SANTA CRUZ BIOTECHNOLOGY, INC.

Ah Receptor (A-3): sc-133088

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) is the prototype for a family of toxic halogenated aromatic compounds that are thought to cause adverse reproductive, immunologic and metabolic effects. Many biological responses to TCDD are mediated through ligand binding to the aromatic hydrocarbon (Ah) receptor, also known as AhR. Ah Receptor is a ligand dependent transcription factor that interacts with specific DNA sequences, termed xenobiotic responsive elements (XREs), and that lies upstream of TCDD-inducible genes. Upon binding to the ligand, Ah Receptor binds to the Ah Receptor nuclear translocator (Arnt), and the complex is translocated from the cytoplasm to the nucleus. Arnt is required for Ah R eceptor to bind to XRE. Ah Receptor and Arnt are members of a family of transcription factors that contain a basic helix-loop-helix motif and a common "PAS" motif.

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. Okey, A.B., et al. 1994. The Ah Receptor: mediator of the toxicity of 2,3,7,8-tetrachlorobenzo-p-dioxin (TCDD) and related compounds. Toxicol. Lett. 70: 1-22.
3. Bacsi, S.G., et al. 1996. Functional characterization of DNA-binding domains of the subunits of the heterodimeric aryl hydrocarbon receptor complex imputing novel and canonical basic helix-loop-helix protein-DNA interactions. J. Biol. Chem. 271: 8843-8850.

CHROMOSOMAL LOCATION

Genetic locus: AHR (human) mapping to 7p21.1; Ahr (mouse) mapping to 12 A3.

SOURCE

Ah Receptor (A-3) is a mouse monoclonal antibody raised against amino acids 637-848 of Ah Receptor of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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-133088 X, 200 µg/0.1 ml.

Ah Receptor (A-3) is available conjugated to agarose (sc-133088 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133088 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133088 PE), fluorescein (sc-133088 FITC), Alexa Fluor® 488 (sc-133088 AF488), Alexa Fluor® 546 (sc-133088 AF546), Alexa Fluor® 594 (sc-133088 AF594) or Alexa Fluor® 647 (sc-133088 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133088 AF680) or Alexa Fluor® 790 (sc-133088 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

Ah Receptor (A-3) is recommended for detection of Ah Receptor 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), immunohistochemistry (including paraffin-embedded sections) (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 Ah Receptor siRNA (h): sc-29654, Ah Receptor siRNA (m): sc-29655, Ah Receptor siRNA (r): sc-72178, Ah Receptor shRNA Plasmid (h): sc-29654-SH, Ah Receptor shRNA Plasmid (m): sc-29655-SH, Ah Receptor shRNA Plasmid (r): sc-72178-SH, Ah Receptor shRNA (h) Lentiviral Particles: sc-29654-V, Ah Receptor shRNA (m) Lentiviral Particles: sc-29655-V and Ah Receptor shRNA (r) Lentiviral Particles: sc-72178-V.

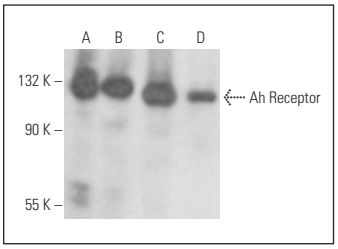
Ah Receptor (A-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of Ah Receptor: 96 kDa.

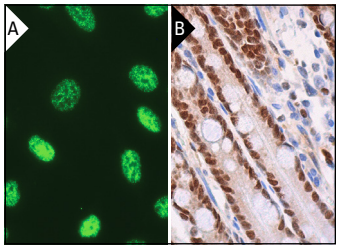
Molecular Weight (observed) of Ah Receptor: 122 kDa.

Positive Controls: PC-3 cell lysate: sc-2220, MDA-MB-435S whole cell lysate: sc-364184 or A-431 whole cell lysate: sc-2201.

DATA



Ah Receptor (A-3): sc-133088. Western blot analysis of Ah Receptor expression in PC-3 (**A**), MDA-MB-435S (**B**), A-431 (**C**) and COLO 205 (**D**) whole cell lysates.



Ah Receptor (A-3): sc-133088. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Terashima, J., et al. 2011. Induction of CYP1 family members under low-glucose conditions requires AhR expression and occurs through the nuclear translocation of AhR. Drug Metab. Pharmacokinet. 26: 577-583.
2. Kou, Z., et al. 2022. Oxidative stress modulates expression of immune checkpoint genes via activation of AhR signaling. Toxicol. Appl. Pharmacol. 457: 116314.
3. Kim, J., et al. 2025. Mutated IL-32θ (A94V) inhibits COX2, GM-CSF and CYP1A1 through AhR/ARNT and MAPKs/NF-κB/AP-1 in keratinocytes exposed to PM10. Sci. Rep. 15: 1994.

RESEARCH USE

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