SANTA CRUZ BIOTECHNOLOGY, INC.

NOS3 (B-5): sc-136977

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

SOURCE

NOS3 (B-5) is a mouse monoclonal antibody raised against amino acids 2-160 of NOS3 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.

NOS3 (B-5) is available conjugated to agarose (sc-136977 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-136977 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-136977 PE), fluorescein (sc-136977 FITC), Alexa Fluor® 488 (sc-136977 AF488), Alexa Fluor® 546 (sc-136977 AF546), Alexa Fluor® 594 (sc-136977 AF594) or Alexa Fluor® 647 (sc-136977 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-136977 AF680) or Alexa Fluor® 790 (sc-136977 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

NOS3 (B-5) 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) 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.

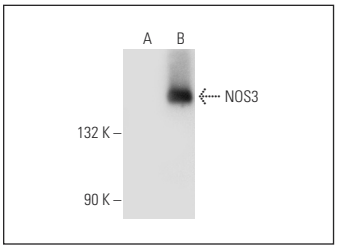
Molecular Weight of NOS3: 140 kDa.

Positive Controls: NOS3 (m): 293T Lysate: sc-122097.

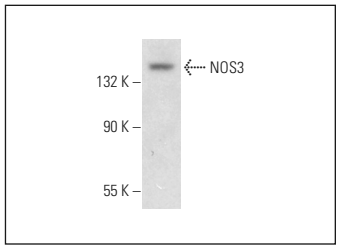
STORAGE

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

DATA



NOS3 (B-5): sc-136977. Western blot analysis of NOS3 expression in non-transfected: sc-117752 (**A**) and mouse NOS3 transfected: sc-122097 (**B**) 293T whole cell lysates.



NOS3 (B-5): sc-136977. Western blot analysis of NOS3 expression in F9 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Bevan, H.S., et al. 2011. Acute laminar shear stress reversibly increases human glomerular endothelial cell permeability via activation of endothelial nitric oxide synthase. Am. J. Physiol. Renal Physiol. 301: F733-F742.
2. De Francesco, E.M., et al. 2013. GPER mediates cardiotropic effects in spontaneously hypertensive rat hearts. PLoS ONE 8: e69322.
3. Tavukçu, H.H., et al. 2014. Melatonin and tadalafil treatment improves erectile dysfunction after spinal cord injury in rats. Clin. Exp. Pharmacol. Physiol. 41: 309-316.
4. Fu, L., et al. 2015. Circulating microparticles from patients with valvular heart disease and cardiac surgery inhibit endothelium-dependent vasodilation. J. Thorac. Cardiovasc. Surg. 150: 666-672.
5. Ou, Z.J., et al. 2016. 25-hydroxycholesterol impairs endothelial function and vasodilation by uncoupling and inhibiting endothelial nitric oxide synthase. Am. J. Physiol. Endocrinol. Metab. 311: E781-E790.
6. Leucker, T.M., et al. 2017. Cystathionine γ-lyase protects vascular endothelium: a role for inhibition of histone deacetylase 6. Am. J. Physiol. Heart Circ. Physiol. 312: H711-H720.
7. Santana, M.N., et al. 2018. Resistance exercise mediates remote ischemic preconditioning by limiting cardiac eNOS uncoupling. J. Mol. Cell. Cardiol. 125: 61-72.
8. Wang, F., et al. 2019. A SIRT1 agonist reduces cognitive decline in type 2 diabetic rats through antioxidative and anti-inflammatory mechanisms. Mol. Med. Rep. 19: 1040-1048.
9. Son, J.S., et al. 2019. Exercise prevents the adverse effects of maternal obesity on placental vascularization and fetal growth. J. Physiol. 597: 3333-3347.

RESEARCH USE

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