



wwPDB EM Validation Summary Report ⓘ

Sep 24, 2025 – 01:51 am BST

PDB ID : 5AJ0 / pdb_00005aj0
EMDB ID : EMD-2875
Title : Cryo electron microscopy of actively translating human polysomes (POST state).
Authors : Behrmann, E.; Loerke, J.; Budkevich, T.V.; Yamamoto, K.; Schmidt, A.; Penczek, P.A.; Vos, M.R.; Burger, J.; Mielke, T.; Scheerer, P.; Spahn, C.M.T.
Deposited on : 2015-02-19
Resolution : 3.50 Å (reported)
Based on initial model : 4UJE

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

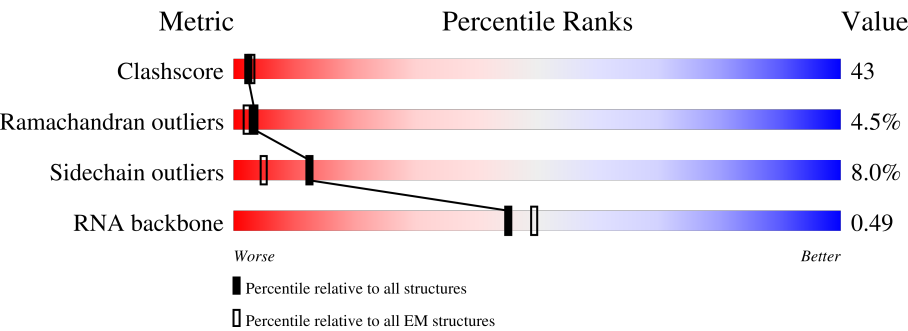
EMDB validation analysis : 0.0.1.dev129
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : **NOT EXECUTED**
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.46

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.50 Å.

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



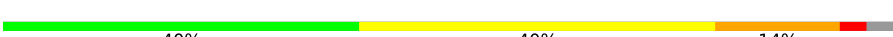
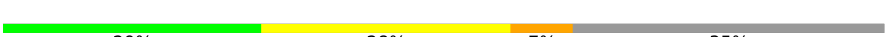
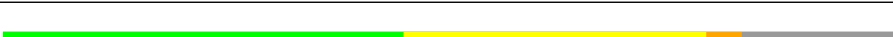
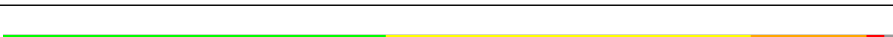
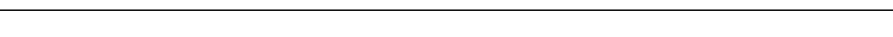
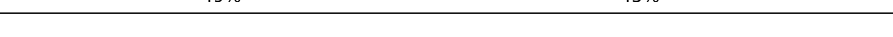
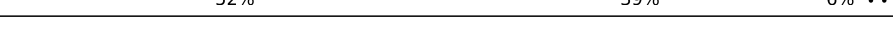
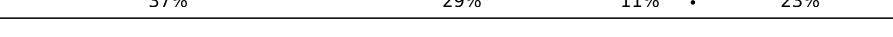
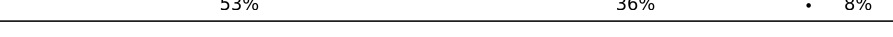
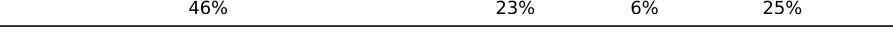
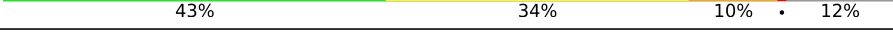
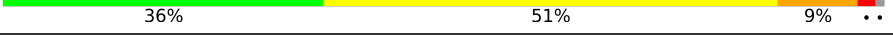
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	A3	194	26% 28% 21% 6% 19%
2	A4	121	26% 41% 31% ..
3	AA	257	52% 39% 7% .
4	AB	403	41% 50% 6% ..
5	AC	427	40% 37% 7% . 15%
6	AD	297	53% 36% 9% ..
7	AE	288	19% 27% 17% . 33%

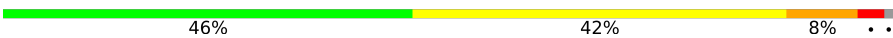
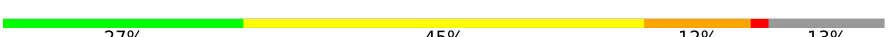
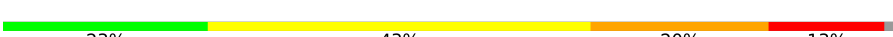
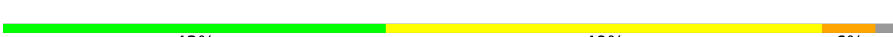
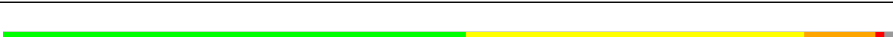
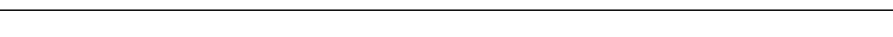
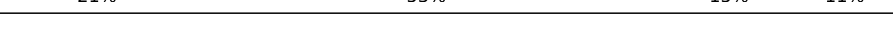
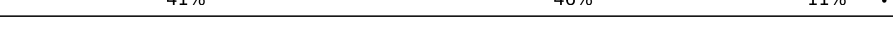
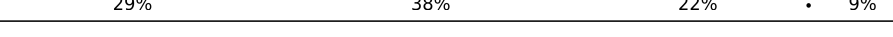
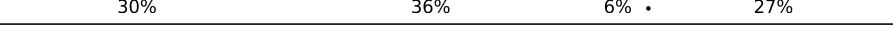
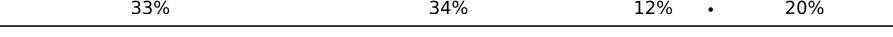
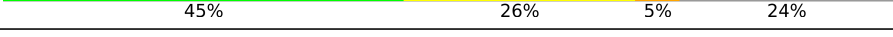
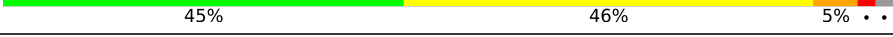
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Mol	Chain	Length	Quality of chain
8	AF	248	
9	AG	266	
10	AH	192	
11	AI	214	
12	AJ	178	
13	AK	317	
14	AL	211	
15	AM	215	
16	AN	204	
17	AO	203	
18	AP	184	
19	AQ	188	
20	AR	196	
21	AS	176	
22	AT	160	
23	AU	128	
24	AV	140	
25	AW	157	
26	AX	156	
27	AY	145	
28	AZ	136	
29	Aa	148	
30	Ab	159	
31	Ac	115	
32	Ad	125	

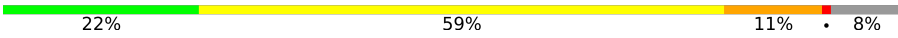
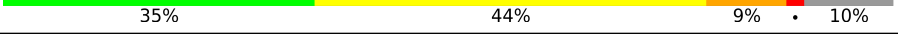
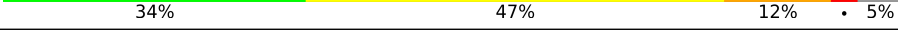
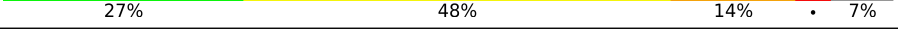
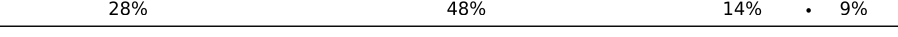
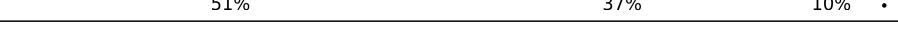
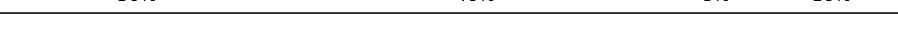
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Mol	Chain	Length	Quality of chain
33	Ae	135	
34	Af	110	
35	Ag	117	
36	Ah	123	
37	Ai	105	
38	Aj	97	
39	Ak	70	
40	Al	51	
41	Am	128	
42	An	25	
43	Ao	106	
44	Ap	92	
45	Aq	165	
46	At	137	
47	Au	217	
48	A2	5029	
49	B1	1869	
50	BA	295	
51	BB	264	
52	BC	293	
53	BD	243	
54	BE	263	
55	BF	204	
56	BG	249	
57	BH	194	

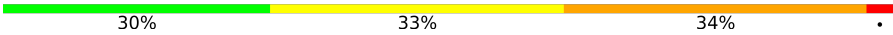
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Mol	Chain	Length	Quality of chain
58	BI	208	
59	BJ	194	
60	BK	165	
61	BL	158	
62	BM	132	
63	BN	151	
64	BO	151	
65	BP	145	
66	BQ	146	
67	BR	135	
68	BS	152	
69	BT	145	
70	BU	119	
71	BV	83	
72	BW	130	
73	BX	143	
74	BY	133	
75	BZ	125	
76	Ba	115	
77	Bb	84	
78	Bc	69	
79	Bd	56	
80	Be	59	
81	Bf	156	
82	Bg	317	

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Mol	Chain	Length	Quality of chain
83	Bv	76	
83	Bw	76	
84	Bx	28	
85	By	24	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
86	MG	B1	1941	-	-	X	-

2 Entry composition

There are 87 unique types of molecules in this entry. The entry contains 218559 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 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A3	157	Total	C	N	O	P	0	0
			3337	1489	587	1104	157		

- Molecule 2 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	A4	119	Total	C	N	O	P	0	0
			2541	1132	454	836	119		

- Molecule 3 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	AA	252	Total	C	N	O	S	0	0
			1930	1209	395	320	6		

- Molecule 4 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	AB	394	Total	C	N	O	S	0	0
			3178	2024	596	544	14		

- Molecule 5 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	AC	363	Total	C	N	O	S	0	0
			2888	1817	577	480	14		

- Molecule 6 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	AD	294	Total	C	N	O	S	0	0
			2392	1510	436	432	14		

- Molecule 7 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	AE	194	Total	C	N	O	S	0	0
			1571	1013	294	263	1		

- Molecule 8 is a protein called 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	AF	234	Total	C	N	O	S	0	0
			1950	1252	376	313	9		

- Molecule 9 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	AG	234	Total	C	N	O	S	0	0
			1880	1197	362	317	4		

- Molecule 10 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	AH	191	Total	C	N	O	S	0	0
			1526	960	285	275	6		

- Molecule 11 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AI	208	Total	C	N	O	S	0	0
			1692	1074	327	278	13		

- Molecule 12 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AJ	169	Total	C	N	O	S	0	0
			1353	855	252	240	6		

- Molecule 13 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	AK	109	Total	C	N	O	S	0	0
			872	554	159	151	8		

- Molecule 14 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AL	205	Total	C	N	O	S	0	0
			1657	1036	344	273	4		

- Molecule 15 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	AM	139	Total	C	N	O	S	0	0
			1138	730	218	183	7		

- Molecule 16 is a protein called 60S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	AN	203	Total	C	N	O	S	0	0
			1701	1072	359	266	4		

- Molecule 17 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	AO	195	Total	C	N	O	S	0	0
			1606	1034	315	252	5		

- Molecule 18 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	AP	153	Total	C	N	O	S	0	0
			1242	776	241	216	9		

- Molecule 19 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AQ	187	Total	C	N	O	S	0	0
			1513	944	314	250	5		

- Molecule 20 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AR	181	Total	C	N	O	S	0	0
			1517	938	329	241	9		

- Molecule 21 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	AS	175	Total	C	N	O	S	0	0
			1449	921	283	234	11		

- Molecule 22 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	AT	157	Total	C	N	O	S	0	0
			1284	815	250	214	5		

- Molecule 23 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	AU	99	Total	C	N	O	S	0	0
			808	518	141	147	2		

- Molecule 24 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	AV	129	Total	C	N	O	S	0	0
			969	613	182	169	5		

- Molecule 25 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	AW	121	Total	C	N	O	S	0	0
			989	617	202	167	3		

- Molecule 26 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	AX	117	Total	C	N	O	S	0	0
			958	612	180	165	1		

- Molecule 27 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	AY	127	Total	C	N	O	S	0	0
			1064	668	216	177	3		

- Molecule 28 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	AZ	134	Total	C	N	O	S	0	0
			1103	712	207	181	3		

- Molecule 29 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Aa	147	Total	C	N	O	S	0	0
			1162	736	237	186	3		

- Molecule 30 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Ab	68	Total	C	N	O	S	0	0
			559	344	122	90	3		

- Molecule 31 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Ac	103	Total	C	N	O	S	0	0
			801	508	141	145	7		

- Molecule 32 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Ad	106	Total	C	N	O	S	0	0
			879	555	170	152	2		

- Molecule 33 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Ae	129	Total	C	N	O	S	0	0
			1064	673	220	166	5		

- Molecule 34 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Af	109	Total	C	N	O	S	0	0
			876	555	174	144	3		

- Molecule 35 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Ag	114	Total	C	N	O	S	0	0
			906	566	187	147	6		

- Molecule 36 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Ah	122	Total	C	N	O	S	0	0
			1015	641	205	168	1		

- Molecule 37 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Ai	97	Total	C	N	O	S	0	0
			794	497	168	124	5		

- Molecule 38 is a protein called 60S ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Aj	84	Total	C	N	O	S	0	0
			689	423	152	109	5		

- Molecule 39 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Ak	69	Total	C	N	O	S	0	0
			569	366	103	99	1		

- Molecule 40 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Al	50	Total	C	N	O	S	0	0
			444	281	98	64	1		

- Molecule 41 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Am	50	Total	C	N	O	S	0	0
			411	254	87	64	6		

- Molecule 42 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	An	25	Total	C	N	O	S	0	0
			240	145	64	28	3		

- Molecule 43 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Ao	105	Total	C	N	O	S	0	0
			863	542	175	140	6		

- Molecule 44 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Ap	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 45 is a protein called 60S ribosomal protein L12.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Aq	138	Total	C	N	O	S	0	0
			1046	654	196	193	3		

- Molecule 46 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	At	122	Total	C	N	O	S	0	0
			980	607	204	165	4		

- Molecule 47 is a protein called 60S ribosomal protein L10a.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Au	217	Total	C	N	O	S	0	0
			1744	1114	314	307	9		

- Molecule 48 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	A2	3612	Total	C	N	O	P	0	0
			77427	34482	14158	25175	3612		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A2	245	C	-	insertion	GB 337381
A2	246	C	-	insertion	GB 337381
A2	247	C	-	insertion	GB 337381
A2	4684	G	-	insertion	GB 337381

- Molecule 49 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	B1	1708	Total	C	N	O	P	0	0
			36456	16274	6546	11928	1708		

- Molecule 50 is a protein called 40S ribosomal protein SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	BA	215	Total	C	N	O	S	0	0
			1704	1083	298	315	8		

- Molecule 51 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	BB	212	Total	C	N	O	S	0	0
			1722	1093	308	307	14		

