

Product Specification Sheet

**MOP3 (BMAL1) Antibodies**

<b>Cat.</b> MOP31-S	Rabbit Anti-Human MOP3 antiserum # 1	<b>SIZE:</b> 100 ul
<b>Cat.</b> MOP31-A	Rabbit Anti-Human MOP3 IgG #1 (aff pure)	<b>SIZE:</b> 100 ug
<b>Cat.</b> MOP31-P	Human MOP3 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 *RIGU1*) 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. Mouse *Clock* (855 aa) is abundantly expressed in brain (SCN, pyramidal cortex, hippocampus) as well as in other tissues (eye, total brain, testes, 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.

Basic-helix-loop-helix-PAS orphan protein, **MOP3** (Members Of PAS Superfamily; also known as **BMAL1/JAP3/PAS3**; 626 aa) is a general dimerization partner for several PAS superfamily of transcription regulators. MOP3 interacts with **MOP4** (also known as NPAS2; 626 aa), *Clock*, HIF1 $\alpha$ , and HIF2 $\alpha$ . MOP4 is a brain specific homolog of *Clock*.

**Source of Antigen and Antibodies**

<b>Antigen</b>	15-aa peptide from human <b>MOP3 (1)</b> ; <b>Designation ( MOP31-P, control/blocking peptide)</b> conjugated to KLH; epitope location ~ C-terminus
<b>Ab Host/type</b>	Rabbit, Polyclonal unpurified antiserum (#MOP31-S) and IgG, purified over antigen-agarose (Cat # MOP31-A). This antibody is also raised in <b>chickens</b> (cat # MOP22-S).
<b>2-Ab</b>	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
<b>-ve control IgG</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 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 -200C and powder at 40C or -200C..

**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 -200C or below.  
**Shipping:** 40C 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).

**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 cited in refs. 2.

**Specificity & Cross-reactivity**

Human MOP31-P sequence is 100% conserved in related proteins from other species (rat TIC; human bMAL1a & bMAL1b, PAS3, JAP3, and mouse Arnt3) (2). Antibody cross-reactivity with MOP3 from various 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 (see detailed protocol see detailed protocol at the web site).

**General References:** Hogenesch JB et al (1997) J Biol. Chem. 272, 8581-8593; Hogenesch JB et al (1998) PNAS 95, 5474; Wolting CD et al (1998) Mamm. Genome 9, 463. Takahata S et al (1998) BBRC 248, 789-794.

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

**Related material available from ADI**

Anti-Mouse/human Per1-3, *Clock*, MOPs, CRY1-2

MOP31-S-A-P 71209A