SANTA CRUZ BIOTECHNOLOGY, INC.

NOS3 (A-9): sc-376751

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.H.W. and Walter, U. 1994. NO at work. Cell 78: 919-925.
3. Marietta, M.A. 1994. Nitric oxide synthase: aspects concerning structure and catalysis. Cell 78: 927-930.

CHROMOSOMAL LOCATION

Genetic locus: NOS3 (human) mapping to 7q36.1; Nos3 (mouse) mapping to 5 A3.

SOURCE

NOS3 (A-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1173-1202 at the C-terminus of NOS3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NOS3 (A-9) is available conjugated to agarose (sc-376751 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376751 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376751 PE), fluorescein (sc-376751 FITC), Alexa Fluor® 488 (sc-376751 AF488), Alexa Fluor® 546 (sc-376751 AF546), Alexa Fluor® 594 (sc-376751 AF594) or Alexa Fluor® 647 (sc-376751 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376751 AF680) or Alexa Fluor® 790 (sc-376751 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376751 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

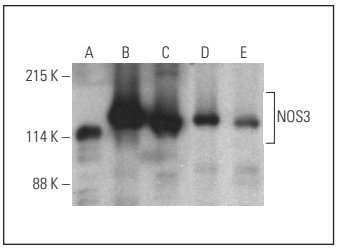
NOS3 (A-9) is recommended for detection of NOS3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 NOS3 siRNA (h): sc-36093, NOS3 siRNA (m): sc-36094, NOS3 siRNA (r): sc-270518, NOS3 shRNA Plasmid (h): sc-36093-SH, NOS3 shRNA Plasmid (m): sc-36094-SH, NOS3 shRNA Plasmid (r): sc-270518-SH, NOS3 shRNA (h) Lentiviral Particles: sc-36093-V, NOS3 shRNA (m) Lentiviral Particles: sc-36094-V and NOS3 shRNA (r) Lentiviral Particles: sc-270518-V.

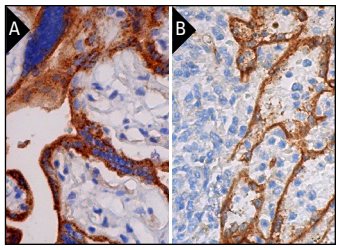
Molecular Weight of NOS3: 140 kDa.

Positive Controls: HUV-EC-C whole cell lysate: sc-364180, NOS3 (h): 293T Lysate: sc-372992 or human kidney extract: sc-363764.

DATA



NOS3 (A-9): sc-376751. Western blot analysis of NOS3 expression in non-transfected 293T: sc-117752 (**A**), human NOS3 transfected 293T: sc-372992 (**B**) and HUV-EC-C (**C**) whole cell lysates and human placenta (**D**) and human kidney (**E**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214.



NOS3 (A-9): sc-376751. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic and membrane staining of endothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Zhu, X.Y., et al. 2013. Xuezhikang, extract of red yeast rice, improved abnormal hemorheology, suppressed caveolin-1 and increased eNOS expression in atherosclerotic rats. PLoS ONE 8: e62731.
2. Yu, S., et al. 2018. Isolation and characterization of endothelial colony-forming cells from mononuclear cells of rat bone marrow. Exp. Cell Res. 370: 116-126.
3. Zhang, Z., et al. 2019. TLR4 counteracts BVRA signaling in human leukocytes via differential regulation of AMPK, mTORC1 and mTORC2. Sci. Rep. 9: 7020.
4. Deluque, A.L., et al. 2020. Effect of calcitriol on the renal microvasculature differentiation disturbances induced by AT_1 blockade during nephrogenesis in rats. Front. Med. 7: 23.

RESEARCH USE

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