

NOS1 (D-10): sc-17825

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 eNOS), 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. Heiss, L.N., et al. 1994. Epithelial autotoxicity of nitric oxide: role in the respiratory cytopathology of pertussis. *Proc. Natl. Acad. Sci. USA* 91: 267-270.
2. Farias-Eisner, R., et al. 1994. Nitric oxide is an important mediator for tumoricidal activity *in vivo*. *Proc. Natl. Acad. Sci. USA* 91: 9407-9411.
3. Schmidt, H.H.H.W. and Walter, U. 1994. NO at work. *Cell* 78: 919-925.
4. Marletta, M.A. 1994. Nitric oxide synthase: aspects concerning structure and catalysis. *Cell* 78: 927-930.

CHROMOSOMAL LOCATION

Genetic locus: NOS1 (human) mapping to 12q24.22.

SOURCE

NOS1 (D-10) is a mouse monoclonal antibody raised against amino acids 2-300 of NOS1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NOS1 (D-10) is recommended for detection of NOS1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), 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 shRNA Plasmid (h): sc-29416-SH and NOS1 shRNA (h) Lentiviral Particles: sc-29416-V.

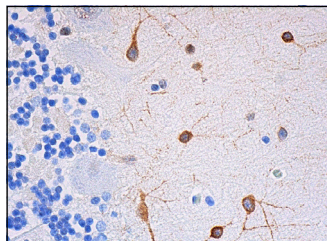
Molecular Weight of NOS1: 155 kDa.

Positive Controls: A-673 cell lysate: sc-2414.

STORAGE

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

DATA



NOS1 (D-10): sc-17825. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of cells in molecular layer.

SELECT PRODUCT CITATIONS

1. Naureckiene, S., et al. 2007. Use of a murine cell line for identification of human nitric oxide synthase inhibitors. *J. Pharmacol. Toxicol. Methods* 55: 303-313.
2. Lin, X., et al. 2012. Epstein-Barr virus-encoded LMP1 triggers regulation of the ERK-mediated Op18/stathmin signaling pathway in association with cell cycle. *Cancer Sci.* 103: 993-999.
3. Yang, Z., et al. 2013. Targeting nitric oxide signaling with nNOS inhibitors as a novel strategy for the therapy and prevention of human melanoma. *Antioxid. Redox Signal.* 19: 433-447.
4. Ding, L., et al. 2018. (-)Epigallocatechin-3-gallate attenuates anesthesia-induced memory deficit in young mice via modulation of nitric oxide expression. *Mol. Med. Rep.* 18: 4813-4820.
5. Su, H., et al. 2018. Mycobacterium tuberculosis PPE60 antigen drives Th1/Th17 responses via Toll-like receptor 2-dependent maturation of dendritic cells. *J. Biol. Chem.* 293: 10287-10302.
6. Tossetta, G., et al. 2023. ZO-1 expression in normal human macula densa: immunohistochemical and immunofluorescence investigations. *J. Anat.* 242: 1184-1188.

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.