SANTA CRUZ BIOTECHNOLOGY, INC.

ATP13A4 siRNA (h): sc-78058

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ATP13A4 (ATPase type 13A4) is a 1,196 amino acid multi-pass membrane protein that belongs to the P-type family of cation transport ATPases. Expressed in pancreas, liver, placenta, heart and skeletal muscle, with lower levels of expression in kidney, lung and brain, ATP13A4 functions to catalyze the decomposition of ATP to ADP and phosphate, a reaction that is H2O-dependent and may drive intracellular transport processes. Chromosomal aberrations in the gene encoding ATP13A4 are associated with language impairment disorders, suggesting that ATP13A4 may be involved in language development. Four isoforms of ATP13A4 exist due to alternative splicing events. The gene encoding ATP13A4 maps to human chromosome 3q29, which houses over 1,100 genes, including a chemokine receptor (CKR) gene cluster and a variety of human cancer-related gene loci.

REFERENCES

1. Müller, S., et al. 2000. Molecular cytogenetic dissection of human chromosomes 3 and 21 evolution. Proc. Natl. Acad. Sci. USA 97: 206-211.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609556. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Braga, E.A., et al. 2003. New tumor suppressor genes in hot spots of human chromosome 3: new methods of identification. Mol. Biol. 37: 194-211.
4. Tsend-Ayush, E., et al. 2004. Plasticity of human chromosome 3 during primate evolution. Genomics 83: 193-202.
5. Schultheis, P.J., et al. 2004. Characterization of the P5 subfamily of P-type transport ATPases in mice. Biochem. Biophys. Res. Commun. 323: 731-738.
6. Kwasnicka-Crawford, D.A., et al. 2005. Characterization of a novel cation transporter ATPase gene (ATP13A4) interrupted by 3q25-q29 inversion in an individual with language delay. Genomics 86: 182-194.

CHROMOSOMAL LOCATION

Genetic locus: ATP13A4 (human) mapping to 3q29.

PRODUCT

ATP13A4 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 ATP13A4 shRNA Plasmid (h): sc-78058-SH and ATP13A4 shRNA (h) Lentiviral Particles: sc-78058-V as alternate gene silencing products.

For independent verification of ATP13A4 (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-78058A, sc-78058B and sc-78058C.

PROTOCOLS

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

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

ATP13A4 siRNA (h) is recommended for the inhibition of ATP13A4 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 ATP13A4 gene expression knockdown using RT-PCR Primer: ATP13A4 (h)-PR: sc-78058-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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