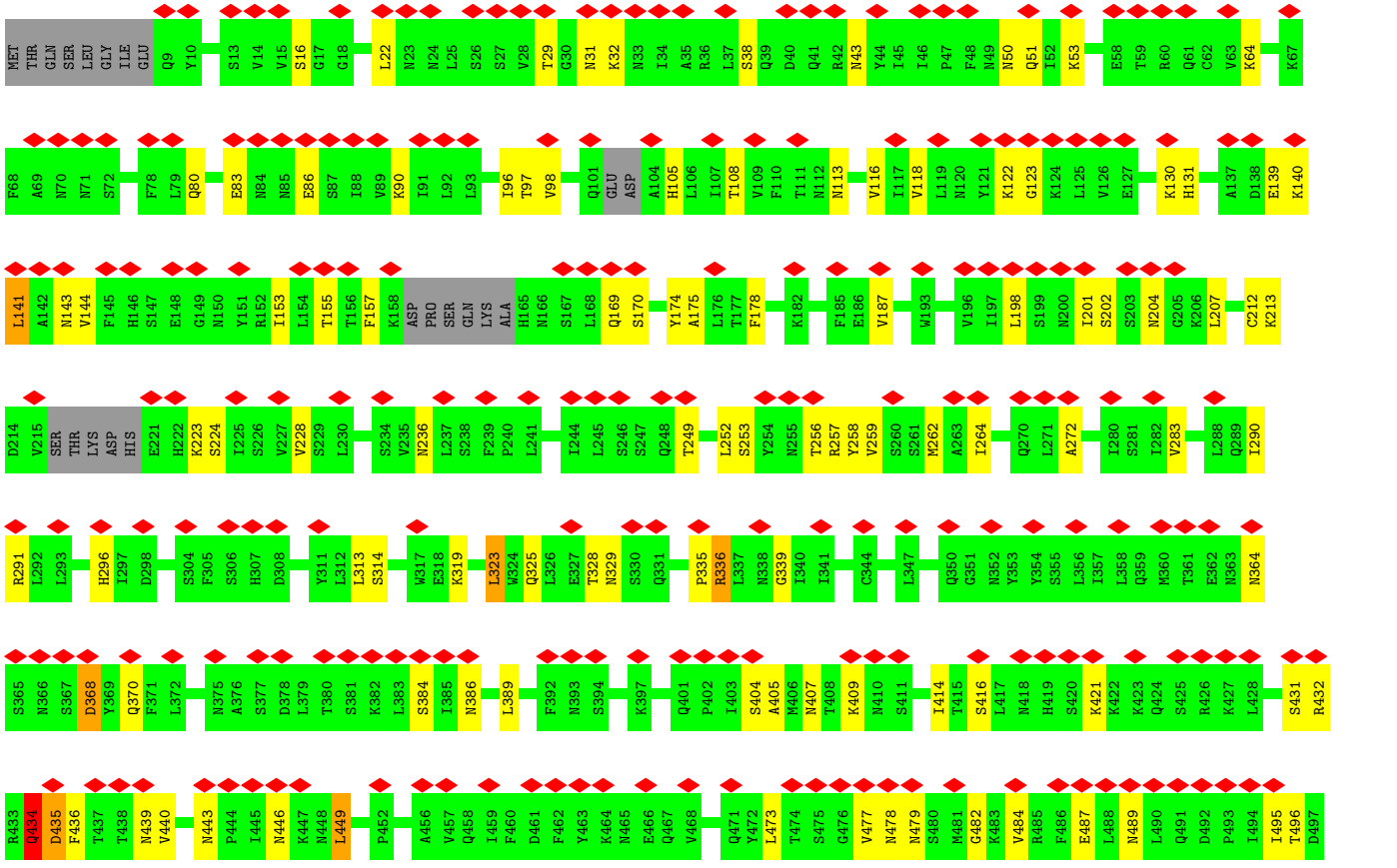
Chain AF:

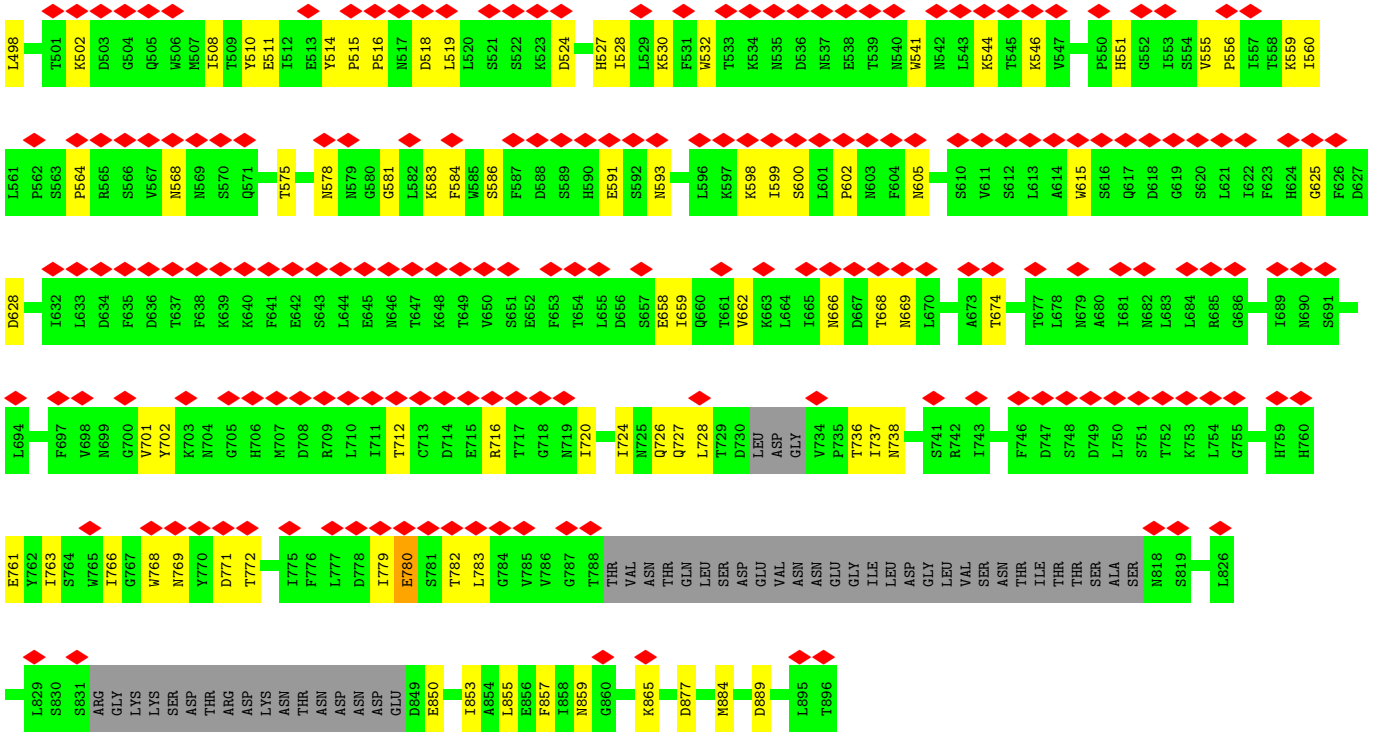




• Molecule 25: NET1-associated nuclear protein 1

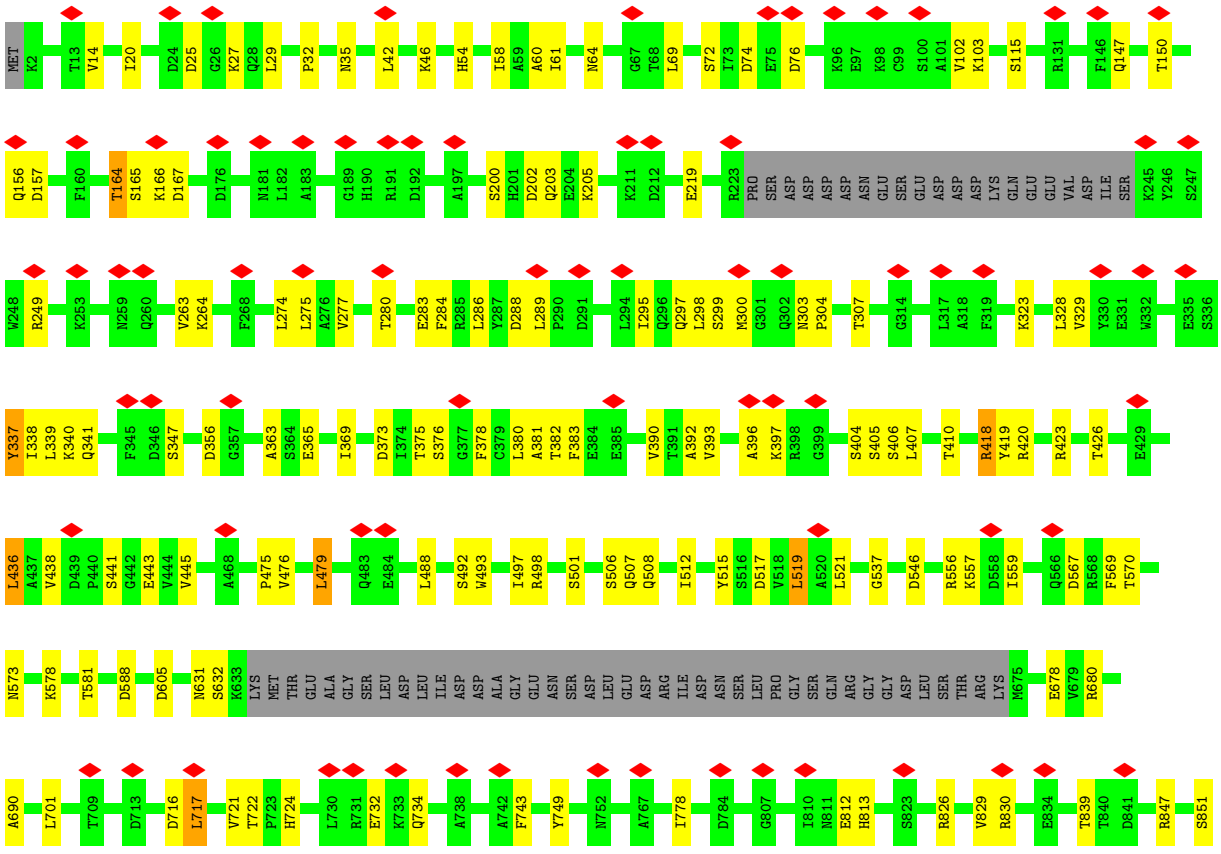
Chain AG:

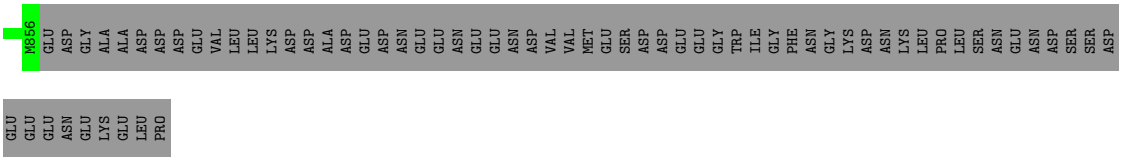




• Molecule 26: Periodic tryptophan protein 2

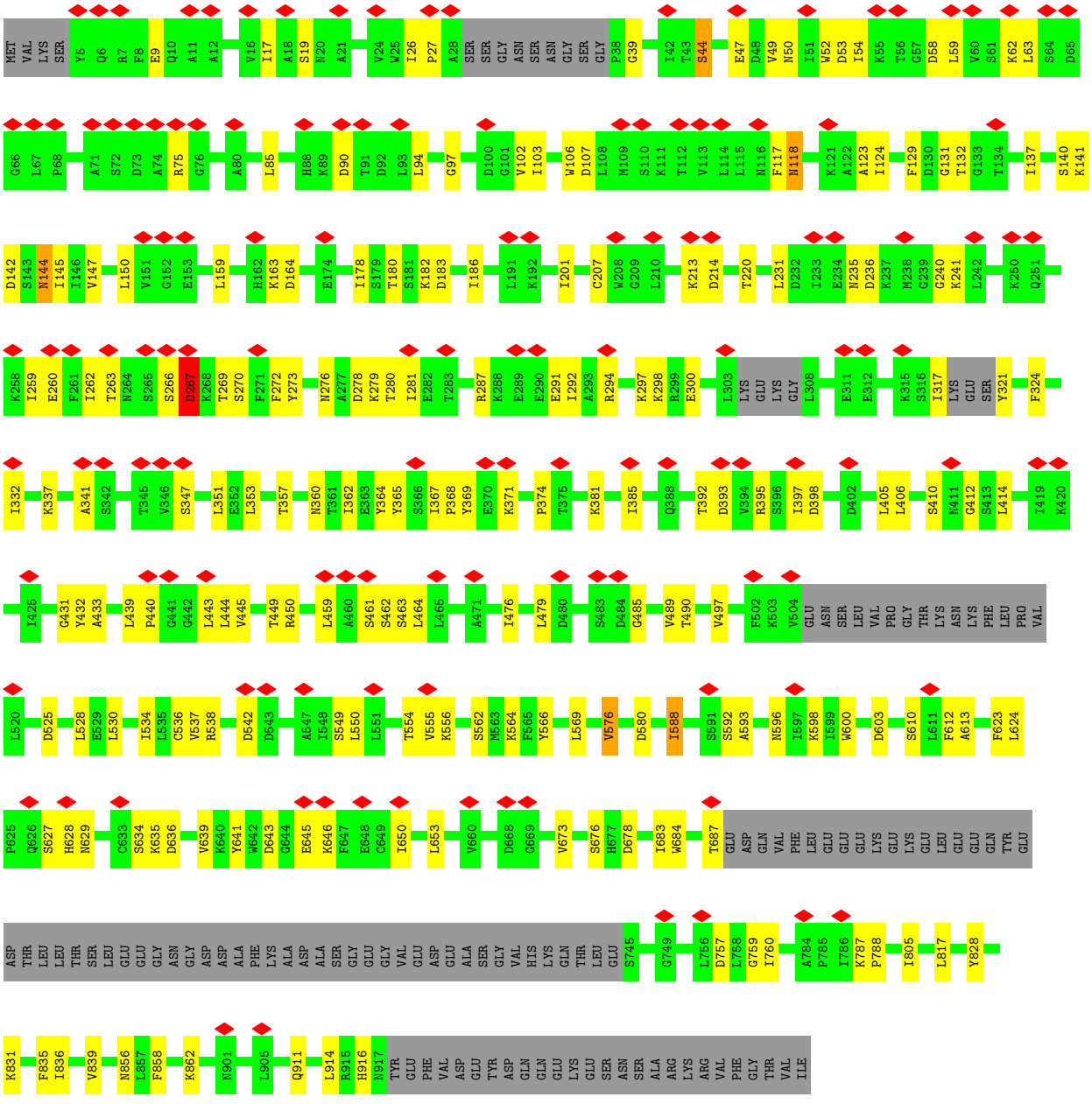
Chain B1:





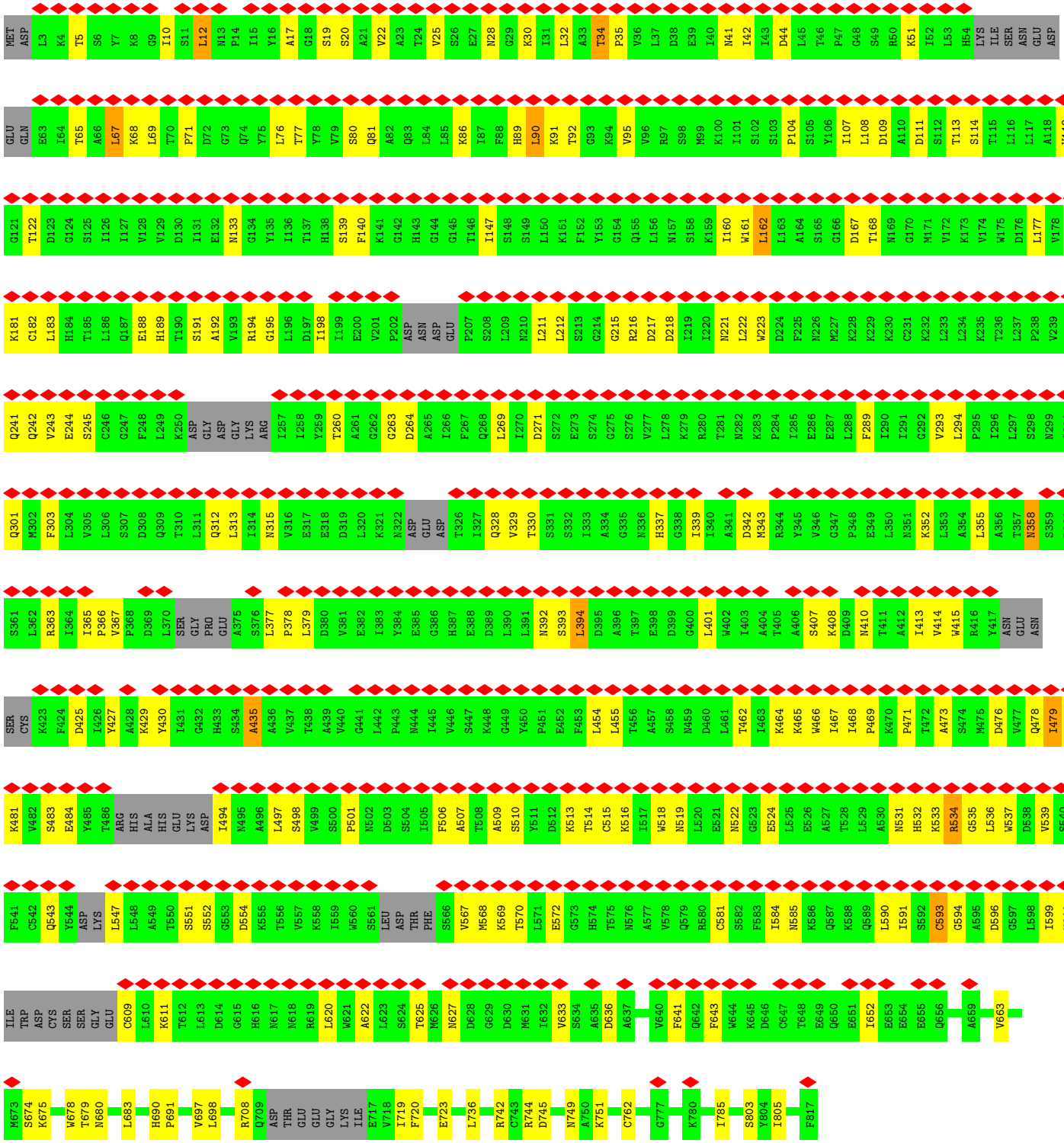
• Molecule 27: U3 small nucleolar RNA-associated protein 12

Chain B2:



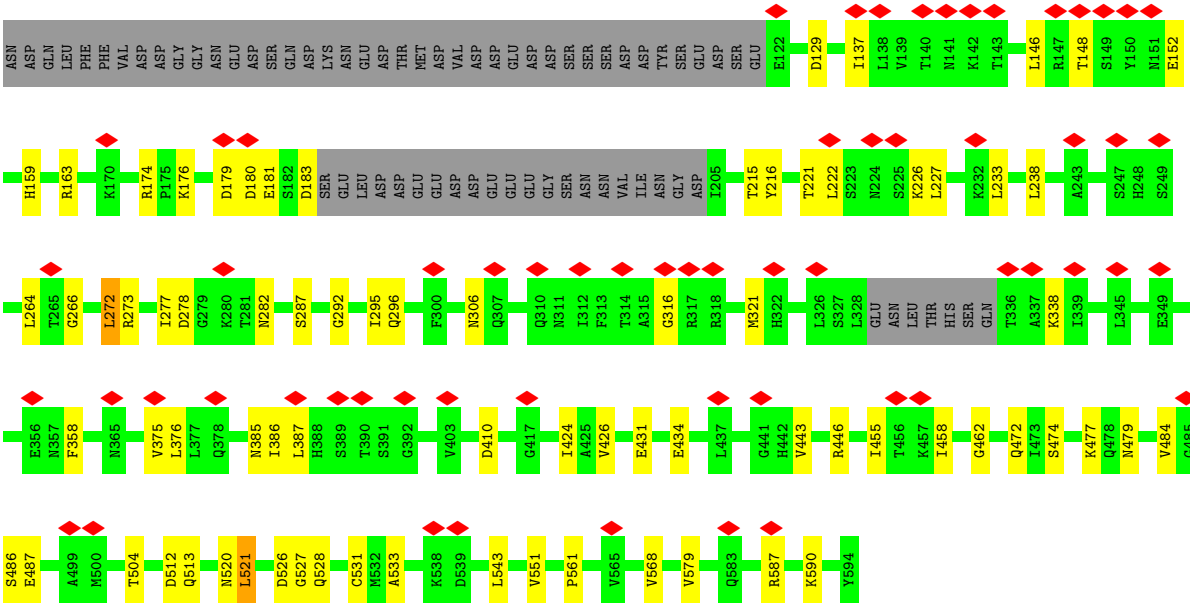
• Molecule 28: U3 small nucleolar RNA-associated protein 13

Chain B3:



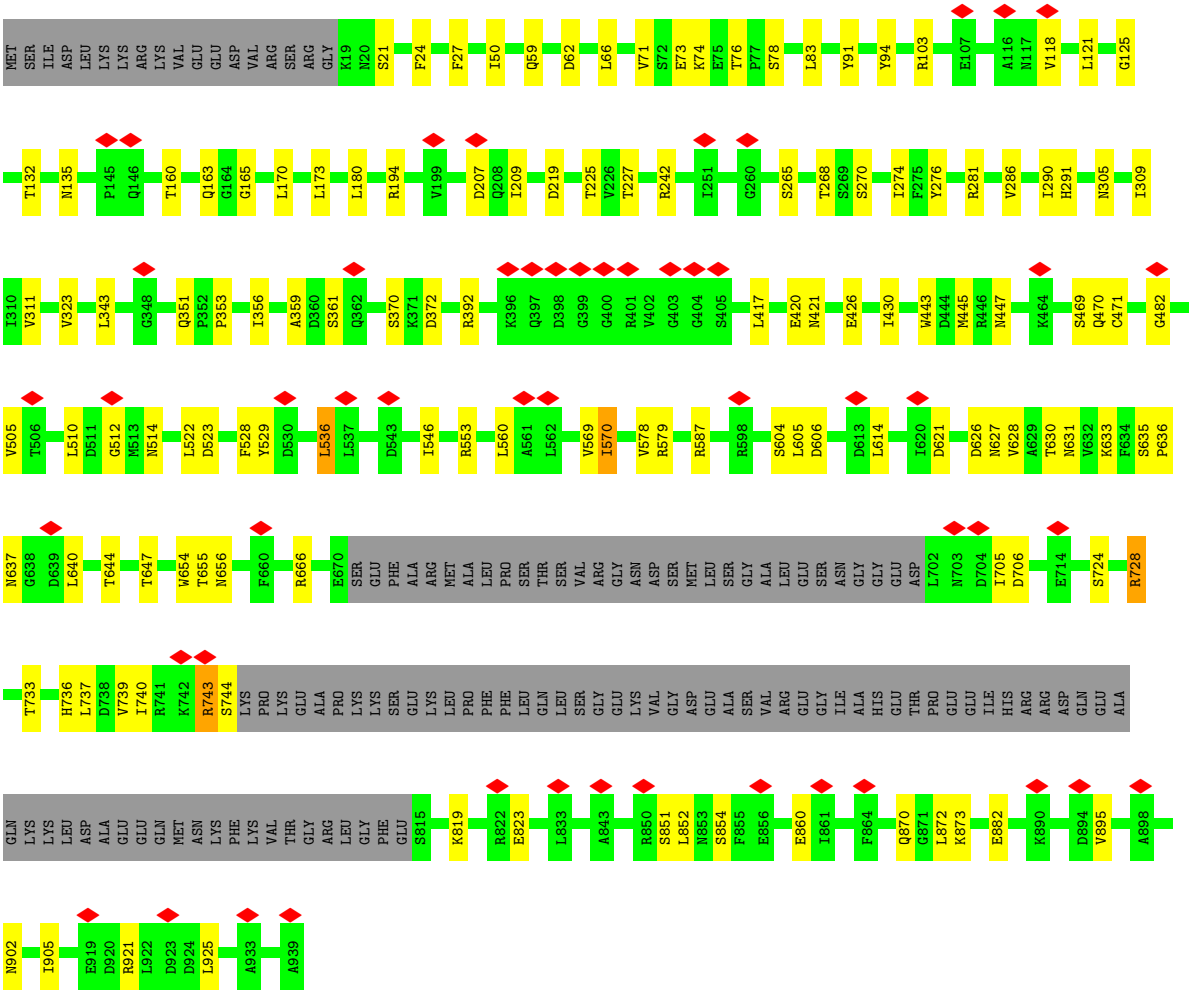
• Molecule 29: U3 small nucleolar RNA-associated protein 18

Chain B8:



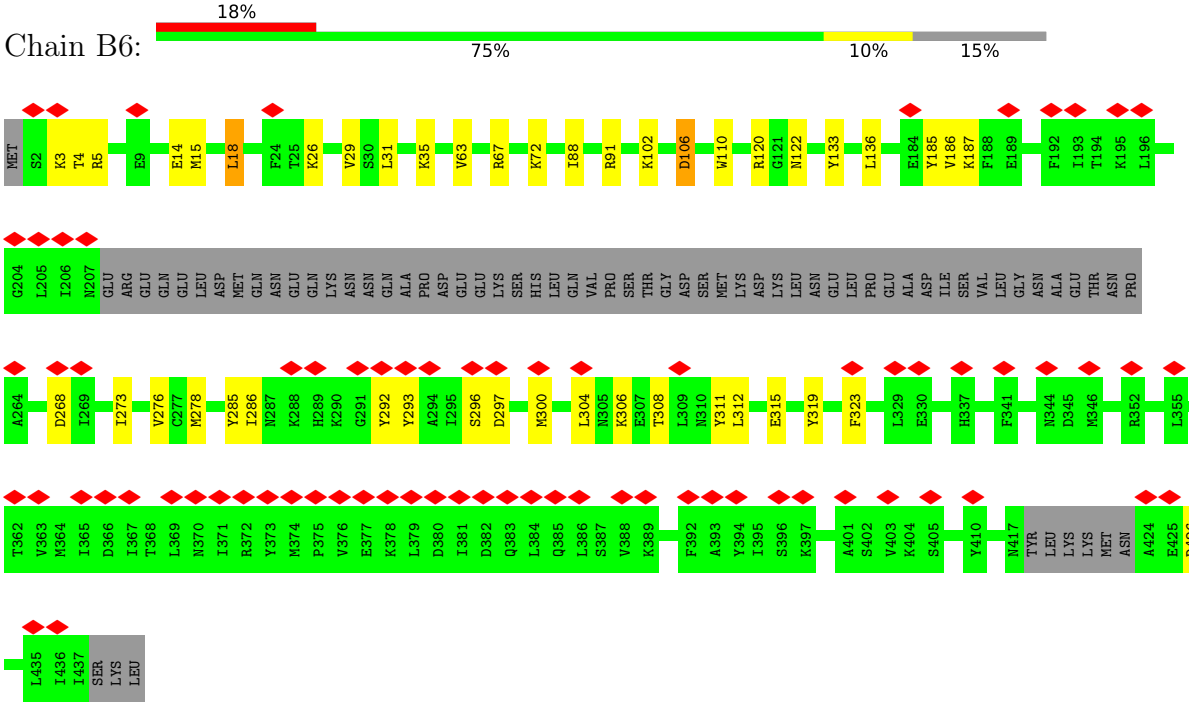
• Molecule 30: U3 small nucleolar RNA-associated protein 21

Chain BE:



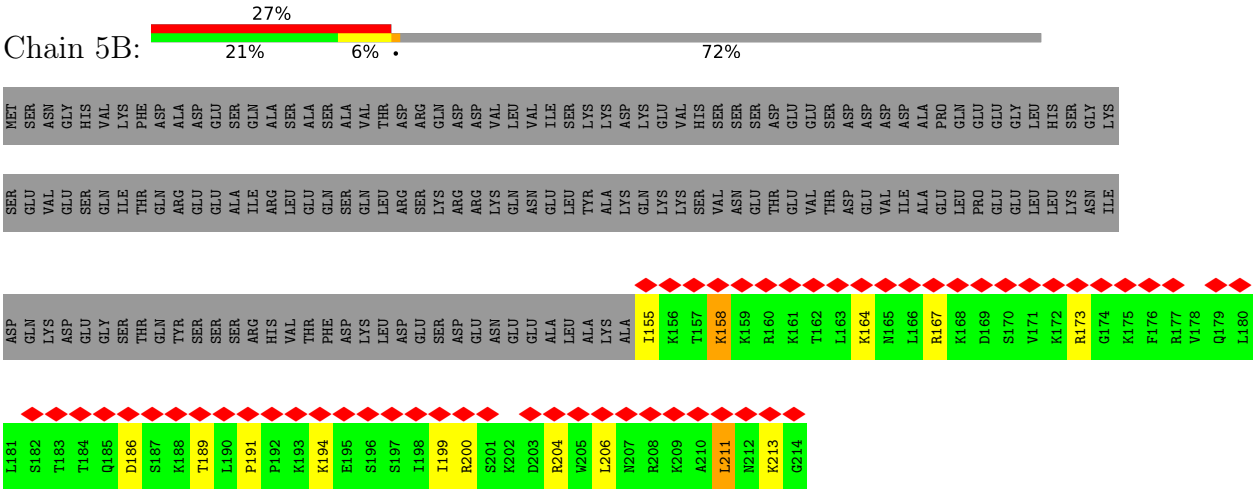
• Molecule 31: U3 small nucleolar RNA-associated protein 6

Chain B6:



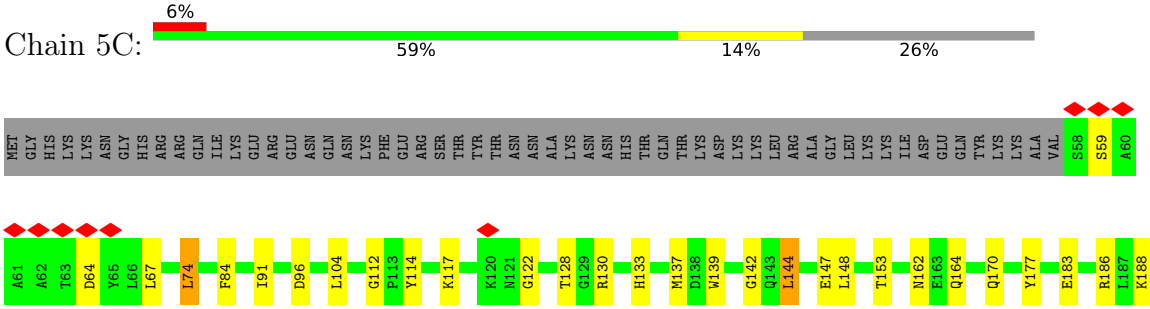
• Molecule 32: Bud site selection protein 21

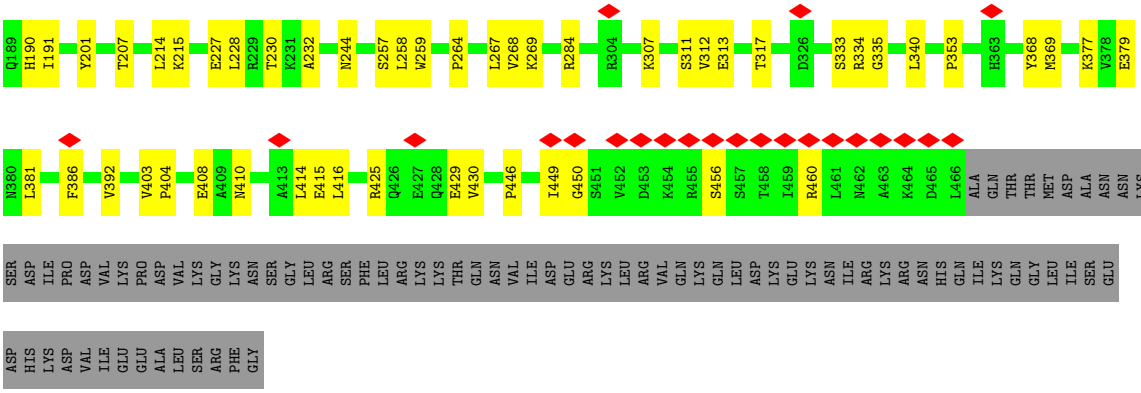
Chain 5B:



• Molecule 33: U3 small nucleolar RNA-associated protein 7

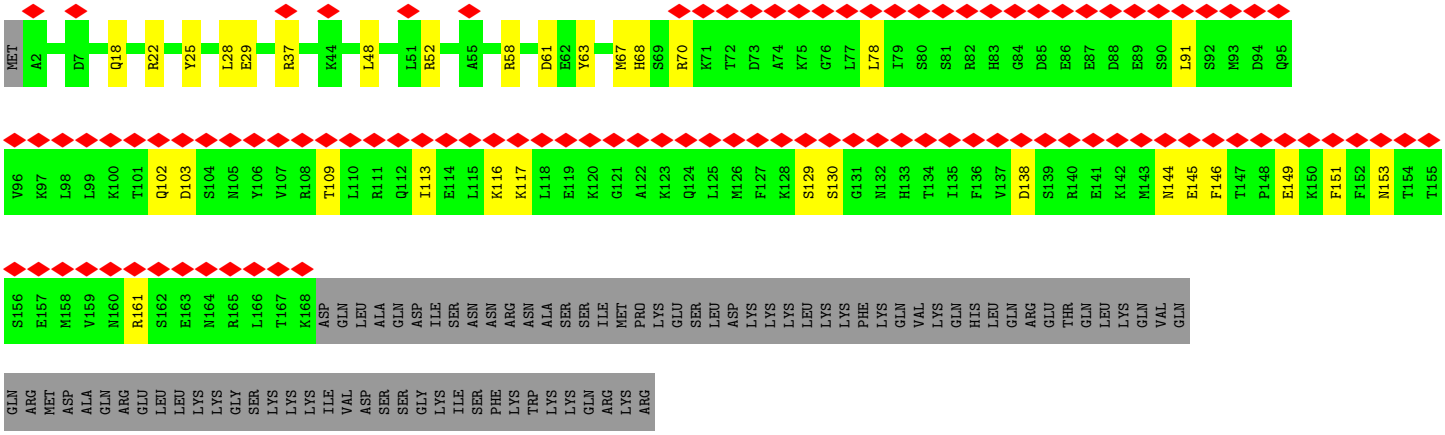
Chain 5C:





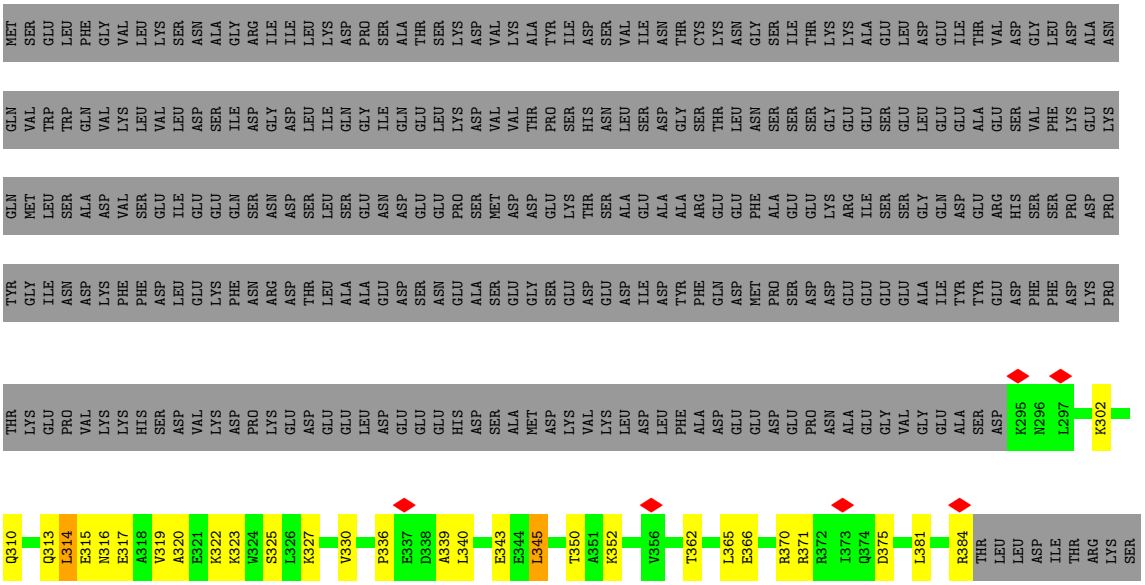
• Molecule 34: U3 small nucleolar RNA-associated protein 11

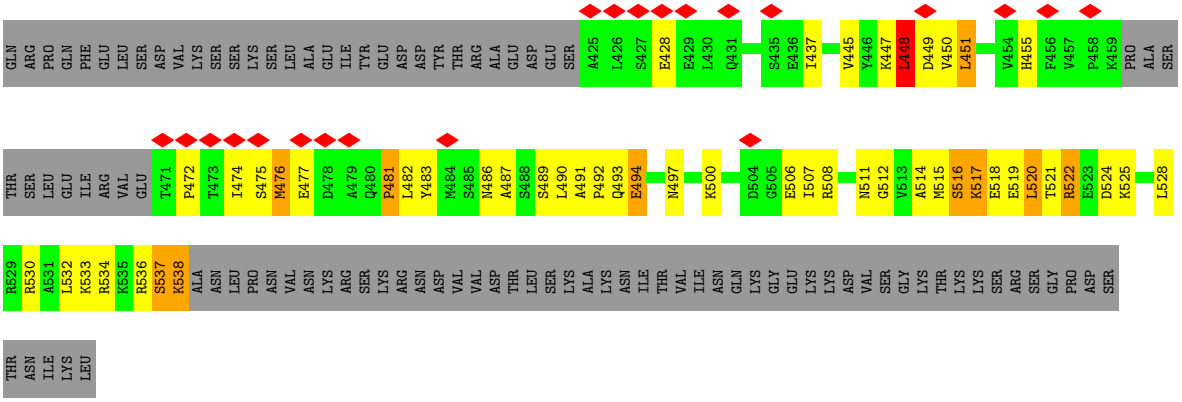
Chain 5D:



• Molecule 35: U3 small nucleolar RNA-associated protein MPP10

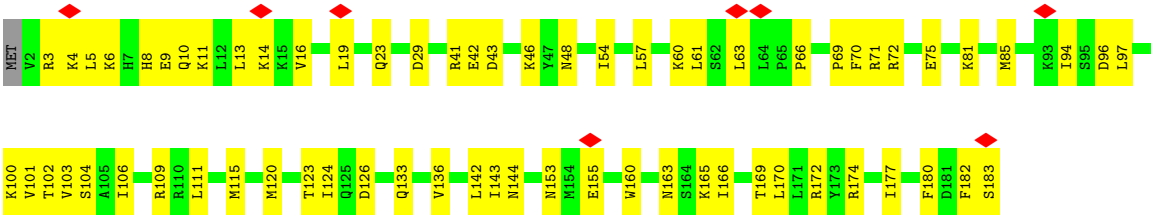
Chain 5E:





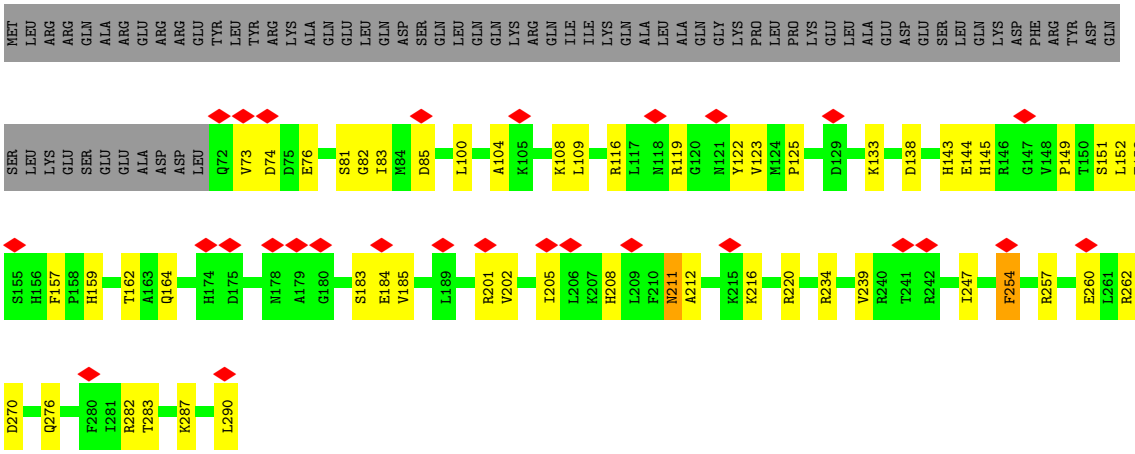
• Molecule 36: U3 small nucleolar ribonucleoprotein protein IMP3

Chain 5F:



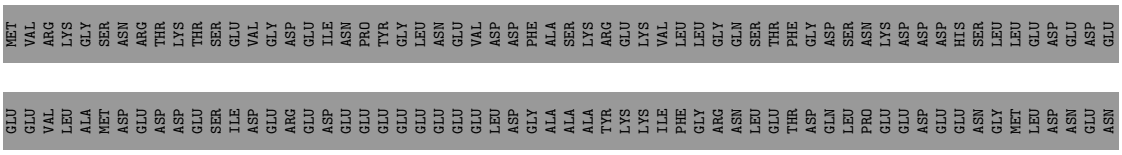
• Molecule 37: U3 small nucleolar ribonucleoprotein protein IMP4

Chain 5G:



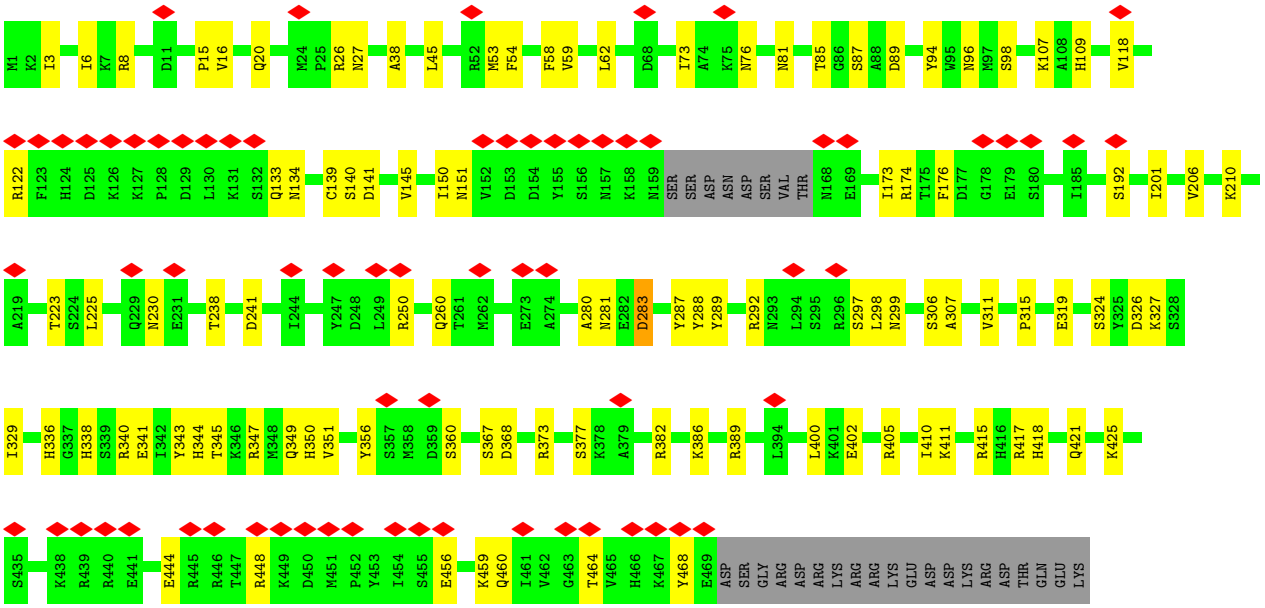
• Molecule 38: Something about silencing protein 10

Chain 5H:



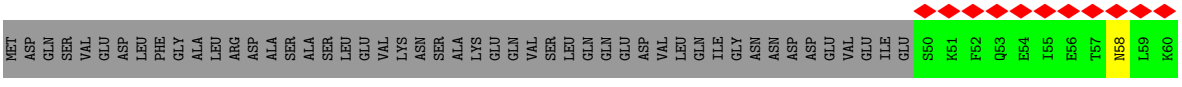
• Molecule 39: Protein SOF1

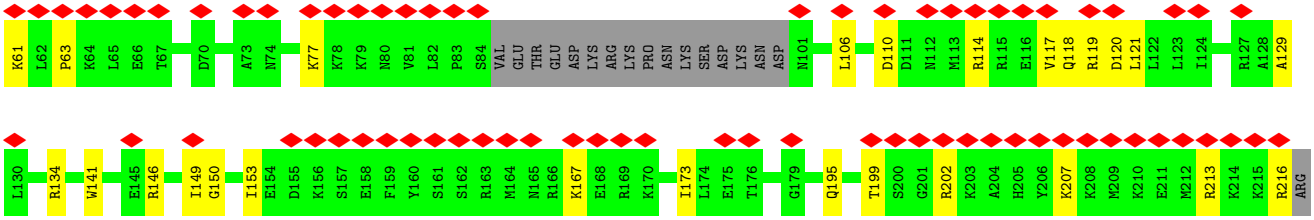
Chain 5I:



• Molecule 40: rRNA-processing protein FCF2

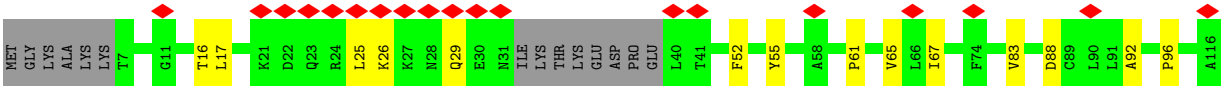
Chain 5J:

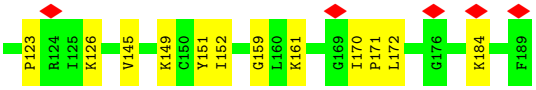




• Molecule 41: rRNA-processing protein FCF1

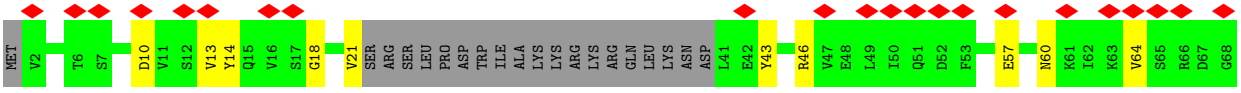
Chain 5K:

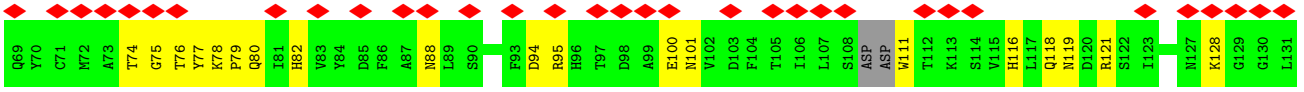


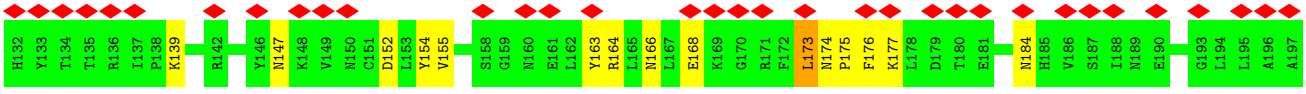


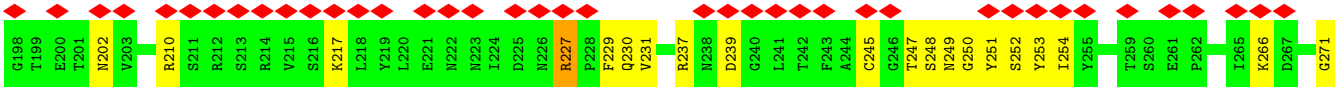
• Molecule 42: Ribosome biogenesis protein ENP2

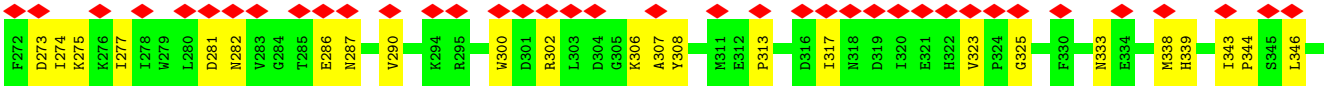
Chain RA:

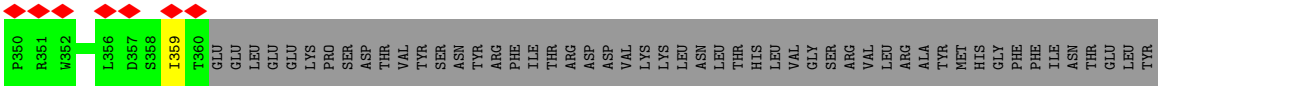


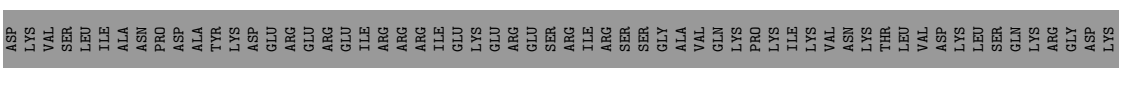


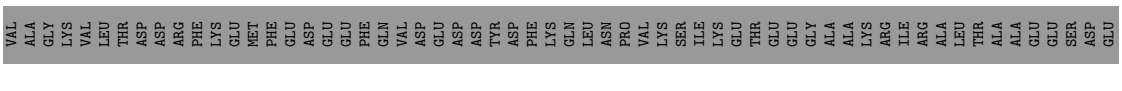


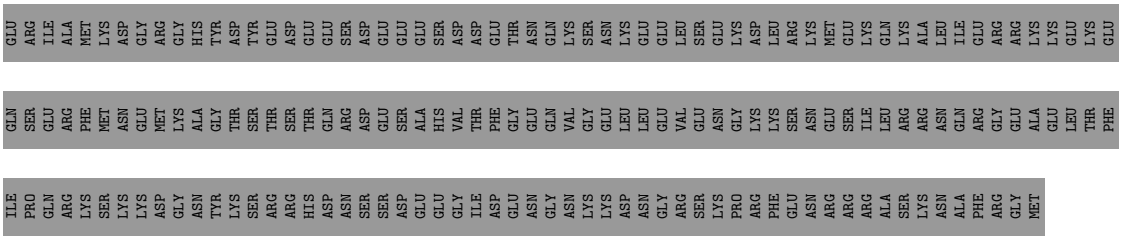






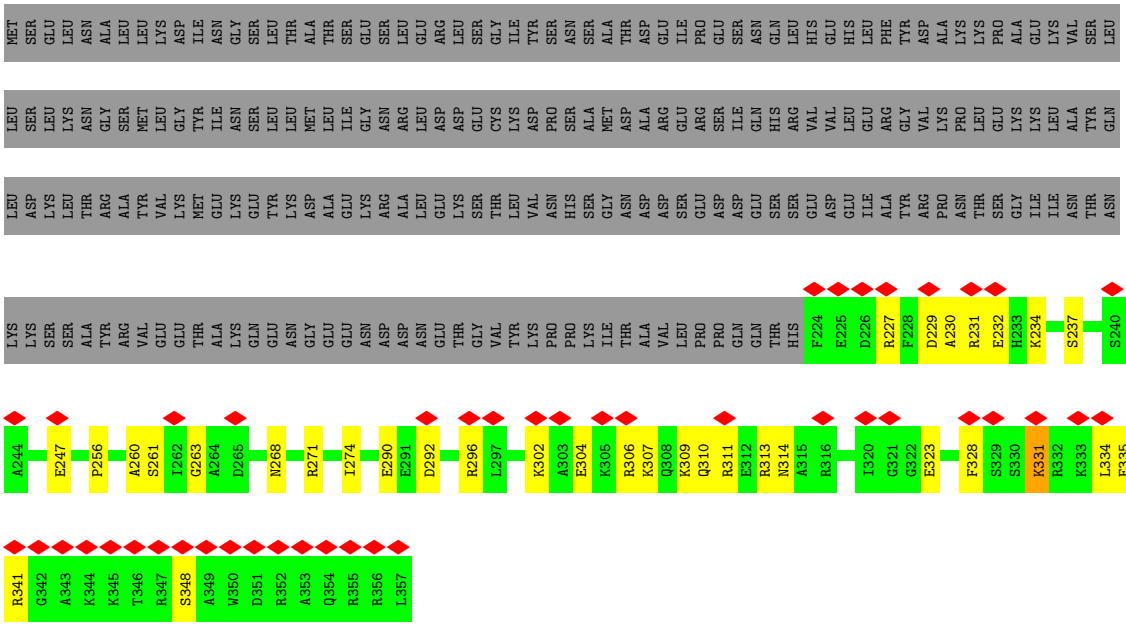






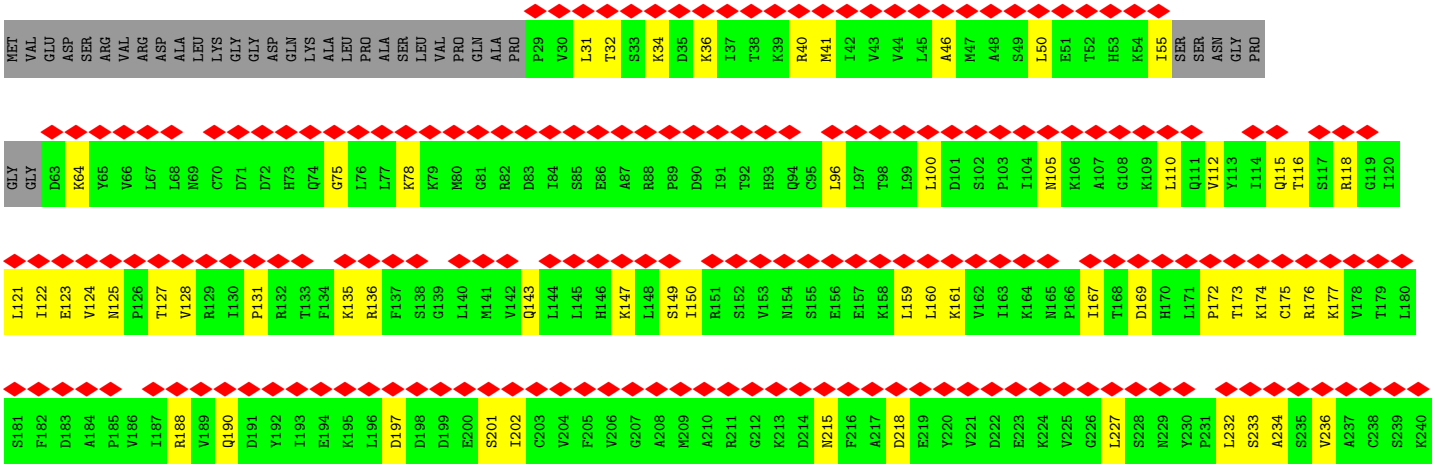
• Molecule 43: U3 small nucleolar ribonucleoprotein protein LCP5

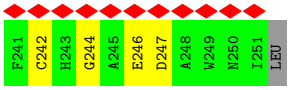
Chain RB:



• Molecule 44: Ribosomal RNA small subunit methyltransferase NEP1

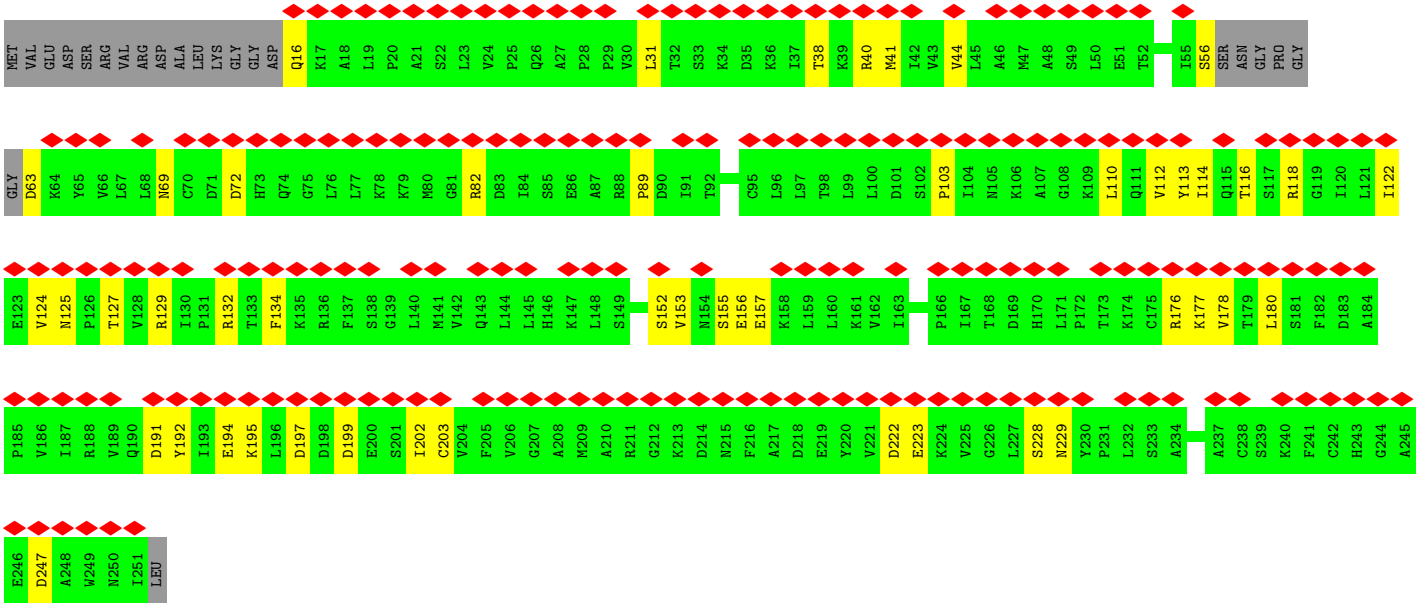
Chain RG:





