

Identification of 5'-upstream region of pufferfish ribosomal protein L29 gene as a strong constitutive promoter to drive GFP expression in zebrafish

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摘要.

The genomic structure of *Tetraodon fluviatilis* L29 gene was determined and its promoter activity was analyzed in COS-1 cells and zebrafish embryos. The TfL29 gene comprises four exons and three introns, spanning approximately 1.7kb. The 5'(-)upstream2.2-kb of the first exon contains 10 E-boxes and many putative binding motifs for transcription factors GATA-1, AML-1a, c-Myb, Oct-1, CdxA, and NRF-2. Promoter activity assay showed that the distal 2.2-kb fragment not only had high luciferase activity in COS-1 cells, but also strong and ubiquitous GFP expression in a variety of tissues in zebrafish embryos. On the other hand, there are no TATA or CAAT boxes within a 300-bp region upstream from the transcription initiation site. Although this region has high luciferase activity in COS-1 cells, it is not sufficient to drive GFP expression in zebrafish embryos. In this proximal 300-bp region, there are two E-boxes, two CdxA sites, and one NRF-2 site that is immediately downstream of the transcription start site.