

CTH (H-167): sc-135203

BACKGROUND

CTH (cystathionine γ -lyase), also known as CSE or γ -cystathionase, is a member of the *trans*-sulfuration 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 β -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

1. Lu, Y., et al. 1992. Cloning and nucleotide sequence of human liver cDNA encoding for cystathionine γ -lyase. *Biochem. Biophys. Res. Commun.* 189: 749-758.
2. Yang, G., et al. 2004. Cystathionine γ -lyase overexpression inhibits cell proliferation via a H_2S -dependent modulation of ERK1/2 phosphorylation and p21^{Cip/WAF-1}. *J. Biol. Chem.* 279: 49199-49205.
3. Dominy, J.E., et al. 2004. New roles for cysteine and transsulfuration enzymes: production of H_2S , a neuromodulator and smooth muscle relaxant. *Nutr. Rev.* 62: 348-353.
4. Ishii, I., et al. 2004. Murine cystathionine γ -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.

CHROMOSOMAL LOCATION

Genetic locus: CTH (human) mapping to 1p31.1; Cth (mouse) mapping to 3 H4.

SOURCE

CTH (H-167) is a rabbit polyclonal antibody raised against amino acids 61-227 mapping within an internal region of CTH of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

CTH (H-167) is recommended for detection of CTH isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

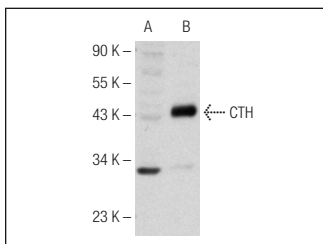
CTH (H-167) is also recommended for detection of CTH isoforms 1 and 2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for CTH siRNA (h): sc-78973, CTH siRNA (m): sc-142618, CTH shRNA Plasmid (h): sc-78973-SH, CTH shRNA Plasmid (m): sc-142618-SH, CTH shRNA (h) Lentiviral Particles: sc-78973-V and CTH shRNA (m) Lentiviral Particles: sc-142618-V.

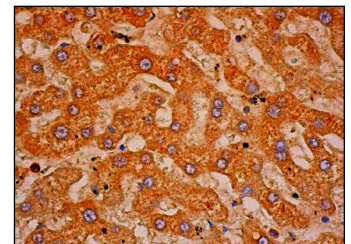
Molecular Weight of CTH: 45 kDa.

Positive Controls: CTH (m): 293T Lysate: sc-119499, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

DATA



CTH (H-167): sc-135203. Western blot analysis of CTH expression in non-transfected: sc-117752 (A) and mouse CTH transfected: sc-119499 (B) 293T whole cell lysates.



CTH (H-167): sc-135203. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **CTH (F-1): sc-374249** or **CTH (A-2): sc-365381**, our highly recommended monoclonal alternatives to CTH (H-167). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **CTH (F-1): sc-374249**.