

Rabbit PER1 Polyclonal Antibody | anti-PER1 antibody

PER1 Antibody (C-term)

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA286990	Rabbit	Human (Predicted Reactivity: Mouse, Rat)	ELISA, Western Blot

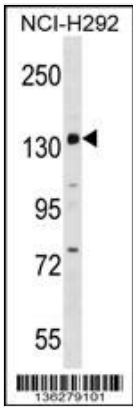
PRODUCT SYNONYMS

PER1; Polyclonal Antibody; PER1 Antibody (C-term); Period circadian protein homolog 1; hPER1; Circadian clock protein PERIOD 1; Circadian pacemaker protein Rigiui; KIAA0482; PER; RIGUI; anti-PER1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human (Predicted Reactivity: Mouse, Rat)
Clonality	Polyclonal
Isotype	Rabbit Ig
Specificity	This PER1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1156-1183 amino acids from the C-terminal region of human PER1.
Purity/Purification	This antibody is purified through a protein A column, followed by peptide affinity purification.
Form/Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide.
Sequence Positions	1156-1183
Sequence Length	1290
Applicable Applications for anti-PER1 antibody	ELISA, WB (Western Blot)
Clone Names	RB36279

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 'time givers'). 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, ARNTL/BMAL1, ARNTL2/BMAL2, PER1, PER2, PER3, CRY1 andCRY2) plays a critical role in rhythm eneration, 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 ARNTL/BMAL1 orARNTL2/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 Utge, S.J., et al. PLoS ONE 5 (2), E9259 (2010) :Zhu, Y., et al. Cancer Res.69(24):9315-9322(2009) Pendergast, J.S., et al. J. Neurosci.29(46):14681-14686(2009) limb of the feedback loop and interact withtheCLOCK NPAS2-ARNTL/BMAL1 ARNTL2/BMAL2heterodimer inhibiting its activity and there by 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 ARNTL/BMAL1transcription, respectively. Regulates circadian target genes expression atpost-transcriptional levels, but may not be required for the repression at transcriptional level. Controls PER2 protein decay. RepressesCRY2 preventing its repression on CLOCK/ARNTL target genes such as FXYD5and 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 ARNTL:CLOCK. Plays a role in the modulation of the neuroinflammatory state via the regulation of inflammatory mediators release, such asCCL2 and IL6. In spinal astrocytes, negatively regulates the MAPK14/p38 and MAPK8/JNKMAPK 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 WNK1and SLC12A3 expression in collaboration with CLOCK. Modulates hair follicle cycling. Represses the CLOCK- ARNTL/BMAL1 induced transcription of BHLHE40/DEC1.
Cellular Location	Nucleus. Cytoplasm. Note=Nucleocytoplasmic shuttling is effected by interaction with other circadian core oscillator proteins and/or by phosphorylation. Retention of PER1 in the cytoplasm occurs through PER1-PER2heterodimer formation Translocate to the nucleus after phosphorylation by CSNK1D orCSNK1E. Also translocated to the nucleus byCRY1 or CRY2 (By similarity).
Tissue Location	Widely expressed. Expressed in hair follicles (at protein level).Found in heart, brain, placenta, lung, liver, skeletal muscle, pancreas, kidney, spleen, thymus, prostate, testis, ovary and small intestine. Highest level in skeletal muscle.
Preparation and Storage	Maintain refrigerated at 2-8 degree C for up to 2 weeks. For long term storage store at -20 degree C in small aliquots to prevent freeze-thaw cycles.



WB (Western Blot)
PER1 Antibody (C-term) (AAA286990) western blot analysis in NCI-H292 cell line lysates (35ug/lane).This demonstrates the PER1 antibody detected the PER1 protein (arrow).

ADDITIONAL INFORMATION

Related Product Information for anti-PER1 antibody	This gene is a member of the Period family of genes and is expressed in a circadian pattern in the suprachiasmatic nucleus, the primary circadian pacemaker in the mammalian brain. Genes in this family encode components of the circadian rhythms of locomotor activity, metabolism, and behavior. Circadian expression in the suprachiasmatic nucleus continues in constant darkness, and a shift in the light/dark cycle evokes a proportional shift of gene expression in the suprachiasmatic nucleus. The specific function of this gene is not yet known. Alternative splicing has been observed in this gene; however, these variants have not been fully described.
Product Categories/Family for anti-PER1 antibody	Neuroscience
References	Xia, H.C., et al. Can J Neurol Sci 37(3):365-370(2010) Soria, V., et al. Neuropsychopharmacology 35(6):1279-1289(2010) Utge, S.J., et al. PLoS ONE 5 (2), E9259 (2010) : Zhu, Y., et al. Cancer Res. 69(24):9315-9322(2009) Pendergast, J.S., et al. J. Neurosci. 29(46):14681-14686(2009)

NCBI AND UNIPROT INFORMATION

NCBI GI #	194097341
NCBI GeneID	5187
NCBI Accession #	NP_002607.2
NCBI GenBank Nucleotide #	NM_002616.2
UniProt Accession #	O15534; B2RPA8; B4DI49; D3DTR3
NCBI Official Full Name	period circadian protein homolog 1
NCBI Official Synonym Full Names	period circadian clock 1
NCBI Official Symbol	PER1
NCBI Official Synonym Symbols	PER; hPER; RIGUI
NCBI Protein Information	period circadian protein homolog 1
UniProt Protein Name	Period circadian protein homolog 1
UniProt Gene Name	PER1
UniProt Synonym Gene Names	KIAA0482; PER; RIGUI; hPER1

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com

Online datasheet: <https://stage.aaabiotech.com/polyclonal/per1-antibody-western-blot-elisa/286990>