

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived		
	Mouse Semaphorin 3D (Ser38-Glu738) Accession # Q8BH34 N-terminus	IEGRMDP	Mouse IgG _{2a} (Glu98-Lys330) C-terminus
N-terminal Sequence Analysis	Ser38		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	107 kDa		

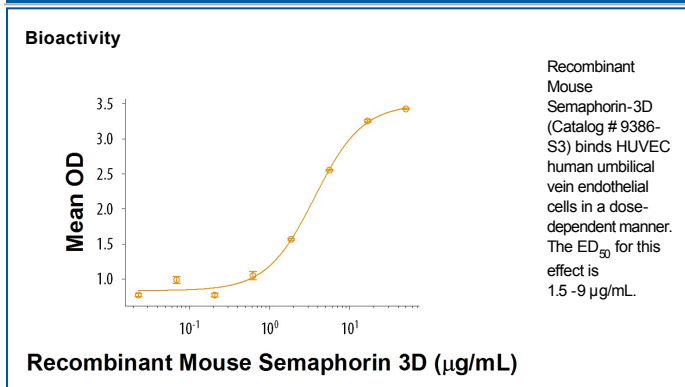
SPECIFICATIONS

SDS-PAGE	97 - 113 kDa, reducing conditions
Activity	Measured by its ability to bind HUVEC human umbilical vein endothelial cells. The ED ₅₀ for this effect is 1.5 -9 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in Tris and NaCl with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 400 µg/mL in PBS containing at least 0.1% human or bovine serum albumin.
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.

DATA



BACKGROUND

Semaphorin 3D (Sema3D) is a member of the semaphorin family that plays a role in neuronal and vascular development (1, 2). Class 3 semaphorins are secreted molecules, and contain a common domain structure. The mouse Sema3D domains consist of a 488 aa Sema domain, a 53 aa plexin-semaphorin-integrin (PSI) domain, an 89 aa Ig-like C2-type domain, and a 35 aa basic domain which is proteolytically processed (3, 4). Within these domains, mouse Sema3D shares 94% and 98% aa sequence identity with human and rat Sema3D, respectively. Semaphorin 3D is a secreted guidance molecule involved in angiogenesis and neuronal development (5). It induces the collapse and paralysis of neuronal growth cones and promotes fasciculation of axons (6, 7). Sema3D also inhibits endothelial cell motility and tubulogenesis through cytoskeletal reorganization (2). Binding to Neuropilin-1 is required for Sema3D signaling (8). ErbB2 was shown to be a potential Sema3D co-receptor, which is phosphorylated in response to Sema3D in HUVEC cells (8). Semaphorin 3D inhibition of vascular development facilitates inhibition of glioblastoma growth in the cortex of the brain (1).

References:

1. Sabag, A. *et al.* (2012) PLoS One. **7**:e42912.
2. Aghajanian, H. *et al.* (2014) J. Biol. Chem. **289**:17971.
3. Takahashi, K. *et al.* (2009) Biochimica et Biophysica Acta. **1790**:395.
4. Gu, C. and E. Giraudo. (2013) Exp. Cell Res. **319**:1306.
5. Binch, A. *et al.* (2015) Oncotarget. **6**:18338.
6. Kuhn, T.B. *et al.* (2000) J. Neurobiology. **44**:126.
7. Wolman, M.A. *et al.* (2007) J. Neurobiology. **27**: 9653-63.
8. Aghajanian, H. *et al.* (2015) Nature Commun. **7**:12038.