Product Specification Sheet

Bone Morphogenetic Protein 2 (BMP-2) Protein

Cat # BMP25-R-10 Purified (E.Coli) Recombinant Human BMP2 protein, Biologically active, Carrier free **SIZE**: □ 10 ug

The BMPs belong to the TGF- Beta superfamily, whose members are widely represented throughout the animal kingdom. The BMPs are important regulators of key events in the processes of bone formation during embryogenesis, postnatal growth, remodeling and regeneration of the skeleton. The BMPs function by binding to a receptor complex that is found on all normal cells and is composed of type-I and –II receptors. The primary unit of bone formation is osteoblast, the bone-forming cell. These osteoblast cells respond to physical loading by transducing signals that alter gene expression patterns, and Cbfa (core binding factor), the osteoblast specific transcription factor plays an important role in osteoblast differentiation and function.

Localization studies in both human and mouse tissues have demonstrated high levels of mRNA expression and protein synthesis for various BMPs in kidney, heart, lung, small intestine, limb bud and teeth. Several BMPs have been implicated in early skeletal development, including BMP-2, -4, -5, -7, -14 (CDMP-1 / GDF-5), other members, such as BMP-3, -6, -7 and –13 (CDMP-2 / GDF-6) may be involved in later stages of skeletal formation.

BMP2 or BMP-2A, a 396aa protein in human (chr 20p12) belongs to the TGF-beta family, It is involved in cartilage and bone formation during embryogenesis, but may have additional functions in morphogenesis as implied by its expression in various organs and embryonic tissues. It is abundant in lung, spleen, and colon.

Source of Antigen or Protein controls

The DNA sequence encoding human BMP-2 was expressed in E. coli and purified (>98%). The mature recombinant human BMP-2 generated by the proteolytic removal of the signal peptide. The purified protein is of ~26 KD, containing two identical chains of 115 amino acids linked by disulfide bond. Recombinant **BMP-2** has very low endotoxin level (<0.1 ng/1 ug).

Purified recombinant human BMP-2 (cat # BMP25-R-10) is supplied in 10 ug sizes in lyophilized powder or in liquid (PBS). This preparation is not necessarily sterile. Reconstitute the powder in PBS, pH 7.4 containing 0.1% BSA at a concentration of 5 ug/200 ul or 10 ug/500 ul. The solution can be sterile filtered if necessary,

The **biological activity** of rhBMP-2 was determined by the dose dependent stimulation of the cytolysis of MC3T3-E1 cells (ED50=<50 ng/ml) and induction of alkaline Phosphatase in mouse ATDC-5 chodrogenic cells (ED50=<1 ug/ml).

Storage

Short-term: unopened, undiluted vials for less than a week at 4oC.

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder.

General References:

Kawabata, M et al (1998) Cytokine and Growth Factor Reviews 9: 49-61, Ebendal, T et al (1998), J. Neurosci. Res. 51: 139-146; Reddi, A. H (1998), Nature Biotechnology 16: 247-252.

*This product is for in vitro research use only.

Related material available from ADI

Catalog#	Prod Description
BMP21-C	Human recombinant, purified BMP2 protein Western blot +ve control
BMP21-M	Mouse Monoclonal Anti-Human Bone Morphogenetic protein 2 (BMP2), IgG # 1, aff pure
BMP22-S	Anti-Human Bone Morphogenic Protein 2 (BMP-2) antiserum
BMP25-R-10	Purified (E.coli) Recombinant Human BMP2 protein, biologically active, Carrier free
BMP25-R-5	Discontinued: Purified Recombinant Human BMP2 protein, biologically active, Carrier free
BMP31-A	Anti- Human Bone Morphogenetic protein (BMP3) IgG #1, aff pure
BMP31-C	Human recombinant, purified BMP3 protein Western blot +ve control
BMP32-M	Mouse Monoclonal Anti-Bone Morphogenetic protein 3 (BMP3), IgG # 1, aff pure
BMP35-R-10	Purified Recombinant Human BMP3 protein, biologically active
BMP35-R-100	Purified Recombinant Human BMP3 protein, Biologically active

BMP25-R-10-bone-morphogenetic-protein 170103SV

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