



## Zebrafish BMP-4 (aa 288 - 400) (DAG2587)

This product is for research use only and is not intended for diagnostic use.

### PRODUCT INFORMATION

<b>Product Overview</b>	Recombinant Zebrafish BMP-4 was expressed in <i>E. coli</i> . Ser288-Arg400, with an N-terminal Met (Accession # NP_571417)
<b>Antigen Description</b>	BMP-4 is one of at least 15 structurally and functionally-related BMPs, which are members 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 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- $\beta$ superfamily proteins, BMPs are highly conserved across animal species. Zebrafish BMP-4 protein shares 73% amino acid sequence identity with human and murine BMP-4, and 86% amino acid sequence 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 amino acid residues that contains the characteristic seven conserved cysteine residues involved in the formation of the cysteine knot and the single interchain
<b>Species</b>	Zebrafish
<b>Purity</b>	> 97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Conjugate</b>	Unconjugated
<b>Format</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in Acetonitrile and TFA with BSA as a carrier protein.
<b>Concentration</b>	10 $\mu$ g/mL
<b>Buffer</b>	4 mM HCl

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<b>Preservative</b>	None
<b>Storage</b>	2-8°C short term, -20°C long term

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## BACKGROUND

**Introduction** Bone morphogenetic protein 4 is a protein that in humans is encoded by the BMP4 gene. BMP4 is a member of the bone morphogenetic protein family which is part of the transforming growth factor-beta superfamily. The superfamily includes large families of growth and differentiation factors. Bone morphogenetic proteins were originally identified by an ability of demineralized bone extract to induce endochondral osteogenesis in vivo in an extraskeletal site. This particular family member plays an important role in the onset of endochondral bone formation in humans. It has been shown to be involved in muscle development, bone mineralization, and ureteric bud development.

**Keywords** BMP 2B; BMP 4; BMP-2B; BMP-4; BMP2B; BMP2B1; BMP4; Bone morphogenetic protein 2B; Bone morphogenetic protein 4; DVR4; MCOPS6; OFC11; ZYME; Zebrafish BMP-4 protein

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