

# Mox1 (H-15): sc-5821

## 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<sub>2</sub> 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: NOX1 (human) mapping to Xq22.1; Nox1 (mouse) mapping to X E3.

## SOURCE

Mox1 (H-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Mox1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-5821 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Mox1 (H-15) is recommended for detection of Mox1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Mox1 (H-15) is also recommended for detection of Mox1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Mox1 siRNA (h): sc-43939, Mox1 siRNA (m): sc-43940, Mox1 siRNA (r): sc-156079, Mox1 shRNA Plasmid (h): sc-43939-SH, Mox1 shRNA Plasmid (m): sc-43940-SH, Mox1 shRNA Plasmid (r): sc-156079-SH, Mox1 shRNA (h) Lentiviral Particles: sc-43939-V, Mox1 shRNA (m) Lentiviral Particles: sc-43940-V and Mox1 shRNA (r) Lentiviral Particles: sc-156079-V.

Molecular Weight of Mox1 isoforms: 65/59/22 kDa.

## SELECT PRODUCT CITATIONS

- Menshikov, M., et al. 2006. Urokinase plasminogen activator stimulates vascular smooth muscle cell proliferation via redox-dependent pathways. *Arterioscler. Thromb. Vasc. Biol.* 26: 801-807.
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- Fang, Q., et al. 2006. Inhibition of NADPH oxidase improves impaired reactivity of pial arterioles during chronic exposure to nicotine. *J. Appl. Physiol.* 100: 631-636.
- Ateghang, B., et al. 2006. Regulation of cardiotrophin-1 expression in mouse embryonic stem cells by HIF-1 $\alpha$  and intracellular reactive oxygen species. *J. Cell Sci.* 119: 1043-1052.
- Sarr, M., et al. 2006. Red wine polyphenols prevent angiotensin II-induced hypertension and endothelial dysfunction in rats: role of NADPH oxidase. *Cardiovasc. Res.* 71: 794-802.
- Piccoli, C., et al. 2007. Bone-marrow derived hematopoietic stem/progenitor cells express multiple isoforms of NADPH oxidase and produce constitutively reactive oxygen species. *Biochem. Biophys. Res. Commun.* 353: 965-972.
- Lee, J.G., et al. 2008. A combination of Lox-1 and Nox1 regulates TLR9-mediated foam cell formation. *Cell. Signal.* 20: 2266-2275.
- de Carvalho, D.D., et al. 2008. Nox1 downstream of 12-lipoxygenase controls cell proliferation but not cell spreading of colon cancer cells. *Int. J. Cancer* 122: 1757-1764.
- Helmcke, I., et al. 2009. Identification of structural elements in Nox1 and Nox4 controlling localization and activity. *Antioxid. Redox Signal.* 11: 1279-1287.
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- Stanic, B., et al. 2010. An oxidized extracellular oxidation-reduction state increases Nox1 expression and proliferation in vascular smooth muscle cells via epidermal growth factor receptor activation. *Arterioscler. Thromb. Vasc. Biol.* 30: 2234-2241.
- Amoureux, S., et al. 2011. Vascular BDNF expression and oxidative stress during aging and the development of chronic hypertension. *Fundam. Clin. Pharmacol.* 26: 227-234.

## 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.