SANTA CRUZ BIOTECHNOLOGY, INC.

MLH1 (H-300): sc-11442

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DNA-mismatch repair (MMR) is an essential process in maintaining genetic stability. Lack of a functional DNA-mismatch repair pathway is a common characteristic of several different types of human cancers, either due to an MMR gene mutation or promoter methylation gene silencing. MLH1 is an integral part of the protein complex responsible for mismatch repair that is expressed in lymphocytes, heart, colon, breast, lung, spleen, testis, prostate, thyroid and gall bladder and is methylated in several ovarian tumors. Loss of MLH1 protein expression is associated with a mutated phenotype, microsatellite instability and a predisposition to cancer. In hereditary nonpolyposis colorectal cancer (HNPCC), an autosomal dominant inherited cancer syndrome that signifies a high risk of colorectal and various other types of cancer, the MLH1 gene exhibits a pathogenic mutation. Certain cancer cell lines, including leukemia CCRF-CEM, colon HCT 116 and KM12, and ovarian cancers SK-OV-3 and IGROV-1, show complete deficiency of MLH1, while MLH1 is expressed in 60% of melanomas, 70% of noninvasive squamous cell carcinomas and 30% of invasive squamous cell carcinomas.

CHROMOSOMAL LOCATION

Genetic locus: MLH1 (human) mapping to 3p22.2; Mlh1 (mouse) mapping to 9 F3.

SOURCE

MLH1 (H-300) is a rabbit polyclonal antibody raised against amino acids 457-756 mapping at the C-terminus of MLH1 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.

Available as TransCruz reagent for ChIP application, sc-11442 X, 200 µg/0.1 ml.

APPLICATIONS

MLH1 (H-300) is recommended for detection of MLH1 of mouse, rat and 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MLH1 (H-300) is also recommended for detection of MLH1 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for MLH1 siRNA (h): sc-35943, MLH1 siRNA (m): sc-35944, MLH1 shRNA Plasmid (h): sc-35943-SH, MLH1 shRNA Plasmid (m): sc-35944-SH, MLH1 shRNA (h) Lentiviral Particles: sc-35943-V and MLH1 shRNA (m) Lentiviral Particles: sc-35944-V.

MLH1 (H-300) X TransCruz antibody is recommended for ChIP assays.

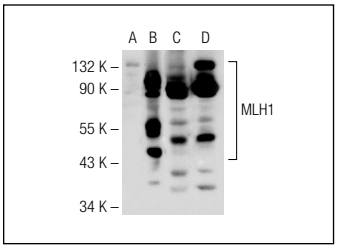
Molecular Weight of MLH1: 85 kDa.

Positive Controls: MLH1 (h): 293 Lysate: sc-110500, SW480 cell lysate: sc-2219 or HeLa nuclear extract: sc-2120.

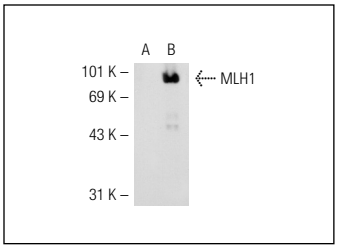
STORAGE

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

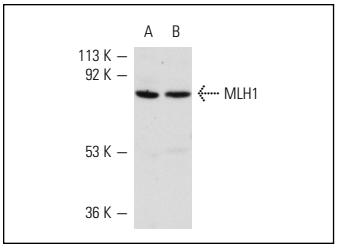
DATA



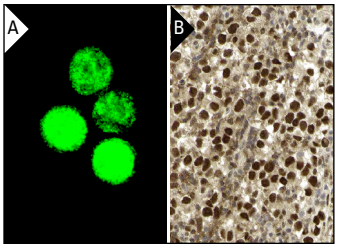
MLH1 (H-300): sc-11442. Western blot analysis of MLH1 expression in non-transfected 293T: sc-117752 (**A**), human MLH1 transfected 293T: sc-158736 (**B**) and SW480 (**C**) whole cell lysates and HeLa nuclear extract (**D**).



MLH1 (H-300): sc-11442. Western blot analysis of MLH1 expression in non-transfected: sc-110760 (**A**) and human MLH1 transfected: sc-110500 (**B**) 293 whole cell lysates.



MLH1 (H-300): sc-11442. Western blot analysis of MLH1 expression in SW480 (**A**) and MM-142 (**B**) nuclear extracts.



MLH1 (H-300): sc-11442. Immunofluorescence staining of methanol-fixed SW480 cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis cancer tissue showing nuclear and cytoplasmic staining of tumor cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Bardwell, P.D., et al. 2004. Altered somatic hypermutation and reduced class-switch recombination in exonuclease 1-mutant mice. Nat. Immunol. 5: 224-229.
2. de Souza-Pinto, N.C., et al. 2009. Novel DNA mismatch-repair activity involving YB-1 in human mitochondria. DNA Repair 8: 704-719.
3. Romeo, F., et al. 2011. BRCA1 is required for hMLH1 stabilization following doxorubicin-induced DNA damage. Int. J. Biochem. Cell Biol. 43: 1754-1763.

RESEARCH USE

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