abcam

ab239830

Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody [EP656Y] - BSA and Azide free

Recombinant RabMAb

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	EP656Y
Purification technique	Affinity purification Protein A
Concentration	1.024 - 1.03 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-

Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Species	Mouse
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information PAK1 pS144

Function

Protein kinase involved in intracellular signaling pathways downstream of integrins and receptor-type kinases that plays an important role in cytoskeleton dynamics, in cell adhesion, migration, proliferation, apoptosis, mitosis, and in vesicle-mediated transport processes (PubMed:10551809, PubMed:11896197, PubMed:12876277, PubMed:14585966, PubMed:15611088, PubMed:17726028, PubMed:17989089, PubMed:30290153, PubMed:17420447). Can directly phosphorylate BAD and protects cells against apoptosis (By similarity). Activated by interaction with CDC42 and RAC1 (PubMed:8805275, PubMed:9528787). Functions as a GTPase effector that links the Rho-related GTPases CDC42 and RAC1 to the JNK MAP kinase pathway (PubMed:8805275, PubMed:9528787). Phosphorylates and activates MAP2K1, and thereby mediates activation of downstream MAP kinases (By similarity). Involved in the reorganization of the actin cytoskeleton, actin stress fibers and of focal adhesion complexes (PubMed:9032240, PubMed:9395435). Phosphorylates the tubulin chaperone TBCB and thereby plays a role in the regulation of microtubule biogenesis and organization of the tubulin cytoskeleton (PubMed:15831477). Plays a role in the regulation of insulin secretion in response to elevated glucose levels (PubMed:22669945). Part of a ternary complex that contains PAK1, DVL1 and MUSK that is important for MUSK-dependent regulation of AChR clustering during the

formation of the neuromuscular junction (NMJ) (By similarity). Activity is inhibited in cells undergoing apoptosis, potentially due to binding of CDC2L1 and CDC2L2 (PubMed:12624090). Phosphorylates MYL9/MLC2 (By similarity). Phosphorylates RAF1 at 'Ser-338' and 'Ser-339' resulting in: activation of RAF1, stimulation of RAF1 translocation to mitochondria, phosphorylation of BAD by RAF1, and RAF1 binding to BCL2 (PubMed:11733498). Phosphorylates SNAI1 at 'Ser-246' promoting its transcriptional repressor activity by increasing its accumulation in the nucleus (PubMed:15833848). In podocytes, promotes NR3C2 nuclear localization (By similarity). Required for atypical chemokine receptor ACKR2-induced phosphorylation of LIMK1 and cofilin (CFL1) and for the up-regulation of ACKR2 from endosomal compartment to cell membrane, increasing its efficiency in chemokine uptake and degradation (PubMed:23633677). In synapses, seems to mediate the regulation of F-actin cluster formation performed by SHANK3, maybe through CFL1 phosphorylation and inactivation (By similarity). Plays a role in RUFY3-mediated facilitating gastric cancer cells migration and invasion (PubMed:25766321). In response to DNA damage, phosphorylates MORC2 which activates its ATPase activity and facilitates chromatin remodeling (PubMed:23260667). In neurons, plays a crucial role in regulating GABA(A) receptor synaptic stability and hence GABAergic inhibitory synaptic transmission through its role in F-actin stabilization (By similarity). In hippocampal neurons, necessary for the formation of dendritic spines and excitatory synapses; this function is dependent on kinase activity and may be exerted by the regulation of actomyosin contractility through the phosphorylation of myosin II regulatory light chain (MLC) (By similarity). Along with GIT1, positively regulates microtubule nucleation during interphase (PubMed:27012601). Phosphorylates FXR1, promoting its localization to stress granules and activity (PubMed:20417602). Phosphorylates ILK on 'Thr-173' and 'Ser-246', promoting nuclear export of ILK (PubMed:17420447).

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

ab239830 is the carrier-free version of ab40795.

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.

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

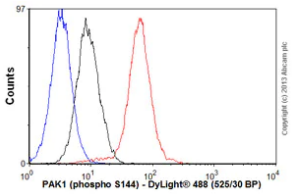
We do not recommend this combination. It is not covered by our product promise.

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.

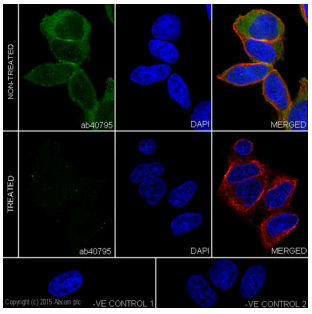
7 product images



Flow Cytometry (Intracellular) - Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody [EP656Y] - BSA and Azide free (ab239830)

PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) Flow Cytometry (Intracellular) staining using rabbit Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody

Overlay histogram showing HeLa (Human epithelial cell line from cervix adenocarcinoma) cells stained with unpurified ab40795 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab40795, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab40795).

