SANTA CRUZ BIOTECHNOLOGY, INC.

Ethanolamine kinase siRNA (h): sc-77291

BACKGROUND

Ethanolamine kinase (ETNK1) is a 452 amino acid member of the choline/ethanolamine kinase family. Localized to the cytoplasm, Ethanolamine kinase catalyzes the first step in phosphatidylethanolamine (PtdEtn) biosynthesis via the CDP-Etn pathway. Ethanolamine kinase is specific for ethanolamine and exhibits negligible kinase activity on choline. Expressed in kidney, liver, placenta, heart, leukocyte, ovary and testis, Ethanolamine kinase exists as several isoforms as a result of alternative splicing events. The gene encoding Ethanolamine kinase maps to human chromosome 12, which encodes over 1,100 genes and comprises approximately 4.5% of the human genome. Chromosome 12 is associated with a variety of diseases and afflictions, including hypochondrogenesis, achondrogenesis, Kniest dysplasia, Noonan syndrome and trisomy 12p, which causes facial developmental defects and seizure disorders.

REFERENCES

1. Liu, Y., et al. 1998. Galactosemic cataractogenesis disrupts intracellular interactions and changes the substrate specificity of choline/Ethanolamine kinase. Exp. Eye Res. 67: 193-202.
2. Kim, K., et al. 1999. Isolation and characterization of the *Saccharomyces cerevisiae* EKI1 gene encoding Ethanolamine kinase. J. Biol. Chem. 274: 14857-14866.
3. Yamazaki, N., et al. 2000. Novel expression of equivocal messages containing both regions of choline/Ethanolamine kinase and muscle type carnitine palmitoyltransferase I. J. Biol. Chem. 275: 31739-31746.
4. Nyako, M., et al. 2001. Tissue-specific and developmental effects of the easily shocked mutation on Ethanolamine kinase activity and phospholipid composition in *Drosophila melanogaster*. Biochem. Genet. 39: 339-349.
5. Kersting, M.C., et al. 2004. Regulation of the yeast EKI1-encoded Ethanolamine kinase by inositol and choline. J. Biol. Chem. 279: 35353-35359.
6. Pascual, A., et al. 2005. Ethanolamine kinase controls neuroblast divisions in *Drosophila* mushroom bodies. Dev. Biol. 280: 177-186.

CHROMOSOMAL LOCATION

Genetic locus: ETNK1 (human) mapping to 12p12.1.

PRODUCT

Ethanolamine kinase 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 Ethanolamine kinase shRNA Plasmid (h): sc-77291-SH and Ethanolamine kinase shRNA (h) Lentiviral Particles: sc-77291-V as alternate gene silencing products.

For independent verification of Ethanolamine kinase (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-77291A and sc-77291B.

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 siRNA (h) is recommended for the inhibition of Ethanolamine kinase 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

Ethanolamine kinase (3F11): sc-517100 is recommended as a control antibody for monitoring of Ethanolamine kinase 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Ethanolamine kinase gene expression knockdown using RT-PCR Primer: Ethanolamine kinase (h)-PR: sc-77291-PR (20 µl). 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.