

Nox5 (W-15): sc-34707

BACKGROUND

The superoxide-generating NADPH oxidase 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. NADPH oxidase 5 (Nox5) is a homolog of the gp91 phox subunit of the phagocyte NADPH oxidase. Nox5 is expressed in lymphoid organs and testis and is distinguished from the other NADPH oxidases by its unique N-terminus, which contains three canonical EF-hands, Ca²⁺-binding domains. Upon heterologous expression, Nox5 generates superoxide in response to intracellular Ca²⁺ elevations.

REFERENCES

1. 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.
2. Nisimoto, Y., et al. 1999. The p67 phox activation domain regulates electron flow from NADPH to flavin in flavocytochrome b558. *J. Biol. Chem.* 274: 22999-23005.
3. 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.
4. Geiszt, M., et al. 2000. Identification of renox, an NAD(P)H oxidase in kidney. *Proc. Natl. Acad. Sci. USA* 97: 8010-8014.
5. Cheng, G., et al. 2001. Homologs of gp91phox: cloning and tissue expression of Nox3, Nox4, and Nox5. *Gene* 269: 131-140.
6. Wingler, K., et al. 2001. Upregulation of the vascular NAD(P)H-oxidase isoforms Nox1 and Nox4 by the renin-angiotensin system *in vitro* and *in vivo*. *Free Radic. Biol. Med.* 31: 1456-1464.
7. Shiose, A., et al. 2001. A novel superoxide-producing NAD(P)H oxidase in kidney. *J. Biol. Chem.* 276: 1417-1423.

CHROMOSOMAL LOCATION

Genetic locus: NOX5 (human) mapping to 15q23.

SOURCE

Nox5 (W-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Nox5 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-34707 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Nox5 (W-15) is recommended for detection of Nox5 of 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).

Nox5 (W-15) is also recommended for detection of Nox5 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Nox5 siRNA (h): sc-45486, Nox5 shRNA Plasmid (h): sc-45486-SH and Nox5 shRNA (h) Lentiviral Particles: sc-45486-V.

Molecular Weight of Nox5: 86 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. O'Brien, W.J., et al. 2009. NADPH oxidase expression and production of superoxide by human corneal stromal cells. *Mol. Vis.* 15: 2535-2543.
2. Rizvi, F., et al. 2012. Expression of NADPH oxidase (NOX) 5 in rabbit corneal stromal cells. *PLoS ONE* 7: e34440.

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.

PROTOCOLS

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