Antibodies

Anti-Rat Nestin Antibody, Clone Rat401

Mouse monoclonal IgG1 antibody against mouse, rat nestin, unconjugated

Catalog #60051

100 µg 0.5 mg/mL

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Product Description

The Rat401 antibody reacts with mouse and rat nestin, a > 170 kDa Class VI intermediate filament (IF) protein expressed in neuroepithelial stem and progenitor cells and some other cell types, including pancreatic islet progenitor cells, angiogenic endothelial cells, glioma cells, and bone marrow mesenchymal stem cells. Expression is down-regulated following neural differentiation, and within the adult nervous system is limited mainly to progenitor cells in the cortical subventricular zone, the hippocampal dentate gyrus, dorsal root ganglia satellite cells, and a subpopulation of Schwann cells. Nestin assembles into heterodimers with vimentin or α-internexin by a phosphorylation-dependent process to form IFs and is thus involved in structural organization of the cell. It is required for the survival, renewal, and proliferation of neural progenitor cells and may also be involved in growth cone guidance during neuronal differentiation. During differentiation, nestin-containing filaments are replaced by cell type-specific IFs such as GFAP.

Target Antigen Name:	Nestin
Alternative Names:	NES, Type VI intermediate filament (IF) protein
Gene ID:	18008
Species Reactivity:	Mouse, Rat
Host Species:	Mouse
Clonality:	Monoclonal
Clone:	Rat401
Isotype:	IgG1, kappa
Immunogen:	Nestin purified from embryonic rat spinal cord
Conjugate:	Unconjugated

Applications

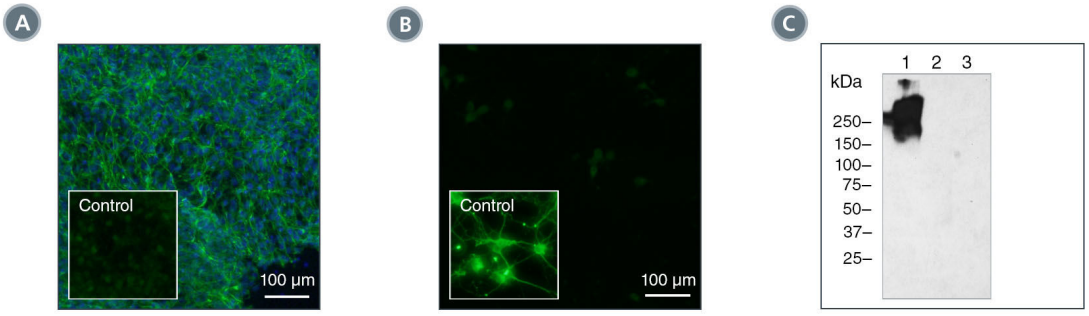
Verified:	ICC
Reported:	ICC, IF, IHC, WB
Special Applications:	This antibody clone has been verified for labeling neural stem and progenitor cells grown with NeuroCult™ Proliferation Kit (Mouse & Rat; Catalog #05702).

Abbreviations: CellSep: Cell separation; ChIP: Chromatin immunoprecipitation; FA: Functional assay; FACS: Fluorescence-activated cell sorting; FC: Flow cytometry; ICC: Immunocytochemistry; IF: Immunofluorescence microscopy; IHC: Immunohistochemistry; IP: Immunoprecipitation; RIA: Radioimmunoassay; WB: Western blotting

Properties

Formulation:	Phosphate-buffered solution, pH 7.2 containing 0.09% sodium azide
Purification:	The antibody was purified by affinity chromatography.
Stability and Storage:	Product stable at 2 - 8°C when stored undiluted. Do not freeze. For product expiry date, please contact techsupport@stemcell.com.
Directions for Use:	The suggested use of this antibody is: ICC/IF, ≤ 10 µg/mL; WB, ≤ 2 µg/mL. It is recommended that the antibody be titrated for optimal performance for each application.

