SANTA CRUZ BIOTECHNOLOGY, INC.

NOS (C-12): sc-49055

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.

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-diaphorase in rat striatum, but not cortex. Neuroscience 62: 983-987.
5. Xie, J., et al. 1995. Two closely linked but separable promoters for human neuronal nitric oxide synthase gene transcription. Proc. Natl. Acad. Sci. USA 92: 1242-1246.
6. Gahm, C., et al. 2006. Neuroprotection by selective inhibition of inducible nitric oxide synthase after experimental brain contusion. J. Neurotrauma 23: 1343-1354.
7. Morawietz, H., et al. 2006. Increased cardiac endothelial nitric oxide synthase expression in patients taking angiotensin-converting enzyme inhibitor therapy. Eur. J. Clin. Invest. 36: 705-712.
8. Ozkara, H., et al. 2006. Changes of nitric oxide synthase-containing nerve fibers and parameters for oxidative stress after unilateral cavernous nerve resection or manuplation in rat penis. Chin. J. Physiol. 49: 160-166.

SOURCE

NOS (C-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of NOS2 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-515648 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

NOS (C-12) 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), 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 (C-12) 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.

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) 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.

SELECT PRODUCT CITATIONS

1. Kang, T.H., et al. 2006. Neuroprotective effects of the cyanidin-3-O-β-δ-glucopyranoside isolated from mulberry fruit against cerebral ischemia. Neurosci. Lett. 391: 122-126.
2. Bulick, A.S., et al. 2009. Impact of endothelial cells and mechanical conditioning on smooth muscle cell extracellular matrix production and differentiation. Tissue Eng. Part A 15: 815-825.
3. Ma, F.C., et al. 2012. The effects of the edible bird's nest on sexual function of male castrated rats. AJPP 6: 2875-2879.
4. He, J.T., et al. 2012. Neuroprotective effects of exogenous activin A on oxygen-glucose deprivation in PC12 cells. Molecules 17: 315-327.

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.