Datasheet for ABIN7554785

NPAS2 Protein (AA 1-824) (His tag)

Go to Product page

Overview

Quantity:	1 mg
Target:	NPAS2
Protein Characteristics:	AA 1-824
Origin:	Human
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This NPAS2 protein is labelled with His tag.

Product Details

Purpose:	Custom-made recombinant NPAS2 Protein expressed in mammalian cells.
Sequence:	MDEDEKDRAK RASRNKSEKK RRDQFNVLIK ELSSMLPGNT RKMDKTTVLE KVIGFLQKHN EVSAQTEICD IQQDWKPSFL SNEEFTQLML EALDGFIIAV TTDGSIIYVS DSITPLLGHL PSDVMDQNLL NFLPEQEHSE VYKILSSHML VTDSPSPEYL KSDSDLEFYC HLLRGSLNPK EFPTYEYIKF VGNFRSYNNV PSPSCNGFDN TLSRPCRVPL GKEVCFIATV RLATPQFLKE MCIVDEPLEE FTSRHSLEWK FLFLDHRAPP IIGYLPFEVL GTSGYDYYHI DDLELLARCH QHLMQFGKGK SCCYRFLTKG QQWIWLQTHY YITYHQWNSK PEFIVCTHSV VSYADVRVER RQELALEDPP SEALHSSALK DKGSSLEPRQ HFNTLDVGAS GLNTSHSPSA SSRSSHKSSH TAMSEPTSTP TKLMAEASTP ALPRSATLPQ ELPVPGLSQA ATMPAPLPSP SSCDLTQQLL PQTVLQSTPA PMAQFSAQFS MFQTIKDQLE QRTRILQANI RWQQEELHKI QEQLCLVQDS NVQMFLQQPA VSLSFSSTQR PEAQQQLQQR SAAVTQPQLG AGPQLPGQIS SAQVTSQHLL RESSVISTQG PKPMRSSQLM QSSGRSGSSL VSPFSSATAA LPPSLNLTTP ASTSQDASQC QPSPDFSHDR QLRLLLSQPI QPMMPGSCDA RQPSEVSRTG RQVKYAQSQT VFQNPDAHPA

Product Details

	NSSSAPMPVL LMGQAVLHPS FPASQPSPLQ PAQARQQPPQ HYLQVQAPTS LHSEQQDSLL LSTYSQQPGT LGYPQPPPAQ PQPLRPPRRV SSLSESSGLQ QPPR **Sequence without tag. The proposed Purification-Tag is based on experiences 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.**
Specificity:	If you are looking for a specific domain and are interested in a partial protein or a different isoform, please contact us regarding an individual offer.
Characteristics:	Key Benefits: • Made to order protein - from design to production - by highly experienced protein experts. • Protein expressed in mammalian cells and purified in one-step affinity chromatography • The optimized expression system ensures reliability for intracellular, secreted and transmembrane proteins. • 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. If you are not interested in a full length protein, please contact us for individual protein fragments. 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.
Purity:	> 90 % as determined by Bis-Tris PAGE, anti-tag ELISA, Western Blot and analytical SEC (HPLC)
Grade:	custom-made

Target Details

Target:	NPAS2
Alternative Name:	NPAS2 (NPAS2 Products)
Background:	Neuronal PAS domain-containing protein 2 (Neuronal PAS2) (Basic-helix-loop-helix-PAS protein MOP4) (Class E basic helix-loop-helix protein 9) (bHLHe9) (Member of PAS protein 4) (PAS domain-containing protein 4),FUNCTION: Transcriptional activator 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. The NPAS2-BMAL1 heterodimer positively regulates the expression of MAOA, F7 and LDHA and modulates the circadian rhythm of daytime contrast sensitivity by regulating the rhythmic expression of adenylate cyclase type 1 (ADCY1) in the retina. NPAS2 plays an important role in sleep homeostasis and in maintaining circadian behaviors in normal light/dark and feeding conditions and in the effective synchronization of feeding behavior with scheduled food availability. Regulates the gene transcription of key metabolic pathways in the liver and is

Target Details

	involved in DNA damage response by regulating several cell cycle and DNA repair genes. Controls the circadian rhythm of NR0B2 expression by binding rhythmically to its promoter (By similarity). Mediates the diurnal variation in the expression of GABARA1 receptor in the brain and contributes to the regulation of anxiety-like behaviors and GABAergic neurotransmission in the ventral striatum (By similarity). {ECO:0000250|UniProtKB:P97460, ECO:0000269|PubMed:11441146, ECO:0000269|PubMed:11441147, ECO:0000269|PubMed:14645221, ECO:0000269|PubMed:18439826, ECO:0000269|PubMed:18819933}.
Molecular Weight:	91.8 kDa
UniProt:	Q99743
Pathways:	Regulation of Lipid Metabolism by PPARalpha, Photoperiodism

Application Details

Application Notes:	We expect the protein to work for functional studies. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.
Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition 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:	12 months