

Product datasheet for **TP724711**

BMP7 Human Recombinant Protein

Product data:

Product Type:	Recombinant Proteins
Description:	Recombinant Human BMP-7 (C-hFc)
Species:	Human
Expression cDNA Clone or AA Sequence:	Arg292-Cys430
Tag:	C-Human Fc
Buffer:	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.
Note:	Recombinant Human BMP-7 (C-hFc) is produced by Human Cells. The target gene encoding Arg292-Cys430 is expressed with a C-hFc tag.
Stability:	12 months from date of despatch
Locus ID:	655
UniProt ID:	P18075



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Summary:

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 (1, 2). Human BMP-7 is synthesized with a 29 amino acid (aa) signal sequence, a 263 aa propeptide, and a 139 aa growth factor domain (3, 4). 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 (5, 6). 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 (7-9). The presence of the propeptides in the BMP-7 tetramer does not diminish the bioactivity of the growth factor domains (6). Secreted BMP-7 is immobilized in the extracellular matrix as a result of interactions between the propeptide and matrix Fibrillin (5). 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 (2, 6). BMP-7 plays a role in a variety of organ systems. It promotes new bone formation and nephron development (10, 11), inhibits the branching of prostate epithelium (12), and antagonizes epithelial-mesenchymal transition (EMT) (13-15). In pathological conditions, BMP-7 inhibits tumor growth and metastasis (14), ameliorates fibrotic damage in nephritis (13), and promotes neuroregeneration following brain ischemia (16).