Datasheet for ABIN3086065

Plakophilin 2 Protein (PKP2) (AA 1-881) (Strep Tag)

1 Image

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Overview

Quantity:	1 mg
Target:	Plakophilin 2 (PKP2)
Protein Characteristics:	AA 1-881
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This Plakophilin 2 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence:	MAAPGAPAEY GYIRTVLGQQ ILGQLDSSSL ALPSEAKLKL AGSSGRGGQT VKSLRIQEQV QQTLARKGRS SVGNGNLHRT SSVPEYVYNL HLVENDFVGG RSPVPKTYDM LKAGTTATYE GRWGRGTAQY SSQKSVEERS LRHPLRRLEI SPDSSPERAH YTHSDYQYSQ RSQAGHTLHH QESRRAALLV PPRYARSEIV GVSRAGTTSR QRHFDTYHRQ YQHGSVSDTV FDSIPANPAL LTYPRPGTSR SMGNLLEKEN YLTAGLTVGQ VRPLVPLQPV TQNRASRSSW HQSSFHSTRT LREAGPSVAV DSSGRRAHLT VGQAAAGGSG NLLTERSTFT DSQLGNADME MTLERAVSML EADHMLPSRI SAAATFIQHE CFQKSEARKR VNQLRGILKL LQLLKVQNED VQRAVCGALR NLVFEDNDNK LEVAELNGVP RLLQVLKQTR DLETKKQITD HTVNLRSRNG WPGAVAHACN PSTLGGQGGR ITRSGVRDQP DQHGLLWNLS SNDKLKNLMI TEALLTLTEN IIIPFSGWPE GDYPKANGLL DFDIFYNVTG CLRNMSSAGA DGRKAMRRCD GLIDSLVHYV RGTIADYQPD DKATENCVCI LHNLSYQLEA ELPEKYSQNI YIQNRNIQTD NNKSIGCFGS RSRKVKEQYQ DVPMPEEKSN PKGVEWLWHS IVIRMYLSLI AKSVRNYTQE ASLGALQNLT AGSGPMPTSV

AQTVVQKESG LQHTRKMLHV GDPSVKKTAI SLLRNLSRNL SLQNEIAKET LPDLVSIIPD TVPSTDLLIE TTASACYTLN NIIQNSYQNA RDLLNTGGIQ KIMAISAGDA YASNKASKAA SVLLYSLWAH TELHHAYKKA QFKKTDFVNS RTAKAYHSLK D

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.

Product Details

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 Western blot.
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)
Grade:	Crystallography grade

Target Details

Target:	Plakophilin 2 (PKP2)
Alternative Name:	PKP2 (PKP2 Products)
Background:	Plakophilin-2,FUNCTION: Regulates focal adhesion turnover resulting in changes in focal adhesion size, cell adhesion and cell spreading, potentially via transcriptional modulation of beta-integrins (PubMed:23884246). Required to maintain gingival epithelial barrier function (PubMed:34368962). Required for cardiac sodium current propagation and electrical synchrony in cardiac myocytes, via ANK3 stabilization and modulation of SCN5A/Nav1.5 localization to cell-cell junctions (By similarity). Required for the formation of desmosome cell junctions in cardiomyocytes, thereby required for the correct formation of the heart, specifically trabeculation and formation of the atria walls (By similarity). Loss of desmosome cell junctions leads to mis-localization of DSP and DSG2 resulting in disruption of cell-cell adhesion and disordered intermediate filaments (By similarity). Modulates profibrotic gene expression in cardiomyocytes via regulation of DSP expression and subsequent activation of downstream TGFB1 and MAPK14/p38 MAPK signaling (By similarity). Required for mitochondrial function, nuclear envelope integrity and positive regulation of SIRT3 transcription via maintaining DES localization at its nuclear envelope and cell tip anchoring points, and thereby preserving regulation of the transcriptional program (PubMed:35959657). Maintenance of nuclear envelope integrity protects against DNA damage and transcriptional dysregulation of genes, especially those involved in the electron transport chain, thereby preserving mitochondrial function and protecting against superoxide radical anion generation (PubMed:35959657). May play a role in junctional plaques (PubMed:22781308). Involved in the inhibition of viral infection by influenza A viruses (IAV) (PubMed:28169297). Acts as a host restriction factor for IAV viral

Target Details

	propagation, potentially via disrupting the interaction of IAV polymerase complex proteins (PubMed:28169297). {ECO:0000250|UniProtKB:F1M7L9, ECO:0000250|UniProtKB:Q9CQ73, ECO:0000269|PubMed:22781308, ECO:0000269|PubMed:23884246, ECO:0000269|PubMed:28169297, ECO:0000269|PubMed:34368962, ECO:0000269|PubMed:35959657}.
Molecular Weight:	97.4 kDa
UniProt:	Q99959
Pathways:	Cell-Cell Junction Organization, SARS-CoV-2 Protein Interactome, The Global Phosphorylation Landscape of SARS-CoV-2 Infection

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 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

Handling

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

