CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET

Product name	Oxidized PAPC		
Catalog number	HC4035-1MG		
Lot number	-	**Expiry date**	-
Volume	See application notes	**Activity**	N.A.
Formulation	Dried OxPAPC prepared by air oxidation of synthetic PAPC according to ref. 1, packed under argon.	**Amount**	1 mg
Host Species	N.A.	**Concentration**	N.A.
Endotoxin	N.A.	**Purification**	N.A.
Storage	-20°C or below	**Purity**	N.A.

Application notes

1. For use of total amount in once:
Add buffer or medium used in the experiment and resuspend lipids by vigorous vortexing for at least 30 seconds. Warm the vial up to 30°C and vortex again for 1 minute. Avoid preparing concentrated stocks since OxPAPC is poorly soluble in water. Sonicate if necessary to ensure better resuspension of OxPAPC, although that is usually not necessary at concentrations below 150µg/ml.
The concentration range in which OxPAPC can be used depends on the cell type, but usually is below 100 µg/ml. High concentrations of OxPAPC can be toxic. For every new cell and assay type it is recommended to determine time- and concentration dependence.

2. For use of partial amount:
Add chloroform to the vial to obtain lipid concentration of 1 to 10 mg/ml and carefully vortex avoiding contact of the solvent with vial cap. Aliquot OxPAPC solution into sterile glass (optimal) or polypropylene cell culture tubes. Before use check if the tubes are resistant to chloroform. Evaporate chloroform under a stream of nitrogen or argon gas with simultaneous vortexing in order to obtain a thin film of lipid on the tube walls. Resuspend in culture medium according to par. 1

General Information

Description

Oxidized 1-palmitoyl-2-arachidonoyl-sn-glycero-3-phosphocholine (OxPAPC) is a prototypic biologically active oxidized phospholipid first isolated from LDL minimally modified by oxidation (MM-LDL). OxPAPC is an active principle of MM-LDL that mimics several pro- and anti-inflammatory effects induced by oxidized lipoproteins. Oxidation of PAPC generates a mixture of oxidized phospholipids containing either fragmented or full-length oxygenated sn-2 residues. The best-characterized oxidatively fragmented species contain a five-carbon sn-2 residue bearing omega-aldehyde or omega-carboxyl groups. Oxidation of arachidonic acid residue also produces phospholipids containing esterified isoprostanes. Both fragmented and full-length oxygenated species can regulate immune reactions. Pro-inflammatory effects of OxPAPC include stimulation of endothelial cells to bind monocytes and induction of tissue clotting factor, IL-8, MCP-1, G-CSF and other mediators of atherothrombosis. Anti-inflammatory effects of OxPAPC are mediated by induction of protective enzymes such as heme oxygenase-1 as well as suppression of innate immune responses to bacterial lipopolysaccharide (LPS) due to inhibition of LPS recognition by LPS-binding protein (LBP) and CD14. OxPAPC is active in vivo and was shown to protect mice in several models of acute inflammation induced by bacterial products. In addition, oxidized phospholipids present in OxPAPC are recognized by scavenger receptor CD36 and auto-antibodies present in patients with anti-phospholipid syndrome. Biological activities of OxPAPC are mediated by a variety of signal transduction mechanisms, including elevation of cAMP and Ca2+ levels, activation of MAP kinases, PI-3-kinase and small GTPases Rac-1 and Cdc42. OxPAPC-induced gene expression is mediated by transcription factors such as Egr-1, NFAT, CREB, NRF2, ATF4 but does not involve NFκB-dependent transcription. For biological tests we recommend to use 1-palmitoyl-2-arachidonoyl-sn-glycero-3-phosphatidylcholine (PAPC, cat.# HC4043) and 1,2-dimyristoyl-sn-glycero-3-phosphocholine (DMPC, cat.# HC1044) as negative unoxidized controls.

References

1. Bochkov, V et al; Oxidized phospholipids stimulate tissue factor expression in human endothelial cells via activation of ERK/EGR-1 and Ca++/NFAT. Blood 2002, 99: 199
2. Birukov, K et al; Signal transduction pathways activated in human pulmonary endothelial cells by OxPAPC, a bioactive component of oxidized lipoproteins. Microvasc Res 2004, 67: 18
3. Zheng, M et al; Inhibition of LPS- and CpG DNA-induced TNF-alpha response by oxidized phospholipids. Am J Physiol Lung Cell Mol Physiol 2004, 286: L808
4. Birukov, K et al; Epoxycyclopentenone-containing oxidized phospholipids restore endothelial barrier function via Cdc42 and Rac. Circ Res 2004, 95: 892
5. Furnkranz, A et al; Oxidized phospholipids trigger atherogenic inflammation in murine arteries. Arterioscler Thromb Vasc Biol 2005, 25: 633
6. Blüml, S et al; Oxidized phospholipids negatively regulate dendritic cell maturation induced by TLRs and CD40. J Immunol 2005, 175: 501

Storage&stability	After arrival product should be stored at –20ºC or below. Under recommended storage conditions, product is stable for at least one year. Aliquots prepared in chloroform can be stored at preferably –70ºC for a few months.
Precautions	For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result from the use or derivation of this product.

We hereby certify that the above-stated information is correct and that this product has been successfully tested by the Quality Control Department. This product was released for sale according to the existing specifications. This document has been produced electronically and is valid without a signature.

Approved by Manager of QC	Date
Brenda Teunissen	26/10/2020

Do you have any questions or comments regarding this product? Please contact us via support@hycultbiotech.com.