Human Semaphorin 3E
Alexa Fluor® 488-conjugated Antibody

Monoclonal Mouse IgG_1 Clone # 400513

Catalog Number: IC32391G

100 TESTS

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Semaphorin 3E in direct ELISAs. In direct ELISAs, approximately 15% cross-reactivity with recombinant human (rh) Semaphorin 3B is observed and no cross-reactivity with rhSemaphorin 6A is observed.
Source	Monoclonal Mouse IgG_1 Clone # 400513
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Semaphorin 3E Thr25-Ser775 (Arg557Ala and Arg560Ala) Accession # O15041
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *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.

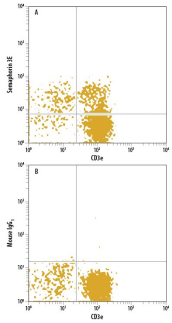
APPLICATIONS

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.*

	Recommended Concentration	Sample
Intracellular Staining by Flow Cytometry	5 µL/10^6 cells	See Below

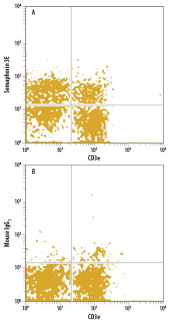
DATA

Intracellular Staining by Flow Cytometry



Detection of Semaphorin 3E in Human PBMCs by Flow Cytometry. Human peripheral blood mononuclear cells (PBMCs) treated with PHA for were stained with Mouse Anti-Human CD3ε APC-conjugated Monoclonal Antibody (Catalog # FAB100A) and either (A) Mouse Anti-Human Semaphorin 3E Alexa Fluor® 488-conjugated Monoclonal Antibody (Catalog # IC32391G) or (B) Mouse IgG_1 Alexa Fluor 488 Isotype Control (Catalog # IC002G). To facilitate intracellular staining, cells were fixed with Flow Cytometry Fixation Buffer (Catalog # FC004) and permeabilized with Flow Cytometry Permeabilization/Wash Buffer I (Catalog # FC005). View our protocol for Staining Intracellular Molecules.

Intracellular Staining by Flow Cytometry



Detection of Semaphorin 3E in Mouse Splenocytes by Flow Cytometry. Mouse splenocytes treated with PHA were stained with Rat Anti-Mouse CD3 APC-conjugated Monoclonal Antibody (Catalog # FAB4841A) and either (A) Mouse Anti-Human Semaphorin 3E Alexa Fluor® 488-conjugated Monoclonal Antibody (Catalog # IC32391G) or (B) Mouse IgG_1 Alexa Fluor 488 Isotype Control (Catalog # IC002G). To facilitate intracellular staining, cells were fixed with Flow Cytometry Fixation Buffer (Catalog # FC004) and permeabilized with Flow Cytometry Permeabilization/Wash Buffer I (Catalog # FC005). View our protocol for Staining Intracellular Molecules.

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.

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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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