Anti-L1CAM antibody [UJ127] ab3200

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Overview

Product name	Anti-L1CAM antibody [UJ127]
Description	Mouse monoclonal [UJ127] to L1CAM
Specificity	ab3200 is useful in the identification of primitive neuroectodermal tumors. It binds to tumors of neuroectodermal and glial origin. It does not bind to pediatric or adult brain.
Tested applications	ICC/IF, IHC-P, IP, WB
Species reactivity	**Reacts with:** Human
Immunogen	Homogenous suspension of 16 week human fetal brain.
Positive control	IMR-5 cells.
General notes	L1CAM can be detected between 200-220 kD. In brain samples it is typically seen at ~ 200 kD. When the protein is overexpressed in vitro it is often detected as a doublet with bands at 200 and 220 kD. The unglycosylated, unprocessed L1CAM is ~ 140-150 kDa. The protein has 21 putative N-glycosylation sites on the extracellular portion of the protein which, when they are all glycosylated, results in a detected MW of 200-220 kD depending upon how many residues are actually glycosylated. L1CAM can be cleaved by the metalloprotease ADAM10 resulting in fragments of 180 kD and 40 kD. L1CAM can also be cleaved by plasmin resulting in fragments of 140 kD and 80 kD. In theory, therefore, one could detect bands at ~220, 200, 180, 140, 80 and 40 kD.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer	10mM PBS, pH7.4, 0.2%BSA, 0.09% sodium azide
Purity	Protein G purified
Clonality	Monoclonal
Clone number	UJ127
Isotype	IgG1
Light chain type	kappa

Applications

Our Abpromise guarantee covers the use of **ab3200** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

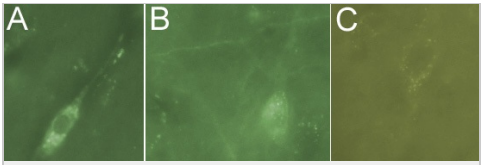
Application	Abreviews	Notes
ICC/IF	★★★☆☆	Use at an assay dependent dilution.
IHC-P	★★★★★	Use a concentration of 1 - 2 µg/ml. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.
IP		Use at 2 µg/mg of lysate.
WB	★★★★★	Use a concentration of 1 - 2 µg/ml. Detects a band of approximately 200-220 kDa. It may also detect smaller cleavage fragments (please see Notes below).

Target

Function	Cell adhesion molecule with an important role in the development of the nervous system. Involved in neuron-neuron adhesion, neurite fasciculation, outgrowth of neurites, etc. Binds to axonin on neurons.
Involvement in disease	Defects in L1CAM are the cause of hydrocephalus due to stenosis of the aqueduct of Sylvius (HSAS) [MIM:307000]. Hydrocephalus is a condition in which abnormal accumulation of cerebrospinal fluid in the brain causes increased intracranial pressure inside the skull. This is usually due to blockage of cerebrospinal fluid outflow in the brain ventricles or in the subarachnoid space at the base of the brain. In children is typically characterized by

