



Recombinant Human Bone Morphogenetic Protein-2

20220808DS



FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	100-048
Size:	10 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	<i>BMP2</i>
Synonyms:	BMP-2A, Bone morphogenetic protein 2A

BMPs (Bone Morphogenetic Proteins) belong to the TGF-beta superfamily of structurally related signaling proteins. BMP-2 is a potent osteoinductive cytokine, capable of inducing bone and cartilage formation in association with an osteoconductive carrier such as collagen and synthetic hydroxyapatite. In addition to its osteogenic activity, BMP-2 appears to play an important role in cardiac morphogenesis, and is expressed in a variety of other tissues, including lung, liver, spleen, prostate, ovary, and small intestine. The functional form of BMP-2 is a 26 kDa protein composed of two identical 114 amino acid polypeptide chains (monomers) linked by a single disulfide bond. Each BMP-2 monomer is expressed as the C-terminal part of a precursor polypeptide, which also contains a 23 amino acid signal sequence for secretion, and a 259 amino acid propeptide. After dimerization of this precursor, the covalent bonds between the propeptide (which is also a disulfide-linked homodimer) and the mature BMP-2 ligand are cleaved by a furin-type protease. Recombinant Human/Murine/Rat BMP-2 derived from CHO cells is a homodimeric glycoprotein that consists of two 114 amino acid polypeptide chains linked by a single disulfide bond. Due to glycosylation, CHO cell-derived Human/Murine/Rat BMP-2 migrates at an apparent molecular weight of approximately 28-29 kDa by SDS-PAGE analysis under non-reducing conditions.

References

1. Wozney et al., Science 242:1528, 1988
2. Ruppert et al., Eur J Biochem 237:295, 1996

Sequence

QAKHKQRKRL KSSCKRHPLY VDFSDVGWND WIVAPPGYHA
FYCHGECFPF LADHLNSTNH AIVQTLVNSV NSKIPKACCV
PTELSAISML YLDENERVVL KNYQDMVVEG CGCR

Database References

Protein RefSeq:	NP_001191.1
Uniprot ID:	P12643
mRNA RefSeq:	NM_001200.2

Product Specifications

Expressed in	CHO cells
Purity	> 95% by SDS-PAGE & HPLC analysis
Endotoxin	< 0.1ng per µg of BMP-2
Stabilizer	None
Formulation	lyophilized
Length (aa):	114
MW:	28-29.0 kDa (reducing conditions)

Stability: The lyophilized protein is stable at room temperature for 1 month and at 4°C for 6 months. Reconstituted working aliquots are stable for 1 week at 2°C to 8°C and for 6 months at -20°C to -80°C.

Reconstitution: Centrifuge the vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. *Do not vortex.* For extended storage, it is recommended to further dilute in a buffer containing a carrier protein (example 0.1% BSA) and store in working aliquots at -20°C to -80°C.



AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: Determined by its ability to induce alkaline phosphatase production by ATDC-5 cells. The expected ED₅₀ for this effect is 40-100 ng/ml.