

Product Specification Sheet

**Bone Morphogenetic Protein (BMP) 4 Antibodies**

Cat. # BMP41-M	Mouse monoclonal anti-Human BMP4 IgG # 1 (aff pure)	<b>SIZE:</b> 100 ug
Cat. # BMP41-C	Recombinant human BMP-4 protein WB+Ve control	<b>SIZE:</b> 100 ul

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.

BMP4 / BMP-2B is a vital regulatory molecule that functions throughout development in mesoderm induction, tooth development, limb formation, bone induction, and fracture repair. In human it is expressed as 408aa protein (Chr 14q22) in lungs, kidney and is secreted in extracellular matrix.

**Source of Antigen, Antibodies, Protein and controls**

<b>Antigen</b>	Recombinant human BMP-4 (cat # BMP45-R-10)
<b>Ab Host/type</b>	Mouse, Monoclonal IgG2b Protein A/G Aff pure IgG (cat #BMP41-M)
<b>2-ab</b>	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control IgG</b>	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

**BMP4 Protein:** The DNA sequence encoding human BMP-2 signal peptide and propeptides (aa residues 1-282 of human BMP-2) fused to the human BMP-4 mature chain (aa residues 293-408 of human BMP-4) was expressed in a mouse myeloma cell line, NSO. The mature recombinant human BMP-4, generated by the proteolytic removal of the signal peptide and propeptides, is a disulphide-linked homodimeric protein consisting of two 116 aa residue subunits with a mol. mass of ~26kD. Due to glycosylation the rhBMP-4 migrates as an ~36kD protein under non-reducing conditions and as 18kD protein under reducing conditions in SDS-PAGE.

Purified recombinant BMP-4 protein for Western blot +ve control (cat # BMP41-C) is supplied in SDS-PAGE sample buffer. Load 10 ul/lane for good visibility with antibody Cat # BMP41-M. Store at -20oC in suitable size aliquots. SDS may

crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the BMP41-C solution prior to heating and loading on gels. This preparation is not biologically inactive. It is not suitable for ELISA or other applications where native protein is required. This preparation is intended for qualitative purpose and not to serve as standard of known concentration. Do not freeze, thaw, or heat repeatedly

**Form & Storage of Antibodies/Peptide Control**

**Affinity pure IgG**

100 ug/100ul solution lyophilized powder  
Supplied in Buffer: PBS+0.1% BSA  
Reconstitute powder in PBS at 1mg/ml

**Storage**

**Short-term:** unopened, undiluted liquid vials at -20oC and powder at 4oC or -20oC..

**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.

**Recommended Usage**

**Western Blotting** (1-2 ug/ml with appropriate secondary reagents to detect human BMP-4).

**ELISA** (0.1-1 ug/ml)

**Histochemistry & Immunofluorescence:** not tested

**Specificity & Cross-reactivity**

BMP41-M recognizes recombinant human BMP4 (rhBMP4) under non-reducing conditions. No significant reactivity is observed with rhBMP-2-7 under non-non-reducing conditions. Antibody crossreactivity in other species has not been tested.

**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**

BMP 1-8, CDMP-1, -2 recombinant proteins and antibodies  
Human BMP-7 ELISA kit

BMP41-M-C 71219A

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