

MEDICAL DEVICE



Olidia®

DIAMOND COLLAGEN OLIDIAMOND



For Professionals

This product is a medical device indicated for treatment of severe facial wrinkles and folds, replacement of volume defects, facial lipoatrophy and improvement of facial contour deformities.
Before using OLIDIA®, please read the "Instructions for use" thoroughly or consult with physicians.

Diamond Collagen

Olidia®

As a safe and effective collagen stimulator, Olidia® is an injectable and biocompatible medical device. Olidia® helps to restore natural volume for aging skin lost collagen.

Poly L-Lactic Acid, the main ingredient is used for medical material over 20 years and confirmed safety by US FDA.

Injected Olidia®(is made up of Poly L-Lactic Acid) to subcutaneous layer starts to stimulate the body's collagen production. This increases the skin's elasticity and volume naturally and makes young looking. Depend on the condition of patient, 2 to 3 times of treatments are recommended to extend longevity of volume staying.¹⁾

PLLA COLLAGEN STIMULATOR Confirmed By Korean Ministry of Food and Drug Safety(MFDS)

Olidia® is a collagen stimulator made of PLLA which is confirmed by FDA as a medical material.

Injected Olidia® stimulates and generates collagen under the skin and restores volume for facial area. It naturally helps to reduce fine line wrinkles and present youth looking.²⁾

Olidia® Product Information

Volume : 365mg x 1 vial(5ml)

Indication : For treatment of severe facial wrinkles and folds, replacement of volume defects, facial lipoatrophy and improvement of facial contour deformities.

[Reference]

1) Aesthetic Surgery Journal 2018, Vol 38(S1) S13~S17

2) Olidia® Confirmed by Korean Ministry of Drug and Food Safety (as of 2021-05)

3) EC certified(as of 2021-03)

Why Olidia®?

Natural volume with longevity

Injected Poly L-Lactic Acid(Olidia®) restores volume through stimulating collagen in the skin layer. Generated volume with own collagen lasts more than 2 years.



For You

Convenient

Long lasting volume

Safe

Confirmed by Korean MDFS and achieved CE mark.³⁾
The main ingredient PLLA is biodegradable.

Economic

Solution = Olidia® + WFI(Water For Injection) + Lidocaine

Steady treatment over 20 years

The treatment for improving wrinkle with PLLA is being done over 20 years.

Short treatment time



For Patients

Natural result

The result will be shown gradually.

