Human L1CAM Alexa Fluor® 647-conjugated Antibody

Recombinant Monoclonal Rabbit IgG Clone # 2702C
Catalog Number: FAB7773R
100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human L1CAM in direct ELISAs.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2702C
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Mouse myeloma cell line NS0 derived Human L1CAM (Ile20Glu1120) & (Arg864Glu1120) Accession # CAA42508
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

Flow Cytometry	Titration recommended for optimal concentration with starting range of 0.1-1 µg/1 million cells. Sample used for this experiment was HeLa human cervical epithelial cell line.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Protect from light. Do not freeze.** • 12 months from date of receipt, 2 to 8 °C as supplied.

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BACKGROUND

L1CAM (Neural cell adhesion molecule L1, also known as L1, CD171 and NCAM-L1) is a founding member of the L1 family, Immunoglobulin (Ig) superfamily of molecules (1-4). It was initially described as a 200-230 kDa neural adhesion molecule that likely played a key role in mouse nervous system development (4-6). Subsequent studies have confirmed the adhesive nature of the molecule, and expanded its activities in both neural and nonneural cell types. L1 is now recognized to play a key role in cell migration, adhesion, neurite outgrowth, myelination and neuronal differentiation (1, 7, 8). It does so through a series of *cis* and *trans* interactions that involve multiple copartners and target receptors (1, 3, 6, 8). Cells known to express L1 are varied, and include immature oligodendrocytes (9), CD4+ T cells, B cells and monocytes (10), both motor and sensory Schwann cells (11, 12), intestinal epithelial progenitor cells (12), cerebellar granule and Purkinje cells (5, 13, 14), and multiple tumor cells such as melanoma (15) plus pancreatic duct and lung carcinoma cells (16, 17). Human L1 was first identified as a 215 kDa glycoprotein on the surface of SKNAS neuroblastoma cells (18). Subsequent cloning established its precursor as being 1257 amino acids (aa) in length (19, 20). The molecule is a type I transmembrane (TM) protein that contains an 1101 aa extracellular region (aa 20-1120) plus a 114 aa cytoplasmic domain (aa 1144-1257). The extracellular region possesses six C2-type Ig-like domains (aa 35-607) followed by five fibronectin (FN) type III domains (aa 612-1108). As noted, L1 participates in multiple *cis* and *trans* interactions, and some of these interaction sites have been mapped to select Ig or FN domains. For instance, Ig-like domains #1, 2 and 6 associate with NP-1, L1 (homotypic binding), and various integrins, respectively (21-23). The latter interaction is mediated by one (in human) or two (in mouse) RGD motifs (23, 24). Other molecules that heterotypically associate with L1 include NCAM, neurocan, CD24 and EGFR. The cytoplasmic tail contains no kinase motifs, but does possess a FIGQY peptide that interacts with ankyrin, and an RSLE sequence that mediates clathrin-associated endocytosis (1). There are two splice variants, one each in the intracellular and extracellular domains. A deletion of RSLE adversely affects endocytosis, while a Leu substitution for aa 26-31 interfers with numerous heterotypic interactions (25, 26). In general, the full-length L1 molecule is a neuron-associated isoform. L1 is known to undergo proteolysis, either by plasmin or ADAMs. This generates soluble isoforms of varying sizes (140-200 kDa) that retain bioactivity, and which can be incorporated into the surrounding ECM (5, 13, 27-30). The membrane fragments (30-80 kDa) undergo further processing, most importantly by γ-secretase, to generate a soluble 28 kDa intracellular domain. This domain is SUMOylated, and believed to possess an NLS at Lys1147. Upon presumed entry into the nucleus, L1 is posited to activate L1-responsive genes. Human and mouse L1 precursors share 88% aa sequence identity.

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