SANTA CRUZ BIOTECHNOLOGY, INC.

NOS1 (H-299): sc-8309

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 O_2) 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 Ca^{2+}/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 Ca^{2+}-independent and is expressed in a broad range of cell types.

CHROMOSOMAL LOCATION

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

SOURCE

NOS1 (H-299) is a rabbit polyclonal antibody raised against amino acids 2-300 mapping at the N-terminus 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.

APPLICATIONS

NOS1 (H-299) is recommended for detection of NOS1 (ncNOS) 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).

NOS1 (H-299) is also recommended for detection of NOS1 (ncNOS) in additional species, including equine, bovine and porcine.

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

Molecular Weight of NOS1: 155 kDa.

Positive Controls: mouse brain extract: sc-2253, A-673 cell lysate: sc-2414 or rat brain tissue extract: sc-2392.

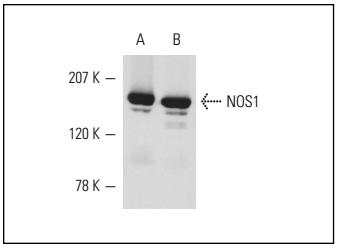
STORAGE

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.

DATA



NOS1 (H-299): sc-8309. Western blot analysis of NOS1 expression in rat (**A**) and mouse (**B**) brain tissue extracts.

SELECT PRODUCT CITATIONS

1. Catania, M.V., et al. 2001. Increased expression of neuronal nitric oxide synthase spliced variants in reactive astrocytes of amyotrophic lateral sclerosis human spinal cord. J. Neurosci. 21: RC148.
2. Jaafari, N., et al. 2008. Qualitative and quantitative analysis of Tachykinin NK2 receptors in chemically defined human colonic neuronal pathways. J. Comp. Neurol. 507: 1542-1558.
3. Liu, T., et al. 2008. Involvement of spinal nitric oxide (NO) in rat pain-related behaviors induced by the venom of scorpion *Buthus martensi* Karsch. Toxicon 52: 62-71.
4. d'Anglemont de Tassigny, X., et al. 2009. Estradiol induces physical association of neuronal nitric oxide synthase with NMDA receptor and promotes nitric oxide formation via estrogen receptor activation in primary neuronal cultures. J. Neurochem. 109: 214-224.
5. Giove, T.J., et al. 2009. Identification of alternate transcripts of neuronal nitric oxide synthase in the mouse retina. J. Neurosci. Res. 87: 3134-3142.
6. Parkash, J., et al. 2010. Phosphorylation of N-methyl-D-aspartic acid receptor-associated neuronal nitric oxide synthase depends on estrogens and modulates hypothalamic nitric oxide production during the ovarian cycle. Endocrinology 151: 2723-2735.
7. Aquilano, K., et al. 2011. Nitric oxide is the primary mediator of cytotoxicity induced by GSH depletion in neuronal cells. J. Cell Sci. 124: 1043-1054.
8. El Ghazi, F., et al. 2012. NO-dependent protective effect of VEGF against excitotoxicity on layer VI of the developing cerebral cortex. Neurobiol. Dis. 45: 871-886.