

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human LRRTM1 protein		
	Human LRRTM1 (Ala35-Ile425) Accession # Q86UE6.2	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	Ala35		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	70 kDa		

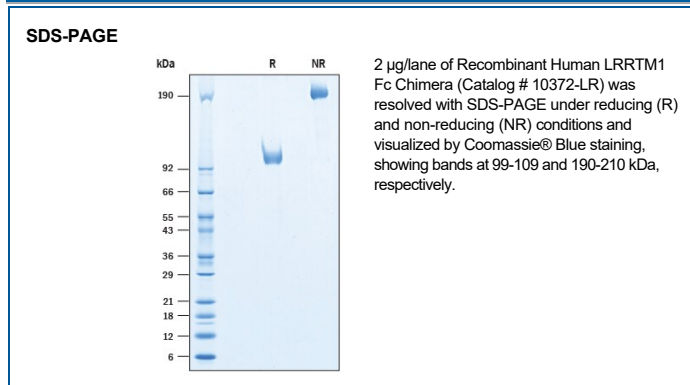
SPECIFICATIONS

SDS-PAGE	99-109 kDa, under reducing conditions
Activity	Measured by its ability to enhance neurite outgrowth of E16-E18 rat embryonic cortical neurons. Recombinant Human LRRTM1 Fc Chimera (Catalog # 10372-LR), immobilized at 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 at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 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



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 expressed in both developing and adult brains. It can be detected in many brain areas such the forebrain, mid brain, olfactory bulb, striatum, thalamus and cerebral cortex (3). LRRTM1 proteins are mainly localized to postsynaptic sites and bind across the synaptic cleft to its presynaptic partner neurexins lacking the splice site 4 insert (3, 4). LRRTM1 functions as a synapse organizer and plays an essential role in synapse formation and development (3, 4). 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). LRRTM1 was also reported to be associated with schizophrenia and autism spectrum disorder (5, 6).

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. Roppongi, R.T. *et al.* (2017) *Neurosci. Res.* **116**:18.
4. Ko, J. (2012) *Mol. Cells.* **34**:335.
5. Francks, C. *et al.* (2007) *Mol. Psychiatry* **12**:1129.
6. Sousa, I. *et al.* (2010) *Mol. Autism* **1**:17.