SANTA CRUZ BIOTECHNOLOGY, INC.

AKAP 14 siRNA (h): sc-90907

BACKGROUND

The type II cAMP-protein kinase (PKA) is a multifunctional kinase with a broad range of substrates. Specificity of PKA signaling is thought to be mediated by the compartmentalization of the kinase to specific sites within the cell. To maintain this specific localization, the regulatory (R) subunits (RI and RII) of PKA interact with specific R-anchoring proteins designated AKAPs (A-kinase anchoring proteins). AKAP 14 (protein kinase A anchoring protein 14), also known as AKAP28 (A-kinase anchoring protein 28), is a 197 amino acid cytoplasmic protein that binds to the type II regulatory subunits of PKA to anchor it to discrete locations within the cell. AKAP 14 is expressed in axoneme-based tissue organelles including trachea, testis and airway cilia, with lower expression levels also found in adult and fetal lung. Due to alternative splicing events, three AKAP 14 isoforms exist.

REFERENCES

1. Trotter, K.W., et al. 1999. Alternative splicing regulates the subcellular localization of A-kinase anchoring protein 18 isoforms. J. Cell Biol. 147: 1481-1492.
2. Perkins, G.A., et al. 2001. PKA, PKC, and AKAP localization in and around the neuromuscular junction. BMC Neurosci. 2: 17.
3. Kultgen, P.L., et al. 2002. Characterization of an A-kinase anchoring protein in human ciliary axonemes. Mol. Biol. Cell. 13: 4156-4166.
4. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 300462. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Dell'Acqua, M.L., et al. 2006. Regulation of neuronal PKA signaling through AKAP targeting dynamics. Eur. J. Cell Biol. 85: 627-633.

CHROMOSOMAL LOCATION

Genetic locus: AKAP14 (human) mapping to Xq24.

PRODUCT

AKAP 14 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 AKAP 14 shRNA Plasmid (h): sc-90907-SH and AKAP 14 shRNA (h) Lentiviral Particles: sc-90907-V as alternate gene silencing 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

AKAP 14 siRNA (h) is recommended for the inhibition of AKAP 14 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 AKAP 14 gene expression knockdown using RT-PCR Primer: AKAP 14 (h)-PR: sc-90907-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.

PROTOCOLS

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