

NOS (S-16): sc-49058

BACKGROUND

Nitric oxide (NO) has a broad range of biological activities and has been implicated in signaling pathways in phylogenetically diverse species. Nitric oxide synthases (NOSs), the enzymes responsible for synthesis of NO, contain an N-terminal oxygenase domain and a C-terminal reductase domain. NOS activity requires homodimerization as well as three cosubstrates (L-arginine, NADPH and O₂) and five cofactors or prosthetic groups (FAD, FMN, calmodulin, tetrahydrobiopterin and heme). Several distinct NOS isoforms have been described and been shown to represent the products of three distinct genes. These include two constitutive Ca²⁺/CaM-dependent forms of NOS, including NOS1 (also designated ncNOS) whose activity was first identified in neurons, and NOS3 (also designated ecNOS), first identified in endothelial cells. The inducible form of NOS, NOS2 (also designated iNOS), is Ca²⁺-independent and is expressed in a broad range of cell types.

REFERENCES

1. Bredt, D.S., et al. 1991. Cloned and expressed nitric oxide synthase structurally resembles cytochrome P450 reductase. *Nature* 351: 714-718.
2. Kishimoto, J., et al. 1992. Localization of brain nitric oxide synthase (NOS) to human chromosome 12. *Genomics* 14: 802-804.
3. Xu, W., et al. 1993. Regional localization of the gene coding for human brain nitric oxide synthase (NOS1) to 12q24.2→24.31 by fluorescent *in situ* hybridization. *Cytogenet. Cell Genet.* 64: 62-63.
4. Kharazia, V.N., et al. 1994. Type I nitric oxide synthase fully accounts for NADPH-dihydropyridine in rat striatum, but not cortex. *Neuroscience* 62: 983-987.

SOURCE

NOS (S-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NOS1 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-49058 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NOS (S-16) is recommended for detection of NOS1, NOS2 and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

NOS (S-16) is also recommended for detection of NOS1, NOS2 and NOS3 in additional species, including equine, canine, bovine, porcine and avian.

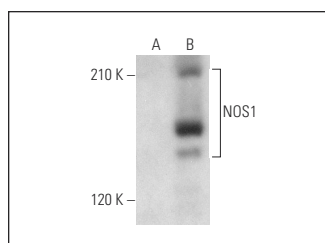
Molecular Weight of NOS: 130/140/155 kDa.

Positive Controls: NOS1 (h): 293T Lysate: sc-372005.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



NOS (S-16): sc-49058. Western blot analysis of NOS expression in non-transfected: sc-117752 (A) and human NOS1 transfected: sc-372005 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Treves, S., et al. 2011. Enhanced excitation-coupled Ca²⁺ entry induces nuclear translocation of NFAT and contributes to IL-6 release from myotubes from patients with central core disease. *Hum. Mol. Genet.* 20: 589-600.

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.



Try **NOS2 (C-11): sc-7271** or **pan NOS (NOS-3F7-B11 B5): sc-58399**, our highly recommended monoclonal alternatives to NOS (S-16). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **NOS2 (C-11): sc-7271**.