abcam

ab236871

Anti-PBK/SPK antibody [EPR21982]

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	EPR21982
Purification technique	Affinity purification Protein A
Specificity	IHC is recommended for human only.
Concentration	0.451 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

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

WB

Tested

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

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

IHC-P

Tested

Species	Human

Dilution info	1/2000
Notes	IHC is recommended for human only. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Expected

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

Target data

See full target information PBK

Function	Phosphorylates MAP kinase p38. Seems to be active only in mitosis. May also play a role in the activation of lymphoid cells. When phosphorylated, forms a complex with TP53, leading to TP53 destabilization and attenuation of G2/M checkpoint during doxorubicin-induced DNA damage.

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	PBK/SPK also known as PDZ-binding kinase or Cdc2-related kinase is a serine/threonine protein kinase with an approximate molecular weight of 47 kDa. This protein is involved in cell division playing an important role in mitotic processes. PBK/SPK is expressed in various tissues including significant levels in testis and placenta often in proliferating cell types. It also exhibits higher expression in cancerous tissues suggesting a role in tumorigenesis.
Biological function summary	PBK/SPK facilitates cell cycle progression and cellular proliferation. This protein is not typically part of larger complexes but it partners with other molecules during cell division to ensure proper mitotic spindle formation and chromosome segregation. Its expression levels increase during the G2/M phase of the cell cycle indicating its involvement in cell cycle regulation. In cancer it often shows overexpression contributing to unregulated proliferation of cancer cells.
Pathways	PBK/SPK is associated with critical cell division pathways such as the MAPK signaling pathway. This involvement impacts cellular responses to growth signals and stress. PBK can phosphorylate and interact with proteins like p38 MAPK which further modulates signal transduction related to cellular growth and survival. Through these pathways PBK/SPK helps manage the balance between cell division and apoptosis particularly under stress conditions.
Associated diseases and disorders	PBK/SPK has strong correlations with cancer especially glioblastoma and cervical cancer. Overexpression of PBK often links to poor prognosis in these conditions. In cancerous settings PBK interacts with proteins such as p53 and c-Myc influencing tumor progression and resistance to therapy. PBK can modulate oncogenic pathways providing a potential target for therapeutic intervention in tumor proliferation and survival.

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.

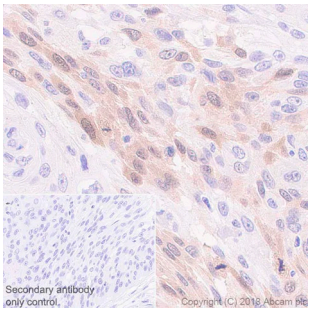
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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9 product images

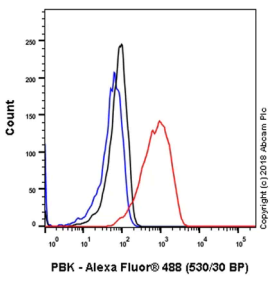


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PBK/SPK antibody [EPR21982] (ab236871)

PBK/SPK Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PBK/SPK antibody

Immunohistochemical analysis of paraffin-embedded human esophagus cancer tissue labeling PBK/SPK with ab236871 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Positive staining in human esophagus cancer (PMID: 27919968) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

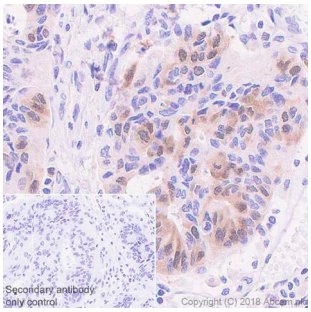
Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Flow Cytometry (Intracellular) - Anti-PBK/SPK antibody [EPR21982] (ab236871)

PBK/SPK Flow Cytometry (Intracellular) staining using rabbit Anti-PBK/SPK antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized HepG2 (human liver hepatocellular carcinoma cell line) cell line labeling PBK/SPK with ab236871 at 1/50 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.

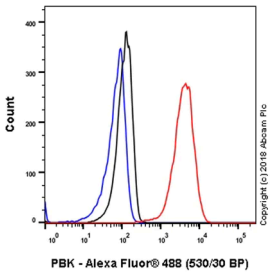


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PBK/SPK antibody [EPR21982] (ab236871)

PBK/SPK Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PBK/SPK antibody

Immunohistochemical analysis of paraffin-embedded human gastric cancer tissue labeling PBK/SPK with ab236871 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Positive staining in human gastric cancer (PMID:26894977; PMID:27898655) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

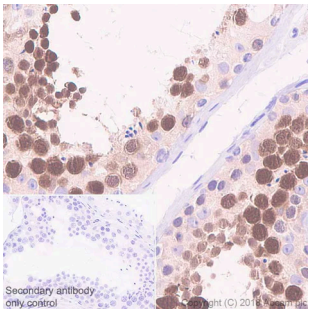
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Flow Cytometry (Intracellular) - Anti-PBK/SPK antibody [EPR21982] (ab236871)

PBK/SPK Flow Cytometry (Intracellular) staining using rabbit Anti-PBK/SPK antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized HeLa (human epithelial cell line from cervix adenocarcinoma) cell line labeling PBK/SPK with ab236871 at 1/50 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.

