



# SZABO SCANDIC

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Diagnostik & molekulare Diagnostik



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- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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# DD3 (h5): 293 Lysate: sc-158433

## BACKGROUND

Human liver contains isoforms of dihydrodiol dehydrogenase (DD1, DD2, DD3 and DD4), which belong to the aldo-oxo reductase/aldo-keto reductase (AKR) superfamily, have 20 $\alpha$ - or 3 $\alpha$ -hydroxysteroid dehydrogenase (HSD) activity. DD1 is also designated AKR1C1, DDH or DDH1 while DD2 also can be designated AKR1C2, dDD, BABP or DDH2. AKR1C3 and 3 $\alpha$ -HSD are alternate designations for DD3, while DD4 also can be called AKR1C4, CD or CHDR. DD1 and DD2 are 20 $\alpha$ -HSDs, whereas DD3 and DD4 are the 3 $\alpha$ -HSDs. The multiple human cytosolic dihydrodiol dehydrogenases are involved in the metabolism of xenobiotics, such as polycyclic aromatic hydrocarbons, pesticides and steroid hormones, and are responsible for the reduction of ketone-containing drugs by using NADH or NADPH as a cofactor. The 20 $\alpha$ -HSD catalyzes the reaction of progesterone to the inactive form 20 $\alpha$ -hydroxyprogesterone. The 3 $\alpha$ -HSD is a cytosolic, monomeric, NADPH-dependent oxidoreductase that reduces 3-keto-5-dihydrosteroids to their tetrahydro products. DD1 and DD2 are ubiquitously expressed, whereas DD4 mRNA is restricted to the liver. DD3 is a unique enzyme that can specifically catalyze the dehydrogenation of *trans*-benzenedihydrodiol and *trans*-naphthalenedihydrodiol.

## REFERENCES

1. Binstock, J.M., et al. 1992. Human hepatic 3 $\alpha$ -hydroxysteroid dehydrogenase: possible identity with human hepatic chlordecone reductase. *Biochem. Biophys. Res. Commun.* 187: 760-766.
2. Mizoguchi, T., et al. 1992. A novel dihydrodiol dehydrogenase in bovine liver cytosol: purification and characterization of multiple forms of dihydrodiol dehydrogenase. *J. Biochem.* 12: 523-529.
3. Nanjo, H., et al. 1995. Enzymatic characterization of a novel bovine liver dihydrodiol dehydrogenase—reaction mechanism and bile acid dehydrogenase activity. *Biochim. Biophys. Acta* 1244: 53-61.
4. Khanna, M., et al. 1995. Localization of multiple human dihydrodiol dehydrogenase (DDH1 and DDH2) and chlordecone reductase (CHDR) genes in chromosome 10 by the polymerase chain reaction and fluorescence *in situ* hybridization. *Genomics* 25: 588-590.
5. Hara, A., et al. 1996. Relationship of human liver dihydrodiol dehydrogenase to hepatic bile-acid-binding protein and an oxidoreductase of human colon cells. *Biochem. J.* 313: 373-376.
6. Shiraishi, H., et al. 1998. Sequence of the cDNA of a human dihydrodiol dehydrogenase isoform (AKR1C2) and tissue distribution of its mRNA. *Biochem. J.* 334: 399-405.
7. Kume, T., et al. 1999. Characterization of a novel variant (S145C/L311V) of 3 $\alpha$ -hydroxysteroid/dihydrodiol dehydrogenase in human liver. *Pharmacogenetics* 9: 763-771.

## CHROMOSOMAL LOCATION

Genetic locus: AKR1C3 (human) mapping to 10p15.1.

## PRODUCT

DD3 (h5): 293 Lysate represents a lysate of human DD3 transfected 293 cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## APPLICATIONS

DD3 (h5): 293 Lysate is suitable as a Western Blotting positive control for human reactive DD3 antibodies. Recommended use: 10-20  $\mu$ l per lane.

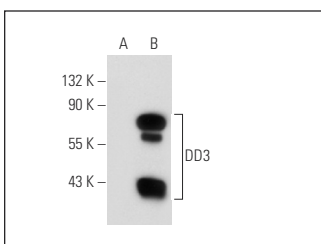
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

DD (C-12): sc-166297 is recommended as a positive control antibody for Western Blot analysis of enhanced human DD3 expression in DD3 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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



DD (C-12): sc-166297. Western blot analysis of DD3 expression in non-transfected: sc-117752 (A) and human DD3 transfected: sc-158433 (B) 293T whole cell lysates.

## 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.

## 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) for detailed protocols and support products.