

**OGT Antibody (C-term) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP6695b****Specification****OGT Antibody (C-term) Blocking Peptide - Product Information**Primary Accession [O15294](#)**OGT Antibody (C-term) Blocking Peptide - Additional Information****Gene ID** 8473**Other Names**UDP-N-acetylglucosamine--peptide  
N-acetylglucosaminyltransferase 110 kDa  
subunit, O-GlcNAc transferase subunit  
p110, O-linked N-acetylglucosamine  
transferase 110 kDa subunit, OGT, OGT**Target/Specificity**

The synthetic peptide sequence used to generate the antibody [AP6695b](/products/AP6695b) was selected from the C-term region of human OGT. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**OGT Antibody (C-term) Blocking Peptide - Protein Information****OGT Antibody (C-term) Blocking Peptide - Background**

O-linked N-acetylglucosamine (O-GlcNAc) transferase (OGT) 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 nine tetratricopeptide repeats and a putative bipartite nuclear localization signal.

**OGT Antibody (C-term) Blocking Peptide - References**

Roeder, R.G., Nature 459 (7245), 455-459 (2009)  
Taylor, R.P., J. Biol. Chem. 284 (6), 3425-3432 (2009)  
Slawson, C., Mol. Biol. Cell 19 (10), 4130-4140 (2008)

**Name** OGT**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:<a href="http://www.uniprot.org/citations/26678539" target="\_blank">26678539</a>, PubMed:<a href="http://www.uniprot.org/citations/23103939" target="\_blank">23103939</a>, PubMed:<a href="http://www.uniprot.org/citations/21240259" target="\_blank">21240259</a>, PubMed:<a href="http://www.uniprot.org/citations/21285374" target="\_blank">21285374</a>, PubMed:<a href="http://www.uniprot.org/citations/15361863" target="\_blank">15361863</a>). Glycosylates a large and diverse number of proteins including histone H2B, AKT1, EZH2, PFKL, KMT2E/MLL5, MAPT/TAU and HCFC1. Can regulate their cellular processes via cross-talk between glycosylation and phosphorylation or by affecting proteolytic processing (PubMed:<a href="http://www.uniprot.org/citations/21285374" target="\_blank">21285374</a>). Probably by glycosylating KMT2E/MLL5, stabilizes KMT2E/MLL5 by preventing its ubiquitination (PubMed:<a href="http://www.uniprot.org/citations/26678539" target="\_blank">26678539</a>). 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:<a href="http://www.uniprot.org/citations/22923583" target="\_blank">22923583</a>). Component of a THAP1/THAP3-HCFC1-OGT complex that is required for the regulation of the transcriptional activity of RRM1. 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:<a href="http://www.uniprot.org/citations/22121020" target="\_blank">22121020</a>, PubMed:<a href="http://www.uniprot.org/citations/23353889" target="\_blank">23353889</a>). As part of the NSL complex indirectly involved in acetylation of nucleosomal histone H4 on several lysine residues (PubMed:<a href="http://www.uniprot.org/citations/20018852" target="\_blank">20018852</a>). O-GlcNAcylation of 'Ser-75' of EZH2 increases its stability, and facilitating the formation of H3K27me3 by the PRC2/EED-EZH2 complex (PubMed:<a href="http://www.uniprot.org/citations/24474760" target="\_blank">24474760</a>). Regulates circadian oscillation of the clock genes and glucose homeostasis in the liver. Stabilizes clock proteins ARNTL/BMAL1 and CLOCK through O- glycosylation, which prevents their ubiquitination and subsequent degradation. Promotes the CLOCK-ARNTL/BMAL1-mediated transcription of genes in the negative loop of the circadian clock such as PER1/2 and CRY1/2 (PubMed:<a href="http://www.uniprot.org/citations/12150998" target="\_blank">12150998</a>, PubMed:<a href="http://www.uniprot.org/citations/19451179" target="\_blank">19451179</a>, PubMed:<a href="http://www.uniprot.org/citations/20018868" target="\_blank">20018868</a>, PubMed:<a href="http://www.uniprot.org/citations/20200153" target="\_blank">20200153</a>, PubMed:<a href="http://www.uniprot.org/citations/21285374" target="\_blank">21285374</a>, PubMed:<a href="http://www.uniprot.org/citations/15361863" target="\_blank">15361863</a>). O-glycosylates HCFC1 and regulates its proteolytic processing and transcriptional activity (PubMed:<a href="http://www.uniprot.org/citations/21285374" target="\_blank">21285374</a>, PubMed:<a href="http://www.uniprot.org/citations/28584052" target="\_blank">28584052</a>, PubMed:<a href="http://www.uniprot.org/citations/28302723" target="\_blank">28302723</a>). Regulates mitochondrial motility in neurons by mediating glycosylation of TRAK1 (By

similarity). Glycosylates HOXA1 (By similarity). O-glycosylates FNIP1 (PubMed:<a href="http://www.uniprot.org/citations/30699359" target="\_blank">30699359</a>).

#### **Cellular Location**

Nucleus. Cytoplasm. Note=Predominantly localizes to the nucleus. [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.

### **OGT Antibody (C-term) Blocking Peptide - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)