

Active Recombinant Human BMP7 Protein, Biotinylated

Cat. No. BMP7-163H Lot. No. (See product label)

SPECIFICATION

Product Overview Recombinant Human BMP7(Ser293-His431) was expressed in CHO, Biotinylated.

Species Human

Source CHO

ProteinLength Ser293-His431

Description

Bone morphogenetic protein 7 (BMP-7), also known as osteogenic protein 1 (OP-1), is a widely expressed TGF-beta superfamily member with important functions during embryogenesis, in the adult, and in disease. Human BMP-7 is synthesized with a 29 amino acid (aa) signal sequence, a 263 aa propeptide, and a 139 aa growth factor domain. The growth factor domain of human BMP-7 shares 98% aa sequence identity with mouse and rat BMP-7. The BMP-7 propeptide is cleaved intracellularly but remains in association with the growth factor domain. BMP-7 is subsequently secreted as a tetramer that consists of two propeptides and two disulfide-linked growth factor domains. Mature BMP-7 can also form disulfide-linked heterodimers with BMP-2 or BMP-4, complexes that show increased potency and range of activity compared to BMP-7 homodimers. The presence of the propeptides in the BMP-7 tetramer does not diminish the bioactivity of the growth factor domains. Secreted BMP-7 is immobilized in the extracellular matrix as a result of interactions between the propeptide and matrix Fibrillin. BMP-7 exerts its biological effects through the type 2 receptors Activin RIIA, Activin RIIB, and BMPR-II and the type 1 receptors Activin RIA, BMPR-IA, and BMPR-IB. BMP-7 plays a role in a variety of organ systems. It

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promotes new bone formation and nephron development, inhibits the branching of prostate epithelium, and antagonizes epithelial-mesenchymal transition (EMT). In pathological conditions, BMP-7 inhibits tumor growth and metastasis, ameliorates fibrotic damage in nephritis, and promotes neuroregeneration following brain ischemia.

Predicted N Terminal Ser293

Form Lyophilized from a 0.2 µm filtered solution in HCl with BSA as a carrier protein.

Bio-activity Measured by its ability to induce alkaline phosphatase production by ATDC5 mouse chondrogenic cells. Nakamura, K. et al. (1999) Exp. Cell Res. 250:351. The ED50 for this effect is 100-600 ng/mL.

Molecular Mass 16 kDa (unlabeled)

Endotoxin <0.010 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE with silver staining

Notes Structure / Form: Disulfide-linked homodimer; Biotinylated protein via sugars

Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
12 months from date of receipt, -20 to -70 centigrade as supplied.
1 month, 2 to 8 centigrade under sterile conditions after reconstitution.
3 months, -20 to -70 centigrade under sterile

Reconstitution Reconstitute at 100 µg/mL in 4 mM HCl.

Conjugation Biotin

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GENE INFORMATION

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|------------------------|--|
| Gene Name | BMP7 bone morphogenetic protein 7 [Homo sapiens] |
| Official Symbol | BMP7 |
| Synonyms | BMP7; bone morphogenetic protein 7; OP 1; osteogenic protein 1; BMP-7; OP-1; |
| Gene ID | 655 |
| mRNA Refseq | NM_001719 |
| Protein Refseq | NP_001710 |
| MIM | 112267 |
| UniProt ID | P18075 |

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