SANTA CRUZ BIOTECHNOLOGY, INC.

IQSEC2 siRNA (m): sc-146278

BACKGROUND

IQSEC2 (IQ motif and SEC7 domain-containing protein 2) is a 1,478 amino acid protein that belongs to the BRAG family and contains one IQ domain, one PH domain and a SEC7 domain. Localizing to the cytoplasm, IQSEC2 is expressed in brain, kidney and small intestine, with weaker levels of expression in placenta, pancreas, ovary, prostate and liver. IQSEC2 is a component of the postsynaptic density at excitatory synapses, and interacts with ARF family members as a guanine nucleotide exchange factor. Through the activation of ARF substrates, IQSEC2 may play a crucial role in cytoskeletal and synaptic organization. The gene encoding IQSEC2 maps to the human X chromosome. Defects to the IQSEC2 gene have been linked to mental retardation X-linked type 1 (MRX1), a condition characterized by decreased intellectual function. IQSEC2 exists as three isoforms due to alternative splicing events.

REFERENCES

1. Morleo, M., Iaconis, D., Chitayat, D., Peluso, I., Marzella, R., Renieri, A., Mari, F. and Franco, B. 2008. Disruption of the IQSEC2 transcript in a female with X;autosome translocation t(X;20)(p11.2;q11.2) and a phenotype resembling X-linked infantile spasms (ISSX) syndrome. Mol. Med. Rep. 1: 33-39.
2. Li, N. and Carrel, L. 2008. Escape from X chromosome inactivation is an intrinsic property of the Jarid1c locus. Proc. Natl. Acad. Sci. USA 105: 17055-17060.
3. Shoubridge, C., Tarpey, P.S., Abidi, F., Ramsden, S.L., Rujirabanjerd, S., Murphy, J.A., Boyle, J., Shaw, M., Gardner, A., Proos, A., Puusepp, H., Raymond, F.L., Schwartz, C.E., Stevenson, R.E., Turner, G., et al. 2010. Mutations in the guanine nucleotide exchange factor gene IQSEC2 cause nonsyndromic intellectual disability. Nat. Genet. 42: 486-488.
4. Shoubridge, C., Walikonis, R.S., Gecz, J. and Harvey, R.J. 2010. Subtle functional defects in the Arf-specific guanine nucleotide exchange factor IQSEC2 cause non-syndromic X-linked intellectual disability. Small Gtpases 1: 98-103.
5. Fukaya, M., Kamata, A., Hara, Y., Tamaki, H., Katsumata, O., Ito, N., Takeda, S., Hata, Y., Suzuki, T., Watanabe, M., Harvey, R.J. and Sakagami, H. 2011. SynArfGEF is a guanine nucleotide exchange factor for Arf6 and localizes preferentially at post-synaptic specializations of inhibitory synapses. J. Neurochem. 116: 1122-1137.

CHROMOSOMAL LOCATION

Genetic locus: Iqsec2 (mouse) mapping to X F3.

PRODUCT

IQSEC2 siRNA (m) is a target-specific 19-25 nt siRNA 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 IQSEC2 shRNA Plasmid (m): sc-146278-SH and IQSEC2 shRNA (m) Lentiviral Particles: sc-146278-V as alternate gene silencing products.

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 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

IQSEC2 siRNA (m) is recommended for the inhibition of IQSEC2 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 IQSEC2 gene expression knockdown using RT-PCR Primer: IQSEC2 (m)-PR: sc-146278-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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