ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Per1 (mPer1/mRIGUI) Antibodies

Cat. PER11-S	**Rabbit** Anti-Mouse Per 1 antiserum # 1	**SIZE**: 100 ul
Cat. PER11-A	**Rabbit** Anti-Mouse Per 1 IgG #1 (aff pure)	**SIZE**: 100 ug
Cat. PER11-P	Mouse Per 1 Control/blocking peptide #1	**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. 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. Using genetic approach, a single mutation (A to T in the ***Clock*** gene affects circadian rhythmicity in mice.

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.
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 Rigui
mPER1
Gene name Name: Per1
Synonyms: Per, Rigui

Source of Antigen and Antibodies

Antigen	16-aa peptide of mouse Per1 (1) ; (gene accession # 035973) **Designated (PER11-P or control peptide). conjugated to KLH**; Epitope location ~ C-terminal mapping downstream of the SG repeat of mouse Per 1
Ab Host/type	Rabbit, Polyclonal Aff pure IgG (Cat # PER11-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 Chemiluminescence technique). (see published refs in 2).

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 Mouse PER11-P peptide sequences is 93% conserved in human and rat Per1. No significant homology is seen with Per2, Per 3, dPER or other known proteins. Antibody cross-reactivity with Per1 from other species is not known. 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 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
PER11-S-A-P 70911J

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