

AKR1D1 (C-2): sc-365932

BACKGROUND

AKR1D1 (aldo-keto reductase family 1 member D1), also known as Δ^4 -3-oxosteroid 5- β -reductase (3o5bred) 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 ex-pressed 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., et al. 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., et al. 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., et al. 1997. Gene analysis in Δ^4 -3-oxosteroid 5 β -reductase deficiency. *Lancet* 349: 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.

CHROMOSOMAL LOCATION

Genetic locus: AKR1D1 (human) mapping to 7q33; Akrd1 (mouse) mapping to 6 B1.

SOURCE

AKR1D1 (C-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 13-37 at the N-terminus of AKR1D1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AKR1D1 (C-2) is available conjugated to agarose (sc-365932 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365932 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365932 PE), fluorescein (sc-365932 FITC), Alexa Fluor® 488 (sc-365932 AF488), Alexa Fluor® 546 (sc-365932 AF546), Alexa Fluor® 594 (sc-365932 AF594) or Alexa Fluor® 647 (sc-365932 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365932 AF680) or Alexa Fluor® 790 (sc-365932 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365932 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

AKR1D1 (C-2) is recommended for detection of AKR1D1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

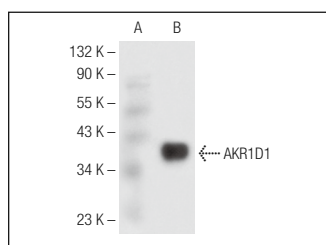
AKR1D1 (C-2) is also recommended for detection of AKR1D1 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for AKR1D1 siRNA (h): sc-61964, AKR1D1 siRNA (m): sc-61965, AKR1D1 shRNA Plasmid (h): sc-61964-SH, AKR1D1 shRNA Plasmid (m): sc-61965-SH, AKR1D1 shRNA (h) Lentiviral Particles: sc-61964-V and AKR1D1 shRNA (m) Lentiviral Particles: sc-61965-V.

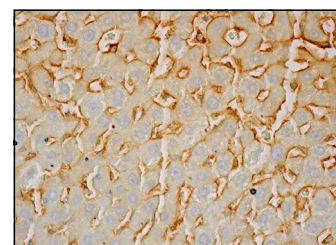
Molecular Weight of AKR1D1: 37 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, mouse liver extract: sc-2256 or AKR1D1 (m): 293T Lysate: sc-118319.

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.



AKR1D1 (C-2): sc-365932. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing membrane staining of hepatocytes and cytoplasmic and membrane staining of hepatic sinusoids.

SELECT PRODUCT CITATIONS

1. Valanejad, L., et al. 2018. Dysregulation of Δ^4 -3-oxosteroid 5 β -reductase in diabetic patients: implications and mechanisms. *Mol. Cell. Endocrinol.* 470: 127-141.

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.

PROTOCOLS

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

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