

nestin (2Q178): sc-58813



The Power to Question

BACKGROUND

Nestin is a major intermediate filament (IF) protein of embryonic central nervous system progenitor cells. It is also a component of the dynamic IF network during muscle development, where it polymerizes with Desmin and Vimentin. Nestin co-assembles with Vimentin or α -internexin and forms heterodimer coiled-coil molecules which then further assemble into 10 nm IFs. Deletion of the IF consensus rod domain in nestin alters nestin localization in CNS precursor cells and radial glial cells *in vivo*. Nestin is a marker for neuroepithelial stem cells, glioma cells and tumor endothelial cells during rapid growth. During axon elongation of differentiation neurons, nestin localizes to the growth cones and may play a role in growth cone guidance. In the rat adrenal gland, nestin is expressed by the zona fasciculata and the zona reticularis. Nestin is also expressed by dermatomal cells and by myoblasts during the earliest stages of myogenesis.

CHROMOSOMAL LOCATION

Genetic locus: NES (human) mapping to 1q23.1; Nes (mouse) mapping to 3 F1.

SOURCE

nestin (2Q178) is a mouse monoclonal antibody raised against embryonic spinal cord extracts of rat origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

nestin (2Q178) is recommended for detection of nestin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 flow cytometry (1 μ g per 1 x 10⁶ cells).

Suitable for use as control antibody for nestin siRNA (h): sc-36032, nestin siRNA (m): sc-36033, nestin siRNA (r): sc-156055, nestin shRNA Plasmid (h): sc-36032-SH, nestin shRNA Plasmid (m): sc-36033-SH, nestin shRNA Plasmid (r): sc-156055-SH, nestin shRNA (h) Lentiviral Particles: sc-36032-V, nestin shRNA (m) Lentiviral Particles: sc-36033-V and nestin shRNA (r) Lentiviral Particles: sc-156055-V.

Molecular Weight of nestin: 200-220 kDa.

Positive Controls: L6 whole cell lysate: sc-364196, SH-SY5Y cell lysate: sc-3812 or P19 cell lysate: sc-24760.

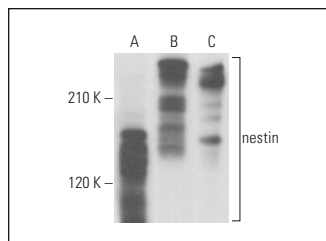
STORAGE

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

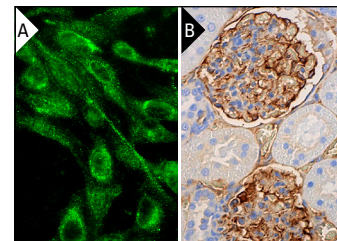
RESEARCH USE

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

DATA



nestin (2Q178): sc-58813. Western blot analysis of nestin expression in L6 (A), P19 (B) and SH-SY5Y (C) whole cell lysates.



nestin (2Q178): sc-58813. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat kidney tissue showing cytoplasmic and membrane staining of cells in glomeruli (B).

SELECT PRODUCT CITATIONS

1. Zhdanova, O., et al. 2011. The inducible deletion of Drosha and microRNAs in mature podocytes results in a collapsing glomerulopathy. *Kidney Int.* 80: 719-730.
2. Pereira, S.L., et al. 2013. Inhibition of mitochondrial complex III blocks neuronal differentiation and maintains embryonic stem cell pluripotency. *PLoS ONE* 8: e82095.
3. Ye, J., et al. 2016. Pluripotent stem cells induced from mouse neural stem cells and small intestinal epithelial cells by small molecule compounds. *Cell Res.* 26: 34-45.
4. Vermillion, M.S., et al. 2017. Intrauterine Zika virus infection of pregnant immunocompetent mice models transplacental transmission and adverse perinatal outcomes. *Nat. Commun.* 8: 14575.
5. Assinck, P., et al. 2017. Myelinogenic plasticity of oligodendrocyte precursor cells following spinal cord contusion injury. *J. Neurosci.* 37: 8635-8654.
6. Kask, K., et al. 2018. Targeted deletion of RIC8A in mouse neural precursor cells interferes with the development of the brain, eyes, and muscles. *Dev. Neurobiol.* 78: 374-390.
7. Doncel-Pérez, E., et al. 2018. Biochemical profiling of rat embryonic stem cells grown on electrospun polyester fibers using synchrotron infrared microspectroscopy. *Anal. Bioanal. Chem.* 410: 3649-3660.
8. Bott, C.J., et al. 2020. Nestin selectively facilitates the phosphorylation of the lissencephaly-linked protein Doublecortin (DCX) by Cdk5/p35 to regulate growth cone morphology and SEMA3A sensitivity in developing neurons. *J. Neurosci.* 40: 3720-3740.



See **nestin (Rat-401): sc-33677** for nestin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.