ArciTect™ Cas9-eGFP Nuclease

Enhanced green fluorescent protein (eGFP)-tagged Cas9 nuclease for the generation of double-strand breaks in CRISPR-Cas9 genome editing

Catalog #	76005	50 µg	1 µg/µL
	76006	100 µg	3 µg/µL

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Product Description

ArciTect™ Cas9-eGFP Nuclease is a fusion protein consisting of enhanced green fluorescent protein (eGFP) and the wild-type Cas9 recombinant protein from Streptococcus pyogenes. ArciTect™ Cas9-eGFP Nuclease contains a C-terminal-linked eGFP molecule that can be used for fluorescence-activated cell sorting of positive transfectants, transfection optimization, or other experiments requiring the visualization of Cas9. ArciTect™ Cas9-eGFP Nuclease requires association with a guide RNA, composed of ArciTect™ tracrRNA (Catalog #76016) and ArciTect™ crRNA (Catalog #76010), to form a ribonucleoprotein (RNP) complex. This RNP complex creates double-strand breaks at site-specific locations in the genome. ArciTect™ Cas9-eGFP Nuclease also contains a nuclear localization signal at the N-terminus, ensuring that the RNP complex translocates to the nucleus, thereby increasing the efficiency of genome editing. As the RNP complex is fully functional upon transfection, it allows for immediate activity following translocation to the nucleus. The RNP complex is degraded over 48 hours, allowing sufficient time for genome editing to occur while reducing off-target effects that can be caused by the continuous presence of the RNP complex. Using the RNP system also circumvents the laborious process of generating stable Cas9-expressing cell lines, saving time and reducing the risk of off-target effects due to leaky inducible expression systems. The S. pyogenes Cas9 uses the protospacer adjacent motif (PAM) sequence NGG (where N can be any nucleotide). The enzyme will not cleave without a genomic PAM site downstream of the target sequence.

Properties

Storage:	Store at -20°C. Protect product from prolonged exposure to light.
Shelf Life:	Stable for 3 years from date of manufacture (MFG) on label.
Formulation:	10 mM Tris buffer, 300 mM NaCl, 0.1 mM EDTA, 1 mM DTT, 50% glycerol, pH 7.4.
Molecular Weight:	190 kDa

Directions for Use

For complete instructions on CRISPR-Cas9 genome editing, refer to the Technical Bulletin: Genome Editing of Human Pluripotent Stem Cells (Document #27084), available at www.stemcell.com or contact us to request a copy.

Related Products

For related products, including other genome editing tools, specialized cell culture and storage media, supplements, antibodies, cytokines, and small molecules, visit www.stemcell.com or contact us at techsupport@stemcell.com.

References

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Hultquist JF et al. (2016) A Cas9 ribonucleoprotein platform for functional genetic studies of HIV-host interactions in primary human T cells. Cell Rep 17(5): 1438–52.

Kim S et al. (2014) Highly efficient RNA-guided genome editing in human cells via delivery of purified Cas9 ribonucleoproteins. Genome Res 24(6): 1012–9.

Liang X et al. (2015) Rapid and highly efficient mammalian cell engineering via Cas9 protein transfection. J Biotechnol 208: 44–53.

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