SANTA CRUZ BIOTECHNOLOGY, INC.

ISG12b siRNA (h): sc-92086

BACKGROUND

ISG12b, also known as Ifi27l2a (interferon α-inducible protein 27 like 2A) or Ifi27, is a 90 amino acid small hydrophobic protein murine protein that is highly expressed in white adipose tissue. Encoded by a gene which maps to a cluster of ISG12 genes on mouse chromosome 12, ISG12b localizes to mitochondria and functions to inhibit adipocyte differentiation, as well as mitochondrial function. Via its ability to negatively affect mitochondrial biogenesis, ISG12b may play a role in the association of aberrant mitochondrial function with adipocyte development and associated diseases. Murine chromosome 12 houses approximately 670 protein-coding genes, including immunoglobulin heavy chain proteins (IgHs), Myosin light chain proteins, eukaryotic translation initiation factors (eIFs) and thyroid growth factors, suggesting that chromosome 12-localized genes play an important role in cellular growth and development. Additionally, defects in select chromosome 12-encoded genes are associated with mouse lung adenocarcinomas, implicating a role for chromosome instability in tumor progression.

REFERENCES

1. D'Eustachio, P. 1984. A genetic map of mouse chromosome 12 composed of polymorphic DNA fragments. J. Exp. Med. 160: 827-838.
2. Labrada, L., Liang, X.H., Zheng, W., Johnston, C. and Levine, B. 2002. Age-dependent resistance to lethal alphavirus encephalitis in mice: analysis of gene expression in the central nervous system and identification of a novel interferon-inducible protective gene, mouse ISG12. J. Virol. 76: 11688-11703.
3. Smidt, K.C., Hansen, L.L., Søgaard, T.M., Petersen, L.K., Knudsen, U.B. and Martensen, P.M. 2003. A nine-nucleotide deletion and splice variation in the coding region of the interferon induced ISG12 gene. Biochim. Biophys. Acta 1638: 227-234.
4. Parker, N. and Porter, A.C. 2004. Identification of a novel gene family that includes the interferon-inducible human genes 6-16 and ISG12. BMC Genomics 5: 8.
5. Tevendale, M., Watkins, M., Rasberry, C., Cattanach, B. and Ferguson-Smith, A.C. 2006. Analysis of mouse conceptuses with uniparental duplication/deficiency for distal chromosome 12: comparison with chromosome 12 uniparental disomy and implications for genomic imprinting. Cytogenet. Genome Res. 113: 215-222.
6. Ohgaki, S., Iida, K., Yokoo, T., Watanabe, K., Kihara, R., Suzuki, H., Shimano, H., Toyoshima, H. and Yamada, N. 2007. Identification of ISG12b as a putative interferon-inducible adipocytokine which is highly expressed in white adipose tissue. J. Atheroscler. Thromb. 14: 179-184.
7. Li, B., Shin, J. and Lee, K. 2009. Interferon-stimulated gene ISG12b1 inhibits adipogenic differentiation and mitochondrial biogenesis in 3T3-L1 cells. Endocrinology 150: 1217-1224.

CHROMOSOMAL LOCATION

Genetic locus: IFI27L2 (human) mapping to 14q32.12.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

ISG12b siRNA (h) is a pool of 2 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 ISG12b shRNA Plasmid (h): sc-92086-SH and ISG12b shRNA (h) Lentiviral Particles: sc-92086-V as alternate gene silencing products.

For independent verification of ISG12b (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-92086A and sc-92086B.

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

ISG12b siRNA (h) is recommended for the inhibition of ISG12b 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.

PROTOCOLS

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