Human BMP-5 Antibody

Antigen Affinity-purified Polyclonal Goat IgG

Catalog Number: AF615

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human BMP-5 in direct ELISAs and Western blots. In direct ELISAs, less than 5% cross-reactivity with recombinant human (rh) BMP-2, rhBMP-4, rhBMP-6, rhBMP-7, and rhBMP-8 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human BMP-5
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 either lyophilized or as a 0.2 µm filtered solution in PBS.

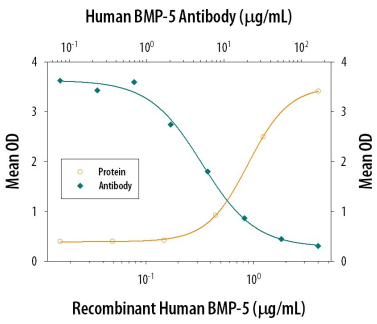
APPLICATIONS

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	0.1 µg/mL	Recombinant Human BMP-5 (Catalog # 615-BMC)
Immunohistochemistry	5-15 µg/mL	Paraffin-embedded sections of human placenta and osteosarcoma
Neutralization	Measured by its ability to neutralize BMP-5-induced alkaline phosphatase production in the MC3T3-E1 mouse preosteoblast cell line. Erlacher, L. *et al.* (1998) J. Bone Miner. Res. **13**:383. The Neutralization Dose (ND_{50}) is typically 6-24 µg/mL in the presence of 1 µg/mL Recombinant Human BMP-5 and 50 µg/mL L-ascorbic acid.	

DATA

Neutralization



Alkaline Phosphatase Production Induced by BMP-5 and Neutralization by Human BMP-5 Antibody. Recombinant Human BMP-5 (Catalog # 615-BMC) induces alkaline phosphatase production in the the MC3T3-E1 mouse preosteoblast cell line in a dose-dependent manner (orange line). Alkaline phosphatase production elicited by Recombinant Human BMP-5 (1 µg/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human BMP-5 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF615). The ND_{50} is typically 6-24 µg/mL in the presence of L-ascorbic acid (50 µg/mL).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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

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 454 amino acid (aa) precursor protein that is cleaved at the dibasic cleavage site (RxxR) to release the 20 kDa C-terminal mature protein (2). 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 human BMP-5 shares 96% aa sequence identity with mouse and rat BMP-5. 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 (3). It contributes to limb development by promoting proliferation and differentiation of chondrocytes as well as apoptosis of undifferentiated mesoderm (3, 4). 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 (5, 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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