SYSY Antibodies

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Substance P

Cat.No. 459 005; Polyclonal Guinea pig antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin 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 **IP**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P (FFPE)**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 58 to 68 from mouse Protachykinin-1 (UniProt Id: P41539)
Reactivity	Reacts with: mouse (P41539), rat (P06767). Other species not tested yet.
Specificity	The antibody is specific for substance P. It shows no cross-reactivity to neurokinin A, neurokinin B, or the unprocessed precursor protein.

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

Background

Substance P (also designated **SP** or **NK-1**) is a highly conserved peptide that was originally discovered in 1931 (1). It is an undecapeptide belonging to the tachykinin neuropeptide family. Mammalian tachykinins include substance P, neurokinin A and neurokinin B, and they all share the same carboxy-terminal amino acid sequence (2,3).
Substance P is generated by post-translational cleavage of the precursor Protachykinin-1 (2,3).
Substance P is widely distributed throughout the central and peripheral nervous system, including the brain, spinal cord, and nerve fibers and endocrine cells of the gastrointestinal tract (3,4).
Substance P exerts its effects by binding to the neurokinin-1 receptor NK-1R (2,3).
It functions in the central and peripheral nervous systems as a neurotransmitter or neuromodulator (5) and is involved in many biological processes, including intestinal smooth muscle contraction, blood pressure regulation, neurogenic inflammation, nociception and pain transmission (2,5). Furthermore, it has gained attention for its role in complex psychiatric processes including stress, anxiety, and depression (2).

Selected References for 459 005

Neuropathic Pain-Like Responses in a Chronic CNS Injury Model Are Mediated by Corticospinal-Targeted Spinal Interneurons.
Guan X, Zhu Y, Zhong J, Hollis E
The Journal of neuroscience : the official journal of the Society for Neuroscience (2025) 4529: . . **IHC; tested species: mouse**

Substance P/Neurokinin-1 receptor signaling exhibits sex-specific regulation of inhibitory transmission in the central amygdala.
Gashi L, Lubec J, Daneyshar BH, Steinkellner T, Khom S
Neuropharmacology (2026) 292: 110927. . **IHC; tested species: mouse**

Selected General References

An unidentified depressor substance in certain tissue extracts.
V Euler US et al. J Physiol (1931) PubMed:16994201

Substance P and the Neurokinin-1 Receptor: The New CRF.
Schank JR et al. Int Rev Neurobiol (2017) PubMed:29056150

Immunomodulatory properties of substance P: the gastrointestinal system as a model.
Koon HW et al. Ann N Y Acad Sci (2006) PubMed:17192554

Neuroanatomical localisation of Substance P in the CNS and sensory neurons.
Ribeiro-da-Silva A et al. Neuropeptides (2000) PubMed:11049730

Neurotransmitter functions of mammalian tachykinins.
Otsuka M et al. Physiol Rev (1993) PubMed:7682720

Access the online factsheet including applicable protocols at https://sysy.com/product/459005 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.