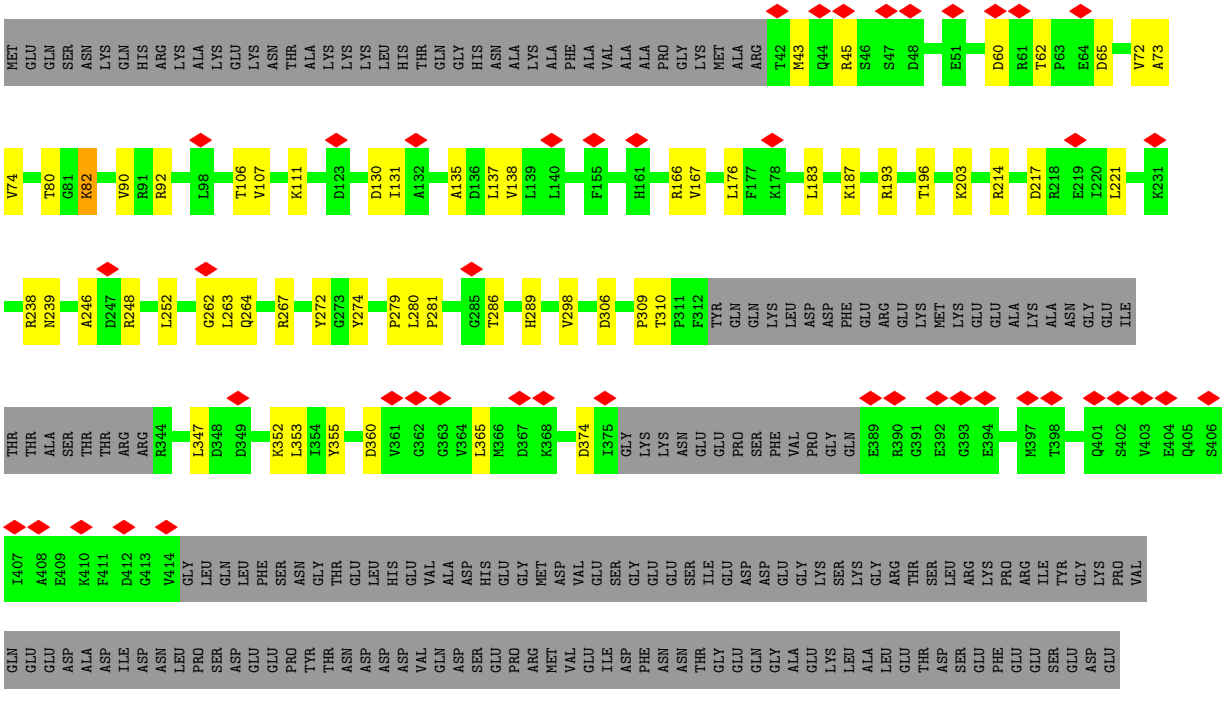
• Molecule 44: Ribosomal RNA small subunit methyltransferase NEP1

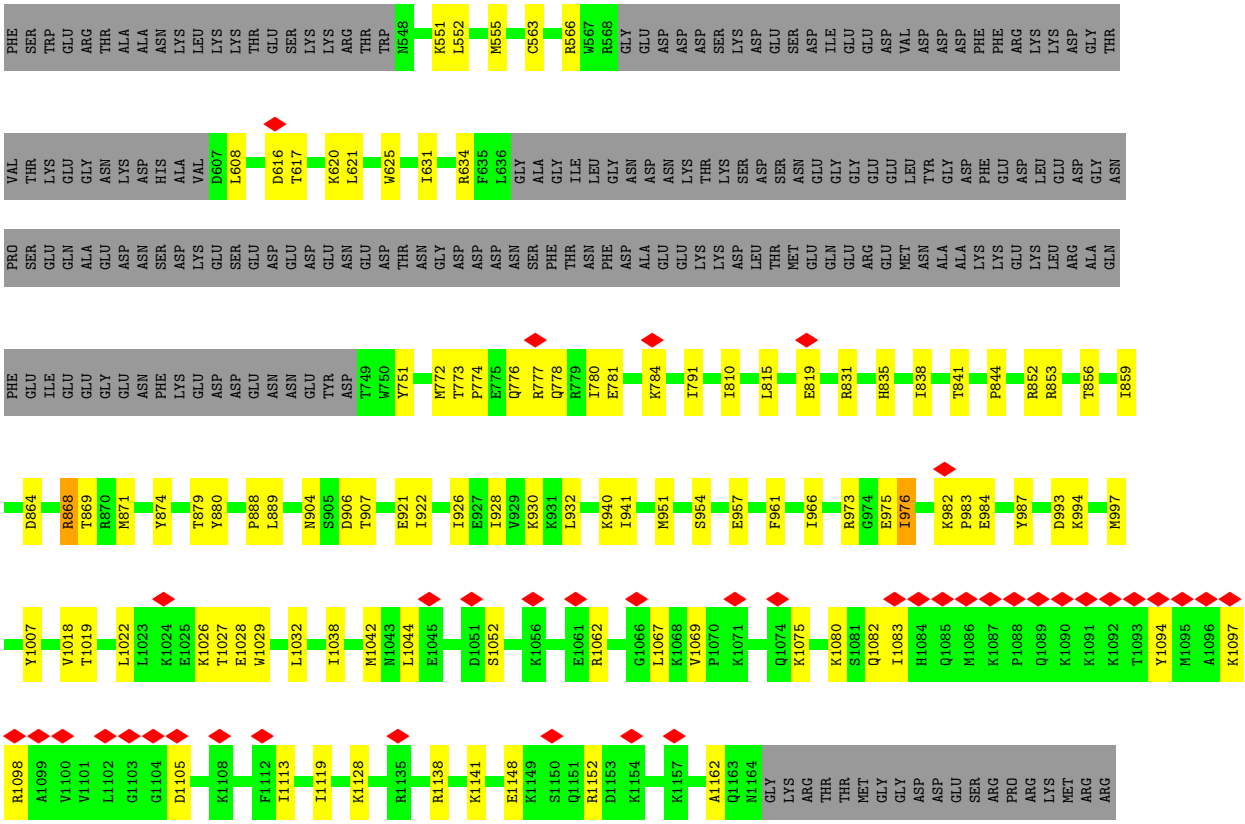
Chain RH:



• Molecule 45: Ribosome biogenesis protein BMS1

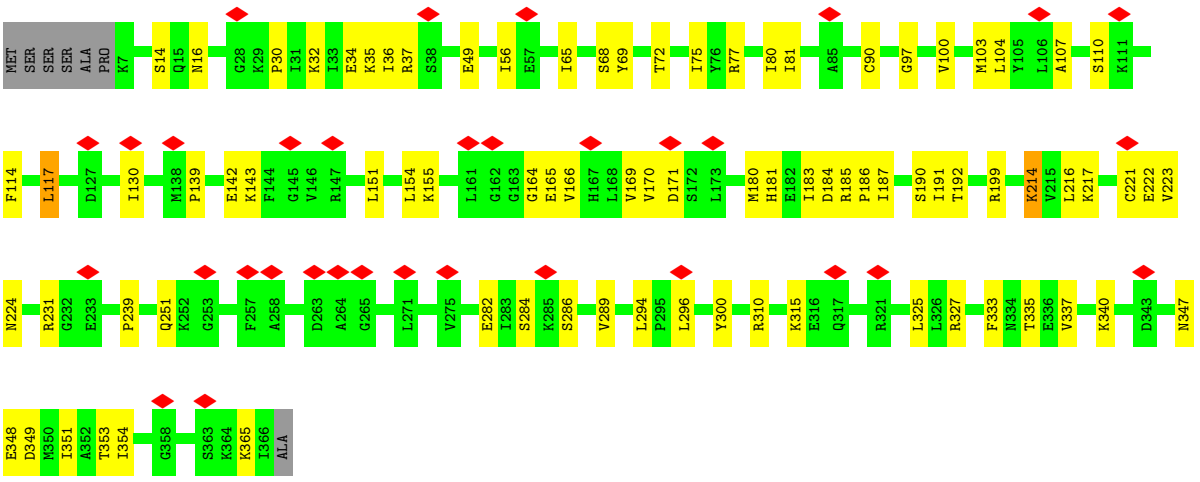
Chain RJ:





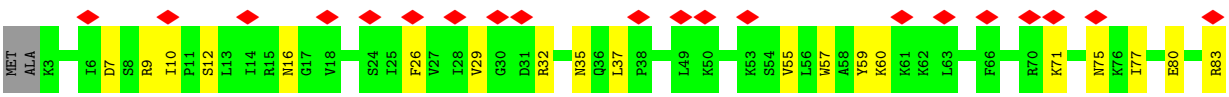
• Molecule 46: RNA 3'-terminal phosphate cyclase-like protein

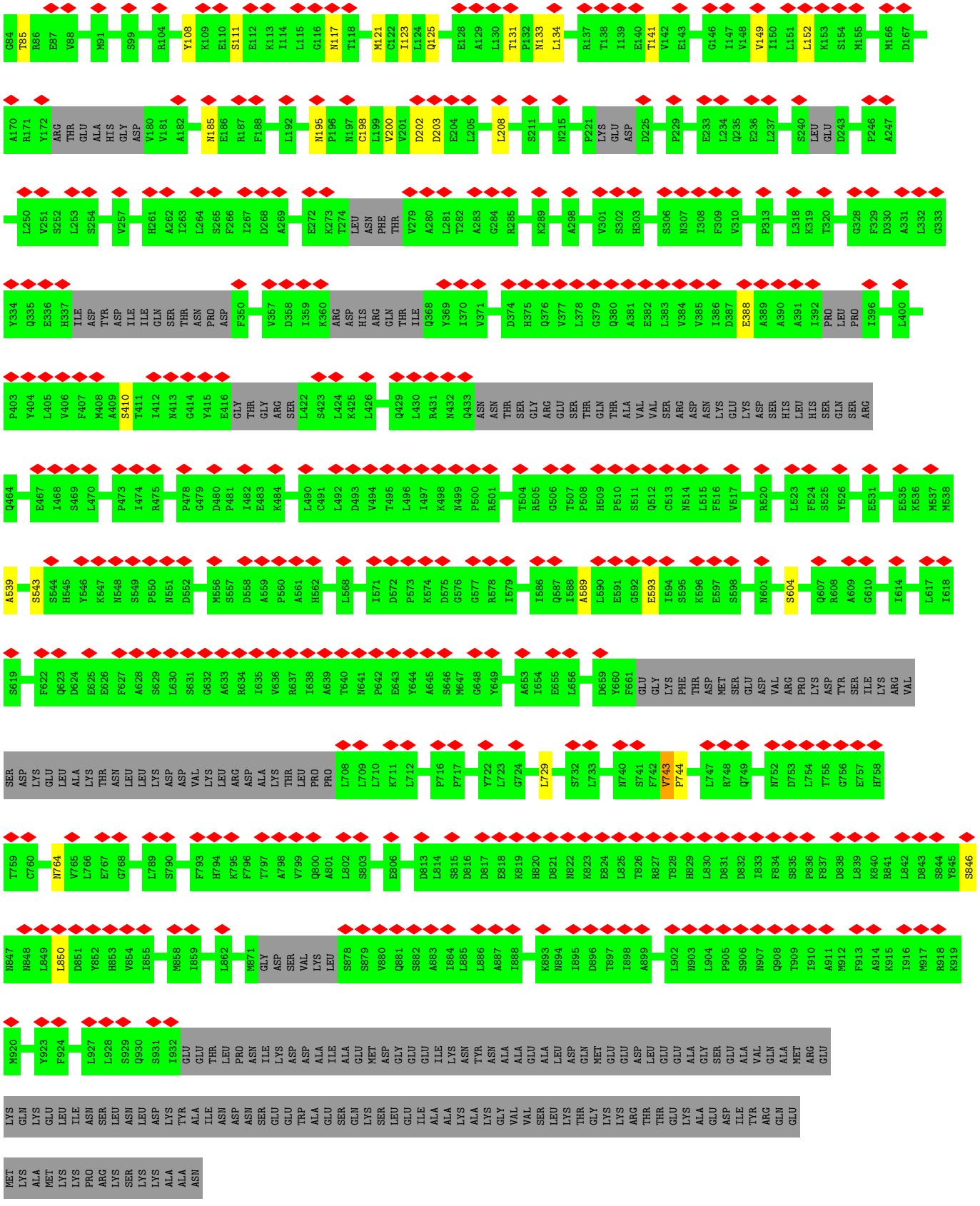
Chain RK:



• Molecule 47: RNA cytidine acetyltransferase

Chain RL:

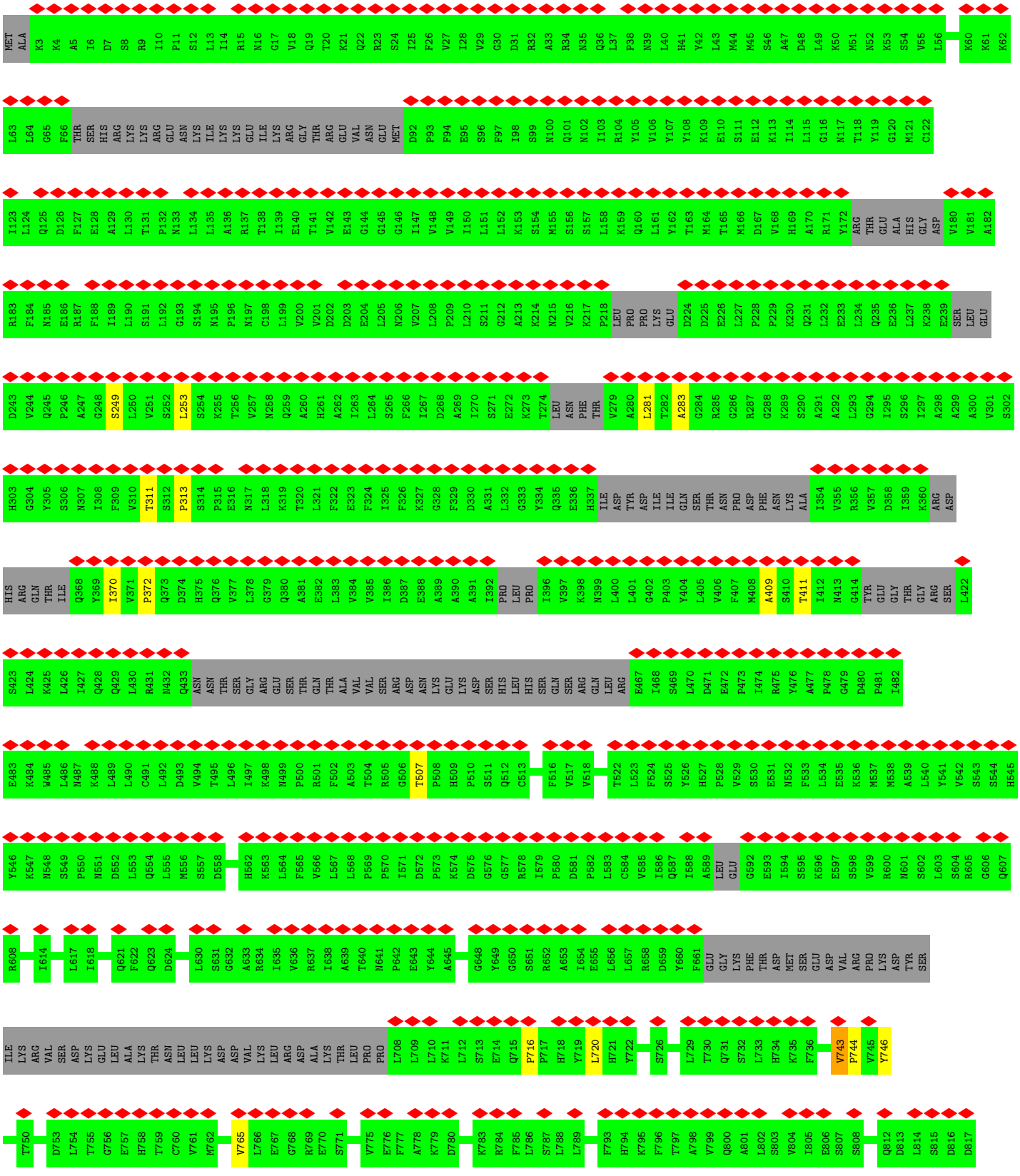


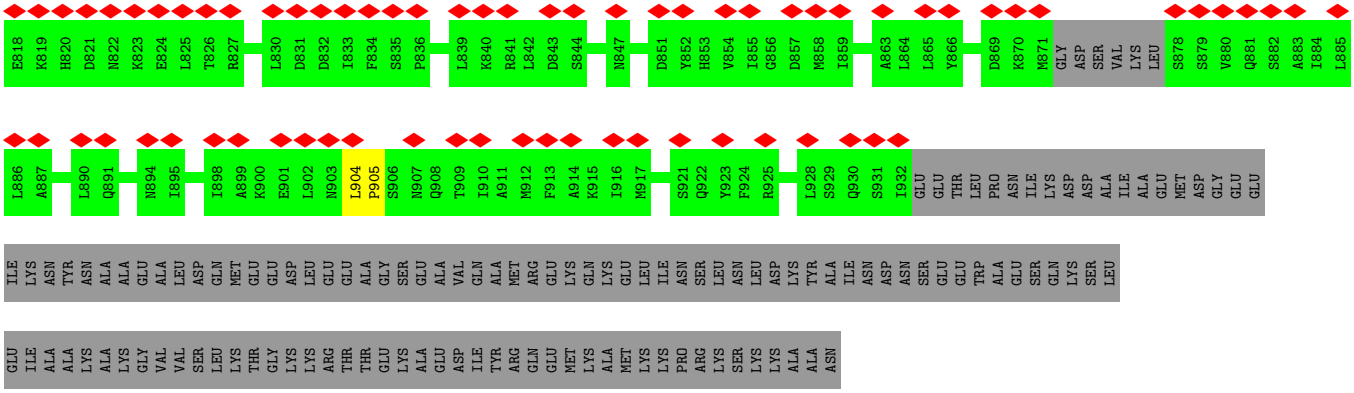


• Molecule 47: RNA cytidine acetyltransferase

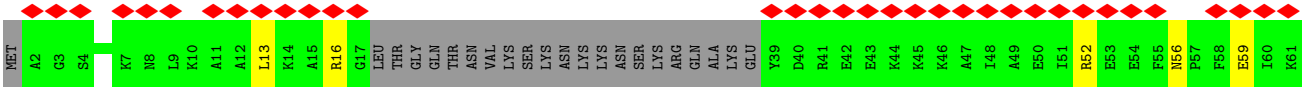
Chain RM:

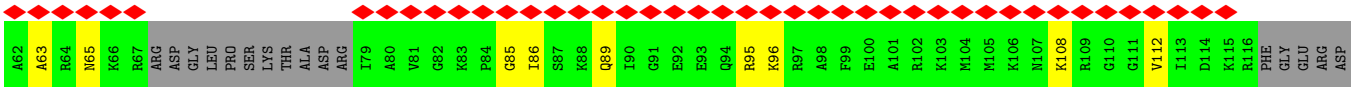

61%
71%
27%

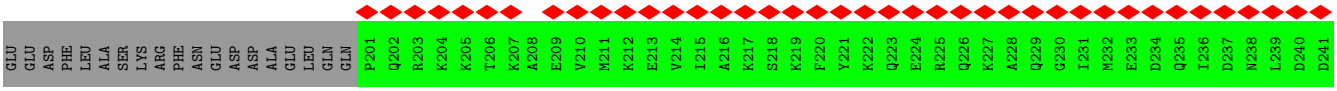

MET ALA K3 K4 A5 I6 D7 S8 R9 I10 P11 S12 L13 I14 R15 N16 G17 V18 Q19 T20 K21 Q22 R23 S24 I25 F26 V27 I28 V29 G30 D31 R32 A33 R34 N35 Q36 L37 P38 N39 L40 H41 Y42 L43 M44 M45 S46 A47 D48 L49 K50 M51 N52 K53 S54 V55 L56 K60 K61 K62
L63 L64 G65 F66 THR SER HIS ARG LYS LYS ARG GLU ASN LYS ILE LYS LYS GLU ILE LYS ARG GLY THR ARG GLU VAL ASN GLU MET D92 P93 F94 E95 S96 F97 I98 S99 N100 Q101 N102 I103 R104 Y105 V106 Y107 Y108 K109 E110 S111 E112 K113 I114 L115 G116 N117 T118 Y119 G120 M121 C122
I123 L124 Q125 D126 F127 E128 A129 L130 T131 P132 N133 L134 L135 A136 R137 T138 I139 E140 T141 V142 E143 G144 G145 G146 I147 V148 V149 I150 L151 L152 K153 S154 M155 S156 S157 L158 K159 Q160 L161 Y162 T163 M164 T165 M166 D167 V168 H169 A170 R171 Y172 ARG THR GLU ALA HIS GLY ASP V180 V181 A182
R183 F184 N185 E186 R187 F188 I189 L190 S191 L192 G193 S194 N195 P196 N197 C198 L199 V200 V201 D202 D203 E204 L205 N206 V207 L208 P209 L210 S211 G212 A213 K214 N215 V216 K217 P218 LEU PRO PRO LYS GLU D224 D225 E226 L227 P228 P229 K230 Q231 L232 E233 L234 Q235 E236 L237 K238 E239 SER LEU GLU
D243 V244 Q245 P246 A247 G248 S249 L250 V251 S252 L253 S254 K255 T256 V257 N258 Q259 A260 H261 A262 I263 L264 S265 F266 I267 D268 A269 I270 S271 E272 K273 T274 LEU ASN PHE THR V279 A280 L281 T282 A283 G284 R285 G286 R287 G288 K289 S290 A291 A292 L293 G294 I295 S296 I297 A298 A299 A300 V301 S302
H303 G304 Y305 S306 N307 I308 F309 V310 T311 S312 P313 S314 P315 E316 N317 L318 K319 T320 L321 F322 E323 F324 I325 F326 K327 G328 F329 D330 A331 L332 G333 Y334 Q335 E336 H337 ILE ASP TYR ASP ILE ILE GLN SER THR ASN PRO ASP PHE ASN LYS ALA I354 V355 R356 V357 D358 I359 K360 ARG ASP
HIS ARG GLN THR ILE Q368 Y369 I370 V371 P372 Q373 D374 H375 Q376 V377 L378 G379 Q380 A381 E382 L383 V384 V385 I386 D387 E388 A389 A390 A391 I392 PRO LEU PRO I396 V397 K398 N399 L400 L401 G402 P403 Y404 L405 V406 F407 M408 A409 S410 T411 I412 N413 G414 TYR GLU GLY THR GLY ARG SER L422
S423 L424 K425 L426 I427 Q428 Q429 L430 R431 N432 Q433 ASN ASN THR SER GLY ARG GLU SER THR GLN THR ALA VAL VAL SER ARG ASP ASN LYS GLU LYS ASP SER HIS LEU HIS SER GLN SER ARG GLN LEU ARG E467 I468 S469 L470 D471 E472 P473 I474 R475 Y476 A477 P478 G479 D480 P481 I482
E483 K484 W485 L486 N487 K488 L489 L490 C491 L492 D493 V494 T495 L496 I497 K498 N499 P500 R501 F502 A503 T504 R505 G506 T507 P508 H509 P510 S511 Q512 C513 F516 V517 V518 T522 L523 F524 S525 Y526 H527 P528 V529 S530 E531 N532 F533 L534 E535 K536 M537 M538 A539 L540 Y541 V542 S543 S544 H545
Y546 K547 N548 S549 P550 N551 D552 L553 Q554 L555 M556 S557 D558 H562 K563 L564 F565 V566 L567 L568 P569 P570 L571 D572 S573 K574 D575 G576 G577 R578 I579 P580 D581 P582 L583 C584 V585 I586 Q587 I588 A589 LEU GLU G592 E593 I594 S595 K596 E597 S598 V599 R600 N601 S602 L603 S604 R605 G606 Q607
R608 I614 L617 I618 Q621 F622 Q623 D624 L630 S631 G632 A633 R634 I635 V636 R637 I638 A639 T640 N641 P642 E643 Y644 A645 G648 Y649 G650 S651 R652 A653 I654 E655 L656 L657 R658 D659 Y660 F661 GLU GLY LYS PHE THR ASP MET SER GLU ASP VAL ARG PRO LYS ASP TYR SER
ILE LYS ARG VAL SER ASP LYS GLU LEU ALA LYS THR ASN LEU LEU LYS ASP ASP VAL LYS LEU ARG ASP ALA LYS THR LEU PRO PRO L708 L709 L710 K711 L712 S713 E714 Q715 P716 P717 H718 Y719 L720 H721 Y722 S726 L729 T730 Q731 S732 L733 H734 K735 F736 V743 P744 V745 Y746
T750 D753 L754 T755 G756 E757 H758 T759 C760 V761 M762 V765 L766 E767 G768 R769 E770 S771 V775 E776 F777 A778 K779 D780 K783 R784 F785 L786 S787 L788 L789 F793 H794 K795 F796 T797 A798 V799 Q800 A801 L802 S803 V804 I805 E806 S807 S808 Q812 D813 L814 S815 D816 D817

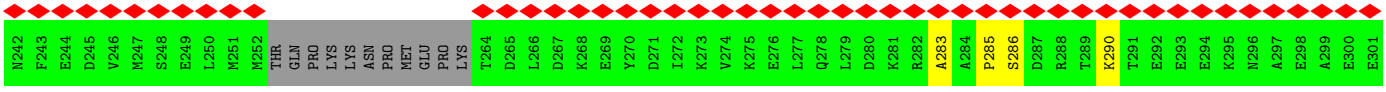


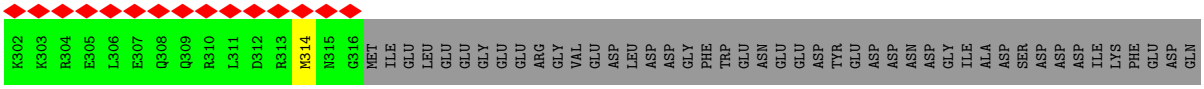
• Molecule 48: Nucleolar complex protein 14

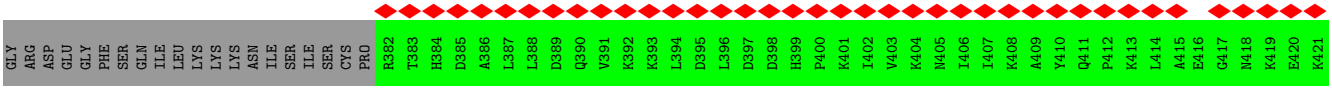


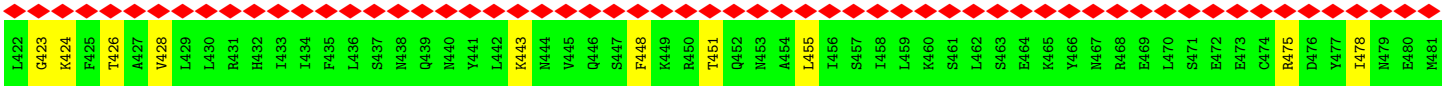


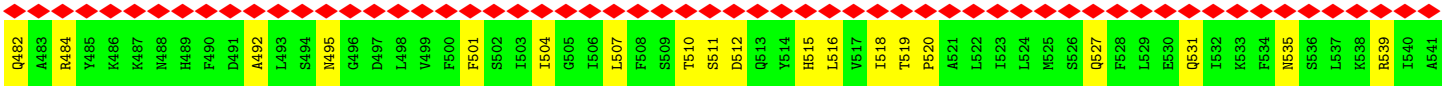


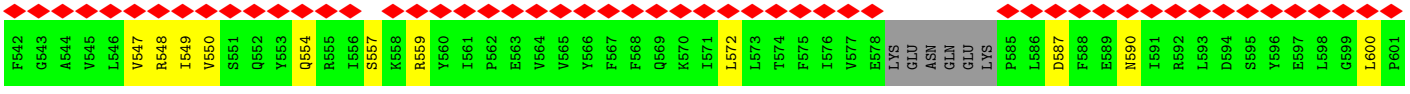


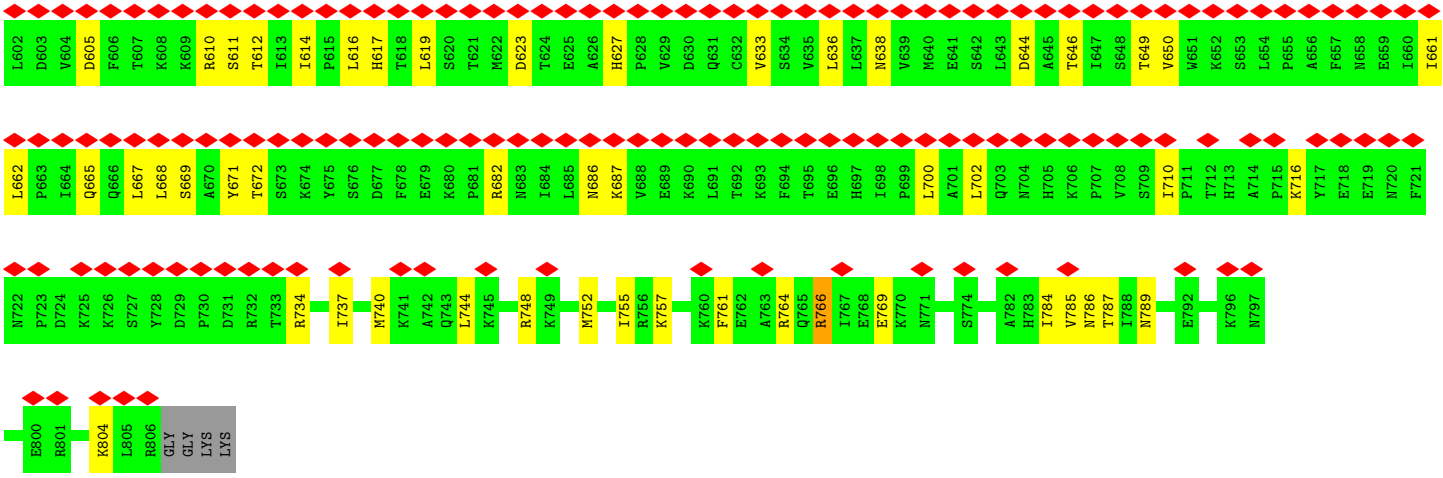






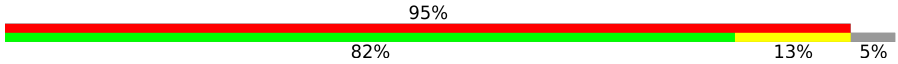


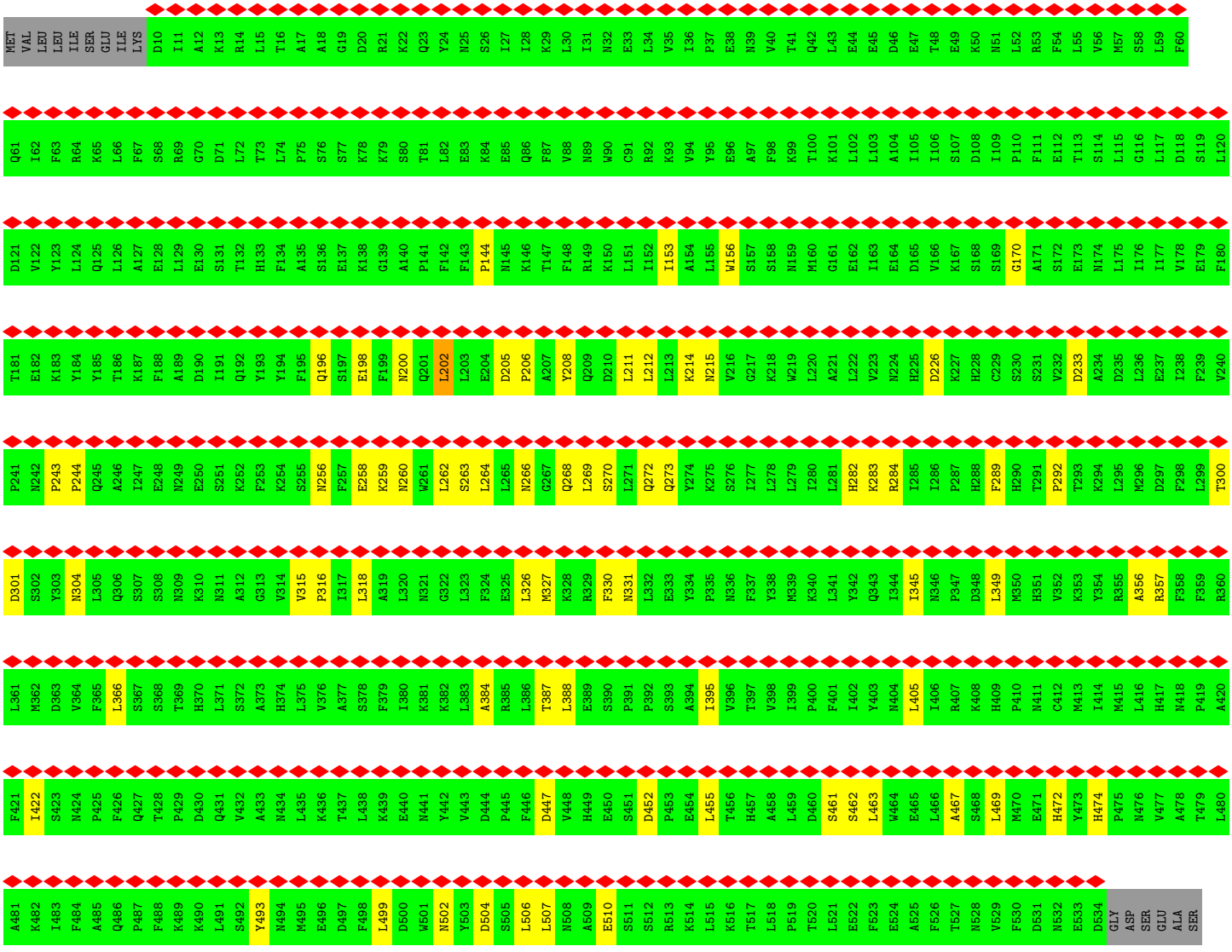




• Molecule 49: Nucleolar complex protein 4

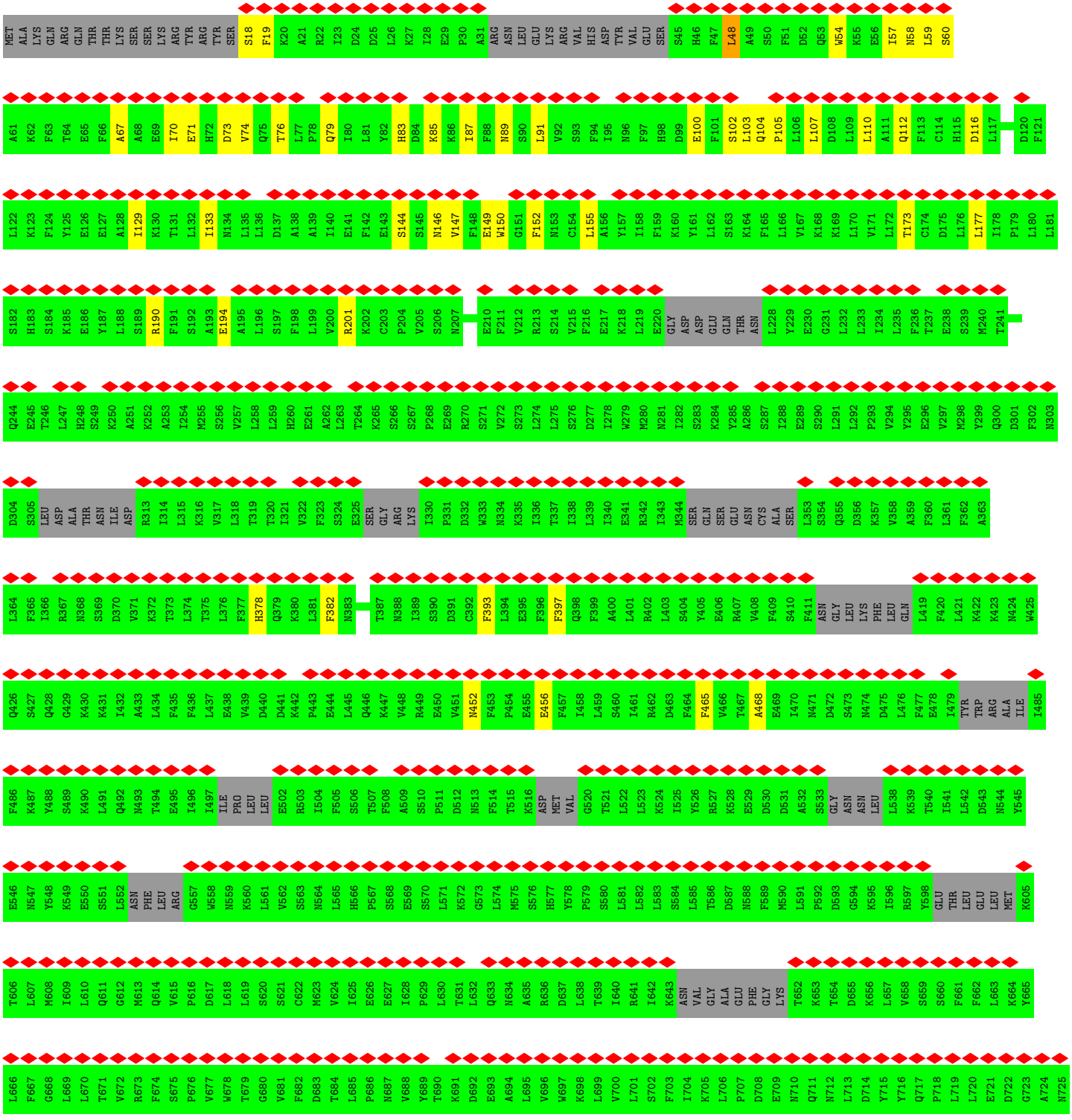
Chain RO:

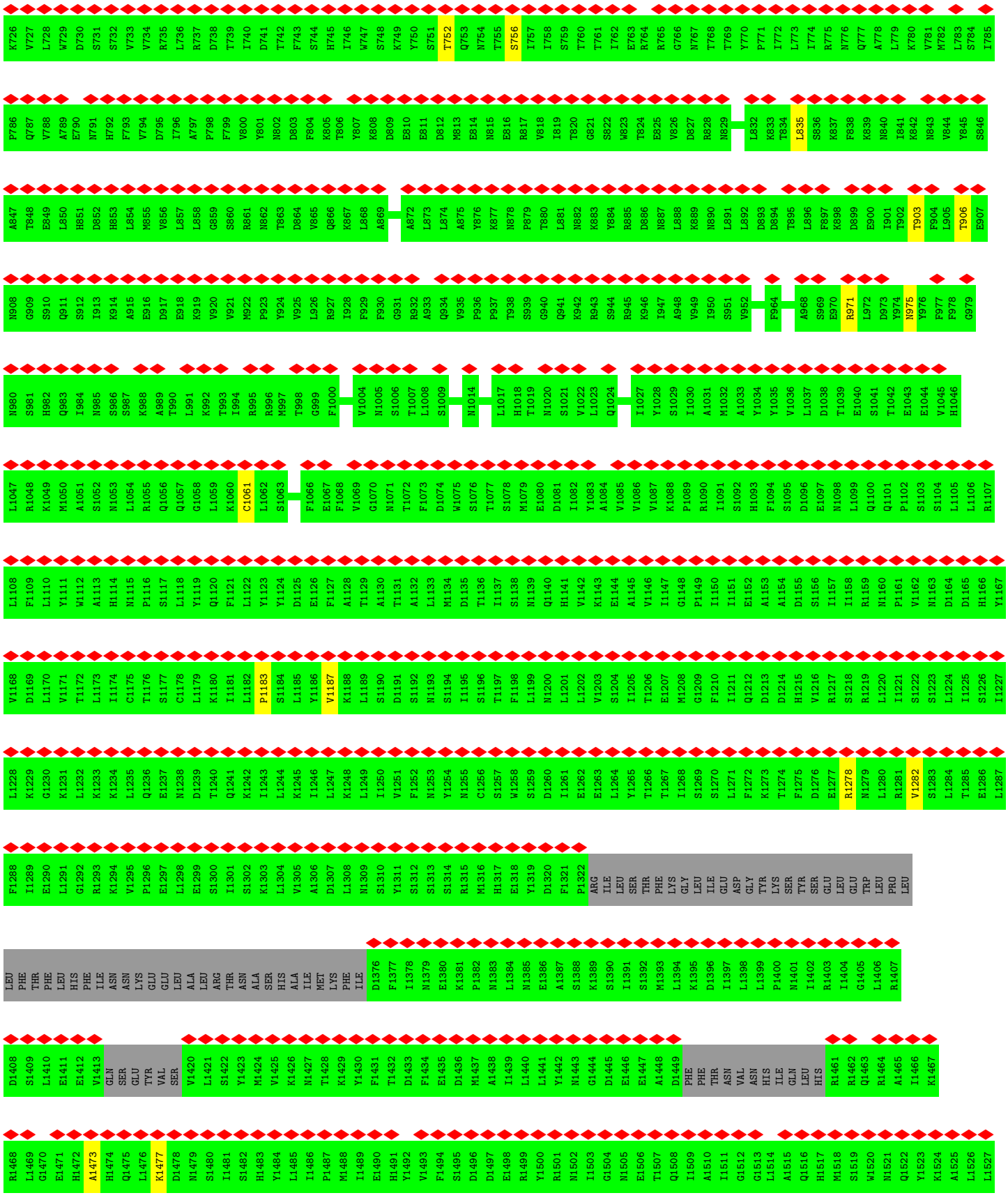


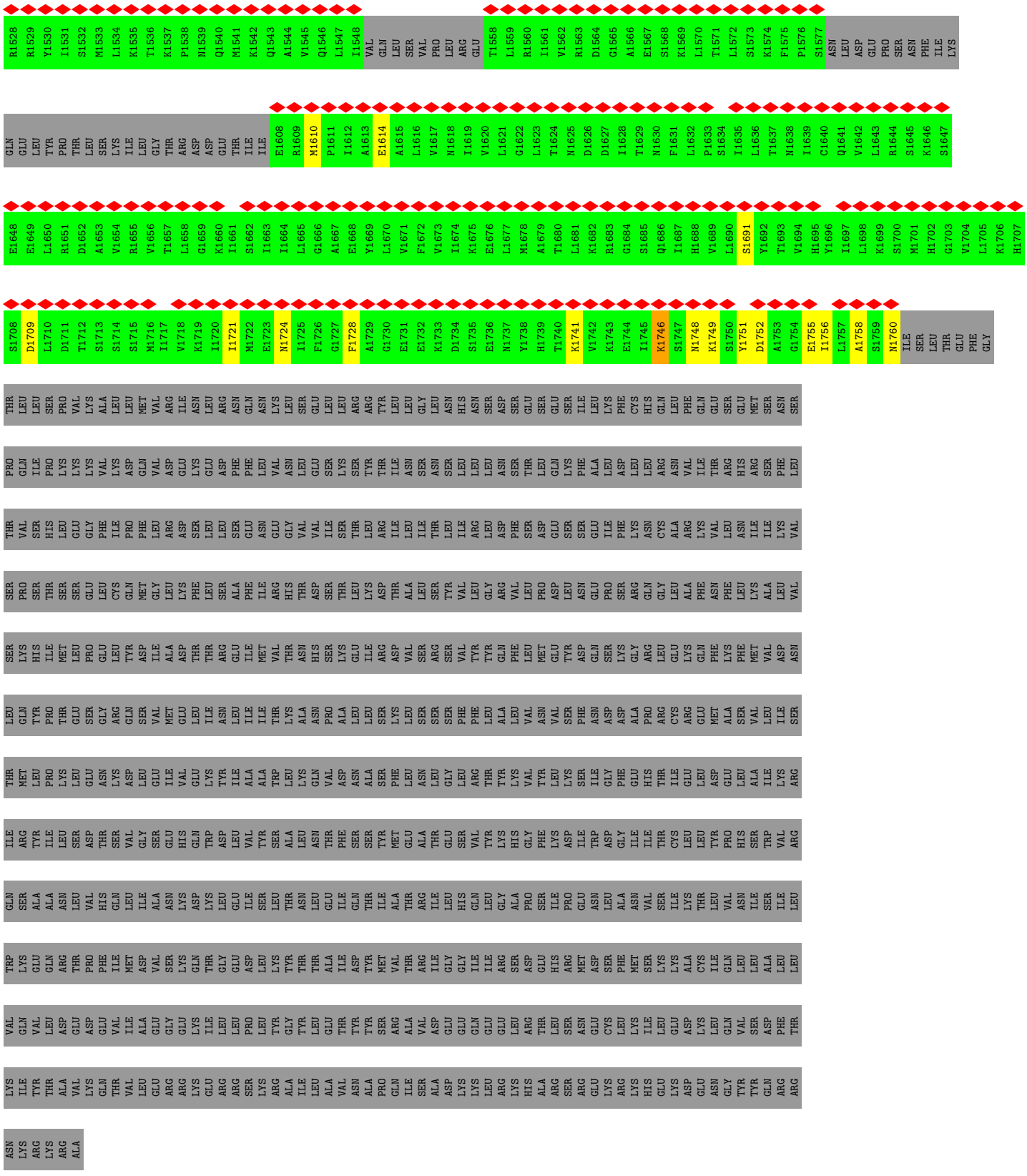


• Molecule 50: U3 small nucleolar RNA-associated protein 20

Chain RP:

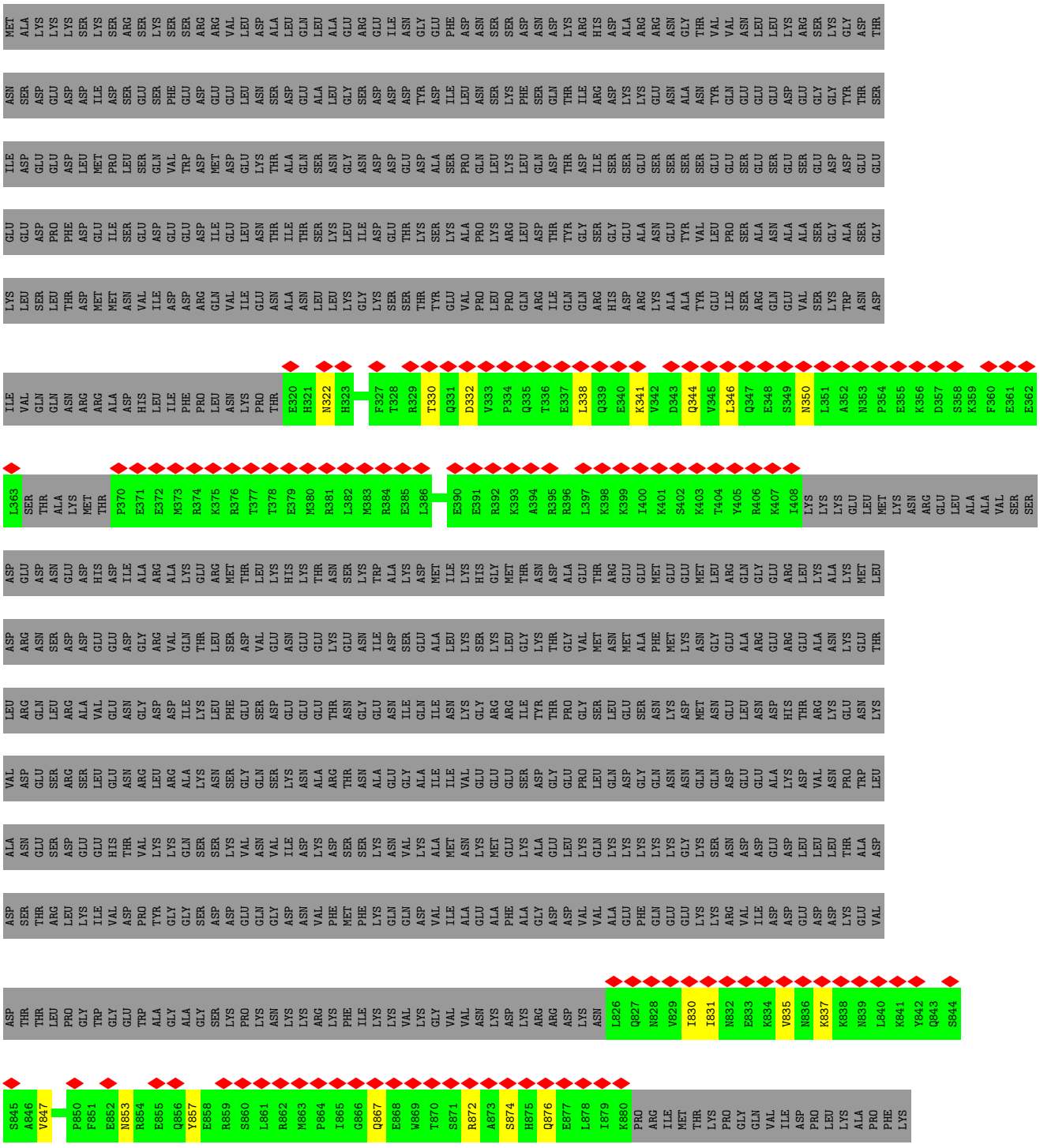



K726 V727 L728 W729 D730 S731 S732 V733 V734 R735 L736 R737 D738 T739 I740 D741 T742 F743 S744 H745 I746 W747 S748 K749 Y750 S751 T752 Q753 N754 T755 S756 I757 I758 S759 T760 T761 I762 E763 R764 R765 G766 N767 T768 T769 Y770 P771 I772 L773 I774 R775 N776 Q777 A778 L779 K780 V781 M782 L783 S784 I785
P786 Q787 V788 A789 E790 N791 H792 F793 V794 D795 I796 A797 P798 F799 V800 Y801 N802 D803 F804 K805 T806 Y807 K808 D809 E810 E811 D812 N813 E814 N815 E816 R817 V818 I819 T820 G821 S822 W823 T824 E825 V826 D827 R828 N829 L832 K833 T834 L835 S836 K837 F838 K839 N840 I841 K842 N843 V844 Y845 S846
A847 T848 E849 L850 H851 D852 H853 L854 M855 V856 L857 L858 G859 S860 R861 N862 T863 D864 V865 Q866 K867 L868 A869 A872 L873 L874 A875 Y876 K877 N878 P879 T880 L881 N882 K883 Y884 R885 D886 N887 L888 K889 N890 L891 L892 D893 D894 T895 L896 F897 K898 D899 E900 I901 T902 T903 F904 L905 T906 E907
N908 G909 S910 Q911 S912 I913 K914 A915 E916 D917 E918 K919 V920 V921 M922 P923 Y924 V925 L926 R927 I928 F929 F930 G931 R932 A933 Q934 V935 P936 P937 T938 S939 G940 Q941 K942 R943 S944 R945 K946 I947 A948 V949 I950 S951 V952 F964 A968 S969 E970 R971 L972 D973 Y974 N975 Y976 F977 F978 G979
N980 S981 H982 Q983 I984 N985 S986 S987 K988 A989 T990 L991 K992 T993 I994 R995 R996 M997 T998 G999 F1000 V1004 N1005 S1006 T1007 L1008 S1009 N1014 L1017 H1018 T1019 N1020 S1021 V1022 L1023 Q1024 I1027 Y1028 S1029 I1030 A1031 M1032 A1033 Y1034 Y1035 V1036 L1037 D1038 T1039 E1040 S1041 T1042 E1043 E1044 V1045 H1046
L1047 R1048 K1049 M1050 A1051 S1052 N1053 L1054 R1055 Q1056 Q1057 G1058 L1059 K1060 C1061 L1062 S1063 F1066 E1067 F1068 V1069 G1070 N1071 T1072 F1073 D1074 W1075 S1076 T1077 S1078 M1079 E1080 D1081 I1082 Y1083 A1084 V1085 V1086 V1087 K1088 P1089 R1090 I1091 S1092 H1093 F1094 S1095 D1096 E1097 N1098 L1099 Q1100 Q1101 P1102 S1103 S1104 L1105 L1106 R1107
L1108 F1109 L1110 V1111 W1112 A1113 H1114 N1115 P1116 S1117 C1118 Y1119 Q1120 F1121 L1122 Y1123 Y1124 D1125 E1126 F1127 A1128 T1129 A1130 T1131 A1132 L1133 M1134 D1135 T1136 I1137 S1138 N1139 Q1140 H1141 V1142 K1143 E1144 A1145 V1146 I1147 G1148 P1149 I1150 I1151 E1152 A1153 A1154 D1155 S1156 I1157 I1158 R1159 N1160 P1161 V1162 N1163 D1164 D1165 H1166 Y1167
V1168 D1169 L1170 V1171 T1172 L1173 I1174 C1175 T1176 S1177 C1178 L1179 K1180 I1181 L1182 P1183 S1184 L1185 Y1186 V1187 K1188 L1189 S1190 D1191 S1192 N1193 S1194 I1195 S1196 T1197 F1198 L1199 N1200 L1201 L1202 V1203 S1204 I1205 T1206 E1207 M1208 G1209 F1210 I1211 Q1212 D1213 D1214 H1215 V1216 R1217 S1218 R1219 L1220 I1221 S1222 S1223 L1224 I1225 S1226 I1227
L1228 K1229 G1230 K1231 L1232 K1233 K1234 L1235 Q1236 E1237 N1238 D1239 T1240 Q1241 K1242 I1243 L1244 K1245 I1246 L1247 K1248 L1249 I1250 V1251 F1252 N1253 Y1254 N1255 C1256 S1257 W1258 S1259 D1260 I1261 E1262 E1263 L1264 Y1265 T1266 T1267 I1268 S1269 S1270 L1271 F1272 K1273 T1274 F1275 D1276 E1277 R1278 N1279 L1280 R1281 V1282 S1283 L1284 T1285 E1286 L1287
F1288 I1289 E1290 L1291 G1292 R1293 K1294 V1295 P1296 E1297 L1298 E1299 S1300 I1301 S1302 K1303 L1304 V1305 A1306 D1307 L1308 N1309 S1310 Y1311 S1312 S1313 S1314 R1315 M1316 H1317 E1318 Y1319 D1320 F1321 P1322 ARG ILE LEU SER THR PHE LYS GLY LEU ILE GLU ASP GLY TYR LYS SER TYR SER GLU LEU GLU TRP LEU PRO LEU
LEU PHE THR PHE LEU HIS PHE ILE ASN ASN LYS GLU GLU LEU ALA LEU ARG THR ASN ALA SER HIS ALA ILE MET LYS PHE ILE D1376 F1377 I1378 N1379 E1380 K1381 P1382 N1383 L1384 N1385 E1386 A1387 S1388 K1389 S1390 I1391 S1392 M1393 L1394 K1395 D1396 I1397 L1398 L1399 P1400 N1401 I1402 R1403 I1404 G1405 L1406 R1407
D1408 S1409 L1410 E1411 E1412 V1413 GLN SER GLU TYR VAL SER V1420 L1421 S1422 Y1423 M1424 V1425 K1426 N1427 T1428 K1429 Y1430 F1431 T1432 D1433 F1434 E1435 D1436 M1437 A1438 I1439 L1440 L1441 Y1442 N1443 G1444 D1445 E1446 E1447 A1448 D1449 PHE PHE THR ASN VAL ASN HIS ILE GLN LEU HIS R1461 R1462 Q1463 R1464 A1465 I1466 K1467
R1468 L1469 G1470 E1471 H1472 A1473 H1474 Q1475 L1476 K1477 D1478 N1479 S1480 I1481 S1482 H1483 Y1484 L1485 I1486 P1487 M1488 I1489 E1490 H1491 Y1492 V1493 F1494 S1495 D1496 D1497 E1498 R1499 Y1500 R1501 N1502 I1503 G1504 N1505 E1506 T1507 Q1508 I1509 A1510 I1511 G1512 G1513 L1514 A1515 Q1516 H1517 M1518 S1519 W1520 N1521 Q1522 Y1523 K1524 A1525 L1526 L1527

