

## Animal-Free BMP-5 Protein, Human (His)

Cat. No.:	HY-P700028AF
Synonyms:	Bone morphogenetic protein 5; BMP5
Species:	Human
Source:	E. coli
Accession:	P22003 (A317-H454)
Gene ID:	653
Molecular Weight:	Approximately 16.57 kDa

### PROPERTIES

AA Sequence	<pre> M A A N K R K N Q N   R N K S S S H Q D S   S R M S S V G D Y N   T S E Q K Q A C K K H E L Y V S F R D L   G W Q D W I I A P E   G Y A A F Y C D G E   C S F P L N A H M N A T N H A I V Q T L   V H L M F P D H V P   K P C C A P T K L N   A I S V L Y F D D S S N V I L K K Y R N   M V V R S C G C H           </pre>
Biological Activity	Measure by its ability to induce alkaline phosphatase production by ATDC5 cells. The ED <sub>50</sub> for this effect is <0.17 µg/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a solution containing 20 mM sodium citrate, 0.2 M NaCl, pH 3.5, trehalose.
Endotoxin Level	<0.1 EU per 1 µg of the protein by the LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
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	<p>BMP-5 Protein, a crucial member of the TGF-beta superfamily, plays indispensable roles in various developmental processes, including cartilage and bone formation, as well as neurogenesis. It triggers the canonical BMP signaling cascade by binding to type I receptor BMPRI1 and type II receptor BMPRII, leading to the phosphorylation of SMAD1/5/8, which modulate gene transcription. Additionally, BMP-5 can engage non-canonical pathways, such as the MAPK p38 signaling cascade, promoting chondrogenic differentiation. Notably, it promotes the expression of HAMP, a process regulated by its interaction with ERFE, which inhibits BMP-induced transcription of HAMP. The intricate signaling network involving BMP-5 underscores its versatile regulatory functions in diverse cellular processes.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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