

AKR1D1 (m): 293T Lysate: sc-118319

BACKGROUND

AKR1D1 (aldo-keto reductase family 1 member D1), also known as Δ^4 -3-oxosteroid 5 β -reductase (3 α 5 β red) or steroid 5 β -reductase (SRD5B1), is responsible for catalyzing bile acid intermediates and steroid hormones possessing a Δ^4 -3-one structure to 5 β reduced metabolites. The AKR family of proteins are soluble NADPH oxidoreductases. They play important roles in the metabolism of drugs, carcinogens and reactive aldehydes. AKR1D1 is highly expressed in liver, colon and testis. Substrates for AKR1D1 include Testosterone, androstenedione, Progesterone, 17 α -hydroxyprogesterone and the bile acid intermediates 7 α -hydroxy-4-cholesten-3-one and 7 α , 12 α -dihydroxy-4-cholesten-3-one. A deficiency in AKR1D1 may be involved in hepatic dysfunction.

REFERENCES

1. Kondo, K.H., Kai, M.H., Setoguchi, Y., Eggertsen, G., Sjöblom, P., Setoguchi, T., Okuda, K.I. and Björkhem, I. 1994. Cloning and expression of cDNA of human Δ^4 -3-oxosteroid 5 β -reductase and substrate specificity of the expressed enzyme. *Eur. J. Biochem.* 219: 357-363.
2. Clayton, P.T., Mills, K.A., Johnson, A.W., Barabino, A. and Marazzi, M.G. 1996. Δ^4 -3-oxosteroid 5 β -reductase deficiency: failure of ursodeoxycholic acid treatment and response to chenodeoxycholic acid plus cholic acid. *Gut* 38: 623-628.
3. Sumazaki, R., Nakamura, N., Shoda, J., Kurosawa, T. and Tohma, M. 1997. Gene analysis in Δ^4 -3-oxosteroid 5 β -reductase deficiency. *Lancet* 349: 329-329.
4. Charbonneau, A. and Luu-The, V. 1999. Assignment of steroid 5 β -reductase (SRD5B1) and its pseudogene (SRD5BP1) to human chromosome bands 7q32→q33 and 1q23→q25, respectively, by *in situ* hybridization. *Cytogenet. Cell Genet.* 84: 105-106.
5. Charbonneau, A. and The, V.L. 2001. Genomic organization of a human 5 β -reductase and its pseudogene and substrate selectivity of the expressed enzyme. *Biochim. Biophys. Acta* 1517: 228-235.
6. Lemonde, H.A., Custard, E.J., Bouquet, J., Duran, M., Overmars, H., Scambler, P.J. and Clayton, P.T. 2003. Mutations in SRD5B1 (AKR1D1), the gene encoding Δ^4 -3-oxosteroid 5 β -reductase, in hepatitis and liver failure in infancy. *Gut* 52: 1494-1499.
7. Gonzales, E., Cresteil, D., Baussan, C., Dabadie, A., Gerhardt, M.F. and Jacquemin, E. 2004. SRD5B1 (AKR1D1) gene analysis in Δ^4 -3-oxosteroid 5 β -reductase deficiency: evidence for primary genetic defect. *J. Hepatol.* 40: 716-718.
8. Sheehan, P.M., Rice, G.E., Moses, E.K. and Brennecke, S.P. 2005. 5 β -dihydroprogesterone and steroid 5 β -reductase decrease in association with human parturition at term. *Mol. Hum. Reprod.* 11: 495-501.
9. Jin, Y. and Penning, T.M. 2007. Aldo-keto reductases and bioactivation/detoxication. *Annu. Rev. Pharmacol. Toxicol.* 47: 263-292.

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: Akr1d1 (mouse) mapping to 6 B1.

PRODUCT

AKR1D1 (m): 293T Lysate represents a lysate of mouse AKR1D1 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

AKR1D1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive AKR1D1 antibodies. Recommended use: 10-20 μ l per lane.

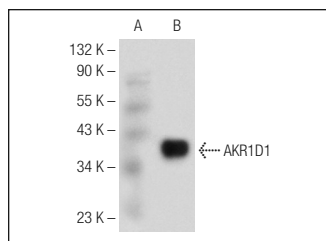
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

AKR1D1 (C-2): sc-365932 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse AKR1D1 expression in AKR1D1 transfected 293T 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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



AKR1D1 (C-2): sc-365932. Western blot analysis of AKR1D1 expression in non-transfected: sc-117752 (A) and mouse AKR1D1 transfected: sc-118319 (B) 293T 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.