

Product Specification Sheet

**Clock (dCLOCK) Antibodies**

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

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 *RIGUI*) 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 $\alpha$ , and HIF2 $\alpha$ . MOP4 is a brain specific homolog of *Clock*.

**Source of Antigen and Antibodies**

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

Supplied in Buffer: PBS pH 7.5,

**Reconstitute powder in PBS at 1 mg/ml.**

**Storage**

**Short-term:** unopened, undiluted liquid vials at -20OC 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**

Gustincich S, 2004, *Proc. Natl. Acad. Sci.* 101, 5069-5074  
Curtis AM, 2003, *J. Biol. Chem.* 279, 7091-7097  
Allen GC, 2004, *Neuroscience*, 127, 4, 989-999  
Zanello SB., 2000, *J. Invest. Dermatol.* 115: 757-760  
Takahashi J S, 1999, *Science* 24; 285: 2076-2077  
Allada R, 2003, *EMBO J.*, 22: 3367 - 3375  
Maywood ES, 2002, *Eur. J. Neurosci.* 15, 1, 216-220,  
Maywood ES, 2003, *J. NeuroEndocrinol.* 15, 4, 329

\*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*.

CLO13-S-A-P 71209A

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, S an Antonio, T X 7 8 24 4 , U S A;

**India Contact:**

**Life Technologies (India) Pvt. Ltd.**

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi - 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400

Fax: +91-11-42208444 Email: [customerservice@lifetechnindia.com](mailto:customerservice@lifetechnindia.com) Website: [www.lifetechnindia.com](http://www.lifetechnindia.com)