

Rabbit BMAL1 Polyclonal Antibody | anti-BMAL1 antibody

BMAL1 (Acetyl Lys538) Polyclonal Antibody

CATALOG # AAA293484	HOST Rabbit	REACTIVITY Human, Mouse, Rat	APPLICATIONS Western Blot
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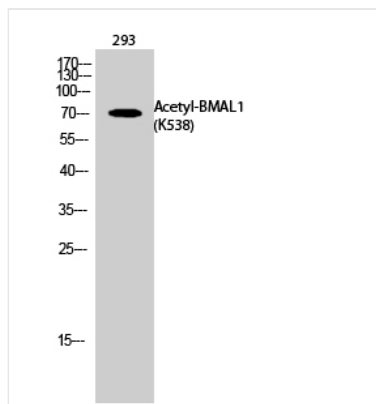
PRODUCT SYNONYMS

BMAL1; Polyclonal Antibody; BMAL1 (Acetyl Lys538) Polyclonal Antibody; ARNTL; BHLHE5; MOP3; PASD3; Aryl hydrocarbon receptor nuclear translocator-like protein 1; Basic-helix-loop-helix-PAS protein MOP3Brain and muscle ARNT-like 1; Class E basic helix-loop-helix protein 5; bHLHe5; Member of PAS protein 3; PAS domain-containing protein 3; bHLH-PAS protein JAP3; anti-BMAL1 antibody

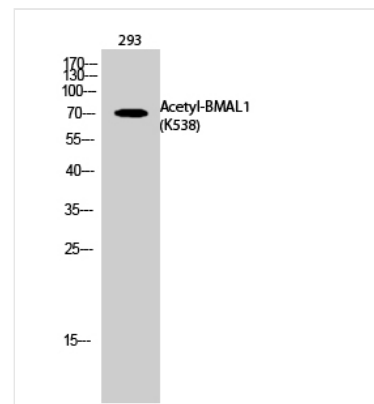
PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Applicable Applications for anti-BMAL1 antibody	WB (Western Blot)
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.

IMAGES


WB (Western Blot)

Dilution: Western Blot: 1/500 - 1/2000. ELISA: 1/20000. Not yet tested in other applications.


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ADDITIONAL INFORMATION

Related Product Information for anti-BMAL1 antibody	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, ARNTL/BMAL1, ARNTL2/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 theultradian 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 or ARNTL2/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-ARNTL/BMAL1 ARNTL2/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 ARNTL/BMAL1 transcription, respectively. ARNTL/BMAL1 positively regulates myogenesis and negatively regulates adipogenesis via the transcriptional control of the genes of the canonical Wnt signaling pathway. Plays a role in normal pancreatic beta-cell function; regulates glucose-stimulated insulin secretion via the regulation of antioxidant genes NFE2L2/NRF2 and its targets SESN2, PRDX3, CCLC and CCLM. Negatively regulates the mTORC1 signaling pathway; regulates the expression of MTOR and DEPTOR. Controls diurnal oscillations of Ly6C inflammatory monocytes; rhythmic recruitment of the PRC2 complex imparts diurnal variation to chemokine expression that is necessary to sustain Ly6C monocyte rhythms. Regulates the expression of HSD3B2, STAR, PTGS2, CYP11A1, CYP19A1 and LHCGR in the ovary and also the genes involved in hair growth. Plays an important role in adult hippocampal neurogenesis by regulating the timely entry of neural stem/progenitor cells (NSPCs) into the cell cycle and the number of cell divisions that take place prior to cell-cycle exit. Regulates the circadian expression of CIART and KLF11. The CLOCK-ARNTL/BMAL1 heterodimer regulates the circadian expression of SERPINE1/PAI1, VWF, B3, CCRN4L/NOC, NAMPT, DBP, MYOD1, PPARGC1A, PPARGC1B, SIRT1, GYS2, F7, NGFR, GNRHR, BHLHE40/DEC1, ATF4, MTA1, KLF10 and also genes implicated in glucose and lipid metabolism. Promotes rhythmic chromatin opening, regulating the DNA accessibility of other transcription factors. The NPAS2-ARNTL/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 adenylyate cyclase type 1 (ADCY1) in the retina. The preferred binding motif for the CLOCK- ARNTL/BMAL1 heterodimer is 5'-CACGTGA-3', which contains a flanking Ala residue in addition to the canonical 6-nucleotide E- box sequence (PubMed:23229515). CLOCK specifically binds to the half-site 5'-CAC-3', while ARNTL binds to the half-site 5'-GTGA-3' (PubMed:23229515). The CLOCK-ARNTL/BMAL1 heterodimer also recognizes the non-canonical E-box motifs 5'-AACGTGA-3' and 5'- CATGTGA-3' (PubMed:23229515). Essential for the rhythmic interaction of CLOCK with ASS1 and plays a critical role in positively regulating CLOCK-mediated acetylation of ASS1 (PubMed:28985504). Plays a role in protecting against lethal sepsis by limiting the expression of immune checkpoint protein CD274 in macrophages in a PKM2-dependent manner (By similarity).
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NCBI AND UNIPROT INFORMATION

NCBI GI #	71852580
NCBI GeneID	406
NCBI Accession #	NP_001025443.1
NCBI GenBank Nucleotide #	NM_001030272.1

UniProt Accession #	O00327; O00313; O00314; O00315; O00316; O00317; Q4G136; A2I2N6; A8K645; B5ME11; B7WPG7; D3DQW6
Molecular Weight	626
NCBI Official Full Name	aryl hydrocarbon receptor nuclear translocator-like protein 1 isoform a
NCBI Official Synonym Full Names	aryl hydrocarbon receptor nuclear translocator-like
NCBI Official Symbol	ARNTL
NCBI Official Synonym Symbols	TIC; JAP3; MOP3; BMAL1; PASD3; BMAL1c; bHLHe5
NCBI Protein Information	aryl hydrocarbon receptor nuclear translocator-like protein 1; bHLH-PAS protein JAP3; member of PAS protein 3; member of PAS superfamily 3; brain and muscle ARNT-like 1; PAS domain-containing protein 3; ARNT-like protein 1, brain and muscle; basic-helix-l
UniProt Protein Name	Aryl hydrocarbon receptor nuclear translocator-like protein 1
UniProt Gene Name	ARNTL
UniProt Synonym Gene Names	BHLHE5; BMAL1; MOP3; PASD3; bHLHe5
UniProt Entry Name	BMAL1_HUMAN

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/bmal1-antibody-western-blot-elisa/293484>