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Recombinant Human BMPR-2 Protein

Catalog No.: RP01418 Recombinant

Sequence Information

Species	Gene ID	Swiss Prot
Human	659	Q13873-1

Tags
C-His

Synonyms
BMPR2; BMPR-II; BMPR3; BMR2; BRK-3; POVD1; PPH1; T-ALK; bone morphogenetic protein receptor type-2;BMPR-II;BMPR3;BMR2;BRK-3;POVD1;PPH1;T-ALK

Product Information

Source	Purification
HEK293 cells	> 95% by SDS-PAGE.

Endotoxin
< 0.1 EU/μg of the protein by LAL method.

Formulation
Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4.

Reconstitution
Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid votex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stablizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

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Background

The bone morphogenetic protein type II receptor (BMPR-II, or BMPR2), a receptor for the transforming growth factor (TGF)-beta/bone morphogenetic protein (BMP) superfamily. Reduced expression or function of BMPR2 signaling leads to exaggerated TGF-beta signaling and altered cellular responses to TGF-beta. In endothelial cells, BMPR2 mutation increases the susceptibility of cells to apoptosis. BMPR2 transduces BMP signals by forming heteromeric complexes with and phosphorylating BMP type I receptors. The intracellular domain of BMPR2 is both necessary and sufficient for receptor complex interaction. It had been identified that BMPR2 plays a key role in cell growth. Its mutations lead to hereditary pulmonary hypertension, and knockout of Bmpr-II results in early embryonic lethality. The C-terminal tail of BMPR2 provides binding sites for a number of regulatory proteins that may initiate Smad-independent signalling. BMPR2 mutations were predicted to alter the BMP and TGF-b1/SMAD signalling pathways, resulting in proliferation rather than apoptosis of vascular cells, and greatly increase the risk of developing severe pulmonary arterial hypertension. BMPR2 gene result in familial Primary pulmonary hypertension (PPH) transmitted as an autosomal dominant trait, albeit with low penetrance. Heterozygous germline mutations of BMPR2 gene have been identified in patients with familial and sporadic PPH, indicating that BMPR2 may contribute to the maintenance of normal pulmonary vascular structure and function. Tctex-1, a light chain of the motor complex dynein, interacts with the cytoplasmic domain of BMPR2 and demonstrate that Tctex-1 is phosphorylated by BMPR-II, a function disrupted by PPH disease causing mutations within exon 12. BMPR2 and Tctex-1 co-localize to endothelium and smooth muscle within the media of pulmonary arterioles, key sites of vascular remodelling in PPH.

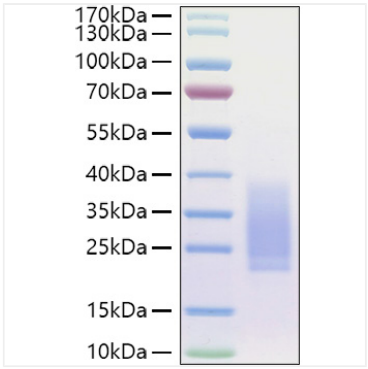
Basic Information

Description
Recombinant Human BMPR-2 Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Ser27-Ile151) of human BMPR2 (Accession #NP_001195.2) fused with a 6×His tag at the C-terminus.

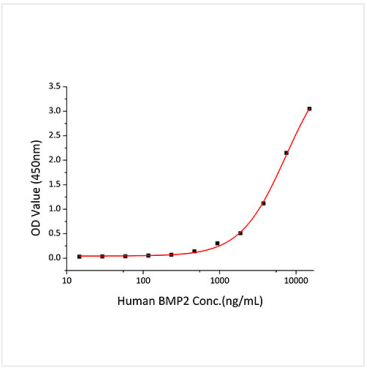
Bio-Activity
Measured by its binding ability in a functional ELISA. Immobilized Human BMPR2 at 1 μg/mL (100 μL/well) can bind Human BMP2 with a linear range of 0.015-7.4 μg/ml.

Storage
Store the lyophilized protein at -20°C to -80°C for long term.
After reconstitution, the protein solution is stable at -20°C for 3 months, at 2-8°C for up to 1 week.
Avoid repeated freeze/thaw cycles.

Validation Data



Recombinant Human BMPR-2 Protein was determined by SDS-PAGE with Coomassie Blue, showing a band at 25-38kDa.



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