SANTA CRUZ BIOTECHNOLOGY, INC.

MAGE-A2 siRNA (h): sc-108018

BACKGROUND

The melanoma-associated antigen (MAGE) family consists of a number of antigens recognized by cytotoxic T lymphocytes. The MAGE genes were initially isolated from different kinds of tumors and, based on their virtually exclusive tumor-specific expression in adult tissues, they have been used as targets for cancer immunotherapy. MAGE genes encode for tumor-rejection antigens and are expressed in tumors of different histologic types and in normal testis and placenta. MAGE-A2 (melanoma antigen family A2), also known as MAGE2, MAGEA2A, MAGE-A2B or CT1.2 (cancer/testis antigen 1.2), is a 314 amino acid protein that contains one MAGE domain. Expressed in a variety of carcinomas, including melanoma, breast cancer, lung cancer and neck and head squamous cell carcinoma, MAGE-A2/2B is thought to play a role in embryonic development and tumor transformation/progression.

REFERENCES

1. van der Bruggen, P., et al. 1991. A gene encoding an antigen recognized by cytolytic T lymphocytes on a human melanoma. Science 254: 1643-1647.
2. Zakut, R., et al. 1993. Differential expression of MAGE-1, -2, and -3 messenger RNA in transformed and normal human cell lines. Cancer Res. 53: 5-8.
3. De Smet, C., et al. 1994. Sequence and expression pattern of the human MAGE2 gene. Immunogenetics 39: 121-129.
4. De Plaen, E., et al. 1994. Structure, chromosomal localization, and expression of 12 genes of the MAGE family. Immunogenetics 40: 360-369.
5. Rogner, U.C., et al. 1995. The melanoma antigen gene (MAGE) family is clustered in the chromosomal band Xq28. Genomics 29: 725-731.
6. Nagao, T., et al. 2003. MAGE-A4 interacts with the liver oncoprotein gankyrin and suppresses its tumorigenic activity. J. Biol. Chem. 278: 10668-10674.
7. Monte, M., et al. 2006. MAGE-A tumor antigens target p53 transactivation function through histone deacetylase recruitment and confer resistance to chemotherapeutic agents. Proc. Natl. Acad. Sci. USA 103: 11160-11165.

CHROMOSOMAL LOCATION

Genetic locus: MAGEA2 (human) mapping to Xq28.

PRODUCT

MAGE-A2 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 MAGE-A2 shRNA Plasmid (h): sc-108018-SH and MAGE-A2 shRNA (h) Lentiviral Particles: sc-108018-V as alternate gene silencing products.

For independent verification of MAGE-A2 (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-108018A, sc-108018B and sc-108018C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

MAGE-A2 siRNA (h) is recommended for the inhibition of MAGE-A2 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

MAGE-A (6C1): sc-20034 is recommended as a control antibody for monitoring of MAGE-A2 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 MAGE-A2 gene expression knockdown using RT-PCR Primer: MAGE-A2 (h)-PR: sc-108018-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.