Data Sheet (Cat.No.TMPY-00871)

TargetMol

LAYN Protein, Human, Recombinant (hFc)

General Information

Synonyms:	layilin
Protein Construction:	A DNA sequence encoding the extracellular domain (Met 1-Glu 220) of human Layilin (NP_849156.1) precursor was expressed with the C-terminal fused Fc region of human IgG1. Predicted N terminal: Ala 22
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q6UX15-2
Molecular Weight:	49.5 kDa (predicted); 60-65 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 100 mM Glycine, 10 mM NaCl, 50 mM Tris, pH 7.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Layilin recently characterized as a 55 kDa transmembrane protein with homology to C-type lectins, is present in numerous cell lines and tissue extracts. As one of the adaptor proteins, talin mediates the interactions between the actin filaments and the cell membrane by binding to integral membrane proteins and the cytoskeleton. Layilin is a newly identified membrane-binding site for talin in peripheral ruffles of spreading cells, a ten-amino acid

motif in the Layilin cytoplasmic domain is sufficient for talin binding, and its adjacent LH2-LH3 tandem arrays in the cytoplasmic domain provide docking sites for talin. Furthermore, talin binds Layilin, PIPK1gamma, and integrins in similar although subtly different ways. Layilin binds specifically to hyaluronan (HA) through its extracellular domain, a ubiquitous extracellular matrix component in most animal tissues and body fluids, but not to other tested glycosaminoglycans. The research suggests that Layilin may mediate signals from the extracellular matrix to the cell cytoskeleton via interaction with different intracellular binding partners and thereby be involved in the modulation of cortical structures in the cell. All the above actions reveal an interesting parallel between Layilin and the known HA receptor CD44. Also, merlin and radixin have been identified as different intracellular binding partners of Layilin. Accordingly, it has been suggested that Layilin plays roles in a variety of cellular processes, including cell shape, adhesion, motility, and homeostasis, as well as signal transduction. Besides, Layilin might play an important role in the process of invasion and lymphatic metastasis of lung carcinoma.

Reference

Borowsky ML, et al. (1998) Layilin, a novel talin-binding transmembrane protein homologous with C-type lectins, is localized in membrane ruffles.J Cell Biol. 143(2):429-42.

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Scoles DR. (2007) The merlin interacting proteins reveal multiple targets for NF2 therapy. Biochim Biophys Acta. 1785(1):32-54.

Chen Z, et al. (2008) Down-regulation of layilin, a novel hyaluronan receptor, via RNA interference, inhibits invasion and lymphatic metastasis of human lung A549 cells. Biotechnol Appl Biochem. 50(Pt 2):89-96.

Wegener KL, et al. (2008) Structural basis for the interaction between the cytoplasmic domain of the hyaluronate receptor layilin and the talin F3 subdomain. J Mol Biol. 382(1):112-26.

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