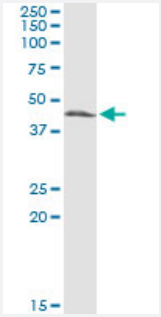
CTH monoclonal antibody (M01), clone 4E1-1B7

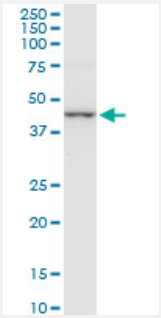
Catalog # H00001491-M01 Size 100 ug

Applications



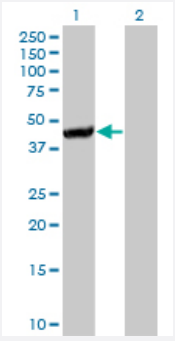
Western Blot (Tissue lysate)

CTH monoclonal antibody (M01), clone 4E1-1B7. Western Blot analysis of CTH expression in human liver.



Western Blot (Cell lysate)

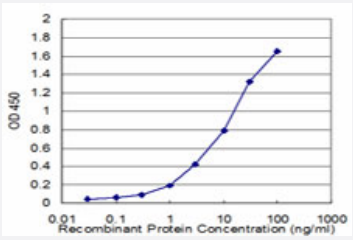
CTH monoclonal antibody (M01), clone 4E1-1B7. Western Blot analysis of CTH expression in Hela S3 NE.



Western Blot (Transfected lysate)

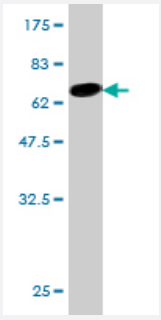
Western Blot analysis of CTH expression in transfected 293T cell line by CTH monoclonal antibody (M01), clone 4E1-1B7.

Lane 1: CTH transfected lysate (Predicted MW: 44.5 KDa).
Lane 2: Non-transfected lysate.



Sandwich ELISA (Recombinant protein)

Detection limit for recombinant GST tagged CTH is approximately 1ng/ml as a capture antibody.



Western Blot detection against Immunogen (70.07 KDa) .

Specification

Product Description	Mouse monoclonal antibody raised against a full length recombinant CTH.
Immunogen	CTH (AAH15807, 1 a.a. ~ 405 a.a) full-length recombinant protein with GST tag. MW of the GST tag alone is 26 KDa.
Sequence	MQEKDASSQGFLPHFQHFATQAIHVGQDPEQWTSRAVVPPISLSTTFKQGAPGQHSGFEYSRSG NPTRNCLEKAVAALDGAKYCLAFASGLAATVTITHLLKAGDQIICMDDVYGGTNRYFRQVASEFGL KISFVDCSKIKLLEAAITPETKLVWIETPTNPTQKVIDIEGCAHIVHKHGDIILVVDNTFMSPYFQRPLA LGADISMYSATKYMNGRSDVVMGLVSVNCESLHNRLRFLQNSLGAVPSPIDCYLCNRGLKTLHVR MEKHFKNGMAVAQFLESNPWVEKVIYPGLPSHPQHELVKRQCTGCTGMVTFYIKGTLQHAEIFLK NLKLFTLAESLGGFESLAELPAIMTHASVLKNDRDVLGISDTLIRLSVGLEDEEDLLEDLDQALKAA HPPSGSHS
Host	Mouse
Reactivity	Guinea pig, Human
Isotype	IgG1 Kappa
Quality Control Testing	Antibody Reactive Against Recombinant Protein. Western Blot detection against Immunogen (70.07 KDa) .
Storage Buffer	In 1x PBS, pH 7.4
Storage Instruction	Store at -20°C or lower. Aliquot to avoid repeated freezing and thawing.

Applications

- Western Blot (Tissue lysate)

  CTH monoclonal antibody (M01), clone 4E1-1B7. Western Blot analysis of CTH expression in human liver.

  Protocol Download

- Western Blot (Cell lysate)

  CTH monoclonal antibody (M01), clone 4E1-1B7. Western Blot analysis of CTH expression in Hela S3 NE.

  Protocol Download

- Western Blot (Transfected lysate)

  Western Blot analysis of CTH expression in transfected 293T cell line by CTH monoclonal antibody (M01), clone 4E1-1B7.

  Lane 1: CTH transfected lysate (Predicted MW: 44.5 KDa).
  Lane 2: Non-transfected lysate.