	enlargement of the head, prominence of the forehead, brain atrophy, mental deterioration, and convulsions. In adults the syndrome includes incontinence, imbalance, and dementia. HSAS is characterized by mental retardation and enlarged brain ventricles. Defects in L1CAM are the cause of mental retardation-aphasia-shuffling gait-adducted thumbs syndrome (MASA) [MIM:303350]; also known as corpus callosum hypoplasia, psychomotor retardation, adducted thumbs, spastic paraparesis, and hydrocephalus or CRASH syndrome. MASA is an X-linked recessive syndrome with a highly variable clinical spectrum. Main clinical features include spasticity and hyperreflexia of lower limbs, shuffling gait, mental retardation, aphasia and adducted thumbs. The features of spasticity have been referred to as complicated spastic paraplegia type 1 (SPG1). Some patients manifest corpus callosum hypoplasia and hydrocephalus. Inter- and intrafamilial variability is very wide, such that patients with hydrocephalus, MASA, SPG1, and agenesis of corpus callosum can be present within the same family. Defects in L1CAM are the cause of spastic paraplegia X-linked type 1 (SPG1) [MIM:303350]. Spastic paraplegia is a degenerative spinal cord disorder characterized by a slow, gradual, progressive weakness and spasticity of the lower limbs. Note=Defects in L1CAM may contribute to Hirschsprung disease by modifying the effects of Hirschsprung disease-associated genes to cause intestinal aganglionosis. Defects in L1CAM are a cause of partial agenesis of the corpus callosum (ACCPX) [MIM:304100]. A syndrome characterized by partial corpus callosum agenesis, hypoplasia of inferior vermis and cerebellum, mental retardation, seizures and spasticity. Other features include microcephaly, unusual facies, and Hirschsprung disease in some patients.
Sequence similarities	Belongs to the immunoglobulin superfamily. L1/neurofascin/NgCAM family. Contains 5 fibronectin type-III domains. Contains 6 Ig-like C2-type (immunoglobulin-like) domains.
Cellular localization	Cell membrane.

Anti-L1CAM antibody [UJ127] images



Immunocytochemistry/ Immunofluorescence - L1CAM antibody [UJ127] (ab3200)

ab3200 at a dilution of 1/1000, staining L1CAM (green; Alexa 488 secondary at 1/2000) on 30µm coronal rat brain tissue sections in free floating IHC (see protocol link for detailed description). Images showing neuron body, cytoplasm and axon labeling: [A] neuron; 40x objective [B] neuron and axons; 40x objective and [C] punctate cytoplasmic labeling. Images coloured in Photoshop.

NB: No labeling observed following omission of primary antibody.

Sections were viewed using an Axioplan 2 Imaging microscope (Imaging Associates) fitted with 10x, 20x and 40x Plan-Neofluorobjectives (Zeiss, Germany) and images were taken using a AxioCam Hrm digital camera (Zeiss, Germany) and AxioVision software (Imaging Associates).

Western blot - L1CAM antibody [UJ127] (ab3200)

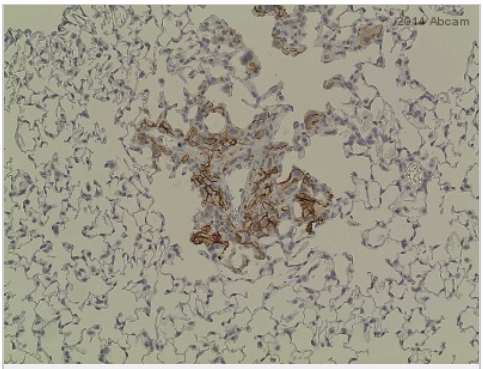
Anti-L1CAM antibody [UJ127] (ab3200) at 1 µg/ml + Brain (Human) Tissue Lysate - adult normal tissue (ab29466) at 10 µg

Secondary
Goat Anti-Mouse IgG H&L (HRP) preadsorbed (ab97040) at 1/5000 dilution
developed using the ECL technique

Performed under reducing conditions.

Observed band size : 230 kDa
Additional bands at : 75 kDa. We are unsure as to the identity of these extra bands.

Exposure time : 8 minutes L1CAM contains an exstensive number of potential glycosylation sites (SwissProt) which may explain its migration at a higher molecular weight than predicted.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-L1CAM antibody [UJ127] (ab3200)

This image is courtesy of an Abreview submitted by Victoria Thompson

ab3200 staining L1CAM in human cancer cells in mouse lung tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 1% BSA for 1 hour at 25°C; antigen retrieval was by heat mediation in a citrate buffer, pH 6. Samples were incubated with primary antibody (1/100 in PBS + 1% BSA) for 2 hours at 25°C. A Biotin-conjugated goat anti-mouse IgG polyclonal (1/1000) was used as the secondary antibody.

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