Technical Data Sheet

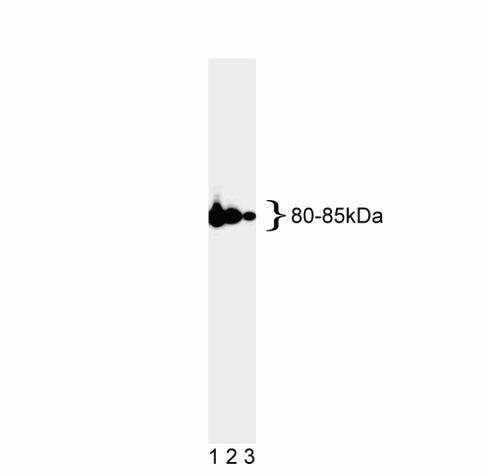
Purified Mouse Anti-MLH-1 with Control

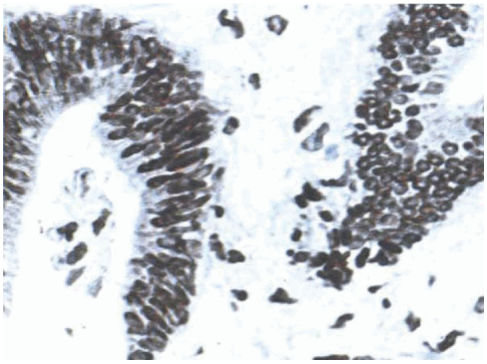
Product Information

Material Number:	**551091**
Size:	50 µg
Reactivity:	QC Testing: Human
Component:	**51-1327GR**
Description:	Purified Mouse Anti-Human MLH-1
Size:	50 µg (1 ea)
Concentration:	0.25 mg/ml
Clone Name:	G168-15
Immunogen:	Human recombinant MLH
Isotype:	Mouse IgG1
Target MW:	80-85 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.
Component:	**51-16526N**
Description:	Jurkat Cell Lysate
Size:	50 µg (1 ea)
Concentration:	1.0 mg/ml
Storage Buffer:	SDS-PAGE buffer (62mM Tris pH 6.8, 2% SDS, 0.9% b-mercaptoethanol, 0.003% bromophenol blue, 5% glycerol)

Description

The repair of mismatched DNA is essential to maintaining the integrity of genetic information over time. In bacteria the DNA repair process is accomplished by the MutL, MutH, and MutS proteins. The MutS protein initially recognizes and binds to mismatched DNA. Following this, MutH, an endonuclease, and MutL form a complex with MutS and carry out an excision repair mechanism. When bacteria are deficient in one of these enzymes a mutator phenotype arises characterized by genetic instability. The important role played by DNA repair enzymes is emphasized by the fact that they are highly conserved from bacteria to yeast to mammals. In yeast the proteins are called MutS homolog 2 (MSH2), MutL homolog (MLH1), and PMS1 which is also a homolog of MutL. MSH2 is involved in the initial recognition of mismatched nucleotides during the replication mismatch repair process. It is thought that after MSH2 binds to a mismatched DNA duplex it is joined by a heterodimer of MLH1 and PMS1 which together help facilitate the later steps in mismatch repair. Biochemical studies of the human homologs of DNA mismatch repair enzymes MLH1, PMS2, and MSH2 indicate that human MSH2 protein can bind mispaired DNA, and that human MLH1 and PMS2 can exist as a heterodimer. These and other studies support the conservation of eukaryotic DNA mismatch repair mechanisms. The G168-15 antibody recognizes human MLH1 (80-85 kDa). Full-length human recombinant MLH was expressed as a fusion protein, affinity purified, and used as immunogen.





Left: Western blot analysis of MLH1. *Lysate from Jurkat cells were probed with anti-MLH1 (clone G168-15, Comp. No. 51-1327GR) at concentrations of 2.0 (lane 1), 1.0 (lane 2), and 0.5 µg/ml (lane 3). MLH1 is identified as a band between 80-85 kDa.*

Right: *Acetone-fixed, frozen tissue section of human colon carcinoma stained for MLH1 (clone G168-15, Cat. No. 550838) using a DAB chromogen and Hematoxylin counterstain. Cells expressing MLH-1 can be identifed by the intense brown labeling of their cell nuclei.*

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Preparation and Storage

Store undiluted at -20°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Application Notes

Application

Western blot	Routinely Tested
Immunohistochemistry-frozen	Tested During Development
Immunohistochemistry-paraffin	Tested During Development

Recommended Assay Procedure:

Applications include western blot analysis (0.5-2.0 µg/ml) and immunohistochemical staining of frozen and paraffin-embedded tissue sections (5-20 µg/ml). Jurkat control lysate [50 µg (1 µg/µl)] is provided as a western blot control (Comp. No. 51-16526N; store lysate at -20°C). Additional Jurkat control lysate (Cat. No. 611451) is sold separately. Intestine or normal colon is suggested as a positive control for immunohistochemical staining. In intestine, staining is primarily nuclear and is seen in the crypts of Lieberkuhn, similar to that described in the literature. Both nuclear and cytoplasmic staining have been observed in a variety of other normal and tumor tissue and cell types. Clone G168-728 (Cat. No. 554073) is recommended for immunoprecipitation of MLH1. Clone G168-15 is also available as Cat. No. 550838 in our special formulation for IHC application.

Suggested Companion Products

Catalog Number	Name	Size	Clone
611451	Jurkat Cell Lysate	500 µg	(none)
550838	Purified Mouse Anti-Human MLH-1	1.0 ml	G168-15
554073	Purified Mouse Anti-Human MLH1	0.1 mg	G168-728
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
4. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

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Cleaver JE. It was a very good year for DNA repair. *Cell.* 1994; 76(1):1-4. (Biology)

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Prolla TA, Christie DM, Liskay RM. Dual requirement in yeast DNA mismatch repair for MLH1 and PMS1, two homologs of the bacterial mutL gene. *Mol Cell Biol.* 1994; 14(1):407-415. (Biology)

Prolla TA, Pang Q, Alani E, Kolodner RD, Liskay RM. MLH1, PMS1, and MSH2 interactions during the initiation of DNA mismatch repair in yeast. *Science.* 1994; 265(5175):1091-1093. (Biology)

Su SS, Modrich P. Escherichia coli mutS-encoded protein binds to mismatched DNA base pairs. *Proc Natl Acad Sci U S A.* 1986; 83(14):5057-5061. (Biology)

Wilson TM, Ewel A, Duguid JR. Differential cellular expression of the human MSH2 repair enzyme in small and large intestine. *Cancer Res.* 1995; 55(22):5146-5150. (Clone-specific)