Long lasting volume

Quick recovery time

With less downtime, easy to return to normal life

Economic

Less cost than other surgical treatments

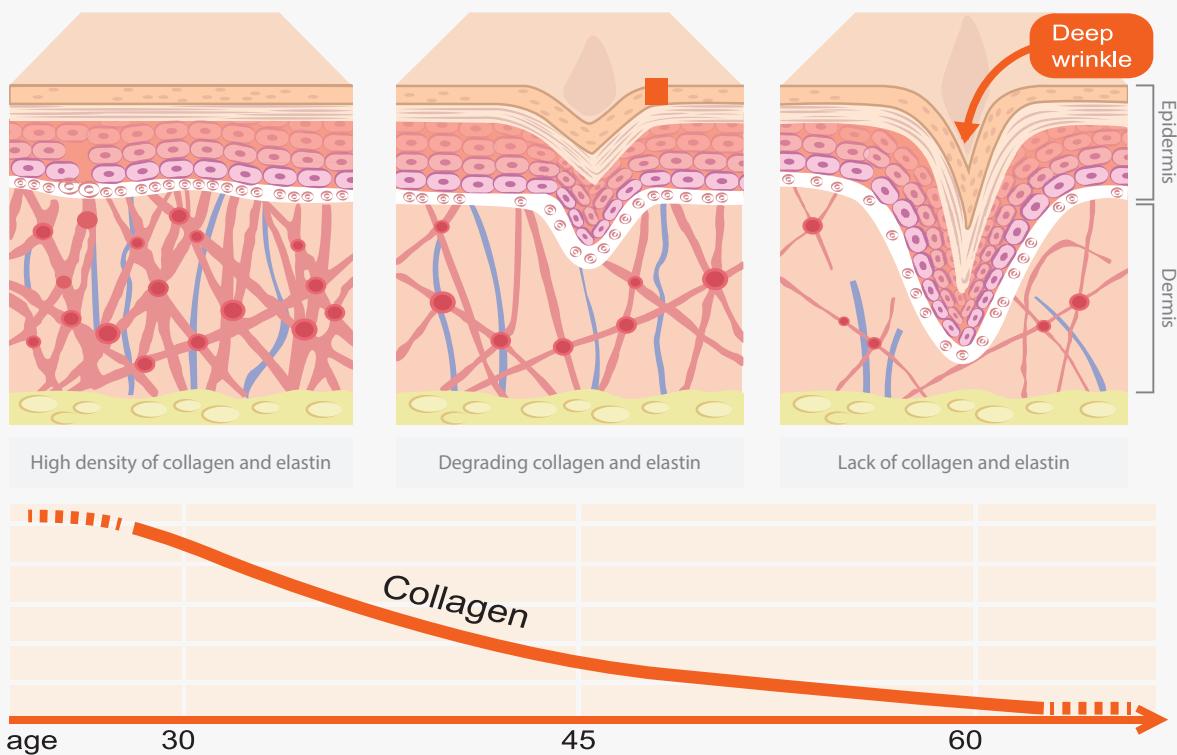
Volume Improvement & Restoration

Improvement of wrinkle through lost collagen renaturation

Short treatment time

The correlation between Collagen & Skin aging⁴⁾

- The proportion of the collagen types in skin change with age. Young skin is composed of 80% type I collagen and about 15% collagen type III. With age, the ability to replenish collagen naturally decreases by about 1.0%-1.5% per year.
- This decrease in collagen is one of the characteristic hallmarks associated with the appearance of fine lines and deeper wrinkles. [Picture 1]
- Moreover, deep inside in the dermis, fibrillar collagens, elastin fibres and hyaluronic acid, which are the major components of the extracellular matrix, undergo distinct structural and functional changes.



Picture 1. Collagen content in skin tends to increase until approximately the mid-20s. Thereafter, there is a progressive loss of collagen through the decades.

The loss of collagen is clearly correlated with changes to **appearance attributes which are typically referred to as fines lines and wrinkles.**

[Reference]
4) Reilly et al. Plast Aesthet Res 2021;8:2

How Olidia® works

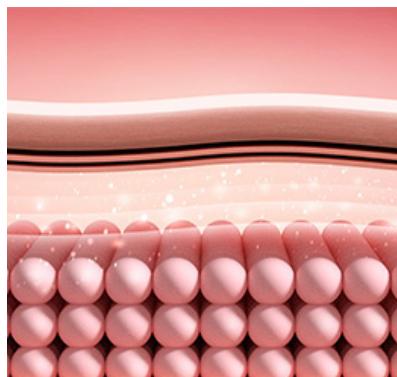
PLLA(Poly L-Lactic Acid), the main ingredient of Olida® is biocompatible and biodegradable synthetic polymer that has been used for sutures and other medical devices. Injected PLLA stimulates collagen generation, the volume gradually restored improves wrinkles.

Mechanism of action



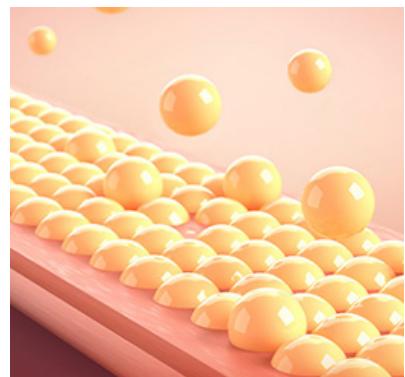
STEP 01

Inject diluted Olidia® into the subcutaneous layer of the skin.



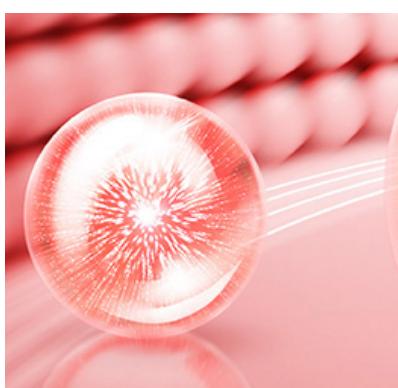
STEP 02

Firstly wrinkle improvement can be shown with WFI(Water for injection) and diluted Olidia®



STEP 03

Within some days, after absorbing water, only Olidia® particles left.



