



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# PRODUCT INFORMATION



## ALK4 Extracellular Domain (human, recombinant)

Item No. 31846

### Overview and Properties

**Synonyms:** Activin Receptor-like Kinase 4, Activin Receptor Type-1B, ACTR1B, ACVR1B, ACVRLK4, Serine/threonine-protein Kinase Receptor R2, SKR2

**Source:** Active recombinant human C-terminal His-tagged ALK4 expressed in HEK293 cells

**Amino Acids:** 24-126

**Uniprot No.:** P36896

**Molecular Weight:** 13 kDa

**Storage:** -80°C (as supplied)

**Stability:** ≥1 year

**Purity:** ≥92% estimated by SDS-PAGE

**Supplied in:** Lyophilized from sterile PBS, pH 7.4

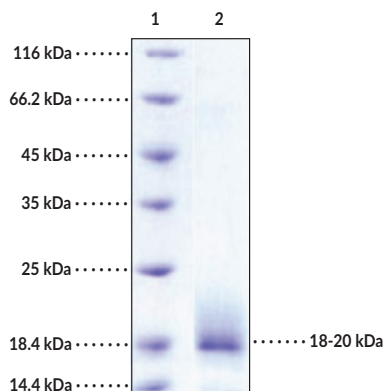
**Endotoxin Testing:** <1.0 EU/μg, determined by the LAL endotoxin assay

**Protein Concentration:** *batch specific* mg/ml

**Bioactivity:** See figures for details

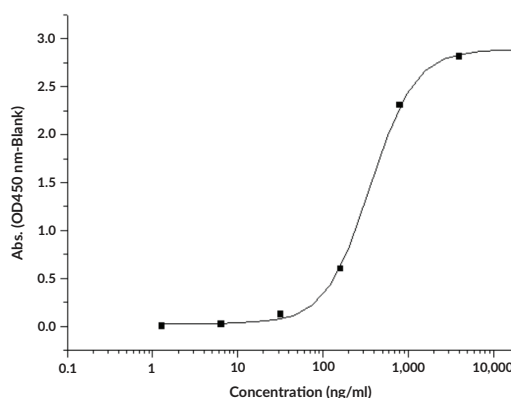
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Images



Lane 1: MW Markers  
Lane 2: ALK4 Extracellular Domain

**SDS-PAGE Analysis of ALK4 Extracellular Domain.** This protein has a calculated molecular weight of 13 kDa. It has an apparent molecular weight of 18-20 kDa by SDS-PAGE under reducing conditions due to glycosylation.



**ALK4 Extracellular Domain Binding in Functional ELISA.** Immobilized human TDGF1 at 2 μg/ml (100 μl/well) can bind human ALK4 Extracellular Domain with a linear range of 0.032-4 μg/ml.

**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.

**WARRANTY AND LIMITATION OF REMEDY**  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 05/04/2021

**CAYMAN CHEMICAL**  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM

# PRODUCT INFORMATION



## Description

---

Activin receptor-like kinase 4 (ALK4) is a type I transmembrane glycoprotein, serine/threonine kinase, and member of the TGF- $\beta$  superfamily that is encoded by *ACVR1B* in humans.<sup>1,2</sup> 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. ALK4 is ubiquitously expressed and forms heterodimers with activin receptor type IIA (ACTRIIA) or ACTRIIB at the cell surface. Upon ligand activation by activin A, activin B, activin AB, or Nodal, ALK4 is phosphorylated by its heterodimer partner and induces intracellular signaling and phosphorylation of SMAD2 and SMAD3 to regulate gene expression. ALK4-mediated signaling has roles in glucose-stimulated insulin secretion, neuronal differentiation of pluripotent stem cells, and the development of pancreatic and pituitary cancers.<sup>1-3</sup> Cayman's ALK4 Extracellular Domain (human, recombinant) protein can be used for binding assays. This protein consists of 114 amino acids, has a calculated molecular weight of 13 kDa, and a predicted N-terminus of Ser24 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 18-20 kDa due to glycosylation.

## References

---

1. Watanabe, R. Activin receptor-like kinase and the insulin gene. *Vitamins and hormones*. Litwack, G., editor, 1<sup>st</sup> edition, *Academic Press* (2011).
2. 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).
3. Fjodorova, M., Noakes, Z., and Li, M. A role for TGF $\beta$  signalling in medium spiny neuron differentiation of human pluripotent stem cells. *Neuronal Signal.* **4**(2), NS20200004 (2020).

CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM