

S4 Supplementary material

Birth of a nucleolus: the evolution of nucleolar compartments

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Table showing length of rDNA transcription units versus intergenic regions across evolution

Length of rDNA transcription units (TU) versus intergenic spacer regions (IR) across evolution^a								
Species	TU (µm)	IR (µm)	TU (Kb)	IR (Kb)	rDNA copy number^b	References		
<i>Chlamydomonas reinhardtii</i>	1.9	1	n.d.	n.d.	150	Franke et al, 1979 The cell nucleus, 7: 49-95	Protist	Green plants
<i>Acetabularia major</i>	1.9	1.5	n.d.	n.d.	n.d.	Franke et al, 1979 The cell nucleus, 7: 49-95	Protist	Green plants
<i>Acetabularia peniculus</i>	2.3	0.95	n.d.	n.d.	n.d.	Franke et al, 1979 The cell nucleus, 7: 49-95	Protist	Green plants
<i>Dasycladus clavaeformis</i>	1.85	0.2	n.d.	n.d.	n.d.	Franke et al, 1979 The cell nucleus, 7: 49-95	Protist	Green plants
<i>Cymopolia van bossea</i>	1.9	0.4	n.d.	n.d.	n.d.	Franke et al, 1979 The cell nucleus, 7: 49-95	Protist	Green plants
<i>Funaria hygrometrica</i>	1.9	1.6	5.982	5.15	n.d.	Capesius, 1997 Plant Mol Biol 33: 559-564	Moss	Green plants
<i>Cucumis sativas</i>	3.2	0.75	10.111	2.389	4400	Zentgraf et al, 1990 Plant Mol Biol 15: 465-467	Plant	Green plants
<i>Glycine max</i>	1.9	0.6	5.979	1.821	n.d.	Varsanyi-Breiner et al, 1979 Gene 7: 317-334; Nickrent and Patrick 1998 Genome 41: 183-192	Plant	Green plants
<i>Zea mays</i>	1.7	0.5	n.d.	n.d.	3500-9450	Deltour and Mosen, 1987 Biol Cell 60: 75-86	Plant	Green plants
<i>Sinapis alba</i>	1.9	0.7	n.d.	n.d.	15000	Deltour and Mosen, 1987 Biol Cell 60: 75-86	Plant	Green plants
<i>Giardia muris</i>	1.4	1.05	4.354	3.314	n.d.	Van Keulen et al, 1992 J Mol Evol 35: 318-328	Protist	Other Protists
<i>Oxytricha fallax</i>	1.9	0.5	5.92	1.4	n.d.	Blachburn, 1981 The cell nucleus, 10: 145-170	Protist	Alveolates
<i>Tetrahymena pyriformis</i>	2	0.6	n.d.	n.d.	200-290	Franke et al, 1979 The cell nucleus, 7: 49-95	Protist	Alveolates
<i>Crithidia fasciculata</i>	2.5	1.1	7.807	3.508	n.d.	Schnare et al, 2000 Nucleic Acid Res 28: 3452-3461	Protist	Alveolates