Data



(A) Embryonic mouse cortical tissue was cultured using NeuroCult™ Proliferation Kit (Mouse), then fixed and labeled with Anti-Rat Nestin Antibody, Clone Rat401, followed by goat anti-mouse IgG, FITC. Nuclei were counter-stained with DAPI (e.g. Catalog #75004). Inset shows cells labeled with a mouse IgG1, kappa isotype control antibody (Anti-Dextran Antibody, Clone DX1; Catalog #60026) followed by goat anti-mouse IgG, FITC (without DAPI staining).
(B) E18 cortical rat neurons were cultured using NeuroCult™ SM1 Neuronal Culture Kit, then fixed and labeled with Anti-Rat Nestin Antibody, Clone Rat401, followed by goat anti-mouse IgG, FITC. Nestin expression is down-regulated during neuronal differentiation. Inset shows cells labeled with a positive control antibody (anti-neuronal class III beta-tubulin antibody) followed by goat anti-mouse IgG, FITC.
(C) Western blot analysis of denatured/reduced cell lysates from mouse neural progenitor cells cultured with NeuroCult™ Proliferation Kit (Mouse & Rat) (lane 1), HT1080 fibrosarcoma cells (negative control, lane 2), or adult rat brain cells (negative control, lane 3) with Anti-Rat Nestin Antibody, Clone Rat401.

Related Products

For a complete list of antibodies, including other conjugates, sizes and clones, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com/antibodies or contact us at techsupport@stemcell.com.

References

1. Andreu Z et al. (2015) The cyclin-dependent kinase inhibitor p27 kip1 regulates radial stem cell quiescence and neurogenesis in the adult hippocampus. Stem Cells 33(1): 219–29. (IF)
2. Narisawa Y et al. (2015) Histogenesis of pure and combined Merkel cell carcinomas: An immunohistochemical study of 14 cases. J Dermatol 42(5): 445–52. (IHC)
3. Blackmore DG et al. (2012) Growth hormone responsive neural precursor cells reside within the adult mammalian brain. Sci Rep 2: 250. (ICC, IF)
4. Meng X et al. (2011) PI3K mediated electrotaxis of embryonic and adult neural progenitor cells in the presence of growth factors. Exp Neurol 227(1): 210–7. (FC, ICC, IF)
5. Robinson JP et al. (2010) Activated BRAF induces gliomas in mice when combined with Ink4a/Arf loss or Akt activation. Oncogene 29(3): 335–44. (IHC)
6. Di Bella A et al. (2009) An appraisal of intermediate filament expression in adult and developing pancreas: vimentin is expressed in alpha cells of rat and mouse embryos. J Histochem Cytochem 57(6): 577–86. (IHC)
7. Saito K et al. (2009) Ablation of cholesterol biosynthesis in neural stem cells increases their VEGF expression and angiogenesis but causes neuron apoptosis. Proc Natl Acad Sci USA 106(20): 8350–5. (IHC)
8. Jiao JW et al. (2008) Ephrins as negative regulators of adult neurogenesis in diverse regions of the central nervous system. Proc Natl Acad Sci USA 105(25): 8778-83. (ICC, IF, IHC)
9. Regad T et al. (2007) The neural progenitor-specifying activity of FoxG1 is antagonistically regulated by CKI and FGF. Nat Cell Biol 9(5): 531–40. (ICC, IF)
10. Lindsley RC et al. (2006) Canonical Wnt signaling is required for development of embryonic stem cell-derived mesoderm. Development 133(19): 3787–96. (ICC)
11. Dubé M et al. (2000) Muscle specific fragile X related protein 1 isoforms are sequestered in the nucleus of undifferentiated myoblast. BMC Genet 1: 4. (WB)
12. Kachinsky AM et al. (1995) Intermediate filaments in cardiac myogenesis: nestin in the developing mouse heart. J Histochem Cytochem 43(8): 843–7. (IF, IHC, WB)
13. Hockfield S & McKay RD. (1985) Identification of major cell classes in the developing mammalian nervous system. J Neurosci 5(12): 3310–28. (ICC)