Recombinant Human Slit1 (aa 1129-1534)

Catalog Number: 9848-SL

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived Ser1129-Ala1534, with a C-terminal 6-His tag Accession # O75093-1
N-terminal Sequence Analysis	Ser1129
Predicted Molecular Mass	45 kDa

SPECIFICATIONS

SDS-PAGE	60-68 kDa, reducing conditions
Activity	Measured by its ability to enhance neurite outgrowth of E16-E18 rat embryonic cortical neurons. Recombinant Human Slit1, immobilized at 1.25-2.5 µg/mL on a 96 well plate, is able to significantly enhance neurite outgrowth.
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 500 µg/mL in 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.

BACKGROUND

Slit1 is a member of the Slit family of large secreted axon guidance molecules that are ligands for Robo receptors (1, 2). Like other mammalian family members, the 1534 amino acid (aa), ~200 kDa human Slit1 contains a 33 aa signal sequence followed by 23 leucine-rich repeats (LRR, aa 34-900) and 9 EGF-like sequences (aa 930-1454) (2). Mammalian Slits also contain a laminin-G domain between EGF6 and EGF7 (aa 1166-1339), and a C-terminal cysteine-rich domain (cysteine knot; aa 1459-1534) (2). Heparin sulfates are required for interaction of Robo with Slit LRR domains (2, 3). Within the LRR domains, human Slit1 shares 96% aa identity with mouse, rat, and bovine, 98% with equine and 91% with canine Slit1. Human Slits 1, 2 and 3 share 68-74% aa identity within the LRR domains. One potential isoform of 1641 aa has 10 aa inserted after aa 338 within LRR9 and lacks aa 793-816 within LRR20-21 (4). Two more potential isoforms of 1520 and 1461 aa diverge at the C-terminus (aa 1453 and 1411, respectively); these isoforms lack the cysteine knot, which may mediate interaction with other proteins (5). Slit1 has been found mainly, but not exclusively, in the fetal and adult brain (2). Slit1 and Slit2 (or in some cases Slit3) are expressed in complementary locations during development of the optic and olfactory tracts and the forebrain, and appear to work together to mediate Robo guidance of retinal, olfactory, hippocampal and motor axons (1, 6-11). Deletion of either Slit1 or Slit2 has less effect than deletion of both, which allows axons to wander from tracts and inappropriately cross or recross the midline (6, 7, 9-11). Expression of Slit1 by new neurons influences astrocytes to form and maintain tunnels that guide neuronal migration (12). In the injured spinal cord, presence of Slit1 along with Slit3 and Netrin-1 may be responsible for failure of axons to regenerate in the adult CNS (13). Slit1 also promotes dendrite growth and branching of cortical neurons indicating it may exert important influence on the final morphology of cortical neurons (14).

References:

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