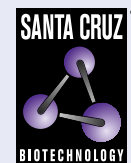


nestin (Rat-401): sc-33677



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 (Rat-401) 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.

nestin (Rat-401) is available conjugated to agarose (sc-33677 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-33677 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-33677 PE), fluorescein (sc-33677 FITC), Alexa Fluor® 488 (sc-33677 AF488), Alexa Fluor® 546 (sc-33677 AF546), Alexa Fluor® 594 (sc-33677 AF594) or Alexa Fluor® 647 (sc-33677 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-33677 AF680) or Alexa Fluor® 790 (sc-33677 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

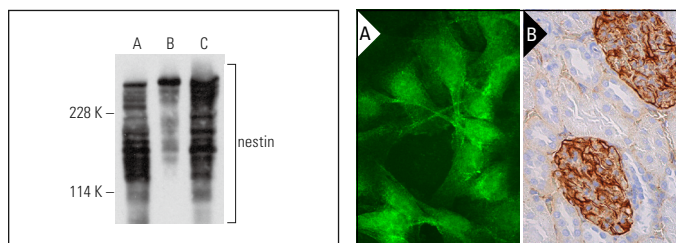
nestin (Rat-401) is recommended for detection of nestin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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.

STORAGE

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

DATA

nestin (Rat-401) HRP: sc-33677 HRP. Direct western blot analysis of nestin expression in L6 (A), P19 (B) and H19-7/IGF-IR (C) whole cell lysates.

nestin (Rat-401) Alexa Fluor® 488: sc-33677 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing membrane localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (A). nestin (Rat-401): sc-33677. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat kidney tissue showing cytoplasmic and membrane staining of cells in glomeruli (B).

SELECT PRODUCT CITATIONS

- Li, Y., et al. 1999. Temporal profile of nestin expression after focal cerebral ischemia in adult rat. *Brain Res.* 838: 1-10.
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- Petroni, M., et al. 2019. SMO-M2 mutation does not support cell-autonomous Hedgehog activity in cerebellar granule cell precursors. *Sci. Rep.* 9: 19623.
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- Zhang, X., et al. 2021. Schwann cells promote prevascularization and osteogenesis of tissue-engineered bone via bone marrow mesenchymal stem cell-derived endothelial cells. *Stem Cell Res. Ther.* 12: 382.
- Yin, S.W., et al. 2022. Enriched environment for offspring improves learning and memory impairments induced by sevoflurane exposure during the second trimester of pregnancy. *Neural Regen. Res.* 17: 1293-1298.
- Kumar, P., et al. 2023. Functional mapping of microRNA promoters with dCas9 fused to transcriptional regulators. *Front. Genet.* 14: 1147222.
- Kishimoto, T., et al. 2024. An engineered ligand-responsive Csy4 endoribonuclease controls transgene expression from Sendai virus vectors. *J. Biol. Eng.* 18: 9.

RESEARCH USE

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