abcam

ab280209

Anti-PBK/SPK antibody [31/PBK]

Recombinant | KO Validated

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	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	31/PBK
Purification technique	Affinity purification Protein A
Concentration	0.973 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

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	1/1000
Notes	-

Expected

Species	Mouse, Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
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	Blue Ice
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

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.

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

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.

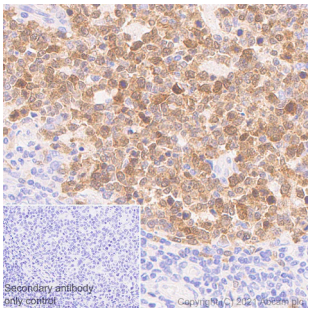
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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:
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7 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PBK/SPK antibody [31/PBK] (ab280209)

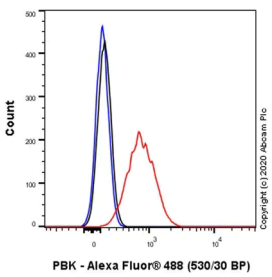
PBK/SPK Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-PBK/SPK antibody

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling PBK/PSK with ab280209 at 1/500 (1.946 µg/ml) dilution followed by ready to use LeicaDS9800 (Bond® Polymer Refine Detection).
Positive staining in germinal center of human tonsil.

The section was incubated with ab280209 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is ready to use LeicaDS9800 (Bond® Polymer Refine Detection).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.

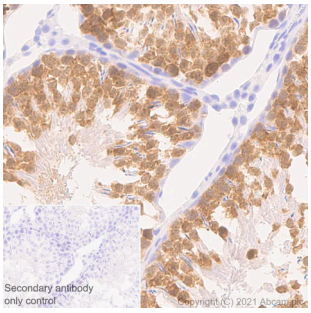


Flow Cytometry (Intracellular) - Anti-PBK/SPK antibody [31/PBK] (ab280209)

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

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling PBK/SPK with ab280209 at 1/1000 dilution (0.1 µg) (red) compared with a mouse monoclonal IgG isotype control (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

A Goat anti mouse IgG (Alexa Fluor® 488, ab150113) at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PBK/SPK antibody [31/PBK] (ab280209)

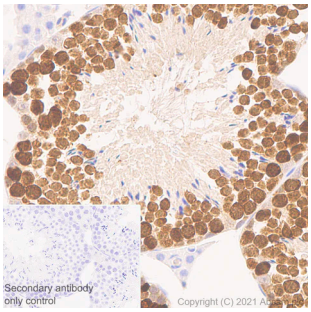
PBK/SPK Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-PBK/SPK antibody

Immunohistochemical analysis of paraffin-embedded rat testis tissue labeling PBK/PSK with ab280209 at 1/500 (1.946 µg/ml) dilution followed by ready to use LeicaDS9800 (Bond® Polymer Refine Detection).
Positive staining in rat testis.

The section was incubated with ab280209 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is ready to use LeicaDS9800 (Bond® Polymer Refine Detection).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PBK/SPK antibody [31/PBK] (ab280209)

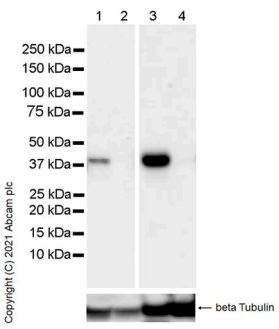
PBK/SPK Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-PBK/SPK antibody

Immunohistochemical analysis of paraffin-embedded mouse testis tissue labeling PBK/PSK with ab280209 at 1/500 (1.946 µg/ml) dilution followed by ready to use LeicaDS9800 (Bond® Polymer Refine Detection).
Positive staining in mouse testis.

The section was incubated with ab280209 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is ready to use LeicaDS9800 (Bond® Polymer Refine Detection).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins.



Western blot - Anti-PBK/SPK antibody [31/PBK] (ab280209)

Negative control: Human heart, mouse brain (PMID: 27898655).
The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID:23547718).

Blocking/Dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-PBK/SPK antibody [31/PBK] (ab280209) at 1/1000 dilution

Lane 1:

Human testis tissue lysate at 20 µg

Lane 2:
Human heart tissue lysate at 20 µg

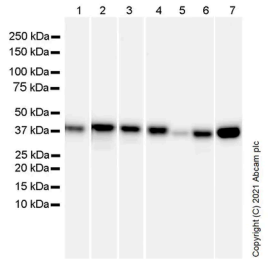
Lane 3:
Mouse testis tissue lysate at 20 µg

Lane 4:
Mouse brain tissue lysate at 20 µg

Secondary

All lanes:
Peroxidase-Conjugated Goat anti-Mouse IgG (H+L) at 1/10000 dilution

Predicted band size: 36 kDa



Western blot - Anti-PBK/SPK antibody [31/PBK] (ab280209)

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID:23547718).
Exposure time: lane 1: 37 secs; lane 2-7: 15 secs.

Blocking/Dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-PBK/SPK antibody [31/PBK] (ab280209) at 1/1000 dilution

Lane 1:
HepG2 (human hepatocellular carcinoma epithelial cell), whole cell lysate at 20 µg

Lane 2:
HeLa (human epithelial cell line from cervix adenocarcinoma), whole cell lysate at 20 µg

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

Lane 4:
RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage), whole cell lysate at 20 µg

Lane 5:
C6 (rat glial tumor glial cell), whole cell lysate at 20 µg

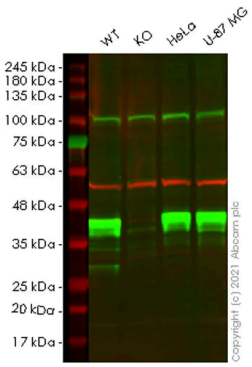
Lane 6:
PC-12 (rat adrenal gland pheochromocytoma), whole cell lysate at 20 µg

Lane 7:
Rat testis tissue lysate at 20 µg

Secondary

All lanes:
Peroxidase-Conjugated Goat anti-Mouse IgG (H+L) at 1/10000 dilution

Predicted band size: 36 kDa



Western blot - Anti-PBK/SPK antibody [31/PBK] (ab280209)

Lanes 1 - 4: Merged signal (red and green). Green - ab280209 observed at 36 kDa. Red - loading control ab52901(Rabbit monoclonal [EP1331Y] to beta Tubulin) observed at 52 kDa.

Lanes 1-2: ab280209 Anti-PBK antibody was shown to react with in HEK-293T cells in Western blot. Loss of signal was observed when PBK knockout sample was used. Wild-type and PBK knockout samples were subjected to SDS-PAGE.

ab280209 and Anti-beta Tubulin antibody [EP1331Y] (ab52901) were incubated at 4° overnight at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 680CW) (ab216777) and Goat anti-Mouse IgG H&L (IRDye® 800RD) (ab216772) secondary antibodies at 1 in 10000 dilution for 1 hour at room temperature before imaging. Blocking/Dilution buffer: Intercept® (TBS) Blocking Buffer diluted with an equal volume of 0.1% TBS.

All lanes:
Western blot - Anti-PBK/SPK antibody [31/PBK] (ab280209) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T (human embryonic kidney epithelial cell), whole cell lysate at 20 µg

Lane 2:
PBK knockout HEK-293T (human embryonic kidney epithelial cell), whole cell lysate at 20 µg

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

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

Secondary

All lanes:
Goat Anti-Mouse IgG H&L (IRDye® 800CW) (ab216772) and Goat Anti-Rabbit IgG H&L (IRDye® 680RD) (ab216777) at 1/10000 dilution

Predicted band size: 36 kDa

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