- Molecule 52 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	BC	222	Total	C	N	O	S	0	0
			1724	1114	296	304	10		

- Molecule 53 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	BD	220	Total	C	N	O	S	0	0
			1709	1090	308	304	7		

- Molecule 54 is a protein called 40S ribosomal protein S4, Y isoform 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	BE	257	Total	C	N	O	S	0	0
			2031	1298	381	344	8		

- Molecule 55 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	BF	190	Total	C	N	O	S	0	0
			1502	939	285	271	7		

- Molecule 56 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	BG	232	Total	C	N	O	S	0	0
			1884	1176	379	322	7		

- Molecule 57 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	BH	183	Total	C	N	O	S	0	0
			1479	941	272	265	1		

- Molecule 58 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	BI	207	Total	C	N	O	S	0	0
			1696	1064	334	293	5		

- Molecule 59 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	BJ	179	Total	C	N	O	S	0	0
			1495	953	299	241	2		

- Molecule 60 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	BK	98	Total	C	N	O	S	0	0
			827	539	148	134	6		

- Molecule 61 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	BL	153	Total	C	N	O	S	0	0
			1258	804	235	213	6		

- Molecule 62 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	BM	120	Total	C	N	O	S	0	0
			931	584	164	174	9		

- Molecule 63 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	BN	149	Total	C	N	O	S	0	0
			1202	770	228	203	1		

- Molecule 64 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	BO	136	Total	C	N	O	S	0	0
			1016	621	199	190	6		

- Molecule 65 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	BP	120	Total	C	N	O	S	0	0
			999	636	188	168	7		

- Molecule 66 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	BQ	139	Total	C	N	O	S	0	0
			1109	704	210	192	3		

- Molecule 67 is a protein called 40S ribosomal protein S17-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	BR	125	Total	C	N	O	S	0	0
			1011	634	187	186	4		

- Molecule 68 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	BS	139	Total	C	N	O	S	0	0
			1154	725	233	195	1		

- Molecule 69 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	BT	143	Total	C	N	O	S	0	0
			1112	697	214	198	3		

- Molecule 70 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	BU	97	Total	C	N	O	S	0	0
			769	483	144	138	4		

- Molecule 71 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	BV	81	Total	C	N	O	S	0	0
			617	380	114	118	5		

- Molecule 72 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	BW	129	Total	C	N	O	S	0	0
			1034	659	193	176	6		

- Molecule 73 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	BX	139	Total	C	N	O	S	0	0
			1080	682	214	181	3		

- Molecule 74 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	BY	125	Total	C	N	O	S	0	0
			1015	642	199	169	5		

- Molecule 75 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	BZ	86	Total	C	N	O	S	0	0
			688	442	129	116	1		

- Molecule 76 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	Ba	97	Total	C	N	O	S	0	0
			774	481	160	128	5		

- Molecule 77 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	Bb	80	Total	C	N	O	S	0	0
			625	391	116	111	7		

- Molecule 78 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	Bc	62	Total	C	N	O	S	0	0
			488	297	97	92	2		

- Molecule 79 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	Bd	51	Total	C	N	O	S	0	0
			427	269	87	66	5		

- Molecule 80 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Be	55	Total	C	N	O	S	0	0
			437	272	96	68	1		

- Molecule 81 is a protein called Ubiquitin-40S ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	Bf	73	Total	C	N	O	S	0	0
			601	379	115	100	7		

- Molecule 82 is a protein called Guanine nucleotide-binding protein subunit beta-2-like 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	Bg	314	Total	C	N	O	S	0	0
			2440	1537	425	466	12		

- Molecule 83 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	Bv	76	Total	C	N	O	P	0	0
			1623	723	290	534	76		
83	Bw	76	Total	C	N	O	P	0	0
			1623	723	290	534	76		

- Molecule 84 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	Bx	28	Total	C	N	O	P	0	0
			561	252	56	225	28		

- Molecule 85 is a protein called Nascent protein chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
85	By	24	Total	C	N	O	0	0
			120	72	24	24		

- Molecule 86 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
86	A3	8	Total	Mg	0
			8	8	
86	A4	9	Total	Mg	0
			9	9	
86	AA	1	Total	Mg	0
			1	1	
86	AB	2	Total	Mg	0
			2	2	
86	AN	2	Total	Mg	0
			2	2	
86	AY	1	Total	Mg	0
			1	1	
86	Aa	3	Total	Mg	0
			3	3	
86	Ae	2	Total	Mg	0
			2	2	
86	An	1	Total	Mg	0
			1	1	
86	A2	220	Total	Mg	0
			220	220	
86	B1	72	Total	Mg	0
			72	72	

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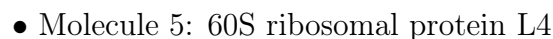
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Mol	Chain	Residues	Atoms		AltConf
86	BD	1	Total 1	Mg 1	0
86	BX	1	Total 1	Mg 1	0
86	Bv	2	Total 2	Mg 2	0
86	Bx	1	Total 1	Mg 1	0

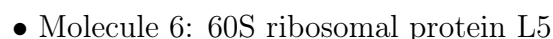
- Molecule 87 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
87	Aj	1	Total 1	Zn 1	0
87	Ao	1	Total 1	Zn 1	0
87	Ap	1	Total 1	Zn 1	0
87	Ba	1	Total 1	Zn 1	0
87	Bd	1	Total 1	Zn 1	0

Response	Percentage
Good	41%
Not good	50%
Don't know	6%

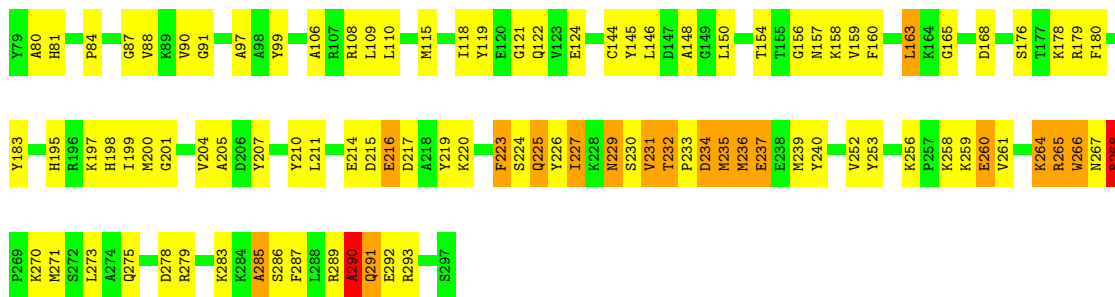


Response	Percentage
Yes, a lot more	40%
Yes, some more	37%
No more	7%
Don't know	15%

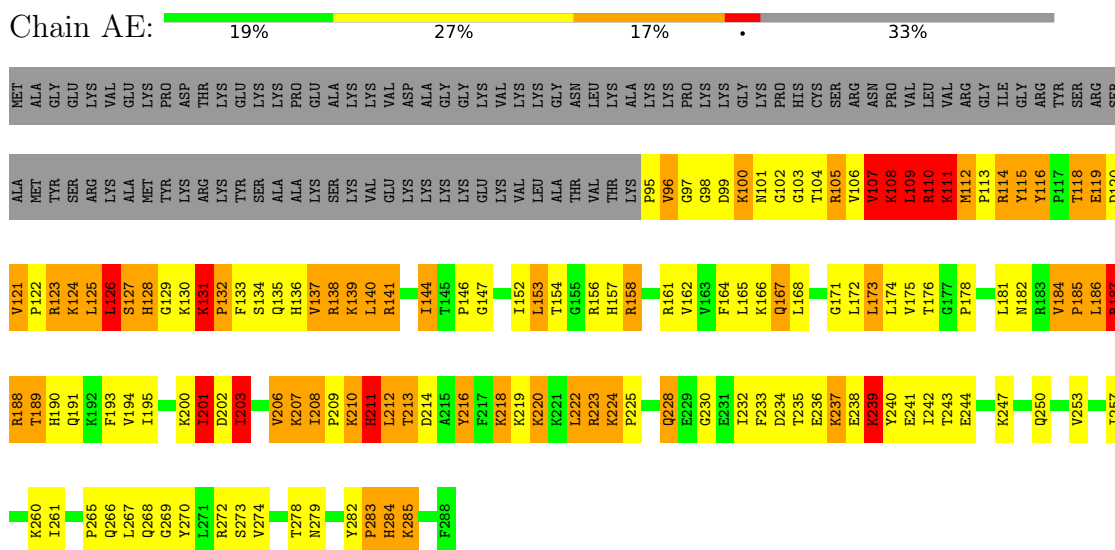


Response	Percentage
Yes, the U.S. is a democracy	53%
No, the U.S. is not a democracy	36%
Don't know	9%

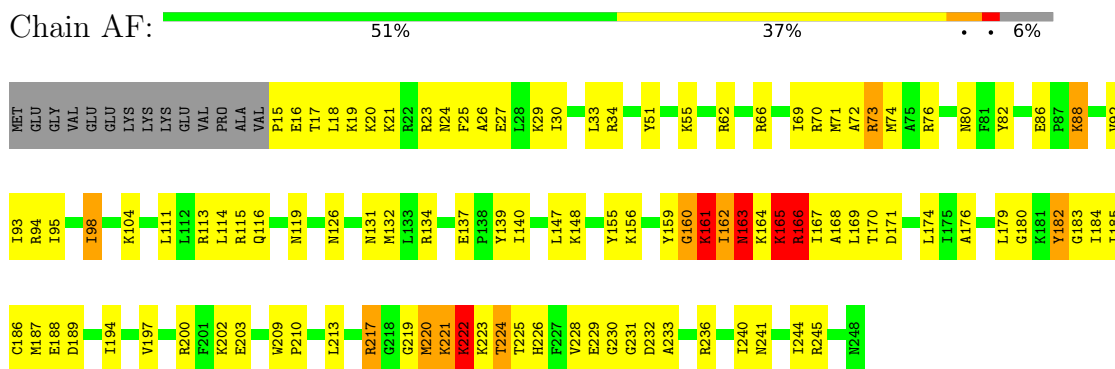




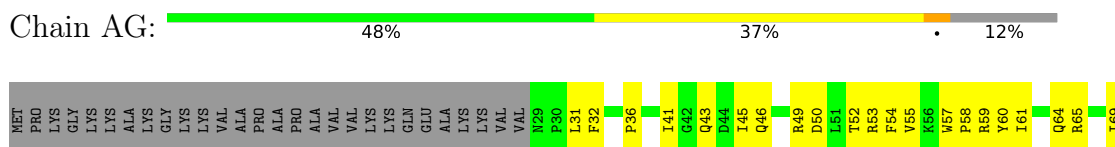
• Molecule 7: 60S ribosomal protein L6

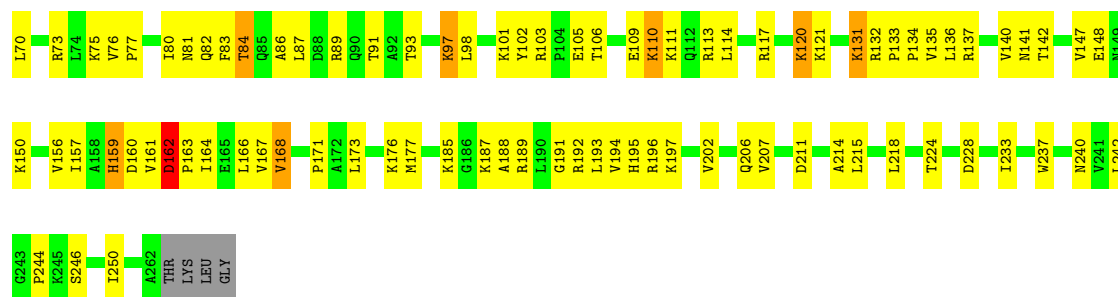


• Molecule 8: 60S ribosomal protein L7



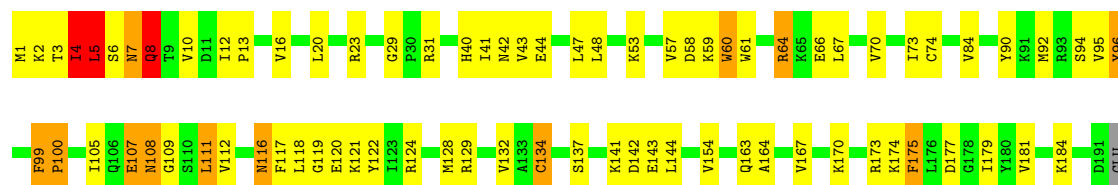
• Molecule 9: 60S ribosomal protein L7a





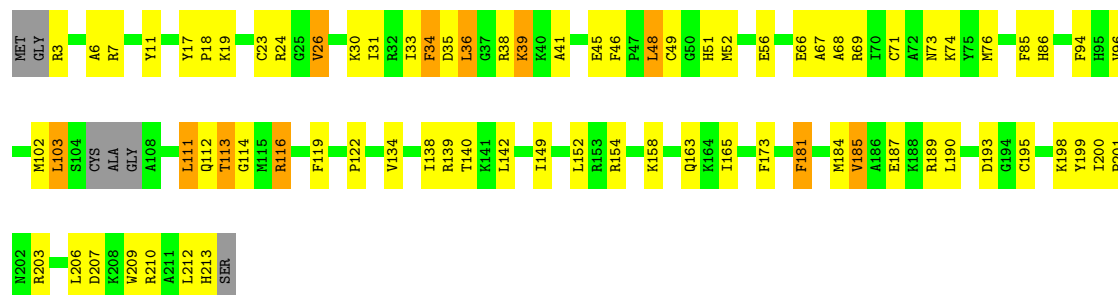
- Molecule 10: 60S ribosomal protein L9

Chain AH: 59% 33% 6% ..



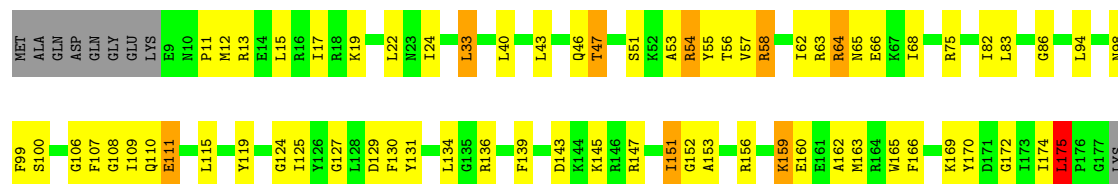
- Molecule 11: 60S ribosomal protein L10

Chain AI: 61% 31% 5% .



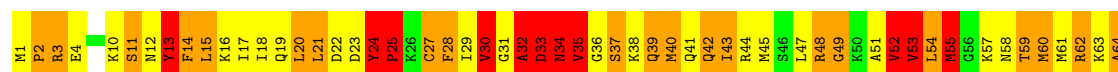
- Molecule 12: 60S ribosomal protein L11

Chain AJ: 56% 34% . 5%



- Molecule 13: 60S acidic ribosomal protein P0

Chain AK: 12% 12% 6% 66%



H181
H182
T183
T184
G185
G186
S187
R188
R189
R193
R194
R195
L200
H201
R202
Y203
R204

• Molecule 17: 60S ribosomal protein L13a

Chain AO: 55% 38% . .

