

RhD siRNA (h): sc-72147

BACKGROUND

The Rhesus (Rh) blood group system represents one of the most complex and important systems in humans. Two highly homologous genes RHD and RHCE (collectively referred to as RH30 or RHCEd) encode the antigens of the Rh blood group system. These tightly linked genes map to human chromosomal position 1p34.1-1p36. The RHD gene, which is commonly deleted from a large segment of the population, encodes the most potent blood group immunogen, the D antigen. Rh incompatibility between maternal and fetal blood types results in hemolytic disease of the newborn (HDN), which often results in fetal death. The RHCE gene exists in four allelic forms, and each allele determines the expression of two antigens in Ce, ce, cE, or CE combinations. The RHCEd antigens exist as integral membrane proteins with contain 12-trans-membrane helices, and maintain erythrocyte membrane integrity. The presentation of the Rh antigenic activity requires the formation of a complex between the RHCEd antigens and RHAG (RH50).

REFERENCES

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2. Cherif-Zahar, B., Le Van Kim, C., Rouillac, C., Raynal, V., Cartron, J.P. and Colin, Y. 1994. Organization of the gene (RHCE) encoding the human blood group RhCcEe antigens and characterization of the promoter region. *Genomics* 19: 68-74.
3. Wagner, F.F. and Flegel, W.A. 2000. RHD gene deletion occurred in the Rhesus box. *Blood* 95: 3662-3668.
4. Narang, A. and Jain, N. 2001. Haemolytic disease of newborn. *Indian J. Pediatr.* 68: 167-172.
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CHROMOSOMAL LOCATION

Genetic locus: RHD (human) mapping to 1p36.11.

PRODUCT

RhD 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RhD shRNA Plasmid (h): sc-72147-SH and RhD shRNA (h) Lentiviral Particles: sc-72147-V as alternate gene silencing products.

For independent verification of RhD (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-72147A, sc-72147B and sc-72147C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RhD siRNA (h) is recommended for the inhibition of RhD 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 μ M in 66 μ 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

RhD (55/2): sc-52432 is recommended as a control antibody for monitoring of RhD 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 RhD gene expression knockdown using RT-PCR Primer: RhD (h)-PR: sc-72147-PR (20 μ 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.