

## Product datasheet for **RC400103**

### **IDH2 (NM\_002168) Human Mutant ORF Clone**

#### **Product data:**

|                           |   |
|---------------------------|---|
| Product Type:             | Mutant ORF Clones   |
| Product Name:             | IDH2 (NM_002168) Human Mutant ORF Clone   |
| Mutation Description:     | R172K   |
| Affected Codon#:          | 172   |
| Affected NT#:             | c. 515  |
| Nucleotide Mutation:      | IDH2 mutant (R172K), Myc-DDK-tagged ORF clone of Homo sapiens isocitrate dehydrogenase 2 (NADP+), mitochondrial (IDH2), nuclear gene encoding mitochondrial protein as transfection-ready DNA |
| Effect:                   | Missense  |
| Symbol:                   | IDH2  |
| Synonyms:                 | D2HGA2; ICD-M; IDH; IDHM; IDP; IDPM; mNADP-IDH  |
| E. coli Selection:        | Kanamycin (25 ug/mL)  |
| Mammalian Cell Selection: | Neomycin  |
| Vector:                   | pCMV6-Entry (PS100001)  |
| Tag:                      | Myc-DDK   |
| ACCN:                     | NM_002168   |
| ORF Size:                 | 1359 bp   |
| Restriction Sites:        | Sgfl-Mlul   |



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**ORF Nucleotide Sequence:**

>RC400103 representing NM\_002168  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGCC**

ATGGCCGGCTACCTGCGGGTCTGTGCGCTCGCTCTGCAGAGCCTCAGGCTCGCGGCCGGCCTGGGCGCCGG  
 CGGCCCTGACAGCCCCACCTCGCAAGAGCAGCCGCGGCCACTATGCCGACAAAAGGATCAAGGTGGC  
 GAAGCCCGTGGTGGAGATGGATGGTGTGATGAGATGACCCGTATTATCTGGCAGTTCATCAAGGAGAAGCTC  
 ATCCTGCCCCACGTGGACATCCAGCTAAAGTATTTTGACCTCGGGCTCCCAAACCGTGACCAGACTGATG  
 ACCAGGTACCATTGACTCTGCACTGGCCACCCAGAAGTACAGTGTGGCTGTCAAGTGTGCCACCATCAC  
 CCCTGATGAGGCCGTGTGGAAGAGTTCAAGCTGAAGAAGATGTGAAAAGTCCCAATGGAACACTCCGG  
 AACATCTGGGGGGACTGTCTCCGGGAGCCCATCATCTGCAAAAACATCCCACGCCTAGTCCCTGGCT  
 GGACCAAGCCCATCACCATTGGCAAGCACGCCCATGGCGACCAGTACAAGGCCACAGACTTTGTGGCAGA  
 CCGGGCCGGCACTTTCAAATGGTCTTCACCCAAAAGATGGCAGTGGTGTCAAGGAGTGGGAAGTGTAC  
 AACTTCCCGCAGGCGCGTGGGCATGGGCATGTACAACACCGACGAGTCCATCTCAGGTTTTGCGCACA  
 GCTGCTCCAGTATGCCATCCAGAAGAAATGGCCGCTGTACATGAGCACCAAGAACCATACTGAAAGC  
 CTACGATGGGCGTTTCAAGGACATCTTCCAGGAGATCTTTGACAAGCACTATAAGACCGACTTCGACAAG  
 AATAAGATCTGGTATGAGCACCGGCTCATTGATGACATGGTGGCTCAGGTCCCTCAAGTCTTCGGGTGGCT  
 TTGTGTGGGCTGCAAGAAGTATGACGGAGATGTGCAGTCAGACATCCTGGCCAGGGCTTTGGCTCCCT  
 TGGCCTGATGACGTCCGTCTGGTCTGCCCTGATGGGAAGACGATTGAGGCTGAGGCCGCTCATGGGACC  
 GTCACCCGCCACTATCGGGAGCACCCAGAAGGGCCGCCACCAGCACCAACCCCATCGCCAGCATCTTTG  
 CCTGGACACGTGGCCTGGAGCACCGGGGAAGCTGGATGGGAACCAAGACCTCATCAGGTTTGGCCAGAT  
 GCTGGAGAAGGTGTGCGTGGAGACGGTGGAGAGTGGAGCCATGACCAAGGACCTGGCGGGCTGCATTAC  
 GGCCTCAGCAATGTGAAGCTGAACGAGCACTTCTGAACACCACGGACTTCTCGACACCATCAAGAGCA  
 ACCTGGACAGAGCCCTGGGCAGGCAG

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RC400103 representing NM\_002168  
 Red=Cloning site Green=Tags(s)

MAGYLRVVRSLCRASGRPAWAPAALTAPTSQEQPRRHADKRIKVAKPVVEMDGDDEMTRIIWQFIKEKL  
 ILPHVDIQLKYFDLGLPNRDQTDQVTIDSALATQKYSVAVKCATITPDEARVEEFKLLKMWKSPNGTIR  
 NILGGTVFREP IICKNIPRLVPGWTKPITIGKHAHGDQYKATDFVADRAGTFKMFVTPKDGSGVKEWEVY  
 NFPAGGVGMGYNTDESISGFHSCFYA IQKKWPLYMSTKNTILKAYDGRFKDIFQEIFDKHYKTDFDK  
 NKIWEHRLIDDMVAQVLKSSGGFVWACKNYDGDVQSDILAQGFGLMTSVL VCPDGKTI EAEAAHGT  
 VTRHYREHQGRPTSTNPIASIFAWTRGLEHRGKLDGNQDLIRFAQMLEKVCVETVESGAMTKDLAGCIH  
 GLSNVKLNEHFLNTDFLDTIKSNLDRALGRQ

**TR**TRPLEQKLISEEDLAANDILDYKDDDDKV

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**

**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).

**RefSeq:**

[NP\\_002159](#)

**RefSeq Size:**

1740 bp

**RefSeq ORF:**

1359 bp

**Locus ID:**

3418

**Cytogenetics:**

15q26.1

**Domains:**

isodh

**Protein Pathways:**

Citrate cycle (TCA cycle), Glutathione metabolism, Metabolic pathways

**MW:**

46.6 kDa

**Gene Summary:**

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 mitochondria. It plays a role in intermediary metabolism and energy production. This protein may tightly associate or interact with the pyruvate dehydrogenase complex. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Feb 2014]