SANTA CRUZ BIOTECHNOLOGY, INC.

Atase siRNA (h): sc-88891

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 negu-von 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/

CHROMOSOMAL LOCATION

Genetic locus: PPAT (human) mapping to 4q12.

PRODUCT

Atase siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Atase shRNA Plasmid (h): sc-88891-SH and Atase shRNA (h) Lentiviral Particles: sc-88891-V as alternate gene silencing products.

For independent verification of Atase (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-88891A, sc-88891B and sc-88891C.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Atase siRNA (h) is recommended for the inhibition of Atase expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Atase gene expression knockdown using RT-PCR Primer: Atase (h)-PR: sc-88891-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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