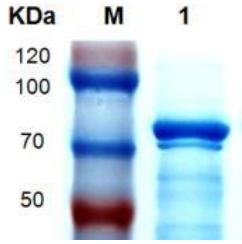
Human Bone Morphogenetic Protein Receptor type 1B (BMPR1B) Protein, Recombinant

I. For sale

Product name	Catalog #	Size
HumanBone Morphogenetic Protein Receptortype 1B (BMPR1B) Protein, Recombinant	P01B0012	10ug
		50ug
		100ug
		1mg

II. Product Description

Other Names	ALK-6; ALK6; AMD3; AMDD; BDA1D; BDA2; CDw293
Protein & NCBI Number	O00238, NM_001256793.2
Host	E.coli
Express Region	1-532aa
Protein Length	Total length of the protein（including Tag）
Protein Sequence	MGWLEELNWQLHIFLLILLSMHTRANFLDNMLLRSAGKLNVGTK KEDGESTAPTPRPKVLRCKCHHHCPEDSVNNICSTDGYCFTMIEEDDSGLPVVTSGCL GLEGSDFQCRDTPIPHQRRSIECCTERNECNKDLHPTLPPLKNRDFVDGPIHHRALLI SVTVCSLLLVLIILFCYFRYKRQETRPRYSIGLEQDETYIPPGESLRDLIEQSQSSGS GSGLPLLVQRTIAKQIQMVKQIGKGRYGEVWMGKWRGEKVAVKVFFTTEEASWFRETE IYQTVLMRHENILGFIAADIKGTGSWTQLYLITDYHENGSLYDYLKSTTLDAKSMLKL AYSSVSGLCHLHTEIFSTQGKPAIAHRDLKSKNILVKKNGTCCIADLGLAVKFISDTN EVDIPPNTRVGTKRYMPPEVLDESLNRNHFQSYIMADMYSFGLILWEVARRCVSGGIV EEYQLPYHDLVPSDPSYEDMREIVCIKKLRPSFPNRWSSDECLRQMGKLMTECWAHNP ASRLTALRVKKTLAKMSESQDIKL
Molecular Weight	about 60.6kDa
Fusion Tag	6×His-SUMO (N-terminus)
Purity	≥95% SDS-PAGE
Physical Property	liquid or lyophilized powder
Reconstitution	Storage solution: We recommend using PBS or a suitable solvent according to the experimental requirements to prepare 1mg/mL storage solution, aliquot and store at -20 °C. Working solution: According to the experimental requirement, dilute Storage solution. The working solution can be stored at 4°C for 2-3 weeks after dilution.
Storage & Stability	The shelf life of liquid form is 6 months stored at -20 °C /-80 °C. The shelf life of lyophilized form is 12 months stored at -20 °C /-80 °C.

Applications	Antibody preparation, immunoassay (ELISA, WB), subcellular localization and interaction protein identification, etc.
Lead Time	5 to 10 business days; 2 to 3 days for stock products
Figure. SDS-PAGE	 Bis-Tris (MOPS) SDS-PAGE

III. **Storage and Transportation**

Product is stable for up to twelve months from date of receipt under sterile conditions at -20℃ to -80℃. For optimal storage the lyophilized powder and protein stock solution should be aliquoted, and avoid freeze-thaw cycles.

IV. **Background**

BMPR1B gene, a member of the bone morphogenetic protein (BMP) receptor family, encodes transmembrane serine/threonine kinases, and binds BMPs. BMPs are members of the TGF-beta superfamily and involved in endochondral bone formation and embryogenesis. These proteins transduce their signals through the formation of heteromeric complexes of 2 different types of serine (threonine) kinase receptors:

type I receptors of about 50-55 kD and type II receptors of about 70-80 kD. Type II receptors bind ligands in the absence of type I receptors, but they require their respective type I receptors for signaling, whereas type I receptors require their respective type II receptors for ligand binding. Several transcript variants encoding two different isoforms have been found for this gene. BMPR1A and BMPR1B have overlapping functions. BMPR1A and BMPR1B are expressed during early chondrogenesis in mice and are necessary for chondrogenesis in vivo and crucial for endochondral ossification. Recent studies suggest that stronger BMPR1B signaling, compared with BMPR1A signaling, prevents chondrocyte hypertrophy and acts as a cartilage stabilizer during joint morphogenesis.

V. **References**

1. Mang Tanja, Kleinschmidt Doerr Kerstin,Ploeger Frank,Schoenemann Andreas,Lindemann Sven,Gigout Anne. BMPR1A is necessary for chondrogenesis and osteogenesis, whereas BMPR1B prevents hypertrophic differentiation. J Cell Sci. 2020;133(16):jcs246934.

2. Byeong S. Yoon,Dmitry A. Ovchinnikov,Isaac Yoshii,Yuji Mishina,Richard R. Behringer,Karen M. Lyons,Kathryn V. Anderson. Bmpr1a and Bmpr1b have overlapping functions and are essential for chondrogenesis in vivo. Proc Natl Acad Sci U S A. 2005;102(14):5062-5067.