SANTA CRUZ BIOTECHNOLOGY, INC.

NOS1 (A-11): sc-5302

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 (A-11) is a mouse monoclonal antibody raised against amino acids 2-300 of NOS1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NOS1 (A-11) is available conjugated to agarose (sc-5302 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-5302 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-5302 PE), fluorescein (sc-5302 FITC), Alexa Fluor® 488 (sc-5302 AF488), Alexa Fluor® 546 (sc-5302 AF546), Alexa Fluor® 594 (sc-5302 AF594) or Alexa Fluor® 647 (sc-5302 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-5302 AF680) or Alexa Fluor® 790 (sc-5302 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

NOS1 (A-11) is recommended for detection of NOS1 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).

Suitable for use as control antibody for NOS1 siRNA (h): sc-29416, NOS1 siRNA (m): sc-36091, NOS1 siRNA (r): sc-108067, NOS1 shRNA Plasmid (h): sc-29416-SH, NOS1 shRNA Plasmid (m): sc-36091-SH, NOS1 shRNA Plasmid (r): sc-108067-SH, NOS1 shRNA (h) Lentiviral Particles: sc-29416-V, NOS1 shRNA (m) Lentiviral Particles: sc-36091-V and NOS1 shRNA (r) Lentiviral Particles: sc-108067-V.

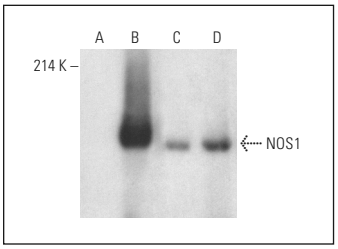
Molecular Weight of NOS1: 155 kDa.

Positive Controls: NOS1 (m): 293 Lysate: sc-179019.

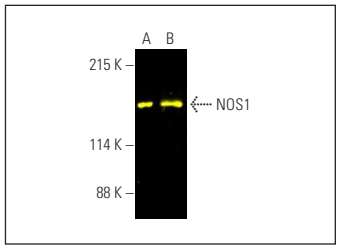
STORAGE

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

DATA



NOS1 (A-11): sc-5302. Western blot analysis of NOS1 expression in non-transfected 293T: sc-117752 (**A**), mouse NOS1 transfected 293T: sc-179019 (**B**) and BC_3H1 (**C**) whole cell lysates and mouse brain tissue extract (**D**).



NOS1 (A-11) Alexa Fluor® 488: sc-5302 AF488. Direct fluorescent western blot analysis of NOS1 expression in mouse brain tissue extract (**A**) and Neuro-2A whole cell lysate (**B**). Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Frank, S., et al. 1996. Transforming growth factors β1, β2, and β3 and their receptors are differentially regulated during normal and impaired wound healing. J. Biol. Chem. 271: 10188-10193.
2. Ma, H., et al. 2016. Tetrandrine ameliorates sevoflurane-induced cognitive impairment via the suppression of inflammation and apoptosis in aged rats. Mol. Med. Rep. 13: 4814-4820.
3. Schulte, U., et al. 2017. Identification of Cav2-PKCβ and Cav2-NOS1 complexes as entities for ultrafast electrochemical coupling. Proc. Natl. Acad. Sci. USA 114: 5707-5712.
4. Harding, E.C., et al. 2018. A neuronal hub binding sleep initiation and body cooling in response to a warm external stimulus. Curr. Biol. 28: 2263-2273.e4.
5. Fujiwara, D., et al. 2019. SIRT1 deficiency interferes with membrane resealing after cell membrane injury. PLoS ONE 14: e0218329.
6. Vignjevic Petrinovic, S., et al. 2020. Nitric oxide-dependent expansion of erythroid progenitors in a murine model of chronic psychological stress. Histochem. Cell Biol. 153: 457-468.
7. Zhang, J., et al. 2021. Effects of sex and estrous cycle on the brain and plasma arginine metabolic profile in rats. Amino Acids 53: 1441-1454.
8. Masugi-Tokita, M., et al. 2022. Spinal transection switches the effect of metabotropic glutamate receptor subtype 7 from the facilitation to inhibition of ejaculation. Neuroscience 509: 10-19.
9. Xu, X.X., et al. 2023. Neuronal nitric oxide synthase/reactive oxygen species pathway is involved in apoptosis and pyroptosis in epilepsy. Neural Regen. Res. 18: 1277-1285.

RESEARCH USE

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