Product Information

Anti-AsCpf1 Antibody, Mouse Monoclonal

Clone AsCpf-11, Purified from Hybridoma Cell Culture

SAB4200756

Product Description

Anti-AsCpf1 antibody, Mouse monoclonal, (mouse IgG2a isotype) is derived from the AsCPf-11 hybridoma, produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mouse immunized with recombinant Cpf1 from *Acidaminococcus sp*. (strain BV3L6). The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents (Product Number ISO2). The antibody is purified from culture supernatant of hybridoma cells.

Monoclonal Anti-AsCpf1 recognizes Cpf1 from *Acidaminococcus sp*. (strain BV3L6). Monoclonal Anti-AsCpf1 does not cross react with Cpf1 from *Lachnospiraceae bacterium* (ND2006), SpCas9 from *Streptococcus Pyogenes* bacteria, nor FnCas9 from *Francisella novicida* bacteria. The product may be used in several immunochemical techniques including immunoblotting (~ 135 kDa), immunofluorescence, and immunoprecipitation.

Clustered, regularly interspaced, short palindromic repeat (CRISPR) systems, encode RNA-guided endonucleases that are essential for bacterial adaptive immunity.[1] Depending on the architecture of the effector-CRISPR RNA (crRNA) interference module, the different CRISPR-Cas systems could be assigned into two classes: Class-1 systems of multisubunit complex such as Cascade and Class-2 systems of single enzyme, such as Cas9.[2-3]

Cpf1 (CRISPR from *Prevotella* and *Francisella* 1) belongs to Class-2 type V CRISPR-Cas endonuclease system.[4-5] Cpf1 comprise several differences from Cas9 protein including cleavage with 5′ overhangs, a shorter guide RNA, and a longer distance between the seed sequence and the cleavage site.[5-6]

AsCpf1, Cpf1 from *Acidaminococcus sp.* (strain BV3L6), was examined together with 15 members of Cpf1 nuclease family and shown to mediate efficient genome editing in HEK293FT cells with improved results compared to SpCas9.[5] AsCpf1 crystal structure in a complex with crRNA and partially duplexed target DNA, shows AsCpf1 acts as a monomer thus identifying a unique mechanism employed by AsCpf1 for target recognition.[7]

Monoclonal anti-AsCpf1 antibody can provide a useful tool for genome editing research such as detecting and monitoring AsCpf1 positively transfected cells.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1.25–2.5 µg/mL is recommended using purified recombinant AsCpf1 produced in *E. coli*.

Immunofluorescence: a working concentration of 1.25–2.5 µg/mL is recommended using human HEK-293T cells overexpressing AsCpf1 protein.

Immunoprecipitation: a working concentration of 2.5–5 µg/test is recommended using lysate of human HEK-293T cells overexpressing AsCpf1 protein.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Wright, A.V. et al., *Cell*, **164**, 29-44 (2016).
2. Jinek, M. et al., *Science*, **337**, 816-21 (2012).
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4. Schunder, E. et al., *Int. J. Med. Microbiol.*, **303**, 51-60 (2013).
5. Zetsche, B. et al., *Cell*, **163**, 759-71 (2015).
6. Kim, H.K. et al., *Nat. Methods*, **14**, 153-9 (2017).
7. Gao, P. et al., *Cell Research*, **26**, 901-13 (2016).

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