SANTA CRUZ BIOTECHNOLOGY, INC.

Atg9b siRNA (m): sc-141326

BACKGROUND

All lower eukaryotes possess a single ATG9 gene, and all vertebrates likely possess two genes, ATG9A and ATG9B, suggesting that an ATG9 gene duplication occurred before the divergence of fish. The overlapping orientation of the ATG9B and NOS3 genes is also conserved in mammals and frogs, indicating conservation in vertebrates. Atg9b (ATG9 autophagy related 9 homolog B), also known as SONE, APG9L2 (autophagy 9-like 2 protein) or NOS3AS (nitric oxide synthase 3-overlapping antisense gene protein), is a 924 amino acid protein belonging to the ATG9 family. 16 known human ATG genes exist, of which 4 (Atg2B, Atg5, Atg9B and Atg12) possess mononucleotide repeats with 7 or more nucleotides. Atg9B frameshift mutations may contribute to development of cancer via disruption of autophagy. Encoded by a gene that maps to human chromosome 7q36.1, Atg9b contains between six and eight putative transmembrane domains. Conserved in chimpanzee, canine, bovine, mouse and rat, Atg9b is highly expressed in placenta, pituitary, testis, uterus and lung, and to a lesser extent in most other tissues.

REFERENCES

1. Kusama, Y., et al. 2009. Comprehensive analysis of expression pattern and promoter regulation of human autophagy-related genes. Apoptosis 14: 1165-1175.
2. He, C., et al. 2009. Assaying autophagic activity in transgenic GFP-Lc3 and GFP-Gabarap zebrafish embryos. Autophagy 5: 520-526.
3. Ahn, C.H., et al. 2009. Mutational analysis of TTK gene in gastric and colorectal cancers with microsatellite instability. Cancer Res. Treat. 41: 224-228.
4. Rosenfeldt, M.T., et al. 2009. The role of autophagy in tumour development and cancer therapy. Expert Rev. Mol. Med. 11: e36.
5. Kang, M.R., et al. 2009. Frameshift mutations of autophagy-related genes ATG2B, ATG5, ATG9B and ATG12 in gastric and colorectal cancers with microsatellite instability. J. Pathol. 217: 702-706.
6. Park, S.W., et al. 2010. Somatic frameshift mutations of bone morphogenic protein receptor 2 gene in gastric and colorectal cancers with microsatellite instability. APMIS 118: 824-829.

CHROMOSOMAL LOCATION

Genetic locus: Atg9b (mouse) mapping to 5 A3.

PRODUCT

Atg9b 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 Atg9b shRNA Plasmid (m): sc-141326-SH and Atg9b shRNA (m) Lentiviral Particles: sc-141326-V as alternate gene silencing products.

For independent verification of Atg9b (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-141326A, sc-141326B and sc-141326C.

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

Atg9b siRNA (m) is recommended for the inhibition of Atg9b 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 Atg9b gene expression knockdown using RT-PCR Primer: Atg9b (m)-PR: sc-141326-PR (20 µl, 482 bp). 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.