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# Product datasheet for RN210984

## Mdh1 (NM_033235) Rat Untagged Clone

### Product data:

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| **Product Type:** | Expression Plasmids |
| **Product Name:** | Mdh1 (NM_033235) Rat Untagged Clone |
| **Tag:** | Tag Free |
| **Symbol:** | Mdh1 |
| **Synonyms:** | Mdhl; MDL1; Mor2 |
| **Vector:** | pCMV6-Entry (PS100001) |
| **E. coli Selection:** | Kanamycin (25 ug/mL) |
| **Cell Selection:** | Neomycin |
| **Fully Sequenced ORF:** | >RN210984 representing NM_033235<br>Red=Cloning site Blue=ORF Orange=Stop codon<br><br>TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC<br>GCCGCGATCGCC<br><br>ATGTCTGAGCCAATCAGAGTCCTCGTGACAGGAGCAGCCGGTCAGATTGCATATTCGCTGCTGTACAGCA<br>TTGGAAATGGATCTGTCTTTGGGAAAGACCAGCCCATCATTCTTGTGCTGTTGGACATCACCCCCATGAT<br>GGGTGTTCTGGACGGTGTCCTGATGGAGCTGCAAGACTGTGCCCTTCCCCTTCTGCAGGATGTCATTGCA<br>ACAGACAAAGAAGAGGTTGCCTTCAAAGACCTGGACGTGGCTGTCCTTGTGGGCTCCATGCCAAGAAGGG<br>AGGGCATGGAGAGGAAGGACCTACTGAAAGCCAACGTGAAGATCTTCAAATCCCAGGGCGCAGCCTTGGA<br>GAAGTACGCCAAGAAATCAGTTAAGGTCATTGTTGTGGGGAACCCAGCCAATACAAACTGCCTGACGGCC<br>TCCAAGTCAGCACCATCGATCCCCAAGGAGAACTTCAGTTGCCTGACTCGATTGGACCACAACCGAGCAA<br>AATCTCAAATTGCTCTTAAACTCGGTGTAACCGCTGATGATGTAAAAAATGTCATTATCTGGGGAAATCA<br>TTCATCAACCCAGTATCCAGATGTCAATCATGCCAAGGTGAAATTGCAAGGAAAAGAAGTTGGTGTGTAT<br>GAAGCCCTCAAAGACGACAGCTGGCTCAAGGGAGAGTTCATCACGACTGTGCAGCAGCGTGGTGCTGCTG<br>TCATCAAGGCTCGGAAGCTGTCCAGTGCCATGTCTGCTGCGAAGGCCATCTCGGACCACATCAGAGACAT<br>CTGGTTTGGAACCCCGGAGGGCGAGTTCGTGTCGATGGGCGTAATCTCTGATGGCAACTCCTATGGTGTC<br>CCTGATGACCTGCTCTACTCGTTCCCTGTCGTGATCAAGAATAAGACCTGGAAGTTTGTTGAAGGCCTCC<br>CCATTAACGACTTCTCCCGTGAGAAGATGGACCTGACAGCAAAGGAGCTGACCGAGGAAAAGGAAACGGC<br>TTTTGAGTTTCTCTCCTCCGCATGA<br><br>ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT<br>ACAAGGATGACGACGATAAGGTTTAA |
| **Restriction Sites:** | SgfI-MluI |
| **ACCN:** | NM_033235 |

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| **Insert Size:** | 1005 bp |
| **OTI Disclaimer:** | Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP). |
| **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.<br>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.<br>3. Close the tube and incubate for 10 minutes at room temperature.<br>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.<br>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:** | NM_033235.2, NP_150238.1 |
| **RefSeq Size:** | 1878 bp |
| **RefSeq ORF:** | 1005 bp |
| **Locus ID:** | 24551 |
| **UniProt ID:** | O88989 |
| **Cytogenetics:** | 14q22 |
| **Gene Summary:** | This gene encodes an enzyme that catalyzes the NAD/NADH-dependent, reversible oxidation of malate to oxaloacetate in many metabolic pathways, including the citric acid cycle. Two main isozymes are known to exist in eukaryotic cells: one is found in the mitochondrial matrix and the other in the cytoplasm. This gene encodes the cytosolic isozyme, which plays a key role in the malate-aspartate shuttle that allows malate to pass through the mitochondrial membrane to be transformed into oxaloacetate for further cellular processes. A recent study showed that a C-terminally extended isoform is produced by use of an alternative in-frame translation termination codon via a stop codon readthrough mechanism, and that this isoform is localized in the peroxisomes. [provided by RefSeq, Feb 2016]<br>Transcript Variant: This transcript (1) encodes two isoforms, which result from the use of alternative in-frame translation termination codons. The shorter isoform (Mdh1) results from translation termination at the upstream UGA stop codon, while the longer isoform (Mdh1x) results from UGA stop codon readthrough to the downstream UGA termination codon. This RefSeq represents the shorter isoform (Mdh1), which is localized in the cytosol. |