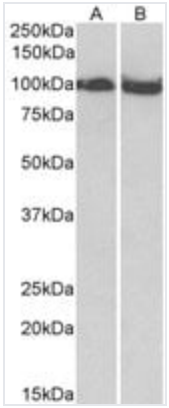
CLOCK Antibody – Goat

PRODUCT OVERVIEW

Product Name	CLOCK, Antibody
Full Product Name	Goat anti-CLOCK (aa458-472) Antibody
Product Gene Name	anti-CLOCK antibody
Product Synonym Names	CLOCK; clock homolog (mouse); KAT13D; bHLHe8; circadian locomoter output cycles kaput protein; circadian locomoter output cycles protein kaput; class E basic helix-loop-helix protein 8; CLOCK antibody; clock homolog (mouse) antibody; KAT13D antibody; bHLHe8 antibody; circadian locomoter output cycles kaput protein antibody; circadian locomoter output cycles protein kaput antibody; class E basic helix-loop-helix protein 8 antibody; CLOCK (aa458-472)
Host	Goat
Species Reactivity	Tested: Mouse, Rat Expected from sequence similarity: Human, Mouse, Cow
Form/Format	Supplied at 0.5 mg/ml in Tris saline, 0.02% sodium azide, pH7.3 with 0.5% bovine serum albumin.
Purity/Purification	Purified from goat serum by ammonium sulphate precipitation followed by antigen affinity chromatography using the immunizing peptide.
Preparation and Storage	Aliquot and store at -20 degree C. Minimize freezing and thawing.
Antibody/Peptide Pairs	CLOCK peptide (MBS428152) is used for blocking the activity of CLOCK antibody (MBS423183)
OMIM	601851
Immunogen	Peptide with sequence C-DTSTPPRQHLPAHEK, from the internal region of the protein sequence according to NP_004889.1.
Note	Reported variants represent identical protein: NP_004889.1, NP_001254772.1
ISO Certification	Manufactured in an ISO 9001:2008 Certified Laboratory.
Applications Tested/Suitable for anti-CLOCK antibody	Peptide ELISA (EIA), Western Blot (WB)
Application Notes for anti-CLOCK antibody	**Peptide ELISA:** Antibody detection limit dilution 1:128000. **Western Blot:** Approx 100kDa band observed in Mouse and Rat Skeletal Muscle lysates (calculated MW of 96.4kDa according to Mouse NP_031741.1 and 97. 0kDa according to Rat NP_068628.1). Recommended concentration: 0. 03-0.1ug/ml.
Related Product Information for anti-CLOCK antibody	MBS423183 is an antibody targeting CLOCK. Also known as Goat anti-CLOCK (aa458-472) Antibody. Reactive in Tested: Mouse, Rat Expected from sequence similarity: Human, Mouse, Cow. Host: Goat.
Other Notes	Small volumes of anti-CLOCK antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.



Western Blot (WB) of anti-CLOCK antibody
(0. 03ug/ml) staining of Mouse (A) and Rat (B) Skeletal Muscle lysate (35ug protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for CLOCK. It may not necessarily be applicable to this product.

NCBI GI #	4758010
NCBI GeneID	9575
NCBI Accession #	NP_004889.1
UniProt Secondary Accession #	O14516; Q9UIT8; A0AV01; A2I2N9
UniProt Related Accession #	O15516
GenBank Nucleotide #	NM_004898.3
NCBI Official Full Name	circadian locomoter output cycles protein kaput
NCBI Official Synonym Full Names	clock circadian regulator
NCBI Official Symbol	CLOCK
NCBI Official Synonym Symbols	KAT13D; bHLHe8
UniProt Protein Name	Circadian locomoter output cycles protein kaput
UniProt Synonym Protein Names	Class E basic helix-loop-helix protein 8; bHLHe8
Protein Family	Circadian locomoter output cycles protein
UniProt Gene Name	CLOCK
UniProt Synonym Gene Names	BHLHE8; KIAA0334; hCLOCK; bHLHe8
UniProt Entry Name	CLOCK_HUMAN
NCBI Protein Information	circadian locomoter output cycles protein kaput
NCBI Summary for CLOCK	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]

UniProt Comments for CLOCK	CLOCK: 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. Acetylates primarily histones H3 and H4. Acetylates also a non-histone substrate: ARNTL. Plays a role in DNA damage response (DDR) signaling during the S phase. 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. 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). Protein type: Acetyltransferase; EC 2.3.1.48; Transcription factor; DNA-binding Chromosomal Location of Human Ortholog: 4q12 Cellular Component: chromosome; intracellular membrane-bound organelle; nucleoplasm; nucleus; transcription factor complex Molecular Function: chromatin DNA binding; DNA binding; histone acetyltransferase activity; protein binding; protein dimerization activity; sequence-specific DNA binding; transcription factor activity Biological Process: activation of NF-kappaB transcription factor; circadian regulation of gene expression; circadian rhythm; DNA damage checkpoint; entrainment of circadian clock; histone acetylation; negative regulation of transcription, DNA-dependent; photoperiodism; positive regulation of inflammatory response; positive regulation of transcription from RNA polymerase II promoter; positive regulation of transcription, DNA-dependent; proteasomal ubiquitin-dependent protein catabolic process; regulation of hair cycle; regulation of insulin secretion; regulation of transcription from RNA polymerase II promoter; regulation of transcription, DNA-dependent; response to redox state; signal transduction; spermatogenesis; transcription from RNA polymerase II promoter
Research Articles on CLOCK	**1.** CLOCK, ARNTL, and NPAS2 gene polymorphisms may have a role in seasonal variations in mood and behavior
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