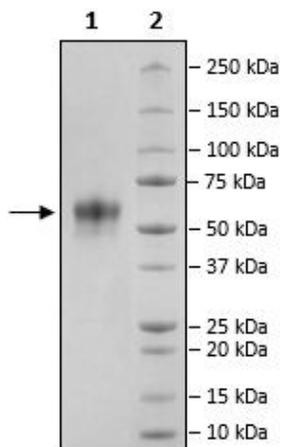


## Product Information

<b>Description:</b>	Activin Blocker is a fusion protein composed of the extracellular domain of ActRIIA (activin A receptor type 2A variant 2), amino acids 21-135, and the Fc domain of human IgG1. This protein was affinity purified.
<b>Background:</b>	Activin A is a member of the TGF $\beta$ (transforming growth factor beta) family of proteins involved in embryonic development, hematopoiesis, cell proliferation, and cell differentiation. It is the ligand to the activin A receptor type I or type II. Upon binding, SMAD2 (mothers against decapentaplegic homolog 2) and SMAD3 are phosphorylated, complex with SMAD4 and translocate to the nucleus, regulating gene expression. Activin A can be found in macrophages, dendritic cells, and neutrophils, playing a role in cell maturation and activation. It is involved in inflammation and autoimmune disorders, such as SLE (systemic lupus erythematosus), RA (rheumatoid arthritis), and atopic dermatitis. It is also involved in bone formation. ActRIIA is a high affinity receptor, and that property can be explored for clinical applications. The use of fusion protein blockers of the activin signaling pathways, that serve as sinks for activin A and other TGF $\beta$ members, is being explored for the treatment of pulmonary hypertension, chemotherapy-induced anemia, and osteoporosis.
<b>Species:</b>	Human
<b>Concentration:</b>	1.54 mg/ml
<b>Expression System:</b>	HEK293
<b>Purity:</b>	$\geq 90\%$
<b>Format:</b>	Aqueous buffer solution.
<b>Formulated In:</b>	8 mM phosphate, pH 7.4, 110 mM NaCl, 2.2 mM KCl, and 20% glycerol
<b>MW:</b>	39 kDa + glycans
<b>Glycosylation:</b>	This protein runs at a higher MW by SDS-PAGE due to glycosylation.
<b>Stability:</b>	At least 12 months at $-80^{\circ}\text{C}$ .
<b>Storage:</b>	$-80^{\circ}\text{C}$
<b>Instructions for Use:</b>	Thaw on ice and gently mix prior to use. DO NOT VORTEX. Perform a quick spin before opening. Aliquot into small volumes and flash freeze for long term storage. Avoid multiple freeze/thaw cycles.
<b>Assay Conditions:</b>	TGF $\beta$ /Activin A-Responsive Luciferase Reporter HEK293 cells were plated according to the cell line protocol (BPS Bioscience #60653). A serial dilution of Activin Blocker was prepared in Assay Medium 1B (BPS Bioscience #79617) and pre-incubated with 30 ng/ml of Activin A (Peprotech #120-14E) for one hour at $37^{\circ}\text{C}$ with 5% $\text{CO}_2$ . The Activin Blocker and Activin A mixture were then added to the cells and incubated at $37^{\circ}\text{C}$ with 5% $\text{CO}_2$ overnight. The next day, luciferase activity was measured using the ONE-Step™ Luciferase Assay System (BPS Bioscience #60690). Data is shown as percent luminescence in which cells stimulated with Activin A in the absence of Activin Blocker was set at 100%.
<b>Applications:</b>	Useful for Activin A blocking studies.

## Quality Control Data

## 4-20% SDS-PAGE Coomassie Staining



## Activin A Blocking Bioassay

