

Product datasheet for RC210582

Isocitrate dehydrogenase (IDH1) (NM_005896) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Isocitrate dehydrogenase (IDH1) (NM_005896) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Isocitrate dehydrogenase
Synonyms:	HEL-216; HEL-S-26; IDCD; IDH; IDP; IDPC; PICD
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC210582 representing NM_005896 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGTCCAAAAAATCAGTGGCGTTCTGTGGTAGAGATGCAAGGAGATGAAATGACACGAATCATTGGG
AATTGATTAAGAGAACTCATTTTTCCCTACGTGGAATTGGATCTACATAGCTATGATTTAGGCATAGA
GAATCGTGATGCCACCAACGACCAAGTCACCAAGGATGCTGCAGAAGCTATAAGAAGCATAATGTTGGC
GTCAAATGTGCCACTATCACTCCTGATGAGAAGAGGGTTGAGGAGTTCAAGTTGAAACAAATGTGGAAT
CACCAAATGGCACCATACGAAATATTCTGGGTGGCACGGTCTTCAGAGAAGCCATTATCTGCAAAAATAT
CCCCCGCTTGTGAGTGGATGGTAAAACCTATCATCATAGGTCGTCATGCTTATGGGGATCAATACAGA
GCAACTGATTTTGTGTTCTGGCCTGGAAAAGTAGAGATAACCTACACACCAAGTGACGGAACCCAAA
AGGTGACATACCTGGTACATAACTTTGAAGAAGGTGGTGGTGTGCCATGGGGATGTATAATCAAGATAA
GTCAATTGAAGATTTTGCACACAGTTCCTTCCAAATGGCTCTGTCTAAGGGTTGGCCTTTGTATCTGAGC
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AGTACAAGTCCCAGTTTGAAGCTCAAAGATCTGGTATGAGCATAGGCTCATCGACGACATGGTGGCCCA
AGCTATGAAATCAGAGGGAGGCTTCATCTGGCCTGTAAAAACTATGATGGTGACGTGCAGTCGGACTCT
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AAGCAGAGTCTGCCACGGGACTGTAACCCGCTCACTACCGCATGTACCAGAAAGGACAGGAGACGTCCAC
CAATCCCATTGCTTCCATTTTGGCTGGACCAGAGGGTTAGCCCACAGAGCAAAGCTTGATAACAATAAA
GAGCTTGCTTCTTTGCAATGCTTTGGAAGAAGTCTCTATTGAGACAATTGAGGCTGGCTTCATGACCA
AGGACTTGGCTGCTTGCATTAAGGTTTACCCAATGTGCAACGTTCTGACTACTTGAATACATTTGAGTT
CATGGATAAACTTGAGAAAACCTGAAGATCAAACCTAGCTCAGGCCAACTT

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA



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Protein Sequence: >RC210582 representing NM_005896
Red=Cloning site Green=Tags(s)

MSKKISGGSVVEMQGDDEMTRIIWELIKEKLIFFYVELDLHSYDLGIENRDATNDQVTKDAAEAIKKHNVG
 VKCATITPDEKRVVEEFKLMWKSPPNGTIRNLLGGTVFREAIIICKNIPRLVSGWVKPIIIGRHAYGDQYR
 ATDFVVPGPVKVEITYTPSDGTQKVTYLVHNFEEGGVAMGMYNQDKSIEDFAHSSFFQMALSKGWPLYLS
 TKNTILKKYDGRFKDIFQEIYDKQYKSQFEAQKIWYEHRLIDDMVAQAMKSEGGFIWACKNYDGDVQSDS
 VAQGYGSLGMMTSVLVCPDGKTVEAESAHGTVTRHYRMYQKGQETSTNPIASIFAWTRGLAHRAKLDNNK
 ELAFFANALEEVSIIETIEAGFMTKDLAACIKGLPNVQRSDYLNTEFFMDKLGENLKIKLAQAKL

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mg4264_d09.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_005896

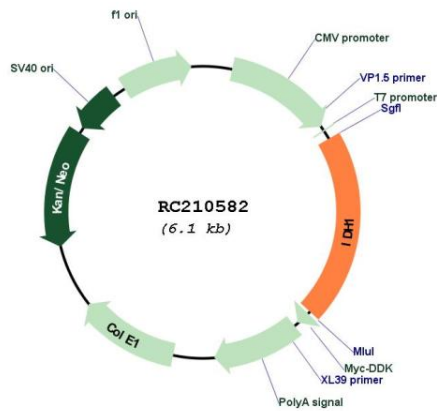
ORF Size: 1242 bp

OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

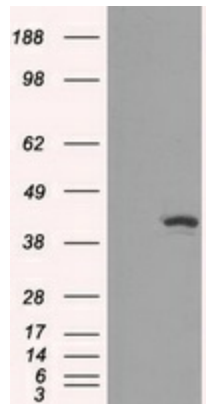
The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in 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:	<ol style="list-style-type: none">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.
Note:	Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.
RefSeq:	NM_005896.4
RefSeq Size:	2339 bp
RefSeq ORF:	1245 bp
Locus ID:	3417
UniProt ID:	O75874
Cytogenetics:	2q34
Domains:	isodh
Protein Pathways:	Citrate cycle (TCA cycle), Glutathione metabolism, Metabolic pathways
MW:	46.5 kDa
Gene Summary:	<p>Isocitrate dehydrogenases catalyze the oxidative decarboxylation of isocitrate to 2-oxoglutarate. These enzymes belong to two distinct subclasses, one of which utilizes NAD(+) as the electron acceptor and the other NADP(+). Five isocitrate dehydrogenases have been reported: three NAD(+)-dependent isocitrate dehydrogenases, which localize to the mitochondrial matrix, and two NADP(+)-dependent isocitrate dehydrogenases, one of which is mitochondrial and the other predominantly cytosolic. Each NADP(+)-dependent isozyme is a homodimer. The protein encoded by this gene is the NADP(+)-dependent isocitrate dehydrogenase found in the cytoplasm and peroxisomes. It contains the PTS-1 peroxisomal targeting signal sequence. The presence of this enzyme in peroxisomes suggests roles in the regeneration of NADPH for intraperoxisomal reductions, such as the conversion of 2, 4-dienoyl-CoAs to 3-enoyl-CoAs, as well as in peroxisomal reactions that consume 2-oxoglutarate, namely the alpha-hydroxylation of phytanic acid. The cytoplasmic enzyme serves a significant role in cytoplasmic NADPH production. Alternatively spliced transcript variants encoding the same protein have been found for this gene. [provided by RefSeq, Sep 2013]</p>

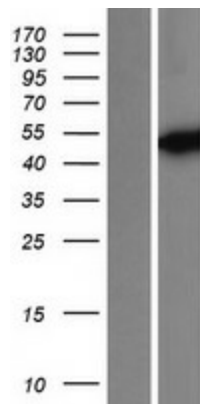
Product images:



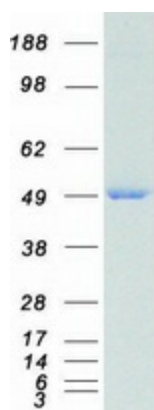
Circular map for RC210582



HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY IDH1 (Cat# RC210582, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-IDH1 (Cat# [TA500610]). Positive lysates [LY401782] (100ug) and [LC401782] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY401782]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC210582 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified IDH1 protein (Cat# [TP310582]). The protein was produced from HEK293T cells transfected with IDH1 cDNA clone (Cat# RC210582) using MegaTran 2.0 (Cat# [TT210002]).