Semaphorin-4A/SEMA4A Protein, Mouse (HEK293, His)

Cat. No.:	HY-P71283
Synonyms:	Semaphorin-4A; Semaphorin-B; Sema B; Sema4a; Semab; SemB
Species:	Mouse
Source:	HEK293
Accession:	Q62178 (T33-H682)
Gene ID:	20351
Molecular Weight:	67-82 kDa

PROPERTIES

AA Sequence

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

Biological Activity	Immobilized Mouse Semaphorin 4A at 2 μg/mL (100 μL/well) can bind Biotinylated Human ILT4 protein. The ED_{50} for this effect is 0.6023 μg/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM PB, 150 mM NaCl, 1mM EDTA, 5% Trehalose, pH 7.4 or 20 mM PB, 150 mM NaCl, 1 mM EDTA, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. 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	The Semaphorin-4A/SEMA4A protein serves as a cell surface receptor for PLXNB1, PLXNB2, PLXNB3, and PLXND1, playing a crucial role in cell-cell signaling. Its involvement in regulating glutamatergic and GABAergic synapse development underscores its significance in synaptic processes. SEMA4A promotes inhibitory synapse development in a PLXNB1-dependent manner and excitatory synapse development in a PLXNB2-dependent manner. Beyond synaptic functions, SEMA4A contributes to adaptive immunity by priming antigen-specific T-cells and promoting the differentiation of Th1 T-helper cells. Additionally, SEMA4A facilitates the phosphorylation of TIMD2 and inhibits angiogenesis. Its role in axon growth cone collapse and the inhibition of axonal extension further highlights its influence in providing local signals to specify territories inaccessible for growing axons. The protein interacts with PLXNB1, PLXNB2, PLXNB3, PLXND1, and TIMD2, showcasing its versatile involvement in diverse cellular processes and signaling pathways.

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