

## DESCRIPTION

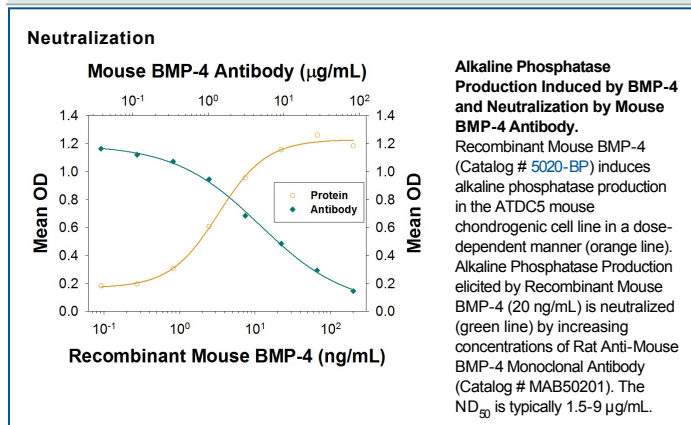
<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse BMP-4 in direct ELISAs.
<b>Source</b>	Monoclonal Rat IgG <sub>1</sub> Clone # 871317
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Chinese hamster ovary cell line CHO-derived mature mouse BMP-4 Ser293-Arg408 Accession # P21275
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

## 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.

**Neutralization** Measured by its ability to neutralize BMP-4-induced alkaline phosphatase production in the ATDC5 mouse chondrogenic cell line. Nakamura, K. *et al.* (1999) *Exp. Cell Res.* **250**:351. The Neutralization Dose (ND<sub>50</sub>) is typically 1.5-9 µg/mL in the presence of 20 ng/mL Recombinant Mouse BMP-4.

## DATA



## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

BMP-4 is a TGF- $\beta$  superfamily ligand that is widely expressed from early embryogenesis through adulthood. It plays an important role in mesenchyme formation, epidermal determination, suppression of neural induction, the development of multiple organs, and tissue repair (1-5). The mouse BMP-4 precursor contains a 273 amino acid (aa) propeptide and a 116 aa mature protein (6). The propeptide is cleaved intracellularly by furin or proprotein convertase 6, enabling the 15 kDa mature BMP-4 monomer to form an active disulfide linked homodimer or heterodimer with BMP-7 (7-9). Mature mouse and human BMP-4 share 98% aa sequence identity. Mouse BMP-4 shares 85% aa sequence identity with mouse BMP-2 and 35%-54% with other mouse BMPs. Compared to BMP-4 homodimers, BMP-4/BMP-7 heterodimers exhibit a greater potency in inducing osteogenic differentiation (9). In *Xenopus*, the heterodimers can also induce the formation of mesoderm, whereas BMP-4 homodimers only provide ventralizing signals for existing mesoderm (10). BMP-4 signals through tetrameric complexes composed of type I (primarily Activin RIA or BMPR-IA) and type II (primarily Activin RIIA or BMPR-II) receptors (11, 12). The bioavailability of BMP-4 is regulated by its interaction with multiple proteins and glycosaminoglycans (13-15).

## References:

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