

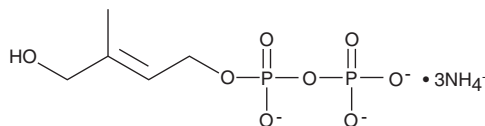
PRODUCT INFORMATION



HDMAPP (ammonium salt)

Item No. 13580

CAS Registry No.: 443892-56-6
Formal Name: diphosphoric acid, mono[(2E)-4-hydroxy-3-methyl-2-butenyl] ester, triammonium salt
Synonym: HMBPP
MF: $C_5H_9O_8P_2 \cdot 3NH_4$
FW: 313.2
Purity: $\geq 90\%$
Supplied as: A crystalline solid
Storage: $-20^\circ C$
Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

HDMAPP (ammonium salt) is supplied as a crystalline solid. Aqueous solutions of HDMAPP (ammonium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of HDMAPP (ammonium salt) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

HDMAPP is a metabolite of the microbial dioxxyulose-phosphate pathway, which is analogous to the isopentenyl pyrophosphate pathway in mammals. It is a protease-resistant and phosphatase-sensitive pyrophosphate produced by bacteria and plants.^{1,2} HDMAPP is a non-peptide ligand, also called a phosphoantigen, that binds the T cell receptor on V γ 9V δ 2 peripheral blood lymphocytes with high affinity ($EC_{50} = 0.39$ nM).³ It induces the expansion of human memory V γ 9V δ 2 T cells, but does not increase their ability to inhibit intracellular mycobacterial growth.^{4,5} Neonatal V γ 9V δ 2 T cells require micromolar concentrations of HDMAPP to drive expansion.⁶

References

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3. Boëdec, A., Sicard, H., Dessolin, J., et al. Synthesis and biological activity of phosphonate analogues and geometric isomers of the highly potent phosphoantigen (E)-1-hydroxy-2-methylbut-2-enyl 4-diphosphate. *J. Med. Chem.* **51(6)**, 1747-1754 (2008).
4. DeBarros, A., Chevas-Ferreira, M., d'Orey, F., et al. CD70-CD27 interactions provide survival and proliferative signals that regulate T cell receptor-driven activation of human $\gamma\delta$ peripheral blood lymphocytes. *Eur. J. Immunol.* **41(1)**, 195-201 (2011).
5. Spencer, C.T., Abate, G., Blazevic, A., et al. Only a subset of phosphoantigen-responsive $\gamma\delta$ 2 T cells mediate protective TB immunity. *J. Immunol.* **181(7)**, 4471-4484 (2008).
6. Moens, E., Brouwer, M., Dimova, T., et al. IL-23R and TCR signaling drives the generation of neonatal V γ 9V δ 2 T cells expressing high levels of cytotoxic mediators and producing IFN- γ and IL-17. *J. Leukoc. Biol.* **89(5)**, 743-752 (2011).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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