Human Semaphorin 5A Alexa Fluor® 647-conjugated Antibody

Monoclonal Mouse IgG_1 Clone # 914419

Catalog Number: FAB5896R

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Semaphorin 5A in direct ELISAs.
Source	Monoclonal Mouse IgG_1 Clone # 914419
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	NS0 mouse myeloma cell line transfected with human Semaphorin 5A Glu23-Thr765 Accession # Q13591
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% 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.*

Immunohistochemistry	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 5A (Sema5A, previously called SemaF) is a 140 kDa protein of the semaphorin family of axon guidance molecules (1-4). Class 5 semaphorins are type I transmembrane glycoproteins with an N-terminal Sema domain and multiple juxtamembrane type 1 thrombospondin (TSP) repeats within their extracellular domains (1-3). Sema5A is expressed developmentally in oligodendrocytes, neuroepithelial cells surrounding retinal axons, the base of limb buds, the cardiac atrial septum and endocardial cushions, and the mesoderm surrounding cranial vessels (4-6). The human Sema5A cDNA encodes a 22 amino acid (aa) signal sequence, a 946 aa extracellular domain (ECD), a 22 aa transmembrane sequence and an 85 aa cytoplasmic portion. Within aa 23-765, which includes the sema domain and four of the seven TSP repeats, human Sema5A shares 93% aa identity with corresponding mouse, rat, and canine sequences. Semaphorins typically transduce signals through transmembrane plexins (1, 2). The sema domain of Sema5A binds plexin B3, triggering signaling via HGF R/c-Met (7). Both Sema5A and plexin B3 are expressed postnatally during differentiation and migration of central nervous system oligodendrocytes. However, plexin B3 is not significantly expressed prenatally and therefore unlikely to be the Sema5A receptor during development (7, 8). The Sema5A TSP repeats interact with either heparin sulfate or chondroitin sulfate proteoglycans (HSPG, CSPG) (9). HSPG interaction promotes attraction, while CSPG interaction promotes repulsion and is essential for axon fasciculation, independent of plexin B3 (9, 10). Sema5A mutations have been implicated in the genetic syndrome, cri-du-chat, while some polymorphisms may increase risk for neurodegenerative diseases such as Parkinson's (3, 11). Sema5A expression may be upregulated in metastatic cancer cells and downregulated in autism (12, 13).

PRODUCT SPECIFIC NOTICES

Bio-Techne®
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