ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Drosophila Brain and Muscle ARNT-Like 1 (dBMAL1/MOP3/CYCLE) Antibodies

Cat. BMALD11-S	**Rabbit** Anti-dBMAL1 antiserum # 1	**SIZE**: 100 ul
Cat. BMALD11-A	**Rabbit** Anti-dBMAL1 IgG (aff pure)	**SIZE**: 100 ug
Cat. BMALD11-P	dBMAL1 Control/blocking peptide	**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. Mouse *Clock* (855 aa) 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. 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. Drosohila BMAL (413 aa).

Source of Antigen and Antibodies

Antigen	A 22-aa peptide of **Drosophila BMAL1** (413 aa, refs 1) ; **Designated (BMALD11-P or control peptide)** conjugated to KLH; Epitope ~N-terminus
Ab Host/type	Rabbit, Polyclonal antiserum # **BMALD11**-S and IgG, purified over antigen-agarose (Cat # **BMALD11**-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control IgG	Cat # 20009-1, Rabbit (non-immune) Serum 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: not tested. We suggest the use of affinity purified antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

Drosophila BMALD11-P sequence has no significant sequence homology with mammalian Clock or Per proteins. Significant sequence homology of the BMALD11-P sequence is seen with mammalian USFs (Upstream Stimulatory Factors 1 and 2) and human and mouse BMAL1 and ARNTs. Antibody crossreactivity with these proteins has not been not tested. 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 at the web site.

General References:

Darlington TK et al (1998) Science 280, 1599-1603; Rutila JE et al (1998) Cell 93, 805-814; Bae K et al (1998) Gene accession # 3219728.

*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, Cryptochromes CRY1 and CRY2.

BMALD11-S-A-P 71210A

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