SANTA CRUZ BIOTECHNOLOGY, INC.

gp91-phox (54.1): sc-130543

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. Mox1 and gp91 contain identical C-terminal sequence identity, yet they have distinct expression patterns. gp91-phox is expressed in eosinophils, neutrophils, monocytes and B lymphocytes, whereas Mox1 is predominantly detected in the colon, with low expression detected in the uterus and prostate. Mox1 is also upregulated in vascular smooth muscle cells in response to PDGF stimulation, which collectively indicates that Mox1 may function analogously to gp91-phox, yet regulate the NADPH superoxide production in non-phagocytic cells.

RESEARCH USE

1. Henderson, L.M., et al. 1995. The arachidonate-activable, NADPH oxidase-associated H^+ channel. Evidence that gp91-phox functions as an essential part of the channel. J. Biol. Chem. 270: 5909-5916.
2. Ushio-Fukai, M., et al. 1996. p22phox is a critical component of the superoxide-generating NADH/NADPH oxidase system and regulates angiotensin II-induced hypertrophy in vascular smooth muscle cells. J. Biol. Chem. 271: 23317-23321.

CHROMOSOMAL LOCATION

Genetic locus: CYBB (human) mapping to Xp11.4; Cybb (mouse) mapping to X A1.1.

SOURCE

gp91-phox (54.1) is a mouse monoclonal antibody raised against amino acids 383-390 of gp91-phox of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

gp91-phox (54.1) is available conjugated to agarose (sc-130543 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-130543 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-130543 PE), fluorescein (sc-130543 FITC), Alexa Fluor® 488 (sc-130543 AF488), Alexa Fluor® 546 (sc-130543 AF546), Alexa Fluor® 594 (sc-130543 AF594) or Alexa Fluor® 647 (sc-130543 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-130543 AF680) or Alexa Fluor® 790 (sc-130543 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

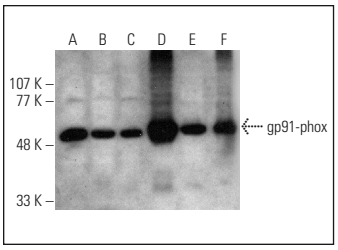
gp91-phox (54.1) is recommended for detection of gp91-phox of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); also recommended for detection of ERp57, Mox1, Nox3 and Nox4.

Suitable for use as control antibody for gp91-phox siRNA (h): sc-35503, gp91-phox siRNA (m): sc-35504, gp91-phox siRNA (r): sc-61838, gp91-phox shRNA Plasmid (h): sc-35503-SH, gp91-phox shRNA Plasmid (m): sc-35504-SH, gp91-phox shRNA Plasmid (r): sc-61838-SH, gp91-phox shRNA (h) Lentiviral Particles: sc-35503-V, gp91-phox shRNA (m) Lentiviral Particles: sc-35504-V and gp91-phox shRNA (r) Lentiviral Particles: sc-61838-V.

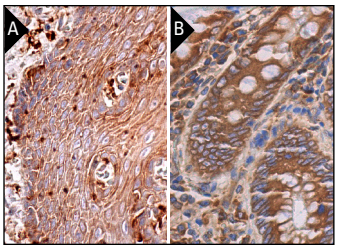
Molecular Weight of gp91-phox: 60/91 kDa.

Positive Controls: COLO 205 whole cell lysate: sc-364177, Hep G2 cell lysate: sc-2227 or MM-142 cell lysate: sc-2246.

DATA



gp91-phox (54.1) HRP: sc-130543 HRP. Direct western blot analysis of gp91-phox expression in COLO 205 (**A**), OVCAR-3 (**B**), Hep G2 (**C**), M1 (**D**), MM-142 (**E**) and WEHI-231 (**F**) whole cell lysates.



gp91-phox (54.1): sc-130543. Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining of glandular cells and lymphoid cells (**B**).

SELECT PRODUCT CITATIONS

1. Fortuno, A., et al. 2009. Insulin resistance determines phagocytic nicotinamide adenine dinucleotide phosphate oxidase overactivation in metabolic syndrome patients. J. Hypertens. 27: 1420-1430.
2. Gu, X.J., et al. 2016. Involvement of NADPH oxidases in alkali burn-induced corneal injury. Int. J. Mol. Med. 38: 75-82.
3. Kim, E., et al. 2017. TRAF4 promotes lung cancer aggressiveness by modulating tumor microenvironment in normal fibroblasts. Sci. Rep. 7: 8923.
4. Gameiro, I., et al. 2017. Discovery of the first dual GSK3β inhibitor/Nrf2 inducer. A new multitarget therapeutic strategy for Alzheimer's disease. Sci. Rep. 7: 45701.

RESEARCH USE

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