MET
ALA
GLU
VAL
V5
L9
D10
H14
K15
L16
G17
A21
I22
V23
A24
K25
Q26
V27
L28
L29
K32
V33
V34
V35
V36
R37
C38
T41
N42
Y48
R49
R50
K51
Y54
K60
R61
R62
N63
T64
N65
P66
S67
Y71
H72
F73
R74
S77
R78
H81
R87
K91
T92
Q96
L102
H103
V104
I108
P109
P110
P111
Y112
D113
K114
M118
V119
V120
P121
A122
A123
L124
K125
V126
V127
R128
L129
R140
H143
E144
V145
G146
W147
K148
Y149
Q150
E157
R160
K163
A164
K165
H166
H167
Q173
R176
K179
E182
K183
N184
V185
E186
K187
K188
K191
T198
H199
GLY
LEU
VAL

• Molecule 18: 60S ribosomal protein L17

Chain AP: 45% 34% 17% .

MET
V2
R3
Y4
S5
L6
D7
N10
P11
T12
K13
S14
C15
K16
S17
R18
G19
L22
R23
V24
H25
F26
K27
H28
T29
L124
E31
K37
T41
Y47
L48
K49
D50
V51
V58
P59
F60
R61
R62
R69
C70
A71
Q72
A73
K74
Q75
W78
R82
W83
P84
K85
K86
S87
F90
L91
L92
R93
M94
L95
E99
L107
D108
V109
L112
V113
T114
E115
H116
I117
Q118
V119
N120
K121
A122
P123
K124
M125
R126
R127
R128
T129
R131
R135
Y139
M140
S141
E147
M148
T149
T151
E154
GLN
ILE
VAL
PRO
LYS
PRO
GLU
GLU
VAL
ALA
GLN
LYS
LYS
LYS
ILE
SER
GLN
LYS
LEU
LYS
LYS
LYS
GLN
MET
ALA
ARG
GLU

• Molecule 19: 60S ribosomal protein L18

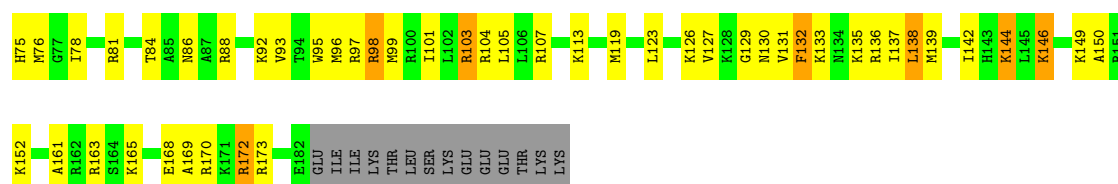
Chain AQ: 43% 41% 13% . .

MET
G2
V3
D4
I5
N8
K9
D10
K11
K12
V13
R14
R15
R16
K17
P18
K19
S20
L25
R26
L27
L28
V29
K30
R33
F34
L35
A36
R37
R38
T42
F43
R44
Q45
L48
R49
R50
L51
F52
M53
T56
N57
R58
S62
L63
S64
R65
M66
T67
R68
R69
M70
K71
L72
F73
G74
R75
E76
N77
K78
T79
T85
D88
D89
V90
R91
W92
Q93
P96
K97
L98
R99
V100
C101
A102
L103
R104
A109
R112
G117
L121
T122
F123
K132
T136
V137
L138
L139
S140
R143
K144
G145
R146
E147
V148
Y149
R150
H151
F152
G153
K154
A155
P156
G157
T158
P159
H160
S161
H162
T163
K164
V167
R168
S169
K170
G171
R172
K173
F174
E175
R176
A177
R178
G179
R180
R184
G185
Y186
M188

• Molecule 20: 60S ribosomal protein L19

Chain AR: 45% 39% 7% 8%

MET
S2
K3
L4
R5
L6
Q7
K8
R9
L10
L15
G18
K19
K20
K21
V22
W23
L24
D25
R26
N27
E28
T29
T32
S37
R38
Q39
Q40
I41
R42
K43
L44
I45
K46
D47
G48
L49
I50
I51
R52
K53
V57
H58
S59
R60
A61
R62
C63
R64
R70
R71
K72
G73
R74



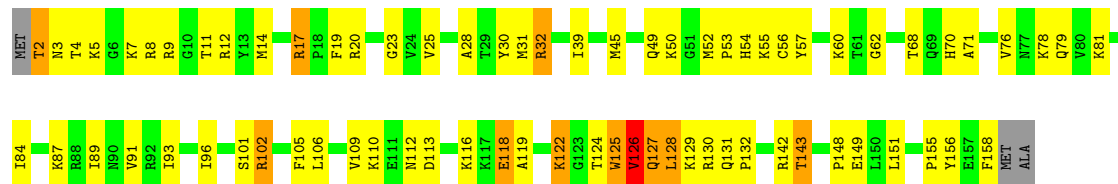
- Molecule 21: 60S ribosomal protein L18a

Chain AS: 49% 45% ..



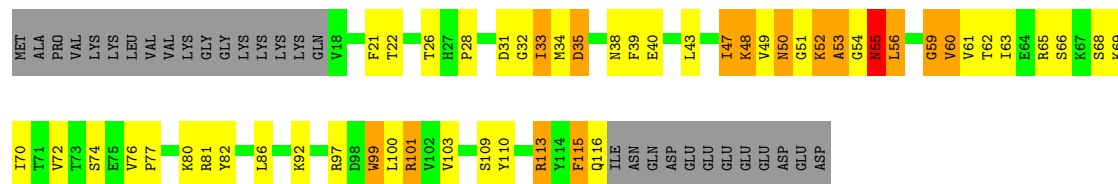
- Molecule 22: 60S ribosomal protein L21

Chain AT: 52% 39% 6% ..



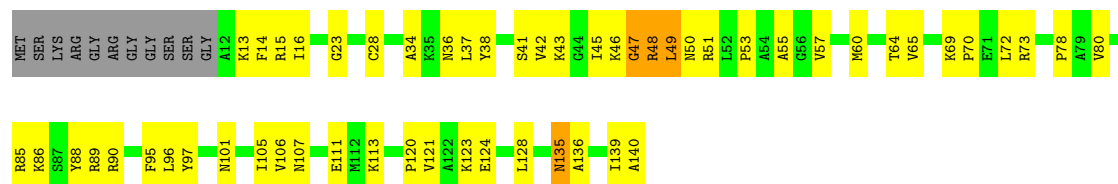
- Molecule 23: 60S ribosomal protein L22

Chain AU: 37% 29% 11% 23%



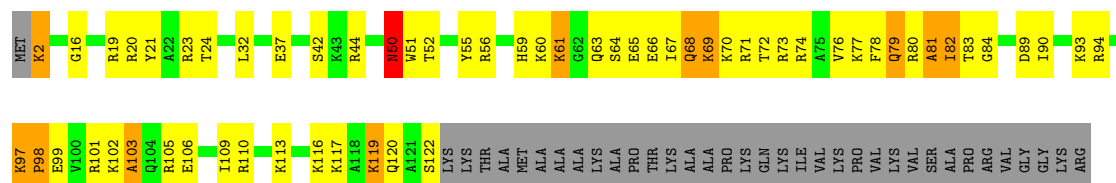
- Molecule 24: 60S ribosomal protein L23

Chain AV: 53% 36% 8%



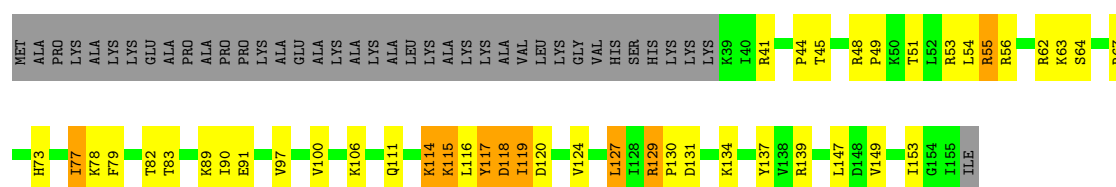
- Molecule 25: 60S ribosomal protein L24

Chain AW: 



- Molecule 26: 60S ribosomal protein L23a

Chain AX: 



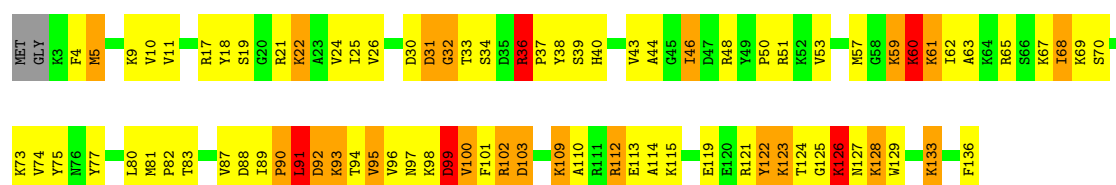
- Molecule 27: 60S ribosomal protein L26

Chain AY: 



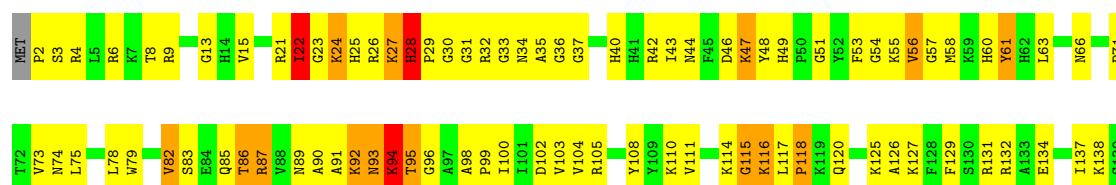
- Molecule 28: 60S ribosomal protein L27

Chain AZ: 

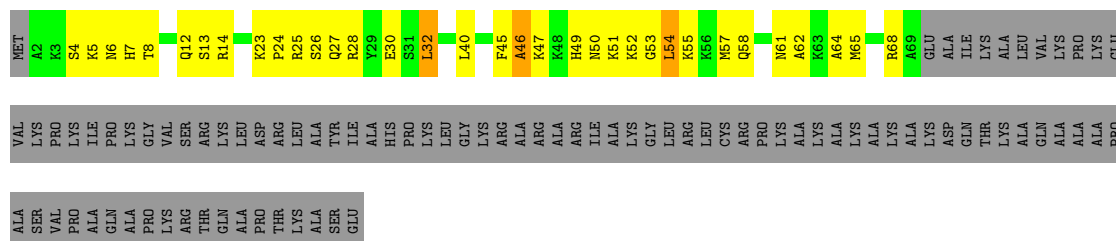


- Molecule 29: 60S ribosomal protein L27a

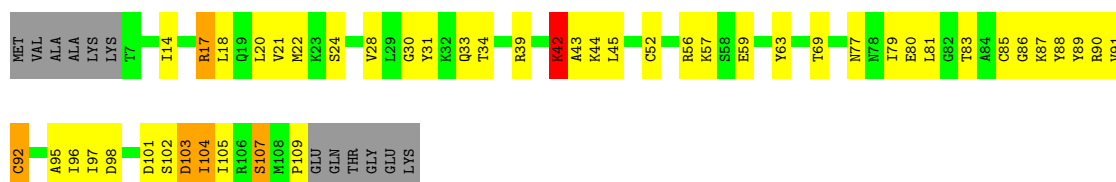
Chain Aa: 



- Molecule 30: 60S ribosomal protein L29



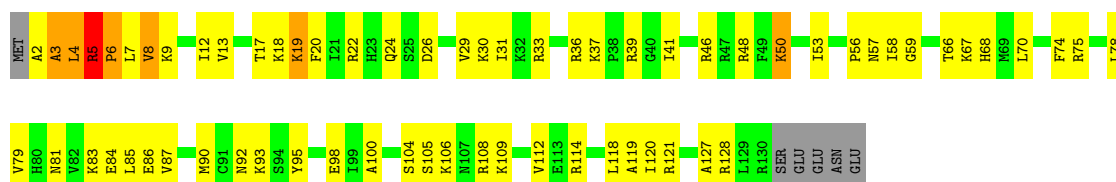
- Molecule 31: 60S ribosomal protein L30



- Molecule 32: 60S ribosomal protein L31

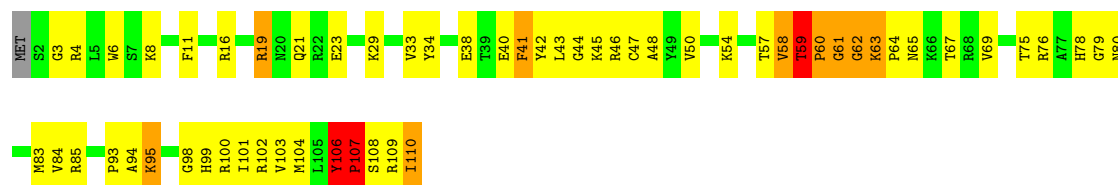


- Molecule 33: 60S ribosomal protein L32



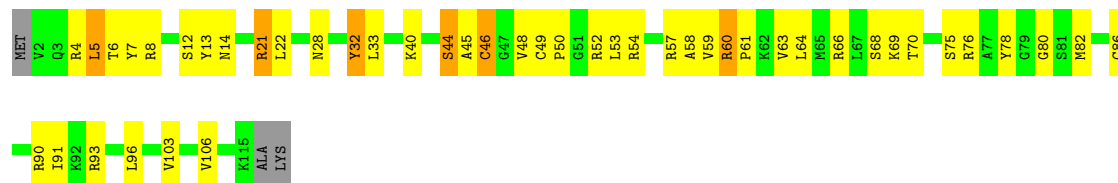
- Molecule 34: 60S ribosomal protein L35a





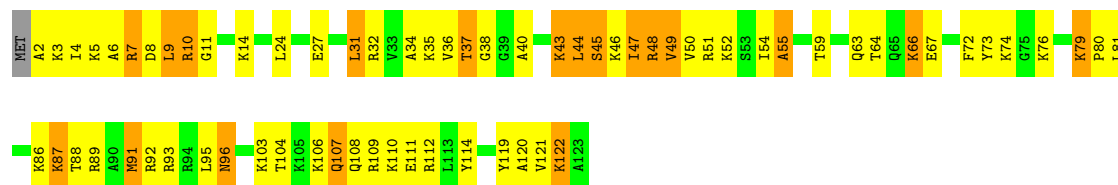
- Molecule 35: 60S ribosomal protein L34

Chain Ag: 58% 34% 5% .



