SANTA CRUZ BIOTECHNOLOGY, INC.

Atase (F-23): sc-130698

BACKGROUND

Atase (amidophosphoribosyltransferase), also known as PPAT (phosphoribosyl pyrophosphate (PRPP) amidotransferase), PRAT or GPAT (glutamine phosphoribosyl pyrophosphate amidotransferase), is a ubiquitously expressed N-terminal nucleophile-type glutamine amidotransferase that belongs to the purine/pyrimidine phosphoribosyltransferase family. Existing as a homotetramer, Atase plays an important role in purine metabolism. More specifically, Atase functions as regulatory enzyme and contains one glutamine amidotransferase type-2 domain. Binding a magnesium ion and a 4Fe-4S cluster as cofactors, Atase catalyzes the first step (the rate-limiting step) in the purine nucleotide biosynthesis pathway, a two-step reaction that results in the formation of phosphoribosylamine from PRPP and glutamine. The first step of this reaction is catalyzed by the N-terminal glutaminase domain while the second step is catalyzed by the C-terminal PRTase domain.

REFERENCES

1. Feldman, R.I., et al. 1975. Purine mutants of mammalian cell lines. II. Identification of a phosphoribosylpyrophosphate amidotransferase-deficient mutant of Chinese hamster lung cells. Biochem. Genet. 13: 227-234.
2. Shabanov, M., et al. 1978. Effect of the pesticides agria 1060 A and neguvon on strains of *Staphylococcus aureus*. Acta Microbiol. Bulg. 2: 66-73.
3. Gavalas, A., et al. 1993. Coexpression of two closely linked avian genes for purine nucleotide synthesis from a bidirectional promoter. Mol. Cell. Biol. 13: 4784-4792.
4. Brayton, K.A., et al. 1994. Two genes for *de novo* purine nucleotide synthesis on human chromosome 4 are closely linked and divergently transcribed. J. Biol. Chem. 269: 5313-5321.
5. Bera, A.K., et al. 1999. Interdomain signaling in glutamine phosphoribosylpyrophosphate amidotransferase. J. Biol. Chem. 274: 36498-36504.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 172450. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Koenigsknecht, M.J., et al. 2007. Glutamine phosphoribosylpyrophosphate amidotransferase-independent phosphoribosyl amine synthesis from ribose 5-phosphate and glutamine or asparagine. J. Biol. Chem. 282: 28379-28384.

CHROMOSOMAL LOCATION

Genetic locus: PPAT (human) mapping to 4q12

SOURCE

Atase (F-23) is a purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of Atase of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

Atase (F-23) is recommended for detection of Atase of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Atase siRNA (h): sc-88891, Atase shRNA Plasmid (h): sc-88891-SH and Atase shRNA (h) Lentiviral Particles: sc-88891-V.

Molecular Weight of proenzyme Atase: 60 kDa.

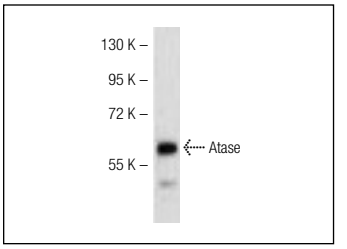
Molecular Weight of mature enzyme Atase: 55 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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).

DATA



Atase (F-23): sc-130698. Western blot analysis of Atase expression in Hep G2 whole cell lysate.

STORAGE

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

PROTOCOLS

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