SYSY Antibodies

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TRPV1 extracellular

Cat.No. 444 003; 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**: 1 : 1000 (AP staining) **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 2000 (see remarks) **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 601-629 in mouse TRPV1 (UniProt Id: Q704Y3)
Reactivity	Reacts with: mouse (Q704Y3). Weaker signal: rat (O35433). Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 is required.

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

Background

TRPV1 (Transient receptor potential cation channel subfamily V member 1, also capsaicin receptor and vanilloid receptor 1) is a member of the TRPV group of the transient receptor potential family of ion channels (1, 3). Expression has been mainly reported in sensory neurons of the peripheral and central nervous system (2, 3). The receptor is activated by a wide variety of exogenous and endogenous physical and chemical stimuli like temperature greater than 42°C; acidic conditions (pH<6); vanilloids, like capsaicin, and allyl isothiocyanate (3). In addition to direct activation, TRPV1 channel activity can also be modulated by inflammatory mediators, such as prostaglandins and bradykinin (4). TRPV1 is involved in the detection and regulation of body temperature, as well as in the sensation of noxious environmental stimuli, like scalding heat and pain. TRPV1 acts as ionotropic endocannabinoid receptor with central neuromodulatory effects and is a prime target for the development of analgesics (5).
[[TRPV1 Epitopes.jpg]]

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

Selected References for 444 003

Genetic targeting of myelinated primary afferent neurons using a new NefhCreERT2 knock-in mouse.
Chen JC, Kaczmarczyk L, de-Faria FM, Szczot M, Jackson WS, Larsson M
Scientific reports (2025) 151: 10890. . **IHC; tested species: mouse**

Distributed interfacing by nanoscale photodiodes enables single-neuron light activation and sensory enhancement in 3D spinal explants.
Thalhammer A, Fontanini M, Shi J, Scaini D, Recupero L, Evtushenko A, Fu Y, Pavagada S, Bistrovic-Popov A, Fruk L, Tian B, et al.
Science advances (2022) 832: eabp9257. . **UPTAKE; tested species: mouse**

A NaV1.8FlpO mouse enabling selective intersectional targeting of low threshold C fiber mechanoreceptors and nociceptors.
Chen JCY, Kaczmarczyk L, Jackson WS, Larsson M
Frontiers in molecular neuroscience (2025) 18: 1574219. . **IHC; tested species: mouse**

Selected General References

International Union of Pharmacology. XLIX. Nomenclature and structure-function relationships of transient receptor potential channels.
Clapham DE et al. Pharmacol. Rev. (2005) PubMed:16382100

The expression pattern of TRPV1 in brain.
Menigoz A et al. J. Neurosci. (2011) PubMed:21917785

TRPV1: a target for next generation analgesics.
Premkumar LS et al. Curr Neuropharmacol (2008) PubMed:19305794

The TRPV1 receptor and nociception.
Immke DC et al. Semin. Cell Dev. Biol. (2006) PubMed:17196854

The capsaicin receptor: a heat-activated ion channel in the pain pathway.
Caterina MJ et al. Nature (1997) PubMed:9349813

Access the online factsheet including applicable protocols at https://sysy.com/product/444003 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.