

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects mouse Semaphorin 7A in direct ELISAs and Western blots. In direct ELISAs, 100% cross-reactivity with recombinant human (rh) Semaphorin 7A is observed and no cross-reactivity with rhSemaphorin 3A, 3B, 6D, or recombinant mouse Semapho
Source	Monoclonal Rat IgG _{2B} Clone # 238906
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Semaphorin 7A Gln45-Ala646 Accession # Q9QUR8
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% 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.

Western Blot Optimal dilution of this antibody should be experimentally determined.

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

BACKGROUND

Semaphorin 7A (Sema7A, designated CD108, previously Sema K1 or Sema L), is an ~80 kDa membrane-anchored glycoprotein that is a member of the Semaphorin family of axon guidance molecules (1-4). On human erythrocytes, it is the John Milton Hagen (JMH) blood group antigen (4). Sema7A is the only known Class 7 or glycosphosphatidylinositol (GPI)-linked semaphorin; its expression is concentrated in the brain, spleen and thymus (1-5). Mouse Sema7A cDNA encodes a 44 amino acid (aa) signal sequence, a 602 aa extracellular domain (ECD) including Sema and C2-type Ig-like domains, and an 18 aa propeptide/GPI membrane anchor signal sequence. Mature mouse Sema7A shares 89%, 98%, 85%, 86% and 89% aa identity with corresponding human, rat, bovine, canine and equine Sema7A, respectively. The Sema7A sema domain contains an RGD integrin interaction motif (4). Although it binds plexin-C1 in vitro and may be coexpressed with it, many of its activities depend on interaction with β1 integrins such as α1β1 (6-10). Sema7A signaling through the two receptors may cause opposing effects (8). Sema7A is an immune semaphorin, with expression and activity on CD4⁺CD8⁺ thymocytes, activated T cells, macrophages and microglia (2, 9-12). T cell Sema7A interacts with monocytic cells, stimulating their chemotaxis, production of pro-inflammatory cytokines, and dendritic differentiation (5, 6). However, on the T cells themselves, Sema7A downregulates TCR signaling by promoting TCR internalization, modulating T cell responses (9). In lung macrophages, Sema7A is induced by TGF-β and participates in TGF-β-induced lung fibrosis (12). Sema7A is also expressed on pre-osteoblasts and osteoclasts, where it promotes migration and fusion, respectively; on keratinocytes, where it promotes melanocyte spreading and dendricity; and on some neurons, for example, promoting axon outgrowth in the developing olfactory tract (8, 10, 13).

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.