

## Anti-Nestin antibody, rabbit polyclonal (ST1)

73-105 100 ug

**Shipping and Storage:** Shipped at 4°C. Store at -20°C. Do not freeze.

**Nestin** is a class VI intermediate filament protein that is abundantly expressed in stem cells and progenitor cells in the mammalian central nervous system (CNS) during development. Upon differentiation, **nestin** becomes down-regulated and is replaced by other intermediate filament proteins. **Nestin** expression is widely used as a marker for CNS stem cells in the developing nervous system. Its transient expression is a critical step in the neural differentiation pathway. Down-regulated **nestin** may be re-expressed in the adult organism under certain pathological conditions such as brain injury, ischemia, inflammation, and neoplastic transformation.

This antibody (named ST1) against mouse **nestin** was raised by Prof. K. Yoshikawa of Osaka University.

### Applications:

1. Western blotting (dilution: 1/500-1/5,000)
2. Immunocytochemistry (dilution: 1/300-1/1,000)
3. Immunohistochemistry (dilution: 1/500-1/1,000) Not tested for other applications

**Immunogen:** Synthetic peptide corresponding to the C-terminal 15 aa of mouse nestin.

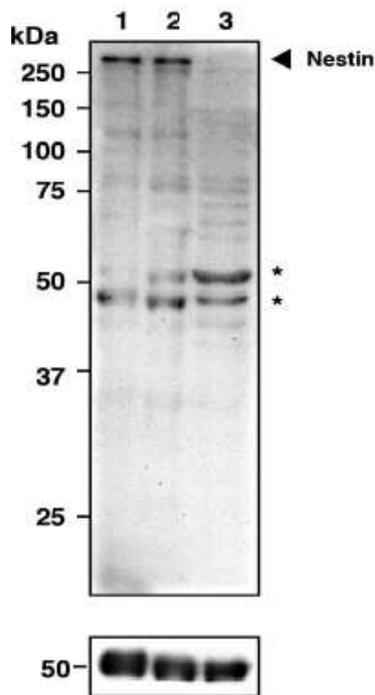
**Specificity:** Reacts with mouse and rat Nestin, but not with human Nestin.

**Form:** Protein A-purified IgG 2 mg/ml in PBS, 50% glycerol. Filter-sterilized. Carrier and azide free.

**Data Link:** Swiss-Prot [Q6P5H2](#) (mouse), [P21263](#) (rat)

**References:** This antibody was produced and used in ref.1 and used 1~4.

1. Sato Y *et al* (1998) Requirement for early-generated neurons recognized by monoclonal antibody Lot1 in the formation of lateral olfactory tract. *J Neurosci* **18**:7800-7810 **PMID:** [9742149](#) **IHC**
2. Nakashima K *et al* (2001) BMP2-mediated alteration in the developmental pathway of fetal mouse brain cells from neurogenesis to astrocytogenesis." *Proc Natl Acad Sci USA* **98**: 5868-5873 **PMID:** [11331769](#) **IF**
3. Shimozaki K. *et al* (2003) Involvement of Oct3/4 in the enhancement of neuronal differentiation of ES cells in neurogenesis-inducing cultures. *Development* **130**, 2505-2512. **PMID:** [12702663](#) **IF**
4. Aizawa T. et al. (2011). Neural stem cell-like gene expression in a mouse ependymoma cell line transformed by human BK polyomavirus. *Cancer Sci.* **102**:122-9. **PMID:** [21073635](#) **IF, IHC**



**Fig.1 Detection of Nestin in whole extracts of mouse neocortex and neural stem cells by western blotting with anti-Nestin antibody.**

Lane 1; Mouse neocortex at E14.5

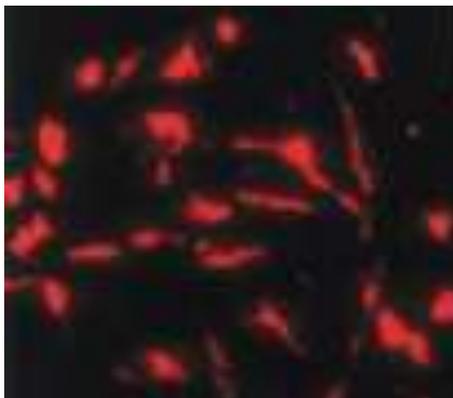
Lane 2; Neural stem cells in culture prepared from E14.5 mouse neocortex.