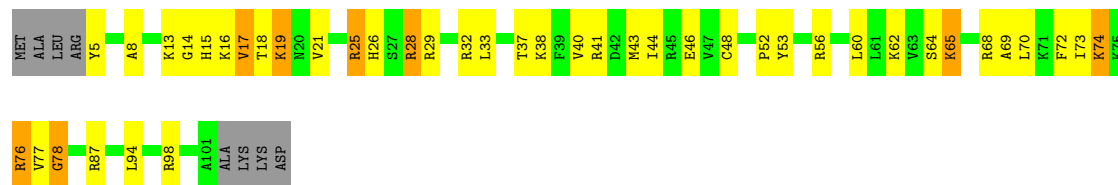
- Molecule 36: 60S ribosomal protein L35

Chain Ah: 44% 40% 15% .



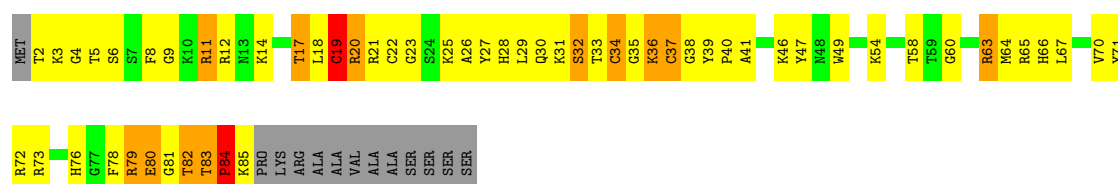
- Molecule 37: 60S ribosomal protein L36

Chain Ai: 51% 33% 8% 8%

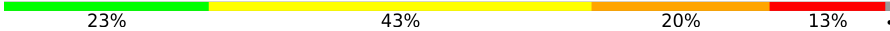


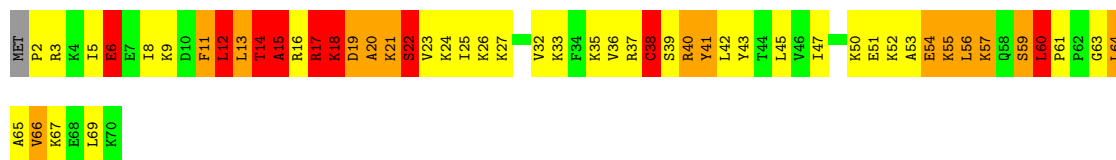
- Molecule 38: 60S ribosomal protein L37

Chain Aj: 27% 45% 12% 13%

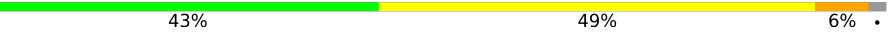


- Molecule 39: 60S ribosomal protein L38

Chain Ak:  23% 43% 20% 13% .



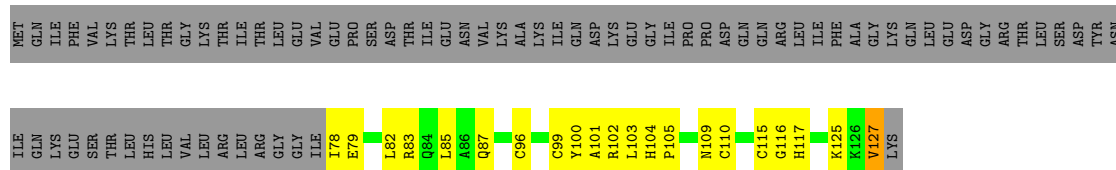
- Molecule 40: 60S ribosomal protein L39

Chain Al:  43% 49% 6% .



- Molecule 41: Ubiquitin-60S ribosomal protein L40

Chain Am:  23% 16% 61% .



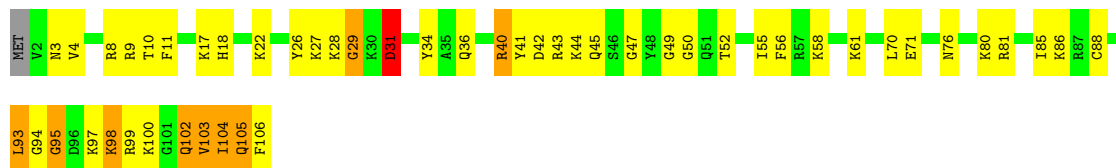
- Molecule 42: 60S ribosomal protein L41

Chain An:  52% 44% .



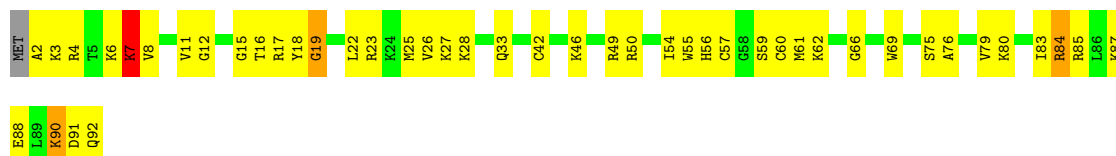
- Molecule 43: 60S ribosomal protein L36a

Chain Ao:  52% 38% 8% ..



- Molecule 44: 60S ribosomal protein L37a

Chain Ap:  49% 46% ..

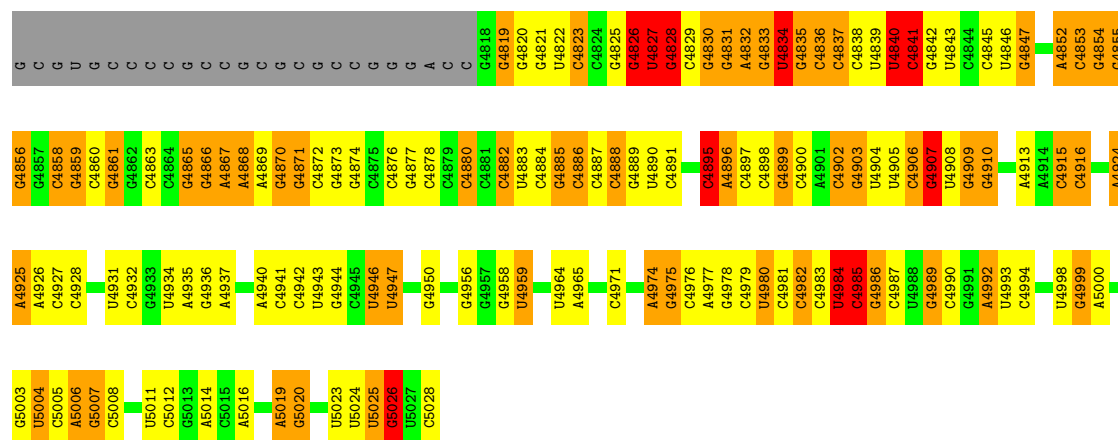






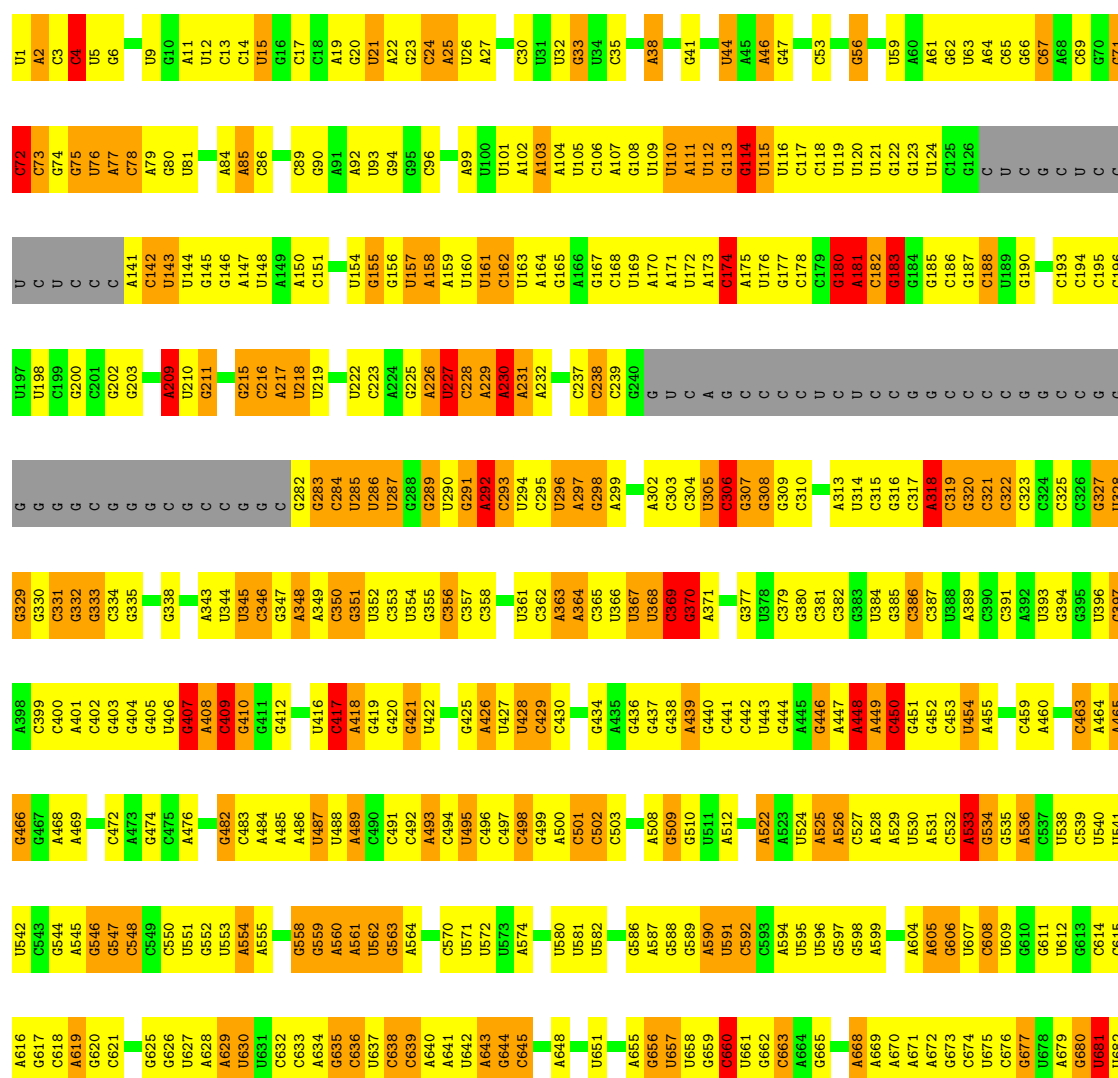


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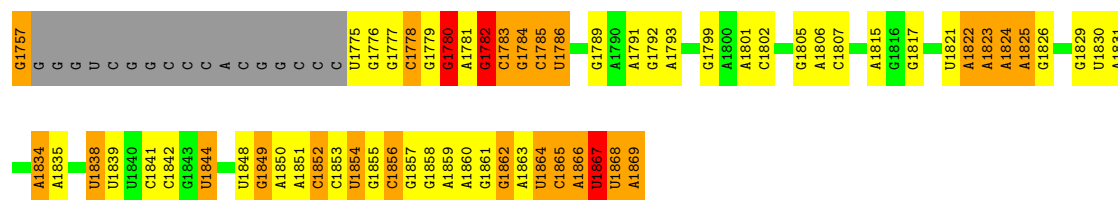


