

# MARCO siRNA (h): sc-75747

## BACKGROUND

Macrophages provide their host with a nonspecific immune defense against pathogens. One cellular surface receptor utilized by macrophages is the macrophage receptor with collagenous structure (MARCO). MARCO is a member of the class A scavenger receptor molecules. This single-pass type II membrane protein was first identified in subpopulations of murine macrophages in the spleen and medullary cord of lymph nodes. MARCO is additionally found in increased levels in other tissues during bacterial infection. MARCO is a major receptor in alveolar macrophages, binding both Gram-positive and Gram-negative bacteria. Additionally, MARCO has been shown to be the major scavenger receptor involved in silica uptake and cytotoxicity in murine macrophages. In mice, mutations in the gene coding for MARCO may lead to increased pulmonary inflammation and cytokine release as well as an impaired ability to clear bacteria from the lungs.

## REFERENCES

1. Grolleau, A., et al. 2003. Inducible expression of macrophage receptor MARCO by dendritic cells following phagocytic uptake of dead cells uncovered by oligonucleotide arrays. *J. Immunol.* 171: 2879-2888.
2. Arredouani, M., et al. 2004. The scavenger receptor MARCO is required for lung defense against pneumococcal pneumonia and inhaled particles. *J. Exp. Med.* 200: 267-272.
3. Arredouani, M.S., et al. 2005. MARCO is the major binding receptor for unopsonized particles and bacteria on human alveolar macrophages. *J. Immunol.* 175: 6058-6064.

## CHROMOSOMAL LOCATION

Genetic locus: MARCO (human) mapping to 2q14.2.

## PRODUCT

MARCO 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 MARCO shRNA Plasmid (h): sc-75747-SH and MARCO shRNA (h) Lentiviral Particles: sc-75747-V as alternate gene silencing products.

For independent verification of MARCO (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-75747A, sc-75747B and sc-75747C.

## 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

MARCO siRNA (h) is recommended for the inhibition of MARCO 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

MARCO (F-3): sc-398053 is recommended as a control antibody for monitoring of MARCO 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MARCO gene expression knockdown using RT-PCR Primer: MARCO (h)-PR: sc-75747-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. Cho, K., et al. 2013. Involvement of lipoprotein PpiA of *Streptococcus gordonii* in evasion of phagocytosis by macrophages. *Mol. Oral Microbiol.* 28: 379-391.
2. Khan, A., et al. 2017. Mesenchymal stem cells internalize *Mycobacterium tuberculosis* through scavenger receptors and restrict bacterial growth through autophagy. *Sci. Rep.* 7: 15010.

## 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.