SANTA CRUZ BIOTECHNOLOGY, INC.

QKI siRNA (m): sc-106468

BACKGROUND

QKI, also known as HKQ, QK, QK3 or quaking, is a 341 amino acid protein that localizes to both the cytoplasm and the nucleus and contains one KH domain. Expressed in the frontal cortex of the brain, QKI functions as an RNA-binding protein that plays an important role in myelinization and specifically binds to the RNA core sequence 5'-NACUAAY-N(1,20)-UAAY-3'. Additionally, QKI regulates pre-mRNA splicing, and mRNA export and is involved in protecting and promoting the stability of select mRNAs. QKI may be methylated by PRMT1 and may also be phosphorylated at its C-terminus, an event that decreases QKI mRNA-binding affinity. Defects or deletions in the gene encoding QKI are associated with astrocytic tumors and may be involved in the pathogenesis of schizophrenia. Multiple isoforms of QKI exist due to alternative splicing events.

REFERENCES

1. Hardy, R.J., et al. 1996. Neural cell type-specific expression of QKI proteins is altered in quakingviable mutant mice. J. Neurosci. 16: 7941-7949.
2. Ebersole, T.A., et al. 1996. The quaking gene product necessary in embryogenesis and myelination combines features of RNA binding and signal transduction proteins. Nat. Genet. 12: 260-265.
3. Chen, T. and Richard, S. 1998. Structure-function analysis of QKI: a lethal point mutation in mouse quaking prevents homodimerization. Mol. Cell. Biol. 18: 4863-4871.
4. Noveroske, J.K., et al. 2002. Quaking is essential for blood vessel development. Genesis 32: 218-230.
5. Wu, J.I., et al. 2002. Function of quaking in myelination: regulation of alternative splicing. Proc. Natl. Acad. Sci. USA 99: 4233-4238.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609590. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: QK (mouse) mapping to 17 A1.

PRODUCT

QKI siRNA (m) 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 QKI shRNA Plasmid (m): sc-106468-SH and QKI shRNA (m) Lentiviral Particles: sc-106468-V as alternate gene silencing products.

For independent verification of QKI (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-106468A and sc-106468B.

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

QKI siRNA (m) is recommended for the inhibition of QKI 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.

GENE EXPRESSION MONITORING

QKI (N147/6): sc-517305 is recommended as a control antibody for monitoring of QKI 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 QKI gene expression knockdown using RT-PCR Primer: QKI (m)-PR: sc-106468-PR (20 µl, 535 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Caines, R., et al. 2019. The RNA-binding protein QKI controls alternative splicing in vascular cells, producing an effective model for therapy. J. Cell Sci. 132: jcs230276.
2. Sun, Y., et al. 2020. Increased AT2R expression is induced by AT1R autoantibody via two axes, Klf-5/IRF-1 and circErbB4/miR-29a-5p, to promote VSMC migration. Cell Death Dis. 11: 432.

RESEARCH USE

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