

Human Semaphorin 4A / SEMA4A / Semaphorin B Protein (His Tag)

Catalog Number: 11756-H08H



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Biological Solution Specialist

General Information

Gene Name Synonym:

CORD10; RP35; SEMAB; SEMB; AI132332; Semab; SemB

Protein Construction:

A DNA sequence encoding the human SEMA4A (NP_071762.2) extracellular domain (Met 1-His 683) was expressed, with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: Human Cells

QC Testing

Purity: > 96 % as determined by SDS-PAGE

Bio Activity:

Measured by its ability to bind biotinylated mouse SEMA4D in a functional ELISA.

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Gly 32

Molecular Mass:

The recombinant human SEMA4A consists of 663 amino acids and predicts a molecular mass of 73.4 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of rh SEMA4A is approximately 75-80 kDa.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

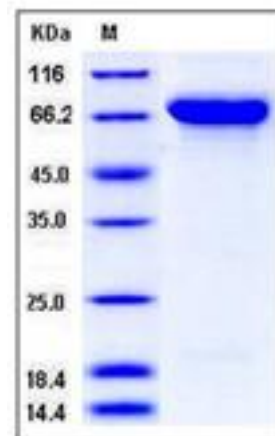
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Semaphorin-4A, also known as Semaphorin-B, SEMA4A, Sema B and SEMAB, is a single-pass type I membrane protein which belongs to the semaphorin family. It inhibits axonal extension by providing local signals to specify territories inaccessible for growing axons. Semaphorin-4A / SEMA4A contains one Ig-like C2-type (immunoglobulin-like) domain, one PSI domain and one Sema domain. Defects in SEMA4A are the cause of retinitis pigmentosa type 35 (RP35) which leads to degeneration of retinal photoreceptor cells. Patients typically have night vision blindness and loss of midperipheral visual field. As their condition progresses, they lose their far peripheral visual field and eventually central vision as well. Defects in SEMA4A are also the cause of cone-rod dystrophy type 10 (CORD10) which are inherited retinal dystrophies belonging to the group of pigmentary retinopathies. CORDs are characterized by retinal pigment deposits visible on fundus examination, predominantly in the macular region, and initial loss of cone photoreceptors followed by rod degeneration. Semaphorins are secreted, transmembrane, and GPI-linked proteins, defined by cysteine-rich semaphorin protein domains, that have important roles in a variety of tissues. Humans have 20 semaphorins, Drosophila has five, and two are known from DNA viruses. Semaphorins are found in nematodes and crustaceans but not in non-animals. They are grouped into eight classes on the basis of phylogenetic tree analyses and the presence of additional protein motifs. Semaphorins have been implicated in diverse developmental processes such as axon guidance during nervous system development and regulation of cell migration.

References

- 1.Clark H.F., et al., 2003, Genome Res. 13: 2265-2270.
- 2.Ota T., et al., 2004,Nat. Genet. 36: 40-45.
- 3.Neufeld, G. et al., 2005, Front Biosci. 10 : 751-60.

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