• Molecule 49: 18S ribosomal RNA

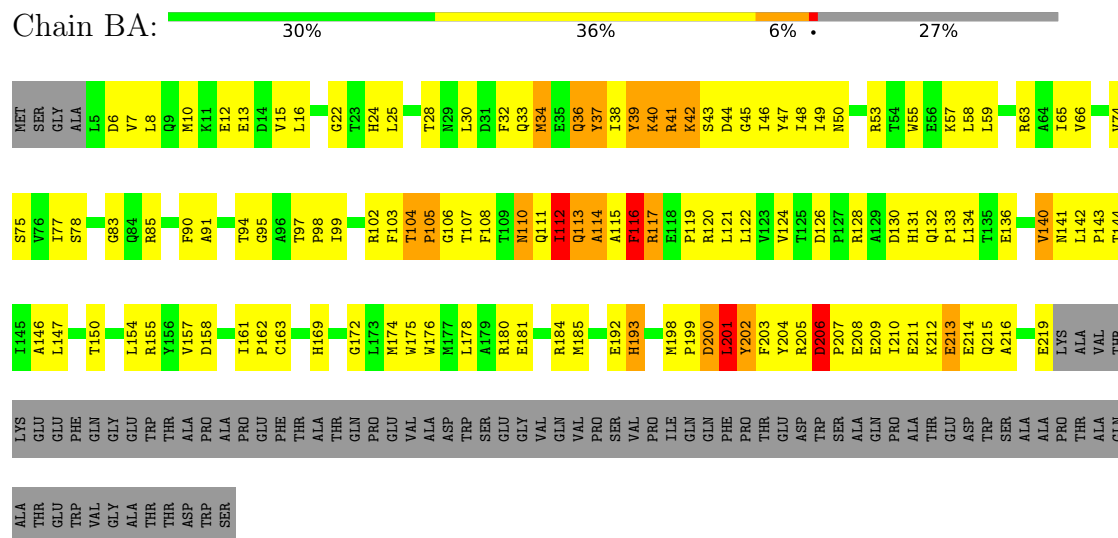
Chain B1: 29% 38% 22% • 9%



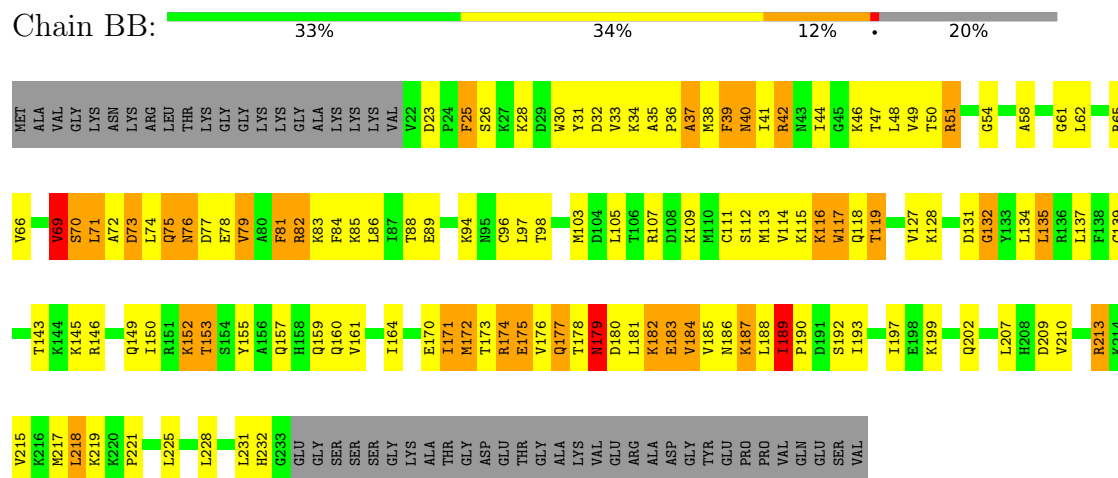
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A1678	C1544	G1466	A1404	G1257	U1172	G1097	C937	G874	U805	C745	A695
A1679	A1545	C1467	U1407	A1258	U1172	G1102	C938	G875	U806	C746	U686
G1680	G1546	U1408	U1408	A1259	G1179	G1103	U939	C876	A807	U747	C687
C1681	C1547	G1472	A1409	A1260	G1180	G1104	U940	C877	A808	C748	U688
C1682	G1548	G1473	C1410	C1261	A1181	G1105	U941	C878	A809	U749	U689
C1683	U1549	A1474	C1411	C1262	A1182	G1106	C941	C879	A810	C750	G690
G1684	G1550	G1475	A1412	U1263	A1183	G1107	G942	G880	A811	G751	G691
U1685	U1551	A1476	C1413	C1264	A1183	G1108	U943	G881	A812	U752	A693
U1686	C1552	U1477	G1414	A1265	A1190	G1109	A944	U882	G817	U753	G694
U1687	C1553	U1478	A1415	C1266	C1191	G1110	U945	U883	U883	U754	C695
G1692	C1554	U1478	C1416	U1267	U1194	U1113	U946	U884	G821	U755	G696
G1693	U1555	G1481	C1417	G1269	U1194	U1113	G947	C884	U822	U756	G
C1698	A1556	C1482	C1418	C1270	G1198	U1114	U952	U885	U823	U757	G
A1699	C1557	A1483	C1419	C1271	G1199	U1115	C953	A886	U824	U758	C
C1700	C1558	A1484	G1420	G1272	A1199	C1116	U956	U887	A825	U759	G
C1701	C1559	U1485	A1421	G1273	A1200	C1117	A957	U888	A826	U760	G
G1702	U1560	A1487	G1422	G1274	U1201	G1118	U960	U889	A827	U761	G
C1728	A1561	C1488	G1423	A1276	U1202	C1119	U961	U890	G828	U762	G
C1629	C1562	A1489	C1424	C1277	U1203	G1120	U962	G891	A	U763	C
A1630	G1563	G1490	G1425	C1278	G1203	U1121	U963	U892	C829	U764	G
U1631	G1564	G1491	G1426	C1279	A1204	G1122	G964	U893	A830	U765	G
G1632	U1567	U1492	U1426	G1280	C1205	A1123	A962	G894	U833	U766	U
A1719	C1568	U1492	C	G1281	G1206	G1123	A963	G895	C834	U767	C
U1720	U1568	G1495	G	A1282	G1207	C1124	A964	U896	C835	U768	C
U1721	G1569	G1496	G	C1283	U1207	C1125	U969	U897	C836	U769	G
G1722	C1573	G1497	C	A1284	C1215	G1126	U970	U898	A837	U770	U
G1723	G1574	U1498	C	C1285	C1216	U1127	C971	U899	A838	U771	C
A1724	G1575	U1499	G	G1286	A1217	G1128	C972	C900	G839	U772	G
U1725	U1578	U1499	U	G1287	G1218	G1129	C973	G901	C840	U773	C
C1644	C1579	G1507	C	A1288	C1219	G1130	C974	G902	C841	U774	C
G1727	A1580	A1508	C	U1289	C1220	G1131	C975	G903	G842	U775	A
U1728	C1581	G1509	C	U1290	G1221	G1132	C976	G904	U843	U776	G
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U1733	U1585	U1519	A1439	A1293	G1224	U1137	C979	G907	G846	U779	A
G1734	U1586	G1520	C1440	G1294	U1228	C1138	A980	A908	A847	U780	G
A1735	G1587	C1521	U1441	A1295	A1229	C1139	A981	G909	U848	U781	C
C1654	C1588	A1522	U1442	U1296	G1230	G1140	C984	G910	A849	U782	C
G1737	A1589	C1523	C1443	U1297	C1231	G1141	G985	G911	C850	U783	C
C1738	C1590	G1524	U1444	G1298	U1232	G1142	G986	C912	C851	U784	A
C1739	C1591	G1524	U1445	G1299	U1233	A1143	A987	C913	G852	U785	C
G1740	C1592	G1525	U1446	U1300	G1233	A1144	C988	U914	G853	U786	C
U1741	C1593	G1526	G1447	A1301	U1236	A1145	C989	G915	U857	U787	G
C1742	A1594	C1527	A1448	G1302	C1237	C1146	A990	A916	U858	U788	C
G1743	U1595	G1528	C1449	C1303	U1237	C1147	G991	U917	A859	U789	C
C1744	C1596	G1529	G1450	U1304	U1238	A1148	A996	U918	G860	U790	C
A1745	C1597	U1530	G1451	C1305	U1239	A1149	A997	A919	A861	U791	U
U1746	G1598	A1531	A1452	U1306	U1240	A1150	A998	A920	A862	U792	C
C1747	U1599	C1532	C1453	U1307	U1241	G1151	G999	G921	U863	U793	C
G1748	G1600	A1533	A1454	U1308	U1242	U1152	C1000	G924	A795	U794	C
U1749	C1601	C1534	A1455	C1309	U1243	C1153	A1001	G925	A796	U795	C
C1750	G1602	U1535	G1456	U1311	U1248	U1154	A1002	A926	A864	U796	C
G1751	G1603	G1536	U1457	C1312	C1249	U1155	U1003	G927	A865	C797	C
C1752	U1604	A1537	U1457	G1313	A1251	U1156	U1004	G928	U866	C798	C
U1753	G1605	C1538	U1460	A1313	C1252	G1157	C1007	G929	A867	U799	C
C1754	C1606	U1539	G1461	U1314	U1253	G1158	A1008	A930	G868	U800	C
G1755	A1607	U1540	U1462	U1315	C1254	G1159	C1009	A869	U801	C741	C
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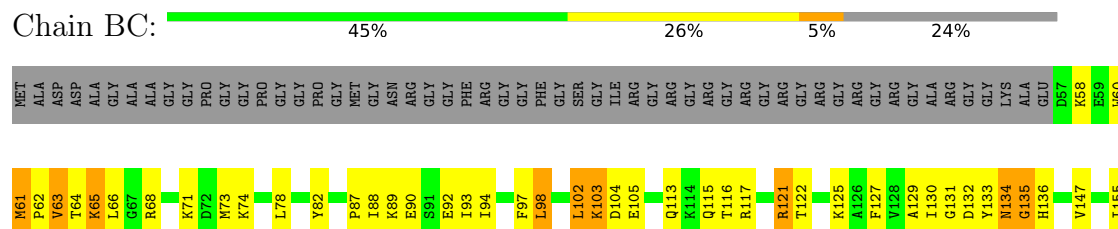
• Molecule 50: 40S ribosomal protein SA

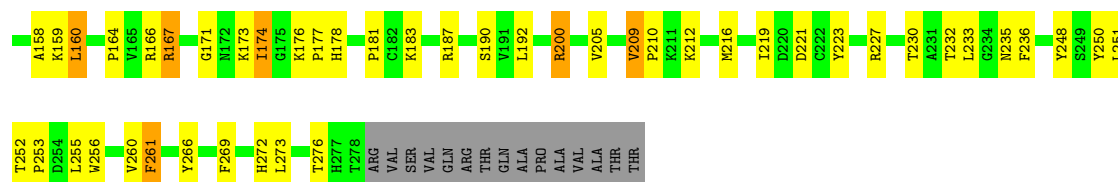


• Molecule 51: 40S ribosomal protein S3a



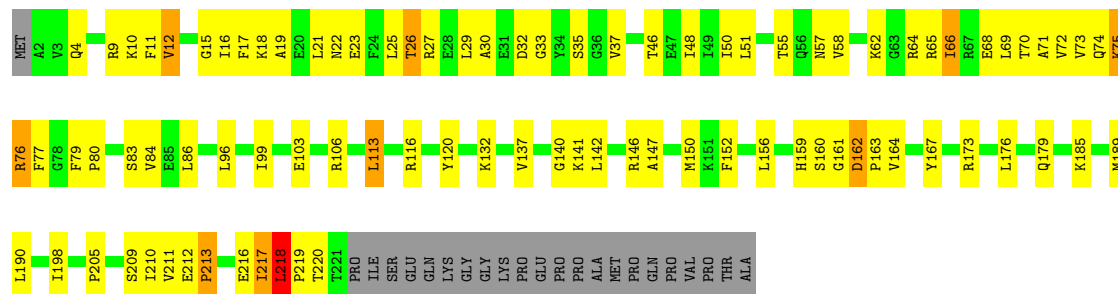
• Molecule 52: 40S ribosomal protein S2





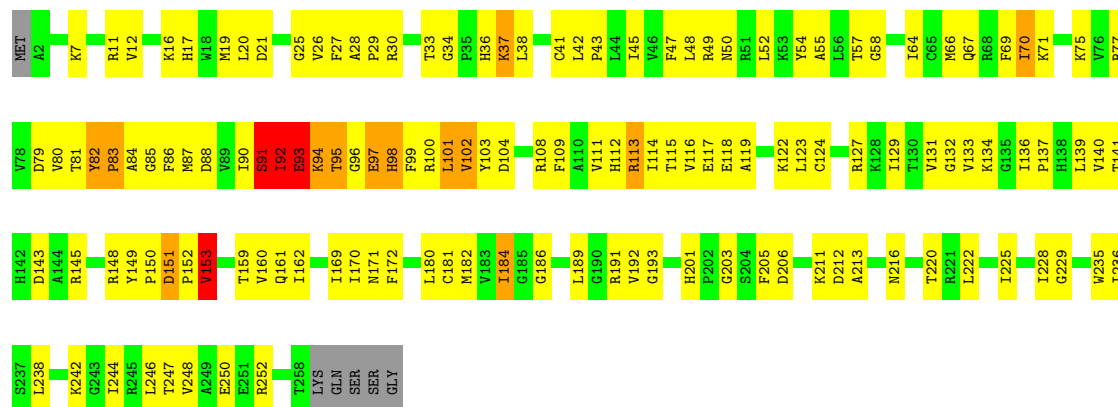
• Molecule 53: 40S ribosomal protein S3

Chain BD: 53% 33% 9%



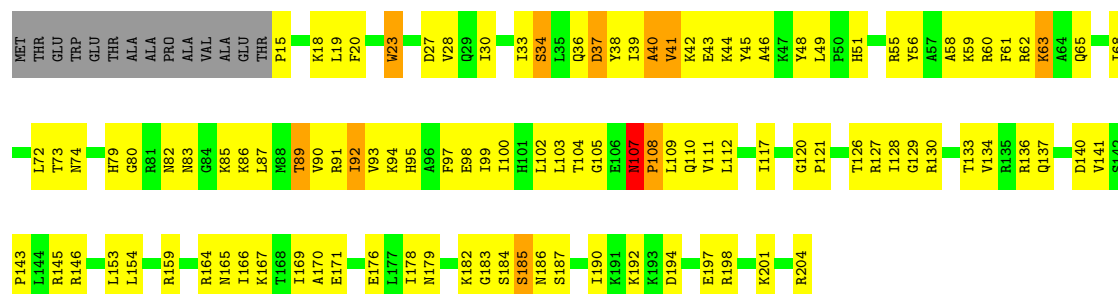
• Molecule 54: 40S ribosomal protein S4, Y isoform 1

Chain BE: 45% 46% 5%

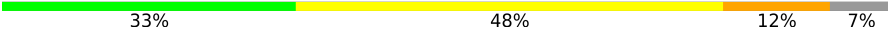


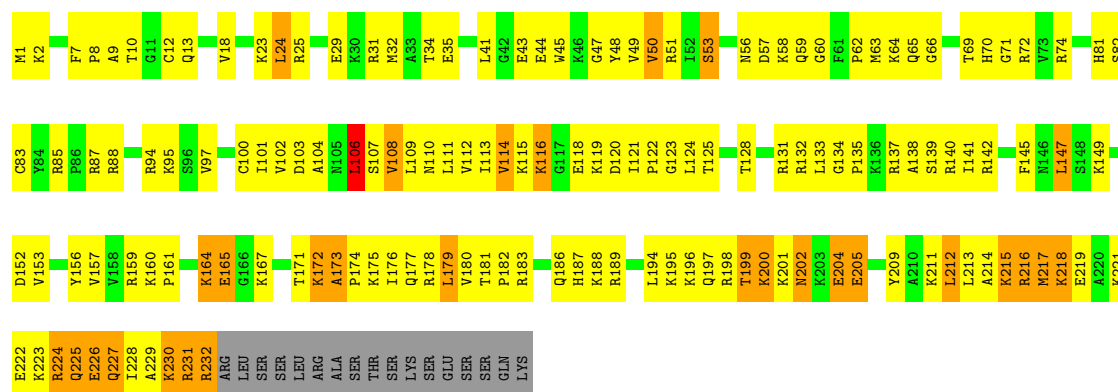
• Molecule 55: 40S ribosomal protein S5

Chain BF: 40% 48% 5% 7%



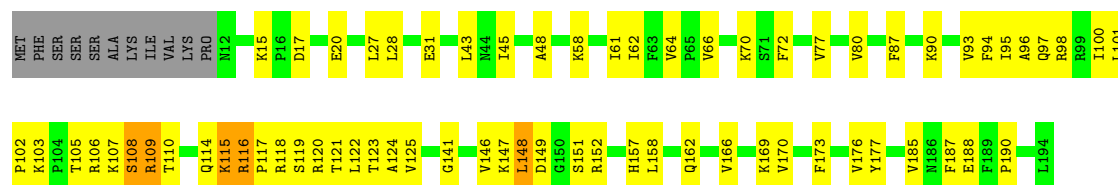
• Molecule 56: 40S ribosomal protein S6

Chain BG: 

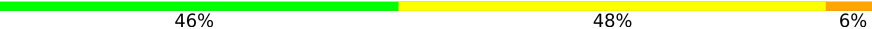


• Molecule 57: 40S ribosomal protein S7

Chain BH: 

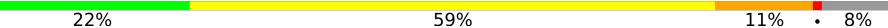


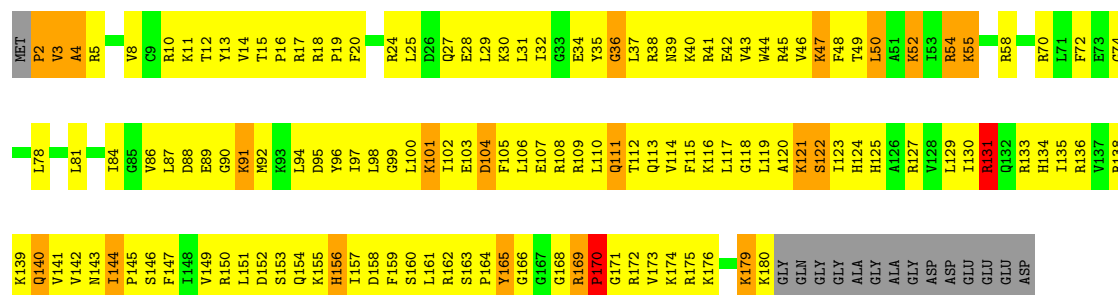
• Molecule 58: 40S ribosomal protein S8

Chain BI: 



