SANTA CRUZ BIOTECHNOLOGY, INC.

HisRS siRNA (h): sc-37675

BACKGROUND

Histidyl-tRNA synthetase (HisRS, Jo-1) is an aminoacyl-tRNA synthetase that charges transfer RNAs (tRNAs) with a cognate histidine residue to produce histidyl-tRNA. Histidyl-tRNA is essential for the incorporation of histidine into proteins. Systemic autoimmune diseases lead to aminoacyl-tRNA synthetase autoantibodies that are directed against self structures. HisRS is an antigen in systemic autoimmune diseases such as rheumatic arthritis or polymyositis with associated interstitial lung disease, thrombocytopenia and Raynaud's phenomenon (vasospastic attacks that cause blood vessels to constrict). HisRS autoantibodies are unlike anti-synthetase antibodies because they bind the nonlinear, exposed epitopes on native HisRS when the enzyme is complexed to tRNA(His).

REFERENCES

1. Miller, F.W., et al. 1990. The role of an autoantigen, histidyl-tRNA synthetase, in the induction and maintenance of autoimmunity. Proc. Natl. Acad. Sci. USA 87: 9933-9937.
2. Freist, W., et al. 1999. Histidyl-tRNA synthetase. Biol. Chem. 380: 623-646.
3. Baron, F., et al. 2000. Effective treatment of Jo-1-associated polymyositis with T cell-depleted autologous peripheral blood stem cell transplantation. Br. J. Haematol. 110: 339-342.
4. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 227400. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. LocusLink Report (LocusID: 2243). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: HARS (human) mapping to 5q31.3.

PRODUCT

HisRS siRNA (h) 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 HisRS shRNA Plasmid (h): sc-37675-SH and HisRS shRNA (h) Lentiviral Particles: sc-37675-V as alternate gene silencing products.

For independent verification of HisRS (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-37675A, sc-37675B and sc-37675C.

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

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

HisRS (HARSA6): sc-81287 is recommended as a control antibody for monitoring of HisRS 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HisRS gene expression knockdown using RT-PCR Primer: HisRS (h)-PR: sc-37675-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.