SANTA CRUZ BIOTECHNOLOGY, INC.

Ah Receptor (C-4): sc-74572

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 Receptor 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.
4. Hirose, K., et al. 1996. cDNA cloning and tissue-specific expression of a novel basic helix-loop-helix/PAS factor (Arrnt2) with close sequence similarity to the aryl hydrocarbon receptor nuclear translocator (Arnt). Mol. Cell. Biol. 16: 1706-1713.

CHROMOSOMAL LOCATION

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

SOURCE

Ah Receptor (C-4) 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-74572 X, 200 µg/0.1 ml.

STORAGE

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

RESEARCH USE

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

APPLICATIONS

Ah Receptor (C-4) 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 shRNA Plasmid (h): sc-29654-SH, Ah Receptor shRNA Plasmid (m): sc-29655-SH, Ah Receptor shRNA (h) Lentiviral Particles: sc-29654-V and Ah Receptor shRNA (m) Lentiviral Particles: sc-29655-V.

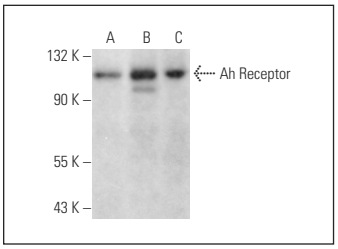
Ah Receptor (C-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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

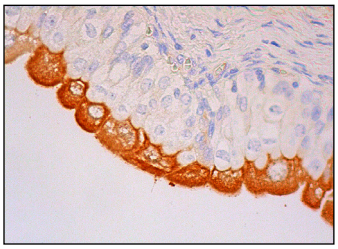
Molecular Weight (observed) of Ah Receptor: 122 kDa.

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

DATA



Ah Receptor (C-4): sc-74572. Western blot analysis of Ah Receptor expression in MDA-MB-435S (**A**), A-431 (**B**) and PC-3 (**C**) whole cell lysates.



Ah Receptor (C-4): sc-74572. Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic staining of urothelial cells.

SELECT PRODUCT CITATIONS

1. Panchanathan, R., et al. 2015. Activation of p53 in human and murine cells by DNA-damaging agents differentially regulates aryl hydrocarbon receptor levels. Int. J. Toxicol. 34: 242-249.
2. Chowdhury, M.M.I., et al. 2021. TLR4 may be a novel indole-3-acetic acid receptor that is implicated in the regulation of CYP1A1 and TNFα expression depending on the culture stage of Caco-2 cells. Biosci. Biotechnol. Biochem. 85: 2011-2021.

CONJUGATES

See **Ah Receptor (A-3): sc-133088** for Ah Receptor antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.