

Product Specification Sheet

Clock (dCLOCK) Antibodies

Cat. CLO13-S	Rabbit Anti-dCLOCK antiserum # 1	SIZE: 100 ul
Cat. CLO13-A	Rabbit Anti-dCLOCK IgG # 1, aff pure	SIZE: 100 ug
Cat. CLO13-P	dCLOCK Control/blocking peptide #1	SIZE: 100 ug

Supplied in Buffer: PBS pH 7.5.

Reconstitute powder in PBS at 1 mg/ml.

Several endogenous factors have been linked to rhythmicity or circadian behavior of living organisms. In *Drosophila*, the genes *period* (**dPer**) and *timeless* (*tim*), and in *Neurospora* *frequency* (*freq*), have been proposed to be responsible for their circadian rhythm. Recently human and mouse genes encoding a basic helix-loop-helix (bHLH) and Per-ARNT-Sim (PAS)-domain with significant similarity to the *Drosophila* Period have been reported. The cDNA sequences of *hPER* and *mPer1* (also named *RIGU1*) are predicted to encode for proteins of length 1290 and 1291 amino acids respectively. Homologues of *mPer1* designated **Per 2** (1257 aa) and **Per3** (1113 aa) have also been cloned. Both *Per1* and *Per2* levels show circadian rhythm in the SCN and eyes. It has been suggested that *mPer* regulates neuronal activity in the SCN. Mouse *Clock* (855 aa) is abundantly expressed in brain (SCN, pyriform cortex, hippocampus) as well as in other tissues (eye, total brain, testes, ovaries, liver, heart, lung, and kidney). Although, *Clock* is constitutively expressed (not rhythmic) in the SCN, it may still be an important component of circadian machinery.

Basic-helix-loop-helix-PAS orphan protein, **MOP3** (Members Of PAS Superfamily; also known as **BMAL1/JAP3/PAS3**; 626 aa) is a general dimerization partner for several PAS superfamily of transcription regulators. MOP3 interacts with **MOP4** (also known as NPAS2; 626 aa), *Clock*, HIF1 α , and HIF2 α . MOP4 is a brain specific homolog of *Clock*.

Source of Antigen and Antibodies

Antigen	17-aa peptide of Drosophila Clock (1027 aa) (protein accession #, refs 1) ; Designated (HO22-P or control peptide) conjugated to KLH; epitope location ~ C-terminus
Ab Host/type	Rabbit, Polyclonal antiserum # CLO13-S and IgG, purified over antigen-agarose (Cat # CLO13-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control IgG	Cat # 20009-1, Rabbit (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)

100ul solution lyophilized powder
Supplied 0.05% azide, **Reconstitute** powder in 100 ul PBS

Affinity pure IgG

100 ug/100ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide

100 ug/100 ul solution lyophilized powder

Storage

Short-term: unopened, undiluted liquid vials at -200C and powder at 4oC or -20oC..

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique).

ELISA (1:10K-1:100K; using 50-100 ng of control peptide/well).

Histochemistry & Immunofluorescence: not tested. We recommend the use of affinity purified antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

Drosophila CLO13-P sequence has no significant sequence homology with mammalian *Clock* or *Per* proteins. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol see detailed protocol at the web site).

General References: (1) Antoch MP I (1997) *Cell* 89, 655-667; King, D. P. et al., (1997) *Cell*, 89, 641-653; Gekakis N (1998) *Science* 280, 1564-1569; Stevens TD (1999) *Genomics* 57, 189-200

Citations of ADI's Clock antibodies

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Zanello SB., 2000, *J. Invest. Dermatol.* 115: 757-760
Takahashi J S, 1999, *Science* 24; 285: 2076-2077
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*This product is for *in vitro* research use only.

Related material available from ADI

Anti-Mouse/human *Per1*, *Per2*, *Per3*, *Clock*, *MOP3*, and *MOP4*; *Drosophila Per*, *dClock*, *dBMAL*, *Mouse MOP4*, *Mouse Cryptochromes CRY1* and *CRY2*.

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