abcam

ab210528

Anti-ZIP Kinase antibody [EPR18809-86]

Recombinant | RabMAb | KO Validated

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	EPR18809-86
Purification technique	Affinity purification Protein A
Concentration	0.683 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Recombinant fragment - Human
Dilution info	1/1000
Notes	-

Species	Mouse

Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/120
Notes	-

Expected

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

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

Target data

See full target information DAPK3

Function

Serine/threonine kinase which is involved in the regulation of apoptosis, autophagy, transcription, translation and actin cytoskeleton reorganization. Involved in the regulation of smooth muscle contraction. Regulates both type I (caspase-dependent) apoptotic and type II (caspase-independent) autophagic cell deaths signal, depending on the cellular setting. Involved in regulation of starvation-induced autophagy. Regulates myosin phosphorylation in both smooth muscle and non-muscle cells. In smooth muscle, regulates myosin either directly by phosphorylating MYL12B and MYL9 or through inhibition of smooth muscle myosin phosphatase (SMPP1M) via phosphorylation of PPP1R12A; the inhibition of SMPP1M functions to enhance muscle responsiveness to Ca(2+) and promote a contractile state. Phosphorylates MYL12B in non-muscle cells leading to reorganization of actin cytoskeleton. Isoform 2 can phosphorylate myosin, PPP1R12A and MYL12B. Overexpression leads to condensation of actin stress fibers into thick bundles. Involved in actin filament focal adhesion dynamics. The function in both reorganization of actin cytoskeleton and focal adhesion dissolution is modulated by RhoD. Positively regulates canonical Wnt/beta-catenin signaling through interaction with NLK and TCF7L2. Phosphorylates RPL13A on 'Ser-77' upon interferon-gamma activation which is causing RPL13A release from the ribosome, RPL13A association with the GAIT complex and its subsequent involvement in transcript-selective translation inhibition. Enhances transcription from AR-responsive promoters in a hormone- and kinase-dependent manner.

	Involved in regulation of cell cycle progression and cell proliferation. May be a tumor suppressor.

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

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.

Supplementary info

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

Activity summary	ZIP Kinase also known as DAPK3 is a serine/threonine protein kinase with a molecular mass of approximately 52 kDa. It is expressed in a variety of tissues including the heart liver and skeletal muscle indicating its broad physiological importance. ZIP Kinase shows activity in phosphorylating specific substrates that influence cell structure and function playing a role in cellular processes.
Biological function summary	ZIP Kinase regulates apoptosis and autophagy impacting cell survival and homeostasis. It does not act in isolation but is part of a complex with other kinases

	and regulatory proteins. ZIP Kinase interacts with cytoskeletal proteins to mediate cell contraction and motility indicating its involvement in both normal cellular dynamics and stress responses.
Pathways	ZIP Kinase is involved in the apoptosis and autophagy pathways. Within the apoptosis pathway ZIP Kinase partners with proteins like DAPK1 influencing stress and injury responses. In the autophagy pathway it helps in regulating cellular degradation processes. These pathways allow ZIP Kinase to integrate signals that manage cell fate decisions collaboratively modulating cellular life and death.
Associated diseases and disorders	ZIP Kinase associates with hypertension and certain types of cancer. In hypertension ZIP Kinase dysregulation may impact vascular smooth muscle cell contractility due to its connection with myosin light chain phosphorylation. In cancer altered ZIP Kinase activity may affect apoptosis linking it to aberrant cell proliferation. Its interaction with proteins like DAPK1 in both contexts underlines its role in pathological states where cell death and survival are disrupted.

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

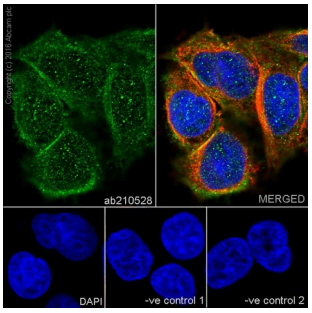
We do not recommend this combination. It is not covered by our product promise.

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.

9 product images



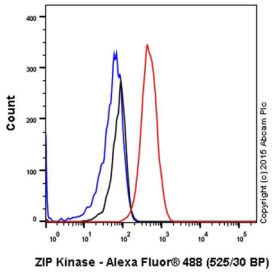
Immunocytochemistry/ Immunofluorescence - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528)

ZIP Kinase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ZIP Kinase antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% Triton X-100 permeabilized HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling ZIP Kinase with ab210528 at 1/100 dilution followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasm and nuclear staining on HeLa cell line. The nuclear counter stain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed (ab150120) at 1/1000 dilution (red).

