

Product Specification Sheet

Bone Morphogenetic Protein 5 (BMP-5) Antibodies

Cat. # BMP51-M	Mouse monoclonal anti-Human BMP5 IgG # 1 (aff pure)	SIZE: 100 ug
Cat. # BMP51-C	Recombinant human BMP-5 protein WB+Ve control	SIZE: 100 ul

The BMPs belong to the TGF- β 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. BMP5, a 454aa protein mainly expressed in lungs and liver. (Chr 6). The Bmp5 gene is expressed at the earliest stages of skeletal development in small, local patterns that prefigure the shapes of future skeletal elements. Based upon a high degree of amino acid sequence homology, BMP5, BMP6, and BMP7 constitute a subfamily within the BMPs.

Source of Antigen, Antibodies, Protein and controls

Antigen	Recombinant Human BMP-5 protein
Ab Host/type	Mouse, monoclonal IgG2b Aff pure IgG (cat # BMP51-M) purified over Protein A/G Agarose
2-ab	Goat Anti-mouse IgG-HRP conjugate Cat # 40320 (AP, biotin, FITC conjugates also available)
-ve control IgG	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

BMP-5 Protein: The DNA sequence encoding a chimeric protein containing the human BMP-2 signal peptide and propeptides (aa residues 1-282 of human BMP-2) fused to the human BMP-5 mature chain (aa residues 323-454 of human BMP-5) was expressed in a mouse myeloma cell line, NSO. As a result of cleavage at an alternate dibasic cleavage site within the human BMP-2 propeptide, the majority of the protein in the recombinant human BMP-5 preparation contains the carboxy terminal 35aa residues from the human BMP-2 propeptide. The recombinant BMP-5 is a disulphide-linked homodimeric protein consisting of two 167 aa residue subunits with a mol. mass of ~18kD. Due to glycosylation the rhBMP-5 migrates as an ~36kD protein under non-reducing conditions and as doublet of 20kD and 25kD protein under reducing conditions in SDS-PAGE.

Purified **recombinant protein for Western blot +ve control** is supplied in SDS-PAGE sample buffer. Load 10 ul/lane of **BMP51-C** (human BMP-5) for good visibility with antibody Cat # BMP51M. 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 BMP51-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 (1-2ug/ml with appropriate secondary reagents to detect human BMP-5). Detection limit is ~25 ng in non-reducing conditions.

ELISA (0.1-1 ug/ml. .

Neutralization of BMP-5

Under specified conditions, this antibody neutralizes BMP-5 activity (ND50=5-20 ug/ml in the presence of 5 ug/ml of rhBMP using alkaline phosphatase production in ATDC-5 cells.

Histochemistry & Immunofluorescence: not tested

Specificity & Cross-reactivity

BMP51-M recognizes recombinant human BMP5 (rhBMP5). Antibody crossreactivity in various species is not established. No significant reactivity is observed with rhBMP-4, 6-8.

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 protein and antibodies.
BMP-7 ELISA kits
BMP51-M-C 71219A

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