SANTA CRUZ BIOTECHNOLOGY, INC.

ASPDH siRNA (h): sc-97089

BACKGROUND

ASPDH (aspartate dehydrogenase domain containing), also known as putative L-aspartate dehydrogenase, is a 283 amino acid belonging to the L-aspartate dehydrogenase family. ASPDH participates in NADP and NADPH binding, as well as aspartate dehydrogenase and oxidoreductase activities. ASPDH catalyzes NAD and NADP-dependent dehydrogenation of L-aspartate to iminoaspartate, resulting in an unstable iminoaspartate product, which can decompose to oxaloacetate and ammonia. Existing as two alternatively spliced isoforms, ASPDH is encoded by a gene that maps to human chromosome 19q13.33. Chromosome 19 makes up over 2% of the human genome and contains approximately 63 million bases, which encode over 1,400 genes. Recognized for having the greatest gene density of all human chromosomes, chromosome 19 is linked to Peutz-Jeghers syndrome, spinocerebellar ataxia type 6, the stroke disorder CADASIL, hypercholesterolemia and Insulin-dependent diabetes. Translocation of chromosomes 19 and 14 may be related to lymphoproliferative disorders.

REFERENCES

1. LaPoint, S.F., et al. 2000. Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL). Adv. Anat. Pathol. 7: 307-321.
2. Trettel, F., et al. 2000. A fine physical map of the CACNA1A gene region on 19p13.1-p13.2 chromosome. Gene 241: 45-50.
3. Buchet-Poyau, K., et al. 2002. Search for the second Peutz-Jeghers syndrome locus: exclusion of the STK13, PRKCG, KLK10, and PSCD2 genes on chromosome 19 and the STK11IP gene on chromosome 2. Cytogenet. Genome Res. 97: 171-178.
4. Moodie, S.J., et al. 2002. Analysis of candidate genes on chromosome 19 in coeliac disease: an association study of the KIR and LILR gene clusters. Eur. J. Immunogenet. 29: 287-291.
5. Yang, Z., et al. 2003. Aspartate dehydrogenase, a novel enzyme identified from structural and functional studies of TM1643. J. Biol. Chem. 278: 8804-8808.

CHROMOSOMAL LOCATION

Genetic locus: ASPDH (human) mapping to 19q13.33.

PRODUCT

ASPDH siRNA (h) 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 ASPDH shRNA Plasmid (h): sc-97089-SH and ASPDH shRNA (h) Lentiviral Particles: sc-97089-V as alternate gene silencing products.

For independent verification of ASPDH (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-97089A, sc-97089B and sc-97089C.

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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ASPDH gene expression knockdown using RT-PCR Primer: ASPDH (h)-PR: sc-97089-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.