SANTA CRUZ BIOTECHNOLOGY, INC.

gp91-phox (G-1): sc-74514

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, and low expression is also 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.

CHROMOSOMAL LOCATION

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

SOURCE

gp91-phox (G-1) is a mouse monoclonal antibody raised against amino acids 231-290 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.

APPLICATIONS

gp91-phox (G-1) is recommended for detection of gp91-phox of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

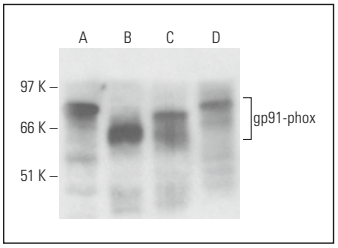
Molecular Weight of gp91-phox: 60/91 kDa.

Positive Controls: A-10 cell lysate: sc-3806, COLO 320DM cell lysate: sc-2226 or Hep G2 cell lysate: sc-2227.

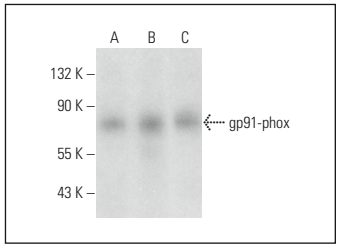
STORAGE

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

DATA



gp91-phox (G-1): sc-74514. Western blot analysis of gp91-phox expression in COLO 320DM (**A**), Hep G2 (**B**), OV-90 (**C**) and A-10 (**D**) whole cell lysates.



gp91-phox (G-1): sc-74514. Western blot analysis of gp91-phox expression in U-937 (**A**), HT-29 (**B**) and COLO 205 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yang, C.S., et al. 2009. NADPH oxidase 2 interaction with TLR2 is required for efficient innate immune responses to mycobacteria via cathelicidin expression. J. Immunol. 182: 3696-3705.
2. Pignatelli, P., et al. 2010. Atorvastatin inhibits gp91-phox circulating levels in patients with hypercholesterolemia. Arterioscler. Thromb. Vasc. Biol. 30: 360-367.
3. Vykhovanets, E.V., et al. 2011. High-fat diet increases NFκB signaling in the prostate of reporter mice. Prostate 71: 147-156.
4. Wang, J., et al. 2012. Overexpression of Actin-depolymerizing factor blocks oxidized low-density lipoprotein-induced mouse brain microvascular endothelial cell barrier dysfunction. Mol. Cell. Biochem. 371: 1-8.
5. Jiang, T., et al. 2013. Angiotensin-(1-7) modulates Renin-angiotensin system associated with reducing oxidative stress and attenuating neuronal apoptosis in the brain of hypertensive rats. Pharmacol. Res. 67: 84-93.
6. Wu, F., et al. 2014. Nox2-dependent glutathionylation of endothelial NOS leads to uncoupled superoxide production and endothelial barrier dysfunction in acute lung injury. Am. J. Physiol. Lung Cell. Mol. Physiol. 307: L987-L997.
7. Luo, G., et al. 2015. Propofol alleviates acute lung injury following orthotopic autologous liver transplantation in rats via inhibition of the NADPH oxidase pathway. Mol. Med. Rep. 11: 2348-2354.
8. Wang, Y.Q., et al. 2016. The protective role of mitochondrial ferritin on erastin-induced ferroptosis. Front. Aging Neurosci. 8: 308.
9. Dolunay, A., et al. 2017. Inhibition of NLRP3 inflammasome prevents LPS-induced inflammatory hyperalgesia in mice: contribution of NFκB, caspase-1/11, ASC, NOX, and NOS isoforms. Inflammation 40: 366-386.

RESEARCH USE

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