SANTA CRUZ BIOTECHNOLOGY, INC.

NOS1 (52): sc-136006

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Nathan, C., et al. 1994. Nitric oxide synthases: roles, tolls and controls. Cell 78: 915-918.
2. Schmidt, H.H. and Walter, U. 1994. NO at work. Cell 78: 919-925.
3. Marletta, M.A. 1994. Nitric oxide synthase: aspects concerning structure and catalysis. Cell 78: 927-930.
4. 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.

CHROMOSOMAL LOCATION

Genetic locus: Nos1 (mouse) mapping to 5 F.

SOURCE

NOS1 (52) is a mouse monoclonal antibody raised against amino acids 144-262 of NOS1 of rat origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NOS1 (52) is recommended for detection of NOS1 of mouse and rat 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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

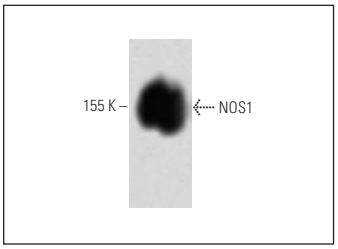
Molecular Weight of NOS1: 155 kDa.

Positive Controls: rat brain extract: sc-2392 or rat pituitary tissue extract.

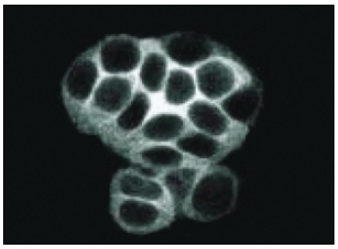
STORAGE

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

DATA



NOS1 (52): sc-136006. Western blot analysis of NOS1 expression in rat pituitary tissue extract.



NOS1 (52): sc-136006. Immunofluorescence staining of GC cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. De Benedictis, L., et al. 2012. Rosiglitazone reverses increased duodenal inhibitory response in spontaneously hypertensive rats. Neurogastroenterol. Motil. 24: e56-66.
2. Beck, P., et al. 2013. Role of G proteins in the effects of leptin on pedunculopontine nucleus neurons. J. Neurochem. 126: 705-714.
3. Zou, R., et al. 2014. Telmisartan protects 5/6 Nx rats against renal injury by enhancing nNOS-derived NO generation via regulation of PPARγ signaling. Am. J. Transl. Res. 6: 517-527.
4. Gu, C., et al. 2017. Dynamin 3 suppresses growth and induces apoptosis of hepatocellular carcinoma cells by activating inducible nitric oxide synthase production. Oncol. Lett. 13: 4776-4784.
5. Zhang, X., et al. 2018. Rs2910164 in microRNA-146a confers an elevated risk of depression in patients with coronary artery disease by modulating the expression of NOS1. Mol. Med. Rep. 18: 603-609.
6. Chen, M., et al. 2020. Berberine attenuates Aβ-induced neuronal damage through regulating miR-188/NOS1 in Alzheimer's disease. Mol. Cell. Biochem. 474: 285-294.
7. Zhào, H., et al. 2021. Neuroprotective effects of troxerutin and cerebroprotein hydrolysate injection on the neurovascular unit in a rat model of middle cerebral artery occlusion- through nitric oxide synthase regulation. Int. J. Neurosci. 131: 264-278.

RESEARCH USE

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

CONJUGATES

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.