

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human BMP-9 in direct ELISAs. In direct ELISAs, 100% cross-reactivity with recombinant mouse BMP-9 is observed. In direct ELISAs less than 2% cross-reactivity with recombinant human (rh) BMP-2, -3, -4, -5, -7, -8, and rhBMP-10 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human BMP-9 Ser320-Arg429 Accession # Q9UK05
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.

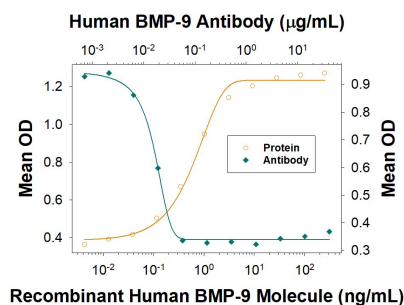
APPLICATIONS

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.

Neutralization	Measured by its ability to neutralize BMP-9-induced alkaline phosphatase production in the ATDC5 mouse chondrogenic cell line. The Neutralization Dose (ND ₅₀) is typically 0.005-0.1 µg/mL in the presence of 2 ng/mL Recombinant Human BMP-9.
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DATA

Neutralization



Alkaline Phosphatase Production Induced by BMP-9 and Neutralization by Human BMP-9 Antibody. Recombinant Human BMP-9 (Catalog # 3209-BP) induces alkaline phosphatase production in the ATDC5 mouse chondrogenic cell line in a dose-dependent manner (orange line). Alkaline phosphatase production elicited by Recombinant Human BMP-9 (2 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human BMP-9 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3209). The ND₅₀ is typically 0.005-0.1 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> 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.

BACKGROUND

Human BMP-9, also known as growth and differentiation factor 2 (GDF-2), is a member of the BMP subgroup of the TGF- β superfamily proteins that signal through heterodimeric complexes composed of type I and type II BMP receptors. BMP-9 regulates the development and function of a variety of embryonal and adult tissues (1, 2). The human BMP-9 cDNA encodes a 429 amino acid (aa) precursor that includes a 22 aa signal sequence, a 298 aa propeptide, and a 111 aa mature protein (3). Unlike with other BMP family proteins, the propeptide does not interfere with the biological activity of BMP-9 and remains associated with the mature peptide after proteolytic cleavage (4). Human and mouse BMP-9 share 96% aa sequence identity. Within the mature protein, human BMP-9 shares 64% aa sequence identity with human BMP-10 and less than 50% aa sequence identity with other BMPs. BMP-9 is expressed by non-parenchymal cells in the liver, (5, 6) where it promotes lipid metabolism and inhibits glucose production (7). BMP-9 exerts a prolonged hypoglycemic effect which may be due to an enhancement of insulin release (7). BMP-9 interacts with a high affinity specific heteromeric receptor expressed on liver endothelial cells that has been identified as ALK-1 (4-6). In the embryonal CNS, BMP-9 functions in the development and maintenance of the cholinergic neuronal phenotype (8-10). BMP-9 also induces the differentiation of mesenchymal stem cells into the chondrogenic lineage (11, 12). At low concentrations, BMP-9 is a proliferative factor for hematopoietic progenitor cells, but at higher concentrations, it enhances TGF- β 1 production and inhibits hematopoietic progenitor colony formation (13).

References:

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