Data Sheet (Cat.No.TMPY-00819)

TargetMol

HAPLN1 Protein, Human, Recombinant (His)

General Information

Synonyms:	CRTL1;hyaluronan and proteoglycan link protein 1
Protein Construction:	A DNA sequence encoding the human HAPLN1 (NP_001875.1) (Met 1-Asn 354) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Asp 16
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P10915
Molecular Weight:	40 kDa (predicted); 52 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 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:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

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

Hyaluronan (HA) is a high MW glycosaminoglycan significantly involved in the formation and stability of extracellular matrix via its association with specific HA-binding proteins. HAPLN1, also known as CRTL1 (Cartilage Link Protein 1, CLP) and link protein, is a member of the HA-binding protein (hyaladherins) family, and contains a common structural domain of about 100 amino acids that is termed a Link module with two α-helices and two antiparallel β-sheets. HAPLN1/CRTL1 stabilizes the interaction between hyaluronan (HA) and versican, two

extracellular matrix components essential for cardiac development. Link module superfamily can be divided into three subgroups, and the HAPLN family are C domain-type proteins that have an extended structure with one N-terminal V-type Ig-like domain followed by two link modules. In cartilage, aggrecan forms - CLP stabilized aggregates with HA that provides the tissue with its load-bearing properties. HAPLN1 is a component of the follicular matrix, was shown to enhance cumulus-oocyte complex (COC) expansion in vitro. HAPLN1 may promote periovulatory granulosa cell survival, which would facilitate their differentiation into luteal cells.

Reference

Sun GW,et al.(2003) Follicle-stimulating hormone and insulin-like growth factor I synergistically induce up-regulation of cartilage link protein (Crtl1) via activation of phosphatidylinositol-dependent kinase/Akt in rat granulosa cells. Endocrinology. 144(3): 793-801.

Wirrig EE,et al.(2007) Cartilage link protein 1 (Crtl1), an extracellular matrix component playing an important role in heart development. Dev Biol. 310(2): 291-303.

Liu J,et al.(2010) Periovulatory expression of hyaluronan and proteoglycan link protein 1 (Hapln1) in the rat ovary: hormonal regulation and potential function. Mol Endocrinol. 24(6): 1203-17.

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