abcam

ab249309

Anti-AK2 antibody [EPR11387(B)] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	EPR11387(B)
Purification technique	Affinity purification

Reactivity data

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Expected

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

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Expected

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

Target data

See full target information AK2

Function Catalyzes the reversible transfer of the terminal phosphate group between ATP and AMP. Plays an important role in cellular energy homeostasis and in adenine nucleotide metabolism. Adenylate kinase activity is critical for regulation of the phosphate utilization and the AMP de novo biosynthesis pathways. Plays a key role in hematopoiesis.

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

ab249309 is the carrier-free version of ab157206.

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	The adenylate kinase 2 also known as AK2 is an enzyme that catalyzes the conversion of adenine nucleotides within the cell. It facilitates the reversible conversion of ADP into ATP and AMP playing a critical role in cellular energy

	homeostasis. AK2 weighing approximately 26 kDa is primarily found in the mitochondrial intermembrane space of various tissues including liver muscle and brain. Its expression allows for efficient energy transfer essential for normal mitochondrial function and cellular metabolism.
Biological function summary	AK2 functions in energy transfer and regulation in the cell serving as an important component in maintaining cellular ATP levels. AK2 is an integral part of the mitochondrial adenylate kinase system which manages energy flux in cells. By balancing the concentrations of ATP ADP and AMP AK2 directly influences cellular energy state and metabolic activity. The enzyme also supports nucleotide homeostasis therefore facilitating processes such as signal transduction and nucleic acid synthesis.
Pathways	AK2 is involved in the adenylate kinase pathway important for energy metabolism. It coordinates with other enzymes like AK1 and AK3 ensuring efficient energy distribution in the cell. AK2 also interfaces with the apoptosis signaling pathways where it plays a part in regulating programmed cell death. The interaction of AK2 within these pathways emphasizes its essential role in maintaining cellular energy balance and undergoing apoptosis when necessary.
Associated diseases and disorders	AK2 mutations link to rare conditions like reticular dysgenesis a severe form of combined immunodeficiency. The disorder arises when AK2 fails to initiate proper energy transfer necessary for white blood cell development. AK2 is also related to mitochondrial disorders where energy production gets critically impaired manifesting in muscle weakness and neurodegenerative symptoms. The enzyme's connection to proteins involved in energy pathways suggests its potential contribution to the progression of such diseases.

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

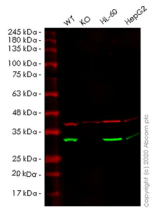
We do not recommend this combination. It is not covered by our product promise.

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.

1 product image



Western blot - Anti-AK2 antibody [EPR11387(B)] - BSA and Azide free (ab249309)

AK2 Western blot staining using rabbit Anti-AK2 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab157206).
Lanes 1-4: Merged signal (red and green). Green - ab157206 observed at 30 kDa. Red - loading control ab8245 observed at 36 kDa.

ab157206 Anti-AK2 antibody [EPR11387(B)] was shown to specifically react with AK2 in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab266539 (knockout cell lysate ab257825) was used. Wild-type and AK2 knockout samples were subjected to SDS-PAGE. ab157206 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated at room temperature for 2.5 hours at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-AK2 antibody [EPR11387(B)] (ab157206) at 1/1000 dilution

Lane 1:
Wild-type HEK293T cell lysate at 20 µg

Lane 2:
AK2 knockout HEK293T cell lysate at 20 µg

Lane 2:
Western blot - Human AK2 knockout HEK-293T cell lysate (ab257825) at 20 µg

Lane 3:
HL-60 cell lysate at 20 µg

Lane 4:
HepG2 cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 26 kDa

Observed band size: 30 kDa

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