

NOSTRIN (F-4): sc-365296

BACKGROUND

NOSTRIN (nitric oxide synthase trafficker isoform 1), also known as endothelial nitric oxide synthase traffic inducer, is a member of the Pombe Cdc15 homology (PCH) family of proteins. NOSTRIN is expressed in the vascular endothelial cells of highly vascularized tissues such as placenta, lung, kidney and heart. It consists of an N-terminal Cdc15 domain with an FCH (Fes/CIP homology) region, two coiled coil domains and a C-terminal SH3 domain. NOSTRIN typically exists as a trimer. It functions as an adaptor protein binding to caveolin-1 via an internal domain and NOS3 via its SH3 domain, forming a ternary complex which facilitates caveolar transport of NOS3. The NOS3 protein is responsible for the production of nitric oxide (NO), a potent mediator in various biological processes. The translocation of NOS3 from the plasma membrane to intracellular vesicle-like structures diminishes NO production. NOSTRIN also interacts with Dynamin and N-WASP via its SH3 domain.

REFERENCES

1. Zimmermann, K., et al. 2002. NOSTRIN: a protein modulating nitric oxide release and subcellular distribution of endothelial nitric oxide synthase. *Proc. Natl. Acad. Sci. USA* 99: 17167-17172.
2. Choi, Y.J., et al. 2005. Cloning and characterization of mouse disabled 2 interacting protein 2, a mouse orthologue of human NOSTRIN. *Biochem. Biophys. Res. Commun.* 326: 594-599.
3. Icking, A., et al. 2005. NOSTRIN functions as a homotrimeric adaptor protein facilitating internalization of eNOS. *J. Cell Sci.* 118: 5059-5069.
4. Kim, H.W., et al. 2005. Mouse disabled 2 interacting protein 2 functions as a transcriptional repressor through direct binding onto its own promoter. *Biochem. Biophys. Res. Commun.* 337: 75-81.
5. Xiang, W., et al. 2005. Expression of endothelial nitric oxide synthase traffic inducer in the placentas of women with pre-eclampsia. *Int. J. Gynaecol. Obstet.* 89: 103-107.
6. Xiang, W., et al. 2006. Expression of endothelial nitric oxide synthase traffic inducer in the placenta of pregnancy induced hypertension. *J. Huazhong Univ. Sci. Technol. Med. Sci.* 26: 356-358.
7. Icking, A., et al. 2006. FCH/Cdc.domain determines distinct subcellular localization of NOSTRIN. *FEBS Lett.* 580: 223-228.
8. Schilling, K., et al. 2006. Translocation of endothelial nitric-oxide synthase involves a ternary complex with caveolin-1 and NOSTRIN. *Mol. Biol. Cell* 17: 3870-3880.

CHROMOSOMAL LOCATION

Genetic locus: NOSTRIN (human) mapping to 2q24.3.

SOURCE

NOSTRIN (F-4) is a mouse monoclonal antibody raised against amino acids 207-506 mapping at the C-terminus of NOSTRIN 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.

APPLICATIONS

NOSTRIN (F-4) is recommended for detection of NOSTRIN 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 NOSTRIN siRNA (h): sc-72295, NOSTRIN shRNA Plasmid (h): sc-72295-SH and NOSTRIN shRNA (h) Lentiviral Particles: sc-72295-V.

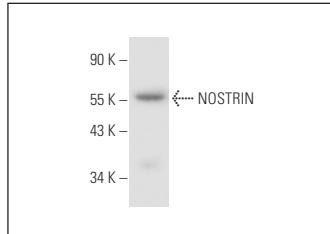
Molecular Weight of NOSTRIN: 58 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2200.

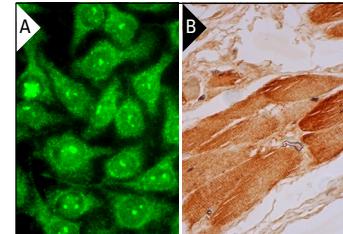
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgG_x BP-HRP: sc-516102 or m-IgG_x BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG_x BP-FITC: sc-516140 or m-IgG_x BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG_x BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



NOSTRIN (F-4): sc-365296. Western blot analysis of NOSTRIN expression in K-562 whole cell lysate.



NOSTRIN (F-4): sc-365296. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (B).

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.