SANTA CRUZ BIOTECHNOLOGY, INC.

ILVBL siRNA (h): sc-97368

BACKGROUND

ILVBL (ilvB (bacterial acetolactate synthase)-like), also known as AHAS (acetolactate synthase-like protein), 209L8 or ILV2H, is a 632 amino acid single-pass membrane protein that belongs to the TPP enzyme family. Expressed in the majority of tissues, ILVBL has the highest level of expression in heart, pancreas and placenta. ILVBL is highly homologous to several bacterial enzymes, including the B isozyme of the large catalytic subunit of *E. coli* acetohydroxy-acid synthase (AHAS) and the oxalyl-coA decarboxylase of *O. formigenes,* that utilize thiamine pyrophosphate as a cofactor. ILVBL binds one magnesium ion and one thiamine pyrophosphate per subunit, and may catalyze the initial step in branched-chain amino acid biosynthesis. The gene encoding ILVBL maps to human chromosome 19p13.12 and mouse chromosome 10 C1.

REFERENCES

1. Joutel, A., et al. 1996. A human homolog of bacterial acetolactate synthase genes maps within the CADASIL critical region. Genomics 38: 192-198.
2. Mitra, A. and Sarma, S.P. 2008. *Escherichia coli* ilvN interacts with the FAD binding domain of ilvB and activates the AHAS I enzyme. Biochemistry 47: 1518-1531.
3. Vyazmensky, M., et al. 2009. Interactions between large and small subunits of different acetohydroxyacid synthase isozymes of *Escherichia coli*. Biochemistry 48: 8731-8737.
4. Pham, N.C., et al. 2010. Characterization of acetohydroxyacid synthase I from *Escherichia coli* K-12 and identification of its inhibitors. Biosci. Biotechnol. Biochem. 74: 2281-2286.
5. Lopatovskaia, K.V., et al. 2010. Attenuation regulation of amino acid and amino acyl-tRNA biosynthetic operons in bacteria: comparative genomics analysis. Mol. Biol. 44: 140-151.
6. Wang, J., et al. 2011. Chemical synthesis, *in vitro* acetohydroxyacid synthase (AHAS) inhibition, herbicidal activity, and computational studies of isatin derivatives. J. Agric. Food Chem. 59: 9892-9900.

CHROMOSOMAL LOCATION

Genetic locus: ILVBL (human) mapping to 19p13.12.

PRODUCT

ILVBL 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 ILVBL shRNA Plasmid (h): sc-97368-SH and ILVBL shRNA (h) Lentiviral Particles: sc-97368-V as alternate gene silencing products.

For independent verification of ILVBL (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-97368A, sc-97368B and sc-97368C.

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

ILVBL siRNA (h) is recommended for the inhibition of ILVBL 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 ILVBL gene expression knockdown using RT-PCR Primer: ILVBL (h)-PR: sc-97368-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.