BMP4 cDNA Clone – Bone Morphogenetic Protein 4 (Human)

PRODUCT OVERVIEW

Product Name	BMP4, cDNA Clone
Full Product Name	BMP4 cDNA Clone
Product Gene Name	BMP4 cdna clone
Sequence	atgattcctg gtaaccgaat gctgatggtc gttttattat gccaagtcct gctaggaggc gcgagccatg ctagtttgat acctgagacg gggaagaaaa aagtcgccga gattcagggc cacgcgggag gacgccgctc agggcagagc catgagctcc tgcgggactt cgaggcgaca cttctgcaga tgtttgggct gcgccgccgc ccgcagccta gcaagagtgc cgtcattccg gactacatgc gggatcttta ccggcttcag tctggggagg aggaggaaga gcagatccac agcactggtc ttgagtatcc tgagcgcccg gccagccggg ccaacaccgt gaggagcttc caccacgaag aacatctgga gaacatccca gggaccagtg aaaactctgc ttttcgtttc ctctttaacc tcagcagcat ccctgagaac gaggcgatct cctctgcaga gcttcggctc ttccgggagc aggtggacca gggccctgat tgggaaaggg gcttccaccg tataaacatt tatgaggtta tgaagccccc agcagaagtg gtgcctgggc acctcatcac acgactactg gacacgagac tggtccacca caatgtgaca cggtgggaaa cttttgatgt gagccctgcg gtccttcgct ggacccggga gaagcagcca aactatgggc tagccattga ggtgactcac ctccatcaga ctcggaccca ccagggccag catgtcagga ttagccgatc gttacctcaa gggagtggga attgggccca gctccggccc ctcctggtca cctttggcca tgatggccgg ggccatgcct tgacccgacg ccggagggcc aagcgtagcc ctaagcatca ctcacagcgg gccaggaaga agaataagaa ctgccggcgc cactcgctct atgtggactt cagcgatgtg ggctggaatg actggattgt ggccccacca ggctaccagg ccttctactg ccatggggac tgccccttc cactggctga ccacctcaac tcaaccaacc atgccattgt gcagaccctg gtcaattctg tcaattccag tatccccaaa gcctgttgtg tgcccactga actgagtgcc atctccatgc tgtacctgga tgagtatgat aaggtggtac tgaaaaatta tcaggagatg gtagtagagg gatgtgggtg ccgctga
Molecular Weight	46,555 Da
OMIM	112262
Vector	pENTR223.1
Clone Sequence Report	Provided with product shipment
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for BMP4 cdna clone	MBS1272730 is a cDNA clone targeting BMP4.
Other Notes	Small volumes of BMP4 cdna clone vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for BMP4. It may not necessarily be applicable to this product.

NCBI GI #	34189723
NCBI GeneID	652
NCBI Accession #	BC020546
UniProt Secondary Accession #	Q9UM80
UniProt Related Accession #	P12644
NCBI Official Full Name	Homo sapiens bone morphogenetic protein 4, mRNA
NCBI Official Synonym Full Names	bone morphogenetic protein 4
NCBI Official Symbol	BMP4
NCBI Official Synonym Symbols	ZYME; BMP2B; OFC11; BMP2B1; MCOPS6

UniProt Protein Name	Bone morphogenetic protein 4
UniProt Synonym Protein Names	Bone morphogenetic protein 2B; BMP-2B
Protein Family	Bone morphogenetic protein
UniProt Gene Name	BMP4
UniProt Synonym Gene Names	BMP2B; DVR4; BMP-4; BMP-2B
UniProt Entry Name	BMP4_HUMAN
NCBI Protein Information	bone morphogenetic protein 4
NCBI Summary for BMP4	This gene encodes a secreted ligand of the TGF-beta (transforming growth factor-beta) superfamily of proteins. Ligands of this family bind various TGF-beta receptors leading to recruitment and activation of SMAD family transcription factors that regulate gene expression. The encoded preproprotein is proteolytically processed to generate each subunit of the disulfide-linked homodimer. This protein regulates heart development and adipogenesis. Mutations in this gene are associated with orofacial cleft and microphthalmia in human patients. The encoded protein may also be involved in the pathology of multiple cardiovascular diseases and human cancers. [provided by RefSeq, Jul 2016]
UniProt Comments for BMP4	BMP4: Induces cartilage and bone formation. Also act in mesoderm induction, tooth development, limb formation and fracture repair. Acts in concert with PTHLH/PTHRP to stimulate ductal outgrowth during embryonic mammary development and to inhibit hair follicle induction. Homodimer; disulfide-linked. Interacts with GREM2. Part of a complex consisting of TWSG1 and CHRD. Interacts with the serine proteases, HTRA1 and HTRA3; the interaction with either inhibits BMP4-mediated signaling. The HTRA protease activity is required for this inhibition. Interacts with SOSTDC1. Expressed in the lung and lower levels seen in the kidney. Present also in normal and neoplastic prostate tissues, and prostate cancer cell lines. Belongs to the TGF-beta family. Protein type: Secreted; Secreted, signal peptide Chromosomal Location of Human Ortholog: 14q22-q23 Cellular Component: extracellular region; extracellular space Molecular Function: chemoattractant activity; cytokine activity; protein binding; transforming growth factor beta receptor binding Biological Process: activation of MAPKK activity; alveolus development; blood vessel endothelial cell proliferation during sprouting angiogenesis; BMP signaling pathway; branching morphogenesis of a tube; chondrocyte differentiation; common-partner SMAD protein phosphorylation; endochondral ossification; hemopoietic progenitor cell differentiation; intermediate mesodermal cell differentiation; kidney development; lymphoid progenitor cell differentiation; macrophage differentiation; mesonephros development; monocyte differentiation; negative regulation of apoptosis; negative regulation of cell cycle; negative regulation of cell proliferation; negative regulation of immature T cell proliferation in the thymus; negative regulation of MAP kinase activity; negative regulation of mitosis; negative regulation of myoblast differentiation; negative regulation of phosphorylation; negative regulation of striated muscle development; negative regulation of T cell differentiation in the thymus; negative regulation of transcription from RNA polymerase II promoter; negative regulation of transcription, DNA-dependent; odontogenesis; osteoblast differentiation; positive regulation of apoptosis; positive regulation of BMP signaling pathway; positive regulation of bone mineralization; positive regulation of cardiac muscle fiber development; positive regulation of collagen biosynthetic process; positive regulation of endothelial cell proliferation; positive regulation of epidermal cell differentiation; positive regulation of epithelial cell proliferation; positive regulation of ossification; positive regulation of osteoblast differentiation; positive regulation of protein amino acid phosphorylation; positive regulation of protein binding; positive regulation of smooth muscle cell proliferation; positive regulation of transcription from RNA polymerase II promoter; positive regulation of transcription, DNA-dependent; post-embryonic development; regulation of cell fate commitment; regulation of protein import into nucleus; smooth muscle development; smoothened signaling pathway; steroid hormone mediated signaling; telencephalon development; ureteric bud branching; ureteric bud development Disease: Microphthalmia, Syndromic 6; Orofacial Cleft 11
Research Articles on BMP4	**1.** BMP4 caused a trend towards accelerated metastasis formation, especially in bone. More work is needed to uncover the long-term effects of BMP4 and the clinical relevance of these findings.

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