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.

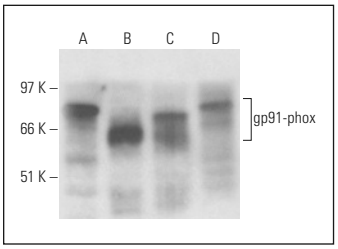
Molecular Weight of gp91-phox: 60/91 kDa.

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

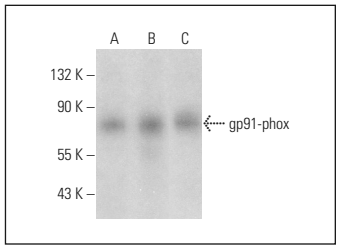
STORAGE

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.