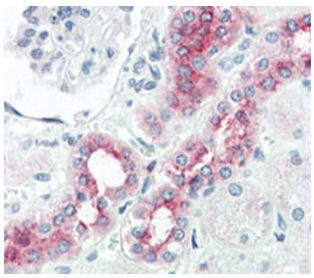
BMPR2 Antibody (F47742)

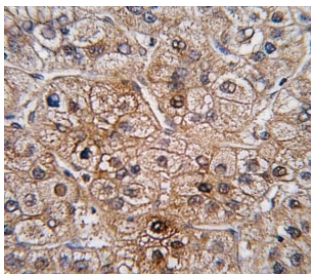
Catalog No.	Formulation	Size
F47742-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F47742-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

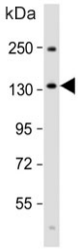
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Purified
UniProt	Q13873
Applications	Western Blot : 1:1000 IHC (Paraffin) : 1:10-1:50 Flow Cytometry : 1:10-1:50
Limitations	This BMPR2 antibody is available for research use only.



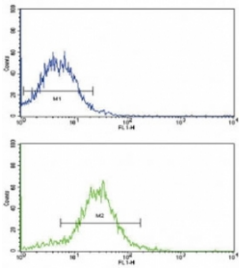
IHC analysis of FFPE human kidney tissue stained with BMPR2 antibody.



IHC analysis of FFPE human hepatocarcinoma tissue stained with BMPR2 antibody.



Western blot analysis of BMPR2 antibody and human heart tissue lysate. Predicted molecular weight ~115 kDa (precursor).



Flow cytometric analysis of HepG2 cells using BMPR2 antibody (green) compared to a negative control (blue). FITC-conjugated goat-anti-rabbit secondary Ab was used for the analysis.

Description

BMPR2 antibody detects Bone Morphogenetic Protein Receptor Type 2, a transmembrane serine-threonine kinase that functions as a central component of the BMP signaling pathway. The UniProt recommended name is Bone morphogenetic protein receptor type 2. As a member of the TGF beta receptor superfamily, BMPR2 participates in developmental patterning, vascular biology, skeletal homeostasis, and cell fate determination. Its activity influences key physiologic events, including differentiation of mesenchymal cells, regulation of vascular smooth muscle tone, and lineage specification in multiple organ systems.

BMPR2 is composed of an extracellular ligand binding domain, a single transmembrane region, and an intracellular serine-threonine kinase domain that initiates downstream signaling. When BMP ligands bind to BMPR2, the receptor forms heteromeric complexes with type I BMP receptors, allowing activation of SMAD dependent transcription programs along with several non canonical pathways. These signaling outputs help coordinate development, tissue repair, and cellular homeostasis across a wide range of tissues.

The BMPR2 gene is located on chromosome 2q33 and is expressed broadly in endothelial cells, smooth muscle cells, osteoblast lineage cells, chondrocytes, neural tissues, reproductive organs, and developing embryonic structures. Expression levels vary depending on developmental stage and tissue context. In endothelial and smooth muscle cells, BMPR2 contributes to vascular remodeling, responses to shear stress, and maintenance of vessel architecture. In skeletal biology, BMPR2 supports osteoblast maturation, cartilage patterning, and bone density regulation. Within the nervous system, BMPR2 helps regulate neuronal differentiation, axonal guidance, and glial maturation.

During embryogenesis, BMPR2 plays important roles in dorsal-ventral patterning, limb formation, heart development, and morphogenesis of the vascular and skeletal systems. BMP mediated cues orchestrate growth and specification of multiple tissues, and BMPR2 serves as a central receptor for transducing these developmental signals. Mutations or reduced signaling can result in disrupted organogenesis or abnormal patterning outcomes.

In adult tissues, BMPR2 contributes to vascular integrity, immune modulation, metabolic control, and tissue repair. It supports endothelial barrier stability and influences smooth muscle proliferation, thereby contributing to healthy vessel remodeling during physiological adaptation. BMP signaling through BMPR2 also participates in adipocyte differentiation, energy balance, and pancreatic endocrine function. In lung tissue, BMPR2 signaling plays a major role in maintaining normal pulmonary vascular biology.

Pathologically, BMPR2 mutations or dysregulated signaling are strongly associated with heritable and idiopathic pulmonary arterial hypertension. Reduced BMPR2 function in pulmonary vascular cells can lead to excessive smooth

muscle proliferation, impaired endothelial repair, and progressive vascular remodeling. Altered BMP signaling is also implicated in congenital heart defects, skeletal dysplasias, metabolic disorders, and certain cancer contexts where BMP pathways influence cell differentiation or invasive behavior.

In research, BMPR2 is studied extensively for its roles in signaling pathway regulation, vascular biology, development, and stem cell differentiation. Investigators use BMPR2 antibody to evaluate receptor abundance, localization, and changes in expression under conditions that influence TGF beta family signaling. Because BMPR2 participates in both canonical SMAD signaling and non canonical pathways, it is central to studies exploring how cells integrate external signals into long term transcriptional and phenotypic outcomes.

BMPR2 antibody is validated for use in relevant research applications to detect Bone Morphogenetic Protein Receptor Type 2 expression in cells and tissues. NSJ Bioreagents provides BMPR2 antibody reagents suitable for vascular biology research, developmental studies, skeletal biology, and investigations of BMP signaling regulation.

Application Notes

Titration of the BMPR2 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 28-59 from the human protein was used as the immunogen for this BMPR2 antibody.

Storage

Aliquot the BMPR2 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

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