Recombinant Mouse Slit1

Catalog Number: 5199-SL

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived Cys34-Glu900, with a C-terminal 10-His tag Accession # Q80TR4
N-terminal Sequence Analysis	Cys34
Predicted Molecular Mass	97.6 kDa

SPECIFICATIONS

SDS-PAGE	110 kDa, under reducing conditions
Activity	Measured by its ability to enhance neurite outgrowth of dissociated E13 chick embryonic dorsal root ganglia (DRG) neurons. Able to significantly enhance neurite outgrowth when immobilized as a 3 µL droplet containing 90 ng on a nitrocellulose-coated microplate.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>80%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in MOPS and NaCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in sterile 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

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 1531 amino acid (aa), ~200 kDa Slit1 contains a 33 aa signal sequence followed by 23 leucine-rich repeats (LRR, aa 34 - 900) and 9 EGF-like sequences (aa 930 - 1451) (2). Mammalian Slits also contain a laminin-G domain between EGF6 and EGF7 (aa 1163 - 1336), and a C-terminal cysteine-rich domain (cysteine knot; aa 1456 - 1531) (2). Heparin sulfates are required for interaction of Robo with Slit LRR domains (2, 3). Mouse Slit1 shares 99, 96, 89, 87 and 80% aa identity with rat, human, canine, Xenopus and zebrafish Slit1, respectively, within the LRR domains. Mouse Slits 1, 2 and 3 share 68 - 74% aa identity within the LRR domains. 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, 4 - 9). 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 (4, 5, 7 - 9). 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 (10). Slit1 also promotes dendrite growth and branching of cortical neurons indicating it may exert important influence on the final morphology of cortical neurons (11). Although Slit1 has mainly been found in the fetal and adult brain, it is also detected in the heart and kidney. The C-terminal cysteine knot, which may mediate interaction with other proteins, is absent in the rat brain splicing variant, Slit1α (12).

References:

1. Yuan, W. *et al.* (1999) Dev. Biol. **212**:290.
2. Hohenester, E. (2008) Biochem. Soc. Trans. **36**:251.
3. Hussain, S-A. *et al.* (2006) J. Biol. Chem. **281**:39693.
4. Thompson, H. *et al.* (2006) Dev. Biol. **296**:476.
5. Plump, A. S. *et al.* (2002) Neuron **33**:219.
6. Cho, J. H. *et al.* (2007) J. Neurosci. **27**:9094.
7. Nguyen-Ba-Charvet, K. T. *et al.* (2002) J. Neurosci. **22**:5473.
8. Bagri, A. *et al.* (2002) Neuron **33**:233.
9. DiMeglio, T. *et al.* (2008) J. Neurosci. **28**:6285.
10. Wehrle, R. *et al.* (2005) Eur. J. Neurosci. **22**:2134.
11. Whitford, K. L. *et al.* (2002) Neuron **33**:47.
12. Tanno, T. *et al.* (2004) J. Biochem. **136**:575.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449