

# Recombinant Human Isocitrate dehydrogenase/IDH1 Protein

Catalog No.: RP03295LQ **Recombinant**

## Sequence Information

Species	Gene ID	Swiss Prot
Human	3417	O75874

### Tags

C-His

### Synonyms

Isocitrate dehydrogenase; IDH1; IDH; IDPc; PICD; IDP; DCD; IDCD; ICDH

## Background

IDH1 is one of three isocitrate dehydrogenase isozymes, the other two being IDH2 and IDH3, and encoded by one of five isocitrate dehydrogenase genes. IDH1 forms an asymmetric homodimer in the cytoplasm and carries out its function through two hydrophilic active sites formed by both protein subunits. As an isocitrate dehydrogenase, IDH1 catalyzes the reversible oxidative decarboxylation of isocitrate to yield  $\alpha$ -ketoglutarate ( $\alpha$ -KG) as part of the TCA cycle in glucose metabolism. This step also allows for the concomitant reduction of nicotinamide adenine dinucleotide phosphate (NADP<sup>+</sup>) to reduced nicotinamide adenine dinucleotide phosphate (NADPH). In addition, IDH1 is key to  $\beta$ -oxidation of unsaturated fatty acids in the peroxisomes of liver cells. IDH1 also participates in the regulation of glucose-induced insulin secretion. Under hypoxic conditions, IDH1 catalyzes the reverse reaction of  $\alpha$ -KG to isocitrate, which contributes to citrate production via glutaminolysis.

## Product Information

Source	Purification
E.coli	> 95% by Tris-Bis PAGE; > 90% by HPLC.

Calculated MW	Observed MW
47.35 kDa	45-50 kDa

### Endotoxin

< 1.0 EU/ $\mu$ g of the protein by LAL method.

### Formulation

Supplied as a 0.22  $\mu$ m filtered solution of 50 mM Tris, 200 mM NaCl, 1 mM DTT, 10% Glycerol, pH 7.5. Contact us for customized product form or formulation.

### Reconstitution

## Basic Information

### Description

Recombinant Human Isocitrate dehydrogenase/IDH1 Protein is produced by E.coli expression system. The target protein is expressed with sequence (Ser2-Leu414) of human IDH1 (Accession #O75874) fused with His tag at the C-terminus.

### Bio-Activity

### Storage

Store at -70°C. This product is stable at  $\leq$  -70°C for up to 1 year from the date of receipt. For optimal storage, aliquot into smaller quantities after centrifugation and store at recommended temperature. Avoid repeated freeze-thaw cycles. Avoid repeated freeze/thaw cycles.

## Contact

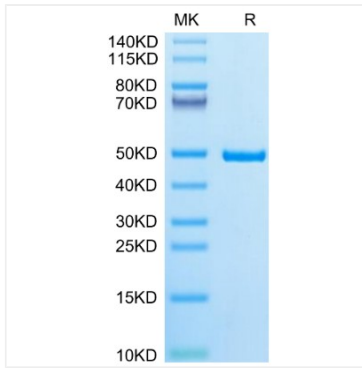
 | 400-999-6126

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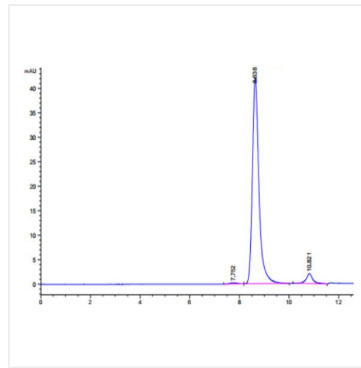
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## Validation Data

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Recombinant Human Isocitrate dehydrogenase/IDH1 Protein was determined by SDS-PAGE with Coomassie Blue, showing a band at 45-50 kDa.



The purity of Human IDH1 is greater than 95% as determined by SEC-HPLC.