SYSY Antibodies

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SOX2

Cat.No. 347 003; 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 tested yet (AP staining) **IP**: not tested yet **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 500 up to 1 : 5000 **IHC-P (FFPE)**: 1 : 200
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of mouse SOX2 (UniProt Id: P48432)
Reactivity	Reacts with: rat (D4A543), mouse (P48432), human (P48431). Other species not tested yet.

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

Background

Sex determining region of Y chromosome (**S**ry)-related high mobility group b**ox1-3** or **SOX 1-3** proteins belong to the earliest transcription factors expressed in the developing CNS
SOX1, SOX2 and SOX3 constitute the B1-subgroup of the Sox gene family 12. They are expressed by most progenitor cells of the developing CNS and are generally downregulated by neural cells when they exit the cell cycle and differentiate.

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

Selected References for 347 003

INSIHGT: an accessible multi-scale, multi-modal 3D spatial biology platform.
Yau CN, Hung JTS, Campbell RAA, Wong TCY, Huang B, Wong BTY, Chow NKN, Zhang L, Tsoi EPL, Tan Y, Li JJX, et al.
Nature communications (2024) 151: 10888. . **IHC; tested species: mouse**

Loss of FEZ1, a gene deleted in Jacobsen syndrome, causes locomotion defects and early mortality by impairing motor neuron development.
Gunaseelan S, Wang Z, Tong VKJ, Ming SWS, Razar RBBA, Srimasorn S, Ong WY, Lim KL, Chua JJE
Human molecular genetics (2021) : . . **ICC; tested species: human**

Selected General References

Generation of organized germ layers from a single mouse embryonic stem cell.
Poh YC et al. Nat Commun (2014) PubMed:24873804

How Sox2 maintains neural stem cell identity.
Thiel G et al. Biochem. J. (2013) PubMed:23445224

Interaction of Sox1, Sox2, Sox3 and Oct4 during primary neurogenesis.
Archer TC et al. Dev. Biol. (2011) PubMed:21147085

Role of Sox2 in the development of the mouse neocortex.
Bani-Yaghoub M et al. Dev. Biol. (2006) PubMed:16631155

Sox1 acts through multiple independent pathways to promote neurogenesis.
Kan L et al. Dev. Biol. (2004) PubMed:15110721

Vertebrate neurogenesis is counteracted by Sox1-3 activity.
Bylund M et al. Nat. Neurosci. (2003) PubMed:14517545

SOX2 functions to maintain neural progenitor identity.
Graham V et al. Neuron (2003) PubMed:12948443

Comparative expression of the mouse Sox1, Sox2 and Sox3 genes from pre-gastrulation to early somite stages.
Wood HB et al. Mech. Dev. (1999) PubMed:10446282

A role for SOX1 in neural determination.
Pevny LH et al. Development (1998) PubMed:9550729

SOX3 is an X-linked gene related to SRY.
Stevanović M et al. Hum. Mol. Genet. (1993) PubMed:8111369

Access the online factsheet including applicable protocols at https://sysy.com/product/347003 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.