SANTA CRUZ BIOTECHNOLOGY, INC.

C1r siRNA (h): sc-60299

BACKGROUND

The complement component proteins, C1, C3, C4, and C5, are potent anaphylatoxins that are released during complement activation. Binding of these proteins to their respective G protein-coupled receptors induces proinflammatory events, such as cellular degranulation, smooth muscle contraction, arachidonic acid metabolism, cytokine release, leukocyte activation, and cellular chemotaxis. C1q, together with proenzymes C1r and C1s, yield C1, the first component of the classical pathways of the serum complement system. C1 consists of a calcium dependent trimolecular complex of C1r, C1s and C1q in a 2:2:1 ratio. C1r is a dimer formed of two identical chains that are activated by cleavage into two chains, A and B.

REFERENCES

1. Nothen, M.M., et al. 1994. A common amino acid polymorphism in complement component C1r. Hum. Mol. Genet. 3: 217.
2. Pelloux, S., et al. 1996. Identification of a cryptic protein kinase CK2 phosphorylation site in human complement protease C1r, and its use to probe intramolecular interaction. FEBS Lett. 386: 15-20.
3. Budayova-Spano, M., et al. 2002. Monomeric structures of the zymogen and active catalytic domain of complement protease C1r: further insights into the C1 activation mechanism. Structure 10: 1509-1519.
4. Budayova-Spano, M., et al. 2002. The crystal structure of the zymogen catalytic domain of complement protease C1r reveals that a disruptive mechanical stress is required to trigger activation of the C1 complex. EMBO J. 21: 231-239.
5. Grevink, M.E., et al. 2005. Levels of complement in sera from inactive SLE patients, although decreased, do not influence *in vitro* uptake of apoptotic cells. J. Autoimmun. 24: 329-336.
6. Bureeva, S., et al. 2005. Inhibition of classical pathway of complement activation with negative charged derivatives of bisphenol A and bisphenol disulphates. Bioorg. Med. Chem. 13: 1045-1052.
7. Liu, T., et al. 2005. Human plasma N-glycoproteome analysis by immunoaffinity subtraction, hydrazide chemistry, and mass spectrometry. J. Proteome Res. 4: 2070-2080.

CHROMOSOMAL LOCATION

Genetic locus: C1R (human) mapping to 12p13.31.

PRODUCT

C1r 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see C1r shRNA Plasmid (h): sc-60299-SH and C1r shRNA (h) Lentiviral Particles: sc-60299-V as alternate gene silencing products.

For independent verification of C1r (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-60299A, sc-60299B and sc-60299C.

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

C1r siRNA (h) is recommended for the inhibition of C1r 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 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

C1r (F-7): sc-514105 is recommended as a control antibody for monitoring of C1r 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 C1r gene expression knockdown using RT-PCR Primer: C1r (h)-PR: sc-60299-PR (20 µl). 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.

PROTOCOLS

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