The negative controls are as follows:

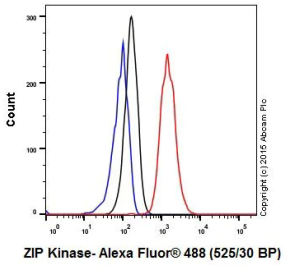
-ve control 1: ab210528 at 1/100 dilution followed by ab150120 at 1/1000 dilution.
-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528)

ZIP Kinase Flow Cytometry (Intracellular) staining using rabbit Anti-ZIP Kinase antibody

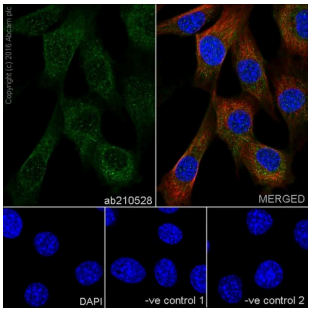
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling ZIP Kinase with ab210528 at 1/600 dilution (red) compared with a Rabbit IgG,monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (Alexa Fluor® 488) at 1/500 dilution was used as the secondary antibody.
Note: Cells were permeabilised with 90% methanol -1XPBS (-20°C, 30min).



Flow Cytometry (Intracellular) - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528)

ZIP Kinase Flow Cytometry (Intracellular) staining using rabbit Anti-ZIP Kinase antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed C2C12 (Mouse myoblast cell line) cells labeling ZIP Kinase with ab210528 at 1/120 dilution (red) compared with a Rabbit IgG,monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (Alexa Fluor® 488) at 1/500 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528)

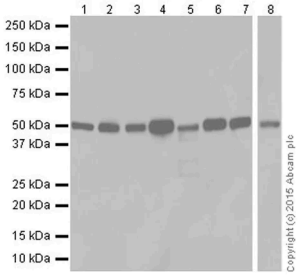
ZIP Kinase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ZIP Kinase antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% Triton X-100 permeabilized NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling ZIP Kinase with ab210528 at 1/100 dilution followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at

1/1000 dilution (green). Confocal image showing cytoplasm and nuclear staining on NIH/3T3 cell line. The nuclear counter stain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed (ab150120) at 1/1000 dilution (red).

The negative controls are as follows:

-ve control 1: ab210528 at 1/100 dilution followed by ab150120 at 1/1000 dilution.
-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.



Western blot - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528)

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: Lane 1, 2, 3, 4, 5, 6 and 7: 30 seconds; Lane 8: 5 seconds.

The molecular weight observed is consistent with what has been described in the literature (PMID: 20124481).

All lanes:
Western blot - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528) at 1/1000 dilution

Lane 1:
Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate at 20 µg

Lane 2:
A431 (Human epidermoid carcinoma cell line) whole cell lysate at 20 µg

Lane 3:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 4:
C2C12 (Mouse myoblast cell line) whole cell lysate at 20 µg

Lane 5:
L6 (Rat skeletal muscle cell line) whole cell lysate at 20 µg

Lane 6:
Mouse bladder lysate at 20 µg

Lane 7:
Rat bladder lysate at 20 µg

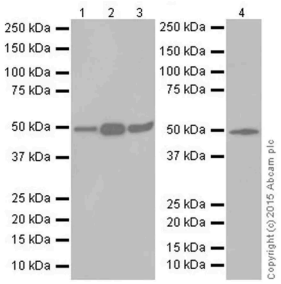
Lane 8:
A549 (Human lung carcinoma cell line) whole cell lysate at 20 µg

Secondary

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

Predicted band size: 53 kDa

Observed band size: 50 kDa



Western blot - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528)

ZIP Kinase Western blot staining using rabbit Anti-ZIP Kinase antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 20124481).

