

SANSHO Co., as a cosmetic material manufacturer, produces NcPA for distribution inside Japan and also overseas: Asia, Europe, and America.

[New Functional Cosmetic Compound!!](#) [Cyclic Lysophosphatidic Acid Na \(NcPA\)](#)

Cyclic Lysophosphatidic Acid (cPA) is a lipid present in all forms of life in extremely small quantities.

Since its discovery in 1985, research has been continued, resulting in scientific evidences demonstrating that cPA has many wonderful actions for us humans.

In the area of cosmetics, cPA has been shown to have "action to activate existing cells and promote normal cellular differentiation."

We continued research of cPA using original techniques and developed natural cyclic phosphatidic acid (NcPA), which can be produced in a commercial scale as cosmetic material.

NcPA, a lipid present in living bodies, is a safe, reassuring ingredient.

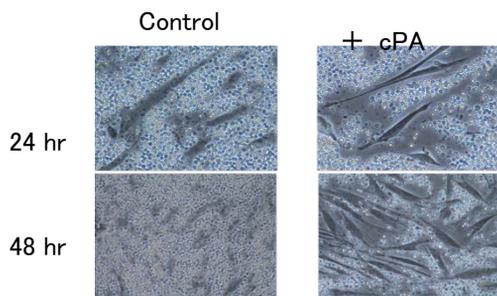


[\[Effects on Skin\]](#)

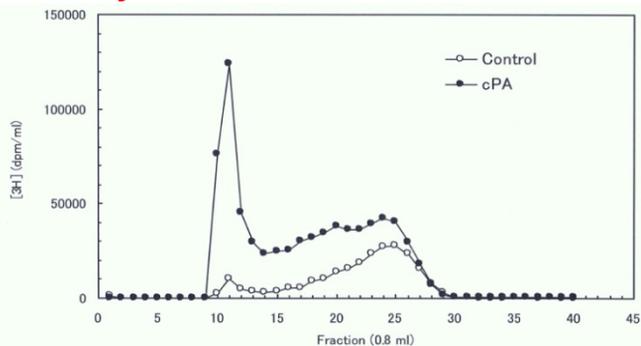
1. Moisture-Holding: Promotion of hyaluronan synthesis
2. Enhanced Elasticity: Strengthening of collagen
3. Improved Tone, Firmness, and Elasticity: Activation of fibroblasts and strengthening of scaffolds
4. Moisture Delivery: Increase in aquaporin 3
5. Ceramidase Inhibition: Improvement in barrier function
6. Atopy Suppression: Suppression of atopic dermatitis (patent obtained)

Promoting Hyaluronic Acid Production

NcPA induces the expression of hyaluronan synthase (HAS2), suggesting its effect on synthesis of high molecular hyaluronic acid.



cPA was added to fibroblasts, which were then inspected for effect on the synthesis of high molecular hyaluronic acid by using the red cell removal technique.



Synthesis of HA with a molecular weight of 2 million or higher daltons was induced, suggesting the effect of cPA to hold moisture in the skin.

Strengthening Collagen

NcPA contracts collagen instantly.



Stronger contraction gives more impact on collagen!

This improves skin firmness and elasticity!

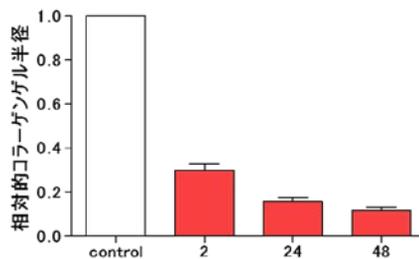
This effect appears immediately and lasts for long hours.

2 hrs



Control

+cPA



<Experiment Method>

<> Assessment of Promotion of Collagen Gel Contraction:

A hydrogel encapsulating NB1RGB, normal human fibroblasts, was used as collagen gel.

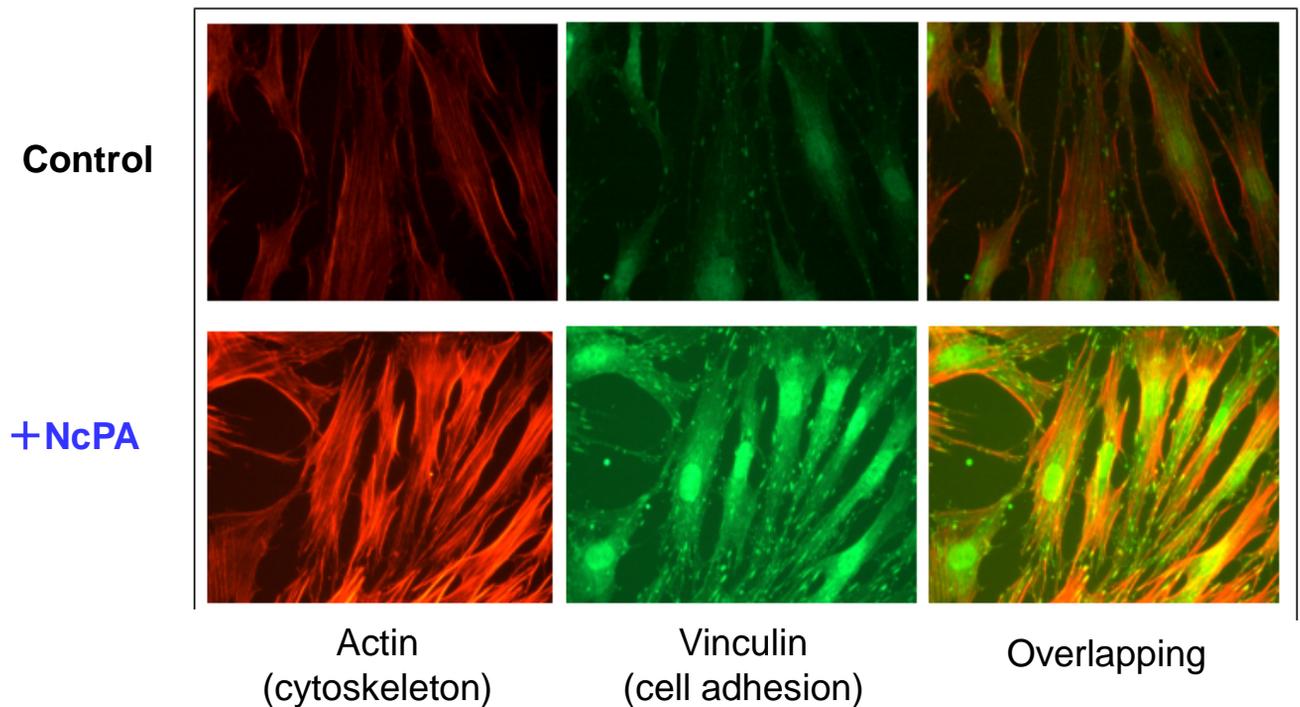
<> Evaluation of Promotion of Collagen Gel Contraction

