Recombinant Human LRRTM1

Catalog Number: 4897-LR

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Ala35-Ile425, with a C-terminal 6-His tag Accession # Q86UE6
N-terminal Sequence Analysis	Ala35
Predicted Molecular Mass	44.4 kDa

SPECIFICATIONS

SDS-PAGE	70-85 kDa, reducing conditions
Activity	Measured by its ability to enhance neurite outgrowth of E16-E18 rat embryonic cortical neurons. Able to significantly enhance neurite outgrowth when immobilized at 6-25 µg/mL on a nitrocellulose-coated microplate
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
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 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

Human LRRTM1 (leucine-rich repeat transmembrane neuronal 1) is a 58 - 59 kDa (predicted) type I transmembrane protein, that belongs to the LRRTM family of proteins within the leucine-rich repeat (LRR) superfamily (1). It is synthesized as a precursor with a 34 amino acid (aa) signal sequence, a 393 aa luminal region, a 21 aa transmembrane region, and a 74 aa cytoplasmic region. The luminal portion of LRRTM1 contains three N-linked glycosylation sites and 10 LRRs flanked by cysteine-rich domains (1). The cytoplasmic region contains several tyrosine, serine, and threonine residues that have potential to be phosphorylated and thus to be involved in signal transduction (1). The C-terminal also contains a conserved glutamic acid-cysteine-glutamic acid-valine sequence for potential interaction with PDZ proteins (1 - 2). Mature human LRRTM1 is 97% aa identical to mouse LRRTM1. LRRTM1 is localized to the endoplasmic reticulum (3). In the mouse, beginning at 9d*pc*, low levels of LRRTM1 can be detected in the overlying ectoderm of the limb bud, dorsal otic vesicle, forebrain, midbrain, hindbrain, and in neural progenitors in the central neural tube (2). In the adult brain, it is highly expressed in the brain and salivary gland, and is detected at intermediate levels in the cerebellum, spinal chord, stomach, testis, and uterus (1). Functionally, LRRTM1 may be involved in the formation of the CNS and maintenance of CNS structure and function in the adult brain (1). In addition, LRRTM1 has been shown to be a maternally suppressed gene that is associated paternally with handedness and schizophrenia (3).

References:

1. Lauren, J. *et al.* (2003) Genomics **81**:411.
2. Haines, B.P. and P.W.J. Rigby (2007) Gene Expr. Patterns **7**:23.
3. Francks, C. *et al.* (2007) Mol. Psychiatry **12**:1129.

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