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Product Information

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

Catalog number **SAB4200267**

Product Description

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

Anti-O-GlcNAcase (OGA) specifically recognizes human, mouse and dog OGA. The antibody can be used in several immunochemical techniques including immunoblotting (~130 kDa) and immunofluorescence. 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 1.5-3.0 µg/mL is recommended using MDCK and mouse kidney extracts.

Immunofluorescence: a working concentration of 5-10 µg/mL is recommended using A431 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).

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