

pan NOS (NOS-3F7-B11 B5): sc-58399

BACKGROUND

Nitric oxide (NO) has a broad range of biological activities and is implicated in signaling pathways in phylogenetically diverse species. Nitric oxide synthases (NOS), the enzymes responsible for synthesis of NO, are homodimers whose monomers are themselves two fused enzymes: a cytochrome reductase and a cytochrome that requires three cosubstrates (L-arginine, NADPH and O₂) and five cofactors or prosthetic groups (FAD, FMN, calmodulin, tetra-hydrobiopterin and heme). Several distinct NOS isoforms are produced from three distinct genes. These include two constitutive Ca²⁺/CaM-dependent forms of NOS: ncNOS (also designated NOS1), whose activity was first identified in neurons and which maps at 12q24.2; and ecNOS (also designated NOS3), first identified in endothelial cells and mapping at 7q35-36. The inducible form of NOS, iNOS (also designated NOS2), is Ca²⁺ independent and is expressed in a broad range of cell types. NOS2 maps to 17cen-q12. Pan NOS antibodies provide detection for a range of NOS proteins.

REFERENCES

- Bredt, D.S., Hwang, P.M., Glatt, C.E., Lowenstein, C., Reed, R.R. and Snyder, S.H. 1991. Cloned and expressed nitric oxide synthase structurally resembles cytochrome P450 reductase. *Nature* 351: 714-718.
- Kishimoto, J., Spurr, N., Liao, M., Lizhi, L., Emson, P. and Xu, W. 1992. Localization of brain nitric oxide synthase (NOS) to human chromosome 12. *Genomics* 14: 802-804.
- Xu, W., Gorman, P., Sheer, D., Bates, G., Kishimoto, J., Lizhi, L. and Emson, P. 1993. Regional localization of the gene coding for human brain nitric oxide synthase (NOS1) to 12q24.2→24.31 by fluorescent *in situ* hybridization. *Cytogenet. Cell Genet.* 64: 62-63.
- Rengasamy, A., Xue, C. and Johns, R.A. 1994. Immunohistochemical demonstration of a paracrine role of nitric oxide in bronchial function. *Am. J. Physiol.* 267: L704-L711.
- Kharazia, V.N., Schmidt, H.H. and Weinberg, R.J. 1994. Type I nitric oxide synthase fully accounts for NADPH-diaphorase in rat striatum, but not cortex. *Neuroscience* 62: 983-987.
- Xie, J., Roddy, P., Rife, T.K., Murad, F. and Young, A.P. 1995. Two closely linked but separable promoters for human neuronal nitric oxide synthase gene transcription. *Proc. Natl. Acad. Sci. USA* 92: 1242-1246.
- Gahm, C., Holmin, S., Wiklund, P.N., Brundin, L. and Mathiesen, T. 2006. Neuroprotection by selective inhibition of inducible nitric oxide synthase after experimental brain contusion. *J. Neurotrauma* 23: 1343-1354.
- Morawietz, H., Rohrbach, S., Rueckschloss, U., Schellenberger, E., Hakim, K., Zerkowski, H.R., Kojda, G., Darmer, D. and Holtz, J. 2006. Increased cardiac endothelial nitric oxide synthase expression in patients taking angiotensin-converting enzyme inhibitor therapy. *Eur. J. Clin. Invest.* 36: 705-712.
- Ozkara, H., Alan, C., Atukeren, P., Uyaner, I., Demirci, C., Gümüştas, M.K. and Alici, B. 2006. Changes of nitric oxide synthase-containing nerve fibers and parameters for oxidative stress after unilateral cavernous nerve resection or manipulation in rat penis. *Chin. J. Physiol.* 49: 160-166.

SOURCE

pan NOS (NOS-3F7-B11 B5) is a mouse monoclonal antibody raised against purified NOS of bovine origin.

PRODUCT

Each vial contains 200 µg IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

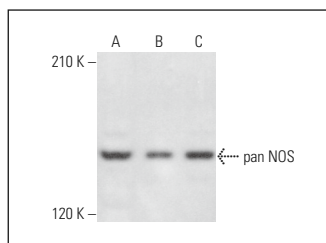
pan NOS (NOS-3F7-B11 B5) is recommended for detection of brain Nitric Oxide Synthase (bNOS), inducible NOS (iNOS) and epithelial NOS (eNOS) of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (starting dilution 1:50, dilution range 1:50-1:500).

pan NOS (NOS-3F7-B11 B5) is also recommended for detection of brain Nitric Oxide Synthase (bNOS), inducible NOS (iNOS) and epithelial NOS (eNOS) in additional species, including bovine and canine.

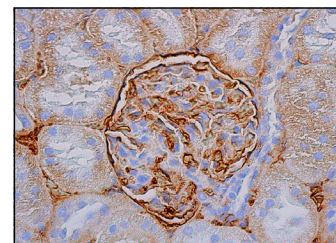
Molecular Weight of pan NOS: 150 kDa.

Positive Controls: AMJ2-C8 whole cell lysate: sc-364366, 3T3-L1 cell lysate: sc-2243 or NIH/3T3 whole cell lysate: sc-2210.

DATA



pan NOS (NOS-3F7-B11 B5): sc-58399. Western blot analysis of pan NOS expression in AMJ2-C8 (A), NIH/3T3 (B) and 3T3-L1 (C) whole cell lysates.



pan NOS (NOS-3F7-B11 B5): sc-58399. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat kidney tissue showing membrane and cytoplasmic staining of cells in glomeruli and cytoplasmic staining of cells in tubules.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.