

# Recombinant Human BMPR1A, His-tagged

**Cat. No.** BMPR1A-160H    **Lot. No.** (See product label)

## SPECIFICATION

### Product Overview

Recombinant BMPR1A produced in *insect cells* was a 23kDa protein. It consisted of an extracellular domain that was fused with a carboxy-terminal 6X his-tag.

### Species

Human

### Source

Insect Cells

### Description

The bone morphogenetic protein (BMP) receptors are a family of transmembrane serine/threonine kinases that include the type I receptors BMPR1A (this protein) and BMPR1B and the type II receptor BMPR2. Cellular responses to bone morphogenetic proteins (BMPs) have been shown to be mediated by the formation of hetero-oligomeric complexes of the type I and type II serine/threonine kinase receptors. BMP receptor 1A (BMPR-1A), also known as activin receptor-like kinase (ALK)-3, is one of seven known type I serine/threonine kinases that are required for the signal transduction of TGF- $\beta$  family cytokines. In contrast to the TGF- $\beta$  receptor system in which the type I receptor does not bind TGF- $\beta$  in the absence of the type II receptor, type I receptors involved in BMP signaling (including BMPR-1A, BMPR-1B/ALK-6, and ActR-I/ALK-2) can independently bind the various BMP family proteins in the absence of type II receptors. Recombinant soluble BMPR-1A binds BMP-2 and -4 with high-affinity in solution and is a potent BMP-2/4 antagonist *in vitro*.

### Purity

>90% by SDS-PAGE and silver staining.

### Endotoxin level

<0.1ng per  $\mu$ g of BMPR1A.

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<b>Buffer</b>	PBS.
<b>Stabilizer</b>	None.
<b>Formulation</b>	Lyophilized.
<b>Biologically Activity</b>	Measured by its ability to inhibit recombinant human BMP-2 induced alkaline phosphatase production by C2C12 myogenic cells. The ED50 for this effect is typically 1-3 µg/ml in the presence of 500 ng/ml of recombinant human BMP-2.
<b>Reconstitution</b>	It is recommended that sterile PBS containing at least 0.1% HSA or BSA be added to the vial to prepare a stock solution of no less than 100 µg/ml of BMPR-IA.
<b>Stability</b>	Lyophilized samples are stable for greater than six month at -20°C to -70°C. Upon reconstitution, this cytokine can be stored under sterile conditions at -2°C to -4°C for one month or at -20°C to -70°C for three month without detecable loss of activity. Avoid repeated freeze–thaw cyles.

## GENE INFORMATION

<b>Gene Name</b>	<a href="#">BMPR1A bone morphogenetic protein receptor, type IA [ Homo sapiens ]</a>
<b>Synonyms</b>	BMPR1A; bone morphogenetic protein receptor, type IA; ALK3; SKR5; CD292; ACVRLK3; 10q23del; OTTHUMP00000020014; activin A receptor, type II-like kinase 3; serine/threonine-protein kinase receptor; Bone morphogenetic protein receptor type-1A; EC 2.7.11.30; Serine/threonine-protein kinase receptor R5; Activin receptor-like kinase 3; ALK-3
<b>Gene ID</b>	<a href="#">657</a>
<b>mRNA Refseq</b>	<a href="#">NM_004329</a>

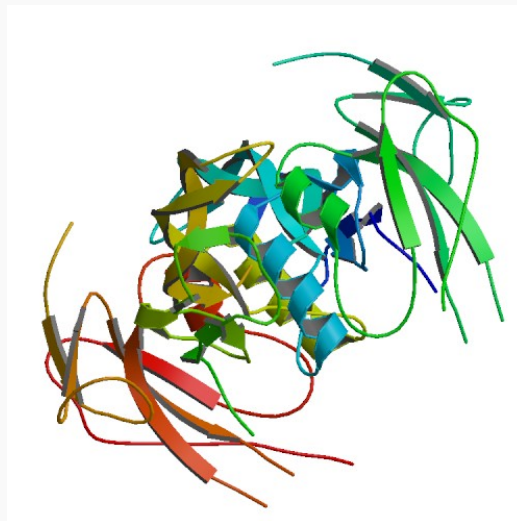
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<b>Protein Refseq</b>	NP_004320
<b>MIM</b>	601299
<b>UniProt ID</b>	P36894
<b>Chromosome Location</b>	10q22.3
<b>Pathway</b>	Cytokine-cytokine receptor interaction; TGF-beta signaling pathway; Signaling by BMP
<b>Function</b>	ATP binding; SMAD binding; magnesium ion binding; nucleotide binding; protein homodimerization activity; protein serine/threonine kinase activity; receptor activity; transferase activity; transforming growth factor beta receptor activity

**PDB rendering based on 1es7**



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