SANTA CRUZ BIOTECHNOLOGY, INC.

YME1L1 siRNA (h): sc-90696

BACKGROUND

YME1L1 (YME1-like 1 *(S. cerevisiae)),* also known as ATP-dependent zinc metalloprotease YME1L1, PAMP (presenilin-associated metalloprotease), MEG4 or FTSH, is a 773 amino acid mitochondrial protein that belongs to the AAA ATPase and peptidase M41 families. Thought to function as an ATP-dependent protease, YME1L1 plays a role in mitochondrial protein metabolism and assists in OPA1 (optic atrophy 1) processing. YME1L1 exists as two alternatively spliced isoforms and is encoded by a gene that maps to human chromosome 10p12.1. Chromosome 10 contains over 800 genes, 135 million nucleotides, and comprises nearly 4.5% of the human genome. PTEN is an important tumor suppressor gene located on chromosome 10q23.31 and, when defective, causes a genetic predisposition to cancer development known as Cowden syndrome.

REFERENCES

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3. Pellegrini, L., et al. 2001. PAMP and PARL, two novel putative metalloproteases interacting with the COOH-terminus of Presenilin-1 and -2. J. Alzheimers Dis. 3: 181-190.
4. Teresi, R.E., et al. 2007. Cowden syndrome-affected patients with PTEN promoter mutations demonstrate abnormal protein translation. Am. J. Hum. Genet. 81: 756-767.
5. Cho, M.Y., et al. 2008. First report of ovarian dysgerminoma in Cowden syndrome with germline PTEN mutation and PTEN-related 10q loss of tumor heterozygosity. Am. J. Surg. Pathol. 32: 1258-1264.
6. Guillery, O., et al. 2008. Metalloprotease-mediated OPA1 processing is modulated by the mitochondrial membrane potential. Biol. Cell 100: 315-325.
7. Yin, Y. and Shen, W.H. 2008. PTEN: a new guardian of the genome. Oncogene 27: 5443-5453.

CHROMOSOMAL LOCATION

Genetic locus: YME1L1 (human) mapping to 10p12.1.

PRODUCT

YME1L1 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 YME1L1 shRNA Plasmid (h): sc-90696-SH and YME1L1 shRNA (h) Lentiviral Particles: sc-90696-V as alternate gene silencing products.

For independent verification of YME1L1 (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-90696A, sc-90696B and sc-90696C.

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

YME1L1 siRNA (h) is recommended for the inhibition of YME1L1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor YME1L1 gene expression knockdown using RT-PCR Primer: YME1L1 (h)-PR: sc-90696-PR (20 µl, 512 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.