LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human CILP C1 Protein
Catalog Number: hRP-1135
Manufacturer: LD Biopharma, Inc.

Introduction

Major alterations in the composition of the cartilage extracellular matrix occur in joint disease, such as osteoarthrosis. Human CILP gene encodes the cartilage intermediate layer protein (CILP), which increases in early osteoarthrosis cartilage. The encoded protein was thought to encode a protein precursor, which then cleavage into two different proteins; C1 = an N-terminal CILP (22-724aa) and C2 = a C-terminal homolog of NTPPHase (725-1184aa), however, later studies identified no nucleotide pyrophosphatase phosphodiesterase (NPP) activity. The full-length and the N-terminal domain of this protein were shown to function as an IGF-1 antagonist.

Full-length mature protein of human CILP - C1 cDNA (22 - 724aa, derived from BC035776) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is expressed in E.coli as inclusion bodies. The final product was refolded using our unique "temperature shift inclusion body refolding" technology and chromatographically purified.

Gene Symbol:	CILP C1 (CILP-1; HsT18872)
Accession Number:	NP_003604
Species:	Human
Size:	10 µg / Vial
Composition:	0.1 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, DTT and Glycerol.
Storage:	In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Min,S.K., et al., *Cartilage intermediate layer protein gene is associated with lumbar disc*

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degeneration in male, but not female, collegiate athletes. Am J Sports Med 38 (12), 2552-2557 (2010)

Min,S.K., et al., *The cartilage intermediate layer protein gene is associated with lumbar disc degeneration in collegiate judokas*. Int J Sports Med 30 (9), 691-694 (2009)

Johnson,K., et al., *One of two chondrocyte-expressed isoforms of cartilage intermediate-layer protein functions as an insulin-like growth factor 1 antagonist*. Arthritis Rheum. 48 (5), 1302-1314 (2003)

Applications

1. May be used for in vitro CILP N-terminal protein C1 mediated IGF-1 antagonist activities for osteoblast cell differentiatio regulation study with this protein as either coating matrix protein or as soluble factor.
2. May be used for CILP C1 protein – protein interaction assay.
3. May be used as enzymatic substrate for various proteases.
4. May be used for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHGNLYFQGGEFRQTMLTQSVRRVQPGKKNPSIFAKPADTLESPGEW
TTWFNIDYPGGKGDYERLDAIRFYYGDRVCARPLRLEARTTDWTPAGSTGQVVHGSPREGFWCL
NREQRPGQNCSNYTVRFLCPPGSLRRDTERIWSPWSPWSKCSAACGQTGVQTRTRICLAEMVSL
CSEASEEGQHCMGQDCTACDLTCPMGQVNADCDACMCQDFMLHGAVSLPGGAPASGAAIYLLTK
TPKLLTQTDSDGRFRIPGLCPDGKSILKITKVKFAPIVLTMPKTSLKAATIKAEFVRAETPYMV
MNPETKARRAGQSVSLCCKATGKPRPDKYFWYHNDTLLDPSLYKHESKLVLRKLQQHQAGEYFC
KAQSDAGAVKSKVAQLIVIASDETPCNPVPESYLIRLPHDCFQNATNSFYYDVGRCPVKTCAGQ
QDNGIRCRDAVQNCCGISKTEEREIQCSGYTLPTKVAKECSCQRCTETRSIVRGRVSAADNGEP
MRFGHVYMGNSRVSMTGYKGTFTLHVPQDTERLVLTFVDRLQKFVNTTKVLPFNKKGSAVFHEI
KMLRRKKPITLEAMETNIIPLGEVVGEDPMAELEIPSRSFYRQNGEPYIGKVKASVTFLDPRNI
STATAAQTDLNFINDEGDTFPLRTYGMFSVDFRDEVTSEPLNAGKVKVHLDSTQVKMPEHISTV
KLWSLNPDTGLWEEEGDFKFENQRRNKR