Recombinant Human ROBO1 Fc Chimera

Catalog Number: 8975-RB

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived

N-terminal Sequence Analysis

Ser20

Structure / Form

Disulfide-linked homodimer

Predicted Molecular Mass

119 kDa

SPECIFICATIONS

Activity

Measured by its binding ability in a functional ELISA.
When recombinant human Slit3 is coated at 250 ng/mL, Recombinant Human ROBO1 Fc Chimera binds with a typical ED_{50} of 100-600 ng/mL.

Endotoxin Level

<0.10 EU per 1 µg of the protein by the LAL method.

Purity

>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation

Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution

Reconstitute at 100 µg/mL in PBS.

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.

BACKGROUND

ROBO1 is a 170-200 kDa member of the ROBO family of guidance molecules. It serves as a repulsing molecule that prevents axons from crossing the midline in the developing central nervous system (CNS) (1). Mature human ROBO1 consists of an 872 amino acid (aa) extracellular domain (ECD), a 21 aa transmembrane segment, and a 733 aa cytoplasmic region (2). The ECD contains five tandem Ig-like domains followed by three tandem fibronectin type III domains. Usage of an alternative promoter generates a shorter isoform (ROBO1b or DUTT1) that has an 18 aa substitution for the N-terminal 57 residues (2, 3). Within the ECD, human ROBO1 shares 97% aa identity with mouse and rat ROBO1. A 120 kDa soluble fragment of the ECD can be shed by juxtamembrane proteolytic cleavage (4). ROBO1 is expressed on pioneer axons in the neural tube and proliferative zones of the cortical plate (5-8). It is restricted to axonal growth cones that do not cross the midline and to midline-crossing axons only after they cross (2). ROBO1b shows even wider expression in the developing mouse CNS and is the predominant isoform in spinal cord commissural axons (5). ROBO1 plays an important role in axon pathfinding and tract development (6, 9, 10) as well as in neuronal proliferation and dendrite branching (7, 8). ROBO1 binds to Slit1 and Slit2, leading to growth cone collapse and axonal branching (7, 11). It also regulates Netrin-1 and Semaphorin 3A and 3F responsiveness through its ability to form *in cis* complexes with Neuropilin-1, Neuropilin-2, Plexin A1, DCC, and FLRT3 (10, 12, 13). ROBO1 is additionally expressed in developing ductal epithelia where its binding to Slit2 restricts branching morphogenesis (14). ROBO1-Slit2 interactions can also suppress tumorigenesis (15), enhance VEGF-induced angiogenesis (16), and enhance CXCL12 induced T cell chemotaxis by associating with CXCR4 (17).

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