

1-Hydroxy-2-methyl-2-buten-4-yl 4-diphosphate (HDMAPP)

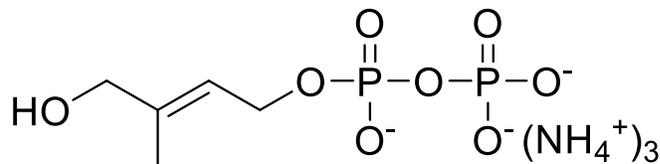
Catalog number: I-M055

Molecular Formula: $C_5H_{21}N_3O_8P_2$

MW: 313.18

CAS: 396726-03-7

Alternate Name: BMP



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. 1-Hydroxy-2-methyl-2-buten-4-yl 4-diphosphate (HDMAPP or HMBPP) is an intermediate in the non-mevalonate pathway and is biosynthesized from 2-C-Methyl-D-erythritol 2,4-cyclophosphate (cMEPP) by IspG (GcpE). It is the substrate for IspH (LytB) yielding IPP and DMAPP. In addition, HDMAPP is the most potent $V\gamma V\delta$ T-cell activator identified.

- References: 1) deBarros, A., M. Chaves-Ferreira, et al. (2011). "CD70-CD27 interactions provide survival and proliferative signals that regulate T cell receptor-driven activation of human $\gamma\delta$ peripheral blood lymphocytes." *European Journal of Immunology* 41(1): 195.
- 2) Spencer, C. T., G. Abate, et al. (2008). "Only a Subset of Phosphoantigen-Responsive $\gamma\delta$ T Cells Mediate Protective Tuberculosis Immunity." *The Journal of Immunology* 181(7): 4471-4484.
- 3) Moens, E., M. Brouwer, et al. (2011). "IL-23R and TCR signaling drives the generation of neonatal $V\gamma 9V\delta 2$ T cells expressing high levels of cytotoxic mediators and producing IFN-gamma and IL-17." *J Leukoc Biol* 89(5): 743-52.

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.

Warranty and Disclaimer: Echelon warrants the product conforms to the specifications stated herein. In the event of nonconformity, Echelon will replace products or refund purchase price, at its sole option, and Echelon shall not be responsible for any other loss or damage, whether known or foreseeable to Echelon. No other warranties apply, express or implied, including but not limited to warranty of fitness for any purpose or implied warranty of merchantability. Purchaser is solely responsible for all consequences of its use of the product and Echelon assumes no responsibility therefore, including success of purchaser's research and development, or health or safety of any uses of the product.

