Datasheet for ABIN3094555

PER1 Protein (AA 1-1290) (Strep Tag)

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Overview

Quantity:	250 µg
Target:	PER1
Protein Characteristics:	AA 1-1290
Origin:	Human
Source:	Cell-free protein synthesis (CFPS)
Protein Type:	Recombinant
Purification tag / Conjugate:	This PER1 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

Product Details

Brand:	AliCE®
Sequence:	MSGPLEGADG GGDPRPGESF CPGGVPSPGP PQHRPCPGPS LADDTDANSN GSSGNESNGH ESRGASQRSS HSSSSGNGKD SALLETTESS KSTNSQSPSP PSSSIAYSLL SASSEQDNPS TSGCSSEQSA RARTQKELMT ALRELKLRLP PERRGKGRSG TLATLQYALA CVKQVQANQE YYQQWSLEEG EPCSMDMSTY TLEELEHITS EYTLQNQDTF SVAVSFLTGR IVYISEQAAV LLRCKRDVFR GTRFSELLAP QDVGVFYGST APSRLPTWGT GASAGSGLRD FTQEKSVFCR IRGGPDRDPG PRYQPFRLTP YVTKIRVSDG APAQPCCLLI AERIHSGYEA PRIPPDKRIF TTRHTPSCLF QDVDERAAPL LGYLPQDLLG APVLLFLHPE DRPLMLAIHK KILQLAGQPF DHSPIRFCAR NGEYVTMDTS WAGFVHPWSR KVAFVLGRHK VRTAPLNEDV FTPPAPSPAP SLDTDIQELS EQIHRLLLQP VHSPSPTGLC GVGAVTSPGP LHSPGSSSDS NGGDAEGPGP PAPVTFQQIC KDVHLVKHQG QQLFIESRAR PQSRPRLPAT GTFKAKALPC QSPDPELEAG SAPVQAPLAL VPEEAERKEA SSCSYQQINC LDSILRYLES CNLPSTTKRK CASSSSYTTS

SASDDDRQRT GPVSVGTKKD PPSAALSGEG ATPRKEPVVG GTLSPLALAN KAESVVSVTS QCSFSSTIVH VGDKKPPESD IIMMEDLPGL APGPAPSPAP SPTVAPDPAP DAYRPVGLTK AVLSLHTQKE EQAFLSRFRD LGRLRGLDSS STAPSALGER GCHHGPAPPS RRHHCRSKAK RSRHHQNPRA EAPCYVSHPS PVPPSTPWPT PPATTPFPAV VQPYPLPVFS PRGGPQPLPP APTSVPPAAF PAPLVTPMVA LVLPNYLFPT PSSYPYGALQ TPAEGPPTPA SHSPSPSLPA LAPSPPHRPD SPLFNSRCSS PLQLNLLQLE ELPRAEGAAV AGGPGSSAGP PPPSAEAAEP EARLAEVTES SNQDALSGSS DLLELLLQED SRSGTGSAAS GSLGSGLGSG SGSGSHEGGS TSASITRSSQ SSHTSKYFGS IDSSEAEAGA ARGGAEPGDQ VIKYVLQDPI WLLMANADQR VMMTYQVPSR DMTSVLKQDR ERLRAMQKQQ PRFSEDQRRE LGAVHSWVRK GQLPRALDVM ACVDCGSSTQ DPGHPDDPLF SELDGLGLEP MEEGGGEQGS SGGGSGEGEG CEEAQGGAKA SSSQDLAMEE EEEGRSSSSP ALPTAGNCTS

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 in one-step affinity chromatography
- 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 try to ensure that you receive soluble 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 -

Product Details

	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 against its specific reference buffer. • We use the Expasy's ProtParam tool to determine the absorption coefficient of each protein.
Purification:	One-step Strep-tag purification of proteins expressed in Almost Living Cell-Free Expression System (AliCE®).
Purity:	> 70-80 % as determined by SDS PAGE, Western Blot and analytical SEC (HPLC).
Grade:	custom-made

