

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: 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 its large size, L1CAM requires special gel-electrophoresis and Western blot protocols for visualization by immunoblotting. Excellent results can be obtained with NuPAGE 3-8% TRIS-Acetate gradient gels from Invitrogen.

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://susy.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 our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.