

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 # 76006 100 µg 3 µg/µL



Scientists Helping Scientists™ | WWW.STEMCELL.COM

TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

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*; it contains a C-terminal-linked eGFP molecule. ArciTect™ Cas9-eGFP 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 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

- 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.

PRODUCTS ARE FOR RESEARCH USE ONLY AND NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES UNLESS OTHERWISE STATED.

Copyright © 2021 by STEMCELL Technologies Inc. All rights reserved including graphics and images. STEMCELL Technologies & Design, STEMCELL Shield Design, Scientists Helping Scientists, and ArciTect are trademarks of STEMCELL Technologies Canada Inc. All other trademarks are the property of their respective holders. The purchase of the ArciTect™ products conveys to the purchaser the limited, non-transferable right to use, in accordance with all applicable laws and regulations, the ArciTect™ products and any related material solely for research purposes only, not for any clinical, human, agricultural, veterinary, livestock, or commercial purpose, with no warranty (express or implied) from the owners or assignees of the Patents or STEMCELL Technologies each of whom expressly disclaim any warranty regarding results obtained through the use of the ArciTect™ products, and without any exception the owners or assignees of the Patents or STEMCELL Technologies, or as applicable a director, trustee, officer, employee, agent, faculty, official investigator or student thereof, will not suffer or be exposed to any liability, damages, loss, or expense of any kind whatsoever arising from or related to the use of the ArciTect™ products by a purchaser of same. Distribution of ArciTect™ products by STEMCELL Technologies is covered under at least US 8,697,359, US 8,771,945, US 8,795,965, US 8,865,406, US 8,871,445, US 8,889,356, US 8,889,418, US 8,895,308, US 8,906,616 and foreign equivalents ("Patents"). While STEMCELL has made all reasonable efforts to ensure that the information provided by STEMCELL and its suppliers is correct, it makes no warranties or representations as to the accuracy or completeness of such information.