Cas9 antibody (mAb)

Catalog No: 61577, 61578
Clone: 7A9-3A3
Isotype: IgG1k
Application(s): ICC, IF, IP, WB

Purification: Protein G Chromatography
Host: Mouse
Concentration: 1 µg/µl
Quantity: 100 µg, 10 µg
Molecular Weight: 160 kDa

Background: Cas9 is a nuclease from *Streptococcus pyogenes* that can be targeted to particular DNA sequences through a guide RNA that results in double-stranded breaks in DNA. Cas9 is part of the CRISPR/Cas9 gene-editing system that can create a DNA break at a specific location with the genome.

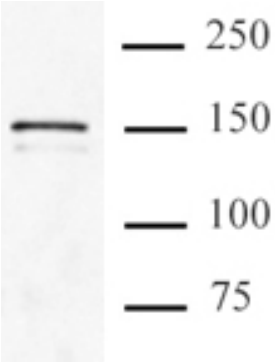
CRISPR (clustered regularly interspaced short palindromic repeat) is an adaptive immune system that provides protection against mobile genetic elements (viruses, transposable elements and conjugative plasmids). CRISPR clusters contain spacers, sequences complementary to antecedent mobile elements, and target invading nucleic acids. CRISPR clusters are transcribed and processed into CRISPR RNA (crRNA) Probable. In type II CRISPR systems correct processing of pre-crRNA requires a trans-encoded small RNA (tracrRNA), endogenous ribonuclease 3 (rnc) and this protein. The tracrRNA serves as a guide for ribonuclease 3-aided processing of pre-crRNA. Subsequently Cas9/crRNA/tracrRNA endonucleolytically cleaves linear or circular dsDNA target complementary to the spacer. The target strand not complementary to crRNA is first cut endonucleolytically, then trimmed by 3'-5' exonucleolytically. DNA-binding requires protein and both RNA species. Cas9 probably recognizes a short motif in the CRISPR repeat sequences (the PAM or protospacer adjacent motif) to help distinguish self versus nonself.

Immunogen: This antibody was raised against a recombinant protein within the N-terminal region of *Streptococcus pyogene* Cas9. This antibody should recognize Cas9 and dCas9 based on the antigen design.

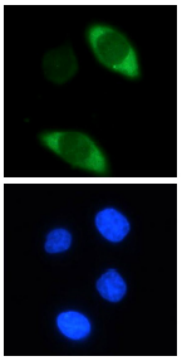
Buffer: Purified IgG in PBS with 30% glycerol and 0.035% sodium azide. Sodium azide is highly toxic.

Application Notes:
Validated Applications:
IP: 5 µg per IP
ICC/IF: 0.5 - 2 µg/ml dilution
WB: 0.1 - 1 µg/ml dilution

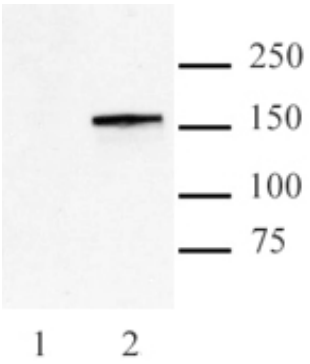
Storage and Guarantee: Antibodies in solution can be stored at -20°C for 2 years. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of arrival.



Cas9 antibody (mAb) tested by Immunoprecipitation.
5 µg of Cas9 antibody (mAb) was used to immunoprecipitate Cas9 from 100 µg of whole cell extracts after 72 hours of transient transfection of HEK293 cells with flag-tagged Cas9. The immunoprecipitated protein was detected by Western blotting using Cas9 antibody (mAb) at a 0.5 µg/mL dilution.



Cas9 antibody (mAb) tested by Immunoflourescence.
HeLa cells were transiently transfected with flag-tagged Cas9 for 48 hours and then stained. Top: Cas9 antibody (mAb) at a 0.5 µg/ml dilution. Bottom: Stained with Hoechst.



Cas9 antibody (mAb) tested by Western blot.
HEK293 cells were transiently transfected with myc-tagged Cas9 (lane 2) or untransfected (lane 1), lysates prepared 40 hours post transfection, and probed with Cas9 antibody (mAb) at a 0.5 µg/ml dilution.