10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-OGT Monoclonal Antibody

Catalog # ABO14634

Product Information

Application	WB, IHC, IF, ICC, FC
Primary Accession	O15294
Host	Rabbit
Isotype	Rabbit IgG
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Format	Liquid
Description	Anti-OGT Monoclonal Antibody . Tested in WB, IHC, ICC/IF, Flow Cytometry applications. This antibody reacts with Human, Mouse, Rat.

Additional Information

Gene ID	8473
Other Names	UDP-N-acetylglucosamine--peptide N-acetylglucosaminyltransferase 110 kDa subunit, 2.4.1.255, O-GlcNAc transferase subunit p110, O-linked N-acetylglucosamine transferase 110 kDa subunit, OGT, OGT {ECO:0000303|PubMed:11773972, ECO:0000312|HGNC:HGNC:8127}
Calculated MW	116925
Application Details	WB 1:500-1:2000 IHC 1:50-1:200 ICC/IF 1:50-1:200 FC 1:50
Source	Eukaryota
Contents	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
Clone Names	Clone: AEDG-15
Immunogen	A synthesized peptide derived from human OGT / O-Linked N-Acetylglucosamine Transferase Addition of nucleotide-activated sugars directly onto the polypeptide through O-glycosidic linkage with the hydroxyl of serine or threonine. Mediates the O-glycosylation of MLL5 and HCFC1. Promotes proteolytic maturation of HCFC1.
Purification	Affinity-chromatography
Storage	Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles.

Protein Information

Name

OGT {ECO:0000303|PubMed:11773972, ECO:0000312|HGNC:HGNC:8127}

Function

Catalyzes the transfer of a single N-acetylglucosamine from UDP-GlcNAc to a serine or threonine residue in cytoplasmic and nuclear proteins resulting in their modification with a beta-linked N- acetylglucosamine (O-GlcNAc) (PubMed:12150998, PubMed:15361863, PubMed:19451179, PubMed:20018868, PubMed:21240259, PubMed:21285374, PubMed:23103939, PubMed:26237509, PubMed:26369908, PubMed:26678539, PubMed:27713473, PubMed:37541260, PubMed:37962578). Glycosylates a large and diverse number of proteins including histone H2B, AKT1, AMPK, ATG4B, CAPRIN1, EZH2, FNIP1, GSDMD, KRT7, LMNA, LMNB1, LMNB2, RPTOR, HOXA1, PFKL, KMT2E/MLL5, MAPT/TAU, TET2, RBL2, RET, NOD2 and HCFC1 (PubMed:19451179, PubMed:20200153, PubMed:21285374, PubMed:22923583, PubMed:23353889, PubMed:24474760, PubMed:26237509, PubMed:26369908, PubMed:26678539, PubMed:27527864, PubMed:30699359, PubMed:34074792, PubMed:34667079, PubMed:37541260, PubMed:37962578). Can regulate their cellular processes via cross-talk between glycosylation and phosphorylation or by affecting proteolytic processing (PubMed:21285374). Involved in insulin resistance in muscle and adipocyte cells via glycosylating insulin signaling components and inhibiting the 'Thr-308' phosphorylation of AKT1, enhancing IRS1 phosphorylation and attenuating insulin signaling (By similarity). Involved in glycolysis regulation by mediating glycosylation of 6- phosphofructokinase PFKL, inhibiting its activity (PubMed:22923583). Plays a key role in chromatin structure by mediating O-GlcNAcylation of 'Ser-112' of histone H2B: recruited to CpG-rich transcription start sites of active genes via its interaction with TET proteins (TET1, TET2 or TET3) (PubMed:22121020, PubMed:23353889). As part of the NSL complex indirectly involved in acetylation of nucleosomal histone H4 on several lysine residues (PubMed:20018852). O-GlcNAcylation of 'Ser-75' of EZH2 increases its stability, and facilitating the formation of H3K27me3 by the PRC2/EED-EZH2 complex (PubMed:24474760). Stabilizes KMT2E/MLL5 by mediating its glycosylation, thereby preventing KMT2E/MLL5 ubiquitination (PubMed:26678539). Regulates circadian oscillation of the clock genes and glucose homeostasis in the liver (By similarity). Stabilizes clock proteins BMAL1 and CLOCK through O-glycosylation, which prevents their ubiquitination and subsequent degradation (By similarity). Promotes the CLOCK-BMAL1-mediated transcription of genes in the negative loop of the circadian clock such as PER1/2 and CRY1/2. O-glycosylates HCFC1 and regulates its proteolytic processing and transcriptional activity (PubMed:21285374, PubMed:28302723, PubMed:28584052). Component of a THAP1/THAP3-HCFC1-OGT complex that is required for the regulation of the transcriptional activity of RRM1 (PubMed:20200153). Regulates mitochondrial motility in neurons by mediating glycosylation of TRAK1 (By similarity). Promotes autophagy by mediating O-glycosylation of ATG4B (PubMed:27527864). Acts as a regulator of mTORC1 signaling by mediating O-glycosylation of RPTOR and FNIP1: O-GlcNAcylation of RPTOR in response to glucose sufficiency promotes activation of the mTORC1 complex (PubMed:30699359, PubMed:37541260).

