

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human BMP-7 in direct ELISAs and Western blots. In direct ELISAs, approximately 25% cross-reactivity with recombinant human (rh) BMP-6 is observed and no cross-reactivity with rhBMP-2, -3, -4, -5, or -8 is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 164311
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human BMP-7 Ser293-His431 Accession # P18075
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 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.

Neutralization	Optimal dilution of this antibody should be experimentally determined.
Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	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

Bone morphogenetic protein 7 (BMP-7), also known as osteogenic protein 1 (OP-1), is a widely expressed TGF-β superfamily member with important functions during embryogenesis, in the adult, and in disease (1, 2). Human BMP-7 is synthesized with a 29 amino acid (aa) signal sequence, a 263 aa propeptide, and a 139 aa growth factor domain (3, 4). The growth factor domain of human BMP-7 shares 98% aa sequence identity with mouse and rat BMP-7. The BMP-7 propeptide is cleaved intracellularly but often remains associated with the mature C-terminus. Based on in vivo and in vitro studies, BMP-7 has the potential to be secreted as a disulfide-linked mature homodimer, or particularly as a heteromeric complex that consists of two propeptides noncovalently associated with a mature disulfide-linked homodimer (5, 6). The presence of the propeptides in BMP-7 appears to stabilize the molecule and provide a docking mechanism for extracellular storage on molecules such as fibrillin-1 and -2 (5, 6). The propeptides themselves do not impart latency to the complex. BMP-7 binding to type II receptors rapidly displaces the prodomain:mature molecule interaction and has no effect on activity. But it is suggested that immobilized BMP-7 (via prodomain:fibrillin) is inactive, allowing for possible long-term storage of the molecule (6). BMP-7 interacts with the type 2 receptors Activin RIIA, Activin RIIIB, and BMPRII and the type 1 receptors Activin RIA, BMPRII, and BMPRII (2, 6). BMP-7 may also be processed into a disulfide-linked heterodimer with either BMP-2 or BMP-4. Such complexes may show increased potency and range of activity compared to BMP-7 homodimers (7-9). BMP-7 plays a role in a variety of organ systems. It promotes new bone formation and nephron development (10, 11), inhibits the branching of prostate epithelium (12), and antagonizes epithelial-mesenchymal transition (EMT) (13-15). In pathological conditions, BMP-7 inhibits tumor growth and metastasis (14), ameliorates fibrotic damage in nephritis (13), and promotes neuroregeneration following brain ischemia (16).

PRODUCT SPECIFIC NOTICES

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