

## SEMA3A Protein, Mouse, Recombinant (His)

### General Information

Synonyms:	SemD;Semad;Hsema-I;SEMA1;coll-1;sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3A
Protein Construction:	A DNA sequence encoding the mouse SEMA3A (NP_001230001.1) (Lys26-Phe546) was expressed with a polyhistidine tag at the N-terminus. Predicted N terminal: His
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	O08665
Molecular Weight:	61.6 kDa (predicted)

### QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/ $\mu$ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 $\mu$ m filter, containing 20 mM Tris, 150 mM NaCl, 100 mM Arginine, 100 mM glutamic acid, pH 8.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

#### Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

#### Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Semaphorins are a family of secreted and cell-bound signaling molecules defined by the presence of a common 5 aa Sema domain. They are best characterized in relation to axon guidance during development of the nervous system. The functions of Semaphorins 3A (SEMA3A) are mediated primarily through binding to the Neuropilin-1

(Npn-1) and Plexin-A1 coreceptor complex. Neuropilins lack a signaling-competent cytoplasmic domain and ensure semaphorin binding, whereas the transmembrane receptor plexin mediates the intracellular response. As the first identified vertebrate semaphorin, SEMA3A functions either as a chemorepulsive agent inhibiting axonal outgrowth, or as a chemoattractive agent stimulating the growth of apical dendrites. In both cases, the protein is vital for normal neuronal pattern development. Its overexpression is associated with schizophrenia which is seen in various human tumor cell lines, and aberrant release is associated with the progression of Alzheimer's disease

### Reference

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