Animal-Free BMP-6 Protein, Human (His)

Cat. No.:	HY-P700029AF
Synonyms:	Bone morphogenetic protein 6; Bmp6; BMP-6; VG-1-related protein; VGR-1; Vgr1
Species:	Human
Source:	E. coli
Accession:	P22004 (V397-H513)
Gene ID:	654
Molecular Weight:	Approximately 14.07 kDa

PROPERTIES

AA Sequence	M V S S A S D Y N S S E L K T A C R K H E L Y V S F Q D L G W Q D W I I A P K G Y A A N 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 N P E Y V P K P C C A P T K L N A I S V L Y F D D N S N V I L K K Y R N M V V R A C G C H
Biological Activity	Measure by its ability to induce alkaline phosphatase production by ATDC5 cells. The ED_{50} for this effect is <87 ng/mL
Appearance	Lyophilized powder.
Formulation	Lyophilized from a solution containing 20 mM sodium citrate, 0.2 M NaCl, pH 3.5.
Endotoxin Level	<0.1 EU per 1 μg of the protein by the 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	BMP-6 Protein, a member of the TGF-beta superfamily, is indispensable in various developmental processes, including cartilage and bone formation. Beyond its roles in skeletal development, BMP-6 serves as a crucial regulator of HAMP/hepcidin expression and iron metabolism by acting as a ligand for hemojuvelin/HJV. Moreover, it can promote HAMP expression, potentially through interaction with its receptor BMPR1A/ALK3. The initiation of the canonical BMP signaling cascade involves BMP-6 associating with the type I receptor ACVR1 and type II receptor ACVR2B, with ACVR1 propagating signals by phosphorylating SMAD1/5/8 that travel to the nucleus and act as activators and repressors of transcription of target genes. Additionally, BMP-6 can engage non-canonical pathways, such as the TAZ-Hippo signaling cascade, influencing VEGF signaling by regulating VEGFR2 expression. It forms interactions with various proteins, including SOSTDC1,

	Hemojuvelin/HJV, ERFE, and BMPR1A/ALK3, showcasing its versatile regulatory roles in different cellular processes.

Caution: Product has not been fully validated for medical applications. For research use only.

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