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Anti-OGT Picoband Antibody

Catalog # ABO12453

Product Information

Application	WB, IHC-P
Primary Accession	O15294
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for UDP-N-acetylglucosamine--peptide N-acetylglucosaminyltransferase 110 kDa subunit(OGT) detection. Tested with WB, IHC-P in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

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
Calculated MW	116925
Application Details	Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, Mouse, Rat, Human, By Heat Western blot, 0.1-0.5 □g/ml, Human, Mouse, Rat
Subcellular Localization	Isoform 2: Mitochondrion. Membrane. Associates with the mitochondrial inner membrane.
Tissue Specificity	Highly expressed in pancreas and to a lesser extent in skeletal muscle, heart, brain and placenta. Present in trace amounts in lung and liver. .
Source	Eukaryota
Protein Name	UDP-N-acetylglucosamine--peptide N-acetylglucosaminyltransferase 110 kDa subunit
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human OGT (1008-1046aa NTKQYTMELERLYLQMWEHYAAGNKPDHMIKPVEVTESA), identical to the related mouse and rat sequences.

Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins.
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

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.

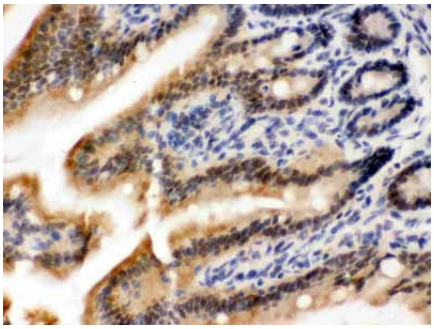
Background

O-linked N-acetylglucosamine (O-GlcNAc) transferase (OGT) is an enzyme that in humans is encoded by the OGT gene. This gene encodes a glycosyltransferase that catalyzes the addition of a single N-acetylglucosamine in O-glycosidic linkage to serine or threonine residues. Since both phosphorylation and glycosylation compete for similar serine or threonine residues, the two processes may compete for sites, or they may alter the substrate specificity of nearby sites by steric or electrostatic effects. The protein contains multiple tetratricopeptide repeats that are required for optimal recognition of substrates. Alternatively spliced transcript variants encoding distinct isoforms have been found for this gene.

Images

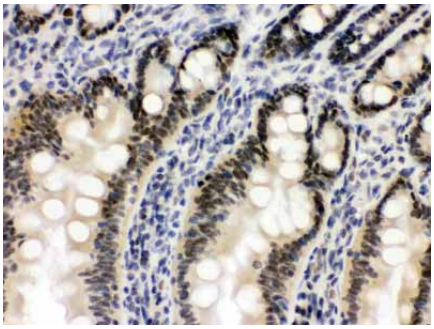


Anti- OGT Picoband antibody, ABO12453, Western blottingAll lanes: Anti OGT (ABO12453) at 0.5ug/mlLane 1: Rat Brain Tissue Lysate at 50ugLane 2: Mouse Brain Tissue Lysate at 50ugLane 3: Mouse Cardiac Muscle Tissue Lysate at 50ugLane 4: A549 Whole Cell Lysate at 40ugPredicted bind size: 117KDObserved bind size: 117KD



Anti- OGT Picoband antibody, ABO12453,IHC(P)IHC(P): Mouse Intestine Tissue

Anti- OGT Picoband antibody, ABO12453,IHC(P)IHC(P): Rat Intestine Tissue



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