

# Protein C siRNA (h): sc-72054

## BACKGROUND

Protein C is a vitamin K-dependent plasma protein that is produced in the liver and made up of two polypeptide chains. It is an important anti-coagulant activated by Thrombin bound to an endothelial surface receptor and it enzymatically cleaves activated forms of Factors V and VIII, thus inhibiting blood coagulation. Protein C is similar to the prothrombin group of blood coagulation factors in its primary structure. Normal Protein C concentration in human plasma is approximately 1-3 ng/ml and the proenzyme concentration is approximately 3 µg/ml. Protein C deficiency is associated with inherited thrombophilia, a rare genetic disorder that predisposes affected individuals to venous thrombosis and habitual abortion.

## REFERENCES

1. Griffin, J.H., et al. 1982. Deficiency of Protein C in congenital thrombotic disease. *J. Clin. Invest.* 68: 1370-1373.
2. Esmon, C.T. 1989. The roles of Protein C and thrombomodulin in the regulation of blood coagulation. *J. Biol. Chem.* 264: 4743-4746.
3. Dahlbäck, B., et al. 1993. Familial thrombophilia due to a previously unrecognized mechanism characterized by poor anti-coagulant response to activated Protein C: prediction of a cofactor to activated Protein C. *Proc. Nat. Acad. Sci. USA* 90: 1004-1008.
4. Bertina, R.M., et al. 1994. Mutation in blood coagulation Factor V associated with resistance to activated Protein C. *Nature* 369: 64-67.
5. Dahlbäck, B. 1995. Inherited thrombophilia: resistance to activated Protein C as a pathogenic factor of venous thromboembolism. *Blood* 85: 607-614.
6. Preston, F.E., et al. 1996. Increased fetal loss in women with heritable thrombophilia. *Lancet* 348: 913-916.
7. Abu-Amero, K.K., et al. 2006. Severe type I Protein C deficiency with neonatal purpura fulminans due to a novel homozygous mutation in exon 6 of the Protein C gene. *J. Thromb. Haemost.* 4: 1152-1153.

## CHROMOSOMAL LOCATION

Genetic locus: PROC (human) mapping to 2q14.3.

## PRODUCT

Protein C 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 Protein C shRNA Plasmid (h): sc-72054-SH and Protein C shRNA (h) Lentiviral Particles: sc-72054-V as alternate gene silencing products.

For independent verification of Protein C (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-72054A, sc-72054B and sc-72054C.

## PROTOCOLS

See our web site at [www.scbt.com](http://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

Protein C siRNA (h) is recommended for the inhibition of Protein C 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

Protein C (C-10): sc-377175 is recommended as a control antibody for monitoring of Protein C 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 Protein C gene expression knockdown using RT-PCR Primer: Protein C (h)-PR: sc-72054-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.