

p-NOS3 (Ser 1177): sc-12972

BACKGROUND

Nitric oxide (NO), produced by the endothelial NO synthase (NOS3), is a fundamental determinant of cardiovascular homeostasis that maintains system blood pressure, vascular remodeling and angiogenesis. NOS3 is stimulated, in a phosphatidylinositol 3-kinase (PI 3-kinase)-dependent fashion, by treatment of endothelial cells with Insulin-like growth factor-1 and vascular endothelial growth factor (VEGF). The serine/threonine protein kinase Akt/PKB is an important downstream target of PI 3-kinase, regulating VEGF-stimulated endothelial cell survival. NOS3 activation via phosphorylation of serine 1177 by Akt/PKB is necessary and sufficient for VEGF-mediated endothelial cell migration. Therefore, Akt/PKB can directly phosphorylate NOS3 on serine 1177, activating the enzyme and leading to NO production.

CHROMOSOMAL LOCATION

Genetic locus: NOS3 (human) mapping to 7q36.1; Nos3 (mouse) mapping to 5 A3.

SOURCE

p-NOS3 (Ser 1177) is available as either a goat (sc-12972) or rabbit (sc-12972-R) affinity purified polyclonal antibody raised against a short amino acid sequence containing Ser 1177 phosphorylated NOS3 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12972 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-NOS3 (Ser 1177) is recommended for detection of Ser 1177 phosphorylated NOS3 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), dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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-NOS3 (Ser 1177) is also recommended for detection of correspondingly phosphorylated NOS3 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for NOS3 siRNA (h): sc-36093, NOS3 siRNA (m): sc-36094, NOS3 shRNA Plasmid (h): sc-36093-SH, NOS3 shRNA Plasmid (m): sc-36094-SH, NOS3 shRNA (h) Lentiviral Particles: sc-36093-V and NOS3 shRNA (m) Lentiviral Particles: sc-36094-V.

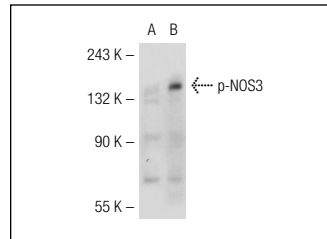
Molecular Weight of p-NOS3: 140 kDa.

Positive Controls: NOS3 (m): 293T Lysate: sc-122097 or HUV-EC-C whole cell lysate: sc-364180.

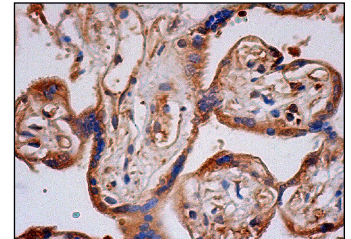
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



p-NOS3 (Ser 1177)-R: sc-12972-R. Western blot analysis of NOS3 phosphorylation in non-transfected: sc-117752 (A) and mouse NOS3 transfected: sc-122097 (B) 293T whole cell lysates.



p-NOS3 (Ser 1177)-R: sc-12972-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells.

SELECT PRODUCT CITATIONS

- van Haperen, R., et al. 2003. Functional expression of endothelial nitric oxide synthase fused to green fluorescent protein in transgenic mice. *Am. J. Pathol.* 163: 1677-1686.
- Zecchin, H.G., et al. 2003. Insulin signalling pathways in aorta and muscle from two animal models of Insulin resistance—the obese middle-aged and the spontaneously hypertensive rats. *Diabetologia* 46: 479-491.
- Edwards, J.L. 2010. *Neisseria gonorrhoeae* survival during primary human cervical epithelial cell infection requires nitric oxide and is augmented by progesterone. *Infect. Immun.* 78: 1202-1213.
- Zakula, Z., et al. 2011. Impairment of cardiac Insulin signaling in fructose-fed ovariectomized female Wistar rats. *Eur. J. Nutr.* 50: 543-551.
- Mazza, R., et al. 2012. Cardiac heterometric response: the interplay between Catestatin and nitric oxide deciphered by the frog heart. *Nitric Oxide* 1: 40-49.
- Borsani, E., et al. 2013. Endothelial nitric oxide synthase in dorsal root ganglia during chronic inflammatory nociception. *Cells Tissues Organs* 197: 159-168.
- Hashimoto, T., et al. 2013. Exercise-inducible factors to activate lipolysis in adipocytes. *J. Appl. Physiol.* 115: 260-267.

RESEARCH USE

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


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Try **p-NOS3 (15E2): sc-81510**, our highly recommended monoclonal alternative to p-NOS3 (Ser 1177).