abcam

ab236872

Anti-PBK/SPK antibody [EPR21983]

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	EPR21983
Purification technique	Affinity purification Protein A
Concentration	0.549 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	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/4000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/4000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/4000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

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

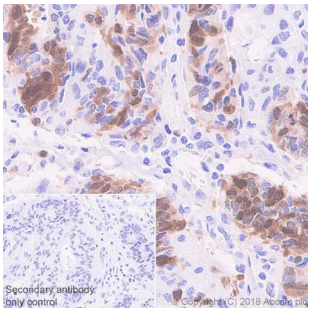
We do not recommend this combination. It is not covered by our product promise.

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.

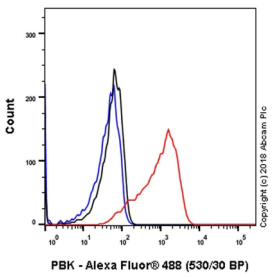
9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PBK/SPK antibody [EPR21983] (ab236872)

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

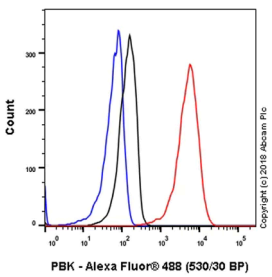
Immunohistochemical analysis of paraffin-embedded human gastric cancer tissue labeling PBK/SPK with ab236872 at 1/4000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Positive staining in human gastric cancer (PMID:26894977; PMID:27898655) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Flow Cytometry (Intracellular) - Anti-PBK/SPK antibody [EPR21983] (ab236872)

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

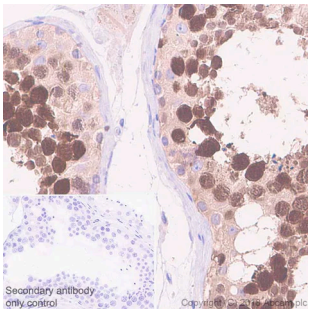
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized HepG2 (human hepatocellular carcinoma epithelial cell) cell line labeling PBK/SPK with ab236872 at 1/500 (red) compared with a Rabbit monoclonal IgG (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077), at 1/2000 dilution was used as the secondary antibody.



Flow Cytometry (Intracellular) - Anti-PBK/SPK antibody [EPR21983] (ab236872)

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

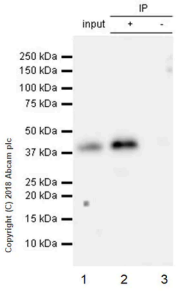
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cell line labeling PBK/SPK with ab236872 at 1/500 (red) compared with a Rabbit monoclonal IgG (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti rabbit IgG (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 [EPR21983] (ab236872)

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 ab236872 at 1/4000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). 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 a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

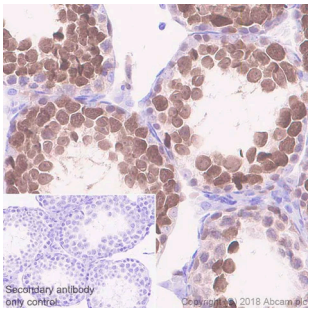


Immunoprecipitation - Anti-PBK/SPK antibody [EPR21983] (ab236872)

PBK/SPK was immunoprecipitated from 0.35 mg HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate with ab236872 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab236872 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.
Lane 1: HepG2 whole cell lysate 10 µg (Input).
Lane 2: ab236872 IP in HepG2 whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab236872 in HepG2 whole cell lysate.
Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: 10 seconds.
All lanes:
Immunoprecipitation - Anti-PBK/SPK antibody [EPR21983] (ab236872)

Predicted band size: 36 kDa

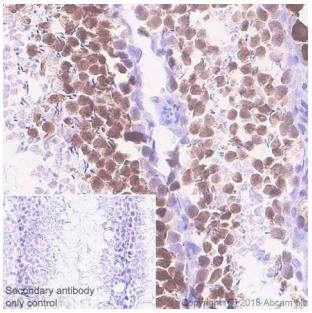
Observed band size: 38 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PBK/SPK antibody [EPR21983] (ab236872)

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

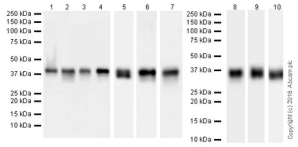
Immunohistochemical analysis of paraffin-embedded mouse testis tissue labeling PBK/SPK with ab236872 at 1/4000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Positive staining in germ cells of mouse testis (PMID:16982762; PMID:25909225) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PBK/SPK antibody [EPR21983] (ab236872)

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

Immunohistochemical analysis of paraffin-embedded rat testis tissue labeling PBK/SPK with ab236872 at 1/4000 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Positive staining in germ cells of rat testis (PMID:16982762; PMID:25909225) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Western blot - Anti-PBK/SPK antibody [EPR21983] (ab236872)

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

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure times: Lanes 1-4 & 8-9: 15 seconds; Lanes 5 & 10: 3 minutes; Lane 6: 70 seconds; Lane 7: 3 seconds.

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 [EPR21983] (ab236872) at 1/1000 dilution

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

Lane 2:
MCF7 (human breast adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Lane 3:
A431 (human epidermoid carcinoma epithelial cell), whole cell lysate at 20 µg

Lane 4:
U-87 MG (human glioblastoma-astrocytoma epithelial cell), whole cell lysate at 20 µg

Lane 5:
Hepa1-6 (mouse hepatoma epithelial cell), whole cell lysate at 20 µg

Lane 6:

Human testis lysate at 20 µg

Lane 7:
Rat testis lysate at 20 µg

Lane 8:
C6 (rat glial tumor glial cell), whole cell lysate at 20 µg

Lane 9:
PC-12 (rat adrenal gland pheochromocytoma), whole cell lysate at 20 µg

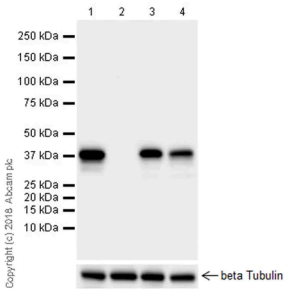
Lane 10:
RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage), whole cell lysate at 20 µg

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



Western blot - Anti-PBK/SPK antibody [EPR21983] (ab236872)

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

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

ab236872 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. ab236872 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 [EPR21983] (ab236872) 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 cervix adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Lane 4:
HepG2 (human hepatocellular carcinoma epithelial cell), 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

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