

Product Specification Sheet

**Bone Morphogenetic Protein 14 (BMP-14/CDMP1 Antibodies)**

Cat. # BMP141-S	Rabbit anti-human BMP-14 antiserum	<b>SIZE:</b> 100 ul
Cat. # BMP141-C	Recombinant Human BMP-14 Protein control for WB	<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.

BMP14/CDMP-1/GDF-5, a 501-aa precursor protein with a 121-aa mature chain, (chromosome 20q11.2). It is predominantly expressed in long bones during embryonic development; it is involved in bone formation. Defects in GDF5/CDMP-1 are a cause of Acromersomelic chondrodysplasia; short forearms, hands and feet, characterize this form of dwarfism.

**Source of Antibodies and Protein controls**

<b>Antigen</b>	Recombinant purified Human <b>BMP-14/CDMP-1</b> protein (Cat # BMP145-R-10)
<b>Ab Host/type</b>	Rabbit, polyclonal unpurified antiserum (cat # <b>BMP141-S</b> )
<b>2-ab</b>	<b>Goat Anti-rabbit IgG-HRP</b> cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control</b>	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Recombinant Human BMP-14/CDMP-1/GDF-5 is a 13.5 kDa homodimeric disulfide-linked protein consisting of 120 amino acids. It was expressed in E. coli and purified to >95%. Human BMP141-C protein for Western blot +ve control (Cat # **BMP141-C**) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of **BMP141-C** for good visibility with antibody Cat # **BMP141-S**. 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 **BMP141-C** solution prior to

heating and loading on gels. This preparation is not biologically active. 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

**Stability:** 6-12 months at -20oC or below.

**Shipping:** 4oC for solutions and room temp for powder.

**Recommended Usage**

**Western Blotting** (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using ECL technique).

**ELISA:** Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

**Histochemistry & Immunofluorescence:** not tested. We recommend the use of affinity purified antibody at 1-20 ug/ml in paraformaldehyde fixed sections of tissues.

**Specificity & Cross-reactivity**

Antibodies to BMP14 (#BMP141-S) react with human BMP-14 and the recombinant protein control (#BMP141-C). Antibody crossreactivity in various other species is not established.

**General References:** Chang, S. C et al (1994) JBC Vol. 269 (45), 28227-28234; Paralkar V. M et al (1998) JBC 273 (22) 13760-13767; Tomaski SM et al (1999) Arch Otolaryngol Head Neck Surg. 125 (8) 901-906.

\*This product is for in vitro research use only.

**Related material available from ADI**

BMP 1-8, CDMP -1, -2 antibodies and recombinant proteins.

Human BMP-7 ELISA kit

BMP141-S-C

71219A

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