SANTA CRUZ BIOTECHNOLOGY, INC.

BMAL2 (h): 293 Lysate: sc-110662

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 2 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., et al. 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., et al. 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., et al. 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., et al. 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., et al. 2002. Alternative splicing yields novel BMAL2 variants: tissue distribution and functional characterization. Am. J. Physiol., Cell Physiol. 283: C103-C114.
6. Dardente, H., et al. 2007. Molecular circadian rhythms in central and peripheral clocks in mammals. Chronobiol. Int. 24: 195-213.
7. Shi, J., et al. 2008. Clock genes may influence bipolar disorder susceptibility and dysfunctional circadian rhythm. Am. J. Med. Genet. B Neuropsychiatr. Genet. 147B: 1047-1055.
8. Ciarleglio, C.M., et al. 2008. Genetic differences in human circadian clock genes among worldwide populations. J. Biol. Rhythms 23: 330-340.
9. Onishi, Y., et al. 2008. Rhythmic SAF-A binding underlies circadian transcription of the BMAL1 gene. Mol. Cell. Biol. 28: 3477-3488.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: ARNTL2 (human) mapping to 12p11.23.

PRODUCT

BMAL2 (h): 293 Lysate represents a lysate of human BMAL2 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

BMAL2 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive BMAL2 antibodies. Recommended use: 10-20 µl per lane.

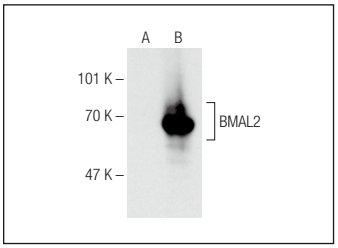
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

BMAL2 (C-11): sc-365469 is recommended as a positive control antibody for Western Blot analysis of enhanced human BMAL2 expression in BMAL2 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



BMAL2 (C-11): sc-365469. Western blot analysis of BMAL2 expression in non-transfected: sc-110760 (**A**) and human BMAL2 transfected: sc-110662 (**B**) 293 whole cell lysates.

RESEARCH USE

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