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SM1659 Monoclonal Antibody to Growth Cone - Supernatant

Alternate names: Growth Cone Marker

Quantity: 2 ml

Background: Subsequent investigation has identified this protein to be 40S ribosomal protein SA, also known as 37 kDa laminin receptor precursor or Laminin receptor 1 (Baloui et al. 2004). 40S ribosomal protein SA is a 296 amino acid ~37kDa membrane, cytoplasmic and nuclear protein required for the assembly and/or stability of the 40S ribosomal subunit. In vertebrate evolution the molecule has acquired a secondary function as a laminin receptor (UniProt: P50890). In growth cones expression is notable particularly in filopodia and lamellipodia in developing rat CNS and embryonic neurons in culture (Stettler et al. 1999).
40S ribosomal protein SA interacts with the filamentous actin cytoskeleton and therefore may be involved in growth cone motility (Stettler et al. 1999).

Host / Isotype: Mouse / IgM

Clone: 2G13

Immunogen: Embryonic chick tectal membranes.
Spleen cells from immunised mice were fused with cells of the mouse NS1 myeloma cell line.

Format: **State:** Liquid Tissue Culture Supernatant
Preservatives: 0.09% Sodium Azide

Applications: **Immunohistochemistry on Frozen Sections.**
Immunohistochemistry on Paraffin Sections.
Protein digestion pretreatment of paraffin sections ***not required***.
Antigen retrieval using heat treatment prior to staining of paraffin sections ***not required***.
Clone *2G13* has also been reported to work in **Western Blotting**.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: This antibody recognizes intracellular 2G13P which is localized to Growth Cones, particularly filopodia and lamellipodies in developing Rat CNS and embryonic neurons in culture.
Studies suggest that *2G13P* interacts with the filamentous actin cytoskeleton and therefore may be involved in Growth Cone motility (*Stettler et al.* 1999).
Mouse anti Growth Cone antibody, Clone *2G13* has been used for the detection of growth cones by immunohistochemistry and identification of 40S ribosomal protein SA by Western blotting in Chicken and Rat samples (*Baloui et al.* 2004).
Species: Chicken, Rat and Mouse.
Other species not tested.

Storage: Store undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

For research and in vitro use only. Not for diagnostic or therapeutic work.
Material Safety Datasheets are available at www.acris-antibodies.com or on request.

General Readings:

1. Stettler O, Bush MS, Kasper M, Schlosshauer B, Gordon-Weeks PR. Monoclonal antibody 2G13, a new axonal growth cone marker. J Neurocytol. 1999 Dec;28(12):1035-44. PubMed PMID: 11054903.
2. Baloui H, von Boxberg Y, Vinh J, Weiss S, Rossier J, Nothias F, et al. Cellular prion protein/laminin receptor: distribution in adult central nervous system and characterization of an isoform associated with a subtype of cortical neurons. Eur J Neurosci. 2004 Nov;20(10):2605-16. PubMed PMID: 15548204.
3. Espejo C, Penkowa M, Demestre M, Montalban X, Martínez-Cáceres EM. Time-course expression of CNS inflammatory, neurodegenerative tissue repair markers and metallothioneins during experimental autoimmune encephalomyelitis. Neuroscience. 2005;132(4):1135-49. PubMed PMID: 16078373.
4. Kim SR, Chen X, Oo TF, Kareva T, Yarygina O, Wang C, et al. Dopaminergic pathway reconstruction by Akt/Rheb-induced axon regeneration. Ann Neurol. 2011 Jul;70(1):110-20. doi: 10.1002/ana.22383. Epub 2011 Mar 17. PubMed PMID: 21437936.

Pictures:

Staining of Growth Cones of primary olfactory neurons within the olfactory bulb in the developing Rat brain using Growth Cone antibody Cat.-No SM1659 (Clone 2G13).