

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse L1CAM in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human (rh) ALCAM, rhBCAM, rhEPCAM, rhMCAM, rhNCAM, rhNCAM-L1, rhOBCAM, recombinant mouse (rm)MAdCAM-1, or rmOCAM is observed.
Source	Monoclonal Rat IgG _{2A} Clone # 555
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse cerebellum-derived partially purified L1CAM
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *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.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10 ⁶ cells	Mouse splenocytes

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. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

L1CAM, also known as Neural Cell Adhesion Molecule L1 (NCAM-L1) and CD171, is a 200-220 kDa type I transmembrane glycoprotein of the immunoglobulin superfamily and L1/neurofascin/NgCAM family (1, 2). L1CAM is expressed by neurons, especially by growing axons on their growth cones (2). Non-neuronal cells such as Schwann cells, astrocytes, epithelial cells, and cells of myelomonocytic and lymphoid origin also express L1CAM (2). Mature mouse L1CAM consists of a 1104 amino acid (aa) extracellular domain (ECD) with 6 Ig-like domains and 5 fibronectin type-III domains, a 23 aa transmembrane region, and a 114 aa cytoplasmic tail (3). Mouse L1CAM shares 88% aa sequence identity with human L1CAM. L1CAM is critical for neural development. Specifically, L1CAM plays a key role in neuronal cell migration, axon outgrowth, axon fasciculation, synaptogenesis, and myelination (4). L1CAM mediates homophilic cell-cell interaction but also binds heterophilically with Axonin-1, CD24, CD9, Neurocan and several Integrins (4). L1CAM can undergo membrane-proximal cleavage by ADAM10 and ADAM17, leading to the release of the soluble ECD and the generation of a membrane-bound stub (4). The soluble ECD can serve as a substrate for integrin-mediated cell adhesion, thereby stimulating cellular motility and cell migration (4). L1CAM also plays a role in the ontogeny of human tumors, and its expression is linked to poor prognosis (1). Overexpression promotes tumor cell invasion and motility, growth in nude mice, and tumor metastasis (1). Proteolytic processing by ADAM10 and presenilin/γ-secretase is essential for the nuclear signaling of L1CAM in human carcinoma cell lines (1). Defects in L1CAM are the cause of the neurological MASA/CRASH syndrome (5, 6).

References:

1. Riedle, S. *et al.* (2009) *Biochem. J.* **420**:391.
2. Kenwright, S. and P. Doherty (1998) *Bioessays* **20**:668.
3. Crossin, K.L. and L.A. Krushel (2000) *Dev. Dyn.* **218**:260.
4. Maretzky, T. *et al.* (2005) *Mol. Cell. Biol.* **25**:9040.
5. Kamiguchi, H. *et al.* (1998) *Mol. Cell Neurosci.* **12**:48.
6. Striha, L. *et al.* (2000) *J. Child Neurol.* **15**:239.

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