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Anti-CRISPR/Cas9 [Clone 7A9-3A3] — Purified No Carrier Protein

Hybridoma Monoclonal Antibody

Product Information

Product No.:	C3455
Clone:	7A9-3A3
Isotype:	Mouse Mouse IgG1 κ
Storage:	Sterile 2-8°C

Product Description

Specificity:
7A9-3A3 activity is directed against Cas9 and dCas9.

Antigen Distribution:
Cas9 is found naturally in the prokaryote *Streptococcus pyogenes* and can be introduced into various species for genome editing.

Background:
The CRISPR/Cas9 system is an RNA-guided endonuclease system used for genome editing that was first identified as an adaptive immune system in bacteria and archaea[1]. To operate, a single guide RNA is responsible for DNA site targeting, while Cas9 cleaves the DNA at the target sites. Cas9 contains RuvC and HNH nuclease domains, which are responsible for cleaving the target complementary and noncomplementary DNA strands. Cas9 is directed to the specific DNA targets by the single guide RNA. Any DNA sequence that contains the N_{20}-NGG motif can be recognized as a target site.

The CRISPR/Cas9 system has been engineered to allow genome editing in a variety of organisms beyond bacteria[1]. Codon-optimized Cas9 with an appropriate nuclear localization signal has been used in yeast, roundworm, silkworm, *Drosophila*, zebrafish, frog, rabbit, human, mouse, rat, pig, monkey, and plants. A single gene or multiple genes (e.g., at least four genes in rat, mouse, and zebrafish) can be disrupted by providing the appropriate single guide RNAs and programming the DNA-cleaving activity of Cas9. Large-fragment deletion, inversion, and reporter gene insertion can also be performed. Additionally, methylation effect and chromatin states can be studied using 'dead' Cas9, which is a fusion of a non-functional Cas9 with an effector domain. In mouse[1, 2, 3] and humans, the CRISPR/Cas9 system has been used to correct genetic diseases (e.g., cystic fibrosis[1], sickle cell disease[4], and β-thalassemia) and also has applications for cancer treatment[5].

Known Reactivity Species:
S. Pyogenes

Format:
Purified No Carrier Protein

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Immunogen:
Recombinant S. pyogenes Cas9 Protein (N-terminal 250 amino acids) expressed in E. coli.

Formulation
0.2 µm Filtered, Aseptically Packaged

Purity
≥90% monomer by analytical SEC and SDS-Page

Storage and Stability
This antibody may be stored sterile as received at 2-8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at -80°C. **Avoid Repeated Freeze Thaw Cycles.**
Other Applications Reported in Literature:

IHC,
IP,
IF,
WB,
FC

Country of Origin
USA

References
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