

ArciTect™ Cas9 Nuclease



Cas9 nuclease for the generation of double-strand breaks in CRISPR-Cas9 genome editing

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Catalog #	76002	100 µg	4 µg/µL
	76004	300 µg	4 µg/µL

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Product Description

ArciTect™ Cas9 Nuclease is the wild-type Cas9 recombinant protein from *Streptococcus pyogenes*. This RNA-guided DNA endonuclease has become a useful tool for CRISPR-Cas9 genome editing. ArciTect™ Cas9 Nuclease requires association with a guide RNA—e.g. ArciTect™ sgRNA (Catalog #200-0013) or a duplex composed of ArciTect™ tracrRNA (Catalog #76016) and ArciTect™ crRNA (Catalog #76010)—to form a ribonucleoprotein (RNP) complex. This RNP complex then creates double-strand breaks at site-specific locations in the genome. ArciTect™ Cas9 Nuclease 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.
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:	160 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

- Gundry MC et al. (2016) Highly efficient genome editing of murine and human hematopoietic progenitor cells by CRISPR/Cas9. *Cell Rep* 17(5): 1453–61.
- 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.
- Ran FA et al. (2013) Double nicking by RNA-guided CRISPR Cas9 for enhanced genome editing specificity. *Cell* 154(6): 1380–9.
- Rupp LJ et al. (2017) CRISPR/Cas9-mediated PD-1 disruption enhances anti-tumor efficacy of human chimeric antigen receptor T cells. *Sci Rep* 7(1): 737.

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