

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Human                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | Detects human Semaphorin 3E in direct ELISAs and Western blots. In Western blots, less than 10% cross-reactivity with recombinant human (rh) Semaphorin 3A, 3B, 6A, 6B, 6C, 6D, 7A, rmSemaphorin 3C, 3E, or 3F is observed.                                                 |
| <b>Source</b>             | Monoclonal Mouse IgG <sub>1</sub> Clone # 400520                                                                                                                                                                                                                            |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant                                                                                                                                                                                                                  |
| <b>Immunogen</b>          | Mouse myeloma cell line NS0-derived recombinant human Semaphorin 3E<br>Thr25-Ser775 (Arg557Ala and Arg560Ala)<br>Accession # O15041                                                                                                                                         |
| <b>Conjugate</b>          | Alexa Fluor 700<br>Excitation Wavelength: 675-700 nm<br>Emission Wavelength: 723 nm                                                                                                                                                                                         |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*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 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).

## PRODUCT SPECIFIC NOTICES

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