Human/Mouse Semaphorin 3E Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF3239

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human Semaphorin 3E in direct ELISAs and Western blots. In direct ELISAs, approximately 30% cross-reactivity with recombinant mouse (rm) Semaphorin 3E is observed and less than 10% cross-reactivity with rmSemaphorin 3A, rmSemaphorin 3B, rmSemaphorin 3C, rmSemaphorin 3F, and recombinant human (rh) Semaphorin 3A, rhSemaphorin 3C, rhSemaphorin 3D, and rhSemaphorin 3F is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Semaphorin 3E Thr25-Ser775 (Arg557Ala and Arg560Ala) Accession # O15041
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.

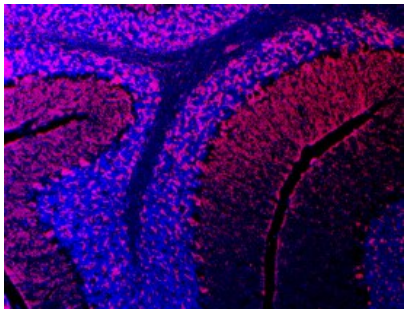
APPLICATIONS

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
Western Blot	0.1 µg/mL	Recombinant Human Semaphorin 3E (Catalog # 3239-S3)
Immunocytochemistry	5-15 µg/mL	Immersion fixed MDA-MB-453 human breast cancer cell line
Immunohistochemistry	5-15 µg/mL	See Below

DATA

Immunohistochemistry



Semaphorin 3E in Mouse Brain. Semaphorin 3E was detected in immersion fixed frozen sections of adult mouse brain using Goat Anti-Human Semaphorin 3E Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3239) at 10 µg/mL overnight at 4 °C. Tissue was stained using the Northern-Lights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cerebellum. View our protocol for Fluorescent IHC Staining of Frozen Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
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 3E (Sema3E; previously SemaH) is one of six Class 3 (secreted) semaphorins which in the human share 40-50% amino acid (aa) identity. Class 3 semaphorins are potent chemorepellents that function in axon guidance and/or vascular tip cell guidance during development (1). Sema3E is highly expressed by a subset of motor neurons in developing somites, where it acts as a repulsive cue for PlexinD1-expressing endothelial cells of adjacent intersomitic vessels (2, 3). Crystal structures of semaphorins reveal that the 500 aa N-terminal Sema domain forms a seven-blade b-propeller similar to that found in integrin molecules; 14 conserved cysteine residues and one or more N-glycosylation sites are thought critical for forming the secondary structure (4). C-terminal to the Sema domain, Sema3E has a consensus sequence for furin cleavage which, when used, creates a 61kDa form that does not dimerize and is highly expressed in tumor cell lines with metastatic potential (5, 6). Further C-terminal are a cysteine-knot plexin/semaphorin/integrin (PSI) domain, an Ig-like domain, a cysteine for dimerization and a basic domain containing another furin site. Dimerization and cleavage at the C-terminal site are required for repulsing activity of class 3 semaphorins (7). Human Sema3E shares 90%, 85% and 57% aa identity with mouse, cow and dog Sema3E, respectively. Like other semaphorins, Sema3E signaling is transduced by a transmembrane Plexin dimer, which also has a Sema domain and is coupled to kinase pathways. Unlike other Class 3 semaphorins, Sema3E binds directly to its plexin and does not require interaction with a neuropilin for activity (7). Genetic disruption of either Sema3E or PlexinD1 creates mouse mutants with excessive and disorganized vascular growth and branching, indicating the importance of this ligand-receptor pair for vascular guidance (3, 8).

References:

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