  Protocol Download

- Western Blot (Recombinant protein)

  Protocol Download

- Sandwich ELISA (Recombinant protein)

  Detection limit for recombinant GST tagged CTH is approximately 1ng/ml as a capture antibody.

  Protocol Download

- ELISA

Gene Info — CTH

Entrez GeneID	1491
GeneBank Accession#	BC015807
Protein Accession#	AAH15807
Gene Name	CTH
Gene Alias	MGC9471
Gene Description	cystathionase (cystathionine gamma-lyase)

Omim ID	219500 607657
Gene Ontology	Hyperlink
Gene Summary	This gene encodes a cytoplasmic enzyme in the trans-sulfuration pathway that converts cystathione derived from methionine into cysteine. Glutathione synthesis in the liver is dependent upon the availability of cysteine. Mutations in this gene cause cystathioninuria. Alternative splicing of this gene results in two transcript variants encoding different isoforms. [provided by RefSeq
Other Designations	OTTHUMP00000010945|OTTHUMP00000010946|cystathionase|cysteine desulfhydrase|gamma-cystathionase|homoserine deaminase|homoserine dehydratase

Publication Reference

- Cystathionine γ-lyase promotes estrogen-stimulated uterine artery blood flow via glutathione homeostasis.

  Rachael Bok, Damian D Guerra, Ramón A Lorca, Sara A Wennersten, Peter S Harris, Abhishek K Rauniyar, Sally P Stabler, Kenneth N MacLean, James R Roede, Laura D Brown, K Joseph Hurt.

  Redox Biology 2021 Apr; 40:101827.

  Application: WB-Ti, Mouse, Mouse uterine arteries

- H2S stimulated bioenergetics in chicken erythrocytes and the underlying mechanism.

  Zhuping Jin, Quanxi Zhang, Eden Wondimu, Richa Verma, Ming Fu, Tian Shuang, Hassan Mustafa Arif, Lingyun Wu, Rui Wang.

  American Journal of Physiology. Regulatory, Integrative and Comparative Physiology 2020 Jul; 319(1):R69.

  Application: WB-Ce, WB-Ti, Chicken, Mouse, Chicken erythrocytes, Mouse livers

- Increased Urinary 3-Mercaptolactate Excretion and Enhanced Passive Systemic Anaphylaxis in Mice Lacking Mercaptopyruvate Sulfurtransferase, a Model of Mercaptolactate-Cysteine Disulfiduria.

  Noriyuki Akahoshi, Tatsuro Minakawa, Masashi Miyashita, Uran Sugiyama, Chihiro Saito, Rintaro Takemoto, Akihiro Honda, Waka Kamichatani, Shotaro Kamata, Yasumi Anan, Isao Ishii.

  International Journal of Molecular Sciences 2020 Jan; 21(3):818.

  Application: WB-Ti, Mouse, Mouse liver

- The gasotransmitter hydrogen sulfide inhibits transepithelial anion secretion of pregnant mouse endometrial epithelium.

  Xu JW, Gao DD, Peng L, Qiu ZE, Ke LJ, Zhu YX, Zhang YL, Zhou WL.

  Nitric Oxide : Biology and Chemistry 2019 Sep; 90:37.

  Application: WB-Ti, Mouse, Mouse uterus

- Hydrogen sulfide-releasing silk fibroin scaffold for bone tissue engineering.

  Gambari L, Amore E, Raggio R, Bonani W, Barone M, Lisignoli G, Grigolo B, Motta A, Grassi F.

  Materials science & Engineering. C, Materials for Biological Applications 2019 Sep; 102:471.

  Application: IHC-P, Human, Human mesenchymal stromal cells

- Impaired CBS-H2S signaling axis contributes to MPTP-induced neurodegeneration in a mouse model of Parkinson's disease.

  Yuan YQ, Wang YL, Yuan BS, Yuan X, Hou XO, Bian JS, Liu CF, Hu LF.

  Brain, Behavior, and Immunity 2018 Jan; 67:77.

  Application: WB-Ti, Mouse, Mouse cortex, striatum

- β3 adrenergic receptor activation relaxes human corpus cavernosum and penile artery through a hydrogen sulfide/cGMP-dependent mechanism.

  Mitidieri E, Tramontano T, Gurgone D, Imbimbo C, Mirone V, Fusco F, Cirino G, di Villa Bianca RD, Sorrentino R.

