

# Aminoacylase-1 (B-1): sc-271019

## 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., et al. 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., et al. 2000. Mutational analysis of two PWV sequence motifs in human Aminoacylase-1. *Biol. Chem.* 381: 1055-1061.
3. Lindner, H.A., et al. 2003. Essential roles of zinc ligation and enzyme dimerization for catalysis in the Aminoacylase-1/M20 family. *J. Biol. Chem.* 278: 44496-44504.
4. Lindner, H.A., et al. 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.

## SOURCE

Aminoacylase-1 (B-1) is a mouse monoclonal antibody raised against amino acids 265-408 mapping at the C-terminus of Aminoacylase-1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Aminoacylase-1 (B-1) is available conjugated to agarose (sc-271019 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271019 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271019 PE), fluorescein (sc-271019 FITC), Alexa Fluor® 488 (sc-271019 AF488), Alexa Fluor® 546 (sc-271019 AF546), Alexa Fluor® 594 (sc-271019 AF594) or Alexa Fluor® 647 (sc-271019 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271019 AF680) or Alexa Fluor® 790 (sc-271019 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## 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 (B-1) is recommended for detection of Aminoacylase-1 of human origin by Western Blotting (starting dilution 1:100, 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).

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

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

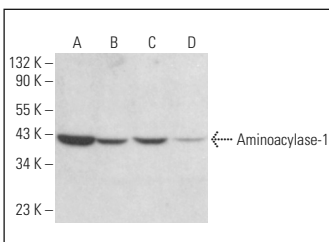
Molecular Weight (observed) of Aminoacylase-1: 42 kDa.

Positive Controls: MDA-MB-231 cell lysate: sc-2232, Caki-1 cell lysate: sc-2224 or Hep G2 cell lysate: sc-2227.

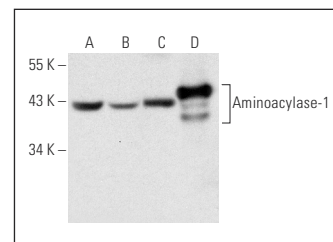
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



Aminoacylase-1 (B-1): sc-271019. Western blot analysis of Aminoacylase-1 expression in Hep G2 (A), MDA-MB-231 (B), Caki-1 (C) and HEK293T (D) whole cell lysates.



Aminoacylase-1 (B-1): sc-271019. Western blot analysis of Aminoacylase-1 expression in Hep G2 (A) and SH-SY5Y (B) whole cell lysates and human hippocampus (C) and human lung (D) tissue extracts.

## SELECT PRODUCT CITATIONS

1. Shi, H., et al. 2011. Proteomic analysis of advanced colorectal cancer by laser capture microdissection and two-dimensional difference gel electrophoresis. *J. Proteomics* 75: 339-351.
2. Shi, H., et al. 2013. Overexpression of Aminoacylase-1 is associated with colorectal cancer progression. *Hum. Pathol.* 44: 1089-1097.

## RESEARCH USE

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