SANTA CRUZ BIOTECHNOLOGY, INC.

NOSTRIN (D-16): sc-51345

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The Power to Question

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/Cdc15 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.
9. Mookerjee, R.P., et al. 2007. Increased gene and protein expression of the novel eNOS regulatory protein NOSTRIN and a variant in alcoholic hepatitis. Gastroenterology 132: 2533-2541.

CHROMOSOMAL LOCATION

Genetic locus: NOSTRIN (human) mapping to 2q24.3; Nostrin (mouse) mapping to 2 C2.

RESEARCH USE

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

SOURCE

NOSTRIN (D-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NOSTRIN of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-51345 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NOSTRIN (D-16) is recommended for detection of NOSTRIN of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

NOSTRIN (D-16) is also recommended for detection of NOSTRIN in additional species, including equine.

Suitable for use as control antibody for NOSTRIN siRNA (h): sc-72295, NOSTRIN siRNA (m): sc-72296, NOSTRIN shRNA Plasmid (h): sc-72295-SH, NOSTRIN shRNA Plasmid (m): sc-72296-SH, NOSTRIN shRNA (h) Lentiviral Particles: sc-72295-V and NOSTRIN shRNA (m) Lentiviral Particles: sc-72296-V.

Molecular Weight of NOSTRIN: 58 kDa.

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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