

**DESCRIPTION**

<b>Species Reactivity</b>	Human/Mouse
<b>Specificity</b>	Detects human and mouse BMP-7 in Western blots. In this format, less than 1% cross-reactivity with recombinant human (rh) BMP-2, rhBMP-3, rhBMP-4, rhBMP-5, and rhBMP-6 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Chinese hamster ovary cell line CHO-derived recombinant human BMP-7 Ser293-His431 Accession # P18075
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	0.1 µg/mL	Recombinant Human BMP-7 (Catalog # 354-BP) and Recombinant Mouse BMP-7 (Catalog # 5666-BP)

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**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 RIIb, and BMPRII and the type 1 receptors Activin RIA, BMPRI-IA, and BMPRI-IB (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).

**References:**

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