SANTA CRUZ BIOTECHNOLOGY, INC.

p22-phox (44.1): sc-130550

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Mox1 and the glycoprotein gp91-phox are largely related proteins that are essential components of the NADPH oxidase. The superoxide-generating NADPH oxidase is present in phagocytes, neuroepithelial bodies, vascular smooth muscle cells and endothelial cells. It includes a membrane-bound flavocytochrome containing two subunits, gp91-phox and p22-phox, and the cytosolic proteins p47-phox and p67-phox. During activation of the NADPH oxidase, p47-phox and p67-phox migrate to the plasma membrane, where they associate with the flavocytochrome cytochrome b558 to form the active enzyme complex. The p22- and gp91-phox subunits also function as surface O_2 sensors that initiate cellular signaling in response to hypoxic conditions.

CHROMOSOMAL LOCATION

Genetic locus: CYBA (human) mapping to 16q24.3; Cyba (mouse) mapping to 8 E1.

SOURCE

p22-phox (44.1) is a mouse monoclonal antibody raised against p22-phox of human origin, with epitope mapping to amino acids 29-33 and 182-188.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p22-phox (44.1) is available conjugated to agarose (sc-130550 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-130550 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-130550 PE), fluorescein (sc-130550 FITC), Alexa Fluor® 488 (sc-130550 AF488), Alexa Fluor® 546 (sc-130550 AF546), Alexa Fluor® 594 (sc-130550 AF594) or Alexa Fluor® 647 (sc-130550 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-130550 AF680) or Alexa Fluor® 790 (sc-130550 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

p22-phox (44.1) is recommended for detection of p22-phox of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for p22-phox siRNA (h): sc-36149, p22-phox siRNA (m): sc-36150, p22-phox siRNA (r): sc-61892, p22-phox shRNA Plasmid (h): sc-36149-SH, p22-phox shRNA Plasmid (m): sc-36150-SH, p22-phox shRNA Plasmid (r): sc-61892-SH, p22-phox shRNA (h) Lentiviral Particles: sc-36149-V, p22-phox shRNA (m) Lentiviral Particles: sc-36150-V and p22-phox shRNA (r) Lentiviral Particles: sc-61892-V.

Molecular Weight of p22-phox: 22 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, THP-1 cell lysate: sc-2238 or human spleen extract: sc-363779.

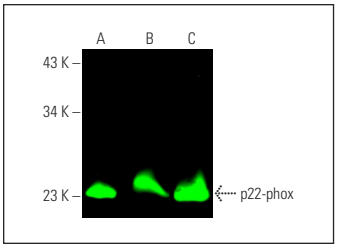
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

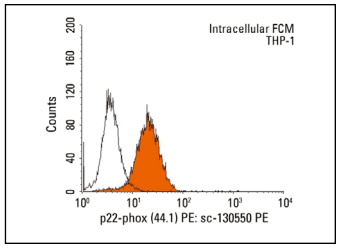
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



p22-phox (44.1) Alexa Fluor® 680: sc-130550 AF680. Direct near-infrared western blot analysis of p22-phox expression in HL-60 (**A**) and THP-1 (**B**) whole cell lysates and human spleen tissue extract (**C**). Blocked with UltraCruz® Blocking Reagent: sc-516214.



p22-phox (44.1) PE: sc-130550 PE. Intracellular FCM analysis of fixed and permeabilized THP-1 cells. Black line histogram represents the isotype control, normal mouse IgG_{2a}-PE: sc-2867.

SELECT PRODUCT CITATIONS

1. von Lohneysen, K., et al. 2008. Mutational analysis reveals distinct features of the Nox4-p22 phox complex. J. Biol. Chem. 283: 35273-35282.
2. Jackson, H.M., et al. 2010. Nox4 B-loop creates an interface between the transmembrane and dehydrogenase domains. J. Biol. Chem. 285: 10281-10290.
3. Johnson, M.B. and Criss, A.K. 2013. *Neisseria gonorrhoeae* phagosomes delay fusion with primary granules to enhance bacterial survival inside human neutrophils. Cell. Microbiol. 15: 1323-1340.
4. Smirnov, A., et al. 2014. Assembly of NADPH oxidase in human netrophils is modulated by the opacity-associated protein expression state of *Neisseria gonorrhoeae*. Infect. Immun. 82: 1036-1044.
5. Pan, L., et al. 2017. Antiproliferation effect of the uremic toxin para-cresol on endothelial progenitor cells is related to its antioxidant activity. Mol. Med. Rep. 15: 2308-2312.
6. Mu, H.N., et al. 2018. Caffeic acid attenuates rat liver injury after transplantation involving PDIA3-dependent regulation of NADPH oxidase. Free Radic. Biol. Med. 129: 202-214.
7. Diebold, B.A., et al. 2019. Guidelines for the detection of NADPH oxidases by immunoblot and RT-qPCR. Methods Mol. Biol. 1982: 191-229.
8. Gao, M., et al. 2020. Troxerutin attenuates cognitive decline in the hippocampus of male diabetic rats by inhibiting NADPH oxidase and activating the Nrf2/ARE signaling pathway. Int. J. Mol. Med. 46: 1239-1248.
9. Li, T., et al. 2021. *Listeria monocytogenes* upregulates mitochondrial calcium signalling to inhibit LC3-associated phagocytosis as a survival strategy. Nat. Microbiol. 6: 366-379.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.