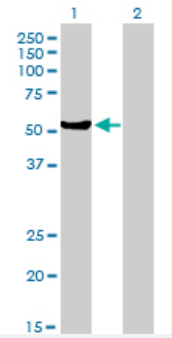
MUTYH monoclonal antibody (M01), clone 4D10

Catalog # H00004595-M01 Size 100 ug

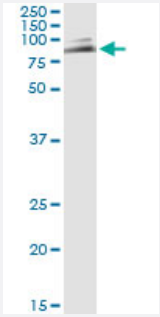
Applications



Western Blot (Transfected lysate)

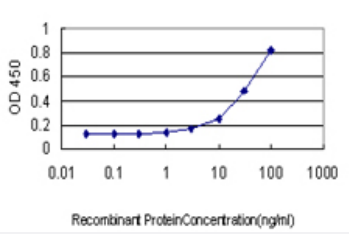
Western Blot analysis of MUTYH expression in transfected 293T cell line by MUTYH monoclonal antibody (M01), clone 4D10.

Lane 1: MUTYH transfected lysate(59.1 KDa).
Lane 2: Non-transfected lysate.



Immunoprecipitation

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



Sandwich ELISA (Recombinant protein)

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

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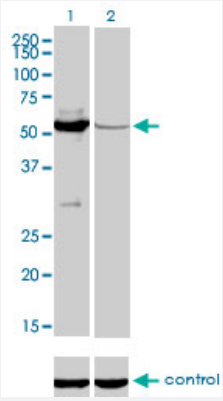
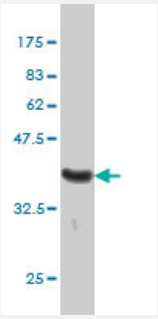


RNAi Knockdown (Antibody validated)

Western blot analysis of MUTYH over-expressed 293 cell line, cotransfected with MUTYH Validated Chimera RNAi (Cat # H00004595-R01V) (Lane 2) or non-transfected control (Lane 1). Blot probed with MUTYH monoclonal antibody (M01), clone 4D10 (Cat # H00004595-M01). GAPDH (36.1 kDa) used as specificity and loading control.



Western Blot detection against Immunogen (36.74 KDa) .

Specification

Product Description	Mouse monoclonal antibody raised against a partial recombinant MUTYH.
Immunogen	MUTYH (AAH03178, 436 a.a. ~ 535 a.a) partial recombinant protein with GST tag. MW of the GST t ag alone is 26 KDa.
Sequence	KLTYQVYGLALEGQTPVTTVPPGARWLTQEEFHTAAVSTAMKKVFRVYQGQQPGTCMGSKRSQ VSSPCSRKKPRMGQQVLDNFFRSHISTDAHSLNSAAQ
Host	Mouse
Reactivity	Human
Interspecies Antigen Sequence	Mouse (70)
Isotype	IgG1 Kappa
Quality Control Testing	Antibody Reactive Against Recombinant Protein. Western Blot detection against Immunogen (36.74 KDa) .
Storage Buffer	In 1x PBS, pH 7.4
Storage Instruction	Store at -20°C or lower. Aliquot to avoid repeated freezing and thawing.

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  Protocol Download

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

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  Western blot analysis of MUTYH over-expressed 293 cell line, cotransfected with MUTYH Validated Chimera RNAi (Cat # H00004595-R01V) (Lane 2) or non-transfected control (Lane 1). Blot probed with MUTYH monoclonal antibody (M01), clone 4D10 (Cat # H00004595-M01). GAPDH (36.1 kDa) used as specificity and loading control.

  Protocol Download

Gene Info — MUTYH

Entrez GeneID	4595
GeneBank Accession#	BC003178
Protein Accession#	AAH03178
Gene Name	MUTYH

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Gene Alias	MGC4416, MYH
Gene Description	mutY homolog (E. coli)
Omim ID	132600 137215 604933 608456
Gene Ontology	Hyperlink
Gene Summary	This gene encodes a DNA glycosylase involved in oxidative DNA damage repair. The enzyme ex cises adenine bases from the DNA backbone at sites where adenine is inappropriately paired wit h guanine, cytosine, or 8-oxo-7,8-dihydroguanine, a major oxidatively damaged DNA lesion. The protein is localized to the nucleus and mitochondria. Mutations in this gene result in heritable predi sposition to colon and stomach cancer. Multiple transcript variants encoding different isoforms ha ve been found for this gene. [provided by RefSeq
Other Designations	A/G-specific adenine DNA glycosylase|OTTHUMP00000009096|OTTHUMP00000009098|OTTH UMP00000009101|OTTHUMP00000009102|mutY homolog

Publication Reference

- Oxidative guanine base damage plays a dual role in regulating productive ALT-associated homology-directed repair.

  Sanjana A Thosar, Ryan P Barnes, Ariana Detwiler, Ragini Bhargava, Anne Wondisford, Roderick J O'Sullivan, Patricia L Opresko.

  Cell Reports 2024 Jan; 43(1):113656.

