SANTA CRUZ BIOTECHNOLOGY, INC.

uricase siRNA (m): sc-41089

BACKGROUND

In most mammals, urate oxidase (uricase) is present in liver, with little or no detectable activity in other tissues. It is associated with the peroxisomes and exists as a tetramer. Humans and certain primates lack this enzyme, which catalyzes the oxidation of uric acid to allantoin. The human Lesch-Nyhan syndrome is a rare neurological and behavioural disorder caused by an inherited deficiency in the level of activity of the purine salvage enzyme hypoxanthine-guanosine phosphoribosyl transferase (HPRT). The identification of mice with complete HPRT deficiency but without any symptoms of the Lesch-Nyhan syndrome raises the possibility that the absence of uricase activity in the purine metabolism pathway may contribute to the development of the neurologic symptoms observed in humans. Comparison of the sequences in man, mouse and pig suggested that loss of uricase function in man was due to a sudden mutational event. The gene which encodes uricase maps to human chromosome 1p22.

REFERENCES

1. Hooper, M., et al. 1987. HPRT-deficient (Lesch-Nyhan) mouse embryos derived from germline colonization by cultured cells. Nature 326: 292-295.
2. Kuehn, M.R., et al. 1987. A potential animal model for Lesch-Nyhan syndrome through introduction of HPRT mutations into mice. Nature 326: 295-298.
3. Wu, X., et al. 1989. Urate oxidase: primary structure and evolutionary implications. Proc. Natl. Acad. Sci. USA 86: 9412-9416.
4. Yeldandi, A.V., et al. 1992. Localization of the human urate oxidase gene (UOX) to 1p22. Cytogenet. Cell Genet. 61: 121-122.
5. Online Mendelian Inheritance in Man, OMIM™. 1997. Johns Hopkins University, Baltimore, MD. MIM Number: 191540. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Ronco, C., et al. 2005. Rasburicase therapy in acute hyperuricemia and renal dysfunction. Contrib. Nephrol. 147: 115-123.

CHROMOSOMAL LOCATION

Genetic locus: Uox (mouse) mapping to 3 H2.

PRODUCT

uricase 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 uricase shRNA Plasmid (m): sc-41089-SH and uricase shRNA (m) Lentiviral Particles: sc-41089-V as alternate gene silencing products.

For independent verification of uricase (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-41089A, sc-41089B and sc-41089C.

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

uricase siRNA (m) is recommended for the inhibition of uricase 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

uricase (C-11): sc-166214 is recommended as a control antibody for monitoring of uricase 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-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (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 uricase gene expression knockdown using RT-PCR Primer: uricase (m)-PR: sc-41089-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.