

Human COL2A1 Protein (aa 1242-1487, His Tag)

Catalog Number: 11790-H07H



Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

ANFH; AOM; COL11A3; SEDC; STL1; Col2; Col2a; Col2a-1; Del1; Dmm; Lpk; M100856; Rgsc856

Protein Construction:

A DNA sequence encoding the amino acids (Asp 1242-Leu 1487) of human COL2A1 isoform 1 (P02458-2), known as chondrocalcin, was expressed, with a polyhistidine tag at the N-terminus.

Source: Human

Expression Host: Human Cells

QC Testing

Purity: > 92 % as determined by SDS-PAGE

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: His

Molecular Mass:

The recombinant human COL2A1 (aa 1242-1487), known as chondrocalcin consists of 265 amino acids and has a calculated molecular mass of 29.8 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of the protein is approximately 37 kDa due to glycosylation.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

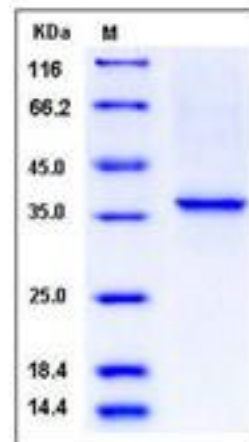
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

COL2A1 is the alpha-1 chain of type II collagen which is a fibrillar collagen found in cartilage and the vitreous humor of the eye. Mutations in this protein are associated with achondrogenesis, chondrodysplasia, early onset familial osteoarthritis, SED congenita, Langer-Saldino achondrogenesis, Kniest dysplasia, Stickler syndrome type I, and spondyloepimetaphyseal dysplasia Strudwick type. In addition, defects in processing chondrocalcin, a calcium binding protein that is the C-propeptide of this collagen molecule, are also associated with chondrodysplasia. There are two transcripts identified for this gene. Type II collagen is specific for cartilaginous tissues. Thus COL2A1 is essential for the normal embryonic development of the skeleton, for linear growth and for the ability of cartilage to resist compressive forces. The regulation of COL2A1, likely results from a balance of both positive and negative proteins. The inhibition of COL2A1 transcription following treatment of chick sternal chondrocytes with growth factors was accompanied by increased EF1 expression. Overexpression of EF1 in differentiated chondrocytes resulted in decreased expression of a reporter construct containing a collagen II promoter/enhancer insert.

References

- 1.Chan D, *et al.* (1995) A COL2A1 mutation in achondrogenesis type II results in the replacement of type II collagen by type I and III collagens in cartilage. *J Biol Chem.* 270 (4): 1747-53.
- 2.Donoso LA, *et al.* (2003) Clinical variability of Stickler syndrome: role of exon 2 of the collagen COL2A1 gene. *Surv Ophthalmol.* 48 (2): 191-203.
- 3.Meulenbelt I, *et al.* (1999) Haplotype analysis of three polymorphisms of the COL2A1 gene and associations with generalised radiological osteoarthritis. *Ann Hum Genet.* 63 (5): 393-400.

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