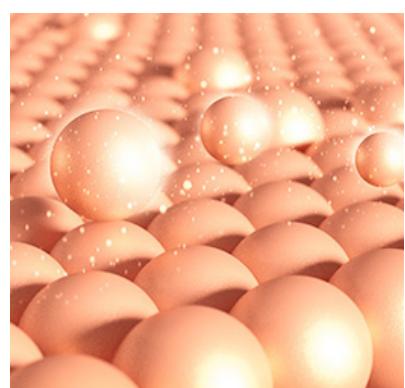
STEP 04

New cells are gathered around PLLA and increasing fibroblasts.



STEP 05

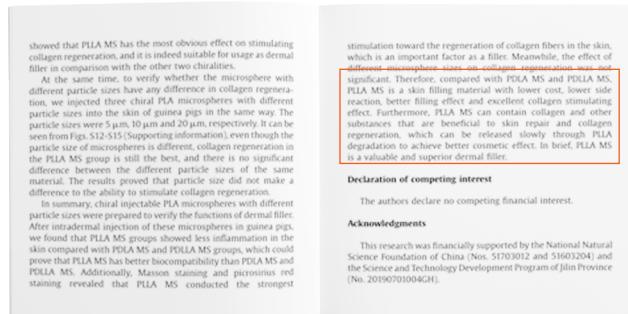
Increased fibroblasts stimulate collagen generation and improve skin folds.



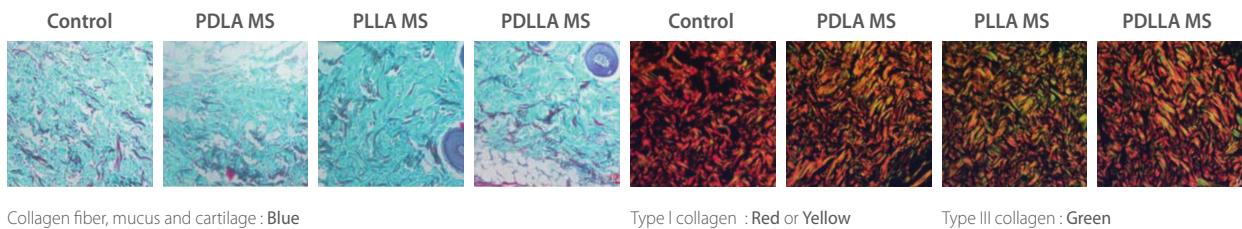
STEP 06

Generated collagen lasts for 2 years and Olidia® particles are biodegraded.

Superior Collagen stimulator PLLA⁵⁾

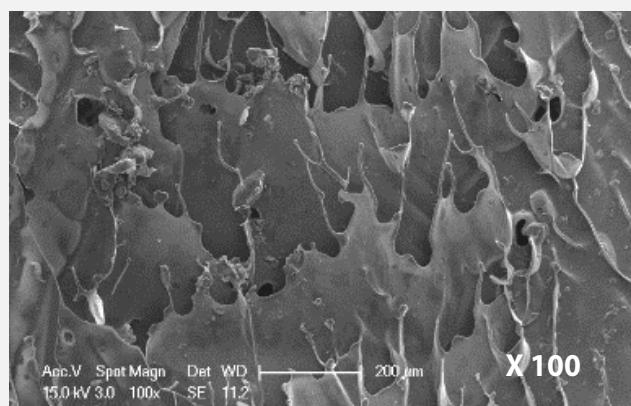
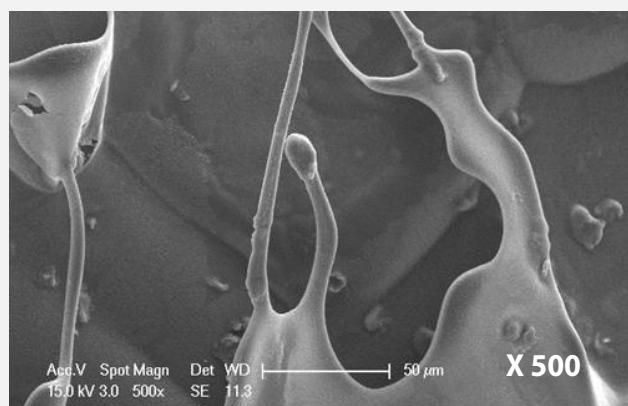


