

**RELIATech GmbH**  
Lindenerstr. 15  
38300 Wolfenbüttel  
Germany

Tel.: +49 5331 8586 987  
Fax.: +49 5331 8586 989  
Email: [info@reliatech.de](mailto:info@reliatech.de)  
web: [www.reliatech.de](http://www.reliatech.de)

## Recombinant Human soluble BMPR-IA

**Description:** The extracellular domain of human BMPR-IA was fused with a carboxy-terminal 6X histidine-tag. The monomeric glycoprotein was expressed in baculovirus infected insect cells. 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 a 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-IA, BMPR-IB/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-IA binds BMP-2 and -4 with high-affinity in solution and is a potent BMP-2/4 antagonist in vitro. BMPR-IA is ubiquitously expressed during embryogenesis. In adult tissues, BMPR-IA mRNA is also widely distributed; with the highest expression levels found in skeletal muscle. The extracellular domain of BMPR-IA shares little amino acid sequence identity with the other mammalian ALK type I receptor kinases, but the cysteine residues are conserved. Human and mouse BMPR-IA are highly conserved and share 98% sequence identity.

<b>Source:</b>	Insect cells
<b>Molecular Weight:</b>	23 kDa
<b>Purity:</b>	> 90 % by SDS-PAGE and silver staining
<b>Endotoxin level:</b>	< 0.1 ng per $\mu\text{g}$ of BMPR-IA
<b>Subunit:</b>	monomeric glycoprotein
<b>Stabilizer:</b>	none
<b>Buffer:</b>	PBS
<b>Formulation:</b>	lyophilized

**Biological Activity:** Measured by its ability to inhibit recombinant human BMP-2 induced alkaline phosphatase production by C2C12 myogenic cells. The  $\text{ED}_{50}$  for this effect is typically 1-3  $\mu\text{g}/\text{ml}$  in the presence of 500 ng/ml of recombinant human BMP-2.

**Reconstitution:** 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  $\mu\text{g}/\text{ml}$  of BMPR-IA.

**Stability:** Lyophilized samples are stable for greater than six month at  $-20^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$ . Upon reconstitution, this cytokine can be stored under sterile conditions at  $-2^{\circ}\text{C}$  to  $-4^{\circ}\text{C}$  for one month or at  $-20^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$  for three month without detectable loss of activity. **Avoid repeated freeze-thaw cycles.**

**Usage:** Human soluble BMPR-IA is offered for research use. Not for drug use. **Not for human use.**

**Catalogue number:** S01-021

**Size:** 100  $\mu\text{g}$

**Range:** 0.1-10 ng/ml

**\*\* Always centrifuge vial before opening \*\***