

# PKA I $\alpha$ reg siRNA (m): sc-39163

## BACKGROUND

The second messenger cyclic AMP (cAMP) mediates diverse cellular responses to external signals such as proliferation, ion transport, regulation of metabolism and gene transcription by activation of the cAMP-dependent protein kinase (cAPK or PKA). Activation of PKA occurs when cAMP binds to the two regulatory subunits of the tetrameric PKA holoenzyme, resulting in release of active catalytic subunits. Four different PKA regulatory subunits have been identified, designated I $\alpha$ , I $\beta$ , II $\alpha$  and II $\beta$ . The PKA I $\alpha$  reg protein is a tissue-specific extinguisher that downregulates the expression of seven liver genes in hepatoma x fibroblast hybrids. Functional null mutations in the gene that codes for PKA I $\alpha$  reg cause Carney complex (CNC). CNC is an autosomal dominant multiple neoplasia syndrome. CNC is associated with a variety of characterized symptoms such as cardiac and other myxomas, spotty skin pigmentation, endocrine tumors and psammomatous melanotic schwannomas.

## REFERENCES

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8. Nordheim, A. 1994. CREB takes CBP to tango. *Nature* 370: 177-178.
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## CHROMOSOMAL LOCATION

Genetic locus: Prkar1a (mouse) mapping to 11 E1.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

PKA I $\alpha$  reg siRNA (m) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PKA I $\alpha$  reg shRNA Plasmid (m): sc-39163-SH and PKA I $\alpha$  reg shRNA (m) Lentiviral Particles: sc-39163-V as alternate gene silencing products.

For independent verification of PKA I $\alpha$  reg (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-39163A, sc-39163B and sc-39163C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

PKA I $\alpha$  reg siRNA (m) is recommended for the inhibition of PKA I $\alpha$  reg expression in mouse 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  $\mu$ M in 66  $\mu$ l. 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

PKA I $\alpha$  reg (20): sc-136231 is recommended as a control antibody for monitoring of PKA I $\alpha$  reg 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).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PKA I $\alpha$  reg gene expression knockdown using RT-PCR Primer: PKA I $\alpha$  reg (m)-PR: sc-39163-PR (20  $\mu$ l, 491 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.