

## ATE1 (H-12): sc-271219



The Power to Question

## BACKGROUND

Arginyl-tRNA-protein transferase (ATE1), also designated arginyltransferase 1, belongs to the R-transferase family of proteins. In order for a protein to be degraded via the ubiquitin pathway, arginylation of the protein is required. ATE1 plays an important role in this process, as it is important for the post-translational conjugation of arginine to the N-terminal aspartate-, glutamate- and possibly cystine-containing substrates. ATE1 is a 518 amino acid protein. Alternative splicing results in two distinct isoforms. ATE1, which is found as a monomer, can localize to the cytoplasm and/or the nucleus.

## REFERENCES

1. Kwon, Y.T., et al. 1999. Alternative splicing results in differential expression, activity, and localization of the two forms of arginyl-tRNA-protein transferase, a component of the N-end rule pathway. *Mol. Cell. Biol.* 19: 182-193.
2. Kwon, Y.T., et al. 2002. An essential role of N-terminal arginylation in cardiovascular development. *Science* 297: 96-99.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607103. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Rai, R. and Kashina, A. 2005. Identification of mammalian arginyltransferases that modify a specific subset of protein substrates. *Proc. Natl. Acad. Sci. USA* 102: 10123-10128.

## CHROMOSOMAL LOCATION

Genetic locus: ATE1 (human) mapping to 10q26.13.

## SOURCE

ATE1 (H-12) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of ATE1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

ATE1 (H-12) is recommended for detection of ATE1 isoforms 1 and 2 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), immunohistochemistry (including paraffin-embedded sections) (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 ATE1 siRNA (h): sc-60220, ATE1 shRNA Plasmid (h): sc-60220-SH and ATE1 shRNA (h) Lentiviral Particles: sc-60220-V.

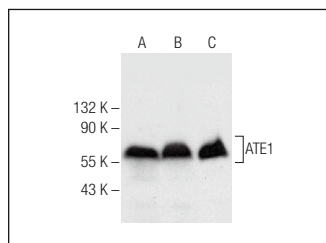
Molecular Weight of ATE1: 59 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, MDA-MB-231 cell lysate: sc-2232 or Jurkat whole cell lysate: sc-2204.

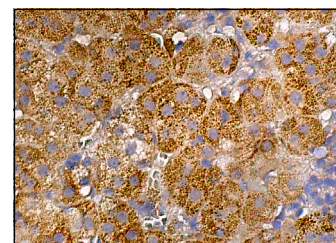
## RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



ATE1 (H-12): sc-271219. Western blot analysis of ATE1 expression in Hep G2 (A), MDA-MB-231 (B) and Jurkat (C) whole cell lysates.



ATE1 (H-12): sc-271219. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS

1. Cha-Molstad, H., et al. 2017. p62/SQSTM1/Sequestosome-1 is an N-recognin of the N-end rule pathway which modulates autophagosome biogenesis. *Nat. Commun.* 8: 102.
2. Shim, S.M., et al. 2023. The Cys-N-degron pathway modulates pexophagy through the N-terminal oxidation and arginylation of ACAD10. *Autophagy* 19: 1642-1661.
3. Lan, X., et al. 2024. Oligomerization and a distinct tRNA-binding loop are important regulators of human arginyl-transferase function. *Nat. Commun.* 15: 6350.

## 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](http://www.scbt.com) for detailed protocols and support products.