

# FHR-3 siRNA (h): sc-88648

## BACKGROUND

The Factor H gene family is a multidomain, multifunctional protein family whose individual members are defined by conserved structural elements and display diverse, yet often overlapping functions. These proteins share a common structural motif, the short consensus repeat (SCR), which is structurally conserved among related genes and between phylogenetically divergent species. Five Factor H-related proteins, FHR-1–5, have been identified. All five are closely linked to the Factor H gene on chromosome 1q31.3. FHR-3 and FHR-4 both are synthesized in the liver and contains five SCRs. However, FHR-4, like FHR-1 and FHR-2, are constituents of lipoproteins, while FHR-3 interacts with heparin.

## REFERENCES

1. Ripoche, J., Day, A.J., Harris, T.J. and Sim, R.B. 1988. The complete amino acid sequence of human complement Factor H. *Biochem. J.* 249: 593-602.
2. Proding, W.M., Hellwage, J., Spruth, M., Dierich, M.P. and Zipfel, P.F. 1998. The C-terminus of Factor H: monoclonal antibodies inhibit heparin binding and identify epitopes common to Factor H and Factor H-related proteins. *Biochem. J.* 331: 41-47.
3. Díaz-Guillen, M.A., Rodríguez de Córdoba, S. and Heine-Suñer, D. 1999. A radiation hybrid map of complement Factor H and Factor H-related genes. *Immunogenetics* 49: 549-552.
4. Hellwage, J., Jokiranta, T.S., Koistinen, V., Vaarala, O., Meri, S. and Zipfel, P.F. 1999. Functional properties of complement Factor H-related proteins FHR-3 and FHR-4: binding to the C3d region of C3b and differential regulation by heparin. *FEBS Lett.* 462: 345-352.
5. Zipfel, P.F., Jokiranta, T.S., Hellwage, J., Koistinen, V. and Meri, S. 1999. The Factor H protein family. *Immunopharmacology* 42: 53-60.
6. Male, D.A., Ormsby, R.J., Ranganathan, S., Giannakis, E. and Gordon, D.L. 2000. Complement Factor H: sequence analysis of 221 kb of human genomic DNA containing the entire FH, FHR-1 and FHR-3 genes. *Mol. Immunol.* 37: 41-52.
7. Närkiö-Mäkelä, M., Hellwage, J., Tahkokallio, O. and Meri, S. 2001. Complement-regulator Factor H and related proteins in otitis media with effusion. *Clin. Immunol.* 100: 118-126.
8. McRae, J.L., Cowan, P.J., Power, D.A., Mitchelhill, K.I., Kemp, B.E., Morgan, B.P. and Murphy, B.F. 2001. Human Factor H-related protein 5 (FHR-5). A new complement-associated protein. *J. Biol. Chem.* 276: 6747-6754.

## CHROMOSOMAL LOCATION

Genetic locus: CFHR3 (human) mapping to 1q31.3.

## 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.

## PRODUCT

FHR-3 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see FHR-3 shRNA Plasmid (h): sc-88648-SH and FHR-3 shRNA (h) Lentiviral Particles: sc-88648-V as alternate gene silencing products.

For independent verification of FHR-3 (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-88648A, sc-88648B and sc-88648C.

## 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  $\mu$ 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

FHR-3 siRNA (h) is recommended for the inhibition of FHR-3 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FHR-3 gene expression knockdown using RT-PCR Primer: FHR-3 (h)-PR: sc-88648-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.