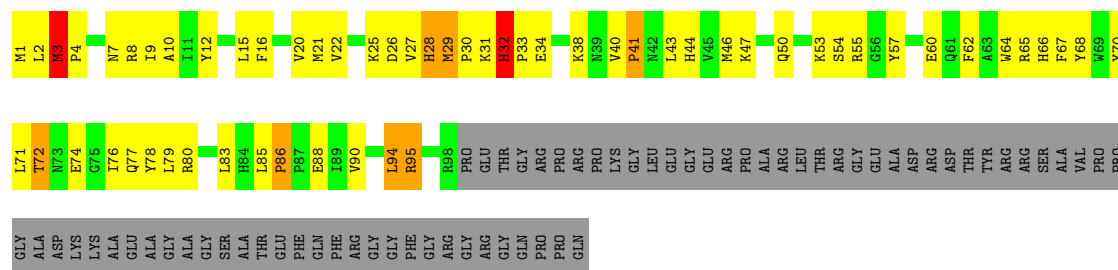
• Molecule 59: 40S ribosomal protein S9

Chain BJ: 

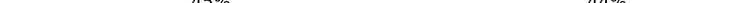


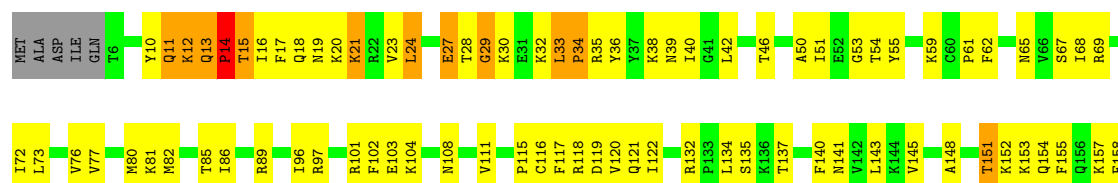
- Molecule 60: 40S ribosomal protein S10

Chain BK: 

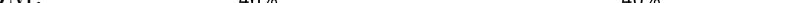


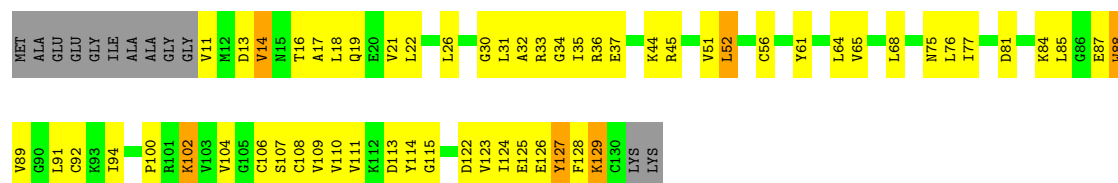
- Molecule 61: 40S ribosomal protein S11

Chain BL:  45% 44% 7% . .



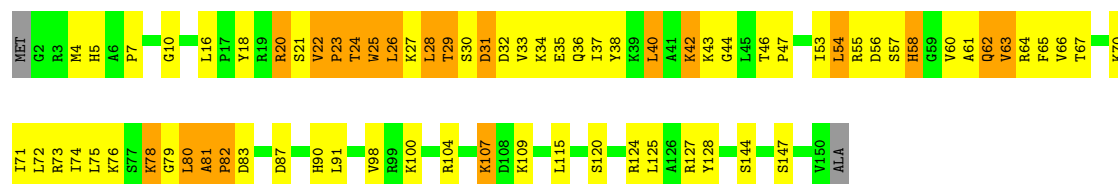
- Molecule 62: 40S ribosomal protein S12

Chain BM: 

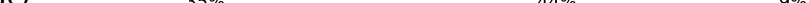


- Molecule 63: 40S ribosomal protein S13

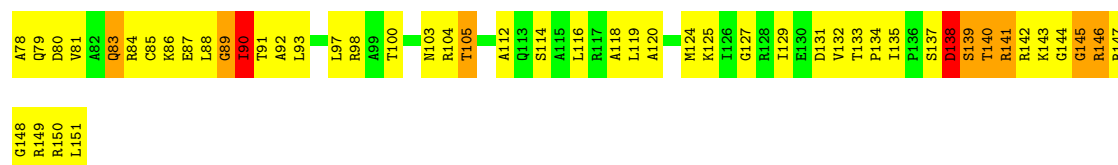
Chain BN: 



- Molecule 64: 40S ribosomal protein S14

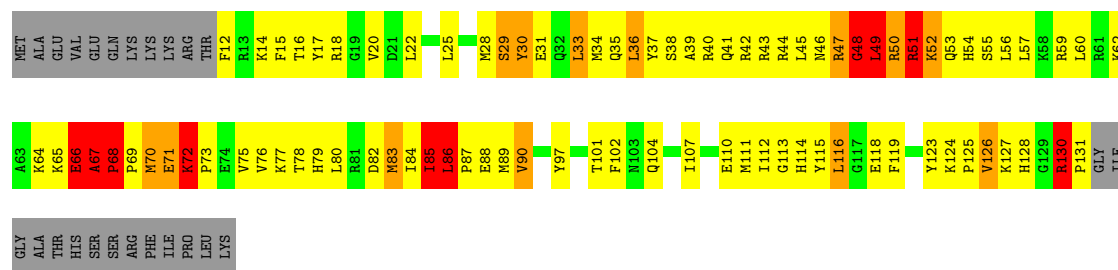
Chain BO:  35% 44% 9% 10%





- Molecule 65: 40S ribosomal protein S15

Chain BP: 22% 45% 9% 7% 17%



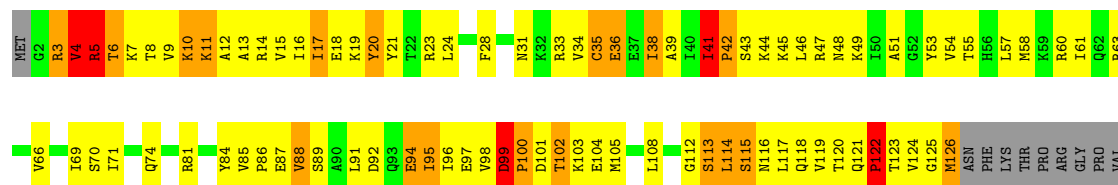
- Molecule 66: 40S ribosomal protein S16

Chain BQ: 34% 47% 12% 5%



- Molecule 67: 40S ribosomal protein S17-like

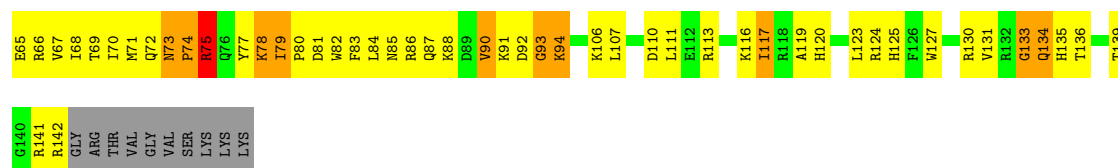
Chain BR: 27% 48% 14% 7%



- Molecule 68: 40S ribosomal protein S18

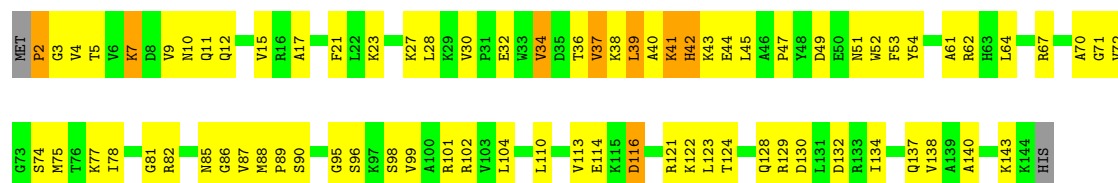
Chain BS: 28% 48% 14% 9%





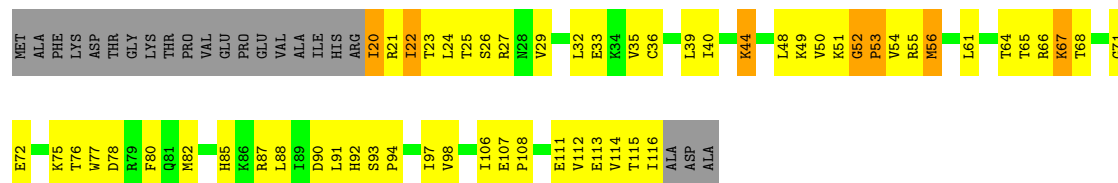
- Molecule 69: 40S ribosomal protein S19

Chain BT: 46% 48% 6% .



- Molecule 70: 40S ribosomal protein S20

Chain BU: 33% 43% 6% 18%



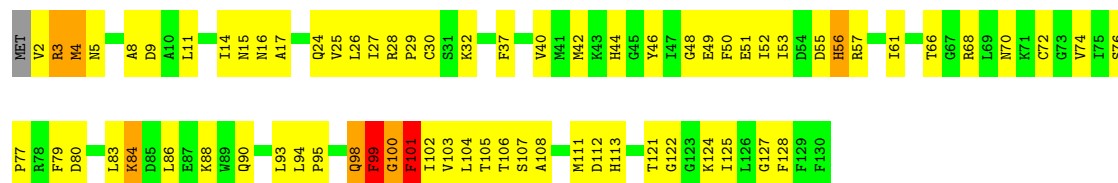
- Molecule 71: 40S ribosomal protein S21

Chain BV: 51% 37% 10%



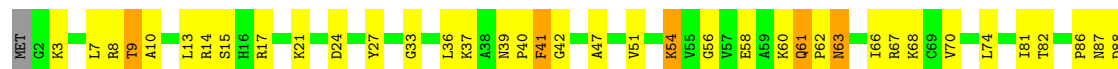
- Molecule 72: 40S ribosomal protein S15a

Chain BW: 45% 48% 5% .

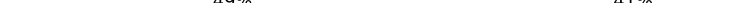


- Molecule 73: 40S ribosomal protein S23

Chain BX: 50% 39% 8% .

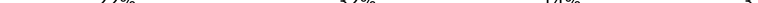


- Molecule 74: 40S ribosomal protein S24

Chain BY:  49% 41% 6%



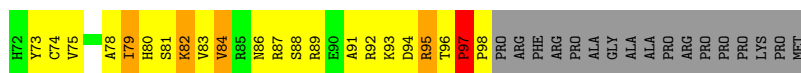
- Molecule 75: 40S ribosomal protein S25

Chain BZ: 



- Molecule 76: 40S ribosomal protein S26

Chain Ba: 30% 46% 8% 16%



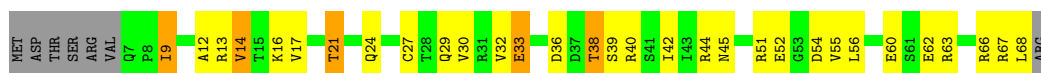
- Molecule 77: 40S ribosomal protein S27

Chain Bb: 60% 33% 5%

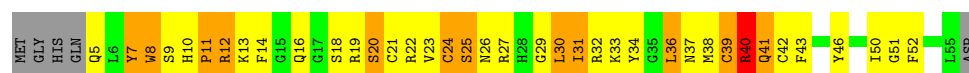


- Molecule 78: 40S ribosomal protein S28

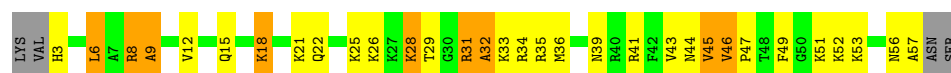
Chain Bc:



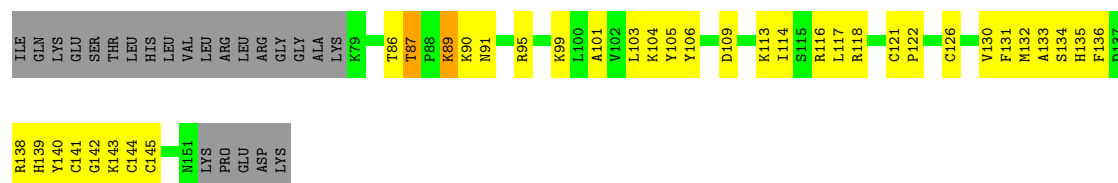
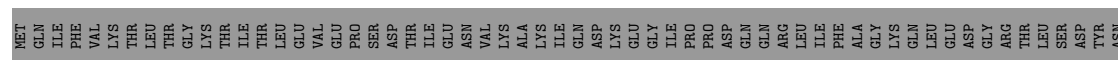
- Molecule 79: 40S ribosomal protein S29



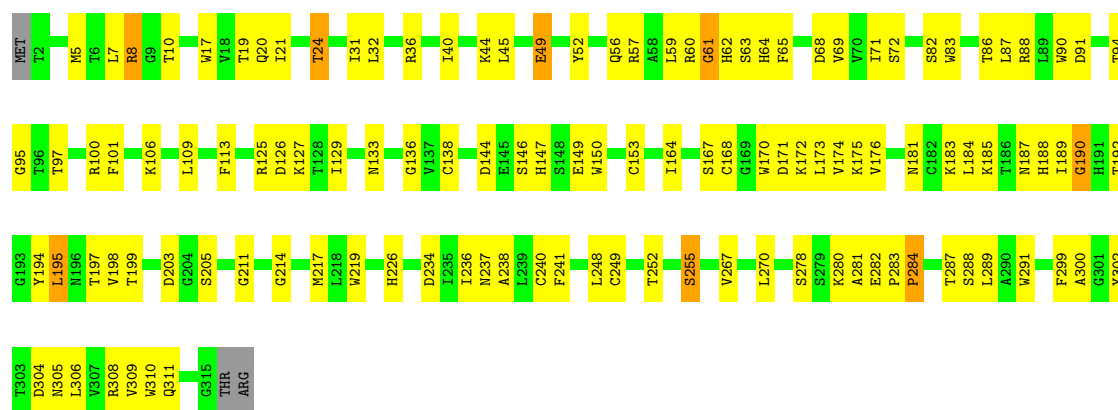
- Chain Be:

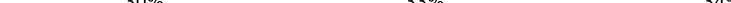


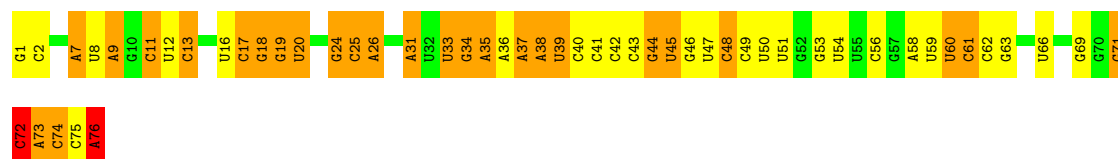
- Chain Bf: 24% 22% . 53%



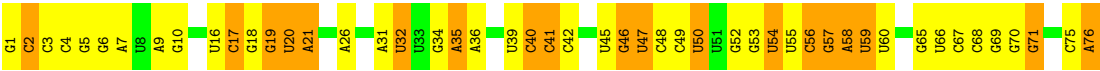
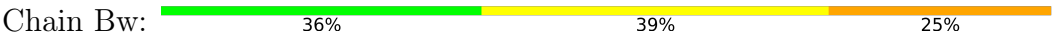
- Chain Bg:



