OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850, US
Phone: +1-888-267-4436
https://www.origene.com
techsupport@origene.com
EU: info-de@origene.com
CN: techsupport@origene.cn

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.
Storage:	Lyophilized protein should be stored at < -20°C, though stable at room temperature for 3 weeks. Reconstituted protein solution can be stored at 4-7°C for 2-5 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
Stability:	12 months from date of despatch
Locus ID:	655
UniProt ID:	P18075
Synonyms:	OP1;BMP7

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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).

Protein Families: Adult stem cells, Cancer stem cells, Druggable Genome, Embryonic stem cells, ES Cell Differentiation/IPS, Induced pluripotent stem cells, Secreted Protein, Stem cell relevant signaling - TGFb/BMP signaling pathway

Protein Pathways: Cytokine-cytokine receptor interaction, Hedgehog signaling pathway, TGF-beta signaling pathway