

**DESCRIPTION**

<b>Species Reactivity</b>	Zebrafish
<b>Specificity</b>	Detects zebrafish BMP-2 and BMP-4 in direct ELISAs and Western blots.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 169125
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant zebrafish BMP-4 Ser288-Arg400 Accession # NP_571417
<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	Recombinant Zebrafish BMP-4 (Catalog # 1128-BM)

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 0.5 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-4 is one of at least 15 structurally and functionally-related BMPs, which are members of the transforming growth factor-β (TGF-β) superfamily. BMPs were originally identified as protein regulators of cartilage and bone formation. They have since been shown to have roles in embryogenesis and morphogenesis of various tissues and organs. BMPs have also been shown to regulate the growth, differentiation, chemotaxis, and apoptosis of various cell types, including mesenchymal cells, epithelial cells, hematopoietic cells, and neuronal cells. Similarly to other TGF-β superfamily proteins, BMPs are highly conserved across animal species. Zebrafish BMP-4 shares 73% amino acid (aa) sequence identity with human and murine BMP-4, and 86% aa identity with zebrafish BMP-2b. Zebrafish BMP-4 mRNA is detected throughout embryonic development and has been detected in tissues of adult fish, including the brain, heart, digestive tracts, testes, and jaw. BMP-4 has been shown to play roles in directing zebrafish heart looping and in ear development. The combined expression pattern of zBMP-2a/2b/4 coincides with areas where BMP-2/4 expression would be found in other vertebrates. Biologically active BMP-4 is a disulfide-linked homodimer of the carboxy-terminal 113 aa that contains the characteristic seven conserved cysteine residues involved in the formation of the cysteine knot and the single interchain disulfide bond.

**References:**

1. Kawabata, M. *et al.* (1998) *Cytokine and Growth Factor Reviews* **9**:49.
2. Hwang, S.P. *et al.* (1997) *DNA Cell Biol.* **16**:1003.
3. Martinez-Barbera, J.P. *et al.* (1997) *Gene* **197**:53.
4. Mowbray, C. *et al.* (2001) *Mech Dev.* **108**:179.
5. Chen J.N. *et al.* (1997) *Development* **124**:4373.