abcam

ab203943

Anti-CRISPR-Cas9 antibody [EPR19795]

Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943) is a rabbit monoclonal antibody detecting CRISPR-Cas9 in **Western Blot, Flow Cytometry (Intra), IP, ICC/IF**. Suitable for **Staphylococcus aureus**.

- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR19795
Purification technique	Affinity purification Protein A
Concentration	0.567 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Transfected cell lysate - Staphylococcus aureus
Dilution info	1/30

Notes	-

Predicted

Species	Staphylococcus aureus
Dilution info	-
Notes	-

WB

Tested

Species	Transfected cell lysate - Staphylococcus aureus
Dilution info	1/5000
Notes	-

Predicted

Species	Staphylococcus aureus
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Transfected cell lysate - Staphylococcus aureus
Dilution info	1/100
Notes	-

Predicted

Species	Staphylococcus aureus
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Transfected cell lysate - Staphylococcus aureus
Dilution info	1/500
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Staphylococcus aureus
Dilution info	-
Notes	-

Target data

See full target information CRISPR-associated endonuclease Cas9

Function	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). 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; Cas9 is inactive in the absence of the 2 guide RNAs (gRNA). Cas9 recognizes the protospacer adjacent motif (PAM) in the CRISPR repeat sequences to help distinguish self versus nonself, as targets within the bacterial CRISPR locus do not have PAMs. PAM recognition is also required for catalytic activity.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunocytochemistry/immunofluorescence (ICC/IF) in Staphylococcus aureus samples.

What is the molecular weight of CRISPR-Cas9?
Anti-CRISPR-Cas9 [EPR19795] (ab203943) specifically detects a band for CRISPR-Cas9 (UniProt: J7RUA5) at a molecular weight of 124kDa.

Other related products
We have a range of other formats of antibody clone [EPR19795] also available for your convenience: ab203943, Carrier free - ab223153

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	CRISPR-Cas9 also known simply as Cas9 is a protein that acts as a molecular scissor in gene editing. It has a molecular weight of approximately 160 kDa. Cas9 is a part of the CRISPR-Cas system originally discovered in bacteria where it serves as an adaptive immune system. In bacterial cells Cas9 targets and cleaves specific DNA sequences allowing for targeted gene modifications. While the expression of

	the CRISPR-Cas system occurs naturally in prokaryotes scientists now harness it in various organisms for genetic manipulation.
Biological function summary	The Cas9 protein functions as an integral part of the CRISPR-Cas9 complex which includes a guide RNA to direct the protein to specific DNA sequences. This complex enables precise cuts at targeted locations within the genome. The Cas9 protein size allows it to fit effectively within cells facilitating genome editing in areas such as research agriculture and therapeutics. The complexity of CRISPR-Cas9 also includes the interaction with other cellular components that assist in DNA repair post-cleavage.
Pathways	CRISPR-Cas9 plays a role in DNA repair pathways particularly non-homologous end joining and homologous recombination. After Cas9-induced DNA breaks these pathways become active to repair the cleaved DNA. The gene editing process facilitated by CRISPR-Cas9 often involves interaction with DNA repair proteins like ku70/80 and Rad51 in response to induced breaks. This allows for either the incorporation of new genetic material or the modification of existing genes.
Associated diseases and disorders	CRISPR-Cas9 has potential in treating genetic disorders such as cystic fibrosis and Duchenne muscular dystrophy. By correcting mutated genes scientists aim to restore normal gene function offering potential therapeutic benefits. Additionally CRISPR-Cas9 relates indirectly to p53 a protein known for its tumor suppressor functions because gene-editing processes can sometimes activate p53-dependent pathways leading to cell cycle arrest or apoptosis. This highlights the importance of understanding the broader implications of CRISPR-Cas9 in therapeutic applications.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

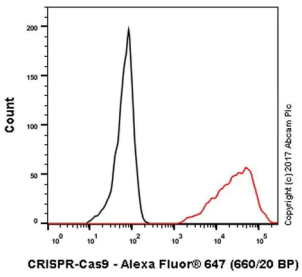
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

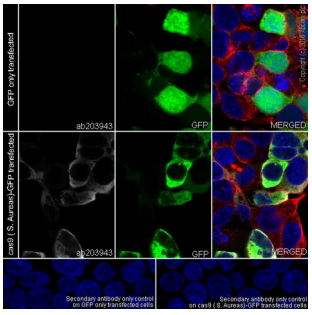
6 product images



Flow Cytometry (Intracellular) - Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943)

CRISPR-Cas9 Flow Cytometry (Intracellular) staining using rabbit Anti-CRISPR-Cas9 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HEK-293T (Human epithelial cell line from embryonic kidney) cells transfected with a GFP tagged CRISPR-Cas9 (J7RUA5, Staphylococcus aureus subsp. aureus) vector,labeling CRISPR-Cas9 with ab203943 at 1/500 dilution (red) compared with a rabbit monoclonal IgG isotype control (ab172730; black). Goat anti rabbit IgG (Alexa Fluorr® 647) at 1/2000 dilution was used as the secondary antibody.
Note:The image is obtained by gating the GFP-tag positive population.



