SANTA CRUZ BIOTECHNOLOGY, INC.

CD64 siRNA (m): sc-35018

BACKGROUND

Three different classes of IgG Fc receptors have been described: Fc γ RI (CD64), Fc γ RII (CD32) and Fc γ RIII (CD16). The low affinity receptors, CD64 and CD16, have a putative role in mediating humoral immune responses. CD64 is a surface glycoprotein with high affinity for monomeric IgG, is expressed constitutively on monocytes and macrophages, and can be induced in neutrophils subsequent to IFN-γ stimulation. CD64 plays a putative role in the initiation of cell-mediated cytotoxicity. Thus far, three genes encoding four distinct CD64 transcripts have been described. CD64 has been shown to associate with signal transducing subunit of the high affinity IgE receptor. Src family kinases Hck and Lyn show increased kinase activity and will co-immunoprecipitate with CD64 subsequent to receptor cross linking.

REFERENCES

1. Porges, A.J., et al. 1992. Novel Fc γ receptor I family gene products in human mononuclear cells. J. Clin. Invest. 90: 2102-2109.
2. Valerius, T., et al. 1993. Involvement of the high-affinity receptor for IgG (Fc γ RI; CD64) in enhanced tumor cell cytotoxicity of neutrophils during granulocyte colony-stimulating factor therapy. Blood 82: 931-939.
3. Wang, A.V., et al. 1994. Physical and functional association of the high affinity immunoglobulin G receptor (Fc γ RI) with the kinases Hck and Lyn. J. Exp. Med. 180: 1165-1170.
4. Hulett, M.D., et al. 1995. Multiple regions of human Fc γ RII (CD32) contribute to the binding of IgG. J. Biol. Chem. 270: 21188-21194.
5. Engelhardt, W., et al. 1995. Activation-dependent expression of low affinity IgG receptors Fc γ RII (CD32) and Fc γ RIII (CD16) in subpopulations of human T lymphocytes. Immunobiology 192: 297-320.
6. Capsoni, F., et al. 1995. IL-10 up-regulates human monocyte phagocytosis in the presence of IL-4 and IFN-γ. J. Leukoc. Biol. 58: 351-358.

CHROMOSOMAL LOCATION

Genetic locus: Fcgr1 (mouse) mapping to 3 F2.1.

PRODUCT

CD64 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 CD64 shRNA Plasmid (m): sc-35018-SH and CD64 shRNA (m) Lentiviral Particles: sc-35018-V as alternate gene silencing products.

For independent verification of CD64 (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-35018A, sc-35018B and sc-35018C.

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 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

CD64 siRNA (m) is recommended for the inhibition of CD64 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

CD64 (C-6): sc-515431 is recommended as a control antibody for monitoring of CD64 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 CD64 gene expression knockdown using RT-PCR Primer: CD64 (m)-PR: sc-35018-PR (20 µl, 551 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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