SANTA CRUZ BIOTECHNOLOGY, INC.

# BMAL2 (P-13): sc-109218

## BACKGROUND

BMAL2, also known as ARNTL2 (aryl hydrocarbon receptor nuclear translocator-like 2), MOP9, CLIF or PASD9, is a 636 amino acid protein that localizes to the nucleus and contains one bHLH (basic helix-loop-helix) domain, one PAC (PAS-associated C-terminal) domain and two PAS (PER-ARNT-SIM) domains. Expressed at high levels in placenta and brain and at lower levels in liver, thymus, heart, lung and kidney, BMAL2 functions as a component of the circadian core oscillator, which includes a variety of proteins that work in tandem to activate the transcription of target genes. More specifically, BMAL2, when functioning as a component of the core oscillator, binds to the E-box element (3'-CACGTG-5') of target DNA, thus inducing transcription. Multiple isoforms of BMAL2 exist due to alternative splicing events.

## REFERENCES


1. Ikeda, M., Yu, W., Hirai, M., Ebisawa, T., Honma, S., Yoshimura, K., Honma, K.I. and Nomura, M. 2000. cDNA cloning of a novel bHLH-PAS transcription factor superfamily gene, BMAL2: its mRNA expression, subcellular distribution, and chromosomal localization. Biochem. Biophys. Res. Commun. 275: 493-502.
2. Maemura, K., de la Monte, S.M., Chin, M.T., Layne, M.D., Hsieh, C.M., Yet, S.F., Perrella, M.A. and Lee, M.E. 2000. CLIF, a novel cycle-like factor, regulates the circadian oscillation of plasminogen activator inhibitor-1 gene expression. J. Biol. Chem. 275: 36847-36851.
3. Hogenesch, J.B., Gu, Y.Z., Moran, S.M., Shimomura, K., Radcliffe, L.A., Takahashi, J.S. and Bradfield, C.A. 2000. The basic helix-loop-helix-PAS protein MOP9 is a brain-specific heterodimeric partner of circadian and hypoxia factors. J. Neurosci. 20: RC83.
4. Okano, T., Yamamoto, K., Okano, K., Hirota, T., Kasahara, T., Sasaki, M., Takanaka, Y. and Fukada, Y. 2001. Chicken pineal clock genes: implication of BMAL2 as a bidirectional regulator in circadian clock oscillation. Genes Cells 6: 825-836.
5. Schoenhard, J.A., Eren, M., Johnson, C.H. and Vaughan, D.E. 2002. Alternative splicing yields novel BMAL2 variants: tissue distribution and functional characterization. Am. J. Physiol., Cell Physiol. 283: C103-C114.
6. Dardente, H. and Cermakian, N. 2007. Molecular circadian rhythms in central and peripheral clocks in mammals. Chronobiol. Int. 24: 195-213.
7. Shi, J., Wittke-Thompson, J.K., Badner, J.A., Hattori, E., Potash, J.B., Willour, V.L., McMahon, F.J., Gershon, E.S. and Liu, C. 2008. Clock genes may influence bipolar disorder susceptibility and dysfunctional circadian rhythm. Am. J. Med. Genet. B Neuropsychiatr. Genet. 147B: 1047-1055.
8. Onishi, Y., Hanai, S., Ohno, T., Hara, Y. and Ishida, N. 2008. Rhythmic SAF-A binding underlies circadian transcription of the BMAL1 gene. Mol. Cell. Biol. 28: 3477-3488.


## CHROMOSOMAL LOCATION

Genetic locus: Arntl2 (mouse) mapping to 6 G3.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## SOURCE

BMAL2 (P-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of BMAL2 of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-109218 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-109218 X, 200 µg/0.1 ml.

## APPLICATIONS

BMAL2 (P-13) is recommended for detection of BMAL2 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for BMAL2 siRNA (m): sc-141718, BMAL2 shRNA Plasmid (m): sc-141718-SH and BMAL2 shRNA (m) Lentiviral Particles: sc-141718-V.

BMAL2 (P-13) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of BMAL2: 71 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.