ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Drosophila Period Clock Protein (dPER) Antibodies

Cat. PER15-S	Rabbit Anti-dPer antiserum # 2	**SIZE**: 100 ul
Cat. PER15-P	dPer Control/blocking peptide # 2	**SIZE**: 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* (*frq*), have been proposed to be responsible for their circadian rhythm. **Drosophila Period clock protein** (1224 aa; 1208 aa; alternatively spliced forms 1155 aa, 1127 aa, 1124 aa) is involved in the generation of biological rhythms. It interacts with Timeless protein (Tim). dPer first accumulates in the perinuclear region about an hour before it is transported to the nucleus. It contains a remarkable run of alternating Gly-Thr residues. The length of the G-T region is similar to that of the mammalian G-S in a chondroitin sulfate proteoglycan indicating that it may be a proteoglycan. It has similarity to the single minded (Sim), ARNT and AH-receptor proteins. 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 h*PER* and **m*Per1* (**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 m*Per* regulates neuronal activity in the SCN. Clock is abundantly expressed in brain as well as in other tissues (eye, total brain, tested, 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.

Source of Antigen and Antibodies

Antigen	21-aa peptide of **Drosophila Per** (1) ; **Designated (PHD11-P or control peptide) conjugated to KLH; epitope location ~ C-terminus**
Ab Host/type	Chicken, Polyclonal IgG, purified over antigen-agarose (Cat # PHD11-A) purified over antigen-agarose column. This antibody has also been raised in **rabbits** (Cat # PER14-S).
2-Ab	**Goat Anti-chicken IgG-HRP** cat # 60320 (AP, biotin, FITC conjugates also available)
-ve control IgG	**Cat # 20010-1, Chicken (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

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 aff pure using Chemiluminescence technique).

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

Histochemistry & Immunofluorescence: We suggest the use of affinity purified antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

Drosophila Per peptide sequence (PER15-P) has no sequence homology with mammalian Per or Clock proteins. The PER15-P epitope is conserved various alternatively spliced forms of dPer (PerA and PerB, etc.). 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 (detailed protocol is available at the web site).

General References: Sun SZ et al (1997) Cell 90, 1003-1011; Tei H et al (1997) Nature 389, 512-516

(2) Citations of ADI's Per1 antibodies (update at the web site)

Liu Y, 2004, Neuroscience, 130, 383-388 WB, IHC,
Zanello S B., 2000, J. Invest. Dermatol. 115: 757-760, IHC,

Uz T, 2003, NeuropsychoPharmacol. 28, 2117 – 2123, IHC,
Koyanagi S, 2005 Mol. Endocrinol., Nov 2005 WB
Gustincich S, 2004 PNAS. 101 , 5069-5074, IHC
Akhisaroglu M, 2004, Pharmacol. Biochem. Behavior 79, 37, WB
Weber F 2003, FEBS Lett., 555, 2, 341-345 WB
Yagita K 2001, Science, 292: 278 – 281, IF
Marquez S, 2004, FASEB J 18, 519-521, IHC

*This product is for *in vitro* research use only.

Related material available from ADI

Anti-Mouse/human Per1-3, Clock, MOP3-4; Drosophila Per, dClock, dBMAL, CRY1 and CRY2.

PER15-S-A-P 71210A

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