



RayBiotech, Inc.

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Certificate of Analysis and Data Sheet

RABBIT ANTI HUMAN BMP-2

With HRP-Conjugated Second Antibody

Catalog No.	Species	Isotype
DS-PB-00287	Human	Rabbit IgG

Preparation

Antisera to human BMP-2 were raised by repeated immunizations of rabbits with highly purified antigen.

Immunogen

Recombinant human BMP-2

Specificity

DS-PB-00287 recognizes the disulphide-linked homodimeric cysteine knot protein known as human Bone Morphogenetic Protein 2 (BMP-2/BMP-2a), full-length 396aa. BMP-2 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.

The realization that BMP-2 was involved in the stimulation of bone formation emerged from research in spinal surgery, following the discovery that the healing of bones was directed by proteins contained within the bone matrix itself.

Formulation

Product Type Polyclonal Antibody

Product Form Purified IgG - liquid

Buffer Solution Phosphate buffered saline pH7.4.

Preservative Stabilizers 0.09% Sodium Azide (NaN₃)

Approx. Protein Concentrations IgG concentration 1.0mg/ml

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



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Storage

18 months from date of dispatch

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.

Applications

Table Summary of antibody applications and working conditions

Options / Functions	YES	NO	Not determined	Recommended Work dilution or concentration
ELISA	.			0.5 - 5.0ug/ml
Western Blotting	.			0.1 - 1.0ug/ml
Immunohistology - frozen			.	
Immunohistology - paraffin			.	
Immunohistology - resin			.	
Immunoprecipitation			.	
Flow Cytometry			.	
Immunofluorescence staining			.	
Neutralization			.	

Note: Other applications are not tested yet. Optimal dilutions should be determined by each laboratory for each application.

Secondary Antibody Applications

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

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Recommended Reading

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. Keller, S. *et al.* (2004) Molecular recognition of BMP-2 and BMP receptor IA. *Nature Structural and Molecular Biology.* 11: 481-488.
4. Kirsch, T. *et al.* (2000) BMP-2 antagonists emerge from alterations in the low-affinity binding epitope for receptor BMPR-II. *EMBO J.* 19: 3314-3324.
5. Kimura, N. *et al.* (2000) BMP2-induced apoptosis is mediated by activation of the TAK1-p38 kinase pathway that is negatively regulated by Smad6. *J. Biol. Chem.* 275: 17647-17652.

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