Technical Data Sheet

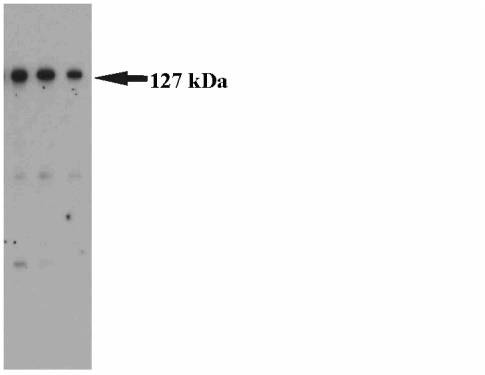
Purified Mouse Anti-Human MSH3

Product Information

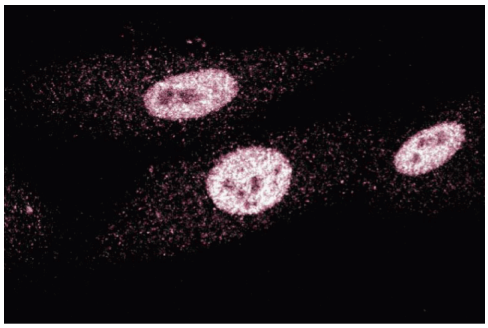
Material Number:	**611390**
Size:	50 µg
Concentration:	250 µg/ml
Clone:	52/MSH3
Immunogen:	Human MSH3 aa. 136-349
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Human
Target MW:	127 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

Bacterial mismatch DNA repair involves the MutL, MutH, and MutS proteins, which forms a complex that mediates excision repair. Mutations in or deficiencies of any of these proteins results in a mutator phenotype that is characterized by genetic instability. Human homologs of MutS include MSH2, MSH3, and MSH6. MSH2 forms heterodimers with MSH6 (hMutSα) or MSH3 (hMutSβ) that specifically bind single-mispaired nucleotides and a subset of insertion-deletion mismatches. In addition, these heterodimers have intrinsic ATPase activity that is regulated by mismatch binding. ADP-bound heterodimers bind mismatched nucleotides, while ATP-bound heterodimers do not. The role of MSH3 in genetic stability in human cells in unclear. However, MSH3 and MSH6 share roles in the control of mutation rates. Both participate in repair of replication errors containing base-base mismatches or 1-4 extra bases. The MSH3 gene is located upstream of the *dihydrofolate reductase (DHFR)* gene and is expressed at low levels in a variety of human tissues. Thus, MSH3 is a component of an adenosine nucleotide-regulated molecular switch whose activity is essential for classical nucleotide mismatch repair.



Western blot analysis of MSH3 on a HeLa cell lysate (Human cervical epitheloid carcinoma; ATCC CCL-2).
2 µg/mL (lane 1), 1 µg/mL (lane 2) and 0.5 µg/mL (lane 3) of the mouse anti-human MSH3 antibody were used.



Immunofluorescence staining of human fibroblasts.

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
Immunofluorescence	Tested During Development

Recommended Assay Procedure:

Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Ig	0.5 mg	Polyclonal
611449	HeLa Cell Lysate	500 µg	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. 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.
4. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

New L, Liu K, Crouse GF. The yeast gene MSH3 defines a new class of eukaryotic MutS homologues. *Mol Gen Genet.* 1993; 239(1-2):97-108. (Biology)
Umar A, Risinger JI, Glaab WE, Tindall KR, Barrett JC, Kunkel TA. Functional overlap in mismatch repair by human MSH3 and MSH6. *Genetics.* 1998; 148(4):1637-1646. (Biology)
Watanabe A, Ikejima M, Suzuki N, Shimada T. Genomic organization and expression of the human MSH3 gene. *Genomics.* 1996; 31(3):311-318. (Biology)
Wilson T, Guerrette S, Fishel R. Dissociation of mismatch recognition and ATPase activity by hMSH2-hMSH3. *J Biol Chem.* 1999; 274(31):21659-21664. (Biology)