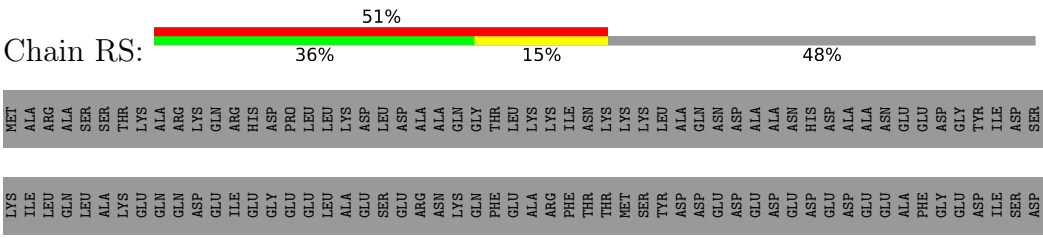


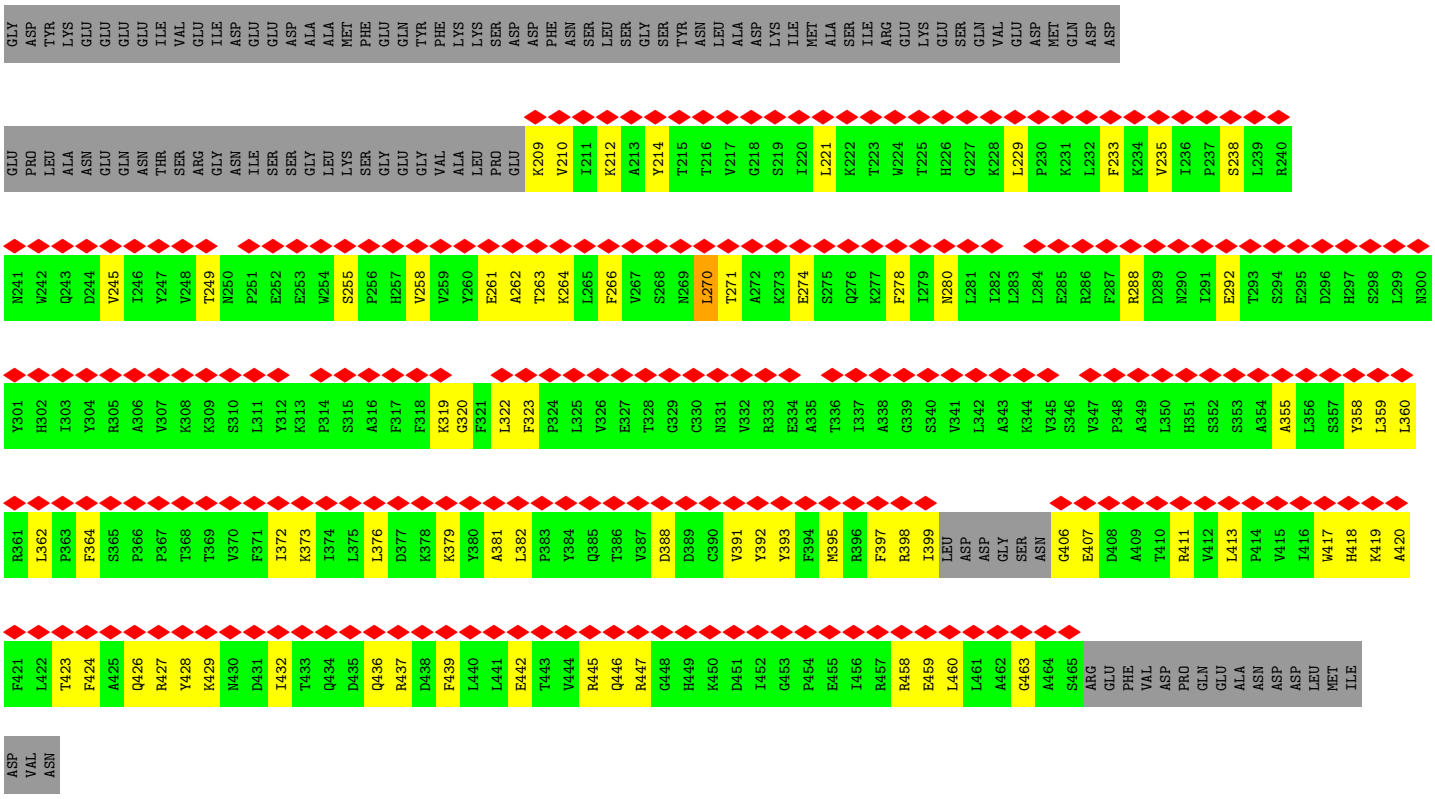
• Molecule 51: U3 small nucleolar RNA-associated protein 14

Chain RQ:



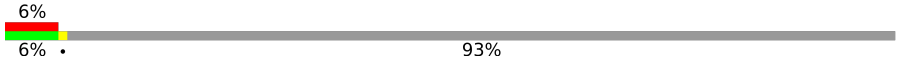
• Molecule 52: Essential nuclear protein 1

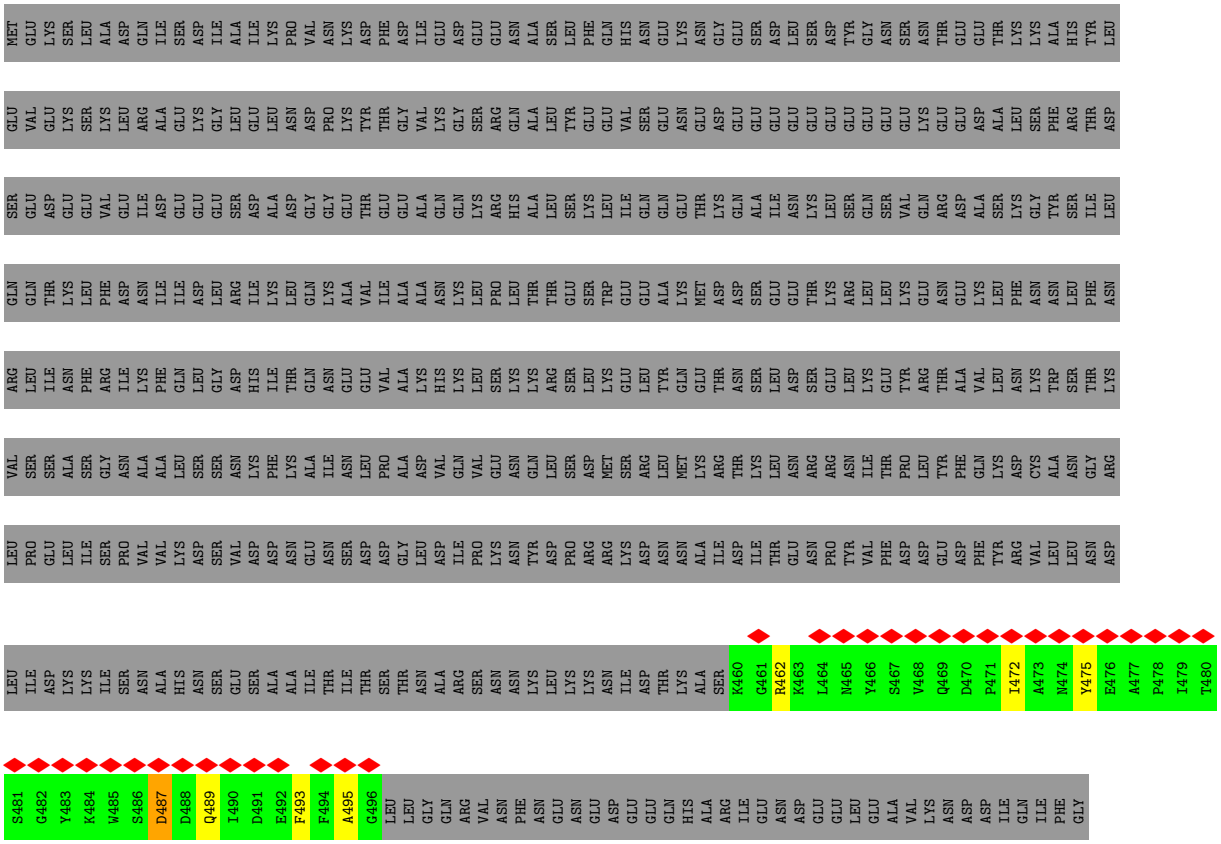




• Molecule 53: Protein BFR2

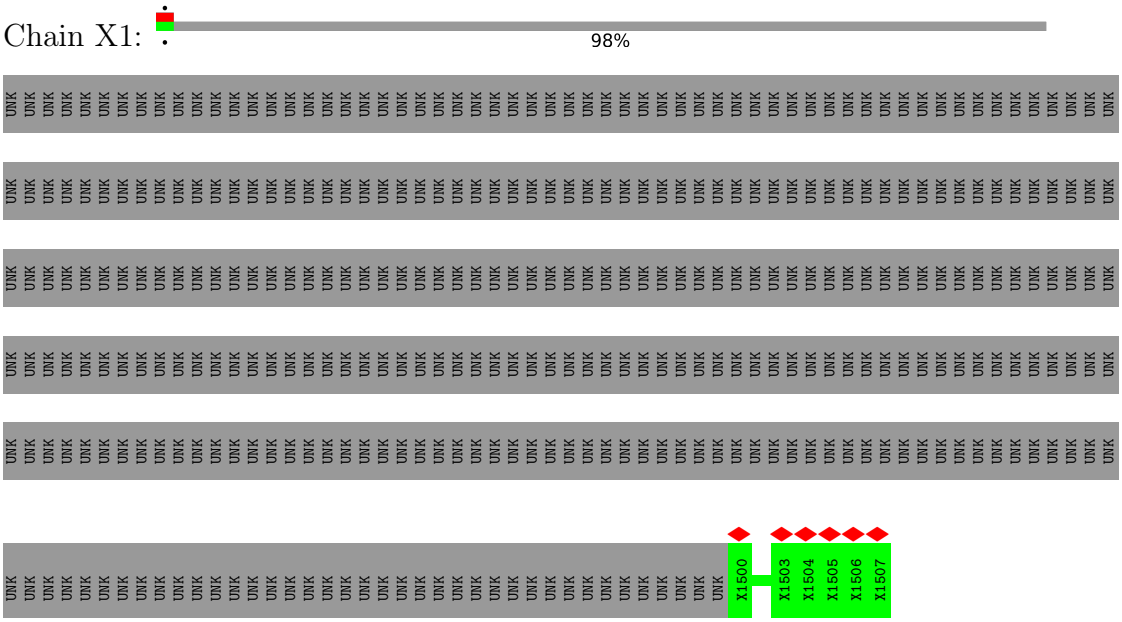
Chain RY:





• Molecule 54: Unassigned helices

Chain X1:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	9421	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.094	Depositor
Minimum map value	-0.047	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.022	Depositor
Map size (Å)	597.632, 597.632, 597.632	wwPDB
Map dimensions	448, 448, 448	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.334, 1.334, 1.334	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	3A	0.91	0/4141	1.25	38/6433 (0.6%)
2	5A	0.83	0/4101	1.09	13/6380 (0.2%)
3	SA	0.69	0/22644	1.15	167/35249 (0.5%)
4	SF	0.35	0/1854	0.66	1/2504 (0.0%)
5	SG	0.53	0/1690	0.64	0/2285
6	SH	0.31	0/1341	0.60	0/1789
7	SJ	0.31	0/1347	0.59	1/1801 (0.1%)
8	SK	0.47	0/1410	0.60	0/1888
9	SM	0.31	0/1020	0.58	0/1374
10	SR	0.58	0/990	0.73	1/1335 (0.1%)
11	SY	0.54	0/798	0.67	1/1065 (0.1%)
12	SZ	0.43	0/822	0.64	0/1103
13	Sd	0.54	0/499	0.66	0/670
14	3B	0.59	0/1901	0.66	1/2567 (0.0%)
14	3C	0.44	0/1796	0.62	1/2424 (0.0%)
15	3D	0.44	0/2891	0.63	3/3895 (0.1%)
16	3E	0.41	0/3059	0.62	3/4153 (0.1%)
17	3F	0.42	0/3715	0.64	2/5001 (0.0%)
18	3G	0.52	0/928	0.76	1/1262 (0.1%)
18	3H	0.47	0/928	0.69	2/1262 (0.2%)
19	A4	0.47	0/5321	0.66	5/7207 (0.1%)
20	A5	0.48	0/4044	0.68	5/5493 (0.1%)
21	A8	0.34	0/3249	0.71	10/4454 (0.2%)
22	A9	0.31	0/951	0.58	1/1287 (0.1%)
23	AE	0.37	0/10049	0.56	6/13737 (0.0%)
24	AF	0.53	0/3993	0.67	4/5413 (0.1%)
25	AG	0.47	0/6699	0.65	3/9077 (0.0%)
26	B1	0.64	0/6474	0.68	7/8763 (0.1%)
27	B2	0.43	0/6628	0.67	3/8954 (0.0%)
28	B3	0.39	0/6014	0.69	7/8137 (0.1%)
29	B8	0.58	0/3848	0.66	4/5218 (0.1%)
30	BE	0.58	0/6580	0.66	7/8901 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
31	B6	0.45	0/2849	0.58	1/3853 (0.0%)
32	5B	0.34	0/499	0.62	0/659
33	5C	0.63	0/3274	0.70	5/4442 (0.1%)
34	5D	0.51	0/1417	0.67	2/1885 (0.1%)
35	5E	0.39	0/1580	0.73	3/2115 (0.1%)
36	5F	0.38	0/1559	0.69	1/2097 (0.0%)
37	5G	0.39	0/1792	0.72	2/2425 (0.1%)
38	5H	0.52	0/601	0.57	0/789
39	5I	0.61	0/3844	0.66	2/5174 (0.0%)
40	5J	0.42	0/1302	0.55	0/1728
41	5K	0.56	0/1426	0.66	1/1917 (0.1%)
42	RA	0.34	0/2769	0.67	1/3753 (0.0%)
43	RB	0.38	0/1121	0.62	0/1487
44	RG	0.39	0/1727	0.68	2/2329 (0.1%)
44	RH	0.42	0/1828	0.61	0/2470
45	RJ	0.50	0/6514	0.61	1/8768 (0.0%)
46	RK	0.44	0/2832	0.65	3/3825 (0.1%)
47	RL	0.29	0/4549	0.50	0/6241
47	RM	0.25	0/3765	0.47	0/5218
48	RN	0.36	0/4591	0.58	2/6187 (0.0%)
49	RO	0.38	0/3849	0.62	5/5261 (0.1%)
50	RP	0.26	0/8541	0.49	2/11805 (0.0%)
51	RQ	0.46	0/985	0.57	0/1339
52	RS	0.33	0/2104	0.67	1/2854 (0.0%)
53	RY	0.29	0/307	0.51	0/415
All	All	0.51	0/187350	0.76	331/260117 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
4	SF	0	2
7	SJ	0	1
9	SM	0	1
12	SZ	0	1
15	3D	0	3
16	3E	0	1
17	3F	0	1
18	3G	0	2
18	3H	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
19	A4	0	1
20	A5	0	1
21	A8	0	2
25	AG	0	2
26	B1	0	2
27	B2	0	8
28	B3	0	11
30	BE	0	1
34	5D	0	1
37	5G	0	2
39	5I	0	2
42	RA	0	2
43	RB	0	1
45	RJ	0	2
46	RK	0	1
47	RL	0	1
47	RM	0	1
48	RN	0	1
49	RO	0	1
50	RP	0	2
All	All	0	58

There are no bond length outliers.

All (331) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	3A	321	C	N1-C1'-C2'	-10.80	99.96	114.00
3	SA	376	C	N1-C2-O2	10.43	125.16	118.90
3	SA	1174	C	N1-C2-O2	10.35	125.11	118.90
1	3A	104	C	C5-C6-N1	9.71	125.86	121.00
20	A5	25	ASP	CB-CG-OD1	9.52	126.87	118.30
18	3G	67	LEU	CA-CB-CG	9.36	136.82	115.30
3	SA	1274	C	C6-N1-C2	-9.01	116.70	120.30
2	5A	312	U	P-O3'-C3'	8.94	130.43	119.70
3	SA	1743	U	N1-C2-O2	8.93	129.05	122.80
3	SA	1451	C	N3-C2-O2	-8.87	115.69	121.90
3	SA	1274	C	C2-N1-C1'	8.73	128.40	118.80
3	SA	1174	C	N3-C2-O2	-8.70	115.81	121.90
2	5A	310	U	N3-C2-O2	-8.64	116.15	122.20
1	3A	200	C	C2-N1-C1'	8.62	128.29	118.80
1	3A	104	C	C6-N1-C2	-8.57	116.87	120.30
3	SA	1254	U	N1-C2-O2	8.57	128.80	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
23	AE	95	ASP	CB-CG-OD1	8.49	125.94	118.30
3	SA	376	C	C2-N1-C1'	8.42	128.06	118.80
1	3A	89	C	C2-N1-C1'	8.41	128.05	118.80
3	SA	258	C	N1-C2-O2	8.38	123.93	118.90
3	SA	1451	C	C6-N1-C2	-8.29	116.98	120.30
3	SA	1174	C	C2-N1-C1'	8.29	127.92	118.80
3	SA	1743	U	C2-N1-C1'	8.23	127.58	117.70
3	SA	1274	C	C5-C6-N1	8.22	125.11	121.00
35	5E	448	LEU	CA-CB-CG	8.17	134.10	115.30
3	SA	607	G	N3-C4-C5	-8.17	124.52	128.60
1	3A	200	C	N1-C2-O2	8.15	123.79	118.90
3	SA	275	C	N1-C2-O2	8.10	123.76	118.90
3	SA	607	G	C2-N3-C4	8.05	115.93	111.90
14	3B	306	LEU	CA-CB-CG	8.05	133.82	115.30
3	SA	166	C	N1-C2-O2	7.97	123.68	118.90
3	SA	1254	U	N3-C2-O2	-7.94	116.64	122.20
29	B8	521	LEU	CA-CB-CG	7.91	133.49	115.30
1	3A	89	C	C6-N1-C2	-7.88	117.15	120.30
3	SA	1274	C	N1-C2-O2	7.84	123.61	118.90
3	SA	374	U	C2-N1-C1'	7.83	127.10	117.70
3	SA	258	C	C2-N1-C1'	7.80	127.38	118.80
3	SA	607	G	C4-N9-C1'	7.78	136.62	126.50
42	RA	10	ASP	CB-CG-OD1	7.73	125.26	118.30
3	SA	376	C	N3-C2-O2	-7.72	116.50	121.90
1	3A	201	C	N1-C2-O2	7.70	123.52	118.90
3	SA	374	U	N1-C2-O2	7.67	128.17	122.80
1	3A	89	C	N1-C2-O2	7.66	123.50	118.90
1	3A	89	C	C5-C6-N1	7.59	124.79	121.00
3	SA	1254	U	C2-N1-C1'	7.55	126.76	117.70
2	5A	91	U	C5-C6-N1	7.45	126.42	122.70
19	A4	225	LEU	CA-CB-CG	7.45	132.43	115.30
52	RS	270	LEU	CA-CB-CG	7.36	132.24	115.30
30	BE	536	LEU	CA-CB-CG	7.35	132.21	115.30
1	3A	308	U	N3-C2-O2	-7.30	117.09	122.20
21	A8	258	PRO	N-CA-CB	7.29	112.05	103.30
3	SA	1258	U	C2-N1-C1'	7.28	126.44	117.70
2	5A	310	U	N1-C2-O2	7.28	127.89	122.80
2	5A	90	G	O4'-C1'-N9	7.25	114.00	108.20
3	SA	275	C	C2-N1-C1'	7.25	126.77	118.80
3	SA	1228	G	N3-C4-C5	-7.23	124.99	128.60
3	SA	579	A	P-O3'-C3'	7.14	128.27	119.70
24	AF	469	LEU	CA-CB-CG	7.14	131.73	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	RN	662	LEU	CA-CB-CG	7.13	131.69	115.30
20	A5	24	LEU	CA-CB-CG	7.09	131.62	115.30
2	5A	312	U	C5-C6-N1	-7.09	119.16	122.70
3	SA	311	U	N1-C2-O2	7.09	127.76	122.80
3	SA	272	U	P-O3'-C3'	7.05	128.16	119.70
3	SA	1451	C	N1-C2-O2	7.04	123.13	118.90
33	5C	144	LEU	CA-CB-CG	7.04	131.49	115.30
15	3D	292	LEU	CA-CB-CG	7.00	131.39	115.30
18	3H	65	LEU	CB-CG-CD1	-6.96	99.17	111.00
3	SA	1258	U	N1-C2-O2	6.96	127.67	122.80
1	3A	248	G	O4'-C1'-N9	6.93	113.75	108.20
3	SA	374	U	N3-C2-O2	-6.92	117.35	122.20
3	SA	280	U	N3-C2-O2	-6.92	117.36	122.20
21	A8	325	PRO	N-CA-CB	6.88	111.55	103.30
3	SA	1743	U	C6-N1-C1'	-6.85	111.61	121.20
3	SA	381	C	N3-C2-O2	-6.83	117.12	121.90
1	3A	104	C	C2-N1-C1'	6.82	126.30	118.80
3	SA	209	U	N3-C2-O2	-6.81	117.44	122.20
2	5A	312	U	OP1-P-O3'	6.80	120.17	105.20
1	3A	72	C	C6-N1-C2	-6.79	117.58	120.30
3	SA	258	C	N3-C2-O2	-6.79	117.15	121.90
11	SY	132	LEU	CA-CB-CG	6.75	130.83	115.30
3	SA	311	U	C2-N1-C1'	6.73	125.77	117.70
3	SA	1174	C	C6-N1-C2	-6.71	117.62	120.30
3	SA	56	U	P-O3'-C3'	6.70	127.74	119.70
27	B2	757	ASP	CB-CG-OD1	6.69	124.32	118.30
3	SA	607	G	N3-C4-N9	6.67	130.00	126.00
3	SA	545	A	O4'-C1'-N9	6.67	113.54	108.20
3	SA	1527	C	N1-C2-O2	6.66	122.90	118.90
3	SA	1258	U	N3-C2-O2	-6.65	117.55	122.20
3	SA	1661	U	C5-C6-N1	6.65	126.03	122.70
1	3A	99	U	C4'-C3'-O3'	6.63	126.25	113.00
21	A8	392	PRO	N-CA-CB	6.62	111.25	103.30
3	SA	608	U	C2-N1-C1'	6.60	125.62	117.70
15	3D	142	LEU	CA-CB-CG	6.60	130.47	115.30
31	B6	18	LEU	CA-CB-CG	6.59	130.46	115.30
3	SA	1476	C	C2-N1-C1'	6.55	126.00	118.80
18	3H	65	LEU	CA-CB-CG	6.52	130.30	115.30
3	SA	280	U	N1-C2-O2	6.51	127.36	122.80
3	SA	1175	U	N3-C2-O2	-6.50	117.65	122.20
3	SA	1274	C	N3-C2-O2	-6.49	117.35	121.90
24	AF	327	LEU	CA-CB-CG	6.49	130.24	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
45	RJ	252	LEU	CA-CB-CG	6.49	130.24	115.30
3	SA	280	U	C2-N1-C1'	6.49	125.48	117.70
3	SA	401	A	P-O3'-C3'	6.49	127.48	119.70
1	3A	318	U	O5'-P-OP2	-6.46	99.88	105.70
26	B1	717	LEU	CA-CB-CG	6.46	130.16	115.30
3	SA	302	U	N3-C2-O2	-6.45	117.68	122.20
3	SA	1535	U	N3-C2-O2	-6.45	117.68	122.20
39	5I	368	ASP	CB-CG-OD1	6.45	124.10	118.30
20	A5	452	LEU	CA-CB-CG	6.44	130.11	115.30
3	SA	166	C	N3-C2-O2	-6.43	117.40	121.90
35	5E	314	LEU	CA-CB-CG	6.42	130.06	115.30
1	3A	250	C	N1-C2-O2	6.40	122.74	118.90
3	SA	1232	U	N1-C2-O2	6.40	127.28	122.80
3	SA	275	C	N3-C2-O2	-6.39	117.43	121.90
3	SA	1228	G	C2-N3-C4	6.39	115.09	111.90
3	SA	1175	U	N1-C2-O2	6.38	127.26	122.80
1	3A	200	C	C6-N1-C1'	-6.36	113.16	120.80
3	SA	1440	C	C6-N1-C2	-6.36	117.75	120.30
1	3A	317	A	C4'-C3'-O3'	6.34	125.68	113.00
3	SA	1594	G	P-O3'-C3'	6.29	127.25	119.70
1	3A	312	U	P-O3'-C3'	6.29	127.24	119.70
24	AF	95	LEU	CA-CB-CG	6.29	129.75	115.30
3	SA	38	C	N1-C2-O2	6.28	122.67	118.90
50	RP	48	LEU	CA-CB-CG	6.28	129.74	115.30
20	A5	457	LEU	CA-CB-CG	6.23	129.63	115.30
21	A8	309	PRO	N-CA-CB	6.21	110.75	103.30
3	SA	1527	C	C2-N1-C1'	6.19	125.61	118.80
2	5A	312	U	C2-N1-C1'	-6.17	110.30	117.70
3	SA	1228	G	C4-N9-C1'	6.16	134.51	126.50
3	SA	1440	C	C5-C6-N1	6.15	124.07	121.00
1	3A	198	U	P-O3'-C3'	6.14	127.07	119.70
3	SA	1441	C	N3-C2-O2	-6.14	117.60	121.90
1	3A	308	U	N1-C2-O2	6.11	127.08	122.80
1	3A	200	C	C5-C6-N1	6.10	124.05	121.00
3	SA	607	G	C8-N9-C1'	-6.10	119.07	127.00
3	SA	209	U	N1-C2-O2	6.09	127.07	122.80
3	SA	273	G	C4-N9-C1'	6.09	134.42	126.50
3	SA	376	C	C6-N1-C2	-6.09	117.86	120.30
49	RO	269	LEU	CA-CB-CG	6.08	129.28	115.30
3	SA	514	G	N7-C8-N9	6.07	116.14	113.10
3	SA	1259	U	C5-C6-N1	6.05	125.72	122.70
3	SA	1476	C	C5-C6-N1	6.04	124.02	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	RK	117	LEU	CA-CB-CG	6.04	129.19	115.30
3	SA	311	U	N3-C2-O2	-6.01	117.99	122.20
3	SA	1439	C	N3-C2-O2	-6.00	117.70	121.90
36	5F	57	LEU	CA-CB-CG	6.00	129.11	115.30
2	5A	492	G	P-O3'-C3'	6.00	126.90	119.70
3	SA	1620	C	N1-C2-O2	6.00	122.50	118.90
26	B1	521	LEU	CA-CB-CG	6.00	129.10	115.30
3	SA	575	C	N1-C2-O2	5.99	122.50	118.90
3	SA	-7	A	P-O3'-C3'	5.99	126.89	119.70
3	SA	1476	C	C6-N1-C2	-5.98	117.91	120.30
1	3A	72	C	C5-C6-N1	5.96	123.98	121.00
7	SJ	29	LEU	CA-CB-CG	5.95	128.99	115.30
21	A8	453	PRO	N-CA-CB	5.94	110.43	103.30
3	SA	1228	G	N3-C4-N9	5.92	129.55	126.00
3	SA	608	U	N1-C2-O2	5.91	126.94	122.80
3	SA	275	C	C6-N1-C2	-5.91	117.94	120.30
3	SA	1232	U	C2-N1-C1'	5.91	124.79	117.70
3	SA	1232	U	N3-C2-O2	-5.91	118.06	122.20
26	B1	479	LEU	CA-CB-CG	5.90	128.87	115.30
3	SA	1216	C	N3-C2-O2	-5.89	117.77	121.90
3	SA	381	C	N1-C2-O2	5.89	122.43	118.90
37	5G	109	LEU	CA-CB-CG	5.88	128.84	115.30
34	5D	28	LEU	CA-CB-CG	5.88	128.82	115.30
3	SA	0	U	P-O3'-C3'	5.87	126.74	119.70
3	SA	1254	U	C5-C6-N1	5.86	125.63	122.70
37	5G	152	LEU	CA-CB-CG	5.86	128.78	115.30
44	RG	96	LEU	CA-CB-CG	5.85	128.76	115.30
3	SA	562	G	O4'-C1'-N9	5.84	112.87	108.20
28	B3	401	LEU	CA-CB-CG	5.83	128.71	115.30
3	SA	542	A	P-O3'-C3'	5.83	126.69	119.70
21	A8	390	PRO	N-CA-CB	5.83	110.29	103.30
26	B1	69	LEU	CA-CB-CG	5.83	128.70	115.30
21	A8	429	PRO	N-CA-CB	5.80	110.27	103.30
21	A8	298	PRO	N-CA-CB	5.79	110.25	103.30
3	SA	411	C	N1-C2-O2	5.79	122.37	118.90
3	SA	1734	U	N3-C2-O2	-5.79	118.15	122.20
3	SA	417	A	P-O3'-C3'	5.78	126.64	119.70
30	BE	522	LEU	CA-CB-CG	5.78	128.60	115.30
33	5C	74	LEU	CA-CB-CG	5.76	128.56	115.30
30	BE	872	LEU	CA-CB-CG	5.75	128.52	115.30
3	SA	194	U	C2-N1-C1'	5.75	124.59	117.70
3	SA	376	C	C5-C6-N1	5.74	123.87	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	SA	612	U	C2-N1-C1'	5.74	124.59	117.70
24	AF	195	LEU	CA-CB-CG	5.73	128.47	115.30
30	BE	121	LEU	CA-CB-CG	5.73	128.47	115.30
21	A8	235	PRO	N-CA-CB	5.72	110.16	103.30
3	SA	87	C	C6-N1-C2	-5.72	118.01	120.30
3	SA	1448	G	C5-C6-O6	5.71	132.03	128.60
28	B3	342	ASP	CB-CG-OD1	5.70	123.43	118.30
3	SA	373	G	N3-C4-C5	-5.70	125.75	128.60
3	SA	310	C	C6-N1-C2	-5.70	118.02	120.30
3	SA	1199	G	N3-C4-N9	5.69	129.42	126.00
3	SA	1521	G	P-O3'-C3'	5.69	126.53	119.70
1	3A	201	C	N3-C2-O2	-5.68	117.92	121.90
23	AE	604	LEU	CA-CB-CG	5.68	128.36	115.30
3	SA	376	C	C6-N1-C1'	-5.67	114.00	120.80
29	B8	387	LEU	CA-CB-CG	5.67	128.33	115.30
39	5I	62	LEU	CA-CB-CG	5.66	128.32	115.30
3	SA	569	C	C6-N1-C2	-5.66	118.04	120.30
19	A4	422	LEU	CA-CB-CG	5.65	128.30	115.30
3	SA	1174	C	C5-C6-N1	5.63	123.81	121.00
26	B1	716	ASP	CB-CG-OD1	5.63	123.37	118.30
3	SA	1743	U	N3-C2-O2	-5.63	118.26	122.20
25	AG	449	LEU	CA-CB-CG	5.62	128.23	115.30
1	3A	106	C	C5-C6-N1	5.62	123.81	121.00
3	SA	273	G	N3-C4-N9	5.58	129.35	126.00
19	A4	534	LEU	CA-CB-CG	5.58	128.12	115.30
3	SA	411	C	N3-C2-O2	-5.57	118.00	121.90
3	SA	1441	C	N1-C2-O2	5.56	122.24	118.90
1	3A	313	A	C4-C5-C6	-5.56	114.22	117.00
22	A9	516	LEU	CA-CB-CG	5.55	128.07	115.30
3	SA	273	G	N3-C4-C5	-5.55	125.83	128.60
30	BE	417	LEU	CA-CB-CG	5.54	128.04	115.30
3	SA	38	C	C6-N1-C2	-5.54	118.09	120.30
33	5C	414	LEU	CA-CB-CG	5.53	128.02	115.30
1	3A	313	A	N3-C4-N9	-5.52	122.99	127.40
44	RG	50	LEU	CA-CB-CG	5.51	127.98	115.30
2	5A	90	G	C8-N9-C1'	5.51	134.16	127.00
29	B8	272	LEU	CA-CB-CG	5.51	127.96	115.30
3	SA	87	C	C5-C6-N1	5.50	123.75	121.00
4	SF	42	LEU	CA-CB-CG	5.50	127.96	115.30
3	SA	1585	U	N1-C2-O2	5.50	126.65	122.80
23	AE	526	LEU	CA-CB-CG	5.49	127.93	115.30
3	SA	1161	C	C5-C6-N1	5.48	123.74	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
41	5K	17	LEU	CA-CB-CG	5.48	127.91	115.30
23	AE	370	LEU	CA-CB-CG	5.48	127.89	115.30
3	SA	1734	U	N1-C2-O2	5.46	126.62	122.80
14	3C	306	LEU	CA-CB-CG	5.45	127.84	115.30
30	BE	614	LEU	CA-CB-CG	5.45	127.84	115.30
3	SA	38	C	C2-N1-C1'	5.45	124.79	118.80
33	5C	416	LEU	CA-CB-CG	5.45	127.83	115.30
28	B3	471	PRO	C-N-CA	5.45	135.31	121.70
3	SA	50	C	C2-N1-C1'	5.44	124.79	118.80
1	3A	89	C	N3-C2-O2	-5.44	118.09	121.90
21	A8	316	PRO	N-CA-CB	5.43	109.82	103.30
3	SA	373	G	C4-N9-C1'	5.43	133.56	126.50
3	SA	1585	U	N3-C2-O2	-5.43	118.40	122.20
46	RK	296	LEU	CA-CB-CG	5.43	127.78	115.30
3	SA	608	U	N3-C2-O2	-5.42	118.40	122.20
3	SA	275	C	C5-C6-N1	5.42	123.71	121.00
3	SA	258	C	C6-N1-C1'	-5.41	114.30	120.80
25	AG	323	LEU	CA-CB-CG	5.41	127.75	115.30
3	SA	258	C	C6-N1-C2	-5.40	118.14	120.30
1	3A	248	G	P-O3'-C3'	5.40	126.18	119.70
3	SA	514	G	C8-N9-C4	-5.40	104.24	106.40
28	B3	736	LEU	CA-CB-CG	5.39	127.71	115.30
3	SA	128	U	C2-N1-C1'	5.38	124.16	117.70
23	AE	547	ILE	CG1-CB-CG2	-5.38	99.55	111.40
3	SA	1448	G	N1-C6-O6	-5.38	116.67	119.90
15	3D	152	LEU	CA-CB-CG	5.37	127.65	115.30
3	SA	1174	C	C6-N1-C1'	-5.37	114.36	120.80
25	AG	889	ASP	CB-CG-OD1	5.37	123.13	118.30
3	SA	311	U	C5-C6-N1	5.36	125.38	122.70
17	3F	315	LEU	CA-CB-CG	5.36	127.63	115.30
3	SA	607	G	C8-N9-C4	-5.36	104.26	106.40
2	5A	312	U	O4'-C1'-N1	5.36	112.49	108.20
3	SA	79	C	N1-C2-O2	5.35	122.11	118.90
3	SA	530	C	N1-C2-O2	5.34	122.11	118.90
16	3E	401	LEU	CA-CB-CG	5.34	127.58	115.30
3	SA	75	U	C2-N1-C1'	5.34	124.10	117.70
28	B3	162	LEU	CB-CG-CD2	-5.33	101.93	111.00
3	SA	1439	C	N1-C2-O2	5.33	122.10	118.90
50	RP	155	LEU	CA-CB-CG	5.33	127.56	115.30
3	SA	38	C	N3-C2-O2	-5.32	118.18	121.90
2	5A	90	G	C4-N9-C1'	-5.32	119.59	126.50
3	SA	1646	C	N1-C2-O2	5.29	122.08	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	SA	25	C	C2-N1-C1'	5.29	124.61	118.80
1	3A	104	C	C2-N3-C4	5.27	122.54	119.90
33	5C	148	LEU	CA-CB-CG	5.27	127.43	115.30
3	SA	380	U	N1-C2-O2	5.27	126.49	122.80
3	SA	49	C	C5-C6-N1	5.26	123.63	121.00
3	SA	50	C	C6-N1-C2	-5.26	118.19	120.30
3	SA	443	C	C5-C6-N1	5.26	123.63	121.00
30	BE	536	LEU	CB-CG-CD2	-5.26	102.06	111.00
3	SA	1269	U	N3-C2-O2	-5.26	118.52	122.20
3	SA	1664	C	N3-C2-O2	-5.26	118.22	121.90
49	RO	388	LEU	CA-CB-CG	5.25	127.36	115.30
3	SA	8	U	N3-C2-O2	-5.24	118.53	122.20
16	3E	227	LEU	CA-CB-CG	5.24	127.35	115.30
3	SA	-7	A	OP1-P-O3'	5.23	116.72	105.20
17	3F	348	LEU	CA-CB-CG	5.23	127.33	115.30
28	B3	12	LEU	CA-CB-CG	5.22	127.31	115.30
3	SA	279	G	N3-C4-N9	-5.22	122.87	126.00
23	AE	94	LEU	CA-CB-CG	5.22	127.30	115.30
20	A5	151	LEU	CA-CB-CG	5.21	127.29	115.30
35	5E	449	ASP	CB-CG-OD1	5.20	122.98	118.30
3	SA	373	G	N3-C4-N9	5.20	129.12	126.00
3	SA	1269	U	N1-C2-O2	5.19	126.44	122.80
16	3E	141	LEU	CA-CB-CG	5.19	127.24	115.30
28	B3	394	LEU	CA-CB-CG	5.18	127.23	115.30
1	3A	39	C	C2-N1-C1'	5.18	124.50	118.80
3	SA	612	U	N1-C2-O2	5.18	126.43	122.80
27	B2	267	ASP	C-N-CA	5.18	134.65	121.70
3	SA	380	U	N3-C2-O2	-5.18	118.58	122.20
29	B8	521	LEU	CB-CG-CD1	-5.18	102.20	111.00
1	3A	39	C	C6-N1-C2	-5.17	118.23	120.30
1	3A	205	G	P-O3'-C3'	5.16	125.89	119.70
3	SA	443	C	C6-N1-C2	-5.14	118.24	120.30
49	RO	211	LEU	CA-CB-CG	5.14	127.13	115.30
2	5A	310	U	C6-N1-C2	-5.14	117.92	121.00
3	SA	273	G	C8-N9-C1'	-5.14	120.32	127.00
3	SA	411	C	C6-N1-C2	-5.14	118.25	120.30
46	RK	325	LEU	CA-CB-CG	5.13	127.09	115.30
19	A4	465	LEU	CA-CB-CG	5.09	127.02	115.30
1	3A	249	G	O5'-P-OP1	-5.09	101.12	105.70
3	SA	1492	A	C4-N9-C1'	5.09	135.46	126.30
3	SA	1535	U	C6-N1-C2	-5.09	117.95	121.00
3	SA	35	U	C5-C6-N1	5.09	125.24	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	3A	89	C	C6-N1-C1'	-5.08	114.70	120.80
3	SA	130	C	C2-N1-C1'	5.07	124.38	118.80
10	SR	123	ARG	C-N-CD	-5.07	109.46	120.60
1	3A	200	C	C6-N1-C2	-5.06	118.27	120.30
1	3A	198	U	OP1-P-O3'	5.06	116.34	105.20
3	SA	75	U	N3-C2-O2	-5.06	118.66	122.20
3	SA	1664	C	N1-C2-O2	5.05	121.93	118.90
34	5D	91	LEU	CA-CB-CG	5.05	126.91	115.30
49	RO	264	LEU	CA-CB-CG	5.05	126.91	115.30
19	A4	435	PRO	C-N-CA	5.04	134.31	121.70
26	B1	701	LEU	CA-CB-CG	5.04	126.90	115.30
3	SA	1664	C	C2-N1-C1'	5.04	124.34	118.80
27	B2	231	LEU	CA-CB-CG	5.04	126.90	115.30
3	SA	414	C	C5-C6-N1	5.03	123.52	121.00
3	SA	1222	C	C5-C6-N1	5.03	123.52	121.00
3	SA	35	U	N1-C2-O2	5.03	126.32	122.80
26	B1	436	LEU	CA-CB-CG	5.02	126.84	115.30
49	RO	202	LEU	CA-CB-CG	5.01	126.81	115.30
3	SA	1636	C	C5-C6-N1	5.00	123.50	121.00
3	SA	1664	C	C6-N1-C2	-5.00	118.30	120.30
48	RN	744	LEU	CA-CB-CG	5.00	126.80	115.30

There are no chirality outliers.

All (58) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
15	3D	142	LEU	Peptide
15	3D	202	HIS	Peptide
15	3D	286	ARG	Peptide
16	3E	331	LYS	Peptide
17	3F	237	ASP	Peptide
18	3G	59	GLU	Peptide
18	3G	9	PHE	Peptide
18	3H	59	GLU	Peptide
34	5D	138	ASP	Peptide
37	5G	254	PHE	Peptide
37	5G	74	ASP	Peptide
39	5I	230	ASN	Peptide
39	5I	283	ASP	Peptide
19	A4	54	LYS	Peptide
20	A5	167	SER	Peptide
21	A8	496	TYR	Peptide

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Mol	Chain	Res	Type	Group
21	A8	529	HIS	Peptide
25	AG	178	PHE	Peptide
25	AG	780	GLU	Peptide
26	B1	288	ASP	Peptide
26	B1	690	ALA	Peptide
27	B2	131	GLY	Peptide
27	B2	213	LYS	Peptide
27	B2	266	SER	Peptide
27	B2	267	ASP	Peptide
27	B2	278	ASP	Peptide
27	B2	44	SER	Peptide
27	B2	613	ALA	Peptide
27	B2	916	HIS	Peptide
28	B3	34	THR	Peptide
28	B3	435	ALA	Peptide
28	B3	473	ALA	Peptide
28	B3	479	ILE	Peptide
28	B3	480	ILE	Peptide
28	B3	585	ASN	Peptide
28	B3	593	CYS	Peptide
28	B3	594	GLY	Peptide
28	B3	627	ASN	Peptide
28	B3	89	HIS	Peptide
28	B3	90	LEU	Peptide
30	BE	94	TYR	Peptide
42	RA	111	TRP	Peptide
42	RA	173	LEU	Peptide
43	RB	261	SER	Peptide
45	RJ	1026	LYS	Peptide
45	RJ	868	ARG	Peptide
46	RK	333	PHE	Peptide
47	RL	743	VAL	Peptide
47	RM	743	VAL	Peptide
48	RN	286	SER	Peptide
49	RO	144	PRO	Peptide
50	RP	1746	LYS	Peptide
50	RP	835	LEU	Peptide
4	SF	193	GLY	Peptide
4	SF	195	ILE	Peptide
7	SJ	85	PRO	Peptide
9	SM	128	CYS	Peptide
12	SZ	76	TYR	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	3A	3711	0	1882	57	0
2	5A	3668	0	1845	35	0
3	SA	20256	0	10219	193	0
4	SF	1815	0	1870	45	0
5	SG	1669	0	1724	18	0
6	SH	1327	0	1403	28	0
7	SJ	1324	0	1344	48	0
8	SK	1388	0	1467	31	0
9	SM	997	0	1048	35	0
10	SR	973	0	1029	19	0
11	SY	786	0	843	8	0
12	SZ	809	0	842	15	0
13	Sd	497	0	535	0	0
14	3B	1865	0	1910	29	0
14	3C	1763	0	1805	42	0
15	3D	2848	0	2815	46	0
16	3E	3028	0	2813	59	0
17	3F	3643	0	3654	79	0
18	3G	916	0	964	11	0
18	3H	916	0	964	24	0
19	A4	5226	0	5199	95	0
20	A5	3976	0	3919	60	0
21	A8	3229	0	2281	130	0
22	A9	939	0	898	45	0
23	AE	9955	0	7968	102	0
24	AF	3911	0	3906	74	0
25	AG	6570	0	6473	140	0
26	B1	6331	0	6236	140	0
27	B2	6502	0	6493	121	0
28	B3	5919	0	6007	134	0
29	B8	3764	0	3757	58	0
30	BE	6450	0	6420	94	0
31	B6	2800	0	2517	32	0
32	5B	495	0	561	12	0
33	5C	3198	0	3157	57	0
34	5D	1396	0	1407	47	0
35	5E	1564	0	1592	165	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
36	5F	1530	0	1572	79	0
37	5G	1756	0	1765	56	0
38	5H	596	0	661	7	0
39	5I	3765	0	3714	67	0
40	5J	1280	0	1331	23	0
41	5K	1403	0	1484	16	0
42	RA	2709	0	2622	63	0
43	RB	1108	0	1087	25	0
44	RG	1701	0	1767	40	0
44	RH	1799	0	1872	29	0
45	RJ	6379	0	6506	138	0
46	RK	2781	0	2878	49	0
47	RL	4539	0	2874	28	0
47	RM	3779	0	1650	8	0
48	RN	4529	0	4262	82	0
49	RO	3766	0	3269	47	0
50	RP	8510	0	4744	43	0
51	RQ	974	0	802	15	0
52	RS	2051	0	2096	53	0
53	RY	299	0	275	6	0
54	X1	40	0	10	0	0
55	5K	1	0	0	0	0
56	RJ	32	0	12	1	0
57	RJ	1	0	0	0	0
All	All	181752	0	157020	2686	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 8.

All (2686) 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)
21:A8:596:LYS:HE3	21:A8:637:LEU:CD2	1.25	1.58
26:B1:382:THR:O	35:5E:481:PRO:HB3	1.40	1.22
21:A8:596:LYS:HE3	21:A8:637:LEU:HD23	1.23	1.21
35:5E:366:GLU:OE2	37:5G:247:ILE:HG21	1.40	1.19
21:A8:443:CYS:HA	25:AG:728:LEU:HD13	1.25	1.19
21:A8:563:LEU:HB2	21:A8:598:GLU:OE1	1.41	1.17
21:A8:596:LYS:CE	21:A8:637:LEU:CD2	2.21	1.17
21:A8:596:LYS:CE	21:A8:637:LEU:HD22	1.75	1.17
33:5C:430:VAL:HG21	36:5F:3:ARG:HD3	1.25	1.16

