

Product Specification Sheet

MOP4 (NPAS2) Antibodies

Cat. MOP41-S	Rabbit Anti-Human MOP4 antiserum # 1	SIZE: 100 ul
Cat. MOP41-A	Rabbit Anti-Human MOP4 IgG #1 (aff pure)	SIZE: 100 ug
Cat. MOP41-P	Human MOP4 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* (*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, testis, 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*, *HIF1α*, and *HIF2α*. MOP4 is a brain specific homolog of *Clock*.

Source of Antigen and Antibodies

Antigen	19-aa peptide of human MOP4 (protein accession #, refs 1) ; Designated (MOP41-P or control peptide) conjugated to KLH; epitope location ~ Mid-region
Ab Host/type	Rabbit, Polyclonal antiserum # MOP41-S and IgG, purified over antigen-agarose (Cat # MOP41-A). This antibody is also raised in chickens (cat # MOP42-S).
2-Ab	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control IgG	# 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 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 -20OC and powder at 4oC or -20oC..

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 -20oC or below.
Shipping: 4oC 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 MOP41-P sequence is 78% conserved in chicken and 73% in mouse MOP4/NPAS2. Antibody cross-reactivity with MOP4 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; Zhou YD et al (1997) PNAS 94, 713-718.

Citations of ADI's MOP4 antibodies

Napoli C et al (2002) Circulation 105, 1360.

*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*.

MOP41-S-A-P 71210A