SANTA CRUZ BIOTECHNOLOGY, INC.

AKR7A (L-18): sc-27765

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The aldo-keto reductase 7 (AKR7) family includes AKR7A2, AKR7A3 and AKR7A4 in human, AKR7A5 in mouse and AKR7A2 in rat, all of which function in the metabolism of Aflatoxin B_1 and other dicarbonyl-containing compounds. More specifically, AKR7A proteins are involved in the metabolism of compounds with ketone groups on adjacent carbon atoms in a broad range of tissues, notably the liver. The human AKR7A2 gene maps to human chromosome 1p35-36, a region frequently deleted in sporadic colorectal cancer. The functional significance of this correlation lies in the constitutive expression of AKR7A2 in human liver to eliminate Aflatoxin (an environmental carcinogen), thus acting as an endogenous chemo-preventative agent.

REFERENCES

1. Ellis, E.M., et al. 1995. Substrate specificity of an Aflatoxin-metabolizing aldehyde reductase. Biochem. J. 312: 535-541.
2. Ireland, L.S., et al. 1998. Molecular cloning, expression and catalytic activity of a human AKR7 member of the aldo-keto reductase superfamily: evidence that the major 2-carboxybenzaldehyde reductase from human liver is a homologue of rat aflatoxin B1-aldehyde reductase. Biochem. J. 332: 21-34.
3. Kelly, V.P., et al. 2000. Purification from rat liver of a novel constitutively expressed member of the aldo-keto reductase 7 family that is widely distributed in extrahepatic tissues. Biochem. J. 348, Part 2: 389-400.
4. Kelly, V.P., et al. 2002. Novel homodimeric and heterodimeric rat γ-hydroxybutyrate synthases that associate with the Golgi apparatus define a distinct subclass of aldo-keto reductase 7 family proteins. Biochem. J. 366: 847-861.
5. Praml, C., et al. 2003. Aflatoxin B1 aldehyde reductase (AFAR) genes cluster at 1p35-1p36.1 in a region frequently altered in human tumour cells. Oncogene 22: 4765-4773.
6. Hyndman, D., et al. 2003. The aldo-keto reductase superfamily homepage. Chem Biol Interact. 143-144: 621-631.

SOURCE

AKR7A (L-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of AKR7A2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-27765 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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

AKR7A (L-18) is recommended for detection of AKR7A2, AKR7A3 and AKR7A4 of human origin, AKR7A5 of mouse origin and AKR7A2 of rat 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of AKR7A2: 40 kDa.

Molecular Weight of AKR7A5: 40 kDa.

Molecular Weight of AKR7A3: 37 kDa.

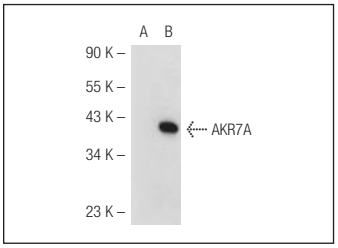
Molecular Weight of AKR7A4: 37 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, AKR7A5 (m): 293T Lysate: sc-124941 or Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



AKR7A (L-18): sc-27765. Western blot analysis of AKR7A expression in non-transfected: sc-117752 (A) and mouse AKR7A transfected: sc-124941 (B) 293T whole cell lysates.

PROTOCOLS

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