

BMPR1A/ALK-3 Active Protein | BMPR1A active protein

BMPR1A/ALK-3 Protein, Canine, Recombinant (hFc Tag)

CATALOG #
AAA258253

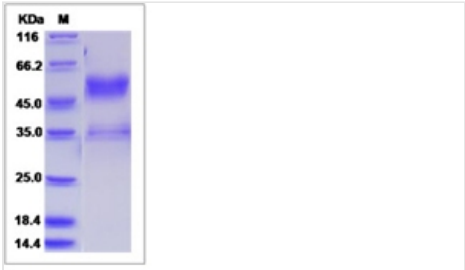
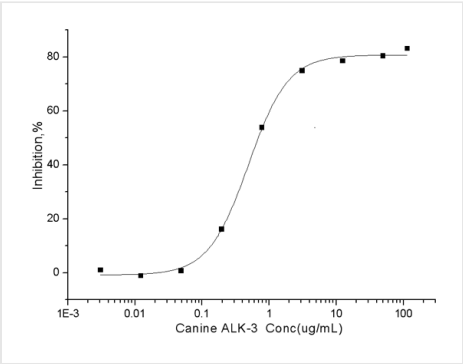
HOST
HEK293 Cells

PRODUCT SYNONYMS

BMPR1A/ALK-3; BMPR1A/ALK-3 Protein; Canine; Recombinant (hFc Tag); Canine ALK-3/BMPR1A Protein (Fc Tag); bone morphogenetic protein receptor; type IA; BMPR1A active protein

PRODUCT SPECIFICATIONS

Host	HEK293 Cells
Purity/Purification	>95% as determined by SDS-PAGE
Form/Format	Lyophilized from sterile PBS, pH7.4. Normally 5%-8% trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the hard copy of CoA.
Sequence	Met1-Arg15 2
Species	Canine
Activity	Measured by its ability to inhibit rhBMP4-induced alkaline phosphatase production by MC3T3-E1 cells. The ED50 for this effect is typically 0.5-2.5ug/mL in the presence of 50ng/mL of recombinant human BMP4.
Endotoxin	<1.0EU per ug protein as determined by the LAL method.
Predicted N Terminal	Gln 24
Tag	C-human IgG1-Fc
Protein Construction	A DNA sequence encoding the canine BMPR1A (NP_001138622.1)(Met1-Arg152) was expressed with the Fc region of human IgG1 at the C-terminus.
Reconstitution	A hardcopy of COA with reconstitution instruction is sent along with the products. Please refer to it for detailed information.
Preparation and Storage	Samples are stable for up to twelve months from date of receipt at -20 degree C to -80 degree C. Store it under sterile conditions at -20 degree C to -80 degree C. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles. In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice.



Application Data
Measured by its ability to inhibit rhBMP4-induced alkaline phosphatase production by MC3T3-E1 cells. The ED50 for this effect is typically 0.5-2.5 ug/mL in the presence of 50 ng/mL of recombinant human BMP4.

ADDITIONAL INFORMATION

Related Product Information for BMPR1A active protein	Background: Activin receptor-Like Kinase 3 (ALK-3), also known as Bone Morphogenetic Protein Receptor, type IA (BMPR1A), is a type I receptor for bone morphogenetic proteins (BMPs) which belong to the transforming growth factor beta (TGF-beta) superfamily. The BMP receptors form a subfamily of transmembrane serine/threonine kinases including the type I receptors BMPR1A and BMPR1B and the type II receptor BMPR2. ALK-3/BMPR1A is expressed in the epithelium during branching morphogenesis. Deletion of BMPR1A in the epithelium with an Sftpc-re transgene leads to dramatic defects in lung development. ALK-3 and ALK-6 share a high degree of homology, yet possess distinct signaling roles. The transforming growth factor (TGF)-beta type III receptor (TbetaRIII) enhanced both ALK-3 and ALK-6 signaling. TbetaRIII associated with ALK-3 primarily through their extracellular domains, whereas its interaction with ALK-6 required both the extracellular and cytoplasmic domains. ALK-3 plays an essential role in the formation of embryonic ventral abdominal wall, and abrogation of BMP signaling activity due to gene mutations in its signaling components could be one of the underlying causes of omphalocele at birth. The type IA BMP receptor, ALK-3 was specifically required at mid-gestation for normal development of the trabeculae, compact myocardium, interventricular septum, and endocardial cushion. Cardiac muscle lacking ALK-3 was specifically deficient in expressing TGFbeta2, an established paracrine mediator of cushion morphogenesis. Hence, ALK-3 is essential, beyond just the egg cylinder stage, for myocyte-dependent functions and signals in cardiac organogenesis.
References	Gaussin V, et al. (2002) Endocardial cushion and myocardial defects after cardiac myocyte-specific conditional deletion of the bone morphogenetic protein receptor ALK3. Proc Natl Acad Sci U S A. 99(5): 2878-83.Eblaghie MC, et al. (2006) Evidence that autocrine signaling through Bmpr1a regulates the proliferation, survival and morphogenetic behavior of distal lung epithelial cells. Dev Biol. 291(1): 67-82.Sun J, et al. (2007) Deficient Alk3-mediated BMP signaling causes prenatal omphalocele-like defect. Biochem Biophys Res Commun. 360(1): 238-43.Lee NY, et al. (2009) The transforming growth factor-beta type III receptor mediates distinct subcellular trafficking and downstream signaling of activin-like kinase (ALK)3 and ALK6 receptors. Mol Biol Cell. 20(20): 4362-70.

NCBI AND UNIPROT INFORMATION

Molecular Weight	The recombinant canine BMPR1A consists 370 amino acids and predicts a molecular mass of 41.2kDa.
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For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.