SANTA CRUZ BIOTECHNOLOGY, INC.

HLA-DQA2 siRNA (h): sc-42917

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). There are two classes of HLA antigens, class I (HLA-A, HLA-B and HLA-C) and class II (HLA-D). HLA-DQ and HLA-DR are MHC class II molecules which regulate immune response and suppression. HLA-DQA2 (HLA class II histocompatibility antigen, DQ α 2 chain), also known as DX alpha chain, HLA-DXA or HLA-DQA1, is a 255 amino acid single-pass type I membrane protein that belongs to the MHC class II family. HLA-DQA2 is expressed at low levels on the surface of B-lymphoblastoid cells and is encoded by a gene that maps to human chromosome 6p21.32.

REFERENCES

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2. Gyllensten, U.B., et al. 1989. Ancient roots for polymorphism at the HLA-DQ α locus in primates. Proc. Natl. Acad. Sci. USA 86: 9986-9990.
3. Marsh, S.G., et al. 1992. HLA class II nucleotide sequences, 1992. Tissue Antigens. 40: 229-243.
4. Rudy, G., et al. 1994. Limited polymorphism of the HLA-DQA2 promoter and identification of a variant octamer. Hum. Immunol. 39: 225-229.
5. Rudy, G.B. and Lew, A.M. 1997. The nonpolymorphic MHC class II isotype, HLA-DQA2, is expressed on the surface of B lymphoblastoid cells. J. Immunol. 158: 2116-2125.
6. Barcellos, L.F., et al. 2009. High-density SNP screening of the major histocompatibility complex in systemic lupus erythematosus demonstrates strong evidence for independent susceptibility regions. PLoS Genet. 5: e1000696.
7. Li, X., et al. 2010. Genome-wide association study of asthma identifies RAD50-IL13 and HLA-DR/DQ regions. J. Allergy Clin. Immunol. 125: 328-335.e11.
8. Online Mendelian Inheritance in Man, OMIM™. 2010. Johns Hopkins University, Baltimore, MD. MIM Number: 613503. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: HLA-DQA2 (human) mapping to 6p21.32.

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.

PRODUCT

HLA-DQA2 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 HLA-DQA2 shRNA Plasmid (h): sc-42917-SH and HLA-DQA2 shRNA (h) Lentiviral Particles: sc-42917-V as alternate gene silencing products.

For independent verification of HLA-DQA2 (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-42917A, sc-42917B and sc-42917C.

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

HLA-DQA2 siRNA (h) is recommended for the inhibition of HLA-DQA2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HLA-DQA2 gene expression knockdown using RT-PCR Primer: HLA-DQA2 (h)-PR: sc-42917-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.