50 μ M of cPA was added to a culture solution, and the gel photographed from above at regular intervals, using a digital camera.

The gel surface areas were calculated from the obtained images.

Activating Fibroblasts

Strengthening of Fibroblast Scaffolds by NcPA



With more points of adhesion, collagen bundles are attracted to one another more efficiently.

Addition of NcPA significantly increased the expression of actin and vinculin.

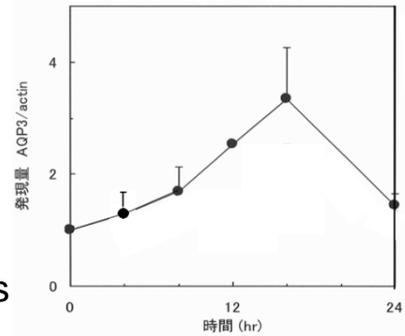
⇒ This suggests that NcPA caused strong contraction of collagen fibers, which should improve firmness and elasticity in the skin.

Increasing Aquaporin 3

[Changes in the Gene Expression of Aquaporin 3 after Addition of cPA]

Expression of AQP3, a Cellular Membrane Transporter of Water, Is Increased!

Better moistened skin is expected as more water flows into extracellular matrices

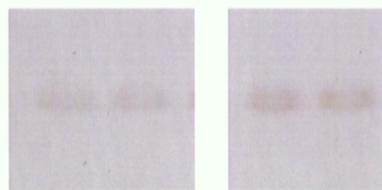


Inhibiting Ceramidase

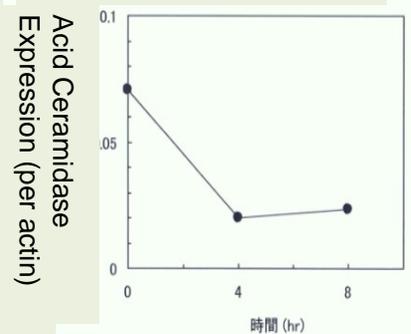
Decomposition of Ceramide, Intracellular Lipid, Is Prevented!

Effect to hold moisture on skin surface is expected.

(a) Changes in ceramide quantity after cPA addition



(b) Quantities of acid ceramidase expressed



20 μ M of cPA was added to 3-D cultured epidermis model. 8 days later, lipid was collected and analyzed by TLC for ceramide visualization.

Time of Treatment (hr)

Suppressing Atopy

Effect of NcPA to Suppress Ear Swelling (Effect on Atopy Treatment)

In animal studies to investigate atopic dermatitis, good effects were demonstrated!

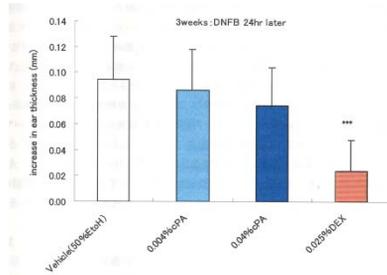


Fig. 2 Effects of cPA on DNFB-induced Mouse Ear. Each value represents mean \pm SD. (n=10). *** : p<0.001 vs Vehicle group (Dunnett multiple comparison test).

A tendency to inhibit DNFB-induced ear swelling was observed in a dose-dependent manner after addition of cPA. A significant difference was observed between positive control dexamethasone and vehicle. (Fig.2)

Effect on Mite-Induced Atopic Dermatitis

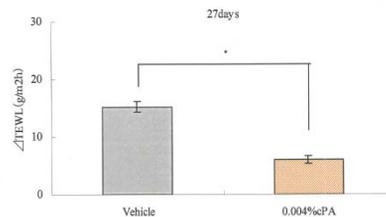


Figure 3 . Effects of cPA on mouse model of the atopic eczema. Each value represents mean \pm SD. (n=10). * : p<0.05 vs AD group (Dunnett multiple comparison test).

From the day of study start, reductions in eczema development and water evaporation were observed after application of 0.004% cPA. A statistically significant difference was achieved in water evaporation between cPA and vehicle.

NcPA is a biological compound expected to have high effects as a novel next-generation anti-aging agent.

[Product Information]

Product Name: cyclic lysophosphatidic acid Na

Label Name: cyclic lysophosphatidic acid Na