# Human Semaphorin 6D Alexa Fluor® 750-conjugated Antibody

Monoclonal Mouse $IgG_1$ Clone # 257510

Catalog Number: FAB2095S

100 µg

## DESCRIPTION

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| **Species Reactivity** | Human |
| **Specificity** | Detects human Semaphorin 6D in direct ELISAs and Western blots. In Western blots, approximately 10% cross-reactivity with recombinant human (rh) Semaphorin 3A and recombinant mouse (rm) Semaphorin 3C is observed and no cross-reactivity with |
| **Source** | Monoclonal Mouse $IgG_1$ Clone # 257510 |
| **Purification** | Protein A or G purified from hybridoma culture supernatant |
| **Immunogen** | Mouse myeloma cell line NS0-derived recombinant human Semaphorin 6D<br>Ser22-His660<br>Accession # Q8NFY4 |
| **Conjugate** | Alexa Fluor 750<br>Excitation Wavelength: 749 nm<br>Emission Wavelength: 775 nm |
| **Formulation** | 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.*

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| **Western Blot** | Optimal dilution of this antibody should be experimentally determined. |

## 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. 12 months from date of receipt, 2 to 8 °C as supplied |

## BACKGROUND

Semaphorin 6D (Sema6D) is a ~130-135 kDa member of the Semaphorin family of axon guidance molecules (1-3). The four known Class 6 semaphorins are type I transmembrane glycoproteins that share ~40% amino acid (aa) identity and exhibit neuropilin-independent binding to specific plexin A receptors (1, 2). Sema6D is expressed in the cardiac tube and within the brain and spinal cord during development (2-5). It shows broad expression postnatally, including neurons, lymphocytes, dendritic cells and osteoclasts (5-8). Brain, kidney, placenta, and cardiac and skeletal muscles show highest mRNA expression (2, 5). The primary human Sema6D isoform (1073 aa) includes a 21 aa signal sequence, a 642 aa extracellular domain (ECD) including Sema and PSI domains, a 21 aa transmembrane sequence and a 390 aa cytoplasmic portion. The ECD of this isoform shares 96%, 96%, 98%, 98% and 97% aa identity with corresponding mouse, rat, bovine, equine and canine sequences, respectively. Alternate splicing creates isoforms of 1054, 1030, 1017, 1011 and 998 that lack sequences between aa 570 and 644 and/or contain a 13 aa insert after aa 549; all variations affect the PSI domain (2, 5). An isoform of 476 aa is truncated after the Sema domain (2). All Sema6D isoforms are present in the brain, but are differentially expressed elsewhere (2, 5). In the developing brain, both Sema6D and Sema6C are co-expressed with Plexin A1 and interact differentially to guide proprioceptive peripheral neurons by repulsion (4). Sema6D is essential for morphogenesis of the cardiac ventricle in the chick, signaling both forward through Plexin A1 and in reverse through Sema6D (3, 9). Sema6D mediates survival and anchorage-independent growth of malignant pleural mesothelioma (10) It is active in immune responses by Sema6D+ T cell stimulation of dendritic cells, and in bone homeostasis by engaging osteoclast Plexin A1 (6-8). In all these settings, Sema6D acts through a complex of Plexin A1 with receptor tyrosine kinases such as VEGF R2 (3, 6-10).

## PRODUCT SPECIFIC NOTICES

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