AapCas12b, Active

Recombinant *A. acidiphilus* protein expressed in E. coli cells

Catalog #: 0544-MBS516659

Lot # T4346-4

Aliquot Size

50 pmol
100 pmol
200 pmol
1000 pmol

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Product Description

Recombinant tag-free *Alicyclobacillus acidiphilus* AapCas12b was expressed in *E. coli* cells. The protein accession number is WP_067623834.

Gene aliases

c2c1, CRISPR-associated endonuclease C2c1,

Formulation

Recombinant protein stored in 50mM sodium phosphate, pH 7.5, 300mM NaCl, 1mM DTT, 10% glycerol.

Storage and Stability

Store product at –70°C. For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles.

Scientific Background

CRISPR (clustered regularly interspaced short palindromic repeat) and their CRISPR-associated (Cas) proteins constitute the adaptive immune system in bacteria (1-2). This system has been redesigned to create an exemplary genome editing tool for application to RNA-based therapeutics development (3). AapCas12b belongs to the type V CRISPR effector, CRISPR-Cas12b/C2c1, and due to its thermostability, it can be used in a wide range of biomedical applications including loop-mediated isothermal amplification (LAMP), mammalian genome editing, and gene activation (4).

References

1. Horvath, P., et al. CRISPR/Cas, the immune system of bacteria and archaea. Science, 327(5962):167-170.
2. Morange, M. What history tells us XXXVII. CRISPR-Cas: The disconvery of an immune system in prokaryotes. J. Biosci. 40(2):221-223.
3. Gier, R.A., et al. High-performance CRISPR-Cas12a genome editing for combinatorial genetic screening. Nat. Commun. 2020, 11(1):1-9.
4. Teng F, et al: Repurposing CRISPR-Cas12b for mammalian genome engineering. Cell discovery. 2018, 4(1):1-5.

Activity

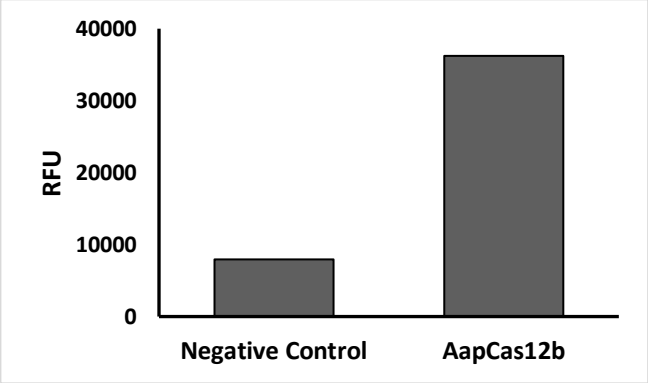

Figure 1. AapCas12b nuclease activity was assayed using a fluorogenic substrate.

Purity

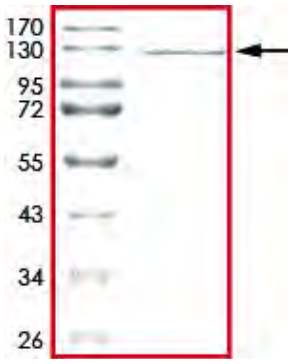

Figure 2. SDS-PAGE gel image

The purity of AapCas12b was determined to be **>75%** by densitometry, approx. MW **128 kDa**.

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Recombinant *A. acidiphilus* protein expressed in E. coli cells

Catalog #	0544-MBS516659
Lot #	T4346-4
Purity	>75%
Concentration	2.0 pmol/µl
Stability	1yr at –70°C from date of shipment
Storage & Shipping	Store product at –70°C. For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles. Product shipped on dry ice.