

#### DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human BMP-8 in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant human (rh) BMP-2, rhBMP-3, rhBMP-4, rhBMP-5, rhBMP-6 and rhBMP-7 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human BMP-8a Ala264-His402 Accession # AAP74559
<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 as a 0.2 µm filtered solution in PBS.

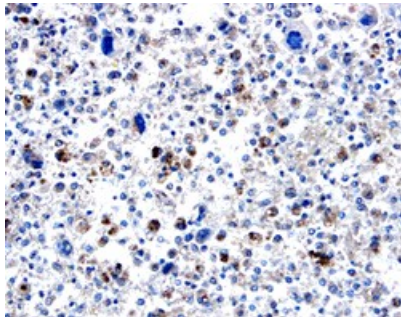
#### APPLICATIONS

**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>	0.1 µg/mL	Recombinant Human BMP-8
<b>Immunohistochemistry</b>	5-15 µg/mL	See Below

#### DATA

**Immunohistochemistry**



**BMP-8 in Human Osteosarcoma.** BMP-8 was detected in immersion fixed paraffin-embedded sections of human osteosarcoma using 15 µg/mL Goat Anti-Human BMP-8 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1073) overnight at 4 °C. Tissue was stained with the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining for Paraffin-embedded Tissue Sections](#).

#### 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. *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

BMP-8, also known as osteogenic protein 2 (OP-2), was first isolated from a hippocampal library in a screen to identify relatives of BMP-7 (OP-1) (1). BMPs are a family of structurally and functionally related proteins and represent a subfamily of the transforming growth factor  $\beta$  (TGF- $\beta$ ) superfamily. BMPs were originally identified as protein regulators of cartilage and bone formation. They have since been shown to be involved in embryogenesis and morphogenesis of various tissues and organs (2). BMPs play roles in regulating growth, differentiation, chemotaxis, and apoptosis of various cell types, including mesenchymal, epithelial, hematopoietic, and neuronal cells.

There exist two highly related and closely linked genes, designated BMP-8a and -8b in mice and humans. For humans, the protein products of these two genes share 98% amino acid (aa) sequence identity in their pro- and mature regions. However in the mouse, the two proteins share 89% and 76% aa sequence homology in their pro- and mature regions, respectively (3). Mature human BMP-8a shares 91% and 70% aa sequence identity with mouse BMP-8a and -8b, respectively. Human BMP-8a is synthesized as a large precursor protein that is cleaved at a dibasic cleavage site (RTPR) between aa residues 263 and 264 to release a 139 aa carboxy-terminal domain. Expression patterns of the BMP-8 genes indicate that they regulate aspects of cell proliferation and/or differentiation during spermatogenesis and formation of the placenta (3). BMP-8 is also highly expressed in osteosarcomas (4).

#### References:

1. Ozkaynak, E. *et al.* (1992) *J. Biol. Chem.* **267**:25220.
2. Canalis, E. *et al.* (2003) *Endocrine Rev.* **24**:218.
3. Zhao, G-Q. *et al.* (1996) *Mech. Dev.* **57**:159.
4. Sulzbacher, I. *et al.* (2002) *J. Clin. Pathol.* **55**:381.