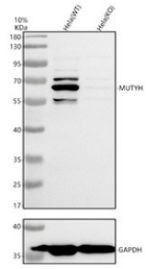
MUTYH Antibody / Adenine DNA Glycosylase MYH1 Polyclonal Antibody (RQ8629)

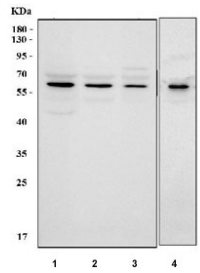
Catalog No.	Formulation	Size
RQ8629	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

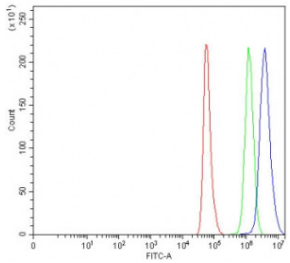
Species Reactivity	Human, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q9UIF7
Applications	Western blot: 0.5-1ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This MUTYH Antibody / Adenine DNA Glycosylase MYH1 Polyclonal Antibody is available for research use only.



MUTYH Antibody WB Analysis of Wild-Type and MUTYH Knockout HeLa Cells. Western blot analysis of human HeLa wild-type (WT, lane 1) and MUTYH knockout (KO, lane 2) whole-cell lysates using Adenine DNA Glycosylase MYH1 Polyclonal Antibody at 0.5 ug/ml. A prominent immunoreactive band near 60-65 kDa is detected in WT lysate and is markedly reduced in the KO sample, supporting MUTYH-dependent recognition. Additional bands near 55 and 70 kDa are also reduced in the KO sample. Multiple MUTYH protein forms have been documented in published studies, although the identities of the individual bands have not been established. GAPDH serves as the loading control.



MUTYH Antibody WB Analysis of Human HeLa, K562, HEL and Rat C6 Cell Lysates. Western blot analysis of human HeLa (lane 1), K562 (lane 2), HEL (lane 3), and rat C6 (lane 4) cell lysates using Adenine DNA Glycosylase MYH1 Polyclonal Antibody. An immunoreactive band is detected near 60 kDa across all four samples, consistent with the expected molecular weight of MUTYH. Additional immunoreactive bands are visible in the human cell lysates.



MUTYH Antibody FACS Analysis of Human HeLa Cells. Flow cytometry analysis of fixed and permeabilized human HeLa cells using Adenine DNA Glycosylase MYH1 Polyclonal Antibody at 1 ug per million cells following blocking with goat serum. The blue histogram represents antibody-stained cells, the green histogram represents the isotype control, and the red histogram represents unstained cells. A rightward fluorescence shift is observed in the antibody-stained population relative to both controls.

Description

MUTYH Antibody / Adenine DNA Glycosylase MYH1 Polyclonal Antibody targets MUTYH, also known as MYH1, a DNA glycosylase involved in the base excision repair pathway. MUTYH protects genomic integrity by correcting inappropriate adenine incorporation opposite oxidatively damaged guanine bases. This function is particularly important in preventing mutations caused by reactive oxygen species, which can damage DNA during normal cellular metabolism and under conditions of oxidative stress.

One of the most common oxidative DNA lesions is 8-oxo-7,8-dihydroguanine (8-oxoG), which can pair incorrectly with adenine during DNA replication. If this mismatch remains unrepaired, subsequent replication can produce a G to T transversion mutation. MUTYH recognizes adenine paired with 8-oxoG and removes the incorrectly incorporated adenine, initiating repair through the base excision repair pathway. The resulting abasic site is processed by additional DNA repair enzymes, allowing the correct nucleotide to be incorporated.

MUTYH functions within a coordinated network of proteins that protect DNA from oxidative damage. OGG1 removes 8-oxoG when paired with cytosine, while MTH1 helps prevent oxidized nucleotides from entering the DNA replication process. Together, these activities reduce the accumulation of oxidative DNA lesions and associated mutations. MUTYH also interacts with proteins involved in DNA replication and repair, including proliferating cell nuclear antigen (PCNA), supporting its role in maintaining replication fidelity.

Alternative transcription initiation and RNA processing generate multiple MUTYH isoforms with distinct N-terminal sequences. These protein forms contribute to the distribution of MUTYH between the nucleus and mitochondria, where oxidative DNA damage presents different challenges to genome maintenance. Published studies have identified several MUTYH protein forms with apparent molecular weights in the approximately 50-65 kDa range. Their relative abundance and localization can vary according to cellular context.

Biallelic pathogenic variants in MUTYH cause MUTYH-associated polyposis (MAP), an inherited colorectal cancer predisposition syndrome characterized by increased colorectal adenoma formation and cancer risk. Impaired MUTYH activity permits the accumulation of oxidative DNA damage-associated mutations, contributing to genomic instability and tumor development. MUTYH Antibody supports investigations into oxidative DNA repair, MUTYH protein regulation, and the molecular mechanisms connecting defective base excision repair with hereditary colorectal cancer.

Explore additional antibodies targeting DNA repair enzymes, genome maintenance proteins, and regulators of cellular responses to oxidative stress in our Cell Biology Antibodies collection.

Application Notes

Optimal dilution of the MUTYH Antibody / Adenine DNA Glycosylase MYH1 Polyclonal Antibody should be determined by the researcher.

Immunogen

An E.coli-derived human recombinant protein (amino acids A187-N528) was used as the immunogen for the MUTYH antibody.

Storage

After reconstitution, the MUTYH antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

MYH1 antibody, Adenine DNA glycosylase MYH1 antibody, MutY homolog antibody, MutY DNA glycosylase antibody, Human MutY homolog antibody, hMYH antibody, MUTYH DNA glycosylase antibody, MUTYH base excision repair antibody, MUTYH oxidative DNA repair antibody, Adenine glycosylase antibody

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