

## **Product datasheet for MR211249L4**

## Msh2 (NM\_008628) Mouse Tagged Lenti ORF Clone

## **Product data:**

**Product Type:** Expression Plasmids

**Product Name:** Msh2 (NM\_008628) Mouse Tagged Lenti ORF Clone

Tag: mGFP Symbol: Msh2

Synonyms: Al788990 Mammalian Cell Puromycin

Selection:

**Vector:** pLenti-C-mGFP-P2A-Puro (PS100093)

E. coli Selection: Chloramphenicol (34 ug/mL)

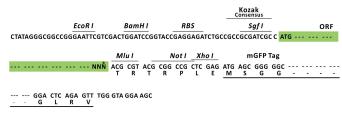
ORF Nucleotide The ORF insert of this clone is exactly the same as(MR211249).

Sequence:

Restriction Sites: Sgfl-Mlul

**Cloning Scheme:** 





 $<sup>\</sup>ensuremath{^*}$  The last codon before the Stop codon of the ORF.

**ACCN:** NM\_008628

ORF Size: 2808 bp



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## Msh2 (NM\_008628) Mouse Tagged Lenti ORF Clone - MR211249L4

**OTI Disclaimer:** The molecular sequence of this clone aligns with the gene accession number as a point of

reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing

variants is recommended prior to use. More info

**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression

varies depending on the nature of the gene.

**Components:** The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube

containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

**Reconstitution Method:** 1. Centrifuge at 5,000xg for 5min.

2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.

3. Close the tube and incubate for 10 minutes at room temperature.

4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid

at the bottom.

5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of

shipping when stored at -20°C.

RefSeq: <u>NM 008628.2</u>, <u>NP 032654.1</u>

 RefSeq Size:
 3056 bp

 RefSeq ORF:
 2808 bp

 Locus ID:
 17685

 UniProt ID:
 P43247

Cytogenetics: 17 57.87 cM

**Gene Summary:** 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 containg DNA strand. 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

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and apoptosis.[UniProtKB/Swiss-Prot Function]