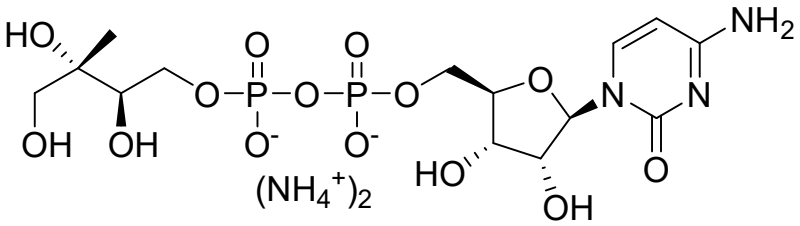
Echelon Biosciences Inc.

4-Diphosphocytidyl-2-*C*-methyl-D-erithritol (CDP-ME)

Catalog number: I-M052



Molecular Formula: $C_{14}H_{31}N_5O_{14}P_2$

MW: 555.38

CAS: 263016-94-0

Solubility: water and most aqueous buffers, > 1 mg/mL

Storage and Handling: Store dry at -20 °C. Stock solutions should be stored frozen (-20 °C or below).

Background: Isoprenoid compounds are a diverse group of natural products which are essential components in all cells. Isoprenoids are biosynthesized from the simple precursors isopentenyl diphosphate (IPP) and dimethylallyl diphosphate (DMAPP). Eukaryotes, fungi, and some gram-positive bacteria produce IPP through the mevalonate (MVA) pathway whereas gram-negative and some gram-positive bacteria utilize the non-mevalonate or 2-C-methyl-D-erythritol-4-phosphate (MEP) pathway. 4-Diphosphocytidyl-2-C-methyl-D-erythritol (CDP-ME) is an intermediate in the non-mevalonate pathway. It is formed from MEP by CDPME Synthase and phosphorylated at the 2-position by CDPME kinase to CDP-MEP.

References: 1) Bernal, C., E. Mendez, et al. (2005). "A spectrophotometric assay for the determination of 4-diphosphocytidyl-2-C-methyl-d-erythritol kinase activity." Anal Biochem 340(2): 245-51.
2) Tang, M., S. I. Odejinmi, et al. (2011). "Identification of novel small molecule inhibitors of 4-diphosphocytidyl-2-C-methyl-d-erythritol (CDP-ME) kinase of Gram-negative bacteria." Bioorganic & Medicinal Chemistry 19(19): 5886.
3) Perez-Gil, J., M. Bergua, et al. (2010). "Cloning and functional characterization of an enzyme from Helicobacter pylori that catalyzes two steps of the methylerythritol phosphate pathway for isoprenoid biosynthesis." Biochimica et Biophysica Acta (BBA) - General Subjects 1800(9): 919.

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