SANTA CRUZ BIOTECHNOLOGY, INC.

Ethanolamine kinase 2 siRNA (m): sc-144956

BACKGROUND

Ethanolamine kinase 2, also known as EKI2, ETNK2 or HMFT1716, is a 386 amino acid protein that belongs to the choline/ethanolamine kinase family. Via the cytidine diphosphate (CDP) ethanolamine pathway, Ethanolamine kinase 2 catalyses the initial step of phosphatidylethanolamine (PtdEtn) biosynthesis. Ethanolamine kinase 2 is expressed in kidney, liver, testis, ovary and prostate, and is highly specific for ethanolamine phosphorylation. Up-regulated during testis development, Ethanolamine kinase 2 may play an essential role in regulating placental hemostasis. Existing as three alternatively spliced isoforms, the gene encoding Ethanolamine kinase 2 maps to human and mouse chromosome 1. Human chromosome 1 spans 260 million base pairs, contains over 3,000 genes, comprises nearly 8% of the human genome and 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.

REFERENCES

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2. Bowling, E.L., et al. 2000. The Stickler syndrome: case reports and literature review. Optometry 71: 177-182.
3. Lykidis, A., et al. 2001. Overexpression of a mammalian ethanolamine-specific kinase accelerates the CDP-ethanolamine pathway. J. Biol. Chem. 276: 2174-2179.
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5. Yamada, S., et al. 2004. Expression profiling and differential screening between hepatoblastomas and the corresponding normal livers: identification of high expression of the PLK1 oncogene as a poor-prognostic indicator of hepatoblastomas. Oncogene 23: 5901-5911.
6. Tian, Y., et al. 2006. Placental thrombosis and spontaneous fetal death in mice deficient in ethanolamine kinase 2. J. Biol. Chem. 281: 28438-28449.
7. Gregory, S.G., et al. 2006. The DNA sequence and biological annotation of human chromosome 1. Nature 441: 315-321.
8. Gustin, S.E., et al. 2008. Testis development, fertility, and survival in Ethanolamine kinase 2-deficient mice. Endocrinology 149: 6176-6186.
9. Yokoi, T., et al. 2009. Analysis of the vitreous membrane in a case of type 1 Stickler syndrome. Graefes Arch. Clin. Exp. Ophthalmol. 247: 715-718.

CHROMOSOMAL LOCATION

Genetic locus: Etnk2 (mouse) mapping to 1 E4.

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.

PRODUCT

Ethanolamine kinase 2 siRNA (m) 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 Ethanolamine kinase 2 shRNA Plasmid (m): sc-144956-SH and Ethanolamine kinase 2 shRNA (m) Lentiviral Particles: sc-144956-V as alternate gene silencing products.

For independent verification of Ethanolamine kinase 2 (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-144956A, sc-144956B and sc-144956C.

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

Ethanolamine kinase 2 siRNA (m) is recommended for the inhibition of Ethanolamine kinase 2 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 Ethanolamine kinase 2 gene expression knockdown using RT-PCR Primer: Ethanolamine kinase 2 (m)-PR: sc-144956-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.