Mouse Semaphorin 3A Alexa Fluor® 405-conjugated Antibody

Monoclonal Rat IgG_1 Clone # 1040525

Catalog Number: FAB109031V

100 µg

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Semaphorin 3A in direct ELISAs.
Source	Monoclonal Rat IgG_1 Clone # 1040525
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese Hamster Ovary cell line CHO-derived mouse Semaphorin 3A protein Asn21-Lys747 Accession # O08665
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. *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.*

Flow Cytometry	Titration recommended for optimal concentration with starting range of 0.1-1 µg/1 million cells. Sample used for this experiment was bEnd.3 mouse brain endothelial cell line

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 3A (Sema3A; previously sem D, sema III or collapsin) is one of six Class 3 secreted semaphorins which share ~40-50% amino acid (aa) identity (1-3). Class 3 semaphorins are potent chemorepellents that function in axon and/or vascular guidance during development (2, 3). The 772 aa mouse Sema3C 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 PSI domain, a furin-type cleavage site, an Ig-like domain, and a C-terminal basic domain (3, 4). Covalent dimerization plus cleavage at the C-terminus are required for activity of class 3 semaphorins (5, 6). The 95 kDa mature mouse Sema3A shares at least 95% aa identity with human, rat, equine and canine Sema3A, and 90% and 86% aa identity with chick and zebrafish Sema3A, respectively. Type 3 semaphorins transduce signals through transmembrane plexins, either directly or by binding associated neuropilin receptors (3). Sema3A signaling is transduced by plexin A1-4, indirectly via neuropilin-1 (3). Sema3A activity is mediated by small GTPases that influence actin rearrangement and integrin activity (7-9). It is important in developmental organization of central and peripheral nerves, including those in heart, lung, kidneys, bones, teeth, and visual and olfactory systems (1, 2, 10, 11). Gradients of Sema3A repel axons, but attract dendrites (11, 12). Sema3A affect vasculogenesis by inhibiting integrin function and, with Sema3F, promoting apoptosis of endothelial cells (3, 9, 12). It is thought to suppress cancer-related angiogenesis (3). In the immune system, Sema3A influences T cell proliferation, migration, response to activation, and interactions with dendritic cells (7, 13). It negatively regulates platelet activation (14). Expression of Sema3A in relevant parts of the nervous system may be increased in Alzheimer's disease, multiple sclerosis, ischemia and schizophrenia (2).

References:

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Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956

USA | TEL: 800.343.7475 **Canada** | TEL: 855.668.8722 **Europe** | **Middle East** | **Africa** TEL: +44.0.1235.529449

China | info.cn@bio-techne.com TEL: 400.821.3475

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USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475