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IDE Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1455c

Product Information

Application	WB, IHC-P, E
Primary Accession	P14735
Other Accession	P35559, Q9JHR7, Q24K02
Reactivity	Human, Rat, Mouse
Predicted	Mouse, Rat, Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	117968
Antigen Region	406-435

Additional Information

Gene ID	3416
Other Names	Insulin-degrading enzyme, Abeta-degrading protease, Insulin protease, Insulinase, Insulysin, IDE
Target/Specificity	This IDE antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 406-435 amino acids from the Central region of human IDE.
Dilution	WB~~1:2000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	IDE Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	IDE {ECO:0000303|PubMed:20364150, ECO:0000312|HGNC:HGNC:5381}
Function	Plays a role in the cellular breakdown of insulin, APP peptides, IAPP peptides, natriuretic peptides, glucagon, bradykinin, kallidin, and other peptides, and thereby plays a role in intercellular peptide signaling

(PubMed:10684867, PubMed:17051221, PubMed:17613531, PubMed:18986166, PubMed:19321446, PubMed:21098034, PubMed:2293021, PubMed:23922390, PubMed:24847884, PubMed:26394692, PubMed:26968463, PubMed:29596046). Substrate binding induces important conformation changes, making it possible to bind and degrade larger substrates, such as insulin (PubMed:23922390, PubMed:26394692, PubMed:29596046). Contributes to the regulation of peptide hormone signaling cascades and regulation of blood glucose homeostasis via its role in the degradation of insulin, glucagon and IAPP (By similarity). Plays a role in the degradation and clearance of APP-derived amyloidogenic peptides that are secreted by neurons and microglia (Probable) (PubMed:26394692, PubMed:9830016). Degrades the natriuretic peptides ANP, BNP and CNP, inactivating their ability to raise intracellular cGMP (PubMed:21098034). Also degrades an aberrant frameshifted 40-residue form of NPPA (fsNPPA) which is associated with familial atrial fibrillation in heterozygous patients (PubMed:21098034). Involved in antigen processing. Produces both the N terminus and the C terminus of MAGEA3-derived antigenic peptide (EVDPIGHLY) that is presented to cytotoxic T lymphocytes by MHC class I.

Cellular Location

Cytoplasm, cytosol. Cell membrane {ECO:0000250|UniProtKB:P35559}. Secreted Note=Present at the cell surface of neuron cells. The membrane-associated isoform is approximately 5 kDa larger than the known cytosolic isoform

Tissue Location

Detected in brain and in cerebrospinal fluid (at protein level).

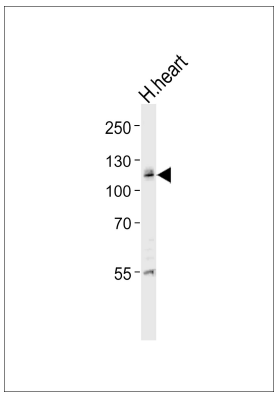
Background

IDE belongs to a protease family responsible for intercellular peptide signalling. Though its role in the cellular processing of insulin has not yet been defined, insulin-degrading enzyme is thought to be involved in the termination of the insulin response.

References

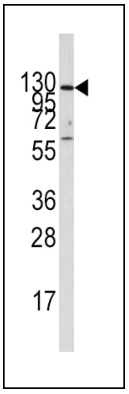
Vepsalainen,S.,J. Med. Genet. 44 (9), 606-608 (2007)
Kim,M.,J. Biol. Chem. 282 (11), 7825-7832 (2007)
Radulescu,R.T.,Int. J. Oncol. 30 (1), 73-80 (2007)
Li,Q.,Cell 127 (2), 305-316 (2006)

Images

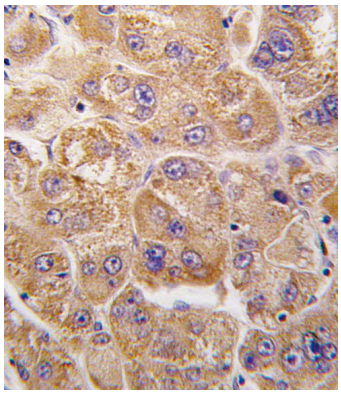


Western blot analysis of lysate from K562 cell line, using IDE Antibody (Center)(Cat. #AP1455c). AP1455c was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysate at 35ug.

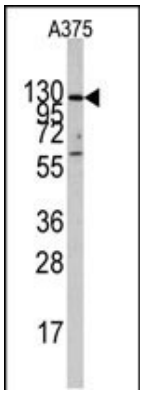
Western blot analysis of anti-IDE Antibody (Center) (Cat.#AP1455c) in A375 cell line lysates (35ug/lane). IDE



(arrow) was detected using the purified Pab.



Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with IDE antibody (Center)(Cat.#AP1455c), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Western blot analysis of lysate from K562 cell line, using IDE Antibody (Center)(Cat. #AP1455c). AP1455c was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysate at 35ug.

Citations

- Promoting scientific standards in Germany.
- Complex formation between metabolic enzymes in tumor cells: unfolding the MDR1-IDE paradigm.