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ARNTL2 Rabbit pAb

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Catalog # AP54505

Product Information

Application	WB
Primary Accession	Q8WYA1
Reactivity	Rat, Mouse
Predicted	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	70887
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human ARNTL2
Epitope Specificity	381-480/636
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Nuclear
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	BMAL2 is a 636 amino acid protein that localizes to the nucleus and contains one bHLH (basic helix-loop-helix) domain, one PAC (PAS-associated C-terminal) domain and two PAS (PER-ARNT-SIM) domains. Expressed at high levels in placenta and brain and at lower levels in liver, thymus, heart, lung and kidney, BMAL2 functions as a component of the circadian core oscillator, which includes a variety of proteins that work in tandem to activate the transcription of target genes. More specifically, BMAL2, when functioning as a component of the core oscillator, binds to the E-box element (3'-CACGTG-5') of target DNA, thus inducing transcription. Multiple isoforms of BMAL2 exist due to alternative splicing events.

Additional Information

Gene ID	56938
Other Names	Basic helix-loop-helix ARNT-like protein 2 {ECO:0000312|HGNC:HGNC:18984}, Aryl hydrocarbon receptor nuclear translocator-like protein 2, Basic-helix-loop-helix-PAS protein MOP9, Brain and muscle ARNT-like 2, CYCLE-like factor, CLIF, Class E basic helix-loop-helix protein 6, bHLHe6, Member of PAS protein 9, PAS domain-containing protein 9, BMAL2 (HGNC:18984)
Dilution	WB=1:500-2000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When

reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name

BMAL2 (HGNC:18984)

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 CLOCK-BMAL2 heterodimer activates the transcription of SERPINE1/PAI1 and BHLHE40/DEC1.

Cellular Location

Nucleus {ECO:0000255|PROSITE-ProRule:PRU00981, ECO:0000269|PubMed:10964693}

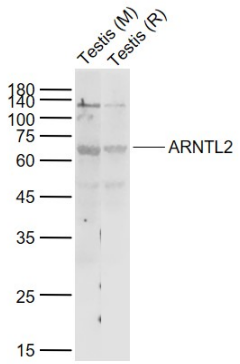
Tissue Location

Expressed in fetal brain. Highly expressed in brain and placenta. Lower levels in heart, liver, thymus, kidney and lung Located to endothelial cells and neuronal cells of the suprachiasmatic nucleus (SCN). Also detected in endothelial cells of the heart, lung and kidney. In the brain, specifically expressed in the thalamus, hippocampus and amygdala.

Background

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Images



Sample:
Lane 1: Testis (Mouse) Lysate at 40 ug
Lane 2: Testis (Rat) Lysate at 40 ug
Primary: Anti-ARNTL2 (AP54505) at 1/1000 dilution
Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution
Predicted band size: 71/63 kD
Observed band size: 65 kD

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.