Creative Enzymes®

Isocitrate dehydrogenase from Bacillus subtilis, Recombinant

Cat. No. NATE-1103

Lot. No. (See product label)

Introduction

Description

Isocitrate dehydrogenase (IDH) (EC 1.1.1.42) and (EC 1.1.1.41) is an enzyme that catalyzes the oxidative decarboxylation of isocitrate, producing alpha-ketoglutarate (α-ketoglutarate) and CO2. This is a two-step process, which involves oxidation of isocitrate (a secondary alcohol) to oxalosuccinate (a ketone), followed by the decarboxylation of the carboxyl group beta to the ketone, forming alpha-ketoglutarate. In humans, IDH exists in three isoforms: IDH3 catalyzes the third step of the citric acid cycle while converting NAD+ to NADH in the mitochondria. The isoforms IDH1 and IDH2 catalyze the same reaction outside the context of the citric acid cycle and use NADP+ as a cofactor instead of NAD+. They localize to the cytosol as well as the mitochondrion and peroxisome.

Synonyms

isocitrate dehydrogenase (NADP+); oxalosuccinate decarboxylase; oxalsuccinic decarboxylase; isocitrate (NADP) dehydrogenase; isocitrate (nicotinamide adenine dinucleotide phosphate) dehydrogenase; NADP-specific isocitrate dehydrogenase; NADP-linked isocitrate dehydrogenase; NADP-dependent isocitrate dehydrogenase; NADP isocitric dehydrogenase; isocitrate dehydrogenase (NADP-dependent); NADP-dependent isocitric dehydrogenase; triphosphopyridine nucleotide-linked isocitrate dehydrogenase-oxalosuccinate carboxylase; NADP+-linked isocitrate dehydrogenase; IDH (ambiguous); dual-cofactor-specific isocitrate dehydrogenase; NADP+-ICDH; NADP+-IDH; IDP; IDP1; IDP2; IDP3

Product Information

Source	Bacillus subtilis
Form	Liquid
EC Number	EC 1.1.1.42
CAS No.	9028-48-2
Molecular Weight	~ 48.5kD
Activity	~ 13 U/mg protein
Unit Definition	One unit is the amount of enzyme required to convert one μmole of D-/L-isocitric acid to α-ketoglutarate per minute in Tris-HCl buffer at pH 7.6 and 25°C.

Storage and Shipping Information

Storage	4°C