

Table 1 | **Ribosome components from the three domains of life**

Characteristics	Bacteria	Archaea	Mitochondria	Eukarya
Ribosome size	70S	70S	55S	80S
<i>Small subunit</i>				
Size	30S	30S	28S	40S
Mass (MDa)	0.8	0.8	1.2	1.4
rRNAs	16S	16S	12S	18S
Number of r-proteins	20	28	33	32
<i>Large subunit</i>				
Size	50S	50S	39S	60S
Mass (MDa)	1.6	1.6	2.4	2.6
rRNAs	23S, 5S	23S, 5S	16S	28S, 5.8S, 5S
Number of r-proteins	34	40	52	46

Ribosomes from all domains of life function in essentially the same manner. Bacterial and archaeal ribosomes are approximately the same size, whereas the ribosomes in Eukarya are much larger. Differences in rRNA and r-protein components allow antibiotics and cytotoxins to exhibit specificity for the ribosomes of one domain. Chloroplast ribosomes (not shown) are structurally closest to the bacterial domain. Mitochondrial ribosomes (based on the rat genome sequence) have evolved away from the other structures, including their cytoplasmic counterparts, and contain a larger complement of r-proteins relative to the rRNA.