SANTA CRUZ BIOTECHNOLOGY, INC.

C8α siRNA (m): sc-141941

BACKGROUND

The complement cascade is a multi-protein system that functions to clear pathogens from an infected host. Part of the innate (unchanging) immune system, the complement cascade consists of proteins and inactive zymogens that are present in blood and are stimulated by one of several triggers. Once stimulated, the cascade relays amplified responses throughout the body, ultimately activating the cell-killing membrane attack complex which can insert itself into the cell membrane and cause the cell to lyse. C8α (complement component 8, α polypeptide) is a 584 amino acid secreted protein that contains one EGF-like domain, one LDL-receptor class A domain, one MACPF domain and two TSP domains. Existing as a part of the membrane attack complex with C8β and C8γ, C8α binds to the C5-8 complex and acts to catalyze the polymerization of C9. Defects in the gene encoding C8α are associated with complement C8 deficiency type I (C8D1), a condition characterized by recurrent bacterial infections.

REFERENCES

1. Müller-Eberhard, H.J. 1988. Molecular organization and function of the complement system. Annu. Rev. Biochem. 57: 321-347.
2. Scheurer, B., et al. 1997. Expression of the human complement C8 subunits is independently regulated by interleukin 1β, interleukin 6, and interferon γ. Immunopharmacology 38: 167-175.
3. Plumb, M.E., et al. 1999. Chimeric and truncated forms of human complement protein C8α reveal binding sites for C8β and C8γ within the membrane attack complex/perforin region. Biochemistry 38: 8478-8484.
4. Plumb, M.E., et al. 2000. An indel within the C8α subunit of human complement C8 mediates intracellular binding of C8γ and formation of C8α-γ. Biochemistry 39: 13078-13083.
5. Musingarimi, P., et al. 2002. Interaction between the C8α-γ and C8β subunits of human complement C8: role of the C8β N-terminal thrombospondin type 1 module and membrane attack complex/perforin domain. Biochemistry 41: 11255-11260.

CHROMOSOMAL LOCATION

Genetic locus: C8a (mouse) mapping to 4 C6.

PRODUCT

C8α 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 C8α shRNA Plasmid (m): sc-141941-SH and C8α shRNA (m) Lentiviral Particles: sc-141941-V as alternate gene silencing products.

For independent verification of C8α (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-141941A, sc-141941B and sc-141941C.

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

C8α siRNA (m) is recommended for the inhibition of C8α 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor C8α gene expression knockdown using RT-PCR Primer: C8α (m)-PR: sc-141941-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.