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:5E:520:LEU:HD11	35:5E:525:LYS:CG	1.74	1.16
21:A8:673:THR:HG22	22:A9:490:GLU:HB2	1.20	1.16
21:A8:633:GLN:O	21:A8:637:LEU:HG	1.44	1.14
34:5D:78:LEU:HB2	45:RJ:1082:GLN:HE21	1.10	1.14
21:A8:673:THR:HG22	22:A9:490:GLU:CB	1.80	1.12
35:5E:520:LEU:CD1	35:5E:525:LYS:HG3	1.80	1.11
36:5F:8:HIS:HA	39:5I:53:MET:HE1	1.29	1.10
35:5E:520:LEU:HD11	35:5E:525:LYS:HG3	1.29	1.10
30:BE:737:LEU:HA	30:BE:740:ILE:CG2	1.82	1.08
21:A8:631:SER:O	21:A8:634:LEU:HG	1.56	1.06
26:B1:298:LEU:HD12	35:5E:476:MET:SD	1.95	1.06
21:A8:443:CYS:N	25:AG:728:LEU:HD22	1.70	1.05
21:A8:443:CYS:CB	25:AG:728:LEU:HB3	1.86	1.05
26:B1:341:GLN:NE2	26:B1:378:PHE:HB3	1.73	1.03
28:B3:690:HIS:CG	35:5E:519:GLU:HB2	1.94	1.03
26:B1:298:LEU:CD1	35:5E:476:MET:SD	2.47	1.02
30:BE:740:ILE:HG13	35:5E:483:TYR:OH	1.58	1.02
36:5F:19:LEU:HG	41:5K:25:LEU:HB3	1.41	1.02
21:A8:592:ARG:HB2	21:A8:596:LYS:HZ1	0.88	1.01
26:B1:418:ARG:HD2	35:5E:489:SER:O	1.59	1.01
27:B2:17:ILE:HG22	27:B2:52:TRP:CZ2	1.94	1.01
48:RN:527:GLN:O	48:RN:531:GLN:HB2	1.60	1.01
21:A8:631:SER:HA	21:A8:634:LEU:HD11	1.43	1.01
21:A8:592:ARG:HB2	21:A8:596:LYS:NZ	1.76	1.00
35:5E:384:ARG:HD2	37:5G:83:ILE:HD12	1.42	1.00
26:B1:337:TYR:OH	35:5E:474:ILE:HD13	1.61	1.00
35:5E:343:GLU:OE2	45:RJ:1007:TYR:HE1	1.43	1.00
3:SA:36:C:H42	3:SA:472:U:H3	1.00	0.99
48:RN:86:ILE:HA	48:RN:89:GLN:HE21	1.26	0.98
33:5C:430:VAL:HG21	36:5F:3:ARG:CD	1.94	0.97
21:A8:593:ASP:HA	21:A8:596:LYS:HD2	1.43	0.97
8:SK:65:LYS:HZ2	17:3F:59:PRO:CD	1.77	0.96
8:SK:65:LYS:HZ2	17:3F:59:PRO:CG	1.78	0.94
1:3A:319:G:H5'	14:3C:121:LYS:NZ	1.82	0.94
21:A8:443:CYS:CA	25:AG:728:LEU:HD22	1.96	0.94
26:B1:54:HIS:HE2	26:B1:72:SER:HG	1.14	0.94
35:5E:319:VAL:HG21	45:RJ:1038:ILE:CG2	1.97	0.93
21:A8:596:LYS:HE2	21:A8:637:LEU:HA	1.48	0.93
30:BE:739:VAL:HG21	35:5E:487:ALA:HB2	1.51	0.92
8:SK:65:LYS:HZ2	17:3F:59:PRO:CB	1.82	0.92
21:A8:443:CYS:HA	25:AG:728:LEU:CD1	2.00	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5A:9:G:H5'	22:A9:483:LYS:NZ	1.85	0.92
26:B1:418:ARG:HH21	26:B1:418:ARG:HG3	1.33	0.91
30:BE:737:LEU:HA	30:BE:740:ILE:HG21	1.50	0.91
21:A8:596:LYS:CE	21:A8:637:LEU:HD23	1.91	0.90
48:RN:86:ILE:HA	48:RN:89:GLN:NE2	1.87	0.90
3:SA:36:C:N4	3:SA:472:U:H3	1.70	0.89
35:5E:343:GLU:OE2	45:RJ:1007:TYR:CE1	2.25	0.89
8:SK:65:LYS:NZ	17:3F:59:PRO:CG	2.35	0.89
1:3A:318:U:H3	14:3C:119:GLY:HA3	1.36	0.88
21:A8:673:THR:HG22	22:A9:490:GLU:CA	2.02	0.88
21:A8:592:ARG:CB	21:A8:596:LYS:HZ1	1.82	0.87
26:B1:418:ARG:CD	35:5E:489:SER:O	2.21	0.87
28:B3:494:ILE:N	28:B3:510:SER:HG	1.71	0.87
35:5E:493:GLN:NE2	35:5E:497:ASN:HB3	1.88	0.86
21:A8:673:THR:CG2	22:A9:490:GLU:CA	2.54	0.86
34:5D:78:LEU:HD22	45:RJ:1082:GLN:CG	2.05	0.86
34:5D:78:LEU:HB2	45:RJ:1082:GLN:NE2	1.91	0.85
8:SK:65:LYS:NZ	17:3F:59:PRO:CD	2.38	0.85
17:3F:415:THR:HG1	17:3F:425:TRP:HE1	1.24	0.85
21:A8:596:LYS:HE3	21:A8:637:LEU:HD22	0.88	0.85
35:5E:384:ARG:HE	37:5G:82:GLY:H	1.22	0.85
33:5C:430:VAL:CG2	36:5F:3:ARG:HD3	2.07	0.85
47:RM:313:PRO:O	47:RM:372:PRO:HA	1.77	0.84
35:5E:319:VAL:HG21	45:RJ:1038:ILE:HG22	1.57	0.84
21:A8:673:THR:CG2	22:A9:490:GLU:HA	2.07	0.84
48:RN:86:ILE:CA	48:RN:89:GLN:HE21	1.89	0.84
21:A8:643:ASP:HA	24:AF:510:LEU:CD1	2.06	0.84
52:RS:424:PHE:O	52:RS:428:TYR:HB2	1.78	0.84
1:3A:24:U:O2	36:5F:13:LEU:HB2	1.77	0.84
45:RJ:871:MET:HE1	45:RJ:930:LYS:CE	2.08	0.84
1:3A:94:A:H61	1:3A:322:A:H61	1.27	0.83
49:RO:502:ASN:O	49:RO:506:LEU:HB2	1.77	0.83
4:SF:213:SER:HG	17:3F:102:ASP:N	1.77	0.83
28:B3:691:PRO:HD2	35:5E:516:SER:HB3	1.60	0.83
26:B1:382:THR:O	35:5E:481:PRO:CB	2.26	0.82
35:5E:384:ARG:HD2	37:5G:83:ILE:CD1	2.10	0.82
30:BE:736:HIS:O	30:BE:740:ILE:HG22	1.78	0.82
35:5E:532:LEU:O	35:5E:536:ARG:HG2	1.78	0.82
35:5E:520:LEU:HD11	35:5E:525:LYS:HG2	1.61	0.82
1:3A:319:G:C5'	14:3C:121:LYS:NZ	2.42	0.82
34:5D:68:HIS:CE1	36:5F:169:THR:HG21	2.14	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:5E:384:ARG:HH21	37:5G:81:SER:HB3	1.45	0.81
1:3A:318:U:OP1	1:3A:318:U:H3'	1.80	0.81
51:RQ:346:LEU:O	51:RQ:350:ASN:HA	1.80	0.81
35:5E:384:ARG:CD	37:5G:83:ILE:HD12	2.09	0.81
18:3H:44:LEU:HD22	18:3H:52:ILE:CD1	2.10	0.81
23:AE:151:ILE:O	23:AE:155:ILE:HB	1.81	0.81
34:5D:58:ARG:HD2	36:5F:174:ARG:NH2	1.96	0.81
26:B1:14:VAL:HG21	26:B1:341:GLN:O	1.81	0.80
26:B1:678:GLU:OE2	35:5E:455:HIS:CE1	2.34	0.80
26:B1:298:LEU:HA	35:5E:472:PRO:HB2	1.62	0.80
35:5E:345:LEU:O	35:5E:345:LEU:HD23	1.81	0.80
47:RM:746:TYR:O	47:RM:765:VAL:HA	1.81	0.80
35:5E:533:LYS:HA	35:5E:536:ARG:NE	1.97	0.80
21:A8:596:LYS:HD3	21:A8:640:LEU:HD22	1.62	0.79
30:BE:737:LEU:HA	30:BE:740:ILE:HG22	1.63	0.79
28:B3:690:HIS:CD2	35:5E:519:GLU:HB2	2.18	0.79
21:A8:633:GLN:O	21:A8:637:LEU:CG	2.29	0.79
1:3A:323:G:N3	1:3A:323:G:H2'	1.96	0.79
31:B6:319:TYR:O	31:B6:323:PHE:HB2	1.81	0.79
7:SJ:48:THR:O	7:SJ:52:ASN:HB2	1.83	0.79
35:5E:319:VAL:CG2	45:RJ:1038:ILE:CG2	2.60	0.79
21:A8:631:SER:CA	21:A8:634:LEU:HD21	2.13	0.78
2:5A:9:G:H5'	22:A9:483:LYS:HZ2	1.46	0.78
8:SK:65:LYS:NZ	17:3F:59:PRO:HD3	1.97	0.78
21:A8:672:ASN:HB2	22:A9:489:SER:OG	1.83	0.78
48:RN:86:ILE:O	48:RN:89:GLN:HG3	1.84	0.78
3:SA:1663:G:H1	3:SA:1738:U:H3	1.31	0.78
48:RN:86:ILE:HA	48:RN:89:GLN:HG2	1.66	0.78
21:A8:665:GLN:HB3	22:A9:496:LEU:HD21	1.64	0.78
24:AF:224:THR:O	24:AF:239:LEU:HB2	1.83	0.78
37:5G:239:VAL:HG21	48:RN:13:LEU:HD12	1.65	0.77
35:5E:319:VAL:CG2	45:RJ:1038:ILE:HG21	2.14	0.77
3:SA:153:G:H1	3:SA:161:U:H3	1.33	0.77
21:A8:673:THR:HG21	22:A9:490:GLU:HA	1.66	0.77
21:A8:631:SER:HA	21:A8:634:LEU:HD21	1.66	0.77
35:5E:533:LYS:HA	35:5E:536:ARG:HE	1.47	0.76
21:A8:647:LEU:HB3	22:A9:509:GLN:HE22	1.50	0.76
34:5D:78:LEU:HD22	45:RJ:1082:GLN:HG3	1.68	0.76
36:5F:6:LYS:O	36:5F:9:GLU:HB2	1.85	0.76
26:B1:299:SER:O	35:5E:476:MET:HG2	1.87	0.75
35:5E:319:VAL:HG21	45:RJ:1038:ILE:HG21	1.69	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:5D:78:LEU:HD22	45:RJ:1082:GLN:HG2	1.68	0.75
8:SK:138:LYS:H	43:RB:263:GLY:HA3	1.51	0.75
35:5E:493:GLN:HE22	35:5E:497:ASN:ND2	1.84	0.75
3:SA:415:C:H1'	3:SA:419:G:H22	1.50	0.75
36:5F:5:LEU:HB3	36:5F:9:GLU:HB3	1.67	0.75
35:5E:345:LEU:HD22	45:RJ:961:PHE:CZ	2.22	0.74
26:B1:680:ARG:NH1	35:5E:455:HIS:CD2	2.56	0.74
35:5E:533:LYS:HA	35:5E:536:ARG:HG2	1.68	0.74
19:A4:614:TRP:O	19:A4:618:ASN:HB2	1.87	0.74
10:SR:94:GLN:OE1	36:5F:182:PHE:CD1	2.39	0.74
1:3A:319:G:H5'	14:3C:121:LYS:HZ2	1.50	0.74
26:B1:419:TYR:HE2	35:5E:486:ASN:ND2	1.86	0.74
35:5E:384:ARG:CD	37:5G:83:ILE:CD1	2.65	0.74
40:5J:114:ARG:O	40:5J:118:GLN:HB3	1.88	0.74
33:5C:188:LYS:HE2	36:5F:23:GLN:OE1	1.87	0.74
10:SR:94:GLN:OE1	36:5F:182:PHE:HD1	1.69	0.73
1:3A:319:G:C5'	14:3C:121:LYS:HZ2	2.01	0.73
30:BE:737:LEU:CA	30:BE:740:ILE:CG2	2.64	0.73
2:5A:9:G:C5'	22:A9:483:LYS:NZ	2.51	0.72
21:A8:643:ASP:HA	24:AF:510:LEU:HD13	1.69	0.72
21:A8:669:ALA:HA	22:A9:489:SER:HB2	1.69	0.72
35:5E:384:ARG:NE	37:5G:82:GLY:H	1.87	0.72
28:B3:216:ARG:HH11	28:B3:241:GLN:HE22	1.36	0.72
3:SA:1756:A:H5'	35:5E:536:ARG:HB2	1.70	0.72
8:SK:65:LYS:HZ1	17:3F:59:PRO:HD3	1.55	0.72
21:A8:642:LEU:HD12	22:A9:499:ILE:HG23	1.70	0.72
45:RJ:871:MET:CE	45:RJ:930:LYS:NZ	2.53	0.72
26:B1:341:GLN:HE21	26:B1:378:PHE:HB3	1.55	0.72
8:SK:65:LYS:NZ	17:3F:59:PRO:CB	2.52	0.72
21:A8:596:LYS:CG	21:A8:637:LEU:HB3	2.20	0.71
1:3A:318:U:H3'	1:3A:318:U:P	2.30	0.71
3:SA:505:A:H61	3:SA:586:G:H8	1.38	0.71
16:3E:397:ARG:HH21	16:3E:400:GLN:HE21	1.38	0.71
26:B1:298:LEU:HD11	35:5E:476:MET:SD	2.30	0.71
47:RL:29:VAL:HG12	47:RL:152:LEU:HD12	1.72	0.71
35:5E:493:GLN:HE21	35:5E:497:ASN:HB3	1.52	0.71
48:RN:86:ILE:HA	48:RN:89:GLN:CG	2.21	0.71
20:A5:545:ALA:CB	21:A8:674:GLU:HG3	2.20	0.71
21:A8:631:SER:HA	21:A8:634:LEU:CD1	2.18	0.71
25:AG:435:ASP:HB2	25:AG:702:TYR:CD1	2.26	0.71
45:RJ:871:MET:HE2	45:RJ:930:LYS:HZ2	1.55	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:B3:591:ILE:HG12	28:B3:600:LYS:HZ1	1.56	0.70
36:5F:8:HIS:HA	39:5I:53:MET:CE	2.14	0.70
30:BE:740:ILE:HG13	35:5E:483:TYR:HH	1.52	0.70
35:5E:493:GLN:HE22	35:5E:497:ASN:HD22	1.37	0.70
3:SA:1756:A:N7	35:5E:532:LEU:HB2	2.07	0.70
4:SF:92:LEU:HB2	4:SF:97:GLU:HB2	1.74	0.70
21:A8:596:LYS:CE	21:A8:637:LEU:HA	2.22	0.70
35:5E:340:LEU:HB2	45:RJ:957:GLU:OE2	1.92	0.70
5:SG:206:SER:H	5:SG:211:ILE:HD11	1.55	0.70
1:3A:323:G:OP2	34:5D:116:LYS:HB3	1.92	0.69
26:B1:420:ARG:HH22	35:5E:494:GLU:CD	1.96	0.69
26:B1:337:TYR:CD2	26:B1:340:LYS:HD3	2.27	0.69
26:B1:58:ILE:HA	26:B1:74:ASP:HA	1.74	0.69
35:5E:533:LYS:HA	35:5E:536:ARG:CG	2.22	0.69
48:RN:86:ILE:HG23	48:RN:89:GLN:NE2	2.07	0.69
21:A8:643:ASP:HA	24:AF:510:LEU:HD12	1.75	0.68
12:SZ:29:HIS:HB2	12:SZ:32:ARG:HB2	1.76	0.68
35:5E:517:LYS:NZ	35:5E:517:LYS:HB3	2.09	0.68
8:SK:65:LYS:NZ	17:3F:59:PRO:HB3	2.08	0.68
21:A8:664:LYS:O	21:A8:668:ILE:HG13	1.92	0.68
22:A9:480:LYS:O	22:A9:483:LYS:HG3	1.93	0.68
21:A8:596:LYS:HG3	21:A8:637:LEU:HB3	1.74	0.68
39:5I:345:THR:HG22	39:5I:347:ARG:H	1.58	0.68
21:A8:443:CYS:CB	25:AG:728:LEU:HD22	2.23	0.68
35:5E:315:GLU:HB3	45:RJ:1032:LEU:HD11	1.74	0.68
35:5E:517:LYS:HD2	35:5E:517:LYS:C	2.14	0.68
46:RK:192:THR:HA	46:RK:224:ASN:O	1.92	0.68
23:AE:692:ILE:HA	23:AE:695:TYR:HB3	1.76	0.68
50:RP:173:THR:O	50:RP:177:LEU:HB2	1.94	0.68
24:AF:86:SER:O	24:AF:98:ALA:HA	1.93	0.68
35:5E:366:GLU:OE2	37:5G:247:ILE:CG2	2.33	0.68
24:AF:211:HIS:HD1	24:AF:228:SER:HG	1.41	0.67
27:B2:17:ILE:HG22	27:B2:52:TRP:CH2	2.28	0.67
8:SK:65:LYS:NZ	17:3F:59:PRO:HG3	2.08	0.67
17:3F:443:LEU:HD21	17:3F:492:TRP:HE1	1.59	0.67
48:RN:86:ILE:CB	48:RN:89:GLN:HE21	2.07	0.67
35:5E:520:LEU:CG	35:5E:525:LYS:HG3	2.24	0.67
30:BE:209:ILE:HG22	30:BE:225:THR:HG22	1.76	0.67
35:5E:384:ARG:HH21	37:5G:81:SER:CB	2.08	0.67
35:5E:384:ARG:NH2	37:5G:81:SER:HB3	2.09	0.67
48:RN:85:GLY:O	48:RN:89:GLN:HG2	1.95	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:3F:185:LEU:H	17:3F:202:THR:HB	1.59	0.67
19:A4:645:ARG:HD2	19:A4:656:ARG:HD3	1.76	0.67
21:A8:648:PHE:CE1	22:A9:510:ALA:HA	2.29	0.67
36:5F:11:LYS:HA	36:5F:14:LYS:HE3	1.75	0.67
37:5G:123:VAL:HG12	37:5G:125:PRO:HD2	1.77	0.67
29:B8:513:GLN:HG3	29:B8:551:VAL:HG21	1.76	0.67
35:5E:517:LYS:HB3	35:5E:517:LYS:HZ2	1.60	0.67
27:B2:536:CYS:HB3	27:B2:549:SER:HB3	1.77	0.67
3:SA:187:G:N2	3:SA:197:A:N7	2.43	0.66
12:SZ:51:GLU:HB2	12:SZ:54:ALA:HB3	1.76	0.66
26:B1:20:ILE:H	26:B1:307:THR:HG21	1.58	0.66
35:5E:490:LEU:HD22	35:5E:494:GLU:OE1	1.95	0.66
21:A8:648:PHE:HE1	22:A9:510:ALA:HA	1.59	0.66
25:AG:435:ASP:HB3	25:AG:701:VAL:O	1.96	0.66
30:BE:209:ILE:HA	30:BE:225:THR:HA	1.76	0.66
11:SY:103:LEU:HB3	11:SY:126:LYS:HB2	1.76	0.66
14:3B:103:GLU:HG3	40:5J:134:ARG:HH12	1.60	0.66
9:SM:67:ARG:HH21	9:SM:129:ARG:H	1.44	0.66
26:B1:337:TYR:CD2	30:BE:744:SER:O	2.48	0.66
1:3A:323:G:H5'	34:5D:116:LYS:HG3	1.76	0.66
33:5C:257:SER:HG	33:5C:259:TRP:HE1	1.40	0.66
45:RJ:248:ARG:HB3	45:RJ:272:TYR:HB2	1.78	0.66
25:AG:16:SER:HB2	25:AG:783:LEU:HB2	1.77	0.66
45:RJ:871:MET:HE2	45:RJ:930:LYS:NZ	2.09	0.66
24:AF:52:PRO:HG2	24:AF:312:ALA:HA	1.77	0.65
28:B3:462:THR:HA	28:B3:484:GLU:HG2	1.77	0.65
21:A8:665:GLN:HB3	22:A9:496:LEU:CD2	2.26	0.65
36:5F:5:LEU:HB3	36:5F:9:GLU:CB	2.25	0.65
21:A8:443:CYS:N	25:AG:728:LEU:CD2	2.56	0.65
47:RM:283:ALA:HA	47:RM:411:THR:O	1.96	0.65
3:SA:207:U:H3	3:SA:258:C:H42	1.45	0.65
47:RM:311:THR:O	47:RM:370:ILE:HA	1.97	0.65
21:A8:643:ASP:OD1	24:AF:510:LEU:HA	1.96	0.65
19:A4:497:ILE:HD11	19:A4:511:VAL:HG23	1.78	0.65
27:B2:262:ILE:O	27:B2:270:SER:HA	1.97	0.65
34:5D:61:ASP:O	36:5F:160:TRP:CH2	2.50	0.65
35:5E:345:LEU:HD23	35:5E:345:LEU:C	2.17	0.65
1:3A:84:U:OP2	16:3E:361:ARG:NH2	2.30	0.65
33:5C:170:GLN:NE2	33:5C:177:TYR:OH	2.30	0.64
9:SM:87:ARG:HE	9:SM:104:HIS:HB2	1.62	0.64
17:3F:125:VAL:O	17:3F:128:GLN:NE2	2.30	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:RG:122:ILE:HA	44:RG:161:LYS:O	1.97	0.64
45:RJ:263:LEU:HD23	45:RJ:267:ARG:HH22	1.63	0.64
49:RO:472:HIS:HD2	49:RO:474:HIS:H	1.46	0.64
1:3A:319:G:C5'	14:3C:121:LYS:HZ1	2.08	0.64
8:SK:57:ARG:HE	41:5K:88:ASP:HB3	1.60	0.64
35:5E:493:GLN:NE2	35:5E:497:ASN:CB	2.61	0.64
2:5A:487:A:H62	51:RQ:876:GLN:HE22	1.45	0.64
3:SA:415:C:H1'	3:SA:419:G:N2	2.12	0.64
3:SA:1727:G:N2	3:SA:1728:A:N7	2.46	0.64
21:A8:576:ARG:HG2	21:A8:578:LEU:H	1.63	0.64
26:B1:438:VAL:HG12	26:B1:445:VAL:HG23	1.79	0.64
27:B2:439:LEU:HB2	27:B2:444:LEU:HB3	1.79	0.64
28:B3:719:ILE:HD11	28:B3:762:CYS:HB3	1.78	0.64
30:BE:631:ASN:HB2	30:BE:644:THR:HB	1.80	0.64
48:RN:86:ILE:HG23	48:RN:89:GLN:HE21	1.63	0.64
11:SY:97:ASP:OD1	11:SY:97:ASP:N	2.31	0.64
26:B1:678:GLU:CD	35:5E:455:HIS:ND1	2.51	0.64
29:B8:521:LEU:HA	29:B8:531:CYS:O	1.98	0.64
21:A8:664:LYS:HD2	22:A9:448:GLU:OE1	1.98	0.64
7:SJ:5:ARG:NH2	7:SJ:29:LEU:O	2.31	0.63
20:A5:145:CYS:HB2	20:A5:148:LEU:HD21	1.80	0.63
49:RO:318:LEU:HA	49:RO:357:ARG:HH12	1.62	0.63
18:3H:44:LEU:HD22	18:3H:52:ILE:HD11	1.80	0.63
34:5D:78:LEU:CB	45:RJ:1082:GLN:HE21	2.01	0.63
35:5E:381:LEU:HB2	37:5G:212:ALA:HA	1.80	0.63
42:RA:18:GLY:HA2	42:RA:339:HIS:HD2	1.62	0.63
35:5E:340:LEU:HD13	45:RJ:957:GLU:OE2	1.98	0.63
3:SA:343:C:H2'	3:SA:344:A:H8	1.63	0.63
7:SJ:42:ARG:HD3	42:RA:57:GLU:HB3	1.80	0.63
12:SZ:20:ARG:HD2	12:SZ:74:LEU:HD12	1.79	0.63
26:B1:298:LEU:HD11	35:5E:476:MET:CE	2.28	0.63
45:RJ:831:ARG:NH2	45:RJ:835:HIS:O	2.30	0.63
3:SA:576:G:H4'	35:5E:327:LYS:HE2	1.81	0.63
35:5E:370:ARG:NH1	48:RN:52:ARG:NH1	2.47	0.63
35:5E:538:LYS:HD3	35:5E:538:LYS:C	2.19	0.63
45:RJ:871:MET:HE1	45:RJ:930:LYS:HD2	1.81	0.63
17:3F:538:ARG:HA	17:3F:566:ALA:O	1.97	0.63
33:5C:386:PHE:O	39:5I:8:ARG:NH2	2.31	0.63
44:RH:192:TYR:HA	44:RH:195:LYS:HD2	1.81	0.63
28:B3:244:GLU:HG2	28:B3:293:VAL:H	1.64	0.63
10:SR:94:GLN:HB2	10:SR:102:LYS:HG3	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SK:65:LYS:HZ2	17:3F:59:PRO:HB3	1.64	0.63
19:A4:399:VAL:HG22	19:A4:420:LEU:HB2	1.80	0.63
23:AE:638:SER:HA	23:AE:641:LEU:HD12	1.80	0.63
35:5E:533:LYS:CA	35:5E:536:ARG:HG2	2.29	0.63
42:RA:247:THR:HG23	42:RA:249:ASN:H	1.64	0.63
1:3A:319:G:O5'	14:3C:121:LYS:NZ	2.32	0.62
44:RH:129:ARG:HH11	44:RH:132:ARG:HD3	1.63	0.62
16:3E:384:GLY:O	16:3E:388:LEU:HB2	1.99	0.62
42:RA:287:ASN:HB2	42:RA:302:ARG:HB2	1.80	0.62
45:RJ:932:LEU:HD22	45:RJ:1007:TYR:HB2	1.80	0.62
34:5D:29:GLU:OE2	34:5D:37:ARG:NH1	2.31	0.62
49:RO:300:THR:O	49:RO:304:ASN:ND2	2.32	0.62
52:RS:379:LYS:HD2	52:RS:427:ARG:HE	1.64	0.62
21:A8:672:ASN:CB	22:A9:489:SER:OG	2.46	0.62
28:B3:691:PRO:CD	35:5E:516:SER:HB3	2.29	0.62
31:B6:285:TYR:HD2	31:B6:308:THR:HG22	1.63	0.62
3:SA:146:U:H3	3:SA:168:A:N6	1.97	0.62
48:RN:482:GLN:HG2	49:RO:507:LEU:HD11	1.80	0.62
3:SA:1220:C:H2'	3:SA:1221:A:H8	1.64	0.62
3:SA:1655:A:N6	3:SA:1743:U:O4	2.32	0.62
46:RK:221:CYS:SG	46:RK:222:GLU:N	2.71	0.62
20:A5:120:ILE:HB	20:A5:151:LEU:HD23	1.82	0.62
22:A9:432:LYS:HB3	22:A9:435:LEU:HB3	1.81	0.62
30:BE:733:THR:O	30:BE:737:LEU:HB3	2.00	0.62
36:5F:153:ASN:O	36:5F:153:ASN:ND2	2.32	0.62
45:RJ:871:MET:CE	45:RJ:930:LYS:HD2	2.30	0.62
3:SA:477:A:H5'	38:5H:560:ASN:HD22	1.64	0.62
52:RS:214:TYR:HB3	52:RS:249:THR:HG22	1.80	0.62
21:A8:592:ARG:HH11	25:AG:605:ASN:ND2	1.98	0.61
21:A8:631:SER:C	21:A8:634:LEU:HG	2.19	0.61
26:B1:303:ASN:ND2	26:B1:323:LYS:HD3	2.15	0.61
3:SA:1538:U:H2'	3:SA:1569:A:H61	1.65	0.61
24:AF:440:GLU:O	24:AF:444:ASN:HB2	2.00	0.61
35:5E:345:LEU:CD2	45:RJ:961:PHE:CZ	2.82	0.61
48:RN:95:ARG:HH12	48:RN:757:LYS:HG3	1.64	0.61
18:3H:50:GLU:HG3	18:3H:104:THR:HG22	1.82	0.61
21:A8:631:SER:CA	21:A8:634:LEU:HD11	2.25	0.61
30:BE:471:CYS:SG	30:BE:514:ASN:ND2	2.74	0.61
3:SA:362:G:H22	3:SA:382:C:H1'	1.66	0.61
24:AF:428:ARG:NH2	25:AG:518:ASP:O	2.34	0.61
46:RK:155:LYS:HG2	46:RK:165:GLU:HG2	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:RS:423:THR:HA	52:RS:426:GLN:HG2	1.81	0.61
3:SA:521:A:N3	12:SZ:34:ASN:ND2	2.48	0.61
4:SF:95:THR:HG22	50:RP:59:LEU:HB3	1.83	0.61
21:A8:443:CYS:HA	25:AG:728:LEU:CG	2.30	0.61
4:SF:212:ASP:H	4:SF:215:ASP:HA	1.65	0.61
29:B8:424:ILE:HG12	29:B8:434:GLU:HG2	1.83	0.61
20:A5:162:GLN:HA	20:A5:173:ILE:O	2.01	0.61
21:A8:671:ARG:NH2	22:A9:453:PRO:HG2	2.16	0.61
24:AF:51:HIS:O	24:AF:53:HIS:ND1	2.30	0.61
44:RG:36:LYS:HB3	44:RG:172:PRO:HA	1.82	0.61
25:AG:335:PRO:HB2	25:AG:336:ARG:HD3	1.82	0.61
25:AG:769:ASN:ND2	25:AG:771:ASP:OD1	2.33	0.61
31:B6:286:ILE:HG22	31:B6:308:THR:HG21	1.83	0.61
45:RJ:871:MET:HE1	45:RJ:930:LYS:CD	2.31	0.61
35:5E:371:ARG:NH1	35:5E:375:ASP:OD2	2.34	0.61
48:RN:511:SER:HA	48:RN:557:SER:HB2	1.82	0.61
14:3B:142:ARG:NH1	14:3B:186:ASP:OD2	2.34	0.60
17:3F:356:ARG:NH1	43:RB:260:ALA:O	2.34	0.60
20:A5:481:LEU:HD21	20:A5:526:LEU:HD22	1.82	0.60
50:RP:91:LEU:HD21	50:RP:110:LEU:HD12	1.83	0.60
1:3A:319:G:H5'	14:3C:121:LYS:HZ1	1.59	0.60
14:3C:186:ASP:OD1	14:3C:214:ARG:NH1	2.34	0.60
45:RJ:60:ASP:O	45:RJ:239:ASN:ND2	2.34	0.60
3:SA:374:U:H5"	43:RB:331:LYS:HE3	1.83	0.60
26:B1:14:VAL:HG11	26:B1:341:GLN:HB3	1.84	0.60
28:B3:160:ILE:HG22	28:B3:162:LEU:HD13	1.82	0.60
39:5I:260:GLN:NE2	39:5I:289:TYR:OH	2.35	0.60
44:RG:147:LYS:HD3	44:RG:150:ILE:HG22	1.83	0.60
44:RH:156:GLU:HG2	44:RH:157:GLU:HG2	1.81	0.60
49:RO:461:SER:OG	49:RO:462:SER:N	2.33	0.60
34:5D:68:HIS:HE1	36:5F:169:THR:HG21	1.67	0.60
3:SA:435:C:H42	45:RJ:166:ARG:HH12	1.47	0.60
17:3F:328:ILE:HG13	17:3F:338:THR:HG22	1.82	0.60
19:A4:429:SER:HB3	19:A4:444:ARG:HA	1.83	0.60
20:A5:545:ALA:HB2	21:A8:674:GLU:HG3	1.82	0.60
48:RN:548:ARG:NH1	48:RN:638:ASN:OD1	2.34	0.60
49:RO:452:ASP:HB3	49:RO:455:LEU:HB2	1.84	0.60
3:SA:606:A:N3	3:SA:607:G:N1	2.50	0.60
4:SF:194:THR:HG23	4:SF:195:ILE:HG12	1.83	0.60
21:A8:638:LEU:HD21	21:A8:658:LEU:HD11	1.83	0.60
48:RN:649:THR:HG23	48:RN:650:VAL:HG23	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SK:65:LYS:HZ2	17:3F:59:PRO:N	1.98	0.60
15:3D:29:SER:O	15:3D:35:GLN:NE2	2.34	0.60
27:B2:54:ILE:HD13	27:B2:364:TYR:HD2	1.66	0.60
28:B3:581:CYS:HA	28:B3:590:LEU:O	2.02	0.60
34:5D:22:ARG:NH1	45:RJ:997:MET:O	2.35	0.60
3:SA:85:A:H2'	3:SA:86:A:H8	1.65	0.60
42:RA:333:ASN:HD21	42:RA:338:MET:HA	1.67	0.60
21:A8:593:ASP:CA	21:A8:596:LYS:HD2	2.26	0.59
23:AE:699:ARG:NH1	23:AE:702:TRP:O	2.35	0.59
24:AF:248:ARG:NH1	24:AF:289:ASN:O	2.35	0.59
36:5F:69:PRO:HA	36:5F:72:ARG:HG2	1.83	0.59
37:5G:239:VAL:HG21	48:RN:13:LEU:CD1	2.30	0.59
46:RK:14:SER:HB2	46:RK:36:ILE:HG23	1.83	0.59
24:AF:301:PRO:HG2	24:AF:323:SER:HB3	1.84	0.59
28:B3:189:HIS:NE2	28:B3:217:ASP:OD1	2.35	0.59
5:SG:131:GLN:NE2	5:SG:135:ASP:OD1	2.35	0.59
6:SH:70:PRO:HB3	6:SH:101:ILE:HB	1.84	0.59
15:3D:382:LYS:HD2	15:3D:404:LEU:HD22	1.83	0.59
24:AF:133:HIS:HD2	24:AF:135:GLN:H	1.50	0.59
45:RJ:871:MET:HE1	45:RJ:930:LYS:HE2	1.83	0.59
25:AG:90:LYS:HG2	25:AG:144:VAL:HG22	1.85	0.59
48:RN:614:ILE:HG22	48:RN:616:LEU:HB2	1.85	0.59
7:SJ:32:GLN:HG2	42:RA:79:PRO:HD2	1.84	0.59
10:SR:122:ARG:NH2	37:5G:133:LYS:HD2	2.17	0.59
30:BE:737:LEU:CA	30:BE:740:ILE:HG22	2.28	0.59
36:5F:109:ARG:NH2	36:5F:155:GLU:OE2	2.36	0.59
50:RP:112:GLN:NE2	50:RP:116:ASP:OD2	2.36	0.59
50:RP:54:TRP:O	50:RP:58:ASN:ND2	2.35	0.59
15:3D:286:ARG:HA	15:3D:289:TYR:HB3	1.85	0.59
16:3E:210:LEU:HD23	16:3E:256:ASN:HD22	1.68	0.59
21:A8:673:THR:CG2	22:A9:490:GLU:CB	2.68	0.59
26:B1:497:ILE:HG23	26:B1:512:ILE:HB	1.84	0.59
31:B6:15:MET:HA	31:B6:18:LEU:HB3	1.85	0.59
48:RN:86:ILE:CG2	48:RN:89:GLN:HE21	2.16	0.59
4:SF:180:LEU:HA	4:SF:194:THR:HG21	1.85	0.59
26:B1:298:LEU:HD11	35:5E:476:MET:HE1	1.84	0.59
35:5E:384:ARG:HE	37:5G:82:GLY:N	1.97	0.59
35:5E:493:GLN:NE2	35:5E:497:ASN:HD22	2.01	0.59
44:RG:125:ASN:ND2	44:RG:127:THR:OG1	2.36	0.59
48:RN:535:ASN:OD1	48:RN:539:ARG:NH1	2.36	0.59
14:3C:114:GLY:O	14:3C:122:ARG:NH1	2.35	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:5C:190:HIS:HB3	33:5C:207:THR:HG21	1.84	0.58
25:AG:153:ILE:HG22	25:AG:174:TYR:HB2	1.85	0.58
34:5D:58:ARG:NH2	36:5F:174:ARG:NE	2.51	0.58
37:5G:144:GLU:HA	37:5G:149:PRO:HA	1.84	0.58
1:3A:58:A:OP1	36:5F:165:LYS:HE3	2.03	0.58
50:RP:144:SER:HB3	50:RP:147:VAL:HG12	1.86	0.58
19:A4:565:ARG:HD3	23:AE:633:GLU:HB2	1.86	0.58
25:AG:568:ASN:ND2	25:AG:586:SER:OG	2.35	0.58
27:B2:97:GLY:HA3	27:B2:124:ILE:HD11	1.84	0.58
34:5D:113:ILE:HG23	34:5D:117:LYS:HE3	1.86	0.58
36:5F:54:ILE:HD11	36:5F:101:VAL:HG21	1.84	0.58
39:5I:411:LYS:O	39:5I:415:ARG:HB2	2.02	0.58
1:3A:30:A:N6	39:5I:341:GLU:OE2	2.36	0.58
16:3E:11:GLY:HA2	16:3E:143:LEU:HD22	1.86	0.58
34:5D:37:ARG:NH2	45:RJ:994:LYS:O	2.36	0.58
36:5F:9:GLU:HA	36:5F:9:GLU:OE2	2.04	0.58
4:SF:44:LEU:HD13	4:SF:82:TYR:HB3	1.85	0.58
19:A4:269:PHE:O	29:B8:446:ARG:NH2	2.36	0.58
21:A8:631:SER:HA	21:A8:634:LEU:CD2	2.34	0.58
23:AE:248:SER:OG	23:AE:253:CYS:SG	2.62	0.58
25:AG:118:VAL:HB	25:AG:130:LYS:HB2	1.85	0.58
28:B3:494:ILE:N	28:B3:510:SER:OG	2.35	0.58
28:B3:742:ARG:NH1	35:5E:506:GLU:OE1	2.36	0.58
48:RN:86:ILE:CA	48:RN:89:GLN:HG2	2.33	0.58
49:RO:202:LEU:HD22	49:RO:212:LEU:HD22	1.86	0.58
1:3A:251:G:H2'	17:3F:155:ASN:HD21	1.67	0.58
3:SA:126:A:N6	3:SA:291:G:O2'	2.37	0.58
20:A5:546:ARG:NH1	21:A8:677:ASN:O	2.36	0.58
21:A8:632:THR:O	21:A8:636:GLN:HG3	2.04	0.58
25:AG:435:ASP:CB	25:AG:702:TYR:HA	2.34	0.58
27:B2:259:ILE:HA	27:B2:273:TYR:O	2.03	0.58
42:RA:75:GLY:HA3	42:RA:80:GLN:H	1.68	0.58
44:RH:44:VAL:HA	44:RH:113:TYR:O	2.03	0.58
14:3B:236:MET:HG3	15:3D:133:LEU:HA	1.84	0.58
20:A5:545:ALA:HB1	21:A8:674:GLU:HG3	1.86	0.58
25:AG:144:VAL:HG12	25:AG:153:ILE:HG13	1.86	0.58
25:AG:157:PHE:HB2	25:AG:170:SER:HB3	1.86	0.58
26:B1:501:SER:HB2	26:B1:508:GLN:HB2	1.84	0.58
37:5G:183:SER:HB3	37:5G:220:ARG:HD2	1.86	0.58
17:3F:293:ASP:N	17:3F:293:ASP:OD1	2.37	0.57
28:B3:584:ILE:HD11	28:B3:599:ILE:HD11	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:RO:270:SER:H	49:RO:273:GLN:HE21	1.50	0.57
1:3A:323:G:OP2	34:5D:116:LYS:CB	2.51	0.57
17:3F:241:THR:HG21	17:3F:285:SER:HA	1.86	0.57
18:3H:44:LEU:HD13	18:3H:52:ILE:HD11	1.86	0.57
23:AE:671:LEU:O	23:AE:675:ASN:HB3	2.04	0.57
24:AF:303:LEU:HD13	24:AF:323:SER:HB2	1.86	0.57
29:B8:221:THR:OG1	29:B8:222:LEU:N	2.38	0.57
30:BE:482:GLY:HA2	30:BE:505:VAL:HG23	1.86	0.57
33:5C:317:THR:HG23	33:5C:334:ARG:HB3	1.86	0.57
45:RJ:773:THR:HA	45:RJ:777:ARG:HH11	1.69	0.57
46:RK:114:PHE:HB2	46:RK:170:VAL:HG22	1.86	0.57
3:SA:1196:A:N3	44:RG:136:ARG:NH2	2.52	0.57
11:SY:109:ARG:NH2	11:SY:120:VAL:O	2.37	0.57
27:B2:365:TYR:HA	27:B2:381:LYS:HA	1.85	0.57
32:5B:194:LYS:HD2	32:5B:199:ILE:HG13	1.86	0.57
35:5E:384:ARG:HE	37:5G:81:SER:HB3	1.69	0.57
44:RH:31:LEU:HD13	44:RH:40:ARG:HE	1.69	0.57
12:SZ:83:LYS:HD2	12:SZ:96:LEU:HD21	1.86	0.57
14:3C:267:VAL:HG21	14:3C:298:ILE:HD12	1.87	0.57
28:B3:744:ARG:HA	28:B3:785:ILE:HG21	1.86	0.57
29:B8:227:LEU:HB2	29:B8:528:GLN:HE22	1.67	0.57
30:BE:359:ALA:O	30:BE:421:ASN:ND2	2.38	0.57
34:5D:113:ILE:CG2	34:5D:117:LYS:HE3	2.34	0.57
1:3A:318:U:H3	14:3C:119:GLY:CA	2.12	0.57
16:3E:339:TYR:HB3	16:3E:343:TYR:HB2	1.85	0.57
23:AE:559:ASN:HA	23:AE:592:ARG:HD3	1.85	0.57
47:RL:29:VAL:HG22	47:RL:202:ASP:HA	1.86	0.57
4:SF:206:ASP:OD1	4:SF:206:ASP:N	2.38	0.57
7:SJ:167:ALA:HB2	7:SJ:183:ILE:HD12	1.87	0.57
20:A5:148:LEU:HD23	20:A5:167:SER:HB3	1.86	0.57
24:AF:24:GLN:O	24:AF:28:ARG:HB3	2.05	0.57
26:B1:264:LYS:HD3	26:B1:280:THR:HG22	1.87	0.57
26:B1:405:SER:HB3	26:B1:436:LEU:HD23	1.85	0.57
28:B3:392:ASN:H	28:B3:407:SER:HA	1.69	0.57
33:5C:430:VAL:HG21	36:5F:3:ARG:NE	2.18	0.57
39:5I:87:SER:OG	39:5I:89:ASP:OD1	2.22	0.57
1:3A:57:A:H5"	36:5F:165:LYS:HG3	1.87	0.57
3:SA:205:U:H2'	3:SA:206:A:H8	1.68	0.57
17:3F:442:ILE:HA	17:3F:472:PRO:HA	1.86	0.57
29:B8:146:LEU:O	29:B8:163:ARG:NH1	2.37	0.57
14:3C:142:ARG:NH1	14:3C:186:ASP:OD2	2.36	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:A8:596:LYS:HG2	21:A8:637:LEU:HB3	1.86	0.57
26:B1:418:ARG:HH21	26:B1:418:ARG:CG	2.09	0.57
42:RA:152:ASP:HA	42:RA:166:ASN:HA	1.86	0.57
45:RJ:1042:MET:HG3	45:RJ:1044:LEU:HD13	1.86	0.57
2:5A:481:U:O2'	31:B6:102:LYS:NZ	2.37	0.57
3:SA:146:U:N3	3:SA:168:A:N6	2.51	0.57
3:SA:559:C:OP1	45:RJ:868:ARG:NH2	2.37	0.57
15:3D:264:SER:OG	15:3D:265:GLU:N	2.37	0.57
17:3F:142:ILE:HA	17:3F:568:ILE:HD11	1.86	0.57
20:A5:434:THR:HG23	49:RO:266:ASN:HD21	1.68	0.57
25:AG:86:GLU:OE1	25:AG:113:ASN:ND2	2.36	0.57
29:B8:129:ASP:OD1	30:BE:194:ARG:NH2	2.36	0.57
39:5I:81:ASN:ND2	39:5I:96:ASN:OD1	2.38	0.57
47:RL:32:ARG:HE	47:RL:35:ASN:HD21	1.53	0.57
3:SA:112:A:O2'	9:SM:67:ARG:NH1	2.37	0.57
30:BE:666:ARG:NH1	30:BE:706:ASP:OD2	2.38	0.57
39:5I:45:LEU:HD13	39:5I:410:ILE:HG22	1.86	0.57
50:RP:54:TRP:HA	50:RP:57:ILE:HG22	1.87	0.57
52:RS:209:LYS:HE3	52:RS:212:LYS:HG3	1.87	0.57
3:SA:1197:C:OP1	44:RG:136:ARG:NH1	2.38	0.56
17:3F:545:LYS:HG2	17:3F:561:ASN:HD21	1.70	0.56
20:A5:212:LEU:HD11	20:A5:246:VAL:HG11	1.87	0.56
21:A8:655:LEU:HD23	22:A9:507:ARG:HB3	1.86	0.56
26:B1:373:ASP:HB2	26:B1:380:LEU:HD21	1.86	0.56
35:5E:310:GLN:HA	35:5E:313:GLN:HG2	1.86	0.56
41:5K:26:LYS:HD3	41:5K:29:GLN:HG3	1.87	0.56
1:3A:94:A:H61	1:3A:322:A:N6	2.01	0.56
25:AG:473:LEU:HB2	25:AG:495:ILE:HD11	1.87	0.56
26:B1:479:LEU:HD12	26:B1:488:LEU:HD11	1.87	0.56
28:B3:690:HIS:ND1	35:5E:519:GLU:HB2	2.20	0.56
39:5I:15:PRO:HB3	39:5I:20:GLN:HE21	1.70	0.56
47:RL:12:SER:O	47:RL:16:ASN:ND2	2.38	0.56
3:SA:439:U:H4'	3:SA:465:G:H22	1.69	0.56
24:AF:147:ARG:NH2	44:RH:16:GLN:O	2.39	0.56
26:B1:298:LEU:HA	35:5E:472:PRO:CB	2.33	0.56
27:B2:598:LYS:NZ	27:B2:610:SER:OG	2.38	0.56
35:5E:507:ILE:HD11	35:5E:528:LEU:HD23	1.86	0.56
42:RA:227:ARG:NH2	42:RA:248:SER:O	2.34	0.56
43:RB:230:ALA:O	43:RB:234:LYS:HB2	2.05	0.56
44:RG:41:MET:HG3	44:RG:202:ILE:HG23	1.88	0.56
3:SA:337:G:N2	3:SA:340:U:OP2	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:3E:414:ARG:NH1	23:AE:187:ASP:OD2	2.36	0.56
22:A9:473:LYS:O	22:A9:477:LYS:NZ	2.39	0.56
11:SY:132:LEU:HA	11:SY:135:LEU:HB2	1.87	0.56
19:A4:32:ILE:O	19:A4:751:GLU:HA	2.06	0.56
19:A4:37:ARG:NH1	21:A8:704:PRO:O	2.38	0.56
26:B1:329:VAL:HG12	26:B1:339:LEU:HG	1.87	0.56
8:SK:78:ARG:NH2	43:RB:247:GLU:OE1	2.33	0.56
19:A4:301:ASP:O	19:A4:771:GLN:NE2	2.38	0.56
27:B2:145:ILE:HG23	27:B2:159:LEU:HB2	1.88	0.56
27:B2:180:THR:OG1	27:B2:207:CYS:SG	2.62	0.56
47:RL:71:LYS:O	47:RL:75:ASN:ND2	2.38	0.56
2:5A:484:G:OP2	31:B6:3:LYS:NZ	2.39	0.56
19:A4:578:SER:HG	19:A4:643:SER:HG	1.51	0.56
35:5E:474:ILE:HG23	35:5E:476:MET:H	1.71	0.56
49:RO:170:GLY:O	49:RO:272:GLN:NE2	2.32	0.56
2:5A:5:G:N2	2:5A:8:A:OP2	2.39	0.56
14:3C:160:ASP:OD1	14:3C:160:ASP:N	2.37	0.56
20:A5:435:GLY:HA3	49:RO:262:LEU:HD11	1.88	0.56
25:AG:510:TYR:HH	25:AG:527:HIS:HD1	1.52	0.56
26:B1:419:TYR:CE2	35:5E:486:ASN:ND2	2.73	0.56
27:B2:347:SER:O	27:B2:371:LYS:NZ	2.39	0.56
27:B2:461:SER:OG	27:B2:462:SER:N	2.38	0.56
47:RL:7:ASP:HB2	47:RL:10:ILE:HG12	1.88	0.56
3:SA:143:G:OP2	6:SH:139:ASN:ND2	2.38	0.56
3:SA:1657:U:OP1	3:SA:1658:G:O2'	2.23	0.56
7:SJ:104:ILE:O	7:SJ:164:ARG:HA	2.06	0.56
15:3D:389:ILE:HA	18:3H:62:GLU:HB2	1.87	0.56
20:A5:471:ARG:NH2	49:RO:301:ASP:OD2	2.39	0.56
37:5G:76:GLU:OE2	37:5G:201:ARG:NH2	2.36	0.56
41:5K:123:PRO:O	41:5K:126:LYS:NZ	2.39	0.56
23:AE:272:LYS:NZ	23:AE:310:GLY:O	2.39	0.56
39:5I:73:ILE:HG12	39:5I:85:THR:HG22	1.88	0.56
46:RK:34:GLU:HG3	46:RK:35:LYS:HG2	1.88	0.56
46:RK:154:LEU:HB2	46:RK:165:GLU:HG3	1.88	0.56
48:RN:478:ILE:HD13	48:RN:520:PRO:HB2	1.88	0.56
48:RN:512:ASP:OD1	48:RN:512:ASP:N	2.38	0.56
53:RY:487:ASP:N	53:RY:487:ASP:OD1	2.36	0.56
3:SA:1108:G:O2'	3:SA:1109:G:N7	2.37	0.55
3:SA:1490:C:OP1	45:RJ:1062:ARG:NH2	2.38	0.55
14:3C:320:TYR:OH	14:3C:322:ARG:NH2	2.39	0.55
17:3F:417:SER:OG	17:3F:418:ASP:N	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A5:364:THR:OG1	20:A5:368:ASN:ND2	2.38	0.55
23:AE:95:ASP:HB2	23:AE:131:ASN:HD21	1.71	0.55
25:AG:435:ASP:HB3	25:AG:702:TYR:HA	1.88	0.55
28:B3:12:LEU:HG	28:B3:641:PHE:HB2	1.87	0.55
29:B8:181:GLU:HB3	30:BE:281:ARG:HH12	1.71	0.55
50:RP:67:ALA:O	50:RP:71:GLU:HB2	2.07	0.55
1:3A:94:A:N6	1:3A:322:A:H61	2.00	0.55
3:SA:448:C:OP2	4:SF:49:ARG:NH2	2.38	0.55
6:SH:46:LYS:HB3	6:SH:118:GLU:HG2	1.88	0.55
12:SZ:54:ALA:HB1	12:SZ:76:TYR:HB2	1.88	0.55
18:3H:41:THR:O	18:3H:45:ASN:ND2	2.39	0.55
20:A5:5:VAL:HA	20:A5:21:THR:HG22	1.89	0.55
27:B2:463:SER:OG	27:B2:464:LEU:N	2.39	0.55
27:B2:858:PHE:O	27:B2:862:LYS:HB2	2.06	0.55
40:5J:129:ALA:HB1	45:RJ:1119:ILE:HG22	1.89	0.55
42:RA:101:ASN:HA	42:RA:118:GLN:HA	1.88	0.55
3:SA:128:U:H3	50:RP:906:THR:H	1.53	0.55
26:B1:341:GLN:HG3	26:B1:378:PHE:CD1	2.41	0.55
34:5D:58:ARG:NH2	36:5F:174:ARG:CZ	2.69	0.55
48:RN:86:ILE:O	48:RN:89:GLN:CG	2.54	0.55
3:SA:396:G:O6	7:SJ:26:LYS:NZ	2.37	0.55
7:SJ:195:ARG:NH2	9:SM:11:ARG:O	2.39	0.55
27:B2:124:ILE:HA	27:B2:140:SER:HA	1.89	0.55
27:B2:142:ASP:OD2	27:B2:144:ASN:ND2	2.39	0.55
27:B2:267:ASP:OD1	27:B2:267:ASP:N	2.36	0.55
34:5D:61:ASP:HA	36:5F:160:TRP:HZ3	1.71	0.55
36:5F:4:LYS:O	36:5F:4:LYS:HG2	2.07	0.55
39:5I:26:ARG:NH1	51:RQ:867:GLN:O	2.40	0.55
39:5I:340:ARG:NH2	39:5I:377:SER:O	2.39	0.55
46:RK:139:PRO:HA	46:RK:142:GLU:HB2	1.89	0.55
48:RN:682:ARG:O	48:RN:686:ASN:ND2	2.40	0.55
3:SA:207:U:H3	3:SA:258:C:N4	2.04	0.55
3:SA:444:C:O2	3:SA:460:A:N6	2.39	0.55
3:SA:453:U:O2'	3:SA:455:C:OP2	2.24	0.55
14:3B:225:ARG:NH1	14:3B:248:ASP:OD2	2.38	0.55
14:3C:189:GLY:O	14:3C:216:ASN:ND2	2.39	0.55
14:3C:225:ARG:NH2	14:3C:246:GLN:OE1	2.38	0.55
17:3F:289:ARG:NH2	17:3F:332:ALA:O	2.39	0.55
17:3F:552:TRP:HB3	18:3H:85:VAL:HG13	1.88	0.55
25:AG:262:MET:HA	25:AG:272:ALA:O	2.07	0.55
28:B3:366:PRO:HG2	28:B3:378:PRO:HB3	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:5C:162:ASN:HB3	33:5C:164:GLN:H	1.71	0.55
36:5F:13:LEU:CD1	36:5F:16:VAL:HG11	2.37	0.55
39:5I:173:ILE:HG13	39:5I:174:ARG:HG2	1.87	0.55
39:5I:329:ILE:HG12	39:5I:343:TYR:HB2	1.89	0.55
45:RJ:279:PRO:HB3	45:RJ:784:LYS:HA	1.88	0.55
45:RJ:360:ASP:OD1	45:RJ:360:ASP:N	2.35	0.55
45:RJ:608:LEU:HB2	46:RK:16:ASN:HD22	1.72	0.55
45:RJ:921:GLU:HB2	46:RK:365:LYS:HG3	1.88	0.55
7:SJ:41:LYS:HE2	7:SJ:43:ILE:HD11	1.89	0.55
7:SJ:98:LYS:NZ	7:SJ:170:SER:O	2.36	0.55
19:A4:57:ILE:HD13	19:A4:340:GLN:HG2	1.89	0.55
25:AG:583:LYS:HE2	25:AG:599:ILE:HD13	1.88	0.55
29:B8:526:ASP:OD1	29:B8:526:ASP:N	2.38	0.55
29:B8:561:PRO:O	29:B8:587:ARG:NH1	2.39	0.55
31:B6:278:MET:HA	31:B6:312:LEU:HD11	1.89	0.55
43:RB:304:GLU:OE1	43:RB:309:LYS:NZ	2.40	0.55
45:RJ:871:MET:SD	45:RJ:930:LYS:HD2	2.47	0.55
3:SA:365:G:N7	43:RB:231:ARG:NH1	2.55	0.55
3:SA:1232:U:O4	3:SA:1234:A:N6	2.39	0.55
23:AE:1172:ASP:N	23:AE:1236:ASN:O	2.40	0.55
27:B2:163:LYS:HG2	35:5E:522:ARG:HH22	1.71	0.55
27:B2:592:SER:OG	27:B2:593:ALA:N	2.40	0.55
28:B3:179:LYS:O	28:B3:181:LYS:NZ	2.38	0.55
52:RS:445:ARG:NH1	52:RS:445:ARG:O	2.40	0.55
8:SK:139:GLN:NE2	12:SZ:64:PHE:O	2.39	0.55
15:3D:21:LYS:HE2	15:3D:49:GLU:HB2	1.88	0.55
18:3G:57:ASP:O	18:3G:84:ARG:NH1	2.40	0.55
19:A4:641:GLU:OE2	19:A4:645:ARG:NH1	2.40	0.55
21:A8:596:LYS:HE2	21:A8:637:LEU:CA	2.29	0.55
25:AG:51:GLN:HE21	25:AG:53:LYS:HD3	1.72	0.55
26:B1:356:ASP:HB2	26:B1:826:ARG:HG3	1.89	0.55
27:B2:787:LYS:NZ	27:B2:788:PRO:O	2.38	0.55
28:B3:5:THR:O	28:B3:611:LYS:NZ	2.39	0.55
42:RA:166:ASN:ND2	42:RA:168:GLU:O	2.40	0.55
45:RJ:130:ASP:OD2	45:RJ:853:ARG:NH2	2.40	0.55
46:RK:171:ASP:N	46:RK:171:ASP:OD1	2.39	0.55
1:3A:58:A:P	36:5F:165:LYS:HE3	2.47	0.55
3:SA:96:G:N2	3:SA:387:A:N1	2.55	0.55
3:SA:258:C:O2	7:SJ:178:ARG:NH2	2.40	0.55
4:SF:45:ILE:HG13	4:SF:61:VAL:HG11	1.88	0.55
20:A5:454:GLU:OE2	20:A5:487:ARG:NH1	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:AE:196:LEU:HD11	23:AE:213:THR:HG21	1.88	0.55
23:AE:636:ASP:OD1	23:AE:639:ARG:NH1	2.40	0.55
28:B3:107:ILE:HD11	28:B3:147:ILE:HG22	1.88	0.55
46:RK:155:LYS:HG3	46:RK:164:GLY:HA2	1.89	0.55
48:RN:290:LYS:O	52:RS:458:ARG:NH1	2.40	0.55
6:SH:10:ASN:O	6:SH:128:THR:OG1	2.25	0.55
9:SM:125:VAL:HB	9:SM:137:PHE:HB3	1.89	0.55
10:SR:122:ARG:CZ	37:5G:133:LYS:HD2	2.37	0.55
16:3E:280:MET:HG3	16:3E:288:THR:HG22	1.89	0.55
20:A5:531:LYS:O	20:A5:535:ASP:HB2	2.07	0.55
23:AE:12:ALA:HB2	33:5C:142:GLY:HA3	1.89	0.55
23:AE:558:VAL:O	23:AE:592:ARG:NH1	2.40	0.55
38:5H:565:LYS:HA	38:5H:568:LYS:HG2	1.89	0.55
39:5I:349:GLN:O	39:5I:367:SER:OG	2.24	0.55
45:RJ:289:HIS:HB2	45:RJ:815:LEU:HD21	1.89	0.55
45:RJ:871:MET:HE1	45:RJ:930:LYS:NZ	2.18	0.55
3:SA:332:U:OP1	7:SJ:31:ARG:NH2	2.37	0.54
7:SJ:8:ARG:HD2	7:SJ:22:ARG:HH11	1.72	0.54
15:3D:379:LEU:O	15:3D:383:CYS:HB2	2.07	0.54
21:A8:638:LEU:HA	21:A8:641:VAL:HG12	1.89	0.54
24:AF:75:LYS:HD3	24:AF:113:PRO:HD3	1.89	0.54
24:AF:420:GLU:O	24:AF:424:ARG:HB3	2.07	0.54
29:B8:176:LYS:O	29:B8:180:ASP:CB	2.55	0.54
33:5C:96:ASP:OD1	33:5C:96:ASP:N	2.35	0.54
45:RJ:551:LYS:O	45:RJ:555:MET:HB2	2.07	0.54
3:SA:1628:U:OP2	35:5E:534:ARG:NH1	2.40	0.54
25:AG:727:GLN:OE1	25:AG:738:ASN:ND2	2.39	0.54
26:B1:375:THR:OG1	26:B1:376:SER:N	2.41	0.54
29:B8:176:LYS:O	29:B8:180:ASP:HB3	2.07	0.54
31:B6:187:LYS:HE3	40:5J:63:PRO:HB2	1.89	0.54
39:5I:402:GLU:O	39:5I:405:ARG:NH2	2.40	0.54
45:RJ:966:ILE:HD13	45:RJ:976:ILE:HG22	1.88	0.54
49:RO:345:ILE:HA	49:RO:349:LEU:HD13	1.89	0.54
3:SA:562:G:H8	37:5G:283:THR:HB	1.72	0.54
23:AE:205:THR:HB	23:AE:210:LEU:HD21	1.89	0.54
25:AG:850:GLU:HA	25:AG:853:ILE:HD12	1.89	0.54
33:5C:186:ARG:NH1	36:5F:42:GLU:OE2	2.40	0.54
39:5I:133:GLN:NE2	39:5I:151:ASN:OD1	2.40	0.54
43:RB:335:GLU:HA	43:RB:339:SER:HB2	1.89	0.54
46:RK:37:ARG:NH2	46:RK:49:GLU:OE2	2.36	0.54
52:RS:319:LYS:HA	52:RS:323:PHE:HB2	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:576:G:C5'	35:5E:327:LYS:HE2	2.37	0.54
10:SR:22:VAL:HG22	10:SR:65:ILE:HG23	1.89	0.54
15:3D:63:LEU:O	15:3D:67:ASN:ND2	2.40	0.54
19:A4:534:LEU:HA	19:A4:542:VAL:O	2.07	0.54
21:A8:527:LEU:HD11	21:A8:549:ARG:HH22	1.72	0.54
26:B1:202:ASP:N	26:B1:202:ASP:OD1	2.40	0.54
28:B3:537:TRP:N	28:B3:551:SER:O	2.37	0.54
33:5C:369:MET:HE1	33:5C:404:PRO:HD2	1.90	0.54
42:RA:78:LYS:O	42:RA:80:GLN:NE2	2.41	0.54
45:RJ:1018:VAL:O	45:RJ:1029:TRP:NE1	2.41	0.54
49:RO:156:TRP:O	49:RO:215:ASN:ND2	2.40	0.54
19:A4:252:GLN:NE2	19:A4:318:ASN:OD1	2.40	0.54
24:AF:215:VAL:HA	24:AF:230:GLY:HA3	1.90	0.54
25:AG:510:TYR:OH	25:AG:527:HIS:ND1	2.35	0.54
28:B3:328:GLN:NE2	28:B3:329:VAL:O	2.41	0.54
29:B8:352:GLN:HE21	29:B8:385:ASN:HD22	1.54	0.54
30:BE:73:GLU:OE2	30:BE:74:LYS:NZ	2.40	0.54
30:BE:626:ASP:N	30:BE:626:ASP:OD1	2.35	0.54
44:RH:114:ILE:HG12	44:RH:122:ILE:HB	1.89	0.54
3:SA:103:A:OP1	7:SJ:18:ARG:NH1	2.40	0.54
15:3D:392:TYR:HB3	18:3H:65:LEU:HD22	1.90	0.54
23:AE:274:ILE:HD11	29:B8:215:THR:HG21	1.90	0.54
45:RJ:73:ALA:HB1	45:RJ:131:ILE:HD12	1.90	0.54
3:SA:511:A:OP2	8:SK:176:ASN:ND2	2.40	0.54
3:SA:1175:U:OP1	48:RN:748:ARG:NH1	2.41	0.54
4:SF:198:LYS:HG3	4:SF:208:VAL:HG23	1.89	0.54
5:SG:26:ALA:HB3	10:SR:28:LEU:HB3	1.89	0.54
10:SR:34:SER:HB2	10:SR:38:LEU:HD12	1.90	0.54
17:3F:398:CYS:O	17:3F:419:ASN:ND2	2.40	0.54
17:3F:414:ILE:HD11	17:3F:480:ALA:HB2	1.90	0.54
18:3G:13:ASP:OD1	18:3G:13:ASP:N	2.39	0.54
26:B1:396:ALA:HB2	26:B1:438:VAL:HG21	1.90	0.54
27:B2:287:ARG:NH1	27:B2:324:PHE:O	2.41	0.54
29:B8:486:SER:OG	29:B8:487:GLU:N	2.41	0.54
35:5E:437:ILE:HD11	36:5F:70:PHE:HE2	1.73	0.54
41:5K:145:VAL:HG23	41:5K:151:TYR:HB2	1.89	0.54
43:RB:310:GLN:O	43:RB:314:ASN:ND2	2.40	0.54
46:RK:347:ASN:ND2	46:RK:349:ASP:OD2	2.40	0.54
48:RN:515:HIS:HB3	48:RN:518:ILE:HG22	1.90	0.54
14:3B:90:PRO:HD3	40:5J:106:LEU:HD12	1.90	0.54
14:3C:268:VAL:HG22	14:3C:317:VAL:HG12	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:3F:481:ILE:HD12	17:3F:486:VAL:HG13	1.90	0.54
25:AG:325:GLN:NE2	25:AG:328:THR:OG1	2.41	0.54
25:AG:368:ASP:OD1	25:AG:368:ASP:N	2.38	0.54
27:B2:317:ILE:O	27:B2:321:TYR:N	2.41	0.54
28:B3:510:SER:O	28:B3:514:THR:OG1	2.26	0.54
42:RA:64:VAL:HG21	42:RA:323:VAL:HG12	1.90	0.54
42:RA:121:ARG:HH22	53:RY:462:ARG:HD2	1.72	0.54
42:RA:250:GLY:HA2	42:RA:274:ILE:HG23	1.88	0.54
1:3A:258:U:O4	15:3D:377:ARG:NH2	2.41	0.54
3:SA:146:U:O4	3:SA:168:A:N7	2.41	0.54
3:SA:1605:G:OP1	37:5G:119:ARG:NH2	2.40	0.54
14:3B:124:SER:HB3	40:5J:153:ILE:HD11	1.90	0.54
20:A5:20:VAL:HG22	20:A5:29:VAL:HG22	1.89	0.54
21:A8:647:LEU:C	22:A9:509:GLN:NE2	2.62	0.54
23:AE:519:LEU:HD23	23:AE:523:ILE:HD13	1.88	0.54
24:AF:387:ALA:O	24:AF:391:ASN:ND2	2.40	0.54
25:AG:724:ILE:HD11	25:AG:763:ILE:HG22	1.90	0.54
27:B2:260:GLU:O	27:B2:272:PHE:HA	2.08	0.54
30:BE:430:ILE:HB	30:BE:443:TRP:HB2	1.89	0.54
30:BE:604:SER:OG	30:BE:606:ASP:OD1	2.25	0.54
45:RJ:954:SER:HA	45:RJ:984:GLU:HG3	1.89	0.54
3:SA:325:G:H2'	3:SA:326:G:H8	1.73	0.54
3:SA:1539:G:N1	3:SA:1569:A:OP2	2.41	0.54
15:3D:392:TYR:HB2	18:3H:62:GLU:HB3	1.90	0.54
16:3E:380:ARG:NH1	16:3E:382:ASP:OD1	2.40	0.54
17:3F:399:GLU:OE2	17:3F:417:SER:OG	2.26	0.54
18:3H:38:ASN:HA	18:3H:41:THR:HG22	1.90	0.54
19:A4:207:ASP:OD2	19:A4:209:ARG:NH1	2.37	0.54
19:A4:641:GLU:HB3	19:A4:749:SER:HB3	1.90	0.54
28:B3:745:ASP:O	35:5E:512:GLY:O	2.26	0.54
30:BE:160:THR:OG1	30:BE:163:GLN:NE2	2.41	0.54
33:5C:449:ILE:HD11	39:5I:38:ALA:HA	1.89	0.54
45:RJ:1027:THR:HG23	45:RJ:1028:GLU:HG2	1.89	0.54
48:RN:605:ASP:OD1	48:RN:610:ARG:NH1	2.41	0.54
3:SA:1738:U:OP1	27:B2:279:LYS:NZ	2.40	0.53
7:SJ:184:LEU:HD23	7:SJ:189:LEU:HA	1.90	0.53
19:A4:271:THR:HG21	29:B8:443:VAL:HG21	1.91	0.53
25:AG:157:PHE:O	25:AG:169:GLN:NE2	2.40	0.53
27:B2:525:ASP:OD1	27:B2:525:ASP:N	2.41	0.53
36:5F:136:VAL:HA	36:5F:160:TRP:HA	1.90	0.53
39:5I:192:SER:HB2	39:5I:206:VAL:HG22	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SK:76:LEU:HB2	43:RB:328:PHE:CE1	2.43	0.53
25:AG:404:SER:OG	25:AG:405:ALA:N	2.40	0.53
30:BE:743:ARG:O	30:BE:743:ARG:HD3	2.08	0.53
44:RH:125:ASN:ND2	44:RH:127:THR:OG1	2.42	0.53
48:RN:96:LYS:HD2	48:RN:761:PHE:HZ	1.73	0.53
1:3A:318:U:N3	14:3C:119:GLY:HA3	2.16	0.53
3:SA:396:G:N7	7:SJ:47:ARG:NH1	2.56	0.53
5:SG:73:THR:OG1	5:SG:91:GLU:OE1	2.27	0.53
19:A4:311:THR:HG22	19:A4:313:LYS:H	1.74	0.53
23:AE:651:LEU:HD21	23:AE:680:TYR:HB2	1.90	0.53
24:AF:173:THR:HG21	24:AF:218:VAL:H	1.74	0.53
26:B1:283:GLU:OE2	26:B1:297:GLN:NE2	2.42	0.53
1:3A:25:U:H5'	36:5F:11:LYS:O	2.07	0.53
14:3B:230:TYR:OH	14:3B:256:ASN:OD1	2.25	0.53
23:AE:626:PHE:HB3	23:AE:629:GLU:HB2	1.90	0.53
26:B1:418:ARG:HG3	26:B1:418:ARG:NH2	2.12	0.53
26:B1:419:TYR:CD2	35:5E:482:LEU:HD12	2.44	0.53
28:B3:596:ASP:OD1	28:B3:596:ASP:N	2.42	0.53
30:BE:737:LEU:O	30:BE:740:ILE:HG23	2.09	0.53
33:5C:312:VAL:HG21	33:5C:353:PRO:HG2	1.90	0.53
17:3F:357:LEU:HD22	43:RB:256:PRO:HB2	1.90	0.53
18:3H:45:ASN:HA	18:3H:74:LYS:HE2	1.90	0.53
25:AG:291:ARG:HD2	25:AG:329:ASN:HD21	1.73	0.53
27:B2:412:GLY:HA2	27:B2:431:GLY:H	1.73	0.53
35:5E:315:GLU:HB3	45:RJ:1032:LEU:CD1	2.37	0.53
6:SH:48:TYR:OH	6:SH:119:GLN:O	2.27	0.53
9:SM:82:ARG:HA	9:SM:111:VAL:HG13	1.91	0.53
25:AG:213:LYS:HA	25:AG:223:LYS:HA	1.91	0.53
44:RG:36:LYS:NZ	44:RG:169:ASP:O	2.40	0.53
46:RK:289:VAL:HG21	46:RK:294:LEU:HD13	1.90	0.53
47:RL:37:LEU:HD13	47:RL:123:ILE:HD13	1.90	0.53
1:3A:98:U:OP2	1:3A:98:U:H6	1.92	0.53
3:SA:513:U:H2'	3:SA:514:G:C8	2.44	0.53
3:SA:1209:C:N3	3:SA:1210:C:N4	2.56	0.53
4:SF:209:HIS:ND1	4:SF:218:PHE:O	2.41	0.53
16:3E:289:GLN:HE21	16:3E:388:LEU:HD13	1.74	0.53
20:A5:46:TRP:HD1	20:A5:48:GLU:HG3	1.74	0.53
25:AG:283:VAL:HG12	25:AG:290:ILE:HG22	1.91	0.53
27:B2:554:THR:OG1	27:B2:556:LYS:NZ	2.39	0.53
44:RG:188:ARG:NH2	44:RH:247:ASP:OD2	2.41	0.53
45:RJ:374:ASP:OD1	45:RJ:374:ASP:N	2.40	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:RS:437:ARG:NH2	52:RS:459:GLU:O	2.42	0.53
19:A4:35:ARG:HH11	19:A4:738:TYR:HD1	1.57	0.53
19:A4:420:LEU:HD23	20:A5:581:ASN:HA	1.91	0.53
22:A9:513:ARG:HH21	22:A9:515:ASP:HA	1.72	0.53
35:5E:322:LYS:HD2	35:5E:327:LYS:HB2	1.90	0.53
42:RA:202:ASN:ND2	42:RA:229:PHE:O	2.41	0.53
44:RG:121:LEU:HD21	44:RG:167:ILE:HG13	1.89	0.53
45:RJ:844:PRO:HA	45:RJ:856:THR:O	2.08	0.53
49:RO:233:ASP:N	49:RO:233:ASP:OD1	2.42	0.53
1:3A:323:G:N3	1:3A:323:G:C2'	2.71	0.53
3:SA:1633:A:O3'	26:B1:418:ARG:NH2	2.38	0.53
15:3D:102:ASP:HB3	15:3D:105:LEU:HB3	1.91	0.53
21:A8:443:CYS:CB	25:AG:728:LEU:CB	2.76	0.53
23:AE:40:ALA:HB1	23:AE:123:ARG:HH12	1.73	0.53
26:B1:284:PHE:HZ	35:5E:476:MET:HE2	1.72	0.53
26:B1:812:GLU:HG3	26:B1:813:HIS:HD2	1.74	0.53
3:SA:1136:U:O2'	27:B2:596:ASN:ND2	2.43	0.52
9:SM:97:TYR:O	9:SM:99:ARG:NH1	2.42	0.52
23:AE:571:LEU:HD11	23:AE:582:VAL:HG11	1.91	0.52
26:B1:418:ARG:NH1	35:5E:492:PRO:HD3	2.24	0.52
29:B8:216:TYR:OH	30:BE:276:TYR:OH	2.27	0.52
35:5E:493:GLN:HE21	35:5E:497:ASN:CB	2.20	0.52
35:5E:500:LYS:O	35:5E:508:ARG:NH2	2.42	0.52
36:5F:123:THR:HG23	36:5F:126:ASP:H	1.74	0.52
42:RA:13:VAL:HG12	42:RA:343:ILE:HG12	1.89	0.52
50:RP:18:SER:OG	50:RP:19:PHE:N	2.42	0.52
1:3A:97:C:O2	1:3A:320:G:C2	2.62	0.52
3:SA:153:G:H2'	3:SA:154:G:H8	1.74	0.52
15:3D:157:ALA:O	31:B6:293:TYR:OH	2.26	0.52
16:3E:251:ASP:OD1	16:3E:251:ASP:N	2.42	0.52
17:3F:162:CYS:SG	17:3F:525:GLN:NE2	2.78	0.52
21:A8:443:CYS:CA	25:AG:728:LEU:CD2	2.79	0.52
21:A8:647:LEU:O	22:A9:509:GLN:NE2	2.41	0.52
24:AF:87:ALA:HA	24:AF:97:CYS:O	2.08	0.52
24:AF:364:SER:O	24:AF:364:SER:OG	2.26	0.52
45:RJ:135:ALA:O	45:RJ:238:ARG:NH2	2.42	0.52
45:RJ:982:LYS:HG3	45:RJ:983:PRO:HD3	1.92	0.52
47:RL:131:THR:OG1	47:RL:133:ASN:ND2	2.42	0.52
3:SA:258:C:H4'	7:SJ:75:LYS:HD2	1.91	0.52
23:AE:502:ILE:HG23	23:AE:542:ILE:HG13	1.90	0.52
45:RJ:90:VAL:HG23	45:RJ:107:VAL:HG11	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:RK:97:GLY:HA2	46:RK:100:VAL:HG12	1.92	0.52
48:RN:587:ASP:OD1	48:RN:587:ASP:N	2.42	0.52
3:SA:153:G:N2	6:SH:56:ASN:OD1	2.42	0.52
8:SK:67:PRO:HB2	43:RB:334:LEU:HD23	1.91	0.52
19:A4:39:VAL:H	19:A4:755:ILE:HD11	1.75	0.52
19:A4:658:ASP:OD2	19:A4:731:HIS:N	2.42	0.52
20:A5:481:LEU:HD22	20:A5:523:LEU:HD22	1.92	0.52
27:B2:398:ASP:HB2	27:B2:406:LEU:HB3	1.92	0.52
30:BE:470:GLN:NE2	30:BE:512:GLY:O	2.42	0.52
4:SF:53:LYS:O	17:3F:120:ARG:NH2	2.42	0.52
7:SJ:191:PHE:O	7:SJ:195:ARG:NH1	2.41	0.52
28:B3:337:HIS:HD2	28:B3:363:ARG:HD3	1.74	0.52
30:BE:268:THR:HG22	30:BE:270:SER:H	1.75	0.52
35:5E:384:ARG:HD3	37:5G:83:ILE:CD1	2.38	0.52
44:RH:116:THR:HG22	44:RH:118:ARG:H	1.73	0.52
3:SA:494:U:OP1	45:RJ:1138:ARG:NH2	2.32	0.52
3:SA:594:A:OP1	8:SK:38:ASN:ND2	2.43	0.52
14:3B:281:ASP:OD1	14:3B:281:ASP:N	2.41	0.52
15:3D:169:LYS:HA	15:3D:299:VAL:HG22	1.92	0.52
17:3F:284:LEU:O	17:3F:548:ARG:NH2	2.38	0.52
23:AE:556:LYS:O	23:AE:592:ARG:NH2	2.42	0.52
44:RG:169:ASP:N	44:RG:169:ASP:OD1	2.40	0.52
46:RK:30:PRO:HB3	46:RK:77:ARG:HG3	1.90	0.52
50:RP:452:ASN:O	50:RP:456:GLU:N	2.43	0.52
3:SA:331:A:N3	7:SJ:5:ARG:NH1	2.57	0.52
3:SA:1436:A:H1'	52:RS:419:LYS:HD2	1.91	0.52
6:SH:105:ASP:OD1	6:SH:105:ASP:N	2.43	0.52
7:SJ:110:ARG:NH1	7:SJ:161:SER:O	2.43	0.52
22:A9:504:GLU:OE2	22:A9:507:ARG:NH1	2.43	0.52
25:AG:319:LYS:HD2	25:AG:339:GLY:H	1.74	0.52
30:BE:578:VAL:O	30:BE:579:ARG:NH1	2.42	0.52
30:BE:605:LEU:HD23	30:BE:628:VAL:HG11	1.92	0.52
36:5F:66:PRO:O	36:5F:72:ARG:NH2	2.43	0.52
49:RO:258:GLU:HG3	49:RO:289:PHE:HD1	1.74	0.52
52:RS:397:PHE:HD1	52:RS:407:GLU:HG2	1.75	0.52
2:5A:7:A:N7	25:AG:578:ASN:ND2	2.55	0.52
16:3E:426:ALA:HB2	30:BE:305:ASN:HD21	1.75	0.52
25:AG:431:SER:OG	25:AG:432:ARG:N	2.42	0.52
26:B1:678:GLU:OE2	35:5E:455:HIS:ND1	2.43	0.52
28:B3:680:ASN:N	28:B3:680:ASN:OD1	2.42	0.52
30:BE:819:LYS:NZ	30:BE:823:GLU:OE2	2.40	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:5E:350:THR:OG1	45:RJ:975:GLU:CD	2.48	0.52
40:5J:58:ASN:HA	40:5J:61:LYS:HG2	1.92	0.52
42:RA:147:ASN:ND2	42:RA:154:TYR:OH	2.43	0.52
1:3A:198:U:O4	17:3F:151:ARG:NE	2.38	0.52
1:3A:312:U:H5"	40:5J:167:LYS:HG2	1.91	0.52
6:SH:39:GLU:HG3	6:SH:46:LYS:HG3	1.91	0.52
14:3C:297:ARG:HD3	14:3C:322:ARG:HA	1.92	0.52
20:A5:503:LYS:HD3	22:A9:508:ARG:HH22	1.75	0.52
21:A8:596:LYS:CD	21:A8:637:LEU:HD22	2.38	0.52
24:AF:256:THR:N	24:AF:275:SER:O	2.39	0.52
26:B1:506:SER:OG	26:B1:507:GLN:N	2.43	0.52
