



# Recombinant Protein Technical Manual

## Recombinant Human ALK-2/ACVR1 Protein (His & Fc Tag)(Active)

RPE5217

### Product Data:

**Product SKU:** RPE5217

**Size:** 100µg

**Species:** Human

**Expression host:** HEK293 Cells

**Uniprot:** NP\_001104537.1

### Protein Information:

**Molecular Mass:** 39.6 kDa

**AP Molecular Mass:** 40-45 kDa

**Tag:** C-His & Fc

**Bio-activity:** Measure by its ability to bind with human BMP2 in a functional ELISA.

**Purity:** > 95 % as determined by reducing SDS-PAGE.

**Endotoxin:** < 1.0 EU per µg as determined by the LAL method.

**Storage:** Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

**Shipping:** This product is provided as lyophilized powder which is shipped with ice packs.

**Formulation:** Lyophilized from sterile PBS, pH 7.4

**Reconstitution:** Please refer to the printed manual for detailed information.

**Application:** Functional ELISA

**Synonyms:** Activin Receptor Type; Activin Receptor Type I; ACTR-I; Activin Receptor-Like Kinase 2; ALK-2; Serine/Threonine-Protein Kinase Receptor R1; SKR1; TGF-B Superfamily Receptor Type I; TSR-I; ACVR1; ACVRLK2;ACVR1A;ACVRLK2;ALK2;FOP;SKR1

## Immunogen Information:

**Sequence:** Met 1-Val 124

## Background:

ALK-2, also termed as ACVR1, was initially identified as an activin type I receptor because of its ability to bind activin in concert with ActRII or ActRIIB. ALK-2 is also identified as a BMP type I receptor. It has been demonstrated that ALK-2 forms complex with either the BMP-2/7-bound BMPR-II or ACVR2A /ACVR2B. ALK and ALK-2 presenting in the yeast *Saccharomyces cerevisiae* are two haspin homologues. Both ALK and ALK-2 exhibit a weak auto-kinase activity in vitro, and are phosphoproteins in vivo. ALK and ALK-2 levels peak in mitosis and late-S/G2. Control of protein stability plays a major role in ALK-2 regulation. The half-life of ALK-2 is particularly short in G1. Overexpression of ALK-2, but not of ALK, causes a mitotic arrest, which is correlated to the kinase activity of the protein. This suggests a role for ALK-2 in the control of mitosis. Endoglin is phosphorylated on cytosolic domain threonine residues by the TGF-beta type I receptors ALK-2 and ALK-5 in prostate cancer cells. Endoglin did not inhibit cell migration in the presence of constitutively active ALK-2. Defects in ALK-2 are a cause of fibrodysplasia ossificans progressiva (FOP).