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Datasheet for ABIN3128627

**TMEM175 Protein (AA 1-499) (Strep Tag)**

## Overview

Quantity:	1 mg
Target:	TMEM175
Protein Characteristics:	AA 1-499
Origin:	Mouse
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This TMEM175 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

## Product Details

Sequence: MSRLQTEEQV VDSEGDSSLH RRNEEGTQSS HRMLGFSDAL LSIIATVMIL PVTHTESISPE  
QQFDKSIQKL LATRIAVYLM TFLIVTVAWT AHTRLFQVVG KIDDTLALLN LACMMTITLL  
PYTFSLMVTF PDVPLGIFLF CVCVIAIGSV QAMIVGYAFH FPHLLNPQIQ CSTHRDLSRR  
HILHLVLRGP ALCFVAAVFS LFFFPLSYLL MVTVIFLPHI SKATTWCKDK LMGQRESPAH  
DMEPFSDILH APLSKERVEA FSDGVYAIVA TLLILDICED NVPDPKDVQE KFSGSLVAAL  
GAYGPQFLAY FGSFATVGLL WFAHHSFLFH VRKATQTMGL LNILSLAFVG GLPLAYQQTS  
AFARQPHDEL ERVRVSCAII FFASIFQFAI WTTALLHQTE TLQPAVQFGG QEHAFMFAKL  
ALYPCASLLA FAATCLLSRF STAIFHLMQI SVPFAFLLLR LLVRLALAGL QVLRGLWPHH  
PQQDQSEPEA QSQLLPDPC

**Sequence without tag. The proposed Strep-Tag is based on experience s with the expression system, a different complexity of the protein could make another tag necessary. In case you have a special request, please contact us.**

### Characteristics:

#### Key Benefits:

- Made in Germany - from design to production - by highly experienced protein experts.
- Protein expressed with ALiCE® and purified by multi-step, protein-specific process to ensure correct folding and modification.
- These proteins are normally active (enzymatically functional) as our customers have reported (not tested by us and not guaranteed).
- 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.

#### Expression System:

- ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from *Nicotiana tabacum* c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.
- During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!

#### Concentration:

- 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.
- We use the ExPASy's protparam tool to determine the absorption coefficient of each protein.

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### Purification:

Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®):

1. In a first purification step, the protein is purified from the cleared cell lysate using StrepTag capture material. Eluate fractions are analyzed by SDS-PAGE.
2. 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

## Product Details

Western blot.

Purity:  $\geq 80\%$  as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

Endotoxin Level: Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)

Grade: Crystallography grade

## Target Details

Target: TMEM175

Alternative Name: Tmem175 ([TMEM175 Products](#))

Background: Endosomal/lysosomal proton channel TMEM175 (Potassium channel TMEM175) (Transmembrane protein 175) (mTMEM175),FUNCTION: Proton-activated proton channel that catalyzes proton efflux from endosomes and lysosomes to maintain a steady-state pH (PubMed:35750034). Activated at low pH (under pH 4.6) by luminal side protons: selectively mediates lysosomal proton release from lysosomes, eliciting a proton leak that balances V-ATPase activity to maintain pH homeostasis (By similarity). Regulation of luminal pH stability is required for autophagosome-lysosome fusion (PubMed:26317472). Also acts as a potassium channel at higher pH , regulating potassium conductance in endosomes and lysosomes (PubMed:26317472, PubMed:33505021). Constitutes the pore-forming subunit of the lysoK(GF) complex, a complex activated by extracellular growth factors (PubMed:33505021). The lysoK(GF) complex is composed of TMEM175 and AKT (AKT1, AKT2 or AKT3), a major target of growth factor receptors: in the complex, TMEM175 channel is opened by conformational changes by AKT, leading to its activation (PubMed:33505021). The lysoK(GF) complex is required to protect neurons against stress-induced damage (PubMed:33505021). {ECO:0000250|UniProtKB:Q9BSA9, ECO:0000269|PubMed:26317472, ECO:0000269|PubMed:33505021, ECO:0000269|PubMed:35750034}.

Molecular Weight: 55.6 kDa

UniProt: [Q9CXY1](#)

## 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: ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from

Application Details

Nicotiana tabacum c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.

During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!

Restrictions: For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer. If you have a special request, please contact us.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	Unlimited (if stored properly)