

Aminoacylase-1 (D-15): sc-55057

BACKGROUND

Aminoacylase-1, also designated N-acyl-L-amino-acid amidohydrolase or ACY-1, is a member of the largest metallopeptidase family called M20A. Aminoacylase-1 is a zinc-binding homodimeric enzyme expressed in kidney, brain, placenta and spleen. It is the most abundant of the aminoacylases. Aminoacylase-1 localizes to the cytoplasm and catalyzes the hydrolysis of N-acylated or N-acetylated amino acids. In addition, Aminoacylase-1 is a sphingosine kinase 1 (SphK1)-interacting protein and may also play a role in regulating responses of the cell to oxidative stress. The gene encoding Aminoacylase-1 is evolutionarily conserved in fish, frog, mouse, rat and human. Deficiency in the Aminoacylase-1 protein may result in defects of brain metabolism and function.

REFERENCES

1. Cook, R.M., Burke, B.J., Buchhagen, D.L., Minna, J.D. and Miller, Y.E. 1993. Human aminoacylase-1. Cloning, sequence, and expression analysis of a chromosome 3p21 gene inactivated in small cell lung cancer. *J. Biol. Chem.* 268: 17010-17017.
2. Lindner, H., Berens, W., Kraus, I. and Röhm, K.H. 2001. Mutational analysis of two PWW sequence motifs in human aminoacylase 1. *Biol. Chem.* 381: 1055-1061.
3. Lindner, H.A., Lunin, V.V., Alary, A., Hecker, R., Cygler, M. and Menard, R. 2003. Essential roles of zinc ligation and enzyme dimerization for catalysis in the aminoacylase-1/M20 family. *J. Biol. Chem.* 278: 44496-44504.
4. Maceyka, M., Nava, V.E., Milstien, S. and Spiegel, S. 2004. Aminoacylase-1 is a sphingosine kinase 1-interacting protein. *FEBS Lett.* 568: 30-34.
5. Lindner, H.A., Alary, A., Boju, L.I., Sulea, T. and Menard, R. 2005. Roles of dimerization domain residues in binding and catalysis by aminoacylase-1. *Biochemistry* 44: 15645-15651.

CHROMOSOMAL LOCATION

Genetic locus: ACY1 (human) mapping to 3p21.2; *Acy1* (mouse) mapping to 9 F1.

SOURCE

Aminoacylase-1 (D-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Aminoacylase-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-55057 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Aminoacylase-1 (D-15) is recommended for detection of Aminoacylase-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

Aminoacylase-1 (D-15) is also recommended for detection of Aminoacylase-1 in additional species, including equine and canine.

Suitable for use as control antibody for Aminoacylase-1 siRNA (h): sc-61966, Aminoacylase-1 siRNA (m): sc-61967, Aminoacylase-1 shRNA Plasmid (h): sc-61966-SH, Aminoacylase-1 shRNA Plasmid (m): sc-61967-SH, Aminoacylase-1 shRNA (h) Lentiviral Particles: sc-61966-V and Aminoacylase-1 shRNA (m) Lentiviral Particles: sc-61967-V.

Molecular Weight (predicted) of Aminoacylase-1: 45 kDa.

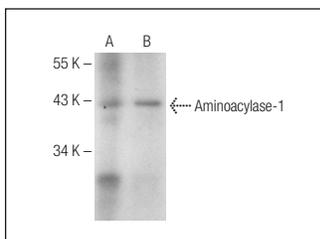
Molecular Weight (observed) of Aminoacylase-1: 42 kDa.

Positive Controls: Mouse kidney extract: sc-2255, human kidney extract: sc-363764 or HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Aminoacylase-1 (D-15): sc-55057. Western blot analysis of Aminoacylase-1 expression in mouse kidney (A) and human kidney (B) tissue extracts.

RESEARCH USE

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

PROTOCOLS

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