

IDE (E-4): sc-514458

BACKGROUND

Insulin degrading enzyme (IDE), initiates the cleavage of Insulin, resulting in Insulin response and resistance. However, IDE also degrades a variety of bioactive peptides, including Amyloid- β peptides, implicating IDE in certain age-related changes seen in Alzheimer's disease. Studies show that when the expression of the IDE gene (chromosome 10q23.33) is altered, changes occur not only in glucose homeostasis, but also in the levels of brain A β 40 and A β 42 peptides. An IDE inhibitor, bacitracin, inhibits degradation of both Insulin and amylin, indicating that both are degraded through a common proteolytic pathway. Variations in the rate of proteolysis suggest that the function of IDE exhibits conformational dependence, which may lead to possible therapeutic interventions for diabetes, AD, and other diseases associated with IDE substrate proteolysis.

REFERENCES

1. Seta, K.A., et al. 1997. Overexpression of Insulin degrading enzyme: cellular localization and effects on Insulin signalling. *Biochem. Biophys. Res. Commun.* 231: 167-171.
2. Ling, Y., et al. 2003. Amyloid precursor protein (APP) and the biology of proteolytic processing: relevance to Alzheimer's disease. *Int. J. Biochem. Cell Biol.* 35: 1505-1535.

CHROMOSOMAL LOCATION

Genetic locus: IDE (human) mapping to 10q23.33; Ide (mouse) mapping to 19 C2.

SOURCE

IDE (E-4) is a mouse monoclonal antibody raised against amino acids 720-1019 mapping at the C-terminus of IDE of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

IDE (E-4) is recommended for detection of IDE of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IDE siRNA (h): sc-106817, IDE siRNA (m): sc-146140, IDE shRNA Plasmid (h): sc-106817-SH, IDE shRNA Plasmid (m): sc-146140-SH, IDE shRNA (h) Lentiviral Particles: sc-106817-V and IDE shRNA (m) Lentiviral Particles: sc-146140-V.

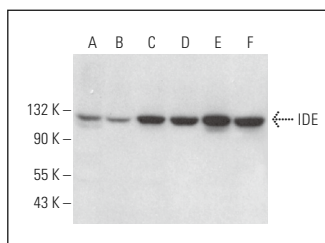
Molecular Weight of IDE: 118 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HEL 92.1.7 cell lysate: sc-2270 or T98G cell lysate: sc-2294.

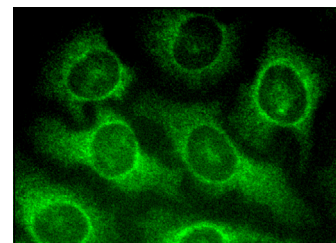
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



IDE (E-4): sc-514458. Western blot analysis of IDE expression in K-562 (A), HEL 92.1.7 (B), T98G (C), Neuro-2A (D), EOC 20 (E) and C6 (F) whole cell lysates.



IDE (E-4): sc-514458. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Fan, Y.G., et al. 2019. Paricalcitol accelerates BACE1 lysosomal degradation and inhibits calpain-1 dependent neuronal loss in APP/PS1 transgenic mice. *EBioMedicine* 45: 393-407.
2. Fan, Y.G., et al. 2020. Vitamin D deficiency exacerbates Alzheimer-like pathologies by reducing antioxidant capacity. *Free Radic. Biol. Med.* 161: 139-149.
3. Xu, Y., et al. 2021. Lovastatin attenuates sevoflurane-induced cognitive disorder in aged rats via reducing A β accumulation. *Neurochem. Int.* 148: 105078.
4. Fan, Y.G., et al. 2023. Astrocyte-derived lactoferrin reduces β -Amyloid burden by promoting the interaction between p38 kinase and PP2A phosphatase in male APP/PS1 transgenic mice. *Br. J. Pharmacol.* 181: 896-913.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.