

# Gamma Cystathionase Polyclonal antibody

Catalog Number: 12217-1-AP

Featured Product

213 Publications

## Basic Information

### Catalog Number:

12217-1-AP

### Concentration:

550 ug/ml

### Source:

Rabbit

### Isotype:

IgG

### Immunogen Catalog Number:

AG2872

### GenBank Accession Number:

BC015807

### GeneID (NCBI):

1491

### UNIPROT ID:

P32929

### Full Name:

cystathionase (cystathionine gamma-lyase)

### Calculated MW:

405 aa, 45 kDa

### Observed MW:

40-45 kDa

### Purification Method:

Antigen affinity purification

### Recommended Dilutions:

WB: 1:5000-1:50000

IP: 0.5-4.0 ug for 1.0-3.0 mg of total protein lysate

IHC: 1:100-1:500

IF-P: 1:200-1:800

IF/ICC: 1:200-1:800

FC (Intra): 0.80 ug per 10<sup>6</sup> cells in a 100 µl suspension

## Applications

### Tested Applications:

WB, IHC, IF/ICC, IF-P, FC (Intra), IP, ELISA

### Cited Applications:

WB, IHC, IF, IP, CoIP

### Species Specificity:

human, mouse, rat

### Cited Species:

human, mouse, rat, pig, rabbit

**Note-IHC: suggested antigen retrieval with TE buffer pH 9.0; (\*) Alternatively, antigen retrieval may be performed with citrate buffer pH 6.0**

### Positive Controls:

**WB:** HEK-293 cells, HeLa cells, HepG2 cells, mouse heart tissue, mouse kidney tissue, mouse liver tissue, rat heart tissue, rat liver tissue, rat kidney tissue

**IP:** mouse liver tissue,

**IHC:** human liver cancer tissue, human breast cancer tissue, human kidney tissue

**IF-P:** human liver cancer tissue,

**IF/ICC:** HepG2 cells,

**FC (Intra):** MCF-7 cells,

## Background Information

CTH, also named as Gamma-cystathionase and CSE, belongs to the transsulfuration enzymes family. It catalyzes the last step in the transsulfuration pathway from methionine to cysteine. CTH converts two cysteine molecules to lanthionine and hydrogen sulfide. CTH can also accept homocysteine as substrate. Its specificity depends on the levels of the endogenous substrates. CTH is the major H<sub>2</sub>S-producing enzyme in kidney, liver, vascular smooth muscle cells and enterocytes. The endogenous production of H<sub>2</sub>S 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. The CSE/H<sub>2</sub>S pathway is upregulated in the heart in a murine model of CVB3-induced myocarditis and that inhibition of endogenous H<sub>2</sub>S is beneficial to treatment early in the disease while administration of exogenous H<sub>2</sub>S is protective to infected myocardium during the later stage. 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. Both male and female CTH-null mice showed hypercystathioninemia and hyperhomocysteinemia, but not hypermethioninemia. CSE has also been reported to be expressed in endothelial cells and contribute to endothelium-dependent vasorelaxation. It can be detected as a minor 36 kDa band probably representing a degradative intermediate except the major 43 kDa band in vitamin B6-deficient rat liver (PMID:8660672). CTH also can be detected as ~70kD in rat liver (PMID: 18974309). This antibody is a rabbit polyclonal antibody raised against residues near the C terminus of human CTH.

## Notable Publications

| Author                             | Pubmed ID | Journal        | Application |
|------------------------------------|-----------|----------------|-------------|
| Yu Sun                             | 34562065  | J Cell Mol Med | WB          |
| Lisette Carolina Sanchez-Aranguren | 32978411  | Sci Rep        | WB          |
| Pilar González-García              | 32975579  | Hum Mol Genet  | WB          |

## Storage

### Storage:

Store at -20°C. Stable for one year after shipment.

