

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived		
	Mouse Semaphorin 4G (Val18-Met673) Accession # Q9WUH7	IEGRMDP	Mouse IgG _{2A} (Glu98-Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	Val18		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	100 kDa (monomer)		

SPECIFICATIONS

SDS-PAGE	105-120 kDa, reducing conditions
Activity	Measured by its ability to inhibit survival of SK-OV-3 human ovarian carcinoma cells. The ED ₅₀ for this effect is 1-4 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS and Tween® 20. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Semaphorin 4G (Sema4G) is one of the seven known Class 4 transmembrane semaphorin glycoproteins (1). Class 4 semaphorins have multiple roles in cell attraction or repulsion, including development of nerve pathways in the brain, promoting or inhibiting proliferation, and in some cases organizing immune cell interactions. Receptors include transmembrane plexins, but alternate receptors, such as CD72 for Sema4D and TIM-2 for Sema4A, have been identified (2, 3). The 837 amino acid (aa) mouse Sema4G precursor contains a 17 aa signal sequence, a 656 aa extracellular domain (ECD) containing sema and C2-type immunoglobulin domains, a 21 aa transmembrane domain, and a 143 aa cytoplasmic domain with one Ser/Thr phosphorylation site (4). The mouse Sema4G ECD shares 91% and 97% aa sequence identity with human and rat Sema4G, respectively. It also shares approximately 43% aa identity with Sema4C, the most closely related semaphorin, and colocalizes with Sema4C in the cerebellar cortex (5). Both can bind Plexin-B2 and mediate migration of Plexin-B2-expressing cerebellar granule cells (5). Deletion of both Sema4C and Sema4G augments the phenotype produced by deletion of Sema4C alone (5). Sema4G mRNA is also expressed in the peripheral nervous system and in sensory organs such as retina, cochlea, vomeronasal organ and olfactory epithelium (1). In adults, Sema4G mRNA is found in predominantly in the liver, but is also detected in the kidneys and brain (1). Elevated Sema4G mRNA expression is found in mouse kidney during Plasmodium yoelii infection (6). Sema4G is also identified in a screen for genes that are down-regulated in human colorectal cancer (7).

References:

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4. SwissProt Accession # Q9WUH7.
5. Maier, V. *et al.* (2001) *Mol. Cell. Neurosci.* **46**:419.
6. Lao, A.O.T. *et al.* (2001) *J. Immunol.* **166**:1945.
7. Wang, X. *et al.* (2008) *Hepatogastroenterology* **55**:2039.