CyPA®-ET (Liquid type)
CyPA®-PW (Powder type)

Cyclic Phosphatidic Acid (CyPA®)

NOF CORPORATION
Oleo & Speciality Chemicals Div.

1 Characteristic

Cyclic phosphatidic acid (CyPA®) was isolated from the culture medium of slime mold (*Physarum polycephalum*) as the novel lysophospholipid with quite unique structure by Prof. Murofushi in 1985 (1). Later, it was also found in body fluid like serum and tear (2). Recently, we found various functions of CyPA® positive for skin treatment.

We licensed in its enzymatic process of manufacturing from Prof. Murofushi, and started providing CyPA®. We are now expanding its applications for cosmetics.

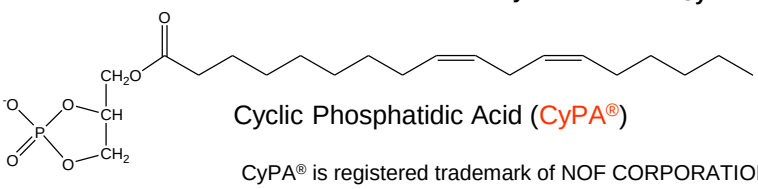
(1) J. Biol. Chem., 267(30), 21512-7 (1992)
(2) Life Sci., 65(21), 2185-91 (1999)

Functions

- Increase hyaluronan production.
- Re-construct cytoskeleton (F-actin) and focal adhesion.
- Contract dermal model (collagen gel).
- Increase the expression of transglutaminase.
- Increase the expression of aquaporin 3.
- Increase the water content of skin.
- Improve the skin elasticity and wrinkles.
- Reduce hair follicle.

CyPA®-ET

CyPA®-PW



Cyclic Phosphatidic Acid (CyPA®)

2 Specification / Composition

Composition

CyPA®-ET

INCI Name	Content
CYCLIC LYSOPHOSPHATIDIC ACID	20.0 %
WATER	40.0 %
ALCOHOL	40.0 %

CyPA®-PW

INCI Name	Content
CYCLIC LYSOPHOSPHATIDIC ACID	50.0 %
CYCLODEXTRIN	50.0 %

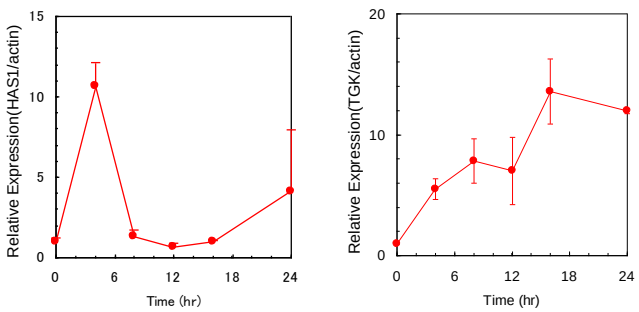
Specification (CyPA®-ET)

Item	Specification
Description	Light yellow to yellow brown liquid. Slightly characteristic odor.
Identification(CyPA)	Positive
Peroxide value	Max.10.0 meq/kg
Refractive index	1.377 - 1.387
Purity(1)Heavy metals	Max. 20 ppm
Purity(2)Arsenic	Max. 2 ppm
Ethanol content	30 - 50 %
Nonvolatile residue	18.0 - 22.0 %

3 Experimental Data

1) Effects on epidermal keratinocytes

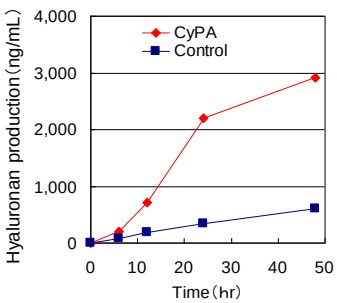
1) Increase of expression of HAS1 2) Increase of expression of TGK



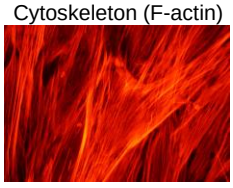
CyPA® increased the expression level of Hyaluronan Synthase 1 (HAS1) and Transglutaminase (TGK).

2) Effects on dermal fibroblasts

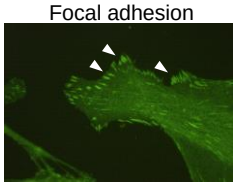
1) Increase of hyaluronan production 2) Enhancement of cytoskeleton



Cytoskeleton (F-actin)



Focal adhesion



CyPA® enhanced hyaluronan production by HAS2 gene induction, and emphasized the cytoskeleton and focal adhesion of the cells.

Head Office Yebisu Garden Place Tower, 20-3 Ebisu 4-chome, Shibuya-ku, Tokyo 150-6019
TEL.03-5424-6690 FAX.03-5424-6810 http://www.nof.co.jp/

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