

p-p40-phox (Thr 154): sc-33403

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.
4. Cross, A.R. 2000. p40-phox participates in the activation of NADPH oxidase by increasing the affinity of p47-phox for flavocytochrome b558. *Biochem. J.* 349: 113-117.

CHROMOSOMAL LOCATION

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

SOURCE

p-p40-phox (Thr 154) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 154 phosphorylated 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-33403 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.

APPLICATIONS

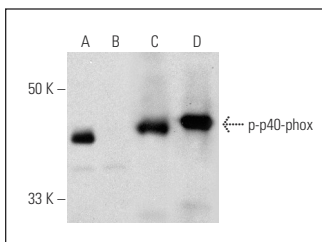
p-p40-phox (Thr 154) is recommended for detection of Threonine 154 phosphorylated p40-phox of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-p40-phox (Thr 154) is also recommended for detection of correspondingly phosphorylated p40-phox in additional species, including canine 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 p-p40-phox: 40 kDa.

DATA



Western blot analysis of p40-phox phosphorylation in untreated (A, C) and lambda protein phosphatase (sc-200312A) treated (B, D) THP-1 whole cell lysates. Antibodies tested include p-p40-phox (Thr 154): sc-33403 (A, B) and p40-phox (B-1): sc-48376 (C, D).

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.

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Try **p-p40-phox (B-8): sc-377550**, our highly recommended monoclonal alternative to p-p40-phox (Thr 154).