SANTA CRUZ BIOTECHNOLOGY, INC.

AATK siRNA (h): sc-93982

BACKGROUND

AATK (Apoptosis-associated tyrosine kinase), also known as LMR1 (Lemur tyrosine kinase 1), AATYK, AATYK1 or LMTK1, is a single-pass type I membrane protein that is involved in neuronal differentiation. Localized to the brain, AATK expression is induced during apoptosis and may be necessary for growth arrest of myeloid precursor cells. Additionally, AATK functions in death activation pathways in the brain where it helps to regulate neuronal apoptosis; a crucial event that minimizes brain damage and ensures proper development. AATK, which has *in vitro* kinase activity, contains a proline-rich domain at its C-terminus and a tyrosine kinase domain at its N-terminus. Three isoforms of AATK exist due to alternative splicing events.

REFERENCES

1. Seki, N., et al. 1999. Chromosomal assignment of a human apoptosis-associated tyrosine kinase gene on chromosome 17q25.3 by somatic hybrid analysis and fluorescence *in situ* hybridization. J. Hum. Genet. 44: 141-142.
2. Raghunath, M., et al. 2000. A novel kinase, AATYK induces and promotes neuronal differentiation in a human neuroblastoma (SH-SY5Y) cell line. Brain Res. Mol. Brain Res. 77: 151-162.
3. Baker, S.J., et al. 2001. Characterization of an alternatively spliced AATYK mRNA: expression pattern of AATYK in the brain and neuronal cells. Oncogene 20: 1015-1021.
4. Tomomura, M., et al. 2001. Characterization of the apoptosis-associated tyrosine kinase (AATYK) expressed in the CNS. Oncogene 20: 1022-1032.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605276. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Tomomura, M., et al. 2003. Differential expression and function of apoptosis-associated tyrosine kinase (AATYK) in the developing mouse brain. Brain Res. Mol. Brain Res. 112: 103-112.
7. Tomomura, M., et al. 2005. Apoptosis-associated tyrosine kinase (AATYK) has differential Ca^{2+}-dependent phosphorylation states in response to survival and apoptotic conditions in cerebellar granule cells. J. Biol. Chem. 280: 35157-35163.

CHROMOSOMAL LOCATION

Genetic locus: AATK (human) mapping to 17q25.3.

PRODUCT

AATK siRNA (h) is a target-specific 19-25 nt siRNA 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 AATK shRNA Plasmid (h): sc-93982-SH and AATK shRNA (h) Lentiviral Particles: sc-93982-V as alternate gene silencing products.

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

AATK siRNA (h) is recommended for the inhibition of AATK 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.

GENE EXPRESSION MONITORING

AATK (L-37): sc-100436 is recommended as a control antibody for monitoring of AATK gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AATK gene expression knockdown using RT-PCR Primer: AATK (h)-PR: sc-93982-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.