

Beclin 2 siRNA (h): sc-88199

BACKGROUND

Autophagy is the degradation of cellular proteins in the lysosome, and when this pathway is suppressed, cell growth is deregulated. Autophagy is controlled by the same signal transduction pathway that induces the phosphorylation of the Ribosomal Protein S6, both of which are mediated by amino acids. Beclin 2, also known as BECN1L1 (beclin-1-like protein 1) or BECN1P1, is a 441 amino acid peripheral membrane protein that localizes to the Golgi apparatus. Belonging to the beclin family, Beclin 2 may play a role in autophagy and antiviral host defense. Beclin 2 is encoded by a gene located on human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome. Aberrations in chromosome 1 are found in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

1. Blommaart, E.F., et al. 1995. Phosphorylation of Ribosomal Protein S6 is inhibitory for autophagy in isolated rat hepatocytes. *J. Biol. Chem.* 270: 2320-2326.
2. Blommaart, E.F., et al. 1997. Autophagic proteolysis: control and specificity. *Histochem. J.* 29: 365-385.
3. Liang, X.H., et al. 1999. Induction of autophagy and inhibition of tumorigenesis by beclin 1. *Nature* 402: 672-676.
4. Pattingre, S. and Levine, B. 2006. Bcl-2 inhibition of autophagy: a new route to cancer? *Cancer Res.* 66: 2885-2888.
5. Marzin, Y., et al. 2006. Chromosome 1 abnormalities in multiple myeloma. *Anticancer Res.* 26: 953-959.
6. Stacey, S.N., et al. 2008. Common variants on 1p36 and 1q42 are associated with cutaneous basal cell carcinoma but not with melanoma or pigmentation traits. *Nat. Genet.* 40: 1313-1318.

CHROMOSOMAL LOCATION

Genetic locus: BECN1P1 (human) mapping to 1q43.

PRODUCT

Beclin 2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Beclin 2 shRNA Plasmid (h): sc-88199-SH and Beclin 2 shRNA (h) Lentiviral Particles: sc-88199-V as alternate gene silencing products.

For independent verification of Beclin 2 (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-88199A, sc-88199B and sc-88199C.

RESEARCH USE

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

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Beclin 2 siRNA (h) is recommended for the inhibition of Beclin 2 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 μ M in 66 μ l. 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 Beclin 2 gene expression knockdown using RT-PCR Primer: Beclin 2 (h)-PR: sc-88199-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Song, X., et al. 2018. AMPK-mediated BECN1 phosphorylation promotes ferroptosis by directly blocking system X_c⁻ activity. *Curr. Biol.* 28: 2388-2399.
2. He, X.X., et al. 2018. Autophagy inhibition enhanced 5-FU-induced cell death in human gastric carcinoma BGC-823 cells. *Mol. Med. Rep.* 17: 6768-6776.

PROTOCOLS

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