

**DESCRIPTION**

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects recombinant human and mouse BMP-6 in direct ELISAs and detects mouse BMP-6 in Western blots. In direct ELISAs, approximately 5% cross-reactivity with recombinant mouse (rm) BMP-5 and rmBMP-7 is observed.
<b>Source</b>	Polyclonal Sheep IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Chinese hamster ovary cell line CHO-derived recombinant mouse BMP-6 Ser372-His510 Accession # P20722
<b>Formulation</b>	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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	1 µg/mL	See Below
<b>Immunohistochemistry</b>	5-15 µg/mL	See Below

**DATA**

<p><b>Western Blot</b></p> <p><b>Detection of Mouse BMP-6 by Western Blot.</b> Western blot shows lysates of NS0 mouse myeloma cell line either mock transfected or transfected with mouse BMP-6. PVDF membrane was probed with 1 µg/mL of Sheep Anti-Mouse BMP-6 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF6325) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). For additional reference, Recombinant Mouse BMP-6 (Catalog # 6325-BM) (10ng/lane) was included. A specific band was detected for BMP-6 at approximately 20kDa (as indicated). This experiment was conducted under reducing conditions and using <i>Immunoblot Buffer Group 1</i>.</p>	<p><b>Immunohistochemistry</b></p> <p><b>BMP-6 in Mouse Embryo.</b> BMP-6 was detected in immersion fixed frozen sections of mouse embryo (15 d.p.c.) using Sheep Anti-Mouse BMP-6 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF6325) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Sheep HRP-DAB Cell &amp; Tissue Staining Kit (brown; Catalog # CTS019) and counterstained with hematoxylin (blue). Specific staining was localized to skeletal muscle cells. View our protocol for <i>Chromogenic IHC Staining of Frozen Tissue Sections</i>.</p>
---	--

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Sterile PBS to a final concentration of 0.2 mg/mL.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <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 6 (BMP-6), also known as Vgr-1, is one of at least 15 structurally and functionally related BMPs which are members of the transforming growth factor  $\beta$  (TGF- $\beta$ ) superfamily. Mouse BMP-6 is synthesized as a 510 amino acid (aa) precursor protein that is cleaved at the dibasic cleavage site (RxxR) to release the 18 kDa C-terminal mature protein. Biologically active BMP-6 consists of a disulfide-linked homodimer of the mature proteins (1, 2). Mature mouse BMP-6 shares 96% and 98% aa sequence identity with human and rat BMP-6, respectively. Cellular responses to BMP-6 are mediated by hetero-oligomeric complexes of type I (Activin RIA/ALK-2 and BMPR-IA/ALK-3) and type II (Activin RIIA and BMPR-II) serine/threonine kinase receptors (3-5). Glycosylation of BMP-6 is required for its interaction with Activin RIA (6). BMP-6 induces the expression of Noggin and is subsequently antagonized by Noggin (7, 8). BMP-6 induces a wide range of cellular responses. It promotes osteoblast differentiation from mesenchymal stem cells (5), chondrocyte maturation (9), Ang II-induced aldosterone production in the adrenal cortex (3), hormone production and responsiveness in ovarian granulosa cells (10), iNOS and TNF- $\alpha$  production in macrophages (4), the cell death of B cells (8), and neurite outgrowth (11). BMP-6 expression is induced in astrocytes surrounding sites of brain injury where it functions as a neuroprotectant (11, 12). BMP-6 is upregulated during prostate cancer progression and promotes tumor cell metastasis to bone (13). Through interactions with the BMP coreceptor RGM-C/Hemojuvelin, BMP-6 plays an important role in iron homeostasis by promoting Hpcidin expression and preventing serum iron overload (14, 15).

**References:**

1. Chen, D. *et al.* (2004) *Growth Factors* **22**:233.
2. Lyons, K. *et al.* (1989) *Proc. Natl. Acad. Sci.* **86**:4554.
3. Inagaki, K. *et al.* (2006) *Endocrinology* **147**:2681.
4. Hong, J.H. *et al.* (2008) *Immunology* **128**:e442.
5. Lavery, K. *et al.* (2008) *J. Biol. Chem.* **283**:20948.
6. Saremba, S. *et al.* (2008) *FEBS J.* **275**:172.
7. Haudenschild, D.R. *et al.* (2004) *Cancer Res.* **64**:8276.
8. Kersten, C. *et al.* (2005) *BMC Immunol.* **6**:9.
9. Grimsrud, C.D. *et al.* (1999) *J. Bone Miner. Res.* **14**:475.
10. Shi, J. *et al.* (2009) *Fertil. Steril.* **92**:1794.
11. Yabe, T. *et al.* (2002) *J. Neurosci. Res.* **68**:161.
12. Zhang, Z. *et al.* (2006) *Neuroscience* **138**:47.
13. Dai, J. *et al.* (2005) *Cancer Res.* **65**:8274.
14. Meynard, D. *et al.* (2009) *Nat. Genet.* **41**:478.
15. Andriopoulos, B. Jr. *et al.* (2009) *Nat. Genet.* **41**:482.