

# HLA-A siRNA (h): sc-42908

## BACKGROUND

Major histocompatibility complex (MHC) molecules form an integral part of the immune response system. They are cell-surface receptors that bind peptides and present them to T lymphocytes. Human leukocyte antigens (HLAs) are polymorphic members of the MHC family that are specifically involved in the presentation of antigens to the T cell receptor. There are two classes of HLA antigens: class I (HLA-A, HLA-B and HLA-C) and class II (HLA-D). Class I molecules are expressed in nearly all cells and play a central role in the immune system by presenting peptides derived from the endoplasmic reticulum. The differential structural properties of MHC class I and class II molecules account for their respective roles in activating different populations of T lymphocytes. HLA-A encodes a membrane anchored heavy chain which hetero-dimerizes with a light chain ( $\beta$ -2-Microglobulin) to form MHC-I. Polymorphisms yield hundreds of HLA-A alleles.

## REFERENCES

- Salomonsen, J., et al. 1987. The chicken erythrocyte-specific MHC antigen. Characterization and purification of the B-G antigen by monoclonal antibodies. *Immunogenetics* 25: 373-382.
- Dunon, D., et al. 1990. Ontogenic appearance of MHC class I (B-F) antigens during chicken embryo-genesis. *Dev. Immunol.* 1: 127-135.
- Moller, L.B., et al. 1991. Variations in the cytoplasmic region account for the heterogeneity of the chicken MHC class I (B-F) molecules. *Immunogenetics* 34: 110-120.
- Murakami, M., et al. 1999. Autoimmune thyroid disease induced by interferon therapy. *Nippon Rinsho* 8: 1779-1783.
- Collins, K.L., et al. 1999. HIV's evasion of the cellular immune response. *Immunol. Rev.* 168: 65-74.
- toh, K., et al. 2000. Human tumor-rejection antigens and peptides from genes to clinical research. *Nippon Geka Gakkai Zasshi* 9: 612-617.
- Tourdot, S., et al. 2000. A general strategy to enhance immunogenicity of low-affinity HLA-A2.1-associated peptides: implication in the identification of cryptic tumor epitopes. *Eur. J. Immunol.* 12: 3411-3421.

## CHROMOSOMAL LOCATION

Genetic locus: HLA-A (human) mapping to 6p22.1.

## PRODUCT

HLA-A 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HLA-A shRNA Plasmid (h): sc-42908-SH and HLA-A shRNA (h) Lentiviral Particles: sc-42908-V as alternate gene silencing products.

For independent verification of HLA-A (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-42908A, sc-42908B and sc-42908C.

## 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

HLA-A siRNA (h) is recommended for the inhibition of HLA-A 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

HLA-A (B-11): sc-390473 is recommended as a control antibody for monitoring of HLA-A 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 HLA-A gene expression knockdown using RT-PCR Primer: HLA-A (h)-PR: sc-42908-PR (20  $\mu$ l, 580 bp). 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](http://www.scbt.com) for detailed protocols and support products.