

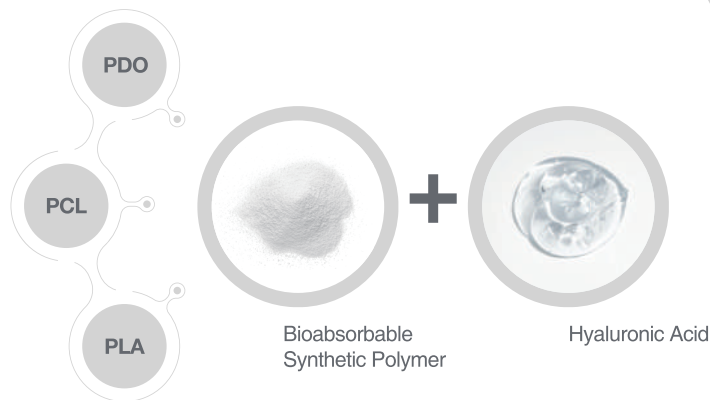


# POLY DERM

Collagen stimulator  
for dermal cell bioactivation



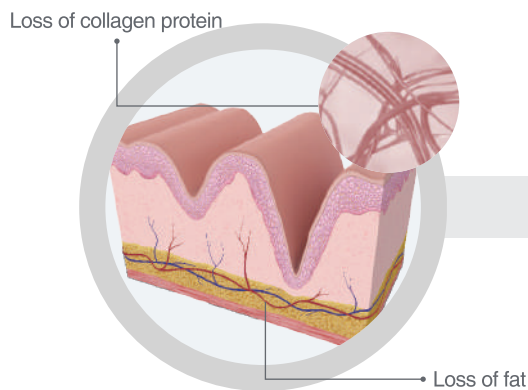
# What is Polyderm®?



**Polyderm®  
(Collagen stimulator)**

Polyderm®(Collagen stimulator) is a product that has the both advantages of an aesthetic thread and an HA filler. It can help to generate autologous collagen and stimulate the synthesis of new collagen, so that lead improvement in skin tone and elasticity.

## Effect of Polyderm®



We begin to lose collagen from the age of 25 and once this process begins, we start to see signs of ageing. This can include volume loss, loss of skin elasticity, contour changes, sagging and facial wrinkles. Dermal collagen consists of 80%–85% type I collagen and 10%–15% type III collagen. Because collagen degeneration or decrease induces signs of aging in skin such as wrinkles, collagen stimulation is one of the keys to antiaging medicine.

## Action mechanism of Polyderm®

After injection of Polyderm®, it is gradually absorbed by macrophages over several weeks.(Macrophage is a type of cell which is a phagocyte.)

In detail, Polyderm® powder particles entering the body are ingested by immune phagocytes by engaging receptors on their surface. Phagocytosis occurs when particles greater than  $0.5\mu\text{m}$  in diameter engage receptors on the surface of professional(monocytes/macrophages, neutrophils, dendritic cells) or nonprofessional phagocytes(e.g. fibroblasts, epithelial cells).

# Polyderm® Spec

Cell size of Macrophage is 25–30  $\mu\text{m}$ . Macrophages can ingest up to 25% per hour of their volume. Where the particle is greater than the volume of a macrophage, macrophage aggregation is required and foreign body giant cells are formed. Macrophages can phagocytose microparticles (<5  $\mu\text{m}$ ), whereas particles of larger sizes (>10  $\mu\text{m}$ ) induce the formation of foreign-body giant cells.







Microparticles : < 5  $\mu\text{m}$

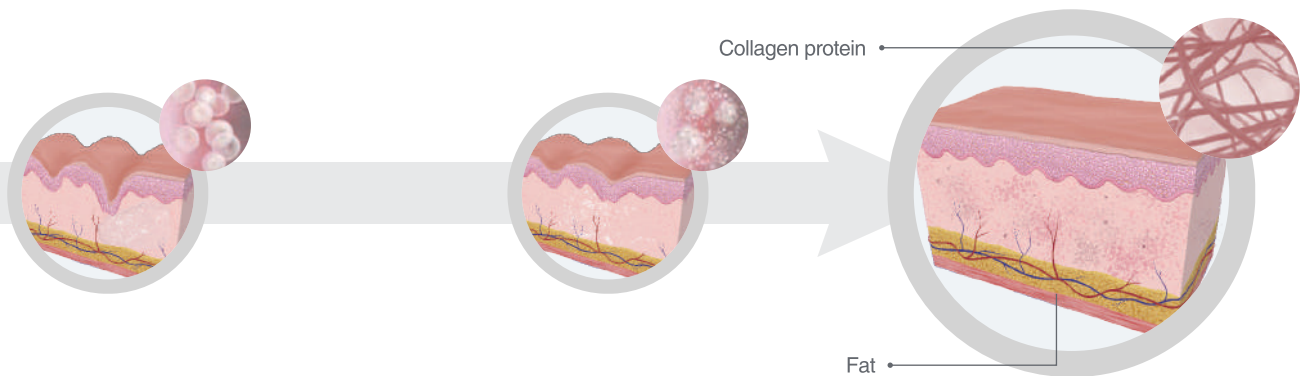
**Macroparticles : 5 – 100  $\mu\text{m}$ \***

Supra-Macroparticles : >100  $\mu\text{m}$

\* Polyderm® particles size

Macrophages and foreign body giant cells secrete an array of inflammatory mediators. Macrophages secrete factors that recruit and activate fibroblasts, and a fibrous capsule develops around the foreign material.

	Polyderm D	Polyderm L	Polyderm C
Image (Syringe)	 Polydioxanone + Hyaluronic acid	 Poly L-lactic acid powder + Hyaluronic acid	 Polycaprolactone powder + Hyaluronic acid
Image (Vial)	 Only Polydioxanone powder	 Only Poly L-lactic acid powder	 Only Polycaprolactone powder
Decomposition period	< 1 year	1~2 year	> 2 year



Macrophages can phagocytose microparticles (<5  $\mu\text{m}$ ), whereas particles of larger sizes (>10  $\mu\text{m}$ ) induce the formation of foreign-body giant cells. Macrophages and foreign body giant cells secrete an array of inflammatory mediators. Macrophages secrete factors that recruit and activate fibroblasts, and a fibrous capsule develops around the foreign material.

Through this immune reaction, after type I collagen is generated by biostimulatory effect, it becomes progressively predominant over collagen type III.

Polyderm® (Collagen stimulator) can be a good option for forming collagen. Over time, these induce the synthesis or regeneration of collagen and other connective tissues to create spaces and scaffolds for fibroblasts or vascular cells to enter, resulting in greater effectiveness in later stages than other fillers.

**PINE BM Co., LTD.**

120-11, Techno 2-ro,  
Yuseong-gu, Daejeon  
34029 Rep.of Korea

**CONTACT**

TEL: +82-42-710-7312

FAX: +82-42-671-9078

MAIL: info@pinebm.com

