Anti-UGP2 Antibody [7H1]

EM1701-76

Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, IF-Cell
Molecular Wt:	Predicted band size: 57 kDa
Clone number:	7H1

Description: UGP2 (UDP-glucose pyrophosphorylase 2), also known as UDPG, UGPP2, UDPGP2 or pHC379, is an evolutionarily conserved protein belonging to the UDPGP type 1 family of proteins. Localizing to the cytoplasm, UGP2 forms homooligomers and is believed to function as a glucosyl donor in cellular metabolic pathways. More specifically, UGP2 catalyzes the transfer of a glucose moiety from glucose-1-phosphate to UTP, producing a diphosphate and UDP-glucose. UDP-glucose is an essential precursor for the synthesis of polysaccharides; in liver and muscle, UDP-glucose is a precursor of glycogen, in liver UDP-glucose is also a precursor of UDP-glucuronate, and in lactating mammary gland UDP-glucose is converted to UDP-galactose and then to lactose.

Immunogen: Synthetic peptide within Human UGP2 aa 61-110 / 508.

Positive control: Human liver tissue lysates, HepG2, NIH/3T3, rat liver tissue, human liver tissue, mouse heart tissue.

Subcellular location: Cytoplasm.

Database links: SwissProt: Q16851 Human | Q91ZJ5 Mouse
Entrez Gene: 289827 Rat

Recommended Dilutions:

WB	1:1,000
IHC-P	1:50-1:400
IF-Cell	1:100

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 50% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

Purity: Protein G affinity purified.

Images

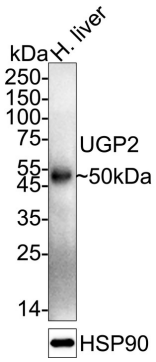

Fig1: Western blot analysis of UGP2 on human liver tissue lysates with Mouse anti-UGP2 antibody (EM1701-76) at 1/1,000 dilution.

Lysates/proteins at 20 µg/Lane.

Predicted band size: 57 kDa
Observed band size: 50 kDa

Exposure time: 46 seconds; ECL: K1801;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (EM1701-76) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1/50,000 dilution was used for 1 hour at room temperature.

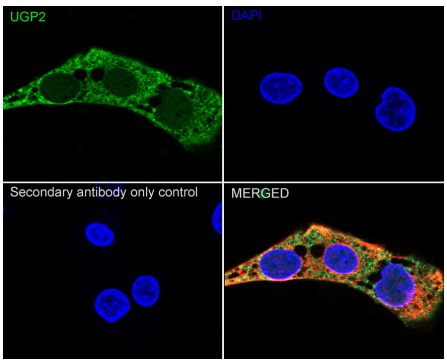

Fig2: Immunocytochemistry analysis of HepG2 cells labeling UGP2 with Mouse anti-UGP2 antibody (EM1701-76) at 1/100 dilution.

Cells were fixed in 4% paraformaldehyde for 15 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 15 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Mouse anti-UGP2 antibody (EM1701-76) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Mouse IgG H&L (iFluor™ 488, HA1125) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

beta Tubulin (ET1602-4, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Rabbit IgG H&L (iFluor™ 594, HA1122) was used as the secondary antibody at 1/1,000 dilution.

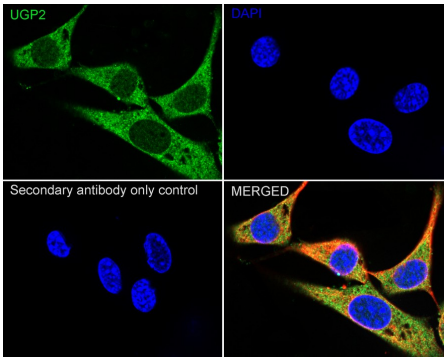

Fig3: Immunocytochemistry analysis of NIH/3T3 cells labeling UGP2 with Mouse anti-UGP2 antibody (EM1701-76) at 1/100 dilution.

Cells were fixed in 4% paraformaldehyde for 15 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 15 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Mouse anti-UGP2 antibody (EM1701-76) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Mouse IgG H&L (iFluor™ 488, HA1125) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

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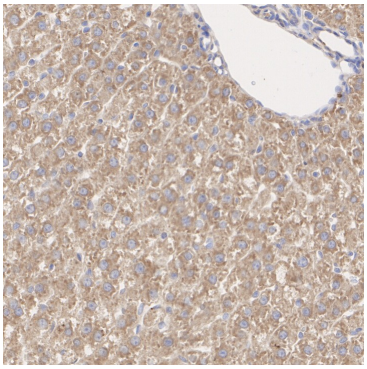

Fig4: Immunohistochemical analysis of paraffin-embedded rat liver tissue with Mouse anti-UGP2 antibody (EM1701-76) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1701-76) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

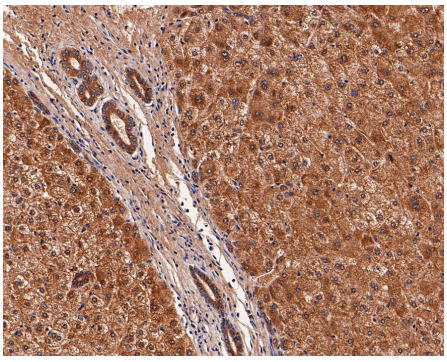

Fig5: Immunohistochemical analysis of paraffin-embedded human liver tissue with Mouse anti-UGP2 antibody (EM1701-76) at 1/400 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1701-76) at 1/400 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

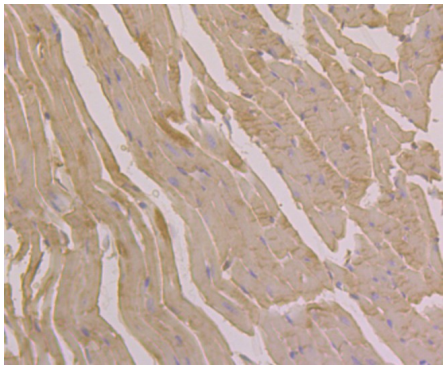

Fig6: Immunohistochemical analysis of paraffin-embedded mouse heart tissue using anti-UGP2 antibody. Counter stained with hematoxylin.

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Fuhring J I et al. A quaternary mechanism enables the complex biological functions of octameric human UDP-glucose pyrophosphorylase, a key enzyme in cell metabolism. Sci Rep 5:9618-9618 (2015).
2. Peng H-L et al. Cloning of a human liver UDP-glucose pyrophosphorylase cDNA by complementation of the bacterial galU mutation. FEBS Lett 329:153-158 (1993).