Abstract

CRISPR-BASED GENOME MODIFICATION AND REGULATION

The present invention provides RNA-guided endonucleases, which are engineered for expression in eukaryotic cells or embryos, and methods of using the RNA-guided endonuclease for targeted genome modification in in eukaryotic cells or embryos. Also provided are fusion proteins, wherein each fusion protein comprises a CRISPR/Cas-like protein or fragment thereof and an effector domain. The effector domain can be a cleavage domain, an epigenetic modification domain, a transcriptional activation domain, or a transcriptional repressor domain. Also provided are methods for using the fusion proteins to modify a chromosomal sequence or regulate expression of a chromosomal sequence.

Fig. 1