

Datasheet for ABIN3113840 KCNQ1 Protein (AA 1-676) (rho-1D4 tag)



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Overview

Quantity:	1 mg
Target:	KCNQ1
Protein Characteristics:	AA 1-676
Origin:	Human
Source:	Insect Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This KCNQ1 protein is labelled with rho-1D4 tag.
Application:	Crystallization (Crys), ELISA, SDS-PAGE (SDS), Western Blotting (WB)

Product Details

Sequence:	<p>MAAASSPPRA ERKRWGWGRL PGARRGSAGL AKKCPFSLEL AEGGPAGGAL YAPIAPGAPG</p> <p>PAPPASPAAP AAPPVASDLG PRPPVSLDPR VSIYSTRRPV LARTHVQGRV YNFLERPTGW</p> <p>KCFVYHFAVF LIVLVCLIFS VLSTIEQYAA LATGTLFWME IVLVVFFGTE YVRLWSAGC</p> <p>RSKYVGLWGR LRFARKPISI IDLIVVASM VVLCVGSKGQ VFATSAIRGI RFLQILRMLH</p> <p>VDRQGGTWRL LGSVFIHRQ ELITTLTYIGF LGLIFSSYFV YLAEKDAVNE SGRVEFGSYA</p> <p>DALWWGVVTV TTIGYGDKVP QTWVGKTIAS CFSVFAISFF ALPAGILGSG FALKVQKQQR</p> <p>QKHFNQRIPA AASLIQTAWR CYAAENPDSS TWKIYIRKAP RSHTLLSPSP KPKKSVVVKK</p> <p>KKFKLDKDNG VTPGEKMLTV PHITCDPPEE RRLDHFSVDG YDSSVRKSPT LLEVSMPHFM</p> <p>RTNSFAEDLD LEGETLLTPI THISQLREHH RATIKVIRRM QYFVAKKKFQ QARKPYDVDR</p> <p>VIEQYSQGH LNMVRIKELQ RRLDQSIGKP SLFISVSEKS KDRGSNTIGA RLNRVEDKVT</p> <p>QLDQRLALIT DMLHQLLSLH GGSTPGSGGP PREGGAHITQ PCGSGGSVDP ELFLPSNTLP</p> <p>TYEQLTVPRR GPDEGS</p>
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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 KCNQ1 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 chromatograph. 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

Product Details

Endotoxin Level: Protein is endotoxin-free.

Grade: Crystallography grade

Target Details

Target: KCNQ1

Alternative Name: KCNQ1 ([KCNQ1 Products](#))

Background: Potassium channel that plays an important role in a number of tissues, including heart, inner ear, stomach and colon (By similarity) (PubMed:10646604). Associates with KCNE beta subunits that modulates current kinetics (By similarity) (PubMed:9312006, PubMed:9108097, PubMed:8900283, PubMed:10646604, PubMed:11101505, PubMed:19687231). Induces a voltage-dependent by rapidly activating and slowly deactivating potassium-selective outward current (By similarity) (PubMed:9312006, PubMed:9108097, PubMed:8900283, PubMed:10646604, PubMed:11101505). Promotes also a delayed voltage activated potassium current showing outward rectification characteristic (By similarity). During beta-adrenergic receptor stimulation participates in cardiac repolarization by associating with KCNE1 to form the I(Ks) cardiac potassium current that increases the amplitude and slows down the activation kinetics of outward potassium current I(Ks) (By similarity) (PubMed:9312006, PubMed:9108097, PubMed:8900283, PubMed:10646604, PubMed:11101505). Muscarinic agonist oxotremorine-M strongly suppresses KCNQ1/KCNE1 current (PubMed:10713961). When associated with KCNE3, forms the potassium channel that is important for cyclic AMP-stimulated intestinal secretion of chloride ions (PubMed:10646604). This interaction with KCNE3 is reduced by 17beta-estradiol, resulting in the reduction of currents (By similarity). During conditions of increased substrate load, maintains the driving force for proximal tubular and intestinal sodium ions absorption, gastric acid secretion, and cAMP-induced jejunal chloride ions secretion (By similarity). Allows the provision of potassium ions to the luminal membrane of the secretory canaliculus in the resting state as well as during stimulated acid secretion (By similarity). When associated with KCNE2, forms a heterooligomer complex leading to currents with an apparently instantaneous activation, a rapid deactivation process and a linear current-voltage relationship and decreases the amplitude of the outward current (PubMed:11101505). When associated with KCNE4, inhibits voltage-gated potassium channel activity (PubMed:19687231). When associated with KCNE5, this complex only conducts current upon strong and continued depolarization (PubMed:12324418). Also forms a heterotetramer with KCNQ5, has a voltage-gated potassium channel activity (PubMed:24855057). Binds with phosphatidylinositol 4,5-bisphosphate (PubMed:25037568). {ECO:0000250|UniProtKB:P97414,

Target Details

ECO:0000250|UniProtKB:Q9Z0N7, ECO:0000269|PubMed:10646604,
ECO:0000269|PubMed:10713961, ECO:0000269|PubMed:11101505,
ECO:0000269|PubMed:12324418, ECO:0000269|PubMed:19687231,
ECO:0000269|PubMed:24855057, ECO:0000269|PubMed:25037568,
ECO:0000269|PubMed:8900283, ECO:0000269|PubMed:9108097,
ECO:0000269|PubMed:9312006}, Isoform 2: Non-functional alone but modulatory when
coexpressed with the full-length isoform 1. {ECO:0000269|PubMed:9305853}.

Molecular Weight: 75.9 kDa Including tag.

UniProt: [P51787](#)

Pathways: [Negative Regulation of Hormone Secretion, Sensory Perception of Sound](#)

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.

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)



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