SANTA CRUZ BIOTECHNOLOGY, INC.

Atg2B siRNA (m): sc-141322

BACKGROUND

Atg2B (ATG2 autophagy related 2 homolog B) is a 2,078 amino acid protein belonging to the ATG2 family. Encoded by a gene that maps to human chromosome 14q32.2, Atg2B is conserved in chimpanzee, canine, bovine, mouse, chicken, zebrafish, fruit fly, mosquito and *Caenorhabditis elegans*. 16 known human ATG genes exist, of which four (Atg2B, Atg5, Atg9B and Atg12) possess mononucleotide repeats with seven or more nucleotides. Atg2B frameshift mutations may contribute to development of cancer via disruption of autophagy. Atg2B associates with Atg2A, which is also linked to frameshift mutations associated with gastric and colorectal carcinomas with high microsatellite instability, indicating that these two related proteins functionally interact. WIPI-4, which is phylogenetically related to both Atg18p and Atg21p, associates with Atg2B and reciprocally binds Atg2A.

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. 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.
3. Rosenfeldt, M.T., et al. 2009. The role of autophagy in tumour development and cancer therapy. Expert Rev. Mol. Med. 11: e36.
4. 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.
5. 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.
6. Behrends, C., et al. 2010. Network organization of the human autophagy system. Nature 466: 68-76.
7. Pandey, A.K., et al. 2010. Gene expression profiling and network analysis reveals lipid and steroid metabolism to be the most favored by TNFα in Hep G2 cells. PLoS ONE 5: e9063.

CHROMOSOMAL LOCATION

Genetic locus: Atg2b (mouse) mapping to 12 E.

PRODUCT

Atg2B 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 Atg2B shRNA Plasmid (m): sc-141322-SH and Atg2B shRNA (m) Lentiviral Particles: sc-141322-V as alternate gene silencing products.

For independent verification of Atg2B (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-141322A, sc-141322B and sc-141322C.

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

Atg2B siRNA (m) is recommended for the inhibition of Atg2B 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 Atg2B gene expression knockdown using RT-PCR Primer: Atg2B (m)-PR: sc-141322-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.