abcam

ab225989

Anti-Arg2 antibody [EPR9473] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR9473
Purification technique	Affinity purification Protein A
Concentration	0.965 - 0.977 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Target data

See full target information ARG2

Function

May play a role in the regulation of extra-urea cycle arginine metabolism and also in down-regulation of nitric oxide synthesis. Extrahepatic arginase functions to regulate L-arginine bioavailability to nitric oxid synthase (NOS). Arginine metabolism is a critical regulator of innate and adaptive immune responses. Seems to be involved in negative regulation of the survival capacity of activated CD4(+) and CD8(+) T cells (PubMed:27745970). May suppress inflammation-related signaling in asthmatic airway epithelium (PubMed:27214549). May contribute to the immune evasion of H.pylori by restricting M1 macrophage activation and polyamine metabolism (By similarity). In fetal dendritic cells may play a role in promoting immune suppression and T cell TNF production during gestation (PubMed:28614294). Regulates RPS6KB1 signaling, which promotes endothelial cell senescence and inflammation and implicates NOS3/eNOS dysfunction (PubMed:22928666). Can inhibit endothelial autophagy independently of its enzymatic activity implicating mTORC2 signaling (PubMed:25484082). Involved in vascular smooth muscle cell senescence and apoptosis independently of its enzymatic activity (PubMed:23832324). Since NOS is found in the penile corpus cavernosum smooth muscle, the clitoral corpus cavernosum and the vagina, arginase-2 plays a role in both male and female sexual arousal (PubMed:12859189).

Storage

Shipped at conditions Blue Ice

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab225989 is the carrier-free version of ab137069.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Arginase 2 (Arg2) also known as AII is an enzyme with a molecular weight of approximately 39 kDa. It is part of the urea cycle and functions to hydrolyze L-arginine into L-ornithine and urea. Arg2 is a mitochondrial enzyme mainly expressed in the liver kidney and prostate. Its expression can extend to other

	tissues such as the small intestine in some conditions and its activity is important in regulating arginine availability for various physiological processes.
Biological function summary	Arg2 plays a role in nitrogen disposal and polyamine synthesis. As part of an enzymatic complex it contributes to the urea cycle which is important for the removal of excess nitrogen from the body. Arginase activity also influences the balance of nitric oxide synthesis as it competes with nitric oxide synthase for their common substrate L-arginine. This competition affects cellular functions which rely on nitric oxide signaling for developing proper vascular and immune responses.
Pathways	Arg2 is an important player in the urea cycle and the polyamine synthesis pathway. It works alongside the enzymes involved in these processes such as ornithine decarboxylase. Additionally Arg2 has a role in the nitric oxide regulation pathway modulating nitric oxide levels by limiting the availability of L-arginine for nitric oxide synthase. This makes Arg2 essential for metabolic processes and cellular communication.
Associated diseases and disorders	Altered Arg2 expression has been associated with cardiovascular diseases and renal complications. For instance disruptions in Arg2 function can lead to endothelial dysfunction influencing conditions like atherosclerosis. Arg2 imbalances are also linked to kidney diseases possibly due to its critical role in ammonia detoxification and renal arginine metabolism. Its interaction with other proteins such as nitric oxide synthase further emphasizes its relevance in these health conditions.

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

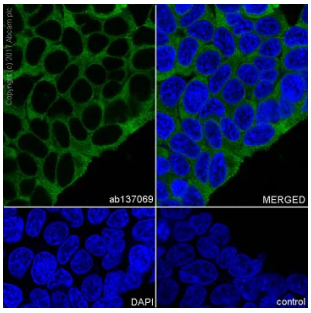
We do not recommend this combination. It is not covered by our product promise.

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.

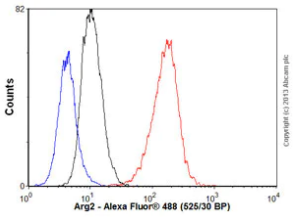
4 product images



Immunocytochemistry/ Immunofluorescence - Anti-Arg2 antibody [EPR9473] - BSA and Azide free (ab225989)

Arg2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Arg2 antibody

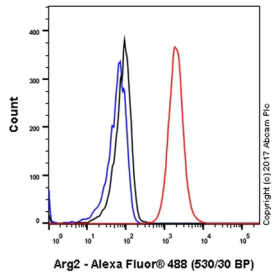
Immunocytochemistry/ Immunofluorescence analysis of HEK-293T (Human embryonic kidney epithelial cell) cells labeling Arg2 with purified ab137069 at 1:500 dilution (1.2 µg/ml). Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077 Goat anti rabbit IgG (Alexa Fluor® 488) was used as the secondary antibody at 1:1000 dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab137069).



Flow Cytometry (Intracellular) - Anti-Arg2 antibody [EPR9473] - BSA and Azide free (ab225989)

Arg2 Flow Cytometry (Intracellular) staining using rabbit Anti-Arg2 antibody

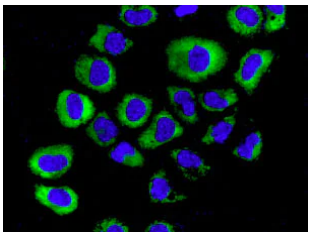
Overlay histogram showing HEK293 cells stained with ab137069 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab137069, 1/10000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in HEK293 cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab137069).



Flow Cytometry (Intracellular) - Anti-Arg2 antibody [EPR9473] - BSA and Azide free (ab225989)

Arg2 Flow Cytometry (Intracellular) staining using rabbit Anti-Arg2 antibody

Intracellular Flow Cytometry analysis of HEK-293 (Human embryonic kidney epithelial cell) cells labeling Arg2 with purified ab137069 at 1/60 dilution (10µg/ml) (red). Cells were fixed with 4% Paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluor® 488) secondary antibody was used at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab137069).



Immunocytochemistry/ Immunofluorescence - Anti-Arg2 antibody [EPR9473] - BSA and Azide free (ab225989)

Arg2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Arg2 antibody

Immunofluorescent analysis of Caco 2 cells labelling Arg2 with ab137069 at 1/250 dilution. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab137069).

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