

L1CAM (NCAM-L1)

Cat.No. 526 008; 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 ₂ O 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) (see remarks) IP: not tested yet ICC: 1 : 500 IHC: 1 : 500 IHC-P (FFPE): 1 : 200
Clone	Rb557B6
Subtype	IgG1 (κ light chain)
Immunogen	Protein complex consisting of L1CAM cross-linked with a monoclonal antibody to the L2/HNK-1 carbohydrate epitope and KLH (UniProt Id: P11627)
Reactivity	Reacts with: mouse (P11627). No signal: rat. Other species not tested yet.
Remarks	This antibody is a chimeric antibody based on the monoclonal rat antibody 557B6. 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. WB: Due to the large size of this protein, we recommend NuPAGE 3-8% Tris-Acetate gels for SDS-PAGE.

Background

The **Neural Cell Adhesion Molecule L1** (NCAM-L1), also known as L1CAM or CD171, is a transmembrane glycoprotein belonging to the immunoglobulin superfamily. Structurally, L1CAM comprises six immunoglobulin-like domains followed by five fibronectin type III domains in its extracellular region, a single transmembrane segment, and a short cytoplasmic tail (1, 2). L1CAM is predominantly expressed on the surface of neurons mediating neuron-neuron adhesion and neurite outgrowth (3). It is also found in non-neuronal cells such as immature oligodendrocytes, Schwann cells, and certain immune cells like T cells (4, 5). Moreover, L1CAM expression has been observed in a variety of tumors across different organ systems (6). Mutations or dysregulation of L1CAM are associated with several neurological disorders collectively termed L1 syndrome. These comprise X-linked hydrocephalus, MASA syndrome (mental retardation, aphasia, shuffling gait, and adducted thumbs), and spastic paraplegia type 1 (7).

Selected General References

- Neural adhesion molecule L1 as a member of the immunoglobulin superfamily with binding domains similar to fibronectin. Moos M et al. *Nature* (1988) PubMed:3412448
- Interaction of L1CAM with LC3 Is Required for L1-Dependent Neurite Outgrowth and Neuronal Survival. Loers G et al. *Int J Mol Sci* (2023) PubMed:37569906
- Case Report: Two Novel L1CAM Mutations in Two Unrelated Chinese Families With X-Linked Hydrocephalus. Zhou H et al. *Front Genet* (2022) PubMed:35571029
- Expression of neural cell adhesion molecule L1 (CD171) in neuroectodermal and other tumors: An immunohistochemical study of 5155 tumors and critical evaluation of CD171 prognostic value in gastrointestinal stromal tumors. Inaguma S et al. *Oncotarget* (2016) PubMed:27419370
- L1CAM promotes enrichment of immunosuppressive T cells in human pancreatic cancer correlating with malignant progression. Grage-Griebenow E et al. *Mol Oncol* (2014) PubMed:24746181
- "CRASH"ing with the worm: insights into L1CAM functions and mechanisms. Chen L et al. *Dev Dyn* (2010) PubMed:20225255
- Aberrant splicing of neural cell adhesion molecule L1 mRNA in a family with X-linked hydrocephalus. Rosenthal A et al. *Nat Genet* (1992) PubMed:1303258
- Inhibition of Schwann cell myelination in vitro by antibody to the L1 adhesion molecule. Wood PM et al. *J Neurosci* (1990) PubMed:2230951

Access the online factsheet including applicable protocols at <https://sysy.com/product/526008> or scan the QR-code.



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

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.