Data Sheet (Cat.No.TMPC-00018)

TargetMol

ALK-4/ACVR1B Protein, Human, Recombinant (GST)

General Information

Protein Construction: Recombinant human ALK4 (150-end) was expressed in Sf9 cells using an N-terminal GST tag.

Species: Human

Expression Host: Baculovirus-Insect Cells

Accession: P36896

Molecular Weight: ~64 kDa

QC Testing

Biological Activity: Representative specific activity data for ALK4 were obtained using different assay formats:

- 18 nmol/min/mg, determined by radioactive kinase assay
- 6.8 nmol/min/mg, determined by ADP-Glo kinase assay

Different lots may be tested using different assay methods; therefore, values obtained using different assay formats are not directly comparable.

Purity: >90% as determined by SDS-PAGE.

Formulation: Supplied as sterile 50 mM Tris-HCl, pH 7.5, 150 mM NaCl, 10 mM glutathione, 0.1 mM EDTA, 0.25 mM DTT, 0.1 mM EDTA, 0.1 mM PMSF, 25% glycerol.

Preparation and Storage

Stability & Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Enzymes are highly recommended to be shipped at frozen temperature with dry ice. Shipment made at ambient temperature may seriously affect the activity of the ordered products.

Protein Background

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.

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