



LD Biopharma, Inc.
7384 Trade Street, Suite B
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Tel: 858-876-8266
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- PRODUCT DATA SHEET -

Name of Product: Recombinant AcrIIA4 (Anti-CRISPR) - 11R Protein
Catalog Number: BRP-2223
Manufacturer: LD Biopharma, Inc.

Introduction

CRISPR–Cas9 systems are bacterial adaptive immune systems that defend against infection by phages. Through the RNA-guided endonuclease activity of Cas9, this protein/gRNA complex degrades double-stranded DNA with a protospacer adjacent motif (PAM) and sequences complementary to the guide RNA. Recently, two anti-CRISPR proteins (AcrIIA2 and AcrIIA4 from *Listeria monocytogenes* prophages) were reported, both of which inhibit *Streptococcus pyogenes* Cas9 (SpyCas9) and *L. monocytogenes* Cas9 activity in bacteria and human cells. Recent data indicated that expression of AcrIIA4 with Cas9 could modulate Cas9/gRNA complex activities for controlling the outcomes of Cas9-mediated gene editing.

Full-length AcrIIA4 cDNA (86 aa) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal and 11 Poly-Arginine (11R) tag at its C-terminal. This protein was expressed in *E. coli* as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: AcrIIA4
Accession Number: AEO04689
Species: Bacterial : *Listeria Monocytogene*
Size: 20 µg / Vial
Composition: 0.2 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References



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Jiyung Shin. et al., *Disabling Cas9 by an anti-CRISPR DNA mimic*. Sci. Adv. 3: e1701620 12 July (2017)

Benjamin J Rauch. et al., *Inhibition of CRISPR-Cas9 with Bacteriophage Proteins*. Cell 168. 1-9. (2017)

De Dong. et al., *Structural basis of CRISPR-SpyCas9 inhibition by anti-CRISPR protein*. Nature. Vol 546. doi:10.1038/nature22377 (2017)

Applications

1. May be used for in vitro modulating Cas9 protein activities study for gene editing experiments by intracellular delivery of this AcrIIA4-11R protein directly adding protein into cell culture medium.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHENLYFQGGEFNI SELIREIKNKDYAVRLEGTDDNSITKLI IDVDN
DGNEYVISESKNESIAEKFASTFKNGWNKEYEDEEEFYNDMQSII LKSELNESGGGGSPGRRRR
RRRRRRR