Target Details

Target:	PER1
Alternative Name:	PER1 (PER1 Products)
Background:	Period circadian protein homolog 1 (hPER1) (Circadian clock protein PERIOD 1) (Circadian pacemaker protein Rigui),FUNCTION: Transcriptional repressor which forms a core component of the circadian clock. The circadian clock, an internal time-keeping system, regulates various physiological processes through the generation of approximately 24 hour circadian rhythms in gene expression, which are translated into rhythms in metabolism and behavior. It is derived from the Latin roots 'circa' (about) and 'diem' (day) and acts as an important regulator of a wide array of physiological functions including metabolism, sleep, body temperature, blood pressure, endocrine, immune, cardiovascular, and renal function. Consists of two major components: the central clock, residing in the suprachiasmatic nucleus (SCN) of the brain, and the peripheral clocks that are present in nearly every tissue and organ system. Both the central and peripheral clocks can be reset by environmental cues, also known as Zeitgebers (German for 'timegivers'). The predominant Zeitgeber for the central clock is light, which is sensed by retina and signals directly to the SCN. The central clock entrains the peripheral clocks through neuronal and hormonal signals, body temperature and feeding-related cues, aligning all clocks with the external light/dark cycle. Circadian rhythms allow an organism to achieve temporal homeostasis with its environment at the molecular level by regulating gene expression to create a peak of protein expression once every 24 hours to control when a particular physiological process is most active with respect to the solar day. Transcription and translation

	of core clock components (CLOCK, NPAS2, BMAL1, BMAL2, PER1, PER2, PER3, CRY1 and CRY2) plays a critical role in rhythm generation, whereas delays imposed by post-translational modifications (PTMs) are important for determining the period (tau) of the rhythms (tau refers to the period of a rhythm and is the length, in time, of one complete cycle). A diurnal rhythm is synchronized with the day/night cycle, while the ultradian and infradian rhythms have a period shorter and longer than 24 hours, respectively. Disruptions in the circadian rhythms contribute to the pathology of cardiovascular diseases, cancer, metabolic syndromes and aging. A transcription/translation feedback loop (TTFL) forms the core of the molecular circadian clock mechanism. Transcription factors, CLOCK or NPAS2 and BMAL1 or BMAL2, form the positive limb of the feedback loop, act in the form of a heterodimer and activate the transcription of core clock genes and clock-controlled genes (involved in key metabolic processes), harboring E-box elements (5'-CACGTG-3') within their promoters. The core clock genes: PER1/2/3 and CRY1/2 which are transcriptional repressors form the negative limb of the feedback loop and interact with the CLOCK|NPAS2-BMAL1|BMAL2 heterodimer inhibiting its activity and thereby negatively regulating their own expression. This heterodimer also activates nuclear receptors NR1D1/2 and RORA/B/G, which form a second feedback loop and which activate and repress BMAL1 transcription, respectively. Regulates circadian target genes expression at post-transcriptional levels, but may not be required for the repression at transcriptional level. Controls PER2 protein decay. Represses CRY2 preventing its repression on CLOCK/BMAL1 target genes such as FXYD5 and SCNN1A in kidney and PPARA in liver. Besides its involvement in the maintenance of the circadian clock, has an important function in the regulation of several processes. Participates in the repression of glucocorticoid receptor NR3C1/GR-induced transcriptional activity by reducing the association of NR3C1/GR to glucocorticoid response elements (GREs) by BMAL1:CLOCK. Plays a role in the modulation of the neuroinflammatory state via the regulation of inflammatory mediators release, such as CCL2 and IL6. In spinal astrocytes, negatively regulates the MAPK14/p38 and MAPK8/JNK MAPK cascades as well as the subsequent activation of NFkappaB. Coordinately regulates the expression of multiple genes that are involved in the regulation of renal sodium reabsorption. Can act as gene expression activator in a gene and tissue specific manner, in kidney enhances WNK1 and SLC12A3 expression in collaboration with CLOCK. Modulates hair follicle cycling. Represses the CLOCK-BMAL1 induced transcription of BHLHE40/DEC1. {ECO:0000269|PubMed:24005054}.
Molecular Weight:	136.2 kDa
UniProt:	O15534
Pathways:	Photoperiodism

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. Standard Storage Buffer: PBS pH 7.4, 10 % Glycerol **Might differ depending on protein.**
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months

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