

Abstract

Stable transformation depends on the efficient delivery of DNA into cells and the robust expression of genes that encode proteins which provide resistance to selective (cytotoxic) compounds. We have examined the possibility that altering the 5'untranslated region (UTR) of a selectable marker may increase transformation efficiency. A 15-nucleotide synthetic UTR (the so-called universal translational enhancer [UTE]) was placed upstream of a kanamycin/neomycin phosphotransferase (kanaR) gene to create a novel expression cassette, UTE-kanaR. In comparison to a wild-type version of kanaR, UTE-kanaR produced up to 30-fold more transformants in *E. coli*. The superior performance of UTE-kanaR was independent of the promoter strength, indicating that the gene may find general use in routine transformation experiments.