Cellular Location

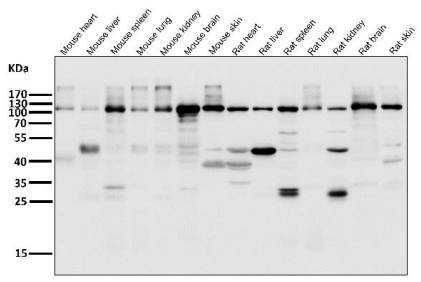
Nucleus. Cytoplasm. Note=Predominantly localizes to the nucleus (PubMed:26678539). Translocates into the nucleus via association with importin KPNA1 (PubMed:27713473) [Isoform 3]: Cytoplasm. Nucleus. Cell membrane {ECO:0000250|UniProtKB:P56558}. Mitochondrion membrane {ECO:0000250|UniProtKB:P56558}. Cell projection {ECO:0000250|UniProtKB:P56558}. Note=Mostly in the nucleus. Retained in the nucleus via interaction with HCFC1 (PubMed:21285374). After insulin induction, translocated from the nucleus to the cell membrane via

phosphatidylinositide binding. Colocalizes with AKT1 at the plasma membrane. TRAK1 recruits this protein to mitochondria. In the absence of TRAK1, localizes in cytosol and nucleus (By similarity) {ECO:0000250|UniProtKB:P56558, ECO:0000269|PubMed:21285374}

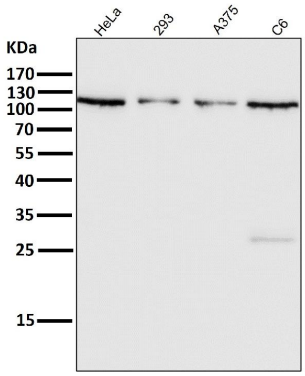
Tissue Location

Highly expressed in pancreas and to a lesser extent in skeletal muscle, heart, brain and placenta. Present in trace amounts in lung and liver.

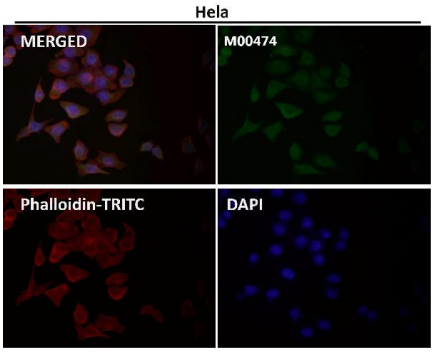
Images



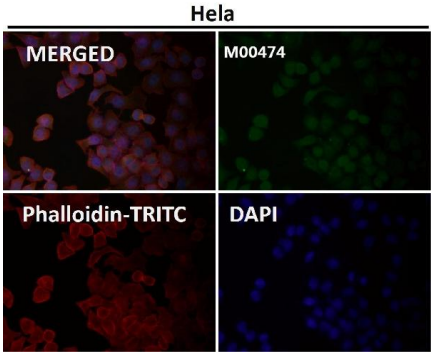
All lanes use the Antibody at 1:3K dilution for 1 hour at room temperature.



All lanes use the Antibody at 1:3K dilution for 1 hour at room temperature.

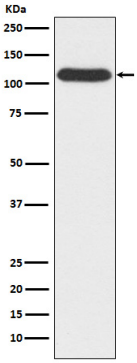


Immunofluorescent analysis using the Antibody at 1:50 dilution.



Immunofluorescent analysis using the Antibody at 1:50 dilution.

Western blot analysis of OGT / O-Linked



N-Acetylglucosamine Transferase expression in A549 cell lysate.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.