Therefore, **compared with PDLA MS and PDLLA MS**, PLLA MS is a skin filling material with lower cost, lower side reaction, better filling effect and excellent collagen stimulating effect. Furthermore, PLLA MS can contain collagen and other substances that are beneficial to skin repair and collagen regeneration, which can be released slowly through PLLA degradation to achieve better cosmetic effect. **In breif, PLLA MS is a valuable and superior dermal filler.**



Histological analysis of collagen regeneration. (A) Masson staining and (B) Picosirius red staining of the skin at the injection site of three kinds of PLA microsphere on Day 30. Type I collagen fibers are red or yellow, type III collagen fibers are green.

Safe Collagen stimulator PLLA



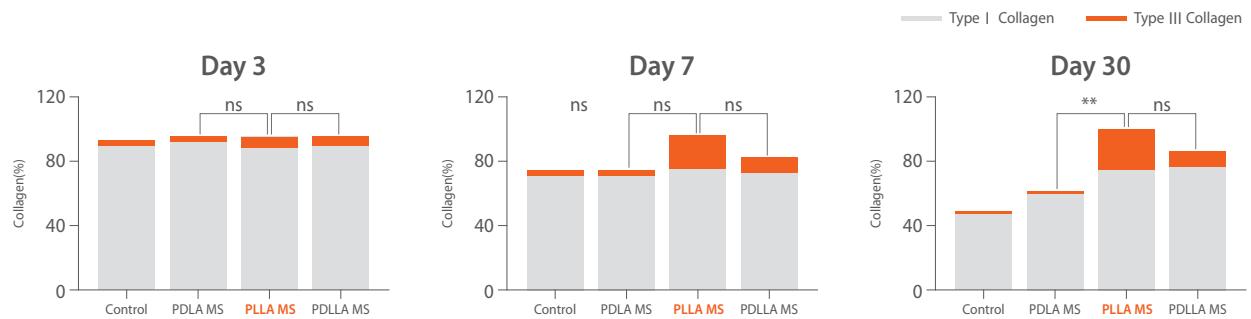
inflammatory response shortly after the injection, while the inflammation reaction decreased or disappeared on Day 7 or Day 30 [Figs. S6 and S7 in Supporting information]. Nevertheless, due to the fast degradation rate of PDLLA MS, a large number of PDLLA MS were degraded and absorbed in the skin tissue on Day 30, which could not guarantee the long-term effect. And PDLLA MS was easy to cause redness and swelling due to the local inflammation after injection, so the inflammation was not conducive to recover which was a major disadvantage of PDLLA as a filler.

Collagen fibers are the most widely distributed fiber in connective tissue. In order to evaluate the effect of chiral PLA microfibers on collagen regeneration, the collagen staining was observed under the optical microscope. Masson's trichrome staining is an authoritative and classic technique for the staining of collagen fiber. It is frequently used in the analysis of collagen and smooth muscle. Collagen, elastic mucus, and other components of connective tissue, collagen, elastic fiber, and glia were stained red. Nucleus was stained blue purple [25]. By using picrosirius red staining, different types of collagen fibers can be distinguished according to their specific forms and distinct colors under polarized light. For example, type I collagen fibers are densely arranged showing red and yellow colors, while type III collagen fibers exhibits threadlike structure in green color [26]. As shown in Figs. S8 and S9

(Supporting information), on three days and seven days after injection of microsphere, the collagen fibers were almost nearly and dense, with no significant difference among the three groups. However, on Day 30, the collagen fibers in the control group were messy and sparse, and the collagen loss was very serious. On the contrary, the collagen fibers in the PLLA MS groups still remained relatively dense. Moreover, the collagen density of PDLLA MS and PLLA MS group was significantly sparse than that of PLLA MS group. Nevertheless, the results of PDLLA MS group stimulation of collagen regeneration were better than that in PDLLA MC group (Fig. 4A). Similar results were shown in optical photos of trichrome staining with picrosirius red. Seven days after injection, a large amount of type I collagen fibers (red and yellow) were observed in all the groups (Fig. S10 in Supporting information). On Day 7, the collagen fibers turned darker and sparser. Type III collagen fibers were observed in the MC group, which was showing green in Fig. S11 (Supporting information). This difference was enlarged on Day 30, when new collagens were formed in the PLLA MC group (Fig. 4B).

