Animal-Free BMP-10 Protein, Human (His)

Cat. No.:	HY-P700019AF
Synonyms:	Bone morphogenetic protein 10; BMP10
Species:	Human
Source:	E. coli
Accession:	O95393 (N317-R424)
Gene ID:	27302
Molecular Weight:	Approximately 13.10 kDa

PROPERTIES

AA Sequence	MNAKGNYCKR TPLYIDFKEI GWDSWIIAPP GYEAYECRGV CNYPLAEHLT PTKHAIIQAL VHLKNSQKAS KACCVPTKLE PISILYLDKG VVTYKFKYEG MAVSECGCR
Biological Activity	Measure by its ability to induce alkaline phosphatase production by ATDC5 cells. The ED_{50} for this effect is 1.7-2.1 ng/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a solution containing 20 mM sodium citrate, 0.2 MNaCl, 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-10 is vital for maintaining the proliferative activity of embryonic cardiomyocytes, preventing premature activation of the negative cell cycle regulator CDKN1C/p57KIP, and ensuring the necessary expression levels of cardiogenic factors like MEF2C and NKX2-5. Functioning as a ligand for ACVRL1/ALK1, BMPR1A/ALK3, and BMPR1B/ALK6, it triggers the activation of SMAD1, SMAD5, and SMAD8 transcription factors, orchestrating crucial signaling pathways. Additionally, BMP-10 exhibits inhibitory effects on endothelial cell migration and growth, and in breast cancer cell lines, it may attenuate both cell migration and cell matrix adhesion. Structurally, it forms a homodimer linked by disulfide bonds. Notably, BMP-10 interacts with extracellular matrix proteins FBN1 and FBN2 through its N-terminal domain and engages with ENG, further underscoring its multifaceted roles in various cellular processes.

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

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