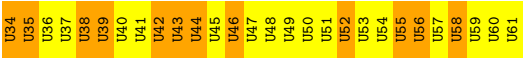
- Chain Bv:  30% 33% 34%



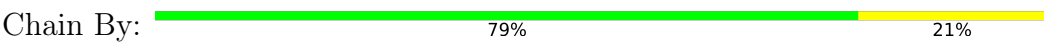
● Molecule 83: tRNA



● Molecule 84: mRNA



● Molecule 85: Nascent protein chain



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	313321	Depositor
Resolution determination method	Not provided	
CTF correction method	DEFOCUS GROUPS	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	20.00	Depositor
Minimum defocus (nm)	2000.00	Depositor
Maximum defocus (nm)	4500.00	Depositor
Magnification	205000	Depositor
Image detector	TVIPS TEMCAM-F416 (4k x 4k)	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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	A3	0.92	32/3726 (0.9%)	1.14	55/5804 (0.9%)
2	A4	0.90	23/2839 (0.8%)	0.97	31/4425 (0.7%)
3	AA	0.69	1/1968 (0.1%)	1.04	7/2639 (0.3%)
4	AB	0.60	0/3246	1.00	3/4345 (0.1%)
5	AC	0.63	4/2942 (0.1%)	1.01	10/3951 (0.3%)
6	AD	0.65	1/2437 (0.0%)	1.06	9/3262 (0.3%)
7	AE	0.73	1/1603 (0.1%)	1.27	16/2153 (0.7%)
8	AF	0.59	0/1986	0.96	4/2644 (0.2%)
9	AG	0.64	0/1913	0.94	3/2576 (0.1%)
10	AH	0.57	2/1545 (0.1%)	0.94	2/2077 (0.1%)
11	AI	0.67	0/1730	1.10	10/2311 (0.4%)
12	AJ	0.62	0/1376	0.97	3/1841 (0.2%)
13	AK	0.90	3/886 (0.3%)	1.74	32/1188 (2.7%)
14	AL	0.71	7/1688 (0.4%)	1.23	14/2260 (0.6%)
15	AM	0.64	0/1161	0.98	2/1554 (0.1%)
16	AN	0.61	0/1746	0.95	5/2338 (0.2%)
17	AO	0.62	0/1638	0.98	2/2191 (0.1%)
18	AP	0.63	0/1268	1.05	3/1701 (0.2%)
19	AQ	0.70	4/1537 (0.3%)	1.06	10/2052 (0.5%)
20	AR	0.59	0/1533	1.01	6/2025 (0.3%)
21	AS	0.59	2/1488 (0.1%)	0.96	2/1997 (0.1%)
22	AT	0.58	0/1312	0.97	3/1753 (0.2%)
23	AU	0.57	0/822	0.90	1/1103 (0.1%)
24	AV	0.58	0/983	0.98	1/1319 (0.1%)
25	AW	0.57	3/1004 (0.3%)	1.02	7/1332 (0.5%)
26	AX	0.56	0/975	0.88	0/1312
27	AY	0.58	0/1081	0.98	4/1439 (0.3%)
28	AZ	0.67	1/1126 (0.1%)	1.13	12/1502 (0.8%)
29	Aa	0.76	3/1191 (0.3%)	1.12	10/1591 (0.6%)
30	Ab	0.57	0/569	0.94	0/750
31	Ac	0.62	0/812	1.01	5/1089 (0.5%)
32	Ad	0.60	0/894	0.98	0/1204

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	Ae	0.63	1/1082 (0.1%)	0.92	2/1443 (0.1%)
34	Af	0.69	0/895	1.14	7/1198 (0.6%)
35	Ag	0.57	0/916	0.86	0/1220
36	Ah	0.63	0/1023	1.12	10/1351 (0.7%)
37	Ai	0.60	0/805	0.93	1/1065 (0.1%)
38	Aj	0.66	1/703 (0.1%)	1.23	11/929 (1.2%)
39	Ak	0.71	2/575 (0.3%)	1.12	6/761 (0.8%)
40	Al	0.62	0/454	0.91	0/599
41	Am	0.70	0/417	0.93	0/553
42	An	0.50	0/241	0.85	0/305
43	Ao	0.58	0/877	1.02	3/1156 (0.3%)
44	Ap	0.60	0/718	0.97	3/953 (0.3%)
45	Aq	0.98	3/1058 (0.3%)	2.06	39/1424 (2.7%)
46	At	0.63	0/995	1.12	5/1334 (0.4%)
47	Au	0.85	3/1772 (0.2%)	1.63	20/2375 (0.8%)
48	A2	0.80	509/86613 (0.6%)	1.04	1075/135108 (0.8%)
49	B1	0.78	213/40767 (0.5%)	1.07	543/63536 (0.9%)
50	BA	0.80	6/1741 (0.3%)	1.23	23/2366 (1.0%)
51	BB	0.65	0/1749	1.04	11/2340 (0.5%)
52	BC	0.57	0/1761	0.95	0/2379
53	BD	0.66	1/1736 (0.1%)	1.07	1/2338 (0.0%)
54	BE	0.65	2/2072 (0.1%)	1.00	6/2793 (0.2%)
55	BF	0.62	2/1524 (0.1%)	0.98	5/2048 (0.2%)
56	BG	0.62	0/1907	1.00	9/2538 (0.4%)
57	BH	0.65	0/1501	1.08	4/2009 (0.2%)
58	BI	0.69	0/1725	0.96	2/2298 (0.1%)
59	BJ	0.53	1/1520 (0.1%)	0.92	5/2030 (0.2%)
60	BK	0.71	0/851	1.09	2/1147 (0.2%)
61	BL	0.59	1/1281 (0.1%)	1.01	6/1710 (0.4%)
62	BM	0.65	0/941	1.01	2/1264 (0.2%)
63	BN	0.59	2/1226 (0.2%)	0.91	2/1649 (0.1%)
64	BO	0.66	0/1029	0.99	2/1380 (0.1%)
65	BP	0.68	2/1019 (0.2%)	1.15	9/1361 (0.7%)
66	BQ	0.54	0/1126	0.98	5/1506 (0.3%)
67	BR	0.69	5/1023 (0.5%)	1.11	8/1373 (0.6%)
68	BS	0.66	2/1172 (0.2%)	1.05	5/1570 (0.3%)
69	BT	0.57	0/1131	0.93	1/1515 (0.1%)
70	BU	0.63	1/778 (0.1%)	1.08	4/1045 (0.4%)
71	BV	0.60	2/623 (0.3%)	1.07	3/833 (0.4%)
72	BW	0.60	0/1051	0.93	0/1406
73	BX	0.66	2/1097 (0.2%)	1.03	2/1464 (0.1%)
74	BY	0.63	0/1032	1.02	2/1371 (0.1%)
75	BZ	0.58	0/696	1.04	2/929 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
76	Ba	0.69	0/786	1.09	2/1053 (0.2%)
77	Bb	0.66	0/637	0.95	0/854
78	Bc	0.63	0/490	1.12	2/656 (0.3%)
79	Bd	0.76	0/437	1.32	6/580 (1.0%)
80	Be	0.56	0/443	0.99	0/583
81	Bf	0.66	0/613	0.93	0/811
82	Bg	0.65	0/2497	0.98	3/3399 (0.1%)
83	Bv	0.46	2/1813 (0.1%)	0.73	9/2823 (0.3%)
83	Bw	0.34	1/1813 (0.1%)	0.82	7/2823 (0.2%)
84	Bx	0.41	1/616 (0.2%)	1.26	10/948 (1.1%)
All	All	0.74	852/234393 (0.4%)	1.05	2157/344230 (0.6%)

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	AB	0	3
5	AC	0	2
7	AE	0	1
8	AF	0	2
10	AH	0	3
13	AK	0	3
14	AL	0	6
39	Ak	0	1
48	A2	2	3
49	B1	1	0
54	BE	0	6
63	BN	0	2
64	BO	0	2
65	BP	0	11
66	BQ	0	6
72	BW	0	3
76	Ba	0	1
79	Bd	0	1
All	All	3	56

The worst 5 of 852 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
48	A2	3612	U	O3'-P	-17.06	1.35	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
49	B1	842	C	O3'-P	16.14	1.85	1.61
48	A2	2689	C	O3'-P	-15.67	1.37	1.61
49	B1	558	G	O3'-P	15.52	1.84	1.61
49	B1	497	C	O3'-P	14.87	1.83	1.61

The worst 5 of 2157 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	A2	131	C	C4'-C3'-O3'	38.38	170.56	113.00
45	Aq	75	PRO	CA-N-CD	-36.64	60.70	112.00
48	A2	1341	G	C4'-C3'-O3'	35.73	162.99	109.40
48	A2	137	G	C4'-C3'-O3'	35.32	165.98	113.00
49	B1	842	C	O3'-P-O5'	-32.49	55.26	104.00

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
48	A2	131	C	C3'
48	A2	137	G	C3'
49	B1	1289	U	C4'

5 of 56 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	AB	295	ASP	Peptide
4	AB	296	GLY	Peptide
4	AB	297	LYS	Peptide
5	AC	98	GLY	Peptide
5	AC	99	GLY	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A3	3337	0	1691	214	0
2	A4	2541	0	1284	159	0
3	AA	1930	0	2030	183	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	AB	3178	0	3314	340	0
5	AC	2888	0	3064	461	0
6	AD	2392	0	2424	347	0
7	AE	1571	0	1698	459	0
8	AF	1950	0	2093	286	0
9	AG	1880	0	2018	148	0
10	AH	1526	0	1605	141	0
11	AI	1692	0	1744	81	0
12	AJ	1353	0	1386	97	0
13	AK	872	0	916	353	0
14	AL	1657	0	1764	252	0
15	AM	1138	0	1204	158	0
16	AN	1701	0	1748	138	0
17	AO	1606	0	1745	137	0
18	AP	1242	0	1269	90	0
19	AQ	1513	0	1628	205	0
20	AR	1517	0	1665	231	0
21	AS	1449	0	1493	171	0
22	AT	1284	0	1352	163	0
23	AU	808	0	831	82	0
24	AV	969	0	1031	88	0
25	AW	989	0	1041	158	0
26	AX	958	0	1029	93	0
27	AY	1064	0	1145	99	0
28	AZ	1103	0	1179	149	0
29	Aa	1162	0	1213	215	0
30	Ab	559	0	590	79	0
31	Ac	801	0	845	50	0
32	Ad	879	0	924	53	0
33	Ae	1064	0	1160	126	0
34	Af	876	0	912	122	0
35	Ag	906	0	1002	74	0
36	Ah	1015	0	1147	101	0
37	Ai	794	0	870	75	0
38	Aj	689	0	717	116	0
39	Ak	569	0	637	119	0
40	Al	444	0	483	48	0
41	Am	411	0	443	29	0
42	An	240	0	289	25	0
43	Ao	863	0	929	77	0
44	Ap	708	0	756	61	0
45	Aq	1046	0	1116	241	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
46	At	980	0	1041	197	0
47	Au	1744	0	1859	347	0
48	A2	77427	0	39103	4535	0
49	B1	36456	0	18412	2629	0
50	BA	1704	0	1703	325	0
51	BB	1722	0	1794	294	0
52	BC	1724	0	1808	200	0
53	BD	1709	0	1801	196	0
54	BE	2031	0	2138	311	0
55	BF	1502	0	1557	187	0
56	BG	1884	0	2044	371	0
57	BH	1479	0	1563	130	0
58	BI	1696	0	1785	192	0
59	BJ	1495	0	1615	409	0
60	BK	827	0	854	152	0
61	BL	1258	0	1334	143	0
62	BM	931	0	961	114	0
63	BN	1202	0	1289	178	0
64	BO	1016	0	1039	174	0
65	BP	999	0	1046	254	0
66	BQ	1109	0	1174	264	0
67	BR	1011	0	1063	323	0
68	BS	1154	0	1210	234	0
69	BT	1112	0	1146	164	0
70	BU	769	0	837	131	0
71	BV	617	0	622	80	0
72	BW	1034	0	1080	138	0
73	BX	1080	0	1147	124	0
74	BY	1015	0	1085	163	0
75	BZ	688	0	766	176	0
76	Ba	774	0	821	156	0
77	Bb	625	0	646	43	0
78	Bc	488	0	514	43	0
79	Bd	427	0	426	203	0
80	Be	437	0	483	102	0
81	Bf	601	0	625	104	0
82	Bg	2440	0	2396	110	0
83	Bv	1623	0	820	71	0
83	Bw	1623	0	821	98	0
84	Bx	561	0	281	54	0
85	By	120	0	32	10	0
86	A2	220	0	0	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
86	A3	8	0	0	0	0
86	A4	9	0	0	0	0
86	AA	1	0	0	0	0
86	AB	2	0	0	0	0
86	AN	2	0	0	0	0
86	AY	1	0	0	0	0
86	Aa	3	0	0	0	0
86	Ae	2	0	0	0	0
86	An	1	0	0	0	0
86	B1	72	0	0	2	0
86	BD	1	0	0	0	0
86	BX	1	0	0	0	0
86	Bv	2	0	0	0	0
86	Bx	1	0	0	1	0
87	Aj	1	0	0	0	0
87	Ao	1	0	0	0	0
87	Ap	1	0	0	0	0
87	Ba	1	0	0	0	0
87	Bd	1	0	0	0	0
All	All	218559	0	162165	16253	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 43.

