SANTA CRUZ BIOTECHNOLOGY, INC.

HA-1 siRNA (h): sc-97742

BACKGROUND

Major histocompatibility complex (MHC) molecules, which include human leukocyte antigens (HLAs), form an integral part of the immune response system. They are cell-surface receptors that bind foreign peptides and present them to cytotoxic T lymphocytes (CTLs). Minor histocompatibility antigens can form an immune response upon recognition by certain T-cells when complexed with MHC molecules. HA-1 (minor histocompatibility protein HA-1), also known as HA-1, HLA-HA1 or HMHA1, is a 1,136 amino acid GTPase activator of Rho-type GTPases. Expressed in dendritic cells, epidermal Langerhans cells, hematopoietic cells, peripheral blood mononuclear cells and all leukemia and lymphoma cell lines, HA-1 is also found in various solid tissues and tumors. Highly phosphorylated, HA-1 contains one Rho-GAP domain, a single phorbol-ester/DAG-type zinc finger and is encoded by a gene located on human chromosome 19p13.3.

REFERENCES

1. van Els, C.A., et al. 1992. Immunogenetics of human minor histocompatibility antigens: their polymorphism and immunodominance. Immunogenetics 35: 161-165.
2. Schreuder, G.M., et al. 1993. A genetic analysis of human minor histocompatibility antigens demonstrates Mendelian segregation independent of HLA. Immunogenetics 38: 98-105.
3. Goulmy, E., et al. 1996. Mismatches of minor histocompatibility antigens between HLA-identical donors and recipients and the development of graft-versus-host disease after bone marrow transplantation. N. Engl. J. Med. 334: 281-285.
4. den Haan, J.M., et al. 1998. The minor histocompatibility antigen HA-1: a diallelic gene with a single amino acid polymorphism. Science 279: 1054-1057.
5. Kaminski, W.E., et al. 2000. Genomic organization of the human cholesterol-responsive ABC transporter ABCA7: tandem linkage with the minor histocompatibility antigen HA-1 gene. Biochem. Biophys. Res. Commun. 278: 782-789.
6. Mommaas, B., et al. 2005. Cord blood comprises antigen-experienced T cells specific for maternal minor histocompatibility antigen HA-1. Blood 105: 1823-1827.

CHROMOSOMAL LOCATION

Genetic locus: ARHGAP45 (human) mapping to 19p13.3.

PRODUCT

HA-1 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 HA-1 shRNA Plasmid (h): sc-97742-SH and HA-1 shRNA (h) Lentiviral Particles: sc-97742-V as alternate gene silencing products.

For independent verification of HA-1 (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-97742A, sc-97742B and sc-97742C.

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

HA-1 siRNA (h) is recommended for the inhibition of HA-1 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

HA-1 (C-1): sc-393579 is recommended as a control antibody for monitoring of HA-1 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 HA-1 gene expression knockdown using RT-PCR Primer: HA-1 (h)-PR: sc-97742-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.