COMP Protein, Human (HEK293, His)

Cat. No.:	HY-P72945
Synonyms:	Cartilage oligomeric matrix protein; COMP; Thrombospondin-5; TSP5
Species:	Human
Source:	HEK293
Accession:	P49747 (Q21-A757)
Gene ID:	1311
Molecular Weight:	120-130 kDa

PROPERTIES

AA Sequence

M V P D T A C V L L L T L A A L G A S G Q G Q S P L G S D L G P Q M L R E L Q E
T N A A L Q D V R E L L R Q Q V R E I T F L K N T V M E C D A C G M Q Q S V R T
G L P S V R P L L H C A P G F C F P G V A C I Q T E S G A R C G P C P A G F T G
N G S H C T D V N E C N A H P C F P R V R C I N T S P G F R C E A C P P G Y S G
P T H Q G V G L A F A K A N K Q V C T D I N E C E T G Q H N C V P N S V C I N T
R G S F Q C G P C Q P G F V G D Q A S G C Q R R A Q R F C P D G S P S E C H E H
A D C V L E R D G S R S C V C A V G W A G N G I L C G R D T D L D G F P D E K L
R C P E R Q C R K D N C V T V P N S G Q E D V D R D G I G D A C D P D A D G D G
V P N E K D N C P L V R N P D Q R N T D E D K W G D A C D N C R S Q K N D D Q K
D T D Q D G R G D A C D D D I D G D R I R N Q A D N C P R V P N S D Q K D S D G
D G I G D A C D N C P Q K S N P D Q A D V D H D F V G D A C D S D Q D Q D G D G
H Q D S R D N C P T V P N S A Q E D S D H D G Q G D A C D D D D N D G V P D S
R D N C R L V P N P G Q E D A D R D G V G D V C Q D D F D A D K V V D K I D V C
P E N A E V T L T D F R A F Q T V V L D P E G D A Q I D P N W V V L N Q G R E I
V Q T M N S D P G L A V G Y T A F N G V D F E G T F H V N T V T D D D Y A G F I
F G Y Q D S S S F Y V V M W K Q M E Q T Y W Q A N P F R A V A E P G I Q L K A V
K S S T G P G E Q L R N A L W H T G D T E S Q V R L L W K D P R N V G W K D K K
S Y R W F L Q H R P Q V G Y I R V R F Y E G P E L V A D S N V V L D T T M R G G
R L G V F C F S Q E N I I W A N L R Y R C N D T I P E D Y E T H Q L R Q A

Biological Activity	Measured by its ability to induce adhesion of ATDC5 mouse chondrogenic cells.When cells are added to COMP-coated plates (0.625 μg/mL and 100 μL/well), approximately ≥30% cells will adhere specifically after 60 minutes at 37°C.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.

Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The COMP protein assumes a crucial role in preserving the structural integrity of cartilage by interacting with other extracellular matrix proteins, including collagens and fibronectin. It facilitates the connection between chondrocytes and the cartilage extracellular matrix by engaging with cell surface integrin receptors. Additionally, COMP's involvement in the pathogenesis of osteoarthritis underscores its potential significance in joint health. Beyond its structural role, COMP emerges as a potent suppressor of apoptosis in both primary chondrocytes and transformed cells. Its anti-apoptotic effects are mediated by inhibiting caspase-3 activation and inducing the IAP family of survival proteins (BIRC3, BIRC2, BIRC5, and XIAP). Furthermore, COMP plays an essential role in maintaining the contractile and differentiated phenotype of vascular smooth muscle cells under both physiological and pathological stimuli, achieved through its interaction with ITGA7. This multifaceted functionality positions COMP as a key player in the maintenance of cartilage structure, joint health, and cellular survival processes.

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