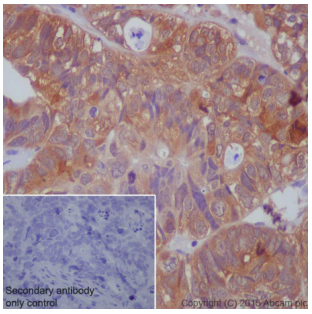


Immunocytochemistry/ Immunofluorescence - Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody [EP656Y] - BSA and Azide free (ab239830)

PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody

ab40795 staining PAK1 (phospho S144) + PAK2 (phospho S141) + PAK3 (phospho S154) in HeLa (human cervix adenocarcinoma) cells, treated and untreated with Lambda Protein Phosphtase 31°C for 5h by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with 4% Paraformaldehyde and permeabilized with 0.1% Triton X-100. Samples were incubated with primary antibody at a dilution of 1/100. A goat anti rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody. ab7291 and ab150120 were used as counterstains for primary antibody ab75748 and secondary antibody ab150077 respectively and DAPI was used as a nuclear counterstain.
Negative control 1: Rabbit primary antibody and anti-mouse secondary antibody (ab150120)
Negative control 2: Mouse primary antibody (ab7291) and anti-rabbit secondary antibody (ab150077)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab40795).



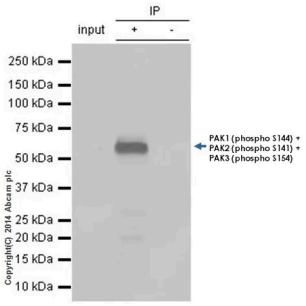
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody [EP656Y] - BSA and Azide free (ab239830)

PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody

ab40795 staining PAK1 (phospho S144) + PAK2 (phospho S141) + PAK3 (phospho S154) in human liver carcinoma tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was

by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/100. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody at a dilution of 1/500.
Negative control 1: PBS in place of primary antibody.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab40795).

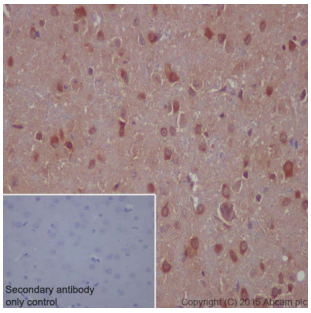


Immunoprecipitation - Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody [EP656Y] - BSA and Azide free (ab239830)

ab40795 immunoprecipitating PAK1 (phospho S144) + PAK2 (phospho S141) + PAK3 (phospho S154). 10µg of HeLa (human cervix adenocarcinoma) whole cell lysate was incubated with primary antibody at a dilution of 1/40 and VeriBlot for IP Detection Reagent (HRP) (ab131366) at a dilution of 1/10000.
Lane 1: HeLa whole cell lysate (10ug)
Lane 2: ab40795 IP in HeLa whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab40795 in HeLa (human cervix adenocarcinoma) whole cell lysate

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab40795).

All lanes:
Immunoprecipitation - Anti-PAK1 (phospho S144) + PAK2 (phospho S141) + PAK3 (phospho S154) antibody [EP656Y] (ab40795)

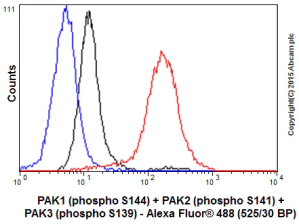


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody [EP656Y] - BSA and Azide free (ab239830)

PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody

ab40795 staining PAK1 (phospho S144) + PAK2 (phospho S141) + PAK3 (phospho S154) in rat cerebral cortex tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/100. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody at a dilution of 1/500.
Negative control 1: PBS in place of primary

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab40795).



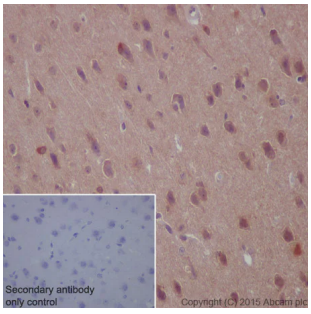
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PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) Flow Cytometry (Intracellular) staining using rabbit Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody

ab40795 staining PAK1 (phospho S144) + PAK2 (phospho S141) + PAK3 (phospho S154) in the mousecell line NIH/3T3 (mouse embryo) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde and the sample was incubated with the primary antibody at a dilution of 1/120. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/500 was used as the secondary antibody. Isoytype control: Rabbit monoclonal IgG (Black)

Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab40795).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody [EP656Y] - BSA and Azide free (ab239830)

PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PAK1+PAK2+PAK3 (phospho S141 + S144 + S154) antibody

ab40795 staining PAK1 (phospho S144) + PAK2 (phospho S141) + PAK3 (phospho S154) in mouse cerebral cortex tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/100. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody at a dilution of 1/500.
Negative control 1: PBS in place of primary antibody.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab40795).

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