SANTA CRUZ BIOTECHNOLOGY, INC.

Qa-2 siRNA (m): sc-72141

BACKGROUND

Qa-1-5 are non-classical MHC class I cell surface antigens encoded by the region of the murine 17th chromosome telomeric to H2-D. The molecular weight and subunit structure of Qa-2 molecules are similar to H2 antigens, though the Qa-2 heavy chain has two additional NH_2-terminal amino acids and several critical amino acid interchanges. Qa-2 affects the rate of embryonic cleavage during the preimplantation stages of development and is also involved in adaptive and innate immune responses. The Qa-2 antigen also functions in resistance to T. crassiceps cysticercosis. Qa-2 is unique in that it can associate with a diverse array of peptide sequences and requires two dominant C-terminal anchor residues when binding to peptides.

REFERENCES

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3. Sharrow, S.O., et al. 1989. Epitope clusters of Qa-2 antigens defined by a panel of new monoclonal antibodies. J. Immunol. 142: 3495-3502.
4. Sharabi, Y. and Sachs, D.H. 1990. *In vivo* effects of monoclonal antibodies to distinct epitopes of Qa-2 antigens. J. Exp. Med. 171: 211-219.
5. Fragoso, G., et al. 1998. Increased resistance to *Taenia crassiceps* murine cysticercosis in Qa-2 transgenic mice. Infect. Immun. 66: 760-764.
6. He, X., et al. 2001. Promiscuous antigen presentation by the nonclassical MHC Ib Qa-2 is enabled by a shallow, hydrophobic groove and self-stabilized peptide conformation. Structure 9: 1213-1224.
7. Comiskey, M., et al. 2003. Evidence that HLA-G is the functional homolog of mouse Qa-2, the Ped gene product. Hum. Immunol. 64: 999-1004.
8. Chiang, E.Y., et al. 2003. Correction of defects responsible for impaired Qa-2 class Ib MHC expression on melanoma cells protects mice from tumor growth. J. Immunol. 170: 4515-4523.
9. Comiskey, M., et al. 2007. HLA-G is found in lipid rafts and can act as a signaling molecule. Hum. Immunol. 68: 1-11.

CHROMOSOMAL LOCATION

Genetic locus: H2-Q7 (mouse) mapping to 17 B1.

PRODUCT

Qa-2 siRNA (m) 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 Qa-2 shRNA Plasmid (m): sc-72141-SH and Qa-2 shRNA (m) Lentiviral Particles: sc-72141-V as alternate gene silencing products.

For independent verification of Qa-2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72141A, sc-72141B and sc-72141C.

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

Qa-2 siRNA (m) is recommended for the inhibition of Qa-2 expression in mouse 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

Qa-2 (695H1-9-9): sc-52552 is recommended as a control antibody for monitoring of Qa-2 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 Qa-2 gene expression knockdown using RT-PCR Primer: Qa-2 (m)-PR: sc-72141-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.