Human Insulysin/IDE Antibody

Monoclonal Mouse IgG_1 Clone # 334501

Catalog Number: MAB2496

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Insulysin/IDE in direct ELISAs and Western blots.
Source	Monoclonal Mouse IgG_1 Clone # 334501
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant human Insulysin/IDE Met42-Leu1019 Accession # P14735
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

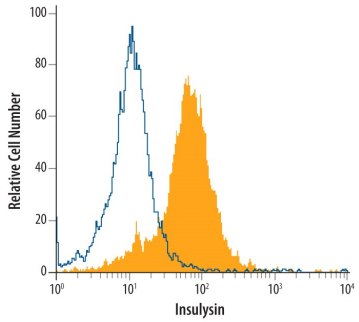
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Human Insulysin/IDE (Catalog # 2496-ZN)
Intracellular Staining by Flow Cytometry	2.5 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA

Intracellular Staining by Flow Cytometry



Detection of Insulysin/IDE in HeLa cells by Flow Cytometry. HeLa cells were stained with Mouse Anti-Human Insulysin/IDE Monoclonal Antibody (Catalog # MAB2496, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by Allophycocyanin-conjugated Anti-Mouse IgG $F(ab')_2$ Secondary Antibody (Catalog # F0101B). To facilitate intracellular staining, cells were fixed with paraformaldehyde and permeabilized with saponin.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Insulysin, or insulin-degrading enzyme (IDE), is a zinc metallopeptidase of the inverzincin family. IDE is primarily located in the cytosol, but has been detected as a secreted enzyme and associated with the plasma membrane as well (1). The enzyme is expressed in many tissues, with the highest levels in liver, kidney, brain, and testis (2). IDE hydrolyzes a variety of regulatory peptides, including insulin, glucagon, atrial natriuretic factor, and transforming growth factor-α *in vitro* (1). In addition, IDE has been shown to degrade the amyloid β (Aβ) peptide, which polymerizes into the plaques associated with Alzheimer's disease (3). Deficiencies in IDE activity may contribute to the pathogenesis of type 2 diabetes mellitus (DM2) and Alzheimer's disease. The IDE region of human chromosome 10q has been genetically linked to DM2 (4). When the IDE gene was specifically disrupted in mice, IDE -/- animals developed hyperinsulinemia and glucose intolerance, characteristics of DM2 (5). The IDE -/- mice were also shown to have a significant decrease in Aβ degradation in the brain, resulting in increased cerebral accumulation of Aβ peptide. This *in vivo* evidence is consistent with the hypotheses that IDE is important for the degradation of insulin in cells and for the clearance of Aβ peptide in the brain.

References:

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2. Duckworth, W.C. *et al.* (1998) Endocr. Rev. **19**:608.
3. Akiyama, H. *et al.* (1990) Biochem. Biophys. Res. Commun. **170**:1325.
4. Selkoe, D.J. (2001) Neuron **32**:177.
5. Ghosh, S. *et al.* (2000) Am. J. Hum. Genet. **67**:1174.
6. Farris, W. *et al.* (2003) Proc. Natl. Acad. Sci. USA **100**:4162.

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