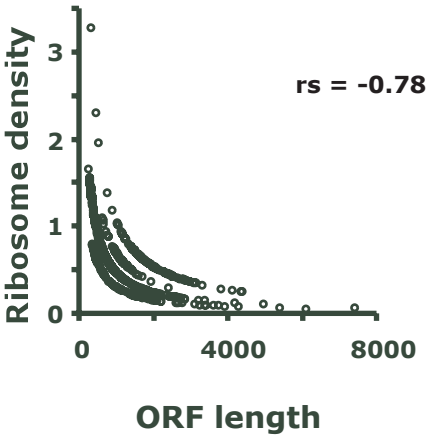
Supplemental figure 8

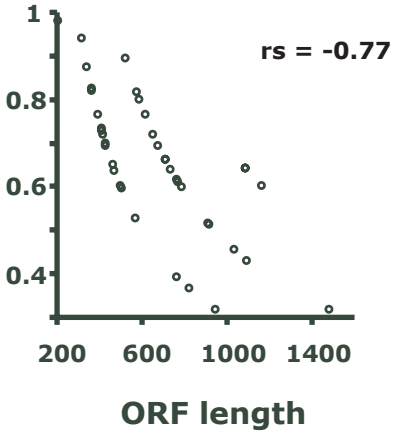
Analysis of the correlation between ORF length and ribosome density for various mRNA subsets

We have analyzed the correlation between the ORF length and ribosome density for several functional subsets: A) mRNAs encoding for ribosomal proteins (RP). B). mRNAs encoding proteins localized in the mitochondria. C). mRNAs cosedimenting the mitochondria D). mRNAs associated with membrane fractions.

A) Excluding mRNAs encoding ribosomal proteins

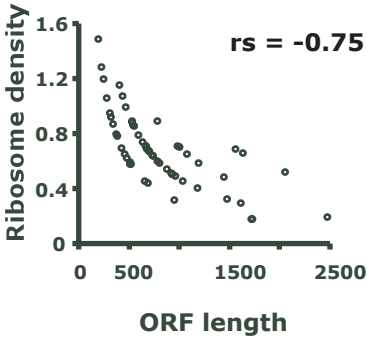


Only mRNAs encoding ribosomal proteins



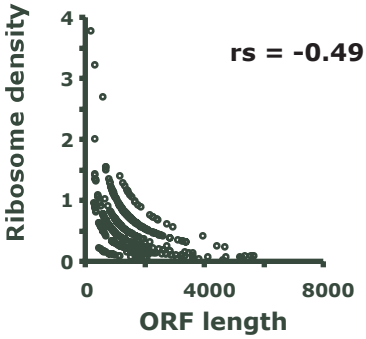
To ensure that the inverse correlation does not arise from the effects of small subset of highly expressed genes, we excluded from the analysis the genes encoding for ribosome associated proteins (left panel). The correlation is still apparent with a Spearman rank of -0.78. The complementary analysis, looking only at the genes encoding for the ribosome associated proteins (right panel) also reveals the correlation. The mRNAs encoding ribosomal proteins are relatively short and sediment at the well-resolved region of the gradient (<5 ribosomes).

B). Mitochodrial proteins subset.



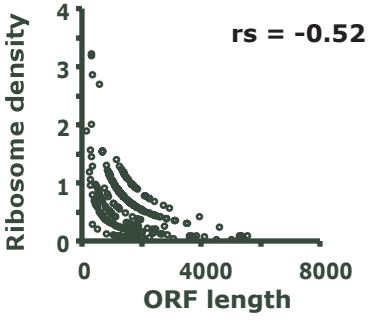
Correlation analysis was performed within the group of mRNAs encoding for mitochondrial protein (Taken from YPD database, July 2000 release). The high inverse correlation is still apparent.

C).mRNAs in the vicinity of the mitochondria proteins.



Correlation analysis was performed within a group of mRNAs reported to be closely associated with the mitochondria (Marc P. et al. EMBO reports 2002 3:159-164). For the analysis, only mRNAs reported to have mitochondrial localization of mRNA (MLR) larger than 80 were taken.

D). Membrane-associated mRNAs.



Correlation analysis was performed within a group of mRNAs reported to be associated with membranes (Diehn M. et al. Nat. Genet. 2000 25: 58-62). For the analysis, only mRNAs reported to have ratios larger than 2 were taken.