SYSY Antibodies

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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_2O 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**: 1 : 500 **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: not recommended
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). No signal: mouse (Q6P5H2), rat (P21263). Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 is required.

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

Background

Nestin is a type VI intermediate filament and is expressed in early embryonic neuroepithelial stem cells during CNS development (1). The protein is downregulated and replaced by other tissue specific intermediate filaments during differentiation (2). Antibodies against Nestin can be employed as predominant markers for stem and progenitor cells in the mammalian CNS.
During neuroinflammation and ischemia, Nestin is upregulated in different CNS cell types (2). Expression has also been reported for proliferative endothelial cells of various tissues like newly formed blood vessels in brain (3), glomeruli of kidney (4) and skin (5). Moreover, Nestin has garnered significant attention in oncology, as its re-expression is associated with various cancers, including glioblastomas and melanomas (6).

Selected References for 312 011

Regulation of synaptic connectivity in schizophrenia spectrum by mutual neuron-microglia interaction.
Breitmeyer R, Vogel S, Heider J, Hartmann SM, Wüst R, Keller AL, Binner A, Fitzgerald JC, Fallgatter AJ, Volkmer H
Communications biology (2023) 61: 472. . **ICC; tested species: human**

A novel method for culturing stellate astrocytes reveals spatially distinct Ca2+ signaling and vesicle recycling in astrocytic processes.
Wolfes AC, Ahmed S, Awasthi A, Stahlberg MA, Rajput A, Magruder DS, Bonn S, Dean C
The Journal of general physiology (2017) 1491: 149-170. . **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) 3571: 31-41. . **IHC; tested species: marmoset**

Selected General References

Stem cells in the central nervous system.
McKay R et al. Science (1997) PubMed:9082987

Molecular imaging of nestin in neuroinflammatory conditions reveals marked signal induction in activated microglia.
Krishnasamy S et al. J Neuroinflammation (2017) PubMed:28253906

Tumor Evolution of Glioma-Intrinsic Gene Expression Subtypes Associates with Immunological Changes in the Microenvironment.
Wang Q et al. Cancer Cell (2017) PubMed:28697342

The neural stem/progenitor cell marker nestin is expressed in proliferative endothelial cells, but not in mature vasculature.
Suzuki S et al. J Histochem Cytochem (2010) PubMed:20421592

Expression of nestin in the podocytes of normal and diseased human kidneys.
Su W et al. Am. J. Physiol. Regul. Integr. Comp. Physiol. (2007) PubMed:17255215

Patterns of nestin expression in human skin.
Wang Y et al. Cell Biol Int (2006) PubMed:16275024

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

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.