

# Mdr-3 siRNA (h): sc-37015

## BACKGROUND

Cells selected for resistance to a single cytotoxic drug may become cross-resistant to a broad range of drugs with different structures and cellular targets. This phenomenon is called multiple drug resistance (MDR). MDR proteins (Mdrs) are members of a highly conserved superfamily of ATP-binding cassette transport proteins. Mdr-3, also known as ABCB4, is a member of the Mdr family that may be associated with a more malignant phenotype in B cell lymphocytic leukemias. The human Mdr-3 gene, which is known as ABCB4 maps to chromosome 7. The mouse homolog of Mdr-3 is designated Mdr-2.

## REFERENCES

1. Banerjee, S., et al. 1992. Down-regulation of Ras and Myc expression associated with Mdr-1 overexpression in adriamycin-resistant tumor cells. *Cell. Mol. Biol.* 38: 561-570.
2. Gupta, S., et al. 1993. P-glycoprotein (MDR 1 gene product) in cells of the immune system: its possible physiologic role and alteration in aging and human immunodeficiency virus-1 (HIV-1) infection. *J. Clin. Immunol.* 13: 289-301.
3. Zaman, G.J., et al. 1993. Analysis of the expression of MRP, the gene for a new putative transmembrane drug transporter, in human multidrug resistant lung cancer cell lines. *Cancer Res.* 53: 1747-1750.
4. Zaman, G.J., et al. 1994. The human multidrug resistance-associated protein MRP is a plasma membrane drug-efflux pump. *Proc. Natl. Acad. Sci. USA* 91: 8822-8826.
5. Alvarez, M., et al. 1995. Generation of a drug resistance profile by quantitation of Mdr-1/P-glycoprotein in the cell lines of the National Cancer Institute Anticancer Drug Screen. *J. Clin. Invest.* 95: 2205-2214.
6. Russo, D., et al. 1995. MDR-related P170-glycoprotein modulates cytotoxic activity of homoharringtonine. *Leukemia* 9: 513-516.
7. Larkin, A., et al. 1999. A new monoclonal antibody that specifically recognizes the Mdr product. *Int. J. Cancer* 80: 265-271.
8. Larkin, A., et al. 1999. Preliminary immunocytochemical studies of Mdr-1 and Mdr-3 Pgp expression in B-cell leukaemias. *Adv. Exp. Med. Biol.* 457: 65-70.

## CHROMOSOMAL LOCATION

Genetic locus: ABCB4 (human) mapping to 7q21.12.

## PRODUCT

Mdr-3 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Mdr-3 shRNA Plasmid (h): sc-37015-SH and Mdr-3 shRNA (h) Lentiviral Particles: sc-37015-V as alternate gene silencing products.

For independent verification of Mdr-3 (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-37015A, sc-37015B and sc-37015C.

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

## APPLICATIONS

Mdr-3 siRNA (h) is recommended for the inhibition of Mdr-3 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  $\mu$ M in 66  $\mu$ 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

Mdr-3 (P3-II-26): sc-551480 is recommended as a control antibody for monitoring of Mdr-3 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 Mdr-3 gene expression knockdown using RT-PCR Primer: Mdr-3 (h)-PR: sc-37015-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Cheshenko, N., et al. 2018. Herpes simplex viruses activate phospholipid scramblase to redistribute phosphatidylserines and Akt to the outer leaflet of the plasma membrane and promote viral entry. *PLoS Pathog.* 14: e1006766.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.