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GCH1 Antibody (monoclonal) (M01)

Mouse monoclonal antibody raised against a partial recombinant GCH1.
Catalog # AT2174a

Product Information

Application	WB, IHC, IP, E
Primary Accession	P30793
Other Accession	NM_000161
Reactivity	Human
Host	Mouse
Clonality	monoclonal
Isotype	IgG2a Kappa
Clone Names	4A12
Calculated MW	27903

Additional Information

Gene ID	2643
Other Names	GTP cyclohydrolase 1, GTP cyclohydrolase I, GTP-CH-I, GCH1, DYT5, GCH
Target/Specificity	GCH1 (NP_000152, 84 a.a. ~ 172 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 E~~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	GCH1 Antibody (monoclonal) (M01) is for research use only and not for use in diagnostic or therapeutic procedures.

Background

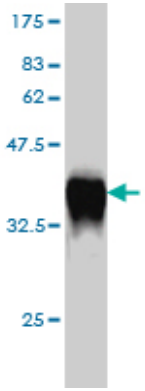
This gene encodes a member of the GTP cyclohydrolase family. The encoded protein is the first and rate-limiting enzyme in tetrahydrobiopterin (BH4) biosynthesis, catalyzing the conversion of GTP into 7,8-dihydroneopterin triphosphate. BH4 is an essential cofactor required by aromatic amino acid hydroxylases as well as nitric oxide synthases. Mutations in this gene are associated with malignant hyperphenylalaninemia and dopa-responsive dystonia. Several alternatively spliced transcript variants encoding different isoforms have been described; however, not all variants give rise to a functional enzyme.

References

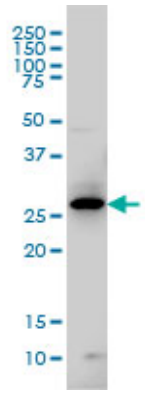
1.Inhibition of GTP cyclohydrolase attenuates tumor growth by reducing angiogenesis and M2-like

polarization of tumor associated macrophages.Pickert G, Lim HY, Weigert A, Haussler A, Myrczek T, Waldner M, Labocha S, Ferreiros N, Geisslinger G, Lotsch J, Becker C, Brune B, Tegeder I.Int J Cancer. 2012 Jun 30. doi: 10.1002/ijc.27706.2.Differential effects of heart rate reduction with ivabradine in two models of endothelial dysfunction and oxidative stress.Kroller-Schon S, Schulz E, Wenzel P, Kleschyov AL, Hortmann M, Torzewski M, Oelze M, Renne T, Daiber A, Munzel T.Basic Res Cardiol. 2011 Oct 2.3.Vascular dysfunction in experimental diabetes is improved by pentaerithrityl tetranitrate but not isosorbide-5-mononitrate therapy.Schuhmacher S, Oelze M, Bollmann F, Kleinert H, Otto C, Heeren T, Steven S, Hausding M, Knorr M, Pautz A, Reifenberg K, Schulz E, Gori T, Wenzel P, Munzel T, Daiber A.Diabetes. 2011 Oct;60(10):2608-16. Epub 2011 Aug 15.4.Sepiapterin improves angiogenesis of pulmonary artery endothelial cells with in utero pulmonary hypertension by recoupling endothelial nitric oxide synthase.Teng RJ, Du J, Xu H, Bakhutashvili I, Eis A, Shi Y, Pritchard KA Jr, Konduri GG.Am J Physiol Lung Cell Mol Physiol. 2011 Sep;301(3):L334-45. Epub 2011 May 27.5.Vascular Dysfunction in Streptozotocin-Induced Experimental Diabetes Strictly Depends on Insulin Deficiency.Oelze M, Knorr M, Schuhmacher S, Heeren T, Otto C, Schulz E, Reifenberg K, Wenzel P, Munzel T, Daiber A.J Vasc Res. 2011 Jan 27;48(4):275-284. [Epub ahead of print]6.Role of Angiotensin II on Dihydrofolate Reductase, GTP-Cyclohydrolase 1 and Nitric Oxide Synthase Expressions in Renal Ischemia-Reperfusion.Seujange Y, Eiam-Ong S, Tirawatnapong T, Eiam-Ong S.Am J Nephrol. 2008;28(4):692-700. Epub 2008 Apr 11.7.Mechanisms underlying recoupling of eNOS by HMG-CoA reductase inhibition in a rat model of streptozotocin-induced diabetes mellitus.Wenzel P, Daiber A, Oelze M, Brandt M, Closs E, Xu J, Thum T, Bauersachs J, Ertl G, Zou MH, Forstermann U, Munzel T.Atherosclerosis. 2008 May;198(1):65-76. Epub 2007 Dec 3.8.Regulation of Tetrahydrobiopterin Biosynthesis by Shear Stress.Widder JD, Chen W, Li L, Dikalov S, Thony B, Hatakeyama K, Harrison DG.Circ Res. 2007 Oct 12;101(8):830-8. Epub 2007 Aug 17.

Images



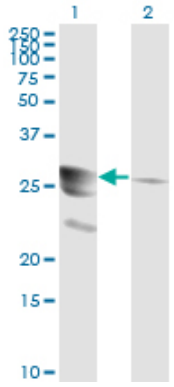
Antibody Reactive Against Recombinant Protein.Western Blot detection against Immunogen (35.53 KDa) .

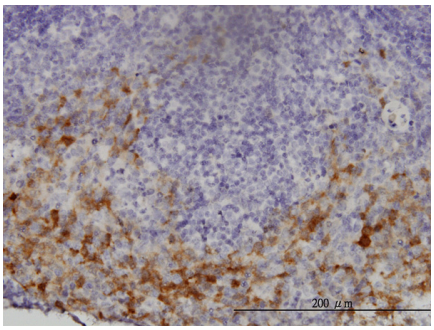


GCH1 monoclonal antibody (M01), clone 4A12 Western Blot analysis of GCH1 expression in IMR-32 ((Cat # AT2174a)

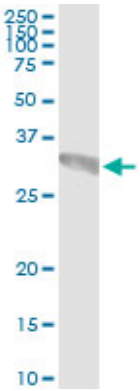
Western Blot analysis of GCH1 expression in transfected 293T cell line by GCH1 monoclonal antibody (M01), clone 4A12.

Lane 1: GCH1 transfected lysate(27.9 KDa).
Lane 2: Non-transfected lysate.

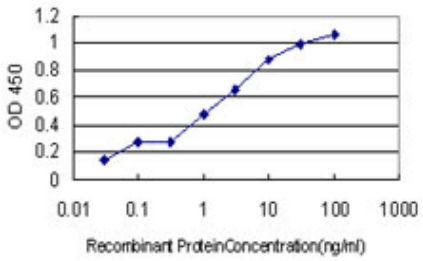




Immunoperoxidase of monoclonal antibody to GCH1 on formalin-fixed paraffin-embedded human lymph node. [antibody concentration 3 ug/ml]



Immunoprecipitation of GCH1 transfected lysate using anti-GCH1 monoclonal antibody and Protein A Magnetic Bead (U0007), and immunoblotted with GCH1 MaxPab rabbit polyclonal antibody.



Detection limit for recombinant GST tagged GCH1 is approximately 0.3ng/ml as a capture antibody.