

Recombinant Human Bone Morphogenetic Protein 7

Cat. No. BMP7-07H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human DNA sequence encoding the human BMP-2 signal peptide and propeptide (1~282 amino acid) fused to the human rhBMP-7 mature chain (293~431 amino acid) was expressed in a Chinese hamster ovary cell line. The mature recombinant BMP-7 generated by the proteolytic removal of the signal peptide and propeptide contains 139 amino acid residues. The glycosylation of BMP-7 increases the molecular mass and the glycosylated proteins migrate as 25 ~ 40 kDa in SDS-PAGE under non-reducing conditions. BMP-7 is purified by proprietary chromatographic techniques.
Species	Human
Source	CHO
ProteinLength	1-282;293-431 a.a.
Description	The bone morphogenetic proteins (BMPs) are a family of secreted signaling molecules that can induce ectopic bone growth. Many BMPs are part of the transforming growth factor-beta (TGFB) superfamily. BMPs were originally identified by an ability of demineralized bone extract to induce endochondral osteogenesis in vivo in an extraskeletal site. Based on its expression early in embryogenesis, the BMP encoded by this gene has a proposed role in early development. In addition, the fact that this BMP is closely related to BMP5 and BMP7 has lead to speculation of possible bone inductive activity.

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Amino Acid Sequence	The sequence of the first five N-terminal amino acids was determined and was found to be, Phe-Pro-Met-Phe-Lys.
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Purity	Greater than 97.0% as determined by:(a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.
Formulation	BMP-7 was lyophilized from a concentrated (1mg/ml) sterile solution containing 1% sucrose, 1.2% mannitol, 20mM glycine, and 0.005% tween 20 pH-4.
Biological Activity	Measured in alkaline phosphatase activity assay using MC3T3-E1 cells. The ED50 for this effect is < 100 ng/mL.
Solubility	It is recommended to reconstitute the lyophilized Bone Morphogenetic Protein-7 in 1ml sterile/ endotoxin free water.
Storage	Lyophilized BMP-7 although stable at room temperature for 3 weeks, should be stored desiccated below - 18°C. Upon reconstitution BMP-7 should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

GENE INFORMATION

Gene Name	BMP7 bone morphogenetic protein 7 [Homo sapiens]
Synonyms	BMP-7; OP-1; OP1; OTTHUMP00000031357; Eptotermin alfa; Osteogenic protein 1; bone morphogenetic protein 7; BMP7
Gene ID	655

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mRNA Refseq	NM_001719
Protein Refseq	NP_001710
MIM	112267
UniProt ID	P18075
Chromosome Location	20q13
Pathway	Cytokine-cytokine receptor interaction; Hedgehog signaling pathway; TGF-beta signaling pathway
Function	cytokine activity; growth factor activity; heparin binding; protein binding
bone morphogenetic protein 7	