

Datasheet for ABIN3113175

## Kv1.4 Protein (AA 1-653) (rho-1D4 tag)



[Go to Product page](#)

### 1 Image

#### Overview

Quantity:	1 mg
Target:	Kv1.4 (KCNA4)
Protein Characteristics:	AA 1-653
Origin:	Human
Source:	Insect Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This Kv1.4 protein is labelled with rho-1D4 tag.
Application:	ELISA, Western Blotting (WB), Crystallization (Crys), SDS-PAGE (SDS)

#### Product Details

Sequence: MEVAMVSAES SGCNSHMPYG YAAQARARER ERLAHSRAAA AA AVAAATAA VEGSGGSGGG  
SHHHHQSRGA CTSHDPQSSR GSRRRRRQRS EKKKAHYRQS SFPHCSDLMP SGSEEKILRE  
LSEEEEEDEEE EEEEEEEGRF YYSEDDHGDE CSYTDLLPQD EGGGGYSSVR YSDCCERVVI  
NVSGLRFETQ MKTLAQFPET LLGDPEKRTQ YFDPLRNEYF FDRNRPSFDA ILYYYQSGGR  
LKRPNVVPFD IFTEEVKFYQ LGEEALLKFR EDEGFVREEE DRALPENEFK KQIWLLFEYP  
ESSSPARGIA IVSVLVILIS IVFCLETLP EFRDDRDLMV ALSAGGHGGL LNDTSAPHLE  
NSGHTIFNDP FFIVETVCIV WFSFEFVVR C FACPSQALFF KNIMNIIDIV SILPYFITLG  
TDLAQQQGGG NGQQQQAMSF AILRIIRLVR VFRIFKLSRH SKGLQILGHT LRASMRELGL  
LIFFLFIGVI LFSSAVYFAE ADEPTTHFQS IPDAFWWAVV TMTTVGYGDM KPITVGGKIV  
GSLCAIAGVL TIALPVPVIV SNFNIFYHRE TENEEQTQLT QNAVSCPYP LP SNLLKKFRSS  
TSSSLGDKSE YLEMEEGVKE SLCAKEEK CQ GKGDDSETDK NNCSNAKAVE TDV

**Sequence without tag. Tag location is at the discretion of the manufacturer. If you have a**

### **special request, please contact us.**

---

#### Characteristics:

- Made in Germany - from design to production - by highly experienced protein experts.
- Human KCNA4 Protein (raised in Insect Cells) purified by multi-step, protein-specific 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:

Three step purification of membrane proteins expressed in baculovirus infected SF9 insect cells:

1. Membrane proteins are fractionated by ultracentrifugation and subsequently solubilized with different detergents (detergent screen). Samples are analyzed by Western blot.
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.
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.

#### Purity:

>95 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

#### Sterility:

0.22 µm filtered

#### Endotoxin Level:

Protein is endotoxin-free.

## Product Details

---

Grade: Crystallography grade

## Target Details

---

Target: Kv1.4 (KCNA4)

Alternative Name: KCNA4 ([KCNA4 Products](#))

Background: Voltage-gated potassium channel that mediates transmembrane potassium transport in excitable membranes. Forms tetrameric potassium-selective channels through which potassium ions pass in accordance with their electrochemical gradient. The channel alternates between opened and closed conformations in response to the voltage difference across the membrane (PubMed:19912772, PubMed:8495559). Can form functional homotetrameric channels and heterotetrameric channels that contain variable proportions of KCNA1, KCNA2, KCNA4, KCNA5, and possibly other family members as well, channel properties depend on the type of alpha subunits that are part of the channel (PubMed:8495559). Channel properties are modulated by cytoplasmic beta subunits that regulate the subcellular location of the alpha subunits and promote rapid inactivation. In vivo, membranes probably contain a mixture of heteromeric potassium channel complexes, making it difficult to assign currents observed in intact tissues to any particular potassium channel family member. Homotetrameric KCNA4 forms a potassium channel that opens in response to membrane depolarization, followed by rapid spontaneous channel closure (PubMed:19912772, PubMed:8495559). Likewise, a heterotetrameric channel formed by KCNA1 and KCNA4 shows rapid inactivation (PubMed:17156368). {ECO:0000269|PubMed:17156368, ECO:0000269|PubMed:19912772, ECO:0000269|PubMed:8495559}.

Molecular Weight: 74.4 kDa Including tag.

UniProt: [P22459](#)

## 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 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.

## Application Details

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