[Fig. 4B]. The content of type I collagen in the PDLLA group was still 84.7%, and type III collagen was 15.1%. Total of type I and type III collagen were 1.4 times than the collagen in the PDLLA group, and 1.1 times than the collagen in the PDLLA group (Fig. 4C). Which showed that **PLLA MS has the most obvious effect on stimulating collagen regeneration, and it is indeed suitable for usage as dermal filler in comparison with the other two chiralities.**

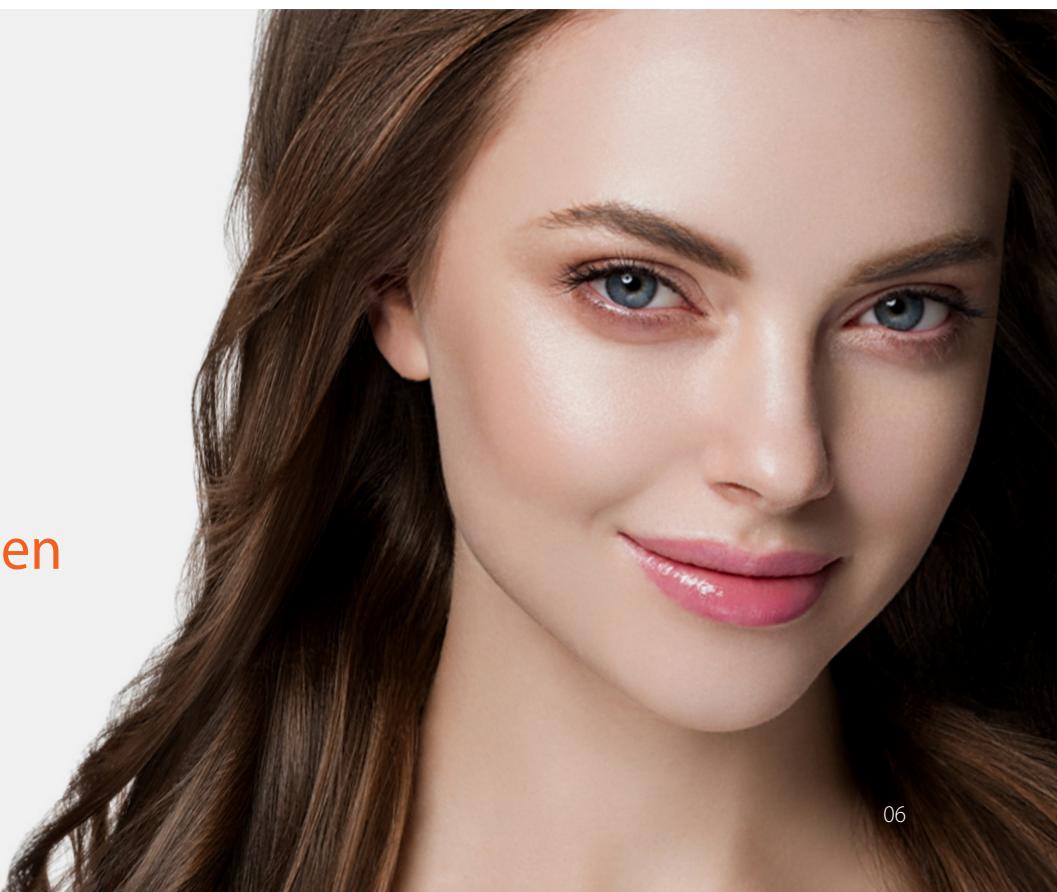
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Semi-quantitative analyses of type I and type III collagen fibers. Data are presented as mean \pm standard deviation ($n = 3$; * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$, ns: not significant)

Ölidia®

Safe & Long
lasting volume
Beautiful Collagen





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