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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

SANTA CRUZ BIOTECHNOLOGY, INC.

PTG siRNA (m): sc-152578

BACKGROUND

Protein phosphatase 1 (PP1) is a serine-threonine protein phosphatase that plays a central role in mediating the effects of Insulin on glucose and lipid metabolism. PTG (protein targeting to glycogen) was cloned from 3T3-L1 adipocytes as a protein that binds to the PP1 catalytic subunit. The human homolog of PTG, designated PPP1R5, has been shown to bind to PP1 and to modulate its specificity. PTEN/PPP1R5 shows 42% identity to the glycogen binding subunit, G_L, of rat liver PP1. PTG is expressed predominantly in Insulin-sensitive tissues, and it localizes PP1 to glycogen. PTG also has been shown to interact with several enzymes involved in the hormonal regulation of glycogen metabolism, including phosphorylase kinase, phosphorylase A and glycogen synthase. These data indicate a role for PTG in glycogen metabolism, possibly that of a molecular scaffold.

REFERENCES

1. Cohen, P. 1989. The structure and regulation of protein phosphatases. Annu. Rev. Biochem. 58: 453-508.
2. Saltiel, A.R. 1996. Diverse signaling pathways in the cellular actions of Insulin. Am. J. Physiol. 270: E375-E385.
3. Doherty, M.J., et al. 1996. Amino acid sequence of a novel protein phosphatase 1 binding protein (R5) which is related to the liver- and muscle-specific glycogen binding subunits of protein phosphatase 1. FEBS Lett. 399: 339-343.
4. Printen, J.A., et al. 1997. PTG, a protein phosphatase-1 binding protein with a role in glycogen metabolism. Science 275: 1475-1478.
5. Armstrong, C.G., et al. 1997. PPP1R6, a novel member of the family of glycogen-targeting subunits of protein phosphatase 1. FEBS Lett. 418: 210-214.
6. Brady, M.J., et al. 1997. Role of protein targeting to glycogen (PTG) in the regulation of protein phosphatase-1 activity. J. Biol. Chem. 272: 20198-20204.

CHROMOSOMAL LOCATION

Genetic locus: Ppp1r3c (mouse) mapping to 19 C2.

PRODUCT

PTG 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 PTG shRNA Plasmid (m): sc-152578-SH and PTG shRNA (m) Lentiviral Particles: sc-152578-V as alternate gene silencing products.

For independent verification of PTG (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-152578A, sc-152578B and sc-152578C.

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

PTG siRNA (m) is recommended for the inhibition of PTG 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 PTG gene expression knockdown using RT-PCR Primer: PTG (m)-PR: sc-152578-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.