26:B1:678:GLU:OE2	35:5E:455:HIS:HE1	1.92	0.52
27:B2:634:SER:OG	27:B2:635:LYS:N	2.41	0.52
45:RJ:72:VAL:HG22	45:RJ:137:LEU:HB3	1.91	0.52
45:RJ:246:ALA:HB3	45:RJ:810:ILE:HB	1.91	0.52
45:RJ:776:GLN:NE2	45:RJ:781:GLU:OE2	2.40	0.52
49:RO:356:ALA:HA	49:RO:499:LEU:HD22	1.91	0.52
2:5A:9:G:H5'	22:A9:483:LYS:HZ1	1.73	0.52
3:SA:1533:C:OP2	24:AF:114:ARG:NH2	2.43	0.52
16:3E:3:TYR:N	16:3E:21:LYS:O	2.43	0.52
16:3E:359:ILE:HA	16:3E:362:VAL:HG12	1.92	0.52
27:B2:53:ASP:OD2	27:B2:58:ASP:OD1	2.27	0.52
31:B6:296:SER:HB3	31:B6:300:MET:HB2	1.91	0.52
45:RJ:193:ARG:NH2	45:RJ:196:THR:OG1	2.43	0.52
47:RL:589:ALA:HB3	47:RL:593:GLU:H	1.75	0.52
52:RS:360:LEU:HD21	52:RS:393:TYR:HB2	1.92	0.52
5:SG:120:ILE:HA	5:SG:123:VAL:HG12	1.92	0.51
16:3E:385:ASP:OD1	16:3E:385:ASP:N	2.42	0.51
27:B2:54:ILE:CD1	27:B2:364:TYR:CD2	2.93	0.51
33:5C:130:ARG:NH2	33:5C:379:GLU:OE2	2.42	0.51
39:5I:319:GLU:OE2	39:5I:356:TYR:OH	2.27	0.51
39:5I:324:SER:OG	39:5I:326:ASP:OD1	2.23	0.51
49:RO:200:ASN:ND2	49:RO:256:ASN:O	2.43	0.51
2:5A:294:U:OP1	26:B1:631:ASN:ND2	2.43	0.51
3:SA:419:G:H5"	3:SA:419:G:H8	1.75	0.51
3:SA:1599:C:H4'	37:5G:145:HIS:CD2	2.45	0.51
6:SH:74:LYS:HB2	42:RA:88:ASN:HD21	1.75	0.51
14:3B:277:ASP:N	14:3B:277:ASP:OD1	2.43	0.51
18:3H:44:LEU:HD22	18:3H:52:ILE:HD12	1.90	0.51
19:A4:63:SER:HA	19:A4:82:ARG:HH12	1.75	0.51
21:A8:443:CYS:CA	25:AG:728:LEU:HD13	2.17	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:AE:659:LEU:HD13	23:AE:690:GLU:HB3	1.92	0.51
25:AG:736:THR:HG23	25:AG:738:ASN:H	1.74	0.51
27:B2:281:ILE:HB	27:B2:332:ILE:HG23	1.91	0.51
27:B2:362:ILE:HG12	27:B2:385:ILE:HB	1.92	0.51
33:5C:410:ASN:O	39:5I:27:ASN:ND2	2.43	0.51
37:5G:108:LYS:HD2	37:5G:116:ARG:HB2	1.92	0.51
45:RJ:864:ASP:OD1	45:RJ:864:ASP:N	2.44	0.51
14:3B:120:GLU:OE2	14:3B:142:ARG:NE	2.41	0.51
19:A4:481:ILE:HB	19:A4:485:LYS:HB2	1.91	0.51
21:A8:587:LEU:HD23	21:A8:587:LEU:O	2.10	0.51
25:AG:407:ASN:ND2	25:AG:416:SER:OG	2.44	0.51
27:B2:759:GLY:HA3	27:B2:805:ILE:HD11	1.91	0.51
28:B3:679:THR:HG21	28:B3:723:GLU:HB2	1.93	0.51
37:5G:143:HIS:HB2	37:5G:151:SER:HB2	1.91	0.51
43:RB:348:SER:HB2	50:RP:1728:PHE:HB3	1.93	0.51
45:RJ:616:ASP:HB2	45:RJ:621:LEU:HG	1.90	0.51
49:RO:214:LYS:O	49:RO:268:GLN:NE2	2.43	0.51
4:SF:201:HIS:H	4:SF:206:ASP:HB3	1.75	0.51
7:SJ:171:SER:HB3	7:SJ:180:ASP:H	1.74	0.51
15:3D:126:ASP:HA	15:3D:129:ARG:HG2	1.93	0.51
17:3F:136:PHE:HE1	17:3F:484:SER:HB2	1.74	0.51
21:A8:631:SER:O	21:A8:634:LEU:CG	2.45	0.51
24:AF:59:SER:OG	24:AF:60:SER:N	2.43	0.51
37:5G:185:VAL:O	37:5G:220:ARG:NH1	2.39	0.51
47:RL:117:ASN:O	47:RL:141:THR:OG1	2.26	0.51
50:RP:85:LYS:NZ	50:RP:89:ASN:OD1	2.40	0.51
50:RP:1746:LYS:O	50:RP:1748:ASN:ND2	2.41	0.51
2:5A:473:A:H5"	33:5C:164:GLN:HE22	1.76	0.51
15:3D:26:ASP:OD1	39:5I:98:SER:OG	2.29	0.51
19:A4:402:TRP:HB3	19:A4:416:LEU:HA	1.91	0.51
26:B1:329:VAL:HG13	26:B1:338:ILE:HB	1.92	0.51
30:BE:59:GLN:HG2	30:BE:71:VAL:HG22	1.91	0.51
35:5E:350:THR:HG21	45:RJ:975:GLU:HB2	1.92	0.51
39:5I:329:ILE:HG22	39:5I:351:VAL:HG11	1.93	0.51
44:RG:105:ASN:HD21	44:RG:110:LEU:HD22	1.75	0.51
46:RK:315:LYS:HB2	46:RK:348:GLU:HB3	1.92	0.51
48:RN:661:ILE:HG22	48:RN:665:GLN:HG3	1.92	0.51
5:SG:118:LEU:HG	5:SG:129:PRO:HB2	1.92	0.51
7:SJ:100:ALA:O	7:SJ:168:CYS:HA	2.10	0.51
9:SM:18:HIS:HB2	9:SM:63:LEU:HD21	1.91	0.51
14:3B:91:HIS:HD2	14:3B:93:HIS:H	1.57	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:A8:712:ASP:OD1	21:A8:712:ASP:N	2.40	0.51
23:AE:558:VAL:HG13	23:AE:615:ASN:HA	1.93	0.51
26:B1:588:ASP:OD1	26:B1:588:ASP:N	2.43	0.51
26:B1:680:ARG:HH11	35:5E:455:HIS:CD2	2.27	0.51
27:B2:180:THR:HG1	27:B2:207:CYS:HG	1.58	0.51
28:B3:501:PRO:HG3	28:B3:543:GLN:HG3	1.91	0.51
30:BE:854:SER:HB2	30:BE:895:VAL:HG21	1.93	0.51
36:5F:6:LYS:HB2	36:5F:9:GLU:HG2	1.91	0.51
39:5I:122:ARG:HB2	39:5I:192:SER:HB3	1.93	0.51
39:5I:327:LYS:HG2	39:5I:350:HIS:H	1.76	0.51
42:RA:101:ASN:HD21	42:RA:116:HIS:HB3	1.76	0.51
52:RS:229:LEU:HD11	52:RS:233:PHE:HD2	1.74	0.51
1:3A:256:G:OP1	15:3D:382:LYS:NZ	2.37	0.51
6:SH:70:PRO:HD3	6:SH:101:ILE:HD12	1.93	0.51
19:A4:420:LEU:HD11	19:A4:462:VAL:HG21	1.92	0.51
25:AG:434:GLN:OE1	25:AG:434:GLN:N	2.43	0.51
26:B1:722:THR:HG22	26:B1:724:HIS:H	1.75	0.51
27:B2:201:ILE:HG13	28:B3:663:VAL:HG11	1.92	0.51
28:B3:497:LEU:HA	28:B3:507:ALA:O	2.11	0.51
52:RS:263:THR:HA	52:RS:266:PHE:HB2	1.93	0.51
7:SJ:67:TRP:NE1	7:SJ:70:GLU:OE1	2.42	0.51
14:3C:94:ALA:HB3	14:3C:166:PRO:HG3	1.92	0.51
21:A8:647:LEU:CB	22:A9:509:GLN:HE22	2.23	0.51
24:AF:258:LEU:HD22	24:AF:272:LEU:HD21	1.93	0.51
26:B1:392:ALA:O	26:B1:404:SER:HA	2.10	0.51
28:B3:414:VAL:HG23	28:B3:427:TYR:HB3	1.92	0.51
33:5C:74:LEU:HD23	33:5C:404:PRO:HG2	1.93	0.51
40:5J:120:ASP:HB2	40:5J:173:ILE:HD12	1.92	0.51
44:RG:150:ILE:HD11	44:RG:160:LEU:HD23	1.92	0.51
47:RL:539:ALA:O	47:RL:543:SER:CB	2.59	0.51
2:5A:293:U:H3	26:B1:632:SER:HB3	1.75	0.51
3:SA:283:U:OP1	6:SH:191:ARG:NH1	2.40	0.51
3:SA:340:U:H2'	3:SA:341:A:H8	1.75	0.51
3:SA:1634:C:P	26:B1:418:ARG:HH22	2.32	0.51
14:3C:171:LEU:HD23	14:3C:240:VAL:HG12	1.92	0.51
21:A8:441:VAL:CA	25:AG:728:LEU:HD21	2.41	0.51
23:AE:522:ARG:HH12	23:AE:561:PHE:HB2	1.76	0.51
25:AG:64:LYS:NZ	25:AG:123:GLY:O	2.39	0.51
28:B3:17:ALA:HB3	28:B3:35:PRO:HA	1.91	0.51
42:RA:282:ASN:HD21	42:RA:325:GLY:H	1.58	0.51
44:RH:178:VAL:HG12	44:RH:223:GLU:HB2	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3A:59:G:H5'	26:B1:570:THR:HG23	1.92	0.51
1:3A:305:G:H2'	1:3A:306:G:H8	1.75	0.51
3:SA:29:U:H2'	3:SA:30:G:H8	1.74	0.51
3:SA:123:G:OP1	4:SF:77:ARG:NH2	2.40	0.51
7:SJ:104:ILE:HD13	7:SJ:167:ALA:HB3	1.91	0.51
12:SZ:86:GLU:OE2	12:SZ:90:ARG:NH1	2.43	0.51
16:3E:355:ASN:HB2	16:3E:401:LEU:HD13	1.93	0.51
20:A5:8:SER:OG	20:A5:293:ASN:ND2	2.43	0.51
20:A5:439:VAL:HG11	49:RO:300:THR:HG21	1.92	0.51
23:AE:586:LEU:O	23:AE:590:ALA:CB	2.58	0.51
26:B1:732:GLU:HG2	26:B1:734:GLN:HE22	1.76	0.51
30:BE:135:ASN:ND2	30:BE:165:GLY:O	2.42	0.51
35:5E:336:PRO:HB2	35:5E:339:ALA:HB2	1.93	0.51
45:RJ:776:GLN:HA	45:RJ:780:ILE:HG22	1.93	0.51
6:SH:21:GLU:OE2	6:SH:25:ARG:NH2	2.44	0.50
14:3B:142:ARG:NH2	14:3B:182:SER:OG	2.44	0.50
25:AG:668:THR:OG1	25:AG:669:ASN:OD1	2.30	0.50
27:B2:562:SER:HB2	27:B2:564:LYS:HB2	1.93	0.50
27:B2:627:SER:OG	27:B2:628:HIS:N	2.45	0.50
33:5C:91:ILE:HG23	39:5I:3:ILE:HD11	1.92	0.50
34:5D:61:ASP:HB3	36:5F:160:TRP:CZ3	2.46	0.50
44:RG:150:ILE:HG12	44:RG:160:LEU:HB2	1.93	0.50
47:RL:80:GLU:OE2	47:RL:85:THR:OG1	2.29	0.50
3:SA:290:G:H3'	3:SA:291:G:H8	1.76	0.50
3:SA:442:C:O2'	3:SA:525:A:N1	2.35	0.50
20:A5:192:SER:HB3	20:A5:207:GLU:HG3	1.93	0.50
21:A8:34:GLY:HA2	21:A8:352:GLN:HA	1.92	0.50
25:AG:855:LEU:HD23	29:B8:477:LYS:HE3	1.93	0.50
26:B1:328:LEU:HD21	35:5E:476:MET:HG3	1.93	0.50
28:B3:413:ILE:HG22	28:B3:429:LYS:HA	1.92	0.50
39:5I:54:PHE:O	39:5I:382:ARG:NH2	2.44	0.50
3:SA:304:U:OP1	9:SM:136:ARG:NH2	2.45	0.50
3:SA:340:U:H2'	3:SA:341:A:C8	2.47	0.50
3:SA:420:A:H8	3:SA:420:A:H3'	1.76	0.50
14:3C:223:ASP:OD2	14:3C:225:ARG:NH1	2.44	0.50
24:AF:401:LEU:HB3	24:AF:434:ARG:HH22	1.77	0.50
25:AG:207:LEU:HG	25:AG:264:ILE:HD12	1.93	0.50
30:BE:225:THR:OG1	30:BE:227:THR:O	2.29	0.50
30:BE:370:SER:OG	30:BE:372:ASP:OD1	2.20	0.50
31:B6:297:ASP:OD1	31:B6:297:ASP:N	2.44	0.50
36:5F:8:HIS:CA	39:5I:53:MET:HE1	2.21	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:RH:228:SER:OG	44:RH:229:ASN:N	2.44	0.50
1:3A:93:U:OP2	16:3E:302:HIS:ND1	2.42	0.50
1:3A:316:A:H2'	1:3A:317:A:H8	1.76	0.50
3:SA:413:U:H2'	3:SA:414:C:H6	1.77	0.50
22:A9:471:LYS:HZ3	22:A9:474:HIS:H	1.60	0.50
24:AF:224:THR:O	24:AF:239:LEU:CB	2.57	0.50
24:AF:378:LYS:NZ	29:B8:292:GLY:O	2.44	0.50
45:RJ:634:ARG:HD2	46:RK:185:ARG:HH21	1.77	0.50
46:RK:65:ILE:HB	48:RN:112:VAL:HG12	1.94	0.50
46:RK:183:ILE:HG22	46:RK:351:ILE:HD13	1.94	0.50
4:SF:26:CYS:SG	4:SF:27:TYR:N	2.84	0.50
14:3B:111:MET:HB2	14:3B:186:ASP:HB3	1.92	0.50
16:3E:430:ASP:HA	30:BE:125:GLY:HA2	1.93	0.50
19:A4:382:VAL:HG11	19:A4:755:ILE:HG21	1.92	0.50
20:A5:355:ASN:OD1	25:AG:479:ASN:ND2	2.44	0.50
24:AF:399:GLU:O	24:AF:403:ASN:ND2	2.42	0.50
25:AG:249:THR:HG22	25:AG:256:THR:HB	1.93	0.50
35:5E:345:LEU:HD21	45:RJ:961:PHE:CE2	2.46	0.50
44:RH:41:MET:O	44:RH:110:LEU:HA	2.11	0.50
44:RH:41:MET:HG3	44:RH:202:ILE:HG23	1.92	0.50
52:RS:322:LEU:HD21	52:RS:359:LEU:HD11	1.92	0.50
3:SA:420:A:H3'	3:SA:420:A:C8	2.47	0.50
3:SA:1134:C:H1'	27:B2:610:SER:HB2	1.94	0.50
9:SM:109:VAL:HG11	9:SM:139:VAL:HG13	1.94	0.50
14:3C:170:VAL:HG23	14:3C:194:VAL:HG13	1.93	0.50
23:AE:558:VAL:HG22	23:AE:615:ASN:HD22	1.76	0.50
27:B2:102:VAL:HA	27:B2:118:ASN:HA	1.94	0.50
28:B3:182:CYS:SG	28:B3:183:LEU:N	2.84	0.50
32:5B:173:ARG:HE	34:5D:146:PHE:HA	1.76	0.50
2:5A:20:C:H2'	2:5A:21:A:H8	1.77	0.50
3:SA:1192:C:H1'	44:RG:131:PRO:HA	1.92	0.50
3:SA:1194:A:OP2	3:SA:1195:C:N4	2.40	0.50
14:3B:228:GLN:O	14:3B:231:ARG:NH2	2.43	0.50
21:A8:539:ASN:ND2	21:A8:560:ASN:O	2.44	0.50
25:AG:80:GLN:NE2	25:AG:83:GLU:OE1	2.44	0.50
28:B3:407:SER:OG	28:B3:408:LYS:N	2.45	0.50
37:5G:287:LYS:HE2	37:5G:290:LEU:HA	1.94	0.50
46:RK:114:PHE:O	46:RK:169:VAL:HA	2.12	0.50
46:RK:214:LYS:O	46:RK:217:LYS:NZ	2.40	0.50
4:SF:181:VAL:HA	4:SF:227:VAL:HA	1.94	0.50
19:A4:415:LYS:NZ	19:A4:416:LEU:O	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:AG:139:GLU:HB3	25:AG:155:THR:HB	1.94	0.50
28:B3:455:LEU:HA	28:B3:464:LYS:O	2.12	0.50
35:5E:533:LYS:HA	35:5E:536:ARG:CD	2.42	0.50
44:RG:175:CYS:SG	44:RG:201:SER:OG	2.67	0.50
49:RO:327:MET:O	49:RO:331:ASN:HA	2.11	0.50
52:RS:439:PHE:HA	52:RS:442:GLU:HG3	1.94	0.50
53:RY:472:ILE:HA	53:RY:475:TYR:HB2	1.93	0.50
1:3A:321:C:H2'	1:3A:322:A:C8	2.47	0.50
2:5A:293:U:H2'	26:B1:631:ASN:HA	1.93	0.50
2:5A:484:G:O6	51:RQ:872:ARG:NH1	2.45	0.50
3:SA:1588:G:H1	3:SA:1608:U:H3	1.60	0.50
7:SJ:80:GLY:O	7:SJ:103:GLN:NE2	2.45	0.50
19:A4:156:LEU:HD22	19:A4:170:ILE:HD11	1.93	0.50
19:A4:418:CYS:SG	19:A4:419:LYS:N	2.85	0.50
21:A8:563:LEU:HB2	21:A8:598:GLU:CD	2.27	0.50
24:AF:48:ASN:ND2	24:AF:111:TYR:OH	2.45	0.50
25:AG:370:GLN:NE2	25:AG:384:SER:OG	2.44	0.50
25:AG:877:ASP:N	25:AG:877:ASP:OD1	2.43	0.50
30:BE:587:ARG:HB3	30:BE:605:LEU:HD12	1.92	0.50
32:5B:186:ASP:HA	32:5B:189:THR:HG22	1.94	0.50
34:5D:113:ILE:O	34:5D:117:LYS:HG3	2.12	0.50
45:RJ:852:ARG:HD2	45:RJ:888:PRO:HG3	1.94	0.50
51:RQ:853:ASN:OD1	51:RQ:853:ASN:N	2.45	0.50
9:SM:109:VAL:HG13	9:SM:138:ASN:HA	1.94	0.49
20:A5:115:ASN:ND2	20:A5:130:ASP:OD1	2.45	0.49
21:A8:441:VAL:C	25:AG:728:LEU:HD21	2.33	0.49
23:AE:306:LEU:HD22	23:AE:311:ASN:HA	1.94	0.49
27:B2:828:TYR:HA	27:B2:831:LYS:HG2	1.93	0.49
29:B8:410:ASP:OD1	29:B8:479:ASN:ND2	2.45	0.49
37:5G:202:VAL:HA	37:5G:205:ILE:HG22	1.94	0.49
45:RJ:106:THR:HG23	45:RJ:355:TYR:HB3	1.94	0.49
45:RJ:138:VAL:HB	45:RJ:167:VAL:HG22	1.93	0.49
50:RP:73:ASP:OD2	50:RP:83:HIS:ND1	2.45	0.49
2:5A:485:G:H4'	2:5A:486:U:H5'	1.94	0.49
3:SA:123:G:H21	4:SF:146:THR:HG21	1.76	0.49
3:SA:158:U:H3	3:SA:420:A:HO2'	1.58	0.49
17:3F:365:PRO:HB3	17:3F:397:PHE:HA	1.93	0.49
19:A4:452:HIS:HB3	19:A4:463:THR:HG23	1.94	0.49
19:A4:566:LEU:HD11	19:A4:584:VAL:HG21	1.94	0.49
25:AG:435:ASP:HB2	25:AG:702:TYR:HD1	1.75	0.49
28:B3:65:THR:HA	28:B3:80:SER:HA	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B8:520:ASN:HB2	29:B8:533:ALA:HB3	1.94	0.49
34:5D:67:MET:SD	36:5F:170:LEU:HB3	2.52	0.49
36:5F:96:ASP:HB3	36:5F:100:LYS:HE2	1.94	0.49
42:RA:281:ASP:OD1	42:RA:281:ASP:N	2.45	0.49
45:RJ:1069:VAL:HG11	45:RJ:1083:ILE:HD13	1.93	0.49
3:SA:268:C:H2'	3:SA:269:G:H8	1.76	0.49
21:A8:673:THR:CG2	22:A9:490:GLU:N	2.74	0.49
26:B1:839:THR:HG22	30:BE:882:GLU:HG3	1.95	0.49
27:B2:90:ASP:N	27:B2:90:ASP:OD1	2.39	0.49
27:B2:476:ILE:HD11	27:B2:490:THR:HB	1.93	0.49
28:B3:22:VAL:O	28:B3:68:LYS:NZ	2.45	0.49
28:B3:195:GLY:O	28:B3:245:SER:OG	2.29	0.49
30:BE:118:VAL:HA	30:BE:132:THR:HA	1.94	0.49
33:5C:340:LEU:O	33:5C:368:TYR:N	2.43	0.49
34:5D:149:GLU:HB3	34:5D:153:ASN:HA	1.94	0.49
42:RA:300:TRP:HB3	42:RA:307:ALA:HA	1.95	0.49
45:RJ:1094:TYR:HA	45:RJ:1097:LYS:HG2	1.94	0.49
50:RP:1473:ALA:O	50:RP:1477:LYS:CB	2.61	0.49
23:AE:387:LEU:HD21	23:AE:403:LEU:HD13	1.93	0.49
24:AF:133:HIS:HB2	24:AF:139:ILE:HG13	1.94	0.49
25:AG:584:PHE:HB3	25:AG:598:LYS:HB2	1.94	0.49
33:5C:84:PHE:HA	33:5C:369:MET:HA	1.95	0.49
35:5E:319:VAL:HG23	45:RJ:1038:ILE:HG21	1.91	0.49
42:RA:252:SER:HB2	42:RA:266:LYS:HB3	1.94	0.49
45:RJ:777:ARG:O	45:RJ:778:GLN:NE2	2.46	0.49
45:RJ:951:MET:SD	45:RJ:987:TYR:OH	2.63	0.49
46:RK:107:ALA:HB1	46:RK:170:VAL:HG21	1.94	0.49
48:RN:600:LEU:HD21	48:RN:636:LEU:HD13	1.94	0.49
48:RN:623:ASP:O	48:RN:627:HIS:HB3	2.13	0.49
3:SA:562:G:C8	37:5G:283:THR:HB	2.46	0.49
7:SJ:70:GLU:OE2	7:SJ:117:TYR:OH	2.30	0.49
10:SR:58:ASP:OD1	10:SR:58:ASP:N	2.43	0.49
16:3E:164:ILE:HG12	16:3E:301:ALA:HA	1.93	0.49
18:3H:52:ILE:HG22	18:3H:54:MET:SD	2.52	0.49
21:A8:631:SER:HA	21:A8:634:LEU:CG	2.43	0.49
27:B2:624:LEU:HD12	27:B2:629:ASN:HB2	1.93	0.49
28:B3:513:LYS:HG3	28:B3:532:HIS:HB2	1.95	0.49
33:5C:456:SER:O	33:5C:456:SER:OG	2.28	0.49
39:5I:76:ASN:HA	39:5I:118:VAL:HG21	1.93	0.49
39:5I:140:SER:OG	39:5I:141:ASP:N	2.44	0.49
44:RG:46:ALA:HA	44:RG:115:GLN:HG3	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:RK:180:MET:O	46:RK:181:HIS:ND1	2.45	0.49
48:RN:752:MET:HA	48:RN:755:ILE:HG12	1.93	0.49
50:RP:752:THR:O	50:RP:756:SER:CB	2.59	0.49
16:3E:24:LYS:O	16:3E:28:LEU:CB	2.60	0.49
18:3H:7:LYS:HB3	18:3H:65:LEU:HD11	1.95	0.49
18:3H:54:MET:O	18:3H:80:PHE:HA	2.12	0.49
25:AG:96:ILE:HG12	25:AG:108:THR:HG21	1.95	0.49
25:AG:628:ASP:H	25:AG:658:GLU:HA	1.77	0.49
25:AG:736:THR:OG1	25:AG:737:ILE:N	2.45	0.49
26:B1:286:LEU:HD12	26:B1:295:ILE:HB	1.94	0.49
26:B1:406:SER:OG	26:B1:407:LEU:N	2.46	0.49
26:B1:567:ASP:HB3	36:5F:144:ASN:ND2	2.28	0.49
27:B2:549:SER:OG	27:B2:576:VAL:O	2.28	0.49
27:B2:817:LEU:HD11	27:B2:856:ASN:HD21	1.77	0.49
28:B3:466:TRP:HZ3	28:B3:478:GLN:HA	1.77	0.49
31:B6:63:VAL:HG13	31:B6:88:ILE:HD11	1.94	0.49
33:5C:183:GLU:HB3	41:5K:16:THR:HG22	1.94	0.49
34:5D:61:ASP:C	36:5F:160:TRP:CH2	2.86	0.49
43:RB:268:ASN:HB3	43:RB:271:ARG:HB3	1.94	0.49
44:RH:38:THR:O	44:RH:40:ARG:NH1	2.45	0.49
44:RH:69:ASN:HD22	44:RH:72:ASP:HB3	1.77	0.49
45:RJ:176:LEU:HD12	45:RJ:183:LEU:HA	1.94	0.49
1:3A:57:A:N3	36:5F:133:GLN:NE2	2.61	0.49
6:SH:57:ASP:HA	6:SH:107:ALA:H	1.78	0.49
19:A4:338:ALA:HB1	19:A4:361:LEU:HD11	1.95	0.49
21:A8:593:ASP:OD1	21:A8:596:LYS:NZ	2.34	0.49
23:AE:637:ILE:HA	23:AE:640:ILE:HG22	1.94	0.49
26:B1:847:ARG:O	26:B1:851:SER:OG	2.30	0.49
27:B2:397:ILE:HD11	27:B2:405:LEU:HD21	1.94	0.49
27:B2:862:LYS:HE2	28:B3:805:ILE:HD13	1.93	0.49
28:B3:80:SER:OG	28:B3:81:GLN:N	2.46	0.49
29:B8:43:ASP:N	29:B8:43:ASP:OD1	2.40	0.49
34:5D:67:MET:SD	36:5F:170:LEU:CB	3.01	0.49
44:RH:112:VAL:O	44:RH:124:VAL:HB	2.12	0.49
45:RJ:871:MET:CE	45:RJ:930:LYS:CE	2.86	0.49
1:3A:64:A:OP2	30:BE:392:ARG:NH2	2.46	0.49
18:3G:105:ASN:HB3	18:3G:108:SER:HB2	1.94	0.49
21:A8:441:VAL:C	25:AG:728:LEU:CD2	2.80	0.49
24:AF:276:SER:OG	24:AF:278:ASP:OD1	2.30	0.49
25:AG:31:ASN:HD21	25:AG:201:ILE:HB	1.78	0.49
25:AG:116:VAL:O	25:AG:131:HIS:HA	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:B1:569:PHE:CZ	36:5F:142:LEU:HD21	2.48	0.49
29:B8:183:ASP:OD1	30:BE:281:ARG:NH2	2.45	0.49
30:BE:528:PHE:HZ	30:BE:570:ILE:HD11	1.78	0.49
39:5I:315:PRO:HG2	39:5I:360:SER:HB3	1.93	0.49
39:5I:421:GLN:HG3	39:5I:425:LYS:HD2	1.95	0.49
41:5K:65:VAL:HG22	41:5K:152:ILE:HB	1.94	0.49
45:RJ:262:GLY:O	45:RJ:264:GLN:NE2	2.44	0.49
48:RN:86:ILE:HA	48:RN:89:GLN:CD	2.33	0.49
48:RN:646:THR:HA	48:RN:649:THR:HG22	1.95	0.49
52:RS:388:ASP:HA	52:RS:391:VAL:HG22	1.93	0.49
4:SF:202:ASP:OD1	4:SF:202:ASP:N	2.41	0.49
14:3B:269:ILE:O	14:3B:315:ILE:HA	2.13	0.49
19:A4:389:ARG:HE	19:A4:404:MET:HB2	1.78	0.49
23:AE:1628:SER:O	23:AE:1632:PHE:CB	2.60	0.49
27:B2:440:PRO:HG3	27:B2:485:GLY:HA3	1.94	0.49
28:B3:198:ILE:HG12	28:B3:211:LEU:HD13	1.95	0.49
29:B8:233:LEU:HD11	29:B8:543:LEU:HD12	1.95	0.49
29:B8:321:MET:HE1	29:B8:375:VAL:HG21	1.94	0.49
30:BE:274:ILE:HG23	30:BE:286:VAL:HG22	1.94	0.49
42:RA:175:PRO:O	42:RA:177:LYS:NZ	2.36	0.49
43:RB:230:ALA:O	43:RB:234:LYS:CB	2.61	0.49
45:RJ:309:PRO:HD2	45:RJ:353:LEU:HD22	1.95	0.49
5:SG:219:ARG:NH2	44:RH:222:ASP:OD2	2.45	0.49
9:SM:109:VAL:HG21	9:SM:125:VAL:HG11	1.95	0.49
15:3D:297:HIS:NE2	15:3D:309:GLU:OE2	2.46	0.49
17:3F:305:ARG:HG2	17:3F:317:ILE:HD13	1.94	0.49
21:A8:635:PHE:HD2	22:A9:492:ILE:CD1	2.26	0.49
26:B1:441:SER:O	26:B1:443:GLU:N	2.43	0.49
28:B3:749:ASN:ND2	35:5E:511:ASN:OD1	2.45	0.49
30:BE:173:LEU:HD13	30:BE:219:ASP:HA	1.95	0.49
30:BE:469:SER:HB3	30:BE:510:LEU:HD23	1.95	0.49
30:BE:902:ASN:HB3	30:BE:905:ILE:HG22	1.95	0.49
39:5I:145:VAL:HB	39:5I:176:PHE:HB2	1.94	0.49
44:RG:197:ASP:OD1	44:RG:197:ASP:N	2.45	0.49
8:SK:82:ARG:NH1	43:RB:323:GLU:OE2	2.46	0.48
16:3E:214:ILE:HD11	16:3E:252:LEU:HD22	1.94	0.48
18:3H:51:PHE:HE1	18:3H:114:ILE:HG23	1.78	0.48
20:A5:280:GLN:HB2	20:A5:288:LYS:HE2	1.95	0.48
24:AF:75:LYS:HD2	24:AF:111:TYR:HA	1.95	0.48
24:AF:428:ARG:HH21	25:AG:518:ASP:HB3	1.76	0.48
26:B1:150:THR:OG1	26:B1:164:THR:OG1	2.31	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:B2:263:THR:HA	27:B2:269:THR:O	2.13	0.48
28:B3:454:LEU:O	28:B3:465:LYS:HA	2.12	0.48
29:B8:462:GLY:HA2	29:B8:527:GLY:HA3	1.95	0.48
34:5D:78:LEU:HD13	45:RJ:1082:GLN:HG2	1.95	0.48
44:RG:190:GLN:HE22	44:RG:247:ASP:HB2	1.78	0.48
48:RN:786:ASN:HA	48:RN:789:ASN:HB2	1.95	0.48
3:SA:129:U:O2'	50:RP:903:THR:O	2.30	0.48
3:SA:1133:A:OP1	46:RK:231:ARG:NE	2.42	0.48
18:3H:54:MET:HB3	18:3H:64:LEU:HD13	1.93	0.48
20:A5:25:ASP:OD2	29:B8:590:LYS:NZ	2.37	0.48
20:A5:149:ASN:HD21	20:A5:190:PRO:HB3	1.77	0.48
25:AG:249:THR:O	25:AG:257:ARG:NH1	2.41	0.48
27:B2:291:GLU:HA	27:B2:294:ARG:HG2	1.94	0.48
32:5B:155:ILE:HD12	32:5B:158:LYS:HE3	1.95	0.48
33:5C:112:GLY:HA3	33:5C:130:ARG:HB3	1.94	0.48
33:5C:284:ARG:NH1	33:5C:408:GLU:OE1	2.39	0.48
39:5I:283:ASP:OD2	39:5I:287:TYR:OH	2.30	0.48
41:5K:149:LYS:HD3	41:5K:170:ILE:HD11	1.95	0.48
50:RP:393:PHE:O	50:RP:397:PHE:CB	2.60	0.48
12:SZ:52:LYS:O	12:SZ:94:TYR:OH	2.23	0.48
15:3D:225:ASP:OD1	15:3D:226:LYS:N	2.46	0.48
17:3F:421:ASN:HD22	17:3F:437:ARG:HA	1.78	0.48
23:AE:8:LEU:HD12	33:5C:144:LEU:HD23	1.96	0.48
23:AE:395:GLU:OE2	23:AE:397:LYS:NZ	2.44	0.48
23:AE:482:SER:HB2	23:AE:484:LEU:HG	1.94	0.48
27:B2:392:THR:HG21	27:B2:410:SER:HB3	1.93	0.48
28:B3:44:ASP:OD1	28:B3:44:ASP:N	2.46	0.48
30:BE:656:ASN:N	30:BE:656:ASN:OD1	2.46	0.48
31:B6:273:ILE:HA	31:B6:276:VAL:HG22	1.95	0.48
37:5G:85:ASP:OD1	37:5G:211:ASN:ND2	2.42	0.48
39:5I:260:GLN:NE2	39:5I:460:GLN:OE1	2.47	0.48
46:RK:103:MET:O	46:RK:107:ALA:HB2	2.13	0.48
9:SM:132:SER:OG	9:SM:133:LYS:N	2.46	0.48
14:3C:170:VAL:HG12	14:3C:239:CYS:HB3	1.96	0.48
21:A8:596:LYS:CE	21:A8:640:LEU:HD13	2.43	0.48
25:AG:771:ASP:OD1	25:AG:771:ASP:N	2.46	0.48
28:B3:536:LEU:HA	28:B3:552:SER:HA	1.96	0.48
28:B3:600:LYS:HA	28:B3:609:CYS:HA	1.95	0.48
41:5K:67:ILE:HD11	41:5K:96:PRO:HB2	1.95	0.48
46:RK:130:ILE:HG23	46:RK:151:LEU:HD23	1.95	0.48
47:RM:716:PRO:O	47:RM:720:LEU:CB	2.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:RO:447:ASP:OD1	49:RO:447:ASP:N	2.46	0.48
18:3H:13:ASP:OD1	18:3H:13:ASP:N	2.42	0.48
19:A4:150:ASN:ND2	19:A4:198:ASP:OD1	2.37	0.48
21:A8:583:SER:HA	21:A8:586:ILE:HG22	1.94	0.48
21:A8:668:ILE:O	21:A8:671:ARG:HG3	2.14	0.48
26:B1:680:ARG:HH11	35:5E:455:HIS:CG	2.31	0.48
26:B1:717:LEU:HD12	30:BE:578:VAL:HB	1.94	0.48
27:B2:214:ASP:OD1	27:B2:214:ASP:N	2.45	0.48
27:B2:643:ASP:HB3	27:B2:650:ILE:HD11	1.95	0.48
29:B8:148:THR:OG1	29:B8:152:GLU:OE2	2.31	0.48
29:B8:266:GLY:HA3	29:B8:295:ILE:HD11	1.95	0.48
29:B8:458:ILE:HG13	29:B8:484:VAL:HG22	1.95	0.48
30:BE:529:TYR:HA	30:BE:536:LEU:HA	1.95	0.48
30:BE:630:THR:N	30:BE:644:THR:O	2.44	0.48
45:RJ:634:ARG:NH2	46:RK:186:PRO:O	2.42	0.48
1:3A:88:U:OP2	16:3E:338:LYS:NZ	2.41	0.48
3:SA:364:G:N7	3:SA:366:A:N6	2.62	0.48
3:SA:1642:G:OP2	35:5E:530:ARG:NH2	2.47	0.48
4:SF:223:ASN:OD1	4:SF:223:ASN:N	2.47	0.48
7:SJ:72:ILE:HG22	7:SJ:74:LYS:HG2	1.96	0.48
19:A4:424:ASP:N	19:A4:424:ASP:OD1	2.45	0.48
31:B6:426:ASP:O	31:B6:430:TYR:N	2.47	0.48
35:5E:520:LEU:HG	35:5E:525:LYS:HG3	1.96	0.48
9:SM:90:TYR:H	9:SM:103:ARG:HB3	1.79	0.48
12:SZ:20:ARG:NH1	12:SZ:22:GLN:OE1	2.47	0.48
16:3E:225:GLU:HG2	16:3E:226:ILE:HG13	1.96	0.48
17:3F:448:PHE:HA	17:3F:451:ILE:HG22	1.95	0.48
19:A4:171:SER:O	19:A4:171:SER:OG	2.32	0.48
19:A4:579:ARG:NH2	19:A4:644:SER:OG	2.47	0.48
24:AF:420:GLU:O	24:AF:424:ARG:CB	2.61	0.48
25:AG:105:HIS:HB2	25:AG:122:LYS:HG3	1.95	0.48
28:B3:167:ASP:OD1	28:B3:168:THR:N	2.47	0.48
43:RB:237:SER:O	43:RB:237:SER:OG	2.32	0.48
45:RJ:298:VAL:HG23	45:RJ:791:ILE:HG23	1.94	0.48
47:RM:507:THR:H	53:RY:495:ALA:HB3	1.77	0.48
48:RN:734:ARG:HA	48:RN:737:ILE:HG12	1.95	0.48
49:RO:507:LEU:HA	49:RO:510:GLU:HB3	1.95	0.48
10:SR:120:ASP:OD1	10:SR:120:ASP:N	2.40	0.48
23:AE:684:TYR:HB2	23:AE:687:LEU:HD23	1.95	0.48
27:B2:118:ASN:OD1	27:B2:118:ASN:N	2.46	0.48
28:B3:161:TRP:HB3	28:B3:177:LEU:HG	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B8:183:ASP:HB2	30:BE:242:ARG:HA	1.96	0.48
35:5E:517:LYS:NZ	35:5E:518:GLU:HG3	2.29	0.48
42:RA:313:PRO:HG3	42:RA:317:ILE:HD11	1.94	0.48
49:RO:153:ILE:HD13	49:RO:202:LEU:HD21	1.94	0.48
50:RP:48:LEU:HG	50:RP:74:VAL:HG22	1.95	0.48
3:SA:153:G:N2	3:SA:161:U:O2	2.43	0.48
3:SA:464:A:H2'	3:SA:465:G:H8	1.78	0.48
6:SH:31:ARG:HE	42:RA:359:ILE:HD13	1.78	0.48
8:SK:136:VAL:HG12	8:SK:156:ILE:HG12	1.96	0.48
19:A4:560:SER:OG	19:A4:561:LYS:N	2.47	0.48
23:AE:336:LEU:HD22	23:AE:373:ILE:HG21	1.96	0.48
23:AE:484:LEU:HD13	23:AE:663:SER:HB3	1.95	0.48
24:AF:435:ASP:OD1	24:AF:435:ASP:N	2.45	0.48
27:B2:479:LEU:HA	27:B2:489:VAL:O	2.14	0.48
28:B3:271:ASP:OD1	28:B3:271:ASP:N	2.47	0.48
28:B3:301:GLN:HG2	28:B3:315:ASN:HA	1.95	0.48
33:5C:137:MET:HA	33:5C:144:LEU:HA	1.96	0.48
35:5E:384:ARG:NE	37:5G:81:SER:HB3	2.28	0.48
47:RL:55:VAL:HG23	47:RL:121:MET:HB3	1.95	0.48
47:RL:388:GLU:HA	47:RL:410:SER:O	2.14	0.48
50:RP:190:ARG:NH1	50:RP:194:GLU:OE2	2.46	0.48
3:SA:1624:C:H5"	37:5G:185:VAL:HG22	1.96	0.48
15:3D:160:ARG:NH2	16:3E:243:MET:O	2.43	0.48
16:3E:207:ARG:HH11	16:3E:226:ILE:HG12	1.78	0.48
17:3F:523:LYS:O	17:3F:541:ALA:HA	2.13	0.48
21:A8:570:LEU:HD23	21:A8:582:ILE:HD11	1.95	0.48
24:AF:31:THR:OG1	24:AF:32:SER:N	2.46	0.48
25:AG:141:LEU:HD11	25:AG:153:ILE:HD11	1.96	0.48
35:5E:477:GLU:HG2	35:5E:477:GLU:O	2.14	0.48
42:RA:164:ARG:NH2	42:RA:174:ASN:OD1	2.46	0.48
44:RG:173:THR:OG1	44:RG:174:LYS:N	2.47	0.48
50:RP:1709:ASP:HA	50:RP:1758:ALA:HA	1.94	0.48
51:RQ:322:ASN:N	51:RQ:322:ASN:OD1	2.46	0.48
1:3A:94:A:H2'	1:3A:95:A:H8	1.79	0.47
2:5A:90:G:O2'	2:5A:91:U:O4'	2.25	0.47
3:SA:124:A:O2'	4:SF:148:ARG:NH2	2.33	0.47
3:SA:336:G:H1	7:SJ:5:ARG:HB2	1.79	0.47
3:SA:351:C:N3	9:SM:102:LYS:NZ	2.52	0.47
9:SM:124:THR:HG22	9:SM:141:LYS:HB3	1.96	0.47
19:A4:284:LEU:HD21	32:5B:206:LEU:HD21	1.95	0.47
19:A4:747:ILE:HD11	19:A4:753:ALA:HB2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A5:335:ASN:O	20:A5:337:LYS:NZ	2.47	0.47
23:AE:329:THR:HG21	23:AE:365:ILE:HG21	1.95	0.47
25:AG:440:VAL:HG11	25:AG:449:LEU:HD12	1.95	0.47
26:B1:205:LYS:HG2	26:B1:219:GLU:HG2	1.96	0.47
28:B3:77:THR:HG22	28:B3:86:LYS:HB3	1.96	0.47
44:RG:232:LEU:HD21	44:RH:103:PRO:HG3	1.96	0.47
45:RJ:1105:ASP:N	45:RJ:1105:ASP:OD1	2.47	0.47
46:RK:282:GLU:O	46:RK:286:SER:HB3	2.14	0.47
47:RL:57:TRP:NE1	47:RL:125:GLN:OE1	2.39	0.47
19:A4:97:ARG:NE	32:5B:191:PRO:O	2.39	0.47
20:A5:460:ARG:HA	20:A5:465:ILE:HD11	1.96	0.47
23:AE:376:GLU:H	23:AE:379:GLU:HG3	1.79	0.47
24:AF:246:TYR:OH	24:AF:289:ASN:ND2	2.44	0.47
27:B2:54:ILE:CD1	27:B2:364:TYR:HD2	2.27	0.47
28:B3:803:SER:O	28:B3:803:SER:OG	2.31	0.47
42:RA:250:GLY:HA3	42:RA:271:GLY:HA2	1.96	0.47
42:RA:273:ASP:O	42:RA:275:LYS:NZ	2.47	0.47
3:SA:1757:G:H2'	35:5E:500:LYS:HD2	1.96	0.47
4:SF:143:ASP:OD1	4:SF:143:ASP:N	2.35	0.47
9:SM:112:SER:HB3	9:SM:139:VAL:HG23	1.95	0.47
19:A4:214:SER:OG	19:A4:221:ASN:O	2.28	0.47
20:A5:473:LYS:HE3	20:A5:475:ALA:HB3	1.96	0.47
24:AF:135:GLN:HE22	24:AF:178:PRO:HA	1.79	0.47
27:B2:137:ILE:HG22	27:B2:147:VAL:HG22	1.97	0.47
27:B2:530:LEU:HD13	27:B2:550:LEU:HD11	1.94	0.47
33:5C:333:SER:HB3	33:5C:381:LEU:HD11	1.95	0.47
34:5D:58:ARG:HH21	36:5F:174:ARG:CZ	2.28	0.47
45:RJ:92:ARG:HH21	45:RJ:221:LEU:HG	1.79	0.47
45:RJ:111:LYS:O	45:RJ:310:THR:OG1	2.32	0.47
1:3A:315:A:H2'	1:3A:316:A:C8	2.49	0.47
3:SA:280:U:H2'	6:SH:188:ARG:HH22	1.80	0.47
8:SK:87:SER:OG	8:SK:89:ASP:OD1	2.33	0.47
25:AG:581:GLY:HA2	25:AG:602:PRO:HD2	1.97	0.47
33:5C:133:HIS:HE1	33:5C:147:GLU:HG3	1.79	0.47
33:5C:450:GLY:O	51:RQ:857:TYR:OH	2.21	0.47
41:5K:152:ILE:HG12	41:5K:171:PRO:HG2	1.95	0.47
47:RL:200:VAL:HG12	47:RL:208:LEU:HD13	1.97	0.47
4:SF:103:TYR:O	4:SF:182:TYR:OH	2.32	0.47
23:AE:141:ASN:ND2	23:AE:206:TYR:OH	2.46	0.47
25:AG:498:LEU:HA	25:AG:508:ILE:O	2.14	0.47
25:AG:855:LEU:O	25:AG:859:ASN:HB2	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:B2:9:GLU:O	27:B2:684:TRP:HA	2.14	0.47
27:B2:414:LEU:HD11	27:B2:445:VAL:HG11	1.94	0.47
34:5D:58:ARG:HD2	36:5F:174:ARG:CZ	2.45	0.47
43:RB:290:GLU:OE2	43:RB:296:ARG:NH1	2.47	0.47
45:RJ:631:ILE:HG13	45:RJ:634:ARG:HB2	1.97	0.47
49:RO:198:GLU:O	49:RO:202:LEU:HB2	2.13	0.47
50:RP:1278:ARG:O	50:RP:1282:VAL:HA	2.15	0.47
51:RQ:835:VAL:HG13	51:RQ:837:LYS:HG3	1.96	0.47
16:3E:355:ASN:HA	16:3E:358:LYS:HB2	1.97	0.47
19:A4:157:SER:OG	19:A4:195:TRP:NE1	2.47	0.47
19:A4:744:VAL:HA	19:A4:753:ALA:O	2.15	0.47
25:AG:143:ASN:N	25:AG:143:ASN:OD1	2.47	0.47
26:B1:150:THR:N	26:B1:164:THR:O	2.45	0.47
44:RH:153:VAL:HA	48:RN:716:LYS:HB2	1.96	0.47
52:RS:258:VAL:HA	52:RS:261:GLU:HG2	1.97	0.47
3:SA:406:U:H2'	3:SA:407:A:C8	2.50	0.47
6:SH:32:ILE:HD12	6:SH:65:GLN:HA	1.96	0.47
14:3C:173:LEU:HA	14:3C:197:VAL:HG13	1.97	0.47
16:3E:262:ILE:HA	16:3E:265:PHE:HB2	1.96	0.47
19:A4:534:LEU:HB3	19:A4:543:ILE:HG22	1.95	0.47
21:A8:635:PHE:HD2	22:A9:492:ILE:HD12	1.79	0.47
25:AG:175:ALA:O	25:AG:187:VAL:HA	2.15	0.47
26:B1:156:GLN:HB2	26:B1:203:GLN:HE21	1.79	0.47
26:B1:165:SER:OG	26:B1:166:LYS:N	2.48	0.47
26:B1:537:GLY:HA3	26:B1:556:ARG:HB3	1.96	0.47
27:B2:183:ASP:OD1	27:B2:183:ASP:N	2.42	0.47
28:B3:10:ILE:HG23	28:B3:643:PHE:HB2	1.95	0.47
28:B3:108:LEU:HG	28:B3:119:VAL:HG12	1.97	0.47
29:B8:238:LEU:HD11	29:B8:590:LYS:HB2	1.97	0.47
30:BE:207:ASP:N	30:BE:207:ASP:OD1	2.47	0.47
33:5C:257:SER:OG	33:5C:259:TRP:NE1	2.36	0.47
34:5D:52:ARG:NH2	37:5G:270:ASP:OD1	2.43	0.47
36:5F:163:ASN:N	36:5F:183:SER:OG	2.45	0.47
42:RA:80:GLN:HB2	42:RA:82:HIS:HD2	1.78	0.47
45:RJ:879:THR:OG1	45:RJ:880:TYR:N	2.48	0.47
51:RQ:341:LYS:HA	51:RQ:344:GLN:HE21	1.79	0.47
10:SR:50:GLU:OE2	10:SR:82:ARG:NH2	2.47	0.47
12:SZ:59:GLY:O	43:RB:296:ARG:NH2	2.44	0.47
16:3E:176:GLU:HA	16:3E:179:THR:HG22	1.97	0.47
16:3E:191:HIS:HD2	16:3E:246:GLU:HA	1.80	0.47
25:AG:22:LEU:HD12	25:AG:32:LYS:HB2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:B2:235:ASN:ND2	27:B2:240:GLY:O	2.40	0.47
27:B2:367:ILE:HD12	27:B2:368:PRO:HD2	1.97	0.47
28:B3:19:SER:OG	28:B3:20:SER:N	2.48	0.47
28:B3:113:THR:OG1	28:B3:114:SER:N	2.48	0.47
28:B3:139:SER:OG	28:B3:140:PHE:N	2.48	0.47
28:B3:339:ILE:HG13	28:B3:358:ASN:HD21	1.80	0.47
28:B3:481:LYS:HE2	28:B3:522:ASN:HA	1.97	0.47
29:B8:568:VAL:HG23	29:B8:579:VAL:HG22	1.96	0.47
31:B6:14:GLU:OE2	31:B6:91:ARG:NH2	2.38	0.47
31:B6:122:ASN:OD1	31:B6:122:ASN:N	2.48	0.47
45:RJ:80:THR:O	56:RJ:1201:GTP:O2B	2.31	0.47
2:5A:69:U:O4	2:5A:70:A:N6	2.48	0.47
3:SA:158:U:N3	3:SA:420:A:O2'	2.46	0.47
18:3G:57:ASP:HB3	18:3G:84:ARG:HG2	1.97	0.47
20:A5:366:GLY:O	25:AG:583:LYS:NZ	2.48	0.47
23:AE:136:LEU:HD21	23:AE:155:ILE:HG12	1.97	0.47
27:B2:393:ASP:OD1	27:B2:393:ASP:N	2.46	0.47
28:B3:245:SER:OG	28:B3:245:SER:O	2.32	0.47
39:5I:201:ILE:HD12	39:5I:225:LEU:HD21	1.97	0.47
45:RJ:347:LEU:O	45:RJ:352:LYS:NZ	2.48	0.47
48:RN:510:THR:HB	48:RN:518:ILE:HD13	1.96	0.47
52:RS:271:THR:OG1	52:RS:274:GLU:OE1	2.31	0.47
2:5A:18:G:H2'	2:5A:19:A:C8	2.50	0.47
2:5A:485:G:H2'	15:3D:22:LEU:HD21	1.97	0.47
19:A4:511:VAL:HA	19:A4:558:ARG:HB3	1.96	0.47
25:AG:443:ASN:ND2	25:AG:446:ASN:OD1	2.48	0.47
26:B1:115:SER:O	26:B1:115:SER:OG	2.33	0.47
26:B1:299:SER:O	35:5E:475:SER:HA	2.15	0.47
27:B2:542:ASP:N	27:B2:542:ASP:OD1	2.45	0.47
27:B2:588:ILE:HG12	27:B2:600:TRP:HB2	1.97	0.47
28:B3:593:CYS:HB2	28:B3:620:LEU:HB3	1.95	0.47
28:B3:622:ALA:HB3	28:B3:636:ASP:H	1.78	0.47
30:BE:170:LEU:HG	30:BE:180:LEU:HD21	1.97	0.47
30:BE:430:ILE:HD11	30:BE:445:MET:HB2	1.97	0.47
36:5F:103:VAL:HA	36:5F:106:ILE:HG22	1.96	0.47
17:3F:477:SER:OG	17:3F:521:VAL:O	2.27	0.46
26:B1:515:TYR:CE2	36:5F:180:PHE:HZ	2.33	0.46
27:B2:360:ASN:OD1	27:B2:360:ASN:N	2.47	0.46
28:B3:352:LYS:HA	28:B3:365:ILE:O	2.15	0.46
28:B3:680:ASN:HA	28:B3:683:LEU:HG	1.96	0.46
28:B3:749:ASN:HB3	28:B3:751:LYS:H	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:RN:451:THR:O	48:RN:455:LEU:HB2	2.15	0.46
50:RP:1721:ILE:HD11	50:RP:1751:TYR:HB2	1.96	0.46
3:SA:545:A:OP2	38:5H:542:TYR:OH	2.33	0.46
3:SA:1160:A:H2'	3:SA:1161:C:H6	1.80	0.46
4:SF:52:LEU:O	17:3F:120:ARG:NH1	2.48	0.46
4:SF:53:LYS:NZ	43:RB:292:ASP:OD2	2.38	0.46
27:B2:676:SER:OG	27:B2:678:ASP:OD1	2.22	0.46
28:B3:476:ASP:N	28:B3:476:ASP:OD1	2.48	0.46
31:B6:185:TYR:HE2	51:RQ:338:LEU:HD21	1.81	0.46
32:5B:173:ARG:NH2	34:5D:144:ASN:O	2.48	0.46
34:5D:25:TYR:HD1	40:5J:213:ARG:HE	1.62	0.46
35:5E:493:GLN:NE2	35:5E:497:ASN:ND2	2.58	0.46
42:RA:245:CYS:HB3	42:RA:253:TYR:HB2	1.96	0.46
42:RA:251:TYR:HA	42:RA:266:LYS:O	2.16	0.46
43:RB:309:LYS:HB3	43:RB:313:ARG:HH11	1.80	0.46
47:RL:729:LEU:HA	47:RL:764:ASN:HA	1.97	0.46
5:SG:52:GLU:OE2	5:SG:54:LYS:NZ	2.48	0.46
14:3C:194:VAL:HB	14:3C:217:ILE:HD13	1.97	0.46
19:A4:418:CYS:HB2	19:A4:460:LEU:HB2	1.97	0.46
19:A4:742:LEU:HD12	19:A4:757:ARG:HG3	1.96	0.46
23:AE:509:SER:HA	23:AE:512:LEU:HD12	1.98	0.46
25:AG:204:ASN:OD1	25:AG:204:ASN:N	2.47	0.46
25:AG:530:LYS:HG2	25:AG:546:LYS:HB3	1.97	0.46
26:B1:420:ARG:NH2	35:5E:494:GLU:CD	2.66	0.46
27:B2:163:LYS:HG2	35:5E:522:ARG:NH2	2.30	0.46
27:B2:236:ASP:OD1	27:B2:236:ASP:N	2.46	0.46
28:B3:69:LEU:HD13	28:B3:109:ASP:HA	1.96	0.46
35:5E:521:THR:HG23	35:5E:524:ASP:H	1.80	0.46
42:RA:286:GLU:HG3	42:RA:287:ASN:H	1.80	0.46
45:RJ:187:LYS:HE3	45:RJ:187:LYS:HB2	1.75	0.46
46:RK:337:VAL:HG23	46:RK:354:ILE:HG12	1.98	0.46
48:RN:56:ASN:HD21	48:RN:59:GLU:HG3	1.81	0.46
49:RO:202:LEU:HD23	49:RO:208:TYR:HB3	1.98	0.46
12:SZ:45:ALA:HB2	12:SZ:55:VAL:HG11	1.97	0.46
17:3F:417:SER:HB3	17:3F:421:ASN:HB2	1.96	0.46
20:A5:518:ASN:O	20:A5:522:THR:OG1	2.32	0.46
23:AE:374:ARG:NH1	23:AE:375:LEU:O	2.49	0.46
26:B1:32:PRO:HG3	26:B1:61:ILE:HG13	1.97	0.46
28:B3:189:HIS:HD2	28:B3:191:SER:H	1.62	0.46
29:B8:306:ASN:OD1	29:B8:306:ASN:N	2.43	0.46
44:RH:152:SER:OG	44:RH:155:SER:N	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:RJ:819:GLU:O	45:RJ:852:ARG:NH2	2.47	0.46
45:RJ:1082:GLN:OE1	45:RJ:1082:GLN:HA	2.15	0.46
46:RK:282:GLU:O	46:RK:286:SER:CB	2.64	0.46
49:RO:196:GLN:OE1	49:RO:260:ASN:ND2	2.37	0.46
3:SA:1276:U:H3	3:SA:1434:U:H3	1.64	0.46
14:3C:308:PRO:HG3	34:5D:129:SER:HA	1.96	0.46
19:A4:326:ARG:NH2	19:A4:364:PHE:O	2.49	0.46
20:A5:85:ILE:HB	20:A5:99:PHE:HB2	1.98	0.46
25:AG:212:CYS:HB2	25:AG:224:SER:HB3	1.98	0.46
25:AG:446:ASN:OD1	25:AG:446:ASN:N	2.46	0.46
26:B1:29:LEU:HD22	26:B1:42:LEU:HD11	1.96	0.46
26:B1:557:LYS:NZ	30:BE:426:GLU:OE1	2.44	0.46
26:B1:680:ARG:HH12	35:5E:455:HIS:CD2	2.29	0.46
28:B3:67:LEU:HD23	28:B3:68:LYS:H	1.80	0.46
28:B3:534:ARG:HH11	28:B3:535:GLY:H	1.63	0.46
28:B3:708:ARG:NH2	28:B3:720:PHE:O	2.49	0.46
29:B8:278:ASP:N	29:B8:278:ASP:OD1	2.46	0.46
29:B8:512:ASP:OD1	29:B8:512:ASP:N	2.48	0.46
32:5B:211:LEU:HD13	32:5B:213:LYS:HE3	1.96	0.46
35:5E:384:ARG:HD3	37:5G:83:ILE:HD11	1.97	0.46
35:5E:448:LEU:HD12	36:5F:85:MET:SD	2.55	0.46
36:5F:61:LEU:O	36:5F:71:ARG:NE	2.47	0.46
44:RG:112:VAL:HB	44:RG:124:VAL:HG22	1.97	0.46
45:RJ:360:ASP:HB3	45:RJ:365:LEU:HB2	1.98	0.46
49:RO:462:SER:OG	49:RO:463:LEU:N	2.48	0.46
52:RS:270:LEU:HB3	52:RS:278:PHE:HZ	1.80	0.46
3:SA:328:A:H2'	3:SA:329:G:C8	2.50	0.46
10:SR:113:ASP:N	10:SR:113:ASP:OD1	2.48	0.46
11:SY:113:ALA:HB3	11:SY:116:ASP:HB2	1.96	0.46
21:A8:638:LEU:HD12	21:A8:641:VAL:CG1	2.46	0.46
23:AE:568:ILE:HD11	23:AE:673:ASN:HD21	1.80	0.46
29:B8:472:GLN:NE2	29:B8:474:SER:OG	2.49	0.46
36:5F:115:MET:HG3	36:5F:120:MET:HB3	1.98	0.46
37:5G:119:ARG:HG3	37:5G:122:TYR:HB2	1.98	0.46
39:5I:288:TYR:O	39:5I:298:LEU:N	2.42	0.46
44:RG:55:ILE:O	44:RG:64:LYS:HB2	2.16	0.46
46:RK:104:LEU:O	46:RK:300:TYR:OH	2.33	0.46
50:RP:104:GLN:HG3	50:RP:105:PRO:HD3	1.97	0.46
50:RP:1691:SER:HA	50:RP:1724:ASN:HD21	1.81	0.46
1:3A:56:A:O2'	34:5D:63:TYR:OH	2.34	0.46
2:5A:486:U:H4'	2:5A:487:A:H5"	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:1111:G:C8	45:RJ:1162:ALA:HA	2.51	0.46
6:SH:17:GLU:N	47:RL:604:SER:O	2.47	0.46
7:SJ:48:THR:O	7:SJ:52:ASN:CB	2.58	0.46
19:A4:164:THR:HG22	19:A4:185:ARG:HG2	1.98	0.46
23:AE:583:LYS:HE2	23:AE:627:LEU:HA	1.98	0.46
24:AF:436:GLU:HG2	24:AF:480:LEU:HD23	1.98	0.46
27:B2:63:LEU:HD21	27:B2:106:TRP:CD2	2.50	0.46
27:B2:341:ALA:HB1	27:B2:353:LEU:HD11	1.96	0.46
30:BE:640:LEU:HD23	30:BE:655:THR:HG22	1.98	0.46
34:5D:61:ASP:CA	36:5F:160:TRP:CZ3	2.99	0.46
41:5K:83:VAL:HG12	41:5K:96:PRO:HG3	1.98	0.46
48:RN:547:VAL:HA	48:RN:550:VAL:HG12	1.97	0.46
48:RN:554:GLN:HE21	48:RN:559:ARG:H	1.63	0.46
48:RN:804:LYS:HD3	48:RN:804:LYS:HA	1.75	0.46
49:RO:395:ILE:HG23	49:RO:469:LEU:HD21	1.98	0.46
52:RS:379:LYS:HA	52:RS:379:LYS:HD3	1.72	0.46
52:RS:392:TYR:HA	52:RS:395:MET:HB2	1.96	0.46
52:RS:413:LEU:O	52:RS:418:HIS:NE2	2.49	0.46
7:SJ:32:GLN:HE21	42:RA:78:LYS:HG2	1.81	0.46
15:3D:175:ILE:HD12	15:3D:317:SER:HA	1.98	0.46
15:3D:371:ASN:OD1	15:3D:374:ARG:NH1	2.48	0.46
21:A8:587:LEU:HD23	21:A8:587:LEU:C	2.35	0.46
26:B1:280:THR:HA	26:B1:304:PRO:HB3	1.98	0.46
28:B3:32:LEU:HD12	28:B3:68:LYS:HE2	1.97	0.46
30:BE:323:VAL:HB	30:BE:343:LEU:HD22	1.98	0.46
35:5E:330:VAL:HG21	45:RJ:932:LEU:HD12	1.97	0.46
35:5E:384:ARG:HD2	37:5G:83:ILE:N	2.30	0.46
42:RA:164:ARG:HH12	42:RA:176:PHE:H	1.64	0.46
47:RM:249:SER:O	47:RM:253:LEU:CB	2.63	0.46
2:5A:86:C:N4	25:AG:482:GLY:O	2.45	0.46
3:SA:1273:G:H1	3:SA:1437:U:H2'	1.80	0.46
11:SY:137:LYS:HE2	11:SY:137:LYS:HB3	1.80	0.46
14:3B:261:LEU:O	15:3D:129:ARG:NH1	2.49	0.46
16:3E:392:ALA:O	16:3E:396:ASN:ND2	2.49	0.46
25:AG:253:SER:O	25:AG:256:THR:OG1	2.33	0.46
25:AG:296:HIS:NE2	25:AG:314:SER:OG	2.37	0.46
28:B3:625:THR:HG22	28:B3:633:VAL:HG13	1.97	0.46
32:5B:200:ARG:O	32:5B:204:ARG:HB3	2.15	0.46
39:5I:280:ALA:HB2	39:5I:311:VAL:HB	1.97	0.46
39:5I:281:ASN:ND2	39:5I:283:ASP:OD1	2.49	0.46
42:RA:300:TRP:HA	42:RA:308:TYR:H	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:RS:280:ASN:ND2	52:RS:320:GLY:O	2.46	0.46
52:RS:359:LEU:HB2	52:RS:372:ILE:HD11	1.97	0.46
3:SA:225:A:H2'	3:SA:226:A:H8	1.79	0.46
19:A4:124:THR:HG21	32:5B:191:PRO:HG3	1.97	0.46
23:AE:495:LEU:HA	23:AE:498:PHE:HB2	1.97	0.46
24:AF:117:LEU:HD12	24:AF:117:LEU:HA	1.79	0.46
33:5C:335:GLY:HA2	33:5C:377:LYS:HG3	1.98	0.46
36:5F:5:LEU:HD23	36:5F:9:GLU:HB3	1.98	0.46
46:RK:199:ARG:HB2	46:RK:239:PRO:HA	1.97	0.46
48:RN:495:ASN:HD22	48:RN:617:HIS:HB2	1.80	0.46
49:RO:366:LEU:HD13	49:RO:405:LEU:HD11	1.96	0.46
7:SJ:83:TYR:HB3	7:SJ:101:ILE:HD11	1.98	0.45
7:SJ:103:GLN:HB3	7:SJ:164:ARG:HG2	1.98	0.45
16:3E:381:ASP:OD1	16:3E:381:ASP:N	2.49	0.45
19:A4:444:ARG:HG3	19:A4:446:SER:H	1.81	0.45
19:A4:545:ARG:HG3	19:A4:549:VAL:HB	1.98	0.45
19:A4:652:THR:HG23	19:A4:653:TRP:HD1	1.81	0.45
35:5E:437:ILE:HD11	36:5F:70:PHE:CE2	2.51	0.45
45:RJ:65:ASP:OD1	45:RJ:65:ASP:N	2.46	0.45
45:RJ:772:MET:HG3	45:RJ:774:PRO:HD2	1.98	0.45
1:3A:36:C:O2'	39:5I:389:ARG:NH1	2.48	0.45
2:5A:485:G:N2	39:5I:386:LYS:O	2.41	0.45
3:SA:381:C:H2'	3:SA:382:C:H4'	1.97	0.45
3:SA:420:A:C8	3:SA:420:A:C3'	2.98	0.45
4:SF:58:GLY:HA2	4:SF:61:VAL:HG12	1.99	0.45
4:SF:127:LYS:HB2	4:SF:140:VAL:HG23	1.99	0.45
9:SM:76:VAL:HG21	9:SM:87:ARG:HH11	1.81	0.45
21:A8:633:GLN:H	21:A8:633:GLN:HG3	1.41	0.45
30:BE:351:GLN:HG3	30:BE:372:ASP:HB3	1.97	0.45
30:BE:420:GLU:HG2	30:BE:470:GLN:HA	1.97	0.45
34:5D:48:LEU:HG	45:RJ:1067:LEU:HD11	1.98	0.45
36:5F:29:ASP:OD2	36:5F:41:ARG:NH1	2.49	0.45
37:5G:100:LEU:HD22	37:5G:144:GLU:HB3	1.97	0.45
39:5I:306:SER:HB3	39:5I:326:ASP:H	1.81	0.45
42:RA:60:ASN:ND2	42:RA:100:GLU:OE2	2.50	0.45
43:RB:229:ASP:HB3	43:RB:232:GLU:HG2	1.97	0.45
3:SA:397:A:H5"	7:SJ:50:GLY:HA2	1.98	0.45
3:SA:1463:C:H4'	48:RN:63:ALA:HB1	1.98	0.45
20:A5:66:VAL:HG12	20:A5:112:LEU:HD21	1.97	0.45
21:A8:631:SER:N	21:A8:634:LEU:HD21	2.31	0.45
23:AE:11:VAL:HA	23:AE:14:ASN:HD22	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:AE:255:ILE:HD11	25:AG:884:MET:HB3	1.98	0.45
23:AE:1700:SER:O	23:AE:1703:GLU:N	2.49	0.45
24:AF:69:ARG:HG3	24:AF:70:THR:HG23	1.97	0.45
27:B2:760:ILE:HD11	27:B2:835:PHE:HB2	1.98	0.45
28:B3:343:MET:HB3	28:B3:355:LEU:HD23	1.98	0.45
35:5E:520:LEU:HD11	35:5E:525:LYS:CA	2.45	0.45
36:5F:13:LEU:HG	36:5F:13:LEU:O	2.16	0.45
44:RG:143:GLN:HE22	44:RG:149:SER:HA	1.81	0.45
48:RN:13:LEU:HD22	48:RN:16:ARG:HE	1.81	0.45
50:RP:971:ARG:O	50:RP:975:ASN:HA	2.16	0.45
52:RS:271:THR:H	52:RS:274:GLU:HB2	1.82	0.45
15:3D:379:LEU:HD13	15:3D:408:VAL:HG21	1.98	0.45
19:A4:137:TYR:HB2	19:A4:177:LEU:HD12	1.99	0.45
20:A5:452:LEU:HA	20:A5:455:THR:HG22	1.98	0.45
20:A5:518:ASN:HB2	20:A5:521:SER:HB3	1.98	0.45
20:A5:539:ARG:NH1	25:AG:524:ASP:OD2	2.49	0.45
21:A8:440:ARG:O	25:AG:728:LEU:HD21	2.16	0.45
23:AE:700:SER:O	23:AE:700:SER:OG	2.32	0.45
24:AF:171:VAL:HG22	24:AF:188:SER:HB3	1.99	0.45
27:B2:49:VAL:HG22	27:B2:63:LEU:HD22	1.98	0.45
36:5F:29:ASP:N	36:5F:29:ASP:OD1	2.50	0.45
44:RH:191:ASP:HA	44:RH:194:GLU:HG2	1.98	0.45
48:RN:600:LEU:HD22	48:RN:633:VAL:HG22	1.98	0.45
52:RS:399:ILE:O	52:RS:406:GLY:N	2.50	0.45
3:SA:385:A:OP1	7:SJ:25:ARG:NH2	2.46	0.45
5:SG:117:THR:HG21	5:SG:194:LEU:HD23	1.98	0.45
15:3D:195:VAL:HG12	15:3D:216:PHE:HE2	1.81	0.45
18:3G:58:CYS:HB3	18:3G:98:ILE:HD12	1.99	0.45
19:A4:249:ARG:HB2	19:A4:292:ASN:HD22	1.81	0.45
21:A8:547:GLN:O	21:A8:551:PHE:HB2	2.16	0.45
23:AE:718:ARG:HA	23:AE:721:VAL:HG12	1.99	0.45
25:AG:364:ASN:OD1	25:AG:364:ASN:N	2.42	0.45
26:B1:418:ARG:HD3	35:5E:489:SER:O	2.10	0.45
27:B2:103:ILE:HB	27:B2:117:PHE:HB2	1.99	0.45
27:B2:220:THR:HG22	27:B2:259:ILE:HD11	1.96	0.45
29:B8:264:LEU:HD11	29:B8:272:LEU:HD12	1.97	0.45
31:B6:186:VAL:HG12	31:B6:273:ILE:HG13	1.98	0.45
36:5F:111:LEU:HD13	36:5F:143:ILE:HG21	1.97	0.45
42:RA:21:VAL:HG12	42:RA:46:ARG:HH12	1.81	0.45
44:RH:56:SER:HA	44:RH:63:ASP:HB2	1.99	0.45
2:5A:550:C:H2'	2:5A:551:A:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:1537:C:N4	44:RH:155:SER:O	2.37	0.45
4:SF:150:PRO:HB2	4:SF:154:ILE:HG13	1.98	0.45
5:SG:39:GLU:OE2	5:SG:47:SER:OG	2.33	0.45
17:3F:164:GLN:HE21	17:3F:527:VAL:HG13	1.81	0.45
17:3F:452:SER:HB3	17:3F:460:ARG:HG2	1.99	0.45
23:AE:864:VAL:O	23:AE:868:LYS:CB	2.65	0.45
25:AG:726:GLN:NE2	25:AG:736:THR:O	2.42	0.45
25:AG:761:GLU:HG3	25:AG:779:ILE:HG22	1.99	0.45
30:BE:851:SER:O	30:BE:851:SER:OG	2.31	0.45
35:5E:325:SER:OG	45:RJ:1007:TYR:CE1	2.69	0.45
42:RA:14:TYR:HE2	42:RA:344:PRO:HG3	1.81	0.45
42:RA:164:ARG:HH12	42:RA:176:PHE:N	2.15	0.45
50:RP:378:HIS:O	50:RP:382:PHE:CB	2.65	0.45
3:SA:67:A:H2'	3:SA:69:G:C8	2.52	0.45
3:SA:420:A:C8	3:SA:420:A:O5'	2.70	0.45
9:SM:92:HIS:HD2	9:SM:94:ILE:HG13	1.82	0.45
15:3D:120:SER:O	15:3D:120:SER:OG	2.33	0.45
19:A4:468:ASP:OD2	19:A4:472:ARG:NH1	2.44	0.45
19:A4:636:ILE:HG23	19:A4:648:PHE:HD2	1.82	0.45
23:AE:583:LYS:HD3	23:AE:631:VAL:HG21	1.99	0.45
25:AG:600:SER:O	25:AG:600:SER:OG	2.33	0.45
27:B2:54:ILE:HD13	27:B2:364:TYR:CD2	2.48	0.45
28:B3:42:ILE:HD11	28:B3:379:LEU:HD13	1.97	0.45
33:5C:104:LEU:HD21	33:5C:139:TRP:HB2	1.99	0.45
47:RL:77:ILE:HD12	47:RL:77:ILE:HA	1.82	0.45
47:RL:846:SER:O	47:RL:850:LEU:CB	2.65	0.45
48:RN:423:GLY:O	48:RN:426:THR:OG1	2.31	0.45
1:3A:316:A:H2'	1:3A:317:A:C8	2.51	0.45
3:SA:145:A:O2'	3:SA:146:U:O5'	2.33	0.45
3:SA:326:G:H4'	9:SM:82:ARG:HD2	1.98	0.45
3:SA:545:A:O2'	3:SA:546:U:O4'	2.22	0.45
4:SF:159:THR:HB	4:SF:173:ILE:HB	1.99	0.45
9:SM:57:LYS:O	9:SM:138:ASN:ND2	2.50	0.45
14:3C:253:ILE:HD11	14:3C:293:LEU:HD21	1.99	0.45
21:A8:635:PHE:CD2	22:A9:492:ILE:HD12	2.51	0.45
23:AE:65:LYS:HB3	23:AE:104:LEU:HD11	1.99	0.45
24:AF:227:VAL:HG22	24:AF:236:VAL:HG12	1.99	0.45
25:AG:38:SER:OG	25:AG:43:ASN:O	2.35	0.45
26:B1:25:ASP:O	26:B1:27:LYS:N	2.49	0.45
26:B1:369:ILE:HD11	26:B1:390:VAL:HG11	1.99	0.45
28:B3:217:ASP:OD1	28:B3:217:ASP:N	2.48	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:B3:509:ALA:HB1	28:B3:515:CYS:HA	1.98	0.45
33:5C:311:SER:OG	33:5C:313:GLU:OE2	2.33	0.45
37:5G:104:ALA:HB3	37:5G:116:ARG:HE	1.82	0.45
39:5I:94:TYR:OH	39:5I:134:ASN:ND2	2.41	0.45
42:RA:247:THR:HG21	42:RA:251:TYR:HB2	1.99	0.45
1:3A:12:U:H3	3:SA:1112:G:H1	1.65	0.45
3:SA:265:A:OP2	6:SH:194:LYS:NZ	2.37	0.45
3:SA:1223:A:H2'	3:SA:1224:A:C8	2.52	0.45
14:3B:88:ILE:HD11	14:3B:123:ILE:HG21	1.98	0.45
18:3H:33:LEU:HD23	18:3H:35:LYS:HE3	1.98	0.45
23:AE:348:ILE:HD13	23:AE:348:ILE:HA	1.87	0.45
26:B1:475:PRO:HD2	26:B1:493:TRP:HB2	1.99	0.45
39:5I:297:SER:OG	39:5I:299:ASN:O	2.33	0.45
40:5J:110:ASP:OD1	40:5J:110:ASP:N	2.36	0.45
45:RJ:617:THR:HG23	45:RJ:620:LYS:HE2	1.99	0.45
50:RP:465:PHE:HA	50:RP:468:ALA:HB3	1.98	0.45
52:RS:235:VAL:HG12	52:RS:238:SER:HB3	1.98	0.45
52:RS:429:LYS:HD2	52:RS:437:ARG:HH22	1.82	0.45
3:SA:1634:C:O2	26:B1:397:LYS:NZ	2.50	0.45
14:3C:175:ALA:N	14:3C:198:GLU:OE2	2.48	0.45
20:A5:582:GLU:O	20:A5:586:ASP:N	2.50	0.45
21:A8:633:GLN:O	21:A8:637:LEU:CD2	2.65	0.45
23:AE:659:LEU:HD21	23:AE:691:PHE:HA	1.98	0.45
24:AF:371:GLU:OE2	29:B8:273:ARG:NH2	2.50	0.45
33:5C:214:LEU:HD23	33:5C:228:LEU:HD12	1.99	0.45
33:5C:269:LYS:HB2	51:RQ:830:ILE:HG23	1.98	0.45
33:5C:460:ARG:HB3	51:RQ:847:VAL:HB	1.99	0.45
36:5F:5:LEU:CD2	36:5F:13:LEU:HD21	2.47	0.45
42:RA:231:VAL:HA	42:RA:247:THR:HA	1.98	0.45
46:RK:143:LYS:HE3	46:RK:143:LYS:HB2	1.75	0.45
52:RS:373:LYS:HG3	52:RS:420:ALA:HA	1.99	0.45
9:SM:46:LYS:HD3	9:SM:49:ILE:HD12	1.98	0.44
20:A5:87:LEU:O	20:A5:96:THR:N	2.50	0.44
23:AE:109:TRP:HA	23:AE:114:THR:HG21	2.00	0.44
25:AG:43:ASN:OD1	25:AG:43:ASN:N	2.48	0.44
27:B2:129:PHE:HE1	27:B2:150:LEU:HD11	1.82	0.44
27:B2:292:ILE:HG23	27:B2:324:PHE:HE2	1.83	0.44
27:B2:641:TYR:O	27:B2:650:ILE:N	2.49	0.44
28:B3:498:SER:OG	28:B3:539:VAL:O	2.29	0.44
30:BE:546:ILE:HG21	30:BE:560:LEU:HD22	1.99	0.44
39:5I:210:LYS:HA	39:5I:210:LYS:HD3	1.69	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:RG:135:LYS:HD3	44:RG:135:LYS:HA	1.87	0.44
45:RJ:1148:GLU:OE2	45:RJ:1152:ARG:NH1	2.49	0.44
50:RP:60:SER:HB3	50:RP:102:SER:HB3	1.99	0.44
3:SA:406:U:H2'	3:SA:407:A:H8	1.82	0.44
9:SM:94:ILE:HD12	9:SM:101:GLU:H	1.81	0.44
14:3B:104:ASP:OD1	14:3B:104:ASP:N	2.38	0.44
26:B1:64:ASN:N	26:B1:64:ASN:OD1	2.49	0.44
45:RJ:889:LEU:HD22	45:RJ:922:ILE:HB	2.00	0.44
47:RL:111:SER:HB3	47:RL:134:LEU:HD12	1.99	0.44
48:RN:737:ILE:HA	48:RN:740:MET:HG2	2.00	0.44
49:RO:282:HIS:CD2	49:RO:283:LYS:HG2	2.52	0.44
16:3E:372:ARG:HG3	18:3G:63:ILE:HA	2.00	0.44
17:3F:405:VAL:HG12	17:3F:415:THR:HG22	2.00	0.44
23:AE:763:LEU:HD12	23:AE:768:LYS:HD3	2.00	0.44
24:AF:51:HIS:O	24:AF:53:HIS:N	2.49	0.44
27:B2:337:LYS:O	27:B2:357:THR:OG1	2.25	0.44
27:B2:566:TYR:OH	27:B2:603:ASP:O	2.33	0.44
27:B2:580:ASP:OD2	27:B2:623:PHE:N	2.40	0.44
28:B3:32:LEU:HD22	28:B3:76:LEU:HD12	2.00	0.44
28:B3:104:PRO:O	28:B3:122:THR:OG1	2.35	0.44
30:BE:921:ARG:O	30:BE:925:LEU:HB2	2.17	0.44
