

### MSH2 Antibody

Rabbit Polyclonal Antibody Catalog # ABV10313

## **Specification**

## **MSH2 Antibody - Product Information**

Application
Primary Accession
Reactivity
Host
Clonality
Isotype

P43246
Human, Mouse, Rat
Rabbit
Polyclonal
Rabbit IgG
104743

WB, IHC, IP

# **MSH2 Antibody - Additional Information**

**Gene ID 4436** 

Calculated MW

Application & Usage

Western blotting (1-4  $\mu$ g/ml), immunoprecipitation (15-25  $\mu$ g/ml), and Immunohistochemistry (15-25  $\mu$ g/ml). However, the optimal concentrations should be determined individually. The antibody recognizes the MSH2 of human, mouse, and rat origins. Reactivity to other species has not been tested.

#### **Other Names**

 $\mbox{HNPCC}$  ,  $\mbox{COCA1}$  ,  $\mbox{Flow}$  cytometryC1 ,  $\mbox{HNPCC1}$  ,  $\mbox{BAT-26}$  ,  $\mbox{Familial Nonpolyposis Colon Cancer Type 1 , Colorectal Cancer Type 1$ 

**Target/Specificity** 

MSH<sub>2</sub>

**Antibody Form** 

Liquid

**Appearance** 

Colorless liquid

### **Formulation**

 $100~\mu g$  (0.2 mg/ml) purified rabbit polyclonal antibody in phosphate-buffered saline (PBS) containing 50% glycerol, 1% BSA, and 0.02% sodium azide.

#### Handling

The antibody solution should be gently mixed before use.

**Reconstitution & Storage** 

-20 °C

**Background Descriptions** 



#### **Precautions**

MSH2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## **MSH2 Antibody - Protein Information**

### Name MSH2

#### **Function**

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. Recruits DNA helicase MCM9 to chromatin which unwinds the mismatch containing DNA strand (PubMed:<a href="http://www.uniprot.org/citations/26300262" target=" blank">26300262</a>). 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.

**Cellular Location**Nucleus. Chromosome

**Tissue Location** Ubiquitously expressed.

## **MSH2 Antibody - Protocols**

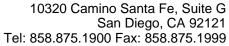
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- <u>Immunohistochemistry</u>
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

# **MSH2 Antibody - Images**

# MSH2 Antibody - Background

DNA mismatch repair genes have been found to be associated with hereditary nonpolyposis colorectal cancer (HNPCC). Inherited mutations in the MSH2 were demonstrated at high frequency in HNPCC and were shown to be associated with microsatellite instability. The demonstration that





10 to 45% of pancreatic, gastric, breast, ovarian and small cell lung cancers also display microsatellite instability s  $\mu$ ggests that DNA mismatch repair is not restricted to HNPCC tumors but is a common feature in tumor initiation or progression.