SANTA CRUZ BIOTECHNOLOGY, INC.

Mx2 siRNA (m): sc-45261

BACKGROUND

Members of the Dynamin family include GTPase, microtubule-associated proteins that are involved in cellular trafficking, including microtubule bundling and endocytosis. Mx1, also known as MxA, an interferon (IFN)-induced protein, acquires a high degree of resistance to influenza A virus and the rhabdo-virus vesicular stomatitis virus (VSV), which suggests that Mx1 plays an active role against influenza virus and the rhabdovirus VSV. Mx1 is a cytoplasmic protein that is 63% identical to the Mx2 protein, which lacks antiviral activity. Mx2 is also known as MxB and is localized at the cytoplasmic face of nuclear pores. Mx2 expression is not interferon-dependent and this protein is thought to regulate the efficiency and/or kinetics of nuclear import, a function which may have been usurped by its antiviral relatives.

REFERENCES

1. Weitz, G., et al. 1989. Purification and characterization of a human Mx protein. J. Interferon Res. 9: 679-689.
2. Aebi, M., et al. 1989. cDNA structures and regulation of two interferon-induced human Mx proteins. Mol. Cell. Biol. 9: 5062-5072.
3. Pavlovic, J., et al. 1990. Resistance to influenza virus and vesicular stomatitis virus conferred by expression of human MxA protein. J. Virol. 64: 3370-3375.
4. Melén, K., et al. 1996. Human targeting signal and is localized in the heterochromatin region beneath the nuclear envelope. J. Biol. Chem. 271: 23478-23486.
5. Melén, K. and Julkunen, I. 1998. Nuclear cotransport mechanism of cytoplasmic human MxB protein. J. Biol. Chem. 272: 32353-32359.
6. Melén, K., et al. 2004. Expression of hepatitis C virus core protein inhibits interferon-induced nuclear import of STATs. J. Med. Virol. 73: 536-547.
7. King, M.C., et al. 2004. Inhibition of nuclear import and cell-cycle progres the dynamin-like GTPase MxB. Proc. Natl. Acad. Sci. USA 101: 8957-8962.
8. Ozaki, T., et al. 2005. Expression of the type I interferon receptor and the interferon-induced Mx protein in human endometrium during the menstrual cycle. Fertil. Steril. 83: 163-170.

CHROMOSOMAL LOCATION

Genetic locus: Mx2 (mouse) mapping to 16 C4.

PRODUCT

Mx2 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 Mx2 shRNA Plasmid (m): sc-45261-SH and Mx2 shRNA (m) Lentiviral Particles: sc-45261-V as alternate gene silencing products.

For independent verification of Mx2 (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-45261A, sc-45261B and sc-45261C.

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

Mx2 siRNA (m) is recommended for the inhibition of Mx2 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

Mx1/2/3 (C-1): sc-166412 is recommended as a control antibody for monitoring of Mx2 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 Mx2 gene expression knockdown using RT-PCR Primer: Mx2 (m)-PR: sc-45261-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhou, J., et al. 2017. Mx is not responsible for the antiviral activity of interferon-α against Japanese encephalitis virus. Viruses 9: 5.

RESEARCH USE

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