

# CTH (m): 293T Lysate: sc-119499

## BACKGROUND

CTH (cystathionine  $\gamma$ -lyase), also known as CSE or  $\gamma$ -cystathionase, is a member of the transsulfuration enzyme family and participates in the trans-sulfuration pathway. CTH is a cytoplasmic enzyme produced in the cytosol and is responsible for catalyzing the pyridoxal phosphate-dependent  $\beta$ -disulfide elimination reaction resulting in ammonium, pyruvate and thiocysteine. The thiocysteine that is produced may then react with other thiols (or cysteine) and form hydrogen sulfide ( $H_2S$ ). Thus, CTH is the major  $H_2S$ -producing enzyme in kidney, liver, vascular smooth muscle cells and enterocytes. The endogenous production of  $H_2S$  plays a significant role in the regulation of cellular functions, including cell growth, hyperpolarization of cell membranes, modulation of neuronal excitability and relaxation of smooth muscle cells. Mutations in the gene encoding CTH can result in the autosomal recessive disease cystathioninuria; a disorder characterized by the unusual accumulation of plasma cystathionine causing increased urinary excretion.

## REFERENCES

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2. Yang, G., et al. 2004. Cystathionine  $\gamma$ -lyase overexpression inhibits cell proliferation via a  $H_2S$ -dependent modulation of ERK 1/2 phosphorylation and p21<sup>Cip/WAF-1</sup>. *J. Biol. Chem.* 279: 49199-49205.
3. Dominy, J.E., et al. 2004. New roles for cysteine and *trans*-sulfuration enzymes: production of  $H_2S$ , a neuromodulator and smooth muscle relaxant. *Nutr. Rev.* 62: 348-353.
4. Ishii, I., et al. 2004. Murine cystathionine  $\gamma$ -lyase: complete cDNA and genomic sequences, promoter activity, tissue distribution and developmental expression. *Biochem. J.* 381: 113-123.
5. Kamoun, P. 2004. Endogenous production of hydrogen sulfide in mammals. *Amino Acids* 26: 243-254.
6. Kamoun, P. 2004.  $H_2S$ , a new neuromodulator. *Med. Sci.* 20: 697-700.
7. Schicho, R., et al. 2006. Hydrogen sulfide is a novel prosecretory neuromodulator in the Guinea-pig and human colon. *Gastroenterology* 131: 1542-1552.
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## CHROMOSOMAL LOCATION

Genetic locus: Cth (mouse) mapping to 3 H4.

## PRODUCT

CTH (m): 293T Lysate represents a lysate of mouse CTH transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## APPLICATIONS

CTH (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive CTH antibodies. Recommended use: 10-20  $\mu$ l per lane.

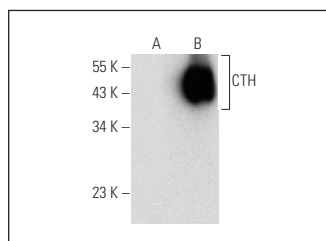
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

CTH (D-12): sc-365382 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse CTH expression in CTH transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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.

## DATA



CTH (D-12): sc-365382. Western blot analysis of CTH expression in non-transfected: sc-117752 (A) and mouse CTH transfected: sc-119499 (B) 293T whole cell lysates.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.