abcam

ab247448

Anti-p40-phox antibody [EP2142Y] - 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	EP2142Y
Purification technique	Affinity purification Protein A
Concentration	1.055 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-

Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information NCF4

Function	Subunit of the phagocyte NADPH oxidase complex that mediates the transfer of electrons from cytosolic NADPH to O2 to produce the superoxide anion (O2(-)) (Probable). In the activated complex, electrons are first transferred from NADPH to flavin adenine dinucleotide (FAD) and subsequently transferred via two heme molecules to molecular oxygen, producing superoxide through an outer-sphere reaction (By similarity). Activation of the NADPH oxidase complex is initiated by the assembly of cytosolic subunits of the NADPH oxidase complex with the core NADPH oxidase complex to form a complex at the plasma membrane or phagosomal membrane (By similarity). This activation process is initiated by phosphorylation dependent binding of the cytosolic NCF1/p47-phox subunit to the C-terminus of CYBA/p22-phox (By similarity).

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

ab247448 is the carrier-free version of ab76158.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	P40-phox also known as neutrophil cytosolic factor 4 (NCF4) is a regulatory component of the NADPH oxidase complex. It is expressed in phagocytic cells such as neutrophils and macrophages. The protein plays a role in the production of reactive oxygen species (ROS) during the respiratory burst. The molecular mass of p40-phox is approximately 40 kDa. It interacts with other subunits of the NADPH oxidase complex such as p67-phox and p47-phox contributing to the assembly and activation of the complex.
Biological function summary	P40-phox participates in innate immune responses by regulating the NADPH oxidase complex's function. It acts as a scaffold to facilitate the interaction between cytosolic and membrane components. p40-phox integrates into the cytosolic fraction with other subunits and translocates to the membrane upon stimulation. This translocation is essential for generating superoxide radicals that are involved in defense against pathogens. Its functional domains enable it to bind phosphatidylinositol (34) bisphosphate which anchors the protein to the membrane. p40-phox itself is not an enzyme but modulates the activity of the complex.
Pathways	The p40 protein serves as an important player in the signaling cascade of the respiratory burst. It interacts with the phosphoinositide 3-kinase (PI3K) pathway and cooperates with other proteins like p67-phox and p47-phox through phosphorylation-dependent mechanisms. The p40-phox is phox compatible meaning it can integrate into various signaling modules. Within the oxidative burst pathway it enhances the cytosolic complex's attachment to the membrane affecting the production of ROS.
Associated diseases and disorders	Mutations in the p40-phox have been connected to chronic granulomatous disease (CGD) characterized by recurrent infections and granuloma formation. The lack of functional p40-phox disrupts the assembly of the NADPH oxidase complex leading to decreased ROS production. This deficiency impairs the ability of phagocytes to eliminate pathogens effectively. p40-phox is also related to inflammatory disorders like inflammatory bowel disease (IBD) as variations in the NCF4 gene affect the immune response. The dysfunction in ROS production impacts the signaling involving p67-phox and p47-phox further influencing disease pathogenesis.

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

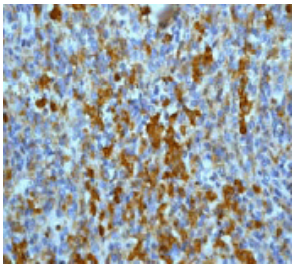
We do not recommend this combination. It is not covered by our product promise.

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.

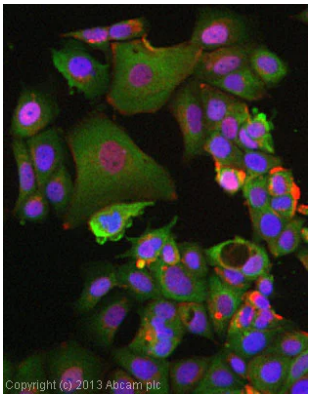
5 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-p40-phox antibody [EP2142Y] - BSA and Azide free (ab247448)

P40-phox Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-p40-phox antibody

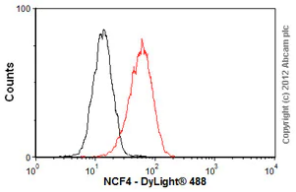
This data was developed using ab76158, the same antibody clone in a different buffer formulation. ab76158 at 1/100-1/250 dilution staining p40-phox in human spleen by Immunohistochemistry, Paraffin-embedded tissue.



Immunocytochemistry/ Immunofluorescence - Anti-p40-phox antibody [EP2142Y] - BSA and Azide free (ab247448)

P40-phox Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-p40-phox antibody

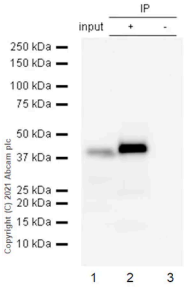
This data was developed using ab76158, the same antibody clone in a different buffer formulation. ICC/IF image of ab76158 stained MCF7 cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab76158, 1/25 dilution) overnight at +4°C. The secondary antibody (green) was ab96899, DyLight® 488 goat anti-rabbit IgG (H+L) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.



Flow Cytometry (Intracellular) - Anti-p40-phox antibody [EP2142Y] - BSA and Azide free (ab247448)

P40-phox Flow Cytometry (Intracellular) staining using rabbit Anti-p40-phox antibody

This data was developed using ab76158, the same antibody clone in a different buffer formulation.Overlay histogram showing K562 cells stained with ab76158 (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 (ab76158, 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. Acquisition of >5,000 events was performed.



Immunoprecipitation - Anti-p40-phox antibody [EP2142Y] - BSA and Azide free (ab247448)

This data was developed using ab76158, the same antibody clone in a different buffer formulation. p40-phox was immunoprecipitated from 0.35 mg HL-60 (Human acute promyelocytic leukemia promyeloblast) whole cell lysate 10 µg with ab76158 at 1/50 dilution (2µg). VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.

Lane 1: HL-60 (Human acute promyelocytic leukemia promyeloblast) whole cell lysate 10 µg

Lane 2: ab76158 IP in HL-60 whole cell lysate

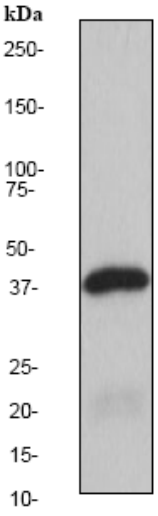
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab76158 in HL-60 whole cell lysate

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

All lanes:
Immunoprecipitation - Anti-p40-phox antibody [EP2142Y] (ab76158)

Predicted band size: 39 kDa

Observed band size: 39 kDa



Western blot - Anti-p40-phox antibody [EP2142Y] - BSA and Azide free (ab247448)

P40-phox Western blot staining of HL60 cell lysate using rabbit Anti-p40-phox antibody

This data was developed using ab76158, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-p40-phox antibody [EP2142Y] (ab76158) at 1/50000 dilution

All lanes:
HL60 cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP conjugated at 1/2000 dilution

Predicted band size: 39 kDa

Observed band size: 39 kDa

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