SANTA CRUZ BIOTECHNOLOGY, INC.

AHRR (D-14): sc-138745

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: AHRR (human) mapping to 5p15.33; Ahrr (mouse) mapping to 13 C1.

SOURCE

AHRR (D-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of AHRR of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-138745 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AHRR (D-14) is recommended for detection of AHRR of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AHRR (D-14) is also recommended for detection of AHRR in additional species, including equine, canine, porcine and avian.

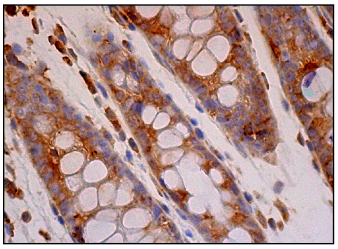
Suitable for use as control antibody for AHRR siRNA (h): sc-91825, AHRR siRNA (m): sc-140918, AHRR shRNA Plasmid (h): sc-91825-SH, AHRR shRNA Plasmid (m): sc-140918-SH, AHRR shRNA (h) Lentiviral Particles: sc-91825-V and AHRR shRNA (m) Lentiviral Particles: sc-140918-V.

Molecular Weight of AHRR: 80 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



AHRR (D-14): sc-138745. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic staining of glandular cells.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.