

Nebulin (N-19): sc-8083

BACKGROUND

Caldesmon, filamin 1, Nebulin and Villin are differentially expressed and regulated Actin binding proteins. Both muscular (CDh) and non-muscular (CDI) forms of Caldesmon have been identified and each has been shown to bind to Actin as well as to Calmodulin and Myosin. CDh is expressed predominantly on thin filaments in smooth muscle, whereas CDI is widely expressed in non-muscle tissues and cells. Filamin 1, which is ubiquitously expressed and exists as a homodimer, functions to crosslink Actin to filaments. Nebulin is a large filamentous protein specific to muscle tissue that may function as a ruler for filament length. Several isoforms of nebulin are produced by alternative exon usage. Villin is Ca^{2+} -regulated and is the major structural component of the brush border of absorptive cells.

REFERENCES

- Weihing, R.R. 1988. Actin-binding and dimerization domains of HeLa cell filamin. *Biochemistry* 27: 1865-1869.
- Maunoury, R., Robine, S., Pringault, E., Leonard, N., Gaillard, J.A. and Louvard, D. 1992. Developmental regulation of Villin gene expression in the epithelial cell lineages of mouse digestive and urogenital tracts. *Development* 115: 717-728.
- Marston, S., Pinter, K. and Bennett, P. 1992. Caldesmon binds to smooth muscle Myosin and Myosin rod and crosslink thick filaments to Actin filaments. *J. Muscle Res. Cell Motil.* 13: 206-218.
- Labeit, S. and Kolmerer, B. 1995. The complete primary structure of human Nebulin and its correlation to muscle structure. *J. Mol. Biol.* 248: 308-315.
- Zhang, J.Q., Luo, G., Herrera, A.H., Paterson, B. and Horowitz, R. 1996. cDNA cloning of mouse nebulin. Evidence that the nebulin-coding sequence is highly conserved among vertebrates. *Eur. J. Biochem.* 239: 835-841.
- Huber, P.A., El-Mezgueldi, M., Grabarek, Z., Slatter, D.A., Levine, B.A. and Marston, S.B. 1996. Multiple-sited interaction of Caldesmon with Ca^{2+} -Calmodulin. *Biochem. J.* 316: 413-420.

CHROMOSOMAL LOCATION

Genetic locus: NEB (human) mapping to 2q23.3.

SOURCE

Nebulin (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Nebulin of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-8083 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Nebulin (N-19) is recommended for detection of Nebulin of human origin by 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).

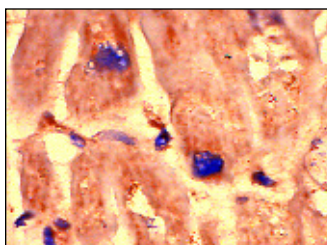
Suitable for use as control antibody for Nebulin siRNA (h): sc-43210, Nebulin shRNA Plasmid (h): sc-43210-SH, Nebulin shRNA (h) Lentiviral Particles: sc-43210-V.

Molecular Weight of Nebulin: 700-900 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) 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. 2) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



Nebulin (N-19): sc-8083. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human heart tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Yoshida, M., Sho, E., Nanjo, H., Takahashi, M., Kobayashi, M., Kawamura, K., Honma, M., Komatsu, M., Sugita, A., Yamauchi, M., Hosoi, T., Ito, Y. and Masuda, H. 2010. Weaving hypothesis of cardiomyocyte sarcomeres: discovery of periodic broadening and narrowing of intercalated disk during volume-load change. *Am. J. Pathol.* 176: 660-678.

STORAGE

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

PROTOCOLS

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