

Product Information

Anti- α 1,2-Mannosidase IA

Developed in Rabbit, Affinity Isolated Antibody

Product Number **M 3694**

Product Description

Anti- α 1,2-Mannosidase IA is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acids 138-154 of human α 1,2-Mannosidase IA with N-terminal added cysteine, conjugated to KLH. The corresponding sequence is identical in mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti- α 1,2-Mannosidase IA recognizes human, mouse, and rat α 1,2-Mannosidase IA. Applications include immunoblotting (~73 kDa), and immunofluorescence. Detection of the α 1,2-mannosidase IA band by immunoblotting is specifically inhibited with the immunizing peptide.

α 1,2-Mannosidase IA is a Type II transmembrane Golgi-resident enzyme that belongs to class I α 1,2-Mannosidases (glycosylhydrolase family 47). α 1,2-Mannosidases play an essential role in the maturation of N-glycans to hybrid and complex oligosaccharides in mammalian cells. Class I α 1,2-Mannosidases are conserved through evolution. They can be classified into three subgroups according to their enzymatic activities. The first subgroup includes yeast and human endoplasmic reticulum (ER) α 1,2-Mannosidases that primarily trim $\text{Man}_9\text{GlcNAc}_2$ to $\text{Man}_8\text{GlcNAc}_2$ isomer B. The second subgroup includes mammalian Golgi α 1,2-Mannosidases IA, IB, and IC that trim $\text{Man}_9\text{GlcNAc}_2$ to $\text{Man}_5\text{GlcNAc}_2$ through $\text{Man}_8\text{GlcNAc}_2$ isomer A and C. These Golgi mannosidases display different tissue- and cell-specific expression, subcellular localization, and substrate specificity. The third subgroup includes yeast and

mammalian proteins that do not hydrolyze $\text{Man}_9\text{GlcNAc}_2$. Proteins from subgroup 1 and 3 have been implicated in ER quality control and in proteasomal degradation of misfolded glycoproteins. It was also suggested that Golgi mannosidases from the second subgroup may play a role in the ERAD (endoplasmic reticulum-associated degradation) of defective glycoproteins.¹⁻⁵

Although α 1,2-Mannosidase IA is predominantly detected in the juxtanuclear Golgi region by indirect immunofluorescence, significant cell type and species-dependent variation in localization was reported. The pig liver enzyme has been localized to the ER and transitional vesicles between ER and Golgi, but is not found within the Golgi stacks of porcine hepatocytes.⁶⁻⁷

Reagent

The antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide as preservative.

Antibody Concentration: Approx. 0.7 mg/ml

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous 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 is not recommended. Storage in frost-free freezers is also 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

By immunoblotting, a working antibody concentration of 0.5-1.0 µg/mL is recommended using a whole extract of mouse NIH 3T3 cells, and a chemiluminescence detection reagent.

By indirect immunofluorescence, a working antibody concentration of 5-10 µg/mL is recommended using human HepG2 cells and rat NRK cells.

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

References

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