

## Animal-Free BMP-13/GDF-6 Protein, Human (His)

<b>Cat. No.:</b>	HY-P700022AF
<b>Synonyms:</b>	subunit (CLMF p35); NK cell Stimulating Factor Chain 1
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	Q6KF10 (T336-R455)
<b>Gene ID:</b>	392255
<b>Molecular Weight:</b>	Approximately 14.50 kDa

### PROPERTIES

<b>AA Sequence</b>	<p>           M T A F A S R H G K    R H G K K S R L R C    S K K P L H V N F K    E L G W D D W I I A            P L E Y E A Y H C E    G V C D F P L R S H    L E P T N H A I I Q    T L M N S M D P G S            T P P S C C V P T K    L T P I S I L Y I D    A G N N V V Y K Q Y    E D M V V E S C G C            R         </p>
<b>Biological Activity</b>	Measure by its ability to induce alkaline phosphatase production by ATDC5 cells. The ED <sub>50</sub> for this effect is 63-240 ng/mL.
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a solution containing 20 mM sodium citrate, 0.2 M NaCl, pH 3.5.
<b>Endotoxin Level</b>	<0.1 EU per 1 µg of the protein by the LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

<b>Background</b>	<p>Animal-Free BMP-13/GDF-6 Protein, a pivotal growth factor, governs crucial processes, including proliferation and cellular differentiation in the retina and bone formation. Its regulatory role in apoptosis during retinal development is essential, contributing to the establishment of dorsal-ventral positional information and controlling the formation of the retinotectal map. In the context of skeletal development, this growth factor is indispensable for the normal formation of bones and joints in diverse anatomical regions, such as limbs, skull, digits, and axial skeleton. Additionally, it plays a key role in delineating boundaries between skeletal elements, suggesting a role in species-specific skeletal evolution. Functionally, BMP-13/GDF-6 exhibits positive regulation of chondrogenic tissue differentiation through specific growth factor receptor</p>
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subunits, including BMPR1A, BMPR1B, BMPR2, and ACVR2A, culminating in the activation of the SMAD1-SMAD5-SMAD8 complex. Notably, NOG serves as an inhibitor in the regulation of chondrogenic differentiation. Furthermore, BMP-13/GDF-6 is implicated in the induction of adipogenesis from mesenchymal stem cells, engaging growth factor receptors BMPR1A, BMPR2, and ACVR2A, and activating the SMAD1-SMAD5-SMAD8 complex and MAPK14/p38 through a mechanism of homodimerization with disulfide-linked structures.

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

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