

# Human/Mouse/Rat Recombinant Follistatin-Resistant Activin A, ACF

## Follistatin-resistant Activin A

Catalog #100-1795

100 µg

### Product Description

Follistatin-resistant activin A (FRACTA) is a modified version of activin A that has been engineered to reduce binding to follistatin, the natural inhibitor of activin A. Activin A is a member of the transforming growth factor beta (TGF- $\beta$ ) family of proteins, and is produced by many cell types throughout development (Gurdon et al.). It is a disulfide-linked homodimer (two beta-A chains) that binds to heteromeric complexes of a type I (Act RI-A and Act RI-B) and a type II (Act RII-A and Act RII-B) serine-threonine kinase receptor (Attisano et al.). Activins primarily signal through SMAD2/3 proteins to regulate a variety of functions, including cell proliferation, differentiation, wound healing, apoptosis, and metabolism (McDowell et al.). Activin A signaling is regulated by binding of follistatin, which blocks the type-II receptor binding site (Harrington et al.). Activin A maintains the undifferentiated state of human embryonic stem cells (James et al.; Xiao et al.) and also facilitates differentiation of human embryonic stem cells into definitive endoderm (D'Amour et al.). This product is animal component-free (ACF).

## Product Information

<b>Alternative Names:</b>	Activin beta-A chain, EDF, Erythroid differentiation protein, FRACTA, FRP, FSH-releasing protein, INHBA, Inhibin betaA chain, Inhibin beta-1
<b>Accession Number:</b>	P08476
<b>Predicted Molecular Mass:</b>	26 kDa (dimer)
<b>Species:</b>	Human, Mouse, Rat
<b>Product Formulation:</b>	Lyophilized from a solution containing acetonitrile and trifluoroacetic acid.
<b>Source:</b>	E. coli
<b>Purity:</b>	≥ 98% by SDS-PAGE

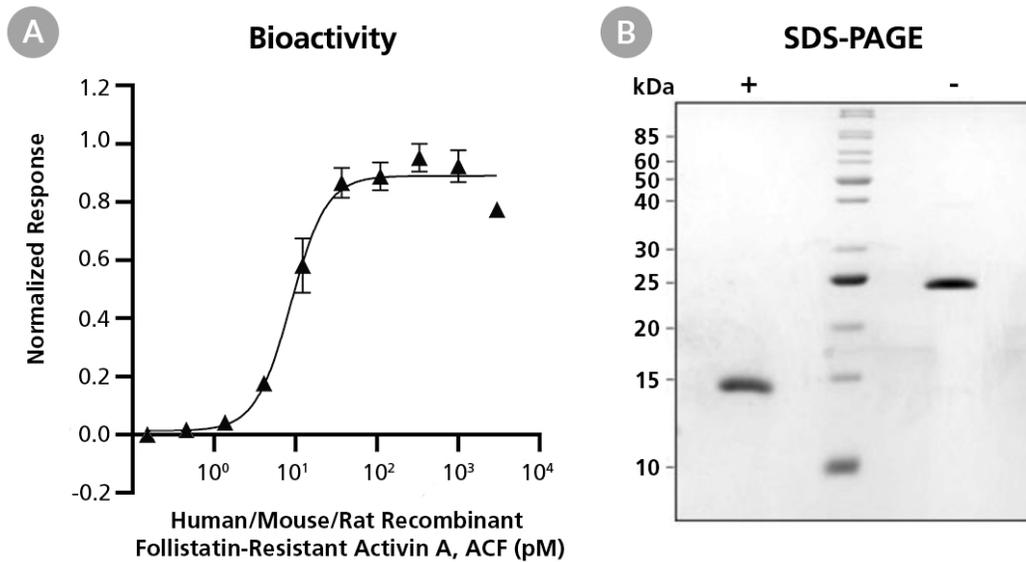
## Specifications

<b>Activity:</b>	The EC50 is approximately 0.23 ng/mL (~8.79 pM), as determined by an activin-responsive luciferase reporter assay in HEK293T cells.
<b>Endotoxin Level:</b>	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 0.1 EU/μg protein.

## Preparation and Storage

<b>Stability and Storage:</b>	Store at -20 to -80°C. Stable as supplied for 12 months from date of receipt.
<b>Preparation:</b>	Centrifuge vial before opening. Reconstitute the product in 10 mM hydrochloric acid 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 - 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 -20 to -80°C for more than 12 months. Avoid repeated freeze-thaw cycles.

## Data



**Figure 1. Biological Activity and Molecular Mass of Human/Mouse/Rat Recombinant Follistatin-Resistant Activin A, ACF**

(A) The biological activity of Human/Mouse/Rat Recombinant Follistatin-Resistant Activin A, ACF was tested using an activin-responsive luciferase reporter assay in HEK293T cells. Firefly luciferase activity was normalized to control Renilla luciferase activity. The EC<sub>50</sub> is defined as the effective concentration of the growth factor at which activin response is at 50% of maximum. The EC<sub>50</sub> in the above example is 8.79 pM (0.23 ng/mL). (B) 1 µg of Human/Mouse/Rat Recombinant Follistatin-Resistant Activin A, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human/Mouse/Rat Recombinant Follistatin-Resistant Activin A, ACF has a predicted molecular mass of 26 kDa (dimer).

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