SANTA CRUZ BIOTECHNOLOGY, INC.

RPS6KL1 siRNA (h): sc-92312

BACKGROUND

RPS6KL1 (ribosomal protein S6 kinase-like 1) is a 549 amino acid protein that belongs to the Ser/Thr protein kinase family, S6 kinase subfamily and protein kinase superfamily. Existing as three alternatively spliced isoforms, RPS6KL1 contains one MIT domain and a protein kinase domain. The gene encoding RPS6KL1 maps to human chromosome 14, which houses over 700 genes and comprises nearly 3.5% of the human genome. Chromosome 14 encodes the presinilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD). The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder α1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction.

REFERENCES

1. Avramopoulos, D., et al. 2005. Linkage to chromosome 14q in Alzheimer's disease (AD) patients without psychotic symptoms. Am. J. Med. Genet. B Neuropsychiatr. Genet. 132B: 9-13.
2. Larner, A.J., et al. 2006. Clinical phenotypic heterogeneity of Alzheimer's disease associated with mutations of the presenilin-1 gene. J. Neurol. 253: 139-158.
3. Girard, A., et al. 2006. A germline-specific class of small RNAs binds mammalian Piwi proteins. Nature 442: 199-202.
4. Filley, C.M., et al. 2007. The genetics of very early onset Alzheimer disease. Cogn. Behav. Neurol. 20: 149-156.
5. Chappell, S., et al. 2008. A polymorphism of the α1-antitrypsin gene represents a risk factor for liver disease. Hepatology 47: 127-132.
6. Larner, A.J., et al. 2009. Genotype-phenotype relationships of presenilin-1 mutations in Alzheimer's disease: an update. J. Alzheimers Dis. 17: 259-265.
7. Topic, A., et al. 2009. α-1-antitrypsin phenotypes in adult liver disease patients. Ups. J. Med. Sci. 114: 228-234.

CHROMOSOMAL LOCATION

Genetic locus: RPS6KL1 (human) mapping to 14q24.3.

PRODUCT

RPS6KL1 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 RPS6KL1 shRNA Plasmid (h): sc-92312-SH and RPS6KL1 shRNA (h) Lentiviral Particles: sc-92312-V as alternate gene silencing products.

For independent verification of RPS6KL1 (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-92312A and sc-92312B.

PROTOCOLS

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

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

RPS6KL1 siRNA (h) is recommended for the inhibition of RPS6KL1 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.

GENE EXPRESSION MONITORING

RPS6KL1 (273CT4.5.3): sc-517359 is recommended as a control antibody for monitoring of RPS6KL1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RPS6KL1 gene expression knockdown using RT-PCR Primer: RPS6KL1 (h)-PR: sc-92312-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Jin, S., et al. 2017. Identification of downstream genes of the mTOR pathway that predict recurrence and progression in non-muscle invasive high-grade urothelial carcinoma of the bladder. J. Korean Med. Sci. 32: 1327-1336.

RESEARCH USE

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