

p40-phox (E-20): sc-18253

BACKGROUND

Nicotinamide adenine dinucleotide phosphate (NADPH)-oxidase is a multi-meric enzyme system that mediates electron transport from NADPH in the cytoplasm to molecular oxygen in the phagosome, thereby generating reactive oxidant intermediates. Upon neutrophil stimulation, NADPH-oxidase and other cytosolic elements localize to the cell membrane from the cytosol to form a complex which produces phagocytic oxygen radicals. There are a number of cytosolic proteins that are involved in NADPH-oxidase activation/deactivation, including p47-phox, p67-phox, p40-phox and the small GTP-binding protein, Rac. Activation of NADPH oxidase is accompanied by the phosphorylation of cytosolic components p40-phox, p47-phox and p67-phox. The PKC consensus phosphorylation sites Thr 154 and Ser 315 in p40-phox are phosphorylated during activation of NADPH oxidase. p40-phox can promote oxidase activation by increasing the affinity of p47-phox for NADPH-oxidase. However, p40-phox appears to downregulate oxidase function as well, by competing with an SH3 domain interaction between other essential oxidase components.

REFERENCES

1. Sathyamoorthy, M., et al. 1997. p40-phox downregulates NADPH oxidase activity through interactions with its SH3 domain. *J. Biol. Chem.* 272: 9141-9146.
2. Bouin, A.P., et al. 1998. p40-phox is phosphorylated on Threonine 154 and Serine 315 during activation of the phagocyte NADPH oxidase. Implication of a protein kinase c-type kinase in the phosphorylation process. *J. Biol. Chem.* 273: 30097-30103.
3. Someya, A., et al. 1999. Phosphorylation of p40-phox during activation of neutrophil NADPH oxidase. *J. Leukoc. Biol.* 66: 851-887.

CHROMOSOMAL LOCATION

Genetic locus: NCF4 (human) mapping to 22q12.3; Ncf4 (mouse) mapping to 15 E1.

SOURCE

p40-phox (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of p40-phox 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-18253 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

p40-phox (E-20) is recommended for detection of p40-phox of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

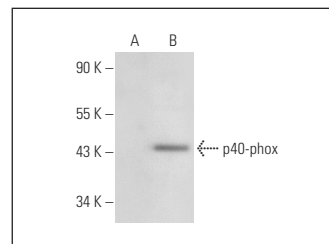
p40-phox (E-20) is also recommended for detection of p40-phox in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for p40-phox siRNA (h): sc-36155, p40-phox siRNA (m): sc-36156, p40-phox shRNA Plasmid (h): sc-36155-SH, p40-phox shRNA Plasmid (m): sc-36156-SH, p40-phox shRNA (h) Lentiviral Particles: sc-36155-V and p40-phox shRNA (m) Lentiviral Particles: sc-36156-V.

Molecular Weight of p40-phox: 40 kDa.

Positive Controls: p40-phox (h2): 293T Lysate; sc-129386, RAW 264.7 whole cell lysate: sc-2211 or HL-60 whole cell lysate: sc-2209.

DATA



p40-phox (E-20): sc-18253. Western blot analysis of p40-phox expression in non-transfected: sc-117752 (A) and human p40-phox transfected: sc-129386 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ellson, C.D., et al. 2006. Neutrophils from p40-phox^{-/-} mice exhibit severe defects in NADPH oxidase regulation and oxidant-dependent bacterial killing. *J. Exp. Med.* 203: 1927-1937.
2. Singh, A., et al. 2009. Impaired priming and activation of the neutrophil NADPH oxidase in patients with IRAK4 or NEMO deficiency. *J. Immunol.* 182: 6410-6417.

PROTOCOLS

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


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Try **p40-phox (D-8): sc-48388** or **p40-phox (B-1): sc-48376**, our highly recommended monoclonal alternatives to p40-phox (E-20).