50:RP:107:LEU:HD21	50:RP:150:TRP:HB3	1.98	0.44
3:SA:362:G:H2'	3:SA:363:G:C8	2.52	0.44
3:SA:608:U:O2'	3:SA:609:U:O4'	2.34	0.44
3:SA:1146:G:H2'	3:SA:1147:A:H8	1.83	0.44
3:SA:1660:A:H2'	3:SA:1661:U:C6	2.52	0.44
9:SM:84:ILE:N	9:SM:109:VAL:O	2.47	0.44
15:3D:31:LEU:HD21	39:5I:59:VAL:HG13	1.99	0.44
19:A4:579:ARG:HH12	19:A4:659:PHE:HD1	1.65	0.44
26:B1:157:ASP:N	26:B1:157:ASP:OD1	2.50	0.44
28:B3:430:TYR:HD2	28:B3:454:LEU:HD23	1.82	0.44
28:B3:531:ASN:OD1	28:B3:531:ASN:N	2.49	0.44
35:5E:319:VAL:CG1	45:RJ:1044:LEU:HD22	2.47	0.44
36:5F:43:ASP:HA	36:5F:46:LYS:HG2	1.99	0.44
37:5G:234:ARG:NH1	37:5G:254:PHE:O	2.51	0.44
38:5H:555:ASN:HB3	38:5H:558:ASN:HB2	1.98	0.44
43:RB:302:LYS:HB3	43:RB:306:ARG:HH22	1.81	0.44
46:RK:187:ILE:HB	46:RK:251:GLN:HE22	1.82	0.44
48:RN:65:ASN:OD1	48:RN:65:ASN:N	2.50	0.44
48:RN:443:LYS:HG3	48:RN:448:PHE:HE2	1.81	0.44
2:5A:554:G:H1	2:5A:583:U:H3	1.64	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:SG:63:GLN:HE22	5:SG:66:GLN:HB3	1.82	0.44
14:3C:92:ARG:HH12	34:5D:151:PHE:HB2	1.81	0.44
15:3D:281:LEU:HD23	16:3E:261:GLN:HE21	1.82	0.44
19:A4:75:ASN:HB3	19:A4:92:GLU:HA	2.00	0.44
19:A4:201:VAL:HG13	19:A4:213:TRP:HB2	1.99	0.44
23:AE:488:GLY:HA2	23:AE:491:TYR:HB3	1.98	0.44
23:AE:729:LYS:HA	23:AE:733:MET:HG3	2.00	0.44
25:AG:414:ILE:HA	25:AG:414:ILE:HD12	1.80	0.44
26:B1:418:ARG:CZ	35:5E:491:ALA:HA	2.47	0.44
27:B2:443:LEU:HG	27:B2:459:LEU:HD13	2.00	0.44
28:B3:467:ILE:H	28:B3:479:ILE:HD11	1.83	0.44
28:B3:749:ASN:OD1	35:5E:511:ASN:OD1	2.36	0.44
29:B8:358:PHE:HA	29:B8:376:LEU:O	2.17	0.44
30:BE:356:ILE:HG22	30:BE:633:LYS:HG3	2.00	0.44
30:BE:737:LEU:C	30:BE:740:ILE:CG2	2.85	0.44
33:5C:122:GLY:O	33:5C:139:TRP:NE1	2.34	0.44
35:5E:325:SER:OG	45:RJ:1007:TYR:CD1	2.71	0.44
37:5G:138:ASP:N	37:5G:138:ASP:OD1	2.48	0.44
42:RA:60:ASN:HB3	42:RA:74:THR:HB	2.00	0.44
44:RG:242:CYS:O	44:RG:246:GLU:HG3	2.18	0.44
45:RJ:60:ASP:OD2	45:RJ:62:THR:OG1	2.32	0.44
50:RP:70:ILE:HG21	50:RP:87:ILE:HG22	1.98	0.44
2:5A:20:C:H2'	2:5A:21:A:C8	2.52	0.44
3:SA:592:A:O2'	3:SA:596:C:OP1	2.35	0.44
3:SA:1234:A:O2'	3:SA:1236:A:N6	2.50	0.44
5:SG:86:GLN:HE22	26:B1:546:ASP:HB3	1.83	0.44
10:SR:8:GLN:OE1	36:5F:177:ILE:HG23	2.18	0.44
11:SY:77:ILE:HG22	45:RJ:751:TYR:HB2	1.99	0.44
14:3B:125:VAL:HG12	40:5J:150:GLY:HA3	2.00	0.44
14:3B:169:LYS:HA	14:3B:193:VAL:O	2.18	0.44
19:A4:120:SER:OG	19:A4:121:THR:N	2.50	0.44
25:AG:484:VAL:O	25:AG:487:GLU:N	2.51	0.44
26:B1:476:VAL:HA	26:B1:492:SER:HB3	1.98	0.44
26:B1:743:PHE:HZ	26:B1:778:ILE:HD13	1.83	0.44
29:B8:27:PHE:HB3	31:B6:31:LEU:HD23	1.98	0.44
35:5E:447:LYS:HA	35:5E:450:VAL:HG12	1.98	0.44
44:RH:199:ASP:OD1	44:RH:199:ASP:N	2.49	0.44
49:RO:259:LYS:HB3	49:RO:259:LYS:HE2	1.72	0.44
3:SA:398:G:OP2	7:SJ:47:ARG:NH2	2.40	0.44
4:SF:140:VAL:HG12	4:SF:146:THR:HG22	2.00	0.44
8:SK:38:ASN:HA	38:5H:565:LYS:HE2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:SM:57:LYS:HG3	9:SM:110:HIS:CE1	2.53	0.44
10:SR:64:ASP:OD1	10:SR:64:ASP:N	2.50	0.44
14:3B:218:ILE:HD11	15:3D:152:LEU:HD22	1.98	0.44
16:3E:227:LEU:HG	16:3E:231:ILE:HB	2.00	0.44
21:A8:675:LEU:CB	22:A9:486:LEU:HD13	2.47	0.44
23:AE:396:ASP:OD1	23:AE:396:ASP:N	2.47	0.44
24:AF:20:THR:HA	24:AF:24:GLN:HE21	1.83	0.44
25:AG:768:TRP:HE1	25:AG:772:THR:HA	1.83	0.44
26:B1:200:SER:OG	26:B1:202:ASP:O	2.29	0.44
28:B3:111:ASP:N	28:B3:111:ASP:OD1	2.48	0.44
39:5I:241:ASP:OD1	39:5I:241:ASP:N	2.39	0.44
42:RA:152:ASP:N	42:RA:152:ASP:OD1	2.51	0.44
45:RJ:841:THR:HB	45:RJ:859:ILE:HA	1.99	0.44
48:RN:314:MET:HA	48:RN:512:ASP:HA	2.00	0.44
50:RP:1183:PRO:O	50:RP:1187:VAL:CB	2.65	0.44
53:RY:489:GLN:O	53:RY:493:PHE:CB	2.66	0.44
7:SJ:66:SER:HA	7:SJ:73:SER:HA	1.99	0.44
15:3D:206:LEU:HD11	15:3D:219:LEU:HD11	2.00	0.44
19:A4:214:SER:HB3	19:A4:226:LEU:HD13	1.99	0.44
23:AE:63:GLU:HA	23:AE:64:PRO:HD3	1.88	0.44
27:B2:107:ASP:OD1	27:B2:107:ASP:N	2.46	0.44
39:5I:444:GLU:OE2	39:5I:448:ARG:NH2	2.37	0.44
42:RA:184:ASN:OD1	42:RA:230:GLN:NE2	2.51	0.44
44:RG:227:LEU:HA	44:RG:227:LEU:HD23	1.79	0.44
3:SA:1599:C:H2'	3:SA:1600:A:C8	2.53	0.44
3:SA:1623:C:O2'	37:5G:184:GLU:HB2	2.18	0.44
6:SH:65:GLN:NE2	42:RA:43:TYR:O	2.51	0.44
7:SJ:67:TRP:HD1	7:SJ:70:GLU:H	1.66	0.44
9:SM:36:LYS:HD2	9:SM:36:LYS:HA	1.74	0.44
19:A4:45:THR:HB	19:A4:352:VAL:HA	1.99	0.44
19:A4:774:LEU:HD12	19:A4:774:LEU:HA	1.83	0.44
21:A8:676:TRP:CE3	21:A8:676:TRP:O	2.70	0.44
23:AE:238:LEU:HA	23:AE:241:ILE:HG22	1.99	0.44
23:AE:538:ALA:HA	23:AE:541:LEU:HB2	2.00	0.44
25:AG:228:VAL:HG23	25:AG:236:ASN:HB3	2.00	0.44
25:AG:510:TYR:HE1	25:AG:527:HIS:HB3	1.83	0.44
25:AG:532:TRP:HB3	25:AG:541:TRP:HB3	1.99	0.44
26:B1:35:ASN:HA	26:B1:58:ILE:HG23	1.99	0.44
26:B1:157:ASP:OD1	26:B1:203:GLN:NE2	2.38	0.44
27:B2:59:LEU:HD21	27:B2:62:LYS:HE2	1.99	0.44
28:B3:188:GLU:O	28:B3:221:ASN:ND2	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B8:277:ILE:HA	29:B8:282:ASN:HD22	1.83	0.44
30:BE:852:LEU:HD22	30:BE:860:GLU:HG2	2.00	0.44
33:5C:162:ASN:ND2	33:5C:429:GLU:OE1	2.51	0.44
35:5E:384:ARG:CD	37:5G:82:GLY:H	2.30	0.44
35:5E:475:SER:C	35:5E:477:GLU:H	2.21	0.44
44:RH:89:PRO:HG2	44:RH:134:PHE:HZ	1.83	0.44
47:RL:195:ASN:HB3	47:RL:198:CYS:HB3	1.99	0.44
3:SA:257:A:O2'	7:SJ:73:SER:O	2.34	0.43
3:SA:415:C:O2'	3:SA:418:G:O6	2.36	0.43
20:A5:233:LYS:HA	20:A5:233:LYS:HD3	1.82	0.43
20:A5:520:MET:H	20:A5:520:MET:HG3	1.60	0.43
21:A8:573:ILE:HG22	21:A8:575:ASN:H	1.83	0.43
21:A8:634:LEU:HD23	21:A8:634:LEU:H	1.83	0.43
21:A8:642:LEU:HD12	22:A9:499:ILE:CG2	2.44	0.43
23:AE:100:ALA:HB1	29:B8:44:PHE:HZ	1.82	0.43
24:AF:288:ASP:OD1	24:AF:288:ASP:N	2.48	0.43
26:B1:356:ASP:OD1	26:B1:356:ASP:N	2.50	0.43
28:B3:652:ILE:HD12	28:B3:652:ILE:HA	1.92	0.43
30:BE:76:THR:OG1	30:BE:78:SER:O	2.29	0.43
33:5C:228:LEU:HD22	33:5C:264:PRO:HA	1.99	0.43
35:5E:533:LYS:CA	35:5E:536:ARG:HE	2.25	0.43
39:5I:139:CYS:HB3	39:5I:145:VAL:HG22	1.99	0.43
44:RG:177:LYS:HE2	44:RG:177:LYS:HB3	1.68	0.43
45:RJ:203:LYS:HA	45:RJ:203:LYS:HD2	1.78	0.43
50:RP:103:LEU:HD11	50:RP:147:VAL:HG23	1.99	0.43
3:SA:328:A:H2'	3:SA:329:G:H8	1.83	0.43
9:SM:123:VAL:HG12	9:SM:142:VAL:HA	1.99	0.43
14:3B:221:ILE:HD13	15:3D:163:VAL:HB	2.00	0.43
19:A4:212:ILE:O	19:A4:226:LEU:N	2.50	0.43
19:A4:571:THR:HG21	19:A4:632:ASN:HB3	2.00	0.43
20:A5:240:GLN:HE22	20:A5:298:LYS:HB3	1.83	0.43
21:A8:439:LYS:HA	21:A8:442:LYS:CB	2.48	0.43
21:A8:635:PHE:CD2	22:A9:492:ILE:CD1	3.01	0.43
25:AG:712:THR:HG23	25:AG:720:ILE:HD13	1.99	0.43
31:B6:5:ARG:HA	31:B6:5:ARG:HD2	1.80	0.43
45:RJ:625:TRP:HZ2	46:RK:284:SER:HB3	1.83	0.43
47:RM:281:LEU:HA	47:RM:409:ALA:HB3	1.99	0.43
49:RO:292:PRO:HG2	49:RO:330:PHE:HE2	1.82	0.43
49:RO:315:VAL:HG23	49:RO:316:PRO:HD3	1.98	0.43
49:RO:472:HIS:CD2	49:RO:474:HIS:H	2.31	0.43
3:SA:513:U:H2'	3:SA:514:G:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:1146:G:H2'	3:SA:1147:A:C8	2.53	0.43
4:SF:183:VAL:HB	4:SF:225:VAL:HG23	2.00	0.43
4:SF:194:THR:H	4:SF:210:ILE:HG23	1.82	0.43
7:SJ:74:LYS:HD3	7:SJ:74:LYS:HA	1.68	0.43
16:3E:330:LEU:HD13	34:5D:109:THR:HG21	2.00	0.43
19:A4:144:ILE:HD12	19:A4:158:VAL:HB	2.00	0.43
21:A8:633:GLN:HE21	21:A8:633:GLN:HB2	1.55	0.43
25:AG:516:PRO:HG2	25:AG:519:LEU:HD21	2.00	0.43
26:B1:605:ASP:OD1	26:B1:605:ASP:N	2.40	0.43
28:B3:28:ASN:OD1	28:B3:28:ASN:N	2.48	0.43
28:B3:34:THR:HG23	28:B3:68:LYS:HE3	2.00	0.43
34:5D:78:LEU:HA	34:5D:78:LEU:HD12	1.82	0.43
39:5I:306:SER:OG	39:5I:307:ALA:N	2.50	0.43
41:5K:171:PRO:HA	41:5K:184:LYS:HB2	2.00	0.43
49:RO:260:ASN:HA	49:RO:263:SER:HG	1.83	0.43
4:SF:141:THR:OG1	4:SF:142:HIS:N	2.52	0.43
16:3E:206:ALA:HB2	16:3E:262:ILE:HD11	2.00	0.43
19:A4:572:ALA:HB3	19:A4:585:ILE:HD11	2.00	0.43
19:A4:750:ASN:N	19:A4:750:ASN:OD1	2.50	0.43
23:AE:655:ALA:O	23:AE:659:LEU:HB2	2.18	0.43
24:AF:24:GLN:HB2	24:AF:294:PHE:HD1	1.83	0.43
24:AF:115:THR:O	24:AF:115:THR:OG1	2.35	0.43
26:B1:369:ILE:HB	26:B1:383:PHE:HB2	1.99	0.43
28:B3:194:ARG:HD3	28:B3:243:VAL:HG13	1.99	0.43
37:5G:164:GLN:HE21	37:5G:260:GLU:HB3	1.84	0.43
40:5J:207:LYS:HE2	40:5J:207:LYS:HB3	1.88	0.43
45:RJ:904:ASN:HA	45:RJ:907:THR:HB	2.00	0.43
46:RK:68:SER:OG	46:RK:69:TYR:N	2.52	0.43
52:RS:221:LEU:HD22	52:RS:258:VAL:HG11	2.00	0.43
52:RS:373:LYS:HE2	52:RS:373:LYS:HB3	1.84	0.43
2:5A:467:A:N1	2:5A:468:A:N6	2.66	0.43
2:5A:485:G:OP2	15:3D:46:LYS:NZ	2.39	0.43
2:5A:489:G:O6	31:B6:120:ARG:NH1	2.51	0.43
3:SA:18:C:O2'	3:SA:21:U:O4'	2.37	0.43
3:SA:578:U:OP2	45:RJ:874:TYR:OH	2.29	0.43
7:SJ:76:THR:OG1	7:SJ:77:ARG:N	2.52	0.43
8:SK:65:LYS:HZ2	17:3F:59:PRO:CA	2.27	0.43
11:SY:68:ILE:HD12	48:RN:785:VAL:HG23	2.00	0.43
14:3C:185:SER:HB3	14:3C:217:ILE:HD11	2.00	0.43
16:3E:191:HIS:HB2	16:3E:247:ILE:HG23	1.99	0.43
18:3G:62:GLU:HA	18:3G:65:LEU:HG	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:3H:95:ARG:HD2	18:3H:95:ARG:HA	1.87	0.43
21:A8:443:CYS:CA	25:AG:728:LEU:HB3	2.47	0.43
25:AG:50:ASN:HD21	25:AG:782:THR:HG22	1.84	0.43
25:AG:252:LEU:HD23	25:AG:256:THR:HG21	2.00	0.43
26:B1:829:VAL:HG23	26:B1:830:ARG:HG2	2.01	0.43
27:B2:276:ASN:ND2	27:B2:280:THR:O	2.47	0.43
28:B3:41:ASN:OD1	28:B3:41:ASN:N	2.49	0.43
30:BE:606:ASP:OD1	30:BE:606:ASP:N	2.41	0.43
35:5E:323:LYS:HG2	35:5E:325:SER:H	1.84	0.43
39:5I:8:ARG:HD3	39:5I:8:ARG:HA	1.80	0.43
41:5K:52:PHE:HB3	41:5K:55:TYR:HB3	2.01	0.43
41:5K:161:LYS:HG2	41:5K:172:LEU:HD21	1.99	0.43
50:RP:1610:MET:O	50:RP:1614:GLU:CB	2.67	0.43
52:RS:359:LEU:HD23	52:RS:362:LEU:HD12	2.00	0.43
3:SA:526:A:OP1	12:SZ:93:ARG:NE	2.48	0.43
8:SK:155:HIS:NE2	17:3F:321:HIS:O	2.50	0.43
14:3C:261:LEU:O	16:3E:118:ARG:NH2	2.34	0.43
16:3E:372:ARG:O	16:3E:376:LEU:HB2	2.19	0.43
17:3F:303:LYS:HB3	17:3F:317:ILE:HD11	2.01	0.43
18:3H:52:ILE:HD12	18:3H:71:CYS:SG	2.58	0.43
20:A5:336:ASN:OD1	20:A5:336:ASN:N	2.49	0.43
21:A8:270:PHE:HA	21:A8:282:GLY:HA2	2.00	0.43
21:A8:547:GLN:O	21:A8:551:PHE:CB	2.66	0.43
25:AG:478:ASN:N	25:AG:478:ASN:OD1	2.51	0.43
26:B1:341:GLN:OE1	26:B1:341:GLN:HA	2.19	0.43
27:B2:645:GLU:HG2	27:B2:646:LYS:HG3	1.99	0.43
30:BE:569:VAL:HB	30:BE:579:ARG:HB2	2.01	0.43
35:5E:384:ARG:CZ	37:5G:81:SER:HB3	2.49	0.43
39:5I:6:ILE:HG21	39:5I:8:ARG:HH21	1.84	0.43
42:RA:155:VAL:HG13	42:RA:163:TYR:HB2	2.00	0.43
46:RK:36:ILE:HB	46:RK:72:THR:HA	2.01	0.43
48:RN:590:ASN:OD1	48:RN:590:ASN:N	2.50	0.43
3:SA:532:U:O2'	12:SZ:33:ALA:O	2.27	0.43
5:SG:89:ILE:HD11	5:SG:172:ILE:HD11	2.00	0.43
14:3C:185:SER:HA	14:3C:188:VAL:HG12	2.01	0.43
17:3F:301:ASP:N	17:3F:301:ASP:OD1	2.51	0.43
21:A8:643:ASP:OD1	24:AF:510:LEU:O	2.37	0.43
23:AE:348:ILE:HG21	23:AE:373:ILE:HD11	2.00	0.43
23:AE:715:HIS:HA	23:AE:718:ARG:HG2	2.00	0.43
25:AG:140:LYS:HA	25:AG:140:LYS:HD3	1.78	0.43
28:B3:377:LEU:HA	28:B3:378:PRO:HD3	1.85	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:B3:519:ASN:HD22	28:B3:524:GLU:H	1.67	0.43
28:B3:678:TRP:HE3	28:B3:697:VAL:HG23	1.84	0.43
29:B8:35:GLU:O	29:B8:39:LYS:HB2	2.18	0.43
33:5C:64:ASP:HA	33:5C:67:LEU:HG	1.99	0.43
39:5I:133:GLN:HA	39:5I:150:ILE:O	2.18	0.43
45:RJ:280:LEU:HD12	45:RJ:281:PRO:HD2	2.01	0.43
48:RN:616:LEU:HB3	48:RN:619:LEU:HD13	2.01	0.43
48:RN:644:ASP:OD1	48:RN:687:LYS:NZ	2.51	0.43
4:SF:163:ASP:OD2	4:SF:166:SER:N	2.51	0.43
5:SG:72:HIS:O	10:SR:79:TYR:OH	2.37	0.43
17:3F:209:LYS:HA	17:3F:209:LYS:HD2	1.82	0.43
17:3F:343:ASP:OD1	17:3F:343:ASP:N	2.46	0.43
20:A5:281:ILE:HG12	20:A5:328:VAL:HB	2.01	0.43
22:A9:475:THR:HA	22:A9:478:ASN:HB2	1.99	0.43
24:AF:377:ASP:OD1	24:AF:377:ASP:N	2.51	0.43
24:AF:463:VAL:HA	24:AF:466:VAL:HG12	2.01	0.43
27:B2:596:ASN:HB3	27:B2:612:PHE:HA	1.99	0.43
28:B3:218:ASP:OD1	28:B3:218:ASP:N	2.52	0.43
29:B8:376:LEU:HG	29:B8:386:ILE:HG12	1.99	0.43
30:BE:24:PHE:HB3	30:BE:654:TRP:HB3	2.01	0.43
34:5D:145:GLU:OE1	34:5D:146:PHE:N	2.52	0.43
35:5E:316:ASN:O	35:5E:320:ALA:CB	2.66	0.43
39:5I:344:HIS:NE2	39:5I:418:HIS:O	2.51	0.43
48:RN:700:LEU:HD21	49:RO:467:ALA:HB2	2.00	0.43
53:RY:489:GLN:O	53:RY:493:PHE:HB3	2.19	0.43
1:3A:97:C:C2	1:3A:320:G:N2	2.86	0.43
2:5A:474:A:OP2	33:5C:425:ARG:NH2	2.37	0.43
3:SA:1233:G:H1	3:SA:1253:U:H2'	1.83	0.43
4:SF:182:TYR:CD2	4:SF:192:ILE:HD11	2.54	0.43
5:SG:103:ASN:HA	5:SG:106:LYS:HD2	2.01	0.43
7:SJ:67:TRP:O	7:SJ:71:GLY:HA2	2.18	0.43
15:3D:52:SER:HB2	15:3D:85:ASN:HD21	1.84	0.43
16:3E:218:ALA:HA	16:3E:221:THR:HG22	2.00	0.43
16:3E:319:ILE:HD12	16:3E:326:LEU:HD22	2.01	0.43
17:3F:201:ILE:HG12	17:3F:538:ARG:HD3	2.00	0.43
19:A4:617:ASN:O	19:A4:621:ASN:HB2	2.19	0.43
26:B1:76:ASP:OD1	26:B1:76:ASP:N	2.51	0.43
27:B2:178:ILE:HD11	27:B2:186:ILE:HD11	2.01	0.43
28:B3:192:ALA:HB3	28:B3:216:ARG:HG3	2.00	0.43
29:B8:426:VAL:HG11	29:B8:455:ILE:HG21	2.01	0.43
30:BE:50:ILE:HD13	30:BE:311:VAL:HG11	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:RJ:831:ARG:HD3	45:RJ:838:ILE:HD12	2.01	0.43
48:RN:484:ARG:HB3	48:RN:492:ALA:HB1	2.01	0.43
48:RN:669:SER:HA	48:RN:672:THR:HG22	2.01	0.43
50:RP:1741:LYS:HD3	50:RP:1741:LYS:HA	1.90	0.43
1:3A:94:A:H2'	1:3A:95:A:C8	2.53	0.43
3:SA:200:A:H2'	3:SA:201:G:H8	1.84	0.43
3:SA:555:A:N6	3:SA:571:G:O2'	2.50	0.43
3:SA:1169:G:N1	3:SA:1575:G:OP2	2.44	0.43
7:SJ:31:ARG:HH12	7:SJ:48:THR:HB	1.84	0.43
19:A4:313:LYS:HA	19:A4:316:LYS:HG2	2.01	0.43
20:A5:110:ILE:HG22	20:A5:119:CYS:HB2	2.00	0.43
20:A5:448:ASN:OD1	20:A5:450:HIS:NE2	2.52	0.43
21:A8:314:LEU:HA	21:A8:321:ILE:HA	2.00	0.43
21:A8:595:ILE:O	21:A8:599:MET:HB2	2.19	0.43
23:AE:586:LEU:O	23:AE:590:ALA:HB2	2.18	0.43
24:AF:413:LEU:HA	24:AF:416:THR:HG22	2.00	0.43
25:AG:202:SER:OG	25:AG:204:ASN:OD1	2.30	0.43
26:B1:493:TRP:HA	26:B1:517:ASP:HB2	2.01	0.43
28:B3:133:ASN:OD1	28:B3:133:ASN:N	2.51	0.43
30:BE:627:ASN:ND2	30:BE:647:THR:OG1	2.52	0.43
30:BE:739:VAL:CG2	35:5E:487:ALA:HB2	2.37	0.43
32:5B:164:LYS:HB3	32:5B:164:LYS:HE3	1.76	0.43
33:5C:268:VAL:HG13	51:RQ:831:ILE:HG12	2.00	0.43
34:5D:102:GLN:HE21	45:RJ:1098:ARG:NH1	2.17	0.43
34:5D:130:SER:O	34:5D:130:SER:OG	2.36	0.43
36:5F:169:THR:HA	36:5F:172:ARG:HG2	2.01	0.43
37:5G:119:ARG:HA	37:5G:122:TYR:HD2	1.84	0.43
41:5K:61:PRO:HB3	41:5K:92:ALA:HB1	2.01	0.43
44:RG:75:GLY:HA2	44:RG:78:LYS:HE3	2.01	0.43
45:RJ:1080:LYS:HA	45:RJ:1080:LYS:HD2	1.80	0.43
48:RN:475:ARG:HH22	48:RN:516:LEU:HB3	1.84	0.43
1:3A:62:C:O2'	30:BE:447:ASN:O	2.35	0.42
3:SA:200:A:O2'	50:RP:1061:CYS:O	2.36	0.42
3:SA:327:U:OP2	9:SM:57:LYS:NZ	2.38	0.42
4:SF:45:ILE:O	4:SF:49:ARG:HB3	2.19	0.42
16:3E:283:ILE:HD13	16:3E:283:ILE:HA	1.88	0.42
17:3F:414:ILE:HG13	17:3F:478:LEU:HD21	2.00	0.42
20:A5:441:LEU:HD11	20:A5:480:LEU:HD13	2.01	0.42
23:AE:476:ILE:HG23	23:AE:515:PHE:HE2	1.84	0.42
27:B2:351:LEU:HB2	27:B2:367:ILE:HG23	2.00	0.42
27:B2:369:TYR:HA	27:B2:374:PRO:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:B2:636:ASP:OD1	27:B2:636:ASP:N	2.52	0.42
30:BE:470:GLN:HB3	30:BE:553:ARG:NH1	2.34	0.42
33:5C:230:THR:HG22	33:5C:232:ALA:H	1.83	0.42
42:RA:95:ARG:NH2	42:RA:128:LYS:O	2.51	0.42
42:RA:254:ILE:HD12	42:RA:254:ILE:HA	1.84	0.42
45:RJ:1019:THR:HB	45:RJ:1022:LEU:HD12	2.01	0.42
45:RJ:1075:LYS:HE3	45:RJ:1075:LYS:HB2	1.84	0.42
49:RO:504:ASP:OD1	49:RO:504:ASP:N	2.48	0.42
52:RS:266:PHE:O	52:RS:270:LEU:HB3	2.18	0.42
52:RS:398:ARG:H	52:RS:406:GLY:HA3	1.83	0.42
52:RS:437:ARG:HH21	52:RS:463:GLY:HA3	1.84	0.42
17:3F:160:ILE:HG12	17:3F:542:SER:HB2	2.00	0.42
19:A4:106:ASN:OD1	19:A4:106:ASN:N	2.51	0.42
20:A5:270:ASN:OD1	20:A5:270:ASN:N	2.49	0.42
21:A8:556:VAL:O	21:A8:585:ARG:NH1	2.52	0.42
24:AF:424:ARG:HA	25:AG:477:VAL:HG11	2.01	0.42
25:AG:555:VAL:HA	25:AG:556:PRO:HD3	1.89	0.42
25:AG:857:PHE:HE2	29:B8:226:LYS:HB3	1.84	0.42
27:B2:123:ALA:HB3	27:B2:141:LYS:HD3	2.00	0.42
28:B3:260:THR:HG22	28:B3:269:LEU:HD13	2.01	0.42
30:BE:353:PRO:HA	30:BE:370:SER:HA	2.01	0.42
31:B6:72:LYS:HD2	31:B6:72:LYS:HA	1.78	0.42
38:5H:550:LEU:HD23	38:5H:550:LEU:HA	1.88	0.42
42:RA:217:LYS:HE2	42:RA:217:LYS:HB3	1.87	0.42
42:RA:277:ILE:HA	42:RA:290:VAL:O	2.19	0.42
44:RG:34:LYS:HD3	44:RG:34:LYS:HA	1.84	0.42
49:RO:208:TYR:O	49:RO:212:LEU:HB2	2.19	0.42
52:RS:382:LEU:HD11	52:RS:428:TYR:CG	2.55	0.42
3:SA:274:G:N1	3:SA:283:U:O2'	2.50	0.42
3:SA:1739:C:H2'	3:SA:1740:A:C8	2.53	0.42
14:3B:198:GLU:O	14:3B:221:ILE:HA	2.18	0.42
14:3C:149:SER:OG	14:3C:150:LYS:N	2.52	0.42
16:3E:160:ASP:HB3	16:3E:283:ILE:HG21	2.01	0.42
19:A4:532:ASN:N	19:A4:544:SER:O	2.50	0.42
19:A4:566:LEU:HA	19:A4:566:LEU:HD23	1.83	0.42
23:AE:323:PHE:CZ	23:AE:332:ILE:HD11	2.54	0.42
23:AE:354:SER:O	23:AE:358:TYR:HB2	2.20	0.42
23:AE:422:LEU:HD12	23:AE:422:LEU:HA	1.87	0.42
25:AG:551:HIS:HA	25:AG:583:LYS:HE3	2.00	0.42
26:B1:749:TYR:HE2	30:BE:705:ILE:HG13	1.84	0.42
27:B2:297:LYS:HA	27:B2:300:GLU:HB2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:B2:673:VAL:HG23	27:B2:683:ILE:HD13	2.01	0.42
28:B3:188:GLU:HB2	28:B3:223:TRP:HZ2	1.83	0.42
28:B3:483:SER:O	28:B3:483:SER:OG	2.35	0.42
28:B3:572:GLU:HG3	28:B3:600:LYS:HD2	2.01	0.42
37:5G:153:THR:HG23	37:5G:164:GLN:HB3	2.02	0.42
42:RA:306:LYS:HA	42:RA:306:LYS:HD2	1.83	0.42
48:RN:86:ILE:HG13	48:RN:89:GLN:NE2	2.34	0.42
3:SA:-7:A:N7	39:5I:292:ARG:NH1	2.68	0.42
6:SH:74:LYS:O	42:RA:88:ASN:ND2	2.52	0.42
8:SK:163:PRO:HB3	8:SK:169:PRO:HA	2.01	0.42
14:3B:272:LYS:HD3	14:3B:275:CYS:HB3	2.01	0.42
21:A8:596:LYS:CE	21:A8:637:LEU:CA	2.95	0.42
21:A8:638:LEU:HA	21:A8:641:VAL:CG1	2.48	0.42
25:AG:780:GLU:O	25:AG:782:THR:N	2.49	0.42
26:B1:515:TYR:HE2	36:5F:180:PHE:HZ	1.67	0.42
27:B2:39:GLY:O	27:B2:54:ILE:HG13	2.20	0.42
27:B2:294:ARG:O	27:B2:298:LYS:NZ	2.44	0.42
27:B2:432:TYR:O	27:B2:450:ARG:N	2.48	0.42
27:B2:497:VAL:HG12	27:B2:528:LEU:HB3	2.01	0.42
33:5C:215:LYS:HG2	33:5C:227:GLU:HG2	2.00	0.42
36:5F:94:ILE:HG23	36:5F:97:LEU:HD12	2.02	0.42
39:5I:456:GLU:HA	39:5I:459:LYS:HE2	2.01	0.42
40:5J:106:LEU:O	40:5J:146:ARG:NH1	2.44	0.42
43:RB:307:LYS:O	43:RB:311:ARG:HB3	2.19	0.42
46:RK:81:ILE:HG22	46:RK:110:SER:HB3	2.01	0.42
47:RL:203:ASP:OD1	47:RL:203:ASP:N	2.52	0.42
48:RN:108:LYS:HA	48:RN:108:LYS:HD2	1.85	0.42
1:3A:58:A:OP2	36:5F:165:LYS:CE	2.68	0.42
3:SA:99:C:H2'	3:SA:100:A:C8	2.54	0.42
3:SA:147:A:N7	3:SA:167:U:O2	2.52	0.42
3:SA:1659:A:H2'	3:SA:1660:A:C8	2.53	0.42
15:3D:4:ILE:HG23	15:3D:20:VAL:HG21	2.01	0.42
26:B1:25:ASP:OD1	26:B1:25:ASP:N	2.50	0.42
26:B1:46:LYS:HE2	26:B1:46:LYS:HB3	1.87	0.42
26:B1:275:LEU:HD22	26:B1:289:LEU:HD13	2.02	0.42
27:B2:534:ILE:HD11	27:B2:537:VAL:HG12	2.01	0.42
27:B2:836:ILE:HA	27:B2:839:VAL:HG12	2.00	0.42
30:BE:27:PHE:HB2	30:BE:655:THR:HG23	2.00	0.42
37:5G:164:GLN:NE2	37:5G:260:GLU:OE1	2.52	0.42
40:5J:216:ARG:HA	40:5J:216:ARG:HD3	1.82	0.42
49:RO:395:ILE:HD12	49:RO:469:LEU:HD11	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:RS:210:VAL:HG23	52:RS:212:LYS:HG2	2.00	0.42
2:5A:532:A:O2'	51:RQ:332:ASP:OD2	2.37	0.42
4:SF:68:ARG:HH21	4:SF:76:VAL:HG11	1.85	0.42
5:SG:23:VAL:HG23	10:SR:61:SER:HB3	2.00	0.42
15:3D:61:GLU:OE2	15:3D:77:SER:OG	2.36	0.42
25:AG:511:GLU:HG2	25:AG:528:ILE:HB	2.00	0.42
30:BE:21:SER:OG	30:BE:621:ASP:OD2	2.28	0.42
30:BE:523:ASP:OD1	30:BE:523:ASP:N	2.38	0.42
36:5F:124:ILE:H	36:5F:124:ILE:HG13	1.47	0.42
37:5G:154:ILE:O	37:5G:162:THR:HA	2.20	0.42
39:5I:464:THR:HG21	39:5I:468:TYR:HE1	1.85	0.42
45:RJ:217:ASP:O	45:RJ:221:LEU:HB2	2.20	0.42
45:RJ:940:LYS:HB2	45:RJ:940:LYS:HE2	1.73	0.42
46:RK:310:ARG:HB3	46:RK:353:THR:HG22	2.01	0.42
48:RN:501:PHE:HB3	48:RN:549:ILE:HG21	2.02	0.42
52:RS:432:ILE:HG23	52:RS:436:GLN:HB2	2.00	0.42
3:SA:341:A:OP1	42:RA:121:ARG:NH2	2.48	0.42
4:SF:71:LYS:N	4:SF:91:THR:O	2.52	0.42
5:SG:114:ILE:HA	5:SG:117:THR:HG22	2.02	0.42
9:SM:92:HIS:NE2	9:SM:101:GLU:O	2.52	0.42
16:3E:172:ASP:O	16:3E:176:GLU:HG2	2.20	0.42
19:A4:313:LYS:HA	19:A4:316:LYS:HZ3	1.84	0.42
21:A8:596:LYS:HG3	21:A8:637:LEU:HD22	2.00	0.42
23:AE:487:THR:HG22	23:AE:488:GLY:H	1.85	0.42
23:AE:539:LEU:HD12	23:AE:540:LYS:HG3	2.01	0.42
24:AF:119:SER:O	24:AF:119:SER:OG	2.36	0.42
26:B1:60:ALA:HB1	26:B1:102:VAL:HG12	2.02	0.42
28:B3:547:LEU:N	28:B3:569:LYS:HZ1	2.17	0.42
28:B3:674:SER:OG	28:B3:675:LYS:N	2.52	0.42
30:BE:62:ASP:O	30:BE:66:LEU:N	2.48	0.42
35:5E:508:ARG:HG2	35:5E:514:ALA:HB2	2.02	0.42
36:5F:166:ILE:H	36:5F:166:ILE:HG13	1.68	0.42
44:RG:190:GLN:NE2	44:RG:244:GLY:HA2	2.34	0.42
1:3A:118:A:C5	17:3F:218:ALA:HB2	2.55	0.42
7:SJ:67:TRP:O	7:SJ:71:GLY:CA	2.68	0.42
8:SK:45:ILE:HD12	8:SK:48:GLN:HE21	1.84	0.42
9:SM:70:ILE:HA	9:SM:125:VAL:O	2.20	0.42
9:SM:115:PHE:CG	9:SM:142:VAL:HG21	2.55	0.42
14:3C:124:SER:HA	14:3C:139:VAL:O	2.19	0.42
17:3F:560:ARG:HE	17:3F:560:ARG:HB3	1.75	0.42
20:A5:27:GLN:HG3	20:A5:59:LYS:HA	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:AE:25:ARG:HH21	39:5I:16:VAL:HG22	1.83	0.42
25:AG:313:LEU:HD23	25:AG:323:LEU:HB3	2.01	0.42
25:AG:559:LYS:HE2	25:AG:559:LYS:HB2	1.79	0.42
28:B3:367:VAL:HG12	28:B3:643:PHE:HE2	1.85	0.42
29:B8:504:THR:O	29:B8:504:THR:OG1	2.35	0.42
30:BE:737:LEU:C	30:BE:740:ILE:HG22	2.41	0.42
46:RK:56:ILE:HD13	46:RK:56:ILE:HA	1.89	0.42
46:RK:216:LEU:HB3	46:RK:223:VAL:HG21	2.01	0.42
47:RL:37:LEU:HD22	47:RL:149:VAL:HG11	2.01	0.42
47:RL:59:TYR:O	47:RL:108:TYR:N	2.53	0.42
52:RS:364:PHE:HE1	52:RS:417:TRP:HE1	1.67	0.42
52:RS:373:LYS:HA	52:RS:376:LEU:HG	2.02	0.42
52:RS:382:LEU:HD21	52:RS:428:TYR:CZ	2.53	0.42
3:SA:565:C:N4	45:RJ:993:ASP:HB3	2.35	0.42
3:SA:1656:U:H3	3:SA:1743:U:H3	1.67	0.42
4:SF:47:PHE:HD2	4:SF:48:LEU:HD12	1.84	0.42
4:SF:220:THR:OG1	4:SF:221:ARG:N	2.53	0.42
20:A5:98:LYS:HE3	20:A5:98:LYS:HB2	1.88	0.42
26:B1:274:LEU:HD11	26:B1:286:LEU:HD13	2.02	0.42
26:B1:284:PHE:CZ	35:5E:476:MET:HE2	2.54	0.42
28:B3:516:LYS:HE2	28:B3:516:LYS:HB2	1.89	0.42
30:BE:361:SER:HA	30:BE:636:PRO:HB2	2.02	0.42
37:5G:157:PHE:O	37:5G:159:HIS:N	2.51	0.42
42:RA:164:ARG:NH2	42:RA:174:ASN:O	2.51	0.42
44:RG:128:VAL:HG22	44:RG:159:LEU:HD22	2.01	0.42
44:RH:176:ARG:NH2	44:RH:192:TYR:OH	2.52	0.42
45:RJ:773:THR:HG23	45:RJ:777:ARG:HD3	2.02	0.42
46:RK:190:SER:OG	46:RK:191:ILE:N	2.51	0.42
48:RN:700:LEU:HD23	48:RN:702:LEU:HG	2.01	0.42
52:RS:437:ARG:HD2	52:RS:460:LEU:HG	2.02	0.42
3:SA:575:C:O2	45:RJ:1052:SER:OG	2.28	0.42
4:SF:31:PRO:HA	4:SF:81:THR:HB	2.01	0.42
6:SH:77:LEU:HD12	6:SH:95:LYS:HD3	2.00	0.42
6:SH:101:ILE:H	6:SH:101:ILE:HG13	1.72	0.42
14:3B:107:VAL:HG13	14:3B:141:TYR:HB3	2.01	0.42
16:3E:117:TYR:HA	16:3E:120:ILE:HG12	2.01	0.42
17:3F:303:LYS:HE3	17:3F:319:TYR:HE2	1.85	0.42
17:3F:415:THR:OG1	17:3F:425:TRP:NE1	2.39	0.42
19:A4:98:SER:OG	19:A4:99:ILE:N	2.53	0.42
19:A4:213:TRP:HA	19:A4:225:LEU:HA	2.02	0.42
20:A5:224:CYS:SG	20:A5:225:VAL:N	2.93	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:A8:443:CYS:CB	25:AG:728:LEU:CD2	2.97	0.42
23:AE:91:ILE:HD13	23:AE:91:ILE:HA	1.90	0.42
23:AE:420:LYS:HB2	23:AE:420:LYS:HE2	1.91	0.42
25:AG:502:LYS:HD2	25:AG:564:PRO:HA	2.02	0.42
26:B1:147:GLN:HB2	26:B1:167:ASP:H	1.85	0.42
27:B2:26:ILE:HA	27:B2:27:PRO:HD3	1.94	0.42
27:B2:405:LEU:HD11	27:B2:673:VAL:HG21	2.02	0.42
27:B2:555:VAL:HG22	27:B2:569:LEU:HB2	2.02	0.42
28:B3:303:PHE:HA	28:B3:312:GLN:O	2.20	0.42
33:5C:191:ILE:HD13	33:5C:191:ILE:HA	1.87	0.42
40:5J:134:ARG:HD2	40:5J:134:ARG:HA	1.83	0.42
2:5A:490:G:H1'	2:5A:495:G:H5'	2.01	0.41
3:SA:318:U:O2	3:SA:346:G:O6	2.37	0.41
3:SA:576:G:C4'	35:5E:327:LYS:HE2	2.48	0.41
3:SA:1489:U:N3	40:5J:202:ARG:O	2.53	0.41
14:3C:291:GLN:HA	14:3C:294:ARG:HG2	2.01	0.41
16:3E:333:LYS:HD3	34:5D:103:ASP:HB3	2.02	0.41
17:3F:368:LEU:HB3	17:3F:396:PHE:HE2	1.83	0.41
18:3G:44:LEU:HD23	18:3G:44:LEU:HA	1.87	0.41
19:A4:423:LYS:NZ	32:5B:167:ARG:HH11	2.18	0.41
21:A8:662:ILE:HA	21:A8:665:GLN:HB2	2.01	0.41
23:AE:755:ARG:O	23:AE:759:ILE:HG12	2.20	0.41
24:AF:105:VAL:HG21	24:AF:142:THR:HG21	2.02	0.41
39:5I:336:HIS:CE1	39:5I:338:HIS:HB2	2.55	0.41
44:RG:215:ASN:HB2	44:RG:218:ASP:HB2	2.01	0.41
48:RN:611:SER:OG	48:RN:612:THR:N	2.52	0.41
48:RN:616:LEU:HD13	48:RN:619:LEU:HD22	2.01	0.41
50:RP:129:ILE:O	50:RP:133:ILE:HG12	2.20	0.41
2:5A:298:A:OP2	30:BE:103:ARG:NH2	2.45	0.41
3:SA:324:U:OP1	9:SM:133:LYS:NZ	2.41	0.41
15:3D:268:MET:HA	15:3D:271:VAL:HG12	2.02	0.41
17:3F:421:ASN:ND2	17:3F:437:ARG:HA	2.34	0.41
17:3F:476:THR:HG22	17:3F:491:SER:HA	2.02	0.41
23:AE:35:TYR:O	23:AE:150:ARG:NH1	2.53	0.41
23:AE:664:PRO:HB2	23:AE:716:PHE:HE2	1.85	0.41
24:AF:366:TYR:OH	24:AF:371:GLU:OE1	2.23	0.41
25:AG:625:GLY:HA3	25:AG:662:VAL:HG11	2.02	0.41
25:AG:659:ILE:HG22	25:AG:674:THR:HB	2.01	0.41
26:B1:300:MET:HG2	26:B1:328:LEU:HD22	2.02	0.41
26:B1:498:ARG:HH11	26:B1:498:ARG:HD3	1.72	0.41
27:B2:19:SER:HG	27:B2:44:SER:HG	1.66	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:B2:538:ARG:HD3	27:B2:580:ASP:HA	2.02	0.41
28:B3:506:PHE:CE1	28:B3:518:TRP:HB2	2.55	0.41
28:B3:745:ASP:OD2	35:5E:508:ARG:HD2	2.20	0.41
30:BE:635:SER:OG	30:BE:637:ASN:OD1	2.30	0.41
33:5C:201:TYR:OH	33:5C:415:GLU:OE1	2.29	0.41
35:5E:352:LYS:HE2	48:RN:764:ARG:HE	1.85	0.41
35:5E:533:LYS:HG3	35:5E:536:ARG:HE	1.83	0.41
39:5I:223:THR:HG1	39:5I:238:THR:HG1	1.69	0.41
49:RO:243:PRO:HA	49:RO:244:PRO:HD3	1.81	0.41
50:RP:1756:ILE:HG22	50:RP:1760:ASN:HD21	1.85	0.41
52:RS:255:SER:HB3	52:RS:258:VAL:HG22	2.01	0.41
3:SA:360:A:O2'	3:SA:362:G:N2	2.45	0.41
6:SH:123:GLY:O	6:SH:127:THR:OG1	2.39	0.41
8:SK:154:LYS:HE2	8:SK:154:LYS:HB3	1.88	0.41
14:3B:150:LYS:NZ	14:3B:310:GLU:OE2	2.44	0.41
14:3C:242:ALA:HB3	14:3C:269:ILE:HA	2.01	0.41
15:3D:206:LEU:HB3	15:3D:216:PHE:HE1	1.84	0.41
22:A9:451:LEU:HA	22:A9:451:LEU:HD13	1.83	0.41
23:AE:148:PHE:HA	23:AE:151:ILE:HG12	2.01	0.41
23:AE:480:ASN:HA	23:AE:518:THR:HG21	2.02	0.41
24:AF:177:ILE:HA	24:AF:178:PRO:HD3	1.84	0.41
26:B1:275:LEU:HB2	26:B1:289:LEU:HD22	2.02	0.41
26:B1:363:ALA:HB2	26:B1:393:VAL:HG13	2.01	0.41
26:B1:381:ALA:HA	35:5E:481:PRO:HA	2.01	0.41
26:B1:501:SER:O	26:B1:506:SER:OG	2.38	0.41
26:B1:721:VAL:O	30:BE:579:ARG:NH2	2.53	0.41
31:B6:106:ASP:OD1	31:B6:106:ASP:N	2.38	0.41
36:5F:6:LYS:O	36:5F:10:GLN:N	2.52	0.41
37:5G:73:VAL:HG23	37:5G:208:HIS:HE1	1.85	0.41
46:RK:80:ILE:HD13	46:RK:80:ILE:HA	1.90	0.41
1:3A:49:C:H42	2:5A:467:A:H61	1.67	0.41
1:3A:312:U:O4	1:3A:313:A:N6	2.53	0.41
6:SH:51:LYS:HE2	6:SH:51:LYS:HB3	1.91	0.41
10:SR:97:VAL:HG12	10:SR:98:ASP:H	1.83	0.41
16:3E:388:LEU:HD12	16:3E:388:LEU:HA	1.89	0.41
17:3F:132:VAL:HG21	17:3F:505:LEU:HD21	2.02	0.41
17:3F:260:LEU:HD21	17:3F:283:VAL:HG11	2.02	0.41
17:3F:304:ILE:HB	17:3F:318:LEU:HG	2.03	0.41
18:3G:64:LEU:O	18:3G:66:HIS:N	2.43	0.41
23:AE:559:ASN:HB2	23:AE:614:LEU:HD12	2.02	0.41
23:AE:682:SER:O	23:AE:682:SER:OG	2.33	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:AF:34:GLN:O	24:AF:328:ALA:HA	2.21	0.41
25:AG:258:TYR:CD1	25:AG:414:ILE:HD11	2.55	0.41
25:AG:386:ASN:HD21	25:AG:389:LEU:HD11	1.86	0.41
26:B1:347:SER:HB2	26:B1:365:GLU:HB3	2.03	0.41
26:B1:559:ILE:HG21	26:B1:578:LYS:HA	2.03	0.41
27:B2:50:ASN:HB3	27:B2:62:LYS:HG3	2.02	0.41
28:B3:195:GLY:HA3	28:B3:245:SER:H	1.85	0.41
28:B3:242:GLN:HA	28:B3:263:GLY:HA3	2.01	0.41
28:B3:264:ASP:HA	28:B3:289:PHE:HB2	2.03	0.41
28:B3:393:SER:OG	28:B3:394:LEU:N	2.53	0.41
28:B3:690:HIS:CE1	35:5E:519:GLU:HB2	2.55	0.41
29:B8:174:ARG:NE	29:B8:179:ASP:OD2	2.44	0.41
29:B8:278:ASP:H	29:B8:282:ASN:HD22	1.67	0.41
29:B8:296:GLN:HB3	29:B8:316:GLY:HA2	2.03	0.41
31:B6:268:ASP:N	31:B6:268:ASP:OD1	2.53	0.41
39:5I:58:PHE:HE1	39:5I:373:ARG:HB3	1.85	0.41
39:5I:107:LYS:NZ	39:5I:109:HIS:O	2.45	0.41
46:RK:32:LYS:HG2	46:RK:75:ILE:HG13	2.02	0.41
47:RL:26:PHE:O	47:RL:149:VAL:HA	2.20	0.41
50:RP:1752:ASP:HA	50:RP:1755:GLU:HG2	2.03	0.41
52:RS:355:ALA:HA	52:RS:358:TYR:CE2	2.55	0.41
4:SF:181:VAL:HG23	4:SF:227:VAL:HG22	2.02	0.41
10:SR:46:PHE:HA	10:SR:49:TYR:HB2	2.02	0.41
14:3C:151:LEU:HD13	14:3C:241:PHE:HE1	1.86	0.41
16:3E:163:ILE:HD13	16:3E:163:ILE:HA	1.86	0.41
17:3F:488:ILE:HG22	17:3F:524:ILE:HD13	2.02	0.41
19:A4:39:VAL:HG12	19:A4:41:PHE:H	1.85	0.41
20:A5:32:GLN:HE22	20:A5:47:ASN:HB3	1.85	0.41
23:AE:526:LEU:HA	23:AE:529:VAL:HG12	2.01	0.41
24:AF:392:ILE:HD11	24:AF:417:VAL:HG23	2.03	0.41
25:AG:97:THR:OG1	25:AG:98:VAL:N	2.54	0.41
25:AG:544:LYS:HD3	25:AG:544:LYS:HA	1.88	0.41
26:B1:14:VAL:CG2	26:B1:341:GLN:O	2.62	0.41
27:B2:433:ALA:HA	27:B2:449:THR:HA	2.03	0.41
36:5F:6:LYS:N	36:5F:9:GLU:HB2	2.36	0.41
42:RA:164:ARG:HB2	42:RA:173:LEU:HB2	2.03	0.41
45:RJ:552:LEU:HD23	45:RJ:552:LEU:HA	1.92	0.41
48:RN:515:HIS:O	48:RN:519:THR:OG1	2.32	0.41
3:SA:88:U:H2'	3:SA:89:G:H8	1.85	0.41
3:SA:110:U:OP1	43:RB:227:ARG:NH1	2.53	0.41
3:SA:1156:C:H2'	3:SA:1157:A:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SA:1523:G:H1'	3:SA:1524:A:H5'	2.02	0.41
14:3C:89:GLU:HG2	14:3C:98:ILE:HB	2.03	0.41
19:A4:154:ASP:OD1	19:A4:154:ASP:N	2.49	0.41
19:A4:394:TRP:HB3	19:A4:399:VAL:HG12	2.03	0.41
20:A5:551:ILE:HA	20:A5:554:PHE:CE2	2.56	0.41
21:A8:631:SER:C	21:A8:634:LEU:CG	2.86	0.41
23:AE:109:TRP:HB2	23:AE:142:TYR:CZ	2.56	0.41
25:AG:31:ASN:OD1	25:AG:31:ASN:N	2.52	0.41
25:AG:712:THR:HG22	25:AG:766:ILE:HG23	2.01	0.41
26:B1:298:LEU:HD12	35:5E:474:ILE:CG2	2.51	0.41
27:B2:164:ASP:HB3	27:B2:182:LYS:HB3	2.02	0.41
29:B8:137:ILE:HD13	29:B8:137:ILE:HA	1.86	0.41
29:B8:159:HIS:O	29:B8:163:ARG:HG2	2.21	0.41
29:B8:278:ASP:H	29:B8:282:ASN:ND2	2.18	0.41
31:B6:35:LYS:HE3	31:B6:35:LYS:HB3	1.88	0.41
31:B6:311:TYR:O	31:B6:315:GLU:HG2	2.21	0.41
33:5C:59:SER:HG	51:RQ:874:SER:HG	1.60	0.41
33:5C:244:ASN:HB3	33:5C:446:PRO:HG3	2.02	0.41
34:5D:61:ASP:O	36:5F:160:TRP:HH2	2.03	0.41
35:5E:314:LEU:HA	35:5E:317:GLU:HB2	2.03	0.41
35:5E:350:THR:CG2	45:RJ:975:GLU:HB2	2.51	0.41
37:5G:260:GLU:OE2	37:5G:262:ARG:NH2	2.33	0.41
38:5H:542:TYR:CZ	38:5H:546:LYS:HG3	2.56	0.41
44:RH:180:LEU:HD23	44:RH:180:LEU:HA	1.88	0.41
6:SH:70:PRO:O	6:SH:98:ARG:NH2	2.54	0.41
6:SH:115:LYS:HB2	6:SH:115:LYS:HE3	1.76	0.41
9:SM:82:ARG:HD3	9:SM:110:HIS:CD2	2.55	0.41
9:SM:115:PHE:HB2	9:SM:142:VAL:HG11	2.03	0.41
16:3E:132:SER:OG	16:3E:134:ASN:OD1	2.34	0.41
16:3E:192:PHE:CD2	16:3E:195:LEU:HB2	2.56	0.41
17:3F:158:THR:HG23	17:3F:548:ARG:HB2	2.02	0.41
17:3F:308:SER:OG	17:3F:313:SER:OG	2.36	0.41
17:3F:321:HIS:CE1	17:3F:340:GLY:H	2.39	0.41
17:3F:502:SER:OG	17:3F:504:ASN:OD1	2.32	0.41
20:A5:64:LYS:HB3	20:A5:77:ILE:HG13	2.02	0.41
22:A9:416:ILE:O	22:A9:420:ILE:CB	2.69	0.41
23:AE:549:LYS:HD3	23:AE:549:LYS:HA	1.91	0.41
24:AF:255:VAL:HA	24:AF:276:SER:HA	2.03	0.41
26:B1:410:THR:HG22	26:B1:426:THR:HG22	2.01	0.41
28:B3:468:ILE:HA	28:B3:469:PRO:HD3	1.83	0.41
35:5E:522:ARG:HA	35:5E:525:LYS:HE3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:5J:117:VAL:HG11	40:5J:149:ILE:HG13	2.02	0.41
42:RA:94:ASP:N	42:RA:94:ASP:OD1	2.54	0.41
44:RG:232:LEU:HB3	44:RG:236:VAL:HG13	2.02	0.41
48:RN:283:ALA:HA	52:RS:381:ALA:HB1	2.03	0.41
48:RN:784:ILE:HA	48:RN:787:THR:HG22	2.03	0.41
52:RS:264:LYS:HB2	52:RS:264:LYS:HE3	1.81	0.41
3:SA:200:A:H2'	3:SA:201:G:C8	2.56	0.41
7:SJ:35:ASN:HD21	42:RA:119:ASN:HD22	1.69	0.41
7:SJ:58:LEU:HD21	42:RA:77:TYR:HB2	2.02	0.41
8:SK:63:ASP:OD1	8:SK:63:ASP:N	2.46	0.41
15:3D:24:GLN:NE2	15:3D:126:ASP:OD1	2.48	0.41
19:A4:389:ARG:HG2	19:A4:747:ILE:HG21	2.02	0.41
19:A4:428:ILE:HD12	19:A4:444:ARG:HH21	1.85	0.41
20:A5:49:ASN:OD1	20:A5:49:ASN:N	2.49	0.41
20:A5:248:THR:OG1	20:A5:250:ASP:OD1	2.31	0.41
21:A8:563:LEU:H	21:A8:563:LEU:HG	1.51	0.41
21:A8:703:LEU:HA	21:A8:704:PRO:HD3	1.96	0.41
23:AE:32:SER:OG	23:AE:33:LEU:N	2.54	0.41
23:AE:33:LEU:HD11	23:AE:151:ILE:HG22	2.03	0.41
23:AE:69:PHE:HE2	23:AE:104:LEU:HD13	1.85	0.41
23:AE:572:ARG:NH2	23:AE:632:THR:O	2.40	0.41
23:AE:597:HIS:HB3	23:AE:615:ASN:HB3	2.03	0.41
25:AG:439:ASN:ND2	25:AG:496:THR:O	2.54	0.41
25:AG:514:TYR:HA	25:AG:515:PRO:HD3	1.94	0.41
26:B1:419:TYR:HB2	35:5E:482:LEU:CD1	2.50	0.41
28:B3:90:LEU:O	28:B3:92:THR:N	2.54	0.41
30:BE:870:GLN:HA	30:BE:873:LYS:HE3	2.03	0.41
37:5G:260:GLU:HG3	37:5G:276:GLN:HB3	2.03	0.41
42:RA:237:ARG:NE	42:RA:239:ASP:OD2	2.46	0.41
44:RG:40:ARG:O	44:RG:201:SER:HA	2.20	0.41
47:RL:185:ASN:OD1	47:RL:185:ASN:N	2.52	0.41
48:RN:766:ARG:NH2	48:RN:769:GLU:OE2	2.54	0.41
49:RO:226:ASP:OD1	49:RO:284:ARG:NE	2.54	0.41
52:RS:238:SER:O	52:RS:238:SER:OG	2.33	0.41
2:5A:18:G:H2'	2:5A:19:A:H8	1.85	0.41
3:SA:153:G:O6	3:SA:161:U:O4	2.39	0.41
3:SA:1538:U:H1'	3:SA:1570:A:H61	1.84	0.41
5:SG:79:ASN:N	5:SG:79:ASN:OD1	2.54	0.41
6:SH:185:GLN:O	6:SH:189:HIS:ND1	2.44	0.41
7:SJ:36:THR:O	7:SJ:96:LEU:N	2.52	0.41
7:SJ:49:ARG:HA	7:SJ:49:ARG:HD3	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:3B:116:SER:OG	14:3B:120:GLU:OE1	2.28	0.41
15:3D:7:LEU:HD12	15:3D:99:ALA:HB3	2.02	0.41
15:3D:157:ALA:HB2	31:B6:292:TYR:CZ	2.56	0.41
16:3E:311:LYS:HB3	16:3E:311:LYS:HE2	1.84	0.41
17:3F:457:GLU:HG3	17:3F:461:LYS:HE2	2.02	0.41
18:3G:85:VAL:O	18:3G:89:ARG:HG2	2.21	0.41
19:A4:52:SER:HA	19:A4:104:TRP:CG	2.56	0.41
19:A4:249:ARG:NH2	19:A4:309:GLN:OE1	2.49	0.41
19:A4:513:LEU:HD12	19:A4:513:LEU:HA	1.89	0.41
19:A4:581:SER:HA	19:A4:594:PHE:O	2.21	0.41
21:A8:342:LEU:HA	21:A8:357:HIS:HA	2.02	0.41
21:A8:443:CYS:HA	25:AG:728:LEU:CD2	2.47	0.41
22:A9:475:THR:HA	22:A9:478:ASN:HD22	1.86	0.41
23:AE:214:THR:HG23	23:AE:260:ILE:HG13	2.03	0.41
23:AE:227:ASN:OD1	23:AE:227:ASN:N	2.53	0.41
24:AF:287:LEU:HD13	24:AF:287:LEU:HA	1.96	0.41
25:AG:591:GLU:O	25:AG:593:ASN:N	2.54	0.41
25:AG:666:ASN:OD1	25:AG:666:ASN:N	2.54	0.41
27:B2:17:ILE:CG2	27:B2:52:TRP:CH2	3.01	0.41
28:B3:567:VAL:HG22	28:B3:568:MET:HG2	2.02	0.41
29:B8:338:LYS:HE3	29:B8:338:LYS:HB2	1.89	0.41
30:BE:724:SER:O	30:BE:728:ARG:NH2	2.39	0.41
33:5C:117:LYS:HD2	33:5C:117:LYS:HA	1.85	0.41
39:5I:400:LEU:HD12	39:5I:400:LEU:HA	1.89	0.41
40:5J:119:ARG:HD3	45:RJ:1113:ILE:HG13	2.02	0.41
42:RA:139:LYS:HA	42:RA:139:LYS:HD2	1.89	0.41
44:RG:31:LEU:HD23	44:RG:31:LEU:HA	1.86	0.41
44:RG:116:THR:HG22	44:RG:118:ARG:H	1.86	0.41
44:RG:123:GLU:HB2	44:RG:161:LYS:HB2	2.03	0.41
44:RG:233:SER:OG	44:RG:234:ALA:N	2.54	0.41
44:RH:177:LYS:HG2	44:RH:203:CYS:HB3	2.03	0.41
45:RJ:43:MET:N	45:RJ:43:MET:SD	2.94	0.41
45:RJ:906:ASP:OD1	45:RJ:906:ASP:N	2.45	0.41
45:RJ:926:ILE:HG12	45:RJ:928:ILE:HG23	2.01	0.41
46:RK:117:LEU:HA	46:RK:166:VAL:O	2.21	0.41
50:RP:76:THR:O	50:RP:79:GLN:N	2.54	0.41
52:RS:288:ARG:O	52:RS:292:GLU:HG2	2.21	0.41
52:RS:407:GLU:HB2	52:RS:411:ARG:HD2	2.03	0.41
3:SA:27:U:H4'	45:RJ:45:ARG:HG3	2.02	0.41
3:SA:1492:A:N6	45:RJ:941:ILE:O	2.46	0.41
3:SA:1655:A:O2'	27:B2:395:ARG:NH1	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:3E:201:ASP:HB3	16:3E:204:ALA:HB3	2.03	0.41
19:A4:425:ASP:OD2	19:A4:444:ARG:NH2	2.53	0.41
24:AF:136:ASP:OD1	24:AF:137:ASN:N	2.54	0.41
24:AF:492:ARG:HD3	24:AF:492:ARG:HA	1.80	0.41
26:B1:263:VAL:HG13	26:B1:277:VAL:HG13	2.03	0.41
27:B2:241:LYS:HB2	27:B2:241:LYS:HE3	1.89	0.41
27:B2:911:GLN:HA	27:B2:914:LEU:HG	2.02	0.41
28:B3:410:ASN:OD1	28:B3:435:ALA:N	2.52	0.41
30:BE:83:LEU:HA	30:BE:91:TYR:O	2.21	0.41
31:B6:26:LYS:HA	31:B6:29:VAL:HG12	2.03	0.41
31:B6:306:LYS:HE3	31:B6:306:LYS:HB2	1.77	0.41
35:5E:533:LYS:O	35:5E:537:SER:HB2	2.21	0.41
36:5F:60:LYS:HZ2	36:5F:63:LEU:HD22	1.86	0.41
39:5I:225:LEU:HA	39:5I:225:LEU:HD23	1.87	0.41
45:RJ:274:TYR:OH	45:RJ:306:ASP:OD1	2.29	0.41
48:RN:668:LEU:HD23	48:RN:671:TYR:HD2	1.86	0.41
50:RP:149:GLU:HA	50:RP:152:PHE:CD2	2.56	0.41
3:SA:304:U:H5"	9:SM:136:ARG:HH21	1.86	0.40
6:SH:38:GLY:N	6:SH:48:TYR:O	2.54	0.40
17:3F:212:LYS:HB2	17:3F:212:LYS:HE3	1.88	0.40
19:A4:250:THR:OG1	19:A4:251:ASP:N	2.53	0.40
22:A9:432:LYS:HA	22:A9:432:LYS:HD3	1.85	0.40
23:AE:688:PHE:HB3	23:AE:730:GLN:HE21	1.86	0.40
24:AF:183:LEU:HD12	24:AF:183:LEU:HA	1.85	0.40
24:AF:397:TRP:CZ3	24:AF:425:GLY:HA3	2.56	0.40
26:B1:519:LEU:HD13	26:B1:581:THR:HG22	2.03	0.40
28:B3:678:TRP:CE3	28:B3:697:VAL:HG23	2.56	0.40
28:B3:745:ASP:OD2	35:5E:508:ARG:CD	2.70	0.40
34:5D:70:ARG:HD3	34:5D:78:LEU:HD11	2.02	0.40
40:5J:77:LYS:HA	40:5J:77:LYS:HD2	1.84	0.40
44:RG:176:ARG:HA	44:RG:176:ARG:HD2	1.91	0.40
46:RK:184:ASP:OD1	46:RK:185:ARG:N	2.53	0.40
48:RN:504:ILE:HA	48:RN:507:LEU:HG	2.03	0.40
3:SA:1525:A:N3	3:SA:1589:C:O2'	2.53	0.40
3:SA:1672:G:H2'	3:SA:1673:G:C8	2.55	0.40
4:SF:97:GLU:HB3	4:SF:99:PHE:CE2	2.56	0.40
14:3B:248:ASP:OD1	14:3B:248:ASP:N	2.37	0.40
14:3C:202:ARG:HA	14:3C:202:ARG:HD2	1.96	0.40
16:3E:88:ILE:HA	16:3E:106:ASN:O	2.22	0.40
18:3G:41:THR:HG21	18:3G:66:HIS:CE1	2.55	0.40
18:3H:33:LEU:HD11	18:3H:100:ALA:HB1	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:A4:141:SER:O	19:A4:141:SER:OG	2.34	0.40
23:AE:3:SER:OG	23:AE:4:LEU:N	2.55	0.40
23:AE:328:ASP:N	23:AE:328:ASP:OD1	2.49	0.40
24:AF:57:VAL:HG21	24:AF:327:LEU:HD11	2.04	0.40
24:AF:426:LYS:HB3	24:AF:429:VAL:HB	2.03	0.40
27:B2:639:VAL:HG22	27:B2:653:LEU:HB2	2.03	0.40
28:B3:25:VAL:HG22	28:B3:294:LEU:HD13	2.03	0.40
28:B3:313:LEU:O	28:B3:330:THR:OG1	2.33	0.40
30:BE:265:SER:O	30:BE:265:SER:OG	2.39	0.40
30:BE:290:ILE:HG23	30:BE:291:HIS:CD2	2.56	0.40
31:B6:304:LEU:O	31:B6:308:THR:HG23	2.21	0.40
33:5C:340:LEU:HD22	33:5C:403:VAL:HG11	2.03	0.40
35:5E:362:THR:HA	35:5E:365:LEU:HD23	2.03	0.40
35:5E:445:VAL:HG13	36:5F:81:LYS:HE2	2.03	0.40
40:5J:106:LEU:HD23	40:5J:106:LEU:HA	1.95	0.40
40:5J:195:GLN:O	40:5J:199:THR:HG22	2.22	0.40
49:RO:422:ILE:HD13	49:RO:422:ILE:HA	1.93	0.40
50:RP:100:GLU:OE2	50:RP:146:ASN:ND2	2.54	0.40
52:RS:245:VAL:O	52:RS:249:THR:HG23	2.22	0.40
3:SA:16:G:H4’	41:5K:159:GLY:HA2	2.03	0.40
3:SA:268:C:H2’	3:SA:269:G:C8	2.56	0.40
3:SA:298:C:H5”	4:SF:38:LEU:HG	2.02	0.40
4:SF:106:LYS:HE3	4:SF:106:LYS:HB3	1.88	0.40
8:SK:79:ARG:HE	8:SK:79:ARG:HB3	1.78	0.40
14:3C:165:ALA:HB3	14:3C:168:LYS:HD3	2.04	0.40
15:3D:182:ASP:OD1	15:3D:314:ARG:NH2	2.39	0.40
16:3E:248:THR:OG1	16:3E:251:ASP:OD1	2.29	0.40
16:3E:367:ALA:O	16:3E:371:LEU:HB3	2.22	0.40
17:3F:263:TRP:HA	17:3F:269:SER:O	2.22	0.40
17:3F:465:GLN:HG2	18:3H:6:PRO:HG3	2.03	0.40
19:A4:429:SER:OG	19:A4:430:THR:N	2.52	0.40
25:AG:29:THR:HB	25:AG:198:LEU:HD11	2.03	0.40
25:AG:560:ILE:HG22	25:AG:575:THR:HG22	2.03	0.40
27:B2:687:THR:OG1	27:B2:687:THR:O	2.38	0.40
28:B3:415:TRP:HA	28:B3:425:ASP:O	2.20	0.40
28:B3:690:HIS:CE1	35:5E:519:GLU:HA	2.57	0.40
29:B8:431:GLU:H	29:B8:431:GLU:HG2	1.71	0.40
31:B6:110:TRP:CD2	31:B6:136:LEU:HD13	2.56	0.40
33:5C:114:TYR:HA	33:5C:128:THR:O	2.22	0.40
42:RA:343:ILE:HG22	42:RA:346:LEU:H	1.87	0.40
45:RJ:74:VAL:HG11	45:RJ:82:LYS:HA	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:RJ:563:CYS:SG	46:RK:327:ARG:NH2	2.95	0.40
47:RL:60:LYS:HB3	47:RL:108:TYR:CD2	2.56	0.40
48:RN:424:LYS:O	48:RN:428:VAL:HG23	2.20	0.40
52:RS:446:GLN:HG2	52:RS:447:ARG:HE	1.86	0.40
1:3A:253:G:OP2	18:3H:95:ARG:NH1	2.54	0.40
3:SA:259:U:O2'	3:SA:261:U:OP2	2.32	0.40
3:SA:514:G:H2'	3:SA:515:A:H8	1.87	0.40
3:SA:1463:C:H2'	3:SA:1464:G:O4'	2.22	0.40
3:SA:1464:G:H2'	3:SA:1465:C:C6	2.57	0.40
3:SA:1480:G:H2'	3:SA:1481:C:O4'	2.22	0.40
14:3B:227:PRO:HG2	14:3B:255:LEU:HB3	2.02	0.40
15:3D:86:LEU:HD21	15:3D:98:LEU:HD13	2.03	0.40
15:3D:315:LEU:HD12	15:3D:315:LEU:HA	1.90	0.40
16:3E:215:ARG:NH1	16:3E:244:GLY:O	2.54	0.40
16:3E:299:LEU:HD22	16:3E:320:LEU:HD23	2.03	0.40
16:3E:306:LEU:HG	16:3E:375:ALA:HB2	2.04	0.40
16:3E:359:ILE:HD13	16:3E:398:LEU:HD13	2.03	0.40
19:A4:442:VAL:O	19:A4:448:THR:OG1	2.26	0.40
24:AF:371:GLU:HG3	29:B8:287:SER:OG	2.21	0.40
25:AG:409:LYS:HG2	25:AG:489:ASN:HA	2.03	0.40
26:B1:382:THR:H	35:5E:481:PRO:HB3	1.87	0.40
26:B1:423:ARG:HD3	26:B1:423:ARG:HA	1.88	0.40
28:B3:189:HIS:NE2	28:B3:215:GLY:HA3	2.37	0.40
35:5E:448:LEU:HA	35:5E:451:LEU:HD23	2.02	0.40
36:5F:41:ARG:HA	36:5F:41:ARG:HD2	1.89	0.40
36:5F:102:THR:HG22	36:5F:104:SER:H	1.87	0.40
48:RN:572:LEU:HB3	48:RN:667:LEU:HD13	2.04	0.40
48:RN:710:ILE:HD13	48:RN:710:ILE:HA	1.91	0.40
49:RO:205:ASP:HA	49:RO:206:PRO:HD3	1.89	0.40
49:RO:326:LEU:HA	49:RO:326:LEU:HD12	1.90	0.40
49:RO:384:ALA:HA	49:RO:387:THR:HG22	2.03	0.40
1:3A:59:G:OP1	26:B1:573:ASN:ND2	2.43	0.40
3:SA:56:U:O2	3:SA:91:G:N2	2.54	0.40
7:SJ:191:PHE:HA	7:SJ:194:ARG:HE	1.85	0.40
10:SR:47:LYS:HD2	10:SR:47:LYS:HA	1.93	0.40
12:SZ:13:ILE:HD11	12:SZ:22:GLN:HE21	1.85	0.40
15:3D:59:ALA:HB1	31:B6:292:TYR:HE1	1.87	0.40
17:3F:68:LYS:HE3	17:3F:68:LYS:HB2	1.93	0.40
20:A5:444:ALA:HB2	20:A5:452:LEU:HD12	2.03	0.40
23:AE:677:SER:HA	23:AE:678:PRO:HD3	1.98	0.40
24:AF:178:PRO:HD2	24:AF:223:PRO:HA	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:AG:865:LYS:HE2	25:AG:865:LYS:HB3	1.81	0.40
26:B1:103:LYS:HB3	26:B1:103:LYS:HE3	1.92	0.40
26:B1:298:LEU:HD12	35:5E:474:ILE:HG22	2.04	0.40
27:B2:85:LEU:HD12	27:B2:94:LEU:HD11	2.04	0.40
28:B3:51:LYS:H	28:B3:51:LYS:HG2	1.66	0.40
28:B3:698:LEU:HD23	28:B3:698:LEU:HA	1.92	0.40
33:5C:258:LEU:O	33:5C:267:LEU:N	2.54	0.40
33:5C:307:LYS:HA	33:5C:307:LYS:HD3	1.89	0.40
35:5E:384:ARG:HD2	37:5G:83:ILE:CG1	2.51	0.40
40:5J:121:LEU:HD22	40:5J:141:TRP:HH2	1.87	0.40
45:RJ:286:THR:H	45:RJ:298:VAL:HG12	1.86	0.40
52:RS:258:VAL:O	52:RS:262:ALA:CB	2.69	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
4	SF	227/261 (87%)	197 (87%)	29 (13%)	1 (0%)	34 72
5	SG	211/225 (94%)	195 (92%)	16 (8%)	0	100 100
6	SH	161/236 (68%)	143 (89%)	18 (11%)	0	100 100
7	SJ	162/200 (81%)	140 (86%)	22 (14%)	0	100 100
8	SK	169/197 (86%)	163 (96%)	6 (4%)	0	100 100
9	SM	119/156 (76%)	103 (87%)	16 (13%)	0	100 100
10	SR	123/143 (86%)	112 (91%)	11 (9%)	0	100 100
11	SY	101/145 (70%)	90 (89%)	11 (11%)	0	100 100
12	SZ	100/135 (74%)	87 (87%)	12 (12%)	1 (1%)	15 53
13	Sd	61/67 (91%)	57 (93%)	4 (7%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	3B	236/327 (72%)	222 (94%)	14 (6%)	0	100	100
14	3C	221/327 (68%)	207 (94%)	14 (6%)	0	100	100
15	3D	359/504 (71%)	346 (96%)	13 (4%)	0	100	100
16	3E	427/511 (84%)	387 (91%)	40 (9%)	0	100	100
17	3F	446/573 (78%)	403 (90%)	42 (9%)	1 (0%)	47	81
18	3G	119/126 (94%)	107 (90%)	11 (9%)	1 (1%)	19	59
18	3H	119/126 (94%)	111 (93%)	8 (7%)	0	100	100
19	A4	648/776 (84%)	590 (91%)	58 (9%)	0	100	100
20	A5	504/643 (78%)	465 (92%)	39 (8%)	0	100	100
21	A8	516/713 (72%)	397 (77%)	107 (21%)	12 (2%)	6	36
22	A9	126/575 (22%)	115 (91%)	11 (9%)	0	100	100
23	AE	1496/1769 (85%)	1367 (91%)	129 (9%)	0	100	100
24	AF	489/513 (95%)	442 (90%)	47 (10%)	0	100	100
25	AG	812/896 (91%)	731 (90%)	80 (10%)	1 (0%)	51	85
26	B1	787/923 (85%)	732 (93%)	55 (7%)	0	100	100
27	B2	813/943 (86%)	724 (89%)	87 (11%)	2 (0%)	47	81
28	B3	733/817 (90%)	606 (83%)	125 (17%)	2 (0%)	41	76
29	B8	469/594 (79%)	439 (94%)	30 (6%)	0	100	100
30	BE	814/939 (87%)	765 (94%)	49 (6%)	0	100	100
31	B6	368/440 (84%)	341 (93%)	27 (7%)	0	100	100
32	5B	58/214 (27%)	55 (95%)	3 (5%)	0	100	100
33	5C	407/554 (74%)	377 (93%)	30 (7%)	0	100	100
34	5D	165/250 (66%)	145 (88%)	20 (12%)	0	100	100
35	5E	187/593 (32%)	175 (94%)	10 (5%)	2 (1%)	14	51
36	5F	180/183 (98%)	164 (91%)	16 (9%)	0	100	100
37	5G	217/290 (75%)	203 (94%)	14 (6%)	0	100	100
38	5H	72/610 (12%)	65 (90%)	7 (10%)	0	100	100
39	5I	457/489 (94%)	421 (92%)	36 (8%)	0	100	100
40	5J	147/217 (68%)	136 (92%)	11 (8%)	0	100	100
41	5K	171/189 (90%)	166 (97%)	5 (3%)	0	100	100
42	RA	332/707 (47%)	276 (83%)	56 (17%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
43	RB	132/357 (37%)	117 (89%)	14 (11%)	1 (1%)	19 59
44	RG	212/252 (84%)	182 (86%)	30 (14%)	0	100 100
44	RH	226/252 (90%)	219 (97%)	7 (3%)	0	100 100
45	RJ	784/1183 (66%)	721 (92%)	62 (8%)	1 (0%)	51 85
46	RK	358/367 (98%)	341 (95%)	17 (5%)	0	100 100
47	RL	781/1056 (74%)	664 (85%)	115 (15%)	2 (0%)	41 76
47	RM	738/1056 (70%)	625 (85%)	109 (15%)	4 (0%)	29 68
48	RN	593/810 (73%)	545 (92%)	47 (8%)	1 (0%)	47 81
49	RO	523/552 (95%)	455 (87%)	68 (13%)	0	100 100
50	RP	1516/2493 (61%)	1336 (88%)	180 (12%)	0	100 100
51	RQ	132/899 (15%)	126 (96%)	6 (4%)	0	100 100
52	RS	247/483 (51%)	225 (91%)	22 (9%)	0	100 100
53	RY	35/534 (7%)	29 (83%)	6 (17%)	0	100 100
All	All	20606/29390 (70%)	18552 (90%)	2022 (10%)	32 (0%)	50 81