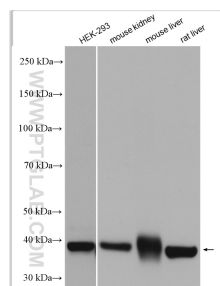
### Storage Buffer:

PBS with 0.02% sodium azide and 50% glycerol, pH7.3

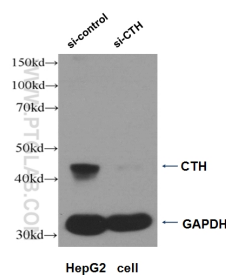
Aliquoting is unnecessary for -20°C storage



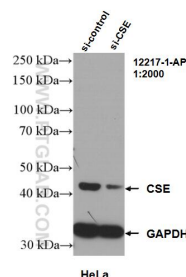
## Selected Validation Data



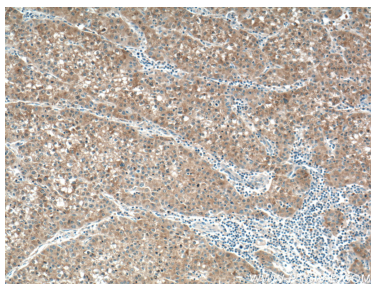
Various lysates were subjected to SDS PAGE followed by western blot with 12217-1-AP (Gamma Cystathionase antibody) at dilution of 1:10000 incubated at room temperature for 1.5 hours.



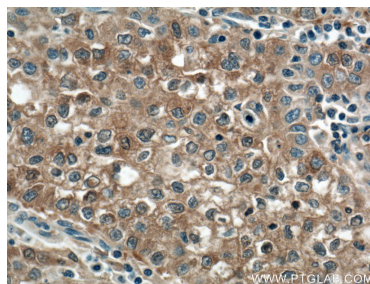
WB result of CTH antibody (12217-1-AP, 1:500) with si-control and si-CTH transfected HepG2 cell.



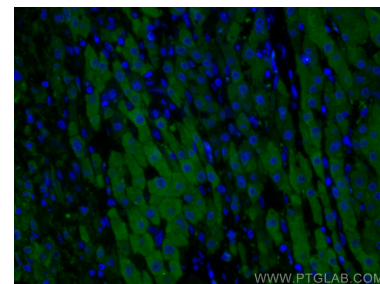
WB result of Gamma cystathionase antibody (12217-1-AP; 1:2000; incubated at room temperature for 1.5 hours) with sh-Control and sh-Gamma cystathionase transfected HeLa cells.



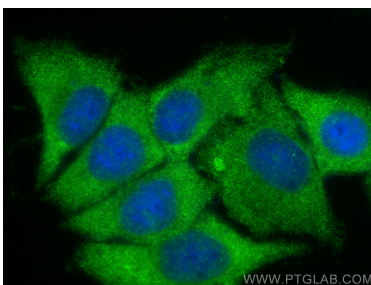
Immunohistochemical analysis of paraffin-embedded human liver cancer tissue slide using 12217-1-AP (Gamma cystathionase antibody) at dilution of 1:200 (under 10x lens). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0).



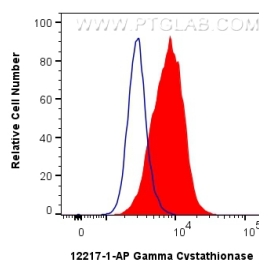
Immunohistochemical analysis of paraffin-embedded human liver cancer tissue slide using 12217-1-AP (Gamma cystathionase antibody) at dilution of 1:200 (under 40x lens). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0).



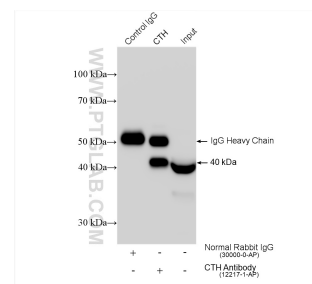
Immunofluorescent analysis of (4% PFA) fixed human liver cancer tissue using Gamma Cystathionase antibody (12217-1-AP) at dilution of 1:400 and CoraLite®488-Conjugated AffiniPure Goat Anti-Rabbit IgG(H+L).



Immunofluorescent analysis of (-20°C Ethanol) fixed HepG2 cells using Gamma Cystathionase antibody (12217-1-AP) at dilution of 1:400 and CoraLite®488-Conjugated Goat Anti-Rabbit IgG(H+L) (SA00013-2).



1x10<sup>6</sup> MCF-7 cells were intracellularly stained with 0.8 ug Gamma Cystathionase Polyclonal antibody (12217-1-AP) and CoraLite®488-Conjugated Goat Anti-Rabbit IgG(H+L) (SA00013-2) (red), or 0.8 ug Rabbit IgG control Rabbit PolyAb (30000-0-AP) (blue). Cells were fixed with 4% PFA and permeabilized with Flow Cytometry Perm Buffer (PF00011-C).



IP result of anti-Gamma Cystathionase (IP:12217-1-AP, 4ug; Detection:12217-1-AP 1:8000) with mouse liver tissue lysate 1840 ug.