

# Recombinant Human Bone Morphogenetic Protein 7

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

## SPECIFICATION

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Overview</b> | 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.                              |
| <b>Species</b>          | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Source</b>           | CHO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>ProteinLength</b>    | 1-282;293-431 a.a.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Description</b>      | 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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| <b>Amino Acid Sequence</b> | The sequence of the first five N-terminal amino acids was determined and was found to be, Phe-Pro-Met-Phe-Lys.                                                                                                                                                                                                                         |
| <b>Physical Appearance</b> | Sterile Filtered White lyophilized (freeze-dried) powder.                                                                                                                                                                                                                                                                              |
| <b>Purity</b>              | Greater than 97.0% as determined by:(a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.                                                                                                                                                                                                                                                 |
| <b>Formulation</b>         | 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.                                                                                                                                                                                      |
| <b>Biological Activity</b> | Measured in alkaline phosphatase activity assay using MC3T3-E1 cells. The ED50 for this effect is < 100 ng/mL.                                                                                                                                                                                                                         |
| <b>Solubility</b>          | It is recommended to reconstitute the lyophilized Bone Morphogenetic Protein-7 in 1ml sterile/ endotoxin free water.                                                                                                                                                                                                                   |
| <b>Storage</b>             | 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. |

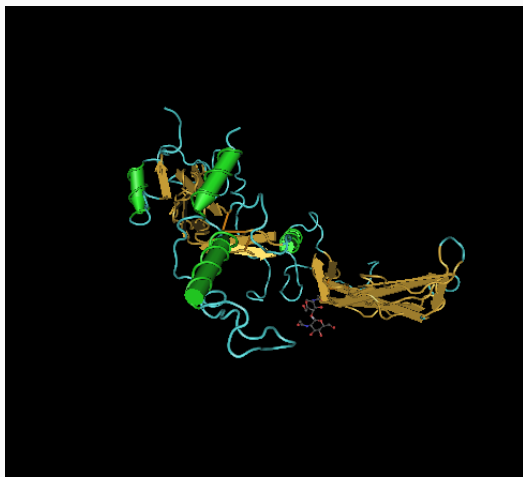
## GENE INFORMATION

|                  |                                                                                                                 |
|------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Gene Name</b> | BMP7 bone morphogenetic protein 7 [ Homo sapiens ]                                                              |
| <b>Synonyms</b>  | BMP-7; OP-1; OP1; OTTHUMP00000031357; Eptotermin alfa; Osteogenic protein 1; bone morphogenetic protein 7; BMP7 |
| <b>Gene ID</b>   | 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 |            |