All (32) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
21	A8	258	PRO
21	A8	309	PRO
21	A8	325	PRO
21	A8	390	PRO
21	A8	392	PRO
21	A8	446	VAL
21	A8	472	ILE
47	RL	744	PRO
47	RM	744	PRO
47	RM	905	PRO
12	SZ	51	GLU
45	RJ	82	LYS
21	A8	235	PRO
25	AG	434	GLN
27	B2	132	THR
28	B3	91	LYS
47	RM	904	LEU
48	RN	285	PRO
17	3F	552	TRP

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Mol	Chain	Res	Type
21	A8	369	ILE
35	5E	476	MET
4	SF	194	THR
27	B2	118	ASN
35	5E	481	PRO
43	RB	274	ILE
47	RL	743	VAL
47	RM	743	VAL
21	A8	439	LYS
28	B3	71	PRO
18	3G	10	PRO
21	A8	306	ILE
21	A8	339	ILE

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
4	SF	196/222 (88%)	190 (97%)	6 (3%)	40 62
5	SG	180/191 (94%)	180 (100%)	0	100 100
6	SH	139/201 (69%)	137 (99%)	2 (1%)	67 81
7	SJ	136/161 (84%)	134 (98%)	2 (2%)	65 80
8	SK	147/166 (89%)	146 (99%)	1 (1%)	84 90
9	SM	110/137 (80%)	108 (98%)	2 (2%)	59 77
10	SR	105/119 (88%)	105 (100%)	0	100 100
11	SY	85/120 (71%)	84 (99%)	1 (1%)	71 84
12	SZ	85/113 (75%)	85 (100%)	0	100 100
13	Sd	56/60 (93%)	56 (100%)	0	100 100
14	3B	201/240 (84%)	201 (100%)	0	100 100
14	3C	190/240 (79%)	187 (98%)	3 (2%)	62 79
15	3D	296/435 (68%)	293 (99%)	3 (1%)	76 86
16	3E	262/433 (60%)	261 (100%)	1 (0%)	91 94

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
17	3F	396/503 (79%)	394 (100%)	2 (0%)	88 93
18	3G	100/104 (96%)	100 (100%)	0	100 100
18	3H	100/104 (96%)	100 (100%)	0	100 100
19	A4	591/713 (83%)	584 (99%)	7 (1%)	71 84
20	A5	433/574 (75%)	432 (100%)	1 (0%)	93 96
21	A8	174/657 (26%)	164 (94%)	10 (6%)	20 47
22	A9	89/533 (17%)	88 (99%)	1 (1%)	73 85
23	AE	708/1633 (43%)	705 (100%)	3 (0%)	91 94
24	AF	437/454 (96%)	433 (99%)	4 (1%)	78 87
25	AG	750/826 (91%)	740 (99%)	10 (1%)	69 82
26	B1	696/812 (86%)	691 (99%)	5 (1%)	84 90
27	B2	712/832 (86%)	707 (99%)	5 (1%)	84 90
28	B3	665/719 (92%)	655 (98%)	10 (2%)	65 80
29	B8	421/529 (80%)	420 (100%)	1 (0%)	93 96
30	BE	718/819 (88%)	714 (99%)	4 (1%)	86 92
31	B6	251/414 (61%)	247 (98%)	4 (2%)	62 79
32	5B	57/196 (29%)	55 (96%)	2 (4%)	36 60
33	5C	349/480 (73%)	347 (99%)	2 (1%)	86 92
34	5D	156/234 (67%)	154 (99%)	2 (1%)	69 82
35	5E	175/535 (33%)	162 (93%)	13 (7%)	13 40
36	5F	171/172 (99%)	169 (99%)	2 (1%)	71 84
37	5G	194/258 (75%)	190 (98%)	4 (2%)	53 72
38	5H	63/538 (12%)	63 (100%)	0	100 100
39	5I	416/443 (94%)	414 (100%)	2 (0%)	88 93
40	5J	140/200 (70%)	140 (100%)	0	100 100
41	5K	157/169 (93%)	157 (100%)	0	100 100
42	RA	303/636 (48%)	300 (99%)	3 (1%)	76 86
43	RB	117/315 (37%)	114 (97%)	3 (3%)	46 67
44	RG	195/222 (88%)	193 (99%)	2 (1%)	76 86
44	RH	206/222 (93%)	204 (99%)	2 (1%)	76 86
45	RJ	683/1039 (66%)	676 (99%)	7 (1%)	76 86

