Active Recombinant Human IDH1 Protein, DDK-tagged

Cat. No. IDH1-044H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant protein of mutant(R132H) of human isocitrate dehydrogenase 1 (NADP+), soluble (IDH1), with C-terminal DDK tag, was expressed in sf9 cells.
Species	Human
Source	Insect Cells
ProteinLength	1-414 aa
Description	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.

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	[provided by RefSeq, Sep 2013]
Bio-activity	Enzymatic activities were determined by monitoring NADPH formation based on the absorbance at 345nm. The reaction was carried out at 37 centigrade for 10 minutes in the presence of isocitrate as a substrate and NADP as a cofactor. The data which presented a good linear relation on the curve was used to calculate the specific activity, and one unit is defined as converting 1.0 umole of NADP to NADPH per min at 37 centigrade. In summary, the wildtype IDH1 produced from HEK293 cells and insect cells are active while the R132H mutant or the WT/R132H heterodimers are inactive.
Molecular Mass	47 kDa
Purity	> 80% as determined by SDS-PAGE and Coomassie blue staining
Stability	Stable for at least 3 months from receipt of products under proper storage and handling conditions.
Storage	Store at -80 centigrade. Avoid repeated freeze-thaw cycles.
Concentration	>50 g/mL as determined by microplate BCA method
Storage Buffer	50mM Tris-HCl, pH 8.0, 150mM NaCl, 10%glycerol.

GENE INFORMATION

Gene Name	IDH1 isocitrate dehydrogenase 1 (NADP+), soluble [Homo sapiens]
Official Symbol	IDH1
Synonyms	IDH1; isocitrate dehydrogenase 1 (NADP+), soluble; isocitrate dehydrogenase

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	[NADP] cytoplasmic; NADP(+)-specific ICDH; oxalosuccinate decarboxylase; NADP-dependent isocitrate dehydrogenase, cytosolic; NADP-dependent isocitrate dehydrogenase, peroxisomal; IDH; IDP; IDCD; IDPC; PICD;
Gene ID	3417
mRNA Refseq	NM_005896
Protein Refseq	NP_005887
MIM	147700
UniProt ID	O75874

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