abcam

Product datasheet

Anti-Rac1 + Rac2 + Rac3 antibody [EPR18631] - BSA and Azide free ab250247

Recombinant RabMAb

4 Images

Overview

Product name	Anti-Rac1 + Rac2 + Rac3 antibody [EPR18631] - BSA and Azide free
Description	Rabbit monoclonal [EPR18631] to Rac1 + Rac2 + Rac3 - BSA and Azide free
Host species	Rabbit
Tested applications	**Suitable for:** WB
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
General notes	ab250247 is the carrier-free version of **ab180683**. Our **carrier-free** antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency. 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. 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. 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 production For more information **see here**. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C. Do Not Freeze.
Storage buffer	pH: 7.2 Constituent: PBS
Carrier free	Yes
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR18631
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab250247 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

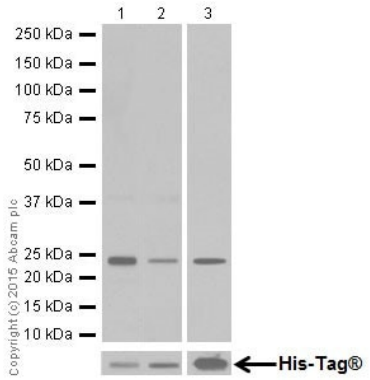
Application	Abreviews	Notes
WB		Use at an assay dependent concentration. Detects a band of approximately 21 kDa (predicted molecular weight: 21 kDa).

Target

Relevance Rac1 function: Plasma membrane-associated small GTPase which cycles between active GTP-bound and inactive GDP-bound states. In its active state, binds to a variety of effector proteins to regulate cellular responses such as secretory processes, phagocytosis of apoptotic cells, epithelial cell polarization and growth-factor induced formation of membrane ruffles. Rac1 p21/rho GDI heterodimer is the active component of the cytosolic factor sigma 1, which is involved in stimulation of the NADPH oxidase activity in macrophages. Essential for the SPATA13-mediated regulation of cell migration and adhesion assembly and disassembly. Stimulates PKN2 kinase activity. In concert with RAB7A, plays a role in regulating the formation of RBs (ruffled borders) in osteoclasts. In glioma cells, promotes cell migration and invasion. In podocytes, promotes nuclear shuttling of NR3C2; this modulation is required for a proper kidney functioning. Required for atypical chemokine receptor ACKR2-induced LIMK1-PAK1-dependent phosphorylation of cofilin (CFL1) and for up-regulation of ACKR2 from endosomal compartment to cell membrane, increasing its efficiency in chemokine uptake and degradation. In synapses, seems to mediate the regulation of F-actin cluster formation performed by SHANK3. Isoform B has an accelerated GEF-independent GDP/GTP exchange and an impaired GTP hydrolysis, which is restored partially by GTPase-activating proteins. It is able to bind to the GTPase-binding domain of PAK but not full-length PAK in a GTP-dependent manner, suggesting that the insertion does not completely abolish effector interaction. Enzyme regulation: Regulated by guanine nucleotide exchange factors (GEFs) which promote the exchange of bound GDP for free GTP, GTPase activating proteins (GAPs) which increase the GTP hydrolysis activity, and GDP dissociation inhibitors which inhibit the dissociation of the nucleotide from the GTPase. GTP hydrolysis is stimulated by ARHGAP30. Rac2 fucntion: Plasma membrane-associated small GTPase which cycles between an active GTP-bound and inactive GDP-bound state. In active state binds to a variety of effector proteins to regulate cellular responses, such as secretory processes,

phagocytose of apoptotic cells and epithelial cell polarization. Augments the production of reactive oxygen species (ROS) by NADPH oxidase. Enzyme regulation: Regulated by guanine nucleotide exchange factors (GEFs) which promote the exchange of bound GDP for free GTP, GTPase activating proteins (GAPs) which increase the GTP hydrolysis activity, and GDP dissociation inhibitors which inhibit the dissociation of the nucleotide from the GTPase. Rac3 function: Plasma membrane-associated small GTPase which cycles between an active GTP-bound and inactive GDP-bound state. In active state binds to a variety of effector proteins to regulate cellular responses, such as cell spreading and the formation of actin-based protusions including lamellipodia and membrane ruffles. Promotes cell adhesion and spreading on fibrinogen in a CIB1 and alpha-IIb/beta3 integrin-mediated manner.

