# Human Semaphorin 3E APC-conjugated Antibody

Monoclonal Mouse $IgG_1$ Clone # 400513

Catalog Number: IC32391A

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<br>Thr25-Ser775 (Arg557Ala and Arg560Ala)<br>Accession # O15041 |
| **Conjugate** | Allophycocyanin<br>Excitation Wavelength: 620-650 nm<br>Emission Wavelength: 660-670 nm |
| **Formulation** | Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.<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. |

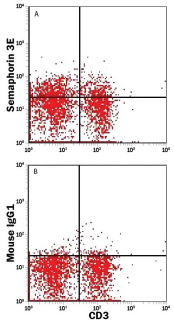
## APPLICATIONS

**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.*

| | Recommended Concentration | Sample |
|---|---|---|
| **Intracellular Staining by Flow Cytometry** | 10 µL/$10^6$ cells | See Below |

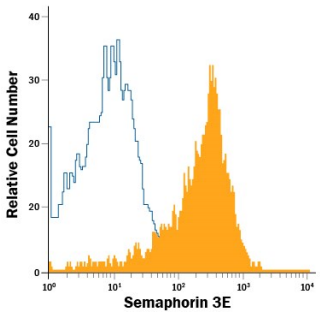
## DATA

### Intracellular Staining by Flow Cytometry




**Detection of Semaphorin 3E in Mouse Splenocytes by Flow Cytometry.** Mouse splenocytes stimulated with PHA were stained with Rat Anti-Mouse CD3 PE-conjugated Monoclonal Antibody (Catalog # FAB4841P) and either (A) Mouse Anti-Human Semaphorin 3E APC-conjugated Monoclonal Antibody (Catalog # IC32391A) or (B) Mouse $IgG_1$ Allophycocyanin Isotype Control (Catalog # IC002A). 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 Human PBMCs by Flow Cytometry.** Human peripheral blood mononuclear cells stimulated with PHA were stained with Mouse Anti-Human Semaphorin 3E APC-conjugated Monoclonal Antibody (Catalog # IC32391A, filled histogram) or isotype control antibody (Catalog # IC002A, open histogram). 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

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|---|---|
| **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.**<br>● 12 months from date of receipt, 2 to 8 °C as supplied. |



bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956

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## BACKGROUND

Semaphorin 3E (Sema3E; previously SemaH) is a 90-95 kDa member of the Class 3 (secreted) semaphorins which, in human, share 40-50% amino acid (aa) sequence 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 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 β-propeller similar to that found in integrin molecules. This is accompanied by 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 61 kDa 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 cleavage 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 sequence identity with mouse, bovine and canine 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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Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956