SANTA CRUZ BIOTECHNOLOGY, INC.

# ADPGK siRNA (m): sc-140887

## BACKGROUND

ADPGK (ADP-dependent glucokinase), also known as ADP-GK or RbBP-35, is a member of the ADP-dependent glucokinase family of proteins that are involved in both carbohydrate degradation and glycolysis. Expressed in a wide variety of tissues including lymphatic, endocrine, muscular and epithelial, ADPGK functions to catalyze the ADP-dependent phosphorylation of D-glucose to D-glucose 6-phosphate. Although GDP and CDP can replace ADP as a phosphate donor, the enzymatic efficiency of ADPGK is decreased when anything other than ADP is used. ADPGK contains one ADPK (ADP-dependent kinase) domain and is able to bind one magnesium ion as a cofactor. Five isoforms of ADPGK exist due to alternative splicing events.

## REFERENCES


1. Tsuge, H., et al. 2002. Crystal structure of the ADP-dependent glucokinase from *Pyrococcus horikoshii* at 2.0-A resolution: a large conformational change in ADP-dependent glucokinase. Protein Sci. 11: 2456-2463.
2. Sakuraba, H., et al. 2002. ADP-dependent glucokinase/phosphofructokinase, a novel bifunctional enzyme from the hyperthermophilic archaeon *Methanococcus jannaschii*. J. Biol. Chem. 277: 12495-12498.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611861. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Ronimus, R.S. and Morgan, H.W. 2004. Cloning and biochemical characterization of a novel mouse ADP-dependent glucokinase. Biochem. Biophys. Res. Commun. 315: 652-658.
5. Gregori, C., et al. 2006. Insulin regulation of glucokinase gene expression: evidence against a role for sterol regulatory element binding protein 1 in primary hepatocytes. FEBS Lett. 580: 410-414.


## CHROMOSOMAL LOCATION

Genetic locus: Adpgk (mouse) mapping to 9 B.

## PRODUCT

ADPGK 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 ADPGK shRNA Plasmid (m): sc-140887-SH and ADPGK shRNA (m) Lentiviral Particles: sc-140887-V as alternate gene silencing products.

For independent verification of ADPGK (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-140887A, sc-140887B and sc-140887C.

## PROTOCOLS

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

ADPGK siRNA (m) is recommended for the inhibition of ADPGK 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.

## GENE EXPRESSION MONITORING

ADPGK (AA40): sc-100751 is recommended as a control antibody for monitoring of ADPGK 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-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ADPGK gene expression knockdown using RT-PCR Primer: ADPGK (m)-PR: sc-140887-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.