SYSY Antibodies

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Tyrosine hydroxylase

Cat.No. 213 104; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For **reconstitution** add 100 µl H_2O, then aliquot and store at -20°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**: not tested yet **IHC**: 1 : 500 **IHC-P**: 1 : 500
Immunogen	Recombinant protein corresponding to residues near the amino-terminus of rat TyrH. (UniProt Id: P04177)
Reactivity	Reacts with: rat (P04177), mouse (P24529). Other species not tested yet.

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

Background

Tyrosine hydroxylase is one of the key enzymes in the synthesis pathway of catecholamines like adrenalin, noradrenalin and dopamin and is frequently used as a marker for dopaminergic neurons. This neuronal subpopulation is especially affected in Parkinson's disease.

Selected References for 213 104

Dopamine Secretion Is Mediated by Sparse Active Zone-like Release Sites.
Liu C, Kershberg L, Wang J, Schneeberger S, Kaeser PS
Cell (2018) 1724: 706-718.e15. . **ICC, IHC; tested species: mouse**

The proteomic landscape of synaptic diversity across brain regions and cell types.
van Oostrum M, Blok TM, Giandomenico SL, Tom Dieck S, Tushev G, Fürst N, Langer JD, Schuman EM
Cell (2023) 18624: 5411-5427.e23. . **IHC, WB; tested species: mouse**

Synaptotagmin-1 is the Ca2+ sensor for fast striatal dopamine release.
Banerjee A, Lee J, Nemcova P, Liu C, Kaeser PS
eLife (2020) 9: . . **ICC, IHC; tested species: mouse**

Spike-Dependent Dynamic Partitioning of the Locus Coeruleus Network through Noradrenergic Volume Release in a Simulation of the Nucleus Core.
Baral S, Hosseini H, More K, Fabrin TMC, Braun J, Prigge M
Brain sciences (2022) 126: . . **EXM; tested species: mouse**

Multiplex imaging of human induced pluripotent stem cell-derived neurons with CO-Detection by indEXing (CODEX) technology.
Heinrich L, Zafar F, Morato Torres CA, Singh J, Khan A, Chen MY, Hempel C, Nikulina N, Mulholland J, Braubach O, Schüle B, et al.
Journal of neuroscience methods (2022) : 109653. . **CODEX_PC; tested species: human**

Neuroinflammation causes mitral cell dysfunction and olfactory impairment in a multiple sclerosis model.
Schubert C, Schulz K, Sonner JK, Hadjilaou A, Seemann AL, Gierke J, Vieira V, Meurs N, Woo MS, Lohr C, Morellini F, et al.
Journal of neuroinflammation (2025) 221: 71. . **IHC; tested species: mouse**

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**

Coordinating brain-distributed network activities in memory resistant to extinction.
Clarke-Williams CJ, Lopes-Dos-Santos V, Lefèvre L, Brizee D, Causse AA, Rothaermel R, Hartwich K, Perestenko PV, Toth R, McNamara CG, Sharott A, et al.
Cell (2024) 1872: 409-427.e19. . **IHC; tested species: mouse**

Deficiency of Perry syndrome-associated p150Glued in midbrain dopaminergic neurons leads to progressive neurodegeneration and endoplasmic reticulum abnormalities.
Yu J, Yang X, Zheng J, Sgobio C, Sun L, Cai H
NPJ Parkinson's disease (2023) 91: 35. . **IHC; tested species: mouse**

Neuronal Adenosine A1 Receptor is Critical for Olfactory Function but Unable to Attenuate Olfactory Dysfunction in Neuroinflammation.
Schubert C, Schulz K, Träger S, Plath AL, Omriouate A, Rosenkranz SC, Morellini F, Friese MA, Hirnet D
Frontiers in cellular neuroscience (2022) 16: 912030. . **IHC; tested species: mouse**

A glutaminyl cyclase-catalyzed α-synuclein modification identified in human synucleinopathies.
Hartlage-Rübsamen M, Bluhm A, Moceri S, Machner L, Köppen J, Schenk M, Hilbrich I, Holzer M, Weidenfeller M, Richter F, Coras R, et al.
Acta neuropathologica (2021) : . . **IHC; tested species: mouse**

Presence of ethanol-sensitive and ethanol-insensitive glycine receptors in the ventral tegmental area and prefrontal cortex in mice.
Araya A, Gallegos S, Viveros R, San Martin L, Muñoz B, Harvey RJ, Zeilhofer HU, Aguayo LG
British journal of pharmacology (2021) 17823: 4691-4707. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/213104 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera**: With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies**: Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein.
  For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.