

The relation between the stop codon reassignment and the specificity of eukaryotic release factor 1 (eRF1) in *Blepharisma*

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SUMMARY

In *Blepharisma*, the universal stop codon UGA has been known to reassign to sense codon (Trp). The reassignment of the codon UGA implies that eRF1 (the stop codon-recognizing protein) may lose its binding specificity toward UGA. In this study, we examined the stop codon recognizing capacity of eRF1 domain 1, (the stop codon-binding domain), infrom *Blepharisma musculus* by an in vivo assay system in yeast. Unexpectedly, the chimeric eRF1, which contains *Blepharisma* domain 1, was able to complement a defect in yeast eRF1, i.e. *Blepharisma* eRF1 and recognizes all three stop codons (UAA, UAG and UGA). Our result leads to a speculation that the stop codon reassignment in *Blepharisma* has occurred by a mechanism that might require the appearance of new tRNA able to read the reassigned codon UGA.