

## Semaphorin-4D/SEMA4D Protein, Mouse (HEK293, Fc)

<b>Cat. No.:</b>	HY-P72478
<b>Synonyms:</b>	SEMA4D; Semaphorin-4D; M-Sema G; Semaphorin-C-like 2; Sema J; CD100; Semacl2; Semaj
<b>Species:</b>	Mouse
<b>Source:</b>	HEK293
<b>Accession:</b>	O09126 (F24-M711)
<b>Gene ID:</b>	20354
<b>Molecular Weight:</b>	100-130 kDa

### PROPERTIES

#### AA Sequence

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F A P V P R L T W E   H G E V G L V Q F H   K P G I F N Y S A L   L M S E D K D T L Y
V G A R E A V F A V   N A L N I S E K Q H   E V Y W K V S E D K   K S K C A E K G K S
K Q T E C L N Y I R   V L Q P L S S T S L   Y V C G T N A F Q P   T C D H L N L T S F
K F L G K S E D G K   G R C P F D P A H S   Y T S V M V G G E L   Y S G T S Y N F L G
S E P I I S R N S S   H S P L R T E Y A I   P W L N E P S F V F   A D V I Q K S P D G
P E G E D D K V Y F   F F T E V S V E Y E   F V F K L M I P R V   A R V C K G D Q G G
L R T L Q K K W T S   F L K A R L I C S K   P D S G L V F N I L   Q D V F V L R A P G
L K E P V F Y A V F   T P Q L N N V G L S   A V C A Y T L A T V   E A V F S R G K Y M
Q S A T V E Q S H T   K W V R Y N G P V P   T P R P G A C I D S   E A R A A N Y T S S
L N L P D K T L Q F   V K D H P L M D D S   V T P I D N R P K L   I K K D V N Y T Q I
V V D R T Q A L D G   T F Y D V M F I S T   D R G A L H K A V I   L T K E V H V I E E
T Q L F R D S E P V   L T L L L S S K K G   R K F V Y A G S N S   G V V Q A P L A F C
E K H G S C E D C V   L A R D P Y C A W S   P A I K A C V T L H   Q E E A S S R G W I
Q D M S G D T S S C   L D K S K E S F N Q   H F F K H G G T A E   L K C F Q K S N L A
R V V W K F Q N G E   L K A A S P K Y G F   V G R K H L L I F N   L S D G D S G V Y Q
C L S E E R V R N K   T V S Q L L A K H V   L E V K M V P R T P   P S P T S E D A Q T
E G S K I T S K M P   V A S T Q G S S P P   T P A L W A T S P R   A A T L P P K S S S
G T S C E P K M

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#### Biological Activity

Measured in a cell proliferation assay using MDA-MB-231 cells. The ED<sub>50</sub> this effect is 0.4301 µg/mL, corresponding to a specific activity is 2.33×10<sup>3</sup> units/mg.

#### Appearance

Lyophilized powder.

#### Formulation

Lyophilized from a 0.2 µm filtered solution of 20 mM PB, 150 mM NaCl, pH 7.4 or PBS.

#### Endotoxin Level

<1 EU/µg, determined by LAL method.

#### Reconstitution

It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH<sub>2</sub>O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).

**Storage & Stability**

Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.

**Shipping**

Room temperature in continental US; may vary elsewhere.

**DESCRIPTION****Background**

Semaphorin-4D (SEMA4D) operates as a cell surface receptor for PLXNB1 and PLXNB2, assuming a crucial role in cell-cell signaling. This versatile protein is implicated in diverse cellular processes, including the regulation of GABAergic synapse development, where it fosters the development of inhibitory synapses in a PLXNB1-dependent manner. In hippocampal neurons, SEMA4D influences the complexity and arborization of developing neurites by activating PLXNB1, thereby mediating RHOA activation. Additionally, SEMA4D is involved in promoting the migration of cerebellar granule cells and induces B-cell aggregation, enhancing their viability in vitro. Furthermore, SEMA4D stimulates endothelial cell migration through the activation of PTK2B/PYK2, SRC, and the phosphatidylinositol 3-kinase-AKT pathway. Operating as a homodimer, SEMA4D interacts with both PLXNB1 and PLXNB2, underscoring its intricate involvement in various cellular and developmental processes.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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