



Recombinant Human Semaphorin 3A Fc

20190619BB



FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no.:	100-151S
Size:	5 µg
Lot. No.:	According to product label

Scientific Background

Gene-ID (NCBI):	10371
Synonyms:	SEMA3A, SEMAD

Semaphorins are a large group of structurally-related, secreted, GPI-anchored, transmembrane, cell-signaling molecules. There are 8 major classifications of Semaphorins (the first seven ordered by number, 1-7, and the eighth designated V for virus), which are characterized by the existence of a conserved 500 amino acid SEMA domain at the amino terminus. Classes 3, 4, 6, and 7 are found in vertebrates only, whilst class 5 is found in both vertebrates and invertebrates. Each class is then divided into additional subgroups based on shared structural characteristics. Semaphorins primarily function as axon growth cone guidance factors during neuronal development. Semaphorin 3A acts as a chemo-repellent to axons, and an inhibitor of the growth of axons by signaling through receptors, Neuropilin-1 and Plexin-A. PeproTech's CHO cell-derived Recombinant Human Semaphorin 3A Fc is a glycosylated, disulfide-linked homodimer of 1,976 amino acid residues, which includes the SEMA domain, immunoglobulin c2-like domain, and the C-terminal basic Arg/Lys-rich domain of the mature sequence, as well as an 8-residue N-terminal His-tag and a 230-residue C-terminal Fc region linked by two glycines. Recombinant Human Semaphorin 3A Fc has a calculated molecular weight of 226.2 kDa and therefore runs above the 200kDa marker by SDS-PAGE analysis under nonreducing conditions. When run under reducing conditions, this protein migrates as three distinct bands that, due to glycosylation, run higher than expected at apparent molecular weights of approximately 120-130 kDa, 90-100 kDa, and 35-40 kDa.

Sequence

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HHHHHHHGGK  NNVPRLLKLSY  KEMLESNNVI  TFNGLANSSS
YHTFLLDEER  SRLYVGAKDH  IFSFDLVNIK  DFQKIVWPVS
YTRRDECKWA  GKDILKECAN  FIKVLKAYNQ  THLYACGTGA
FHPICTYIEI  GHHPEDNIFK  LENSHEFNGR  GKSPYDPKLL
TASLLIDGEL  YSGTAADFMG  RDFAIFRTLG  HHHPIRTEQH
DSRWLNPKF  ISAHLISESD  NPEDDKVYFF  FRENAIDGEH
SGKATHARIG  QICKNDFGGH  RSLVNKWTTF  LKARLICSVP
GPNGIDTHFD  ELQDVFLMNF  KDPKNPVVYG  VFTTSSNIFK
GSAVCMYSMS  DVRRVFLGPY  AHRDGPYQW  VPYQGRVPYP
RPGTCPSKTF  GGFDSTKDLF  DDVITFARSH  PAMYNPVFPM
NNRPVIVIKT  VNYQFTQIVV  DRVDAEDQY  DVMFIGTDVG
TVLKVVSIK  ETWYDLEEV  LEEMTVFREP  TAISAMELST
KQQQLYIGST  AGVAQLPLHR  CDIYGKACAE  CCLARDPYCA
WDGSACSRFY  PTAKRATRAQ  DIRNGDPLTH  CSDLHHDNHH
GHSPEERLIY  GVENSSTFLE  CSPKSQRALV  YWQFQRNEE
RKEEIRVDDH  IIRTDQGLL  RSLQKQDSGN  YLCHAVEHGF
IQTLLKVTLE  VIDTEHLEEL  LHKDDDGDS  KTKEMSNSMT
PSQKVWYRDF  MQLINHPNLN  TMDEFCEQVW  KRDRKQRRQR
PGHTPGNSNK  WKHLQENKKG  RNRRTHEFER  APRSVGGPKS
CDKTHTCPPC  PAPELLGGPS  VFLFPKPKD  TLMISRTPEV
TCVVVDVSH  DPEVKFNWYV  DGVEVHNAKT  KPREEQYNST
YRVVSVLTVL  HQDWLNGKEY  KCKVSNKALP  APIEKTISKA
KGQPREPQVY  TLPSPRDELT  KNQVSLTCLV  KGFYPSDIAV
EWESNGQPEN  NYKTPPVLD  SDGSFFLYSK  LTVDKSRWQQ
GNVFCSCVMH  EALHNNHTQK  SLSLSPGK

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Database References

Protein RefSeq:	NP_006071.1
Uniprot ID:	Q14563
mRNA RefSeq:	NM_006080.2

Product Specifications

Expressed in	CHO cells
Purity	> 95% by SDS-PAGE & HPLC analyses
Endotoxin level	< 0.1 ng /µg of protein (<1EU/µg).
Formulation	lyophilized
Length (aa):	988
MW:	>200 kDa (nonreducing conditions)

Stability: The lyophilized protein is stable at room temperature for 1 month and at 4°C for 3 months. Reconstituted working aliquots are stable for 1 week at 2°C to 8°C and for 3 months at -20°C to -80°C.

Reconstitution: Centrifuge the vial prior to opening. Reconstitute in 1x PBS to a concentration of 0.1-0.25 mg/ml. NOTE: Allow the reconstituted vial to sit at room temperature for 1 hour before use. *Do not vortex.* For extended storage, it is recommended to further dilute in a buffer containing a carrier protein (example 0.1% BSA).



AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: Determined by its ability to bind recombinant rat Neuropilin-1 Fc Chimera in a functional ELISA assay.