SANTA CRUZ BIOTECHNOLOGY, INC.

Arnt 1 (H-10): sc-55526

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Arnt 1 (aryl hydrocarbon receptor nuclear translocator), also known as HIF1B, TANGO, bHLHe2, HIF1BETA, HIF-1β or ARNT, is a 789 amino acid nuclear protein that contains a basic helix-loop-helix (bHLH) domain, a PAC (PAS-associated C-terminal) domain and two PAS (PER-ARNT-SIM) domains.

CHROMOSOMAL LOCATION

Genetic locus: ARNT (human) mapping to 1q21.3; Arnt (mouse) mapping to 3 F2.1.

SOURCE

Arnt 1 (H-10) is a mouse monoclonal antibody raised against amino acids 520-692 of Arnt 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Arnt 1 (H-10) is available conjugated to agarose (sc-55526 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-55526 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-55526 PE), fluorescein (sc-55526 FITC), Alexa Fluor® 488 (sc-55526 AF488), Alexa Fluor® 546 (sc-55526 AF546), Alexa Fluor® 594 (sc-55526 AF594) or Alexa Fluor® 647 (sc-55526 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-55526 AF680) or Alexa Fluor® 790 (sc-55526 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Arnt 1 (H-10) is recommended for detection of Arnt 1 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).

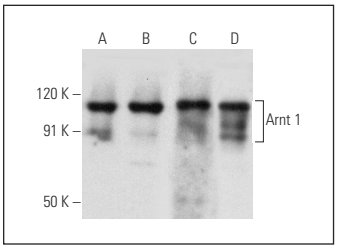
Suitable for use as control antibody for Arnt 1 siRNA (h): sc-29733, Arnt 1 siRNA (m): sc-29734, Arnt 1 siRNA (r): sc-156041, Arnt 1 shRNA Plasmid (h): sc-29733-SH, Arnt 1 shRNA Plasmid (m): sc-29734-SH, Arnt 1 shRNA Plasmid (r): sc-156041-SH, Arnt 1 shRNA (h) Lentiviral Particles: sc-29733-V, Arnt 1 shRNA (m) Lentiviral Particles: sc-29734-V and Arnt 1 shRNA (r) Lentiviral Particles: sc-156041-V.

Molecular Weight of Arnt 1: 95 kDa.

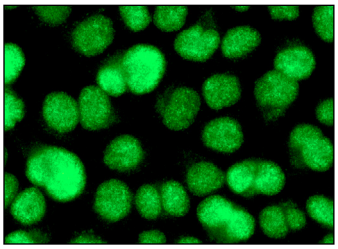
STORAGE

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

DATA



Arnt 1 (H-10): sc-55526. Western blot analysis of Arnt 1 expression in Hep G2 (**A**), MDA-MB-231 (**B**), PC-12 (**C**) and RPE-J (**D**) whole cell lysates.



Arnt 1 (H-10): sc-55526. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Lin, H.H., et al. 2011. Andrographolide down-regulates hypoxia-inducible factor-1α in human non-small cell lung cancer A549 cells. Toxicol. Appl. Pharmacol. 250: 336-345.
2. Ohno, M., et al. 2012. All-*trans* retinoic acid inhibits the recruitment of ARNT to DNA, resulting in the decrease of CYP1A1 mRNA expression in Hep G2 cells. Biochem. Biophys. Res. Commun. 417: 484-489.
3. Chen, W., et al. 2016. Targeting renal cell carcinoma with a HIF-2 antagonist. Nature 539: 112-117.
4. Zhang, H., et al. 2017. Combination of betulinic acid and chidamide inhibits acute myeloid leukemia by suppression of the HIF1α pathway and generation of reactive oxygen species. Oncotarget 8: 94743-94758.
5. Haque, M., et al. 2019. The Kaposi's sarcoma-associated herpesvirus ORF34 protein interacts and stabilizes HIF-2α via binding to the HIF-2α bHLH and PAS domains. J. Virol. 93: e00764-19.
6. Persson, C.U., et al. 2020. ARNT-dependent HIF-2 transcriptional activity is not sufficient to regulate downstream target genes in neuroblastoma. Exp. Cell Res. 388: 111845.
7. Yu, Q., et al. 2021. S-allylmercaptocysteine improves nonalcoholic steatohepatitis by enhancing AHR/Nrf2-mediated drug metabolising enzymes and reducing NFκB/IκBα and NLRP3/6-mediated inflammation. Eur. J. Nutr. 60: 961-973.
8. Macias, D., et al. 2021. Targeting HIF2α-ARNT hetero-dimerisation as a novel therapeutic strategy for pulmonary arterial hypertension. Eur. Respir. J. 57: 1902061.
9. Ji, L., et al. 2022. Luteolin ameliorates hypoxia-induced pulmonary hypertension via regulating HIF-2α-Arg-NO axis and PI3K-AKT-eNOS-NO signaling pathway. Phytomedicine 104: 154329.

RESEARCH USE

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