SANTA CRUZ BIOTECHNOLOGY, INC.

GS2 siRNA (h): sc-60770

BACKGROUND

The Adiponutrin family consists of Adiponutrin (ADPN), adipocyte triglyceride lipase (ATGL, also designated Desnutrin), GS1, GS2, GS2-like and PNPLA1. ADPN, ATGL and GS2 display lipase activity, which is dependent upon the presence of an activated serine residue. GS2, also designated DXS1283E or patatin-like phospholipase domain containing 4 (PNPLA4), is expressed in all tissues that have been examined, including brain, heart, lung, muscle, placenta, liver, spleen, pancreas, and kidney. It is also expressed highly in adipose tissue and may contribute to lipolysis in human adipose tissue. GS2-like, also designated patatin-like phospholipase domain containing 5 (PNPLA5), is expressed and regulated similarly to ADPN, although the levels of GS2-like mRNA are lower than ADPN. Overexpression of GS2, GS2-like, and ATGL lowers intracellular triglyceride levels. GS2-like and ADPN are strongly induced in the liver of ob/ob mice.

REFERENCES

1. Lee, W.C., et al. 1995. Isolation of a new gene GS2 (DXS1283E) from a CpG island between STS a on Xp22.3. Genomics 22: 372-376.
2. Baulande, S., et al. 2001. Adiponutrin, a transmembrane protein corresponding to a novel dietary- and obesity-linked mRNA specifically expressed in the adipose lineage. J. Biol. Chem. 276: 33336-33344.
3. Jenkins, C.M., et al. 2004. Identification, cloning, expression, and purification of three novel human calcium-independent phospholipase A_2 family members possessing triacylglycerol lipase and acylglycerol transacylase activities. J. Biol. Chem. 279: 48968-48975.
4. Liu, Y.M., et al. 2004. Adiponutrin: A new gene regulated by energy balance in human adipose tissue. J. Clin. Endocrinol. Metab. 89: 2684-9268.
5. Gao, J. et al. 2005. Identification of a novel keratinocyte retinyl ester hydrolase as a transacylase and lipase. J. Invest. Dermatol. 124: 1259-1266.
6. Lake, A.C. et al. 2005. Expression, regulation, and triglyceride hydrolase activity of Adiponutrin family members. J. Lipid Res. 46: 2477-2487.
7. Wilson, P.A., et al. 2006. Characterization of the human patatin-like phospholipase family. J. Lipid Res. 47: 1940-1949.

CHROMOSOMAL LOCATION

Genetic locus: PNPLA4 (human) mapping to Xp22.31.

PRODUCT

GS2 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 GS2 shRNA Plasmid (h): sc-60770-SH and GS2 shRNA (h) Lentiviral Particles: sc-60770-V as alternate gene silencing products.

For independent verification of GS2 (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-60770A, sc-60770B and sc-60770C.

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

GS2 siRNA (h) is recommended for the inhibition of GS2 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

GS2 (E-8): sc-393988 is recommended as a control antibody for monitoring of GS2 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 GS2 gene expression knockdown using RT-PCR Primer: GS2 (h)-PR: sc-60770-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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.