SANTA CRUZ BIOTECHNOLOGY, INC.

MLH1 (G168-15): sc-56161

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 and is expressed in lymphocytes, heart, colon, breast, lung, spleen, testis, prostate, thyroid and gall bladder tissues, 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 non-polyposis 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 (G168-15) is a mouse monoclonal antibody raised against full length MLH1 of human origin.

PRODUCT

Each vial contains IgG_1 in 250 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MLH1 (G168-15) is recommended for detection of MLH1 of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunoprecipitation [10-20 µl per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:10-1:200) and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:10-1:200).

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.

Molecular Weight of MLH1: 85 kDa.

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

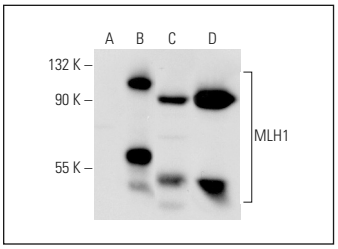
RESEARCH USE

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

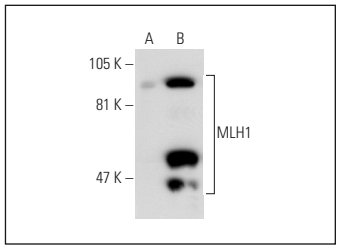
STORAGE

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

DATA



MLH1 (G168-15): sc-56161. 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 (G168-15): sc-56161. Western blot analysis of MLH1 expression in non-transfected: sc-110760 (**A**) and human MLH1 transfected: sc-110500 (**B**) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Barisella, M., et al. 2008. Clear cell adenocarcinoma of the colon is a unique morphological variant of intestinal carcinoma: case report with molecular analysis. World J. Gastroenterol. 14: 6575-6577.
2. Perrone, F., et al. 2009. PI3KCA/PTEN deregulation contributes to impaired responses to cetuximab in metastatic colorectal cancer patients. Ann. Oncol. 20: 84-90.
3. Hassen, S., et al. 2011. Detection of DNA mismatch repair proteins in fresh human blood lymphocytes—towards a novel method for hereditary non-polyposis colorectal cancer (Lynch syndrome) screening. J. Exp. Clin. Cancer Res. 30: 100.
4. Kumar, A., et al. 2018. Pattern of mismatch repair protein loss and its clinicopathological correlation in colorectal cancer in North India. S. Afr. J. Surg. 56: 25-29.
5. Kim, S.C., et al. 2022. Multifocal organoid capturing of colon cancer reveals pervasive intratumoral heterogenous drug responses. Adv. Sci. 9: e2103360.
6. Jeong, N., et al. 2022. Multifocal organoids reveal clonal associations between synchronous intestinal tumors with pervasive heterogeneous drug responses. NPJ Genom. Med. 7: 42.

PROTOCOLS

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