



gp91-phox (h): CHO Lysate: sc-110002

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 O₂ 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.

REFERENCES

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. p22-phox 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.
3. Suh, Y.A., et al. 1999. Cell transformation by the superoxide-generating oxidase Mox1. *Nature* 401: 79-82.
4. Archer, S.L., et al. 1999. O₂ sensing is preserved in mice lacking the gp91-phox subunit of NADPH oxidase. *Proc. Natl. Acad. Sci. USA* 96: 7944-7949.
5. Yang, S., et al. 1999. Superoxide generation in transformed B-lymphocytes from patients with severe, malignant osteopetrosis. *Mol. Cell. Biochem.* 199: 15-24.
6. Meyer, J.W., et al. 1999. Identification of a functional leukocyte-type NADPH oxidase in human endothelial cells: a potential atherogenic source of reactive oxygen species. *Endothelium* 7: 11-22.

CHROMOSOMAL LOCATION

Genetic locus: CYBB (human) mapping to Xp11.4.

PRODUCT

gp91-phox (h): CHO Lysate represents a lysate of human gp91-phox transfected CHO cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

gp91-phox (h): CHO Lysate is suitable as a Western Blotting positive control for human reactive gp91-phox antibodies. Recommended use: 10-20 µl per lane.

Control CHO Lysate: sc-117750 is available as a Western Blotting negative control lysate derived from non-transfected CHO cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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