  Pharmacological Research 2017 Jul; 124:100.

  Application: WB-Ti, Human, Human penile artery

- Left ventricular function during porcine-resuscitated septic shock with pre-existing atherosclerosis.

  Nubbaum BL, McCook O, Hartmann C, Matallo J, Wepler M, Antonucci E, Kalbitz M, Huber-Lang M, Georgieff M, Calzia E, Radermacher P, Hafner S.

  Intensive Care Medicine Experimental 2016 Dec; 4(1):14.

  Application: IHC-P, Pig, Heart

- Homocysteine Triggers Inflammatory Responses in Macrophages through Inhibiting CSE-H2S Signaling via DNA Hypermethylation of CSE Promoter.

  Li JJ, Li Q, Du HP, Wang YL, You SJ, Wang F, Xu XS, Cheng J, Cao YJ, Liu CF, Hu LF.

  International Journal of Molecular Sciences 2015 Jun; 16(6):12560.

  Application: WB, Mouse, Raw264.7 cells

- Statins upregulate cystathionine γ-lyase transcription and H2S generation via activating Akt signaling in macrophage.

  Xu Y, Du HP, Li J, Xu R, Wang YL, You SJ, Liu H, Wang F, Cao YJ, Liu CF, Hu LF.

  Pharmacological Research 2014 Sep; 87:18.

- Reactive cysteine persulfides and S-polythiolation regulate oxidative stress and redox signaling.

  Ida T, Sawa T, Ihara H, Tsuchiya Y, Watanabe Y, Kumagai Y, Suematsu M, Motohashi H, Fujii S, Matsunaga T, Yamamoto M, Ono K, Devarie-Baez NO, Xian M, Fukuto JM, Akaike T.

  PNAS 2014 May; 111(21):7606.

  Application: WB-Tr, Human, A549 cells

- Inhibition of hydrogen sulfide production by gene silencing attenuates inflammatory activity of LPS-activated RAW264.7 cells.

  Badiei A, Rivers-Auty J, Ang AD, Bhatia M.

  Applied Microbiology and Biotechnology 2013 Sep; 97(17):7845.

  Application: WB-Tr, Mouse, Raw 264.7 cells

- Decreased Endogenous Production of Hydrogen Sulfide Accelerates Atherosclerosis.

  Mani S, Li H, Untereiner A, Wu L, Yang G, Austin RC, Dickhout JD, Lhotak S, Meng QH, Wang R.

  Circulation 2013 Jun; 127(25):2523.

  Application: WB-Ti, Mouse, Aortic

- Hydrogen sulfide protects against cellular senescence via S-sulfhydration of Keap1 and activation of Nrf2.

  Yang G, Zhao K, Ju Y, Mani S, Cao Q, Puukila S, Khaper N, Wu L, Wang R.

  Antioxidants & Redox Signaling 2013 May; 18(15):1906.

  Application: WB-Ce, WB-Tr, Mouse, Human, MEFs, Fibroblast cells

- Hydrogen sulfide inhibits the translational expression of hypoxia-inducible factor-1α.

  Wu B, Teng H, Yang G, Wu L, Wang R.

  British Journal of Pharmacology 2012 Dec; 167(7):1492.

  Application: WB-Tr, Human, HEK 293T cells

- Is cystathionine gamma-lyase protein expressed in the heart?

  Fu M, Zhang W, Yang G, Wang R.

  Biochemical and Biophysical Research Communications 2012 Nov; 428(4):469.

  Application: WB-Ce, WB-Ti, Mouse, Rat, Heart, Liver, H9C2 cells

- MicroRNA-21 represses human cystathionine gamma-lyase expression by targeting at specificity protein-1 in smooth muscle cells.

  Yang G, Pei Y, Cao Q, Wang R.

  Journal of Cellular Physiology 2012 Sep; 227(9):3192.

  Application: WB-Tr, Human, HASMCs

- Hydrogen sulfide and resolution of acute inflammation: A comparative study utilizing a novel fluorescent probe.

  Dufton N, Natividad J, Verdu EF, Wallace JL.

  Scientific Reports 2012 Jul; 2:499.

  Application: IF, IHC, Human, Human peripheral blood mononuclear cells (PBMC)-derived Macrophages

- Hydrogen sulfide producing enzymes in pregnancy and preeclampsia.

