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Produktinformation



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PRODUCT INFORMATION



ALK7 Extracellular Domain (human, recombinant)

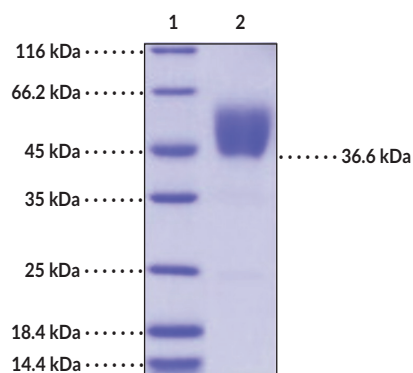
Item No. 33731

Overview and Properties

Synonyms: Activin Receptor-like Kinase 7, Activin Receptor Type-1C, ACVR1C
Source: Recombinant C-terminal human IgG1 Fc-tagged ALK7 expressed in HEK293 cells
Amino Acids: 22-113
Uniprot No.: Q8NER5
Molecular Weight: 36.6 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: ≥95% estimated by SDS-PAGE
Supplied in: Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing: <1.0 EU/μg, determined by the LAL endotoxin assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: ALK7 Extracellular Domain

SDS-PAGE Analysis of ALK7 Extracellular Domain. This protein has a calculated molecular weight of 36.6 kDa. It has an apparent molecular weight greater than 36.6 kDa by SDS-PAGE under reducing conditions due to glycosylation.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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PRODUCT INFORMATION



Description

Activin receptor-like kinase 7 (ALK7) is a serine/threonine kinase and member of the type I TGF- β receptor superfamily that is encoded by *ACVR1C* in humans.^{1,2} It is composed of an extracellular ligand-binding domain, a single transmembrane domain, an intracellular serine/threonine kinase domain, and a cytoplasmic serine/threonine-rich region.^{3,4} Alternative splicing of the *ACVR1C* pre-mRNA produces a truncated isoform, tALK7, which lacks the first 50 amino acids of the full-length protein, and two soluble isoforms, sALK7a and sALK7b, which lack the transmembrane, kinase, and cytoplasmic domains.⁵ ALK7 is highly expressed in neuronal tissues, as well as intestinal tissues, pancreatic islets, and adipocytes.^{2,6,7} It heterodimerizes with activin receptor type 2A (ACTRIIA) or ACTRIIB, and upon ligand activation by activin A, activin B, activin AB, or Nodal, induces phosphorylation of SMAD2 and SMAD3 to regulate gene expression.^{3,6} ALK7-mediated signaling has roles in insulin secretion and apoptosis, as well as roles in the suppression of tumorigenesis and metastasis.^{8,9} *ACVR1C* SNPs are associated with increased risk of metabolic syndrome in women, and adipose tissue *ACVR1C* expression is decreased in obese individuals.^{2,7} Cayman's ALK7 Extracellular Domain (human, recombinant) protein is a disulfide-linked homodimer. The reduced monomer, composed of ALK7 (22-113) fused to human IgG1 Fc at its C-terminus, consists of 330 amino acids, has a calculated molecular weight of 36.6 kDa, and a predicted N-terminus of Leu22 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is greater than 36.6 kDa due to glycosylation.

References

1. Reissmann, E., Jörnvall, H., Blokzijl, A., *et al.* The orphan receptor ALK7 and the Activin receptor ALK4 mediate signaling by Nodal proteins during vertebrate development. *Genes Dev.* **15(15)**, 2010-2022 (2001).
2. Zhang, W., Wang, H., Zhang, W., *et al.* ALK7 gene polymorphism is associated with metabolic syndrome risk and cardiovascular remodeling. *Arq. Bras. Cardiol.* **101(2)**, 134-140 (2013).
3. Watanabe, R. Activin receptor-like kinase and the insulin gene. *Vitamins and hormones*. Litwack, G., editor, 1st ed., *Academic Press* (2011).
4. Tsuchida, K., Nakatani, M., Uezumi, A., *et al.* Signal transduction pathway through activin receptors as a therapeutic target of musculoskeletal diseases and cancer. *Endocr. J.* **55(1)**, 11-21 (2008).
5. Roberts, H.J., Hu, S., Qiu, Q., *et al.* Identification of novel isoforms of activin receptor-like kinase 7 (ALK7) generated by alternative splicing and expression of ALK7 and its ligand, Nodal, in human placenta. *Biol. Reprod.* **68(5)**, 1719-1726 (2003).
6. Tsuchida, K., Nakatani, M., Yamakawa, N., *et al.* Activin isoforms signal through type I receptor serine/threonine kinase ALK7. *Mol. Cell. Endocrinol.* **220(1-2)**, 59-65 (2004).
7. Carlsson, L.M.S., Jacobson, P., Walley, A., *et al.* ALK7 expression is specific for adipose tissue, reduced in obesity and correlates to factors implicated in metabolic disease. *Biochem. Biophys. Res. Commun.* **382(2)**, 309-314 (2009).
8. Michael, I.P., Saghafinia, S., Tichet, M., *et al.* ALK7 signaling manifests a homeostatic tissue barrier that is abrogated during tumorigenesis and metastasis. *Dev. Cell* **49(3)**, 409-424 (2019).
9. Zhao, F., Huang, F., Tang, M., *et al.* Nodal induces apoptosis through activation of the ALK7 signaling pathway in pancreatic INS-1 β -cells. *Am. J. Physiol. Endocrinol. Metab.* **303(1)**, E132-E143 (2012).

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