Data Sheet (Cat.No.TMPY-04496)

TargetMol

BMPRIB Protein, Mouse, Recombinant (hFc)

General Information

Synonyms:	Alk6;ALK-6;CFK-43a;BMPR-1B;SKR6;BMPR-IB;bone morphogenetic protein receptor, type IB; AI385617;AV355320;Acvrlk6
Protein Construction:	A DNA sequence encoding the mouse Bmpr1b (NP_031586.1) (Lys14-Lys126) was expressed with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Lys 14
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	B2RRZ4
Molecular Weight:	39.4 kDa (predicted)

QC Testing

Biological Activity:	Measured by its ability to inhibit BMP4-induced alkaline phosphatase production by MC3T3E1 mouse preosteoblast cells. The ED50 for this effect is 1.5-7.5 μg/mL.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

BMPR1B(bone morphogenetic protein receptor, type IB), also known as ALK6, is a member of the bone morphogenetic protein (BMP) receptor family. BMPs are 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. BMPR1B is the major transducer of signals in precartilaginous condensations as demonstrated in experiments using constitutively active BMPR1B receptors. BMPR1B is a more effective transducer of GDF5 than BMPR1A. Unlike BMPR1A null mice, which die at an early embryonic stage, BMPR1B null mice are viable.

Reference

Ide H, et al. (1998) Assignment of the BMPR1A and BMPR1B genes to human chromosome 10q22.3 and 4q23--q24 byin situ hybridization and radiation hybrid map ping. Cytogenet. Cell Genet. 81(3-4): 285-6.
Mishina Y, et al. (2004) Bone morphogenetic protein type IA receptor signaling regulates postnatal osteoblast function and bone remodeling. J Biol Chem. 279(26): 27560-6.
Yoon BS, et al. (2005) Bmpr1a and Bmpr1b have overlapping functions and are essential for chondrogenesis in vivo. Proc Natl Acad Sci. 102(14): 5062-7.