

UDP-GlcDH (h): 293T Lysate: sc-113665

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, cancer growth and cancer metastasis. UDP-glucuronic acid (UDP-GlcA) is needed in the 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 cow 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 β and downregulated by hypoxia.

REFERENCES

- Hempel, J., Perozich, J., Romovacek, H., Hinich, A., Kuo, I. and Feingold, D.S. 1994. UDP-glucose dehydrogenase from bovine liver: primary structure and relationship to other dehydrogenases. *Protein Sci.* 3: 1074-1080.
- Spicer, A.P., Kaback, L.A., Smith, T.J. and Seldin, M.F. 1998. Molecular cloning and characterization of the human and mouse UDP-glucose dehydrogenase genes. *J. Biol. Chem.* 273: 25117-25124.
- Marcu, O., Stathakis, D.G. and Marsh, J.L. 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., Sterky, F., Amini, B., Lundeberg, J. and Kleczkowski, L.A. 2002. Molecular cloning and characterization of a cDNA encoding poplar UDP-glucose dehydrogenase, a key gene of hemicellulose/pectin formation. *Biochim. Biophys. Acta* 1576: 53-58.
- Bontemps, Y., Vuillermoz, B., Antonicelli, F., Perreau, C., Danan, J.L., Maquart, F.X. and Wegrowski, Y. 2003. Specific protein-1 is a universal regulator of UDP-glucose dehydrogenase expression: its positive involvement in transforming growth factor- β signaling and inhibition in hypoxia. *J. Biol. Chem.* 278: 21566-21575.
- Vatsyayan, J., Peng, H.L. and Chang, H.Y. 2005. Analysis of human UDP-glucose dehydrogenase gene promoter: identification of an Sp1 binding site crucial for the expression of the large transcript. *J. Biochem.* 137: 703-709.
- Huh, J.W., Choi, M.M., Yang, S.J., Yoon, S.Y., Choi, S.Y. and Cho, S.W. 2005. Inhibition of human UDP-glucose dehydrogenase expression using siRNA expression vector in breast cancer cells. *Biotechnol. Lett.* 27: 1229-1232.
- SWISS-PROT/TrEMBL (O60701). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

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.

CHROMOSOMAL LOCATION

Genetic locus: UGDH (human) mapping to 4p14.

PRODUCT

UDP-GlcDH (h): 293T Lysate represents a lysate of human UDP-GlcDH transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

UDP-GlcDH (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive UDP-GlcDH antibodies. Recommended use: 10-20 μ l per lane.

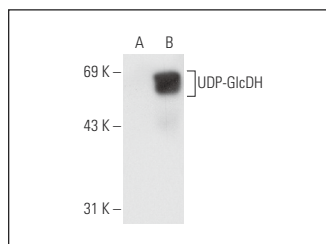
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

UDP-GlcDH (B-4): sc-137058 is recommended as a positive control antibody for Western Blot analysis of enhanced human UDP-GlcDH expression in UDP-GlcDH transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

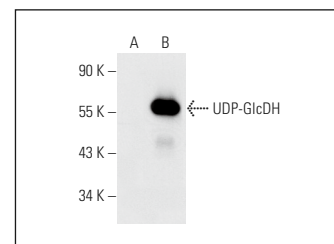
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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



UDP-GlcDH (B-4): sc-137058. Western blot analysis of UDP-GlcDH expression in non-transfected: sc-117752 (A) and human UDP-GlcDH transfected: sc-113665 (B) 293T whole cell lysates.



UDP-GlcDH (D-2): sc-137005. Western blot analysis of UDP-GlcDH expression in non-transfected: sc-117752 (A) and human UDP-GlcDH transfected: sc-113665 (B) 293T whole cell lysates.

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.