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Product Information

Anti-CRISPR/Cas9 (C-terminal) antibody, Mouse monoclonal
clone 10C11-A12, purified from hybridoma cell culture

Product Number **SAB4200751**

Product Description

Monoclonal Anti-CRISPR/Cas9 (C-terminal) (mouse IgG1 isotype) is derived from the hybridoma 10C11-A12 produced by the fusion of mouse myeloma cells and splenocytes from mice immunized with a recombinant protein within the C-terminal region of *Streptococcus pyogene* Cas9. 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-CRISPR/Cas9 (C-terminal) recognizes CAS9 protein in CAS9 construct over-expression systems. Monoclonal Anti- CRISPR/CAS9 (C-terminal) does not cross react with FnCas9 from *Francisella novicida* bacteria nor Cpf1 proteins from *Acidaminococcus sp*. (strain BV3L6) and *Lachnospiraceae bacterium* ND2006. The antibody may be used in various immunochemical techniques including immunoblotting, immunofluorescence, and immunoprecipitation.

Genetic and epigenetic control of cells with genome engineering technologies enable a broad range of applications including animal models, genetically modified products, food safety, bio-fuel, gene therapy, and drug development.[1]

CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) belongs to the type II CRISPR/CAS9 system. It is part of an adaptive immune system of the *Streptococcus pyogenes* SF370, protecting from pathogens' target genes by cleaving the foreign DNA in a sequence-dependent manner.[2]

The type II CRISPR/Cas system which has been adapted to expression in eukaryotic cells, consists of four genes including the Cas9 (CRISPR-associated proteins) nuclease, two noncoding CRISPR RNAs (crRNAs, or gRNA), trans-activating crRNA (tracrRNA), and a precursor crRNA (pre-crRNA) array. The pre-crRNA contains nuclease guide sequences (spacers) interspaced by identical direct repeats (DRs).[1-8]

The Cas9 endonuclease can be engineered with a single gRNA, directing a DNA double-strand break (DSB) at a desired genomic location. Similar to DSBs induced by zinc finger nucleases (ZFNs), the cell then activates endogenous DNA repair processes, either non-homologous end joining (NHEJ) or homology-directed repair (HDR), to heal the targeted DSB.

In comparison to other genome-editing technologies such as designer zinc fingers (ZFs), transcription activator–like effectors (TALEs), and homing meganucleases, the CRISPR/CAS9 system is scalable, affordable, and easy to engineer.[1-8]

Therefore, the anti-CRISPR/CAS9 antibody can be a useful tool for detecting CRISPR/CAS9 positively transfected cells, revealing DSB sites in the genome and in ChIP (Chromatin Immunoprecipitation) related assays.

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 1–2 μg/mL is recommended using whole extracts of human HEK-293T cells overexpressing CAS9 protein.

Immunofluorescence: a working concentration of 1.25–2.5 μg/mL is recommended using human HEK-293T cells overexpressing CAS9 protein.

Immunoprecipitation: a working amount of 5–10 μg/test is recommended using whole extract of human HEK-293T cells overexpressing CAS9 protein.

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

References

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DS,SG,DR,LV,OKF,PHC,MAM 07/18-1