ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Per3 (mPer3) Antibodies

Cat. PER31-S	Rabbit Anti-Mouse Per 3 antiserum # 1	**SIZE**: 100 ul
Cat. PER31-A	Rabbit Anti-Mouse Per 3 Ig G # 1 (aff pure)	**SIZE**: 100 ug
Cat. PER31-P	Mouse Per 3 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. 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, pyrifom cortex, hippocampus) 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.

FUNCTION: Component of the circadian clock mechanism which is essential for generating circadian rhythms. Function unknown.
SUBCELLULAR LOCATION: Cytoplasm. Nucleus. Note=Mainly cytoplasmic. Translocates to the nucleus through binding PER1, PER2, CRY1 or CRY2, but not TIMELESS.
SIMILARITY: Contains 1 PAC (PAS-associated C-terminal) domain.
Protein name Period circadian protein homolog 3
Synonyms Circadian clock protein PERIOD 3
mPER3
Gene name Name: Per3

Source of Antigen and Antibodies

Antigen	20-aa peptide of Mouse PER3 (gene accession # 070361) (**designated PER31-P; control peptide).**conjugated to KLH
Ab Host/type	Rabbit, polyclonal Aff pure IgG1 (**cat #PER31-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). This antibody has been used in western (refs 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. This antibody has been used in frozen, free floating sections (refs 2).

Specificity & Cross-reactivity

Mouse PER31-P peptide is 77% conserved in rat, and 50% in human and drosophila's Per3. We recommend the use of antibody # PER32-S for human Per3. Antibody crossreactivity in various species is not established. 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:

Zylka MJ et al (1998) Neuron 20, 1103-1110; Shearman LP et al (1997) Neuron 19, 1261-1269

Citations of ADI's Per 3 antibodies

(2) Field MD (2000) Neuron 2000 25: 437

*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.

PER31-S-A-P 70911J

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com

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@lifetechindia.com Website: www.lifetechindia.com