

# Amylin siRNA (h): sc-39275

## BACKGROUND

Adrenomedullin (AM),  $\alpha$ - and  $\beta$ -calcitonin gene-related peptide (CGRP), calcitonin (CT) and Amylin are homologous polypeptides with overlapping biological actions, such as vasodilatation and inhibition of bone resorption. Amylin (islet/insulinoma amyloid polypeptide or IAPP) is a 37 amino acid monomeric polypeptide isolated from pancreatic amyloid. This protein is a major component of amyloid-rich pancreatic extracts of type 2 diabetic patients. Amylin has cysteine residues in positions 2 and 7, a feature found in all known calcitonin gene-related peptides, and shows 46% amino acid sequence homology with CGRP II. Demonstrated immunochemically in normal  $\beta$  cells of several mammals, Amylin likely plays an important role in pancreatic islet function. The gene that encodes Amylin maps to human chromosome 12p12.1.

## REFERENCES

1. Cooper, G.J., et al. 1987. Purification and characterization of a peptide from amyloid-rich pancreases of type 2 diabetic patients. *Proc. Natl. Acad. Sci. USA* 84: 8628-8632.
2. Hoovers, J.M., et al. 1993. High-resolution chromosomal localization of the human Calcitonin/CGRP/IAPP gene family members. *Genomics* 15: 525-529.
3. Born, W., et al. 2002. Functional interaction of G protein-coupled receptors of the adrenomedullin peptide family with accessory receptor-activity-modifying proteins (RAMP). *Microsc. Res. Tech.* 57: 14-22.
4. Zhang, S., et al. 2003. Fibrillogenic Amylin evokes islet  $\beta$ -cell apoptosis through linked activation of a caspase cascade and JNK1. *J. Biol. Chem.* 278: 52810-52819.

## CHROMOSOMAL LOCATION

Genetic locus: IAPP (human) mapping to 12p12.1.

## PRODUCT

Amylin 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Amylin shRNA Plasmid (h): sc-39275-SH and Amylin shRNA (h) Lentiviral Particles: sc-39275-V as alternate gene silencing products.

For independent verification of Amylin (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-39275A, sc-39275B and sc-39275C.

## 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

Amylin siRNA (h) is recommended for the inhibition of Amylin 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  $\mu$ 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

Amylin (E-5): sc-377530 is recommended as a control antibody for monitoring of Amylin 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Amylin gene expression knockdown using RT-PCR Primer: Amylin (h)-PR: sc-39275-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Chatterjee Bhowmick, D., et al. 2021. FoxA2 and RNA Pol II mediate human islet amyloid polypeptide turnover in ER-stressed pancreatic  $\beta$ -cells. *Biochem. J.* 478: 1261-1282.

## 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.