

BMAL1 (B-1): sc-365645

BACKGROUND

AhR, Arnt 1, Arnt 2 and BMAL1 are members of a family of transcription factors that contain a basic helix-loop-helix motif and a common "PAS" motif. The aromatic (aryl) hydrocarbon receptor, AhR, is a ligand dependent transcription factor that interacts with specific DNA sequences termed xenobiotic responsive elements (XREs) to activate several genes including CYP1A1, glutathione S-transferase Ya subunit and DT-diaphorase. The Ah Receptor nuclear translocator proteins (Arnt 1 or Arnt 2) are required for ligand-dependent nuclear translocation of the Ah Receptor and are also necessary for Ah Receptor binding to the XRE element. BMAL1 (brain and muscle Arnt-like protein 1), also designated Arnt3, TIC, JAP3 or MOP3, has been shown to dimerize with Clock and bind to the promoter region of mPer1, suggesting that this protein plays a role in regulation of circadian oscillation in mammals.

REFERENCES

- Reyes, H., et al. 1992. Identification of the Ah Receptor nuclear translocator protein (Arnt) as a component of the DNA binding form of the Ah Receptor. *Science* 256: 1193-1195.
- Sogawa, K., et al. 1995. Transcriptional activation domains of the Ah Receptor and Ah Receptor nuclear translocator. *J. Cancer Res. Clin. Oncol.* 121: 612-620.
- Drutel, G., et al. 1996. Cloning and selective expression in brain and kidney of Arnt2 homologous to the Ah Receptor nuclear translocator (Arnt). *Biochem. Biophys. Res. Commun.* 225: 333-339.

CHROMOSOMAL LOCATION

Genetic locus: ARNTL (human) mapping to 11p15.2; Arntl (mouse) mapping to 7 F1.

SOURCE

BMAL1 (B-1) is a mouse monoclonal antibody raised against amino acids 441-610 mapping near the C-terminus of BMAL1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-365645 X, 200 µg/0.1 ml.

BMAL1 (B-1) is available conjugated to agarose (sc-365645 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365645 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365645 PE), fluorescein (sc-365645 FITC), Alexa Fluor[®] 488 (sc-365645 AF488), Alexa Fluor[®] 546 (sc-365645 AF546), Alexa Fluor[®] 594 (sc-365645 AF594) or Alexa Fluor[®] 647 (sc-365645 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-365645 AF680) or Alexa Fluor[®] 790 (sc-365645 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

BMAL1 (B-1) is recommended for detection of BMAL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 BMAL1 siRNA (h): sc-38165, BMAL1 siRNA (m): sc-38166, BMAL1 siRNA (r): sc-77369, BMAL1 shRNA Plasmid (h): sc-38165-SH, BMAL1 shRNA Plasmid (m): sc-38166-SH, BMAL1 shRNA Plasmid (r): sc-77369-SH, BMAL1 shRNA (h) Lentiviral Particles: sc-38165-V, BMAL1 shRNA (m) Lentiviral Particles: sc-38166-V and BMAL1 shRNA (r) Lentiviral Particles: sc-77369-V.

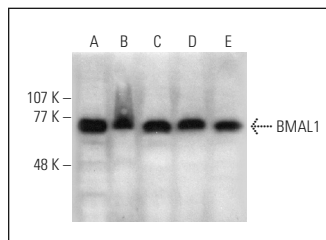
BMAL1 (B-1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of BMAL1: 69 kDa.

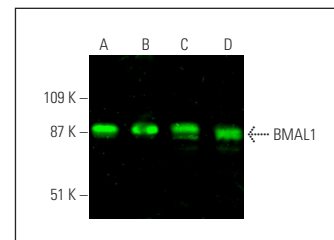
Molecular Weight (observed) of BMAL1: 75-86 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, 3T3-L1 cell lysate: sc-2243 or HeLa whole cell lysate: sc-2200.

DATA



BMAL1 (B-1) HRP: sc-365645 HRP. Direct western blot analysis of BMAL1 expression in NIH/3T3 (A), 3T3-L1 (B), A549 (C), U-251-MG (D) and HeLa (E) whole cell lysates.



BMAL1 (B-1): sc-365645. Near-infrared western blot analysis of BMAL1 expression in A549 (A), NIH/3T3 (B), U-251-MG (C) and HeLa (D) whole cell lysates. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

- Lipton, J.O., et al. 2015. The circadian protein BMAL1 regulates translation in response to S6K1-mediated phosphorylation. *Cell* 161: 1138-1151.
- Guo, D., et al. 2018. Tyrosine hydroxylase down-regulation after loss of Abelson helper integration site 1 (AHI1) promotes depression via the circadian clock pathway in mice. *J. Biol. Chem.* 293: 5090-5101.
- Brigidi, G.S., et al. 2019. Genomic decoding of neuronal depolarization by stimulus-specific NPAS4 heterodimers. *Cell* 179: 373-391.e27.
- Takaguri, A., et al. 2020. The role of circadian clock gene BMAL1 in vascular proliferation. *Eur. J. Pharmacol.* 872: 172924.

RESEARCH USE

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