

# HUGT2 (G-7): sc-515421

## BACKGROUND

HUGT2 is also known as UGCGL2 (UDP-glucose ceramide glucosyltransferase-like 2) or UGT2 (UDP-glucose: glycoprotein glucosyltransferase 2) and is a 1,516 amino acid protein that is expressed abundantly in kidney, pancreas, heart and skeletal muscle. HUGT2 is localized to the lumen of the ER (endoplasmic reticulum) and to the ER-Golgi intermediate compartment which regulates transportation between the ER and the Golgi. HUGT2 is a quality control protein that targets unfolded glycoproteins for glucosylation in a calcium-dependent manner, but may use manganese in the absence of calcium. HUGT2 targets glycans by attaching single glucose residues to glycans with amino acid sequences which are not correctly folded, an enzymatic process that is exhibited during carbohydrate processing. Patients with type 2 diabetes express altered HUGT2 proteins in their  $\beta$  cells, suggesting that these patients may also have defects in their ER glycoprotein quality control abilities.

## REFERENCES

1. Arnold, S.M., Fessler, L.I., Fessler, J.H. and Kaufman, R.J. 2000. Two homologues encoding human UDP-glucose: glycoprotein glucosyltransferase differ in mRNA expression and enzymatic activity. *Biochemistry* 39: 2149-2163.
2. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 605898. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Arnold, S.M. and Kaufman, R.J. 2003. The noncatalytic portion of human UDP-glucose: glycoprotein glucosyltransferase I confers UDP-glucose binding and transferase function to the catalytic domain. *J. Biol. Chem.* 278: 43320-43328.
4. Marchetti, P., Bugliani, M., Lupi, R., Marselli, L., Masini, M., Boggi, U., Filipponi, F., Weir, G.C., Eizirik, D.L. and Cnop, M. 2007. The endoplasmic reticulum in pancreatic  $\beta$  cells of type 2 diabetes patients. *Diabetologia* 50: 2486-2494.
5. Mackenzie, P.I., Rogers, A., Treloar, J., Jorgensen, B.R., Miners, J.O. and Meech, R. 2008. Identification of UDP glycosyltransferase 3A1 as a UDP N-acetylglucosaminyltransferase. *J. Biol. Chem.* 283: 36205-36210.

## CHROMOSOMAL LOCATION

Genetic locus: UGGT2 (human) mapping to 13q32.1.

## SOURCE

HUGT2 (G-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 35-50 near the N-terminus of HUGT2 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-515421 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

HUGT2 (G-7) is recommended for detection of HUGT2 of human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for HUGT2 siRNA (h): sc-75315, HUGT2 shRNA Plasmid (h): sc-75315-SH and HUGT2 shRNA (h) Lentiviral Particles: sc-75315-V.

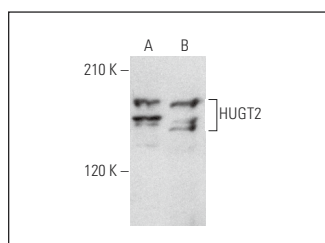
Molecular Weight of HUGT2: 175 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, U-87 MG cell lysate: sc-2411 or HeLa whole cell lysate: sc-2200.

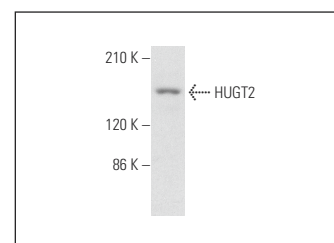
## RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



HUGT2 (G-7): sc-515421. Western blot analysis of HUGT2 expression in HeLa (A) and U-87 MG (B) whole cell lysates.



HUGT2 (G-7): sc-515421. Western blot analysis of HUGT2 expression in MIA PaCa-2 whole cell lysate.

## 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) for detailed protocols and support products.