

# DHRS6 (T-20): sc-104197

## BACKGROUND

DHRS6 (dehydrogenase/reductase SDR family member 6), also known as EFA6R, SDR15C1, UCPA-OR, UNQ6308 or BDH2, is a 245 amino acid cytoplasmic protein belonging to the short-chain dehydrogenases/reductases (SDR) family, an evolutionarily conserved family of oxidoreductases found in all forms of life. DHRS6 is a novel, cytosolic type II R- $\beta$ -hydroxybutyrate dehydrogenase that exists as two alternatively spliced isoforms and may have an essential role as a nutrient or building block in cellular survival. Human DHRS6 and its vertebrate orthologs show high levels of sequence identities to bacterial hydroxybutyrate dehydrogenases. DHRS6 may play an important role in the peripheral utilization of 3-hydroxybutyrate and its cytoplasmic localization with its high ratio of oxidized NAD<sup>+</sup>, the NAD<sup>+</sup> dependence and the kinetic parameters of DHRS6 make it suitable to convert high levels of circulating 3-hydroxybutyrate into acetoacetate.

## REFERENCES

- Guo, K., et al. 2006. Characterization of human DHRS6, an orphan short chain dehydrogenase/reductase enzyme: a novel, cytosolic type 2 R- $\beta$ -hydroxybutyrate dehydrogenase. *J. Biol. Chem.* 281: 10291-10297.
- Ito, K., et al. 2006. D-3-hydroxybutyrate dehydrogenase from *Pseudomonas fragi*: molecular cloning of the enzyme gene and crystal structure of the enzyme. *J. Mol. Biol.* 355: 722-733.
- Matsunaga, T., et al. 2008. Characterization of human DHRS4: an inducible short-chain dehydrogenase/reductase enzyme with 3 $\beta$ -hydroxysteroid dehydrogenase activity. *Arch. Biochem. Biophys.* 477: 339-347.
- Parés, X., et al. 2008. Medium- and short-chain dehydrogenase/reductase gene and protein families: Medium-chain and short-chain dehydrogenases/reductases in retinoid metabolism. *Cell. Mol. Life Sci.* 65: 3936-3949.
- Endo, S., et al. 2009. Molecular determinants for the stereospecific reduction of 3-ketosteroids and reactivity towards all-trans-retinal of a short-chain dehydrogenase/reductase (DHRS4). *Arch. Biochem. Biophys.* 481: 183-190.
- Zhang, Q., et al. 2009. Alternative transcription initiation and splicing variants of the DHRS4 gene cluster. *Biosci. Rep.* 29: 47-56.

## CHROMOSOMAL LOCATION

Genetic locus: BDH2 (human) mapping to 4q24; Bdh2 (mouse) mapping to 3 G3.

## SOURCE

DHRS6 (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of DHRS6 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-104197 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

DHRS6 (T-20) is recommended for detection of DHRS6 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other DHRS family members.

DHRS6 (T-20) is also recommended for detection of DHRS6 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for DHRS6 siRNA (h): sc-89195, DHRS6 siRNA (m): sc-143032, DHRS6 shRNA Plasmid (h): sc-89195-SH, DHRS6 shRNA Plasmid (m): sc-143032-SH, DHRS6 shRNA (h) Lentiviral Particles: sc-89195-V and DHRS6 shRNA (m) Lentiviral Particles: sc-143032-V.

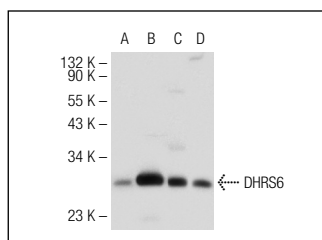
Molecular Weight of DHRS6: 27 kDa.

Positive Controls: DHRS6 (m): 293T Lysate: sc-119767, Caki-1 cell lysate: sc-2224 or IMR-32 cell lysate: sc-2409.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



DHRS6 (T-20): sc-104197. Western blot analysis of DHRS6 expression in non-transfected 293T: sc-117752 (A), mouse DHRS6 transfected 293T: sc-119767 (B), Caki-1 (C) and IMR-32 (D) 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.