

OSCAR siRNA (h): sc-45304

BACKGROUND

Osteoclasts regulate homeostasis of bone development. Osteoclast-associated receptor (OSCAR) functions critically in osteoclast differentiation, and is a member of the leukocyte receptor complex (LRC) protein family that plays critical roles in the regulation of both innate and adaptive immune responses. Different from the other LRC members, OSCAR expression is detected specifically in preosteoclasts or mature osteoclasts. The Fc γ chain, a signal transducing adaptor molecule for Fc receptors, associates with OSCAR and is involved in the cell surface expression of OSCAR, which regulates differentiation. Human OSCAR is continually expressed during differentiation of CD14⁺ monocytes into dendritic cells and after maturation.

REFERENCES

1. Boabaid, F., et al. 2004. The role of parathyroid hormone-related protein in the regulation of osteoclastogenesis by cementoblasts. *J. Periodontol.* 75: 1247-1254.
2. Shikawa, S., et al. 2004. Involvement of Fc γ in signal transduction of osteoclast-associated receptor (OSCAR). *Int. Immunol.* 16: 1019-1025.
3. Merck, E., et al. 2004. OSCAR is an Fc γ -associated receptor that is expressed by myeloid cells and is involved in antigen presentation and activation of human dendritic cells. *Blood* 104: 1386-1395.
4. Mocsai, A., et al. 2004. The immunomodulatory adapter proteins DAP12 and Fc receptor γ -chain (Fc γ) regulate development of functional osteoclasts through the Syk tyrosine kinase. *Proc. Natl. Acad. Sci. USA* 101: 6158-6163.
5. Merck, E., et al. 2005. Fc receptor γ -chain activation via hOSCAR induces survival and maturation of dendritic cells and modulates Toll-like receptor responses. *Blood* 105: 3623-3632.

CHROMOSOMAL LOCATION

Genetic locus: OSCAR (human) mapping to 19q13.42.

PRODUCT

OSCAR 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 OSCAR shRNA Plasmid (h): sc-45304-SH and OSCAR shRNA (h) Lentiviral Particles: sc-45304-V as alternate gene silencing products.

For independent verification of OSCAR (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-45304A, sc-45304B and sc-45304C.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

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

OSCAR (WW07): sc-80266 is recommended as a control antibody for monitoring of OSCAR 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 OSCAR gene expression knockdown using RT-PCR Primer: OSCAR (h)-PR: sc-45304-PR (20 μ l, 468 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.