<i>Acanthamoeba castellanii</i>	3.1	0.7	9.7	2.33	24	D'Alessio et al, 1981 Biochemistry 20: 3822-3827; Yang et al, 1994 Nucleic Acid Res 22: 4798-4805	Protist	Ramicrostates
<i>Saccharomyces cerevisiae</i>	2.1	0.8	6.614	2.554	100-200	Hadjiolov, 1985 Biol Monographs 12: 1-268	Yeast	Yeast
<i>Ascaris lumbricoides</i>	2.05 2.05	0.75 0.6	6.39 6.463	2.41 1.937	300	Black et al, 1984 Nucleic Acid Res 12: 1313-1332; Muller et al, 1992 Nucleic Acid Res 20: 2977-2983	Nematod	Nematoda
<i>Drosophila hydei</i>	2.5	0.9	n.d.	n.d.	280	Franke et al, 1979 The cell nucleus, 7: 49-95	Insect	Arthropoda
<i>Chironomus tentans</i>	2.2	0.45	n.d.	n.d.	40-100	Franke et al, 1979 The cell nucleus, 7: 49-95	Insect	Arthropoda
<i>Bombyx mori</i>	2.9	0.5	n.d.	n.d.	240	Manning et al, 1978 Gene 4: 153-166	Insect	Arthropoda
<i>Oncopeltus fasciatus</i>	2.4	0.75	n.d.	n.d.	n.d.	Franke et al, 1979 The cell nucleus, 7: 49-95	Insect	Arthropoda
<i>Dytiscus marginalis</i>	3.6	3.4	n.d.	n.d.	220	Franke et al, 1979 The cell nucleus, 7: 49-95	Insect	Arthropoda
<i>Locusta migratoria</i>	1.64	1.84	n.d.	n.d.	3300-4000	Scheer et al, 1997 Chromosoma 105: 470-480	Insect	Arthropoda
<i>Sciara coprophila</i>	2.15	0.6	n.d.	n.d.	45	Franke et al, 1979 The cell nucleus, 7: 49-95	Insect	Arthropoda
<i>Lytechinus variegatus</i>	2.47	1.16	n.d.	n.d.	260	Mishra, 1979 Experientia 35: 1161-1163	Echinoderm	Echinodermata
<i>Brachydanio rerio</i>	1.85	0.85	n.d.	n.d.	n.d.	Franke et al, 1979 The cell nucleus, 7: 49-95	Fish	Osteichthyes
<i>Cyprinus carpio</i>	2.1	2.6	6.7	8.3	290	Vera et al, 2003 Biol Res 36: 241-251	Fish	Osteichthyes
<i>Andrius davidianus</i>	2.15	1.25	n.d.	n.d.	n.d.	Franke et al, 1979 The cell nucleus, 7: 49-95	Amphibian	Amphibians
<i>Pleurodeles waltlii</i>	2.4	0.85	n.d.	n.d.	n.d.	Franke et al, 1979 The cell nucleus, 7: 49-95	Amphibian	Amphibians
<i>Triturus alpestris</i>	2.7	2.1	n.d.	n.d.	n.d.	Franke et al, 1979 The cell nucleus, 7: 49-95	Amphibian	Amphibians
<i>Triturus cristatus</i>	2.5	1.7	n.d.	n.d.	4100	Franke et al, 1979 The cell nucleus, 7: 49-95	Amphibian	Amphibians
<i>Triturus helveticus</i>	2.6	2.2	n.d.	n.d.	n.d.	Franke et al, 1979 The cell nucleus, 7: 49-95	Amphibian	Amphibians
<i>Rana pipiens</i>	2.2	0.8	n.d.	n.d.	950-1290	Franke et al, 1979 The cell nucleus, 7: 49-95	Amphibian	Amphibians
<i>Xenopus laevis</i>	2.4	0.95	n.d.	n.d.	500-760	Franke et al, 1979 The cell nucleus, 7: 49-95	Amphibian	Amphibians
<i>Mus musculus</i>	4.27	10.2	13.405	31.904	100	Grozdanov et al, 2003 Genomics 82: 637-643	Mammalian	Mammalia
<i>Cricetulus griseus</i>	3.8	6.4	n.d.	n.d.	250	Franke et al, 1979 The cell nucleus, 7: 49-95	Mammalian	Mammalia
<i>Bos taurus</i>	4.25	6	n.d.	n.d.	n.d.	Blin et al, 1976 Chromosoma 58: 41-50	Mammalian	Mammalia
<i>Homo sapiens</i>	4.24	9.44	13.314	29.685	50-200	Gonzalez and Sylvester 1995 Genomics 27: 320-328	Mammalian	Mammalia

^a Size is provided in μm and, when available, in Kb. Note that 1 μm has been estimated to roughly correspond to 3143 bp (Stuber and Bujard, 1977 Mol Gen Genet 154: 299-303). ^b number of rDNA genes per haploid genome (most original references in Long and Dawid, Ann Rev Biochem 1980, 49: 727-764). n.d., not determined