Data Sheet (Cat.No.TMPY-01680)

TargetMol

Lumican Protein, Human, Recombinant (His)

General Information

Synonyms:	lumican;LDC;SLRR2D
Protein Construction:	A DNA sequence encoding the human LUM (NP_002336.1) (Met 1-Asn 338) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Gln 19
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P51884
Molecular Weight:	38 kDa (predicted); 45-55 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:	> 97 % 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 PBS, pH 7.4. 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

Lumican, a prototypic leucine-rich proteoglycan with keratan sulfate side chains, is a major component of the cornea, dermal, and muscle connective tissues. In these bifunctional molecules, the protein moiety binds collagen fibrils and the highly charged hydrophilic glycosaminoglycans regulate interfibrillar spacings. Lumican is the major keratan sulfate proteoglycan of the cornea but is also distributed in interstitial collagenous matrices throughout the body. Lumican regulates collagenous matrix assembly as a keratan sulfate proteoglycan in the

cornea and is also present in the connective tissues of other organs and embryonic corneal stroma as a glycoprotein. Lumican may regulate collagen fibril organization and circumferential growth, corneal transparency, and epithelial cell migration, and tissue repair. lumican expressed in injured epithelium may modulate cell behavior such as adhesion or migration, thus contributing to corneal epithelial wound healing. Lumican plays a crucial role in the regulation of collagen assembly into fibrils in various connective tissues and serve as a definitive link between a necessity for lumican in the development of a highly organized collagenous matrix and corneal transparency.

Reference

Saika S,et al. (2000) Role of lumican in the corneal epithelium during wound healing. J Biol Chem. 275(4): 2607-12.
Chakravarti S,et al. (1998) Lumican regulates collagen fibril assembly: skin fragility and corneal opacity in the absence of lumican. J Cell Biol. 141(5): 1277-86.
Ezura Y,et al. (2000) Differential expression of lumican and fibromodulin regulate collagen fibrillogenesis in developing mouse tendons. J Cell Biol. 151(4): 779-88.