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CBS Antibody (monoclonal) (M01)

Mouse monoclonal antibody raised against a partial recombinant CBS.
Catalog # AT1408a

Specification

CBS Antibody (monoclonal) (M01) - Product Information

Application	**WB, IHC, IP**
Primary Accession	P35520
Other Accession	NM_000071
Reactivity	**Human**
Host	**mouse**
Clonality	**Monoclonal**
Isotype	**IgG2a Kappa**
Calculated MW	**60587**

CBS Antibody (monoclonal) (M01) - Additional Information

Gene ID 102724560;875

Other Names
Cystathionine beta-synthase, Beta-thionase, Serine sulfhydrase, CBS

Target/Specificity
CBS (NP_000062, 1 a.a. ~ 100 a.a) partial recombinant protein with GST tag. MW of the GST tag alone is 26 KDa.

Dilution
WB~~1:500~1000
IHC~~1:100~500
IP~~N/A

Format
Clear, colorless solution in phosphate buffered saline, pH 7.2 .

Storage
Store at -20°C or lower. Aliquot to avoid repeated freezing and thawing.

Precautions
CBS Antibody (monoclonal) (M01) is for research use only and not for use in diagnostic or therapeutic procedures.

CBS Antibody (monoclonal) (M01) - Protocols

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

- Western Blot
- Blocking Peptides

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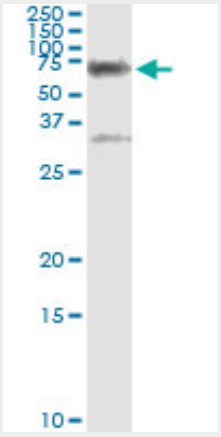
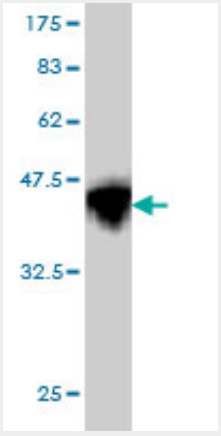
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

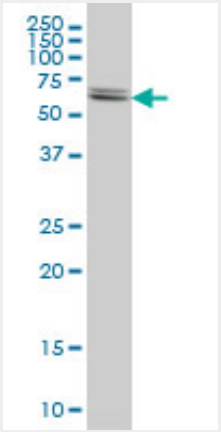
CBS Antibody (monoclonal) (M01) - Images



Immunoprecipitation of CBS transfected lysate using anti-CBS monoclonal antibody and Protein A Magnetic Bead (U0007), and immunoblotted with CBS MaxPab rabbit polyclonal antibody.



Antibody Reactive Against Recombinant Protein.Western Blot detection against Immunogen (36.74 KDa) .



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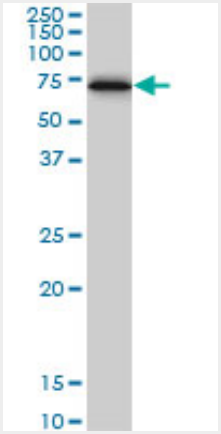
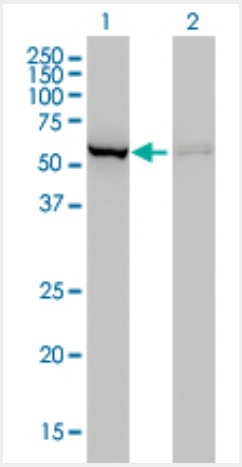
CBS monoclonal antibody (M01), clone 3E1 Western Blot analysis of CBS expression in HeLa ((Cat # AT1408a)

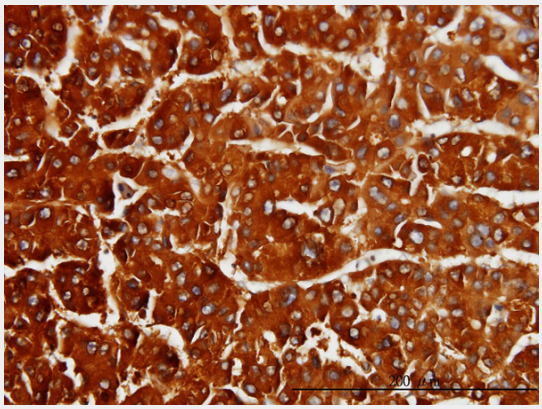


CBS monoclonal antibody (M01), clone 3E1. Western Blot analysis of CBS expression in MCF-7 ((Cat # AT1408a)

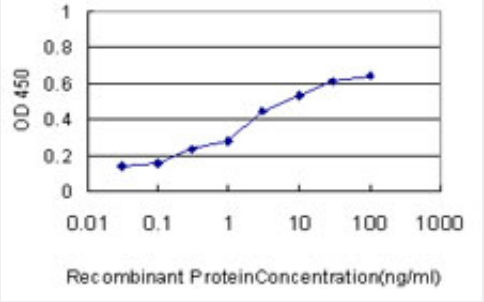


Western Blot analysis of CBS expression in transfected 293T cell line by CBS monoclonal antibody (M01), clone 3E1.

