SANTA CRUZ BIOTECHNOLOGY, INC.

MUTYH (A-13): sc-30631

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. Hayashi, H., et al. 2002. Replication-associated repair of adenine:8-oxoguanine mispairs by MYH. Curr. Biol. 12: 335-339.
2. 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.
3. Halford, S.E., et al. 2003. Germline mutations but not somatic changes at the MYH locus contribute to the pathogenesis of unselected colorectal cancers. Am. J. Pathol. 162: 1545-1548.
4. Lee, H.M., et al. 2004. Developmental changes in expression and subcellular localization of the DNA repair glycosylase, MYH, in the rat brain. J. Neurochem. 88: 394-400.
5. Tao, H., et al. 2004. A novel splice-site variant of the base excision repair gene MYH is associated with production of an aberrant mRNA transcript encoding a truncated MYH protein not localized in the nucleus. Carcinogenesis 25: 1859-1866.
6. Kim, C.J., et al. 2004. Genetic alterations of the MYH gene in gastric cancer. Oncogene 23: 6820-6822.

CHROMOSOMAL LOCATION

Genetic locus: Mutyh (mouse) mapping to 4 C7.

SOURCE

MUTYH (A-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of MUTYH of mouse 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-30631 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MUTYH (A-13) is recommended for detection of MUTYH of mouse and rat 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).

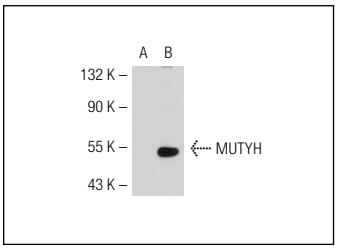
Suitable for use as control antibody for MUTYH siRNA (m): sc-45816, MUTYH shRNA Plasmid (m): sc-45816-SH and MUTYH shRNA (m) Lentiviral Particles: sc-45816-V.

Molecular Weight of MUTYH: 65 kDa.

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 (A-13): sc-30631. Western blot analysis of MUTYH expression in non-transfected: sc-117752 (**A**) and mouse MUTYH transfected: sc-125671 (**B**) 293T whole cell lysates.

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.