Lane 3; Neurons in culture differentiated from neural stem cells.

Nestin is detected only in undifferentiated neural stem cells

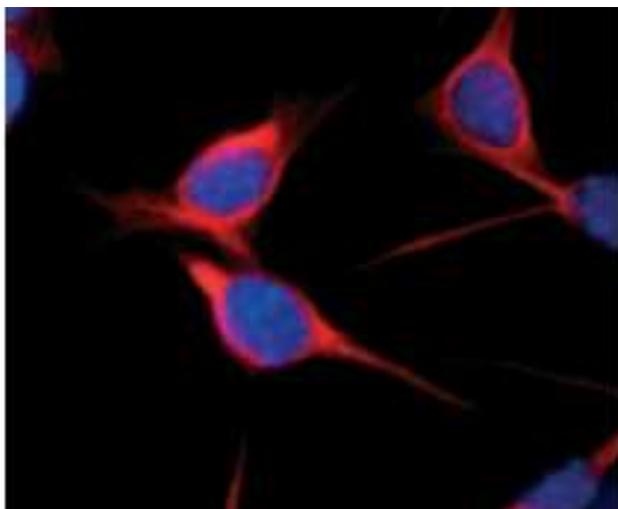
Anti-Nestin antibody (ST1) was used at 1/500 dilution. As 2nd antibody, HRP-conjugated polyclonal anti-rabbit IgG antibody was used at 1/20,000. As a loading control, western blot of  $\gamma$ -tubulin was employed.

(\* Stars indicate non-specific bands.)



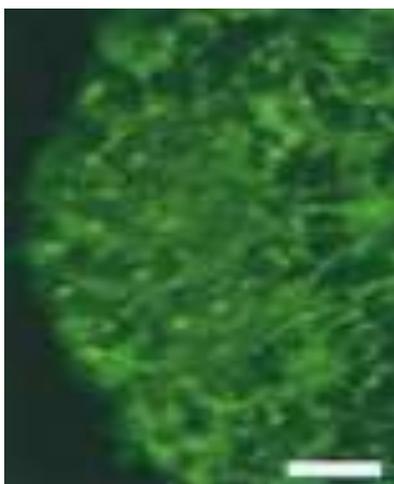
**Fig.2 Immunofluorescence staining of nestin in mouse neuroepithelial cells by using anti-nestin antibody.**

Cells in culture were fixed with paraformaldehyde and reacted with anti-nestin antibody at 1/300 dilution and then with rhodamine-conjugated donkey anti-rabbit antibody as a second antibody.



**Fig.3 Immunofluorescent staining of Nestin in Vn19 cells, which were derived from mouse ependymoma, with anti-Nestin antibody (ST1).**

Dispersed Vn19 cells were fixed with methanol-acetone solution and incubated with anti-Nestin antibody at 1/1,000 dilution. As 2<sup>nd</sup> antibody, Cy3-conjugated anti-rabbit IgG was used. DNA was stained with Hoechst 33342 and the merged image was shown.



**Fig.3. Section of telencephalon of mouse stained by immunohistochemistry with anti-nestin antibody**

Mouse telencephalon was fixed with paraformaldehyde, and frozen. Sections were cut on a cryostat. The sections were reacted with anti-nestin antibody (ST1) at 1/500 dilution and FITC-conjugated anti-rabbit Ig antibody as a secondary antibody. Scale bar is 10  $\mu$  m

Data are by courtesy of Prof. K. Yoshikawa at Osaka University, Protein Research Institute

Related product: 73-100 anti-Nestin antibody, rat monoclonal (7A3)