

DD3 (C-21): sc-23795

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 α - or 3 α -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 α -HSD are alternate designations for DD3, while DD4 also can be called AKR1C4, CD or CHDR. DD1 and DD2 are 20 α -HSDs, whereas DD3 and DD4 are the 3 α -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 α -HSD catalyzes the reaction of progesterone to the inactive form 20 α -hydroxyprogesterone. The 3 α -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 α -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 α -hydroxysteroid/dihydrodiol dehydrogenase in human liver. *Pharmacogenetics* 9: 763-771.

CHROMOSOMAL LOCATION

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

SOURCE

DD3 (C-21) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of DD3 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with 0.1% sodium azide and 0.2% gelatin.

Blocking peptide available for competition studies, sc-23795 P, (100 μ g peptide in 0.5 ml PBS containing 0.1% sodium azide and 0.2% BSA)

APPLICATIONS

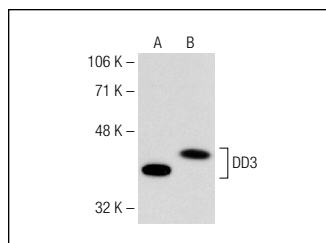
STEP (23E5) is recommended for detection of all known isoforms of STEP of mouse and rat origin by Western Blotting (starting dilution 1:50, dilution range 1:50-1:200), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for STEP siRNA (m): sc-44480, STEP shRNA Plasmid (m): sc-44480-SH and STEP shRNA (m) Lentiviral Particles: sc-44480-V.

Molecular Weight of DD3: 37 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or A549 cell lysate: sc-2413.

DATA



DD3 (C-21): sc-23795. Western blot analysis of DD3 expression in A549 (A) and Hep G2 (B) whole cell lysates.

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 or our catalog for detailed protocols and support products.

MONOS
Satisfaction
Guaranteed

Try **DD (C-12): sc-166297** or **DD3 (D-9): sc-398596**, our highly recommended monoclonal alternatives to DD3 (C-21).