

Nestin

Cat.No. 312 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	WB: 1 : 1000 (AP staining) IP: yes ICC: yes IHC: 1 : 500 IHC_P: not tested yet ELISA: yes
Clone	JP63
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 1618 from human Nestin (UniProt Id: P48681)
Reactivity	Reacts with: human (P48681). Other species not tested yet.
Specificity	Specific for human nestin.
Remarks	Differences between clone JP 63 and clone JP39 in application or specificity not determined yet.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Access the online factsheet including applicable protocols at <https://sysy.com/product/312011> or scan the QR-code.



Background

Nestin is expressed in early embryonic neuroepithelial stem cells during development of the CNS. The protein is downregulated and replaced by other tissue specific intermediate filaments during differentiation. Antibodies against this protein can be employed as predominant markers for stem and progenitor cells in the mammalian CNS.

Nestin is also a useful marker-protein for brain tumors of both glial and neuronal lineage.

Selected References for 312 011

A novel method for culturing stellate astrocytes reveals spatially distinct Ca²⁺ signaling and vesicle recycling in astrocytic processes.

Wolfe AC, Ahmed S, Awasthi A, Stahlberg MA, Rajput A, Magruder DS, Bonn S, Dean C
The Journal of general physiology (2017) 149:1-170. . **WB; tested species: rat**

NDRG2 as a marker protein for brain astrocytes.

Flügge G, Araya-Callis C, Garea-Rodriguez E, Stadelmann-Nessler C, Fuchs E
Cell and tissue research (2014) 357:1: 31-41. . **IHC; tested species: marmoset**

Selected General References

Nestin expression as a new marker in malignant peripheral nerve sheath tumors.

Shimada S, Tsuzuki T, Kuroda M, Nagasaka T, Hara K, Takahashi E, Hayakawa S, Ono K, Maeda N, Mori N, Illei PB, et al.
Pathology international (2007) 57:2: 60-7. .

Expression of nestin in the podocytes of normal and diseased human kidneys.

Su W, Chen J, Yang H, You L, Xu L, Wang X, Li R, Gao L, Gu Y, Lin S, Xu H, et al.
American journal of physiology. Regulatory, integrative and comparative physiology (2007) 292:5: R1761-7. .

Nestin is expressed in the basal/myoepithelial layer of the mammary gland and is a selective marker of basal epithelial breast tumors.

Li H, Cherukuri P, Li N, Cowling V, Spinella M, Cole M, Godwin AK, Wells W, DiRenzo J
Cancer research (2007) 67:2: 501-10. .

Nestin expression in adult and developing human kidney.

Bertelli E, Regoli M, Fonzi L, Occhini R, Mannucci S, Ermini L, Toti P
The journal of histochemistry and cytochemistry : official journal of the Histochemistry Society (2007) 55:4: 411-21. .

Cyclopamine treatment of human embryonic stem cells followed by culture in human astrocyte medium promotes differentiation into nestin- and GFAP-expressing astrocytic lineage.

Lee DS, Yu K, Rho JY, Lee E, Han JS, Koo DB, Cho YS, Kim J, Lee KK, Han YM
Life sciences (2006) 80:2: 154-9. .

Evidence for a distinct group of nestin-immunoreactive neurons within the basal forebrain of adult rats.

Wang S, Yao Z, Wang J, Ai Y, Li D, Zhang Y, Mao J, Gu H, Ruan Y, Mao J
Neuroscience (2006) 142:4: 1209-19. .

Nestin immunoreactivity of Purkinje cells in Creutzfeldt-Jakob disease.

Mizuno Y, Ohama E, Hirato J, Nakazato Y, Takahashi H, Takatama M, Takeuchi T, Okamoto K
Journal of the neurological sciences (2006) 246:1-2: 131-7. .

Long-lasting coexpression of nestin and glial fibrillary acidic protein in primary cultures of astroglial cells with a major participation of nestin(+)/GFAP(-) cells in cell proliferation.

Sergent-Tanguy S, Michel DC, Neveu I, Naveilhan P
Journal of neuroscience research (2006) 83:8: 1515-24. .

Colocalization of nestin and vimentin/desmin in skeletal muscle cells demonstrated by three-dimensional fluorescence digital imaging microscopy.

Sjöberg G, Jiang WQ, Ringertz NR, Lendahl U, Sejersen T
Experimental cell research (1994) 214:2: 447-58. .

Expression of the class VI intermediate filament nestin in human central nervous system tumors.

Dahlstrand J, Collins VP, Lendahl U
Cancer research (1992) 52:19: 5334-41. .

Nestin expression in embryonic human neuroepithelium and in human neuroepithelial tumor cells.

Tohyama T, Lee VM, Rorke LB, Marvin M, McKay RD, Trojanowski JQ
Laboratory investigation; a journal of technical methods and pathology (1992) 66:3: 303-13. .

FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.