SANTA CRUZ BIOTECHNOLOGY, INC.

# FPGS siRNA (h): sc-92545

## BACKGROUND

FPGS (folylpolyglutamate synthase) is a 587 amino acid protein that localizes to both the nucleus and the cytoplasm in an isoform-dependent manner and is involved in tetrahydrofolylpolyglutamate biosynthesis. Existing as a monomer, FPGS catalyzes the ATP-dependent conversion of folates to polyglutamate derivatives, thus allowing tissues to have a higher concentration of folate than the surrounding plasma. The gene encoding FPGS maps to human chromosome 9, which houses over 900 genes and comprises nearly 4% of the human genome. Hereditary hemorrhagic telangiectasia, which is characterized by harmful vascular defects, and familial dysautonomia, are both associated with chromosome 9. Notably, chromosome 9 encompasses the largest interferon family gene cluster.

## REFERENCES


1. Jones, C., et al. 1980. Chromosomal assignment of the gene for folylpolyglutamate synthetase to human chromosome 9. Cytogenet. Cell Genet. 28: 181-194.
2. Cichowicz, D.J. and Shane, B. 1987. Mammalian folylpoly-γ-glutamate synthetase. 1. Purification and general properties of the hog liver enzyme. Biochemistry 26: 504-512.
3. Garrow, T.A., et al. 1992. Expression cloning of a human cDNA encoding folylpoly (γ-glutamate) synthetase and determination of its primary structure. Proc. Natl. Acad. Sci. USA 89: 9151-9155.
4. Taylor, S.M., et al. 1995. Structural organization of the human folypoly-γ-glutamate synthetase gene: evidence for a single genomic locus. Cancer Res. 55: 6030-6034.
5. Freemantle, S.J. and Moran, R.G. 1997. Transcription of the human folylpoly-γ-glutamate synthetase gene. J. Biol. Chem. 272: 25373-25379.
6. Leclerc, G.J. and Barredo, J.C. 2001. Folylpoly-γ-glutamate synthetase gene mRNA splice variants and protein expression in primary human leukemia cells, cell lines, and normal human tissues. Clin. Cancer Res. 7: 942-951.


## CHROMOSOMAL LOCATION

Genetic locus: FPGS (human) mapping to 9q34.11.

## PRODUCT

FPGS 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 FPGS shRNA Plasmid (h): sc-92545-SH and FPGS shRNA (h) Lentiviral Particles: sc-92545-V as alternate gene silencing products.

For independent verification of FPGS (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-92545A, sc-92545B and sc-92545C.

## 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

FPGS siRNA (h) is recommended for the inhibition of FPGS 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FPGS gene expression knockdown using RT-PCR Primer: FPGS (h)-PR: sc-92545-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.