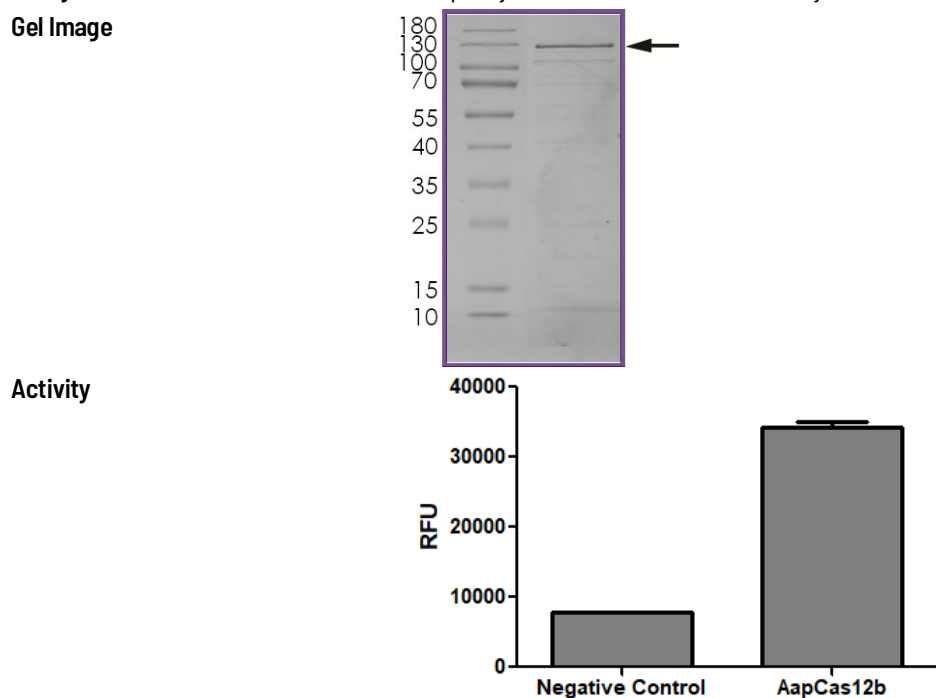


Product Name: AapCas12b

Catalog # C12B1-E311U

Storage and Stability: Store at -20°C. To avoid repeated handling and multiple freeze/thaw cycles, aliquot product into smaller quantities.

Alternate Names	: c2c1, CRISPR-associated endonuclease C2c1, Cas12b
Source	: <i>Alicyclobacillus acidiphilus</i>
Accession Numbers	: Genbank: WP_067623834.1
Host	: <i>E. coli</i>
Formulation	: Protein stored in 25 mM Tris, 300 mM NaCl, pH7.5, 50% glycerol, 0.1 mM TCEP
Molecular Weight	: Calculated: 130.5 kDa Observed: ~128 kDa
Concentration	: 1.0 µg/µL 7.66 pmol/µg
Purity	: The purity was determined to be >80% by densitometry
Gel Image	180



AapCas12b nuclease activity assayed using a fluorogenic substrate and 40 nM enzyme according to the activity assay protocol.

Recommendation : Always include RNase inhibitor at recommended concentrations in Cas enzyme reactions.

Scientific Background

: CRISPR (clustered regularly interspaced short palindromic repeats) and their CRISPR-associated (Cas) proteins constitute the adaptive immune system in bacteria (1-2). This system has been leveraged to create an exemplary genome editing tool with applications in both basic research and therapeutics development (3). AapCas12b is a type V-B CRISPR-Cas effector protein. Due to its thermostability, 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. 2010. CRISPR/Cas, the immune system of bacteria and archaea. *Science*, 327(5962):167-170.
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3. Gier, R.A., et al. 2020. High-performance CRISPR-Cas12a genome editing for combinatorial genetic screening. *Nat. Commun.* 11(1):1-9.
4. Teng F, et al. 2018. Repurposing CRISPR-Cas12b for mammalian genome engineering. *Cell discovery*. 4(1):1-5.