



SZABO SCANDIC

Part of Europa Biosite

Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!



Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic)

AKR1A1 (h5): 293 Lysate: sc-158244

BACKGROUND

AKR1A1 (aldo-keto reductase family 1 member A1), also known as ALR (aldehyde reductase), DD3 (dihydrodiol dehydrogenase 3) or ALDR1 (alcohol dehydrogenase), is a widely and abundantly expressed member of the aldo-keto reductase (AKR) family of proteins. Members of the AKR family are soluble NADPH-dependent oxidoreductases. They play important roles in the metabolism of drugs, carcinogens and reactive aldehydes. AKR1A1 exists as a monomer and catalyzes the reduction of xenobiotic and biogenic aldehydes and ketones to their corresponding alcohols. In particular, AKR1A1 efficiently catalyzes medium-chain and aromatic aldehydes. AKR1A1 participates in the biosynthetic pathways of cholesterol and triglyceride and plays a role in the activation of polycyclic aromatic hydrocarbons (PAHs).

REFERENCES

- Jez, J.M., Flynn, T.G. and Penning, T.M. 1997. A new nomenclature for the aldo-keto reductase superfamily. *Biochem. Pharmacol.* 54: 639-647.
- O'connor, T., Ireland, L.S., Harrison, D.J. and Hayes, J.D. 1999. Major differences exist in the function and tissue-specific expression of human aflatoxin B1 aldehyde reductase and the principal human aldo-keto reductase AKR1 family members. *Biochem. J.* 343: 487-504.
- Barski, O.A., Gabbay, K.H. and Bohren, K.M. 1999. Characterization of the human aldehyde reductase gene and promoter. *Genomics* 60: 188-198.
- Palackal, N.T., Burczynski, M.E., Harvey, R.G. and Penning, T.M. 2001. The ubiquitous aldehyde reductase (AKR1A1) oxidizes proximate carcinogen *trans*-dihydrodiols to o-quinones: potential role in polycyclic aromatic hydrocarbon activation. *Biochemistry* 40: 10901-10910.
- Palackal, N.T., Burczynski, M.E., Harvey, R.G. and Penning, T.M. 2001. Metabolic activation of polycyclic aromatic hydrocarbon *trans*-dihydrodiols by ubiquitously expressed aldehyde reductase (AKR1A1). *Chem. Biol. Interact.* 130-132: 815-824.
- Plebuch, M., Soldan, M., Hungerer, C., Koch, L. and Maser, E. 2007. Increased resistance of tumor cells to daunorubicin after transfection of cDNAs coding for anthracycline inactivating enzymes. *Cancer Lett.* 255: 49-56.
- Holland-Nell, K. and Beck-Sickinger, A.G. 2007. Specifically immobilised aldo/keto reductase AKR1A1 shows a dramatic increase in activity relative to the randomly immobilised enzyme. *Chembiochem* 8: 1071-1076.
- Caino, M.C., Oliva, J.L., Jiang, H., Penning, T.M. and Kazanietz, M.G. 2007. Benzo[a]pyrene-7,8-dihydrodiol promotes checkpoint activation and G₂/M arrest in human bronchoalveolar carcinoma H358 cells. *Mol. Pharmacol.* 71: 744-750.
- Bains, O.S., Takahashi, R.H., Pfeifer, T.A., Grigliatti, T.A., Reid, R.E. and Riggs, K.W. 2008. Two allelic variants of aldo-keto reductase 1A1 exhibit reduced *in vitro* metabolism of daunorubicin. *Drug Metab. Dispos.* 36: 904-910.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: AKR1A1 (human) mapping to 1p34.1.

PRODUCT

AKR1A1 (h5): 293 Lysate represents a lysate of human AKR1A1 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

AKR1A1 (h5): 293 Lysate is suitable as a Western Blotting positive control for human reactive AKR1A1 antibodies. Recommended use: 10-20 µl per lane.

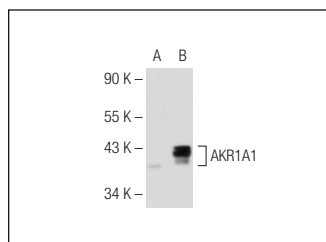
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

AKR1A1 (3B08): sc-100500 is recommended as a positive control antibody for Western Blot analysis of enhanced human AKR1A1 expression in AKR1A1 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



AKR1A1 (3B08): sc-100500. Western blot analysis of AKR1A1 expression in non-transfected: sc-110760 (A) and human AKR1A1 transfected: sc-158244 (B) 293 whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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