SANTA CRUZ BIOTECHNOLOGY, INC.

MSH2 (E-7): sc-365052

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The finding that mutations in DNA mismatch repair genes are associated with hereditary nonpolyposis colorectal cancer (HNPCC) has resulted in considerable interest in the understanding of the mechanism of DNA mismatch repair. Initially, inherited mutations in the MSH2 and MLH1 homologs of the bacterial DNA mismatch repair genes MutS and MutL were demonstrated at high frequency in HNPCC and were shown to be associated with microsatellite instability. The demonstration that 10 to 45% of pancreatic, gastric, breast, ovarian and small cell lung cancers also display microsatellite instability has been interpreted to suggest that DNA mismatch repair is not restricted to HNPCC tumors but is a common feature in tumor initiation or progression. Two additional homologs of the prokaryotic MutL gene, designated hPMS1 and hPMS2, have been identified and shown to be mutated in the germline of HNPCC patients.

CHROMOSOMAL LOCATION

Genetic locus: MSH2 (human) mapping to 2p21; Msh2 (mouse) mapping to 17 E4.

SOURCE

MSH2 (E-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-28 at the N-terminus of MSH2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365052 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

MSH2 (E-7) is recommended for detection of MSH2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

MSH2 (E-7) is also recommended for detection of MSH2 in additional species, including canine.

Suitable for use as control antibody for MSH2 siRNA (h): sc-35969, MSH2 siRNA (m): sc-35970, MSH2 shRNA Plasmid (h): sc-35969-SH, MSH2 shRNA Plasmid (m): sc-35970-SH, MSH2 shRNA (h) Lentiviral Particles: sc-35969-V and MSH2 shRNA (m) Lentiviral Particles: sc-35970-V.

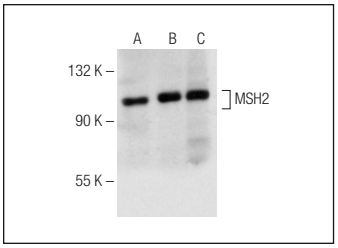
Molecular Weight of MSH2: 100 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, A-431 nuclear extract: sc-2122 or Hep G2 nuclear extract: sc-364819.

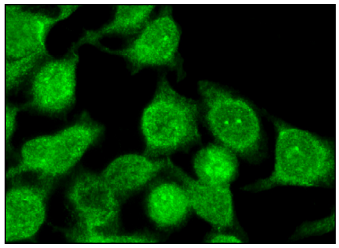
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MSH2 (E-7): sc-365052. Western blot analysis of MSH2 expression in 293 whole cell lysate (**A**) and HeLa (**B**) and Hep G2 (**C**) nuclear extracts.



MSH2 (E-7): sc-365052. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Lv, L., et al. 2013. Mismatch repair protein MSH2 regulates translesion DNA synthesis following exposure of cells to UV radiation. Nucleic Acids Res. 41: 10312-10322.
2. Wu, X.Y., et al. 2020. DNMT1 promotes cell proliferation via methylating hMLH1 and hMSH2 promoters in EGFR-mutated non-small cell lung cancer. J. Biochem. 168: 151-157.
3. Amar-Schwartz, A., et al. 2022. S6K1 phosphorylates Cdk1 and MSH6 to regulate DNA repair. Elife 11: e79128.

STORAGE

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

PROTOCOLS

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