SYSY Antibodies

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TNFSF14 (LIGHT)

Cat.No. 543 003; 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 : 500 up to 1 : 1000 (see remarks) **IHC-P (FFPE)**: 1 : 400
Immunogen	Synthetic peptide corresponding to residues near the amino terminus of mouse TNFSF14 (UniProt Id: Q9QYH9)
Reactivity	Reacts with: mouse (Q9QYH9). Weaker signal: rat. No signal: human (O43557). 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

Tumor necrosis factor superfamily member 14 (TNFSF14), also known as LIGHT or CD258, is a 29 kDa type II transmembrane protein belonging to the TNF superfamily (1). It is an inducible molecule that is transiently expressed as a membrane-bound protein on activated CD4 and CD8 T cells, natural killer (NK) cells, neutrophils, dendritic cells (DCs), and other innate immune cells. TNFSF14 can also be released as a soluble form following proteolytic cleavage (2–4).
TNFSF14 regulates both innate and adaptive immune responses through engagement of two principal receptors: the herpesvirus entry mediator (HVEM; TNFRSF14) and the lymphotoxin-β receptor (LTβR; TNFRSF3) (4). HVEM is broadly expressed across immune cell populations, including T and B lymphocytes, whereas LTβR is primarily expressed on endothelial, epithelial, and myeloid cells (5). Signaling through these receptors mediates diverse immunological functions that depend on cellular context, receptor expression, ligand availability, and the local inflammatory milieu (6).
Functionally, TNFSF14 expression on DCs or T cells provides costimulatory signals that enhance T cell proliferation and cytokine production (7). In contrast, interaction with LTβR contributes to lymphoid tissue organization, promotes tumor vasculature normalization, and can induce apoptosis in certain tumor cell types (8). In humans, TNFSF14 can also bind Decoy Receptor 3 (DcR3), a soluble receptor that is upregulated in inflammatory diseases and cancer but is absent in mice and rats (6,9). Collectively, these properties position TNFSF14 as an important immunoregulatory molecule and a promising target for therapeutic modulation in inflammatory diseases and cancer.

Selected General References

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A bioactive soluble recombinant mouse LIGHT promotes effective tumor immune cell infiltration delaying tumor growth.
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Mousa RS et al. Front Immunol (2025) PubMed:41030453

Shining a LIGHT on myeloid cell targeted immunotherapy.
Shuptrine CW et al. Eur J Cancer (2023) PubMed:37167762

TNFSF14: LIGHTing the Way for Effective Cancer Immunotherapy.
Skeate JG et al. Front Immunol (2020) PubMed:32499782

Reverse Signaling of Tumor Necrosis Factor Superfamily Proteins in Macrophages and Microglia: Superfamily Portrait in the Neuroimmune Interface.
Lee WH et al. Front Immunol (2019) PubMed:30838001

Decoy receptor 3: an endogenous immunomodulator in cancer growth and inflammatory reactions.
Hsieh SL et al. J Biomed Sci (2017) PubMed:28629361

Licensed human natural killer cells aid dendritic cell maturation via TNFSF14/LIGHT.
Holmes TD et al. Proc Natl Acad Sci U S A (2014) PubMed:25512551

HVEM/LIGHT/BTLA/CD160 cosignaling pathways as targets for immune regulation.
del Rio ML et al. J Leukoc Biol (2010) PubMed:20007250

Access the online factsheet including applicable protocols at https://sysy.com/product/543003 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.