Human Semaphorin 3C Antibody

Monoclonal Mouse IgG_{2B} Clone # 757820

Catalog Number: MAB5570

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Semaphorin 3C in direct ELISAs. In direct ELISAs, 100% cross-reactivity with recombinant mouse Semaphorin 3C and no cross-reactivity with recombinant human Semaphorin 3A, 3B, 3D, or 3F is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 757820
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Semaphorin 3C Gly21-Ser738 Accession # Q99985
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

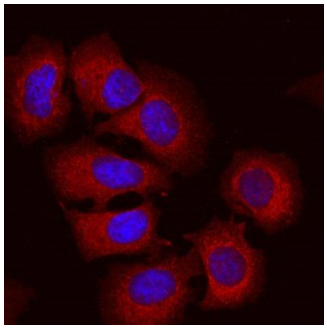
APPLICATIONS

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
Immunocytochemistry	8-25 µg/mL	See Below

DATA

Immunocytochemistry



Semaphorin 3C in MCF-7 Human Cell Line. Semaphorin 3C was detected in immersion fixed MCF-7 human breast cancer cell line using Mouse Anti-Human Semaphorin 3C Monoclonal Antibody (Catalog # MAB5570) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Semaphorin 3C (Sema3C; previously semaE) is one of six Class 3 secreted semaphorins which share 40-50% amino acid (aa) identity. Class 3 semaphorins are potent chemorepellents that function in axon and/or vascular guidance during development, and may be upregulated in tumor progression (1, 2). The 751 amino acid (aa) mouse Sema3C is highly modular. It contains a 20 aa signal sequence, an ~500 aa N-terminal Sema domain that forms a β-propeller structure similar to that found in integrin molecules, a cysteine knot, a furin-type cleavage site, an Ig-like domain, and a C-terminal basic domain (1-3). Covalent dimerization plus cleavage at the C-terminus are required for activity of class 3 semaphorins (4). Mouse Sema3C shares at least 95% aa identity with human, rat, cow and dog Sema3C, and 89% and 75% aa identity with chick and zebrafish Sema3C, respectively. Type 3 semaphorins transduce signals through transmembrane plexins, either directly or by binding associated neuropilin receptors (1, 2). Sema3C signaling is transduced by Plexin-D1 indirectly via Neuropilin-1 or Neuropilin-2 receptors (5). Sema3C is expressed in all somitic motor neurons, in lung buds and in cardiac neural crest cells during development (1, 5-8). Sema3C activates integrins in certain cells so, in addition to its repulsive activities, it sometimes acts as a chemoattractant (6, 9). In the developing nervous system, this chemoattraction appears to complement Sema3A repulsion in adjacent cell layers (1, 6, 7). Sema3C also provides an attractive force opposing Sema6A and Sema6B to guide migration of neural crest endothelial cells to the cardiac outflow tract (10). Consequently, defects in aortic arch formation occur when Sema3C or Plexin-D1 genes or Sema3C-neuropilin interactions are disrupted (5, 11, 12).

References:

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