# Mouse BMP-5 Antibody

Monoclonal Rat $IgG_1$ Clone # 781321

Catalog Number: MAB6176

## DESCRIPTION

| | |
|---|---|
| **Species Reactivity** | Mouse |
| **Specificity** | Detects mouse BMP-5 in ELISA. |
| **Source** | Monoclonal Rat $IgG_1$ Clone # 781321 |
| **Purification** | Protein A or G purified from hybridoma culture supernatant |
| **Immunogen** | Chinese hamster ovary cell line CHO-derived recombinant mouse BMP-5<br>Ala315-His452<br>Accession # P49003 |
| **Endotoxin Level** | <0.10 EU per 1 µg of the antibody by the LAL method. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. |

## APPLICATIONS

**Please Note:** *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

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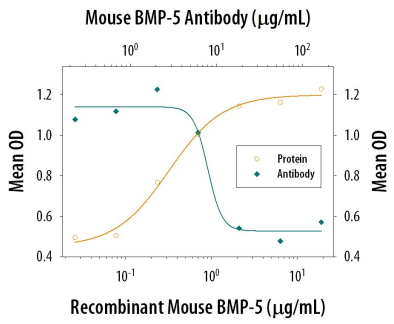
|---|---|
| **Neutralization** | Measured by its ability to neutralize BMP-5-induced alkaline phosphatase production in the ATDC5 mouse chondrogenic cell line. Asahina, I. *et al.* (1996) Exp. Cell Res. 222:38.The Neutralization Dose ($ND_{50}$) is typically 5-25 µg/mL in the presence of 2 µg/mL Recombinant Mouse BMP-5. |

## DATA

**Neutralization**




**Alkaline Phosphatase Production Induced by BMP-5 and Neutrali-zation by Mouse BMP-5 Antibody.** Recombinant Mouse BMP-5 (Catalog # 6176-BM) induces alkaline phosphatase production in the ATDC5 mouse chondrogenic cell line in a dose-dependent manner (orange line). Alkaline Phosphatase Production elicited by Recombinant Mouse BMP-5 (2 µg/mL) is neutralized (green line) by increasing concentrations of Rat Anti-Mouse BMP-5 Mono-clonal Antibody (Catalog # MAB6176). The $ND_{50}$ is typically 5-25 µg/mL.

## PREPARATION AND STORAGE

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| **Reconstitution** | Sterile PBS to a final concentration of 0.2 mg/mL. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 12 months from date of receipt, -20 to -70 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>• 6 months, -20 to -70 °C under sterile conditions after reconstitution. |



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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
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## BACKGROUND

Bone Morphogenetic Protein-5 (BMP-5) is one of at least 15 structurally and functionally related BMPs which are members of the transforming growth factor β (TGF-β) superfamily (1). BMP-5 is synthesized as a 452 amino acid (aa) precursor protein that is cleaved at the dibasic cleavage site (RxxR) to release the 20 kDa C-terminal mature protein (2, 3). Mature BMP-5 contains seven conserved cysteine residues involved in formation of the cysteine knot and the single interchain disulfide bond. Biologically active BMP-5 is a disulfide-linked homodimer of the C-terminal mature protein. Mature mouse BMP-5 shares 96% and 99% aa sequence identity with human and rat BMP-5, respectively. Cellular responses to BMP-5 are mediated by the formation of hetero-oligomeric complexes of type I and type II serine/threonine kinase receptors (1). BMP-5 is expressed by chondrocytes in proliferating and hypertrophic zones of bone growth plates (4). It contributes to limb development by promoting proliferation and differentiation of chondrocytes as well as apoptosis of undifferentiated mesoderm (4, 5). Genetic defects in BMP-5 which cause C-terminal truncation or loss of the proteolytic cleavage site result in multiple skeletal abnormalities, including the *short ear* phenotype in mice (3, 6). BMP-5 is also expressed by ovarian granulosa cells where it functions as an autocrine factor to promote GC proliferation and inhibit their production of progesterone (7). In the nervous system, BMP-5 promotes dendrite outgrowth and dopaminergic neuronal differentiation (8, 9). It is upregulated in oral squamous carcinoma cells and induces the apoptosis of some myeloma cell lines (10, 11).

**References:**

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