SANTA CRUZ BIOTECHNOLOGY, INC.

NOS1 (R-20): sc-648

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 (R-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of NOS1 of rat 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-648 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NOS1 (R-20) 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 (R-20) is also recommended for detection of NOS1 (ncNOS) in additional species, including equine, canine, bovine, porcine and avian.

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 extract: sc-2392.

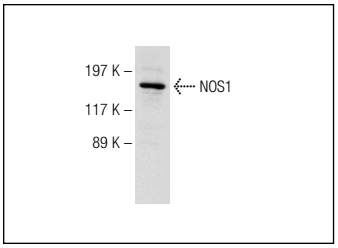
STORAGE

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

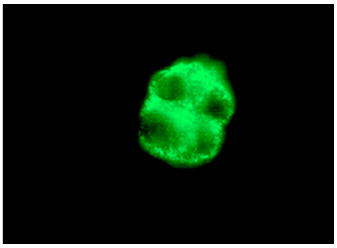
RESEARCH USE

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

DATA



NOS1 (R-20): sc-648. Western blot analysis of NOS1 expression in mouse brain tissue extract.



Nos1 (R-20): sc-648. Immunofluorescence staining of methanol-fixed A673 cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Ruan, J., et al. 1996. Inducible nitric oxide synthase requires both the canonical calmodulin-binding domain and additional sequences in order to bind calmodulin and produce nitric oxide in the absence of free Ca^{2+}. J. Biol. Chem. 271: 22679-22686.
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3. Hsu, Y.Y., et al. 2010. KMUP-1 attenuates serum deprivation-induced neurotoxicity in SH-SY5Y cells: roles of PKG, PI3K/Akt and Bcl-2/Bax pathways. Toxicology 268: 46-54.
4. Damm, J., et al. 2011. Spatiotemporal nuclear factor interleukin-6 expression in the rat brain during lipopolysaccharide-induced fever is linked to sustained hypothalamic inflammatory target gene induction. J. Comp. Neurol. 519: 480-505.
5. Salvolini, E., et al. 2011. VEGF and nitric oxide synthase immunoexpression in Down's syndrome amniotic fluid stem cells. Eur. J. Clin. Invest. 41: 23-29.
6. Mu, S., et al. 2011. Protective effect of melatonin on 3-NP induced striatal interneuron injury in rats. Neurochem. Int. 59: 224-234.
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