

# Isopentenyl-diphosphate Delta-isomerase 1

Human, IDI1

Expressed in *E.Coli*

Cat. No. CBCRY10

Lot. No. (See product label)

## BACKGROUND

IDI1 encodes a peroxisomally-localized enzyme that catalyzes the interconversion of isopentenyl diphosphate (IPP) to its highly electrophilic isomer, dimethylallyl diphosphate (DMAPP), which are the substrates for the successive reaction that results in the synthesis of farnesyl diphosphate and, ultimately, cholesterol. It has been shown in peroxisomal deficiency diseases such as Zellweger syndrome and neonatal adrenoleukodystrophy that there is reduction in IPP isomerase activity.

## MOLECULAR DESCRIPTION

**Protein classification:** Isomerase

**Structure Weight:** 56107.39 Da

**Polymer:** 1

**Molecule:** Isopentenyl-diphosphate delta-isomerase 1

**Chains:** A,B

**Type:** polypeptide (L)

**Chain Length:** 255 amino acids

## CRYSTAL INFORMATION

**PDB ID:** [2I6K](#)

**MMDB ID:** [46256](#)

**Source:** E.Coli

**Method:** X-Ray Diffraction

**Resolution:** 2.00 Å

**Ligand Chemical Component:** Acetic acid; Aminoethanol-pyrophosphate; Magnesium ion; Manganese ion

## RELATED PDB ENTRIES

[2DHO](#): The same protein in space group P212121

[2EWQ](#): The same protein in space group C2

## FOR RESEARCH USE ONLY

## CRYSTAL STRUCTURE



## GENE INFORMATION

**Gene Name:** [IDI1](#)

**Synonyms:** IPP1; IPP11; EC 5.5.5.2; IPP isomerase; IPP isomerase; OTTHUMP00000018951; isopentenyl diphosphate dimethylallyl diphosphate isomerase 1; isopentenyl pyrophosphate isomerase 1; isopentenyl-diphosphate delta isomerase

**UniProt ID:** [Q13907](#)

**GeneID:** [3422](#)

**Chromosome Location:** 10p15.3

**Function:** magnesium ion binding; isopentenyl-diphosphate delta-isomerase activity; hydrolase activity; isomerase activity; metal ion binding

## PRIMARY CITATION

Zhang, C., Liu, L., Xu, H., Wei, Z., Wang, Y., Lin, Y., Gong, W. (2007) Crystal structures of human IPP isomerase: new insights into the catalytic mechanism *J.Mol.Biol.* 366: 1437-1446

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