Human ALK4 / ACVR1B Protein (His & Fc Tag)

Catalog Number: **10583-H03H**

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Biological Solution Specialist

General Information

Gene Name Synonym:

ACTRIB; ACVRLK4; ALK4; SKR2; 6820432J04; ActR-IB; ActRIB; Acvrlk4; Alk4; SKR2

Protein Construction:

A DNA sequence encoding the human ACVR1B (NP_004293.1) extracellular domain (Met 1-Glu 126) was fused with C-terminal His-tagged Fc region of human IgG1 at the C-terminus.

Source: Human

Expression Host: Human Cells

QC Testing

Purity: > 80 % as determined by SDS-PAGE

Bio Activity:

Measured by its binding ability in a functional ELISA. Immobilized human TDGF1 at 2 μg/ml (100 μl/well) can bind human ALK-4 with a linear range of 0.0068-0.16 μg/ml.

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Ser 24

Molecular Mass:

The recombinant human ALK4/Fc is a disulfide-linked homodimer. The reduced monomer consists of 351 amino acids and has a predicted molecular mass of 39.6 kDa. In SDS-PAGE under reducing conditions, rhALK4/Fc monomer migrates as an approximately 46 kDa band due to glycosylation, with ~15% free Fc fragment.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

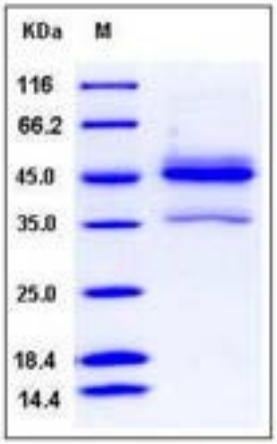
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

ALK-4 (Activin Receptor-Like Kinase 4) or ACVR1B (Activin A Receptor, type 1B), belongs to the protein kinase superfamily, TKL Ser/Thr protein kinase family, and TGFB receptor subfamily. ALK-4/ACVR1B acts as a transducer of activin or activin like ligands signals. Activin binds to either ACVR2A or ACVR2B and then forms a complex with ACVR1B. The known type II activin receptors include ActRII and ActRIIB, while the main type I activin receptor in mammalian cells is ALK-4 (ActRIB). In the presence of activin, type II and type I receptors form complexes whereby the type II receptors activate ALK-4 through phosphorylation. The activated ALK-4, in turn, transduces signals downstream by phosphorylation of its effectors, such as Smads, to regulate gene expression and affect cellular phenotype. ALK-4/ACVR1B is an important regulator of vertebrate development, with roles in mesoderm induction, primitive streak formation, gastrulation, dorsoanterior patterning, and left-right axis determination.

References

1. Chen Y, et al. (2005) Developmental analysis of activin-like kinase receptor-4 (ALK4) expression in Xenopus laevis. 232(2): 393-8.
2. J. Massagu. (1998) TGF- SIGNAL TRANSDUCTION. Annual Review of Biochemistry. 67: 753-91.