Data Sheet (Cat.No.TMPY-04267)

TargetMol

MSH2 Protein, Human, Recombinant (His & GST)

General Information

Synonyms:	FCC1;COCA1;HNPCC1;HNPCC;LCFS2;mutS homolog 2
Protein Construction:	A DNA sequence encoding the human MSH2 (NP_000242.1) (Met1-Thr934) was expressed with a C-terminal polyhistidine-tagged GST tag at the N-terminus (his-GST). Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	P43246-1
Molecular Weight:	132.6 kDa (predicted)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90 % as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM Tris, 500 mM NaCl, pH 7.4, 10% glycerol, 20 mM GSH. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

MSH2 is a key DNA mismatch repair protein, which plays an important role in genomic stability. In addition to its DNA repair function, MSH2 serves as a sensor for DNA base analogs-provoked DNA replication errors and binds to various DNA damage-induced adducts to trigger cell cycle arrest or apoptosis. Loss or depletion of MSH2 from cells renders resistance to certain DNA-damaging agents. Therefore, the level of MSH2 determines the DNA

damage response.MSH2 is a central component of the mismatch repair pathway that targets mismatches arising during DNA replication, homologous recombination (HR), and in response to genotoxic stresses.MSH2 rearrangements are involved in approximately 10% of hereditary non-polyposis colorectal cancer (HNPCC) families, and in most of the rearrangements, exon 1 is deleted. Loss of human MSH2 (hMSH2) protein might be involved in the multistep pathogenesis of hematological malignancies associated with genetic instability.

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