Recombinant Rat ALK-4/ACVR1B Protein

Catalog No.: RP01861

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Sequence Information

Species
Rat

Gene ID
29381

Swiss Prot
P80202

Tags
C-hFc-5his

Synonyms
Activin receptor type-1B, 2.7.11.30, Activin receptor type IB, ACTR-IB, Activin receptor-like kinase 4, ALK-4, Serine/threonine-protein kinase receptor R2, SKR2, Acvr1b, Acvrlk4, Alk4

Product Information

Source
HEK293 cells

Purification
≥ 90% as determined by SDS-PAGE.

Calculated MW
41.35 kDa

Observed MW
45-50 kDa

Endotoxin
< 0.1 EU/μg of the protein by LAL method.

Formulation
Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4.

Reconstitution
Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stablizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

Background

Activin RIB, also known as activin receptor type-1B (ACVR1B) or ALK-4, is a type I transmembrane serine/threonine kinase receptor that is part of the TGF-β receptor superfamily. Activin binds to a type II activin receptor (ACVR2or ACVR2B) and then recruits ACVR1B. ALK4 is an important regulator of vertebrate development, with roles in mesoderm induction, primitive streak formation, gastrulation, dorsoanterior patterning, and left-right axis determination.
The sequence of amino acids in ALK4 (ACVR1B) proteins from different species is very stable, which leads to the conclusion that in the process of evolution, ALK4 has been only slightly altered, and that both in humans and in animals, its function is similar.
ALK4 (ACVR1B) forms an activin receptor complex with activin type-II receptor to transduce activin signal from the cell surface to the cytoplasm, thus regulating physiological and pathological processes including embryogenesis, tissue homeostasis, wound healing, extracellular matrix production, immunosuppression, and carcinogenesis. Receptor heterodimerization activates the type II receptor kinase to phosphorylate the type I receptor, which recruits and phosphorylates regulated Smads2 and 3. Phosphorylated regulated Smads are released and form a heteromeric complex with the Co-Smad, Smad4. The regulated Smad and Co-Smad complex then translocates to the nucleus where it regulates the expression of many genes. In mammals, Acvr1b is expressed by various types of epithelial cells, including interfollicular epidermis, and the outer root sheath (ORS) and the inner root sheath (IRS) of the hair follicles. Activin signaling through Acvr1b acts on skin epithelial cells in a paracrine manner.

Basic Information

Description
Recombinant Rat ALK-4/ACVR1B Protein is produced by HEK293 expression system. The target protein is expressed with sequence (Met1-Glu126) fused with hFc-5his tag at the C-terminus.

Activity
Measured by its binding ability in a functional ELISA. Immobilized human Cripto-1/TDGF1 protein(Catalog: RP00202) at 2μg/mL (100 μL/well) can bind rat ALK-4/ACVR1B with a linear range of 4.9-152.7 ng/mL.

Shipping
Lyophilized proteins are shipped at ambient temperature.
Liquid proteins are shipped at frozen temperature with dry ice.
Upon receipt, store it immediately at the temperature recommended below.

Storage
Store at -20℃

Operational Notes
For your safety and health, please wear a lab coat and disposable gloves for handling.

Contact

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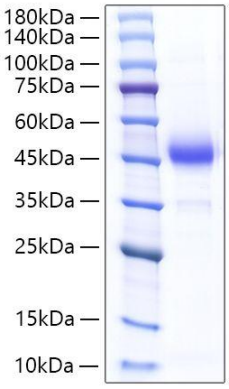
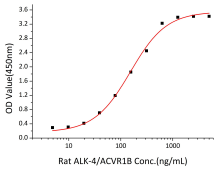
For research use only. Not for therapeutic or diagnostic purposes.
Please visit http://abclonal.com for a complete listing of recommended products.

Validation Data



Recombinant Rat ALK-4/ACVR1B Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.



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