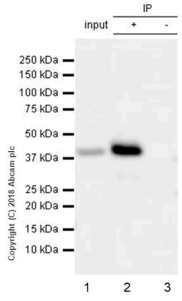


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PBK/SPK antibody [EPR21982] (ab236871)

PBK/SPK Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PBK/SPK antibody

Immunohistochemical analysis of paraffin-embedded human testis tissue labeling PBK/SPK with ab236871 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Positive staining in germ cells of human testis (PMID:16982762; PMID:25909225) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Immunoprecipitation - Anti-PBK/SPK antibody [EPR21982] (ab236871)

PBK/SPK was immunoprecipitated from 0.35 mg of HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab236871 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab184276 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.
Lane 1: HeLa whole cell lysate 10 µg (Input).

Lane 2: ab231871 IP in HeLa whole cell lysate.

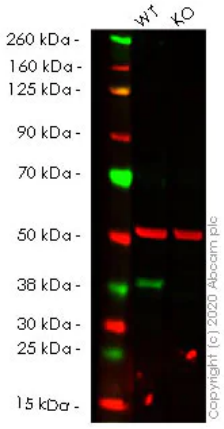
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab231871 in HeLa whole cell lysate.

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

Exposure time: 30 seconds.
All lanes:
Immunoprecipitation - Anti-PBK/SPK antibody [EPR21982] (ab236871)

Predicted band size: 36 kDa, 50 kDa

Observed band size: 36 kDa, 46 kDa, 50 kDa



Western blot - Anti-PBK/SPK antibody [EPR21982] (ab236871)

PBK/SPK Western blot staining using rabbit Anti-PBK/SPK antibody

Lanes 1- 2: Merged signal (red and green). Green - ab236871 observed at 40 kDa. Red - Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) observed at 50 kDa.
ab236871 was shown to react with PBK/SPK in wild-type HEK-293T cells in western blot. Loss of signal was observed when knockout cell line ab266827 (knockout cell lysate ab257575) was used. Wild-type HEK-293T and PBK knockout HEK-293T cell lysates were subjected to SDS-PAGE. ab236871 and Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) overnight at 4°C at a 1 in 1000 dilution and a 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-PBK/SPK antibody [EPR21982] (ab236871) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

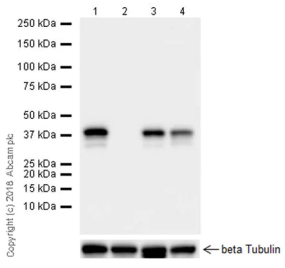
Lane 2:
PBK knockout HEK-293T cell lysate at 20 µg

Lane 2:
Western blot - Human PBK (SPK) knockout HEK-293T cell line (ab266827)

Performed under reducing conditions.

Predicted band size: 36 kDa

Observed band size: 40 kDa



Western blot - Anti-PBK/SPK antibody [EPR21982] (ab236871)

Blocking/Dilution buffer: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID:23547718; PMID:25909225).

ab236871 was shown to specifically react with PBK/SPK in wild-type HAP1 cells as signal was lost in PBK/SPK knockout cells. Wild-type and PBK/SPK knockout samples were subjected to SDS-PAGE. ab236871 and ab181602 (Rabbit anti-GAPDH loading control) were incubated 1 hour at room temperature at 1/1000 dilution and 1/200,000 dilution respectively. Blots were developed

with Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) secondary antibody at 1/100,000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-PBK/SPK antibody [EPR21982] (ab236871) at 1/1000 dilution

Lane 1:
Wild-type HAP1 cell lysate at 20 µg

Lane 2:
PBK/SPK knockout HAP1 cell lysate at 20 µg

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

Lane 4:
HepG2 (human liver hepatocellular carcinoma cell line) whole cell lysate at 20 µg

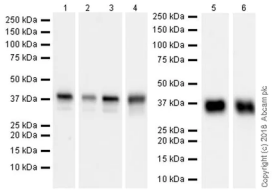
Secondary

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

Predicted band size: 36 kDa

Observed band size: 38 kDa

Exposure time: 15s



Western blot - Anti-PBK/SPK antibody [EPR21982] (ab236871)

Exposure time : Lanes 1-3: 26 seconds; Lane 4: 8 seconds; Lanes 5-6: 70 seconds.
Blocking/Dilution buffer: 5% NFDM/TBST.

The molecular weight observed is consistent with what has been described in the literature (PMID:23547718; PMID:25909225).

All lanes:
Western blot - Anti-PBK/SPK antibody [EPR21982] (ab236871) at 1/1000 dilution

Lane 1:
SW480 (human colorectal adenocarcinoma cell line) whole cell lysate at 20 µg

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

Lane 3:
U-87 MG (human glioblastoma-astrocytoma epithelial cell line) whole cell lysate at 20 µg

Lane 4:
Rat testis lysate at 20 µg

Lane 5:
C6 (rat glial tumor cell line) whole cell lysate at 10 µg

Lane 6:
PC-12 (rat adrenal gland pheochromocytoma 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: 36 kDa

Observed band size: 38 kDa

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