The worst 5 of 16253 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)
6:AD:286:SER:HB3	48:A2:1163:C:C5'	1.21	1.68
64:BO:54:CYS:SG	64:BO:81:VAL:HG22	1.31	1.67
10:AH:5:LEU:HD13	10:AH:60:TRP:CH2	1.32	1.65
75:BZ:79:ILE:HG21	75:BZ:83:LEU:CD1	1.18	1.64
10:AH:5:LEU:HB3	10:AH:60:TRP:CZ3	1.14	1.63

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	
3	AA	250/257 (97%)	237 (95%)	7 (3%)	6 (2%)	5	30
4	AB	392/403 (97%)	370 (94%)	10 (3%)	12 (3%)	3	26
5	AC	361/427 (84%)	333 (92%)	13 (4%)	15 (4%)	2	19
6	AD	292/297 (98%)	270 (92%)	14 (5%)	8 (3%)	4	28
7	AE	192/288 (67%)	161 (84%)	12 (6%)	19 (10%)	0	6
8	AF	232/248 (94%)	213 (92%)	10 (4%)	9 (4%)	2	21
9	AG	232/266 (87%)	217 (94%)	10 (4%)	5 (2%)	5	31
10	AH	189/192 (98%)	175 (93%)	8 (4%)	6 (3%)	3	25
11	AI	204/214 (95%)	192 (94%)	7 (3%)	5 (2%)	4	29
12	AJ	167/178 (94%)	154 (92%)	7 (4%)	6 (4%)	3	22
13	AK	107/317 (34%)	34 (32%)	37 (35%)	36 (34%)	0	0
14	AL	203/211 (96%)	175 (86%)	14 (7%)	14 (7%)	1	10
15	AM	137/215 (64%)	127 (93%)	5 (4%)	5 (4%)	3	22
16	AN	201/204 (98%)	193 (96%)	6 (3%)	2 (1%)	13	46
17	AO	193/203 (95%)	187 (97%)	3 (2%)	3 (2%)	8	38
18	AP	151/184 (82%)	147 (97%)	4 (3%)	0	100	100
19	AQ	185/188 (98%)	163 (88%)	10 (5%)	12 (6%)	1	12
20	AR	179/196 (91%)	171 (96%)	4 (2%)	4 (2%)	5	31
21	AS	173/176 (98%)	156 (90%)	11 (6%)	6 (4%)	3	24
22	AT	155/160 (97%)	144 (93%)	6 (4%)	5 (3%)	3	25
23	AU	97/128 (76%)	81 (84%)	7 (7%)	9 (9%)	0	7
24	AV	127/140 (91%)	125 (98%)	2 (2%)	0	100	100
25	AW	119/157 (76%)	96 (81%)	18 (15%)	5 (4%)	2	19
26	AX	115/156 (74%)	113 (98%)	2 (2%)	0	100	100
27	AY	125/145 (86%)	119 (95%)	2 (2%)	4 (3%)	3	25

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
28	AZ	132/136 (97%)	118 (89%)	6 (4%)	8 (6%)	1	13
29	Aa	145/148 (98%)	135 (93%)	6 (4%)	4 (3%)	4	27
30	Ab	66/159 (42%)	57 (86%)	5 (8%)	4 (6%)	1	13
31	Ac	101/115 (88%)	97 (96%)	2 (2%)	2 (2%)	6	33
32	Ad	104/125 (83%)	99 (95%)	3 (3%)	2 (2%)	6	34
33	Ae	127/135 (94%)	116 (91%)	6 (5%)	5 (4%)	2	21
34	Af	107/110 (97%)	93 (87%)	5 (5%)	9 (8%)	0	8
35	Ag	112/117 (96%)	107 (96%)	3 (3%)	2 (2%)	7	35
36	Ah	120/123 (98%)	112 (93%)	2 (2%)	6 (5%)	1	16
37	Ai	95/105 (90%)	83 (87%)	7 (7%)	5 (5%)	1	14
38	Aj	82/97 (84%)	69 (84%)	7 (8%)	6 (7%)	1	9
39	Ak	67/70 (96%)	50 (75%)	7 (10%)	10 (15%)	0	3
40	Al	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
41	Am	48/128 (38%)	44 (92%)	3 (6%)	1 (2%)	5	32
42	An	23/25 (92%)	23 (100%)	0	0	100	100
43	Ao	103/106 (97%)	94 (91%)	5 (5%)	4 (4%)	2	21
44	Ap	89/92 (97%)	84 (94%)	3 (3%)	2 (2%)	5	31
45	Aq	136/165 (82%)	40 (29%)	47 (35%)	49 (36%)	0	0
46	At	120/137 (88%)	107 (89%)	10 (8%)	3 (2%)	4	29
47	Au	215/217 (99%)	185 (86%)	20 (9%)	10 (5%)	2	17
50	BA	213/295 (72%)	197 (92%)	12 (6%)	4 (2%)	6	34
51	BB	210/264 (80%)	180 (86%)	12 (6%)	18 (9%)	0	7
52	BC	220/293 (75%)	204 (93%)	7 (3%)	9 (4%)	2	20
53	BD	218/243 (90%)	201 (92%)	10 (5%)	7 (3%)	3	25
54	BE	255/263 (97%)	230 (90%)	14 (6%)	11 (4%)	2	19
55	BF	188/204 (92%)	163 (87%)	15 (8%)	10 (5%)	1	14
56	BG	230/249 (92%)	211 (92%)	11 (5%)	8 (4%)	3	24
57	BH	181/194 (93%)	169 (93%)	8 (4%)	4 (2%)	5	31
58	BI	205/208 (99%)	175 (85%)	20 (10%)	10 (5%)	2	16
59	BJ	177/194 (91%)	137 (77%)	28 (16%)	12 (7%)	1	11
60	BK	96/165 (58%)	84 (88%)	7 (7%)	5 (5%)	1	15

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
61	BL	151/158 (96%)	133 (88%)	11 (7%)	7 (5%)	2	18
62	BM	118/132 (89%)	113 (96%)	1 (1%)	4 (3%)	3	24
63	BN	147/151 (97%)	126 (86%)	13 (9%)	8 (5%)	1	14
64	BO	134/151 (89%)	113 (84%)	11 (8%)	10 (8%)	1	9
65	BP	118/145 (81%)	100 (85%)	9 (8%)	9 (8%)	1	9
66	BQ	137/146 (94%)	120 (88%)	10 (7%)	7 (5%)	1	16
67	BR	123/135 (91%)	106 (86%)	9 (7%)	8 (6%)	1	12
68	BS	137/152 (90%)	125 (91%)	7 (5%)	5 (4%)	3	22
69	BT	141/145 (97%)	131 (93%)	6 (4%)	4 (3%)	4	27
70	BU	95/119 (80%)	91 (96%)	2 (2%)	2 (2%)	5	32
71	BV	79/83 (95%)	77 (98%)	2 (2%)	0	100	100
72	BW	127/130 (98%)	120 (94%)	3 (2%)	4 (3%)	3	26
73	BX	137/143 (96%)	124 (90%)	8 (6%)	5 (4%)	3	22
74	BY	123/133 (92%)	116 (94%)	6 (5%)	1 (1%)	16	51
75	BZ	84/125 (67%)	80 (95%)	1 (1%)	3 (4%)	3	22
76	Ba	95/115 (83%)	87 (92%)	7 (7%)	1 (1%)	12	45
77	Bb	78/84 (93%)	72 (92%)	4 (5%)	2 (3%)	4	28
78	Bc	60/69 (87%)	57 (95%)	1 (2%)	2 (3%)	3	25
79	Bd	49/56 (88%)	42 (86%)	4 (8%)	3 (6%)	1	13
80	Be	53/59 (90%)	49 (92%)	2 (4%)	2 (4%)	2	21
81	Bf	71/156 (46%)	63 (89%)	7 (10%)	1 (1%)	9	40
82	Bg	312/317 (98%)	292 (94%)	12 (4%)	8 (3%)	4	28
All	All	11580/13387 (86%)	10401 (90%)	657 (6%)	522 (4%)	3	18

5 of 522 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	AA	138	SER
3	AA	144	LYS
3	AA	197	PRO
4	AB	189	THR
4	AB	356	LYS

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	AA	194/199 (98%)	182 (94%)	12 (6%)	15	42
4	AB	343/349 (98%)	318 (93%)	25 (7%)	11	37
5	AC	302/348 (87%)	275 (91%)	27 (9%)	8	31
6	AD	248/250 (99%)	227 (92%)	21 (8%)	8	32
7	AE	174/252 (69%)	124 (71%)	50 (29%)	0	2
8	AF	203/215 (94%)	192 (95%)	11 (5%)	18	46
9	AG	199/223 (89%)	190 (96%)	9 (4%)	23	53
10	AH	170/171 (99%)	158 (93%)	12 (7%)	12	38
11	AI	178/181 (98%)	174 (98%)	4 (2%)	47	70
12	AJ	142/149 (95%)	138 (97%)	4 (3%)	38	65
13	AK	95/258 (37%)	68 (72%)	27 (28%)	0	2
14	AL	171/177 (97%)	154 (90%)	17 (10%)	6	27
15	AM	118/161 (73%)	105 (89%)	13 (11%)	5	24
16	AN	171/172 (99%)	166 (97%)	5 (3%)	37	64
17	AO	168/174 (97%)	164 (98%)	4 (2%)	44	68
18	AP	134/163 (82%)	122 (91%)	12 (9%)	8	30
19	AQ	164/165 (99%)	145 (88%)	19 (12%)	4	21
20	AR	160/175 (91%)	146 (91%)	14 (9%)	8	31
21	AS	156/157 (99%)	149 (96%)	7 (4%)	23	53
22	AT	138/140 (99%)	126 (91%)	12 (9%)	8	31
23	AU	89/115 (77%)	79 (89%)	10 (11%)	5	22
24	AV	100/107 (94%)	97 (97%)	3 (3%)	36	63
25	AW	100/126 (79%)	95 (95%)	5 (5%)	20	49
26	AX	105/133 (79%)	94 (90%)	11 (10%)	5	25
27	AY	119/135 (88%)	107 (90%)	12 (10%)	6	26
28	AZ	117/118 (99%)	100 (86%)	17 (14%)	2	15

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
29	Aa	120/121 (99%)	109 (91%)	11 (9%)	7	29
30	Ab	58/126 (46%)	54 (93%)	4 (7%)	13	39
31	Ac	88/97 (91%)	86 (98%)	2 (2%)	45	69
32	Ad	97/110 (88%)	96 (99%)	1 (1%)	73	84
33	Ae	115/121 (95%)	114 (99%)	1 (1%)	75	86
34	Af	88/89 (99%)	84 (96%)	4 (4%)	23	53
35	Ag	98/100 (98%)	93 (95%)	5 (5%)	20	48
36	Ah	109/110 (99%)	96 (88%)	13 (12%)	4	21
37	Ai	83/89 (93%)	79 (95%)	4 (5%)	21	50
38	Aj	71/80 (89%)	65 (92%)	6 (8%)	8	32
39	Ak	64/65 (98%)	44 (69%)	20 (31%)	0	2
40	Al	47/48 (98%)	43 (92%)	4 (8%)	8	32
41	Am	46/116 (40%)	45 (98%)	1 (2%)	47	70
42	An	24/24 (100%)	23 (96%)	1 (4%)	25	54
43	Ao	93/94 (99%)	82 (88%)	11 (12%)	4	21
44	Ap	74/75 (99%)	70 (95%)	4 (5%)	18	46
45	Aq	114/137 (83%)	87 (76%)	27 (24%)	0	3
46	At	106/121 (88%)	87 (82%)	19 (18%)	1	8
47	Au	196/196 (100%)	179 (91%)	17 (9%)	8	31
50	BA	180/243 (74%)	165 (92%)	15 (8%)	9	32
51	BB	193/231 (84%)	174 (90%)	19 (10%)	6	27
52	BC	188/225 (84%)	179 (95%)	9 (5%)	21	50
53	BD	183/202 (91%)	175 (96%)	8 (4%)	24	53
54	BE	220/225 (98%)	214 (97%)	6 (3%)	40	65
55	BF	160/170 (94%)	154 (96%)	6 (4%)	28	57
56	BG	202/218 (93%)	175 (87%)	27 (13%)	3	18
57	BH	164/174 (94%)	163 (99%)	1 (1%)	84	91
58	BI	179/180 (99%)	174 (97%)	5 (3%)	38	65
59	BJ	160/168 (95%)	151 (94%)	9 (6%)	17	45
60	BK	89/136 (65%)	85 (96%)	4 (4%)	23	53
61	BL	138/142 (97%)	134 (97%)	4 (3%)	37	64

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
62	BM	102/108 (94%)	100 (98%)	2 (2%)	50	72
63	BN	130/131 (99%)	121 (93%)	9 (7%)	13	39
64	BO	106/119 (89%)	97 (92%)	9 (8%)	8	32
65	BP	109/130 (84%)	92 (84%)	17 (16%)	2	13
66	BQ	115/121 (95%)	103 (90%)	12 (10%)	5	25
67	BR	113/122 (93%)	95 (84%)	18 (16%)	2	12
68	BS	121/132 (92%)	103 (85%)	18 (15%)	2	15
69	BT	113/115 (98%)	104 (92%)	9 (8%)	10	34
70	BU	90/107 (84%)	86 (96%)	4 (4%)	24	53
71	BV	65/67 (97%)	58 (89%)	7 (11%)	5	24
72	BW	112/113 (99%)	109 (97%)	3 (3%)	40	65
73	BX	111/115 (96%)	100 (90%)	11 (10%)	6	27
74	BY	107/115 (93%)	103 (96%)	4 (4%)	29	58
75	BZ	75/103 (73%)	58 (77%)	17 (23%)	0	4
76	Ba	84/98 (86%)	72 (86%)	12 (14%)	2	16
77	Bb	72/76 (95%)	72 (100%)	0	100	100
78	Bc	55/62 (89%)	53 (96%)	2 (4%)	30	59
79	Bd	45/49 (92%)	39 (87%)	6 (13%)	3	18
80	Be	44/48 (92%)	33 (75%)	11 (25%)	0	3
81	Bf	66/140 (47%)	65 (98%)	1 (2%)	60	77
82	Bg	272/275 (99%)	267 (98%)	5 (2%)	54	74
All	All	10112/11392 (89%)	9304 (92%)	808 (8%)	12	34

5 of 808 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
45	Aq	37	LEU
54	BE	153	VAL
80	Be	46	VAL
45	Aq	109	ILE
45	Aq	35	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 268 such sidechains are listed below:

Mol	Chain	Res	Type
69	BT	42	HIS
72	BW	44	HIS
82	Bg	56	GLN
24	AV	101	ASN
23	AU	50	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A3	156/194 (80%)	28 (17%)	4 (2%)
2	A4	118/121 (97%)	23 (19%)	1 (0%)
48	A2	3600/5029 (71%)	698 (19%)	48 (1%)
49	B1	1701/1869 (91%)	291 (17%)	19 (1%)
83	Bv	75/76 (98%)	38 (50%)	0
83	Bw	75/76 (98%)	34 (45%)	0
84	Bx	27/28 (96%)	18 (66%)	0
All	All	5752/7393 (77%)	1130 (19%)	72 (1%)

5 of 1130 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A3	2	G
1	A3	12	G
1	A3	16	G
1	A3	35	C
1	A3	59	A

5 of 72 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
49	B1	283	G
49	B1	1756	C
49	B1	369	C
49	B1	797	C
48	A2	1402	G

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 331 ligands modelled in this entry, 331 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
49	B1	8
48	A2	5

The worst 5 of 13 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B1	842:C	O3'	843:C	P	1.85
1	B1	558:G	O3'	559:G	P	1.84
1	B1	497:C	O3'	498:C	P	1.83
1	B1	72:C	O3'	73:C	P	1.82
1	B1	1253:A	O3'	1254:C	P	1.82

6 Map visualisation

This section contains visualisations of the EMDB entry EMD-2875. 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

This section was not generated.

6.2 Central slices

This section was not generated.

6.3 Largest variance slices

This section was not generated.

6.4 Orthogonal standard-deviation projections (False-color)

This section was not generated.

6.5 Orthogonal surface views

This section was not generated.

6.6 Mask visualisation

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 ⓘ

This section was not generated.

7.2 Volume estimate versus contour level ⓘ

This section was not generated.

7.3 Rotationally averaged power spectrum ⓘ

This section was not generated. The rotationally averaged power spectrum had issues being displayed.

8 Fourier-Shell correlation

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

9 Map-model fit

This section was not generated.