

Clock Monoclonal Antibody

Catalog No :	YM0159
Reactivity :	Human
Applications :	WB;IF;ELISA
Target :	Clock
Fields :	>>Circadian rhythm;>>Dopaminergic synapse
Gene Name :	CLOCK
Protein Name :	Circadian locomoter output cycles protein kaput
Human Gene Id :	9575
Human Swiss Prot No :	O15516
Mouse Swiss Prot No :	O08785
Immunogen :	Purified recombinant fragment of human Clock expressed in E. Coli.
Specificity :	Clock Monoclonal Antibody detects endogenous levels of Clock protein.
Formulation :	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Source :	Monoclonal, Mouse
Dilution :	WB 1:500 - 1:2000. IF 1:200 - 1:1000. ELISA: 1:10000. Not yet tested in other applications.
Purification :	Affinity purification
Storage Stability :	-15°C to -25°C/1 year(Do not lower than -25°C)
Molecularweight :	95kD

Cell Pathway : Protein_Acetylation

P References :

1. Chronobiol Int. 2007;24(4):589-97.
2. Neurosci Lett. 2008 Apr 11;435(1):30-3.
3. Virchows Arch. 2009 Apr;454(4):467-74.

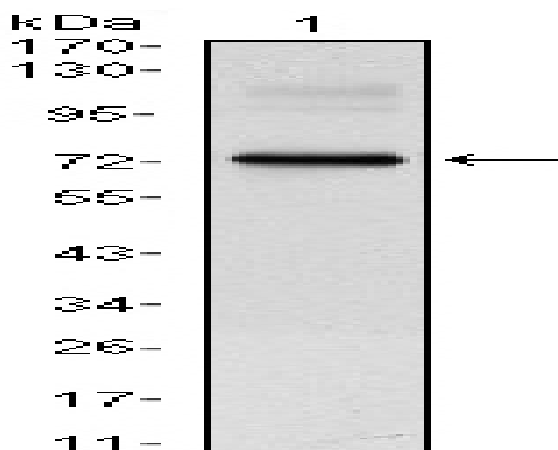
Background : The protein encoded by this gene plays a central role in the regulation of circadian rhythms. The protein encodes a transcription factor of the basic helix-loop-helix (bHLH) family and contains DNA binding histone acetyltransferase activity. The encoded protein forms a heterodimer with ARNTL (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],

Function : 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 format

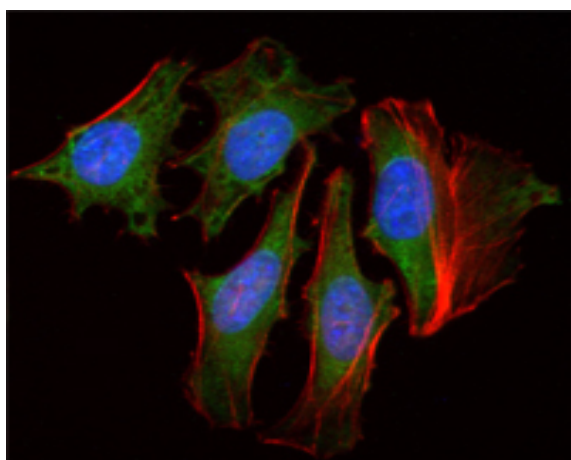
Subcellular Location : Nucleus . Cytoplasm . Cytoplasm, cytosol . Shuttling between the cytoplasm and the nucleus is under circadian regulation and is ARNTL/BMAL1-dependent. Phosphorylated form located in the nucleus while the nonphosphorylated form found only in the cytoplasm. Sequestered to the cytoplasm in the presence of ID2 (By similarity). Localizes to sites of DNA damage in a H2AX-independent manner.

Expression : Hair follicles (at protein level). 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).

Products Images



Western Blot analysis using Clock Monoclonal Antibody against CLOCK-hlgGfc transfected HEK293 cell lysate.



Immunofluorescence analysis of HeLa cells using Clock Monoclonal Antibody (green). Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin. Blue: DRAQ5 fluorescent DNA dye.