

Anti-CRISPR/Cas9 [Clone 7A9-3A3] — HRP

Hybridoma Monoclonal Antibody

Product Information

Product No.:	C3457
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 archaea¹. 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 N₂₀-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 bacteria¹. 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 fibrosis¹, sickle cell disease⁴, and β -thalassemia) and also has applications for cancer treatment⁵.

Known Reactivity Species:

S. Pyogenes

Format:

HRP

Products are for research use only. Not for use in diagnostic or therapeutic procedures.

Product Datasheet

www.leinco.com



Immunogen:

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

Formulation

This HRP-conjugated antibody is formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4, 1% BSA. **(Warning: Use of sodium azide as a preservative will inhibit the enzyme activity of horseradish peroxidase)**

Storage and Stability

This horseradish peroxidase conjugated monoclonal antibody is stable when stored at 2-8°C. **Do not freeze.**

Other Applications Reported in Literature:

IHC,
IP,
IF,
WB,
FC

Country of Origin

USA

References

1. Ma Y, Zhang L, Huang X. FEBS J. 281(23):5186-5193. 2014.
2. Savić N, Schwank G. Transl Res. 168:15-21. 2016.
3. Park H, Oh J, Shim G, et al. Nat Neurosci. 22(4):524-528. 2019.
4. Frangoul H, Altshuler D, Cappellini MD, et al. N Engl J Med. 384(3):252-260. 2021.
5. Wang SW, Gao C, Zheng YM, et al. Mol Cancer. 21(1):57. 2022.
6. Lin S, Ewen-Campen B, Ni X, et al. Genetics. 201(2):433-442. 2015.
7. Howden SE, McColl B, Glaser A, et al. Stem Cell Reports. 7(3):508-517. 2016.
8. Kim S, Bae T, Hwang J, et al. Genome Biol. 18(1):218. 2017.
9. Lattanzi A, Duguez S, Moiani A, et al. Mol Ther Nucleic Acids. 7:11-19. 2017.
10. Maji B, Moore CL, Zetsche B, et al. Nat Chem Biol. 13(1):9-11. 2017.

Products are for research use only. Not for use in diagnostic or therapeutic procedures.

410 Axminster Dr, St. Louis, MO 63026

(800) 538-1145

leincoglobal@leinco.com