

NOS1 (G-4): sc-398843

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. Nathan, C., et al. 1994. Nitric oxide synthases: roles, tolls, and controls. *Cell* 78: 915-918.
2. Schmidt, H.H.W., et al. 1994. NO at work. *Cell* 78: 919-925.

CHROMOSOMAL LOCATION

Genetic locus: NOS1 (human) mapping to 12q24.22; Nos1 (mouse) mapping to 5 F.

SOURCE

NOS1 (G-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 37-56 near the N-terminus of NOS1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NOS1 (G-4) is recommended for detection of NOS1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), 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).

Suitable for use as control antibody for NOS1 siRNA (h): sc-29416, NOS1 siRNA (m): sc-36091, NOS1 siRNA (r): sc-108067, NOS1 shRNA Plasmid (h): sc-29416-SH, NOS1 shRNA Plasmid (m): sc-36091-SH, NOS1 shRNA Plasmid (r): sc-108067-SH, NOS1 shRNA (h) Lentiviral Particles: sc-29416-V, NOS1 shRNA (m) Lentiviral Particles: sc-36091-V and NOS1 shRNA (r) Lentiviral Particles: sc-108067-V.

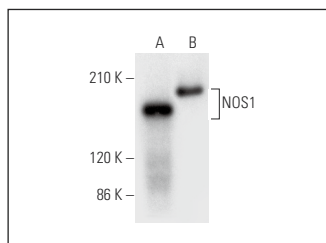
Molecular Weight of NOS1: 155 kDa.

Positive Controls: mouse brain extract: sc-2253 or human skeletal muscle extract: sc-363776.

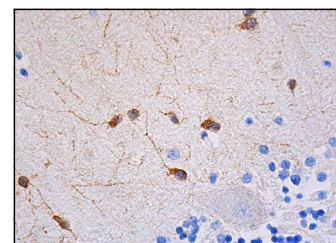
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



NOS1 (G-4): sc-398843. Western blot analysis of NOS1 expression in mouse brain (A) and human skeletal muscle (B) tissue extracts.



NOS1 (G-4): sc-398843. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of cells in molecular layer.

SELECT PRODUCT CITATIONS

1. Iliev, A., et al. 2019. Hypertension-induced changes in the rat myocardium during the development of cardiac hypertrophy-a comparison between the left and the right ventricle. *Acta Histochem.* 121: 16-28.
2. Ruze, A., et al. 2023. Bradykinin B1 receptor antagonist protects against cold stress-induced erectile dysfunction in rats. *Sex. Med.* 11: qfac004.

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 for detailed protocols and support products.



See **NOS1 (A-11): sc-5302** for NOS1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.