PRODUCT INFORMATION



(E)-C-HDMAPP (ammonium salt)

Item No. 13151

CAS Registry No.:	933030-60-5				
Formal Name:	P'-[(3E)-5-hydroxy-4-methyl-3-				
	penten-1-yl]-isohypophosphoric acid,				
	triammonium salt				
Synonym:	(E)-5-hydroxy-4-methylpent-3-enyl		0	0	
	pyrophosphate	\wedge	Ĭ	Ĭ	
MF:	$C_6H_{14}O_7P_2 \bullet 3NH_4$		-P—O—	-P— O-	• 3NH ₄ +
FW:	311.2	о́н	0-	0-	
Purity:	≥95%				
Supplied as:	A crystalline solid				
Storage:	-20°C				
Stability:	≥4 years				
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.					

Laboratory Procedures

(E)-C-HDMAPP (ammonium salt) is supplied as a crystalline solid. Aqueous solutions of (E)-C-HDMAPP (ammonium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (E)-C-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

Synthetic and natural alkyl phosphates, also known as phosphoantigens, stimulate the proliferation of $\gamma\delta$ -T lymphocytes.¹ Isopentenyl pyrophosphate, and related derivatives including (E)-hydroxy-dimethyl-allyl pyrophosphate ((E)-HDMAPP), are particularly effective activators of γδ-T cells.^{2,3} (E)-C-HDMAPP is the pyrophosphonate form of (E)-HDMAPP. The pyrophosphonate moiety in (E)-C-HDMAPP is much less susceptible to chemical or enzymatic hydrolysis than its pyrophosphate counterpart. As a result, (E)-C-HDMAPP is much more stable in solution and in vascular circulation.⁴ (E)-C-HDMAPP possesses comparable activity to (E)-HDMAPP, which is the most potent of the isoprenoid phosphoantigens. (E)-C-HDMAPP stimulates the synthesis of tumor necrosis factor (TNF- α) by $\gamma\delta$ -T lymphocytes with an IC_{50} value of 0.91 nM.⁴ (E)-C-HDMAPP also significantly increases the number of circulating $\gamma\delta$ -T cells in vivo, in cynomolgus monkeys.⁴

References

- 1. Tanaka, Y., Sano, S., Nieves, E., et al. Nonpeptide ligands for human γδ T cells. Proc. Natl. Acad. Sci. USA 91(17), 8175-8179 (1994).
- 2. Poupot, M. and Fournié, J.J. Non-peptide antigens activating human Vγ9/Vδ2 T lymphocytes. Immunol. Lett. 95(2), 129-138 (2004).
- 3. Tanaka, Y., Morita, C.T., Tanaka, Y., et al. Natural and synthetic non-peptide antigens recognized by human γδ T cells. Nature 375(6527), 155-158 (1995).
- 4. 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).

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

SAFFTY 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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