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# Product datasheet for SC320854

## MDH1 (NM_005917) Human Untagged Clone

### Product data:

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| **Product Type:** | Expression Plasmids |
| **Product Name:** | MDH1 (NM_005917) Human Untagged Clone |
| **Tag:** | Tag Free |
| **Symbol:** | MDH1 |
| **Synonyms:** | DEE88; EIEE88; HEL-S-32; KAR; MDH-s; MDHA; MGC:1375; MOR2 |
| **Mammalian Cell Selection:** | Neomycin |
| **Vector:** | pCMV6-AC (PS100020) |
| **E. coli Selection:** | Ampicillin (100 ug/mL) |
| **Fully Sequenced ORF:** | >OriGene sequence for NM_005917.2<br>CTGACTCTCTGAGGCTCATTTTGCAGTTGTTGAAATTGTCCCCGCAGTTTTCAATCATGT<br>CTGAACCAATCAGAGTCCTTGTGACTGGAGCAGCTGGTCAAATTGCATATTCACTGCTGT<br>ACAGTATTGGAAATGGATCTGTCTTTGGTAAAGATCAGCCTATAATTCTTGTGCTGTTGG<br>ATATCACCCCCATGATGGGTGTCCTGGACGGTGTCCTAATGGAACTGCAAGACTGTGCCC<br>TTCCCCTCCTGAAAGATGTCATCGCAACAGATAAAGAAGACGTTGCCTTCAAAGACCTGG<br>ATGTGGCCATTCTTGTGGGCTCCATGCCAAGAAGGGAAGGCATGGAGAGAAAAGATTTAC<br>TGAAAGCAAATGTGAAAATCTTCAAATCCCAGGGTGCAGCCTTAGATAAATACGCCAAGA<br>AGTCAGTTAAGGTTATTGTTGTGGGTAATCCAGCCAATACCAACTGCCTGACTGCTTCCA<br>AGTCAGCTCCATCCATCCCCAAGGAGAACTTCAGTTGCTTGACTCGTTTGGATCACAACC<br>GAGCTAAAGCTCAAATTGCTCTTAAACTTGGTGTGACTGCTAATGATGTAAAGAATGTCA<br>TTATCTGGGGAAACCATTCCTCGACTCAGTATCCAGATGTCAACCATGCCAAGGTGAAAT<br>TGCAAGGAAAGGAAGTTGGTGTTTATGAAGCTCTGAAAGATGACAGCTGGCTCAAGGGAG<br>AATTTGTCACGACTGTGCAGCAGCGTGGCGCTGCTGTCATCAAGGCTCGAAAACTATCCA<br>GTGCCATGTCTGCTGCAAAAGCCATCTGTGACCACGTCAGGGACATCTGGTTTGGAACCC<br>CAGAGGGAGAGTTTGTGTCCATGGGTGTTATCTCTGATGGCAACTCCTATGGTGTTCCTG<br>ATGATCTGCTCTACTCATTCCCTGTTGTAATCAAGAATAAGACCTGGAAGTTTGTTGAAG<br>GTCTCCCTATTAATGATTTCTCACGTGAGAAGATGGATCTTACTGCAAAGGAACTGACAG<br>AAGAAAAAGAAAGTGCTTTTGAATTTCTTTCCTCTGCCTGACTAGACAATGATGTTACTA<br>AATGCTTCAAAGCTGAAGAATCTAAATGTCGTCTTTGACTCAAGTACCAAATAATAATAA<br>TGCTATACTTAAATTACTTGTGAAAAACAACACATTTTAAAGATTACGTGCTTCTTGGTA<br>CAGGTTTGTGAATGACAGTTTATCGTCATGCTGTTAGTGTGCATTCTAAATAAATATATA<br>TTCAAATGAAAAAAAAAAAAAAAAAA |
| **Restriction Sites:** | Please inquire |
| **ACCN:** | NM_005917 |



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| **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). |
| **OTI Annotation:** | This TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA. |
| **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_005917.2, NP_005908.1 |
| **RefSeq Size:** | 1268 bp |
| **RefSeq ORF:** | 1005 bp |
| **Locus ID:** | 4190 |
| **UniProt ID:** | P40925 |
| **Cytogenetics:** | 2p15 |
| **Domains:** | ldh |
| **Protein Families:** | Druggable Genome |
| **Protein Pathways:** | Citrate cycle (TCA cycle), Glyoxylate and dicarboxylate metabolism, Metabolic pathways, Pyruvate metabolism |

**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. Alternatively spliced transcript variants have been found for this gene. 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. Pseudogenes have been identified on chromosomes X and 6. [provided by RefSeq, Feb 2016]
Transcript Variant: This variant (1) represents the predominant transcript and 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.