# Cartilage Oligomeric Matrix Protein Human HEK293

## Product Data Sheet

**Type:** Recombinant
**Source:** HEK293
**Species:** Human
**Other names:** COMP, Thrombospondin-5, TSP5

**Cat. No.:**
RD172080100 (0.1 mg)

## Description

Total 750 AA. MW: 82.4 kDa (calculated). UniProtKB acc.no. P49747. N-Terminal FLAG-tag, 13 extra AA (highlighted). Protein identity confirmed by LC-MS/MS.

## Introduction to the Molecule

Cartilage oligomeric matrix protein (COMP), also designated thrombospondin 5 (TSP 5), is non-collagenous glycoprotein and is a member of the thrombospondin family of extracellular proteins. COMP is a calcium-binding protein of high molecular weight (>500kDa) present in the extracellular matrix of articular, nasal and tracheal cartilage. COMP is not only cartilage-derived but was found widely in other tissues, including synovium and tendon. Intact COMP is pentameric, with five identical subunits and the carboxy-terminal globular domain of native COMP binds to collagens I, II, and IX. It has been proposed that COMP molecules are important for maintaining the properties and integrity of collagen network. In addition COMP may have a storage and delivery function for hydrophobic cellsignaling molecules such as vitamin D. The significance of COMP for normal development and function of cartilage has been underscored by the discovery that mutations of the COMP gene result in pseudoachondroplasia and some forms of multiple epiphyseal dysplasia. Most published studies have shown that serum levels of COMP provide important information about metabolic changes occurring in the cartilage matrix in joint disease. These studies describe that serum COMP level correlated with cartilage degradation and is a potential prognostic marker in inflammatory joint diseases such as osteoarthritis (OA) and rheumatoid arthritis (RA). Results have demonstrated an association of increasing serum COMP levels with progressive destruction of articular cartilage monitored radiographically. OA and RA are a common disease causing pain and disability in a significant proportion of the adult population and early diagnostics of these diseases is very important for future therapy.

## Research topic

Bone and cartilage metabolism

## Amino Acid Sequence

```
HVDYKDDDDK PAGQGQSPLG SDLGPQMLRE LQETNAALQD VRELLRQQVR EITFLKNTVM ECDACGMQQS VRTGLPSVRP
LLHCAPGFCF PGVACIQTES GARCGPCPAG FTGNGSHCTD VNECNAHPCF PRVRCINTSP GFRCEACPPG YSGPTHQGVG
LAFAKANKQV CTDINECETG QHNCVPNSVC INTRGSFQCG PCQPGFVGDQ ASGCQRRAQR FCPDGSPSEC HEHADCVLER
DGSRSCVCAV GWAGNGILCG RDTDLDGFPD EKLRCPERQC RKDNCVTVPN SGQEDVDRDG IGDACDPDAD GDGVPNEKDN
CPLVRNPDQR NTDEDKWGDA CDNCRSQKND DQKDTDQDGR GDACDDDIDG DRIRNQADNC PRVPNSDQKD SDGDGIGDAC
DNCPQKSNPD QADVDHDFVG DACDSDQDQD GDGHQDSRDN CPTVPNSAQE DSDHDGQGDA CDDDDDNDGV PDSRDNCRLV
PNPGQEDADR DGVGDVCQDD FDADKVVDKI DVCPENAEVT LTDFRAFQTV VLDPEGDAQI DPNWVVLNQG REIVQTMNSD
PGLAVGYTAF NGVDFEGTFH VNTVTDDDYA GFIFGYQDSS SFYVVMWKQM EQTYWQANPF RAVAEPGIQL KAVKSSTGPG
EQLRNALWHT GDTESQVRLL WKDPRNVGWK DKKSYRWFLQ HRPQVGYIRV RFYEGPELVA DSNVVLDTTM RGGRLGVFCF
SQENIIWANL RYRCNDTIPE DYETHQLRQA
```

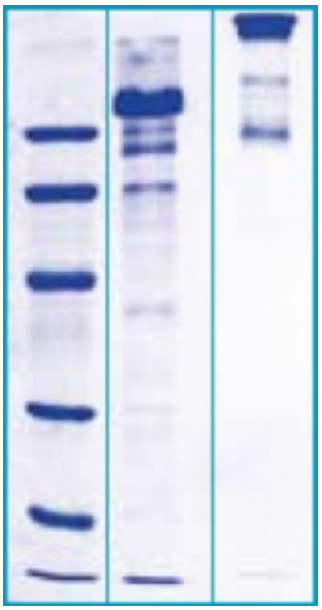
## Source

HEK293

## Purity

Purity as determined by densitometric image analysis: >90%

### SDS-PAGE gel



10% SDS-PAGE separation of Human COMP
1. M.W. marker - 21, 31, 45, 66, 97 kDa
2. reduced and boiled sample, 5µg / lane
3. non-reduced and non-boiled sample, 5µg / lane

### Endotoxin

< 0.1 EU/ug

### Formulation

Filtered (0.4 µm) and lyophilized from 0.5 mg/ml in 20mM Tris buffer, 50mM NaCl, pH 7.5

### Reconstitution

Add deionized water to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. Filter sterilize your culture media/working solutions containing this non-sterile product before using in cell culture.

### Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

### Storage, Stability/Shelf Life

Store lyophilized protein at -80°C. Lyophilized protein remains stable until the expiry date when stored at -80°C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80°C for long term storage. Reconstituted protein can be stored at 4°C for a limited period of time; it does not show any change after one week at 4°C.

### Quality Control Test

BCA to determine quantity of the protein.
SDS PAGE to determine purity of the protein.
LAL to determine quantity of endotoxin.

### Applications

Cell culture and/or animal studies, ELISA, Western blotting

### Note

This product is intended for research use only. The Certificate of Analysis is available on www.biovendor.com

### Physical Appearance

Filtered (0.4 µm) white lyophilized (freeze-dried) powder.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