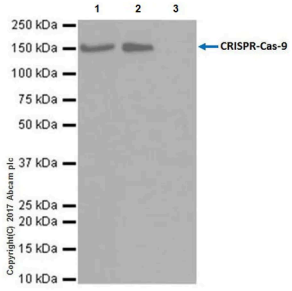
Immunocytochemistry/ Immunofluorescence - Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943)

CRISPR-Cas9 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CRISPR-Cas9 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HEK-293T (Human epithelial cell line from embryonic kidney) cells labeling CRISPR-Cas9 with ab203943 at 1/100 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing positive staining on HEK-293T cells transfected with a GFP-tagged CRISPR-Cas9 (J7RUA5, *Staphylococcus aureus subsp. aureus*) expression construct.

The nuclear counter stain is DAPI (blue). Tubulin is detected with ab195889 (Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594)) at 1/200 dilution (red).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.



Immunoprecipitation - Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943)

CRISPR-Cas9 was immunoprecipitated from 0.35 mg of HEK-293T (Human epithelial cell line from embryonic kidney) whole cell lysate transfected with a GFP tagged CRISPR-Cas9 (J7RUA5, *Staphylococcus aureus subsp. aureus*) vector, with ab203943 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab203943 at 1/2000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.
Lane 1: HEK-293T whole cell lysate transfected with a GFP tagged CRISPR-Cas9 (J7RUA5, *Staphylococcus aureus subsp. aureus*) vector, 10 µg (Input).

Lane 2: ab203943 IP in HEK-293T whole cell lysate transfected with a GFP tagged CRISPR-Cas9 (J7RUA5, *Staphylococcus aureus subsp. aureus*) vector.

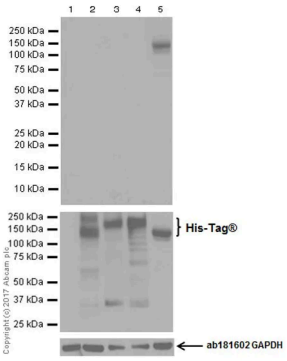
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab203943 in HEK-293T whole cell lysate transfected with a GFP tagged CRISPR-Cas9 (J7RUA5, *Staphylococcus aureus subsp. aureus*)

vector.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 10 seconds.
All lanes:
Immunoprecipitation - Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943)

Observed band size: 150 kDa



Western blot - Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943) at 1/5000 dilution

Lane 1:
HEK-293T whole cell lysate (Human epithelial cell line from embryonic kidney) transfected with an empty vector containing Myc-His tag (vector control) at 20 µg

Lane 2:
HEK-293T whole cell lysate transfected with a Myc-His tagged CRISPR-Cas9 (A1IQ68, Neisseria meningitidis serogroup A / serotype 4A (strain Z2491)) vector at 20 µg

Lane 3:
HEK-293T whole cell lysate transfected with a Myc-His tagged CRISPR-Cas9 (G3ECR1, Streptococcus thermophilus) vector at 20 µg

Lane 4:
HEK-293T whole cell lysate transfected with a Myc-His tagged CRISPR-Cas9 (Q03JI6, Streptococcus thermophiles (strain ATCC BAA-491/ LMD-9)) vector at 20 µg

Lane 5:
HEK-293T whole cell lysate transfected with a Myc-His tagged CRISPR-Cas9 (J7RUA5, Staphylococcus aureus subsp. aureus) vector at 20 µg

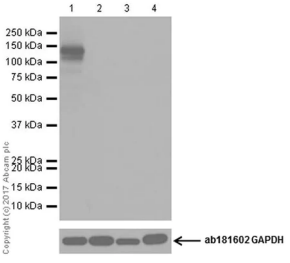
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 124 kDa

Observed band size: 124 kDa

Exposure time: 1s



Western blot - Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943) at 1/5000 dilution

Lane 1:
HEK-293 whole cell lysate (Human epithelial cell line from embryonic kidney) transfected with a Myc-His tagged CRISPR-Cas9 (J7RUA5, Staphylococcus aureus subsp. aureus) vector at 20 µg

Lane 2:

HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 3:
NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate at 20 µg

Lane 4:
Rat embryo lysate at 20 µg

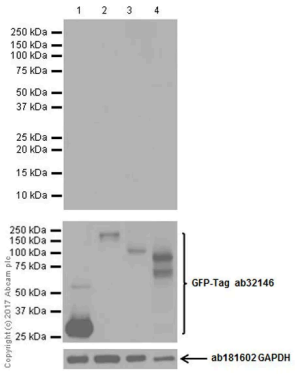
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 124 kDa

Observed band size: 124 kDa

Exposure time: 1s



Western blot - Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-CRISPR-Cas9 antibody [EPR19795] (ab203943) at 1/5000 dilution

Lane 1:
HEK-293T whole cell lysate (Human epithelial cell line from embryonic kidney transfected with an empty vector containing GFP-Myc tag (vector control) at 20 µg

Lane 2:
HEK-293T whole cell lysate transfected with a GFP-Myc tagged CRISPR-Cas9 (Q99ZW2, Streptococcus pyogenes serotype M1) vector at 20 µg

Lane 3:
HEK-293T whole cell lysate transfected with a GFP-Myc tagged CRISPR-Cas9 (G3ECR1, Streptococcus thermophilus, aa1-800) vector at 20 µg

Lane 4:
HEK-293 whole cell lysate transfected with a GFP-Myc tagged CRISPR-Cas9 (G3ECR1, Streptococcus thermophilus, aa801-1409) vector at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 124 kDa

Observed band size: 124 kDa

Exposure time: 1s

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.