SYSY Antibodies

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HNK-1 (CD57)

Cat.No. HS-531 008; Recombinant rabbit antibody, 50 µg recombinant IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg purified recombinant IgG, lyophilized. 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**: not tested yet **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: 1 : 400 up to 1 : 1000 **ELISA**: not tested yet
Clone	Rb-HNK-1
Subtype	IgG1 (κ light chain)
Immunogen	Membrane extract of human lymphoblastoid cell line HSB-2 (UniProt Id: Q9P2W7)
Reactivity	Reacts with: human (Q9P2W7). No signal: mouse, rat. Other species not tested yet.
Remarks	This antibody is a chimeric antibody based on the monoclonal mouse antibody clone HNK-1. The constant regions of the heavy and light chains have been replaced with rabbit specific sequences. The antibody can therefore be used with standard anti-rabbit secondary reagents. The antibody has been expressed in mammalian cells. **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

The human natural killer-1 (HNK-1) glyco-epitope, also known as LEU-7 or CD57, was first identified by a monoclonal antibody that recognizes a subset of human natural killer (NK) cells (1). This epitope features a unique trisaccharide structure, consisting of a 3-O-sulfated glucuronic acid linked to N-acetyl-lactosamine (HSO_3-3GlcAß1-3Galß1-4GlcNAc-) and is primarily expressed on glycolipids and glycoproteins within the nervous system. Notable carriers are NCAM, L1, MAG, tenascin-R and tenascin-C (2). Studies in mice lacking HNK-1 expression reveal abnormal brain function, including impaired synaptic plasticity, deficits in dendritic spine maturation and disrupted spatial learning (2-4). In humans, HNK-1 is implicated in various central nervous system (CNS) disorders. For instance, autoantibodies targeting HNK-1 have been detected in certain neuropathies (5). Beyond its role in neural development, HNK-1 also appears to function as tumor suppressor. Elevated HNK-1 expression has been associated with improved survival outcomes in patients with prostate cancer or astrocytic tumors (6,7). In the field of immunology, HNK-1 is most commonly referred to as CD57. It is expressed on a subset of immune cells, particularly T cells and natural killer (NK) cells, and is associated with terminal differentiation and cellular senescence (8).

Selected General References

A differentiation antigen of human NK and K cells identified by a monoclonal antibody (HNK-1).
Abo T et al. J Immunol (1981) PubMed:6790607

Relevance of anti-HNK1 antibodies in the management of anti-MAG neuropathies.
Delmont E et al. J Neurol (2019) PubMed:31089861

The role of human natural killer-1 (HNK-1) carbohydrate in neuronal plasticity and disease.
Morise J et al. Biochim Biophys Acta Gen Subj (2017) PubMed:28709864

CD57 in human natural killer cells and T-lymphocytes.
Kared H et al. Cancer Immunol Immunother (2016) PubMed:26850637

HNK-1 glycan functions as a tumor suppressor for astrocytic tumor.
Suzuki-Anekoji M et al. J Biol Chem (2011) PubMed:21784847

HNK-1 (human natural killer-1) glyco-epitope is essential for normal spine morphogenesis in developing hippocampal neurons.
Morita I et al. Neuroscience (2009) PubMed:19796667

Mice deficient in nervous system-specific carbohydrate epitope HNK-1 exhibit impaired synaptic plasticity and spatial learning.
Yamamoto S et al. J Biol Chem (2002) PubMed:12032138

Immunohistochemical study of HNK-1 (Leu-7) antigen in prostate cancer and its clinical significance.
Liu X et al. Chin Med J (Engl) (1995) PubMed:7555270

Access the online factsheet including applicable protocols at https://sysy.com/product/HS-531008 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.