

Datasheet for ABIN3113508

## Activin A Receptor Type IB/ALK-4 Protein (AA 24-505) (rho-1D4 tag)



[Go to Product page](#)

### 1 Image

#### Overview

Quantity:	1 mg
Target:	Activin A Receptor Type IB/ALK-4 (ACVR1B)
Protein Characteristics:	AA 24-505
Origin:	Human
Source:	Insect Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This Activin A Receptor Type IB/ALK-4 protein is labelled with rho-1D4 tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA, Crystallization (Crys)

#### Product Details

Sequence:	<p>SGPRGVQALL CACTSCLQAN YTCETDGACM VSIFNLDGME HHVRTCIPKV ELVPAGKPFY          CLSSEDLRNT HCCYTDYCNR IDLRVPSGHL KEPEHPSMWG PVELVGIIAG PVFLLFLIII          IVFLVINYHQ RYVYHNRQRLD MEDPSCMCL SKDKTLQDLV YDLSTSGSGS GLPLFVQRTV          ARTIVLQEII GKGRFGEVWR GRWRGGDVAV KIFSSREERS WFREAIEYQT VMLRHENILG          FIAADNKDNG TWTQLWLVD YHEHGSFLDY LNRYTVTIEG MIKLALSAAS GLAHLHMEIV          GTQGKPGIAH RDLKSKNILV KKNMGCAIAD LGLAVRHDAV TDTIDIAPNQ RVGTKRYMAP          EVLDETINMK HFDSFKCADI YALGLVYWEI ARRCNSGGVH EEYQLPYYDL VPSDPSIEEM          RKVVCDQKLR PNIPNWWQSY EALRVMGKMM RECWYANGAA RLTALRIKKT LSQLSVQEDV KI</p> <p><b>Sequence without tag. Tag location is at the discretion of the manufacturer. If you have a special request, please contact us.</b></p>
-----------	--

Characteristics:	<ul style="list-style-type: none"> <li>Made in Germany - from design to production - by highly experienced protein experts.</li> <li>Human ACVR1B Protein (raised in Insect Cells) purified by multi-step, protein-specific</li> </ul>
------------------	--

process to ensure crystallization grade.

- State-of-the-art algorithm used for plasmid design (Gene synthesis).

This protein is a made to order protein and will be made for the first time for your order. Our experts in the lab will ensure that you receive a correctly folded protein.

The big advantage of ordering our made-to-order proteins in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.

In the unlikely event that the protein cannot be expressed or purified we do not charge anything (other companies might charge you for any performed steps in the expression process for custom-made proteins, e.g. fees might apply for the expression plasmid, the first expression experiments or purification optimization).

When you order this made-to-order protein you will only pay upon receipt of the correctly folded protein. With no financial risk on your end you can rest assured that our experienced protein experts will do everything to make sure that you receive the protein you ordered.

The concentration of our recombinant proteins is measured using the absorbance at 280nm. The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer.

The concentration of the protein is calculated using its specific absorption coefficient. We use the ExPASy's protparam tool to determine the absorption coefficient of each protein.

Purification:	<p>Three step purification of membrane proteins expressed in baculovirus infected SF9 insect cells:</p> <ol style="list-style-type: none"><li>1. Membrane proteins are fractioned by ultracentrifugation and subsequently solubilized with different detergents (detergent screen). Samples are analyzed by Western blot.</li><li>2. The best performing detergent is used for solubilization and the proteins are purified via their rho1D4 tag via two rho1D4 antibody columns: one DTT resistant, the other one not. Eluate fractions are analyzed by Western blot.</li><li>3. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.</li></ol>
Purity:	>95 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.
Sterility:	0.22 µm filtered
Endotoxin Level:	Protein is endotoxin-free.
Grade:	Crystallography grade

## Target Details

Target:	Activin A Receptor Type IB/ALK-4 (ACVR1B)
Alternative Name:	ACVR1B ( <a href="#">ACVR1B Products</a> )
Background:	<p>Transmembrane serine/threonine kinase activin type-1 receptor forming an activin receptor complex with activin receptor type-2 (ACVR2A or ACVR2B). Transduces the activin signal from the cell surface to the cytoplasm and is thus regulating a many physiological and pathological processes including neuronal differentiation and neuronal survival, hair follicle development and cycling, FSH production by the pituitary gland, wound healing, extracellular matrix production, immunosuppression and carcinogenesis. Activin is also thought to have a paracrine or autocrine role in follicular development in the ovary. Within the receptor complex, type-2 receptors (ACVR2A and/or ACVR2B) act as a primary activin receptors whereas the type-1 receptors like ACVR1B act as downstream transducers of activin signals. Activin binds to type-2 receptor at the plasma membrane and activates its serine-threonine kinase. The activated receptor type-2 then phosphorylates and activates the type-1 receptor such as ACVR1B. Once activated, the type-1 receptor binds and phosphorylates the SMAD proteins SMAD2 and SMAD3, on serine residues of the C-terminal tail. Soon after their association with the activin receptor and subsequent phosphorylation, SMAD2 and SMAD3 are released into the cytoplasm where they interact with the common partner SMAD4. This SMAD complex translocates into the nucleus where it mediates activin-induced transcription. Inhibitory SMAD7, which is recruited to ACVR1B through FKBP1A, can prevent the association of SMAD2 and SMAD3 with the activin receptor complex, thereby blocking the activin signal. Activin signal transduction is also antagonized by the binding to the receptor of inhibin-B via the IGSF1 inhibin coreceptor. ACVR1B also phosphorylates TDP2. {ECO:0000269 PubMed:12364468, ECO:0000269 PubMed:12639945, ECO:0000269 PubMed:18039968, ECO:0000269 PubMed:20226172, ECO:0000269 PubMed:8196624, ECO:0000269 PubMed:9032295, ECO:0000269 PubMed:9892009}.</p>
Molecular Weight:	55.8 kDa Including tag.
UniProt:	<a href="#">P36896</a>

## Application Details

Application Notes:	In addition to the applications listed above we expect the protein to work for functional studies as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.
Comment:	In cases in which it is highly likely that the recombinant protein with the default tag will be

## Application Details

insoluble our protein lab may suggest a higher molecular weight tag (e.g. GST-tag) instead to increase solubility. We will discuss all possible options with you in detail to assure that you receive your protein of interest.

Restrictions: For Research Use only

## Handling

Format:	Liquid
Buffer:	100 mM NaCL, 20 mM Hepes, 10% glycerol. pH value is at the discretion of the manufacturer.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	Unlimited (if stored properly)

## Images



**Image 1.** „Crystallography Grade“ protein due to multi-step, protein-specific purification process