SYSY Antibodies

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Tryptophan hydroxylase2

Cat.No. 348 003; Polyclonal rabbit antibody, 100 µl specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µl specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 100 µl H_2O. 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	**IHC**: 1 : 250 up to 1 : 500 **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to the N-terminal part of rat TPH2. (UniProt Id: Q8CGU9)
Reactivity	Reacts with: rat (Q8CGU9), mouse (Q8CGV2), human (Q8IWU9). Other species not tested yet.
Specificity	K.O. validated

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

Background

Tryptophan hydroxylase (TPH) is an enzyme that catalyzes the 5-hydroxylation of tryptophan, which is the first step in the biosynthesis of indoleamines (serotonin and melatonin).
Two isoforms TPH1 and **TPH2** have been described. TPH1 occurs mainly in tissues that express serotonin in the periphery (skin, gut, pineal gland). TPH2 is exclusively expressed in neuronal cell types and is the predominant isoform in the central nervous system.
In mammals, serotonin biosynthesis occurs predominantly in neurons which originate in the Raphe nuclei of the brain.

Selected References for 348 003

Neuroanatomical evidence and a mouse calcitonin gene-related peptide model in line with human functional magnetic resonance imaging data support the involvement of peptidergic Edinger-Westphal nucleus in migraine.
Al-Omari A, Gaszner B, Zelena D, Gecse K, Berta G, Biró-Sütő T, Szocsics P, Maglóczky Z, Gombás P, Pintér E, Juhász G, et al.
Pain (2024) 16512: 2774-2793. . **IHC; tested species: mouse,human**

Rapid dynamics of dorsal raphe serotonin neurons regulate the strength of visual attention.
Lehnert J, Cha K, Forestell J, Yang K, Ma X, Shariff S, Britt JP, Khadra A, Cook EP, Krishnaswamy A
Nature communications (2026) 171: . . **IHC; tested species: mouse**

Selected General References

Tryptophan hydroxylase-2: an emerging therapeutic target for stress disorders.
Chen GL et al. Biochem. Pharmacol. (2013) PubMed:23435356

A structural approach into human tryptophan hydroxylase and its implications for the regulation of serotonin biosynthesis.
Martínez A et al. Curr. Med. Chem. (2001) PubMed:11472242

Regulation of tryptophan hydroxylase activity by a cyclic AMP-dependent mechanism in rat striatum.
Garber SL et al. Brain Res. (1987) PubMed:2827848

Access the online factsheet including applicable protocols at https://sysy.com/product/348003 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.