

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human BMP-4 in direct ELISAs
Source	Monoclonal Mouse IgG ₁ Clone # 1050731
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived human BMP-4 protein Lys303-Arg408 Accession # P12644
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

Immunocytochemistry Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

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 human BMP-4 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 BMP-4 and facilitates its secretion. Similar intracellular processes may lead to the formation and recreation of BMP-4/BMP-7 disulfidelinked heterodimer (7, 9). Mature human and mouse BMP-4 share 98% aa sequence identity. Human BMP-4 shares 85% aa sequence identity with human BMP-2 and less than 50% with other human 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 BMPRIA) and type II (primarily Activin RIIA or BMPRII) receptors (11, 12). The bioavailability of BMP-4 is regulated by its interaction with multiple proteins and glycosaminoglycan (13-15).

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