Lane 1: CBS transfected lysate(61 KDa).
Lane 2: Non-transfected lysate.



Immunoperoxidase of monoclonal antibody to CBS on formalin-fixed paraffin-embedded human hepatocellular carcinoma. [antibody concentration 3 ug/ml]



Detection limit for recombinant GST tagged CBS is approximately 0.1ng/ml as a capture antibody.

CBS Antibody (monoclonal) (M01) - Background

The protein encoded by this gene acts as a homotetramer to catalyze the conversion of homocysteine to cystathionine, the first step in the transsulfuration pathway. The encoded protein is allosterically activated by adenosyl-methionine and uses pyridoxal phosphate as a cofactor. Defects in this gene can cause cystathionine beta-synthase deficiency (CBSD), which can lead to homocystinuria. Multiple alternatively spliced transcript variants have been found for this gene.

CBS Antibody (monoclonal) (M01) - References

1.Downregulation of cystathionine β-synthase/hydrogen sulfide contributes to rotenone-induced microglia polarization toward M1 type.Du C, Jin M, Hong Y, Li Q, Wang XH, Xu JM, Wang F, Zhang Y, Jia J, Liu CF, Hu LFBiochem Biophys Res Commun. 2014 Jul 30. pii: S0006-291X(14)01356-4. doi: 10.1016/j.bbrc.2014.07.107.2.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 TProc Natl Acad Sci U S A. 2014 May 27;111(21):7606-11. doi: 10.1073/pnas.1321232111. Epub 2014 Apr 14.3.Contribution of cysteine aminotransferase and mercaptopyruvate sulfurtransferase to hydrogen sulfide production in peripheral neurons.Miyamoto R, Otsuguro K, Yamaguchi S, Ito SJ Neurochem. 2014 Jul;130(1):29-40. doi: 10.1111/jnc.12698. Epub 2014 Mar 27.4.Reduced methylation of PFKFB3 in cancer cells shunts glucose towards the pentose phosphate pathway.Yamamoto T, Takano N, Ishiwata K, Ohmura M, Nagahata Y, Matsuura T, Kamata A, Sakamoto K, Nakanishi T, Kubo A, Hishiki T, Suematsu MNat Commun. 2014 Mar 17;5:3480. doi: 10.1038/ncomms4480.5.Hypoxia-inducible factors regulate human and rat cystathionine ?-synthase gene expression.Takano N, Peng YJ, Kumar GK, Luo W, Hu H, Shimoda LA, Suematsu M, Prabhakar NR, Semenza GLBiochem J. 2013 Dec 12.6.Sensitization of sodium channels by cystathionine ?-synthetase activation in colon sensory neurons in adult rats with neonatal maternal deprivation.Hu S, Xu W, Miao X, Gao Y, Zhu L, Zhou Y, Xiao Y, Xu GYExp Neurol. 2013 Jul 6. pii: S0014-4886(13)00200-8. doi: 10.1016/j.expneurol.2013.06.027.7.High fat diet stimulates hepatic cystathionine ?-synthase and cystathionine ?-lyase expression.Hwang SY, Sarna LK, Siow YL, O K.Canadian Journal of Physiology and Pharmacology, 10.1139/cjpp-2013-01068.Promoted Interaction of Nuclear Factor-kB with Demethylated Cystathionine-beta-Synthetase Gene Contributes to Gastric Hypersensitivity in Diabetic Rats.Zhang HH, Hu J, Zhou YL, Hu S, Wang YM, Chen W, Xiao Y, Huang LY, Jiang X, Xu GYJ Neurosci. 2013 May 22;33(21):9028-9038.9.Hydrogen sulfide attenuates opioid dependence by suppression of adenylate cyclase/cAMP pathway.Yang HY, Wu ZY, Wood M, Whiteman M, Bian JSAntioxid Redox Signal. 2013 May 18.10.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 RAntioxid Redox Signal. 2013 May 20;18(15):1906-19. doi: 10.1089/ars.2012.4645. Epub 2013 Feb 7.11.Actions of Hydrogen Sulfide and ATP-Sensitive Potassium Channels on Colonic Hypermotility in a Rat Model of Chronic Stress.Liu Y, Luo H, Liang C, Xia H, Xu W, Chen J, Chen MPLoS One. 2013;8(2):e55853. doi: 10.1371/journal.pone.0055853. Epub 2013 Feb 6.12.Electroacupuncture Suppresses Mechanical Allodynia and Nuclear Factor Kappa B Signaling in Streptozotocin-Induced Diabetic Rats.Shi L,

