

## Cytokines

### Human Recombinant BMPR-1A Fc

Bone morphogenetic protein receptor type 1A, Fc tag



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Catalog #	78212	20 µg
	78212.1	100 µg
	78212.2	500 µg
	78212.3	1000 µg

## Product Description

Bone morphogenetic protein receptor type 1A (BMPR-1A) is a type I receptor of the BMP receptor family of transmembrane serine/threonine kinases (Abe; Fischerauer et al.); it is also known as ALK3. BMPR-1A is a receptor for BMP-2, BMP-4, GDF-5, and GDF-6. Binding of BMPs to receptor complexes results in phosphorylation of intracellular SMADs, which go on to regulate transcription (Pan et al.). BMP regulation plays a role in proliferation, differentiation, migration, and apoptosis of endothelial and vascular smooth muscle cells (Abe). BMPR-1A deficiency is lethal during gastrulation (Mishina et al.). BMPR-1A is important in chondrogenesis and osteogenesis, along with BMPR-1B (Fischerauer et al.; Jing et al.). This protein contains a C-terminus linker (IEGRMD) to an Fc tag (Human IgG1).

## Product Information

Alternative Names:	Activin receptor-like kinase 3, ACVRLK3, ALK3, BMP type-1A receptor, BRK-1, CD292, Serine/threonine-protein kinase receptor R5, SKR5
Accession Number:	P36894
Amino Acid Sequence:	QNLDSMLHGT GMKSDSDQKK SENGVTLAPE DTLPLFKCYC SGHCPDDAIN NTCITNGHCF AIIIEDDQGE TTLASGCMKY EGSDFQCKDS PKAQLRRTIE CCRTNLCNQY LQPTLPPVVI GPFFDGSIRI EGRMDDKTHT CPPCPAPELL GGPSVFLFPP KPKDTLMISR TPEVTCVVVD VSHEDPEVKF NQYVDGVEVH NAKTKPREEQ YNSTYRVSV LTVLHQDWLN GKEYKCKVSN KALPAPIEKT ISKAKGQPRE PQVYTLPPSR DELTKNQVSL TCLVKGFYPS DIAVEWESNG QPENNYKTP PVLDSGDSFF LYSKLTVDKS RWQQGNVFC SVMHEALHNNH YTQKSLSLSP GK
Predicted Molecular Mass:	40.4 kDa monomer; 80.8 kDa dimer
Species:	Human
Cross Reactivity:	Not determined
Formulation:	Lyophilized from a sterile-filtered solution containing phosphate-buffered saline.
Source:	CHO

## Specifications

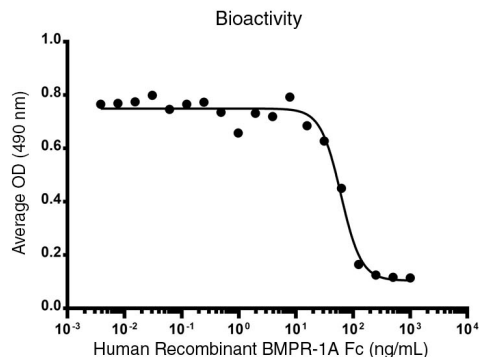
Activity:	The specific activity is $\geq 8.3 \times 10^3$ units/mg ( $EC_{50} \leq 120$ ng/mL) as determined by inhibition of alkaline phosphatase production induced by BMP-4 in ATDC-5 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is $\leq 1$ EU/µg protein.

## Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -20°C to -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

## Data



The biological activity of Human Recombinant BMPR-1A Fc was tested by its ability to inhibit BMP-4-induced alkaline phosphatase production in ATDC-5 cells. Inhibition of BMP-4-induced alkaline phosphatase production was measured using a fluorometric assay method. The EC<sub>50</sub> is defined as the effective concentration of the growth factor at which inhibition of alkaline phosphatase production is at 50% of maximum. The EC<sub>50</sub> in the above example is 61.5 ng/mL.

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## References

- Abe J. (2006) Bone morphogenetic protein (BMP) family, SMAD signaling and Id helix-loop-helix proteins in the vasculature: The continuous mystery of BMPs pleiotropic effects. *J Mol Cell Cardiol* 41(1): 4–7.
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