SANTA CRUZ BIOTECHNOLOGY, INC.

AHRR (5G11): sc-293297

BACKGROUND

AHRR (aryl-hydrocarbon receptor repressor), also known as bHLHe77 (class E basic helix-loop-helix protein 77), is a 701 amino acid protein. Encoded by a gene that maps to human chromosome 5p15.33, AHRR exists as three alternatively spliced isoforms. AHRR localizes initially in cytoplasm, interacts with Arnt 1 and translocates to nucleus for prominent localization. Containing one basic helix-loop-helix (bHLH) domain and one PAS (PER-ARNT-SIM) domain, AHRR is highly expressed in testis, lung, ovary, spleen, pancreas, kidney and thymus. AHRR is also highly expressed in mononuclear cells from umbilical cord blood and autoregulates its expression by associating with its own xenobiotic response element (XRE) site. AHRR regulates dioxin toxicity and participates in cell growth regulation and differentiation. Suppressing transcription activity of Ah Receptor, AHRR competes with the transcription factor for heterodimer formation with Arnt 1, and subsequently binds to the XRE sequence in the promoter. AHRR also suppresses CYP1A1 by binding the XRE sequence and recruiting ANKRA, HDAC4 or HDAC5. AHRR may be linked to male infertility and endometriosis susceptibilty.

REFERENCES

1. Fujita, H., et al. 2002. Characterization of the aryl hydrocarbon receptor repressor gene and association of its Pro185Ala polymorphism with micropenis. Teratology 65: 10-18.
2. Watanabe, M., et al. 2004. Association of male infertility with Pro185Ala polymorphism in the aryl hydrocarbon receptor repressor gene: implication for the susceptibility to dioxins. Fertil. Steril. 82: 1067-1071.
3. Yamamoto, J., et al. 2004. Characteristic expression of aryl hydrocarbon receptor repressor gene in human tissues: organ-specific distribution and variable induction patterns in mononuclear cells. Life Sci. 74: 1039-1049.
4. Tsuchiya, M., et al. 2005. Analysis of the AhR, ARNT, and AHRR gene polymorphisms: genetic contribution to endometriosis susceptibility and severity. Fertil. Steril. 84: 454-458.
5. Kanno, Y., et al. 2007. Identification of intracellular localization signals and of mechanisms underlining the nucleocytoplasmic shuttling of human aryl hydrocarbon receptor repressor. Biochem. Biophys. Res. Commun. 364: 1026-1031.
6. Haarmann-Stemmann, T., et al. 2007. Analysis of the transcriptional regulation and molecular function of the aryl hydrocarbon receptor repressor in human cell lines. Drug Metab. Dispos. 35: 2262-2269.
7. Merisalu, A., et al. 2007. The contribution of genetic variations of aryl hydrocarbon receptor pathway genes to male factor infertility. Fertil. Steril. 88: 854-859.

CHROMOSOMAL LOCATION

Genetic locus: AHRR (human) mapping to 5p15.33.

SOURCE

AHRR (5G11) is a mouse monoclonal antibody raised against amino acids 617-715 of AHRR of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AHRR (5G11) is recommended for detection of AHRR of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AHRR siRNA (h): sc-91825, AHRR shRNA Plasmid (h): sc-91825-SH and AHRR shRNA (h) Lentiviral Particles: sc-91825-V.

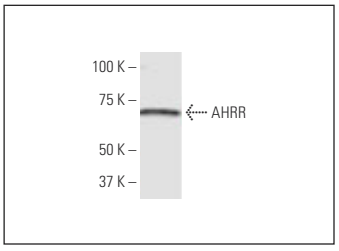
Molecular Weight of AHRR: 80 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

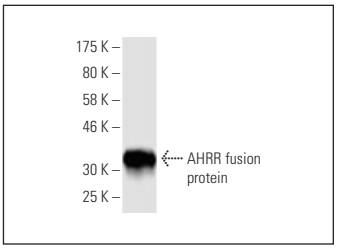
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



AHRR (5G11): sc-293297. Western blot analysis of AHRR expression in A-431 whole cell lysate.



AHRR (5G11): sc-293297. Western blot analysis of human recombinant AHRR fusion protein.

SELECT PRODUCT CITATIONS

1. Ribeiro, M.A., et al. 2018. Integrative transcriptome and microRNome analysis identifies dysregulated pathways in human Sertoli cells exposed to TCDD. Toxicology 409: 112-118.

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.