3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-O-GlcNAcase (OGA) (C-terminal region)
produced in rabbit, affinity isolated antibody

Catalog Number **SAB4200311**

Product Description

Anti-O-GlcNAcase (OGA) (C-terminal region) is produced in rabbit using as immunogen a synthetic peptide corresponding to a sequence near the C-terminus of human O-GlcNAcase (OGA) (GeneID 10724), conjugated to KLH. The corresponding sequence is identical in human OGA isoform B, and highly conserved (single amino acid substitution) in rat and mouse OGA. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-O-GlcNAcase (OGA) (C-terminal region) specifically recognizes human and canine OGA. The antibody can be used in several immunochemical techniques including immunoblotting (~130 kDa) and immunoprecipitation. Detection of the OGA band by immunoblotting is specifically inhibited by the OGA immunizing peptide.

The post-translational modification of proteins by O-linked *N*-acetylglucosamine (O-GlcNAc) on Ser/Thr residues is an important mechanism for modulating cellular signaling pathways. O-GlcNAcylation affects transcription, organelle trafficking, proteasomal degradation and apoptosis.[1,2] This modification has been implicated in several human diseases including type-2 diabetes and neurodegeneration. Two key enzymes regulate cycling of this post-translational modification: O-GlcNAc transferase (OGT) and β-*N*-acetylglucosaminidase (OGA). OGT modifies protein substrates by adding N-acetylglucosamine.[1] OGA (also known as O-GlcNAcase, MGEA5, NCOAT) belongs to the family of glycoside hydrolases and is responsible for cleaving the modification from target proteins.[1,2] The *OGA* gene encodes two alternatively spliced isoforms that are widely expressed in mammalian tissues.[3] The longer OGA form is a bifunctional nuclear/cytoplasmic enzyme that contains two distinct domains, an O-GlcNAcase domain at the N-terminus and a C-terminal putative histone acetyltransferase (HAT) domain. The shorter OGA form contains only the N-terminal O-GlcNAcase domain. OGA is also glycosylated by OGT suggesting a possible regulatory feedback loop between these two enzymes.[4] OGA and OGT have been found to strongly associate together in transcriptional co-repression complexes with histone deacetylases (HDACs).[5]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~1.5 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2-4 µg/mL is recommended using MCF7 cell extracts.

Immunoprecipitation: a working amount of 3-6 µg is recommended using MDCK cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Hart, G.W., et al., *Nature*, **446**, 1017-1022 (2007).

2. Lazarus, B.D., et al., *Int. J. Biochem. Cell Biol.*, **41**, 2134-2146 (2008).
3. Comtesse, N., et al., *Biochem. Biophys. Res. Commun.*, **283**, 634-640 (2001).
4. Lazarus, B.D., et al., *Glycobiology*, **16**, 415-421 (2006).
5. Whisenhunt, T.R., et al., *Glycobiology*, **16**, 551-563 (2006).

ER,RC,KAA,PHC 07/11-1