SYSY Antibodies

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Olig2

Cat.No. 292 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 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**: not recommended **IP**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 200 up to 1 : 500 **IHC-P (FFPE)**: 1 : 500
Immunogen	Synthetic peptide corresponding to AA 242 to 259 from mouse Olig2 (UniProt Id: Q9EQW6)
Reactivity	Reacts with: rat (G3V612), mouse (Q9EQW6). Other species not tested yet.

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

Background

Olig2 (also known as BHLHB1 and PRKCBP2) is a basic helix–loop–helix transcription factor characteristic of the oligodendroglial lineage and plays key roles in the specification and maturation of oligodendrocytes. Oligodendrocytes are glial cells that produce and maintain central nervous system myelin; Morphologically, oligodendrocyte nuclei are typically smaller and more oval than nuclei of other CNS cell types. (1-3).
In cancer, particularly in diffuse gliomas, Olig2 is widely used as a nuclear immunohistochemical marker of glial lineage. In diagnostic pathology, nuclear Olig2 immunohistochemistry is widely used as a glial lineage marker in diffuse gliomas: Olig2 is strongly expressed in oligodendrogliomas and is also detectable in a substantial proportion of astrocytomas and glioblastomas (GBM). Large cohorts established that Olig2 is highly expressed across diffuse gliomas while being largely restricted to oligodendroglia in normal brain, supporting its utility in routine practice (4, 5).

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected References for 292 003

Peculiar protrusions along tanycyte processes face diverse neural and nonneural cell types in the hypothalamic parenchyma.
Pasquettaz R, Kolotuev I, Rohrbach A, Gouelle C, Pellerin L, Langlet F
The Journal of comparative neurology (2021) 5293: 553-575. . **IHC; tested species: mouse**

GSK-3β S9A overexpression leads murine hippocampal neural precursors to acquire an astroglial phenotype in vivo.
Flor-García M, Ávila J, Llorens-Martín M
Developmental neurobiology (2021) 815: 710-723. . **IHC; tested species: mouse**

Selected General References

Stage-specific deletion of Olig2 conveys opposing functions on differentiation and maturation of oligodendrocytes.
Mei F et al. J. Neurosci. (2013) PubMed:23658182

Oligodendroglioma: pathology, molecular mechanisms and markers.
Wesseling P et al. Acta Neuropathol (2015) PubMed:25943885

Olig2/Plp-positive progenitor cells give rise to Bergmann glia in the cerebellum.
Chung SH et al. Cell Death Dis (2013) PubMed:23492777

Transcription factor Olig2 defines subpopulations of retinal progenitor cells biased toward specific cell fates.
Hafler BP et al. Proc. Natl. Acad. Sci. U.S.A. (2012) PubMed:22543161

The oligodendroglial lineage marker OLIG2 is universally expressed in diffuse gliomas.
Ligon KL et al. J Neuropathol Exp Neurol (2004) PubMed:15198128

Access the online factsheet including applicable protocols at https://sysy.com/product/292003 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.