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Datasheet for ABIN3112991  
**ATP2A2 Protein (AA 1-1042) (Strep Tag)**

### Overview

Quantity:	1 mg
Target:	ATP2A2
Protein Characteristics:	AA 1-1042
Origin:	Human
Source:	Tobacco ( <i>Nicotiana tabacum</i> )
Protein Type:	Recombinant
Purification tag / Conjugate:	This ATP2A2 protein is labelled with Strep Tag.
Application:	SDS-PAGE (SDS), Western Blotting (WB), ELISA

### Product Details

Sequence: MENAHTKTVE EVLGHFGVNE STGLSLEQVK KLKERWGSNE LPAEEGKTLL ELVIEQFEDL  
LVRILLAAAC ISFVLAWFEE GEETITAFVE PFVILLILVA NAIVGVWQER NAENAIEALK  
EYEPENMGVY RQDRKSVQRI KAKDIVPGDI VEIAGDKVP ADIRLTSIKS TTLRVDQSIL  
TGESVSVIKH TDPVPDPRAV NQDKKNMLFS GTNIAAGKAM GVVVATGVNT EIGKIRDEM  
ATEQERTPLQ QKLDEFGEQL SKVISLICIA VWIINIGHFN DPVHGGSWIR GAIYYFKIAV  
ALAVAAIPEG LPAVITTCCLA LGTRRMAKKN AIVRSLPSVE TLGCTSVICS DKTGTLTTNQ  
MSVCRMFILE RVEGDTCSLN EFTITGSTYA PIGEVHKDDK PVNCHQYDGL VELATICALC  
NDSALDYNEA KGVYEKVGEA TETALTCLVE KMNVFDTELK GLSKIERANA CNSVIKQLMK  
KEFTLEFSRD RKSMSVYCTP NKPSRTSMK MFVKGAPGV IDRCTHIRVG STKVPMTSGV  
KQKIMSVIRE WSGSDDLRC LALATHDNPL RREEMHLEDS ANFIKYETNL TFGCVGMLD  
PPRIEVASSV KLCRQAGIRV IMITGDNKGT AVAICRRIGI FGQDEDVTSK AFTGREFDEL  
NPSAQRDAQL NARCFARVEP SHKSKIVEFL QSFDEITAMT GDGVNDAPAL KKAIEIGIAMG

SGTAVAKTAS EMVLADDNFS TIVAAVEEGR AIYNNMKQFI RYLISSNVGE VVCIFLTAAL  
GFPEALIPVQ LLWVNLVTDG LPATALGFNP PDLDIMNKPP RNPKEPLISG WLFFRYLAIG  
CYVGAATVGA AAWWFIAADG GPRVSFYQLS HFLQCKEDNP DFEGVDCAIF ESPYPMTMAL  
SVLVTIEMCN ALNSLSEMQS LLRMPWENI WLVGSIKLSM SLHFLILYVE PLPLIFQITP  
LNVTQWLMVL KISLPVILMD ETLKFVARNY LEPGKECVQP ATKSCSFAC TDGISWPFVL  
LIMPLVIWVY STDTNFSDMF WS

**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.**

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### 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.

## Product Details

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- 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®): <ol style="list-style-type: none"><li>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.</li><li>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 Western blot.</li></ol>
Purity:	>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)

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## Target Details

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Target:	ATP2A2
Alternative Name:	ATP2A2 ( <a href="#">ATP2A2 Products</a> )
Background:	<p>Sarcoplasmic/endoplasmic reticulum calcium ATPase 2 (SERCA2) (SR Ca(2+)-ATPase 2) (EC 7.2.2.10) (Calcium pump 2) (Calcium-transporting ATPase sarcoplasmic reticulum type, slow twitch skeletal muscle isoform) (Endoplasmic reticulum class 1/2 Ca(2+) ATPase),FUNCTION: This magnesium-dependent enzyme catalyzes the hydrolysis of ATP coupled with the translocation of calcium from the cytosol to the sarcoplasmic reticulum lumen (PubMed:16402920, PubMed:12542527). Involved in autophagy in response to starvation. Upon interaction with VMP1 and activation, controls ER-isolation membrane contacts for autophagosome formation (PubMed:28890335). Also modulates ER contacts with lipid droplets, mitochondria and endosomes (PubMed:28890335). In coordination with FLVCR2 mediates heme-stimulated switching from mitochondrial ATP synthesis to thermogenesis (By similarity). {ECO:0000250 UniProtKB:O55143, ECO:0000269 PubMed:12542527, ECO:0000269 PubMed:16402920, ECO:0000269 PubMed:28890335}., FUNCTION: [Isoform 2]: Involved in the regulation of the contraction/relaxation cycle. Acts as a regulator of TNFSF11-mediated Ca(2+) signaling pathways via its interaction with TMEM64 which is critical for the TNFSF11-induced CREB1 activation and mitochondrial ROS generation necessary for proper osteoclast generation. Association between TMEM64 and SERCA2 in the ER leads to cytosolic Ca(2+) spiking for activation of NFATC1 and production of mitochondrial ROS, thereby</p>

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## Target Details

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triggering Ca(2+) signaling cascades that promote osteoclast differentiation and activation. {ECO:0000250|UniProtKB:O55143}.

Molecular Weight: 114.8 kDa

UniProt: [P16615](#)

Pathways: [Myometrial Relaxation and Contraction](#), [ER-Nucleus Signaling](#), [Ribonucleoside Biosynthetic Process](#)

## Application Details

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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 *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.

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Restrictions: For Research Use only

## Handling

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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)