Recombinant Human ELFN1 His-tag

Catalog Number: 10090-EF

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human ELFN1 protein Asp28-Tyr418, with a C-terminal 6-His tag Accession # P0C7U0
N-terminal Sequence Analysis	Asp28
Predicted Molecular Mass	44 kDa

SPECIFICATIONS

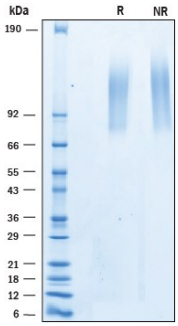
SDS-PAGE	78-121 kDa, reducing conditions
Activity	Bioassay data are not available.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 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	**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 °C under sterile conditions after reconstitution.

DATA

SDS-PAGE



Recombinant Human ELFN1 His-tag Protein SDS-PAGE 2 µg/lane of Recombinant Human ELFN1 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 78-121 kDa.

BACKGROUND

ELFN1 (Extracellular leucine-rich repeat and fibronectin type-III domain-containing protein 1), also known as Protein phosphatase 1 regulatory subunit 28, is a member of the extracellular Leucine-Rich Repeat superfamily (1). Expressed mainly in the nervous system, ELFN1 is a transmembrane protein that inhibits the activity of protein phosphatase 1 (PP1) complexes (2). Mature human ELFN1 consists of a 391 amino acid (aa) extracellular domain (ECD), a 21 aa transmembrane segment and a 389 aa cytoplasmic tail. The ECD includes one fibronectin type-III domain, six leucine-rich repeats (LRR) and one LRR C-terminal (LRRCT) domain. Human ELFN1 shares 90% aa sequence identity with mouse and rat ELFN1. The cytoplasmic tail contains many tyrosine but no other detectable motifs. ELFN1 is strongly expressed in globus pallidus and interneurons in cortex and hippocampus in both developing and adult brains (1). It is also expressed in endocrine and reproductive tissues (1). Given the functions and discrete patterns of many known LRR family proteins, it has been proposed that ELFN1 could serve as a neuronal adhesion molecule and play an integral role in synapse formation and differentiation via the coordination of both pre- and postsynaptic machineries, thereby involved in neurite outgrowth, axon guidance, fasciculation, and synapse formation (3). Recent studies showed that ELFN1 physically anchor metabotropic glutamate receptor 6 (mGluR6) and mGluR7 across retinal and hippocampal synapses (3-4), and can be recruited selectively to all group III mGluRs (mGluR4, mGluR6, mGluR7, and mGluR8) to allosterically modulate these receptors (5).

References:

1. Dolan J. *et al.* (2007) BMC Genomics **8**:320.
2. Hendrickx, A. *et al.* (2009) Chem. Biol. **16**:365.
3. Williams, M.E. *et al.* (2010) Neuron **68**:9.
4. De Wit, J. and Ghosh A. (2016) Nat Rev Neurosci **17**:22.
5. Dunn H. A. *et al.* (2018) PNAS **115**:5022.

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