

MUTYH (N-15): sc-25169

BACKGROUND

MUTYH (mutY homolog (*E. coli*)) is a DNA glycosylase mismatch repair enzyme that in conjunction with mutM (OGG1), cleaves adenine residues paired with either oxidized (8-hydroxyguanines) or non-modified guanines in order to correct A/G and A/C mismatches. Repair of most modified and mispaired bases in the genome is initiated by DNA glycosylases, which bind and cleave N-glycosyl bonds to initiate base excision repair. MUTYH is crucial for the avoidance of mutations resulting from oxidative DNA damage. Multiple N-terminal splice variants of MUTYH exist in mammalian cells. Increasing levels of MUTYH in A549 cells exposed to oxygen and infrared radiation leads to improvements in cell survival. Biallelic MUTYH germ-line mutations predispose humans to colorectal adenomas and carcinomas. MUTYH is abundant in neurons where mitochondrial genomes exposed to reactive oxygen species (ROS) that damage DNA must maintain integrity over the entire mammalian life span.

REFERENCES

- Hayashi, H., et al. 2002. Replication-associated repair of adenine:8-oxoguanine mispairs by MYH. *Curr. Biol.* 12: 335-339.
- Englander, E.W., et al. 2002. Rat MYH, a glycosylase for repair of oxidatively damaged DNA, has brain-specific isoforms that localize to neuronal mitochondria. *J. Neurochem.* 83: 1471-1480.

CHROMOSOMAL LOCATION

Genetic locus: MUTYH (human) mapping to 1p34.1.

SOURCE

MUTYH (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of MUTYH of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-25169 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MUTYH (N-15) is recommended for detection of MUTYH of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MUTYH siRNA (h): sc-37407, MUTYH shRNA Plasmid (h): sc-37407-SH and MUTYH shRNA (h) Lentiviral Particles: sc-37407-V.

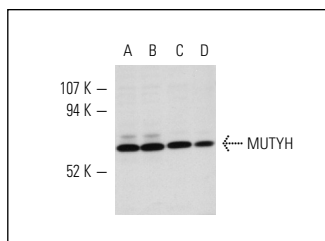
Molecular Weight of MUTYH: 65 kDa.

Positive Controls: HL-60 nuclear extract: sc-2147, Jurkat nuclear extract: sc-2132 or K-562 nuclear extract: sc-2130.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



MUTYH (N-15): sc-25169. Western blot analysis of MUTYH expression in Jurkat (A), K-562 (B), HL-60 (C) and SW480 (D) nuclear extracts.

SELECT PRODUCT CITATIONS

- Markkanen, E., et al. 2012. Regulation of oxidative DNA damage repair by DNA polymerase γ and MutYH by cross-talk of phosphorylation and ubiquitination. *Proc. Natl. Acad. Sci. USA* 109: 437-442.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

MONOS
Satisfaction
Guaranteed

Try **MUTYH (C-6): sc-374571**, our highly recommended monoclonal alternative to MUTYH (N-15).