

# SLC22A12 siRNA (h): sc-96373

## BACKGROUND

SLC22A12 (solute carrier family 22 (organic anion/urate transporter), member 12), also known as RST, OAT4L or URAT1 (urate transporter-1), is a 553 amino acid multi-pass membrane protein belonging to the major facilitator superfamily and the organic cation transporter family. Expressed in epithelial cells of proximal tubules in renal cortex, SLC22A12 is required for efficient urate re-absorption in the kidney, thereby regulating blood urate levels and mediating saturable urate uptake by facilitating the exchange of urate against organic anions. Defects in the SLC22A12 gene leads to renal hypouricemia (RH), an inherited disorder characterized by impaired tubular uric acid transport. Individuals affected with RH have low serum urate levels due to defects in renal urate re-absorption and high urinary urate excretion. SLC22A12 has three consensus sequences for N-glycosylation and two cyclic AMP-dependent protein kinase phosphorylation sites.

## REFERENCES

- Enomoto, A., et al. 2002. Molecular identification of a renal urate anion exchanger that regulates blood urate levels. *Nature* 417: 447-452.
- Hamada, T., et al. 2008. Uricosuric action of losartan via the inhibition of urate transporter 1 (URAT 1) in hypertensive patients. *Am. J. Hypertens.* 21: 1157-1162.
- Jang, W.C., et al. 2008. T6092C polymorphism of SLC22A12 gene is associated with serum uric acid concentrations in Korean male subjects. *Clin. Chim. Acta* 398: 140-144.
- Lam, C.W., et al. 2008. A novel mutation of SLC22A12 gene causing primary renal hypouricemia in a patient with metabolic syndrome. *Clin. Chim. Acta* 398: 157-158.

## CHROMOSOMAL LOCATION

Genetic locus: SLC22A12 (human) mapping to 11q13.1.

## PRODUCT

SLC22A12 siRNA (h) is a pool of 2 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 SLC22A12 shRNA Plasmid (h): sc-96373-SH and SLC22A12 shRNA (h) Lentiviral Particles: sc-96373-V as alternate gene silencing products.

For independent verification of SLC22A12 (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-96373A and sc-96373B.

## 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

SLC22A12 siRNA (h) is recommended for the inhibition of SLC22A12 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

SLC22A12 (2B5): sc-293405 is recommended as a control antibody for monitoring of SLC22A12 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 SLC22A12 gene expression knockdown using RT-PCR Primer: SLC22A12 (h)-PR: sc-96373-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

- Wang, J.C., et al. 2023. Hyperuricemia exacerbates abdominal aortic aneurysm formation through the URAT1/ERK/MMP-9 signaling pathway. *BMC Cardiovasc. Disord.* 23: 55.

## 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.