SANTA CRUZ BIOTECHNOLOGY, INC.

Renalase siRNA (m): sc-76385

BACKGROUND

Renalase is a 342 amino acid FAD-dependent amine oxidase that is highly expressed in kidney and is expressed at a lower level in heart, skeletal muscle and small intestine. Renalase is secreted in the blood by the kidney and it is thought to regulate cardiac function and systemic blood pressure. It is also suggested that Renalase functions as a hormone that metabolizes circulating catecholamines, which have an active role in the sympathetic and parasympathetic nervous systems. Individuals with chronic kidney disease and end-stage renal disease have markedly reduced levels of plasma Renalase than healthy individuals. Infusion of Renalase in animal models causes decrease in heart rate, cardiac contractility and blood pressure. Two isoforms of Renalase exist due to alternative splicing events.

REFERENCES

1. Luft, F.C. 2005. Renalase, a catecholamine-metabolizing hormone from the kidney. Cell Metab. 1: 358-360.
2. Xu, J., et al. 2005. Renalase is a novel, soluble monoamine oxidase that regulates cardiac function and blood pressure. J. Clin. Invest. 115: 1275-1280.
3. Go, A.S. and Lo, J.C. 2006. Epidemiology of non-dialysis-requiring chronic kidney disease and cardiovascular disease. Curr. Opin. Nephrol. Hypertens. 15: 296-302.
4. Xu, J. and Desir, G.V. 2007. Renalase, a new renal hormone: its role in health and disease. Curr. Opin. Nephrol. Hypertens. 16: 373-378.
5. Boomsma, F. and Tipton, K.F. 2007. Renalase, a catecholamine-metabolising enzyme? J. Neural Transm. 114: 775-776.
6. Zhao, Q., et al. 2007. Renalase gene is a novel susceptibility gene for essential hypertension: a two-stage association study in northern Han Chinese population. J. Mol. Med. 85: 877-885.
7. Li, G., et al 2008. Catecholamines regulate the activity, secretion, and synthesis of Renalase. Circulation 117: 1277-1282.
8. Desir, G.V. 2008. Renalase deficiency in chronic kidney disease, and its contribution to hypertension and cardiovascular disease. Curr. Opin. Nephrol. Hypertens. 17: 181-185.

CHROMOSOMAL LOCATION

Genetic locus: Rnls (mouse) mapping to 19 C1.

PRODUCT

Renalase 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Renalase shRNA Plasmid (m): sc-76385-SH and Renalase shRNA (m) Lentiviral Particles: sc-76385-V as alternate gene silencing products.

For independent verification of Renalase (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-76385A, sc-76385B and sc-76385C.

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

Renalase siRNA (m) is recommended for the inhibition of Renalase 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 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 Renalase gene expression knockdown using RT-PCR Primer: Renalase (m)-PR: sc-76385-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.