

MAGE-A12 siRNA (h): sc-108017

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-A12 (melanoma-associated antigen 12), also known as MAGE12 or CT1.12 (cancer/testis antigen 1.12), is a 314 amino acid protein that contains one MAGE domain and is thought to play a role in tumor progression. Like other members of the MAGE family, MAGE-A12 is expressed in head and neck squamous cell carcinoma, melanoma, breast cancer and lung cancer, suggesting that MAGE-A12 plays an important role in carcinogenesis.

REFERENCES

1. De Plaen, E., et al. 1994. Structure, chromosomal localization, and expression of 12 genes of the MAGE family. *Immunogenetics* 40: 360-369.
2. Rogner, U.C., et al. 1995. The melanoma antigen gene (MAGE) family is clustered in the chromosomal band Xq28. *Genomics* 29: 725-731.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300177. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Taylor, M., et al. 2007. Breast cancer is a promising target for vaccination using cancer-testis antigens known to elicit immune responses. *Breast Cancer Res.* 9: R46.
5. Wischnewski, F., et al. 2007. Methyl-CpG binding domain proteins and their involvement in the regulation of the MAGE-A1, MAGE-A2, MAGE-A3, and MAGE-A12 gene promoters. *Mol. Cancer Res.* 5: 749-759.
6. Ries, J., et al. 2008. Expression of melanoma-associated antigens in oral squamous cell carcinoma. *J. Oral Pathol. Med.* 37: 88-93.
7. Andrade, V.C., et al. 2008. Prognostic impact of cancer/testis antigen expression in advanced stage multiple myeloma patients. *Cancer Immun.* 8: 2.

CHROMOSOMAL LOCATION

Genetic locus: MAGEA12 (human) mapping to Xq28.

PRODUCT

MAGE-A12 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MAGE-A12 shRNA Plasmid (h): sc-108017-SH and MAGE-A12 shRNA (h) Lentiviral Particles: sc-108017-V as alternate gene silencing products.

For independent verification of MAGE-A12 (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-108017A, sc-108017B and sc-108017C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MAGE-A12 siRNA (h) is recommended for the inhibition of MAGE-A12 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 μ M in 66 μ 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

MAGE-A (6C1): sc-20034 is recommended as a control antibody for monitoring of MAGE-A12 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 κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-A12 gene expression knockdown using RT-PCR Primer: MAGE-A12 (h)-PR: sc-108017-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Oh, C., et al. 2021. Epigenetic upregulation of MAGE-A isoforms promotes breast cancer cell aggressiveness. *Cancers* 13: 3176.

RESEARCH USE

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