All lanes:
Western blot - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528) at 1/1000 dilution

Lane 1:
Human fetal liver lysate at 10 µg

Lane 2:
Human fetal heart lysate at 10 µg

Lane 3:
Human fetal kidney lysate at 10 µg

Lane 4:
Human bladder lysate at 10 µg

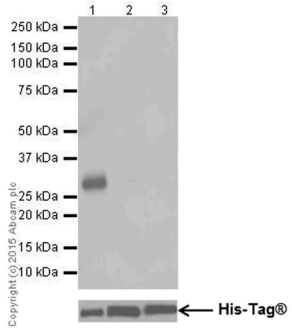
Secondary

All lanes:
Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/10000 dilution

Predicted band size: 53 kDa

Observed band size: 50 kDa

Exposure time: 3min



Western blot - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528)

ZIP Kinase Western blot staining using rabbit Anti-ZIP Kinase antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
Human ZIP Kinase fragment recombinant protein contain aa13-275 with a His-Tag®. Human DAP Kinase 2 fragment recombinant protein contain aa23-285 with a His-Tag®. Human DAP Kinase 1 fragment recombinant protein contain aa13-275 with a His-Tag®. All three recombinant human fragment proteins were made in-house.

The antibody reacts weakly with DAP kinase 1 and DAP kinase 2; however bands of their appropriate MW (159 kD, 42 kD) are not detected in the tissue lysates.

All lanes:
Western blot - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528) at 1/1000 dilution

Lane 1:
Human ZIP Kinase fragment recombinant protein at 0.01 µg

Lane 2:
Human DAP Kinase 2 fragment recombinant protein at 0.01 µg

Lane 3:
Human DAP Kinase 1 fragment recombinant protein at 0.01 µg

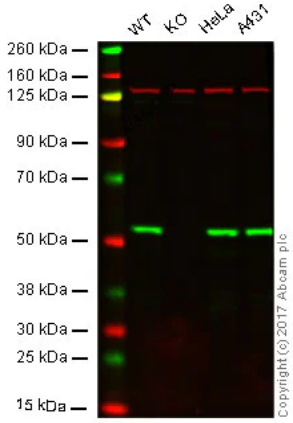
Secondary

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

Predicted band size: 53 kDa

Observed band size: 29 kDa

Exposure time: 1s



Western blot - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528)

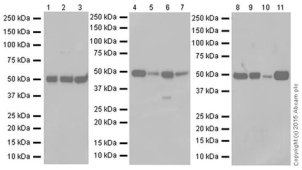
ZIP Kinase Western blot staining using rabbit Anti-ZIP Kinase antibody

Lane 1: Wild type HAP1 whole cell lysate (20 µg)
Lane 2: ZIP Kinase knockout HAP1 whole cell lysate (20 µg)
Lane 3: HeLa whole cell lysate (20 µg)
Lane 4: A431 whole cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab210528 observed at 53 kDa. Red - loading control, ab9484, observed at 37 kDa.

ab210528 was shown to specifically react with ZIP Kinase in wild type cells as signal was lost in ZIP Kinase knockout cells. Wild-type and ZIP Kinase knockout samples were subjected to SDS-PAGE. ab210528 and ab9484 (Mouse anti GAPDH loading control) were incubated overnight at 4°C at a 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528)

Predicted band size: 53 kDa



Western blot - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528)

ZIP Kinase Western blot staining using rabbit Anti-ZIP Kinase antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: Lane 1, 2 and 3: 30 seconds; Lane 4, 5, 6 and 7: 3 minutes; Lane 8, 9, 10 and 11: 30 seconds.

The molecular weight observed is consistent with what has been described in the literature (PMID: 20124481)

All lanes:
Western blot - Anti-ZIP Kinase antibody [EPR18809-86] (ab210528) at 1/1000 dilution

Lane 1:
Mouse brain tissue lysate at 10 µg

Lane 2:
Mouse kidney tissue lysate at 10 µg

Lane 3:
Mouse spleen tissue lysate at 10 µg

Lane 4:
Rat brain tissue lysate at 10 µg

Lane 5:
Rat heart tissue lysate at 10 µg

Lane 6:
Rat kidney tissue lysate at 10 µg

Lane 7:
Rat spleen tissue lysate at 10 µg

Lane 8:
C6 (Rat glial tumor cell line) whole cell lysate at 20 µg

Lane 9:
RAW 264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

Lane 10:
PC-12 (Rat adrenal gland pheochromocytoma cell line) whole cell lysate at 10 µg

Lane 11:
NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate at 10 µg

Secondary

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

Predicted band size: 53 kDa

Observed band size: 50 kDa

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