SANTA CRUZ BIOTECHNOLOGY, INC.

# selenocysteine lyase siRNA (h): sc-44717

## BACKGROUND

Selenocysteine lyase (SCL) catalyzes the decomposition of L-selenocysteine to L-alanine and elemental selenium. The reaction depends on the presence of pyridoxal 5'-phosphate as a cofactor, and occurs in liver, kidney, heart, adrenal and muscle tissue. This regulation by the 5'-phosphate resembles the regulatory mechanisms for other enzymes, including aspartate β-decarboxylase, arginine racemase and kynureninase. SCL potentially functions as a selenium delivery protein to selenophosphate synthetase, facilitating selenoprotein biosynthesis.

## REFERENCES


1. Esaki, N., et al. 1985. Mechanism of reactions catalyzed by selenocysteine β-lyase. Arch. Biochem. Biophys. 238: 418-423.
2. Daher, R. and Van Lente, F. 1992. Characterization of selenocysteine lyase in human tissues and its relationship to tissue selenium concentrations. J. Trace Elem. Electrolytes Health Dis. 6: 189-194.
3. Mihara, H., et al. 2000. cDNA cloning, purification, and characterization of mouse liver selenocysteine lyase. Candidate for selenium delivery protein in selenoprotein synthesis. J. Biol. Chem. 275: 6195-6200.
4. Mihara, H., et al. 2000. Kinetic and mutational studies of three NifS homologs from *Escherichia coli:* mechanistic difference between L-cysteine desulfurase and L-selenocysteine lyase reactions. J. Biochem. 127: 559-567.
5. Mihara, H., et al. 2002. Selenocysteine lyase from mouse liver. Methods Enzymol. 347: 198-203.
6. Pilon, M., et al. 2003. Enhanced selenium tolerance and accumulation in transgenic *Arabidopsis* expressing a mouse selenocysteine lyase. Plant Physiol. 131: 1250-1257.
7. Stadtman, T. 2004. Methanococcus vannielii selenium metabolism: purification and N-terminal amino acid sequences of a novel selenium-binding protein and selenocysteine lyase. IUBMB Life 56: 427-431.


## CHROMOSOMAL LOCATION

Genetic locus: SCLY (human) mapping to 2q37.3.

## PRODUCT

selenocysteine lyase 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 selenocysteine lyase shRNA Plasmid (h): sc-44717-SH and selenocysteine lyase shRNA (h) Lentiviral Particles: sc-44717-V as alternate gene silencing products.

For independent verification of selenocysteine lyase (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-44717A, sc-44717B and sc-44717C.

## 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

selenocysteine lyase siRNA (h) is recommended for the inhibition of selenocysteine lyase 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

selenocysteine lyase (B-8): sc-374391 is recommended as a control antibody for monitoring of selenocysteine lyase 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 selenocysteine lyase gene expression knockdown using RT-PCR Primer: selenocysteine lyase (h)-PR: sc-44717-PR (20 µl, 549 bp). 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.