  Application: IF, Human, HeLa LT FAP, U2OS FAP cells

- hMYH and hMTH1 cooperate for survival in mismatch repair defective T-cell acute lymphoblastic leukemia.

  Eshtad S, Mavajian Z, Rudd SG, Visnes T, Boström J, Altun M, Helleday T.

  Oncogenesis 2016 Dec; 5(12):e275.

  Application: WB, Human, HEK 293T, Jurkat cells

- Reduced expression of the DNA glycosylase gene MUTYH is associated with an increased number of somatic mutations via a reduction in the DNA repair capacity in prostate adenocarcinoma.

  Shinmura K, Kato H, Kawanishi Y, Yoshimura K, Igarashi H, Goto M, Tao H, Inoue Y, Sugiyama T, Furuse H, Ozono S, Sugimura H.

  Molecular Carcinogenesis 2017 Feb; 56(2):781.

  Application: WB-Tr, Human, PC-3 cells

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- Functional Complementation Assay for 47 MUTYH Variants in a MutY-Disrupted Escherichia coli strain.

  Komine K, Shimodaira H, Takao M, Soeda H, Zhang X, Takahashi M, Ishioka C.

  Human Mutation 2015 Jul; 36(7):704.

  Application: WB, Human, HCT116 cells

- Visualization of the physical and functional interaction between hMYH and hRad9 by Dronpa bimolecular fluorescence complementation.

  Agustina L, Hahm SH, Han SH, Tran AH, Chung JH, Park JH, Park JW, Han YS.

  BMC Molecular Biology 2014 Aug; 15(1):17.

  Application: WB-Ce, Human, HEK293 cells

- Impaired 8-Hydroxyguanine Repair Activity of MUTYH Variant p.Arg109Trp Found in a Japanese Patient with Early-Onset Colorectal Cancer.

  Shinmura K, Goto M, Tao H, Kato H, Suzuki R, Nakamura S, Matsuda T, Yin G, Morita M, Kono S, Sugimura H.

  Oxidative Medicine and Cellular Longevity 2014 Mar; 2014:617351.

  Application: IF, WB-Tr, Human, H1299 cells

- Human MutY homolog induces apoptosis in etoposide-treated HEK293 cells.

  Hahm SH, Chung JH, Agustina L, Han SH, Yoon IS, Park JH, Kang LW, Park JW, Na JJ, Han YS.

  Oncology Letters 2012 Dec; 4(6):1203.

  Application: WB, Human, HEK 293 cells

- Cancer-associated variants and a common polymorphism of MUTYH exhibit reduced repair of oxidative DNA damage using a GFP-based assay in mammalian cells.

  Raetz AG, Xie Y, Kundu S, Brinkmeyer MK, Chang C, David SS.

  Carcinogenesis 2012 Nov; 33(11):2301.

  Application: WB-Ce, Mouse , MEFs

- Reduced expression of MUTYH with suppressive activity against mutations caused by 8-hydroxyguanine is a novel predictor of a poor prognosis in human gastric cancer.

  Shinmura K, Goto M, Suzuki M, Tao H, Yamada H, Igarashi H, Matsuura S, Maeda M, Konno H, Matsuda T, Sugimura H.

  J Pathol 2011 Jun; 225:414.

  Application: WB-Tr, Human, AGS cells

- Effects of base excision repair proteins on mutagenesis by 8-oxo-7,8-dihydroguanine (8-hydroxyguanine) paired with cytosine and adenine.

  Suzuki T, Harashima H, Kamiya H.

  DNA Repair 2010 May; 9(5):542.

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

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- Immunohistochemistry is not an accurate first step towards the molecular diagnosis of MUTYH-associated polyposis.

  van der Post RS, Kets CM, Ligtenberg MJ, van Krieken JH, Hoogerbrugge N.

  Virchows Archiv 2009 Jan; 454(1):25.

  Application: IHC-P, Human, Human adenoma cancer

Pathway

- Base excision repair

Disease

- Adenocarcinoma
- Adenoma
- Adenomatous Polyposis Coli
- Adenomatous Polyps
- Brain Neoplasms
- Breast cancer
- Breast Neoplasms
- Carcinoma
- Chronic Disease
- Colon cancer
- Colonic Neoplasms
- Colonic Polyps
- Colorectal Neoplasms
- Disease Progression
- Disease Susceptibility
- DNA Damage
- Endometrial Neoplasms

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- Esophageal Neoplasms
- Genetic Predisposition to Disease
- Glioma
- Graft vs Host Disease
- Head and Neck Neoplasms
- Intestinal Polyposis
- Intestinal Polyps
- Kidney Failure
- Lung Neoplasms
- Meningeal Neoplasms
- Meningioma
- Microsatellite Instability
- Mouth Neoplasms
- Multiple Sclerosis
- Neoplasms
- Neoplastic Syndromes
- Neuroma
- Occupational Diseases
- Oropharyngeal Neoplasms
- Pancreatic Neoplasms
- Poisoning
- Prostatic Neoplasms
- Syndrome
- Urinary Bladder Neoplasms

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