



## RayBiotech, Inc.

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### Certificate of Analysis and Data Sheet

## Mouse Anti Human BMP-4 With HRP-Conjugated Second Antibody

**Catalog No.**

DS-MB-02776

**Target Species**

Human

**Isotype**

IgG2b

### Preparation

**Immunogen:** Recombinant Human BMP-4 expressed in *E.coli*.

**Purification:** Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant.

### Formulation

**Product Type:** Monoclonal Antibody

**Product Form:** Purified IgG - liquid

**Buffer Solution:** Phosphate buffered saline pH7.2

**Preservative Stabilizers:** 0.09% Sodium Azide (NaN<sub>3</sub>)

**Approx. Protein Concentration:** IgG concentration 1.0 mg/ml

### Specificity

DS-MB-02776 recognizes the disulfide-linked homodimeric cysteine knot protein known as human Bone Morphogenetic Protein 4 (BMP-4/BMP-2b), full-length 408aa. BMP-4 is a member of the Transforming Growth Factor beta (TGF-β) superfamily and one of a growing number of osteogenic proteins shown to induce bone and cartilage formation and to play an important role in developmental processes, including cell proliferation, differentiation, apoptosis and morphogenesis.

BMPs act through binding with a receptor complex consisting of type I and type II serine/threonine kinases, resulting ultimately in the activation of the Smad protein and mitogen-activated protein kinase (MAPK) signaling pathways. Several antagonist proteins, including, noggin, chordin, gremlin and follistatin, are responsible for modulating the signaling effects of BMPs, through the binding and blocking of receptor ligands, thereby preventing activation.

Research studies have verified the particular importance of BMP-4 in epithelial-mesenchymal interactions, including its vital role in the early stages of tooth morphogenesis<sup>(3)</sup>, the interaction between BMP-4 and its antagonist noggin in hair follicles<sup>(4)</sup> and the effects of BMP-4 expression/signaling in organs, including the lungs<sup>(5)</sup> and eyes<sup>(6)</sup>

**Synonyms:** BMP2B, DVR4

**The products are furnished for LABORATORY RESEARCH USE ONLY.  
Not for diagnostic or therapeutic use.**



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### Applications

**Table Summary of antibody applications and working conditions**

Options / Functions	YES	NO	Not determined	Recommended Work dilution or concentration
ELISA	.			1.0 - 4.0 ug/ml
Western Blot (1)	.			0.25ug/ml non-reducing conditions
IHC			.	

Note: Other applications are not tested yet. Optimal dilutions should be determined by each laboratory for each application.  
(1) DS-MB-02779 detects a band of approximately 44kDa due to glycosylation.

### Secondary Antibody Applications

Options / Functions	YES	NO	Not determined	Recommended Work dilution or concentration
Immunoassay (ELISA, Western blot)	.			1:5000-1:10000

### Storage

Store at +4°C or at -20°C if preferred.

Storage in frost-free freezers is not recommended.

This product should be stored undiluted.

Avoid repeated freezing and thawing as this may denature the antibody.

Should this product contain a precipitate we recommend microcentrifugation before use.

**Shelf Life:** 18 months from date of dispatch

### References

1. Balemans, W. and Van Hul, W. (2002) Extracellular regulation of BMP signaling in vertebrates: a cocktail of modulators. *Dev. Biol.* 250: 231-250.
2. Sebald, W. *et al.* (2004) Molecular recognition in bone morphogenetic protein (BMP)/receptor interaction. *Biol. Chem.* 385: 697-710.
3. Feng, J.Q. *et al.* (2002) Identification of Cis-DNA regions controlling Bmp4 expression during tooth morphogenesis in vivo. *J. Dent. Res.* 81(1): 6-10.

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4. Botchkarev, V.A. *et al.* (2001) Noggin is required for induction of the hair follicle growth phase in postnatal skin. *Faseb J.* 15: 2205-2214.
5. Bellusci, S. *et al.* (1996) Evidence from normal expression and targeted misexpression that Bone Morphogenetic Protein (Bmp-4) plays a role in mouse embryonic lung morphogenesis. *Developmental* 122: 1693-1702.
6. Trousse, F. *et al.* (2001) BMP4 mediates apoptotic cell death in the developing chick eye. *J. Neuroscience* 21: 1292-1301.

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