

## Anti-MSH2 Antibody (1C50)

## Product Details

Ig Type:	IgG
Reactivity:	Human
Molecular Weight:	Theoretical: 105 kDa. Actual: 105 kDa.
Clone:	1C50
Purification:	Protein A purified

## Applications

## Verified Activity:

1. Paraformaldehyde-fixed, paraffin embedded Human Colon Cancer; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with MSH2 Monoclonal Antibody, Unconjugated (TMAB-09027) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit) and DAB staining.
2. Paraformaldehyde-fixed, paraffin embedded Human Tonsil; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with MSH2 Monoclonal Antibody, Unconjugated (TMAB-09027) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit) and DAB staining.
3. Paraformaldehyde-fixed, paraffin embedded Human Testicles; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with MSH2 Monoclonal Antibody, Unconjugated (TMAB-09027) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit) and DAB staining.
4. Paraformaldehyde-fixed, paraffin embedded Human Thyroid Gland; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with MSH2 Monoclonal Antibody, Unconjugated (TMAB-09027) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit) and DAB staining.
5. Paraformaldehyde-fixed, paraffin embedded Human Colon; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with MSH2 Monoclonal Antibody, Unconjugated (TMAB-09027) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit) and DAB staining.
6. Paraformaldehyde-fixed, paraffin embedded Human Esophagus; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with MSH2 Monoclonal Antibody, Unconjugated (TMAB-09027) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit) and DAB staining.
7. Paraformaldehyde-fixed, paraffin embedded Human Endometrial; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with MSH2 Monoclonal Antibody, Unconjugated (TMAB-09027) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit) and DAB staining.
8. Paraformaldehyde-fixed, paraffin embedded Human Breast Cancer; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with MSH2 Monoclonal Antibody, Unconjugated (TMAB-09027) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit) and DAB staining.
9. 25 ug total protein per lane of various lysates (see on figure) probed with MSH2 monoclonal antibody, unconjugated (TMAB-09027) at 1: 1000 dilution and 4°C overnight incubation. Followed by conjugated secondary antibody incubation at r. T. for 60 min.
10. The Hela (H) cells were fixed with 4% PFA (10 min at r. T.) and then permeabilized with 90%

ice-cold methanol for 20 min at -20°C, the cells then were incubated in 5% BSA to block non-specific protein-protein interactions (30 min at r. T.), followed by secondary antibody incubation for 40 min at room temperature. Primary Antibody (green): Rabbit Anti-MSH2 antibody (TMAB-09027): 1 µg/10<sup>6</sup> cells; Isotype Control (orange): Rabbit IgG. Blank control (black): PBS. Acquisition of 20,000 events was performed.

11. 4% Paraformaldehyde-fixed HeLa (H) cell; Triton X-100 at r. T. for 20 min; Antibody incubation with (MSH2) monoclonal Antibody, unconjugated (TMAB-09027) 1: 100, 90 min at 37°C; followed by BF488 conjugated Goat Anti-Rabbit IgG antibody (green, BF488) at 37°C for 90 min, DAPI (blue) was used to stain the cell nuclei. PBS instead of the primary antibody was used as the blank control.

Application: FCM,ICC/IF,IF,IHC-Fr,IHC-P,WB

Recommended FCM=1:50-100; ICC/IF=1:50-200; IF=1:200-1000; IHC-Fr=1:200-1000; IHC-P=1:200-1000; WB=1:1000-5000

### Properties

Stability & Storage: Store at 2°C-8°C for 1 month. Store at -20°C or -80°C for 12 months. Avoid repeated freeze-thaw cycles.

Shipping: Shipping with blue ice.

### Antigen Details

Immunogen: A synthesized peptide: human MSH2

Antigen Species: Human

Gene ID: 4436

Uniprot ID: P43246

### Research Background

Component of the post-replicative DNA mismatch repair system (MMR). Forms two different heterodimers: MutS alpha (MSH2-MSH6 heterodimer) and MutS beta (MSH2-MSH3 heterodimer) which binds to DNA mismatches thereby initiating DNA repair. When bound, heterodimers bend the DNA helix and shields approximately 20 base pairs. MutS alpha recognizes single base mismatches and dinucleotide insertion-deletion loops (IDL) in the DNA. MutS beta recognizes larger insertion-deletion loops up to 13 nucleotides long. After mismatch binding, MutS alpha or beta forms a ternary complex with the MutL alpha heterodimer, which is thought to be responsible for directing the downstream MMR events, including strand discrimination, excision, and resynthesis. ATP binding and hydrolysis play a pivotal role in mismatch repair functions. The ATPase activity associated with MutS alpha regulates binding similar to a molecular switch: mismatched DNA provokes ADP->ATP exchange, resulting in a discernible conformational transition that converts MutS alpha into a sliding clamp capable of hydrolysis-independent diffusion along the DNA backbone. This transition is crucial for mismatch repair. MutS alpha may also play a role in DNA homologous recombination repair. In melanocytes may modulate both UV-B-induced cell cycle regulation and apoptosis.

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