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### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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# Insulin I siRNA (r): sc-156136

## BACKGROUND

Insulin I is a secreted peptide hormone that elicits metabolic effects such as increases in glucose uptake and glycogen synthesis leading to a decrease in blood glucose concentration. Insulin I is first formed as a precursor molecule, proinsulin, which is later cleaved to proinsulin and finally to the mature Insulin I hormone. Mature Insulin I consists of 51 amino acids, contained within an A chain and a B chain that are connected by two disulfide bridges. It increases cell permeability to monosaccharides, amino acids and fatty acids. Insulin I is secreted by the pancreas at basal levels in the absence of exogenous stimuli, with secretion increasing in response to glucose. Insulin I action is effected by the binding of Insulin I to cell-surface receptors on the target cell membrane. Defects of Insulin I are the cause of hyperproinsulinemia and of type 2 diabetes mellitus.

## REFERENCES

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3. Hilgert, I. et al. 1991. A monoclonal antibody applicable for determination of C-peptide of human proinsulin by RIA. *Hybridoma* 10: 379-86.
4. Jorgensen, A.M., et al. 1996. Solution structure of the superactive monomeric des-[Phe(B25)] Insulin and the dimerization of native Insulin. *J. Mol. Biol.* 257: 684-699.
5. Mackin, R.B. 1998. Proinsulin: recent observations and controversies. *Cell. Mol. Life Sci.* 54: 696-702.
6. Soria, B., et al. 1998. Cytosolic oscillations and Insulin release in pancreatic islets of Langerhans. *Diabetes Metab.* 24: 37-40.
7. Walker, M., et al. 2005. Impaired  $\beta$  cell glucose sensitivity and whole-body Insulin sensitivity as predictors of hyperglycaemia in non-diabetic subjects. *Diabetologia* 48: 2470-2476.
8. Polak J, et al. 2005. Dynamic strength training improves Insulin sensitivity and functional balance between adrenergic  $\alpha$  2A and  $\beta$  pathways in subcutaneous adipose tissue of obese subjects. *Diabetologia* 48: 2631-2640.
9. Chen, J., et al. 2006. Stevioside does not cause increased basal Insulin secretion or  $\beta$ -cell desensitization as does the sulphonylurea, glibenclamide: studies *in vitro*. *Life Sci.* 78: 1748-1753.

## CHROMOSOMAL LOCATION

Genetic locus: Ins1 (rat) mapping to 1q55.

## PRODUCT

Insulin I siRNA (r) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Insulin I shRNA Plasmid (r): sc-156136-SH and Insulin I shRNA (r) Lentiviral Particles: sc-156136-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  $\mu$ 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

Insulin I siRNA (r) is recommended for the inhibition of Insulin I expression in rat 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Insulin I gene expression knockdown using RT-PCR Primer: Insulin I (r)-PR: sc-156136-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.