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
46	RK	307/312 (98%)	303 (99%)	4 (1%)	69 82
47	RL	164/934 (18%)	162 (99%)	2 (1%)	71 84
48	RN	422/732 (58%)	421 (100%)	1 (0%)	93 96
49	RO	329/506 (65%)	328 (100%)	1 (0%)	92 95
50	RP	224/2307 (10%)	222 (99%)	2 (1%)	78 87
51	RQ	81/808 (10%)	80 (99%)	1 (1%)	71 84
52	RS	225/424 (53%)	225 (100%)	0	100 100
53	RY	31/482 (6%)	30 (97%)	1 (3%)	39 61
All	All	14594/25228 (58%)	14450 (99%)	144 (1%)	77 86

All (144) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	SF	108	ARG
4	SF	143	ASP
4	SF	206	ASP
4	SF	207	LEU
4	SF	211	LYS
4	SF	240	LYS
6	SH	71	THR
6	SH	92	ARG
7	SJ	165	LEU
7	SJ	195	ARG
8	SK	57	ARG
9	SM	43	LYS
9	SM	136	ARG
11	SY	97	ASP
14	3C	237	VAL
14	3C	262	LYS
14	3C	306	LEU
15	3D	103	LYS
15	3D	129	ARG
15	3D	285	ARG
16	3E	265	PHE
17	3F	370	ARG
17	3F	506	ARG
19	A4	190	VAL
19	A4	282	ASP
19	A4	423	LYS

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Mol	Chain	Res	Type
19	A4	436	ASP
19	A4	648	PHE
19	A4	739	LYS
19	A4	776	PHE
20	A5	434	THR
21	A8	505	LYS
21	A8	526	LEU
21	A8	536	ARG
21	A8	549	ARG
21	A8	563	LEU
21	A8	576	ARG
21	A8	633	GLN
21	A8	634	LEU
21	A8	636	GLN
21	A8	671	ARG
22	A9	483	LYS
23	AE	617	LYS
23	AE	645	ARG
23	AE	699	ARG
24	AF	199	ARG
24	AF	261	VAL
24	AF	432	TYR
24	AF	508	LEU
25	AG	141	LEU
25	AG	259	VAL
25	AG	336	ARG
25	AG	368	ASP
25	AG	421	LYS
25	AG	434	GLN
25	AG	435	ASP
25	AG	436	PHE
25	AG	615	TRP
25	AG	716	ARG
26	B1	164	THR
26	B1	249	ARG
26	B1	337	TYR
26	B1	418	ARG
26	B1	519	LEU
27	B2	47	GLU
27	B2	75	ARG
27	B2	144	ASN
27	B2	576	VAL

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Mol	Chain	Res	Type
27	B2	588	ILE
28	B3	30	LYS
28	B3	67	LEU
28	B3	95	VAL
28	B3	212	LEU
28	B3	222	LEU
28	B3	358	ASN
28	B3	533	LYS
28	B3	534	ARG
28	B3	554	ASP
28	B3	570	THR
29	B8	22	LEU
30	BE	309	ILE
30	BE	570	ILE
30	BE	728	ARG
30	BE	743	ARG
31	B6	4	THR
31	B6	67	ARG
31	B6	106	ASP
31	B6	133	TYR
32	5B	158	LYS
32	5B	211	LEU
33	5C	153	THR
33	5C	392	VAL
34	5D	18	GLN
34	5D	161	ARG
35	5E	302	LYS
35	5E	345	LEU
35	5E	428	GLU
35	5E	448	LEU
35	5E	451	LEU
35	5E	494	GLU
35	5E	515	MET
35	5E	516	SER
35	5E	517	LYS
35	5E	520	LEU
35	5E	522	ARG
35	5E	537	SER
35	5E	538	LYS
36	5F	48	ASN
36	5F	75	GLU
37	5G	211	ASN

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Mol	Chain	Res	Type
37	5G	216	LYS
37	5G	257	ARG
37	5G	282	ARG
39	5I	250	ARG
39	5I	417	ARG
42	RA	76	THR
42	RA	210	ARG
42	RA	227	ARG
43	RB	331	LYS
43	RB	338	THR
43	RB	341	ARG
44	RG	32	THR
44	RG	100	LEU
44	RH	82	ARG
44	RH	197	ASP
45	RJ	214	ARG
45	RJ	566	ARG
45	RJ	869	THR
45	RJ	973	ARG
45	RJ	976	ILE
45	RJ	1128	LYS
45	RJ	1141	LYS
46	RK	90	CYS
46	RK	214	LYS
46	RK	335	THR
46	RK	340	LYS
47	RL	9	ARG
47	RL	83	ARG
48	RN	766	ARG
49	RO	493	TYR
50	RP	201	ARG
50	RP	1749	LYS
51	RQ	330	THR
53	RY	487	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (248) such sidechains are listed below:

Mol	Chain	Res	Type
5	SG	63	GLN
5	SG	169	ASN
5	SG	186	ASN
6	SH	140	ASN

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Mol	Chain	Res	Type
6	SH	201	GLN
7	SJ	32	GLN
7	SJ	84	HIS
7	SJ	103	GLN
7	SJ	159	GLN
9	SM	81	HIS
10	SR	32	ASN
10	SR	74	HIS
14	3B	91	HIS
14	3B	183	HIS
14	3B	258	HIS
15	3D	39	ASN
15	3D	85	ASN
15	3D	168	GLN
15	3D	213	ASN
16	3E	191	HIS
16	3E	256	ASN
16	3E	286	ASN
16	3E	289	GLN
16	3E	400	GLN
17	3F	155	ASN
17	3F	235	HIS
17	3F	525	GLN
17	3F	561	ASN
18	3G	19	GLN
18	3G	29	ASN
18	3G	38	ASN
18	3H	5	ASN
18	3H	18	GLN
18	3H	45	ASN
19	A4	53	HIS
19	A4	179	HIS
19	A4	279	HIS
19	A4	292	ASN
19	A4	317	ASN
19	A4	426	GLN
19	A4	438	GLN
19	A4	452	HIS
19	A4	529	ASN
19	A4	589	ASN
20	A5	32	GLN
20	A5	67	ASN

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Mol	Chain	Res	Type
20	A5	115	ASN
20	A5	293	ASN
20	A5	302	ASN
20	A5	316	ASN
20	A5	324	ASN
20	A5	333	ASN
20	A5	443	GLN
21	A8	588	GLN
22	A9	478	ASN
22	A9	509	GLN
23	AE	14	ASN
23	AE	141	ASN
23	AE	166	ASN
23	AE	219	ASN
23	AE	224	ASN
23	AE	258	HIS
23	AE	477	ASN
23	AE	480	ASN
23	AE	545	ASN
23	AE	673	ASN
23	AE	730	GLN
24	AF	48	ASN
24	AF	64	GLN
24	AF	125	HIS
24	AF	133	HIS
24	AF	156	ASN
24	AF	289	ASN
24	AF	481	GLN
25	AG	50	ASN
25	AG	105	HIS
25	AG	190	GLN
25	AG	266	ASN
25	AG	269	GLN
25	AG	325	GLN
25	AG	332	GLN
25	AG	370	GLN
25	AG	375	ASN
25	AG	393	ASN
25	AG	407	ASN
25	AG	410	ASN
25	AG	453	HIS
25	AG	467	GLN

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Mol	Chain	Res	Type
25	AG	489	ASN
25	AG	568	ASN
25	AG	579	ASN
25	AG	605	ASN
25	AG	669	ASN
25	AG	706	HIS
25	AG	881	ASN
26	B1	92	HIS
26	B1	142	HIS
26	B1	190	HIS
26	B1	201	HIS
26	B1	297	GLN
26	B1	303	ASN
26	B1	349	ASN
26	B1	386	HIS
26	B1	452	ASN
26	B1	456	HIS
26	B1	483	GLN
26	B1	549	GLN
26	B1	552	ASN
26	B1	795	ASN
26	B1	813	HIS
26	B1	837	ASN
26	B1	842	ASN
27	B2	172	GLN
27	B2	390	GLN
27	B2	455	GLN
27	B2	524	HIS
27	B2	596	ASN
27	B2	628	HIS
27	B2	629	ASN
27	B2	657	GLN
27	B2	770	ASN
27	B2	791	ASN
27	B2	856	ASN
27	B2	879	GLN
28	B3	241	GLN
28	B3	337	HIS
28	B3	387	HIS
28	B3	519	ASN
28	B3	667	GLN
28	B3	749	ASN

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Mol	Chain	Res	Type
28	B3	753	HIS
28	B3	767	HIS
28	B3	792	HIS
29	B8	162	ASN
29	B8	167	GLN
29	B8	224	ASN
29	B8	282	ASN
29	B8	311	ASN
29	B8	352	GLN
29	B8	472	GLN
29	B8	492	ASN
29	B8	528	GLN
29	B8	592	ASN
30	BE	163	GLN
30	BE	289	ASN
30	BE	481	ASN
30	BE	501	HIS
30	BE	514	ASN
30	BE	627	ASN
30	BE	708	ASN
30	BE	877	ASN
30	BE	911	ASN
30	BE	916	HIS
31	B6	90	GLN
31	B6	115	ASN
31	B6	166	ASN
31	B6	287	ASN
32	5B	207	ASN
33	5C	101	ASN
33	5C	124	HIS
33	5C	133	HIS
33	5C	151	ASN
33	5C	164	GLN
33	5C	170	GLN
33	5C	371	HIS
33	5C	394	HIS
34	5D	42	HIS
34	5D	68	HIS
34	5D	144	ASN
34	5D	153	ASN
35	5E	303	GLN
35	5E	434	HIS

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Mol	Chain	Res	Type
35	5E	486	ASN
35	5E	493	GLN
36	5F	7	HIS
36	5F	48	ASN
36	5F	144	ASN
36	5F	153	ASN
36	5F	163	ASN
37	5G	118	ASN
37	5G	145	HIS
37	5G	211	ASN
37	5G	235	GLN
38	5H	560	ASN
39	5I	20	GLN
39	5I	46	ASN
39	5I	109	HIS
39	5I	242	ASN
39	5I	260	GLN
39	5I	336	HIS
39	5I	371	ASN
39	5I	406	HIS
39	5I	460	GLN
40	5J	135	HIS
40	5J	184	ASN
41	5K	29	GLN
41	5K	43	ASN
42	RA	82	HIS
42	RA	96	HIS
42	RA	119	ASN
42	RA	147	ASN
42	RA	230	GLN
42	RA	268	GLN
42	RA	282	ASN
42	RA	339	HIS
43	RB	314	ASN
43	RB	318	ASN
44	RG	105	ASN
44	RG	125	ASN
44	RH	69	ASN
44	RH	125	ASN
44	RH	250	ASN
45	RJ	126	ASN
45	RJ	157	ASN

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Mol	Chain	Res	Type
45	RJ	276	HIS
45	RJ	289	HIS
45	RJ	778	GLN
45	RJ	1082	GLN
46	RK	16	ASN
46	RK	334	ASN
47	RL	16	ASN
47	RL	75	ASN
47	RL	133	ASN
48	RN	8	ASN
48	RN	56	ASN
48	RN	89	GLN
48	RN	482	GLN
48	RN	703	GLN
48	RN	771	ASN
48	RN	797	ASN
49	RO	192	GLN
49	RO	266	ASN
49	RO	268	GLN
49	RO	273	GLN
49	RO	304	ASN
49	RO	306	GLN
49	RO	343	GLN
49	RO	434	ASN
49	RO	472	HIS
49	RO	474	HIS
50	RP	58	ASN
50	RP	1686	GLN
50	RP	1702	HIS
50	RP	1707	HIS
51	RQ	344	GLN
51	RQ	839	ASN
51	RQ	867	GLN
51	RQ	876	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	3A	169/333 (50%)	55 (32%)	8 (4%)
2	5A	164/700 (23%)	51 (31%)	4 (2%)
3	SA	935/1808 (51%)	373 (39%)	16 (1%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
All	All	1268/2841 (44%)	479 (37%)	28 (2%)

All (479) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	3A	2	U
1	3A	14	A
1	3A	15	U
1	3A	24	U
1	3A	25	U
1	3A	27	U
1	3A	28	A
1	3A	30	A
1	3A	33	A
1	3A	35	U
1	3A	38	U
1	3A	56	A
1	3A	60	A
1	3A	61	G
1	3A	87	G
1	3A	88	U
1	3A	89	C
1	3A	90	C
1	3A	91	C
1	3A	97	C
1	3A	98	U
1	3A	99	U
1	3A	101	G
1	3A	103	A
1	3A	111	G
1	3A	115	G
1	3A	198	U
1	3A	199	G
1	3A	201	C
1	3A	204	U
1	3A	205	G
1	3A	206	C
1	3A	246	A
1	3A	248	G
1	3A	249	G
1	3A	252	C
1	3A	264	C

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Mol	Chain	Res	Type
1	3A	267	A
1	3A	305	G
1	3A	310	G
1	3A	311	G
1	3A	313	A
1	3A	314	C
1	3A	317	A
1	3A	318	U
1	3A	319	G
1	3A	320	G
1	3A	321	C
1	3A	322	A
1	3A	323	G
1	3A	324	U
1	3A	325	C
1	3A	328	A
1	3A	329	C
1	3A	332	G
2	5A	5	G
2	5A	6	A
2	5A	7	A
2	5A	8	A
2	5A	11	A
2	5A	13	U
2	5A	14	U
2	5A	15	G
2	5A	63	G
2	5A	64	U
2	5A	70	A
2	5A	83	U
2	5A	86	C
2	5A	87	C
2	5A	90	G
2	5A	279	A
2	5A	280	A
2	5A	281	G
2	5A	292	A
2	5A	294	U
2	5A	304	U
2	5A	305	A
2	5A	309	A
2	5A	310	U

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Mol	Chain	Res	Type
2	5A	311	C
2	5A	312	U
2	5A	313	A
2	5A	468	A
2	5A	472	A
2	5A	474	A
2	5A	481	U
2	5A	482	A
2	5A	485	G
2	5A	487	A
2	5A	488	U
2	5A	490	G
2	5A	491	U
2	5A	493	A
2	5A	536	A
2	5A	537	G
2	5A	539	A
2	5A	540	U
2	5A	541	U
2	5A	542	U
2	5A	548	A
2	5A	549	G
2	5A	583	U
2	5A	586	A
2	5A	587	G
2	5A	589	U
2	5A	591	U
3	SA	-6	A
3	SA	-5	G
3	SA	-4	A
3	SA	-1	G
3	SA	0	U
3	SA	1	U
3	SA	2	A
3	SA	17	C
3	SA	18	C
3	SA	19	A
3	SA	21	U
3	SA	23	G
3	SA	25	C
3	SA	26	A
3	SA	29	U

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Mol	Chain	Res	Type
3	SA	35	U
3	SA	36	C
3	SA	37	U
3	SA	50	C
3	SA	51	A
3	SA	52	U
3	SA	53	G
3	SA	55	A
3	SA	56	U
3	SA	57	G
3	SA	60	U
3	SA	61	A
3	SA	63	G
3	SA	65	A
3	SA	66	U
3	SA	67	A
3	SA	68	A
3	SA	69	G
3	SA	72	A
3	SA	73	U
3	SA	74	U
3	SA	75	U
3	SA	77	U
3	SA	81	G
3	SA	85	A
3	SA	92	A
3	SA	96	G
3	SA	97	C
3	SA	100	A
3	SA	102	U
3	SA	103	A
3	SA	104	A
3	SA	105	A
3	SA	106	U
3	SA	114	C
3	SA	115	G
3	SA	116	U
3	SA	119	A
3	SA	127	G
3	SA	128	U
3	SA	129	U
3	SA	130	C

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Mol	Chain	Res	Type
3	SA	131	C
3	SA	141	U
3	SA	145	A
3	SA	146	U
3	SA	147	A
3	SA	149	C
3	SA	153	G
3	SA	159	U
3	SA	160	C
3	SA	161	U
3	SA	168	A
3	SA	174	U
3	SA	175	G
3	SA	176	C
3	SA	177	U
3	SA	182	A
3	SA	183	U
3	SA	184	C
3	SA	187	G
3	SA	188	A
3	SA	190	C
3	SA	191	C
3	SA	192	U
3	SA	193	U
3	SA	194	U
3	SA	195	G
3	SA	197	A
3	SA	202	A
3	SA	203	U
3	SA	204	G
3	SA	206	A
3	SA	210	A
3	SA	211	U
3	SA	214	G
3	SA	226	A
3	SA	228	G
3	SA	230	C
3	SA	233	C
3	SA	234	G
3	SA	236	A
3	SA	237	C
3	SA	238	U

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Mol	Chain	Res	Type
3	SA	239	C
3	SA	240	U
3	SA	241	U
3	SA	242	U
3	SA	243	G
3	SA	254	A
3	SA	256	A
3	SA	258	C
3	SA	261	U
3	SA	262	U
3	SA	265	A
3	SA	266	A
3	SA	267	U
3	SA	272	U
3	SA	273	G
3	SA	275	C
3	SA	276	C
3	SA	277	U
3	SA	278	U
3	SA	279	G
3	SA	280	U
3	SA	281	G
3	SA	283	U
3	SA	290	G
3	SA	308	C
3	SA	309	C
3	SA	311	U
3	SA	312	A
3	SA	316	A
3	SA	319	U
3	SA	320	U
3	SA	321	C
3	SA	324	U
3	SA	325	G
3	SA	333	A
3	SA	334	G
3	SA	337	G
3	SA	338	C
3	SA	350	U
3	SA	352	A
3	SA	355	G
3	SA	357	G

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Mol	Chain	Res	Type
3	SA	359	A
3	SA	360	A
3	SA	361	C
3	SA	362	G
3	SA	365	G
3	SA	366	A
3	SA	369	A
3	SA	371	G
3	SA	373	G
3	SA	374	U
3	SA	375	U
3	SA	377	G
3	SA	379	U
3	SA	382	C
3	SA	383	G
3	SA	386	G
3	SA	387	A
3	SA	390	G
3	SA	400	A
3	SA	401	A
3	SA	402	C
3	SA	403	G
3	SA	411	C
3	SA	416	A
3	SA	417	A
3	SA	418	G
3	SA	419	G
3	SA	421	A
3	SA	422	G
3	SA	423	G
3	SA	424	C
3	SA	425	A
3	SA	426	G
3	SA	429	G
3	SA	436	A
3	SA	437	A
3	SA	439	U
3	SA	440	U
3	SA	441	A
3	SA	444	C
3	SA	445	A
3	SA	448	C

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Mol	Chain	Res	Type
3	SA	454	U
3	SA	455	C
3	SA	456	A
3	SA	457	G
3	SA	468	A
3	SA	469	C
3	SA	470	A
3	SA	471	A
3	SA	473	A
3	SA	477	A
3	SA	480	G
3	SA	486	G
3	SA	487	G
3	SA	496	G
3	SA	501	U
3	SA	502	U
3	SA	505	A
3	SA	506	A
3	SA	514	G
3	SA	520	A
3	SA	534	A
3	SA	538	A
3	SA	539	G
3	SA	541	A
3	SA	542	A
3	SA	543	C
3	SA	545	A
3	SA	557	G
3	SA	558	U
3	SA	563	U
3	SA	564	G
3	SA	565	C
3	SA	570	A
3	SA	572	C
3	SA	574	G
3	SA	575	C
3	SA	578	U
3	SA	579	A
3	SA	580	A
3	SA	583	C
3	SA	584	C
3	SA	585	A

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Mol	Chain	Res	Type
3	SA	586	G
3	SA	587	C
3	SA	594	A
3	SA	595	G
3	SA	602	U
3	SA	603	U
3	SA	604	A
3	SA	606	A
3	SA	608	U
3	SA	609	U
3	SA	610	G
3	SA	611	U
3	SA	612	U
3	SA	613	G
3	SA	614	C
3	SA	615	A
3	SA	616	G
3	SA	1106	U
3	SA	1107	G
3	SA	1108	G
3	SA	1109	G
3	SA	1110	G
3	SA	1111	G
3	SA	1114	G
3	SA	1118	G
3	SA	1119	G
3	SA	1122	G
3	SA	1125	A
3	SA	1126	G
3	SA	1127	G
3	SA	1128	C
3	SA	1129	U
3	SA	1131	A
3	SA	1132	A
3	SA	1145	U
3	SA	1146	G
3	SA	1158	C
3	SA	1164	G
3	SA	1178	G
3	SA	1191	U
3	SA	1192	C
3	SA	1193	A

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Mol	Chain	Res	Type
3	SA	1195	C
3	SA	1196	A
3	SA	1197	C
3	SA	1198	G
3	SA	1199	G
3	SA	1200	G
3	SA	1201	G
3	SA	1202	A
3	SA	1205	C
3	SA	1206	U
3	SA	1208	A
3	SA	1210	C
3	SA	1213	G
3	SA	1217	A
3	SA	1218	G
3	SA	1219	A
3	SA	1220	C
3	SA	1223	A
3	SA	1227	A
3	SA	1228	G
3	SA	1229	G
3	SA	1230	A
3	SA	1232	U
3	SA	1233	G
3	SA	1235	C
3	SA	1236	A
3	SA	1252	C
3	SA	1253	U
3	SA	1254	U
3	SA	1255	G
3	SA	1258	U
3	SA	1263	G
3	SA	1266	U
3	SA	1268	G
3	SA	1271	G
3	SA	1272	U
3	SA	1273	G
3	SA	1275	A
3	SA	1276	U
3	SA	1436	A
3	SA	1440	C
3	SA	1441	C

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Mol	Chain	Res	Type
3	SA	1442	U
3	SA	1443	U
3	SA	1449	U
3	SA	1450	U
3	SA	1453	G
3	SA	1457	C
3	SA	1461	C
3	SA	1469	A
3	SA	1472	C
3	SA	1473	U
3	SA	1474	G
3	SA	1475	A
3	SA	1476	C
3	SA	1482	C
3	SA	1488	G
3	SA	1492	A
3	SA	1522	U
3	SA	1523	G
3	SA	1524	A
3	SA	1527	C
3	SA	1533	C
3	SA	1535	U
3	SA	1536	G
3	SA	1537	C
3	SA	1539	G
3	SA	1569	A
3	SA	1570	A
3	SA	1573	A
3	SA	1582	U
3	SA	1584	G
3	SA	1590	G
3	SA	1594	G
3	SA	1595	U
3	SA	1596	C
3	SA	1601	G
3	SA	1602	C
3	SA	1607	G
3	SA	1614	A
3	SA	1618	C
3	SA	1628	U
3	SA	1630	U
3	SA	1633	A

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Mol	Chain	Res	Type
3	SA	1651	A
3	SA	1655	A
3	SA	1657	U
3	SA	1658	G
3	SA	1659	A
3	SA	1661	U
3	SA	1665	U
3	SA	1670	G
3	SA	1728	A
3	SA	1731	A
3	SA	1732	A
3	SA	1736	G
3	SA	1737	G
3	SA	1742	U
3	SA	1743	U
3	SA	1745	G
3	SA	1749	A
3	SA	1750	A
3	SA	1755	A
3	SA	1756	A
3	SA	1757	G
3	SA	1758	U

All (28) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	3A	97	C
1	3A	98	U
1	3A	198	U
1	3A	248	G
1	3A	312	U
1	3A	318	U
1	3A	322	A
1	3A	323	G
2	5A	312	U
2	5A	487	A
2	5A	492	G
2	5A	536	A
3	SA	-7	A
3	SA	0	U
3	SA	56	U
3	SA	68	A

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Mol	Chain	Res	Type
3	SA	272	U
3	SA	372	G
3	SA	401	A
3	SA	417	A
3	SA	538	A
3	SA	542	A
3	SA	579	A
3	SA	602	U
3	SA	1197	C
3	SA	1521	G
3	SA	1594	G
3	SA	1632	C

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
56	GTP	RJ	1201	57	26,34,34	0.94	2 (7%)	32,54,54	0.92	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
56	GTP	RJ	1201	57	-	3/18/38/38	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
56	RJ	1201	GTP	C5-C6	-2.47	1.42	1.47
56	RJ	1201	GTP	C8-N7	-2.05	1.31	1.35

There are no bond angle outliers.

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
56	RJ	1201	GTP	O4'-C4'-C5'-O5'
56	RJ	1201	GTP	C3'-C4'-C5'-O5'
56	RJ	1201	GTP	C4'-C5'-O5'-PA

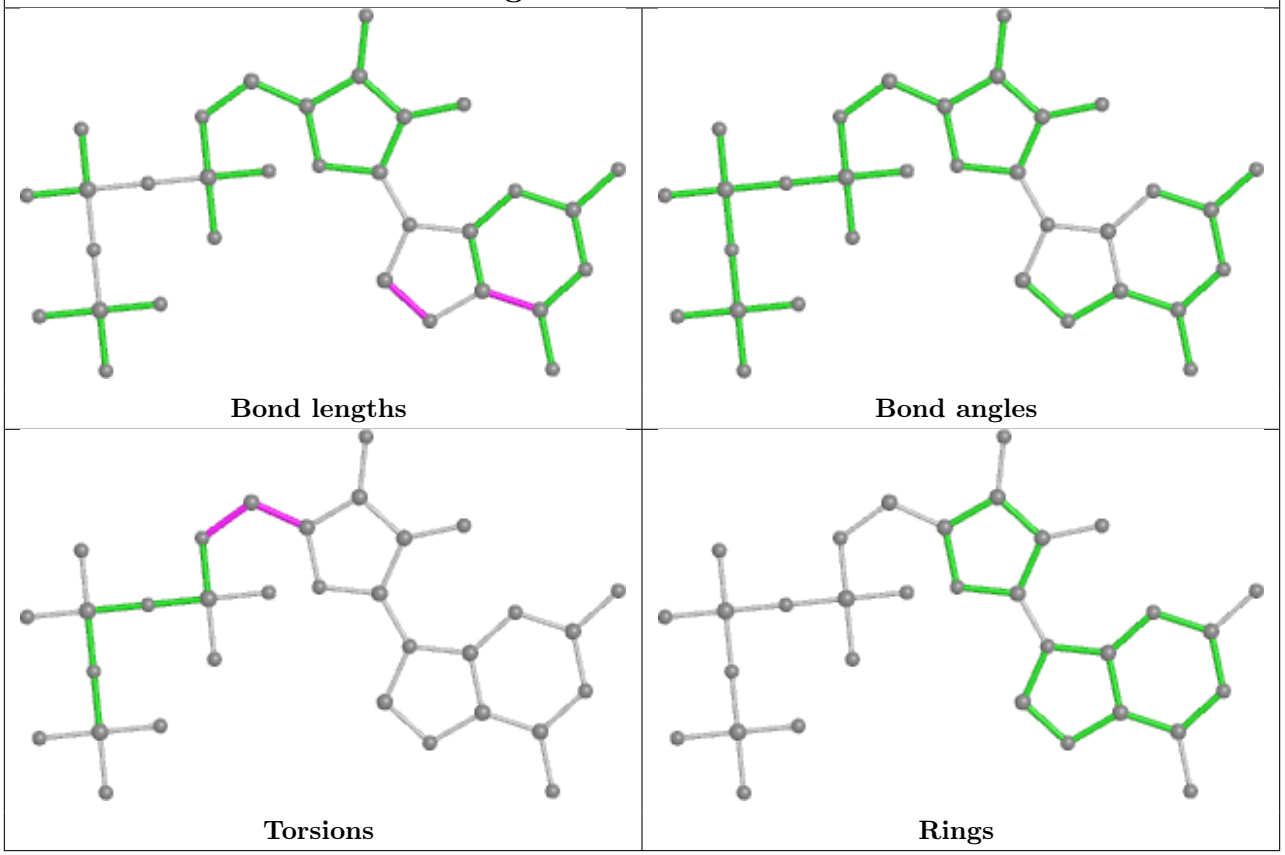
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
56	RJ	1201	GTP	1	0

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

Ligand GTP RJ 1201



5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

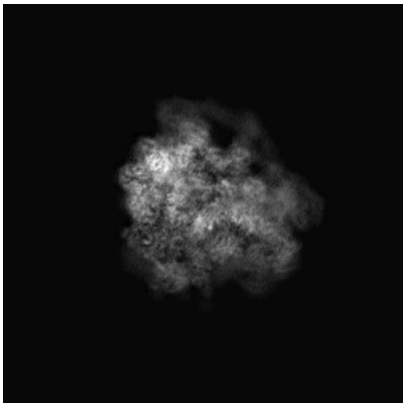
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-0955. These allow visual inspection of the internal detail of the map and identification of artifacts.

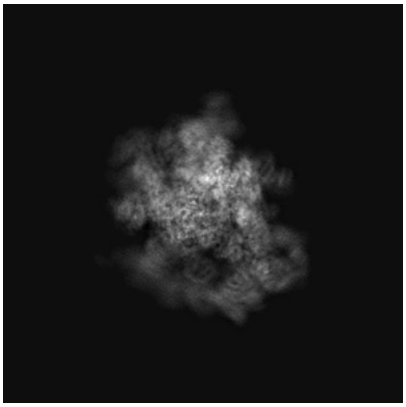
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

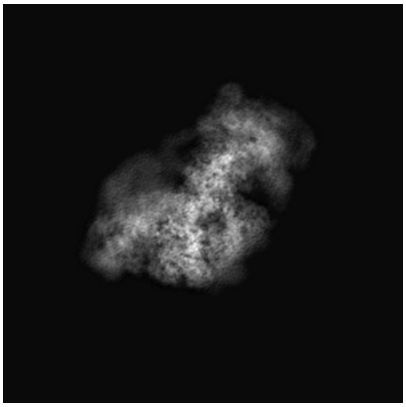
6.1.1 Primary map



X



Y



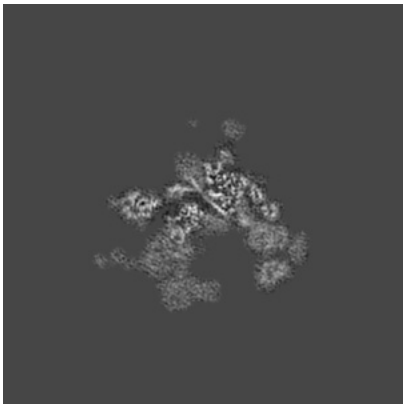
Z

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

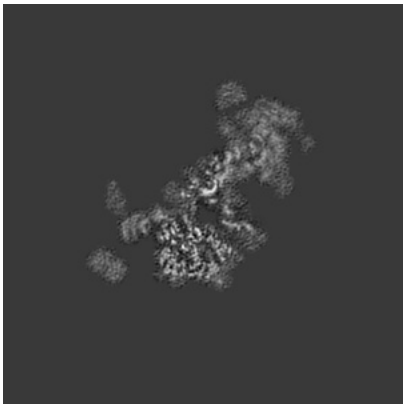
6.2 Central slices

6.2.1 Primary map

X Index: 224



Y Index: 224

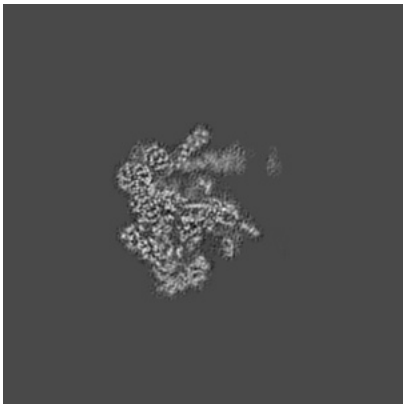


Z Index: 224

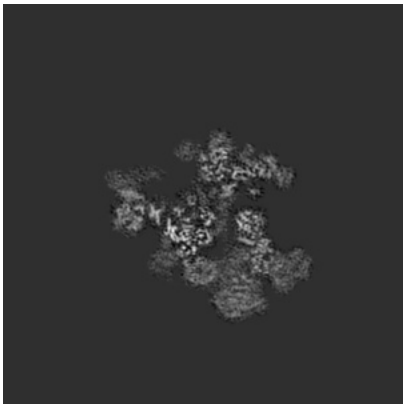
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

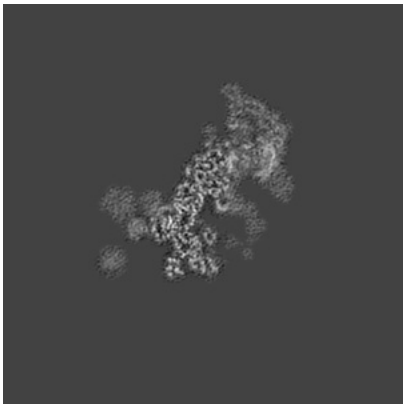
6.3.1 Primary map



X Index: 212



Y Index: 197

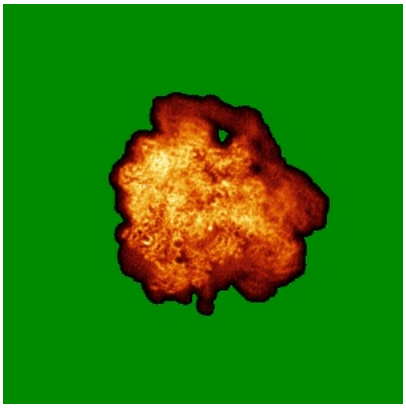


Z Index: 206

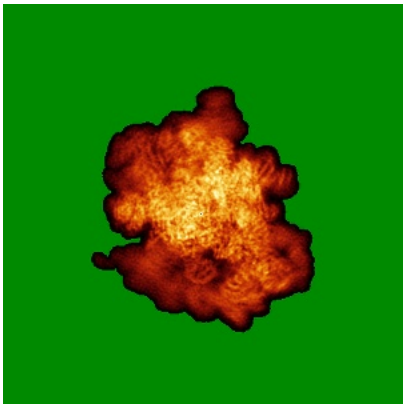
The images above show the largest variance slices of the map in three orthogonal directions.

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

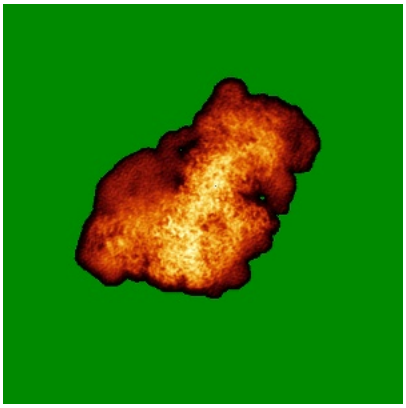
6.4.1 Primary map



X



Y

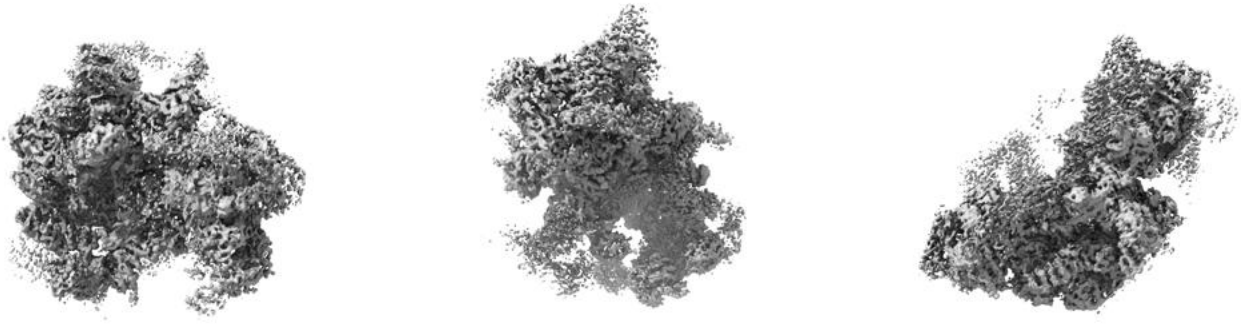


Z

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

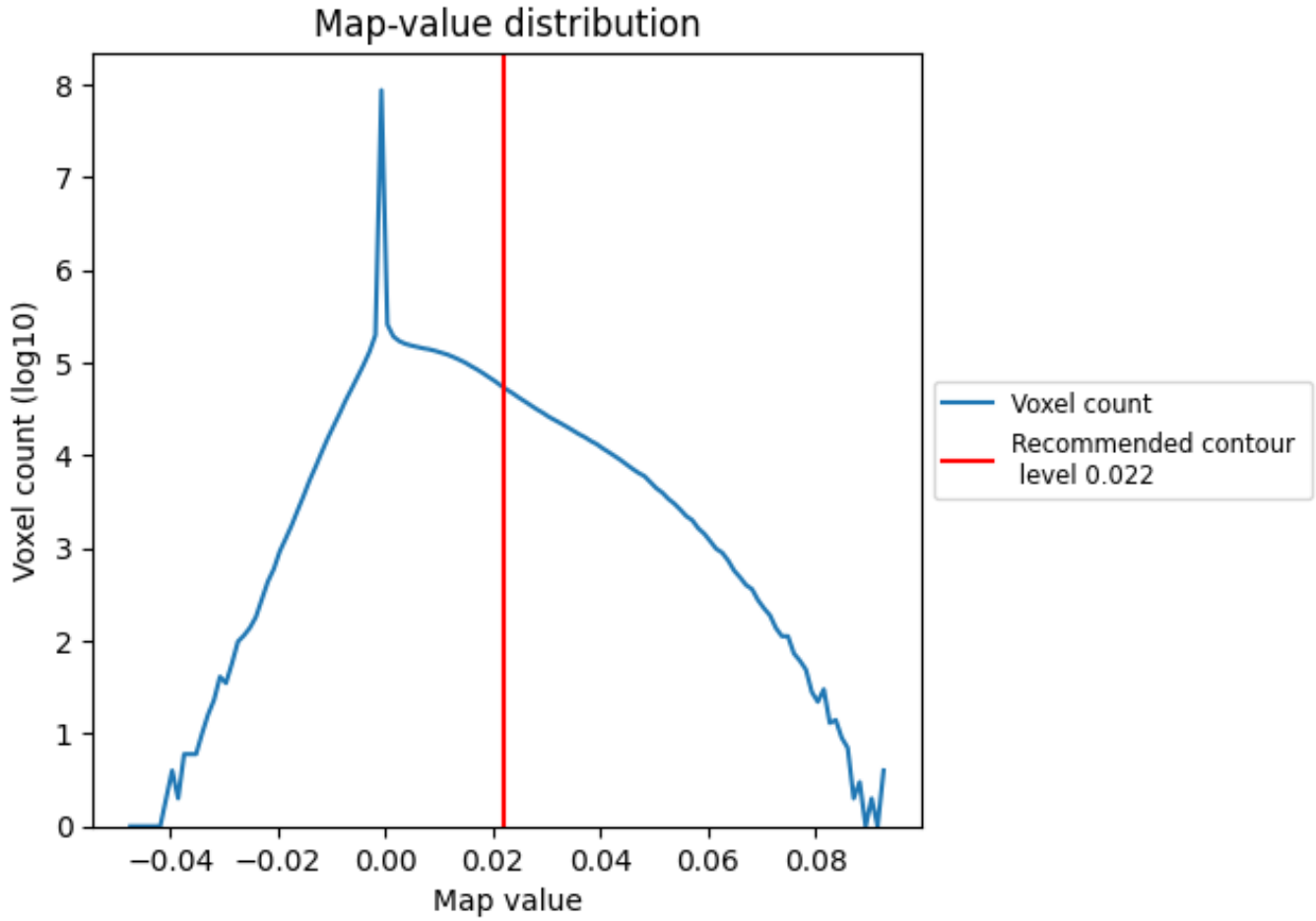
6.6 Mask visualisation (i)

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

7 Map analysis

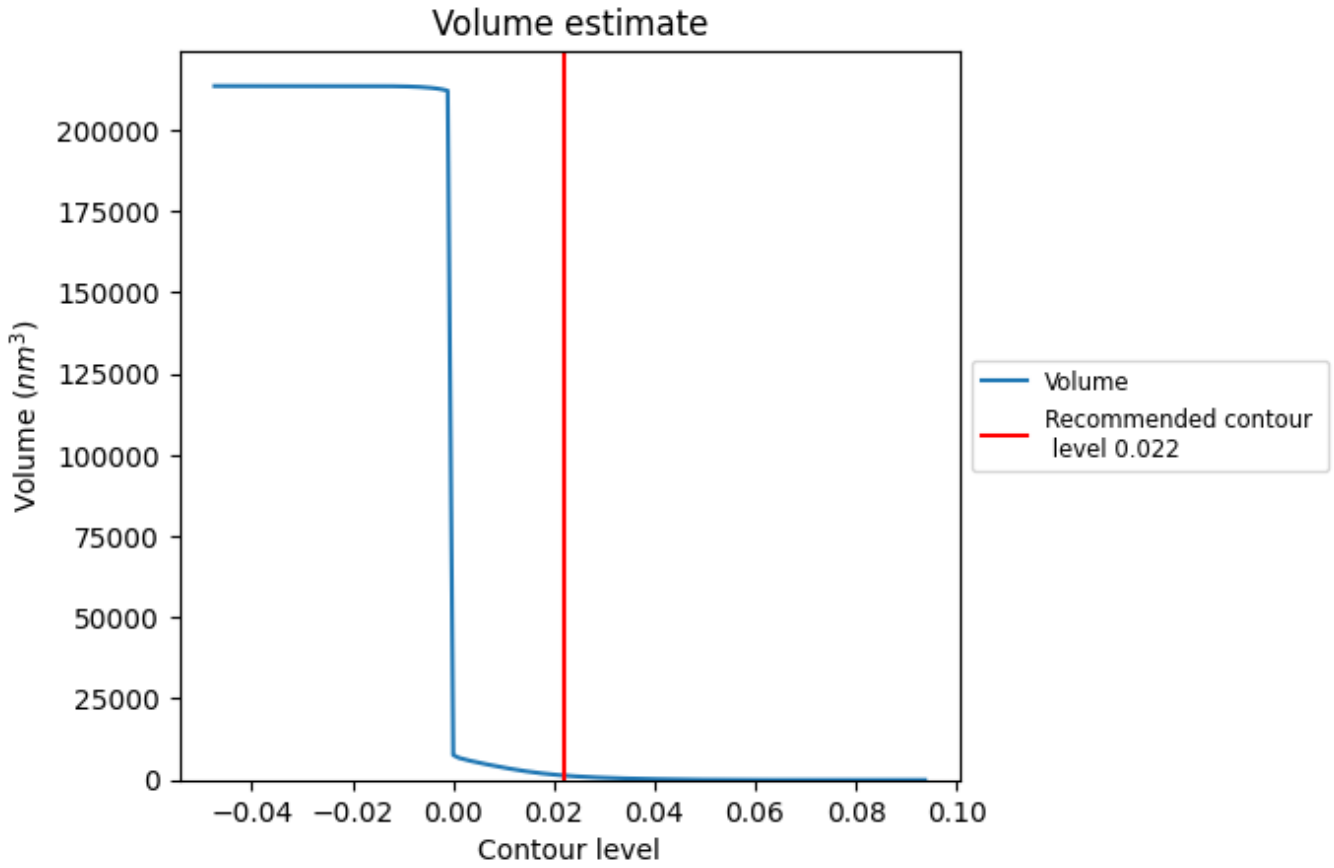
This section contains the results of statistical analysis of the map.

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.

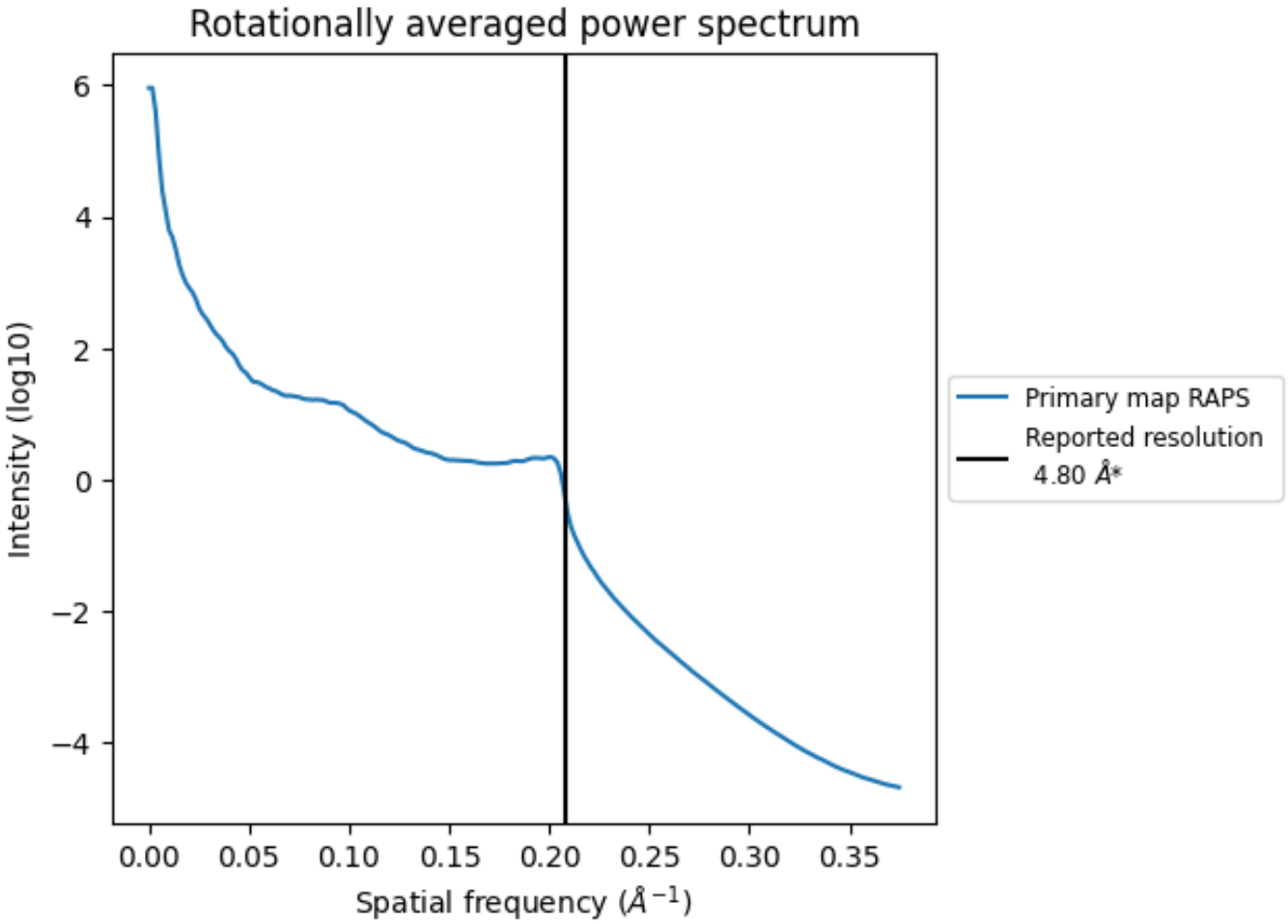
7.2 Volume estimate



The volume at the recommended contour level is 1377 nm^3; this corresponds to an approximate mass of 1244 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 0.208 Å^{-1}

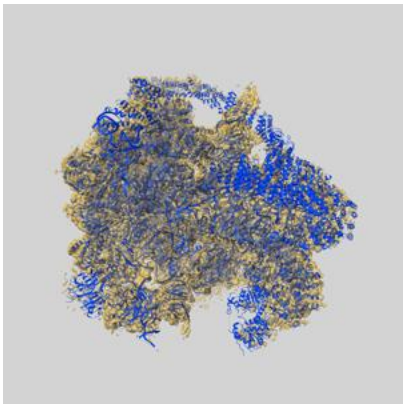
8 Fourier-Shell correlation (i)

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

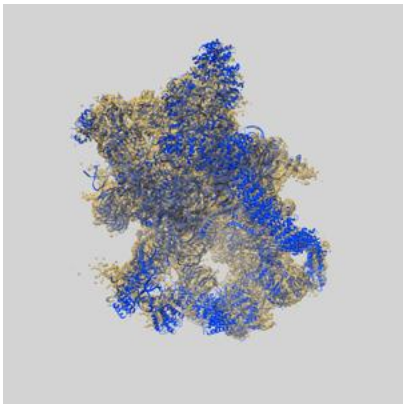
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-0955 and PDB model 6LQV. Per-residue inclusion information can be found in section 3 on page 15.

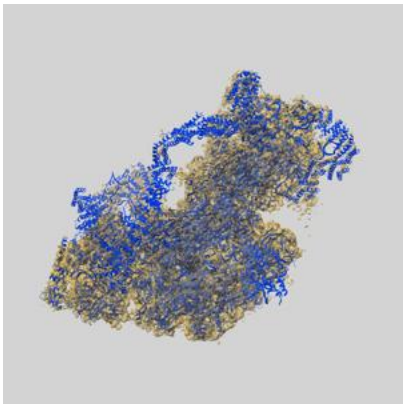
9.1 Map-model overlay



X



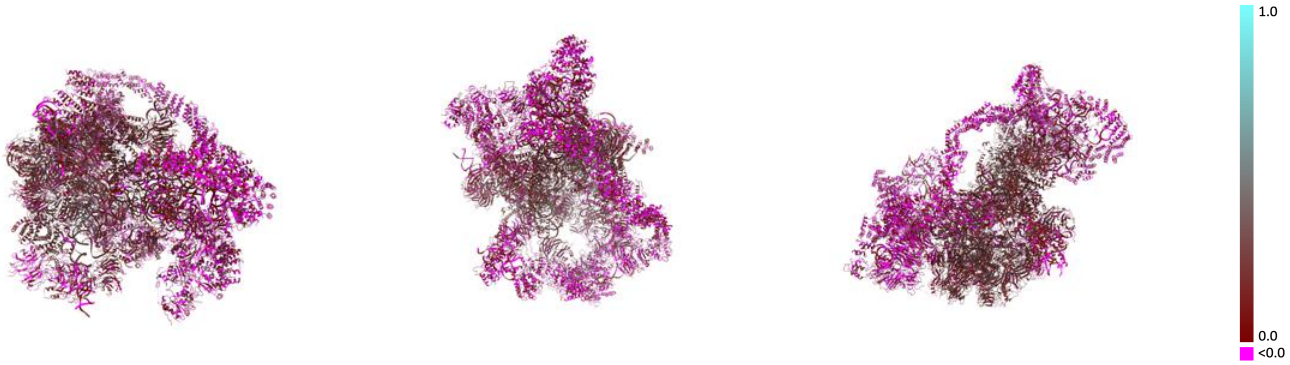
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.022 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

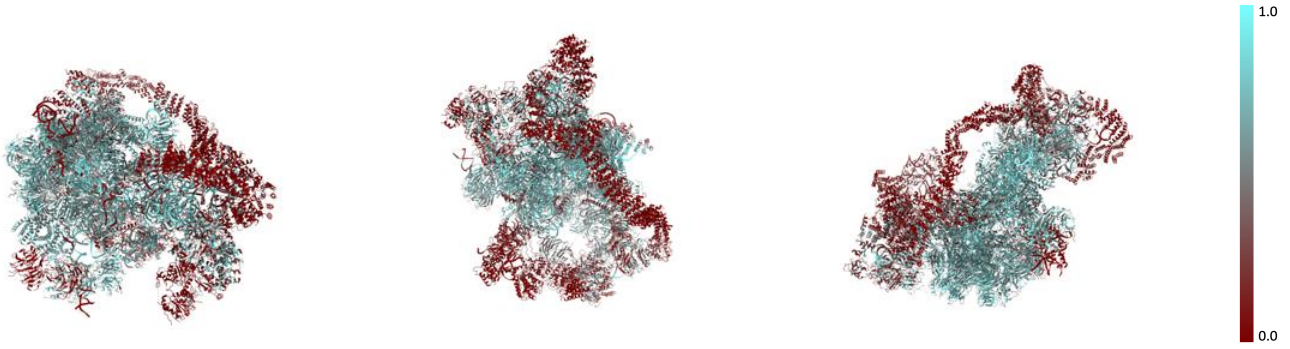
9.2 Q-score mapped to coordinate model



X Y Z

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

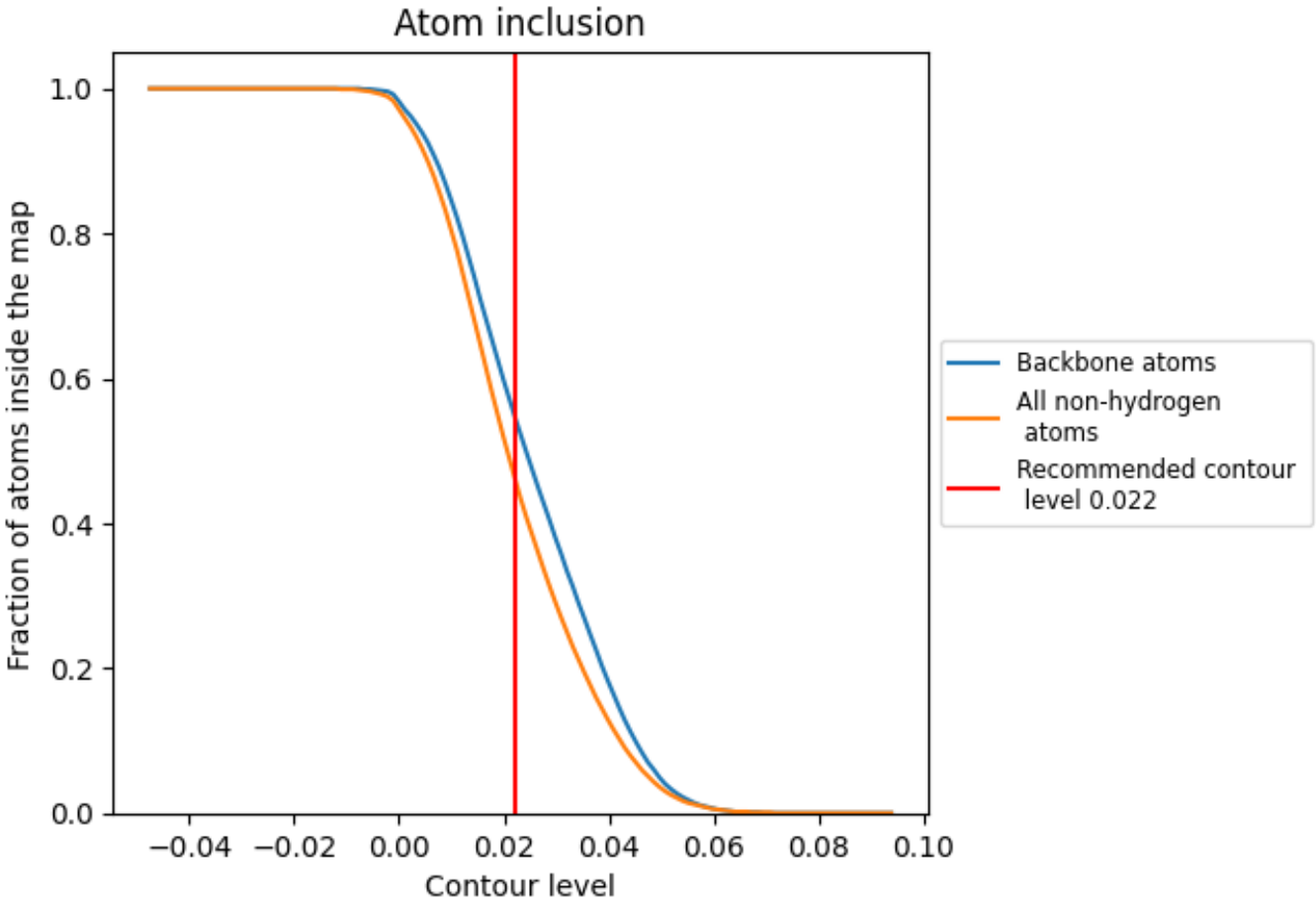
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.022).

9.4 Atom inclusion (i)



At the recommended contour level, 55% of all backbone atoms, 46% 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 (0.022) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4640	0.1300
3A	0.7750	0.2060
3B	0.6390	0.2150
3C	0.3490	0.0730
3D	0.6490	0.2060
3E	0.5020	0.1390
3F	0.6880	0.2280
3G	0.5760	0.1250
3H	0.6750	0.2540
5A	0.4030	0.0860
5B	0.0600	0.0360
5C	0.6710	0.2430
5D	0.2860	0.0990
5E	0.6220	0.2160
5F	0.6690	0.2490
5G	0.6530	0.2350
5H	0.6660	0.2450
5I	0.6430	0.2000
5J	0.3570	0.1150
5K	0.5970	0.2210
A4	0.4140	0.0400
A5	0.4860	0.1360
A8	0.2720	0.0490
A9	0.2530	0.0090
AE	0.2430	0.0890
AF	0.3850	0.0850
AG	0.4180	0.0280
B1	0.6840	0.2210
B2	0.6530	0.1650
B3	0.2010	0.0520
B6	0.5890	0.1660
B8	0.6510	0.1760
BE	0.7130	0.2240
RA	0.3970	0.0330
RB	0.4760	0.1580

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Chain	Atom inclusion	Q-score
RG	0.1070	0.0470
RH	0.1620	0.0610
RJ	0.6610	0.2200
RK	0.6830	0.2240
RL	0.4770	0.1490
RM	0.1670	0.0470
RN	0.1120	0.0520
RO	0.0070	0.0120
RP	0.0920	0.0270
RQ	0.1560	0.0700
RS	0.0530	0.0280
RY	0.1300	-0.0200
SA	0.5860	0.1420
SF	0.5530	0.1410
SG	0.6650	0.2440
SH	0.3660	0.0530
SJ	0.4500	0.0380
SK	0.6560	0.2280
SM	0.4840	0.0430
SR	0.6910	0.2420
SY	0.6250	0.2260
SZ	0.6200	0.2110
Sd	0.6960	0.2790
X1	0.4250	0.1700