SANTA CRUZ BIOTECHNOLOGY, INC.

G3PP/PGP siRNA (m): sc-108319

BACKGROUND

G3PP/PGP (phosphoglycolate phosphatase), also known as PGPase, is a 321 amino acid enzyme belonging to the HAD-like hydrolase superfamily and the CbbY/cbbZ/gph/yieH family. G3PP/PGP is detected in all tissues including red cells, lymphocytes and cultured fibroblasts, with highest activity found in skeletal and cardiac muscle. PGP is considered an important regulatory enzyme on oxygen transport by indirectly affecting the level of red cell 2,3-diphosphoglycerate. The gene encoding G3PP/PGP maps to human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome. The GAN gene is located on chromosome 16 and, with mutation, may lead to giant axonal neuropathy, a nervous system disorder characterized by increasing malfunction with growth. The rare disorder Rubinstein-Taybi syndrome is also associated with chromosome 16, as is Crohn's disease, which is a gastrointestinal inflammatory condition.

REFERENCES

1. Barker, R.F. and Hopkinson, D.A. 1978. Genetic polymorphism of human phosphoglycolate phosphatase (PGP). Ann. Hum. Genet. 42: 143-151.
2. Povey, S., Jeremiah, S.J., Barker, R.F., Hopkinson, D.A., Robson, E.B., Cook, P.J., Solomon, E., Bobrow, M., Carritt, B. and Buckton, K.E. 1980. Assignment of the human locus determining phosphoglycolate phosphatase (PGP) to chromosome 16. Ann. Hum. Genet. 43: 241-248.
3. Sparkes, R.S., Mohandas, T., Sparkes, M.C., Passage, M.B. and Shulkin, J.D. 1980. Assignment of the human gene for phosphoglycolate phosphatase to chromosome 16. Hum. Genet. 54: 159-161.
4. Turner, V.S. and Hopkinson, D.A. 1981. Biochemical characterization of the genetic variants of human phosphoglycolate phosphatase (PGP). Ann. Hum. Genet. 45: 121-127.
5. Brink, W., Baur, M.P. and Rittner, C. 1981. Population, formal genetics, and linkage relations of the phosphoglycolate phosphatase (PGP)—E.C.3.1.3.18. Hum. Genet. 59: 386-388.
6. Zecher, R., Schäfer, H.J. and Wolf, H.U. 1982. Phosphotransferase properties of human erythrocyte phosphoglycolate phosphatase. Int. J. Biochem. 14: 771-774.

CHROMOSOMAL LOCATION

Genetic locus: Pgp (mouse) mapping to 17 A3.3.

PRODUCT

G3PP/PGP siRNA (m) is a target-specific 19-25 nt siRNA 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 G3PP/PGP shRNA Plasmid (m): sc-108319-SH and G3PP/PGP shRNA (m) Lentiviral Particles: sc-108319-V as alternate gene silencing products.

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

G3PP/PGP siRNA (m) is recommended for the inhibition of G3PP/PGP 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.

GENE EXPRESSION MONITORING

G3PP/PGP (E-10): sc-390883 is recommended as a control antibody for monitoring of G3PP/PGP 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 G3PP/PGP gene expression knockdown using RT-PCR Primer: G3PP/PGP (m)-PR: sc-108319-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.