

Arnt 1 (A-3): sc-17811

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-1 β 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.

REFERENCES

1. 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.
2. 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.
3. 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: ARNT (human) mapping to 1q21.3; Arnt (mouse) mapping to 3 F2.1.

SOURCE

Arnt 1 (A-3) is a mouse monoclonal antibody raised against amino acids 520-692 mapping near the C-terminus of Arnt 1 of human origin.

PRODUCT

Each vial contains 200 μ g 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-17811 X, 200 μ g/0.1 ml.

Arnt 1 (A-3) is available conjugated to agarose (sc-17811 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17811 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17811 PE), fluorescein (sc-17811 FITC), Alexa Fluor[®] 488 (sc-17811 AF488), Alexa Fluor[®] 546 (sc-17811 AF546), Alexa Fluor[®] 594 (sc-17811 AF594) or Alexa Fluor[®] 647 (sc-17811 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-17811 AF680) or Alexa Fluor[®] 790 (sc-17811 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

Arnt 1 (A-3) is recommended for detection of Arnt 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:2,000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

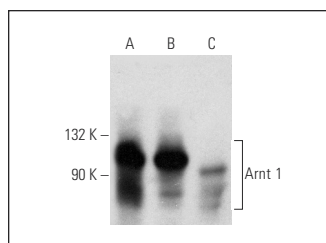
Suitable for use as control antibody for Arnt 1 siRNA (h): sc-29733, Arnt 1 siRNA (m): sc-29734, Arnt 1 siRNA (r): sc-156041, Arnt 1 shRNA Plasmid (h): sc-29733-SH, Arnt 1 shRNA Plasmid (m): sc-29734-SH, Arnt 1 shRNA Plasmid (r): sc-156041-SH, Arnt 1 shRNA (h) Lentiviral Particles: sc-29733-V, Arnt 1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

Arnt 1 (A-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

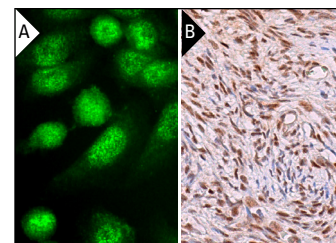
Molecular Weight of Arnt 1: 95 kDa.

Positive Controls: MDA-MB-231 cell lysate: sc-2232, Hep G2 cell lysate: sc-2227 or RPE-J cell lysate: sc-24771.

DATA



Arnt 1 (A-3): sc-17811. Western blot analysis of Arnt 1 expression in Hep G2 (A), MDA-MB-231 (B) and RPE-J (C) whole cell lysates.



Arnt 1 (A-3): sc-17811. Immunofluorescence staining of formalin-fixed SW480 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing nuclear staining of ovarian stroma cells and oocytes (B).

SELECT PRODUCT CITATIONS

1. Ceradini, D.J., et al. 2008. Decreasing intracellular superoxide corrects defective ischemia-induced new vessel formation in diabetic mice. *J. Biol. Chem.* 283: 10930-10938.
2. Bianchi-Smiraglia, A., et al. 2018. Inhibition of the aryl hydrocarbon receptor/polyamine biosynthesis axis suppresses multiple myeloma. *J. Clin. Invest.* 128: 4682-4696.
3. Vogel, C.F.A., et al. 2019. A protective role of aryl hydrocarbon receptor repressor in inflammation and tumor growth. *Cancers* 11: 589.
4. Rijjo, M.P., et al. 2021. Roles of the ubiquitin ligase CUL4B and ADP-ribosyltransferase TipARP in TCDD-induced nuclear export and proteasomal degradation of the transcription factor AHR. *J. Biol. Chem.* 297: 100886.

STORAGE

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