

## Summary

<b>Production Name</b>	Clock Rabbit Polyclonal Antibody
<b>Description</b>	Rabbit Polyclonal Antibody
<b>Host</b>	Rabbit
<b>Application</b>	IHC, WB, ELISA
<b>Reactivity</b>	Human, Mouse, Rat

## Performance

<b>Conjugation</b>	Unconjugated
<b>Modification</b>	Unmodified
<b>Isotype</b>	IgG
<b>Clonality</b>	Polyclonal
<b>Form</b>	Liquid
<b>Storage</b>	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.
<b>Buffer</b>	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% New type preservative N.
<b>Purification</b>	Affinity purification

## Immunogen

<b>Gene Name</b>	CLOCK
<b>Alternative Names</b>	CLOCK; BHLHE8; KIAA0334; Circadian locomotor output cycles protein kaput; hCLOCK; Class E basic helix-loop-helix protein 8; bHLHe8
<b>Gene ID</b>	9575.0
<b>SwissProt ID</b>	O15516. The antiserum was produced against synthesized peptide derived from human Clock. AA range: 241-290

## Application

<b>Dilution Ratio</b>	WB 1:500 - 1:2000. IHC 1:100 - 1:300. ELISA: 1:20000..
<b>Molecular Weight</b>	95kD

## Background

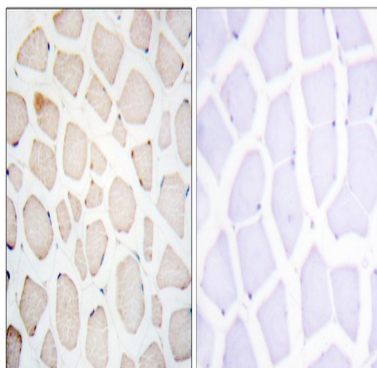
The protein encoded by this gene plays a central role in the regulation of circadian rhythms. The protein encodes a transcription factor of the basic helix-loop-helix (bHLH) family and contains DNA binding histone acetyltransferase activity. The encoded protein forms a heterodimer with ARNTL (BMAL1) that binds E-box enhancer elements upstream of Period (PER1, PER2, PER3) and Cryptochrome (CRY1, CRY2) genes and activates transcription of these genes. PER and CRY proteins heterodimerize and repress their own transcription by interacting in a feedback loop with CLOCK/ARNTL complexes. Polymorphisms in this gene may be associated with behavioral changes in certain populations and with obesity and metabolic syndrome. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Jan 2014], catalytic activity: Acetyl-CoA + histone = CoA + acetylhistone, function: ARNTL/2-CLOCK heterodimers activate E-box element (3'-CACGTG-5') transcription of a number of proteins of the circadian clock. Activates transcription of PER1 and PER2. This transcription is inhibited in a feedback loop by PER and CRY proteins. Has intrinsic histone acetyltransferase activity and this enzymatic function contributes to chromatin-remodeling events implicated in circadian control of gene expression (By similarity). Acetylates primarily histones H3 and H4 (By similarity). Acetylates also a non-histone substrate: ARNTL., miscellaneous: CLOCK-ARNTL double mutations within the PAS domains result in synergistic desensitization to high levels of CRY on repression of CLOCK-ARNTL transcriptional activity of PER1 and disrupt circadian rhythmicity., PTM: Phosphorylation is dependent on CLOCK-ARNTL heterodimer formation., similarity: Contains 1 basic helix-loop-helix (bHLH) domain., similarity: Contains 1 PAC (PAS-associated C-terminal) domain., similarity: Contains 2 PAS (PER-ARNT-SIM) domains., subcellular location: Shuffling between the cytoplasm and the nucleus is under circadian regulation and is ARNTL-dependent. Phosphorylated form located in the nucleus., subunit: Component of the circadian clock oscillator which includes the CRY proteins, CLOCK or NPAS2, ARNTL or ARNTL2, CSNK1D and/or CSNK1E, TIMELESS and the PER proteins. Efficient DNA binding requires dimerization with another bHLH protein. Heterodimerization with ARNTL is required for E-box-dependent transactivation, for CLOCK nuclear translocation and degradation, and, for phosphorylation of both CLOCK and ARNTL. Interaction with PER and CRY proteins requires translocation to the nucleus. Interaction of the CLOCK-ARNTL heterodimer with PER or CRY inhibits transcription activation. Binds weakly ARNTL and ARNTL2 to form heterodimers which bind poorly to the E-box motif., tissue specificity: Expressed in all tissues examined including spleen, thymus, prostate, testis, ovary, small intestine, colon, leukocytes, heart, brain, placenta, lung, liver, skeletal muscle, kidney and pancreas. Highest levels in testis and skeletal muscle. Low levels in thymus, lung and liver. Expressed in all brain regions with highest levels in cerebellum. Highly expressed in the suprachiasmatic nucleus (SCN),

## Research Area

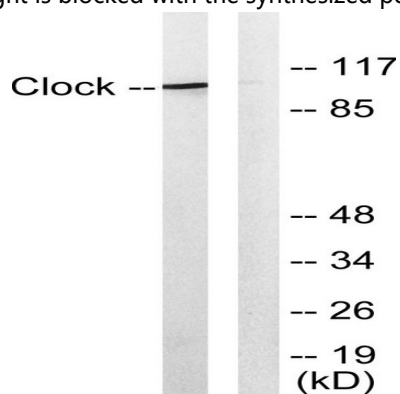
Protein\_Acetylation

## Image Data

**Product Name: Clock Rabbit Polyclonal Antibody**  
**Catalog #: APRab09060**



Immunohistochemistry analysis of paraffin-embedded human skeletal muscle tissue, using Clock Antibody. The picture on the right is blocked with the synthesized peptide.



Western blot analysis of lysates from HUVEC cells, using Clock Antibody. The lane on the right is blocked with the synthesized peptide.



Western Blot analysis of various cells using Clock Polyclonal Antibody

## Note

For research use only.