

nestin (7A3): sc-101541



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.

REFERENCES

1. Lendahl, U., et al. 1990. CNS stem cells express a new class of intermediate filament protein. *Cell* 60: 585-595.
2. Sejersen, T. and Lendahl, U. 1993. Transient expression of the intermediate filament nestin during skeletal muscle development. *J. Cell Sci.* 106: 1291-1300.
3. Kachinsky, A.M., et al. 1994. Myogenesis and the intermediate filament protein, nestin. *Dev. Biol.* 165: 216-228.
4. Marvin, M.J., et al. 1998. A rod end deletion in the intermediate filament protein nestin alters its subcellular localization in neuroepithelial cells of transgenic mice. *J. Cell Sci.* 111: 1951-1961.
5. Steinert, P.M., et al. 1999. A high molecular weight intermediate filament-associated protein in BHK-21 cells is nestin, a type VI intermediate filament protein. Limited co-assembly *in vitro* to form heteropolymers with type III vimentin and type IV α -internexin. *J. Biol. Chem.* 274: 9881-9890.
6. Yan, Y., et al. 2001. Mouse nestin protein localizes in growth cones of P19 neurons and cerebellar granule cells. *Neurosci. Lett.* 302: 89-92.
7. Sugawara, K., et al. 2002. Nestin as a marker for proliferative endothelium in gliomas. *Lab. Invest.* 82: 345-351.
8. Bertelli, E., et al. 2002. Nestin expression in rat adrenal gland. *Histochem. Cell Biol.* 117: 371-377.

CHROMOSOMAL LOCATION

Genetic locus: Nes (mouse) mapping to 3 F1.

SOURCE

nestin (7A3) is a rat monoclonal antibody raised against E16 embryonic cerebral cortex extracts of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

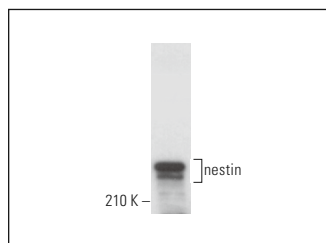
nestin (7A3) is recommended for detection of nestin of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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

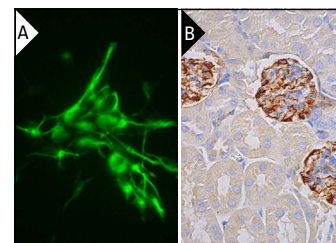
Molecular Weight of nestin: 190-200 kDa.

Positive Controls: C2C12 whole cell lysate: sc-364188.

DATA



nestin (7A3): sc-101541. Western blot analysis of nestin expression in C2C12 whole cell lysate.



nestin (7A3): sc-101541. Immunofluorescence staining of mouse neural progenitor cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse kidney tissue showing cytoplasmic and membrane staining of cells in glomeruli (B).

SELECT PRODUCT CITATIONS

1. Wang, L., et al. 2013. Identification of a clonally expanding haematopoietic compartment in bone marrow. *EMBO J.* 32: 219-230.
2. Li, D., et al. 2015. Establishment of pancreatic cancer stem cells by flow cytometry and their biological characteristics. *Int. J. Clin. Exp. Pathol.* 8: 11218-11223.
3. Jimenez-García, M.P., et al. 2021. Regulation of sarcomagenesis by the empty spiracles homeobox genes EMX1 and EMX2. *Cell Death Dis.* 12: 515.

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.



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.