

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

Rabbit monoclonal antibody

Catalog # AGI1860

Product Information

Application	WB, FC, ICC
Primary Accession	P32929
Reactivity	Human
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	24GB4795
Calculated MW	44508
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

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

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: 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 sulfhydryase by mediating sulfhydrylation of target proteins: sulfhydrylation 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)

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