SANTA CRUZ BIOTECHNOLOGY, INC.

NOS1 (H-7): sc-55521

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.

CHROMOSOMAL LOCATION

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

SOURCE

NOS1 (H-7) 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.

NOS1 (H-7) is available conjugated to agarose (sc-55521 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-55521 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-55521 PE), fluorescein (sc-55521 FITC), Alexa Fluor® 488 (sc-55521 AF488), Alexa Fluor® 546 (sc-55521 AF546), Alexa Fluor® 594 (sc-55521 AF594) or Alexa Fluor® 647 (sc-55521 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-55521 AF680) or Alexa Fluor® 790 (sc-55521 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

NOS1 (H-7) is recommended for detection of NOS1 of human origin by Western Blotting (starting dilution 1:100, 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), 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.

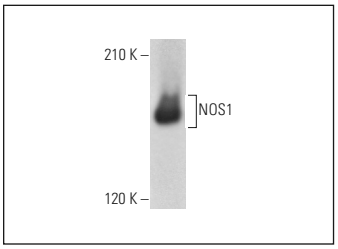
Molecular Weight of NOS1: 155 kDa.

Positive Controls: human skeletal muscle extract: sc-363776 or A-673 cell lysate: sc-2414.

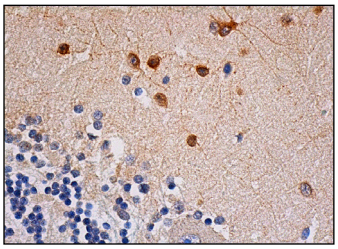
STORAGE

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

DATA



NOS1 (H-7): sc-55521. Western blot analysis of NOS1 expression in human skeletal muscle tissue extract.



NOS1 (H-7): sc-55521. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of cells in molecular layer.

SELECT PRODUCT CITATIONS

1. Zhou, Y., et al. 2010. Astrocytes express N-methyl-D-aspartate receptor subunits in development, ischemia and post-ischemia. Neurochem. Res. 35: 2124-2134.
2. Cazzella, V., et al. 2012. Exon 45 skipping through U1-snRNA antisense molecules recovers the Dys-nNOS pathway and muscle differentiation in human DMD myoblasts. Mol. Ther. 20: 2134-2142.
3. Tang, Y., et al. 2014. Time-specific microRNA changes during spinal motoneuron degeneration in adult rats following unilateral brachial plexus root avulsion: ipsilateral vs. contralateral changes. BMC Neurosci. 15: 92.
4. Temiz, T.K., et al. 2016. Effect of nitrergic system on colonic motility in a rat model of irritable bowel syndrome. Indian J. Pharmacol. 48: 424-429.
5. Sampaolo, S., et al. 2017. First study on the peptidergic innervation of the brain superior sagittal sinus in humans. Neuropeptides 65: 45-55.
6. Li, Y., et al. 2017. Autophagy impairment mediated by S-nitrosation of ATG4B leads to neurotoxicity in response to hyperglycemia. Autophagy 13: 1145-1160.
7. Zhang, H., et al. 2019. Oxidative and nitrosative stress in the neurotoxicity of polybrominated diphenyl ether-153: possible mechanism and potential targeted intervention. Chemosphere 238: 124602.
8. Karayigit, M.O., et al. 2020. Role of ADAMTS-13 and nNOS expression in neuropathogenesis of listeric encephalitis of small ruminants. Biotech. Histochem. 95: 584-596.
9. Zhang, F., et al. 2020. Early intervention of gastrodin improved motor learning in diabetic rats through ameliorating vascular dysfunction. Neurochem. Res. 45: 1769-1780.

RESEARCH USE

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