

## 4-Diphosphocytidyl-2-C-methyl-D-erythritol (CDP-ME)

**Catalog number:** I-M052

**Molecular Formula:** C<sub>14</sub>H<sub>31</sub>N<sub>5</sub>O<sub>14</sub>P<sub>2</sub>

**MW:** 555.38

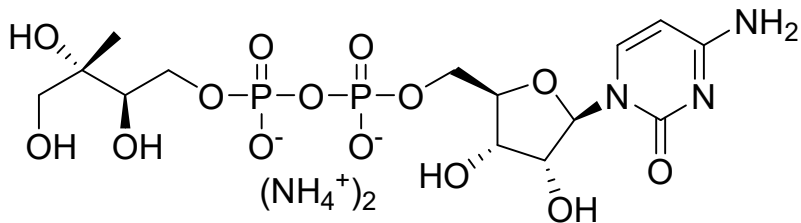
**CAS#:** 263016-94-0

**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.



**Hazardous Properties and Cautions:** The toxicological and pharmacological properties of this compound are not fully known. For further information see the MSDS on request. This product is manufactured and shipped only in small quantities, intended for research and development in a laboratory utilizing prudent procedures for handling chemicals of unknown toxicity, under the supervision of persons technically qualified to evaluate potential risks and authorized to enforce appropriate health and safety measures. As with all research chemicals, precautions should be taken to avoid unnecessary exposures or risks.

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Technical Data Sheet, Rev 3, 5/3/24– **For research use only.** Not intended for diagnostic or therapeutic use.

