

SUPPLEMENTAL DATA

Charge Segregation and Low Hydrophobicity Are Key Features of Ribosomal Proteins from Different Organisms*

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Supplemental Text

The data provided here illustrate the percent of positively and negatively charged solvent-accessible surface area (%ASA₊ and %ASA₋) of each protein embedded within the large ribosomal subunit of five different organisms (*D. radiodurans*, *E. coli*, *H. marismortui*, *S. cerevisiae*, and *T. thermophilus*). Corresponding values averaged over all proteins of each organism (~~%ASA₊ and %ASA₋~~) are reported in Table 6 of the main text. Data were generated for positively and negatively charged functional groups of each ribosomal protein with available PDB coordinates, as described in the main text. The results are summarized in the five Supplemental Tables below.

Supplemental Tables

Supplemental Table 1. Percent of positively and negatively charged solvent-accessible surface area of proteins embedded within the large ribosomal subunit of *D. radiodurans*.

Ribosomal protein	Percent of positively charged ASA (%ASA ₊)	Percent of negatively charged ASA (%ASA ₋)	Ribosomal protein	Percent of positively charged ASA (%ASA ₊)	Percent of negatively charged ASA (%ASA ₋)
L2	58%	67%	L20	40%	60%
L3	45%	86%	L21	37%	91%
L4	53%	93%	L22	50%	79%
L5	75%	86%	L23	58%	90%
L6	75%	100%	L24	69%	100%
L11	84%	99%	L25	74%	96%
L13	52%	82%	L27	56%	58%
L14	64%	70%	L28	55%	100%
L15	49%	83%	L29	74%	85%
L16	55%	60%	L30	64%	98%
L17	43%	81%	L32	32%	77%
L18	64%	93%	L36	41%	90%
L19	57%	73%	Average	57%	84%

Supplemental Table 2. Percent of positively and negatively charged solvent-accessible surface area of proteins embedded within the large ribosomal subunit of *E. coli*.

Ribosomal protein	Percent of positively charged ASA (%ASA₊)	Percent of negatively charged ASA (%ASA₋)	Ribosomal protein	Percent of positively charged ASA (%ASA₊)	Percent of negatively charged ASA (%ASA₋)
L2	61%	65%	L21	53%	87%
L3	63%	89%	L22	43%	48%
L4	51%	89%	L23	58%	81%
L5	84%	91%	L24	70%	99%
L6	82%	98%	L25	69%	83%
L13	50%	83%	L27	44%	54%
L14	68%	65%	L29	66%	92%
L15	53%	86%	L31	63%	64%
L16	62%	77%	L32	38%	96%
L17	53%	79%	L33	74%	32%
L18	65%	75%	L34	41%	N/A
L19	76%	69%	L35	31%	68%
L20	33%	6%	L36	33%	94%
			Average	57%	75%

Supplemental Table 3. Percent of positively and negatively charged solvent-accessible surface area of proteins embedded within the large ribosomal subunit of *H. marismortui*.

Ribosomal protein	Percent of positively charged ASA (%ASA₊)	Percent of negatively charged ASA (%ASA₋)	Ribosomal protein	Percent of positively charged ASA (%ASA₊)	Percent of negatively charged ASA (%ASA₋)
L2p	44%	76%	L21e	43%	87%
L3p	36%	86%	L22p	54%	92%
L4p	34%	87%	L23p	46%	87%
L5p	55%	79%	L24e	66%	75%
L6p	63%	94%	L24p	37%	84%
L7Ae	74%	90%	L29p	51%	89%
L10e	54%	90%	L30p	45%	88%
L11p	92%	96%	L31e	57%	91%
L13p	49%	89%	L32e	36%	91%
L14p	56%	85%	L37Ae	68%	96%
L15e	30%	73%	L37e	29%	74%
L16e	34%	86%	L39e	39%	52%
L18p	39%	93%	L44e	60%	94%
L19e	39%	89%	Average	49%	86%

Supplemental Table 4. Percent of positively and negatively charged solvent-accessible surface area of proteins embedded within the large ribosomal subunit of *S. cerevisiae*.

Ribosomal protein	Percent of positively charged ASA (%ASA₊)	Percent of negatively charged ASA (%ASA₋)	Ribosomal protein	Percent of positively charged ASA (%ASA₊)	Percent of negatively charged ASA (%ASA₋)
L2A	40%	69%	L23A	58%	76%
L3	52%	84%	L25	56%	96%
L5	53%	95%	L26A	49%	80%
L6A	52%	86%	L27A	55%	94%
L7A	41%	73%	L28	40%	69%
L8A	55%	81%	L29	52%	84%
L9A	57%	85%	L31A	53%	95%
L10	62%	84%	L32	52%	86%
L11A	52%	93%	L33A	41%	73%
L13A	39%	80%	L34A	55%	81%
L14A	45%	74%	L35A	57%	85%
L15A	45%	44%	L36A	62%	84%
L16	57%	100%	L37A	52%	93%
L17A	53%	95%	L38	79%	73%
L18A	41%	70%	L39	39%	80%
L19A	57%	97%	L40	45%	74%
L20A	46%	81%	L41A	45%	44%
L21A	41%	87%	L42A	57%	100%
L22A	46%	100%	L43A	53%	95%
			Average	51%	83%

Supplemental Table 5. Percent of positively and negatively charged solvent-accessible surface area of proteins embedded within the large ribosomal subunit of *T. thermophilus*.

Ribosomal protein	Percent of positively charged ASA (%ASA₊)	Percent of negatively charged ASA (%ASA₋)	Ribosomal protein	Percent of positively charged ASA (%ASA₊)	Percent of negatively charged ASA (%ASA₋)
L2	46%	74%	L20	32%	44%
L3	53%	82%	L21	48%	98%
L4	47%	90%	L22	49%	81%
L5	73%	86%	L23	46%	65%
L6	84%	100%	L24	68%	87%
L7/12	89%	80%	L25	74%	85%
L9	89%	100%	L27	48%	61%
L10	73%	82%	L28	53%	76%
L11	84%	95%	L29	66%	91%
L13	59%	93%	L30	66%	100%
L14	62%	69%	L31	90%	88%
L15	44%	85%	L32	42%	95%
L16	53%	63%	L33	70%	38%
L17	45%	87%	L34	34%	N/A
L18	54%	92%	L35	30%	55%
L19	70%	82%	Average	59%	81%