Recombinant Human Semaphorin 3B Fc Chimera

Catalog Number: 9518-S3

DESCRIPTION

Source

Trichoplusia ni, *T. ni* (baculovirus)-derived human Semaphorin 3B protein

Human Semaphorin 3B (Ala25-Gly727(Arg551Ala, Arg554Ala)) Accession # Q13214-1	IEGRMD	Human IgG_1 (Pro100-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	Ala25
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	105 kDa

SPECIFICATIONS

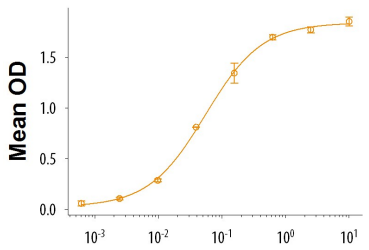
SDS-PAGE	96-116 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human Semaphorin 3B Fc Chimera is coated at 1 µg/mL, 100 µL/well, it binds to Recombinant Rat Neuropilin-1 Fc Chimera (Catalog # 566-N1) with an ED_{50} of 25-150 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in Citric Acid, NaCl and Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in water.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

Bioactivity



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BACKGROUND

Semaphorin 3B (Sema3B), also known as Semaphorin V and Sema A(V), is an approximately 90 kDa member of the semaphorin family that plays a role in cancer, neuronal and vascular development (1-4). Class 3 semaphorins are secreted molecules found in vertebrates and contain a common domain structure. The Sema3B domains consist of a 484 aa Sema domain, followed by a plexin-semaphorin-integrin (PSI) domain, an 87 aa Ig-like C2-type domain, and a 21 aa basic domain (5). Within these domains, human Sema3B shares 88% and 90% aa sequence identity with mouse and rat Sema3B, respectively. Like other Class 3 semaphorins, Sema3B signaling is transduced by a transmembrane plexin-A dimer, which also has a Sema domain and is coupled to kinase pathways (6, 7). Sema3B binds indirectly to plexins, and requires interaction with neuropilins for activity (6, 7). Repulsive signals through Neuropilin-1 (Npn-1) and attractive signals through Neuropilin-2 (Npn-2) have been identified, affecting adhesion molecule activity in opposite directions (6, 8). In tumors, Sema3B competes with VEGF165 for binding to Npn-1, which in part down-regulates tumor angiogenesis, inhibits tumor cell proliferation and promotes apoptosis (9, 10). However, it is also proposed to promote dissemination and metastatic progression by stimulating Npn-1 mediated IL-8 secretion in a subset of tumors that over-express Sema3B (11). In differentiating osteoblasts, Sema3B expression is induced by vitamin D and promotes osteoclastogenesis (12).

References:

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