

# UDP-GlcDH (C-20): sc-33254

## BACKGROUND

UDP-GlcDH (also called UDP-glucose 6-dehydrogenase, UGDH or UDPGDH) is a member of the UDP-glucose/GDP-mannose dehydrogenase family. UDP-GlcDH converts UDP-glucose to UDP-glucuronic acid, which is a crucial component in the biosynthesis of the glycosaminoglycans, hyaluronan, heparan sulfate and chondroitin sulfate. Found as common components of the extracellular matrix, these glycosaminoglycans are significant in signal transduction, cell migration, and cancer growth and metastasis. UDP-glucuronic acid (UDP-GlcA) is needed in liver for the excretion of toxic compounds. UDP-GlcDH is an ubiquitously expressed protein most abundant in the liver. The protein structure of UDP-GlcDH was first analyzed in bovine liver and found to be a homohexamer. This structure is well conserved between species and phyla with an overall 97% sequence identity shared between different species of mammals. Research indicates that UDP-GlcDH expression is upregulated by TGF $\beta$  and downregulated by hypoxia.

## REFERENCES

- Hempel, J., et al. 1994. UDP-glucose dehydrogenase from bovine liver: primary structure and relationship to other dehydrogenases. *Protein Sci.* 3: 1074-1080.
- Spicer, A.P., et al. 1998. Molecular cloning and characterization of the human and mouse UDP-Glucose dehydrogenase genes. *J. Biol. Chem.* 273: 25117-25124.
- Marcu, O., et al. 1999. Assignment of the UGDH locus encoding UDP-Glucose dehydrogenase to human chromosome band 4p15.1 by radiation hybrid mapping. *Cytogenet. Cell Genet.* 86: 244-245.
- Johansson, H., et al. 2002. Molecular cloning and characterization of a cDNA encoding poplar UDP-Glucose dehydrogenase, a key gene of hemi-cellulose/pectin formation. *Biochim. Biophys. Acta* 1576: 53-58.
- Bontemps, Y., et al. 2003. Specific protein-1 is a universal regulator of UDP-glucose dehydrogenase expression: its positive involvement in transforming growth factor  $\beta$  signaling and inhibition in hypoxia. *J. Biol. Chem.* 278: 21566-21575.

## CHROMOSOMAL LOCATION

Genetic locus: UGDH (human) mapping to 4p14; Ugdh (mouse) mapping to 5 C3.1.

## SOURCE

UDP-GlcDH (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of UDP-GlcDH 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-33254 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

UDP-GlcDH (C-20) is recommended for detection of UDP-glucose-6 dehydrogenase 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).

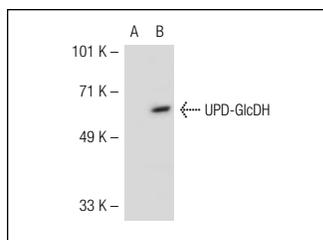
UDP-GlcDH (C-20) is also recommended for detection of UDP-glucose-6 dehydrogenase in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for UDP-GlcDH siRNA (h): sc-44709, UDP-GlcDH siRNA (m): sc-44710, UDP-GlcDH shRNA Plasmid (h): sc-44709-SH, UDP-GlcDH shRNA Plasmid (m): sc-44710-SH, UDP-GlcDH shRNA (h) Lentiviral Particles: sc-44709-V and UDP-GlcDH shRNA (m) Lentiviral Particles: sc-44710-V.

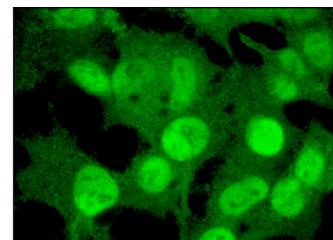
Molecular Weight of UDP-GlcDH: 57 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, UDP-GlcDH (m): 293T Lysate: sc-124442 or HeLa whole cell lysate: sc-2200.

## DATA



UDP-GlcDH (C-20): sc-33254. Western blot analysis of UDP-GlcDH expression in non-transfected: sc-117752 (A) and mouse UDP-GlcDH transfected: sc-124442 (B) 293T whole cell lysates.



UDP-GlcDH (C-20): sc-33254. Immunofluorescence staining of formalin-fixed HepG2 cells showing nuclear and cytoplasmic localization.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **UDP-GlcDH (B-4): sc-137058** or **UDP-GlcDH (B-1): sc-137057**, our highly recommended monoclonal alternatives to UDP-GlcDH (C-20).