Zhang HH, Xiao Y, Hu J, Xu GY.CNS Neurosci Ther. 2012 Dec 11. doi: 10.1111/cns.12035. [Epub ahead of print]13.Hydrogen Sulphide-induced relaxation of porcine peripheral bronchioles.Rashid S, Heer JK, Garle MJ, Alexander SP, Roberts RE.Br J Pharmacol. 2012 Dec 6. doi: 10.1111/bph.12084. [Epub ahead of print]14.Hydrogen sulfide and resolution of acute inflammation: A comparative study utilizing a novel fluorescent probe.Dufton N, Natividad J, Verdu EF, Wallace JL.Sci Rep. 2012;2:499. Epub 2012 Jul 9.15.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 Mar 3. [Epub ahead of print]16.Characterization of Hydrogen Sulfide and Its Synthases, Cystathionine ?]-Synthase and Cystathionine ?^-Lyase, in Human Prostatic Tissue and Cells.Guo H, Gai JW, Wang Y, Jin HF, Du JB, Jin J.Urology. 2012 Feb;79(2):483.e1-5.17.Homocystinuria in Taiwan: An inordinately high prevalence in an Austronesian aboriginal tribe, Tao.Lu YH, Huang YH, Cheng LM, Yu HC, Hsu JH, Wu JT, Lo MY, Lin A, Lin CY, Wu JY, Niu DM.Molecular Genetics and Metabolism (2012), doi: 10.1016/j.ymgme.2012.01.02118.Hydrogen Sulfide in the RVLM and PVN has No Effect on Cardiovascular Regulation.Streeter E, Al-Magableh M, Hart JL, Badoer E.Front Physiol. 2011;2:55. Epub 2011 Sep 1.19.Interdependency of Cystathione ?^-Lyase and Cystathione ?]-Synthase in Hydrogen Sulfide-Induced Blood Pressure Regulation in Rats.Roy A, Khan AH, Islam MT, Prieto MC, Majid DS.Am J Hypertens. 2011 Aug 25. doi: 10.1038/ajh.2011.149. [Epub ahead of print]20.Placental markers of folate-related metabolism in preeclampsia.Mislanova C, Martsenyuk O, Huppertz B, Obolenskaya MY.Reproduction. 2011 Jun 20. [Epub ahead of print]21.Multiple hemodynamic effects of endogenous hydrogen sulfide on central nervous system in rats.Ren YS, Wu SY, Wang XJ, Yu F, Zhao J, Tang CS, Ouyang JP, Geng B.Chin Med J 2011;124(21):3468-347522.Hydrogen Sulfide Modulates Contractile Function in Rat Jejunum.Kasparek MS, Linden DR, Farrugia G, Sarr MG.J Surg Res. 2011 Apr 22. [Epub ahead of print]23.Carbon monoxide stimulates global protein methylation via its inhibitory action on cystathionine beta-synthase.Yamamoto T, Takano N, Ishiwata K, Suematsu M.J. Clin. Biochem. Nutr., 48, 96-100, 2010 .24.The hydrogen sulfide signaling system: changes during aging and the benefits of caloric restriction.Predmore BL, Alendy MJ, Ahmed KI, Leeuwenburgh C, Julian D.Age (Dordr). 2010 Dec;32(4):467-81. Epub 2010 May 26.25.A Crucial Role for Hydrogen Sulfide in Oxygen Sensing via Modulating Large Conductance Calcium-Activated Potassium Channels.Li Q, Sun B, Wang X, Jin Z, Zhou Y, Dong L, Jiang LH, Rong W.Antioxid Redox Signal. 2010 May 15;12(10):1179-89.26.Rescue of cystathionine beta-synthase (CBS) mutants with chemical chaperones: purification and characterization of eight CBS mutant enzymes.Majtan T, Liu L, Carpenter JF, Kraus JP.J Biol Chem. 2010 Mar 22. [Epub ahead of print]27.Actions of hydrogen sulphide on ion transport across rat distal colon.Hennig B, Diener M.Br J Pharmacol. 2009 Nov;158(5):1263-75. Epub 2009 Sep 25.28.The endogenous hydrogen sulfide producing enzyme cystathionine-?] synthase contributes to visceral hypersensitivity in a rat model of irritable bowel syndrome.Xu GY, Winston JH, Shenoy M, Zhou S, Chen JD, Pasricha PJ.Mol Pain. 2009 Aug 6;5:44.29.Astrocytes produce the antiinflammatory and neuroprotective agent hydrogen sulfide.Lee M, Schwab C, Yu S, McGeer E, McGeer PL.Neurobiol Aging. 2009 Oct;30(10):1523-34. Epub 2009 Jul 23.30.Hydrogen sulphide synthesis in the rat and mouse gastrointestinal tract.Martin GR, McKnight GW, Dicay MS, Coffin CS, Ferraz JG, Wallace JL.Dig Liver Dis. 2009 Jun 29. [Epub ahead of print]31.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):569-78, 578.e1. Epub 2009 Apr 16.32.Active CBS can be expressed in heme-free systems in the presence of metal-substituted porphyrins or a chemical chaperone.Majtan T, Singh LR, Wang L, Kruger WD, Kraus JP.J Biol Chem. 2008 Dec 12;283(50):34588-95. Epub 2008 Oct 10.33.Hydrogen sulfide enhances ulcer healing in rats.Wallace JL, Dicay M, McKnight W, Martin GR.FASEB J. 2007 Dec;21(14):4070-6. Epub 2007 Jul 18.34.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 Nov;131(5):1542-52. Epub 2006 Aug 18.