

Product Specification Sheet

**Per2 (mPer2) Antibodies**

<b>Cat.</b> PER21-S	Rabbit Anti-Mouse Per 2 antiserum # 1	<b>SIZE:</b> 100 ul
<b>Cat.</b> PER21-A	Rabbit Anti-Mouse Per 2 IgG # 1(aff pure)	<b>SIZE:</b> 100 ug
<b>Cat.</b> PER21-P	Mouse Per 2 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. Using genetic approach, a single mutation (A to T) in the **Clock** gene affects circadian rhythmicity in mice. *Clock* has been mapped to chromosome 5. Mouse *Clock* encodes a transcription factor, a single polypeptide chain of 855 aa (predicted calculated mol wt ~97 kDa; pI 6.52; hClock, 846 aa). *Clock* is abundantly expressed in brain (SCN, pyriform cortex, hippocampus) as well as in other tissues (eye, total brain, testes, ovaries, liver, heart, and kidney).

**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 2

**Synonyms** Circadian clock protein PERIOD 2  
mPER2

**Gene name** Name: Per2

**Source of Antigen and Antibodies**

<b>Antigen</b>	A 23 amino acid peptide sequence (gene accession # 054943) ( <b>designated PER21-P, control peptide/blocking peptide</b> ) of mouse <b>Per 2</b> conjugated to KLH; Epitope location ~C-terminus
<b>Ab Host/type</b>	Rabbit, Polyclonal Aff pure IgG, (Cat # <b>PER21-A</b> ) purified over the antigen column
<b>2-Ab</b>	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
<b>-ve control</b>	# 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 1 mg/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 using this antibody in 3).

**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 published refs using this antibody in 3).

**Specificity & Cross-reactivity**

The mouse PER21-P peptide sequence is 77% conserved in rat Per2. No significant homology is seen with human Per2 or Per1 or Per3. Antibody cross-reactivity with Per2 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:** Albrecht U (1997) Cell 91, 1055; Shearman LP (1997) Neuron 19, 1261; Sakamoto K (1998) JBC 273, 27039-27342. (2) Nagase T (1997) DNA Res. 4, 141

**(2) Citations of ADI's Antibodies** (see web site for updated list)

Beaule C, 2004, Neuroscience, 121, 253-257, , IHC  
Karatsoreos IN, 2004, J. Neurosci., Jan 2004; 24: 68 - 75, WB,  
Amir S, 2004, J. Neurosci., Jan 2004; 24: 781 - 790, , IHC  
Koyanagi S, 2003, Cancer Res., Nov 2003; 63: 7277 - 7283, WB,  
Bae Kiho, 2000, Neuron 30, 525-536, , IHC,  
Yagita K, 2001, Science, Apr 2001; 292: 278 - 281, , IF  
Field, MD, 2000, Neuron 2000 25: 437, WB,, IHC,  
Harmar AJ et al. 2002, Cell 109, 497-508, WB, IHC,  
Kapfhamer D, 2002, Nature Genetics32, 290 - 295, , IHC,

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

PER21-S-A-P 70911J