Images



Western blot - Anti-Rac1 + Rac2 + Rac3 antibody [EPR18631] - BSA and Azide free (ab250247)

All lanes : Anti-Rac1 + Rac2 + Rac3 antibody [EPR18631] (**ab180683**) at 1/2000 dilution

Lane 1 : Recombinant Human Rac1 full length protein
Lane 2 : Recombinant Human Rac2 full length protein
Lane 3 : Recombinant Human Rac3 full length protein

Lysates/proteins at 0.01 µg per lane.

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

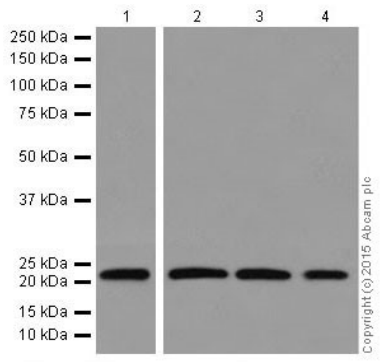
Predicted band size: 21 kDa
Observed band size: 21 kDa

This data was developed using **ab180683**, the same antibody clone in a different buffer formulation.

Blocking and dilution buffer: 5% NFDM/TBST.

Exposure time: Lanes 1-2: 1 second; Lane 3: 3 minutes.

Recombinant human Rac1 full length protein contains aa1-192 with a C-terminal His-Tag®; Recombinant human Rac2 full length protein contains aa1-192 with a C-terminal His-Tag®; Recombinant human Rac3 full length protein contains aa1-192 with a C-terminal His-Tag®. All three recombinant Rac's were made in house.



Western blot - Anti-Rac1 + Rac2 + Rac3 antibody [EPR18631] - BSA and Azide free (ab250247)

All lanes : Anti-Rac1 + Rac2 + Rac3 antibody [EPR18631] (**ab180683**) at 1/2000 dilution

Lane 1 : Human fetal brain lysate
Lane 2 : HEK-293 (Human epithelial cells from embryonic kidney) whole cell lysate
Lane 3 : HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysate
Lane 4 : HUVEC (Human umbilical vein endothelial cell line) whole cell lysate

Lysates/proteins at 20 µg per lane.

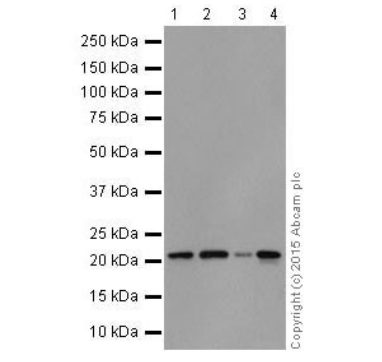
Secondary
All lanes : Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/10000 dilution

Predicted band size: 21 kDa
Observed band size: 21 kDa

This data was developed using **ab180683**, the same antibody clone in a different buffer formulation.

Blocking and dilution buffer: 5% NFDM/TBST.

Exposure time: Lane 1: 3 seconds; Lanes 2-4 : 15 seconds.



Western blot - Anti-Rac1 + Rac2 + Rac3 antibody [EPR18631] - BSA and Azide free (ab250247)

All lanes : Anti-Rac1 + Rac2 + Rac3 antibody [EPR18631] (**ab180683**) at 1/2000 dilution

Lane 1 : C6 (Rat glial tumor cells) whole cell lysate
Lane 2 : RAW 264.7 (Mouse macrophage cells transformed with Abelson murine leukemia virus) whole cell lysate
Lane 3 : PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysate
Lane 4 : NIH/3T3 (Mouse embyro fibroblast cells) whole cell lysate

Lysates/proteins at 10 µg per lane.

Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at

1/100000 dilution

Predicted band size: 21 kDa
Observed band size: 21 kDa

Exposure time: 3 seconds

This data was developed using **ab180683**, the same antibody clone in a different buffer formulation.

Blocking and dilution buffer: 5% NFDM/TBST.

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