  Holwerda KM, Bos EM, Rajakumar A, Ris-Stalpers C, van Pampus MG, Timmer A, Erwich JJ, Faas MM, van Goor H, Lely AT.

  Placenta 2012 Jun; 33(6):518.

  Application: WB-Ti, Human, Placentae

- Increased neointimal formation in cystathionine gamma-lyase deficient mice: Role of hydrogen sulfide in α5β1-integrin and matrix metalloproteinase-2 expression in smooth muscle cells.

  Yang G, Li H, Tang G, Wu L, Zhao K, Cao Q, Xu C, Wang R.

  Journal of Molecular and Cellular Cardiology 2011 Dec; 52(3):677.

  Application: WB, Mouse, Vascular smooth muscle cells

- Protective Role of Hydrogen Sulfide against Noise-Induced Cochlear Damage: A Chronic Intracochlear Infusion Model.

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  PLoS One 2011 Oct; 6(10):e26728.

  Application: IF, Rat, Cochlea

- Specificity protein-1 as a critical regulator of human cystathionine gamma-lyase in smooth muscle cells.

  Yang G, Pei Y, Teng H, Cao Q, Wang R.

  J Biol Chem 2011 Jun; 286:26450.

  Application: WB-Ce, WB-Tr, Human, HASMCs

- Hydrogen Sulfide Modulates Contractile Function in Rat Jejunum.

  Kasparek MS, Linden DR, Farrugia G, Sarr MG.

  The Journal of Surgical Research 2012 Jun; 175(2):234.

  Application: IF, Rat, Rat jejunum

- Hydrogen sulphide synthesis in the rat and mouse gastrointestinal tract.

  Martin GR, McKnight GW, Dicay MS, Coffin CS, Ferraz JG, Wallace JL.

  Digestive and Liver Disease 2010 Feb; 42(2):103.

  Application: IHC-P, WB-Ti, Human, Rat, Liver, Brain, Lung, Stomach, Duodenum, Jejunum, Ileum, Colon

- Endogenous and Exogenous Hydrogen Sulfide Promotes Resolution of Colitis in Rats.

  Wallace JL, Vong L, McKnight W, Dicay M, Martin GR.

  Gastroenterology 2009 Aug; 137(2):569.

  Application: WB, Rat, Colon

- Hydrogen sulfide from adipose tissue is a novel insulin resistance regulator.

  Feng X, Chen Y, Zhao J, Tang C, Jiang Z, Geng B.

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  Application: WB-Ti, Rat, Rat adipose tissues

- Hydrogen sulfide protects rat lung from ischemia-reperfusion injury.

  Fua Z, Liua X, Geng B, Fanga L, Tang C.

  Life Sciences 2008 May; 82(23-24):1196.

  Application: WB-Ti, Rat, Rat lung from ischemia-reperfusion injury

- Hydrogen sulfide enhances ulcer healing in rats.

  Wallace JL, Dicay M, McKnight W, Martin GR.

  FASEB Journal 2007 Jul; 21(14):4070.

  Application: WB-Ti, Rat, Rat gastric tissue

- Hydrogen sulfide-induces DNA damage and changes in apoptotic gene expression in human lung fibroblast cells.

  Baskar R, Li L, Moore PK.

  FASEB Journal 2006 Nov; 21(1):247.

  Application: WB, Human, MRC-5, IMR-90, and WI-38 cells

- Hydrogen sulfide is a novel prosecretory neuromodulator in the Guinea-pig and human colon.

  Schicho R, Krueger D, Zeller F, Von Weyhern CW, Frieling T, Kimura H, Ishii I, De Giorgio R, Campi B, Schemann M.

  Gastroenterology 2006 Aug; 131(5):1542.

  Application: IHC, Human, Mouse, Enteric neurons of guinea-pig colon, human colon, and myenteric interstitial cells of Cajal guinea-pig ileum

Pathway

- Cysteine and methionine metabolism
- Glycine
- Metabolic pathways
- Nitrogen metabolism
- Selenoamino acid metabolism

Disease

- Atherosclerosis
- Calcinosis
- Cardiovascular Diseases
- Carotid Stenosis
- Cleft Lip
- Cleft Palate
- Coronary Artery Disease
- Diabetes Mellitus
- Edema
- Genetic Predisposition to Disease
- Hypertension
- Infertility
- Lung Neoplasms
- Pulmonary Disease
- Spinal Dysraphism
- Urinary Bladder Neoplasms
- Werner syndrome