Recombinant Human Semaphorin 3A
Fc Chimera
Catalog Number: 1250-S3

DESCRIPTION

Source: Mouse myeloma cell line, NS0-derived

| Met-6-His tag | Human Semaphorin 3A Lys26-Val771 (Arg552 Ala & Arg555 Ala) | DIEGRMD | Human IgG 

N-terminal Sequence: Met & Ser770

Analysis: Disulfide-linked homodimer

Predicted Molecular Mass: 113.5 kDa (monomer)

SPECIFICATIONS

SDS-PAGE: 120 kDa, 90 kDa and 37 kDa, reducing conditions

Activity: Measured by its binding ability in a functional ELISA.

When Recombinant Rat Neuropilin-1 Fc Chimera (Catalog # 566-N1) is coated at 2 µg/mL, Recombinant Human Semaphorin 3A Fc Chimera (Catalog # 1250-S3) binds with an ED_{50} = 50-300 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 Tris, NaCl and Tween® 20. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution: Reconstitute at 250 µg/mL in sterile PBS.

Shipping: The product is shipped with polar packs. 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

Recombinant Human Semaphorin 3A Fc Chimera binds to Recombinant Rat Neuropilin-1 Fc Chimera in an ELISA Binding Assay. When Recombinant Rat Neuropilin-1 Fc Chimera (Catalog # 566-N1) is coated at 2 µg/mL, Recombinant Human Semaphorin 3A Fc Chimera (Catalog # 1250-S3) binds with an ED_{50} = 50-300 ng/mL.
The Semaphorins constitute a large family of secreted, GPI-anchored and transmembrane cell signaling molecules. Depending on their domain organization and species origin, these proteins can be classified into eight groups. To date, at least 19 vertebrate Semaphorins belonging to five groups (class 3 through 7) have been identified. All Semaphorins contain a conserved, 500 amino acid (aa) Sema domain at the amino terminus. Semaphorins are best known for their roles in axon guidance during neuronal development. Semaphorins are also expressed in non-neuronal tissues and are involved in angiogenesis, hematopoiesis, organogenesis, and the regulation of immune functions (1, 2).

Class 3 Semaphorins (Sema3) are secreted proteins containing a Sema domain, an immunoglobulin c2-like domain and a basic domain near the carboxyl tail. Sema3A (also referred to as Semall, SemD and Collapsin) cDNA predicts a 771 aa precursor protein with a putative 25 aa signal peptide (1-3). Bioactive Sema3A is a disulfide-linked dimer (4). The bioactivity is increased after proteolytic processing by a furin-like endoprotease near the carboxy-terminus (1). The functional receptor complex for Sema3 is composed of two distinct transmembrane proteins: Neuropilin-1 (Npn-1) and Plexin-A. Npn-1 binds directly to Sema3A with high-affinity and confers specificity. Plexin-A interacts with Npn-1 to increase the affinity of the complex for Sema3A and serves as the signaling subunit in the receptor complex (1, 2, 5).

References: