

How is ciliate eukaryotic release factor 1 (eRF1) different from conventional eRF1s?

– *In vivo* complementary activity of *Dileptus* eRF1 –

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Eukaryotic release factor 1 (eRF1) of some ciliates differs from conventional ones in stop codon recognition; this results in stop codon reassignment in these organisms. To clarify the specificity of stop codon recognition in ciliate eRF1s, we have sequenced eRF1 genes from four ciliate species [Kim, O. T. P., Yura, K., Go, N., Harumoto, T. (2005) *Gene*, 346, 277-286]. In *Dileptus margaritifer*, UAA was found to encode termination, while the usage of UAG and UGA is still unknown. In this study, we started to examine the release activity of *Dileptus* eRF1. An *in vivo* experiment in yeast has been carried out to investigate whether *Dileptus* eRF1 recognizes all three stop codons. A chimeric eRF1 was constructed from *Dileptus* domain 1 and human domains 2–3, then transformed to yeast strains whose eRF1 was mutated. The chimeric eRF1 was able to complement a defect in yeast eRF1 *in vivo*. Our results suggest that *Dileptus* eRF1 recognizes all three stop codons (UAA, UAG and UGA).