

Product Specification Sheet

Per1 (hPer1/hRIGUI) Antibodies

Cat. PER12-S	Rabbit Anti-Human Per 1 antiserum # 2	SIZE: 100 ul
Cat. PER12-A	Rabbit Anti-Human Per 1 IgG #2 (aff pure)	SIZE: 100 ug
Cat. PER12-P	Human Per 1 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* (*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.

FUNCTION: Component of the circadian clock mechanism which is essential for generating circadian rhythms. Negative element in the circadian transcriptional loop. Influences clock function by interacting with other circadian regulatory proteins and transporting them to the nucleus. Negatively regulates CLOCK|NPAS2-BMAL1|BMAL2-induced transactivation (By similarity).

SUBCELLULAR LOCATION: Nucleus

SIMILARITY: Contains 1 PAC (PAS-associated C-terminal) domain.

Protein name Period circadian protein homolog 1

Synonyms Circadian clock protein PERIOD 1

Circadian pacemaker protein Rigiui

hPER1

Gene name Name: PER1; Synonyms: KIAA0482, PER, RIGUI

Source of Antigen and Antibodies

Antigen	20-aa peptide from human per-1 (1) ; (gene accession # 015534) Designation (# PER12-P, control/blocking peptide) conjugated to KLH; Epitope location ~C-terminus
Ab Host/type	Rabbit, Polyclonal Aff pure IgG (Cat # PER12-A) purified over the antigen column
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)

100ul solution lyophilized powder

Supplied in Buffer: 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 20°C and powder at 4°C or -20°C..

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

Stability: 6-12 months at -20°C or below.

Shipping: 4°C 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 ECL) (see published refs 2 using this antibody).

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

Histochemistry & Immunofluorescence: We recommend the use of affinity purified antibody at 2-20 ug/ml (see refs 2 on this antibody).

Specificity & Cross-reactivity

The human PER12-P peptide sequences is 100% conserved in mouse, rat and 65% with chicken Per1. No significant homology is seen with Per2, Per 3, dPER or other known proteins. Antibody cross-reactivity with Per1 from other species has not been studied. 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

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 Antibodies (see web site for updated list)

Liu Y, 2004, Neuroscience, 130, 383-388, WB, IHC,
Zanello, SB, 2000, J. Invest. Dermatol. 115: 757-760, , IHC,
Uz T, 2003, Neuropsychopharmacology 28, 2117 - 2123, , IHC,
Akhisaroglu M, 2004, Pharmacol. Biochem. Behavior 79, 37, WB,
Gustincich S, 2004, PNAS 101 , 5069-5074, , IHC
Weber F, 2003, FEBS Letters, 555, 341-345, WB,
Marquez S, 2004, FASEB J, Jan 2004; 10.1, , IHC
Yagita K, 2001, Science, Apr 2001; 292: 278 - 281, , IF

*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.

PER12-S-A-P

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