

## Datasheet for ABIN3093905 MSH2 Protein (AA 2-934) (His tag)



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### 1 Image

#### Overview

Quantity:	1 mg
Target:	MSH2
Protein Characteristics:	AA 2-934
Origin:	Human
Source:	Insect Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This MSH2 protein is labelled with His tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS), Crystallization (Crys)

#### Product Details

Sequence:	<p>AVQPKETLQL ESAAEVGFVR FFQGMPEKPT TTVRLFDRGD FYTAHGEDAL LAAREVFKTQ</p> <p>GVIKYMGPAG AKNLQSVVLS KMNFESEFVKD LLLVRQYRVE VYKNRAGNKA SKENDWYLAY</p> <p>KASPGNLSQF EDILFGNNDM SASIGVVGK MSAVDGQRQV GVGVDISIQR KLGLCEFPDN</p> <p>DQFSNLEALL IQIGPKECVL PGGETAGDMG KLRQIIQRGG ILITERKKAD FSTKDIYQDL</p> <p>NRLKGGKKE QMNSAVLPEM ENQVAVSSLS AVIKFLELLS DDSNFGQFEL TTFDFSQYMK</p> <p>LDIAAVRALN LFQGSVEDTT GSQSLAALLN KCKTPQGQRL VNQWIKQPLM DKNRIEERLN</p> <p>LVEAFVEDAE LRQTLQEDLL RRFDPDLNRLA KKFQRQAANL QDCYRLYQGI NQLPNVIQAL</p> <p>EKHEGKHQKL LLAVFVTPLT DLRSDFSKFQ EMIETTLMD QVENHEFLVK PSFDPNLSEL</p> <p>REIMNDLEKK MQSTLISAAR DLGLDPGKQI KLDSSAQFGY YFRVTCKEEK VLRNNKNFST</p> <p>VDIQKNGVKF TNSKLTSLNE EYTKNKTEYE EAQDAIVKEI VNISSGYVEP MQTLNDVLAQ</p> <p>LDAVVSFAHV SNGAPVPYVR PAILEKGQGR IILKASRHAC VEVQDEIAFI PNDVYFEKDK</p> <p>QMFHIITGPN MGGKSTYIRQ TGVIVLMAQI GCFVPCESAE VSIVDCILAR VGAGDSQLKG</p>
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VSTFMAEMLE TASILRSATK DSLIIDEELG RGTSTYDGFG LAWAISEYIA TKIGAFCMFA  
THFHELTALA NQIPTVNNLH VTALTTEETL TMLYQVKKGV CDQSFGIHVA ELANFPKHVI  
ECAKQKALEL EEFQYIGESQ GYDIMEPAAK KCYLEREQGE KIIQEFLSKV KQMPFTEMSE  
ENITIKLKQL KAEVIAKNNS FVNEISRIK VTT

**Sequence without tag. Tag location is at the discretion of the manufacturer. If you have a special request, please contact us.**

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### Characteristics:

- Made in Germany - from design to production - by highly experienced protein experts.
- Human MSH2 Protein (raised in Insect Cells) purified by multi-step, protein-specific process to ensure crystallization grade.
- State-of-the-art algorithm used for plasmid design (Gene synthesis).

This protein is a made to order protein and will be made for the first time for your order. Our experts in the lab will ensure that you receive a correctly folded protein.

The big advantage of ordering our made-to-order proteins in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.

In the unlikely event that the protein cannot be expressed or purified we do not charge anything (other companies might charge you for any performed steps in the expression process for custom-made proteins, e.g. fees might apply for the expression plasmid, the first expression experiments or purification optimization).

When you order this made-to-order protein you will only pay upon receipt of the correctly folded protein. With no financial risk on your end you can rest assured that our experienced protein experts will do everything to make sure that you receive the protein you ordered.

The concentration of our recombinant proteins is measured using the absorbance at 280nm. The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer.

The concentration of the protein is calculated using its specific absorption coefficient. We use the Expasy's protparam tool to determine the absorption coefficient of each protein.

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### Purification:

Two step purification of proteins expressed in baculovirus infected SF9 insect cells:

1. In a first purification step, the protein is purified from the cleared cell lysate using three different His-tag capture materials: high yield, EDTA resistant, or DTT resistant. Eluate fractions are analyzed by SDS-PAGE.
2. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.

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### Purity:

>95 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

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## Product Details

Sterility:	0.22 µm filtered
Endotoxin Level:	Protein is endotoxin free.
Grade:	Crystallography grade

## Target Details

Target:	MSH2
Alternative Name:	MSH2 ( <a href="#">MSH2 Products</a> )
Background:	<p>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--&gt;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.</p> <p>{ECO:0000269 PubMed:10078208, ECO:0000269 PubMed:10660545, ECO:0000269 PubMed:15064730, ECO:0000269 PubMed:17611581, ECO:0000269 PubMed:9564049, ECO:0000269 PubMed:9822679, ECO:0000269 PubMed:9822680}.</p>
Molecular Weight:	105.6 kDa Including tag.
UniProt:	<a href="#">P43246</a>
Pathways:	<a href="#">DNA Damage Repair</a> , <a href="#">Production of Molecular Mediator of Immune Response</a>

## Application Details

Application Notes:	In addition to the applications listed above we expect the protein to work for functional studies
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## Application Details

as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.

**Comment:** In cases in which it is highly likely that the recombinant protein with the default tag will be insoluble our protein lab may suggest a higher molecular weight tag (e.g. GST-tag) instead to increase solubility. We will discuss all possible options with you in detail to assure that you receive your protein of interest.

**Restrictions:** For Research Use only

## Handling

**Format:** Liquid

**Buffer:** 100 mM NaCl, 20 mM Hepes, 10% glycerol. pH value is at the discretion of the manufacturer.

**Handling Advice:** Avoid repeated freeze-thaw cycles.

**Storage:** -80 °C

**Storage Comment:** Store at -80°C.

**Expiry Date:** Unlimited (if stored properly)

## Images



**Image 1.** „Crystallography Grade“ protein due to multi-step, protein-specific purification process