10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

MSH2 Antibody
Rabbit Polyclonal Antibody
Catalog # ABV10313

Specification

MSH2 Antibody - Product Information

Application	**WB, IHC, IP**
Primary Accession	P43246
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**104743**

MSH2 Antibody - Additional Information

Gene ID 4436

Application & Usage	**Western blotting (1-4 µg/ml), immunoprecipitation (15-25 µg/ml), and Immunohistochemistry (15-25 µg/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
HNPCC , COCA1 , Flow cytometryC1 , HNPCC1 , BAT-26 , Familial Nonpolyposis Colon Cancer Type 1 , Colorectal Cancer Type 1

Target/Specificity
MSH2

Antibody Form
Liquid

Appearance
Colorless liquid

Formulation
100 µg (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:26300262). 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
- Immunohistochemistry
- 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 µggests that DNA mismatch repair is not restricted to HNPCC tumors but is a common feature in tumor initiation or progression.