

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human LRRTM2 protein		
	Human LRRTM2 (Cys34-Arg422) Accession # O43300	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus
N-terminal Sequence	Cys34		
Analysis			
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	71 kDa		

SPECIFICATIONS

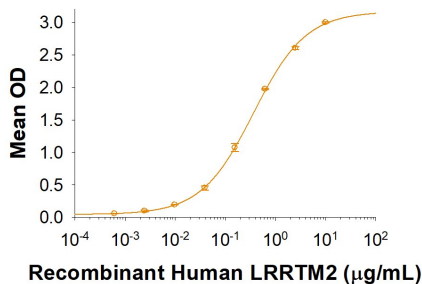
SDS-PAGE	83-100 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Rat Neurexin 1 α (-S4) is immobilized at 1 μ g/mL (100 μ L/well), the concentration of Recombinant Human LRRTM2 Fc Chimera that produces 50% of the optimal binding response is 0.07-0.42 μ g/mL.
Endotoxin Level	<0.10 EU per 1 μ g 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 μ m filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 μ g/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, \leq -20 °C under sterile conditions after reconstitution.

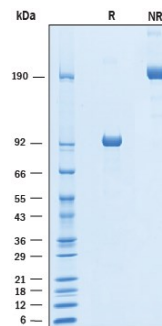
DATA

Binding Activity



When Recombinant Rat Neurexin 1 α (-S4) is coated at 1 μ g/mL (100 μ L/well), Recombinant Human LRRTM-2 Fc Chimera (Catalog # 5589-LR) binds with an ED₅₀ of 0.07-0.42 μ g/mL.

SDS-PAGE



2 μ g/lane of Recombinant Human LRRTM2 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 83-100 kDa and 160-200 kDa, respectively.

BACKGROUND

LRRTM2 (Leucine-rich repeat transmembrane protein 2) is a member of the LRRTM family of molecules (1). All LRRTMs are type I transmembrane proteins that contain multiple leucine rich repeats and one PDZ consensus cytoplasmic binding domain. The LRRTM family is expressed in the central nervous system across vertebrate species, and they are not found in invertebrates (1). Human LRRTM2 is synthesized as a 516 amino acid (aa) precursor that contains a 33 aa signal sequence, a 389 aa extracellular domain, a 21 aa transmembrane segment, and a 73 aa cytoplasmic region (1). The extracellular domain is characterized by the presence of ten Leucine-rich repeats, flanked by two cysteine-rich sequences. Mature human LRRTM2 is 98% aa identical to mouse LRRTM2 (1). LRRTM2 functions as a postsynaptic organizer in excitatory synapses. LRRTM2 binds only Neurexin-alpha and Neurexin-beta which are lacking splice site 4 (S4) (2). Crystal structure shows dependence of this interaction on Calcium ion as well as overlapping binding interface with Neuroligins (3). LRRTM2 is essential for long term potentiation in hippocampal neuron by maintaining AMPA Receptors at the synapse (4).

References:

1. Lauren, J. *et al.* (2003) *Genomics* **81**:411.
2. Ko, J. *et al.* (2009) *Neuron* **64**:791.
3. Yamagata, A. *et al.* (2018) *Nat. Commun.* **9**:3964.
4. Soler-Llavina, G.J. *et al.* (2013) *Neuron* **79**:439.