

2-C-Methyl-D-erythritol 2,4-cyclophosphate (cMEPP)

Catalog number: I-M054

Molecular Formula: C₅H₁₈N₂O₉P₂

MW: 312.15

CAS: 151435-51-7

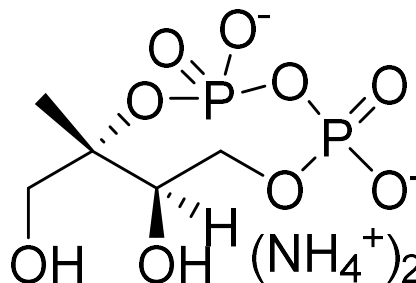
Alternate Name: MEcPP

Solubility: water and most aqueous buffers, >5 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. 2-C-Methyl-D-erythritol 2,4-cyclophosphate (cMEPP) is an intermediate in the non-mevalonate pathway. It is formed by from MECDP Synthase from CDP-MEP and converted to 1-hydroxy-2-methyl-2-buten-4-yl diphosphate (HDMAPP) by IspG (GcpE).

References: 1) Xiao, Y., T. Savchenko, et al. (2012). "Retrograde Signaling by the Plastidial Metabolite MEcPP Regulates Expression of Nuclear Stress-Response Genes." *Cell* 149(7): 1525.
2) Zhou, K., R. Zou, et al. (2012). "Metabolite Profiling Identified Methylerythritol Cyclodiphosphate Efflux as a Limiting Step in Microbial Isoprenoid Production." *PLoS ONE* 7(11): e47513.



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.

