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KD-Validated Anti-Cystathionine Gamma-Lyase Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1860

Specification

KD-Validated Anti-Cystathionine Gamma-Lyase Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	P32929
Reactivity	**Human**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 45 kDa, observed, 45 kDa KDa**
Gene Name	**CTH**
Aliases	**CTH; Cystathionine Gamma-Lyase; CSE; Cystathionase (Cystathionine Gamma-Lyase); Cysteine-Protein Sulfhydrase; Homocysteine Desulfhydrase; Cysteine Desulfhydrase; Gamma-Cystathionase; EC 4.4.1.1; CGL; Homoserine Dehydratase; Homoserine Deaminase; EC 4.4.1.2; EC 4.4.1**
Immunogen	**A synthesized peptide derived from human Cystathionase/CTH**

KD-Validated Anti-Cystathionine Gamma-Lyase Rabbit Monoclonal Antibody - Additional Information

Gene ID	**1491**

Other Names
Cystathionine gamma-lyase, CGL, CSE, 4.4.1.1, Cysteine desulfhydrase, Cysteine-protein sulfhydrase, Gamma-cystathionase, Homocysteine desulfhydrase, 4.4.1.2, CTH

KD-Validated Anti-Cystathionine Gamma-Lyase Rabbit Monoclonal Antibody - Protein Information

Name CTH

Function
Catalyzes the last step in the trans-sulfuration pathway from L-methionine to L-cysteine in a pyridoxal-5'-phosphate (PLP)-dependent manner, which consists on cleaving the L,L-cystathionine molecule into L-cysteine, ammonia and 2-oxobutanoate (PubMed:10212249, PubMed:18476726, PubMed:19261609, PubMed:19961860). Part of the L-cysteine derived from the trans-sulfuration pathway is utilized for biosynthesis of the ubiquitous antioxidant glutathione (PubMed:<a href="http://www.uniprot.org/citations/18476726"

target="_blank">18476726). Besides its role in the conversion of L- cystathionine into L-cysteine, it utilizes L-cysteine and L- homocysteine as substrates (at much lower rates than L,L-cystathionine) to produce the endogenous gaseous signaling molecule hydrogen sulfide (H2S) (PubMed:10212249, PubMed:19019829, PubMed:19261609, PubMed:19961860). In vitro, it converts two L-cysteine molecules into lanthionine and H2S, also two L-homocysteine molecules to homolanthionine and H2S, which can be particularly relevant under conditions of severe hyperhomocysteinemia (which is a risk factor for cardiovascular disease, diabetes, and Alzheimer's disease) (PubMed:19261609). Lanthionine and homolanthionine are structural homologs of L,L-cystathionine that differ by the absence or presence of an extra methylene group, respectively (PubMed:19261609). Acts as a cysteine-protein sulfhydrase by mediating sulfhydration of target proteins: sulfhydration consists of converting -SH groups into -SSH on specific cysteine residues of target proteins such as GAPDH, PTPN1 and NF-kappa-B subunit RELA, thereby regulating their function (PubMed:22169477). By generating the gasotransmitter H2S, it participates in a number of physiological processes such as vasodilation, bone protection, and inflammation (Probable) (PubMed:29254196). Plays an essential role in myogenesis by contributing to the biogenesis of H2S in skeletal muscle tissue (By similarity). Can also accept homoserine as substrate (By similarity). Catalyzes the elimination of selenocystathionine (which can be derived from the diet) to yield selenocysteine, ammonia and 2-oxobutanoate (By similarity).

Cellular Location
Cytoplasm.

Tissue Location
Highly expressed in liver (PubMed:10727430, PubMed:20305127). Also in muscle and lower expression in most tissues except heart, pituitary gland, spleen, thymus, and vascular tissue, where it is hardly detected (PubMed:20305127)

KD-Validated Anti-Cystathionine Gamma-Lyase Rabbit Monoclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

KD-Validated Anti-Cystathionine Gamma-Lyase Rabbit Monoclonal Antibody - Images

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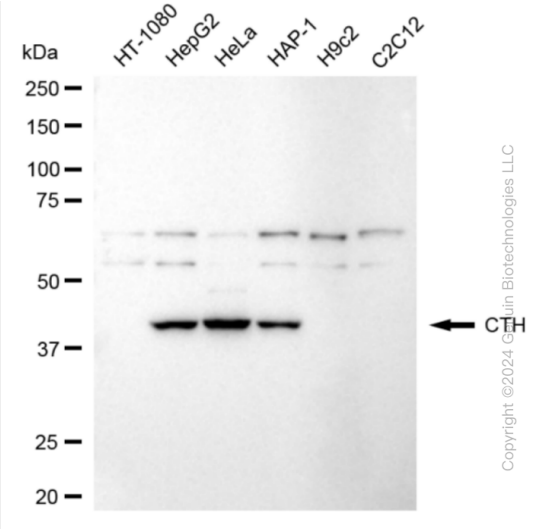
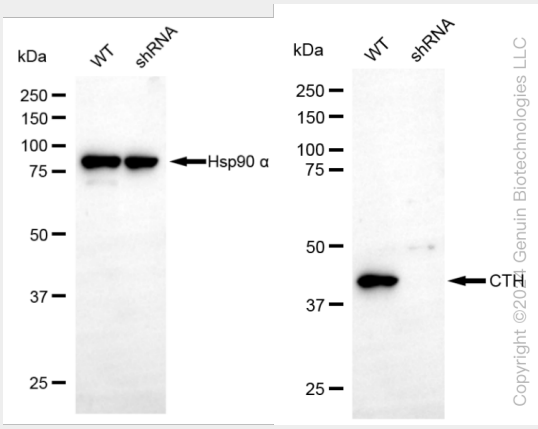
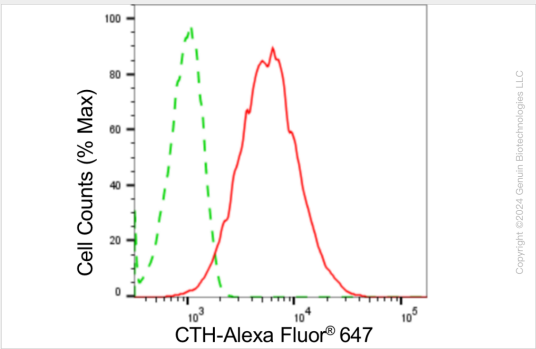


Western blotting analysis using anti-CTH antibody (Cat#AGI1860). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-CTH antibody (Cat#AGI1860, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-CTH antibody (Cat#AGI1860). CTH expression in wild type (WT) and CTH shRNA knockdown (KD) HeLa cells with 20 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-CTH antibody (Cat#AGI1860, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of CTH expression in HepG2 cells using anti-CTH antibody (Cat#AGI1860, 1:2,000). Green, isotype control; red, CTH.

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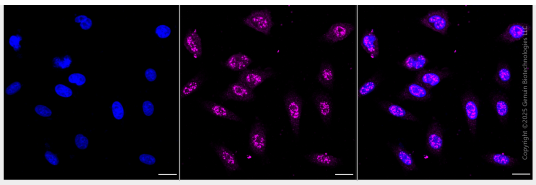

Immunocytochemical staining of HepG2 cells with anti-CTH antibody(Cat#AGI1860, 1:1,000). Nuclei were stained blue with DAPI; CTH was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar, 20 µm.