# Zebrafish BMP-2 Alexa Fluor® 488-conjugated Antibody

Monoclonal Mouse $IgG_1$ Clone # 208301

Catalog Number: FAB111G

100 µg

## DESCRIPTION

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| **Species Reactivity** | Zebrafish |
| **Specificity** | Detects zebrafish BMP-2 in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human BMP-2, -3, -3B, -4, -5, -6, -7, -8, or recombinant zebrafish BMP-4 is observed. |
| **Source** | Monoclonal Mouse $IgG_1$ Clone # 208301 |
| **Purification** | Protein A or G purified from hybridoma culture supernatant |
| **Immunogen** | *E. coli*-derived recombinant zebrafish BMP-2<br>Gln272-Arg386<br>Accession # AAI63048 |
| **Conjugate** | Alexa Fluor 488<br>Excitation Wavelength: 488 nm<br>Emission Wavelength: 515-545 nm |
| **Formulation** | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

## 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.*

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| **Neutralization** | Optimal dilution of this antibody should be experimentally determined. |
| **Western Blot** | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

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| **Shipping** | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied |

## BACKGROUND

BMP-2 is one of at least 20 structurally and functionally related BMPs, which are members of the transforming growth factor β (TGF-β) superfamily (1, 2). BMPs were originally identified as protein regulators of cartilage and bone formation. However, they are also involved in embryogenesis and morphogenesis of various tissues and organs. BMPs 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 family proteins, BMPs are highly conserved across animal species. At the amino acid sequence level, mature human, mouse, and rat BMP-2 share 100% amino acid (aa) sequence identity, while mature human BMP-2 and zebrafish BMP-2 share 85% aa identity. Zebrafish have another homolog of BMP-2 (also called BMP-2a) called BMP-2b, which is 88% identical to BMP-2 in the mature region and corresponds to the *swirl* mutant. The combined expression pattern of zfBMP-2a/2b/4 coincides with areas where BMP-2/4 expression would be found in other vertebrates (3). Biologically active BMP-2 is a disulfide-linked homodimer of the carboxy-terminal 115 amino acid residues that contains the characteristic seven conserved cysteine residues involved in the formation of the cysteine knot and the single interchain disulfide bond. Cellular responses to BMP-2 have been shown to be mediated by the formation of hetero-ogliomeric complexes of type I and type II serine/threonine kinase receptors (4). In contrast to the TGF-β type I receptor, which does not bind the ligand in the absence of the TGF-β receptor type II, both type I BMP receptor's can bind BMP-2 with high affinity in the absence of BMP receptor type II.

## PRODUCT SPECIFIC NOTICES

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