Human BMP-4 Antibody

Monoclonal Mouse IgG_{2B} Clone # 66119

Catalog Number: MAB757

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human BMP-4 in direct ELISAs and Western blots. This antibody shows approximately 5% cross-reactivity with recombinant human BMP-2.
Source	Monoclonal Mouse IgG_{2B} Clone # 66119
Purification	Protein A or G purified from ascites
Immunogen	Mouse myeloma cell line NS0-derived recombinant human BMP-4 Ser293-Arg408 Accession # P12644
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. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

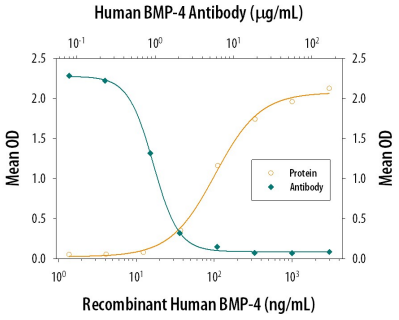
APPLICATIONS

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.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Human BMP-4 (Catalog # 314-BP)
Neutralization	Measured by its ability to neutralize BMP-4-induced alkaline phosphatase production in the C2C12 mouse myoblast cell line. Katagiri, T. *et al.* (1994) J. Cell Biol. **127**:1755. The Neutralization Dose (ND_{50}) is typically 1-3 µg/mL in the presence of 500 ng/mL Recombinant Human BMP-4 and 2 µg/mL heparin.	

DATA

Neutralization



Alkaline Phosphatase Production Induced by BMP-4 and Neutralization by Human BMP-4 Antibody. Recombinant Human BMP-4 (Catalog # 314-BP) induces alkaline phosphatase production in the the C2C12 mouse myoblast cell line in a dose-dependent manner (orange line). Alkaline phosphatase production elicited by Recombinant Human BMP-4 (500 ng/mL) is neutralized (green line) by increasing concentrations of Human BMP-4 Monoclonal Antibody (Catalog # MAB757). The ND_{50} is typically 1-3 µg/mL in the presence of heparin (2 µg/mL).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	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
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

BMP4 is a TGFβ 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 human BMP4 precursor contains a 273 amino acid (aa) propeptide and a 116 aa mature protein (6). Processing of the propeptide by furin or proprotein convertase 6 enables the formation of the mature disulfidelinked homodimeric BMP4 and facilitates its secretion. Similar intracellular processes may lead to the formation and recreation of BMP4/BMP7 disulfidelinked heterodimer (7 9). Mature human and mouse BMP4 share 98% aa sequence identity. Human BMP4 shares 85% aa sequence identity with human BMP2 and less than 50% with other human BMPs. Compared to BMP4 homodimers, BMP4/ BMP7 heterodimers exhibit a greater potency in inducing osteogenic differentiation (9). In Xenopus, the heterodimers can also induce the formation of mesoderm, whereas BMP4 homodimers only provide ventralizing signals for existing mesoderm (10). BMP4 signals through tetrameric complexes composed of type I (primarily Activin RIA or BMPRIA) and type II (primarily Activin RIIA or BMPRII) receptors (11, 12). The bioavailability of BMP4 is regulated by its interaction with multiple proteins and glycosaminoglycan (13 - 15).

References:

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