

# c-Fms/CSF-1R siRNA (h): sc-29220

## BACKGROUND

c-Fms/CSF-1R, also designated macrophage colony-stimulating factor receptor (M-CSFR), FIM2 or CD115, is a transmembrane tyrosine kinase receptor belonging to the CSF1/PDGF receptor family. It is encoded by the c-Fms proto-oncogene and is expressed in mononuclear phagocytes, oocytes, decidual cells, trophoblastic cells and some myoblasts. It is important for growth and differentiation of myeloid cells and its function can be regulated by SLAP-2. c-Fms/CSF-1R is responsible for mediating all of the functions of M-CSF. M-CSF is a glycoprotein required for the proliferation and differentiation of mononuclear phagocytes, including osteoclasts. M-CSF has also been identified as an important mediator of the inflammatory response and can regulate the release of proinflammatory cytokines from macrophages.

## REFERENCES

1. Timms, J.F., et al. 1998. Identification of major binding proteins and substrates for the SH2-containing protein tyrosine phosphatase SHP-1 in macrophages. *Mol. Cell. Biol.* 18: 3838-3850.
2. Cross, M., et al. 2004. A novel 110 kDa form of Myosin XVIIIa (MysPDZ) is tyrosine-phosphorylated after colony-stimulating factor-1 receptor signalling. *Biochem. J.* 380: 243-253.
3. Tagoh, H., et al. 2004. Epigenetic silencing of the c-Fms locus during B-lymphopoiesis occurs in discrete steps and is reversible. *EMBO J.* 23: 4275-4285.
4. Pixley, F.J., et al. 2005. Bcl-6 suppresses RhoA activity to alter macrophage morphology and motility. *J. Cell Sci.* 118: 1873-1883.

## CHROMOSOMAL LOCATION

Genetic locus: CSF1R (human) mapping to 5q32.

## PRODUCT

c-Fms/CSF-1R siRNA (h) is a pool of 4 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 c-Fms/CSF-1R shRNA Plasmid (h): sc-29220-SH and c-Fms/CSF-1R shRNA (h) Lentiviral Particles: sc-29220-V as alternate gene silencing products.

For independent verification of c-Fms/CSF-1R (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-29220A, sc-29220B, sc-29220C and sc-29220D.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at  $-20^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at  $-20^{\circ}$  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

c-Fms/CSF-1R siRNA (h) is recommended for the inhibition of c-Fms/CSF-1R 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

c-Fms/CSF-1R (B-8): sc-46662 is recommended as a control antibody for monitoring of c-Fms/CSF-1R 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 $\lambda$  BP-HRP: sc-516132 or m-IgG $\lambda$  BP-HRP (Cruz Marker): sc-516132-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 $\lambda$  BP-FITC: sc-516185 or m-IgG $\lambda$  BP-PE: sc-516186 (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 c-Fms/CSF-1R gene expression knockdown using RT-PCR Primer: c-Fms/CSF-1R (h)-PR: sc-29220-PR (20  $\mu$ l, 507 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## SELECT PRODUCT CITATIONS

1. Komohara, Y., et al. 2011. Macrophage infiltration and its prognostic relevance in clear cell renal cell carcinoma. *Cancer Sci.* 102: 1424-1431.
2. Menke, J., et al. 2012. Autocrine CSF-1 and CSF-1 receptor coexpression promotes renal cell carcinoma growth. *Cancer Res.* 72: 187-200.
3. Wang, X., et al. 2015. The MAPK ERK5, but not ERK1/2, inhibits the progression of monocytic phenotype to the functioning macrophage. *Exp. Cell Res.* 330: 199-211.

## 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.