SYSY Antibodies

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Tbr1

Cat.No. 328 005; Polyclonal Guinea pig antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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 : 1000 up to 1 : 2000 **IHC-P (FFPE)**: 1 : 500
Immunogen	Synthetic peptide corresponding to AA 128 to 145 from rat Tbr1 (UniProt Id: D4A6N8)
Reactivity	Reacts with: rat (D4A6N8), mouse (Q64336). Other species not tested yet.

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

Background

Tbr 1 is a transcription factor of the T-box family that is highly expressed in glutamatergic early-born cortical projection neurons. It plays a role in the differentiation of intermediate progenitor cells (IPCs) into postmitotic projection neuron.

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

Selected References for 328 005

A proper excitatory/inhibitory ratio is required to develop synchronized network activity in mouse cortical cultures.
Crocco E, Iannello L, Tonelli F, Lagani G, Pandolfini L, Ferro M, Amato G, Di Garbo A, Cremisi F
Stem cell reports (2025) : 102646. . **ICC; tested species: mouse**

53BP1 Enforces Distinct Pre- and Post-resection Blocks on Homologous Recombination.
Callen E, Zong D, Wu W, Wong N, Stanlie A, Ishikawa M, Pavani R, Dumitrache LC, Byrum AK, Mendez-Dorantes C, Martinez P, et al.
Molecular cell (2020) 771: 26-38.e7. . **IHC; tested species: mouse**

Persistent and transient senescent cells contribute to brain-barrier development.
Watson LA, Adelsheim Z, Carter MJ, Carter GT, Jimenez-Reyes KL, Du H, Zhu Z, Berry DB, Paredez MC, Palaniappan RH, Augustine JM, et al.
Cell (2026) : . . **IHC; tested species: mouse**

Heterozygous pathogenic variants in the splicing factor SF1 lead to a large spectrum of neurodevelopmental disorders.
Bou-Rouphael J, Cospain A, Courtin T, Keren B, Marie C, Lesieur-Sebellin M, Heron D, de Sainte Agathe JM, Heide S, Lejeune E, Quelin C, et al.
American journal of human genetics (2025) 11211: 2605-2624. . **ICC; tested species: human**

Generation of excitatory and inhibitory neurons from common progenitors via Notch signaling in the cerebellum.
Zhang T, Liu T, Mora N, Guegan J, Bertrand M, Contreras X, Hansen AH, Streicher C, Anderle M, Danda N, Tiberi L, et al.
Cell reports (2021) 3510: 109208. . **IHC; tested species: mouse**

DNA-PKcs, ATM, and ATR Interplay Maintains Genome Integrity during Neurogenesis.
Enriquez-Rios V, Dumitrache LC, Downing SM, Li Y, Brown EJ, Russell HR, McKinnon PJ
The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 374: 893-905. . **IHC; tested species: mouse**

Selected General References

Pax6 regulates Tbr1 and Tbr2 expressions in olfactory bulb mitral cells.
Imamura F et al. Mol. Cell. Neurosci. (2013) PubMed:23353076

The T-box brain 1 (Tbr1) transcription factor inhibits astrocyte formation in the olfactory bulb and regulates neural stem cell fate.
Méndez-Gómez HR et al. Mol. Cell. Neurosci. (2011) PubMed:20807572

Tbr1 regulates regional and laminar identity of postmitotic neurons in developing neocortex.
Bedogni F et al. Proc. Natl. Acad. Sci. U.S.A. (2010) PubMed:20615956

Pax6, Tbr2, and Tbr1 are expressed sequentially by radial glia, intermediate progenitor cells, and postmitotic neurons in developing neocortex.
Englund C et al. J. Neurosci. (2005) PubMed:15634788

Tbr1 regulates differentiation of the preplate and layer 6.
Hevner RF et al. Neuron (2001) PubMed:11239428

Access the online factsheet including applicable protocols at https://sysy.com/product/328005 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.