

BMPR2 active protein

BMPR2 Protein, Human, Recombinant (His & hFc Tag)

CATALOG #
AAA257894

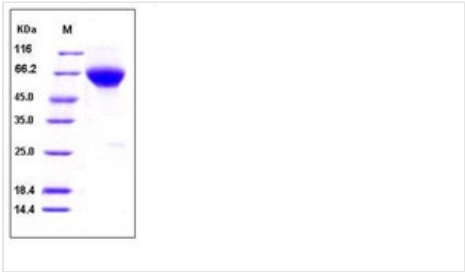
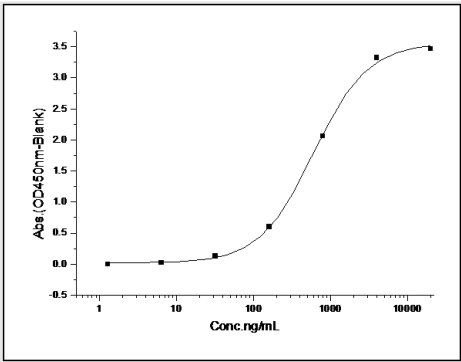
HOST
HEK293 Cells

PRODUCT SYNONYMS

BMPR2; BMPR2 Protein; Human; Recombinant (His & hFc Tag); Human BMPR2/BMPR-II Protein (His & Fc Tag); BMPR-II Protein; BMPR3 Protein; BMR2 Protein; BRK-3 Protein; POVD1 Protein; PPH1 Protein; T-ALK Protein; bone morphogenetic protein receptor; type II (serine/threonine kinase); BMPR2 active protein

PRODUCT SPECIFICATIONS

Host	HEK293 Cells
Purity/Purification	>90% as determined by SDS-PAGE
Form/Format	Lyophilized from sterile PBS, pH7.4. Normally 5%-8% trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the hard copy of CoA.
Sequence	Met1-Ile15 1
Species	Human
Endotoxin	<1.0EU per ug of the protein as determined by the LAL method
Predicted N Terminal	Ser 27
Tag	C-human IgG1-Fc & His
Protein Construction	A DNA sequence encoding the human BMPR-II (NP_001195.2) extracellular domain (Met 1-Ile 151) was fused with the C-terminal polyhistidine-tagged Fc region of human IgG1 at the C-terminus.
Reconstitution	A hardcopy of COA with reconstitution instruction is sent along with the products. Please refer to it for detailed information.
Activity	1. Measured by its binding ability in a functional ELISA. 2. Immobilized human BMPR-II-Fc at 10ug/mL (100uL/well) can bind biotinylated human BMP2-Fc. The EC50 of biotinylated human BMP2-Fc is 80-110ng/mL.
Preparation and Storage	Samples are stable for up to twelve months from date of receipt at -20 degree C to -80 degree C. Store it under sterile conditions at -20 degree C to -80 degree C. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles. In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice.



SDS-PAGE

Application Data

Measured by its binding ability in a functional ELISA. Immobilized human BMPR-II-Fc at 10 ug/mL (100 ul/well) can bind biotinylated human BMP2-Fc. The EC50 of biotinylated human BMP2-Fc is 80-110 ng/mL.

ADDITIONAL INFORMATION

Related Product Information for BMPR2 active protein

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.

References

Machado RD, et al. (2003) Functional interaction between BMPR-II and Tctex-1, a light chain of Dynein, is isoform-specific and disrupted by mutations underlying primary pulmonary hypertension. Hum Mol Genet. 12(24): 3277-86. Abramowicz MJ, et al. (2003) Primary pulmonary hypertension after amfepramone (diethylpropion) with BMPR2 mutation. Eur Respir J. 22(3): 560-2. Hassel S, et al. (2004) Proteins associated with type II bone morphogenetic protein receptor (BMPR-II) and identified by two-dimensional gel electrophoresis and mass spectrometry. Proteomics. 4(5): 1346-58. Beppu H, et al. (2005) Generation of a floxed allele of the mouse BMP type II receptor gene. Genesis. 41(3): 133-7. Morrell NW. (2006) Pulmonary hypertension due to BMPR2 mutation: a new paradigm for tissue remodeling Proc Am Thorac Soc. 3(8): 680-6. Nasim MT, et al. (2008) Stoichiometric imbalance in the receptor complex contributes to dysfunctional BMPR-II mediated signalling in pulmonary arterial hypertension. Hum Mol Genet. 21(11): 1683-94.

NCBI AND UNIPROT INFORMATION

NCBI GI #	15451916
NCBI GeneID	659
NCBI Accession #	NP_001195.2
NCBI GenBank Nucleotide #	NM_001204.6
UniProt Accession #	Q13873; Q16569; Q4ZG08; Q53SA5; Q585T8

Molecular Weight	115,201 Da
NCBI Official Full Name	bone morphogenetic protein receptor type-2
NCBI Official Synonym Full Names	bone morphogenetic protein receptor, type II (serine/threonine kinase)
NCBI Official Symbol	BMPR2
NCBI Official Synonym Symbols	BMR2; PPH1; BMPR3; BRK-3; T-ALK; BMPR-II
NCBI Protein Information	bone morphogenetic protein receptor type-2; BMPR-2; BMP type-2 receptor; BMP type II receptor; type II activin receptor-like kinase; bone morphogenetic protein receptor type II; type II receptor for bone morphogenetic protein-4
UniProt Protein Name	Bone morphogenetic protein receptor type-2
UniProt Gene Name	BMPR2
UniProt Synonym Gene Names	PPH1; BMP type-2 receptor; BMPR-2; BMP type II receptor; BMPR-II
UniProt Entry Name	BMPR2_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/hek293-cells-active-protein/bmpr2/257894>