

# AKR1B10 (S-20): sc-54255

## 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.
7. Yan, R., et al. 2007. Aldo-keto reductase family 1 B10 gene silencing results in growth inhibition of colorectal cancer cells: implication for cancer intervention. *Int. J. Cancer* 121: 2301-2306.
8. Zu, X., et al. 2007. Reduced 293T cell susceptibility to acrolein due to aldose reductase-like-1 protein expression. *Toxicol. Sci.* 97: 562-568.

## CHROMOSOMAL LOCATION

Genetic locus: AKR1B10 (human) mapping to 7q33; 2310005E10Rik (mouse) mapping to 6 B1.

## SOURCE

AKR1B10 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of AKR1B10 of mouse origin.

## STORAGE

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

## 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-54255 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

AKR1B10 (S-20) is recommended for detection of AKR1B10 of mouse and 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).

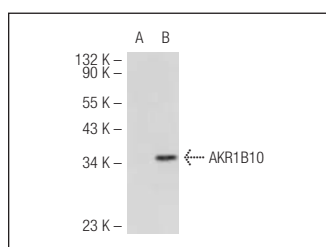
Suitable for use as control antibody for AKR1B10 siRNA (m): sc-72342; and as shRNA Plasmid control antibody for AKR1B10 shRNA Plasmid (m): sc-72342-SH.

Molecular Weight of AKR1B10: 35 kDa.

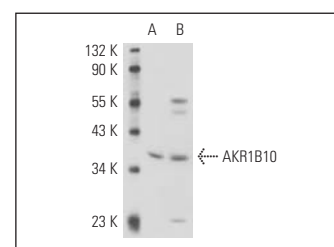
## RECOMMENDED SECONDARY REAGENTS

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



AKR1B10 (S-20): sc-54255. Western blot analysis of AKR1B10 expression in non-transfected: sc-117752 (A) and mouse AKR1B10 transfected: sc-118307 (B) 293T whole cell lysates.



AKR1B10 (S-20): sc-54255. Western blot analysis of AKR1B10 expression in c4 (A) and P 23 (B) whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.