

AKR1B10 (AA-1): sc-100501

BACKGROUND

AKR1B10 (aldo-keto reductase family 1 member B10) is also known as aldose reductase-like-1 (ARL-1), small intestine reductase (SI reductase) or aldose reductase-related protein (ARP or hARP). AKR1B10 is found in many tissues but is predominantly expressed in small intestine, colon and adrenal gland. AKR1B10 is an efficient reductase for aliphatic and aromatic aldehydes. It plays a role in steroid metabolism as well as detoxification of aldehydes in digested food, and may be involved in the retinal-retinoic acid signaling pathway. AKR1B10 is prominently overexpressed in non-small cell lung carcinoma and adenocarcinoma. Cigarette smoking is an independent variable responsible for this overexpression. AKR1B10 may play a role regulating cell proliferation and cellular response to carbonyl stress.

REFERENCES

1. Donaghue, K.C., et al. 2005. The association of aldose reductase gene (AKR1B1) polymorphisms with diabetic neuropathy in adolescents. *Diabet. Med.* 22: 1315-1320.
2. Penning, T.M. 2005. AKR1B10: a new diagnostic marker of non-small cell lung carcinoma in smokers. *Clin. Cancer Res.* 11: 1687-1690.
3. Fukumoto, S., et al. 2005. Overexpression of the aldo-keto reductase family protein AKR1B10 is highly correlated with smokers' non-small cell lung carcinomas. *Clin. Cancer Res.* 11: 1776-1785.
4. Gallego, O., et al. 2006. Comparative functional analysis of human medium-chain dehydrogenases, short-chain dehydrogenases/reductases and aldo-keto reductases with retinoids. *Biochem. J.* 399: 101-109.
5. Martin, H.J., et al. 2006. Purification and characterization of AKR1B10 from human liver: role in carbonyl reduction of xenobiotics. *Drug Metab. Dispos.* 34: 464-470.
6. Mashkova, T.D., et al. 2006. Transcription TIMP3, DAPk1 and AKR1B10 genes in squamous cell lung cancer. *Mol. Biol.* 40: 1047-1054.

CHROMOSOMAL LOCATION

Genetic locus: AKR1B10 (human) mapping to 7q33.

SOURCE

AKR1B10 (AA-1) is a mouse monoclonal antibody raised against recombinant AKR1B10 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.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

AKR1B10 (AA-1) is recommended for detection of AKR1B10 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)], 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 AKR1B10 siRNA (h): sc-72341, AKR1B10 shRNA Plasmid (h): sc-72341-SH and AKR1B10 shRNA (h) Lentiviral Particles: sc-72341-V.

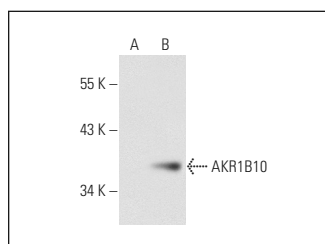
Molecular Weight of AKR1B10: 35 kDa.

Positive Controls: AKR1B10 (h2): 293T Lysate: sc-175413, A549 cell lysate: sc-2413 or Hep G2 cell lysate: sc-2227.

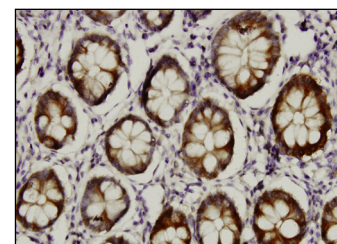
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



AKR1B10 (AA-1): sc-100501. Western blot analysis of AKR1B10 expression in non-transfected: sc-117752 (A) and human AKR1B10 transfected: sc-175413 (B) 293T whole cell lysates.



AKR1B10 (AA-1): sc-100501. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Tao, S., et al. 2014. Oncogenic KRAS confers chemoresistance by upregulating NRF2. *Cancer Res.* 74: 7430-7441.
2. Kerins, M.J., et al. 2017. Fumarate mediates a chronic proliferative signal in fumarate hydratase-inactivated cancer cells by increasing transcription and translation of ferritin genes. *Mol. Cell. Biol.* 37 pii: e00079-17.

RESEARCH USE

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