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

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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